

December 23, 2019

Vista Work Order No. 1903741

Ms. Delaney Peterson Anchor QEA, LLC 720 Olive Way, Suite 1900 Seattle, WA 98101

Dear Ms. Peterson,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on October 18, 2019 under your Project Name 'Gasco PDI'.

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 Windfield 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. 1903741 Case Narrative

Sample Condition on Receipt:

Six sediment 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 1613B

These samples were extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613B 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.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1903741-01	PDI-049SC-A-14-15-191015	15-Oct-19 13:29	18-Oct-19 08:59	Amber Glass, 120 mL
1903741-02	PDI-049SC-A-15-15.5-191015	15-Oct-19 13:29	18-Oct-19 08:59	Amber Glass, 120 mL
1903741-03	PDI-052SC-A-11-12-191015	15-Oct-19 08:41	18-Oct-19 08:59	Amber Glass, 120 mL
1903741-04	PDI-052SC-A-12-13.4-191015	15-Oct-19 08:41	18-Oct-19 08:59	Amber Glass, 120 mL
1903741-05	PDI-055SC-A-11-12-191015	15-Oct-19 10:51	18-Oct-19 08:59	Amber Glass, 120 mL
1903741-06	PDI-055SC-A-12-13.1-191015	15-Oct-19 10:51	18-Oct-19 08:59	Amber Glass, 120 mL

Vista Project: 1903741 Client Project: Gasco PDI

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ANALYTICAL RESULTS

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Sample ID: Method	Blank				_			EPA Me	ethod 1613B
Matrix: Solid Sample Size: 10.0 g	ţ.	(····	B9K0011 04-Nov-2019 7:38		1	ab Sample: B9K0011-BLK1 ate Analyzed: 08-Nov-19 17:2	9 Column: ZB-5M	S	
Analyte Conc.	(pg/g)	DL EM	MPC Qu	ıalifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0627			IS	13C-2,3,7,8-TCDD	103	25 - 164	
1,2,3,7,8-PeCDD	ND	0.102				13C-1,2,3,7,8-PeCDD	109	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0718				13C-1,2,3,4,7,8-HxCDD	102	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.0754				13C-1,2,3,6,7,8-HxCDD	87.7	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.0754				13C-1,2,3,7,8,9-HxCDD	92.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.0922				13C-1,2,3,4,6,7,8-HpCDD	101	23 - 140	
OCDD	ND	0.104				13C-OCDD	100	17 - 157	
2,3,7,8-TCDF	ND	0.0711				13C-2,3,7,8-TCDF	95.0	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0921				13C-1,2,3,7,8-PeCDF	101	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0915				13C-2,3,4,7,8-PeCDF	98.0	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0325				13C-1,2,3,4,7,8-HxCDF	102	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0329				13C-1,2,3,6,7,8-HxCDF	92.2	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0359				13C-2,3,4,6,7,8-HxCDF	94.0	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0467				13C-1,2,3,7,8,9-HxCDF	98.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.172			J		13C-1,2,3,4,6,7,8-HpCDF	97.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0566				13C-1,2,3,4,7,8,9-HpCDF	107	26 - 138	
OCDF	ND	0.122				13C-OCDF	104	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	110	35 - 197	
						Toxic Equivalent Quotient (T)	EQ) Data (pg/g dr	y wt)	
						TEQMinWHO2005Dioxin	0.00172		
TOTALS									
Total TCDD	ND	0.0627							
Total PeCDD	ND	0.102							
Total HxCDD	ND	0.0745							
Total HpCDD	ND	0.0922							
Total TCDF	ND	0.0711							
Total PeCDF	ND	0.0917							
Total HxCDF	ND	0.0365							
Total HpCDF	0.172					CL - Lower control limit - unner control liv			

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: OPR								EPA Method 1613B
Matrix: Solid Sample Size: 10.0 g			B9K0011 04-Nov-2019	9 7:38		Lab Sample: B9K0011-BS1 Date Analyzed: 08-Nov-19 14:17	Column: ZB-5MS	
Analyte	Amt Found (pg/g)	Spike Amt	%R	Limits		Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	20.9	20.0	104	67 - 158	IS	13C-2,3,7,8-TCDD	78.4	20 - 175
1,2,3,7,8-PeCDD	87.8	100	87.8	70 - 142		13C-1,2,3,7,8-PeCDD	91.9	21 - 227
1,2,3,4,7,8-HxCDD	95.5	100	95.5	70 - 164		13C-1,2,3,4,7,8-HxCDD	97.0	21 - 193
1,2,3,6,7,8-HxCDD	99.5	100	99.5	76 - 134		13C-1,2,3,6,7,8-HxCDD	83.6	25 - 163
1,2,3,7,8,9-HxCDD	95.5	100	95.5	64 - 162		13C-1,2,3,7,8,9-HxCDD	90.7	21 - 193
1,2,3,4,6,7,8-HpCDD	96.2	100	96.2	70 - 140		13C-1,2,3,4,6,7,8-HpCDD	100	26 - 166
OCDD	199	200	99.7	78 - 144		13C-OCDD	100	13 - 199
2,3,7,8-TCDF	17.3	20.0	86.6	75 - 158		13C-2,3,7,8-TCDF	75.3	22 - 152
1,2,3,7,8-PeCDF	92.5	100	92.5	80 - 134		13C-1,2,3,7,8-PeCDF	88.2	21 - 192
2,3,4,7,8-PeCDF	92.6	100	92.6	68 - 160		13C-2,3,4,7,8-PeCDF	79.8	13 - 328
1,2,3,4,7,8-HxCDF	94.2	100	94.2	72 - 134		13C-1,2,3,4,7,8-HxCDF	93.0	19 - 202
1,2,3,6,7,8-HxCDF	94.4	100	94.4	84 - 130		13C-1,2,3,6,7,8-HxCDF	84.1	21 - 159
2,3,4,6,7,8-HxCDF	98.0	100	98.0	70 - 156		13C-2,3,4,6,7,8-HxCDF	84.1	22 - 176
1,2,3,7,8,9-HxCDF	94.9	100	94.9	78 - 130		13C-1,2,3,7,8,9-HxCDF	91.9	17 - 205
1,2,3,4,6,7,8-HpCDF	93.4	100	93.4	82 - 122		13C-1,2,3,4,6,7,8-HpCDF	90.6	21 - 158
1,2,3,4,7,8,9-HpCDF	90.0	100	90.0	78 - 138		13C-1,2,3,4,7,8,9-HpCDF	102	20 - 186
OCDF	188	200	93.9	63 - 170		13C-OCDF	102	13 - 199
					CRS	37Cl-2,3,7,8-TCDD	87.8	31 - 191

LCL-UCL - Lower control limit - upper control limit

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Sample ID: PDI-049	SC-A-14-15-191015							EPA Me	thod 1613B
Project: Gasco	or QEA, LLC PDI t-2019 13:29	Sample Da Matrix: Sample S % Solids	Sediment Size: 14.3 g		Lab QC	Sample: 1903741-01 Batch: B9K0011 e Analyzed: 18-Dec-19 23:11	Date Received: Date Extracted: Column: ZB-5MS		
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.338			IS	13C-2,3,7,8-TCDD	55.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.237				13C-1,2,3,7,8-PeCDD	72.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.188				13C-1,2,3,4,7,8-HxCDD	72.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.191				13C-1,2,3,6,7,8-HxCDD	85.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.223				13C-1,2,3,7,8,9-HxCDD	93.1	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.348				13C-1,2,3,4,6,7,8-HpCDD	87.0	23 - 140	
OCDD	ND		2.26			13C-OCDD	87.3	17 - 157	
2,3,7,8-TCDF	ND	0.175				13C-2,3,7,8-TCDF	46.5	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0844				13C-1,2,3,7,8-PeCDF	58.9	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0857				13C-2,3,4,7,8-PeCDF	55.6	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0749				13C-1,2,3,4,7,8-HxCDF	82.3	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0782				13C-1,2,3,6,7,8-HxCDF	85.5	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0740				13C-2,3,4,6,7,8-HxCDF	87.9	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.112				13C-1,2,3,7,8,9-HxCDF	91.2	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.101				13C-1,2,3,4,6,7,8-HpCDF	89.6	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.132				13C-1,2,3,4,7,8,9-HpCDF	87.2	26 - 138	
OCDF	ND	0.225				13C-OCDF	97.3	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	60.1	35 - 197	
						Toxic Equivalent Quotient (TEQ)) Data (pg/g dry w	rt)	
						TEQMinWHO2005Dioxin	0.00		
TOTALS									
Total TCDD	ND	0.338							
Total PeCDD	ND	0.237							
Total HxCDD	ND		0.220						
Total HpCDD	ND		0.318						
Total TCDF		0.175							
Total PeCDF		0.0857							
Total HxCDF	ND	0.112							
Total HpCDF DL - Sample specifc estir	0.0496			В		L- Lower control limit - upper control limit			

EMPC - Estimated maximum possible concentration

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: PDI-049S	SC-A-15-15.5-191015								EPA Met	hod 1613B
Project: Gasco P	QEA, LLC PDI 2019 13:29	Sample Da Matrix: Sample Si % Solids:	Sediment		Lab QC I	oratory Data Sample: Batch: e Analyzed :	1903741-02 B9K0011 18-Dec-19 23:59	Date Received: Date Extracted: Column: ZB-5MS		
Analyte Conc. (p	og/g)	DL I	EMPC	Qualifiers		Labeled Standa	ard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND 0	.158			IS	13C-2,3,7,8-TC	DD	88.8	25 - 164	
1,2,3,7,8-PeCDD	ND 0	.123				13C-1,2,3,7,8-P	PeCDD	91.3	25 - 181	
1,2,3,4,7,8-HxCDD		.196				13C-1,2,3,4,7,8	-HxCDD	79.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND 0	.180				13C-1,2,3,6,7,8	-HxCDD	92.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND 0	.220				13C-1,2,3,7,8,9	-HxCDD	88.0	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.959			J		13C-1,2,3,4,6,7	,8-HpCDD	78.0	23 - 140	
OCDD	8.92					13C-OCDD		72.0	17 - 157	
2,3,7,8-TCDF	ND 0.	0755				13C-2,3,7,8-TC	DF	84.7	24 - 169	
1,2,3,7,8-PeCDF	ND 0.	0622				13C-1,2,3,7,8-P	PeCDF	77.1	24 - 185	
2,3,4,7,8-PeCDF	ND		0.0130			13C-2,3,4,7,8-P	PeCDF	76.9	21 - 178	
1,2,3,4,7,8-HxCDF	ND 0.	0512				13C-1,2,3,4,7,8	-HxCDF	84.3	26 - 152	
1,2,3,6,7,8-HxCDF	ND 0.	0549				13C-1,2,3,6,7,8	-HxCDF	86.3	26 - 123	
2,3,4,6,7,8-HxCDF	ND 0.	0606				13C-2,3,4,6,7,8	-HxCDF	84.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND 0.	0740				13C-1,2,3,7,8,9	-HxCDF	94.7	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.112			J, B		13C-1,2,3,4,6,7	,8-HpCDF	89.6	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND 0	.123				13C-1,2,3,4,7,8	,9-HpCDF	81.2	26 - 138	
OCDF	ND 0	.161				13C-OCDF		82.3	17 - 157	
					CRS	37Cl-2,3,7,8-T0	CDD	85.3	35 - 197	
						Toxic Equivale	nt Quotient (TEQ)	Data (pg/g dry w	t)	
						TEQMinWHO2	005Dioxin	0.0134		
TOTALS										
Total TCDD	ND		0.0660							
Total PeCDD	0.123		0.212							
Total HxCDD	ND		0.561							
Total HpCDD	2.55									
Total TCDF		755								
Total PeCDF	ND		0.0130							
Total HxCDF		740								
Total HpCDF DL - Sample specifc estima	0.243			В			it - upper control 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: PDI-052SC	S-A-11-12-191015							EPA Met	thod 1613B
Client Data Name: Anchor QE Project: Gasco PDI Date Collected: 15-Oct-201	I	Sample Dat Matrix: Sample Siz % Solids:	Sediment		Lab QC I	oratory Data Sample: 1903741-03 Batch: B9K0011 e Analyzed: 19-Dec-19 00:47	Date Received: Date Extracted: 7 Column: ZB-5MS		
Analyte Conc. (pg/g	(g)	DL E	MPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD N	ND 0.	138			IS	13C-2,3,7,8-TCDD	96.8	25 - 164	
1,2,3,7,8-PeCDD N	ND 0.	131				13C-1,2,3,7,8-PeCDD	99.9	25 - 181	
1,2,3,4,7,8-HxCDD N	ND 0.	175				13C-1,2,3,4,7,8-HxCDD	78.4	32 - 141	
1,2,3,6,7,8-HxCDD N	ND 0.	171				13C-1,2,3,6,7,8-HxCDD	93.1	28 - 130	
1,2,3,7,8,9-HxCDD N	ND 0.	204				13C-1,2,3,7,8,9-HxCDD	93.4	32 - 141	
1,2,3,4,6,7,8-HpCDD N	ND		0.742			13C-1,2,3,4,6,7,8-HpCDD	88.1	23 - 140	
OCDD 8.	.07					13C-OCDD	82.0	17 - 157	
2,3,7,8-TCDF N	ND 0.0)774				13C-2,3,7,8-TCDF	81.2	24 - 169	
1,2,3,7,8-PeCDF N	ND 0.0)523				13C-1,2,3,7,8-PeCDF	87.2	24 - 185	
2,3,4,7,8-PeCDF N	ND 0.0)541				13C-2,3,4,7,8-PeCDF	91.3	21 - 178	
1,2,3,4,7,8-HxCDF N	ND 0.0)355				13C-1,2,3,4,7,8-HxCDF	94.2	26 - 152	
1,2,3,6,7,8-HxCDF N	ND	0	.00900			13C-1,2,3,6,7,8-HxCDF	97.5	26 - 123	
2,3,4,6,7,8-HxCDF N	ND 0.0)442				13C-2,3,4,6,7,8-HxCDF	90.3	28 - 136	
1,2,3,7,8,9-HxCDF N	ND 0.0	0655				13C-1,2,3,7,8,9-HxCDF	92.1	29 - 147	
1,2,3,4,6,7,8-HpCDF N	ND 0.0	0432				13C-1,2,3,4,6,7,8-HpCDF	88.1	28 - 143	
1,2,3,4,7,8,9-HpCDF N	ND 0.0)590				13C-1,2,3,4,7,8,9-HpCDF	82.9	26 - 138	
OCDF N	\sqrt{D} 0.	112				13C-OCDF	85.8	17 - 157	
					CRS	37C1-2,3,7,8-TCDD	93.5	35 - 197	
						Toxic Equivalent Quotient (TEC	Q) Data (pg/g dry w	rt)	
						TEQMinWHO2005Dioxin	0.00242		
TOTALS									
	ND		0.334						
	ND		0.228						
	.35								
1	ID		2.09						
	ND		0.104						
	ND 0.0								
	ND		.00900						
Total HpCDF N DL - Sample specific estimated	ND 0.0	590				L- Lower control limit - upper control 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: PDI-05	2SC-A-12-13.4-19101	5					EPA Met	thod 1613B
Project: Gasco	or QEA, LLC o PDI ct-2019 8:41	Sample Data Matrix: Sedi Sample Size: 14.0 % Solids: 72.7		Lab S QC E	Dratory Data Sample: 1903741-04 Batch: B9K0011 Analyzed: 19-Dec-19 01:37	Date Received: Date Extracted: Column: ZB-5MS		
Analyte Conc.	. (pg/g)	DL EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.206		IS	13C-2,3,7,8-TCDD	86.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.171			13C-1,2,3,7,8-PeCDD	83.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.256			13C-1,2,3,4,7,8-HxCDD	73.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.233			13C-1,2,3,6,7,8-HxCDD	85.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.281			13C-1,2,3,7,8,9-HxCDD	81.7	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.509			13C-1,2,3,4,6,7,8-HpCDD	76.6	23 - 140	
OCDD	3.64		J		13C-OCDD	79.8	17 - 157	
2,3,7,8-TCDF	ND	0.0879			13C-2,3,7,8-TCDF	80.5	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0784			13C-1,2,3,7,8-PeCDF	73.2	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0840			13C-2,3,4,7,8-PeCDF	70.8	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0519			13C-1,2,3,4,7,8-HxCDF	86.3	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.00500			13C-1,2,3,6,7,8-HxCDF	87.5	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.00700			13C-2,3,4,6,7,8-HxCDF	82.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0883			13C-1,2,3,7,8,9-HxCDF	94.2	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.00500			13C-1,2,3,4,6,7,8-HpCDF	91.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0755			13C-1,2,3,4,7,8,9-HpCDF	80.9	26 - 138	
OCDF	ND	0.241			13C-OCDF	85.8	17 - 157	
				CRS	37Cl-2,3,7,8-TCDD	92.3	35 - 197	
					Toxic Equivalent Quotient (TEC	Q) Data (pg/g dry w	t)	
					TEQMinWHO2005Dioxin	0.00109		
TOTALS								
Total TCDD	ND	0.430						
Total PeCDD	0.163							
Total HxCDD	ND	0.596						
Total HpCDD	1.06	1.57						
Total TCDF	ND	0.0620						
Total PeCDF	ND	0.0840						
Total HxCDF	0.00644	0.0240						
Total HpCDF DL - Sample specifc est	ND	0.00500			- Lower control limit - upper control 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: PDI-05	5SC-A-11-12-191015							EPA Met	hod 1613B
Project: Gasco	or QEA, LLC o PDI ct-2019 10:51	Sample I Matrix: Sample % Solid	Sediment Size: 14.3 g		Lab QC	Doratory Data Sample: 1903741-05 Batch: B9K0011 e Analyzed: 19-Dec-19 02:25	Date Received: Date Extracted: Column: ZB-5MS		
Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.199			IS	13C-2,3,7,8-TCDD	86.9	25 - 164	
1,2,3,7,8-PeCDD	ND	0.197				13C-1,2,3,7,8-PeCDD	86.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.212				13C-1,2,3,4,7,8-HxCDD	73.2	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.184				13C-1,2,3,6,7,8-HxCDD	84.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.239				13C-1,2,3,7,8,9-HxCDD	78.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.309				13C-1,2,3,4,6,7,8-HpCDD	89.5	23 - 140	
OCDD	1.73			J		13C-OCDD	70.7	17 - 157	
2,3,7,8-TCDF	ND	0.106				13C-2,3,7,8-TCDF	91.3	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0760				13C-1,2,3,7,8-PeCDF	76.9	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0616				13C-2,3,4,7,8-PeCDF	101	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0493				13C-1,2,3,4,7,8-HxCDF	84.8	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0534				13C-1,2,3,6,7,8-HxCDF	84.6	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0524				13C-2,3,4,6,7,8-HxCDF	87.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND		0.0150			13C-1,2,3,7,8,9-HxCDF	90.0	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.0821				13C-1,2,3,4,6,7,8-HpCDF	86.1	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0927				13C-1,2,3,4,7,8,9-HpCDF	87.7	26 - 138	
OCDF	ND	0.273				13C-OCDF	79.1	17 - 157	
					CRS	37Cl-2,3,7,8-TCDD	87.5	35 - 197	
						Toxic Equivalent Quotient (TEQ) Data (pg/g dry v	vt)	
						TEQMinWHO2005Dioxin	0.000519		
TOTALS									
Total TCDD	ND		0.159						
Total PeCDD	ND	0.197							
Total HxCDD	0.161		0.254						
Total HpCDD	0.490								
Total TCDF	ND	0.106							
Total PeCDF	ND	0.0760							
Total HxCDF	ND		0.0220						
Total HpCDF	ND	0.0927							
DL - Sample specifc esti	imated detection limit			·	LCL-UC	L- Lower control limit - upper control 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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Project Gisson Project Sample Size 13.9 g Sample Size 13.0 g Sample Size	Sample ID: PDI-055	SSC-A-12-13.1-191015							EPA Met	hod 1613B
2,3,7,8-PCDD	Name: Ancho Project: Gasco	PDI	Matrix: Sample	Sediment Size: 13.9 g		Lab QC	Sample: 1903741-06 Batch: B9K0011	Date Extracted:	04-Nov-2019	
1,2,3,7,8-PcCDD	Analyte Conc.	(pg/g)	DL	EMPC	Qualifiers		Labeled Standard	%R	LCL-UCL	Qualifiers
1,2,3,4,7,8-HxCDD	2,3,7,8-TCDD	ND	0.130			IS	13C-2,3,7,8-TCDD	93.0	25 - 164	
1,2,3,6,7,8-HxCDD	1,2,3,7,8-PeCDD	ND	0.105				13C-1,2,3,7,8-PeCDD	101	25 - 181	
1,2,3,7,8,9-HxCDD	1,2,3,4,7,8-HxCDD	ND	0.165				13C-1,2,3,4,7,8-HxCDD	75.3	32 - 141	
1,2,3,4,6,7,8-HpCDD	1,2,3,6,7,8-HxCDD	ND	0.151				13C-1,2,3,6,7,8-HxCDD	89.4	28 - 130	
OCDD ND 1.81 13C-OCDD 75.4 17-157 2,37,8-TCDF ND 0.0663 13C-3,23,78-TCDF 83.2 24-169 1,23,7,8-PeCDF ND 0.0415 13C-1,2,3,78-PeCDF 89.5 24-185 2,3,4,78-PeCDF ND 0.0397 13C-2,3,47,8-PeCDF 88.7 21-178 1,23,4,78-HxCDF ND 0.0362 13C-1,2,3,47,8-HxCDF 86.5 26-152 1,23,4,78-HxCDF ND 0.0370 13C-1,2,3,47,8-HxCDF 89.0 26-152 1,23,5,78-HxCDF ND 0.0404 13C-2,3,4,6,7,8-HxCDF 89.0 26-152 1,23,5,78-HxCDF ND 0.0404 13C-2,3,4,6,7,8-HxCDF 89.0 26-152 1,23,4,7,8-HxCDF ND 0.0108 13C-1,2,3,4,7,8-HxCDF 89.0 29-147 1,23,4,7,8-HxCDF ND 0.0407 13C-1,2,3,4,7,8-HxCDF 89.8 28-143 1,2,3,4,7,8-HxCDF ND 0.04607 13C-1,2,3,4,7,8-HxCDF 89.7 28-143 1,2,3,4,7,8-HxCDF ND 0.148	1,2,3,7,8,9-HxCDD	ND	0.176				13C-1,2,3,7,8,9-HxCDD	88.7	32 - 141	
2,37,8-TCDF ND 0.0663 13C-2,37,8-TCDF 83.2 24 - 169 1,2,37,8-PCDF ND 0.0415 13C-1,2,37,8-PCDF 89.5 24 - 185 2,34,7,8-PCDF ND 0.0397 13C-1,2,37,8-PCDF 88.7 21 - 178 1,2,3,47,8-HxCDF ND 0.0362 13C-1,2,3,47,8-HxCDF 86.5 26 - 152 1,2,3,46,7,8-HxCDF ND 0.0404 13C-1,2,3,4,6,7,8-HxCDF 87.9 28 - 136 1,2,3,4,6,7,8-HxCDF ND 0.0404 13C-1,2,3,4,6,7,8-HxCDF 87.9 28 - 136 1,2,3,4,6,7,8-HxCDF ND 0.0407 13C-1,2,3,4,6,7,8-HxCDF 87.9 28 - 143 1,2,3,4,6,7,8-HxCDF ND 0.0407 13C-1,2,3,4,6,7,8-HxCDF 88.7 28 - 143 1,2,3,4,6,7,8-HxCDF ND 0.0407 13C-1,2,3,4,7,8-HxCDF 88.7 28 - 143 1,2,3,4,7,8,9-HxCDF ND 0.0407 13C-1,2,3,4,7,8-HxCDF 88.7 28 - 143 0CDF ND 0.148 13C-0CDF 81.2 17 - 157 10x1 X X X X 12 - 123 X X X <td>1,2,3,4,6,7,8-HpCDD</td> <td>0.226</td> <td></td> <td></td> <td>J</td> <td></td> <td>13C-1,2,3,4,6,7,8-HpCDD</td> <td>77.4</td> <td>23 - 140</td> <td></td>	1,2,3,4,6,7,8-HpCDD	0.226			J		13C-1,2,3,4,6,7,8-HpCDD	77.4	23 - 140	
1,2,3,7,8-PeCDF	OCDD	ND		1.81			13C-OCDD	75.4	17 - 157	
2,3,4,7,8-PeCDF ND 0.0397 13C-2,3,4,7,8-PeCDF 88.7 21-178 1,2,3,4,7,8-PeCDF ND 0.0362 13C-1,2,3,4,7,8-PeCDF 86.5 26-152 1,2,3,4,7,8-PeCDF ND 0.0370 13C-1,2,3,4,7,8-PeCDF 87.9 28-136 1,2,3,4,6,7,8-HxCDF ND 0.0404 13C-2,3,4,6,7,8-HxCDF 87.9 28-136 1,2,3,7,8,9-HxCDF ND 0.0108 13C-1,2,3,7,8,9-HxCDF 92.9 29-147 1,2,3,4,6,7,8-PeCDF ND 0.0407 13C-1,2,3,7,8,9-HxCDF 92.9 29-147 1,2,3,4,6,7,8-PeCDF ND 0.0607 13C-1,2,3,7,8,9-PeCDF 88.7 28-143 1,2,3,4,7,8,9-PeCDF ND 0.048 13C-0CDF 81.2 17-157 CRS 37C1-2,3,7,8-PECDF 89.8 35-197 Total TCDD ND 0.130 Tequivalent Quotient (TEQ) Data (pg/g dry wt) Total TCDD ND 0.130 Tequivalent Quotient (TEQ) Data (pg/g dry wt) Total HxCDF ND 0.0663 Tequivalent Quotient Quo	2,3,7,8-TCDF	ND	0.0663				13C-2,3,7,8-TCDF	83.2	24 - 169	
1,2,3,4,7,8-HxCDF	1,2,3,7,8-PeCDF	ND	0.0415				13C-1,2,3,7,8-PeCDF	89.5	24 - 185	
1,2,3,6,7,8-HxCDF	2,3,4,7,8-PeCDF	ND	0.0397				13C-2,3,4,7,8-PeCDF	88.7	21 - 178	
2,3,4,6,7,8-HxCDF ND 0.0404 13C-2,3,4,6,7,8-HxCDF 87.9 28-136 1,2,3,7,8,9-HxCDF ND 0.0407 13C-1,2,3,7,8,9-HxCDF 92.9 29-147 1,2,3,4,6,7,8-HpCDF ND 0.0407 13C-1,2,3,4,6,7,8-HpCDF 88.7 28-143 1,2,3,4,7,8,9-HpCDF ND 0.0607 13C-1,2,3,4,7,8,9-HpCDF 77.1 26-138 1,2,3,4,7,8,9-HpCDF ND 0.148 13C-0CDF 81.2 17-157 CRS 37C1-2,3,7,8-TCDD 89.8 35-197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry w) Total TCDD ND 0.130	1,2,3,4,7,8-HxCDF	ND	0.0362				13C-1,2,3,4,7,8-HxCDF	86.5	26 - 152	
1,2,3,7,8,9-HxCDF ND 0.0108 13C-1,2,3,7,8,9-HxCDF 92.9 29 - 147 1,2,3,4,6,7,8-HpCDF ND 0.0407 13C-1,2,3,4,6,7,8-HpCDF 88.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0607 13C-1,2,3,4,7,8,9-HpCDF 77.1 26 - 138 OCDF ND 0.148 13C-0CDF 81.2 17 - 157 CRS 37C-12,3,7,8-TCDD 89.8 35 - 197 TOTALS Total TCDD ND 0.130 TEQMinWH02005Dioxin 0.0026 Total TCDD ND 0.105 Telest to the color to the colo	1,2,3,6,7,8-HxCDF	ND	0.0370				13C-1,2,3,6,7,8-HxCDF	90.0	26 - 123	
1,2,3,4,6,7,8-HpCDF ND 0.0407 13C-1,2,3,4,6,7,8-HpCDF 88.7 28 - 143 1,2,3,4,7,8,9-HpCDF ND 0.0607 13C-1,2,3,4,7,8,9-HpCDF 77.1 26 - 138 OCDF ND 0.148 13C-OCDF 81.2 17 - 157 CRS 37CI-2,3,7,8-TCDD 89.8 35 - 197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TOTALS Total TCDD ND 0.130 Total PcCDD ND 0.105 Total HxCDD 0.263 Total HpCDD 0.669 Total TCDF ND 0.0663 Total PcCDF ND 0.0130 Total HxCDF ND 0.0130 Total HxCDF ND 0.0108 Total HyCDF ND 0.0108 Total HyCDF ND 0.0108 Total HyCDF ND 0.0108	2,3,4,6,7,8-HxCDF	ND	0.0404				13C-2,3,4,6,7,8-HxCDF	87.9	28 - 136	
1,2,3,4,7,8,9-HpCDF ND 0.0607 13C-1,2,3,4,7,8,9-HpCDF 77.1 26-138 OCDF ND 0.148 13C-OCDF 81.2 17-157 CRS 37C1-2,3,7,8-TCDD 89.8 35-197 Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) TOTALS TOTAL TCDD ND 0.130 Total PeCDD ND 0.105 Total HxCDD 0.263	1,2,3,7,8,9-HxCDF	ND		0.0108			13C-1,2,3,7,8,9-HxCDF	92.9	29 - 147	
OCDF ND 0.148 13C-OCDF 81.2 17 - 157	1,2,3,4,6,7,8-HpCDF	ND	0.0407				13C-1,2,3,4,6,7,8-HpCDF	88.7	28 - 143	
CRS 37C1-2,37,8-TCDD 89.8 35 - 197 Toxic Equivalent Quotient (TEQ Data (pg/g dry w) — 100 pd (pg/	1,2,3,4,7,8,9-HpCDF	ND	0.0607				13C-1,2,3,4,7,8,9-HpCDF	77.1	26 - 138	
Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)	OCDF	ND	0.148				13C-OCDF	81.2	17 - 157	
TEQMinWHO2005Dioxin 0.00226 TOTALS Total TCDD ND 0.130 □						CRS	37Cl-2,3,7,8-TCDD	89.8	35 - 197	
TOTALS Total TCDD ND 0.130 Total PCDD ND 0.105 Total HxCDD 0.263							Toxic Equivalent Quotient (TEQ) Data (pg/g dry v	vt)	
Total TCDD ND 0.130 Total PcCDD ND 0.105 Total HxCDD 0.263							TEQMinWHO2005Dioxin	0.00226		
Total PeCDD ND 0.105 Total HxCDD 0.263 Total HpCDD 0.699 Total TCDF ND 0.0663 Total PeCDF ND 0.0130 Total HxCDF ND 0.0108 Total HpCDF 0.0171 0.0171	TOTALS									
Total HxCDD 0.263 Total HpCDD 0.699 Total TCDF ND 0.0663 Total PeCDF ND 0.0130 Total HxCDF ND 0.0108 Total HpCDF 0.0171 B	Total TCDD		0.130							
Total HpCDD 0.699 Total TCDF ND 0.0663 Total PeCDF ND 0.0130 Total HxCDF ND 0.0108 Total HpCDF 0.0171 B	Total PeCDD		0.105							
Total TCDF ND 0.0663 Total PeCDF ND 0.0130 Total HxCDF ND 0.0108 Total HpCDF 0.0171 B	Total HxCDD									
Total PeCDF ND 0.0130 Total HxCDF ND 0.0108 Total HpCDF 0.0171 B	Total HpCDD									
Total HxCDF ND 0.0108 Total HpCDF 0.0171 B			0.0663							
Total HpCDF 0.0171 B										
l e e e e e e e e e e e e e e e e e e e				0.0108						
	Total HpCDF									

EMPC - Estimated maximum possible concentration

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

Conc. Concentration

CRS Cleanup Recovery Standard

D Dilution

DL Detection limit

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

IS Internal Standard

J The amount detected is below the Reporting Limit/LOQ

LOD Limit of Detection

LOQ Limit of Quantitation

M Estimated Maximum Possible Concentration (CA Region 2 projects only)

NA Not applicable

ND Not Detected

OPR Ongoing Precision and Recovery sample

P The reported concentration may include contribution from chlorinated diphenyl

ether(s).

Q The ion transition ratio is outside of the acceptance criteria.

RL Reporting Limit

TEQ Toxic Equivalency

U Not Detected (specific projects only)

* See Cover Letter

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

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Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-23
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-В
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Vermont Department of Health	VT-4042
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
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	
Determination of Polychlorinated p-Dioxins & Polychlorinated	EPA TO-9A
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
	1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

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								
	ED 4 505								
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 Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
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
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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Delaney Peterson (360-715-2707)

POC: #

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

Gasco PDI

Project:

COC ID:

VISTA-20191015-152359

CO

Sample Custodian:

	1605 Cornwall Avenue, Bellingham	98225	Client:	NW N	latural	1	Lab:	\	/ISTA				
COC Sample Number	Field Sample ID	Sample Type	Matrix	Collecte Date	Collected Containers Date Time		ed Containers Lab QC*		Test Request		Method	TAT**	Preservative
001	PDI-049SC-A-14-15-191015	N	SE	10/15/2019	13:29	1							
						Dioxin/Furans		E1613B	30	4°C			
							Total solids (VISTA)		SM2540G	30	4°C		
002	PDI-049SC-A-15-15.5-191015	N	SE	10/15/2019	13:29	1							
						Dioxin/Furans		E1613B	30	4°C			
							Total solids (VISTA)		SM2540G	30	4°C		
003	PDI-052SC-A-11-12-191015	N	SE	10/15/2019	8:41	1							
							Dioxin/Furans		E1613B	30	4°C		
						,	 Total solids (VISTA)		SM2540G	30	4°C		
004	PDI-052SC-A-12-13.4-191015	N	SE	10/15/2019	8:41	1							
							Dioxin/Furans		E1613B	30	4°C		
							Total solids (VISTA)		SM2540G	30	4°C		
005	PDI-055SC-A-11-12-191015	N	SE	10/15/2019	10:51	1							
							Dioxin/Furans		E1613B	30	4°C		
							Total solids (VISTA)		SM2540G	30	4°C		
006	PDI-055SC-A-12-13.1-191015	Ν	SE	10/15/2019	10:51	1					•		
							Dioxin/Furans		E1613B	30	4°C		
	20						Total solids (VISTA)		SM2540G	30	4°C		

Comment:					
12					
Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature an-	Signature		I	Signature
Print Name OREIRC	Print Name Ashly Mason	Print Name	Print Name	Print Name	Print Name
Company AQ	Company VAL	Company	Company	Company	Company
Date/Time 0 17 9 355	Date/Time 10/18/19 0859	Date/Time	Date/Time	Date/Time	Date/Time



Sample Log-In Checklist

	ige#		of									
Vista Work Orde	r #:	40211	1)	т	tat_St							
Samples	Date/Time		Initials:		WR-2							
Arrival:	10/18/19 0859	-	SUUS		Shelf/Rack: Na							
Delivered By:	FedEx UPS	On Tra	ac GSO DHL			Han Delive		Other				
Preservation:	(lce)	Blu	ue Ice		Dry	Ice		No	ne			
Temp °C: 3,6			=0 .									
Temp °C: 3.6	nome	eter ID: <u>IR-3</u>										
							YES	NO	NA			
Shipping Containe	er(s) Intact?						1					
Shipping Custody	Seals Intact?						/					
Airbill 10f 2	Trk # 7767	- 5105 61	10				1					
Shipping Docume	ntation Present?						1					
Shipping Containe	er	Vista	Client	Re	etain	Re	eturn	Disp	oose			
Chain of Custody	/ Sample Docume	entation Pre	esent?					1	1			
Chain of Custody	100000000000000000000000000000000000000							1	1			
Holding Time Acce	eptable?		-				V					
	Date/Time		Initials:		Locati	ion:	WR-2					
Logged In:	10/21/19 150	7	afm		Shelf/Rack:							
COC Anomaly/Sar	mple Acceptance	Form com	oleted?				-	/	_/			

Comments:

ID.: LR - SLC

Rev No.: 4

Rev Date: 10/08/2019

Page: 1 of 1



Sample Log-In Checklist

Vista Work Orde	.r#: \(()	10374	11			Page #TAT			<u> </u>		
Samples	Date/Time			InitiaĮs:		Location:	WE				
Arrival:	10/18/19	09	859	apr	n	Shelf/Rack	0.5	0.12			
Delivered By:	FedEx	UPS	On Tra	ac GSO	DHI	Han Delive		Other			
Preservation:	lce	3	Blu	ue Ice		Dry Ice		No	ne		
Temp °C: (.4	Temp °C: (.4 (uncorrected)										
Temp °C: U (corrected) Probe used: Y (N) Thermometer ID:											
	the state of the s						YES	NO	NA		
Shipping Contain	er(s) Intact?										
Shipping Custody	Seals Intac	t?									
Airbill 2 of 2	Trk #	776	75	105 1	137	1	/				
Shipping Docume							/				
Shipping Containe	er	V	ista	Client	Re	etain Re	eturn	Dis	pose		
Chain of Custody	/ Sample Do	ocument	ation Pre	esent?			/				
Chain of Custody	/ Sample Do	ocument	ation Co	mplete?			~				
Holding Time Acc	eptable?										
,	Date/Time			Initials: Location:			WR-2	7	No.		
Logged In:	10/21/19 1507)7	apr	7	Shelf/Rack					
COC Anomaly/Sa		1	1								

Comments:

ID.: LR - SLC

Rev No.: 4

Rev Date: 10/08/2019

Page: 1 of 1

CoC/Label Reconciliation Report WO# 1903741

LabNumber CoC Sample ID	Label ID matches COCID	s	Sampled	Label Sampled matches	Sampled doesn't match	Container	Container Correct	Sample BaseMatrix Comments
1903741-01 A PDI-049SC-A-14-15-191015	Ø	Α 001	15-Oct-19 13:29	V		Amber Glass, 120 mL	\(\overline{\pi}\)	Solid
1903741-02 A PDI-049SC-A-15-15.5-191015	Ø	A 002	15-Oct-19 13:29	V		Amber Glass, 120 mL		Solid
1903741-03 A PDI-052SC-A-11-12-191015		B 003	15-Oct-19 08:41			Amber Glass, 120 mL		Solid
1903741-04 A PDI-052SC-A-12-13.4-191015		B 004	15-Oct-19 08:41	□		Amber Glass, 120 mL		Solid
1903741-05 A PDI-055SC-A-11-12-191015		B 005	15-Oct-19 10:51	Q		Amber Glass, 120 mL	o o	Solid
1903741-06 A PDI-055SC-A-12-13.1-191015	T	B 006	15-Oct-19 10:51			Amber Glass, 120 mL		Solid

Comments:

	Yes	No	NA
Sample Container Intact?	/		
Sample Custody Seals Intact?			/
Adequate Sample Volume?	/		
Preservation Documented: Na2S2O3 Trizma None Other			1
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			

A- cooler #1

B- cooler #2

Verifed by/Date: ______ SC 10 22/19

EXTRACTION INFORMATION

Work Order 1903741 Page 22 of 638

Process Sheet

Workorder: 1903741

Prep Expiration: 2020-10-14

Client: Anchor QEA, LLC

8-Nov-19 Workorder Due: 15-Nov-19 00:00

TAT: 28 21

Q10/22/19

Method: 1613 Full List

Matrix: Solid
Client Matrix: Sediment
Also run: Percent Solids

Prep Batch:

B9K0011

Prep Data Entered:

M 11/06/19

Initial Sequence:

5910044

LabSampleID	Recon ClientSampleID	Date Received	Location Comments	
1903741-01 A	PDI-049SC-A-14-15-191015	18-Oct-19 08:59	WR-2 A-1	
1903741-02	PDI-049SC-A-15-15.5-191015	18-Oct-19 08:59	WR-2 A-1	
1903741-03 4	PDI-052SC-A-11-12-191015	18-Oct-19 08:59	WR-2 A-1	
1903741-04 A	PDI-052SC-A-12-13.4-191015	18-Oct-19 08:59	WR-2 A-1	
1903741-05 A	PDI-055SC-A-11-12-191015	18-Oct-19 08:59	WR-2 A-1	
1903741-06 A	DI-055SC-A-12-13.1-191015	18-Oct-19 08:59	WR-2 A-1	

WO Comments: Pest—1g extraction (dry weight).

