Lancaster Laboratories Semi-Volatiles Runlog for Agilent GC/MS System HP11165 **HP #07**

Data Directory Path is - C:\msdchem\1\data\16oct11a\

OPERATOR	FILE .	LLI#	DATE	TIME	ВАТСН	DILUTION FACTOR
em10340 em10340	GJ0370.D GJ0370a.D GJ0370b.D GJ0370c.D GJ03770c.D GJ0371.D GJ0373.D GJ0374.D GJ0375.D GJ0377.D GJ0377.D GJ0378.D GJ0382.D GJ0382.D GJ0383.D GJ0383.D GJ0383.D GJ0385.D GJ0385.D GJ0385.D GJ0385.D GJ0385.D GJ0385.D GJ0385.D	DFTPP2586 DFTPP2586 DFTPP2586 DFTPP2586 DFTPP2586 STD2776 MDLP772776 MDLP772776 MDLP772776 MDLP772776 MDLP772776 MDLP772776 MDLP772776 MDLP776 MDLP772776 MDLP776 MDLP	10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/11/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016 10/12/2016	17:190 177:190 177:1550 177:1551 177:1552 18:130 199:130 190:1	16284 SLB 16284 SLB 16284 SLB 16284 SLB 16284 SLB 16284 SLB 16284 SLB 16284 SLB 16284 SLB 16284 SLB	

Lancaster Laboratories Semi-Volatiles Runlog for Agilent GC/MS System HP11165 **HP #07**

Data Directory Path is - C:\msdchem\1\data\16nov11\

OPERATOR	FILE	LLI#	DATE	TIME	BATCH	DILUTION FACTOR
img00346 img00346 img00346 img00346 img00346 img00346 img00346 img00346 img00346 img00346 img00346	GK0500.D GK0501.D GK0502.D GK0503.D GK0504.D GK0505.D GK0506.D GK0507.D GK0508.D GK0509.D GK0510.D	DFTPP2586 STD2776 SBLKLF314 314LFLCS 8668440 8668441 8668442 SBLKLF314 SBLKLF314 SBLKLF314 SBLKLF314	11/11/2016 11/11/2016 11/11/2016 11/11/2016 11/11/2016 11/11/2016 11/11/2016 11/11/2016 11/11/2016 11/11/2016 11/11/2016	06:48 07:03 08:18 08:42 09:07 09:32 09:58 10:23 10:48 11:13	16314SLF 16314SLF 16314SLF 16314SLF 16314SLF 16314SLF 16314SLF 16314SLF 16314SLF	

-&15.40C - (s12H

Lancaster Laboratories Semi-Volatiles Runlog for Agilent GC/MS System HP20296 **HP #12**

Data Directory Path is - D:\data\16oct16a\

OPERATOR	FILE	LLI#	DATE	TIME	ватсн	DILUTION FACTOR
ceb05247 ceb05247 ceb05247 ceb05247 ceb05247 ceb05247 ceb05247 ceb05247	LJ1750.D LJ1751.D LJ1752.D LJ1753.D LJ1754.D LJ1755.D LJ1756.D LJ1757.D	RVDFTPP2706 RVSTD2716 RVSTD2716 RVSTD2716 RVSTD2716 RVSTD2716 RVSTD2716 RVSTD2716 RVSTD2716	10/16/2016 10/16/2016 10/16/2016 10/16/2016 10/16/2016 10/16/2016 10/16/2016 10/16/2016 10/16/2016	19:12 19:27 19:55 20:23 20:51 21:19 21:47 22:15 22:44		
ceb05247 ceb05247 ceb05247 ceb05247	LJ1759.D LJ1760.D LJ1761.D LJ1762.D	RVMDL2716 MDLPAH2716 RVICV2036 RVBASICV2516	10/16/2016 10/16/2016 10/17/2016 10/17/2016	23:12 23:40 00:08 00:36		

Files LJ0750-0762 copied from 16oct16 directory and processed under rv8270d method

Lancaster Laboratories Semi-Volatiles Runlog for Agilent GC/MS System HP20296 **HP #12**

Data Directory Path is - D:\data\16nov01\

OPERATOR	FILE	LLI#	DATE	TIME	ВАТСН	DILUTION FACTOR
ceb05247 ceb05247	LK0000.D LK0001.D LK0001.D LK0002.D LK0003.D LK0004.D LK0005.D LK0007.D LK0008.D LK0009.D LK0010.D LK0011.D LK0012.D LK0012.D LK0013.D LK0013.D LK0013.D LK0013.D LK0013.D LK0013.D LK0013.D LK0013.D	RVDFTPP2706 RVDFTPP2706 RVDFTPP2706 RVDFTPP2706 RVNND2286 RVND2286 RVNND2286 RVND2286 RVD2286 RVD	11/01/2016 11/01/2016	05:46 07:32 07:32 08:29 08:26 09:523 11:415 12:43 13:37 14:33 13:37 14:55:526 17:55	16303WAK 16303WAK 16303WAK 16303WAK 16303WAW 16303WAW 16303WAK 16303WAK 16303WAK 16303WAK 16303WAK 16303WAK 16303WAK	5 100
ceb05247	LK0020.D	8668420	11/01/2016	18:35	16303WAK	

Organic Extraction Batchlog

16303WAK026

Assigned to: 9874 Kayla Yuditsky

Reviewed by: UBS247 11/11/11

Start Date:

Tech 2:

Start time: 8:00

Tech 1: _ 1216 188

LCSDAL7 BLANKA Dept: 26 Prep Analysis: 11010 8270D BNA Extraction 303WKLCSD| 250 | SS1629526A 303WKLCSD SOJMWE0E SBLKWK303 303WKLCS Sample Code Amt 250 250 250 250 SS1629526A SS1629526A SS1629526A SS1629526A SS/IS Sol. (mL) MS1628826B MS1621026A MS1629926B MS1629326B MS1621026A MS1629926B MS1628826B MS Sol. 0.25 (mL) Amt 0 FV (mL) SVOAs 8270D MINI рН 2 pH 11 ВС Comments

LCSAL.

LCSDA

LCSA

200

16362	Sulfuric Acid
16300a	Sodium Sulfate
166575	Methylene Chloride
460SA7S	10N NaOH
Lot No.	Solvent Used

(3) 10) 10/21/14 SS1629526A MS 1630026A On by 9874 10/31/16 MS1621026A MJ 1630026B MS1629326B MS1629926B Spike Solutions: Witness:

+ Spirt to 16 305WALADZG.

11/2 Mag 273

ALTIMONT SPECIALS SPIKE
APPIX #1 MINI SPIKE 0
MINI SEP. LCS SPIKE #1 3
MINI SEP. LCS SPIKE #2 of
MINI SEP. BNA SURROGATE
MINI

3 8669033	2 8669031	1 8668422	0 8668421	9 8668420	8 8668419	7 8668418	6 8668417	5 8668416	4 8668415	3 8668414	2 8667909	1 8663485	Sample #
N7413	N7411	COO16	C0014	COO13	COO15	C009D	00009	CO005	COO04	CO003	5444-	02D11	Sample Code
724	241	232	249	238	250	234	248	147	235	249	250	246	Amt
SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS1629526A	SS/IS Sol.
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153D	153A	153A	163A	4634	153A	153A	153A	153A	153A	[63A	153A	153A	вс
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14241	14241	14241	14241	14241	14241	14241	14241	14241	14241	14241	14241	14241	Analyses
22185	22185	22149	22149	22149	22149	22149	22149	22149	22149	22149	22191	22445	List
22185 11/11/2016	22185 11/11/2016	11/09/2016	22149 11/09/2016	22149 11/09/2016	22149 11/09/2016	11/09/2016	22149 11/09/2016	22149 11/09/2016	22149 11/09/2016	22149 11/09/2016	22191 11/08/2016	22445 11/07/2016	Due Date
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Internal Standard VISID2866

Bench#

Bench#

Bench#

Work Station

TUMBLE

100? Micro Temp

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> > 0

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R-VAP ID S-bath ID

88°C

R-VAP ID2 88C

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N-Evap

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M-vap

 \circ

16303WAK026

Balance #

Rack ID:

0 **6** nternal Standard しこくちゃしん Bench# Rack ID: DF = Dilution Factor 8668442MSD LCSA BLANKA 8668441MS **Organic Extraction Batchlog** Dept: 26 Sample # 20 8668440BKG @ Sample would not concentrate below! mt. Ky 9874 11/10/16 16314SLF026 Prep Analysis: 10813 BNA Soil Microwave APP IX Berich# 314LFLCS SBLKLF314 02D24 02D24 Code Sample 02D24 FV = Final Volume Sample Code 30.0 Bench# 多 M A 30.0 € A M Work Station 30.49 30.16 30.02 Assigned to: 6740 Jessica Cook SS1629326A SS1629326A SS1629326A SS/IS Sol SS1629326A SS1629326A SS/IS Sol. Micro $\overline{\omega}$ 0 (mL) (mL) Page 1 of 1 Ö MS1629326A MS1630826C MS1631326A MS1629326A MS1630826C MS1630826C MS1631326A 100? Micro Temp MS1629326A MS1631326A F MS Sol \wp 모 Documented temps are NIST corrected S-bath ID 6 R-VAPID 000 Ô (mL) 0.0 000 모 Tech 1: Reviewed by: Ν (mL) SVOA 8270D (microwave) 301A ВС 암 Ν Ν Molby 11-11-16 Start Date: Soil;Brown 0 R-VAP ID S-bath ID 멀 Ν Ν Ν N 301A 301A Tech 2: Nazsap 100 Comments Comments Nazou Lysnaa N-Evap R-VAP ID 1110116 MS1629326A MS1630826C Methylene Chloride 1:1 Methylene Chloride/Acetone MS1631326A Spike Solutions: Sodium Sulfate SS1629326A Solvent Used 7 10726 Analyses M-vap Start time: APPIX MIX #1

LCS SPIKE MIX #1

LCS SPIKE MIX #2

BNA SURROGATE STANDARD

S List Due Date Prio 39 Witness: APPIX MIX #1 ф 11/18/2016 Lot No. 185101716A 16314SLF026 6313A 166850 DWE02 Page

Explosives Data

Case Narrative/Conformance Summary Explosives

Case Narrative/Conformance Summary

CLIENT: CH2M Hill, Inc. SDG: DWE02

Pesticide Residue Analysis

Fraction: Explosives

Nitroaromatics/Amines 8330B(s)

Nitroaromatics/Amines 8330B(s)

M	GB.	T 14	X
W W	6	B. E	B A

		TAWER	EI IIA			
Sample #	Client ID	Liquid	Solid	DF	Comments	
8663469	DU-1-1-A	,	X	1		
8663470	DU-1-1-B		X	1		
8663471	DU-1-1-B-D		X	1		
8663472	DU-1-1-C		X	1		
8663473	DU-1-8-B		X	1		
8663474	DU-1-14-A		X.	1		
8663475	DU-1-14-B		X	1		
8663476	DU-1-14-C		X	1		
8663482	DU-3-I-B		X	Tarent	Unspiked	
8663483	DU-3-1-B MS		X	· ·	Matrix Spike	
8663484	DU-3-1-B MSD		X	.1	Matrix Spike Duplicate	
8663485	EB-1	X		1	Equipment Blank	
8665231	Tetryl+1,3,5-TNB Blank		. X	1	Blank	
8665491	DU-1-13-A		X	1		
8665492	DU-1-13-B		X	1		
8665493	DU-1-13-C		X	1		
8665494	DU-1-4-A		X	1		
8665495	DU-1-4-B		X	1		
8665496	DU-1-4-C		X	1		
8665497	DU-2-2-C		X	1; 1		
8665498	DU-2-2-C MS		X	1; 1	Matrix Spike	
8665499	DU-2-2-C MSD		X	1, 1	Matrix Spike Duplicate	
8665500	Tetryl+1,3,5-TNB Blank		X	1	Blank	
8668437	DU-2-4-A		X	1		
8668438	DU-2-4-B		X	1		
8668439	DU-2-4-C		X	1		
8668444	DU-2-4-B-D		X	1	Field Duplicate Sample	
8668445	Tetryl+1,3,5-TNB Blank		X	1	Blank	

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.



Case Narrative/Conformance Summary

CLIENT: CH2M Hill, Inc. SDG: DWE02

Pesticide Residue Analysis

Fraction: Explosives

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

(Sample number(s): 8665498-8665499RE2: Analysis: 13413)

The analyte recoveries in the ms/msd were <10% which did not meet the project requirements.

The BKG/MS/MSD were reextracted and similar results were observed. The client was

and a reduced aliquot was used to perform a third extraction. All the data sets are included

in the datapackage for review.

Please note that US EPA Methods for organic compounds do not require action by the laboratory based on out-of-specification MS/MSD results.

Batch#: 163270047A (Sample number(s): 8665497-8665499, UNSPK: 8665497)
The recovery(ies) for the following analyte(s) in the MS and MSD is outside the acceptance window: 1,3,5-Trinitrobenzene, Tetryl
Refer to the QC Summary forms for more information.

Batch#: 163190023A (Sample number(s): 8665497-8665500, UNSPK: 8665497) The recovery(ies) for the following analyte(s) in the MS and MSD is outside the acceptance window: 1,3,5-Trinitrobenzene, Tetryl Refer to the QC Summary forms for more information.

Batch#: 163080031A (Sample number(s): 8665493-8665499, 8668437-8668439, 8668444-8668445, UNSPK: 8665497)

The recovery(ies) for the following analyte(s) in the MS and MSD is outside the acceptance window: 1,3,5-Trinitrobenzene, Tetryl Refer to the QC Summary forms for more information.



Case Narrative/Conformance Summary

CLIENT: CH2M Hill, Inc. SDG: DWE02

Pesticide Residue Analysis

Fraction: Explosives

Batch#: 163080030A (Sample number(s): 8663469-8663476, 8663482-8663484, 8665231, 8665491-

8665492, UNSPK: 8663482)

The recovery(ies) for the following analyte(s) in the MS is outside the acceptance

window: 1,3,5-Trinitrobenzene

The recovery(ies) for the following analyte(s) in the MS and MSD is outside the

acceptance window: Tetryl

Refer to the QC Summary forms for more information.

Surrogate

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted.

Batch#: 163270047A (Sample number(s): 8665497-8665499, UNSPK: 8665497)

The recovery(ies) for the following surrogate(s) is below the acceptance window: 3,4-Dinitrotoluene (8665498RE2, 8665498RE2 MS, 8665499RE2, 8665499RE2 MSD)

principle (0000 points) obox source is, obox source is,

Batch#: 163190023A (Sample number(s): 8665497-8665500, UNSPK: 8665497)
The recovery(ies) for the following surrogate(s) is below the acceptance window: 3,4Dinitrotoluene (8665498RE, 8665498RE MS, 8665499RE, 8665499RE MSD)

Batch#: 163080031A (Sample number(s): 8665493-8665499, 8668437-8668439, 8668444-8668445,

UNSPK: 8665497)

The recovery(ies) for the following surrogate(s) is below the acceptance window: 3,4-Dinitrotoluene (8665498, 8665499)

SAMPLE ANALYSIS:

No problems were encountered with the analysis of the samples.

Abbreviation Kev

zabbi e viactom zacy		
UNSPK = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation	
+MS = Matrix Spike	MDL = Method Detection Limit	
MSD = Matrix Spike Duplicate	ND = Not Detected	
BKG = Background (for Duplicate)	J = Estimated Value	
D = Duplicate (DUP)	E= out of calibration range	
LCS = Lab Control Sample	RE = Repreparation/Reanalysis	
LCSD = Lab Control Sample Duplicate	* = Out of Specification	

Quality Control and Calibration Summary Forms

Explosives



Quality Control Reference List Pesticide Residue Analysis

CLIENT: CH2M Hill, Inc. SDG: DWE02

Fraction: Explosives

Analysis	Batch Number	Sample Number	Analysis Date
Nitroaromatics/Amines 8330B(s)	163080030A	PBLK30308 LCS3030Q 8663469 8663470 8663471 8663472 8663473 8663474 8663475 8663476 8663482 UNSPK 8663483 MS 8663484 MSD 8665231 BL 8665491 8665492	11/09/2016 02:36:00 11/09/2016 04:01:00 11/09/2016 04:43:00 11/09/2016 06:50:00 11/09/2016 08:15:00 11/09/2016 08:57:00 11/09/2016 10:22:00 11/09/2016 11:05:00 11/09/2016 11:47:00 11/09/2016 12:30:00 11/09/2016 13:12:00 11/09/2016 13:55:00 11/09/2016 14:37:00 11/09/2016 15:19:00 11/09/2016 16:02:00
Nitroaromatics/Amines 8330B(s)	163080031A	PBLK31308 LCS3130Q 8665493 8665494 8665495 8665496 8665497 UNSPK 8665498 MS 8665499 MSD 8668437 8668438 8668439 8668444	11/09/2016 16:44:00 11/09/2016 18:52:00 11/09/2016 20:16:00 11/09/2016 21:41:00 11/09/2016 22:24:00 11/09/2016 23:06:00 11/09/2016 23:49:00 11/10/2016 00:31:00 11/10/2016 01:56:00 11/10/2016 03:21:00 11/10/2016 04:03:00 11/10/2016 04:46:00 11/10/2016 05:28:00 11/10/2016 06:10:00
Nitroaromatics/Amines 8330B(s)	163190023A	PBLK23319 LCS2331Q 8665497RE UNSPK 8665498RE MS 8665499RE MSD 8665500 BL	11/17/2016 21:25:00 11/17/2016 22:08:00 11/18/2016 03:47:00 11/18/2016 05:12:00 11/18/2016 05:54:00 11/18/2016 06:37:00
Nitroaromatics/Amines 8330B(s)	163270047A	PBLK47327 LCS4732Q 8665497RE2 UNSPK 8665498RE2 MS 8665499RE2 MSD	11/29/2016 20:49:00 11/29/2016 22:56:00 11/30/2016 01:46:00 11/30/2016 02:28:00 11/30/2016 03:11:00
Nitroaromatics/Amines 8330B(w)	163030041A	PBLK41303	11/02/2016 00:33:00



Quality Control Reference List Pesticide Residue Analysis

CLIENT: CH2M Hill, Inc.

SDG: DWE02

Fraction: Explosives

Analysis

Batch Number

Sample Number

LCS41303 LCSD41303 8663485 Analysis Date

11/02/2016 01:15:00 11/02/2016 01:58:00 11/02/2016 02:40:00



Quality Control Summary Method Blank Pesticide Residue Analysis

SDG: DWE02 Matrix: SOLID

Fraction: Explosives

163080030A / PBLK30308 Analyte	Analysis Date	Blank Results	Units	MDL	LOO
1,3,5-Trinitrobenzene	11/09/16	N.D.	ug/kg	40	120
Tetryl	11/09/16	N.D.	ug/kg	100	300

163080031A / PBLK31308 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
1,3,5-Trinitrobenzene	11/09/16	N.D.	ug/kg	40	120
Tetryl	11/09/16	N.D.	ug/kg	100	300

163190023A / PBLK23319 Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
1,3,5-Trinitrobenzene	11/17/16	N.D.	ug/kg	40	120
Tetryl	11/17/16	N.D.	ug/kg	100	300

163270047A / PBLK47327					
Analyte	Analysis Date	Blank Results	Units	MDL	LOQ
1,3,5-Trinitrobenzene	11/29/16	N.D.	ug/kg	40	120
Tetryl	11/29/16	N.D.	ug/kg	100	300



Quality Control Summary Method Blank

Pesticide Residue Analysis

SDG: DWE02 Matrix: LIQUID

Fraction: Explosives

163030041A / PBLK41303					
Analyte		Blank Results	Units	MDL	LOQ
1,3,5-Trinitrobenzene	11/02/16	N.D.	ug/l	2.2	6.0
Tetryl	11/02/16	N.D.	ug/l	4.4	9.0



Fraction: Explosives

3,4-Dinitrotoluene 163080030A Spike Added 1000 ug/kg Limits % Recovery Sample 62 - 133 PBLK30308 120 62 - 133 LCS3030Q 118 8663469 110 62 - 133 62 - 133 119 8663470 62 - 133 8663471 116 8663472 111 62 - 133 62 - 133 8663473 116 62 - 133 118 8663474 8663475 119 62 - 133 62 - 133 8663476 114 121 62 - 133 8663482 UNSPK 71 62 - 133 8663483 MS 8663484 MSD 62 - 133 78 119 62 - 133 8665231 62 - 133 8665491 116 62 - 133 8665492 109

163080031A	3,4-Dinitr	otoluene
	Spike Added	1000 ug/kg
Sample	% Recovery	Limits
PBLK31308	126	62 - 133
8665493	108	62 - 133
8665494	114	62 - 133
8665495	116	62 - 133
8665496	119	62 - 133
8665497	117	62 - 133
UNSPK		
8665498 MS	1 *	62 - 133
8665499 MSD	0 *	62 - 133
8668437	113	62 - 133
8668438	118	62 - 133
8668439	115	62 - 133
8668444	113	62 - 133
8668445	117	62 - 133

163190023A	3,4-Dinitrotoluene				
	Spike Added	994 ug/kg			
Sample	% Recovery	Limits			
PBLK23319	107	62 - 133			
LCS2331Q	88	62 - 133			
8665497RE	85	62 - 133			

Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted.

Quality Control Summary

Surrogates

Pesticide Residue Analysis

SDG: DWE02 Matrix: SOLID



Fraction: Explosives

163190023A	3,4-Dinitrotoluene					
	Spike Added	994 ug/kg				
Sample	% Recovery	Limits				
UNSPK						
8665498RE MS	0 *	62 - 133				
8665498RE MS	0 *	62 - 133				
8665499RE	9 *	62 - 133				
MSD	Q *	62 - 133				
8665499RE MSD	У *	02 - 133				
8665500	83	62 - 133				

163270047A	3,4-Dinitr	otoluene
·	Spike Added	994 ug/kg
Sample	% Recovery	Limits
PBLK47327	110	62 - 133
8665497RE2 UNSPK	113	62 - 133
8665498RE2 MS	41 *	62 - 133
8665498RE2 MS	41 *	62 - 133
8665499RE2 MSD	37 *	62 - 133
8665499RE2 MSD	37 *	62 - 133

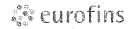
Surrogate recoveries that are noncompliant are confirmed unless attributed to a dilution or otherwise noted.

Quality Control Summary

Pesticide Residue Analysis

Surrogates

SDG: DWE02 Matrix: SOLID



Fraction: Explosives

163030041A	3,4-Dinitrotoluene				
	Spike Added	200 ug/l			
Sample	% Recovery	Limits			
PBLK41303	98	85 - 115			
LCS41303	99	85 - 115			
LCSD41303	100	85 - 115			
8663485	95	85 - 115			

Quality Control Summary Surrogates

Pesticide Residue Analysis

SDG: DWE02 Matrix: LIQUID



Quality Control Summary Matrix Spike/Matrix Spike Duplicate

SDG: DWE02 Matrix: SOLID

Pesticide Residue Analysis

Fraction: Explosives

UNSPK: 8663482 MS: 8663483 MSD: 8663484 Analyte	Batch: 16308 8665492)	80030A (Sar	nple number	(s): 8663469	-8663476,	8663482-	8663484,	8665231,	3665491-
	Spike Added ug/kg MS/MSD	Unspiked Conc ug/kg	MS Conc ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	%Rec Limits	%RPD	%RPD Limits
1,3,5-Trinitrobenzene	1920 / 1960	N.D.	874.13	955.35	46 *	49	48-141	9	50
Tetryl	1920 / 1960	N.D.	645.33	712.32	34 *	36 *	38-152	10	50

UNSPK: 8665497 MS: 8665498 MSD: 8665499 Analyte	Batch: 163080031A (Sample number(s): 8665493-8665499, 8668437-8668439, 8668444-8668445								
	Spike Added ug/kg	Unspiked Conc ug/kg	MS Conc ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	%Rec Limits	%RPD	%RPD Limits
1,3,5-Trinitrobenzene	1950	N.D.	N.D.	N.D.	0 *	0 *	48-141	0	50
Tetryl	1950	N.D.	N.D.	N.D.	0 *	0 *	38-152	0	50

UNSPK: 8665497RE	Batch: 163190023A (Sample number(s): 8665497-8665500)							· ·	
MS: 8665498RE	Spike	Unspiked	MS	MSD					
MSD: 8665499RE	Added	Conc	Conc	Conc	MS	MSD	%Rec		%RPD
Analyte	ug/kg	ug/kg	ug/kg	ug/kg	%Rec	%Rec	Limits	%RPD	Limits
1,3,5-Trinitrobenzene	1980	N.D.	N.D.	N.D.	0 *	0 *	48-141	0	50
Tetryl	1980	N.D.	N.D.	N.D.	0 *	0 *	38~152	0	50

	Batch: 1632	270047A (Sar	nple number	(s): 8665497	-8665499)			
UNSPK: 8665497RE2 MS: 8665498RE2 MSD: 8665499RE2 Analyte	Spike Added ug/kg MS/MSD	Unspiked Conc ug/kg	MS Conc ug/kg	MSD Conc ug/kg	MS %Rec	MSD %Rec	%Rec Limits	%RPD	%RPD
1,3,5-Trinitrobenzene	4000 / 3921.56	N.D.	444.5	321.68	11 *	8 *	48-141	32	50
Tetryl	4000 / 3921.56	N.D.	737.68	678.	18 *	17 *	38-152	8	50

Comments

(2) The unspiked sample result is greater than four times the spike added.

* = Out of Specification

Results are being reported on an as received basis.



Quality Control Summary Laboratory Control Standard (LCS) Laboratory Control Standard Duplicate(LCSD)

SDG: DWE02 Matrix: SOLID

Pesticide Residue Analysis

Fraction: Explosives

LCS: LCS3030Q	•	Batch: 163080030A (Sample number(s): 8663469-8663476, 8663482-8663484, 8665231, 8665491-8665492)							
Analyte	Spike Added ug/kg	LCS Conc ug/kg	LCSD Conc ug/kg	LCS %Rec	LCSD %Rec	%Rec	%RPD	%RPD Limits	
1,3,5-Trinitrobenzene	2000	1990.42	NA.	100	NA	48-141	NA	NA	
Tetryl	2000	1880.2	NA	94	NA	38-152	NA	NA	

LCS: LCS3130Q	Batch: 163080 8668445)	031A (Sample n	umber(s): 8665	5493-86654	99, 86684	37-866843	39, 866844	4
Analyte	Spike Added ug/kg	LCS Conc ug/kg	LCSD Cone ug/kg	LCS %Rec	LCSD %Rec	%Rec Limits	%RPD	%RPD Limits
1,3,5-Trinitrobenzene	2000	2237.69	NA	112	NA	48-141	NA	NA
Tetryl	2000	2075.55	NA	104	NA	38-152	NA	NA

LCS: LCS2331Q	Batch: 163190	023A (Sample n	umber(s): 8665	5497-86655	00)									
	Spike	LCS	LCSD											
	Added	Conc	Conc	LCS	LCSD	%Rec		%RPD						
Analyte	ug/kg	ug/kg	ug/kg	%Rec	%Rec	Limits	%RPD	Limits						
1,3,5-Trinitrobenzene	2000	1431.9	NA	72	NA	48-141	NA	NA						
Tetryl	2000	1223.24	NA	61	NA	38-152	NA	NA						

LCS: LCS4732Q	Batch: 163270	Batch: 163270047A (Sample number(s): 8665497-8665499)								
_	Spike	LCSD	LCSD							
	Added	Conc	Conc	LCS	LCSD	%Rec		%RPD		
Analyte-	ug/kg	ug/kg	ug/kg	%Rec	%Rec	Limits	%RPD	Limits		
1,3,5-Trinitrobenzene	2000	2063.08	NA	103	NA	48-141	NA	NA		
Tetryl	2000	1762.78	NA	88	ÑΑ	38-152	NA	NA		



Quality Control Summary Laboratory Control Standard (LCS) Laboratory Control Standard Duplicate(LCSD)

SDG: DWE02 Matrix: LIQUID

Pesticide Residue Analysis

Fraction: Explosives

LCS: LCS41303	Batch: 1630300	Batch: 163030041A (Sample number(s): 8663485)							
LCSD: LCSD41303	Spike	LCS	LCSD						
	Added	Conc	Conc	LCS	LCSD	%Rec		%RPD	
Analyte	ug/I	ug/l	ug/l	%Rec	%Rec	Limits	%RPD	Limits	
1,3,5-Trinitrobenzene	100	85.54	83.69	86	84	70-130	2	30	
Tetryl	100	102.36	94.64	102	95	70-130	8	30	

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Calibration File: 12C83B1629501

GC Column (3): CAPCELL CN ID: 250 (mm)

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

		RT OF STANDARDS				MIDEOINT	RT WII	RT WINDOW		
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	RT.	FROM	то		
1,3,5-Trinitrobenzene	30.77	30.76	30.56	30.54	30.10	30.10	29.90	30.30		
3,4-Dinitrotoluene	32.92	32.77	32.74	32.74	32.58	32.58	32.40	31.76		
Tetryl	34.52	34.52	34.52	34.51	34.41		34.31	34.51		



OCT 25 2016

6E INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

SAS No.:

SDG No.:

Instrument: Y6329A

Case No.:

Calibration File: 12C83B1629501

GC Column (3): CAPCELL CN ID: 250 (mm)

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016 .

COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD	
1,3,5-Trinitrobenzene	1,34E+02	1.72E+02	2.03E+02	2.09E÷02	2.08E+02	1.85E+02	18	- Linear
3,4-Dinitrotoluene	1.46E+02	1.32E+02	1.26E+02	1.20E+02	1.18E+02	1.28E+02	9	
Tetryl	1.52E+02	1.55E+02	1.56E+02	1.54E+02	1.52E+02	1.54E+02	1	
						01 000	_	

Average % RSD:

OCT 2 6 2016

File Name:

V:\CP12\12C83B1629501.CAL

Version:

Creator:

Description:

Reason for change:

External standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold: 0

Reference peak area reject threshold:

500

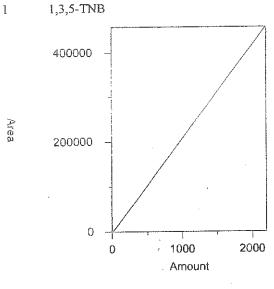
Amount units:

uġ/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.



Expected retention time:							
Search window:							
No retention time reference component							
No response proxy component							
Group number:							

High alarm limit: Low alarm limit: Component constant:

Single peak quantification by area

Y = 209.5954 X + -2628.346

Linear fit with equal weighting Coefficient of determination: Average error:

0.9999409 7.219% 185.0529

17.525%

30.101 minutes 0.2 minutes

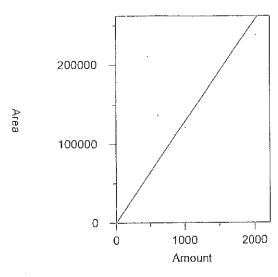
Level	Amount	Response	Cal Factor	Error, %	Source
i	25	3343	133.72	28.009	Manual
2	100	17203.9	172.039	-6.150	Manual
3	500	101332	202.664	-0.820	Manual
4	1000	208920.3	208.9203	0.944	Manual
5	2000	415842.4	207.9212	-0.173	Manual

Date and time
10/25/2016 7:15:31 PM
10/25/2016 7:15:33 PM
10/25/2016 7:15:34 PM
10/25/2016 7:15:37 PM
10/25/2016 7:15:42 PM

Average CF:

RSD:

3,4-Dinitrotoluene 2



Expected retention time: Search window: No retention time reference component No response proxy component Group number:	32.58 minutes 0.18 minutes
High alarm limit: Low alarm limit: Component constant:	0 0 0

Single peak quantification by area

Y = 128.4892 X + 0

Source

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

Average CF:

RSD:

6.539%

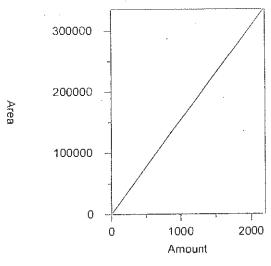
128.4892

8.797%

Level 1 2	Amount 25.2 100.8	Response 3689 13264.82	Cal Factor 146,3889 131,5954	Error, % 13.931 2.417
3	504 1008	63535	126,0615 120,3163	-1.889 -6.361
5	2016	238057.3	118.084	-8.098

3

Tetryl



Expected retention time:	34.412 minutes
Search window:	0.1 minutes
No retention time reference component	
No response proxy component	
Group number:	0
•	
High alarm limit:	0
Low alarm limit:	0 .
Component constant:	0
Single peak quantification by area	
V = 153.6194 X + 0	

Average CF fit with equal weighting, forced to origin Coefficient of determination:

O.9998744

Average error:

Average CF:

RSD:

1.058%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	25	3796	151.84	-1.158	Manual	10/25/2016 7:15:54 PM
2	100	15454.38	154,5438	0,602	Manual	10/25/2016 7:15:56 PM
3	500	77919.69	155.8394	1.445	Manual	10/25/2016 7:15:57 PM
4	1000	153521.3	153.5213	-0.064	Manual	10/25/2016 7:15:59 PM
5	2000	304705.4	152.3527	-0,825	Manual	10/25/2016 7:16:08 PM

6D INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Calibration File: 12C83B1629501B

Instrument: Y6329B

GC Column (4): CAPCELL CN ID: 250 (mm)

Update File:

Date(s) Analyzed: <u>10/23/2016</u> <u>10/23/2016</u>

	RT OF STANDARDS			MIDPOINT	RT WIN	MOGI		
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	RT	FROM	то
HMX			<u> </u>			4.15	4.05	4.25
Nitroglycerin						9.20	9.10	9.30

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329B

Calibration File: 12C83B1629501B

GC Column (4): CAPCELL CN ID: 250 (mm)

Date(s) Analyzed: <u>10/23/2016</u> <u>10/23/2016</u>

		CALIBRATION FACTORS					
COMPOUND	LEVEL 1	LEVEL 2		LEVEL 4		MEAN	%R\$D
них							0
Nitroglycerin							0

Average % RSD: 0

File Name:

V:\CP12\12C83B1629501B.CAL

Version:

1.1

Creator:

Description:

Reason for change:

External standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold: 0
Reference peak area reject threshold: 500

Amount units:

ug/L

No default component

Method of calculating data point averages: Equal weight for all updates

Print calibration update report

All levels are normal data points.

HMX

Amount

Expected retention time:

Search window:

0.1 minutes

No retention time reference component

No response proxy component

Group number:

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 0.0

Average CF fit with equal weighting, forced to origin

Coefficient of determination:

1

Average error:

0.000%

Average CF:

RSD:

0.000%

Level	Amount	Response	Cal Factor	Error, %
1	25.015	0	0	0.000
2	100.06	0	0	0.000
3	500.3	. 0	0	0.000
4	1000.6	0	0	0.000
5	2001.2	0	0	0.000

Source
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12C83B16295001B.0009.B?
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12C83B16295001B.0010.B?
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12C83B16295001B.0011.B?
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12C83B16295001B.0012.B?
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12C83B16295001B.0013.B?

2 Nitroglycerin

Chrom Perfect Calibration File

· <u> </u>			-			Expected retention time: Search window: No retention time reference component	9.135 minutes 0.1 minutes
		s name :				No response proxy component Group number:	0
≥		die e				High alarm limit:	0
Area						Low alarm limit:	0
	•				- Parameter - Para	Component constant:	v
· •,						Single peak quantification by area	
		The state of the s				Y = 0.0	
		L				Average CF fit with equal weighting, for	orced to origin
			\ Ama	unt		Coefficient of determination:	1
			AIIIC	ALI IL		Average error:	0.000% .
						Average CF:	0
						RSD:	0.000%
Level 1 2 3 4 5	Amount 485,75 1063,86 1947,18 4857,82 9956,51	Response 0 0 0 0 0	Cal Factor 0 0 0 0 0	0.000 0.000 0.000 0.000 0.000 0.000	Source \\USLA \\USLA Manual Manual	.N-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-2 .N-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-2 ! !	4\ACTEVE\CP12\12C83B16295001B.000! 4\ACTEVE\CP12\12C83B16295001B.0010
3	PETN						07.055
		_	A.M. (4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1			Expected retention time:	26.255 minutes 0.21 minutes
					1	Search window: No retention time reference component	0.24 minutes
		1		,		No response proxy component	
		i i				Group number:	0
							0
≥		. [High alarm limit:	0
A₹ea		j				Low alarm limit:	0
		married in principal				Component constant:	v
		T # # # T # # # # # # # # # # # # # # #				Single peak quantification by area	
		r (manyii) (dissertative)				Y = 0.0	```````` `
						Average CF fit with equal weighting, for	orced to origin
		-	Amo	ount		Coefficient of determination:	1
			7 1111			Average error:	0.000% 0
	•					Average CF: RSD:	0.000%
Level . 1 . 2 . 3 . 4 . 5	Amount 484.69 1061.44 1942.16 4845.76 9931.88	Response 0 0 0 0 0	Cal Factor 0 0 0 0 0	Error, % 0,000 0,000 0,000 0,000 0,000	Source Manua Manua Manua Manua	Date and time 1	

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

SAS No.:

SDG No.:

Instrument: Y6329A

Case No.:

Calibration File: 12C83B1629502

GC Column (3): CAPCELL CN ID: 250 (mm)

12E83B1629501 ·

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

	RT OF STANDARDS	RT OF STANDARDS			DOW
COMPOUND	LEVEL 1 LEVEL 2 LEVEL 3 LEV	ÆL4 LEVEL5	RT	FROM	то
1,3,5-Trinitrobenzene	29.78		29.78	29.58	29.98
3,4-Dinitrotoluene	32.41		32.41	32.23	32.59
Tetryl	34.32		34.32	34.22	34.42

applies to: 02C83B1629S002,0009-7 012 Cal! 02 C83B1629501 New Cal: 02 C83 B1629502

OCT 26 2016

OCT 2 7 2016

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

SAS No.:

SDG No.:

Case No.:

Calibration File:

Instrument: Y6329A

GC Column (3): CAPCELL CN

ID: 250 (mm)

12C83B1629502

ICAL

12E83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN.	%RSD	
1,3,5-Trinitrobenzene	1.34E+02	1.72E+02	2.03E+02	2.09E÷02	2.08E+02	1.85E+02	` 18	-Linear
3.4-Dinitrotoluene	1.46E+02	1.32E+02	1.26 E ÷02	1.20E+02	1.18E+02	1,28E+02	9	
Tetryl	1.52E+02	1.55E+02	1.56E+02	1.54E+02	1.52E+02	1.54E+02	1	

Average % RSD:

OCT 27 2016

File Name:

V:\CP12\12C83B1629502.CAL

Version:

4

Creator:

Description:

Reason for change:

External standard calibration

Standard injection volume:

1

No sample weight correction

n

Area reject threshold: Reference peak area reject threshold:

500

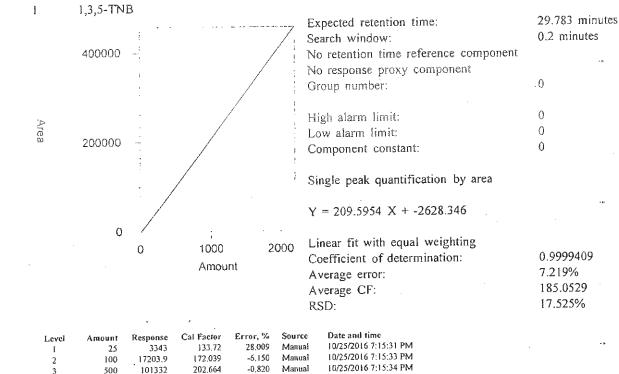
Amount units:

ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.



0.944

-0.173

Manual

Manual

2 3,4-Dinitrotoluene

1000

208920.3

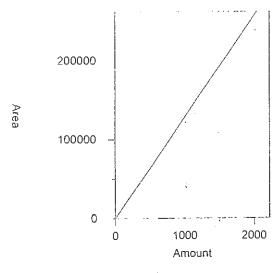
415842.4

208.9203

207.9212

10/25/2016 7:15:37 PM

10/25/2016 7:15:42 PM



Response

13264,82

121278.8

63535

3689

Amount

252

100.8

504

8001

Level

2

Expected retention time: Search window: No retention time reference component	32.412 minutes 0.18 minutes
No response proxy component Group number:	0
High alarm limit:	0
Low alarm limit:	۵
Component constant:	0
Single peak quantification by area	

..........

Y = 128.4892 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

RSD:

0.9861933

6.539%

128.4892

8.797%

5	2016	238057.3	118.084	-8.098	//USL
3	Tetryl				
	300000		. ~		
Area	200000				
	100000				
	0	0		2	2000
		-	Amoun		

Cal Factor

146.3889

131,5954

126.0615

120.3163

Error, %

13.931

2.417

-1.889

-6.361

Source

\\USL	ai AN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24' AN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24' AN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24' AN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24'	ACTIVE\CP12\12C83B16295001.00 ACTIVE\CP12\12C83B16295001.00
	Expected retention time: Search window: No retention time reference component	34.322 minutes 0.1 minutes
	No response proxy component	l, me

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 153.6194 X + 0

Group number:

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

Average CF:

153.6194

RSD:

1.058%

Levei	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	25	- 3796	151.84	-1.158	Manual	10/25/2016 7:15:54 PM
2	100	15454.38	154,5438	0.602	Manual	10/25/2016 7:15:56 PM
3	500	77919.69	155.8394	1.445	Manual	10/25/2016 7:15:57 PM
4	1000	153521.3	153,5213	-0.064	Manual	10/25/2016 7:15:59 PM
5	2000	304705.4	152.3527	-0.825	Manual	10/25/2016 7:16:08 PM

Chrom Perfect Calibration File

File Name:

V:\CP12\12C83B1629502B.CAL

500

ug/L

Version:

Creator:

Description:

Reason for change:

No Compands on B-side



\USLAN-CHROMPERFECT\GHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12C83B16295001B.0013.I

External standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold:

Reference peak area reject threshold:

Amount units:

No default component

HMX

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.

l	UMIV				Expected retention time:	4.146 minutes		
		'			Search window:	0.1 minutes		
					No retention time reference component			
		-]						
					No response proxy component	0		
					Group number:	U		
					7 H * 1 - 1 - 1 - 1 - 1 - 1 - 1	0		
P					High alarm limit:	٥		
Area					Low alarm limit:	0		
					Component constant:	U	ü	
			·	-	Single peak quantification by area			
					Y = 0.0	~		
		. 1.			Average CF fit with equal weighting, f	forced to origin		
					Coefficient of determination:	1		
			Amount .		Average error:	0.000%	•	
					Average CF:	0	3**	
					RSD:	0.000%		
		_	0.45	F 9/	Source			
Level Amoun 1 25.013		0 000 1		Errer, % 0,000	WUSLAN, CHROMPER FECT/CHROMPER FECT-DATA/DEPT-24/ACTIVE/CP12/12C83B16295001B,0009.1			
2	100.06	0	0	0,000	WIGHAN CHROMPERFECT/CHROMPERFECT-DATA/DEPT-	-24\ACT[VE\CP12\12C83B162'	3200 i B.00 i G.1	
3	500.3	0	0	0,000	\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT\\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT\\\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-24\ACTIVE\CP12\12C83B162: -24\ACTIVE\CP12\12C83B162:	95001B.0012.1	
4	1000.6	0	0	0.000	WUSLAN-CHROMPERFECT/CHROMPERFECT-DATABLET	24VACTIVE/CP12/12C83B162	95001B 0013 I	

2 Nitroglycerin

2001.2

				,		eriect Cambration i no	
					S	earch window: lo retention time:	9.135 minutes 0.1 minutes
					N	lo response proxy component	
						Group number:	0
						ligh alarm limit:	0
Area						ow alarm limit:	0
Ö					- 1	Component constant:	0
		+ • •			S	lingle peak quantification by area	i
							s.
					Y	Y = 0.0	, etc.
						Average CF fit with equal weighting, for	rced to origin
			Amo	ount		Coefficient of determination:	0.000%
						Average error:	0.000%
						Average CF: RSD:	0.000%
					,		
3	4857.82 9956.51 PETN	0	0	000,0	Manual Manual		
5	PEIN				ř	Expected retention time:	26.255 minutes
						Search window:	0.21 minutes
					1	No retention time reference component	
						No response proxy component	_
						Group number:	0
*		•				High alarm limit:	0
Area		•			L	Low alarm limit:	0
a a						Component constant:	0
		P			S	Single peak quantification by area	10
					,	Y = 0.0	
					J .,	Average CF fit with equal weighting, fo	orced to origin
			۸	ount	′(Coefficient of determination:	1
			Amount			Average error:	0.000%
						Average CF:	0
]	RSD:	0.000%.
Level	Amount	Response	Cal Factor	Error, %	Source	Oate and time	
! 2	484.69 1061.44	0	0	0.000 0.000	Manual Manual	10/24/2016 4:32:58 PM 10/24/2016 4:33:00 PM	
3	1942,16	0	0	0.000	Manual	10/24/2016 4:33:01 PM	^**
4 5	4845.76 9931.88	0	0	0,000	Manual Manual	10/24/2016 4:33:05 PM 10/24/2016 4:33:04 PM	
_	2201.00	v	•				

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Calibration File: 12E83B1629501

Instrument: X6329A

GC Column (1): CHROMPACK ID: 100 (mm)

Update File:

Date(s) Analyzed: 10/23/2016 10/23/2016

		RT O	STANDA	MIDPONY	- RT WIN	IDOW		
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4		RI	FROM	το
1,3,5-Trinitrobenzene	5.10	5.12	5.11		5.19	5.19	5.09	5.29
Tetryl	8.36	8.37	8.37	8.36	8,50	8.50	8.36	8.64
3,4-Dinitrotoluene	11.36	11.35	11.34	11.34	11.52	11.52	11.28	11.76

OCT 2 4 2016

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: <u>Lancaster Laboratories</u>

Contract:

Lab Code:

Case No.:

GC Column (1): CHROMPACK ID: 100 (mm)

SAS No.:

Instrument: X6329A

Calibration File: 12E83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

		CALIBRATION FACTORS						
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD	
1,3,5-Trinitrobenzene	2.31E+02	1.97E+02	2.00E+02	1.95E+02	1.92E+02	2.03E+02	8	
Tetryl	1.27E+02	1.38E+02	1.49E+02	1.48E+02	1.46E+02	1.42E+02	6	
3,4-Dinitrotoluene	1.11E+02	9.76E+01	1.14E+02	1.16E+02	1.10E+02	1.10E+02	7	

Average % RSD: 7

-V:\CP12\12E83B1629501.CAL

Version:

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold: 0 500

Reference peak area reject threshold: Amount units:

ug/L

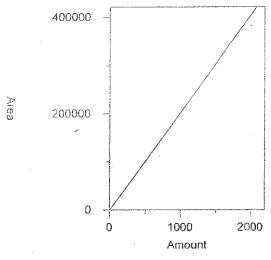
· No default component

Method of calculating data point averages: Equal weight for all updates

All levels are normal data points.

Print calibration update report





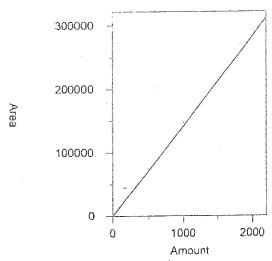
Expected retention time: Search window: No internal standard component No retention time reference component	5.194 minutes 0.1 minutes						
No response proxy component							
Group number:	Û						
High alarm limit:	0						
Low alarm limit:	0						
Component constant:	0						
Single peak quantification by area							
Y = 202.7578 X + 0							

Average CF fit with equal weighting, forced to origin Coefficient of determination: 0.994159 5.617% Average error:

202.7578 Average CF: 7.983% RSD:

	Level	Amount	Response	Cal Factor	Error, %	Source
	ŀ	25	5780,706	231,2282	14.042	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.BNI
	2	100	19660.46	196.6046		\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.BNI
	3	500	99873.61	199,7472	-1.485	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0011.BNL
ı	4	1000	194538.7	194.5387	-4.054	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0012.BNI
٦.	5	2000	383340.2	191.6701	-5.468	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0013.BNI

Tetryl



Expected retention time:	8.502 minutes
Search window:	0.14 minutes
No internal standard component	
No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

Single peak quantification by area

Y = 141.5316 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

Average CF:

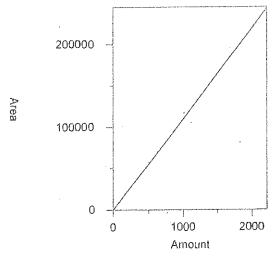
Average CF:

6.356%

Level	Amount	Response	Cal Factor	Error, %
1	25	3186.354	127,4542	-9.947
2	100	13767,77	137.6777	-2,723
3	500	74417.88	148.8358	5.161
4	1000	147509.6	147.5096	. 4,224
5	2000	292362	146.181	3.285

Source
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009...
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010...
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0011...
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0012...
\Manual

3 3,4-Dinitrotoluene



Expected retention time:	11.519 minutes
Search window:	0.242 minutes
No internal standard component	
No retention time reference component	
No response proxy component	
Group number:	0

High alarm limit: Component constant: Componen

Single peak quantification by area

Y = 109.7723 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

Average CF:

RSD:

6.540%

Level	Amount	Response	Cal Factor	Error, %	Source Source
1	25.2	2797.115	110.9966	1,115	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\1283B16295001.0009.
2	100.8	9836.875	97.58804	-11.100	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.
3	504	57294.55	113.6797	3.560	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.0011.
4	1008	117062.3	116.1332	5.795	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0012.
5	2016	222695.1	110.4638	0.630	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0013.

6D INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Calibration File: 12E83B1629501B

Instrument: X6329B

GC Column (2): CHROMPACK ID: 100 (mm)

Update File:

Date(s) Analyzed: 10/23/2016 10/23/2016

	RT OF STANDARDS					MIDPOINT	RT WIN	DOW
COMPOUND	LEVEL 1			EVEL 4 LI		RT	FROM	то
3,4-Dinitrotoluene	11.41	11.46		11.46	11.65	11.65	11.36	11.94

OCT 2 4 2016

6E INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

Instrument: X6329B

Calibration File: 12E83B1629501B

GC Column (2): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

COMPOUND	LEVEL 1			LEVEL 4	LEVEL 5	MEAN	%RSD
3,4-Dinitrotoluene	8.80E+02	6.70E+02	8.31E+02	7.73E+02	8.13E+02	7.94E+02	10

Average % RSD:

V:\CP12\12E83B1629501B.CAL

Version:

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold:

Reference peak area reject, threshold:

Amount units:

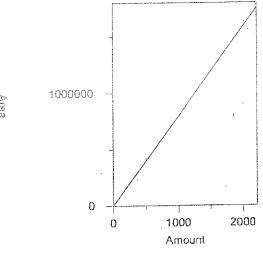
500 ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.





Expected retention time: Search window: No internal standard component No retention time reference component	11.649 minutes 0.286 minutes					
No response proxy component						
Group number:	0					
High alarm limit: Low alarm limit: Component constant:	0 0 0					
Single peak quantification by area						
Y = 793.5834 X + 0						

Average CF fit with equal weighting,	forced to origin
Coefficient of determination:	0.9986128
Average error:	7.236%
Average CF:	793.5834

9.948%

Level	Amount	Response	Cal Factor	Error, %	Source \USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0009.B}
1	25.2	22181.26	880,2087	10.916	WUSLAN-CHROMPERFECT-CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12/12F83B16295001B 0010 B1
2	100.8	67553.95	670,1781	-15.550	WUSLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24\ACTIVE\CP12\1283B16295001B.0010.B1
3	504	418951.8	831.2536	4,747	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0011.B\
4	1008	779612	773.4246	-2.540	Manual 900 100 100 100 100 100 100 100 100 100
ż	2016	1429710	812 8522	2 428	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0013.B1

RSD:

6D INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File:

12E83B1629502

GC Column (1): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 10/24/2016 10/24/2016

	RT OF STANDARDS	MIDPOINT	RT WIN	IDOW
COMPOUND	LEVEL 1 LEVEL 2 LEVEL 3 LEVEL 4 LEVEL 5		FROM	TO
1,3,5-Trinitrobenzene	5.33	5.33	5.23	5.43
Tetryl	8.72	8.72	8.58	8.86
3,4-Dinitrotoluene	11.82	11.82		12.06

applies to: 12553816295002,0009 -7 oid Cal! 128381629507 New Cal! 12 E83 B1620502



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6E INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File: 12E83B1629502

GC Column (1): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 10/24/2016 10/24/2016

		CALIBRATION FACTORS						
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD	
1,3,5-Trinitrobenzene	2.31E+02	1.97E+02	2.00E+02	1.95E+02	1.92E+02	2.03E+02	8	
Tetryl	1.27E+02	1.38E+02	1.49E+02	1.48E+02	1.46E+02	1.42E+02	6	
3 4-Dinitrotoluene	1.11E÷02	9.76E+01	1.14E+02	1.16E+02	1.10E+02	1.10E+02	7	

Average % RSD:

V:\CP12\12E83B1629502.CAL

Version:

- 3

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold: 0

Reference peak area reject threshold:

500

Amount units:

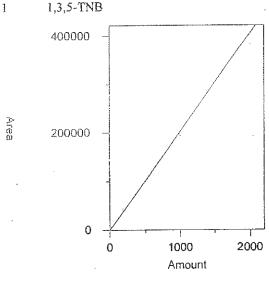
ug/L

No default component

Method of calculating data point averages: Equal weight for all updates

Print calibration update report

All levels are normal data points.

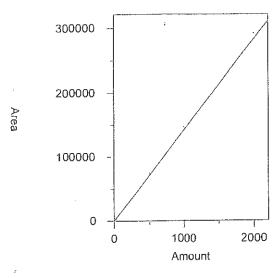


Expected retention time:	5.331 minutes
Search window:	0.1 minutes
No internal standard component	
No retention time reference componer	nt
No response proxy component	
Group number:	0
High alarm limit:	G
Low alarm limit:	. 0
Component constant:	0
Single peak quantification by area	
Y = 202.7578 X + 0	,

Average CF fit with equal weighting,	forced to origin
Coefficient of determination:	0.994159
Average error:	5.617%
Average CF:	202.7578
RSD:	7.983%

Level 1 2 3	Amount . 25 100 500 1000	Response 5780,706 19660,46 99873,61 194538.7	Cal Factor 231,2282 196,6046 199,7472 194,5387	-3.035 -1.485 -4.054	Source \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.0009.B} \\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.0010.B} \\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.0011.B} \\\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.0012.B} \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
5	2000	383340.2	191.6701	~5.468	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0013.B1

2 Tetryl



Expected retention time: Search window:	8.716 minutes 0.14 minutes
No internal standard component	0.14 innidios
No retention time reference component	
No response proxy component	•
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

Single peak quantification by area

Y = 141.5316 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

O.9975975

Average error:

Average CF:

RSD:

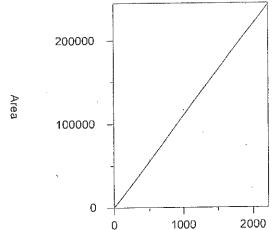
6.356%

Level	Amount	Response	Cal Factor	Error, %
!	25	3186.354	127,4542	-9.947
2	100	13767.77	137.6777	-2,723
3	500	74417.88	148.8358	5.161
4	1000	147509.6	147.5096	4.224
5	2000	292362	146.181	3.285

3,4-Dinitrotoluene

3

Source
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.06
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.06
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.06
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001.06
\Manual



Expected retention time:

Search window:

No internal standard component
No retention time reference component
No response proxy component
Group number:

High alarm limit:

Low alarm limit:

Component constant:

Single peak quantification by area

Y = 109.7723 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

RSD:

O.9985371

4.440%

109.7723

6.540%

Level	Amount	Response	Cal Factor	Error, %	Sou
J.	25.2	2797.115	110.9966	1.115	WUS
2	100.8	9836,875	97.58804	~11.100	\\U!
3	504	57294.55	113,6797	3.560	\\U!
4	1008	117062.3	116,1332	5.795	\\U:
5	2016	222695.1	110,4638	0.630	\\U

Amount

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Calibration File: 12E83B1629502B

GC Column (2): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 10/24/2016 10/24/2016

		RT OF STANDARDS	MIDPOINT	RT WIN	DOW	
COMPOUND	LEVEL 1	LEVEL 2 LEVEL 3 LEVEL 4	LEVEL 5	RT	FROM	то
3,4-Dinitrotoluene		11.95		11.95	11.66	12.23

6E INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

SAS No.:

SDG No.:

Instrument: X6329B

Case No.:

Calibration File: 12E83B1629502B

GC Column (2): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 10/24/2016 10/24/2016

}	1	. 1	- 1	1	I		1
COMPOUND LEV	VEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD_
3,4-Dinitrotoluene 8.8	80E+02	6.70E+02	8.31E÷02	7.73E+02	8.13E+02		10

Average % RSD:

V:\CP12\12E83B1629502B.CAL

Version:

4

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold: 0

Reference peak area reject threshold:

500

Amount units:

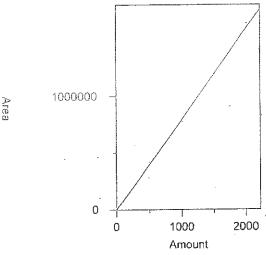
ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.

3,4-Dinitrotoluene



Expected retention time: Search window:	11.948 minutes 0.286 minutes
No internal standard component	
No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0
Single peak quantification by area	
Y = 793.5834 X + 0	

Average CF fit with equal weighting, forced to origin	1
Coefficient of determination: 0.9986128	
Average error: 7.236%	
Average CF: 793.5834	
RSD: 9.948%	

Level	Amount	Response	Cal Factor	Error, %	Source .
1	25.2	22181.26	880.2087	10,916	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\\12E83B16295001B.0009.1
2	100.8	67553.95	670.1781	-15.550	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0010.i
3	504	418951.8	831.2536	4,747	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP\2\12E83B16295001B.0011.i
4	1008	779612	773.4246	-2.540	Manual
5	2016	1638710	812 8522	2 428	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0013.I

6D INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

GC Column (3): CAPCELL CN ID: 250 (mm)

Calibration File:

12C83B1629503

ICAL

12C83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

		RT OF STANDARDS					RT WIN	4DOM
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	RT	FROM	то
1,3,5-Trinitrobenzene			29.89			29.89	29.68	30.08
3,4-Dinitrotoluene			32.45			32,45	32.26	32.63
Tetryl			34.31			34.31	34.21	34.41

applies! 12 c83 8/6245004.0001-7 019 Cal: 12: C8331429502 New Call, 12 (835) 16 25503

James H. Plece Senior Chemist

NOV 10 2016

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

ICAL

Calibration File: 12C83B1629503

GC Column (3): CAPCELL CN ID: 250 (mm)

12C83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

		CALIBRATION FACTORS .							
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD		
1,3,5-Trinitrobenzene	1.34E+02	1.72E+02	2.03E+02	2.09E+02	2.08E+02	1.85E+02	18		
3,4-Dinitrotoluene	1.46E+02	1.32E+02	1.26E+02	1.20E+02	1.18E+02	1.28E+02	9		
Tetryl	1.52E+02	1,55E+02	1.56E+02	1.54E+02	1.52E+02	1.54E+02	1		

Average % RSD:

Retention time update only using file(s) 12C83B16295004.0009.RAW analyzed on 11/9/2016 01:53:4

V:\CP12\12c83B1629503.CAL

Version:

Creator:

Description:

Reason for change:

External standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold:

Reference peak area reject threshold:

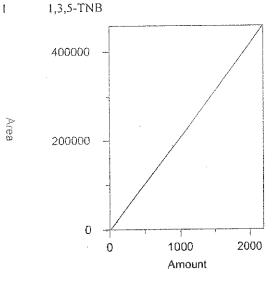
Amount units:

500 ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.



Expected retention time:
Search window:
No retention time reference component
No response proxy component
Group number:
High alarm limit:

Low alarm limit: Component constant:

Single peak quantification by area

Y = 209.5954 X + -2628.346

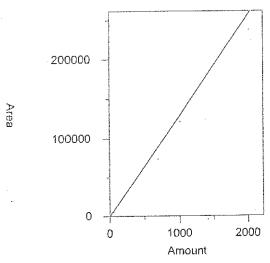
Linear fit with equal weighting Coefficient of determination: Average error: Average CF: RSD:

0.9999409 7.219% 185.0529 17.525%

29.889 minutes 0.2 minutes

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
1	25	3343	133.72	28.009	Manuai	10/25/2016 7:15:31 PM
2	100	17203.9	172,039	-6.150	Manual	10/25/2016 7:15:33 PM
3	500	101332	202,664	-0.820	Manual	10/25/2016 7:15:34 PM
4	1000	208920.3	208.9203	0.944	Manual	10/25/2016 7:15:37 PM
5	2000	415842.4	207.9212	-0.173	Manual	10/25/2016 7:15:42 PM

3,4-Dinitrotoluene



Expected retention time: Search window: No retention time reference component	32.447 minutes 0.18 minutes
No response proxy component	0
Group number:	U
High alarm limit:	0
Low alarm limit:	0
Component constant:	0
Single peak quantification by area	

Single peak quantification sy

Y = 128.4892 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

RSD:

6.539%

128.4892

8.797%

5	2016	238057.3	118.084	-8.098	\\USI
3	Tetryi				
	300000	The second secon	- P-20(1)		
Area	200000				
	100000	VICENT A		-	A CONTRACTOR OF THE PROPERTY O
		1/			de de la constant de

Cal Factor

146.3889

131.5954

126,0615

120.3163

Amount

25.2

100.8

504

1008

Level

Response

13264.82

3689

63535

121278.8

Error, %

13.931

2.417

-1.889

Source

Manual

2000

No response proxy component
Group number:

High alarm limit:

Low alarm limit:

Component constant:

Single peak quantification by area

No retention time reference component

Y = 153.6194 X + 0

Average CF fit with equal weighting,	forced to origin
Coefficient of determination:	0.9998744
Average error:	0.819%
Average CF:	153.6194
RSD:	1.058%

Level	Amount	Response	Cal Factor	Error, %	Source	Date and time
I	25	3796	151.84	1.158	Manual	10/25/2016 7:15:54 PM
2	100	15454 38	154,5438	0.602	Manual	10/25/2016 7:15:56 PM
3	500	77919 69	155.8394	1,445	Manual	10/25/2016 7:15:57 PM
4	1000	153521.3	153.5213	-0.064	Manual	10/25/2016 7:15:59 PM
4	2000	304705.4	152.3527	-0.825	Manual	10/25/2016 7:16:08 PM
3	2000	304703.4	(32.3327	0,000		-

1000 Amount

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File: 12E83B1629503

GC Column (1): CHROMPACK ID: 100 (mm)

ICAL

12E83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

		RT OF STANDARDS					RT WINDOW	
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	RT	FROM	TO
1,3,5-Trinitrobenzene			5.14			5.14	5.04	5.24
Tetryl			8.34			8.34	8.20	8.48
3,4-Dinitrotoluene			11.43			11.43	11.19	11.67

applies to: 17E831516295004.0001-7
012 cal;12E83151629502
New Cal; 12E83151629503
New Cal; 12E83151629503

NOV 10 2016

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File: 12E83B1629503

GC Column (1): CHROMPACK ID: 100 (mm)

iCAL Date(s) Analyzed: 11/9/2016

11/9/2016

		CALIBRATION FACTORS							
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD		
1,3,5-Trinitrobenzene	2.31E+02	1.97E+02	2.00E+02	1.95E+02	1.92E+02	2.03E+02	8		
Tetryl	1.27E+02	1.38E+02	1.49E+02	1.48E+02	1,46E+02	1.42E+02	6		
3.4-Dinitrotoluene	1,11E+02	9.76E+01	1.14E+02	1.16E+02	1.10E+02	1.10E+02	7		

Average % RSD: 7

V:\CP12\12e83B1629503.CAL

1

Version:

4

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold: 0

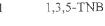
Reference peak area reject threshold: 500

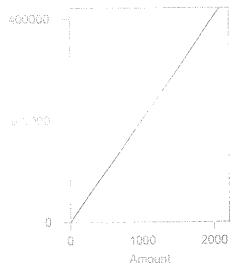
Amount units: ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.





Expected retention time: Search window: No internal standard component No retention time reference component	5.142 minutes 0.1 minutes
No response proxy component Group number:	0
High alarm limit: Low alarm limit: Component constant:	0 0 0
Single peak quantification by area	

Y = 202.7578 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination: 0.994159

Average error: 5.617%

Average CF: 202.7578 RSD: 7.983%

Level	Amount	Response	Cal Factor	Error, %	Source
I	25	5780,706	231.2282	14.042	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.BNI
2	100	19660.46	196.6046	-3.035	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.BNI
3	500	99873 61	199.7472	-1.485	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0011.BN(
4	1000	194538.7	194,5387	-4,054	
5	2000	383340.2	191,6701	-5.468	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001,0013.BNI

2 Tetryl

V:\CP12\12e83B1629503.CAL

Version:

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold:

Reference peak area reject threshold:

500

Amount units:

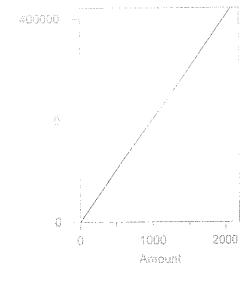
ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.





Expected retention time: Search window: No internal standard component No retention time reference component	5.142 minutes 0.1 minutes
No response proxy component Group number:	0
High alarm limit: Low alarm limit: Component constant:	0 0 0
Single peak quantification by area	

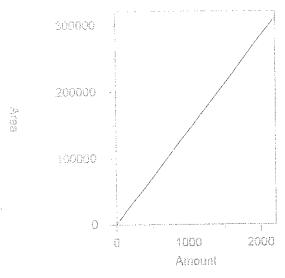
$$Y = 202.7578 X + 0$$

Average CF fit with equal weighting, forced to origin Coefficient of determination: 0.994159 5.617% Average error: 202.7578 Average CF: 7.983% RSD:

Level 1 2 3 4	Amount 25 100 500 1000	Response 5780.706 19660.46 99873.61 194538.7	Cal Factor 231.2282 196.6046 199.7472 194.5387	Error, % 14.042 -3.035 -1.485 -4.054
5	2000	383340.2	191,6701	-5,468

Source \USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.BNI \USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.BNI \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0011.BN[\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACT[VE\CP12\12E83B16295001,0012.BN[\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0013.BNE

2 Tetryl



Expected retention time: Search window:	8.342 minutes 0.14 minutes
No internal standard component	
No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

Single peak quantification by area

$$Y = 141.5316 X + 0$$

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

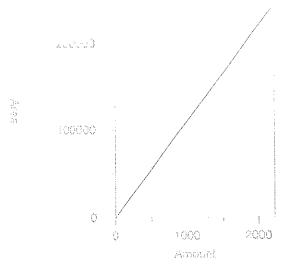
Average CF:

RSD:

6.356%

Level	Amount	Response	Cal Factor	Error, %
1	25	3186.354	127.4542	-9.947
2	100	13767.77	137.6777	- 2.723
3	500	74417.88	148.8358	5.161
:1	1000	147509.6	147.5096	4.224
5	2000	292362	146,181	3 285

3 3.4-Dinitrotoluene



Expected retention time:	11.432 minutes
Search window:	0.242 minutes
No internal standard component	
No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0
Single peak quantification by area	
Y = 109.7723 X + 0	

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

RSD:

6.540%

Level	Amount	Response	Cal Factor	Error, %
I	25.2	2797.115	110.9966	1.115
2	100.8	9836.875	97.58804	-11.100
3	504	57294.55	113.6797	3.560
4	1008	117062.3	116.1332	5.795
5	2016	222695.1	110.4638	0.630

Source
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0011.
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0012.
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0013.

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

GC Column (2): CHROMPACK

ID: <u>100 (mm)</u>

Calibration File: 12E83B1629503B

ICAL

12E83B1629501B

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

	RT OF STANDARDS					MIDPOINT	RT WIN	NDOM
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	RT	FROM	ТО
3,4-Dinitrotoluene			11.56			11.56		11,85

6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: <u>Lancaster Laboratories</u>

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Calibration File: 12E83B1629503B

GC Column (2): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 11/9/2016

11/9/2016

		CALIBRATION FACTORS							
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD		
3.4-Dinitrotoluene	8.80E+02		8.31E+02	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		7.94E+02	10		

Average % RSD: .10

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Version:

2

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold:

Reference peak area reject threshold: 500

Amount units: ug/L

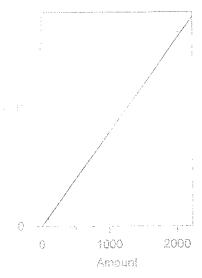
No default component

Method of calculating data point averages: Equal weight for all updates

Print calibration update report

All levels are normal data points.

1 3,4-Dinitrotoluene



Expected retention time: Search window: No internal standard component No retention time reference component	11.563 minutes 0.286 minutes
No response proxy component Group number:	0
High alarm limit: Low alarm limit: Component constant:	0 0 0
Single peak quantification by area	
Y = 793.5834 X + 0	

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

Average CF:

7:236%

7:236%

7:93.5834

RSD:

9.948%

Level 1 2	Amount 25.2 100.8 504	Response 22181.26 67553.95 418951.8	Cal Factor 880,2087 670,1781 831,2536	-15.550	Source \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0009.B6\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0010.B6\\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0011.B6\\\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0011.B6\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
4	1008	779612 1638710	773.4246 812.8522	-2.540 2.428	Manual \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0013.B\

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Calibration File: 12C83B1629504

Instrument: Y6329A

ICAL

12C83B1629501

GC Column (3): CAPCELL CN ID: 250 (mm)

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

	RT OF STANDARDS	MIDPOINT	RT WIN	WOC
COMPOUND	LEVEL 1 LEVEL 2 LEVEL 3 LEVEL 4 LEVEL 5	RT	FROM	TO
1,3,5-Trinitrobenzene	30.19	30.19	29.99	30.39
3,4-Dinitrotoluene	32.59	32.59	32.41	32.77
Tetryl	34.39	34.39	34.29	34.49

applies+or. 12683B16295005,001-7

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6E INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

GC Column (3): CAPCELL CN ID: 250 (mm)

Calibration File: 12C83B1629504

ICAL

12C83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

THE PARTY OF THE P			CALIBRAT	ION FACTO	RS			
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD	
1,3,5-Trinitrobenzene	1.34E+02	1.72E+02	2.03E+02	2.09E+02	2.08E+02	1.85E+02	18	-1ineas
3,4-Dinitrotoluene	1.46E+02	1.32E+02	1.26E+02	1.20E+02	1.18E+02	1.28E+02	9	
Tetryl	1.52E+02	1.55E+02	1.56E+02	1.54E+02	1.52E+02	1.54E+02	1	

Average % RSD:



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Version:

3

Creator:

Description:

Reason for change:

External standard calibration

Standard injection volume:

1

No sample weight correction

1

Area reject threshold: Reference peak area reject threshold:

500

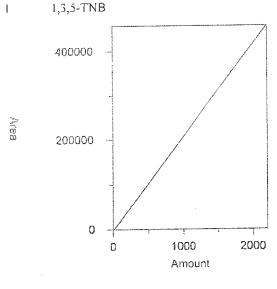
Amount units:

ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.



Expected retention time:
Search window:
No retention time reference component
No response proxy component
Group number:
,
High alarm limit:
Low alarm limit:

Component constant:

Single peak quantification by area

Y = 209.5954 X + -2628.346

Linear fit with equal weighting Coefficient of determination: Average error:

0.9999409 7.219%

30.185 minutes 0.2 minutes

0

0

Average error: Average CF:

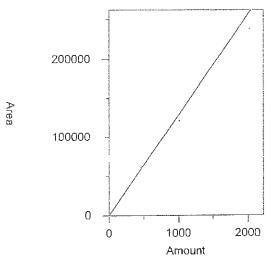
RSD:

185.0529 17.525%

Level	Amount	Response	Cal Factor	Error, %	Source
1	25	3343	133.72	28,009	Manual
2	100	17203.9	172.039	-6,150	Manual
3	500	101332	202.664	-0.820	Manual
4	1000	208920.3	208.9203	0.944	Manual
5	2000	415842.4	207.9212	-0.173	Manual

Date and time 10/25/2016 7:15:31 PM 10/25/2016 7:15:33 PM 10/25/2016 7:15:34 PM 10/25/2016 7:15:37 PM 10/25/2016 7:15:42 PM

2 3,4-Dinitrotoluene



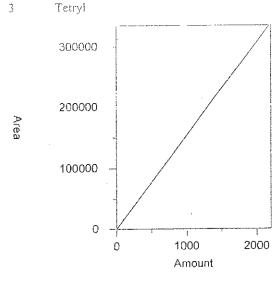
Expected retention time:	32.589 minutes
Search window:	0.18 minutes
No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

Single peak quantification by area

Y = 128.4892 X + 0

Average CF fit with equal weighting, forced to origin 0.9861933 Coefficient of determination: 6.539% Average error: 128.4892 Average CF: 8.797% RSD:

Level . 1 . 2 . 3 . 4	Amount 25,2 100.8 504 1008	Response 3689 13264.82 63535 121278.8	Cal Factor 146.3889 131.5954 126.0615 120.3163	-1.889 -6.361	Source Manual NUSLAN-CHROMPERFECT/CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12C83B16295001.0010. NUSLAN-CHROMPERFECT/CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12C83B16295001.0011. NUSLAN-CHROMPERFECT/CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12C83B16295001.0012. NUSLAN-CHROMPERFECT/CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12C83B16295001.0013.
5	2016	238057.3	118.084	-8.098	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12\83B16295001.0013.



Expected retention time: Search window: No retention time reference component	34.393 minutes 0.1 minutes
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0
Single peak quantification by area	

Y = 153.6194 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination: 0.9998744 0.819% Average error: 153.6194 Average CF: 1.058% RSD:

Levei	Amount	Response	Cal Factor	Error, %	Source	Date and time
1.	25	3796	151.84	-1.158	Manual	10/25/2016 7:15:54 PM
2	100	15454.38	154.5438	0.602	Manual	10/25/2016 7:15:56 PM
3	500	77919.69	155,8394	1.445	Manual	10/25/2016 7:15:57 PM
4	1000	153521.3	153.5213	-0.064	Manual	10/25/2016 7:15:59 PM
5	2000	304705.4	152.3527	-0,825	Manual	10/25/2016 7:16:08 PM

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File:

12E83B1629504

GC Column (1): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 11/18/2016 11/18/2016

	RT OF STANDARDS	MIDPOINT	RT WINI	VVOC
COMPOUND	LEVEL 1 LEVEL 2 LEVEL 3 LEVEL 4 LEVEL 5	RT	FROM	TO
1,3,5-Trinitrobenzene	5.06	5.06	4.96	5.16
Tetrvi	8.16	8.16	8.02	8.30
3,4-Dinitrotoluene	11.23	11.23	10.99	11.47

applies to: 12E83B16295005.0001-7

al E (U): 12 E83 31629503 New Cal: 12 E83B 1629504

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6E

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: <u>Lancaster Laboratories</u>

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File: 12E83B1629504

GC Column (1): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 11/18/2016 11/18/2016

			CALIBRAT	ION FACTO	RS		
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
1,3,5-Trinitrobenzene	2.31E+02	1.97E+02	2.00E+02	1.95E+02	1.92E+02	2.03E+02	8
Tetryl	1.27E+02	1.38E+02	1.49E+02	1.48E+02	1.46E+02	1.42E+02	6
3,4-Dinitrotoluene	1.11E+02	9.76E+01	1.14E+02	1.16E+02	1.10E+02	1.10E+02	7

Average % RSD: 7

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Version:

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

0

Area reject threshold: Reference peak area reject threshold:

500

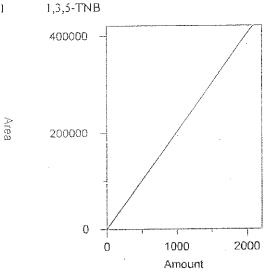
Amount units:

ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.



Expected retention time: Search window: No internal standard component No retention time reference component	5.058 minutes 0.1 minutes
No response proxy component	
Group number:	0
High alarm limit: Low alarm limit: Component constant:	0 0 0
Single peak quantification by area	
Y = 202.7578 X + 0	

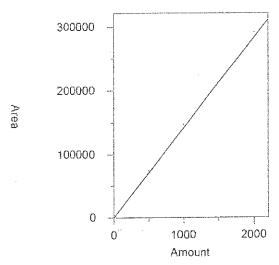
Average CF fit with equal weighting,	forced to origin
Coefficient of determination:	0.994159
Average error:	5.617%
Average CF:	202.7578
RSD:	7.983%

					_
Level	Amount	Response	Cal Factor	Error, %	Sour
I	25	5780.706	231,2282	14.042	\\US
2	100	19660.46	196,6046	-3.035	\\US
3	500	99873.61	199,7472	-1.485	\\US
4	1000	194538.7	194.5387	-4.054	\\US
5	2000	383340.2	191,6701	-5.468	\\US

SLAN-CHROMPERFECT/CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.BNI SLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.BNE LAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24\ACTIVE/CP12\12E83B16295001.0011.BNL LAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12/12E83B16295001.0012.BNL LAN-CHROMPERFECT/CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0013.BNL

2 Tetryl

Chrom Perfect Calibration File



8.164 minutes Expected retention time: 0.14 minutes Search window: No internal standard component No retention timé reference component No response proxy component 0 Group number: 0 High alarm limit: Low alarm limit: 0 0 Component constant: Single peak quantification by area

Y = 141.5316 X + 0

Manual

Average CF fit with equal weighting, forced to origin Coefficient of determination: 0.9975975

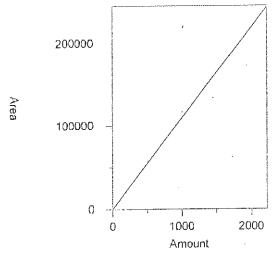
Average error: 5.068%

Average CF: 141.5316

RSD: 6.356%

Level	Amount	Response	Cal Factor	Error, %
Ł	25	3186.354	127,4542	-9.947
2	100	13767.77	137.6777	-2.723
3	500	74417.88	148.8358	5.161
4	1000	147509.6	147,5096	4.224
5	2000	292362	146.181	3,285

3 3,4-Dinitrotoluene



Expected retention time: Search window: No internal standard component No retention time reference component	11.228 minutes 0.242 minutes
No response proxy component Group number: High alarm limit:	0
Low alarm limit:	0
Single peak quantification by area	

Average CF fit with equal weighting, forced to origin Coefficient of determination: 0.9985371
Average error: 4.440%
Average CF: 109.7723
RSD: 6.540%

Level 1 2 3 4 5	Amount 25.2 100.8 504 1008 2016	Response 2797.115 9836.875 57294.55 117062.3 222695.1	Cal Factor 110,9966 97,58804 113,6797 116,1332 110,4638	-11,100 3,560 5,795	Source \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.\\\\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0011.\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
-----------------	--	--	--	---------------------------	--

Y = 109.7723 X + 0

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: -

Instrument: X6329B

Calibration File: 12E83B1629504B

GC Column (2): CHROMPACK

ID: 100 (mm)

ICAL Date(s) Analyzed: 11/18/2016 11/18/2016

	RT OF STANDARDS	MIDPOINT	RT WINDOW	
COMPOUND	LEVEL 1 LEVEL 2 LEVEL 3 LEVEL 4 LEVEL 5	RT	FROM TO	о
3,4-Dinitrotoluene	11.35	11.35	11.06	11.64

6E **INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY**

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Calibration File: 12E83B1629504B

GC Column (2): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 11/18/2016 11/18/2016

,	CALIBRATION FACTORS						
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVELY	LEVEL 5	MEAN	%RSD
3,4-Dinitrotoluene	8.80E+02		8.31E+02	7.73E÷02	8.13E+02	7.94E+02	10

Average % RSD:

10

File Name:

V:\CP12\12e83B1629504b.CAL

Version:

2

Creator: Description:

Reason for change:

Internal standard calibration

Standard injection volume:

1

No sample weight correction

)

Area reject threshold: Reference peak area reject threshold:

500

Amount, units:

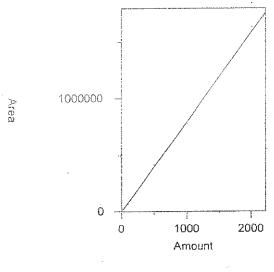
ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.

3,4-Dinitrotoluene



Expected retention time: Search window: No internal standard component No retention time reference component	11.35 minutes 0.286 minutes
No response proxy component	
Group number:	0
•	
High alarm limit:	0
Low alarm limit:	0
Component constant:	0
Single peak quantification by area	
Y = 793.5834 X + 0	

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

793.5834

RSD:

9.948%

Level	Amount	Response	Cal Factor	Error, %	Source
1	25.2	22181,26	880,2087		\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\1283B16295001B.0009.B\
2	100.8	67553.95	670,1781		\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\i2E83B16295001B.0010.B\
3	504	418951.8	831.2536	4.747	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\i2E83B16295001B.0011.B\
4	1008	779612	773,4246	-2,540	Manual
5	2016	1638710	812.8522	2,428	\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001B.0013.B}

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

GC Column (3): CAPCELL CN ID: 250 (mm)

Calibration File: 12C83B1629505

ICAL Date(s) Analyzed: 11/29/2016 11/29/2016

	RT OF STANDARDS	MIDPOINT	RT WIN	DOW
COMPOUND	LEVEL 1 LEVEL 2 LEVEL 3 LEVEL 4 LEVEL 5	RT	FROM	TO
1,3,5-Trinitrobenzene	30.16	30.16	29.96	30.36
3,4-Dinitrotoluene	32.53	32.53	32.35	32.71
Tetryl	34.37	34.37	34.27	34.47

appliesto 13683B1620SOC6.0006- 5

o12 cai, 13 c8331639501 New Cal: 12183B 1629505

/ James H. Piaco

NOV 3 0 2016

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Calibration File: 12C83B1629505

GC Column (3): CAPCELL CN ID: 250 (mm)

ICAL Date(s) Analyzed: 11/29/2016 11/29/2016

		CALIBRATION FACTORS					
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
1,3,5-Trinitrobenzene	1.34E+02	1.72E+02	2.03E+02	2.09E+02	2.08E+02	1.85E+02	18
3.4-Dinitrotoluene	1.46E+02	1.32E+02	1.26E+02	1.20E+02	1.18E+02	1.28E+02	9
Tetryl	1.52E+02	1.55E+02	1.56E+02	1.54E+02	1.52E+02	1.54E+02	1

Average % RSD: 9

File Name:

V:\CP12\12c83B1629505.CAL

Version:

5

Creator:

Description:

Reason for change:

External standard calibration

Standard injection volume:

1

No sample weight correction

0

Area reject threshold: Reference peak area reject threshold:

500

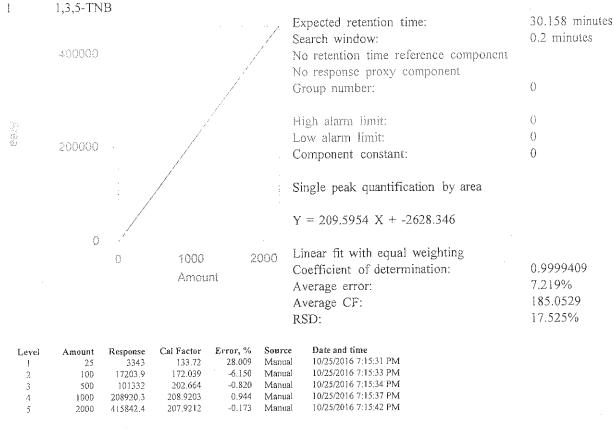
Amount units:

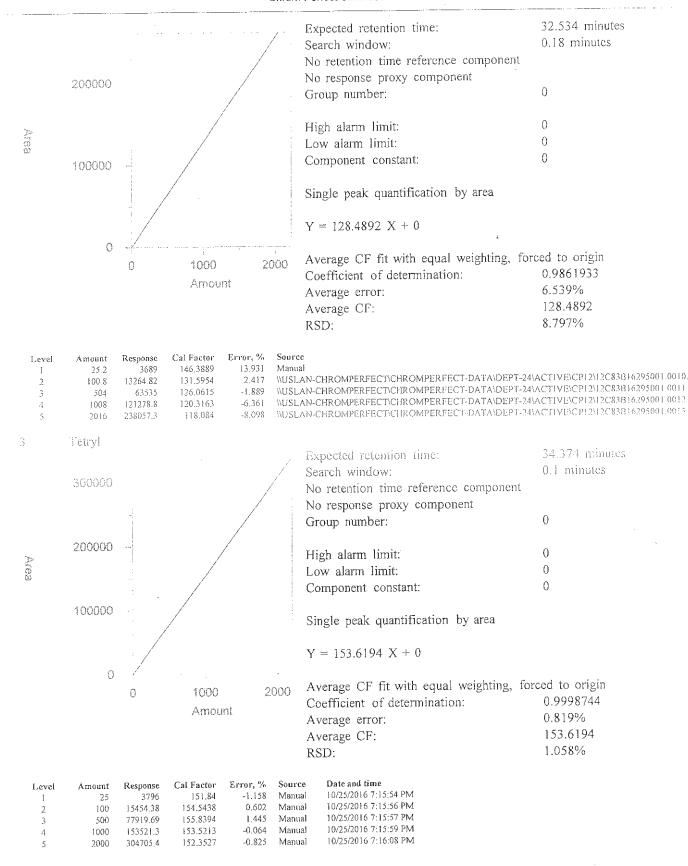
ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.





6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File: 12E83B1629505

GC Column (1): CHROMPACK ID: 100 (mm)

ICAL

12E83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

	RT OF STANDARDS	MIDPOINT	RT WIN	DOW
COMPOUND	LEVEL 1 LEVEL 2 LEVEL 3 LEVEL 4 LEVEL 5	RT	FROM	ТО
1,3,5-Trinitrobenzene	4.81	4.81	4.71	4.91
Tetryl	7.71	7.71	7.57	7.85
3,4-Dinitrotoluene	10.60	10.60	10.36	10.84

old cal? 12E83B162950G.0001-7
Nowcal! TEE3B162950B

MOV 30 2016

r James H. Placs

NOV 3 0 2016

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Calibration File: 12E83B1629505

GC Column (1): CHROMPACK ID: 100 (mm)

ICAL

12E83B1629501

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

		CALIBRATION FACTORS .					
COMPOUND	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	MEAN	%RSD
1,3,5-Trinitrobenzene	2.31E+02	1.97E+02	2.00E+02	1.95E+02	1.92E+02	2.03E+02	8
Tetryl	1.27E+02	1.38E+02	1.49E+02	1.48E+02	1.46E+02	1.42E+02	6
3,4-Dinitrotoluene	1.11E+02	9.76E+01	1.14E+02	1.16E+02	1.10E+02	1.10E+02	7

Average % RSD: 7

File Name:

V:\CP12\I2e83B1629505.CAL

Version:

4

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

No sample weight correction

Area reject threshold:

Reference peak area reject threshold:

ne

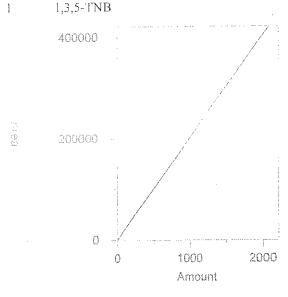
Amount units:

500 ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.



Expected retention time: Search window: No internal standard component No retention time reference component	4.812 minutes 0.1 minutes
No response proxy component Group number:	0
High alarm limit: Low alarm limit:	0
Component constant:	0
Single peak quantification by area	
Y = 202.7578 X + 0	

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

Average CF:

202.7578

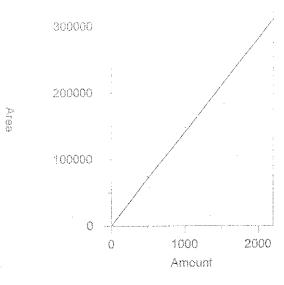
RSD:

7.983%

Level 1 2 3	Amount 25 100 500	Response 5780.706 19660.46 99873.61	Cal Factor 231.2282 196.6046 199.7472	Error, % 14.042 -3.035 -1.485 -4.054
4	1000	194538.7	194.5387	-4.054
5	2000	383340.2	191.6701	-5,468

Source
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.BN1
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0010.BN1
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0011.BN1
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0012.BN1
\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0013.BN1

2 Tetryl



Expected retention time:	7.706 minutes
Search window:	0.14 minutes
No internal standard component	
No retention time reference component	
No response proxy component	
Group number:	0

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 141.5316 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

Average error:

Average CF:

Average CF:

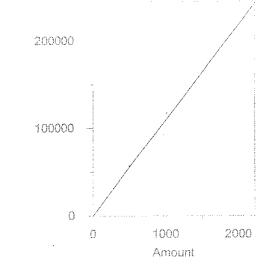
RSD:

6.356%

Level	Amount	Response	Cal Factor	Error, %
1	2.5	3186,354	127.4542	-9.947
2 -	1()()	13767.77	137.6777	-2.723
3	500	74417,88	148.8358	5.161
4	1000	147509.6	147.5096	4.224
٢	2000	292362	146,181	3.285

Source WUSLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12\12E83B16295001.0039 WUSLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12\12E83B16295001.0039 WUSLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12\12E83B16295001.0031 WUSLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12\12E83B16295001.0031 Manual

3 3,4-Dinitrotoluene



Expected retention time:	10.6 minutes
Search window:	0.242 minutes
No internal standard component	
No retention time reference commenent	

0

6.540%

No retention time reference component
No response proxy component

Group number:

High alarm limit: 0
Low alarm limit: 0
Component constant: 0

Single peak quantification by area

Y = 109.7723 X + 0

Average CF fit with equal weighting, forced to origin Coefficient of determination:

O.9985371

Average error:

Average CF:

109.7723

Level	Amount	Response	Cal Factor	Error, %
1	25.2	2797.115	110.9966	1.115
2	100.8	9836.875	97.58804	-11,100
.3	504	57294,55	113.6797	3,560
4	1008	117062.3	116.1332	5.795
5	2016	222695.1	110,4638	0.630

Source
\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.0009.
NUSLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12/12E83B16295001.0010.
USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\12E83B16295001.001}
NUSLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12/12E83B16295001.0012.
USLAN-CHROMPERFECT/CHROMPERFECT-DATA/DEPT-24/ACTIVE/CP12/12E83B16295001.0013

RSD:

6D

INITIAL CALIBRATION - RETENTION TIME SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Calibration File: 12E83B1629505B

GC Column (2): CHROMPACK ID: 100 (mm)

ICAL

12E83B1629501B

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

	RT OF STANDARDS					MIDPOINT	RT WINI	WOC
COMPOUND	LEVEL 1		LEVEL 3	LEVEL 4	LEVEL 5	RT	FROM	TO
3,4-Dinitrotoluene			10.72			10.72	10.44	11.01

INITIAL CALIBRATION - CALIBRATION FACTOR SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Calibration File:

12E83B1629505B

ICAL

12E83B1629501B

GC Column (2): CHROMPACK ID: 100 (mm)

ICAL Date(s) Analyzed: 10/23/2016 10/23/2016

COMPOUND	LEVEL 1	LEVEL 2		LL 4 LL .	LEVEL 5	MEAN	%RSD
3,4-Dinitrotoluene	8.80E+02		8.31E+02		8.13E+02	7.94E+02	10

Average % RSD: 10 File Name:

V:\CP12\12e83B1629505b.CAL

Version:

- 3

Creator:

Description:

Reason for change:

Internal standard calibration

Standard injection volume:

1

No sample weight correction

Area reject threshold:

500

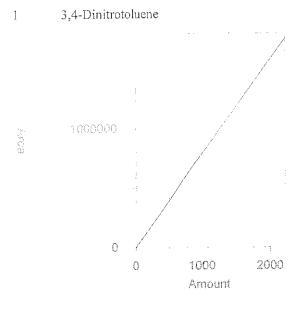
Reference peak area reject threshold: Amount units:

ug/L

No default component

Method of calculating data point averages: Equal weight for all updates Print calibration update report

All levels are normal data points.



Expected retention time: Search window:	10.723 minutes 0.286 minutes
No internal standard component No retention time reference component	
No response proxy component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0
Single peak quantification by area	
Y = 793.5834 X + 0	

Average CF fit with equal weighting,	forced to origin
Coefficient of determination:	0.9986128
Average error:	7.236%
Average CF:	793.5834
RSD:	9.948%

Level 1 2	Amount 25.2 100.8 504	Response 22181,26 67553.95 418951.8	Cal Factor 880.2087 670.1781 831.2536	-15.550	\\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEPT-24\ACTIVE\CP12\1283B16295001B.0010.B\
4	1008	779612 1638710	773,4246 812,8522	-2,540 2,428	Manual \\USLAN-CHROMPERFECT\CHROMPERFECT-DATA\DEP\f\-24\ACTIVE\CP\12\12E83B\1629500\1B.00\13.\B\?

Lab Name: Lancaster Laboratories

-Contract: ...

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed:

10/23/16

GC Column (3): CAPCELL CN ID: 250 (mm)

Time Analyzed: 23:44

Lab File ID: 12C83B16295001.0015.RAW

Initial Calibration: 12C83B1629501

Lab Standard ID: IC83XAA

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629501

COMPOUND	RT	RT WINE	oow TO	CALC AMOUNT	NOM AMOUNT	%D
1,3,5-Trinitrobenzene	29.86	30.26	30.66	499.71	501.00	0
3.4-Dinitrotoluene	32.45	32.14	32.50	487.71	504.00	-3
Tetryl	34.34	34.21	34.41	465.16	502.00	-7

Compounds 3

Lab Name: Lancaster Laboratories Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 10/23/16

GC Column (1): CHROMPACK ID: 100 (mm)

Time Analyzed: 23:44

Lab File ID: 12E83B16295001.0015.RAW

Initial Calibration: 12E83B1629501

Lab Standard ID: IC83XAA

Init. Calib Date(s): 10/23/16 10/23/16

Calibration: 12E83B1629501

COMPOUND	RT	RT WIND FROM	TO TO	CALC AMOUNT	NOM AMOUNT	%D
1.3.5-Trinitrobenzene	5.33	5.13	5.33	495.75	501.00	-1
Tetryl	8.72	8.37	8.65	494.27	502.00	-2
3,4-Dinitrotoluene	11.81	11.55	12.03	420.21	504.00	-17

Compounds 3

Lab-Name: Lancaster Laboratories

. - - - - Contract: - - - - - - - - -

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 10/23/16

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 23:44

Lab File ID: 12E83B16295001B.0015.RAW

Initial Calibration: 12E83B1629501B

10/23/16

Lab Standard ID: IC83XAA

Calibration: 12E83B1629501B

Init. Calib Date(s): 10/23/16

COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
3,4-Dinitrotoluene	11.94	11.60	12.17	520.15	504.00	3

Compounds 1

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed:

11/01/16

GC Column (3): CAPCELL CN

ID: 250 (mm)

Time Analyzed: 23:50

Lab File ID: 12C83B16295003.0007.RAW

Initial Calibration: 12C83B1629501

Lab Standard ID: 83303NT

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629502

COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
1.3.5-Trinitrobenzene	29.75	29.58	29.98	559.99	500.00	12
3.4-Dinitrotoluene	32.43	32.23	32.59	503.17	504.00	0
Tetryl	34.31	34.22	34.42	593.82	500.00	19
1.44.1.					(0/1)	40

Compounds 3

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/02/16

GC Column (3): CAPCELL CN ID: 250 (mm)

Time Analyzed: 3:22

Lab File ID: 12C83B16295003.0012.RAW

Lab Standard ID: 83303NU

Initial Calibration: 12C83B1629501

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629502

COMPOUND .	RT	RT.WINE FROM	TO OT	CALC AMOUNT	MOM AMOUNT	%D
1,3,5-Trinitrobenzene	29.72	29.58	29.98	551.80	500.00	10
3.4-Dinitrotoluene	32.45	32.23	32.59	496.77	504.00	-1
Tetryl	34.32	34.22	34.42	583.91	500.00	17

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/01/16

GC Column (1): CHROMPACK ID: 100 (mm):

Time Analyzed: 23:50

Lab File ID: 12E83B16295003.0007.RAW

Initial Calibration: 12E83B1629501

Init. Calib Date(s): 10/23/16

10/23/16

Lab Standard ID: 83303NT

Calibration: 12E83B1629502						
COMPOUND	RT	RT WIND	vov TO	CALC AMOUNT	MOM TRUOMA	%D
1,3,5-Trinitrobenzene	5.28	5.23	5.43	502.67	500.00	1
Tetryl	8.59	8.58	. 8.86	511.54	500.00	2
3,4-Dinitrotoluene	11.68	11.58	12.06	492.18	504.00	-2

Compounds 3

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/01/16

GC Column (2): CHROMPACK

(D: 100 (mm)

Time Analyzed: 23:50

Lab File ID: 12E83B16295003B.0007.RAW

Initial Calibration: 12E83B1629501B

Lab Standard ID: 83303NT

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629502B

COMPOUND	RT	RT WIND FROM	OW TO	CALC AMOUNT	MOM TAUOMA	%D
3,4-Dinitrotoluene	11.82	11.66	12.23	443.50	504.00	-12

Compounds 1

Average of %D:

12

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed:

Lab File ID: 12E83B16295003.0012.RAW

GC Column (1): CHROMPACK ID: 100 (mm)

Time Analyzed: 3:22

Initial Calibration: 12E83B1629501

11/02/16

Init. Calib Date(s): 10/23/16

10/23/16

Lab Standard ID: 83303NU Calibration: 12E83B1629502

COMPOUND	RT	RT WINE	TO OT	CALC AMOUNT	NOM AMOUNT	%D
1,3,5-Trinitrobenzene	5:29	5.23	5.43	487.68	500.00	-2
Tetryl	8.60	8.58	8.86	507.00	500.00	1
3,4-Dinitrotoluene	11.70	11.58	12.06	496.37	504.00	· -2

Compounds 3.

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Date Analyzed: 11/02/16

Instrument: X6329B

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 3:22

Lab File ID: 12E83B16295003B.0012.RAW

Initial Calibration: 12E83B1629501B

Lab Standard ID: 83303NU

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629502B

COMPOUND	RT	RT WINE FROM	OW TO	CALC AMOUNT	MOM AMOUNT	%D
3,4-Dinitrotoluene	11.84	11.66	12.23	445.87	504.00	-12

Compounds 1

Average of %D:

12

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/17/16

GC Column (3): CAPCELL CN ID: 250 (mm)

Time Analyzed: 20:43

Lab File ID: 12C83B16295005.0009.RAW

Initial Calibration: 12C83B1629501

Lab Standard ID: 83303OJ

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629504

COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
1.3.5-Trinitrobenzene	30.05	29.99	30.39	463.71	500.00	-7
3.4-Dinitrotoluene	32.54	32.41	32.77	503.58	504.00	0
Tetryl	34.37	34.29	34.49	528.70	500.00	6

Compounds 3

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/18/16

GC Column (3): CAPCELL CN

ID: 250 (mm)

Time Analyzed: 4:29 Initial Calibration: 12C83B1629501

Lab File ID: 12C83B16295005.0020.RAW

Lab Standard ID: 83303OL

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629504

COMPOUND	RT	RT WIND FROM	OW TO	CALC AMOUNT	NOM AMOUNT	%D
1,3,5-Trinitrobenzene	30.18	29.99	30.39	446.88	500.00	-11
3 4-Dinitrotoluene	32.59	32.41	32.77	485.29	504.00	-4
Tetryl	34.39	34.29	34.49	536.44	500.00	7

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/18/16

GC Column (3): CAPCELL CN

ID: 250 (mm)

Time Analyzed: 10:51

Lab File ID: 12C83B16295005.0029.RAW

Initial Calibration: 12C83B1629501

Lab Standard ID: 83303OK

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629504

COMPOUND	RT	RT WINI FROM	WOO TO	CALC AMOUNT	NOM AMOUNT	%D
1,3,5-Trinitrobenzene	30.22	29.99	30.39	474.14	500.00	-5
3,4-Dinitrotoluene	32.58	32.41	32,77	475.07	504.00	-6
Tetryl	34.40	34.29	34.49	512.45	500.00	2

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/17/16

GC Column (1): CHROMPACK ID: 100 (mm)

Time Analyzed: 20:43

Init. Calib Date(s): 10/23/16

Lab File ID: 12E83B16295005.0009.RAW

Initial Calibration: 12E83B1629501

10/23/16

Lab Standard ID: 83303OJ

CALC AMOUNT	NOM AMOUNT	%D
1		7012
479.63	500.00	-4
520.19	500.00	4
515.09	504.00	2
	520.19	520.19 500.00

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/17/16

GC Column (2); CHROMPACK ID: 100 (mm)

Time Analyzed: 20:43

Lab File ID: 12E83B16295005B.0009.RAW

Initial Calibration: 12E83B1629501B

Init. Calib Date(s): 10/23/16

10/23/16

Lab Standard ID: 83303OJ

Calibration: 12E83B1629504B

COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
3,4-Dinitrotoluene	11.36	11.06	11.64	537.08	504.00	7

Compounds 1

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/18/16

GC Column (1): CHROMPACK ID: 100 (mm)

Time Analyzed: 4:29

Lab File ID: 12E83B16295005.0020.RAW

Initial Calibration: 12E83B1629501

Lab Standard ID: 83303OL

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629504

COMPOUND	RT	RT WIND FROM	OOW TO	CALC AMOUNT	MOM AMOUNT	%D
1.3.5-Trinitrobenzene	5.06	4.96	5.16	490.98	500.00	-2
Tetrvl	8.16	8.02	8.30	508.76	500.00	2
3,4-Dinitrotoluene	11.23	10.99	11.47	516.93	504.00	3

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

SAS No.:

11.64

SDG No.:

Instrument: X6329B

11.06

Date Analyzed: 11/18/16

GC Column (2): CHROMPACK

ID: 100 (mm)

RT

11.35

Time Analyzed: 4:29

Lab File ID: 12E83B16295005B.0020.RAW

COMPOUND

3,4-Dinitrotoluene

Initial Calibration: 12E83B1629501B

Lab Standard ID: 83303OL

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629504B

RT WINDOW FROM TO	CALC AMOUNT	NOM AMOUNT	%D	

544.21

Compounds 1

Average of %D:

504.00

В

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/18/16

GC Column (1): CHROMPACK ID: 100 (mm)

Time Analyzed: 10:51

Lab File ID: 12E83B16295005.0029.RAW

Initial Calibration: 12E83B1629501

Lab Standard ID: 83303OK

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12F83B1629504

COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
1,3,5-Trinitrobenzene	5.03	4.96	5.16	483.50	500.00	-3
Tetrvl	8.14	8.02	8.30	509.40	500.00	_2
3,4-Dinitrotoluene	11.20	10.99	11.47	512.55	504.00	2
· · · · · · · · · · · · · · · · · · ·						0

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/18/16

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 10:51

Lab File ID: 12E83B16295005B.0029.RAW

Initial Calibration: 12E83B1629501B

Lab Standard ID: 83303OK

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629504B

COMPOUND	RT	RT WIND FROM	ow To	-CALC AMOUNT	MOM TNUOMA	%D	
3,4-Dinitrotoluene	11.34	11.06	11.64	535.24	504.00	6	,

Compounds 1

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

GC Column (1): CHROMPACK ID: 100 (mm)

Date Analyzed: 11/17/16

Lab File ID: 12E83B16295005.0009.RAW

Time Analyzed: 20:43

Initial Calibration: 12E83B1629501

Lab Standard ID: 83303OJ

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629504

COMPOUND	RT .	RT WINE FROM	OOW TO	CALC AMOUNT	NOM AMOUNT	. %D
1,3,5-Trinitrobenzene	5.07	4.96	5.16	479.63	500.00	-4
Tetryl	8.17	8.02	8.30	520.19	500.00	4
3,4-Dinitrotoluene	11.23	10.99	11.47	515.09	504.00	2

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/17/16

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 20:43

Lab File ID: 12E83B16295005B.0009.RAW

Lab Standard ID: 83303OJ

Initial Calibration: 12E83B1629501B

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629504B

COMPOUND	RT	RT WIND FROM	OW TO	CALC AMOUNT	MOM TRUOMA	%D
3,4-Dinitrotoluene	11.36	11.06	11.64		504.00	7

Compounds 1

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/18/16

GC Column (1): CHROMPACK ID: 100 (mm)

Lab File ID: 12E83B16295005.0020.RAW

Time Analyzed: 4:29

Initial Calibration: 12E83B1629501

Lab Standard ID: 83303OL

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12F83B1629504

COMPOUND	RT	RT WIND FROM	WOO TO	CALC AMOUNT	NOM AMOUNT	%D
1,3,5-Trinitrobenzene	5.06	4.96	5.16	490.98	500.00	-2
Tetrvl	8.16	8.02	8.30	508.76	500.00	2
3,4-Dinitrotoluene	11.23	10.99	11.47	516.93	504.00	3

Compounds 3

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/18/16

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 4:29

Lab File ID: 12E83B16295005B.0020.RAW

Initial Calibration: 12E83B1629501B

Lab Standard ID: 83303OL

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629504B

COMPOUND	RT	RT WIND FROM	OOW TO	CALC AMOUNT	NOM AMOUNT	%D
3,4-Dinitrotoluene	11.35	11.06	11.64	544.21	504.00	8

Compounds 1

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

GC Column (1): CHROMPACK ID: 100 (mm)

Date Analyzed: 11/18/16

Time Analyzed: 10:51

Lab File ID: 12E83B16295005.0029.RAW

Initial Calibration: 12E83B1629501

Lab Standard ID: 83303OK

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629504

N N	FROM	ТО	AMOUNT	AMOUNT	%D
5.03	4.96	5.16	483.50	500.00	-3
8.14	8.02	8.30	509.40	500.00	_ 2
11.20	10.99	11.47	512.55	504.00	2
	5.03 8.14	8.14 8.02	5.03 4.96 5.16 8.14 8.02 8.30	5.03 4.96 5.16 483.50 8.14 8.02 8.30 509.40 11.20 10.99 11.47 512.55	5.03 4.96 5.16 483.50 500.00 8.14 8.02 8.30 509.40 500.00

Compounds 3

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/18/16

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 10:51

Initial Calibration: 12E83B1629501B

Lab File ID: 12E83B16295005B.0029.RAW

Init. Calib Date(s): 10/23/16

10/23/16

Lab Standard ID: 83303OK

Calibration: 12E83B1629504B						
COMPOUND	RT	RT WIND FROM	oow To	-CALC AMOUNT	MOM AMOUNT	%D
3,4-Dinitrotoluene	11.34	11.06	11.64	535.24	504.00	6

Compounds 1

7E CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/17/16

ID: 250 (mm)

Time Analyzed: 20:43

GC Column (3): CAPCELL CN

Initial Calibration: 12C83B1629501

Lab Standard ID: 83303OJ

Lab File ID: 12C83B16295005.0009.RAW

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629504

RT	RT WIND FROM	TO	CALC AMOUNT	MOM AMOUNT	%D
30.05	29.99	30.39	463.71	500.00	-7
32.54	32.41	32.77	503.58	504.00	0
34.37	34.29	34.49	528.70	500.00	6
	30.05 32.54	RT FROM 30.05 29.99 32.54 32.41	30.05 29.99 30.39 32.54 32.41 32.77	RT FROM TO AMOUNT 30.05 29.99 30.39 463.71 32.54 32.41 32.77 503.58	RT FROM TO AMOUNT AMOUNT 30.05 29.99 30.39 463.71 500.00 32.54 32.41 32.77 503.58 504.00

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/18/16

ID: 250 (mm)

GC Column (3): CAPCELL CN

Time Analyzed: 4:29

Lab Standard ID: 83303OL

Lab File ID: 12C83B16295005.0020.RAW

Initial Calibration: 12C83B1629501

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629504

Calibration, 12Coob 1025007							
COMPOUND	RT	RT WIND FROM	OOW TO	CALC AMOUNT	NOM AMOUNT	%D	
1,3,5-Trinitrobenzene	30.18	29.99	30.39	446.88	500.00	-11	
3 4-Dinitrotoluene	32.59		32.77	485.29	504.00	-4	
Tetryl	34.39		34.49	536.44	500.00	7	
1101171					4 - ED/ Dx	7	

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/18/16

GC Column (3): CAPCELL CN ID: 250 (mm)

Time Analyzed: 10:51

Lab File ID: 12C83B16295005.0029.RAW

Initial Calibration: 12C83B1629501

Lab Standard ID: 83303OK

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629504

COMPOUND	न्ना	RT WIND FROM	OOW TO	CALC AMOUNT	NOM - AMOUNT	%D
1,3,5-Trinitrobenzene	30.22	29.99	30.39	474.14	500.00	-5
3,4-Dinitrotoluene	32.58	32.41	32.77	475.07	504.00	-6
Tetryl	34.40	34.29	34.49	512.45	500.00	2

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/29/16

GC Column (3): CAPCELL CN

ID: 250 (mm)

Time Analyzed: 20:07

Lab File ID: 12C83B16295006.0006.RAW

Initial Calibration: 12C83B1629501

Lab Standard ID: 83303OM

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629505						
COMPOUND	RT	RT WIND	WOO TO	CALC AMOUNT	MOM AMOUNT	%D
COMPOUND						
1,3,5-Trinitrobenzene	30.16	29.96	30.36	342.18	500.00	-32
3,4-Dinitrotoluene	32.53	32.35	32.71	436.40	504.00	-13
Tetryl	34.37	34.27	34.47	537.93	500.00	8
1 7						40

Compounds 3

Average of %D:

18

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

RT WINDOW

TO

30.36

32.71

34.47

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/30/16

GC Column (3): CAPCELL CN

ID: 250 (mm)

FROM

29.96

32.35

34.27

RT

30.69

32.09

33.71

Lab File ID: 12C83B16295006.0017.RAW

Time Analyzed: 3:53

Initial Calibration: 12C83B1629501

COMPOUND

1,3,5-Trinitrobenzene

Lab Standard ID: 83303ON

Calibration: 12C83B1629505

Init. Calib Date(s): 10/23/16

CALC

TMUOMA

336.30

395.60

1630.69

10/23/16

3,4-Dinitrotoluene Tetryl

Compounds 3

Average of %D:

MOM

AMOUNT

500.00

504.00

500.00

-21 93

-33

224

%D

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: Y6329A

Date Analyzed: 11/30/16

GC Column (3): CAPCELL CN

ID: 250 (mm)

Lab File ID: 12C83B16295006.0021.RAW

Time Analyzed: 6:43

Lab Standard ID: 8330300

Initial Calibration: 12C83B1629501

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12C83B1629505

COMPOUND RT FROM TO AM 1,3,5-Trinitrobenzene 30.13 29.96 30.36 3,4-Dinitrotoluene 32.60 32.35 32.71	0.11.0	NOM	
3,4-Dinitrotoluene 32.60 32.35 32.71	CALC MOUNT	AMOUNT	.%D
3,4-Dinitrotoluene 32.60 32.35 32.71	399.73	500.00	-20
	409.69	504.00	-19
Tetryl 34.39 34.27 34.47	424.22	500.00	-15

Compounds 3

Average of %D:

18

7=

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/29/16

GC Column (1): CHROMPACK ID: 100 (mm)

Lab File ID: 12E83B16295006.0006.RAW

Time Analyzed: 20:07 Initial Calibration: 12E83B1629501

Lab Standard ID: 83303OM

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629505

COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	MOM AMOUNT	%D
1.3.5-Trinitrobenzene	4.81	4.82	5.02	476.33	500.00	-5
Tetryl	7,71	7.73	8.01	517.65	500.00	4
3,4-Dinitrotoluene	10.60	10.66	11.14	525.03	504.00	4

Compounds 3

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

GC Column (2): CHROMPACK

ID: 100 (mm)

Date Analyzed: 11/29/16

Time Analyzed: 20:07

Lab File ID: 12E83B16295006B.0006.RAW

Lab Standard ID: 83303OM

Initial Calibration: 12E83B1629501B

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12F83B1629505B

COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	NOM AMOUNT	%D
3,4-Dinitrotoluene	10.72	10.74	11.32	552.01	504.00	10
O, t Directoration					s co/55	4.0

Compounds 1

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/30/16

Lab File ID: 12E83B16295006.0017.RAW

GC Column (1): CHROMPACK ID: 100 (mm)

Time Analyzed: 3:53

Initial Calibration: 12E83B1629501

Lab Standard ID: 83303ON

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12F83B1629505

COMPOUND	RT	RT WINE FROM	OOW TO	CALC AMOUNT	NOM AMOUNT	%D
1,3,5-Trinitrobenzene	4.78	4.82	5.02	486.61	500.00	-3
Tetryl	7.67	7.73	8.01	508.62	500.00	2
3 4-Dinitrotoluene	10.57	10.66	11.14	511.12	504.00	1

Compounds 3

Average of %D:

2

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/30/16

Lab File ID: 12E83B16295006B.0017.RAW

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 3:53

Initial Calibration: 12E83B1629501B

Lab Standard ID: 83303ON

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629505B

COMPOUND	RT	RT WIND FROM	OW TO	CALC AMOUNT	NOM AMOUNT	%D	
3,4-Dinitrotoluene	10.69	10.74	11.32	544.87	504.00	8	

Compounds 1

Average of %D:

DWE020 积 251 of 320

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329A

Date Analyzed: 11/30/16

GC Column (1): CHROMPACK ID: 100 (mm)

Time Analyzed: 6:43

Initial Calibration: 12E83B1629501

Lab Standard ID: 8330300

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629505

Lab File ID: 12E83B16295006.0021.RAW

Calibration. TZE03B 1023303						
COMPOUND	RT	RT WIND FROM	TO	CALC AMOUNT	MOM AMOUNT	%D
1,3,5-Trinitrobenzene	4.87	4.82	5.02	481.22	500.00	-4
Tetryl	7.81	7.73	8.01	506.82	500.00	1
3.4-Dinitrotoluene	10.76	10.66	11.14	513.73	504.00	2

Compounds 3

Average of %D:

2

CALIBRATION VERIFICATION SUMMARY

Lab Name: Lancaster Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.:

Instrument: X6329B

Date Analyzed: 11/30/16

GC Column (2): CHROMPACK ID: 100 (mm)

Time Analyzed: 6:43

Lab File ID: 12E83B16295006B.0021.RAW

Initial Calibration: 12E83B1629501B

Lab Standard ID: 8330300

Init. Calib Date(s): 10/23/16

10/23/16

Calibration: 12E83B1629505B

COMPOUND	RT	RT WIND FROM	OW TO	CALC AMOUNT	NOM AMOUNT	%D
3.4-Dinitrotoluene	10.89	10.74	11.32	536.72	504.00	6
					8 - F D/ D	_

Compounds 1

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12C83B16295001 Instrument C12C--Y6329A

Operato	or File	LLI#	Client ID	Analysis Date Batch	Dilution Factor
1566	12C83B16295001.0001	CONDITIONER		10/23/16 13:49 1629499	9999 1.00
1566	12C83B16295001.0001	CONDITIONER	•	10/23/16 14:32 1629499	
	12C83B16295001.0002	CONDITIONER		10/23/16 15:14 1629499	
1566		CONDITIONER		10/23/16 15:57 1629499	9999 1.00
1566	12C83B16295001.0004	CONDITIONER		10/23/16 16:39 1629499	
1566	12C83B16295001.0005			10/23/16 17:21 1629499	
1566	12C83B16295001.0006	CONDITIONER		10/23/16 18:04 1629499	
1566 -	12C83B16295001.0007	CONDITIONER		10/23/16 18:46 1629499	
1566	12C83B16295001.0008	CONDITIONER	0000444	10/23/16 19:29 1629499	
1566	12C83B16295001.0009	833011624E	83301AA		,,,,,
1566	12C83B16295001.0010	833021624E	83302AA	10/23/16 20:11 1629499	
1566	12C83B16295001.0011	833031624E	83303AA	10/23/16 20:54 1629499	
1566	12C83B16295001.0012	833041624E	83304AA	10/23/16 21:36 1629499	
1566	12C83B16295001.0013	833051624E	83305AA	10/23/16 22:18 1629499	
1566	12C83B16295001.0014	MD83X1624E	MD83XAA	10/23/16 23:01 1629499	
1566	12C83B16295001.0015	IC83X1624E	IC83XAA	10/23/16 23:44 1629499	9999 1.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12C83B16295002 Instrument C12C-Y6329A

Operator	· File	LL i#	Client ID	Analysis Date Batch	Dilution Factor
Operator 1566 1566 1566 1566 1566 1566 1566 156	12C83B16295002.0001 12C83B16295002.0002 12C83B16295002.0003 12C83B16295002.0004 12C83B16295002.0005 12C83B16295002.0006 12C83B16295002.0007 12C83B16295002.0008 12C83B16295002.0009 12C83B16295002.0010 12C83B16295002.0010	CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER 833031624E BLANKA 10/20/16 LCSA 10/20/16	83303NI PBLK23293 LCS23293	10/24/16 16:40 162979 10/24/16 17:22 162979 10/24/16 18:05 162979 10/24/16 18:47 162979 10/24/16 19:29 162979 10/24/16 20:12 162979 10/24/16 20:54 162979 10/24/16 21:37 162979 10/24/16 22:19 162979 10/24/16 23:02 162930 10/24/16 23:44 162930	Factor 99999 1.00 99999 1.00 99999 1.00 99999 1.00 99999 1.00 99999 1.00 99999 1.00 99999 1.00 99999 1.00 99999 1.00 90023A 40.00
1566 1566 1566 1566 1566 1566 1566	12C83B16295002.0012 12C83B16295002.0013 12C83B16295002.0014 12C83B16295002.0015 12C83B16295002.0016 12C83B16295002.0017 12C83B16295002.0018 12C83B16295002.0019 12C83B16295002.0020	LCSDA 10/20/16 LCSISM 10/20/16 LCSDISM 10/20/16 8645241 8645241 10/20/16 8645241MS 8645242 8645244 833031624E	LCSD23293 LCS23293 LCSD23293 01D01 01D01DUP 01D01MS 01D02- 01D04 83303NI	10/25/16 0:26 162930 10/25/16 1:09 162930 10/25/16 1:51 162930 10/25/16 2:34 162930 10/25/16 3:16 162930 10/25/16 3:59 162930 10/25/16 4:41 162930 10/25/16 5:23 162930 10/25/16 6:06 162979	0023A 40.00 0023A 40.00 0023A 40.00 0023A 40.00 0023A 40.00 0023A 40.00 0023A 40.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12E83B16295001 Instrument CP12--X6329A

Operato	or File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1566	12E83B16295001.0001	CONDITIONER	2000	10/23/16 13:49	1629499999	1.00
1566	12F83B16295001.0002	CONDITIONER		10/23/16 14:32	1629499999	1.00
1566	12E83B16295001.0003	CONDITIONER		10/23/16 15:14	1629499999	1.00
1566	12E83B16295001.0004	CONDITIONER		10/23/16 15:57	1629499999	1.00
1566	12E83B16295001.0005	CONDITIONER		10/23/16 16:39	1629499999	1.00
1566	12E83B16295001.0006	CONDITIONER		10/23/16 17:21	1629499999	1.00
1566	12E83B16295001.0007	CONDITIONER		10/23/16 18:04	1629499999	1.00
1566	12F83B16295001.0008	CONDITIONER		10/23/16 18:46	1629499999	1.00
1566	12F83B16295001.0009	833011624E	83301AA	10/23/16 19:29	1629499999	1,00
1566	12E83B16295001.0010	833021624E	83302AA	10/23/16 20:11	1629499999	1.00
1566	12E83B16295001.0011	833031624E	83303AA	10/23/16 20:54	1629499999	
1566	12F83B16295001.0012	833041624E	83304AA	10/23/16 21:36		
1566	12E83B16295001.0013	833051624E	83305AA	10/23/16 22:18	1629499999	
1566	12E83B16295001.0014	MD83X1624E	MD83XAA	10/23/16 23:01	1629499999	1.00
1566	12E83B16295001.0015	IC83X1624E	IC83XAA	10/23/16 23:44	1629499999	1.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12E83B16295002 Instrument CP12--X6329A

						Dilution
Operator	File	LLI#	Client ID	Analysis Date	Batch	_Factor
1566	12E83B16295002.0001	CONDITIONER		10/24/16 16:40	1629799999	1.00
1566	12E83B16295002.0002	CONDITIONER		10/24/16 17:22	1629799999	1.00
1566	12E83B16295002.0003	CONDITIONER		10/24/16 18:05	1629799999	1.00
1566	12E83B16295002.0004	CONDITIONER		1 4 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1629799999	
1566	12E83B16295002.0005	CONDITIONER			1629799999	
1566	12F83B16295002.0006	CONDITIONER		10/24/16 20:12	1629799999	
1566	12E83B16295002.0007	CONDITIONER		10/24/16 20:54		
1566	12E83B16295002.0008	CONDITIONER		10/24/16 21:37		
1566	12E83B16295002.0009	833031624E	83303NI	10/24/16 22:19		
1566	12E83B16295002.0010	BLANKA 10/20/16	PBLK23293	10/24/16 23:02		
1566	12E83B16295002.0011	LCSA 10/20/16	LCS23293	10/24/16 23:44		
1566	12E83B16295002.0012	LCSDA 10/20/16	LCSD23293	10/25/16 0:26		
1566	12E83B16295002.0013	LCSISM 10/20/16	LCS23293	10/25/16 1:09		-
1566	12E83B16295002.0014	LCSDISM 10/20/16	LCSD23293	10/25/16 1:51	162930023A	
1566	12E83B16295002.0015	8645241	01D01	10/25/16 2:34		
1566	12E83B16295002.0016	8645241 10/20/16	01D01DUP	10/25/16 3:16		
1566	12E83B16295002.0017	8645241MS	01D01MS	10/25/16 3:59		•
1566	12E83B16295002.0018	8645242	01D02	10/25/16 4:41	162930023A	
1566	12E83B16295002.0019	8645244	01D04	10/25/16 5:23		
1566	12E83B16295002.0020	833031624E	83303NI	10/25/16 6:06	1629799999	1.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12C83B16295003 Instrument C12C-Y6329A

Operator	File	LL!#	Client ID	Analysis Date	Batch	Dilution Factor
1566	12C83B16295003.0001	CONDITIONER		11/1/16 19:36	1630599999	1,00
1566	12C83B16295003.0002	CONDITIONER		11/1/16 20:18	1630599999	1.00
1566	12C83B16295003.0003	CONDITIONER		11/1/16 21:01	1630599999	1.00
1566	12C83B16295003.0004	CONDITIONER		11/1/16 21:43	1630599999	1.00
1566	12C83B16295003.0005	CONDITIONER		11/1/16 22:25	1630599999	1.00
1566	12C83B16295003.0006	CONDITIONER		11/1/16 23:08	1630599999	1.00
1566	12C83B16295003.0007	833031624E	83303NT	11/1/16 23:50	1630599999	1.00
1566	12C83B16295003.0008	BLANKA 11/1/16	PBLK41303	11/2/16 0:33	163030041A	10.00
1566	12C83B16295003.0009	LCSA 11/1/16	LCS41303	11/2/16 1:15	163030041A	10.00
1566	12C83B16295003.0010	LCSDA 11/1/16	LCSD41303	11/2/16 1:58	163030041A	10.00
1566	12C83B16295003.0011	8663485	02D11	11/2/16 2:40	163030041A	10.00
1566	12C83B16295003.0012	833031624E	83303NU	11/2/16 3:22	1630599999	1.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12E83B16295003 Instrument CP12--X6329A

Operator	File	LL1#	Client ID	Analysis Date	Batch	Dilution Factor
1566 1566 1566 1566 1566 1566 1566 1566	12E83B16295003.0001 12E83B16295003.0002 12E83B16295003.0003 12E83B16295003.0004 12E83B16295003.0005 12E83B16295003.0006 12E83B16295003.0007 12E83B16295003.0008 12E83B16295003.0009 12E83B16295003.0010 12E83B16295003.0011	CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER 833031624E BLANKA 11/1/16 LCSA 11/1/16 LCSDA 11/1/16 8663485 833031624E	83303NT PBLK41303 LCS41303 LCSD41303 02D11 83303NU	11/1/16 19:36 11/1/16 20:18 11/1/16 21:01 11/1/16 21:43 11/1/16 22:25 11/1/16 23:08 11/1/16 0:33 11/2/16 1:15 11/2/16 1:58 11/2/16 2:40 11/2/16 3:22	1630599999 1630599999 1630599999 1630599999 1630599999 1630599999 163030041A 163030041A 163030041A	1.00 1.00 1.00 1.00 1.00 1.00 1.00 10.00 10.00 10.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12C83B16295004 Instrument C12C--Y6329A

						Dilution
Operator	File	LLI#	Client ID	Analysis Date	Batch	Factor
	12C83B16295004.0001	CONDITIONER		11/8/16 20:14	1631299999	1.00
1566		CONDITIONER		11/8/16 20:56	1631299999	1.00
1566	12C83B16295004.0002	CONDITIONER		11/8/16 21:39	1631299999	1.00
1566	12C83B16295004.0003	CONDITIONER		11/8/16 22:21	1631299999	1.00
1566	12C83B16295004.0004	CONDITIONER		11/8/16 23:03	1631299999	1.00
1566	12C83B16295004.0005	CONDITIONER		11/8/16 23:46	1631299999	
1566	12C83B16295004.0006	CONDITIONER		11/9/16 0:28	1631299999	
1566	12C83B16295004.0007	CONDITIONER		11/9/16 1:11	1631299999	
1566	12C83B16295004.0008	833031624E	83303OI	11/9/16 1:53	1631299999	
1566	12C83B16295004.0009	BLANKA 11/7/16	PBLK30308	11/9/16 2:36	163080030A	
1566	12C83B16295004.0010	LCSA 11/7/16	LCS30308	11/9/16 3:18	163080030A	
1566	12C83B16295004.0011	LCSISM 11/7/16	LCS30308	11/9/16 4:01	163080030A	
1566	12C83B16295004.0012	8663469	02DW1	11/9/16 4:43	163080030A	
1566	12C83B16295004.0013		02DW1DUP	11/9/16 5:25	163080030A	
1566	12C83B16295004.0014	8663469 8663469 MS	02DW1BCF	11/9/16 6:08	163080030A	
1566	12C83B16295004.0015		02DW2	11/9/16 6:50	163080030A	
1566	12C83B16295004.0016	8663470	02DW3	11/9/16 7:33	163080030A	
1566	12C83B16295004.0017	8663471	02DVV3	11/9/16 8:15	163080030A	
1566	12C83B16295004.0018	8663472	02DW5	11/9/16 8:57	163080030A	
1566	12C83B16295004.0019	8663473	83303OD	11/9/16 9:40	1631299999	
156 6	12C83B16295004.0020	833031624E 8663474	02DW6	11/9/16 10:22	163080030A	
1566	12C83B16295004.0021	8663475	02DW0	11/9/16 11:05	163080030A	
1566	12C8 3 B16295 0 04.0022	8663476	02DW8	11/9/16 11:47	163080030A	
1566	12C83B16295004.0023		02D10	11/9/16 12:30	163080030A	
1566	12C83B16295004.0024	8663482 8663483MS	02D10	11/9/16 13:12	163080030A	
1566	12C83B16295004.0025	8663484MSD	02D10	11/9/16 13:55	163080030A	
1566	12C83B16295004.0026	8665231	026BL	11/9/16 14:37	163080030A	
1566	12C83B16295004.0027	8665491	03D01	11/9/16 15:19	163080030A	
1566	12C83B16295004.0028	8665492	03D01	11/9/16 16:02	163080030A	
1566	12C83B16295004.0029	BLANKA 11/7/16	PBLK31308	11/9/16 16:44	163080031A	
1566	12C83B16295004.0030	833031624E	83303OE	11/9/16 17:27	1631299999	
1566	12C83B16295004.0031	LCSA 11/7/16	LCS31308	11/9/16 18:09	163080031A	
1566	12C83B16295004.0032	LCSISM 11/7/16	LCS31308	11/9/16 18:52	163080031A	
1566	12083B16295004.0033	8665493	03D03DUP	11/9/16 19:34	163080031A	
1566	12C83B16295004.0034 12C83B16295004.0035	8665493	03D03	11/9/16 20:16	163080031A	
1566	12C83B16295004.0035	8665493MS	03D03MS	11/9/16 20:59	163080031A	
1566	12C83B16295004.0030	8665494	03D04	11/9/16 21:41	163080031A	
1566	12C83B16295004.0037	8665495	03D05	11/9/16 22:24	163080031A	
1566 1566	12C83B16295004.0030	8665496	03D06	11/9/16 23:06	163080031A	
	12C83B16295004.0039	8665497	03D07	11/9/16 23:49	163080031A	
1566	12C83B16295004.0040	8665498MS	03D07	11/10/16 0:31		
1566	12C83B16295004.0041	833031624E	83303OF		1631299999	
1566	12C83B16295004.0042	8665499MSD	03D07		163080031A	
1566	12C83B16295004.0044	8665500	03D08	11/10/16 2:38		
1566 1566	12C83B16295004.0045	8668437	02D21		163080031A	
	12C83B10293004.0046	8668438	02D22		163080031A	
1566 156 6	12C83B16295004.0047	8668439	02D23	11/10/16 4:46		
1566	12C83B16295004.0047	8668444	02D26	11/10/16 5:28		
1566	12C83B16295004.0049	8668445	02D27	11/10/16 6:10		
1566	12C83B16295004.0049	833031624E	83303OG	11/10/16 6:53		
1500	120000 1023004,0000	3300010246	300000			

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12C83B16295005 Instrument C12C--Y6329A

Operato	r File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
	12C83B16295005.0001	CONDITIONER		11/17/16 15:03	1632199999	1.00
1566	12C83B16295005.0001	CONDITIONER			1632199999	
1566	12C83B16295005.0002 12C83B16295005.0003	CONDITIONER			1632199999	
1566		CONDITIONER			1632199999	
1566	12C83B16295005.0004	CONDITIONER		11/17/16 17:53		
1566	12C83B16295005.0005	CONDITIONER		11/17/16 18:36		
1566	12C83B16295005.0006	CONDITIONER		11/17/16 19:18		
1566	12C83B16295005.0007	CONDITIONER		11/17/16 20:00		
1566	12C83B16295005.0008	833031624E	83303OJ	11/17/16 20:43		
1566	12C83B16295005.0009	BLANKA 11/15/16	PBLK23319	11/17/16 21:25		
1566	12C83B16295005.0010	LCSISM 11/15/16	LCS23319	11/17/16 22:08		
1566	12C83B16295005.0011	LCSA 11/15/16	LCS23319	11/17/16 22:50		
1566	12C83B16295005.0012	8665493R	03D03DUP	11/17/16 23:32		
1566	12C83B16295005.0013	8665493R	03D03D01	11/18/16 0:15		
1566	12C83B16295005.0014	8665493RMS	03D03MS	11/18/16 0:57	163190023A	
1566	12C83B16295005.0015	8665494R	03D03(vi3	11/18/16 1:40		
1566	12C83B16295005.0016	8665495R	03D04 03D05	11/18/16 2:22		,
1566	12C83B16295005.0017	8665496R	03D05 03D06	11/18/16 3:05		
1566	12C83B16295005.0018	8665497R	03D07	11/18/16 3:47		
1566	12C83B16295005.0019	833031624E	83303OL	11/18/16 4:29		
1566	12C83B16295005.0020	8665498RMS	03D07	11/18/16 5:12		
1566	12C83B16295005.0021	8665499RMSD	03D07 03D07	11/18/16 5:54		
1 5 66	12C83B16295005.0022	~~~	03D07 03D08	11/18/16 6:37		
1566	12C83B16295005.0023	8665500R	03D08 02D21	11/18/16 7:19		
1566	12C83B16295005.0024	8668437R	02D22	11/18/16 8:02		
1566	12C83B16295005.0025	8668438R	02D23	11/18/16 8:44		
1566	12C83B16295005.0026	8668439R	02D23 02D26	11/18/16 9:26		•
1566	12C83B16295005.0027	8668444R			163190023A	
156 6	12C83B16295005.0028	8668445R	02D27	11/18/16 10:5		•
1566	12C83B16295005.0029	833031624E	83303OK	11/10/10 TU.3	100213333	1.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12E83B16295005 Instrument CP12--X6329A

						Dilution
Operator	File	LLI#	Client ID	Analysis Date	Batch	Factor
1566	12E83B16295005.0001	CONDITIONER		11/17/16 15:03	1632199999	
1566	12E83B16295005.0002	CONDITIONER		11/17/16 15:46		
1566	12E83B16295005.0003	CONDITIONER		11/17/16 16:28		
1566	12E83B16295005.0004	CONDITIONER		11/17/16 17:11		
1566	12F83B16295005.0005	CONDITIONER		11/17/16 17:53		
1566	12E83B16295005.0006	CONDITIONER		11/17/16 18:36		
1566	12E83B16295005.0007	CONDITIONER		11/17/16 19:18		
1566	12E83B16295005.0008	CONDITIONER		11/17/16 20:00		
1566	12E83B16295005.0009	833031624E	83303OJ	11/17/16 20:43		
1566	12E83B16295005.0010	BLANKA 11/15/16	PBLK23319	11/17/16 21:25		
1566	12E83B16295005.0011	LCSISM 11/15/16	LCS23319	11/17/16 22:08		
1566	12E83B16295005.0012	LCSA 11/15/16	LCS23319	11/17/16 22:50		
1566	12E83B16295005.0013	8665493R	03D03DUP	11/17/16 23:32		
1566	12E83B16295005.0014	8665493R	03D03		163190023	_
1566	12E83B16295005.0015	8665493RMS	03D03MS	11/18/16 0:57		
1566	12E83B16295005.0016	866549 4 R	03D04	11/18/16 1:40		
1566	12E83B16295005.0017	8665495R	03D05	11/18/16 2:22	163190023A	
1566	12E83B16295005.0018	8665496R	03D06	11/18/16 3:05		
1566	12E83B16295005.0019	8665497R	03D07	11/18/16 3:47	- '	
156 6	12E83B16295005.0020	833031624E	83303OL	11/18/16 4:29	1632199999 163190023 <i>A</i>	
1566	12E83B16295005.0021	8665498RMS	03D07	11/18/16 5:12 11/18/16 5:54		
1566	12E83B16295005.0022	8665499RMSD	03D07	* * * * * * * * * * * * * * * * * * * *		•
1566	12E8 3 B16295005.0023	8665500R	03D08	11/18/16 6:37 11/18/16 7:19		•
1566	12E83B16295005.0024	8668437R	02D21	11/18/16 8:02		
1566	12E83B16295005.0025	8668438R	02D22 02D23	11/18/16 8:44		
1566	12E83B16295005.0026	8668439R		11/18/16 9:26		•
1566	12E83B16295005.0027	8668444R	02D26 02D27	11/18/16 10:09		
1566	12E83B16295005.0028	8668445R	83303OK	11/18/16 10:5:		
1566	12E83B16295005.0029	833031624E	63303OK	11/10/10 10.5	1 1002 10000	

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12C83B16295005 Instrument C12C-Y6329A

Operato	r Eila	1 #	Client ID	Analysis Date Batch	Dilution Factor
Operato 1566 1566 1566 1566 1566 1566 1566 156	T File 12C83B16295005.0001 12C83B16295005.0002 12C83B16295005.0003 12C83B16295005.0004 12C83B16295005.0005 12C83B16295005.0006 12C83B16295005.0006 12C83B16295005.0009 12C83B16295005.0010 12C83B16295005.0010 12C83B16295005.0011 12C83B16295005.0012 12C83B16295005.0012 12C83B16295005.0013 12C83B16295005.0014 12C83B16295005.0015 12C83B16295005.0016 12C83B16295005.0017 12C83B16295005.0016 12C83B16295005.0017 12C83B16295005.0019 12C83B16295005.0019 12C83B16295005.0020 12C83B16295005.0020 12C83B16295005.0021 12C83B16295005.0022 12C83B16295005.0022 12C83B16295005.0024 12C83B16295005.0025 12C83B16295005.0026 12C83B16295005.0027 12C83B16295005.0028 12C83B16295005.0028	CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER 833031624E BLANKA 11/15/16 LCSA 11/15/16 LCSA 11/15/16 LCSA 11/15/16 8665493R 8665493R 8665493R 8665495R 8665495R 8665496R 8665497R 833031624E 8665498RMS 8665499RMSD 8665500R 8668437R 8668438R 8668438R 8668438R 8668438R 8668444R 8668445R 833031624E	83303OJ PBLK23319 LCS23319 LCS23319 03D03DUP 03D03 03D04 03D05 03D06 03D07 83303OL 03D07 03D07 03D08 02D21 02D22 02D23 02D26 02D27 83303OK	Analysis Date Batch 11/17/16 15:03 163219999 11/17/16 15:46 163219999 11/17/16 16:28 163219999 11/17/16 17:11 163219999 11/17/16 17:53 163219999 11/17/16 19:18 163219999 11/17/16 20:00 163219999 11/17/16 20:03 163219999 11/17/16 20:43 163219999 11/17/16 20:43 163219999 11/17/16 20:43 163219999 11/17/16 22:08 163190023 11/17/16 22:50 163190023 11/18/16 0:57 163190023 11/18/16 0:57 163190023 11/18/16 3:05 163190023 11/18/16 3:47 163190023 11/18/16 3:47 163190023 11/18/16 5:54 163190023 11/18/16 5:54 163190023 11/18/16 5:54 163190023 11/18/16 5:54 163190023 11/18/16 8:02 163190023 11/18/16 8:44 163190023 11/18/16 8:44 163190023 11/18/16 9:26 163190023 11/18/16 10:09 163190023 11/18/16 10:09 163190023 11/18/16 10:09 163190023 11/18/16 10:51 163219998	9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 6 40.00 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12E83B16295005 Instrument CP12--X6329A

Operator	· File	LLI#	Client ID	Analysis Date	Batch	Dilution Factor
1566	12E83B16295005.0001	CONDITIONER		11/17/16 15:03		1.00
1566	12E83B16295005.0002	CONDITIONER			1632199999	1.00
1566	12E83B16295005.0003	CONDITIONER			1632199999	1.00
1566	12E83B16295005.0004	CONDITIONER		111111110	1632199999	1.00
1566	12E83B16295005.0005	CONDITIONER		11/17/16 17:53		1.00
1566	12E83B16295005.0006	CONDITIONER		11/17/16 18:36		1.00
1566	12E83B16295005.0007	CONDITIONER		11/17/16 19:18		1.00
1566	12E83B16295005.0008	CONDITIONER		11/17/16 20:00		1.00
1566	12E83B16295005.0009	833031624E	83303OJ	11/17/16 20:43		1.00
1566	12E83B16295005.0010	BLANKA 11/15/16	PBLK23319	11/17/16 21:25		
1566	12E83B16295005.0011	LCSISM 11/15/16	LCS23319	1	163190023A	
1566	12E83B16295005.0012	LCSA 11/15/16	LCS23319 .		163190023A	
1566	12E83B16295005.0013	8665493R	03D03DUP	11/17/16 23:32		
1566	12E83B16295005.0014	8 665 493R	03D03	11/18/16 0:15	163190023A	
1566	. 12E83B16295005.0015	8665493RMS	03D03MS	11/18/16 0:57	163190023A	
1566	12E83B16295005.0016	8665494R	03D04	11/18/16 1:40	163190023A	
1566	12E83B16295005.0017	8665495R	03D05	11/18/16 2:22	163190023 <i>A</i>	
1566	12E83B16295005.0018	8665496R	03D06	11/18/16 3:05	163190023A	
1566	12E83B16295005.0019	8665497R	03D07	11/18/16 3:47	163190023A	
1566	12E83B16295005.0020	8 33 031624E	83 30 3OL	11/18/16 4:29	1632199999	
1566	12E83B16295005.0021	8665498RMS	03D07	11/18/16 5:12	163190023/	
1566	12E83B16295005.0022	8665499RMSD	0 3 D07	11/18/16 5:54	163190023A	
1566	12E8 3 B16295005. 0023	8665500R	03D08	11/18/16 6:37	163190023/	
1566	12E83B16295005.0024	8668437R	02D21	11/18/16 7:19	1631900234	
1566	12E83B16295005.0025	8668438R	02D22	11/18/16 8:02	163190023/	
1566	12E83B16295005.0026	8668439R	02D 2 3	11/18/16 8:44	163190023/	
1566	12E83B16295005.0027	8668444R	02D26	11/18/16 9:26	163190023/	
156 6	12E83B16295005.0028	8668445R	02D27		1631900234	
1566	12E83B16295005.0029	833031624E	83303OK	11/18/16 10:51	1632199999	1.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12C83B16295006 Instrument C12C--Y6329A

				A 1 ' D. /.	0-4-1-	Dilution
Operator	File	LLI#	Client ID	Analysis Date	Batch	Factor
1566	12C83B16295006.0001	CONDITIONER		11/29/16 16:35		1.00
1566	12C83B16295006.0002	CONDITIONER		11/29/16 17:17	1633399999	1.00
1566	12C83B16295006.0003	CONDITIONER		11/29/16 17:59	1633399999	
1566	12C83B16295006.0004	CONDITIONER		11/29/16 18:42		
1566	12C83B16295006.0005	CONDITIONER		11/29/16 19:24	1633399999	
1566	12C83B16295006.0006	833031624E	83303OM	11/29/16 20:07		
1566	12C83B16295006.0007	BLANKA 11/23/16	PBLK47327	11/29/16 20:49	163270047A	
1566	12C83B16295006.0008	LCSA 11/23/16	LCS47327	11/29/16 21:31		
1566	12C83B16295006.0009	LCSB 11/23/16	LCS47327	11/29/16 22:14	- 163270047A	40.00
1566	12C83B16295006.0010	LCSISM 11/23/16	LCSD47327	11/29/16 22:56	i 163270047 <i>₽</i>	40.00
1566	12C83B16295006.0011	8665497R	03D07	11/29/16 23:39	163270047△	
1566	12C83B16295006.0012	8665498RMS	03D07	11/30/16 0:21	163270047A	
1566	12C83B16295006.0013	8665499RMSD	03D07	11/30/16 1:04	163270047 <i>A</i>	
1566	12C83B16295006.0014	8665497BKG2	AA	11/30/16 1:46	163270047 <i>P</i>	
1566	12C83B16295006.0015	8665498MS2	AA	11/30/16 2:28	163270047 <i>P</i>	
1566	12C83B16295006.0016	86659499MSD2	AA	11/30/16 3:11	163270047 <i>P</i>	
1566	12C83B16295006.0017	833031624E	83303ON	11/30/16 3:53		
1566	12C83B16295006.0018	8655497BKG3	AA	11/30/16 4:36	163270047 <i>A</i>	
1566	12C83B16295006.0019	8655498MS3	AA	11/30/16 5:18	163270047 <i>P</i>	
15 6 6	12C83B16295006.0020	8655499MSD3	AA	11/30/16 6:01	163270047 <i>P</i>	
1566	12C83B16295006.0021	833031624E	83303OO	11/30/16 6:43	1633399999	1.00

Eurofins Lancaster Laboratories Pesticide Residue Analysis Runlog for 12E83B16295006 Instrument CP12--X6329A

Operator	File	LLI#	Client ID	Analysis Date Batch	Dilution Factor
Operator 2855 2855 2855 2855 2855 2855 2855 285	12E83B16295006.0001 12E83B16295006.0002 12E83B16295006.0003 12E83B16295006.0004 12E83B16295006.0005 12E83B16295006.0006 12E83B16295006.0007 12E83B16295006.0009 12E83B16295006.0010 12E83B16295006.0011 12E83B16295006.0011 12E83B16295006.0012 12E83B16295006.0013 12E83B16295006.0014 12E83B16295006.0015 12E83B16295006.0015	CONDITIONER CONDITIONER CONDITIONER CONDITIONER CONDITIONER 833031624E BLANKA 11/23/16 LCSA 11/23/16 LCSB 11/23/16 LCSB 11/23/16 LCSISM 11/23/16 8665497R 8665497R 8665498RMS 8665497BKG2 8665498MS2 86659499MSD2	83303OM PBLK47327 LCS47327 LCS47327 LCSD47327 03D07 03D07 03D07 AA AA		Factor 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 9 1.00 A 40.00
2855 2855 2855 2855 2855	12E83B16295006.0017 12E83B16295006.0018 12E83B16295006.0019 12E83B16295006.0020 12E83B16295006.0021	833031624E 8655497BKG3 8655498MS3 8655499MSD3 833031624E	83303ON AA AA AA 83303OO	11/30/16 4:36 163270047 11/30/16 5:18 163270047 11/30/16 6:01 163270047 11/30/16 6:43 163339999	7A 40.00 7A 40.00 7A 40.00

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

LCS41303

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163030041A

Lab Code:

Case No.:

SAS No.:

Lab Sample ID: LCSA

Date(s) Analyzed: 11/2/2016

SDG No.:

11/2/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

D: 100 (mm) GC Column (2):

D:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.29	0.20	5.43	86	
Tetryl	1	8.60		8.86		

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

LCSD41303

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163030041A

Lab Code:

Case No.:

SAS No.:

SDG No.:

Lab Sample ID: LCSDA

Date(s) Analyzed: <u>11/2/2016</u>

11/2/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

D:

100 (mm)

GC Column (2):

ID:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.29	5.23	5.43	84	
Tetryi	1	8.59	8.58	8.86	240	

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

02D10MS

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163080030A

Lab Code:

Case No.:

SAS No.:

SDG No.: DWE02

tab Sample ID: 8663483

Date(s) Analyzed: <u>11/9/2016</u>

11/9/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

ID: 100 (mm) GC Column (2):

D:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.13	5.04	5.24	910	
	1	5.13	5.04	5.24	910	
	1	5.13	5.04	5.24	910	
Tetryl	1	8. 30	8.20	8.48	670	
	1	8.30	8.20	8.48	670	
	1	8.30	8.20	8.48	670	

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

02D10MS

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163080030A

Lab Code:

Case No.:

SAS No.:

SDG No.: <u>DWE02</u>

Lab Sample ID: 8663483

ID:

Date(s) Analyzed: 11/9/2016

11/9/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

100 (mm)

GC Column (2):

ID:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.13	5.04	5.24	910	
	1	5.13	5.04	5.24	910	
	1	5.13	5.04	5.24	910	
Tetryl	1	8.30	8.20	8.48	670	
	1	8.30	8.20	8.48	670	
	1 1	8.30	8.20	8.48	670	

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

02D10MSD

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163080030A

Lab Code:

Case No.:

SAS No.:

SDG No.: DWE02

Lab Sample ID: 8663484

Date(s) Analyzed: <u>11/9/2016</u>

11/9/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

ID: 100 (mm) GC Column (2):

D:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.12	5.04	5.24	960	
	1	5.12	5.04	5.24	960	
	1	5.12	5.04	5.24	960	
Tetryl	1	8.29	8.20	8.48	710	
	1	8.29	8.20	8.48	710	
	1 1	8.29	8.20	8.48	710	

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

02D10MSD

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163080030A

Lab Code:

Case No.:

ID:

SAS No.:

SDG No.: DWE02

Lab Sample ID: 8663484

Date(s) Analyzed: 11/9/2016

11/9/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

100 (mm)

GC Column (2):

ID:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.12	5.04	5.24	960	
	1	5.12	5.04	5.24	960	
	1	5.12	5.04	5.24	960	
Tetryl	1	8.29	8.20	8.48	710	
	1	8.29	8.20	8.48	710	
	1	8.29	8.20	8.48	710	

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

02D10MS

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163080030A

Lab Code:

Case No.:

ID:

SAS No.:

SDG No.: <u>DWE02</u>

Lab Sample ID: 8663483

Date(s) Analyzed: 11/9/2016

11/9/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

100 (mm)

GC Column (2):

ID:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.13	5.04	5.24	910	
	1	5.13	5.04	5.24	910	
	1	5.13	5.04	5.24	910	
Tetryl	1	8.30	8.20	8.48	670	
	1	8.30	8.20	8.48	670	
	1	8.30	8.20	8.48	670	

IDENTIFICATION SUMMARY

SAMPLE CODE NO.

02D10MSD

Lab Name: Lancaster Laboratories

Contract:

Batchnumber: 163080030A

Lab Code:

Case No.:

ID:

SAS No.:

SDG No.: DWE02

Lab Sample ID: 8663484

Date(s) Analyzed: 11/9/2016

4 -----

11/9/2016

Instrument ID (1): X6329A

Instrument ID (2): X6329B

GC Column (1): CHROMPA

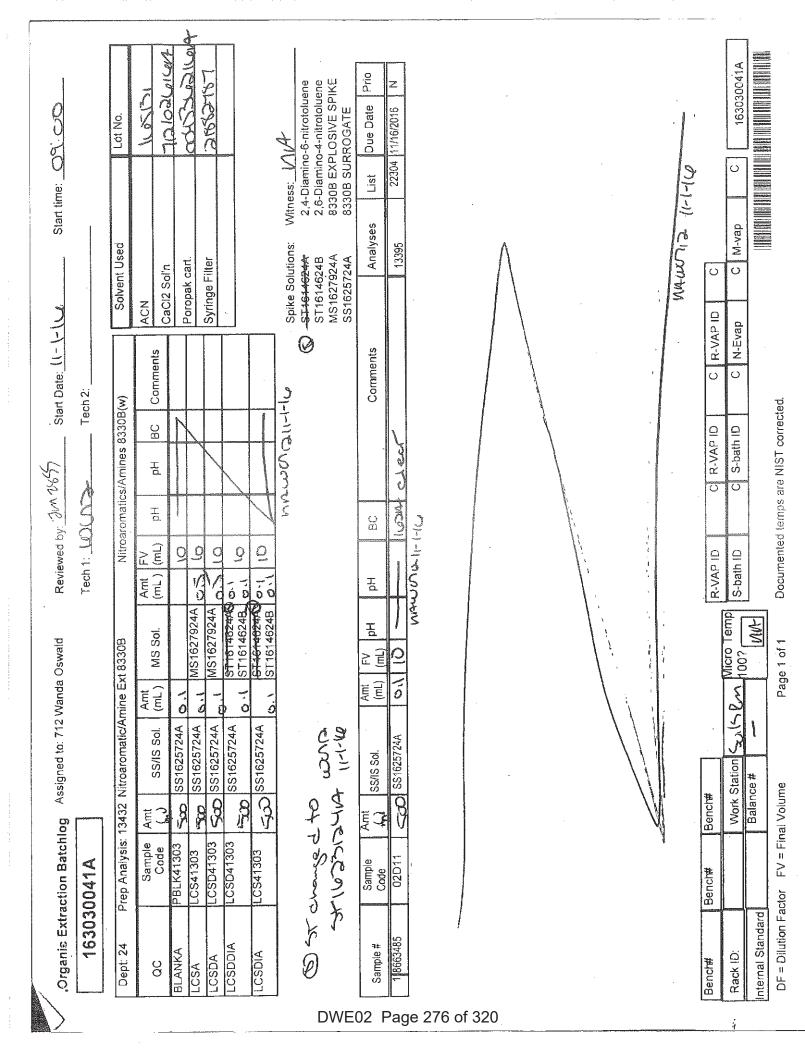
<u>100</u> (mm)

GC Column (2):

D:

ANALYTE	COL	RT	FROM	то	CONCENTRATION	%RSD
1,3,5-Trinitrobenzene	1	5.12	5.04	5.24	960	
	1	5.12	5.04	5.24	960	
	1	5.12	5.04	5.24	960	
Tetryl	1	8.29	8.20	8.48	710	
	1 1	8.29	8.20	8.48	710	
	1	8.29	8.20	8.48	710	

Preparation and Run Logs Explosives



712026164 B20130327 8330B LOD SPECIAL SPIKE 8330B SURROGATE Prio 00100100 Z Z 2 1,7084 51577 6563 Due Date 22303 11/17/2016 22430 [11/16/2016 22302 11/16/2016 22303 11/16/2016 22303 11/16/2016 11/16/2016 22303 11/16/2016 22303 11/16/2016 22303 11/16/2016 22430 11/16/2016 11/16/2016 11/17/2016 Lot No. 7 22303 22303 TE E List Witness:_ CRM 59-1 MO +1-X Otton San Analyses 13413 13413 13413 13413 13413 13413 13413 13413 13413 13413 13413 13413 Spike Salutions: Solvent Used MS1630824A SS1625724A アルグラ Syringe Filter CaCl2 Sol'n Acetonitrile Comments Comments Nitroaromatics/Amines 8330B(s) 020a 020a 020a 020a BC C R-VAP ID 2 표 N N 135 to sooghers of clearly soil 0396 020a 0203 Z 020a 020a 020a 020a 020a 096a 020a 020a N 80 ٥ 0 9 Ş 2 91-L'11 00:KI Z N N N N 91-8-11 co:6 Amt (mL) 표 E d MS1630824A MS1630824A MS1630824A N N N 딘 MS Sol. Prep Analysis: 13433 Nitroaromatic/Amine Ext 8330B 9 9 ₹ (Jm) 7 9 -٥ 2 0 9 9 Amt (mL) Amt (mL) ं 25-60 Ö M> 1630824C 10' - SS1625724A アーヤーマ 10.0 SS1625724A SS/IS Sol. 10,31 SS1625724A 19. 12 SS1625724A 10.0 SS1625724A 10.03|SS1625724A 10,41 SS1625724A SS1625724A 10.37 SS1625724A 10-14 SS1625724A SS1625724A SS1625724A 10.50 SS1625724A SS1625724A SS1625724A 10 04 SS1625724A 10-13 SS1625724A SS1625724A SS1625724A to cleate OFE SS/IS Sol. Bench# 10.52 3 0.3 10,15 10.41 100 10.3 ŞĞ pliked sind of Sample Code 02DW1DUP PBLK30308 LCS30308 8663469IMSp. 102DW1MS 02DW3 02DW6 CS30308 02DW2 02DW4 02DW5 02DW7 02DW8 02D10 O26BL 03D02 03D01 Sample 02DW1 163080030A Bench# Code 02010 02D10 スタンで 9|8663482BKG 8663469DUP 11-7-168663484MSD 8663483MS 8663475 8663476 8663470 8663472 8663473 8663474 8665231 8663469 8665491 12 8665492 8663471 Dept: 24 Sample # BLANKA LCSISM Bench# LCSA Ö 75 වුද් DWE02 Page 277 of 320

15:00

Start time:

Start Date: [1] | | |

Reviewed by: JLM 765

Assigned to: 1429 David Hershey

Organic Extraction Batchlog

Tech 1: D. H. W. L.

Tech 2:

Documented temps are NIST corrected.

Page 1 of 1

DF = Dilution Factor FV = Final Volume

nternal Standard

Rack ID:

163080030A

O

C M-vap

S-bath ID

Ö

Micro Temp 1007

Work Station Balance #

R-VAP ID S-bath ID

O

C R-VAP ID C N-Evap

	ng Methodology.	. Historical Reference: Form \$103	Statue: Effective		nit./	Сотте	8665231	189 : Dand Dland (A)	ſ	Ŏ	184		320			32	8				
00	of Solid Samples Using Incremental Sampling Methodology	Revision; 2			ani, mari pamapanana, kani pa	a Date Time	43	9	7 7 7 80000	Constant Section 2015	2	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	10/28/IL 0730 B		- -	10/28/c 0803 B.	-7		10 12 10 10 10 10 10 10 10 10 10 10 10 10 10	7	
	Peparation		ETFOCIIVO dato: Fob 6, 2015	Unsieved sa	Unsieved Sample Description					Sticks			23. SHOKS			16. St.2.Ks			13. X.R.	1	
	Samo	ins Document Reference:	rtfective dat		st 0111 al 0390								10/2			388	ŀ		381.		
		Eurojins		Final Wt <0. (Y or N)						7/1/4	344		8/3 T	47.6	TO THE	Z	4 34A		7	7	
		. Serioral		2 ^{ad} Wt of sample/drying d Wt of dried sa drying disi	lish mple/	A TOTAL OF THE PARTY OF THE PAR	4			20,49 62.41	7		15.01 PE.01	→		[h.0] ph.0]	-}		10.94 NO.92	7	
		Environmental			Analysis	13588	13564	2203		<u> </u>	. 2203		12564	2203	13588	12564	2203	13588	12564	2203	Reviewed hv.
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🐫 eurofins							7	ample Prepa	Sample Preparation of Solid Samples Using Incremental Sampling Methodology	Docun mples (lent Til	le: ncremer	ıtal Sam	pling Meth	O O O O O O O O O O O O O O O O O O O	
	Lancaster Laboratories Environmental	oratories	,	ш !	Eurofins Do	1-P-Q	Ins Document Reference: 1-P-QM-FOR-3010529	nce: 010529		. K	Revision: 2			Histo	Historical Reference: Form 5103	
	The state of the s				,		Effectiv	Effective date: Feb.5; 2016	5,2016				The second second	Status:	Status: Effective	
Sample Number	Analysis	Wt of dried sample/ drying dish	2 nd Wt of sample/drying dish	Final Wt <0.05 g (Y or N)	Comp. Bottle Code	Metal 0390	Moist 0111	. Unsieved sample Wt. Total Sample Wt.	Unsieved Sample Description	entered	verified	Date	e E	hii./	Comments	- Carlotte Communication Commu
	13588											N. Commission of the Commissio			A STATE OF THE STA	A CONTRACTOR OF THE CONTRACTOR
8003473	13564	15'01	8h'01	7	<u>x</u>		% 2 2 2 3 3 3 3 3	- W	A CONTRACTOR OF THE CONTRACTOR		<u>~</u>	10/25/by 0915	3915	KE.		
	2203	7	->	7	3414		7					→	.	5		
	13588					Bonecoure		ì			NAME OF THE OWNER OWNER OF THE OWNER		SOS STANSFORM STANSFORM	ento Soldi Recoverente una despera		
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Organic Extraction Batchlog Assigned to: 1429 David Hershey

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8330B LOD SPECIAL SPIKE TI WELLA 213240 86 CLARK So. I MOTINE BESIZEST 013 8330B SURROGATE Z. Lot No. Witness:_ The wast Spike Solutions: Solvent Used MS1630824A SS1625724A Syringe Filter CaCl2 Sol'n Acetonitrile Comments Nitroaromatics/Amines 8330B(s) SOOKWAS OF MOON SO 020a 020a 020a 020a BC Ī. Amt FV (mL) (mL) ۲, MS1630824A MS1630824A MS1630824A MS Sol. 7 Prep Analysis: 13433 Nitroaromatic/Amine Ext 8330B 92121 SAI OF MS 1630874C Amt (mL) 10.0 SS1625724A (C) | SS1625724A 10.74 SS1625724A 10, 15 SS1625724A SS1625724A SS/IS Sol. 19.10 SS1625724A NOTY to citche Chin ා <u>ට</u> 0 Sample Amt Code MW PBLK31308 03D03DUP LCS31308 N-7-16 CS31308 03D03MS 8665499MSD 11 03D07 8665493DUP # Dept: 24 BLANKA LCSISM LCSA DWE02

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Crganic Extraction Batchlog Assigned to: 1429 David Hershey

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Tech 1

Start time: 11 00

Tech 2:

ELEAH Son Mating - 215140-AC 7121026/64 Lot No. Solvent Used Syringe Filter CaCl2 Sol'n Acetonitrile Comments Nitroaromatics/Amines 8330B(s) 2 27 1.61 64 400 BC H NNNN N IN IN N M (mL) \geq Amt (mL) 167 إيم MS1630824A MS1630824A MS1630824A MS Sol. Prep Analysis: 13433 Nitroaromatic/Amine Ext 8330B Amt (mL) SS1631624A SS1631624A 10.14 SS1631624A SS1631624A SS1631624A SS/IS Sol. SS1631624A SS1631624A 0.0 0.0 0.5 ද <u>ර</u> <u>ح</u> رح actor 11/1 sample PBLK23319 03D03DUP CS23319 CS23319 86654931MS_{N-M} 103D03MS 03D07 33D07 8665493DUP \ 8665499MSD Dept: 24 8665498MS LCSISM BLANKA LCSA

Spike Solutions: Witness: $\omega_{5/2}$

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Wet Chemistry Data

Case Narrative/Conformance Summary Wet Chemistry



Case Narrative/Conformance Summary

CLIENT: CH2M Hill, Inc. SDG: DWE02

Water Quality
Fraction: Wet Chemistry

		Ma	trix	
Sample #	Client ID	Liquid	Solid	Comments
8663477	DU-3-1-B		X	Background/Unspiked
8663478	DU-3-1-B SS		X	Soluble Spike
8663479	DU-3-1-B IS		X	Insoluble Spike
8663480	DU-3-1-B PDS		X	Post Digestion Spike
8663481	DU-3-1-B DUP		X	Duplicate
8663485	EB-1	X		Equipment Blank
8668443	BGA-3		X	

See QC Reference List for Associated Batch QC Samples

SAMPLE RECEIPT:

Samples were received in good condition and within temperature requirements.

HOLDING TIME:

All holding times were met.

PREPARATION/EXTRACTION/DIGESTION:

No problems were encountered.

CALIBRATION/STANDARDIZATION:

All criteria were met.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

MS/MSD

Method defined actions are taken for any failed matrix QC.

Batch#: 16313042501A (Sample number(s): 8663477-8663481, 8668443, UNSPK: 8663477-8663478,

BKG: 8663477)

The recovery(ies) for the following analyte(s) in the MS is outside the acceptance

window: Hexavalent Chromium (SOLIDS)



Case Narrative/Conformance Summary

CLIENT: CH2M Hill, Inc. SDG: DWE02

Water Quality
Fraction: Wet Chemistry

SAMPLE ANALYSIS:

Samples	Hexavalent Chromium	Hexavalent Chromium (SOLIDS)	Oxidation Reduction Potential	рн
8663477		UNSPK/ DF10	UNSPK/ DF1	UNSPK/ DF1
8663478		SS/ DF10		
8663479		IS/ DF10		
8663480		PDS/ DF10		
8663481		D/ DF10	D/ DF1	D/ DF1
8663485	UNSPK,D/ DF1			
8668443		DF20	DF1	DF1

(Sample number(s): 8663477, 8663481, 8668443: Analysis: 00394) The pH was measured in water at 20.5 C.

(Sample number(s): 8663477, 8663481, 8668443: Analysis: 00425)
Reporting limits were raised due to interference from the sample matrix.

No other problems were encountered with the analysis of the samples.

Abbreviation Kev

Abbi eviation Key	
U = Unspiked (for MS/MSD)	LOQ = Limit of Quantitation
R = Matrix Spike (MS)	MDL = Method Detection Limit
M = Matrix Spike Duplicate (MSD)	ND = Not Detected
BKG = Background (for Duplicate)	J = Estimated Value
D = Duplicate (DUP)	NA = Not Applicable
HS = High Spike	ME = Method
LS = Low Spike	CO = Colorimetric
SS = Soluble Spike	G = Gravimetric
IS = Insoluble Spike	IR = Infrared Spectrophotometry
ISD = Insoluble Spike Duplicate	MTR = Meter
PDS = Post Digestion Spike	OD = Oven Dried
* = Out of Specification	TI = Titration
V = Visual	TOC = Total Organic Carbon
AK = Alpkem	IC = Ion Chromatography
TC = Total Carbon	RA = Rapid Analyzer

QC Summary

Wet Chemistry



Quality Control Reference List Water Quality

CLIENT: CH2M Hill, Inc. SDG: DWE02

Fraction: Wet Chemistry

Analysis Hexavalent Chromium	Batch Number 16300027601A	Sample Number P300027B P300027Q P300027Y 8663485 BKG,DUP	Analysis Date 10/26/2016 12:02:00 10/26/2016 12:02:00 10/26/2016 12:02:00 10/26/2016 12:02:00
Hexavalent Chromium (SOLIDS)	16313042501A	P313042B P313042Q 8663478 SS 8663480 PDS 8663477 UNSPK/BKG 8663479 IS 8663481 DUP 8668443	11/09/2016 04:10:00 11/09/2016 04:10:00 11/09/2016 04:10:00 11/09/2016 04:10:00 11/09/2016 04:10:00 11/09/2016 04:10:00 11/09/2016 04:10:00 11/09/2016 04:10:00
Oxidation Reduction Potential	16313182101A	P313182Q 8663477 BKG 8663481 DUP 8668443	11/08/2016 21:15:00 11/08/2016 21:15:00 11/08/2016 21:15:00 11/08/2016 21:15:00
pH	16313039402A	P313039Q 8663477 BKG 8663481 DUP 8668443	11/08/2016 21:35:00 11/08/2016 21:35:00 11/08/2016 21:35:00 11/08/2016 21:35:00



Quality Control Summary Method Blank

Water Quality SDG: DWE02 Matrix: LIQUID

Fraction: Wet Chemistry

16300027601A / P300027B Parameter	ME	Analysis Date	Blank Results	Units	MDL	LOQ
Hexavalent Chromium	CO	10/26/16	N.D.	mg/l	0.0070	0.020



Quality Control Summary Method Blank

Water Quality SDG: DWE02 Matrix: SOLID

Fraction: Wet Chemistry

16313042501A / P313042B						
Parameter	ME	Analysis Date	Blank Results	Units	MDL	LOQ
Hexavalent Chromium (SOLIDS)	CO	11/09/16	N.D.	mg/kg	0.50	1.5



Quality Control Summary Matrix Spike/Matrix Spike Duplicate

SDG: DWE02 Matrix: SOLID

Water Quality
Fraction: Wet Chemistry

	Batch:	1631304250	1A (Sample r	number(s): 86	663477-8663	481, 8668	443)			
Hexavalent Chromium (SOLIDS) Parameter	ME	Spike Added mg/kg	Unspiked Conc mg/kg	Spike Conc mg/kg	Spike Dup Conc mg/kg	Spike %Rec	Spike Dup %Rec	%Rec Limits	%RPD	%RPD
UNSPK: 8663477 SS: 8663478	СО	40.3	N.D.	26.06	NA	65 *	NA	75-125	NA	NA
IS: 8663479	СО	803.97	N.D.	213.85	NA	27 *	NA	75-125	NA	NA
PDS: 8663477	СО	100	N.D.	97.36	NA	97	NA	85-115	NA	NA

Comments:

(2) The unspiked sample result is greater than four times the spike added.

* = Out of Specification

Results are being reported on an as received basis.

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Quality Control Summary Duplicate

SDG: DWE02 Matrix: LIQUID

Water Quality

Fraction: Wet Chemistry

BKG: 8663485	Batch: 1	6300027601A (Sample n	umber(s): 8663485)		
DUP: 8663485					
		Unspiked Conc	DUP Conc		%RPD
Parameter	ME	mg/l	mg/l	%RPD	Limits
Hexavalent Chromium	CO	N.D.	N.D.	0(1)	5

Comments:

(1) The sample and/or duplicate result is less than five times the LOQ.

* = Out of Specification

Results are being reported on an as received basis.

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Quality Control Summary Duplicate

SDG: DWE02 Matrix: SOLID

Water Quality
Fraction: Wet Chemistry

BKG: 8663477	Batch: 16313039402A (Sample number(s): 8663477, 8663481, 8668443)						
DUP: 8663481							
		Unspiked Conc	DUP Conc		%RPD		
Parameter	ME	Std. Units	Std. Units	%RPD	Limits		
pН	MTR	4.62	4.7	2	3		

BKG: 8663477	Batch: 16313042501A (Sample number(s): 8663477-8663481, 8668443)						
DUP: 8663481		Unspiked Conc	DUP Conc		%RPD		
Parameter	ME	mg/kg	mg/kg	%RPD	Limits		
Hexavalent Chromium (SOLIDS)	СО	N.D.	N.D.	0 (1)	20		

BKG: 8663477	Batch: 16313182101A (Sample number(s): 8663477, 8663481, 8668443)						
DUP: 8663481							
		Unspiked Conc	DUP Conc		%RPD		
Parameter	ME	mV	mV	%RPD	Limits		
Oxidation Reduction Potential	TI	553.5	555.5	0	5		

Comments:

(1) The sample and/or duplicate result is less than five times the LOQ.

* = Out of Specification

Results are being reported on an as received basis.

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Quality Control Summary Laboratory Control Standard (LCS) Laboratory Control Standard Duplicate(LCSD)

SDG: DWE02 Matrix: LIQUID

Water Quality
Fraction: Wet Chemistry

LCS: P300027Q	Batch:	tch: 16300027601A (Sample number(s): 8663485)							
LCSD: P300027Y		Spike	LCS	LCSD					
		Added	Conc	Conc	LCS	LCSD	%Rec		%RPD
Parameter	ME	mg/l	mg/l	mg/l	%Rec	%Rec	Limits	%RPD	Limits
Hexavalent Chromium	CO	0.200	0.208	0.202	104	101	90-110	3	4



Quality Control Summary Laboratory Control Standard (LCS) Laboratory Control Standard Duplicate(LCSD)

SDG: DWE02 Matrix: SOLID

Water Quality Fraction: Wet Chemistry

LCS: P313039Q	Batch:	16313039402A	Sample number(s): 8663477, 8663481, 8668443)						
		Spike	LCS	LCSD					
		Added	Conc	Conc	LCS	LCSD	%Rec		%RPD
Parameter	ME	Std. Units	Std. Units	Std. Units	%Rec	%Rec	Limits	%RPD	Limits
pН	MTR	7.00	6.97	NA	100	NA	95-105	NA	NA

LCS: P313042Q	Batch:	Batch: 16313042501A (Sample number(s): 8663477-8663481, 8668443)							
		Spike Added	LCS Conc	LCSD Conc	LCS	LCSD	%Rec		%RPD
Parameter	ME	mg/kg	mg/kg	mg/kg	%Rec	%Rec	Limits	%RPD	Limits
Hexavalent Chromium (SOLIDS)	СО	5.00	4.59	NA	92	NA	80-120	NA	NA

LCS: P313182Q	Batch:	Batch: 16313182101A (Sample number(s): 8663477, 8663481, 8668443)							
		Spike	LCS	LCSD					
		Added	Conc	Conc	LCS	LCSD	%Rec		%RPD
Parameter	ME	mV	mV	mV	%Rec	%Rec	Limits	%RPD	Limits
Oxidation Reduction	TI	427	431	NA	101	NA	98-102	NA	NA
Potential									

12/8/2016 6:03:46 PM Page 1 of 1

Moisture Data



MOISTURE

CLIENT: CH2M Hill, Inc.

SDG: DWE02

SAMPLE NUMBERS:

Sample #	Sample Code
8663469	02DW1
8663470	02DW2
8663471	02DW3
8663472	02DW4
8663473	02DW5
8663474	02DW6
8663475	02DW7
8663476	02DW8
8663477	02DW9BKG
8663478	02DW9SS
8663479	02DW9IS
8663480	02DW9PDS
8663481	02DW9DUP
8663482	02D10BKG
8663483	02D10MS
8663484	02D10MSD
8665491	03D01
8665492	03D02
8665493	03D03
8665494	03D04
8665495	03D05
8665496	03D06
8665497	03D07BKG
8665498	03D07MS
8665499	03D07MSD
8668437	02D21
8668438	02D22
8668439	02D23
8668440	02D24BKG
8668441	02D24MS
8668442	02D24MSD
8668443	02D25
8668444	02D26FD

COMMENTS:

Method defined actions are taken for any failed matrix QC.



CLIENT: CH2M Hill, Inc. SDG: DWE02

MOISTURE

Laboratory Compliance Quality Control

	_	abolutoi	y compi	arioc Quari	ty Com	
		LCS	LCSD	LCS/LCSD		
Analysis Name		%REC	%REC	<u>Limits</u>	RPD	RPD Max
Batch number:	16322820017A	Sample	number(s):	8663469-	8663481,	8663469-8663481, 8663469-8663481,
						8663469-8663481, 8663469-8663481,
					8663481,	8663469-8663481
Moisture		100		99-101		
Moisture Dunling	t o	100 100		99-101 99-101		
Moisture Duplica	ie	100		99-101		
Batch number:	16322820017B	Sample	number(s):	8663482-	8663484	8663482-8663484, 8663482-8663484,
			()		,	8663482-8663484, 8663482-8663484,
						8663482-8663484
Moisture		100		99-101		
Moisture		100		99-101		
Moisture Duplica	te	100		99-101		
Batch number:	16326820001B	Sample	number(s):	0000440		
	10320020001D	•	number(s).	8668443		
Moisture		100		99-101		
Batch number:	16326820004A	Sample	number(s):	8665491-	8665492.	8665491-8665492, 8668440-8668442
Moisture		100		99-101		
Moisture		100		99-101		
Moisture Duplica	te	100		99-101		
Batch number:	16334820002A	Sample	number(s):	0665402	0665406	0665402 0665406 0660427 0660420 0660444
Moisture	10004020002A	100	number(s).	99-101	0000490,	8665493-8665496, 8668437-8668439, 8668444
Moisture		100		99-101		
Batch number:	16336820006A	Sample	number(s):	8665497-	8665499,	8665497-8665499
Moisture		100		99-101	•	
Moisture		100		99-101		
Moisture Duplica	te	100		99-101		



CLIENT: CH2M Hill, Inc.

SDG: DWE02

MOISTURE

Sample Matrix Quality Control

Analysis Name		BKG Conc	DUP Conc	<u>RPD</u>	RPD Max	
Batch number:	16322820017A	Sample r	number(s):	866346	9-8663481,	8663469-8663481, 8663469-8663481, 8663469-8663481, 8663469-8663481, 8663469-8663481
Moisture		3.3	3.0	7*	5	
Moisture		3.3	3.0	7*	5	
Moisture Duplica	ate	3.3	3.0	7*	5	
Batch number:	16322820017B	Sample r	number(s):	866348	2-8663484,	8663482-8663484, 8663482-8663484, 8663482-8663484, 8663482-8663484, 8663482-8663484
Moisture		4.3	3.1	30*	5	
Moisture		4.3	3.1	30*	5	
Moisture Duplica	ate	4.3	3.1	30*	5	
Batch number:	16326820001B	Sample r	number(s):	866844	3	
Moisture		95.3	95.9	1	5	
Batch number:	16326820004A	Sample r	number(s):	866549	1-8665492.	8665491-8665492, 8668440-8668442
Moisture		3.0	2.6	12*	5	, , , , , , , , , , , , , , , , , , , ,
Moisture		3.0	2.6	12*	5	
Moisture Duplica	ate	3.0	2.6	12*	5	
Batch number:	16334820002A	Sample r	number(s):	866549	3-8665496.	8665493-8665496, 8668437-8668439, 8668444
Moisture		10.6	11.4	8*	5	
Batch number:	16336820006A	Sample r	number(s):	866549	7-8665499	8665497-8665499
Moisture		6.6	7.5	13*	5	222.2. 2200.00
Moisture		6.6	7.5	13*	5	
Moisture Duplica	ate	6.6	7.5	13*	5	

^{* -} Outside of specification

^{(1) -} The result for one or both determinations was less than five times the LOQ.



MOISTURE

CLIENT: CH2M Hill, Inc.

SDG: DWE02

Moisture Data Report

Batch #:	16322820017
Batch #:	16322820017

Batch #:	163228200)17						
				Sample			Analysis	Verified
Sample ID	Batch ID	Analysis#	Tare Wt	<u>Wt</u>	Dry Wt	%Moisture	Date (Emp#)	Date (Emp#)
8663469	Α	00111	1.1262	1.3080	2.4203	1.06	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663470	Α	00111	1.1600	1.0699	2.2095	1.91	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663471	Α	00111	1.1594	1.5026	2.6261	2.39	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663472	Α	00111	1.1493	1.1148	2.2330	2.79	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663473	Α	00111	1.1519	1.1413	2.2422	4.47	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663474	Α	00111	1.1576	1.3370	2.4478	3.50	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663475	Α	00111	1.1470	1.0914	2.1995	3.56	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663476	Α	00111	1.1502	1.2593	2.3669	3.38	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663477BKG	Α	00111	1.1712	5.2215	6.2229	3.25	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663478SS	Α	00118				3.25	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663479IS	Α	00118				3.25	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663480PDS	Α	00118				3.25	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663481DUP	Α	00118				3.25	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663481DUP	Α	00121	1.1590	5.2080	6.2097	3.02	11/18/16 (835/LEB)	11/21/16 (236/CW)
8663482BKG	В	00111	1.1667	5.4862	6.4194	4.26	11/18/16 (835/LEB)	11/22/16 (236/CW)
8663483MS	В	00118				4.26	11/18/16 (835/LEB)	11/22/16 (236/CW)
8663484MSD	В	00118				4.26	11/18/16 (835/LEB)	11/22/16 (236/CW)
8663484MSD	В	00121	1.1736	5.3461	6.3516	3.14	11/18/16 (835/LEB)	11/22/16 (236/CW)
LCS 89.5% Std.	_	00111	1.1440	5.0598	1.6782	89.44	11/18/16 (835/LEB)	11/21/16 (236/CW)
				0.000		••••		= (=====)
Batch #:	163268200	001						
				Sample			Analysis	Verified
Sample ID	Batch ID		Tare Wt	<u>Wt</u>	Dry Wt	<u>%Moisture</u>	Date (Emp#)	Date (Emp#)
8668443	В	00111	1.1109	5.5851	5.3982	23.24	11/21/16 (189/WCS)	11/21/16 (236/CW)
P705573BKG	В	00111	1.1509	6.2068	1.4398	95.35	11/21/16 (189/WCS)	11/21/16 (236/CW)
P705573DUP	В	00111	1.1229	6.0460	1.3680	95.95	11/21/16 (189/WCS)	11/21/16 (236/CW)
P705573DUP LCS 89.5% Std.	В	00111 00111	1.1229 1.1292	6.0460 5.0082	1.3680 1.6573	95.95 89.46	11/21/16 (189/WCS) 11/21/16 (189/WCS)	11/21/16 (236/CW) 11/21/16 (236/CW)
LCS 89.5% Std.		00111					•	, ,
	B 16326820 0	00111		5.0082			11/21/16 (189/WCS)	11/21/16 (236/CW)
LCS 89.5% Std. Batch #:	163268200	00111 0 04	1.1292	5.0082 Sample	1.6573	89.46	11/21/16 (189/WCS) Analysis	11/21/16 (236/CW) Verified
LCS 89.5% Std. Batch #: Sample ID	163268200 Batch ID	00111 004 <u>Analysis#</u>	1.1292 <u>Tare Wt</u>	5.0082 Sample <u>Wt</u>	1.6573	89.46 <u>%Moisture</u>	11/21/16 (189/WCS) Analysis Date (Emp#)	11/21/16 (236/CW) Verified Date (Emp#)
LCS 89.5% Std. Batch #: Sample ID 8665491	163268200 <u>Batch ID</u> A	00111 004 <u>Analysis#</u> 00111	1.1292 <u>Tare Wt</u> 1.1319	5.0082 Sample <u>Wt</u> 5.6088	1.6573 Dry Wt 6.6138	89.46 %Moisture 2.26	11/21/16 (189/WCS) Analysis Date (Emp#) 11/21/16 (835/LEB)	11/21/16 (236/CW) Verified Date (Emp#) 11/22/16 (236/CW)
LCS 89.5% Std. Batch #: Sample ID 8665491 8665492	163268200 <u>Batch ID</u> A A	00111 004 <u>Analysis#</u> 00111 00111	1.1292 <u>Tare Wt</u> 1.1319 1.1165	5.0082 Sample <u>Wt</u> 5.6088 5.4139	1.6573 <u>Dry Wt</u> 6.6138 6.3589	89.46 %Moisture 2.26 3.17	11/21/16 (189/WCS) Analysis <u>Date (Emp#)</u> 11/21/16 (835/LEB) 11/21/16 (835/LEB)	11/21/16 (236/CW) Verified Date (Emp#) 11/22/16 (236/CW) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG	163268200 <u>Batch ID</u> A A A	00111 004 <u>Analysis#</u> 00111 00111	1.1292 <u>Tare Wt</u> 1.1319	5.0082 Sample <u>Wt</u> 5.6088	1.6573 Dry Wt 6.6138	89.46 **Moisture 2.26 3.17 2.97	11/21/16 (189/WCS) Analysis Date (Emp#) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB)	11/21/16 (236/CW) Verified Date (Emp#) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS	163268200 <u>Batch ID</u> A A A A	00111 004 Analysis# 00111 00111 00111 00118	1.1292 <u>Tare Wt</u> 1.1319 1.1165	5.0082 Sample <u>Wt</u> 5.6088 5.4139	1.6573 <u>Dry Wt</u> 6.6138 6.3589	89.46 **Moisture 2.26 3.17 2.97 2.97	11/21/16 (189/WCS) Analysis Date (Emp#) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD	163268200 <u>Batch ID</u> A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00118	1.1292 Tare Wt 1.1319 1.1165 1.1330	5.0082 Sample Wt 5.6088 5.4139 5.4309	1.6573 Dry Wt 6.6138 6.3589 6.4025	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97	11/21/16 (189/WCS) Analysis Date (Emp#) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD	163268200 <u>Batch ID</u> A A A A	00111 004 Analysis# 00111 00111 00111 00118 00118 00121	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088	5.0082 Sample <u>Wt</u> 5.6088 5.4139 5.4309	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62	Analysis Date (Emp#) 11/21/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD	163268200 <u>Batch ID</u> A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00118	1.1292 Tare Wt 1.1319 1.1165 1.1330	5.0082 Sample Wt 5.6088 5.4139 5.4309	1.6573 Dry Wt 6.6138 6.3589 6.4025	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97	11/21/16 (189/WCS) Analysis Date (Emp#) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB) 11/21/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD	163268200 <u>Batch ID</u> A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00118 00121 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088	5.0082 Sample <u>Wt</u> 5.6088 5.4139 5.4309	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62	Analysis Date (Emp#) 11/21/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std.	163268200 <u>Batch ID</u> A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00118 00121 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088	5.0082 Sample <u>Wt</u> 5.6088 5.4139 5.4309	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62	Analysis Date (Emp#) 11/21/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std. Batch #:	163268200 <u>Batch ID</u> A A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00118 00121 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62	Analysis Date (Emp#) 11/21/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW)
ECS 89.5% Std. Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std.	163268200 <u>Batch ID</u> A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00118 00121 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34	Analysis Date (Emp#) 11/21/16 (835/LEB) Analysis	Verified Date (Emp#) 11/22/16 (236/CW) Verified
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID	163268200 <u>Batch ID</u> A A A A A A 163348200 <u>Batch ID</u>	00111 004 Analysis# 00111 00111 00111 00118 00118 00121 00111 002 Analysis#	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34 **Moisture*	Analysis Date (Emp#) 11/21/16 (835/LEB) Analysis Date (Emp#)	Verified Date (Emp#) 11/22/16 (236/CW) Verified Date (Emp#)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493	163268200 <u>Batch ID</u> A A A A A A 163348200 <u>Batch ID</u> A	00111 004 Analysis# 00111 00111 00118 00118 00121 00111 002 Analysis# 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342	5.0082 Sample <u>Wt</u> 5.6088 5.4139 5.4309 5.5424 5.0578 Sample <u>Wt</u> 5.2967	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34 **Moisture* 1.19	Analysis Date (Emp#) 11/21/16 (835/LEB) Analysis Date (Emp#) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) Verified Date (Emp#) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494	163268200 <u>Batch ID</u> A A A A A 163348200 <u>Batch ID</u> A A	00111 004 Analysis# 00111 00111 00118 00118 00121 00111 002 Analysis# 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293	5.0082 Sample <u>Wt</u> 5.6088 5.4139 5.4309 5.5424 5.0578 Sample <u>Wt</u> 5.2967 5.7689	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34 **Moisture* 1.19 1.64	Analysis Date (Emp#) 11/21/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) Verified Date (Emp#) 11/30/16 (236/CW) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494 8665495	163268200 <u>Batch ID</u> A A A A A 163348200 <u>Batch ID</u> A A	00111 004 Analysis# 00111 00111 00118 00121 00111 002 Analysis# 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293 1.1366	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt 5.2967 5.7689 5.5553	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038 6.5960	89.46 %Moisture 2.26 3.17 2.97 2.97 2.97 2.62 89.34 %Moisture 1.19 1.64 1.73	Analysis Date (Emp#) 11/21/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/32/16 (236/CW) Verified Date (Emp#) 11/30/16 (236/CW) 11/30/16 (236/CW) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494 8665495 8665496	163268200 <u>Batch ID</u> A A A A A 163348200 <u>Batch ID</u> A A A	00111 004 Analysis# 00111 00111 00118 00121 00111 002 Analysis# 00111 00111 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293 1.1366 1.1568	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt 5.2967 5.7689 5.5553 5.5071	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038 6.5960 6.5667	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34 **Moisture* 1.19 1.64 1.73 1.76	Analysis Date (Emp#) 11/21/16 (835/LEB) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/30/16 (236/CW) 11/30/16 (236/CW) 11/30/16 (236/CW) 11/30/16 (236/CW) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494 8665495 8665496 8668437	163268200 Batch ID A A A A A 163348200 Batch ID A A A A	00111 004 Analysis# 00111 00111 00118 00118 00121 00111 002 Analysis# 00111 00111 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293 1.1366 1.1568 1.1650	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt 5.2967 5.7689 5.5553 5.5071 5.2663	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038 6.5960 6.5667 6.3108	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.62 89.34 **Moisture* 1.19 1.64 1.73 1.76 2.29	Analysis Date (Emp#) 11/21/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494 8665495 8665496 8668437 8668438	163268200 Batch ID A A A A A 163348200 Batch ID A A A A	00111 004 Analysis# 00111 00111 00111 00118 00121 00111 002 Analysis# 00111 00111 00111 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293 1.1366 1.1568 1.1650 1.1395	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt 5.2967 5.7689 5.5553 5.5071 5.2663 5.1105	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038 6.5960 6.5667 6.3108 6.0231	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.62 89.34 **Moisture* 1.19 1.64 1.73 1.76 2.29 4.44	Analysis Date (Emp#) 11/21/16 (835/LEB) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494 8665495 8665496 8668437 8668438 8668439	163268200 Batch ID A A A A A 163348200 Batch ID A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00121 00111 002 Analysis# 00111 00111 00111 00111 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293 1.1366 1.1568 1.1650 1.1395 1.1560	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt 5.2967 5.7689 5.5553 5.5071 5.2663 5.1105 5.4081	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038 6.5960 6.5667 6.3108 6.0231 6.4254	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34 **Moisture* 1.19 1.64 1.73 1.76 2.29 4.44 2.56	Analysis Date (Emp#) 11/21/16 (835/LEB) Analysis Date (Emp#) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494 8665495 8665496 8668437 8668438 8668439 8668444FD	163268200 Batch ID A A A A A A 163348200 Batch ID A A A A A A A A A A A A A	00111 004 Analysis# 00111 00111 00111 00118 00121 00111 002 Analysis# 00111 00111 00111 00111 00111 00111 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293 1.1366 1.1568 1.1650 1.1395 1.1560 1.1731	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt 5.2967 5.7689 5.5553 5.5071 5.2663 5.1105 5.4081 5.1539	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038 6.5960 6.5667 6.3108 6.0231 6.4254 6.1893	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34 **Moisture* 1.19 1.64 1.73 1.76 2.29 4.44 2.56 2.67	Analysis Date (Emp#) 11/21/16 (835/LEB) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/32/16 (236/CW) 11/30/16 (236/CW)
Batch #: Sample ID 8665491 8665492 8668440BKG 8668441MS 8668442MSD LCS 89.5% Std. Batch #: Sample ID 8665493 8665494 8665495 8665496 8668437 8668438 8668439 8668444FD P712899BKG	163268200 Batch ID A A A A A A 163348200 Batch ID A A A A A A A A A A A A A	00111 004 Analysis# 00111 00111 00118 00118 00121 00111 002 Analysis# 00111 00111 00111 00111 00111 00111 00111 00111 00111 00111 00111	1.1292 Tare Wt 1.1319 1.1165 1.1330 1.1088 1.1184 Tare Wt 1.1342 1.1293 1.1366 1.1568 1.1650 1.1395 1.1560 1.1731 1.1669	5.0082 Sample Wt 5.6088 5.4139 5.4309 5.5424 5.0578 Sample Wt 5.2967 5.7689 5.5553 5.5071 5.2663 5.1105 5.4081 5.1539 5.7592	1.6573 Dry Wt 6.6138 6.3589 6.4025 6.5058 1.6577 Dry Wt 6.3681 6.8038 6.5960 6.5667 6.3108 6.0231 6.4254 6.1893 6.3165	89.46 **Moisture* 2.26 3.17 2.97 2.97 2.97 2.62 89.34 **Moisture* 1.19 1.64 1.73 1.76 2.29 4.44 2.56 2.67 10.58	Analysis Date (Emp#) 11/21/16 (835/LEB) 11/29/16 (835/LEB)	Verified Date (Emp#) 11/22/16 (236/CW) 11/32/16 (236/CW) 11/30/16 (236/CW)

Batch #: 16336820006



Lancaster Laboratories Environmental

CLIENT: CH2M Hill, Inc. SDG: DWE02

MOISTURE

				Sample			Analysis	Verified
Sample ID	Batch ID	Analysis#	Tare Wt	<u>Wt</u>	Dry Wt	%Moisture	Date (Emp#)	Date (Emp#)
8665497BKG	Α	00111	1.1170	5.2939	6.0619	6.59	12/ 1/16 (835/LEB)	12/ 2/16 (236/CW)
8665498MS	Α	00118				6.59	12/ 1/16 (835/LEB)	12/ 2/16 (236/CW)
8665499MSD	Α	00118				6.59	12/ 1/16 (835/LEB)	12/ 2/16 (236/CW)
8665499MSD	Α	00121	1.1082	5.4025	6.1066	7.48	12/ 1/16 (835/LEB)	12/ 2/16 (236/CW)
LCS 89.5% Std.		00111	1.1589	5.0404	1.6914	89.44	12/ 1/16 (835/LEB)	12/ 2/16 (236/CW)



July 18, 2016

Vista Work Order No. 1600835

Mr. Mark Sherrill CH2M Hill 400 Embassy Row NE, Suite 600 Atlanta, GA 30328

Dear Mr. Sherrill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on June 28, 2016. This sample set was analyzed on a standard turn-around time, under your Project Name 'Woodbine Special Event'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Analytical Laboratory 1104 Windfeld Way El Dorado Hills , CA 95762 ph: 916-673-1520 fx: 916-673-0106 www.vista-analytical.com

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Vista Work Order No. 1600835 Case Narrative

Sample Condition on Receipt:

Nine soil samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613

These samples were extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613 using a ZB-5MS GC column.

Holding Times

These samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

As requested, MS/MSDs were performed on samples "DU-1-12-A" and "DU-3-1-B". The recoveries of 1,2,3,4,6,7,8-HpCDD were outside of the acceptance criteria in the MS/MSD associated with sample "DU-1-12-A", as well as OCDD in the MSD. The acceptance criteria were met for all other analytes.

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1600835-01	DU-1-15-A		21-Jun-16 10:15	28-Jun-16 09:00	Clear Glass Jar, 120mL
1600835-02	DU-1-15-B		21-Jun-16 10:40	28-Jun-16 09:00	Clear Glass Jar, 120mL
1600835-03	DU-1-15-C		21-Jun-16 11:35	28-Jun-16 09:00	Clear Glass Jar, 120mL
1600835-04	DU-1-12-A	MS/MSD	21-Jun-16 15:45	28-Jun-16 09:00	Clear Glass Jar, 120mL
		MS/MSD			Clear Glass Jar, 120mL
		MS/MSD			Clear Glass Jar, 120mL
1600835-05	DU-1-12-B		21-Jun-16 16:30	28-Jun-16 09:00	Clear Glass Jar, 120mL
1600835-06	DU-1-12-C		21-Jun-16 17:10	28-Jun-16 09:00	Clear Glass Jar, 120mL
1600835-07	DU-3-1-A		21-Jun-16 13:00	02-Jun-16 09:30	Amber Glass, 60 mL
1600835-08	DU-3-1-B	MS/MSD	21-Jun-16 14:15	02-Jun-16 09:30	Amber Glass, 60 mL
		MS/MSD			Amber Glass, 60 mL
		MS/MSD			Amber Glass, 60 mL
1600835-09	DU-3-1-C		21-Jun-16 14:50	02-Jun-16 09:30	Amber Glass, 60 mL

Vista Project: 1600835 Client Project: Woodbine Special Event

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ANALYTICAL RESULTS

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Sample ID: Method	, Dillin	I						
Matrix: Solid	I	QC Batch: B6G0039		La	ab Sample: B6G0039-BLK1			
Sample Size: 10.0	g	Date Extracted: 07-Jul-2016 1	5:12	D	ate Analyzed: 12-Jul-16 18:46	Column: ZB-5N	MS Analyst: DB	
Analyte Conc.	(na/a)	DL EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	(pg/g) ND	0.0722	Quanners	IS		80.9	25 - 164	Quanners
	ND ND	0.0722		15	13C-2,3,7,8-TCDD	67.4	25 - 164 25 - 181	
1,2,3,7,8-PeCDD	ND ND	0.126			13C-1,2,3,7,8-PeCDD	84.7	25 - 181 32 - 141	
1,2,3,4,7,8-HxCDD	ND ND	0.103			13C-1,2,3,4,7,8-HxCDD			
1,2,3,6,7,8-HxCDD	ND ND				13C-1,2,3,6,7,8-HxCDD	80.5	28 - 130	
1,2,3,7,8,9-HxCDD		0.107			13C-1,2,3,7,8,9-HxCDD	84.7	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.0793			13C-1,2,3,4,6,7,8-HpCDD	69.8	23 - 140	
OCDD	ND	0.126			13C-OCDD	50.2	17 - 157	
2,3,7,8-TCDF	ND	0.0952			13C-2,3,7,8-TCDF	82.4	24 - 169	
1,2,3,7,8-PeCDF	ND	0.115			13C-1,2,3,7,8-PeCDF	67.6	24 - 185	
2,3,4,7,8-PeCDF	ND	0.113			13C-2,3,4,7,8-PeCDF	64.6	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0368			13C-1,2,3,4,7,8-HxCDF	82.9	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0387			13C-1,2,3,6,7,8-HxCDF	78.7	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0397			13C-2,3,4,6,7,8-HxCDF	84.0	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0602			13C-1,2,3,7,8,9-HxCDF	86.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.0503			13C-1,2,3,4,6,7,8-HpCDF	70.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0484			13C-1,2,3,4,7,8,9-HpCDF	66.0	26 - 138	
OCDF	ND	0.184			13C-OCDF	50.2	17 - 157	
				CRS	37Cl-2,3,7,8-TCDD	80.7	35 - 197	
					Toxic Equivalent Quotient (T	EQ) Data		
					TEQMinWHO2005Dioxin	0.00		
TOTALS								
Total TCDD	ND	0.0722						
Total PeCDD	ND	0.126						
Total HxCDD	ND	0.103						
Total HpCDD	ND	0.0793						
Total TCDF	ND	0.0952						
Total PeCDF	ND	0.114						
Total HxCDF	ND	0.0431						
Total HpCDF	ND	0.0495						

Total HpCDF ND

DL - Sample specific estimated detection limit EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

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Matrix: Solid Sample Size: 10.0 g	`		B6G0039 07-Jul-2016	15:12		Lab Sample: B6G0039-BS1 Date Analyzed: 12-Jul-16 17:09 (Column: ZB-5MS Ana	ılyst: DB
Analyte	Amt Found (pg/g)	Spike Amt	%R	Limits		Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	19.1	20.0	95.6	67 - 158	IS	13C-2,3,7,8-TCDD	89.5	20 - 175
1,2,3,7,8-PeCDD	97.1	100	97.1	70 - 142		13C-1,2,3,7,8-PeCDD	71.2	21 - 227
1,2,3,4,7,8-HxCDD	98.1	100	98.1	70 - 164		13C-1,2,3,4,7,8-HxCDD	88.0	21 - 193
1,2,3,6,7,8-HxCDD	94.4	100	94.4	76 - 134		13C-1,2,3,6,7,8-HxCDD	86.9	25 - 163
1,2,3,7,8,9-HxCDD	96.3	100	96.3	64 - 162		13C-1,2,3,7,8,9-HxCDD	89.3	21 - 193
1,2,3,4,6,7,8-HpCDD	101	100	101	70 - 140		13C-1,2,3,4,6,7,8-HpCDD	70.4	26 - 166
OCDD	201	200	101	78 - 144		13C-OCDD	52.6	13 - 199
2,3,7,8-TCDF	20.0	20.0	99.8	75 - 158		13C-2,3,7,8-TCDF	89.7	22 - 152
1,2,3,7,8-PeCDF	98.3	100	98.3	80 - 134		13C-1,2,3,7,8-PeCDF	71.5	21 - 192
2,3,4,7,8-PeCDF	98.7	100	98.7	68 - 160		13C-2,3,4,7,8-PeCDF	70.1	13 - 328
1,2,3,4,7,8-HxCDF	101	100	101	72 - 134		13C-1,2,3,4,7,8-HxCDF	86.5	19 - 202
1,2,3,6,7,8-HxCDF	96.6	100	96.6	84 - 130		13C-1,2,3,6,7,8-HxCDF	86.8	21 - 159
2,3,4,6,7,8-HxCDF	98.2	100	98.2	70 - 156		13C-2,3,4,6,7,8-HxCDF	86.7	22 - 176
1,2,3,7,8,9-HxCDF	97.8	100	97.8	78 - 130		13C-1,2,3,7,8,9-HxCDF	91.9	17 - 205
1,2,3,4,6,7,8-HpCDF	94.0	100	94.0	82 - 122		13C-1,2,3,4,6,7,8-HpCDF	74.6	21 - 158
1,2,3,4,7,8,9-HpCDF	95.5	100	95.5	78 - 138		13C-1,2,3,4,7,8,9-HpCDF	68.3	20 - 186
OCDF	192	200	95.9	63 - 170		13C-OCDF	55.3	13 - 199
					CRS	37Cl-2,3,7,8-TCDD	85.2	31 - 191

LCL-UCL - Lower control limit - upper control limit

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Sample ID: DU-1-1	5-A							EPA Me	thod 1613B
Client Data Name: CH2M Project: Wood Date Collected: 21-Ju:	Ibine Special Event	Sample Da Matrix: Sample S % Solids	Soil ize: 11.2 g		Lab QC	Doratory Data Sample: 1600835-01 Batch: B6G0039 e Analyzed: 12-Jul-16 19:3	Date Received: Date Extracted: 5 Column: ZB-5MS	30-Jun-2016	
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND		0.0954		IS	13C-2,3,7,8-TCDD	97.0	25 - 164	
1,2,3,7,8-PeCDD	0.453			J		13C-1,2,3,7,8-PeCDD	73.1	25 - 181	
1,2,3,4,7,8-HxCDD	0.660			J		13C-1,2,3,4,7,8-HxCDD	100	32 - 141	
1,2,3,6,7,8-HxCDD	1.56			J		13C-1,2,3,6,7,8-HxCDD	93.2	28 - 130	
1,2,3,7,8,9-HxCDD	1.35			J		13C-1,2,3,7,8,9-HxCDD	98.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	29.9					13C-1,2,3,4,6,7,8-HpCDD	83.5	23 - 140	
OCDD	234					13C-OCDD	63.7	17 - 157	
2,3,7,8-TCDF	0.449			J		13C-2,3,7,8-TCDF	99.2	24 - 169	
1,2,3,7,8-PeCDF	ND	0.136				13C-1,2,3,7,8-PeCDF	74.5	24 - 185	
2,3,4,7,8-PeCDF	0.367			J		13C-2,3,4,7,8-PeCDF	71.7	21 - 178	
1,2,3,4,7,8-HxCDF	0.405			J		13C-1,2,3,4,7,8-HxCDF	97.6	26 - 152	
1,2,3,6,7,8-HxCDF	0.386			J		13C-1,2,3,6,7,8-HxCDF	91.8	26 - 123	
2,3,4,6,7,8-HxCDF	0.449			J		13C-2,3,4,6,7,8-HxCDF	94.0	28 - 136	
1,2,3,7,8,9-HxCDF	0.249			J		13C-1,2,3,7,8,9-HxCDF	104	29 - 147	
1,2,3,4,6,7,8-HpCDF	3.90					13C-1,2,3,4,6,7,8-HpCDF	86.6	28 - 143	
1,2,3,4,7,8,9-HpCDF	0.279			J		13C-1,2,3,4,7,8,9-HpCDF	85.5	26 - 138	
OCDF	8.24					13C-OCDF	63.8	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	87.5	35 - 197	
						Toxic Equivalent Quotient (TI	EQ) Data		
						TEQMinWHO2005Dioxin	1.53		
TOTALS									
Total TCDD	ND		0.903						
Total PeCDD	5.02		5.20						
Total HxCDD	19.3								
Total HpCDD	93.4								
Total TCDF	1.69		1.94						
Total PeCDF	3.55		3.77						
Total HxCDF	5.73		6.37						
Total HpCDF	9.38								

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

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Sample ID: DU-1-1	5-E						PMA h e	t6od 131BE
Client Data Name: CH25 Project: Wood Date Collected: 21-Ju:	lbine Special Event	Sample Data 5 atriM Soil Sample Sixe: 11.R, % Solids: 86.g		z ab LC	Doratory Data 160083R-02 BatcQ B6G0039 e h nalAxed : 12-Jul-16 20:2	Date EMra	ived: 28-Jun-2016 cted: 30-Jun-2016 R5 S h nal Ast: DB	
Analyte Conc.	(pg/g)	DL Ph MC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2737g78-TCDD	0.184		J	IS	13C-2737g78-TCDD	91.R	2R-164	
172737g78-PeCDD	0.g04		J		13C-172737g78-PeCDD	gl.g	2R - 181	
17273747g78-HMCDD	0.8RR		J		13C-17273747g78-HMCDD	90.0	32 - 141	
17273767g78-HMCDD	1.61		J		13C-17273767g78-HMCDD	8R2	28 - 130	
172737g7879-HMCDD	1.46		J		13C-172737g7879-HMCDD	8g.2	32 - 141	
1727374767g78-HpCDD	44.3				13C-1727374767g78-HpCDD	g4.3	23 - 140	
OCDD	3R8				13C-OCDD	Rg.0	1g - 1Rg	
2737g78-TCDF	0.2g8		J		13C-2737g78-TCDF	9R3	24 - 169	
172737g78-PeCDF	ND	0.121			13C-172737g78-PeCDF	69.2	24 - 18R	
273747g78-PeCDF	ND	0.268			13C-273747g78-PeCDF	68.2	21 - 1g8	
17273747g78-HMCDF	0.38g		J		13C-17273747g78-HMCDF	8g.3	26 - 1R2	
17273767g78-HMCDF	0.386		J		13C-17273767g78-HMCDF	82.R	26 - 123	
27374767g78-HMCDF	0.442		J		13C-27374767g78-HMCDF	83.0	28 - 136	
172737g7879-HMCDF	0.222		J		13C-172737g7879-HMCDF	9R2	29 - 14g	
1727374767g78-HpCDF	4.80				13C-1727374767g78-HpCDF	g9.9	28 - 143	
17273747g7879-HpCDF	0.360		J		13C-17273747g7879-HpCDF	g3.6	26 - 138	
OCDF	13.g				13C-OCDF	R6.8	1g - 1Rg	
				Cy S	3gCl-2737g78-TCDD	86.4	3R-19g	
					Toxic Pquivalent Quotient (TI	PQ) Data		
					TEL5 inWHO200RDioMn	2.06		
TOTALS								
Total TCDD	1.64	1.99						
Total PeCDD	6.R3	6.g4						
Total HMCDD	31.9							
Total HpCDD	2RR							
Total TCDF	1.6g	1.80						
Total PeCDF	3.20	3.4g						
Total HMCDF	g.28	g.39						
Total HpCDF	13.6							

Dz - Sample specife estimated detection limit
E5 PC - Estimated maMmum possible concentration

ZCZ-UCZ- zower control limit - upper control limit

TO results are reported in dr A wei. O. TO seemple

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CCz-UCz-z ower control limit - upper control limit
TQ: results are reported in drAwei, Q. TQ: sample sixe is reported in wet wei, Q.
5 in-TQ: TEL is calculated usin, xero for tQ: concentration of con, eners tQat are not detected.