Dioxin - 10g (dry weight)

POD-5g extraotion (dry weight)

Pre-Prep Check Out: T 10/3///*

Pre-Prep Check In: T 10/3///4

Prep Check Out: (20 11)04/19
Prep Check In: (20 1) | 04/19

Prep Reconciled Initals/Date: Tu 1.0/31//9

Spike Reconciled Initals/Date: Ob 11 04 19

VialBoxID: 6: ml:

Page 1 of 1

						PR	REPARATIO	N BENCH SH	EET								
M	atrix: Solid					B9K0011						Chemist:					
М	ethod: 1613 Full L	ist				Prepared using: HRMS - Soxhlet						Prep Date/Time: 04-Nov-19 07:38					
с	VISTA Sample ID	G Eqv	Sample Amt. (g)	CI	IS/NS HEM/WIT DATE		CRS IEM/WIT DATE	AP CHEM/ DATE		ABSG CHEM/ DATE		AA CHEM/ DATE DATE		risil EM/ TE	CHEM DA	1/WIT	
	B9K0011-BLK1	NA	(1000)	ao	104/19	a0 1	11/05/19	NA	ao	ao "/05/19		00 00 0019		105 19	all 2 1/06/19		
	B9K0011-BS1	F	(10.00		Γ ,	•	7	T		<u> </u>		7	T			··-	
	1903430-06RE1	13.63	14.03														
	1903739-01	14.67	15.79														
	1903739-02		13.75														
	1903739-03	12.79	13.13														
	1903739-04	12.42	12.51				,										
	1903739-05	13.17	13.37														
	1903739-06	13.91	13.91														
] 1903741-01	1408	14.25													· 	
] 1903741-02	13.53	13.55													,-	
	1903741-03		14.96														
] 1903741-04		13.95														
] 1903741-05	14.32	14.32			L											
] 1903741-06	13.70	13.86		<u> </u>	`	ν	V		Ψ		Ψ		<u> </u>	J	<u>/</u>	
	Name (V2) DD/F 19(1902, 1041	NS Name	18F1913,10	ML ML	CRS Name PCDD/F 19 T	V.02, 10		19I KO3/18/1	1 '	Date/Time	solv:]	OLUPAR	SDS	۱		।।/०५/म	
PC	В	РСВ		_	PCB		PCB		7		Other	_	_		/Date: ///	11/04/6	
PA	н	PAH			PAH		PAH		Stop	Date/Time	Final Vol	ume(s) <u>C14</u>	_	Balance	ID: HR	MZ-8,	

Comments:

Work Order 1903741

I = Sample approached dryness on rotovap

^{2 =} Sample bumped on rotovap; lost < 5%

^{3 =} Sample poured through Na2SO4 to remove water 4 = Precipitate present at Final Volume

^{6 =} Sample clogged during extaction; pipetted and used Nitrogen to assist

Percent Moisture/ Percent Solids

D2216-90

BATCH ID B9J0297

Analyst	: TL Te	st Code: %Moist/%Solids	
Analyte			Data Entry Verified by: (Initial and Date) TV 11/01/19
	Dried at 110°C+/-5°C		
Oven ID	: 01 <u>02</u>		

Inst: HRMS-9

<u>Date/Time IN:</u> <u>Date/Time OUT</u> 10/31/19 11:50 11/1/19 14:25

	В	С	D	Ε	F	G	н	1	K	L	M	N	0	Р
				Intial and Date:		TL 11/01/19			TL 10/31/19)		NA		TL 10/31/19
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	Visual Inspection	Cŀ	pH Before	pH After	Acid Added	Sample Homogenized*
	1903741-01	Α	Sample	1.2900	11.2300	8.3500	7.0600	71.03	Sand	NA	NA	NA	NA	Y
	1903741-02	A	Sample	1.3000	12.7100	9.7300	8.4300	73.88	Sand	NA	NA	NA	NA	Y
	1903741-03	Α	Sample	1.2800 🖊	15.0900 /	10.5900 🖊	9.3100	67.41	Mud	NA	NA	NA	NA	Y
	1903741-04	Α	Sample	1.3000	16.3000	12.2000	10.9000	72.67	Mud	NA	NA	NA	NA	Y
	1903741-05	Α	Sample	1.2900 🖊	13.1500	9.5700	8.2800	69.81	Mud	NA	NA	NA	NA	Y
	1903741-06	Α	Sample	1.2900	14.7000	11.0800	9.7900	73.01	Sand	NA	NA	NA	NA	ΥΥ
										Ш				
										Ш				
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^{*}Sample homogenized in sample container unless otherwise noted.

Percent Moisture/ Percent Solids

D2216-90

BATCH ID B9J0297

Analyst:	T7 Test C	ode: %Moist/%Solids	
•	, ,		Data Entry Verified by: A Í /A
Analyte:	ŧ	nits: %	Data Entry Verified by: NA
			(
Oven ID:	Oried at 110°C+/-5°C 01 (02)		

Inst HRMS-9

Date/Time IN: Date/Time OUT
| 10/31/14 1(:50 | 1/0/14 | 1/1:50 | 1/0/14 | 1/1:50 | 1/1/14 | 1/1:50 | 1/1/14 | 1/1:50 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1/1/14 | 1

,	•		-	14:25										
	В	С	D	Ε	F	G	Н	-	K	L		Ν		P
				Intial and Date:	Wet Pan and Sample	TL 11/01/19			TZ 1019	111	9	ν,	4	TU931/14
Particle Size	SamplD		SampType	Pan	Wet Pan and Sample	Dry Pan and Sample	Dry Sample	%Solids	Visual	CI-	рĤ	рН	Acid	Samplè
	-	T A		Tare Wt. (gms)		Weight (g)	Weight (g)	RawVal	Inspection	-	Before	After	Added	Homogenized*
	1903741-01	+ 4	Sample	1.79	11.73	8.35		-7 -	Sand	_				¥
	1903741-02	 	Sample	1.30	12.71	9.73		/	Sand			lacksquare	<u>r</u>	'
	1903741-03	 	Sample	1.28	15.09	10.59		<u>r</u> _	Mud			\angle		×
	1903741-04		Sample	1.30	16.30	12.20			一丁					Y
	1903741-05		Sample	1.29 .	13.15	9.57			1					У
	1903741-06	1	Sample	1,29	14.70	11.08	1		Sand	7				Y
										П				
										Н	_			
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^{*}Sample homogenized in sample container unless otherwise noted.

BCH_PMOIST_B9J0297

10/28/2019 1:25 PM

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1903430-06RE1	14.03 v	73.35116	10.2912	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903739-01	15.79 √	68.18462	10.7664	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903739-02	13.75 \	73.29377	10.0779	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903739-03	13.13	78.19472	10.2670	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903739-04	12.51	80.54768	10.0765	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903739-05	13.37	75.92	10.1505	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903739-06	13.91	71.90605	10.0021	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903741-01	14.25	71.02616	10.1212	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903741-02	13.55	73.88255	10.0111	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903741-03	14.96	67.41492	10.0853	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903741-04	13.95	72.66667	10.1370	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903741-05	14.32	69.8145	9.9974	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
1903741-06	13.86	73.00522	10.1185	20	04-Nov-19 07:38	ACO			Sediment	1613 Full List
B9K0011-BLK1	10			20	04-Nov-19 07:38	ACO		,		QC
B9K0011-BS1	10			20	04-Nov-19 07:38	ACO	18F1913	J 10V		QC

11/06/19 1

SAMPLE DATA – EPA METHOD 1613

Work Order 1903741 Page 28 of 638

Cl	lient ID: Method Blank	Fi	lename: 1	9110 8 D1	S:8	Acq: 8-N	OV-19 1	7:29:33		_ 0	onCal: ST191	108D1-1			Page 6 of 6
Lā	ab ID: B9K0011-BLK1	GC	Column II	D: ZB-5	MS ICal	: 1613VG7-	10-9-19	wt/vo	01:10.000	E	ndCAL: NA				
	Name	Resp	RA	RRF	RT	Conc	Qual	noise Fac	DL	Nam	2	Conc	EMPC	Oual	noise DL
	2,3,7,8-TCDD	*	* n	0.91	NotFa	*	2	119 2.5	0.0627		- al Tetra-Dio		*	Quai	119 0.0627
	1,2,3,7,8-PeCDD	*	* n	0.90	NotFa	*		202 2.5	0.102		al Penta-Dio		*		202 0.102
	1,2,3,4,7,8-HxCDD	*	* n	1.10	Not Fi	*		94.1 2.5	0.0718		al Hexa-Diox		*		94.1 0.0745
	1,2,3,6,7,8-HxCDD	*	* n	0.94	Not Fa	*		94.1 2.5	0.0754		al Hepta-Dio		*		128 0.0922
	1,2,3,7,8,9-HxCDD	*	* n	0.96	Not Fa	*		94.1 2.5	0.0754		al Tetra-Fur		*		183 0.0711
	1,2,3,4,6,7,8-HpCDD	*	* n	0.98	Not Fi	*		128 2.5	0.0922		al Penta-Fur		0.0000		192 0.0917
	OCDD	*	* n	0.96	Not Fa	*		105 2.5	0.104		al Hexa-Fura		*		100 0.0365
					,,						al Hepta-Fur		0.172		* *
	2,3,7,8-TCDF	*	* n	0.95	Not Fa	*		183 2.5	0.0711						
	1,2,3,7,8-PeCDF	*	* n	0.96	Not Fi	*		192 2.5	0.0921						
	2,3,4,7,8-PeCDF	*	* n	1.01	Not Fa	*		192 2.5	0.0915						
	1,2,3,4,7,8-HxCDF	*	* n	1.18	Not Fi	*		100 2.5	0.0325						
	1,2,3,6,7,8-HxCDF	*	* n	1.07	Not Fi	*		100 2.5	0.0329						
	2,3,4,6,7,8-HxCDF	*	* n	1.11	Not F	*		100 2.5	0.0359						
	1,2,3,7,8,9-HxCDF	*	* n	1.06	Not Fi	*		100 2.5	0.0467						
	1,2,3,4,6,7,8-HpCDF	5.3 6e +03	1.12 y	1.13	36:40	0.17219		* 2.5	*						
	1,2,3,4,7,8,9-HpCDF	*	* n	1.28	NotFi	*		131 2.5	0.0566						
	OCDF	*	* n	0.95	Not Fi	*		151 2.5	0.122						
										Re	c Qual				
IS	13C-2,3,7,8-TCDD	6.6 7e +06	0.79 y	1.10	26:13	205.87				10	3				
IS	13C-1,2,3,7,8-PeCDD	5.7 0 e+06	0.63 y	0.88	30:42	218.82				10	9				
IS	13C-1,2,3,4,7,8-HxCDD	4.8 8 e+06	1.29 y	0.64	34:01	203.81				10	2				
IS	13C-1,2,3,6,7,8-HxCDD	5.6 0 e+06	1.28 y	0.86	34:07	175.33				87.	7				
IS	13C-1,2,3,7,8,9-HxCDD	5. 59 e+06	1.29 y	0.81	34:25	185.77				92.	9				
IS	13C-1,2,3,4,6,7,8-HpCDD	4.9 1e+06	1.07 y	0.65	37:52	201.08				10	1				
IS	13C-OCDD	8. 66 e+06	0.90 y	0.58	41:08	400.64				10)				
IS	13C-2,3,7,8-TCDF	9. 52 e+06	0.79 y	1.03	25:26	190.01				95.)				
IS	13C-1,2,3,7,8-PeCDF	8. 3 3e+06	1.62 y	0.85	29:32	201.50				10	1				
IS	13C-2,3,4,7,8-PeCDF	8. 0 3e+06	1.64 y	0.85	30:25	195.91				98.)				
IS	13C-1,2,3,4,7,8-HxCDF	6. 34 e+06	0.51 y	0.83	33:07	204.17				10:	2				
IS	13C-1,2,3,6,7,8-HxCDF	7. 1 2e+06	0.51 y	1.03	33:15	184.48				92.	2				
IS	13C-2,3,4,6,7,8-HxCDF	6. 6 8e+06	0.51 y	0.95	33:50	187.95				94.)				
IS	13C-1,2,3,7,8,9-HxCDF	6. 0 7e+06	0.52 y	0.83	34:48	196.57				98.	3				
IS	13C-1,2,3,4,6,7,8-HpCDF	5. 52e +06	0.42 y	0.76	36:38	195.35				97.	7				
IS	13C-1,2,3,4,7,8,9-HpCDF	4. 6 3e+06	0.45 y	0.58	38:24	213.54				10	7				
IS	13C-OCDF	1. 0 7e+07	0.92 y	0.69	41:22	415.62				10	1				
- 4					26.11						_				
C \ UI	p 37Cl-2,3,7,8-TCDD	3.11e+06		1.20	26:14	87.757				11		ntegrations	Revi	ewed	
DG /1	Den 1201224 month	F 010.00	0 70	1 00	25.30	200 00					by)A	by		17
RS/I			0.78 y	1.00	25:39 24:14	200.00 200.00					Analy	st:	Anal	yst:	
RS	13C-1,2,3,4-TCDF RT 13C-1,2,3,4,6,9-HxCDF		0.81 y 0.51 y	1.00	33:32	200.00						1 1 .			
K3/1	13C-1,2,3,4,6,3-NXCDF	7.300+00	о.эт у	1.00	33:34	200.00					Date	st: <u>1)B</u> U/U/19	Dato	7	Laplic
											Date:	-`\'`\'	Date		700/17

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Totals class: HpCDF EMPC Entry #: 35

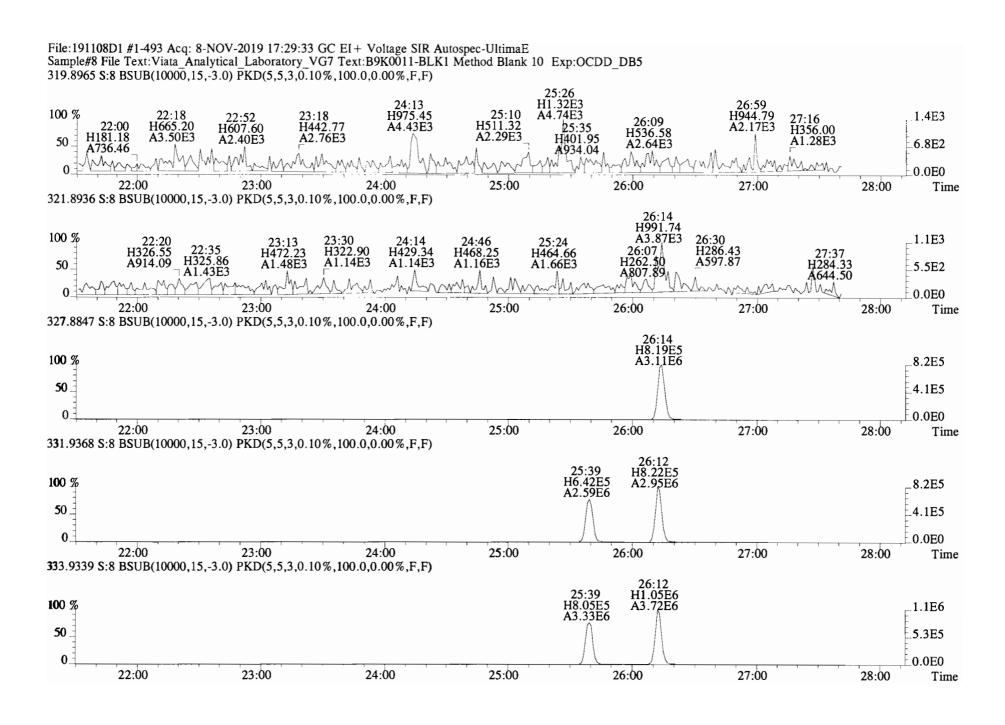
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Acquired: 8-NOV-19 17:29:33 Processed: 11-NOV-19 10:37:15

Total Concentration: 0.17219 Unnamed Concentration: *

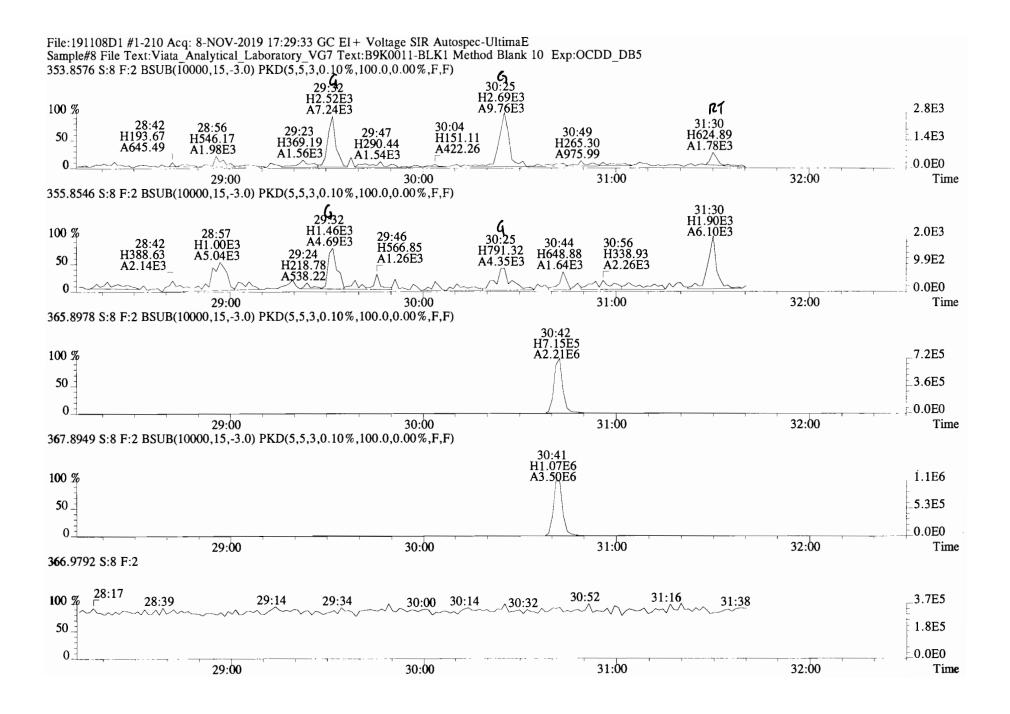
RT m1 Resp m2 Resp RA Resp Concentration Name

36:40 2.837e+03 2.523e+03 1.12 y 5.359e+03 0.17219 1,2,3,4,6,7,8-HpCDF

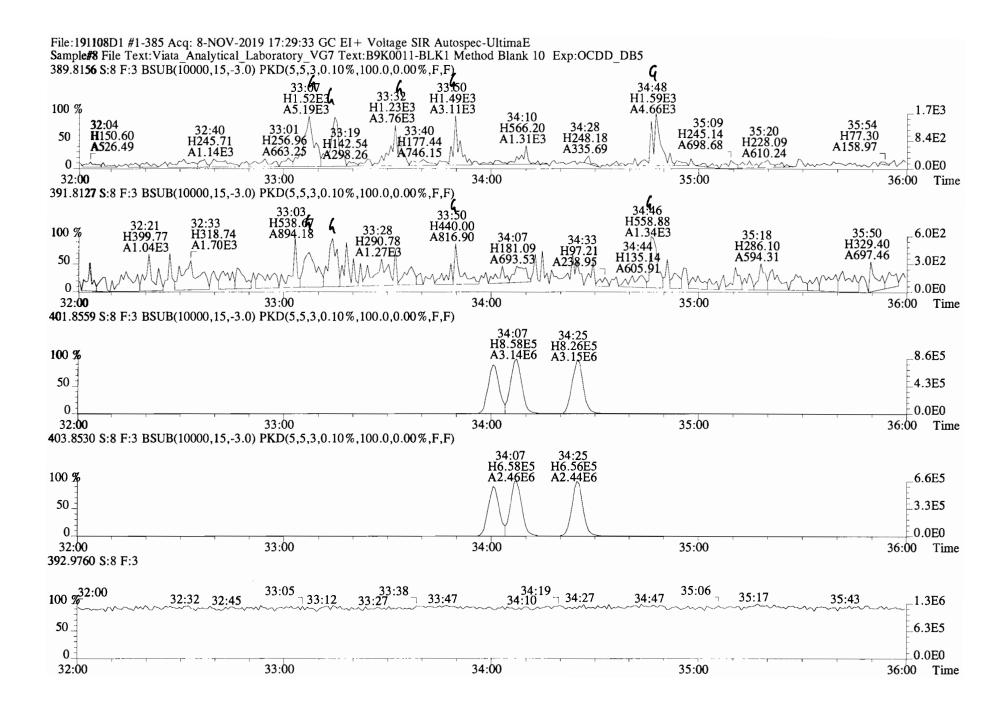
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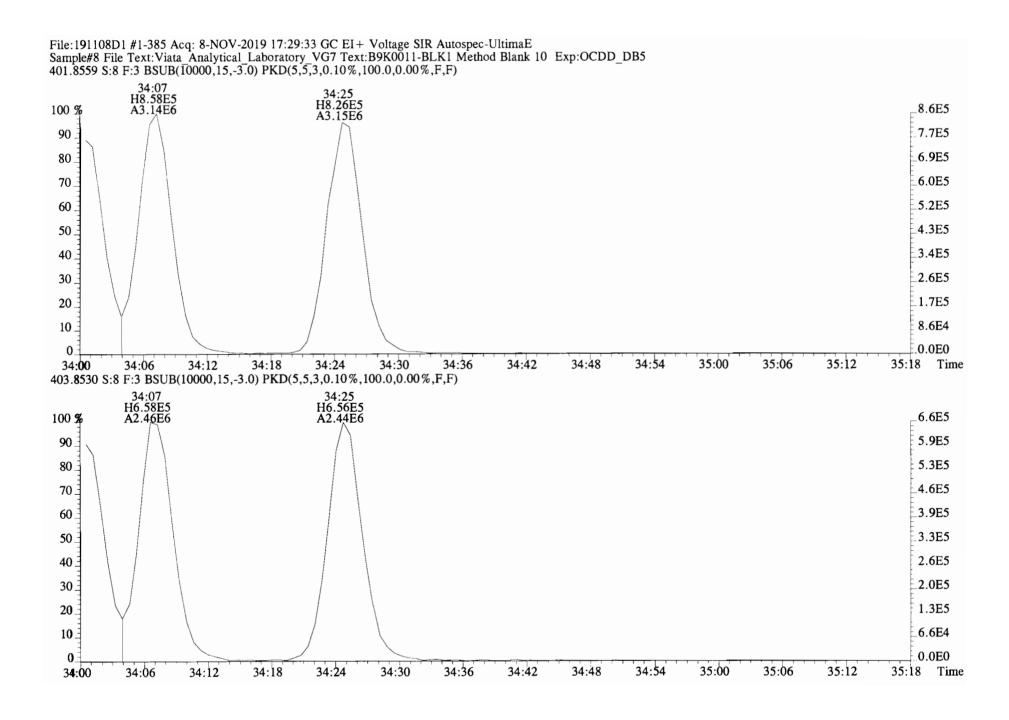
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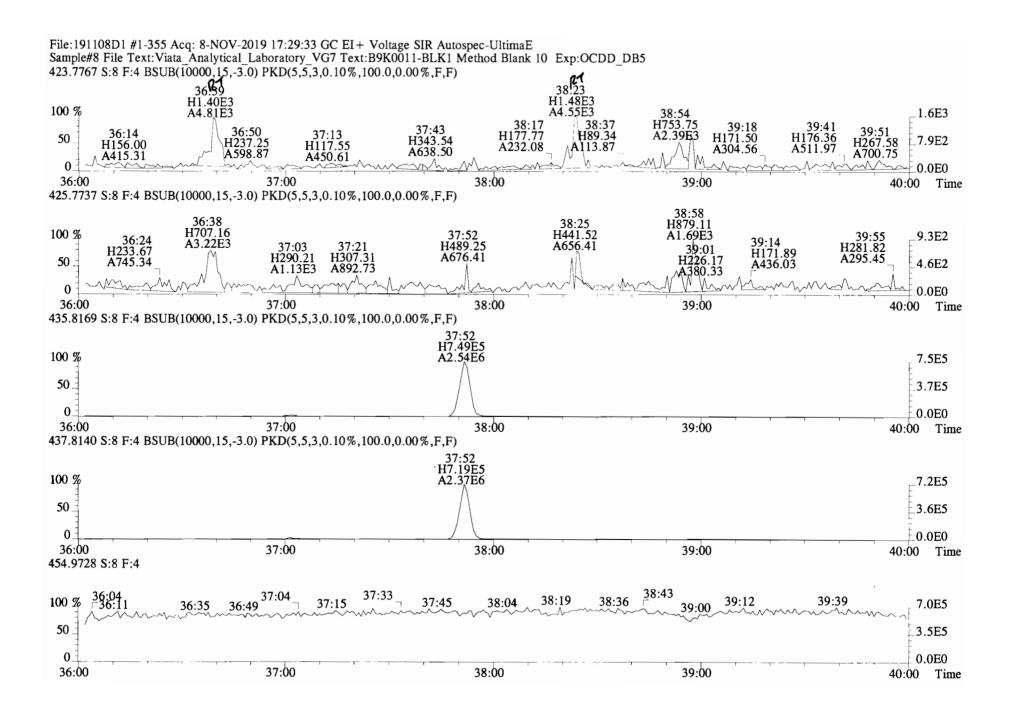
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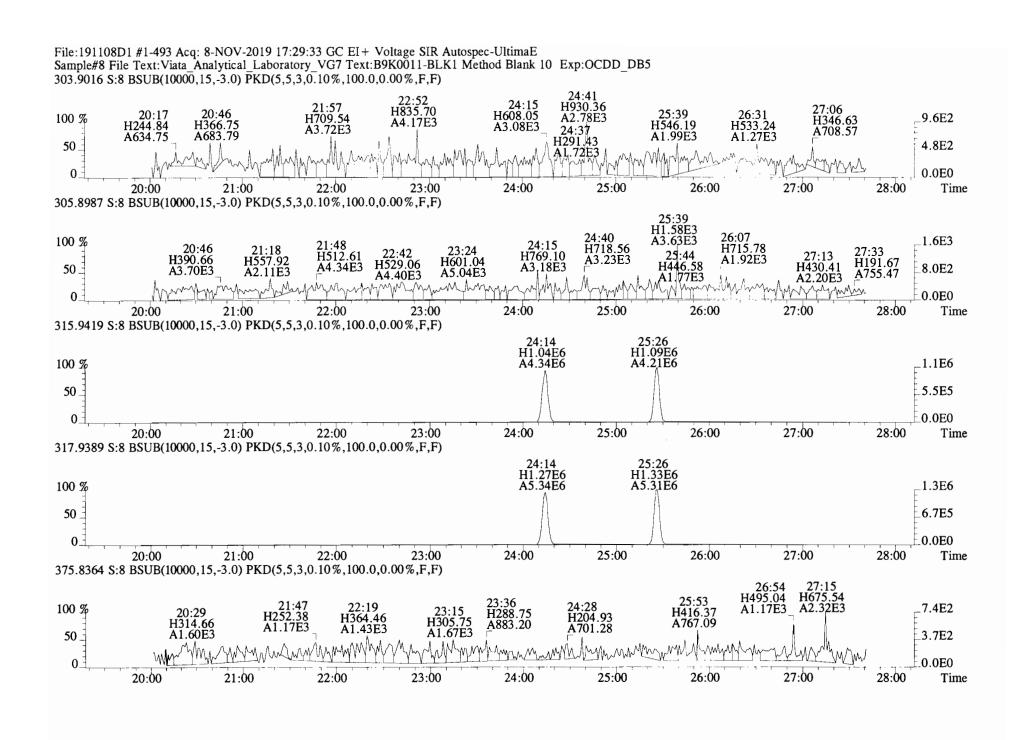


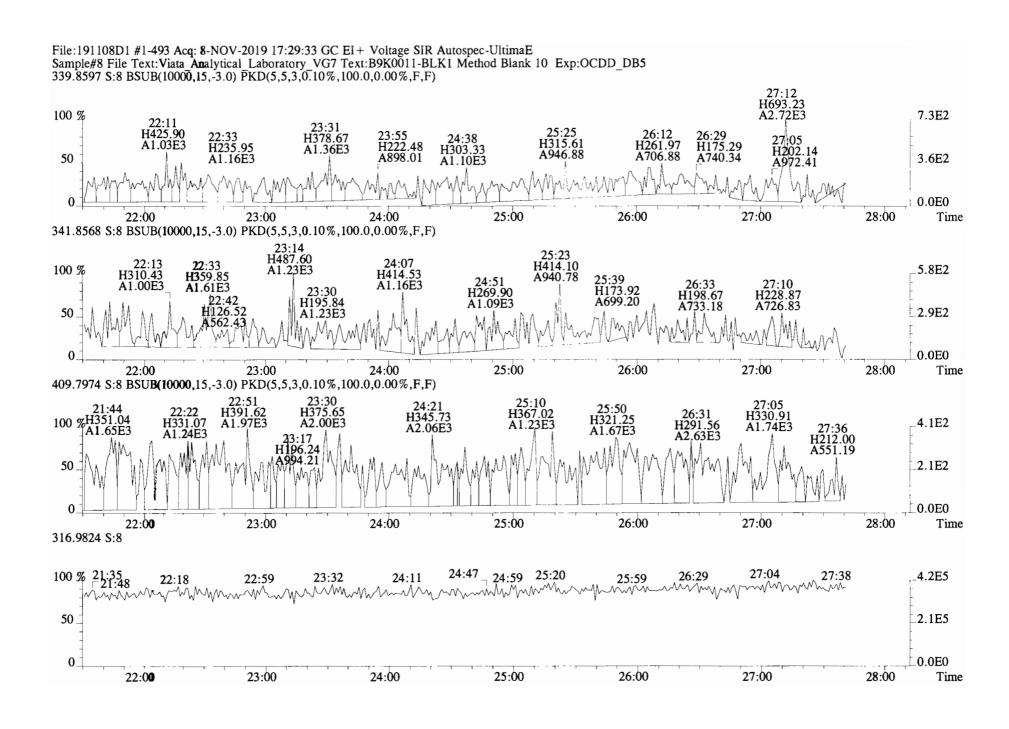
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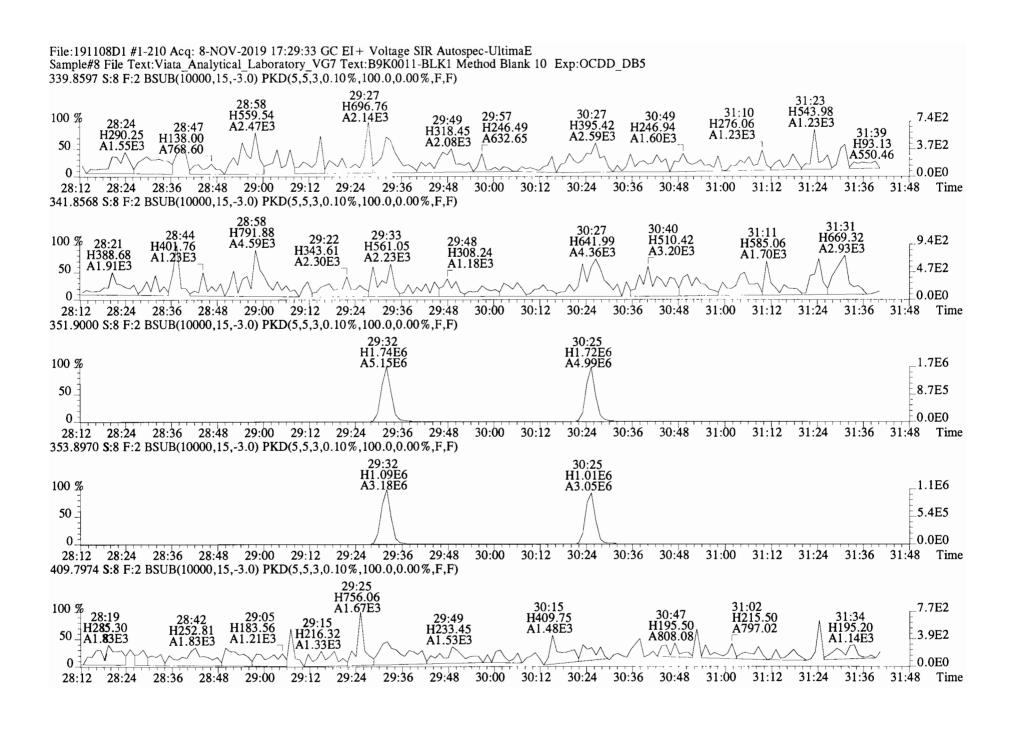
Work Order 1903741 Page 35 of 638

File:191108D1 #1-432 Acq: 8-NOV-2019 17:29:33 GC EI+ Voltage SIR Autospec-UltimaE Sample#8 File Text:Viata Analytical Laboratory VG7 Text:B9K0011-BLK1 Method Blank 10 Exp:OCDD DB5 457.7377 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) H3.90E3 100 % A1.45E4 4.1E3 42:10 H273.08 43:58 H587.38 41:55 H471.39 40:32 H321.68 41:08 H306.15 50 40:10 43:05 43:30 41:31 42:42 2.1E3 H199.70 H173.37 A437.59 H156.93 A225.72 H332.01 H176.67 A612.33 A672.70 A759.76 A299.06 A564.31 A1.36E3 A679.16 A351.87 0.0E0 40:00 41:00 42:00 43:00 44:00 Time 459.7348 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 41:22 H2.18E3 41:10 100 % A9.01E3 2.2E3 H959.21 41:42 H270.08 40:53 H194.45 42:37 H321.67 A2.92E3 43:10 41:30 42:10 50 1.1E3 H268.77 H272.63 A710.66 H235.38 A310.06 A868.06 A541.82 A631.45 A312.29 0.0E040:00 41:00 42:00 43:00 44:00 Time 469.7780 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 41:08 H9.25E5 100 % A4.10E6 9.3E5 50 4.6E5 0 0.0E040:00 41:00 42:00 43:00 44:00 Time 471.7750 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 41:09 H1.08E6 100 % A4.56E6 1.1E6 **50** \pm 5.4E5 0 0.0E0 41:00 40:00 42:00 43:00 44:00 Time 454.9728 S:8 F:5 40:48 100 % 42:23 43:05 43:19 □ 40:54 41:57 42:42 43:41 40:23 41:15 43:59 _7.9E5 50 4.0E5 0.0E0 40:00 41:00 42:00 43:00 44:00 Time

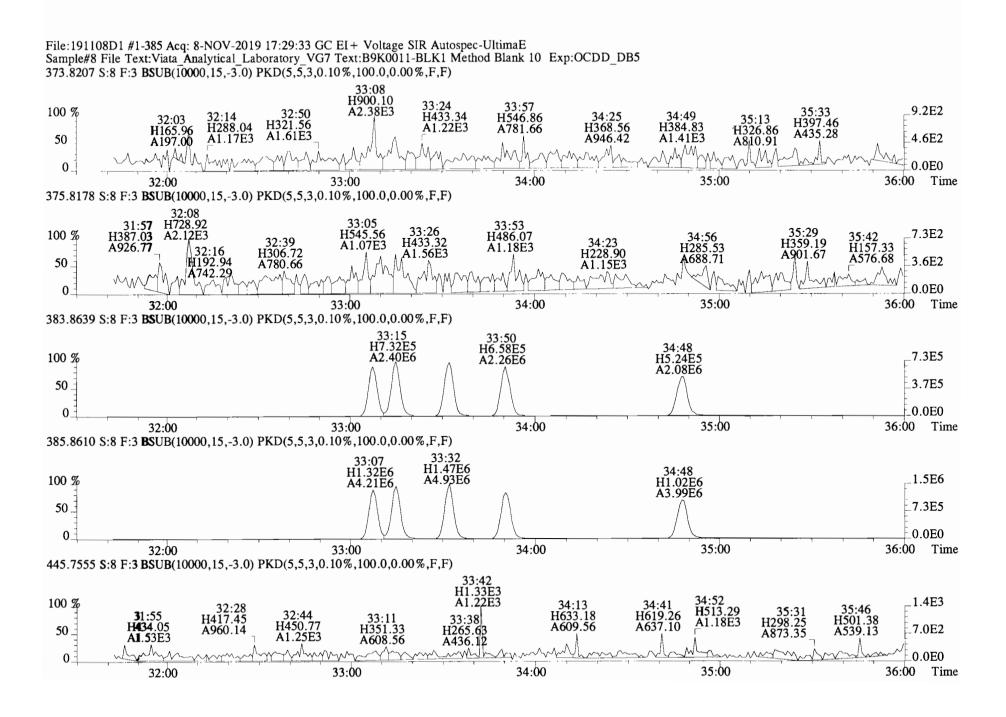




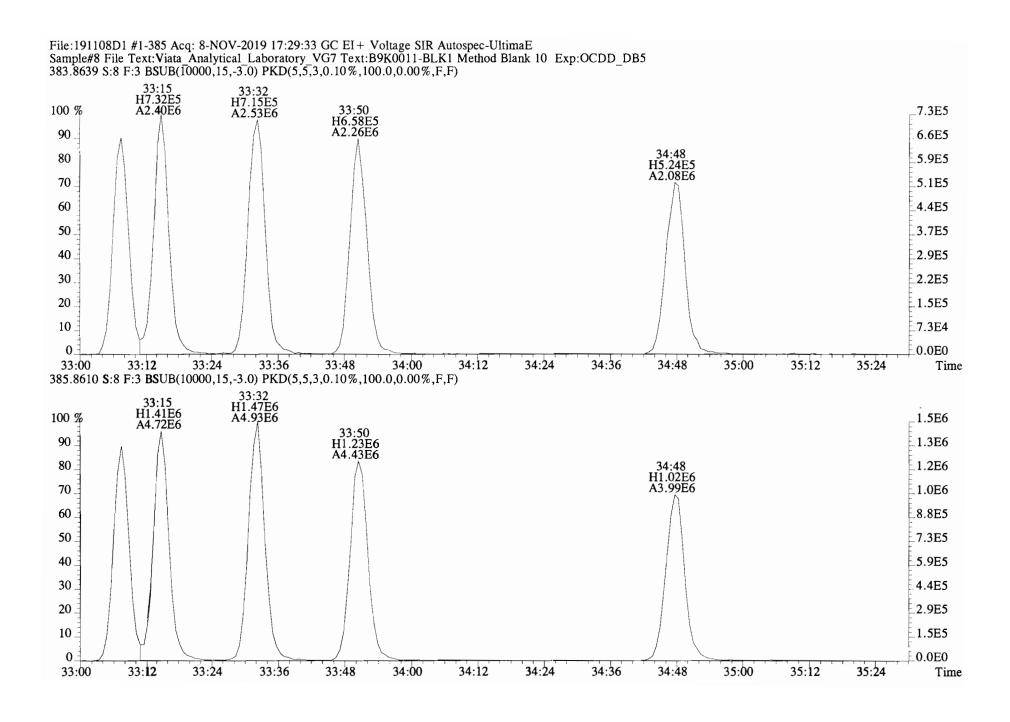
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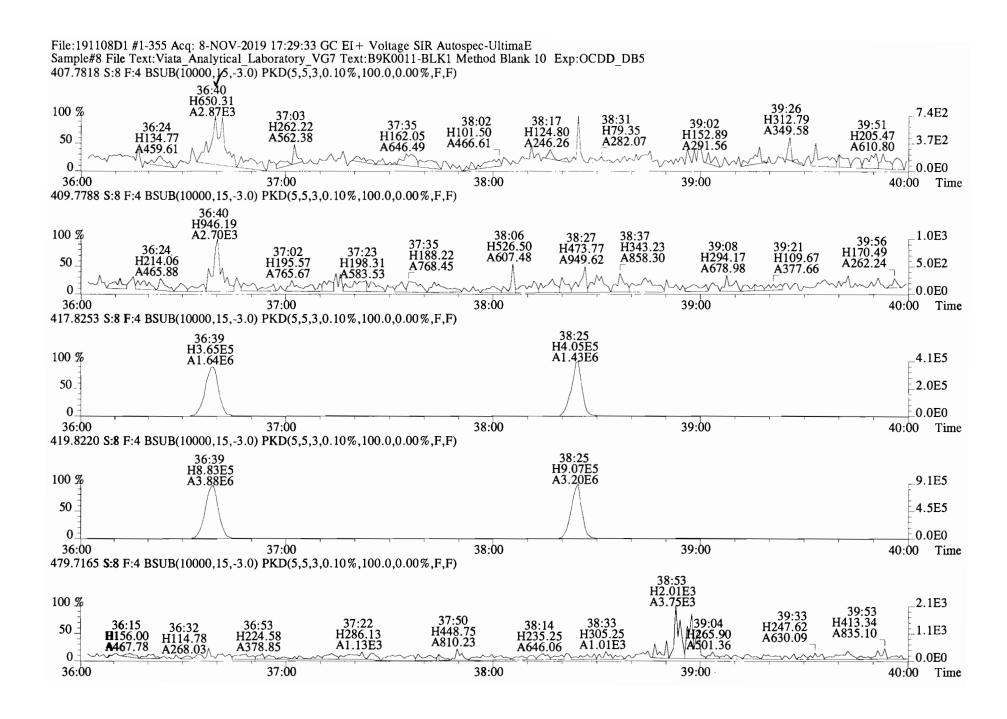
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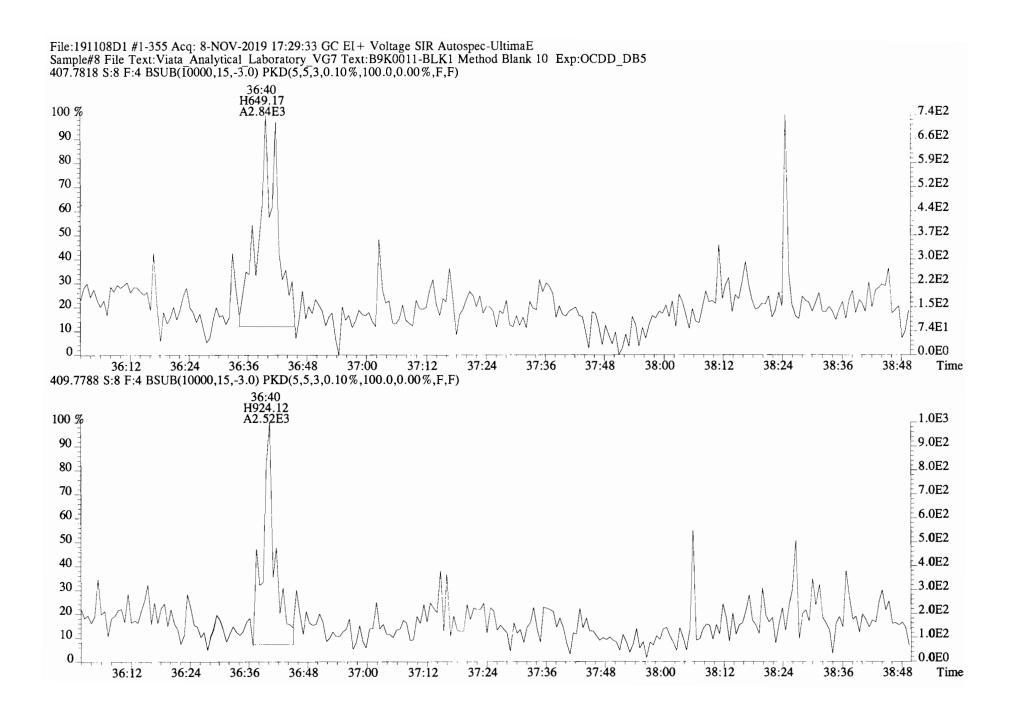
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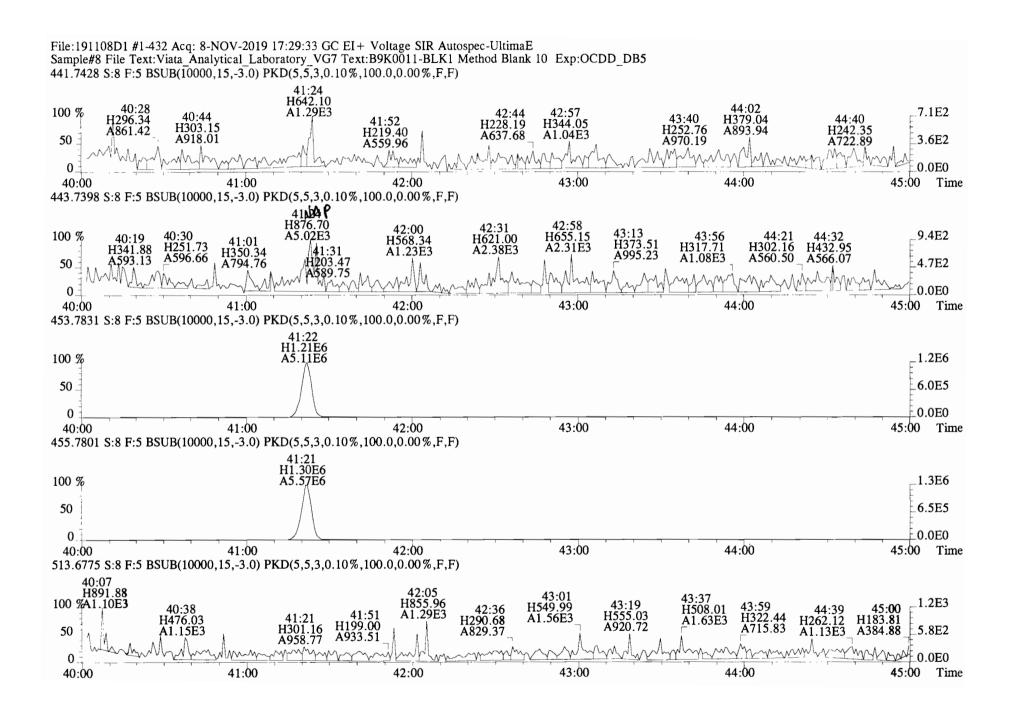
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FORM 8A