Sample ID: DU-1-1	5-C							EPA Me	thod 1613B
Client Data Name: CH2M Project: Wood Date Collected: 21-Jun	lbine Special Event	Sample Matrix Sampl % Soli	: Soil e Size: 11.0 g		Lab QC	Doratory Data Sample: 1600835-03 Batch: B6G0039 e Analyzed: 12-Jul-16 21:1	Date Received Date Extracted 2 Column: ZB-5MS	l: 30-Jun-2016	
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0728			IS	13C-2,3,7,8-TCDD	81.8	25 - 164	
1,2,3,7,8-PeCDD	0.754			J		13C-1,2,3,7,8-PeCDD	61.5	25 - 181	
1,2,3,4,7,8-HxCDD	0.912			J		13C-1,2,3,4,7,8-HxCDD	79.2	32 - 141	
1,2,3,6,7,8-HxCDD	2.06			J		13C-1,2,3,6,7,8-HxCDD	77.4	28 - 130	
1,2,3,7,8,9-HxCDD	2.38			J		13C-1,2,3,7,8,9-HxCDD	80.1	32 - 141	
1,2,3,4,6,7,8-HpCDD	45.8					13C-1,2,3,4,6,7,8-HpCDD	70.0	23 - 140	
OCDD	382					13C-OCDD	55.7	17 - 157	
2,3,7,8-TCDF	ND		0.274			13C-2,3,7,8-TCDF	85.7	24 - 169	
1,2,3,7,8-PeCDF	0.196			J		13C-1,2,3,7,8-PeCDF	61.8	24 - 185	
2,3,4,7,8-PeCDF	0.390			J		13C-2,3,4,7,8-PeCDF	58.0	21 - 178	
1,2,3,4,7,8-HxCDF	0.414			J		13C-1,2,3,4,7,8-HxCDF	80.4	26 - 152	
1,2,3,6,7,8-HxCDF	0.377			J		13C-1,2,3,6,7,8-HxCDF	76.9	26 - 123	
2,3,4,6,7,8-HxCDF	0.563			J		13C-2,3,4,6,7,8-HxCDF	75.9	28 - 136	
1,2,3,7,8,9-HxCDF	0.202			J		13C-1,2,3,7,8,9-HxCDF	87.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	5.93					13C-1,2,3,4,6,7,8-HpCDF	74.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	0.375			J		13C-1,2,3,4,7,8,9-HpCDF	70.5	26 - 138	
OCDF	13.5					13C-OCDF	55.5	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	78.2	35 - 197	
						Toxic Equivalent Quotient (T	EQ) Data		
						TEQMinWHO2005Dioxin	2.21		
TOTALS									
Total TCDD	0.351								
Total PeCDD	4.40								
Total HxCDD	22.4								
Total HpCDD	101								
Total TCDF	1.41		1.69						
Total PeCDF	4.47		4.70						
Total HxCDF	8.57								
Total HpCDF	14.7								

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

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Sample ID: DU-1-1	2-A							EPA Me	thod 1613B
	M Hill Ibine Special Event In-2016 15:45	Sample Data Matrix: Sample Size: % Solids:	Soil 10.4 g 96.6	Lab QC	boratory Data o Sample: Batch: te Analyzed :		Date Received: Date Extracted: 00 Column: ZB-5MS 23 Column: DB-225	30-Jun-2016 Analyst: DB	
Analyte Conc.	. (pg/g)	DL EMP	C Qualifiers		Labeled Stand		%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.092	0	IS	13C-2,3,7,8-TC	CDD	92.1	25 - 164	
1,2,3,7,8-PeCDD	1.07		J		13C-1,2,3,7,8-F	PeCDD	71.8	25 - 181	
1,2,3,4,7,8-HxCDD	1.55		J		13C-1,2,3,4,7,8	-HxCDD	95.1	32 - 141	
1,2,3,6,7,8-HxCDD	5.31				13C-1,2,3,6,7,8	-HxCDD	88.0	28 - 130	
1,2,3,7,8,9-HxCDD	3.18				13C-1,2,3,7,8,9	-HxCDD	93.7	32 - 141	
1,2,3,4,6,7,8-HpCDD	270				13C-1,2,3,4,6,7	,8-HpCDD	78.1	23 - 140	
OCDD	3680				13C-OCDD		67.4	17 - 157	
2,3,7,8-TCDF	2.89				13C-2,3,7,8-TC	CDF	99.2	24 - 169	
1,2,3,7,8-PeCDF	0.569		J		13C-1,2,3,7,8-I	PeCDF	73.0	24 - 185	
2,3,4,7,8-PeCDF	2.73				13C-2,3,4,7,8-I	PeCDF	71.5	21 - 178	
1,2,3,4,7,8-HxCDF	1.21		J		13C-1,2,3,4,7,8	-HxCDF	96.2	26 - 152	
1,2,3,6,7,8-HxCDF	1.11		J		13C-1,2,3,6,7,8	-HxCDF	88.1	26 - 123	
2,3,4,6,7,8-HxCDF	1.71		J		13C-2,3,4,6,7,8	-HxCDF	90.9	28 - 136	
1,2,3,7,8,9-HxCDF	0.327		J		13C-1,2,3,7,8,9	-HxCDF	104	29 - 147	
1,2,3,4,6,7,8-HpCDF	13.4				13C-1,2,3,4,6,7	,8-HpCDF	79.1	28 - 143	
1,2,3,4,7,8,9-HpCDF	1.20		J		13C-1,2,3,4,7,8	,9-HpCDF	78.2	26 - 138	
OCDF	38.7				13C-OCDF		62.4	17 - 157	
				CRS	37Cl-2,3,7,8-T0	CDD	86.5	35 - 197	
					Toxic Equivale	nt Quotient (T	EQ) Data		
					TEQMinWHO2	2005Dioxin	7.60		
TOTALS									
Total TCDD	3.69	4.51							
Total PeCDD	11.7	13.3							
Total HxCDD	53.6								
Total HpCDD	551								
Total TCDF	15.6	16.0							
Total PeCDF	25.6	25.8							
Total HxCDF	30.6								
Total HpCDF	41.9								

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

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Sample ID: Mat	trix Spike											EPA	Method 1613
Source Client ID: Source LabNumber: Matrix: Sample Size:	DU-1-12-A 1600835-04 Solid 10.4/10.3 g				Date Extracted: 07-Jul-2016 15:12				Lab Sample: B6G0039-MS1/B6C Date Analyzed: 13-Jul-16 13:09 Co 13-Jul-16 13:58 Co	lumn: ZB-5M	2		
Analyte		Spike-MS (pg/g)	MS %R	MS Qualifiers	Spike-MSD (pg/g)	MSD %R	RPD	MSD Qualifiers		Labeled Standard	MS %R	MS MS Qualifiers %	
2,3,7,8-TCDD		19.9	99.3		20.0	94.9	4.53		IS	13C-2,3,7,8-TCDD	97.0	92	.2
1,2,3,7,8-PeCDD		99.6	99.7		100	97.2	2.54			13C-1,2,3,7,8-PeCDD	77.4	73	.4
1,2,3,4,7,8-HxCDD		99.6	101		100	96.4	4.66			13C-1,2,3,4,7,8-HxCDD	89.2	85	.0
1,2,3,6,7,8-HxCDD		99.6	97.3		100	93.8	3.66			13C-1,2,3,6,7,8-HxCDD	86.1	82	.4
1,2,3,7,8,9-HxCDD		99.6	102		100	95.2	6.90			13C-1,2,3,7,8,9-HxCDD	89.3	85	.8
1,2,3,4,6,7,8-HpCDD)	99.6	155	Н	100	128	19.1			13C-1,2,3,4,6,7,8-HpCDD	79.7	72	.9
OCDD		199	459	Н	200	361	23.9	Н		13C-OCDD	65.7	59	.6
2,3,7,8-TCDF		19.9	95.9		20.0	93.7	2.32			13C-2,3,7,8-TCDF	105	97	.4
1,2,3,7,8-PeCDF		99.6	99.8		100	96.6	3.26			13C-1,2,3,7,8-PeCDF	80.5	78	.3
2,3,4,7,8-PeCDF		99.6	99.5		100	97.8	1.72			13C-2,3,4,7,8-PeCDF	80.5	77	.1
1,2,3,4,7,8-HxCDF		99.6	96.7		100	93.2	3.69			13C-1,2,3,4,7,8-HxCDF	92.1	87	.0
1,2,3,6,7,8-HxCDF		99.6	97.2		100	94.3	3.03			13C-1,2,3,6,7,8-HxCDF	86.6	81	.5
2,3,4,6,7,8-HxCDF		99.6	97.8		100	92.2	5.89			13C-2,3,4,6,7,8-HxCDF	91.4	87	.2
1,2,3,7,8,9-HxCDF		99.6	96.1		100	94.8	1.36			13C-1,2,3,7,8,9-HxCDF	104	97	.2
1,2,3,4,6,7,8-HpCDF		99.6	97.9		100	95.9	2.06			13C-1,2,3,4,6,7,8-HpCDF	84.8	79	.6
1,2,3,4,7,8,9-HpCDF		99.6	97.5		100	97.2	0.308			13C-1,2,3,4,7,8,9-HpCDF	85.1	78	.3
OCDF		199	99.6		200	99.0	0.604			13C-OCDF	64.5	58	.9
									CRS	S 37Cl-2,3,7,8-TCDD	95.0	85	4

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Sample ID: DU-1-1	2-E						PMA h et	6od 131B
	5 Hill Ibine Special Event In-2016 16:30	Sample Data 5 atriM Soil Sample Sixe: 10.6 g % Solids: 94.6		z ab L C		Date EMra Column: ZB-l	ived: 28-Jun-2016 cted: 30-Jun-2016 R5 S h nalAst: DB 22R h nalAst: h NP	
Analyte Conc.	. (pg/g)	DL Ph MC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.08R2		IS	13C-2,3,7,8-TCDD	90.7	2R-164	
1,2,3,7,8-PeCDD	0.678		J		13C-1,2,3,7,8-PeCDD	6R.7	2R-181	
1,2,3,4,7,8-HMCDD	1.0R		J		13C-1,2,3,4,7,8-HMCDD	92.0	32 - 141	
1,2,3,6,7,8-HMCDD	4.17				13C-1,2,3,6,7,8-HMCDD	84.R	28 - 130	
1,2,3,7,8,9-HMCDD	2.R2				13C-1,2,3,7,8,9-HMCDD	90.0	32 - 141	
1,2,3,4,6,7,8-HpCDD	241				13C-1,2,3,4,6,7,8-HpCDD	7R8	23 - 140	
OCDD	34R0				13C-OCDD	61.R	17 - 1R7	
2,3,7,8-TCDF	1.83				13C-2,3,7,8-TCDF	96.8	24 - 169	
1,2,3,7,8-PeCDF	0.431		J		13C-1,2,3,7,8-PeCDF	68.2	24 - 18R	
2,3,4,7,8-PeCDF	1.18		J		13C-2,3,4,7,8-PeCDF	6R4	21 - 178	
1,2,3,4,7,8-HMCDF	0.939		J		13C-1,2,3,4,7,8-HMCDF	90.R	26 - 1R2	
1,2,3,6,7,8-HMCDF	0.630		J		13C-1,2,3,6,7,8-HMCDF	83.7	26 - 123	
2,3,4,6,7,8-HMCDF	1.01		J		13C-2,3,4,6,7,8-HMCDF	88.0	28 - 136	
1,2,3,7,8,9-HMCDF	0.2R2		J		13C-1,2,3,7,8,9-HMCDF	99.2	29 - 147	
1,2,3,4,6,7,8-HpCDF	11.3				13C-1,2,3,4,6,7,8-HpCDF	80.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	1.06		J		13C-1,2,3,4,7,8,9-HpCDF	77.7	26 - 138	
OCDF	3R2				13C-OCDF	R8.2	17 - 1R7	
				Cy S	37Cl-2,3,7,8-TCDD	87.R	3R-197	
					Toxic Pquivalent Quotient (TP	Q) Data		
					TEL5 inWHO200RDioMn	R86		
TOTALS								
Total TCDD	0.342	0.417						
Total PeCDD	6.48	6.7R						
Total HMCDD	40.9							
Total HpCDD	476							
Total TCDF	8.64	8.83						
Total PeCDF	11.9							
Total HMCDF	21.2							
Total HpCDF	36.2							

Total HpCDF 36.2

Dz - Sample specific estimated detection limit

E5 PC - Estimated maMmum possible concentration

CZ-UCZ-zower control limit - upper control limit
TQ-results are reported in drAweigQ. TQ-sample sixe is reported in wet weigQ.
5 in-TQ-TEL is calculated using xero for tQ-concentration of congeners tQat are not detected.

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Sample ID: DU-1-1	2-C			EPA Method 16
	M . ill Ibine Special Event in-2016 15:10	Sample Data Matrix: Soil Sample Size: 11gt, H Solid% 85g8		Laboratory Data Lab Sample: 160083Z-06 Date Received: 28-Jun-2016 9:00 QC Batch: B6G0039 Date Extracted: 30-Jun-2016 12:42 Date Analyzed: 12-Jul-16 23:35 Column: s B-ZMS Analy% DB
Analyte Conc.	. (pg/g)	DL EMPC	Qualifiers	Labeled Standard %R LCL-UCL Qualif
2737578-TCDD	ND	0gl 33		IS 13C-2737578-TCDD 91g6 2Z-164
172737578-PeCDD	0g48		J	13C-1727578-PeCDD 50g 2Z-181
17273747578 xCDD	ND	0ള53		13C-172774778 xCDD 88g9 32 - 141
17273767578 xCDD	1g03		J	13C-172767578 xCDD 82g5 28 - 130
17273757879 xCDD	0g8Z8		J	13C-17277879 xCDD 8Zg 32 - 141
1727374767578 pCDD	1392			13C-1727776778 pCDD 52g 23 - 140
OCDD	8Zg6			13C-OCDD ZZ4 15 - 1Z5
2737378-TCDF	0gl 46		J	13C-27578-TCDF 89g) 24 - 169
172737578-PeCDF	0g09Z2		J	13C-1727678-PeCDF 66g4 24 - 18Z
273747578-PeCDF	0gl 8Z		J	13C-273747578-PeCDF 6Zg5 21 - 158
17273747578 xCDF	0.25		J	13C-1727374578 xCDF 88g9 26 - 172
17273767578 xCDF	0 £ 6Z		J	13C-172767578 xCDF 82g5 26-123
27374767578 xCDF	0280		J	13C-237476578 xCDF 8Zg5 28 - 136
17273757879 xCDF	ND	0ഏ960		13C-172757879 xCDF 92g4 29 - 145
1727374767578 pCDF	2gZ4			13C-172774767578 pCDF 5Zg5 28 - 143
1727374757879 pCDF	ND	0g09Z8		13C-172767679 pCDF 54g9 26-138
OCDF	4g06		J	13C-OCDF Z6g4 15 - 1Z5
				CRS 35Cl-27378-TCDD 8Zg 3Z-195
				Toxic Equivalent Quotient (TEQ) Data
				TEQMinW. O200ZDioxin 0g851
TOTALS				
Total TCDD	1g06	186		
Total PeCDD	328	3g66		
Total . xCDD	1099	11 g 4		
Total . pCDD	2896			
Total TCDF	1224	2 g Z		
Total PeCDF	1g53	2 <u>@</u> 1		
Total . xCDF	3 g 64			
Total . pCDF	492			

Total . pCDF 4g/2
DL - Sample %pecific e%imated detection limit

EMPC - E%imated maximum po%ible concentration

LCL-UCL- Lower control limit - upper control limit
The re%ilt%are reported in dry wei, htgThe %ample %ze i%reported in wet wei, htg
Min-The TEQ i%calculated u%n, zero for the concentration of con, ener%that are not detected g

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Sample ID: DU-3-1	-A							EPA Me	hod 1613B
	M Hill Ibine Special Event n-2016 13:00	Sample Matrix Sampl % Soli	: Soil e Size: 11.4 g		Lab QC	Doratory Data Sample: 1600835-07 Batch: B6G0039 e Analyzed: 13-Jul-16 00:26		ived: 28-Jun-2016 cted: 07-Jul-2016 5MS Analyst: DB	
Analyte Conc.	. (pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0909			IS	13C-2,3,7,8-TCDD	82.9	25 - 164	
1,2,3,7,8-PeCDD	ND		0.188			13C-1,2,3,7,8-PeCDD	63.4	25 - 181	
1,2,3,4,7,8-HxCDD	0.279			J		13C-1,2,3,4,7,8-HxCDD	82.2	32 - 141	
1,2,3,6,7,8-HxCDD	0.965			J		13C-1,2,3,6,7,8-HxCDD	79.5	28 - 130	
1,2,3,7,8,9-HxCDD	0.574			J		13C-1,2,3,7,8,9-HxCDD	83.5	32 - 141	
1,2,3,4,6,7,8-HpCDD	18.1					13C-1,2,3,4,6,7,8-HpCDD	67.1	23 - 140	
OCDD	227					13C-OCDD	52.3	17 - 157	
2,3,7,8-TCDF	ND	0.147				13C-2,3,7,8-TCDF	85.2	24 - 169	
1,2,3,7,8-PeCDF	0.165			J		13C-1,2,3,7,8-PeCDF	64.4	24 - 185	
2,3,4,7,8-PeCDF	ND		0.0930			13C-2,3,4,7,8-PeCDF	60.4	21 - 178	
1,2,3,4,7,8-HxCDF	0.309			J		13C-1,2,3,4,7,8-HxCDF	83.5	26 - 152	
1,2,3,6,7,8-HxCDF	0.186			J		13C-1,2,3,6,7,8-HxCDF	79.6	26 - 123	
2,3,4,6,7,8-HxCDF	0.219			J		13C-2,3,4,6,7,8-HxCDF	80.0	28 - 136	
1,2,3,7,8,9-HxCDF	0.432			J		13C-1,2,3,7,8,9-HxCDF	95.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	2.32			J		13C-1,2,3,4,6,7,8-HpCDF	73.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	0.166			J		13C-1,2,3,4,7,8,9-HpCDF	73.7	26 - 138	
OCDF	4.35			J		13C-OCDF	52.9	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	79.6	35 - 197	
						Toxic Equivalent Quotient (TE	Q) Data		
						TEQMinWHO2005Dioxin	0.577		
TOTALS									
Total TCDD	0.834		0.951						
Total PeCDD	0.165		1.28						
Total HxCDD	10.1								
Total HpCDD	39.9								
Total TCDF	2.54		2.85						
Total PeCDF	1.58		1.88						
Total HxCDF	4.77								
Total HpCDF	6.06								

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

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Sample ID: DU-3-1	-B							EPA Me	thod 1613B
	M Hill Ibine Special Event n-2016 14:15	Sample Matrix Samp % Sol	x: Soil le Size: 11.9 g		Lab QC	Doratory Data Sample: 1600835-08 Batch: B6G0039 e Analyzed: 13-Jul-16 01:14		ived: 28-Jun-2016 cted: 07-Jul-2016 5MS Analyst: DB	
Analyte Conc.	. (pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0850			IS	13C-2,3,7,8-TCDD	92.8	25 - 164	
1,2,3,7,8-PeCDD	ND		0.104			13C-1,2,3,7,8-PeCDD	68.4	25 - 181	
1,2,3,4,7,8-HxCDD	0.117			J		13C-1,2,3,4,7,8-HxCDD	87.9	32 - 141	
1,2,3,6,7,8-HxCDD	0.296			J		13C-1,2,3,6,7,8-HxCDD	81.3	28 - 130	
1,2,3,7,8,9-HxCDD	0.155			J		13C-1,2,3,7,8,9-HxCDD	88.0	32 - 141	
1,2,3,4,6,7,8-HpCDD	4.27					13C-1,2,3,4,6,7,8-HpCDD	69.3	23 - 140	
OCDD	36.8					13C-OCDD	52.9	17 - 157	
2,3,7,8-TCDF	ND	0.136				13C-2,3,7,8-TCDF	96.7	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0966				13C-1,2,3,7,8-PeCDF	69.1	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0996				13C-2,3,4,7,8-PeCDF	67.0	21 - 178	
1,2,3,4,7,8-HxCDF	ND		0.124			13C-1,2,3,4,7,8-HxCDF	85.6	26 - 152	
1,2,3,6,7,8-HxCDF	0.131			J		13C-1,2,3,6,7,8-HxCDF	83.5	26 - 123	
2,3,4,6,7,8-HxCDF	0.147			J		13C-2,3,4,6,7,8-HxCDF	85.2	28 - 136	
1,2,3,7,8,9-HxCDF	0.366			J		13C-1,2,3,7,8,9-HxCDF	92.8	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.833			J		13C-1,2,3,4,6,7,8-HpCDF	76.5	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.108				13C-1,2,3,4,7,8,9-HpCDF	73.7	26 - 138	
OCDF	1.04			J		13C-OCDF	54.7	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	88.5	35 - 197	
						Toxic Equivalent Quotient (TE	Q) Data		
						TEQMinWHO2005Dioxin	0.184		
TOTALS									
Total TCDD	0.877								
Total PeCDD	0.957		1.20						
Total HxCDD	3.84								
Total HpCDD	10.4								
Total TCDF	3.20		3.35						
Total PeCDF	1.21								
Total HxCDF	1.89		2.01						
Total HpCDF	1.55								

DL - Sample specifc estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

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Sample ID: Mat	trix Spike											EP.	A Me	thod 1613
Source Client ID: Source LabNumber: Matrix: Sample Size:	DU-3-1-B 1600835-08 Solid 11.8/11.9 g				QC Batch: B6G0039 Date Extracted: 07-Jul-2016 15:12 Spike-MSD MSD MSD			16 15:12		Lab Sample: B6G0039-MS2/B60 Date Analyzed: 13-Jul-16 11:32 Cc 13-Jul-16 12:21 Cc	olumn: ZB-5M	S Analyst: DI		
Analyte		Spike-MS (pg/g)	MS %R	MS Qualifiers		MSD %R	RPD	MSD Qualifiers		Labeled Standard	MS %R	1410	ASD %R	MSD Qualifiers
2,3,7,8-TCDD		19.9	98.9		19.9	100	1.11		IS	13C-2,3,7,8-TCDD	91.6		80.1	
1,2,3,7,8-PeCDD		99.6	98.3		99.3	99.3	1.01			13C-1,2,3,7,8-PeCDD	73.1		65.4	
1,2,3,4,7,8-HxCDD		99.6	99.9		99.3	103	3.06			13C-1,2,3,4,7,8-HxCDD	87.2		73.6	
1,2,3,6,7,8-HxCDD		99.6	97.4		99.3	97.2	0.206			13C-1,2,3,6,7,8-HxCDD	84.4		71.8	
1,2,3,7,8,9-HxCDD		99.6	100		99.3	104	3.92			13C-1,2,3,7,8,9-HxCDD	87.3		73.5	
1,2,3,4,6,7,8-HpCDD		99.6	99.9		99.3	105	4.98			13C-1,2,3,4,6,7,8-HpCDD	74.7		62.0	
OCDD		199	103		199	102	0.976			13C-OCDD	55.1		48.6	
2,3,7,8-TCDF		19.9	95.7		19.9	95.5	0.209			13C-2,3,7,8-TCDF	93.7		80.6	
1,2,3,7,8-PeCDF		99.6	103		99.3	103	0			13C-1,2,3,7,8-PeCDF	74.3		66.9	
2,3,4,7,8-PeCDF		99.6	99.3		99.3	102	2.68			13C-2,3,4,7,8-PeCDF	73.1		63.7	
1,2,3,4,7,8-HxCDF		99.6	96.4		99.3	102	5.65			13C-1,2,3,4,7,8-HxCDF	89.3		76.8	
1,2,3,6,7,8-HxCDF		99.6	97.5		99.3	100	2.53			13C-1,2,3,6,7,8-HxCDF	84.7		71.3	
2,3,4,6,7,8-HxCDF		99.6	96.2		99.3	100	3.87			13C-2,3,4,6,7,8-HxCDF	88.3		74.2	
1,2,3,7,8,9-HxCDF		99.6	95.4		99.3	101	5.70			13C-1,2,3,7,8,9-HxCDF	97.6		83.8	
1,2,3,4,6,7,8-HpCDF		99.6	99.1		99.3	101	1.90			13C-1,2,3,4,6,7,8-HpCDF	79.4		68.9	
1,2,3,4,7,8,9-HpCDF		99.6	96.4		99.3	101	4.66			13C-1,2,3,4,7,8,9-HpCDF	79.1		73.3	
OCDF		199	100		199	101	0.995			13C-OCDF	59.8		52.1	
									CRS	S 37Cl-2,3,7,8-TCDD	88.6		76.2	

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Sample ID: DU-3-1	-C							EPA Me	thod 16131
Project: Wood	M Hill Ibine Special Event n-2016 14:50	Sample Da Matrix: Sample S % Solids:	Soil ize: 11.4 g		Lab QC	Doratory Data Incomplex Sample: 1600835-09 Batch: B6G0039 e Analyzed: 13-Jul-16 02:03		ived: 28-Jun-2016 acted: 07-Jul-2016 5MS Analyst: DB	
Analyte Conc.	. (pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0587			IS	13C-2,3,7,8-TCDD	94.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0924				13C-1,2,3,7,8-PeCDD	70.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND		0.193			13C-1,2,3,4,7,8-HxCDD	94.0	32 - 141	
1,2,3,6,7,8-HxCDD	1.56			J		13C-1,2,3,6,7,8-HxCDD	87.4	28 - 130	
1,2,3,7,8,9-HxCDD	0.450			J		13C-1,2,3,7,8,9-HxCDD	92.7	32 - 141	
1,2,3,4,6,7,8-HpCDD	47.6					13C-1,2,3,4,6,7,8-HpCDD	75.5	23 - 140	
OCDD	394					13C-OCDD	56.8	17 - 157	
2,3,7,8-TCDF	ND	0.0855				13C-2,3,7,8-TCDF	98.3	24 - 169	
1,2,3,7,8-PeCDF	0.159			J		13C-1,2,3,7,8-PeCDF	68.9	24 - 185	
2,3,4,7,8-PeCDF	0.152			J		13C-2,3,4,7,8-PeCDF	67.7	21 - 178	
1,2,3,4,7,8-HxCDF	0.225			J		13C-1,2,3,4,7,8-HxCDF	93.2	26 - 152	
1,2,3,6,7,8-HxCDF	0.156			J		13C-1,2,3,6,7,8-HxCDF	88.5	26 - 123	
2,3,4,6,7,8-HxCDF	0.275			J		13C-2,3,4,6,7,8-HxCDF	92.1	28 - 136	
1,2,3,7,8,9-HxCDF	0.556			J		13C-1,2,3,7,8,9-HxCDF	100	29 - 147	
1,2,3,4,6,7,8-HpCDF	7.06					13C-1,2,3,4,6,7,8-HpCDF	80.9	28 - 143	
1,2,3,4,7,8,9-HpCDF	0.393			J		13C-1,2,3,4,7,8,9-HpCDF	79.0	26 - 138	
OCDF	27.0					13C-OCDF	57.6	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	90.7	35 - 197	
						Toxic Equivalent Quotient (TE	Q) Data		
						TEQMinWHO2005Dioxin	1.05		
TOTALS									
Total TCDD	0.751								
Total PeCDD	0.251		1.17						
Total HxCDD	8.63		9.27						
Total HpCDD	107								
Total TCDF	3.59		4.05						
Total PeCDF	1.69		1.94						
Total HxCDF	7.46								
Total HpCDF	24.6								

Total HpCDF 24.6

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

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DATA QUALIFIERS & ABBREVIATIONS

B This compound was also detected in the method blank.

D Dilution

E The associated compound concentration exceeded the calibration range of

the instrument.

H Recovery and/or RPD was outside laboratory acceptance limits.

I Chemical Interference

J The amount detected is below the Reporting Limit/LOQ.

* See Cover Letter

Conc. Concentration

NA Not applicable

ND Not Detected

TEQ Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

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CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request

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NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated	EPA 23
Dibenzofurans	

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B
Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue	EPA 1668A/C
by GC/HRMS	
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by	EPA 1699
HRGC/HRMS	
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by	EPA 8280A/B
GC/HRMS	
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated	EPA
Dibenzofurans (PCDFs) by GC/HRMS	8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B
Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue	EPA 1668A/C
by GC/HRMS	
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated	EPA 8280A/B
Dibenzofurans by GC/HRMS	
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated	EPA
Dibenzofurans (PCDFs) by GC/HRMS	8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

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Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue	EPA 1668A/C
by GC/HRMS	
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated	EPA 8280A/B
Dibenzofurans by GC/HRMS	
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated	EPA
Dibenzofurans (PCDFs) by GC/HRMS	8290/8290A

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Environmental And	alysis Re									0 -) 12.
eurofins Lancaster Laboratories Environmental	Acct. #			6746						-89F2 C	OC #	501	825
Client Information	on			Matrix				A	nalysis F	Requested	For Lab Us	se Only	5
Client:	Acct. #:			ППП					Preservat	ion Codes	FSC:	-1.0	
CH2M HILL Project Name/#:	PWSID #:		9				-		-		SCR#:	ervation (Podec
DOW WOODBINE			Tissue	Ground				<	TO		H=HCI		niosulfate
Project Manager:	P.O. #:		15	Gro			١,	ES SMILIN	9		N=HNO		
Mark Shemil			12			ers	12	19.5	2		S=H ₂ SC		
Sampler: T. Coskic A - Shuwke state where samples were collected: For Compliance:	Quote #:		Sediment	Potable NPDES		Total # of Containers	herola	S. C.	35	H 19	DIONIC	Remarks	DE
Seorcia Yes	No 🗆	i e	Se	P P		Ç	5	30	3-6	172, 18	repair	diagen	04.0
GICO GIGO	Collected	Grab			12	#	10	Q x	2. 8	9334	repair	-lab	
Sample Identification		Grab	Soil	Water	Other:	otal	0	111-9	33	800			
	Date Time			3	0	17	1	111	- A W	8 7 7 7	-	ar Salam move (a)	
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DU-1-15-13	1040		X		-	6	5	YV	XX	XXXX	+	_	
DU-1-15-C	1135					6	1	XX	XX	S/XX/S	-		
* DU-3-1-A	1300	X	X	4	-	3	1	XX	NX		1 4.01	110 N	
* DU-3-1-B	1415	X	X		-	9	X	ŶX	XX	X	MSI	MOD	
* DU-3-1-C	1450	X				13	X	VV	X	XXXX	1101	1115	
DU-1-12-H	1545		1		-	10	X	XX	VV		MSIN	1217	
DU-1-17-13	1630	7	X		-	6	X	XX	NX.	XXXX	-		
DU-1-12-C	17/10	17	X		-	6	X	XV	XX	N N N	-		
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Date results are needed:		Relinquishe	ed by					Date	Time	Received by		Date	Time
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Data Package Options (circle if Type I (EPA Level 3 Type V Equivalent/non-CLP)	required) I (Raw Data Only)	Relinquish	ed by					Date	Time	Received by	~_	Date	Time 270
Type III (Reduced non-CLP) NJ DK0	QP TX TRRP-13		If ye	EDD Re s, format: _	quire	ed?	Yes	No		Relinquished by Comm			
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	SA	MPLE LO	G-IN CHE	CKLIST				Visto Analytical	
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	Date/Time		Initials:		Loc	cation:	ı	NR-	7
Logged In:	06/28/14	1445	BSI	3	Sh	elf/Rac	k:	FH	
Delivered By:	FedEx	UPS	On Trac	DHL		Har Delive		Otl	ner
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If Chlorinated or Di	rinking Water Sa	imples, Acce	eptable Pre	servatio					V
Na ₂ S ₂ O ₃ Preservat	tion Documented	d?	COC			nple tainer	R	None	e)
Shipping Containe	r	Vista (Client	Reta	in ,	Retu	ırn	Disp	ose

Comments:

Sample label ID: DU-1-15-A Grab Soil

DU-1-15-B

DU-1-12-A Grab Soil

DU-1-12-B Grab Soil

DU-1-12-B Grab Soil

DU-1-12-B Grab Soil

Sample Login 11/2013 cki

Sample Login 11/2013 ckt

Chain of Custody Anomaly/Sample Acceptance Form

CH2M



1600835

Client: 28-Jun-16 09:00 Date Received: Contact: Mark Sherrill Documented by/date: B.Benedict 06/28/2016 Email: Phone: (678) 938-0923 Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis. Thank you, Martha Maier mmaier@vista-analytical.com 916-673-1520 The following information or item is needed to proceed with analysis: Collector's Name Complete Chain-of-Custody Preservative Sample Type Sample Identification Test Method Requested Sample Location Sample Collection Date and/or Time Analyte List Requested Other: Samples listed on COC, not received: DU-3-1-A DU-3-1-B DU-3-1-C The following anomalies were noted. Authorization is needed to proceed with analysis. Samples Affected: Temperature outside < 6°C Range Temperature _ °C No Melted Ice Present? Yes Insufficient Sample Size Sample ID Discrepancy Sample Container(s) Broken Sample Holding Time Missed Incorrect Container Type Custody Seals Broken Comments: Client Authorization

Workorder Number:

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Signature and Date

NO

YES

Proceed with Analysis

Client Comments/Instructions

eurofins Lancaster Laboratories Environmental		11372	For	eurofir Group	# _/	6746	orator O's	ies En ample	#	843	837	_	-	83	-2	(_			1336
Client Informatio						Matrix		-	_		Analys		_	_	1		For La	Use O	100	45 0.1
CH2M HILL	Acct. #:										Prese	rvat	on C	odes			SCR#:	600	10.)) ("
Project Name/#:	PWSID #:			-	Tissue	g a			Ë		100						_	eserva	tion (Codes
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J. Crostic / A-Shuartz	Quote #:				Sediment	ble [of Containers	0	SIVES	व र	جي	1世			d	Dio	ins.	narks to t	œ
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Sample Identification	Coll	Time	Grab	Composite	Soil 🔀	Water	Other:	Total #	500	IN S	X Z	MO	and	S	9	3	NIS	M+ L	20	
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DU-1-15-C		1135		X	Ŷ			60	文	XX	X	X	X	X.	1	K				
DU-3-1-H		1300		X	X			3	X	XX	X	X	X			X				
DU-3-1-B		145		X	×			a	X	XX	X	X	X			X	MS	SIMS	1	
DU-3-1-C		1450		X	X			3	X	XX	X	K	X			X		-1		
DU-1-17-A		1545	Г	X	×	100		10	X	XX	X	X	X	X	X	X	MS	MS	D	
DU-1-17-B		1630		X	X			6	X	XX	X	X	X	X	X	X				
DU-1-12-C	1	1710		X	X			6	X	XI	X	X	1	1	X	X				
							No.							ľ	,,					
Turnaround Time (TAT) Requested		le)	Relino	uished	by	1-				(o-2)-	Time	1	Recei	ved by	11			Date 7/2	he	Time
	ush		Beling	uished	by	costic	_	1		Date	P 200	w	Becei	red by	10	Se		Date	//0	Time
(Rush TAT is subject to laboratory approval and surcharge	9.)		I IGIII IC	quiorisa	u,					Daio			110001	rea by				Date	/	1
Date results are needed:		_	Relino	uished	by					Date	Time		Recei	ed by				Date		Time
					1				_		-							10.0		
E-mail address:	aulrod)		Helino	uished	ру					Date	Time		Recei	rea by	/			Date		Time
Type I (FPA Level 3		2	Relino	ulshed	by					Date	Time		Receiv	ed by	_			Date		Time
Equivalent/non-CLP)	Raw Data	Only)												(1		6.2	2.14	720
Type III (Reduced non-CLP) NJ DKQF	TX	TRRP-13			If yes,	EDD Rec	uirec	1? '	Yes	No				quishe S		Comm FedEx_	ercial Ca			
NYSDEC Category A or B MA MCP	CT	RCP				ecific QC (ate QC sampl			100		No (olumn)			Ten	pera	ture upo	on receip	1.5-	1,7	_°C

SAMPLE LOG-IN CHECKLIST



	Date/Time		Initials:	7	Locatio	n: W	RIZ	
Samples Arrival:	7/4:6 0	1930	(1		Shelf/R	ack:	NA	
	Date/Time		Initials:		Locatio	n: W	R-2	-
Logged In:	07/05/14	1028	ASK	b	Shelf/R		F4	
Delivered By:	FedEx	UPS	On Trac	DHL	and the second s	and ivered	Ot	her
Preservation:	(Ice)	В	lue Ice	Dr	y Ice		None	
Temp °C: 🕖. 🤇	(uncorrected)	Time:	1935		Thermo	mater I	n. IR-	2
Temp °C: O	(corrected)	Time.	0 122		memio	inotor t	D. 111	
						YES	NO	NA
Adequate Sample	Volume Receive	d?				V		
Holding Time Acce						V		
Shipping Container						V		
Shipping Custody S		V						
Shipping Documen		V						
Airbill	Trk# 5	0354	1242	1642	-	V		
Sample Container I						V		
Sample Custody Se	eals Intact?							L
Chain of Custody /	Sample Docum	entation Pr	esent?			V		
COC Anomaly/Sam	ple Acceptance	Form com	npleted?				V	
If Chlorinated or Dr	inking Water Sa	mples, Aco	ceptable Pre	servatio	n?			L
Na₂S₂O₃ Preservati			COC		Sample Container	(None	
01: 1 0 1:		Vista	Client	Retai		eturn	Disp	ose
Shipping Container			1	-		& From		e/16.

EXTRACTION INFORMATION

Work Order 1600835 Page 28 of 776

Process Sheet

Workorder: 1600835

Prep Expiration: 06/21/2017

Matrix: Solid Client Matrix: Soil

Client: CH2M Hill

Method: 1613 Full List

Also run: Percent Solids

Workorder Due: 19-Jul-16 00:00

TAT: 21

Prep Batch:

B6G0039

Prep Data Entered:

DBF 7/12/16

Initial Sequence

6G000)B 7/12/16

LabSampleID	Reçon ClientSampleID	Date Received	Location	Comments	5690019
1600835-01 "A"	☑ DU-1-15-A	28-Jun-16 09:00	WR-2 F-4		
1600835-02	DU-1-15-B	28-Jun-16 09:00	WR-2 F-4		
1600835-03 " A"	DU-1-15-C	28-Jun-16 09:00	WR-2 F-4		
1600835-04 * Å*	DU-1-12-A	28-Jun-16 09:00	WR-2 F-4	MS/MSD	
•	DU-1-12-B	28-Jun-16 09:00	WR-2 F-4		
1600835-06 🦒 ′′	DU-1-12-C	28-Jun-16 09:00	WR-2 F-4		
1600835-07 "Å"	☑ DU-3-1-A	02-Jun-16 09:30	WR-2 F-4		
1600835-08 'A''	⊠ DU-3-1-B	02-Jun-16 09:30	WR-2 F-4	MS/MSD	
1600835-09 "Å"	☑ DU-3-1-C	02-Jun-16 09:30	WR-2 F-4		

Vista PM:Martha Maier

Vial Box ID:

Sample Reconciled By:_

S. Royllon

7 171 2016

Page 1 of 1

Work Order 1600835 Page 29 of 776

Percent Moisture/ Percent Solids

D2216-90

BATCH ID

B6G0025

Analyst: S.Roughton

Test Code: %Moist/%Solids

Units: %

Analyte: Dried at 110°C+/-5°C

HRMS-8

 Date/Time IN:
 Date/Time OUT

 7/7/16 0932
 7/8/16 13:15

and the second states	B	C D	. E	· Fleshamma	G	Land with the same of the	K	M	N	<u>.a.</u> 0 .	:P	()
		200 Security .	Intial and Date:	SR 7/7/16	B S S 7/8/16							SR 7/7/16
Particle Size	SampID	SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal			Acid Added		Visual Inspection
n/a	1600835-07	Sample	1.2600	3.4400	3.1500	1.8900	86.70	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a	1600835-08	Sample	1.2600	3.8200	3.4300	2.1700	84.77	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a	1600835-09	Sample	1.2600	3.4300	3.1800	1.9200	88.48	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a ·	1600847-01	Sample	1.2700	3.7200	3.4700	2.2000	89.80	N/A	N/A	N/A	N/A	soil,dark,twigs
n/a	1600847-02	Sample	1.2700	4.4200	4.1500	2.8800	91.43	N/A	N/A	N/A	N/A	soil,dark,twigs
n/a	1600847-03	Sample	1.2800	4.6800	4.4500	3.1700	93.24	N/A	N/A	N/A	N/A	soil,dark,twigs
n/a	1600847-04	Sample	1.2800	4.3900	3.4400	2.1600	69.45	N/A	N/A	N/A	N/A	dark,moist,twig:
n/a	1600847-05	Sample	1.2700	3.5500	3.3700	2.1000	92.11	N/A	N/A	N/A	N/A	sandy,twigs
n/a	1600847-06	Sample	1.2700	3.4200	3.2200	1.9500	90.70	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a	1600848-01	Sample	1.2800	3.4500	3.3900	2.1100	97.24	N/A	N/A	N/A	N/A	fine,brown
n/a	1600848-02	Sample	1.2800	3.4400	3.4000	2.1200	98.15	N/A	N/A	N/A	N/A	sandy
n/a	1600848-03	Sample	1.2800	3.3600	3.3600	2.0800	100.00	N/A	N/A	N/A	N/A	sand,twigs,rock
n/a	1600848-04	Sample	1.2700	3.3600	3.3300	2.0600	98.56	N/A	N/A	N/A	N/A	sandy,twigs
			-									

BCH_QAAN_TS_B6G0025 Work Order 1600835

7/18/2016 9:21 AM Page 30 of 776

Percent Moisture/ Percent Solids

D2216-90

BATCH ID

B6F0183

Test Code: %Moist/%Solids

Dried at 110°C+/-5°C

Units: %

INST HRMS-8

Date/Time IN: Date/Time OUT
6 30 6 90 7/5/6 1216

				/						N		P	
4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	B	C	D	Intial and Date	F Carlle	G	one in the contraction of the co	Statement and a Marian and a second	M	N BS	6		Carlo
Particle Size	SamplD		SampType	Intial and Date: Pan	1845 6130116 Wet Pan and Sample	Dry Pan and Sample	Dry Sample	%Solids	nH		Acid	ICI- I	<i>o</i> Visual
	· ·		Sampiype	Tare Wt. (gms)	Weight (g)	Weight (g)	Weight (g)	RawVal	pH Before	After	Added		Inspection
fine sand	1600835-01 1 A'	A	Sample	1.29	Weight (g) 3.45	Dry Pan and Sample Weight (g) 3.24	Weight (g)	90.28	NA	MA	MA	NA	Pares Foots
fine sand Fine sand	1600835-02"A	4	Sample &		3.42	3.1≰	1. 2 2	86.67	1	\top	-	7	leaves, roots
fine samo	1600835-03 "A"	\dashv	- 77	131	6.01	5.55 4.97 5.83	1.82	90.21		\dashv		ш	eures, swots
the sand	1600835-03 "A" 1600835-04 "A"	$\overline{}$		1.31	5.10	4.47	3 66	96.57		-	+	114	Caves, roots
fine tand	1600835-05		Sample Sample	1.29 1.32	5.10	5 72	3.66 4.54	94.58	 	\rightarrow	\vdash	+++	Cares, Coats
TINE TIMA	1600835-05 "A" 1600835-06 "A" 835-64 "B" 835-04 "C"	\dashv		1.29 1.29	6.09 7.17	(45		87.76	\vdash	+	\vdash	╫	leases, of
fine sand fine sand fine sand	1600835-06 (1 "Q"	\dashv	Sample	1.32	505	6.45 4.90	5.16 3.58	95.98		-	\vdash	╁╂┤	leaves, roots
Car Start	825-0446"	-,	Sample Sample	1,32	5.05 5.65	5.55			1	-	1	1	leaves, roots
Olen, nu's	039-09-0		Sample	1.30	2,65	2.25	4.25	97.70	-V	_	4	4	reaves, roots
		-							_			\vdash	
			-									\vdash	
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BCH_QAAN_TS_B6F0183 Work Order 1600835

**Transferred Sample to Secondary container to homogenize. \$556 30 16

6/30/2016 12:41 PM Page 31 of 776

Percent Moisture/ Percent Solids

D2216-90

BATCH ID

B6F0183

Analyst: INJ

Test Code: %Moist/%Solids

Analyte:

Units: %

Dried at 110°C+/-5°C

INST HRMS-8

Date/Time IN: 6/30/16 13:40 Date/Time OUT 7/5/16 12:10

	В	C	D .,	E	F	G communication		K K	M	N	. 0	Р	Q .
Particle Size	SamplD		Same Tone			INJ 7/5/16		2/0-111			/30/16	101	
Particle Size	Sampio		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal		pH After	Added		Visual Inspection
fine sand	1600835-01		Sample	1.2900	3.4500	3.2400	1.9500	90.28	N/A	N/A	N/A	N/A	leaves, roots
fine sand	1600835-02		Sample	1.3200	3.4200	3.1400	1.8200	86.67	N/A	N/A	N/A	N/A	leaves, roots
fine sand	1600835-03		Sample	1.3100	6.0100	5.5500	4.2400	90.21	N/A	N/A	N/A	N/A	leaves, roots
fine sand	1600835-04		Sample	1.3100	5.1000	4.9700	3.6600	96.57	N/A	N/A	N/A	N/A	leaves, roots
fine sand	1600835-05		Sample	1.2900	6.0900	5.8300	4.5400	94.58	N/A	N/A	N/A	N/A	leaves, roots
fine sand	1600835-06		Sample	1.2900	7.1700	6.4500	5.1600	87.76	N/A	N/A	N/A		leaves, roots
fine sand	835-04 "B"		Sample	1.3200	5.0500	4.9000	3.5800	95.98	N/A	N/A	N/A	N/A	leaves, roots
fine sand	835-04 "C"		Sample	1.3000	5.6500	5.5500	4.2500	97.70	N/A	N/A	N/A	N/A	leaves, roots
						_							
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												П	
										1		1	

BCH_QAAN_TS_B6F0183 Work Order 1600835

7/12/2016 4:00 PM Page 32 of 776

Solids estimate

Actual

Batch: B6F0183

Lab ID	Analysis	% Solids	Entered	Target weight	Weigh this much	
1600835-01	Percent Solids	90.28		10.00	11.08	
1600835-02	Percent Solids	86.67		10.00	11.54	
1600835-03	Percent Solids	90.21		10.00	11.08	
1600835-04	Percent Solids	96.57		10.00	10.36	
1600835-05	Percent Solids	94.58		10.00	10.57	
1600835-06	Percent Solids	87.76		10.00	11.40	

Work Order 1600835

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Batch: B6G0025

Lab ID	Analysis	% Solids	Entered	Target weight	Weigh this much
1600835-07	Percent Solids	87.61		10.00	11.41
1600835-08	Percent Solids	84.38		10.00	11.85
1600835-09	Percent Solids	87.56		10.00	11.42
1600847-01	Percent Solids	90.20		10.00	11.09
1600847-02	Percent Solids	91.11		10.00	10.98
1600847-03	Percent Solids	93.24		10.00	10.73
1600847-04	Percent Solids	70.42		10.00	14.20
1600847-05	Percent Solids	91.23		10.00	10.96
1600847-06	Percent Solids	91.16		10.00	10.97
1600848-01	Percent Solids	97.70		10.00	10.24
1600848-02	Percent Solids	100.00		10.00	10.00
1600848-03	Percent Solids	100.00		10.00	10.00
1600848-04	Percent Solids	99.52		10.00	10.05

Work Order 1600835 Page 34 of 776

•	*					PRE	PREPARATION BENCH SHEET								T :4 =				
Ma	trix: Solid						B60	G0039)]			С	hemist:	NJ			
Me	thod: 1613 Full L	ist			·	Pre	pared using	· HRMS	- Soxble	•t	•			Pi	rep Date/Tim	ne: 07-Jul-16 15	5:12		
							parea asing				DOYL					1			
	VISTA	G	Sample	IS/N	S	T (CRS	(%) (3)		AB	SG	CVC-DC AA			orisil	RS			
С	Sample ID	Eqv	Amt. (g)	CHEM/ DAT	WIT	CHE	M/WIT ATE	CHI DA	EM/	CHE DA	EM/	CHE DAT	M/	CF	IEM/ ATE	CHEM/W DATE	IT		
\vdash	B6G0039-BLK1	. IIA	(10.00)																
	B6G0039-BS1	NA	,	TN) BR	7/8/16	OBY D	m 711111e	OBS	7/11/16		1/14/6	IN	1/12/16	OBF	7/12/16	051 INO	7/12/16		
H	B6G0039-MS1	V	(10.00)										$\overline{}$		1		-		
片	1600835-04RE1		10.40			_					\vdash		1		-				
Ш	B6G0039-MS2 1600835-08	11.85	11.84										\perp		1				
	B6G0039-MSD1 1600835-04RE1	10.36	10.34													'			
	B6G0039-MSD2	11.85	11.88														\		
	1600835-01RE1	11.08	11.17																
	1600835-02RE1	11.54	11.54																
	1600835-03RE1	11.08	11.04					1											
	1600835-04RE1	10.36	10.42										1						
	1600835-05RE1	10.57	10.55																
	1600835-06RE1	11.40	0P.IÍ																
	1600835-07	11.41	11.42												7				
	1600835-08	11.85	11.91							1									
	1600835-09	11.42	11.4	\rightarrow	/	1	V			1		P	V			1			
			A) Sar	nples A	+, B, a	nd C	combined	, hom	ogen in	red pr	ior to	ex+r	action	on (1	600835	-08) T/8	716		
IS N		NS Name	(V,)	CRS	Name	JS	RS Name	(V	$\overline{\mathcal{L}}$	Cycle Tir	ne A	PP: SEFUN	SOX (Out: t/Date: INJ			
PCD	D/F 1531324,10pm	LPCDD/F	1571327,	10 LL PCD	D/F <u>153</u> 1	1325/10	PCDD/F_	157 130	6,10ml	Start Dat	e/Time S	OLV:	0(_	1				
1										7/8/16	1636 0	ther	N/A		Chemis	n: t/Date. ENJ	7/8/16		
PAH		PAH		PAH			PAH			Stop Date	e/Time Fi	inal Volume(s) 201	nL	Balance	ID: HRM	2-8		
				_						7/9/15	0.05		(14						
Com	nents:																		

Work Order 1600835 Page 35 of 776

Batch: B6G0039

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	
1600835-01RE1	11.17	90.27778	10.0840	20	30-Jun-16 12:42	BSS			
1600835-02RE1	11.54	86.66667	10.0013	20	30-Jun-16 12:42	BSS			_
1600835-03RE1	11.04	90.21277	9.9595	20	30-Jun-16 12:42	BSS			_
1600835-04RE1	10.42	96.56992	10.0626	20	30-Jun-16 12:42	BSS			_
1600835-04RE2	10.42	96.56992	10.0626	20	30-Jun-16 12:42	BSS			_
1600835-05RE1	10.55	94.58333	9.9785	20	30-Jun-16 12:42	BSS			_
1600835-05RE2	10.55	94.58333	9.9785	20	30-Jun-16 12:42	BSS			_
1600835-06RE1	11.4	87.7551	10.0041	20	30-Jun-16 12:42	BSS			_
1600835-07	11.42	86.7	9,90	20	07-Jul-16 15:12	BSS			_
1600835-08	11.91	84.8	10.10	20	07-Jul-16 15:12	BSS			_
1600835-09	11.41	881	10.10	20	07-Jul-16 15:12	BSS			_
B6G0039-BLK1	10			20	07-Jul-16 15:12	BSS			_
B6G0039-BS1	10			20	07-Jul-16 15:12	BSS	15J1327	10	_
B6G0039-MS1	10.4	96.57	10,04	20	07-Jul-16 15:12	BSS	15J1327	10	_
B6G0039-MS2	11.84	84,0	10104	20	07-Jul-16 15:12	BSS	15J1327	10	_
B6G0039-MSD1	10.34	96,57	9,985	20	07-Jul-16 15:12	BSS	15J1327	10	_
B6G0039-MSD2	11.88	84,8	10,07	20	07-Jul-16 15:12	BSS	15J1327	10	_

Printed: 7/15/2016 7:42:36AM

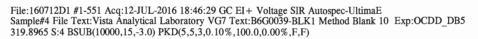
Work Order 1600835 Page 36 of 776

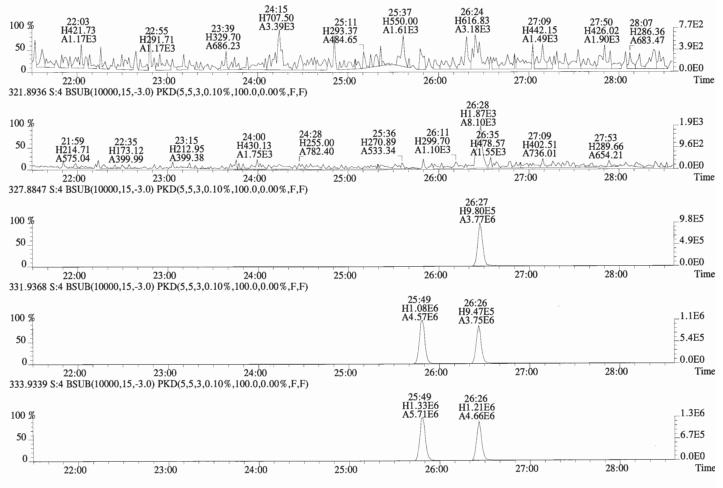
SAMPLE DATA – EPA METHOD 1613

Work Order 1600835 Page 37 of 776

c	lient ID: Method Blank	Fi	lename: 1	60712D1	S:4	Acq:1	2-JUL-16 18	.46.29			Con	Cal: ST160712D1	-1			Page	3 of 3
	ab ID: B6G0039-BLK1		Column I			_			vol:10	.000		CAL: NA				rage	3 01 3
	Name	Resp	RA	RRF	RT	RRT	Conc	O noise	Fac	DL	Name		Conc	EMPC	Oual	noise	DL
	2,3,7,8-TCDD	*	* n	1.13	Not Fa	*	*	195	2.5	0.0722	Total	Tetra-Dioxins	*	*		195 0	.0722
	1,2,3,7,8-PeCDD	*	* n	0.96	NotF ₁	*	*	327	2.5	0.126	Total	Penta-Dioxins	*	*		327	0.126
	1,2,3,4,7,8-HxCDD	*	* n	1.00	Not Fa	*	*	174	2.5	0.103	Total	Hexa-Dioxins	*	*		174	0.103
	1,2,3,6,7,8-HxCDD	*	* n	1.10	Not Fa	*	*	174	2.5	0.101	Total	Hepta-Dioxins	*	*		108 0	.0793
	1,2,3,7,8,9-HxCDD	*	* n	1.05	NotF ₁	*	*	174	2.5	0.107	Total	Tetra-Furans	*	*		325 0	.0952
	1,2,3,4,6,7,8-HpCDD	*	* n	1.05	NotF	*	*	108	2.5	0.0793	Total	Penta-Furans	0.0000	0.0000		298	0.114
	OCDD	*	* n	0.96	NotF7	*	*	114	2.5	0.126	Total	Hexa-Furans	*	*		170 0	.0431
											Total	Hepta-Furans	*	*		127 0	.0495
	2,3,7,8-TCDF	*	* n	1.12	NotF ₁	*	*	325	2.5	0.0952							
	1,2,3,7,8-PeCDF	*	* n	1.01	NotF	*	*	298	2.5	0.115							
	2,3,4,7,8-PeCDF	*	* n	0.90	NotF	*	*	298	2.5	0.113							
	1,2,3,4,7,8-HxCDF	*	* n	1.16	NotF	*	*	170	2.5	0.0368							
	1,2,3,6,7,8-HxCDF	*	* n	1.16	NotF	*	*	170	2.5	0.0387							
	2,3,4,6,7,8-HxCDF	*	* n	1.23	NotF	*	*	170	2.5	0.0397							
	1,2,3,7,8,9-HxCDF	*	* n	1.13	NotF	*	*	170	2.5	0.0602							
	1,2,3,4,6,7,8-HpCDF	*	* n	1.44	Not Fa	*	*	127	2.5	0.0503							
	1,2,3,4,7,8,9-HpCDF	*	* n	1.31	Not F	*	*	127	2.5	0.0484							
	OCDF	*	* n	1.03	Not Fa	*	*	207	2.5	0.184							
											Rec	Qual					
IS	13C-2,3,7,8-TCDD	8.41e+06	0.81 y	1.01	26:27	1.025	161.85				80.9						
IS	13C-1,2,3,7,8-PeCDD	7.65e+06	0.63 y	1.10	31:11	1.208	134.89				67.4						
IS	13C-1,2,3,4,7,8-HxCDD	6.47e+06	1.28 y	0.72	34:28	1.014	169.46				84.7						
IS	13C-1,2,3,6,7,8-HxCDD	6.20e+06	1.28 y	0.73	34:34	1.017	160.97				80.5						
IS	13C-1,2,3,7,8,9-HxCDD	6.30e+06	1.25 y	0.70	34:52	1.025	169.39				84.7						
IS	13C-1,2,3,4,6,7,8-HpCDD	4.92e+06	1.07 y	0.66	38:23	1.129	139.60				69.8						
IS	13C-OCDD	7.02e+06	0.90 y	0.66	41:34	1.223	200.73				50.2						
IS	13C-2,3,7,8-TCDF	1.23e+07	0.81 y	0.90	25:37.	0.992	164.70				82.4						
IS	13C-1,2,3,7,8-PeCDF	1.10e+07	1.57 y	0.98	29:57•	1.161	135.28				67.6						
IS	13C-2,3,4,7,8-PeCDF	1.22e+07	1.58 y	1.15	30:54	1.197	129.14				64.6						
IS	13C-1,2,3,4,7,8-HxCDF	8.91e+06	0.52 y	1.01	33:35	0.988	165.78				82.9						
IS	13C-1,2,3,6,7,8-HxCDF	9.16e+06	0.51 y	1.10	33:43	0.992	157.35				78.7						
IS	13C-2,3,4,6,7,8-HxCDF	8.48e+06	0.52 y	0.95	34:19.	1.009	168.01				84.0						
IS	13C-1,2,3,7,8,9-HxCDF	7.56e+06	0.50 y	0.83	35:15	1.037	172.52				86.3						
IS	13C-1,2,3,4,6,7,8-HpCDF	5.21e+06	0.44 y	0.70	37:00	1.089	140.49				70.2						
IS	13C-1,2,3,4,7,8,9-HpCDF	5.04e+06	0.44 y	0.72	38:55	1.145	132.03				66.0						
IS	13C-OCDF	8.78e+06	0.92 y	0.82	41:48	1.229	200.97				50.2						
C/U	p 37C1-2,3,7,8-TCDD	3.77e+06		1.14	26:28	1.025	64.551				80.7	Integr	ations	Revi	ewed		
												by	7/1	by		11-	
RS/	RT 13C-1,2,3,4-TCDD	1.03e+07	0.80 y	1.00	25:49	*	200.00					Analyst:	11/2	Analy	yst: 1	12	
RS	13C-1,2,3,4-TCDF	1.65e+07	0.83 y	1.00	24:14	*	200.00								7		•
RS/	RT 13C-1,2,3,4,6,9-HxCDF	1.06e+07	0.52 y	1.00	33:60	*	200.00					Date: 7	13/16	Analy	2/1	5//6	
													-			-11	

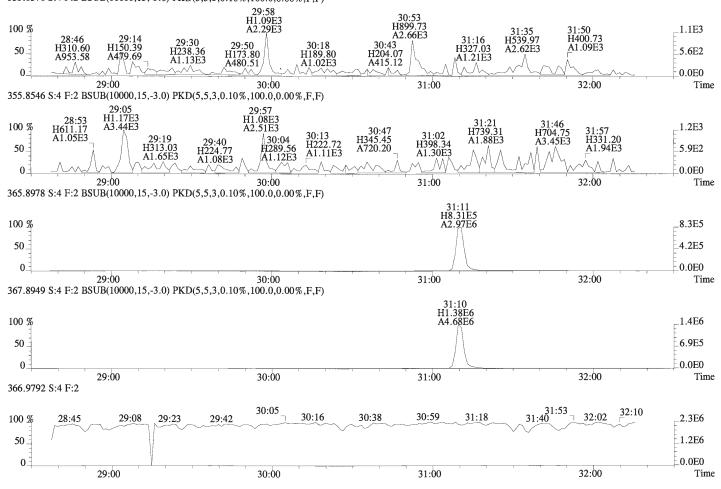
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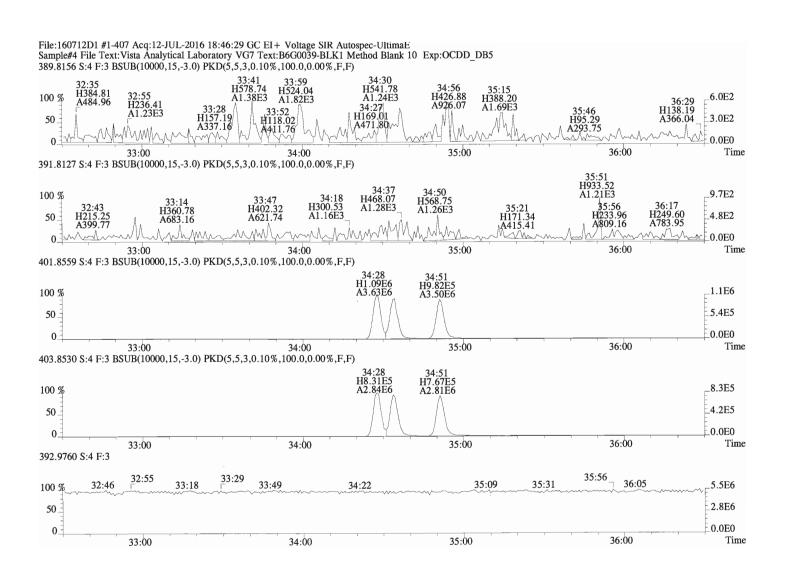
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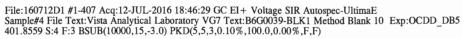


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20

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34:30

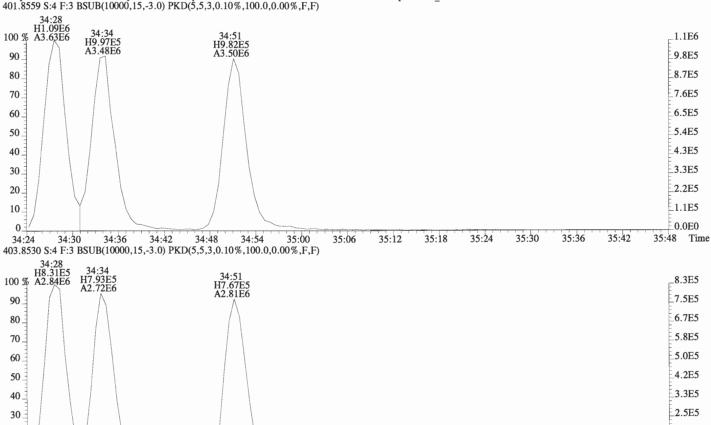
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34:54

35:00



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35:18

35:12

35:24

35:30

35:36

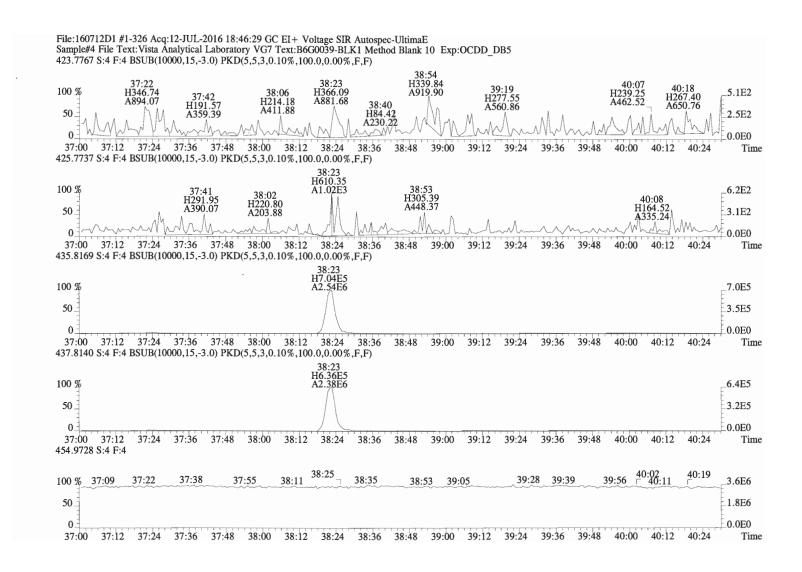
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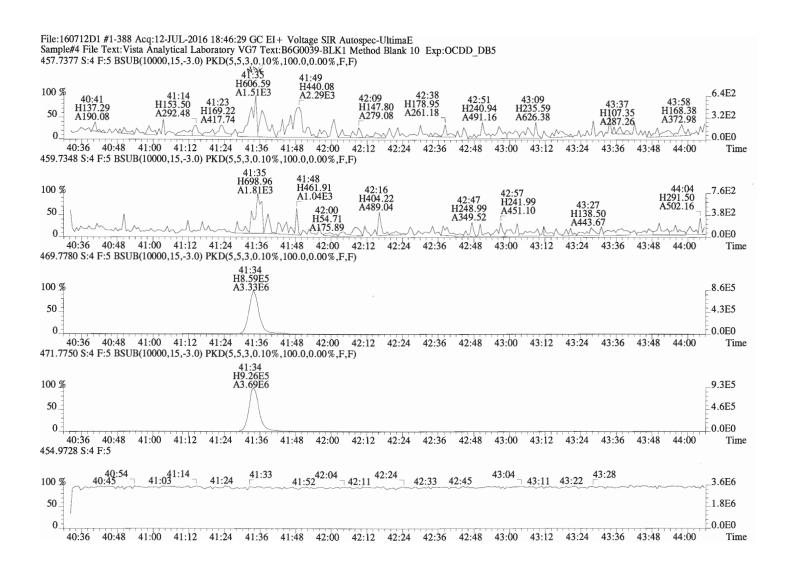
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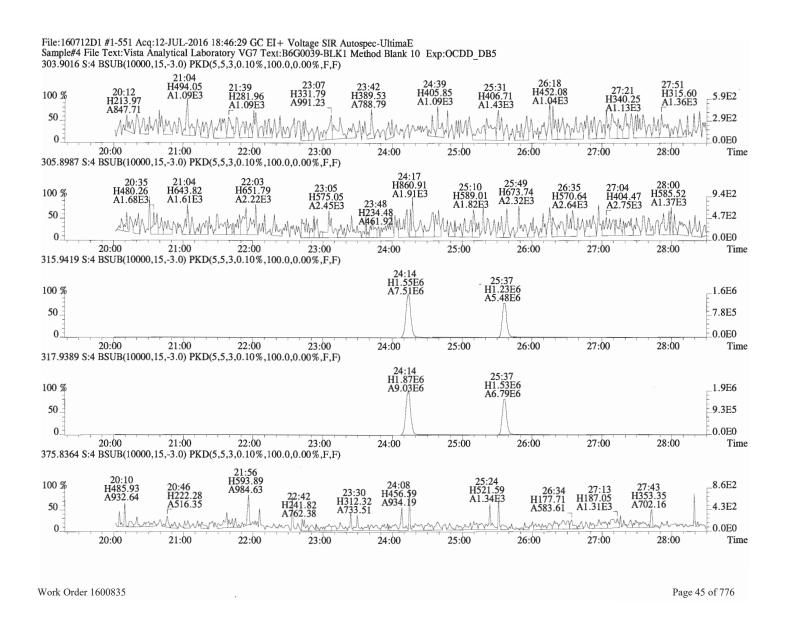
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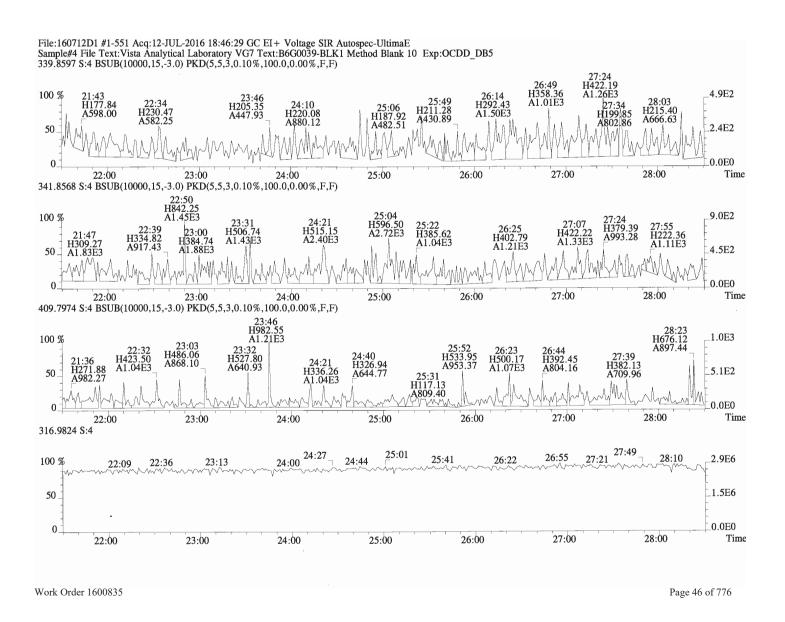


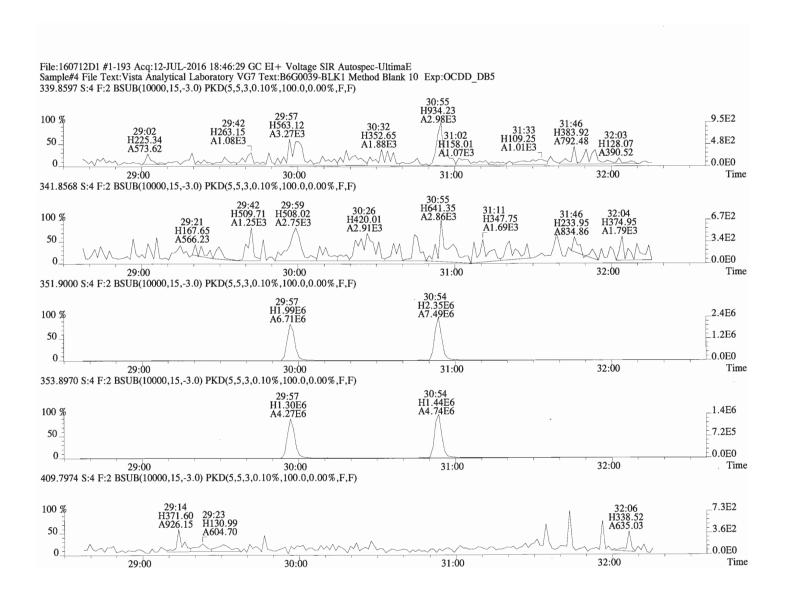
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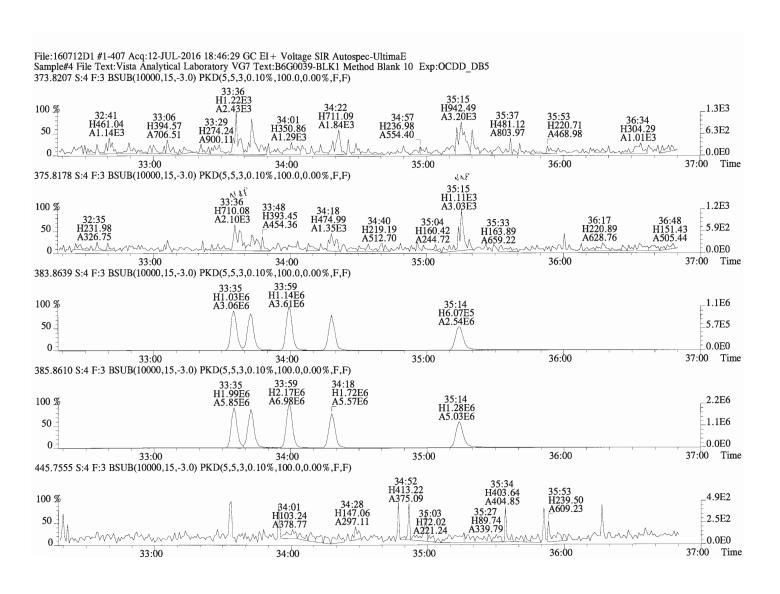
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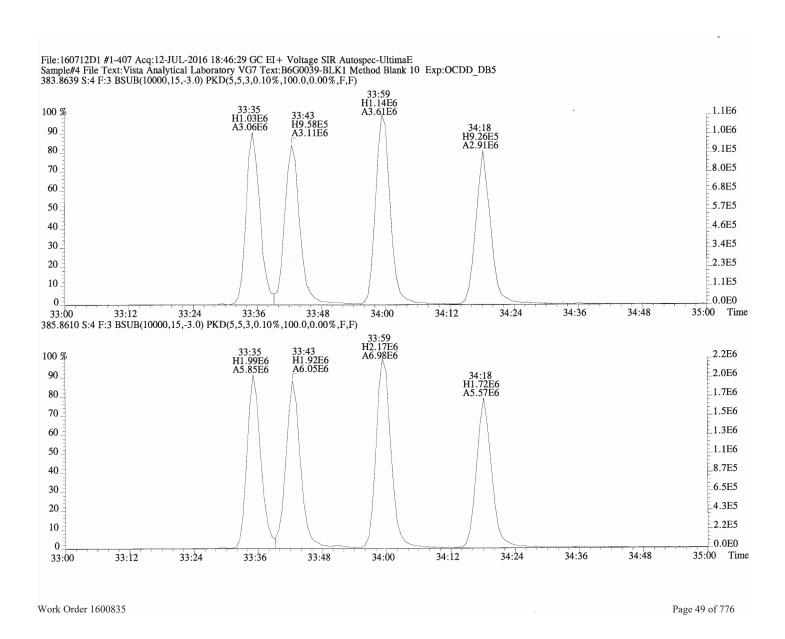


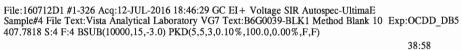


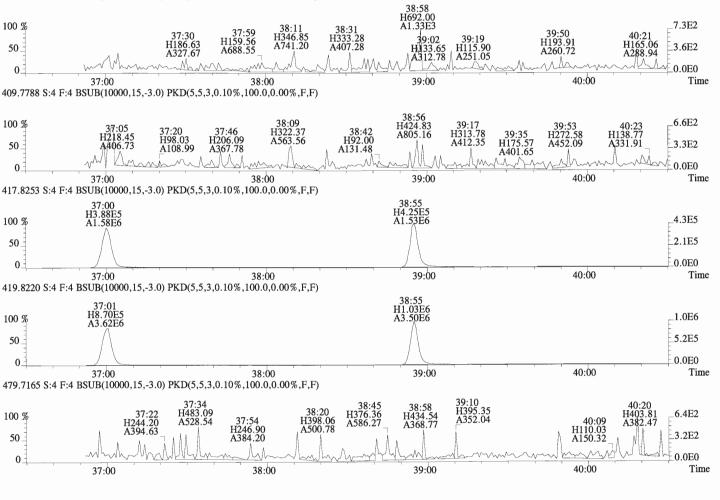
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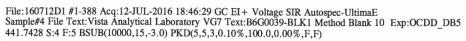


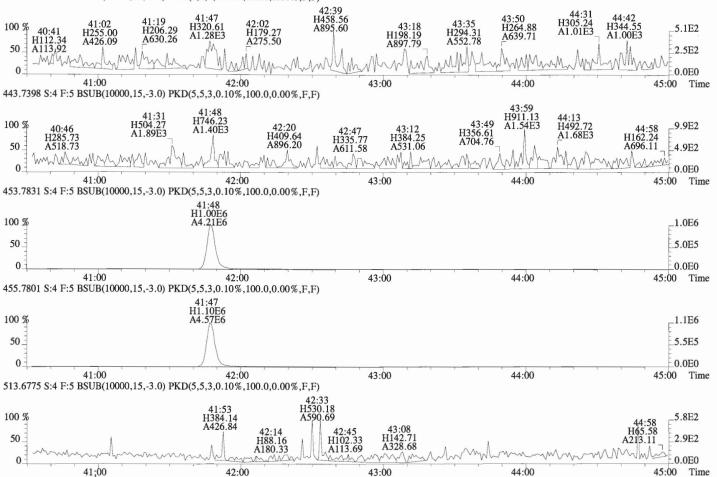




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FORM 8A

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory

Extraction Batch: B6G0039-BS1

Contract No.:

SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 160712D1-2

Ext. Date:

Shift: Day Analysis Date: 12-JUL-16 Time: 17:09:22

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

NATIVE ANALYTES	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (1) (ng/mL)
2,3,7,8-TCDD	10	9.56	6.7 - 15.8 7.3 - 14.6 (2)
1,2,3,7,8-PeCDD	50	48.6	35.0 - 71.0
1,2,3,4,7,8-HxCDD	50	49.0	35.0 - 82.0
1,2,3,6,7,8-HxCDD	50	47.2	38.0 - 67.0
1,2,3,7,8,9-HxCDD	50	48.2	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	50	50.3	35.0 - 70.0
OCDD	100	101	78.0 - 144.0
2,3,7,8-TCDF	10	9.98	7.5 - 15.8 8.0 - 14.7 (2)
1,2,3,7,8-PeCDF	50	49.1	40.0 - 67.0
2,3,4,7,8-PeCDF	50	49.4	34.0 - 80.0
1,2,3,4,7,8-HxCDF	50	50.6	36.0 - 67.0
1,2,3,6,7,8-HxCDF	50	48.3	42.0 - 65.0
2,3,4,6,7,8-HxCDF	50	49.1	35.0 - 78.0
1,2,3,7,8,9-HxCDF	50	48.9	39.0 - 65.0
1,2,3,4,6,7,8-HpCDF	50	47.0	41.0 - 61.0
1,2,3,4,7,8,9~HpCDF	50	47.7	39.0 - 69.0
OCDF	100	95.9	63.0 - 170.0

- (1) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94
- (2) Contract-required concentration limits for ${\tt OPR}$ as specified in Table 6a, Method 1613. 10/94

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FORM 8B

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B6G0039-BS1

Contract No.: SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 160712D1-2

Ext. Date: Shift: Day Analysis Date: 12-JUL-16 Time: 17:09:22

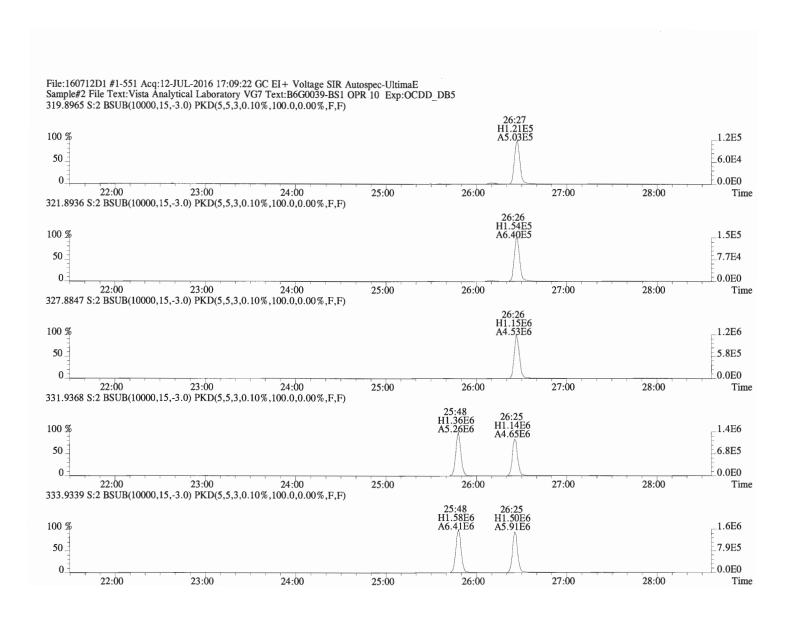
37Cl-2,3,7,8-TCDD 40 34.1 12.4 - 76.4

ALL CONCENTRATIONS REPORTED	ON THIS F	ORM ARE CONCENT	RATIONS IN EXTRACT.	
LABELED COMPOUNDS	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (1) (ng/mL)	
LABELED COMPOUNDS	(11971111)	(IIG/IILL)	(ng/mu)	
13C-2,3,7,8-TCDD	100	89.5	20.0 - 175.0	
			25.0 - 141.0 (2)	(1) Contract-required concentration limits for OPR
13C-1,2,3,7,8-PeCDD	100	71.2	21.0 - 227.0	as specified in Table 6, Method 1613. 10/94
13C-1,2,3,4,7,8-HxCDD	100	88.0	21.0 - 193.0	(2) Contract-required concentration limits for OPR
13C-1,2,3,6,7,8-HxCDD	100	86.9	25.0 - 163.0	as specified in Table 6a, Method 1613. 10/94
13C-1,2,3,7,8,9-HxCDD	100	89.3	21.0 - 193.0	
13C-1,2,3,4,6,7,8-HpCDD	100	70.4	26.0 - 166.0	
13C-OCDD	200	105	26.0 - 397.0	
13C-2,3,7,8-TCDF	100	89.7	22.0 - 152.0	
			26.0 - 126.0 (2)	
13C-1,2,3,7,8-PeCDF	100	71.5	21.0 - 192.0	
13C-2,3,4,7,8-PeCDF	100	70.1	13.0 - 328.0	
13C-1,2,3,4,7,8-HxCDF	100	86.5	19.0 - 202.0	
13C-1,2,3,6,7,8-HxCDF	100	86.8	21.0 - 159.0	
13C-2,3,4,6,7,8-HxCDF	100	86.7	22.0 - 176.0	
13C-1,2,3,7,8,9-HxCDF	100	91.9	17.0 - 205.0	
13C-1,2,3,4,6,7,8-HpCDF	100	74.6	21.0 - 158.0	
13C-1,2,3,4,7,8,9-HpCDF	100	68.3	20.0 ~ 186.0)B
13C-OCDF	200	111	26.0 - 397.0	analyst: 0K
CLEANUP STANDARD				Date: 7/13/16

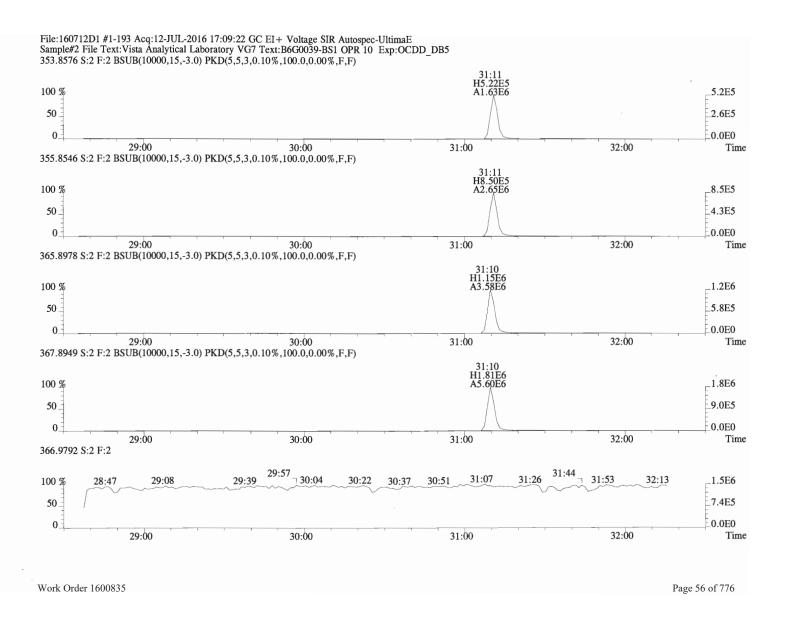
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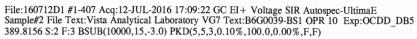
	lient ID: OPR		lename: 1		S:2	_	?-JUL-16 17				ConCal: ST160712D1	-1			Page	2 of 2
L	ab ID: B6G0039-BS1	GC	Column II	D: ZB-5N	MS ICal	: 1613V	37-4-7-16	wt/s	vol: 1.0	000	EndCAL: NA					
	Name	Resp	RA	RRF	RT	RRT	Conc	O noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
	2,3,7,8-TCDD	1.14e+06	0.79 y	1.13	26:27	1.001	9.5606	*	2.5	*	Total Tetra-Dioxins	10.0	10.3		*	*
	1,2,3,7,8-PeCDD	4.29e+06	0.62 y	0.96	31:11	1.001	48.556	*	2.5	*	Total Penta-Dioxins	48.6	49.0		*	*
	1,2,3,4,7,8-HxCDD	3.73e+06	1.23 y	1.00	34:28	1.000	49.026	*	2.5	*	Total Hexa-Dioxins	144	145		*	*
	1,2,3,6,7,8-HxCDD	3.90e+06	1.21 y	1.10	34:35	1.001	47.201	*	2.5	*	Total Hepta-Dioxins	51.2	52.0		*	*
	1,2,3,7,8,9-HxCDD	3.78e+06	1.22 y	1.05	34:52	1.001	48.167	*	2.5	*	Total Tetra-Furans	10.00	10.4		*	*
	1,2,3,4,6,7,8-HpCDD	2.95e+06	1.05 y	1.05	38:23	1.000	50.314	*	2.5	*	Total Penta-Furans	98.878	100.66		*	*
	OCDD	4.02e+06	0.90 y	0.96	41:36	1.000	100.68	*	2.5	*	Total Hexa-Furans	197	198		*	*
											Total Hepta-Furans	96.0	97.5		*	*
	2,3,7,8-TCDF	1.72e+06	0.80 y	1.12	25:38	1.001	9.9765	*	2.5	*						
	1,2,3,7,8-PeCDF	6.62e+06	1.57 y	1.01	29:58	1.001	49.126	*	2.5	*						
	2,3,4,7,8-PeCDF	6.80e+06	1.61 y	0.90	30:54	1.001	49.375	*	2.5	*						
	1,2,3,4,7,8-HxCDF	6.16e+06	1.28 y	1.16	33:36	1.000	50.556	*	2.5	*						
	1,2,3,6,7,8-HxCDF	6.36e+06	1.27 y	1.16	33:43	1.000	48.320	*	2.5	*						
	2,3,4,6,7,8-HxCDF	5.94e+06	1.26 y	1.23	34:19	1.000	49.075	*	2.5	*						
	1,2,3,7,8,9-HxCDF	5.03e+06	1.24 y	1.13	35:15	1.000	48.876	*	2.5	*						
	1,2,3,4,6,7,8-HpCDF	4.22e+06	1.02 y	1.44	37:01	1.000	46.996	*	2.5	*						
	1,2,3,4,7,8,9-HpCDF	3.69e+06	1.05 y	1.31	38:56	1.000	47.748	*	2.5	*						
	OCDF	5.39e+06	0.90 y	1.03	41:49	1.000	95.902	*	2.5	*						
											Rec Qual					
IS	13C-2,3,7,8-TCDD	1.06e+07	0.79 y	1.01	26:26	1.024	89.538				89.5					
IS	13C-1,2,3,7,8-PeCDD	9.18e+06	0.64 y	1.10	31:10	1.208	71.249				71.2					
IS	13C-1,2,3,4,7,8-HxCDD	7.58e+06	1.29 y	0.72	34:28	1.014	87.991				88.0					
IS	13C-1,2,3,6,7,8-HxCDD	7.55e+06	1.31 y	0.73	34:34	1.017	86.877				86.9					
IS	13C-1,2,3,7,8,9-HxCDD	7.49e+06	1.27 y	0.70	34:51.	1.025	89.321				89.3					
IS	13C-1,2,3,4,6,7,8-HpCDD	5.59e+06	1.07 y	0.66	38:23	1.129	70.374				70.4					
IS	13C-OCDD	8.30e+06	0.90 y	0.66	41:35		105.22				52.6					
IS	13C-2,3,7,8-TCDF		0.79 y	0.90		0.992	89.736				89.7					
IS	13C-1,2,3,7,8-PeCDF		1.63 y	0.98		1.161	71.531				71.5					
IS	13C-2,3,4,7,8-PeCDF	1.53e+07	1.58 y	1.15	30:53.		70.095				70.1					
IS	13C-1,2,3,4,7,8-HxCDF		0.51 y	1.01	33:35		86.475				86.5					
IS	13C-1,2,3,6,7,8-HxCDF		0.52 y	1.10	_	0.992	86.836				86.8					
IS	13C-2,3,4,6,7,8-HxCDF	9.87e+06	0.52 y	0.95	34:18,		86.717				86.7					
IS	13C-1,2,3,7,8,9-HxCDF	9.09e+06	0.52 y	0.83	35:15		91.886				91.9					
IS	13C-1,2,3,4,6,7,8-HpCDF		0.42 y	0.70	37:00		74.640				74.6					
IS	13C-1,2,3,4,7,8,9-HpCDF		0.41 y	0.72		1.145	68.306				68.3					
IS	13C-OCDF	1.09e+07	0.91 y	0.82	41:48	1.230	110.60				55.3					
C/U	p 37C1-2,3,7,8-TCDD	4.53e+06		1.14	26:27	1.025	34.094				85.2 Integr	ations	Revi	ewed		
											by	0	by		11.	
RS/	RT 13C-1,2,3,4-TCDD	1.17e+07	0.82 y	1.00	25:48	*	100.00				Analyst:) <u></u>	Anal	yst:	ML	
RS	13C-1,2,3,4-TCDF	1.91e+07	0.81 y	1.00	24:13	*	100.00					. 1			/	
RS/	RT 13C-1,2,3,4,6,9-HxCDF	1.19e+07	0.52 y	1.00	33:59	*	100.00				7	12/16	Anal Date		11-14	_
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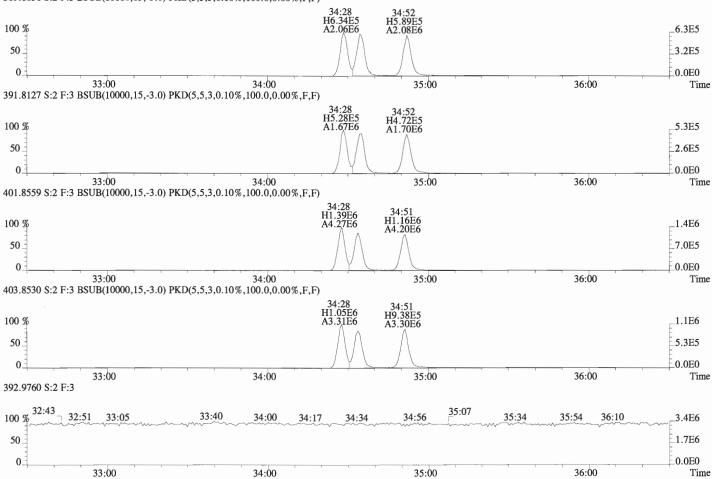
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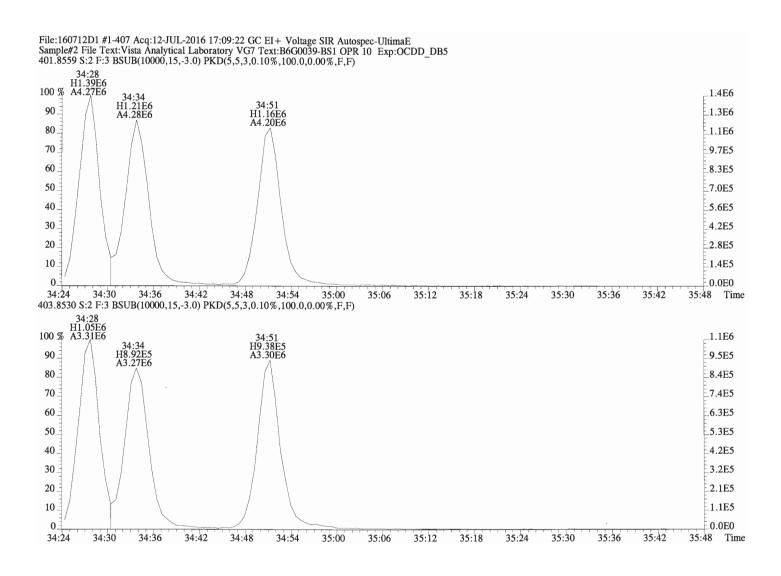
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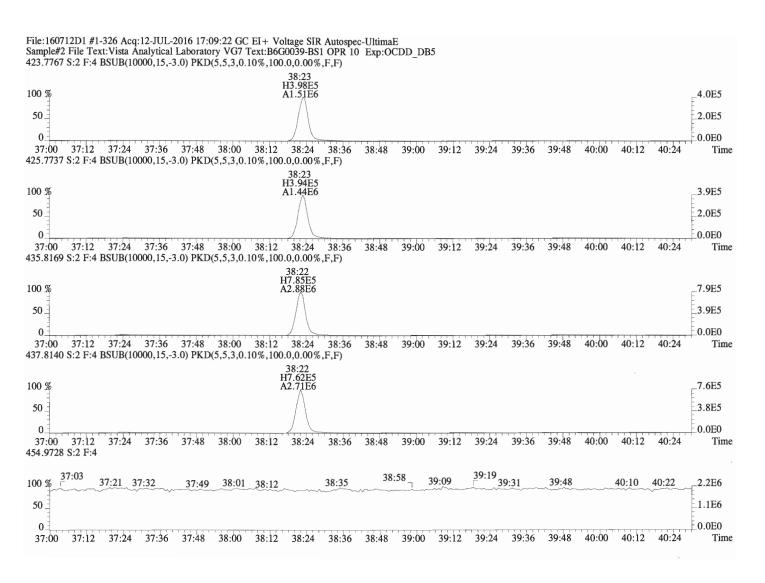




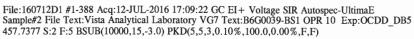
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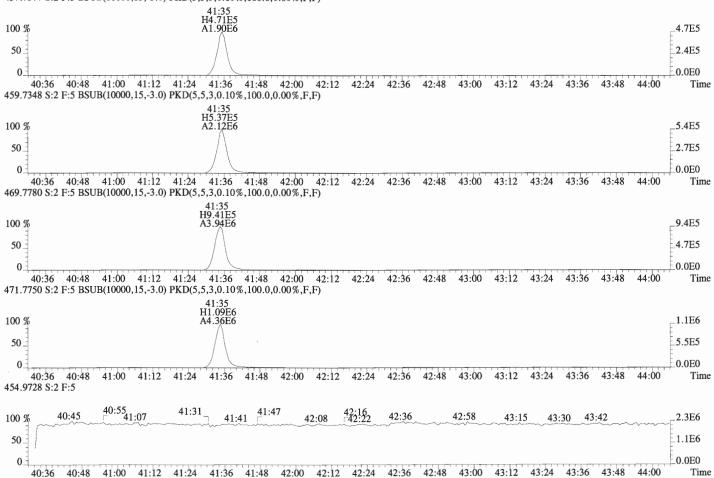


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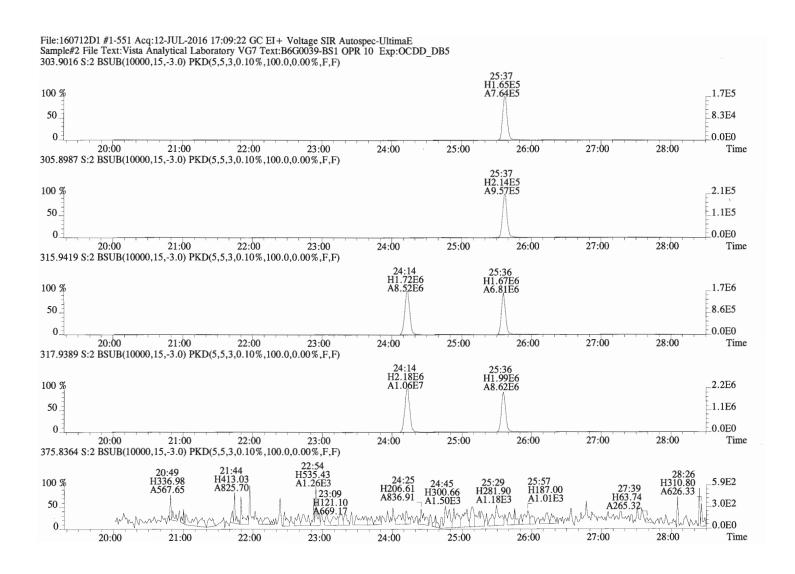


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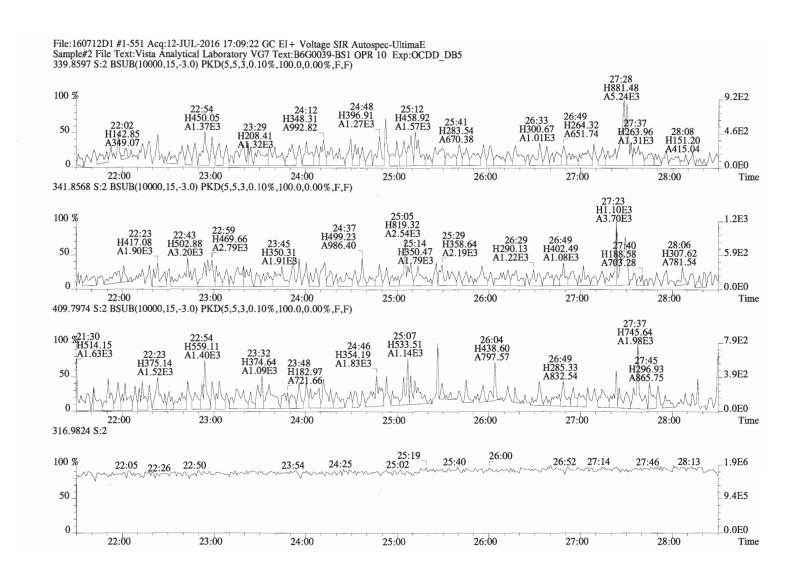




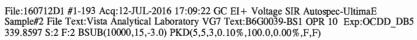
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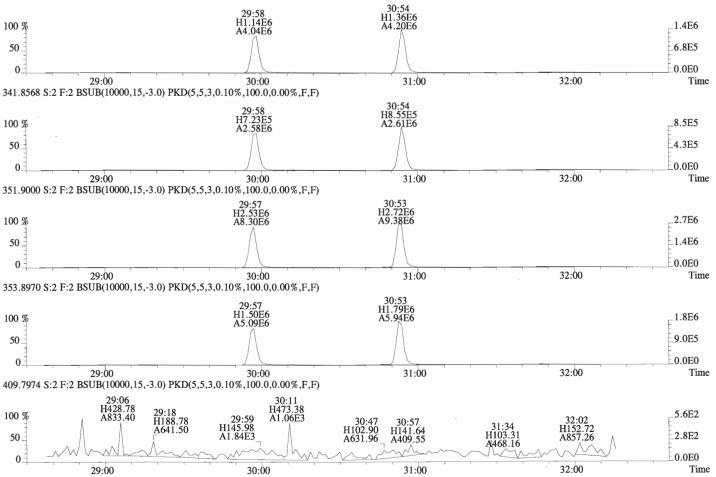


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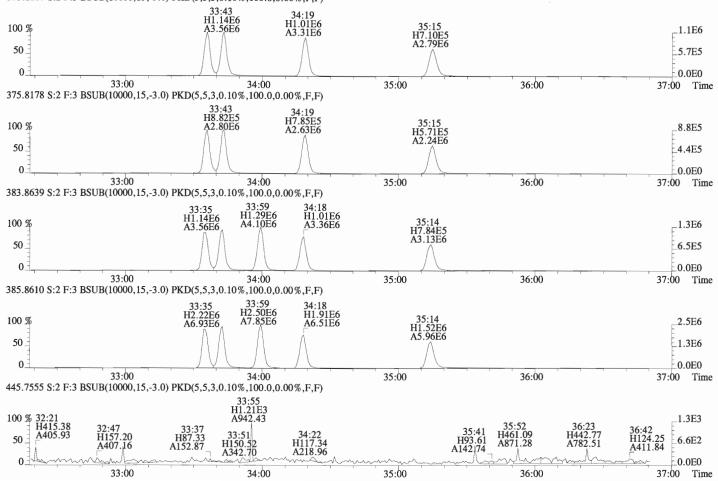




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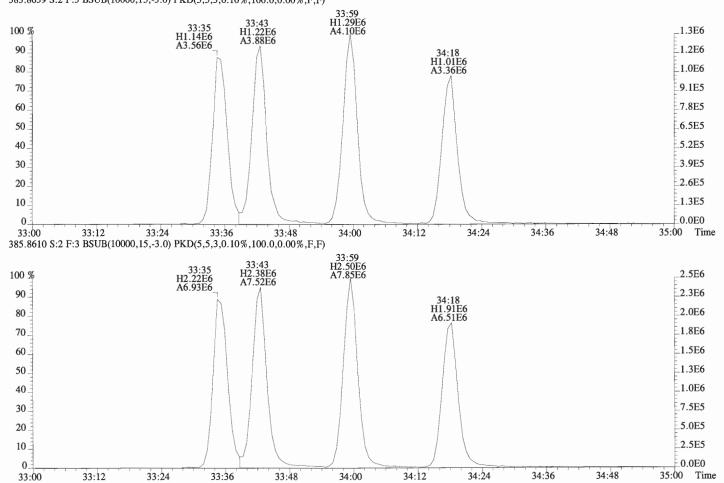
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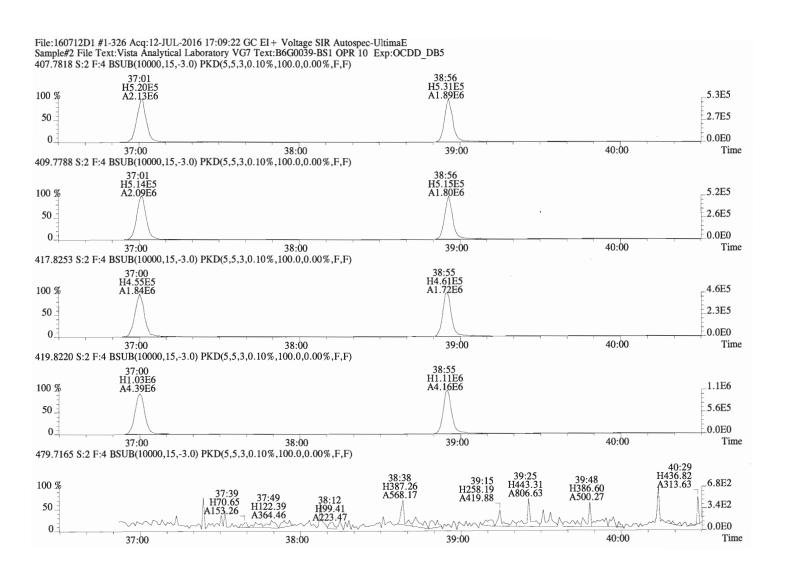
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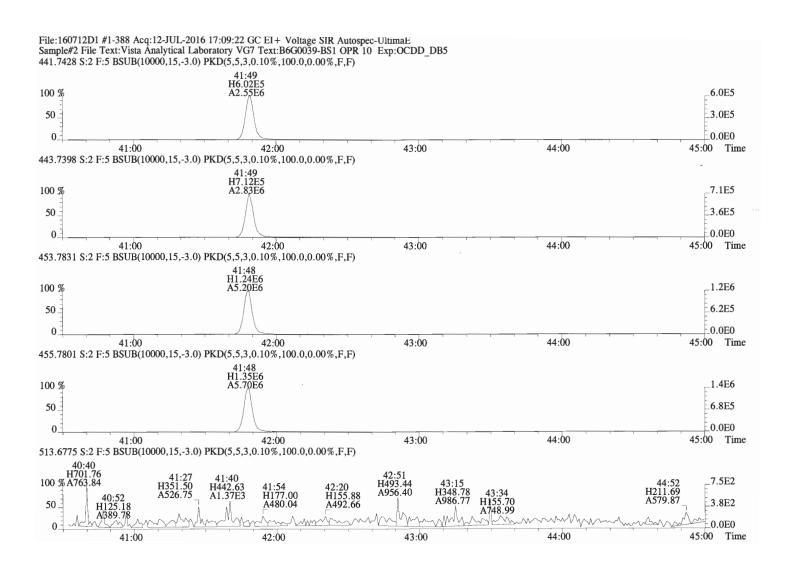
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4 of 4	Page			-1	l: ST160712D1- L: NA		084	vol:10.		2-JUL-16 19 37-4-7-16	_	S:5 MS ICal		lename: 16 Column II		ent ID: DU-1-15-A ID: 1600835-01RE1	
DL *	noise	Qual	EMPC	Conc		Name	DL	Fac	Q noise	Conc	RRT		RRF	RA	Resp	Name	`
*	*		0.903	*	etra-Dioxins		*	2.5	*	0.095428		26:25	1.13	0.35 n		2,3,7,8-TCDD	
	*		5.20	5.02	enta-Dioxins		*	2.5	*	0.45255		31:10	0.96	0.61 y		1,2,3,7,8-PeCDD	
*	*		19.3	19.3	exa-Dioxins		*	2.5	*	0.65993		34:28	1.00	1.28 y	2.57e+04		
*	*		93.4	93.4	epta-Dioxins		*	2.5	*	1.5599		34:34	1.10	1.06 y		1,2,3,6,7,8-HxCDD	
*	*		1.94	1.69	etra-Furans		*	2.5	*	1.3528		34:51	1.05	1.26 y	5.28e+04		
*	*		3.7724	3.5476	enta-Furans		*	2.5	*	29.894		38:22	1.05	1.06 y	9.35e+05		
*	*		6.37	5.73	exa-Furans		*	2.5	*	233.50	1.000	41:35	0.96	0.90 y	5.07e+06	OCDD	
*	*		9.38	9.38	epta-Furans	Total											
							*	2.5	*	0.44916		25:37	1.12	-		2,3,7,8-TCDF	
							0.136	2.5	412	*		NotF	1.01	* n	*	1,2,3,7,8-PeCDF	
							*	2.5	*	0.36656		30:54	0.90	1.74 y		2,3,4,7,8-PeCDF	
							*	2.5	*	0.40457		33:35	1.16	1.19 y		1,2,3,4,7,8-HxCDF	
							*	2.5	*	0.38571		33:43	1.16	1.40 y		1,2,3,6,7,8-HxCDF	
							*	2.5	*	0.44886		34:18	1.23	1.17 y		2,3,4,6,7,8-HxCDF	
							*	2.5	*	0.24866		35:16	1.13	1.35 y		1,2,3,7,8,9-HxCDF	
							*	2.5	*	3.9040		37:00	1.44	1.10 y		1,2,3,4,6,7,8-HpCDF	
							*	2.5	*	0.27906		38:56	1.31	0.90 y		1,2,3,4,7,8,9-HpCDF	
					Oual	D	*	2.5	*	8.2411	1.000	41:49	1.03	0.96 y	2.40e+05	OCDF	
					Quai	Rec 97.0				100 33	1 004	26:25	1 01	0 70	1 00- 07	120 0 2 0 0 0000	
						73.1				192.33 144.99		31:10	1.01	-		13C-2,3,7,8-TCDD	IS
						100				198.96		34:27	0.72	0.63 y		13C-1,2,3,7,8-PeCDD	IS
						93.2				198.96		34:27	0.72	1.29 y 1.28 y		13C-1,2,3,4,7,8-HxCDD	IS
						98.9				196.21		34:54	0.70	1.28 y		13C-1,2,3,6,7,8-HxCDD	IS
						83.5				165.61		38:22	0.66	_		13C-1,2,3,7,8,9-HxCDD	IS
						63.7				252.85		41:34	0.66	1.09 y 0.93 y		13C-1,2,3,4,6,7,8-HpCDD 13C-OCDD	IS IS
						99.2				196.69		25:36	0.90	0.93 y 0.80 y		13C-2,3,7,8-TCDF	IS
						74.5				147.68		29:57	0.98	1.59 y		13C-1,2,3,7,8-PeCDF	IS
						71.7				147.66		30:53	1.15	1.59 y		13C-1,2,3,7,8-PeCDF	IS
						97.6				193.65		33:35	1.01	0.51 y		13C-1,2,3,4,7,8-HxCDF	IS
						91.8				182.05		33:42	1.10	0.52 y		13C-1,2,3,4,7,8-HxCDF	IS
						94.0				186.43		34:18	0.95	0.52 y		13C-2,3,4,6,7,8-HxCDF	IS
						104				206.97		35:14	0.83	0.51 y		13C-1,2,3,7,8,9-HxCDF	IS
						86.6				171.71		36:59	0.70	0.32 y		13C-1,2,3,4,6,7,8-HpCDF	
						85.5				169.53		38:55	0.72	0.45 y		13C-1,2,3,4,7,8,9-HpCDF	
						63.8				253.20		41:48	0.82	0.90 y		13C-OCDF	IS
		ewed	Revi	ations	Integra	87.5				69.454	1.025	26:26	1.14		4.38e+06	37C1-2,3,7,8-TCDD	C/Up
	do-		by	$\partial \mathcal{Q}$	by					55.151					2.000.00	3,01 2,3,,,0 1000	C/ 0p
	7	yst:_	Anal	<u> </u>	Analyst:					198.33		25:48	1.00	0.81 y			RS/RT
	/			. 1						198.33		24:13	1.00	0.81 y		13C-1,2,3,4-TCDF	RS
116	4/157/		Date	115/16	Date: 7/					198.33	*	33:59	1.00	0.51 y	1.06e+07	13C-1,2,3,4,6,9-HxCDF	RS/RT

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Totals class: TCDD EMPC Entry #: 19

Run: 10 File: 160712D1 S: 5 I: 1 F: 1
Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 0.90299 Unnamed Concentration: 0.808

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name
22:38	1.041e+04	9.431e+03	1.10 n	1.669e+04	0.27132	
23:04	6.524e+03	6.427e+03	1.02 n	1.138e+04	0.18491	
24:38	5.231e+03	4.400e+03	1.19 n	7.787e+03	0.12657	
25:47	4.907e+03	4.963e+03	0.99 n	8.785e+03	0.14279	
26:25	2.554e+03	7.299e+03	0.35 n	5.871e+03	0.095428	2,3,7,8-TCDD
26.44	2 7200+02	2 8490+03	0 95 n	5 0430+03	0 081967	

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Totals class: PeCDD EMPC Entry #: 21

Run: 10 File: 160712D1 S: 5 I: 1 F: 2 Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 5.1988 Unnamed Concentration: 4.746

RT	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
29:03	2.359e+04	3.401e+04	0.69 y	5.760e+04	1.3376	
29:30	1.045e+04	1.948e+04	0.54 y	2.992e+04	0.69488	
29:58	9.826e+03	1.558e+04	0.63 y	2.541e+04	0.59003	
30:08	7.770e+03	1.433e+04	0.54 y	2.210e+04	0.51323	
30:14	6.906e+03	9.943e+03	0.69 y	1.685e+04	0.39127	
30:27	1.279e+04	2.322e+04	0.55 y	3.601e+04	0.83624	
30:46	4.332e+03	4.766e+03	0.91 n	7.769e+03	0.18042	
31:10	7.398e+03	1.209e+04	0.61 y	1.949e+04	0.45255	1,2,3,7,8-PeCDD
31:32	3.072e+03	5.653e+03	0.54 y	8.724e+03	0.20259	

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Totals class: HxCDD EMPC Entry #: 23

Run: 10 File: 160712D1 S: 5 I: 1 F: 3 Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 19.340 Unnamed Concentration: 15.767

RT	ml Resp	m2 Resp RA	Resp Concentration	Name
32:57	1.364e+05	1.139e+05 1.20 y	2.504e+05 6.3750	
33:31	2.718e+04	2.167e+04 1.25 y	4.885e+04 1.2438	
33:46	1.428e+05	1.208e+05 1.18 y	2.636e+05 6.7126	
33:53	2.137e+04	1.736e+04 1.23 y	3.873e+04 0.98623	
34:28	1.441e+04	1.124e+04 1.28 y	2.565e+04 0.65993	1,2,3,4,7,8-HxCDD
34:34	3.200e+04	3.009e+04 1.06 y	6.209e+04 1.5599	1,2,3,6,7,8-HxCDD
34:46	9.935e+03	7.715e+03 1.29 y	1.765e+04 0.44941	
34:51	2.942e+04	2.339e+04 1.26 y	5.281e+04 1.3528	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 10 File: 160712D1 S: 5 I: 1 F: 4 Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 93.405 Unnamed Concentration: 63.511

RT m1 Resp m2 Resp RA Resp Concentration Name

37:24 1.011e+06 9.745e+05 1.04 y 1.986e+06 63.511 38:22 4.808e+05 4.538e+05 1.06 y 9.346e+05 29.894 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 10 File: 160712D1 S: 5 I: 1 F: 1
Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 1.9444 Unnamed Concentration: 1.495

RT	ml Resp	m2 Resp RA	Resp Concentration	Name
21:39	2.187e+04	2.866e+04 0.76 y	5.053e+04 0.56565	
24:09	1.451e+04	1.269e+04 1.14 n	2.246e+04 0.25146	
24:43	7.478e+03	8.875e+03 0.84 y	1.635e+04 0.18306	
25:37	1.746e+04	2.266e+04 0.77 y	4.012e+04 0.44916	2,3,7,8-TCDF
25:57	2.008e+04	2.415e+04 0.83 y	4.422e+04 0.49506	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 10 File: 160712D1 S: 5 I: 1 F: 1 Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 1.4013 Unnamed Concentration: 1.401

RT ml Resp m2 Resp RA Resp Concentration Name

27:28 5.336e+04 3.888e+04 1.37 y 9.224e+04 1.4013

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Totals class: PeCDF EMPC Entry #: 31

Run: 10 File: 160712D1 S: 5 I: 1 F: 2 Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 2.3711 Unnamed Concentration: 2.005

RT m1 Resp m2 Resp RA Resp Concentration Name

28:51 1.126e+04 8.121e+03 1.39 y 1.938e+04 0.29446

29:00 4.290e+04 2.844e+04 1.51 y 7.133e+04 1.0837

29:34 1.635e+04 1.008e+04 1.62 y 2.643e+04 0.40161

30:12 8.992e+03 8.446e+03 1.06 n 1.479e+04 0.22474

30:54 1.537e+04 8.841e+03 1.74 y 2.421e+04 0.36656 2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC Entry #: 33

Run: 10 File: 160712D1 S: 5 I: 1 F: 3 Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 6.3687 Unnamed Concentration: 4.881

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
			*		
32:25	2.081e+04	2.134e+04 0.97	n 3.759e+04	0.63815	
32:35	7.238e+04	5.784e+04 1.25	y 1.302e+05	2.2110	
32:56	3.490e+03	2.946e+03 1.18	y 6.436e+03	0.10927	
33:08	5.549e+04	5.027e+04 1.10	y 1.058e+05	1.7957	
33:29	4.051e+03	3.416e+03 1.19	y 7.468e+03	0.12679	
33:35	1.356e+04	1.139e+04 1.19	y 2.496e+04	0.40457	1,2,3,4,7,8-HxCDF
33:43	1.404e+04	1.006e+04 1.40	y 2.409e+04	0.38571	1,2,3,6,7,8-HxCDF
34:18	1.426e+04	1.215e+04 1.17	y 2.641e+04	0.44886	2,3,4,6,7,8-HxCDF
35:16	7.489e+03	5.554e+03 1.35	y 1.304e+04	0.24866	1,2,3,7,8,9-HxCDF

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Totals class: HpCDF EMPC

Entry #: 35

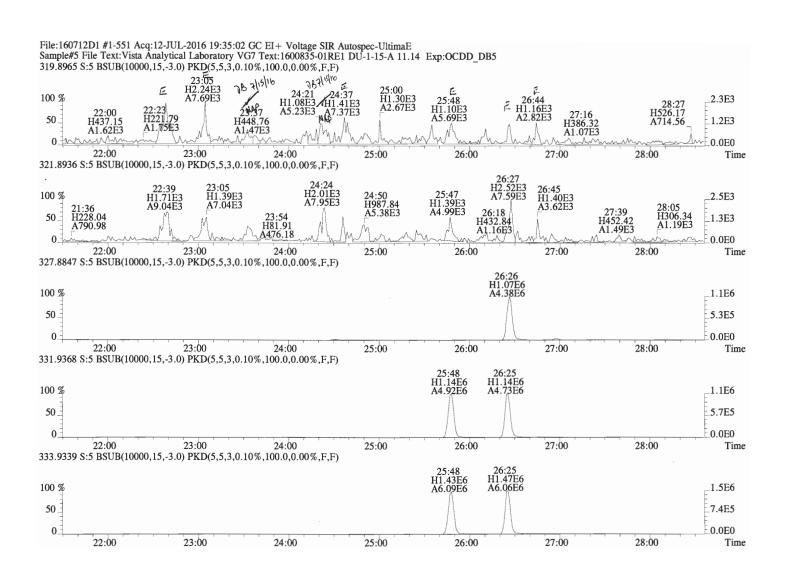
Run: 10 File: 160712D1 S: 5 I: 1 F: 4
Acquired: 12-JUL-16 19:35:02 Processed: 13-JUL-16 11:12:53

Total Concentration: 9.3786

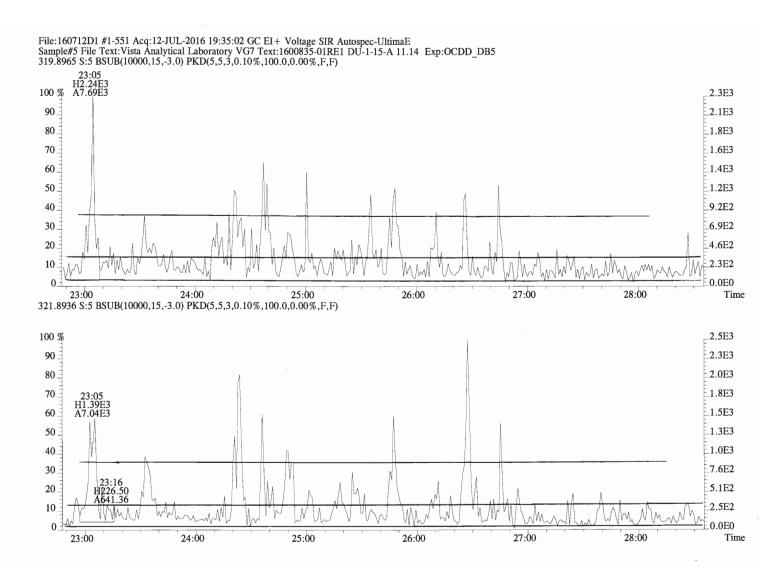
Unnamed Concentration: 5.196

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
	9.544e+04 1.184e+05	8.700e+04 1.10 1.155e+05 1.03	-	3.9040 5.1956	1,2,3,4,6,7,8-HpCDF
	5.736e+03	6.357e+03 0.90		0.27906	1,2,3,4,7,8,9-HpCDF

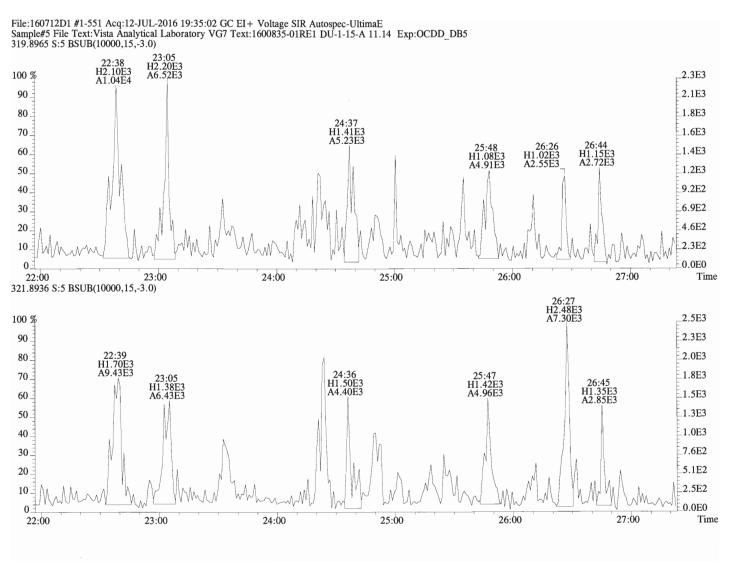
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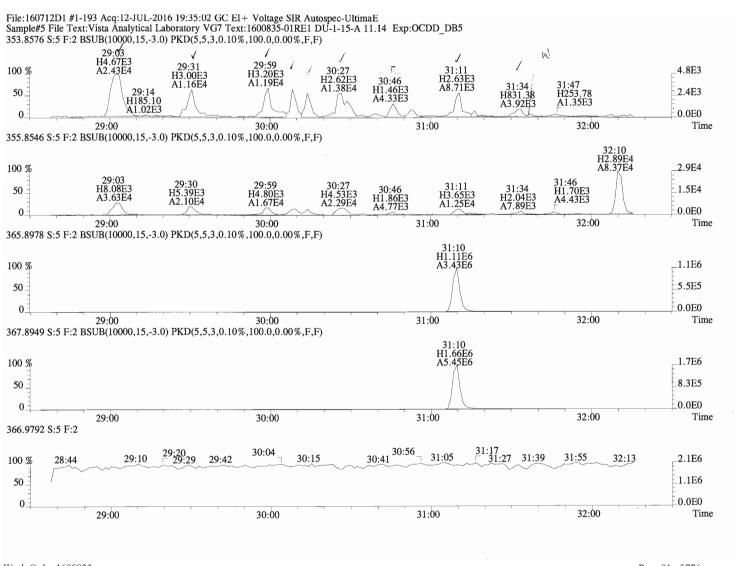
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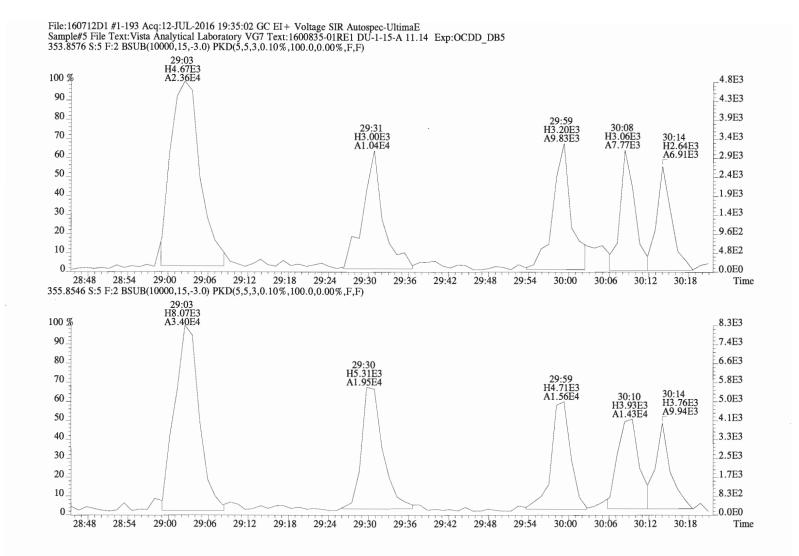
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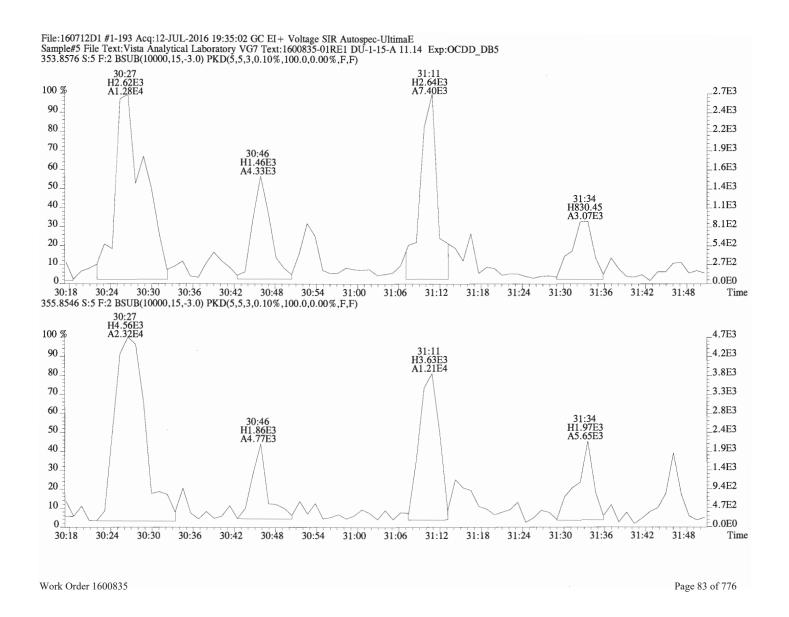


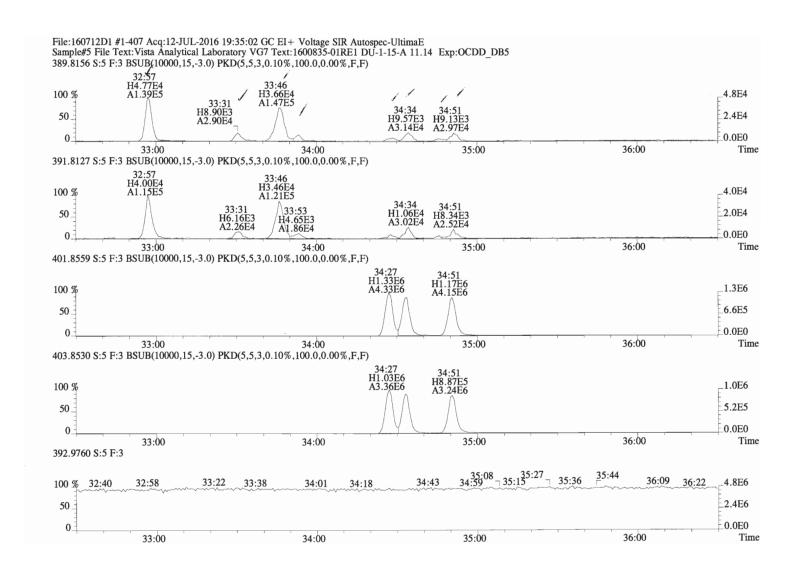
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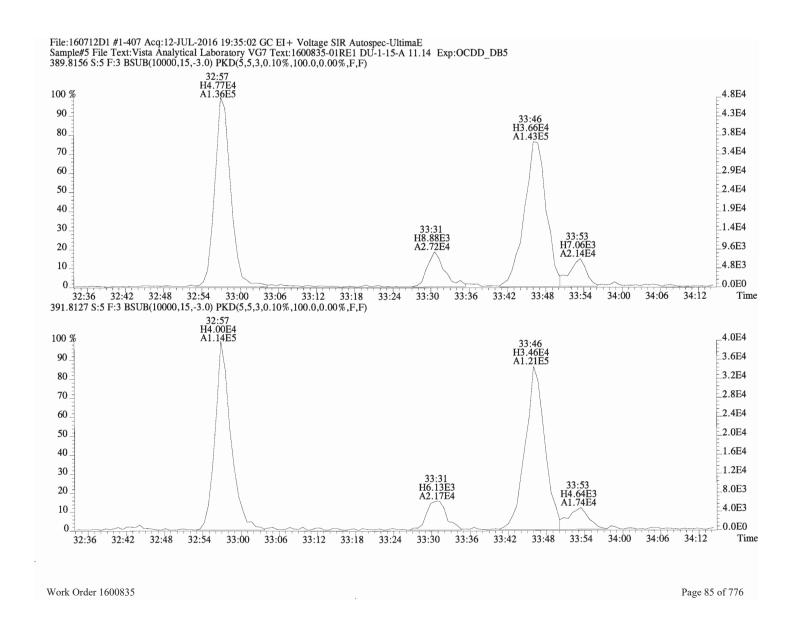
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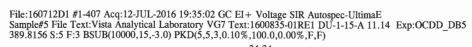
Work Order 1600835

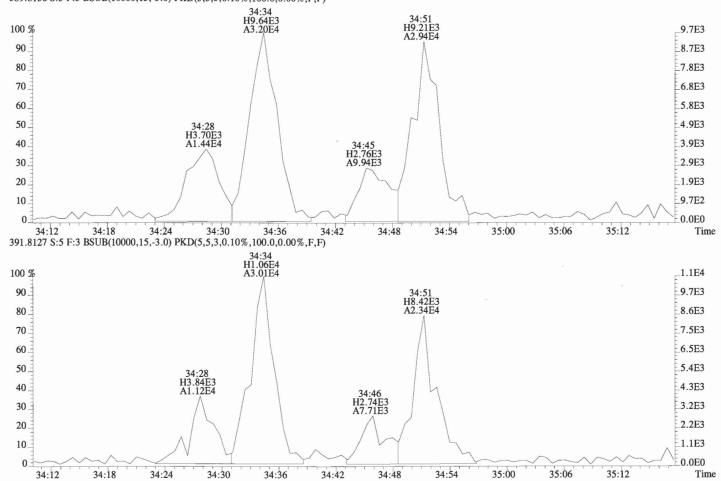




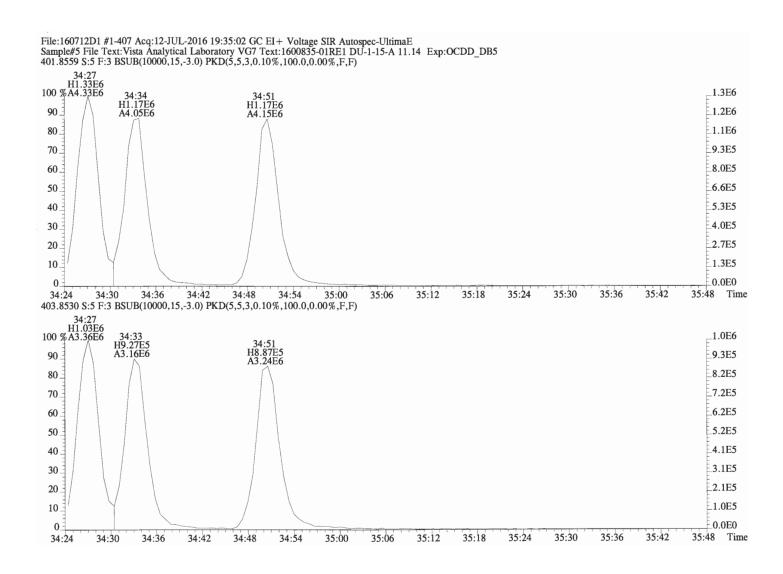
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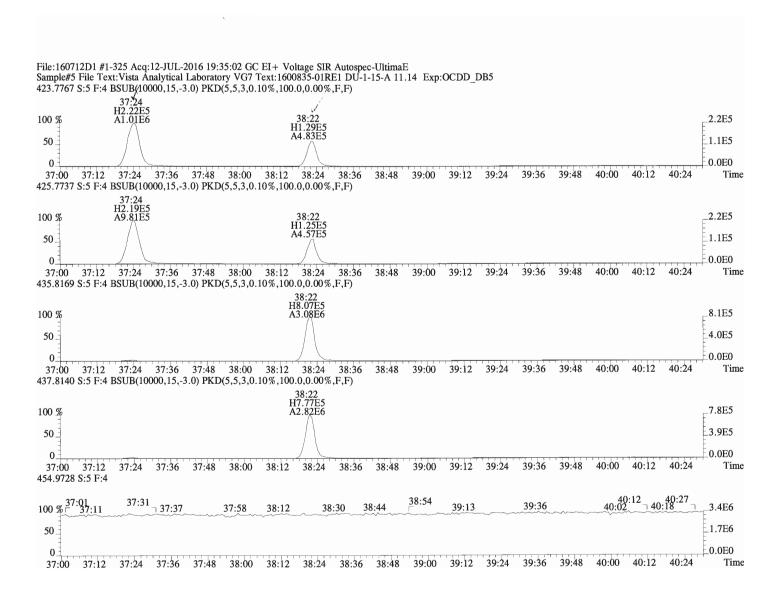




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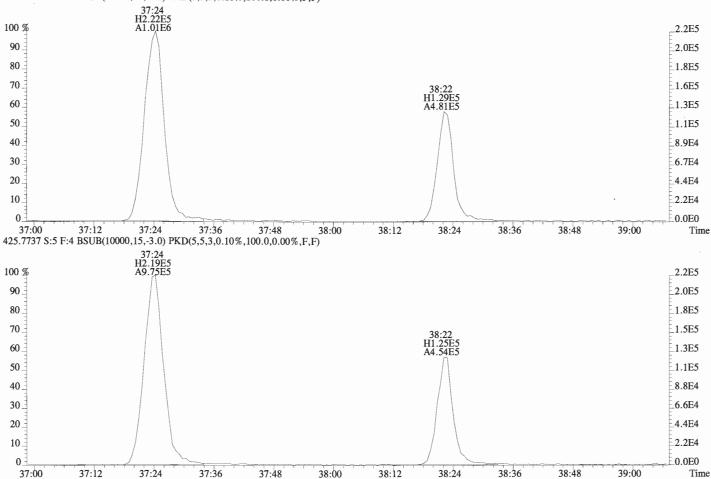


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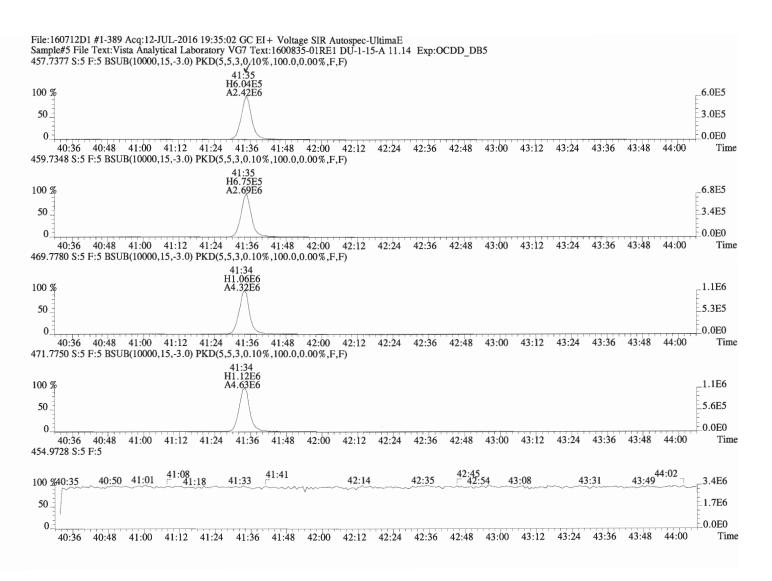


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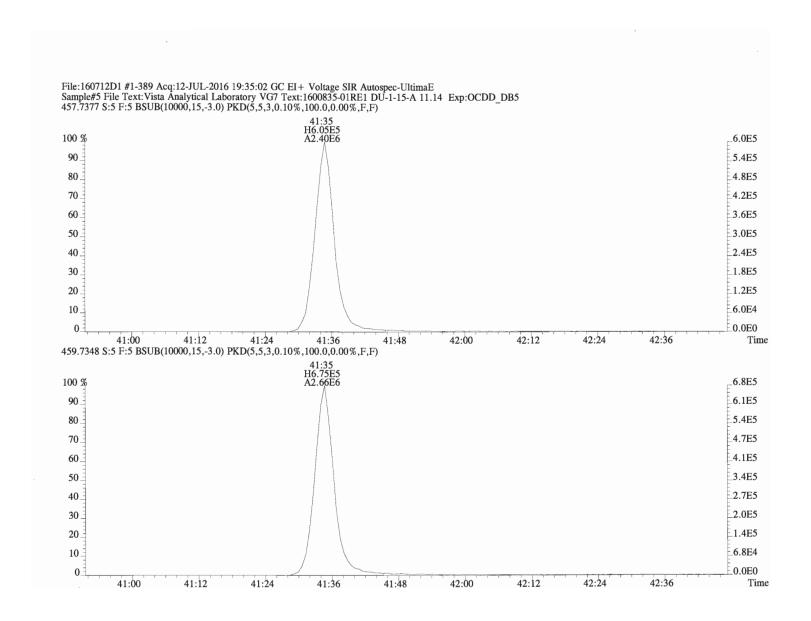
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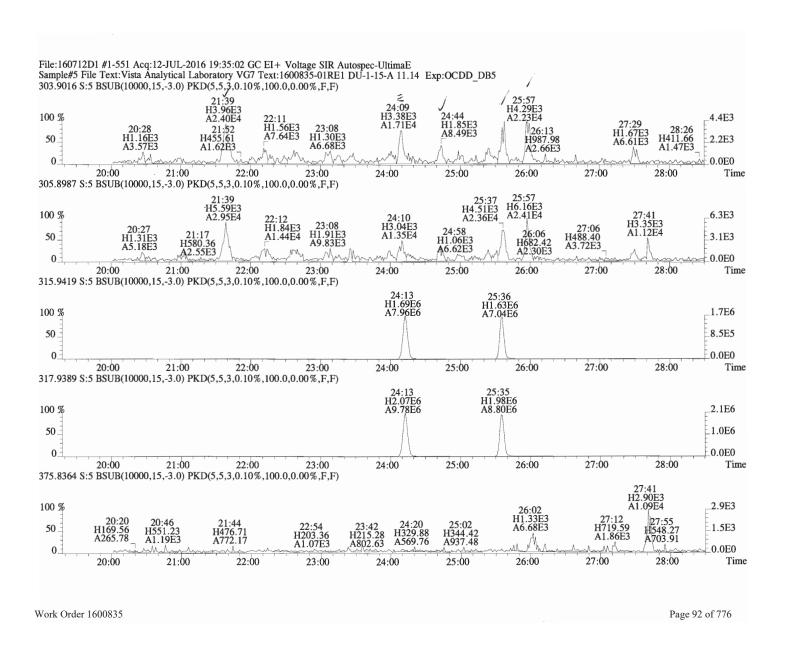
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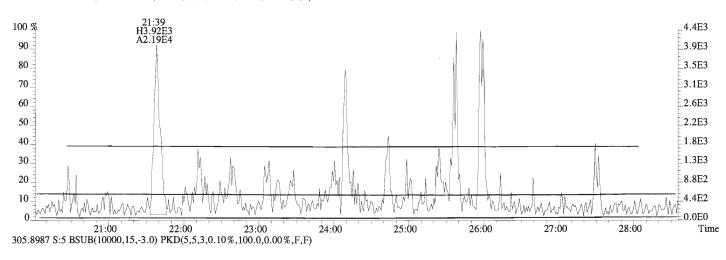
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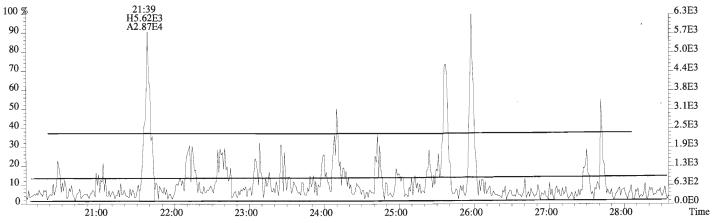


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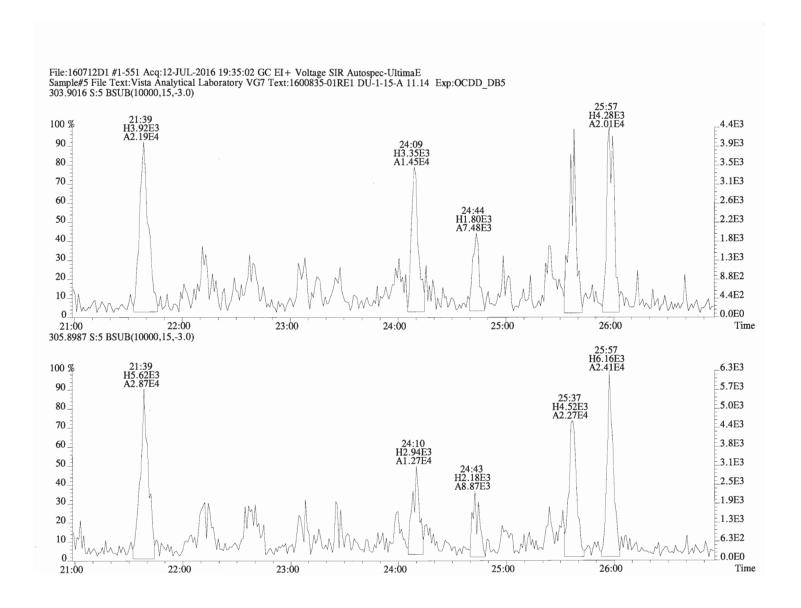
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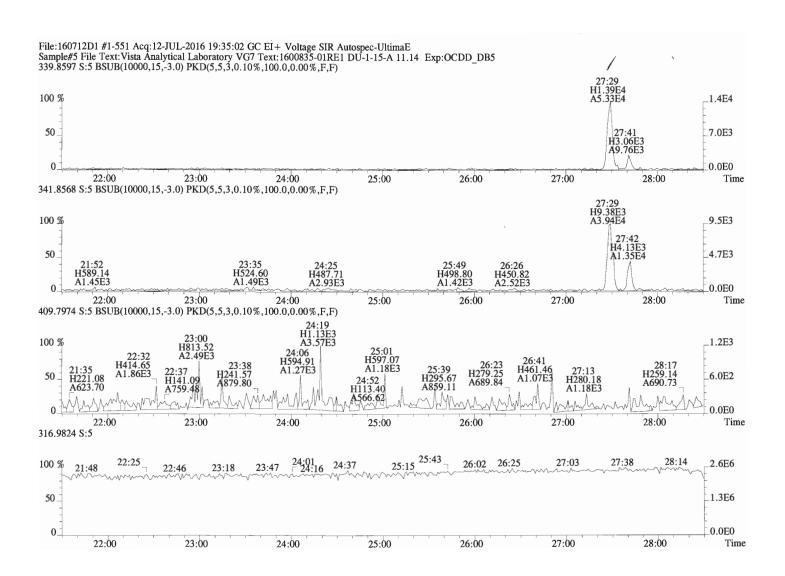


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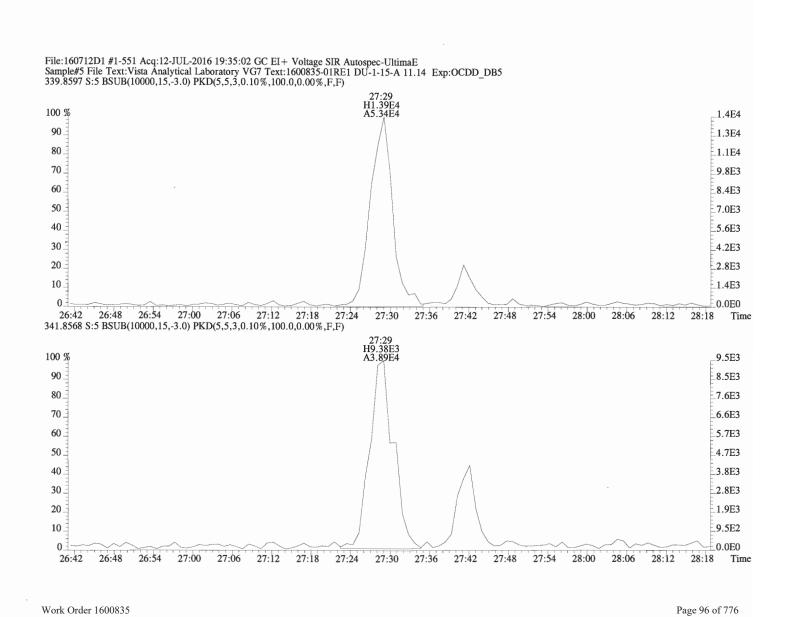
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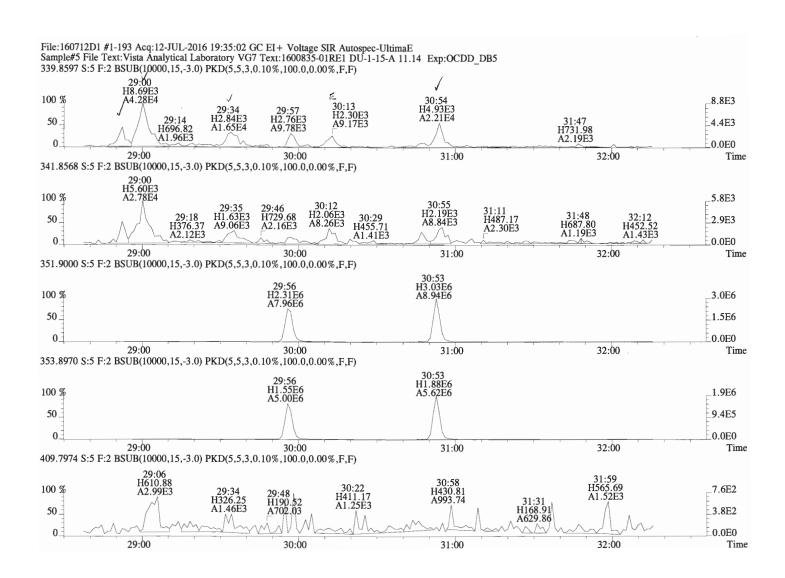


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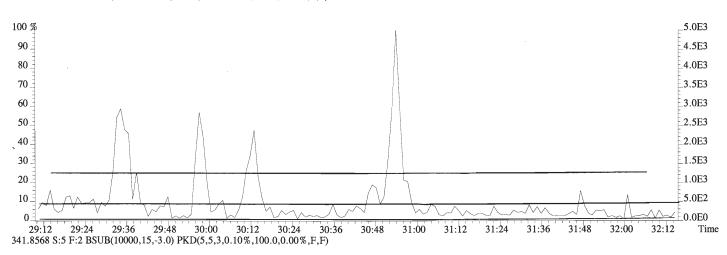
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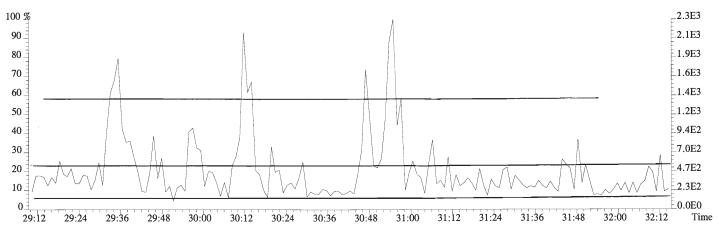




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29:00

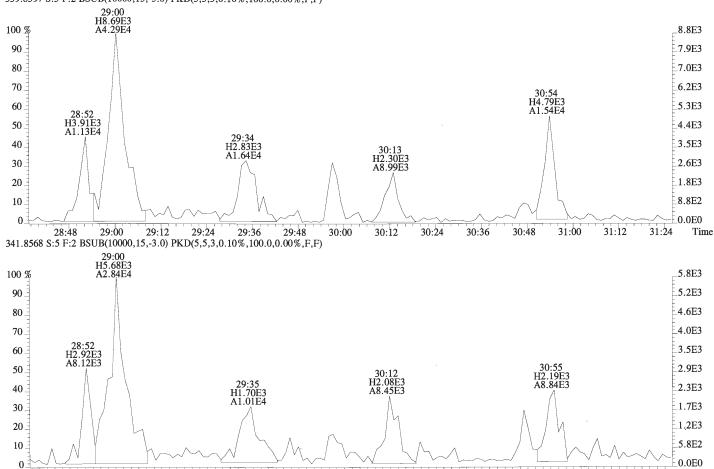
28:48

29:12

29:24

29:36

29:48



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30:00

30:12

30:24

30:36

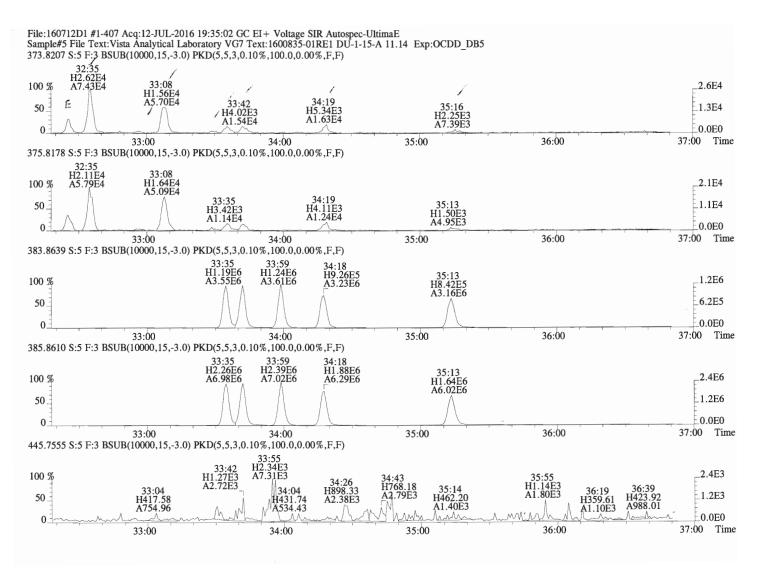
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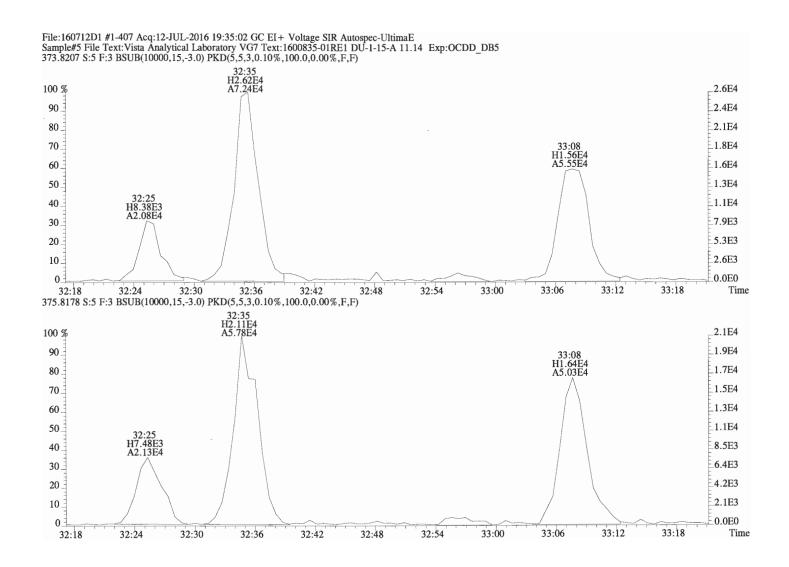
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31:24

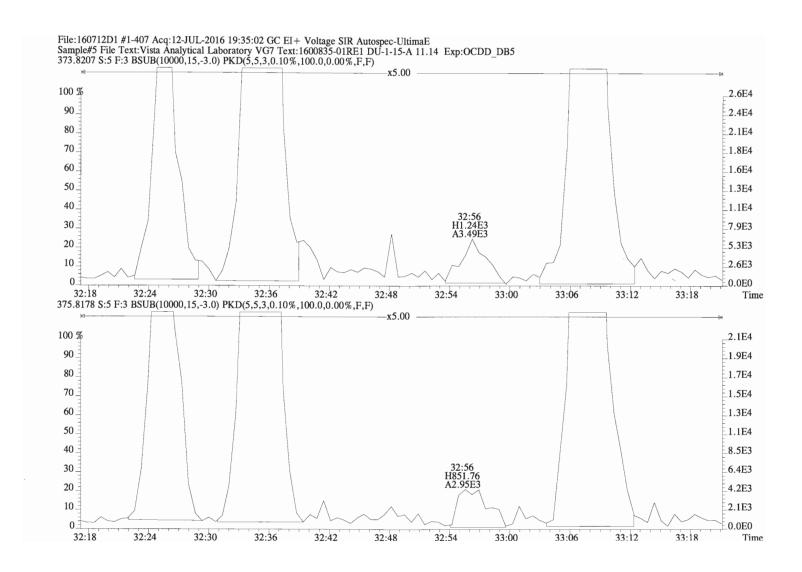
Time



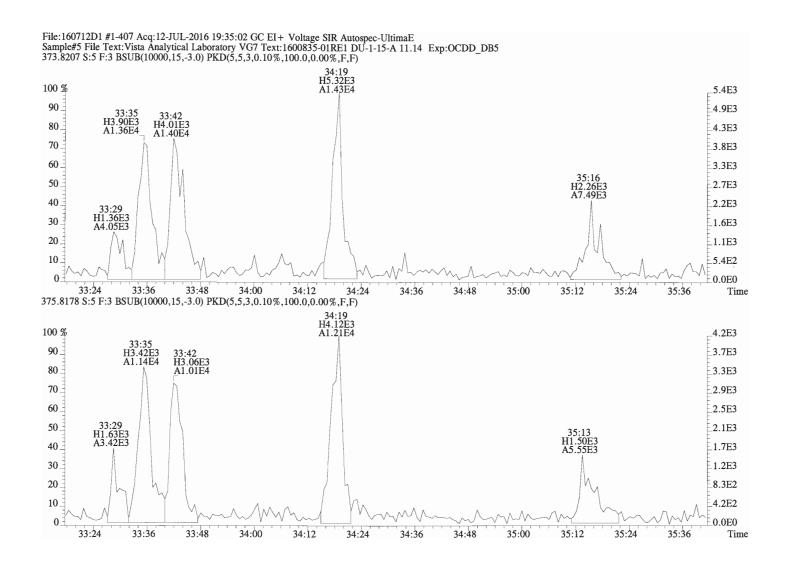
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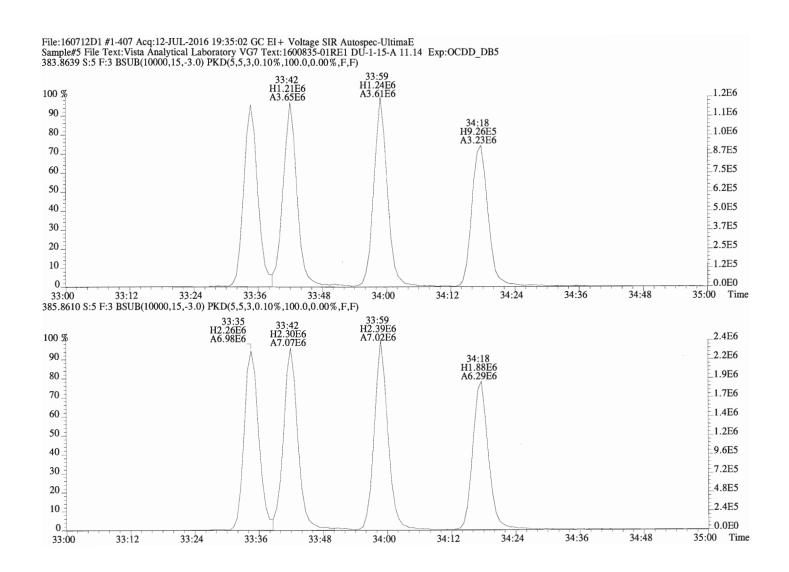
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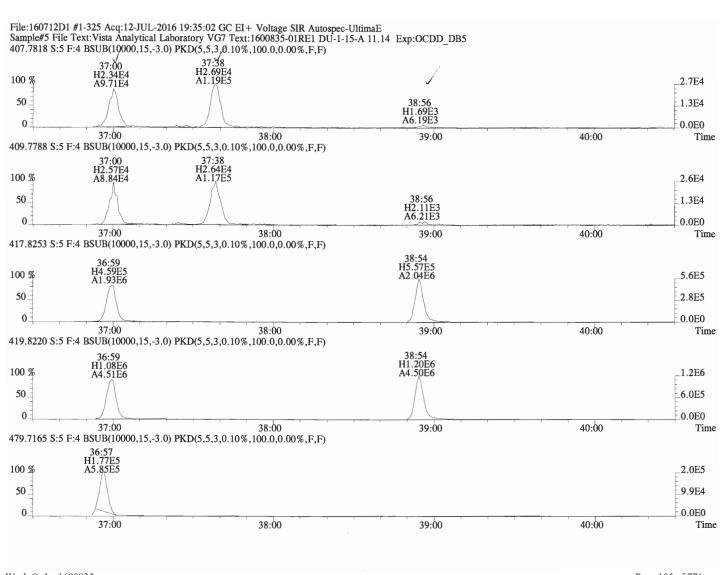
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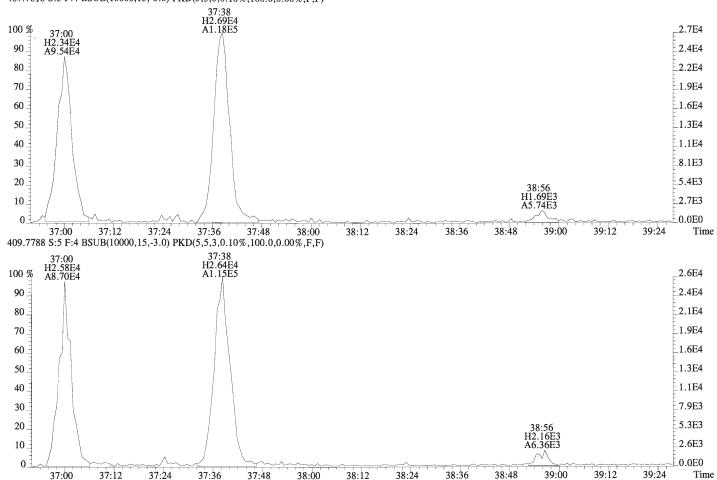


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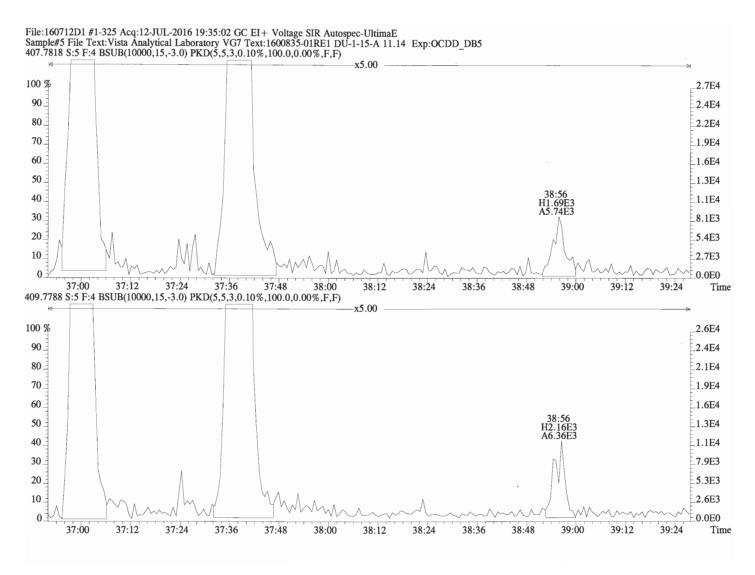


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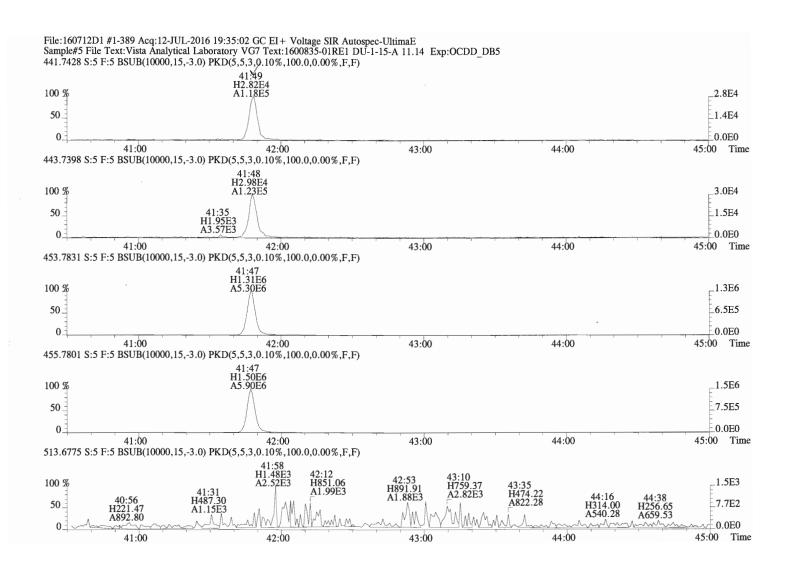
File:160712D1 #1-325 Acq:12-JUL-2016 19:35:02 GC EI+ Voltage SIR Autospec-UltimaE Sample#5 File Text:Vista Analytical Laboratory VG7 Text:1600835-01RE1 DU-1-15-A 11.14 Exp:OCDD_DB5 407.7818 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



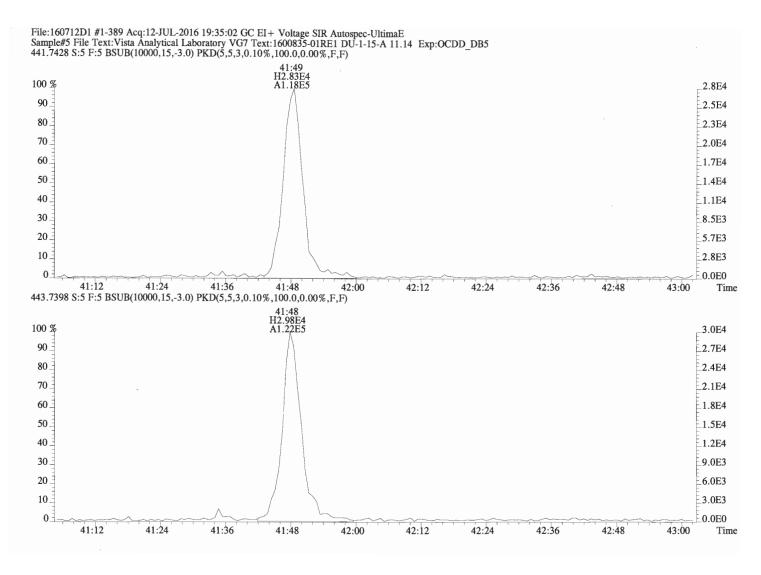
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	Client ID: DU-1-15-B	Fi	lename: 1	60712D1	.S:6	Acq:12	2-JUL-16 20	:23:34		_	ConC	Cal: ST160712D1	-1			Page	5 of 5
	Lab ID: 1600835-02RE1	GC	Column II	D: ZB-5	MS ICal	: 1613V	G7-4-7-16	wt/	vol:10	.002	Endo	AL: NA					
	Name	Resp	RA	RRF	RT	RRT	Conc	Q noise	Fac	DL	Name		Conc	EMPC	Qual	noise	DL
	2,3,7,8-TCDD		0.66 y	1.13		1.001	0.18388	*	2.5	*		Tetra-Dioxins	1.64	1.99		*	*
	1,2,3,7,8-PeCDD		0.63 y	0.96		1.000	0.70384	*	2.5	*		Penta-Dioxins	6.53	6.74		*	*
	1,2,3,4,7,8-HxCDD		1.11 y	1.00		1.000	0.85484	*	2.5	*	Total	Hexa-Dioxins	31.9	31.9		*	*
	1,2,3,6,7,8-HxCDD		1.17 y	1.10		1.000	1.6092	*	2.5	*		Hepta-Dioxins	255	255		*	*
	1,2,3,7,8,9-HxCDD		1.24 y	1.05		1.000	1.4583	*	2.5	*		Tetra-Furans	1.67	1.80		*	*
	1,2,3,4,6,7,8-HpCDD		1.05 y	1.05		1.000	44.267	*	2.5	*		Penta-Furans	3.2031	3.4708		*	*
	OCDD	7.42e+06	0.89 y	0.96	41:34	1.000	357.85	*	2.5	*		Hexa-Furans	.7.28	7.39		*	*
											Total	Hepta-Furans	13.6	13.6		*	*
	2,3,7,8-TCDF		0.71 y	1.12		1.000	0.27773	*	2.5	*							
	1,2,3,7,8-PeCDF	*	* n	1.01		*	*	353	2.5	0.121							
	2,3,4,7,8-PeCDF		1.18 n	0.90		1.001	0.26773	*	2.5	*							
	1,2,3,4,7,8-HxCDF		1.26 y	1.16		1.000	0.38744	*	2.5	*							
	1,2,3,6,7,8-HxCDF		1.06 y	1.16		1.000	0.38603	*	2.5	*							
	2,3,4,6,7,8-HxCDF		1.14 y	1.23		1.000	0.44207	*	2.5	*							
	1,2,3,7,8,9-HxCDF		1.17 y	1.13	35:15		0.22153	*	2.5	*							
	1,2,3,4,6,7,8-HpCDF		1.02 y	1.44		1.001	4.7997	*	2.5	*							
	1,2,3,4,7,8,9-HpCDF		0.92 y	1.31	38:55		0.36040	*	2.5	*							
	OCDF	3.78e+05	0.87 y	1.03	41:48	1.000	13.690	*	2.5	*							
	120 2 2 7 2 7 7	1 05- 05	0.00	1 01	06.05						Rec	Qual					
IS			0.80 y	1.01		1.024	183.02				91.5						
IS			0.63 y	1.10		1.208	143.29				71.7						
IS			1.26 y	0.72		1.014	179.94				90.0						
IS			1.28 y	0.73		1.017	170.29				85.2						
IS			1.26 y	0.70		1.025	174.39				87.2						
IS		8.62e+06	1.05 y 0.89 y	0.66		1.129	148.59				74.3 57.0						
IS			0.89 y	0.90		0.992	227.97 190.53				95.3						
IS			1.60 y	0.90		1.161	138.43				69.2						
IS			1.56 y	1.15		1.197	136.43				68.2						
IS			0.51 y	1.01		0.988	174.58				87.3						
IS			0.52 y	1.10		0.992	164.91				82.5						
IS			0.52 y	0.95		1.009	166.06				83.0						
IS			0.52 y	0.83		1.003	190.42				95.2						
IS			0.32 y	0.70		1.088	159.78				79.9						
IS			0.43 y	0.72		1.145	147.18				73.6		×.				
IS		1.07e+07	0.43 y	0.82		1.230	227.05				56.8						
13	130 0001	1.070707	0.05 y	0.02	41.47	1.250	227.05				50.0			*			
c/	Up 37C1-2,3,7,8-TCDD	4 450+06		1.14	26.26	1.025	69.139				86.4	Integr	ations	Revi	ewed		
C	op 3,c1 2,3,,,0 1000	11100100			20.20	1.025	07.137				00.1	hv	7	by	cwca	/	
RS	/RT 13C-1,2,3,4-TCDD	1.13e+07	0.78 y	1.00	25:47	*	199.97					Analyst:	DR	-	yst:_	M	
RS			0.81 y	1.00	24:12		199.97								1	1	
	/RT 13C-1,2,3,4,6,9-HxCDF		0.52 y	1.00	33:59		199.97						1 1			l	
			1									Date: 7/	13/16	Date	. 7	15/15	6
												- 1	,		-		

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Totals class: TCDD EMPC Entry #: 19

Run: 11 File: 160712D1 S: 6 I: 1 F: 1
Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 1.9944 Unnamed Concentration: 1.811

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
22:38	1.379e+04	1.831e+04 0.75 y	3.210e+04	0.54083	
23:03	6.234e+03	8.081e+03 0.77 y	1.431e+04	0.24119	
23:32	6.254e+03	6.293e+03 0.99 n	1.114e+04	0.18768	
24:21	7.145e+03	8.071e+03 0.89 y	1.522e+04	0.25637	
24:35	5.957e+03	7.826e+03 0.76 y	1.378e+04	0.23222	
24:48	7.626e+03	5.583e+03 1.37 n	9.882e+03	0.16651	
25:47	5.086e+03	5.937e+03 0.86 y	1.102e+04	0.18572	
26:26	4.355e+03	6.559e+03 0.66 y	1.091e+04	0.18388	2,3,7,8-TCDD

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Totals class: PeCDD EMPC Entry #: 21

Run: 11 File: 160712D1 S: 6 I: 1 F: 2 Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 6.7424 Unnamed Concentration: 6.039

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
29:58 30:08 30:13	2.624e+04 1.409e+04 1.513e+04 1.050e+04 1.060e+04 1.554e+04	2.160e+04 0.6 2.635e+04 0.5 1.489e+04 0.7	57 y 7.204e+04 65 y 3.569e+04 57 y 4.148e+04 71 y 2.539e+04 71 y 2.556e+04 58 y 4.242e+04	1.6699 0.82728 0.96145 0.58847 0.59235 0.98333	
	5.575e+03 1.172e+04 3.183e+03	1.864e+04 0.6	01 n 9.007e+03 63 y 3.037e+04 55 y 8.929e+03	0.20878 0.70384 0.20696	1,2,3,7,8-PeCDD

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Totals class: HxCDD EMPC Entry #: 23

Run: 11 File: 160712D1 S: 6 I: 1 F: 3
Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 31.900 Unnamed Concentration: 27.978

RT	ml Resp	m2 Resp RA	Resp Concentration	Name
32:57	2.438e+05	1.936e+05 1.26 y	4.374e+05 11.615	
33:30	4.848e+04	3.968e+04 1.22 y	8.816e+04 2.3409	
33:45	2.150e+05	1.676e+05 1.28 y	3.826e+05 10.160	
33:53	6.671e+04	5.044e+04 1.32 y	1.172e+05 3.1109	
34:27	1.676e+04	1.510e+04 1.11 y	3.185e+04 0.85484	1,2,3,4,7,8-HxCDD
34:34	3.370e+04	2.886e+04 1.17 y	6.256e+04 1.6092	1,2,3,6,7,8-HxCDD
34:45	1.637e+04	1.192e+04 1.37 y	2.829e+04 0.75116	
34:51	2.964e+04	2.398e+04 1.24 y	5.362e+04 1.4583	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 11 File: 160712D1 S: 6 I: 1 F: 4
Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 254.64 Unnamed Concentration: 210.371

RT ml Resp m2 Resp RA Resp Concentration Name

37:23 3.141e+06 3.113e+06 1.01 y 6.254e+06 210.37 38:22 6.738e+05 6.422e+05 1.05 y 1.316e+06 44.267 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 11 File: 160712D1 S: 6 I: 1 F: 1 Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 1.8004 Unnamed Concentration: 1.523

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
	2.253e+04 1.199e+04	3.083e+04 0.73 y 1.572e+04 0.76 y		0.59393	
24:43	6.177e+03 1.035e+04	7.402e+03 0.83 y 1.461e+04 0.71 y	1.358e+04	0.15115 0.27773	2,3,7,8-TCDF
	1.416e+04 1.075e+04	1.602e+04 0.88 y 6.757e+03 1.59 n		0.33594 0.13314	-,-,-,-

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 11 File: 160712D1 S: 6 I: 1 F: 1

Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 1.5090

Unnamed Concentration: 1.509

RT m1 Resp m2 Resp RA Resp Concentration Name

27:27 5.786e+04 3.999e+04 1.45 y 9.785e+04 1.5090

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Totals class: PeCDF EMPC Entry #: 31

Run: 11 File: 160712D1 S: 6 I: 1 F: 2 Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 1.9618 Unnamed Concentration: 1.694

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name
28:51	1.375e+04	7.731e+03	1.78 y	2.148e+04	0.33127	
28:59	3.205e+04	2.319e+04	1.38 y	5.524e+04	0.85199	
29:34	1.356e+04	8.355e+03	1.62 y	2.192e+04	0.33805	
30:12	6.623e+03	4.578e+03	1.45 y	1.120e+04	0.17275	
30:54	1.070e+04	9.038e+03	1.18 n	1.761e+04	0.26773	2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC Entry #: 33

Run: 11 File: 160712D1 S: 6 I: 1 F: 3
Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

Total Concentration: 7.3867 Unnamed Concentration: 5.950

33:42 1.189e+04 1.126e+04 1.06 y 2.315e+04 0.38603 1 34:18 1.310e+04 1.145e+04 1.14 y 2.455e+04 0.44207 2	.,2,3,4,7,8-HxCDF .,2,3,6,7,8-HxCDF !,3,4,6,7,8-HxCDF

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Totals class: HpCDF EMPC Entry #: 35

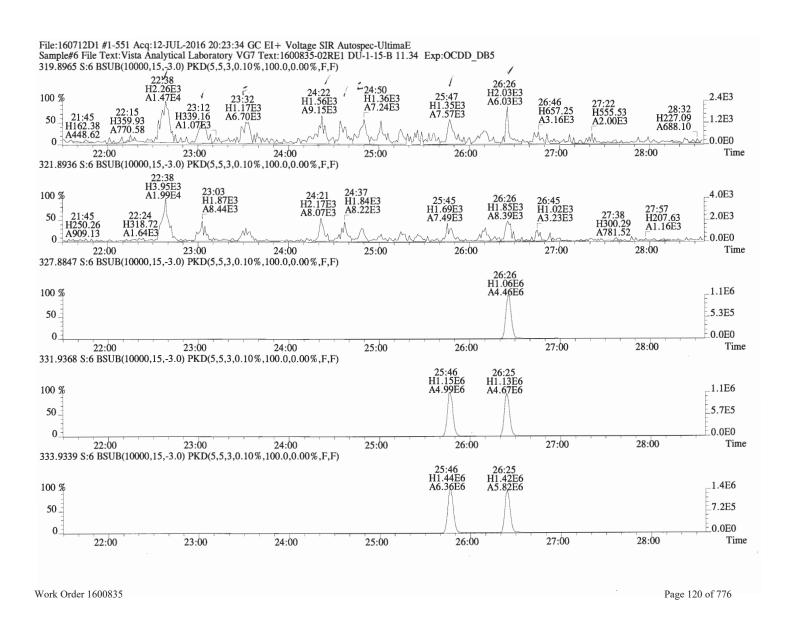
Run: 11 File: 160712D1 S: 6 I: 1 F: 4 Acquired: 12-JUL-16 20:23:34 Processed: 13-JUL-16 12:06:14

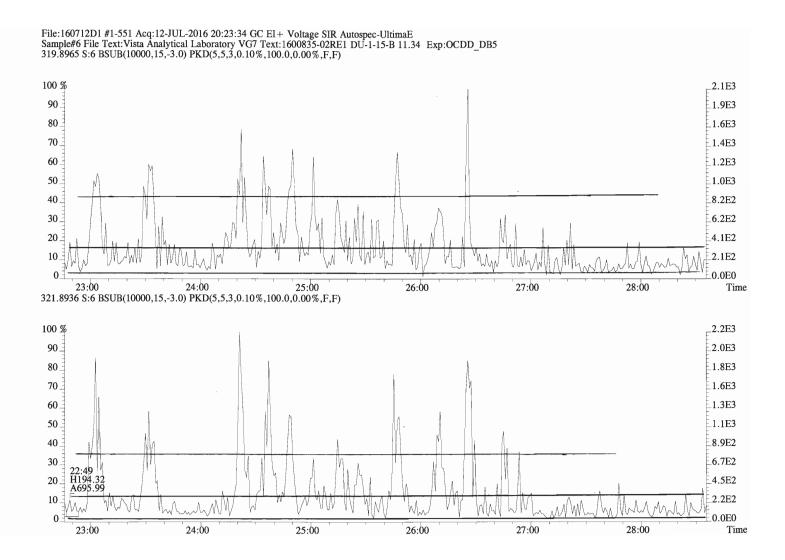
Total Concentration: 13.629 Unnamed Concentration: 8.469

Resp Concentration Name RT ml Resp m2 Resp RA

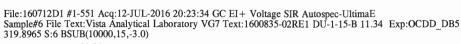
37:00 1.119e+05 1.093e+05 1.02 y 2.212e+05 4.7997 1,2,3,4,6,7,8-HpCDF 37:38 1.853e+05 1.779e+05 1.04 y 3.632e+05 8.4692 38:55 6.893e+03 7.478e+03 0.92 y 1.437e+04 0.36040 1,2,3,4,7,8,9-HpCDF

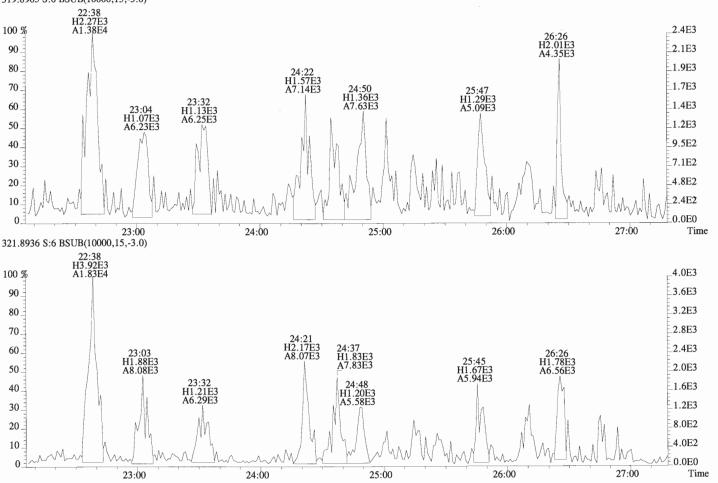
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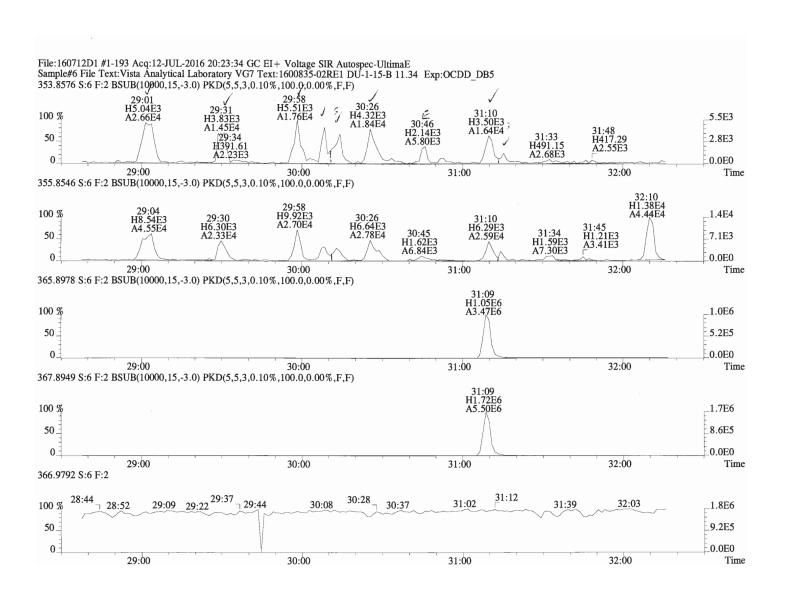


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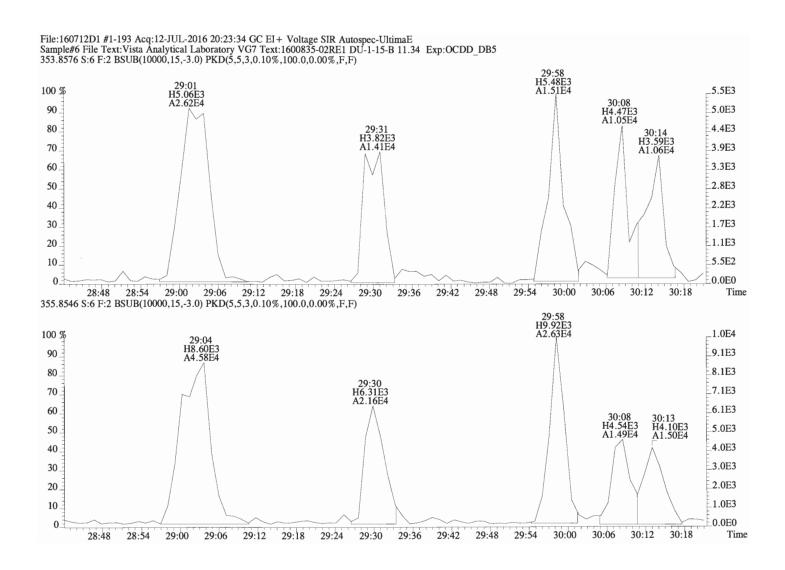




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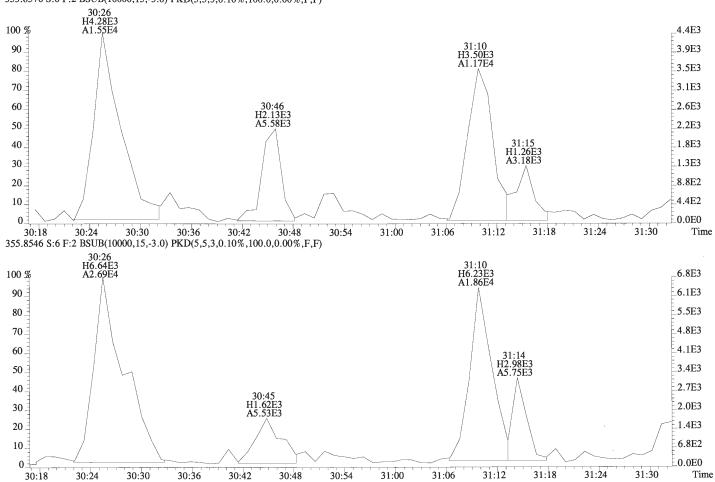


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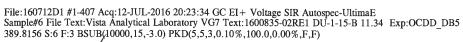


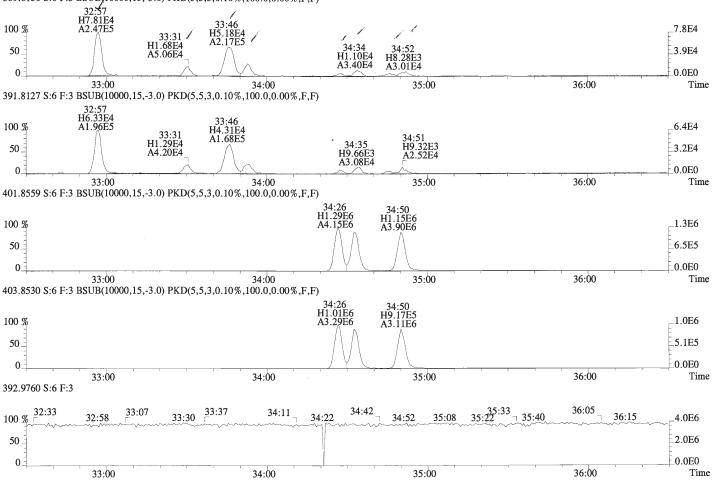
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File:160712D1 #1-193 Acq:12-JUL-2016 20:23:34 GC EI+ Voltage SIR Autospec-UltimaE Sample#6 File Text:Vista Analytical Laboratory VG7 Text:1600835-02RE1 DU-1-15-B 11.34 Exp:OCDD_DB5 353.8576 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

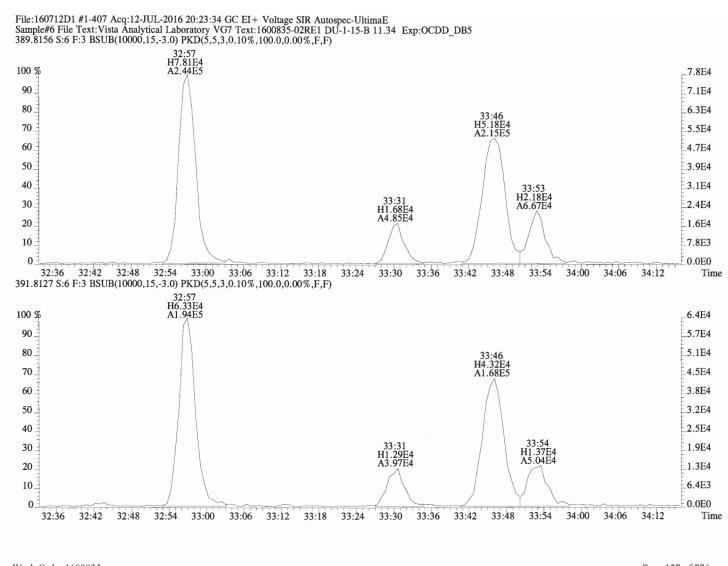


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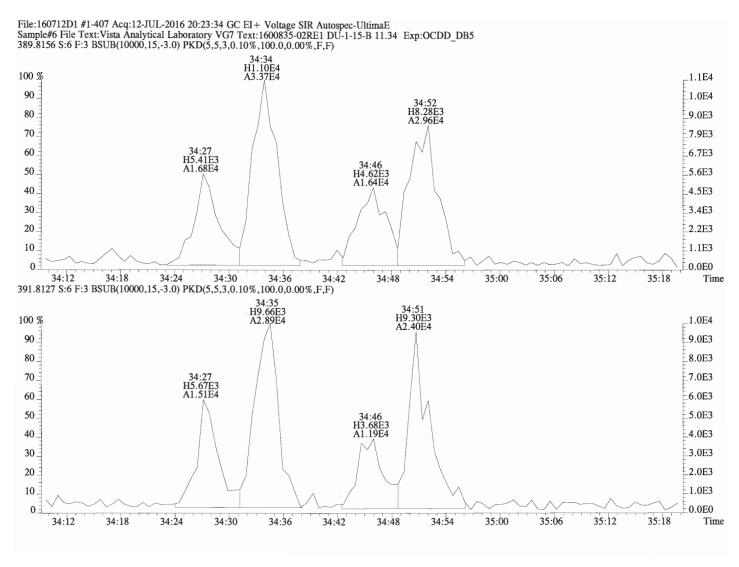




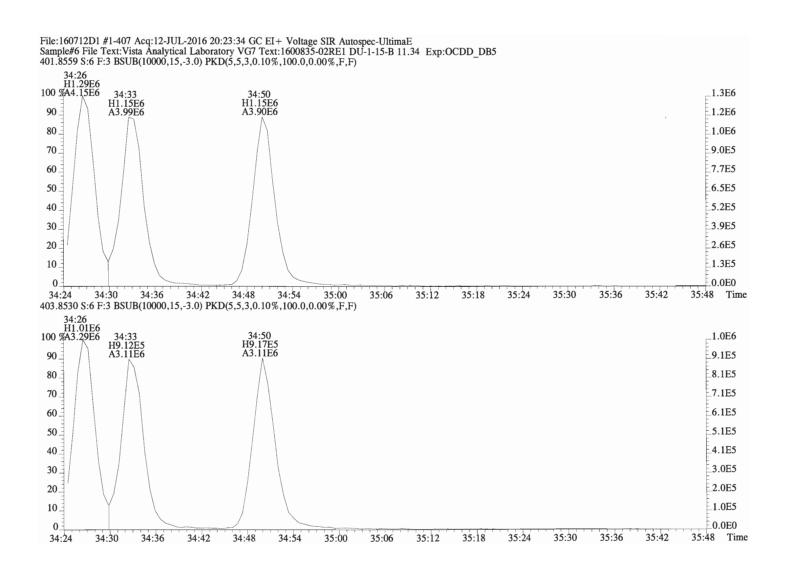
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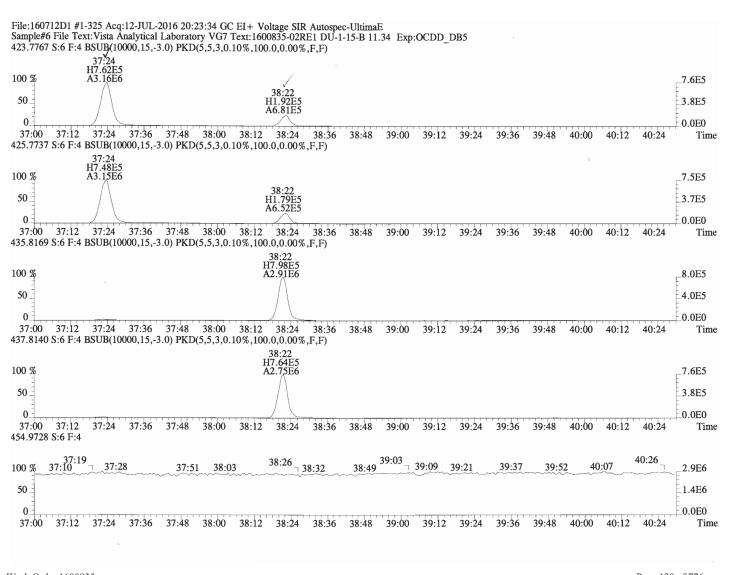
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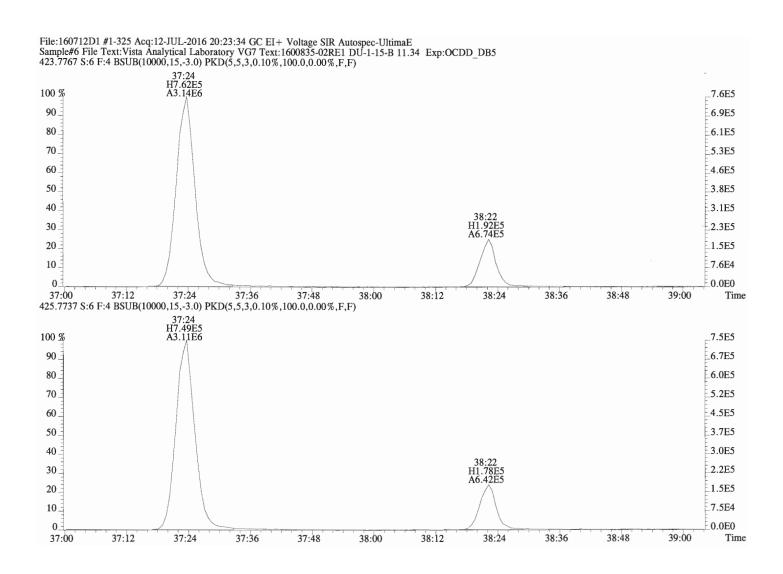
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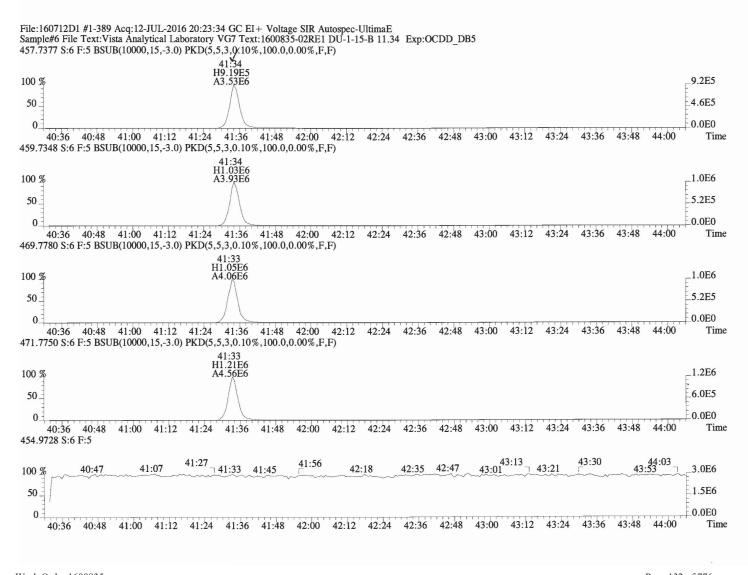
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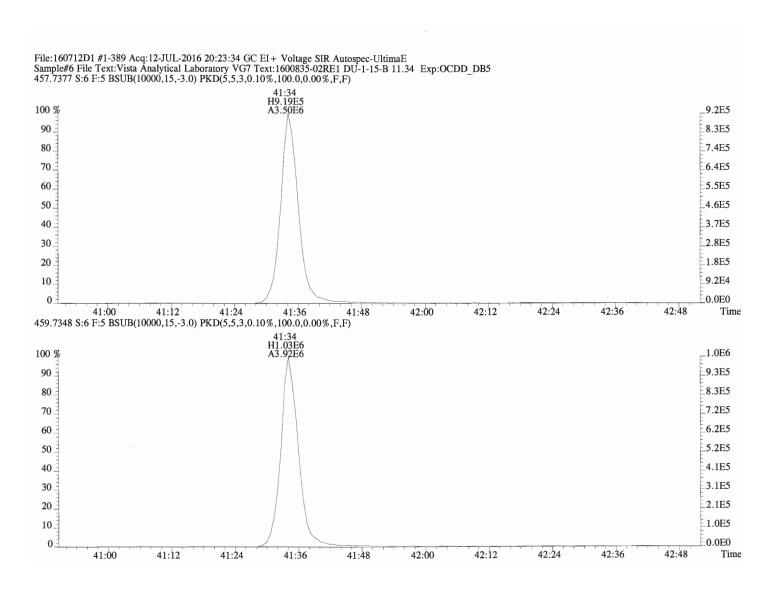
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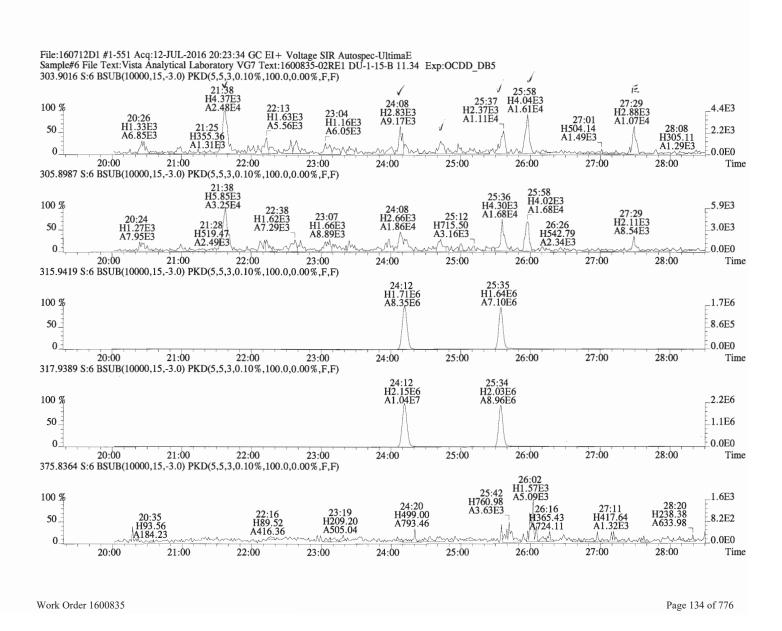
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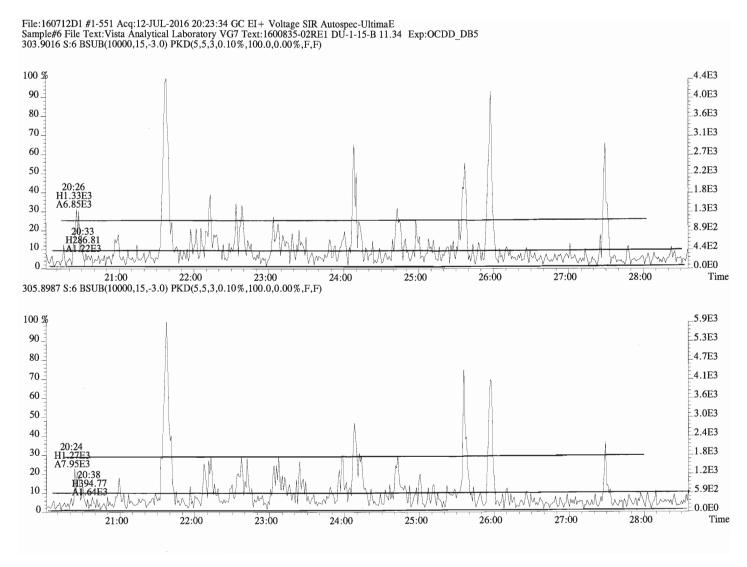


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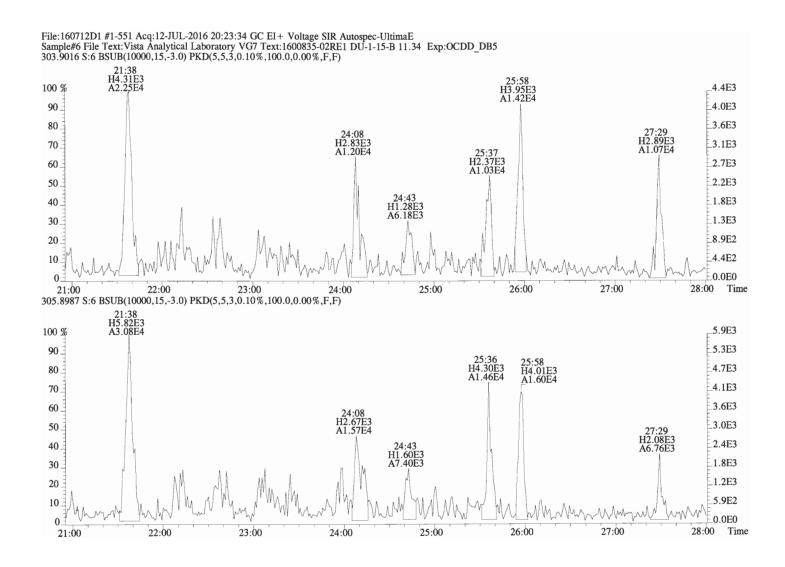


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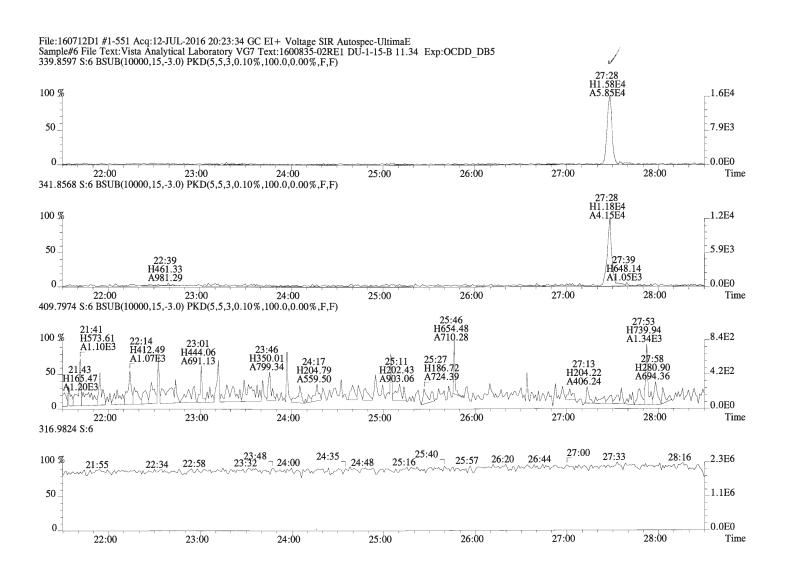




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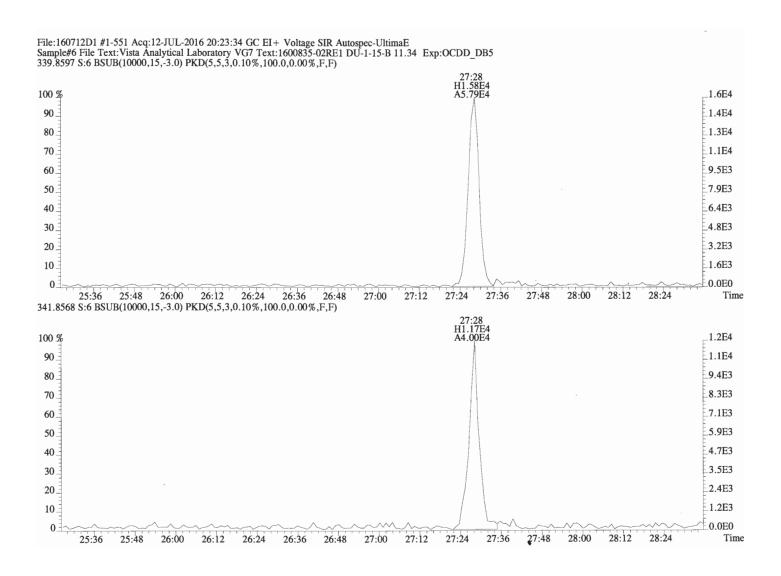


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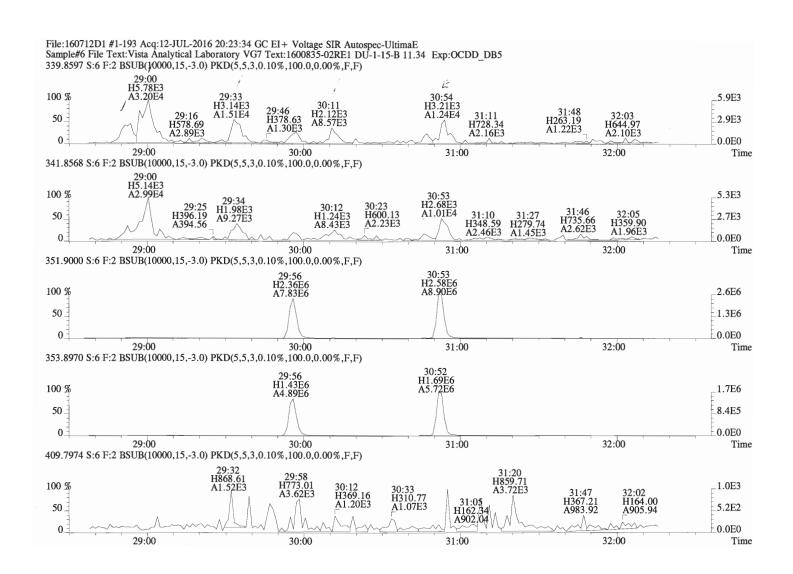


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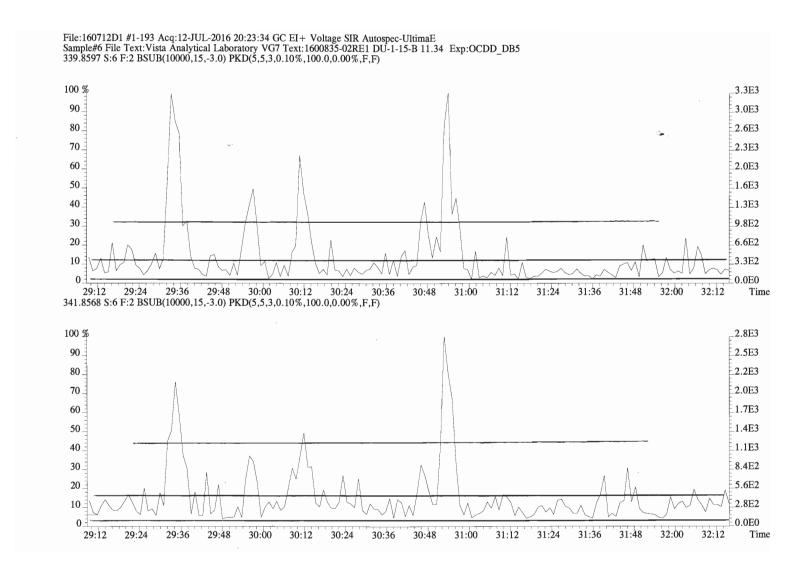
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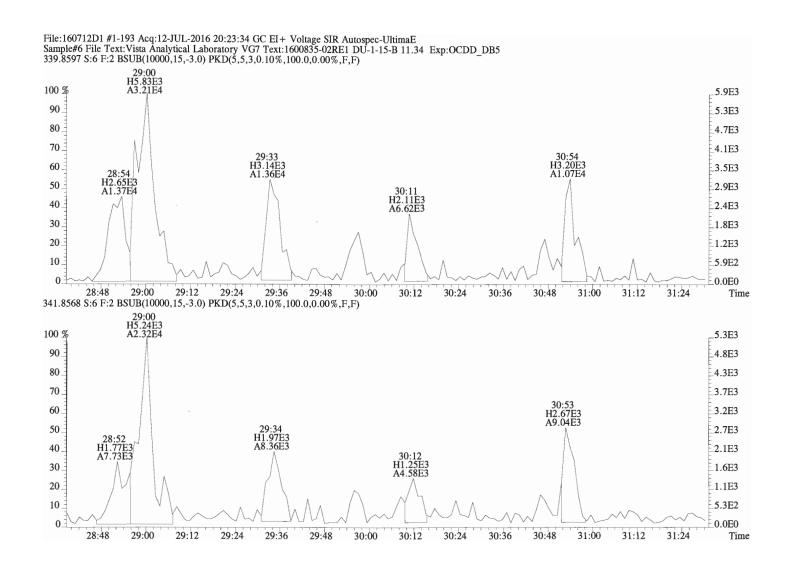
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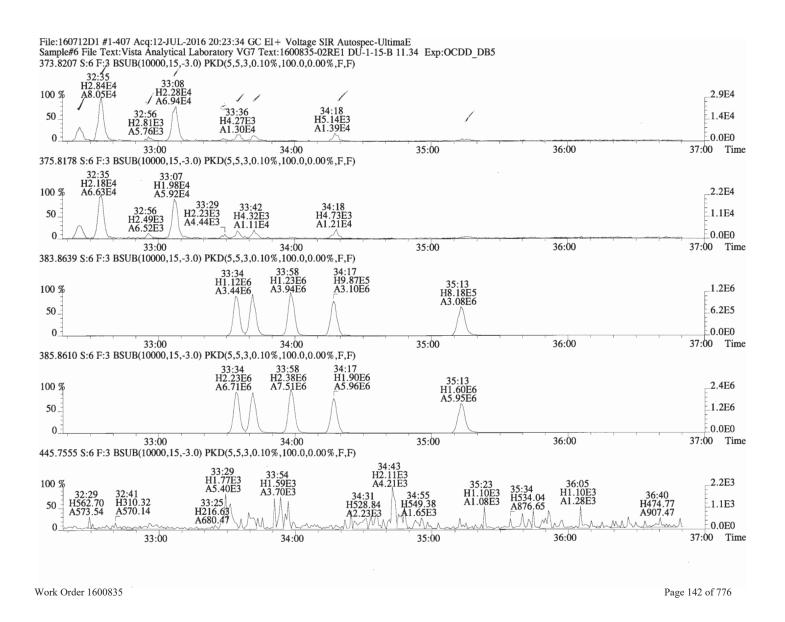
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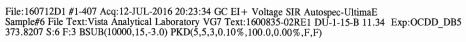


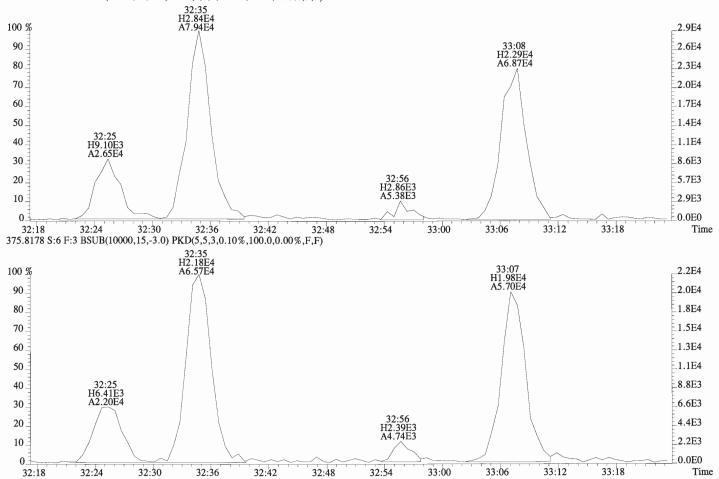
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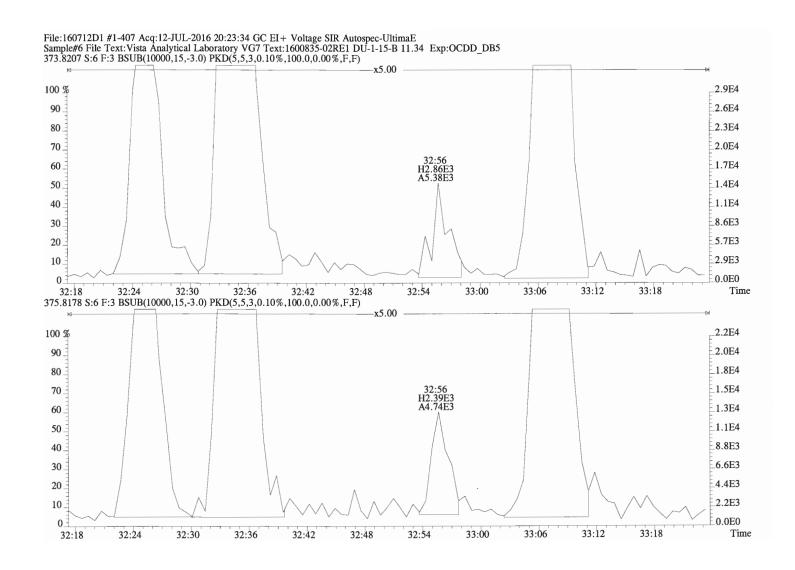






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File:160712D1 #1-407 Acq:12-JUL-2016 20:23:34 GC EI + Voltage SIR Autospec-UltimaE Sample#6 File Text:Vista Analytical Laboratory VG7 Text:1600835-02RE1 DU-1-15-B 11.34 Exp:OCDD_DB5 373.8207 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

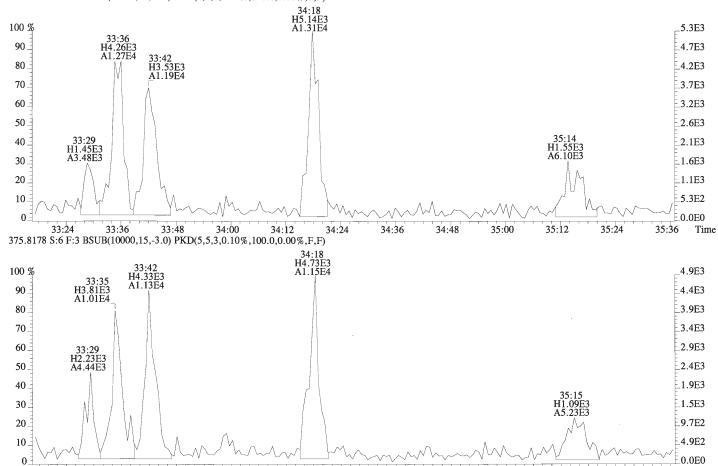
33:24

33:36

33:48

34:00

34:12



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34:36

34:48

34:24

35:00

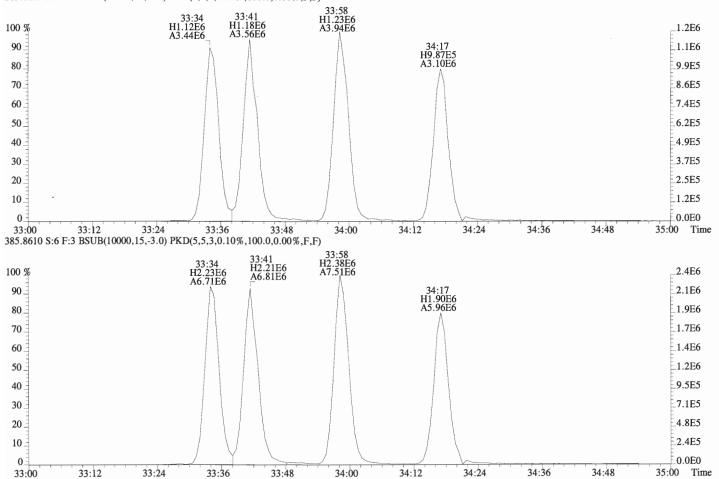
35:12

35:24

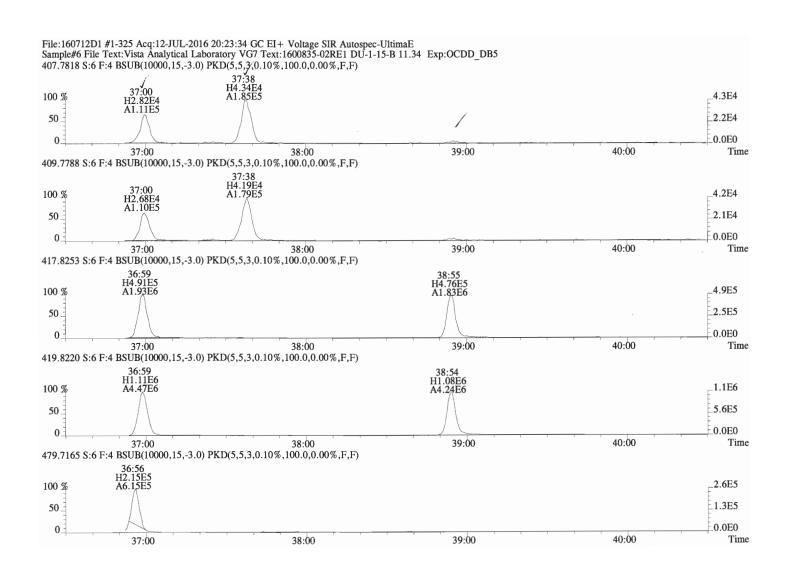
35:36

Time

File:160712D1 #1-407 Acq:12-JUL-2016 20:23:34 GC EI+ Voltage SIR Autospec-UltimaE Sample#6 File Text:Vista Analytical Laboratory VG7 Text:1600835-02RE1 DU-1-15-B 11.34 Exp:OCDD_DB5 383.8639 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10 %,100.0,0.00 %,F,F)

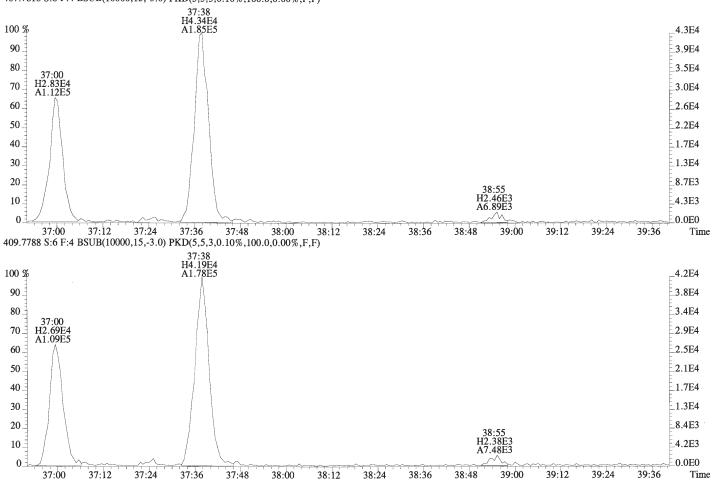


Work Order 1600835

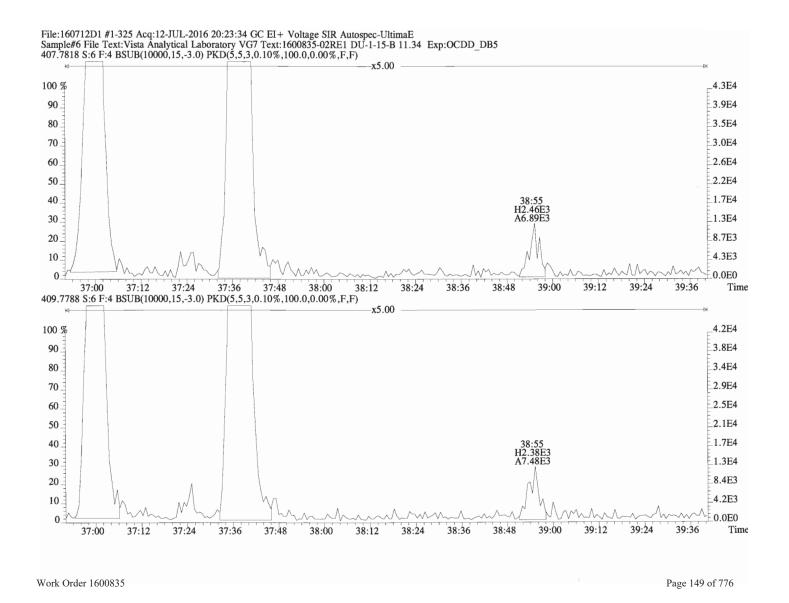


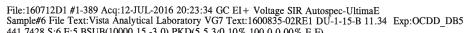
Work Order 1600835 Page 147 of 776

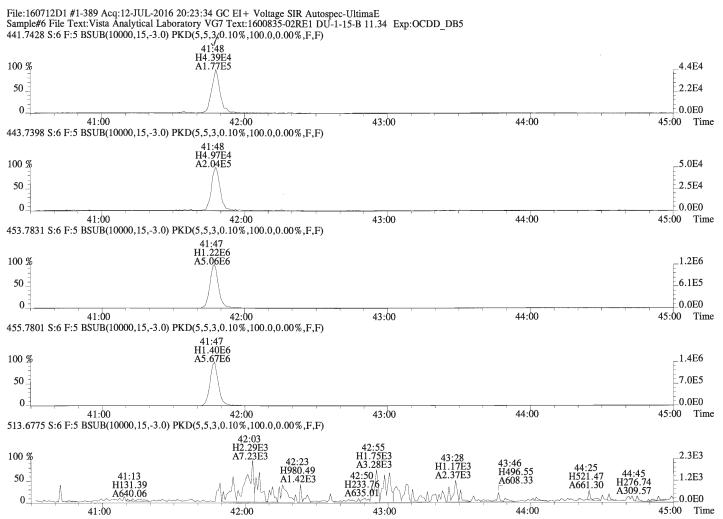
File:160712D1 #1-325 Acq:12-JUL-2016 20:23:34 GC EI+ Voltage SIR Autospec-UltimaE Sample#6 File Text:Vista Analytical Laboratory VG7 Text:1600835-02RE1 DU-1-15-B 11.34 Exp:OCDD_DB5 407.7818 S:6 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



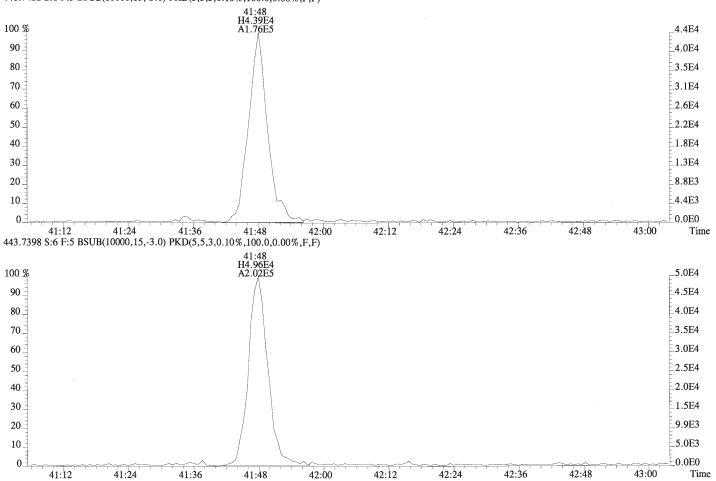
Work Order 1600835 Page 148 of 776







Work Order 1600835 Page 150 of 776 File:160712D1 #1-389 Acq:12-JUL-2016 20:23:34 GC EI+ Voltage SIR Autospec-UltimaE Sample#6 File Text:Vista Analytical Laboratory VG7 Text:1600835-02RE1 DU-1-15-B 11.34 Exp:OCDD_DB5 441.7428 S:6 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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1,2,3,7,8 1,2,3,4,7,8 1,2,3,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 13C-1,2,3,7,8,9	Name .8-TCDD 3-PeCDD 3-HxCDD 0-HxCDD 3-HpCDD OCDD .8-TCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HyCDF 3-HyCDF 0-HyCDF 0-HyCDF	Resp * 2.85e+04 2.95e+04 7.20e+04 7.92e+04 1.27e+06 7.64e+06 2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.92e+04 2.34e+03 2.51e+05 1.42e+04 3.62e+05	RA * n 0.72 y 1.08 y 1.42 y 1.07 y 0.89 y 0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.34 y 1.08 y 0.87 y 1.08 y 0.87 y	RRF 1.13 0.96 1.00 1.10 1.05 1.05 0.96 1.12 1.01 0.90 1.16 1.12 1.13 1.44 1.31 1.03	RT NotFm 31:11 34:29 34:35 34:52 38:23 41:35 25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	RRT * 1.000 1.001 1.000 1.000	77-4-7-16 Conc * 0.75364 0.91242 2.0625 2.3750 45.791 381.61 0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159 5.9293	wt/ Q noise 220 * * * * * * * * *	Fac 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	DL 0.0728 * * * * * * *	EndCAL: NA Name Total Tetra-Diox Total Penta-Diox Total Hexa-Diox Total Hepta-Diox Total Tetra-Pura Total Penta-Fura Total Hexa-Fura Total Hepta-Fura	cins 4.40 ins 22.4 cins 101 ans 1.41 ans 4.4668 as 8.57	EMPC 0.351 4.40 22.4 101 1.69 4.6969 8.57 14.7	Qual	noise * * * * * * * * *
1,2,3,7,8 1,2,3,4,7,8 1,2,3,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 13C-1,2,3,7,8,9	8-TCDD 3-PeCDD 3-HxCDD 3-HxCDD 3-HxCDD 0-HxCDD 3-HpCDD 0-CDD 8-TCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HyCDF 0-HyCDF 0-CDF	2.85e+04 2.95e+04 7.20e+04 7.92e+04 1.27e+06 7.64e+06 2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.34e+03 2.51e+05 1.42e+04 3.62e+05	* n 0.72 y 1.08 y 1.42 y 1.17 y 0.89 y 0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.34 y 1.08 y	1.13 0.96 1.00 1.10 1.05 0.96 1.12 1.01 0.90 1.16 1.16 1.23 1.13 1.44	NotFm 31:11 34:29 34:35 34:52 38:23 41:35 25:37 29:57 30:55 33:36 33:41 34:19 35:15 37:00 38:56	1.000 1.001 1.000 1.000 1.000 1.000 1.000 1.000 1.001 1.000 1.000 1.000 1.000	* 0.75364 0.91242 2.0625 2.3750 45.791 · 381.61 0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	220	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	0.0728	Total Tetra-Diox Total Penta-Diox Total Hexa-Diox Total Hepta-Diox Total Tetra-Pura Total Penta-Fura Total Hexa-Pura	cins 0.351 cins 4.40 cins 22.4 cins 101 cins 1.41 cins 4.4668 cins 8.57	0.351 4.40 22.4 101 1.69 4.6969 8.57	Qual	noise * * * * * * * * * * * * *
1,2,3,7,8 1,2,3,4,7,8 1,2,3,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 13C-1,2,3,7,8,9	8-PeCDD 3-HxCDD 3-HxCDD 3-HxCDD 0-HxCDD 3-HpCDD 0CDD 8-TCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 0-HxCDF 0-HyCDF	2.85e+04 2.95e+04 7.20e+04 7.92e+04 1.27e+06 7.64e+06 2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.34e+04 2.34e+03 2.51e+05 1.42e+04 3.62e+05	0.72 y 1.08 y 1.42 y 1.17 y 1.03 y 0.89 y 0.99 n 1.32 y 1.41 y 1.23 y 1.17 y 1.34 y 1.18 y 1.08 y	0.96 1.00 1.10 1.05 1.05 0.96 1.12 1.01 0.90 1.16 1.12 1.13 1.44 1.31	31:11 34:29 34:35 34:52 38:23 41:35 25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.001 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	0.75364 0.91242 2.0625 2.3750 45.791 381.61 0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	* * * * * *	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5		Total Penta-Diox Total Hexa-Diox Total Hepta-Diox Total Tetra-Fura Total Penta-Fura Total Hexa-Fura	cins 4.40 ins 22.4 cins 101 ans 1.41 ans 4.4668 as 8.57	4.40 22.4 101 1.69 4.6969 8.57		* * * * * *
1,2,3,4,7,8 1,2,3,6,7,8 1,2,3,7,8,9 1,2,3,4,6,7,8 2,3,4,7,8 1,2,3,4,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 13C-1,2,3,7,8,9	3-HxCDD 3-HxCDD 9-HxCDD 0-HxCDD 3-HpCDD 0CDD 8-TCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 9-HxCDF 9-HyCDF 0CDF	2.95e+04 7.20e+04 7.92e+04 1.27e+06 7.64e+06 2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.34e+04 2.34e+03 2.51e+05 1.42e+04 3.62e+05	1.08 y 1.42 y 1.17 y 1.03 y 0.89 y 0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.36 y 1.08 y	1.00 1.10 1.05 1.05 0.96 1.12 1.01 0.90 1.16 1.16 1.23 1.13 1.44 1.31	34:29 34:35 34:52 38:23 41:35 25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.001 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	0.91242 2.0625 2.3750 45.791 381.61 0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	* * * *	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5		Total Hexa-Dioxi Total Hepta-Diox Total Tetra-Fura Total Penta-Fura Total Hexa-Furar	ins 22.4 kins 101 ans 1.41 ans 4.4668 as 8.57	22.4 101 1.69 4.6969 8.57		* * * * *
1,2,3,6,7,8 1,2,3,7,8,9 1,2,3,4,6,7,8 2,3,4,7,8 1,2,3,4,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8,9 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,7,8,9	8-HxCDD 9-HxCDD 0-DD 8-TCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 9-HxCDF 9-HyCDF	7.20e+04 7.92e+04 1.27e+06 7.64e+06 2.28e+04 1.15e+04 2.22e+04 2.22e+04 2.92e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.42 y 1.17 y 1.03 y 0.89 y 0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.34 y 1.03 y 1.08 y	1.10 1.05 1.05 0.96 1.12 1.01 0.90 1.16 1.16 1.23 1.13 1.44 1.31	34:35 34:52 38:23 41:35 25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	2.0625 2.3750 45.791 381.61 0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	* * * *	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	* * * * * * * * * * * * * * * * * * * *	Total Hepta-Diox Total Tetra-Fura Total Penta-Fura Total Hexa-Furar	tins 101 ans 1.41 ans 4.4668 as 8.57	101 1.69 4.6969 8.57		•
1,2,3,7,8,9 1,2,3,4,6,7,8 2,3,4,7,8 1,2,3,4,7,8 1,2,3,4,7,8 1,2,3,7,8,9 1,2,3,4,6,7,8 1,2,3,4,7,8,9 1,2,3,4,7,8,9 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,6,7,8 13C-1,2,3,4,7,8 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8	8-HxCDD OCDD 8-TCDF 3-PeCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 0-HpCDF OCDF	7.92e+04 1.27e+06 7.64e+06 2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.17 y 1.03 y 0.89 y 0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.17 y 1.03 y 1.08 y	1.05 1.05 0.96 1.12 1.01 0.90 1.16 1.16 1.23 1.13 1.44 1.31	34:52 38:23 41:35 25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	2.3750 45.791 381.61 0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	* * *	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	* * * * * * * * * * * * * * * * * * * *	Total Tetra-Pura Total Penta-Pura Total Hexa-Pura	ans 1.41 ans 4.4668 as 8.57	1.69 4.6969 8.57		* * * *
1,2,3,4,6,7,8 2,3,7,1 1,2,3,4,7,8 1,2,3,4,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,4,6,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8 13C-1,2,3,4,6,7,8	8-HpCDD OCDD 8-TCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 0-HpCDF OCDF	1.27e+06 7.64e+06 2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.03 y 0.89 y 0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.17 y 1.03 y 1.08 y	1.05 0.96 1.12 1.01 0.90 1.16 1.16 1.23 1.13 1.44	38:23 41:35 25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	45.791 0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	:	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	* * * * * * * * * * * * * * * * * * * *	Total Penta-Fura Total Hexa-Furar	ans 4.4668 ns 8.57	4.6969 8.57		* * *
2,3,7, 1,2,3,7,8 2,3,4,7,8 1,2,3,6,7,8 2,3,4,6,7,8 1,2,3,7,8,9 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9	OCDD 8-TCDF 3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HyCDF 0-CDF	7.64e+06 2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	0.89 y 0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.34 y 1.03 y 1.08 y	0.96 1.12 1.01 0.90 1.16 1.23 1.13 1.44 1.31	41:35 25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.000 1.000 1.000 1.000 1.000 1.000 1.000	0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	*	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	* * * * * * *	Total Hexa-Furar	ns 8.57	8.57		* *
1,2,3,7,8 2,3,4,7,8 1,2,3,4,7,8 1,2,3,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,6,7,8	8 - TCDF 3 - PeCDF 3 - PeCDF 3 - HxCDF 3 - HxCDF 9 - HxCDF 9 - HxCDF 9 - HpCDF 0 CDF	2.28e+04 1.15e+04 2.24e+04 2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	0.99 n 1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.34 y 1.03 y 1.08 y	1.12 1.01 0.90 1.16 1.16 1.23 1.13 1.44	25:37 29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.000 1.001 1.000 1.000 1.000 1.000	0.27442 0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	*	2.5 2.5 2.5 2.5 2.5 2.5 2.5	* * * *					*
1,2,3,7,8 2,3,4,7,8 1,2,3,4,7,8 1,2,3,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,6,7,8	3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 9-HxCDF 3-HpCDF 9-HpCDF 0CDF	1.15e+04 2.24e+04 2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.34 y 1.03 y 1.08 y	1.01 0.90 1.16 1.16 1.23 1.13 1.44	29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.001 1.000 1.000 1.000 1.000	0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	*	2.5 2.5 2.5 2.5 2.5 2.5	* * *	Total Hepta-Fura	ans 14.7	14.7		*
1,2,3,7,8 2,3,4,7,8 1,2,3,4,7,8 1,2,3,6,7,8 1,2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,6,7,8	3-PeCDF 3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 9-HxCDF 3-HpCDF 9-HpCDF 0CDF	1.15e+04 2.24e+04 2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.32 y 1.33 y 1.41 y 1.23 y 1.17 y 1.34 y 1.03 y 1.08 y	1.01 0.90 1.16 1.16 1.23 1.13 1.44	29:57 30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.001 1.000 1.000 1.000 1.000	0.19586 0.39023 0.41413 0.37736 0.56271 0.20159	*	2.5 2.5 2.5 2.5 2.5 2.5	* * *					
2,3,4,7,8 1,2,3,4,7,8 1,2,3,6,7,8 2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,7,8,13C-1,2,3,7,8,13C-1,2,3,7,8,7,8 13C-1,2,3,7,8,13C-1,2,3,7,8,7,8 13C-1,2,3,4,6,7,8 13C-1,2,3,4,6,7,8	3-PeCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HxCDF 3-HpCDF 0-CDF	2.24e+04 2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.33 Y 1.41 Y 1.23 Y 1.17 Y 1.34 Y 1.03 Y 1.08 Y	0.90 1.16 1.16 1.23 1.13 1.44	30:55 33:36 33:43 34:19 35:15 37:00 38:56	1.001 1.000 1.000 1.000 1.000	0.39023 0.41413 0.37736 0.56271 0.20159	* * * *	2.5 2.5 2.5 2.5 2.5	* *					
1,2,3,4,7,8 1,2,3,6,7,8 2,3,4,6,7,8 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-2,3,7, 13C-1,2,3,7,8 13C-1,2,3,7,8 13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9	3-HxCDF 3-HxCDF 3-HxCDF 9-HxCDF 3-HpCDF OCDF	2.22e+04 2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.41 Y 1.23 Y 1.17 Y 1.34 Y 1.03 Y 1.08 Y	1.16 1.16 1.23 1.13 1.44 1.31	33:36 33:43 34:19 35:15 37:00 38:56	1.000 1.000 1.000 1.000	0.41413 0.37736 0.56271 0.20159	*	2.5 2.5 2.5 2.5	* *					
1,2,3,6,7,8 2,3,4,6,7,8 1,2,3,7,8,9 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-2,3,7, 13C-1,2,3,7,8 13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9 13C-1,2,3,7,8,9	3-HxCDF 3-HxCDF 9-HxCDF 3-HpCDF 9-HpCDF OCDF	2.09e+04 2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.23 y 1.17 y 1.34 y 1.03 y 1.08 y	1.16 1.23 1.13 1.44 1.31	33:43 34:19 35:15 37:00 38:56	1.000 1.000 1.000 1.000	0.37736 0.56271 0.20159	* * *	2.5 2.5 2.5	*					
2,3,4,6,7,8 1,2,3,7,8,9 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-1,2,3,7,8 13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,4,6,7,8 13C-1,2,3,4,6,7,8	3-HxCDF 9-HxCDF 3-HpCDF 9-HpCDF OCDF	2.82e+04 9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.17 y 1.34 y 1.03 y 1.08 y	1.23 1.13 1.44 1.31	34:19 35:15 37:00 38:56	1.000 1.000 1.000	0.56271 0.20159	*	2.5						
1,2,3,7,8,9 1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-2,3,7, 13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,4,6,7,8 13C-1,2,3,4,6,7,8 13C-2,3,7,9	9-HxCDF 8-HpCDF 9-HpCDF OCDF	9.34e+03 2.51e+05 1.42e+04 3.62e+05	1.34 y 1.03 y 1.08 y	1.13 1.44 1.31	35:15 37:00 38:56	1.000	0.20159		2.5						
1,2,3,4,6,7,8 1,2,3,4,7,8,9 13C-2,3,7, 13C-1,2,3,4,7,8 13C-1,2,3,4,7,8 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8	3-HpCDF 9-HpCDF OCDF	2.51e+05 1.42e+04 3.62e+05	1.03 y 1.08 y	1.44	37:00 38:56	1.000		*		*					
1,2,3,4,7,8,9 13C-2,3,7, 13C-1,2,3,7,8 13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,4,6,7,8 13C-1,2,3,4,6,7,8	9-HpCDF OCDF	1.42e+04 3.62e+05	1.08 y	1.31	38:56		5.9293								
13C-2,3,7, 13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8 13C-1,2,3,4,6,7,8	OCDF	3.62e+05	-			1.000			2.5	*					
13C-1,2,3,7,8 13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8			0.87 y	1.03			0.37522	*	2.5	*					
13C-1,2,3,7,8 13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8	8-TCDD				41:49	1.000	13.548	*	2.5	*					
13C-1,2,3,7,8 13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8	A-TODD										Rec Qual				
13C-1,2,3,4,7,8 13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8 13C-2,3,7,	O TODD	9.62e+06	0.76 y	1.01	26:26	1.025	164.23				81.8				
13C-1,2,3,6,7,8 13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8 13C-2,3,7,		7.91e+06	0.64 y	1.10		1.208	123.60				61.5				
13C-1,2,3,7,8,9 13C-1,2,3,4,6,7,8 13 13C-2,3,7,		6.49e+06	1.28 y	0.72		1.014	158.97				79.2				
13C-1,2,3,4,6,7,8 13C-2,3,7,		6.40e+06	1.28 y	0.73		1.017	155.41				77.4				
13C-2,3,7,		6.39e+06	1.22 y	0.70		1.025	160.80				80.1				
13C-2,3,7,		5.29e+06	1.03 y	0.66		1.129	140.55				70.0				
		8.36e+06	0.89 y	0.66		1.223	223.69				55.7				
			0.81 y	0.90		0.993	172.18				85.7				
		1.17e+07	1.62 y	0.98		1.161	124.17				61.8				
13C-2,3,4,7,8			1.59 y	1.15		1.197	116.54				58.0				
13C-1,2,3,4,7,8			0.51 y	1.01		0.988	161.39				80.4				
13C-1,2,3,6,7,8			0.52 y	1.10		0.992	154.46				76.9				
13C-2,3,4,6,7,8			0.52 y	0.95		1.009	152.34				75.9				
13C-1,2,3,7,8,9			0.53 y	0.83		1.037	175.37				87.3				
13C-1,2,3,4,6,7,8	-		0.42 y	0.70		1.088	149.44				74.4				
13C-1,2,3,4,7,8,9	-		0.44 y	0.72		1.145	141.62				70.5				
13	3C-OCDF	1.04e+07	0.93 y	0.82	41:48	1.230	222.96				55.5				
Jp 37Cl-2,3,7,	,8-TCDD	4.14e+06		1.14	26:28	1.025	62.779				78.2 Ir	ntegrations	Revi	ewed	,
											by	1 7)12	by		do
RT 13C-1,2,3,	,4-TCDD	1.16e+07	0.77 y	1.00	25:48	*	200.82				Analys	st:_//\\	Anal	yst:	42
13C-1,2,3,	,4-TCDF	1.93e+07	0.80 y	1.00	24:14	*	200.82							-	/ /
'RT 13C-1,2,3,4,6,9	9-HxCDF	1.14e+07	0.52 y	1.00	33:60	*	200.82					2/12/11		-	1.011

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Totals class: TCDD EMPC Entry #: 19

Run: 12 File: 160712D1 S: 7 I: 1 F: 1 Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 0.35059 Unnamed Concentration: 0.351

RT ml Resp m2 Resp RA Resp Concentration Name

22:40 8.241e+03 1.076e+04 0.77 y 1.900e+04 0.35059

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Totals class: PeCDD EMPC Entry #: 21

Run: 12 File: 160712D1 S: 7 I: 1 F: 2 Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 4.4008 Unnamed Concentration: 3.647

RT	ml Resp	m2 Resp F	RA	Resp	Concentration	Name
29:03	1.561e+04	2.901e+04 0	0.54 y	4.462e+04	1.1784	
29:31	4.574e+03	8.111e+03 0	0.56 y	1.268e+04	0.33498	
29:59	8.157e+03	1.130e+04 0	0.72 y	1.946e+04	0.51395	
30:09	1.090e+04	1.520e+04 0	0.72 y	2.610e+04	0.68916	
30:14	6.431e+03	9.106e+03 0	0.71 y	1.554e+04	0.41031	
30:28	8.120e+03	1.158e+04 0	0.70 y	1.970e+04	0.52036	
31:11	1.191e+04	1.662e+04 0	0.72 y	2.854e+04	0.75364	1.2.3.7.8-PeCDD

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Totals class: HxCDD EMPC Entry #: 23

Run: 12 File: 160712D1 S: 7 I: 1 F: 3
Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 22.411 Unnamed Concentration: 17.061

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
32:58	1.261e+05	1.091e+05 1.16 y	2.353e+05	7.0116	
33:32	2.172e+04	1.625e+04 1.34 y	3.797e+04	1.1316	
33:47	1.503e+05	1.180e+05 1.27 y	2.683e+05	7.9968	
33:54	1.093e+04	8.583e+03 1.27 y	1.951e+04	0.58143	
34:29	1.537e+04	1.418e+04 1.08 y	2.955e+04	0.91242	1,2,3,4,7,8-HxCDD
34:35	4.222e+04	2.976e+04 1.42 y	7.198e+04	2.0625	1,2,3,6,7,8-HxCDD
34:46	6.672e+03	4.728e+03 1.41 y	1.140e+04	0.33976	
34:52	4.268e+04	3.654e+04 1.17 y	7.922e+04	2.3750	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 12 File: 160712D1 S: 7 I: 1 F: 4 Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 101.16 Unnamed Concentration: 55.367

RT ml Resp m2 Resp RA Resp Concentration Name

37:25 7.727e+05 7.590e+05 1.02 y 1.532e+06 55.367 38:23 6.440e+05 6.228e+05 1.03 y 1.267e+06 45.791 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 12 File: 160712D1 S: 7 I: 1 F: 1 Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 1.6877 Unnamed Concentration: 1.413

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
21:39	2.284e+04	3.014e+04 0.76 y	5.298e+04	0.63829	
24:12	1.309e+04	1.591e+04 0.82 y	2.900e+04	0.34934	
25:37	1.276e+04	1.287e+04 0.99 n	2.278e+04	0.27442	2,3,7,8-TCDF
25:59	1.643e+04	1.890e+04 0.87 y	3.533e+04	0.42565	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 12 File: 160712D1 S: 7 I: 1 F: 1 Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 2.0531 Unnamed Concentration: 2.053

RT m1 Resp m2 Resp RA Resp Concentration Name

27:29 7.268e+04 4.629e+04 1.57 y 1.190e+05 2.0531

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Totals class: PeCDF EMPC Entry #: 31

Run: 12 File: 160712D1 S: 7 I: 1 F: 2 Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 2.6439 Unnamed Concentration: 2.058

RI	m1 Resp	m2 Resp RA	Resp Concentration	Name
28:53	3 1.055e+04	5.229e+03 2.02 n	1.334e+04 0.23011	
29:01	4.126e+04	2.690e+04 1.53 y	6.816e+04 1.1761	
29:35	1.487e+04	8.372e+03 1.78 y	2.324e+04 0.40110	
29:57	6.545e+03	4.948e+03 1.32 y	1.149e+04 0.19586	1,2,3,7,8-PeCDF
30:12	8.512e+03	5.999e+03 1.42 y	1.451e+04 0.25040	
30:55	1.278e+04	9.632e+03 1.33 y	2.241e+04 0.39023	2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC Entry #: 33

Run: 12 File: 160712D1 S: 7 I: 1 F: 3
Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

Total Concentration: 8.5735 Unnamed Concentration: 7.018

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name	
32:26	2.858e+04	2.350e+04	1.22 y	5.208e+04	1.0136		
32:36	9.568e+04	7.769e+04	1.23 y	1.734e+05	3.3740		
32:58	5.152e+03	3.842e+03	1.34 y	8.994e+03	0.17504		
33:09	6.708e+04	5.189e+04	1.29 y	1.190e+05	2.3153		
33:30	4.189e+03	2.996e+03	1.40 y	7.185e+03	0.13983		
33:36	1.298e+04	9.216e+03	1.41 y	2.220e+04	0.41413	1,2,3,4,7,8-HxCDF	
33:43	1.150e+04	9.350e+03	1.23 y	2.085e+04	0.37736	1,2,3,6,7,8-HxCDF	
34:19	1.519e+04	1.301e+04	1.17 y	2.820e+04	0.56271	2,3,4,6,7,8-HxCDF	
35:15	5.343e+03	3.998e+03	1.34 y	9.341e+03	0.20159	1,2,3,7,8,9-HxCDF	

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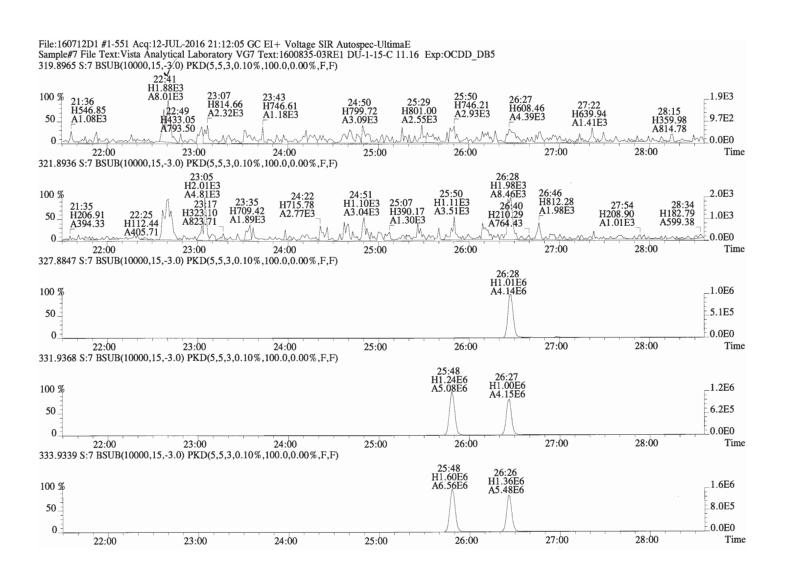
Totals class: HpCDF EMPC Entry #: 35

Run: 12 File: 160712D1 S: 7 I: 1 F: 4
Acquired: 12-JUL-16 21:12:05 Processed: 13-JUL-16 13:43:41

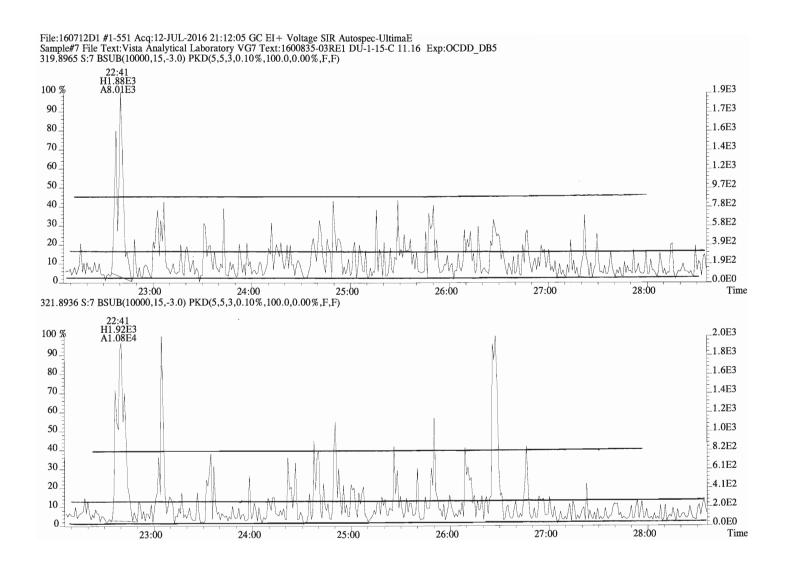
Total Concentration: 14.686 Unnamed Concentration: 8.381

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name
	1.273e+05 1.749e+05	1.242e+05 1.605e+05	•		5.9293 8.3813	1,2,3,4,6,7,8-HpCDF
	7.341e+03	6.822e+03	•		0.37522	1,2,3,4,7,8,9-HpCDF

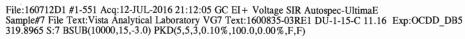
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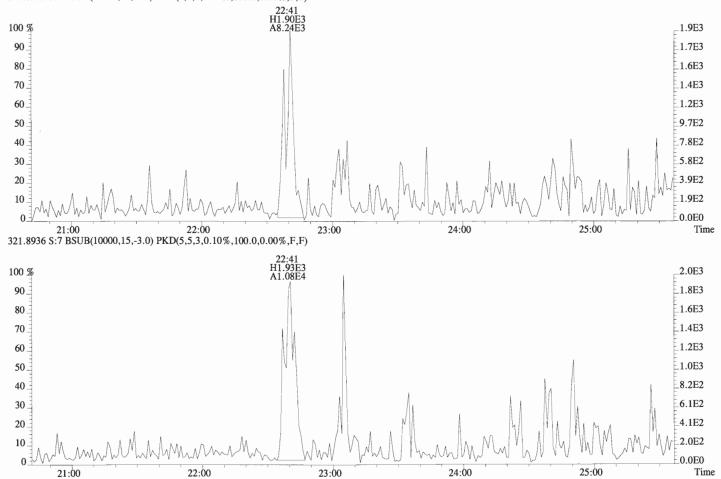


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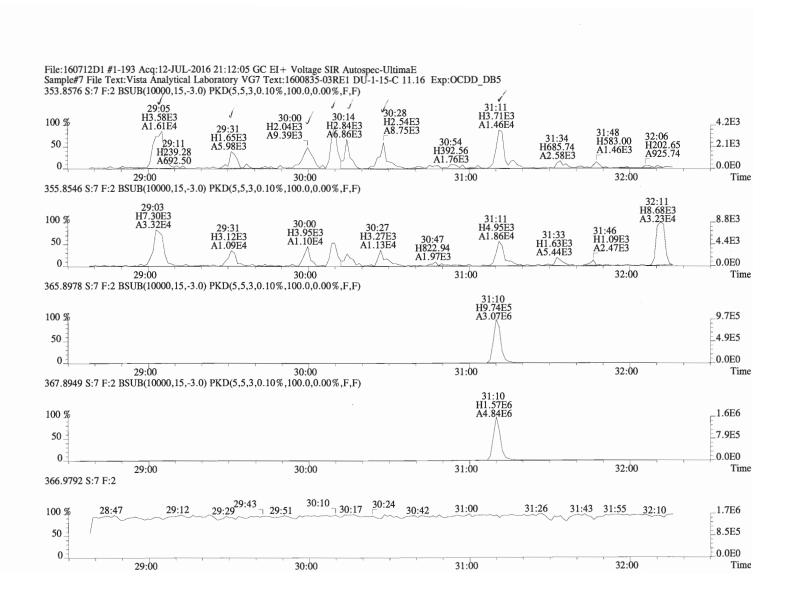
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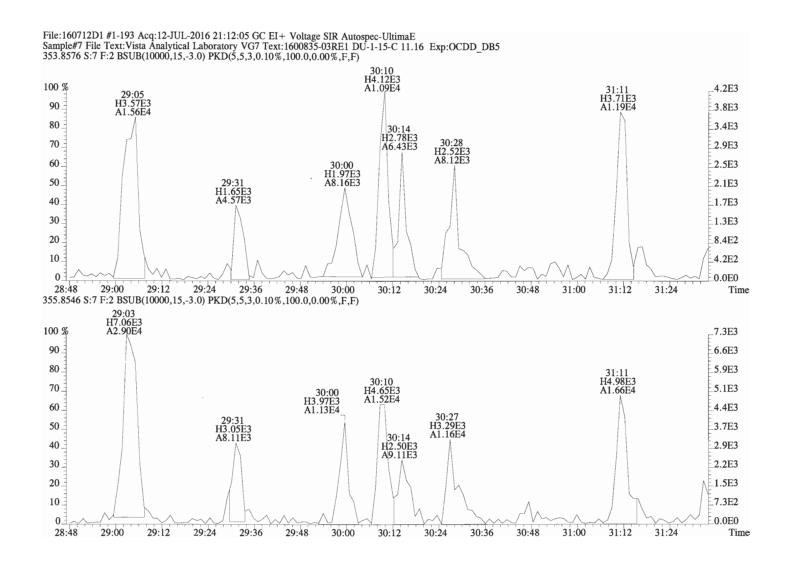


Work Order 1600835

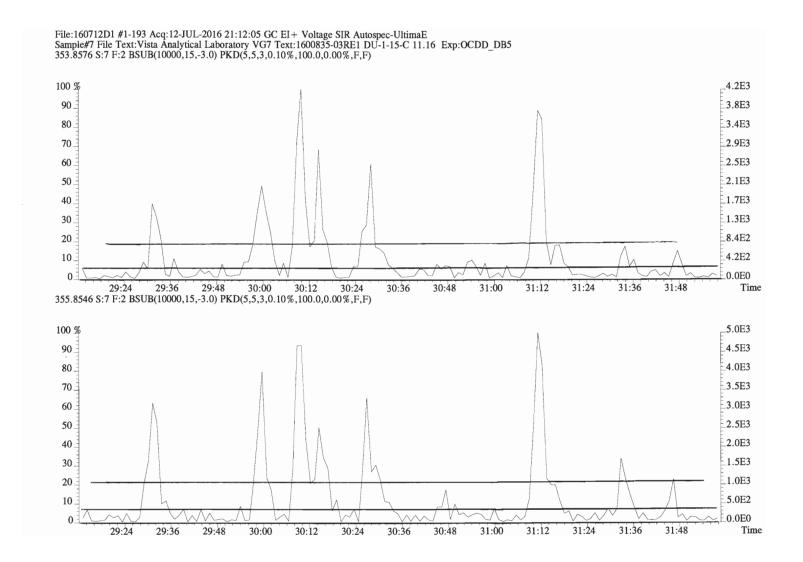
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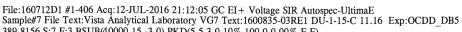
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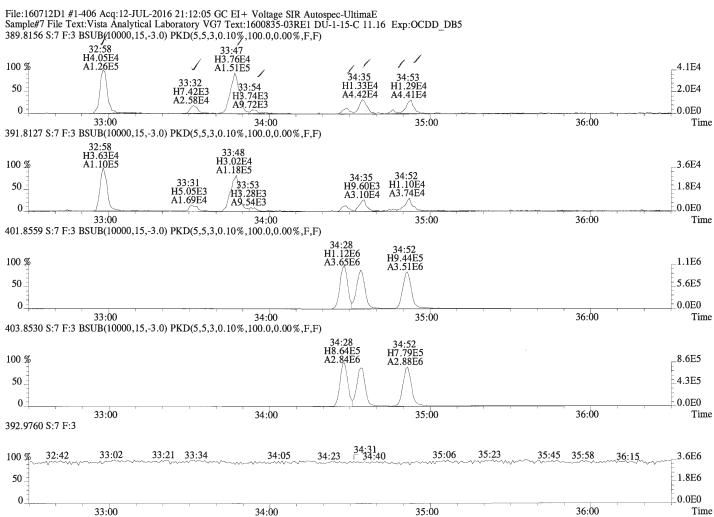


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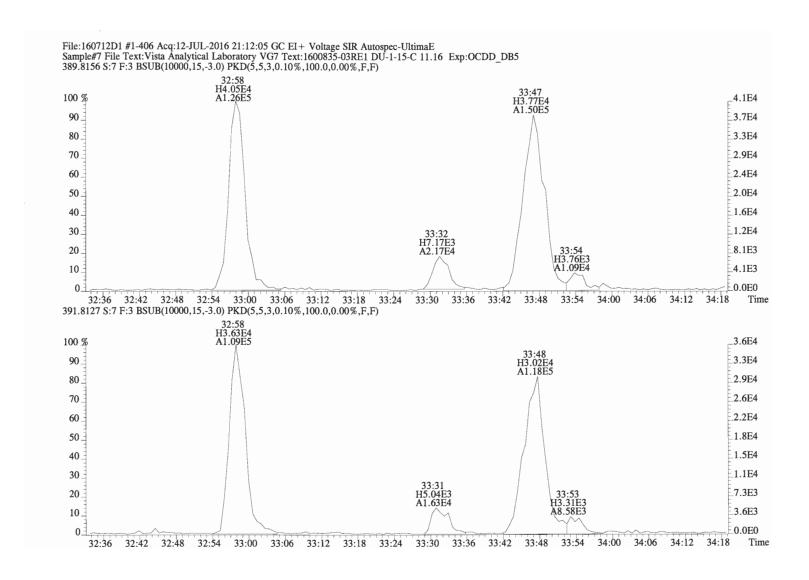


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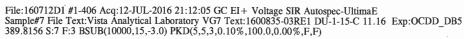




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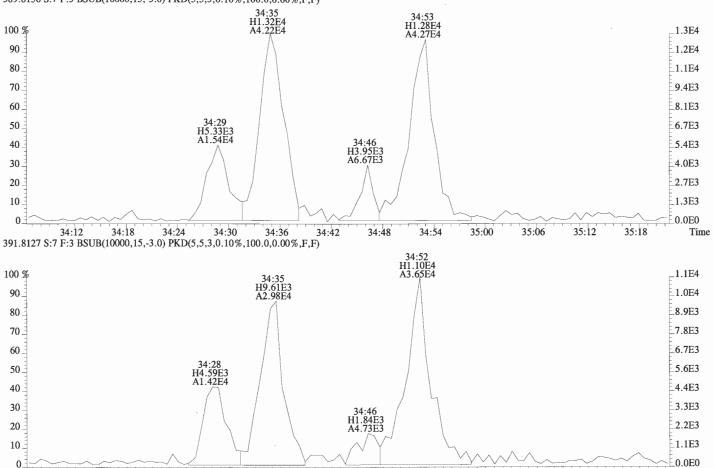
34:18

34:12

34:24

34:30

34:36



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34:48

34:42

35:00

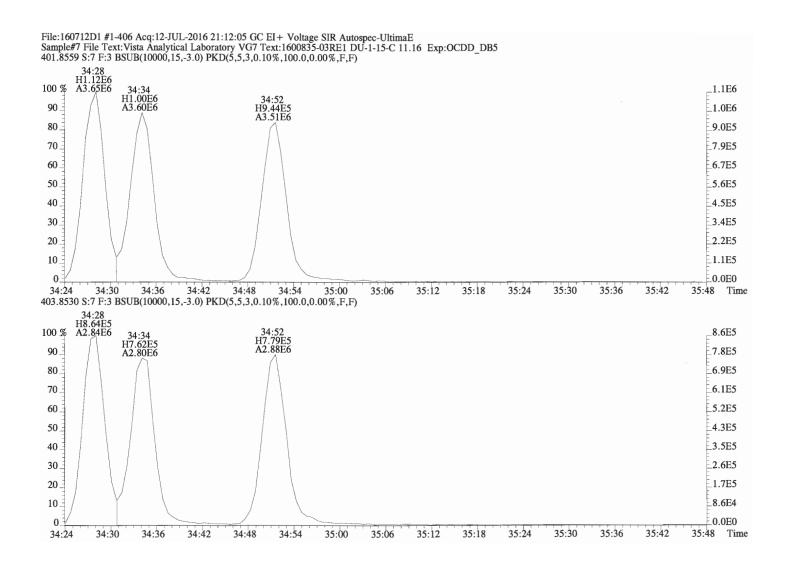
34:54

35:06

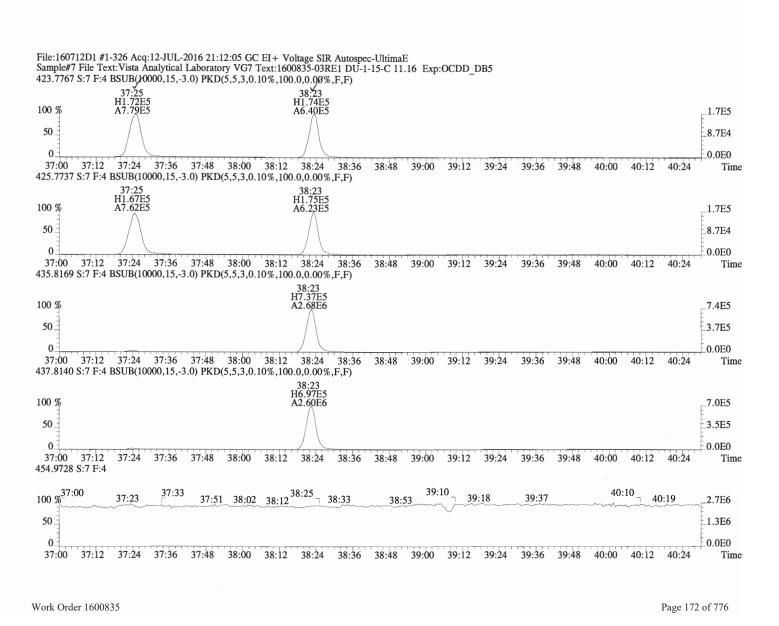
35:12

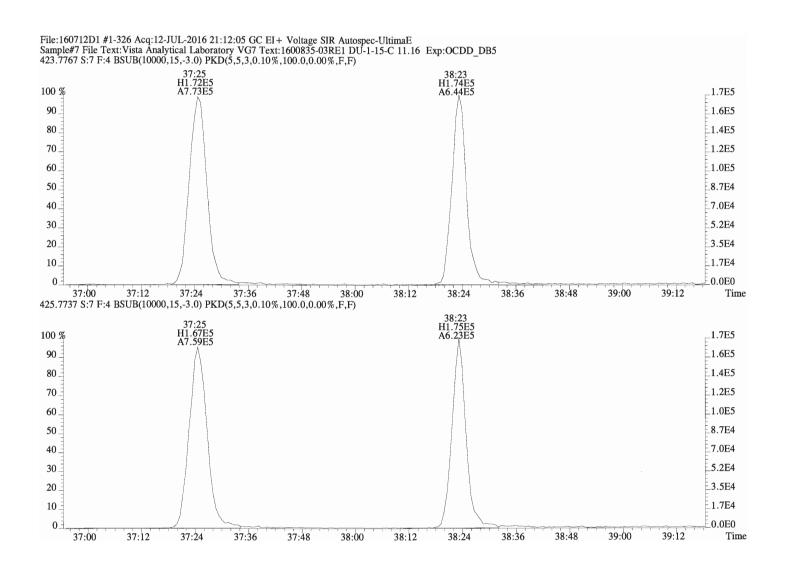
35:18

Time

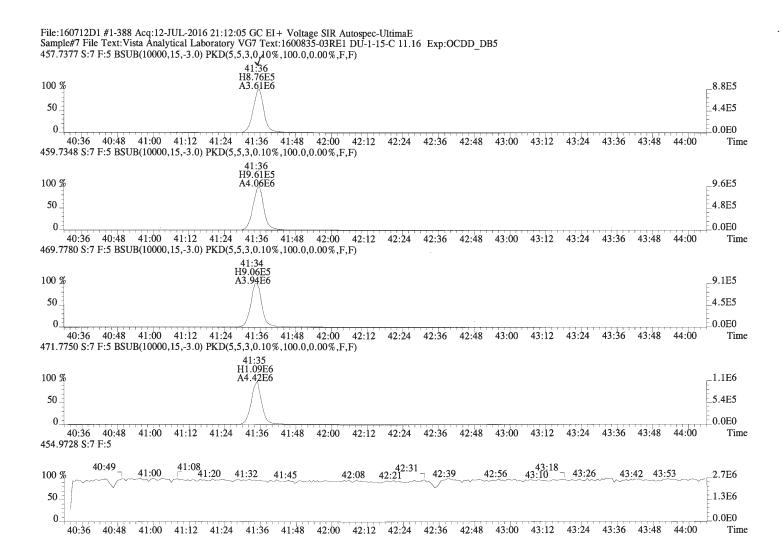


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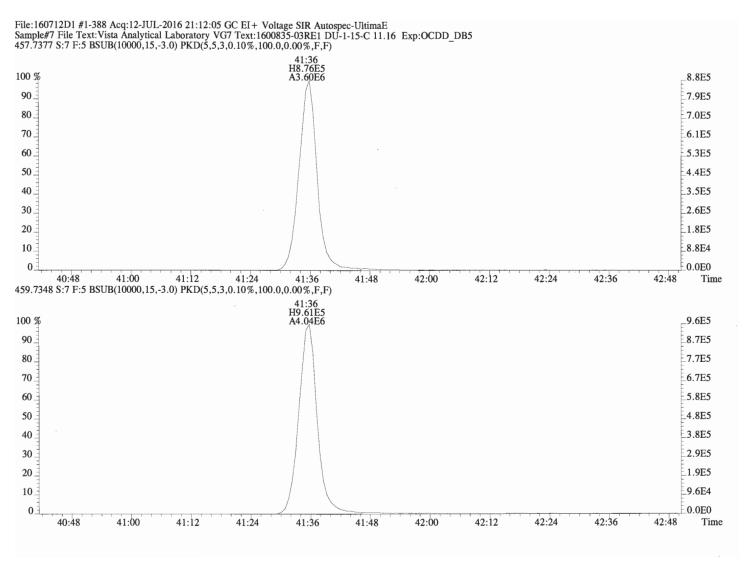




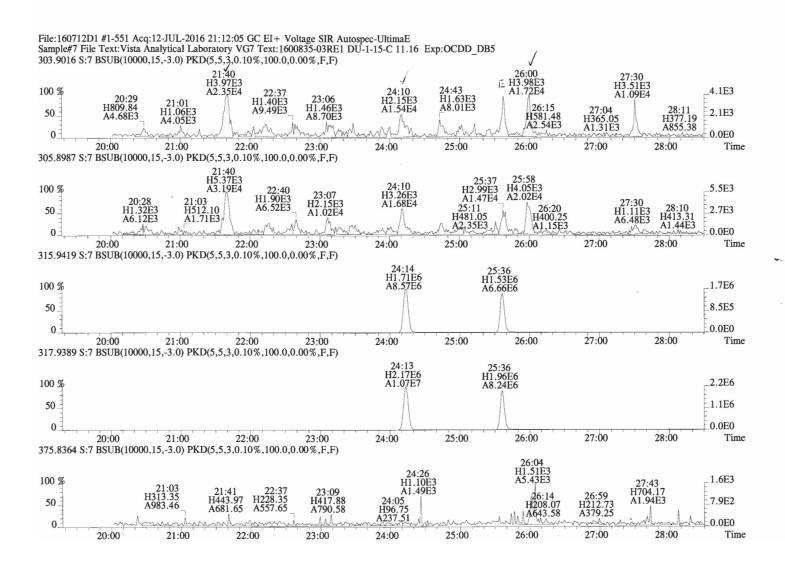
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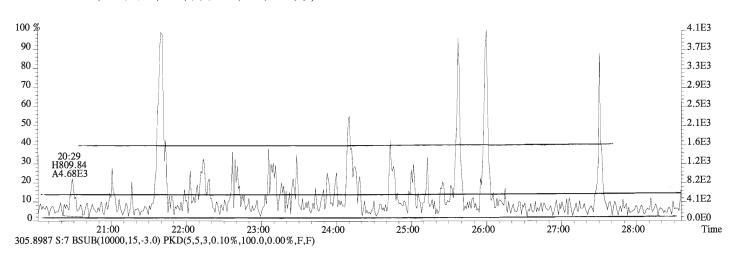


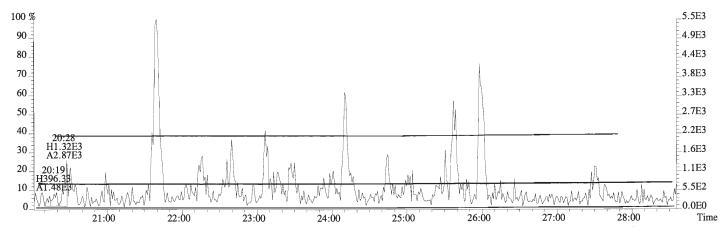
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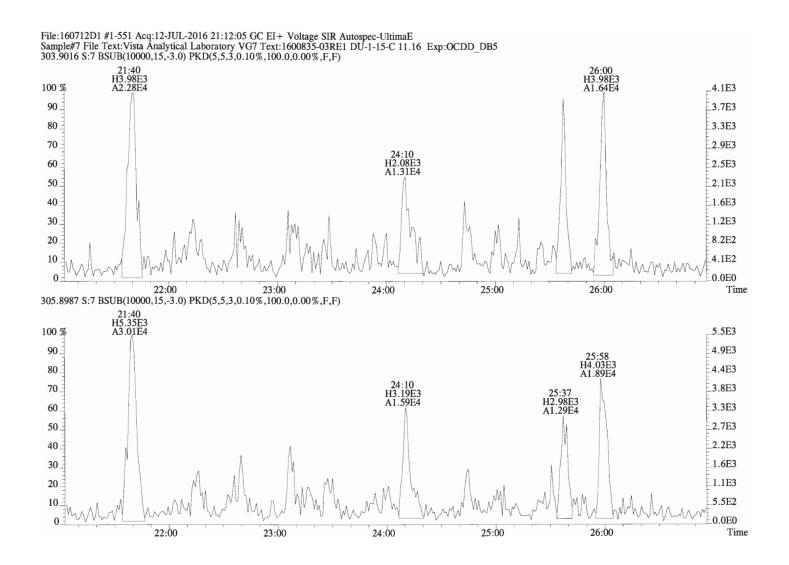
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File:160712D1 #1-551 Acq:12-JUL-2016 21:12:05 GC EI+ Voltage SIR Autospec-UltimaE Sample#7 File Text:Vista Analytical Laboratory VG7 Text:1600835-03RE1 DU-1-15-C 11.16 Exp:OCDD_DB5 303.9016 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

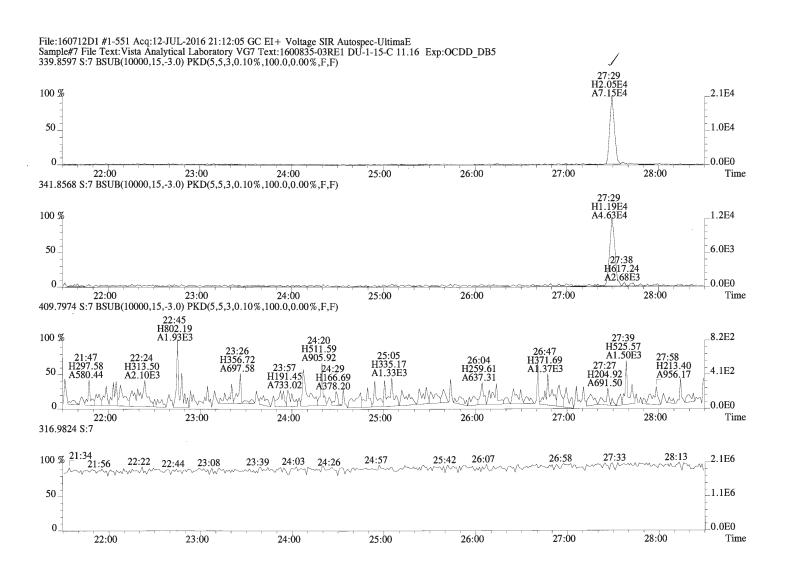




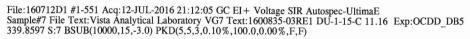
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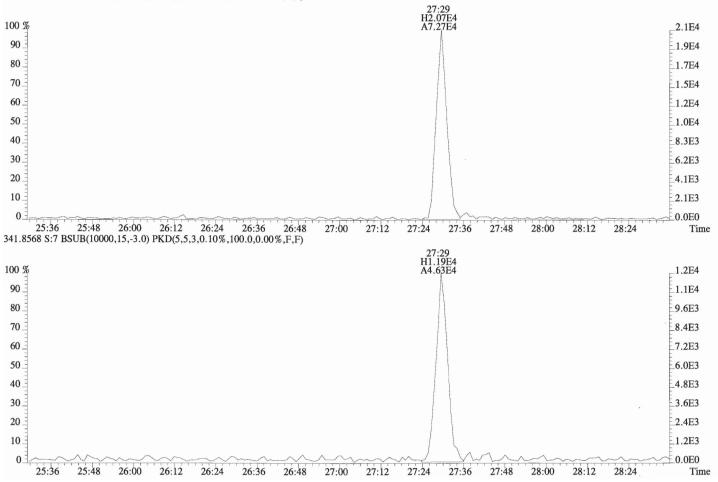


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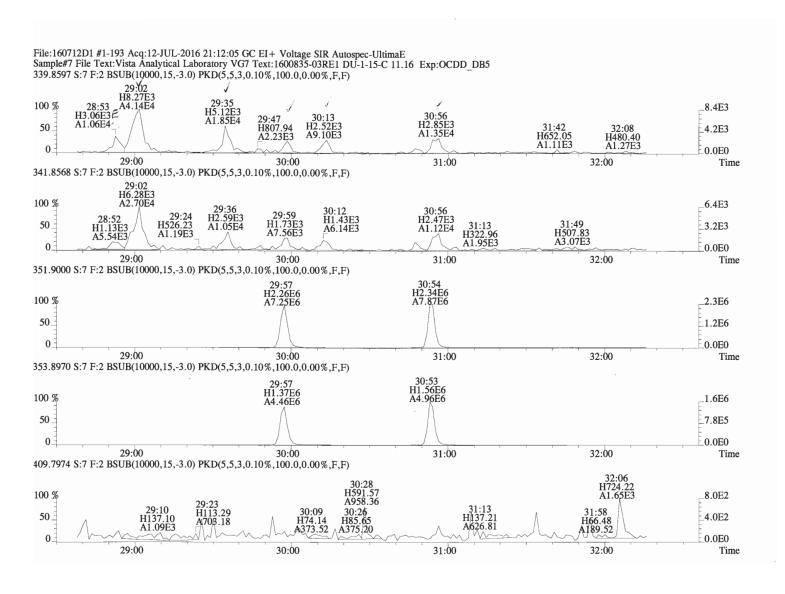


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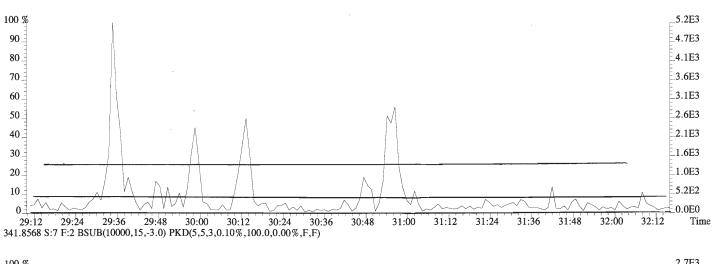


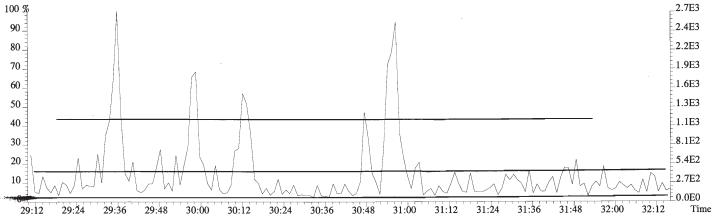
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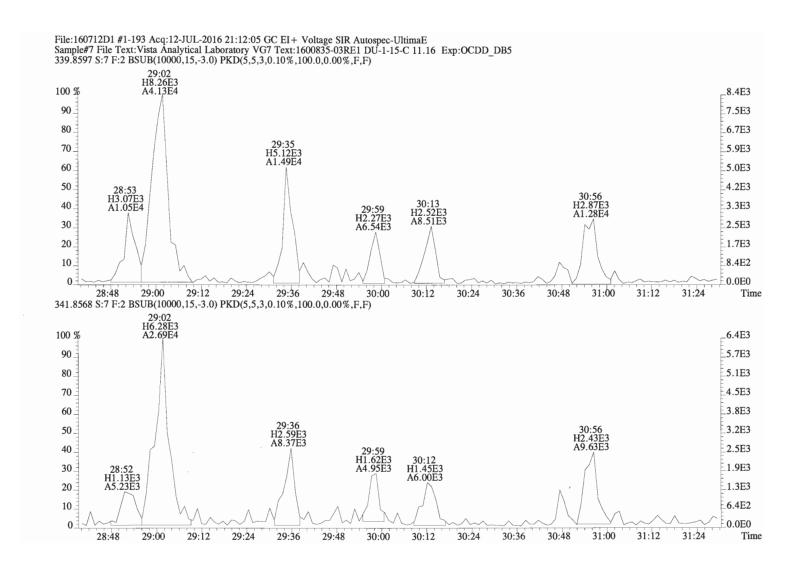
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File:160712D1 #1-193 Acq:12-JUL-2016 21:12:05 GC EI+ Voltage SIR Autospec-UltimaE Sample#7 File Text:Vista Analytical Laboratory VG7 Text:1600835-03RE1 DU-1-15-C 11.16 Exp:OCDD_DB5 339.8597 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



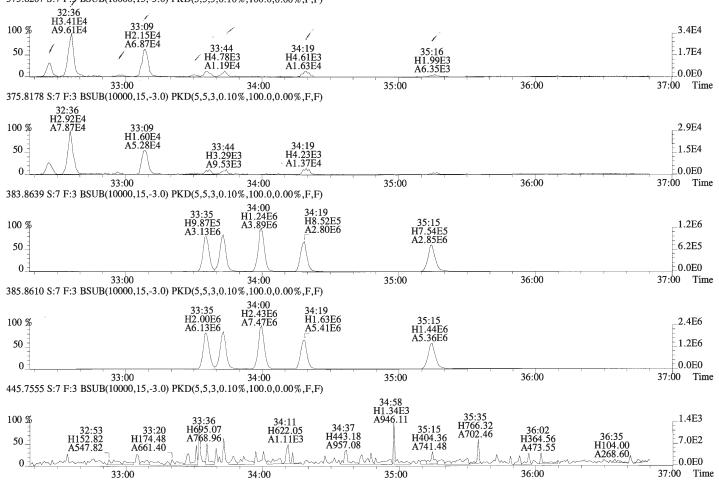


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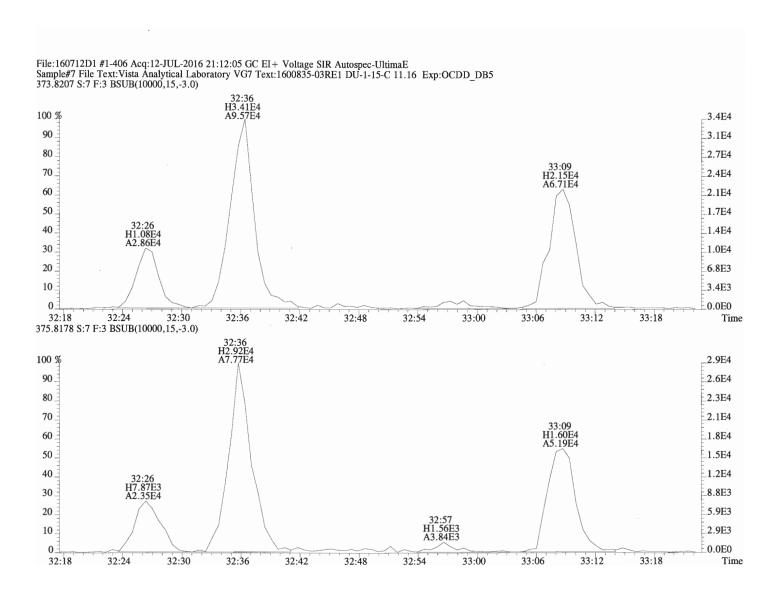
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File:160712D1 #1-406 Acq:12-JUL-2016 21:12:05 GC EI+ Voltage SIR Autospec-UltimaE Sample#7 File Text:Vista Analytical Laboratory VG7 Text:1600835-03RE1 DU-1-15-C 11.16 Exp:OCDD_DB5 373.8207 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

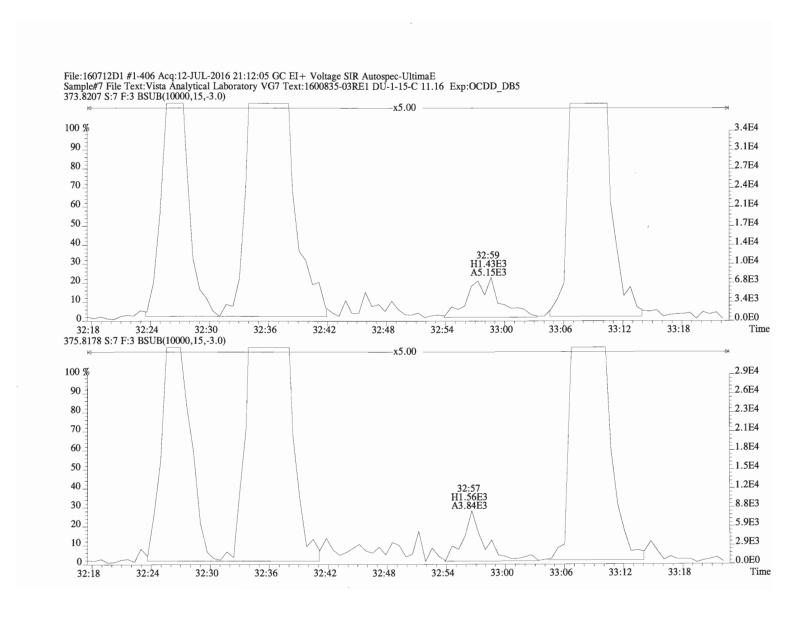


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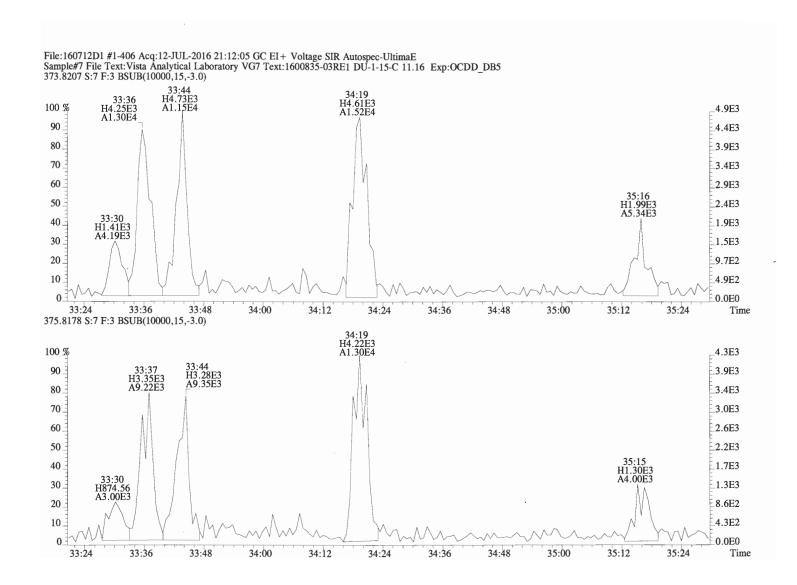
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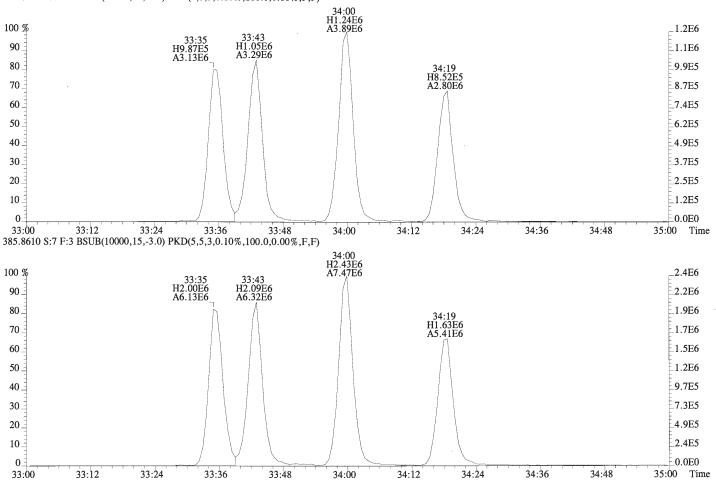


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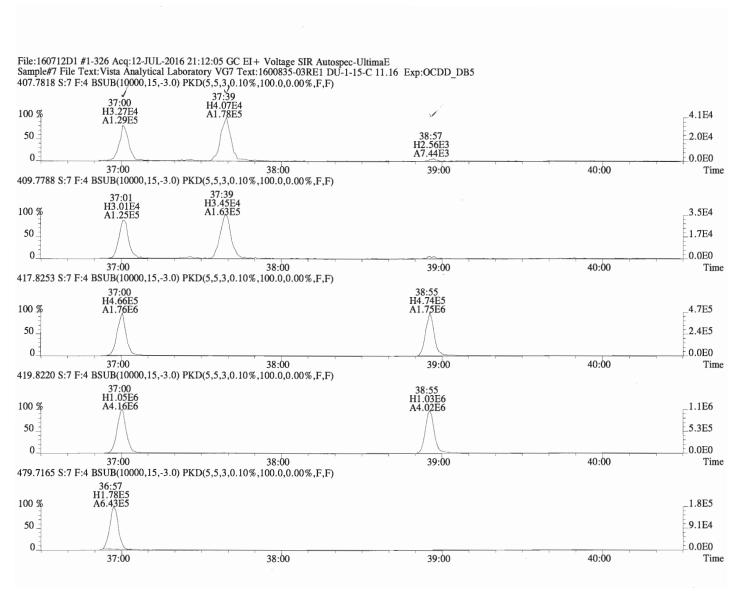


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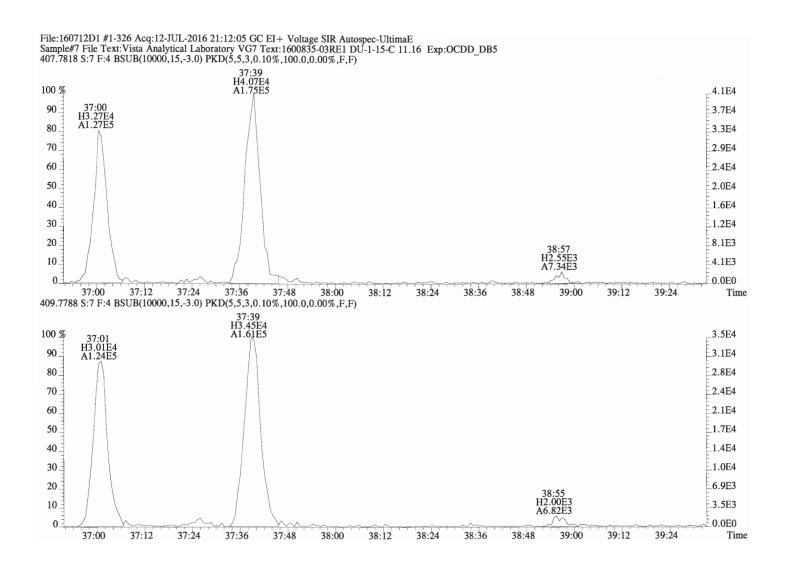
File:160712D1 #1-406 Acq:12-JUL-2016 21:12:05 GC EI+ Voltage SIR Autospec-UltimaE Sample#7 File Text:Vista Analytical Laboratory VG7 Text:1600835-03RE1 DU-1-15-C 11.16 Exp:OCDD_DB5 383.8639 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



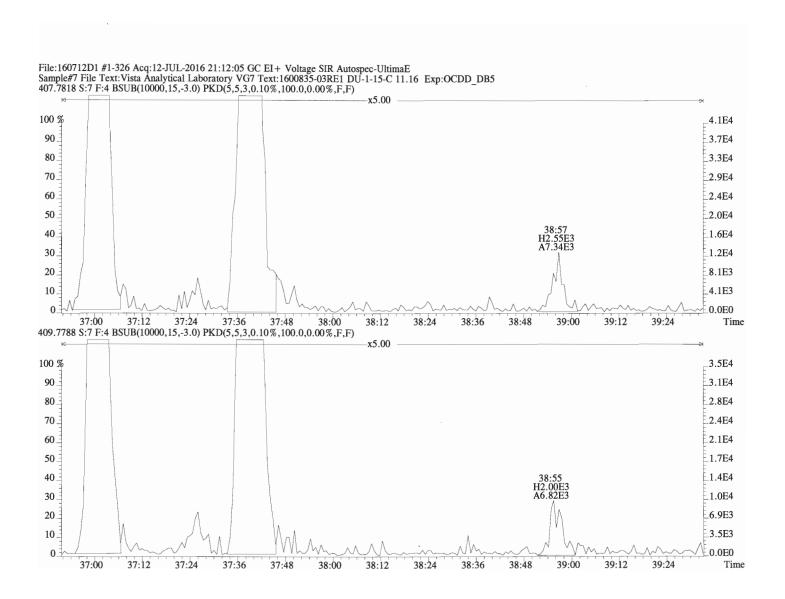
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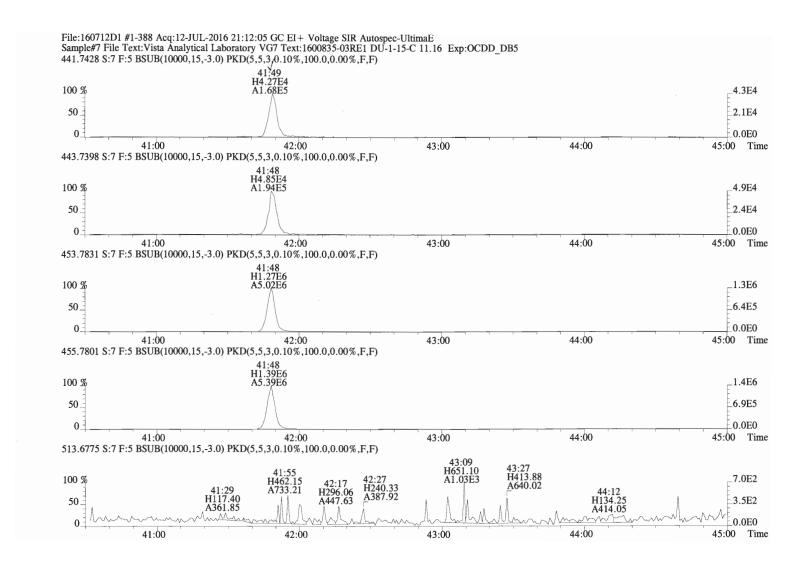
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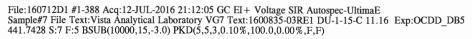
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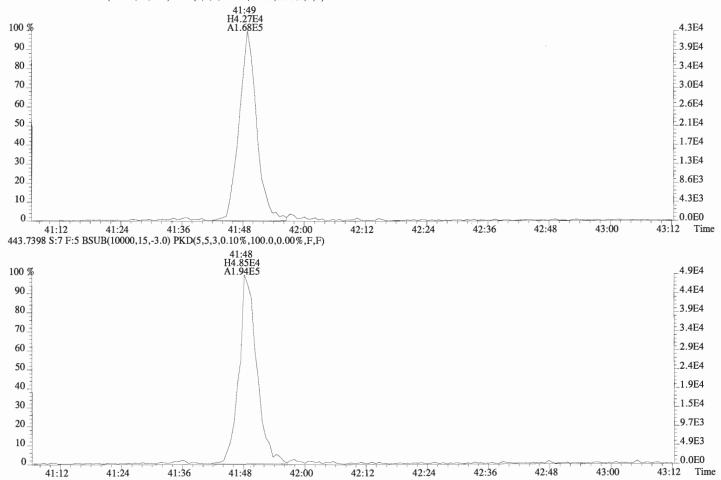


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ge 7 of	Page			-1	al: ST160712D1- AL: NA			rol:10.06		22:00	2-JUL-16 22 G7-4-7-16	-	S:8 S ICal		lename: 16 Column ID		ent ID: DU-1-12-A ID: 1600835-04RE1
		1						_			_					_	
e D *	noise	Qual	EMPC	Conc		Name	DL *	Fac	noise	-	Conc	RRT		RRF	RA	Resp	Name
	*		4.51	3.69	Tetra-Dioxins		*	2.5	*		0.091961		26:27	1.13	0.24 n		2,3,7,8-TCDD
	*		13.3	11.7	Penta-Dioxins		-	2.5	*		1.0664		31:10	0.96	0.66 y	5.07e+04	1,2,3,7,8-PeCDD
	*		53.6	53.6	Hexa-Dioxins		*	2.5	*		1.5547		34:28	1.00	1.29 y	6.44e+04	
	*		551	551	Hepta-Dioxins		*	2.5	*		5.3123		34:34	1.10	1.24 y	2.25e+05	
			16.0	15.6	Tetra-Furans		*	2.5	*		3.1761		34:51	1.05	1.29 y	1.32e+05	
			25.754	25.636	Penta-Furans		*	2.5			269.63		38:22	1.05	1.03 y	8.86e+06	· · · · · · · · ·
			30.6	30.6	Hexa-Furans		*	2.5	*	4	3675.4	1.000	41:35	0.96	0.90 y	9.49e+07	OCDD
	*		41.9	41.9	Hepta-Furans	Total				- 01							
								2.5		-	2.8919		25:37	1.12	0.85 y		2,3,7,8-TCDF
							*	2.5	*		0.56908		29:56	1.01	1.55 y		1,2,3,7,8-PeCDF
								2.5	*		2.7318		30:54	0.90	1.45 y		2,3,4,7,8-PeCDF
							*	2.5	*		1.2112		33:35	1.16	-		1,2,3,4,7,8-HxCDF
							*	2.5	*		1.1136		33:42	1.16	1.26 y	7.50e+04	
							*	2.5	*		1.7119		34:18	1.23	-		2,3,4,6,7,8-HxCDF
							*	2.5	*		0.32676		35:16	1.13	1.28 y		1,2,3,7,8,9-HxCDF
							*	2.5	*		13.359		37:00	1.44	1.09 y	6.41e+05	, ,
							*	2.5	*		1.2011		38:55	1.31	1.08 y	5.36e+04	
							*	2.5	*	5	38.745	1.000	41:48	1.03	0.93 y	1.24e+06	OCDF
					Qual	Rec											
						92.1					183.06		26:26	1.01	0.80 y		13C-2,3,7,8-TCDD
						71.8					142.73		31:10	1.10	0.63 y		13C-1,2,3,7,8-PeCDD
						95.1					189.07		34:27	0.72	1.31 y		13C-1,2,3,4,7,8-HxCDD
						88.0					174.90		34:34	0.73	1.29 y		13C-1,2,3,6,7,8-HxCDD
						93.7					186.23		34:51	0.70	1.26 y		13C-1,2,3,7,8,9-HxCDD
						78.1					155.22		38:22	0.66	1.05 y		13C-1,2,3,4,6,7,8-HpCDD
						67.4					268.12		41:34	0.66	0.91 y		13C-OCDD
						99.2					197.12		25:36	0.90	0.81 y		13C-2,3,7,8-TCDF
						73.0					145.18		29:56	0.98	1.55 y		13C-1,2,3,7,8-PeCDF
						71.5					142.08		30:53	1.15	1.62 y		13C-2,3,4,7,8-PeCDF
						96.2					191.24		33:35	1.01	0.52 y		13C-1,2,3,4,7,8-HxCDF
						88.1					175.03		33:42	1.10	0.53 y		13C-1,2,3,6,7,8-HxCDF
						90.9					180.61		34:17	0.95	0.52 y		13C-2,3,4,6,7,8-HxCDF
						104					207.06		35:14	0.83	0.52 y		13C-1,2,3,7,8,9-HxCDF
						79.1					157.17		36:59	0.70	0.43 y		13C-1,2,3,4,6,7,8-HpCDF
						78.2					155.48		38:55	0.72	0.45 y		13C-1,2,3,4,7,8,9-HpCDF
						62.4				9	247.89	1.230	41:47	0.82	0.91 y	1.23e+07	13C-OCDF
		ewed	Revi	ations	Integra	86.5				9	68.749	1.025	26:27	1.14		4.88e+06	37C1-2,3,7,8-TCDD
	ih.		by	DU	by												
	15/10	yst:	Anal	70	Analyst:						198.76		25:48	1.00			13C-1,2,3,4-TCDD
	1	,		.)							198.76		24:13	1.00	0.79 y		13C-1,2,3,4-TCDF
				10/11	7					6	198.76	*	33:59	1.00	0.52 y	1.20e+07	13C-1,2,3,4,6,9-HxCDF

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Totals class: TCDD EMPC Entry #: 19

Run: 13 File: 160712D1 S: 8 I: 1 F: 1 Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 4.5102 Unnamed Concentration: 4.418

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
22:39	3.551e+04	4.588e+04 0.77	y 8.138e+04	1.2392	
23:04	2.572e+04	2.685e+04 0.96	n 4.752e+04	0.72352	
23:32	6.886e+03	8.425e+03 0.82	y 1.531e+04	0.23313	
24:24	5.334e+03	7.457e+03 0.72	y 1.279e+04	0.19477	
24:38	1.379e+04	1.565e+04 0.88	y 2.943e+04	0.44818	
24:50	1.063e+04	1.312e+04 0.81	y 2.375e+04	0.36156	
25:02	5.166e+03	6.081e+03 0.85	y 1.125e+04	0.17125	
25:26	4.774e+03	6.519e+03 0.73	y 1.129e+04	0.17195	
25:47	7.476e+03	1.064e+04 0.70	y 1.812e+04	0.27584	
26:10	1.281e+04	1.600e+04 0.80	y 2.881e+04	0.43866	
26:27	2.627e+03	1.090e+04 0.24	n 6.040e+03	0.091961	2,3,7,8-TCDD
26:46	4.921e+03	5.604e+03 0.88	y 1.052e+04	0.16025	

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Totals class: PeCDD EMPC Entry #: 21

Run: 13 File: 160712D1 S: 8 I: 1 F: 2 Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 13.286 Unnamed Concentration: 12.219

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
29:02	7.203e+04	1.066e+05 0.68 y	1.786e+05	3.7567	
29:30	1.842e+04	3.112e+04 0.59 y	4.954e+04	1.0420	
29:59	4.256e+04	6.048e+04 0.70 y	1.030e+05	2.1672	
30:09	2.589e+04	3.253e+04 0.80 n	5.302e+04	1.1151	
30:13	2.238e+04	3.271e+04 0.68 y	5.508e+04	1.1586	
30:27	3.145e+04	4.945e+04 0.64 y	8.090e+04	1.7015	
30:45	8.496e+03	1.381e+04 0.62 y	2.231e+04	0.46919	
31:10	2.021e+04	3.050e+04 0.66 y	5.070e+04	1.0664	1,2,3,7,8-PeCDD
31:15	1.101e+04	1.294e+04 0.85 n	2.109e+04	0.44367	
31:32	7.241e+03	1.012e+04 0.72 y	1.736e+04	0.36518	

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Totals class: HxCDD EMPC Entry #: 23

Run: 13 File: 160712D1 S: 8 I: 1 F: 3
Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 53.630 Unnamed Concentration: 43.586

RT	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
32:57	3.468e+05	2.937e+05	1.18 y	6.406e+05	15.325	
33:30	7.515e+04	5.979e+04	1.26 y	1.349e+05	3.2282	
33:46	5.478e+05	4.247e+05	1.29 y	9.725e+05	23.266	
33:54	2.036e+04	1.565e+04	1.30 y	3.601e+04	0.86144	
34:28	3.631e+04	2.812e+04	1.29 y	6.443e+04	1.5547	1,2,3,4,7,8-HxCDD
34:34	1.242e+05	1.003e+05	1.24 y	2.245e+05	5.3123	1,2,3,6,7,8-HxCDD
34:45	2.167e+04	1.619e+04	1.34 y	3.786e+04	0.90578	
34:51	7.433e+04	5.768e+04	1.29 y	1.320e+05	3.1761	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 13 File: 160712D1 S: 8 I: 1 F: 4
Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 551.23 Unnamed Concentration: 281.606

RT ml Resp m2 Resp RA Resp Concentration Name

37:23 4.679e+06 4.578e+06 1.02 y 9.257e+06 281.61 38:22 4.498e+06 4.366e+06 1.03 y 8.863e+06 269.63 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 13 File: 160712D1 S: 8 I: 1 F: 1
Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 15.988 Unnamed Concentration: 13.096

RT	ml Resp	m2 Resp RA	A	Resp	Concentration	Name
21:01	9.861e+03	1.263e+04 0.	.78 y	2.249e+04	0.22786	
21:39	6.286e+04	8.488e+04 0.	.74 y	1.477e+05	1.4967	
22:13	2.833e+04	3.472e+04 0.	.82 y	6.305e+04	0.63870	
22:37	4.331e+04	4.978e+04 0.	.87 y	9.309e+04	0.94302	
23:07	3.537e+04	5.002e+04 0.	.71 y	8.539e+04	0.86500	
23:14	1.514e+04	2.287e+04 0.	.66 y	3.802e+04	0.38512	
23:27	3.293e+04	4.538e+04 0.	.73 y	7.831e+04	0.79333	
23:51	5.108e+03	6.002e+03 0.	.85 y	1.111e+04	0.11255	
23:59	1.251e+04	1.837e+04 0.	.68 y	3.088e+04	0.31281	
24:10	7.056e+04	8.921e+04 0.	.79 y	1.598e+05	1.6186	
24:44	3.782e+04	4.589e+04 0.	.82 y	8.370e+04	0.84793	
25:00	1.858e+04	2.520e+04 0.	.74 y	4.379e+04	0.44356	
25:24	9.655e+03	1.124e+04 0.	.86 y	2.090e+04	0.21168	
25:30	9.794e+03	1.414e+04 0.	.69 y	2.393e+04	0.24245	
25:37	1.311e+05	1.544e+05 0.	.85 y	2.855e+05	2.8919	2,3,7,8-TCDF
25:58	1.559e+05	1.989e+05 0.	.78 y	3.548e+05	3.5939	
27:30	2.396e+04	2.026e+04 1.	.18 n	3.587e+04	0.36334	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 13 File: 160712D1 S: 8 I: 1 F: 1 Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 10.538 Unnamed Concentration: 10.538

RT m1 Resp m2 Resp RA Resp Concentration Name

27:29 4.467e+05 3.116e+05 1.43 y 7.583e+05 10.538

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Totals class: PeCDF EMPC Entry #: 31

Run: 13 File: 160712D1 S: 8 I: 1 F: 2 Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 15.216 Unnamed Concentration: 11.915

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name
28:52 29:00	5.558e+04 2.935e+05 1.063e+04	3.957e+04 1.857e+05 8.030e+03	1.58 y	9.515e+04 4.792e+05 1.866e+04		
29:35 29:46		5.518e+04 6.596e+03	1.52 y 0.78 n	1.390e+05 8.491e+03 4.055e+04	1.9321 0.11801 0.56908	1,2,3,7,8-PeCDF
30:12 30:47 30:54	4.568e+04 2.287e+04 1.176e+05	1.410e+04	1.62 y	7.987e+04 3.698e+04 1.987e+05	1.1100 0.51390 2.7318	2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC Entry #: 33

Run: 13 File: 160712D1 S: 8 I: 1 F: 3 Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 30.575 Unnamed Concentration: 26.212

32:26 8.386e+04 6.776e+04 1.24 y 1.516e+05 2.3438 32:35 3.646e+05 2.887e+05 1.26 y 6.534e+05 10.100 32:47 1.134e+04 8.370e+03 1.36 y 1.971e+04 0.30473 32:56 1.694e+05 1.352e+05 1.25 y 3.046e+05 4.7090 33:07 3.048e+05 2.393e+05 1.27 y 5.441e+05 8.4112 33:29 1.155e+04 1.064e+04 1.09 y 2.218e+04 0.34295 33:35 4.766e+04 3.511e+04 1.36 y 8.277e+04 1.2112 1,2,3,4,7,8-HxCDF 33:42 4.189e+04 3.314e+04 1.26 y 7.503e+04 1.136 1,2,3,6,7,8-HxCDF 34:18 6.104e+04 4.842e+04 1.26 y 1.095e+05 1.7119 2,3,4,6,7,8-HxCDF	RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
35:16 1.079e+04 8.444e+03 1.28 y 1.924e+04 0.32676 1,2,3,7,8,9-HxCDF	32:35 32:47 32:56 33:07 33:29 33:35 33:42 34:18	3.646e+05 1.134e+04 1.694e+05 3.048e+05 1.155e+04 4.766e+04 4.189e+04 6.104e+04	2.887e+05 1.26 y 8.370e+03 1.36 y 1.352e+05 1.25 y 2.393e+05 1.27 y 1.064e+04 1.09 y 3.511e+04 1.36 y 3.314e+04 1.26 y 4.842e+04 1.26 y	6.534e+05 10.100 1.971e+04 0.30473 3.046e+05 4.7090 5.441e+05 8.4112 2.218e+04 0.34295 8.277e+04 1.2112 7.503e+04 1.1136 1.095e+05 1.7119	1,2,3,6,7,8-HxCDF 2,3,4,6,7,8-HxCDF

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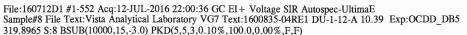
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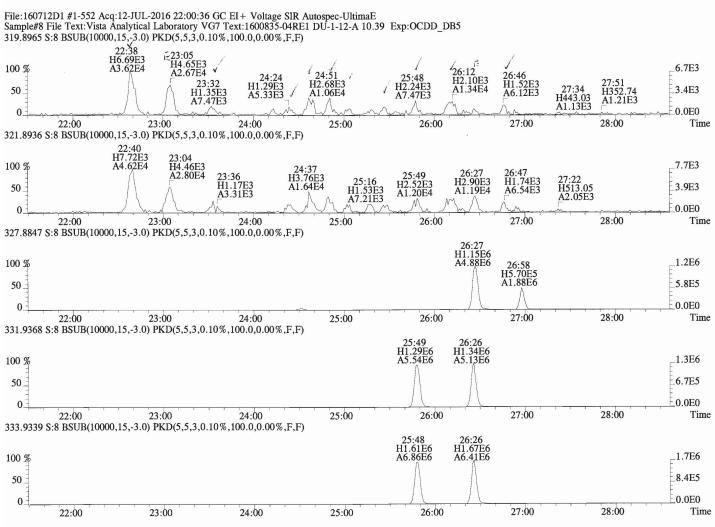
Run: 13 File: 160712D1 S: 8 I: 1 F: 4 Acquired: 12-JUL-16 22:00:36 Processed: 13-JUL-16 15:19:02

Total Concentration: 41.948 Unnamed Concentration: 27.387

R1	ml Resp	m2 Resp RA	Resp	Concentration	Name
37:00	3.336e+05	3.074e+05 1.09 y	6.411e+05	13.359	1,2,3,4,6,7,8-HpCDF
37:24	8.961e+03	9.207e+03 0.97 y	1.817e+04	0.39269	
37:38	6.278e+05	6.211e+05 1.01 y	1.249e+06	26.995	
38:55	2.781e+04	2.575e+04 1.08 y	5.356e+04	1.2011	1,2,3,4,7,8,9-HpCDF

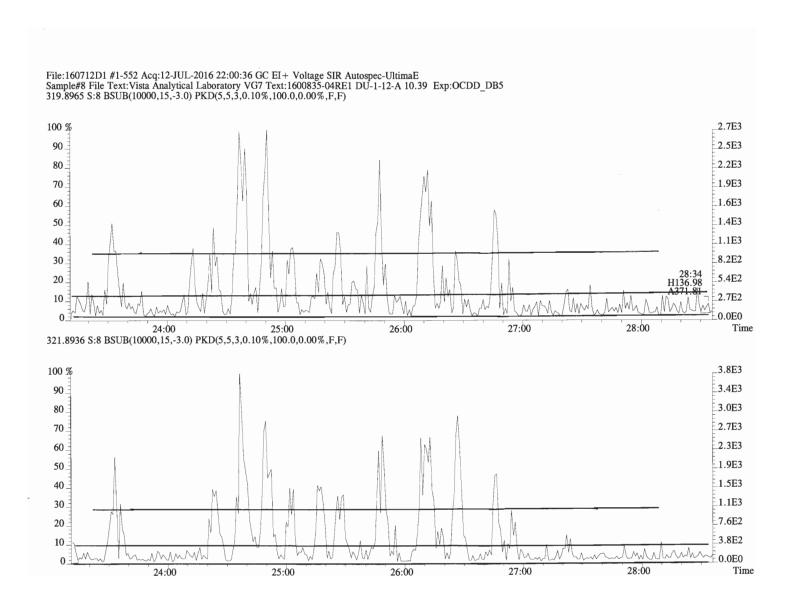
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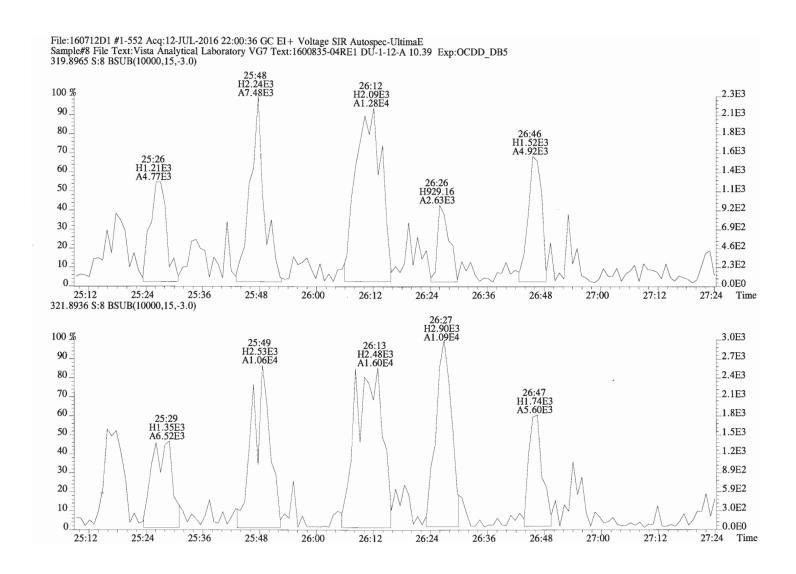


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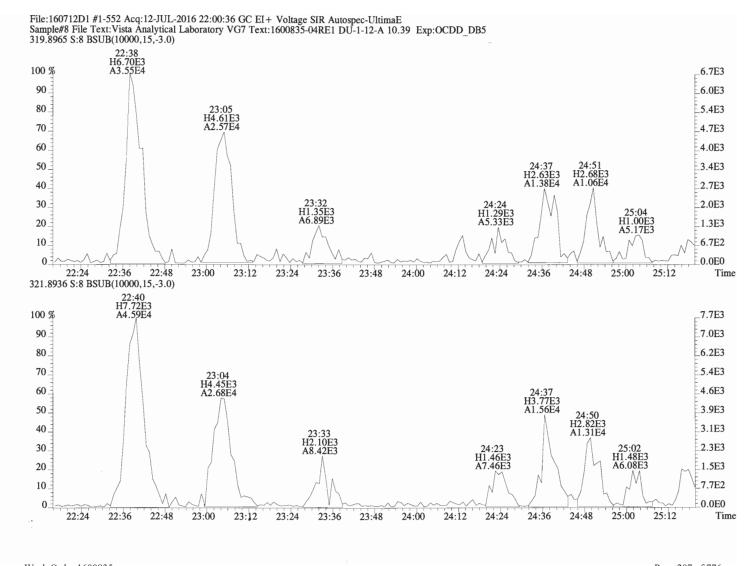
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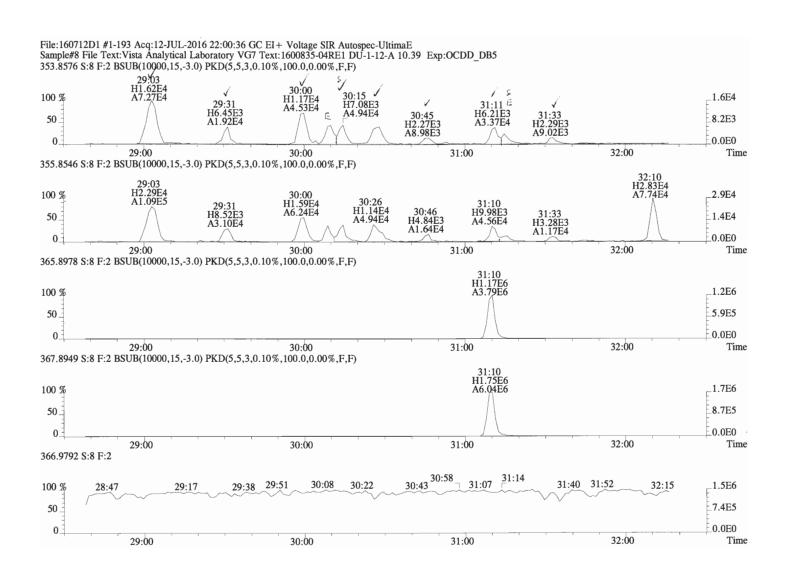
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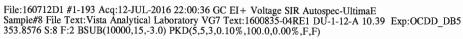
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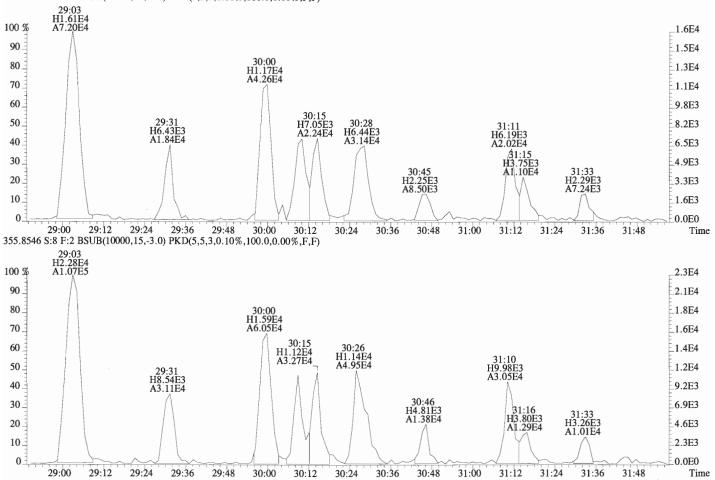


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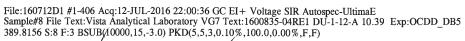


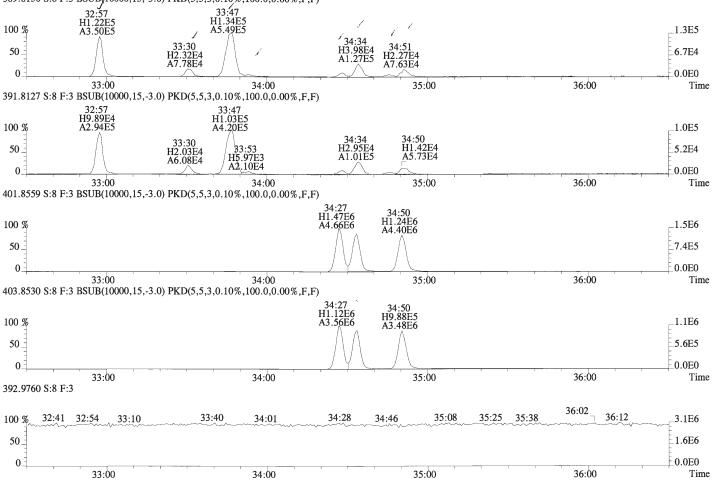
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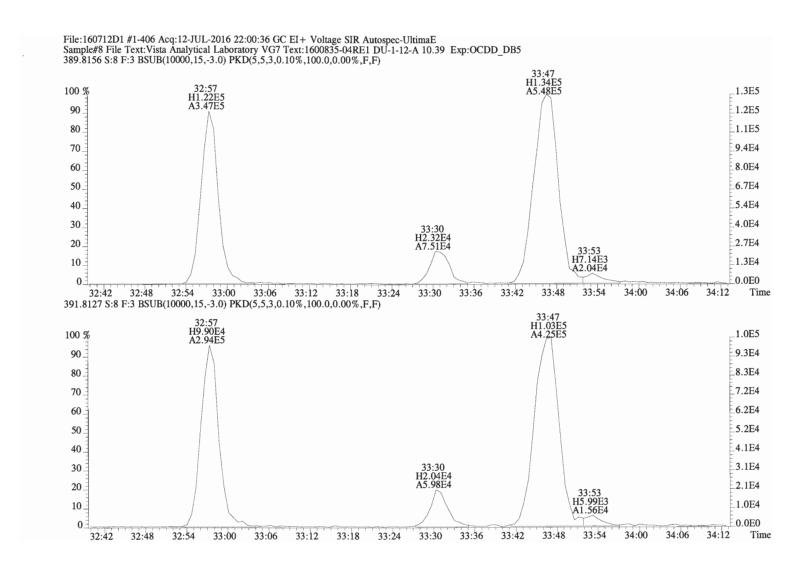


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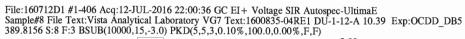


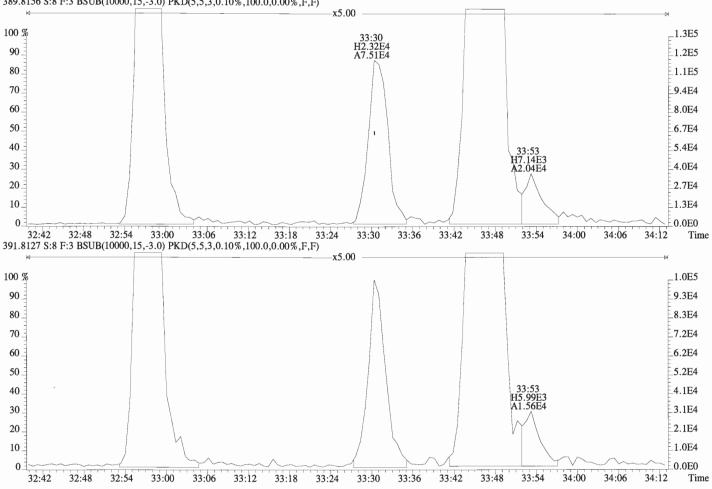


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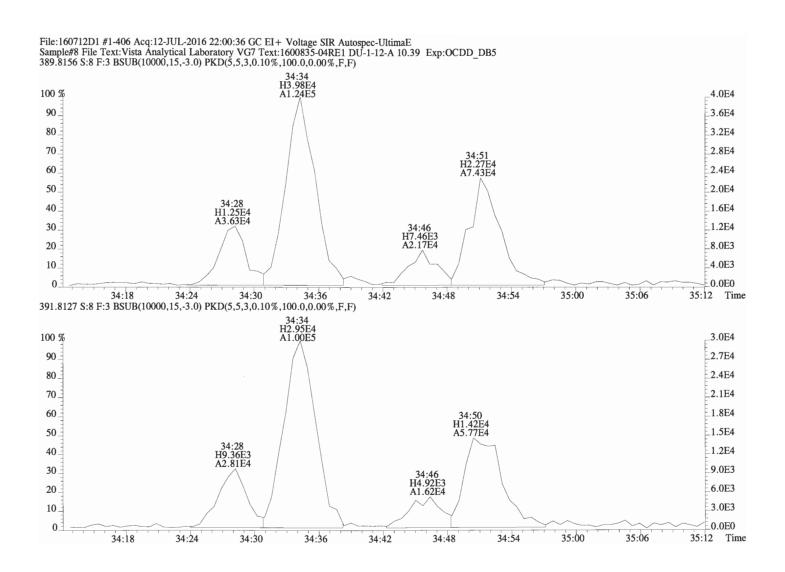


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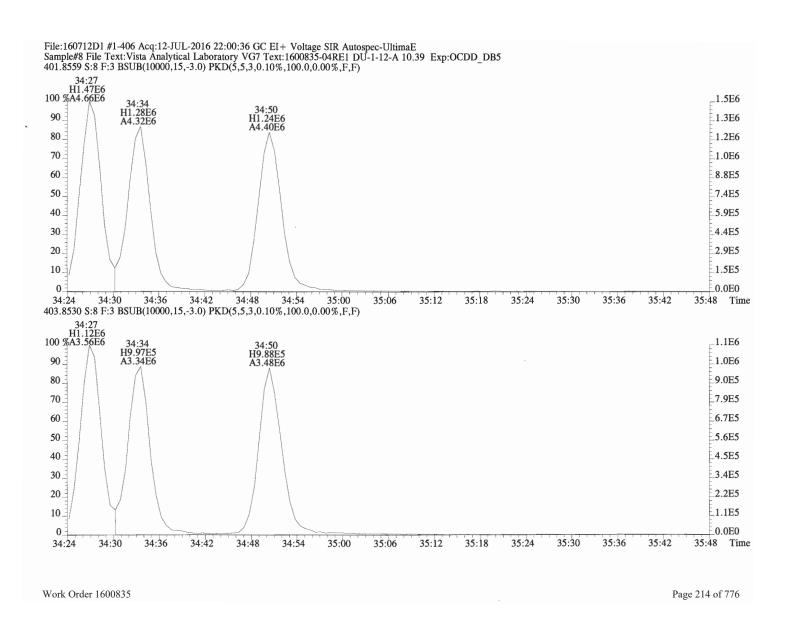


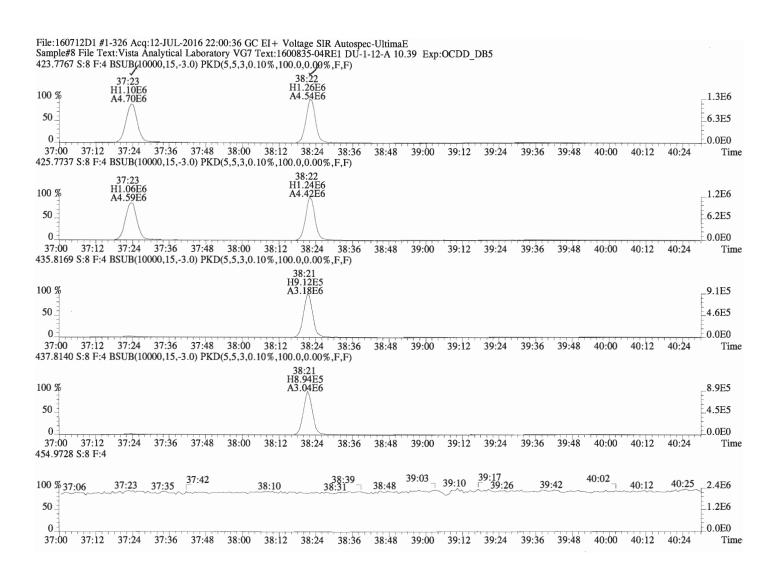


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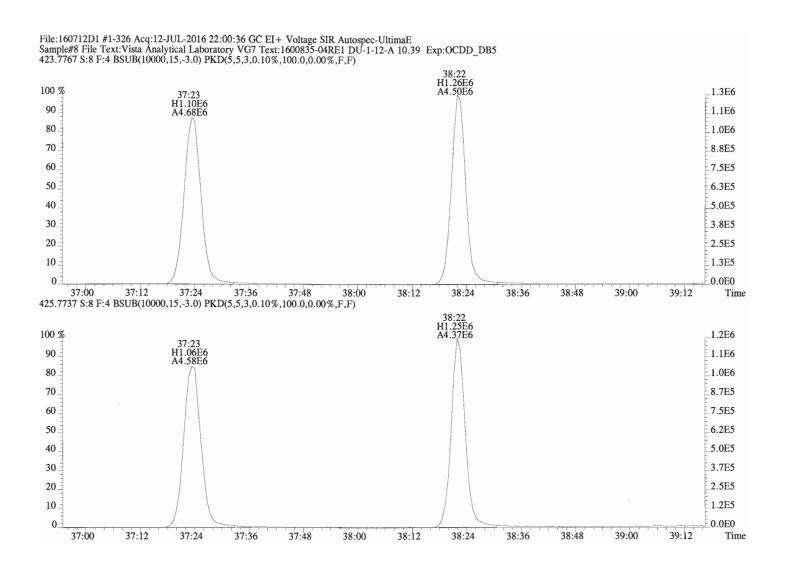


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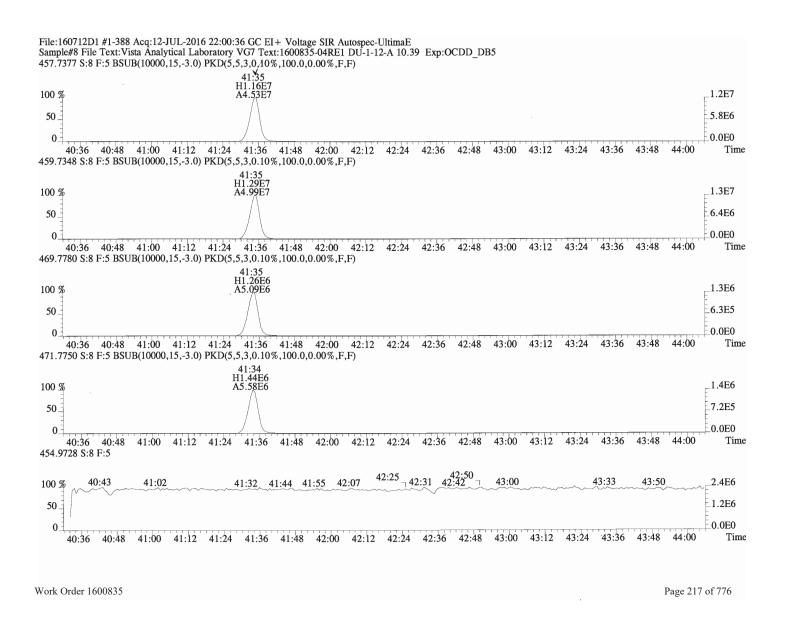


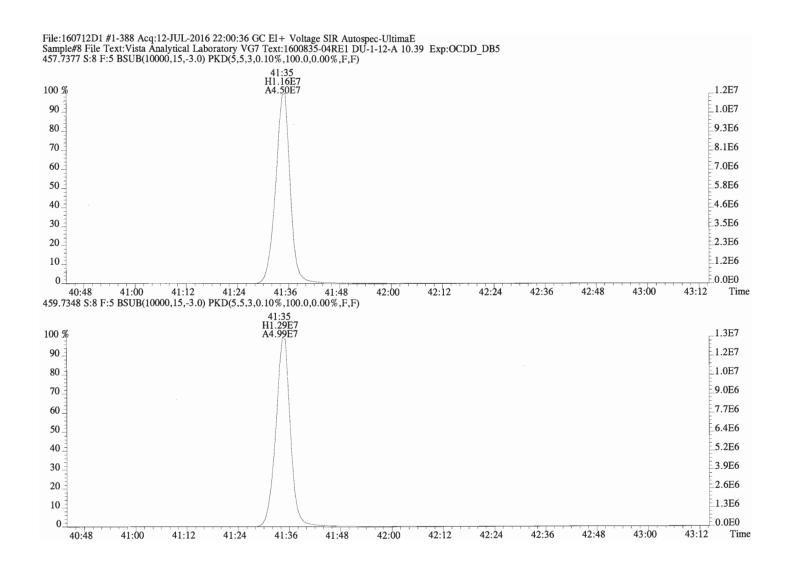


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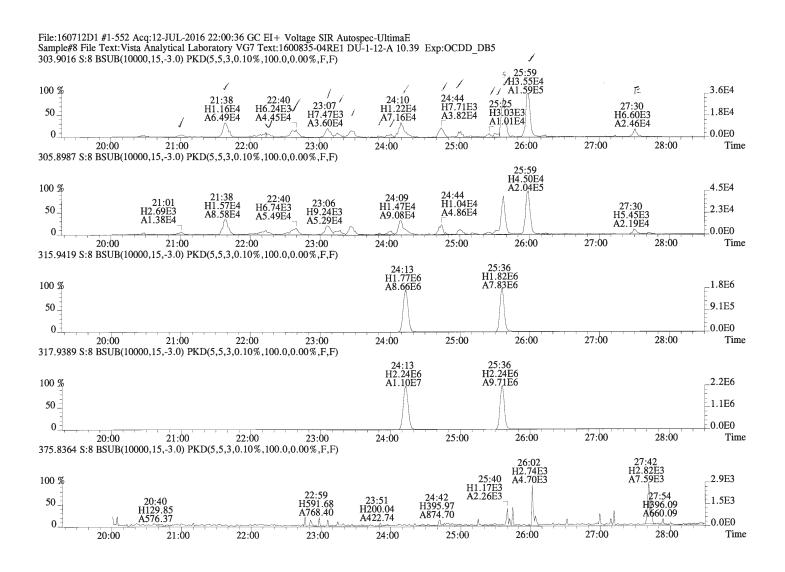


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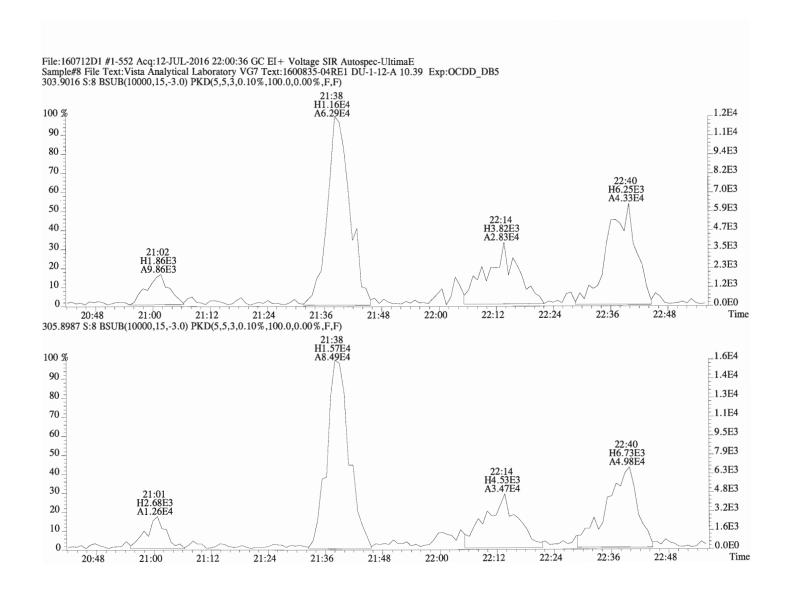




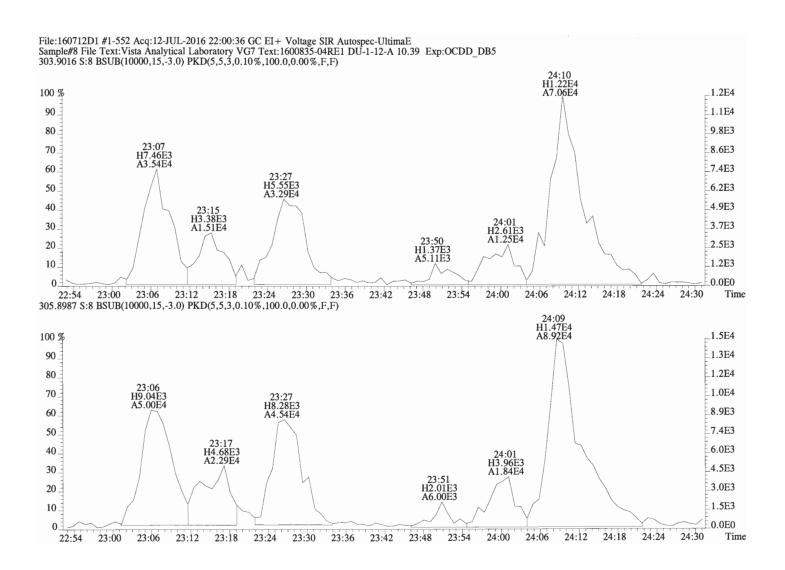
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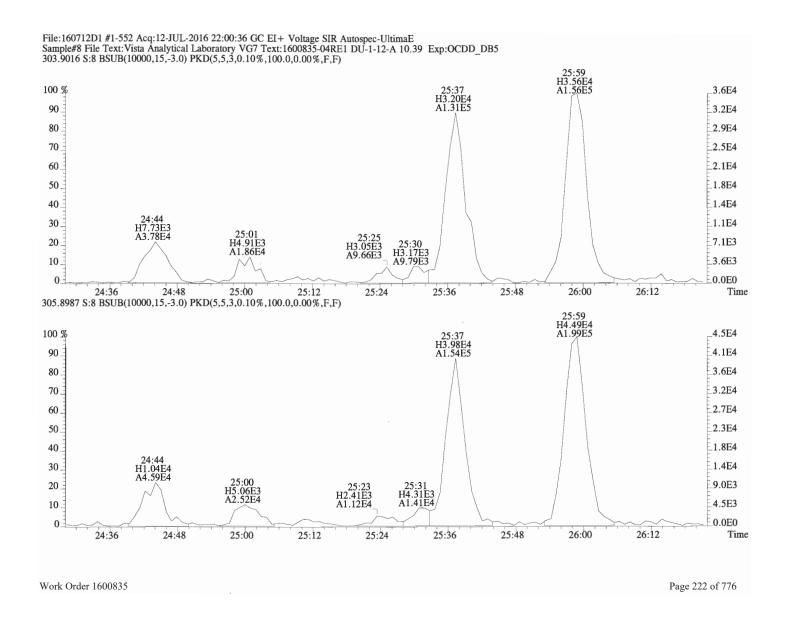
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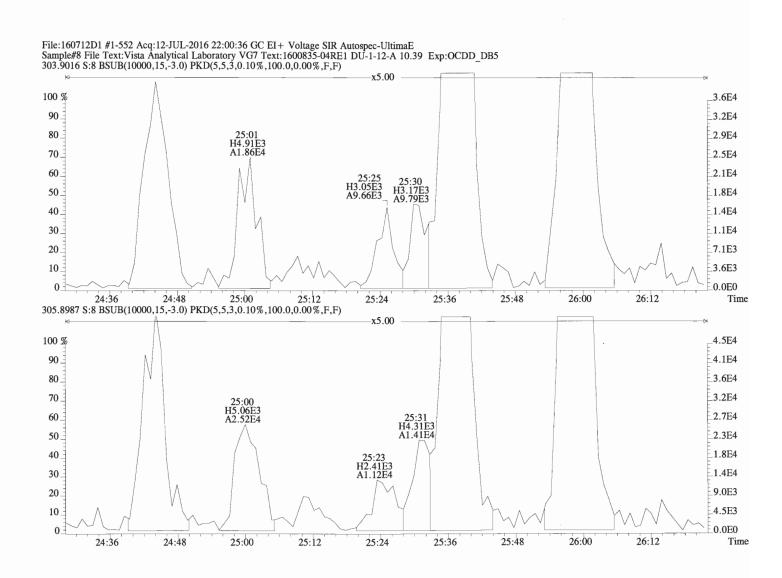


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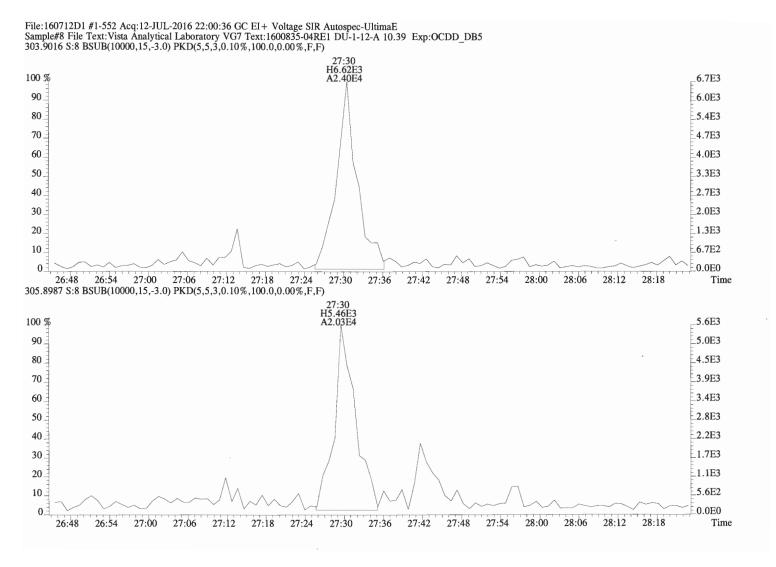
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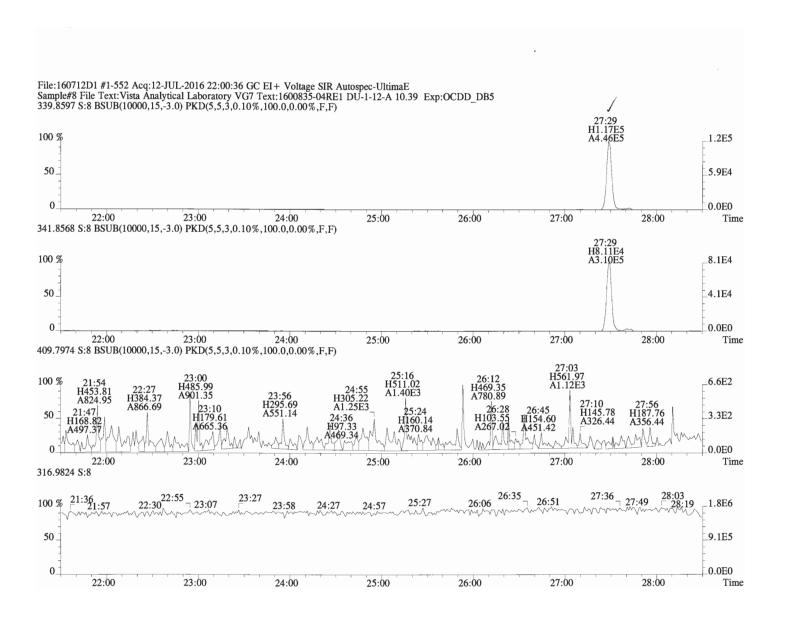


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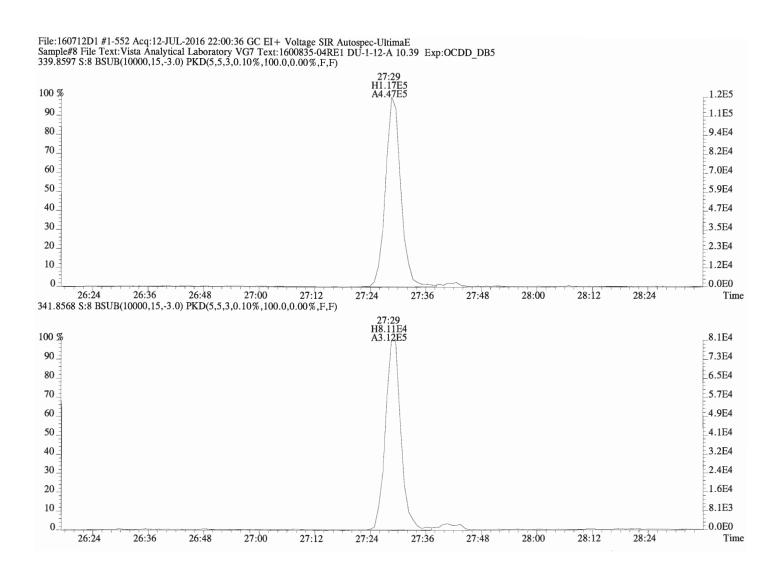
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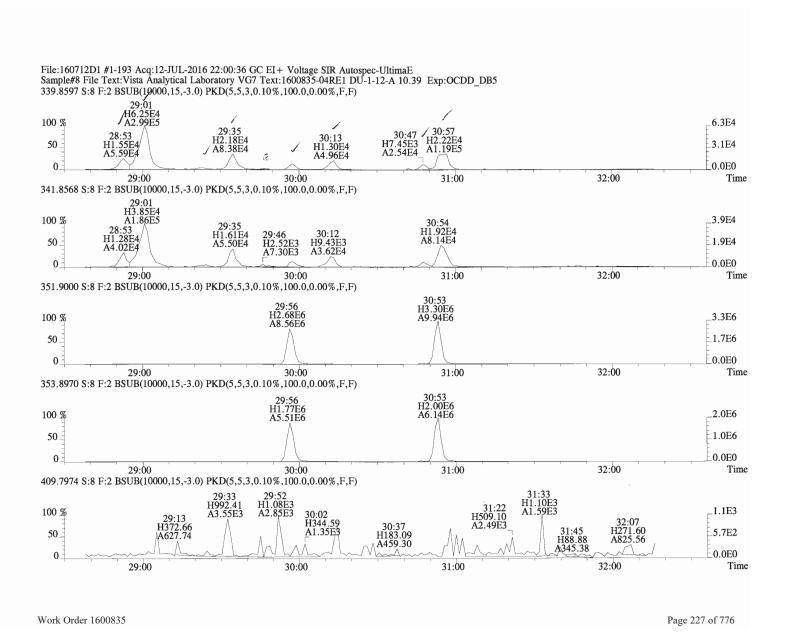
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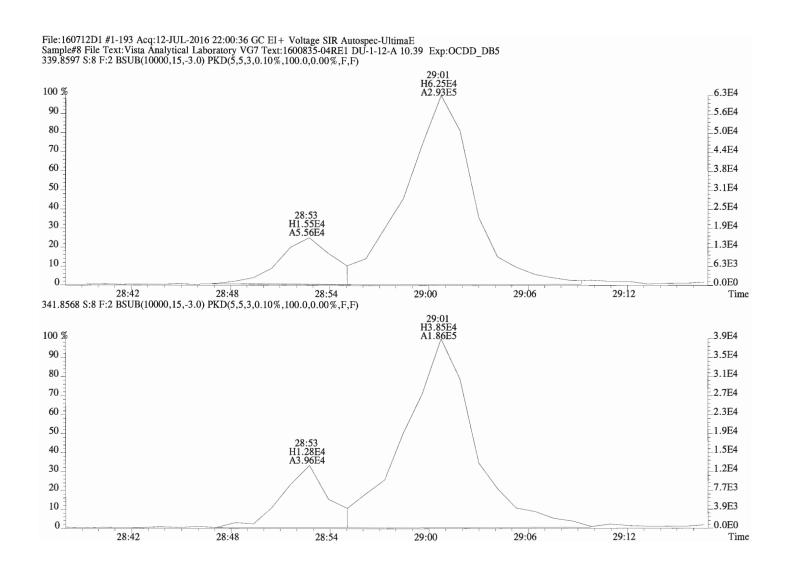


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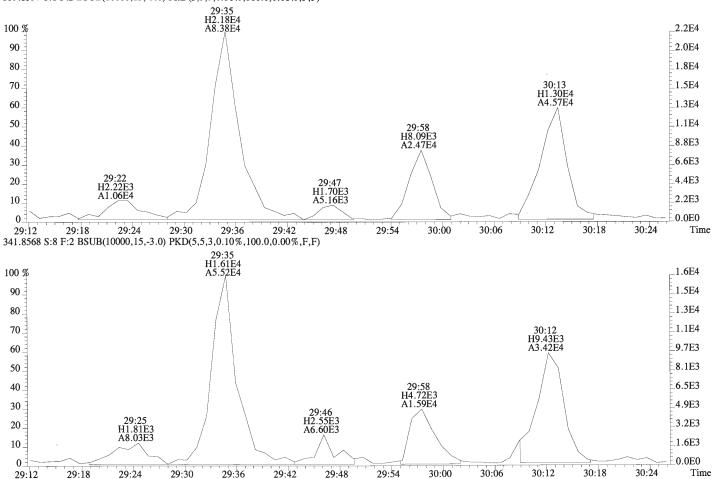
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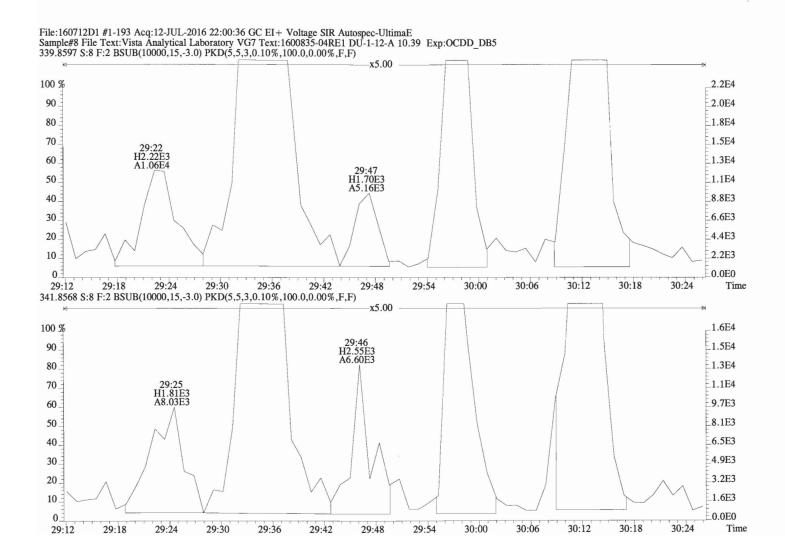


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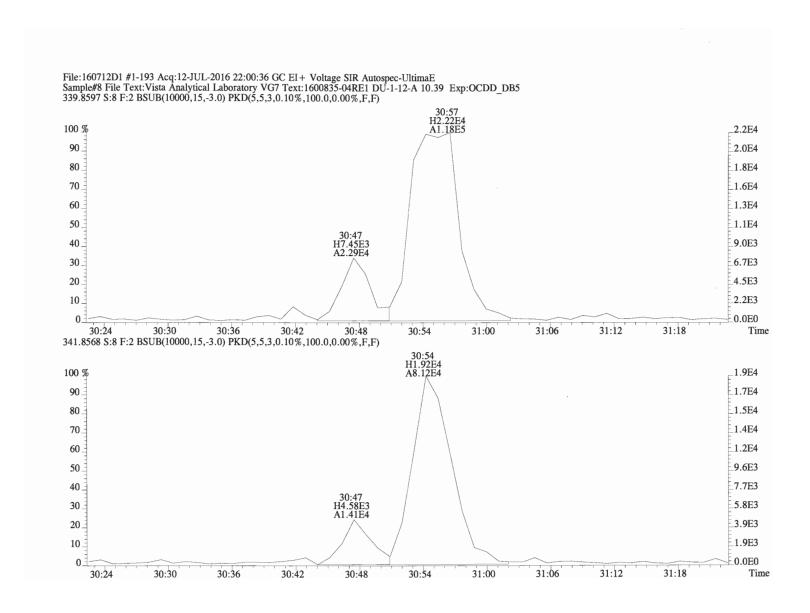
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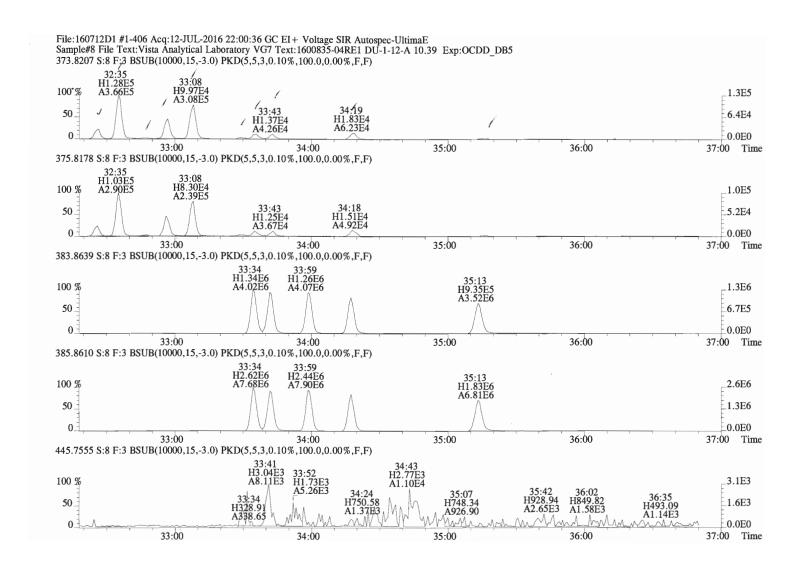
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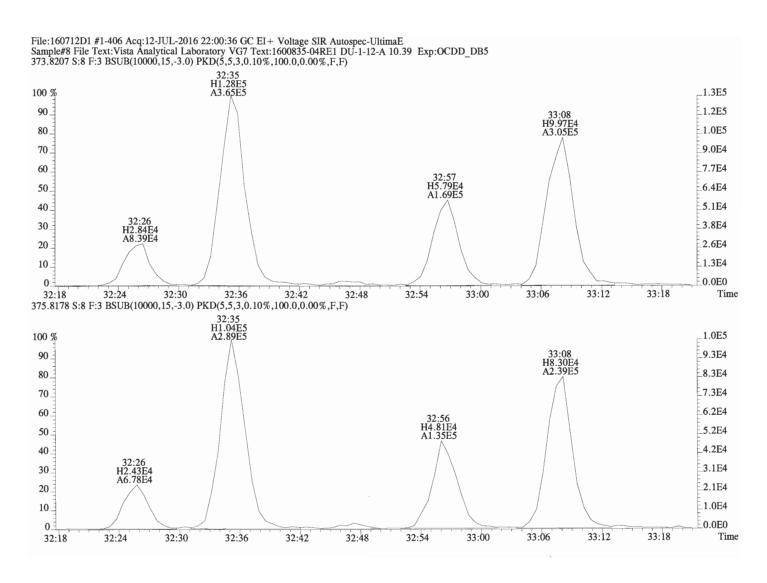
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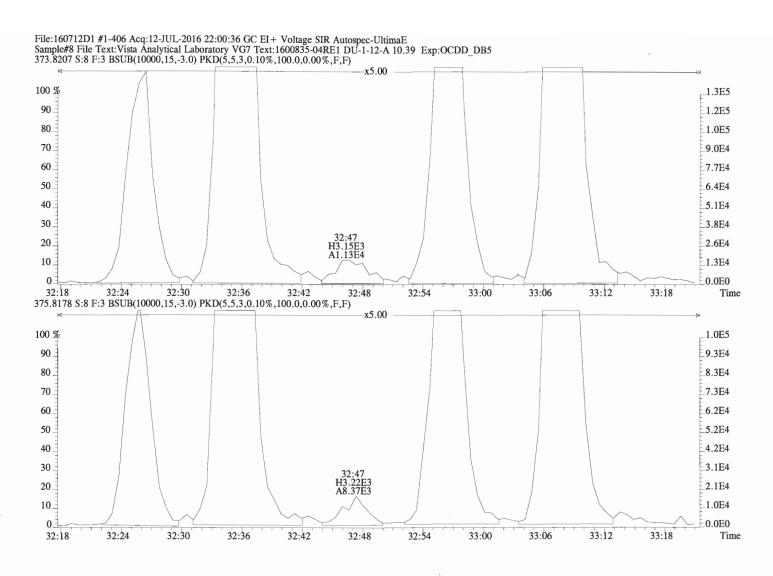
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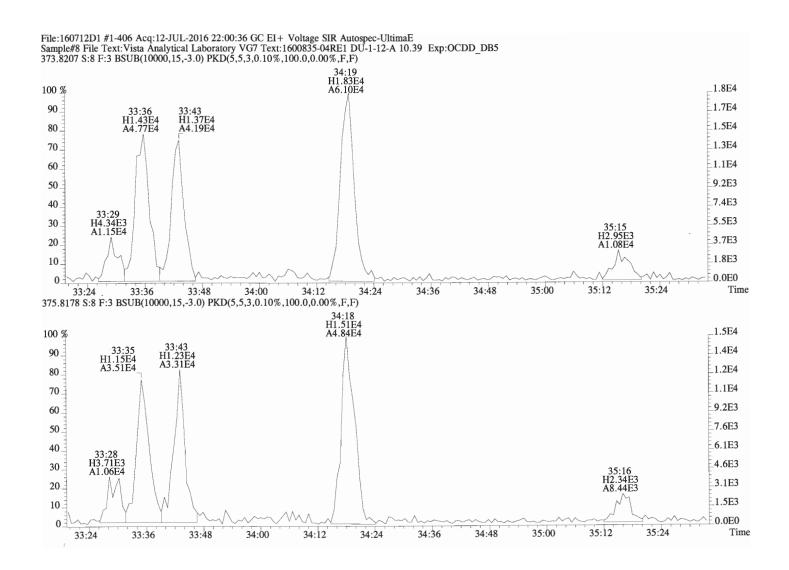
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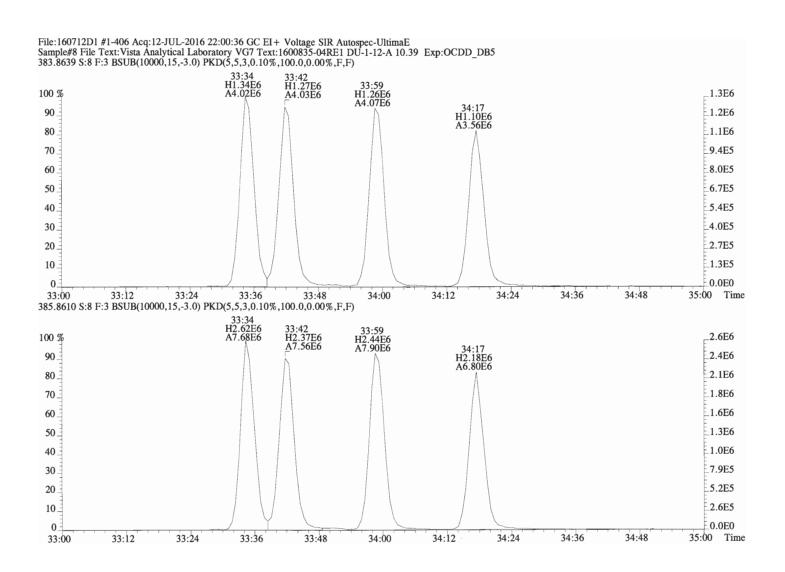
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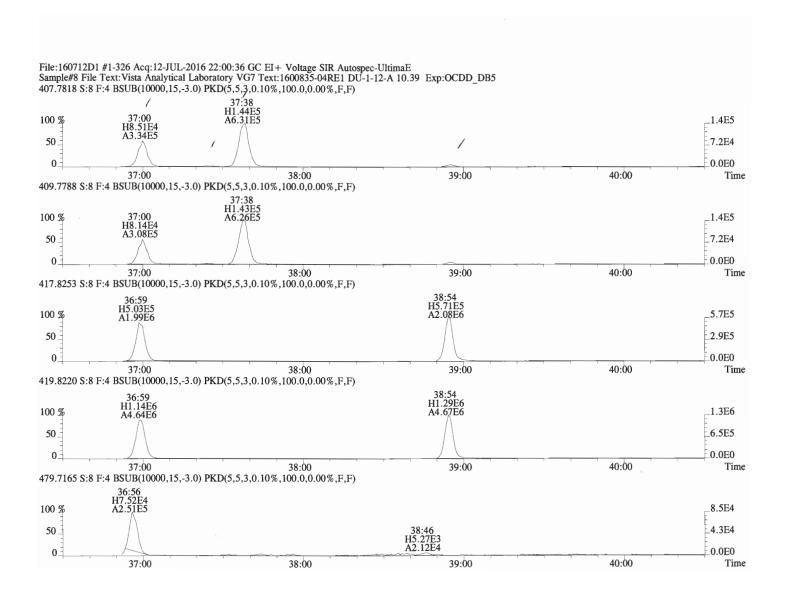
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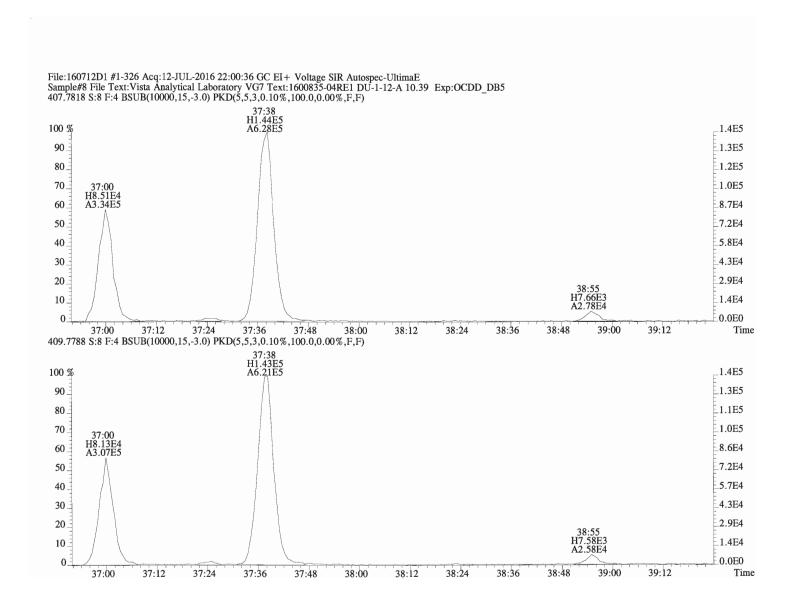
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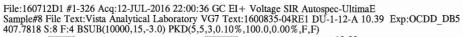
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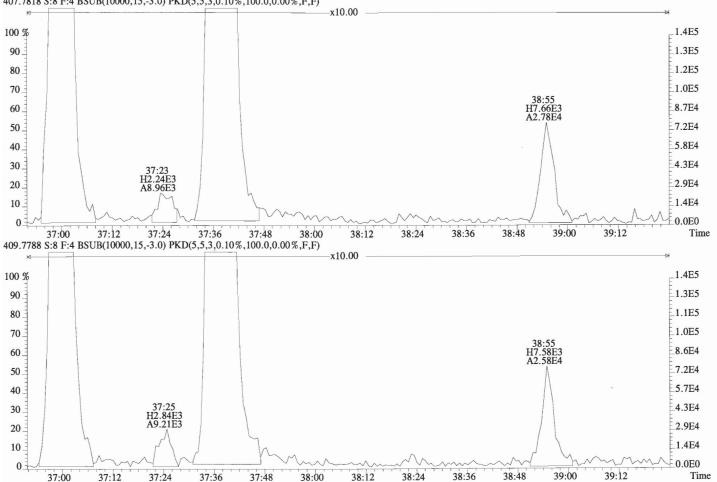


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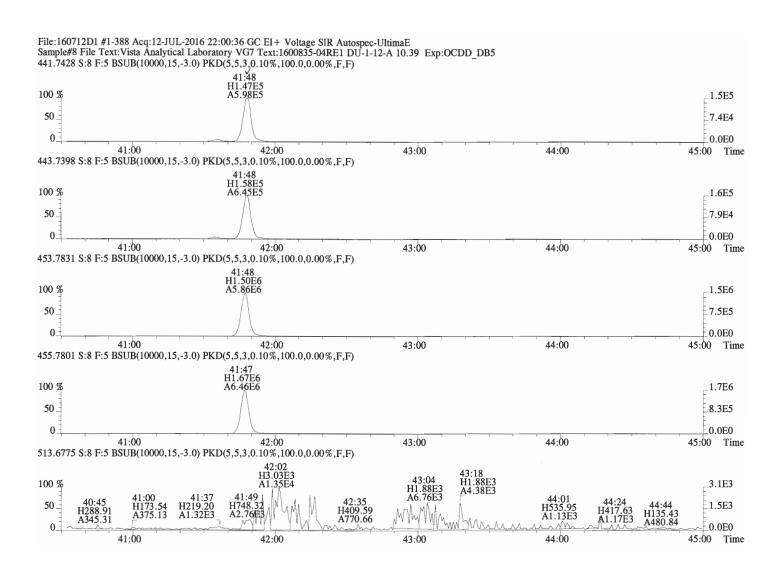


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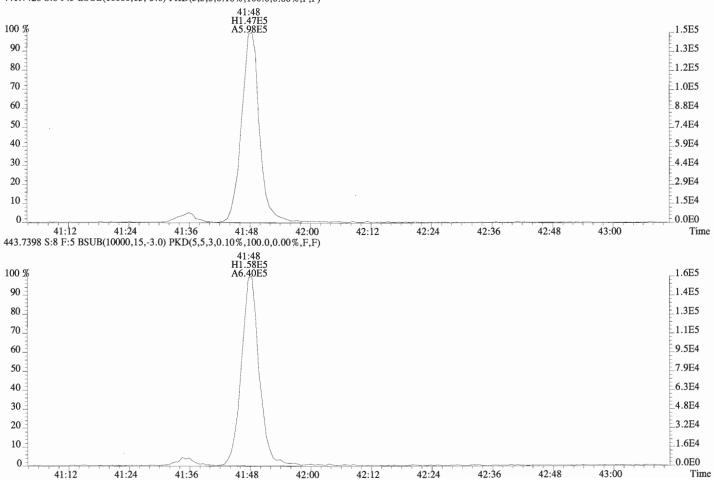


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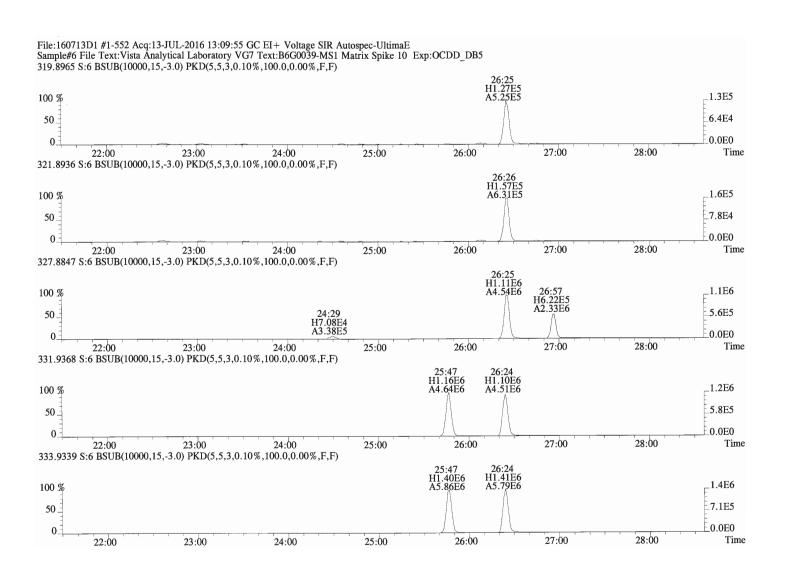
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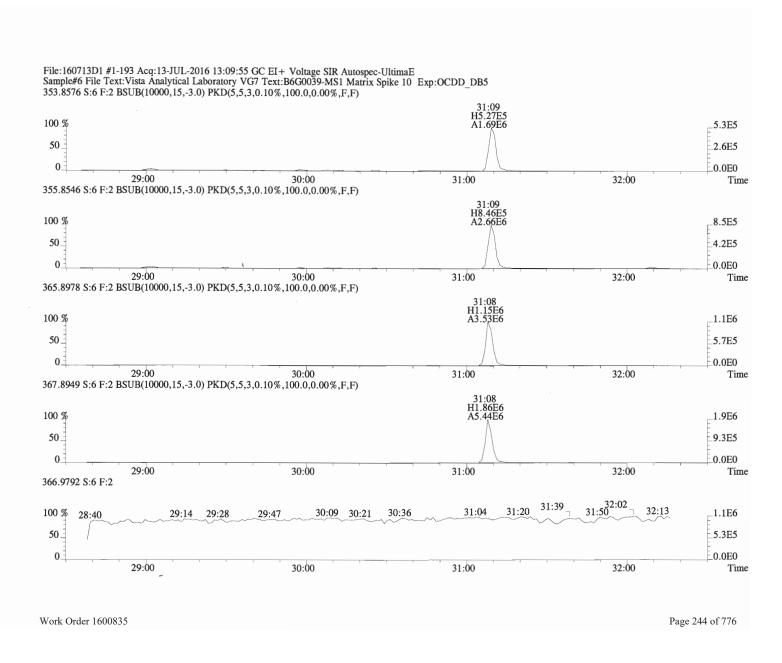
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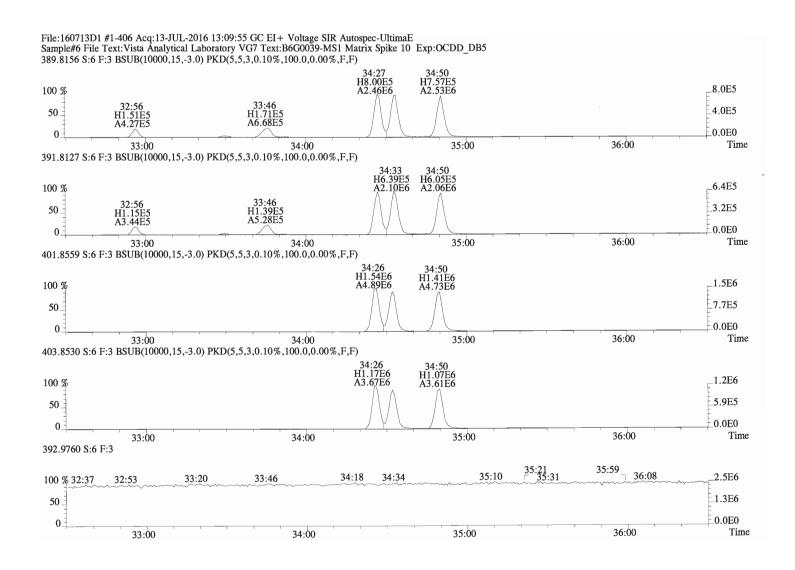
	ent ID: Matrix Spike ID: B6G0039-MS1		lename: 1 Column I			S:6 Acq:13-JUL-16 13:09:55 ICal: 1613VG7-4-7-16 wt/vol:10.043						ConCal: ST160713D1-1 EndCAL: NA					Page	5 0
	Name	Resp	RA	DDD		DD#				_								
	2,3,7,8-TCDD		0.83 y	RRF 1.13		RRT 1.001	Conc 19.758	Q noi	.se	Fac 2.5	DL *	Name	Tetra-Dioxins	Conc 23.8	EMPC 25.1	Qual n	oise	1
	1,2,3,7,8-PeCDD	4.35e+06	0.63 y	0.96		1.001	19.758			2.5			Penta-Dioxins	110				
	1,2,3,4,7,8-HxCDD	4.41e+06	1.26 y	1.00		1.000	100.37		*	2.5			Hexa-Dioxins	358	113			
	1,2,3,4,7,8 HxCDD	4.69e+06	1.24 y	1.10		1.000	102.46			2.5			Hepta-Dioxins	745	361 ₇			
	1,2,3,7,8,9-HxCDD	4.59e+06	1.23 y	1.05		1.000	102.27			2.5	*		Tetra-Furans	33.3	36.4			
	1,2,3,4,6,7,8-HpCDD	1.58e+07	1.02 y	1.05		1.000	424.04			2.5			Penta-Furans	227.33	230.24	\		
	OCDD	1.28e+08	0.91 y	0.96		1.000	4588.7			2.5	*		Hexa-Furans	418	419	\	*	
	CCDD	1.200,00	0.51 Y	0.50	41.34	1.000	4500.7			2.5			Mexa-Furans	242	244			
	2,3,7,8-TCDF	2 01e+06	0.83 y	1 12	25.35	1.001	21.984		*	2.5	*	IOCAI I	iepta-rurans	242	244			
	1,2,3,7,8-PeCDF		1.60 y	1.01		1.001	99.992		*	2.5	*							
	2,3,4,7,8-PeCDF		1.61 y	0.90		1.001	101.84		*	2.5	*							
	1,2,3,4,7,8-HxCDF		1.22 y	1.16	33:34		97.515		*	2.5	*							
	1,2,3,6,7,8-HxCDF		1.22 y	1.16		1.000	97.968		*	2.5	*							
	2,3,4,6,7,8-HxCDF		1.25 y	1.23	34:17		99.169		*	2.5	*							
	1,2,3,7,8,9-HxCDF		1.25 y		35:13		96.054		*	2.5	*							
	1,2,3,4,6,7,8-HpCDF	6.32e+06	1.01 y	1.44	36:59		110.84		*	2.5	*							
	1,2,3,4,7,8,9-HpCDF	5.29e+06	1.04 y	1.31		1.001	98.329		*	2.5	*							
		8.67e+06	0.93 y	1.03	41:47		236.88		*	2.5	*							
			1	2.00		11000	250.00			2.5		Rec	Qual					
	13C-2,3,7,8-TCDD	1.03e+07	0.78 y	1.01	26:24	1.024	193.24					97.0	¥					
	13C-1,2,3,7,8-PeCDD		0.65 y	1.10		1.208	154.22					77.4						
	13C-1,2,3,4,7,8-HxCDD	8.56e+06	1.33 y	0.72	34:26	1.014	177.56					89.2						
	13C-1,2,3,6,7,8-HxCDD	8.33e+06	1.33 y	0.73	34:32	1.017	171.45					86.1						
	13C-1,2,3,7,8,9-HxCDD	8.35e+06	1.31 y	0.70	34:50	1.025	177.91					89.3						
	13C-1,2,3,4,6,7,8-HpCDD	7.05e+06	1.05 y	0.66	38:21	1.129	158.76					79.7						
	13C-OCDD	1.16e+07	0.90 y	0.66	41:33	1.223	261.87					65.7						
	13C-2,3,7,8-TCDF	1.63e+07	0.81 y	0.90	25:35	0.992	208.80					105				_		
	13C-1,2,3,7,8-PeCDF	1.36e+07	1.62 y	0.98	29:55.	1.161	160.29					80.5						
	13C-2,3,4,7,8-PeCDF	1.59e+07	1.58 y	1.15	30:52	1.197	160.34					80.5						
	13C-1,2,3,4,7,8-HxCDF	1.24e+07	0.51 y	1.01	33:34	0.988	183.38					92.1						
	13C-1,2,3,6,7,8-HxCDF	1.27e+07	0.52 y	1.10	33:41	0.992	172.45					86.6						
	13C-2,3,4,6,7,8-HxCDF	1.16e+07	0.52 y	0.95	34:17	1.009	182.00					91.4						
	13C-1,2,3,7,8,9-HxCDF	1.14e+07	0.53 y	0.83	35:13	1.037	206.28					104						
	13C-1,2,3,4,6,7,8-HpCDF	7.89e+06	0.43 y	0.70	36:58	1.089	168.84					84.8						
	13C-1,2,3,4,7,8,9-HpCDF	8.16e+06	0.44 y	0.72	38:54	1.145	169.55					85.1						
	13C-OCDF	1.42e+07	0.91 y	0.82	41:46	1.230	256.78					64.5						
Jр	37C1-2,3,7,8-TCDD	4.54e+06		1.14	26:26	1.025	75.668					95.0	Integr	ations	Revi	ewed		
													by	70	by	1	,	
RT	13C-1,2,3,4-TCDD	1.05e+07	0.79 y	1.00	25:47	*	199.14						Analyst:	1125	Anal	yst/		
	13C-1,2,3,4-TCDF	1.72e+07	0.82 y	1.00	24:11	*	199.14							115/16		- /		
'RT	13C-1,2,3,4,6,9-HxCDF	1.33e+07	0.52 y	1.00	33:58	*	199.14						c	1,2/11-		7/1-	111	
													Date:/	10/10	_ Date	: T/15	16	

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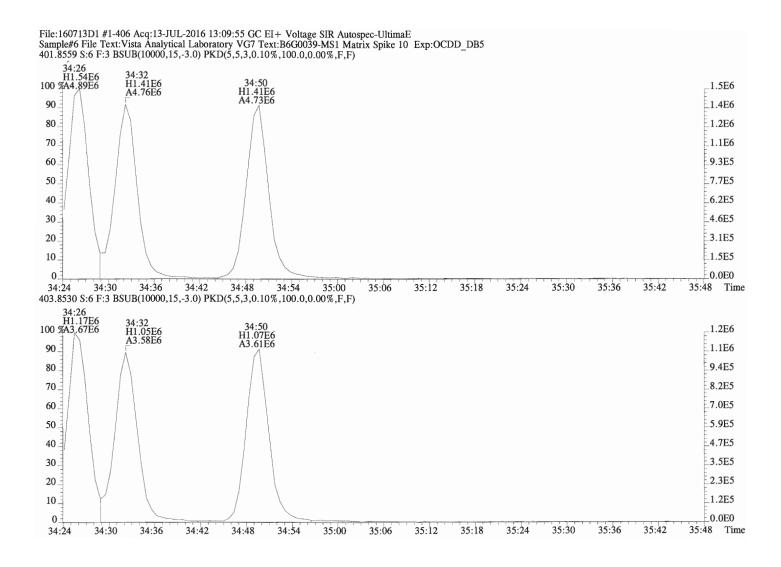


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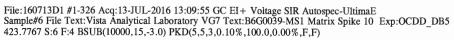


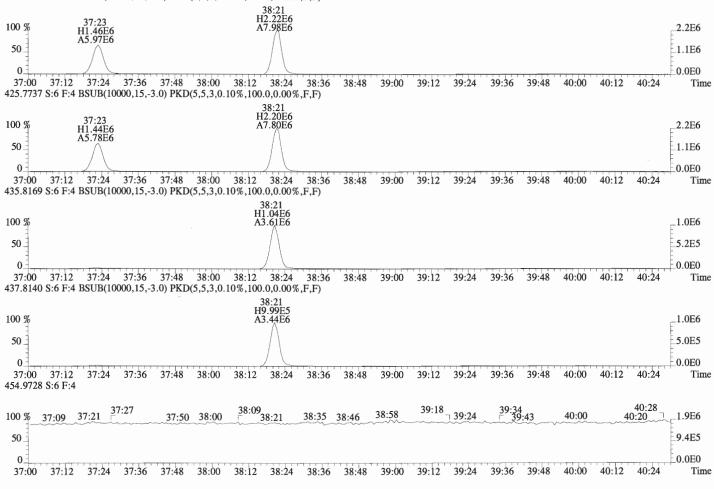


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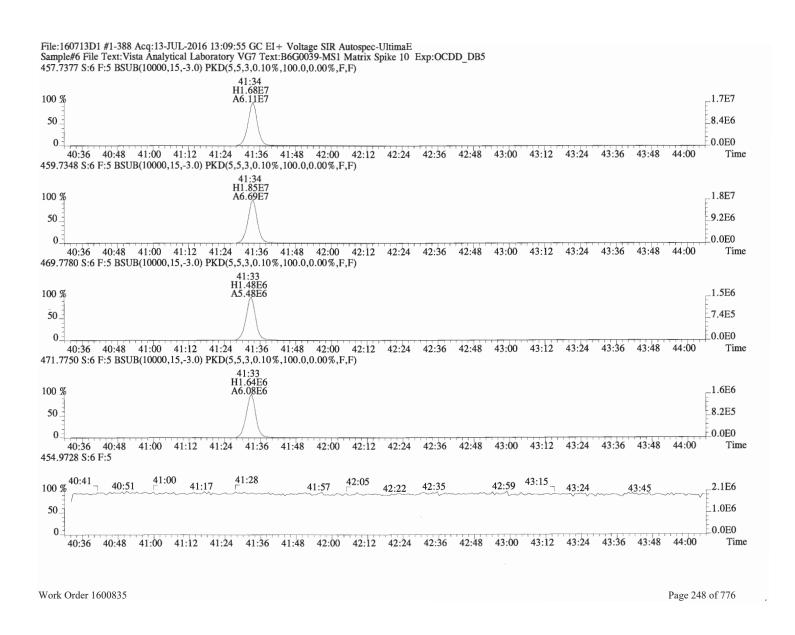


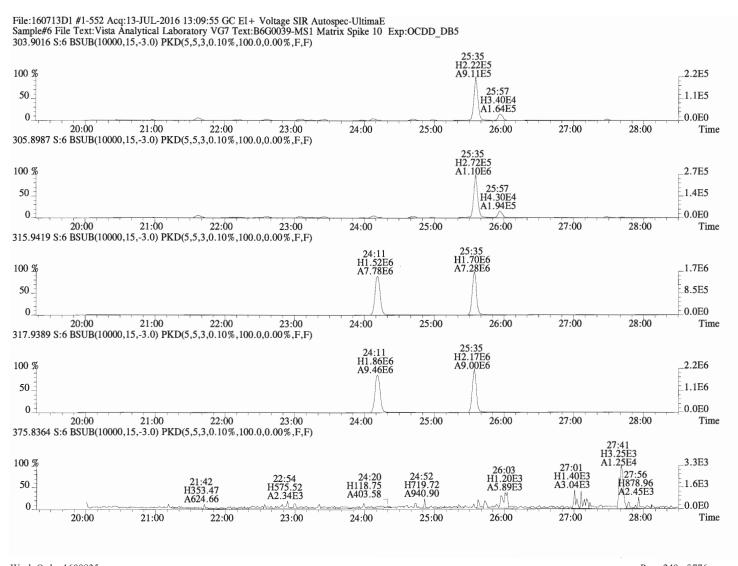
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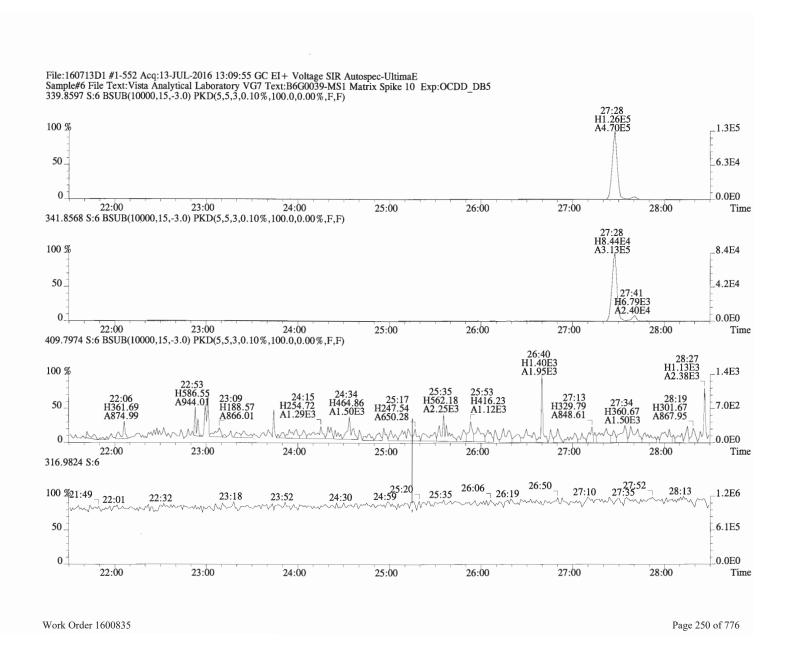


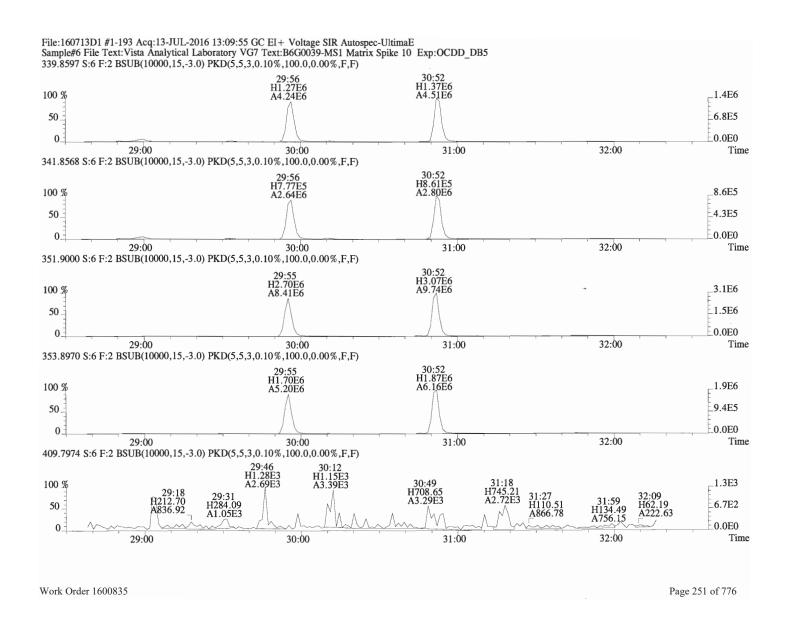
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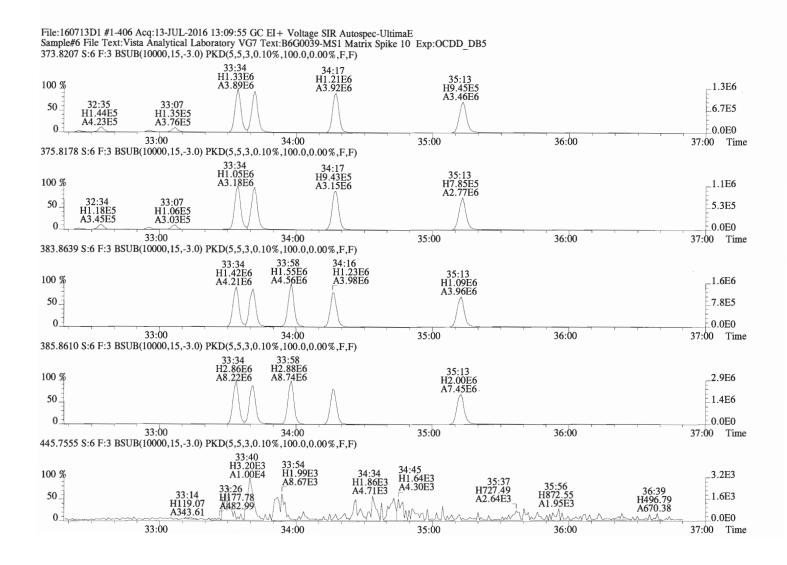




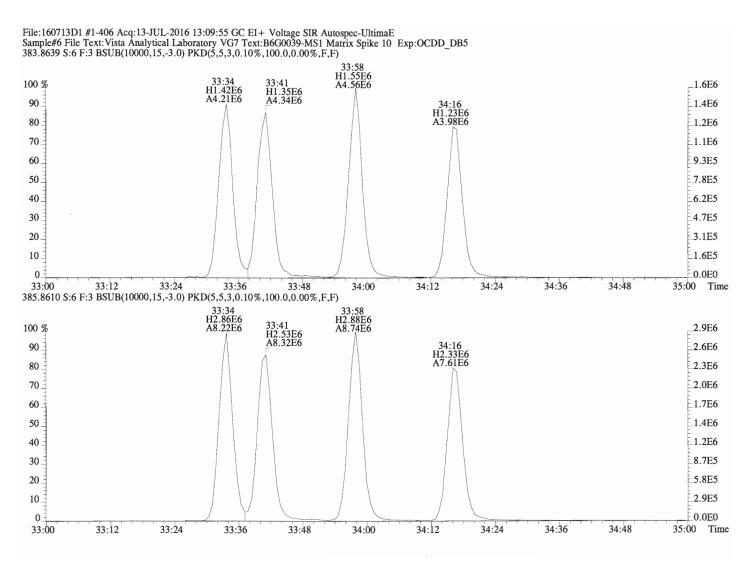
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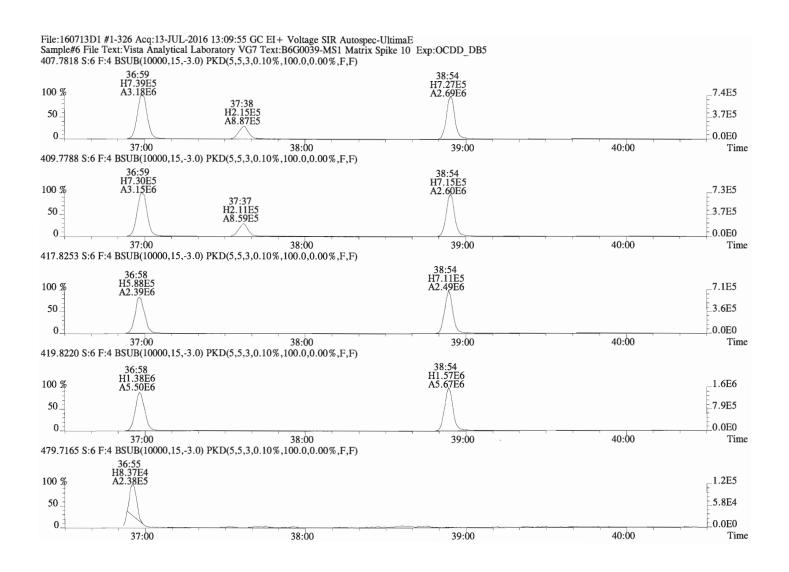




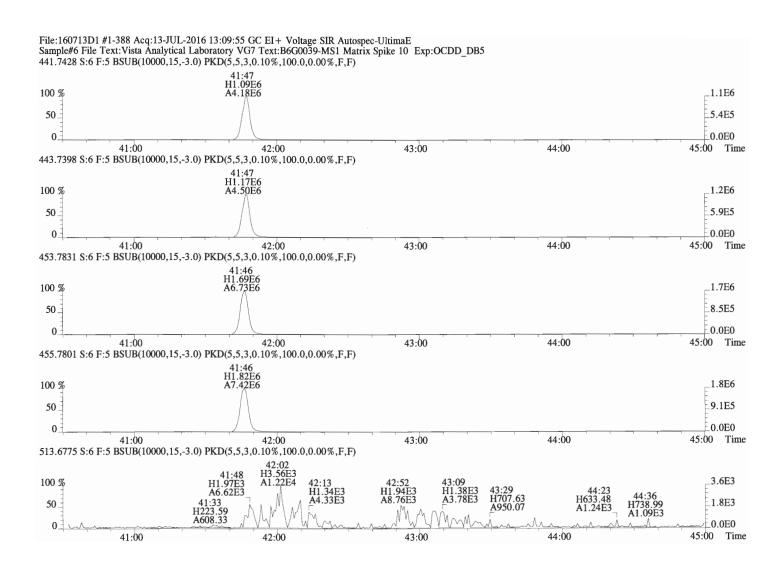
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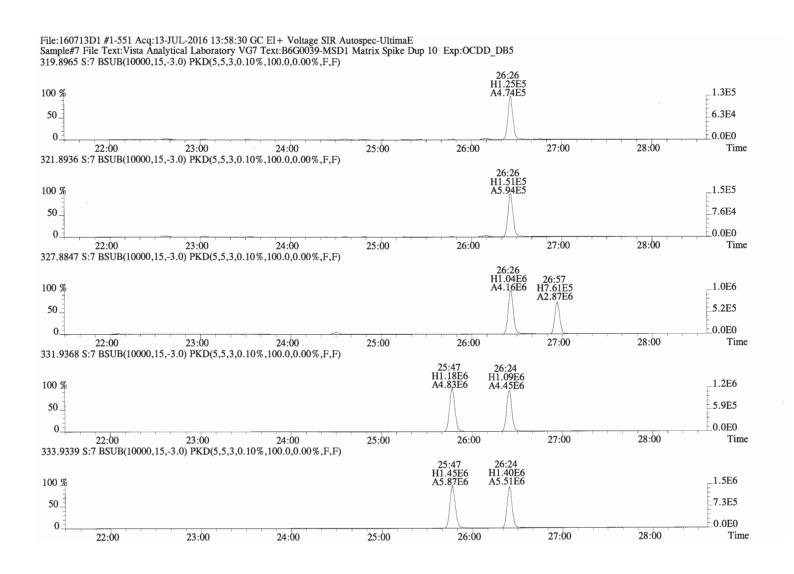
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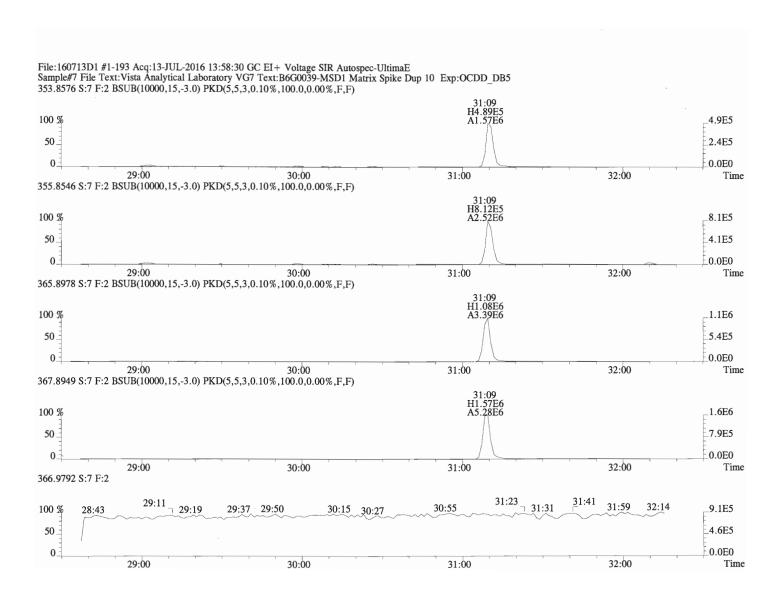
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Name 2,3,7,8-TCDD 1. 1,2,3,7,8-PCDD 4. 1,2,3,4,7,8-HXCDD 4. 1,2,3,6,7,8-HXCDD 4. 1,2,3,7,8,9-HXCDD 1. 0CDD 1. 2,3,7,8-TCDF 1. 1,2,3,7,8-PCDF 6. 2,3,4,7,8-PCDF 6. 1,2,3,4,7,8-HXCDF 6. 1,2,3,4,7,8-HXCDF 6. 1,2,3,4,7,8-HXCDF 6. 2,3,4,7,8-HXCDF 6. 2,3,4,7,8-HXCDF 6.	.07e+06 009e+06 007e+06 140e+06 137e+07 112e+08 053e+06 053e+06 154e+06 154e+06 1.	RA RRI 80 y 1.13 63 y 0.96 22 y 1.00 23 y 1.10 19 y 1.05 90 y 0.96 83 y 1.12 57 y 0.90 23 y 1.16 20 y 1.16	26:26 31:10 34:27 34:34 34:51 38:23 41:35 25:36 29:57 30:54	1.000 1.001 1.000 1.000 1.000	Conc 18.974 98.289 97.997 99.158 98.328 397.67 4397.9 21.624 97.212	Q n	* * * * * * *	Fac 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	DL * * * * * *	Total Pe Total He Total He Total Te Total Pe	etra-Dioxins enta-Dioxins exa-Dioxins epta-Dioxins etra-Furans enta-Furans	Conc 21.3 107 340 696 32.7 214.86 405	EMPC 23.7 111 344 700 36.4 223.62 407	Qual	noise	DL * * * *
1,2,3,7,8-PeCDD 4. 1,2,3,4,7,8-HxCDD 4. 1,2,3,6,7,8-HxCDD 4. 1,2,3,7,8,9-HxCDD 1. 0CDD 1. 2,3,7,8-TCDF 1. 1,2,3,7,8-PECDF 6. 2,3,4,7,8-PECDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	09e+06 007e+06 140e+06 120e+06 137e+07 112e+08 084e+06 053e+06 193e+06 154e+06 154e+06 1.	63 y 0.96 22 y 1.00 23 y 1.10 19 y 1.05 05 y 1.05 90 y 0.96 83 y 1.12 60 y 1.01 57 y 0.90 23 y 1.16	31:10 34:27 34:34 34:51 38:23 41:35 25:36 29:57 30:54	1.001 1.000 1.001 1.000 1.000 1.000	98.289 97.997 99.158 98.328 397.67 4397.9		*	2.5 2.5 2.5 2.5 2.5	•	Total Pe Total He Total He Total Te Total Pe	enta-Dioxins exa-Dioxins epta-Dioxins etra-Furans enta-Furans	107 340 696 32.7 214.86	111 344 700 36.4 223.62		* * * * * * * * * * * * * * * * * * * *	-
1,2,3,4,7,8-HxCDD 4. 1,2,3,6,7,8-HxCDD 4. 1,2,3,7,8,9-HxCDD 4. 1,2,3,4,6,7,8-HyCDD 1. OCDD 1. 2,3,7,8-TCDF 1. 1,2,3,7,8-PCDF 6. 2,3,4,7,8-PCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	.07e+06 1. .40e+06 1. .20e+06 1. .37e+07 1. .12e+08 0. .84e+06 0. .53e+06 1. .93e+06 1. .54e+06 1. .67e+06 1.	22 y 1.00 23 y 1.10 19 y 1.05 05 y 1.05 90 y 0.96 83 y 1.12 60 y 1.01 57 y 0.90 23 y 1.16	34:27 34:34 34:51 38:23 41:35 25:36 29:57 30:54	1.000 1.001 1.000 1.000 1.000	97.997 99.158 98.328 397.67 4397.9		*	2.5 2.5 2.5 2.5	:	Total He Total He Total Te Total Pe	exa-Dioxins epta-Dioxins etra-Furans enta-Furans	340 696 32.7 214.86	344 700 36.4 223.62			* * *
1,2,3,6,7,8-HxCDD 4. 1,2,3,7,8,9-HxCDD 4. 1,2,3,4,6,7,8-HpCDD 1. OCDD 1. 2,3,7,8-TCDF 1. 1,2,3,7,8-PeCDF 6. 2,3,4,7,8-PeCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	.40e+06 1. .20e+06 1. .37e+07 1. .12e+08 0. .84e+06 0. .53e+06 1. .54e+06 1. .67e+06 1.	23 y 1.10 19 y 1.05 05 y 1.05 90 y 0.96 83 y 1.12 60 y 1.01 57 y 0.90 23 y 1.16	34:34 34:51 38:23 41:35 25:36 29:57 30:54	1.001 1.000 1.000 1.000	99.158 98.328 397.67 4397.9		*	2.5 2.5 2.5	*	Total He Total Te Total Pe	epta-Dioxins etra-Furans enta-Furans	696 32.7 214.86	700 36.4 223.62		:	* *
1,2,3,7,8,9-HxCDD 4. 1,2,3,4,6,7,8-HpCDD 1. OCDD 1. 2,3,7,8-TCDF 1. 1,2,3,7,8-PCDF 6. 2,3,4,7,8-PCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	.20e+06 1. .37e+07 1. .12e+08 0. .84e+06 0. .53e+06 1. .93e+06 1. .54e+06 1.	19 y 1.05 05 y 1.05 90 y 0.96 83 y 1.12 60 y 1.01 57 y 0.90 23 y 1.16	34:51 38:23 41:35 25:36 29:57 30:54	1.000 1.000 1.000 1.001	98.328 397.67 4397.9 21.624		*	2.5	*	Total Te	etra-Furans enta-Furans	32.7 214.86	36.4 223.62		:	*
1,2,3,4,6,7,8-HpCDD 1. OCDD 1. 2,3,7,8-TCDF 1. 1,2,3,7,8-PeCDF 6. 2,3,4,7,8-PeCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	37e+07 1. 12e+08 0. 84e+06 0. 53e+06 1. 93e+06 1. 54e+06 1. 67e+06 1.	05 y 1.05 90 y 0.96 83 y 1.12 60 y 1.01 57 y 0.90 23 y 1.16	38:23 41:35 25:36 29:57 30:54	1.000 1.000 1.001 1.001	397.67 4397.9 21.624			2.5		Total Pe	enta-Furans	214.86	223.62		*	*
OCDD 1. 2,3,7,8-TCDF 1. 1,2,3,7,8-PeCDF 6. 2,3,4,7,8-PeCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	12e+08 084e+06 053e+06 193e+06 154e+06 167e+06 1.	90 y 0.96 83 y 1.12 60 y 1.01 57 y 0.90 23 y 1.16	41:35 25:36 29:57 30:54	1.000 1.001 1.001	4397.9 21.624		*		*						*	
2,3,7,8-TCDF 1. 1,2,3,7,8-PECDF 6. 2,3,4,7,8-PECDF 6. 1,2,3,4,7,8-HXCDF 6. 1,2,3,6,7,8-HXCDF 6.	.84e+06 0. .53e+06 1. .93e+06 1. .54e+06 1. .67e+06 1.	83 y 1.12 60 y 1.01 57 y 0.90 23 y 1.16	25:36 29:57 30:54	1.001	21.624		*	2.5		Total II	ore Funnana	405	407		*	*
1,2,3,7,8-PeCDF 6. 2,3,4,7,8-PeCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	.53e+06 1. .93e+06 1. .54e+06 1. .67e+06 1.	60 y 1.01 57 y 0.90 23 y 1.16	29:57 30:54	1.001					*	IOCAI HE	exa-rurans					*
1,2,3,7,8-PeCDF 6. 2,3,4,7,8-PeCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	.53e+06 1. .93e+06 1. .54e+06 1. .67e+06 1.	60 y 1.01 57 y 0.90 23 y 1.16	29:57 30:54	1.001						Total He	epta-Furans	240	242		*	*
2,3,4,7,8-PeCDF 6. 1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	.93e+06 1. .54e+06 1. .67e+06 1. .46e+06 1.	57 y 0.90 23 y 1.16	30:54		97.212		*	2.5	*							
1,2,3,4,7,8-HxCDF 6. 1,2,3,6,7,8-HxCDF 6.	.54e+06 1. .67e+06 1. .46e+06 1.	23 y 1.16		1.001			*	2.5	*							
1,2,3,6,7,8-HxCDF 6.	.67e+06 1.		33:35		100.54		*	2.5	*							
	.46e+06 1.	20 y 1.16		1.000	94.375		*	2.5	*							
2,3,4,6,7,8-HxCDF 6.			33:42	1.000	95.408		*	2.5	*							
	860+06 1	23 y 1.23			93.890		*	2.5	*							
1,2,3,7,8,9-HxCDF 5.		25 y 1.13			95.100		*	2.5	*							
1,2,3,4,6,7,8-HpCDF 5.		01 y 1.44			109.21		*	2.5	*							
1,2,3,4,7,8,9-HpCDF 4.		99 y 1.31			98.451		*	2.5	*							
OCDF 8.	.02e+06 0.	93 y 1.03	41:48	1.000	236.70		*	2.5	*							
										Rec	Qual					
13C-2,3,7,8-TCDD 9.		81 y 1.01			184.65					92.2						
13C-1,2,3,7,8-PeCDD 8.		64 y 1.10		1.208	147.02					73.4						
13C-1,2,3,4,7,8-HxCDD 8.		32 y 0.72			170.28					85.0						
13C-1,2,3,6,7,8-HxCDD 8.		29 y 0.73		1.017	165.00					82.4						
13C-1,2,3,7,8,9-HxCDD 8.		25 y 0.70			171.78					85.8						
13C-1,2,3,4,6,7,8-HpCDD 6.		05 y 0.66			146.04					72.9						\
13C-OCDD 1.		90 y 0.66		1.223	238.70					59.6						/
13C-2,3,7,8-TCDF 1.		78 y 0.90		0.992	195.15					97.4						\
13C-1,2,3,7,8-PeCDF 1.		62 y 0.98		1.161	156.83					78.3						
13C-2,3,4,7,8-PeCDF 1.		64 y 1.15		1.197	154.36					77.1						
13C-1,2,3,4,7,8-HxCDF 1.		51 y 1.01		0.988	174.18					87.0						
13C-1,2,3,6,7,8-HxCDF 1.		51 y 1.10		0.992	163.30					81.5						
13C-2,3,4,6,7,8-HxCDF 1.		50 y 0.95			174.60					87.2						
13C-1,2,3,7,8,9-HxCDF 1.		51 y 0.83			194.63					97.2						
13C-1,2,3,4,6,7,8-HpCDF 7.		42 y 0.70		1.089	159.40					79.6						
13C-1,2,3,4,7,8,9-HpCDF 7.		43 y 0.72		1.145	156.87					78.3						
13C-OCDF 1.	32e+07 0.	88 y 0.82	41:48	1.230	236.14					58.9						
p 37Cl-2,3,7,8-TCDD 4.	.16e+06	1.14	26:26	1.025	68.407					85.4	Integr	ations	Revi	ewed		
											by	111	hv		,	
RT 13C-1,2,3,4-TCDD 1.	.07e+07 0.	82 y 1.00	25:47	*	200.29						Analyst:	18	Anal	yst:	11516	
13C-1,2,3,4-TCDF 1.		81 y 1.00			200.29											-
RT 13C-1,2,3,4,6,9-HxCDF 1.		53 y 1.00			200.29							1 1 .				