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B9K0011-BS1

Contract No.: SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 191108D1-4

Ext. Date: Shift: Day Analysis Date: 8-NOV-19 Time: 14:17:51

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

	SPIKE	CONC.	OPR CONC.
	CONC.	FOUND	LIMITS (1)
NATIVE ANALYTES	(ng/mL)	(ng/mL)	(ng/mL)
2,3,7,8-TCDD	10	10.4	6.7 - 15.8
			7.3 - 14.6 (2)
1,2,3,7,8-PeCDD	50	43.9	35.0 - 71.0
1,2,3,4,7,8-HxCDD	50	47.8	35.0 - 82.0
1,2,3,6,7,8-HxCDD	50	49.8	38.0 - 67.0
1,2,3,7,8,9-HxCDD	50	47.8	32.0 - 81.0
1,2,3,4,6,7,8-HpCDD	50	48.1	35.0 - 70.0
OCDD	100	99.7	78.0 - 144.0
2,3,7,8-TCDF	10	8.66	7.5 - 15.8
			8.0 - 14.7 (2)
1,2,3,7,8-PeCDF	50	46.2	40.0 - 67.0
2,3,4,7,8-PeCDF	50	46.3	34.0 - 80.0
1,2,3,4,7,8-HxCDF	50	47.1	36.0 - 67.0
1,2,3,6,7,8-HxCDF	50	47.2	42.0 - 65.0
2,3,4,6,7,8-HxCDF	50	49.0	35.0 - 78.0
1,2,3,7,8,9-HxCDF	50	47.5	39.0 - 65.0
1,2,3,4,6,7,8-HpCDF	50	46.7	41.0 - 61.0
1,2,3,4,7,8,9-HpCDF	50	45.0	39.0 - 69.0
OCDF	100	93.9	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 OPR as specified in Table 6a, Method 1613. 10/94

Analyst: B

Date: 1819

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FORM 8B

PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B9K0011-BS1

Contract No.: SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 191108D1-4

Ext. Date: Shift: Day Analysis Date: 8-NOV-19 Time: 14:17:51

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	78.4	20.0 - 175.0 25.0 - 141.0 (2)
13C-1,2,3,7,8-PeCDD	100	91.9	21.0 - 227.0
13C-1,2,3,4,7,8-HxCDD	100	97.0	21.0 - 193.0
13C-1,2,3,6,7,8-HxCDD	100	83.6	25.0 - 163.0
13C-1,2,3,7,8,9-HxCDD	100	90.7	21.0 - 193.0
13C-1,2,3,4,6,7,8-HpCDD	100	100	26.0 - 166.0
13C-OCDD	200	201	26.0 - 397.0
13C-2,3,7,8-TCDF	100	75.3	22.0 - 152.0 26.0 - 126.0 (2)
13C-1,2,3,7,8-PeCDF	100	88.2	21.0 - 192.0
13C-2,3,4,7,8-PeCDF	100	79.8	13.0 - 328.0
13C-1,2,3,4,7,8-HxCDF	100	93.0	19.0 - 202.0
13C-1,2,3,6,7,8-HxCDF	100	84.1	21.0 - 159.0
13C-2,3,4,6,7,8-HxCDF	100	84.1	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	90.6	21.0 - 158.0
13C-1,2,3,4,7,8,9-HpCDF	100	102	20.0 - 186.0
13C-OCDF	200	204,	26.0 - 397.0
CLEANUP STANDARD			
37Cl-2,3,7,8-TCDD	40	35.1	12.4 - 76.4

- (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

Analyst: 1)6

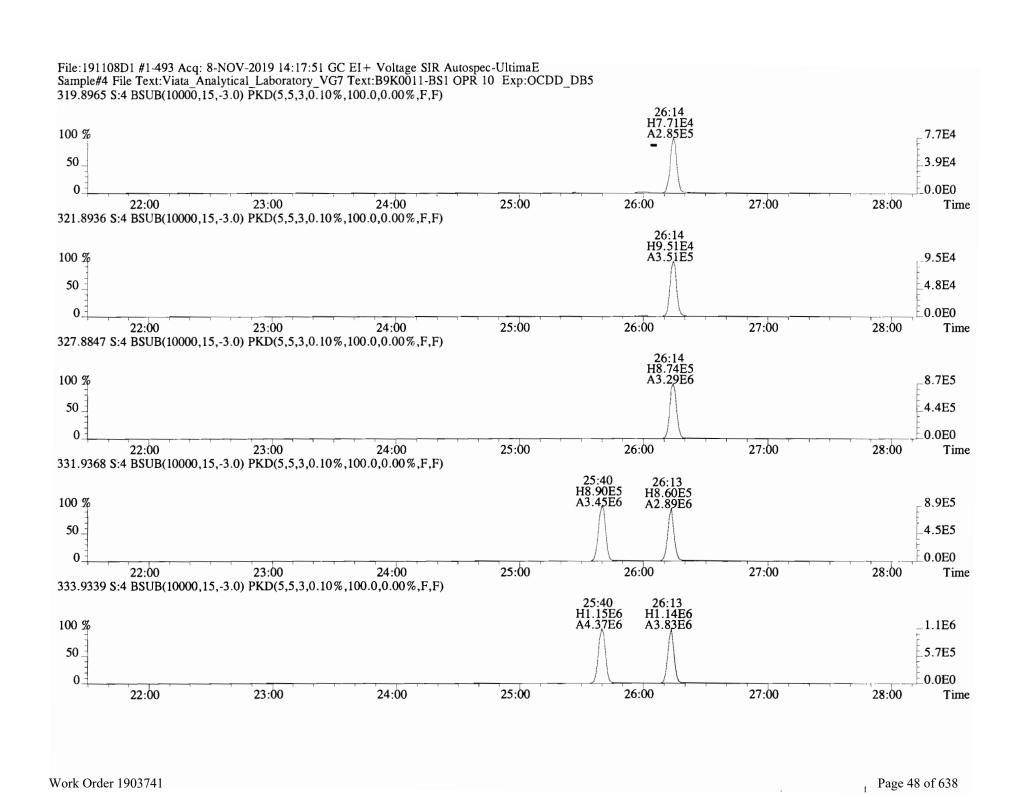
Date: 1(8/19

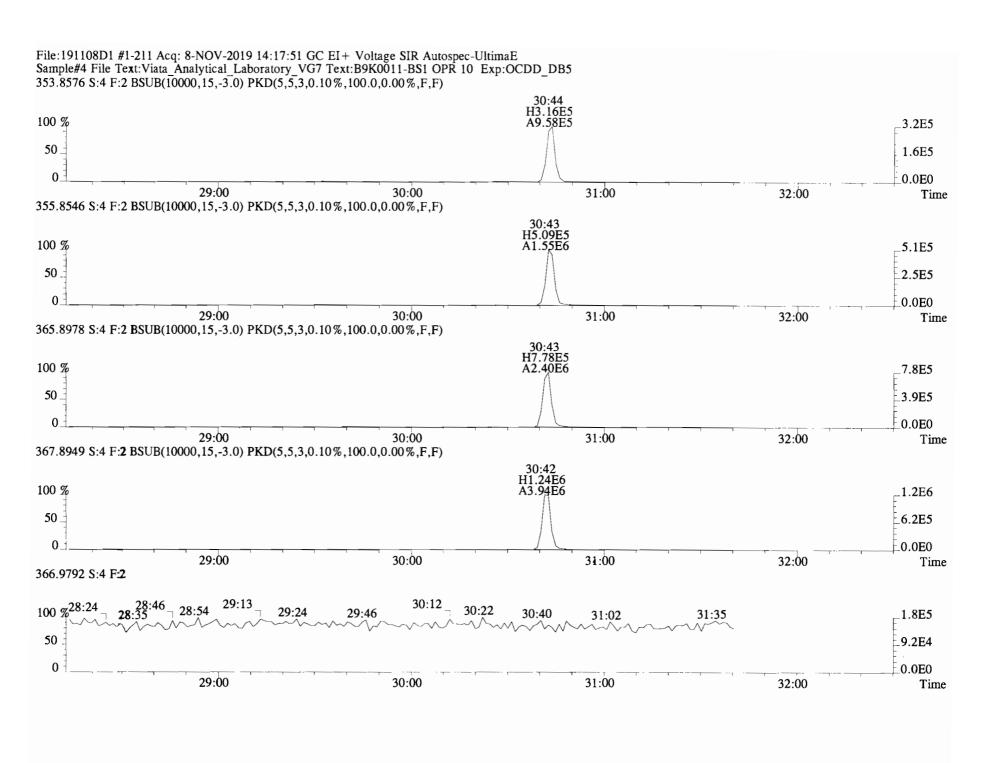
Work Order 1903741

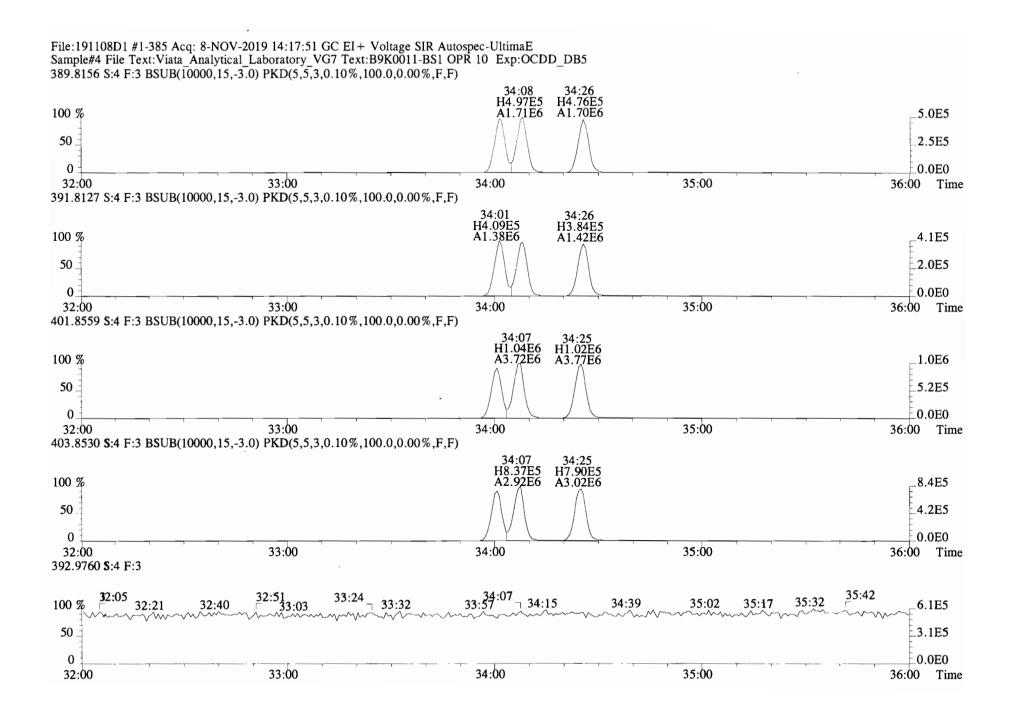
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	Client ID: OPR Lab ID: B9K0011-BS1		lename: 1 Column I			Acq: 8-No 1613VG7-			ol: 1.000		l: ST191108D1	-1			Page	3 of 3
	Name	Resp	RA	RRF	RT	Conc	Qual	noise Fac	DL	Name		Conc	EMPC	Qual	noise	DL
	2,3,7,8-TCDD	6.36e+05	0.81 y	0.91	26:14	10.449		* 2.5	*	Total T	etra-Dioxins	11.0	11.9		*	*
	1,2,3,7,8-PeCDD	2.51e+06	0.62 y	0.90	30:43	43.900		* 2.5	*	Total P	enta-Dioxins	43.9	44.4		*	*
	1,2,3,4,7,8-HxCDD	3.04e+06	1.20 y	1.10	34:01	47.757		* 2.5	*	Total H	exa-Dioxins	145	146		*	*
	1,2,3,6,7,8-HxCDD	3.10e+06	1.22 y	0.94	34:07	49.762		* 2.5	*	Total H	epta-Dioxins	48.3	50.0		*	*
	1,2,3,7,8,9-HxCDD	3.12e+06	1.20 y	0.96	34:26	47.764		* 2.5	*	Total T	etra-Furans	9.32	10.4		*	*
	1,2,3,4,6,7,8-HpCDD	2.86e+06	1.03 y	0.98	37:52	48.101		* 2.5	*	Total P	enta-Furans	93.589	94.153		*	*
	OCDD	5.16e+06	0.88 y	0.96	41:09	99.661		* 2.5	*	Total H	exa-Furans	191	192		*	*
										Total H	epta-Furans	91.7	92.9		*	*
	2,3,7,8-TCDF	8.04e+05	0.78 y	0.95	25:28	8.6600		* 2.5	*							
	1,2,3,7,8-PeCDF	4.20e+06	1.68 y	0.96	29:33	46.244		* 2.5	*							
	2,3,4,7,8-PeCDF	3.99e+06	1.71 y	1.01	30:26	46.285		* 2.5	*							
	1,2,3,4,7,8-HxCDF	3.98e+06	1.24 y	1.18	33:08	47.117		* 2.5	*							
	1,2,3,6,7,8-HxCDF	4.07e+06	1.22 y	1.07	33:16	47.197		* 2.5	*							
	2,3,4,6,7,8-HxCDF	4.06e+06	1.20 y	1.11	33:51	48.992		* 2.5	*							
	1,2,3,7,8,9-HxCDF	3.56e+06	1.22 y	1.06	34:48	47.463		* 2.5	*							
	1,2,3,4,6,7,8-HpCDF	3.35e+06	1.03 y	1.13	36:39	46.681		* 2.5	*							
	1,2,3,4,7,8,9-HpCDF	3.17e+06	1.01 y	1.28	38:25	45.019		* 2.5	*							
	OCDF	5.81e+06	0.89 y	0.95	41:22	93.930		* 2.5	*							
										Rec	Qual					
IS	13C-2,3,7,8-TCDD	6.72e+06	0.75 y	1.10	26:13	78.446				78.4						
IS	13C-1,2,3,7,8-PeCDD	6.33e+06	0.61 y	0.88	30:42	91.874				91.9						
IS	13C-1,2,3,4,7,8-HxCDD	5.78e+06	1.24 y	0.64	34:01	97.028				97.0						
IS	13C-1,2,3,6,7,8-HxCDD	6.63e+06	1.27 y	0.86	34:07	83.598				83.6						
IS	13C-1,2,3,7,8,9-HxCDD	6.79e+06	1.25 y	0.81	34:25	90.731				90.7						
IS	13C-1,2,3,4,6,7,8-HpCDD	6.07e+06	1.05 y	0.65	37:51	100.01				100						
IS	13C-OCDD	1.08e+07	0.90 y	0.58	41:08	200.89				100						
IS	13C-2,3,7,8-TCDF	9.78e+06	0.80 y	1.03	25:27	75.261				75.3						
IS	13C-1,2,3,7,8-PeCDF	9.46e+06	1.58 y	0.85	29:32	88.231				88.2						
IS	13C-2,3,4,7,8-PeCDF	8.49e+06	1.59 y	0.85	30:26	79.817				79.8						
IS	13C-1,2,3,4,7,8-HxCDF	7.18e+06	0.51 y	0.83	33:07	93.048				93.0						
IS	13C-1,2,3,6,7,8-HxCDF	8.07e+06	0.52 y	1.03	33:15	84.141				84.1						
IS	13C-2,3,4,6,7,8-HxCDF	7.44e+06	0.51 y	0.95	33:50	84.084				84.1						
IS	13C-1,2,3,7,8,9-HxCDF	7.06e+06	0.50 y	0.83	34:48	91.938				91.9						
IS	13C-1,2,3,4,6,7,8-HpCDF	6.36e+06	0.44 y	0.76	36:38	90.566				90.6						
IS	13C-1,2,3,4,7,8,9-HpCDF	5.50e+06	0.44 y	0.58	38:24	102.03				102						
IS		1.31e+07	0.91 y	0.69	41:21	204.50				102						
C/t	Up 37Cl-2,3,7,8-TCDD	3.29e+06		1.20	26:14	35.104				87.8	Integra	ations	Revi	ewed		
											by 7	λ	by			
RS,	/RT 13C-1,2,3,4-TCDD	7.82e+06	0.79 y	1.00	25:40	100.00					Analyst:	בזן	Anal	yst : _(27	
RS	13C-1,2,3,4-TCDF	1.26e+07	0.81 y	1.00	24:15	100.00						,			- '	
RS	RT 13C-1,2,3,4,6,9-HxCDF	9.28e+06	0.51 y	1.00	33:32	100.00					Date:	8/19	Anal	:_17	120/19	

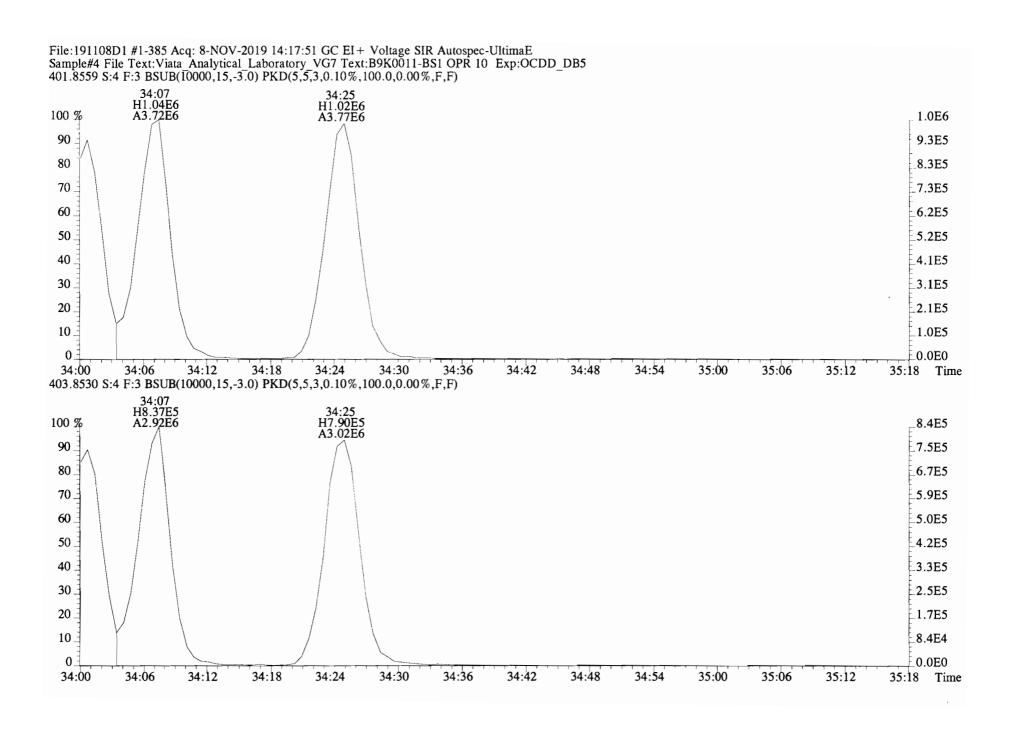
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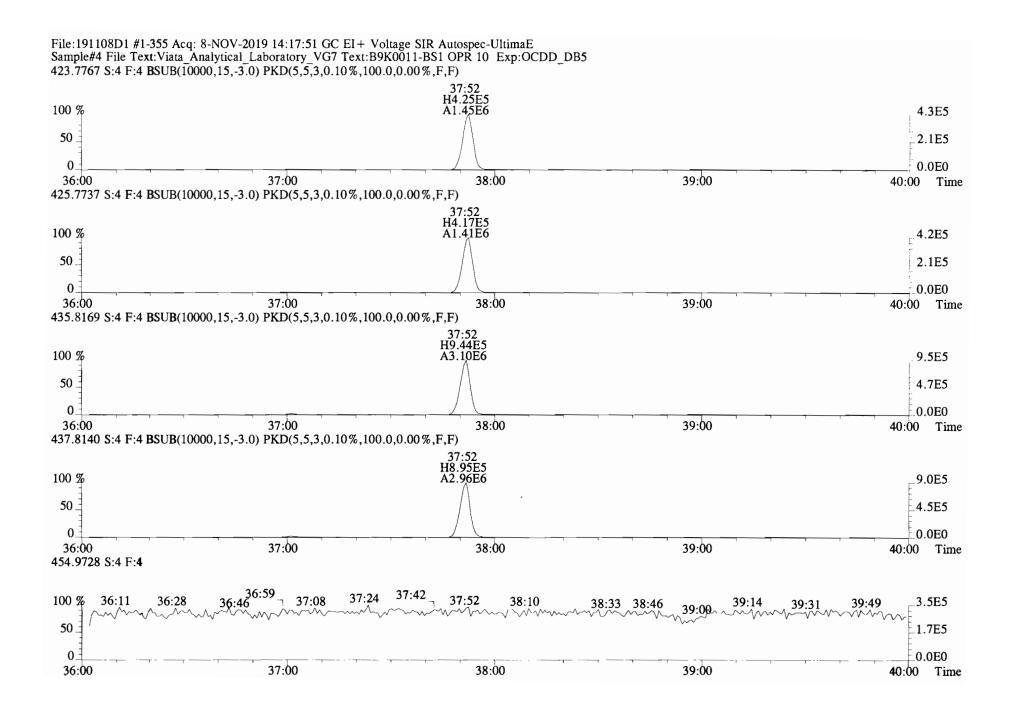




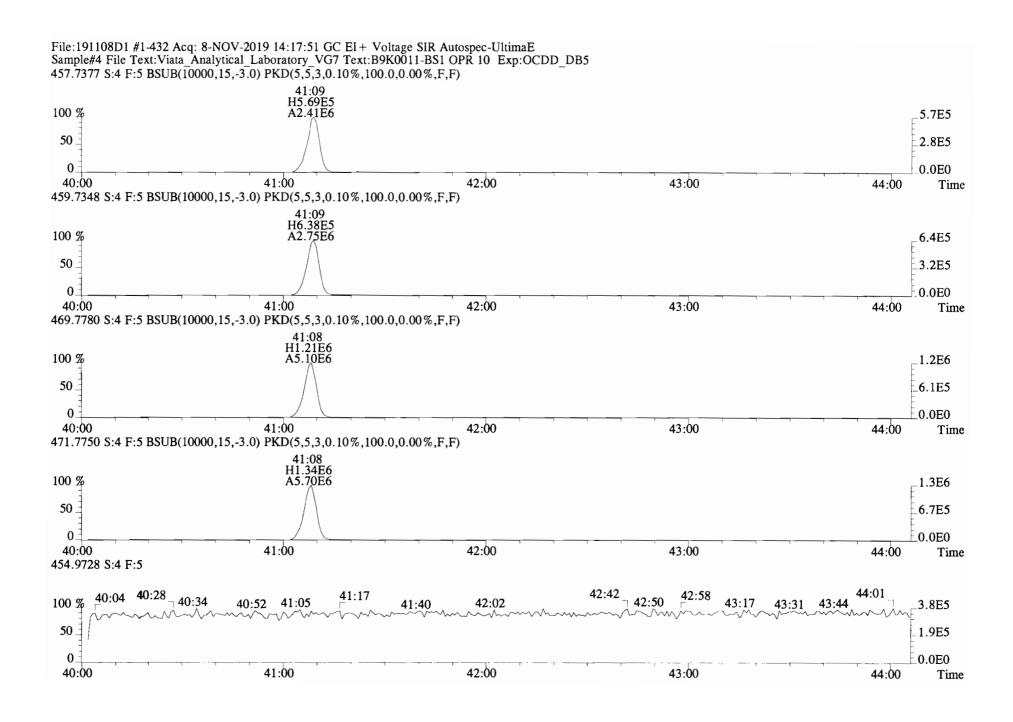
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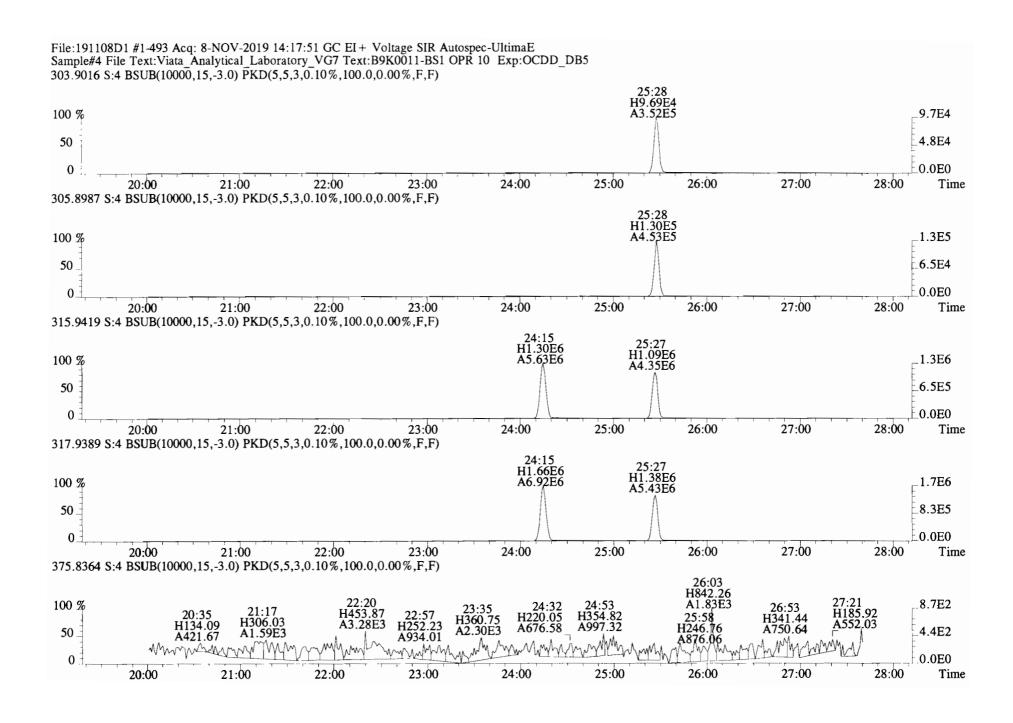
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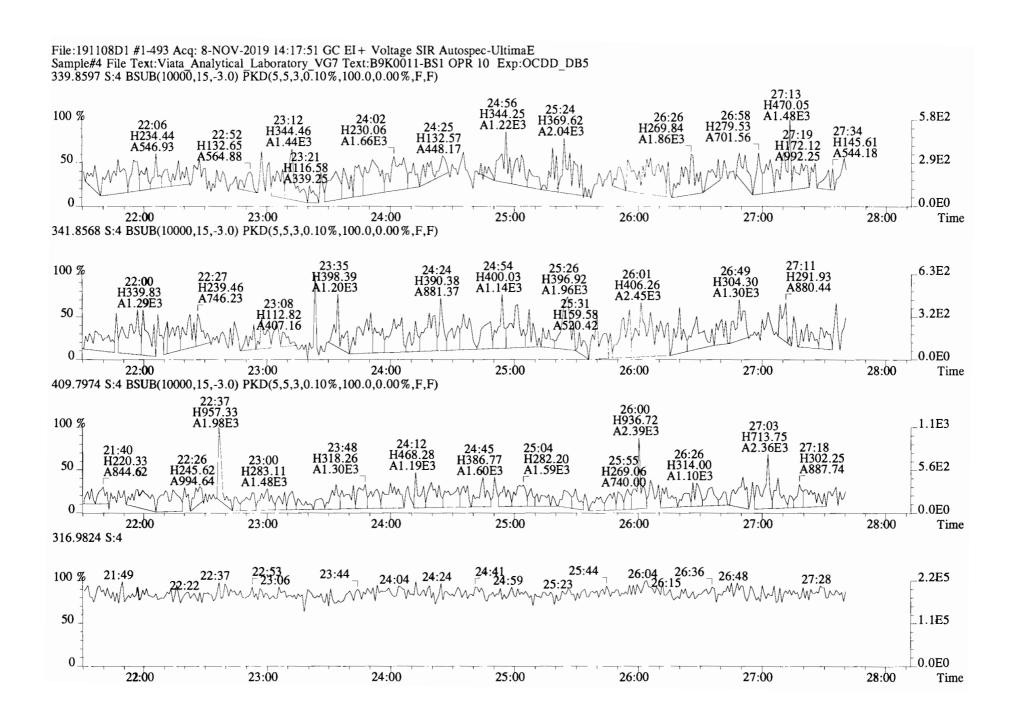
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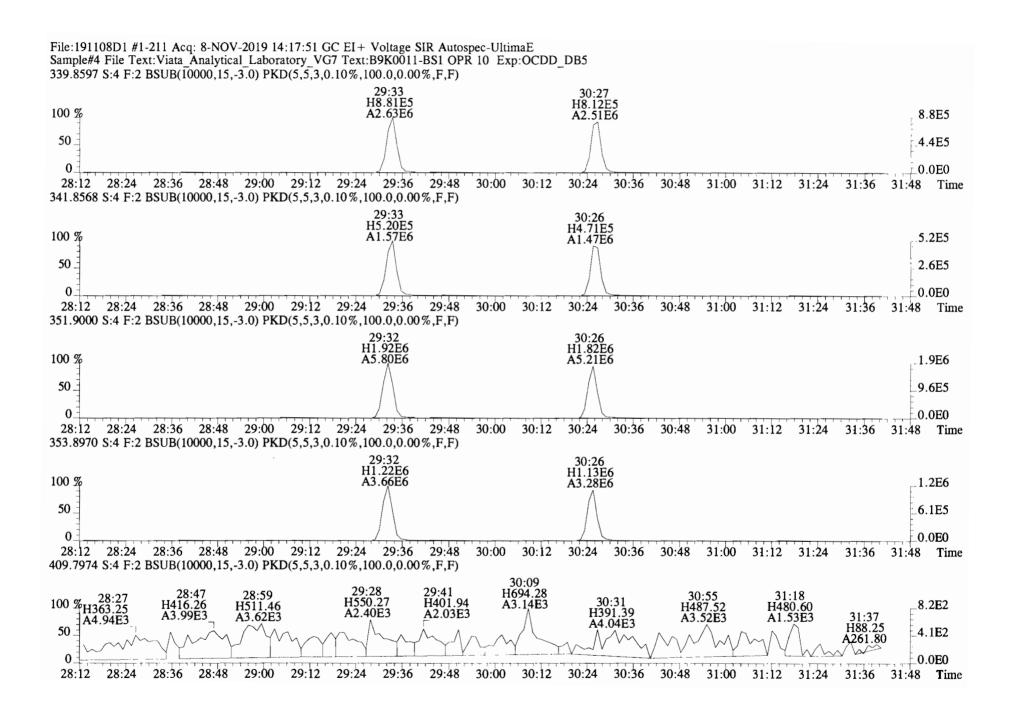
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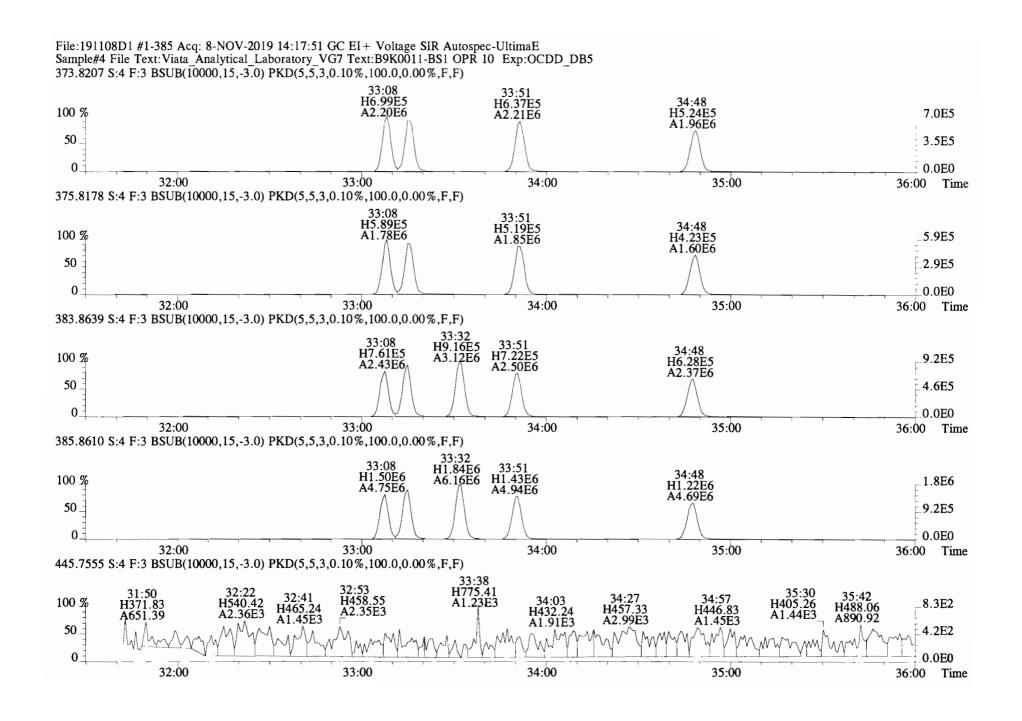
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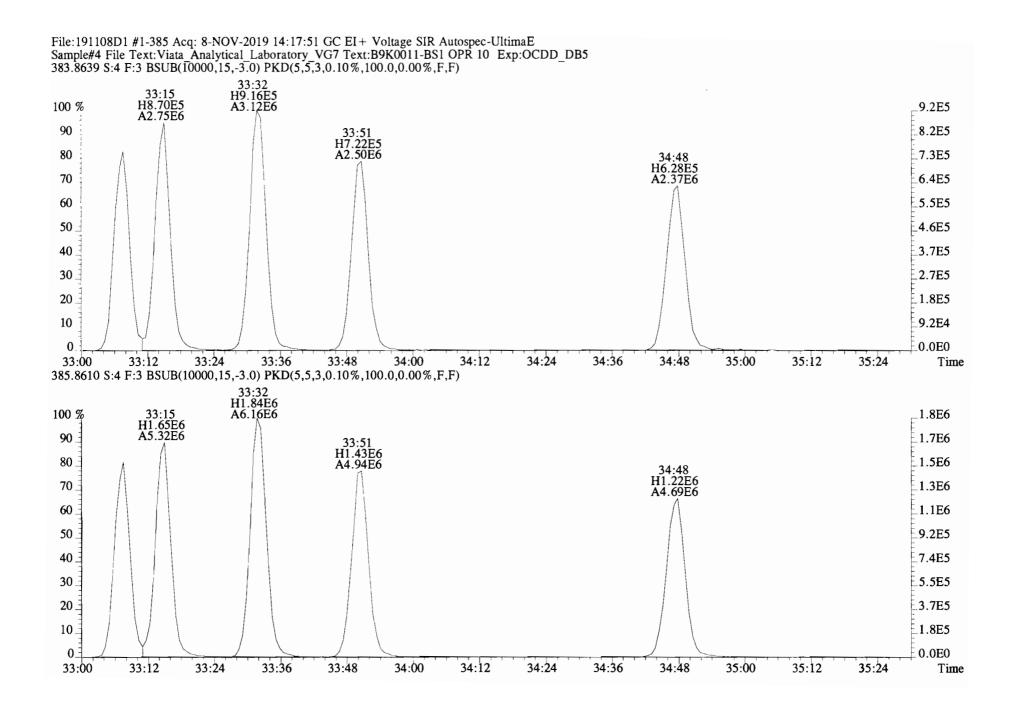
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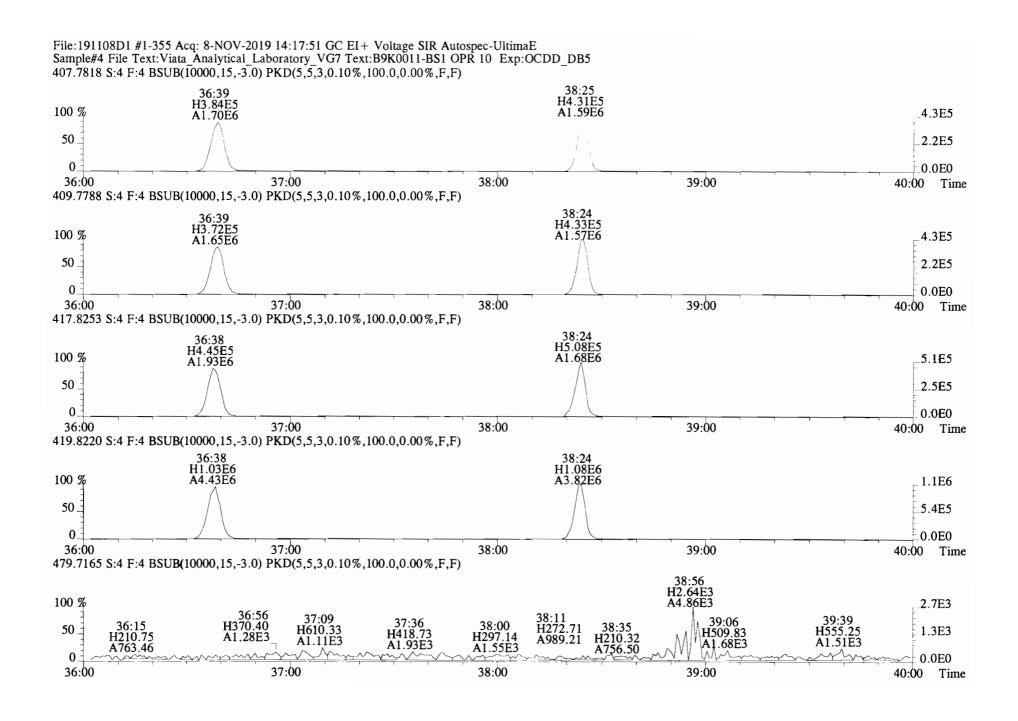
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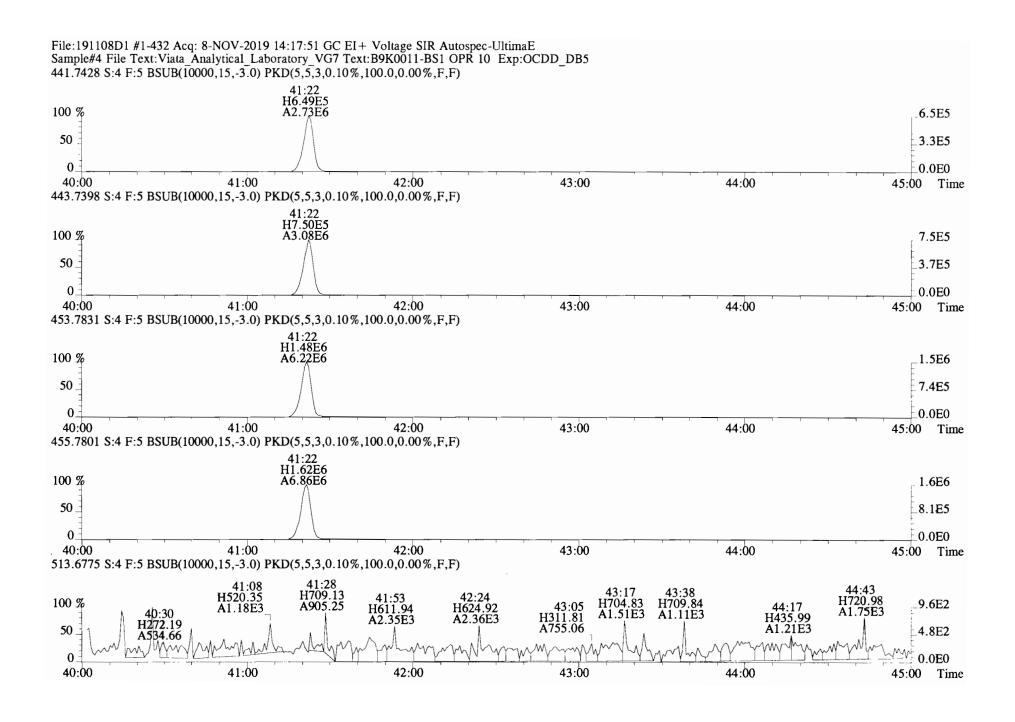
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MassLynx V4.2 SCN982

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Dataset:

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Last Altered: Printed:

Thursday, December 19, 2019 14:53:29 Pacific Standard Time Thursday, December 19, 2019 14:54:05 Pacific Standard Time