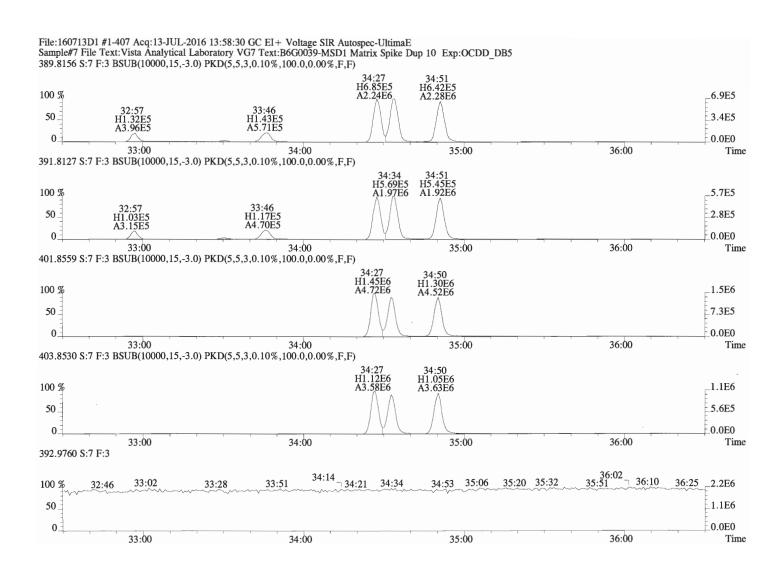
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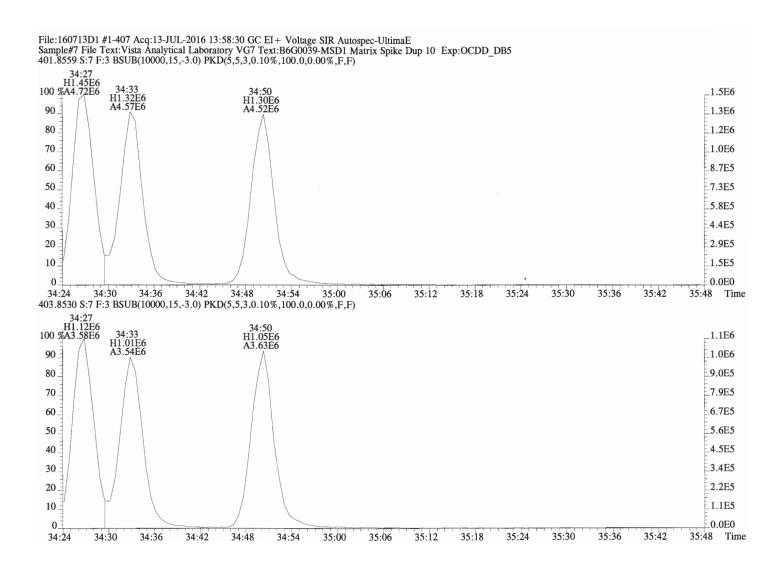
Work Order 1600835



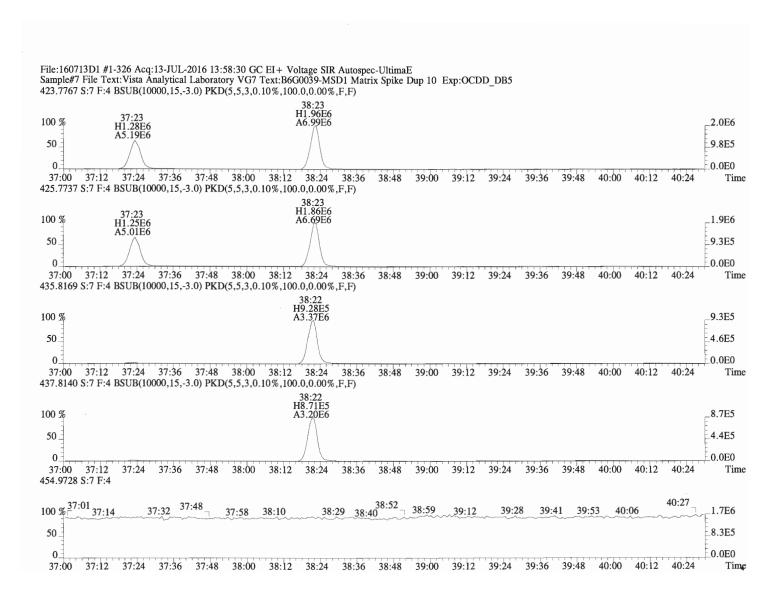
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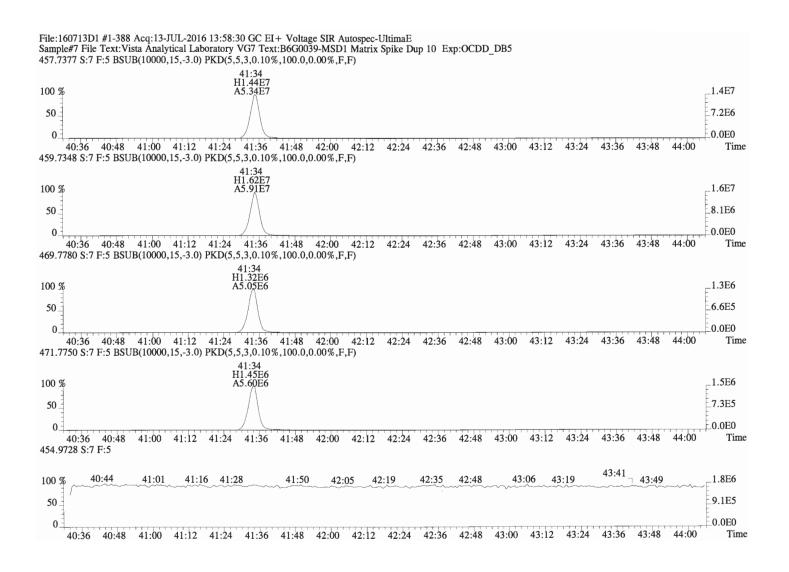
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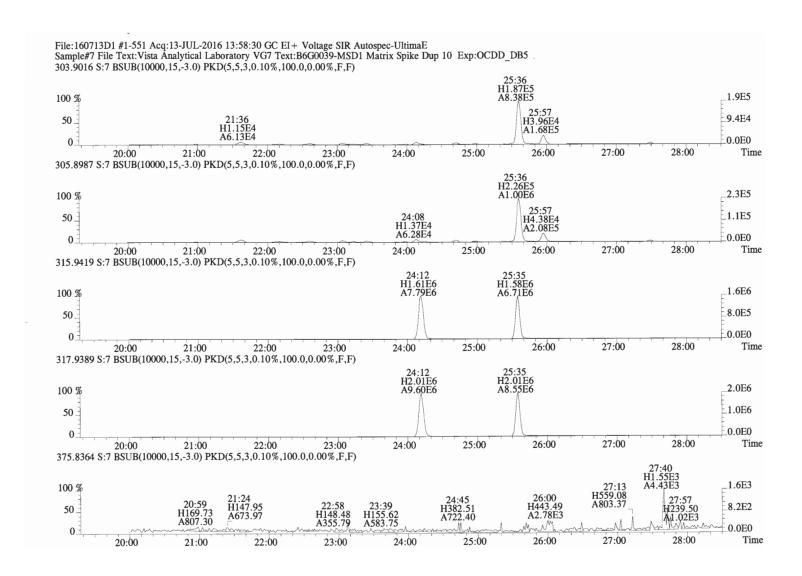
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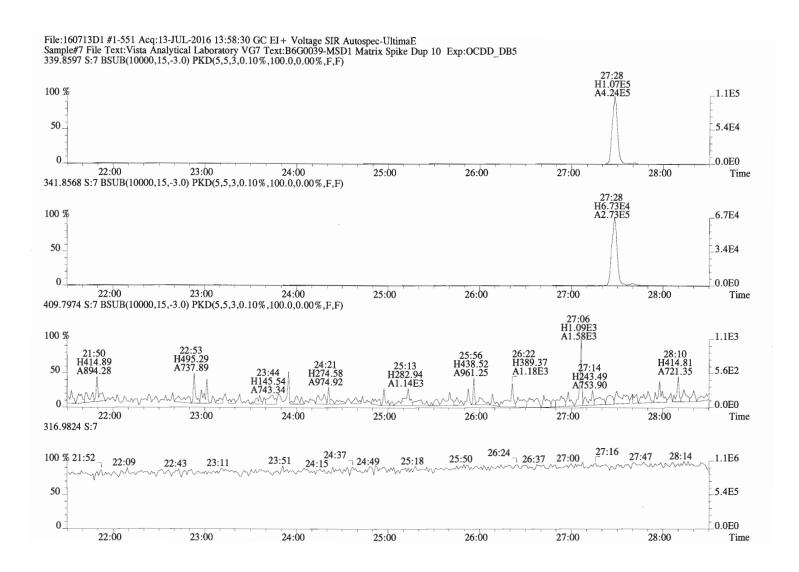
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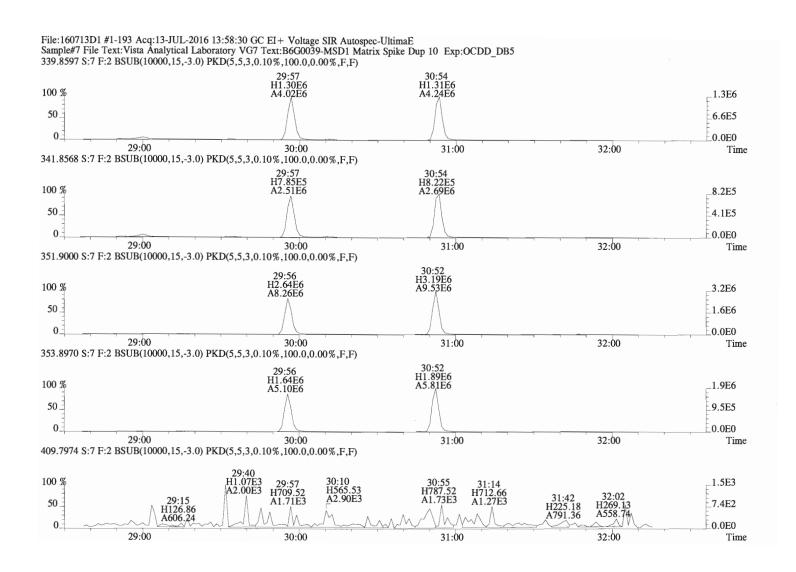
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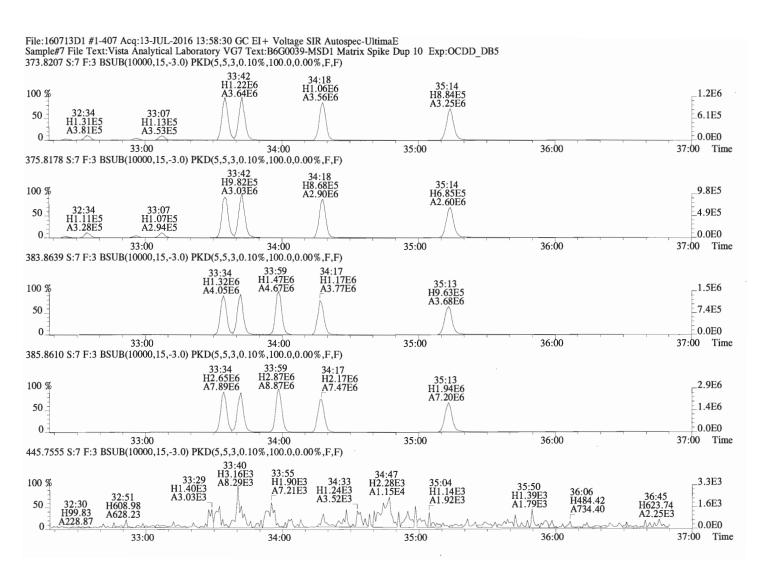
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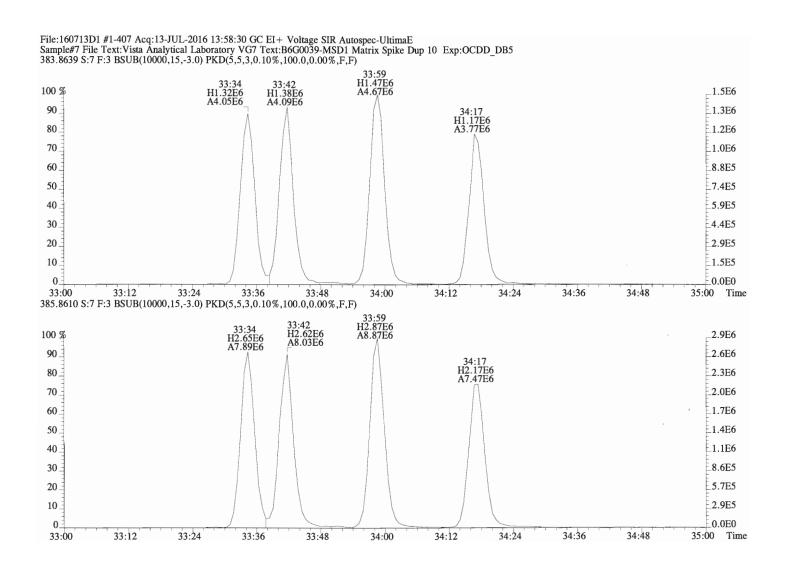
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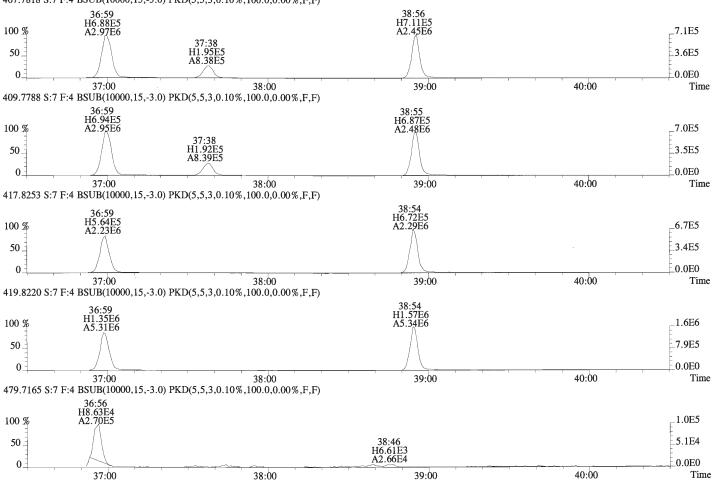


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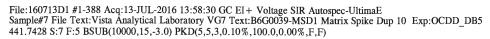
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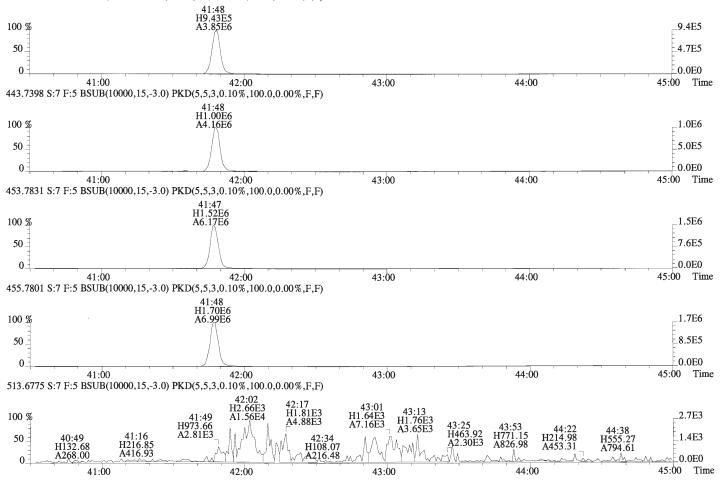
File:160713D1 #1-326 Acq:13-JUL-2016 13:58:30 GC EI+ Voltage SIR Autospec-UltimaE Sample#7 File Text:Vista Analytical Laboratory VG7 Text:B6G0039-MSD1 Matrix Spike Dup 10 Exp:OCDD_DB5 407.7818 S:7 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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8 of	Page 8			-1	1: ST160712D1 L: NA		.978	ol: 9		2:4:	2-JUL-16 22 G7-4-7-16		S:9 MS ICal		lename: 16 Column II		Client ID: DU-1-12-B Lab ID: 1600835-05RE1
		01	W.C.G									D.D.m.	D.M.	222		D = ##	Y
D	noise	Qual	EMPC 0.417	Conc 0.342	etra-Dioxins	Name	DL 0.0852	Fac 2.5	noise 293	-	Conc	RRT *	NotFa	RRF 1.13	RA * n	Resp *	Name 2,3,7,8-TCDD
	*		6.75	6.48	enta-Dioxins		*	2.5	293		0.67767	1.000		0.96	0.71 y	2 700+04	1,2,3,7,8-PeCDD
			40.9	40.9	exa-Dioxins		*	2.5	*		1.0540	1.000		1.00	1.06 y	3.93e+04	
	*		476	476	epta-Dioxins		*	2.5	*		4.1668	1.000		1.10	1.30 y		1,2,3,6,7,8-HxCDD
			8.83	8.64	etra-Furans			2.5	*		2.5215	1.000		1.05	1.21 y	9.35e+04	
			11.888	11.888	enta-Furans			2.5	*		2.5215	1.000		1.05	1.03 y	7.15e+06	
			21.2	21.2	exa-Furans			2.5	*		3450.2	1.000		0.96	0.90 y	7.55e+07	
			36.2	36.2	epta-Furans			2.5	-		3450.2	1.000	41:34	0.90	0.90 у	7.336+07	OCED
			30.2	30.2	epta-rurans	IOCAI I		2.5	· .	01	1.8344	1.001	25.36	1.12	0.79 y	1 700+05	2,3,7,8-TCDF
							*	2.5	*		0.43135	1.000		1.01	1.34 y		1,2,3,7,8-PeCDF
							*	2.5	*		1.1756	1.000		0.90	1.48 y		2,3,4,7,8-PeCDF
								2.5			0.93863	1.001			1.46 y 1.22 y		1,2,3,4,7,8-HxCDF
							*	2.5	*		0.63014	1.000		1.16	1.22 y 1.17 y		1,2,3,4,7,8-HXCDF
								2.5	*		1.0105	1.000			1.17 y 1.06 y		2,3,4,6,7,8-HxCDF
								2.5			0.25229	1.000		1.13	1.00 y		1,2,3,7,8,9-HxCDF
							*	2.5	*		11.329	1.000		1.44	1.07 y		1,2,3,4,6,7,8-HpCDF
								2.5			1.0618	1.000		1.31	1.03 y		1,2,3,4,7,8,9-HpCDF
							*	2.5			35.233	1.000			0.90 y	9.77e+05	
					Qual	Rec		2.5			35.233	1.000	41.40	1.03	0.90 y	3.776+05	OCEF
					Quai	90.7					181.73	1.025	26.26	1.01	0.81 y	1 080+07	13C-2,3,7,8-TCDD
						65.7					131.76	1.208		1.10	0.65 y		13C-1,2,3,7,8-PeCDD
						92.0					184.43	1.014		0.72	1.29 y		13C-1,2,3,4,7,8-HxCDD
						84.5					169.27	1.017		0.72	1.27 y		13C-1,2,3,6,7,8-HxCDD
						90.0					180.31	1.025		0.70	1.28 y		13C-1,2,3,7,8,9-HxCDD
						75.8					151.93	1.129		0.66	1.07 y		13C-1,2,3,4,6,7,8-HpCDD
						61.5					246.55	1.223		0.66	0.91 y	9.12e+06	
						96.8					194.02	0.992		0.90	0.81 y		13C-2,3,7,8-TCDF
						68.2					136.63	1.160		0.98	1.58 y		13C-1,2,3,7,8-PeCDF
						65.4					131.12	1.197		1.15	1.61 y		13C-2,3,4,7,8-PeCDF
						90.5					181.38	0.988		1.01	0.52 y		13C-1,2,3,4,7,8-HxCDF
						83.7					167.78	0.992		1.10	0.52 y		13C-1,2,3,6,7,8-HxCDF
						88.0					176.32	1.009		0.95	0.52 y		13C-2,3,4,6,7,8-HxCDF
						99.2					198.81	1.037		0.83	0.52 y		13C-1,2,3,7,8,9-HxCDF
						80.7					161.68	1.088		0.70	0.44 y		13C-1,2,3,4,6,7,8-HpCDF
						77.7					155.76	1.145		0.70	0.44 y		13C-1,2,3,4,7,8,9-HpCDF
						58.2					233.39	1.230		0.82	0.91 y		13C-OCDF
	,	ewed	Revi by	ations	Integr	87.5				,	70.167	1.025	26:27	1.14		4.70e+06	p 37Cl-2,3,7,8-TCDD
	11/2	vst :	Anal	1)/3	Analyst:						200.44	*	25:48	1.00	0.78 y	1 180+07	RT 13C-1,2,3,4-TCDD
	4/_	, 50.	Andı	,	MIGTYPE:						200.44		24:13	1.00	0.78 y 0.79 y		13C-1,2,3,4-TCDF
	1511			1.1.							200.44		33:59	1.00	0.79 y 0.52 y		RT 13C-1,2,3,4,6,9-HxCDF
6	115711	. 11	Dato	15/16	Pate: 71						200.44	-	33:39	1.00	0.52 y	1.120+0/	RI 13C-1,2,3,4,0,9-DXCDF

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Totals class: TCDD EMPC Entry #: 19

Run: 14 File: 160712D1 S: 9 I: 1 F: 1 Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Total Concentration: 0.41691 Unnamed Concentration: 0.417

RT ml Resp m2 Resp RA Resp Concentration Name

22:38 9.649e+03 1.121e+04 0.86 y 2.086e+04 0.34157 26:09 3.279e+03 2.599e+03 1.26 n 4.601e+03 0.075349

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Totals class: PeCDD EMPC Entry #: 21

Run: 14 File: 160712D1 S: 9 I: 1 F: 2 Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Total Concentration: 6.7458 Unnamed Concentration: 6.068

RT	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
29:02	3.405e+04	6.358e+04	0.54 y	9.763e+04	2.3751	
29:30	1.085e+04	1.672e+04	0.65 y	2.757e+04	0.67063	
29:59	1.088e+04	1.521e+04	0.72 y	2.609e+04	0.63461	
30:09	1.033e+04	1.907e+04	0.54 y	2.940e+04	0.71522	
30:13	6.274e+03	9.444e+03	0.66 y	1.572e+04	0.38239	
30:26	8.414e+03	1.524e+04	0.55 y	2.366e+04	0.57547	
30:29	4.117e+03	7.628e+03	0.54 y	1.175e+04	0.28573	
30:45	3.489e+03	3.660e+03	0.95 n	5.966e+03	0.14514	
31:10	1.159e+04	1.626e+04	0.71 y	2.786e+04	0.67767	1,2,3,7,8-PeCDD
31:15	2.482e+03	4.144e+03	0.60 y	6.625e+03	0.16118	
31:32	1.950e+03	5.424e+03	0.36 n	5.045e+03	0.12273	

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Totals class: HxCDD EMPC Entry #: 23

Run: 14 File: 160712D1 S: 9 I: 1 F: 3 Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Total Concentration: 40.907 Unnamed Concentration: 33.164

RT	ml Resp	m2 Resp RA	Resp Concentration	Name
32:57	2.995e+05	2.354e+05 1.27 y	5.350e+05 14.306	
33:30	3.864e+04	3.213e+04 1.20 y	7.076e+04 1.8924	
33:46	3.210e+05	2.703e+05 1.19 y	5.912e+05 15.811	
33:53	9.682e+03	8.523e+03 1.14 y	1.820e+04 0.48682	
34:27	2.025e+04	1.903e+04 1.06 y	3.927e+04 1.0540	1,2,3,4,7,8-HxCDD
34:34	8.873e+04	6.837e+04 1.30 y	1.571e+05 4.1668	1,2,3,6,7,8-HxCDD
34:46	1.457e+04	1.042e+04 1.40 y	2.499e+04 0.66828	
34:51	5.123e+04	4.230e+04 1.21 y	9.353e+04 2.5215	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 14 File: 160712D1 S: 9 I: 1 F: 4 Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Unnamed Concentration: 234.744 Total Concentration: 475.84

RT m1 Resp m2 Resp RA Resp Concentration Name

37:23 3.544e+06 3.418e+06 1.04 y 6.962e+06 234.74 38:22 3.628e+06 3.523e+06 1.03 y 7.150e+06 241.10 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 14 File: 160712D1 S: 9 I: 1 F: 1
Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Total Concentration: 8.8286 Unnamed Concentration: 6.994

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
20:26	3.991e+03	6.034e+03 0.66 y	1.003e+04	0.10816	
21:00	4.881e+03	7.273e+03 0.67 y	1.215e+04	0.13113	
21:38	5.390e+04	6.119e+04 0.88 y	1.151e+05	1.2417	
22:36	1.994e+04	2.509e+04 0.79 y	4.504e+04	0.48590	
23:06	1.639e+04	2.184e+04 0.75 y	3.823e+04	0.41243	
23:14	9.596e+03	1.111e+04 0.86 y	2.071e+04	0.22342	
23:26	1.515e+04	2.237e+04 0.68 y	3.752e+04	0.40481	
23:58	7.166e+03	1.073e+04 0.67 y	1.789e+04	0.19307	
24:10	3.120e+04	3.667e+04 0.85 y	6.787e+04	0.73223	
24:43	2.196e+04	2.710e+04 0.81 y	4.906e+04	0.52936	
25:00	9.729e+03	1.460e+04 0.67 y	2.433e+04	0.26254	
25:29	4.985e+03	7.569e+03 0.66 y	1.255e+04	0.13544	
25:36	7.481e+04	9.522e+04 0.79 y	1.700e+05	1.8344	2,3,7,8-TCDF
25:58	7.619e+04	1.045e+05 0.73 y	1.807e+05	1.9498	
27:30	1.303e+04	9.644e+03 1.35 n	1.707e+04	0.18417	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 14 File: 160712D1 S: 9 I: 1 F: 1
Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Total Concentration: 4.5340 Unnamed Concentration: 4.534

RT m1 Resp m2 Resp RA Resp Concentration Name

27:29 1.739e+05 1.160e+05 1.50 y 2.899e+05 4.5340

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Totals class: PeCDF EMPC Entry #: 31

Run: 14 File: 160712D1 S: 9 I: 1 F: 2 Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Total Concentration: 7.3536 Unnamed Concentration: 5.747

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
28:52	2.609e+04	1.751e+04 1.49 y	4.359e+04	0.68191	
29:01	1.127e+05	7.168e+04 1.57 y	1.843e+05	2.8835	
29:22	6.716e+03	4.395e+03 1.53 y	1.111e+04	0.17380	
29:35	3.683e+04	2.445e+04 1.51 y	6.127e+04	0.95845	
29:46	5.081e+03	3.156e+03 1.61 y	8.238e+03	0.12886	
29:56	1.579e+04	1.181e+04 1.34 y	2.760e+04	0.43135	1,2,3,7,8-PeCDF
30:11	2.313e+04	1.486e+04 1.56 y	3.799e+04	0.59422	
30:46	1.200e+04	8.836e+03 1.36 y	2.084e+04	0.32592	
30:54	4.491e+04	3.037e+04 1.48 y	7.529e+04	1.1756	2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC Entry #: 33

Run: 14 File: 160712D1 S: 9 I: 1 F: 3 Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

Total Concentration: 21.211 Unnamed Concentration: 18.380

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
32:25	4.645e+04	3.956e+04 1.17 y	8.601e+04	1.5020	
32:35	1.859e+05	1.520e+05 1.22 y	3.379e+05	5.9007	
32:47	6.660e+03	5.828e+03 1.14 y	1.249e+04	0.21807	
32:56	1.368e+05	1.036e+05 1.32 y	2.403e+05	4.1969	
33:07	2.015e+05	1.586e+05 1.27 y	3.600e+05	6.2869	
33:29	9.025e+03	6.735e+03 1.34 y	1.576e+04	0.27521	
33:35	3.085e+04	2.523e+04 1.22 y	5.608e+04	0.93863	1,2,3,4,7,8-HxCDF
33:42	2.023e+04	1.728e+04 1.17 y	3.751e+04	0.63014	1,2,3,6,7,8-HxCDF
34:18	2.995e+04	2.820e+04 1.06 y	5.815e+04	1.0105	2,3,4,6,7,8-HxCDF
35:15	6.801e+03	6.343e+03 1.07 y	1.314e+04	0.25229	1,2,3,7,8,9-HxCDF

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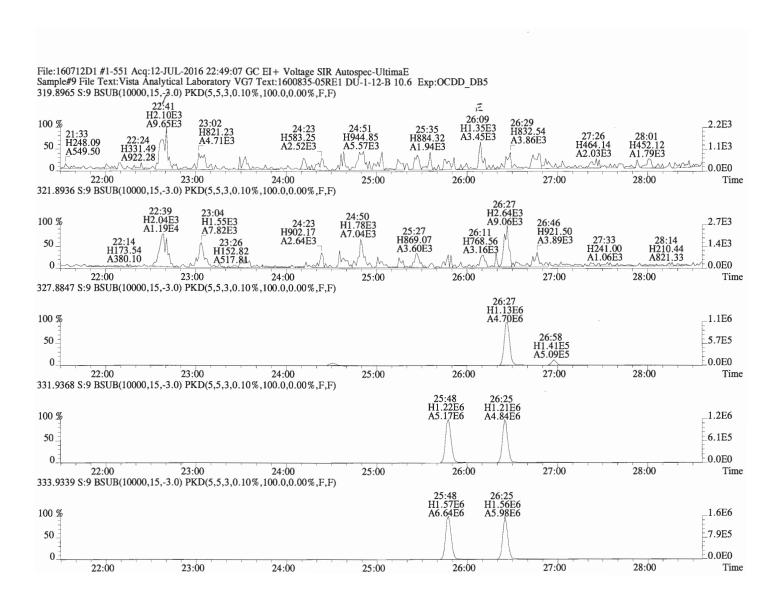
Totals class: HpCDF EMPC Entry #: 35

Run: 14 File: 160712D1 S: 9 I: 1 F: 4 Acquired: 12-JUL-16 22:49:07 Processed: 13-JUL-16 17:04:04

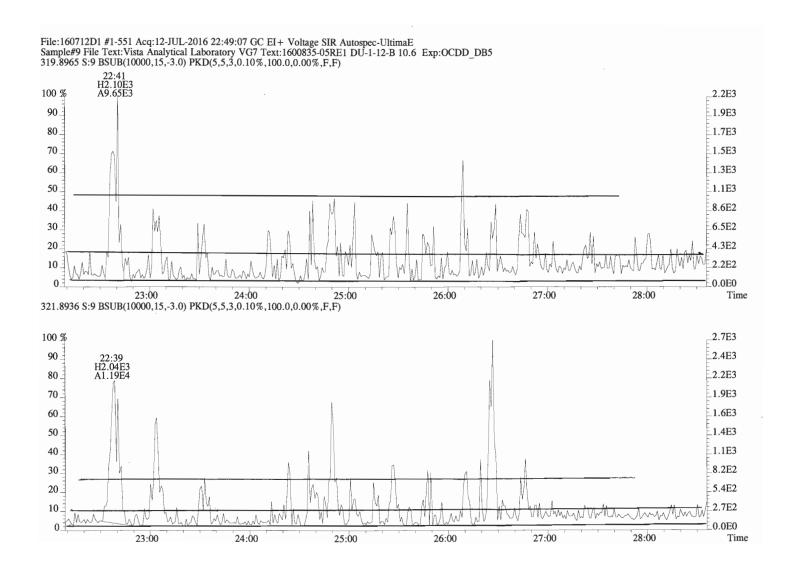
Total Concentration: 36.219 Unnamed Concentration: 23.827

RT	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
37:00	2.644e+05	2.511e+05	1.05 y	5. 1 55e+05	11.329	1,2,3,4,6,7,8-HpCDF
37:23	4.889e+03	4.165e+03	1.17 y	9.054e+03	0.20915	
37:37	5.179e+05	5.045e+05	1.03 y	1.022e+06	23.618	
38:55	2.259e+04	2.113e+04	1.07 y	4.372e+04	1.0618	1,2,3,4,7,8,9~HpCDF

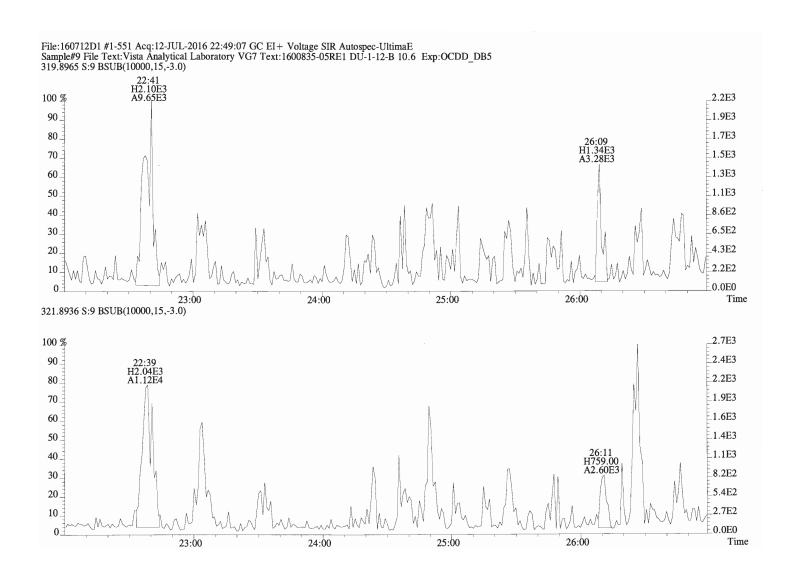
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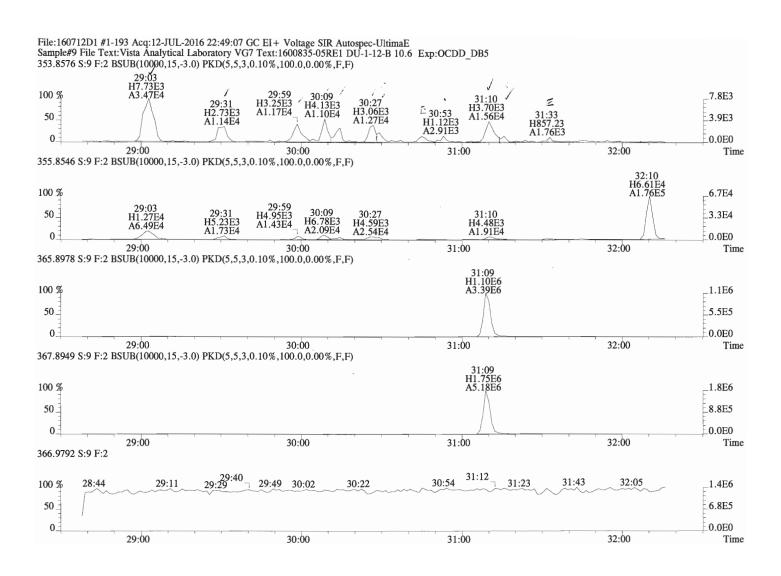
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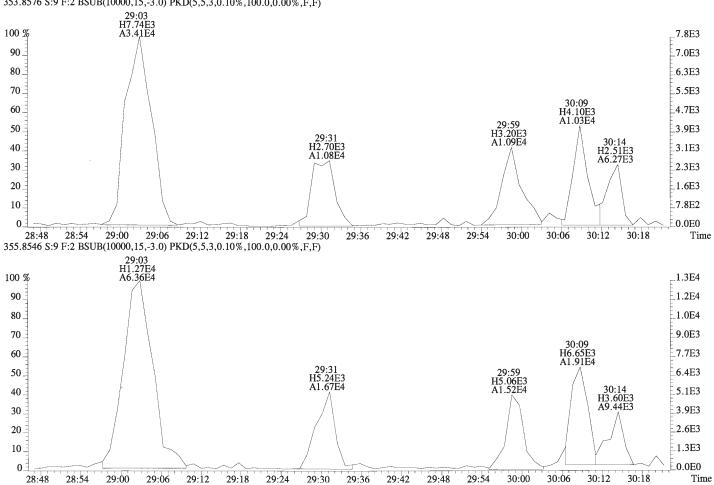


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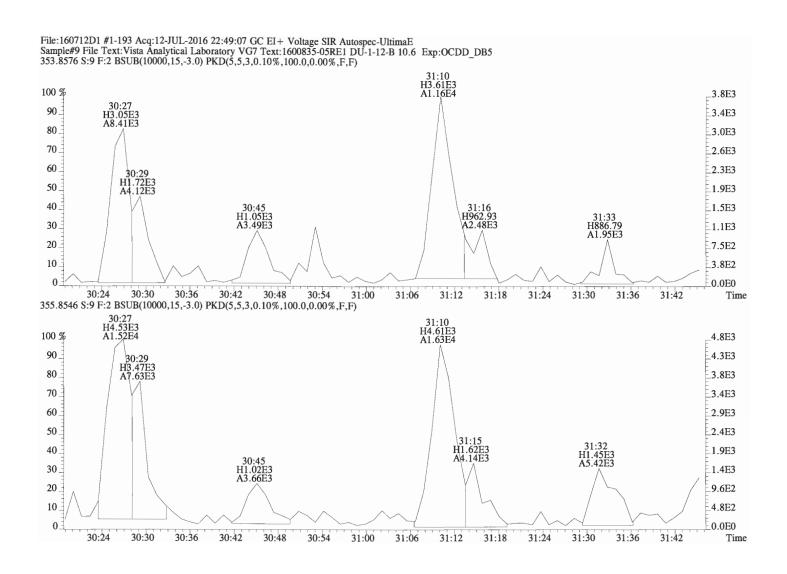


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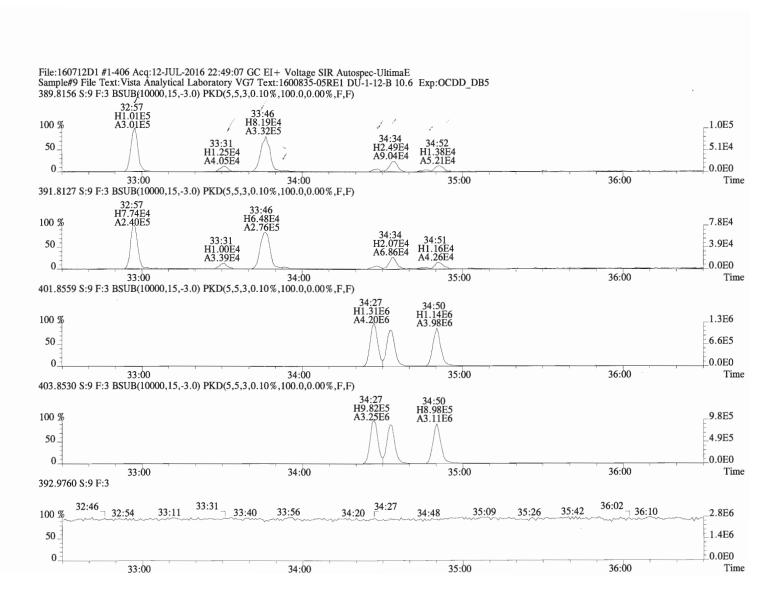
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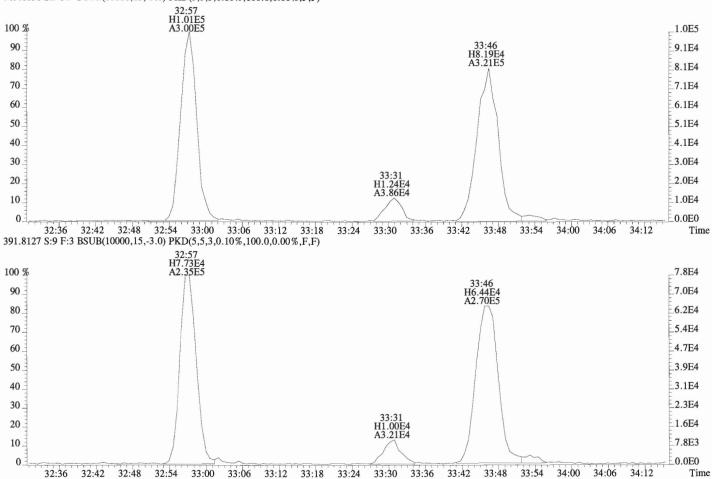


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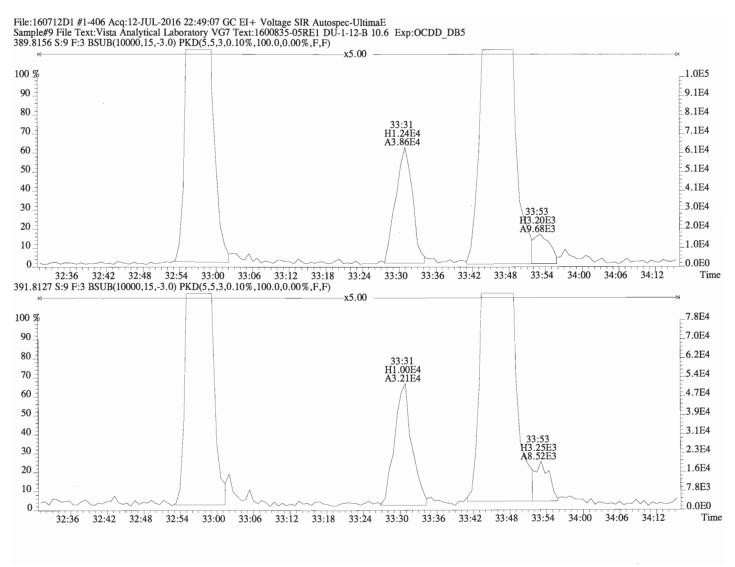


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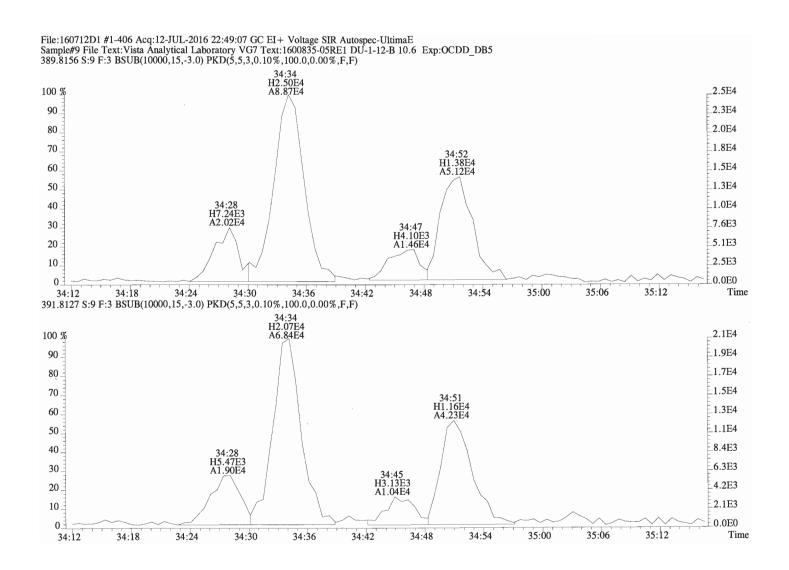
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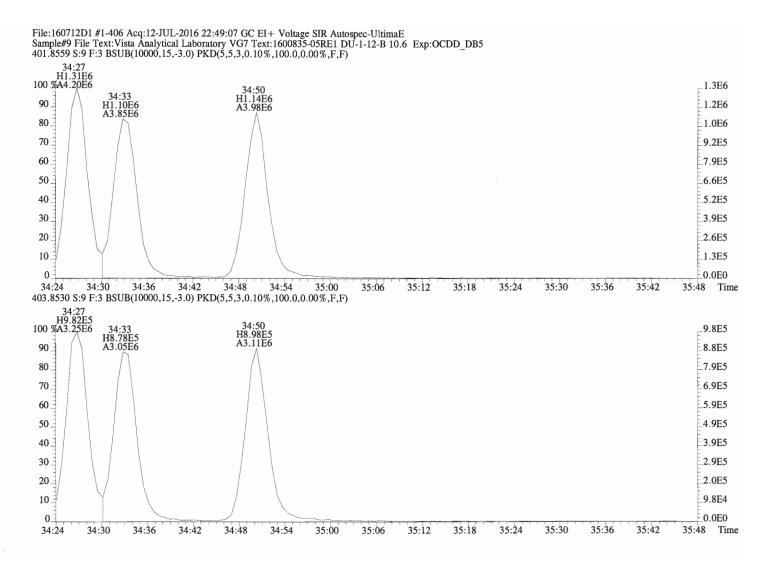
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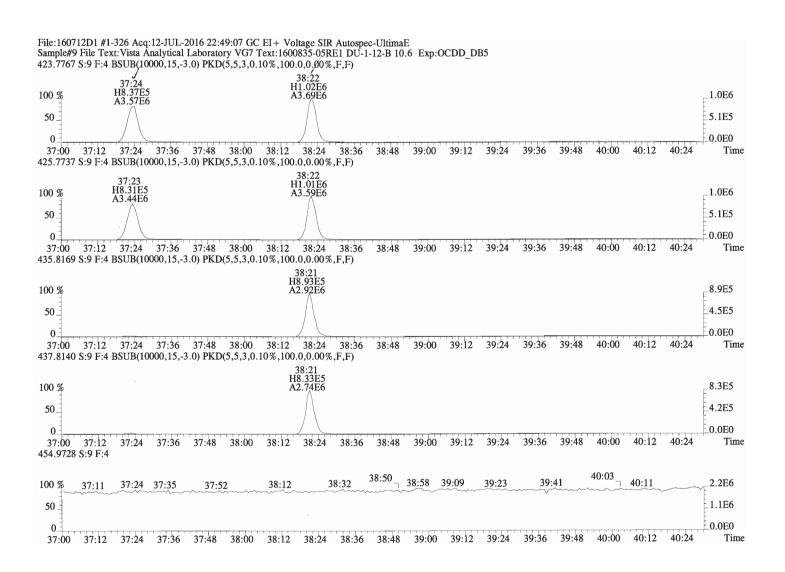
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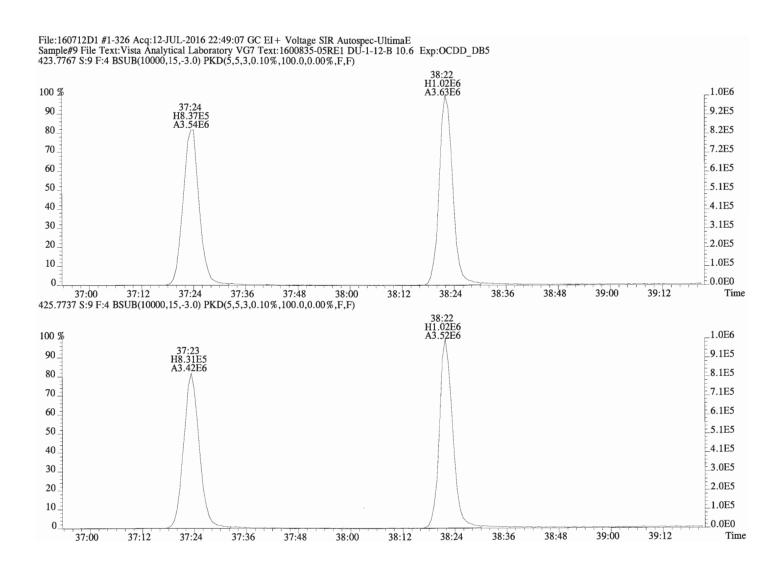
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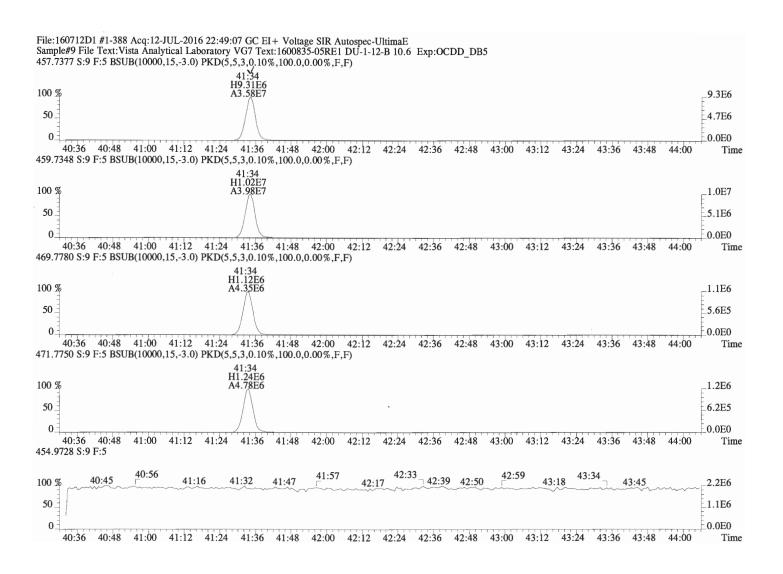
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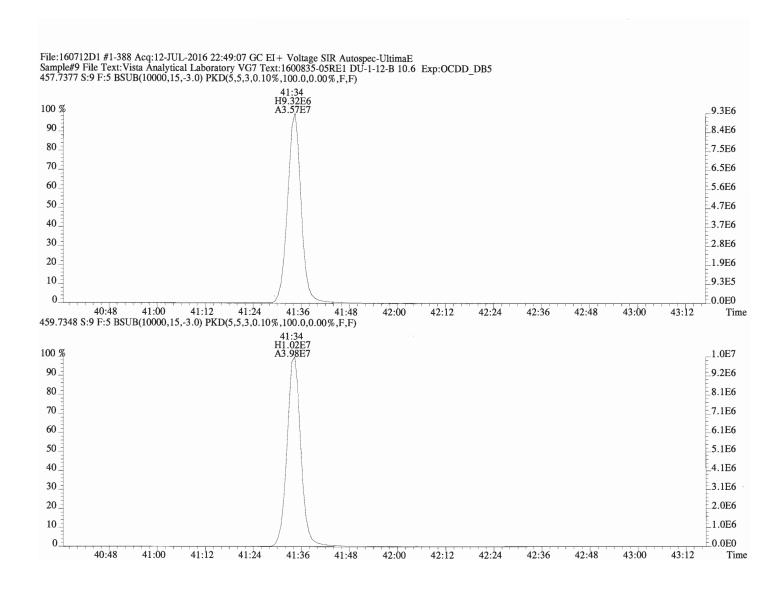
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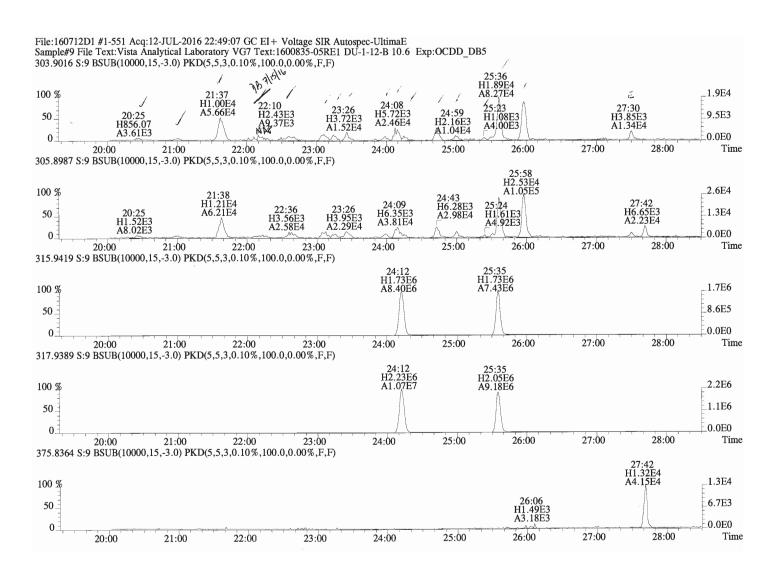
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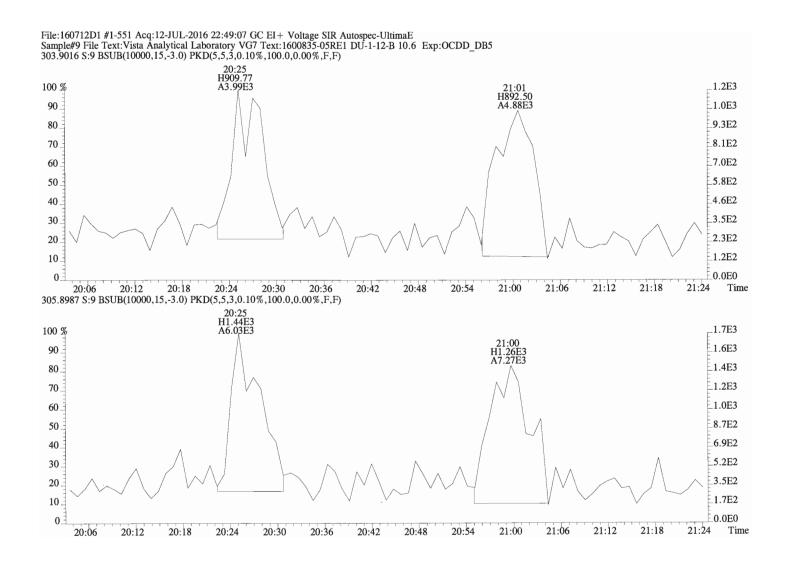
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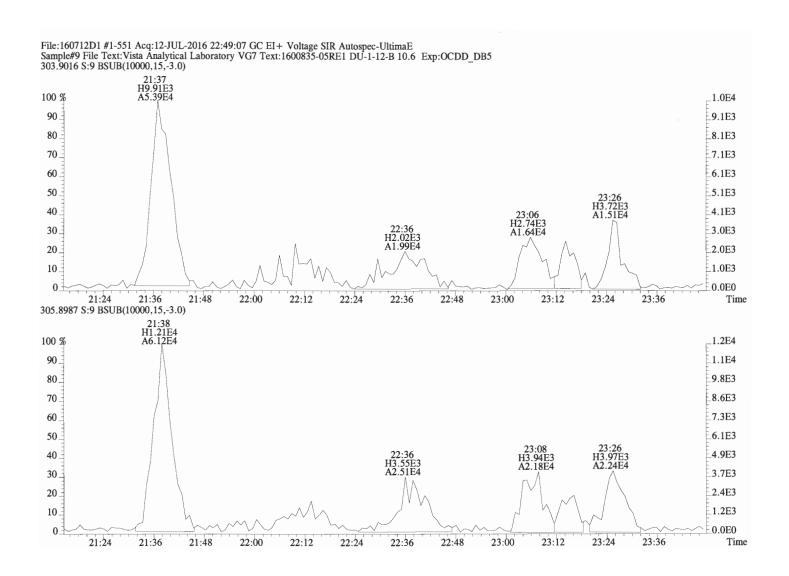
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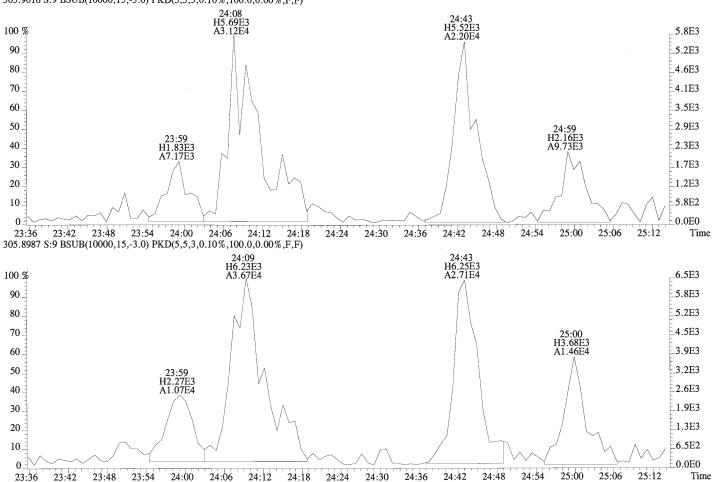


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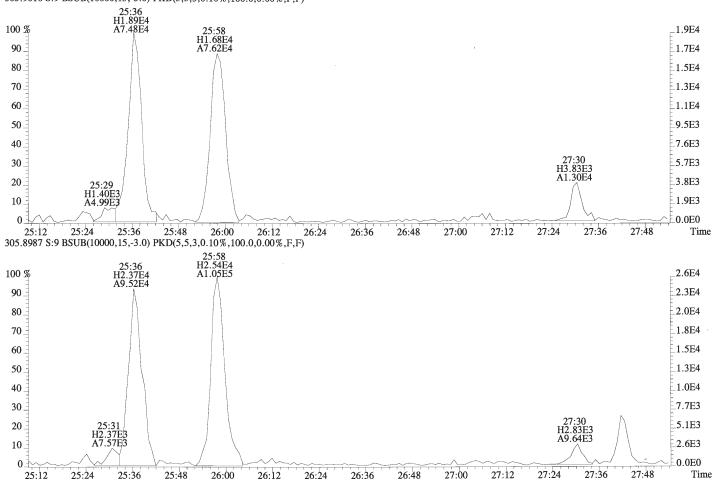
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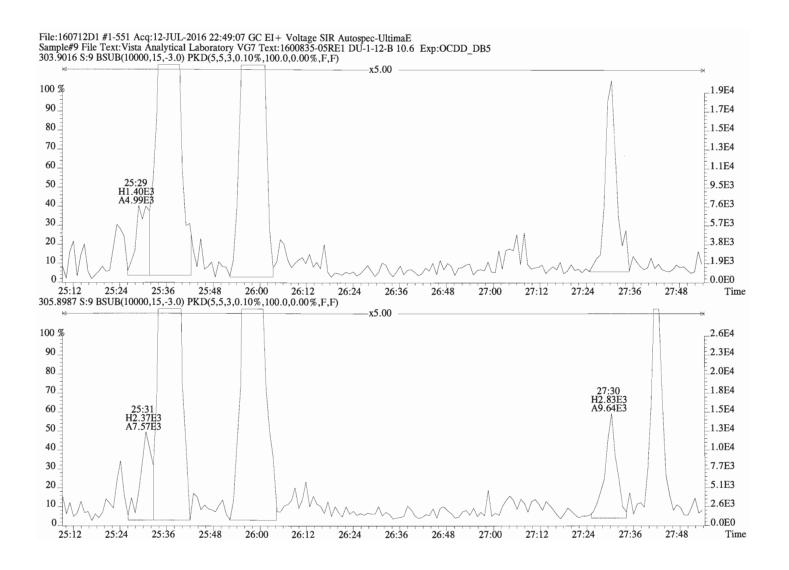


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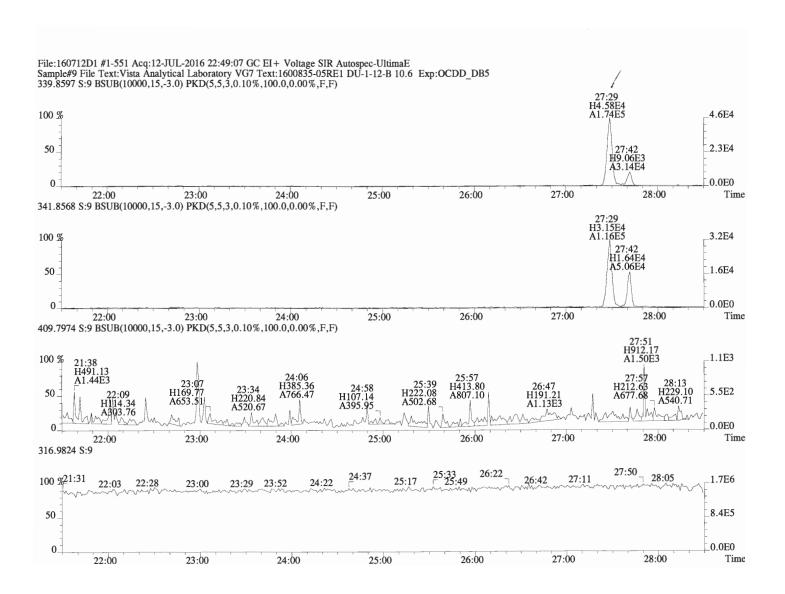
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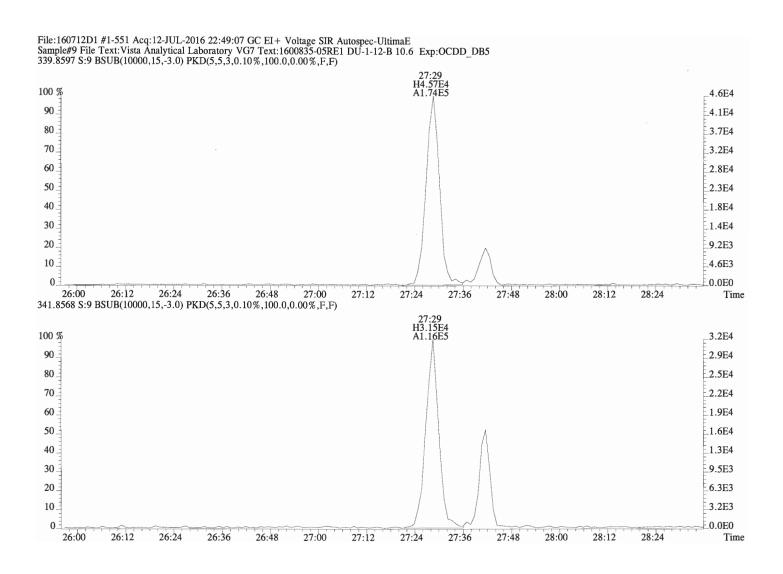
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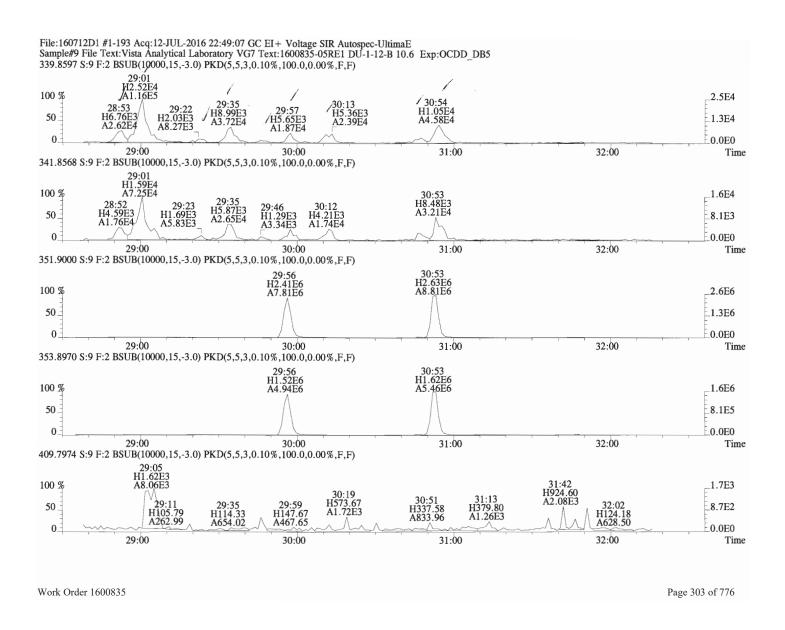
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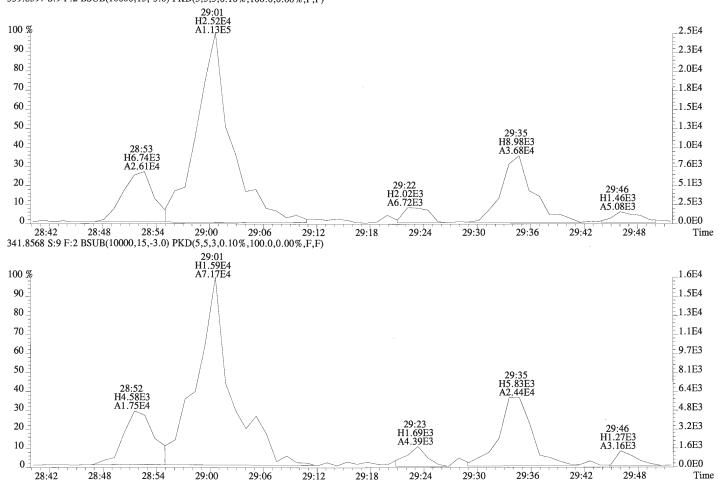
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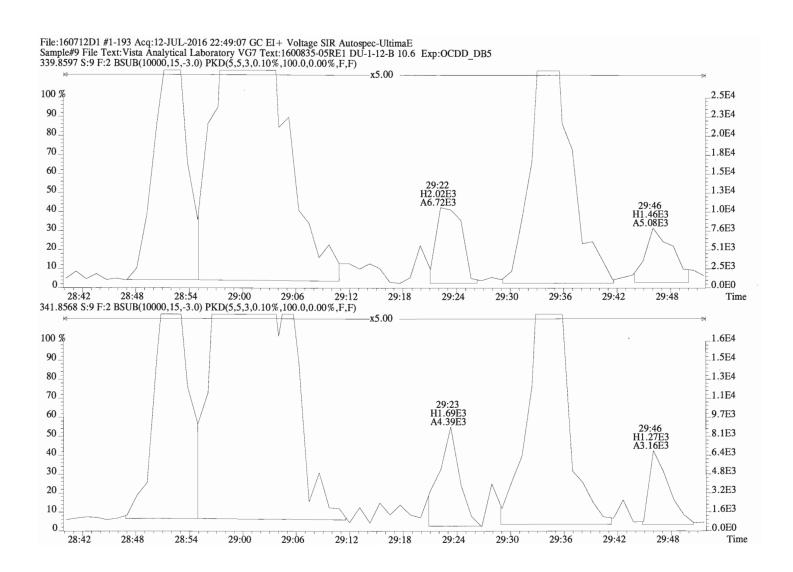
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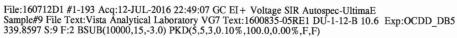
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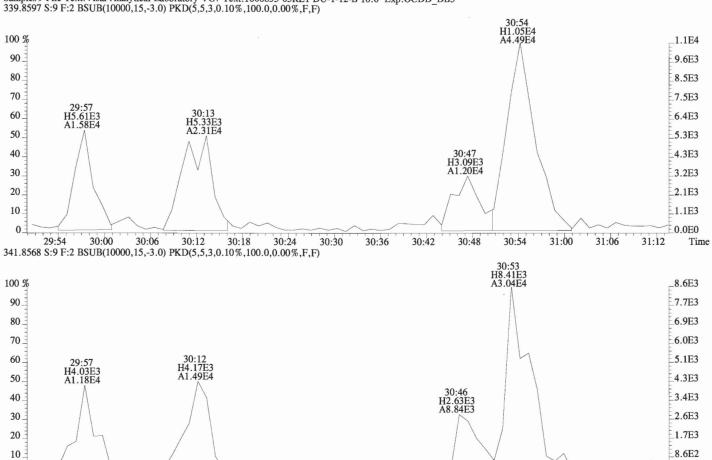


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30:36

30:30

30:42

30:48

30:54

31:00

31:06

30:24

30:18

29:54

30:00

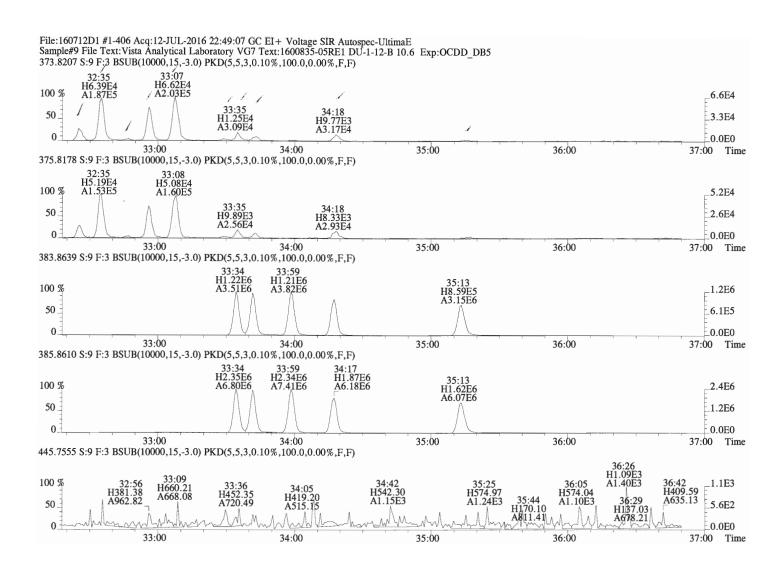
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30:12

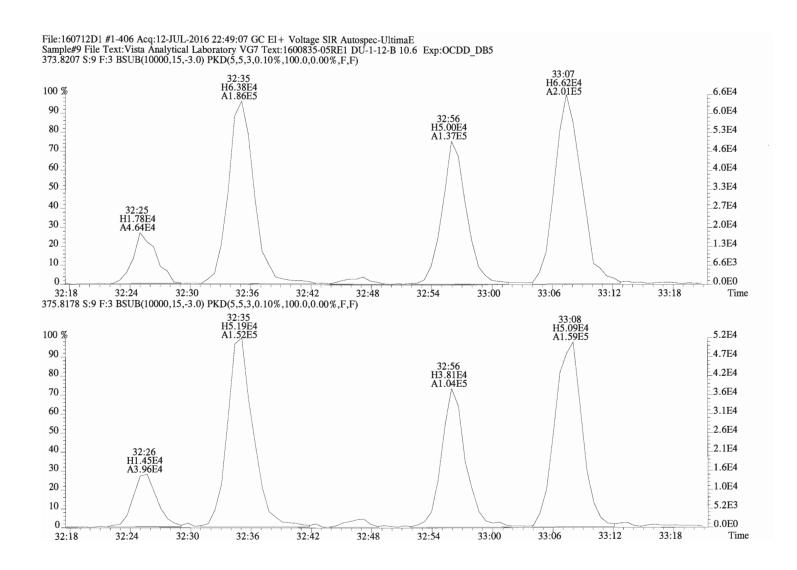
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Time

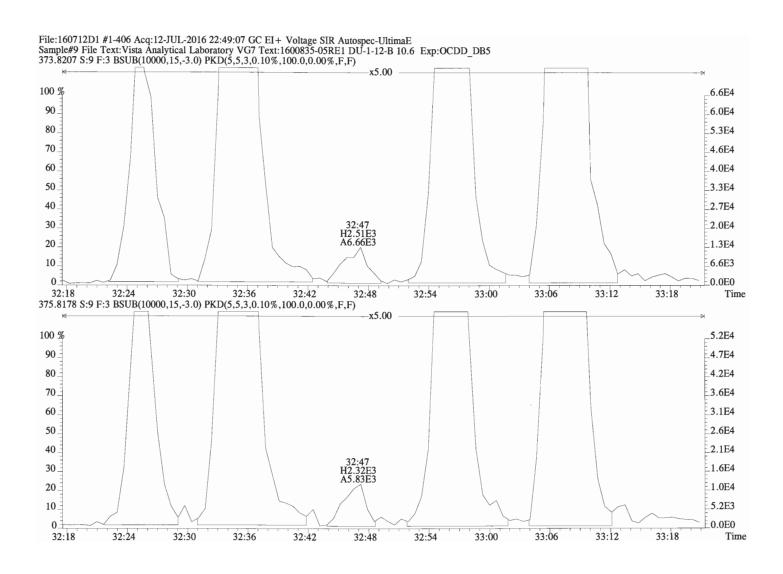
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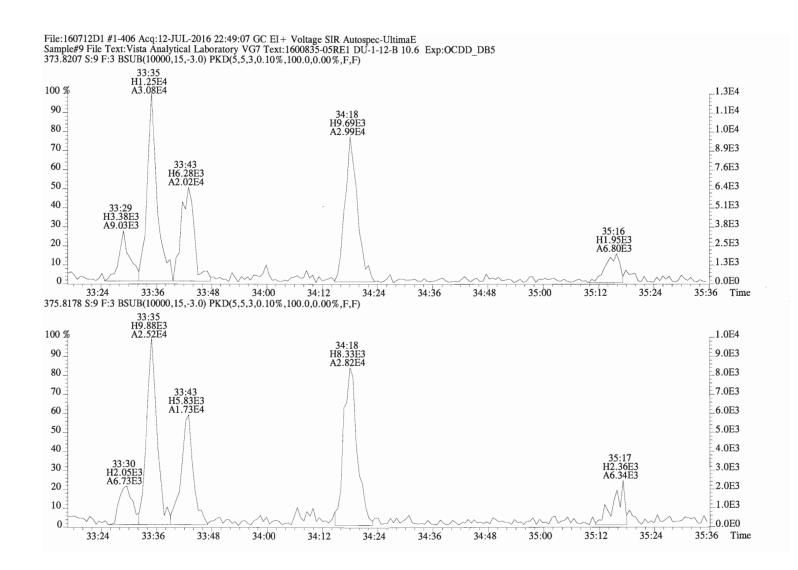
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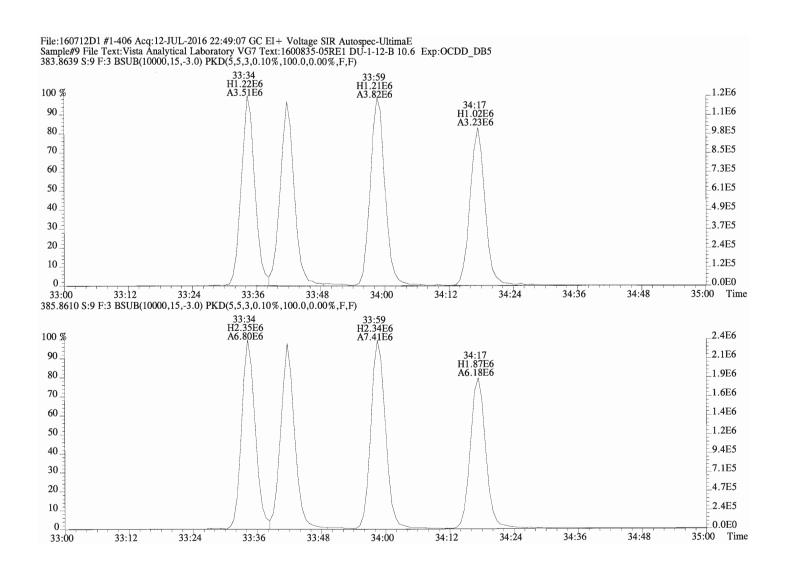
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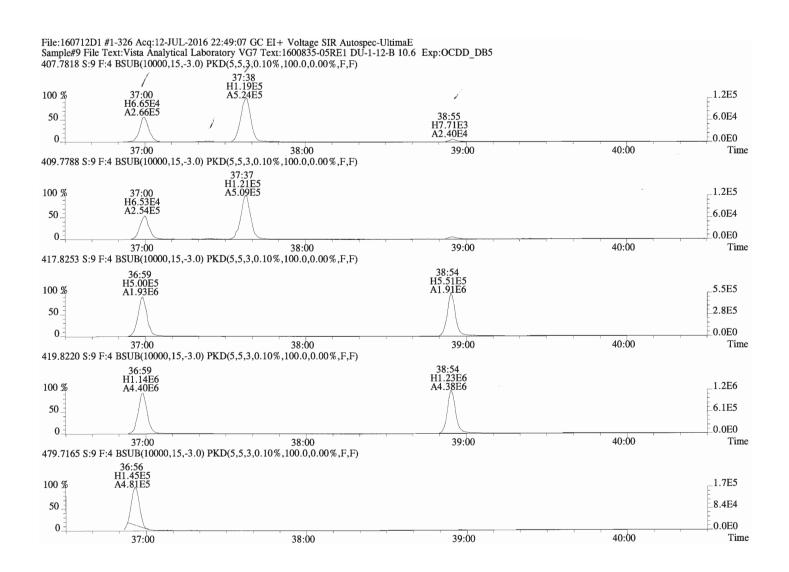
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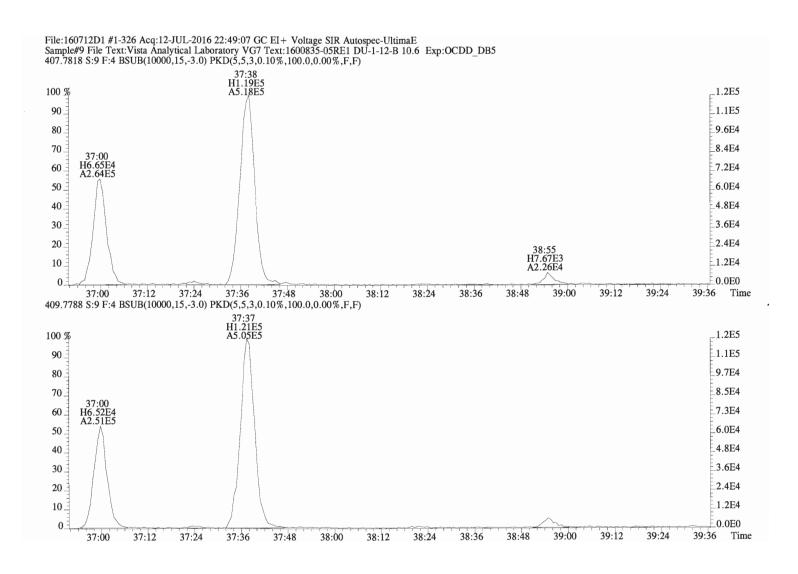
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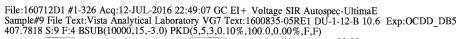
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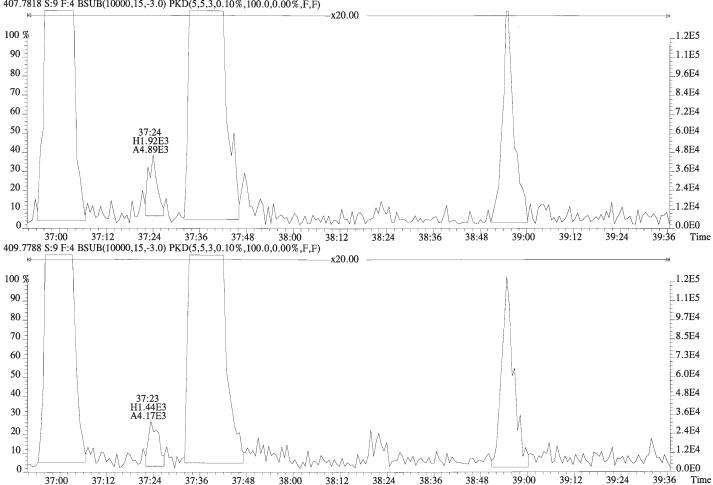


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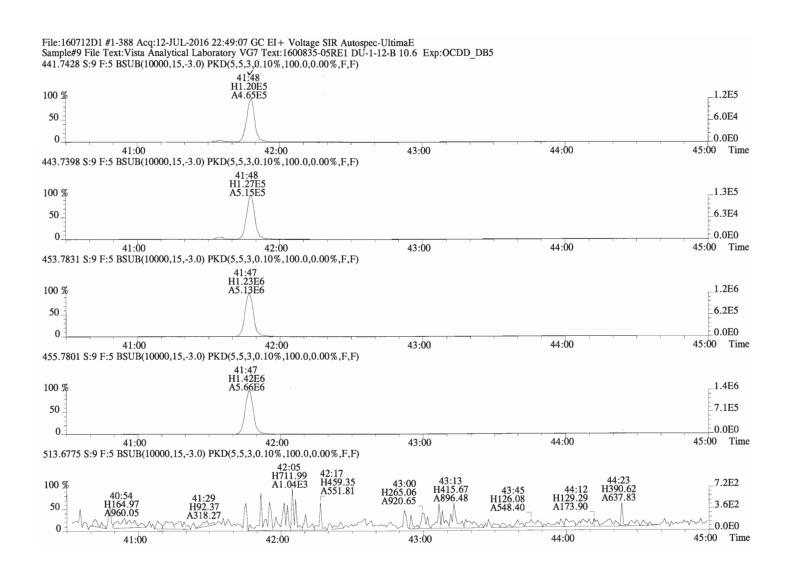


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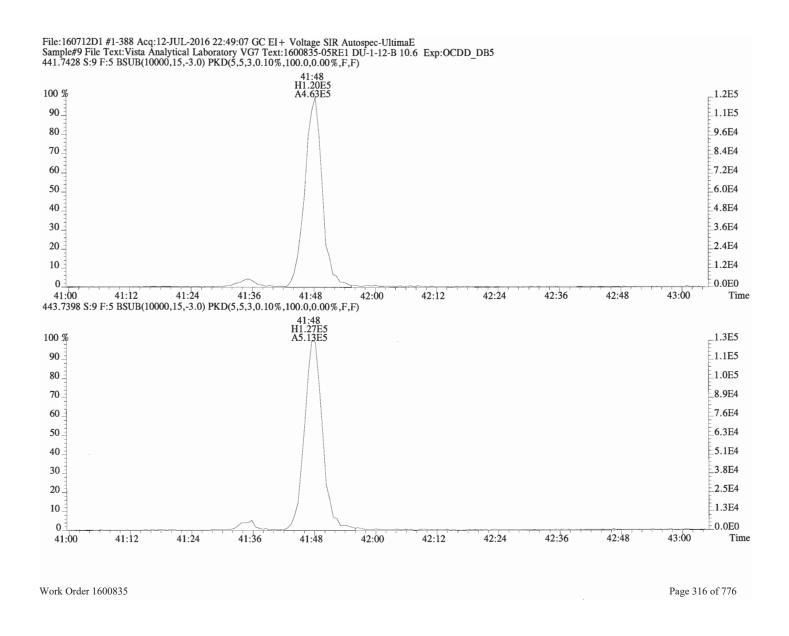




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2,3,7,8-TCDD 8.05e+00 0.51 n 1.13 26:26 1.001 0.13307									-		, , ,	2.10.02.2.1.1				
1,2,3,7,8-PECDS 1,51e-06 0.72 y 0.96 31:10 1.000 0.34840									~					_	al noise	DI
1.2,3,4,7,8-PENCED 1.37e+04 0.91 n 1.00 34:27 1.000 0.37342										2.5					*	1
1,2,3,6,7,8-HRCDD 3.90e404 1.09 y 1.10 34:34 1.000 0.08578 2.2.5 * Total Repta-Dioxins 28.6 28.6 * 1,2,3,7,8,9-HRCDD 3.08e404 1.07 y 1.05 38:22 1.000 13.206 * 2.5 * Total Fenta-Furans 1.24 2.25 * 1,2,3,4,6,7,8-HRCDD 3.81e405 1.08 y 1.05 38:22 1.000 13.206 * 2.5 * Total Fenta-Furans 1.7254 2.2104 * Total Fenta-Furans 3.64 3.64 * Total Fenta										2.5					*	,
1,2,3,7,8,9-HRCDD 3.08e+04 1.07 y 1.05 34:51 1.000 0.85785 * 2.5 * Total Tetra-Furans 1.24 2.25 * 1,2,3,4,6,7,8-HRCDD 3.08e+05 1.08 y 1.05 34:51 1.000 0.85785 * 2.5 * Total Tetra-Furans 1.7254 2.2104 * 1,2,3,4,7,8-HRCDD 1.72e+06 0.90 y 0.96 41:34 1.000 85.604 * 2.5 * Total Tetra-Furans 3.64 3.64 * 3.64 * 7.000 1.72e+06 0.90 y 0.96 41:34 1.000 85.604 * 2.5 * Total Hexa-Furans 3.64 3.64 * 3.64 * 7.000 1.72e+06 0.09 y 1.12 25:35 1.000 0.14625 * 2.5 * 1.2,3,7,8-PRCDD 1.22e+04 1.38 y 0.90 3.05:31 1.000 0.095185 * 2.5 * 1.2,3,4,7,8-PRCDD 1.23e+04 1.35 y 1.01 29:57 1.000 0.095185 * 2.5 * 1.2,3,4,7,8-PRCDD 1.36e+04 1.35 y 1.16 33:35 1.000 0.22690 * 2.5 * 1.2,3,4,7,8-PRCDD 1.59e+04 1.34 y 1.16 33:42 1.000 0.22690 * 2.5 * 1.2,3,4,7,8-PRCDD 1.59e+04 1.34 y 1.16 33:42 1.000 0.22990 * 2.5 * 1.2,3,4,5,7,8-PRCDD 1.69e+04 1.25 y 1.23 34:18 1.000 0.27962 * 2.5 * 1.2,3,4,5,7,8-PRCDD 1.11e+05 1.09 y 1.44 37:00 1.000 2.5351 * 2.5 * 1.2,3,4,5,7,8-PRCDD 1.11e+05 1.09 y 1.03 41:48 1.000 4.0553 * 2.5 * 1.2,3,4,7,8-PRCDD 1.11e+05 0.91 y 1.03 41:48 1.000 4.0553 * 2.5 * 1.2,3,4,7,8-PRCDD 1.07e+07 0.77 y 1.01 26:25 1.024 183.11 \$ 1.6 \$ 1.024,7,8-PRCDD 1.07e+07 0.77 y 1.01 26:25 1.024 183.11 \$ 1.6 \$ 1.024,7,8-PRCDD 1.07e+07 0.77 y 1.01 26:25 1.024 183.11 \$ 1.6 \$ 1.024,7,8-PRCDD 1.07e+07 0.79 y 1.03 41:48 1.000 4.0553 * 2.5 * 1.2 * 1.													10.9		*	,
1,2,3,4,6,7,8-BCDD 3.81e-05 1.08 y 1.05 3e:22 1.000 13.06				-		34:34	1.000	1.0340	,	2.5	*	Total Hepta-Dioxins	28.6	28.6	*	
CCDD 1.72e+06 0.90 y 0.96 41:34 1.000 85.604		1,2,3,7,8,9-HxCDD	3.08e+04	1.07 y	1.05	34:51	1.000	0.85785	,	2.5	*	Total Tetra-Furans	1.24	2.25	*	
2,3,7,8-TCDF 1.27e+04 0.69 y 1.12 25:35 1.000 0.14625		1,2,3,4,6,7,8-HpCDD	3.81e+05	1.08 y	1.05	38:22	1.000	13.206	,	2.5	*	Total Penta-Furans	1.7254	2.2104	*	
2,3,7,8-TCDF 1.27e-04 0.69 y 1.12 25:35 1.000 0.14625		OCDD	1.72e+06	0.90 y	0.96	41:34	1.000	85.604	,	2.5	*	Total Hexa-Furans	3.64	3.64	*	
1,2,3,7,8-PeCDF 6.04e-03 1.68 y 1.01 22:57 1.000 0.095185												Total Hepta-Furans	4.92	4.92	*	
2,3,4,7,8-PECDF 1,21e-04 1,38 y 0,90 30.53 1,000 0,18517				0.69 y	1.12	25:35	1.000	0.14625	,	2.5	*					
1,2,3,4,7,8-BxCDF 1.59e+04 1.35 y 1.16 33:35 1.000 0.22690		1,2,3,7,8-PeCDF	6.04e+03	1.68 y	1.01	29:57	1.000	0.095185	,	2.5	*					
1,2,3,6,7,8-BxCDF 1.59e+04 1.34 y 1.16 33:42 1.000 0.26491		2,3,4,7,8-PeCDF	1.21e+04	1.38 y	0.90	30:53	1.000	0.18517	,	2.5	*					
2,3,4,6,7,8-HxCDF 1.60e+04 1.25 y 1.23 34:18 1.000 0.27962 * 2.5 * 1,2,3,7,8,9-HxCDF * * n 1.13 NotFig * * 336 2.5 0.0960 1,2,3,4,6,7,8-HpCDF 1.11e+05 1.09 y 1.44 37:00 1.000 2.5351 * 2.5 * 1,2,3,4,7,8,9-HpCDF 1.11e+05 0.91 y 1.03 41:48 1.000 4.0553 * 2.5 * 284 2.5 0.0958 * 2.5 * 284 2.5		1,2,3,4,7,8-HxCDF	1.36e+04	1.35 y	1.16	33:35	1.000	0.22690	,	2.5	*					
1,2,3,7,8,9-HxCDF		1,2,3,6,7,8-HxCDF	1.59e+04	1.34 y	1.16	33:42	1.000	0.26491	,	2.5	*					
1,2,3,4,6,7,8-HpCDF		2,3,4,6,7,8-HxCDF	1.60e+04	1.25 y	1.23	34:18	1.000	0.27962	,	2.5	*					
1,2,3,4,7,8,9-BpCDF		1,2,3,7,8,9-HxCDF	*	* n	1.13	Not Fa	*	*	336	2.5	0.0960					
OCDF 1.11e+05 0.91 y 1.03 41:48 1.000 4.0553 * 2.5 * Rec Qual 13C-2,3,7,8-TCDD 1.07e+07 0.77 y 1.01 26:25 1.024 183.11 91.6 13C-1,2,3,7,8-PCDD 9.04e+06 0.63 y 1.10 31:10 1.208 141.80 70.9 13C-1,2,3,4,7,8-HxCDD 7.33e+06 1.28 y 0.72 34:27 1.014 177.66 88.9 13C-1,2,3,4,7,8-HxCDD 6.88e+06 1.29 y 0.70 34:31 1.017 165.32 82.7 13C-1,2,3,4,6,7,8-HxCDD 5.49e+06 1.29 y 0.70 34:51 1.025 170.55 85.3 13C-1,2,3,4,6,7,8-HxCDD 5.49e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-0,3,7,8-PCDD 1.55e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PCDF 1.56e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PCDF 1.26e+07 1.62 y 0.98 29:56 1.161 132.68 66.4 13C-2,3,7,8-HxCDF 1.03e+07 0.51 y 1.01 33:34 0.988 177.70 88.9 13C-1,2,3,4,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:34 0.982 177.00 88.9 13C-1,2,3,4,6,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:34 0.992 165.27 82.7 13C-1,2,3,4,6,7,8-HxCDF 1.04e+07 0.52 y 1.00 33:51 1.037 194.81 92.4 13C-1,2,3,4,6,7,8-HxCDF 1.06e+07 0.51 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,4,6,7,8-HxCDF 6.06e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,6,7,8-HxCDF 6.06e+06 0.44 y 0.70 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9		1,2,3,4,6,7,8-HpCDF	1.11e+05	1.09 y	1.44	37:00	1.000	2.5351	,	2.5	*					
13C-2,3,7,8-TCDD 1.07e+07 0.77 y 1.01 26:25 1.024 183.11 91.6 13C-1,2,3,7,8-PeCDD 9.04e+06 0.63 y 1.10 31:10 1.208 141.80 70.9 13C-1,2,3,4,7,8-HxCDD 7.33e+06 1.28 y 0.72 34:27 1.014 177.66 88.9 13C-1,2,3,4,7,8,9-HxCDD 6.88e+06 1.27 y 0.73 34:33 1.017 165.32 82.7 13C-1,2,3,7,8,9-HxCDD 6.85e+06 1.29 y 0.70 34:51 1.025 170.55 85.3 13C-1,2,3,7,6,7-HxCDD 8.36e+06 0.92 y 0.66 38:22 1.129 144.26 72.2 13C-0CDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-TCDF 1.55e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.46e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-PxCDF 1.03e+07 0.51 y 1.01 33:34 0.988 177.70 88.9 13C-1,2,3,4,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:34 0.998 177.70 88.9 13C-1,2,3,4,6,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-2,3,4,6,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-1,2,3,4,6,7,8-HxCDF 1.06e+07 0.53 y 0.83 35:14 1.037 184.81 92.4 13C-1,2,3,4,6,7,8-HxCDF 6.06e+06 0.44 y 0.70 36:55 1.088 151.37 75.7 13C-1,2,3,4,6,7,8-HxCDF 6.06e+06 0.44 y 0.72 38:55 1.45 149.66 74.9 13C-1,2,3,4,6,7,8-HxCDF 6.06e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8,9-HxCDF 6.06e+07 0.91 y 0.82 41:48 1.230 225.50 56.4 The string of the string		1,2,3,4,7,8,9-HpCDF	*	* n	1.31	NotF ₁	*	*	284	2.5	0.0958					
Rec Qual 13C-2,3,7,8-TCDD 1.07e+07 0.77 y 1.01 26:25 1.024 183.11 91.6 13C-1,2,3,7,8-PeCDD 9.04e+06 0.63 y 1.10 31:10 1.208 141.80 70.9 13C-1,2,3,4,7,8-HxCDD 7.33e+06 1.28 y 0.72 34:27 1.014 177.66 88.9 13C-1,2,3,4,7,8-HxCDD 6.88e+06 1.27 y 0.73 34:33 1.017 165.32 82.7 13C-1,2,3,7,8,9-HxCDD 6.89e+06 1.29 y 0.70 34:51 1.025 170.55 85.3 13C-1,2,3,4,6,7,8-HxCDD 6.89e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-0CDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-TCDF 1.55e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.56e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-PeCDF 1.06e+07 0.51 y 1.01 33:34 0.988 177.70 88.9 13C-1,2,3,4,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:34 0.988 177.70 88.9 13C-1,2,3,4,6,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-1,2,3,4,6,7,8-HxCDF 1.06e+07 0.59 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,4,6,7,8-HxCDF 6.06e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,6,7,8-HxCDF 6.06e+06 0.44 y 0.70 38:55 1.145 149.66 74.9 13C-1,2,3,4,6,7,8-HxCDF 6.06e+07 0.91 y 0.82 41:48 1.230 225.50 56.4		OCDF	1.11e+05	0.91 y	1.03	41:48	1.000	4.0553	1	2.5	*					
13C-1,2,3,7,8-PeCDD 9.04e+06 0.63 y 1.10 31:10 1.208 141.80 70.9 13C-1,2,3,4,7,8-HxCDD 7.33e+06 1.28 y 0.72 34:27 1.014 177.66 88.9 13C-1,2,3,4,7,8-HxCDD 6.88e+06 1.27 y 0.73 34:33 1.017 165.32 82.7 13C-1,2,3,7,8,9-HxCDD 6.85e+06 1.29 y 0.70 34:51 1.025 170.55 85.3 13C-1,2,3,4,6,7,8-HpCDD 5.49e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-0CDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-PeCDF 1.56e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.26e+07 1.62 y 0.98 29:56 1.161 132.68 66.4 13C-2,3,4,7,8-PeCDF 1.46e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-HxCDF 1.03e+07 0.51 y 1.01 33:34 0.998 177.70 88.9 13C-1,2,3,4,6,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-1,2,3,4,6,7,8-HxCDF 9.33e+06 0.51 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,4,6,7,8-HxCDF 8.75e+06 0.53 y 0.83 35:14 1.037 184.81 92.4 13C-1,2,3,4,6,7,8-HpCDF 6.07e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8-HpCDF 6.17e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8-HpCDF 6.17e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8-HpCDF 6.17e+06 0.44 y 0.70 38:55 1.145 149.66 74.9 13C-0,2,3,4,6,7,8-HDCDF 6.17e+06 0.44 y 0.70 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8-TCDD 4.48e+06 1.14 26:26 1.025 68.146 85.2 Integrations Reviewed				-								Rec Oual				
13C-1,2,3,7,8-PeCDD 9.04e+06 0.63 y 1.10 31:10 1.208 141.80 70.9 13C-1,2,3,4,7,8-HxCDD 7.33e+06 1.28 y 0.72 34:27 1.014 177.66 88.9 13C-1,2,3,4,7,8-HxCDD 6.88e+06 1.27 y 0.73 34:33 1.017 165.32 82.7 13C-1,2,3,7,8,9-HxCDD 6.85e+06 1.29 y 0.70 34:51 1.025 170.55 85.3 13C-1,2,3,4,6,7,8-HpCDD 5.49e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-0CDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-PeCDF 1.56e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.26e+07 1.62 y 0.98 29:56 1.161 132.68 66.4 13C-2,3,4,7,8-PeCDF 1.46e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-HxCDF 1.03e+07 0.51 y 1.01 33:34 0.998 177.70 88.9 13C-1,2,3,4,6,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-1,2,3,4,6,7,8-HxCDF 9.33e+06 0.51 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,4,6,7,8-HxCDF 8.75e+06 0.53 y 0.83 35:14 1.037 184.81 92.4 13C-1,2,3,4,6,7,8-HpCDF 6.07e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8-HpCDF 6.17e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8-HpCDF 6.17e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8-HpCDF 6.17e+06 0.44 y 0.70 38:55 1.145 149.66 74.9 13C-0,2,3,4,6,7,8-HDCDF 6.17e+06 0.44 y 0.70 38:55 1.145 149.66 74.9 13C-1,2,3,4,7,8-TCDD 4.48e+06 1.14 26:26 1.025 68.146 85.2 Integrations Reviewed		13C-2,3,7,8-TCDD	1.07e+07	0.77 y	1.01	26:25	1.024	183.11				91.6				
13C-1,2,3,6,7,8-HxCDD 6.88e+06 1.27 y 0.73 34:33 1.017 165.32 82.7 13C-1,2,3,7,8,9-HxCDD 6.85e+06 1.29 y 0.70 34:51 1.025 170.55 85.3 13C-1,2,3,4,6,7,8-HpCDD 5.49e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-OCDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-TCDF 1.55e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.26e+07 1.62 y 0.98 29:56 1.161 132.68 66.4 13C-2,3,4,7,8-PeCDF 1.46e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-HxCDF 1.03e+07 0.51 y 1.01 33:34 0.988 177.70 88.9 13C-1,2,3,4,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-2,3,4,6,7,8-HxCDF 9.33e+06 0.51 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,7,8,9-HxCDF 8.75e+06 0.53 y 0.83 35:14 1.037 184.81 92.4 13C-1,2,3,4,6,7,8-HpCDF 6.06e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,6,7,8-HpCDF 6.17e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8,9-HpCDF 6.10e+07 0.91 y 0.82 41:48 1.230 225.50 56.4		13C-1,2,3,7,8-PeCDD	9.04e+06	0.63 y	1.10	31:10	1.208	141.80				70.9				
13C-1,2,3,7,8,9-HxCDD 6.85e+06 1.29 y 0.70 34:51 1.025 170.55 85.3 13C-1,2,3,4,6,7,8-HpCDD 5.49e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-0CDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-TCDF 1.55e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.26e+07 1.62 y 0.98 29:56 1.161 132.68 66.4 13C-2,3,4,7,8-PeCDF 1.46e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-HxCDF 1.03e+07 0.51 y 1.01 33:34 0.988 177.70 88.9 13C-1,2,3,6,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-2,2,4,6,7,8-HxCDF 9.33e+06 0.51 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,7,8,9-HxCDF 6.06e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.70 38:55 1.145 149.66 74.9 13C-0CDF 1.06e+07 0.91 y 0.82 41:48 1.230 225.50 56.4		13C-1,2,3,4,7,8-HxCDD	7.33e+06	1.28 y	0.72	34:27	1.014	177.66				88.9				
13C-1,2,3,4,6,7,8-HpCDD 5.49e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-OCDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-TCDF 1.55e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.26e+07 1.62 y 0.98 29:56 1.161 132.68 66.4 13C-2,3,4,7,8-PeCDF 1.46e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-HxCDF 1.03e+07 0.51 y 1.01 33:34 0.988 177.70 88.9 13C-1,2,3,4,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-2,3,4,6,7,8-HxCDF 9.33e+06 0.51 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,7,8,9-HxCDF 8.75e+06 0.53 y 0.83 35:14 1.037 184.81 92.4 13C-1,2,3,4,6,7,8-HpCDF 6.06e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.70 36:55 1.145 149.66 74.9 13C-0CDF 1.06e+07 0.91 y 0.82 41:48 1.230 225.50 56.4		13C-1,2,3,6,7,8-HxCDD	6.88e+06	1.27 y	0.73	34:33	1.017	165.32				82.7				
13C-1,2,3,4,6,7,8-HpCDD 5.49e+06 1.05 y 0.66 38:22 1.129 144.26 72.2 13C-OCDD 8.36e+06 0.92 y 0.66 41:34 1.223 221.31 55.4 13C-2,3,7,8-TCDF 1.55e+07 0.79 y 0.90 25:35 0.992 177.84 89.0 13C-1,2,3,7,8-PeCDF 1.26e+07 1.62 y 0.98 29:56 1.161 132.68 66.4 13C-2,3,4,7,8-PeCDF 1.46e+07 1.58 y 1.15 30:53 1.197 131.31 65.7 13C-1,2,3,4,7,8-HxCDF 1.03e+07 0.51 y 1.01 33:34 0.988 177.70 88.9 13C-1,2,3,4,7,8-HxCDF 1.04e+07 0.52 y 1.10 33:42 0.992 165.27 82.7 13C-2,3,4,6,7,8-HxCDF 9.33e+06 0.51 y 0.95 34:17 1.009 171.32 85.7 13C-1,2,3,7,8,9-HxCDF 8.75e+06 0.53 y 0.83 35:14 1.037 184.81 92.4 13C-1,2,3,4,6,7,8-HpCDF 6.06e+06 0.44 y 0.70 36:59 1.088 151.37 75.7 13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.70 36:55 1.145 149.66 74.9 13C-0CDF 1.06e+07 0.91 y 0.82 41:48 1.230 225.50 56.4		13C-1,2,3,7,8,9-HxCDD	6.85e+06	1.29 v	0.70	34:51	1.025	170.55				85.3				
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13C-1,2,3,4,7,8,9-HpCDF 6.17e+06 0.44 y 0.72 38:55 1.145 149.66 74.9 13C-OCDF 1.06e+07 0.91 y 0.82 41:48 1.230 225.50 56.4 Dp 37Cl-2,3,7,8-TCDD 4.48e+06 1.14 26:26 1.025 68.146 85.2 Integrations Reviewed				-												
13C-OCDF 1.06e+07 0.91 y 0.82 41:48 1.230 225.50 56.4 Dp 37Cl-2,3,7,8-TCDD 4.48e+06 1.14 26:26 1.025 68.146 85.2 Integrations Reviewed		· · · · · · · · · ·		-												
Jp 37Cl-2,3,7,8-TCDD 4.48e+06 1.14 26:26 1.025 68.146 85.2 Integrations Reviewed				-												
hy 2 hy		130-000F	1.006+0/	0.91 Y	0.82	41:48	1.230	225.50				50.4				
by Analyst: 13C-1,2,3,4-TCDD 1.15e+07 0.77 y 1.00 25:48 * 199.91	Uj	37C1-2,3,7,8-TCDD	4.48e+06		1.14	26:26	1.025	68.146				85.2 Integ	rations	Reviewe	d	
RT 13C-1,2,3,4-TCDD 1.15e+07 0.77 y 1.00 25:48 * 199.91 Analyst: // Analyst: /												by	7/4	by	16	
13C-1,2,3,4-TCDF 1.94e+07 0.81 y 1.00 24:12 * 199.91 RT 13C-1,2,3,4,6,9-HxCDF 1.14e+07 0.52 y 1.00 33:59 * 199.91				_								Analyst:_	100	Analyst	: ME	
'RT 13C-1,2,3,4,6,9-HxCDF 1.14e+07 0.52 y 1.00 33:59 * 199.91		13C-1,2,3,4-TCDF	1.94e+07	0.81 y	1.00	24:12	*	199.91							/	
	/1	RT 13C-1,2,3,4,6,9-HxCDF	1.14e+07	0.52 y	1.00	33:59	*	199.91				, may	Lula		- 4-2 11	6

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Totals class: TCDD EMPC Entry #: 19

Run: 15 File: 160712D1 S: 10 I: 1 F: 1
Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 1.3627 Unnamed Concentration: 1.230

RT	m1 Resp	m2 Resp RA		Resp	Concentration	Name
22:38	1.731e+04	1.986e+04 0.	87 y	3.717e+04	0.61469	
23:03	6.141e+03	5.780e+03 1.	06 n	1.023e+04	0.16918	
24:22	2.433e+03	3.357e+03 0.	72 y	5.790e+03	0.095738	
24:37	2.688e+03	3.670e+03 0.	73 y	6.358e+03	0.10514	
24:49	3.793e+03	4.916e+03 0.	77 y	8.709e+03	0.14401	
25:48	2.702e+03	3.396e+03 0.	80 у	6.099e+03	0.10085	
26:26	3.501e+03	6.806e+03 0.	51 n	8.047e+03	0.13307	2,3,7,8-TCDD

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Totals class: PeCDD EMPC Entry #: 21

Run: 15 File: 160712D1 S: 10 I: 1 F: 2
Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 3.6588 Unnamed Concentration: 3.310

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
29:02 29:30	1.709e+04 6.239e+03	3.119e+04 0.55 y 1.047e+04 0.60 y	1.671e+04		
30:08	1.185e+04 5.265e+03	1.016e+04 1.17 n 8.045e+03 0.65 y	1.331e+04		
	4.909e+03 1.001e+04 6.342e+03	8.780e+03 0.56 y 1.456e+04 0.69 y 8.807e+03 0.72 y	2.456e+04	0.31483 0.56494 0.34840	1,2,3,7,8-PeCDD
31:15 31:32	2.020e+03 2.267e+03	2.862e+03 0.71 y 3.673e+03 0.62 y	4.882e+03	0.11228 0.13662	1,2,3,7,6-PeCDD

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Totals class: HxCDD EMPC Entry #: 23

Run: 15 File: 160712D1 S: 10 I: 1 F: 3
Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 11.439 Unnamed Concentration: 9.174

RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
32:57	7.003e+04	6.118e+04 1.14 y	1.312e+05 3.5640	
33:30	2.145e+04	1.605e+04 1.34 y	3.750e+04 1.0186	
33:46	8.448e+04	6.856e+04 1.23 y	1.530e+05 4.1570	
33:54	3.900e+03	5.029e+03 0.78 n	7.045e+03 0.19135	
34:27	7.595e+03	8.309e+03 0.91 n	1.372e+04 0.37342	1,2,3,4,7,8-HxCDD
34:34	2.032e+04	1.866e+04 1.09 y	3.897e+04 1.0340	1,2,3,6,7,8-HxCDD
34:45	4.856e+03	4.100e+03 1.18 y	8.956e+03 0.24325	
34:51	1.593e+04	1.488e+04 1.07 y	3.081e+04 0.85785	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 15 File: 160712D1 S: 10 I: 1 F: 4 Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 28.649 Unnamed Concentration: 15.442

RT m1 Resp m2 Resp RA Resp Concentration Name

37:23 2.292e+05 2.159e+05 1.06 y 4.451e+05 15.442 38:22 1.981e+05 1.826e+05 1.08 y 3.807e+05 13.206 1,2,3,4,6,7,8-HpCDD

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Entry #: 27 Totals class: TCDF EMPC

Run: 15 File: 160712D1 S: 10 I: 1 F: 1 Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 2.2471 Unnamed Concentration: 2.101

RT m1 Resp m2 Resp RA Resp Concentration Name
 21:37
 4.241e+04
 5.266e+04 0.81 y
 9.507e+04
 1.0951

 25:35
 5.204e+03
 7.492e+03 0.69 y
 1.270e+04
 0.14625
 2,3,7,8-TCDF

 25:58
 6.225e+03
 6.092e+03 1.02 n
 1.078e+04
 0.12422

 27:29
 7.174e+04
 4.323e+04 1.66 n
 7.653e+04
 0.88150

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Totals class: PeCDF EMPC Entry #: 31

Run: 15 File: 160712D1 S: 10 I: 1 F: 2 Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 1.5452 Unnamed Concentration: 1.265

RT	m1 Resp	m2 Resp RA		Resp	Concentration	Name
28:52	9.890e+03	5.719e+03 1.7	3 v	1.561e+04	0.24205	
28:58	1.522e+04	9.835e+03 1.5	•		0.38847	
29:04	1.605e+04	2.173e+04 0.7	4 n	2.640e+04	0.40939	
29:57	3.791e+03	2.252e+03 1.6	8 y	6.043e+03	0.095185	1,2,3,7,8-PeCDF
30:11	5.937e+03	3.696e+03 1.6	1 y	9.634e+03	0.14939	
30:46	2.962e+03	3.453e+03 0.8	6 n	4.872e+03	0.075555	
30:53	7.035e+03	5.100e+03 1.3	8 y	1.213e+04	0.18517	2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC Entry #: 33

Run: 15 File: 160712D1 S: 10 I: 1 F: 3
Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 3.6417 Unnamed Concentration: 2.870

RT	m1 Resp	m2 Resp RA	Resp Concentration	Ñame
32:26	1.507e+04	1.080e+04 1.40 y	2.586e+04 0.45608	
32:35	4.487e+04	3.421e+04 1.31 y	7.908e+04 1.3945	
32:56	4.387e+03	3.659e+03 1.20 y	8.046e+03 0.14189	
33:07	2.111e+04	1.769e+04 1.19 y	3.879e+04 0.68407	
33:29	6.384e+03	4.601e+03 1.39 y	1.098e+04 0.19371	
33:35	7.801e+03	5.794e+03 1.35 y	1.359e+04 0.22690	1,2,3,4,7,8-HxCDF
33:42	9.117e+03	6.783e+03 1.34 y	1.590e+04 0.26491	1,2,3,6,7,8-HxCDF
34:18	8.875e+03	7.126e+03 1.25 y	1.600e+04 0.27962	2,3,4,6,7,8-HxCDF

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Totals class: HpCDF EMPC Entry #: 35

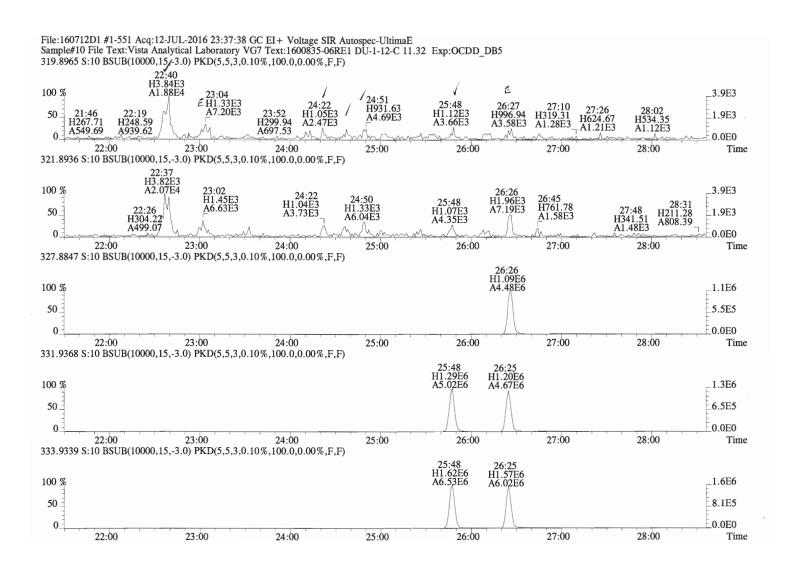
Run: 15 File: 160712D1 S: 10 I: 1 F: 4 Acquired: 12-JUL-16 23:37:38 Processed: 14-JUL-16 09:23:17

Total Concentration: 4.9158 Unnamed Concentration: 2.381

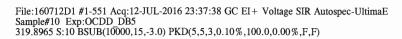
RT m1 Resp m2 Resp RA Resp Concentration Name

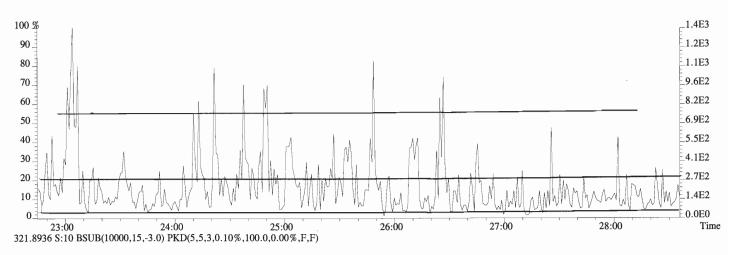
37:00 5.762e+04 5.293e+04 1.09 y 1.105e+05 2.5351 1,2,3,4,6,7,8-HpCDF 37:38 4.932e+04 5.074e+04 0.97 y 1.001e+05 2.3807

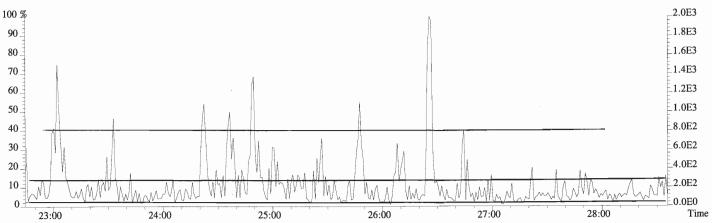
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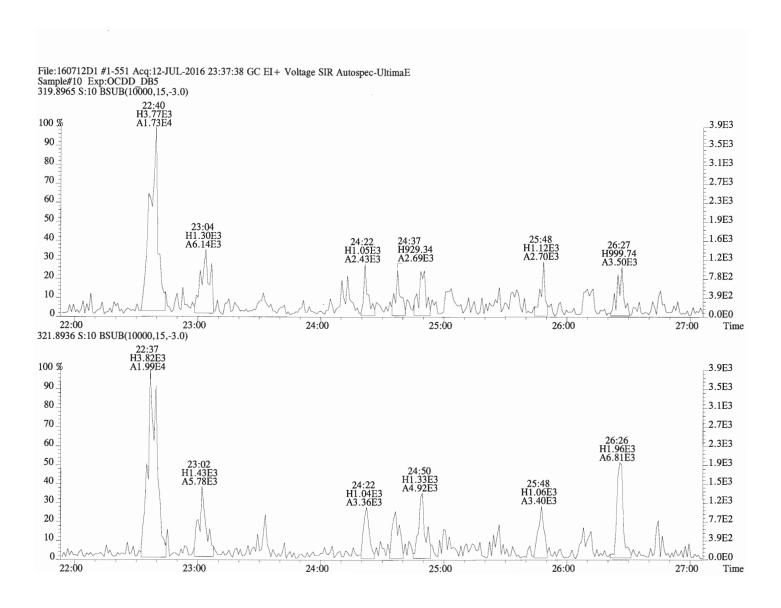
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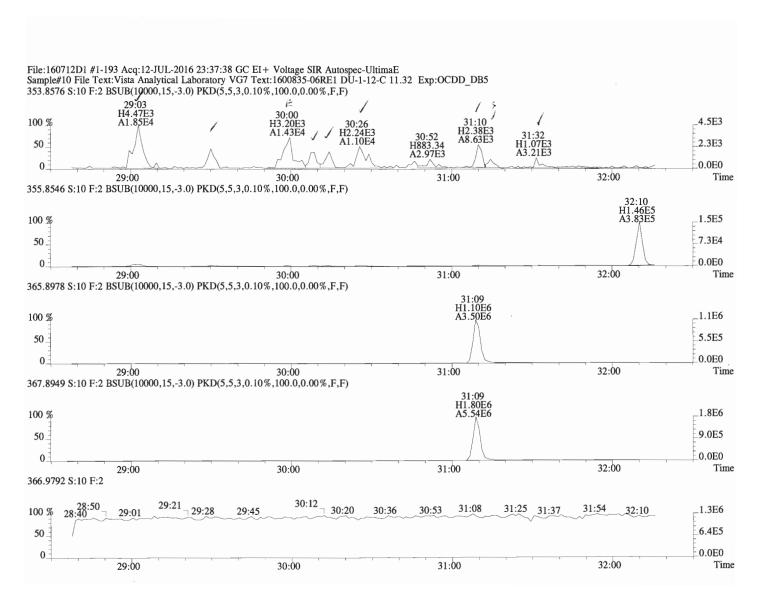




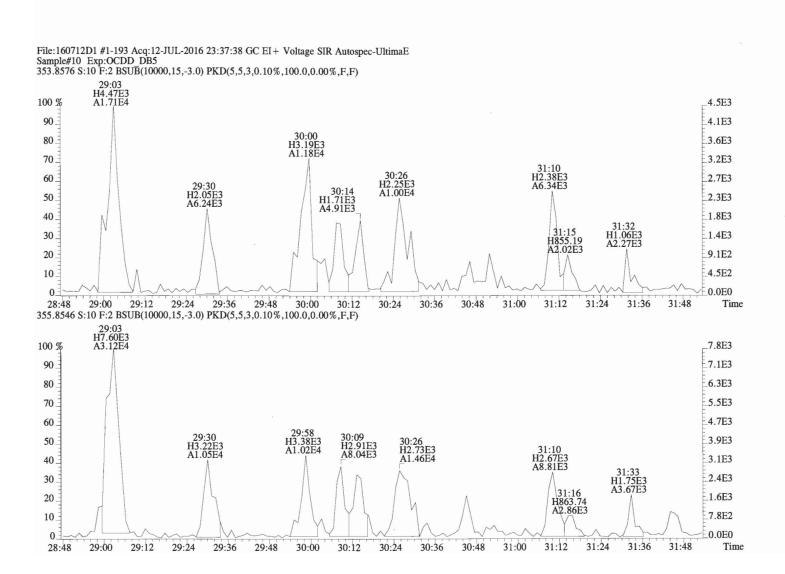
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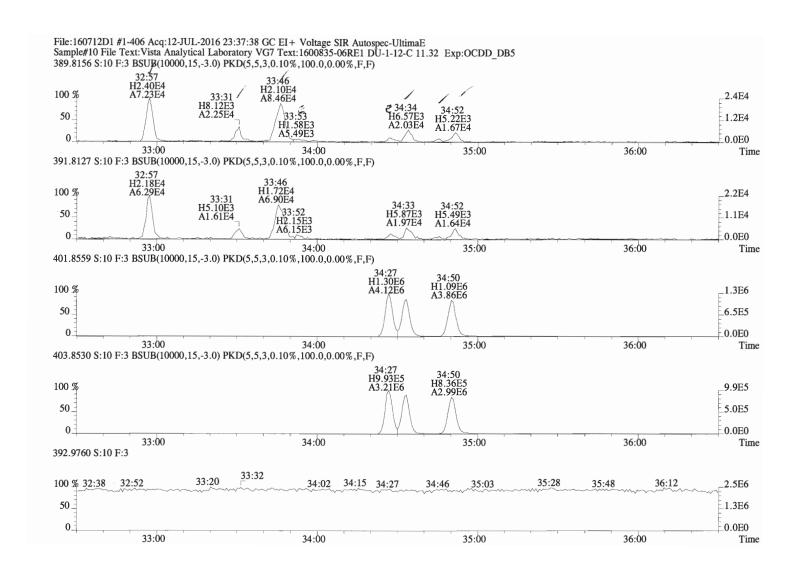
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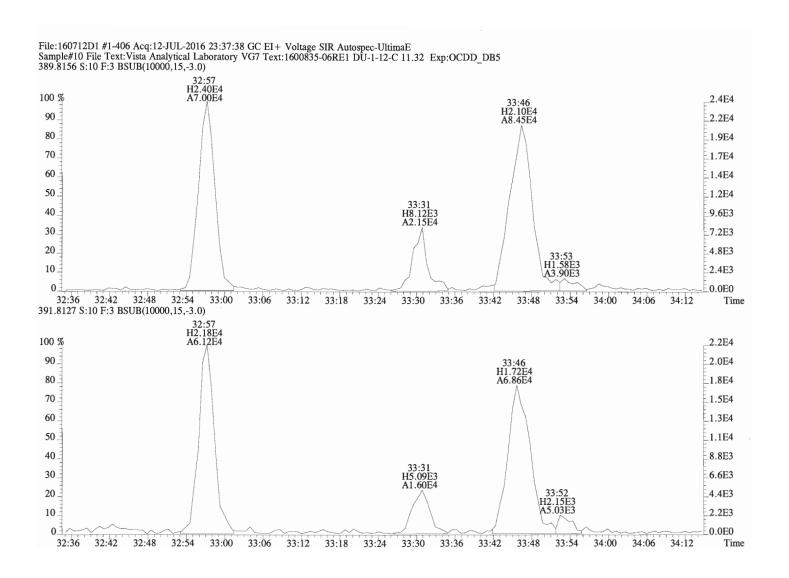
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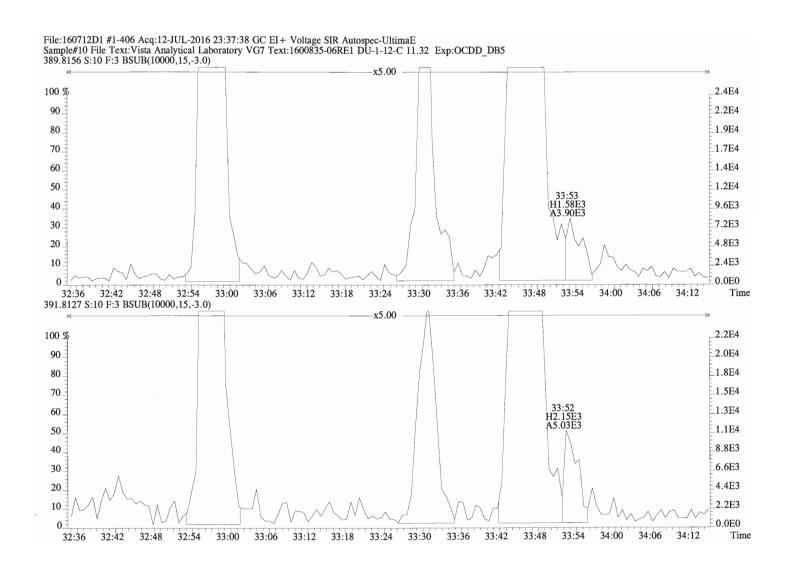
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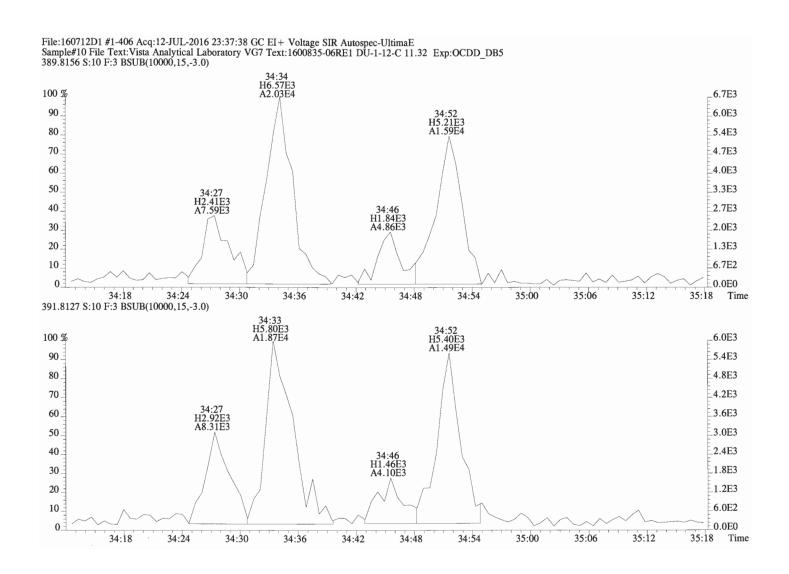
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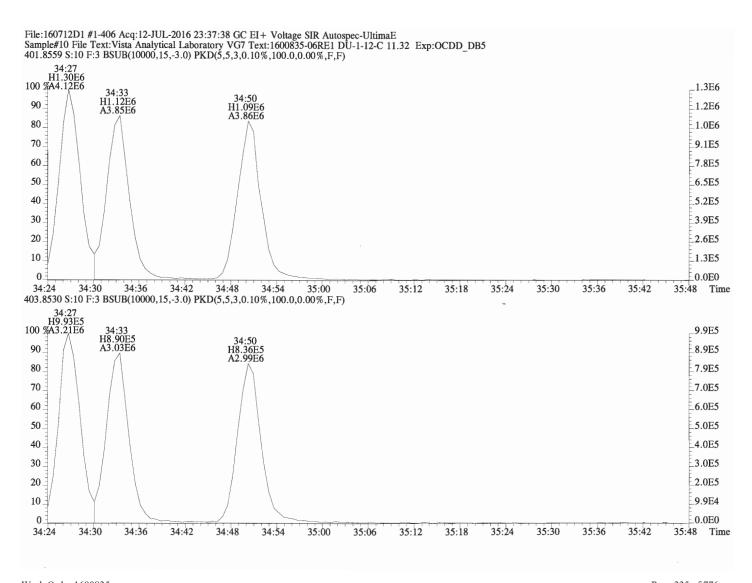
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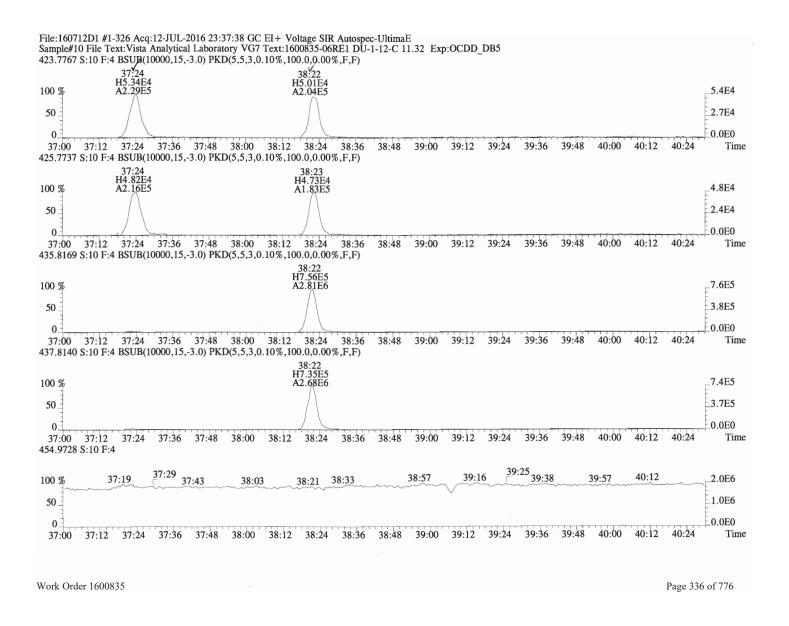
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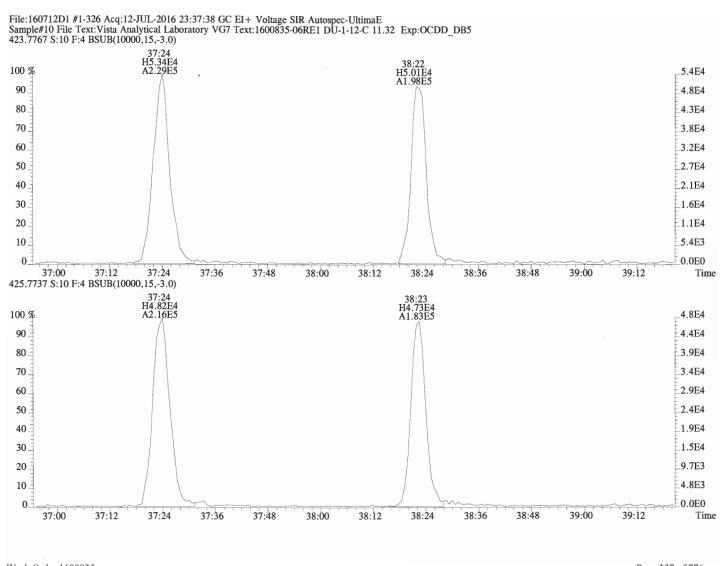


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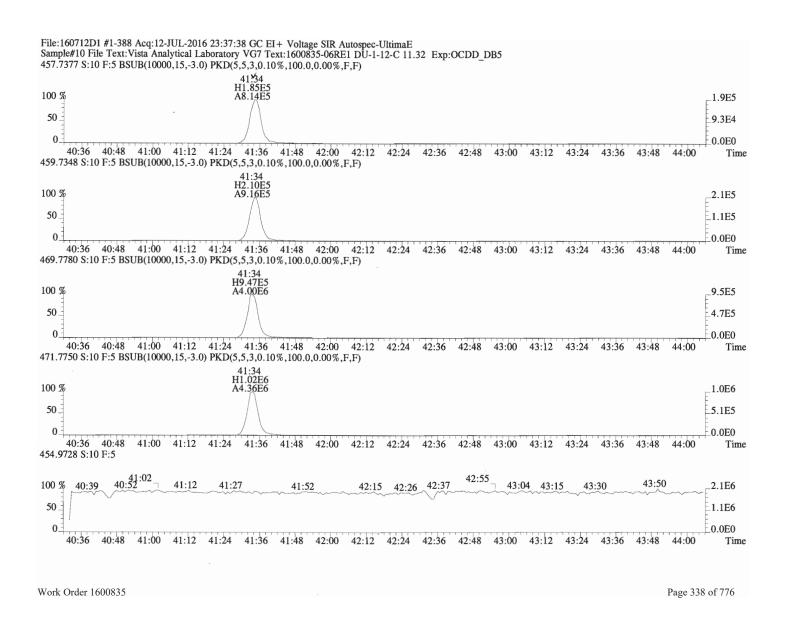


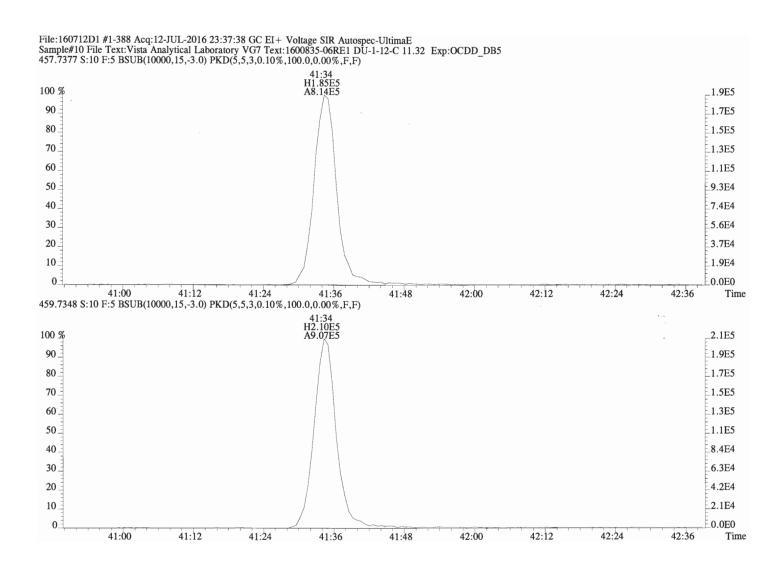
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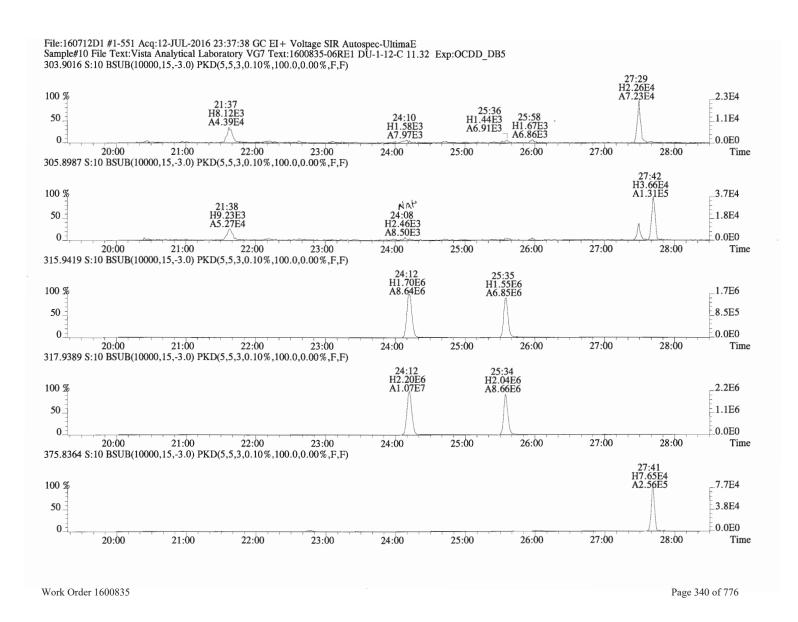


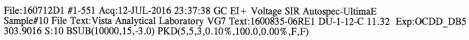
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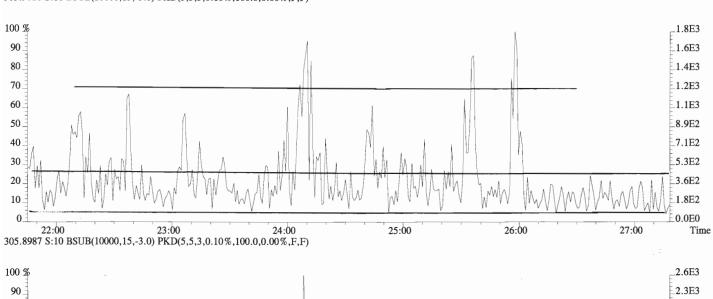


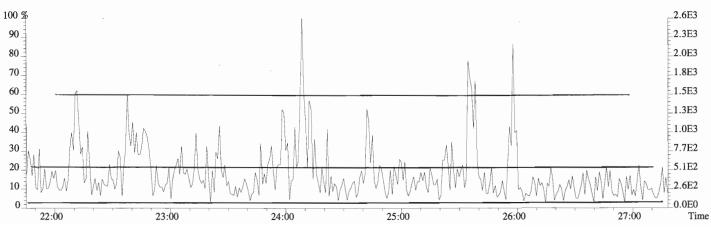


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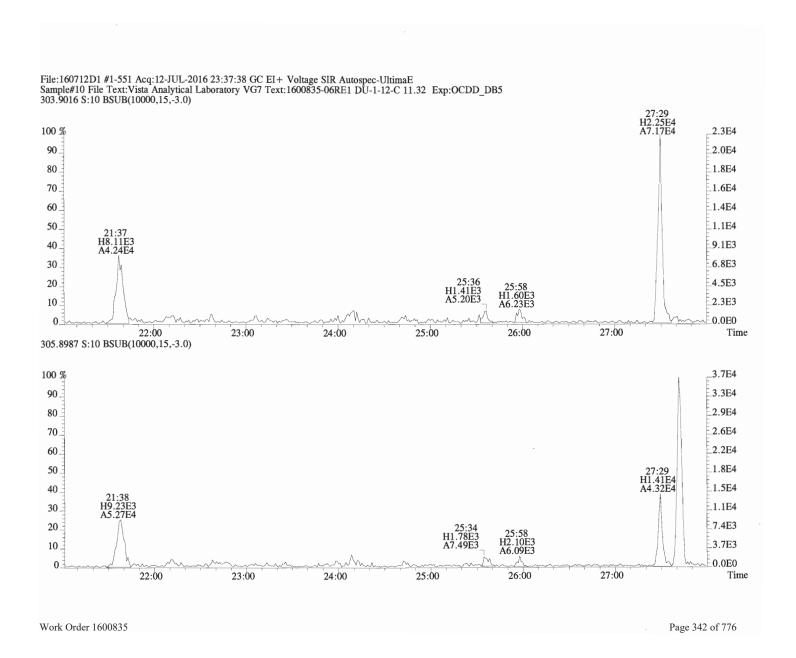


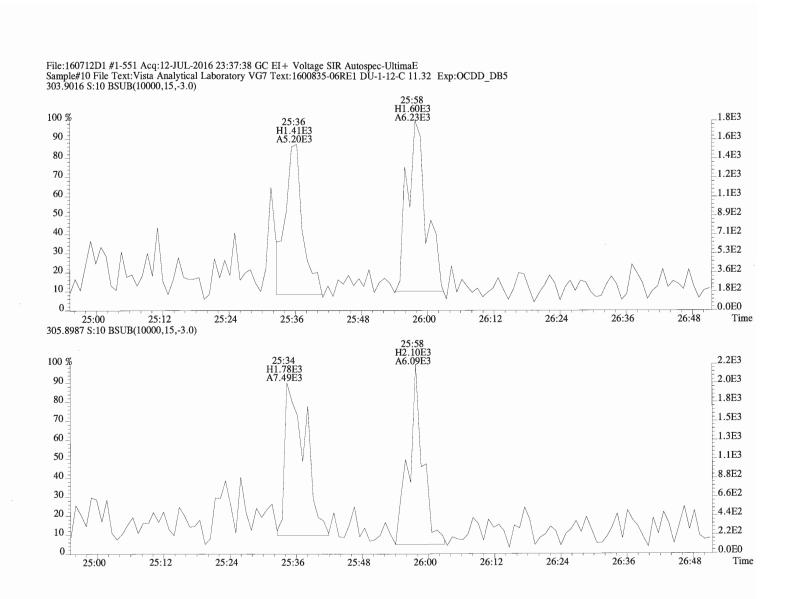






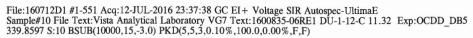
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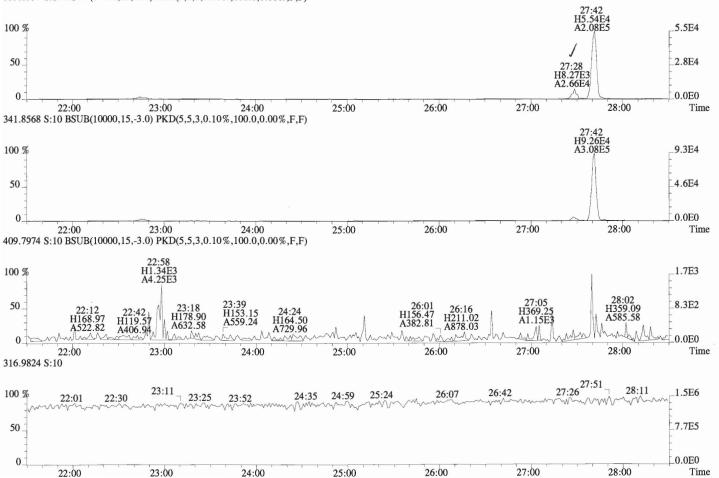




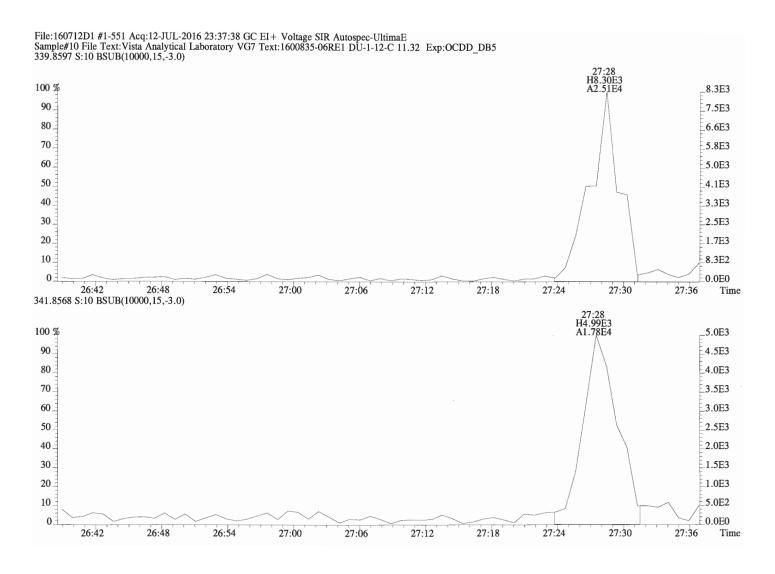
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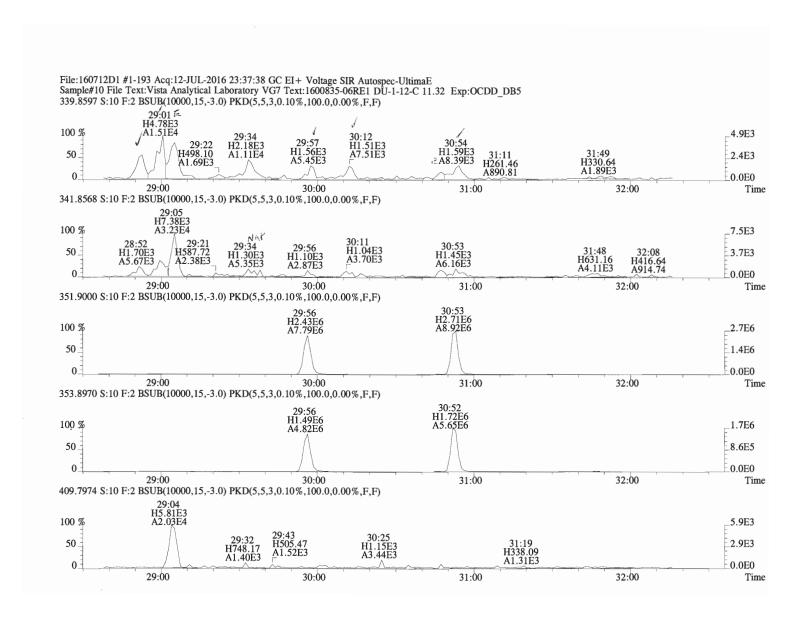




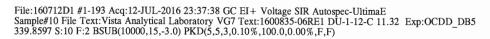
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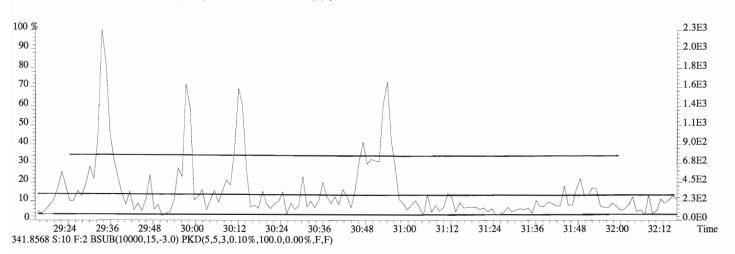


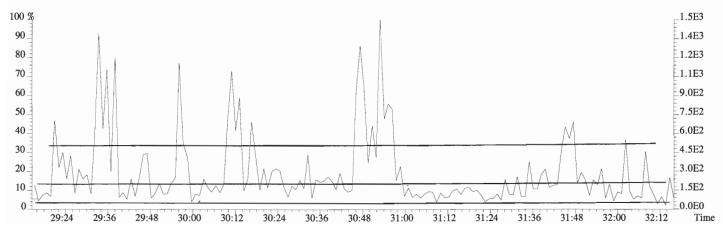
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File:160712D1 #1-193 Acq:12-JUL-2016 23:37:38 GC EI+ Voltage SIR Autospec-UltimaE Sample#10 File Text:Vista Analytical Laboratory VG7 Text:1600835-06RE1 DU-1-12-C 11.32 Exp:OCDD_DB5 339.8597 S:10 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

28:48

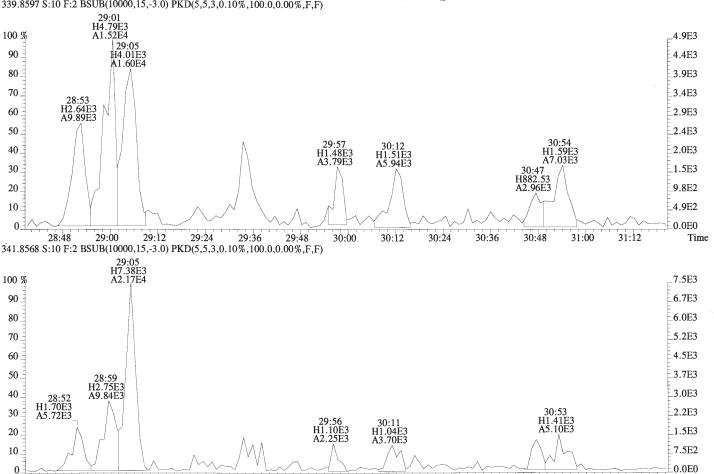
29:00

29:12

29:24

29:36

29:48



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30:00

30:12

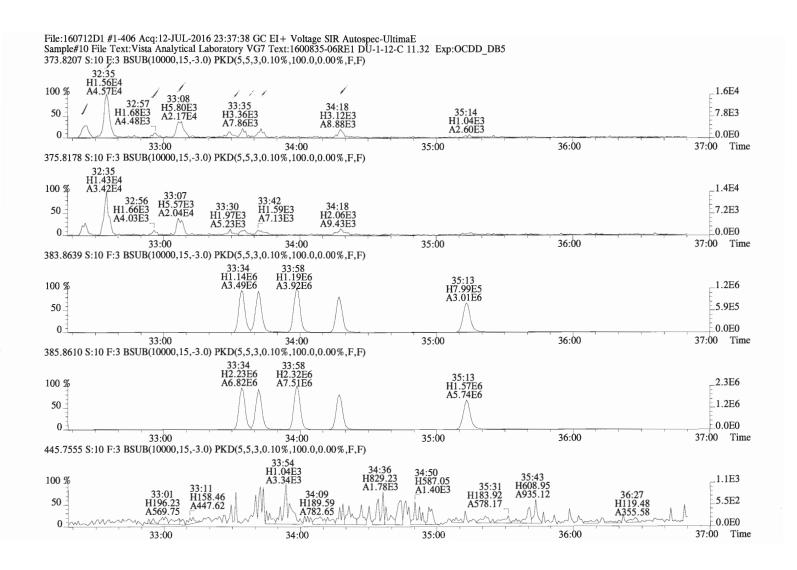
30:24

30:36

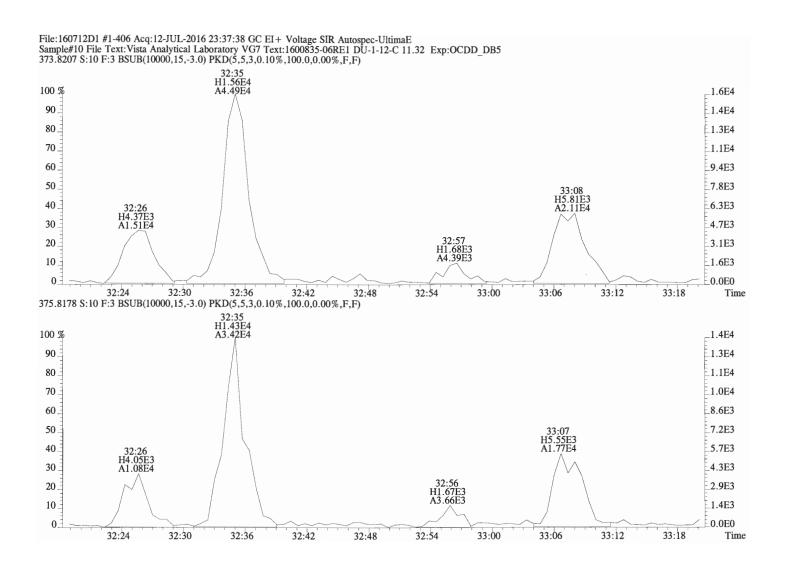
31:00

31:12

Time



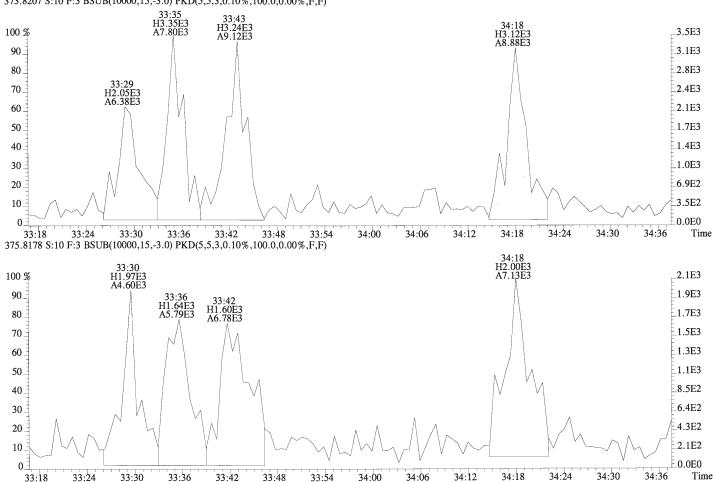
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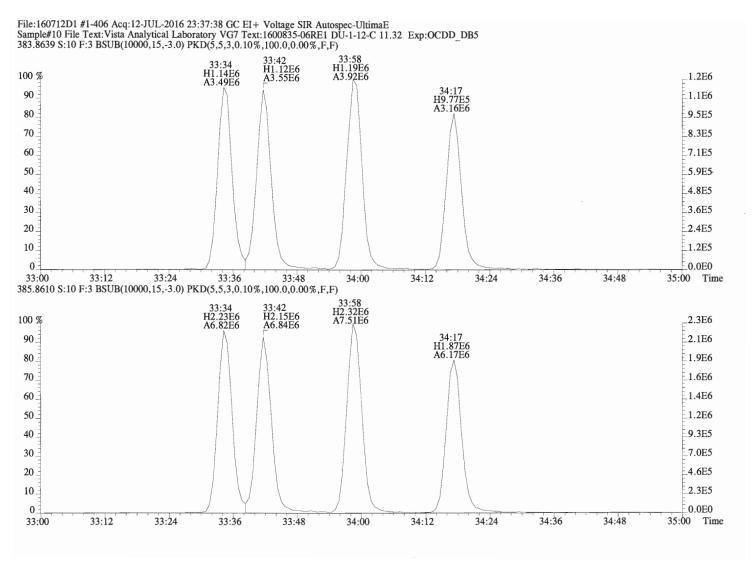
File:160712D1 #1-406 Acq:12-JUL-2016 23:37:38 GC EI+ Voltage SIR Autospec-UltimaE Sample#10 File Text:Vista Analytical Laboratory VG7 Text:1600835-06RE1 DU-1-12-C 11.32 Exp:OCDD_DB5 373.8207 S:10 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

33:18

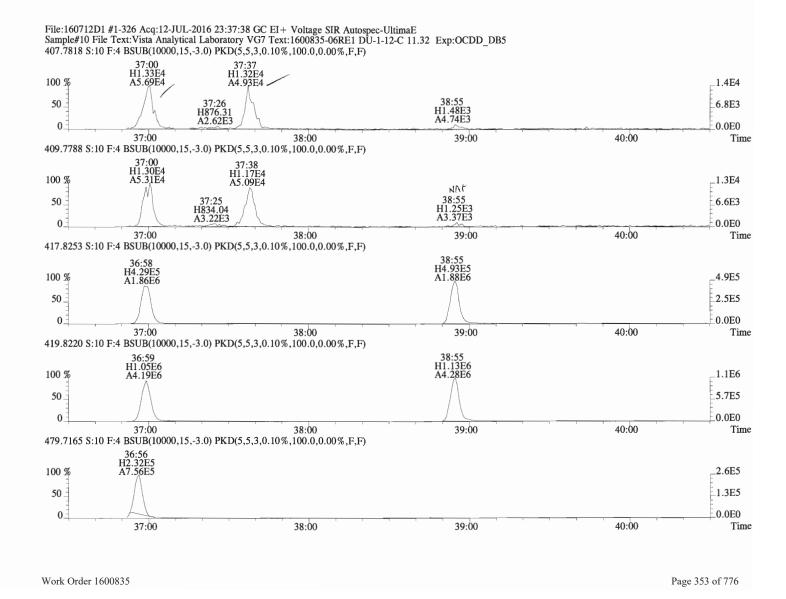


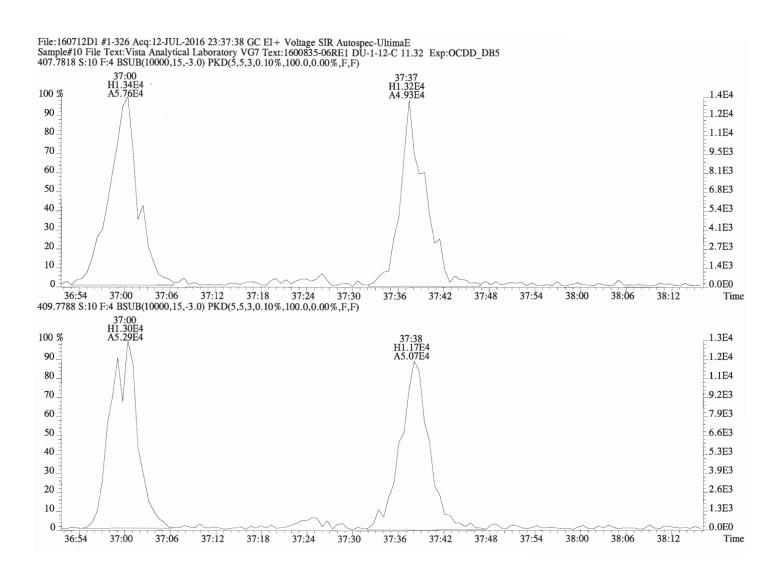
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33:54

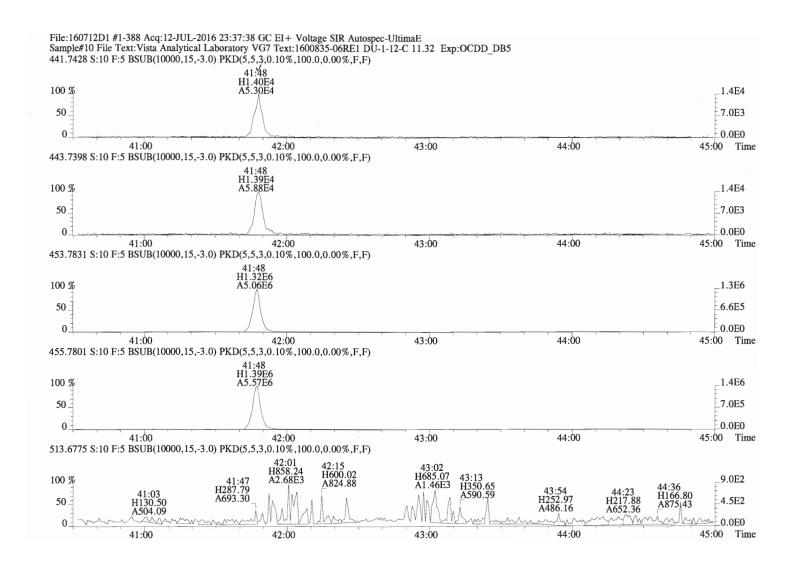


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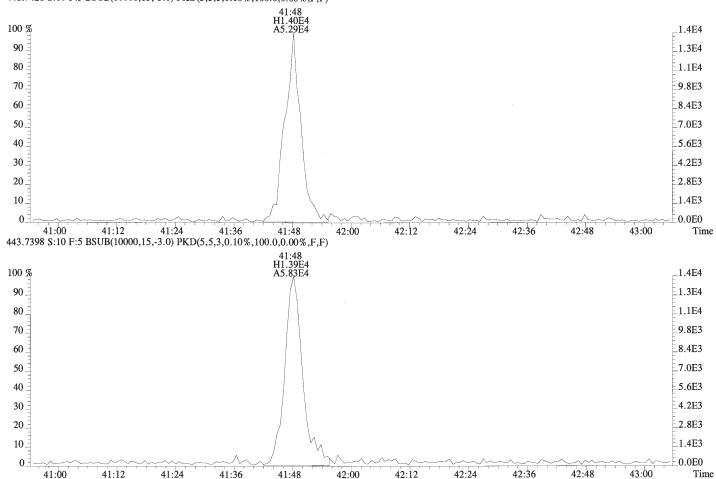


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File:160712D1 #1-388 Acq:12-JUL-2016 23:37:38 GC EI+ Voltage SIR Autospec-UltimaE Sample#10 File Text:Vista Analytical Laboratory VG7 Text:1600835-06RE1 DU-1-12-C 11.32 Exp:OCDD_DB5 441.7428 S:10 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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Client ID: DU-3-1-A Lab ID: 1600835-07		: Column I			_	3-JUL-16 00 G7-4-7-16	0:26:		/ol: 9	.900		Cal: ST160712D1 CAL: NA	1			Page 10	of 10
Name	Resp	RA	RRF	RT	RRT	Conc	Q	noise	Fac	DL	Name		Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	*	* n	1.13	NotFi	*	*		294	2.5	0.0909	Total	Tetra-Dioxins	0.834	0.951		*	*
1,2,3,7,8-PeCDD	7.69e+03	0.83 n	0.96	31:10	1.000	0.18800		*	2.5	*	Total	Penta-Dioxins	0.165	1.28		*	*
1,2,3,4,7,8-HxCDD	9.58e+03	1.06 y	1.00	34:28	1.000	0.27948		*	2.5	*	Total	Hexa-Dioxins	10.1	10.1		*	*
1,2,3,6,7,8-HxCDD	3.52e+04	1.34 y	1.10	34:34	1.000	0.96454		*	2.5	*	Total	Hepta-Dioxins	39.9	39.9		*	*
1,2,3,7,8,9-HxCDD	2.03e+04	1.06 y	1.05	34:52	1.000	0.57360		*	2.5	*	Total	Tetra-Furans	2.54	2.85		*	*
1,2,3,4,6,7,8-HpCDD	4.88e+05	1.00 y	1.05	38:23	1.000	18.062		*	2.5	*	Total	Penta-Furans	1.5757	1.8777		*	*
OCDD	4.35e+06	0.89 y	0.96	41:34	1.000	227.06		*	2.5	*	Total	Hexa-Furans	4.77	4.77		*	*
											Total	Hepta-Furans	6.06	6.06		*	*
2,3,7,8-TCDF	*	* n	1.12	Not Fa	*	*		629	2.5	0.147							
1,2,3,7,8-PeCDF	1.04e+04	1.65 y	1.01	29:57	1.001	0.16511		*	2.5	*							
2,3,4,7,8-PeCDF	5.72e+03	0.94 n	0.90	30:54	1.001	0.093026		*	2.5	*							
1,2,3,4,7,8-HxCDF	1.75e+04	1.24 y	1.16	33:35	1.000	0.30906		*	2.5	*							
1,2,3,6,7,8-HxCDF	1.08e+04	1.19 y	1.16	33:42	1.000	0.18608		*	2.5	*							
2,3,4,6,7,8-HxCDF	1.18e+04	1.06 y	1.23	34:18	1.000	0.21898		*	2.5	*							
1,2,3,7,8,9-HxCDF	2.22e+04	1.40 y	1.13	35:14	1.000	0.43162		*	2.5	*							
1,2,3,4,6,7,8-HpCDF	9.83e+04	1.05 y	1.44	37:00	1.000	2.3184		*	2.5	*							
1,2,3,4,7,8,9-HpCDF	6.69e+03	1.17 y	1.31	38:55	1.000	0.16645		*	2.5	*							
OCDF	1.13e+05	0.93 y	1.03	41:48	1.000	4.3529		*	2.5	*							
											Rec	Qual					
S 13C-2,3,7,8-TCDD	1.03e+07	0.77 y	1.01	26:26	1.025	167.41					82.9						
S 13C-1,2,3,7,8-PeCDD	8.59e+06	0.64 y	1.10	31:10	1.208	128.04					63.4						
S 13C-1,2,3,4,7,8-HxCDD	6.91e+06	1.27 y	0.72	34:27	1.014	166.11					82.2						
S 13C-1,2,3,6,7,8-HxCDD	6.74e+06	1.27 y	0.73	34:33	1.017	160.60					79.5						
S 13C-1,2,3,7,8,9-HxCDD	6.83e+06	1.27 y	0.70	34:51	1.026	168.71					83.5						
S 13C-1,2,3,4,6,7,8-HpCDD	5.20e+06	1.09 y	0.66	38:22	1.129	135.51					67.1						
S 13C-OCDD	8.05e+06	0.92 y	0.66	41:34	1.223	211.45					52.3						
S 13C-2,3,7,8-TCDF	1.53e+07	0.80 y	0.90	25:35	0.992	172.12					85.2						
S 13C-1,2,3,7,8-PeCDF	1.26e+07	1.62 y	0.98	29:56	1.160	130.17					64.4						
S 13C-2,3,4,7,8-PeCDF	1.38e+07	1.57 y	1.15	30:53	1.197	122.10					60.4						
S 13C-1,2,3,4,7,8-HxCDF	9.87e+06	0.52 y	1.01	33:35	0.988	168.60					83.5						
S 13C-1,2,3,6,7,8-HxCDF	1.02e+07	0.52 y	1.10		0.992	160.77					79.6						
S 13C-2,3,4,6,7,8-HxCDF		0.53 y	0.95		1.009	161.68					80.0						
S 13C-1,2,3,7,8,9-HxCDF		0.54 y	0.83		1.037	192.16					95.1						
S 13C-1,2,3,4,6,7,8-HpCDF		0.44 y	0.70		1.089	147.45					73.0						
S 13C-1,2,3,4,7,8,9-HpCDF		0.45 y	0.72		1.145	148.85					73.7						
S 13C-OCDF	1.02e+07	0.88 Y	0.82	41:48	1.230	213.70					52.9						
2/Up 37Cl-2,3,7,8-TCDD	4.45e+06		1.14	26:27	1.025	64.307					79.6	Integr	rations	Revi	ewed	,	
RS/RT 13C-1,2,3,4-TCDD	1.23e+07	0.78 y	1.00	25:48	*	202.02						Analyst:	1)6	Anal	yst:	MZ	-
S 13C-1,2,3,4-TCDF		0.81 y	1.00	24:13		202.02										1	
2S/RT 13C-1,2,3,4,6,9-HxCDF		0.52 y		33:59		202.02						Date: 7	115/16	Date	. 7	42 1516	

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Totals class: TCDD EMPC Entry #: 19

Run: 16 File: 160712D1 S: 11 I: 1 F: 1 Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 0.95082 Unnamed Concentration: 0.951

RT m1 Resp	m2 Resp RA	Resp	Concentration	Name
23:04 5.374e+03 6 24:36 3.726e+03 4	1.703e+04 0.66 y 5.072e+03 0.89 y 4.585e+03 0.81 y 3.797e+03 1.07 n	1.145e+04 8.311e+03	0.49105 0.19875 0.14432 0.11670	

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Totals class: PeCDD EMPC Entry #: 21

Run: 16 File: 160712D1 S: 11 I: 1 F: 2 Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 1.2772 Unnamed Concentration: 1.089

RT	m1 Resp	m2 Resp 1	RA	Resp	Concentration	Name
29:02	1.028e+04	2.111e+04	0.49 n	2.659e+04	0.65009	
29:30	6.479e+03	6.871e+03	0.94 n	1.120e+04	0.27386	
30:14	2.731e+03	4.025e+03	0.68 y	6.756e+03	0.16520	
31:10	3.938e+03	4.717e+03	0.83 n	7.688e+03	0.18800	1,2,3,7,8-PeCDD

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Totals class: HxCDD EMPC Entry #: 23

Run: 16 File: 160712D1 S: 11 I: 1 F: 3
Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 10.102 Unnamed Concentration: 8.284

RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
	7.231e+04 9.067e+03	5.562e+04 1.30 y 7.135e+03 1.27 y	1.620e+04 0.45732	
33:54	7.686e+04 3.472e+03 4.931e+03	5.867e+04 1.31 y 2.848e+03 1.22 y 4.648e+03 1.06 y	6.320e+03 0.17839	1,2,3,4,7,8-HxCDD
34:46	2.016e+04 3.872e+03	1.508e+04 1.34 y 3.652e+03 1.06 y	7.524e+03 0.21238	1,2,3,6,7,8-HxCDD
34:52	1.045e+04	9.882e+03 1.06 y	2.033e+04 0.57360	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 16 File: 160712D1 S: 11 I: 1 F: 4
Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 39.911 Unnamed Concentration: 21.849

RT m1 Resp m2 Resp RA Resp Concentration Name

37:24 3.019e+05 2.884e+05 1.05 y 5.903e+05 21.849 38:23 2.440e+05 2.440e+05 1.00 y 4.880e+05 18.062 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 16 File: 160712D1 S: 11 I: 1 F: 1
Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 2.8482 Unnamed Concentration: 2.848

RT m1 Resp m2 Resp RA Resp Concentration Name

20:26 1.752e+04 2.481e+04 0.71 y 4.233e+04 0.49923 21:38 7.611e+04 9.732e+04 0.78 y 1.734e+05 2.0454 27:29 2.156e+04 1.454e+04 1.48 n 2.574e+04 0.30358

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 16 File: 160712D1 S: 11 I: 1 F: 1 Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 0.69059 Unnamed Concentration: 0.691

RT ml Resp m2 Resp RA Resp Concentration Name

27:28 2.554e+04 1.732e+04 1.47 y 4.286e+04 0.69059

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Totals class: PeCDF EMPC Entry #: 31

Run: 16 File: 160712D1 S: 11 I: 1 F: 2 Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 1.1871 Unnamed Concentration: 0.929

RT	ml Resp	m2 Resp F	RA	Resp	Concentration	Name
28:52	7.884e+03	7.838e+03 1	1.01 n	1.297e+04	0.20900	
28:59	1.661e+04	1.249e+04 1	1.33 у	2.911e+04	0.46900	
29:35	8.871e+03	6.704e+03 1	1.32 у	1.557e+04	0.25096	
29:57	6.457e+03	3.921e+03 1	1.65 у	1.038e+04	0.16511	1,2,3,7,8-PeCDF
30:54	3.477e+03	3.707e+03 (0.94 n	5.721e+03	0.093026	2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC

Entry #: 33

Run: 16 File: 160712D1 S: 11 I: 1 F: 3
Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 4.7721 Unnamed Concentration: 3.626

, , , , , , , , , , , , , , , , , , , ,	RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
34:18 6.082e+03 5.718e+03 1.06 y 1.180e+04 0.21898 2,3,4,6,7,8-HXCDI 35:14 1.297e+04 9.232e+03 1.40 y 2.220e+04 0.43162 1,2,3.7.8.9-HXCDI	32:35 32:48 32:57 33:07 33:30 33:35 33:42 34:18	1.044e+04 3.454e+04 2.624e+03 1.133e+04 4.592e+04 3.533e+03 9.719e+03 5.881e+03 6.082e+03	9.825e+03 1.06 y 2.945e+04 1.17 y 2.293e+03 1.14 y 1.017e+04 1.11 y 3.697e+04 1.24 y 2.865e+03 1.22 y 7.811e+03 1.24 y 4.960e+03 1.19 y 5.718e+03 1.06 y	2.027e+04 0.36756 6.398e+04 1.1604 4.917e+03 0.089179 2.150e+04 0.38985 8.289e+04 1.5033 6.398e+03 0.11604 1.753e+04 0.30906 1.084e+04 0.18608 1.180e+04 0.21898	1,2,3,4,7,8-HXCDF 1,2,3,6,7,8-HXCDF 2,3,4,6,7,8-HXCDF

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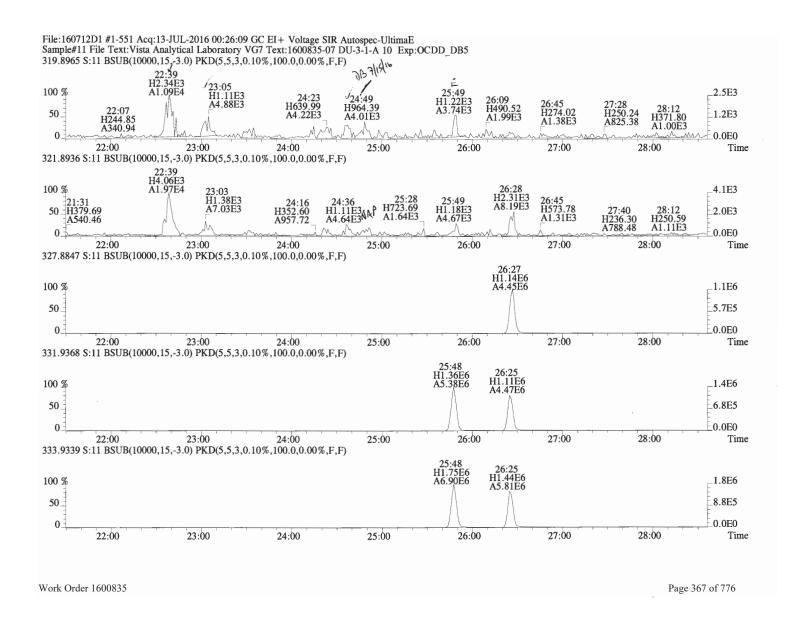
Totals class: HpCDF EMPC Entry #: 35

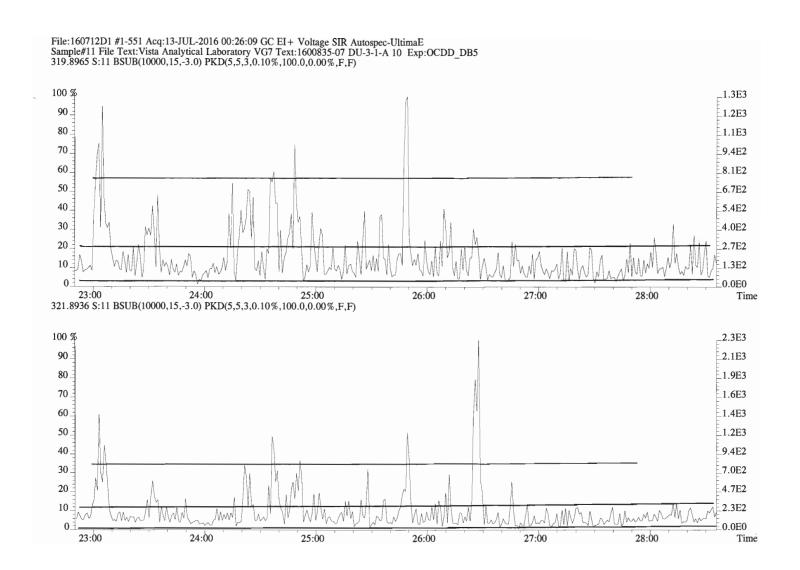
Run: 16 File: 160712D1 S: 11 I: 1 F: 4
Acquired: 13-JUL-16 00:26:09 Processed: 14-JUL-16 10:27:44

Total Concentration: 6.0572 Unnamed Concentration: 3.572

RT	ml Resp	m2 Resp RA	Resp Concentration	Name
	5.042e+04 7.671e+04	4.784e+04 1.05 y 7.076e+04 1.08 y		1,2,3,4,6,7,8-HpCDF
38:55	3.602e+03	3.087e+03 1.17 y	6.689e+03 0.16645	1,2,3,4,7,8,9-HpCDF

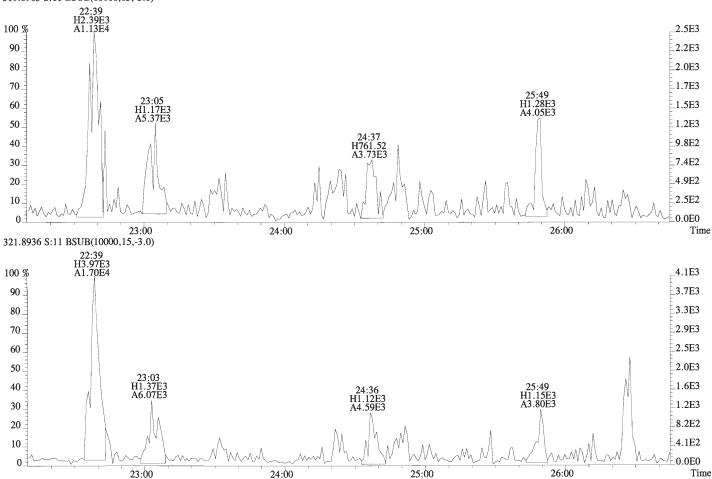
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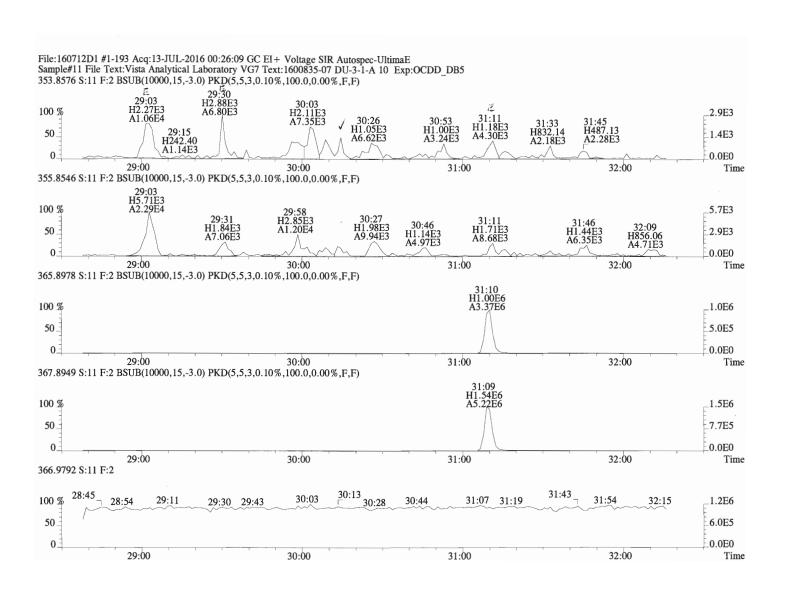


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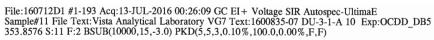
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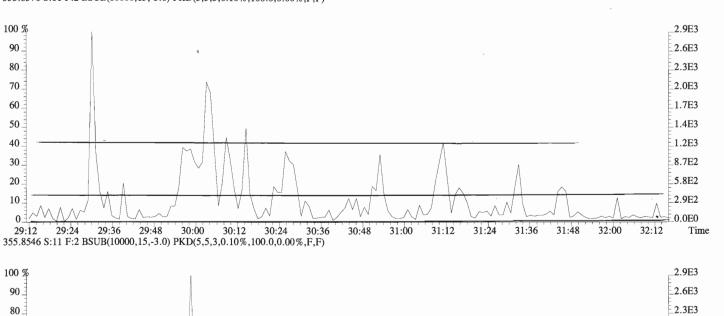


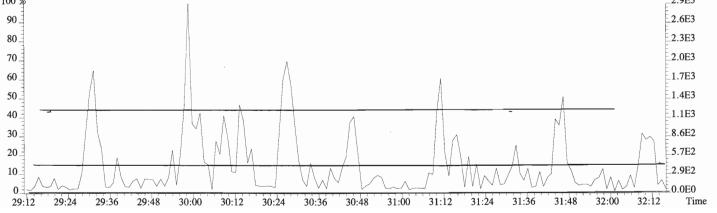
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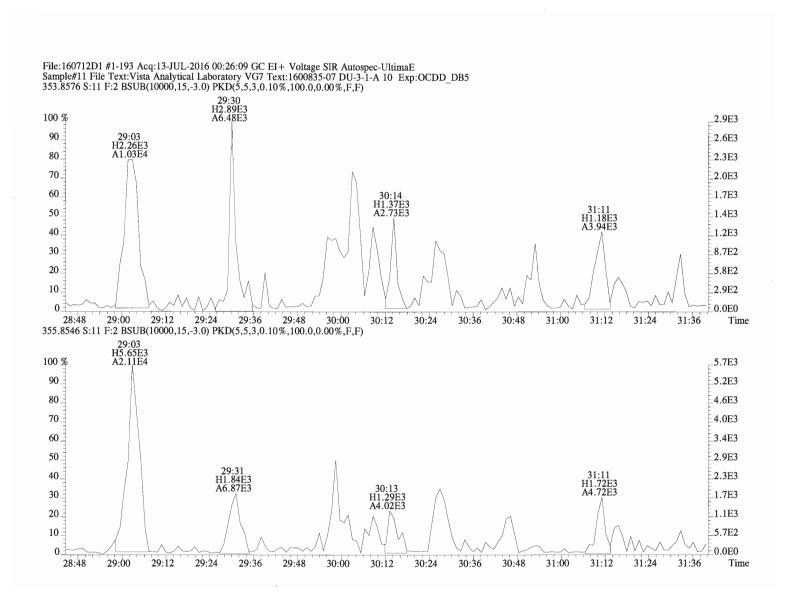
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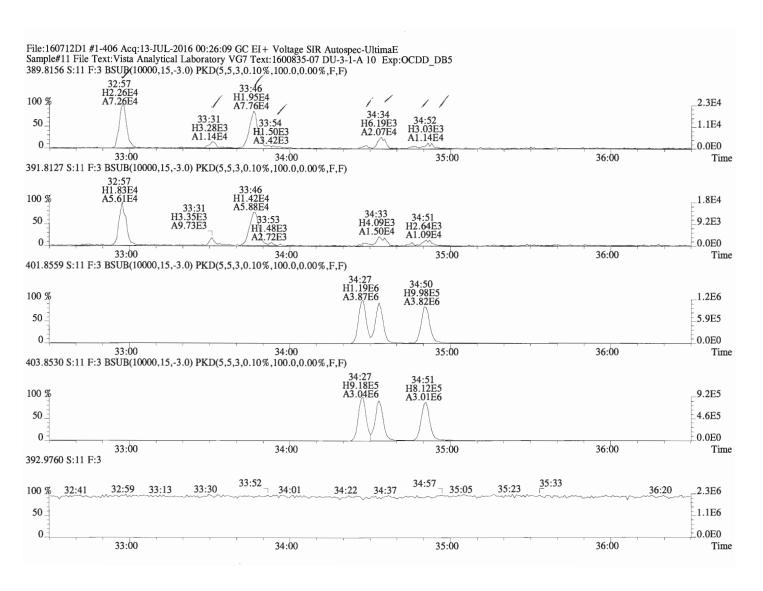




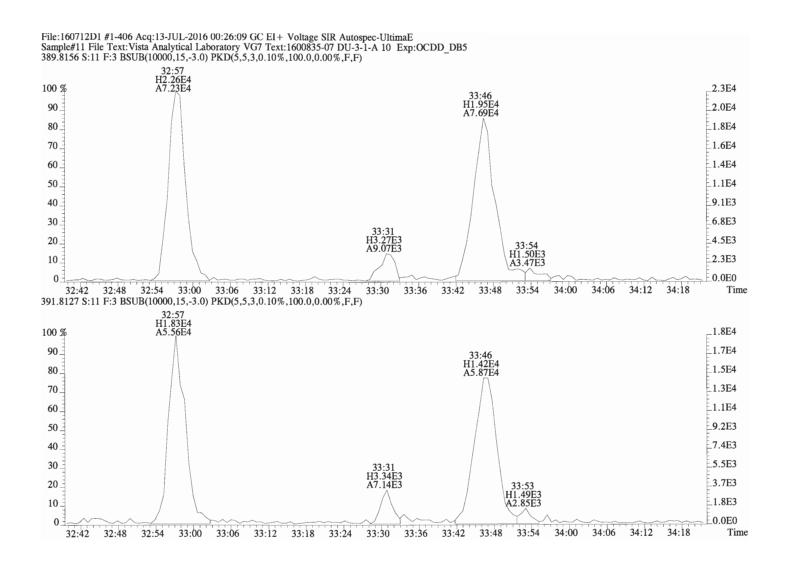
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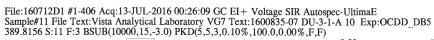
Work Order 1600835 Page 372 of 776

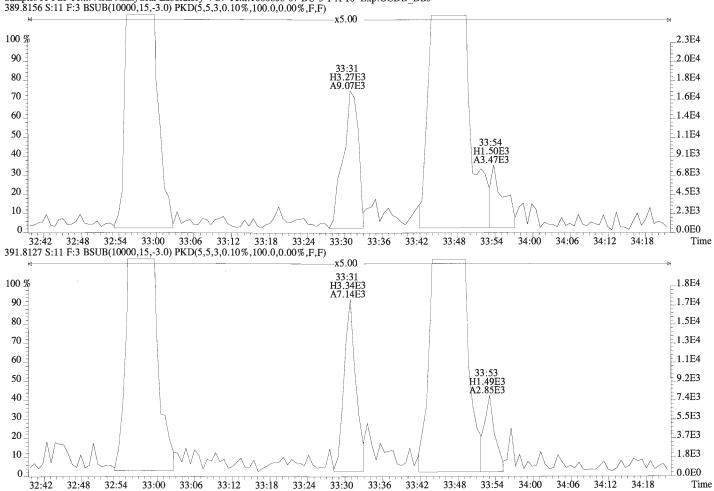


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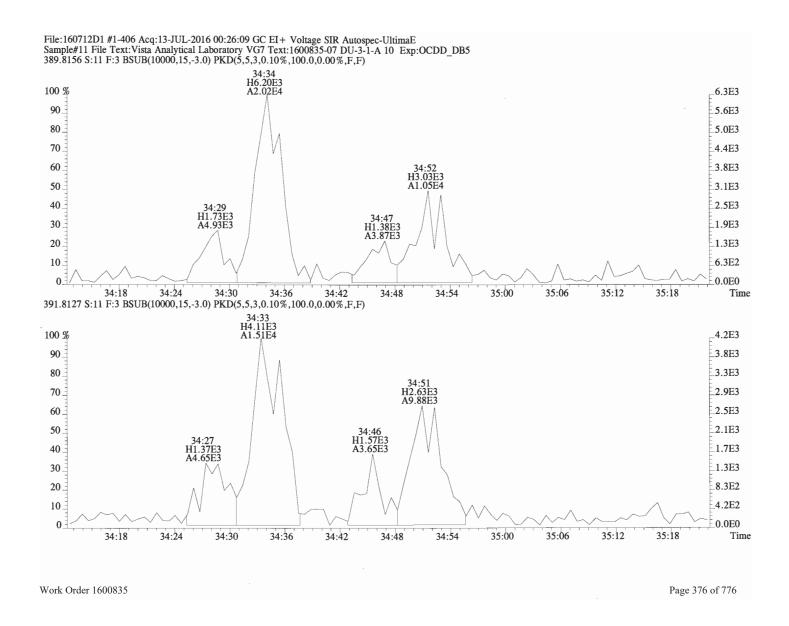


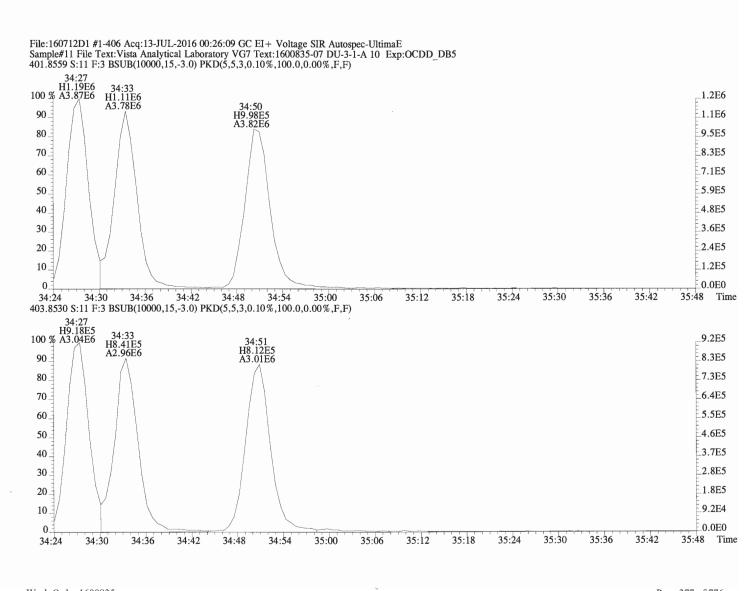
Work Order 1600835 Page 374 of 776



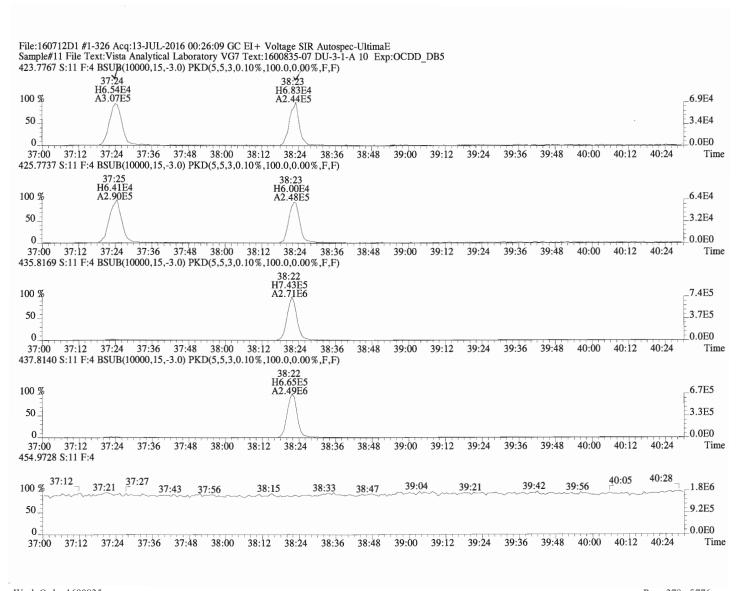


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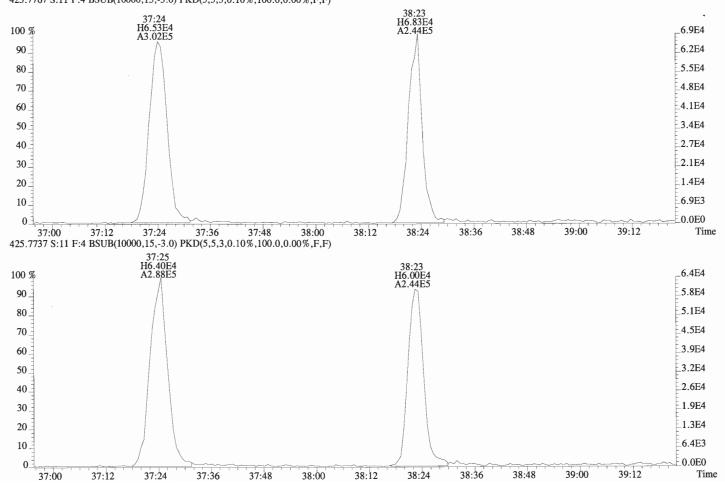


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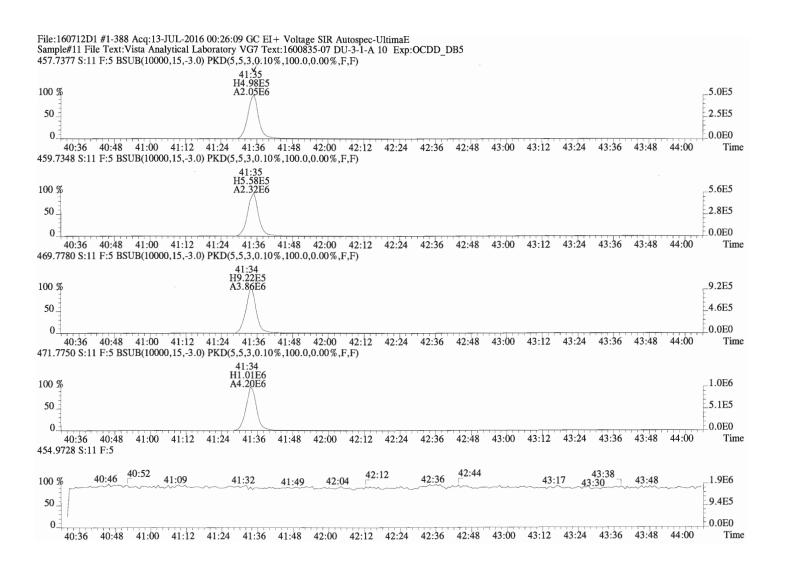


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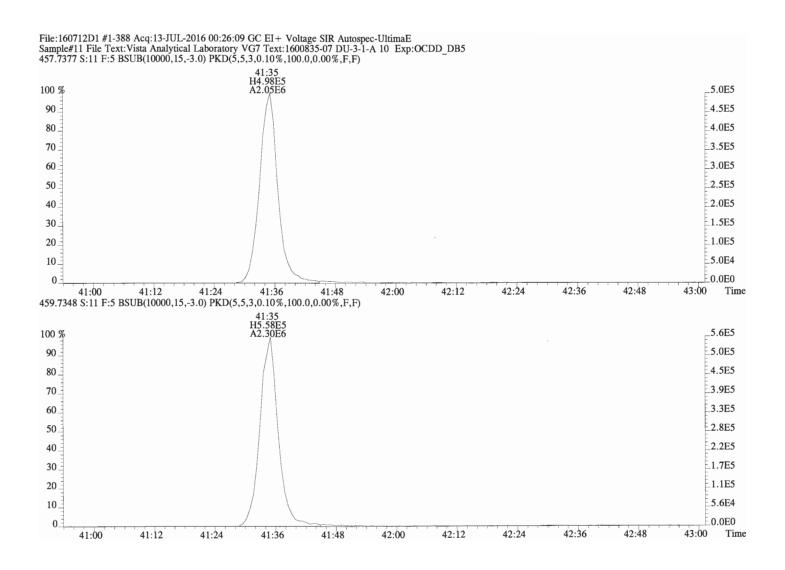
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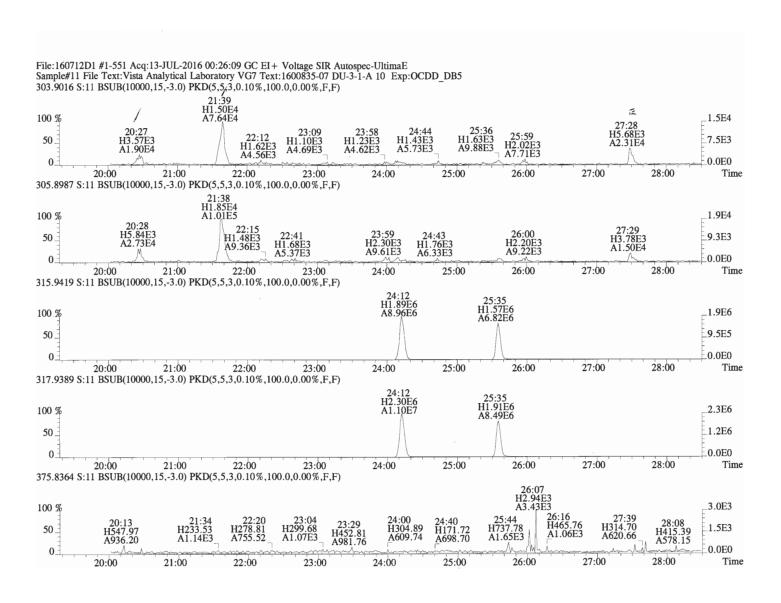
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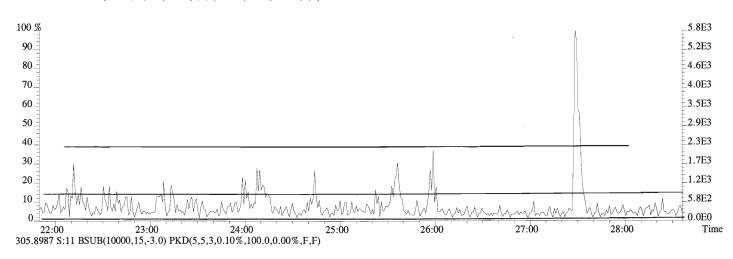


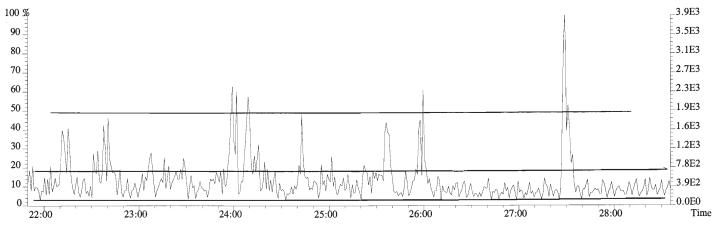
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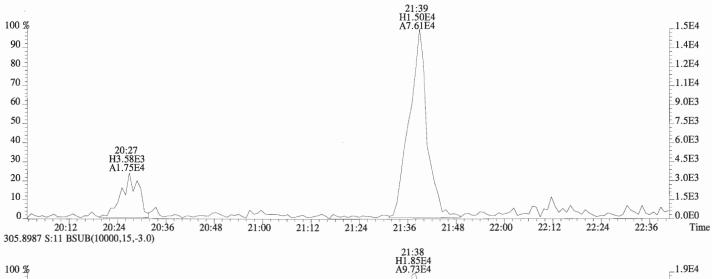
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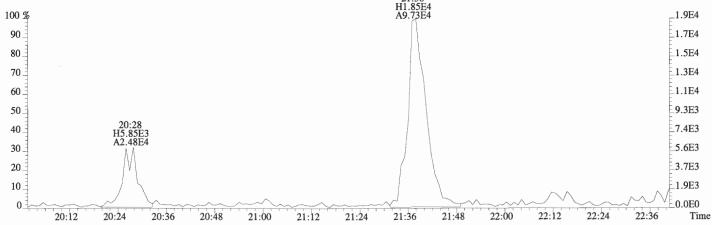




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File:160712D1 #1-551 Acq:13-JUL-2016 00:26:09 GC EI+ Voltage SIR Autospec-UltimaE Sample#11 File Text:Vista Analytical Laboratory VG7 Text:1600835-07 DU-3-1-A 10 Exp:OCDD_DB5 303.9016 S:11 BSUB(10000,15,-3.0)

10

0.