GRB 12/19/19 C1 12/23/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD			YES	0.925	10.121	~ 26.18		1.00		YES			0.338	
2	2 1,2,3,7,8-PeCDD			YES	0.905	10.121	31.33		1.00		YES			0.237	
3	3 1,2,3,4,7,8-HxCDD			YES	1.07	10.121	34.66		1.00		YES			0.188	
4	4 1,2,3,6,7,8-HxCDD			YES	0.967	10.121	34.76		1.00		YES			0.191	
5	5 1,2,3,7,8,9-HxCDD			YES	0.978	10.121	35.07		1.00		YES			0.223	
6	6 1,2,3,4,6,7,8-HpCDD			YES	1.04	10.121	38.55		1.00		YES			0.348	
7	7 OCDD	1145.459	1.152	YES	0.972	10.121	41.81	41.82	1.00	1.00	NO	2.509		0,464	2.256
8	8 2,3,7,8-TCDF			YES	0.938	10.121	25.18		1.00		YES	•		0.175	
9	9 1,2,3,7,8-PeCDF			YES	0.976	10.121	30.02		1.00		YES			0.0844	
10	10 2,3,4,7,8-PeCDF			YES	1.00	10.121	31.02		1.00		YES			0.0857	
11	11 1,2,3,4,7,8-HxCDF			YES	1.24	10.121	33.79		1.00		YES			0.0749	
12	12 1,2,3,6,7,8-HxCDF			YES	1.10	10.121	33.91		1.00		YES			0.0782	
13	13 2,3,4,6,7,8-HxCDF			YES	1.18	10.121	34.52		1.00		YES			0.0740	
14	14 1,2,3,7,8,9-HxCDF			YES	1.07	10.121	35.36		1.00		YES			0.112	
15	15 1,2,3,4,6,7,8-HpCDF			YES	1.13	10.121	37.14		1.00		YES			0.101	
16	16 1,2,3,4,7,8,9-HpCDF			YES	1.26	10.121	39.16		1.00		YES			0.132	
17	17 OCDF			YES	1.10	10.121	42.00		1.00		YES			0.225	
18	18 13C-2,3,7,8-TCDD	140552.324	0.804	NO	1.05	10.121	26.15	26.15	1.03	1.03	NO	108.9	55.1	0.758	
19	19 13C-1,2,3,7,8-PeCDD	130868.445	0.610	NO	0.743	10.121	31.29	31.31	1.23	1.23	NO	143.1	72.4	1.16	
20	20 13C-1,2,3,4,7,8-HxCDD	103884.078	1.228	NO	0.646	10.121	34.65	34.65	1.01	1.01	NO	143.9	72.8	0.971	
21	21 13C-1,2,3,6,7,8-HxCDD	146678.719	1.366	NO	0.777	10.121	34.75	34.76	1.02	1.02	NO	169.1	85.6	0.808	1
22	22 13C-1,2,3,7,8,9-HxCDD	135440.434	1.380	NO	0.659	10.121	35.02	35.03	1.02	1.03	NO	183.9	93.1	0.951	
23	23 13C-1,2,3,4,6,7,8-HpCDD	102510.027	1.136	NO	0.534	10.121	38.52	38.54	1.13	1.13	NO	171.8	87.0	1.34	
24	24 13C-OCDD	181305.977	0.893	NO	0.470	10.121	41.80	41.81	1.22	1.22	NO	345.2	87.3	2.34	
25	25 13C-2,3,7,8-TCDF	181273.477	0.701	NO	0.977	10.121	25.16	25.16	0.99	0.99	NO	91.88	46.5	0.861	
26	26 13C-1,2,3,7,8-PeCDF	182710.281	1.556	NO	0.778	10.121	29.98	30.00	1.18	1.18	NO	116.4	58.9	1.01	
27	27 13C-2,3,4,7,8-PeCDF	166296.723	1.653	NO	0.750	10.121	30.97	30.99	1.22	1.22	NO	109.9	55.6	1.05	
28	28 13C-1,2,3,4,7,8-HxCDF	153443.949	0.515	NO	0.845	10.121	33.79	33.79	0.99	0.99	NO	162.6	82.3	1.62	
29	29 13C-1,2,3,6,7,8-HxCDF	193746.665	0.545	NO	1.03	10.121	33.90	33.90	0.99	0.99	NO	169.0	85.5	1.33	
30	30 13C-2,3,4,6,7,8-HxCDF	173162.645	0.506	NO	0.893	10.121	34.48	34.48	1.01	1.01	NO	173.7	87.9	1.53	
31	31 13C-1,2,3,7,8,9-HxCDF	147820.211	0.467	NO	0.734	10.121	35.38	35.36	1.04	1.03	NO	180.3	91.2	1.87	

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191218K1\191218K1-8.qld

Last Altered: Thursday, December 19, 2019 14:53:29 Pacific Standard Time Thursday, December 19, 2019 14:54:05 Pacific Standard Time

Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RŤ	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	149079.899	0.437	NO	0.754	10.121	37.09	37.10	1.09	1.09	NO	177.0	89.6	1.45	
33	33 13C-1,2,3,4,7,8,9-HpCDF	103657.568	0.448	NO	0.539	10.121	39.12	39.16	1.14	1.15	NO	172.2	87.2	2.02	
34	34 13C-OCDF	254441.797	0.857	NO	0.593	10.121	41.99	42.00	1.23	1.23	NO	384.5	97.3	1.69	
35	35 37Cl-2,3,7,8-TCDD	62531.977			1.07	10.121	26.17	26.17	1.03	1.03	NO	47.51	60.1	0.109	
36	36 13C-1,2,3,4-TCDD	243178.218	0.816	NO	1.00	10.121	25.45	25.45	1.00	1.00	NO	197.6	100	0.795	
37	37 13C-1,2,3,4-TCDF	398827.656	0.752	NO	1.00	10.121	23.55	23.54	1.00	1.00	NO	197.6	100	0.841	
38	38 13C-1,2,3,4,6,9-HxCDF	220669.243	0.516	NO	1.00	10.121	34.16	34.17	1.00	1.00	NO	197.6	100	1.37	
39	39 Total Tetra-Dioxins				0.925	10.121	24.62		0.00		NO			0.232	
40	40 Total Penta-Dioxins				0.905	10.121	29.96		0.00		NO			0.108	1
41	41 Total Hexa-Dioxins				0.967	10.121	33.63		0.00		NO	0.0000		0.111	0.2204
42	42 Total Hepta-Dioxins				1.04	10.121	38.80		0.00		NO	0.0000		0.193	0.3182
43	43 Total Tetra-Furans				0.938	10.121	23.61		0.00		NO			0.0650	
44	44 1st Func. Penta-Furans				0.976	10.121	27.04		0.00		NO			0.0358	
45	45 Total Penta-Furans				0.976	10.121	29.27		0.00		NO			0.0281	
46	46 Total Hexa-Furans				1.18	10.121	33.56		0.00		NO			0.0442	
47	47 Total Hepta-Furans				1.13	10.121	37.83		0.00		NO	0.04965		0.0645	0.04965

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Quantify Totals Report MassLynx V4.2 SCN982

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-8.qld

Last Altered: Printed:

Thursday, December 19, 2019 14:53:29 Pacific Standard Time Thursday, December 19, 2019 14:54:18 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015

Tetra-Dioxins

# Name	Area IS A	ea RA	Y/N	Pred.RT	RT	Conc.	EMPC
1							

Penta-Dioxins

1	# Name	Area IS	Area RA	Y/N	Pred.RT	RT	Conc.	EMPC
١	1							

Hexa-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 41 Total Hexa-Dioxins	0.00e0	0.00e0	2.376	YES	33.63	33.22	0.0000	0.05937
2 41 Total Hexa-Dioxins	0.00e0	0.00e0	1.185	NO	33.63	33.20	0.0000	0.1611

Hepta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 42 Total Hepta-Dioxins	0.00e0	1.03e5	0.752	YES	38.80	37.52	0.0000	0.3182

Tetra-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Penta-Furans function 1

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								- 1

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Quantify Totals Report MassLynx V4.2 SCN982

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-8.qld

Last Altered: Printed:

Thursday, December 19, 2019 14:53:29 Pacific Standard Time

Thursday, December 19, 2019 14:54:18 Pacific Standard Time

Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015

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Penta-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Hexa-Furans

# Name	Area	IS Area	ŔA	Y/N	Pred.RT	RT	Conc.	EMPC
# Name	₩ 6 9	10 Alba	100	1714	FIGU.IXI	N.	COIIC.	CIVII- C
1								

Hepta-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 47 Total Hepta-Furans	3.59e1	0.00e0	0.984	NO	37.83	37.69	0.04965	0.04965

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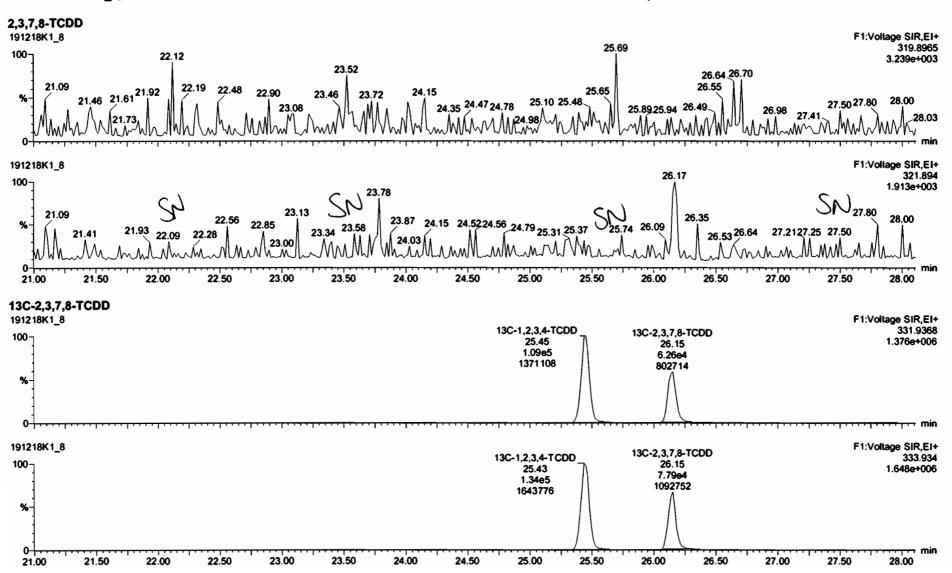
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Last Altered: Printed:

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015



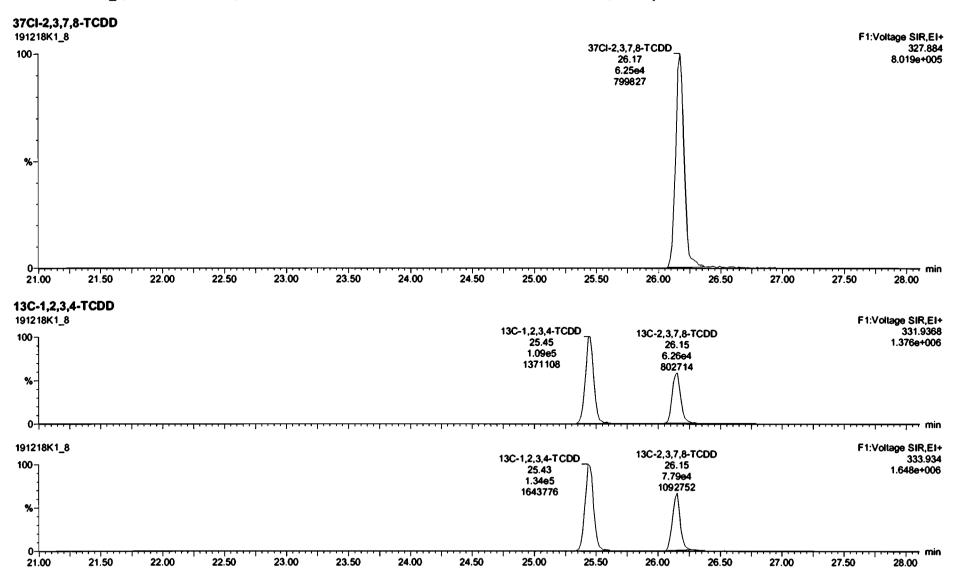
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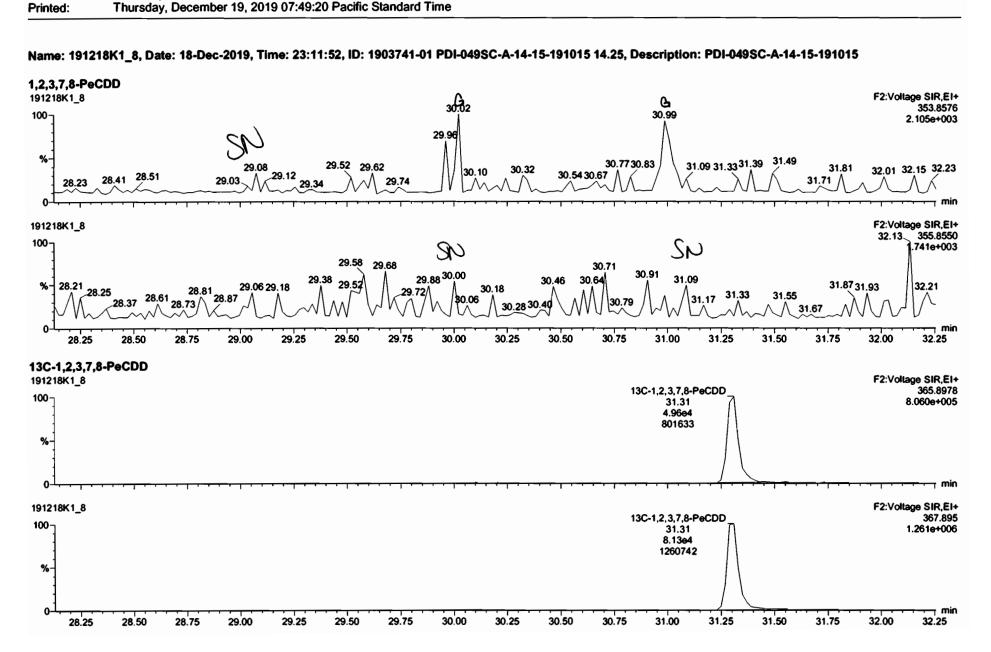
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1 8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015



Work Order 1903741



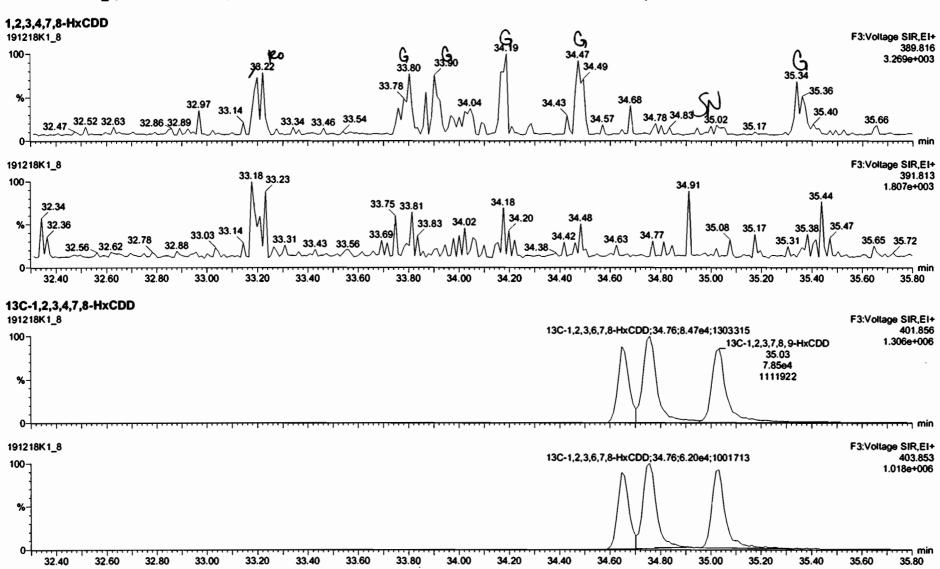
Work Order 1903741 Page 67 of 638

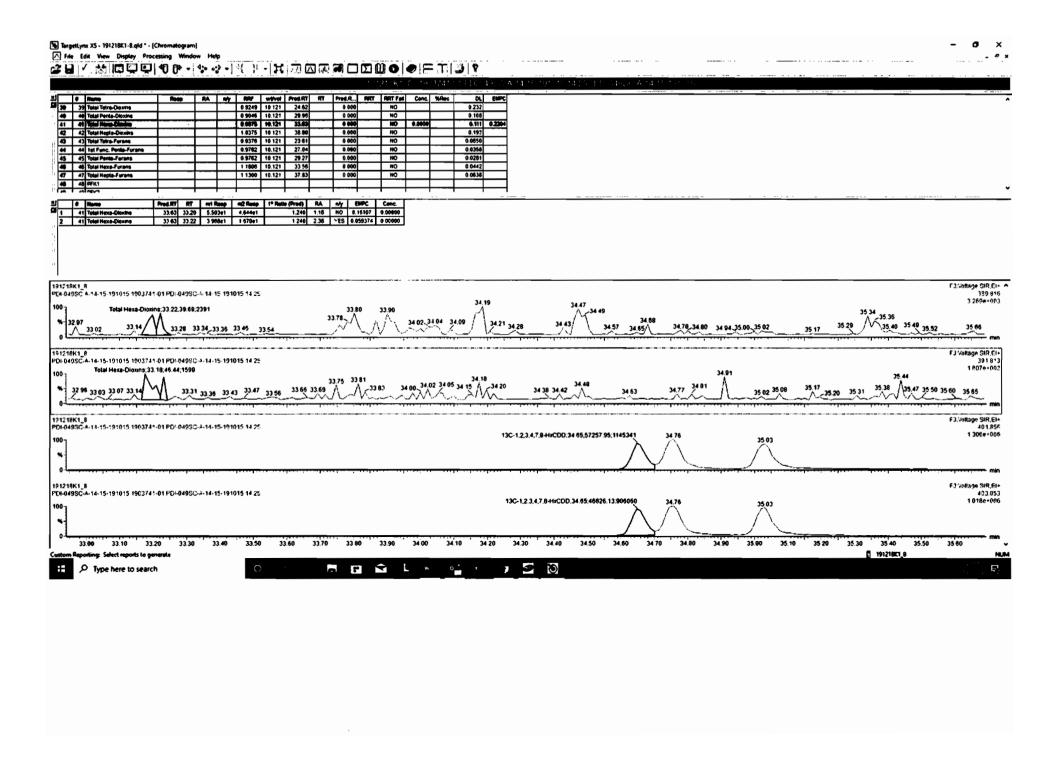
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Last Altered: Printed: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015





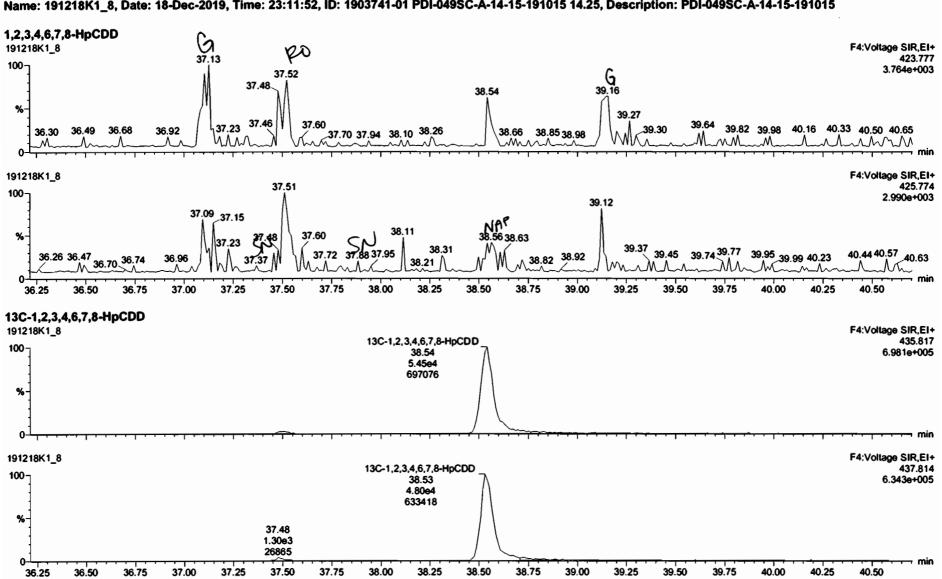
Work Order 1903741 Page 69 of 638

Dataset:

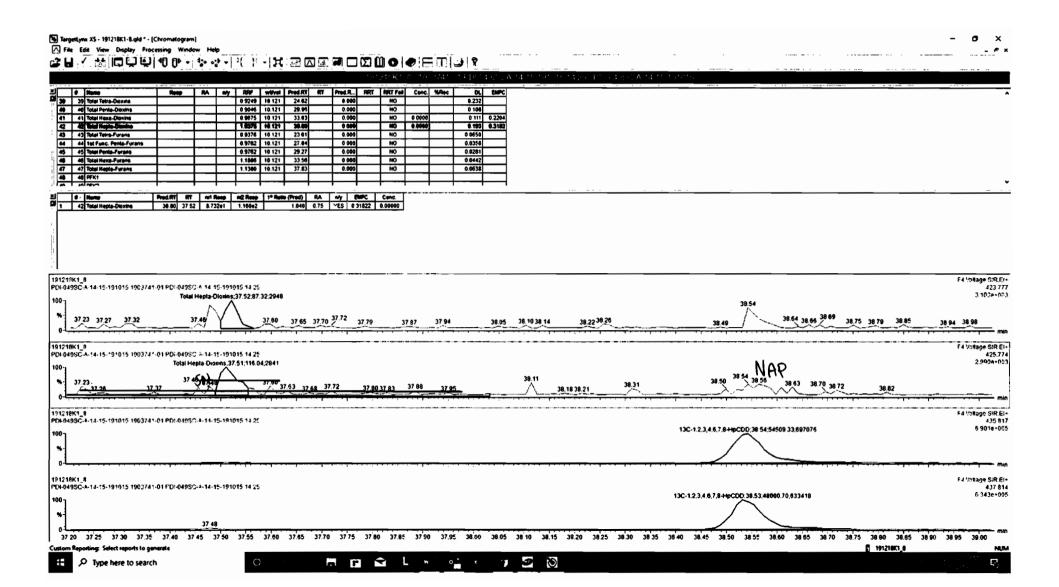
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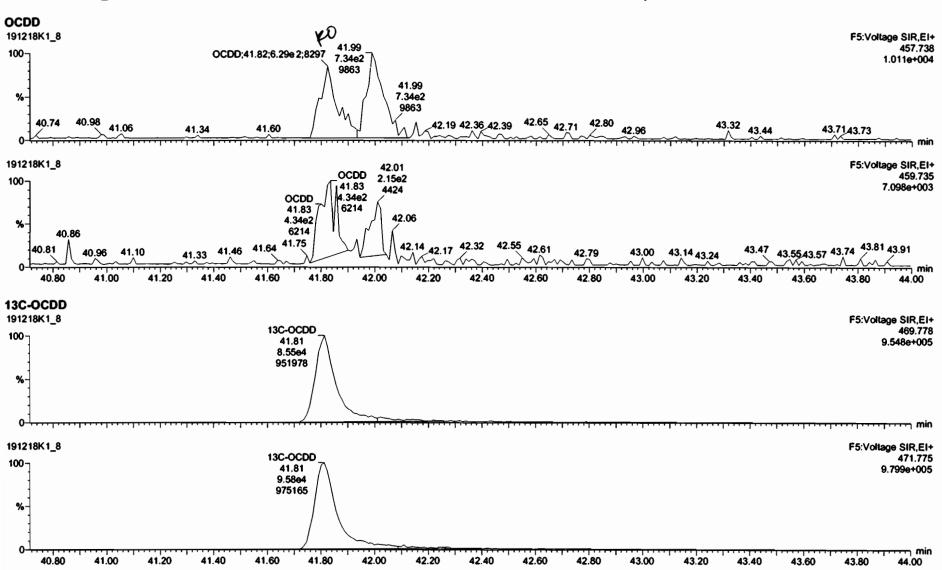


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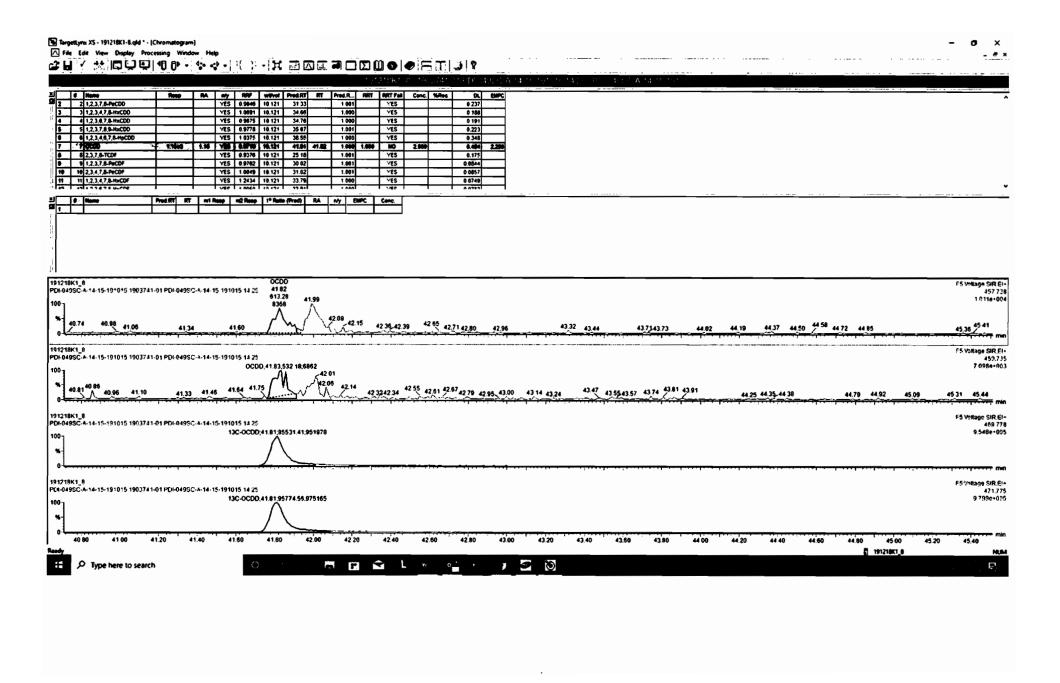


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Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015



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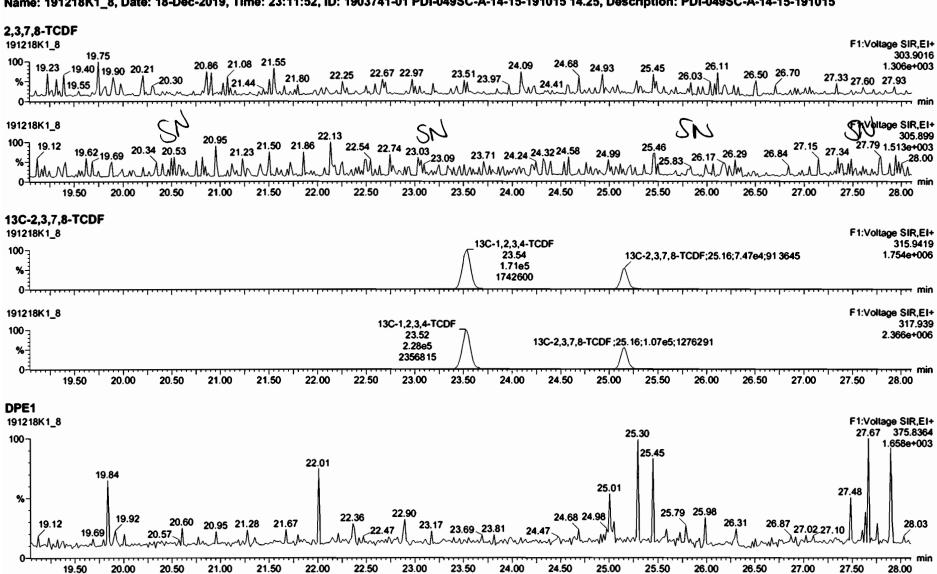
Work Order 1903741 Page 73 of 638

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Last Altered: Printed:

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

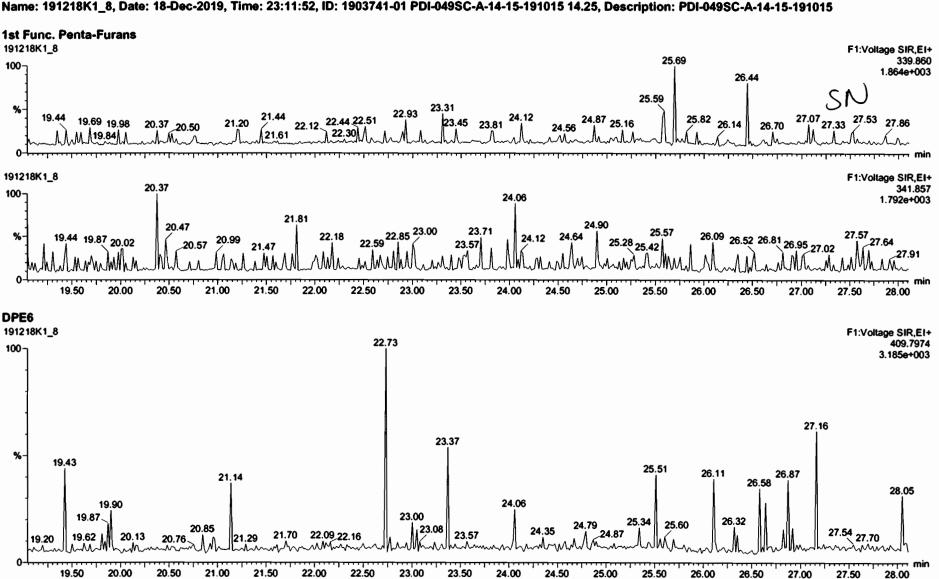
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Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015

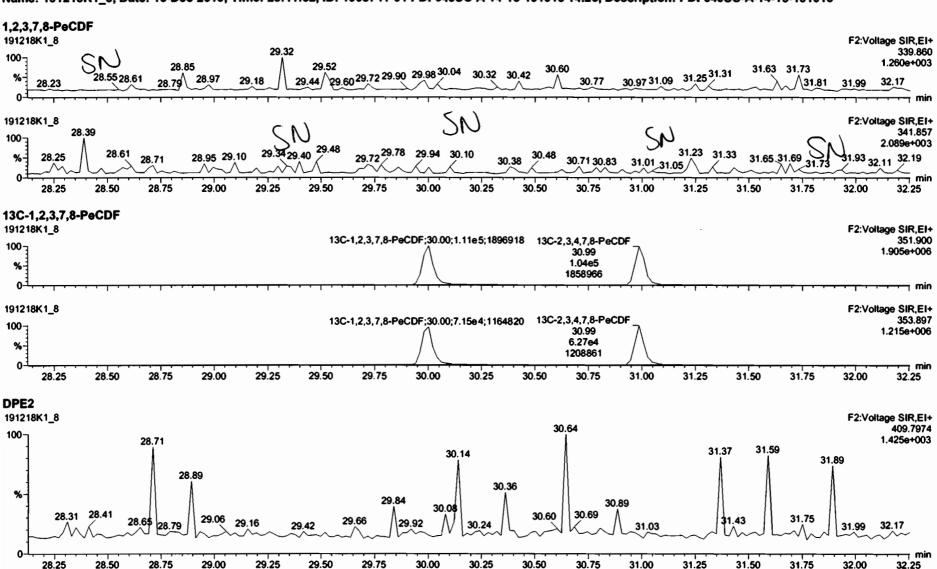


Work Order 1903741 Page 75 of 638 Dataset: U

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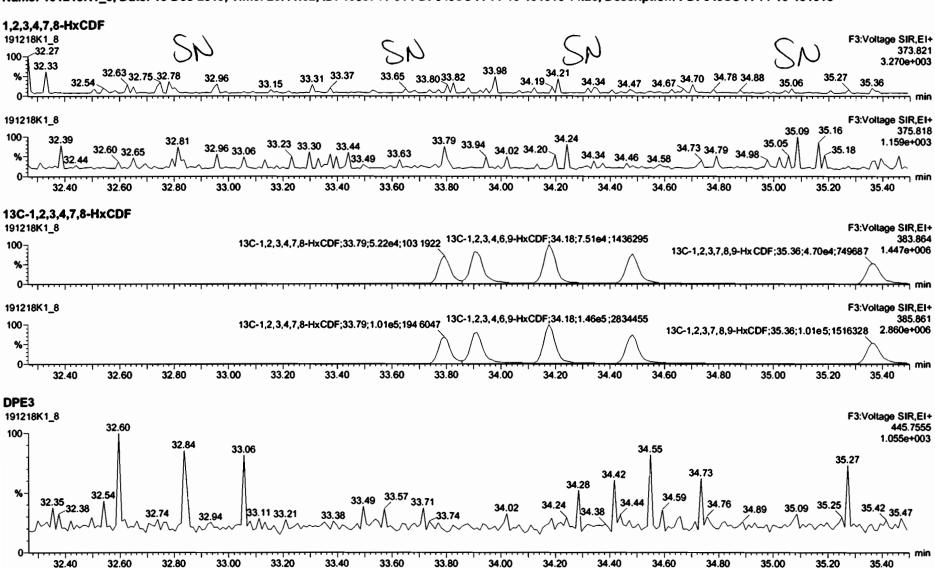
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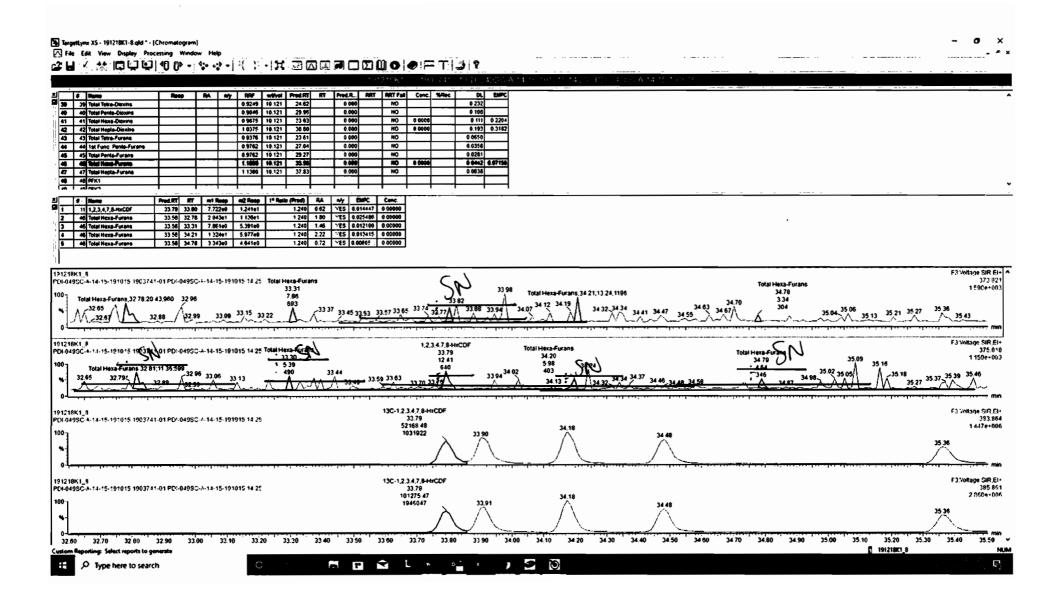
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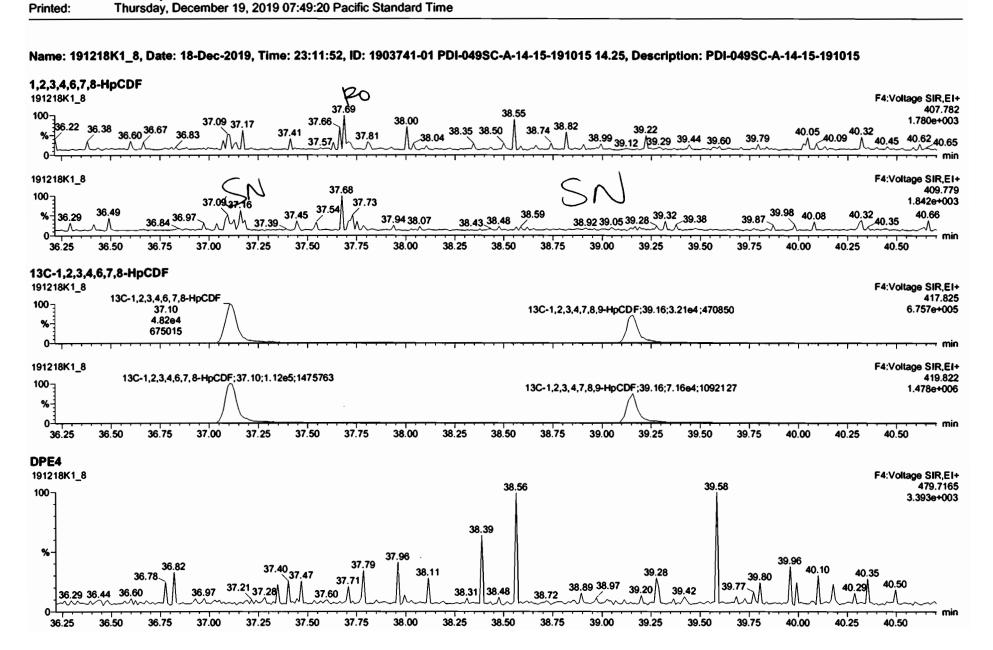
Name: 191218K1_8, Date: 18-Dec-2019, Time: 23:11:52, ID: 1903741-01 PDI-049SC-A-14-15-191015 14.25, Description: PDI-049SC-A-14-15-191015

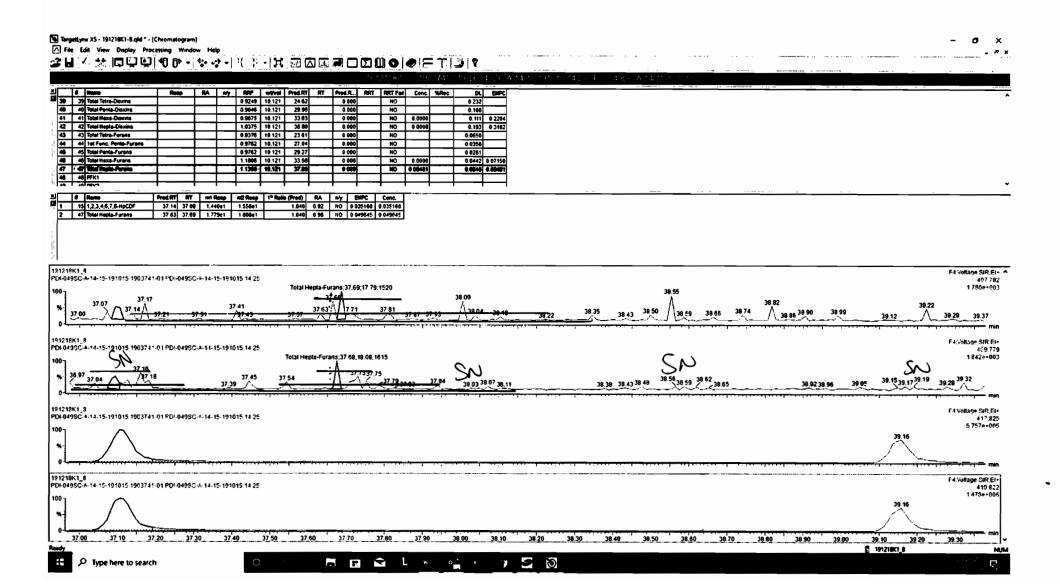


Work Order 1903741



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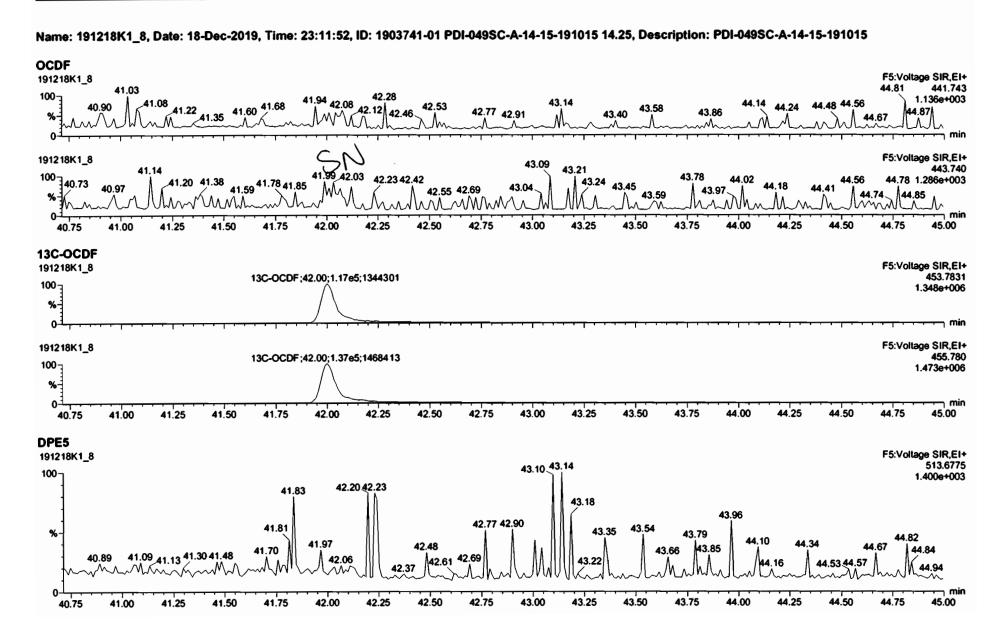


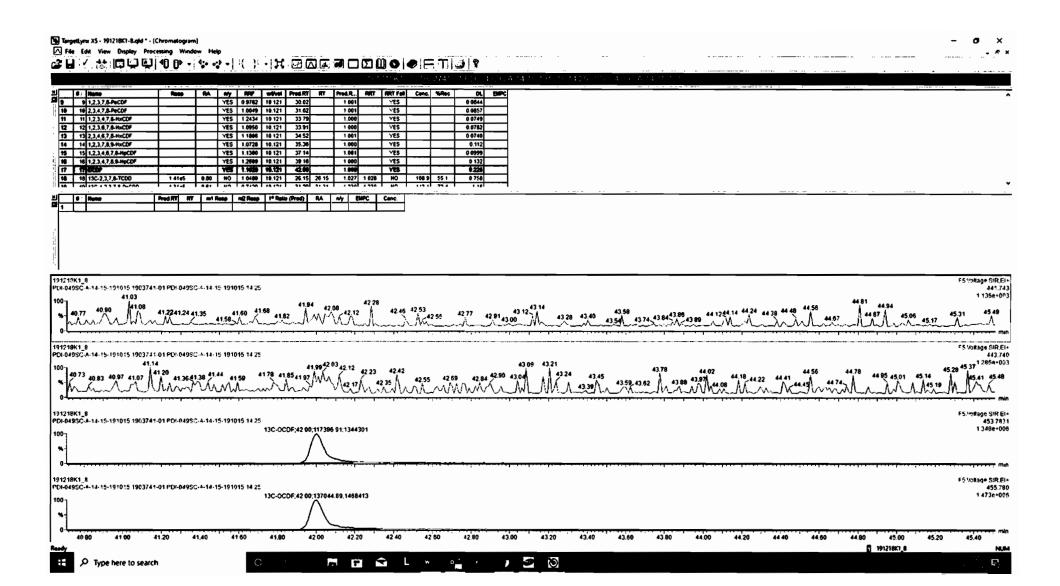
Work Order 1903741 Page 80 of 638

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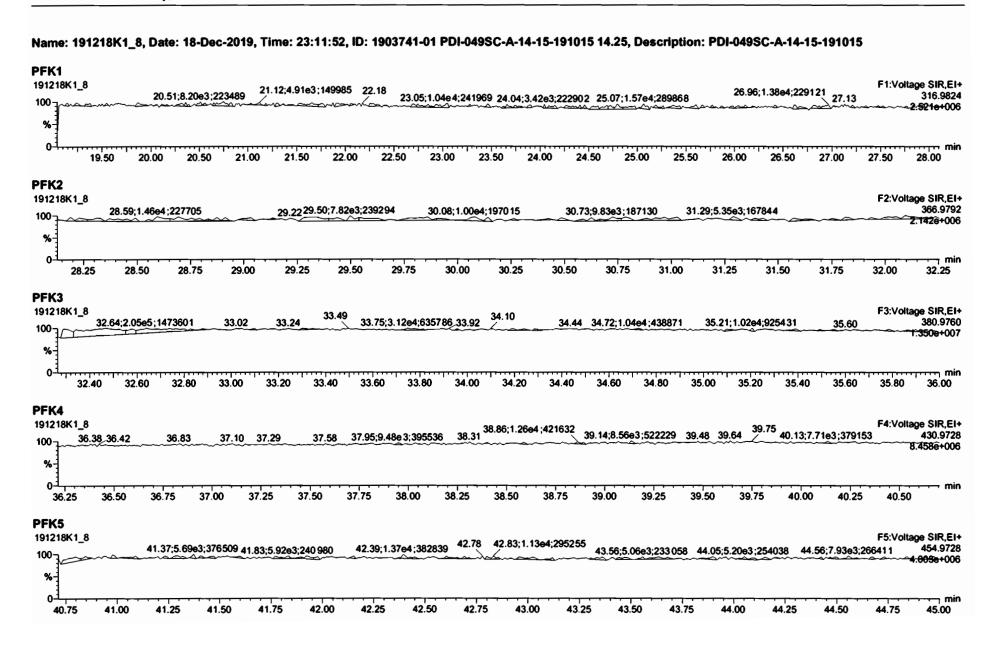
Last Altered: Printed:

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time





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Dataset: U:\VG11.PRO\Results\191218K1\191218K1-9.qld

Last Altered: Thursday, December 19, 2019 15:17:11 Pacific Standard Time Thursday, December 19, 2019 15:22:21 Pacific Standard Time Printed:

GEB 12/19/19 CT 12/23/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD			YES	0.925	10.011	26.17		1.00		YES			0.158	l i
2	2 1,2,3,7,8-PeCDD			YES	0.905	10.011	31.31		1.00		YES			0.123	
3	3 1,2,3,4,7,8-HxCDD			YES	1.07	10.011	34.66		1.00		YES			0.196	
4	4 1,2,3,6,7,8-HxCDD			YES	0.967	10.011	34.75		1.00		YES			0.180	
5	5 1,2,3,7,8,9-HxCDD			YES	0.978	10.011	35.06		1.00		YES			0.220	
6	6 1,2,3,4,6,7,8-HpCDD	678.201	0.937	NO	1.04	10.011	38.55	38.56	1.00	1.00	NO	0.9593		0.360	0.9593
7	7 OCDD	4805.740	0.928	NO	0.972	10.011	41.79	41.80	1.00	1.00	NO	8.919		0.610	8.919
8	8 2,3,7,8-TCDF			YES	0.938	10.011	25.18		1.00		YES			0.0755	
9	9 1,2,3,7,8-PeCDF			YES	0.976	10.011	30.00		1.00		YES			0.0622	
10	10 2,3,4,7,8-PeCDF	29.720	0.815	YES	1.00	10.011	31.02	31.01	1.00	1.00	NO	0.01719		0.0248	0.01270 ·
11	11 1,2,3,4,7,8-HxCDF			YES	1.24	10.011	33.78		1.00		YES			0.0512	
12	12 1,2,3,6,7,8-HxCDF			YES	1.10	10.011	33.91		1.00		YES			0.0549	
13	13 2,3,4,6,7,8-HxCDF			YES	1.18	10.011	34.51		1.00		YES			0.0606	
14	14 1,2,3,7,8,9-HxCDF			YES	1.07	10.011	35.36		1.00		YES			0.0740	ı
15	15 1,2,3,4,6,7,8-HpCDF	139.543	0.949	NO	1.13	10.011	37.14	37.13	1.00	1.00	NO	0.1117		0.0302	0.1117
16	16 1,2,3,4,7,8,9-HpCDF			YES	1.26	10.011	39.16		1.00		YES			0.123	
17	17 OCDF			YES	1.10	10.011	42.00		1.00		YES			0.161	
18	18 13C-2,3,7,8-TCDD	339282.391	0.743	NO	1.05	10.011	26.15	26.14	1.03	1.03	NO	177.3	88.8	0.508	
19	19 13C-1,2,3,7,8-PeCDD	247117.742	0.611	NO	0.743	10.011	31.29	31.29	1.23	1.23	NO	182.4	91.3	0.747	
20	20 13C-1,2,3,4,7,8-HxCDD	168226.023	1.278	NO	0.646	10.011	34.65	34.65	1.01	1.01	NO	159.1	79.6	0.958	
21	21 13C-1,2,3,6,7,8-HxCDD	234874.118	1.180	NO	0.777	10.011	34.75	34.75	1.02	1.02	NO	184.8	92.5	0.797	
22	22 13C-1,2,3,7,8,9-HxCDD	189760.211	1.087	NO	0.659	10.011	35.02	35.02	1.02	1.02	NO	175.8	88.0	0.939	i i
23	23 13C-1,2,3,4,6,7,8-HpCDD	136135.797	1.062	NO	0.534	10.011	38.52	38.54	1.13	1.13	NO	155.7	78.0	0.932	
24	24 13C-OCDD	221532.351	0.893	NO	0.470	10.011	41.80	41.79	1.22	1.22	NO	287.8	72.0	1.56	
25	25 13C-2,3,7,8-TCDF	493800.876	0.716	NO	0.977	10.011	25.16	25.16	0.99	0.99	NO	169.2	84.7	0.612	
26	26 13C-1,2,3,7,8-PeCDF	357496.094	1.501	NO	0.778	10.011	29.98	29.98	1.18	1.18	NO	154.0	77.1	0.789	
27	27 13C-2,3,4,7,8-PeCDF	343765.547	1.492	NO	0.750	10.011	30.97	30.99	1.22	1.22	NO	153.6	76.9	0.818	
28	28 13C-1,2,3,4,7,8-HxCDF	232808.196	0.538	NO	0.845	10.011	33.79	33.78	0.99	0.99	NO	168.3	84.3	1.33	
29	29 13C-1,2,3,6,7,8-HxCDF	289678.781	0.560	NO	1.03	10.011	33.90	33.90	0.99	0.99	NO	172.4	86.3	1.10	
30	30 13C-2,3,4,6,7,8-HxCDF	246765.406	0.549	NO	0.893	10.011	34.48	34.47	1.01	1.01	NO	168.9	84.5	1.26	
31	31 13C-1,2,3,7,8,9-HxCDF	227278.446	0.513	NO	0.734	10.011	35.38	35.36	1.04	1.03	NO	189.1	94.7	1.53	

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191218K1\191218K1-9.qld

Last Altered: Thursday, December 19, 2019 15:17:11 Pacific Standard Time Thursday, December 19, 2019 15:22:21 Pacific Standard Time

Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	220958.562	0.443	NO	0.754	10.011	37.09	37.10	1.09	1.09	NO	179.0	89.6	1.11	
33	33 13C-1,2,3,4,7,8,9-HpCDF	143129.363	0.442	NO	0.539	10.011	39.12	39.16	1.14	1.15	NO	162.3	81.2	1.56	
34	34 13C-OCDF	318773.375	0.890	NO	0.593	10.011	41.99	42.00	1.23	1.23	NO	328.7	82.3	1.30	- 1
35	35 37CI-2,3,7,8-TCDD	132975.844			1.07	10.011	26.17	26.17	1.03	1.03	NO	68.17	85.3	0.131	
36	36 13C-1,2,3,4-TCDD	364376.250	0.795	NO	1.00	10.011	25.45	25.45	1.00	1.00	NO	199.8	100	0.532	
37	37 13C-1,2,3,4-TCDF	596400.094	0.755	NO	1.00	10.011	23.55	23.54	1.00	1.00	NO	199.8	100	0.599	
38	38 13C-1,2,3,4,6,9-HxCDF	326945.024	0.569	NO	1.00	10.011	34.16	34.17	1.00	1.00	NO	199.8	100	1.13	
39	39 Total Tetra-Dioxins				0.925	10.011	24.62		0.00		NO	0.0000		0.0995	0.06578
40	40 Total Penta-Dioxins				0.905	10.011	29.96		0.00		NO	0.1231		0.0392	0.2119
41	41 Total Hexa-Dioxins				0.967	10.011	33.63		0.00		NO	0.0000		0.103	0.5610
42	42 Total Hepta-Dioxins				1.04	10.011	38.80		0.00		NO	2.552		0.360	2.552
43	43 Total Tetra-Furans				0.938	10.011	23.61		0.00		NO			0.0312	
44	44 1st Func. Penta-Furans				0.976	10.011	27.04		0.00		NO			0.0174	
45	45 Total Penta-Furans				0.976	10.011	29.27		0.00		NO	0.0000		0.0260	0.01270
46	46 Total Hexa-Furans				1.18	10.011	33.56		0.00		NO			0.0338	
47	47 Total Hepta-Furans				1.13	10.011	37.83		0.00		NO	0.2428		0.0393	0.2428

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Vista Analytical Laboratory

U:\VG11.PRO\Results\191218K1\191218K1-9.qld Dataset:

Thursday, December 19, 2019 15:17:11 Pacific Standard Time Last Altered: Printed:

Thursday, December 19, 2019 15:22:32 Pacific Standard Time

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Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015

Tetra-Dioxins

ſ	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
١	1 39 Total Tetra-Dioxins	0.00e0	3.39e5	1.218	YES	24.62	23.77	0.0000	0.06578

Penta-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	40 Total Penta-Dioxins	1.38e2	2.47e5	0.722	NO	29.96	29.08	0.1231	0.1231
2	40 Total Penta-Dioxins	0.00e0	2.47e5	0.475	YES	29.96	29.56	0.0000	0.08876

Hexa-Dioxins

1	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
	1 41 Total Hexa-Did	oxins 0.00e0	0.00e0	1.449	YES	33.63	33.20	0.0000	0.5610

Hepta-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	6.78e2	1.36e5	0.937	NO	38.55	38.56	0.9593	0.9593
2	42 Total Hepta-Dioxins	1.13e3	1.36e5	1.116	NO	38.80	37.51	1.593	1.593

Tetra-Furans

# Name	Area IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1							

Penta-Furans function 1

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1									

Quantify Totals Report MassLynx V4.2 SCN982

Vista Analytical Laboratory

Dataset:

Printed:

U:\VG11.PRO\Results\191218K1\191218K1-9.qld

Last Altered:

Thursday, December 19, 2019 15:17:11 Pacific Standard Time Thursday, December 19, 2019 15:22:32 Pacific Standard Time

Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015

Penta-Furans

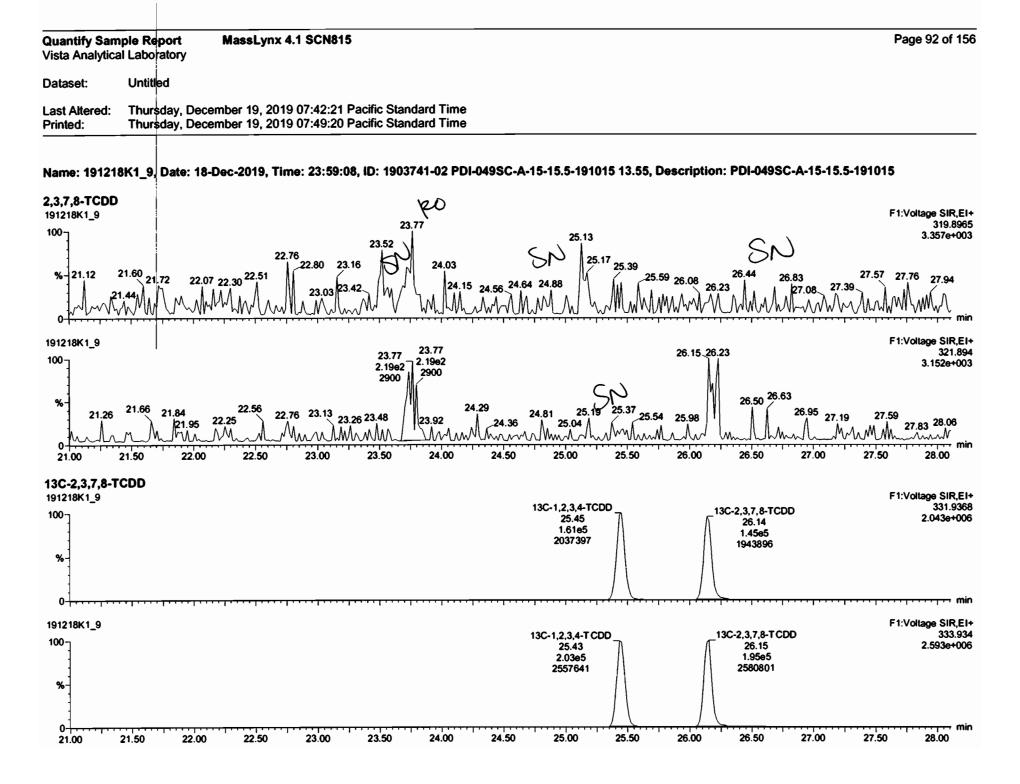
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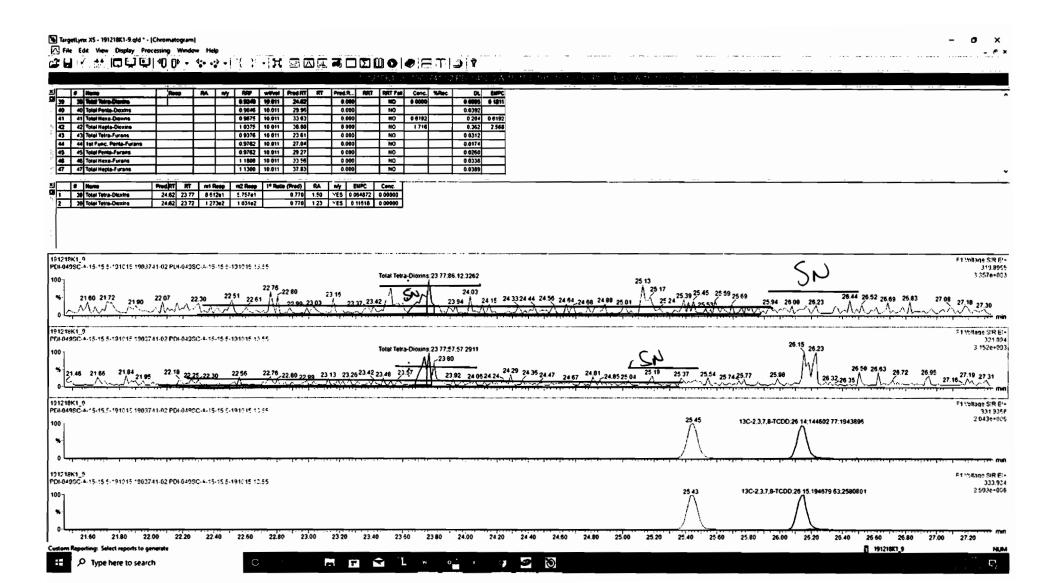
Hexa-Furans

# Nan	ne	Area	IS Area	RA	Y/N	Pred.RT	ŔŦ	Conc.	EMPC
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,					***	•••••	
la .									
17									

Hepta-Furans

		_							
	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	47 Total Hepta-Furans	1.35e2	0.00e0	1.060	NO	37.83	37.71	0.1312	0.1312
2	15 1,2,3,4,6,7,8-HpCDF	1.40e2	2.21e5	0.949	NO	37.14	37.13	0.1117	0.1117





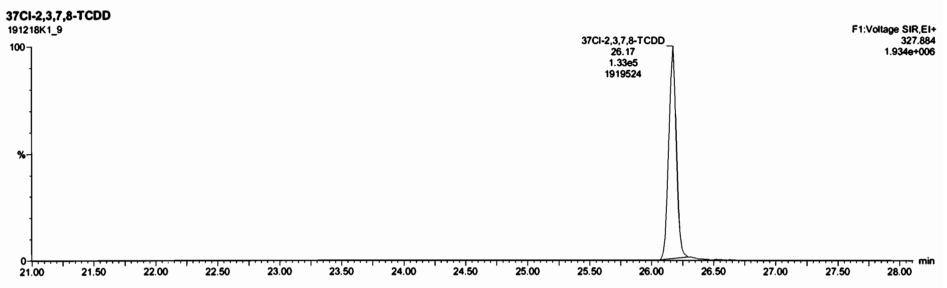
Work Order 1903741 Page 89 of 638

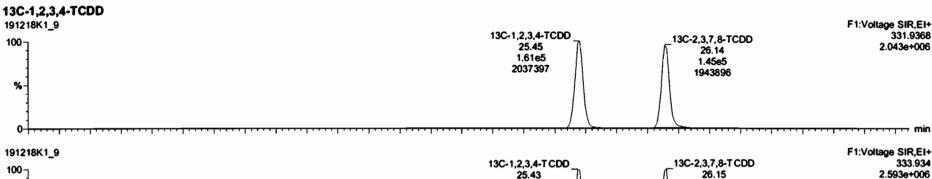
Quantify Sample Report Vista Analytical Laboratory

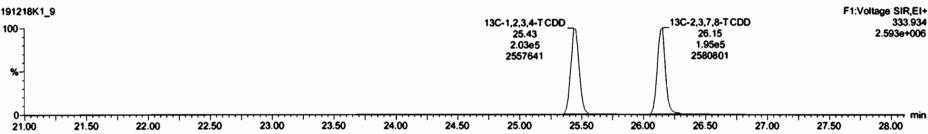
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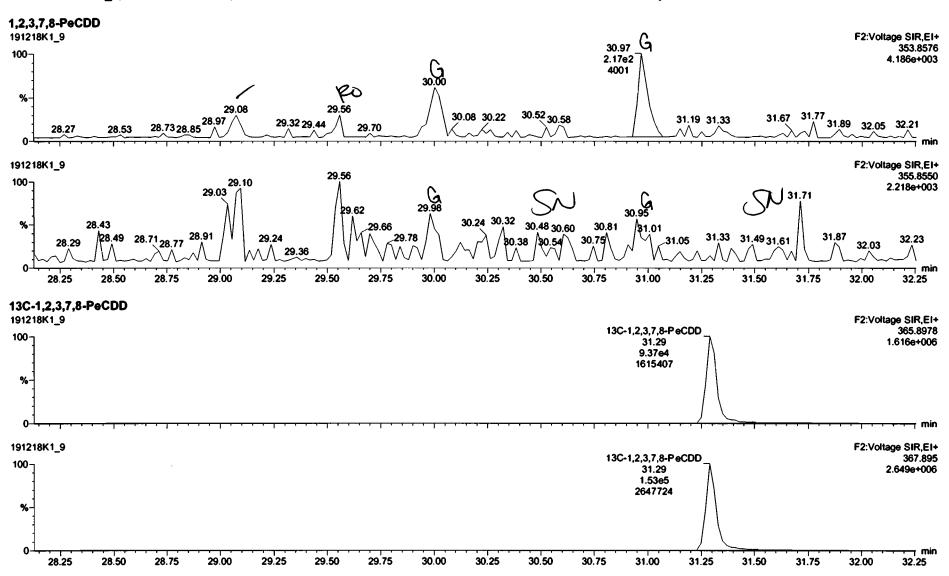
Work Order 1903741 Page 90 of 638

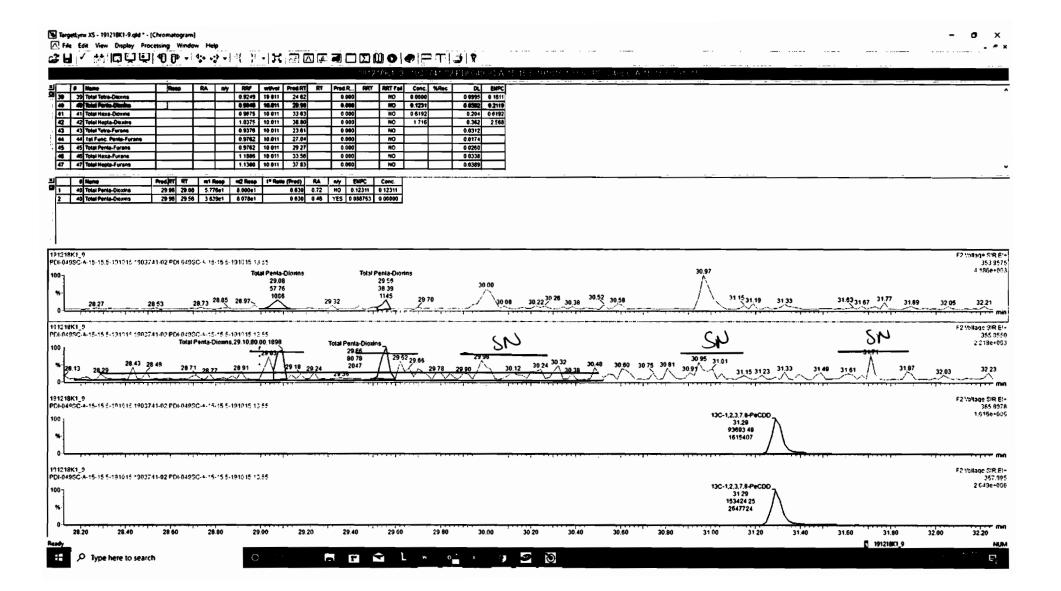
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015



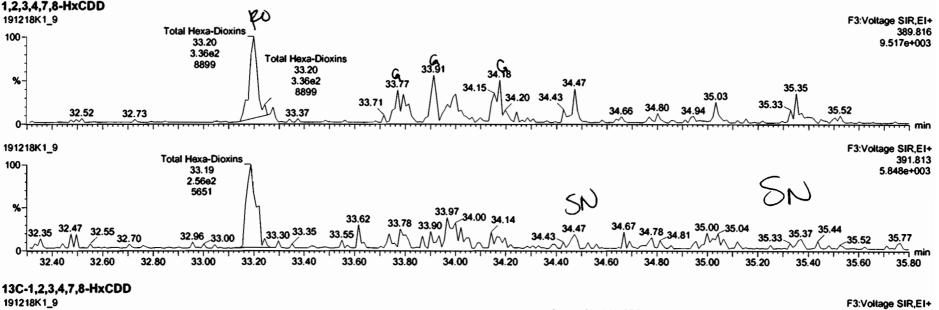


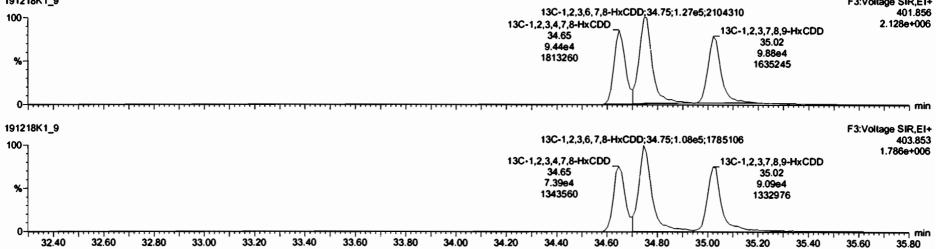
Work Order 1903741 Page 92 of 638

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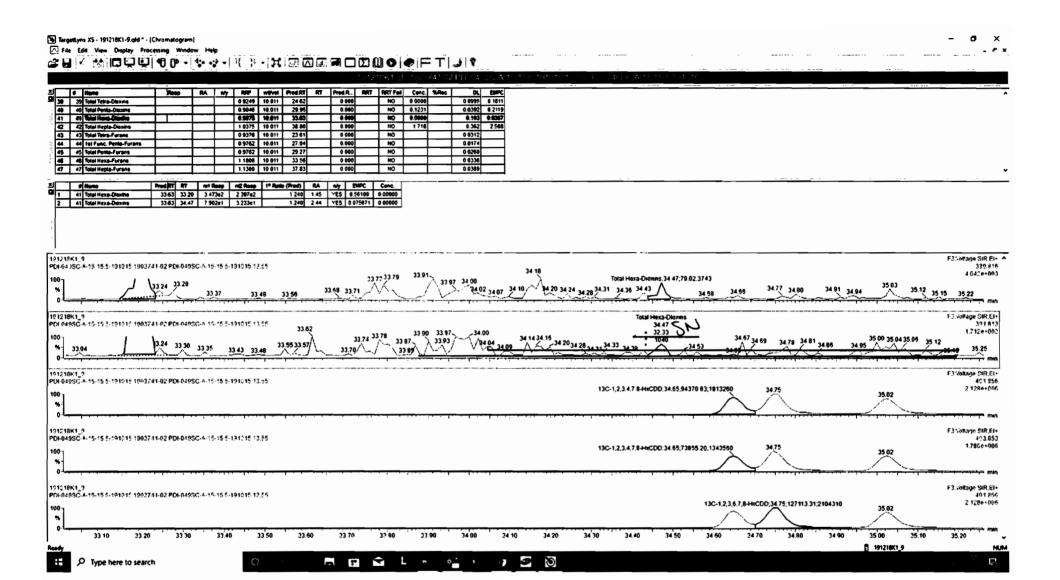
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Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015



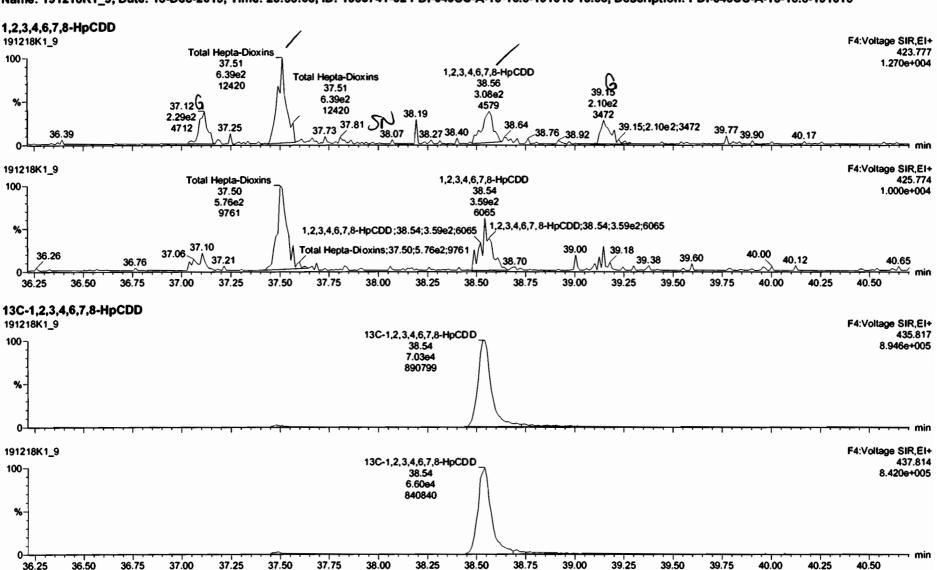


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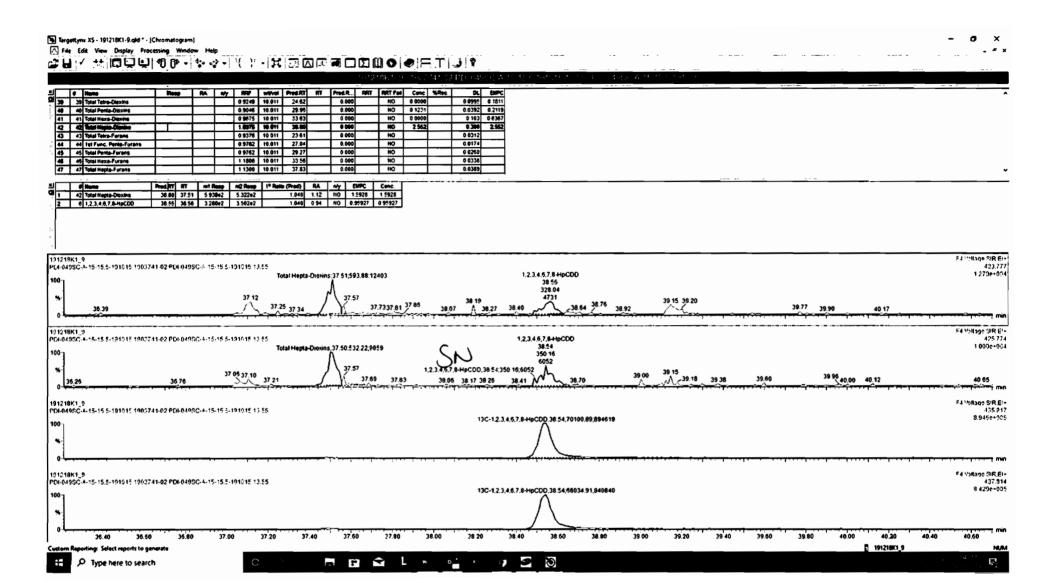


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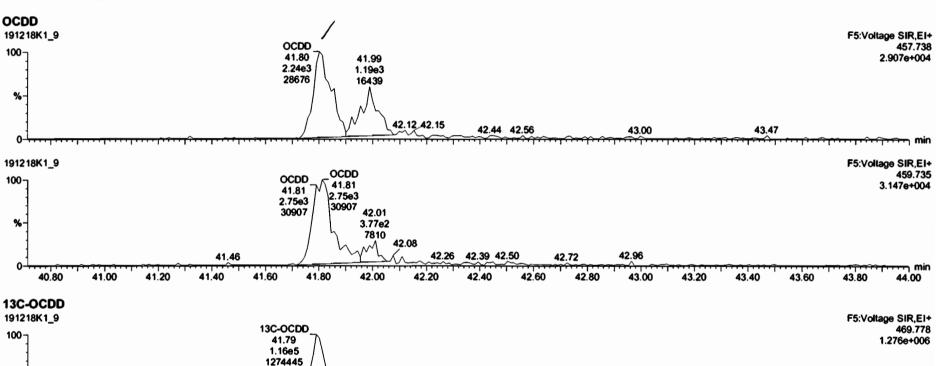
Work Order 1903741 Page 96 of 638

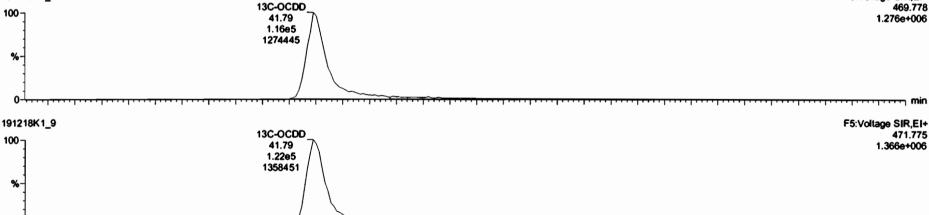
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Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015





42.40

42.60

42.80

43.00

43.20

43.40

43.60

41.00

40.80

41.40

41.20

41.60

41.80

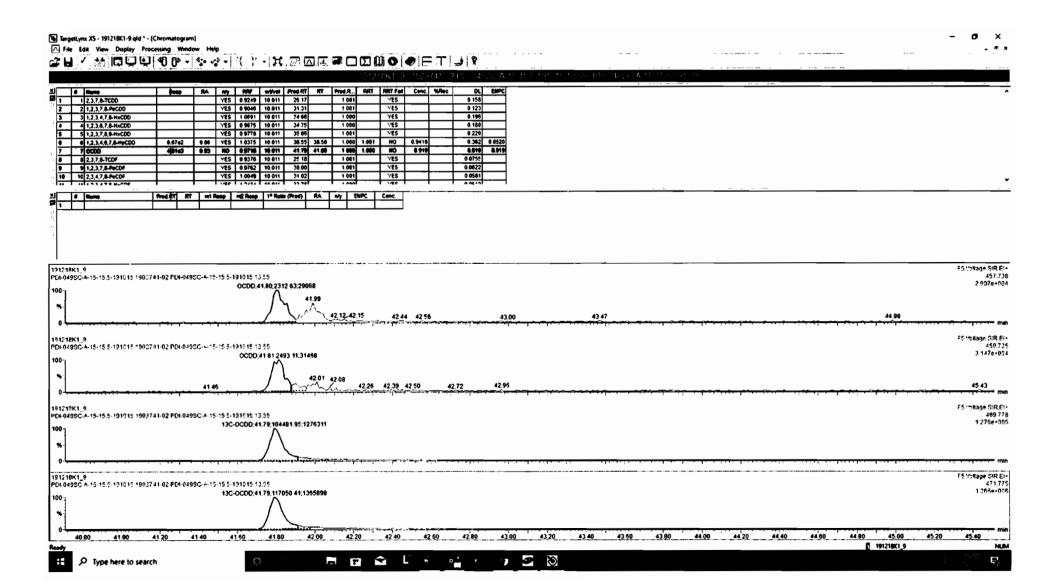
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42.20

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min .

44.00

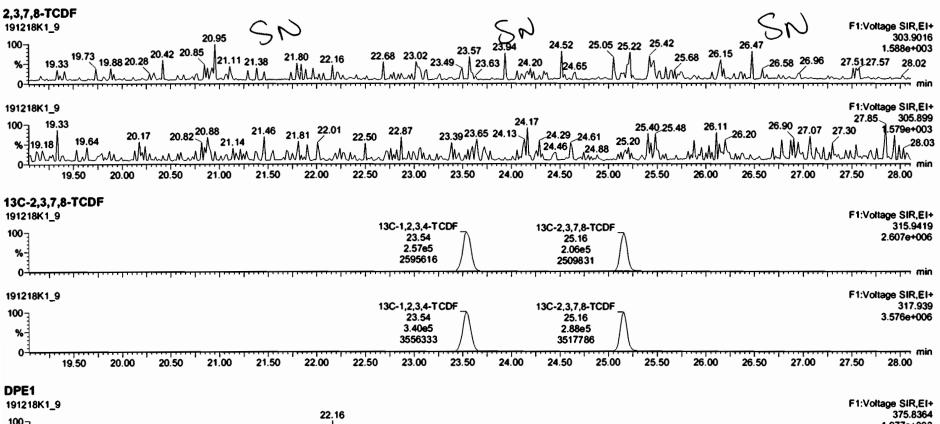


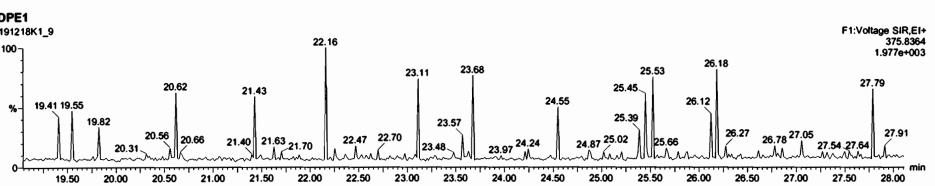
Work Order 1903741 Page 98 of 638

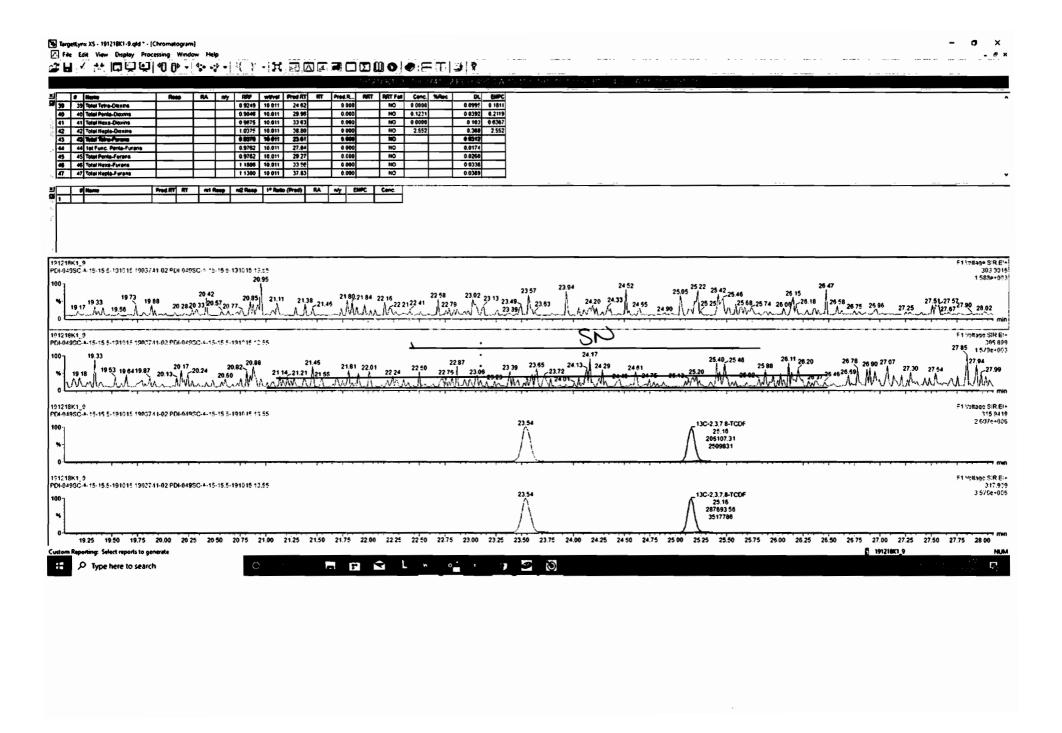
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Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015







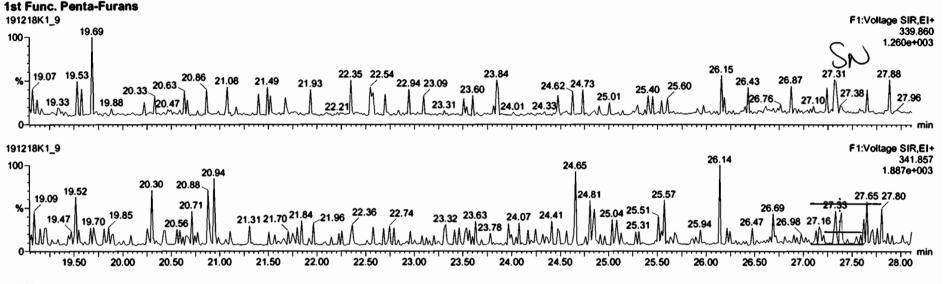
Work Order 1903741 Page 100 of 638

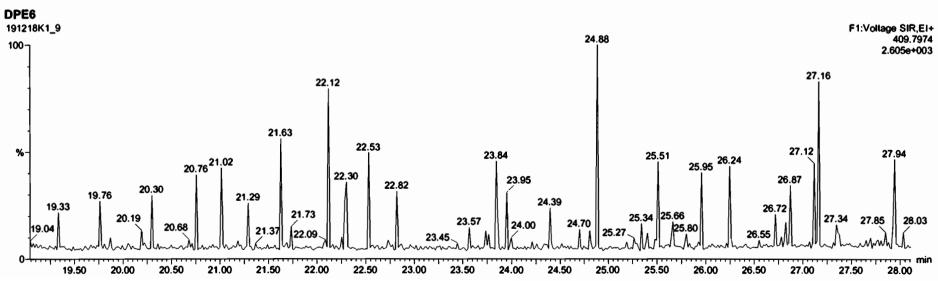
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_9, Date: 18-Dec-2019, Time: 23:59:08, ID: 1903741-02 PDI-049SC-A-15-15.5-191015 13.55, Description: PDI-049SC-A-15-15.5-191015