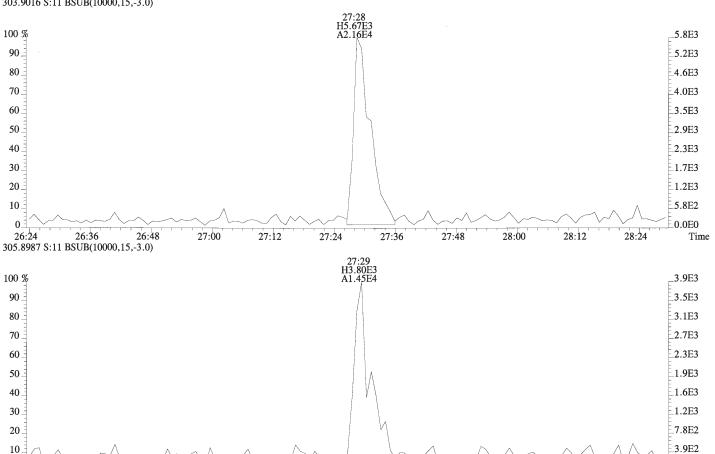
26:24

26:36

26:48

27:00

27:12



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27:36

27:48

27:24

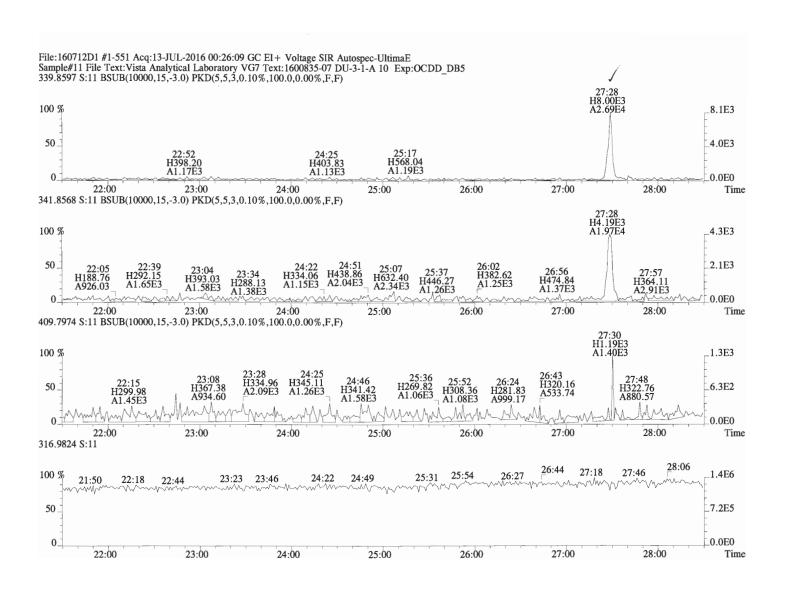
0.0E0

Time

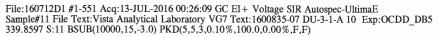
28:24

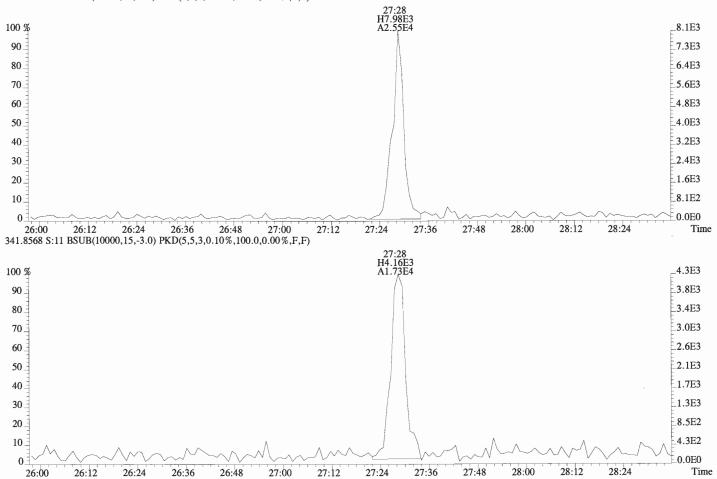
28:12

28:00

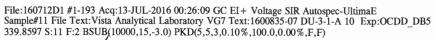


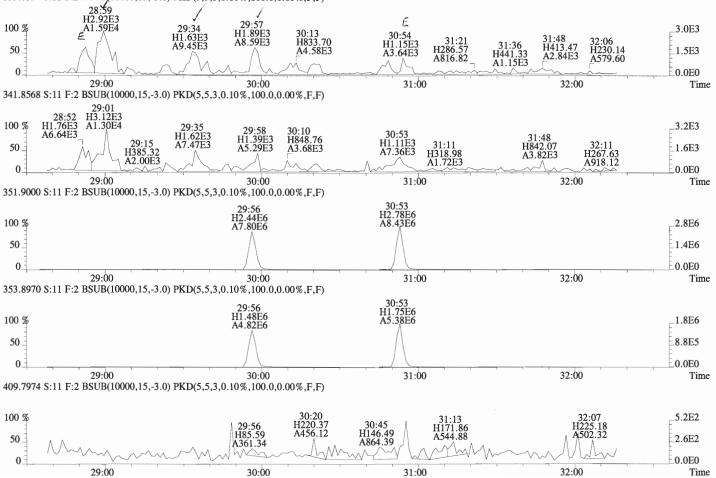
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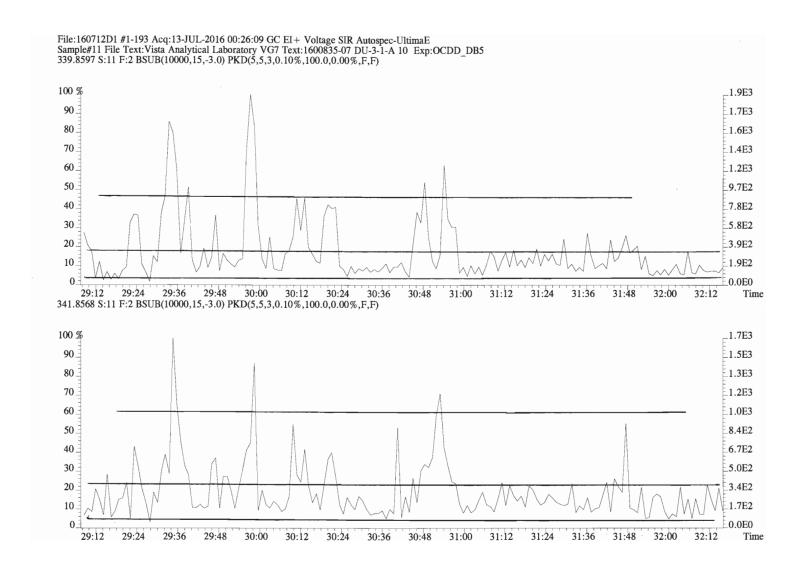
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 $\label{eq:file:160712D1 #1-193 Acq:13-JUL-2016 00:26:09 GC EI+ Voltage SIR Autospec-UltimaE Sample#11 File Text: Vista Analytical Laboratory VG7 Text: 1600835-07 DU-3-1-A 10 Exp:OCDD_DB5 339.8597 S:11 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10\%,100.0,0.00\%,F,F)\\$

28:48

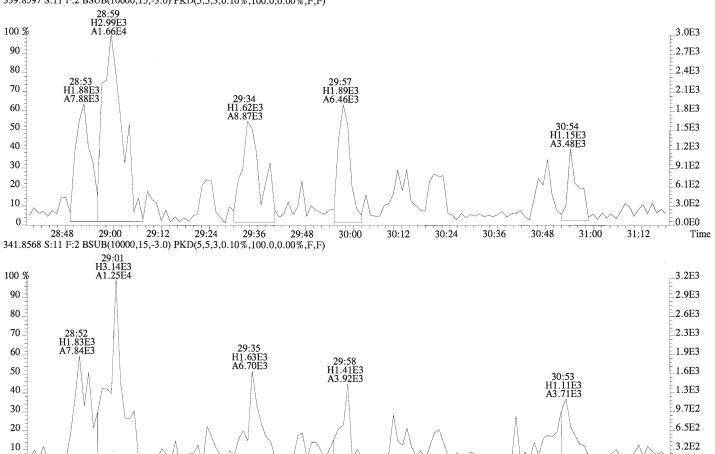
29:00

29:12

29:24

29:36

29:48



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30:00

30:12

30:24

30:36

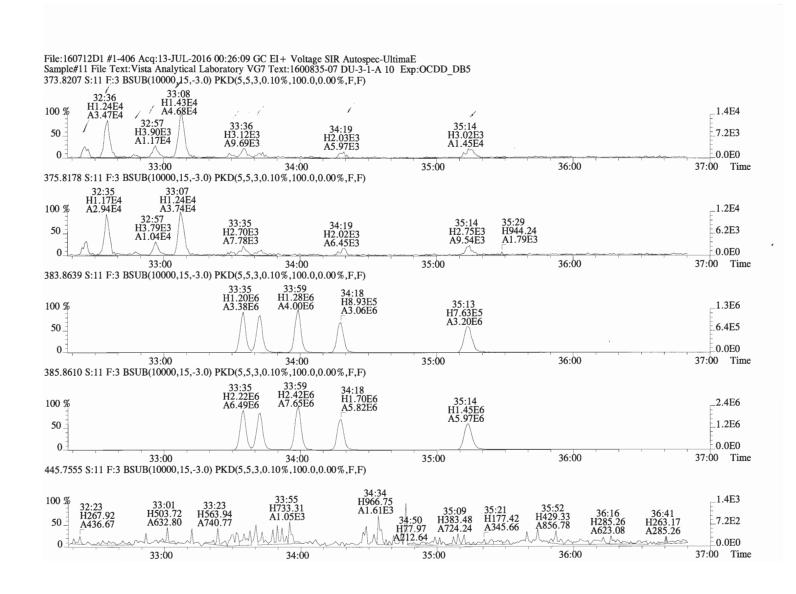
30:48

0.0E0

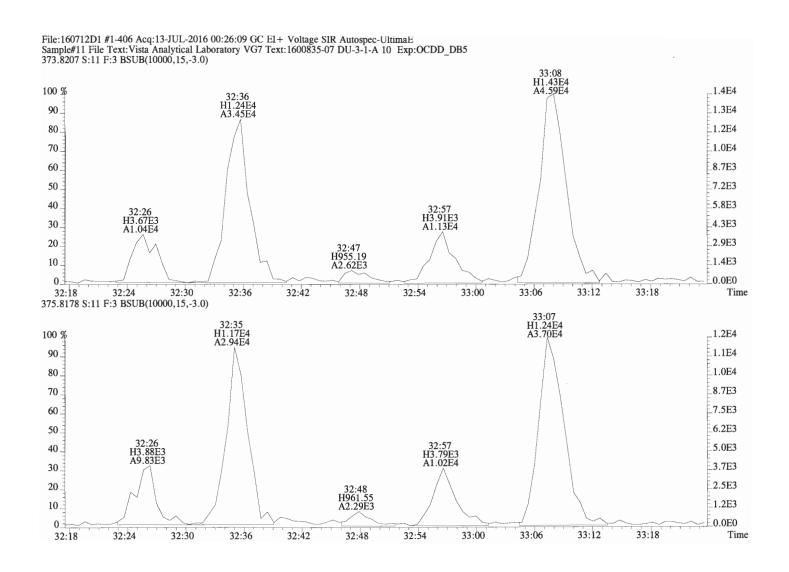
Time

31:00

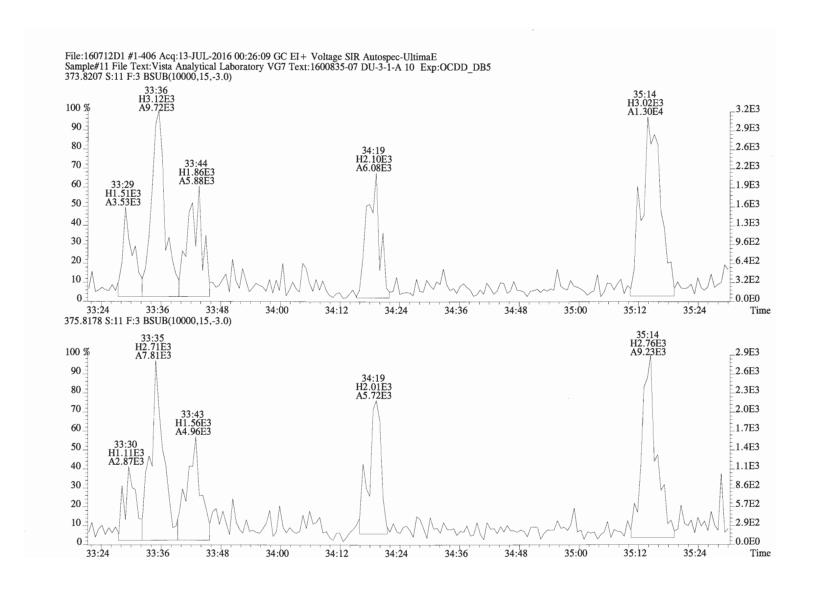
31:12



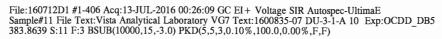
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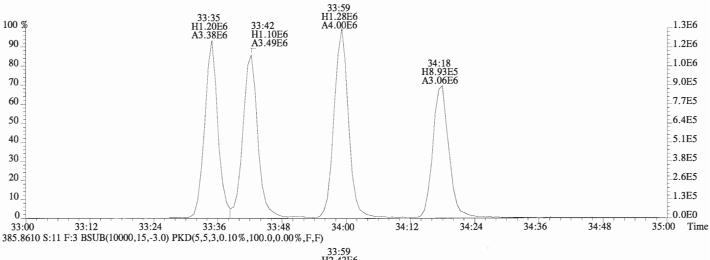


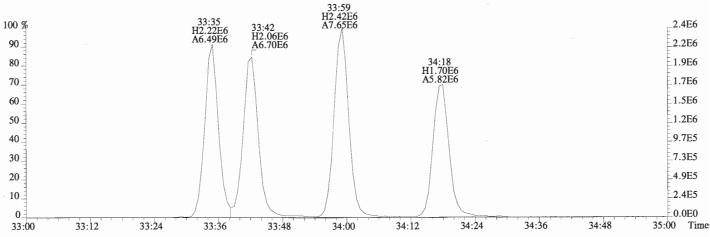
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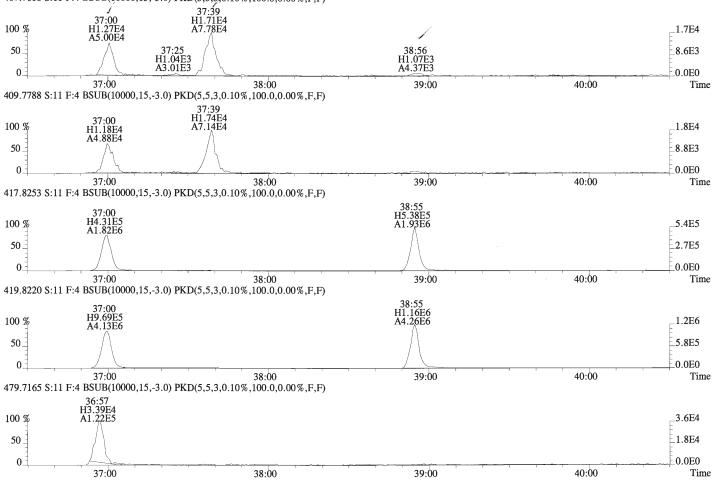






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File:160712D1 #1-326 Acq:13-JUL-2016 00:26:09 GC EI+ Voltage SIR Autospec-UltimaE Sample#11 File Text:Vista Analytical Laboratory VG7 Text:1600835-07 DU-3-1-A 10 Exp:OCDD_DB5 407.7818 S:11 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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File:160712D1 #1-326 Acq:13-JUL-2016 00:26:09 GC EI+ Voltage SIR Autospec-UltimaE Sample#11 File Text:Vista Analytical Laboratory VG7 Text:1600835-07 DU-3-1-A 10 Exp:OCDD_DB5 407.7818 S:11 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10\%,100.0,0.00\%,F,F)

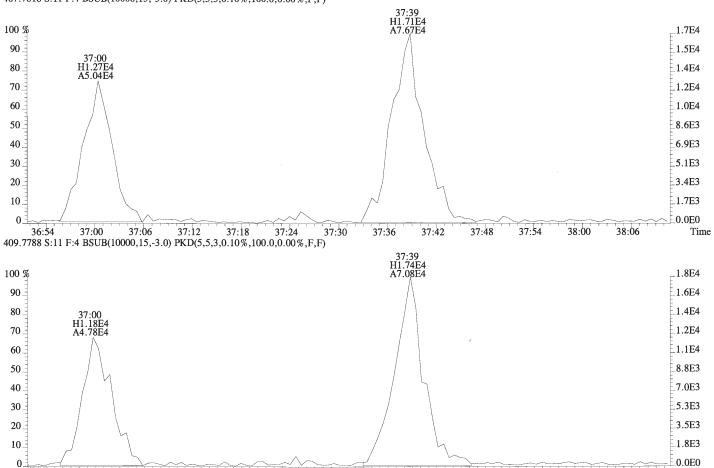
36:54

37:00

37:06

37:12

37:18



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37:36

37:42

37:48

37:54

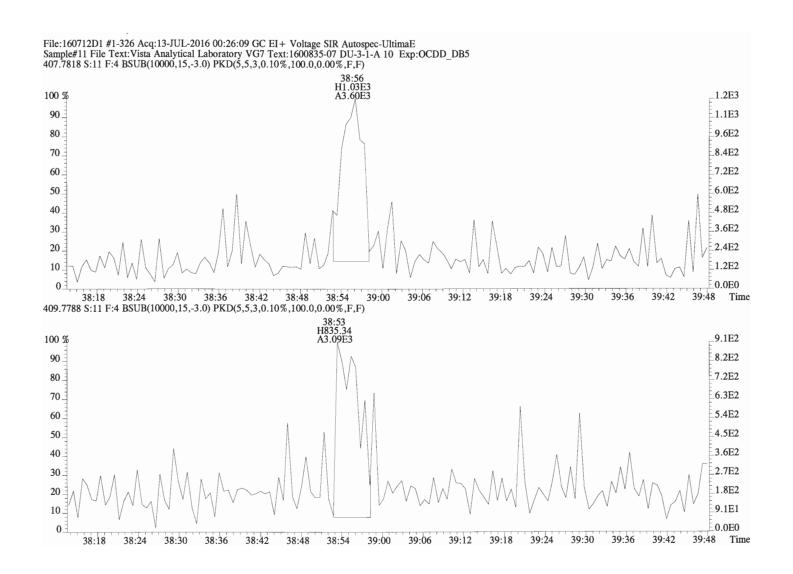
38:00

38:06

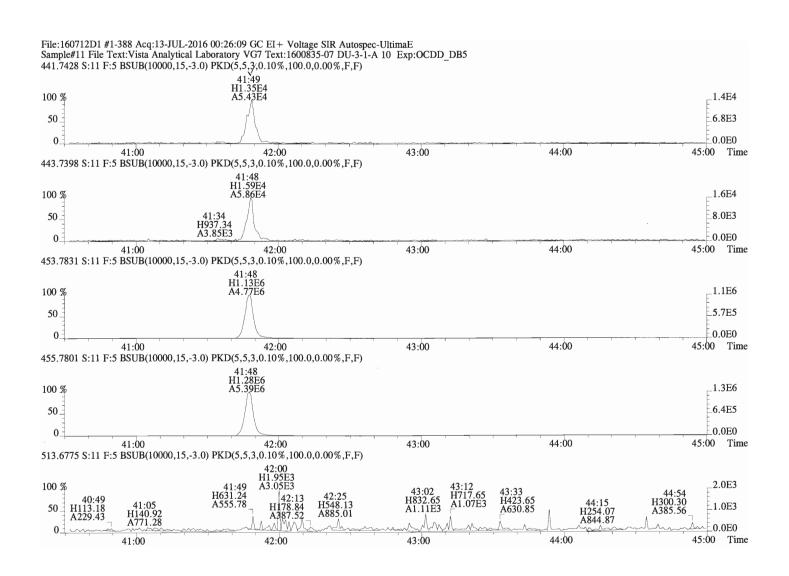
Time

37:30

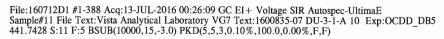
37:24

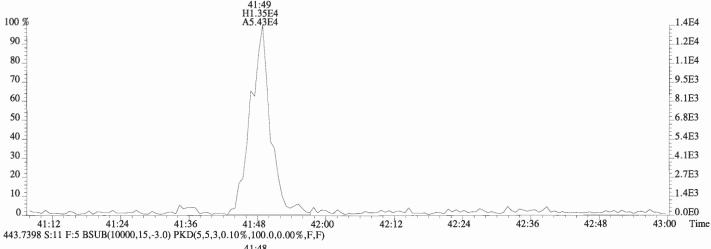


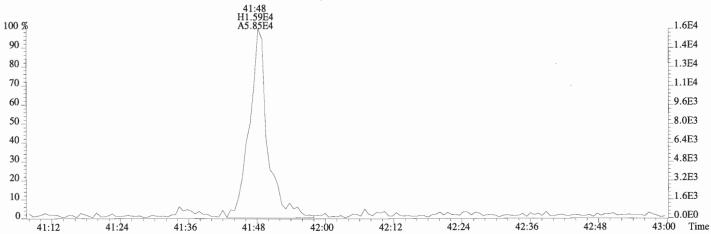
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lient ID: DU-3-1-B ab ID: 1600835-08		lename: 10 Column II			-	3-JUL-16 01 37-4-7-16		vol:10	.100		al: ST160712D1 AL: NA	-1			Page 11	of 11
151 1000033 00	-	oozumi z	D. BD 3.	1001	. 1015	37-4-7-10	wc/	VOI.10	.100	Bilder	E. IG					
Name	Resp	RA	RRF	RT	RRT	Conc	Q noise	Fac	DL	Name		Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	*	* n	1.13	NotFa	*	*	304	2.5	0.0850	Total I	etra-Dioxins	0.877	0.877		*	*
1,2,3,7,8-PeCDD	4.35e+03	0.89 n	0.96	31:10	1.000	0.10447	*	2.5	*	Total F	enta-Dioxins	0.957	1.20		*	*
1,2,3,4,7,8-HxCDD	4.11e+03	1.08 y	1.00	34:27	1.000	0.11687	*	2.5	*	Total H	Mexa-Dioxins	3.84	3.84		*	*
1,2,3,6,7,8-HxCDD	1.06e+04	1.06 y	1.10	34:34	1.000	0.29603	*	2.5	*	Total H	Mepta-Dioxins	10.4	10.4		*	*
1,2,3,7,8,9-HxCDD	5.55e+03	1.09 y	1.05	34:51	1.000	0.15467	*	2.5	*	Total T	etra-Furans	3.20	3.35		*	*
1,2,3,4,6,7,8-HpCDD	1.14e+05	1.03 y	1.05	38:23	1.000	4.2660	*	2.5	*	Total F	enta-Furans	1.2115	1.2115		*	*
OCDD	6.86e+05	0.90 y	0.96	41:34	1.000	36.829	*	2.5	*	Total H	lexa-Furans	1.89	2.01		*	*
										Total H	lepta-Furans	1.55	1.55		*	*
2,3,7,8-TCDF	*	* n	1.12	NotF		*	638	2.5	0.136							
1,2,3,7,8-PeCDF	*	* n	1.01	NotF		*	303		0.0966							
2,3,4,7,8-PeCDF	*	* n	0.90	Not F		*	303		0.0996							
1,2,3,4,7,8-HxCDF		0.81 n	1.16	33:36	1.000	0.12391	*	2.5	*							
1,2,3,6,7,8-HxCDF	7.69e+03	1.31 y	1.16	33:43	1.000	0.13097	*	2.5	*							
2,3,4,6,7,8-HxCDF		-	1.23	34:18	1.000	0.14676	*	2.5	*							
1,2,3,7,8,9-HxCDF	1.77e+04	1.14 y	1.13	35:14	1.000	0.36629	*	2.5	*							
1,2,3,4,6,7,8-HpCDF	3.56e+04	1.18 y	1.44	37:00	1.000	0.83313	*	2.5	*							
1,2,3,4,7,8,9-HpCDF	*	* n	1.31	Not Fn	*	*	313	2.5	0.108							
OCDF	2.68e+04	1.02 y	1.03	41:48	1.000	1.0393	*	2.5	*							
										Rec	Qual					
13C-2,3,7,8-TCDD	1.06e+07	-	1.01	26:25	1.024	183.76				92.8						
13C-1,2,3,7,8-PeCDD	8.57e+06	0.64 y	1.10	31:10	1.208	135.43				68.4						
13C-1,2,3,4,7,8-HxCDD	6.95e+06	1.25 y	0.72	34:27	1.014	174.00				87.9						
13C-1,2,3,6,7,8-HxCDD		1.28 y	0.73	34:33		161.07				81.3						
13C-1,2,3,7,8,9-HxCDD		-	0.70	34:51		174.20				88.0						
13C-1,2,3,4,6,7,8-HpCDD		1.09 y	0.66		1.129	137.30				69.3						
13C-OCDD		0.91 y	0.66	41:34		209.61				52.9						
13C-2,3,7,8-TCDF		0.81 y	0.90	25:35		191.52				96.7						
13C-1,2,3,7,8-PeCDF		1.59 y	0.98		1.160	136.90				69.1						
13C-2,3,4,7,8-PeCDF			1.15		1.197	132.76				67.0						
13C-1,2,3,4,7,8-HxCDF		0.51 y	1.01		0.988	169.54				85.6						
13C-1,2,3,6,7,8-HxCDF		0.52 y	1.10	33:42		165.30				83.5						
13C-2,3,4,6,7,8-HxCDF		0.52 y	0.95		1.009	168.80				85.2						
13C-1,2,3,7,8,9-HxCDF		0.51 y	0.83	35:14		183.76				92.8						
13C-1,2,3,4,6,7,8-HpCDF		0.44 y	0.70		1.088	151.51				76.5						
13C-1,2,3,4,7,8,9-HpCDF		0.44 y	0.72		1.145	146.00				73.7						
13C-OCDF	9.90e+06	0.90 у	0.82	41:48	1.230	216.53				54.7						
37Cl-2,3,7,8-TCDD	4.57e+06		1.14	26:27	1.025	70.086				88.5	Integra	ations	Revi	ewed		
											by	DR	by	4	11	
RT 13C-1,2,3,4-TCDD		0.79 y	1.00	25:48		198.02					Analyst:	1	Anal	yst: 🔏	12	
13C-1,2,3,4-TCDF		0.81 y	1.00	24:13		198.02						. 1				
RT 13C-1,2,3,4,6,9-HxCDF	1 100.07	0.52 y	1.00	33:59	*	198.02						1 1				

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Totals class: TCDD EMPC Entry #: 19

Run: 17 File: 160712D1 S: 12 I: 1 F: 1 Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 0.87665 Unnamed Concentration: 0.877

RT ml Resp m2 Resp RA Resp Concentration Name

22:39 1.321e+04 1.665e+04 0.79 y 2.986e+04 0.49095 23:03 6.598e+03 7.602e+03 0.87 y 1.420e+04 0.23346 24:37 4.177e+03 5.084e+03 0.82 y 9.261e+03 0.15225

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Totals class: PeCDD EMPC Entry #: 21

Run: 17 File: 160712D1 S: 12 I: 1 F: 2 Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 1.1997 Unnamed Concentration: 1.095

RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
	9.590e+03	1.386e+04 0.69 y		
29:30	2.469e+03	3.488e+03 0.71 y	5.957e+03 0.14311	
29:57	4.101e+03	3.529e+03 1.16 n	5.752e+03 0.13821	
30:26	4.345e+03	6.084e+03 0.71 y	1.043e+04 0.25056	
31:10	2.376e+03	2.668e+03 0.89 n	4.348e+03 0.10447	1,2,3,7,8-PeCDD

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Totals class: HxCDD EMPC Entry #: 23

Run: 17 File: 160712D1 S: 12 I: 1 F: 3
Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 3.8417 Unnamed Concentration: 3.274

RT	m1 Resp	m2 Resp RA		Resp	Concentration	Name
32:57	2.776e+04	2.442e+04 1.	14 y	5.218e+04	1.4615	
33:30	7.456e+03	5.282e+03 1.	41 y	1.274e+04	0.35678	
33:46	2.439e+04	1.848e+04 1.	32 y	4.287e+04	1.2007	
33:53	3.066e+03	2.227e+03 1.	38 y	5.293e+03	0.14826	
34:27	2.135e+03	1.978e+03 1.	08 y	4.114e+03	0.11687	1,2,3,4,7,8-HxCDD
34:34	5.462e+03	5.172e+03 1.	06 y	1.063e+04	0.29603	1,2,3,6,7,8-HxCDD
34:46	2.173e+03	1.645e+03 1.	32 y	3.818e+03	0.10694	
34:51	2.892e+03	2.659e+03 1.	09 y	5.550e+03	0.15467	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 17 File: 160712D1 S: 12 I: 1 F: 4 Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 10.381 Unnamed Concentration: 6.115

RT m1 Resp m2 Resp RA Resp Concentration Name

37:24 7.959e+04 8.451e+04 0.94 y 1.641e+05 6.1149 38:23 5.797e+04 5.651e+04 1.03 y 1.145e+05 4.2660 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 17 File: 160712D1 S: 12 I: 1 F: 1 Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 3.3498 Unnamed Concentration: 3.350

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
20:27	1.978e+04	2.239e+04 0.88 y	4.218e+04	0.46412	
21:38	8.081e+04	1.054e+05 0.77 y	1.862e+05	2.0493	
23:59	9.225e+03	1.106e+04 0.83 y	2.029e+04	0.22322	
24:09	1.115e+04	1.387e+04 0.80 y	2.502e+04	0.27536	
25:57	8.006e+03	9.163e+03 0.87 y	1.717e+04	0.18893	
27:29	1.708e+04	7.640e+03 2.24 n	1.352e+04	0.14882	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 17 File: 160712D1 S: 12 I: 1 F: 1
Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 0.39770 Unnamed Concentration: 0.398

RT m1 Resp m2 Resp RA Resp Concentration Name

27:29 1.454e+04 1.090e+04 1.33 y 2.544e+04 0.39770

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Totals class: PeCDF EMPC Entry #: 31

Run: 17 File: 160712D1 S: 12 I: 1 F: 2 Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 0.81380 Unnamed Concentration: 0.814

RT m1 Resp m2 Resp RA Resp Concentration Name

 28:52
 6.516e+03
 3.763e+03
 1.73 y
 1.028e+04
 0.16066

 29:00
 1.635e+04
 1.118e+04
 1.46 y
 2.752e+04
 0.43020

 29:34
 8.785e+03
 5.478e+03
 1.60 y
 1.426e+04
 0.22294

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Totals class: HxCDF EMPC Entry #: 33

Run: 17 File: 160712D1 S: 12 I: 1 F: 3 Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 2.0128 Unnamed Concentration: 1.245

RT	ml Resp	m2 Resp RA	Res	p Concentration	Name
32:26	6.186e+03	5.189e+03 1.	19 y 1.137e+0	0.20860	
32:34	1.693e+04	1.531e+04 1.	11 y 3.224e+0	0.59130	
33:07	1.025e+04	7.829e+03 1.	31 y 1.807e+0	0.33146	
33:29	3.426e+03	2.764e+03 1.	24 y 6.189e+0	0.11351	
33:36	3.836e+03	4.732e+03 0.	81 n 6.929e+0	0.12391	1,2,3,4,7,8-HxCDF
33:43	4.360e+03	3.331e+03 1.	31 y 7.691e+0	0.13097	1,2,3,6,7,8-HxCDF
34:18	4.391e+03	3.704e+03 1.	19 y 8.095e+0	0.14676	2,3,4,6,7,8-HxCDF
35:14	9.427e+03	8.235e+03 1.	14 y 1.766e+0	0.36629	1,2,3,7,8,9-HxCDF

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Totals class: HpCDF EMPC Entry #: 35

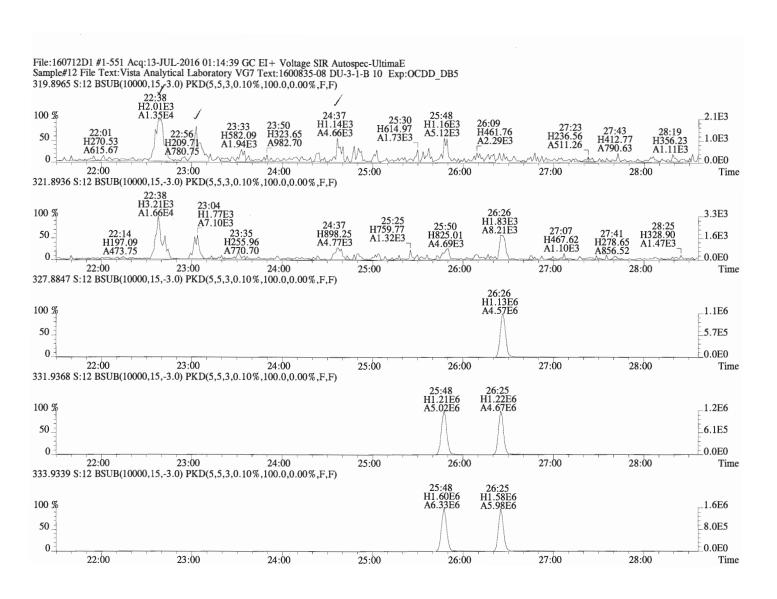
Run: 17 File: 160712D1 S: 12 I: 1 F: 4 Acquired: 13-JUL-16 01:14:39 Processed: 14-JUL-16 10:27:46

Total Concentration: 1.5497 Unnamed Concentration: 0.717

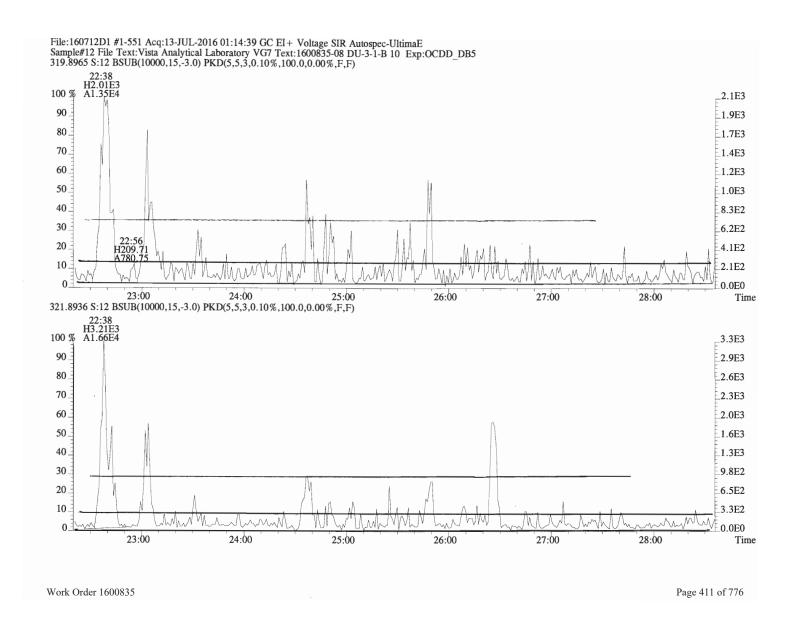
RT m1 Resp m2 Resp RA Resp Concentration Name

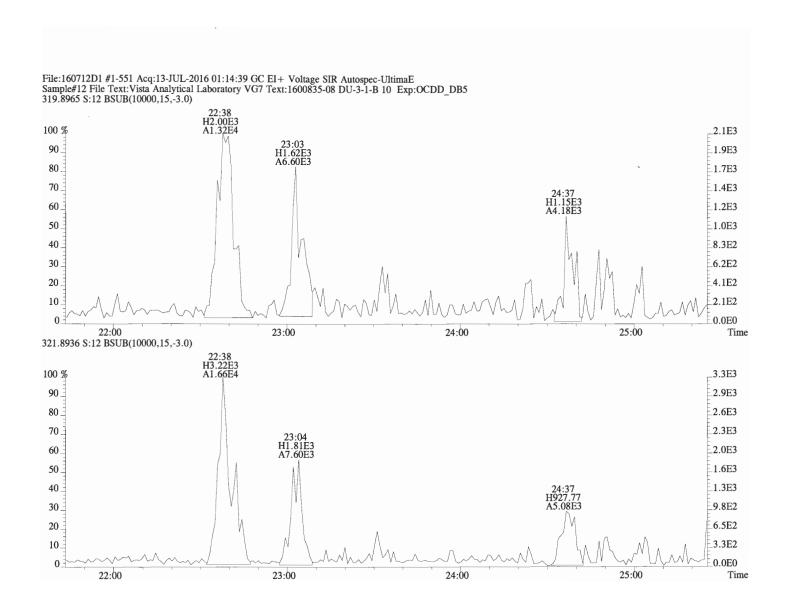
37:00 1.922e+04 1.635e+04 1.18 y 3.557e+04 0.83313 1,2,3,4,6,7,8-HpCDF 37:38 1.536e+04 1.375e+04 1.12 y 2.911e+04 0.71654

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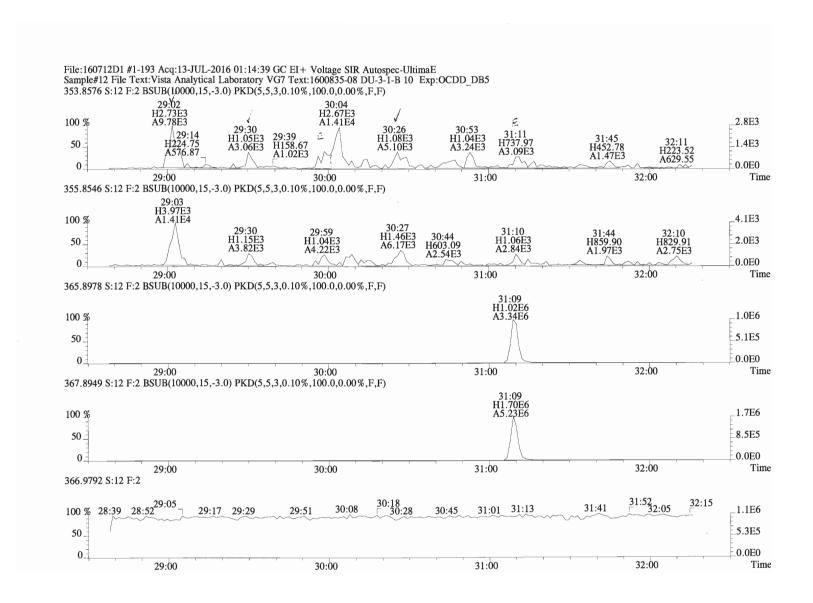


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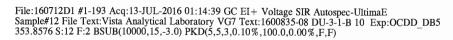


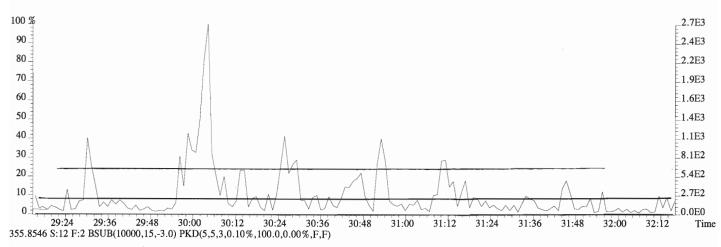


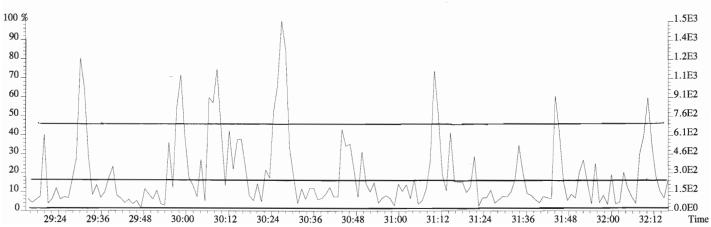
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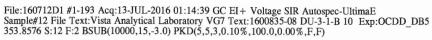
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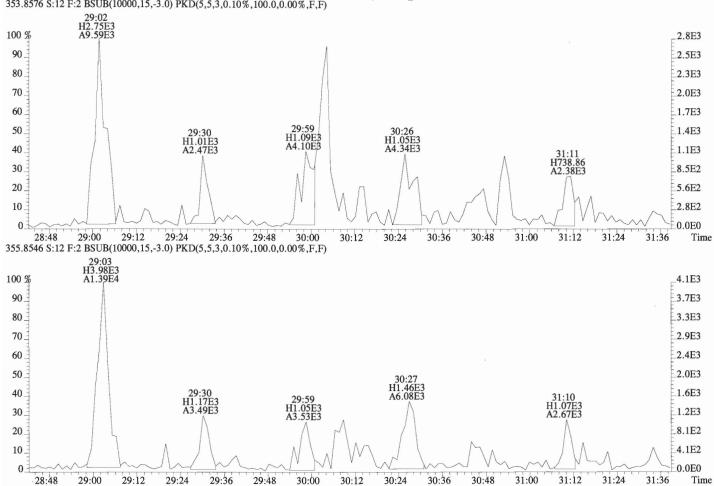




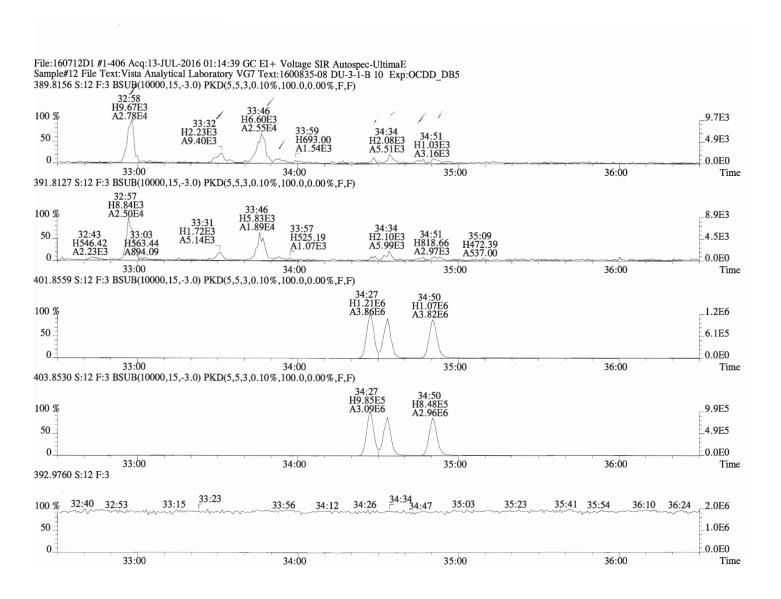


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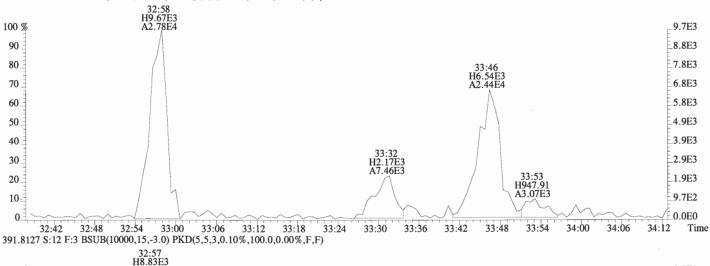


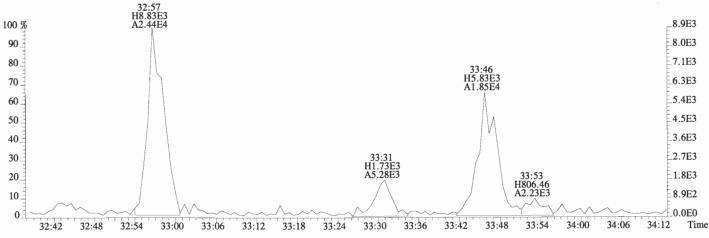
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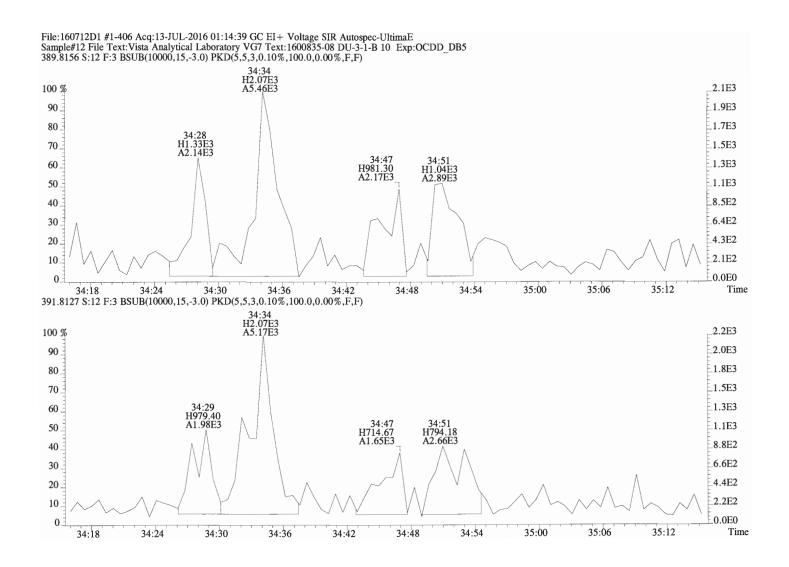
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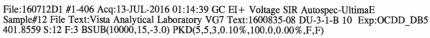


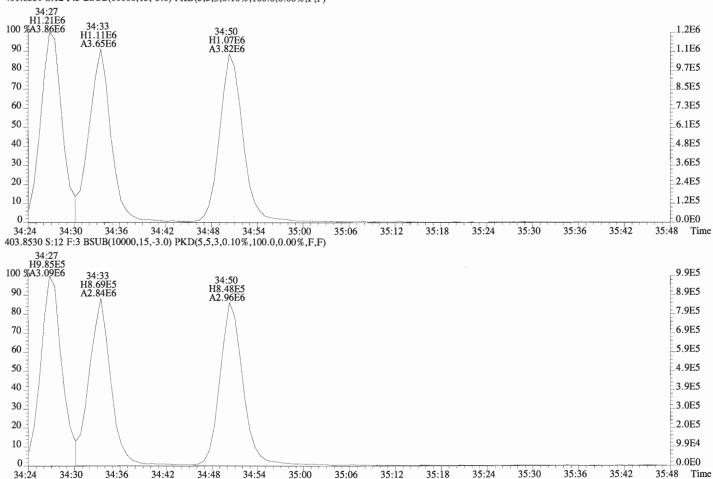


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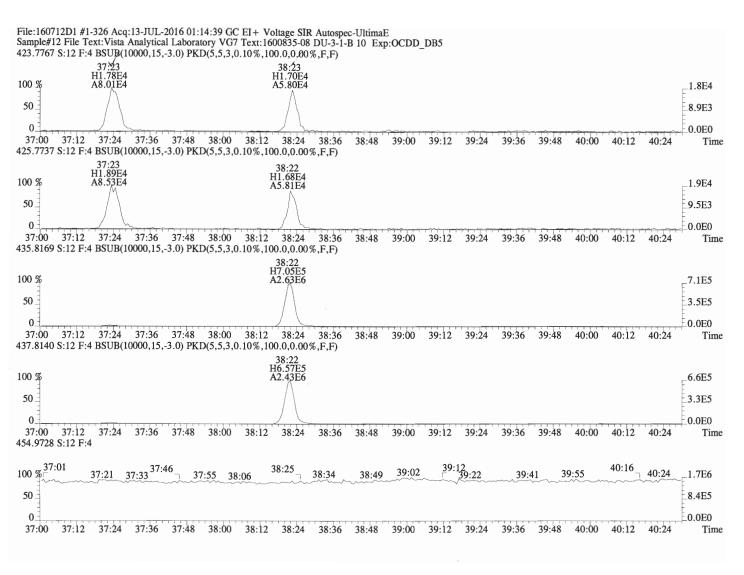


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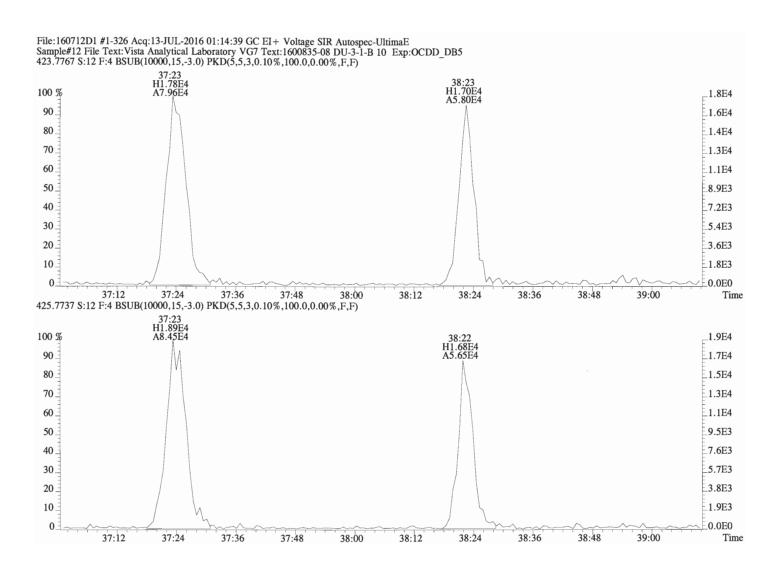




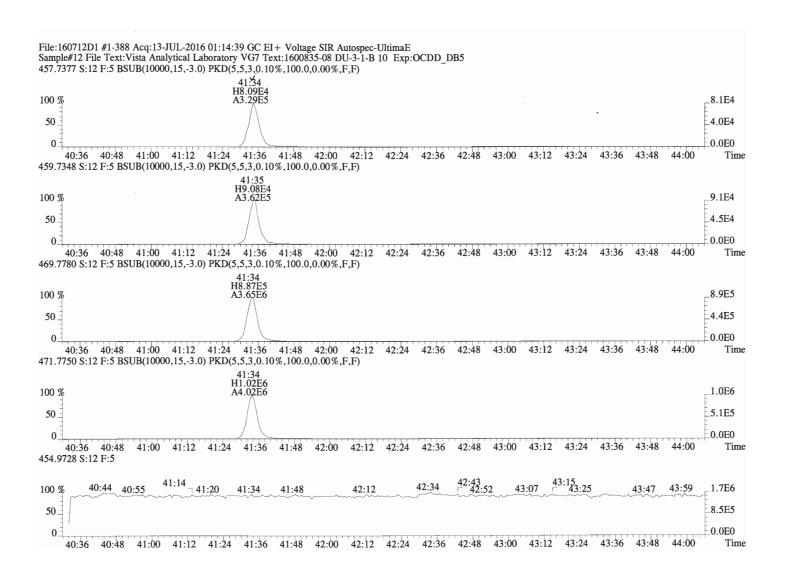
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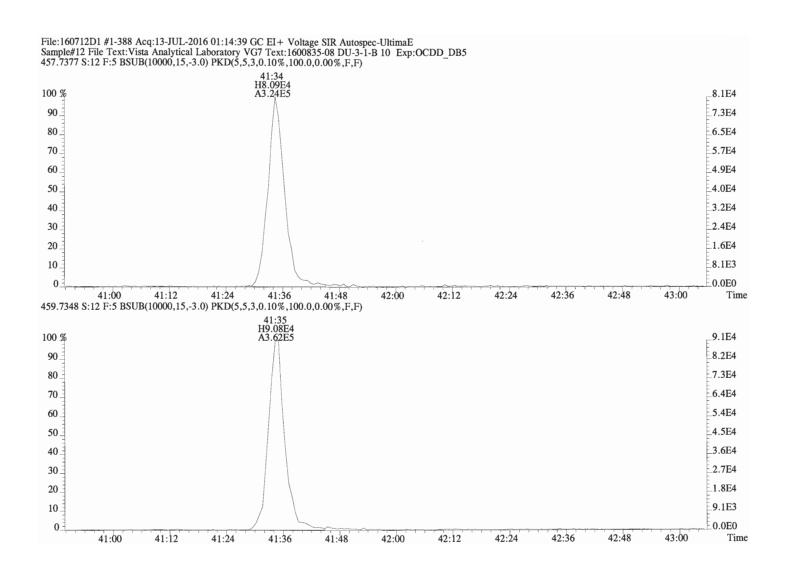
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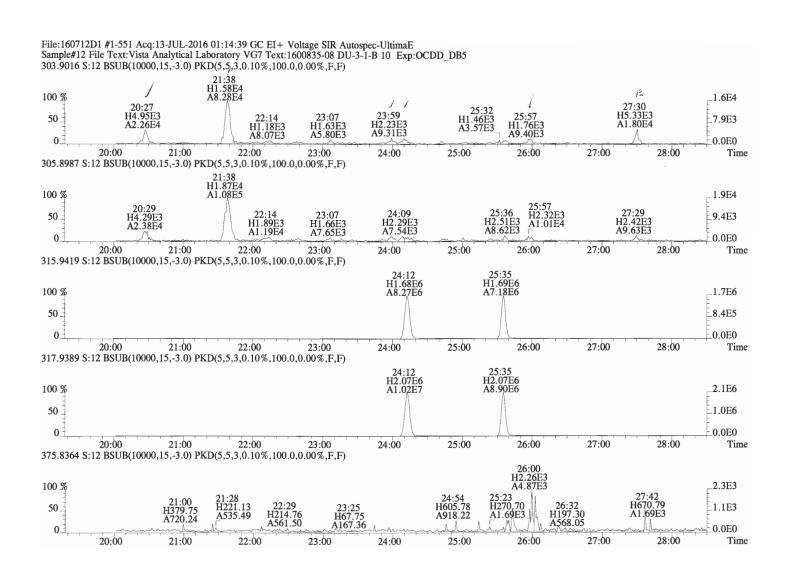
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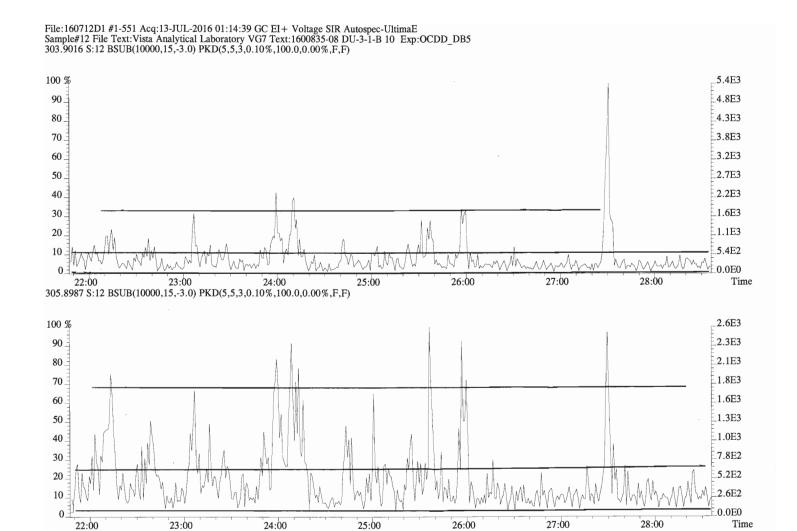
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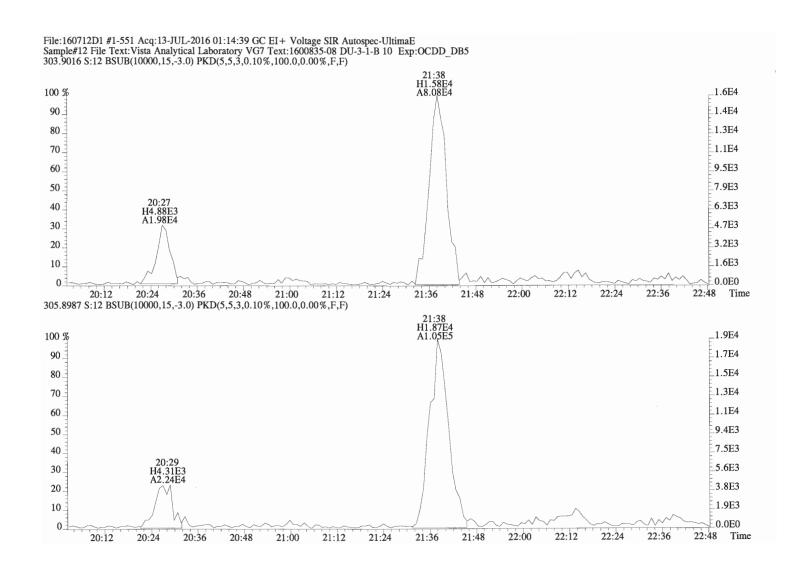
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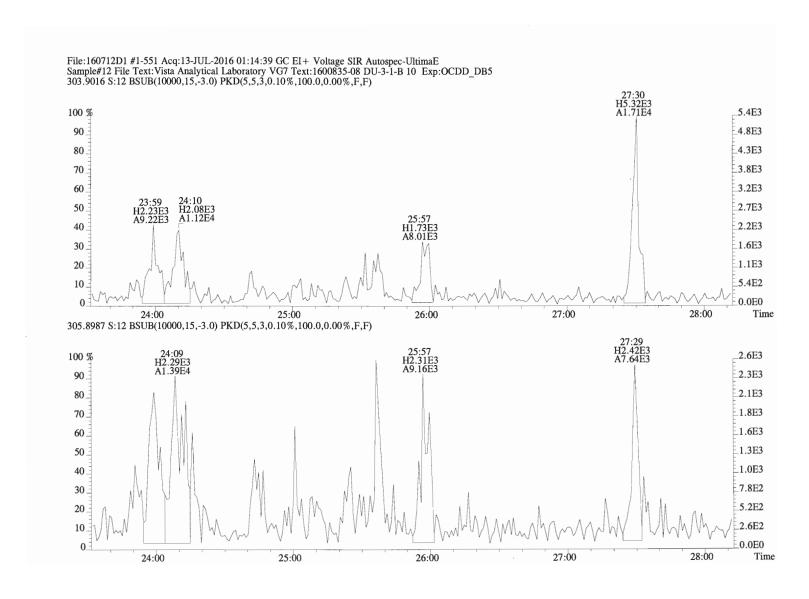
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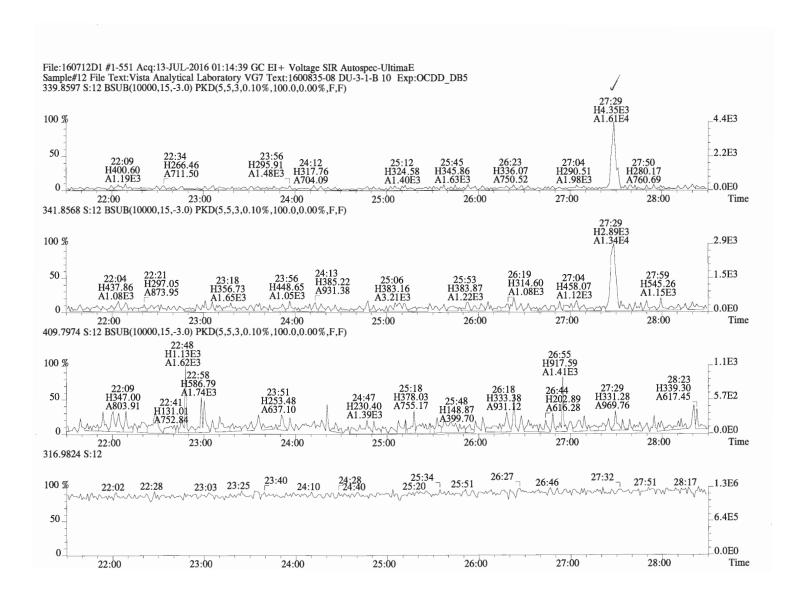
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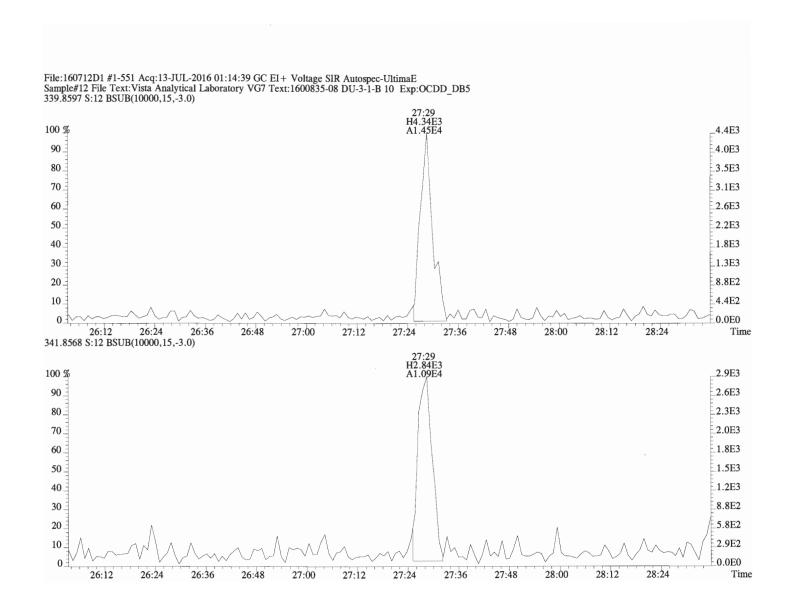
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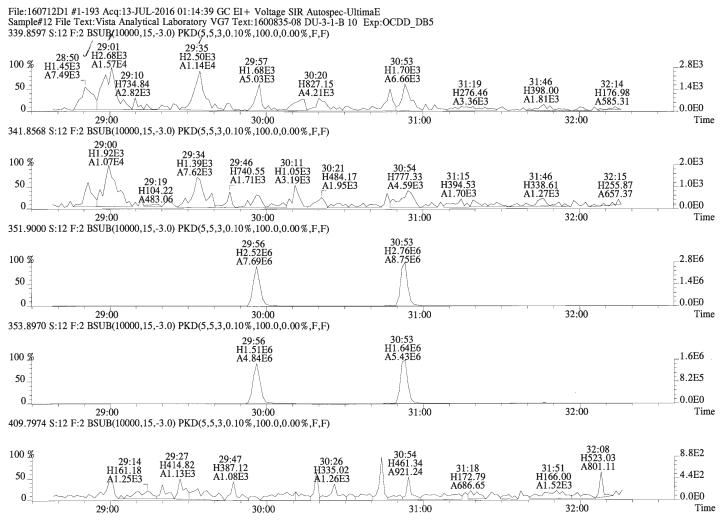
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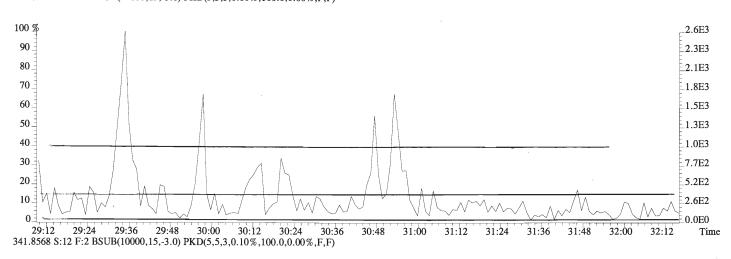
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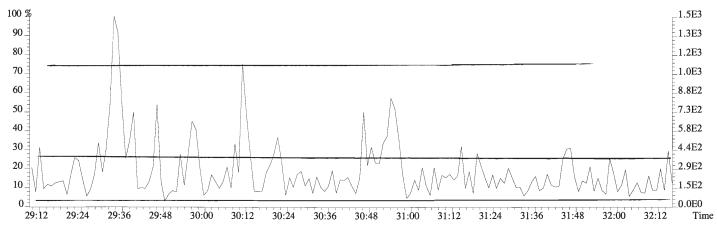


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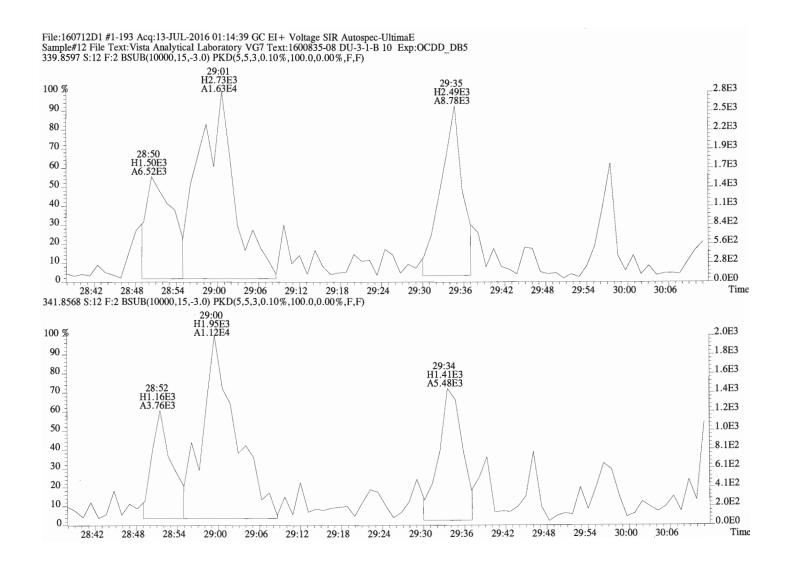
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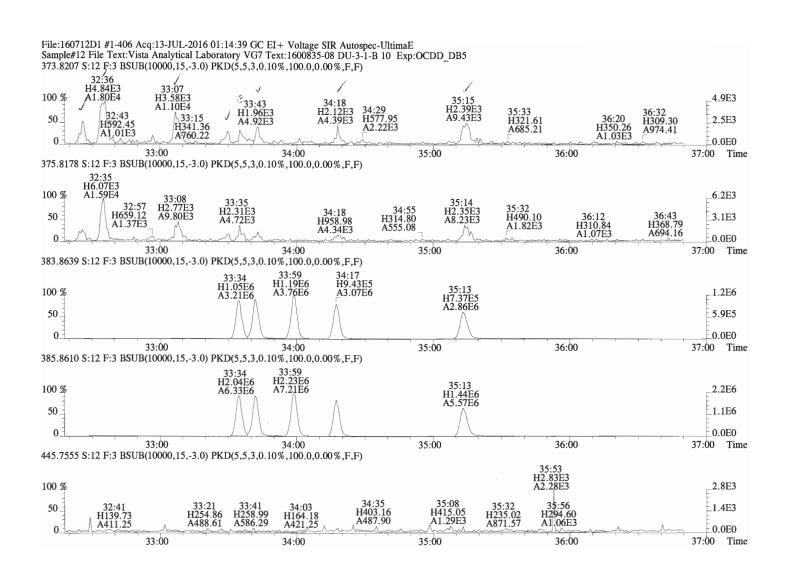




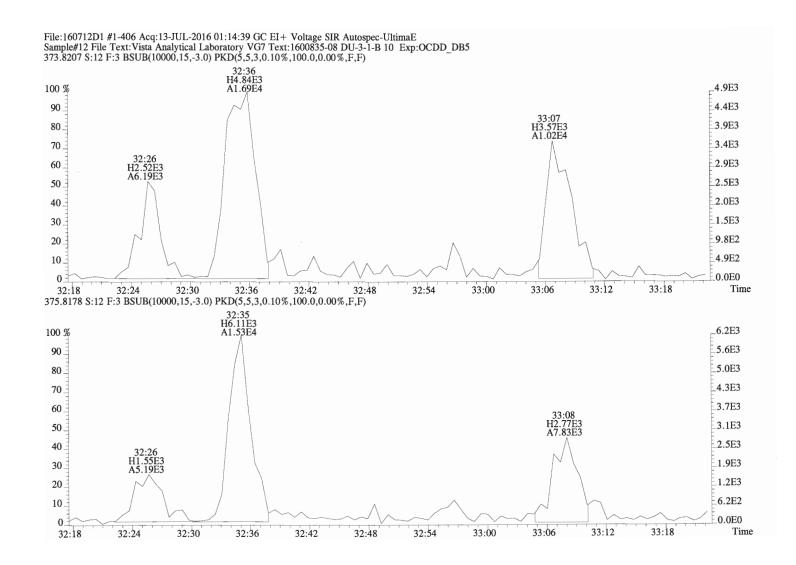
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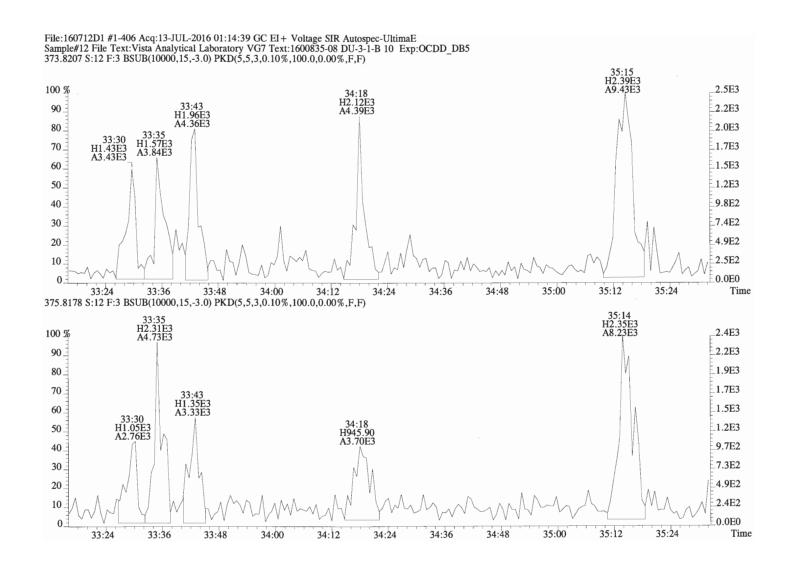
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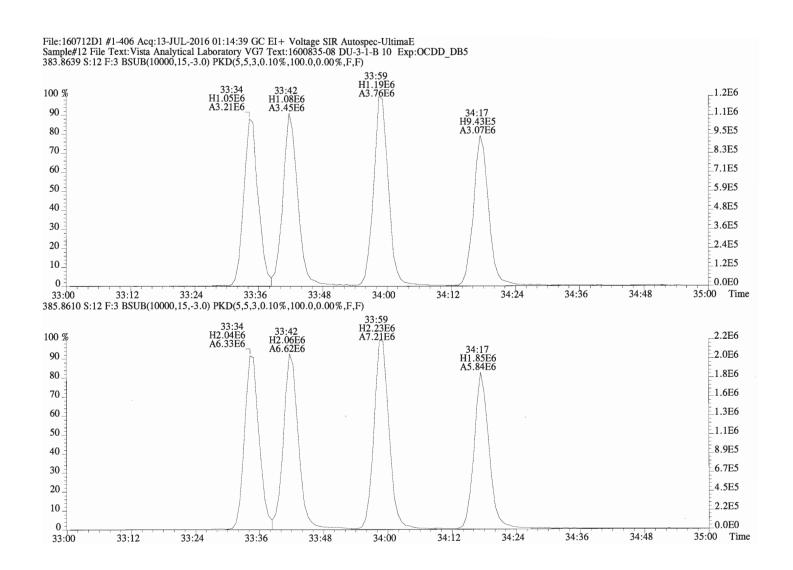
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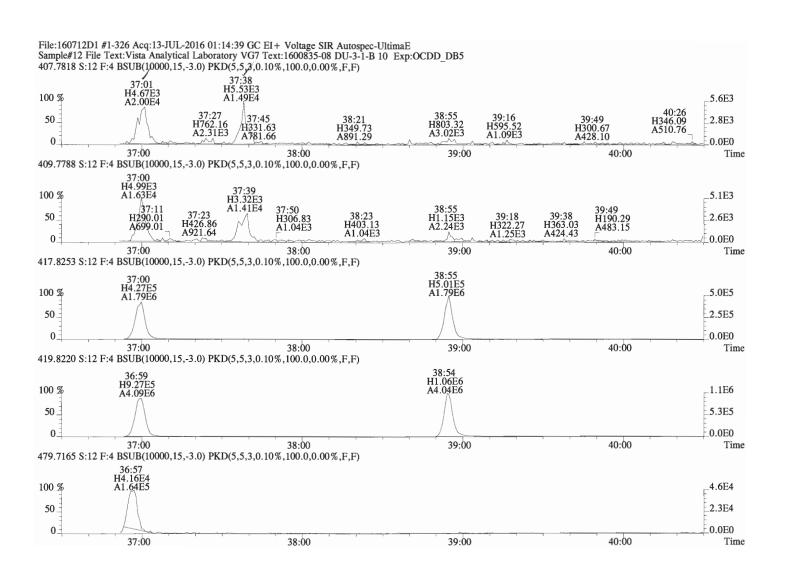
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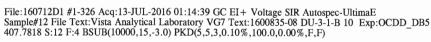
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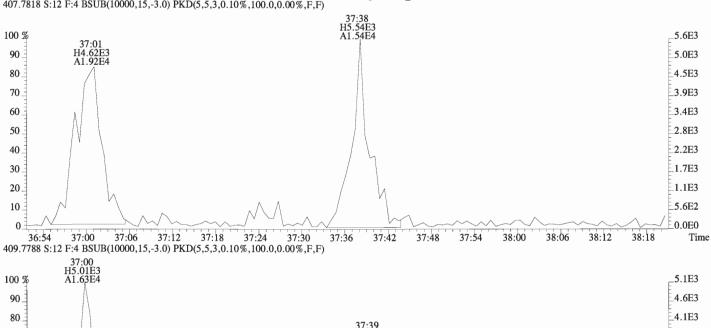


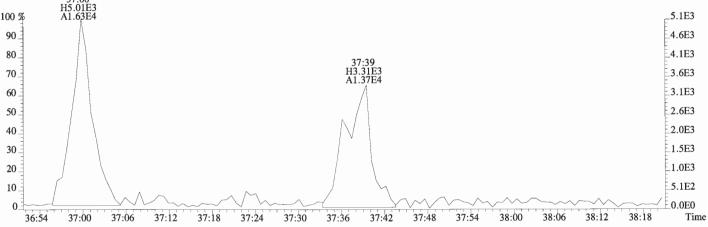
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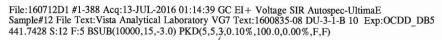
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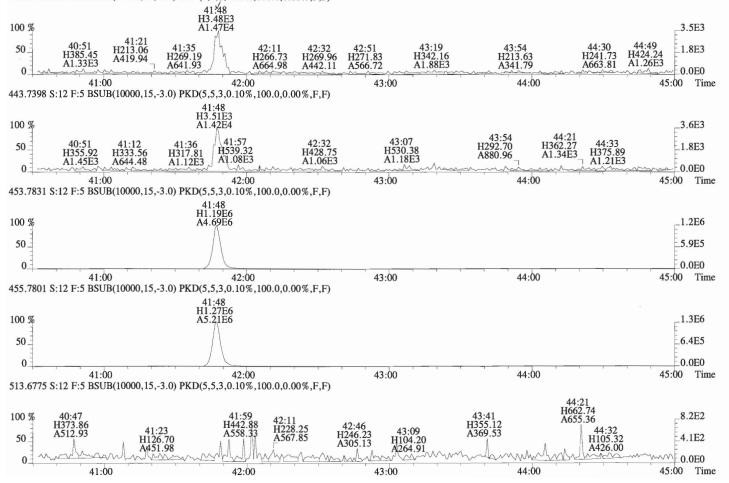




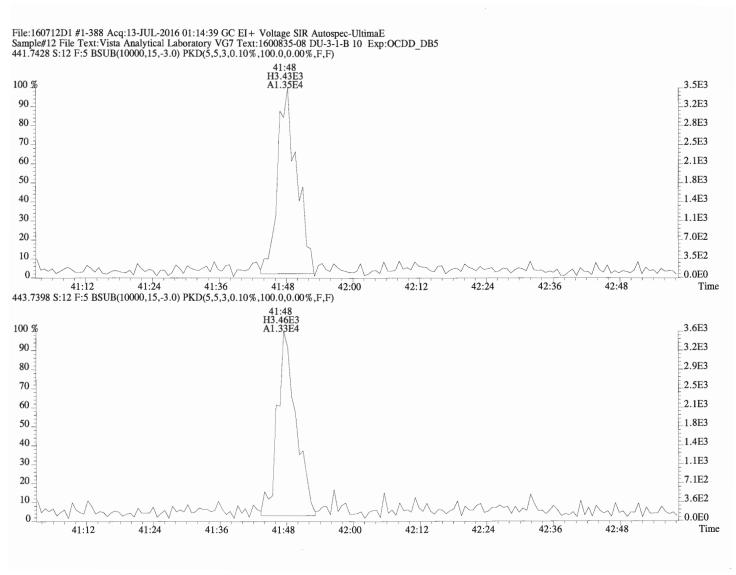


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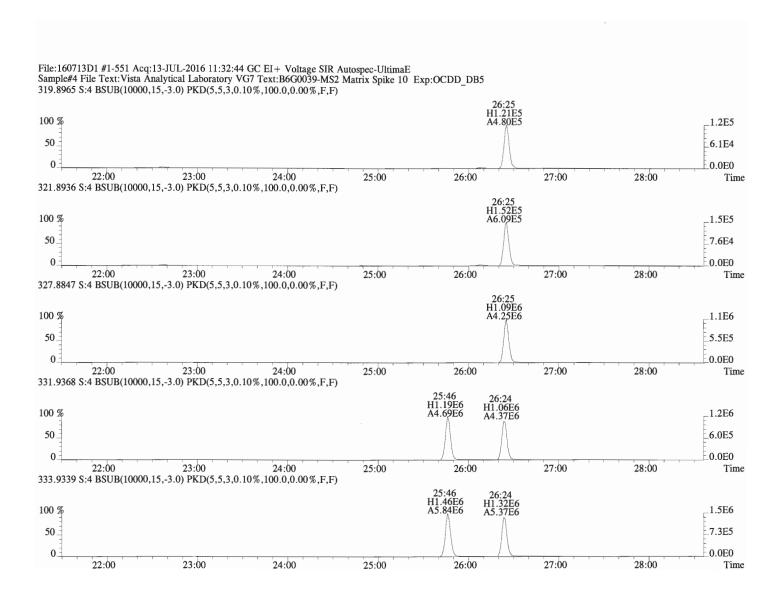
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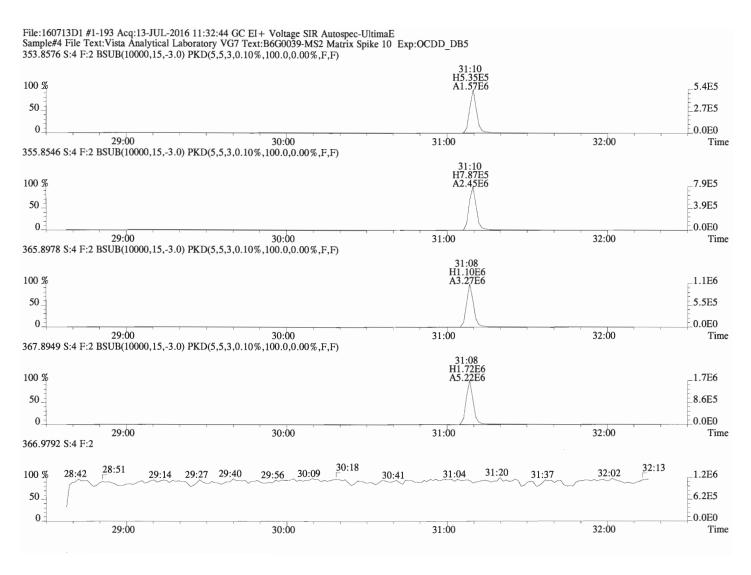
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Lab ID: B6G0039-MS2		Filename: 160713D1 S:4 Acq:13-JUL-16 11:32:44 Concal: ST160713D1-1 GC Column ID: ZB-5MS ICal: 1613VG7-4-7-16 wt/vol:10.040 EndCAL: NA								_	Page 3 of					
Name	Resp	ŔĀ	RRF	RT	RRT	Conc	Q noise	Fac	DL	Name		Conc	EMPC	Qual	noise	Е
2,3,7,8-TCDD	1.09e+06	0.79 y	1.13	26:25	1.001	19.684	*	2.5	*	Total	Tetra-Dioxins	21.3	22.4		*	
1,2,3,7,8-PeCDD	4.02e+06	0.64 y	0.96	31:10	1.001	97.919	*	2.5	*	Total	Penta-Dioxins	98.1	100		*	
1,2,3,4,7,8-HxCDD	4.01e+06	1.23 y	1.00	34:27	1.000	99.605	*	2.5	*	Total	Hexa-Dioxins	299	301		*	
1,2,3,6,7,8-HxCDD	4.19e+06	1.25 y	1.10	34:34	1.001	97.342	*	2.5	*	Total	Hepta-Dioxins	111	113		*	
1,2,3,7,8,9-HxCDD	4.10e+06	1.24 y	1.05	34:51	1.001	99.872	*	2.5	*	Total	Tetra-Furans	21.9	24.1		*	
1,2,3,4,6,7,8-HpCDD	3.46e+06	1.03 y	1.05	38:22	1.000	103.79	*	2.5	*	Total	Penta-Furans	205.50	207.90		*	
OCDD	5.39e+06	0.92 y	0.96	41:34	1.000	240.95	*	2.5	*		Hexa-Furans Hepta-Furans	386 197	387 198		*	
2,3,7,8-TCDF	1.59e+06	0.78 y	1.12	25:36	1.001	19.045	*	2.5	*	Tocar	nepea rarans	157	190			
1,2,3,7,8-PeCDF	6.64e+06	1.58 y	1.01	29:56		102.50	*	2.5	*							
2,3,4,7,8-PeCDF		1.61 y	0.90	30:53		98.866	*	2.5	*							
1,2,3,4,7,8-HxCDF		1.24 y	1.16	33:34		96.059	*	2.5	*							
1,2,3,6,7,8-HxCDF		1.22 y	1.16	33:42		97.218	*	2.5	*							
2,3,4,6,7,8-HxCDF		1.22 y	1.23	34:18		96.009	*	2.5	*							
1,2,3,7,8,9-HxCDF		1.20 y	1.13	35:14		95.411	*	2.5	*							
1,2,3,4,6,7,8-HpCDF	5.09e+06	1.01 y	1.44	36:59		99.536	*	2.5	*							
1,2,3,4,7,8,9-HpCDF		1.02 y	1.31	38:55		95.975	*	2.5	*							
OCDF	6.51e+06	0.93 y	1.03	41:48		200.21	*	2.5	*	Rec	Oual					
13C-2,3,7,8-TCDD	9.74e+06	0.81 y	1.01	26:24	1.025	182.37				91.6	Quai					
13C-1,2,3,7,8-PeCDD	8.50e+06	0.63 y	1.10	31:08		145.65				73.1						
13C-1,2,3,4,7,8-HxCDD	8.01e+06	1.30 y	0.72	34:26		173.69				87.2						
	7.82e+06	1.30 y	0.73	34:32		168.08				84.4						
13C-1,2,3,7,8,9-HxCDD	7.81e+06	1.29 y	0.70	34:50	1.025	173.94				87.3						
13C-1,2,3,4,6,7,8-HpCDD	6.32e+06	1.04 y	0.66	38:21	1.129	148.76				74.7						
13C-OCDD	9.28e+06	0.91 y	0.66	41:33	1.223	219.63				55.1						
13C-2,3,7,8-TCDF	1.48e+07	0.79 y	0.90	25:34	0.992	186.59				93.7						
13C-1,2,3,7,8-PeCDF	1.28e+07	1.59 y	0.98	29:56	1.161	147.93				74.3						
13C-2,3,4,7,8-PeCDF	1.47e+07	1.59 y	1.15	30:52	1.198	145.64				73.1						
13C-1,2,3,4,7,8-HxCDF	1.15e+07	0.53 y	1.01	33:34	0.988	177.92				89.3						
13C-1,2,3,6,7,8-HxCDF	1.19e+07	0.50 y	1.10	33:41	0.992	168.76				84.7						
13C-2,3,4,6,7,8-HxCDF	1.07e+07	0.52 y	0.95	34:17	1.009	175.87				88.3						
13C-1,2,3,7,8,9-HxCDF	1.03e+07	0.52 y	0.83	35:13	1.037	194.37				97.6						
13C-1,2,3,4,6,7,8-HpCDF	7.07e+06	0.42 y	0.70	36:58	1.089	158.15				79.4						
13C-1,2,3,4,7,8,9-HpCDF		0.42 y	0.72	38:54		157.66				79.1						
13C-OCDF	1.26e+07	0.91 y	0.82	41:47	1.230	238.24				59.8						
Jp 37C1-2,3,7,8-TCDD	4.25e+06		1.14	26:25	1.025	70.624				88.6	Integr	ations	Revi	.ewed	Δí	
/RT 13C-1,2,3,4-TCDD	1.05e+07	0.80 y	1.00	25:46	*	199.20					Analyst:	<i>i</i>)ろ	Anal	yst:	11/2 -	_
13C-1,2,3,4-TCDF		0.81 y	1.00	24:11		199.20									110	
/RT 13C-1,2,3,4,6,9-HxCDF		0.51 y	1.00	33:58		199.20					Date: 7	115/16	_ Date	. 7	115/16	

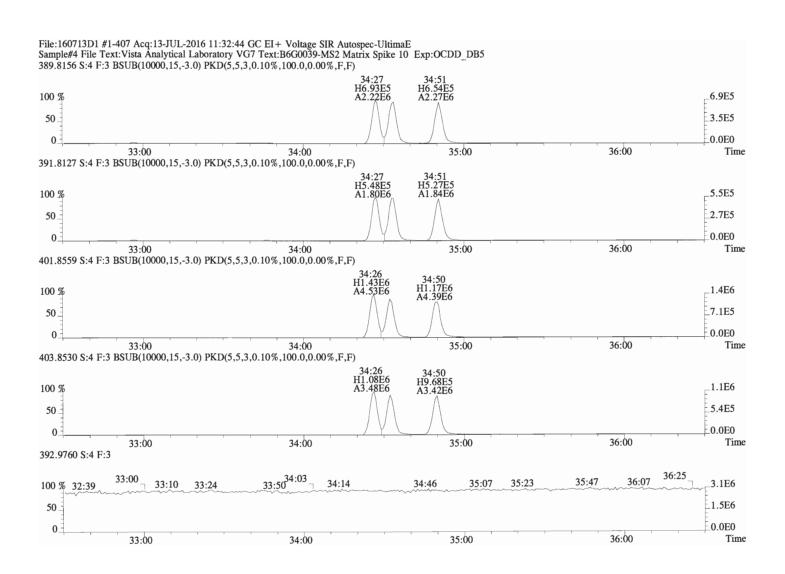
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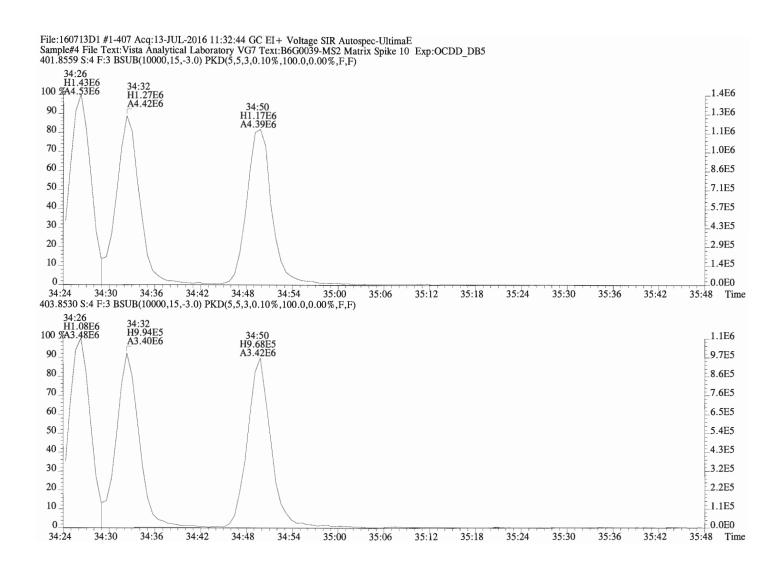
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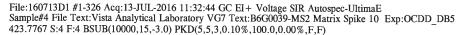
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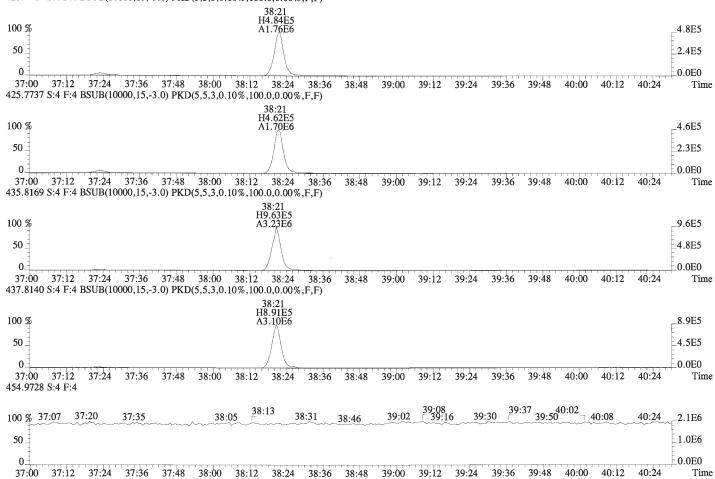


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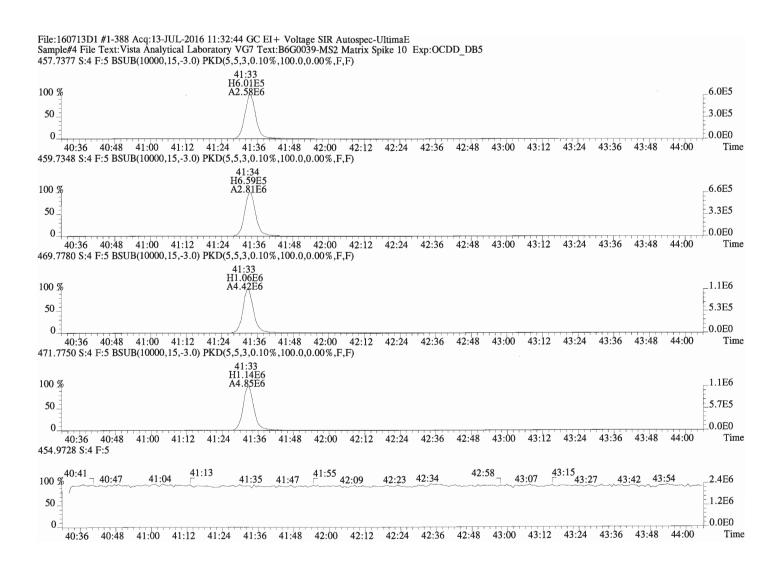


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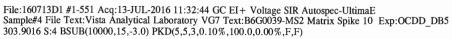


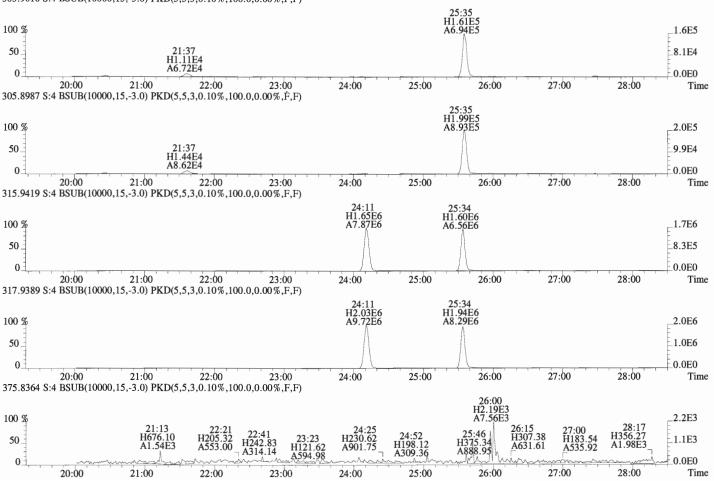


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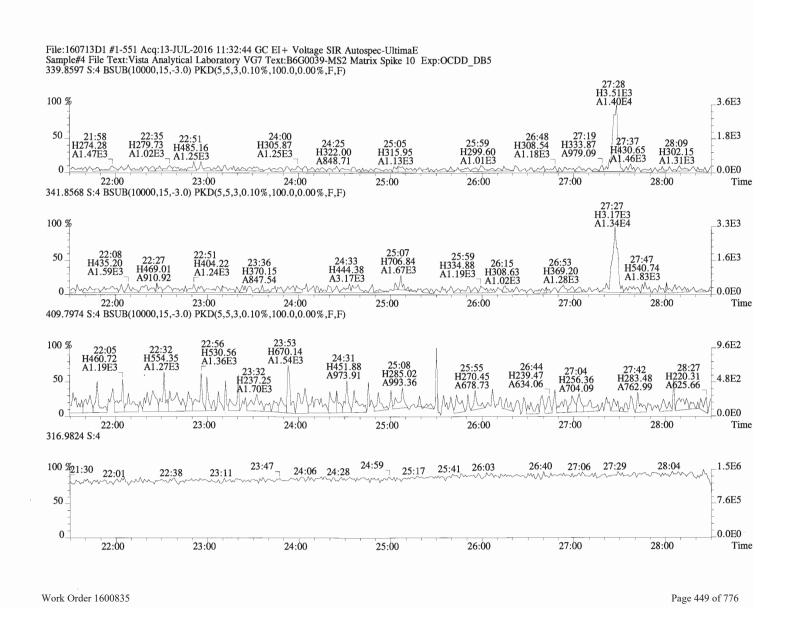


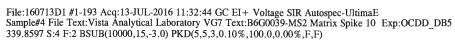
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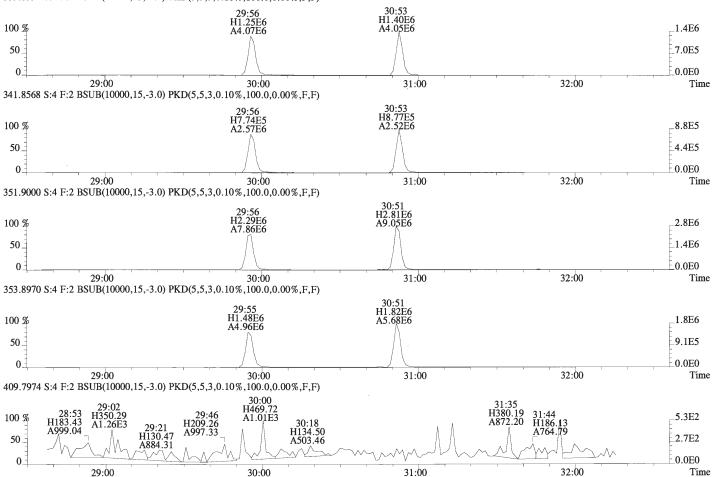




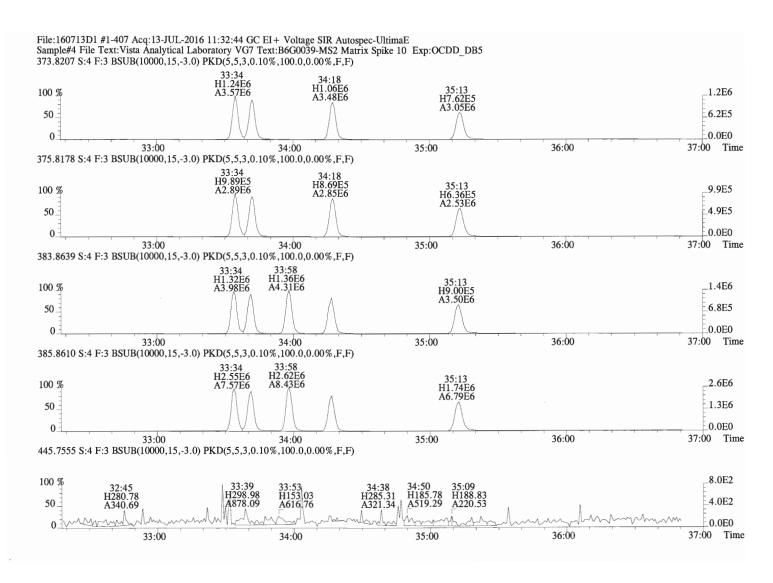
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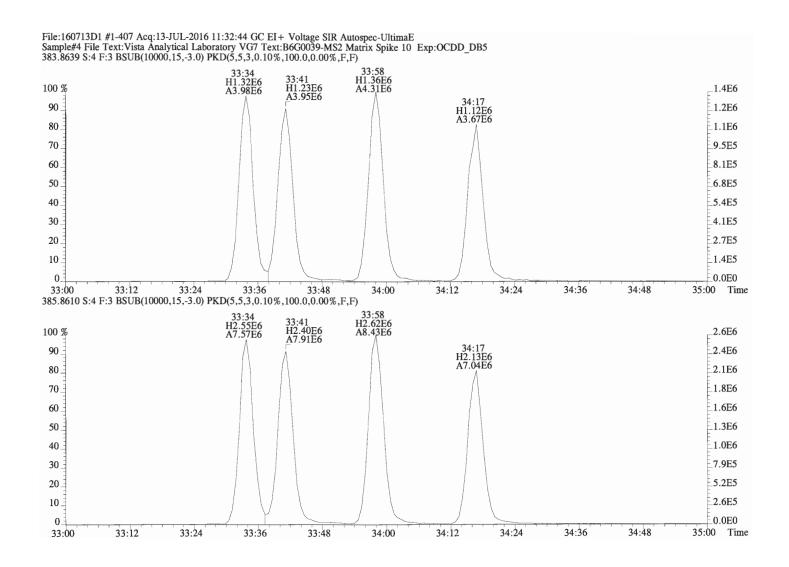




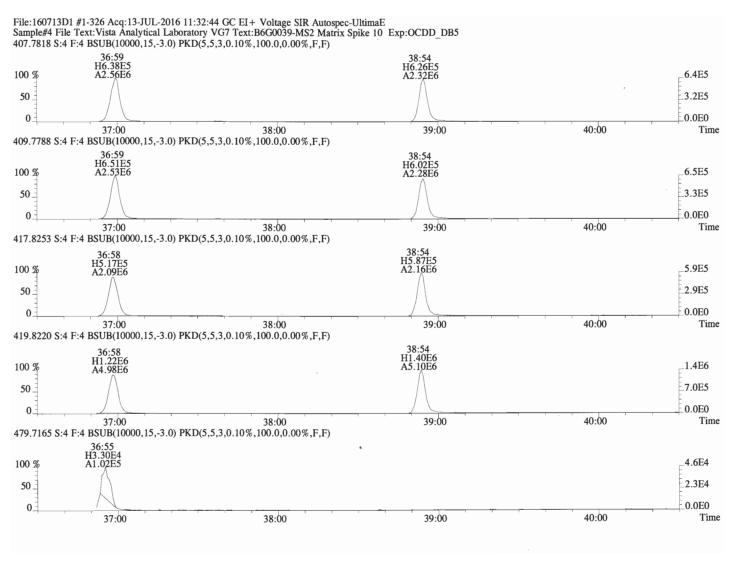
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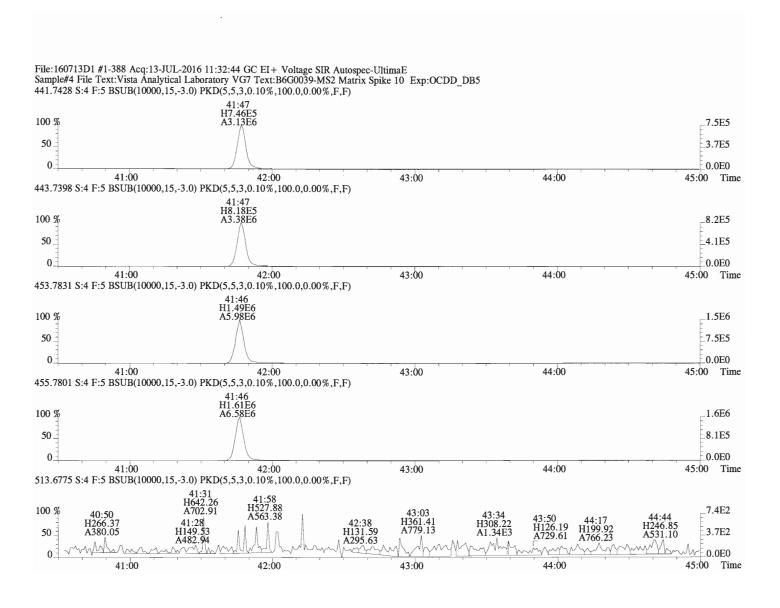
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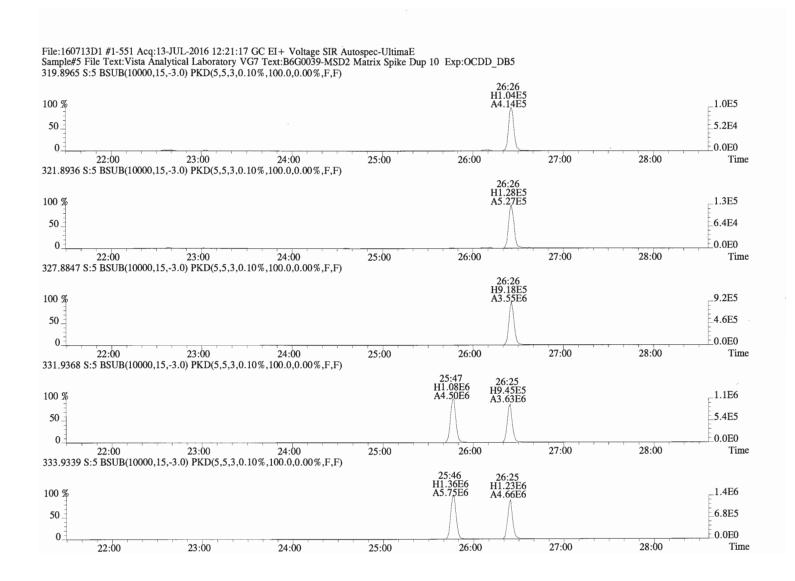
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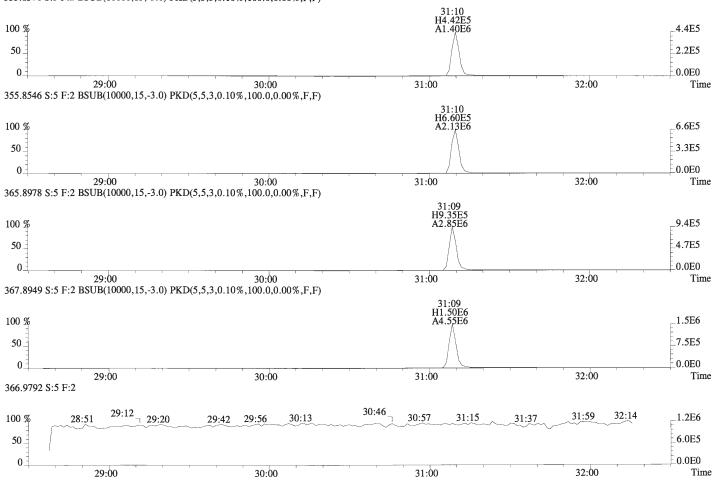
	ent ID: Matrix Spike Dup ID: B6G0039-MSD2		lename: 1				3-JUL-16 12 37-4-7-16		vol:10	.070		Cal: ST160713D1 CAL: NA	-1			Page	4 of 6
	Name	Resp	RA	RRF	RT	RRT	Conc	Q noise	Fac	DL	Name		Conc		Qual	noise	DL
		9.41e+05	0.79 y	1.13		1.001	19.930	*	2.5	*		Tetra-Dioxins	21.3	22.4		*	*
		3.53e+06	0.66 y	0.96		1.000	98.627	*	2.5	*		Penta-Dioxins	99.7	100		*	*
		3.55e+06	1.23 y	1.00		1.000	102.19	*	2.5	*		Hexa-Dioxins	305	307		*	*
	1,2,3,6,7,8-HxCDD	3.62e+06	1.23 y	1.10		1.000	96.770	*	2.5	*		Hepta-Dioxins	116	118		*	*
		3.65e+06	1.24 y	1.05		1.001	103.20	*	2.5	*	Total	Tetra-Furans	20.0	23.8		*	*
		3.06e+06	1.02 y	1.05		1.001	108.14	*	2.5	*		Penta-Furans	206.52	208.80		*	*
	OCDD	4.82e+06	0.90 y	0.96	41:34	1.000	238.92	*	2.5	*	Total	Hexa-Furans	403	405		*	*
											Total	Hepta-Furans	203	205		*	*
	2,3,7,8-TCDF	1.37e+06	0.81 y	1.12	25:36	1.001	18.997	*	2.5	*							
	1,2,3,7,8-PeCDF	5.98e+06	1.64 y	1.01	29:57	1.000	101.88	*	2.5	*							
	2,3,4,7,8-PeCDF	5.92e+06	1.63 y	0.90	30:53	1.000	101.41	*	2.5	*							
	1,2,3,4,7,8-HxCDF	5.95e+06	1.24 y	1.16	33:35	1.000	100.79	*	2.5	*							
	1,2,3,6,7,8-HxCDF	5.91e+06	1.23 y	1.16	33:42	1.000	99.899	*	2.5	*							
	2,3,4,6,7,8-HxCDF	5.65e+06	1.27 y	1.23	34:18	1.000	99.827	*	2.5	*							
	1,2,3,7,8,9-HxCDF	5.15e+06	1.22 y	1.13	35:14	1.000	100.43	*	2.5	*							
	1,2,3,4,6,7,8-HpCDF	4.59e+06	1.02 y	1.44	36:59	1.000	101.24	*	2.5	*							
	1,2,3,4,7,8,9-HpCDF	4.55e+06	1.01 y	1.31	38:55	1.000	100.45	*	2.5	*							
	OCDF	5.86e+06	0.94 y	1.03	41:48	1.000	202.51	*	2.5	*							
											Rec	Qual					
IS	13C-2,3,7,8-TCDD	8.29e+06	0.78 y	1.01	26:25	1.024	159.03				80.1						
IS	13C-1,2,3,7,8-PeCDD	7.39e+06	0.63 y	1.10	31:09	1.208	129.88				65.4						
IS	13C-1,2,3,4,7,8-HxCDD	6.88e+06	1.30 y	0.72	34:26	1.014	146.11				73.6						
IS	13C-1,2,3,6,7,8-HxCDD	6.78e+06	1.32 y	0.73	34:33	1.017	142.64				71.8						
IS	13C-1,2,3,7,8,9-HxCDD	6.69e+06	1.28 y	0.70	34:50	1.025	145.99				73.5						
IS	13C-1,2,3,4,6,7,8-HpCDD	5.34e+06	1.06 y	0.66	38:21	1.129	123.11				62.0						
IS	13C-OCDD	8.33e+06	0.93 y	0.66	41:33	1.223	193.12				48.6						
IS	13C-2,3,7,8-TCDF	1.28e+07	0.80 y	0.90	25:35	0.992	160.09				80.6						
IS	13C-1,2,3,7,8-PeCDF	1.16e+07	1.59 y	0.98	29:56	1.161	132.81				66.9						
IS	13C-2,3,4,7,8-PeCDF		1.60 y	1.15	30:52	1.197	126.58				63.7						
IS	13C-1,2,3,4,7,8-HxCDF	1.01e+07	0.51 y	1.01	33:34	0.988	152.44				76.8						
IS	13C-1,2,3,6,7,8-HxCDF		0.50 y	1.10		0.992	141.66				71.3						
IS	13C-2,3,4,6,7,8-HxCDF		0.53 y	0.95		1.009	147.42				74.2						
IS	13C-1,2,3,7,8,9-HxCDF		0.52 y	0.83		1.037	166.35				83.8						
		6.25e+06	0.42 y	0.70		1.089	136.85				68.9						
		6.85e+06	0.43 y	0.72		1.145	145.66				73.3						
IS	13C-OCDF		0.89 y	0.82		1.230	206.96				52.1						
C/Up	37C1-2,3,7,8-TCDD	3.55e+06		1.14	26:26	1.025	60.558				76.2	Integr	ations	Revi	ewed	1	
, -P												by '	20	by		1//	
RS/RT	13C-1,2,3,4-TCDD	1.02e+07	0.78 y	1.00	25:47	*	198.61					Analyst:	リム		yst:/	U_{N}	_
RS	13C-1,2,3,4-TCDF		0.81 y	1.00	24:12		198.61								. –	1	_
	13C-1,2,3,4,6,9-HxCDF		0.51 y	1.00	33:58		198.61					_	1.0/11			7	
,,	_,_,_,		1									Date: 7	115/16			7/15	111

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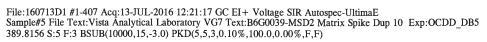


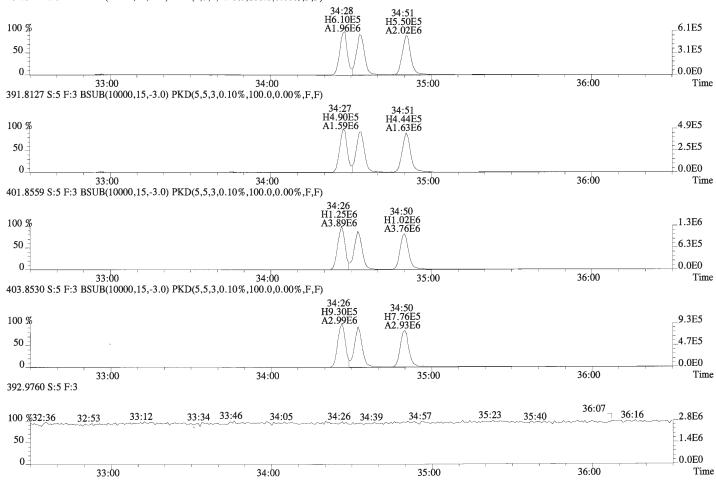
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File:160713D1 #1-193 Acq:13-JUL-2016 12:21:17 GC EI+ Voltage SIR Autospec-UltimaE Sample#5 File Text:Vista Analytical Laboratory VG7 Text:B6G0039-MSD2 Matrix Spike Dup 10 Exp:OCDD_DB5 353.8576 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

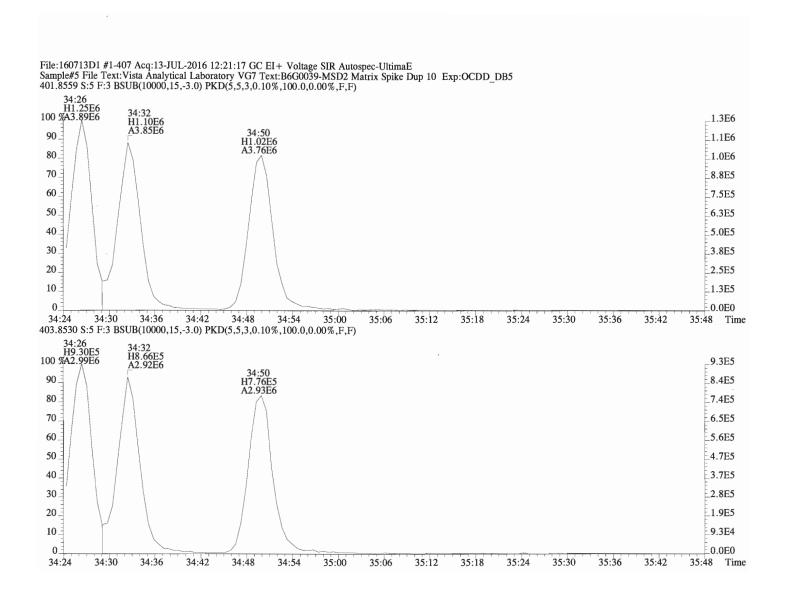


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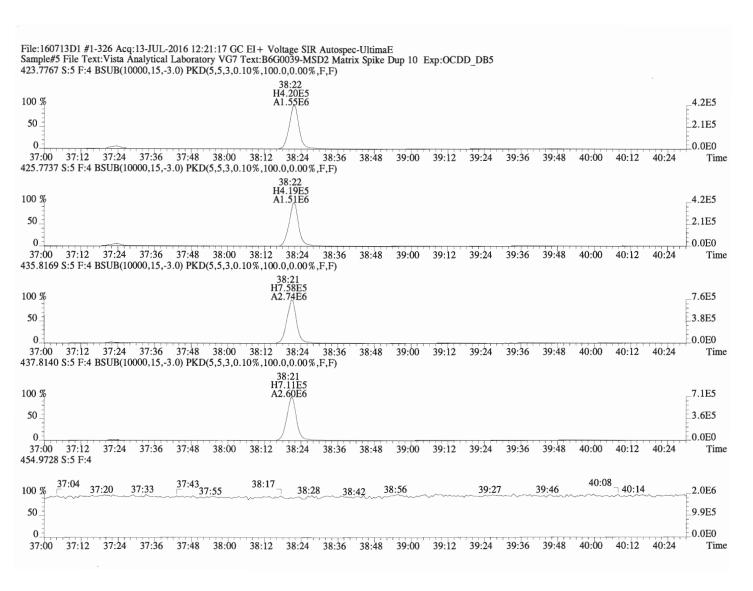




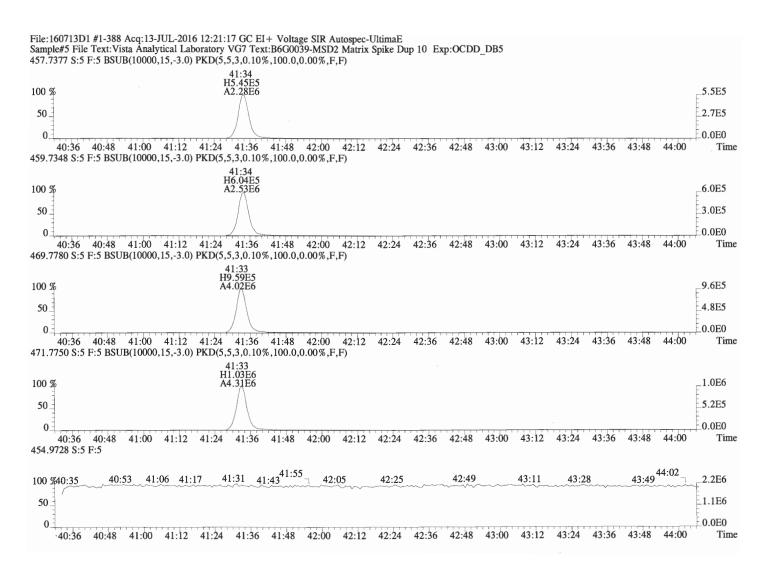
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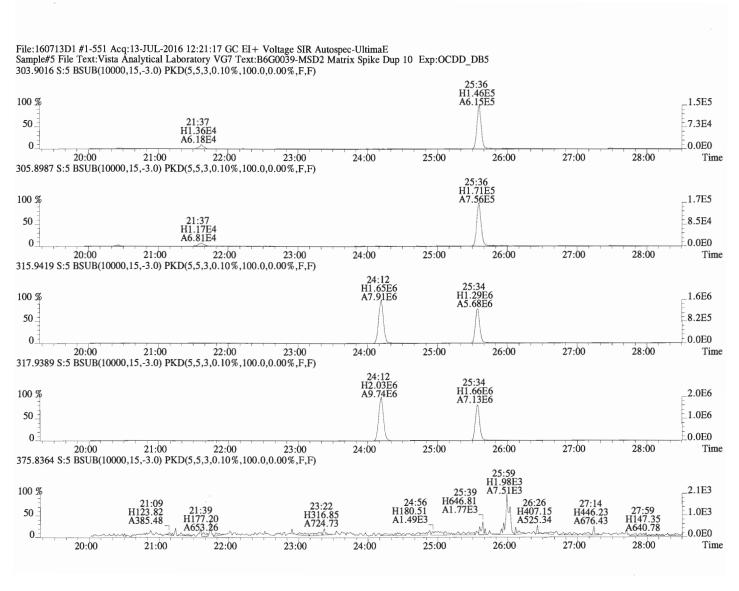
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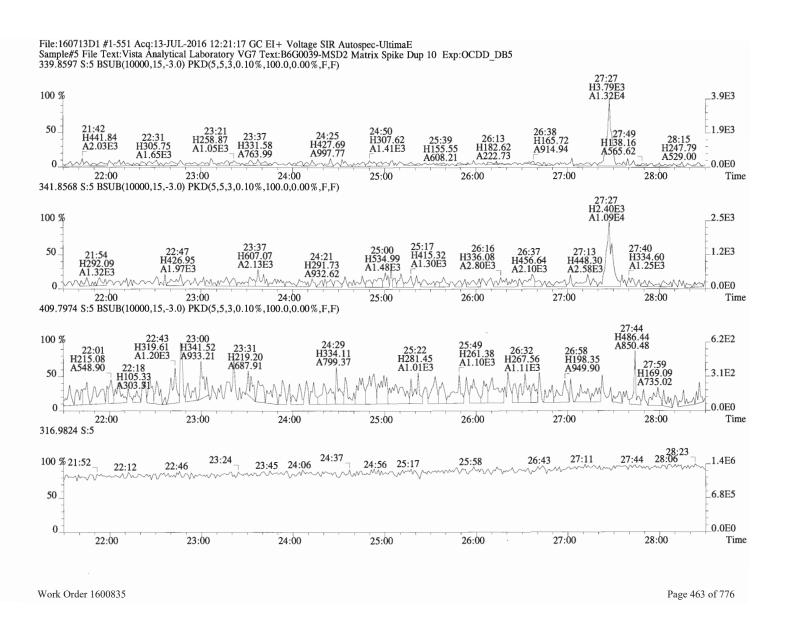
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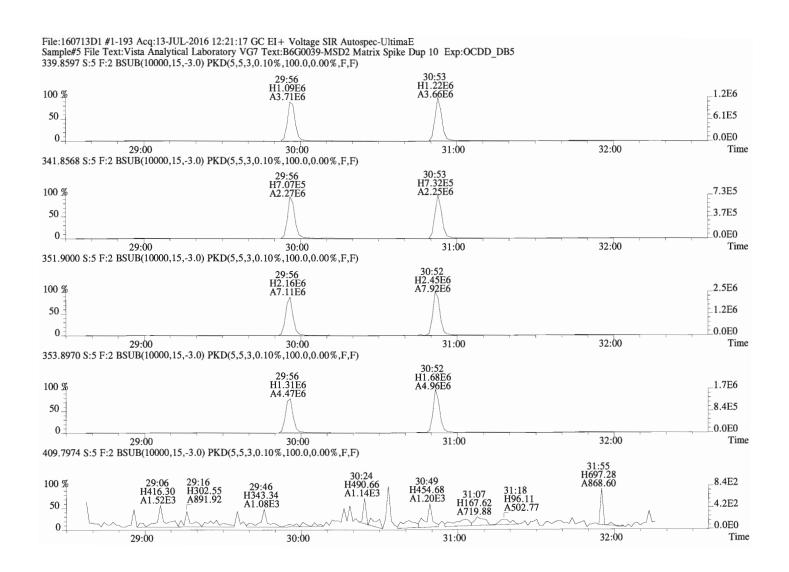


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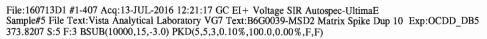


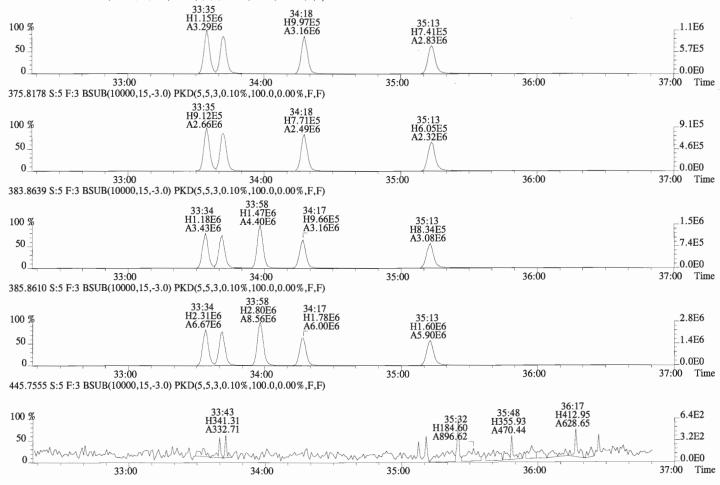
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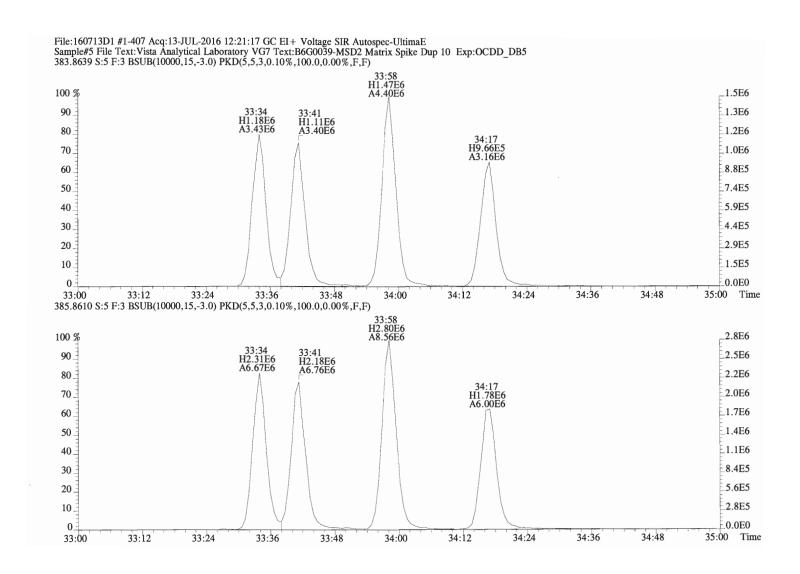
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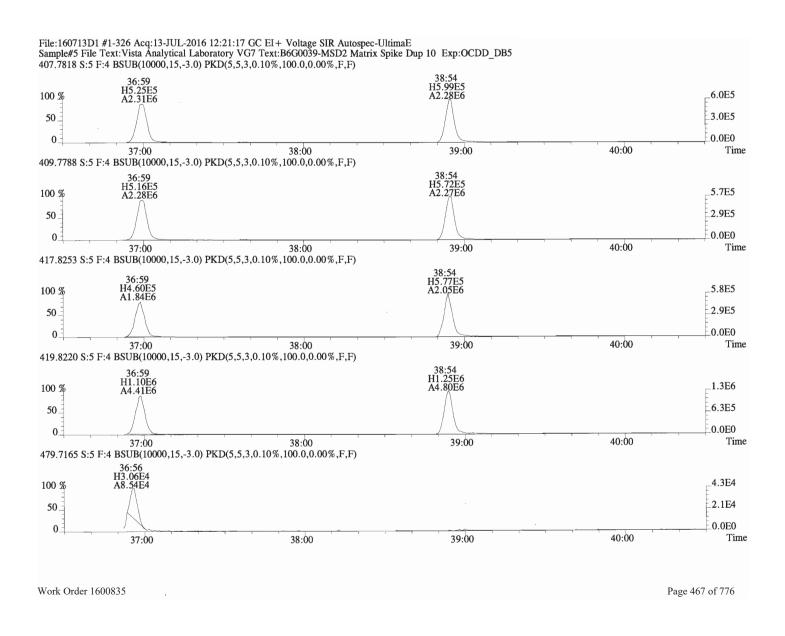


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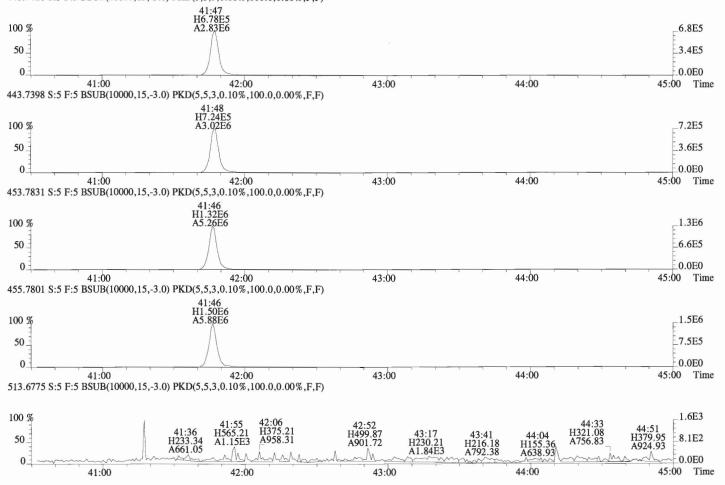
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File:160713D1 #1-388 Acq:13-JUL-2016 12:21:17 GC EI+ Voltage SIR Autospec-UltimaE Sample#5 File Text:Vista Analytical Laboratory VG7 Text:B6G0039-MSD2 Matrix Spike Dup 10 Exp:OCDD_DB5 441.7428 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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Name 2,3,7,8-TCDD 1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD	Resp		D: ZB-51	MS ICal	: 1613V	37-4-7-16	wt./	vol:10	.100	Endo	CAL: NA					
2,3,7,8-TCDD 1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD		RA	RRF	ma	RRT	Conc	Q noise	Fac	DL	Name		Conc	EMPC	Oual	noise	1
1,2,3,7,8-PeCDD 1,2,3,4,7,8-HxCDD	*	* n	1.13		*	cone *	229		0.0587		Tetra-Dioxins	0.751	0.751	Quar	*	,
1,2,3,4,7,8-HxCDD	*	* n	0.96	NotF	*	*	337		0.0924		Penta-Dioxins	0.251	1.17		*	
	7.55e+03	0.78 n	1.00	34:27	1.000	0.19308	*	2.5	*		Hexa-Dioxins	8.63	9.27		*	
1,2,3,6,7,8-HxCDD	6.25e+04	1.32 y	1.10	34:34		1.5591	*	2.5	*		Hepta-Dioxins	107	107		*	
1,2,3,7,8,9-HxCDD	1.77e+04	1.24 y	1.05		1.000	0.44969		2.5	*		Tetra-Furans	3.59	4.05		*	
1,2,3,4,6,7,8-HpCDD	1.44e+06	1.04 y	1.05		1.000	47.568	*	2.5	*		Penta-Furans	1.6909	1.9389		*	
OCDD	8.18e+06	0.89 y	0.96	41:34	1.000	394.26	*	2.5	*	Total	Hexa-Furans	7.46	7.46		*	
		•								Total	Hepta-Furans	24.6	24.6		. *	
2,3,7,8-TCDF	*	* n	1.12	NotF ₁	*	*	446	2.5	0.0855							
1,2,3,7,8-PeCDF	1.10e+04	1.61 y	1.01	29:57	1.001	0.15926	*	2.5	*							
2,3,4,7,8-PeCDF	1.08e+04	1.48 y	0.90	30:53	1.000	0.15242	*	2.5	*							
1,2,3,4,7,8-HxCDF	1.42e+04	1.07 y	1.16	33:35	1.000	0.22487	*	2.5	*							
1,2,3,6,7,8-HxCDF	1.01e+04	1.41 y	1.16	33:42	1.000	0.15580	*	2.5	*							
2,3,4,6,7,8-HxCDF	1.70e+04	1.10 y	1.23	34:18	1.000	0.27545	*	2.5	*							
1,2,3,7,8,9-HxCDF	3.01e+04	1.39 y	1.13	35:14	1.000	0.55613	*	2.5	*							
1,2,3,4,6,7,8-HpCDF	3.31e+05	1.08 y	1.44	37:00	1.000	7.0575	*	2.5	*							
1,2,3,4,7,8,9-HpCDF	1.69e+04	1.15 y	1.31	38:55	1.000	0.39282	*	2.5	*							
OCDF	7.61e+05	0.90 y	1.03	41:48	1.000	27.024	*	2.5	*							
										Rec	Qual					
13C-2,3,7,8-TCDD	1.17e+07	0.77 y	1.01	26:25	1.025	187.52				94.7						
13C-1,2,3,7,8-PeCDD	9.54e+06	0.63 y	1.10	31:10	1.209	139.62				70.5						
13C-1,2,3,4,7,8-HxCDD		1.24 y	0.72	34:27		186.21				94.0						
13C-1,2,3,6,7,8-HxCDD		1.29 y	0.73		1.017	173.00				87.4						
13C-1,2,3,7,8,9-HxCDD		1.26 y	0.70		1.025	183.62				92.7						
	5.72e+06	1.08 y	0.66		1.129	149.54				75.5						
13C-OCDD		0.92 y	0.66		1.223	224.77				56.8						
13C-2,3,7,8-TCDF		0.79 y	0.90		0.992	194.56				98.3						
13C-1,2,3,7,8-PeCDF		1.61 y	0.98		1.161	136.46				68.9						
13C-2,3,4,7,8-PeCDF		1.62 y	1.15		1.198	134.10				67.7						
13C-1,2,3,4,7,8-HxCDF		0.52 y	1.01		0.988	184.61				93.2						
13C-1,2,3,6,7,8-HxCDF		0.52 y	1.10		0.992	175.21				88.5						
13C-2,3,4,6,7,8-HxCDF		0.53 y	0.95		1.009	182.40				92.1						
13C-1,2,3,7,8,9-HxCDF		0.52 y	0.83		1.037	198.70				100 80.9						
13C-1,2,3,4,6,7,8-HpCDF		0.43 y	0.70		1.088	160.21				79.0						
13C-1,2,3,4,7,8,9-HpCDF		0.43 y	0.72		1.145	156.40				57.6						
13C-OCDF	1.08e+07	0.89 у	0.82	41:47	1.230	228.06				57.6						
37Cl-2,3,7,8-TCDD	5.06e+06		1.14	26:26	1.025	71.804				90.7	Integr by	ations	Revie by	ewed	1	
T 13C-1,2,3,4-TCDD	1.23e+07	0.81 y	1.00	25:47	*	198.02					Analyst:	UK_	Analy	yst:	M	
13C-1,2,3,4-TCDF		0.81 y	1.00	24:12	*	198.02									1	
T 13C-1,2,3,4,6,9-HxCDF		0.52 y	1.00	33:59	*	198.02						ارار		_	1/15	11

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Totals class: TCDD EMPC Entry #: 19

Run: 18 File: 160712D1 S: 13 I: 1 F: 1 Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 0.75123 Unnamed Concentration: 0.751

RT m1 Resp m2 Resp RA Resp Concentration Name

22:38 1.671e+04 2.016e+04 0.83 y 3.687e+04 0.55021 23:04 6.302e+03 7.168e+03 0.88 y 1.347e+04 0.20102

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Totals class: PeCDD EMPC Entry #: 21

Run: 18 File: 160712D1 S: 13 I: 1 F: 2 Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 1.1659 Unnamed Concentration: 1.166

RI	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
30:08	1.336e+04 3.065e+03	3.044e+03	1.01 n	2.610e+04 4.961e+03	0.56344	
30:25	1.960e+03 9.599e+03 2.319e+03	6.954e+03	1.38 n	5.540e+03 1.134e+04 6.074e+03	0.11958 0.24468 0.13111	

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Totals class: HxCDD EMPC Entry #: 23

Run: 18 File: 160712D1 S: 13 I: 1 F: 3 Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 9.2705 Unnamed Concentration: 7.069

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
32:57	5.933e+04	4.826e+04 1.23	y 1.076e+05	2.7220	
33:30	9.865e+03	1.182e+04 0.83	n 1.782e+04	0.45088	
33:46	6.591e+04	5.387e+04 1.22	y 1.198e+05	3.0303	
33:53	1.364e+04	1.113e+04 1.23	y 2.477e+04	0.62660	
34:27	4.181e+03	5.388e+03 0.78	n 7.553e+03	0.19308	1,2,3,4,7,8-HxCDD
34:34	3.557e+04	2.689e+04 1.32	y 6.247e+04	1.5591	1,2,3,6,7,8-HxCDD
34:45	5.162e+03	4.278e+03 1.21	y 9.440e+03	0.23883	
34:51	9.792e+03	7.872e+03 1.24	y 1.766e+04	0.44969	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 18 File: 160712D1 S: 13 I: 1 F: 4 Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 106.53 Unnamed Concentration: 58.961

RT m1 Resp m2 Resp RA Resp Concentration Name

37:23 9.093e+05 8.804e+05 1.03 y 1.790e+06 58.961 38:22 7.368e+05 7.071e+05 1.04 y 1.444e+06 47.568 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 18 File: 160712D1 S: 13 I: 1 F: 1 Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 4.0461 Unnamed Concentration: 4.046

RT	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
20.26	2.921e+04	3 3030±04	0 88 V	6.224e+04	0.61768	
	1.112e+05			2.533e+05	2.5135	
23:59	7.865e+03	1.325e+04	0.59 n	1.808e+04	0.17943	
24:10	1.418e+04	1.754e+04	0.81 y	3.172e+04	0.31482	
25:57	6.667e+03	8.313e+03	0.80 y	1.498e+04	0.14868	
27:29	2.421e+04	1.548e+04	1.56 n	2.741e+04	0.27202	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 18 File: 160712D1 S: 13 I: 1 F: 1
Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 0.65231 Unnamed Concentration: 0.652

RT ml Resp m2 Resp RA Resp Concentration Name

27:27 2.606e+04 1.967e+04 1.33 y 4.573e+04 0.65231

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Totals class: PeCDF EMPC Entry #: 31

Run: 18 File: 160712D1 S: 13 I: 1 F: 2 Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 1.2866 Unnamed Concentration: 0.975

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name
28:51	6.055e+03	4.013e+03	1.51 y	1.007e+04	0.14364	
28:59	1.895e+04	1.426e+04	1.33 y	3.321e+04	0.47380	
29:33	7.949e+03	3.512e+03	2.26 n	8.956e+03	0.12777	
29:57	6.809e+03	4.223e+03	1.61 y	1.103e+04	0.15926	1,2,3,7,8-PeCDF
30:11	4.525e+03	3.146e+03	1.44 y	7.671e+03	0.10943	
30:20	5.126e+03	4.803e+03	1.07 n	8.433e+03	0.12030	
30:53	6.450e+03	4.373e+03	1.48 y	1.082e+04	0.15242	2,3,4,7,8-PeCDF

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Totals class: HxCDF EMPC Entry #: 33

Run: 18 File: 160712D1 S: 13 I: 1 F: 3
Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 7.4572 Unnamed Concentration: 6.245

RT	m1 Resp	m2 Resp RA	Resp Concentration	n Name
32:35 32:56 33:07 33:35 33:42 34:18	1.603e+04 6.393e+04 7.892e+03 1.249e+05 7.353e+03 5.900e+03 8.935e+03 1.751e+04	1.455e+04 1.10 y 5.069e+04 1.26 y 7.008e+03 1.13 y 9.602e+04 1.30 y 6.866e+03 1.07 y 4.172e+03 1.41 y 8.113e+03 1.10 y 1.260e+04 1.39 y	1.146e+05 1.878 1.490e+04 0.2442 2.209e+05 3.620 1.422e+04 0.2248 1.007e+04 0.1558 1.705e+04 0.2754	19 15 16 17 1,2,3,4,7,8-HxCDF 10 1,2,3,6,7,8-HxCDF 15 2,3,4,6,7,8-HxCDF

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Totals class: HpCDF EMPC

Entry #: 35

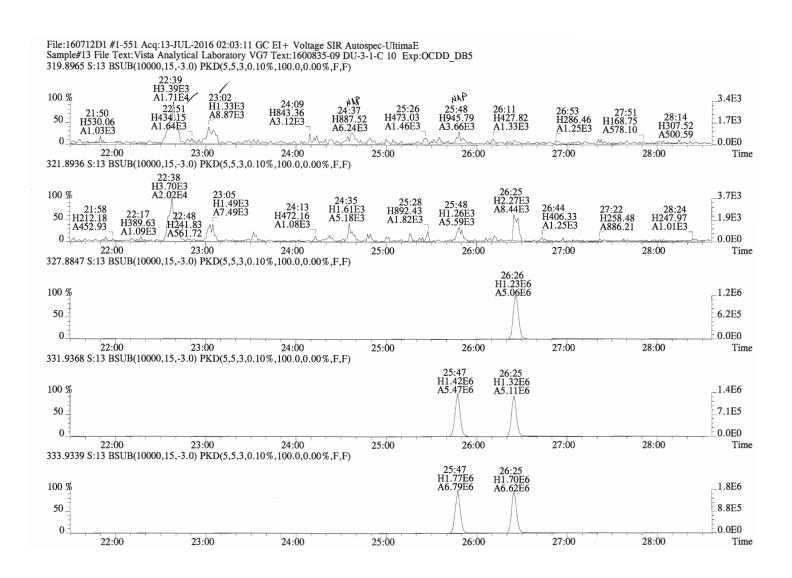
Run: 18 File: 160712D1 S: 13 I: 1 F: 4 Acquired: 13-JUL-16 02:03:11 Processed: 14-JUL-16 10:27:48

Total Concentration: 24.588 Unnamed Concentration: 17.137

RT ml Resp m2 Resp RA Resp Concentration Name

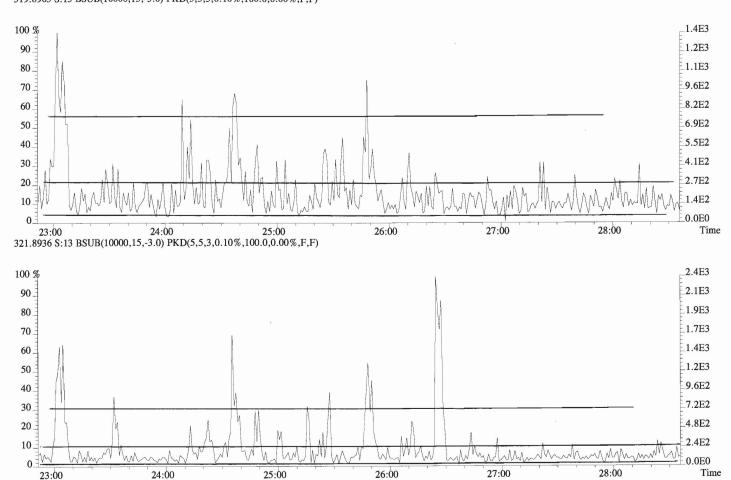
37:00 1.717e+05 1.592e+05 1.08 y 3.309e+05 7.0575 1,2,3,4,6,7,8-HpCDF 37:37 3.875e+05 3.820e+05 1.01 y 7.695e+05 17.137 38:55 9.046e+03 7.841e+03 1.15 y 1.689e+04 0.39282 1,2,3,4,7,8,9-HpCDF

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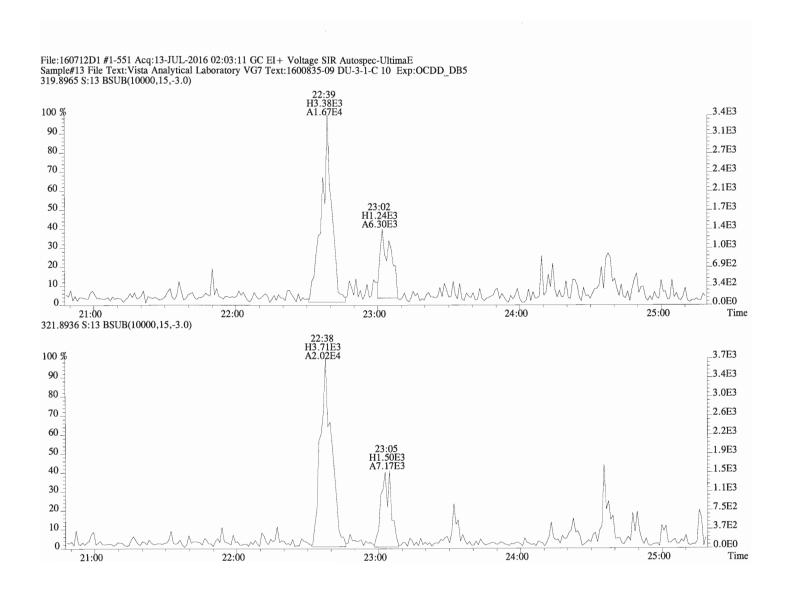


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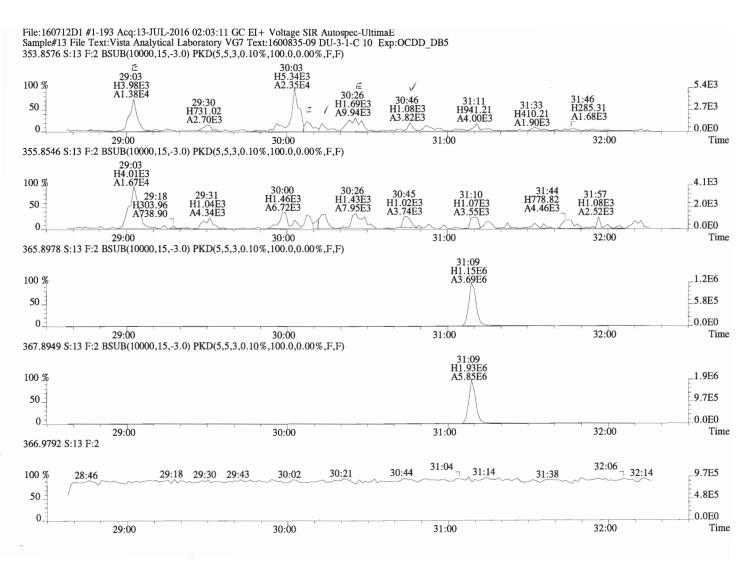
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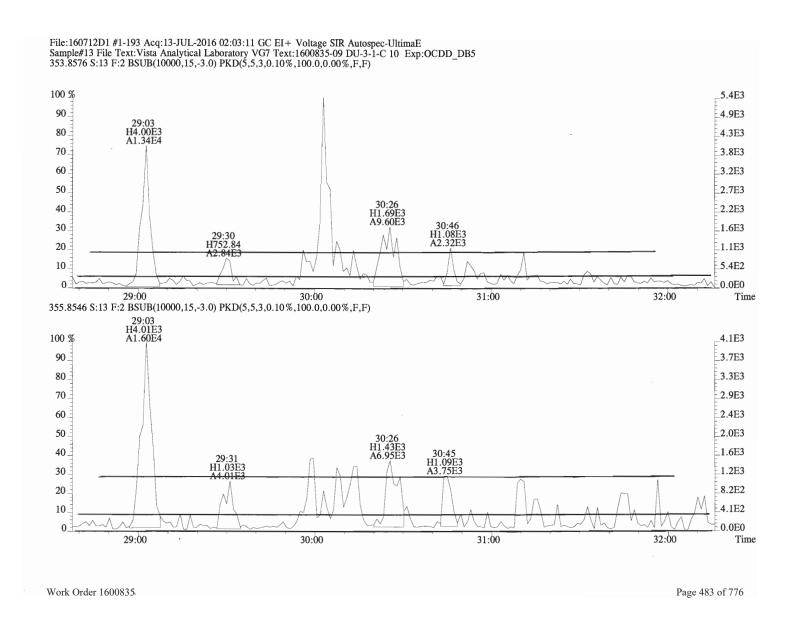
Work Order 1600835 Page 480 of 776

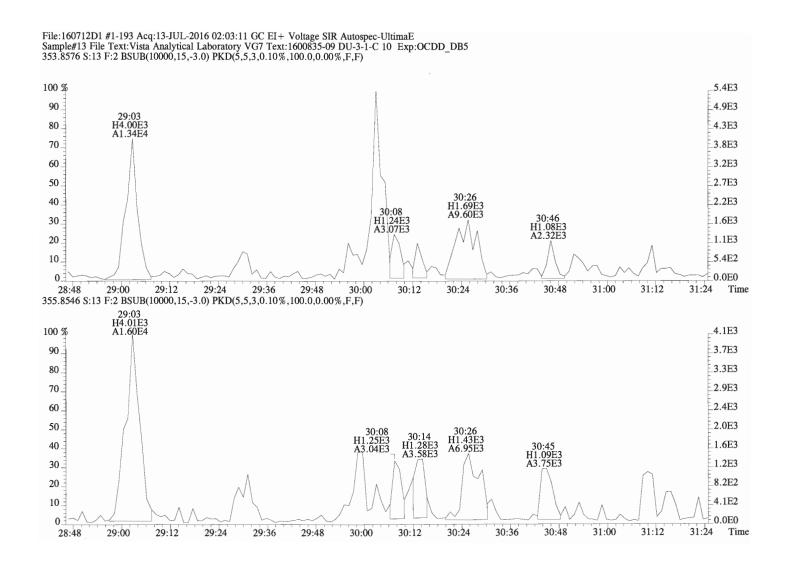


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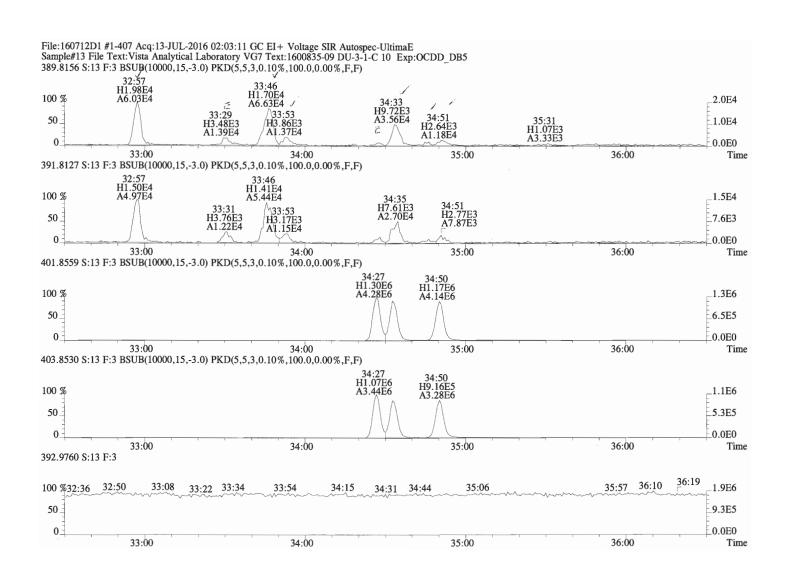


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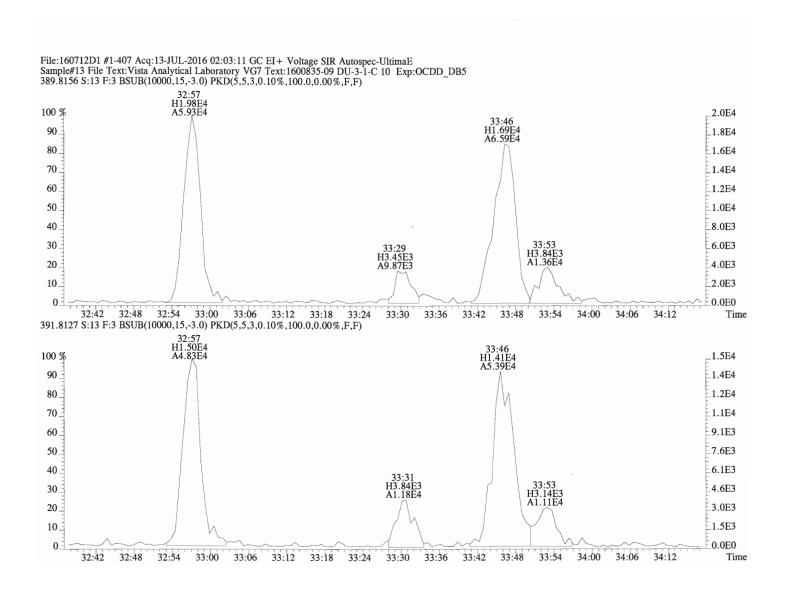




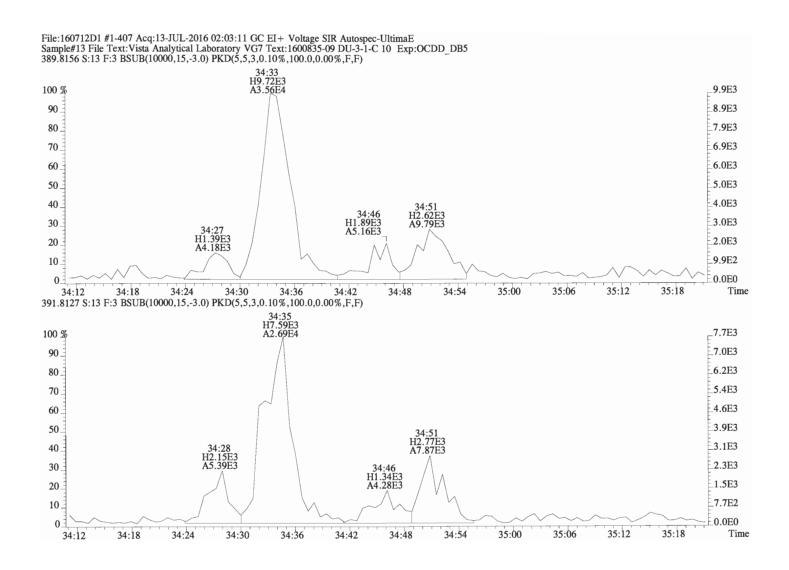
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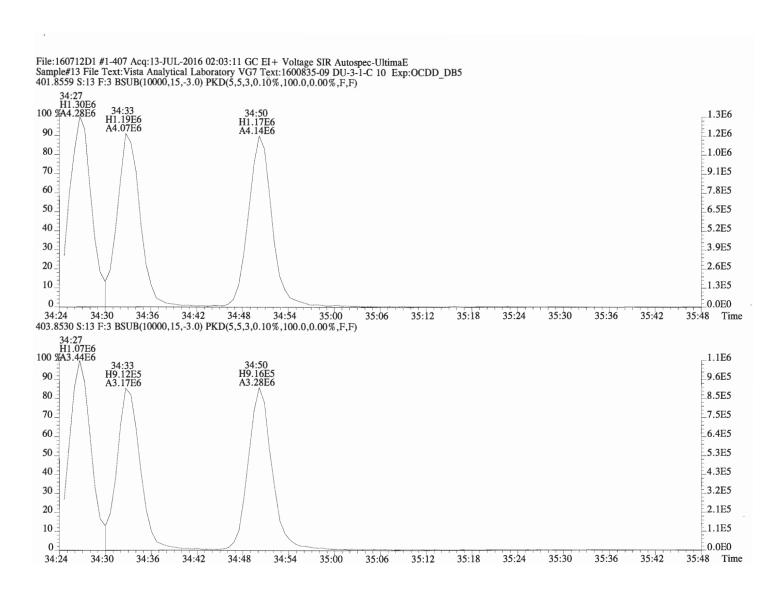
Work Order 1600835 Page 485 of 776



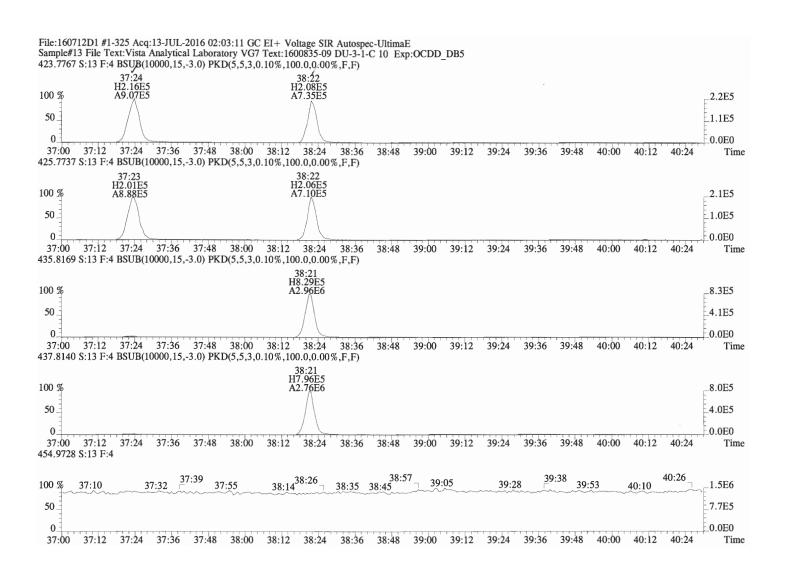
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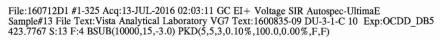
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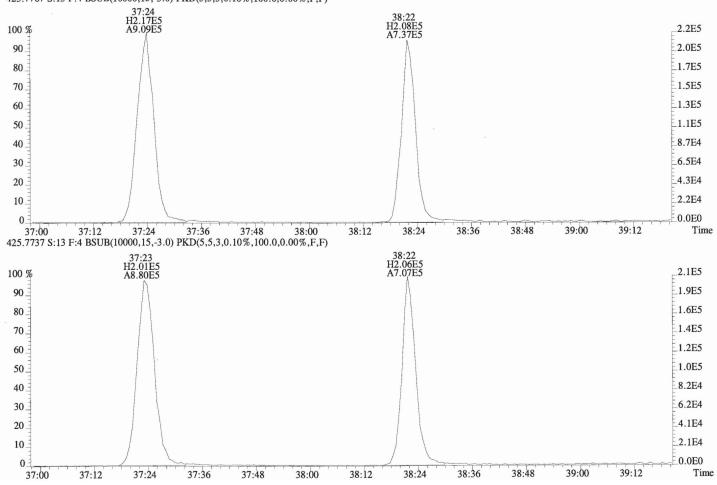


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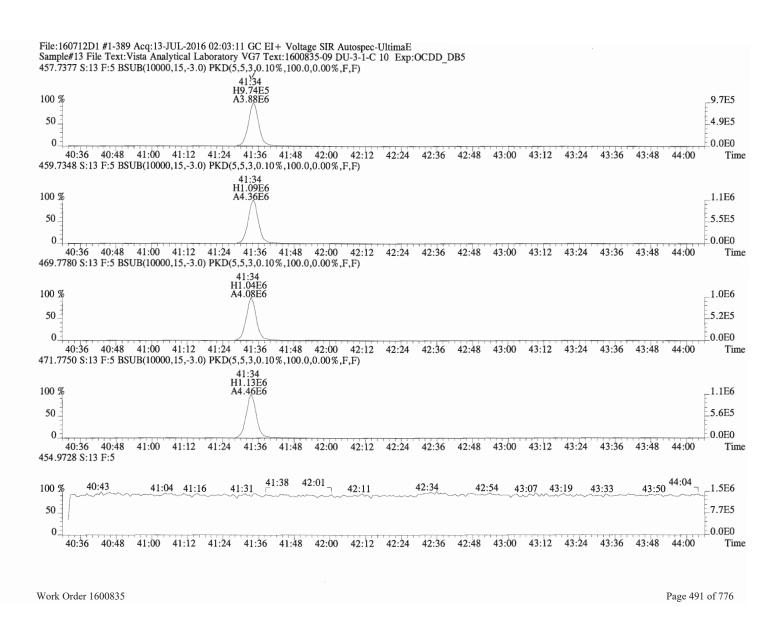


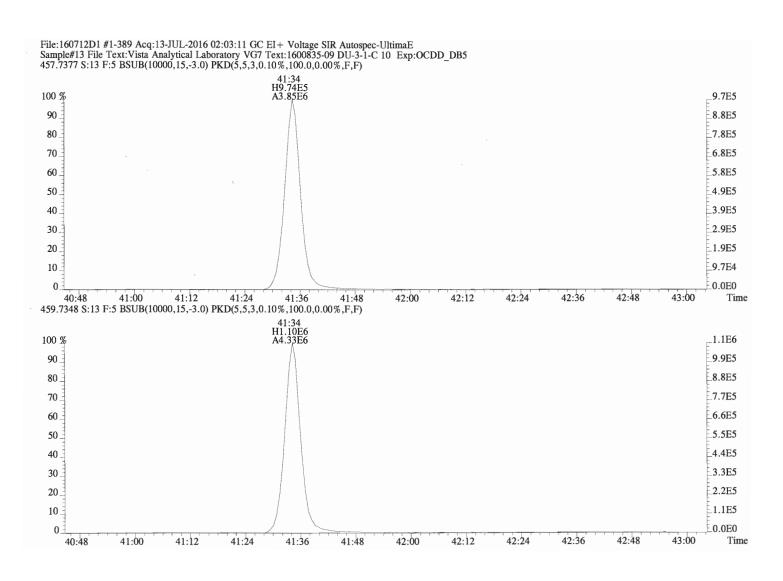
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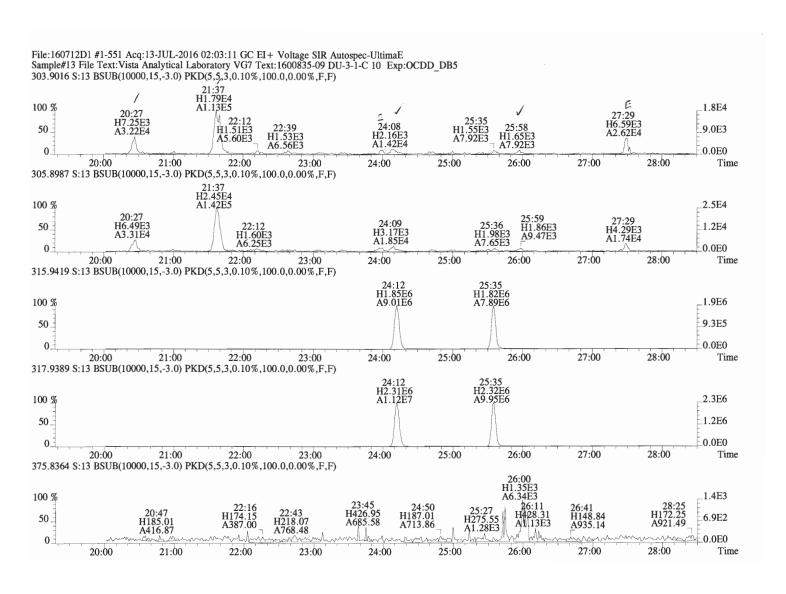


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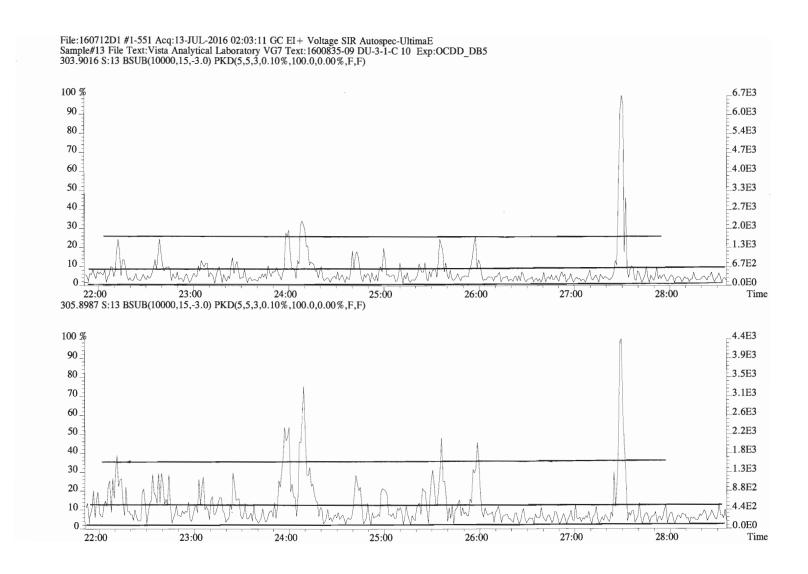




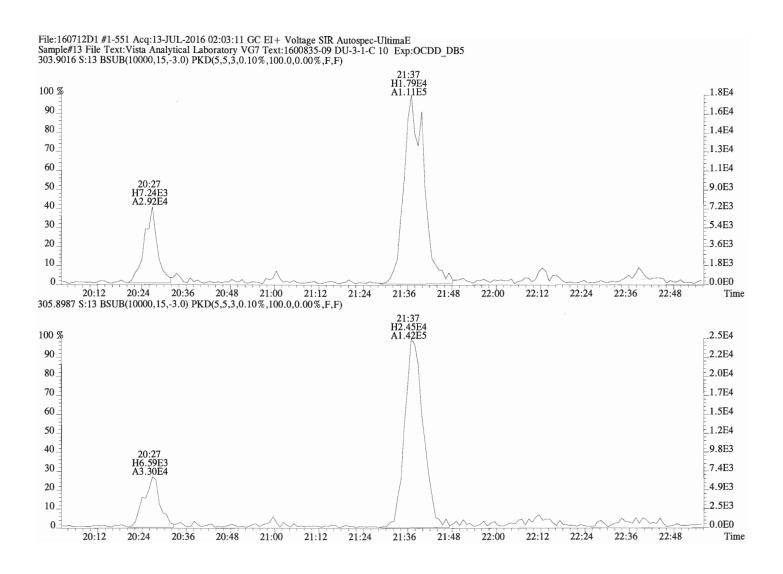
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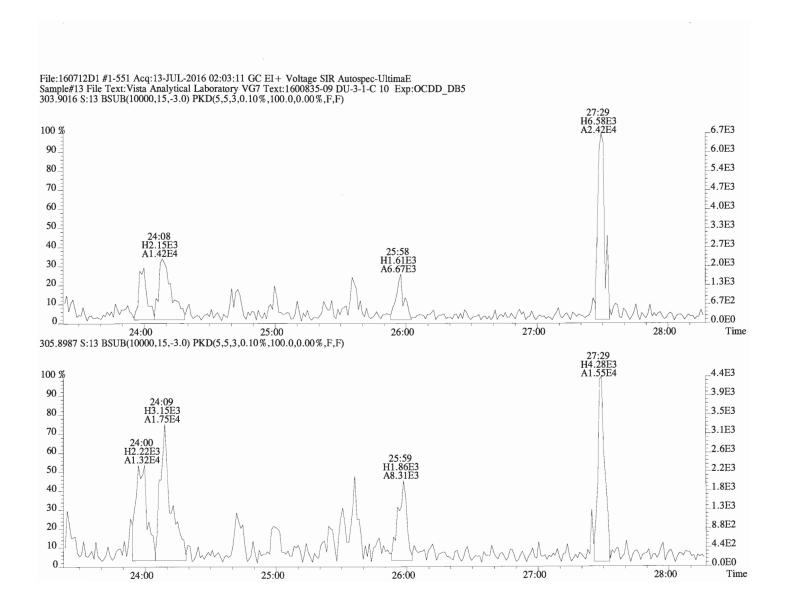
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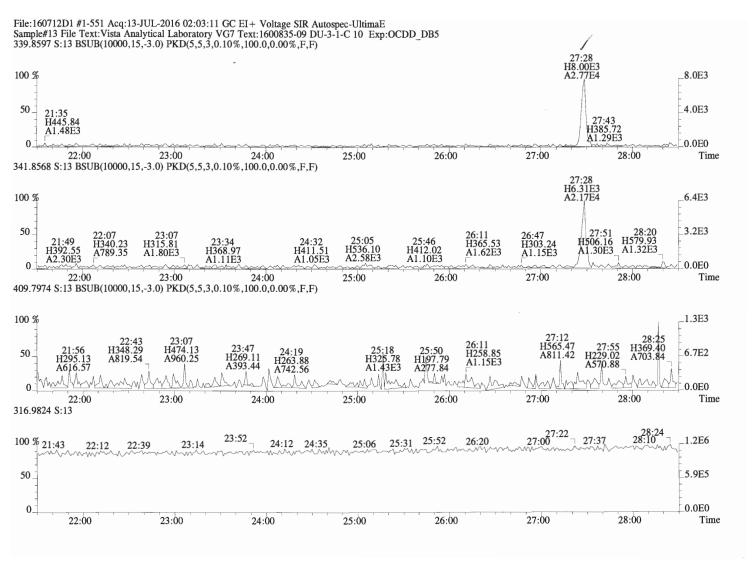
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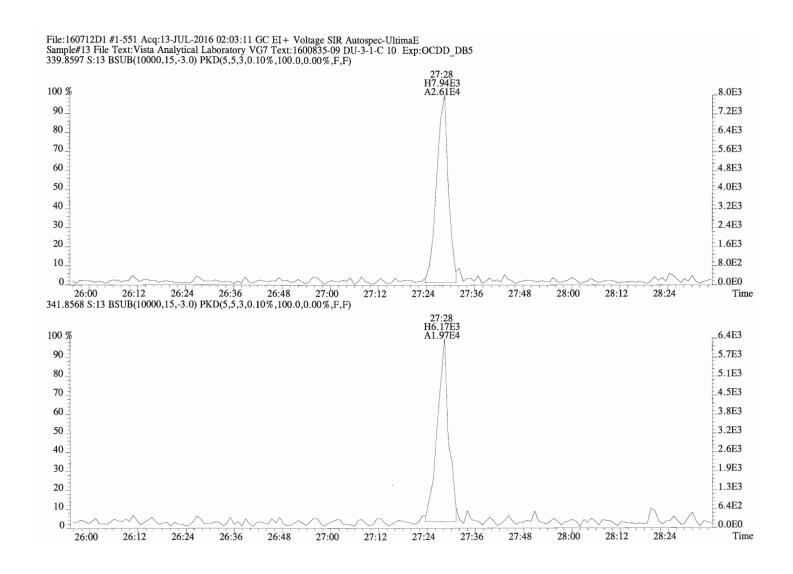
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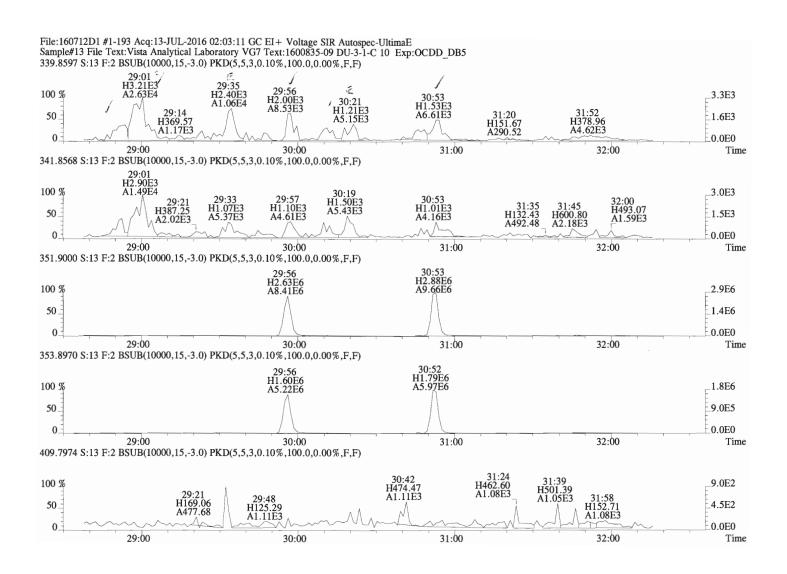
Work Order 1600835 Page 496 of 776



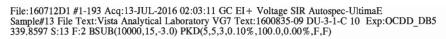
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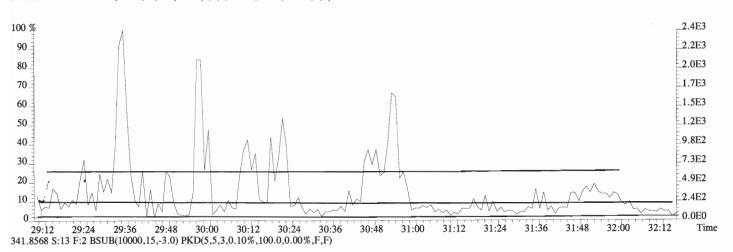


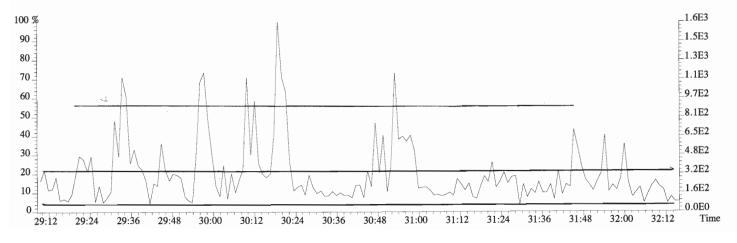
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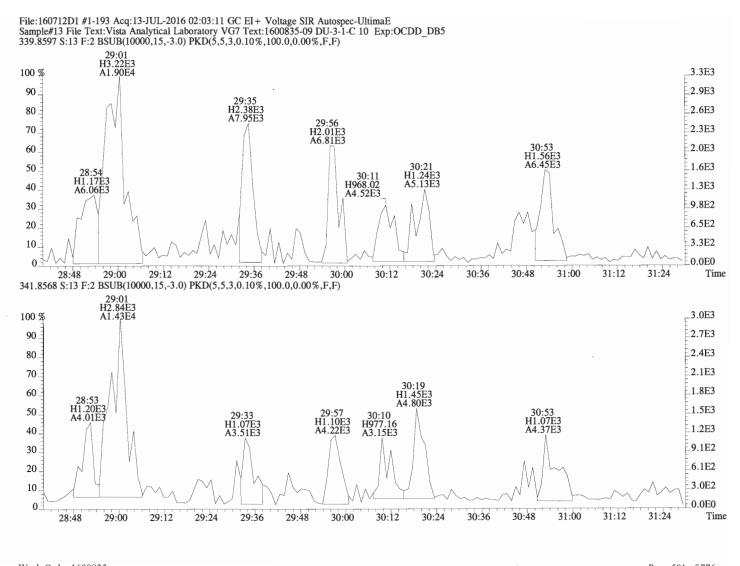
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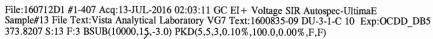


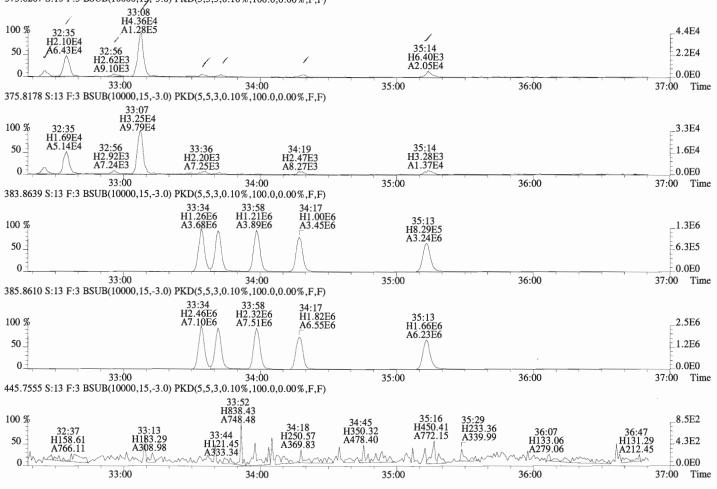


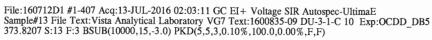
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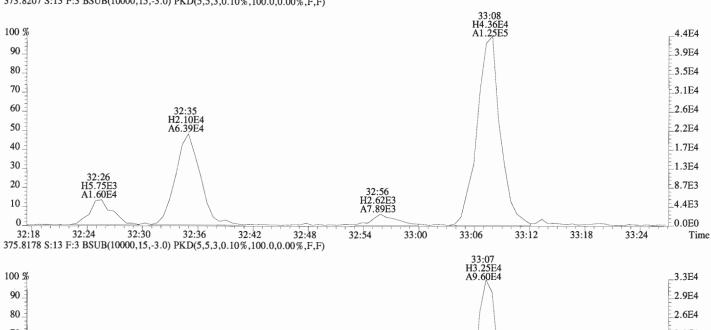


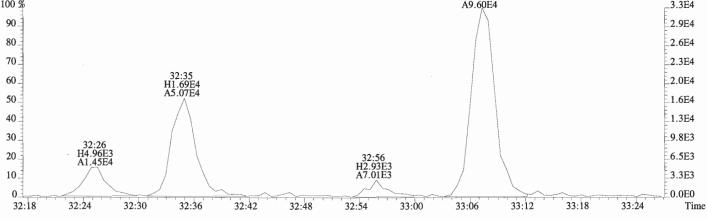
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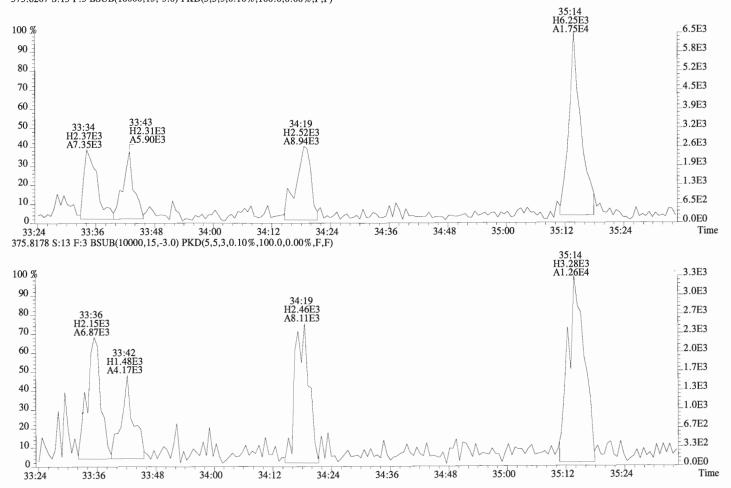






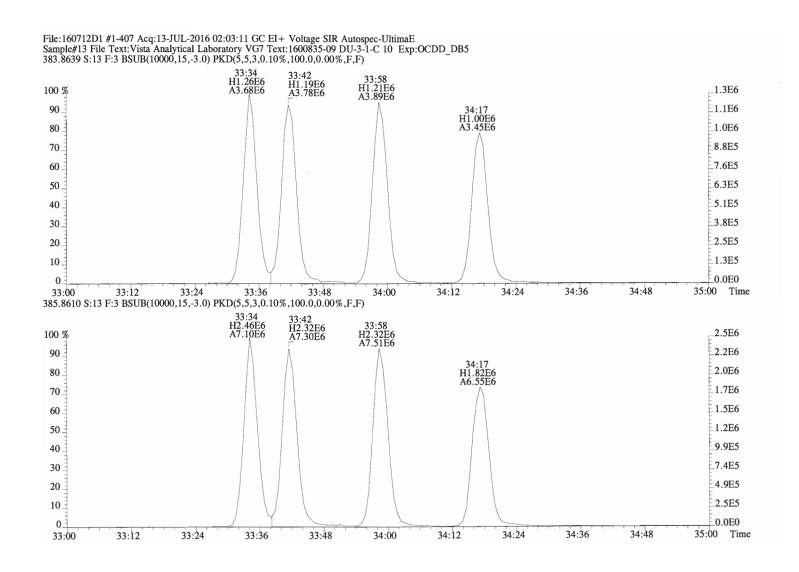
Work Order 1600835 Page 503 of 776

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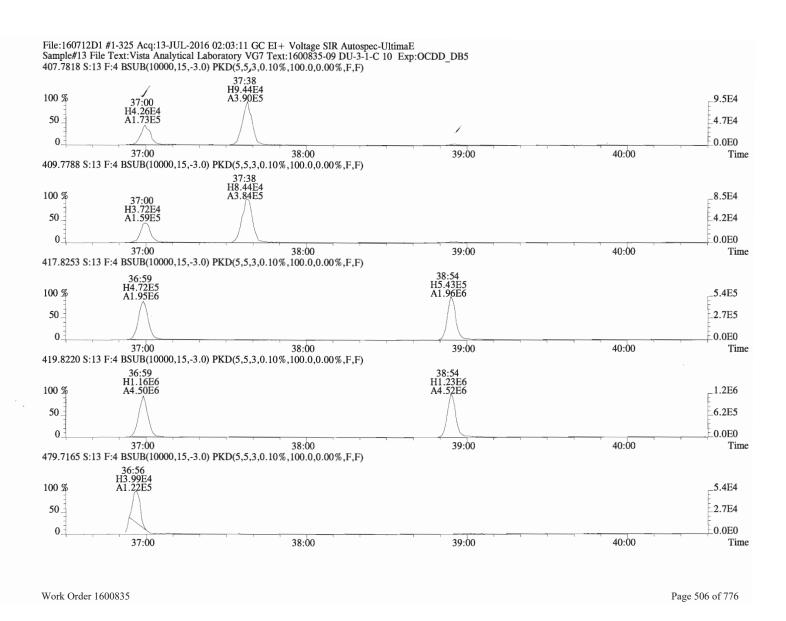


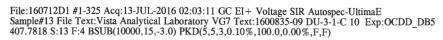
Work Order 1600835

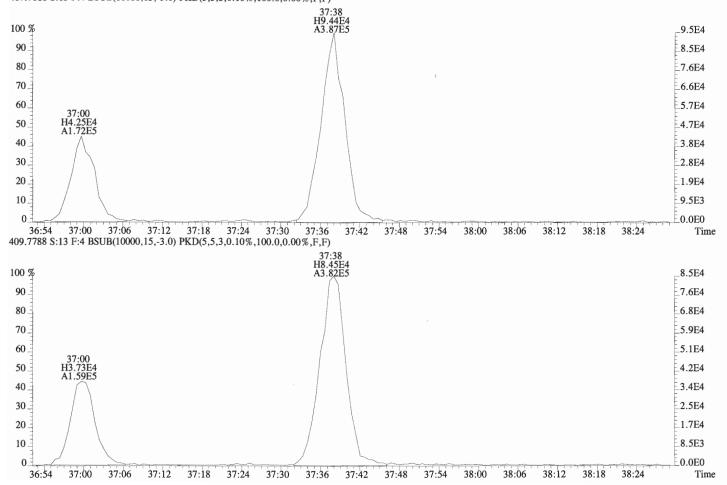
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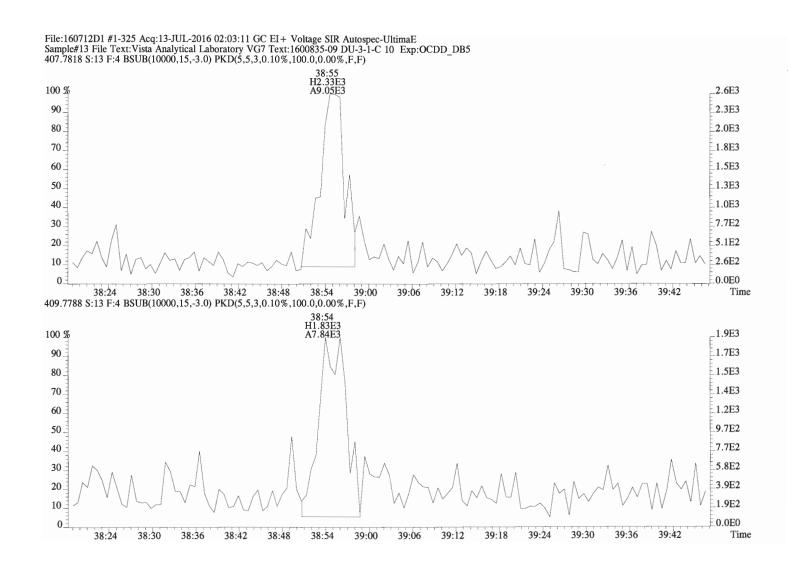
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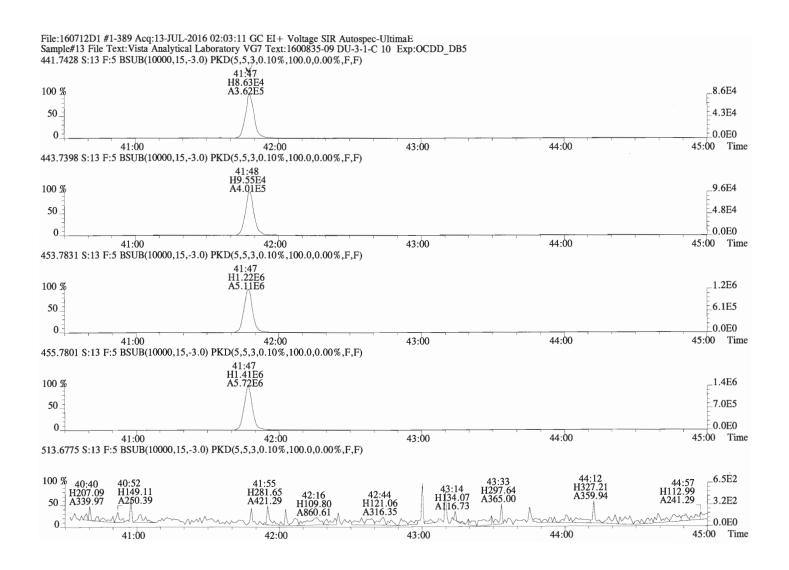




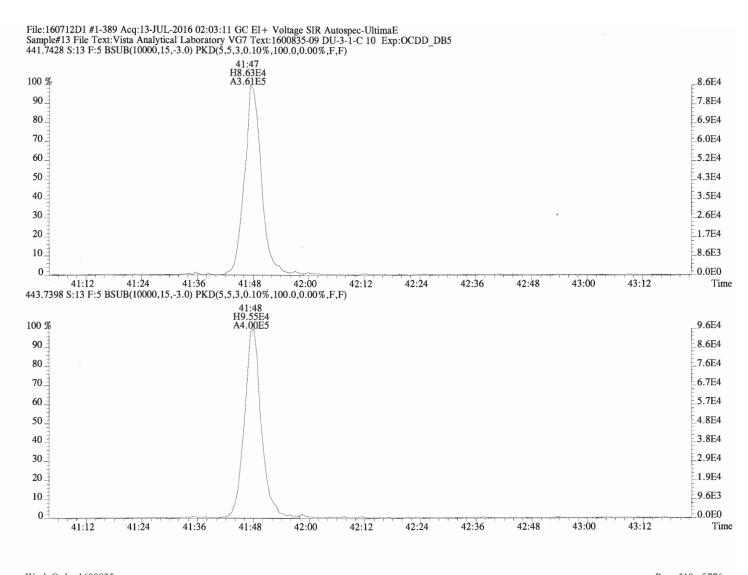
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CONFIRMATION

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Quantify Sample Summary Report

MassLynx 4.1 SCN815

Page 1 of 1

Vista Analytical Laboratory

Dataset:

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Last Altered:

Friday, July 15, 2016 9:00:21 AM Pacific Daylight Time Friday, July 15, 2016 9:48:10 AM Pacific Daylight Time

Printed:

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Calibration: C:\MassLynx\Default.pro\CurveDB\db225_1613TCDFvg11-2-8-16.cdb 08 Feb 2016 15:29:41

(7/15/16 -11-12-ACF 1/15/1/6

Name: 160714K2_4, Date: 14-Jul-2016, Time: 16:23:02, ID: 1600835-04RE2 DU-1-12-A CF 10:42, Description: DU-1-12-A CF

	#-Name -	Resp	RA .	n/y	'RRF M'	wt/vol ·	RT ·	Conc.	%Rec	DL
1 January	1 2,3,7,8-TCDF	2.23e4						3.0215	, , , , , , , , , , , , , , , , , , , ,	0.0997
2	2 13C-2,3,7,8-TCDF	1.37e6	0.78	NO	0.929	10.063	16.59	183.82	92.5	0.282
3	3 13C-1,2,3,4-TCDF	1.60e6	0.79	NO	1.00	10.063	14.62	198.76	100	0.262

Work Order 1600835 Page 512 of 776 **Quantify Sample Report**

MassLynx 4.1 SCN815

Page 1 of 2

Vista Analytical Laboratory

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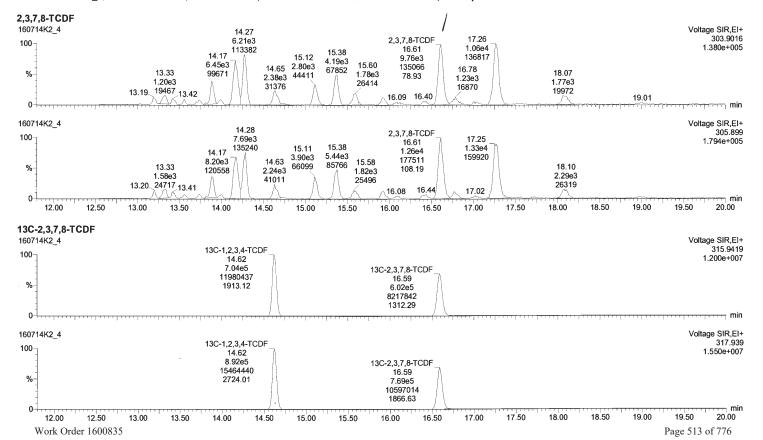
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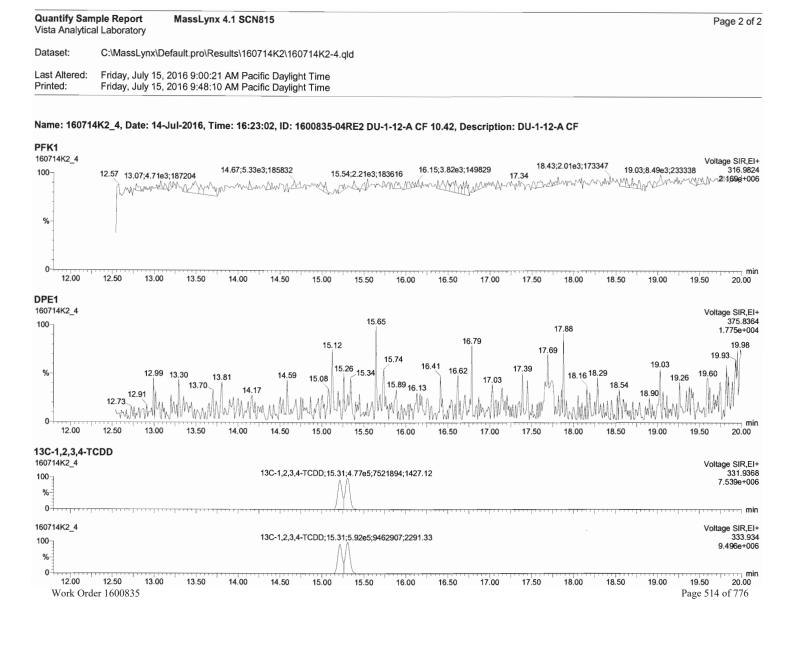
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Calibration: C:\MassLynx\Default.pro\CurveDB\db225_1613TCDFvg11-2-8-16.cdb 08 Feb 2016 15:29:41

Name: 160714K2_4, Date: 14-Jul-2016, Time: 16:23:02, ID: 1600835-04RE2 DU-1-12-A CF 10.42, Description: DU-1-12-A CF





Quantify Sample Summary Report Vista Analytical Laboratory

MassLynx 4.1 SCN815

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Friday, July 15, 2016 9:06:59 AM Pacific Daylight Time Friday, July 15, 2016 9:08:20 AM Pacific Daylight Time

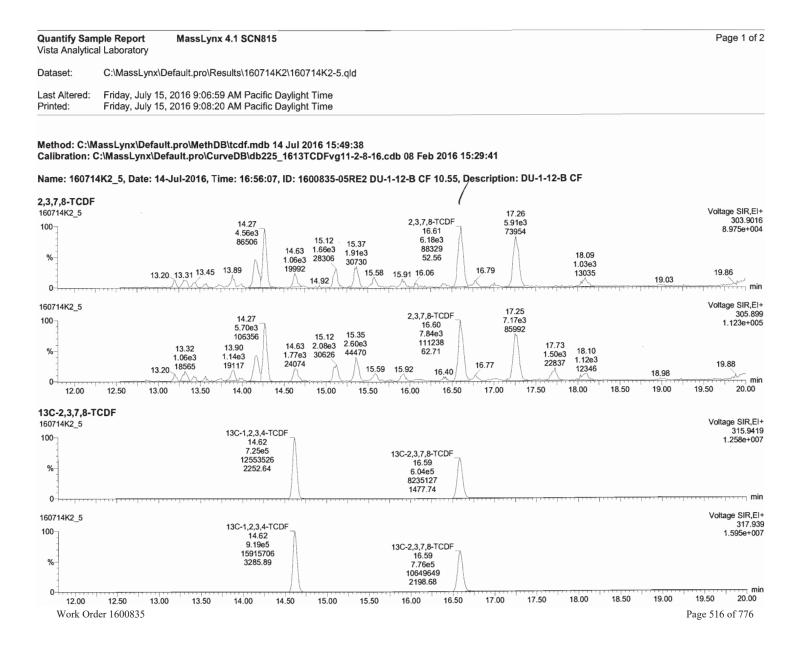
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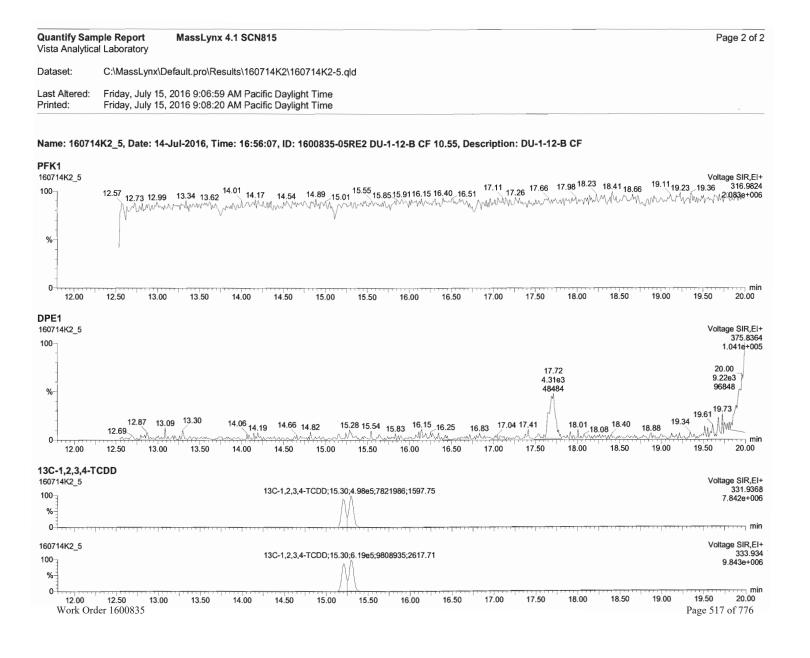
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(P1/15/16 W 71/5/1/5 Name: 160714K2_5, Date: 14-Jul-2016, Time: 16:56:07, ID: 1600835-05RE2 DU-1-12-B CF 10.55, Description: DU-1-12-B CF

The state of the s	#-Name	Resp :	RA .	n/y	'RRF M'	wt/vol =	RT :	Conc.	%Rec	DL
1	1 2,3,7,8-TCDF	1.40e4	0.79	NO	1.07	9.979	16.61	1.8996		0.103
2	2 13C-2,3,7,8-TCDF	1.38e6	0.78	NO	0.929	9.979	16.59	181.31	90.5	0.237
3	3 13C-1,2,3,4-TCDF	1.64e6	0.79	NO	1.00	9.979	14.62	200.43	100	0.220

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CONTINUING CALIBRATION

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FORM 4A PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST160712D1-1

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160712D1 S#1 Analysis Date: 12-JUL-16 Time: 16:20:50

	M/Z'S FORMING	ION ABUND.	QC LIMITS		CONC.	CONC. RANGE (3)	
	RATIO (1)	RATIO	(2)	Pass	FOUND	(ng/mL)	
NATIVE ANALYTES	141110 (1)	1411 20	(2)	1 000	FOUND	(119/1111)	
							(1) See Table 8, Method 1613, for m/z specifications.
2,3,7,8-TCDD	M/M+2	0.80	0.65-0.89) у	10.6	7.8 - 12.9	(-,
						8.2 - 12.3 (4)	(2) Ion Abundance Ratio Control Limits as specified
1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	y Y	50.7	39.0 - 65.0	in Table 9, Method 1613.
1,2,3,4,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	У	48.7	39.0 - 64.0	(3) Contract-required concentration range as specified
1,2,3,6,7,8-HxCDD	M+2/M+4	1.24	1.05-1.43	У	49.7	39.0 - 64.0	in Table 6, Method 1613.
1,2,3,7,8,9-HxCDD	M+2/M+4	1.23	1.05-1.43	У	49.6	41.0 - 61.0	
							(4) Contract-required concentration range as specified
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	У	49.7	43.0 - 58.0	in Table 6a, Method 1613, for tetras only.
OCDD	M+2/M+4	0.90	0.76-1.02	Y Y	102	79.0 - 126.0	
2,3,7,8-TCDF	M/M+2	0.79	0.65-0.89	У	10.2	8.4 - 12.0	
				-		8.6 - 11.6 (4)	
1,2,3,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	У	50.4	41.0 - 60.0	
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	У	50.3	41.0 - 61.0	
1,2,3,4,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	-	50.3	45.0 - 56.0	
1,2,3,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43		51.8	44.0 - 57.0	
2,3,4,6,7,8-HxCDF	M+2/M+4	1.27	1.05-1.43	-	50.2	44.0 - 57.0	
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	У	49.6	45.0 - 56.0	~
1,2,3,4,6,7,8-HpCDF	M. 2 /M. 4	1.02	0.88-1.20				$\mathcal{D}\mathcal{K}$
1,2,3,4,7,8,9-HpCDF		1.02		4	49.6	45.0 - 55.0	Analyst:
1,2,3,4,7,8,9-HDCDF	M+2/M+4	1.04	0.88-1.20	Y	49.4	43.0 - 58.0	4)
OCDF	M+2/M+4	0.93	0.76-1.02	У	98.7	63.0 - 159.0	Analyst: 1)B Date: 7/12/16

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FORM 4B PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.:

SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160712D1 S#1 Analysis Date: 12-JUL-16 Time: 16:20:50

FC	M/Z'S ORMING	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC.	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	У	103	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	Y	76.8	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.28	1.05-1.43	4	98.7	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.27	1.05-1.43	Y	97.7	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.22	1.05-1.43	Y	99.4	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.14	0.88-1.20	Y	82.0	72.0 - 138.0
13C-OCDD	M/M+2	0.89	0.76-1.02	У	147	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.82	0.65-0.89	У	106	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	У	79.4	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	У	77.4	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	Y	98.9	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.50	0.43-0.59	•	96.7	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	Y	97.6	73.0 ~ 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	У	103	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCDE	M+2/M+4	0.43	0.37-0.51	У	88.3	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCDE	M+2/M+4	0.41	0.37-0.51	У	77.9	77.0 - 129.0
13C-OCDF	M+2/M+4	0.91	0.76-1.02	У	147	96.0 - 415.0
CLEANUP STANDARD (3)						
37C1-2,3,7,8-TCDD					9.83	7.9 - 12.7

- (1) See Table 8, Method 1613, for m/z specifications.
- (2) Ion Abundance Ratio Control Limits as specified
- (3) No ion abundance ratio; report concentration found.

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FORM 5 PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.:

SAS No.:

Instrument ID: VG-7

Initial Calibration Date: 4-7-16

RT Window Data Filename: 160712D1 S#1 Analysis Date: 12-JUL-16 Time: 16:20:50

ZB-5MS IS Data Filename: 160712D1 S#1 Analysis Date: 12-JUL-16 Time: 16:20:50

DB_225 IS Data Filename:

Analysis Date:

Time

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

	ABSOLUTE		ABSOLUTE
ISOMERS	RT	ISOMERS	RT
1,3,6,8-TCDD (F)	22:38	1,3,6,8-TCDF (F)	20:26
1,2,8,9-TCDD (L)	27:21	1,2,8,9-TCDF (L)	27:31
1,2,4,7,9-PeCDD (F)	29:02	1,3,4,6,8-PeCDF (F)	27:26
1,2,3,8,9-PeCDD (L)	31:33	1,2,3,8,9-PeCDF (L)	31:47
1,2,4,6,7,9-HxCDD (F)	32:57	1,2,3,4,6,8-HxCDF (F)	32:25
1,2,3,7,8,9-HxCDD (L)	34:52	1,2,3,7,8,9-HxCDF (L)	35:15
1,2,3,4,6,7,9-HpCDD (F)	37:24	1,2,3,4,6,7,8-HpCDF (F)	37:00
1,2,3,4,6,7,8-HpCDD (L)	38:23	1,2,3,4,7,8,9-HpCDF (L)	38:56

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT
BETWEEN
COMPARED PEAKS (1)

<25%

(1) To meet contract requirements, $\$ Walley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst:

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FORM 6A

PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.:

SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160712D1 S#1 Analysis Date: 12-JUL-16 Time: 16:20:50

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)	
2,3,7,8-TCDD 1,2,3,7,8-PeCDD 2,3,7,8-TCDF 1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF	13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF	1.001 1.000 1.001 1.001 1.000	0.999-1.002 0.999-1.002 0.999-1.003 0.999-1.002 0.999-1.002	(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613. 10/94
LABELED COMPOUNDS				
13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-2,3,7,8-TCDF 13C-1,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF 37C1-2,3,7,8-TCDD	13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDD	1.025 1.209 0.993 1.161 1.198 1.025	0.976-1.043 1.000-1.567 0.923-1.103 1.000-1.425 1.011-1.526 0.989-1.052	

Analyst: 1)

Pate: 7/12/16

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FORM 6B

PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160712D1 S#1 Analysis Date: 12-JUL-16 Time: 16:20:50

1,2,3,7,8,9-HxCDF					
NATIVE ANALYTES REFERENCE RRT QC LIMITS (1) 1,2,3,4,7,8-HXCDF 13C-1,2,3,4,7,8-HXCDF 13C-1,2,3,4,6,7,8-HXCDF 13C-1,2,3,4,6,7,8-HXCDF 13C-1,2,3,4,6,7,8-HXCDF 13C-1,2,3,4,6,7,8-HXCDF 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,7,8-HXCDD 13C-1,2,3,4,7,8-HXCDD 13C-1,2,3,4,7,8-HXCDD 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,6,7,8-HXCDF 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HXCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HYCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HYCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HYCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HYCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HYCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,7,8-HYCDD 13C-1,2,3,4,6,9-HXCDF 13C-1,2,3,4,6,9-HYCDF 13C-1,2,3,4,6,9-HYC		RETENTION TIME		PPT	
1,2,3,4,7,8-HxCDF	NATIVE ANALYTES		RRT		
1,2,3,6,7,8-HxCDF				L (-)	
2,3,4,6,7,8-HxCDF	1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.000	0.999-1.001	(1) Contract-required limits for
1,2,3,7,8,9-HxCDF	1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.001	0.997-1.005	Relative Retention Times (RRT)
1,2,3,4,7,8-HxCDD	2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.000	0.999-1.001	as specified in Table 2, Method 1613. 10/94
1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001	
1,2,3,7,8,9-HxCDD	1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.001	0.999-1.001	
1,2,3,4,6,7,8-HpCDF	1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.000	0.998-1.004	
1,2,3,4,6,7,8-HpCDD	1,2,3,7,8,9-HxCDD	13C-1,2,3,7,8,9-HxCDD	1.000	0.998-1.004	
1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,7,8,9-HpCDF 1.001 0.999-1.001 OCDD 13C-OCDD 1.000 0.999-1.001 LABELED COMPOUNDS 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.988 0.975-1.001 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.991 0.979-1.005 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365	1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001	
OCDD 13C-OCDD 1.000 0.999-1.001 LABELED COMPOUNDS 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.988 0.975-1.001 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.991 0.979-1.005 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,4,6,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,4,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HyCDD 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,6,7,8-HyCDD 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HyCDD 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HyCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365	1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999-1.001	
CODF 13C-OCDF 1.000 0.999-1.001	1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.001	0.999-1.001	
LABELED COMPOUNDS 13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.988 0.975-1.001 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.991 0.979-1.005 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.037 1.002-1.072 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365	OCDD	13C-OCDD	1.000	0.999-1.001	
13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.988 0.975-1.001 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.991 0.979-1.005 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.037 1.002-1.072 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365	OCDF	13C-OCDF	1.000	0.999-1.001	
13C-1,2,3,4,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.988 0.975-1.001 13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.991 0.979-1.005 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.037 1.002-1.072 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					
13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.991 0.979-1.005 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.037 1.002-1.072 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365	LABELED COMPOUNDS				
13C-1,2,3,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 0.991 0.979-1.005 13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.037 1.002-1.072 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365	13C-1 2 3 4 7 8-HYCDE	13C-1 2 3 4 6 9-HyCDF	0 988	0 975-1 001	
13C-2,3,4,6,7,8-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.009 1.001-1.020 13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.037 1.002-1.072 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,7,8-HyCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8,9-HyCDF 13C-1,2,3,4,6,9-HxCDF 1.45 1.098-1.192 13C-1,2,3,4,7,8-HyCDD 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HyCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					
13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,9-HxCDF 1.037 1.002-1.072 13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.45 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					
13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.014 1.002-1.026 13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,6,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					
13C-1,2,3,6,7,8-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.017 1.007-1.029 13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.29 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					
13C-1,2,3,7,8,9-HxCDD 13C-1,2,3,4,6,9-HxCDF 1.025 1.014-1.038 13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					
13C-1,2,3,4,6,7,8-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.089 1.069-1.111 13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-0CDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					
13C-1,2,3,4,7,8,9-HpCDF 13C-1,2,3,4,6,9-HxCDF 1.145 1.098-1.192 Analyst: 1/2 13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-0CDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					\ //
13C-1,2,3,4,6,7,8-HpCDD 13C-1,2,3,4,6,9-HxCDF 1.129 1.117-1.141 13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365 13C-OCDF 13C-1,2,3,4,6,9-HxCDF 1.230 1.091-1.371					Analyst: 1)
13C-OCDD 13C-1,2,3,4,6,9-HxCDF 1.223 1.085-1.365					Analyse
13C-12 3.4.6.9-HVCDF 1.230 1.091-1.371					2/ 2/ 2
	13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.230	1.003-1.303	Date: 7/12/16

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	nt ID: 1613 CS3 16C3101 ID: ST160712D1-1		lename: 1 Column I			Acq:12	-JUL-16 16 7-4-7-16		wol.	1.000		ConCal: ST160712D1 EndCAL: NA	-1			Page	1 (
	15. 51100/1251-1	GC	COTUME 1	J. 25-31	no icai	. 1013 40	7-4-7-16	wc,	VOI:	1.000		BIUCAD: NA					
	Name	Resp	RA	RRF		RRT	Conc	Q noise	Fac)L	Name	Conc		Qual	noise	
		8.01e+05	0.80 y	1.13	26:26		10.607	*	2.5		*	Total Tetra-Dioxins	57.2	57.9		*	
	1,2,3,7,8-PeCDD	2.65e+06	0.63 y	0.96	31:10	1.000	50.680	*	2.5		*	Total Penta-Dioxins	160	161		*	
	1,2,3,4,7,8-HxCDD	2.26e+06	1.24 y	1.00	34:28	1.001	48.704	*	2.5		*	Total Hexa-Dioxins	194	195		*	
		2.52e+06	1.24 y	1.10	34:34	1.000	49.744	*	2.5		*	Total Hepta-Dioxins	129	131		*	
	1,2,3,7,8,9-HxCDD	2.35e+06	1.23 y	1.05	34:52	1.000	49.559	*	2.5		*	Total Tetra-Furans	30.4	32.0		*	
	1,2,3,4,6,7,8-HpCDD	1.85e+06	1.03 y	1.05	38:23	1.000	49.735	*	2.5		*	Total Penta-Furans	206.74	207.32		*	
	OCDD	3.10e+06	0.90 y	0.96	41:35	1.000	102.23	*	2.5		*	Total Hexa-Furans	253	255		*	
												Total Hepta-Furans	99.9	102		*	
	2,3,7,8-TCDF	1.14e+06	0.79 y	1.12	25:36	1.001	10.169	*	2.5		*						
	1,2,3,7,8-PeCDF	4.16e+06	1.60 y	1.01	29:57	1.001	50.424	*	2.5		*						
	2,3,4,7,8-PeCDF	4.22e+06	1.54 y	0.90	30:53	1.000	50.285	*	2.5		*						
	1,2,3,4,7,8-HxCDF	3.81e+06	1.25 y	1.16	33:35	1.000	50.341	*	2.5		*						
	1,2,3,6,7,8-HxCDF	4.13e+06	1.26 y	1.16	33:43	1.001	51.797	*	2.5		*						
	2,3,4,6,7,8-HxCDF	3.71e+06	1.27 y	1.23	34:18	1.000	50.182	*	2.5		*						
	1,2,3,7,8,9-HxCDF	3.13e+06	1.24 y	1.13	35:15	1.001	49.640	*	2.5		*						
	1,2,3,4,6,7,8-HpCDF	2.86e+06	1.02 y	1.44	37:00	1.000	49.564	*	2.5		*						
	1,2,3,4,7,8,9-HpCDF	2.36e+06	1.04 y	1.31	38:56	1.001	49.367	*	2.5		*						
	OCDF	4.01e+06	0.93 y	1.03	41:49	1.000	98.687	*	2.5		*						
												Rec Qual					
	13C-2,3,7,8-TCDD	6.68e+06	0.78 y	1.01	26:25	1.025	102.85					103					
	13C-1,2,3,7,8-PeCDD	5.45e+06	0.63 y	1.10	31:10	1.209	76.784					76.8					
	13C-1,2,3,4,7,8-HxCDD	4.62e+06	1.28 y	0.72	34:27	1.014	98.666					98.7					
	13C-1,2,3,6,7,8-HxCDD	4.62e+06	1.27 y	0.73	34:33	1.017	97.725					97.7					
	13C-1,2,3,7,8,9-HxCDD	4.53e+06	1.22 y	0.70	34:51	1.025	99.426					99.4					
1	3C-1,2,3,4,6,7,8-HpCDD	3.54e+06	1.14 y	0.66	38:22	1.129	81.976					82.0					
	13C-OCDD	6.31e+06	0.89 y	0.66	41:34	1.223	147.09					73.5					
	13C-2,3,7,8-TCDF	1.00e+07	0.82 y	0.90	25:35	0.993	105.83					106					
	13C-1,2,3,7,8-PeCDF	8.20e+06	1.62 y	0.98	29:56	1.161	79.393					79.4					
	13C-2,3,4,7,8-PeCDF	9.34e+06	1.62 y	1.15	30:53	1.198	77.427					77.4					
	13C-1,2,3,4,7,8-HxCDF	6.51e+06	0.51 y	1.01	33:34	0.988	98.892					98.9					
	13C-1,2,3,6,7,8-HxCDF	6.89e+06	0.50 y	1.10	33:42	0.991	96.667					96.7					
	13C-2,3,4,6,7,8-HxCDF	6.03e+06	0.52 y	0.95	34:18	1.009	97.553					97.6					
	13C-1,2,3,7,8,9-HxCDF	5.56e+06	0.51 y	0.83	35:14	1.037	103.44					103					
1	3C-1,2,3,4,6,7,8-HpCDF	4.01e+06	0.43 y	0.70	36:60	1.089	88.288					88.3					
1	3C-1,2,3,4,7,8,9-HpCDF	3.65e+06	0.41 y	0.72	38:55	1.145	77.947					77.9					
	13C-OCDF	7.88e+06	0.91 y	0.82	41:48	1.230	147.25					73.6					
	37C1-2,3,7,8-TCDD	7.19e+05		1.14	26:26	1.025	9.8348					98.3 Integr	ations	Revie	ewed		
												by	10	by			
T	13C-1,2,3,4-TCDD	6.43e+06	0.81 y	1.00	25:47	*	100.00					Analyst:	110	Analy	/st:_		
	13C-1,2,3,4-TCDF	1.05e+07	0.78 y	1.00	24:12	*	100.00						i / .				
T	13C-1,2,3,4,6,9-HxCDF	6.49e+06	0.51 y	1.00	33:59	*	100.00					7	1/12/16				
												Date:	1. 1.0	Date:			

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Data file S# Sample ID Analyst Acq date Acq time CCal ECal	
160712D1 1 ST160712D1-1 DB 12-JUL-16 16:20:50 ST160712D1-1 NA 160712D1 2 B6G0039-BS1 DB 12-JUL-16 17:57:56 ST160712D1-1 NA 160712D1 3 SOLVENT BLANK DB 12-JUL-16 17:57:56 ST160712D1-1 NA 160712D1 4 B6G0039-BLK1 DB 12-JUL-16 18:46:29 ST160712D1-1 NA 160712D1 5 1600835-01RE1 DB 12-JUL-16 19:35:02 ST160712D1-1 NA 160712D1 6 1600835-02RE1 DB 12-JUL-16 20:23:34 ST160712D1-1 NA 160712D1 7 1600835-03RE1 DB 12-JUL-16 21:12:05 ST160712D1-1 NA 160712D1 8 1600835-04RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 10 1600835-06RE1 DB 12-JUL-16 20:249:07 ST160712D1-1 NA <	Data file S# Sample ID Analyst Acq date Acq time CCal ECal
160712D1 2 B6G0039-BS1 DB 12-JUL-16 17:09:22 ST160712D1-1 NA 160712D1 3 SOLVENT BLANK DB 12-JUL-16 17:57:56 ST160712D1-1 NA 160712D1 4 B6G0039-BLK1 DB 12-JUL-16 18:46:29 ST160712D1-1 NA 160712D1 5 1600835-01RE1 DB 12-JUL-16 20:23:34 ST160712D1-1 NA 160712D1 6 1600835-02RE1 DB 12-JUL-16 20:23:34 ST160712D1-1 NA 160712D1 7 1600835-03RE1 DB 12-JUL-16 21:12:05 ST160712D1-1 NA 160712D1 8 1600835-04RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA 160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA 160712D1 10 10 10 10 10 10 10	
160712D1 3 SOLVENT BLANK DB 12-JUL-16 17:57:56 ST160712D1-1 NA 160712D1 4 B6G0039-BLK1 DB 12-JUL-16 18:46:29 ST160712D1-1 NA 160712D1 5 1600835-01RE1 DB 12-JUL-16 19:35:02 ST160712D1-1 NA 160712D1 6 1600835-02RE1 DB 12-JUL-16 20:23:34 ST160712D1-1 NA 160712D1 7 1600835-04RE1 DB 12-JUL-16 21:12:05 ST160712D1-1 NA 160712D1 8 1600835-04RE1 DB 12-JUL-16 22:00:36 ST160712D1-1 NA 160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA 160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08	160712D1 1 ST160712D1-1 DB 12-JUL-16 16:20:50 ST160712D1-1 NA
160712D1 4 B6G0039-BLK1 DB 12-JUL-16 18:46:29 ST160712D1-1 NA 160712D1 5 1600835-01RE1 DB 12-JUL-16 19:35:02 ST160712D1-1 NA 160712D1 6 1600835-02RE1 DB 12-JUL-16 20:23:34 ST160712D1-1 NA 160712D1 7 1600835-03RE1 DB 12-JUL-16 22:00:36 ST160712D1-1 NA 160712D1 8 1600835-04RE1 DB 12-JUL-16 22:00:36 ST160712D1-1 NA 160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA 160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA	160712D1 2 B6G0039-BS1 DB 12-JUL-16 17:09:22 ST160712D1-1 NA
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160712D1 7 1600835-03RE1 DB 12-JUL-16 21:12:05 ST160712D1-1 NA 160712D1 8 1600835-04RE1 DB 12-JUL-16 22:00:36 ST160712D1-1 NA 160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA 160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA	160712D1 5 1600835-01RE1 DB 12-JUL-16 19:35:02 ST160712D1-1 NA
160712D1 8 1600835-04RE1 DB 12-JUL-16 22:00:36 ST160712D1-1 NA 160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA 160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA	160712D1 6 1600835-02RE1 DB 12-JUL-16 20:23:34 ST160712D1-1 NA
160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA 160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA 160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA	160712D1 7 1600835-03RE1 DB 12-JUL-16 21:12:05 ST160712D1-1 NA
160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA 160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA	160712D1 8 1600835-04RE1 DB 12-JUL-16 22:00:36 ST160712D1-1 NA
160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA 160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA	160712D1 9 1600835-05RE1 DB 12-JUL-16 22:49:07 ST160712D1-1 NA
160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA	160712D1 10 1600835-06RE1 DB 12-JUL-16 23:37:38 ST160712D1-1 NA
	160712D1 11 1600835-07 DB 13-JUL-16 00:26:09 ST160712D1-1 NA
160712D1 13 1600935_09 DD 12_TIT16 02:03:11 CT160712D1_1 NA	160712D1 12 1600835-08 DB 13-JUL-16 01:14:39 ST160712D1-1 NA
100/12D1 13 1000033 09 DB 13-00E-10 02:03:11 B1100/12D1-1 NA	160712D1 13 1600835-09 DB 13-JUL-16 02:03:11 ST160712D1-1 NA
160712D1 14 SOLVENT BLANK DB 13-JUL-16 02:51:43 ST160712D1-1 NA	160712D1 14 SOLVENT BLANK DB 13-JUL-16 02:51:43 ST160712D1-1 NA

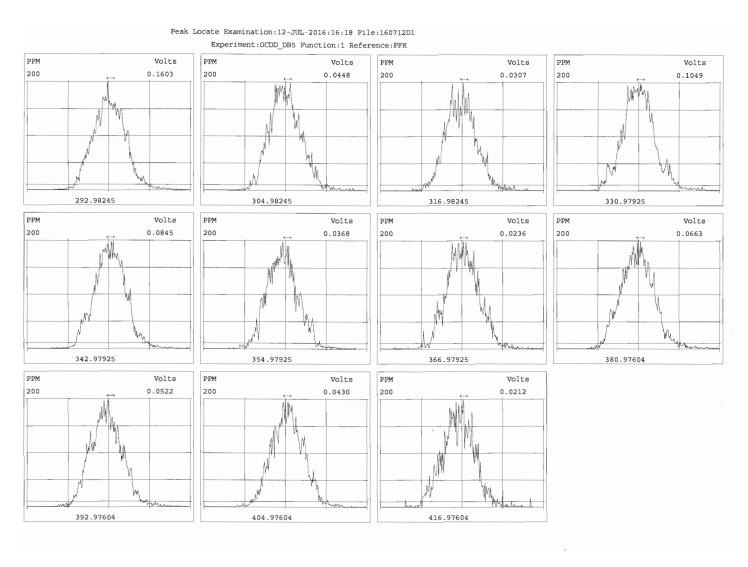
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CALIBRATION STANDARDS REVIEW CHECKLIST

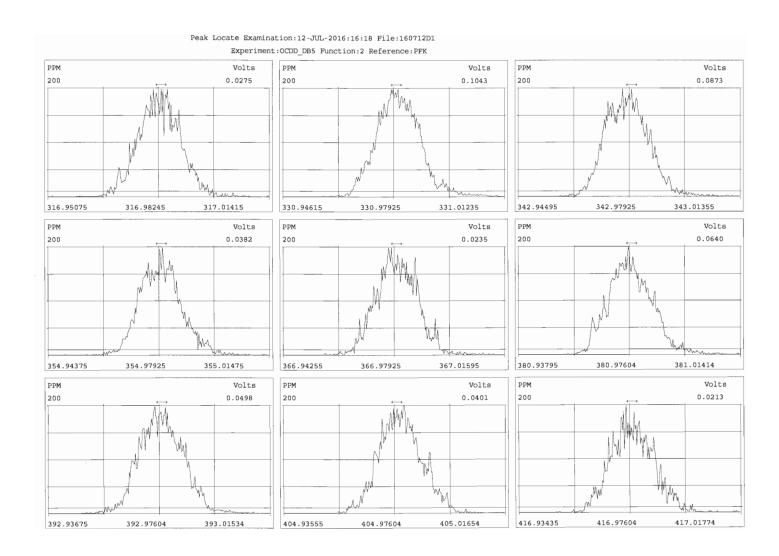


Beg. Calibration ID: ST 1607	7121)1	-1	End Calibration ID:	NA	
Ion abundance within QC limits? Concentration within range? First and last eluters present? Retention Times within criteria? Verification Std. named correctly? (ST-Year-Month-Day-VG ID) Forms signed and dated? Correct ICAL referenced? Run Log: -Data file matches Conc Cal ID? -Correct instrument listed? -Samples within 12-hour clock?	Beg.	End NA n	Mass resolution 10,000? Method 1614 > 5,000; CARB 429 > 8,00 TCDD/TCDF valleys < 25%? Peaks integrated correctly? Manual integrations included? 8280 CS1 Ending Standard -Ratios within limits -S/N > 2.5:1 -CS1 within 12-hour clock Comments:	Beg.	End NA NA
Reviewed by: \(\mathcal{N} \) 7 4 Initials & Date	16		* Ending standard criteria applicable to 8290 only.	<u>. </u>	

Vista Analytical Laboratory El Dorado Hills, CA 95762

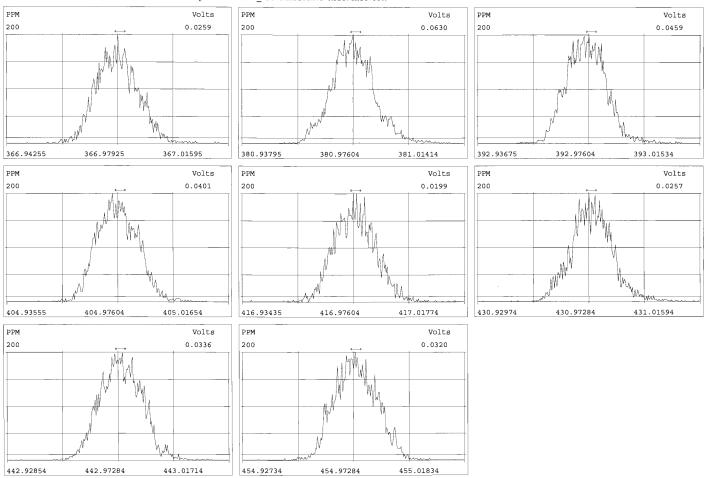


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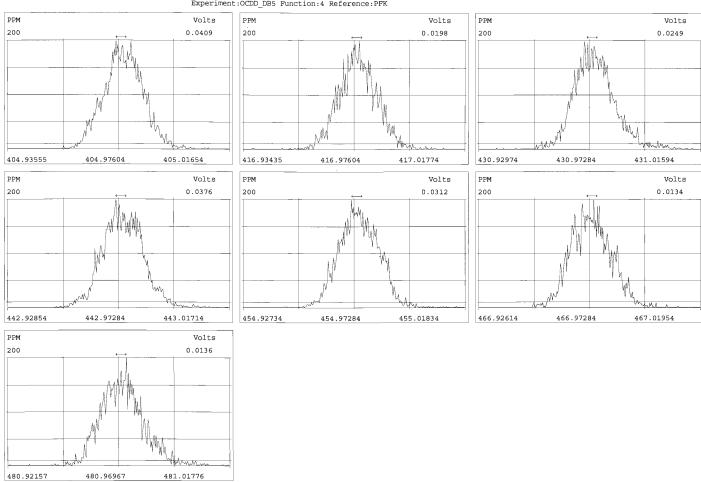
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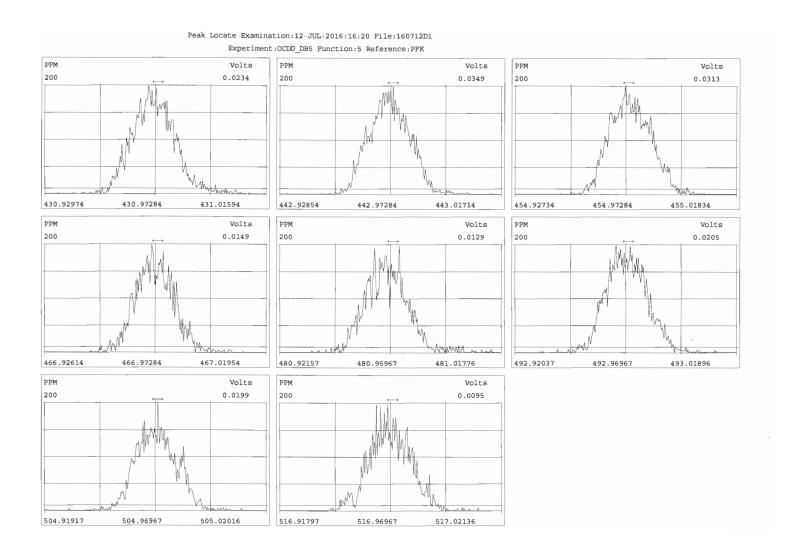


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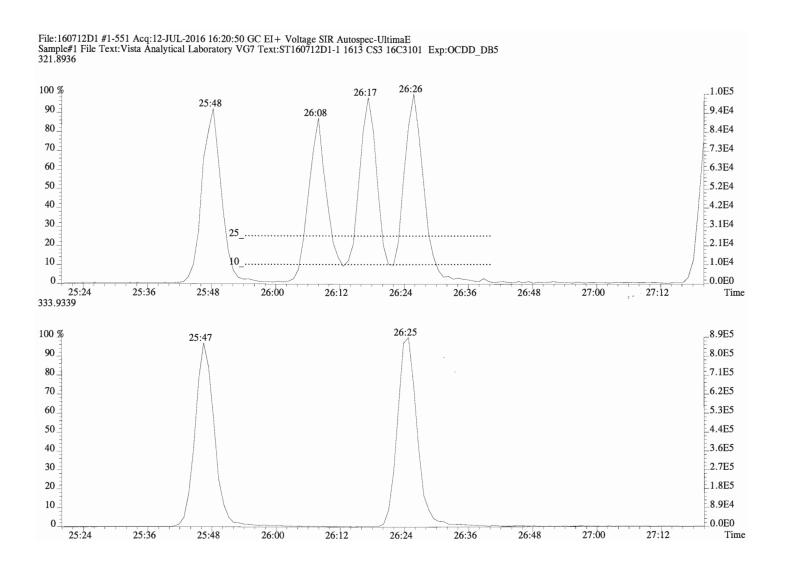
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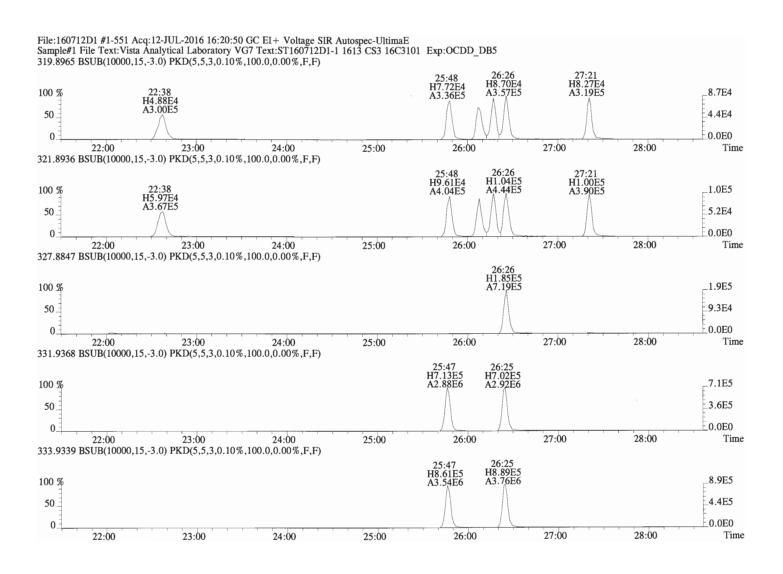
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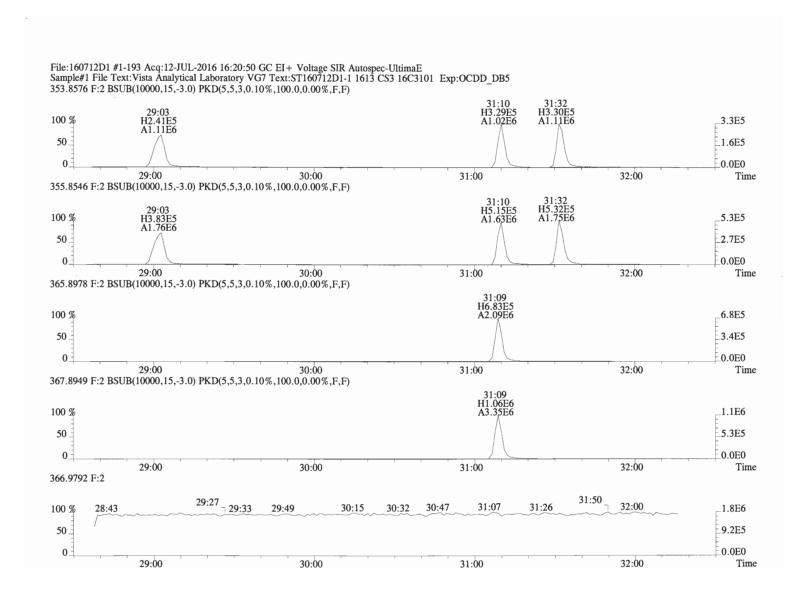
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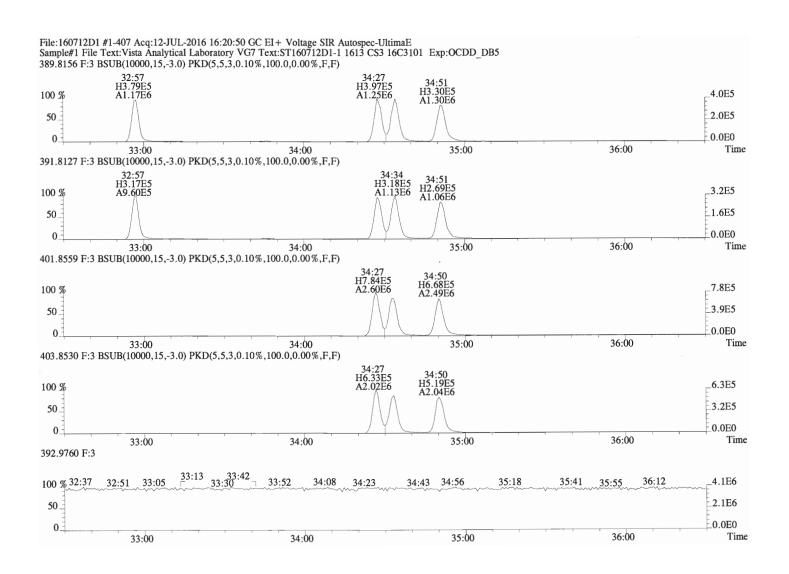
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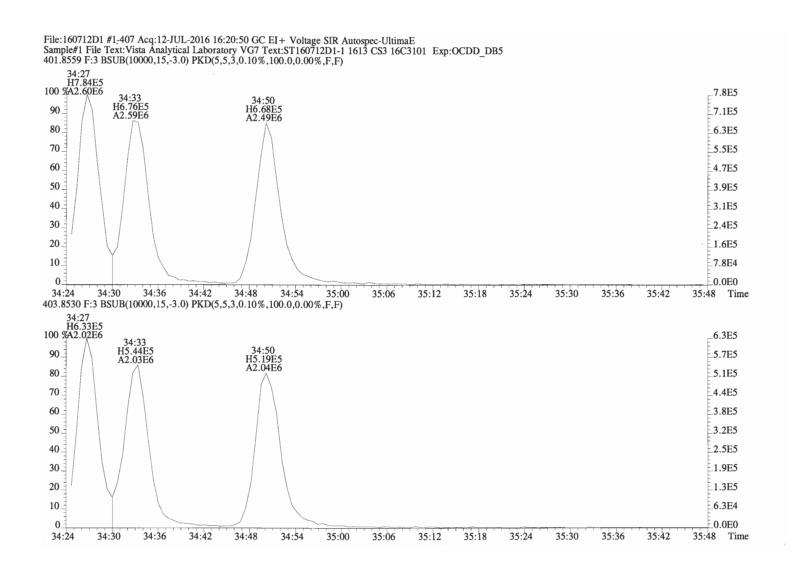
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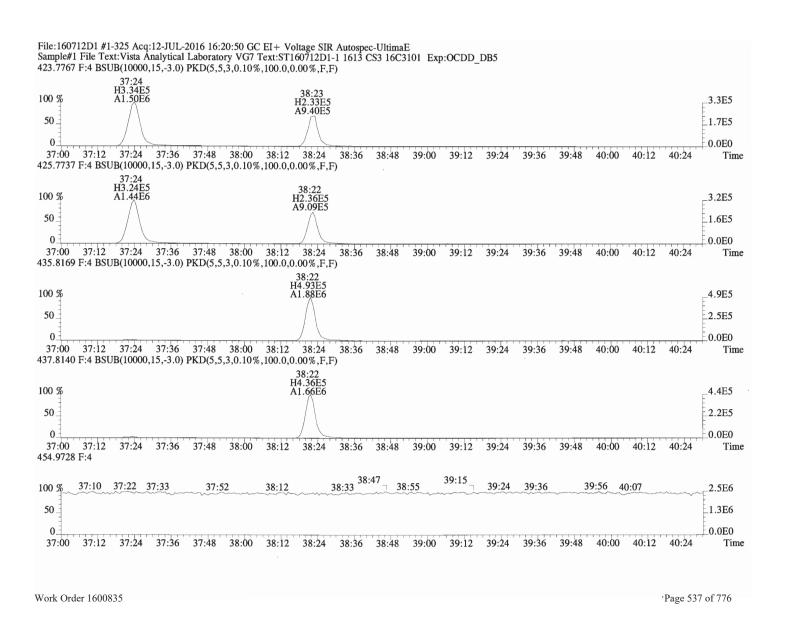
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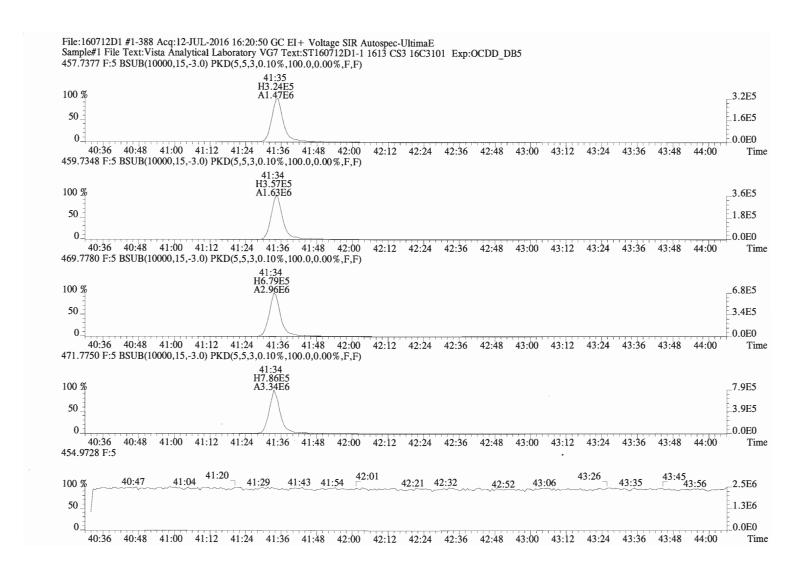


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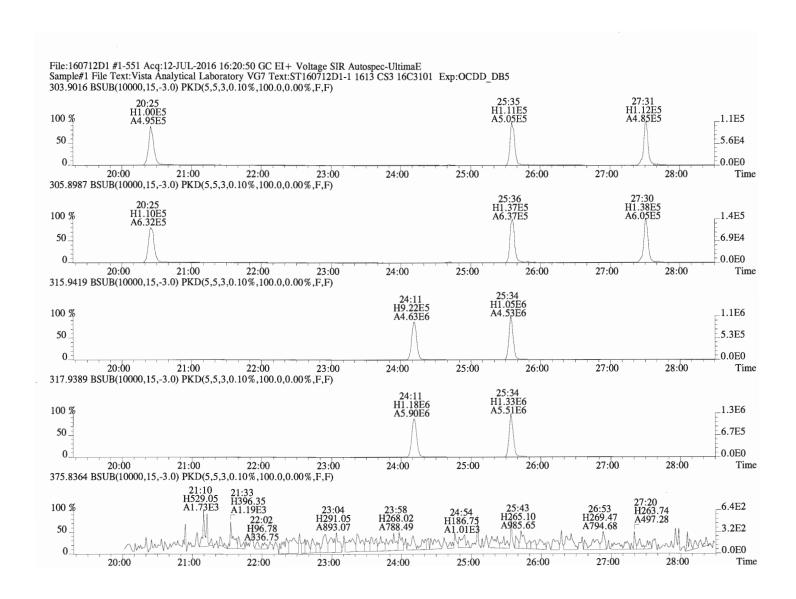


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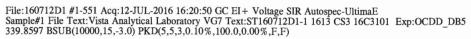


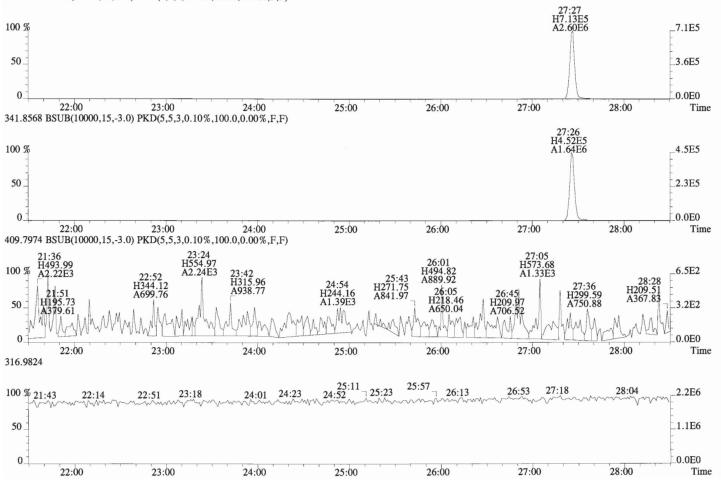


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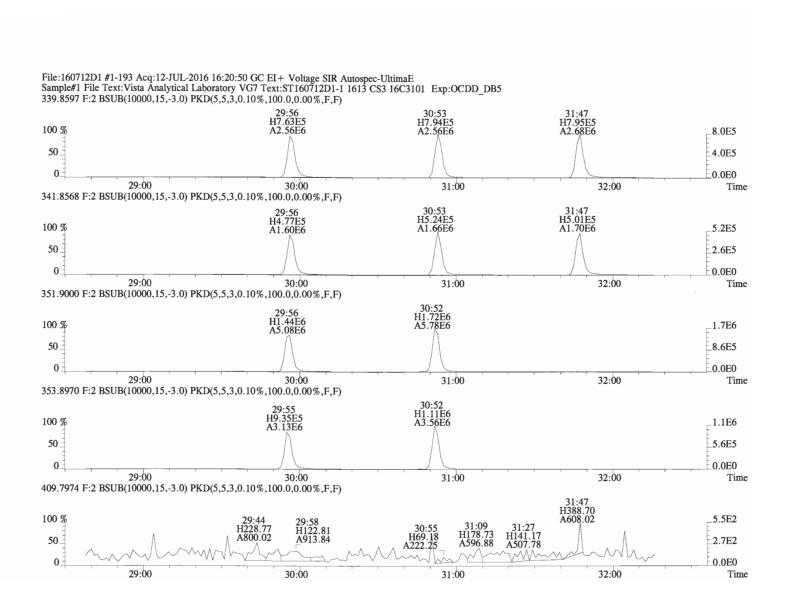


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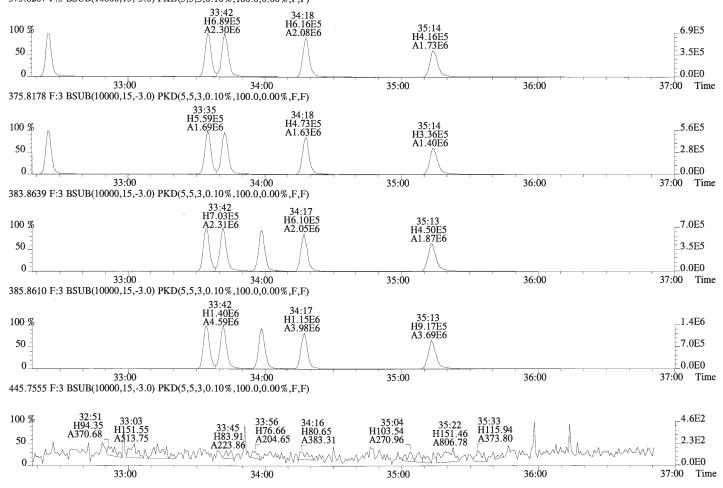


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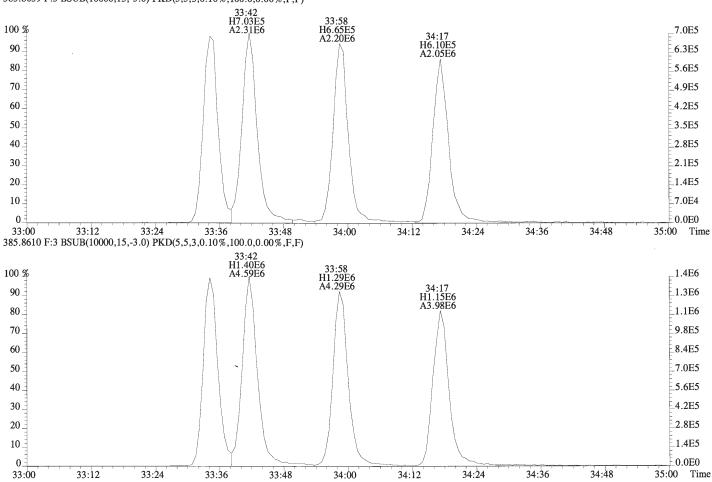
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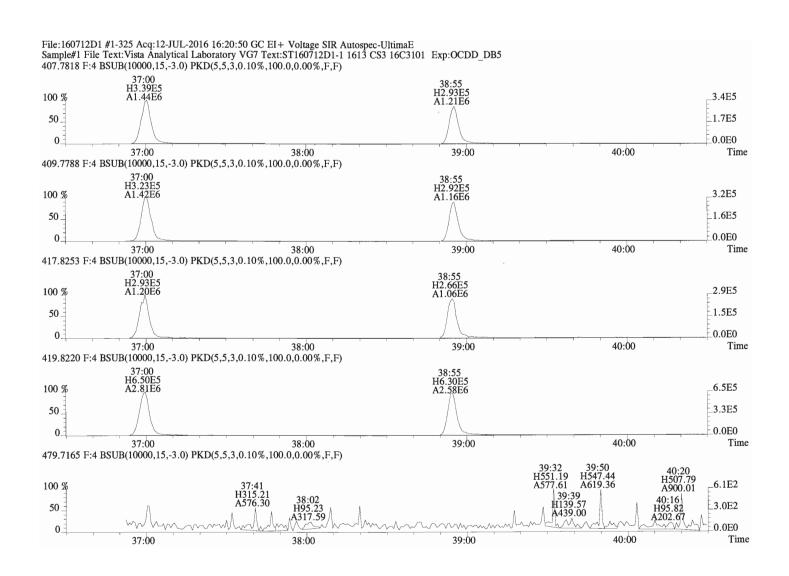
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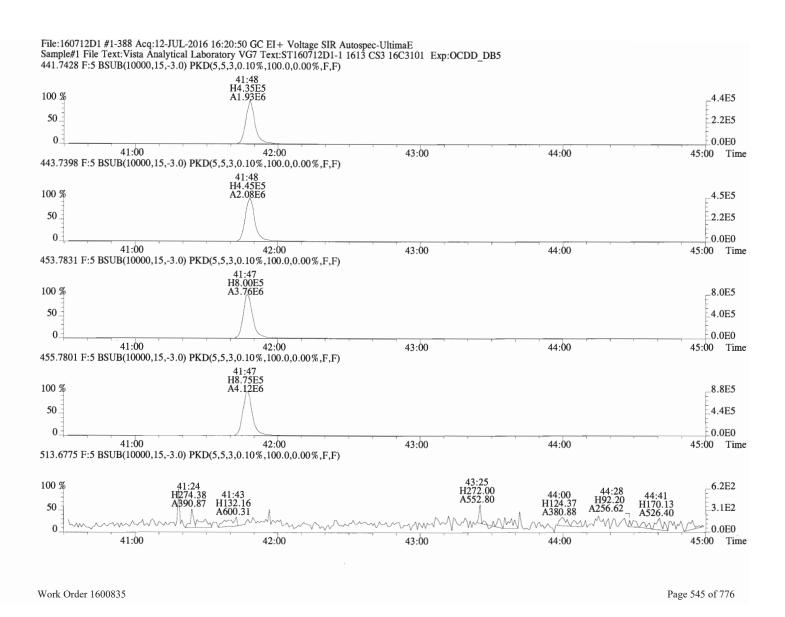
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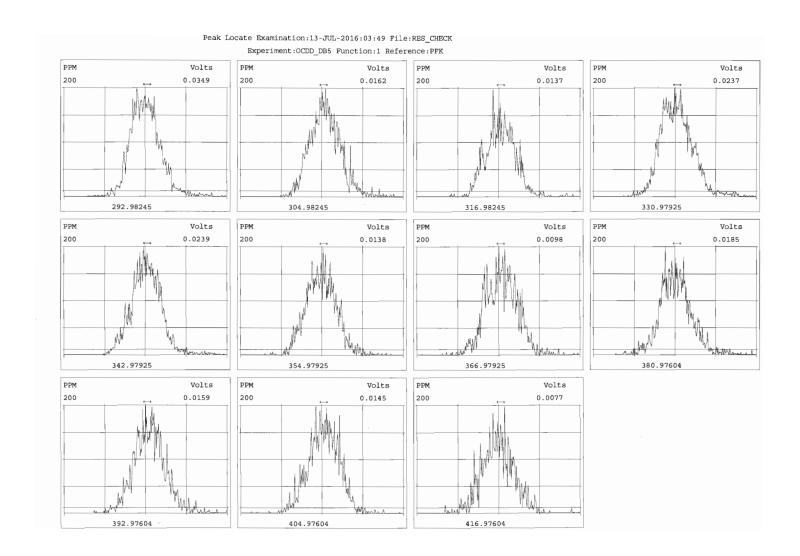


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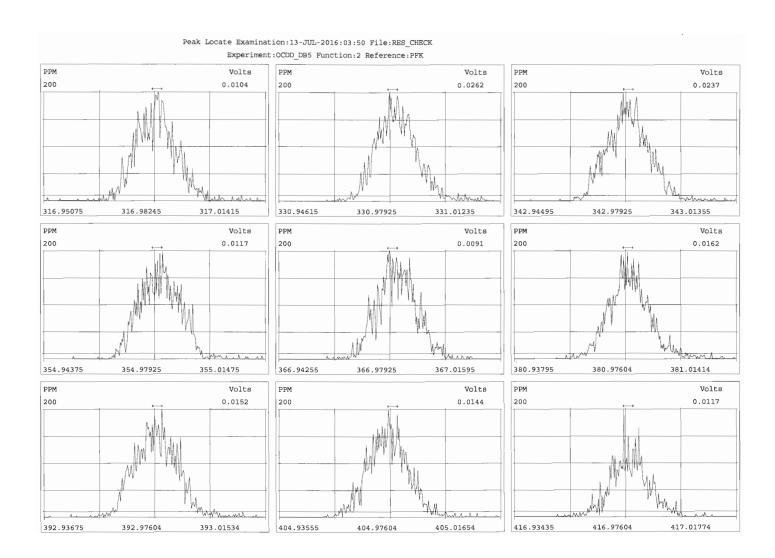


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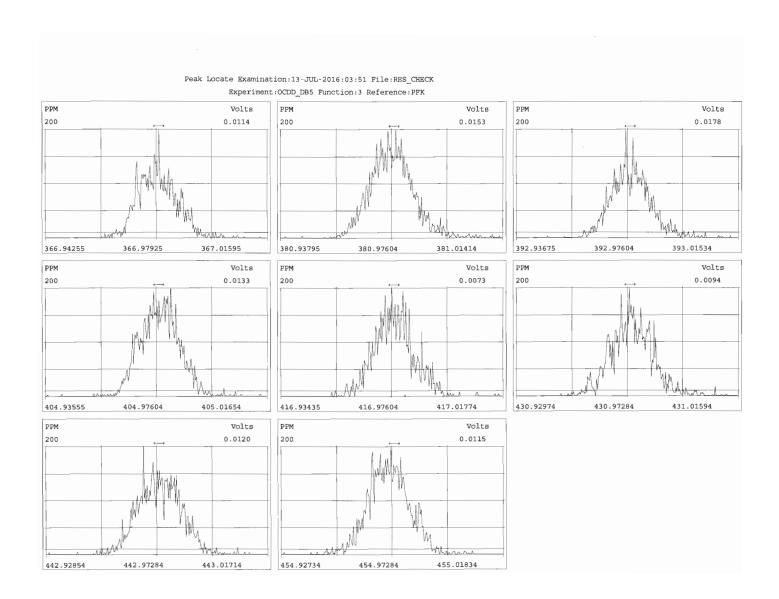




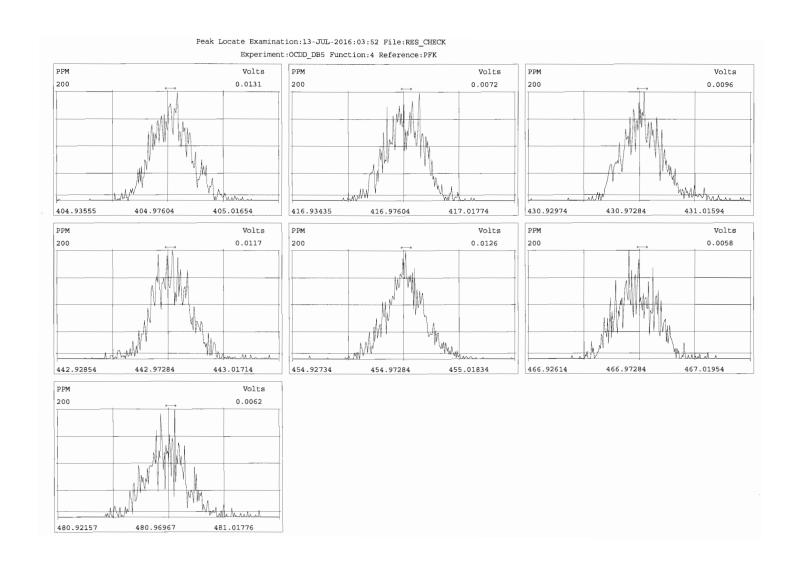
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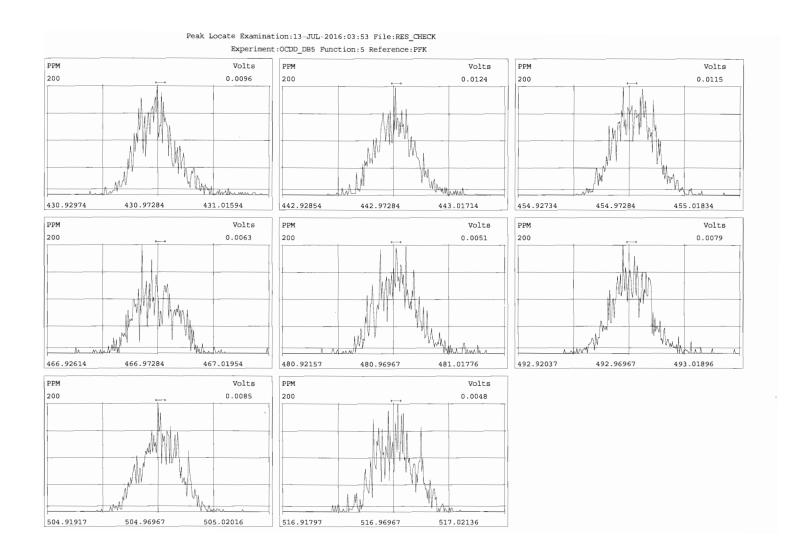
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FORM 4A PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST160713D1-1

Contract No.:

SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160713D1 S#1 Analysis Date: 13-JUL-16 Time: 09:07:08

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC.	CONC. RANGE (3) (ng/mL)
NATIVE ANALYTES						,,
2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	У	10.7	7.8 - 12.9 8.2 - 12.3 (4)
1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	У	51.0	39.0 - 65.0
1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	У	50.1	39.0 - 64.0
1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	У	52.2	39.0 - 64.0
1,2,3,7,8,9-HxCDD	M+2/M+4	1.19	1.05-1.43	У	51.8	41.0 - 61.0
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.05	0.88-1.20	У	50.2	43.0 - 58.0
OCDD	M+2/M+4	0.87	0.76-1.02	У	102	79.0 - 126.0
2,3,7,8-TCDF	M/M+2	0.85	0.65-0.89	Υ	9.57	8.4 - 12.0 8.6 - 11.6 (4)
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	У	52.0	41.0 - 60.0
2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	Y	51.3	41.0 - 61.0
1,2,3,4,7,8-HxCDF	M+2/M+4	1.21	1.05-1.43	У	49.2	45.0 - 56.0
1,2,3,6,7,8-HxCDF	M+2/M+4	1.25	1.05-1.43	Y	51.6	44.0 - 57.0
2,3,4,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	Y	49.4	44.0 - 57.0
1,2,3,7,8,9-HxCDF	M+2/M+4	1.27	1.05-1.43	У	50.5	45.0 - 56.0
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.01	0.88-1.20	У	49.7	45.0 - 55.0
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.00	0.88-1.20	У	52.4	43.0 - 58.0
OCDF	M+2/M+4	0.93	0.76-1.02	У	104	63.0 - 159.0

- (1) See Table 8, Method 1613, for m/z specifications.
- (2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.
- (3) Contract-required concentration range as specified in Table 6, Method 1613.
- (4) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

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FORM 4B PCDD/PCDF CALIBRATION VERIFICATION

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160713D1 S#1 Analysis Date: 13-JUL-16 Time: 09:07:08

	M/Z'S	ION	QC			CONC.	
1	FORMING	ABUND.	LIMITS		CONC.	RANGE	
LABELED COMPOUNDS	RATIO (1)	RATIO	(2)	Pass	FOUND	(ng/mL)	
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89	Y	104	82.0 - 121.0	
							 See Table 8, Method 1613, for m/z specifications.
13C-1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	Y	86.3	62.0 - 160.0	
							(2) Ion Abundance Ratio Control Limits as specified
13C-1,2,3,4,7,8-HxCDD	M+2/M+4		1.05-1.43	-	100	85.0 - 117.0	
13C-1,2,3,6,7,8-HxCDD	M+2/M+4		1.05-1.43	•	95.8	85.0 - 118.0	(3) No ion abundance ratio; report concentration found.
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.33	1.05-1.43	Y	99.7	85.0 - 118.0	
13C-1,2,3,4,6,7,8-HpC	DD M+2/M+4	1.03	0.88-1.20	У	83.5	72.0 - 138.0	
13C-OCDD	M/M+2	0.91	0.76-1.02	Y	161	96.0 - 415.0	
13C-2,3,7,8-TCDF	M+2/M+4	0.82	0.65-0.89	Y	109	71.0 - 140.0	
13C-1,2,3,7,8-PeCDF	M+2/M+4		1.32-1.78	-	90.1	76.0 - 130.0	
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.63	1.32-1.78	Y	89.4	77.0 - 130.0	
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.52	0.43-0.59	У	93.8	76.0 - 131.0	
120 1 2 2 6 7 0 11-000	M/M+2	0 50	0 43 0 50		22.5		
13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF	M/M+2 M/M+2	0.52	0.43-0.59	-	93.6	70.0 - 143.0	
			0.43-0.59	-	104	73.0 - 137.0	
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.54	0.43-0.59	У	104	74.0 - 135.0	
13C-1,2,3,4,6,7,8-HpCI	DE MINIMIA	0.43	0.37-0.51	.,	95.7	78.0 - 129.0	
13C-1,2,3,4,6,7,8-HpCl				-			\(\)
13C-1,2,3,4,7,8,9-npc	Dr M+2/M+4	0.45	0.37-0.51	У	86.4	77.0 - 129.0	analyst VK
13C-OCDF	M+2/M+4	0.00	0.76-1.02	11	165	06.0 415.0	Alidiyst:
13C-OCDF	PIT2/PIT4	0.03	0.76-1.02	1	100	96.0 - 415.0	Analyst: DA
CLEANUP STANDARD (3)							Date: 7/13/16
37C1-2,3,7,8-TCDD					9.93	7.9 - 12.7	Date:
3.01 2,3,.,0-1000					2.23	1.5 - 12.7	

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FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.:

SAS No.:

Instrument ID: VG-7

Initial Calibration Date: 4-7-16

Analysis Date:

RT Window Data Filename: 160713D1 S#1 Analysis Date: 13-JUL-16 Time: 09:07:08

ZB-5MS IS Data Filename: 160713D1 S#1 Analysis Date: 13-JUL-16 Time: 09:07:08

DB_225 IS Data Filename:

Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

	ABSOLUTE		ABSOLUTE
ISOMERS	RT	ISOMERS	RT
1,3,6,8-TCDD (F)	22:36	1,3,6,8-TCDF (F)	20:24
1,2,8,9-TCDD (L)	27:21	1,2,8,9-TCDF (L)	27:31
1,2,4,7,9-PeCDD (F)	29:02	1,3,4,6,8-PeCDF (F)	27:26
1,2,3,8,9-PeCDD (L)	31:33	1,2,3,8,9-PeCDF (L)	31:48
1,2,4,6,7,9-HxCDD (F)	32:57	1,2,3,4,6,8-HxCDF (F)	32:25
1,2,3,7,8,9-HxCDD (L)	34:52	1,2,3,7,8,9-HxCDF (L)	35:15
1,2,3,4,6,7,9-HpCDD (F)	37:24	1,2,3,4,6,7,8-HpCDF (F)	37:00
1,2,3,4,6,7,8-HpCDD (L)	38:23	1,2,3,4,7,8,9-HpCDF (L)	38:56

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT BETWEEN COMPARED PEAKS (1)

<25%

Analyst:

(1) To meet contract requirements, ${\rm Walley\ Height\ Between\ Compared\ Peaks\ shall\ not\ exceed\ 25\%\ (section\ 15.4.2.2,\ Method\ 1613)}$.