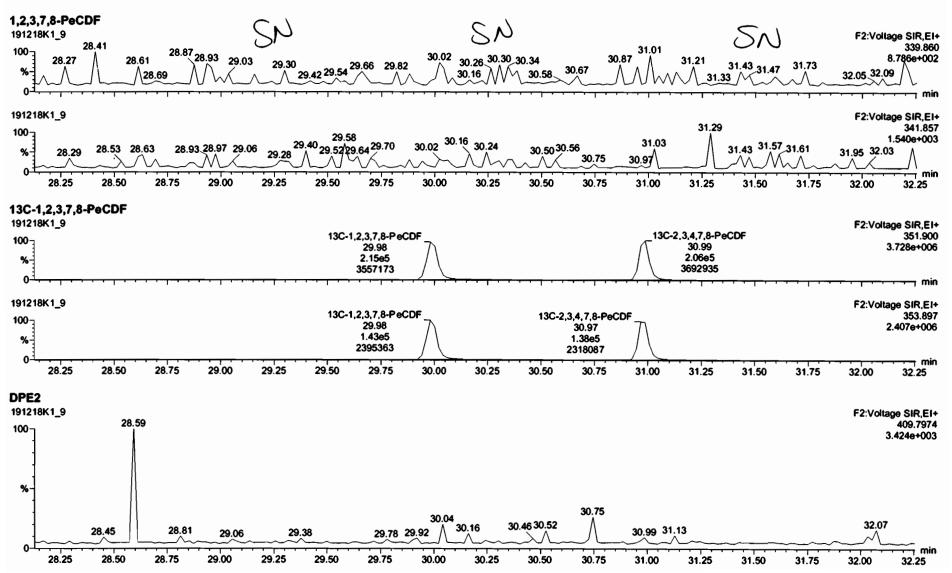




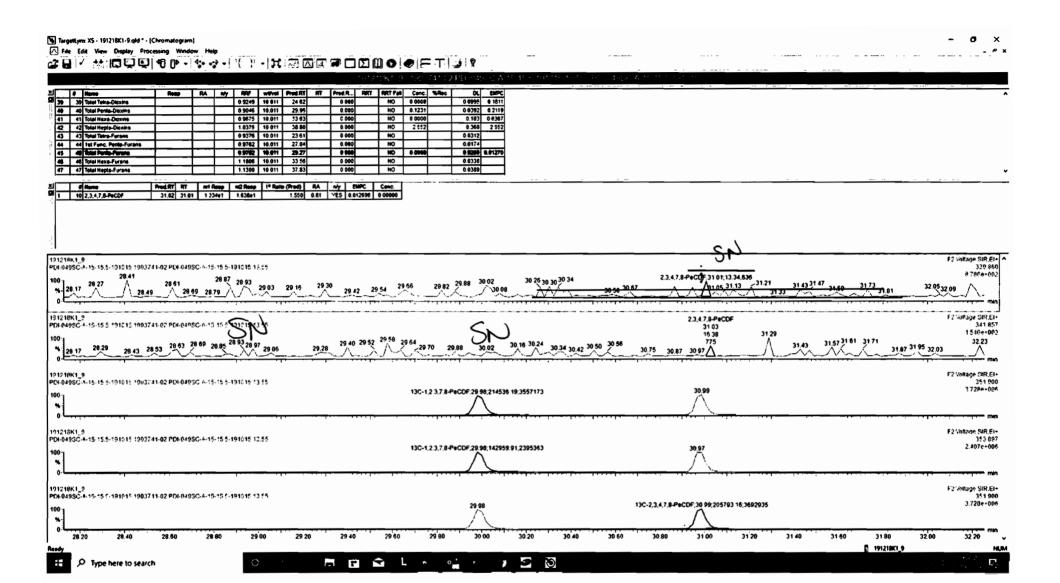


Thursday, December 19, 2019 07:49:20 Pacific Standard Time

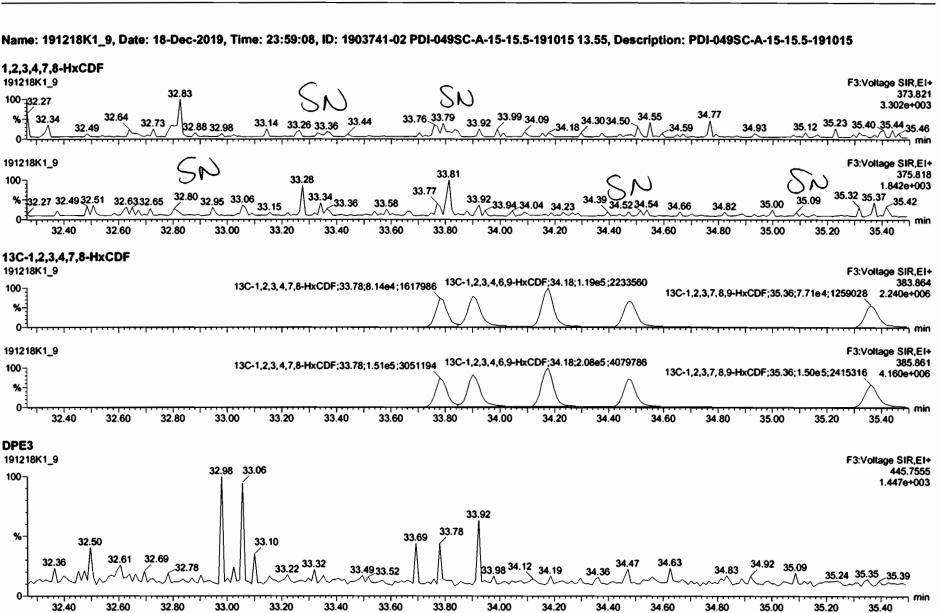
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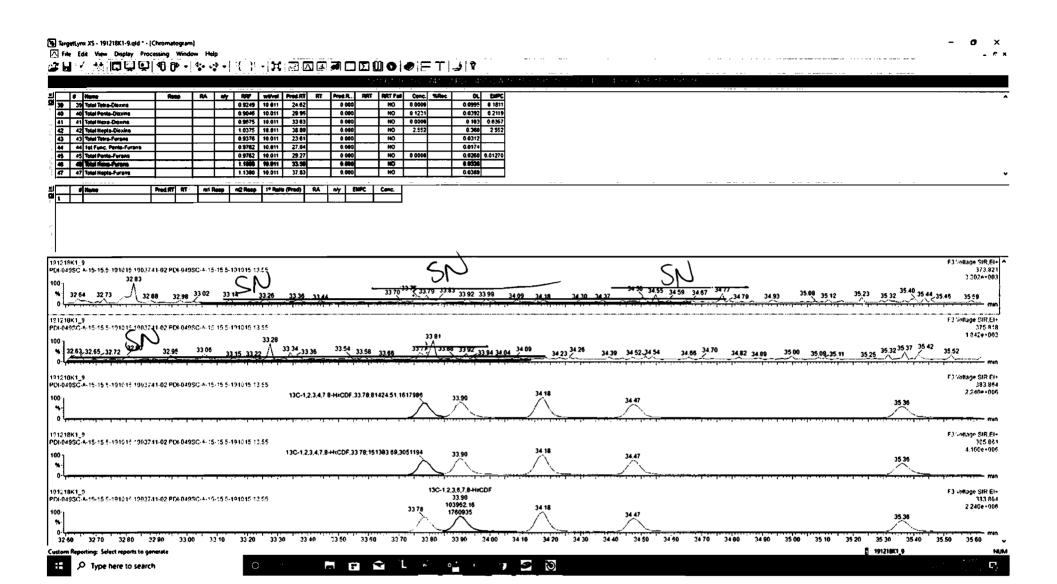
Work Order 1903741 Page 102 of 638



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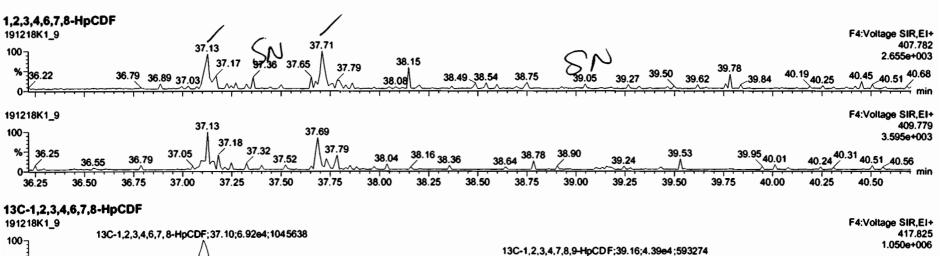


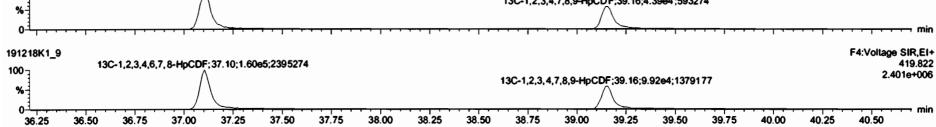
Work Order 1903741 Page 105 of 638

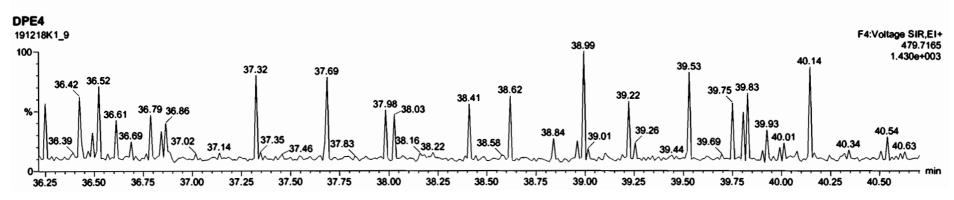
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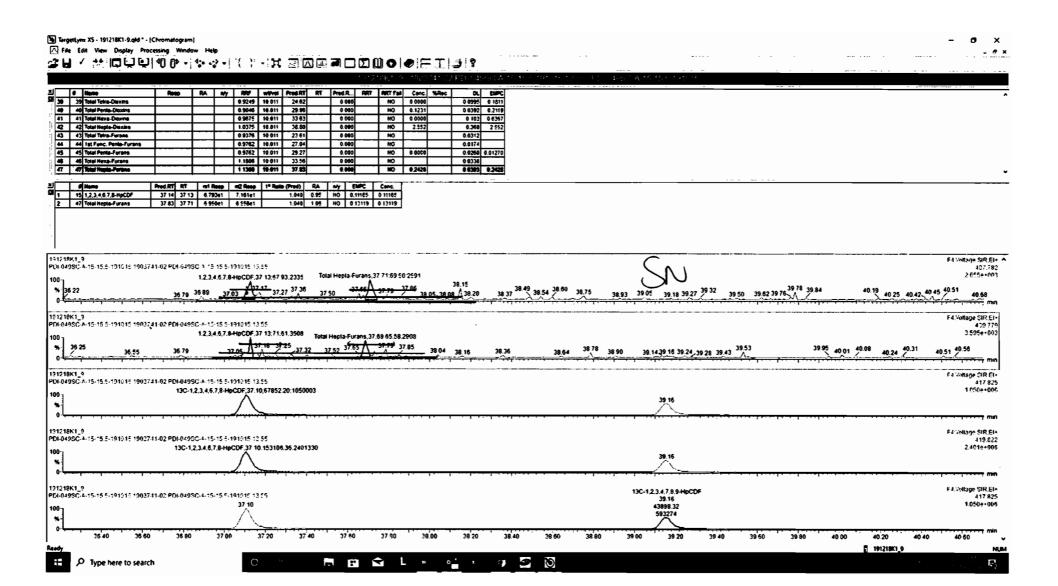
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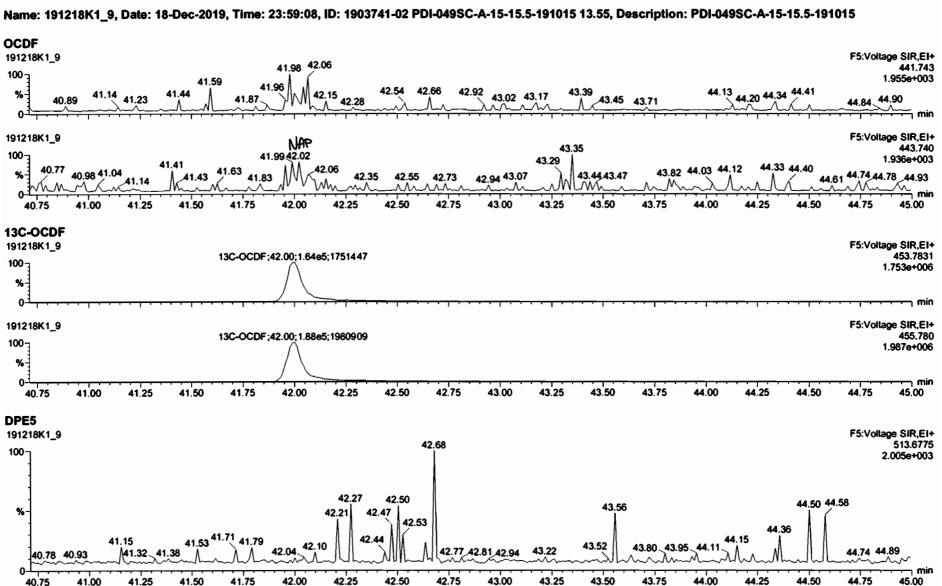


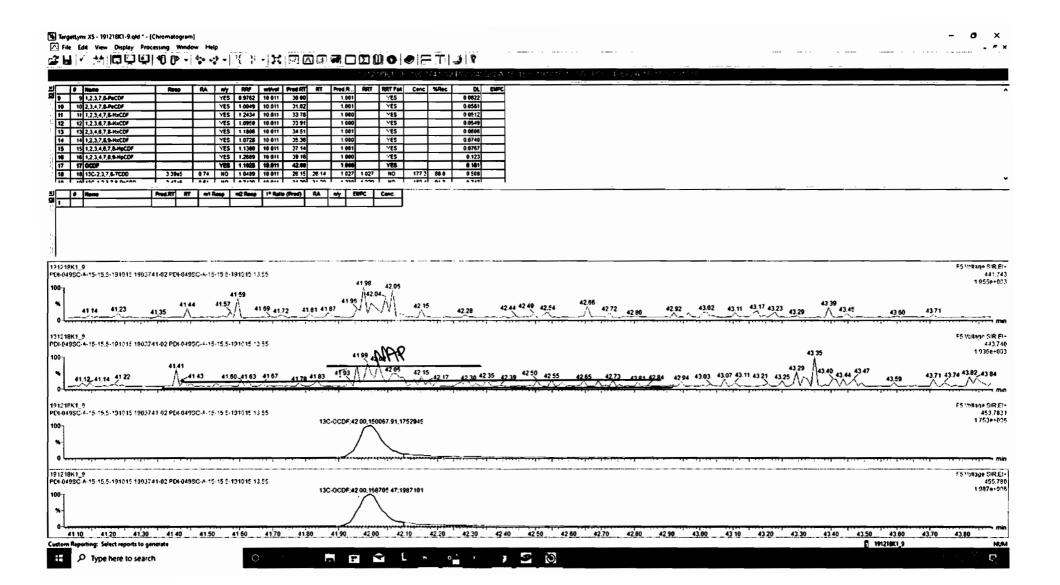
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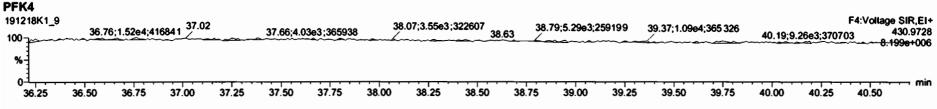
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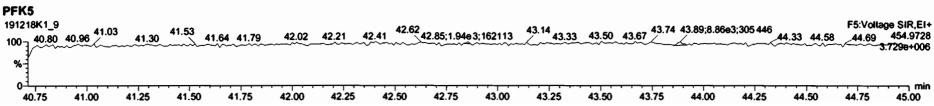






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U:\VG11.PRO\Results\191218K1\191218K1-10.qld Dataset:

Thursday, December 19, 2019 15:47:17 Pacific Standard Time Last Altered: Printed: Thursday, December 19, 2019 15:48:28 Pacific Standard Time

GRB 12/19/19
CT12/23/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015

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1	1 2,3,7,8-TCDD			YES	0.925	10.085	~ 26.17		1.00		YES			0.138	
2	2 1,2,3,7,8-PeCDD			YES	0.905	10.085	31.31		1.00		YES			0.131	
3	3 1,2,3,4,7,8-HxCDD			YES	1.07	10.085	34.66		1.00		YES			0.175	
4	4 1,2,3,6,7,8-HxCDD			YES	0.967	10.085	34.75		1.00		YES			0.171	
5	5 1,2,3,7,8,9-HxCDD			YES	0.978	10.085	35.06		1.00		YES			0.204	
6	6 1,2,3,4,6,7,8-HpCDD	961.895	1.247	YES	1.04	10.085	38.54	38.55	1.00	1.00	NO	0.8178		0.284	0.7423
7	7 OCDD	7292.613	0.918	NO	0.972	10.085	41.80	41.81	1.00	1.00	NO	8.073		0.489	8.073
8	8 2,3,7,8-TCDF			YES	0.938	10.085	25.18		1.00		YES			0.0774	
9	9 1,2,3,7,8-PeCDF			YES	0.976	10.085	30.00		1.00		YES			0.0523	
10	10 2,3,4,7,8-PeCDF			YES	1.00	10.085	31.00		1.00		YES			0.0541	
11	11 1,2,3,4,7,8-HxCDF			YES	1.24	10.085	33.78		1.00		YES			0.0355	
12	12 1,2,3,6,7,8-HxCDF	50.192	3.928	YES	1.10	10.085	33.91	33.90	1.00	1.00	NO	0.91901		0.0245	0.008639
13	13 2,3,4,6,7,8-HxCDF			YES	1.18	10.085	34.51		1.00		YES	•		0.0442	
14	14 1,2,3,7,8,9-HxCDF			YES	1.07	10.085	35.36		1.00		YES			0.0655	
15	15 1,2,3,4,6,7,8-HpCDF			YES	1.13	10.085	37.14		1.00		YES			0.0432	
16	16 1,2,3,4,7,8,9-HpCDF			YES	1.26	10.085	39.15		1.00		YES			0.0590	
17	17 OCDF			YES	1.10	10.085	42.00		1.00		YES			0.112	
18	18 13C-2,3,7,8-TCDD	433278.907	0.806	NO	1.05	10.085	26.13	26.14	1.03	1.03	NO	192.0	96.8	0.471	
19	19 13C-1,2,3,7,8-PeCDD	316494.672	0.589	NO	0.743	10.085	31.27	31.29	1.23	1.23	NO	198.1	99.9	0.756	
20	20 13C-1,2,3,4,7,8-HxCDD	242175.961	1.244	NO	0.646	10.085	34.64	34.65	1.01	1.01	NO	155.6	78.4	0.872	
21	21 13C-1,2,3,6,7,8-HxCDD	345554.172	1.230	NO	0.777	10.085	34.73	34.75	1.02	1.02	NO	184.7	93.1	0.725	
22	22 13C-1,2,3,7,8,9-HxCDD	294226.500	1.206	NO	0.659	10.085	35.01	35.02	1.02	1.03	NO	185.2	93.4	0.854	
23	23 13C-1,2,3,4,6,7,8-HpCDD	224814.110	1.089	NO	0.534	10.085	38.51	38.53	1.13	1.13	NO	174.7	88.1	1.29	
24	24 13C-OCDD	368694.328	0.916	NO	0.470	10.085	41.79	41.80	1.22	1.22	NO	325.4	82.0	1.63	
25	25 13C-2,3,7,8-TCDF	525327.360	0.731	NO	0.977	10.085	25.14	25.16	0.99	0.99	NO	161.0	81.2	0.568	
26	26 13C-1,2,3,7,8-PeCDF	449072.797	1.453	NO	0.778	10.085	29.96	29.98	1.18	1.18	NO	173.0	87.2	1.00	
27	27 13C-2,3,4,7,8-PeCDF	453405.969	1.579	NO	0.750	10.085	30.95	30.97	1.22	1.22	NO	181.1	91.3	1.04	
28	28 13C-1,2,3,4,7,8-HxCDF	380407.343	0.502	NO	0.845	10.085	33.77	33.78	0.99	0.99	NO	186.9	94.2	1.29	
29	29 13C-1,2,3,6,7,8-HxCDF	478209.938	0.513	NO	1.03	10.085	33.89	33.90	0.99	0.99	NO	193.4	97.5	1.06	
30	30 13C-2,3,4,6,7,8-HxCDF	385150.969	0.532	NO	0.893	10.085	34.46	34.47	1.01	1.01	NO	179.1	90.3	1.22	
31	31 13C-1,2,3,7,8,9-HxCDF	323052.000	0.506	NO	0.734	10.085	35.37	35.36	1.04	1.04	NO	182.6	92.1	1.48	

Work Order 1903741 Page 111 of 638 Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191218K1\191218K1-10.qld

Last Altered: Thursday, December 19, 2019 15:47:17 Pacific Standard Time Thursday, December 19, 2019 15:48:28 Pacific Standard Time

Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	317478.563	0.434	NO	0.754	10.085	37.08	37.10	1.09	1.09	NO	174.8	88.1	0.874	
33	33 13C-1,2,3,4,7,8,9-HpCDF	213548.485	0.446	NO	0.539	10.085	39.11	39.15	1.14	1.15	NO	164.5	82.9	1.22	
34	34 13C-OCDF	485516.110	0.877	NO	0.593	10.085	41.97	42.00	1.23	1.23	NO	340.2	85.8	1.15	
35	35 37CI-2,3,7,8-TCDD	170556.750			1.07	10.085	26.15	26.17	1.03	1.03	NO	74.14	93.5	0.108	
36	36 13C-1,2,3,4-TCDD	426582.907	0.815	NO	1.00	10.085	25.45	25.43	1.00	1.00	NO	198.3	100	0.495	
37	37 13C-1,2,3,4-TCDF	661943.501	0.736	NO	1.00	10.085	23.55	23.55	1.00	1.00	NO	198.3	100	0.555	
38	38 13C-1,2,3,4,6,9-HxCDF	477697.312	0.516	NO	1.00	10.085	34.16	34.16	1.00	1.00	NO	198.3	100	1.09	
39	39 Total Tetra-Dioxins				0.925	10.085	24.62		0.00		NO	0.0000		0.0845	0.3342
40	40 Total Penta-Dioxins				0.905	10.085	29.96		0.00		NO	0.0000		0.0569	0.2285
41	41 Total Hexa-Dioxins				0.967	10.085	33.63		0.00		NO	1.347		0.189	1.347
42	42 Total Hepta-Dioxins				1.04	10.085	38.80		0.00		NO	0.0000		0.113	2.089
43	43 Total Tetra-Furans				0.938	10.085	23.61		0.00		NO	0.0000		0.0321	0.1042
44	44 1st Func. Penta-Furans				0.976	10.085	27.04		0.00		NO			0.0108	
45	45 Total Penta-Furans				0.976	10.085	29.27		0.00		NO			0.0162	
46	46 Total Hexa-Furans				1.18	10.085	33.56		0.00		NO	0.0000		0.0283	0.008639
47	47 Total Hepta-Furans				1.13	10.085	37.83		0.00		NO			0.0273	

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191218K1\191218K1-10.qld

Last Altered: Thursday, December 19, 2019 15:47:17 Pacific Standard Time Printed: Thursday, December 19, 2019 15:48:39 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015

Tetra-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 39 Total To	etra-Dioxins 0.00e0	4.33e5	1.127	YES	24.62	23.77	0.0000	0.2811
2 39 Total To	etra-Dioxins 0.00e0	4.33e5	0.993	YES	24.62	23.69	0.0000	0.05310

Penta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 40 Total Penta-Dioxins	0.00e0	3.16e5	0.527	YES	29.96	29.54	0.0000	0.2285

Hexa-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	41 Total Hexa-Dioxins	5.60e2	0.00e0	1.313	NO	33.63	33.99	0.3905	0.3905
2	41 Total Hexa-Dioxins	1.37e3	0.00e0	1.379	NO	33.63	33.18	0.9566	0.9566

Hepta-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	9.62e2	2.25e5	1.247	YES	38.54	38.55	0.0000	0.7423
2	42 Total Hepta-Dioxins	0.00e0	2.25e5	0.871	YES	38.80	37.51	0.0000	1.346

Tetra-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 43 Total Tetra-Furans	0.00e0	5.25e5	0.891	YES	23.61	20.86	0.0000	0.1042

Penta-Furans function 1

Γ	# Name	Area IS A	rea RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

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Quantify Totals Report MassLynx V4.2 SCN982

Vista Analytical Laboratory

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Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-10.qld

Last Altered:

Thursday, December 19, 2019 15:47:17 Pacific Standard Time

Printed:

Thursday, December 19, 2019 15:48:39 Pacific Standard Time

Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015

Penta-Furans

ſ	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
-	1								

Hexa-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc. EMPC
1 12 1,2,3,6,7,8-HxCDF	5.02e1	4.78e5	3.928	YES	33.91	33.90	0.0000 0.0086

Hepta-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

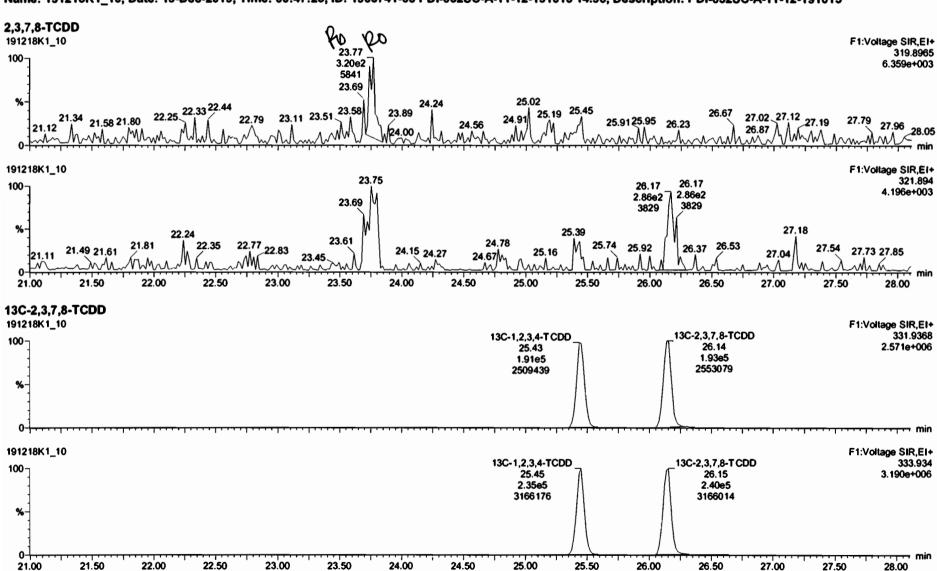
Work Order 1903741 Page 114 of 638

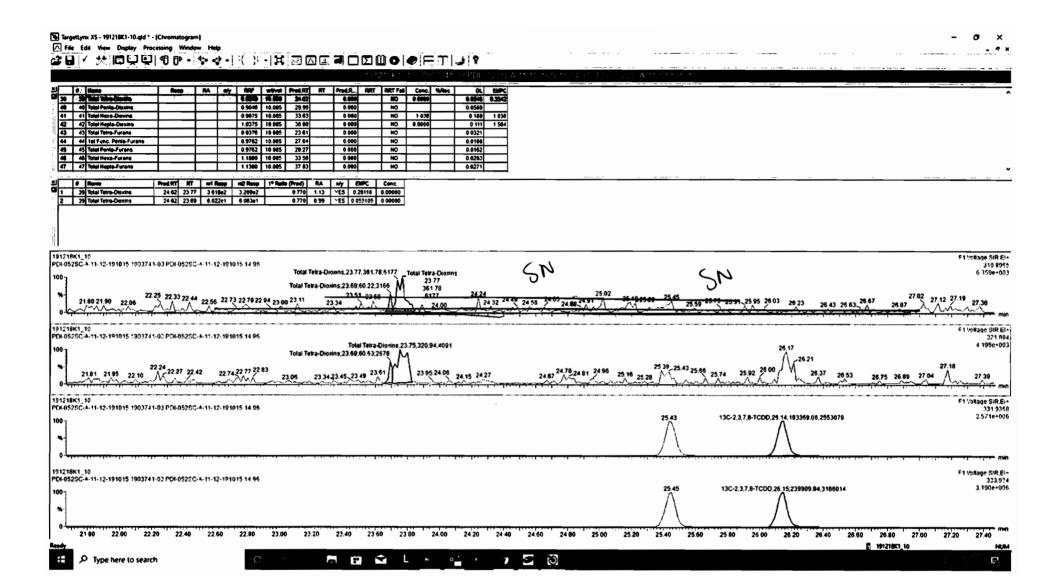
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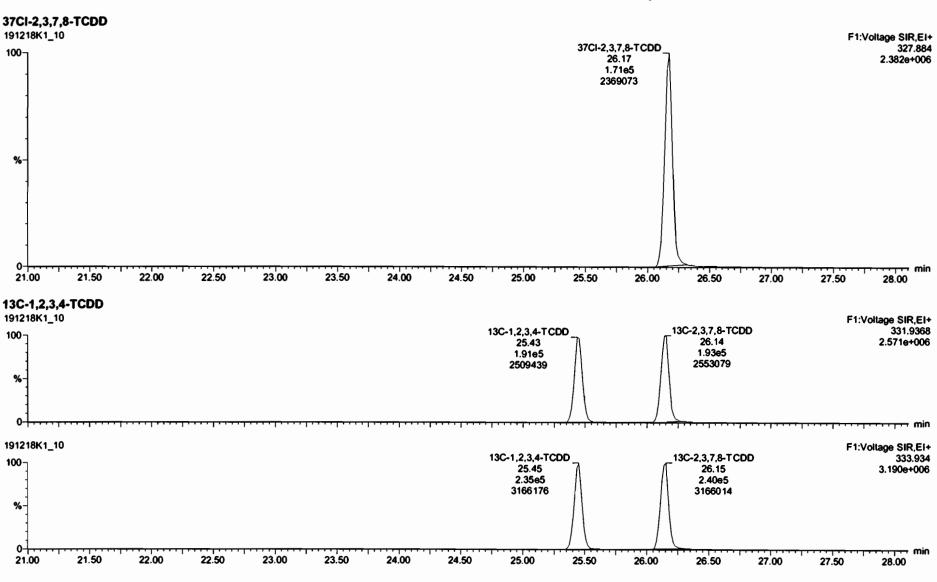
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Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015

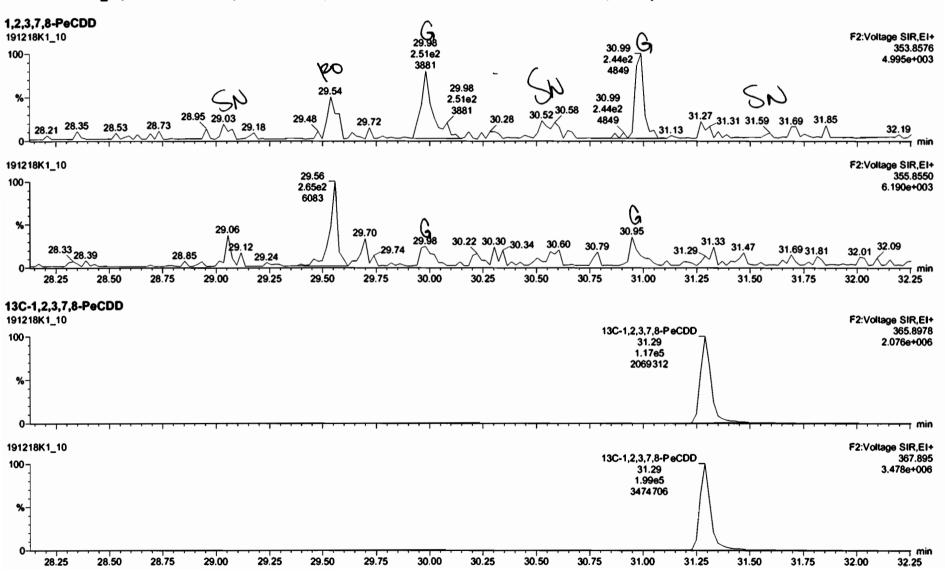


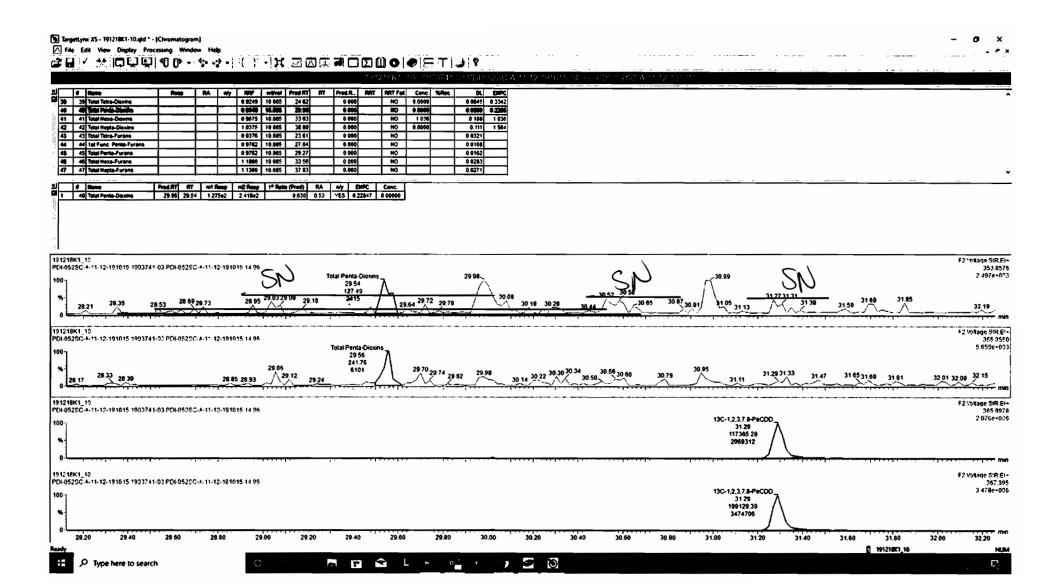
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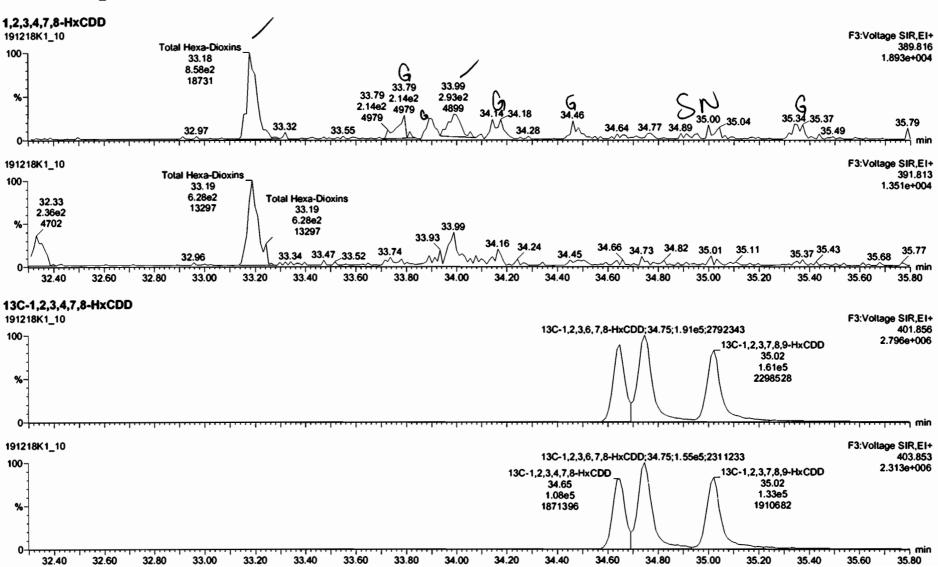
Work Order 1903741 Page 119 of 638

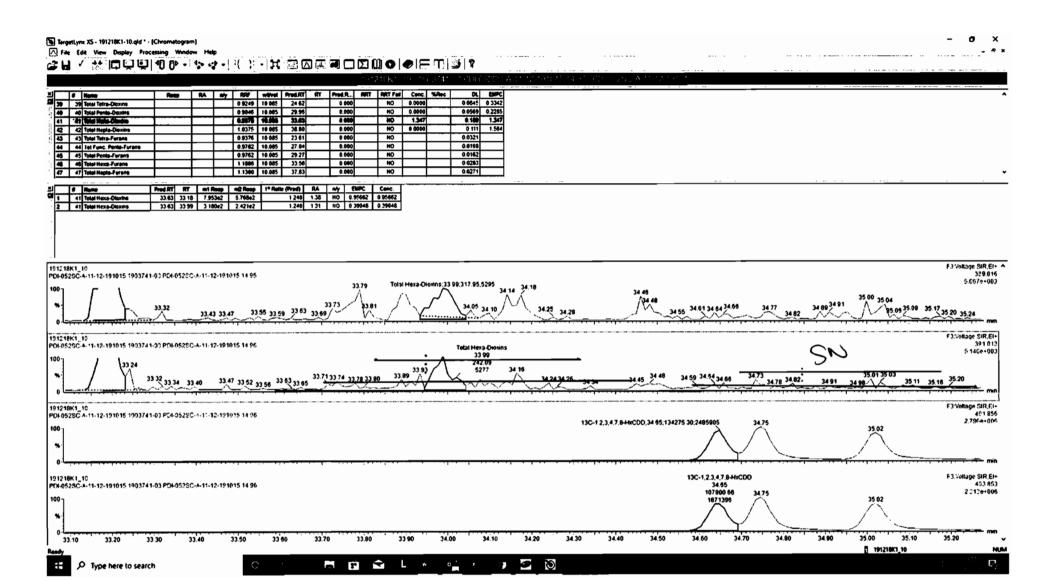
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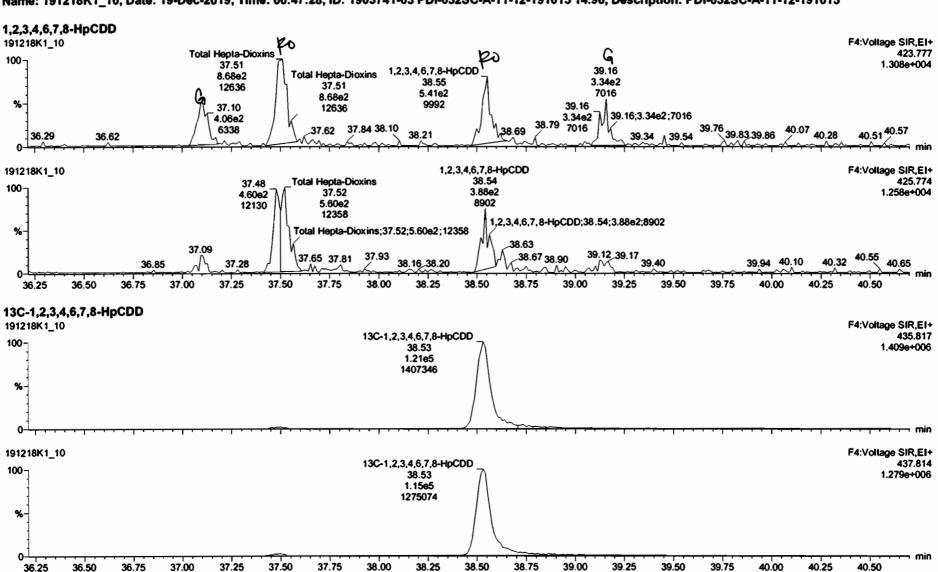


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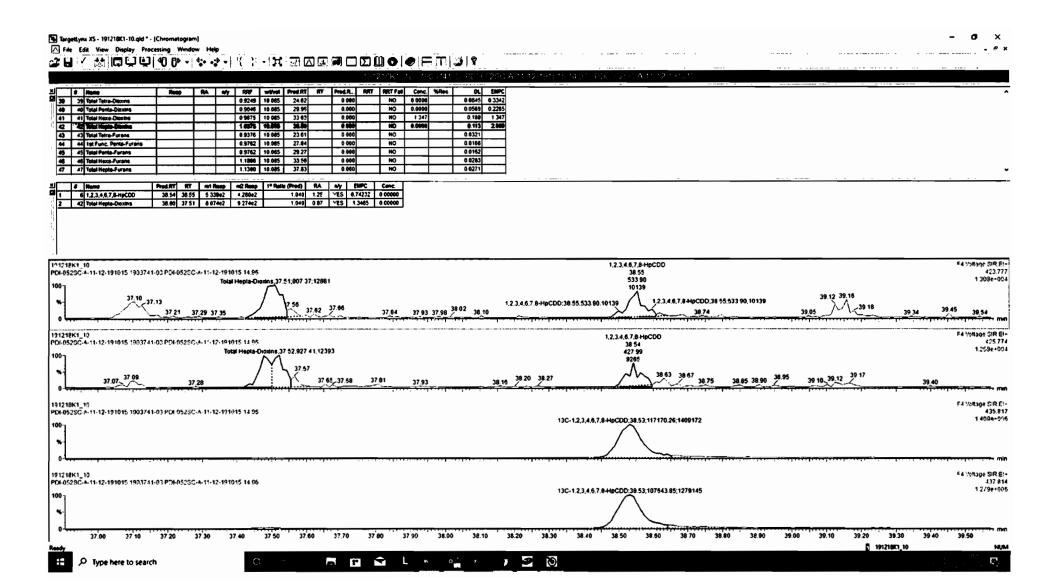
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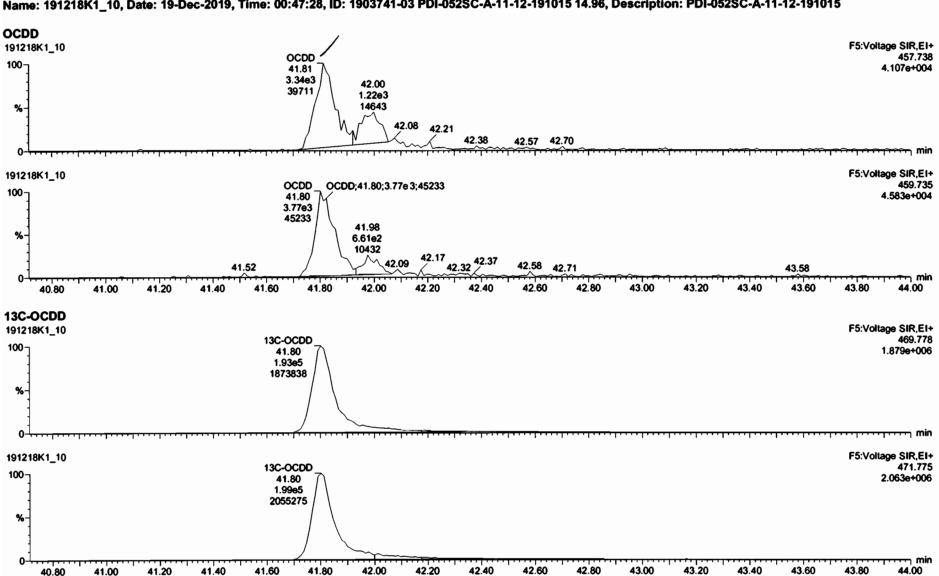
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Vista Analytical Laboratory