Date: 7/13/16

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FORM 6A

PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160713D1 S#1 Analysis Date: 13-JUL-16 Time: 09:07:08

Compounds Using 13C-1234-TCDD as RT Internal Standard

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)	
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002	(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613. 10/94
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.001	0.999-1.002	
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003	
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.001	0.999-1.002	
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.001	0.999-1.002	
LABELED COMPOUNDS				
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.024	0.976-1.043	
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.209	1.000-1.567	
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.992	0.923-1.103	
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.161	1.000-1.425	
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.198	1.011-1.526	
37C1-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.025	0.989-1.052	

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FORM 6B PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.:

SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 160713D1 S#1 Analysis Date: 13-JUL-16 Time: 09:07:08

RETENTION TIME RE								
NATIVE ANALYTES	REFERENCE	RRT	QC LIMITS (1)					
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.001	0.999-1.001					
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.000	0.997-1.005					
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.000	0.999-1.001					
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001					
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.000	0.999-1.001					
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.000	0.998-1.004					
1,2,3,7,8,9-HxCDD	13C-1,2,3,7,8,9-HxCDD	1.000	0.998-1.004					
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.000	0.999-1.001					
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999-1.001					
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.000	0.999-1.001					
OCDD	13C-OCDD	1.000	0.999-1.001					
OCDF	13C-OCDF	1.000	0.999-1.001					
LABELED COMPOUNDS								
13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.988	0.975-1.001					
13C-1,2,3,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.992	0.979-1.005					
13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.009	1.001-1.020					
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.037	1.002-1.072					
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.014	1.002-1.026					
13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.017	1.007-1.029					
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.025	1.014-1.038					
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.089	1.069-1.111					
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.145	1.098-1.192					
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.129	1.117-1.141					
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.224	1.085-1.365					
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.230	1.091-1.371					

(1) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1613. 10/94

Analyst:

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Client ID: 1613 CS3 16C310		lename: 1			-	-JUL-16 09					Cal: ST160713D1	-1		Pag	ge 1 of
Lab ID: ST160713D1-1	GC	Column II	D: ZB-51	MS ICal	: 1613VG	37-4-7-16	wt/	vol: 1.	000	End	CAL: NA				
Name	Resp	RA	RRF	RT	RRT	Conc	Q noise	Fac	DL	Name		Conc	EMPC Qu	al noise	e D
2,3,7,8-TCDD	6.93e+05	0.81 y	1.13	26:26	1.001	10.720	*	2.5	*	Total	Tetra-Dioxins	58.0	59.3	,	*
1,2,3,7,8-PeCDD	2.54e+06	0.63 y	0.96	31:10	1.001	50.999	*	2.5	*		Penta-Dioxins	159	160	,	k
1,2,3,4,7,8-HxCDD	2.70e+06	1.23 y	1.00	34:27		50.137	*	2.5	*		Hexa-Dioxins	199	200	,	
1,2,3,6,7,8-HxCDD	2.96e+06	1.23 y	1.10	34:34	1.000	52.250	*	2.5	*		Hepta-Dioxins	136	138	,	
1,2,3,7,8,9-HxCDD	2.83e+06	1.19 y	1.05	34:52		51.837	*	2.5	*		Tetra-Furans	30.5	31.3	•	*
1,2,3,4,6,7,8-HpCDD	2.18e+06	1.05 y	1.05	38:23		50.243	*	2.5	*		Penta-Furans	204.82	206.65	•	*
OCDD	3.88e+06	0.87 y	0.96	41:36	1.000	102.18	*	2.5	*		Hexa-Furans	248	250	,	*
										Total	Hepta-Furans	103	105	•	r
2,3,7,8-TCDF		0.85 y	1.12		1.001	9.5737	*	2.5	*						
1,2,3,7,8-PeCDF		1.57 y	1.01		1.001	52.027	*	2.5	*						
2,3,4,7,8-PeCDF		1.61 y	0.90		1.001	51.307	*	2.5	*						
1,2,3,4,7,8-HxCDF		1.21 y	1.16	33:35		49.226	*	2.5	*						
1,2,3,6,7,8-HxCDF		1.25 y	1.16	33:43		51.622	*	2.5	*						
2,3,4,6,7,8-HxCDF		1.23 y	1.23	34:19		49.437	*	2.5	*						
1,2,3,7,8,9-HxCDF		1.27 y	1.13	35:15		50.453	*	2.5	*						
1,2,3,4,6,7,8-HpCDF		1.01 y	1.44	37:00		49.749	*	2.5	*						
1,2,3,4,7,8,9-HpCDF		1.00 y	1.31		1.000	52.359	*	2.5	*						
OCDF	5.45e+06	0.93 y	1.03	41:49	1.000	104.46	*	2.5	*						
13C-2,3,7,8-TCDD										Rec	Qual				
13C-2,3,7,8-TCDD		0.78 y	1.01		1.024	103.97				104					
13C-1,2,3,7,8-PeCDD		0.63 y	1.10		1.209	86.285				86.3					
13C-1,2,3,4,7,8-HxCDD		1.31 y	0.72		1.014	100.13				100					
13C-1,2,3,6,7,8-HxCDD		1.30 y	0.73		1.017	95.798				95.8					
13C-1,2,3,7,8,9-HxCDD		1.33 y	0.70		1.025	99.692				99.7					
13C-1,2,3,4,6,7,8-HpCDD		1.03 y	0.66	38:22		83.495				83.5					
13C-OCDD 13C-2,3,7,8-TCDF		0.91 y	0.66		1.224	161.03				80.5					
13C-2,3,7,8-TCDF		0.82 y	0.90		0.992	108.77				109 90.1					
13C-1,2,3,7,8-PeCDF		1.63 y	0.98		1.161	90.150				89.4					
13C-2,3,4,7,8-PeCDF		1.63 y 0.52 y	1.15		1.198	89.435 93.842				93.8					
13C-1,2,3,4,7,8-HxCDF		0.52 y 0.52 y	1.10		0.988	93.842				93.6					
13C-1,2,3,6,7,8-HxCDF 13C-2,3,4,6,7,8-HxCDF		0.52 y 0.51 y	0.95		1.009	104.27				104					
		0.51 y	0.83		1.009	104.27				104					
13C-1,2,3,7,8,9-HxCDF 13C-1,2,3,4,6,7,8-HpCDF		0.43 y	0.70		1.037	95.730				95.7					
13C-1,2,3,4,7,8,9-HpCDF		0.45 y	0.70		1.145	86.443				86.4					
	1.01e+07	0.89 y	0.72		1.230	165.17				82.6					
13C-0CDF	1.010+07	0.05 y	0.02	41.40	1.230	105.17				02.0					
Up 37Cl-2,3,7,8-TCDD	6 15e+05		1.14	26.26	1.025	9.9323				99.3	Integr	ations	Reviewe	ed	
5p 5,61 2,5,7,6 1633	01150105			20.20	1.025	3.3323					by	1	by	-	
/RT 13C-1,2,3,4-TCDD	5.44e+06	0.80 y	1.00	25:46	*	100.00					Analyst:	クと	Analyst	:	
13C-1,2,3,4-TCDF		0.83 y	1.00	24:11		100.00							-1-		_
/RT 13C-1,2,3,4,6,9-HxCDF		0.51 y	1.00	33:59		100.00					_	13/11			
		I									Date. 7	113/16	Date:		

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Vista Anal	ytical	Laboratory - Injection Log Run file: 160713D1	Instrument ID:	VG-7 GC	Column ID:	ZB-5MS		1490 1 01 1
Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal	
160713D1	1	ST160713D1-1	DB	13-ЛП-16	09:07:08	ST160713D1-1	NA	
160713D1	2	SOLVENT BLANK	DB		09:55:39	ST160713D1-1	NA	
160713D1	3	B6G0040-MSD1	DB		10:44:12	ST160713D1-1	NA	
160713D1	4	B6G0039-MS2	DB	13-JUL-16	11:32:44	ST160713D1-1	NA	
160713D1	5	B6G0039-MSD2	DB	13-JUL-16	12:21:17	ST160713D1-1	NA	
160713D1	6	B6G0039-MS1	DB	13-JUL-16	13:09:55	ST160713D1-1	NA	
	7	B6G0039-MSD1	ĎB		13:58:30		NA	
160713D1	8	SOLVENT BLANK	DB	13-JUL-16	14:47:03	ST160713D1-1	NA	

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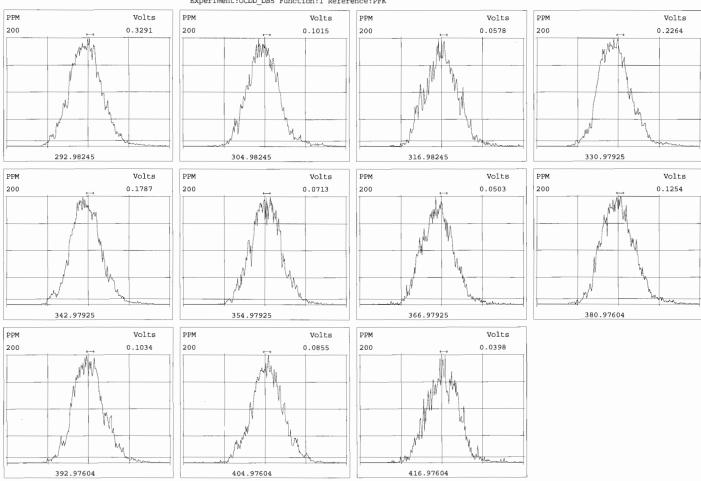
CALIBRATION STANDARDS REVIEW CHECKLIST



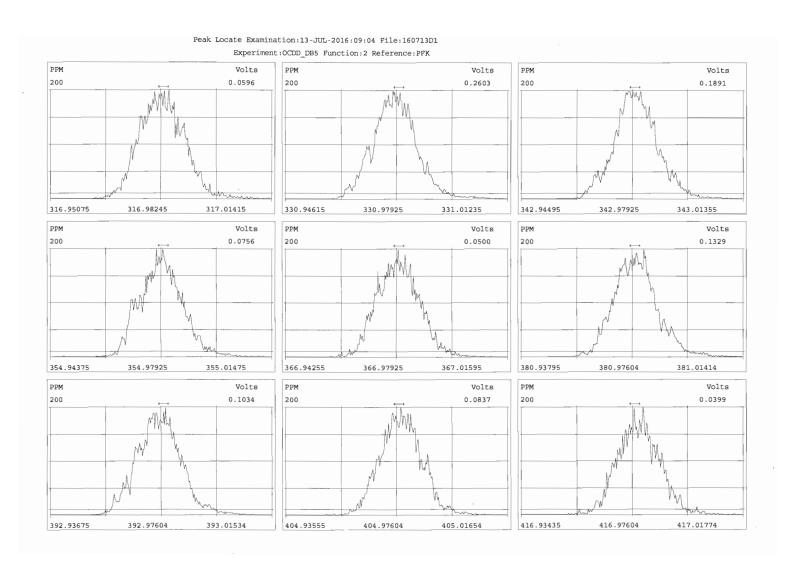
Beg. Calibration ID: ST160-	End Calibration ID:	NA			
Ion abundance within QC limits? Concentration within range? First and last eluters present? Retention Times within criteria? Verification Std. named correctly? (ST-Year-Month-Day-VG ID) Forms signed and dated? Correct ICAL referenced? Run Log: -Data file matches Conc Cal ID? -Correct instrument listed? -Samples within 12-hour clock?	Beg.	End NA n	Mass resolution > 10,000? Method 1614 > 5,000; CARB 429 > 8,000 TCDD/TCDF valleys < 25%? Peaks integrated correctly? Manual integrations included? 8280 CS1 Ending Standard -Ratios within limits -S/N > 2.5:1 -CS1 within 12-hour clock Comments:	Beg.	End NA V
Reviewed by: 7/14//(Initials & Date			* Ending standard criteria applicable to 8290 only.	•	

Vista Analytical Laboratory El Dorado Hills, CA 95762

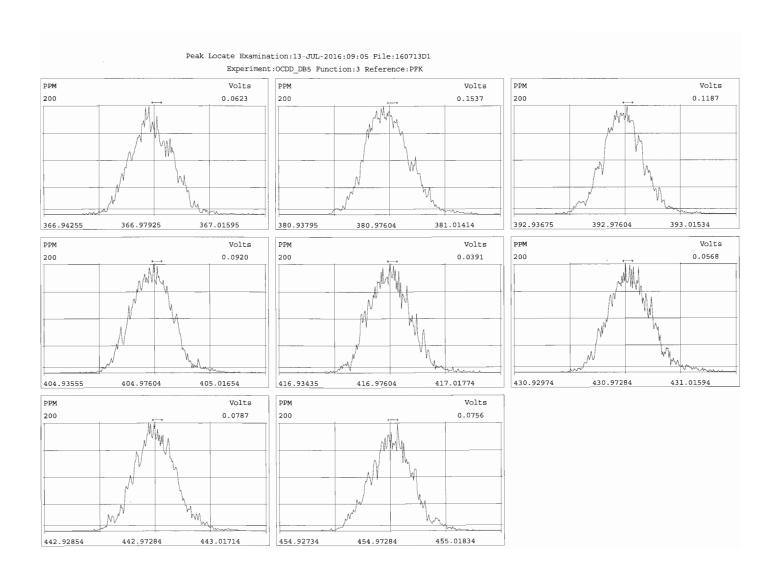
Peak Locate Examination:13-JUL-2016:09:04 File:160713D1 Experiment:OCDD_DB5 Function:1 Reference:PFK



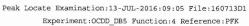
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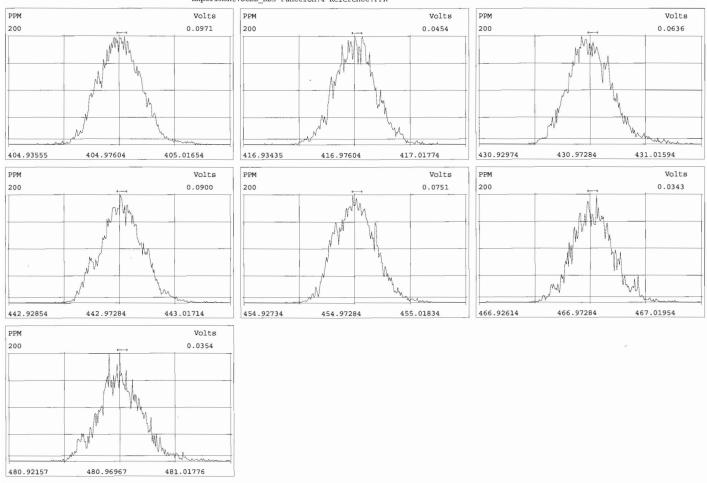


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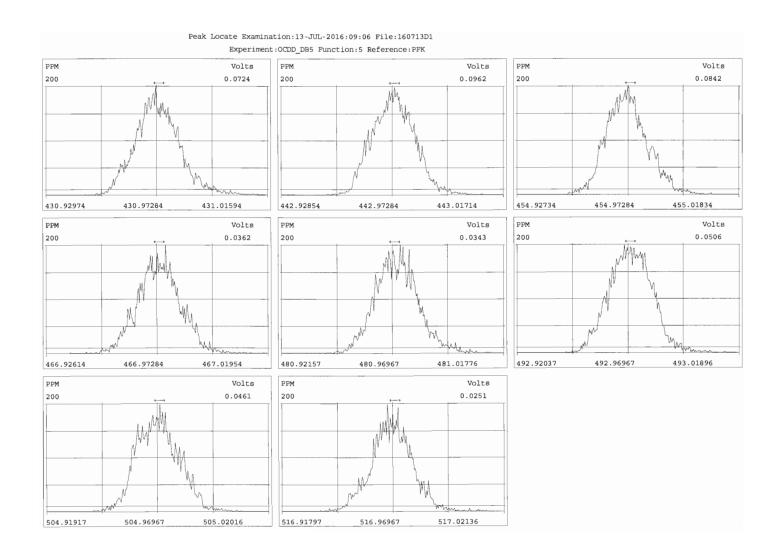


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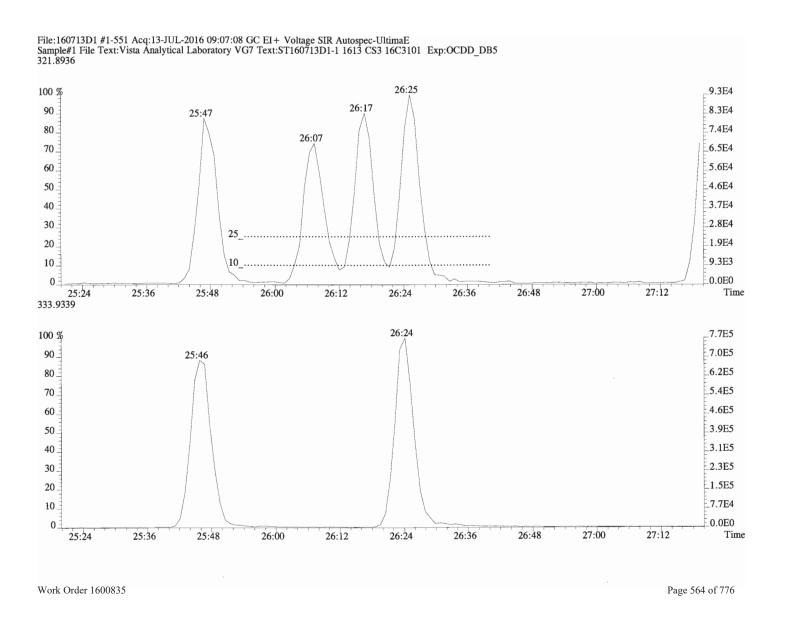


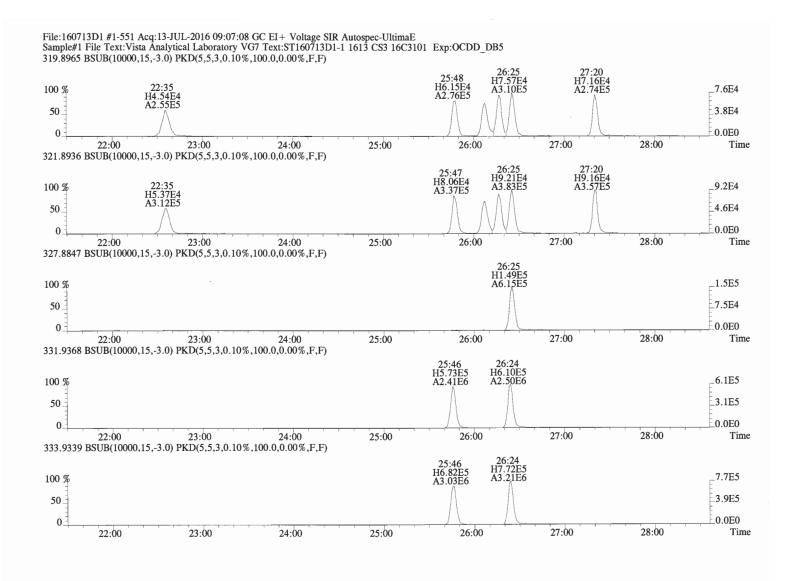


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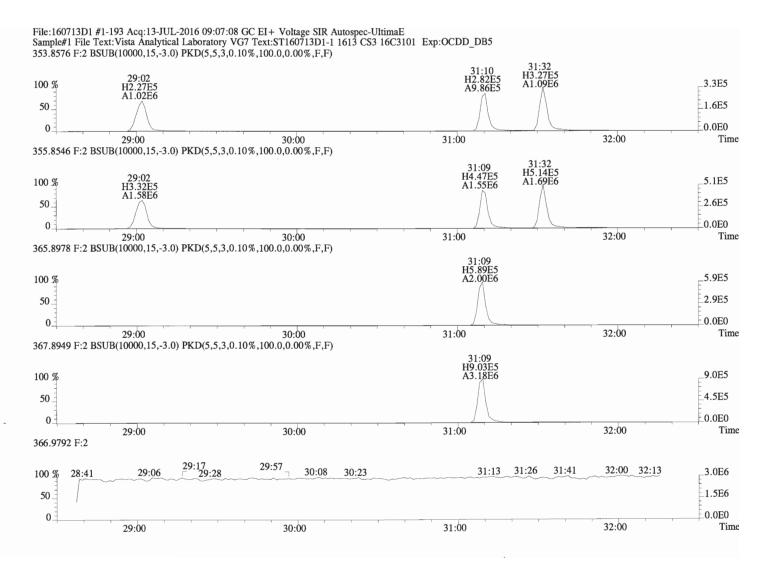
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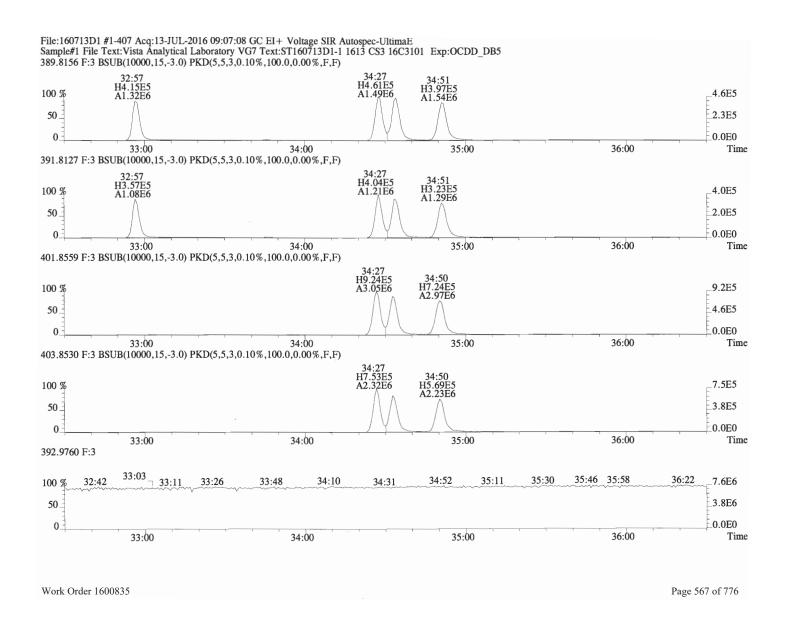


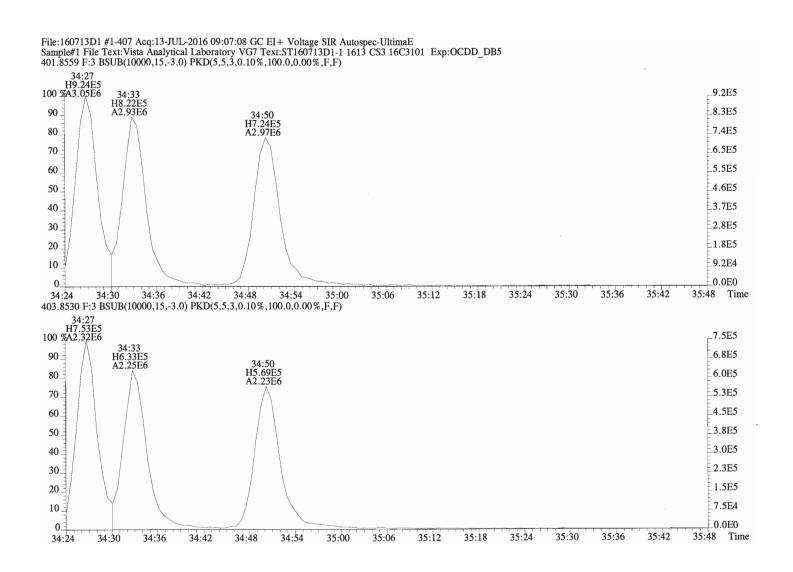
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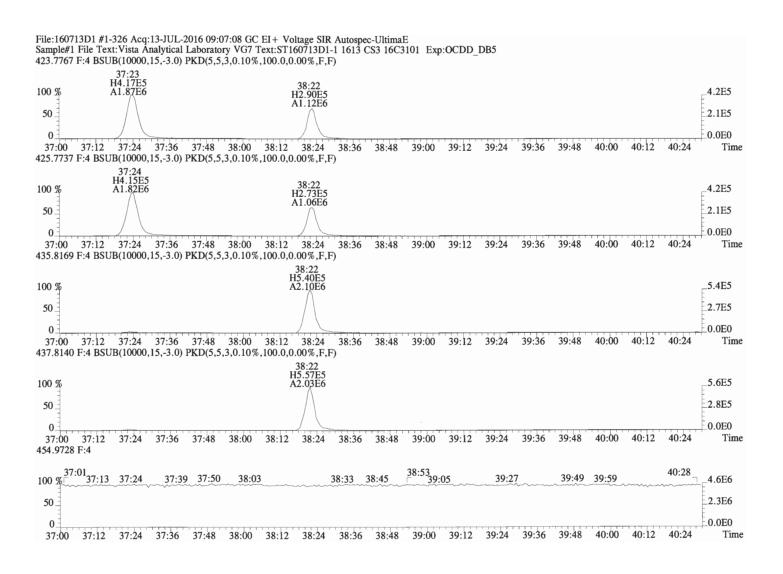


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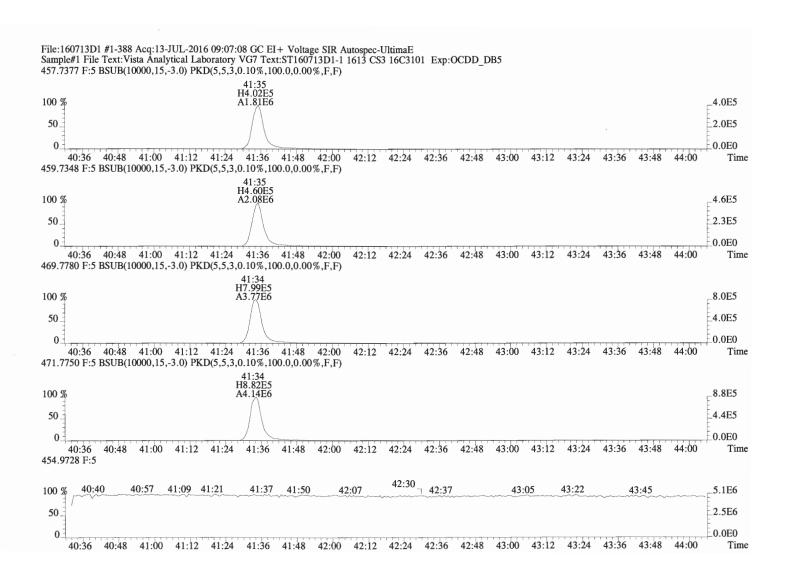




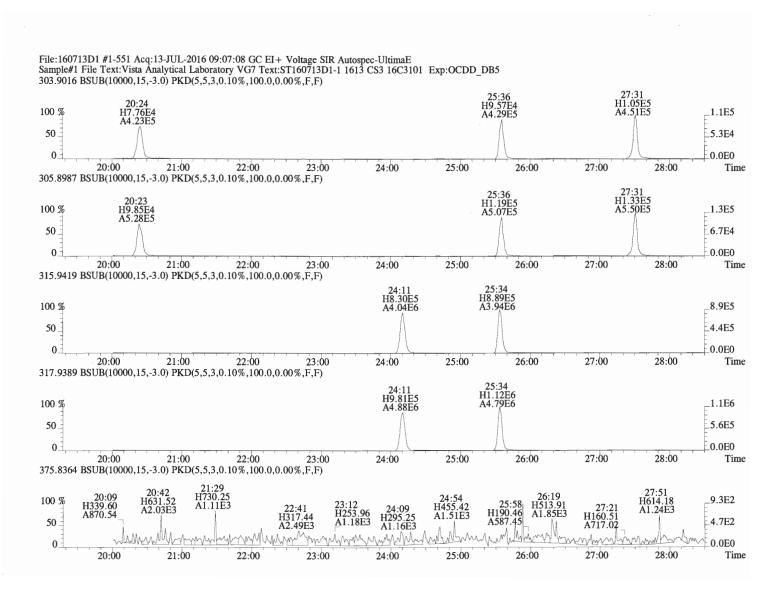
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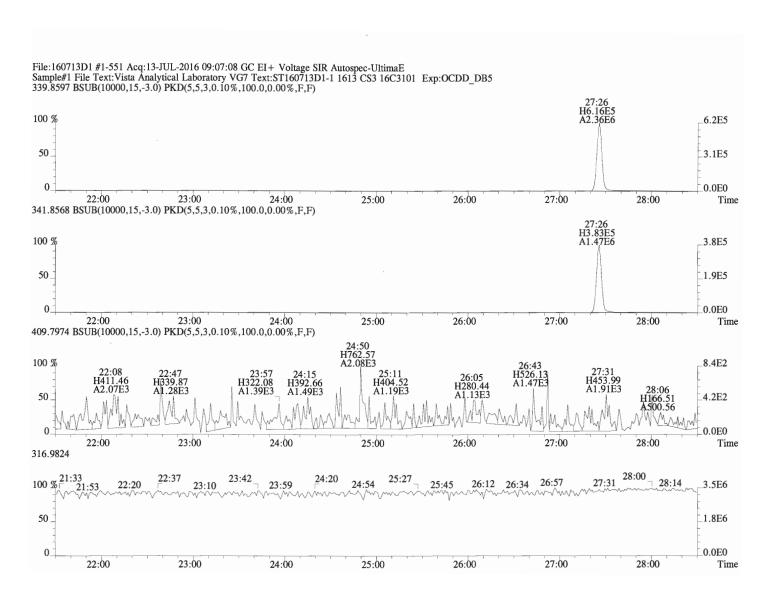
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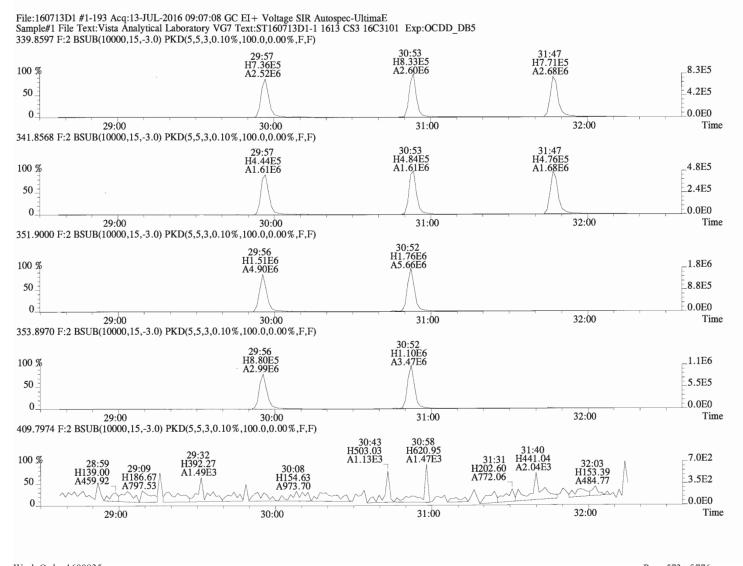
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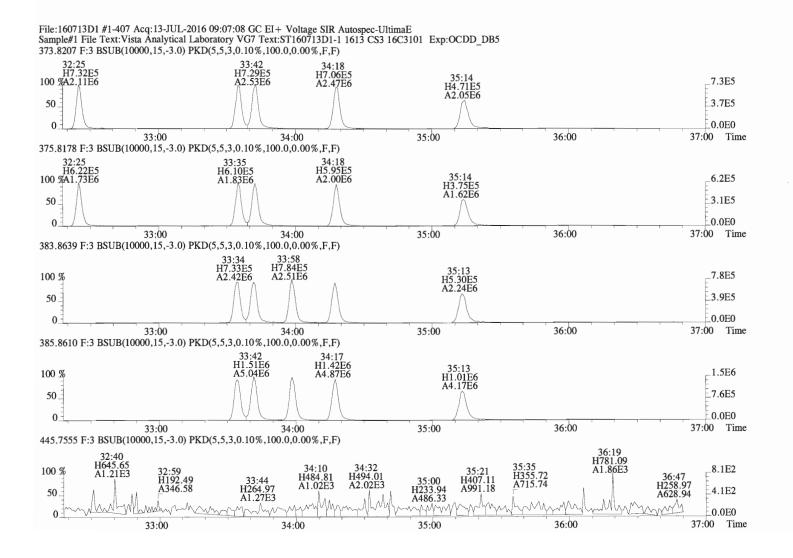
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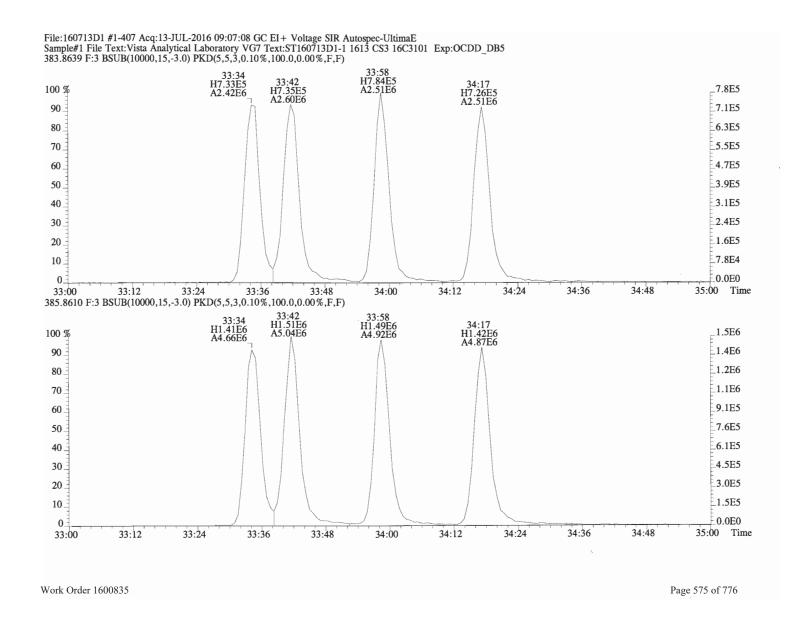


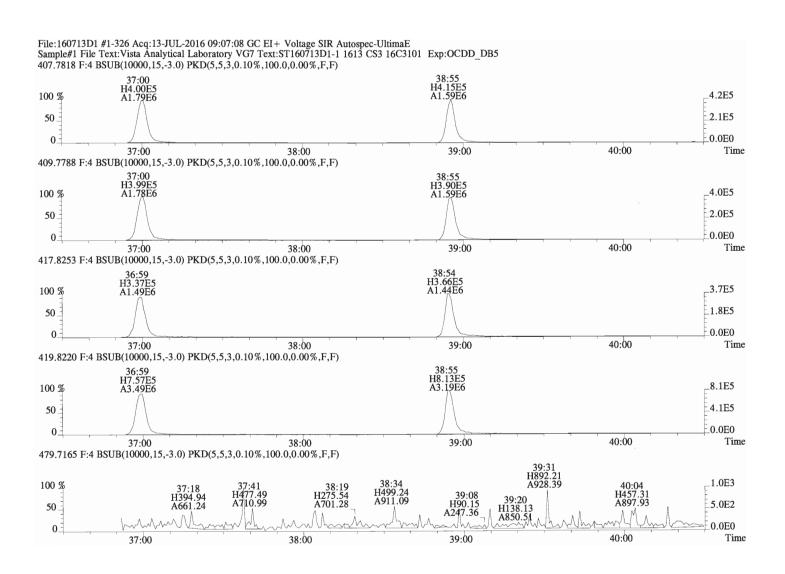
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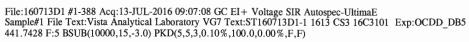
Work Order 1600835

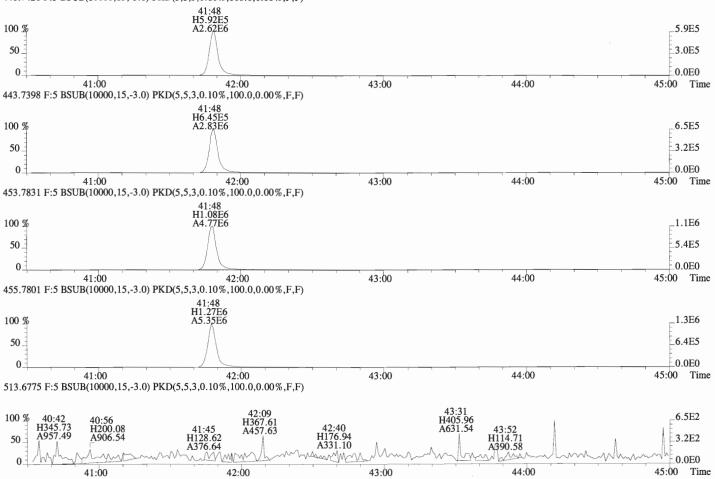
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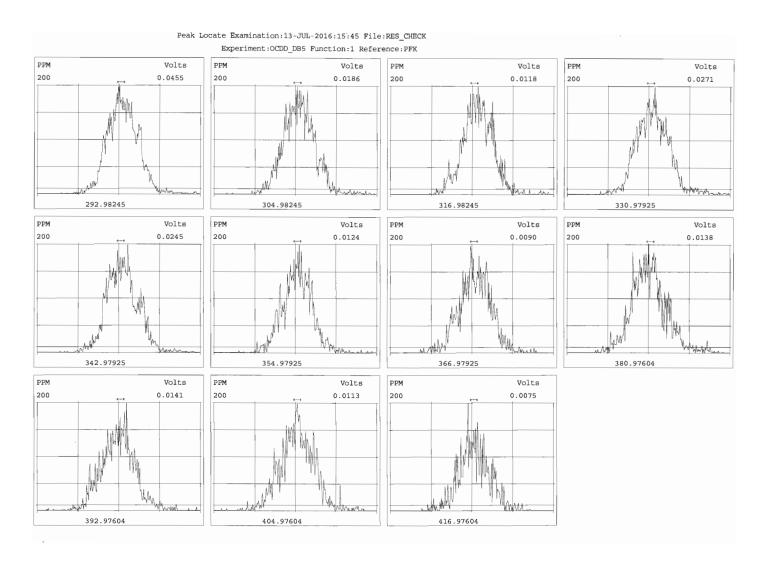


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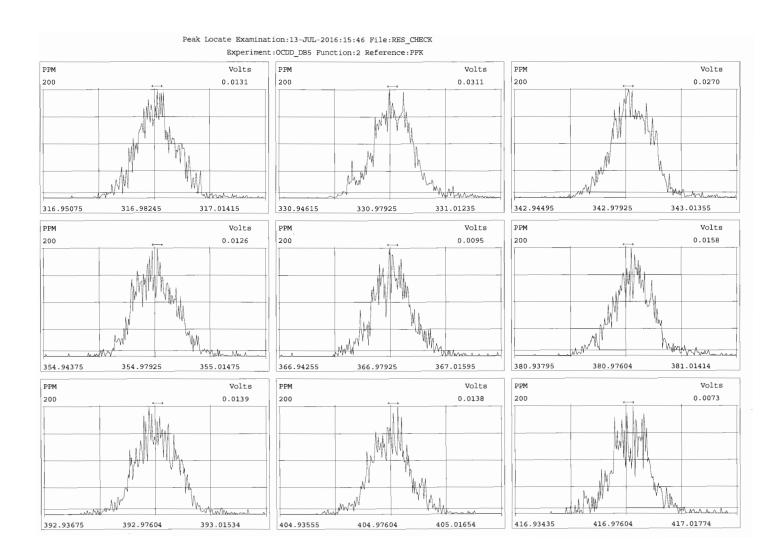




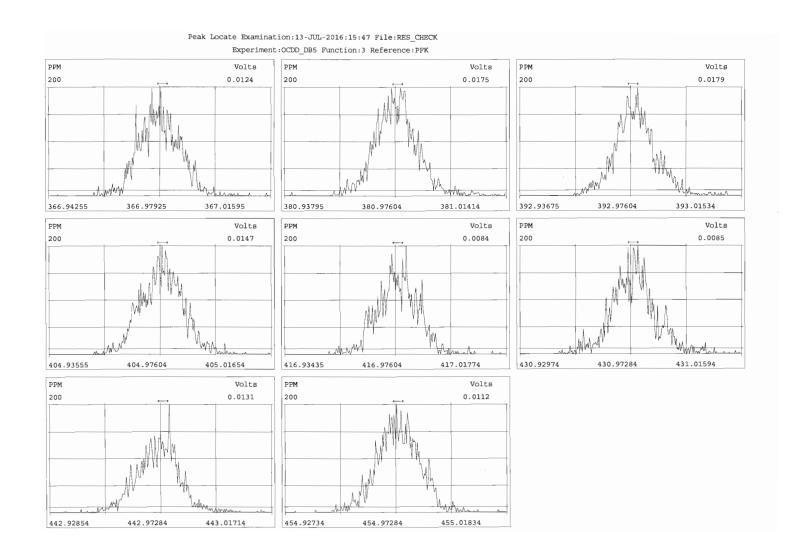
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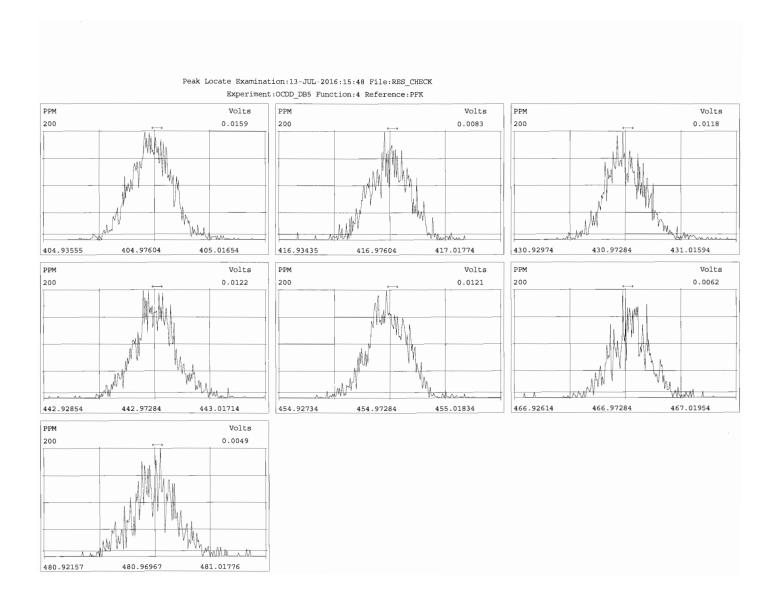
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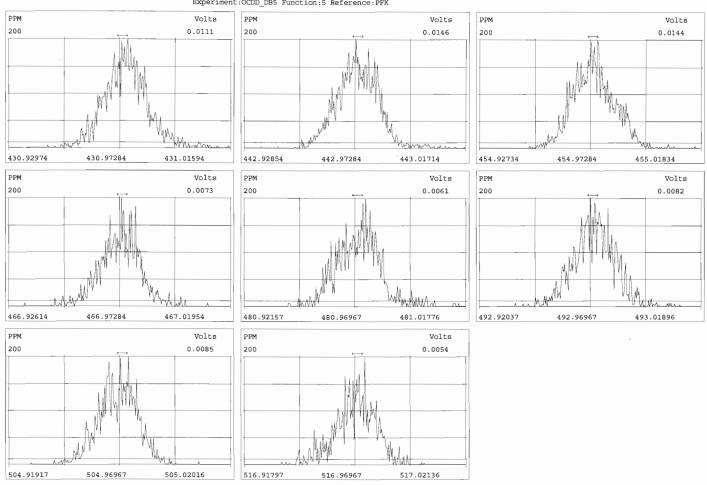


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Peak Locate Examination:13-JUL-2016:15:49 File:RES_CHECK Experiment:OCDD_DB5 Function:5 Reference:PFK



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Quantify Sample Summary Report Vista Analytical Laboratory VG-10

MassLynx 4.1 SCN815

Page 1 of 1

Dataset:

C:\MassLynx\Default.pro\Results\160714K1\160714K2-2.qld

Last Altered:

Printed:

Thursday, July 14, 2016 15:49:42 Pacific Daylight Time Thursday, July 14, 2016 15:55:58 Pacific Daylight Time

Method: C:\MassLynx\Default.pro\MethDB\tcdf.mdb 14 Jul 2016 15:49:38

Calibration: C:\MassLynx\Default.pro\CurveDB\db225_1613TCDFvg11-2-8-16.cdb 08 Feb 2016 15:29:41

Name: 160714K2_2, Date: 14-Jul-2016, Time: 15:16:46, ID: ST160714K2-1 1613 CS3 16C3101, Description: 1613 CS3 16C3101, Task: ST160714K2-1

	#-Name	Resp	; RA	n/y	: RRF	wt/vol	: RT	RRT	Conc.	%Rec	DL;	EMPC
1	1 2,3,7,8-TCDF	1.69e5	0.77	NO	1.07		16.61		10.721	10784-120		10.7
2	1 2,3,7,8-TCDF 2 13C-2,3,7,8-TCDF	1.47e6	0.79	· NO	0.929	1.000	16.60	1.135	100.38	10071-140	0.123	
	3 13C-1,2,3,4-TCDF	1.58e6	0.79	NO	1.00	1.000	14.62	1.000	100.00	100	0.114	

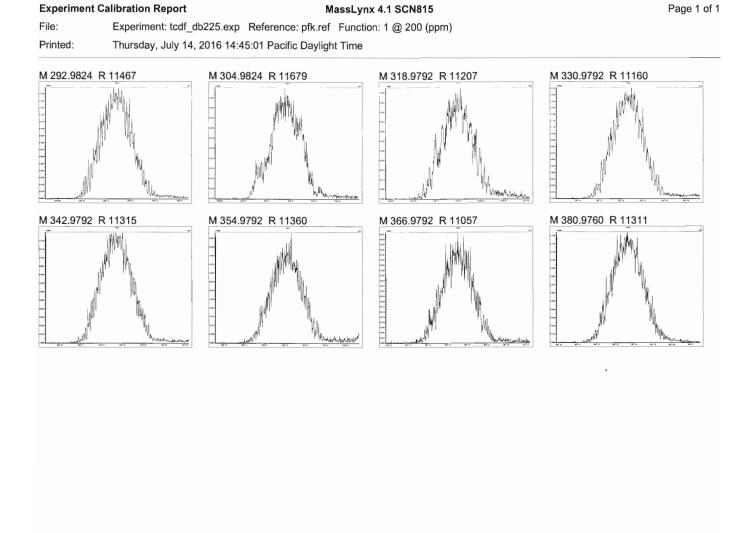
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CALIBRATION STANDARDS REVIEW CHECKLIST

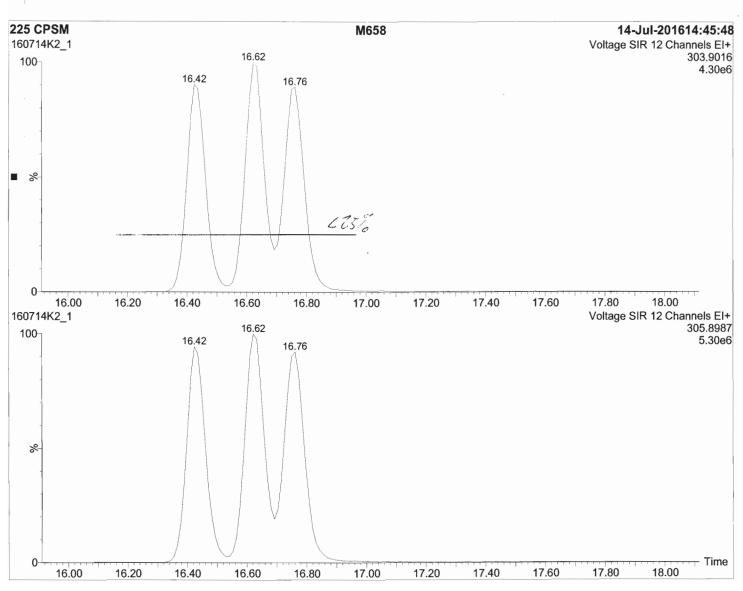


Beg. Calibration ID:ST160714	所写的地	End Calibration ID:	
Ion abundance within QC limits? Concentration within range? First and last eluters present? Retention Times within criteria? Verification Std. named correctly? (ST-Year-Month-Day-VG ID) Forms signed and dated? Correct ICAL referenced?	Beg. End	Mass resolution > 10,000? ■ Method 1614 > 5,000; CARB 429 > 8,000 TCDD/TCDF valleys < 25%? Peaks integrated correctly? Manual integrations included? 8280 CS1 Ending Standard -Ratios within limits -S/N > 2.5:1	Beg. End
Run Log: -Data file matches Conc Cal ID? -Correct instrument listed? -Samples within 12-hour clock?	y n	-CS1 within 12-hour clock Comments:	<u>\</u>
Reviewed by: Initials & Date	<u></u>	* Ending standard criteria applicable to 8290 only.	

Vista Analytical Laboratory El Dorado Hills, CA 95762



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Quantify Sample Report

MassLynx 4.1 SCN815

Vista Analytical Laboratory VG-10

Dataset:

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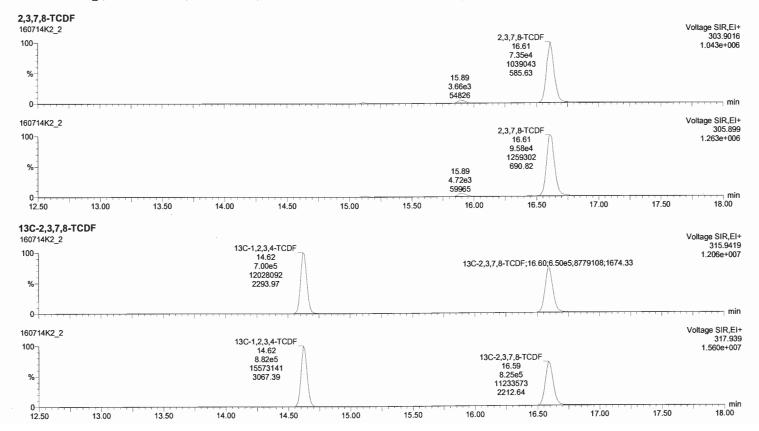
Last Altered: Printed:

Thursday, July 14, 2016 15:49:42 Pacific Daylight Time Thursday, July 14, 2016 15:54:23 Pacific Daylight Time

Method: C:\MassLynx\Default.pro\MethDB\tcdf.mdb 14 Jul 2016 15:49:38

Calibration: C:\MassLynx\Default.pro\CurveDB\db225_1613TCDFvg11-2-8-16.cdb 08 Feb 2016 15:29:41

Name: 160714K2_2, Date: 14-Jul-2016, Time: 15:16:46, ID: ST160714K2-1 1613 CS3 16C3101, Description: 1613 CS3 16C3101



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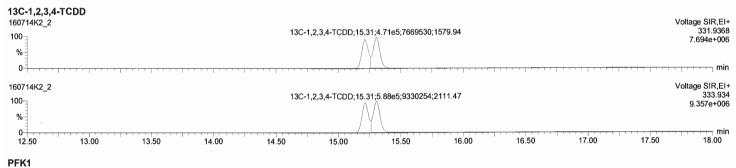
Vista Analytical Laboratory VG-10

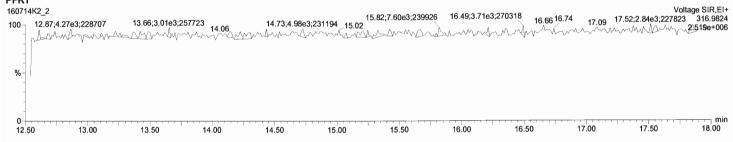
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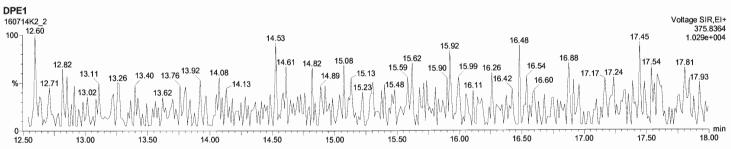
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Thursday, July 14, 2016 15:49:42 Pacific Daylight Time Thursday, July 14, 2016 15:54:23 Pacific Daylight Time Last Altered: Printed:

Name: 160714K2_2, Date: 14-Jul-2016, Time: 15:16:46, ID: ST160714K2-1 1613 CS3 16C3101, Description: 1613 CS3 16C3101

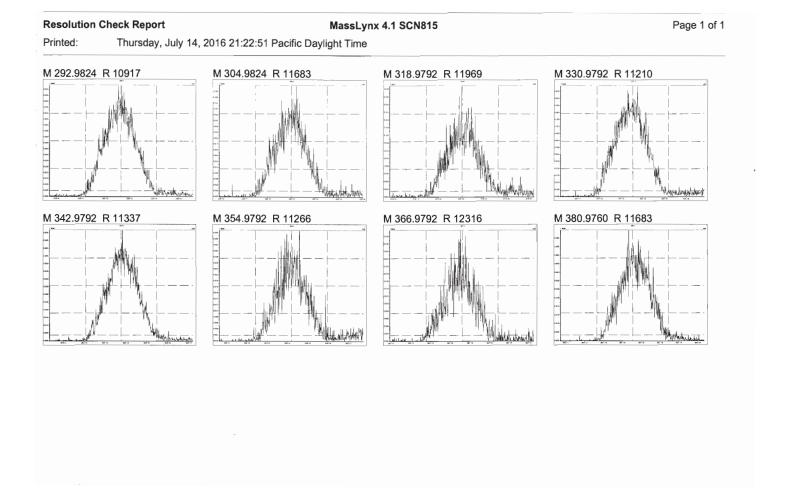






Work Order 1600835

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INITIAL CALIBRATION

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Initial Calibration RRF Run: 160407D1	Summary (Analyte:		-	tical Labo 1613VG7-4-		Inst.	ID. VG-7			
Data filename: 160407D1			Samp# 1 0.25	* Samp# 2	Samp# 3 2.0	Samp# 4	Samp# 5 40	Samp# 6 300		
Name	Mean RRF	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6		
2,3,7,8-TCDD	1.13	6.05 %	1.21	1.11	1.01	1.13	1.14	1.19		
1,2,3,7,8-PeCDD	0.96	4.14 %	1.01	0.95	0.90	0.94	0.98	0.99		
1,2,3,4,7,8-HxCDD	1.00	3.55 %	1.02	0.99	0.95	0.97	1.05	1.03		
1,2,3,6,7,8-HxCDD	1.10	4.36 %	1.09	1.09	1.01	1.10	1.13	1.15		
1,2,3,7,8,9-HxCDD	1.05	3.52 %	1.01	1.05	1.01	1.05	1.08	1.10		
1,2,3,4,6,7,8-HpCDD	1.05	4.28 %	1.00	1.05	0.99	1.06	1.11	1.09		
OCDD	0.96	4.67 %	0.94	0.93	0.90	0.97	1.02	1.00		
2,3,7,8-TCDF	1.12	4.96 %	1.20	1.09	1.05	1.09	1.12	1.16		
1,2,3,7,8-PeCDF	1.01	2.01 %	1.04	0.99	0.99	1.00	1.02	1.00		
2,3,4,7,8-PeCDF	0.90	3.35 %	0.94	0.89	0.86	0.88	0.90	0.93		
1,2,3,4,7,8-HxCDF	1.16	3.34 %	1.13	1.18	1.10	1.16	1.20	1.19		
1,2,3,6,7,8-HxCDF	1.16	3.66 %	1.11	1.13	1.11	1.18	1.21	1.19	- 4	
2,3,4,6,7,8-HxCDF	1.23	3.25 %	1.25	1.24	1.16	1.21	1.23	1.27	DA.	
1,2,3,7,8,9-HxCDF	1.13	2.81 %	1.14	1.12	1.08	1.13	1.16	1.16	7.0	
1,2,3,4,6,7,8-HpCDF	1.44	3.38 %	1.44	1.40	1.38	1.43	1.49	1.50	10/11	
1,2,3,4,7,8,9-HpCDF	1.31	4.33 %	1.22	1.32	1.27	1.33	1.37	1.37	4(8)16	
OCDF	1.03	2.66 %	1.03	1.02	0.99	1.03	1.07	1.06	/	iel !
13C-2,3,7,8-TCDD	1.01	3.68 %	0.99	1.02	0.99	1.00	0.98	1.08	DB 418/16	49/11/
13C-1,2,3,7,8-PeCDD	1.10	6.49 %	1.06	1.09	1.06	1.08	1.08	1.25		
13C-1,2,3,4,7,8-HxCDD	0.72	8.45 %	0.68	0.70	0.69	0.71	0.71	0.84		
13C-1,2,3,6,7,8-HxCDD	0.73	6.41 %	0.70	0.71	0.72	0.70	0.72	0.82		
13C-1,2,3,7,8,9-HxCDD	0.70	6.70 %	0.69	0.68	0.68	0.68	0.69	0.80		
13C-1,2,3,4,6,7,8-HpCDD	0.66	17.12 %	0.60	0.66	0.59	0.60	0.64	0.89		
13C-OCDD	0.66	14.47 %	0.60	0.59	0.60	0.64	0.68	0.84		
13C-2,3,7,8-TCDF	0.90	1.91 %	0.90	0.91	0.89	0.89	0.89	0.93		
13C-1,2,3,7,8-PeCDF	0.98	6.38 %	0.97	0.98	0.93	0.94	0.97	1.10		
13C-2,3,4,7,8-PeCDF	1.15	5.20 %	1.12	1.16	1.11	1.08	1.13	1.25		
13C-1,2,3,4,7,8-HxCDF	1.01	4.97 %	0.99	0.98	1.01	0.99	1.00	1.12		
13C-1,2,3,6,7,8-HxCDF	1.10	4.96 %	1.06	1.09	1.07	1.07	1.09	1.21		
13C-2,3,4,6,7,8-HxCDF	0.95	6.13 %	0.90	0.93	0.93	0.94	0.94	1.07		
13C-1,2,3,7,8,9-HxCDF	0.83	8.06 %	0.79	0.80	0.79	0.80	0.81	0.96		
13C-1,2,3,4,6,7,8-HpCDF		10.51 %	0.65	0.74	0.65	0.65	0.68	0.83		
13C-1,2,3,4,7,8,9-HpCDF		10.56 %	0.69	0.66	0.67	0.70	0.74	0.87		
13C-OCDF	0.82	15.35 %	0.75	0.74	0.74	0.79	0.86	1.07		
37C1-2,3,7,8-TCDD	1.14	17.92 %	1.43	1.29	1.12	1.06	1.09	0.83		
13C-1,2,3,4-TCDD	1.00	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00		
13C-1,2,3,4-TCDF	1.00	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00		
13C-1,2,3,4,6,9-HxCDF	1.00	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00		

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Filename: 160407D1 S: 1 Acquired: 7-APR-16 14:10:55
Run: 160407D1 Analyte: Cal: 1613VG7-4-7-16 Results:
Sample text: ST160407D1-1 1613 CS0 15J1904

Name	Amount	Resp	RA	RT	RF	RRF
2,3,7,8-TCDD	0.250	4.19e+04	0.88 y	26:40	_	1.21
1,2,3,7,8-PeCDD	1.25	1.88e+05	0.65 y	31:16	_	1.01
1,2,3,4,7,8-HxCDD	1.25	1.65e+05	1.21 y	34:36	_	1.02
1,2,3,6,7,8-HxCDD	1.25	1.80e+05	1.10 y	34:43	_	1.09
1,2,3,7,8,9-HxCDD	1.25	1.66e+05	1.31 y	35:00	-	1.01
1,2,3,4,6,7,8-HpCDD	1.25	1.44e+05	1.10 y	38:30	_	1.00
OCDD	2.50	2.69e+05	0.87 y	41:46	_	0.94
			-			
2,3,7,8-TCDF	0.250	6.20e+04	0.71 y	25:52	-	1.20
1,2,3,7,8-PeCDF	1.25	2.90e+05	1.52 y	30:05	-	1.04
2,3,4,7,8-PeCDF	1.25	3.04e+05	1.58 y	30:59	-	0.94
1,2,3,4,7,8-HxCDF	1.25	2.65e+05	1.27 y	33:42	-	1.13
1,2,3,6,7,8-HxCDF	1.25	2.81e+05	1.25 y	33:50	-	1.11
2,3,4,6,7,8-HxCDF	1.25	2.69e+05	1.25 y	34:26	-	1.25
1,2,3,7,8,9-HxCDF	1.25	2.16e+05	1.25 y	35:24	-	1.14
1,2,3,4,6,7,8-HpCDF	1.25	2.22e+05	1.10 y	37:13	-	1.44
1,2,3,4,7,8,9-HpCDF	1.25	2.00e+05	1.00 y	39:03	-	1.22
OCDF	2.50	3.67e+05	0.93 y	42:00	-	1.03
Total Tetra-Dioxins	0.00	-	- n	~	-	1.21
TCDD EMPC	0.00	~	- n	=	-	1.21
Total Penta-Dioxins	0.00	-	- n	~	-	1.01
PeCDD EMPC	0.00	-	- n	-	-	1.01
Total Hexa-Dioxins	0.00	-	- n	-	-	1.04
HxCDD EMPC	0.00	-	- n	-	-	1.04
Total Hepta-Dioxins	0.00	-	- n	~	-	1.00
HpCDD EMPC	0.00	-	~ n	-	-	1.00
Total Tetra-Furans	0.00	-	- n	-	-	1.20
TCDF EMPC	0.00	-	- n	-	-	1.20
1st Func. Penta-Furans	0.00	-	- n	-	-	0.99
1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.99
Total Penta-Furans	0.00	-	- n	-	-	0.99
PeCDF EMPC	0.00	-	- n	-	-	0.99
Total Hexa-Furans	0.00	-	- n	-	-	1.16
HxCDF EMPC	0.00	-	- n	-	-	1.16
Total Hepta-Furans	0.00	-	- n	-	-	1.33
HpCDF EMPC	0.00	-	- n	-	-	1.33
13C-2,3,7,8-TCDD	100	1.39e+07	0.80 y	26:39	-	0.99
13C-1,2,3,7,8-PeCDD	100	1.50e+07	0.62 y	31:16	-	1.06
13C-1,2,3,4,7,8-HxCDD	100	1.29e+07	1.31 y	34:35	-	0.68
13C-1,2,3,6,7,8-HxCDD	100	1.32e+07	1.23 y	34:42	-	0.70
13C-1,2,3,7,8,9-HxCDD	100	1.32e+07	1.28 y	35:00	-	0.69

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13C-1,2,3,4,6,7,8-HpCDD	100	1.15e+07	1.06 y	38:30	-	0.60
13C-OCDD	200	2.30e+07	0.88 y	41:46	-	0.60
13C-2,3,7,8-TCDF	100	2.07e+07	0.82 y	25:51	-	0.90
13C-1,2,3,7,8-PeCDF	100	2.23e+07	1.59 y	30:04	-	0.97
13C-2,3,4,7,8-PeCDF	100	2.59e+07	1.58 y	30:59	-	1.12
13C-1,2,3,4,7,8-HxCDF	100	1.88e+07	0.51 y	33:42	-	0.99
13C-1,2,3,6,7,8-HxCDF	100	2.02e+07	0.52 y	33:50	-	1.06
13C-2,3,4,6,7,8-HxCDF	100	1.72e+07	0.52 y	34:25	-	0.90
13C-1,2,3,7,8,9-HxCDF	100	1.51e+07	0.52 y	35:24	-	0.79
13C-1,2,3,4,6,7,8-HpCDF	100	1.23e+07	0.43 y	37:13	-	0.65
13C-1,2,3,4,7,8,9-HpCDF	100	1.31e+07	0.44 v	39:03	_	0.69

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13C-OCDF	200	2.85e+07	0.89 у	41:60	-	0.75
37Cl-2,3,7,8-TCDD	0.250	5.04e+04		26:40	-	1.43
13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDF 13C-1,2,3,4,6,9-HxCDF	100 100 100	1.41e+07 2.31e+07 1.90e+07	0.80 y 0.81 y 0.52 y	26:03 24:33 34:07	-	1.00 1.00 1.00

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Filename: 160407D1 S: 2 Acqui	red: 7-3	PR-16 14:59	.10			
Run: 160407D1 S: 2 Acqui	red: /-A		: 19	Pogulta.		
Sample text: ST160407D1-2 1613 CS				Results:		
Jampie cext: 5110040/D1-2 1613 CS	T 1201302					
Name	Amount	Pega	DA	D.M.	DE	DDE
Name	Amount	Resp	RA	RT	RF	RRF
2,3,7,8-TCDD	0.500	8.26e+04	0.68 y	26:41	_	1.11
1,2,3,7,8-PeCDD	2.50	3.79e+05	0.65 y	31:16	_	
1,2,3,7,8-FECDD	2.50	3.49e+05	1.25 y	34:36		0.95
1,2,3,6,7,8-HxCDD	2.50	3.92e+05	-		-	0.99
1,2,3,7,8,9-HxCDD	2.50	3.60e+05	1.26 y	34:42 35:00	-	1.09
1,2,3,4,6,7,8-HpCDD	2.50	3.52e+05	1.18 y		-	1.05
1,2,3,4,6,7,6-HpCDD	5.00	5.62e+05	1.06 y	38:30	-	1.05
OCBD	5.00	5.620+05	0.93 Y	41:46	-	0.93
2,3,7,8-TCDF	0.500	1 190:05	0 00	25.52		1 00
		1.18e+05	0.88 y	25:52	-	1.09
1,2,3,7,8-PeCDF 2,3,4,7,8-PeCDF	2.50 2.50	5.84e+05 6.16e+05	1.52 y	30:04	-	0.99
			1.65 y	31:00	-	0.89
1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF	2.50 2.50	5.88e+05 6.24e+05	1.26 y 1.24 y	33:42 33:50	-	1.18
2,3,4,6,7,8-HxCDF	2.50	5.85e+05	-		-	
1,2,3,7,8,9-HxCDF	2.50	4.53e+05	1.24 y	34:26		1.24
	2.50		1.17 y	35:23	-	1.12
1,2,3,4,6,7,8-HpCDF		5.24e+05	1.04 y	37:13		1.40
1,2,3,4,7,8,9-HpCDF OCDF	2.50 5.00	4.42e+05 7.58e+05	1.02 y	39:03	-	1.32
OCDF	5.00	7.58e+05	0.91 y	42:00	-	1.02
Total Tetra-Dioxins	0.00	_	- n	_	_	1.11
TCDD EMPC	0.00	_	- n		_	1.11
Total Penta-Dioxins	0.00	-	- n	-	_	0.95
PeCDD EMPC	0.00	_	- n		_	0.95
Total Hexa-Dioxins	0.00	_	- n	-	_	1.04
HxCDD EMPC	0.00	_	- n	_	-	1.04
Total Hepta-Dioxins	0.00	-	- n	_	_	1.04
HpCDD EMPC	0.00	-	- n	_	_	1.05
Total Tetra-Furans	0.00	-	- n	-	-	1.05
TCDF EMPC	0.00	_	- n	-	_	1.09
1st Func. Penta-Furans	0.00	_		-	_	0.94
1st Func. PecDF EMPC	0.00	-	- n	-	-	0.94
Total Penta-Furans	0.00	-	- n	-	-	
PeCDF EMPC	0.00	-	- n	-	_	0.94
Total Hexa-Furans	0.00	-	- n - n	_	-	
HXCDF EMPC	0.00	-	- n	-	_	1.17
Total Hepta-Furans	0.00	-	- n	_	-	1.17
_				-		
HpCDF EMPC	0.00	-	- n	_	-	1.36
13C-2,3,7,8-TCDD	100	1.49e+07	0 00	26:40	_	1.02
13C-1,2,3,7,8-PeCDD	100	1.49e+07	0.80 y	31:16	-	
13C-1,2,3,7,8-PeCDD	100	1.41e+07	0.62 y 1.25 y	34:35	_	1.09 0.70
13C-1,2,3,4,7,8-HXCDD	100	1.41e+07	1.25 y 1.29 y	34:35	_	0.70
13C-1,2,3,7,8,9-HxCDD	100	1.37e+07	1.27 y	34:42	_	0.68
130-1,2,3,7,6,9-0000	100	1.3/6+0/	1.2/ Y	34:00	-	0.00

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13C-1,2,3,4,6,7,8-HpCDD	100	1.34e+07	1.06 y	38:30	-	0.66
13C-OCDD	200	2.41e+07	0.90 y	41:46	-	0.59
13C-2,3,7,8-TCDF	100	2.18e+07	0.79 y	25:51	~	0.91
13C-1,2,3,7,8-PeCDF	100	2.35e+07	1.59 y	30:04	-	0.98
13C-2,3,4,7,8-PeCDF	100	2.78e+07	1.59 y	30:59	-	1.16
13C-1,2,3,4,7,8-HxCDF	100	1.99e+07	0.51 y	33:41	-	0.98
13C-1,2,3,6,7,8-HxCDF	100	2.21e+07	0.52 y	33:49	-	1.09
13C-2,3,4,6,7,8-HxCDF	100	1.89e+07	0.51 y	34:25	-	0.93
13C-1,2,3,7,8,9-HxCDF	100	1.62e+07	0.51 y	35:23	-	0.80
13C-1,2,3,4,6,7,8-HpCDF	100	1.50e+07	0.43 y	37:13	-	0.74
13C-1.2.3 4 7 8 9-HpCDF	100	1.340+07	0 44 v	39-03	_	0.66

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13C-OCDF	200	2.99e+07	0.90 у	42:00	-	0.74
37C1-2,3,7,8-TCDD	0.500	9.35e+04		26:41	-	1.29
13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDF 13C-1,2,3,4,6,9-HxCDF	100 100 100	1.45e+07 2.39e+07 2.02e+07	0.81 y 0.80 y 0.52 y	26:04 24:34 34:06	-	1.00 1.00 1.00

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Filename: 160407D1 S: 3 Acqui	red: 7-1	PR-16 15:47	.30				
Run: 160407D1 Analyte:	Ca:		.30	Results:			
Sample text: ST160407D1-3 1613 CS				Nebuleb.			
oumple delice different bull bull bull	2001700						
Name	Amount	Resp	RA	RT	RF	RRF	
2,3,7,8-TCDD	2.00	3.11e+05	0.77 y	26:40	-	1.01	
1,2,3,7,8-PeCDD	10.0	1.49e+06	0.66 y	31:17	_	0.90	
1,2,3,4,7,8-HxCDD	10.0	1.35e+06	1.25 y	34:36	-	0.95	
1,2,3,6,7,8-HxCDD	10.0	1.49e+06	1.22 y	34:43	-	1.01	
1,2,3,7,8,9-HxCDD	10.0	1.40e+06	1.24 y	35:00	-	1.01	
1,2,3,4,6,7,8-HpCDD	10.0	1.21e+06	1.05 y	38:30	-	0.99	
OCDD	20.0	2.21e+06	0.88 y	41:46	-	0.90	
2,3,7,8-TCDF	2.00	4.78e+05	0.86 y	25:53	-	1.05	
1,2,3,7,8-PeCDF	10.0	2.35e+06	1.64 y	30:05	-	0.99	
2,3,4,7,8-PeCDF	10.0	2.46e+06	1.62 y	30:60	-	0.86	
1,2,3,4,7,8-HxCDF	10.0	2.27e+06	1.19 y	33:42	-	1.10	
1,2,3,6,7,8-HxCDF	10.0	2.43e+06	1.21 y	33:50	-	1.11	
2,3,4,6,7,8-HxCDF	10.0	2.20e+06	1.23 y	34:26	-	1.16	
1,2,3,7,8,9-HxCDF	10.0	1.75e+06	1.24 y	35:24	-	1.08	
1,2,3,4,6,7,8-HpCDF	10.0	1.82e+06	1.02 y	37:13	-	1.38	
1,2,3,4,7,8,9-HpCDF	10.0	1.73e+06	1.09 y	39:03	-	1.27	
OCDF	20.0	3.01e+06	0.91 y	42:00	-	0.99	
Total Tetra-Dioxins	0.00	_	- n	_	_	1.01	
TCDD EMPC	0.00	-	- n	_	_	1.01	
Total Penta-Dioxins	0.00	_	- n	-	_	0.90	
PeCDD EMPC	0.00	_	- n	-	_	0.90	
Total Hexa-Dioxins	0.00	-	- n	~	-	0.99	
HxCDD EMPC	0.00	_	- n	_	_	0.99	
Total Hepta-Dioxins	0.00	-	- n	_	-	0.99	
HpCDD EMPC	0.00	_	- n	-	_	0.99	
Total Tetra-Furans	0.00	_	- n	_	_	1.05	
TCDF EMPC	0.00	-	- n	_	-	1.05	
1st Func. Penta-Furans	0.00	-	- n	_	-	0.92	
1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.92	
Total Penta-Furans	0.00	-	- n	_	_	0.92	
PeCDF EMPC	0.00	-	- n	_	-	0.92	
Total Hexa-Furans	0.00	~	- n	_	-	1.11	
HxCDF EMPC	0.00	-	- n	_	-	1.11	
Total Hepta-Furans	0.00	-	- n	_	-	1.32	
HpCDF EMPC	0.00	-	- n		-	1.32	
13C-2,3,7,8-TCDD	100	1.54e+07	0.78 y	26:39	_	0.99	
13C-1,2,3,7,8-PeCDD	100	1.66e+07	0.62 y	31:16	-	1.06	
13C-1,2,3,4,7,8-HxCDD	100	1.42e+07	1.28 y	34:35	-	0.69	
13C-1,2,3,6,7,8-HxCDD	100	1.47e+07	1.27 y	34:42	-	0.72	
		1.38e+07	1.29 y	34:60		0.68	

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13C-1,2,3,4,6,7,8-HpCDD	100	1.21e+07	1.06 y	38:30	-	0.59
13C-OCDD	200	2.45e+07	0.88 y	41:46	-	0.60
13C-2,3,7,8-TCDF	100	2.29e+07	0.82 y	25:52	-	0.89
13C-1,2,3,7,8-PeCDF	100	2.39e+07	1.57 y	30:04	-	0.93
13C-2,3,4,7,8-PeCDF	100	2.86e+07	1.57 y	30:59	-	1.11
13C-1,2,3,4,7,8-HxCDF	100	2.06e+07	0.52 y	33:41	-	1.01
13C-1,2,3,6,7,8-HxCDF	100	2.19e+07	0.52 y	33:49	-	1.07
13C-2,3,4,6,7,8-HxCDF	100	1.90e+07	0.53 y	34:25	-	0.93
13C-1,2,3,7,8,9-HxCDF	100	1.62e+07	0.49 y	35:23	-	0.79
13C-1,2,3,4,6,7,8-HpCDF	100	1.32e+07	0.44 y	37:12		0.65
13C-1,2,3,4,7,8,9-HpCDF	100	1.36e+07	0.43 y	39:03	-	0.67

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13C-OCDF	200	3.04e+07	0.89 y	41:60	~	0.74
37Cl-2,3,7,8-TCDD	2.00	3.49e+05		26:40	-	1.12
13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDF 13C-1,2,3,4,6,9-HxCDF	100 100 100	1.56e+07 2.57e+07 2.04e+07	0.80 y 0.80 y 0.52 y	26:04 24:34 34:06	-	1.00 1.00 1.00

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Filename: 160407D1 S: 4 Acquir	red: 7-A	PR-16 16:35	- 58			
Run: 160407D1 Analyte:	Ca		. 50	Results:		
Sample text: ST160407D1-4 1613 CS				Results.		
bample bendt bildelevil i leis ege						
Name	Amount	Resp	RA	RT	RF	RRF
		_				
2,3,7,8-TCDD	10.0	1.64e+06	0.83 y	26:41	_	1.13
1,2,3,7,8-PeCDD	50.0	7.30e+06	0.62 y	31:17	_	0.94
1,2,3,4,7,8-HxCDD	50.0	6.71e+06	1.24 y	34:36	_	0.97
1,2,3,6,7,8-HxCDD	50.0	7.50e+06	1.23 y	34:43	_	1.10
1,2,3,7,8,9-HxCDD	50.0	6.93e+06	1.26 y	35:01	-	1.05
1,2,3,4,6,7,8-HpCDD	50.0	6.22e+06	1.03 y	38:30	-	1.06
OCDD	100	1.22e+07	0.90 y	41:47	-	0.97
2,3,7,8-TCDF	10.0	2.36e+06	0.76 y	25:53	-	1.09
1,2,3,7,8-PeCDF	50.0	1.14e+07	1.64 y	30:05	-	1.00
2,3,4,7,8-PeCDF	50.0	1.16e+07	1.62 y	31:00	-	0.88
1,2,3,4,7,8-HxCDF	50.0	1.13e+07	1.23 y	33:42	-	1.16
1,2,3,6,7,8-HxCDF	50.0	1.23e+07	1.23 y	33:50	-	1.18
2,3,4,6,7,8-HxCDF	50.0	1.10e+07	1.24 y	34:26	-	1.21
1,2,3,7,8,9-HxCDF	50.0	8.87e+06	1.26 y	35:24	-	1.13
1,2,3,4,6,7,8-HpCDF	50.0	9.13e+06	1.03 y	37:13	-	1.43
1,2,3,4,7,8,9-HpCDF	50.0	9.11e+06	1.06 y	39:04	-	1.33
OCDF	100	1.60e+07	0.91 y	42:01	-	1.03
Total Tetra-Dioxins	0.00	-	~ n	~	-	1.13
TCDD EMPC	0.00	-	- n	-	-	1.13
Total Penta-Dioxins	0.00	-	- n	-	-	0.94
PeCDD EMPC	0.00	-	- n	-	-	0.94
Total Hexa-Dioxins	0.00	-	- n	-	-	1.04
HxCDD EMPC	0.00	-	- n	-	-	1.04
Total Hepta-Dioxins	0.00	-	- n	-	-	1.06
HpCDD EMPC	0.00	-	- n	-	~	1.06
Total Tetra-Furans	0.00	-	- n	-	-	1.09
TCDF EMPC	0.00	-	- n	-	-	1.09
1st Func. Penta-Furans	0.00	-	- n	-	-	0.93
1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.93
Total Penta-Furans	0.00	-	- n	~	-	0.93
PeCDF EMPC	0.00	-	- n	-	-	0.93
Total Hexa-Furans	0.00	-	- n	-	-	1.17
HXCDF EMPC	0.00	-	- n	-	-	1.17
Total Hepta-Furans	0.00	-	- n	-	-	1.38
HpCDF EMPC	0.00	-	- n	-	-	1.38
120 2 2 7 0 7000	100	1 45+.67	0 77	25.42		
13C-2,3,7,8-TCDD	100	1.45e+07	0.77 y	26:40	-	1.00
13C-1,2,3,7,8-PeCDD	100	1.56e+07	0.62 y	31:16	-	1.08
13C-1,2,3,4,7,8-HxCDD	100	1.38e+07	1.27 y	34:35	-	0.71
13C-1,2,3,6,7,8-HxCDD	100	1.36e+07	1.28 y	34:42	-	0.70
13C-1,2,3,7,8,9-HxCDD	100	1.32e+07	1.30 y	35:00	-	0.68

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13C-1,2,3,4,6,7,8-HpCDD	100	1.18e+07	1.06 y	38:30	-	0.60
13C-OCDD	200	2.51e+07	0.90 y	41:47	-	0.64
13C-2,3,7,8-TCDF	100	2.16e+07	0.80 Y	25:52	-	0.89
13C-1,2,3,7,8-PeCDF	100	2.29e+07	1.60 y	30:04	-	0.94
13C-2,3,4,7,8-PeCDF	100	2.63e+07	1.55 y	30:59	-	1.08
13C-1,2,3,4,7,8-HxCDF	100	1.94e+07	0.51 y	33:41	-	0.99
13C-1,2,3,6,7,8-HxCDF	100	2.09e+07	0.51 y	33:49	-	1.07
13C-2,3,4,6,7,8-HxCDF	100	1.83e+07	0.52 y	34:26	-	0.94
13C-1,2,3,7,8,9-HxCDF	100	1.56e+07	0.53 y	35:23	-	0.80
13C-1,2,3,4,6,7,8-HpCDF	100	1.27e+07	0.43 y	37:12	-	0.65
13C-1,2,3,4,7,8,9-HpCDF	100	1.37e+07	0.42 y	39:03	-	0.70

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13C-OCDF	200	3.10e+07	0.89 y	42:00	-	0.79
37Cl-2,3,7,8-TCDD	10.0	1.54e+06		26:41	-	1.06
13C-1,2,3,4~TCDD	100	1.44e+07	0.79 y	26:04	-	1.00
13C-1,2,3,4-TCDF	100	2.43e+07	0.81 y	24:35	-	1.00
13C-1,2,3,4,6,9-HxCDF	100	1.95e+07	0.53 v	34:06	_	1.00

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							Page 5 of 6
Filename: 160407D1 S: 5 Acquir	red: 7-N	PR-16 17:24	.10				
Run: 160407D1 Analyte:	Ca:		: 10	Results:			
Sample text: ST160407D1-5 1613 CS4		1:		Results:			
Sample Lext: S1160407D1-5 1613 CS	1501908						
Name	Amount	Resp	RA	RT	RF	RRF	·
2,3,7,8-TCDD	40.0	5.64e+06	0.79 y	26:40	_	1.14	
1,2,3,7,8-PeCDD	200	2.65e+07	0.63 y	31:17	~	0.98	
1,2,3,4,7,8-HxCDD	200	2.56e+07	1.25 y	34:35	_	1.05	
1,2,3,6,7,8-HxCDD	200	2.82e+07	1.25 y	34:42	_	1.13	
1,2,3,7,8,9-HxCDD	200	2.57e+07	1.23 y	35:00	~	1.08	
1,2,3,4,6,7,8-HpCDD	200	2.43e+07	1.01 y	38:30	-	1.11	
OCDD	400	4.79e+07	0.89 y	41:47	-	1.02	
2,3,7,8-TCDF	40.0	8.26e+06	0.80 y	25:53	_	1.12	
1,2,3,7,8-PeCDF	200	4.09e+07	1.64 y	30:05	_	1.02	
2,3,4,7,8-PeCDF	200	4.25e+07	1.62 y	30:60	_	0.90	
1,2,3,4,7,8-HxCDF	200	4.15e+07	1.24 y	33:41	_	1.20	
1,2,3,6,7,8-HxCDF	200	4.55e+07	1.24 y	33:50	_	1.21	
2,3,4,6,7,8-HxCDF	200	4.01e+07	1.22 y	34:26	_	1.23	
1,2,3,7,8,9-HxCDF	200	3.27e+07	1.23 y	35:23	~	1.16	
1,2,3,4,6,7,8-HpCDF	200	3.49e+07	1.01 y	37:12	_	1.49	
1,2,3,4,7,8,9-HpCDF	200	3.47e+07	1.02 y	39:03	_	1.37	
OCDF	400	6.31e+07	0.91 y	41:60	-	1.07	
Total Tetra-Dioxins	0.00	-	- n	-	-	1.14	
TCDD EMPC	0.00	-	- n	-	-	1.14	
Total Penta-Dioxins	0.00	-	- n	-	-	0.98	
PeCDD EMPC	0.00	-	- n	-	-	0.98	
Total Hexa-Dioxins	0.00	-	- n	-	-	1.08	
HxCDD EMPC	0.00	-	- n	-		1.08	
Total Hepta-Dioxins	0.00	-	- n	-	-	1.11	
HpCDD EMPC	0.00	-	- n	-	-	1.11	
Total Tetra-Furans	0.00	-	- n	~	-	1.12	
TCDF EMPC	0.00	-	- n	-	-	1.12	
1st Func. Penta-Furans	0.00	-	- n	-	-	0.96	
1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.96	
Total Penta-Furans	0.00	-	- n	-	~	0.96	
PeCDF EMPC	0.00	-	- n	-	-	0.96	
Total Hexa-Furans	0.00	-	- n	-	-	1.20	
HxCDF EMPC	0.00	-	- n	-	-	1.20	
Total Hepta-Furans	0.00	-	- n	-	-	1.43	
HPCDF EMPC	0.00	-	- n	-	-	1.43	
13C-2,3,7,8-TCDD	100	1.23e+07	0.80 y	26:39	-	0.98	
13C-1,2,3,7,8-PeCDD	100	1.35e+07	0.63 y	31:15	-	1.08	
13C-1,2,3,4,7,8-HxCDD	100	1.22e+07	1.31 y	34:34	-	0.71	
13C-1,2,3,6,7,8-HxCDD	100	1.25e+07	1.23 y	34:41	-	0.72	
13C-1,2,3,7,8,9-HxCDD	100	1.19e+07	1.23 y	34:59	-	0.69	

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```
13C-1,2,3,4,6,7,8-HpCDD 100 1.10e+07 1.07 y 38:29 - 0.64

13C-OCDD 200 2.35e+07 0.88 y 41:45 - 0.68

13C-2,3,7,8-TCDF 100 1.84e+07 0.81 y 25:51 - 0.89

13C-1,2,3,7,8-PeCDF 100 2.01e+07 1.62 y 30:04 - 0.97

13C-2,3,4,7,8-PeCDF 100 2.35e+07 1.56 y 30:58 - 1.13

13C-1,2,3,4,7,8-HxCDF 100 1.73e+07 0.52 y 33:41 - 1.00

13C-1,2,3,4,6,7,8-HxCDF 100 1.88e+07 0.52 y 33:49 - 1.09

13C-2,3,4,6,7,8-HxCDF 100 1.63e+07 0.52 y 34:25 - 0.94

13C-1,2,3,7,8,9-HxCDF 100 1.41e+07 0.53 y 35:22 - 0.81

13C-1,2,3,4,6,7,8-HpCDF 100 1.17e+07 0.42 y 37:12 - 0.68

13C-1,2,3,4,6,7,8-HpCDF 100 1.27e+07 0.44 y 39:02 - 0.74
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13C-OCDF	200	2.96e+07	0.89 y	41:59	-	0.86
37Cl-2,3,7,8-TCDD	40.0	5.49e+06		26:40	-	1.09
13C-1,2,3,4-TCDD 13C-1,2,3,4-TCDF 13C-1,2,3,4,6,9-HxCDF	100 100 100	1.25e+07 2.07e+07 1.73e+07	0.79 y 0.80 y 0.52 y	26:04 24:34 34:06	-	1.00 1.00 1.00

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Run: 160407D1 Analyte:	Cal	PR-16 18:12 l: 1613VG7-		Results:		
Sample text: ST160407D1-6 1613 CS	5 15J1909					
Name	Amount	Resp	RA	RT	RF	RRF
2,3,7,8-TCDD	300	5.22e+07	0.78 y	26:42	_	1.19
1,2,3,7,8-PeCDD	1500	2.52e+08	0.63 y	31:18	_	0.99
1,2,3,4,7,8-HxCDD	1500	2.49e+08	1.24 y	34:36	_	1.03
1,2,3,6,7,8-HxCDD	1500	2.71e+08	1.25 y	34:43	-	1.15
1,2,3,7,8,9-HxCDD	1500	2.53e+08	1.24 y	35:01	_	1.10
1,2,3,4,6,7,8-HpCDD	1500	2.79e+08	1.02 y	38:31	_	1.09
OCDD	3000	4.88e+08	0.90 y	41:47	_	1.00
						2.00
2,3,7,8-TCDF	300	7.38e+07	0.79 y	25:54	_	1.16
1,2,3,7,8-PeCDF	1500	3.76e+08	1.62 y	30:05	_	1.00
2,3,4,7,8-PeCDF	1500	3.95e+08	1.59 y	31:01	_	0.93
1,2,3,4,7,8-HxCDF	1500	3.84e+08	1.24 y	33:43	_	1.19
1,2,3,6,7,8-HxCDF	1500	4.13e+08	1.20 y	33:50	_	1.19
2,3,4,6,7,8-HxCDF	1500	3.92e+08	1.24 y	34:27	_	1.27
1,2,3,7,8,9-HxCDF	1500	3.22e+08	1.24 y	35:24	_	1.16
1,2,3,4,6,7,8-HpCDF	1500	3.58e+08	1.02 y	37:14	_	1.50
1,2,3,4,7,8,9-HpCDF	1500	3.42e+08	1.02 y	39:04	_	1.37
OCDF	3000	6.49e+08	0.92 y	42:01	_	1.06
Total Tetra-Dioxins	0.00	-	- n	-	_	1.19
TCDD EMPC	0.00	-	- n	-	_	1.19
Total Penta-Dioxins	0.00	-	- n	-	_	0.99
PeCDD EMPC	0.00	-	- n	-	_	0.99
Total Hexa-Dioxins	0.00	-	- n	-	_	1.09
HxCDD EMPC	0.00	-	- n	-		1.09
Total Hepta-Dioxins	0.00	**	- n	_	_	1.09
HpCDD EMPC	0.00	-	- n	_		1.09
Total Tetra-Furans	0.00	-	- n	_	_	1.16
TCDF EMPC	0.00	_	- n	_	_	1.16
1st Func. Penta-Furans	0.00	_	- n	-	_	0.96
1st Func. PeCDF EMPC	0.00	-	- n	-	_	0.96
Total Penta-Furans	0.00	_	- n	-	-	0.96
PeCDF EMPC	0.00	-	- n	-	_	0.96
Total Hexa-Furans	0.00	_	- n	_	_	1.20
HxCDF EMPC	0.00	**	- n	_	_	1.20
Total Hepta-Furans	0.00	_	- n	_	_	1.43
HpCDF EMPC	0.00	_	- n	_	-	1.43
13C-2,3,7,8-TCDD	100	1.47e+07	0.80 y	26:40	-	1.08
13C-1,2,3,7,8-PeCDD	100	1.69e+07	0.62 y	31:17	-	1.25
13C-1,2,3,4,7,8-HxCDD	100	1.62e+07	1.30 y	34:36	_	0.84
13C-1,2,3,6,7,8-HxCDD	100	1.57e+07	1.28 y	34:42	-	0.82
13C-1,2,3,7,8,9-HxCDD	100	1.53e+07	1.26 y	35:00	-	0.80

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13C-1,2,3,4,6,7,8-HpCDD	100	1.71e+07	1.06 y	38:30	-	0.89
13C-OCDD	200	3.24e+07	0.89 y	41:46	-	0.84
13C-2,3,7,8-TCDF	100	2.11e+07	0.80 y	25:52	-	0.93
13C-1,2,3,7,8-PeCDF	100	2.50e+07	1.59 y	30:05	-	1.10
13C-2,3,4,7,8-PeCDF	100	2.85e+07	1.58 y	30:60	-	1.25
13C-1,2,3,4,7,8-HxCDF	100	2.14e+07	0.52 y	33:42	-	1.12
13C-1,2,3,6,7,8-HxCDF	100	2.32e+07	0.52 y	33:50	-	1.21
13C-2,3,4,6,7,8-HxCDF	100	2.05e+07	0.52 y	34:25	-	1.07
13C-1,2,3,7,8,9-HxCDF	100	1.85e+07	0.52 y	35:23	-	0.96
13C-1,2,3,4,6,7,8-HpCDF	100	1.60e+07	0.43 y	37:13	-	0.83
13C-1,2,3,4,7,8,9-HpCDF	100	1.66e+07	0.43 y	39:03	-	0.87

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		`				
13C-OCDF	200	4.10e+07	0.90 y	42:01	-	1.07
37Cl-2,3,7,8-TCDD	300	3.39e+07		26:42	-	0.83
13C-1,2,3,4-TCDD	100	1.36e+07	0.80 y	26:05	-	1.00
13C-1,2,3,4-TCDF	100	2.27e+07	0.81 y	24:35	-	1.00
13C-1,2,3,4,6,9-HxCDF	100	1.92e+07	0.52 y	34:07	-	1.00

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		uired: 7-A					
un: 16			613VG7-4-7-	16	Result	s:	
ample	text: ST160407D1-1 1613	CS0 15J1904					
Тур	Name	Amount	Resp	RA	n.m.		
Unk	2,3,7,8-TCDD		4.19e+04		RT	RF	RRF
Unk	1,2,3,7,8-PeCDD		1.88e+05	0.88 y 0.65 y	26:40 31:16	_	1.21
Unk	1,2,3,4,7,8-HxCDD		1.65e+05	-			
Unk	1,2,3,4,7,8-HxCDD		1.80e+05	1.21 y	34:36	-	1.02
Unk	1,2,3,7,8,9-HxCDD		1.66e+05	1.10 y	34:43		1.09
Unk	1,2,3,4,6,7,8-HpCDD		1.44e+05	1.31 y	35:00	-	1.01
Unk	1,2,3,4,6,7,8-mpCDD		2.69e+05	1.10 y	38:30		1.00
UIIK	OCDD	2.50	2.690+05	0.87 у	41:46	-	0.94
Unk	2,3,7,8-TCDF	0.25	6.20e+04	0.71 y	25:52	_	1.20
Unk	1,2,3,7,8-PeCDF	1.25	2.90e+05	1.52 y	30:05	-	1.04
Unk	2,3,4,7,8-PeCDF	1.25	3.04e+05	1.58 y	30:59	_	0.94
Unk	1,2,3,4,7,8-HxCDF	1.25	2.65e+05	1.27 y	33:42	_	1.13
Unk	1,2,3,6,7,8-HxCDF	1.25	2.81e+05	1.25 y	33:50	-	1.11
Unk	2,3,4,6,7,8-HxCDF	1.25	2.69e+05	1.25 y	34:26	-	1.25
Unk	1,2,3,7,8,9-HxCDF	1.25	2.16e+05	1.25 y	35:24	-	1.14
Unk	1,2,3,4,6,7,8-HpCDF	1.25	2.22e+05	1.10 y	37:13	-	1.44
Unk	1,2,3,4,7,8,9-HpCDF	1.25	2.00e+05	1.00 y	39:03	-	1.22
Unk	OCDF	2.50	3.67e+05	0.93 γ	42:00	-	1.03
IS	13C-2,3,7,8-TCDD	100.00	1.39e+07	0.80 y	26:39	_	0.99
IS	13C-1,2,3,7,8-PeCDD		1.50e+07	0.62 y	31:16		1.06
IS	13C-1,2,3,4,7,8-HxCDD		1.29e+07	1.31 y	34:35	_	0.68
IS	13C-1,2,3,6,7,8-HxCDD		1.32e+07	1.23 y	34:42		0.70
S	13C-1,2,3,7,8,9-HxCDD		1.32e+07	1.28 y	35:00	_	0.70
IS	13C-1,2,3,4,6,7,8-HpCDD		1.15e+07	1.06 y	38:30	_	0.60
IS	13C-OCDD		2.30e+07	0.88 y	41:46	-	0.60
IS	13C-2,3,7,8-TCDF		2.07e+07	0.82 y	25:51	-	0.60
IS	13C-1,2,3,7,8-PeCDF		2.23e+07	1.59 y	30:04	-	0.90
IS	13C-2,3,4,7,8-PeCDF		2.59e+07	1.58 y	30:59	-	1.12
IS	13C-1,2,3,4,7,8-HxCDF		1.88e+07	0.51 y	33:42	-	0.99
IS	13C-1,2,3,4,7,8 HxCDF		2.02e+07	0.51 y 0.52 y	33:42	-	1.06
IS	13C-2,3,4,6,7,8-HxCDF		1.72e+07	0.52 y	34:25	-	0.90
IS	13C-1,2,3,7,8,9-HxCDF		1.51e+07	0.52 y	35:24	_	0.79
IS	13C-1,2,3,4,6,7,8-HpCDF		1.23e+07	0.32 y 0.43 y	37:13	_	0.79
IS	13C-1,2,3,4,7,8,9-HpCDF		1.31e+07	0.43 y 0.44 y	39:03	_	0.69
IS	13C-OCDF		2.85e+07	0.44 y 0.89 y	41:60	-	0.75
0/17:	277 0 2 7 0 770	0.5=	F 04				
C/Up	37C1-2,3,7,8-TCDD	0.25	5.04e+04		26:40	-	1.43
RS/RT	13C-1,2,3,4-TCDD	100.00	1.41e+07	0.80 y	26:03	-	1.00
RS	13C-1,2,3,4-TCDF	100.00	2.31e+07	0.81 y	24:33	-	1.00
RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	1.90e+07	0.52 y	34:07	-	1.00

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									Page 2
F	ilename	: 160407D1 S: 2 Acqui	red: 7-A	PR-16 14:59	:18				
1	Run: 16	*	Cal:			Results	S:		
	Sample	text: ST160407D1-2 1613 CS	1 15J1905						
	-								
	Typ	Name	Amount	Resp	RA	RT	RF	RRF	
1	Unk	2,3,7,8-TCDD	0.50	8.26e+04	0.68 y	26:41	_	1.11	
2	Unk	1,2,3,7,8-PeCDD	2.50	3.79e+05	0.65 y	31:16	_	0.95	
3	Unk	1,2,3,4,7,8-HxCDD	2.50	3.49e+05	1.25 y	34:36	-	0.99	
Į.	Unk	1,2,3,6,7,8-HxCDD	2.50	3.92e+05	1.26 y	34:42	_	1.09	
;	Unk	1,2,3,7,8,9-HxCDD	2.50	3.60e+05	1.18 y	35:00	_	1.05	
5	Unk	1,2,3,4,6,7,8-HpCDD	2.50	3.52e+05	1.06 y	38:30	_	1.05	
7	Unk	OCDD	5.00	5.62e+05	0.93 y	41:46	_	0.93	
					•				
	Unk	2,3,7,8-TCDF	0.50	1.18e+05	0.88 y	25:52	-	1.09	
	Unk	1,2,3,7,8-PeCDF	2.50	5.84e+05	1.52 y	30:04	_	0.99	
0	Unk	2,3,4,7,8-PeCDF	2.50	6.16e+05	1.65 y	31:00	-	0.89	
1	Unk	1,2,3,4,7,8-HxCDF	2.50	5.88e+05	1.26 y	33:42	_	1.18	
2	Unk	1,2,3,6,7,8-HxCDF	2.50	6.24e+05	1.24 y	33:50	_	1.13	
3	Unk	2,3,4,6,7,8-HxCDF	2.50	5.85e+05	1.24 y	34:26	_	1.24	
4	Unk	1,2,3,7,8,9-HxCDF	2.50	4.53e+05	1.17 y	35:23	_	1.12	
5	Unk	1,2,3,4,6,7,8-HpCDF	2.50	5.24e+05	1.04 y	37:13	_	1.40	
6	Unk	1,2,3,4,7,8,9-HpCDF	2.50	4.42e+05	1.02 y	39:03	_	1.32	
7	Unk	OCDF	5.00	7.58e+05	0.91 y	42:00	_	1.02	
6	IS	13C-2,3,7,8-TCDD	100.00	1.49e+07	0.80 y	26:40	_	1.02	
7	IS	13C-1,2,3,7,8-PeCDD	100.00	1.59e+07	0.62 y	31:16	_	1.09	
8	IS	13C-1,2,3,4,7,8-HxCDD	100.00	1.41e+07	1.25 y	34:35	_	0.70	
9	IS	13C-1,2,3,6,7,8-HxCDD	100.00	1.44e+07	1.29 y	34:42	_	0.71	
0	IS	13C-1,2,3,7,8,9-HxCDD	100.00	1.37e+07	1.27 y	34:60	_	0.68	
1	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	1.34e+07	1.06 y	38:30	_	0.66	
2	IS	13C-OCDD	200.00	2.41e+07	0.90 y	41:46	_	0.59	
3	IS	13C-2,3,7,8-TCDF	100.00	2.18e+07	0.79 y	25:51	_	0.91	
4	IS	13C-1,2,3,7,8-PeCDF	100.00	2.35e+07	1.59 y	30:04		0.98	
5	IS	13C-2,3,4,7,8-PeCDF	100.00	2.78e+07	1.59 y	30:59	_	1.16	
6	IS	13C-1,2,3,4,7,8-HxCDF	100.00	1.99e+07	0.51 y	33:41	_	0.98	
7	IS	13C-1,2,3,6,7,8-HxCDF	100.00	2.21e+07	0.51 y	33:49	_	1.09	
8	IS	13C-2,3,4,6,7,8-HxCDF	100.00	1.89e+07	0.52 y	34:25	-	0.93	
9	IS	13C-1,2,3,7,8,9-HxCDF	100.00	1.62e+07	0.51 y	35:23	_	0.93	
0	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	1.50e+07	0.51 y 0.43 y	37:13	-	0.80	
1	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	1.34e+07	0.43 y 0.44 y	39:03	-	0.74	
2	IS	13C-1,2,3,4,7,8,9-npcDF	200.00	2.99e+07	0.44 y 0.90 y	42:00	_	0.00	
2	10	13C-0CDF	200.00	2.336+07	0.50 Y	42:00	-	0.74	
3	C/Up	37Cl-2,3,7,8-TCDD	0.50	9.35e+04		26:41	-	1.29	
4	RS/RT	13C-1,2,3,4-TCDD	100.00	1.45e+07	0.81 y	26:04		1.00	
	RS/RI	13C-1,2,3,4-TCDF	100.00	2.39e+07	0.81 y	26:04	_	1.00	
5	RS/RT		100.00	2.39e+07 2.02e+07	0.80 y 0.52 y	24:34 34:06	_	1.00	

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									Page 3 o
F	ilename	: 160407D1 S: 3 Acqui	red: 7-A	PR-16 15:47	:38				
	Run: 16	0407D1 Analyte:	Cal:			Result	ts:		
	Sample	text: ST160407D1-3 1613 CS	2 15J1906						
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
	Unk	2,3,7,8-TCDD	2.00	3.11e+05	0.77 y	26:40	_	1.01	
	Unk	1,2,3,7,8-PeCDD	10.00	1.49e+06	0.66 y	31:17	_	0.90	
	Unk	1,2,3,4,7,8-HxCDD	10.00	1.35e+06	1.25 y	34:36	_	0.95	
	Unk	1,2,3,6,7,8-HxCDD	10.00	1.49e+06	1.22 y	34:43	_	1.01	
	Unk	1,2,3,7,8,9-HxCDD	10.00	1.40e+06	1.24 y	35:00	-	1.01	
	Unk	1,2,3,4,6,7,8-HpCDD	10.00	1.21e+06	1.05 y	38:30	-	0.99	
	Unk	OCDD	20.00	2.21e+06	0.88 у	41:46	-	0.90	
	Unk	2,3,7,8-TCDF	2.00	4.78e+05	0.86 y	25:53	_	1.05	
	Unk	1,2,3,7,8-PeCDF	10.00	2.35e+06	1.64 y	30:05	_	0.99	
0	Unk	2,3,4,7,8-PeCDF	10.00	2.46e+06	1.62 y	30:60	_	0.86	
1	Unk	1,2,3,4,7,8-HxCDF	10.00	2.27e+06	1.19 y	33:42	_	1.10	
2	Unk	1,2,3,6,7,8-HxCDF	10.00	2.43e+06	1.21 y	33:50	_	1.11	
3	Unk	2,3,4,6,7,8-HxCDF	10.00	2.20e+06	1.23 y	34:26	_	1.16	
4	Unk	1,2,3,7,8,9-HxCDF	10.00	1.75e+06	1.24 y	35:24	-	1.08	
5	Unk	1,2,3,4,6,7,8-HpCDF	10.00	1.82e+06	1.02 y	37:13	-	1.38	
6	Unk	1,2,3,4,7,8,9-HpCDF	10.00	1.73e+06	1.09 y	39:03	_	1.27	
7	Unk	OCDF	20.00	3.01e+06	0.91 y	42:00	-	0.99	
6	IS	13C-2,3,7,8-TCDD	100.00	1.54e+07	0.78 y	26:39	_	0.99	
7	IS	13C-1,2,3,7,8-PeCDD	100.00	1.66e+07	0.62 y	31:16	_	1.06	
8	IS	13C-1,2,3,4,7,8-HxCDD	100.00	1.42e+07	1.28 y	34:35	-	0.69	
9	IS	13C-1,2,3,6,7,8-HxCDD	100.00	1.47e+07	1.27 y	34:42	-	0.72	
0	IS	13C-1,2,3,7,8,9-HxCDD	100.00	1.38e+07	1.29 y	34:60	-	0.68	
1	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	1.21e+07	1.06 y	38:30	-	0.59	
2	IS	13C-OCDD	200.00	2.45e+07	0.88 y	41:46	-	0.60	
3	IS	13C-2,3,7,8-TCDF	100.00	2.29e+07	0.82 y	25:52	-	0.89	
4	IS	13C-1,2,3,7,8-PeCDF	100.00	2.39e+07	1.57 y	30:04	-	0.93	
5	IS	13C-2,3,4,7,8-PeCDF	100.00	2.86e+07	1.57 y	30:59	-	1.11	
6	IS	13C-1,2,3,4,7,8-HxCDF	100.00	2.06e+07	0.52 y	33:41	-	1.01	
7	IS	13C-1,2,3,6,7,8-HxCDF	100.00	2.19e+07	0.52 y	33:49	-	1.07	
8	IS	13C-2,3,4,6,7,8-HxCDF	100.00	1.90e+07	0.53 y	34:25	-	0.93	
9	IS	13C-1,2,3,7,8,9-HxCDF	100.00	1.62e+07	0.49 y	35:23	-	0.79	
0	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	1.32e+07	0.44 y	37:12	-	0.65	
1	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	1.36e+07	0.43 y	39:03	-	0.67	
2	IS	13C-OCDF	200.00	3.04e+07	0.89 γ	41:60	-	0.74	
3	C/Up	37Cl-2,3,7,8-TCDD	2.00	3.49e+05		26:40	-	1.12	
4	RS/RT	13C-1,2,3,4-TCDD	100.00	1.56e+07	0.80 y	26:04	-	1.00	
5	RS	13C-1,2,3,4-TCDF	100.00	2.57e+07	0.80 y	24:34	-	1.00	
6	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	2.04e+07	0.52 y	34:06	-	1.00	

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									Page
Fil	.ename	: 160407D1 S: 4 Acqui	red: 7-A	.PR-16 16:35	:58				
		0407D1 Analyte:	Cal:	10 10100	. 50	Resu	lte.		
		text: ST160407D1-4 1613 CS				Resu	105.		
	-								
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
1	Unk	2,3,7,8-TCDD	10.00	1.64e+06	0.83 y	26:41	_	1.13	
2	Unk	1,2,3,7,8-PeCDD	50.00	7.30e+06	0.62 y	31:17	-	0.94	
3	Unk	1,2,3,4,7,8-HxCDD	50.00	6.71e+06	1.24 y	34:36	~	0.97	
4	Unk	1,2,3,6,7,8-HxCDD	50.00	7.50e+06	1.23 y	34:43	_	1.10	
5	Unk	1,2,3,7,8,9-HxCDD	50.00	6.93e+06	1.26 y	35:01	-	1.05	
6	Unk	1,2,3,4,6,7,8-HpCDD	50.00	6.22e+06	1.03 y	38:30	-	1.06	
7	Unk	OCDD	100.00	1.22e+07	0.90 y	41:47	-	0.97	
В	Unk	2,3,7,8-TCDF	10.00	2.36e+06	0.76 y	25:53	_	1.09	
	Unk	1,2,3,7,8-PeCDF	50.00	1.14e+07	1.64 y	30:05	_	1.09	
	Unk	2,3,4,7,8-PeCDF	50.00	1.16e+07	1.62 y	31:00	_	0.88	
	Unk	1,2,3,4,7,8-HxCDF	50.00	1.13e+07	1.23 y	33:42	_	1.16	
	Unk	1,2,3,6,7,8-HxCDF	50.00	1.23e+07	1.23 y	33:50	_	1.18	
	Unk	2,3,4,6,7,8-HxCDF	50.00	1.10e+07	1.24 y	34:26		1.21	
	Unk	1,2,3,7,8,9-HxCDF	50.00	8.87e+06	1.24 y	35:24		1.13	
	Unk	1,2,3,4,6,7,8-HpCDF	50.00	9.13e+06	1.03 y	37:13	-	1.43	
	Unk	1,2,3,4,7,8,9-HpCDF	50.00	9.11e+06	1.06 y	39:04		1.33	
	Unk	OCDF	100.00	1.60e+07	0.91 y	42:01	_	1.03	
					1	12.01		1.05	
36	IS	13C-2,3,7,8-TCDD	100.00	1.45e+07	0.77 y	26:40	_	1.00	
37	IS	13C-1,2,3,7,8-PeCDD	100.00	1.56e+07	0.62 y	31:16	_	1.08	
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	1.38e+07	1.27 y	34:35	-	0.71	
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	1.36e+07	1.28 y	34:42	-	0.70	
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	1.32e+07	1.30 y	35:00	-	0.68	
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	1.18e+07	1.06 y	38:30	-	0.60	
42	IS	13C-OCDD	200.00	2.51e+07	0.90 y	41:47	-	0.64	
43	IS	13C-2,3,7,8-TCDF	100.00	2.16e+07	0.80 y	25:52	-	0.89	
44	IS	13C-1,2,3,7,8-PeCDF	100.00	2.29e+07	1.60 y	30:04	-	0.94	
45	IS	13C-2,3,4,7,8-PeCDF	100.00	2.63e+07	1.55 y	30:59	-	1.08	
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	1.94e+07	0.51 y	33:41	-	0.99	
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	2.09e+07	0.51 y	33:49	-	1.07	
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	1.83e+07	0.52 y	34:26	-	0.94	
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	1.56e+07	0.53 y	35:23	-	0.80	
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	1.27e+07	0.43 y	37:12	-	0.65	
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	1.37e+07	0.42 y	39:03	-	0.70	
52	IS	13C-OCDF	200.00	3.10e+07	0.89 y	42:00	-	0.79	
53	C/Up	37C1-2,3,7,8-TCDD	10.00	1.54e+06		26:41	-	1.06	
54	RS/RT	13C-1,2,3,4-TCDD	100.00	1.44e+07	0.79 y	26:04	_	1.00	
	RS	13C-1,2,3,4-TCDF	100.00	2.43e+07	0.81 y	24:35	_	1.00	
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	1.95e+07	0.53 y	34:06		1.00	

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									Page
									5-
		-		PR-16 17:24	:18				
	un: 160	•	Cal:			Resul	ts:		
2	Sample t	cext: ST160407D1-5 1613 CS	4 15J1908						
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
	Unk	2,3,7,8-TCDD	40.00	5.64e+06	0.79 v	26:40	-	1.14	
2	Unk	1,2,3,7,8-PeCDD	200.00	2.65e+07	0.63 y	31:17	_	0.98	
}	Unk	1,2,3,4,7,8-HxCDD	200.00	2.56e+07	1.25 y	34:35	_	1.05	
	Unk	1,2,3,6,7,8-HxCDD	200.00	2.82e+07	1.25 y	34:42	_	1.13	
	Unk	1,2,3,7,8,9-HxCDD	200.00	2.57e+07	1.23 y	35:00	_	1.08	
,	Unk	1,2,3,4,6,7,8-HpCDD	200.00	2.43e+07	1.01 y	38:30	_	1.11	
,	Unk	OCDD	400.00	4.79e+07	0.89 y	41:47	-	1.02	
	Unk	2,3,7,8-TCDF	40.00	8.26e+06	0.80 y	25:53	-	1.12	
	Unk	1,2,3,7,8-PeCDF	200.00	4.09e+07	1.64 y	30:05		1.02	
0	Unk	2,3,4,7,8-PeCDF	200.00	4.25e+07	1.62 y	30:60	-	0.90	
1	Unk	1,2,3,4,7,8-HxCDF	200.00	4.15e+07	1.24 y	33:41	-	1.20	
2	Unk	1,2,3,6,7,8-HxCDF	200.00	4.55e+07	1.24 y	33:50	-	1.21	
3	Unk	2,3,4,6,7,8-HxCDF	200.00	4.01e+07	1.22 y	34:26	-	1.23	
4	Unk	1,2,3,7,8,9-HxCDF	200.00	3.27e+07	1.23 y	35:23	-	1.16	
5	Unk	1,2,3,4,6,7,8-HpCDF	200.00	3.49e+07	1.01 y	37:12	-	1.49	
6	Unk	1,2,3,4,7,8,9-HpCDF	200.00	3.47e+07	1.02 y	39:03	-	1.37	
7	Unk	OCDF	400.00	6.31e+07	0.91 y	41:60	-	1.07	
6	IS	13C-2,3,7,8-TCDD	100.00	1.23e+07	0.80 y	26:39	-	0.98	
7	IS	13C-1,2,3,7,8-PeCDD	100.00	1.35e+07	0.63 y	31:15	-	1.08	
3	IS	13C-1,2,3,4,7,8-HxCDD	100.00	1.22e+07	1.31 y	34:34	-	0.71	
9	IS	13C-1,2,3,6,7,8-HxCDD	100.00	1.25e+07	1.23 y	34:41	-	0.72	
0	IS	13C-1,2,3,7,8,9-HxCDD	100.00	1.19e+07	1.23 y	34:59	-	0.69	
L	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	1.10e+07	1.07 y	38:29	-	0.64	
2	IS	13C-OCDD	200.00	2.35e+07	0.88 y	41:45	-	0.68	
3	IS	13C-2,3,7,8-TCDF	100.00	1.84e+07	0.81 y	25:51	-	0.89	
1	IS	13C-1,2,3,7,8-PeCDF	100.00	2.01e+07	1.62 y	30:04	-	0.97	
5	IS	13C-2,3,4,7,8-PeCDF	100.00	2.35e+07	1.56 y	30:58	-	1.13	
5	IS	13C-1,2,3,4,7,8-HxCDF	100.00	1.73e+07	0.52 y	33:41	-	1.00	
7	IS	13C-1,2,3,6,7,8-HxCDF	100.00	1.88e+07	0.52 y	33:49	-	1.09	
ļ	IS	13C-2,3,4,6,7,8-HxCDF	100.00	1.63e+07	0.52 y	34:25	**	0.94	
9	IS	13C-1,2,3,7,8,9-HxCDF	100.00	1.41e+07	0.53 y	35:22	-	0.81	
)	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	1.17e+07	0.42 y	37:12	-	0.68	
	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	1.27e+07	0.44 y	39:02	-	0.74	
2	IS	13C-OCDF	200.00	2.96e+07	0.89 у	41:59	-	0.86	
3	C/Up	37Cl-2,3,7,8-TCDD	40.00	5.49e+06		26:40	-	1.09	
4	RS/RT	13C-1,2,3,4-TCDD	100.00	1.25e+07	0.79 y	26:04	-	1.00	
5	RS	13C-1,2,3,4-TCDF	100.00	2.07e+07	0.80 y	24:34	-	1.00	
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	1.73e+07	0.52 y	34:06	-	1.00	

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									Page 6 c
									1430 0
F	ilename	: 160407D1 S: 6 Acqui	ired: 7-A	PR-16 18:12	:36				
	Run: 16	0407D1 Analyte:	Cal: 1	613VG7-4-7-	16	Resul	ts:		
	Sample	text: ST160407D1-6 1613 CS	55 15J1909						
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
	Unk	2,3,7,8-TCDD	300.00	5.22e+07	0.78 y	26:42	-	1.19	
	Unk	1,2,3,7,8-PeCDD	1500.00	2.52e+08	0.63 y	31:18	-	0.99	
	Unk	1,2,3,4,7,8-HxCDD	1500.00	2.49e+08	1.24 y	34:36	-	1.03	
	Unk	1,2,3,6,7,8-HxCDD	1500.00	2.71e+08	1.25 y	34:43	-	1.15	
	Unk	1,2,3,7,8,9-HxCDD	1500.00	2.53e+08	1.24 y	35:01	-	1.10	
	Unk	1,2,3,4,6,7,8-HpCDD	1500.00	2.79e+08	1.02 y	38:31	-	1.09	
	Unk	OCDD	3000.00	4.88e+08	0.90 y	41:47	-	1.00	
	Unk	2,3,7,8-TCDF	300.00	7.38e+07	0.79 y	25:54	-	1.16	
	Unk	1,2,3,7,8-PeCDF	1500.00	3.76e+08	1.62 y	30:05	-	1.00	
0	Unk	2,3,4,7,8-PeCDF	1500.00	3.95e+08	1.59 y	31:01	-	0.93	
1	Unk	1,2,3,4,7,8-HxCDF	1500.00	3.84e+08	1.24 y	33:43	-	1.19	
2	Unk	1,2,3,6,7,8-HxCDF	1500.00	4.13e+08	1.20 y	33:50	-	1.19	
3	Unk	2,3,4,6,7,8-HxCDF	1500.00	3.92e+08	1.24 y	34:27	-	1.27	
4	Unk	1,2,3,7,8,9-HxCDF	1500.00	3.22e+08	1.24 y	35:24	-	1.16	
5	Unk	1,2,3,4,6,7,8-HpCDF	1500.00	3.58e+08	1.02 y	37:14	-	1.50	
6	Unk	1,2,3,4,7,8,9-HpCDF	1500.00	3.42e+08	1.02 y	39:04	-	1.37	
7	Unk	OCDF	3000.00	6.49e+08	0.92 y	42:01	-	1.06	
6	IS	13C-2,3,7,8-TCDD	100.00	1.47e+07	0.80 y	26:40	-	1.08	
7	IS	13C-1,2,3,7,8-PeCDD	100.00	1.69e+07	0.62 y	31:17	-	1.25	
8	IS	13C-1,2,3,4,7,8-HxCDD	100.00	1.62e+07	1.30 y	34:36	-	0.84	
9	IS	13C-1,2,3,6,7,8-HxCDD	100.00	1.57e+07	1.28 y	34:42	-	0.82	
0	IS	13C-1,2,3,7,8,9-HxCDD	100.00	1.53e+07	1.26 y	35:00	-	0.80	
1	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	1.71e+07	1.06 y	38:30	-	0.89	
2	IS	13C-OCDD	200.00	3.24e+07	0.89 y	41:46	-	0.84	
3	IS	13C-2,3,7,8-TCDF	100.00	2.11e+07	0.80 y	25:52	-	0.93	
4	IS	13C-1,2,3,7,8-PeCDF	100.00	2.50e+07	1.59 y	30:05	-	1.10	
5	IS	13C-2,3,4,7,8-PeCDF	100.00	2.85e+07	1.58 y	30:60	~	1.25	
6	IS	13C-1,2,3,4,7,8-HxCDF	100.00	2.14e+07	0.52 y	33:42	-	1.12	
7	IS	13C-1,2,3,6,7,8-HxCDF	100.00	2.32e+07	0.52 y	33:50	-	1.21	
В	IS	13C-2,3,4,6,7,8-HxCDF	100.00	2.05e+07	0.52 y	34:25	-	1.07	
9	IS	13C-1,2,3,7,8,9-HxCDF	100.00	1.85e+07	0.52 y	35:23	-	0.96	
0	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	1.60e+07	0.43 y	37:13	-	0.83	
1	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	1.66e+07	0.43 y	39:03	-	0.87	
2	IS	13C-OCDF	200.00	4.10e+07	0.90 y	42:01	-	1.07	
3	C/Up	37Cl-2,3,7,8-TCDD	300.00	3.39e+07		26:42	-	0.83	
4	RS/RT	13C-1,2,3,4-TCDD	100.00	1.36e+07	0.80 y	26:05	-	1.00	
5	RS	13C-1,2,3,4-TCDF	100.00	2.27e+07	0.81 y	24:35	-	1.00	
6	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	1.92e+07	0.52 y	34:07	_	1.00	

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Initial Calibration RRF	Summary (I	CAL) V	ista Analy	tical Labo:	ratory				Page 1 o
Run: 160407D1	Analyte:		Cal:	1613VG7-4-	7-16	Inst. ID.	VG-7		
Data filename: 160407D1			Samp# 1	Samp# 2	Samp# 3	Samp# 4	Samp# 5	Samp# 6	
			0.25	0.50	2.0	10	40	300	
Name	Mean RRF	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	
Total Tetra-Dioxins	1.13	6.05 %	1.21	1.11	1.01	1.13	1.14	1.19	
CDD EMPC	1.13	6.05 %	1.21	1.11	1.01	1.13	1.14	1.19	
Total Penta-Dioxins	0.96	4.14 %	1.01	0.95	0.90	0.94	0.98	0.99	
PeCDD EMPC	0.96	4.14 %	1.01	0.95	0.90	0.94	0.98	0.99	
Total Hexa-Dioxins	1.05	3.43 %	1.04	1.04	0.99	1.04	1.08	1.09	
HXCDD EMPC	1.05	3.43 %	1.04	1.04	0.99	1.04	1.08	1.09	
Total Hepta-Dioxins	1.05	4.28 %	1.00	1.05	0.99	1.06	1.11	1.09	
HpCDD EMPC	1.05	4.28 %	1.00	1.05	0.99	1.06	1.11	1.09	
Total Tetra-Furans	1.12	4.96 %	1.20	1.09	1.05	1.09	1.12	1.16	
CCDF EMPC	1.12	4.96 %	1.20	1.09	1.05	1.09	1.12	1.16	
lst Func. Penta-Furans	0.95	2.61 %	0.99	0.94	0.92	0.93	0.96	0.96	
1st Func. PeCDF EMPC	0.95	2.61 %	0.99	0.94	0.92	0.93	0.96	0.96	
Total Penta-Furans	0.95	2.61 %	0.99	0.94	0.92	0.93	0.96	0.96	
PeCDF EMPC	0.95	2.61 %	0.99	0.94	0.92	0.93	0.96	0.96	
Total Hexa-Furans	1.17	2.86 %	1.16	1.17	1.11	1.17	1.20	1.20	
HxCDF EMPC	1.17	2.86 %	1.16	1.17	1.11	1.17	1.20	1.20	
Total Hepta-Furans	1.37	3.43 %	1.33	1.36	1.32	1.38	1.43	1.43	
HpCDF EMPC	1.37	3.43 %	1.33	1.36	1.32	1.38	1.43	1.43	

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Initial Calibration RRF	Vista Analy	tical Labo	ratory					
Run: 160407D1	Analyte:	Cal:	1613VG7-4-	7-16	Inst.	ID. VG-7		
Data filename: 160407D1		Samp# 1	Samp# 2	Samp# 3	Samp# 4	Samp# 5	Samp# 6	
baca firefame. 100407bi		0.25	0.50	2.0	10	40	300	
	RRT Limits			2.0	10	10	300	
Name	Lower Upper	RRT#1	RRT#2	RRT#3	RRT#4	RRT#5	RRT#6	
2,3,7,8-TCDD	0.999 -1.002	1.001	1.001	1.001	1.001	1.001	1.001	
1,2,3,7,8-PeCDD	0.999 -1.002	1.000	1.000	1.000	1.001	1.001	1.001	
1,2,3,4,7,8-HxCDD	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
1,2,3,6,7,8-HxCDD	0.998 -1.004	1.000	1.000	1.000	1.000	1.000	1.000	
1,2,3,7,8,9-HxCDD	0.998 -1.004	1.000	1.000	1.000	1.000	1.000	1.000	
1,2,3,4,6,7,8-HpCDD	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
OCDD	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
2,3,7,8-TCDF	0.999 -1.003	1.001	1.000	1.001	1.001	1.001	1.001	
1,2,3,7,8-PeCDF	0.999 -1.002	1.000	1.000	1.001	1.001	1.000	1.000	
2,3,4,7,8-PeCDF	0.999 -1.002	1.000	1.001	1.000	1.000	1.001	1.000	
1,2,3,4,7,8-HxCDF	0.999 -1.001	1.000	1.000	1.000	1.001	1.000	1.000	
1,2,3,6,7,8-HxCDF	0.997 -1.005	1.000	1.000	1.000	1.000	1.000	1.000	
2,3,4,6,7,8-HxCDF	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.001	
1,2,3,7,8,9-HxCDF	0.999 -1.001	1.000	1.000	1.000	1.001	1.001	1.000	
1,2,3,4,6,7,8-HpCDF	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
1,2,3,4,7,8,9-HpCDF	0.999 -1.001	1.000	1.000	1.000	1.001	1.000	1.000	
OCDF	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
436 0 3 5 0 0 0000	0.976 -1.043	1.023	1 000	1 000	1 000		1 003	
13C-2,3,7,8-TCDD	1.000 -1.567	1.023	1.023	1.023	1.023	1.023	1.023 1.199	
13C-1,2,3,7,8-PeCDD	1.000 -1.567	1.200	1.199	1.014	1.014	1.199	1.199	
13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD	1.002 -1.028	1.014	1.014	1.014	1.014	1.014	1.014	
13C-1,2,3,7,8,9-HxCDD	1.014 -1.038	1.026	1.026	1.026	1.017	1.017	1.026	
13C-1,2,3,4,6,7,8-HpCDD	1.117 -1.141	1.129	1.129	1.129	1.129	1.129	1.128	
13C-OCDD	1.085 -1.365	1.225	1.225	1.225	1.225	1.225	1.224	
13C-2,3,7,8-TCDF	0.923 -1.103	0.992	0.992	0.992	0.992	0.992	0.992	
13C-1,2,3,7,8-PeCDF	1.000 -1.425	1.154	1.154	1.154	1.153	1.154	1.153	
13C-2,3,4,7,8-PeCDF	1.011 -1.526	1.189	1.189	1.189	1.189	1.189	1.188	
13C-1,2,3,4,7,8-HxCDF	0.975 -1.001	0.988	0.988	0.988	0.988	0.988	0.988	
13C-1,2,3,6,7,8-HxCDF	0.979 -1.005	0.992	0.992	0.992	0.992	0.992	0.992	
13C-2,3,4,6,7,8-HxCDF	1.001 -1.020	1.009	1.009	1.009	1.009	1.009	1.009	
13C-1,2,3,7,8,9-HxCDF	1.002 -1.072	1.038	1.038	1.037	1.037	1.037	1.037	
13C-1,2,3,4,6,7,8-HpCDF	1.069 -1.111	1.091	1.091	1.091	1.091	1.091	1.091	
13C-1,2,3,4,7,8,9-HpCDF	1.098 -1.192	1.145	1.145	1.145	1.145	1.145	1.145	
13C-OCDF	1.091 -1.371	1.231	1.231	1.231	1.232	1.231	1.231	
37Cl-2,3,7,8-TCDD	0.989 -1.052	1.023	1.023	1.023	1.024	1.024	1.023	
13C-1,2,3,4-TCDD	0.000 -0.000	*	*	*	*	*	*	
13C-1,2,3,4-TCDF	0.000 -0.000	*	*	*	*	*	*	
13C-1,2,3,4,6,9-HxCDF	0.000 -0.000	*	*	*	*	*	*	

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									Page 1 of 6	
_		:: 160407D1 S: 1 Acqui								
	Run: 160407D1 Analyte: Cal: 1613VG7-4-7-16 Results: Sample text: ST160407D1-1 1613 CSO 15J1904									
	sampre	cext: SII60407DI-I 1613 CS	0 1501904							
	Тур	Name	Amount	Resp	RA	RT	RF	RRF		
18	Tot	Total Tetra-Dioxins	0.00	-	- n	_	_	1.21		
19	Tot	TCDD EMPC	0.00	-	- n	-	-	1.21		
20	Tot	Total Penta-Dioxins	0.00	-	- n	-	-	1.01		
21	Tot	PeCDD EMPC	0.00	-	- n	-	-	1.01		
22	Tot	Total Hexa-Dioxins	0.00	-	- n	-	-	1.04		
23	Tot	HxCDD EMPC	0.00	-	- n	-	-	1.04		
24	Tot	Total Hepta-Dioxins	0.00	-	- n	-	-	1.00		
25	Tot	HpCDD EMPC	0.00	-	- n	-	-	1.00		
26	Tot	Total Tetra-Furans	0.00	-	- n	-	-	1.20		
27	Tot	TCDF EMPC	0.00	-	- n	-	-	1.20		
28	Tot	1st Func. Penta-Furans	0.00	-	- n	-	-	0.99		
29	Tot	1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.99		
30	Tot	Total Penta-Furans	0.00	-	- n	-	-	0.99		
31	Tot	PeCDF EMPC	0.00	-	- n	-	-	0.99		
32	Tot	Total Hexa-Furans	0.00	-	- n	~	-	1.16		
33	Tot	HxCDF EMPC	0.00	-	- n	-	-	1.16		
34	Tot	Total Hepta-Furans	0.00	-	- n	-	-	1.33		
35	Tot	HpCDF EMPC	0.00	-	- n	-	-	1.33		

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									Page :	
		e: 160407D1 S: 2 Acqui		PR-16 14:5	9:18					
		160407D1 Analyte: Cal: Results:								
	Sample	text: ST160407D1-2 1613 CS	1 15J1905	15J1905						
	m	Name	Amount	Dean	RA	D.M.		DDE		
	Тур	Name	Allount	Resp	KA	RT	RF	RRF		
18	Tot	Total Tetra-Dioxins	0.00	-	- n	-	_	1.11		
19	Tot	TCDD EMPC	0.00	-	- n	-	-	1.11		
20	Tot	Total Penta-Dioxins	0.00	-	- n	-	-	0.95		
21	Tot	PeCDD EMPC	0.00	-	- n	-	-	0.95		
22	Tot	Total Hexa-Dioxins	0.00	-	- n	-	-	1.04		
23	Tot	HxCDD EMPC	0.00	-	- n	-	-	1.04		
24	Tot	Total Hepta-Dioxins	0.00	-	- n	-	-	1.05		
25	Tot	HpCDD EMPC	0.00	-	- n	-	-	1.05		
26	Tot	Total Tetra-Furans	0.00	-	- n	-	-	1.09		
27	Tot	TCDF EMPC	0.00	-	- n	-	-	1.09		
28	Tot	1st Func. Penta-Furans	0.00	-	- n	~	-	0.94		
29	Tot	1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.94		
30	Tot	Total Penta-Furans	0.00	-	- n	-	-	0.94		
31	Tot	PeCDF EMPC	0.00	-	- n	-	-	0.94		
32	Tot	Total Hexa-Furans	0.00	-	- n	-	-	1.17		
33	Tot	HxCDF EMPC	0.00	-	- n	-	-	1.17		
34	Tot	Total Hepta-Furans	0.00	-	- n	-	-	1.36		
35	Tot	HpCDF EMPC	0.00	-	- n	-	-	1.36		

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	Тур	Name	Amount	Resp	RA	RT	RF	RRF
				•				
	Tot	Total Tetra-Dioxins	0.00	-	- n	-	-	1.01
-	rot .	TCDD EMPC	0.00	-	- n	-	-	1.01
	Tot	Total Penta-Dioxins	0.00	-	- n	-	-	0.90
	Tot	PeCDD EMPC	0.00	-	- n	-	-	0.90
	Tot	Total Hexa-Dioxins	0.00	-	- n	-	-	0.99
	Tot	HxCDD EMPC	0.00	~	- n	-	-	0.99
	Tot	Total Hepta-Dioxins	0.00	~	- n	-	-	0.99
	Tot	HpCDD EMPC	0.00	-	- n	-	-	0.99
	Tot	Total Tetra-Furans	0.00	-	- n	-	-	1.05
	Tot	TCDF EMPC	0.00	-	- n	-	-	1.05
	Tot	1st Func. Penta-Furans	0.00	-	- n	-	-	0.92
	Tot	1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.92
	Tot	Total Penta-Furans	0.00	-	- n	-	-	0.92
	Tot	PeCDF EMPC	0.00	-	- n	-	-	0.92
	Tot	Total Hexa-Furans	0.00	-	- n	-	-	1.11
	Tot	HxCDF EMPC	0.00	-	- n	-	-	1.11
	Tot	Total Hepta-Furans	0.00	-	- n	-	-	1.32
	Tot	HpCDF EMPC	0.00	~	- n	-	_	1.32

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F	ilename	:: 160407D1 S: 4 Acqui		PR-16 16:3	5:58				
	Run: 16	0407D1 Analyte:	Cal:			Result	ts:		
	Sample	text: ST160407D1-4 1613 CS	3 16C3101	16C3101					
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
18	Tot	Total Tetra-Dioxins	0.00	-	- n	-	-	1.13	
19	Tot	TCDD EMPC	0.00	-	- n	-	-	1.13	
20	Tot	Total Penta-Dioxins	0.00	-	- n	-	~	0.94	
21	Tot	PeCDD EMPC	0.00	-	- n	-	-	0.94	
22	Tot	Total Hexa-Dioxins	0.00	-	- n	-	-	1.04	
23	Tot	HxCDD EMPC	0.00	-	- n	-	-	1.04	
24	Tot	Total Hepta-Dioxins	0.00	-	- n	-	-	1.06	
25	Tot	HpCDD EMPC	0.00	-	- n	-	-	1.06	
26	Tot	Total Tetra-Furans	0.00	-	~ n	-	-	1.09	
27	Tot	TCDF EMPC	0.00	-	- n	-	-	1.09	
28	Tot	1st Func. Penta-Furans	0.00	-	- n	-	-	0.93	
29	Tot	1st Func. PeCDF EMPC	0.00	-	- n	-	-	0.93	
30	Tot	Total Penta-Furans	0.00	-	- n	-	-	0.93	
31	Tot	PeCDF EMPC	0.00	-	- n	-	_	0.93	
32	Tot	Total Hexa-Furans	0.00	-	- n	-	_	1.17	
33	Tot	HXCDF EMPC	0.00	_	- n	_	_	1.17	
34	Tot	Total Hepta-Furans	0.00	-	- n	_	_	1.38	
35	Tot	HpCDF EMPC	0.00	_	- n	_	_	1.38	

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Page	5	of	6	
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Results:

	Тур	Name	Amount	Resp	RA	RT	RF	RRF
18	Tot	Total Tetra-Dioxins	0.00	-	- n	_	-	1.14
19	Tot	TCDD EMPC	0.00	~	- n	~	-	1.14
20	Tot	Total Penta-Dioxins	0.00	-	- n	-	-	0.98
21	Tot	PeCDD EMPC	0.00	-	- n	-	-	0.98
22	Tot	Total Hexa-Dioxins	0.00	-	- n	-	-	1.08
23	Tot	HxCDD EMPC	0.00	-	- n	-	-	1.08
24	Tot	Total Hepta-Dioxins	0.00	-	- n	-	-	1.11
25	Tot	HpCDD EMPC	0.00	-	- n	-	-	1.11
26	Tot	Total Tetra-Furans	0.00	-	- n	-	_	1.12
27	Tot	TCDF EMPC	0.00	-	- n	-	-	1.12
28	Tot	1st Func. Penta-Furans	0.00	-	- n	~	-	0.96
29	Tot	1st Func. PeCDF EMPC	0.00		- n	-	-	0.96
30	Tot	Total Penta-Furans	0.00	-	- n	-	-	0.96
31	Tot	PeCDF EMPC	0.00	-	- n	**	-	0.96
32	Tot	Total Hexa-Furans	0.00	-	- n	-	-	1.20
33	Tot	HxCDF EMPC	0.00	-	- n	-	-	1.20
34	Tot	Total Hepta-Furans	0.00	-	- n	-	-	1.43
35	Tot	HpCDF EMPC	0.00	-	- n	-	-	1.43

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Filename: 160407D1 S: 6 Acquired: 7-APR-16 18:12:36
Run: 160407D1 Analyte: Cal: 1613VG7-4-7-16
Sample text: ST160407D1-6 1613 CS5 15J1909

Results:	
RT	R

	Тур	Name	Amount	Resp	RA	RT	RF	RRF
18	Tot	Total Tetra-Dioxins	0.00	_	- n	_	_	1.19
19	Tot	TCDD EMPC	0.00	-	- n	_	-	1.19
20	Tot	Total Penta-Dioxins	0.00	_	- n	_	_	0.99
21	Tot	PeCDD EMPC	0.00	_	- n	_	_	0.99
22	Tot	Total Hexa-Dioxins	0.00	-	- n	_	_	1.09
23	Tot	HxCDD EMPC	0.00	-	- n	_	-	1.09
24	Tot	Total Hepta-Dioxins	0.00	-	- n	-	-	1.09
25	Tot	HpCDD EMPC	0.00	_	- n	-	-	1.09
26	Tot	Total Tetra-Furans	0.00	~	- n	-	-	1.16
27	Tot	TCDF EMPC	0.00		- n	-	_	1.16
28	Tot	1st Func. Penta-Furans	0.00	-	- n	-	_	0.96
29	Tot	1st Func. PeCDF EMPC	0.00	_	- n	-	-	0.96
30	Tot	Total Penta-Furans	0.00	-	- n	-	-	0.96
31	Tot	PeCDF EMPC	0.00	-	- n	-	=	0.96
32	Tot	Total Hexa-Furans	0.00	-	- n	-	=	1.20
33	Tot	HxCDF EMPC	0.00	-	- n	-	-	1.20
34	Tot	Total Hepta-Furans	0.00	-	- n	-	-	1.43
35	Tot	HpCDF EMPC	0.00	-	- n	_	_	1.43

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FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 4-7-16

RT Window Data Filename: 160407D1 S#4 Analysis Date: 7-APR-16 Time: 16:35:58

ZB-5MS IS Data Filename: 160407D1 S#4 Analysis Date: 7-APR-16 Time: 16:35:58

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

	ABSOLUTE		ABSOLUTE
ISOMERS	RT	ISOMERS	RT
1,3,6,8-TCDD (F)	23:07	1,3,6,8-TCDF (F)	20:55
1,2,8,9-TCDD (L)	27:34	1,2,8,9-TCDF (L)	27:43
1,2,4,7,9-PeCDD (F)	29:12	1,3,4,6,8-PeCDF (F)	27:39
1,2,3,8,9-PeCDD (L)	31:39	1,2,3,8,9-PeCDF (L)	31:54
1,2,4,6,7,9-HxCDD (F)	33:04	1,2,3,4,6,8-HxCDF (F)	32:31
1,2,3,7,8,9-HxCDD (L)	35:01	1,2,3,7,8,9-HxCDF (L)	35:24
1,2,3,4,6,7,9-HpCDD (F)	37:37	1,2,3,4,6,7,8-HpCDF (F)	37:13
1,2,3,4,6,7,8-HpCDD (L)	38:30	1,2,3,4,7,8,9-HpCDF (L)	39:04

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT BETWEEN COMPARED PEAKS (1)

<25%

Analyst:

(1) To meet contract requirements, $\$ Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Date: 4/8/16

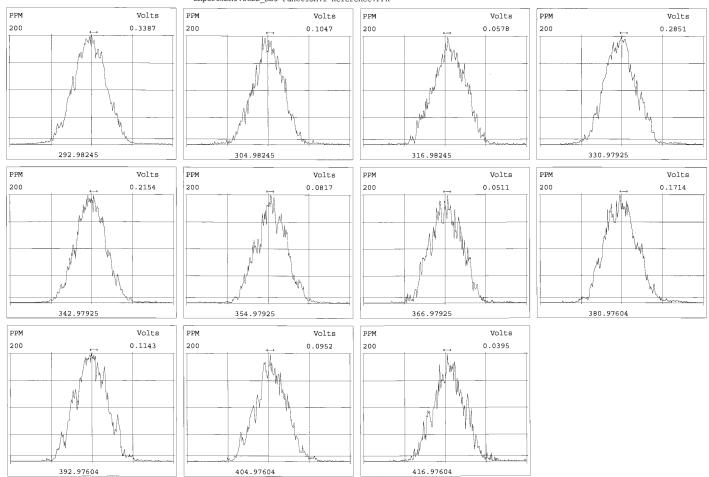
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Page	1	of	1	
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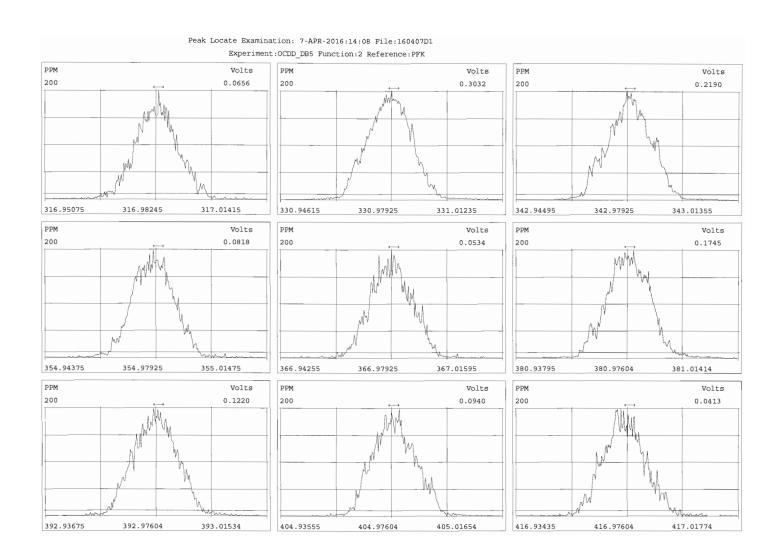
Vista Anai	ytical L	aboratory - Injection Log	Run 111e: 160407D1	Instrument ID: V	/G-7 GC	COLUMN ID:	ZB-5MS	
Data file	s#	Sample ID		Analyst	Acq date	Acq time	CCal	ECal
160407D1	1	ST160407D1-1		DB	7-APR-16	14:10:55	ST160407D1-4	NA
160407D1	2	ST160407D1-2		DB	7-APR-16	14:59:18	ST160407D1-4	NA
160407D1	3	ST160407D1-3		DB	7-APR-16	15:47:38	ST160407D1-4	NA
160407D1	4	ST160407D1-4		DB	7-APR-16	16:35:58	ST160407D1-4	NA
160407D1	5	ST160407D1-5		DB	7-APR-16	17:24:18	ST160407D1-4	NA
160407D1	6	ST160407D1-6		DB	7-APR-16	18:12:36	ST160407D1-4	NA
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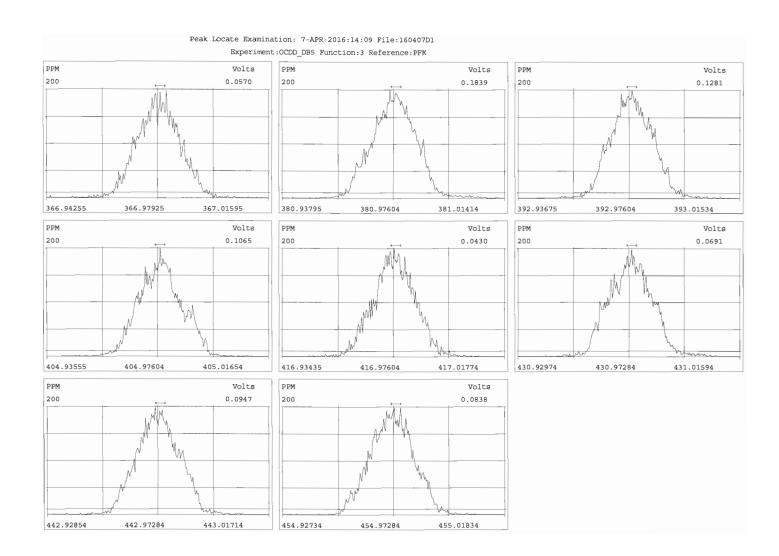
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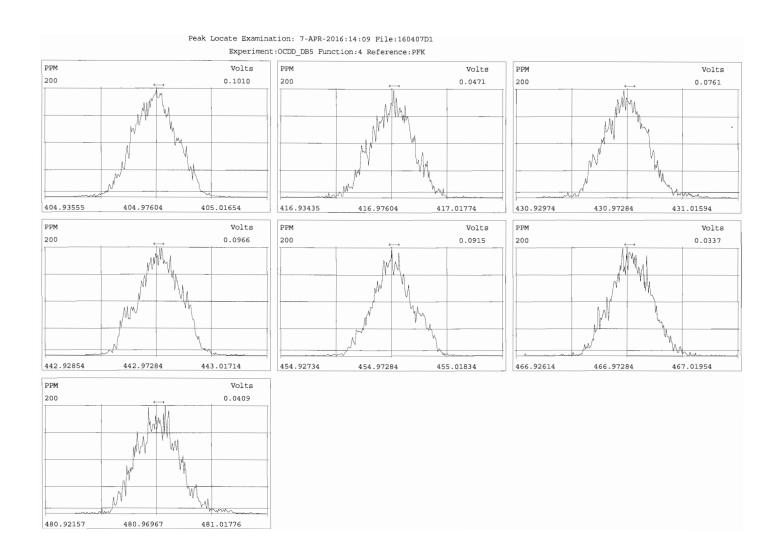
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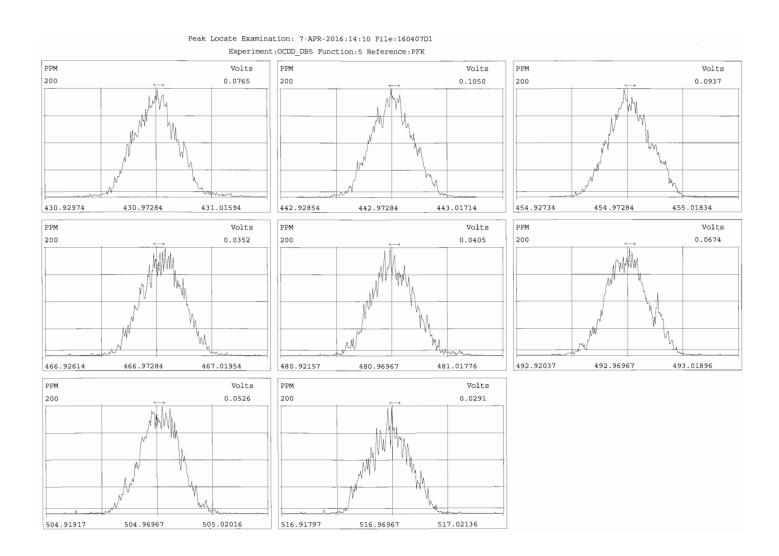
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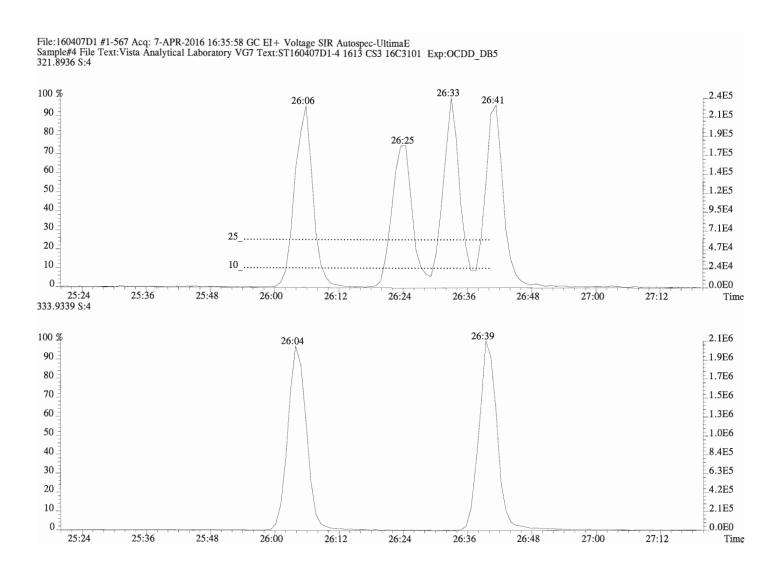
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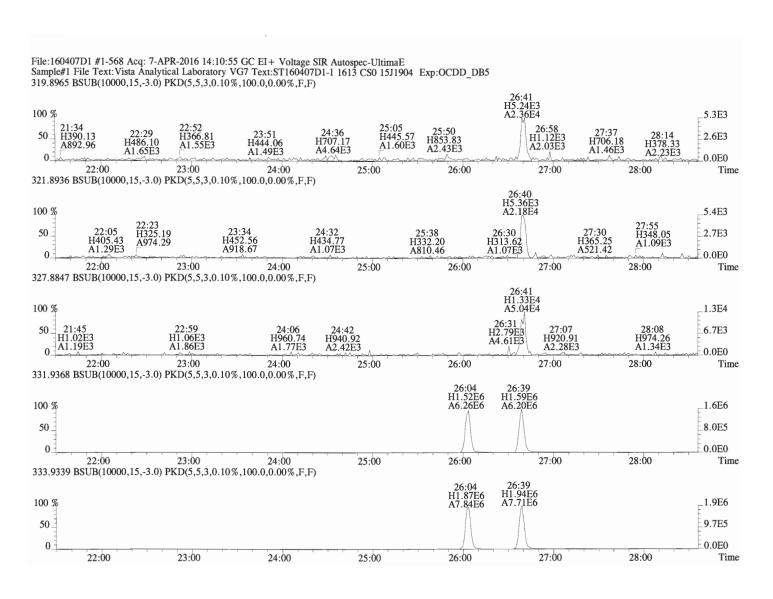
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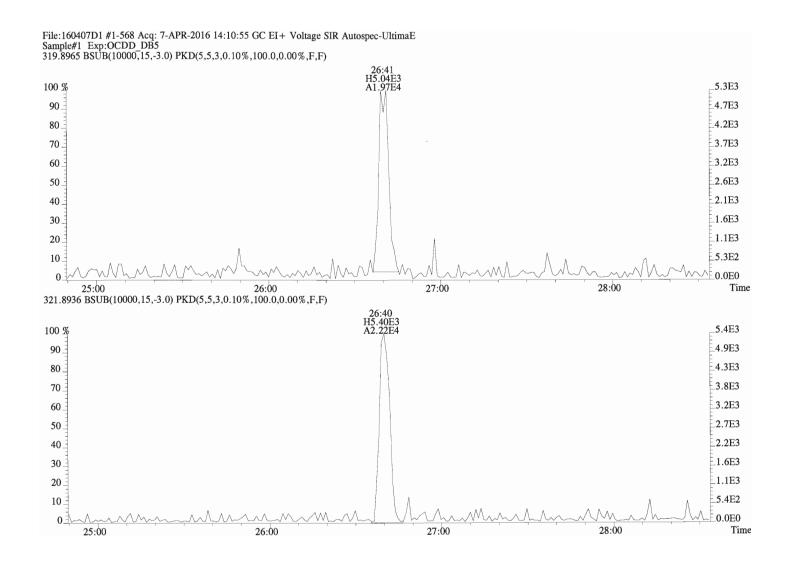
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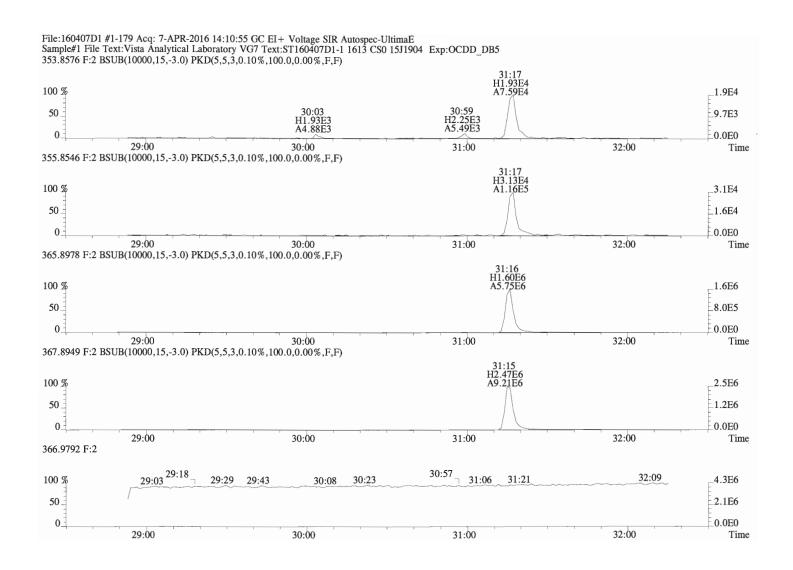
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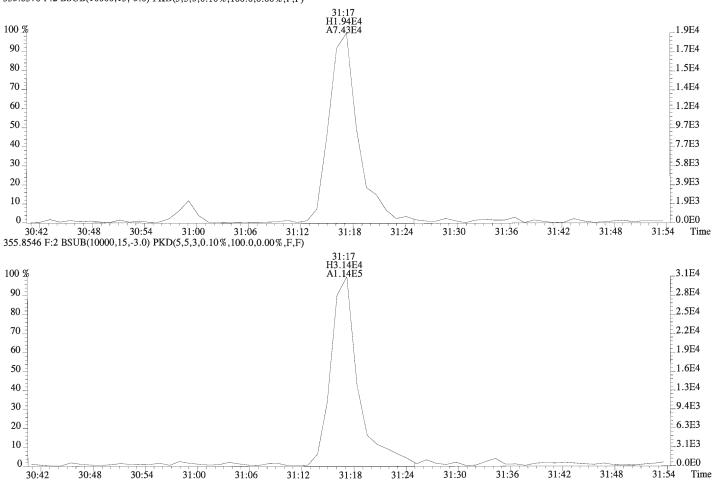


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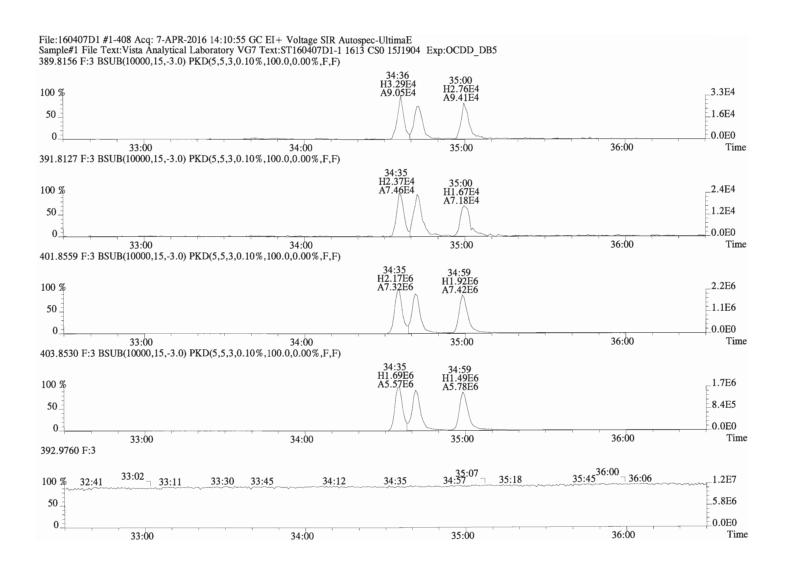


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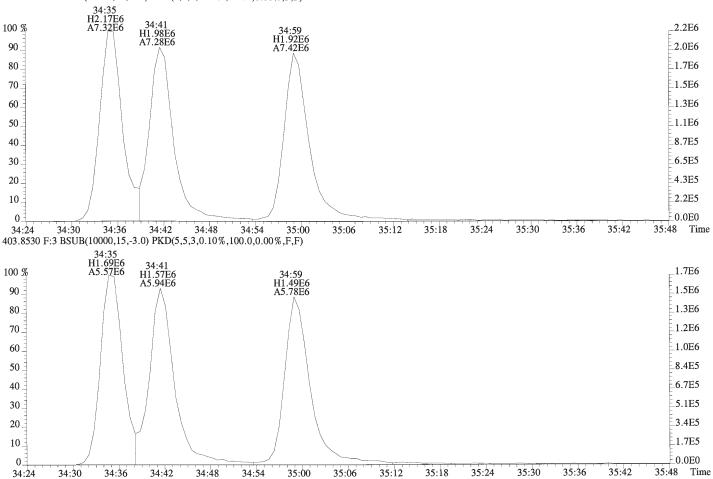


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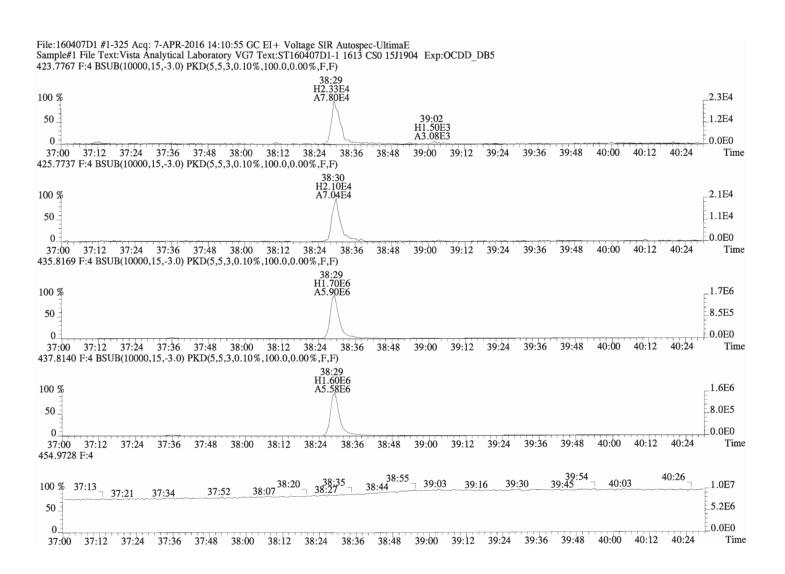


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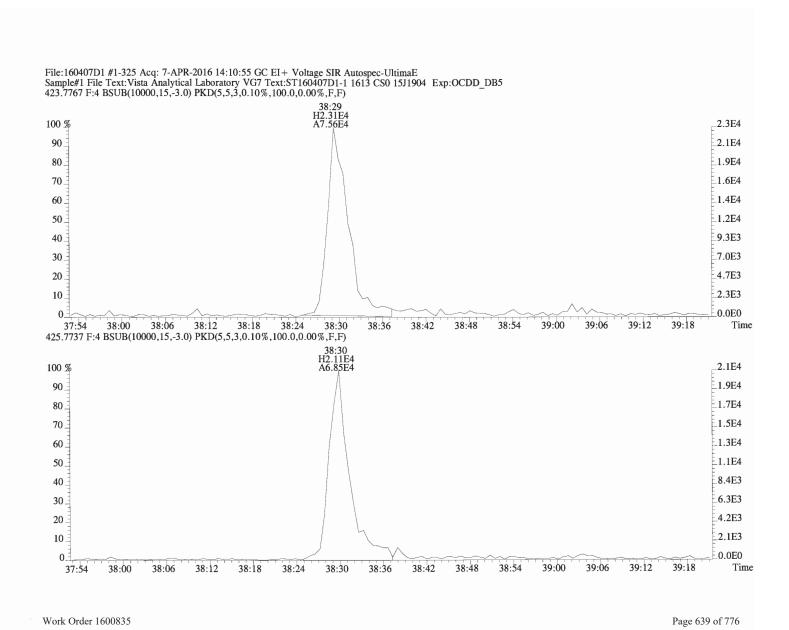
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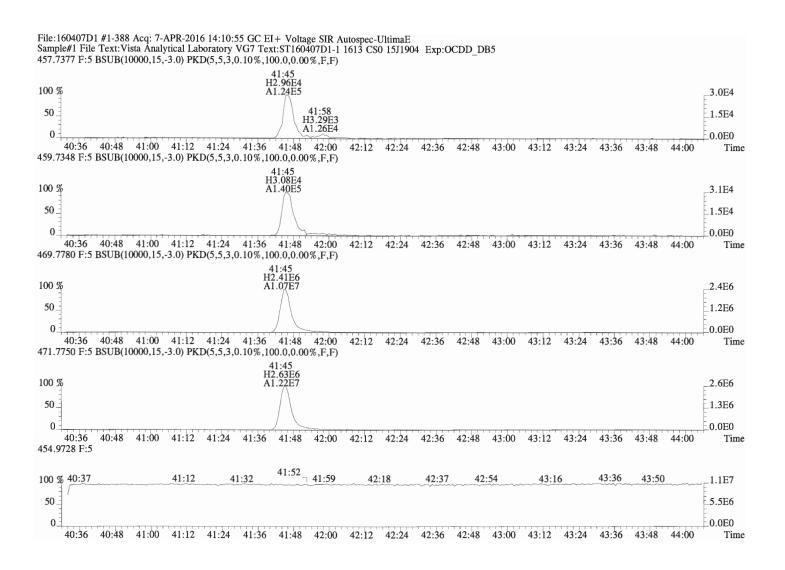


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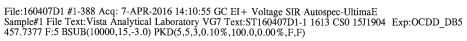


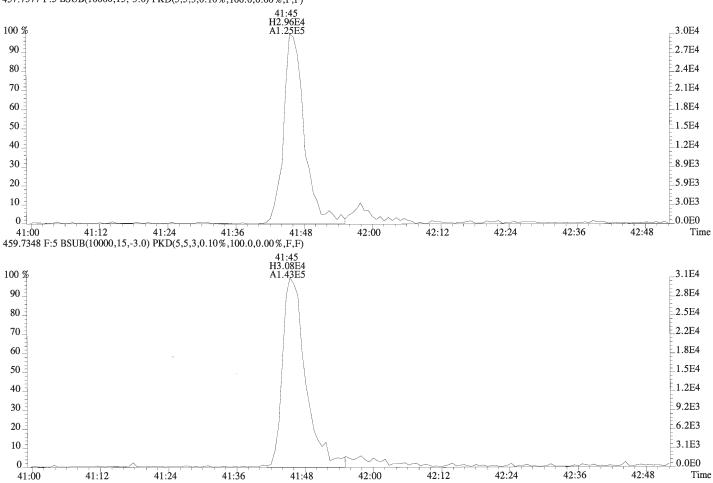
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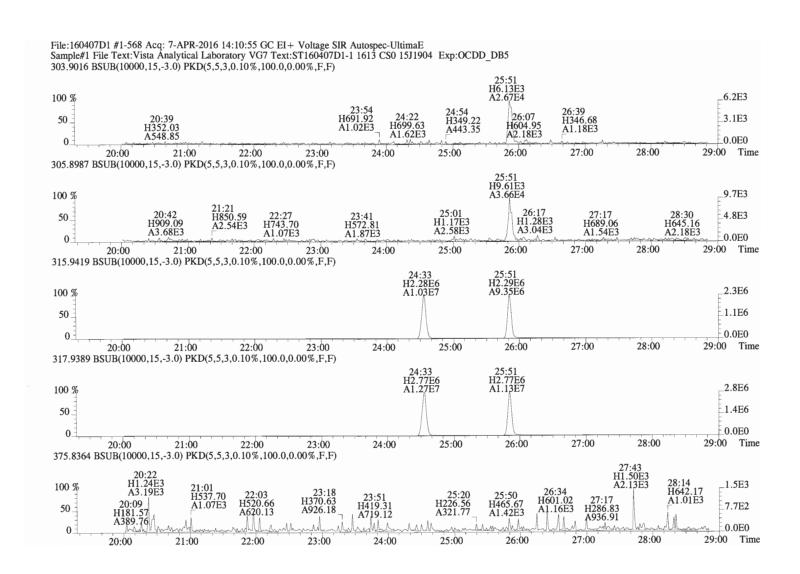


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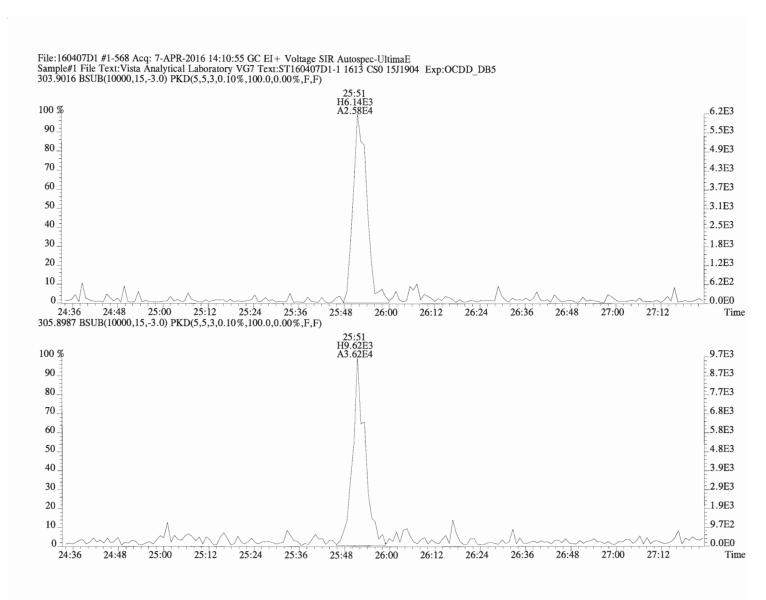




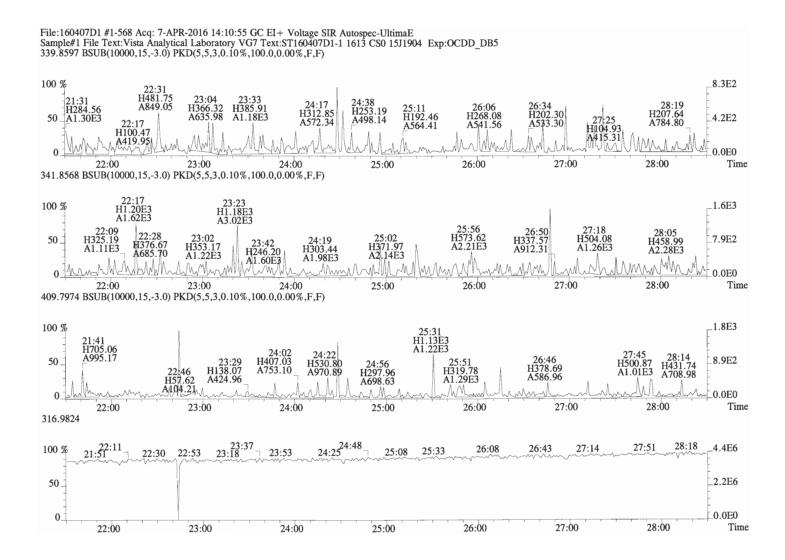
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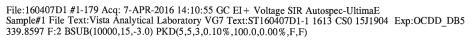
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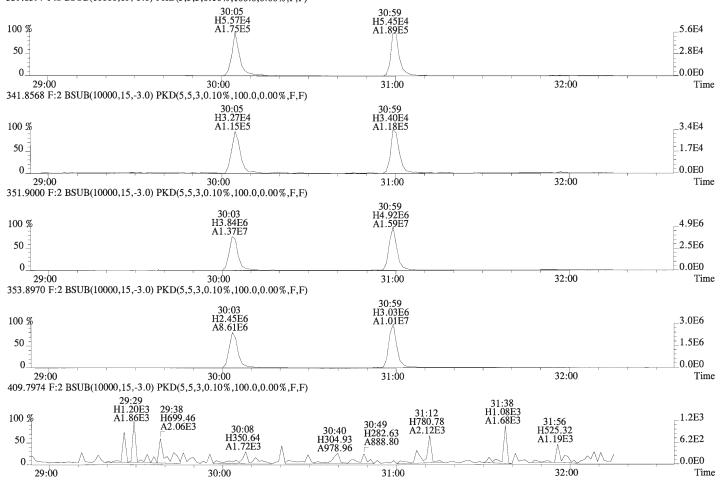


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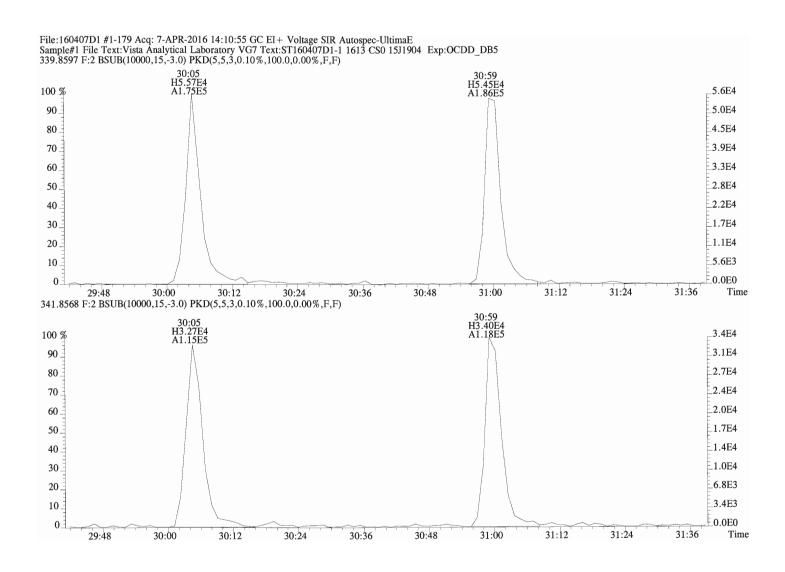


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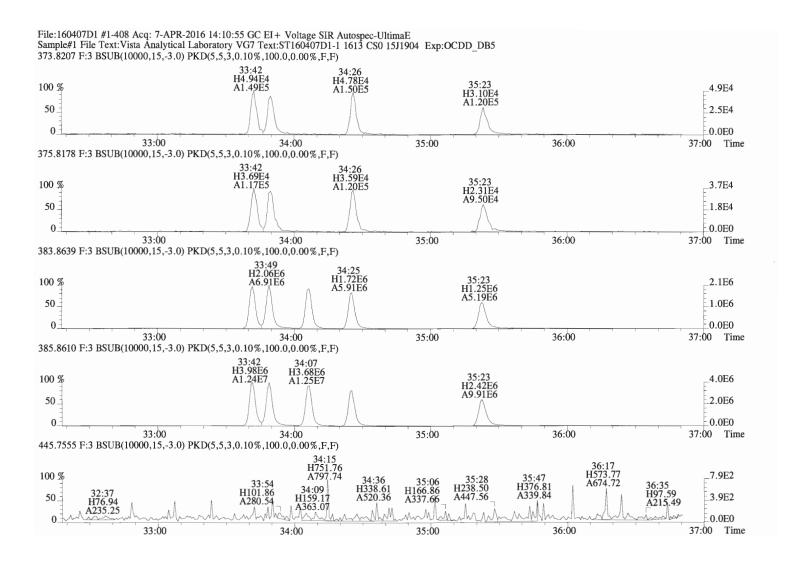




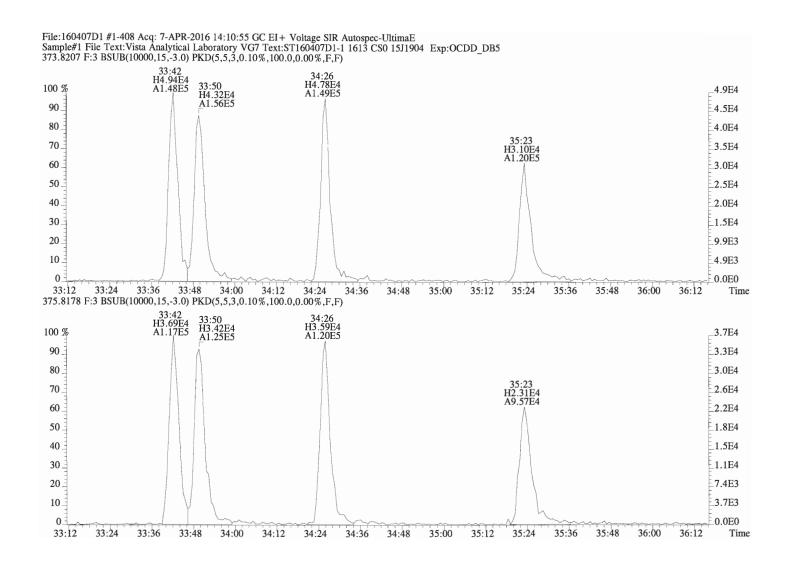
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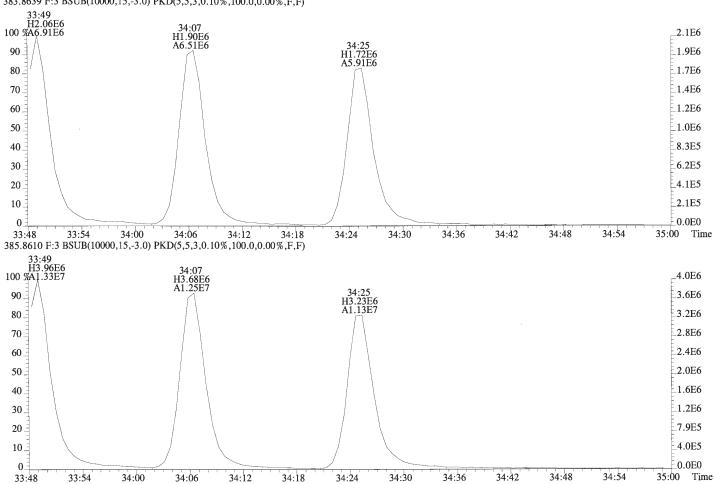


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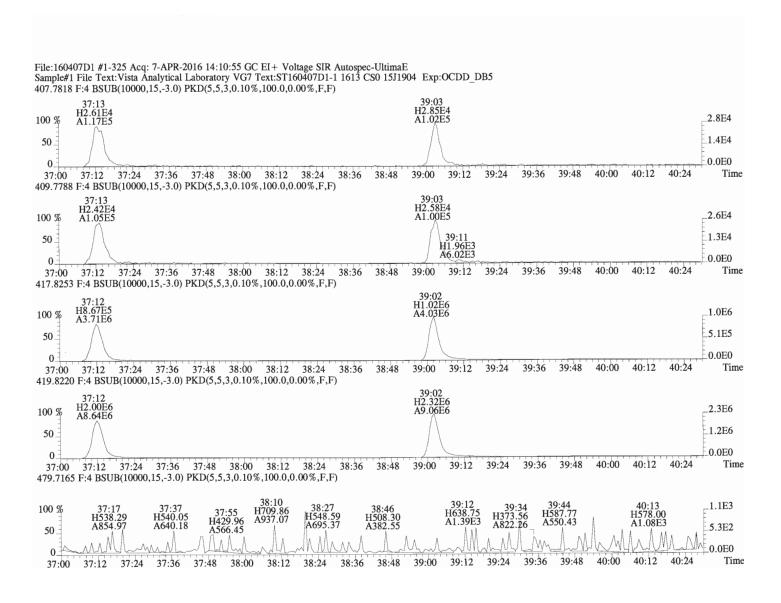


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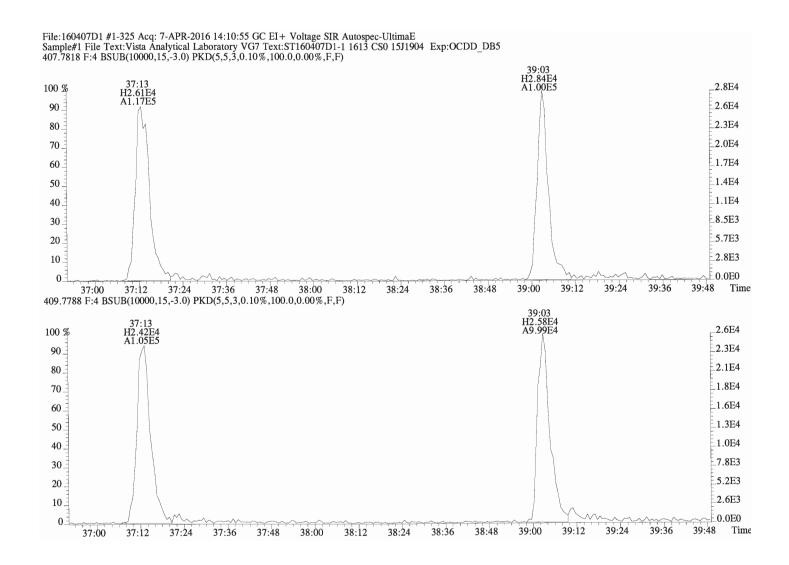
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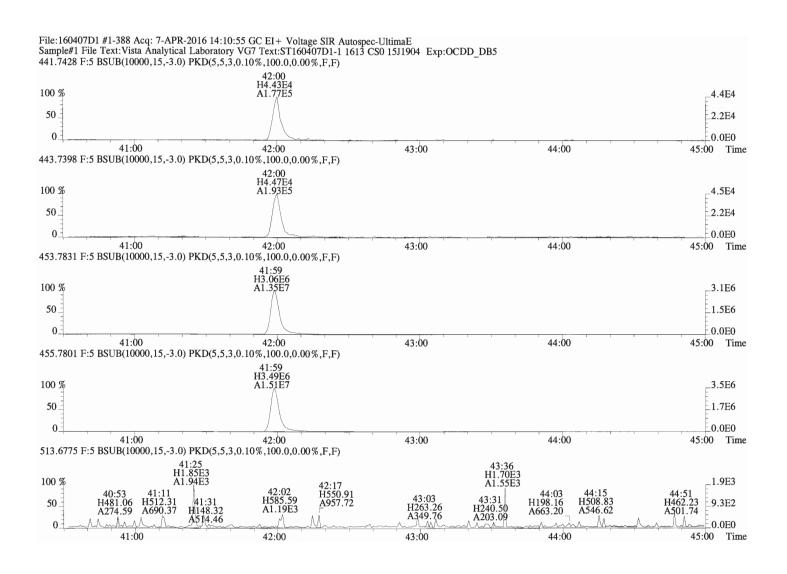
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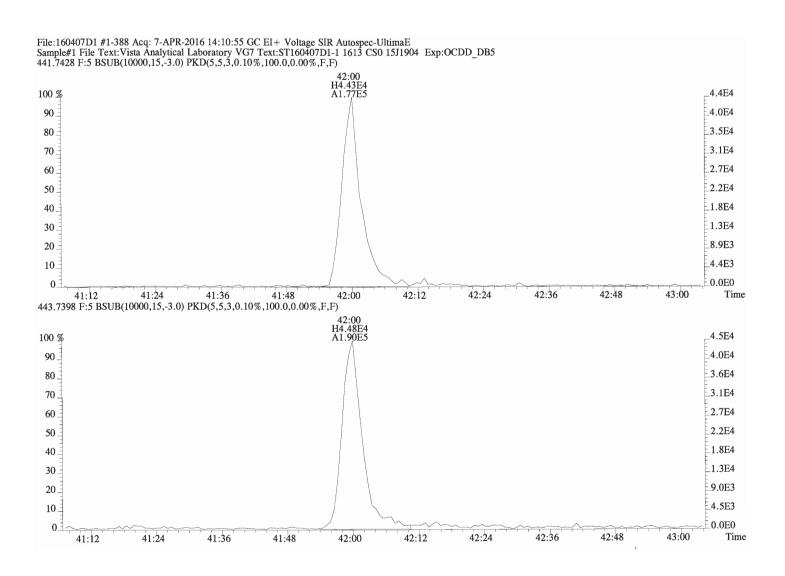
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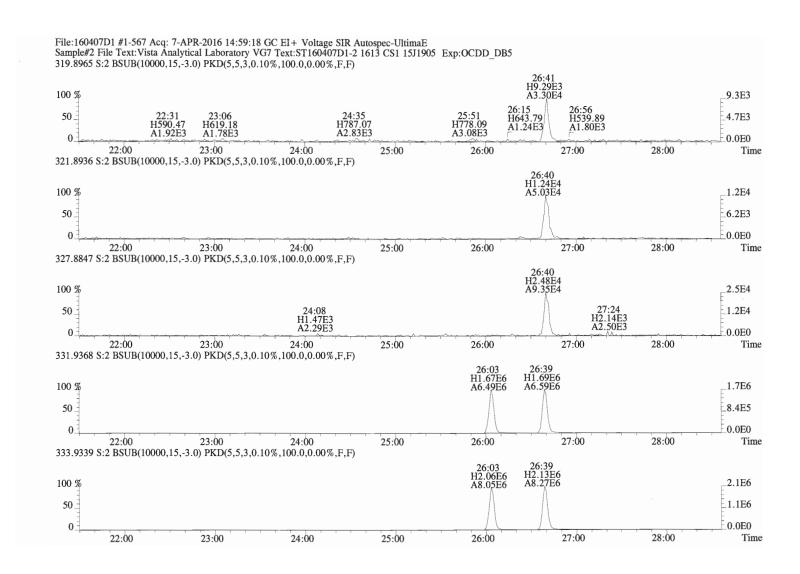
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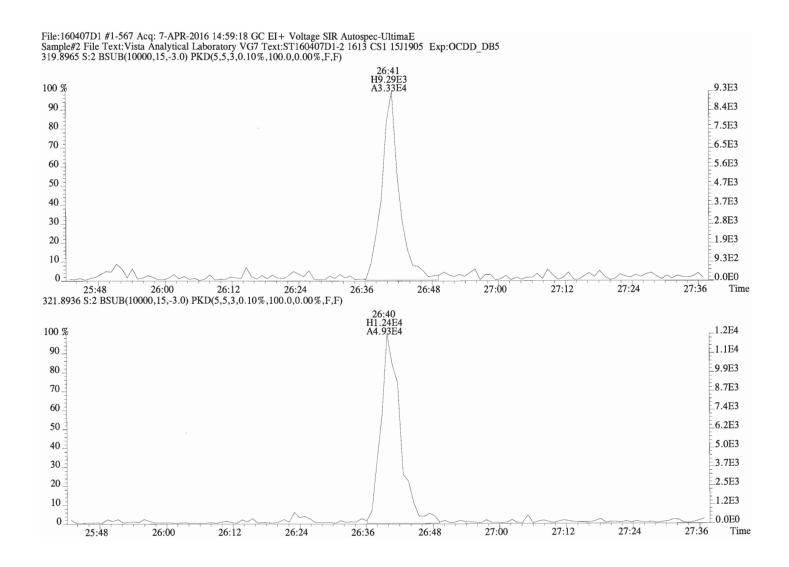
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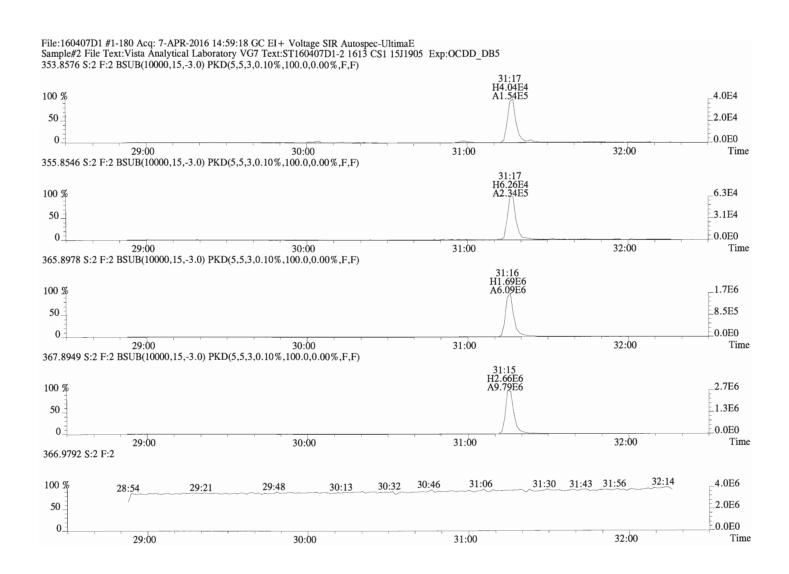
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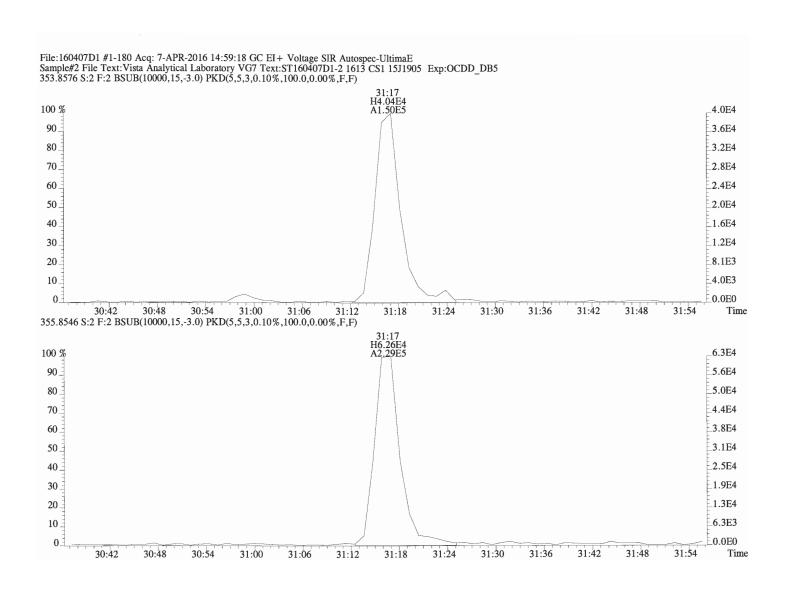
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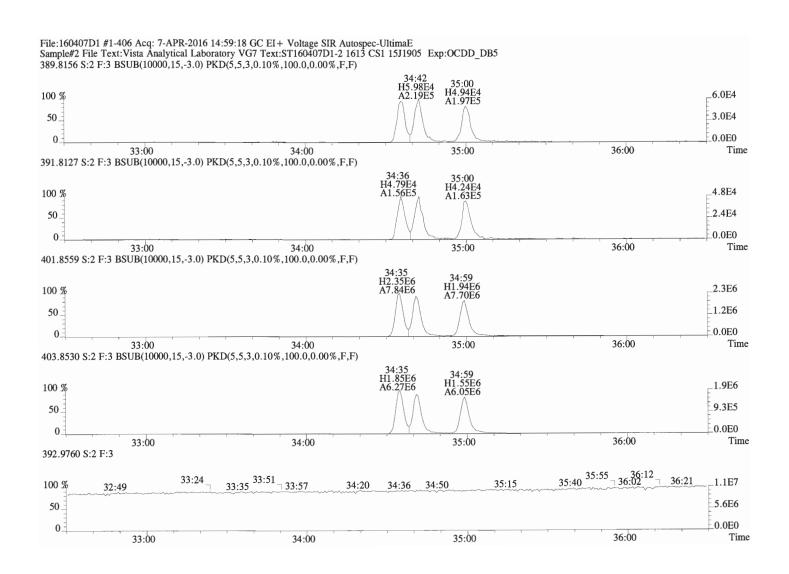
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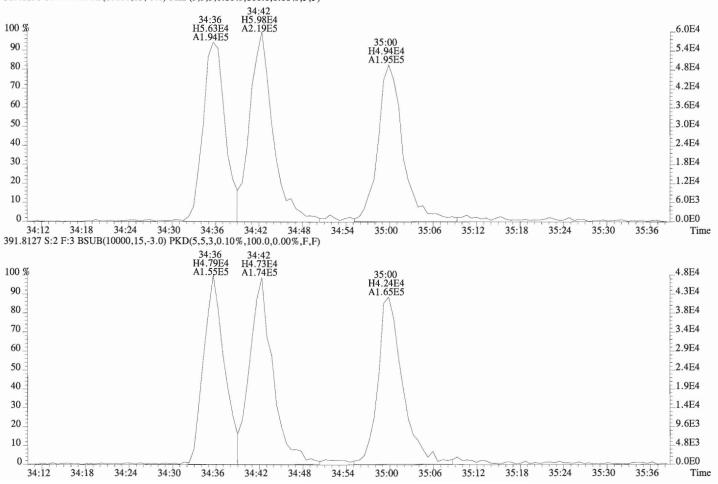


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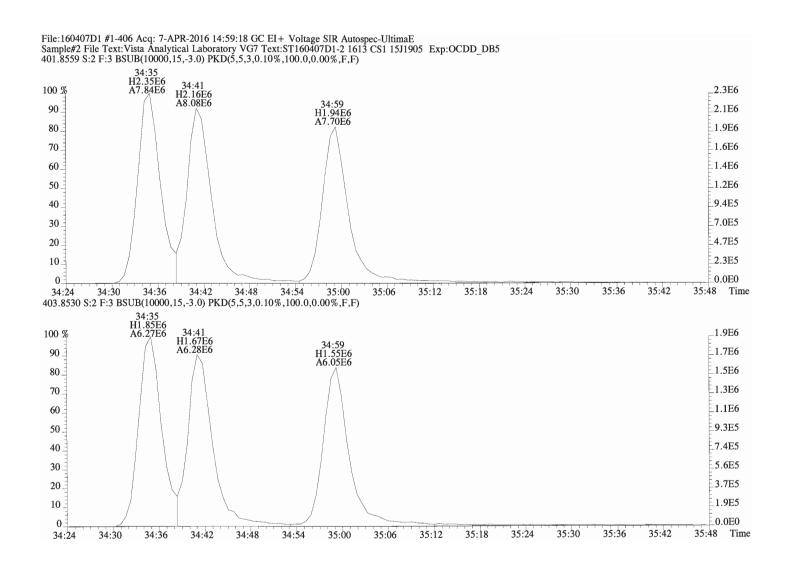


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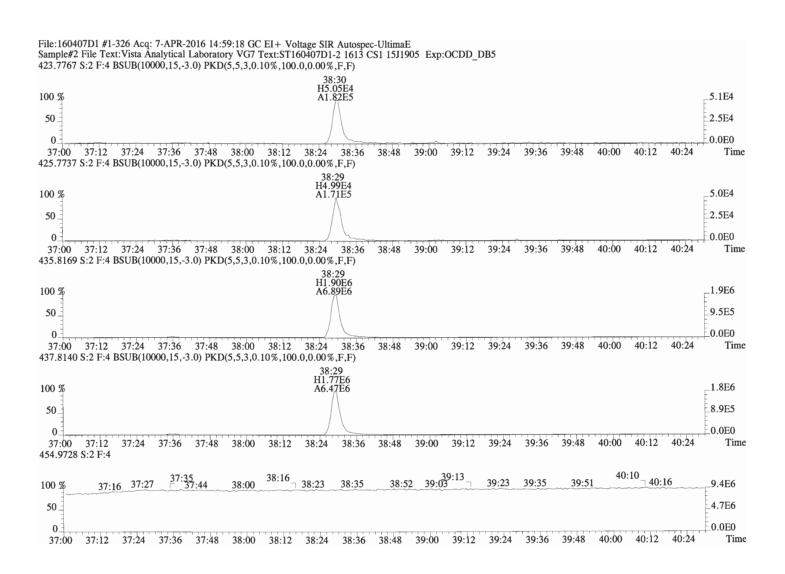
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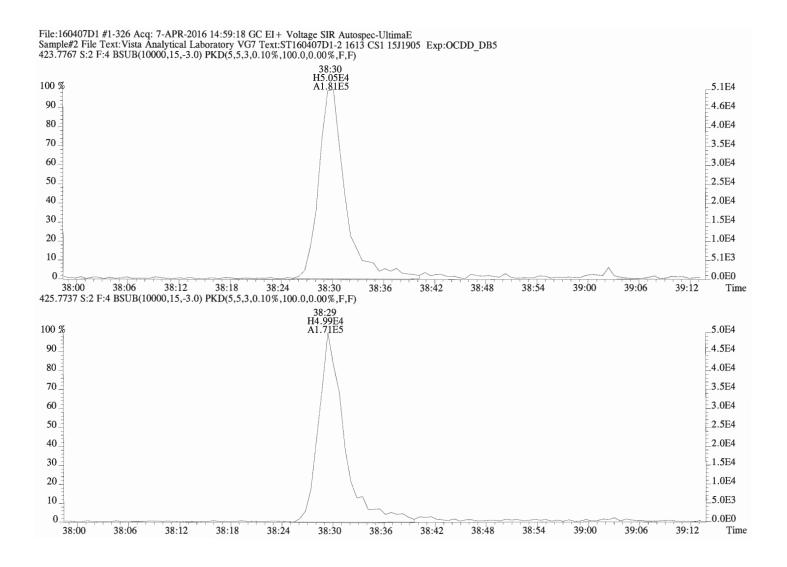
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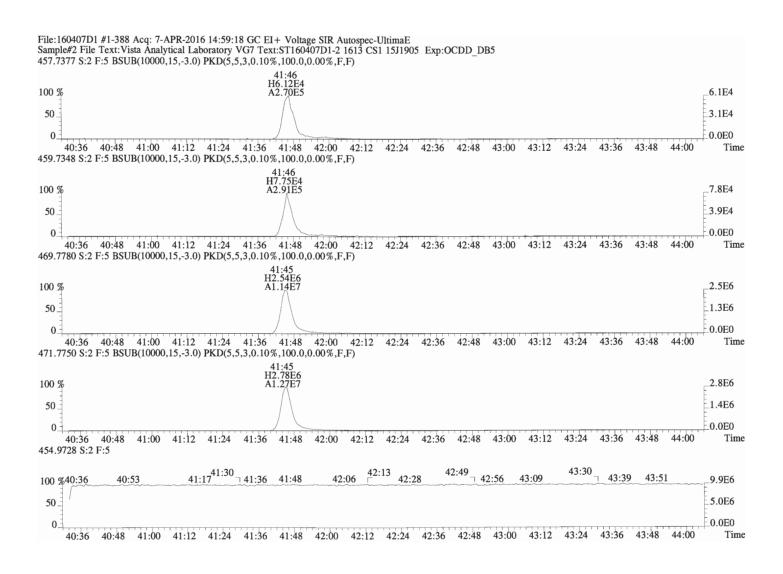
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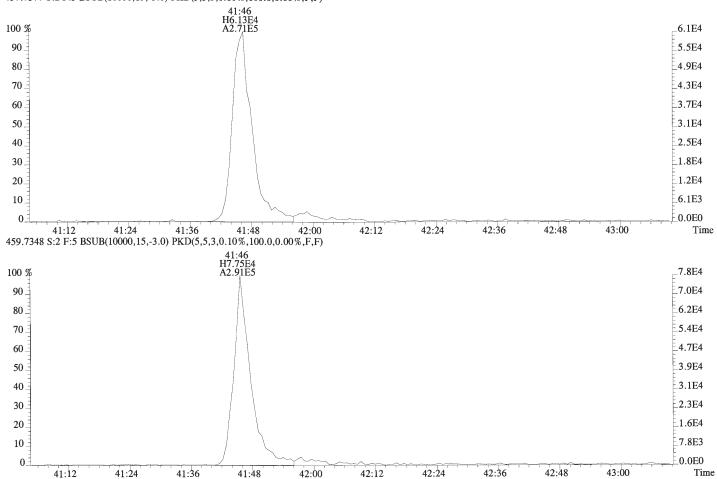


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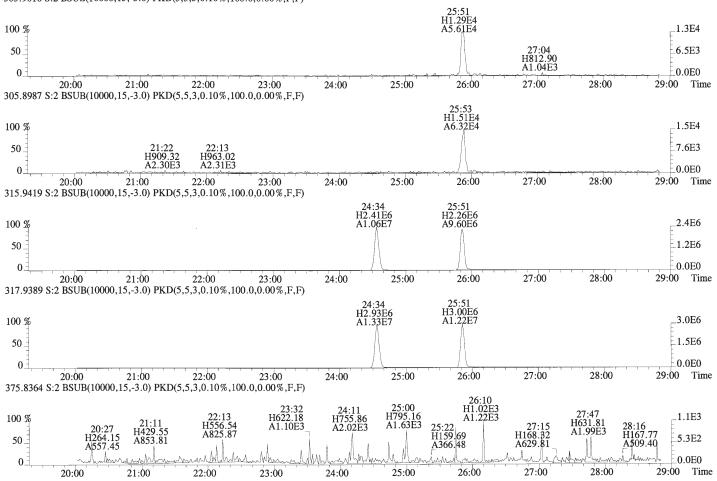
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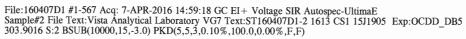


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25:12

25:24

25:36

25:48

25:00

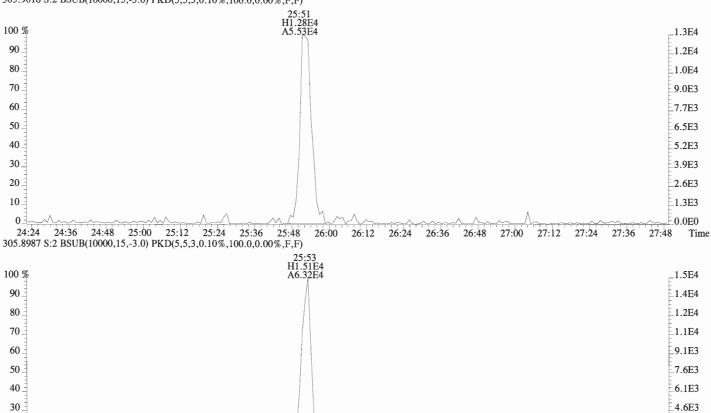
20

10.

24:24

24:36

24:48



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26:12

26:00

26:24

26:36

26:48

27:00

27:12

27:24

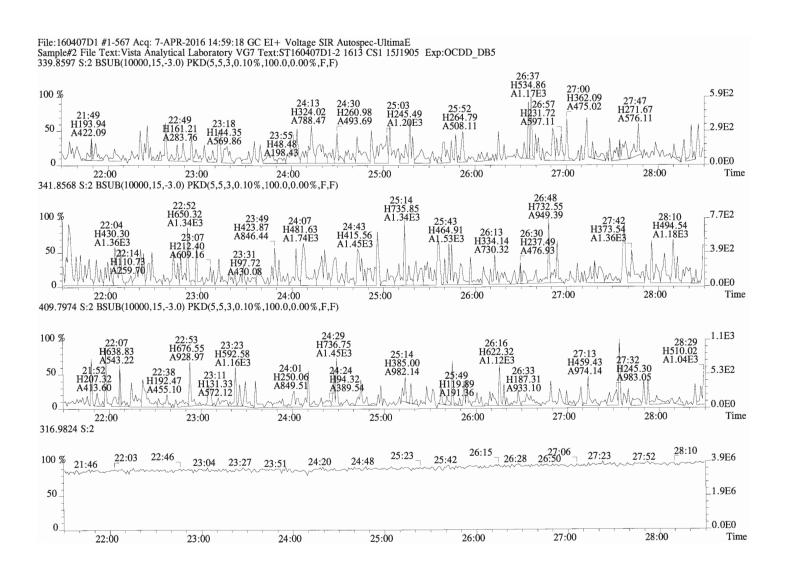
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_1.5E3 _0.0E0

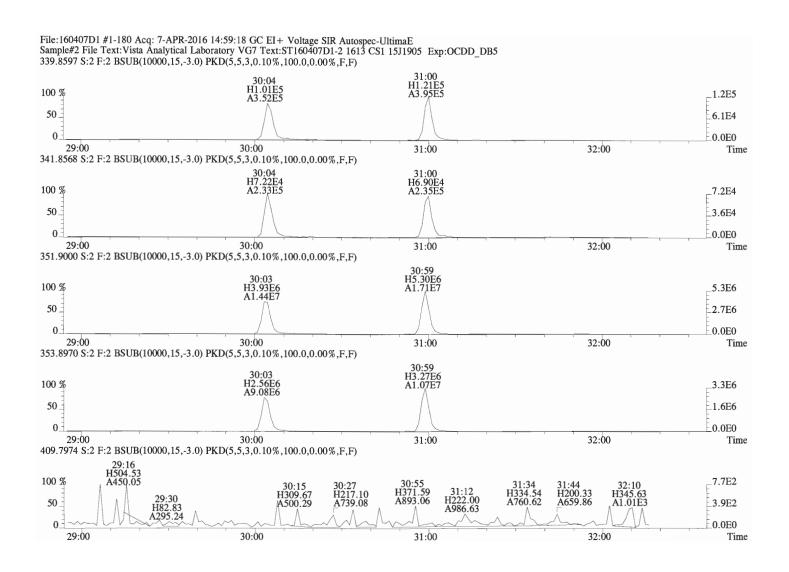
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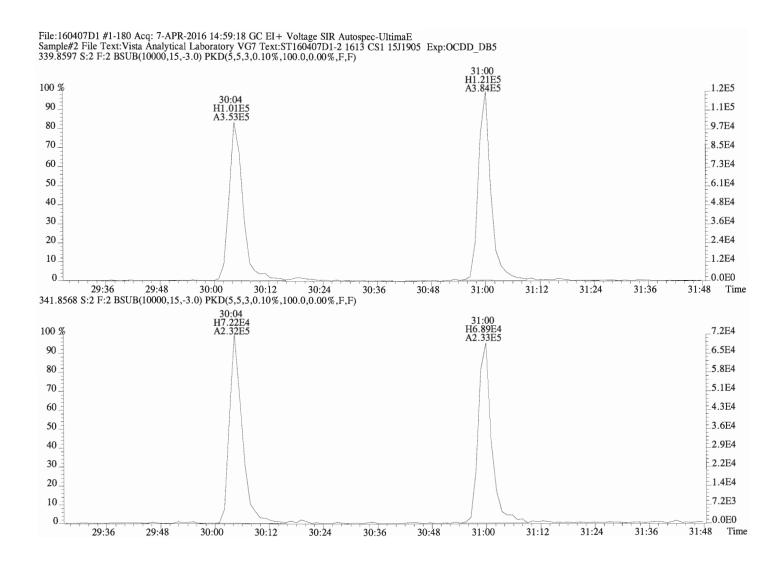
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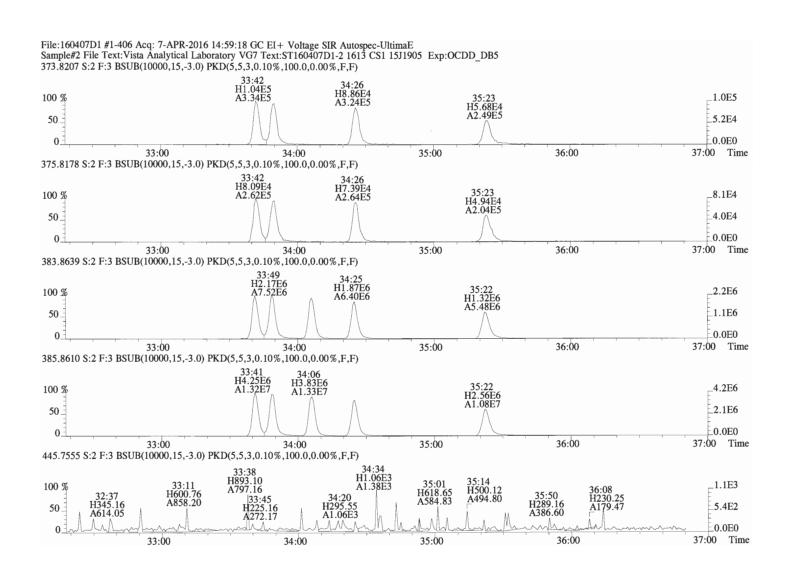
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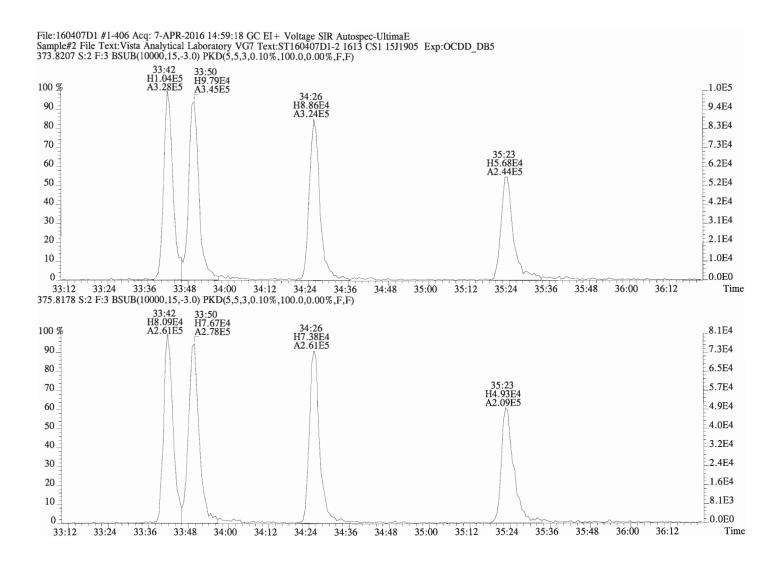
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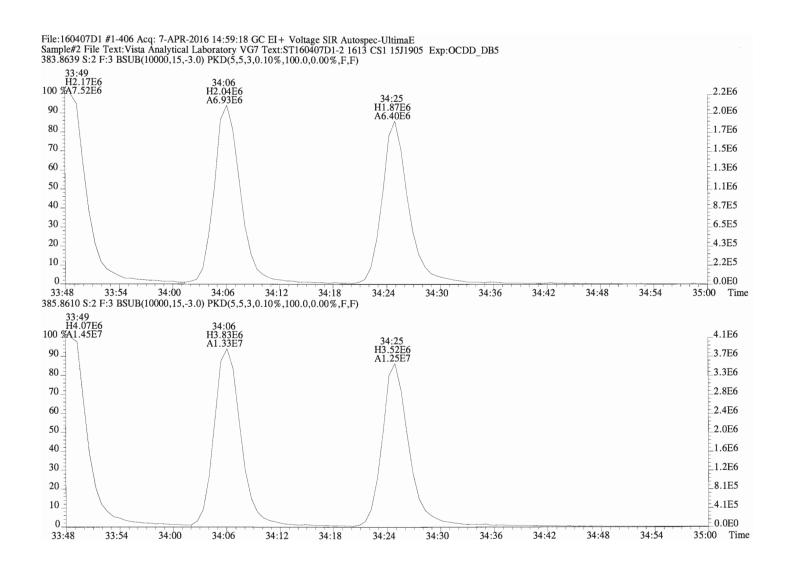
Work Order 1600835 Page 669 of 776



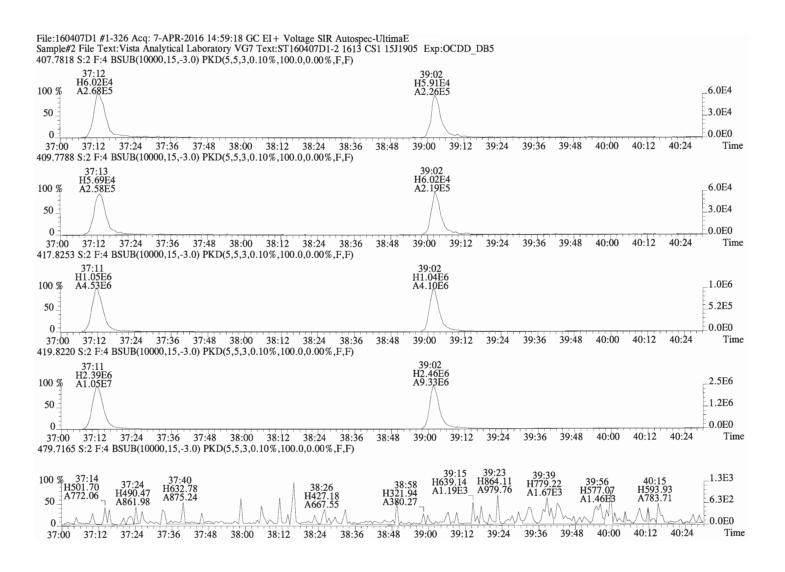
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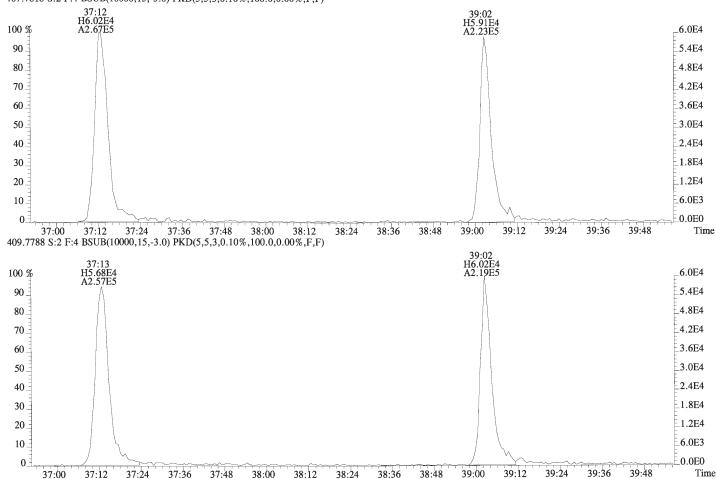
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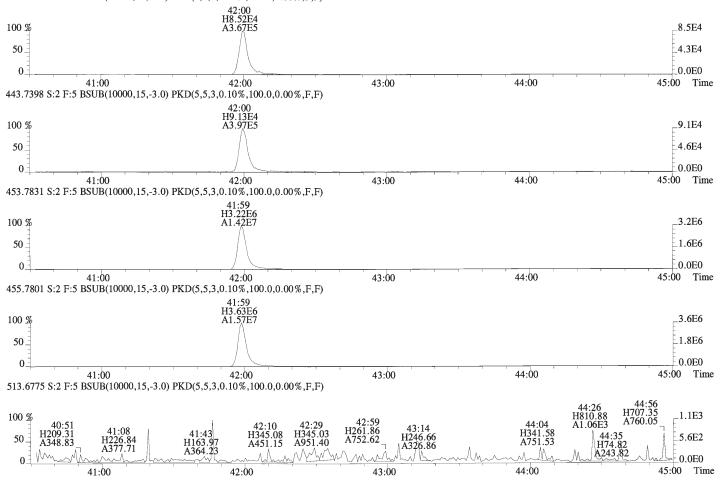


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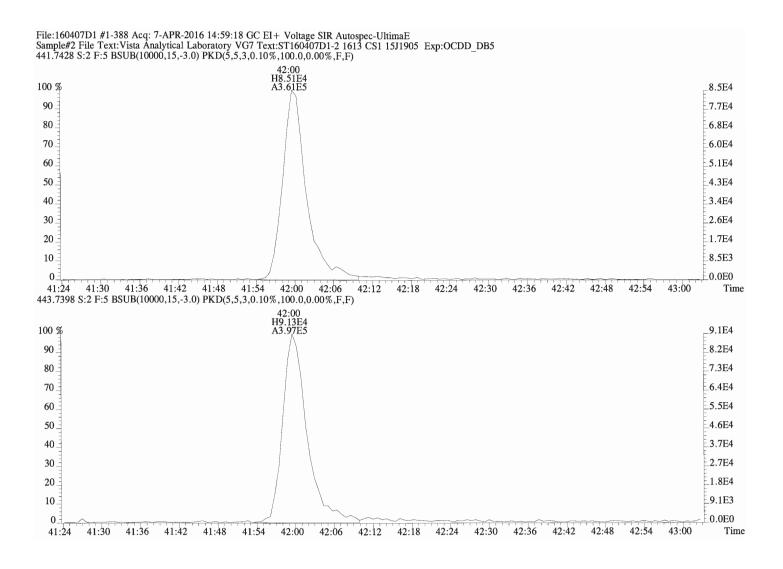


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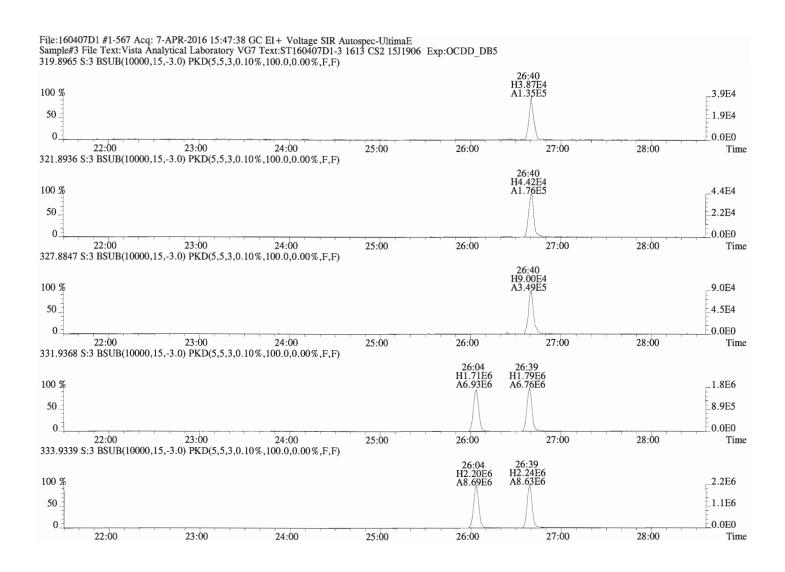
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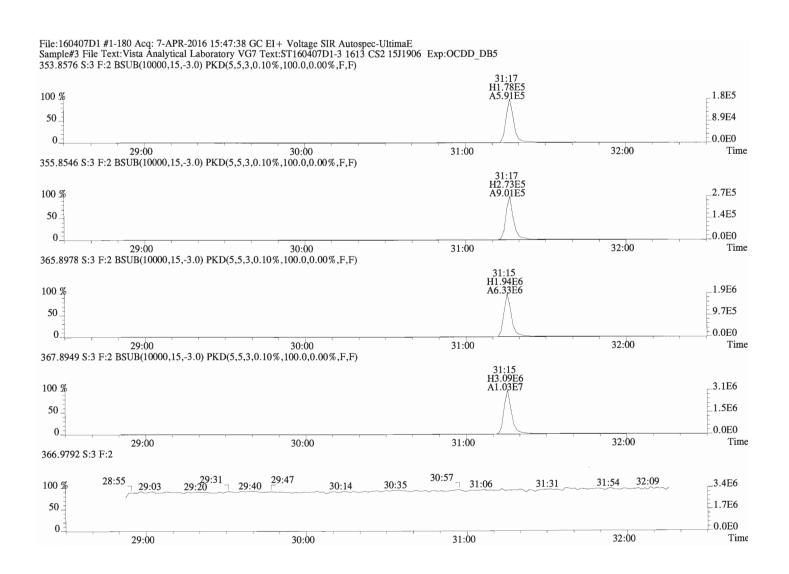
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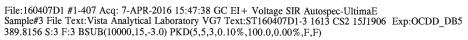
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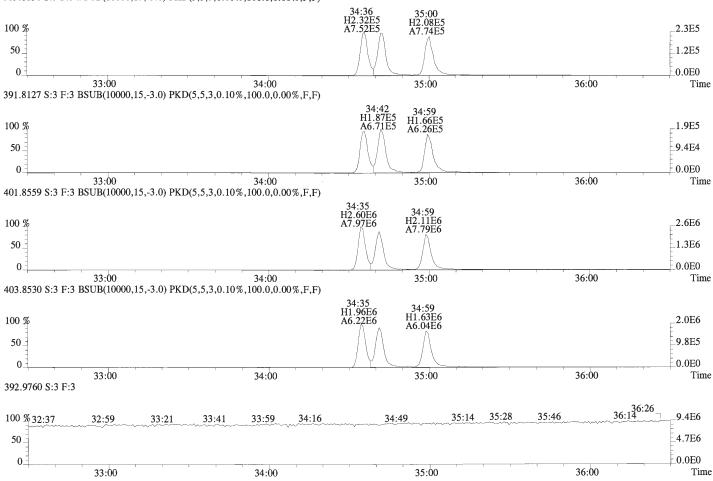


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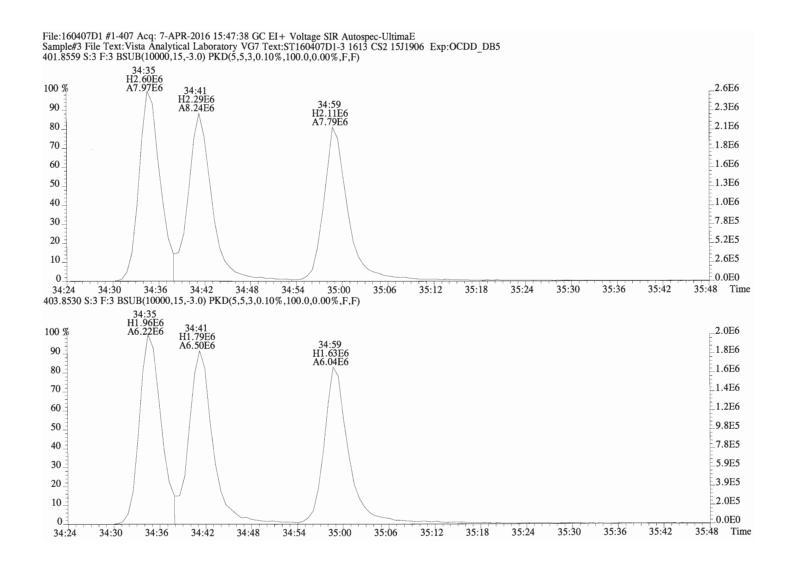


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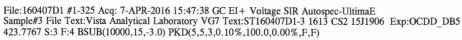


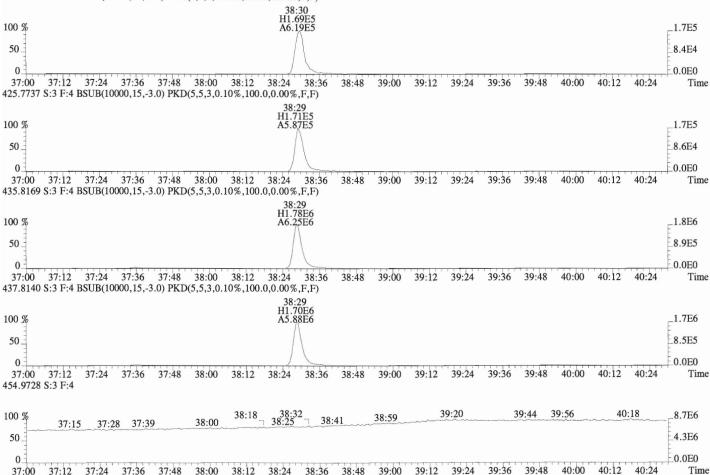


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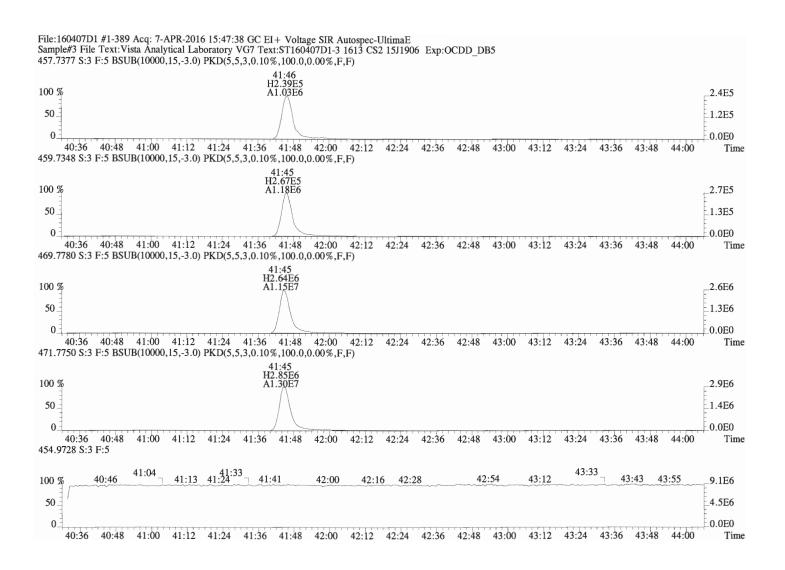


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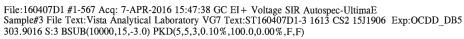


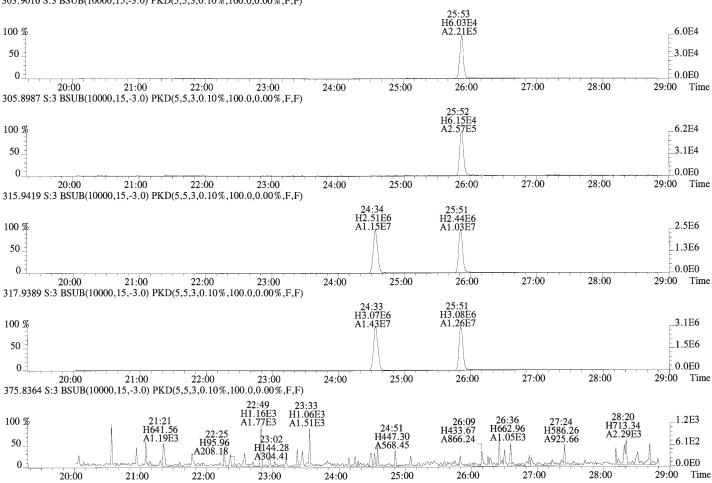


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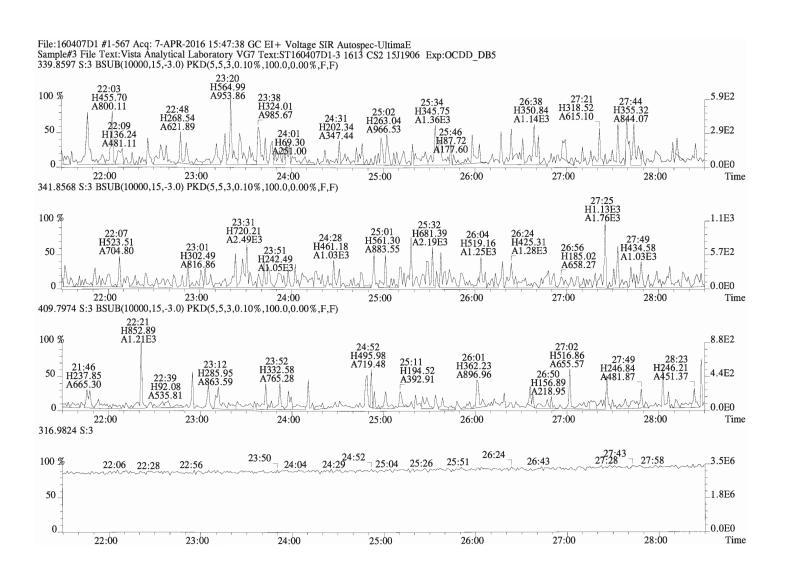


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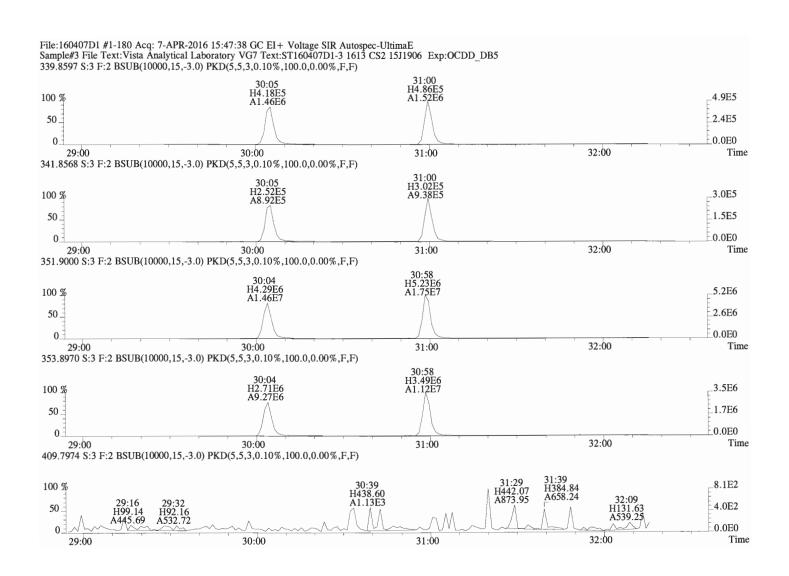




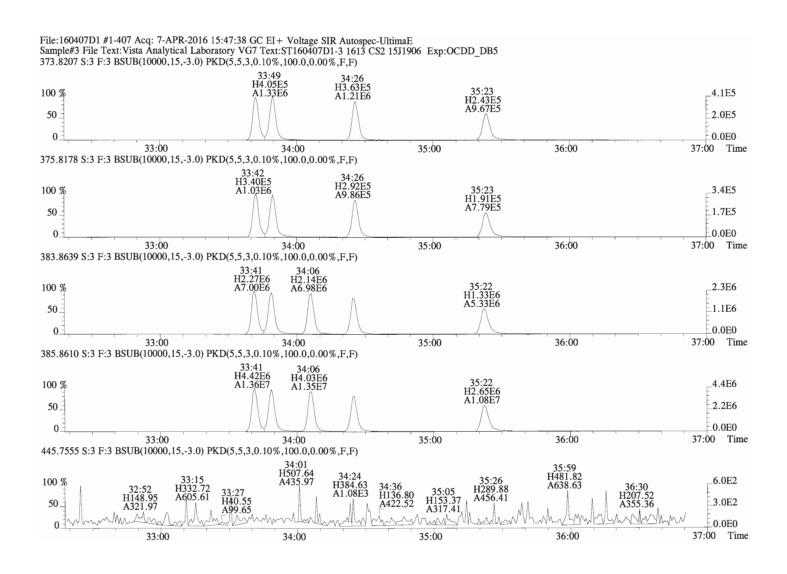
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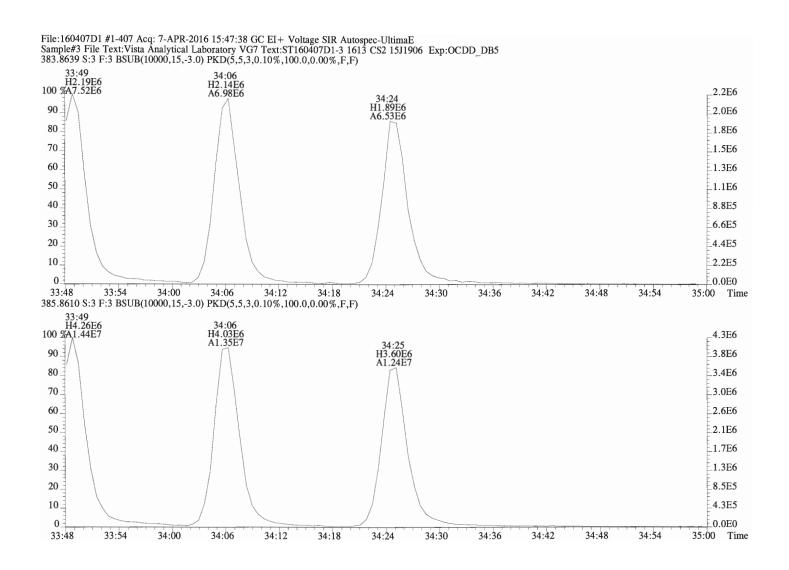
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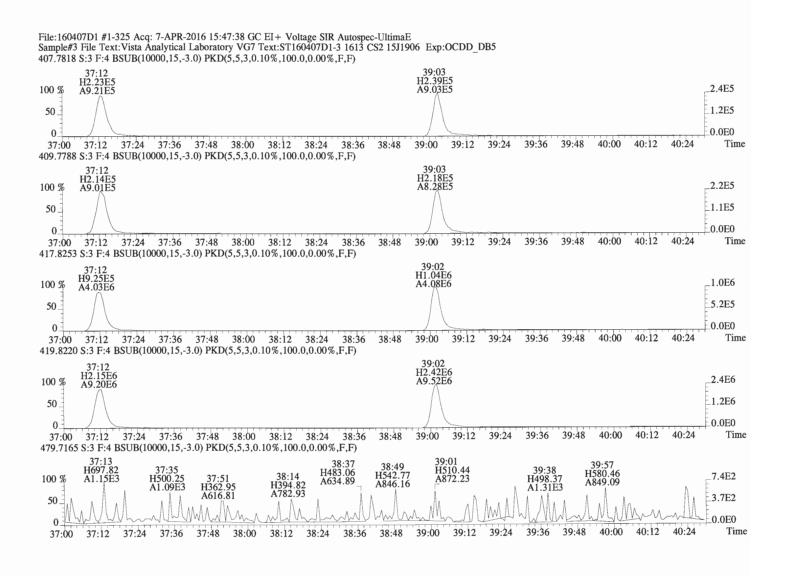
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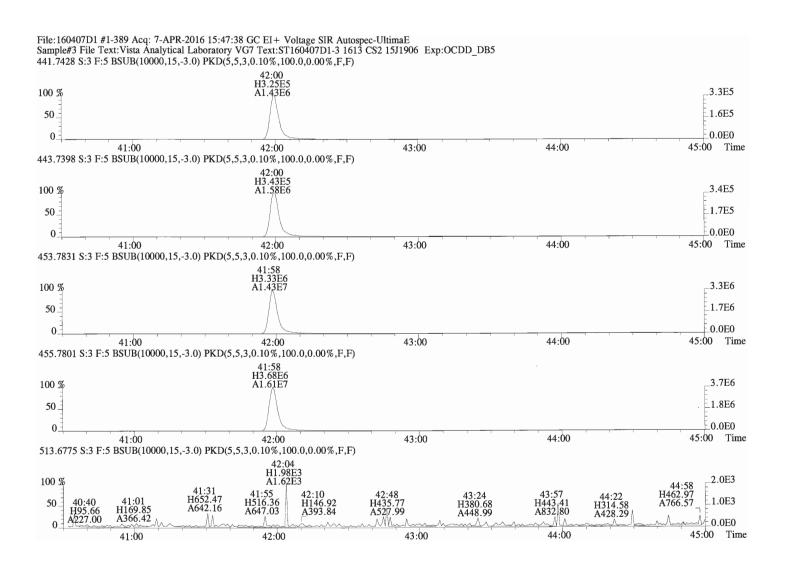


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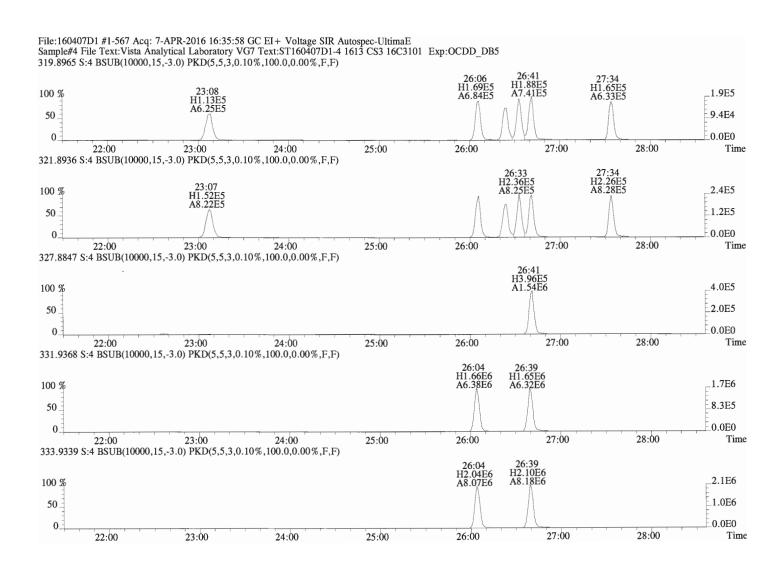


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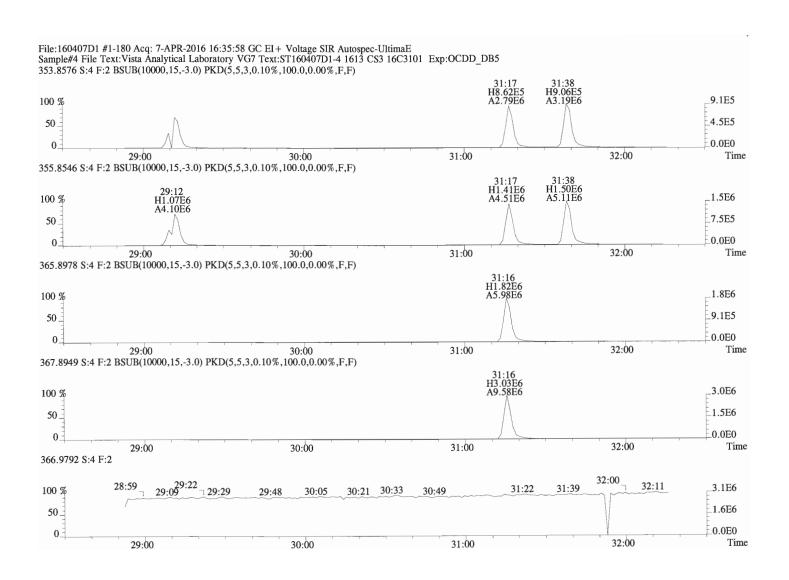
Work Order 1600835



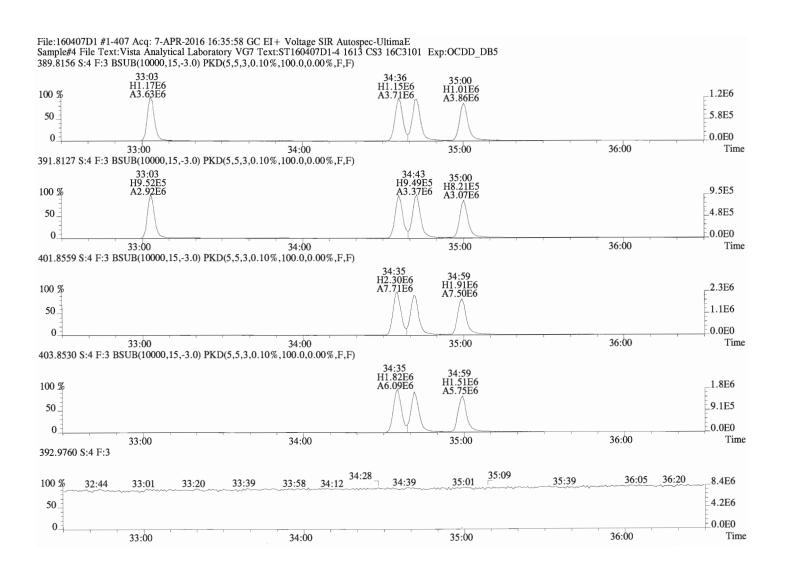
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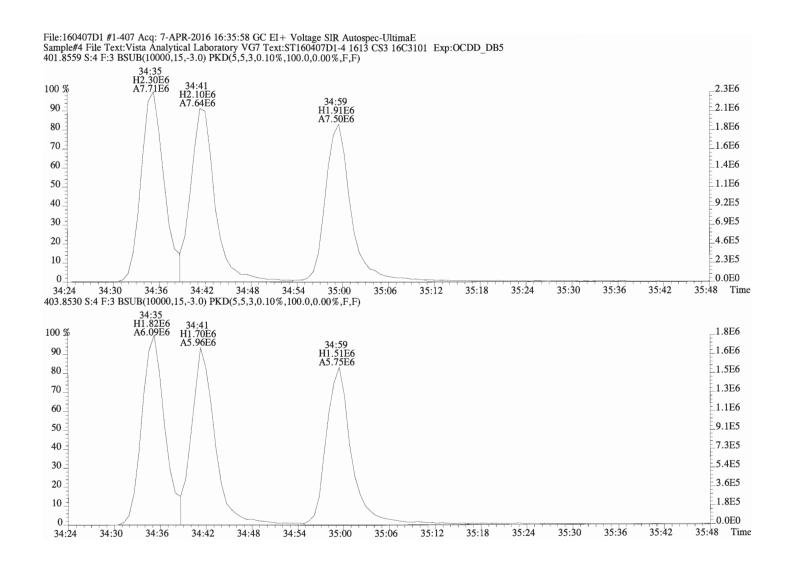
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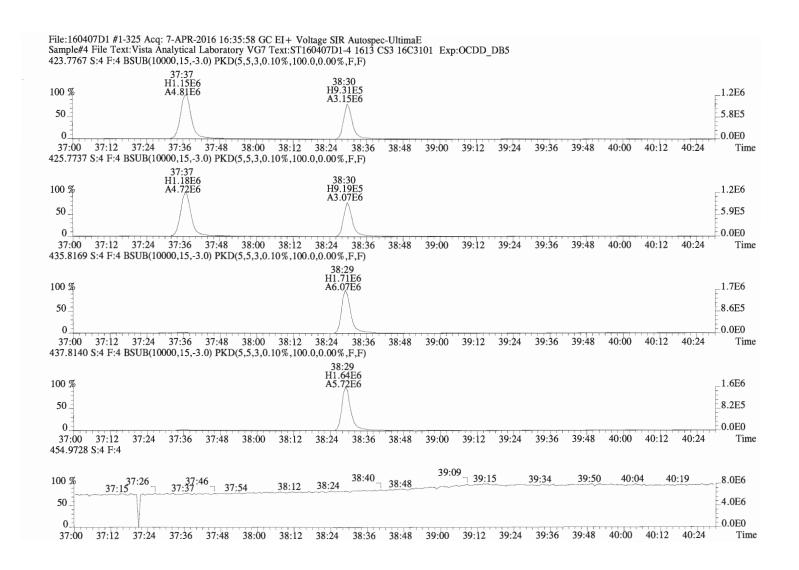
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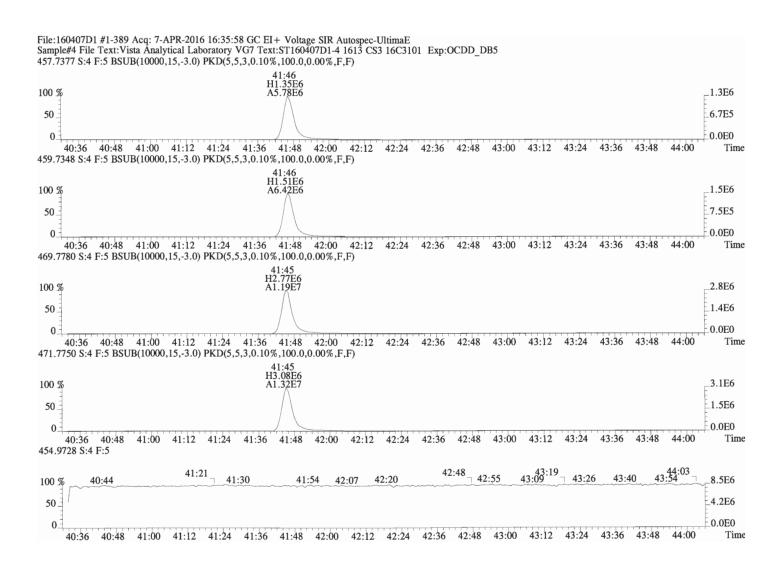
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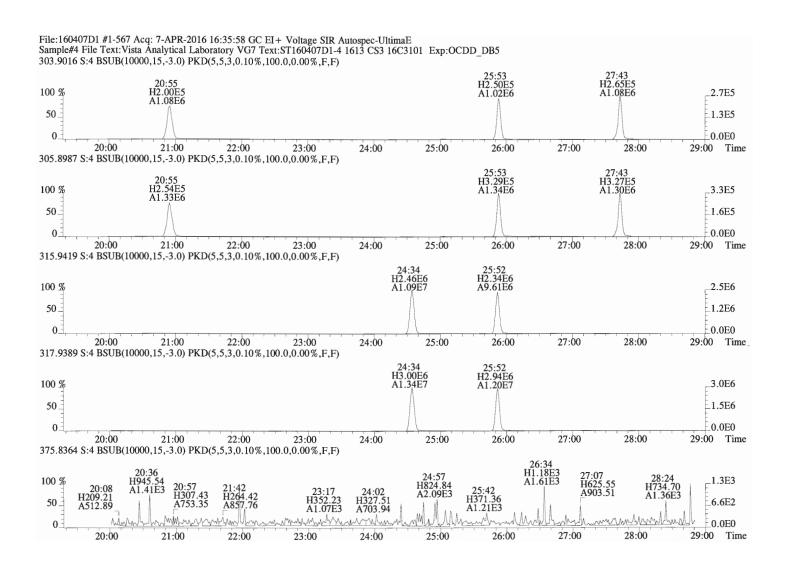
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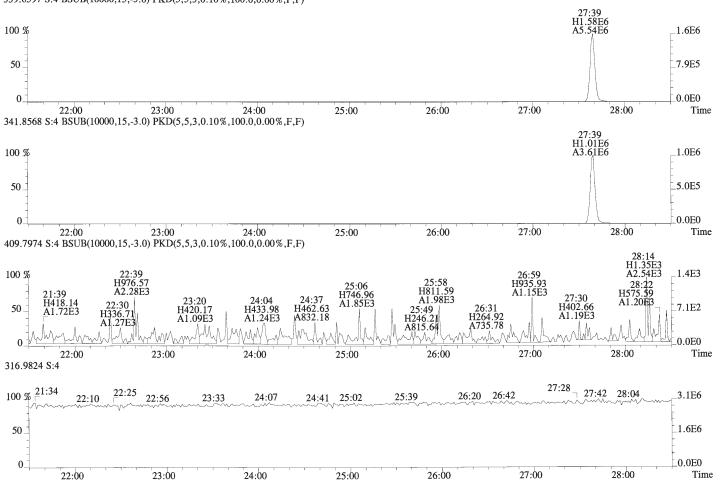


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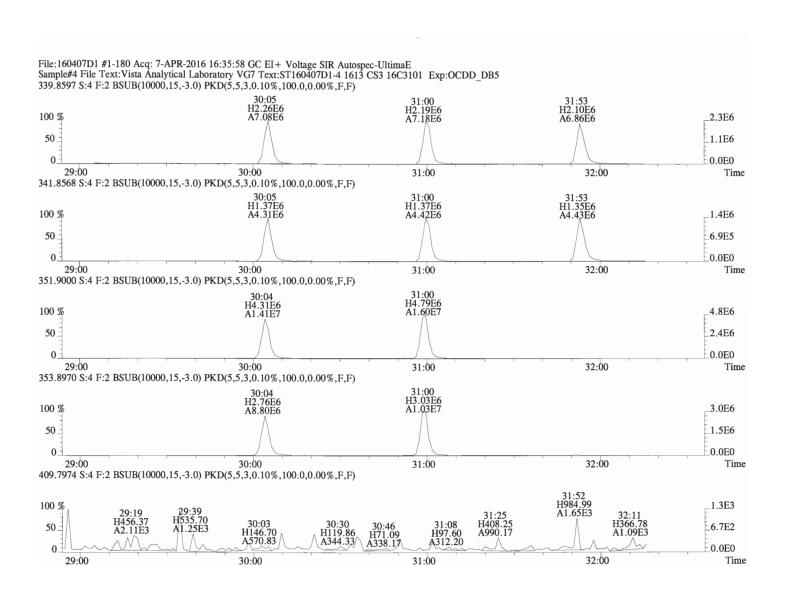


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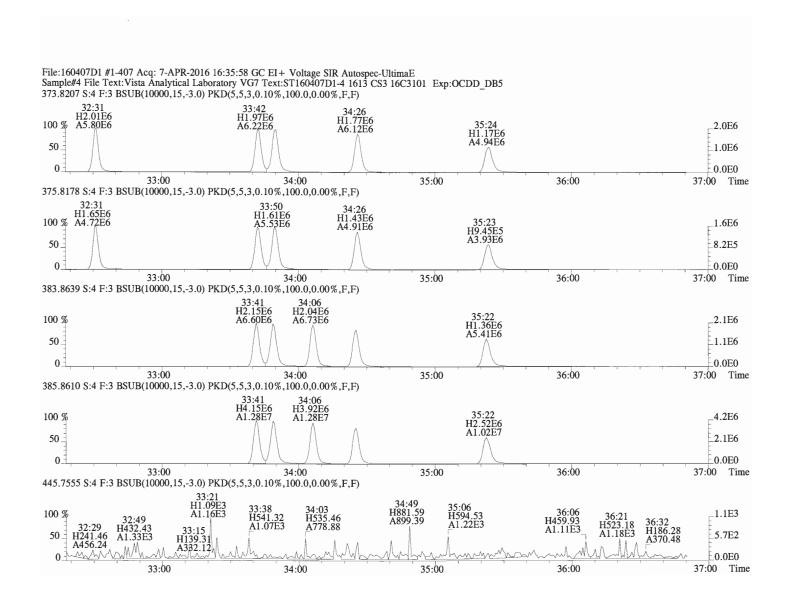
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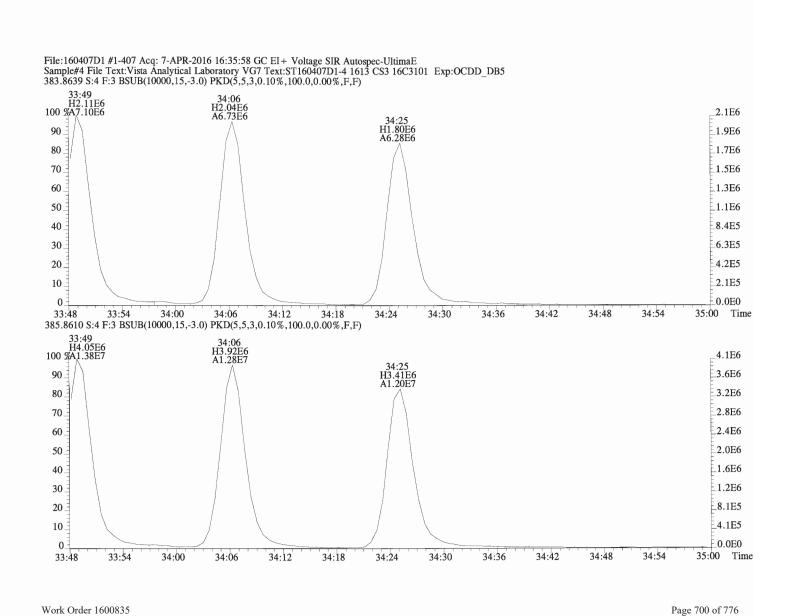
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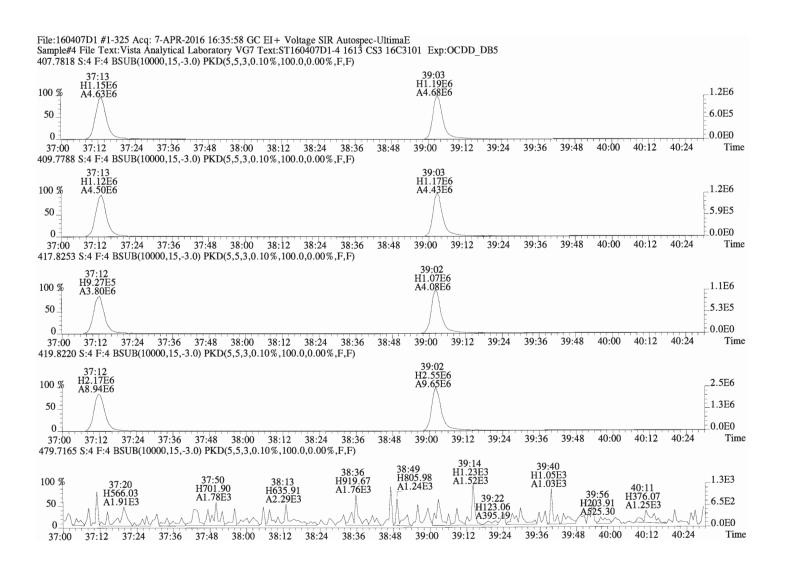


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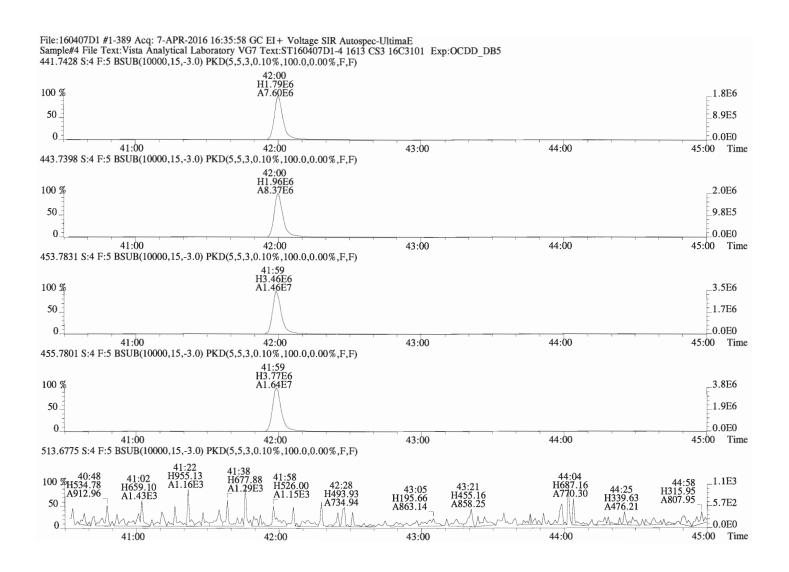


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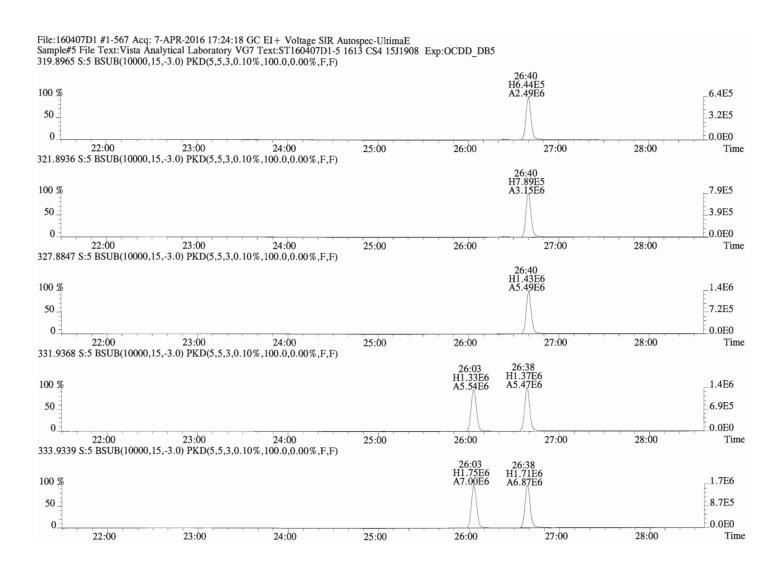




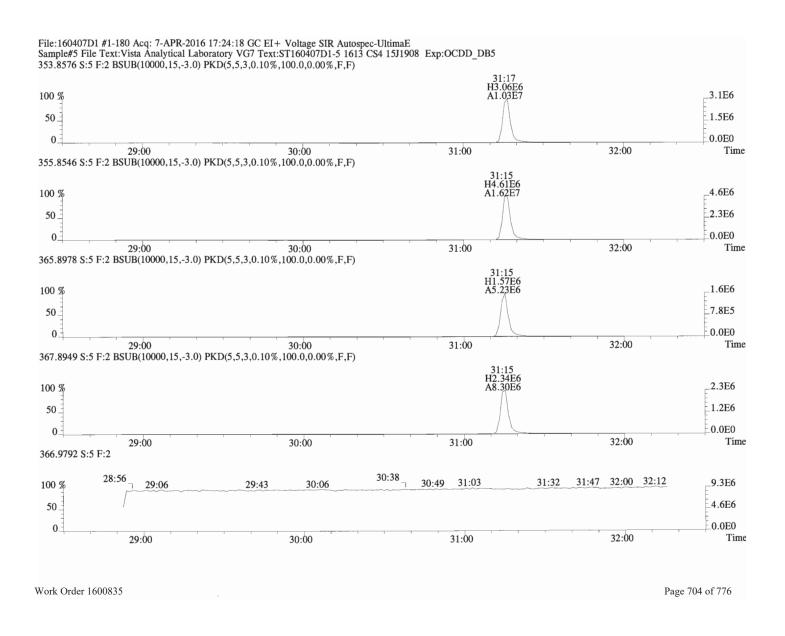
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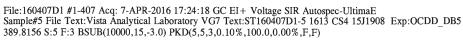


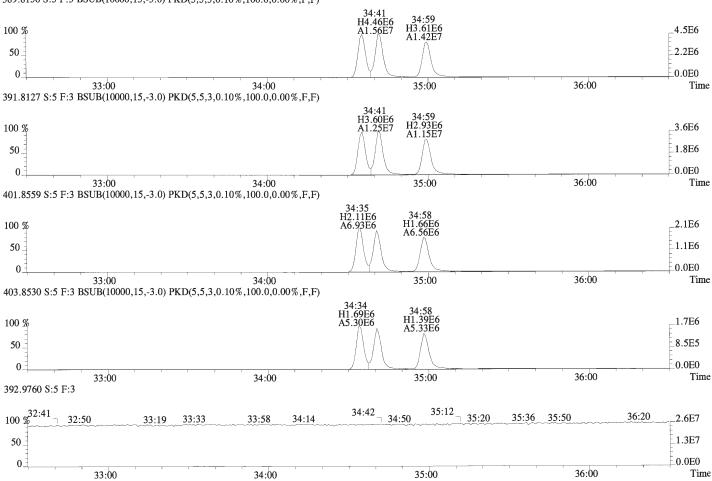
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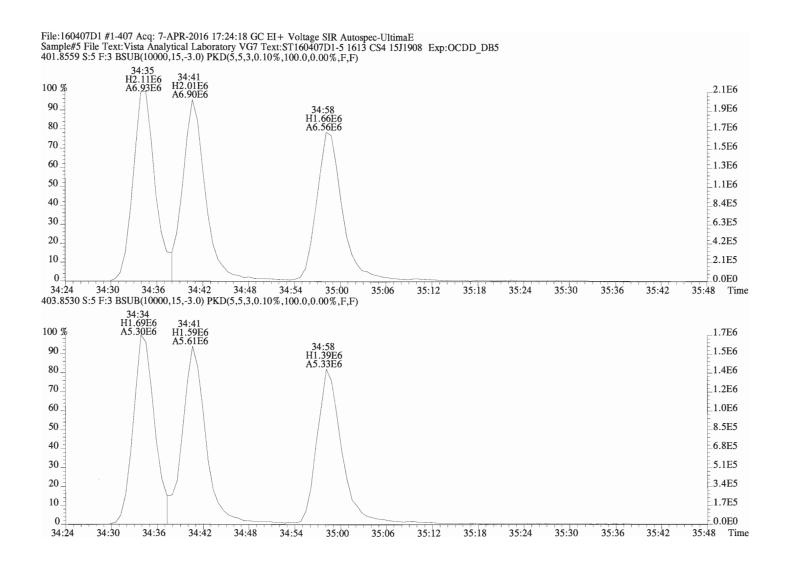
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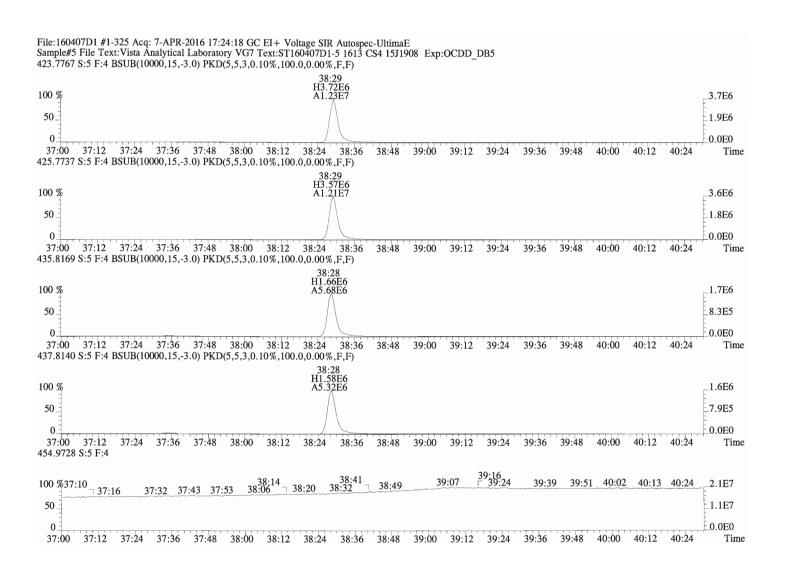




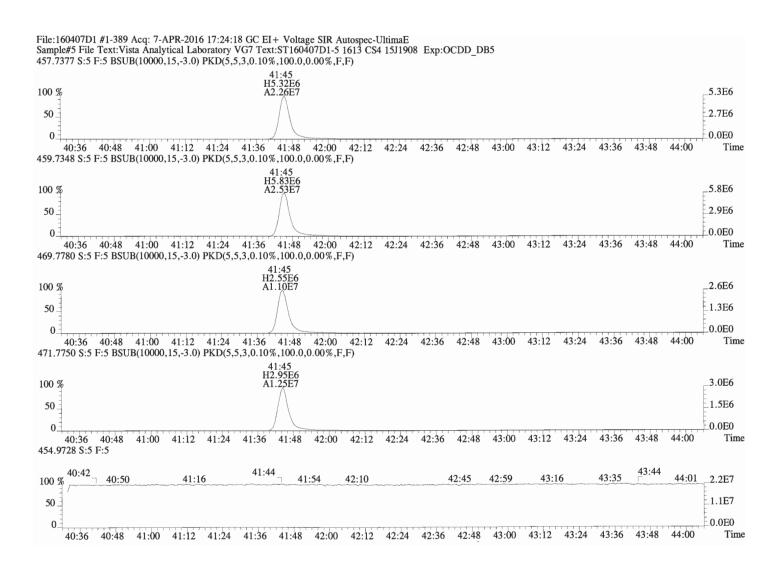
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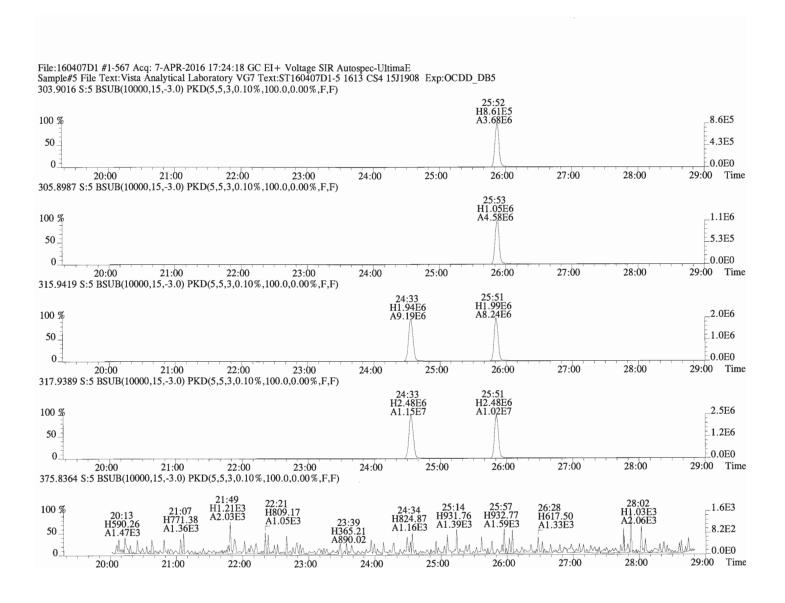
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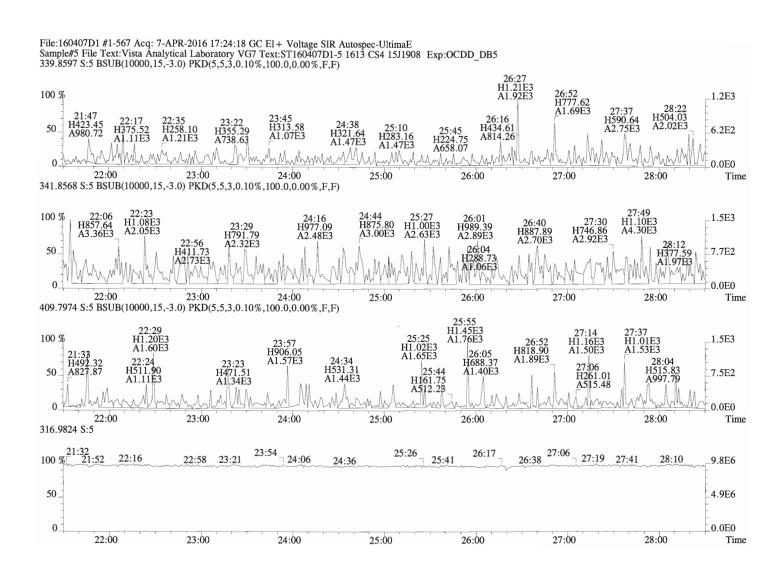
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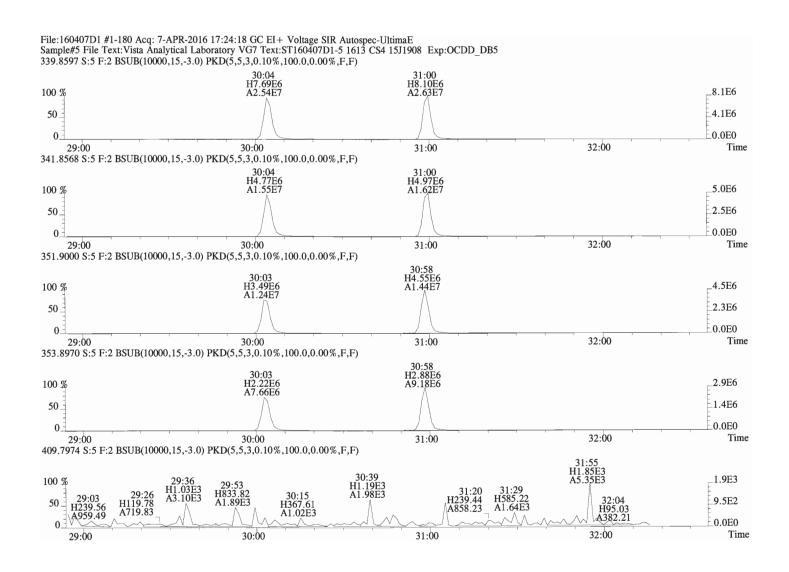
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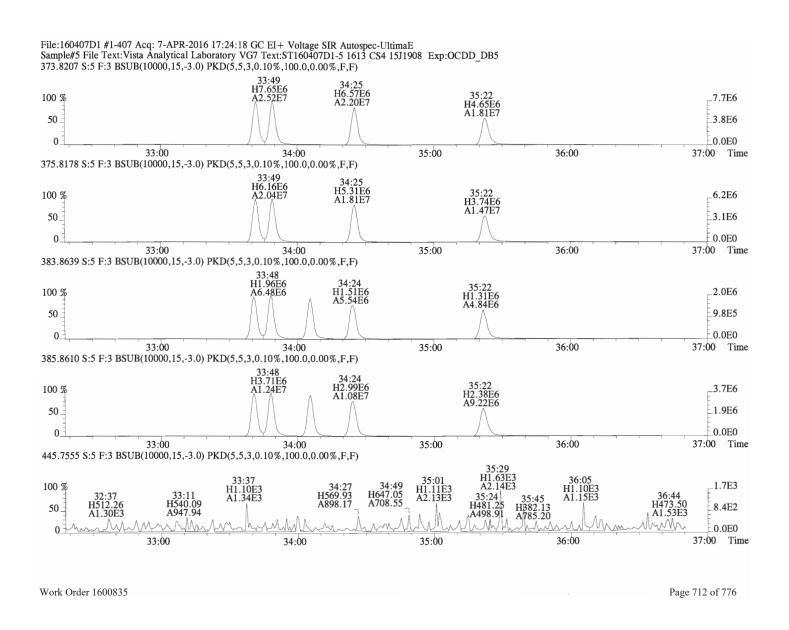
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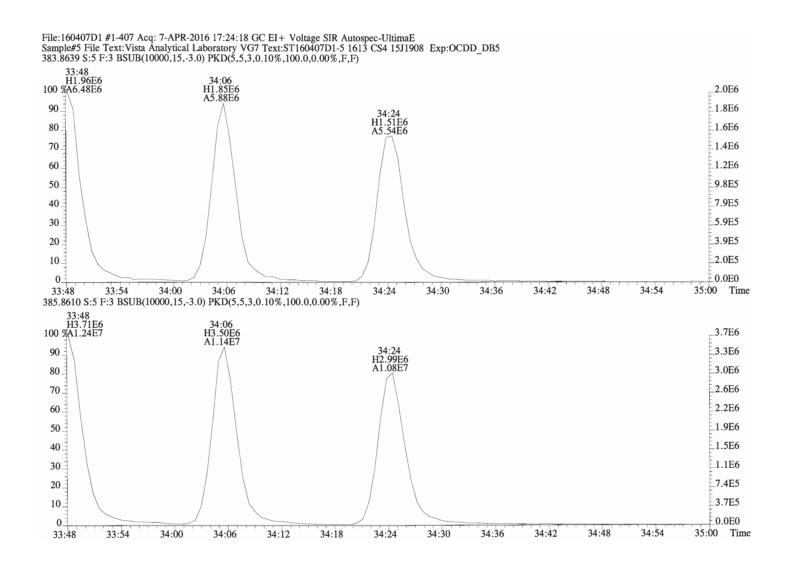


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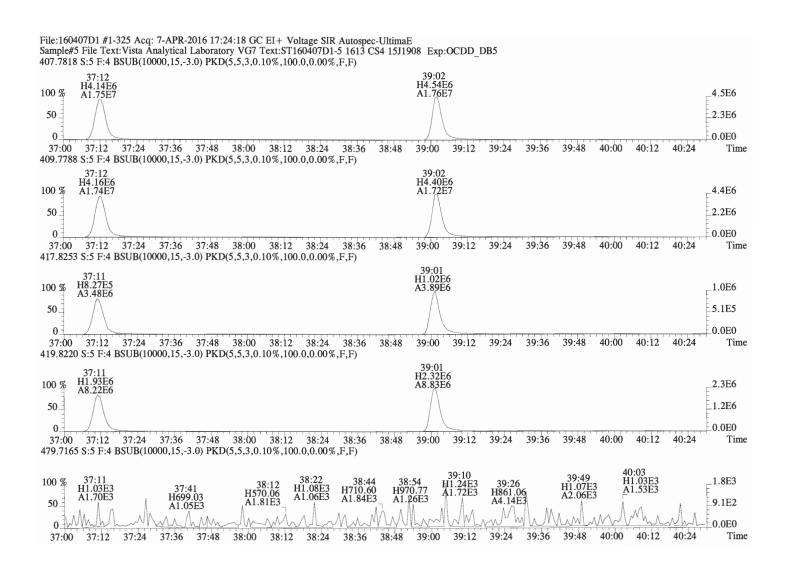


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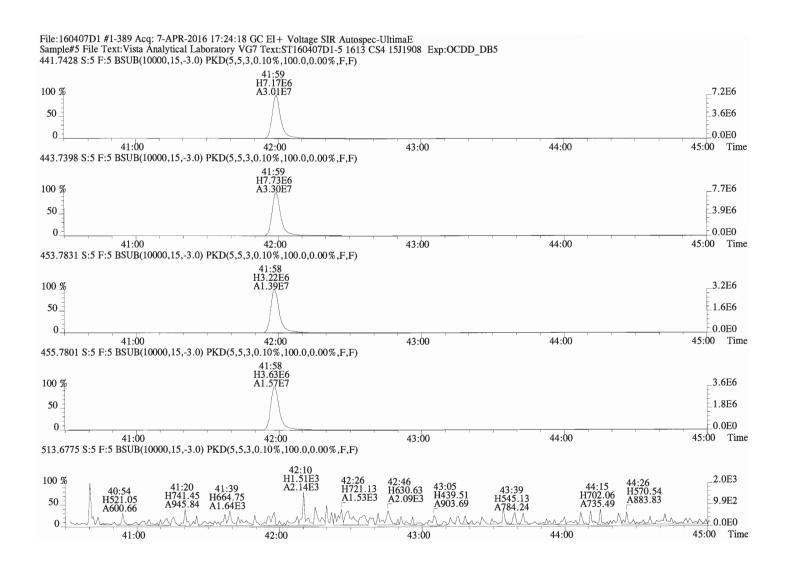




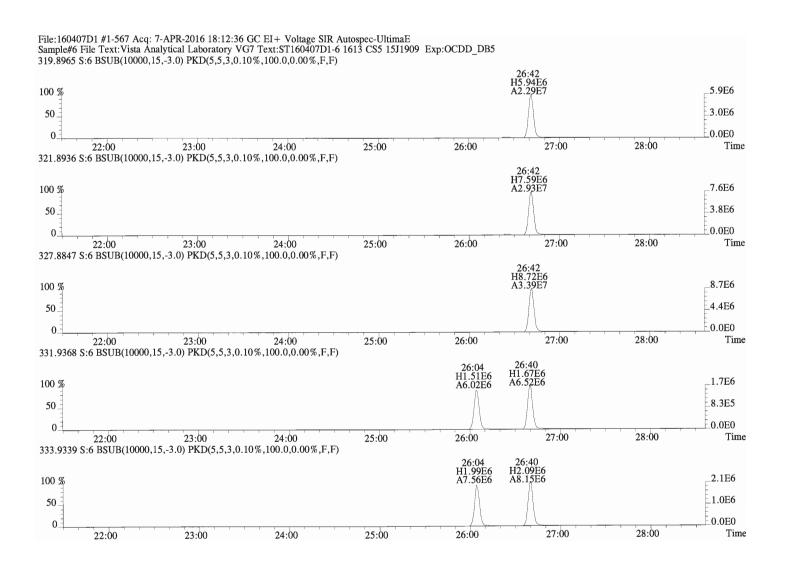
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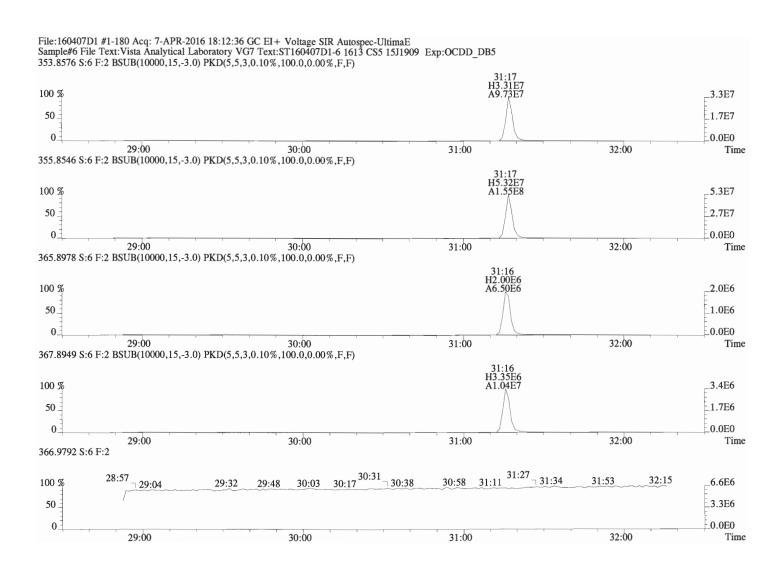
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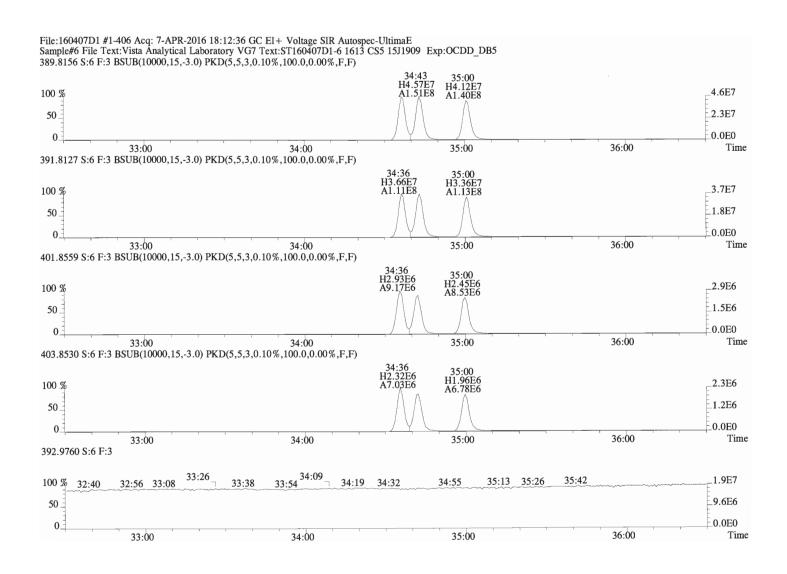
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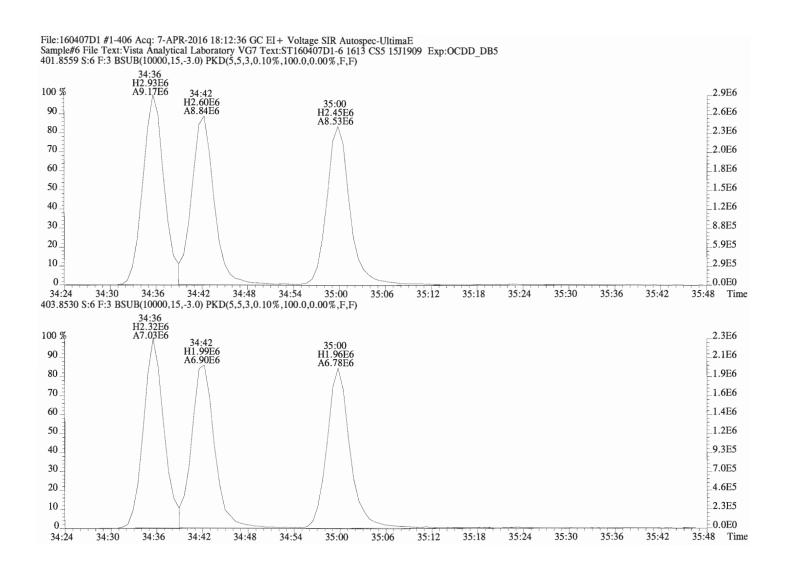
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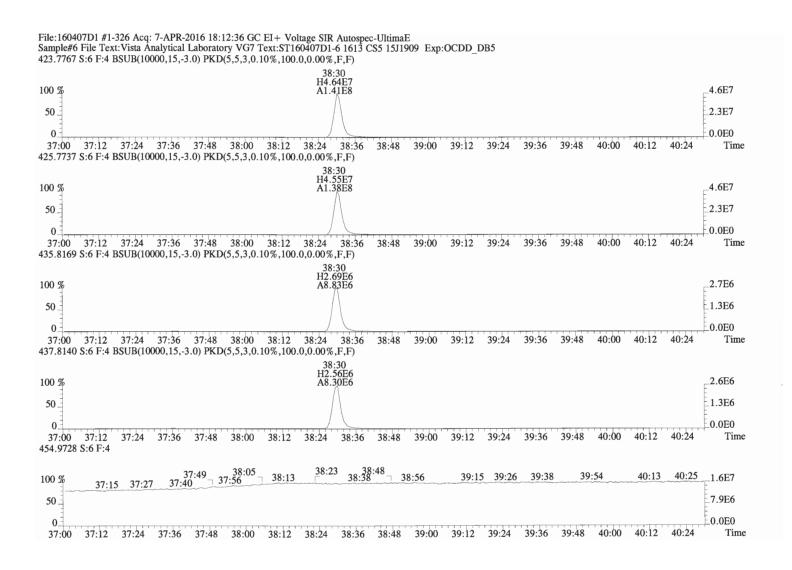
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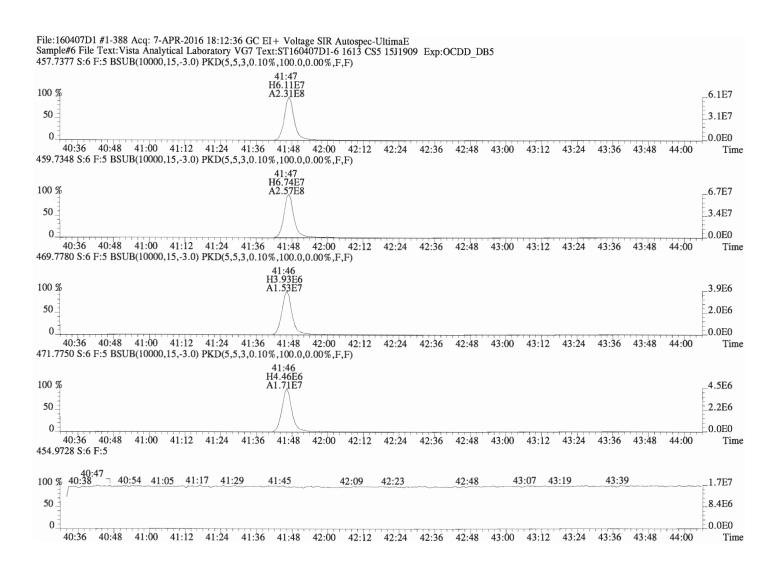
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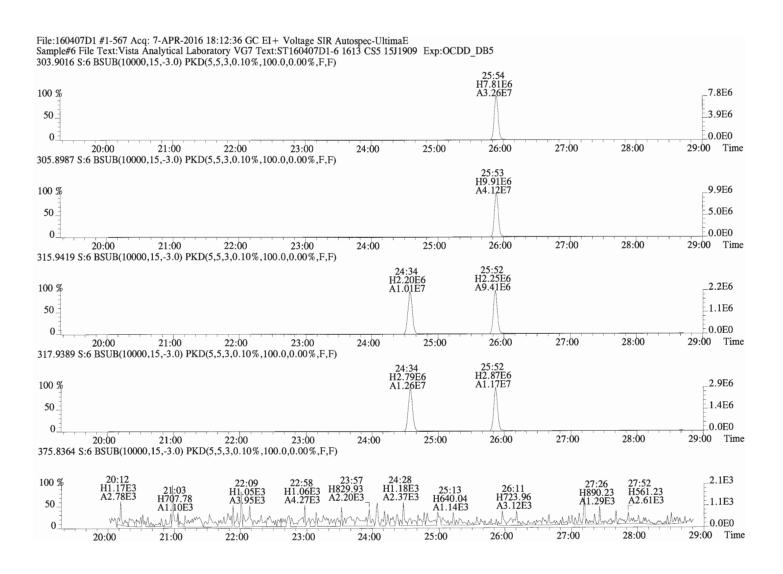
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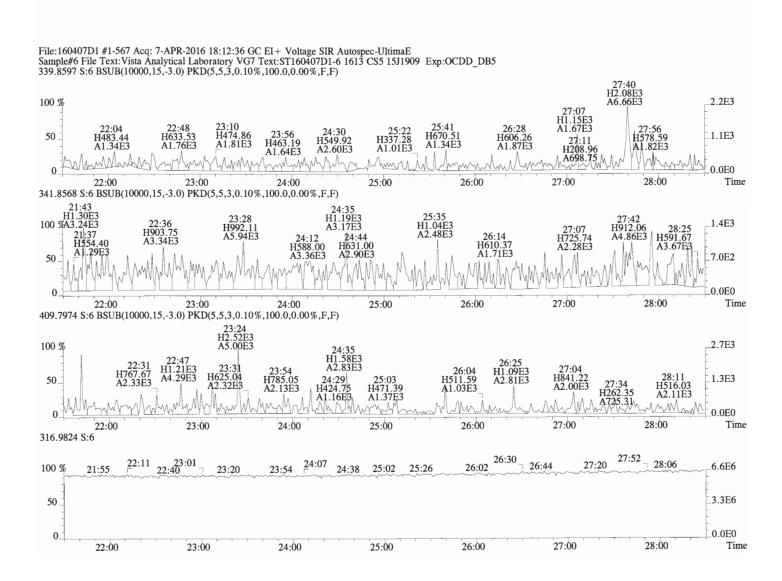
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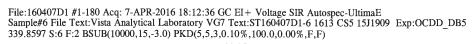
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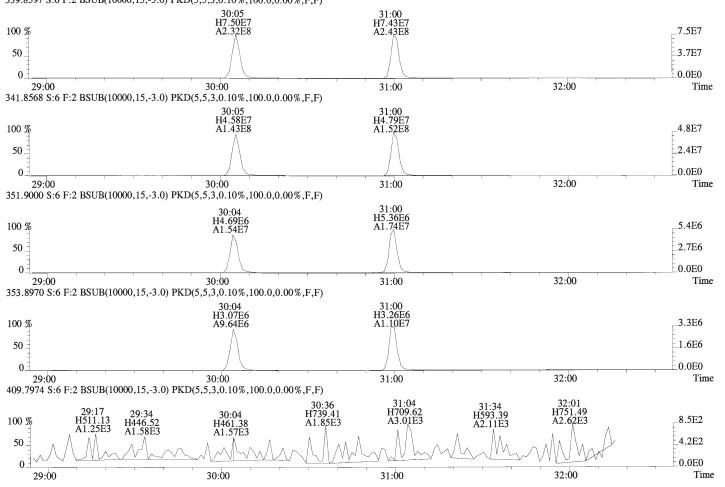


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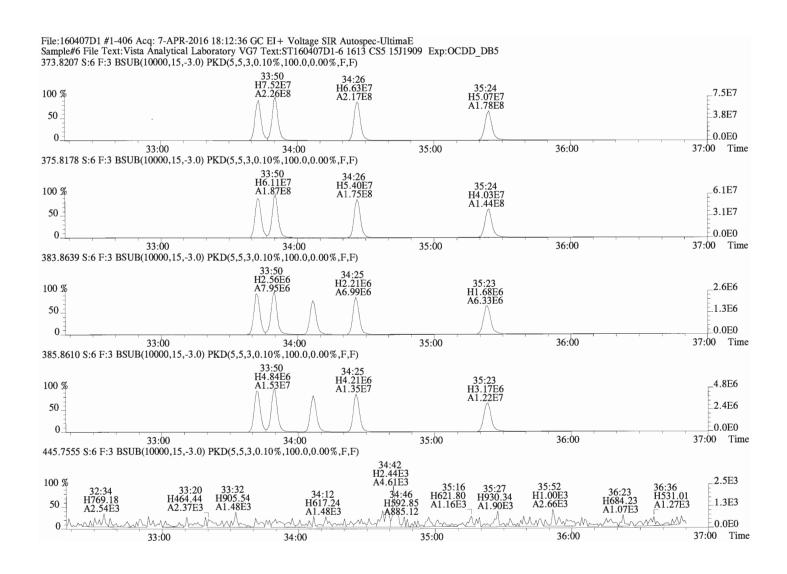


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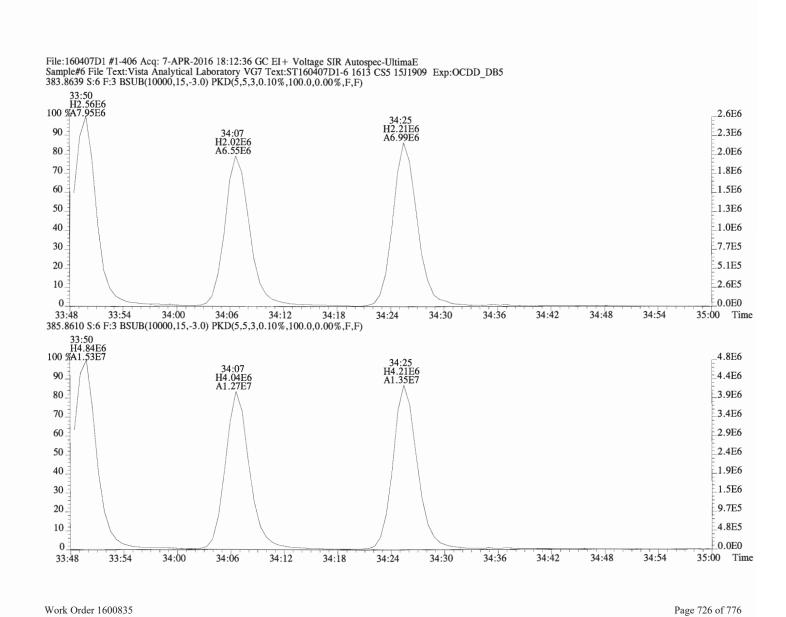


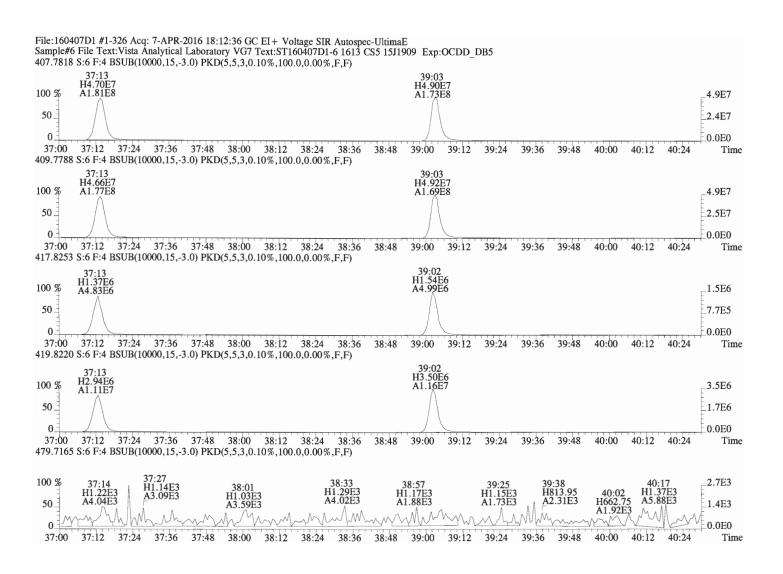


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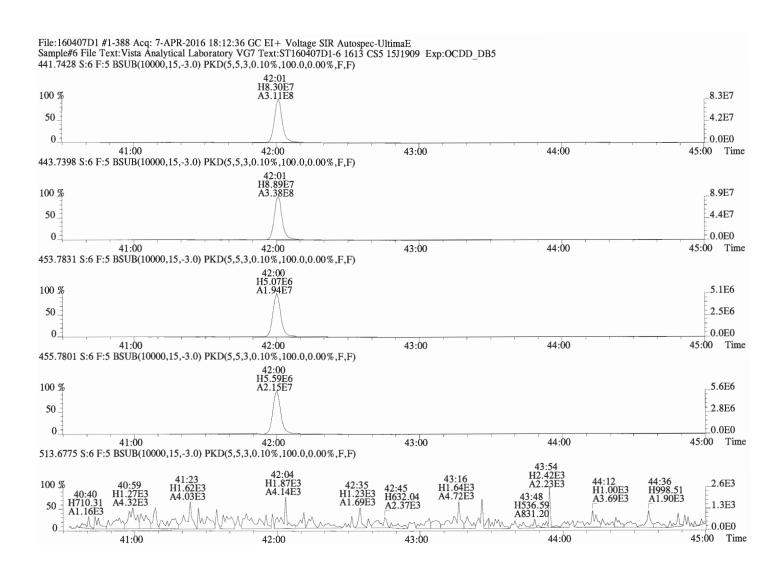


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FORM 4A PCDD/PCDF CALIBRATION VERIFICATION

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 160408Dl S#2 Analysis Date: 8-APR-16 Time: 15:28:50

	M/Z'S	ION	QC			CONC.	
	FORMING	ABUND.	LIMITS		CONC.	RANGE (3)	
	RATIO (1)	RATIO	(2)	Pass	FOUND	(ng/mL)	
NATIVE ANALYTES							
							(1) See Table 8, Method 1613, for m/z specifications.
2,3,7,8-TCDD	M/M+2	0.79	0.65-0.89	Y	9.27	7.8 - 12.9	
						8.2 - 12.3 (4)	(2) Ion Abundance Ratio Control Limits as specified
1,2,3,7,8-PeCDD	M/M+2	0.61	0.54-0.72	Y	50.5	39.0 - 65.0	in Table 9, Method 1613.
1,2,3,4,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43		52.0	39.0 - 64.0	(3) Contract-required concentration range as specified
1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43		50.4	39.0 - 64.0	in Table 6, Method 1613.
1,2,3,7,8,9-HxCDD	M+2/M+4	1.25	1.05-1.43	Y	48.9	41.0 ~ 61.0	
							(4) Contract-required concentration range as specified
1,2,3,4,6,7,8-HpCDD	M+2/M+4	1.03	0.88-1.20	Y	49.6	43.0 - 58.0	in Table 6a, Method 1613, for tetras only.
OCDD	M+2/M+4	0.88	0.76-1.02	Y	106	79.0 - 126.0	
2 2 7 0 5000	M/M+2	0.77	0 65 0 00		0 50		
2,3,7,8-TCDF	M/M+2	0.77	0.65-0.89	Y	9.52	8.4 - 12.0	
1 0 2 7 0 P-CPT	W . O /W . 4	1 50				8.6 - 11.6 (4)	
1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	-	53.5	41.0 - 60.0	
2,3,4,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	Y	55.0	41.0 - 61.0	
1 2 2 4 7 0 11-000	M+2/M+4	1.24	1 05 1 42		F0 1	45.0.54	
1,2,3,4,7,8-HxCDF 1,2,3,6,7,8-HxCDF	M+2/M+4 M+2/M+4	1.24	1.05-1.43	-	50.1	45.0 - 56.0	
			1.05-1.43	-	51.6	44.0 - 57.0	
2,3,4,6,7,8-HxCDF	M+2/M+4	1.26	1.05-1.43	-	50.0	44.0 - 57.0	
1,2,3,7,8,9-HxCDF	M+2/M+4	1.26	1.05-1.43	Y	52.6	45.0 - 56.0	γ_{Λ}
1,2,3,4,6,7,8-HpCDF	. M. O /M. A	1.01	0 00 1 20		53.0	45.0 55.0	Analyst: DB 4/8/14
			0.88-1.20	-	51.8	45.0 - 55.0	Analyst:
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.05	0.88-1.20	Y	51.2	43.0 - 58.0	. 1.1.
OCENT	W. 2 /W. 4	0.01	0.76.1.00		104	62.0 450.0	4/8/16
OCDF	M+2/M+4	0.91	0.76-1.02	Y	104	63.0 - 159.0	Date: 71-71-0

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FORM 4B PCDD/PCDF CALIBRATION VERIFICATION

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 160408D1 S#2 Analysis Date: 8-APR-16 Time: 15:28:50

	M/Z'S FORMING RATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC. FOUND	CONC. RANGE (ng/mL)	
13C-2,3,7,8-TCDD	M/M+2	0.81	0.65-0.89	У	98.4	82.0 - 121.0	
13C-1,2,3,7,8-PeCDD	M/M+2	0.62	0.54-0.72	У	83.7	62.0 - 160.0	(1) See Table 8, Method 1613, for m/z specifications.
							(2) Ion Abundance Ratio Control Limits as specified
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.30	1.05-1.43	У	91.8	85.0 - 117.0	
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	У	99.0	85.0 - 118.0	(3) No ion abundance ratio; report concentration found.
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	Y	97.4	85.0 - 118.0	
13C-1,2,3,4,6,7,8-HpC	DD M+2/M+4	1.06	0.88-1.20	У	96.2	72.0 - 138.0	
13C-OCDD	M/M+2	0.90	0.76-1.02	У	184	96.0 - 415.0	
13C-2,3,7,8-TCDF	M+2/M+4	0.80	0.65-0.89	У	97.8	71.0 - 140.0	
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	У	80.4	76.0 - 130.0	
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.56	1.32-1.78	Y	80.4	77.0 - 130.0	
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.53	0.43-0.59	У	94.9	76.0 - 131.0	
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.53	0.43-0.59	У	123	70.0 - 143.0	
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.52	0.43-0.59	У	100	73.0 - 137.0	
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.52	0.43-0.59	Y	125	74.0 - 135.0	
13C-1,2,3,4,6,7,8-HpC	DF M+2/M+4	0.44	0.37-0.51	У	99.3	78.0 - 129.0	
13C-1,2,3,4,7,8,9-HpC	DF M+2/M+4	0.43	0.37-0.51	У	113	77.0 - 129.0	malvet.
13C-OCDF CLEANUP STANDARD (3)	M+2/M+4	0.90	0.76-1.02	У	189	96.0 - 415.0	Analyst: DB Date: 4/8/16

8.77 7.9 - 12.7

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FORM 6A

PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 160408D1 S#2 Analysis Date: 8-APR-16 Time: 15:28:50

Compounds Using 13C-1234-TCDD as RT Internal Standard

	RETENTION TIME		RRT	
NATIVE ANALYTES	REFERENCE	RRT	QC LIMITS (1)	
2,3,7,8-TCDD	13C-2,3,7,8-TCDD	1.001	0.999-1.002	(1) Contract-required limits for
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	0.999-1.002	Relative Retention Times (RRT)
2,3,7,8-TCDF	13C-2,3,7,8-TCDF	1.001	0.999-1.003	as specified in Table 2, Method 1613. 10/94
1,2,3,7,8-PeCDF	13C-1,2,3,7,8-PeCDF	1.000	0.999-1.002	
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.001	0.999-1.002	
LABELED COMPOUNDS				
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.023	0.976-1.043	
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.200	1.000-1.567	
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.992	0.923-1.103	
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.154	1.000-1.425	
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.189	1.011-1.526	
37C1-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.024	0.989-1.052	

Analyst:)B

Date: 4/8/16

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FORM 6B PCDD/PCDF RELATIVE RETENTION TIMES

Contract No.: SAS No.:

Initial Calibration Date: 4-7-16

GC Column ID: ZB-5MS Instrument ID: VG-7

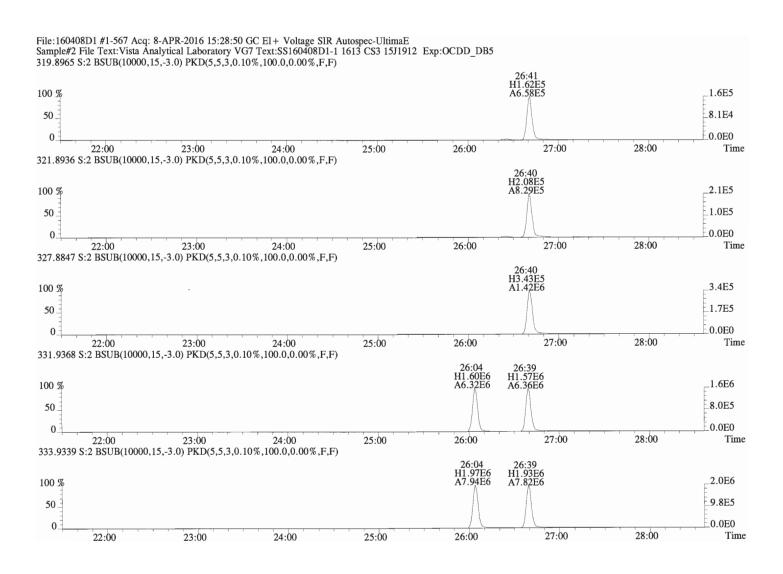
VER Data Filename: 160408D1 S#2 Analysis Date: 8-APR-16 Time: 15:28:50

NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)	
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.000	0.999~1.001	(1) Contract-required limits for
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.000	0.997-1.005	Relative Retention Times (RRT)
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.000	0.999-1.001	as specified in Table 2, Method 1613. 10/94
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001	-
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.001	0.999-1.001	
1,2,3,6,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	1.000	0.998-1.004	
1,2,3,7,8,9-HxCDD	13C-1,2,3,7,8,9-HxCDD	1.000	0.998-1.004	
1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,7,8-HpCDF	1.001	0.999-1.001	
1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,7,8-HpCDD	1.000	0.999-1.001	
1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	1.000	0.999-1.001	
OCDD	13C-OCDD	1.000	0.999-1.001	
OCDF	13C-OCDF	1.000	0.999-1.001	
LABELED COMPOUNDS				
13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.988	0.975-1.001	
13C-1,2,3,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	0.992	0.979-1.005	
13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.010	1.001-1.020	
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.037	1.002-1.072	
13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.014	1.002-1.026	
13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.017	1.007-1.029	
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.026	1.014-1.038	2
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.091	1.069-1.111	Ω
13C-1,2,3,4,7,8,9-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.145	1.098-1.192	Analyst: 75
13C-1,2,3,4,6,7,8-HpCDD	13C-1,2,3,4,6,9-HxCDF	1.129	1.117~1.141	. 1
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.225	1.085-1.365	Analyst: 1/8
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.231	1.091-1.371	Date: 7/8/16

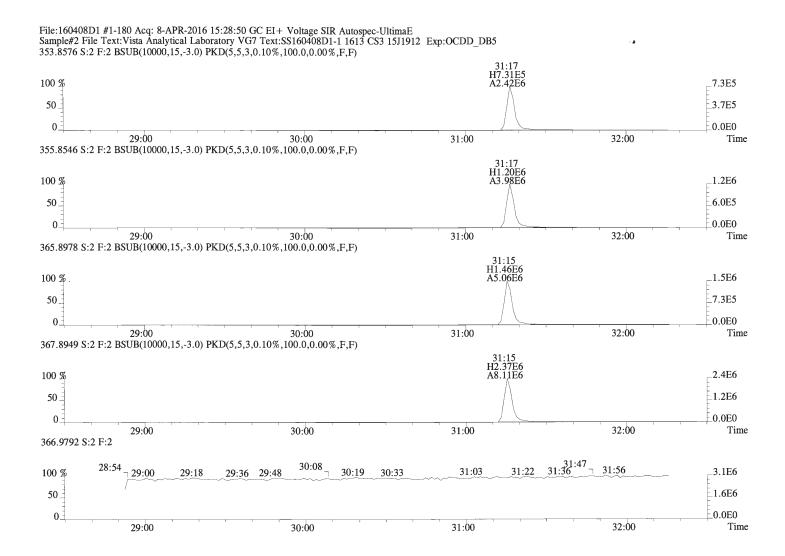
Work Order 1600835 Page 732 of 776

lient ID: 1613 CS3 15J1912 ab ID: SS160408D1-1		lename: 1			-	-APR-16 15 7-4-7-16		/ol: 1.0	000	ConCal: ST EndCAL: NA		-1			Page	2 of 2
Name	Resp	RA	RRF	RT	RRT	Conc	Q noise	Fac	DL	Name		Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	1.49e+06	0.79 y	1.13	26:41	1.001	9.2673	*	2.5	*	Total Tetra-	-Dioxins	9.32	10.1		*	*
1,2,3,7,8-PeCDD	6.40e+06	0.61 y	0.96	31:17	1.000	50.479	*	2.5	*	Total Penta-	-Dioxins	50.5	50.9		*	*
1,2,3,4,7,8-HxCDD	6.17e+06	1.25 y	0.99	34:36	1.001	52.014	*	2.5	*	Total Hexa-I	Dioxins	152	152		*	*
1,2,3,6,7,8-HxCDD	6.97e+06	1.25 y	1.05	34:43	1.000	50.374	*	2.5	*	Total Hepta-	-Dioxins	50.7	51.7		*	*
1,2,3,7,8,9-HxCDD	6.42e+06	1.25 y	1.07	35:01	1.000	48.948	*	2.5	*	Total Tetra-	-Furans	9.81	10.3		*	*
1,2,3,4,6,7,8-HpCDD	5.82e+06	1.03 y	1.05	38:30	1.000	49.601	*	2.5	*	Total Penta-	Furans	111.16	111.80		*	*
OCDD	1.09e+07	0.88 y	0.96	41:47	1.000	106.21	*	2.5	*	Total Hexa-F	Furans	205	206		*	*
										Total Hepta-	Furans	103	103		*	*
2,3,7,8-TCDF	2.30e+06	0.77 y	1.12	25:53	1.001	9.5218	*	2.5	*							
1,2,3,7,8-PeCDF	1.04e+07	1.57 y	1.01	30:05	1.000	53.476	*	2.5	*							
2,3,4,7,8-PeCDF	1.12e+07	1.54 y	0.90	31:01	1.001	55.048	*	2.5	*							
1,2,3,4,7,8-HxCDF	1.02e+07	1.24 y	1.16	33:42	1.000	50.088	*	2.5	*							
1,2,3,6,7,8-HxCDF	1.18e+07	1.28 y	1.16	33:50	1.000	51.573	*	2.5	*							
2,3,4,6,7,8-HxCDF	1.04e+07	1.26 y	1.21	34:26	1.000	49.996	*	2.5	*							
1,2,3,7,8,9-HxCDF	8.78e+06	1.26 y	1.12	35:24	1.001	52.570	*	2.5	*							
1,2,3,4,6,7,8-HpCDF	9.25e+06	1.01 y	1.43	37:13	1.001	51.759	*	2.5	*							
1,2,3,4,7,8,9-HpCDF	7.90e+06	1.05 y	1.32	39:03	1.000	51.195	*	2.5	*							
OCDF	1.47e+07	0.91 y	1.03	42:01	1.000	104.15	*	2.5	*							
										Rec Qu	ıal					
13C-2,3,7,8-TCDD	1.42e+07	0.81 y	1.01	26:40	1.023	98.423				98.4						
13C-1,2,3,7,8-PeCDD	1.32e+07	0.62 y	1.10	31:17	1.200	83.719				83.7						
13C-1,2,3,4,7,8-HxCDD	1.20e+07	1.30 y	0.70	34:35	1.014	91.843				91.8						
13C-1,2,3,6,7,8-HxCDD	1.32e+07	1.31 y	0.72	34:42	1.017	99.037				99.0						
13C-1,2,3,7,8,9-HxCDD	1.22e+07	1.26 y	0.68	35:00	1.026	97.429				97.4						
13C-1,2,3,4,6,7,8-HpCDD	1.12e+07	1.06 y	0.62	38:30	1.129	96.185				96.2						
13C-OCDD	2.15e+07	0.90 y	0.63	41:47	1.225	183.78				91.9						
13C-2,3,7,8-TCDF	2.16e+07	0.80 y	0.90	25:52	0.992	97.816				97.8						
13C-1,2,3,7,8-PeCDF	1.93e+07	1.57 y	0.98	30:05	1.154	80.384				80.4						
13C-2,3,4,7,8-PeCDF	2.25e+07	1.56 y	1.15	30:60		80.442				80.4						
13C-1,2,3,4,7,8-HxCDF	1.76e+07	0.53 y	1.00	33:41	0.988	94.931				94.9						
13C-1,2,3,6,7,8-HxCDF	1.97e+07	0.53 y	0.86	33:49	0.992	122.61				123						
13C-2,3,4,6,7,8-HxCDF	1.72e+07	0.52 y	0.92	34:26	1.010	100.43				100						
13C-1,2,3,7,8,9-HxCDF	1.49e+07	0.52 y	0.64	35:23	1.037	124.53				125						
13C-1,2,3,4,6,7,8-HpCDF	1.25e+07	0.44 y	0.68	37:12	1.091	99.310				99.3						
13C-1,2,3,4,7,8,9-HpCDF		0.43 y	0.55	39:02		113.47				113						
13C-OCDF	2.75e+07	0.90 y	0.78	41:60	1.231	189.20				94.6						
o 37Cl-2,3,7,8-TCDD	1.42e+06		1.14	26:41	1.024	8.7728				21.9	Integra	ations	Revie	ewed		
											by c	00	by		./	
RT 13C-1,2,3,4-TCDD	1.43e+07	0.80 y	1.00	26:04	*	100.00				Ar	alyst:	//S	Analy	yst:	1/2	
13C-1,2,3,4-TCDF	2.45e+07	0.80 y	1.00	24:34	*	100.00									/	
RT 13C-1,2,3,4,6,9-HxCDF	1.86e+07	0.52 y	1.00	34:06	*	100.00				Da	ate: 4/	8/16	Analy	. 4	14/1	5

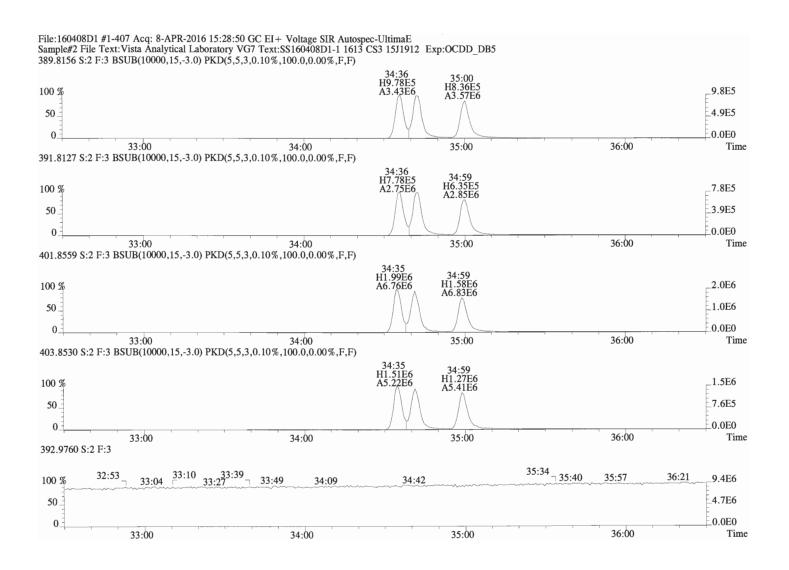
Work Order 1600835 Page 733 of 776



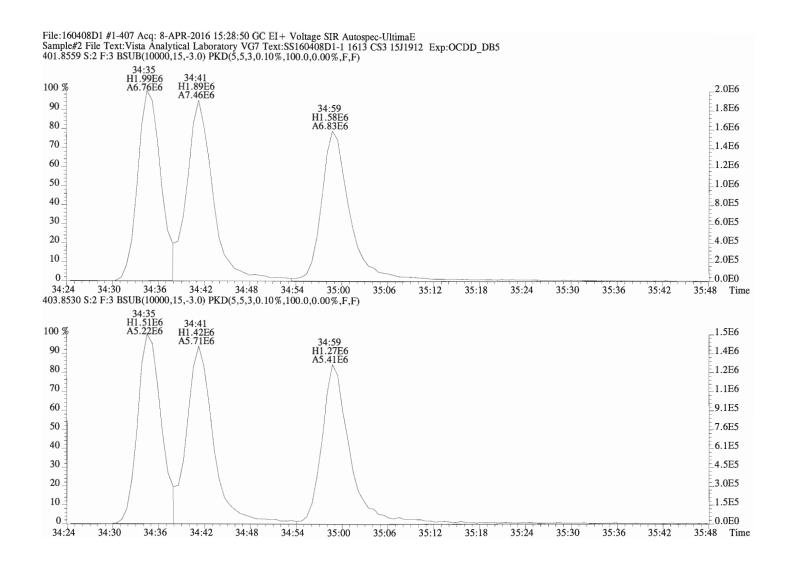
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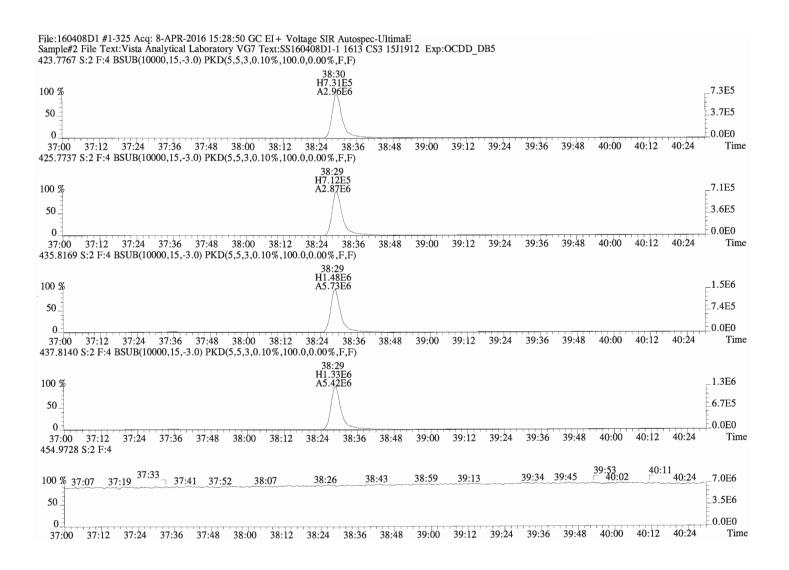
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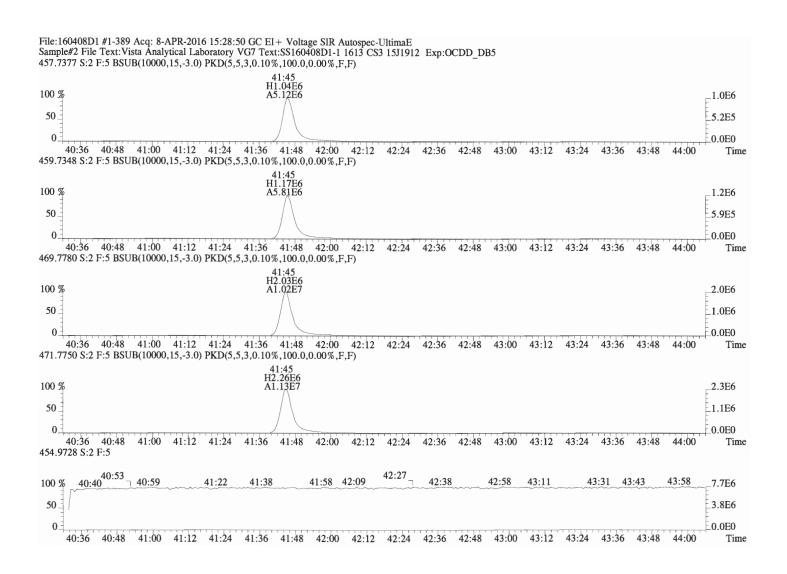
Work Order 1600835 Page 736 of 776



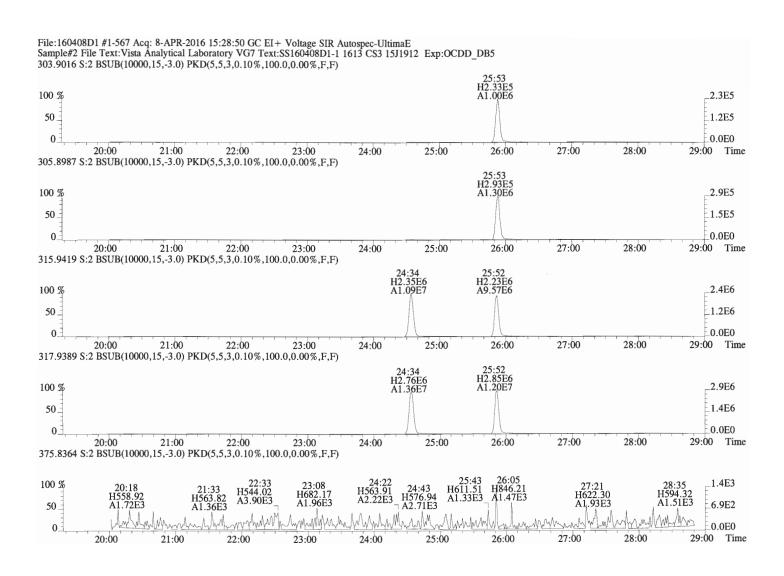
Work Order 1600835 Page 737 of 776



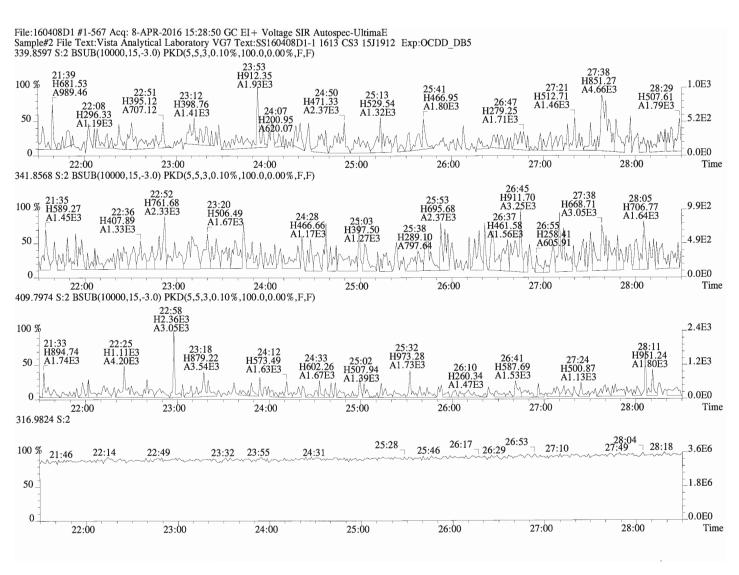
Work Order 1600835 Page 738 of 776



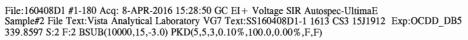
Work Order 1600835 Page 739 of 776

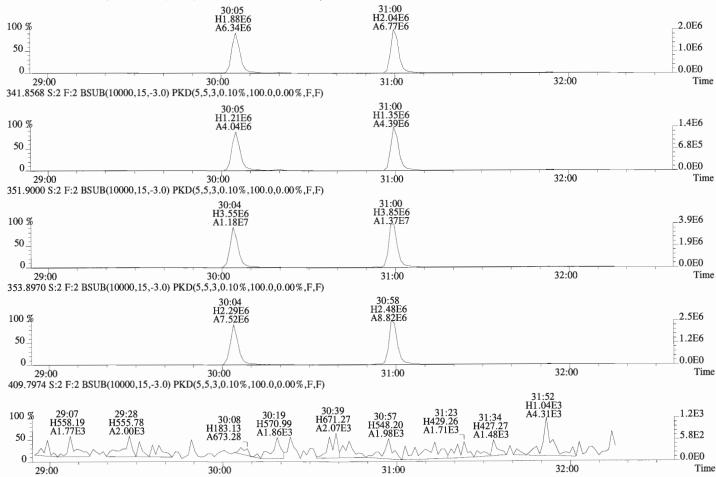


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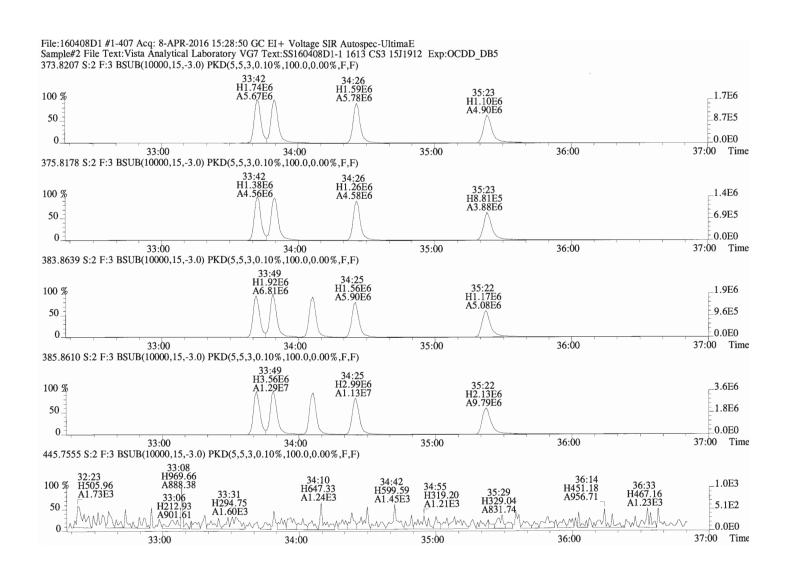
Work Order 1600835 Page 741 of 776





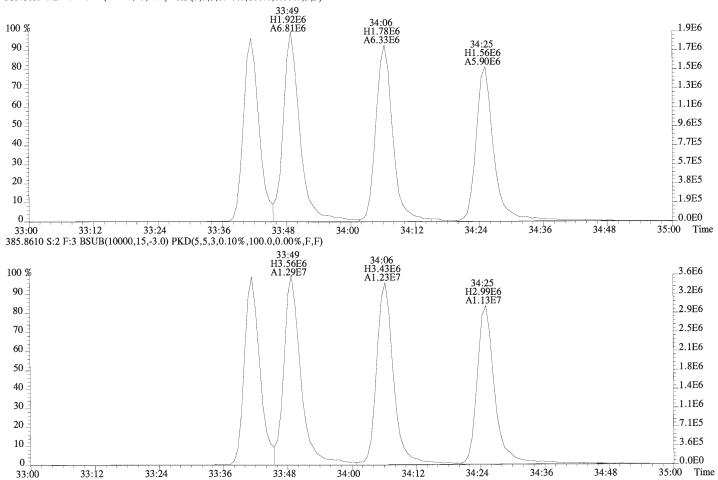
Work Order 1600835

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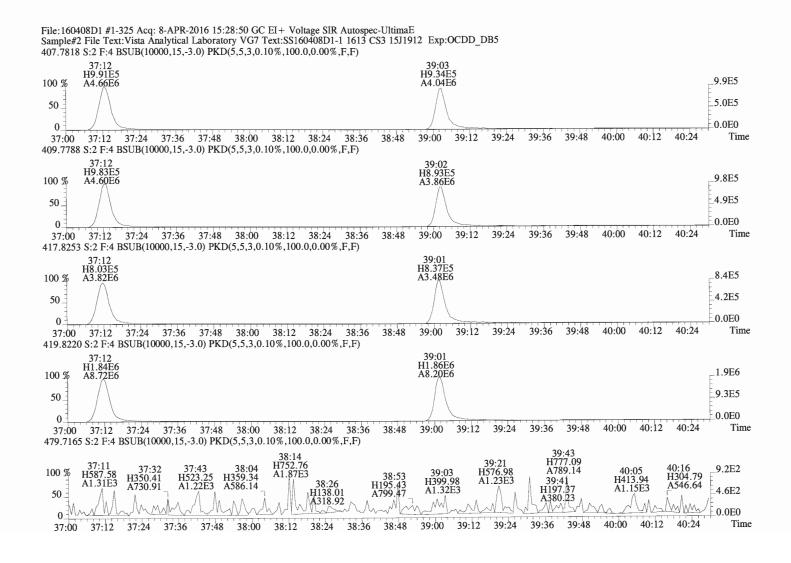


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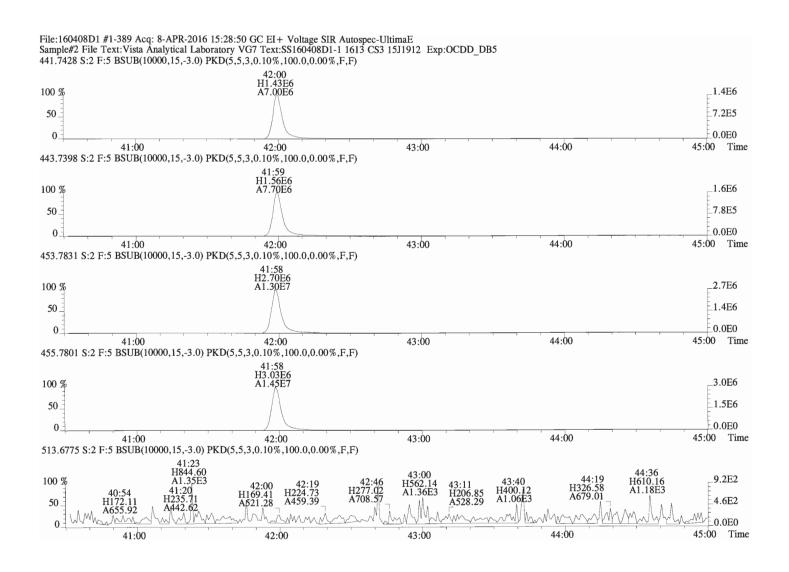
File:160408D1 #1-407 Acq: 8-APR-2016 15:28:50 GC EI+ Voltage SIR Autospec-UltimaE Sample#2 File Text:Vista Analytical Laboratory VG7 Text:SS160408D1-1 1613 CS3 15J1912 Exp:OCDD_DB5 383.8639 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



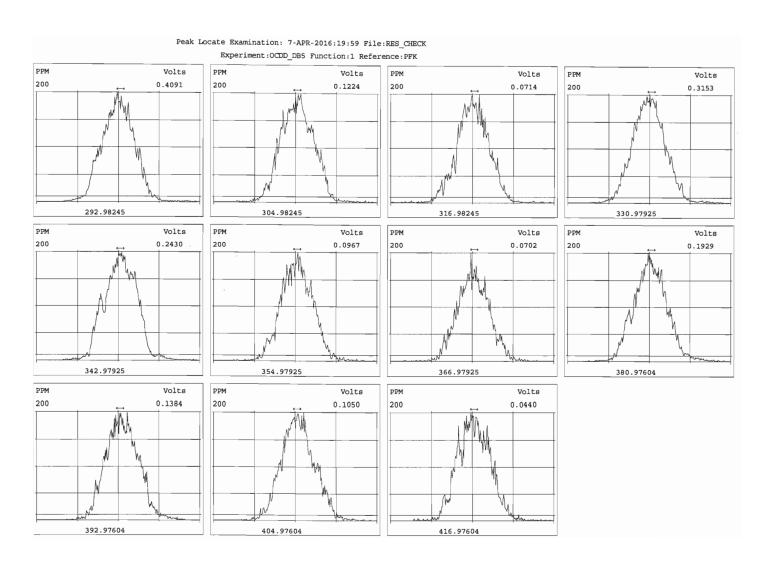
Work Order 1600835 Page 744 of 776



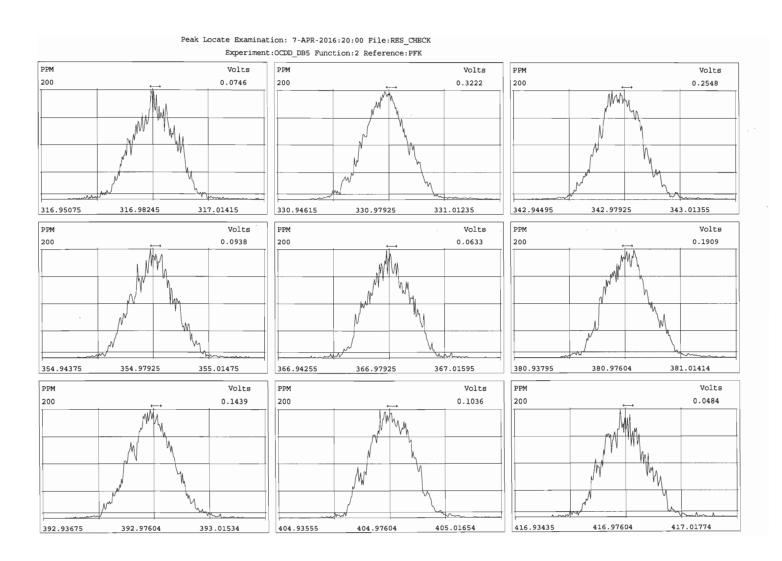
Work Order 1600835 Page 745 of 776



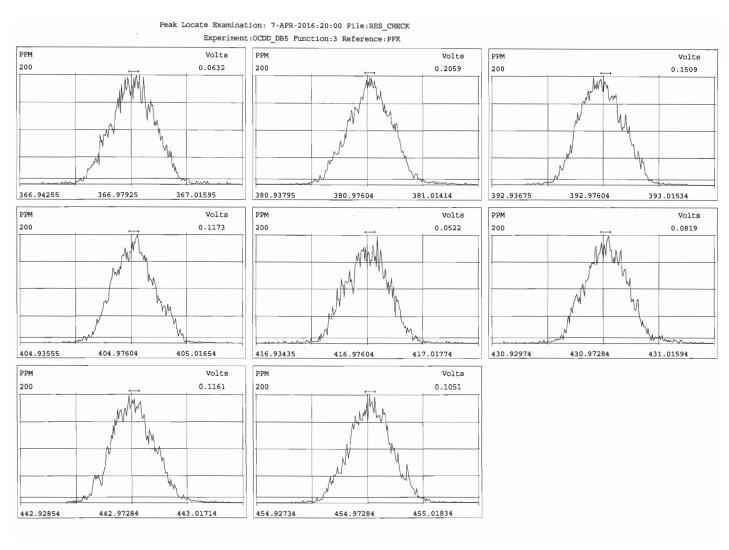
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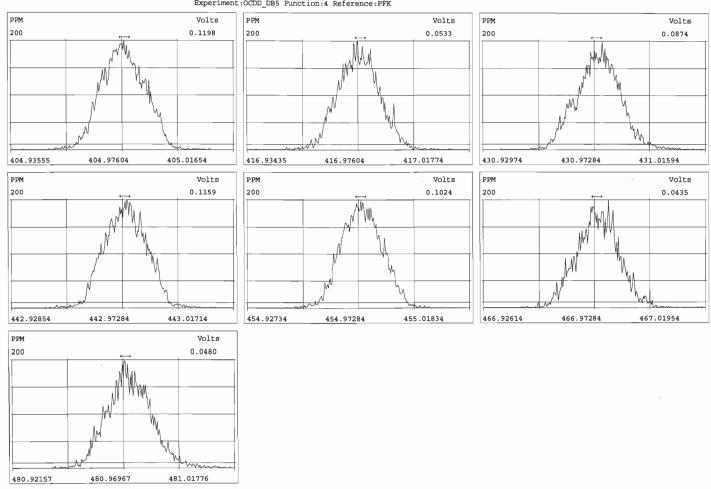


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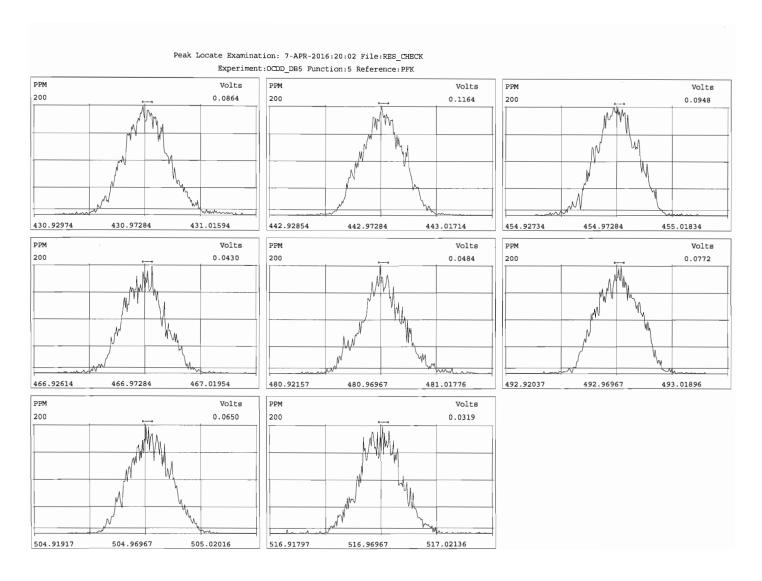


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Peak Locate Examination: 7-APR-2016:20:01 File:RES_CHECK Experiment:OCDD_DB5 Function:4 Reference:PFK



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Quantify Compound Summary Report Vista Analytical Laboratory VG-11 MassLynx 4.1 SCN815

Page 1 of 2

Dataset:

L:\Masslynx Common\vg11\VG11_L.PRO\Results\160208K1\160208K1_crv.qld

Last Altered:

Monday, February 08, 2016 14:29:43 Pacific Standard Time Monday, February 08, 2016 14:30:10 Pacific Standard Time

Printed:

William, 1 epidary 00, 2010 14.50.10 Facilic Standard Time

Method: L:\Masslynx Common\vg11\VG11_L.PRO\MethDB\tcdf.mdb 28 Aug 2015 06:01:56

Calibration: L:\Masslynx Common\vg11\VG11_L.PRO\CurveDB\db225_1613TCDFvg11-2-8-16.cdb 08 Feb 2016 14:29:41

Compound name: 2,3,7,8-TCDF

Response Factor: 1.07096

RRF SD: 0.0596266, Relative SD: 5.56758

Response type: Internal Std (Ref 2), Area * (IS Conc. / IS Area)

Curve type: RF

#-Name	- Std. Con	RA .	n/y		RT.	Resp	- IS Resp -	Conc.	: -	RRF
1 160208	3K1_2 0.250	0.74	NO	1	8.40	5.50e3	1.93e6	0.265		1.14
2 160208	3K1_3 0.500	0.75	NO	1	8.41	9.81e3	1.92e6	0.478		1.02
3 160208	3K1_4 2.00	0.77	NO	1	8.41	3.91e4	2.00e6	1.83		0.979
4 160208	3K1_5 10.0	0.78	NO	1	8.40	1.64e5	1.53e6	10.0		1.07
5 160208	3K1_6 40.0	0.78	NO	1	8.41	8.19e5	1.87e6	41.0		1.10
6 6 160208	300 K1 7	0.79	NO	1	8.40	6.51e6	1.94e6	313		1.12

(P2/8/16 M2/9/16

Compound name: 13C-2,3,7,8-TCDF

Response Factor: 0.928586

RRF SD: 0.0199774, Relative SD: 2.15138

Response type: Internal Std (Ref 3), Area * (IS Conc. / IS Area)

Curve type: RF

	#-Name	Std. Conc	- RA	n/y	 RT.	Resp	- IS Resp -	Conc	RRF
The state of	1 160208K1_2	100	0.80	NO	18.39	1.93e6	2.09e6	99.7	0.926
2	2 160208K1_3	100	0.78	NO	18.39	1.92e6	2.00e6	103	0.957
3 -	3 160208K1_4	100	0.79	NO	18.39	2.00e6	2.13e6	101	0.938
4	4 160208K1_5	100	0.79	NO	18.39	1.53e6	1.71e6	96.7	0.898
5	5 160208K1_6	100	0.77	NO	18.39	1.87e6	2.03e6	98.8	0.917
6	6 160208K1_7	100	0.82	NO	18.38	1.94e6	2.07e6	101	0.936

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Quantify Compound Summary Report

MassLynx 4.1 SCN815

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Vista Analytical Laboratory VG-11

Dataset:

L:\Masslynx Common\vg11\VG11_L.PRO\Results\160208K1\160208K1_crv.qld

Last Altered: Printed:

Monday, February 08, 2016 14:29:43 Pacific Standard Time Monday, February 08, 2016 14:30:10 Pacific Standard Time

Compound name: 13C-1,2,3,4-TCDF Response Factor: 1

RRF SD: 9.93014e-017, Relative SD: 9.93014e-015

Response type: Internal Std (Ref 3), Area * (IS Conc. / IS Area) Curve type: RF

医	#-Name	Std. Conc	RA	- 50	n/y	· RT-	Resp	- IS Resp -	Conc.	RRF
A	1 160208K1_2	100	0.78		NO	16.15	2.09e6	2.09e6	100	1.00
2	2 160208K1_3	100	0.80		NO	16.15	2.00e6	2.00e6	100	1.00
	3 160208K1_4	100	0.78		NO	16.16	2.13e6	2.13e6	100	1.00
4 20 6 96 96 6	4 160208K1_5	100	0.79		NO	16.15	1.71e6	1.71e6	100	1.00
5	5 160208K1_6	100	0.81		NO	16.15	2.03e6	2.03e6	100	1.00
6	6 160208K1_7	100	0.79		NO	16.15	2.07e6	2.07e6	100	1.00

Compound name: 13C-1,2,3,4-TCDD No Calibration

Response type: External Std, Area

Curve type: RF

	#-Name	Std. Conc	RA	n/y	RT.	Resp - IS Resp -	Conc.	RRF
1	1 160208K1_2	0.000		NO				
2 5.66	2 160208K1_3	0.000	0.81	NO	16.94	1.43e6		0.000
3	3 160208K1_4	0.000		NO				
4	4 160208K1_5	0.000		NO				
5	5 160208K1_6	0.000	0.80	NO	16.94	1.46e6		0.000
6	6 160208K1_7	0.000		NO				

Work Order 1600835 Page 753 of 776 **Quantify Sample Summary Report**

MassLynx 4.1 SCN815

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Vista Analytical Laboratory VG-11

Dataset:

Last Altered: Printed:

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Calibration: L:\Masslynx Common\vg11\VG11_L.PRO\CurveDB\db225_1613TCDFvg11-2-8-16.cdb 08 Feb 2016 14:29:41

Name: 160208K1_5, Date: 08-Feb-2016, Time: 11:26:13, ID: ST160208K1-4 1613 CS3 16A1401, Description: 1613 CS3 16A1401

994(3		# Name	Resp	RA .	n/y	: RRF	wt/vol	RT)	RRT	Conc.	%Rec	DL	EMPC
1		1 2,3,7,8-TCDF 2 13C-2,3,7,8-TCDF				1.07			1.001	10.005	100	0.0938	10.0
2		2 13C-2,3,7,8-TCDF	1.53e6	0.79	NO	0.929	1.000	18.39	1.139	96.721	96.7	0.208	
3	a distribution problem	3 13C-1,2,3,4-TCDF	1.71e6	0.79	NO	1.00	1.000	16.15	1.000	100.00	100	0.193	
4	mod of the same	4 13C-1,2,3,4-TCDD			NO		1.000						

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 Quantify Compound Summary Report
 MassLynx 4.1 SCN815
 Page 1 of 1

 Vista Analytical Laboratory VG-11
 Page 1 of 1

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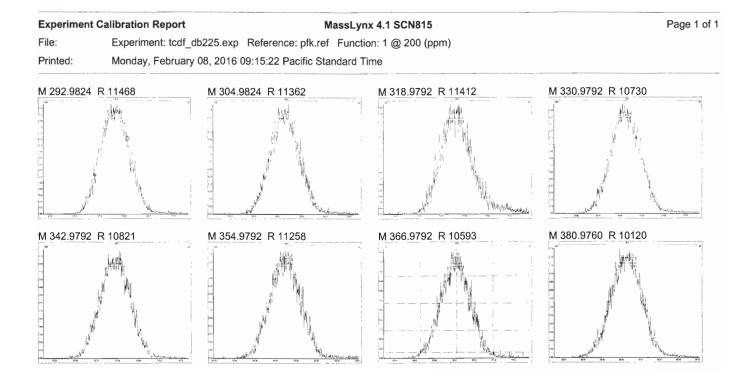
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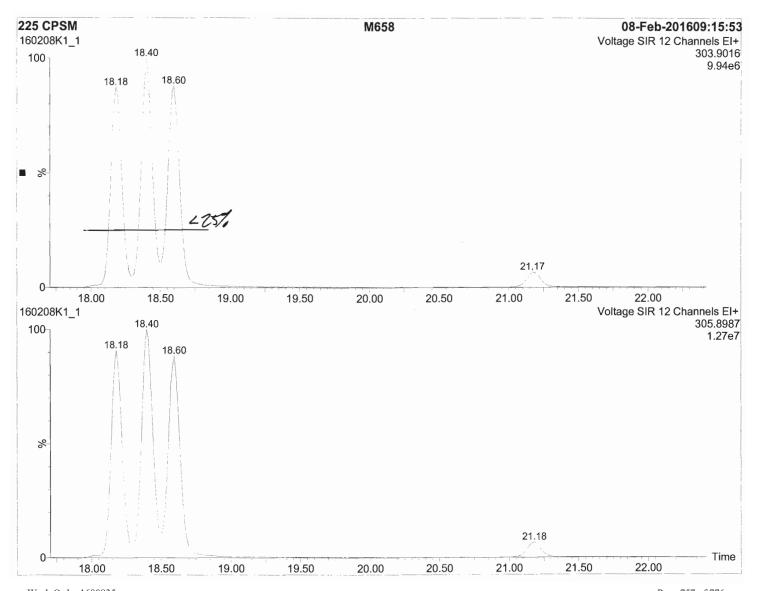
Compound name: 2,3,7,8-TCDF

	Name	D	:Acq.Date	-Acq.Time
	;160208K1_1	CP160208K1-1 225 CPSM	08-Feb-16	09:15:53
2	160208K1_2	ST160208K1-1 1613 CS0 15J1904	08-Feb-16	09:46:49
3	160208K1_3	ST160208K1-2 1613 CS1 15J1905	08-Feb-16	10:19:56
4	160208K1_4	ST160208K1-3 1613 CS2 15J1906	08-Feb-16	10:53:05
5	160208K1_5	ST160208K1-4 1613 CS3 16A1401	08-Feb-16	11:26:13
6	√ 160208K1_6	ST160208K1-5 1613 CS4 15J1908	08-Feb-16	11:59:21
7	160208K1_7	ST160208K1-6 1613 CS5 15J1909	08-Feb-16	12:32:29
8	160208K1_8	Solvent Blank	08-Feb-16	13:05:37
9	160208K1_9	SS160208K1-1 1613 SSS 15J1912	08-Feb-16	13:38:47
10		Solvent Blank	08-Feb-16	14:11:51
11	160208K1_11	1600098-03RE1 WW-P1PM-03-US-20160204	08-Feb-16	15:23:59
12	160208K1_12	1600098-06RE1 WW-P1PM-06-US-20160204	08-Feb-16	15:54:52
13	160208K1_13	1600099-01RE1 WW-P1PM-01-RE-20160204	08-Feb-16	16:28:00
14	160208K1_14	1600099-02RE1 WW-P1PM-02-RE-20160204	08-Feb-16	17:01:06
15	-160208K1_15	1600099-03RE1 WW-P1PM-03-RE-20160204	08-Feb-16	17:34:14
16	160208K1_16	1600099-04RE1 WW-P1PM-04-RE-20160204	08-Feb-16	18:07:20
17	160208K1_17	1600099-05RE1 WW-P1PM-05-RE-20160204	08-Feb-16	18:40:26
18	160208K1_18	1600099-06RE1 WW-P1PM-06-RE-20160204	08-Feb-16	19:13:36
19	160208K1_19	Solvent Blank	08-Feb-16	19:46:46

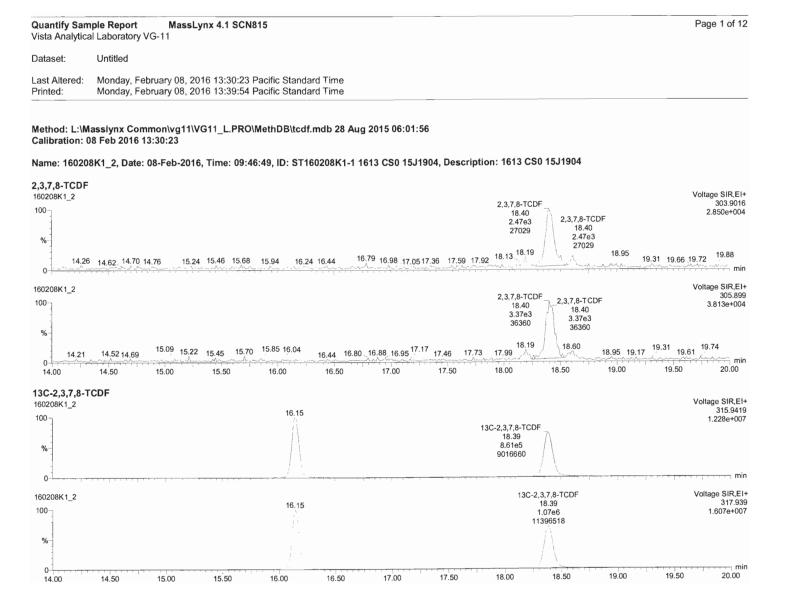
Work Order 1600835 Page 755 of 776



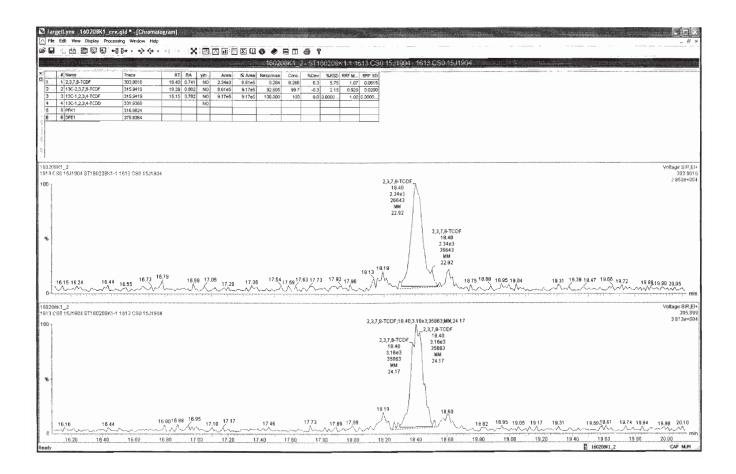
Work Order 1600835 Page 756 of 776



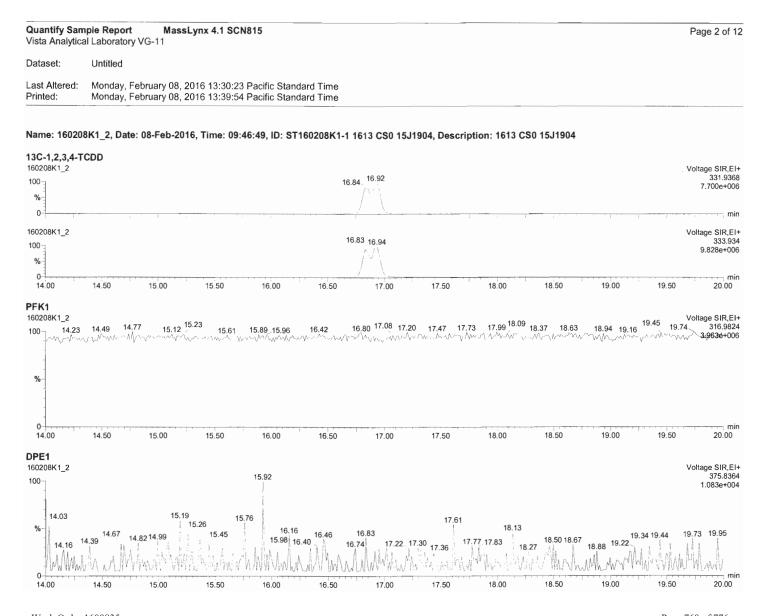
Work Order 1600835 Page 757 of 776



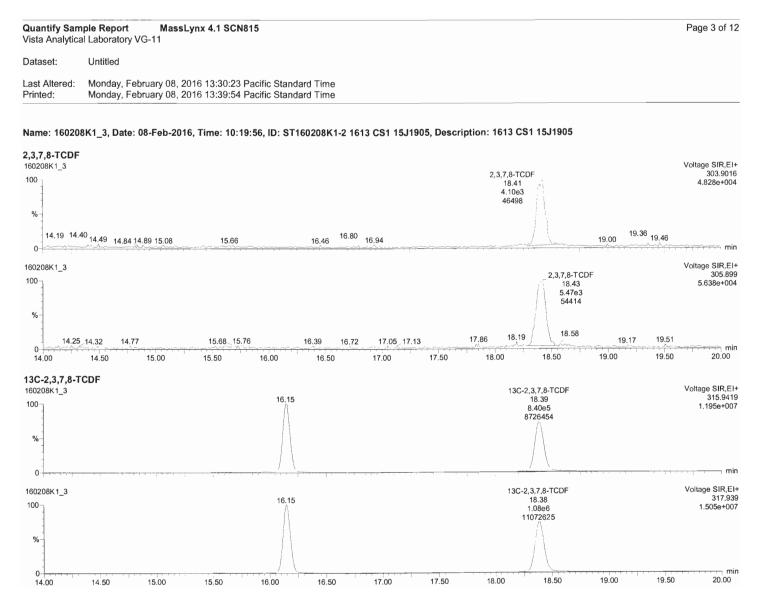
Work Order 1600835 Page 758 of 776



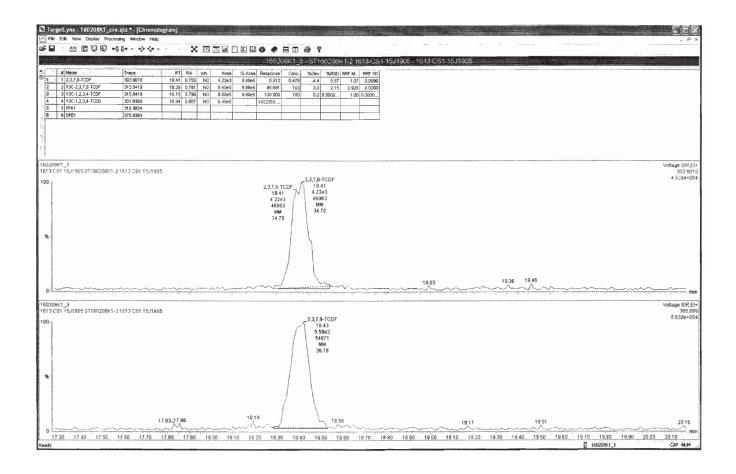
Work Order 1600835 Page 759 of 776



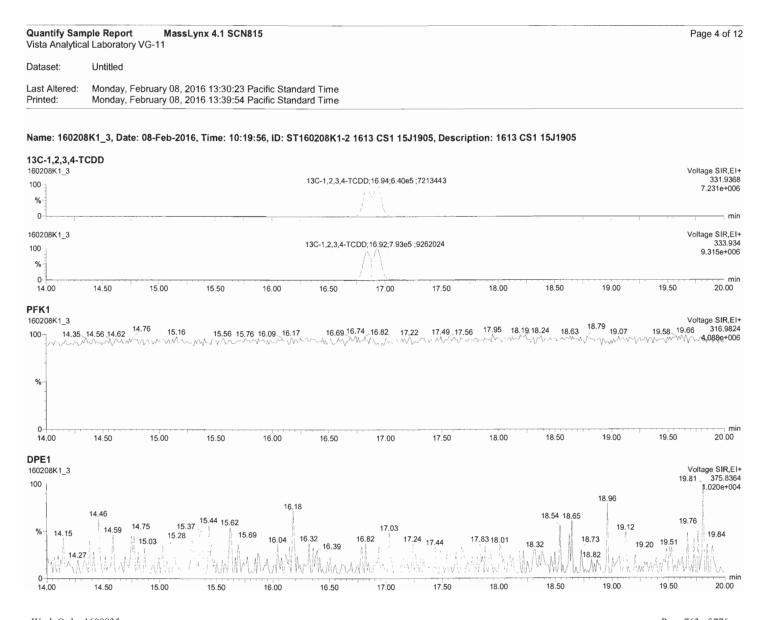
Work Order 1600835 Page 760 of 776



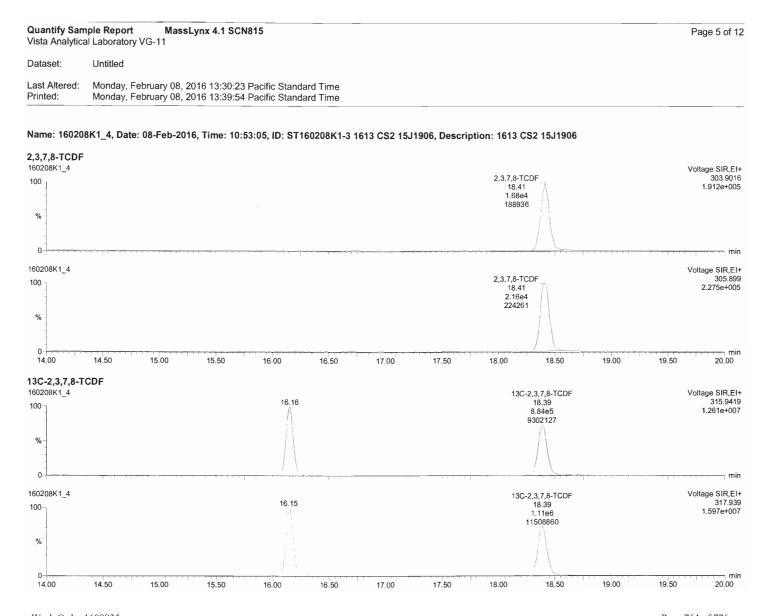
Work Order 1600835 Page 761 of 776



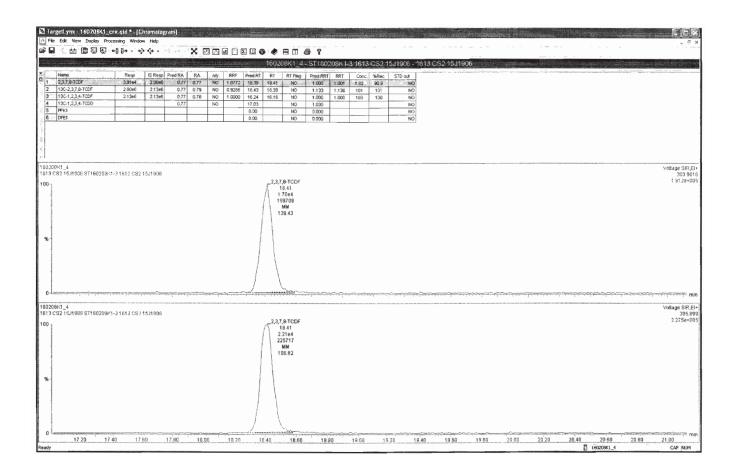
Work Order 1600835 Page 762 of 776



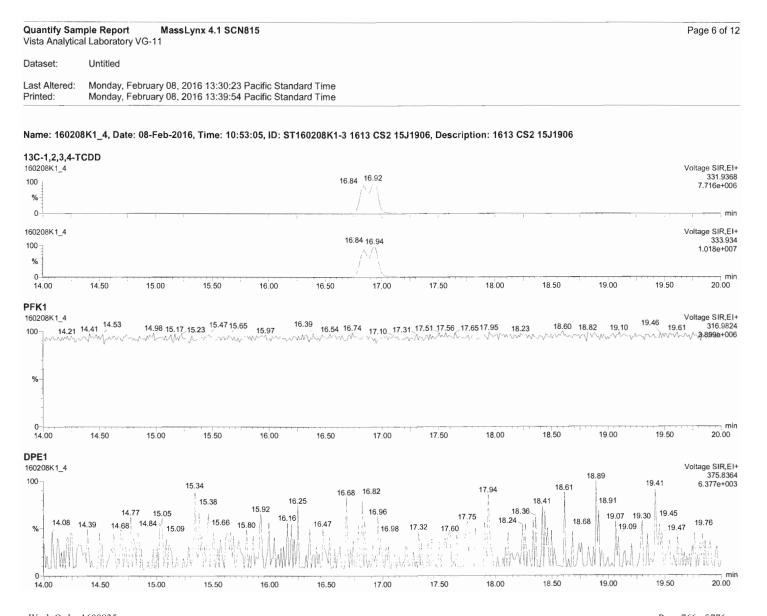
Work Order 1600835 Page 763 of 776



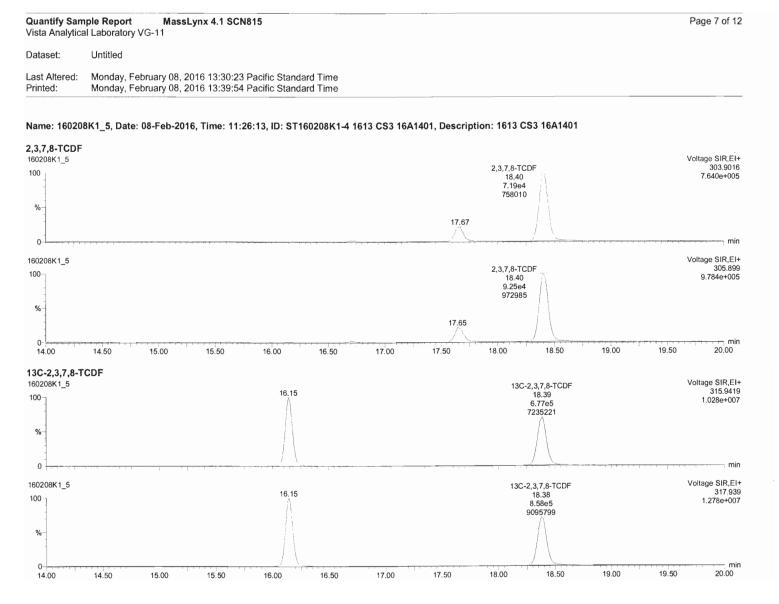
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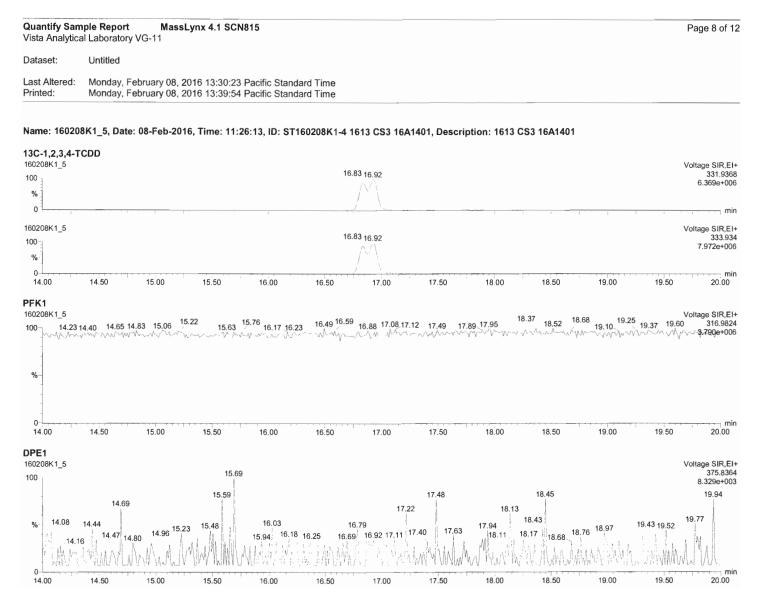
Work Order 1600835 Page 765 of 776



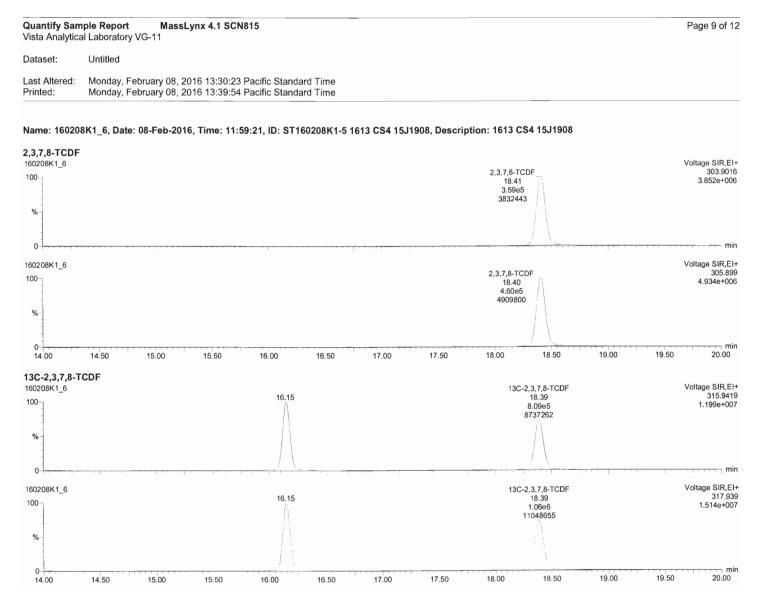
Work Order 1600835 Page 766 of 776



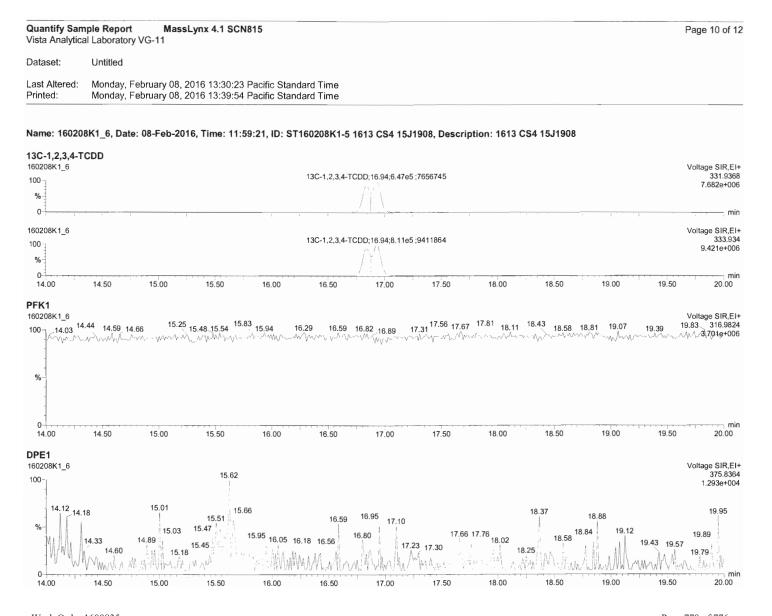
Work Order 1600835 Page 767 of 776



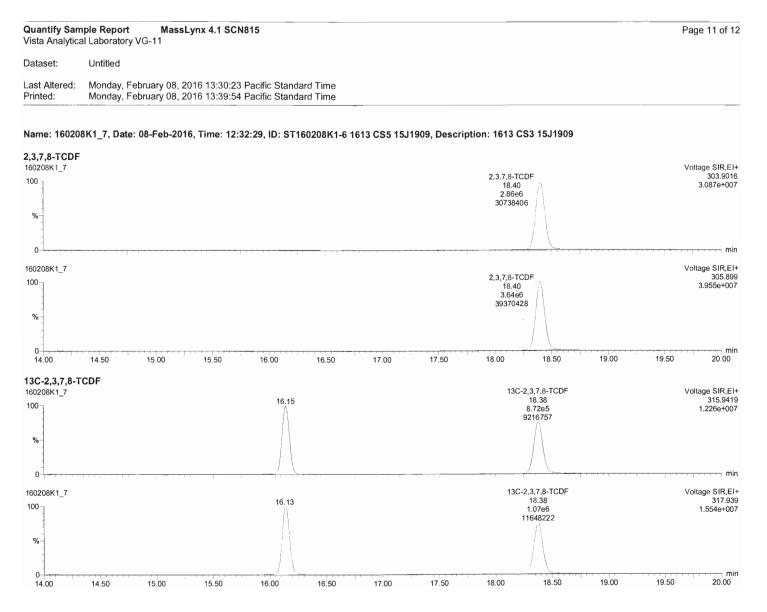
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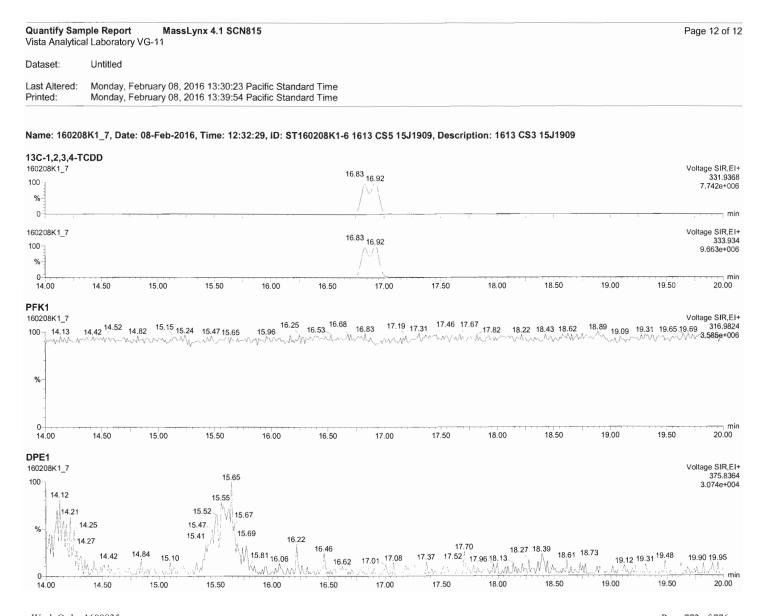
Work Order 1600835 Page 769 of 776



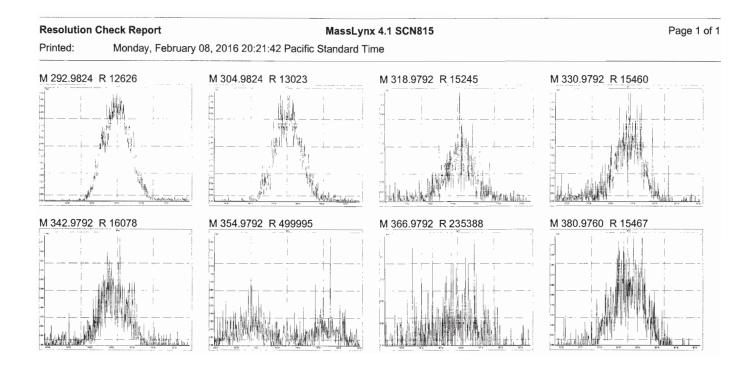
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Quantify Sample Summary Report Vista Analytical Laboratory VG-11

MassLynx 4.1 SCN815

Page 1 of 1

L:\Masslynx Common\vg11\VG11_L.PRO\Results\160208K1\160208K1_9.qld

Last Altered:

Monday, February 08, 2016 14:32:01 Pacific Standard Time

Printed:

Dataset:

Monday, February 08, 2016 14:32:20 Pacific Standard Time

Method: L:\Masslynx Common\vg11\VG11_L.PRO\MethDB\tcdf.mdb 28 Aug 2015 06:01:56 Calibration: L:\Masslynx Common\vg11\VG11_L.PRO\CurveDB\db225_1613TCDFvg11-2-8-16.cdb 08 Feb 2016 14:29:41

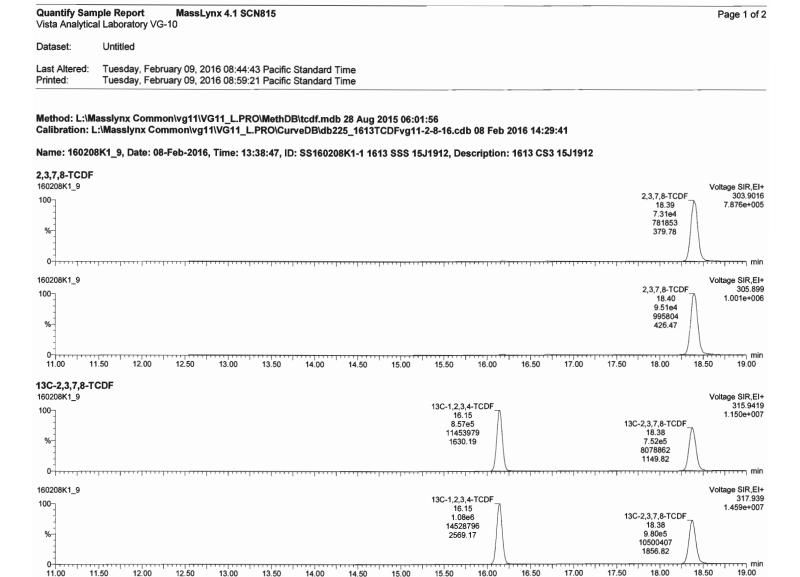
Name: 160208K1_9, Date: 08-Feb-2016, Time: 13:38:47, ID: SS160208K1-1 1613 SSS 15J1912, Description: 1613 CS3 15J1912

	#-Name	Resp	; RA	. n/y	RRF	; wt/vol	RT	RRT	Conc.	%Rec	DL:	EMPC:
10.00	1 2,3,7,8-TCDF	1.68e5	0.77	NO	1.07	1.000	18.39	1.001	9.0683	90.7	0.0661	9.07
2	2 13C-2,3,7,8-TCDF	1.73e6	0.77	NO	0.929	1.000	18.38	1.138	96.240	96.2	0.158	
3	3 13C-1,2,3,4-TCDF	1.94e6	0.79	NO	1.00	1.000	16.15	1.000	100.00	100	0.147	

(P2/8/1C EMPC 9.07 12/9/16

Work Order 1600835

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Work Order 1600835

Quantify Sample Report

MassLynx 4.1 SCN815

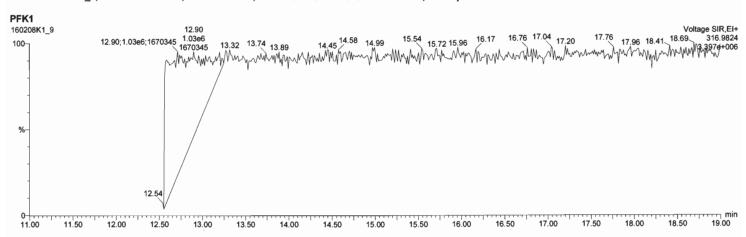
Page 2 of 2

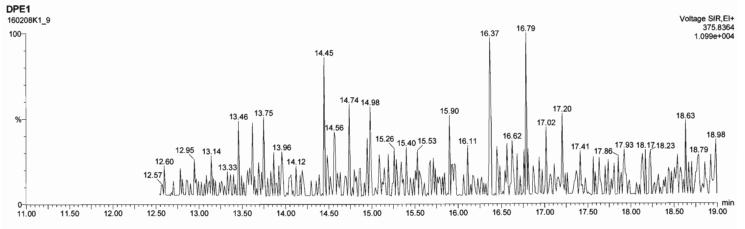
Vista Analytical Laboratory VG-10

Dataset: Untitled

Last Altered: Tuesday, February 09, 2016 08:44:43 Pacific Standard Time Printed: Tuesday, February 09, 2016 08:59:21 Pacific Standard Time

Name: 160208K1_9, Date: 08-Feb-2016, Time: 13:38:47, ID: SS160208K1-1 1613 SSS 15J1912, Description: 1613 CS3 15J1912





Work Order 1600835

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July 00, 0281

Vista Work Order No. 1600847

k r6k ar@Wherrill DC0k Cill H22 Embassy 4 oT j E, White 122 Atlanta, RA 7270G

Mear k r6Wherrill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on July 28, 02816. his sample set Tas analywed on a standard turnzaround time, under your - rolect j ame N oodbine Wecial Event 18

Vista Analytical Laboratory is committed to servinS you effectively 6 gf you rel uire additional information, please contact me at q81z197z8302 or by email at mmaier5 vistazanalytical 6cm6

. han@you for choosinS Vista as part of your analytical support team6

Mahamle Fox

Wincerely,

k artha k aier

Laboratory Mirector



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Analytical Laboratory 1104 Windfeld Way El Dorado Hills , CA 95762 ph: 916-673-1520 fx: 916-673-0106 www.vista-analytical.com

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Vista Work Order No. 1600847 Case Narrative

Sample Condition on Receipt:

Wx soil samples Tere received in Sood condition and Tithin the method temperature reI uirements 6. he samples Tere received in clear Slass containers . hey Tere stored in the dar@to prevent potential ZV deSradation in accordance Tith Vista standard operatinS procedures and E-A methodoloSy 6

Analytical Notes:

EPA Method 1613

. hese samples T ere extracted and analywed for tetrazthrouShzocta chlorinated dioxins and furans by $E-A\,k$ ethod 8187 usinS a BQz3k WRD column6

ColdinS. imes

. hese samples Tere extracted and analywed Tithin the method hold times6

Ouality Dontrol

. he gnitial Dalibration and DontinuinS Dalibration Verifications met the method acceptance criteria 6

A k ethod Qlan@and (nSoinS - recision and 4 ecovery)(- 4/ sample Tere extracted and analywed Tith the preparation batch6 j o analytes Tere detected in the k ethod Qlan@ . he (- 4 recoveries Tere Tithin the method acceptance criteria6

Labeled standard recoveries for all OD and field samples Tere Tithin method acceptance criteria6

As reI uested, k Wk WWs Tere performed on sample LQRAz7U6. he acceptance criteria Tere met for all analytes6

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TABLE OF CONTENTS

Case Narrative	1
Table of Contents	3
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Qualifiers	15
Certifications	16
Sample Receipt	19
Extraction Information	22
Sample Data - EPA Method 1613	32
Continuing Calibration	347
Initial Calibration	412

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Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1600847-01	DU-2-5-A		23-Jun-16 08:45	01-Jul-16 08:57	Clear Glass Jar, 120mL
1600847-02	DU-2-5-B		23-Jun-16 09:30	01-Jul-16 08:57	Clear Glass Jar, 120mL
1600847-03	DU-2-5-C		23-Jun-16 10:15	01-Jul-16 08:57	Clear Glass Jar, 120mL
1600847-04	BGA-1		23-Jun-16 15:15	01-Jul-16 08:57	Clear Glass Jar, 120mL
1600847-05	BGA-2		23-Jun-16 16:00	01-Jul-16 08:57	Clear Glass Jar, 120mL
1600847-06	BGA-3	MS/MSD	23-Jun-16 16:45	01-Jul-16 08:57	Clear Glass Jar, 120mL
		MS/MSD			Clear Glass Jar, 120mL
		MS/MSD			Clear Glass Jar, 120mL

Vista Project: 1600847 Client Project: Woodbine Special Event

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ANALYTICAL RESULTS

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Sample ID: Method	Blank						EPA Me	thod 1613B
Matrix5 Solid Sample Size5 70s01		QC Batch5 B6G0039 Date Extracted5 77-Jul-2076 If	7 \$:		ab Sample5 B6G0039-BLg 7 ate Analyzed 5 79-Jul-76 2050		AS llAnaly Z ISIDB	
Analyte Conc.	(pg/g)	DL EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2KĶK-TCDD	ND	0s03:		IS	7 C-2KĶK-TCDD	93s3	241-1763	
71∕2KKK-PeCDD	ND	0s0: 6,			7 C-7KKKK-PeCDD	, 2s6	241-17: 7	
7㎏K㎏ĶK-HxCDD	ND	0s702			7 C-7KKKKK-HxCDD	9, s4	21-1737	
7ЮККҚК-HxCDD	ND	0s706			7 С-7 К К К ҚК-HxCDD	9, s7	2: 1-17 0	
7⋭KĶKЮ-HxCDD	ND	0s773			7 C-712KKKN9-HxCDD	707	21-1737	
712К1816ҚК-HpCDD	ND	0s069:			7 С-7 КККК К-HpCDD	, 9s2	2 1-1730	
OCDD	ND	0s097			7 C-OCDD	60s,	7, 1-174,	
2KKK-TCDF	ND	0s0473			7 C-2KKK-TCDF	94s6	231-1769	
7₽KKK-PeCDF	ND	0s04, ,			7 C-7KKKK-PeCDF	69\$2	231-17:4	
2KßKK-PeCDF	ND	0s0446			7 C-2KKK-PeCDF	69s7	271-17,:	
7⋭K₿ĶK-HxCDF	ND	0s03, ,			7 C-7½K¼KK-HxCDF	:, s0	261-1742	
71 2 КК К ҚК-HxCDF	ND	0s03, 2			7 С-7 ½ К % ҚК-HxCDF	: 4s6	261-172	
2KKKK-HxCDF	ND	0s03: 3			7 C-2KKKK-HxCDF	97s.	2: 1-17 6	
71℃KĶK19-HxCDF	ND	0s0, 6			7 C-712KKK19-HxCDF	9, s,	291-173,	
712К1316ҚК-НрСDF	ND	0s03, 6			7 С-7 ½ К ¼¼Ķ К-HpCDF	, 9s7	2: 1-173	
71℃K1%KK19-HpCDF	ND	0s040:			7 С-7½К¼ҚКЮ-HpCDF	, 4s4	261-17 :	
OCDF	ND	0s763			7 C-OCDF	49s4	7, 1-174,	
				CRS	, Cl-2KKK-TCDD	: 4s:	41-179,	
					Toxic Equivalent Quotient (T	EQ) Data		
					TEQMinWHO2004Dioxin	0s00		
TOTALS								
Total ITCDD	ND	0s03:						
Total PeCDD	ND	0s0: 6,						
Total HxCDD	ND	0s70,						
Total HpCDD	ND	0s069:						
Total ITCDF	ND	0s0473						
Total PeCDF	ND	0s0466						
Total HxCDF	ND	0804 4						
Total HpCDF	ND	0s0392			T. II awar bantral limit Lumar bantral li			

DL1 Sample Zpecifc leZimated Idetection Ilimit

 $EMPC + \mathbb{E} Z imated \\ lmaximum \\ lpo \\ Z ible \\ lconcentration$

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Sample ID: OPR								EPA Method 1613F
Matrix: Solid Sample Size: 10g0 I	` `		B6G0039 11-7J1-u016	12:35		Lab Sample: B6G0039-BS1 Date Analyzed: 19-7J1-16 16:35 (ColJmn: ZB-sMS An	aly. t: DB
Analyte	Amt Found (pg/g)	Spike Amt	%R	Limits		Labeled Standard	%R	LCL-UCL
u 12 T, T5-4 CDD	198	u0 £ 0	96 9	6, -1s5	88	12C-uƊṬЂ-4CDD	5sg	u0 - 1, s
1Ti T2T T6-PeCDD	90gs	100	90gs	, 0 - 13u		12C-1TiT2T, T5-PeCDD	66gl	u1 - uu,
1Tu ZBT T5-HxCDD	90g6	100	90g6	, 0 - 163		12C-1TiTBT, T-HxCDD	96gı	u1 - 192
1TiT2T6T, T6-HxCDD	92g6	100	92g6	, 6 - 123		12C-1TiTTTTTT-HxCDD	9ugi	us - 162
1To TT TO-HxCDD	92gı	100	92gı	63 - 16u		12C-1TiT2T, TD-HxCDD	99 <i>g</i>	u1 - 192
1TaTBT6T, T6-HpCDD	92 g	100	928	, 0 - 130		12C-1TiPBTGTT-HpCDD	5s g2	u6 - 166
OCDD	159	u00	938	, 5 - 133		12C-OCDD	63g5	12 - 199
u Z ŢЂ-4CDF	15g9	u0g0	93g6	, s - 1s5		12C-u 2 Ţ T -4CDF	59gı	uu - 1su
1To T2T, T5-PeCDF	93g)	100	93g0	50 - 123		12C-1TiT2T, TS-PeCDF	638	u1 - 19u
u T BŢЂ-PeCDF	92gs	100	92gs	65 - 160		12C-uZBŢЂ-PeCDF	63g)	12 - 2u5
1To TBT, TS-HxCDF	9ug6	100	9u g 6	, u - 123		12C-1TiPBTT-HxCDF	53gı	19 - u0u
1To TOT, TO-HxCDF	92gs	100	92gs	53 - 120		12C-1TiTTTT T6T, T6-HxCDF	5u ₽	u1 - 1s9
u ॻ ƁЉŢЂ-HxCDF	59g5	100	59g5	, 0 - 1s6		12C-uZBBTTT-HxCDF	55g	uu - 1, 6
1To TET, TST9-HxCDF	91&	100	91&	, 5 - 120		12C-1TiTT, TD-HxCDF	9, 🛭	1, - u0s
1ТаТВТЬТ, ТБ-НрСDF	91 g 6	100	9196	5u - 1uu		12C-1TiTBTGT, TS-HpCDF	, 5gı	u1 - 1s5
1ТаТВТ, ТВТЭ-НрСDF	91g0	100	91g0	, 5 - 125		12C-1TiPBTTP-HpCDF	50g6	u0 - 156
OCDF	15,	u00	9296	62 - 1, 0		12C-OCDF	63&	12 - 199
					CRS	2, Cl-uTTT-4CDD	50g)	21 - 191

LCL-UCL - Lower control limit - Jpper control limit

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Sample ID: DU-2-5	-A						EPA Me	thod 1613E
5	n ill NpiEPr6vPtimhr6 MPED E&u026mml 3:	Sample Data x nipiz Soil Snæ vlPr6iLP 22gm Hr6oliW6 19gl		Qmp h d	boratory Data botane vIP 2600134802 rBniDA B6G0039 Dhy EniRLPWi 298-J1826nuN24	-	PiMPW 028-J18u026m nt DPW 228-J18u026m & x Smy EntRPDxCB	
Analyte Conc.	(pg/g)	DL EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
u7N74718TdCC	a C	0 £ 4u		IS	2Nd &u7N74718Td CC	92g	u: 181263	
27u7N74718r Pd CC	0g6N9		-		2Nd 827u7N471 & Pd CC	42g4	u: n8n212	
27u7NB74718 zdCC	2gı:		-		2Nd 827u7NB74718. zd CC	203	Nur8232	
27u7N674718 zdCC	NgN3				2Nd 827u7N674718. zd CC	9: g4	u1r8r2N0	
27u7N7471798 zd CC	ug N				2Nd 827u7N471798. zd CC	206	Nur8232	
27u7NB7674718 vd CC	223				2Nd 827u7N37674718 vd CC	99g)	uN 8 230	
OdCC	2060				2Nd 8Od CC	4Ngı	24r82: 4	
u7N74718TdCF	0g31		-		2Nd &u7N4718Td CF	94g)	u3r 8 269	
27u7N74718r Pd CF	0g uN		-		2Nd 827u7N4718r Pd CF	42gN	u3r821:	
u7N374718r Pd CF	0g4N4		-		2Nd &u7N37471&r Pd CF	61g3	u2r8241	
27u7NB74718 zdCF	2gıu		-		2Nd 827u7N374718. zd CF	1u⊈	u6r 8 r2: u	
27u7N674718 zdCF	2gNN		-		2Nd 827u7N674718. zd CF	1ugN	u6r82uN	
u7N37674718 zdCF	u g)2		-		2Nd &u7N37674718. zd CF	9ug9	u1r82N6	
27u7N7471798 zd CF	0g41:		-		2Nd 827u7N471798. zd CF	49g	u9r8234	
27u7NB7674718. vd CF	Nug4				2Nd & 7u7N37674718 vd CF	9ugN	u1r823N	
27u7NB7471798. vd CF	ugNu		-		2Nd 827u7NB7471798 vd CF	14 g 6	u6r82NI	
Od CF	204				2Nd 8Od CF	69g4	241812:4	
				dZS	N4d 18u7N4718Td CC	luga	N 18294	
					Toxic Equivalent Quotient (TE	Q) Data		
					T5hx iEb . Ou00: CioziE	3g)2		
TOTALS								
ToDanTd CC	Ng09	Ngu6						
ToDhir Pd CC	3 <i>9</i> 2	: g 41						
ToDan zd CC	u9 g)							
ToDan vd CC	21u							
ToDninTd CF	a C	1g62						
ToDhrr Pd CF	1g 6	9 g 64						
ToDnin zd CF	u6gN							
ToDan vd CF	46g							

CQr8rSne vIPrt%Pt ift rP%De mDPWMPDt DoErlie iD $5\,\mathrm{x}$ r d
 n816 % De mIDPWie mzie Je nvo % ipl P
nt oEt PED miDoE

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QL QSUIJ QSQ;owPjrt oEBjolrtie iBSH vvPjrt oEBjolrtie iB TAPjP%HDsnjPiPvojDVMEMYRovPj, ABjiTAPtsse vIPtSiIPn'sjPvojDVMEmvPlavPj, ABjimminimminimminimminim x iESTAPiTSh n'strikt JinDVM;SkE, rlPjorfojrDPtr oEi PEDjorDoErofit oE, PEDj%DPnBajpPe5oEMPDr DVAjmm

Sample ID: DU-2-5-	L								
Client Data a nor P d. ux n ill r jocPtD b ooVpiEPrSvPtinInfs MPED CnIDPrd ollPt IDPW uN8-J E8u026m19 NO		Sample Data x nipiz Soil Snæ vlPt6iLP 22g\n Ht6oliW6 92g\s			Laboratory Data QupuSine vIP 260013480u h d iBniDA B6G0039 CniDny EniRIPWi u08-J1826i00 0:		CmlDnZPtPiMPW 028-J18u026mml : 4 CmlDn5 zDmtDPW 228-J18u026m2N31 D: md ol Je Ens B8 x Smy EmlR®DnCB		
Analyte Conc. (pg/g)	DL	Ph MC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
u7N74718TdCC	a C		0 g 1u		IS	2Nd &u7N4718Td CC	94g	u: 181263	
27u7N74718r Pd CC	0g 31			-		2Nd 827u7N7471 & Pd CC	46g3	u: 181212	
27u7N374718 zdCC	0g64N			-		2Nd 827u7N7374718. zd CC	22N	Nur8232	
27u7N7674718 zdCC	2gl 4			-		2Nd 827u7N674718. zd CC	206	u1r82N0	
27u7N7471798 zdCC	2gNu			-		2Nd 827u7N7471798. zd CC	226	Nur8232	
27u7N37674718. vd CC	::gN					2Nd 827u7N737674718 vd CC	220	uN 8 230	
Od CC	: 4N					2Nd 8Od CC	10g3	24r82: 4	
u7N74718Td CF	a C	0g0990				2Nd &u7N4718Td CF	20:	u3r 8 1269	
27u7N74718r Pd CF	0 g 3u			-		2Nd 827u7N7471 & Pd CF	4422	u3r8121:	
u7N7374718r Pd CF	0.230			-		2Nd &u7N3 7471 & Pd CF	43g	u2r8r241	
27u7N374718 zdCF	0 gN 2			-		2Nd 827u7N374718. zd CF	9NB	u6r 8 r2∶ u	
27u7N674718 zdCF	0g16u			-		2Nd 827u7N674718. zd CF	9Ng	u6r812uN	
u7N37674718 zd CF	0gN 3			-		2Nd &u7N37674718. zd CF	20N	u11812N6	
27u7N7471798 zd CF	0gı61			-		2Nd 827u7N471798. zd CF	9396	u9r8r234	
27u7N37674718. vd CF	426					2Nd 827u7N37674718 vd CF	20u	u118123N	
27u7N37471798. vd CF	0gN4			-		2Nd 827u7N37471798 vd CF	93g6	u6r812NI	
OdCF	u3gı					2Nd 8Od CF	44gl	241812:4	
					dZS	N4d 18u7N7471 8Td CC	9ugN	N 181294	
						Toxic Pquivalent Quotient (TF	Q) Data		
						T5hx iEb . Ou00: CioziE	292		
TOTALS									
ToDhiriTd CC	2g49		ug64						
Го Dhir Pd СС	Ng 9		: g02						
ΓοDahn zd CC	26g)								
ГоDnin vd СС	9ug6								
ToDanTd CF	289		2g4:						
ToDhr Pd CF	ug\2		ug 6						
ToDahn zd CF ToDahn vd CF	4g40 u0g6								

CQr8rSne vIPr6/vPt ift rP%De mDPWrMPDrt DoErlie iD

5 x rd n8n6 % De mDPWe mzie Je nvo% iplPnt oEt PEDmDoE

QCI (SUI CROCOMP)rt of Dolrtie i BRH vvPjrt of Dolrtie i B TAÞij P%HDnijPrj Pvoj DPWHEM/RowPi, AlgiTAPrine vIPPiLPri%j Pvoj DPWHEM/Pi, Algimminimminimminimminim x i EST AÞiT 5 h ri%t nit J InDPWH %E, rl.Pjorfoj nJPPrt of Et PEDjordo Erofit of E, PEDJ%D Pullahj Pte of DNPDPt DPWgmm

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Sample ID: DU-2-5	-С							EPA Me	thod 1613I
Client Data a not P d. ux r jocht D b ool CmDmd ollPt DPW uN&J	VpiEPrSvPt inlunf MPED	Sample x nipiz Sne vl H1Sol:	Soil Pr&iLP 20gln,		Qmp h d	oratory Data nSne vIP 260013480N nBniDA B6G0039 Dry EniRLPWi u08-J1826n00 : 3	CmDn5 zDnt	MPW 028-J18u026n DPW 228-J18u026n x Smy EnlP&DrCB	
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
u7N74718TdCC	a C		0gı21		IS	2Nd &u7N4718Td CC	9ugi	u: 181263	
27u7N74718r Pd CC	2g 1			-		2Nd 827u7N74718rPdCC	69 g 9	u: n8n212	
27u7N374718 zdCC	Ngu 1					2Nd 827u7N7374718. zd CC	91 g 4	Nur 81 232	
27u7N674718 zdCC	20gı					2Nd 827u7N7674718 zd CC	96gı	u11812N0	
27u7N471798 zdCC	6gl 2					2Nd 827u7N7471798. zd CC	206	Nur 81 232	
27u7N37674718 vd CC	N19					2Nd 827u7N37674718 vd CC	94 g 4	uN 8 230	
OdCC	N6: 0					2Nd 8Od CC	46gı	241812:4	
u7N74718TdCF	a C		02234			2Nd &u7N4718Td CF	202	u3r8r269	
27u7N74718r Pd CF	a C		0guuu			2Nd 827u7N74718r Pd CF	428	u3n8n21:	
u7N7374718r Pd CF	a C		0g2:			2Nd &u7N37471& Pd CF	69g4	u2n8n241	
27u7N374718 zdCF	2663			-		2Nd 827u7N374718. zd CF	14g4	u6n8n2: u	
27u7N674718 zdCF	2g64			-		2Nd 827u7N674718. zd CF	13gı	u6r8r2uN	
u7N37674718 zdCF	ugN			-		2Nd &u7N37674718. zd CF	92gN	u11812N6	
27u7N7471798 zd CF	a C	0guu2				2Nd 827u7N471798. zd CF	949	u9r8r234	
27u7N3/7674718. vd CF	66g6					2Nd 827u7N37674718 vd CF	90g)	u118123N	
27u7N37471798. vd CF	3£00					2Nd 827u7N37471798 vd CF	12g4	u6r8r2NI	
Od CF	N04					2Nd 8Od CF	4ugı	24182:4	
					dZS	N4d 18u7N7471 8Td CC	13gN	N 18294	
						Toxic Equivalent Quotient (TE	Q) Data		
						T5hx iEb . Ou00: CioziE	9 9 4		
TOTALS									
ToDninTd CC	2g:		2glu						
ToDhr Pd CC	4g4N		20g0						
ToDnin zd CC	42gl								
ToDan vd CC	662								
ToDninTd CF	2g63		ugıN						
To Ddir Pd CF	9 g 6		20g3						
ToDnn zdCF	: ugı								
ToDan vd CF	uNı								

CQr8rSne vIPr64Pt ift rP%De mDPWMPDt DoErlie iD

5 x rd n8n6 % De mDPWe mzie Je nvo% iplPnt oEt PEDmDoE

QCI (SUI CROCOMP)rt of Dolrtie i BRH vvPjrt of Dolrtie i B TAÞij P%HDnijPrj Pvoj DPWHEM/RowPi, AlgiTAPrine vIPPiLPri%j Pvoj DPWHEM/Pi, Algimminimminimminimminim x i EST AÞiT 5 h ri%t nit J InDPWH %E, rl.Pjorfoj nJPPrt of Et PEDjordo Erofit of E, PEDJ%D Pullahj Pte of DNPDPt DPWgmm

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Sample ID: BGA-1								EIAME	thod 1613F
Client Data a ne P d. ux r jocht D b oov CmiDrid ollPt IDW uN-8-1	VpiEPrSvPt inlun MPED	Sample x miliz Sne vl HrSoli	Soil PrSiLP 23g6n		Qmp h d	coratory Data unsure vIP 2600134803 uBmiDA B6G0039 Dby EmiRLPWi u08-J1826n2NN	-	MPW 028-J18u026n IDW 228-J18u026n x Smy EnlP&DiCB	
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
u7N4718TdCC	a C	0242			IS	2Nd &u7N4718Td CC	90gı	u: 181263	
27u7N74718r Pd CC	a C		0 <u>@</u> 46			2Nd 827u7N7471 8r Pd CC	42g4	u: 181212	
27u7N374718 zdCC	0800			-		2Nd 827u7N7374718 zd CC	162	Nur8r232	
27u7N674718 zdCC	0g14			-		2Nd 827u7N674718 zd CC	1 Ng0	u1r8r2N0	
27u7N471798 zd CC	0g94			-		2Nd 827u7N471798. zd CC	92g)	Nur8r232	
27u7N3/7674718. vd CC	22g4					2Nd 827u7N37674718 vd CC	42g	uN 8 230	
OdCC	2N4					2Nd 8Od CC	: 2gı	241812: 4	
u7N74718TdCF	0giuN			-		2Nd &u7N4718Td CF	14gı	u3r8r269	
27u7N74718rPdCF	0 gNV 6			-		2Nd 827u7N4718r Pd CF	64g	u3r8r21:	
u7N7374718r Pd CF	a C		0gN22			2Nd 8u7N374718r Pd CF	6: g4	u2r8r241	
27u7N374718 zdCF	0g\92			-		2Nd 827u7N374718. zd CF	1N ₂ 3	u6r8r2: u	
27u7N674718 zdCF	0g\4N			-		2Nd 827u7N674718. zd CF	10g0	u6r8r2uN	
u7N37674718 zd CF	0g\92			-		2Nd &u7N37674718. zd CF	luga	u1r8r2N6	
27u7N7471798 zd CF	0g24			-		2Nd 827u7N471798. zd CF	9Ngu	u9r8r234	
27u7NB7674718. vd CF	2 <u>9</u> 2			-		2Nd 827u7N37674718 vd CF	4Ng0	u1r8r23N	
27u7N37471798. vd CF	0g\93			-		2Nd 827u7N37471798 vd CF	4Nøj	u6r8r2NI	
Od CF	Ngu			-		2Nd 8Od CF	: 2gN	241812: 4	
	-				dZS	N4d 18u7N7471 8Td CC	12g6	N 181294	
						Toxic Equivalent Quotient (TE	Q) Data		
						T5h x iEb . Ou00: CioziE	0g 0u		
TOTALS									
ToDhinTd CC	3gl2								
ToDdir Pd CC	2gı6		ug u						
ГоDmln zdСС	20g4								
ToDnin vd CC	2N4								
ToDhriTd CF	2: g4		26&						
Го Dhr Pd СF	ugı9		ug60						
ToDnin zd CF	ugs:								
ToDan vd CF	Ng06								

CQr8rSne vIPr6/vPt ift rP%De mDPWrMPDrt DoErlie iD

5 x rd n8n6 % De mDPWe mzie Je nvo% iplPnt oEt PEDmDoE

QCI (SUI CROCOMP)rt of Dolrtie i BRH vvPjrt of Dolrtie i B TAÞij P%HDnijPrj Pvoj DPWHEM/RowPi, AlgiTAPrine vIPPiLPri%j Pvoj DPWHEM/Pi, Algimminimminimminimminim x i EST AÞiT 5 h ri%t nit J InDPWH %E, rl.Pjorfoj nJPPrt of Et PEDjordo Erofit of E, PEDJ%D Pullahj Pte of DNPDPt DPWgmm

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Sample ID: BGA-2							EPA Me	thod 1613E
5	rnill NyjiEP4SvPtinMr5MPED E8u026m2600	Sample Data x nipiz Soil Snæ vlPr6iIP 22gun Hr6oliW6 9ug		Qnp h d	boratory Data orSine vIP 260013480: rBnfDA B6G0039 u08-J1826r23 u.	Cm iD nZPtPiM Cm iD n5zDmiI 3mdolJeEnsB&x	D W 228-J18u026n	
Analyte Conc.	(pg/g)	DL EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
u7N4718TdCC	a C	0 g)44:		IS	2Nd 8u7N4718Td CC	9ugi	u: 181263	
27u7N74718r Pd CC	a C	0 <i>g</i> .02			2Nd 827u7N4718r Pd CC	43gl	u: n8n212	
27u7N374718 zdCC	a C	0 @ 39			2Nd & 7u7NB 74718 zd CC	9ug0	Nur 812 32	
27u7N674718 zdCC	a C	0 g : 1			2Nd & 7u7N674718 zd CC	1999	u1r8r2N0	
27u7N471798 zd CC	a C	0 <i>g</i> .46			2Nd 827u7N471798. zd CC	9: g 6	Nur8232	
27u7N37674718. vd CC	0 9 u2		-		2Nd 827u7N37674718 vd CC	46g	uN 8 230	
OdCC	694				2Nd 8Od CC	: 2g	24r8i2: 4	
u7N74718TdCF	a C	0 g 09u:			2Nd 8u7N4718Td CF	90gl	u3r 8 r269	
27u7N74718r Pd CF	0gı24		-		2Nd 827u7N471 & Pd CF	4Ng	u3r8r21:	
u7N37471&r Pd CF	a C	0g0903			2Nd 8u7N374718r Pd CF	42g4	u2r8r241	
27u7N374718 zdCF	0 2 0u		-		2Nd 827u7N374718. zd CF	14gl	u6r 8 r2∶ u	
27u7N674718 zdCF	a C	0g0601			2Nd 827u7N674718. zd CF	1: 2	u6r 8i 2uN	
u7N37674718 zd CF	a C	0g0400			2Nd 8u7N37674718. zd CF	11gl	u11812N6	
27u7N471798 zd CF	0g 4u		-		2Nd 827u7N471798. zd CF	91gN	u9r8r234	
27u7N37674718. vd CF	0g192		-		2Nd 827u7N37674718 vd CF	41g0	u1r823N	
27u7N37471798. vd CF	a C	0g0: 10			2Nd 827u7N37471798 vd CF	41 <i>g</i> 3	u6r8r2Nl	
Od CF	0gN0		-		2Nd 8Od CF	: ug6	24r82: 4	
				dZS	N4d 1&u7N7471 8Td CC	16gı	N 181294	
					Toxic Equivalent Quotient (TE	EQ) Data		
					T5hx iEb . Ou00: CioziE	0g0113		
TOTALS								
ToDhnTd CC	N29							
ToDdir Pd CC	0 g 69:	0휙 00						
ToDan zd CC	2g04							
ToDan vd CC	329							
ToDninTd CF	: g 66	: 9 0						
To Dılır Pd CF	0월 99							
ToDan zdCF	0gl 29							
ToDan vd CF	0 g 21							

CQr8rSne vIPr6/vPt ift rP%De mDPWrMPDrt DoErlie iD

 $5\,\mathrm{x}$ r d
 n816 % De mIDPWie mzie Je nvo % ipl P
nt oEt PED miDoE

QL QSUIJ QSQ;owPjrt oEBjolrtie iBSH vvPjrt oEBjolrtie iB TAPjP%HDsnjPiPvojDVMEMYRovPj, ABjiTAPtsse vIPtSiIPn'sjPvojDVMEmvPlavPj, ABjimminimminimminimminim x iESTAPiTSh n'strikt JinDVM;SkE, rlPjorfojrDPtr oEi PEDjorDoErofit oE, PEDj%DPnBajpPe5oEMPDr DVAjmm

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Sample ID: BGA-1								EPA Me	thod 6361E
3	n ill NyiEPr&vPtimbr6 NPED E&u026m26 3:	Sample I x nijiz Sne vIP H160liV	Soil MSiLP 20gn		Qmp h d	boratory Data onSine vIP 2600134806 rBniDA B6G0039 u08-J1826n2: 2:	CmiDnZPtPiMP\ CmiDn5zDmiDN umdolJeEnsB&x	W 228-J18u026n	
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
u7N4718TdCC	a C	0 g 0419			IS	2Nd 8u7N74718Td CC	92g6	u: 181263	
27u7N74718rPdCC	0 <u>@</u> 26			-		2Nd 827u7N4718r Pd CC	43g4	u: 181212	
27u7N374718 zdCC	0gı02			-		2Nd 827u7N374718. zd CC	19gN	Nur81232	
27u7N674718 zdCC	0gı36			-		2Nd 827u7N674718. zd CC	1: g4	u11812N0	
27u7N471798 zd CC	0gı4u			-		2Nd 827u7N471798. zd CC	90 g 9	Nur8232	
27u7N737674718. vd CC	: g X 2					2Nd 827u7N37674718 vd CC	69 <i>9</i> 9	uN8230	
OdCC	3N/6					2Nd 8Od CC	3496	24182:4	
u7N74718TdCF	0g09: N			-		2Nd 8u7N4718Td CF	19gı	u3r8269	
27u7N74718r Pd CF	0@24			-		2Nd 827u7N7471 & Pd CF	429	u3r8t21:	
u7N7374718r Pd CF	a C	0g0163				2Nd 8u7N7374718r Pd CF	40g	u2r8r241	
27u7N374718. zd CF	0g01NN			-		2Nd 827u7N374718 zd CF	1N ₂ 6	u6r 8 r2: u	
27u7N7674718. zdCF	0 g u:			-		2Nd 827u7N674718. zd CF	128	u6r82uN	
u7N37674718 zd CF	0 £ u6			-		2Nd 8u7N37674718. zd CF	16g0	u11812N6	
27u7N7471798 zd CF	0gıN0			-		2Nd 827u7N7471798. zd CF	92g	u9r8234	
27u7N37674718. vd CF	0 9 9:			-		2Nd 827u7N37674718 vd CF	4: g3	u11823N	
27u7N37471798. vd CF	0 g : u			-		2Nd 827u7N37471798 vd CF	69g	u6r8t2NI	
Od CF	2gl4			-		2Nd 8Od CF	31gl	241812:4	
					dZS	N4d 1&u7N7471 8Td CC	10gl	N 181294	
						Toxic Equivalent Quotient (TF	EQ) Data		
						T5h x iEb . Ou00: CioziE	0 gN%		
TOTALS									
ToDhinTd CC	2g 4								
ToDhir Pd CC	2g u		2gl 2						
ToDan zd CC	3g4N								
ToDahn vd CC	2ug4								
ToDahnTd CF	2 9 N								
ToDnir Pd CF	0gluN								
ToDan zdCF	0 9 6:		2g1						
ToDnn vd CF	ug0N								

CQr8rSne vIPr6/vPt ift rP%De mDPWrMPDrt DoErlie iD

 $5\,\mathrm{x}$ r d
 n% 16 % De miDPWie mzie Je nvo
% ipl Pri o
Et PEDmiDoE

QL QSUIJ QSQ;owPjrt oEBjolrtie iBSH vvPjrt oEBjolrtie iB TAPjP%HDsnjPiPvojDVMEMYRovPj, ABjiTAPtsse vIPtSiIPn'sjPvojDVMEmvPlavPj, ABjimminimminimminimminim x iESTAPiTSh n'strikt JinDVM;SkE, rlPjorfojrDPtr oEi PEDjorDoErofit oE, PEDj%DPnBajpPe5oEMPDr DVAjmm

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Sample ID: Mat	trix Spike											EPA	Me	thod 1613
Source Client ID: Source LabNumber: Matrix: Sample Size:	BGA-3 1600847-06 Solid 10.6/10.7 g				QC Batch: Date Extract		6G0049 1-Jul-20	16 13:48		Lab Sample: B6G0049-MS1/B6C Date Analyzed: 20-Jul-16 11:58 Co 20-Jul-16 12:46 Co	lumn: ZB-5N	IS Analyst: DB		
Analyte		Spike-MS (pg/g)	MS %R	MS Qualifiers	Spike-MSD (pg/g)	MSD %R	RPD	MSD Qualifiers		Labeled Standard	MS %R	14113	ISD %R	MSD Qualifiers
2,3,7,8-TCDD		20.8	84.4		20.7	83.4	1.19		IS	13C-2,3,7,8-TCDD	85.3	9	06.5	
1,2,3,7,8-PeCDD		104	83.8		103	84.5	0.832			13C-1,2,3,7,8-PeCDD	72.2	7	8.2	
1,2,3,4,7,8-HxCDD		104	85.7		103	85.0	0.820			13C-1,2,3,4,7,8-HxCDD	88.8	ç	06.9	
1,2,3,6,7,8-HxCDD		104	85.3		103	83.8	1.77			13C-1,2,3,6,7,8-HxCDD	84.2	ç	3.9	
1,2,3,7,8,9-HxCDD		104	85.3		103	85.6	0.351			13C-1,2,3,7,8,9-HxCDD	87.8		101	
1,2,3,4,6,7,8-HpCDD		104	87.5		103	88.5	1.14			13C-1,2,3,4,6,7,8-HpCDD	71.1	7	4.2	
OCDD		208	84.9		207	84.9	0			13C-OCDD	51.5	5	8.5	
2,3,7,8-TCDF		20.8	83.5		20.7	81.7	2.18			13C-2,3,7,8-TCDF	83.4	ç	06.3	
1,2,3,7,8-PeCDF		104	84.2		103	83.5	0.835			13C-1,2,3,7,8-PeCDF	71.8	7	7.1	
2,3,4,7,8-PeCDF		104	85.5		103	85.4	0.117			13C-2,3,4,7,8-PeCDF	71.4	7	4.3	
1,2,3,4,7,8-HxCDF		104	85.6		103	86.6	1.16			13C-1,2,3,4,7,8-HxCDF	82.6	ç	1.3	
1,2,3,6,7,8-HxCDF		104	85.3		103	86.0	0.817			13C-1,2,3,6,7,8-HxCDF	79.9	8	88.5	
2,3,4,6,7,8-HxCDF		104	84.8		103	85.0	0.236			13C-2,3,4,6,7,8-HxCDF	84.9	g	2.3	
1,2,3,7,8,9-HxCDF		104	86.2		103	85.2	1.17			13C-1,2,3,7,8,9-HxCDF	88.7		103	
1,2,3,4,6,7,8-HpCDF		104	83.6		103	82.2	1.69			13C-1,2,3,4,6,7,8-HpCDF	74.7	8	33.0	
1,2,3,4,7,8,9-HpCDF		104	84.7		103	84.1	0.711			13C-1,2,3,4,7,8,9-HpCDF	68.4		77.8	
OCDF		208	85.2		207	84.4	0.943			13C-OCDF	52.4	5	8.9	
									CRS	S 37Cl-2,3,7,8-TCDD	78.7	8	6.4	

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DATA QUALIFIERS & ABBREVIATIONS

B This compound was also detected in the method blank.