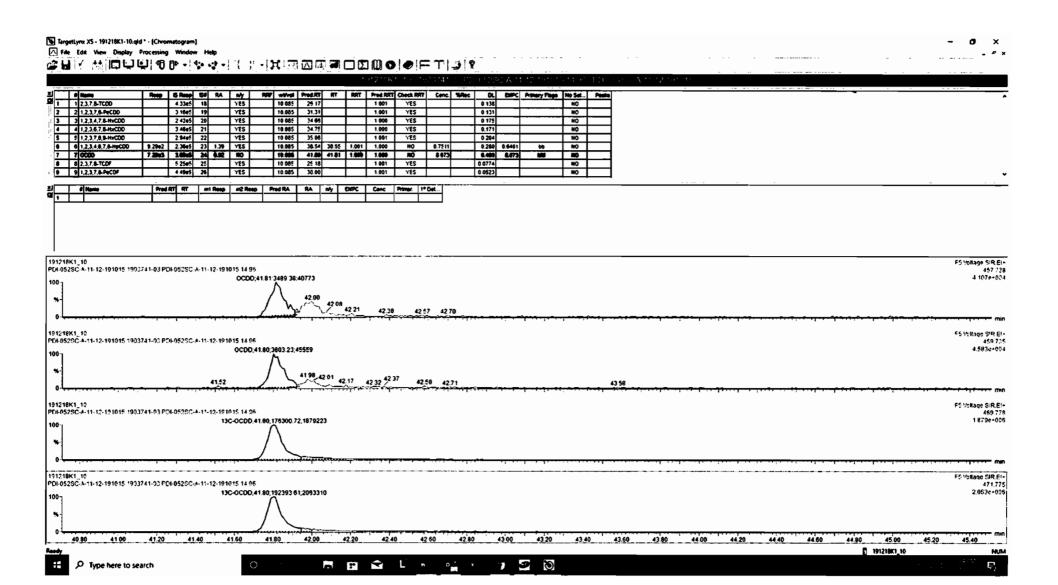
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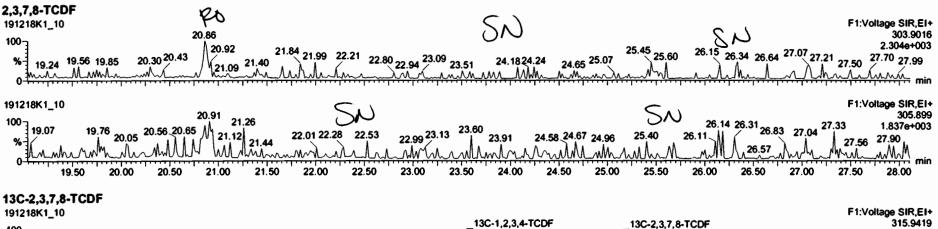


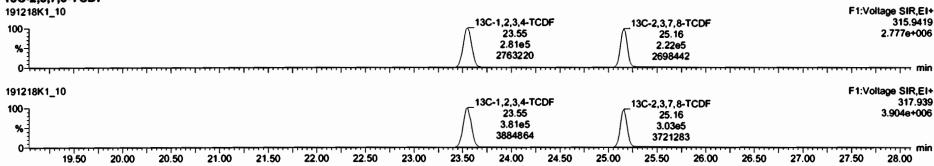
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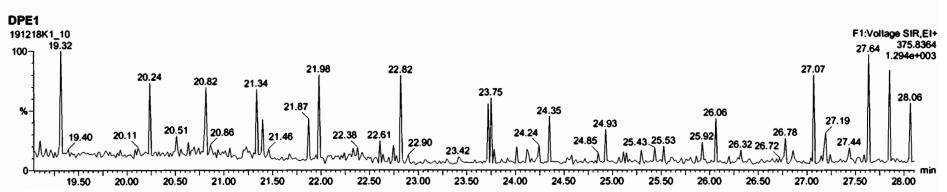
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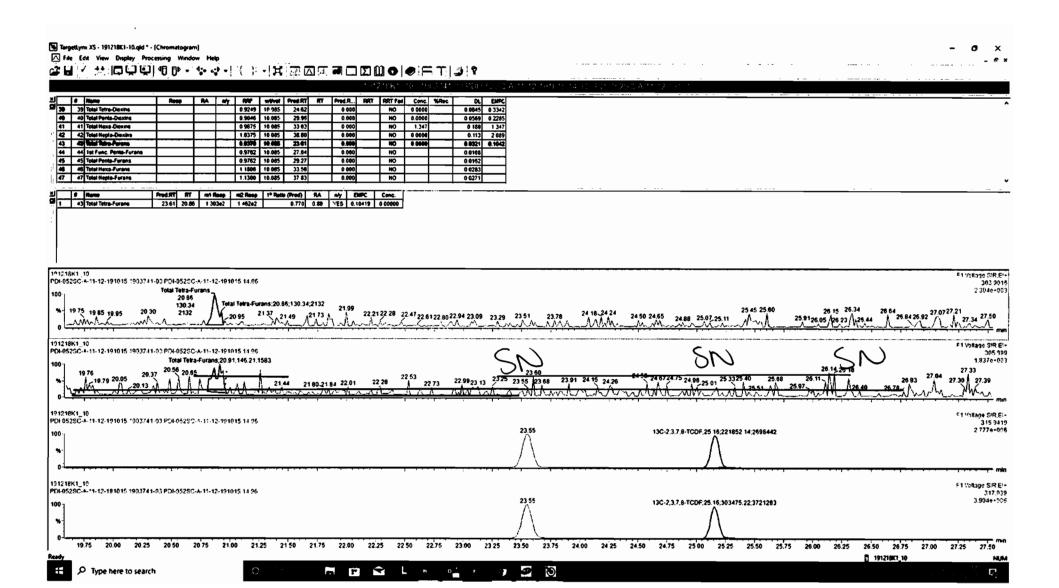
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Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015









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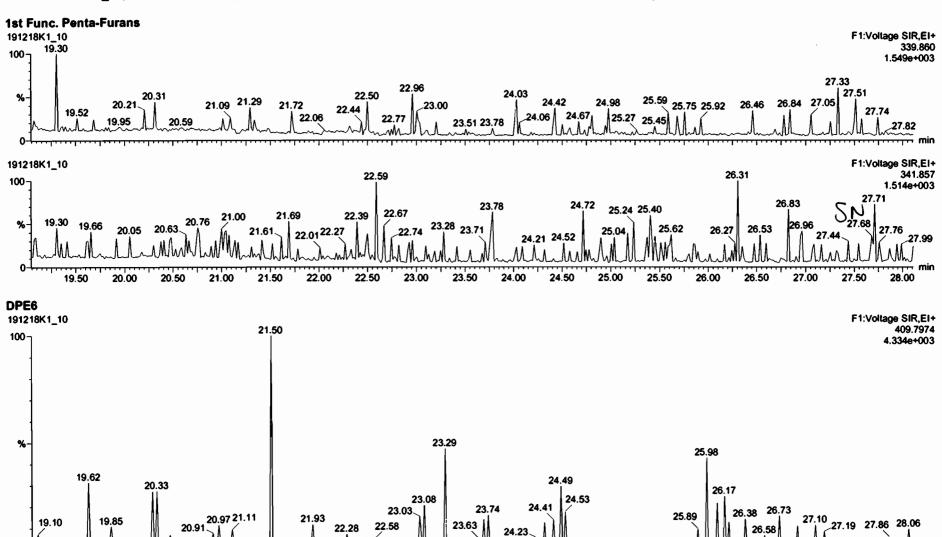
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Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015



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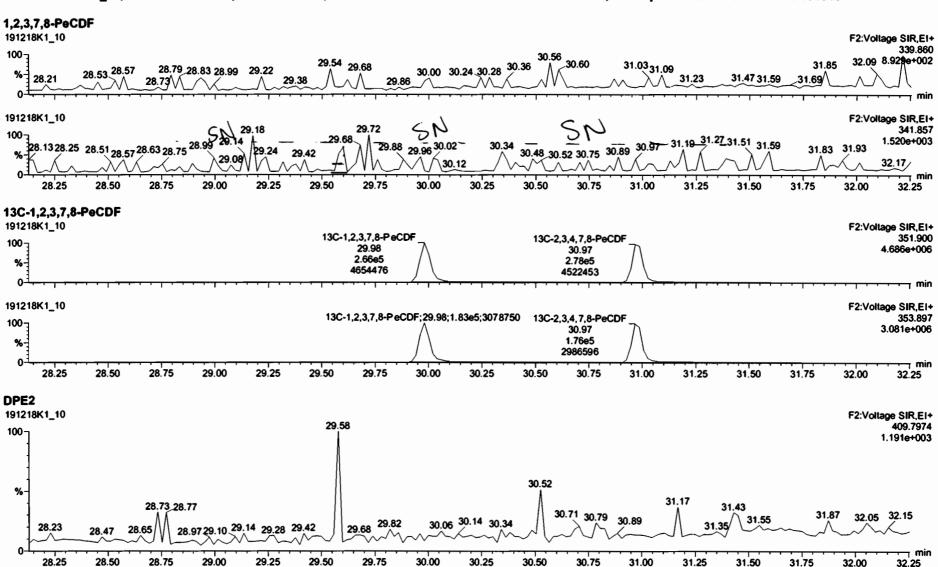
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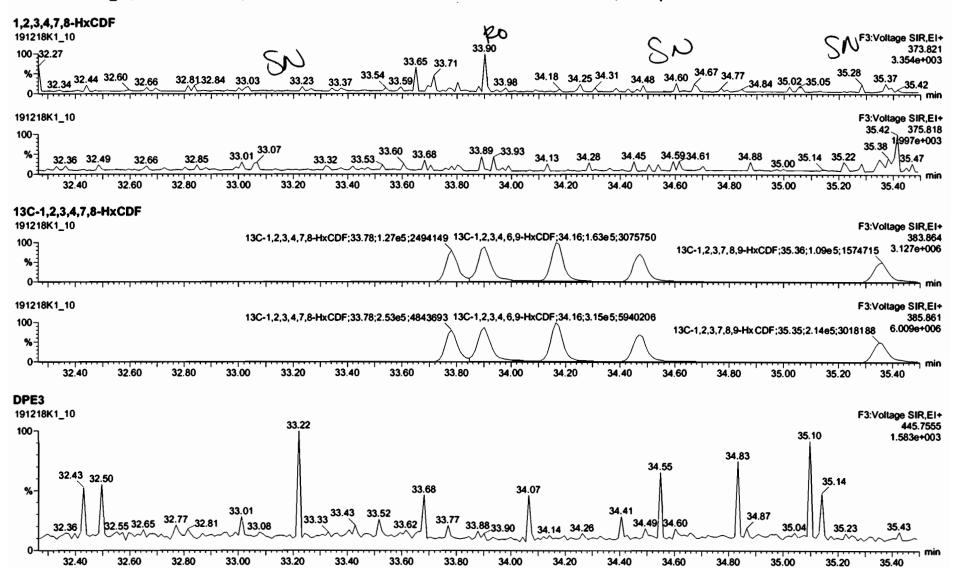


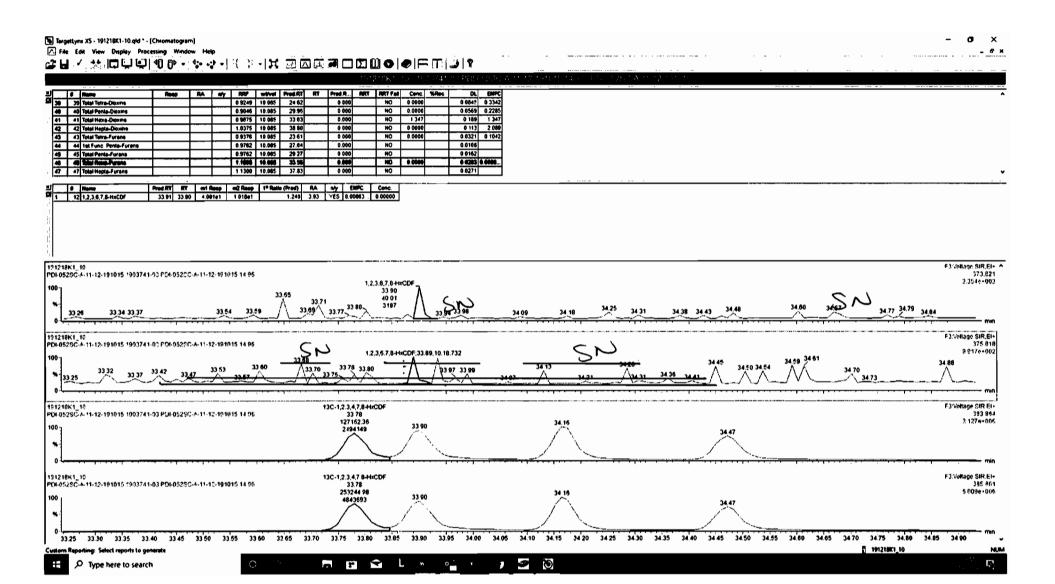
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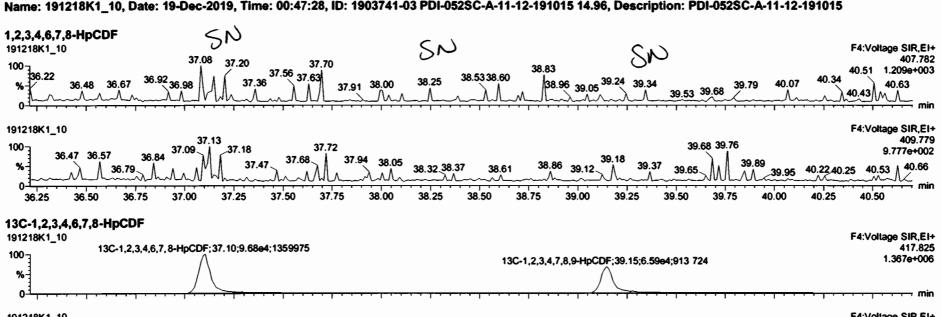


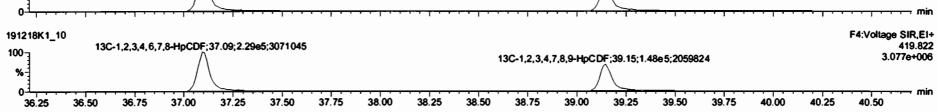
Work Order 1903741 Page 131 of 638

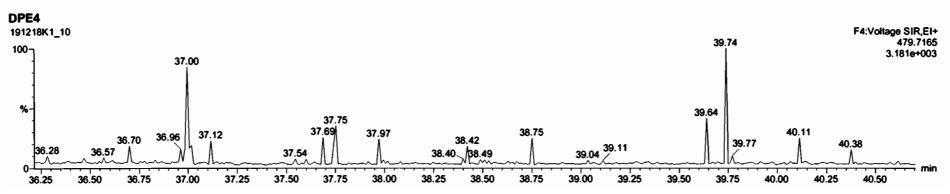
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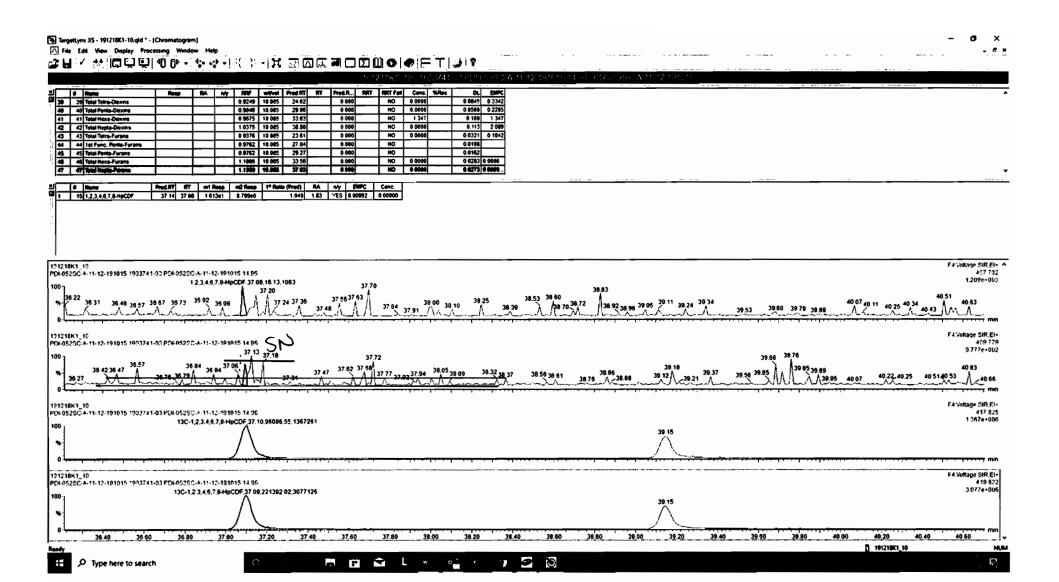
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Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015









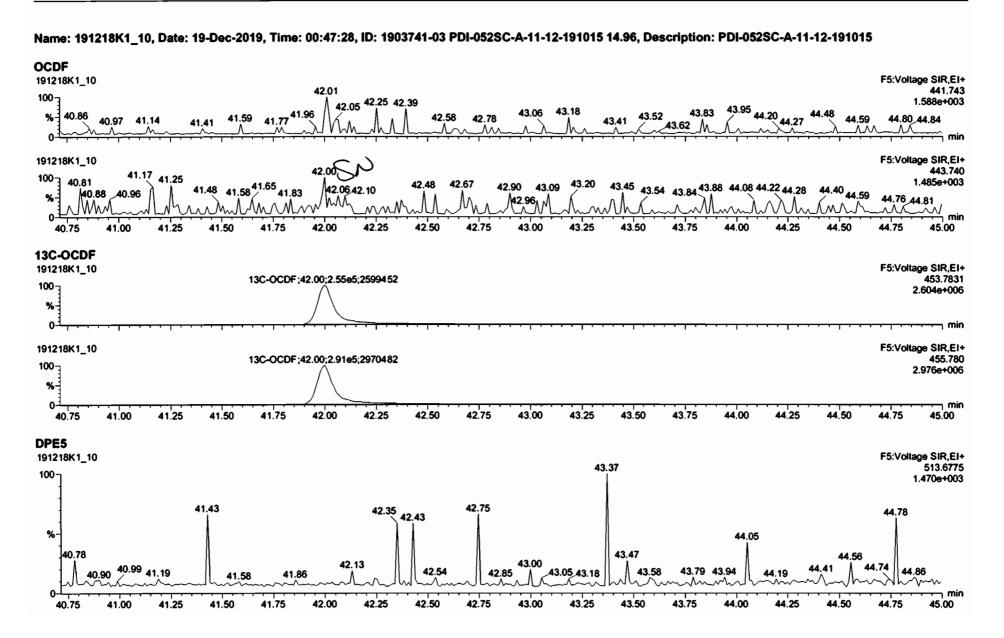
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Quantify Sample Report Vista Analytical Laboratory

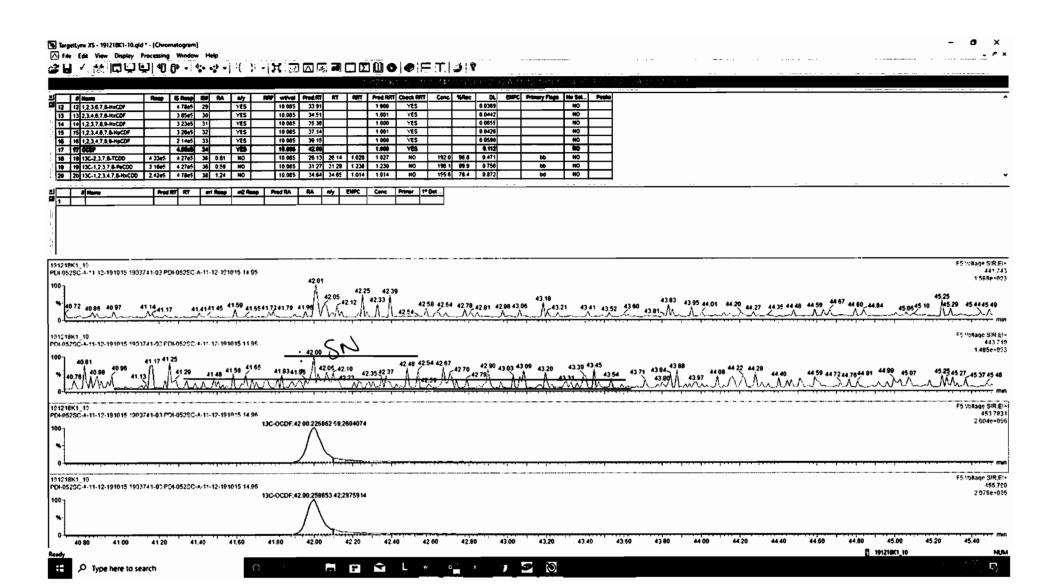
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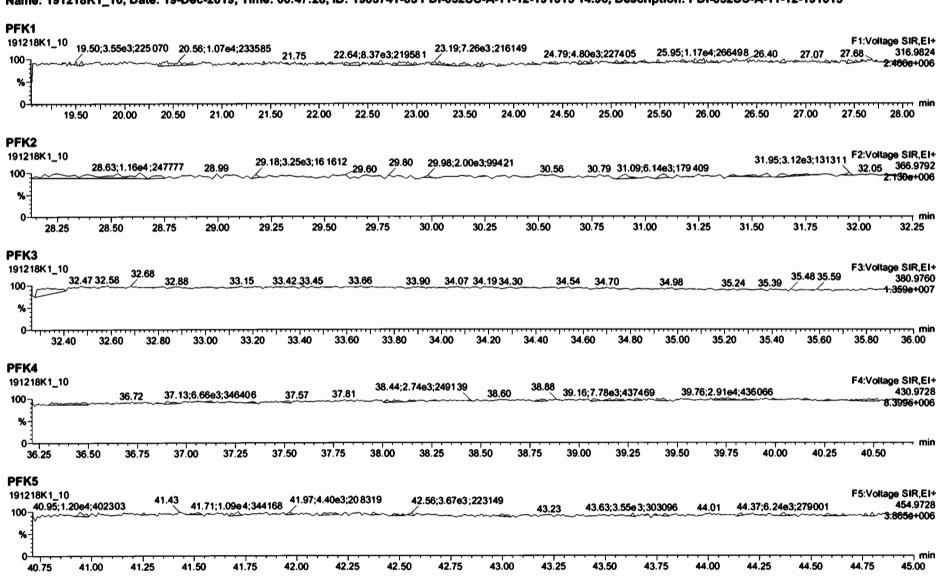


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Name: 191218K1_10, Date: 19-Dec-2019, Time: 00:47:28, ID: 1903741-03 PDI-052SC-A-11-12-191015 14.96, Description: PDI-052SC-A-11-12-191015



MassLynx V4.2 SCN982

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Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-11.qld

Last Altered: Printed:

Friday, December 20, 2019 09:13:28 Pacific Standard Time Friday, December 20, 2019 09:17:53 Pacific Standard Time

GRB 12/20/19 CT12/23/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD			YES	0.925	10.137	26.17		1.00		YES			0.206	
2	2 1,2,3,7,8-PeCDD			YES	0.905	10.137	31.31		1.00		YES			0.171	
3	3 1,2,3,4,7,8-HxCDD			YES	1.07	10.137	34.65		1.00		YES			0.256	
4	4 1,2,3,6,7,8-HxCDD			YES	0.967	10.137	34.75		1.00		YES			0.233	
5	5 1,2,3,7,8,9-HxCDD			YES	0.978	10.137	35.04		1.00		YES			0.281	l
6	6 1,2,3,4,6,7,8-HpCDD	309.000	0.836	YES	1.04	10.137	38.53	38.55	1.00	1.00	NO	0.5702		0.406	0.5092
7	7 OCDD	1696.405	0.907	NO	0.972	10.137	41.80	41.85	1.00	1.00	NO	3.641		0.821	3.641
8	8 2,3,7,8-TCDF			YES	0.938	10.137	25.17		1.00		YES			0.0879	
9	9 1,2,3,7,8-PeCDF			YES	0.976	10.137	30.00		1.00		YES			0.0784	
10	10 2,3,4,7,8-PeCDF			YES	1.00	10.137	31.00		1.00		YES			0.0840	
11	11 1,2,3,4,7,8-HxCDF			YES	1.24	10.137	33.78		1.00		YES			0.0519	
12	12 1,2,3,6,7,8-HxCDF	20.260	6.608	YES	1.10	10.137	33.91	33.92	1.00	1.00	NO	0.01812		0.0291	0.004747
13	13 2,3,4,6,7,8-HxCDF	22.404	5.779	YES	1.18	10.137	34.51	34.48	1.00	1.00	NO	0.02009		0.0422	0.006639
14	14 1,2,3,7,8,9-HxCDF			YES	1.07	10.137	35.36		1.00		YES			0.0883	
15	15 1,2,3,4,6,7,8-HpCDF	15.956	5.810	YES	1.13	10.137	37.14	37.12	1.00	1.00	NO	0.01603		0.0390	0.004803
16	16 1,2,3,4,7,8,9-HpCDF			YES	1.26	10.137	39.15		1.00		YES			0.0755	
17	17 OCDF			YES	1.10	10.137	42.00		1.00		YES			0.241	
18	18 13C-2,3,7,8-TCDD	261905.813	0.777	NO	1.05	10.137	26.13	26.14	1.03	1.03	NO	171.5	86.9	0.593	
19	19 13C-1,2,3,7,8-PeCDD	177017.976	0.620	NO	0.743	10.137	31.27	31.29	1.23	1.23	NO	163.7	83.0	0.839	
20	20 13C-1,2,3,4,7,8-HxCDD	119877.355	1.278	NO	0.646	10.137	34.64	34.64	1.01	1.01	NO	145.2	73.6	1.35	i
21	21 13C-1,2,3,6,7,8-HxCDD	167058.016	1.272	NO	0.777	10.137	34.73	34.75	1.02	1.02	NO	168.4	85.4	1.12	
22	22 13C-1,2,3,7,8,9-HxCDD	135715.575	1.248	NO	0.659	10.137	35.01	35.01	1.02	1.02	NO	161.1	81.7	1.32	
23	23 13C-1,2,3,4,6,7,8-HpCDD	103059.679	1.130	NO	0.534	10.137	38.51	38.52	1.13	1.13	NO	151.0	76.6	1.29	
24	24 13C-OCDD	189165.188	0.922	NO	0.470	10.137	41.79	41.80	1.22	1.22	NO	314.9	79.8	1.66	
25	25 13C-2,3,7,8-TCDF	372651.515	0.726	NO	0.977	10.137	25.14	25.14	0.99	0.99	NO	158.8	80.5	0.696	
26	26 13C-1,2,3,7,8-PeCDF	269747.656	1.483	NO	0.778	10.137	29.96	29.98	1.18	1.18	NO	144.5	73.2	1.16	
27.	27 13C-2,3,4,7,8-PeCDF	251365.743	1.567	NO	0.750	10.137	30.95	30.97	1.22	1.22	NO	139.6	70.8	1.20	1
28	28 13C-1,2,3,4,7,8-HxCDF	183875.793	0.513	NO	0.845	10.137	33.77	33.78	0.99	0.99	NO	170.3	86.3	1.37	
29	29 13C-1,2,3,6,7,8-HxCDF	226398.820	0.525	NO	1.03	10.137	33.89	33.90	0.99	0.99	NO	172.6	87.5	1.13	
30	30 13C-2,3,4,6,7,8-HxCDF	186344.235	0.510	NO	0.893	10.137	34.46	34.47	1.01	1.01	NO	163.4	82.8	1.30	
31	31 13C-1,2,3,7,8,9-HxCDF	174252.726	0.539	NO	0.734	10.137	35.37	35.36	1.04	1.04	NO	185.8	94.2	1.58	

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Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-11.qld

Last Altered: Printed:

Friday, December 20, 2019 09:13:28 Pacific Standard Time Friday, December 20, 2019 09:17:53 Pacific Standard Time

Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	173762.215	0.433	NO	0.754	10.137	37.08	37.10	1.09	1.09	NO	180.4	91.4	1.29	1
33	33 13C-1,2,3,4,7,8,9-HpCDF	109864.060	0.397	NO	0.539	10.137	39.11	39.15	1.14	1.15	NO	159.6	80.9	1.80	
34	34 13C-OCDF	256353.242	0.870	NO	0.593	10.137	41.97	42.00	1.23	1.23	NO	338.7	85.8	1.50	
35	35 37CI-2,3,7,8-TCDD	113452.203			1.07	10.137	26.15	26.15	1.03	1.03	NO	72.88	92.3	0.135	
36	36 13C-1,2,3,4-TCDD	287174.555	0.770	NO	1.00	10.137	25.45	25.43	1.00	1.00	NO	197.3	100	0.622	
37	37 13C-1,2,3,4-TCDF	473634.188	0.732	NO	1.00	10.137	23.55	23.51	1.00	1.00	NO	197.3	100	0.680	I
38	38 13C-1,2,3,4,6,9-HxCDF	252006.649	0.520	NO	1.00	10.137	34.16	34.16	1.00	1.00	NO	197.3	100	1.16	1
39	39 Total Tetra-Dioxins				0.925	10.137	24.62		0.00		NO	0.0000		0.121	0.4304
40	40 Total Penta-Dioxins				0.905	10.137	29.96		0.00		NO	0.1631		0.0597	0.1631
41	41 Total Hexa-Dioxins				0.967	10.137	33.63		0.00		NO	0.0000		0.139	0.5956
42	42 Total Hepta-Dioxins				1.04	10.137	38.80		0.00		NO	1.056		0.406	1.565
43	43 Total Tetra-Furans				0.938	10.137	23.61		0.00		NO	0.0000		0.0311	0.06159
44	44 1st Func. Penta-Furans				0.976	10.137	27.04		0.00		NO			0.0184	
45	45 Total Penta-Furans				0.976	10.137	29.27		0.00		NO			0.0375	
46	46 Total Hexa-Furans				1.18	10.137	33.56		0.00		NO	0.006440		0.0423	0.02432
47	47 Total Hepta-Furans				1.13	10.137	37.83		0.00		NO	0.0000		0.0362	0.004803

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Quantify Totals Report MassLynx V4.2 SCN982

Vista Analytical Laboratory

U:\VG11.PRO\Results\191218K1\191218K1-11.qld

Last Altered:

Friday, December 20, 2019 09:13:28 Pacific Standard Time

Printed:

Dataset:

Friday, December 20, 2019 09:18:04 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015

Page 1 of 2

Tetra-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	39 Total Tetra-Dioxins	0.00e0	2.62e5	1.072	YES	24.62	23.75	0.0000	0.4304

Penta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	ŔŦ	Conc.	EMPC
I 40 Total Penta-Dioxins	1.32e2	1.77e5	0.536	NO	29.96	29.56	0.1631	0.1631

Hexa-Dioxins

				_		_			
# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC	
1 41 Total Hexa-Dioxins	0.00e0	0.00e0	1.428	YES	33.63	33.18	0.0000	0.5956	

Hepta-Dioxins

ſ	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
ŀ	1 42 Total Hepta-Dioxins	5.72e2	1.03e5	1.045	NO	38.80	37.50	1.056	1.056
ŀ	2 6 1,2,3,4,6,7,8-HpCDD	3.09e2	1.03e5	0.836	YES	38.53	38.55	0.0000	0.5092

Tetra-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 43 Total Tetra-Furans	0.00e0	3.73e5	0.918	YES	23.61	20.85	0.0000	0.06159

Penta-Furans function 1

Γ	# Name	Area IS	S Area F	A Y/N	Pred.F	RT RT	Conc.	EMPC
1								

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Quantify Totals Report MassLynx V4.2 SCN982

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-11.qld

Last Altered:

Friday, December 20, 2019 09:13:28 Pacific Standard Time

Printed: Friday, December 20, 2019 09:18:04 Pacific Standard Time

Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015

Page 2 of 2

Penta-Furans

Г	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1									

Hexa-Furans

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	12 1,2,3,6,7,8-HxCDF	2.03e1	2.26e5	6.608	YES	33.91	33.92	0.0000	0.0047
2	46 Total Hexa-Furans	0.00e0	0.00e0	4.817	YES	33.56	34.75	0.0000	0.0064
3	13 2,3,4,6,7,8-HxCDF	2.24e1	1.86e5	5.779	YES	34.51	34.48	0.0000	0.0066
4	46 Total Hexa-Furans	7.43e0	0.00e0	1.137	NO	33.56	33.22	0.006440	0.0064

Hepta-Furans

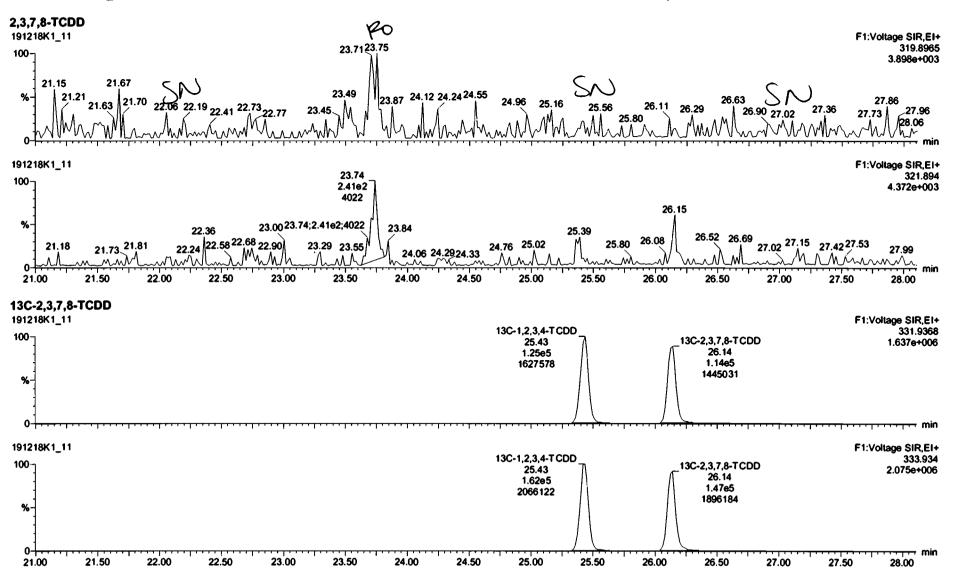
# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc. EM	PC
1 15 1,2,3,4,6,7,8-HpCDF	1.60e1	1.74e5	5.810	YES	37.14	37.12	0.0000 0.004	8

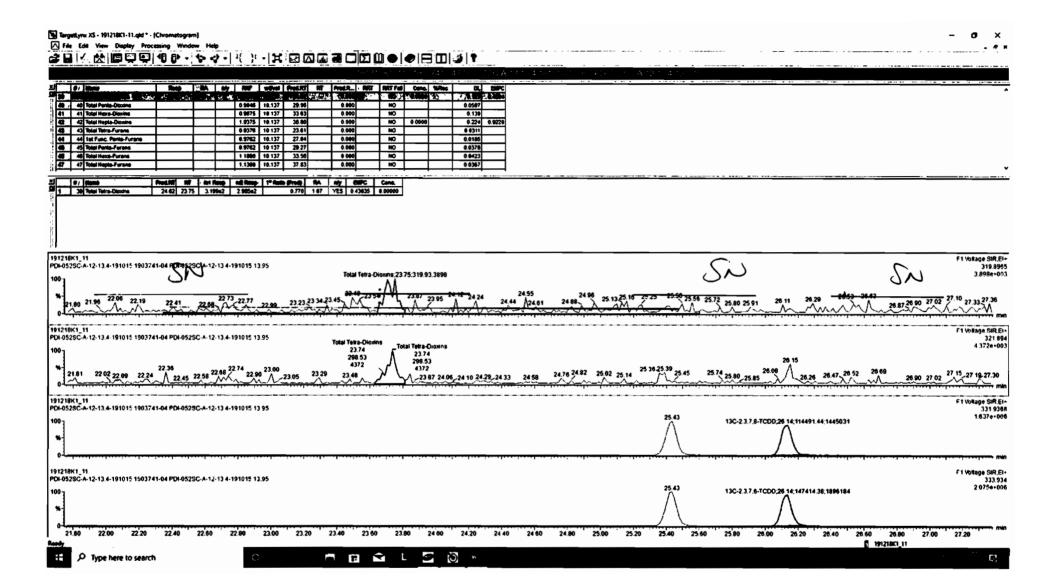
Work Order 1903741 Page 140 of 638

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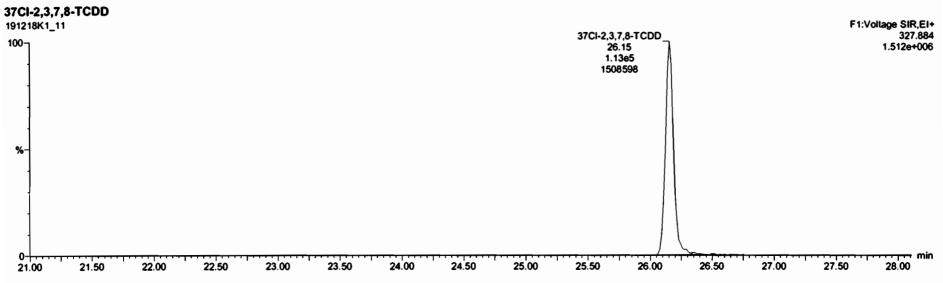
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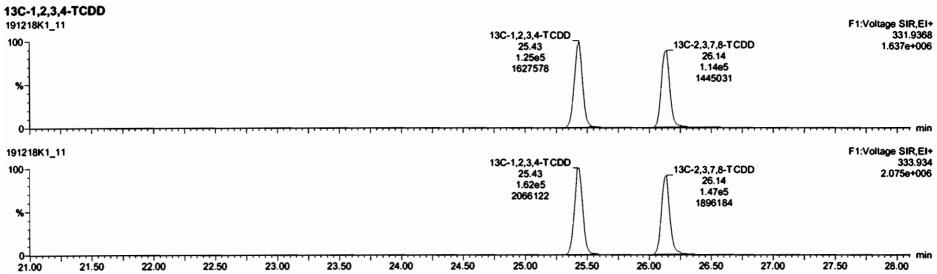




Work Order 1903741 Page 142 of 638

Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015





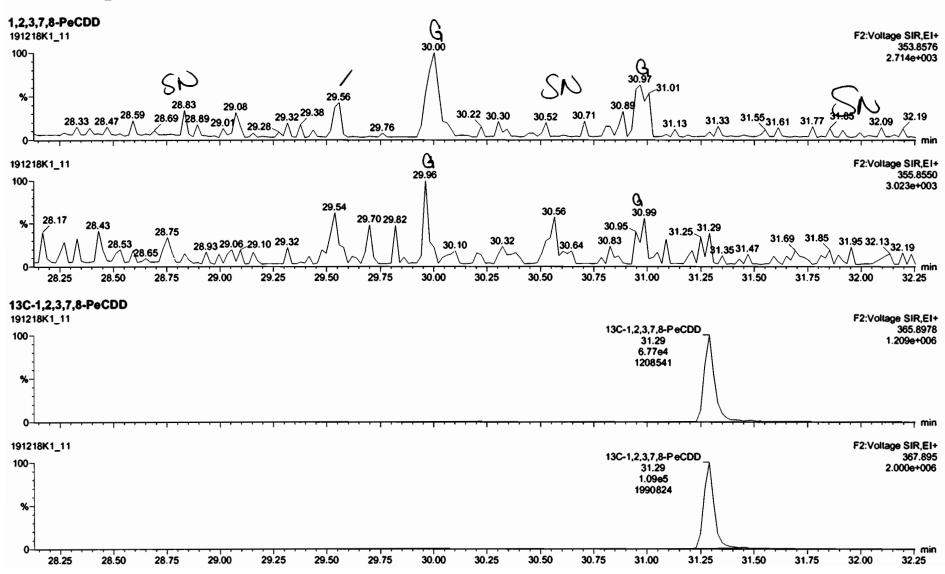
Work Order 1903741 Page 143 of 638

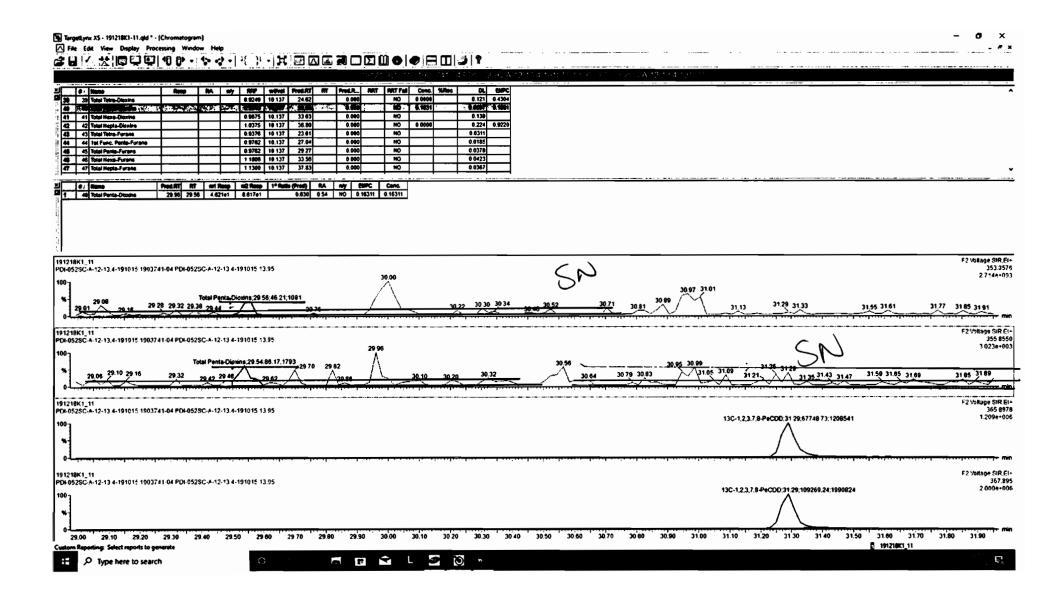
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Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015