D Dilution

E The associated compound concentration exceeded the calibration range of

the instrument.

H Recovery and/or RPD was outside laboratory acceptance limits.

I Chemical Interference

J The amount detected is below the Reporting Limit/LOQ.

* See Cover Letter

Conc. Concentration

NA Not applicable

ND Not Detected

TEQ Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

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CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request

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NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated	EPA 23
Dibenzofurans	

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B
Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue	EPA 1668A/C
by GC/HRMS	
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by	EPA 1699
HRGC/HRMS	
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by	EPA 8280A/B
GC/HRMS	
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated	EPA
Dibenzofurans (PCDFs) by GC/HRMS	8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water					
Description of Test	Method				
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B				
Dilution GC/HRMS					
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A				
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue	EPA 1668A/C				
by GC/HRMS					
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699				
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537				
Dioxin by GC/HRMS	EPA 613				
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated	EPA 8280A/B				
Dibenzofurans by GC/HRMS					
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated	EPA				
Dibenzofurans (PCDFs) by GC/HRMS	8290/8290A				

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

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Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue	EPA 1668A/C
by GC/HRMS	
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated	EPA 8280A/B
Dibenzofurans by GC/HRMS	
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated	EPA
Dibenzofurans (PCDFs) by GC/HRMS	8290/8290A

Work Order 1600847 Page 18 of 573

Lancaster Laboratories Environmental		1372 F	_ Gro	up#_	16	ster Labor 7 587 Matrix	7 _{Sa}	mple #	_8	144	40	S/ -	// (2°C) (and the same of th		Use O	013	and age
Client Information	Acct. #:		400		7	VIALLIA		-		e de la composition della comp		serv				TESSER NO.			SC:			
nt: CH2MHILL JOUN WOODBINE JOUN WOODBINE MAIL SHERRILL	PWSID #: P.O. #: Quote #:				-15	Ground Ground Surface		iners			- Warmon		Metali	3/6	0	0) (0	-	Crens	H=H N=H S=H	CI NO ₃ ₂ SO ₄	T=Thios B=NaO O=Othe	des sulfate H er
The sample sample were collected: Sample Identification	No 🗆	lected	Grab	Sod	Soil Sediment	Water NPDES	Other:	Total # of Containers	VOC	SVOC	Hex Close	polet)	Nerche	Verchoral	DXD UXB		OH 106	Dioxins	Direction	oxin Vic	ns to kege sta l	obe AB
DU-2-5-A DU-2-5-B DU-2-5-C DU-2-2-A DU-2-2-B DU-2-2-C	(o-23)	The state of the s		XXXXXX				000000000000000000000000000000000000000	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXXX	XXXXXXX	XXXXX	XXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXX	М	SIV	MSD	
BGA-Z BGA-3 * Samples not rec'd in on	01/16 3	1600 1645 hipmen	\$ C	人人	30	7/01/14		18	X	X	X	Time	X	7 Receiv	X X yed by	X X	X	XX	M	9	USD Date	Time
Turnaround Time (TAT) Request Standard (Rush TAT is subject to laboratory approval and surce	ed (please c Rush	ircle)	Reline	quished	by	oshi	١			Date	316	Time	20)		ved by						Date Date	Time
Date results are needed:		_		quished		1				Date		Time			ved by		1	1			Date	Time
E-mail address: Data Package Options (circl Type I (EPA Level 3 Type Equivalent/non-CLP)	e if required) VI (Raw Da	ata Only)	Relin	nquished	i by	EDD F	Requi	red?	Yes	Date	,	Time		Rel		10	by C	A L	ercial	Carrie	Date 6/24/ r:	Time
Type III (Neddded non GE. 7	, itali	X TRRP-13	-	ne	ite-S	s, format:	C (M	S/MSI	D/Dup)? <	ample v	No rolume.	.)				ratu	re up		Other eipt_	17	_°C

SAMPLE LOG-IN CHECKLIST



Vista Project #:	16008	347		TAT								
Samples Arrival:	Date/Time	0857	Initials:	R	Location Shelf/Ra		2-2 N/A					
Logged In:	Date/Time 67/01/16	1202	Initials:	3	Location Shelf/Ra							
Delivered By:	FedEx	UPS	On Trac	DHL	H	and vered	P	her				
Preservation:	(Ice	E	Blue Ice	Dr	y Ice		None					
Temp °C: 2.0 Temp °C: 1.2	(uncorrected)	Time:	090	8	Thermor	neter II	D: DT	-2				
						YES	NO	NA				
Adequate Sample	Volume Receive	d?				V						
Holding Time Acce	ptable?					V						
Shipping Container	(s) Intact?					/						
Shipping Custody S	Seals Intact?							/				
Shipping Documen	tation Present?					/						
Airbill 2 of 2	Trk# 50	35 40	242 161	0		V						
Sample Container	ntact?					V						
Sample Custody Se	eals Intact?		,									
Chain of Custody /	Sample Docum	entation P	resent?			V	1					
COC Anomaly/Sam	ple Acceptance	Form cor	mpleted?			/	200	oHoil				
If Chlorinated or Dr	inking Water Sa	mples, Ac	ceptable Pre	servatior	1?			1				
Na ₂ S ₂ O ₃ Preservati	on Documented	1?	coc	(Sample Container		None					
Shipping Container		Vista	Client	Retai	n Re	eturn	Disp	ose				
Comments: Sam	oles recid	in clea	7 glass	jars.	BUB 0:	101/16	5					

Chain of Custody Anomaly/Sample Acceptance Form



Client: Contact: Email: Phone:	CH2M Hill Mark Sherrill (678) 938-0923		Workorder Number: Date Received: Documented by/date:	1600847 01-Jul-16 08:57 B.Benedict 07/01/2016
Please rev authorizat	view the following information and c tion before proceeding with sample a	complete the Client Authorizationalysis.	on section. To comply	with NELAC regulations, we must receive
Thank yo	u,			
Martha M mmaier@ 916-673-	vista-analytical.com			
The follow	ing information or item is needed	to proceed with analysis:		
	Complete Chain-of-Custody	Preservative		Collector's Name
	Test Method Requested	Sample Identification		Sample Type
	Analyte List Requested	Sample Collection Dat	e and/or Time	Sample Location
	Other:			
The follo	wing anomalies were noted. Auth	orization is needed to procee	ed with analysis.	
<i>,</i>	Temperature outside < 6°C Range	Samples Affec	ted:	
	Temperature°C	Ice Present? Yes		
	Sample ID Discrepancy Sample Holding Time Missed Custody Seals Broken	Insu Sam	officient Sample Size uple Container(s) Broken	nmples received in clear glass jars
Commen	ts:			
Client A	uthorization			
Proceed	with Analysis: YES NO	Signature and Date _	Min	
Client Co	omments/Instructions	Signature and Date_		- <u>-</u>

Work Order 1600847 Page 21 of 573

EXTRACTION INFORMATION

Work Order 1600847 Page 22 of 573

Process Sheet

Workorder: 1600847

Prep Expiration: 06/23/2017

Client: CH2M Hill

Workorder Due: 22-Jul-16 00:00

TAT: 21

Method: 1613 Full List

Matrix: Solid Client Matrix: Soil

Also run: Percent Solids

Prep Batch: 36G0049

Prep Data Entered:

Initial Sequence: ____ \$66,003|

LabSampleID	Recon ClientSampleID	Date Received	Location	Comments
1600847-01 **A *	☑ DU-2-5-A	01-Jul-16 08:57	WR-2 F-5	
1600847-02 "A "	⊠ DU-2-5-B	01-Jul-16 08:57	WR-2 F-5	
1600847-03 "A"	☑ DU-2-5-C	01-Jul-16 08:57	WR-2 F-5	
1600847-04 "A "	₩ BGA-1	01-Jul-16 08:57	WR-2 F-5	
1600847-05 'A '	⊠ BGA-2	01-Jul-16 08:57	WR-2 F-5	
1600847-06 'A'	■ BGA-3 ◆	01-Jul-16 08:57	WR-2 F-5	MS/MSD

Asample N/A 8R Hilli

Vista PM:Martha Maier

Vial Box ID: SOCC

Sample Reconciled By:_ Page 1 of 1

S. Roughton 7,7,2016

Work Order 1600847 Page 23 of 573 Batch: B6G0049

10

10.61

10.66

B6G0049-BS1

B6G0049-MS1

B6G0049-MSD1

WetWeight % Solids LabNumber (Extraction Solids) DryWeight (Initial) Final Extracted SpikeAmount ClientMatrix Analysis Ext By Spike 1600847-01 11.22 89.79592 10.0751 11-Jul-16 13:48 1613 Full List 20 SPR 1600847-02 11.3 91.42857 10.3314 20 11-Jul-16 13:48 SPR Soil 1613 Full List 1600847-03 10.84 93.23529 10.1067 20 11-Jul-16 13:48 SPR 1613 Full List Soil 1600847-04 14.62 69.45338 10.1541 20 11-Jul-16 13:48 1613 Full List SPR Soil 1600847-05 11.2 92.10526 10.3158 20 11-Jul-16 13:48 SPR Soil 1613 Full List 1600847-06 10.89 90.69767 9.8770 20 11-Jul-16 13:48 SPR Soil 1613 Full List 1600867-01 10.2 97.34848 Solid 1613 Full List 9.9295 20 11-Jul-16 13:48 SPR 10.21 91.26984 1600867-02 9.3187 20 11-Jul-16 13:48 SPR Solid 1613 Full List B6G0049-BLK1 10 20 QC 11-Jul-16 13:48 SPR

11-Jul-16 13:48

11-Jul-16 13:48

11-Jul-16 13:48

SPR

SPR

SPR

15J1327

10

20

20

20

Printed: 7/14/2016 4:19:30PM Work Order 1600847 Matrix: Solid

QC

QC

QC

Solids estimate

Batch: B6G0043

Lab ID	Analysis	% Solids	Entered_	Target weight	Weigh this much	
1600867-01	Percent Solids	97.35		10.00	10.27	
1600867-02	Percent Solids	91.27		10.00	10.96	

Work Order 1600847 Page 25 of 573

Batch: B6G0025

Lab ID	Analysis	% Solids	Entered	Target weight	Weigh this much	
1600835-07	Percent Solids	86.70		10.00	11.53	
1600835-08	Percent Solids	84.77		10.00	11.80	
1600835-09	Percent Solids	88.48		10.00	11.30	
1600847-01	Percent Solids	89.80		10.00	11.14	
1600847-02	Percent Solids	91.43		10.00	10.94	
1600847-03	Percent Solids	93.24		10.00	10.73	
1600847-04	Percent Solids	69.45		10.00	14.40	
1600847-05	Percent Solids	92.11		10.00	10.86	
1600847-06	Percent Solids	90.70		10.00	11.03	
1600848-01	Percent Solids	97.24		10.00	10.28	
1600848-02	Percent Solids	98.15		10.00	10.19	
1600848-03	Percent Solids	100.00		10.00	10.00	
1600848-04	Percent Solids	98.56		10.00	10.15	

Work Order 1600847 Page 26 of 573

D2216-90

BATCH ID

B6G0043

Analyst: S. Roughton

Test Code: %Moist/%Solids

Analyte:

Units: %

Dried at 110°C+/-5°C

HRMS-8

 Date/Time IN:
 Date/Time OUT

 7/11/16 14:10
 7/13/16 16:10

والمتعارض والمتعارض	., В	C	D	E. 25	Bar F ar Ar	G	Ж. Н	K	M	N	0	Р	
				Intial and Date:		INJ 7/13/16							SR 7/11/16
Particle Size	SamplD		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	pH Before	pH After	Acid Added	CI-	Visual Inspection
N/A	1600867-01		Sample	1.2800	3.9200	3.8500	2.5700	97.35	N/A	N/A	N/A	N/A	dry, fine, dirt
N/A	1600867-02		Sample	1.2600	3.7800	3.5600	2.3000	91.27	N/A	N/A	N/A	N/A	dry, clumpy
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BCH_QAAN_TS_B6G0043 Work Order 1600847

7/13/2016 4:14 PM Page 27 of 573

D2216-90

BATCH ID

B6G0043

Analyst: BSS S. Ronghton
Analyte:

Test Code: %Moist/%Solids

Units: %

Dried at 110°C+/-5°C

HRMS-8

against og skrivet fræ	B	C S	D.	E .	Company States Company	G		Sadagoma K	M	;: N			Q	
Particle Size	SamplD		SampType	Intial and Date: Pan	HIVI6 SAR Wet Pan and Sample	TNJ 7/13//6 Dry Pan and Sample	Dry Sample	%Solids	nH	рН	Acid	_ 7	-/[l/[6 Visual	l
	Sample		Samprype	Tare Wt. (gms)	l Weight (a)	Weight (g)	Weight (g)	RawVal	Before	After	Added	1 1	Inspection	İ
N/A N/A	1600867-01		Sample	1.28	3.92	Weight (g) 3, 85 3, 56							dry, fine dry, dump	diat
NA	1600867-02 A		Sample	1.26	3.78	3.56		_SVE 7/11/16					dry, dump	v
			·										., ,	۱'
		A	Sample h	ompaeniza	ed in a mor-	far with	Destle. 84 7	11/16						
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BCH_QAAN_TS_B6G0043 Work Order 1600847

7/8/2016 1:00 PM Page 28 of 573

D2216-90

BATCH ID

B6G0025

Analyst: S.Roughton

Test Code: %Moist/%Solids

Units: %

Dried at 110°C+/-5°C

HRMS-8

Date/Time OUT 7/8/16 13:15

Same Same Same Same Same Same Same Same	B	C	D	E .	F., F.	G ,	the second H		, M	N	O	Р	Q
Postinia Cina	CommID		0.00	Intial and Date:		BSS 7/8/16					1	1	SR 7/7/16
Particle Size	SampID		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal			Acid Added	CI-	Visual Inspection
n/a	1600835-07		Sample	1.2600	3.4400	3.1500	1.8900	86.70	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a	1600835-08		Sample	1.2600	3.8200	3.4300	2.1700	84.77	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a	1600835-09		Sample	1.2600	3.4300	3.1800	1.9200	88.48	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a	1600847-01		Sample	1.2700	3.7200	3.4700	2.2000	89.80	N/A	N/A	N/A	N/A	soil,dark,twigs
n/a	1600847-02		Sample	1.2700	4.4200	4.1500	2.8800	91.43	N/A	N/A	N/A	N/A	soil,dark,twigs
n/a	1600847-03		Sample	1.2800	4.6800	4.4500	3.1700	93.24	N/A	N/A	N/A	N/A	soil,dark,twigs
п/а	1600847-04		Sample	1.2800	4.3900	3.4400	2.1600	69.45	N/A	N/A	N/A	N/A	dark,moist,twig:
n/a	1600847-05		Sample	1.2700	3.5500	3.3700	2.1000	92.11	N/A	N/A	N/A	N/A	sandy,twigs
n/a	1600847-06		Sample	1.2700	3.4200	3.2200	1.9500	90.70	N/A	N/A	N/A	N/A	fine,sandy,twigs
n/a	1600848-01		Sample	1.2800	3.4500	3.3900	2.1100	97.24	N/A	N/A	N/A	N/A	fine,brown
n/a	1600848-02		Sample	1.2800	3.4400	3.4000	2.1200	98.15	N/A	N/A	N/A	N/A	sandy
n/a	1600848-03		Sample	1.2800	3.3600	3.3600	2.0800	100.00	N/A	N/A	N/A	N/A	sand,twigs,rock
n/a	1600848-04		Sample	1.2700	3.3600	3.3300	2.0600	98.56	N/A	N/A	N/A	N/A	sandy,twigs
												П	
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BCH_QAAN_TS_B6G0025 Work Order 1600847

7/13/2016 4:18 PM Page 29 of 573

D2216-90

BATCH ID

B6G0025

Analyst: S. Ronghton

Test Code: %Moist/%Solids

Analyte:

Dried at 110°C+/-5°C

Units: 9

INST HRMS-8

Date/Time IN: Date/Time OUT
7/7/16 0932 7/8/16 13:15

111			111/12	.,,.,,	•							
	В	С	D	E	F	G	н	К	M	N O		Q
				Intial and Date:	84 7/7/16	BSS 7/8/16				8R 7/7		
Particle Size	SampID		SampType	Pan Tare Wt. (gms)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	%Solids RawVal	pH	pH Acid * After Added		Visual Inspection
N/A	1600835-07	Г	Sample	1.26	3.44	3.15	weight (g)	Nawvai	Belore	Aitel Added	_	
4	1600835-08		Sample	1.26	3.82	3.43					1	Fine, sand fine, sand
- \	1600835-09 A		Sample	1.26	3.43	3.18						Fine Saya
	1600847-01 A		Sample	1.27	3.72	3.47			—		\Box	Soil, de
	1600847-02 A		Sample	1.27	4.42	4.15			116			soil, dar
	1600847-03 (A)		Sample	1.28	4.68	4.45		77				soilidark
	1600847-04		Sample	1.28	4.39	3.44		4				dark, mo
	1600847-05		Sample	1.27	3.55	3,37						Sandy, t
	1600847-06		Sample	1.27	3.42	3,27						fine, san
	1600848-01		Sample	1.28	3.45	3.39						fine bro
	1600848-02		Sample	1.28	3.44	3,40		· ·				sandy
	1600848-03		Sample	1.28	3.36	3,36					Ш	sand twice
J	1600848-04		Sample	1.27	3.36	3,33			_		-	sandy, t
							,				Ш	
											Ш	
			(A) Homa	genized in	a secondary	containe	8R 6 7/7/10	SK				
				Ψ			7/7/16 ' '				Ш	
		_									\sqcup	
											Ш	
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W89H-09449-1808899925

Page 30/3016-8307 AM

PREPARATI	\mathbf{ON}	RENCH	CHEET
INCIANALI		DENCH	SHEEL

Matrix: Solid								
Method:	1613	Full List						

B6G0049

Chemist: S. Royaldon
Prep Date/Time: 11-Jul-16 13:48

Prepared using: HRMS - Soxhlet

							4050	(1.6	5N	64.66	201.0	66.6	266				
VISTA G Sample IS/NS CRS								CUG 0059 CUG 0061			<u>C680060</u>		CPC 20PP		D.C.		
	Sample ID	Eqv	Amt.	CHEM/WIT DATE		CRS CHEM/WIT DATE		AP CHEM/ DATE		ABSG CHEM/ DATE		AA CHEM/ DATE		Florisil CHEM/ DATE		RS CHEM/WIT DATE	
C	Sumple 15	Lqv	(g)														
			(8)														
	B6G0049-BLK1	[10.00]	(10.00)	8K 90	7/11/16	IN O	1/13/16	am	7/13/1h	an	7/14/14	om	HIYIK	030	7115/16	OBF NK	7/5/16
	B6G0049-BS1	J	T	7				_						7	1	Ť	1-1
	B6G0049-MS1 1600847-06	11.03	10.61														
	B6G0049-MSD1 1600847-06	11.03	10.66														
	1600847-01	11.14	11.22														
	1600847-02	10.94][.30														
	1600847-03	10.73	10.84														
	1600847-04	14.40	14.62														
	1600847-05	10.86	11.20														
	1600847-06 1600867-01 OM	11.03	10.89														
		10.28	[0.20														
	1600867-02	10.96	10.21	,				,	V	\	V	1	7	Ð	*	/	V

IS Name	NS Name	CRS Name	RS Name	Cycle Time	APP: SEFUN SOX (SDS)	Check Out: Chemist/Date: SR 711116
PCDD/F 15513	A, 10 APCDD/F 15J1327, 10-4	PCDD/F 1531 325 10	phycody (SJ1326, loul			-
PCB	PCB	PCB	PCB	7/14/16 1610	Other N/A	Check In: Chemist/Date:
PAH	PAH	PAH	PAH	Stop Date/Time	Final Volume(s) 201	Balance ID: HRMS-8
				7/12/16 082	5 <u>C14</u>	

Work Order 1600847

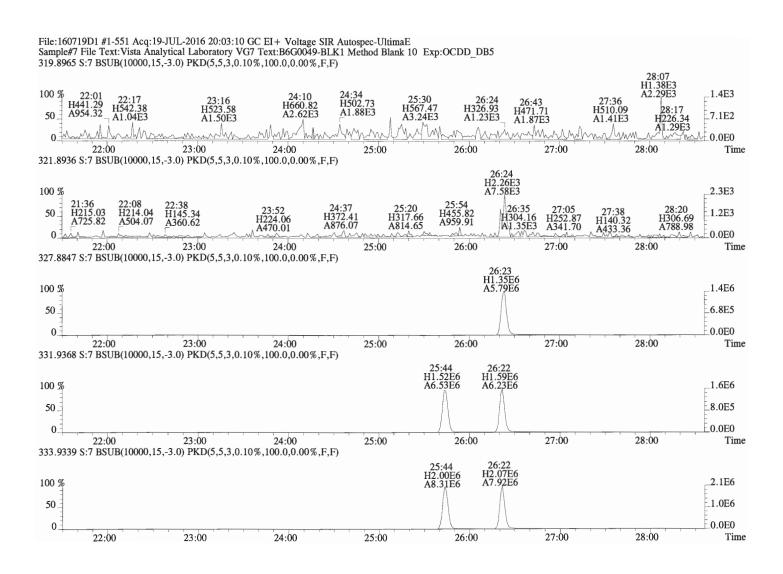
SAMPLE DATA – EPA METHOD 1613

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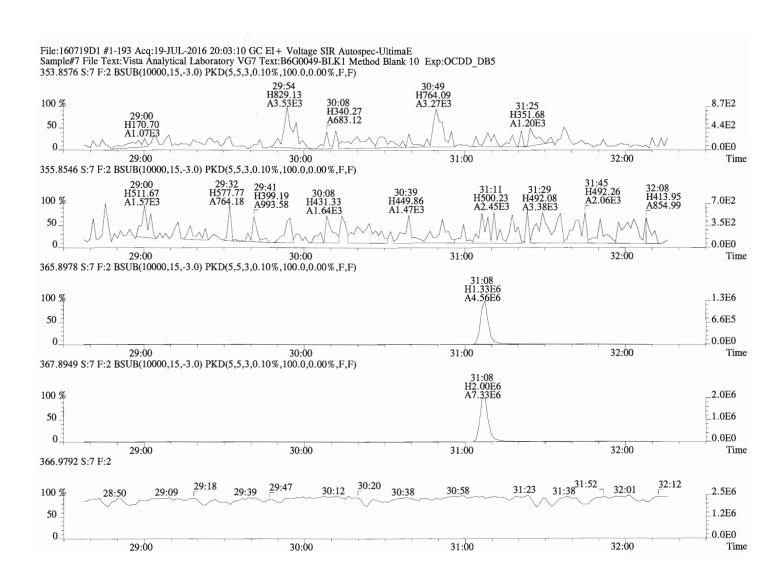
Client ID: Method Blank	Fi	lename: 16	50719D1	S:7	Aca - 19	9-JUL-16 20:0	2.10			Con	Cal: ST160719D1	_1			Page 4 of 4
Lab ID: B6G0049-BLK1		Column II						vol:10	000		CAL: NA	-1			rage 4 OI 4
In December 19 19 19 19 19 19 19 19 19 19 19 19 19		0014111111	J. LL J.	1001	. 1015	37-4-7-10	wc/	VOI.10	.000	Bild	CALL. NA				
Name	Resp	RA.	RRF	RT	RRT	Conc (noise	Fac	DL	Name		Conc	EMPC	Qual	noise DL
2,3,7,8-TCDD	*	* n	1.13	Not Fa	*	*	224	2.5	0.0483	Total	Tetra-Dioxins	*	*		224 0.0483
1,2,3,7,8-PeCDD	*	* n	0.96	NotF ₁	*	*	344	2.5	0.0867	Total	Penta-Dioxins	*	*		344 0.0867
1,2,3,4,7,8-HxCDD	*	* n	1.00	NotFi	*	*	258	2.5	0.102	Total	Hexa-Dioxins	*	*		258 0.107
1,2,3,6,7,8-HxCDD	*	* n	1.10	NotF ₁	*	*	258	2.5	0.106	Total	Hepta-Dioxins	*	*		132 0.0698
1,2,3,7,8,9-HxCDD	*	* n	1.05	NotF	*	*	258	2.5	0.114	Total	Tetra-Furans	*	*		292 0.0514
1,2,3,4,6,7,8-HpCDD	*	* n	1.05	NotF	*	*	132	2.5	0.0698	Total	Penta-Furans	0.0000	0.0000		216 0.0566
OCDD	*	* n	0.96	NotF	*	*	115	2.5	0.0913	Total	Hexa-Furans	*	*		274 0.0535
											Hepta-Furans	*	*		164 0.0492
2,3,7,8-TCDF	*	* n	1.12	Not Fa	*	*	292	2.5	0.0514						
1,2,3,7,8-PeCDF	*	* n	1.01	NotF	*	*	216		0.0577						
2,3,4,7,8-PeCDF	*	* n	0.90	Not Fa	*	*	216		0.0556						
1,2,3,4,7,8-HxCDF	*	* n	1.16	Not Fa	*	*	274		0.0477						
1,2,3,6,7,8-HxCDF	*	* n	1.16	Not Fa	*	*	274		0.0472						
2,3,4,6,7,8-HxCDF	*	* n	1.23	NotFa	*	*	274	2.5	0.0484						
1,2,3,7,8,9-HxCDF	*	* n	1.13	Not Fa	*	*	274		0.0736						
1,2,3,4,6,7,8-HpCDF	*	* n	1.44	NotFa	*	*	164		0.0476						
1,2,3,4,7,8,9-HpCDF	*	* n	1.31	NotFa	*	*	164		0.0508						
OCDF	*	* n	1.03	NotFa	*	*	278	2.5	0.164						
		-					270	2.5	0.101	Rec	Oual				
IS 13C-2,3,7,8-TCDD	1.42e+07	0.79 y	1.01	26:22	1.024	188.74				94.4	2				
IS 13C-1,2,3,7,8-PeCDD		0.62·y	1.10	31:08		145.17				72.6					
IS 13C-1,2,3,4,7,8-HxCDD	9.48e+06	1.29 y	0.72	34:25	1.014	195.09				97.5					
	9.52e+06	1.28 y	0.73	34:31		194.16				97.1					
	9.58e+06	1.24 y	0.70	34:49		202.39				101					
	7.10e+06	1.06 y	0.66	38:20	1.129	158.41				79.2					
	1.08e+07	0.91 y	0.66	41:33		242.72				60.7					
IS 13C-2,3,7,8-TCDF		0.78 y	0.90	25:32		191.20				95.6					
IS 13C-1,2,3,7,8-PeCDF		1.58 y	0.98	29:54		138.36				69.2					
IS 13C-2,3,4,7,8-PeCDF		1.62 y	1.15	30:50		138.17				69.1					
IS 13C-1,2,3,4,7,8-HxCDF		-	1.01	33:33		174.03				87.0					
IS 13C-1,2,3,6,7,8-HxCDF		0.52 y	1.10	33:40		171.29				85.6					
IS 13C-2,3,4,6,7,8-HxCDF		0.51 y	0.95	34:16		183.54				91.8					
IS 13C-1,2,3,7,8,9-HxCDF		0.52 y	0.83	35:12		195.49				97.7					
IS 13C-1,2,3,4,6,7,8-HpCDF		0.45 y	0.70	36:57		158.18				79.1					
IS 13C-1,2,3,4,7,8,9-HpCDF		0.44 y	0.72	38:53		151.04				75.5					
	1.32e+07	0.87 y	0.82	41:46		237.89				59.5					
C/Up 37Cl-2,3,7,8-TCDD	5.79e+06		1.14	26:23	1.025	68.608				85.8	Integr	ations	Revie	ewed	
											by	20	by		11
RS/RT 13C-1,2,3,4-TCDD	1.48e+07	0.79 y	1.00	25:44	*	200.00					Analyst:	118	Analy	yst: /	11/2
RS 13C-1,2,3,4-TCDF		0.81 y	1.00	24:09		200.00					. –		-	-	7
RS/RT 13C-1,2,3,4,6,9-HxCDF		0.51 y		33:57		200.00						20/16			1/22/15
											Date: 7/	20/16	Date	:7	1/22/15
														,	•

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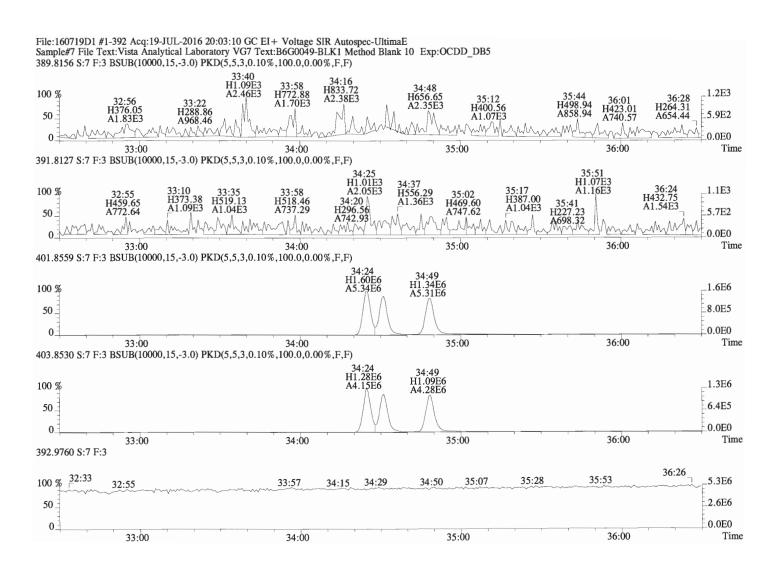
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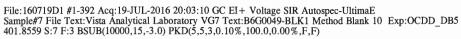
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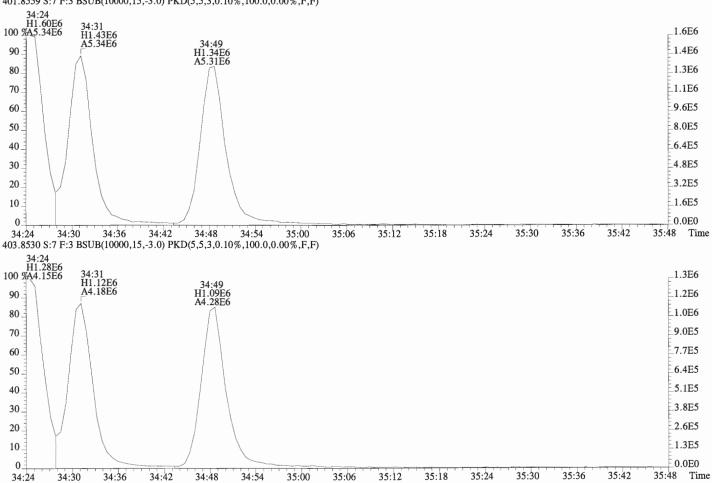


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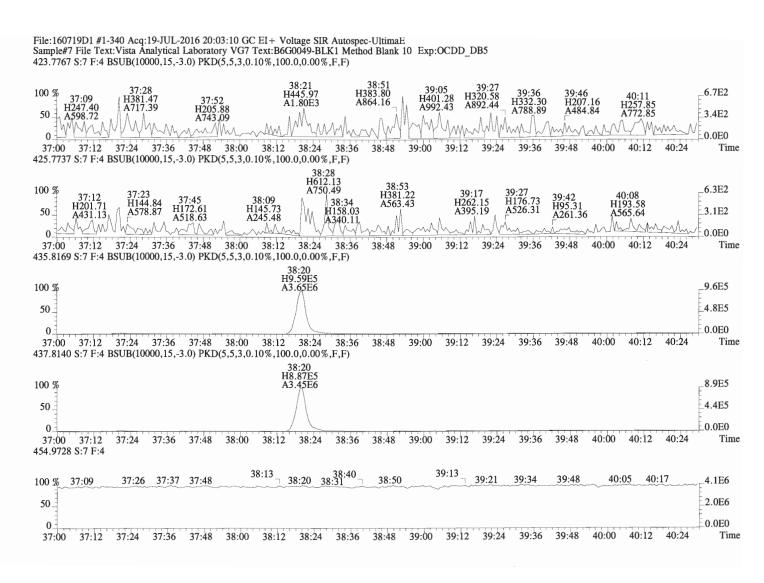


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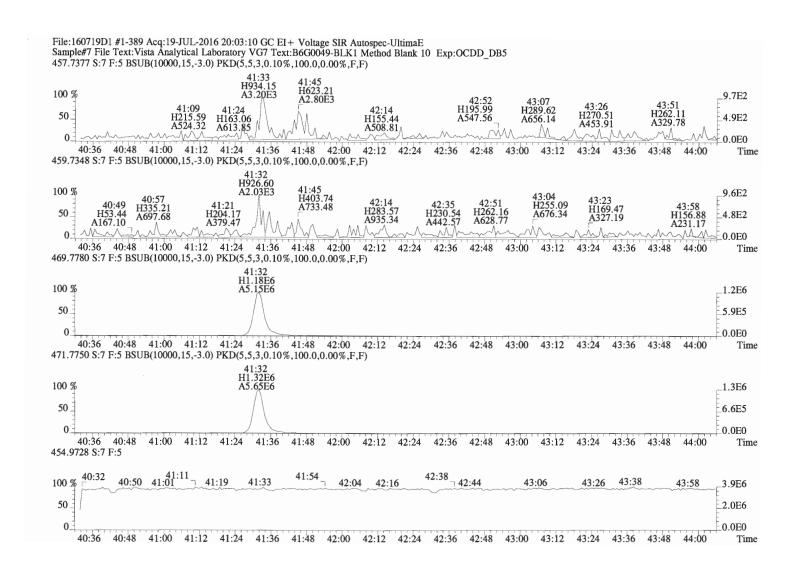




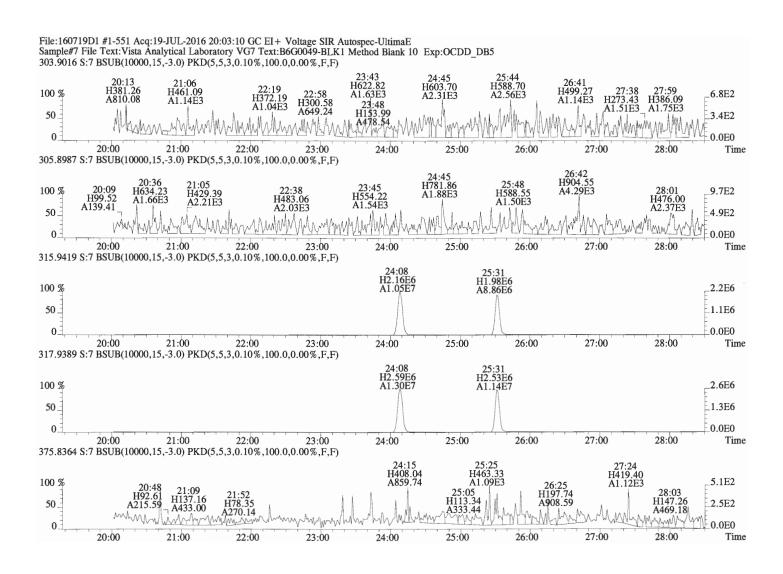
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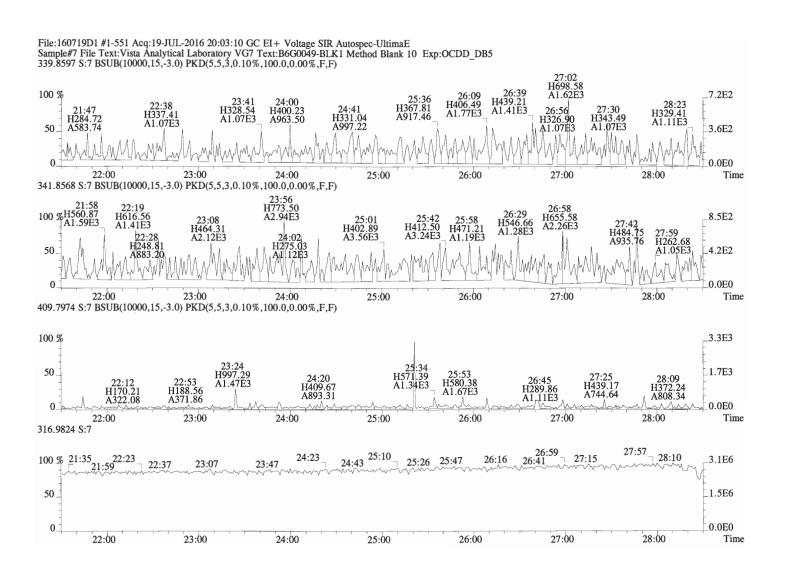
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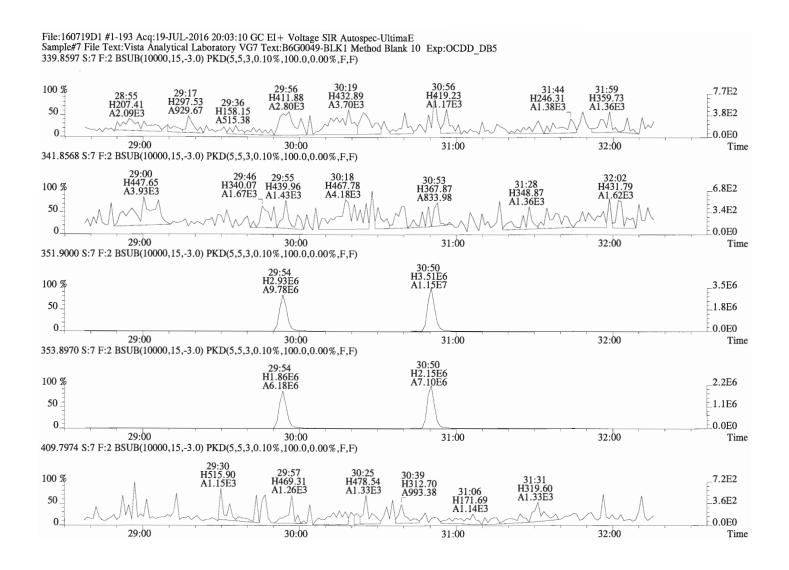
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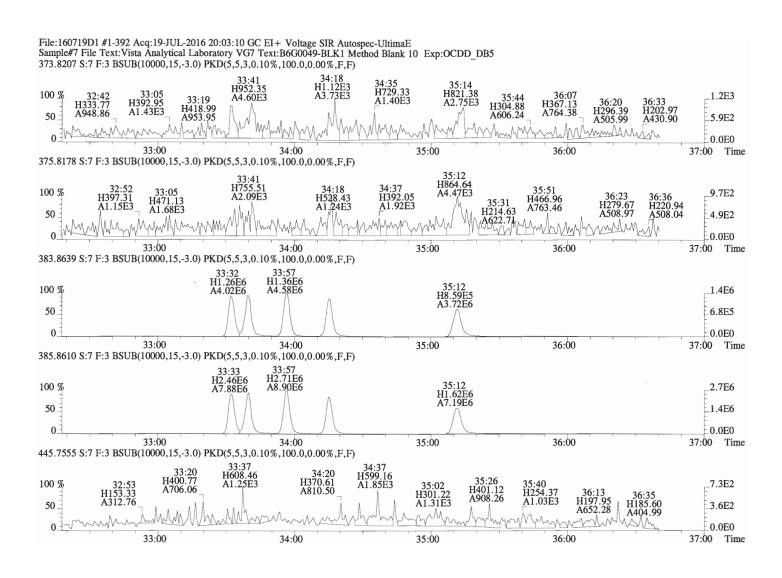
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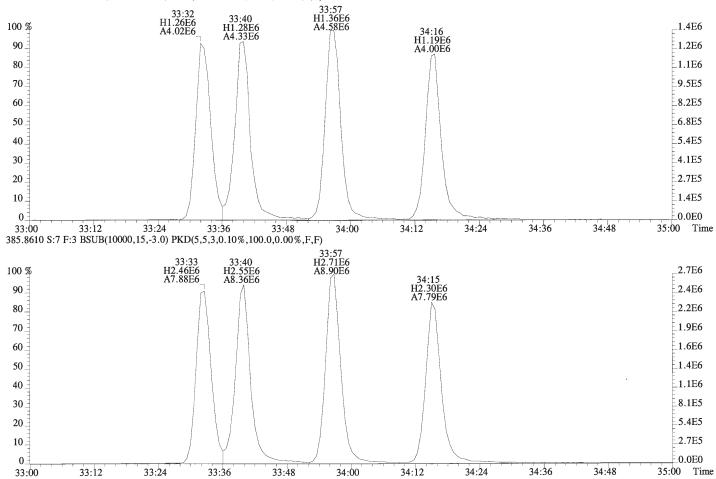


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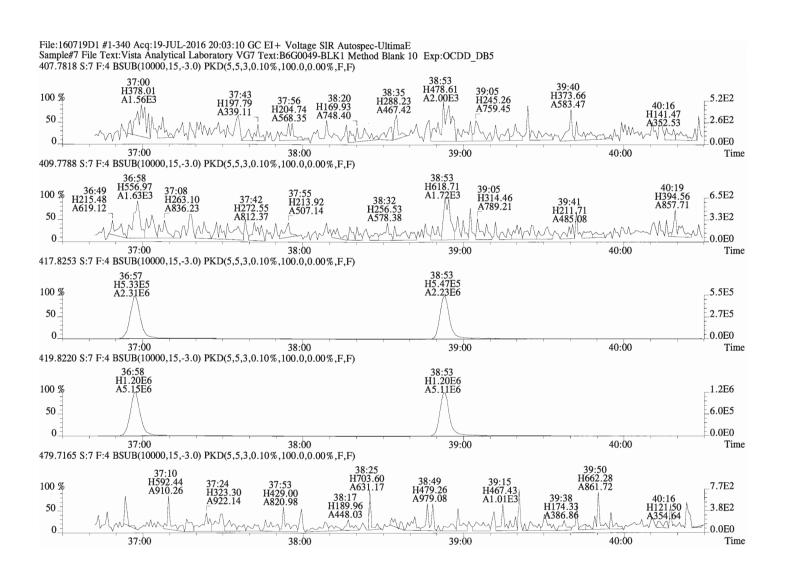


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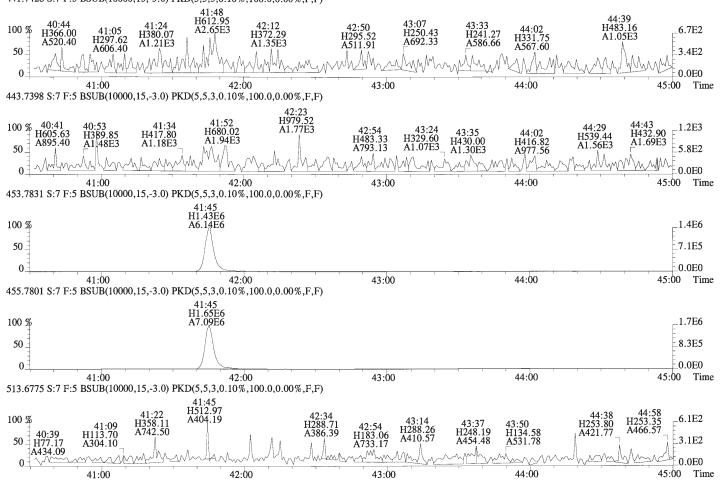


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File:160719D1 #1-389 Acq:19-JUL-2016 20:03:10 GC EI+ Voltage SIR Autospec-UltimaE Sample#7 File Text:Vista Analytical Laboratory VG7 Text:B6G0049-BLK1 Method Blank 10 Exp:OCDD_DB5 441.7428 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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FORM 8A

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory

Extraction Batch: B6G0049-BS1

Contract No.:

SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 160719D1-3

Shift: Day Analysis Date: 19-JUL-16 Time: 16:48:59

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

NATIV	E ANALYTES	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (1) (ng/mL)
2,3,7	,8-TCDD	10	9.69	6.7 - 15.8 7.3 - 14.6 (2)
1,2,3	,7,8-PeCDD	50	45.3	35.0 - 71.0
1,2,3	,4,7,8-HxCDD	50	45.3	35.0 - 82.0
1,2,3	,6,7,8-HxCDD	50	46.8	38.0 - 67.0
1,2,3	,7,8,9-HxCDD	50	46.6	32.0 - 81.0
1,2,3	,4,6,7,8-HpCDD	50	46.7	35.0 - 70.0
OCDD		100	94.4	78.0 - 144.0
2,3,7	,8-TCDF	10	9.46	7.5 - 15.8 8.0 - 14.7 (2)
1,2,3	,7,8-PeCDF	50	47.0	40.0 - 67.0
2,3,4	,7,8-PeCDF	50	46.7	34.0 - 80.0
1,2,3	,4,7,8-HxCDF	50	46.3	36.0 - 67.0
1,2,3	,6,7,8-HxCDF	50	46.8	42.0 - 65.0
2,3,4	,6,7,8-HxCDF	50	44.9	35.0 - 78.0
1,2,3	,7,8,9-HxCDF	50	45.6	39.0 - 65.0
1,2,3	,4,6,7,8-HpCDF	50	45.8	41.0 - 61.0
1,2,3	,4,7,8,9-HpCDF	50	45.5	39.0 - 69.0
OCDF		100	93.6	63.0 - 170.0

- (1) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94
- (2) Contract-required concentration limits for OPR as specified in Table 6a, Method 1613. 10/94

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FORM 8B PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B6G0049-BS1

Contract No.: SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 160719D1-3

Ext. Date: Shift: Day Analysis Date: 19-JUL-16 Time: 16:48:59

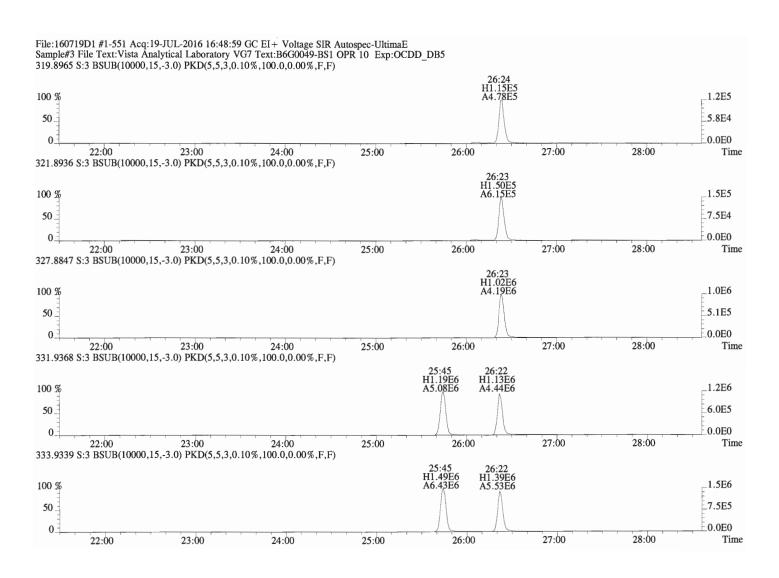
ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

LABELED COMPOUNDS	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS (1) (ng/mL)	
13C-2,3,7,8-TCDD	100	85.7	20.0 - 175.0 25.0 - 141.0 (2)	(1) Contract-required concentration limits for OPR
13C-1,2,3,7,8-PeCDD	100	66.1	21.0 - 227.0	as specified in Table 6, Method 1613. 10/94
13C-1,2,3,4,7,8-HxCDD	100	96.2	21.0 - 193.0	(2) Contract-required concentration limits for OPR
13C-1,2,3,6,7,8-HxCDD	100	92.2	25.0 - 163.0	as specified in Table 6a, Method 1613. 10/94
13C-1,2,3,7,8,9-HxCDD	100	99.3	21.0 - 193.0	
13C-1,2,3,4,6,7,8-HpCDD	100	85.3	26.0 - 166.0	
13C-OCDD	200	130	26.0 - 397.0	
13C-2,3,7,8-TCDF	100	89.2	22.0 - 152.0 26.0 - 126.0 (2)	
13C-1,2,3,7,8-PeCDF	100	64.4	21.0 - 192.0	
13C-2,3,4,7,8-PeCDF	100	64.0	13.0 - 328.0	
200 270717170 20002		0110	13.0 320.0	
13C-1,2,3,4,7,8-HxCDF	100	84.2	19.0 - 202.0	
13C-1,2,3,6,7,8-HxCDF	100	82.9	21.0 - 159.0	
13C-2,3,4,6,7,8-HxCDF	100	88.7	22.0 - 176.0	
13C-1,2,3,7,8,9-HxCDF	100	97.9	17.0 - 205.0	
13C-1,2,3,4,6,7,8-HpCDF	100	78.2	21.0 - 158.0	
13C-1,2,3,4,7,8,9-HpCDF	100	80.6	20.0 - 186.0	Analyst.
13C-OCDF	200	129	26.0 - 397.0	/ /
CLEANUP STANDARD				Analyst:
37Cl-2,3,7,8-TCDD	40	32.0	12.4 - 76.4	

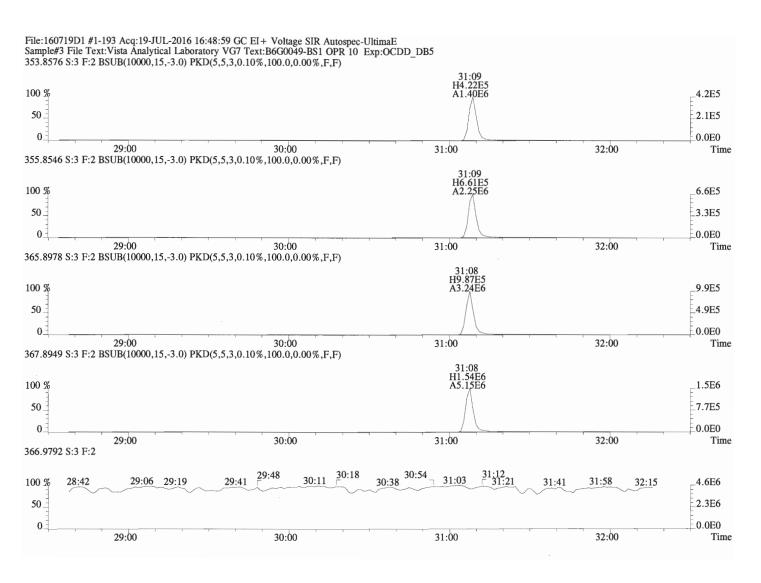
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	GC.	Column II	D: ZB-51	MS ICal	: 1613VG	7-4-7-16		wt/s	/ol: 1.0	000	EndCAL: NA					
Name	Resp	RA	RRF	RT	RRT	Conc	Q	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	1.09e+06	0.78 y	1.13	26:24	1.001	9.6883		*	2.5	*	Total Tetra-Dio	xins 9.93	11.0		*	*
1,2,3,7,8-PeCDD	3.65e+06	0.62 y	0.96	31:09	1.001	45.256		*	2.5	*	Total Penta-Dio	xins 45.4	46.1		*	*
1,2,3,4,7,8-HxCDD	3.47e+06	1.22 y	1.00	34:26	1.000	45.283		*	2.5	*	Total Hexa-Diox	ins 139	140		*	*
1,2,3,6,7,8-HxCDD	3.79e+06	1.22 y	1.10	34:33	1.000	46.811		*	2.5	*	Total Hepta-Dio	xins 47.5	49.1		*	*
1,2,3,7,8,9-HxCDD	3.75e+06	1.23 y	1.05	34:50	1.000	46.621		*	2.5	*	Total Tetra-Fur	ans 10.1	10.7		*	*
1,2,3,4,6,7,8-HpCDD	3.07e+06	1.05 y	1.05	38:22	1.000	46.709		*	2.5	*	Total Penta-Fur	ans 95.712	96.765		*	*
OCDD	4.28e+06	0.88 y	0.96	41:34	1.000	94.404		*	2.5	*	Total Hexa-Fura	ns 184	186		*	*
											Total Hepta-Fur	ans 91.8	93.3		*	*
2,3,7,8-TCDF	1.57e+06	0.80 y	1.12	25:33	1.001	9.4599		*	2.5	*						
1,2,3,7,8-PeCDF	5.52e+06	1.57 y	1.01	29:55	1.000	47.021		*	2.5	*						
2,3,4,7,8-PeCDF	5.69e+06	1.58 y	0.90	30:52	1.000	46.745		*	2.5	*						
1,2,3,4,7,8-HxCDF	5.06e+06	1.23 y	1.16	33:33	1.000	46.321		*	2.5	*						
1,2,3,6,7,8-HxCDF	5.42e+06	1.23 y	1.16	33:41	1.000	46.759		*	2.5	*						
2,3,4,6,7,8-HxCDF	5.12e+06	1.23 y	1.23	34:17	1.000	44.912		*	2.5	*						
1,2,3,7,8,9-HxCDF	4.62e+06	1.22 y	1.13	35:13	1.000	45.634		*	2.5	*						
1,2,3,4,6,7,8-HpCDF	3.97e+06	1.01 y	1.44	36:59	1.001	45.820		*	2.5	*						
1,2,3,4,7,8,9-HpCDF	3.82e+06	1.06 y	1.31	38:55	1.000	45.507		*	2.5	*						
OCDF	5.64e+06	0.90 y	1.03	41:47	1.000	93.621		*	2.5	*						
		-									Rec Qual					
13C-2,3,7,8-TCDD	9.97e+06	0.80 y	1.01	26:22,	1.025	85.718					85.7					
13C-1,2,3,7,8-PeCDD	8.39e+06	0.63 y	1.10	31:08	1.209	66.053					66.1					
13C-1,2,3,4,7,8-HxCDD	7.65e+06	1.28 y	0.72	34:25	1.014	96.206					96.2					
13C-1,2,3,6,7,8-HxCDD	7.39e+06	1.27 y	0.73	34:32	1.017	92.178					92.2					
13C-1,2,3,7,8,9-HxCDD	7.68e+06	1.26 y	0.70	34:49*	1.026	99.266					99.3					
13C-1,2,3,4,6,7,8-HpCDD	6.25e+06	1.03 y	0.66	38:20	1.129	85.287					85.3					
13C-OCDD	9.44e+06	0.93 y	0.66	41:33	1.224	129.65					64.8					
13C-2,3,7,8-TCDF	1.48e+07	0.79 y	0.90	25:32	0.992	89.210					89.2					
13C-1,2,3,7,8-PeCDF	1.17e+07	1.60 y	0.98	29:55	1.162	64.369					64.4					
13C-2,3,4,7,8-PeCDF	1.35e+07	1.58 y		30:51	1.199	63.980					64.0					
13C-1,2,3,4,7,8-HxCDF		0.51 y			0.988	84.166					84.2					
13C-1,2,3,6,7,8-HxCDF	1.00e+07	0.52 y	1.10	33:41	0.992	82.872					82.9					
13C-2,3,4,6,7,8-HxCDF		0.50 y		34:16	1.009	88.661					88.7					
13C-1,2,3,7,8,9-HxCDF	8.93e+06	0.52 y	0.83	35:12	1.037	97.871					97.9					
13C-1,2,3,4,6,7,8-HpCDF		0.45 y	0.70		1.088	78.153					78.2					
13C-1,2,3,4,7,8,9-HpCDF		0.44 y	0.72		1.145	80.621					80.6					
13C-OCDF		0.88 y	0.82	41:46	1.230	128.55					64.3					
p 37Cl-2,3,7,8-TCDD	4.19e+06		1.14	26:24	1.025	32.016					80.0 II	ntegrations	Revi	ewed		
											þ	~ .	h		//	
RT 13C-1,2,3,4-TCDD		0.79 y	1.00	25:45		100.00					Analy	st:	Anal	yst:_	122/	
13C-1,2,3,4-TCDF	1.85e+07	0.81 y	1.00	24:09	*	100.00						, ,			/	
RT 13C-1,2,3,4,6,9-HxCDF	1.10e+07	0.52 y	1.00	33:57	*	100.00						7/20/16		-	177/	10
											Date:	112916	Date	:	1 47/	0

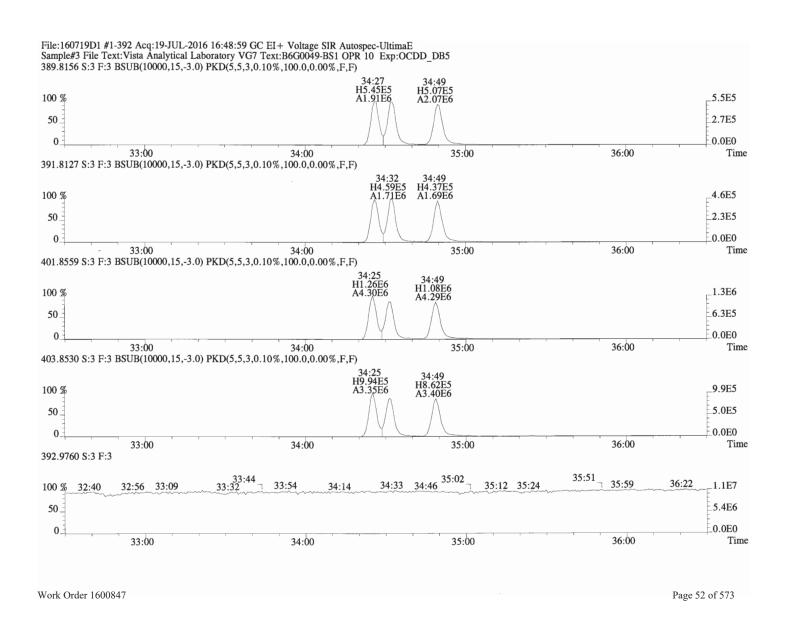
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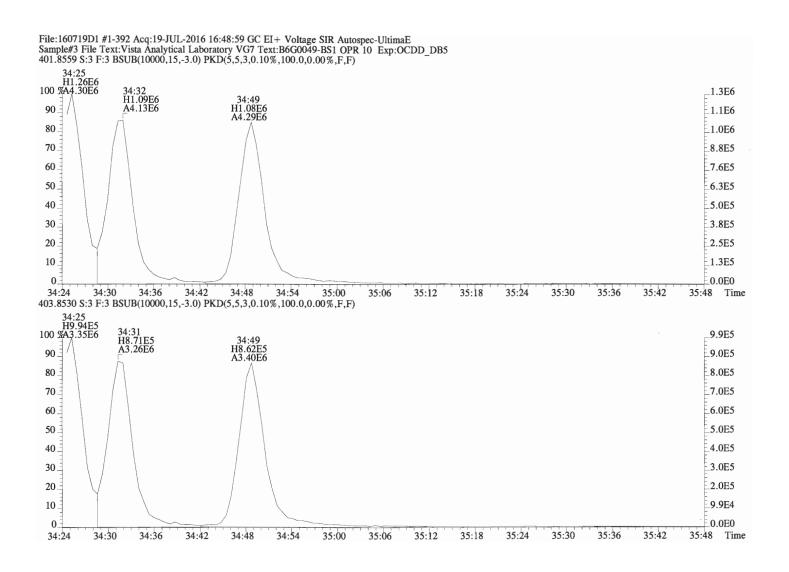


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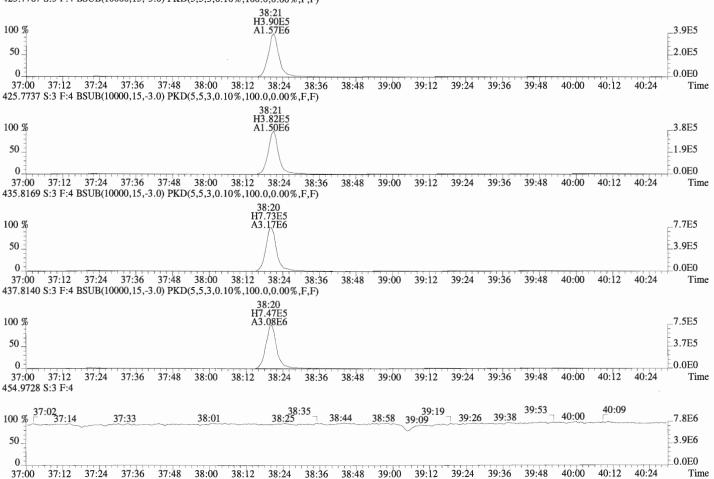
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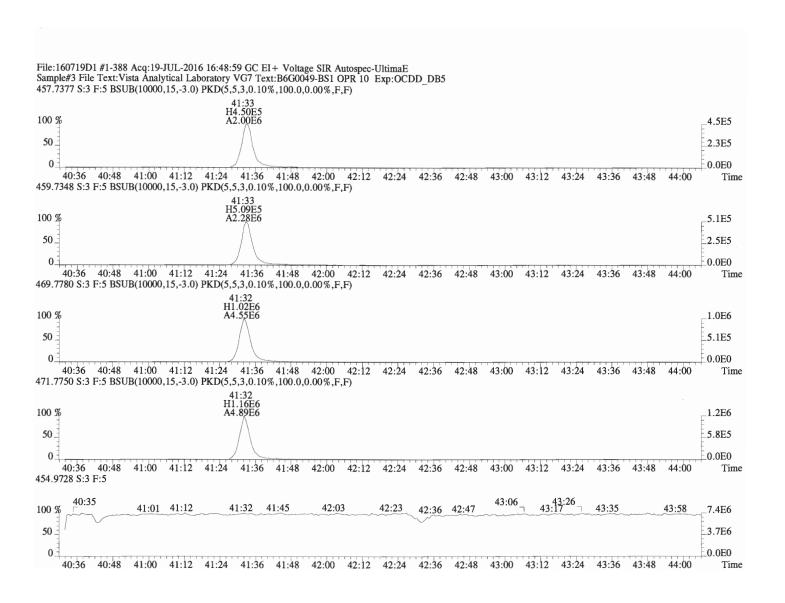


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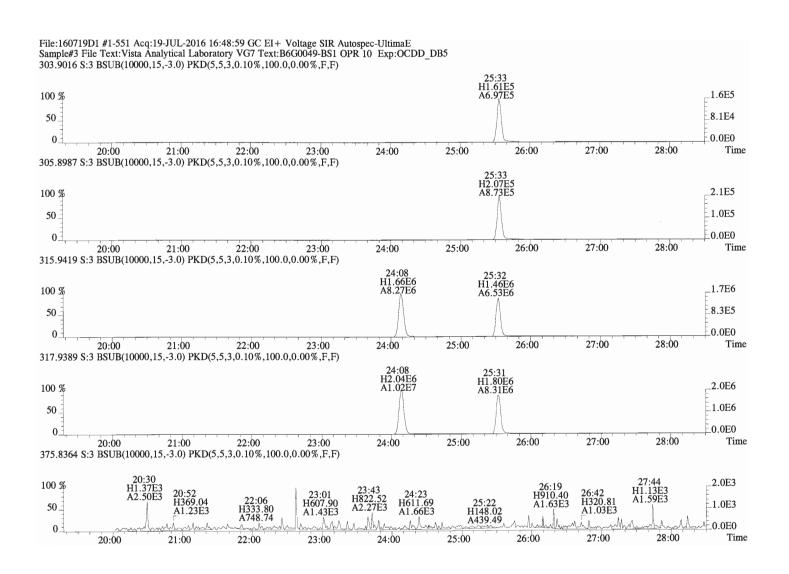
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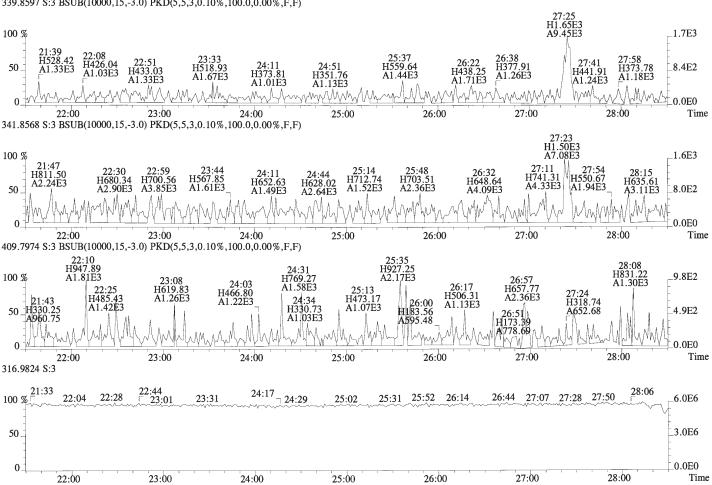


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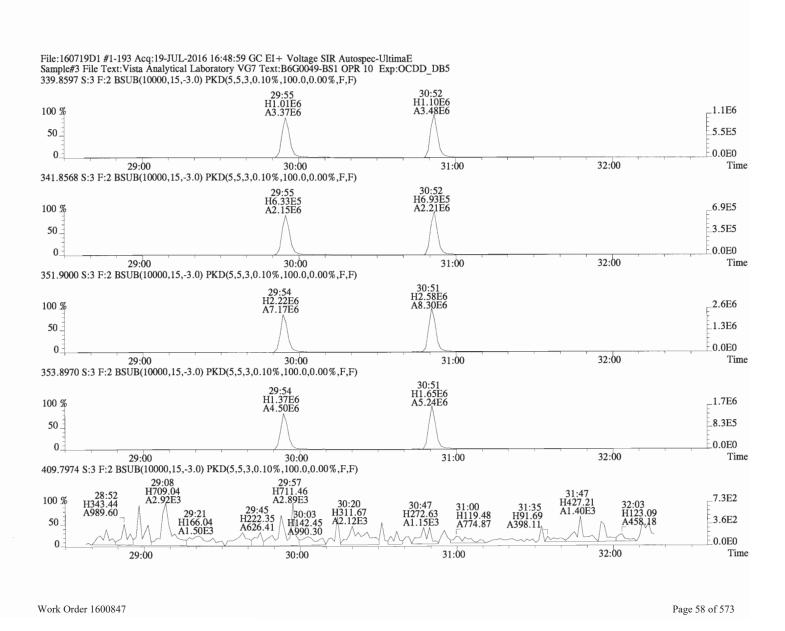


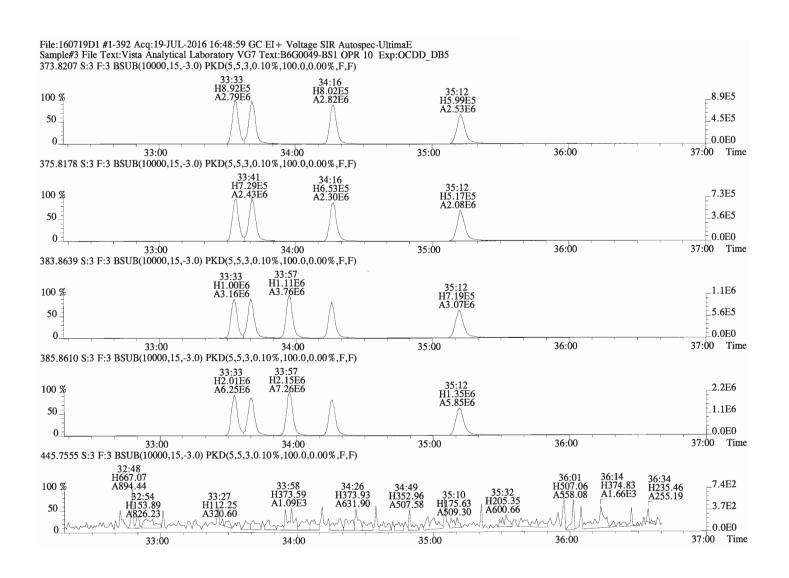
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File:160719D1 #1-551 Acq:19-JUL-2016 16:48:59 GC EI+ Voltage SIR Autospec-UltimaE Sample#3 File Text:Vista Analytical Laboratory VG7 Text:B6G0049-BS1 OPR 10 Exp:OCDD_DB5 339.8597 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

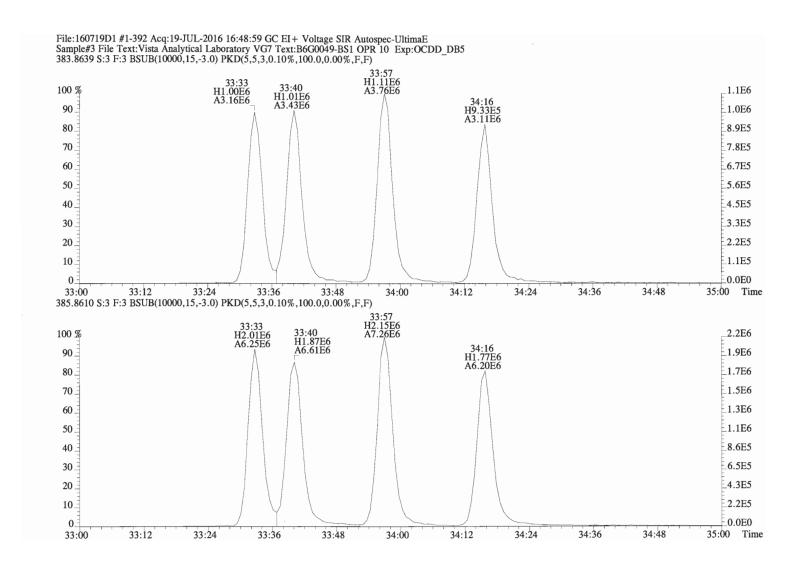


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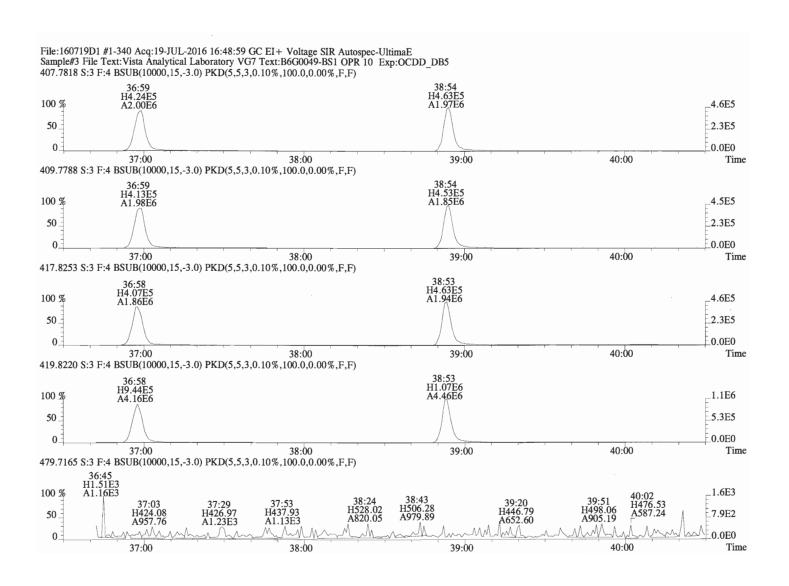




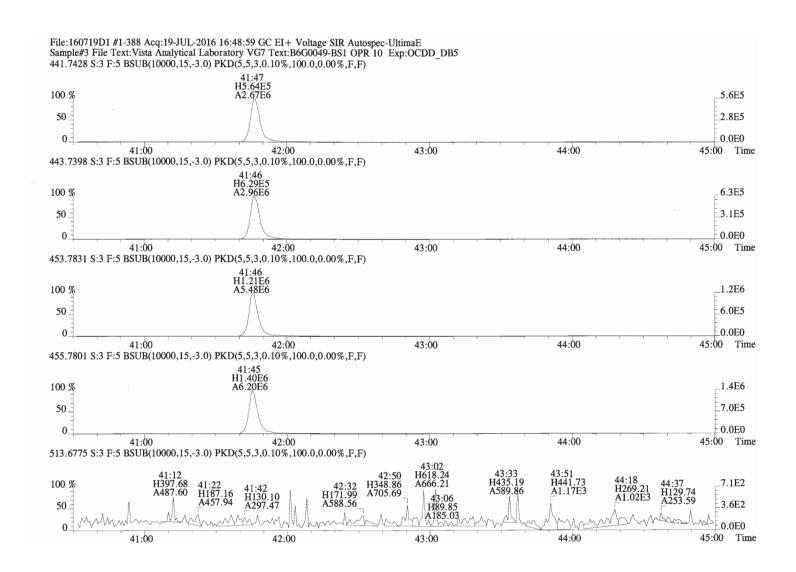
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Client ID: DU-2-5-A	Fi	lename: 16	60719D1	S:11	Acq:19	9-JUL-16 23	3:17	:13		/	ConCal: ST160719	D1-1			Page	7 of 7
Lab ID: 1600847-01	GC	Column II	D: ZB-5N	1S ICal	: 1613V	37-4-7-16		wt/v	/ol:10.0	75	EndCAL: NA					
Name	Resp	RA	RRF	RT	RRT	Conc	0	noise	Fac	DL	Name	Conc	EMPC	Qual	noise	DL
2,3,7,8-TCDD	1.36e+04	0.46 n	1.13	26:23	1.001	0.17154		*	2.5	*	Total Tetra-Dioxin	s 3.09	3.26		*	*
1,2,3,7,8-PeCDD	3.68e+04	0.58 y	0.96	31:08	1.000	0.63856		*	2.5	*	Total Penta-Dioxin	s 4.11	5.78		*	*
1,2,3,4,7,8-HxCDD	6.67e+04	1.09 y	1.00	34:26	1.000	1.2468		*	2.5	*	Total Hexa-Dioxins	29.0	29.0		*	*
1,2,3,6,7,8-HxCDD	1.80e+05	1.22 y	1.10	34:33-	1.000	3.3382		*	2.5	*	Total Hepta-Dioxin	s 182	182		*	*
1,2,3,7,8,9-HxCDD	1.40e+05	1.19 y	1.05	34:50	1.000	2.5285		*	2.5	*	Total Tetra-Furans	*	8.61		*	1.57
1,2,3,4,6,7,8-HpCDD	5.57e+06	1.03 y	1.05	38:21	1.000	113.72		*	2.5	*	Total Penta-Furans	8.5582	9.6743		*	*
OCDD	3.49e+07	0.90 y	0.96	41:34	1.000	1059.9		*	2.5	*	Total Hexa-Furans	26.3	26.3		*	*
											Total Hepta-Furans	76.5	76.5		*	*
2,3,7,8-TCDF	5.17e+04	0.71 y	1.12	25:33	1.000	0.44830		*	2.5	*						
1,2,3,7,8-PeCDF	4.35e+04	1.46 y	1.01	29:55	1.001	0.52350		*	2.5	*						
2,3,4,7,8-PeCDF	6.14e+04	1.48 y	0.90	30:52	1.001	0.73718		*	2.5	*						
1,2,3,4,7,8-HxCDF	8.34e+04	1.37 y	1.16	33:34	1.001	1.2168		*	2.5	*						
1,2,3,6,7,8-HxCDF	9.83e+04	1.17 y	1.16	33:41	1.000	1.3278		*	2.5	*						
2,3,4,6,7,8-HxCDF	1.54e+05	1.17 y	1.23	34:17	1.000	2.0108		*	2.5	*						
1,2,3,7,8,9-HxCDF	4.14e+04	1.35 y	1.13	35:14	1.001	0.78526		*	2.5	*						
1,2,3,4,6,7,8-HpCDF	2.15e+06	1.03 y	1.44	36:58	1.000	32.725		*	2.5	*						
1,2,3,4,7,8,9-HpCDF	1.36e+05	0.96 у	1.31	38:54	1.000	2.3181		*	2.5	*						
OCDF	4.50e+06	0.89 y	1.03	41:48.	1.000	107.29		*	2.5	*						
											Rec Qual					
IS 13C-2,3,7,8-TCDD	1.39e+07	0.81 y	1.01	26:22	1.024	181.68					91.5					
IS 13C-1,2,3,7,8-PeCDD	1.19e+07	0.62 y	1.10	31:08	1.209	142.25					71.7					
IS 13C-1,2,3,4,7,8-HxCDD	1.06e+07	1.26 y	0.72	34:25	1.014	207.27					104					
IS 13C-1,2,3,6,7,8-HxCDD	9.79e+06	1.26 y	0.73	34:32		190.04					95.7					
IS 13C-1,2,3,7,8,9-HxCDD	1.05e+07	1.24 y	0.70	34:49		211.36					106					
IS 13C-1,2,3,4,6,7,8-HpCDD	9.26e+06	1.04 y	0.66	38:21	1.129	196.60					99.0					
IS 13C-OCDD	1.36e+07	0.92 y	0.66	41:34	1.224	290.79					73.2					
IS 13C-2,3,7,8-TCDF	2.05e+07	0.80 y	0.90		0.992	192.47					97.0					
IS 13C-1,2,3,7,8-PeCDF		1.62 y	0.98	29:54		141.45					71.3					
IS 13C-2,3,4,7,8-PeCDF	1.84e+07	1.59 y	1.15	30:51		135.81					68.4					
IS 13C-1,2,3,4,7,8-HxCDF		0.51 y	1.01	33:33		163.06					82.1					
IS 13C-1,2,3,6,7,8-HxCDF	1.27e+07	0.52 y	1.10	33:41	0.992	163.39					82.3					
IS 13C-2,3,4,6,7,8-HxCDF		0.52 y	0.95	34:16		184.36					92.9					
IS 13C-1,2,3,7,8,9-HxCDF	9.23e+06	0.51 y	0.83		1.037	157.54					79.4					
=	9.07e+06	0.45 y	0.70	36:58		183.14					92.3					
IS 13C-1,2,3,4,7,8,9-HpCDF		0.44 y	0.72		1.145	173.96					87.6					
IS 13C-OCDF	1.62e+07	0.89 y	0.82	41:47	1.230	276.53					69.7					
C/th 37Cl 2 2 7 9 TCDD	E 630106		1.14	26.24	1 005	6F 240					82.2 Inte	grations	Perri	ewed		
C/Up 37Cl-2,3,7,8-TCDD	J.03E+06		1.14	20:24	1.025	65.240					by	70	by	cweu	./.	
RS/RT 13C-1,2,3,4-TCDD	1 510+07	0.80 y	1.00	25:45	*	198.51					Analyst:	ロバ	31	yst:_	m	
RS 13C-1,2,3,4-TCDF		0.80 y	1.00	24:09		198.51					raidly 50.	`	(4.1	., 50., <u>-,</u>	7	
RS/RT 13C-1,2,3,4,6,9-HxCDF		0.51 y	1.00	33:58		198.51						-1-10		,	. ,	
, M. 200 2/2/0/3/10/5 MODE	,	J.J. 1				150.51					Date:	7/20/16	_ Date	ئ:	7/22/	1/6

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Totals class: TCDD EMPC Entry #: 19

Run: 13 File: 160719D1 S: 11 I: 1 F: 1 Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

Total Concentration: 3.2582 Unnamed Concentration: 3.087

RT	ml Resp	m2 Resp RA	Resp	Concentration	Name
22:33 22:58 23:27 24:19 24:33 24:46 25:23 25:44 26:07	2.655e+04 2.039e+04 4.058e+03 3.142e+03 2.450e+04 9.673e+03 5.250e+03 4.602e+03	3.747e+04 0.71 y 2.525e+04 0.81 y 4.649e+03 0.87 y 3.644e+03 0.86 y 2.978e+04 0.82 y 1.204e+04 0.80 y 6.206e+03 0.85 y 6.879e+03 0.67 y 1.239e+04 0.69 y	6.401e+04 4.564e+04 8.706e+03 6.786e+03 5.428e+04 2.171e+04	0.80655 0.57508 0.10970 0.085498 0.68391 0.27357 0.14434 0.14465	valle
26:23	5.923e+03	1.282e+04 0.46 n	1.361e+04	0.17154	2,3,7,8-TCDD

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 Totals class: PeCDD EMPC
                                                      Entry #: 21
            Run: 13 File: 160719D1 S: 11 I: 1 F: 2
      Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15
Total Concentration: 5.7793 Unnamed Concentration: 5.141
   RT m1 Resp m2 Resp RA
                                                  Resp Concentration Name
29:01 3.382e+04 7.409e+04 0.46 n 8.751e+04
29:28 9.108e+03 1.634e+04 0.56 y 2.545e+04
29:56 1.030e+04 1.612e+04 0.64 y 2.642e+04
30:00 3.429e+03 4.795e+03 0.72 y 8.223e+03
30:07 1.267e+04 2.136e+04 0.59 y 3.403e+04
30:11 1.516e+04 2.260e+04 0.67 y 3.776e+04
30:25 1.293e+04 2.392e+04 0.54 y 3.684e+04
                                                                    1.5167
                                                                    0.44111
                                                                   0.45795
                                                                  0.14252
0.58984
                                                                  0.65448
                                                                    0.63857
30:44 7.714e+03 1.257e+04 0.61 y 2.029e+04
31:08 1.358e+04 2.326e+04 0.58 y 3.684e+04
                                                                0.35158
                                                                    0.63856
                                                                                  1,2,3,7,8-PeCDD
31:13 4.931e+03 5.241e+03 0.94 n 8.543e+03 0.14806
31:32 4.331e+03 7.205e+03 0.60 y 1.154e+04 0.19993
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Totals class: HxCDD EMPC Entry #: 23

Run: 13 File: 160719D1 S: 11 I: 1 F: 3
Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

Total Concentration: 28.994 Unnamed Concentration: 21.881

RT	ml Resp	m2 Resp RA	Resp Conce	ntration	Name
32:56	2.805e+05	2.343e+05 1.20 y	5.148e+05	9.4645	
33:29	5.163e+04	4.459e+04 1.16 y	9.622e+04	1.7690	
33:44	2.877e+05	2.397e+05 1.20 y	5.274e+05	9.6965	
33:51	1.400e+04	1.071e+04 1.31 y	2.471e+04	0.45430	
34:26	3.471e+04	3.194e+04 1.09 y	6.665e+04	1.2468	1,2,3,4,7,8-HxCDD
34:33	9.914e+04	8.124e+04 1.22 y	1.804e+05	3.3382	1,2,3,6,7,8-HxCDD
34:44	1.571e+04	1.130e+04 1.39 y	2.701e+04	0.49649	
34:50	7.625e+04	6.410e+04 1.19 y	1.403e+05	2.5285	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 13 File: 160719D1 S: 11 I: 1 F: 4 Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

Total Concentration: 181.81 Unnamed Concentration: 68.088

RT ml Resp m2 Resp RA Resp Concentration Name

37:23 1.715e+06 1.621e+06 1.06 y 3.336e+06 68.088 38:21 2.823e+06 2.749e+06 1.03 y 5.571e+06 113.72 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 13 File: 160719D1 S: 11 I: 1 F: 1
Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

Total Concentration: 8.6064 Unnamed Concentration: 8.158

RT	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
20:23	1.557e+04	1.915e+04	0.81 y	3.472e+04	0.30089	
20:56	7.063e+03	9.880e+03	0.71 y	1.694e+04	0.14685	
21:33	3.927e+04	4.482e+04	0.88 y	8.408e+04	0.72878	
22:05	5.087e+04	6.495e+04	0.78 y	1.158e+05	1.0038	
22:32	3.292e+04	4.236e+04	0.78 y	7.528e+04	0.65243	
23:01	1.379e+04	1.901e+04	0.73 y	3.279e+04	0.28422	
23:10	1.123e+04	1.348e+04	0.83 y	2.471e+04	0.21414	
23:22	1.024e+04	1.543e+04	0.66 y	2.567e+04	0.22247	
23:46	1.444e+04	1.816e+04	0.79 y	3.260e+04	0.28254	
23:55	2.089e+04	2.474e+04	0.84 y	4.564e+04	0.39554	
24:09	5.993e+04	7.887e+04	0.76 y	1.388e+05	1.2030	
24:39	2.347e+04	2.733e+04	0.86 y	5.080e+04	0.44027	
24:56	1.677e+04	1.907e+04	0.88 y	3.584e+04	0.31061	
25:07	1.303e+04	1.976e+04	0.66 y	3.279e+04	0.28421	
25:20	1.824e+04	2.081e+04	0.88 y	3.905e+04	0.33844	
25:26	1.120e+04	1.457e+04	0.77 y	2.577e+04	0.22334	
25:33	2.156e+04	3.016e+04	0.71 y	5.172e+04	0.44830	2,3,7,8-TCDF
25:54	4.851e+04	6.071e+04	0.80 y	1.092e+05	0.94662	
27:27	1.512e+04	1.173e+04	1.29 n	2.076e+04	0.17993	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 13 File: 160719D1 S: 11 I: 1 F: 1
Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

Total Concentration: 2.4612 Unnamed Concentration: 2.461

RT m1 Resp m2 Resp RA Resp Concentration Name

27:26 1.233e+05 8.113e+04 1.52 y 2.045e+05 2.4612

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Totals class: PeCDF EMPC Entry #: 31

Run: 13 File: 160719D1 S: 11 I: 1 F: 2
Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

Total Concentration: 7.2131 Unnamed Concentration: 5.952

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name
28:49	4.755e+04	2.348e+04	2.02 n	5.988e+04	0.72084	
28:57	7.106e+04	5.386e+04	1.32 y	1.249e+05	1.5038	
29:27	1.424e+04	9.453e+03	1.51 y	2.369e+04	0.28522	
29:31	4.156e+04	2.658e+04	1.56 y	6.814e+04	0.82027	
29:36	1.432e+04	1.086e+04	1.32 y	2.518e+04	0.30307	
29:44	1.405e+04	7.347e+03	1.91 n	1.873e+04	0.22552	
29:55	2.580e+04	1.771e+04	1.46 y	4.351e+04	0.52350	1,2,3,7,8-PeCDF
30:09	4.511e+04	2.727e+04	1.65 y	7.239e+04	0.87138	
30:18	9.364e+03	5.289e+03	1.77 y	1.465e+04	0.17639	
30:45	4.300e+04	2.980e+04	1.44 y	7.280e+04	0.87630	
30:52	3.664e+04	2.472e+04	1.48 y	6.136e+04	0.73718	2,3,4,7,8-PeCDF
31:44	8.569e+03	1.239e+04	0.69 n	1.410e+04	0.16971	

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Totals class: HxCDF EMPC Entry #: 33

Run: 13 File: 160719D1 S: 11 I: 1 F: 3
Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

Total Concentration: 26.321 Unnamed Concentration: 20.980

RT	m1 Resp	m2 Resp	RA	Resn	Concentration	Name
	mz neop	na nesp		ксыр	concentracton	Name
32:24	9.652e+04	8.615e+04	1.12 y	1.827e+05	2.6905	
32:34	3.424e+05	2.691e+05	1.27 y	6.115e+05	9.0057	
32:55	9.938e+03	9.130e+03	1.09 y	1.907e+04	0.28084	
33:06	2.284e+05	1.797e+05	1.27 y	4.082e+05	6.0115	
33:28	7.577e+04	6.614e+04	1.15 y	1.419e+05	2.0901	
33:34	4.817e+04	3.526e+04	1.37 y	8.343e+04	1.2168	1,2,3,4,7,8-HxCDF
33:41	5.298e+04	4.528e+04	1.17 y	9.827e+04	1.3278	1,2,3,6,7,8-HxCDF
33:58	1.264e+04	1.189e+04	1.06 y	2.453e+04	0.36123	
34:07	1.969e+04	1.700e+04	1.16 y	3.669e+04	0.54030	
34:17	8.320e+04	7.123e+04	1.17 y	1.544e+05	2.0108	2,3,4,6,7,8-HxCDF
35:14	2.375e+04	1.764e+04	1.35 y	4.139e+04	0.78526	1,2,3,7,8,9-HxCDF

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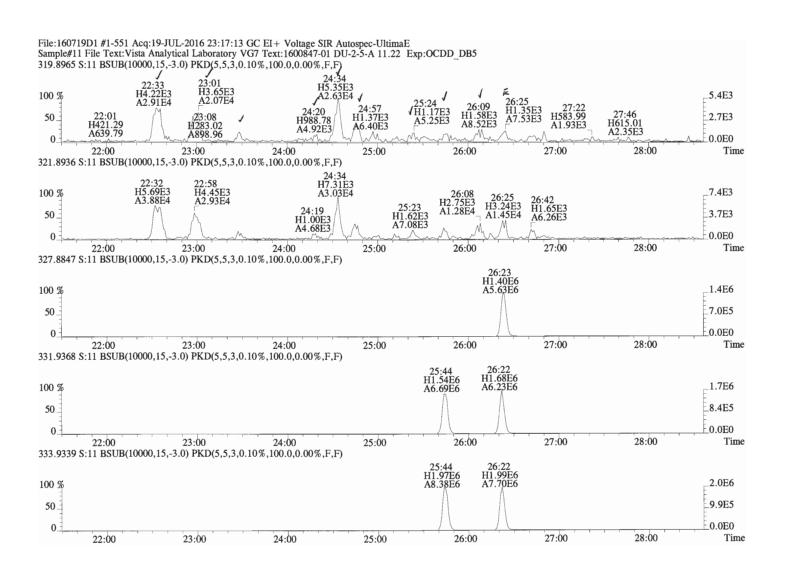
Totals class: HpCDF EMPC Entry #: 35

Run: 13 File: 160719D1 S: 11 I: 1 F: 4
Acquired: 19-JUL-16 23:17:13 Processed: 20-JUL-16 09:26:15

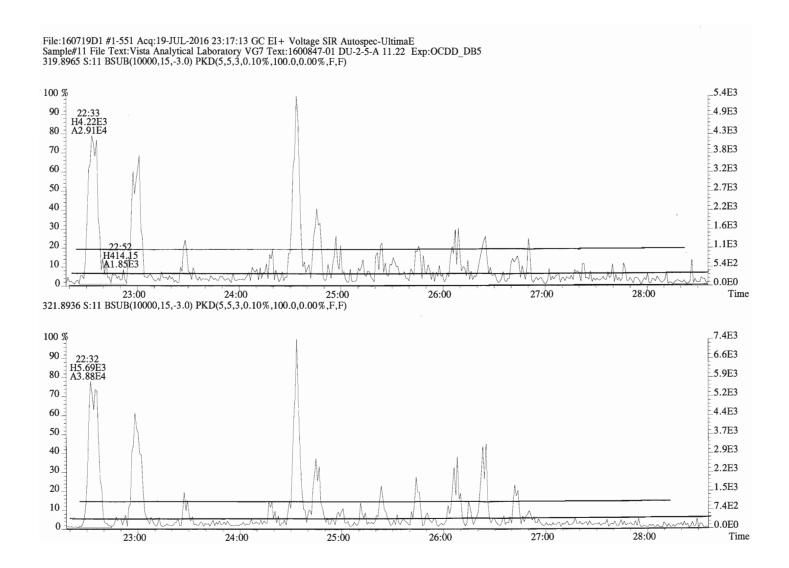
Total Concentration: 76.541 Unnamed Concentration: 41.498

RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
36:58	1.094e+06	1.059e+06 1.03 y	2.153e+06 32.725	1,2,3,4,6,7,8-HpCDF
37:23	6.045e+04	6.064e+04 1.00 y	1.211e+05 1.9481	
37:37	1.253e+06	1.205e+06 1.04 y	2.458e+06 39.550	
38:54	6.661e+04	6.946e+04 0.96 y	1.361e+05 2.3181	1,2,3,4,7,8,9-HpCDF

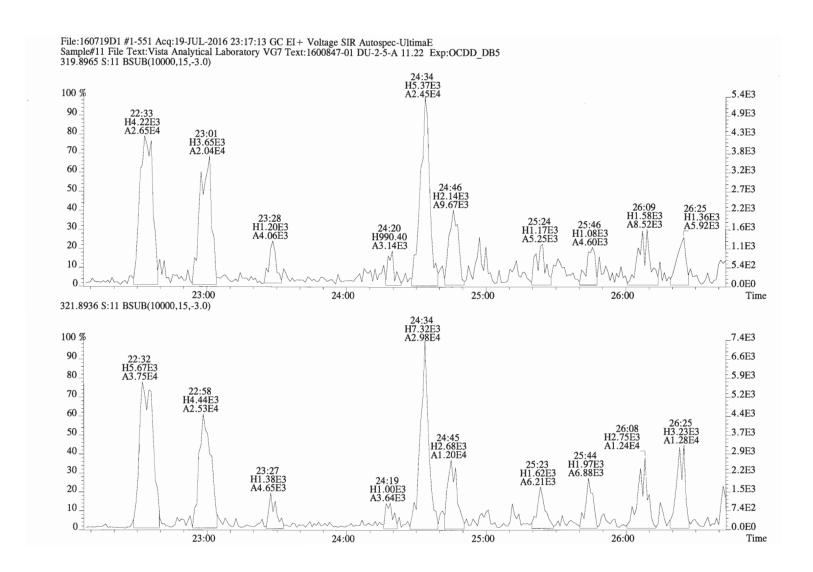
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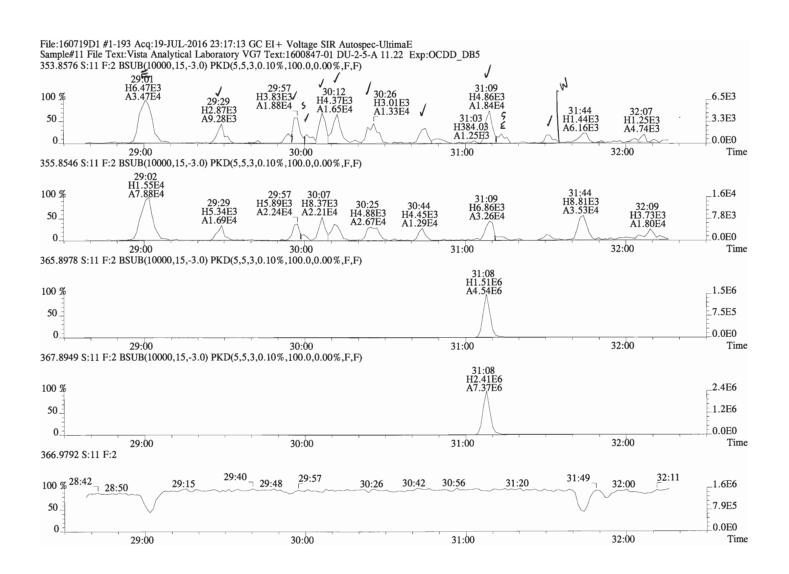
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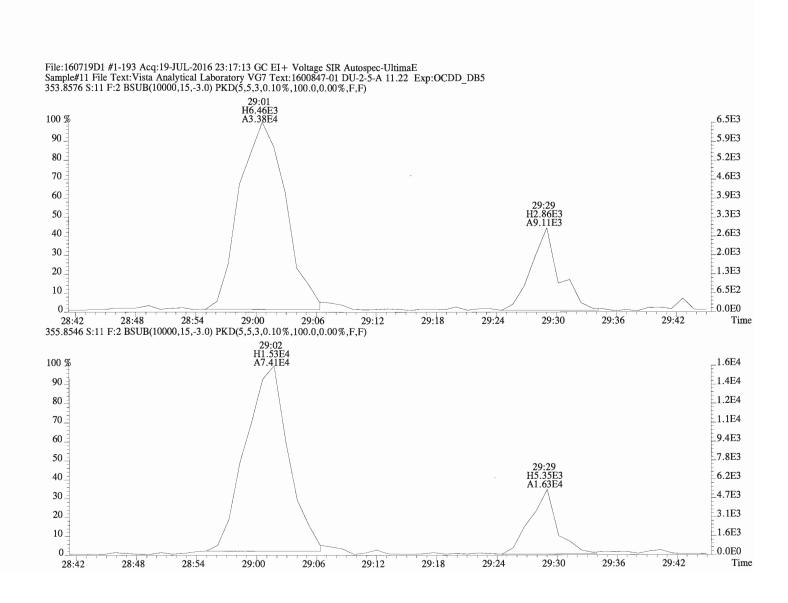
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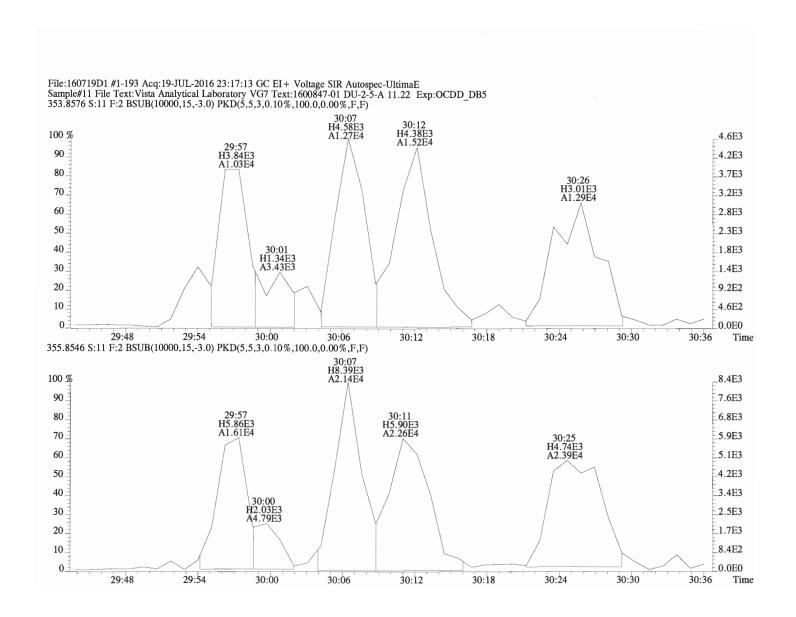
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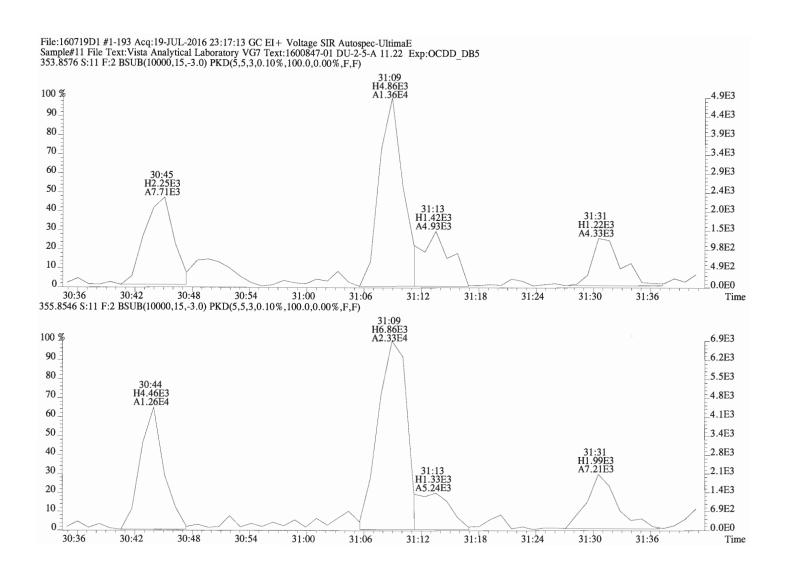
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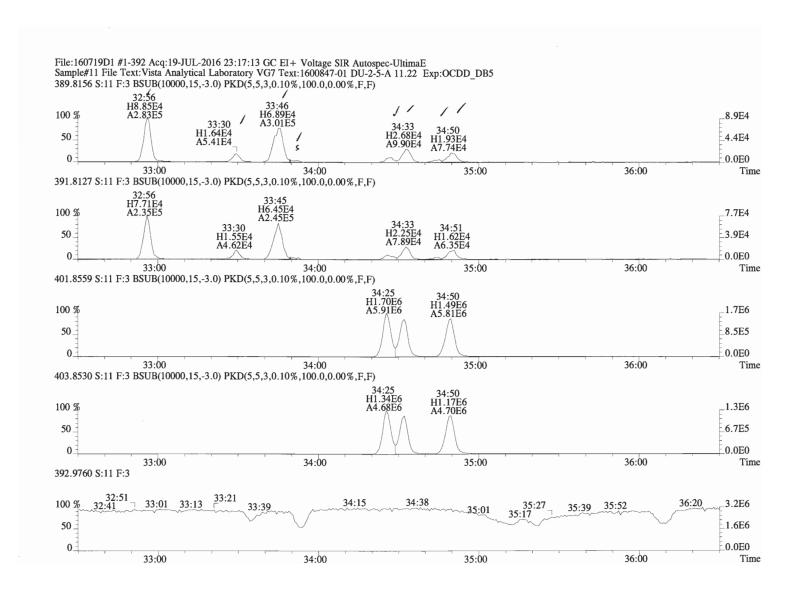
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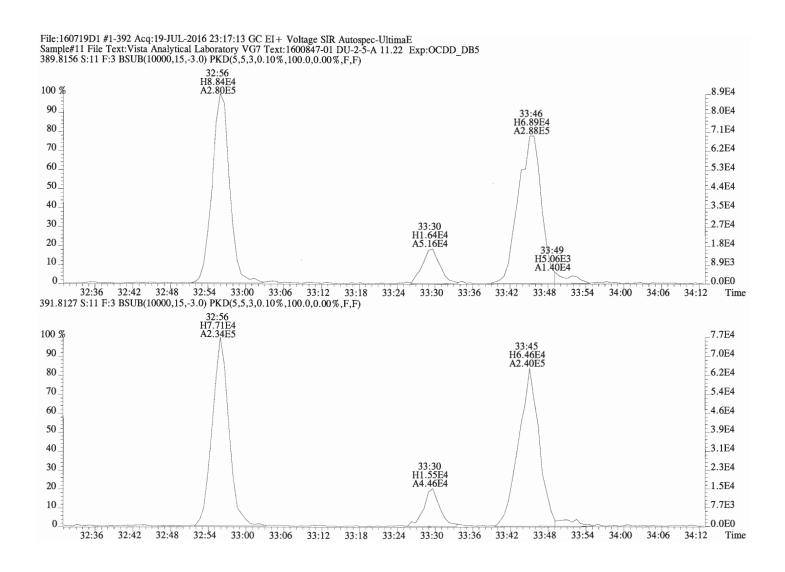
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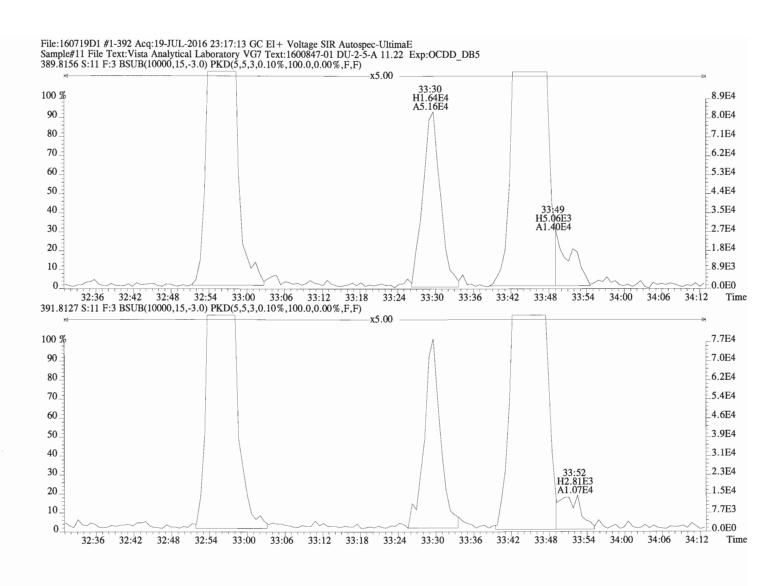
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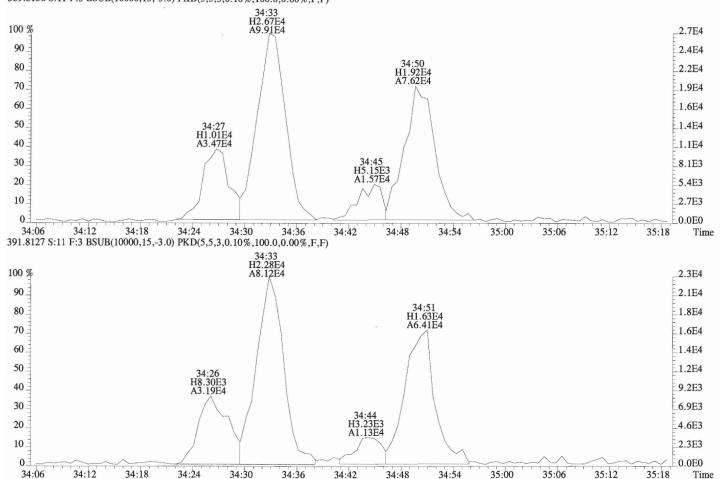


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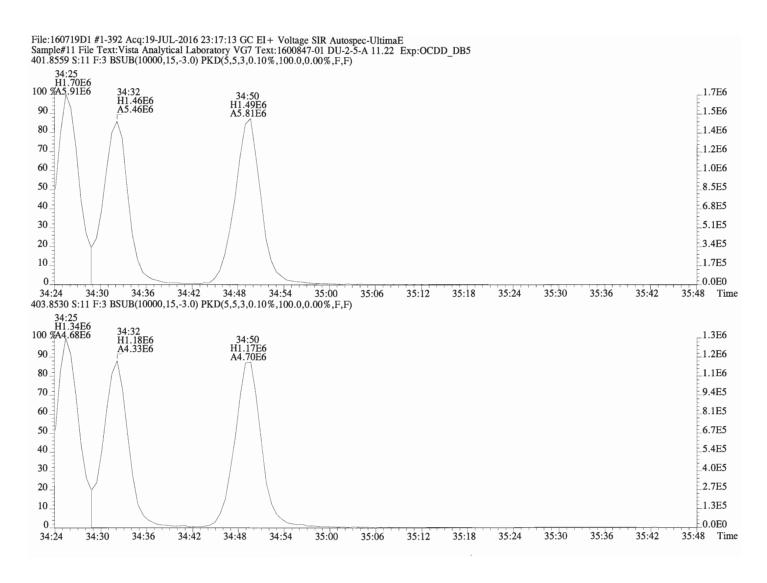


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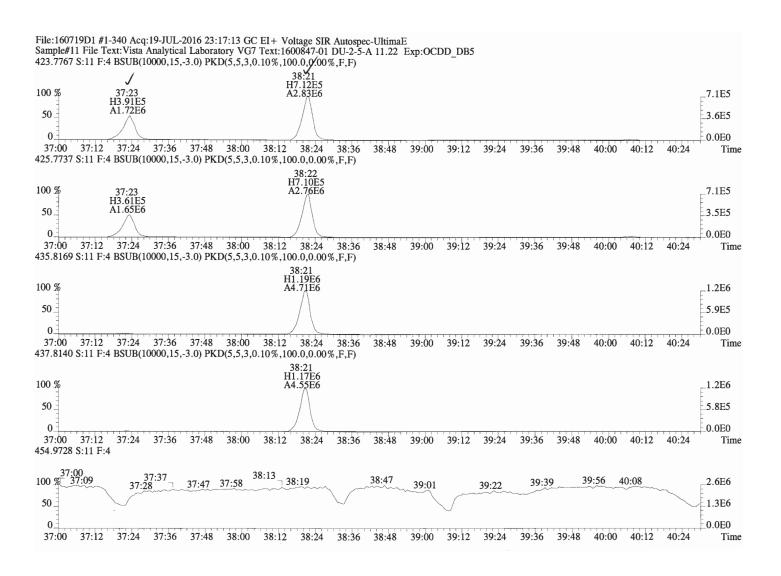
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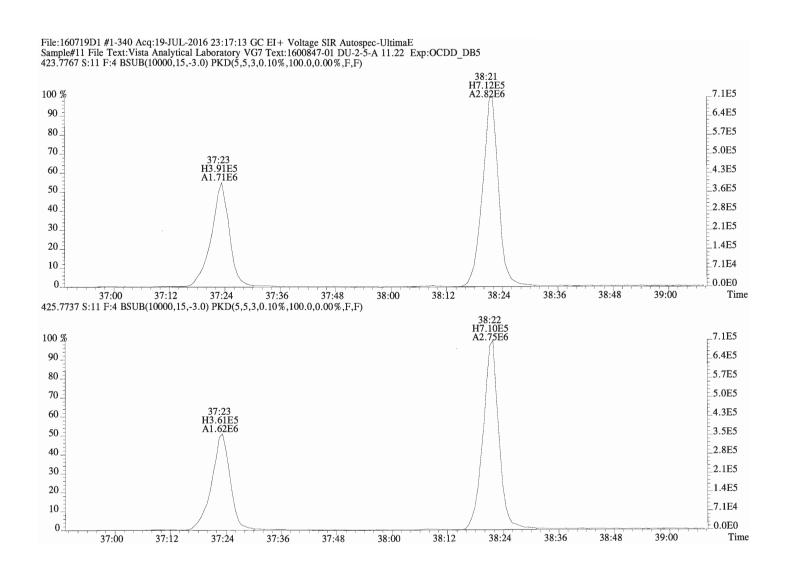
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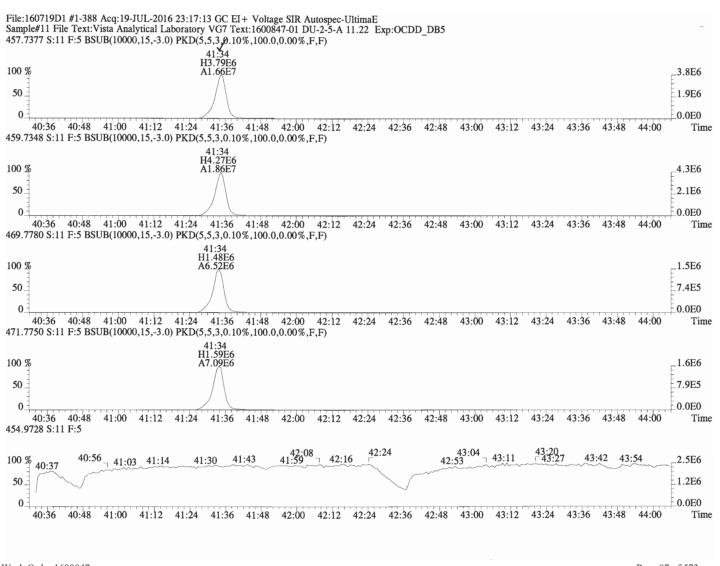
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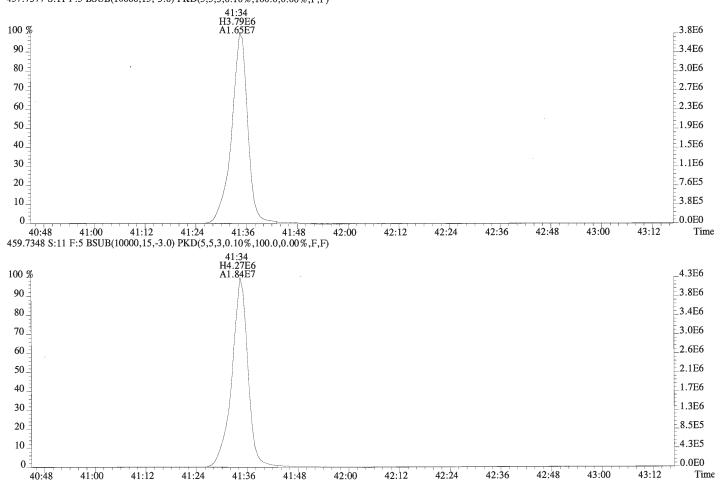


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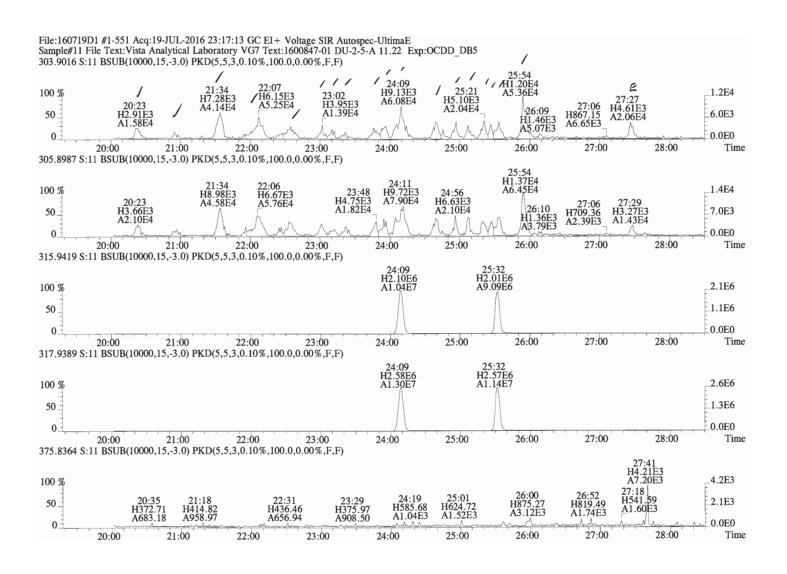


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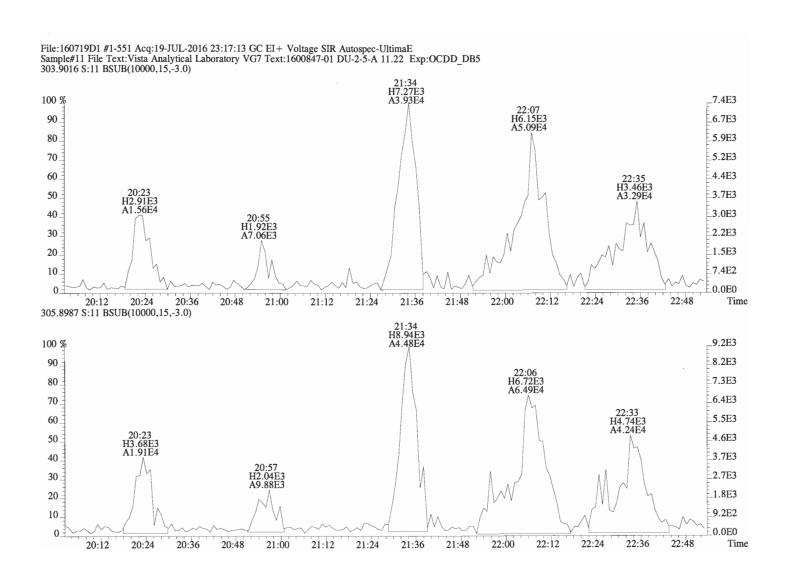
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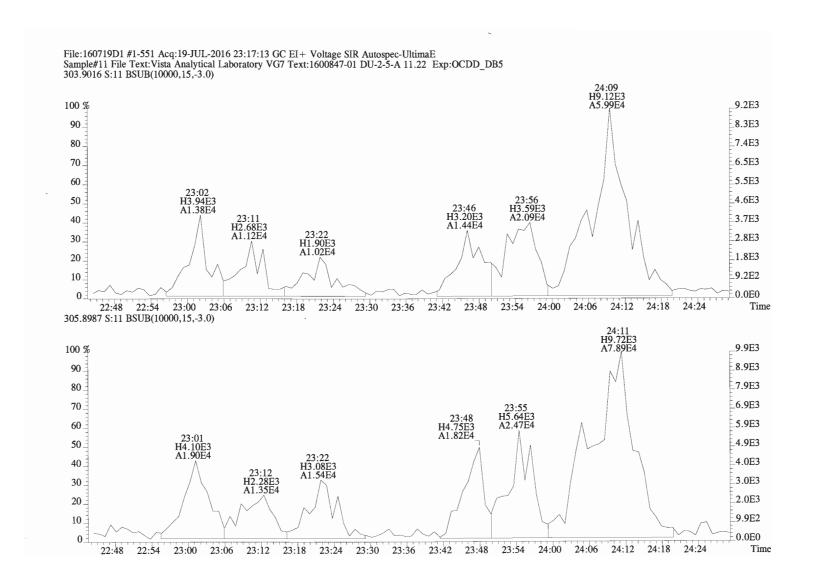
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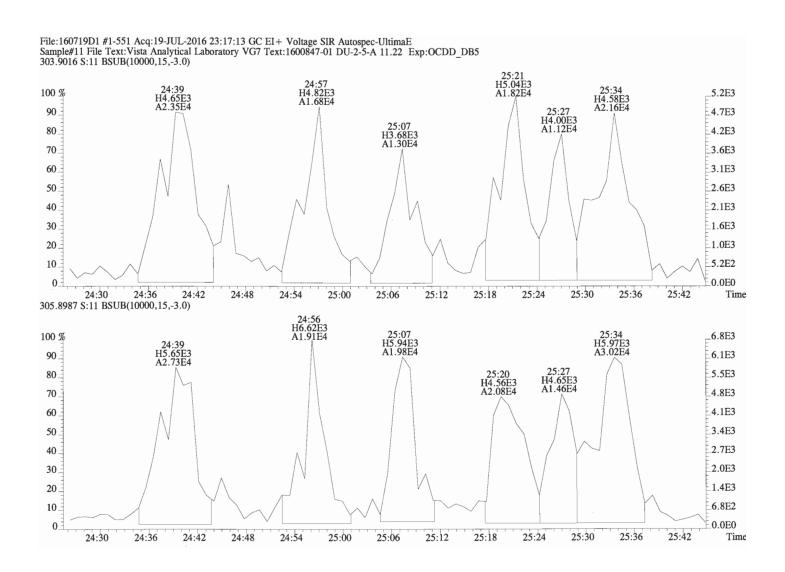
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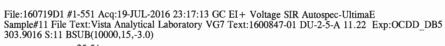
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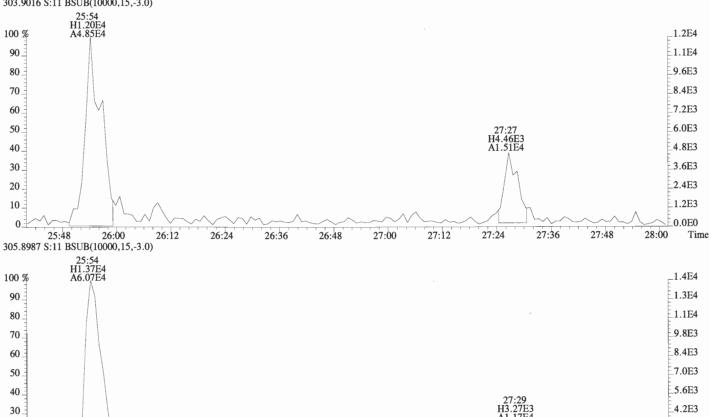


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27:00

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25:48

26:12

26:00

26:24

26:36

26:48

20.

10

0

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28:00

27:24

27:12

27:36

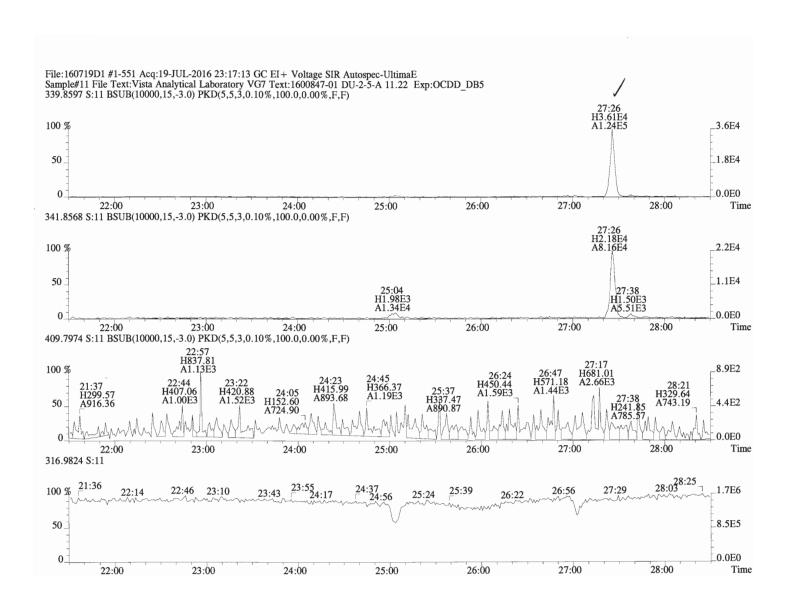
27:48

2.8E3

1.4E3

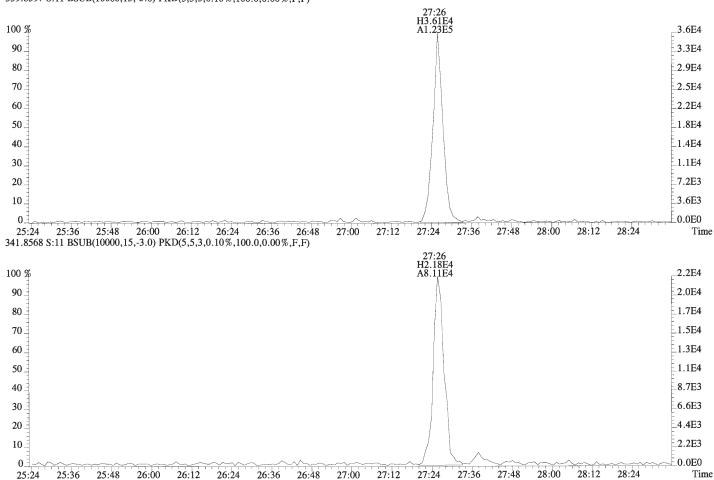
0.0E0

Time

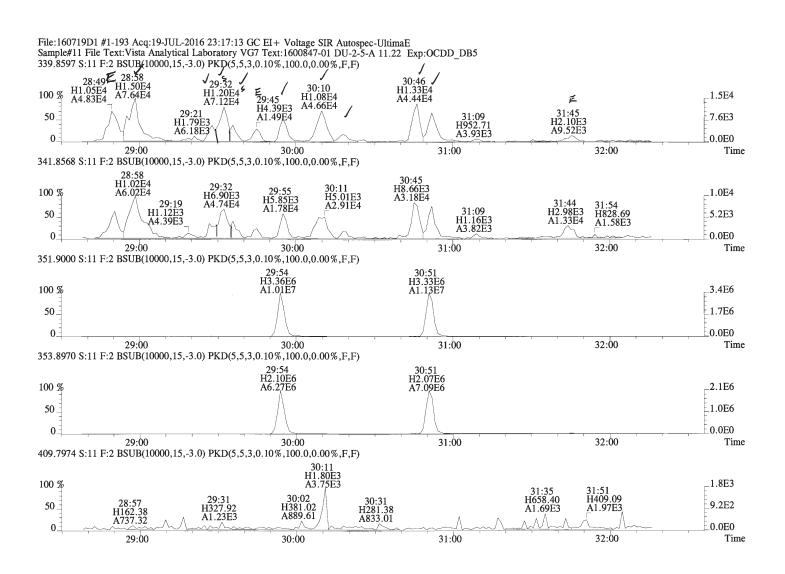


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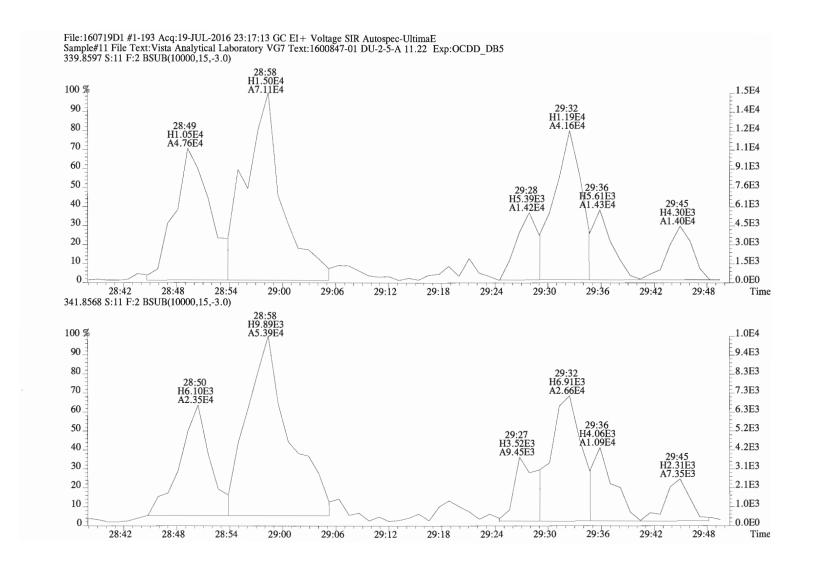
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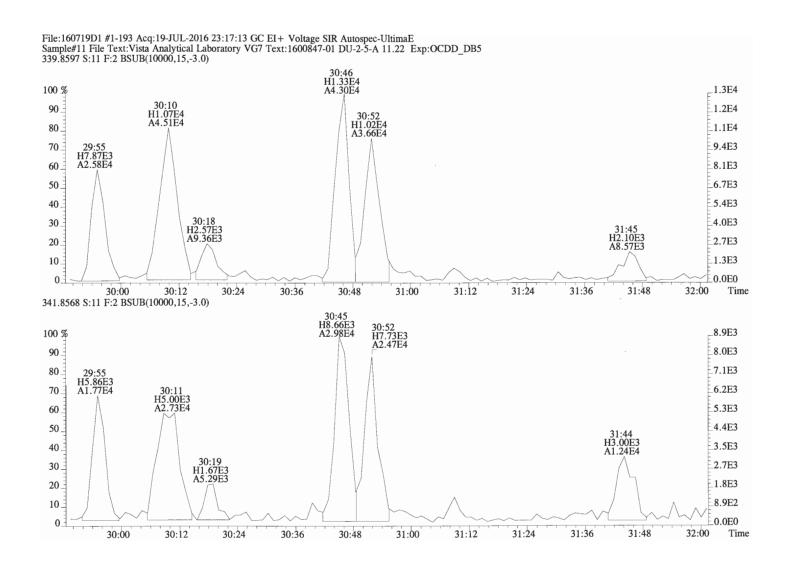
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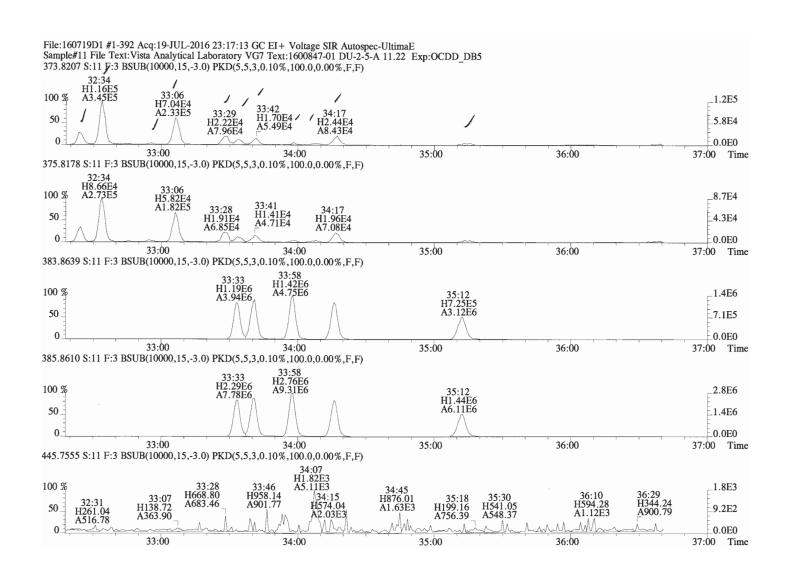
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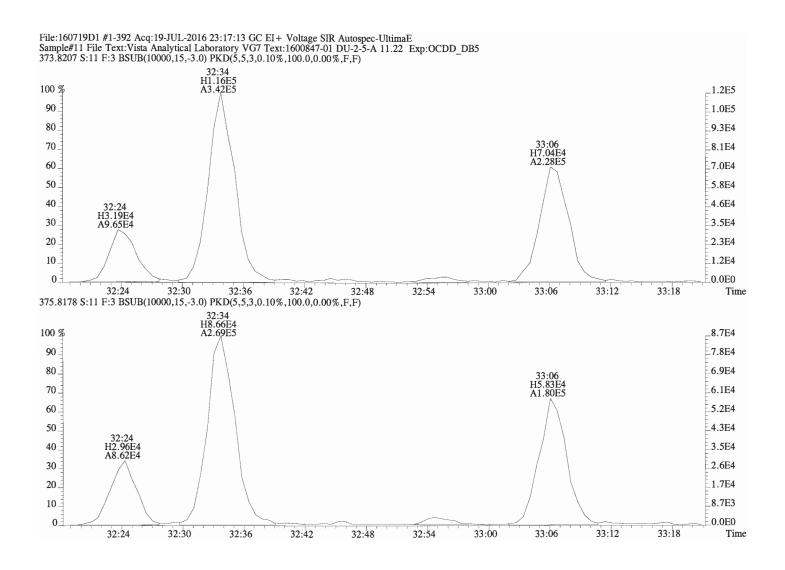
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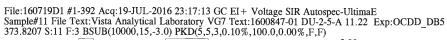
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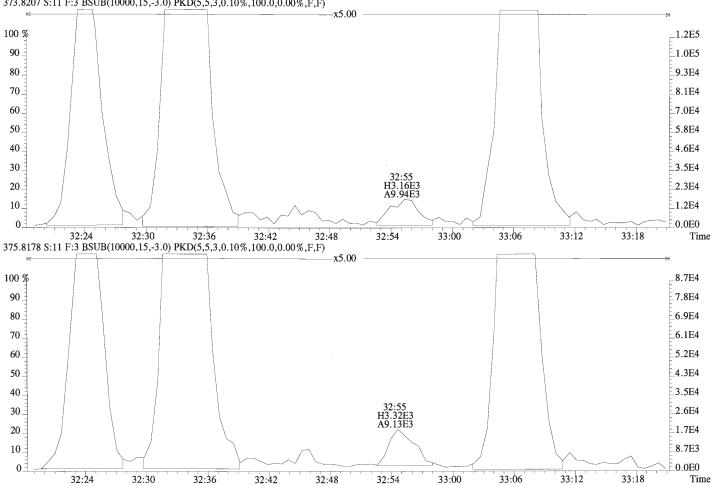


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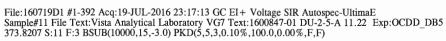


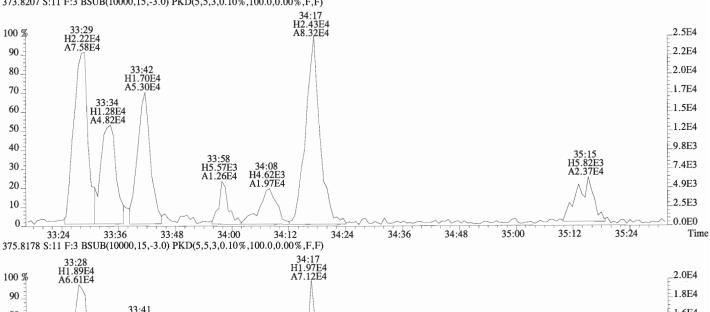
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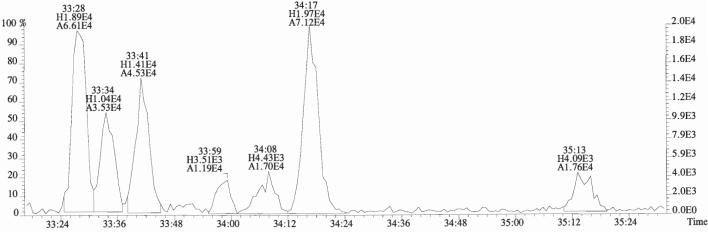




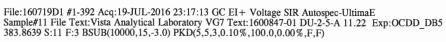
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30.

20

10 ₋

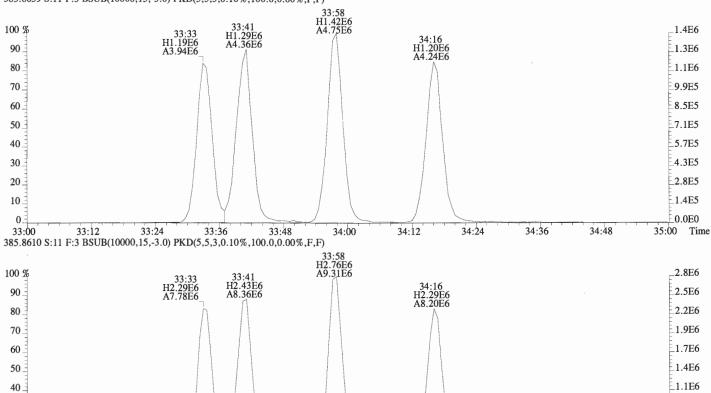
33:00

33:24

33:36

33:48

33:12



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34:00

34:12

34:24

34:36

34:48

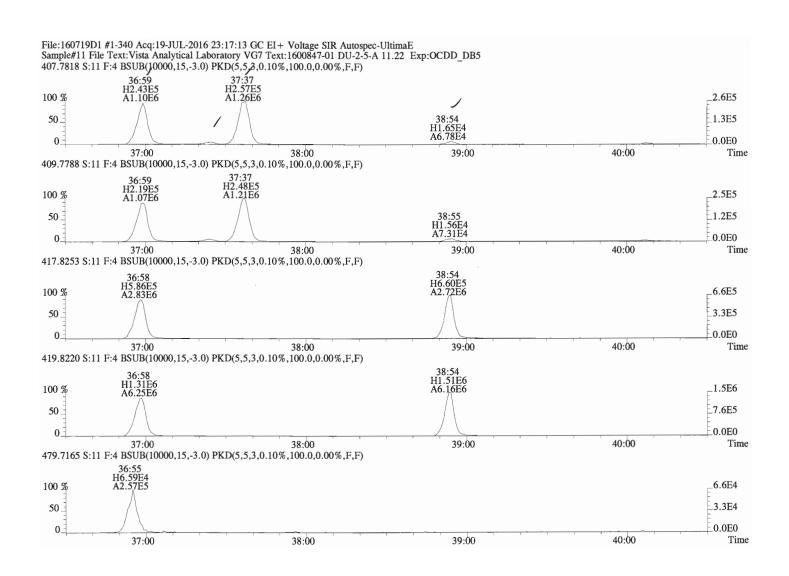
_8.3E5

_5.5E5

_2.8E5

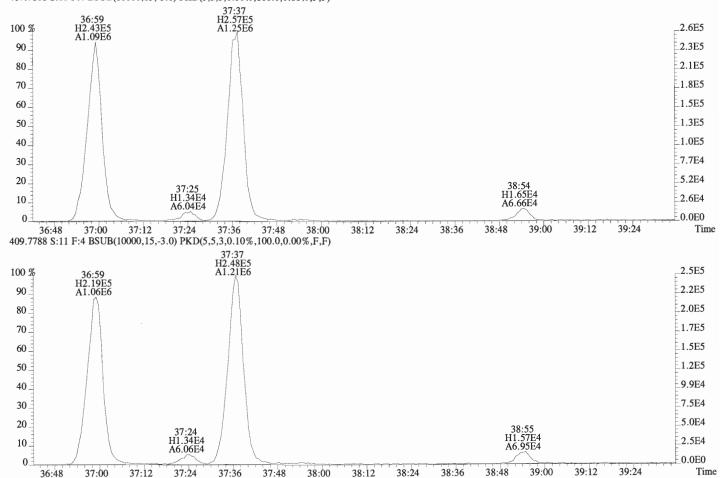
0.0E0

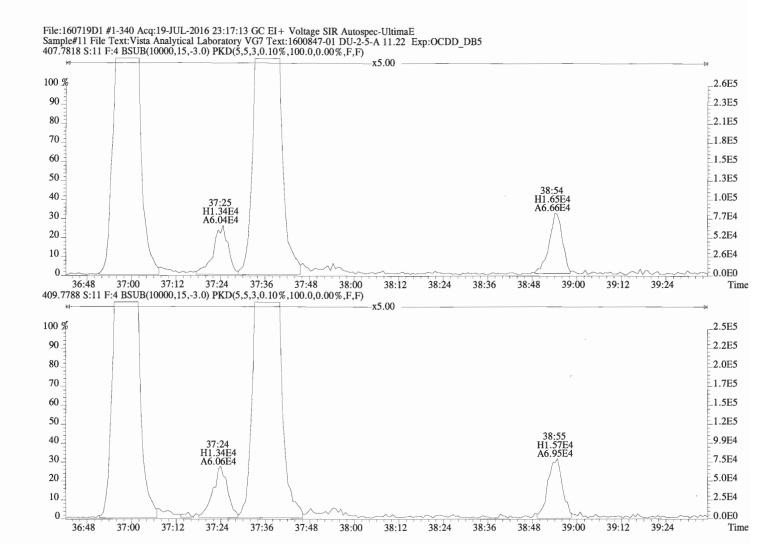
35:00 Time



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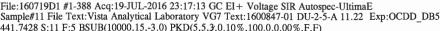
File:160719D1 #1-340 Acq:19-JUL-2016 23:17:13 GC EI+ Voltage SIR Autospec-UltimaE Sample#11 File Text:Vista Analytical Laboratory VG7 Text:1600847-01 DU-2-5-A 11.22 Exp:OCDD_DB5 407.7818 S:11 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

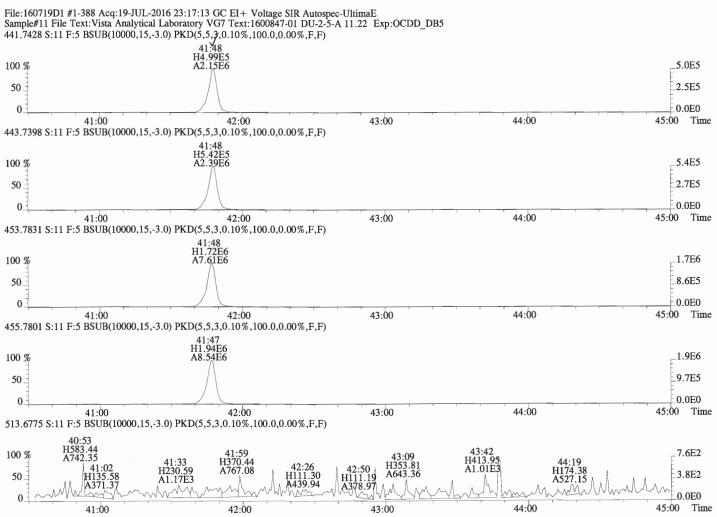




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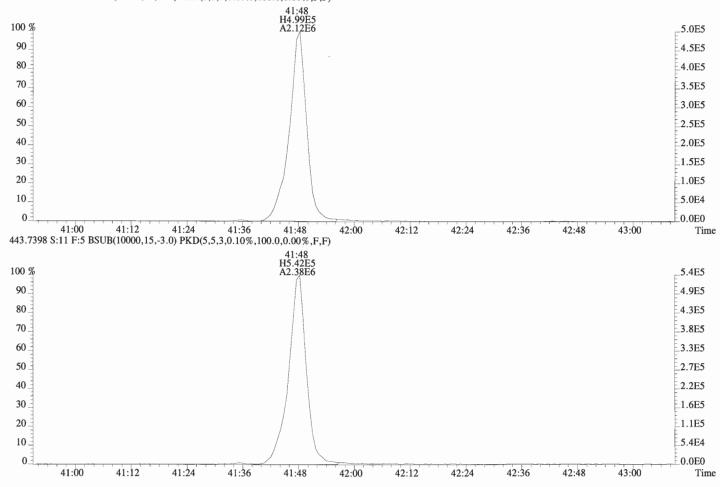




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ient ID: DU-2-5-B b ID: 1600847-02		lename: 10 Column II)-JUL-16 00		/sro1 . 10	221/	ConCal: ST16	0719D1-	-1			Page	8 (
D 1D: 1600647-02	GC	COTUME I	J: ZB-50	ns icai	: 161370	37-4-7-16	Wt/	vol:10	.331/	EndCAL: NA						
Name	Resp	RA	RRF	RT	RRT	Conc	Q noise	Fac	DL	Name		Conc	EMPC	Qual	noise	
2,3,7,8-TCDD	1.64e+04	0.51 n	1.13	26:23	1.000	0.18196	*	2.5	*	Total Tetra-Di	oxins	1.79	2.67		*	
1,2,3,7,8-PeCDD	3.59e+04	0.70 y	0.96	31:08	1.000	0.54761	*	2.5	*	Total Penta-Di	oxins.	3.59	5.01		*	
1,2,3,4,7,8-HxCDD	4.02e+04	1.25 y	1.00	34:26	1.000	0.67288	*	2.5	*	Total Hexa-Dio	xins	16.0	16.0		*	
1,2,3,6,7,8-HxCDD	1.16e+05	1.17 y	1.10	34:32	1.000	1.8668	*	2.5	*	Total Hepta-Di	oxins	92.6	92.6		*	
1,2,3,7,8,9-HxCDD	8.25e+04	1.17 y	1.05	34:50'	1.000	1.3228	*	2.5	*	Total Tetra-Fu	rans	1.39	1.75		*	
1,2,3,4,6,7,8-HpCDD	3.11e+06	1.03 y	1.05	38:21	1.000	55.314	*	2.5	*	Total Penta-Fu	rans	2.3133	2.5575		*	
OCDD	2.14e+07	0.89 y	0.96	41:33	1.000	573.26	*	2.5	*	Total Hexa-Fur	ans	7.70	7.70		*	
										Total Hepta-Fu	rans	20.6	20.6		*	
2,3,7,8-TCDF	*	* n	1.12	NotF ₁	*	*	687	2.5	0.0990							
1,2,3,7,8-PeCDF	1.34e+04	1.50 y	1.01	29:55	1.000	0.14226	*	2.5	*							
2,3,4,7,8-PeCDF	1.33e+04	1.59 y	0.90	30:51	1.000	0.13991	*	2.5	*							
1,2,3,4,7,8-HxCDF	2.66e+04	1.37 y	1.16	33:33*	1.000	0.33066	*	2.5	*							
1,2,3,6,7,8-HxCDF	2.27e+04	1.28 y	1.16	33:41-	1.000	0.26241	*	2.5	*							
2,3,4,6,7,8-HxCDF	3.09e+04	1.41 y	1.23	34:17	1.000	0.35360	*	2.5	*							
1,2,3,7,8,9-HxCDF	1.73e+04	1.22 y	1.13	35:13	1.000	0.26760	*	2.5	*							
1,2,3,4,6,7,8-HpCDF	5.34e+05	1.08 y	1.44	36:58	1.000	7.1630	*	2.5	*							
1,2,3,4,7,8,9-HpCDF	2.85e+04	1.17 y	1.31	38:54	1.000	0.43707	*	2.5	*							
OCDF	1.17e+06	0.91 y	1.03	41:47	1.000	24.206	*	2.5	*							
										Rec Qual						
13C-2,3,7,8-TCDD	1.54e+07	0.77 y	1.01	26:23	1.024	188.81				97.5						
13C-1,2,3,7,8-PeCDD	1.32e+07	0.62 y	1.10	31:08	1.209	147.87				76.4						
13C-1,2,3,4,7,8-HxCDD	1.15e+07	1.26 y	0.72	34:25,	1.014	219.24				113						
13C-1,2,3,6,7,8-HxCDD	1.09e+07	1.27 y	0.73	34:32	1.017	206.09				106						
13C-1,2,3,7,8,9-HxCDD	1.15e+07	1.25 y	0.70	34:49	1.025	224.63				116						
13C-1,2,3,4,6,7,8-HpCDD	1.04e+07	1.04 y	0.66	38:20	1.129	213.68				110						
13C-OCDD	1.50e+07	0.92 y	0.66	41:33	1.224	311.21				80.4						
13C-2,3,7,8-TCDF	2.27e+07	0.79 y	0.90	25:32	0.992	204.15				105						
13C-1,2,3,7,8-PeCDF	1.81e+07	1.59 y	0.98	29:54	1.162	149.27				77.1						
13C-2,3,4,7,8-PeCDF	2.04e+07	1.61 y	1.15	30:51	1.198	144.18				74.5						
13C-1,2,3,4,7,8-HxCDF	1.34e+07	0.51 y	1.01	33:33	0.988	180.80				93.4						
13C-1,2,3,6,7,8-HxCDF	1.45e+07	0.52 y	1.10	33:40-	0.992	180.94				93.5						
13C-2,3,4,6,7,8-HxCDF	1.38e+07	0.53 y	0.95	34:16-	1.009	198.69				103						
13C-1,2,3,7,8,9-HxCDF	1.11e+07	0.52 y	0.83	35:12	1.037	183.20				94.6						
13C-1,2,3,4,6,7,8-HpCDF	1.00e+07	0.44 y	0.70	36:58	1.088	196.54				102						
13C-1,2,3,4,7,8,9-HpCDF	9.63e+06	0.45 y	0.72	38:53	1.145	183.08				94.6						
13C-OCDF	1.81e+07	0.90 у	0.82	41:46	1.230	301.30				77.8						
37C1-2,3,7,8-TCDD	6.58e+06		1.14	26:23	1.025	71.447				92.3	Integra	ations	Revi	ewed		
											by '	20	by		. 6	
T 13C-1,2,3,4-TCDD	1.57e+07	0.81 y	1.00	25:45	*	193.58				Anal	yst:	115	Anal	yst:_	ML	_
13C-1,2,3,4-TCDF	2.39e+07	0.81 y	1.00	24:09	*	193.58								_	1221	
T 13C-1,2,3,4,6,9-HxCDF	1 410:07	0.52 y	1.00	33:57		193.58						1 .		_	11201	"

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Totals class: TCDD EMPC Entry #: 19

Run: 14 File: 160719D1 S: 12 I: 1 F: 1
Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 2.6689 Unnamed Concentration: 2.487

RT	m1 Resp	m2 Resp	RA	Resp	Concentration	Name
22:34	1.644e+04	1.587e+04	1.04 n	2.809e+04	0.31131	
22:59	1.056e+04	1.333e+04	0.79 y	2.389e+04	0.26475	
23:28	6.561e+03	1.098e+04	0.60 n	1.508e+04	0.16714	
24:19	8.364e+03	1.218e+04	0.69 y	2.055e+04	0.22771	
24:33	2.603e+04	2.945e+04	0.88 Y	5.549e+04	0.61491	
24:45	8.424e+03	1.162e+04	0.72 y	2.005e+04	0.22219	
24:58	2.857e+03	2.990e+03	0.96 n	5.293e+03	0.058659	
25:12	3.361e+03	3.049e+03	1.10 n	5.396e+03	0.059802	
25:23	4.671e+03	5.503e+03	0.85 y	1.017e+04	0.11275	
25:44	7.270e+03	9.450e+03	0.77 y	1.672e+04	0.18530	
26:07	6.056e+03	9.015e+03	0.67 y	1.507e+04	0.16703	
26:23	7.143e+03	1.400e+04	0.51 n	1.642e+04	0.18196	2,3,7,8-TCDD
26:43	5.344e+03	4.863e+03	1.10 n	8.608e+03	0.095397	

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Totals class: PeCDD EMPC Entry #: 21

Run: 14 File: 160719D1 S: 12 I: 1 F: 2 Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 5.0124 Unnamed Concentration: 4.465

RT	ml Resp	m2 Resp	RA	Resp	Concentration	Name
29:00	3.155e+04	6.826e+04	0.46 n	8.162e+04	1.2440	
29:27	2.122e+04	2.984e+04	0.71 y	5.107e+04	0.77829	
29:57	6.931e+03	1.238e+04	0.56 y	1.931e+04	0.29435	
30:06	1.535e+04	2.184e+04	0.70 y	3.719e+04	0.56684	
30:12	8.969e+03	1.531e+04	0.59 y	2.428e+04	0.37006	
30:24	1.875e+04	2.594e+04	0.72 y	4.469e+04	0.68109	
30:43	6.686e+03	7.345e+03	0.91 n	1.197e+04	0.18248	
31:08	1.481e+04	2.112e+04	0.70 y	3.593e+04	0.54761	1,2,3,7,8-PeCDD
31:13	4.115e+03	6.777e+03	0.61 y	1.089e+04	0.16601	
31:31	4.746e+03	7.175e+03	0.66 y	1.192e+04	0.18170	

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Totals class: HxCDD EMPC Entry #: 23

Run: 14 File: 160719D1 S: 12 I: 1 F: 3
Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 16.013 Unnamed Concentration: 12.151

RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
32:55	1.831e+05	1.471e+05 1.25 y	3.301e+05 5.3779	
33:29	2.786e+04	2.298e+04 1.21 y	5.084e+04 0.82817	
33:45	1.902e+05	1.534e+05 1.24 y	3.436e+05 5.5971	
34:26	2.232e+04	1.789e+04 1.25 y	4.021e+04 0.67288	1,2,3,4,7,8-HxCDD
34:32	6.245e+04	5.315e+04 1.17 y	1.156e+05 1.8668	1,2,3,6,7,8-HxCDD
34:44	1.206e+04	9.267e+03 1.30 y	2.133e+04 0.34746	
34:50	4.441e+04	3.806e+04 1.17 y	8.247e+04 1.3228	1,2,3,7,8,9-HxCDD

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Totals class: HpCDD EMPC Entry #: 25

Run: 14 File: 160719D1 S: 12 I: 1 F: 4
Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 92.644 Unnamed Concentration: 37.329

RT ml Resp m2 Resp RA Resp Concentration Name

37:22 1.073e+06 1.027e+06 1.04 y 2.101e+06 37.329 38:21 1.582e+06 1.531e+06 1.03 y 3.113e+06 55.314 1,2,3,4,6,7,8-HpCDD

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Totals class: TCDF EMPC Entry #: 27

Run: 14 File: 160719D1 S: 12 I: 1 F: 1 Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 1.7490 Unnamed Concentration: 1.749

RT	m1 Resp	m2 Resp RA	Resp	Concentration	Name
20:23	9.637e+03	1.252e+04 0.77 y	2.215e+04	0.16867	
21:34	3.467e+04	4.483e+04 0.77 y	7.950e+04	0.60535	
22:07	1.100e+04	1.553e+04 0.71 y	2.653e+04	0.20201	
24:06	1.573e+04	1.846e+04 0.85 y	3.419e+04	0.26033	
25:55	8.731e+03	1.123e+04 0.78 y	1.996e+04	0.15196	
27:27	4.275e+04	2.676e+04 1.60 n	4.736e+04	0.36064	

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Totals class: 1st Func. PeCDF EMPC Entry #: 29

Run: 14 File: 160719D1 S: 12 I: 1 F: 1 Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 0.83755 Unnamed Concentration: 0.838

RT m1 Resp m2 Resp RA Resp Concentration Name

27:25 4.863e+04 3.042e+04 1.60 y 7.905e+04 0.83755

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Totals class: PeCDF EMPC Entry #: 31

Run: 14 File: 160719D1 S: 12 I: 1 F: 2 Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 1.7200 Unnamed Concentration: 1.438

RT	ml Resp	m2 Resp F	RA	Resp	Concentration	Name
28:49	1.142e+04	7.643e+03 1	1.49 y	1.907e+04	0.20202	
28:57	1.824e+04	1.333e+04 1	1.37 y	3.157e+04	0.33445	
29:02	8.546e+03	1.114e+04 0	0.77 n	1.406e+04	0.14897	
29:33	1.435e+04	1.002e+04 1	1.43 y	2.437e+04	0.25822	
29:44	3.070e+03	1.952e+03 1	1.57 y	5.023e+03	0.053218	
29:55	8.024e+03	5.367e+03 1	1.50 y	1.339e+04	0.14226	1,2,3,7,8-PeCDF
30:09	8.773e+03	6.626e+03 1	1.32 y	1.540e+04	0.16315	
30:17	3.626e+03	2.419e+03 1	1.50 y	6.045e+03	0.064051	
30:45	6.562e+03	4.615e+03 1	1.42 y	1.118e+04	0.11843	
30:51	8.137e+03	5.132e+03 1	1.59 у	1.327e+04	0.13991	2,3,4,7,8-PeCDF
31:44	5.468e+03	1.050e+04 (0.52 n	8.995e+03	0.095306	

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Totals class: HxCDF EMPC Entry #: 33

Run: 14 File: 160719D1 S: 12 I: 1 F: 3
Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

Total Concentration: 7.7047 Unnamed Concentration: 6.490

RT	m1 Resp	m2 Resp RA	Resp Concentration	Name
	2.900e+04	2.283e+04 1.27 y		
	1.126e+05 5.911e+03	9.531e+04 1.18 y 4.872e+03 1.21 y		
	1.325e+05	1.011e+05 1.31 y		
	6.992e+03 1.534e+04	6.266e+03 1.12 y 1.123e+04 1.37 y		1,2,3,4,7,8-HxCDF
	1.275e+04	9.982e+03 1.28 y		1,2,3,4,7,8-HXCDF
34:17	1.812e+04	1.282e+04 1.41 y	3.093e+04 0.35360	2,3,4,6,7,8-HxCDF
35:13	9.533e+03	7.799e+03 1.22 y	1.733e+04 0.26760	1,2,3,7,8,9-HxCDF

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Totals class: HpCDF EMPC Entry #: 35

Run: 14 File: 160719D1 S: 12 I: 1 F: 4
Acquired: 20-JUL-16 00:05:49 Processed: 20-JUL-16 09:26:17

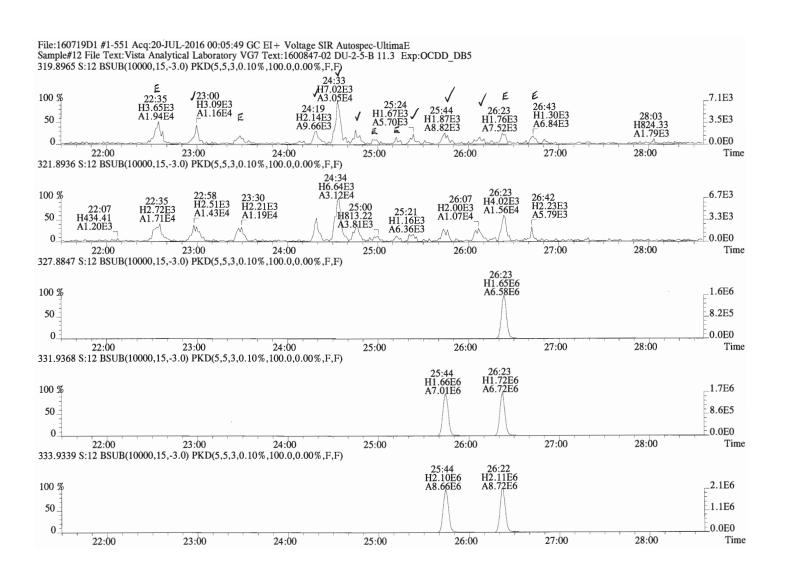
Total Concentration: 20.582 Unnamed Concentration: 12.982

RT ml Resp m2 Resp RA Resp Concentration Name

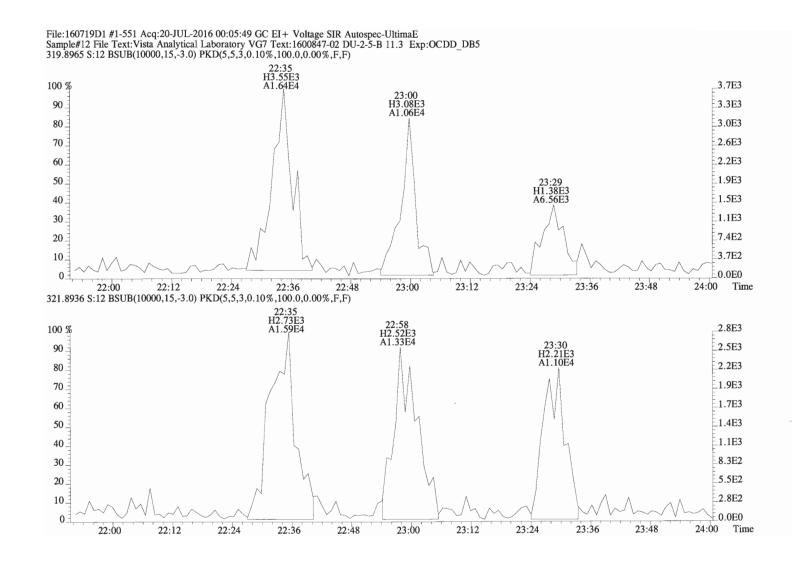
36:58 2.778e+05 2.567e+05 1.08 y 5.345e+05 7.1630 1,2,3,4,6,7,8-HpCDF
37:36 4.591e+05 4.473e+05 1.03 y 9.064e+05 12.982

38:54 1.541e+04 1.313e+04 1.17 y 2.854e+04 0.43707 1,2,3,4,7,8,9-HpCDF

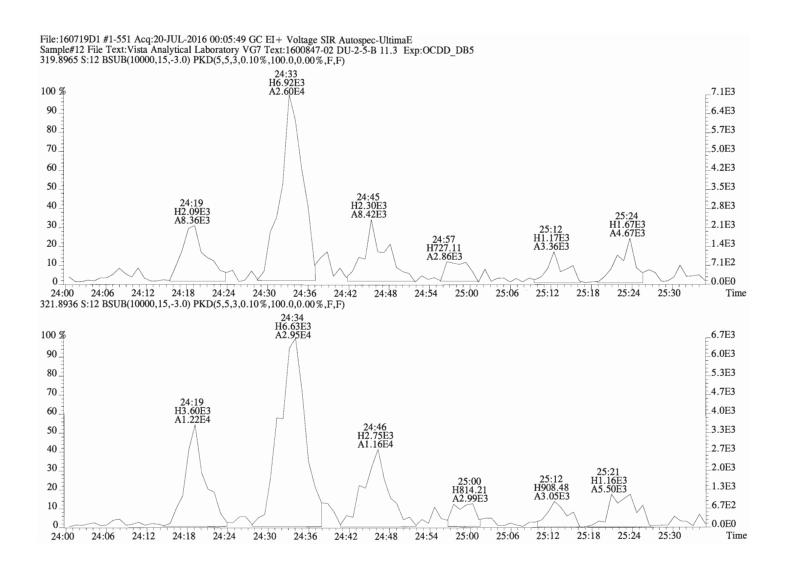
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File:160719D1 #1-551 Acq:20-JUL-2016 00:05:49 GC EI+ Voltage SIR Autospec-UltimaE Sample#12 File Text:Vista Analytical Laboratory VG7 Text:1600847-02 DU-2-5-B 11.3 Exp:OCDD_DB5 319.8965 S:12 BSUB(10000,15,-3.0) PKD(5,5,3,0.10 %,100.0,0.00 %,F,F)

25:42

25:36

25:30

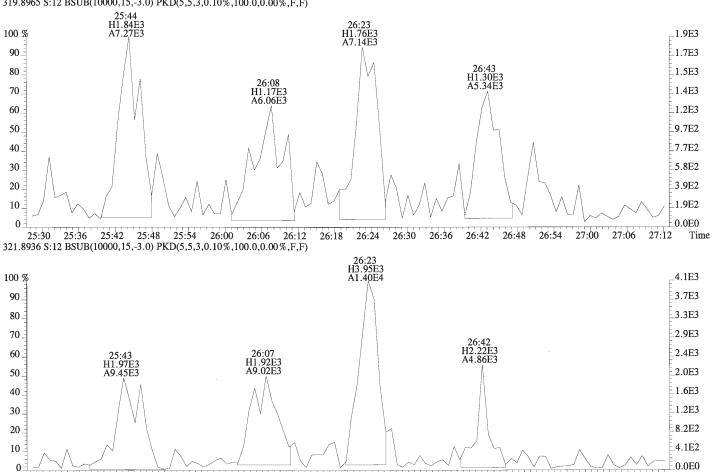
25:48

25:54

26:00

26:06

26:12



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26:24

26:18

26:30

26:36

26:42

26:48

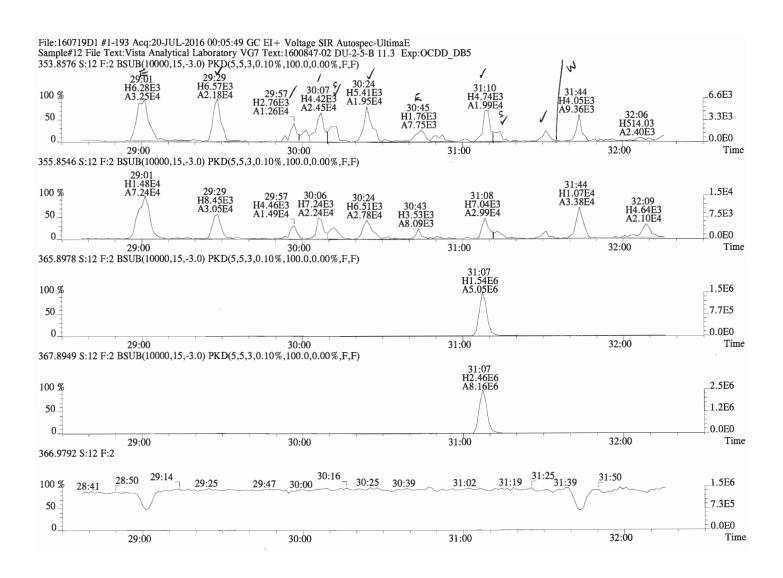
26:54

27:00

27:06

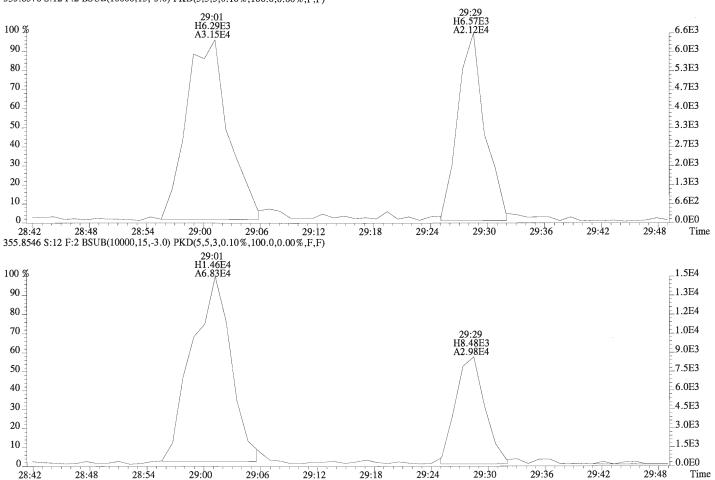
27:12

Time



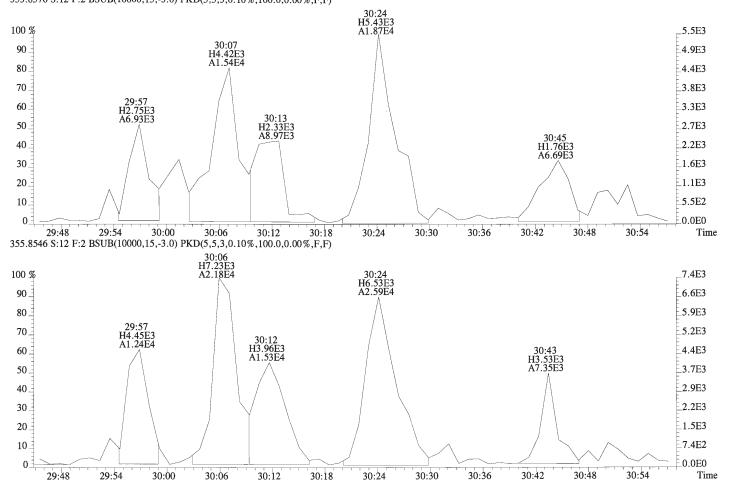
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File:160719D1 #1-193 Acq:20-JUL-2016 00:05:49 GC EI+ Voltage SIR Autospec-UltimaE Sample#12 File Text:Vista Analytical Laboratory VG7 Text:1600847-02 DU-2-5-B 11.3 Exp:OCDD_DB5 353.8576 S:12 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



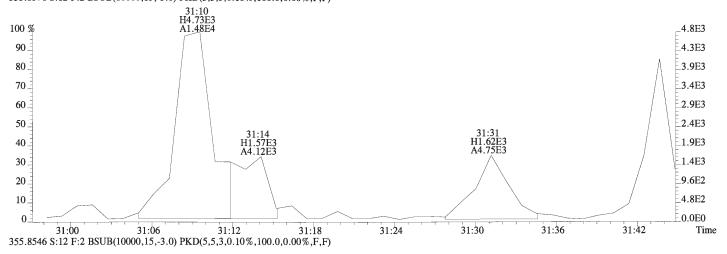
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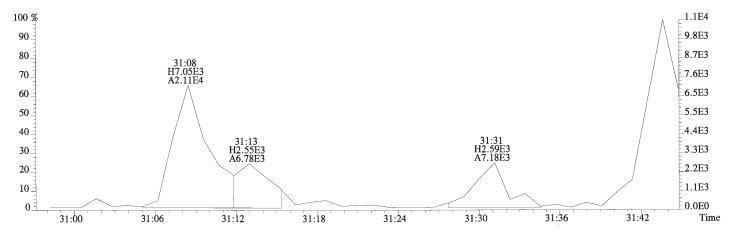
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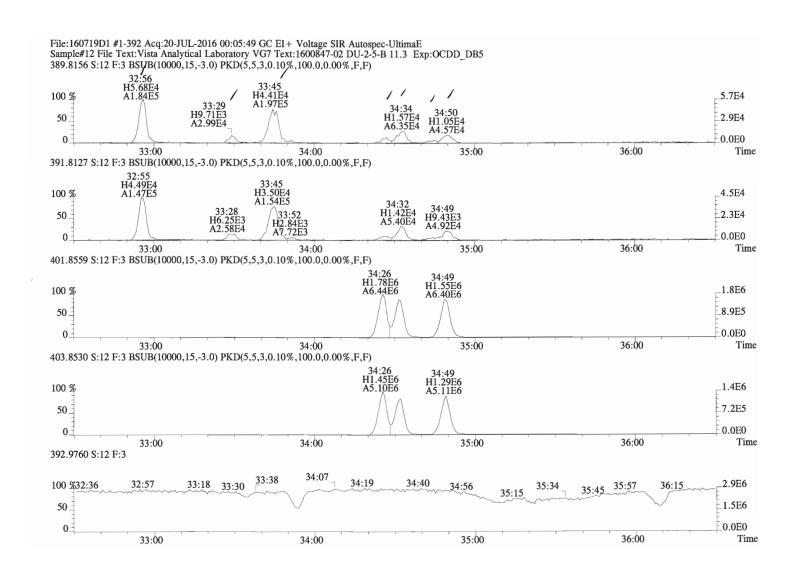
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File:160719D1 #1-193 Acq:20-JUL-2016 00:05:49 GC EI+ Voltage SIR Autospec-UltimaE Sample#12 File Text:Vista Analytical Laboratory VG7 Text:1600847-02 DU-2-5-B 11.3 Exp:OCDD_DB5 353.8576 S:12 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



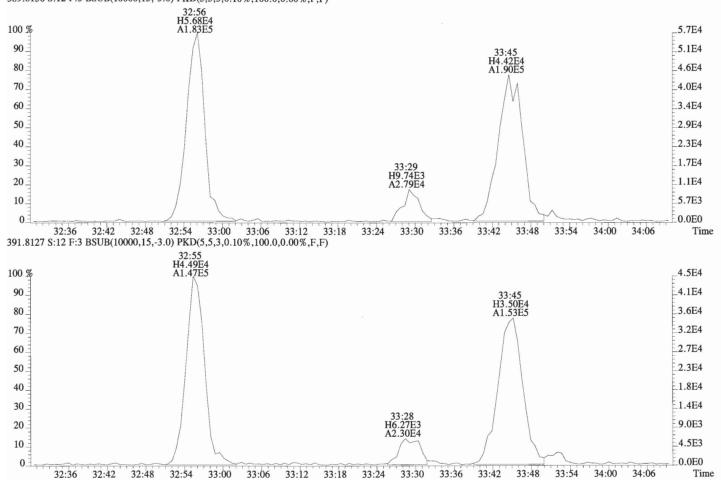


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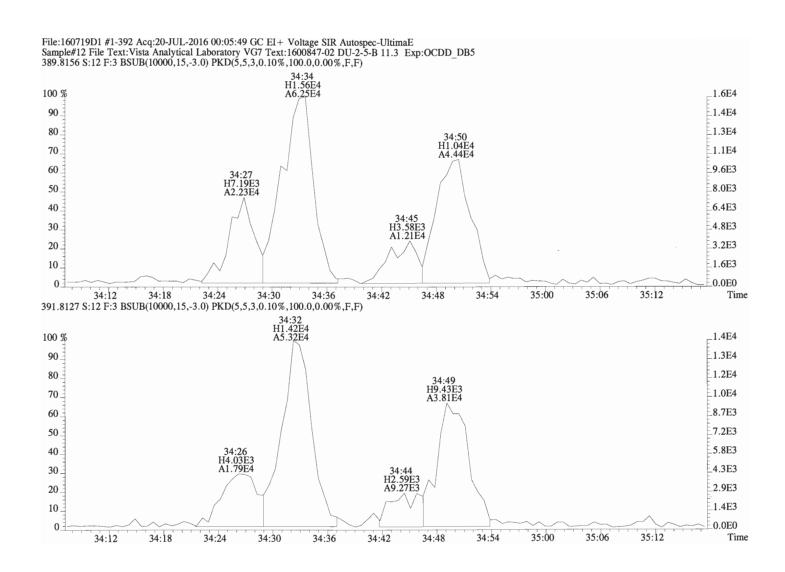


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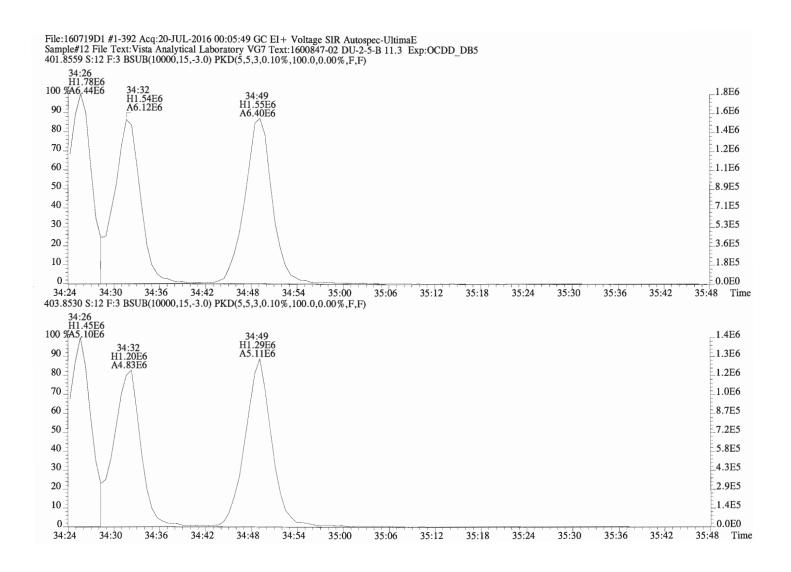
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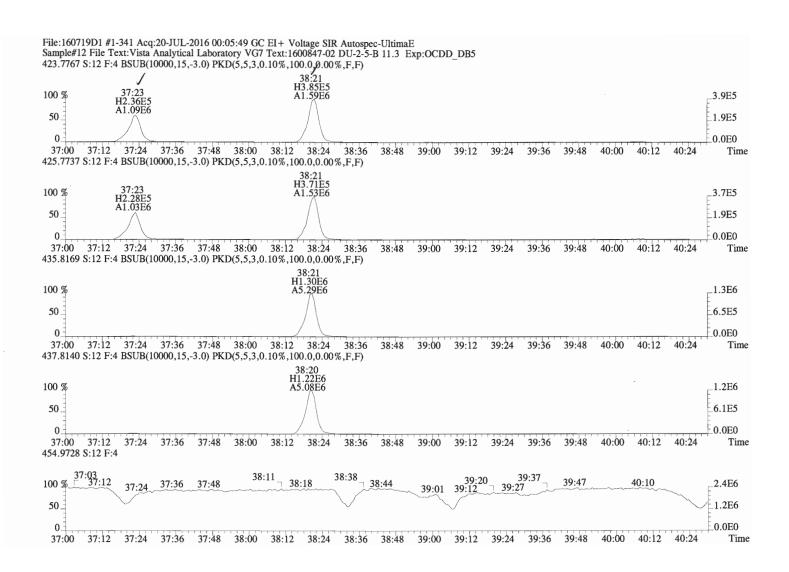
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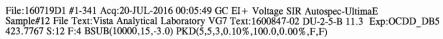
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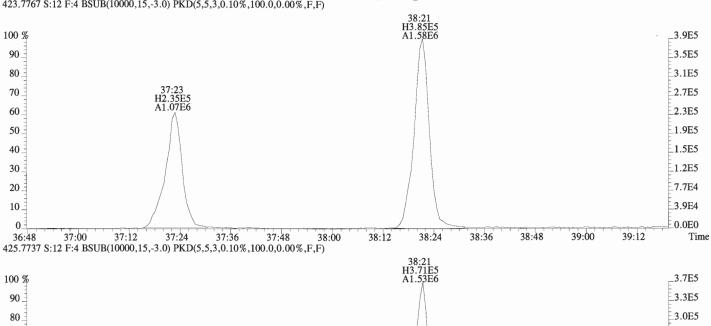


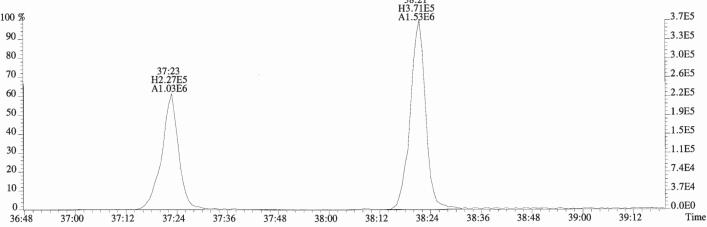
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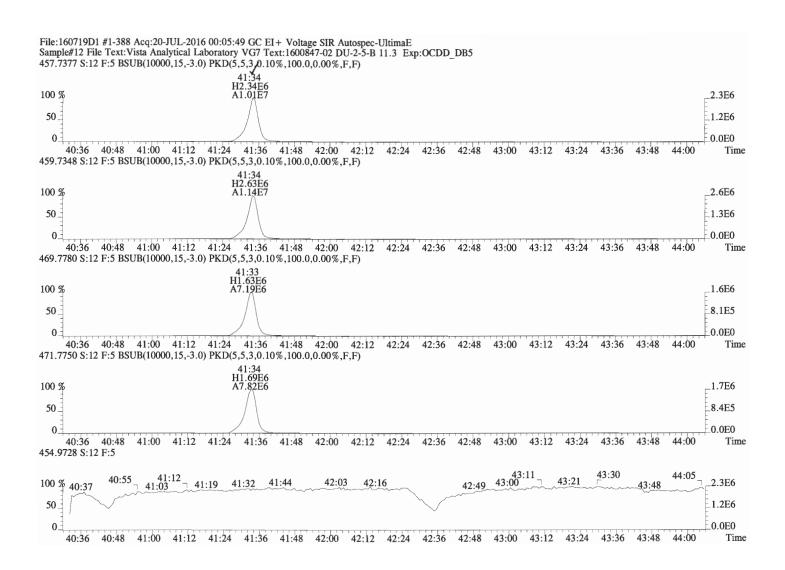
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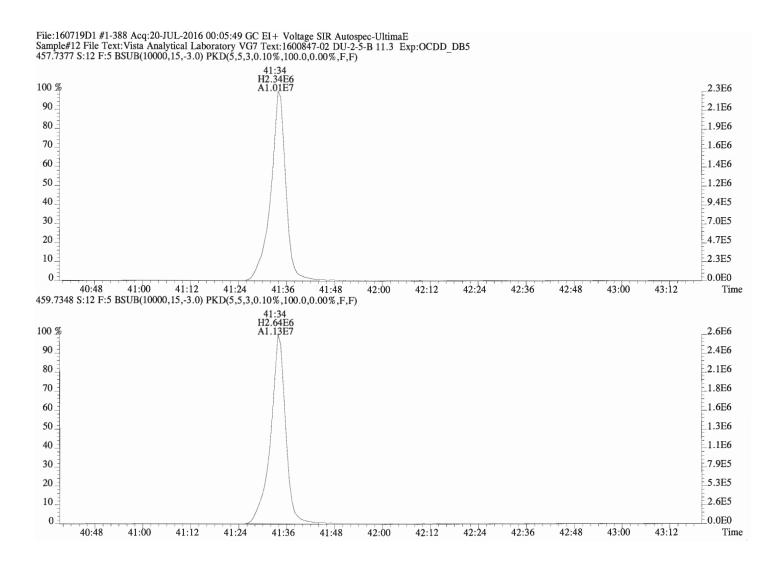




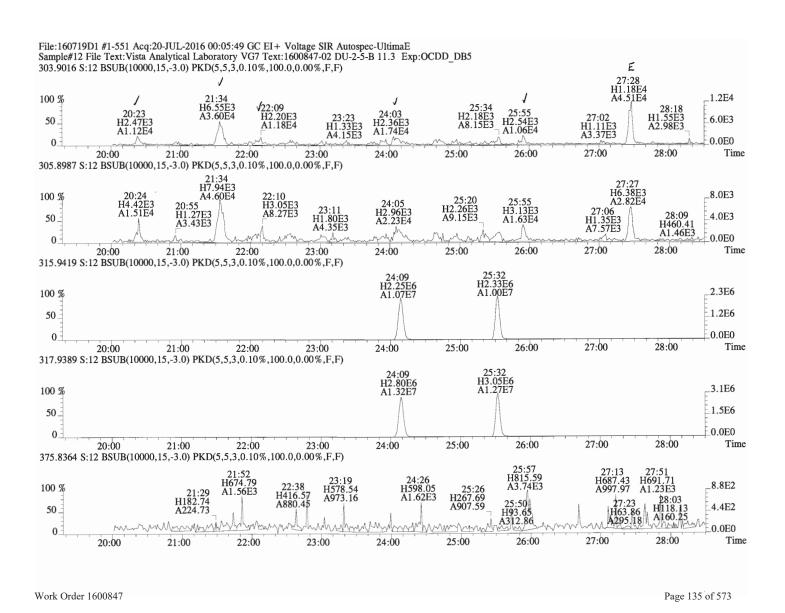
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File:160719D1 #1-551 Acq:20-JUL-2016 00:05:49 GC EI+ Voltage SIR Autospec-UltimaE Sample#12 File Text:Vista Analytical Laboratory VG7 Text:1600847-02 DU-2-5-B 11.3 Exp:OCDD_DB5 303.9016 S:12 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

30 20

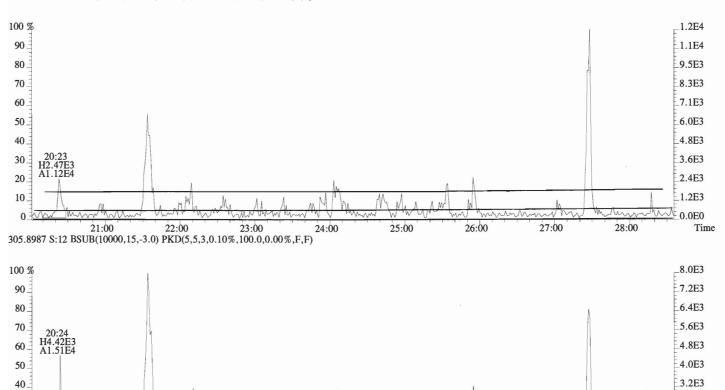
10

WWW.

21:00

22:00

23:00



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24:00

25:00

26:00

2.4E3

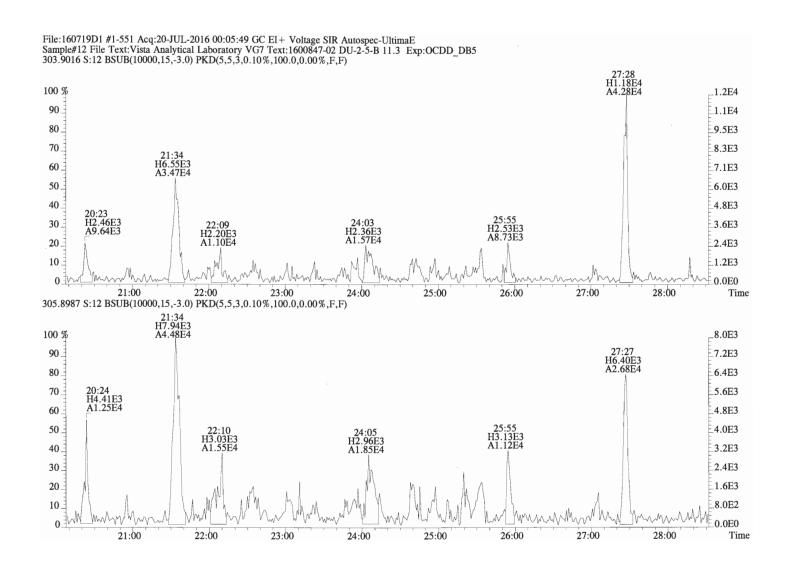
1.6E3 8.0E2

0.0E0

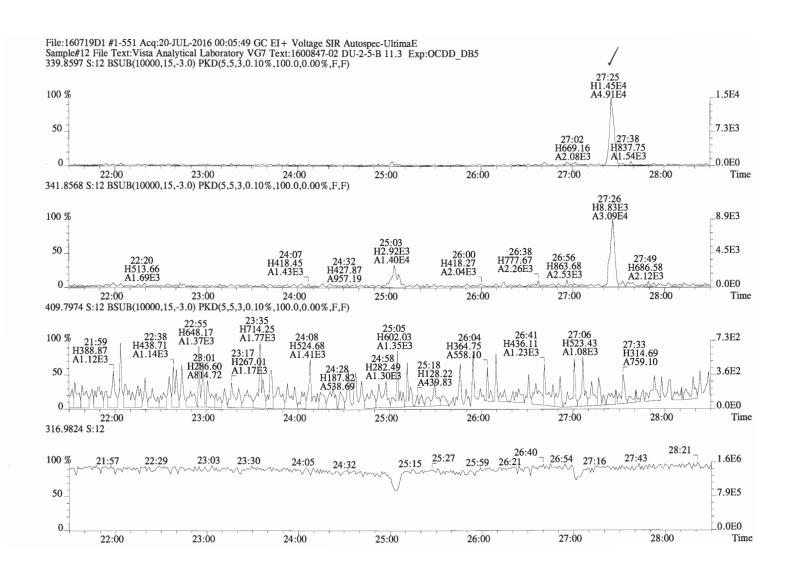
Time

28:00

27:00

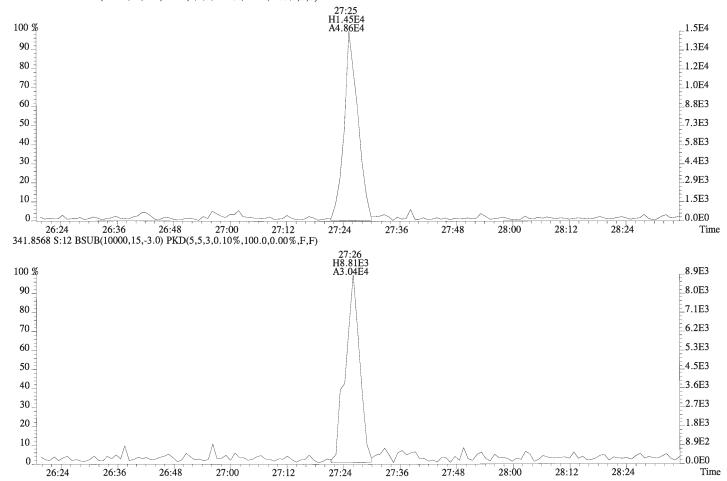


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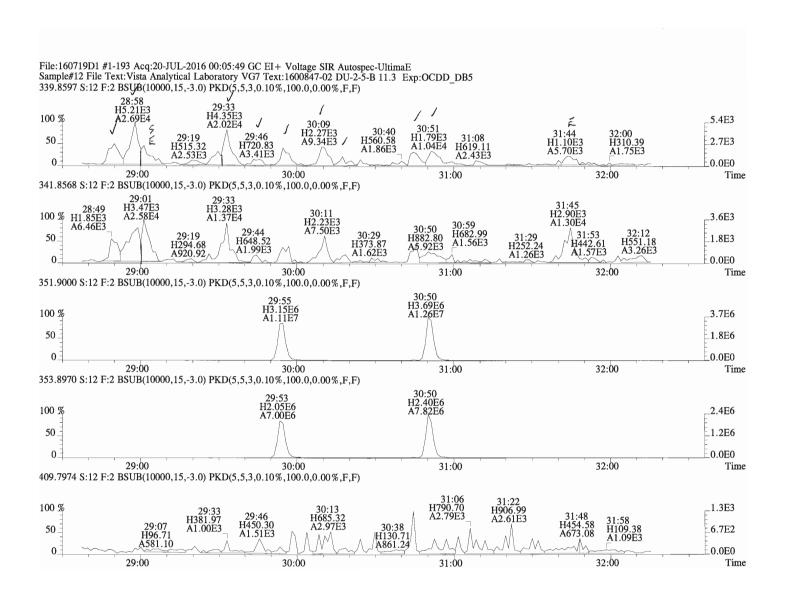


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File:160719D1 #1-551 Acq:20-JUL-2016 00:05:49 GC EI+ Voltage SIR Autospec-UltimaE Sample#12 File Text:Vista Analytical Laboratory VG7 Text:1600847-02 DU-2-5-B 11.3 Exp:OCDD_DB5 339.8597 S:12 BSUB(10000,15,-3.0) PKD(5,5,3,0.10 %,100.0,0.00 %,F,F)



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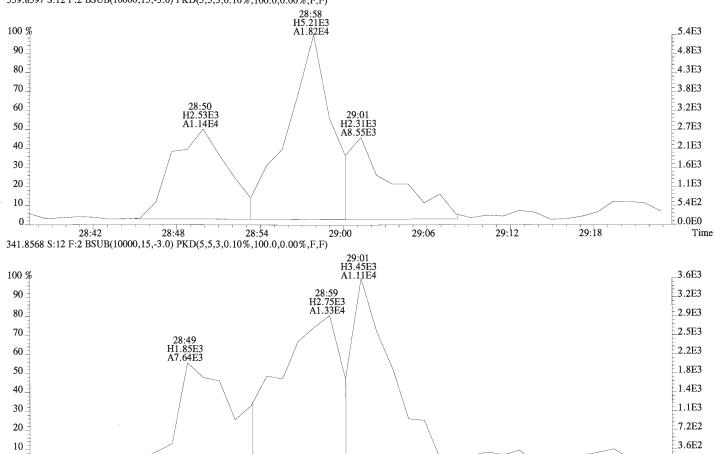
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0

28:42

28:48

28:54



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29:00

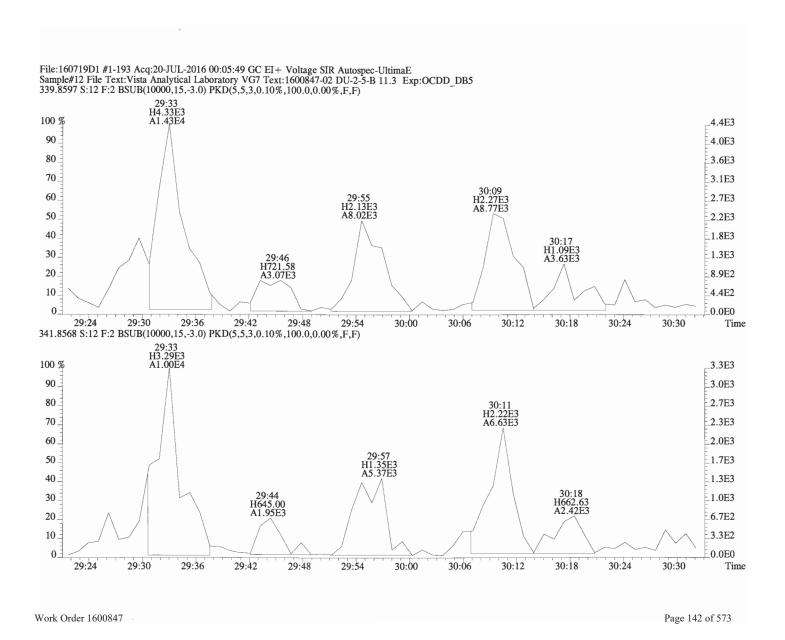
29:06

29:12

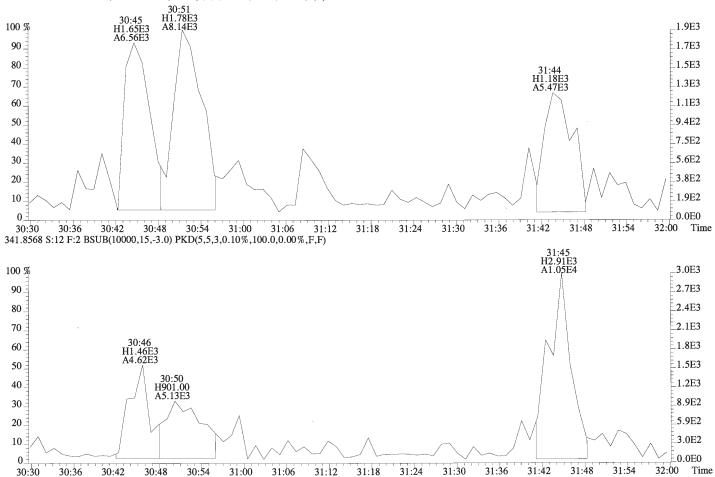
E0.0E0

Time

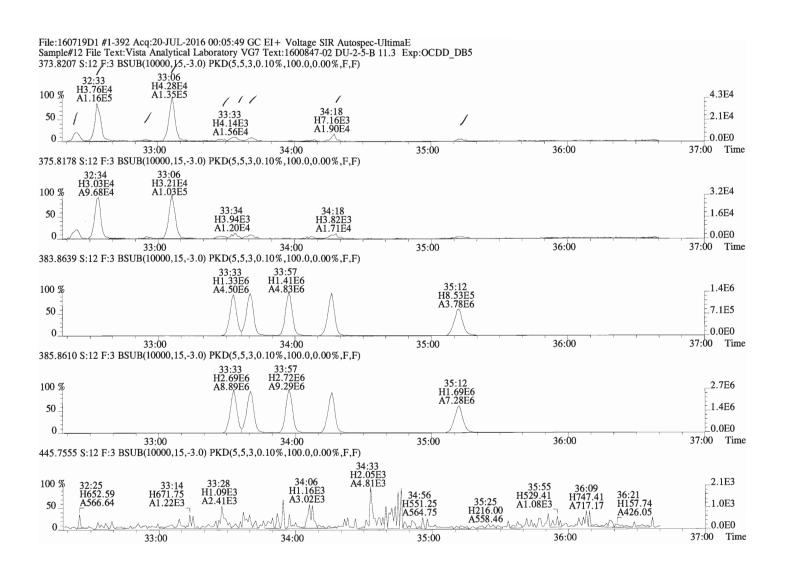
29:18



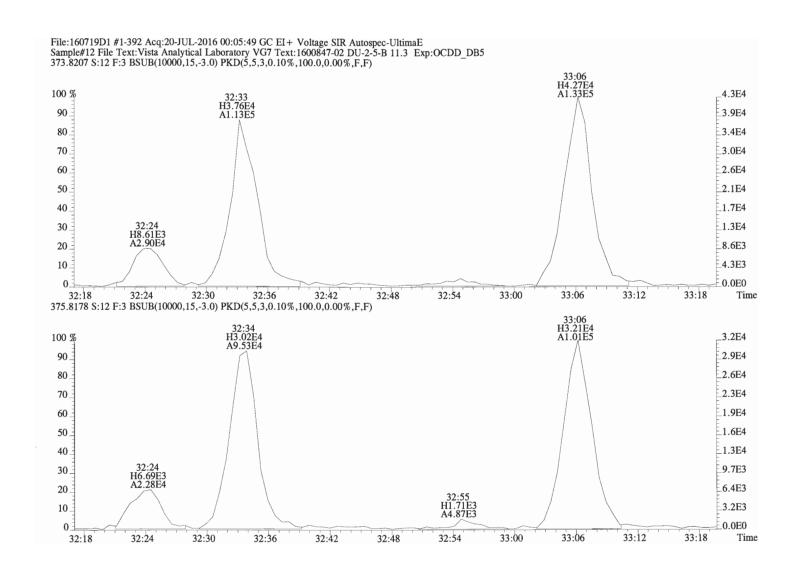
File:160719D1 #1-193 Acq:20-JUL-2016 00:05:49 GC EI+ Voltage SIR Autospec-UltimaE Sample#12 File Text:Vista Analytical Laboratory VG7 Text:1600847-02 DU-2-5-B 11.3 Exp:OCDD_DB5 339.8597 S:12 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



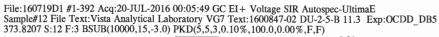
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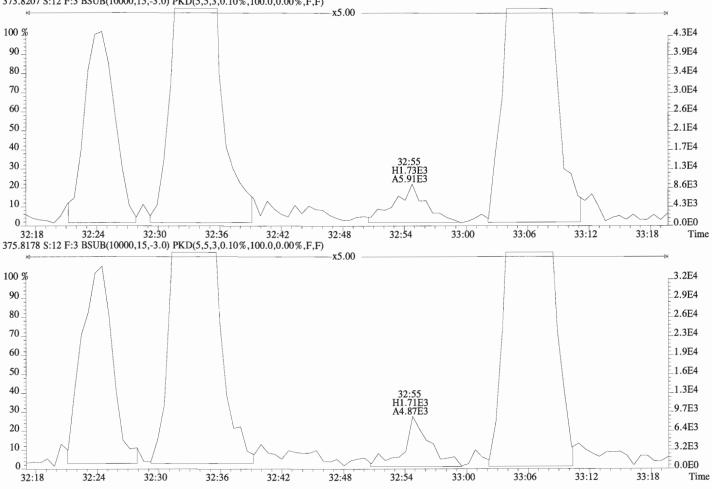


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