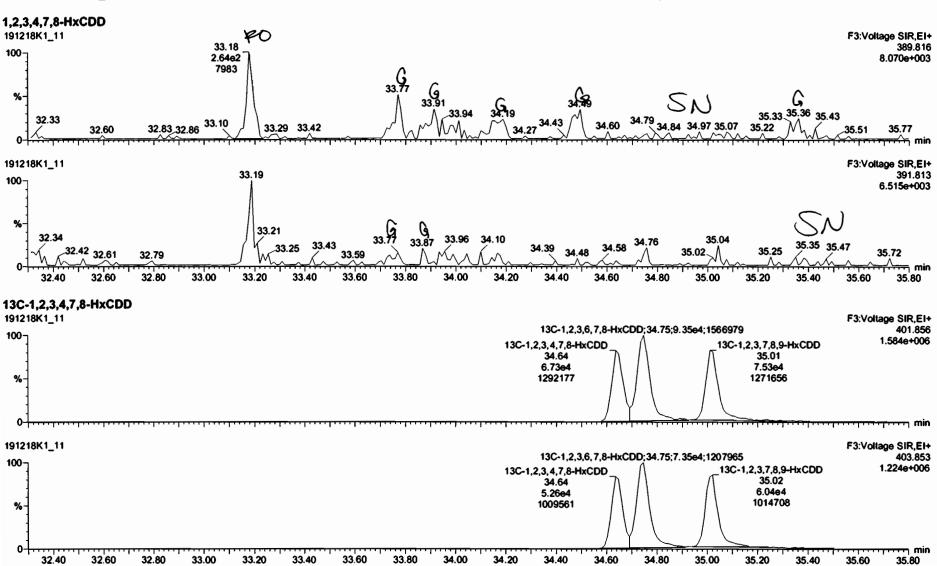


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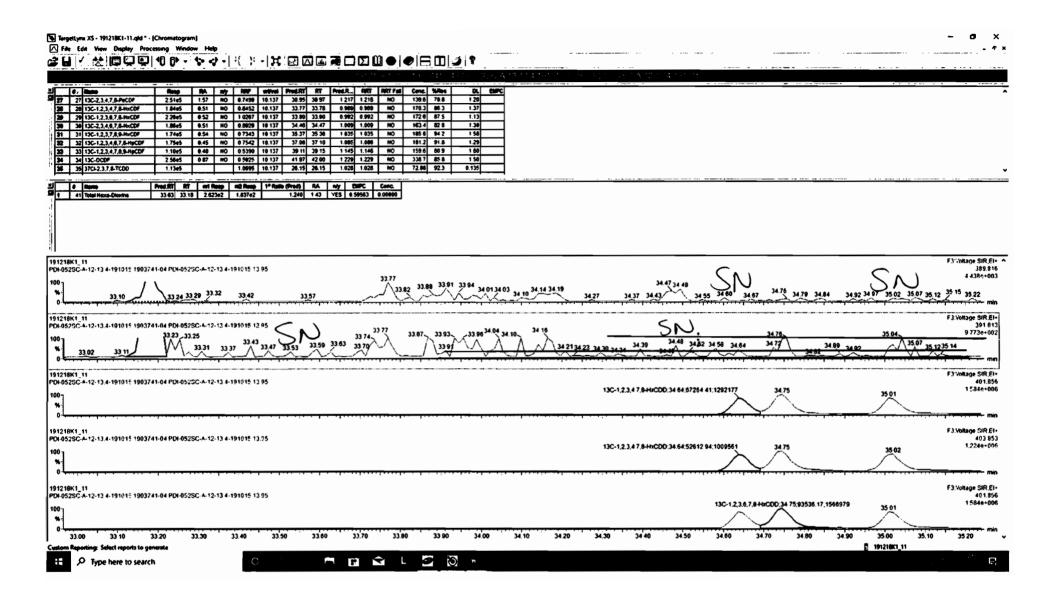
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Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015

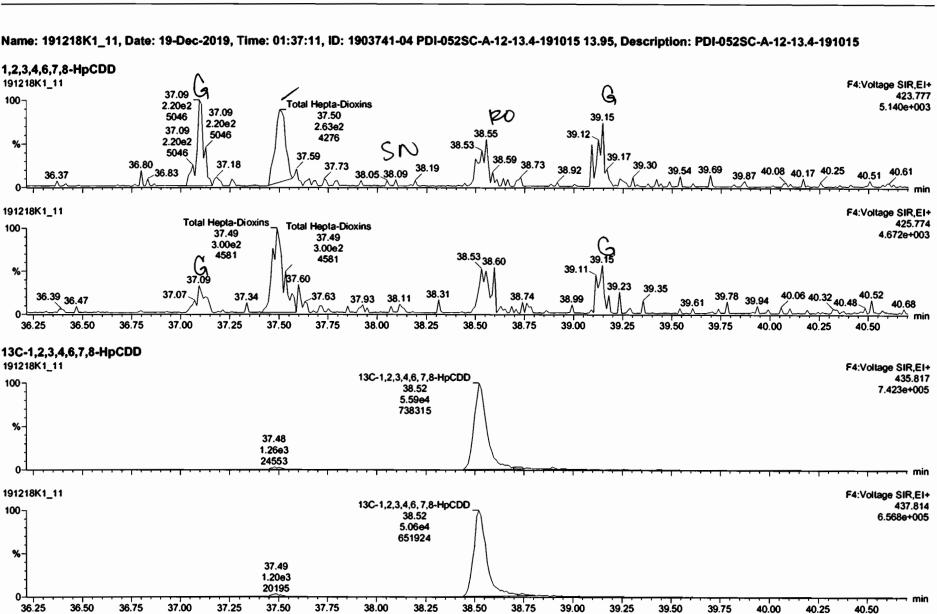


Work Order 1903741 Page 146 of 638

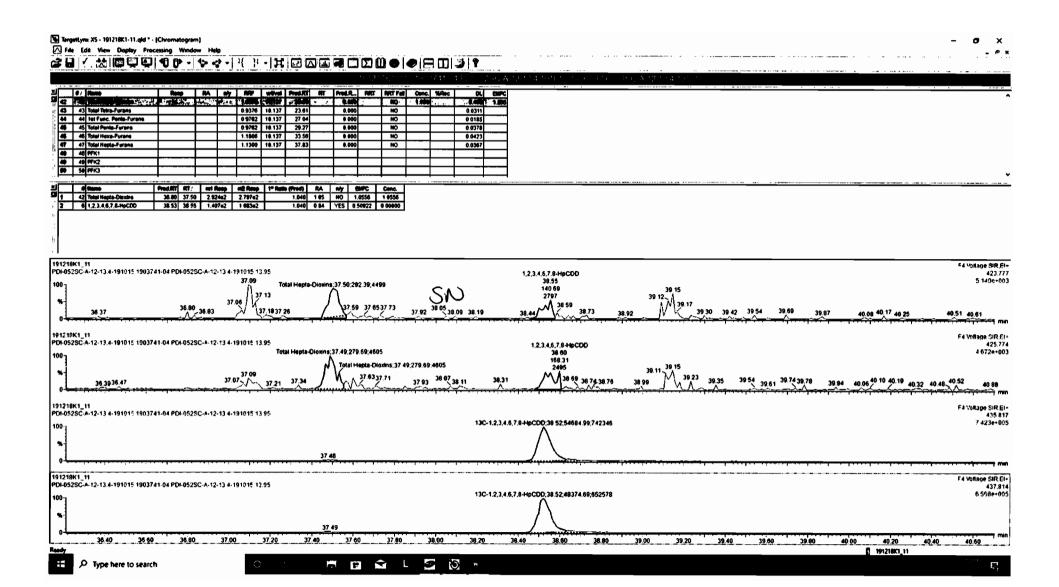


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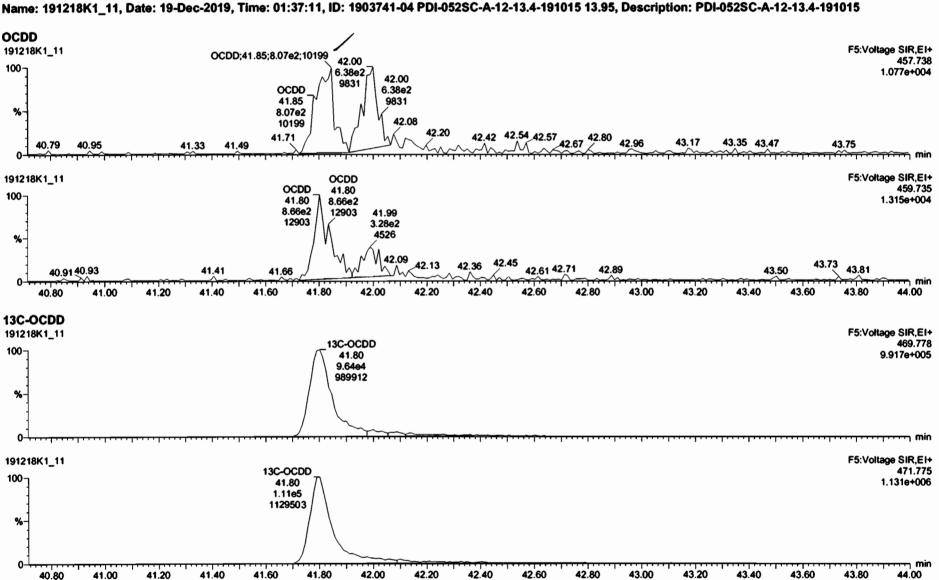
Work Order 1903741 Page 149 of 638

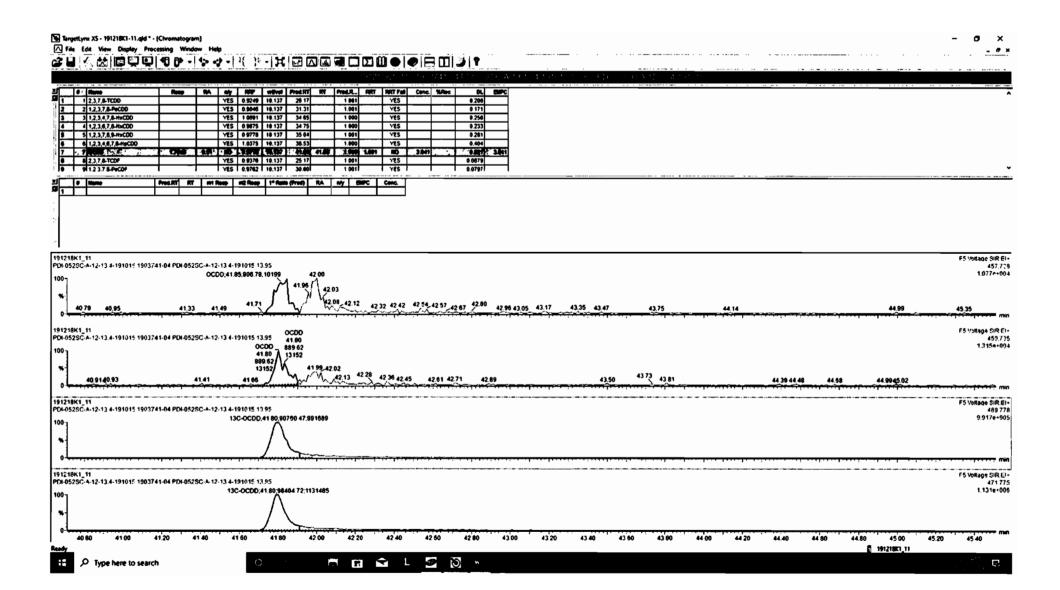
Quantify Sample Report Vista Analytical Laboratory

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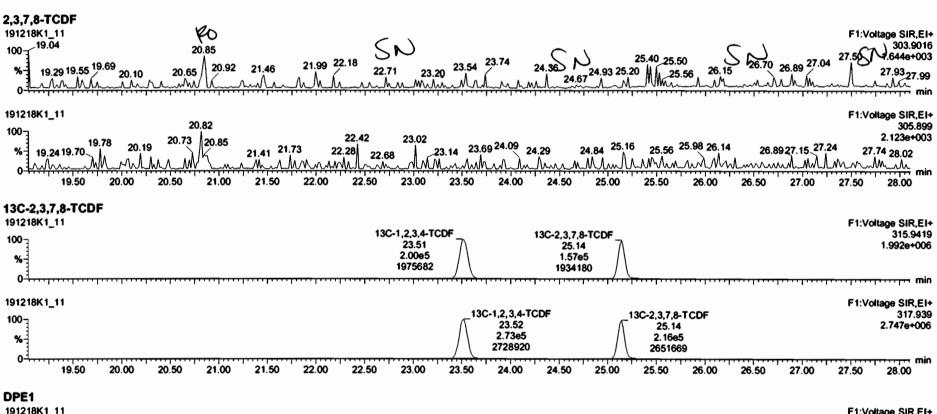
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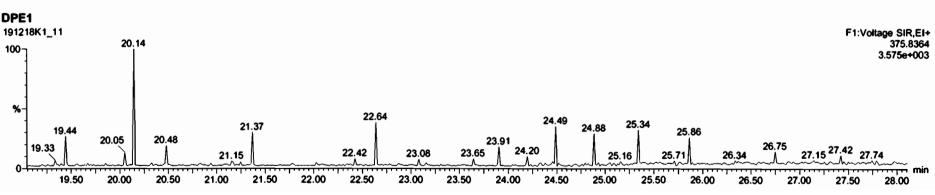
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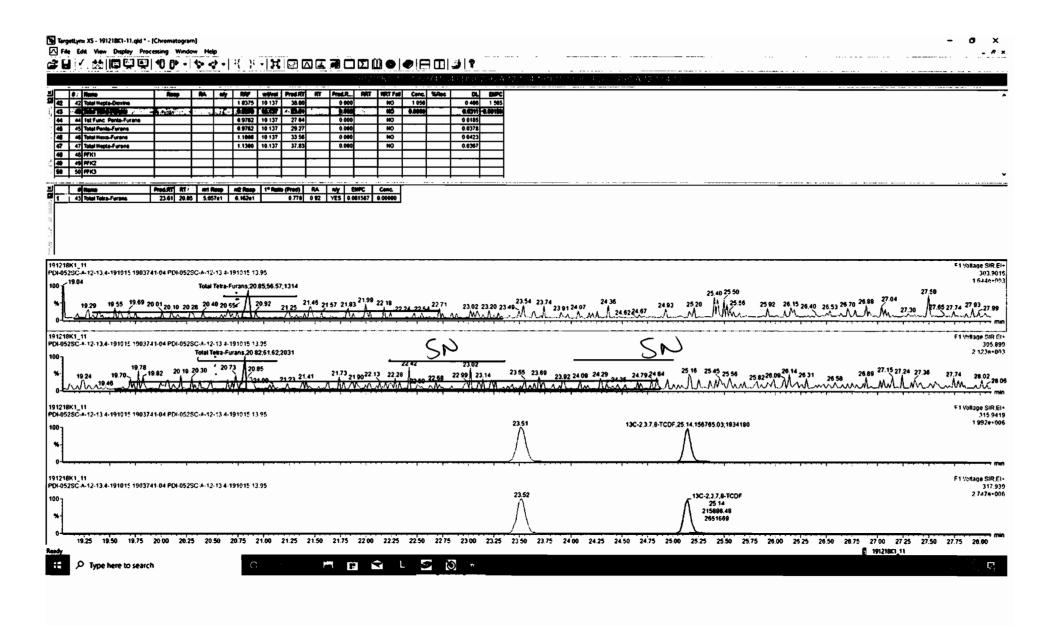
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

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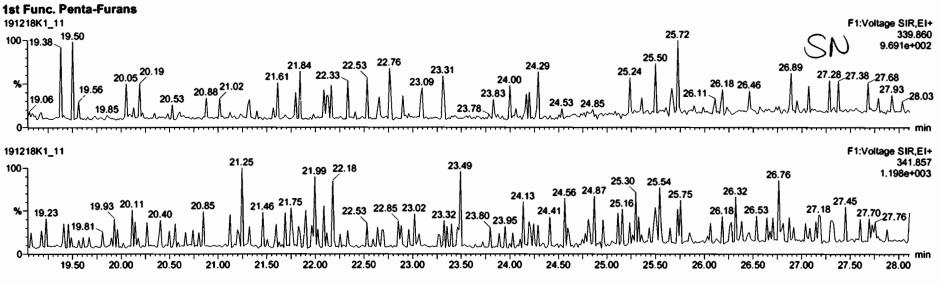
Work Order 1903741 Page 153 of 638

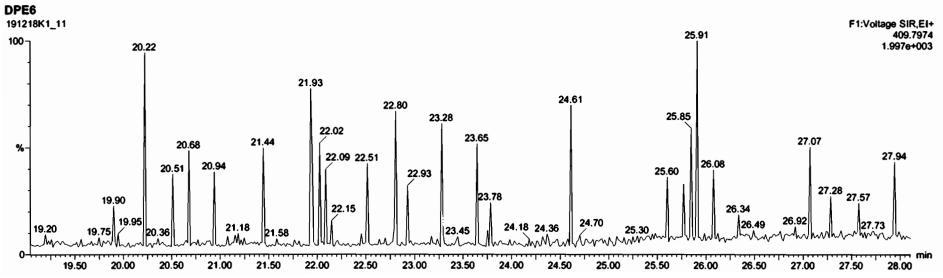
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Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015





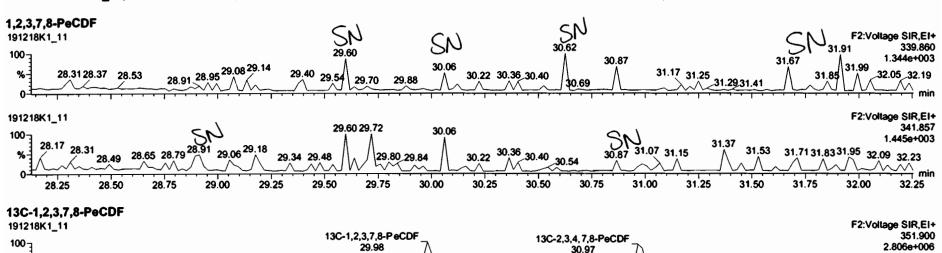
Work Order 1903741 Page 154 of 638

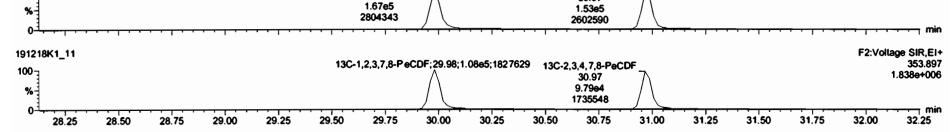
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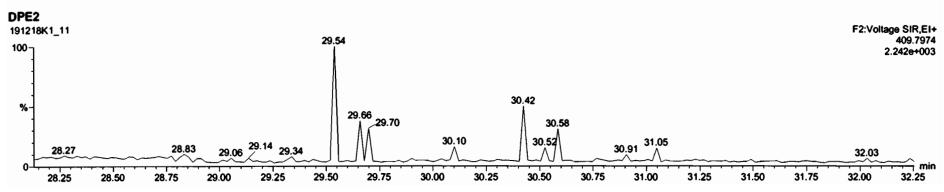
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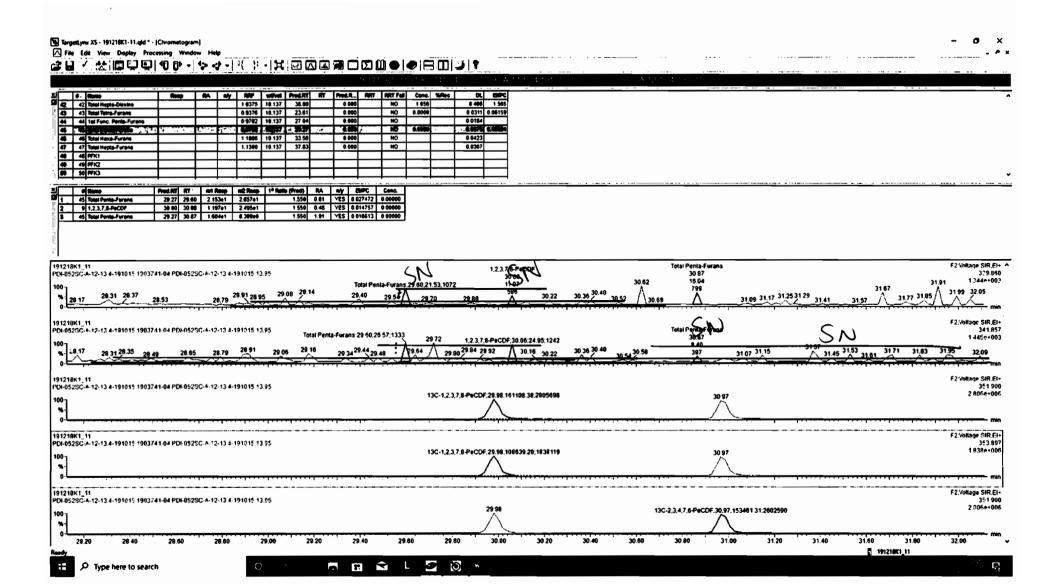
Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time





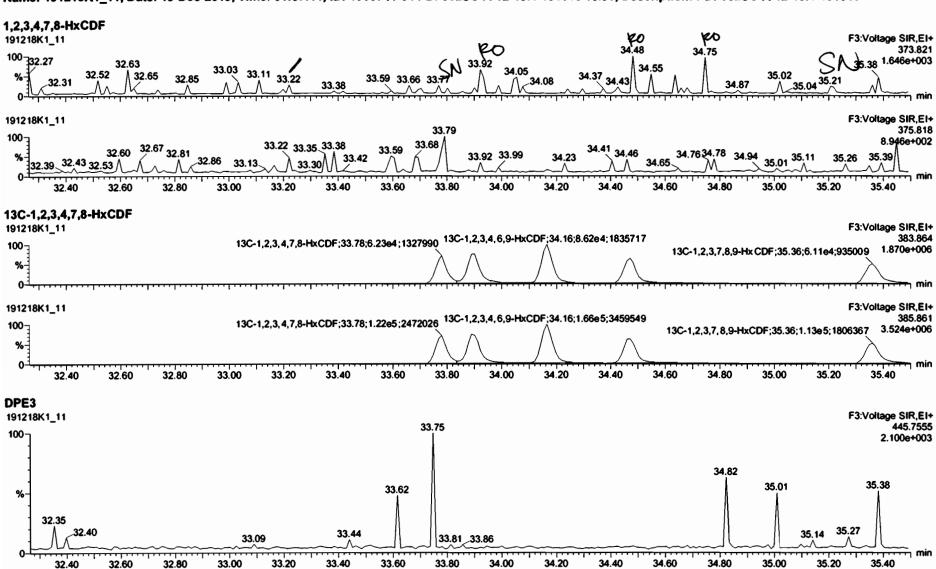




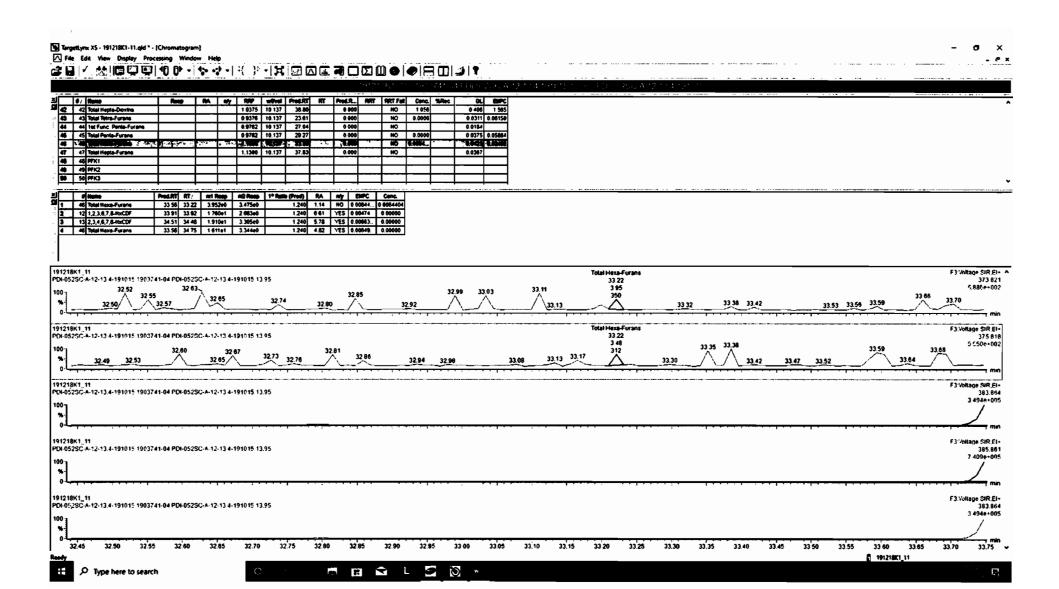


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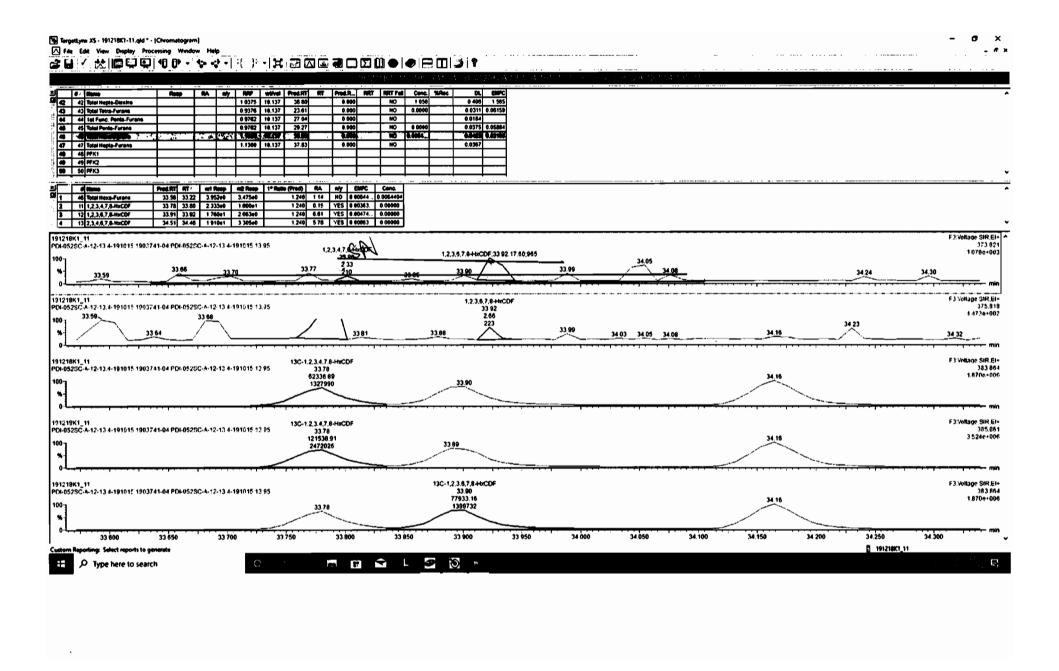




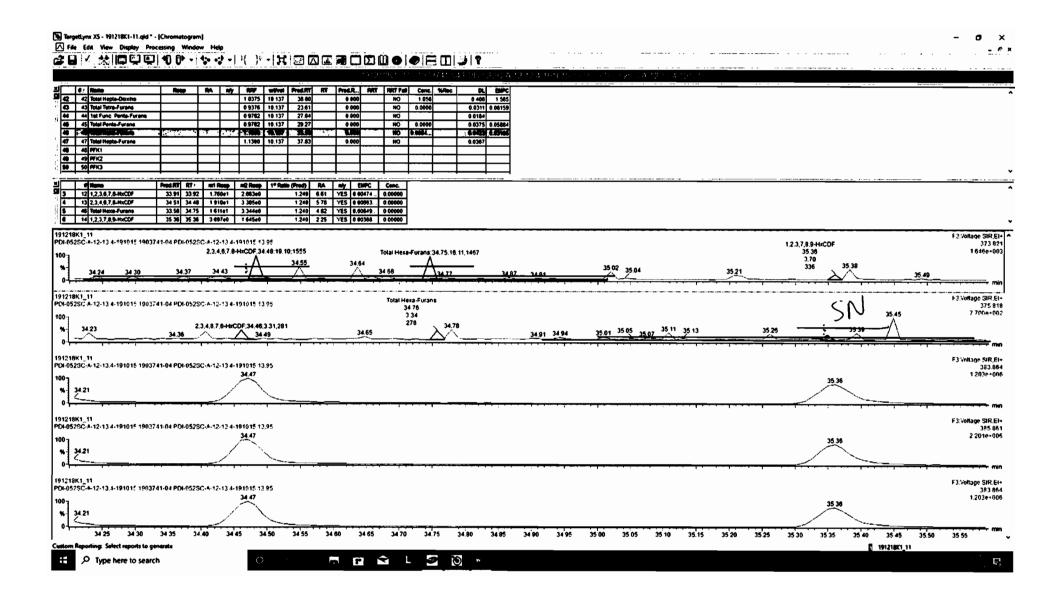
Work Order 1903741 Page 157 of 638



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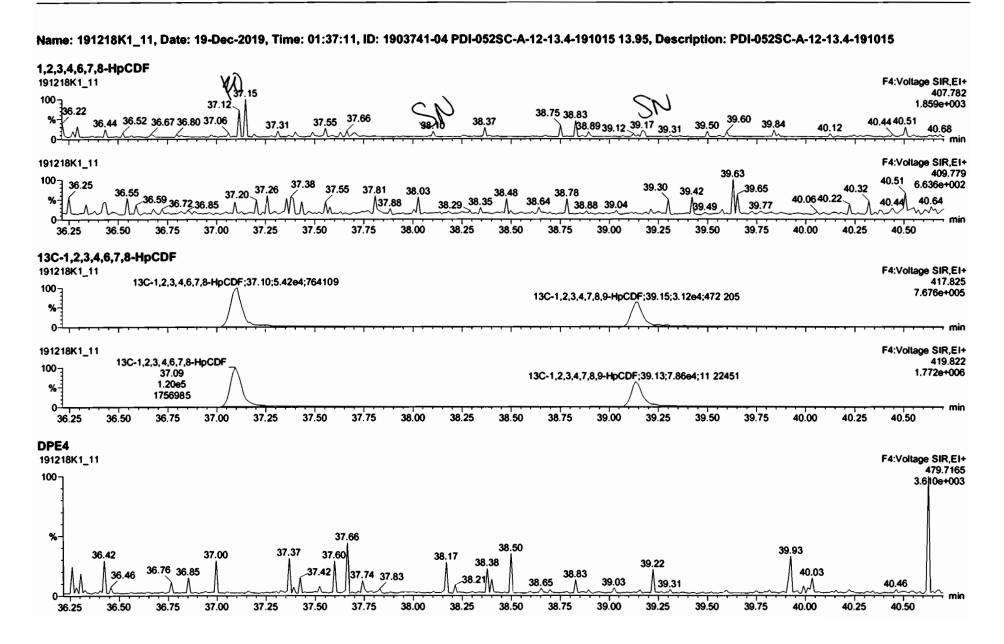
Work Order 1903741 Page 159 of 638

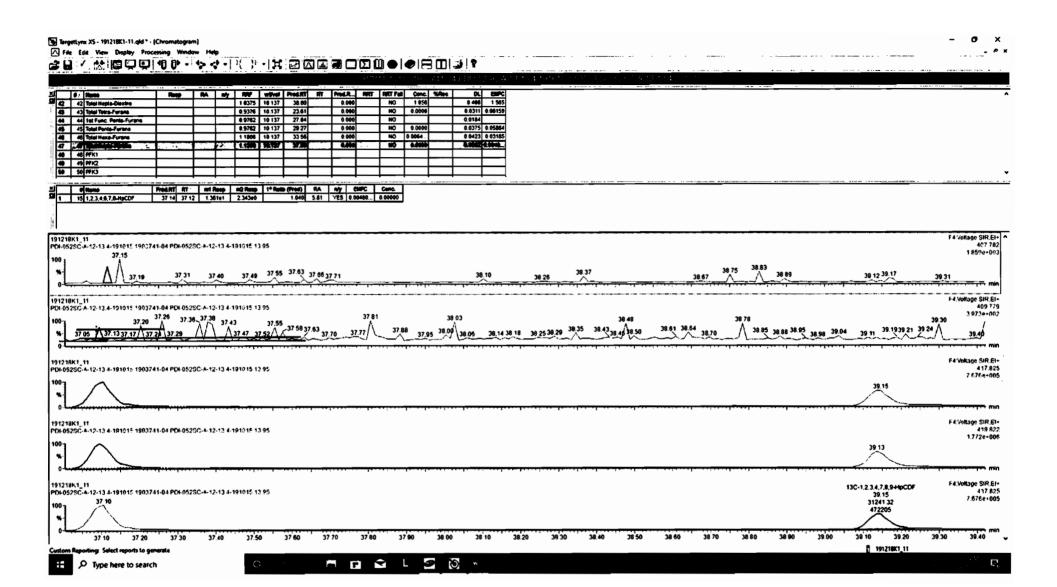


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Last Altered: Printed: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time



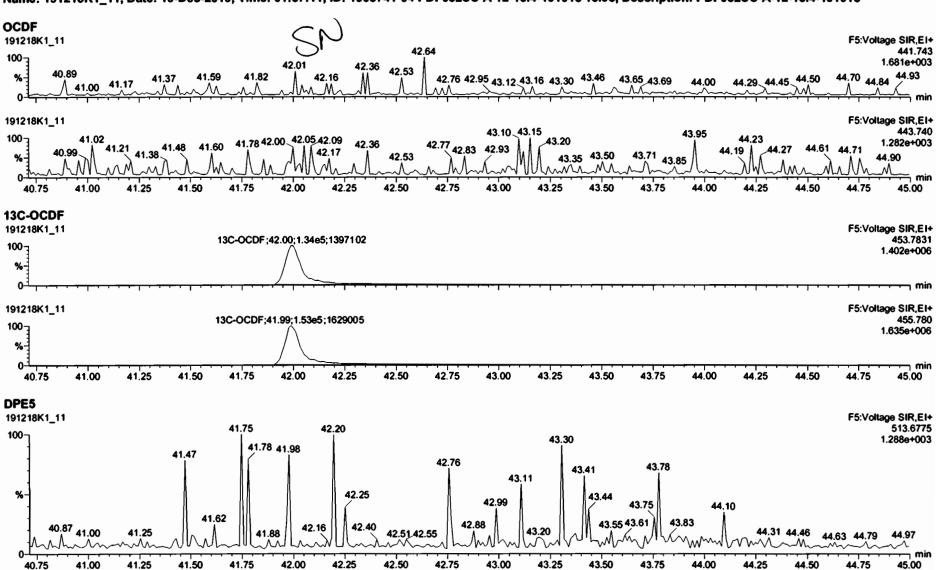


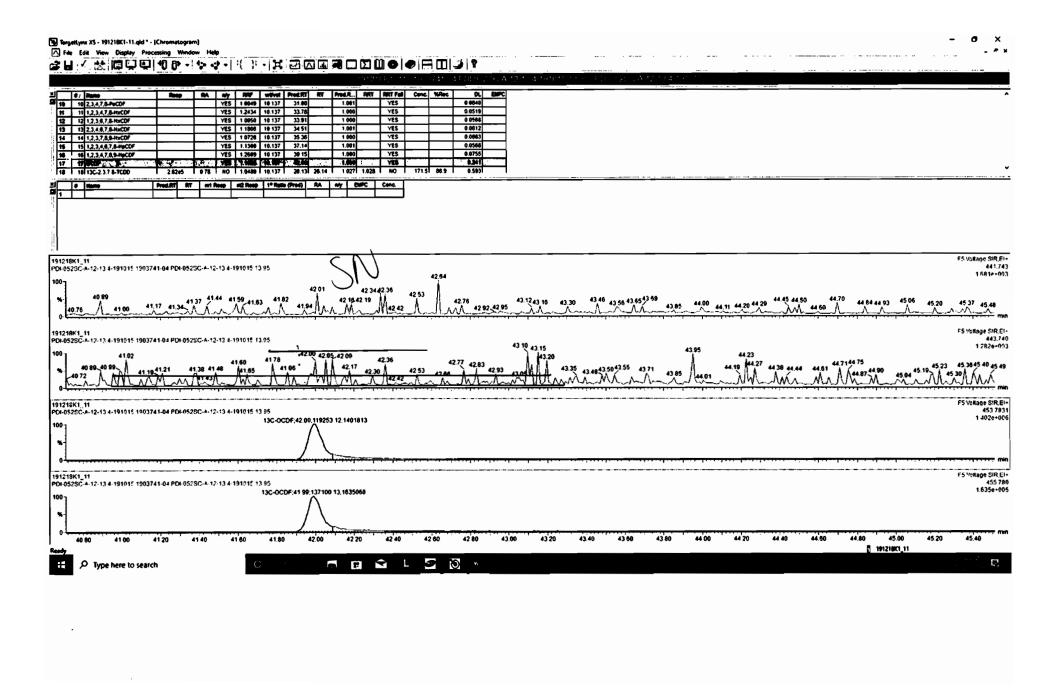
Work Order 1903741 Page 162 of 638

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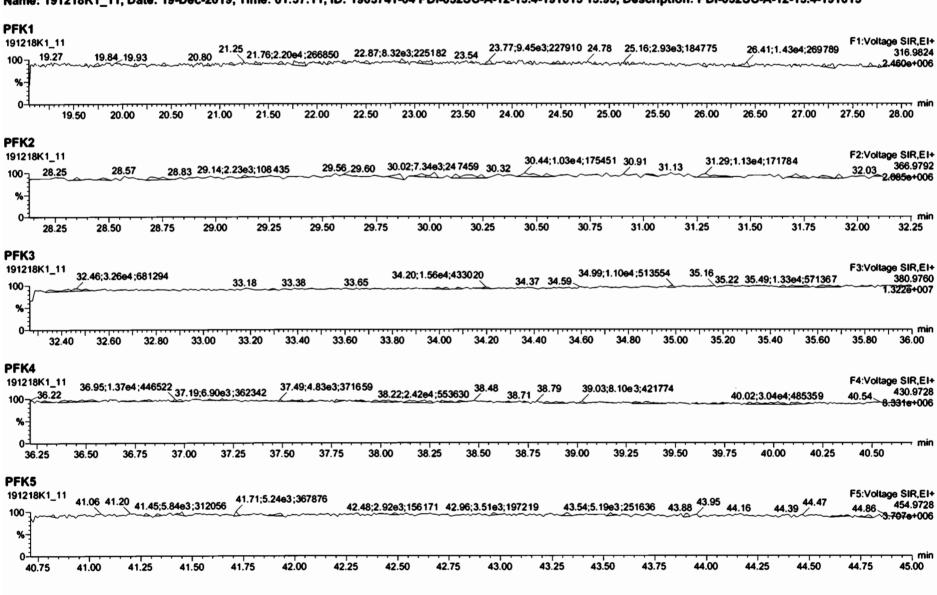


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Dataset: Untitled

Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_11, Date: 19-Dec-2019, Time: 01:37:11, ID: 1903741-04 PDI-052SC-A-12-13.4-191015 13.95, Description: PDI-052SC-A-12-13.4-191015



Page 1 of 2

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-12.qld

Last Altered: Printed:

Friday, December 20, 2019 09:45:49 Pacific Standard Time Friday, December 20, 2019 09:48:42 Pacific Standard Time

GRB 12/20/19 CT 12/23/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, iD: 1903741-05 PDi-055SC-A-11-12-191015 14.32, Description: PDi-055SC-A-11-12-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
1	1 2,3,7,8-TCDD			YES	0.925	9.997	26.17		1.00		YES			0.199	1
2	2 1,2,3,7,8-PeCDD			YES	0.905	9.997	31.31		1.00		YES			0.197	
3	3 1,2,3,4,7,8-HxCDD			YES	1.07	9.997	34.66		1.00		YES			0.212	
4	4 1,2,3,6,7,8-HxCDD			YES	0.967	9.997	34.75		1.00		YES			0.184	ŀ
5	5 1,2,3,7,8,9-HxCDD			YES	0.978	9.997	35.06		1.00		YES			0.239	
6	6 1,2,3,4,6,7,8-HpCDD			YES	1.04	9.997	38.54		1.00		YES			0.309	- 1
7	7 OCDD	662.751	0.888	NO	0.972	9.997	41.80	41.81	1.00	1.00	NO	1.733		0.666	1.733
8	8 2,3,7,8-TCDF			YES	0.938	9.997	25.17		1.00		YES			0.106	
9	9 1,2,3,7,8-PeCDF			YES	0.976	9.997	30.00		1.00		YES			0.0760	ı
10	10 2,3,4,7,8-PeCDF			YES	1.00	9.997	31.02		1.00		YES			0.0616	
11	11 1,2,3,4,7,8-HxCDF			YES	1.24	9.997	33.78		1.00		YES			0.0493	
12	12 1,2,3,6,7,8-HxCDF			YES	1.10	9.997	33.91		1.00		YES			0.0534	
13	13 2,3,4,6,7,8-HxCDF			YES	1.18	9.997	34.51		1.00		YES			0.0524	
14	14 1,2,3,7,8,9-HxCDF	19.679	2.611	YES	1.07	9.997	35.35	35.37	1.00	1.00	NO	0.02344		0.0388	0.01454
15	15 1,2,3,4,6,7,8-HpCDF			YES	1.13	9.997	37.13		1.00		YES	•		0.0821	
16	16 1,2,3,4,7,8,9-HpCDF			YES	1.26	9.997	39.15		1.00		YES			0.0927	- 1
17	17 OCDF			YES	1.10	9.997	41.99		1.00		YES			0.273	- 1
18	18 13C-2,3,7,8-TCDD	244138.101	0.787	NO	1.05	9.997	26.13	26.14	1.03	1.03	NO	173.8	86.9	0.753	
19	19 13C-1,2,3,7,8-PeCDD	171285.473	0.615	NO	0.743	9.997	31.27	31.29	1.23	1.23	NO	172.2	86.1	0.569	
20	20 13C-1,2,3,4,7,8-HxCDD	112011.313	1.205	NO	0.646	9.997	34.64	34.65	1.01	1.01	NO	146.3	73.2	1.06	
21	21 13C-1,2,3,6,7,8-HxCDD	155989.531	1.234	NO	0.777	9.997	34.73	34.75	1.02	1.02	NO	169.6	84.8	0.879	
22	22 13C-1,2,3,7,8,9-HxCDD	123251.621	1.380	NO	0.659	9.997	35.01	35.02	1.02	1.03	NO	157.8	78.9	1.03	
23	23 13C-1,2,3,4,6,7,8-HpCDD	113332.449	1.076	NO	0.534	9.997	38.51	38.53	1.13	1.13	NO	179.1	89.5	1.36	
24	24 13C-OCDD	157492.328	0.867	NO	0.470	9.997	41.79	41.80	1.22	1.22	NO	282.7	70.7	1.98	ľ
25	25 13C-2,3,7,8-TCDF	351606.109	0.720	NO	0.977	9.997	25.14	25.14	0.99	0.99	NO	182.6	91.3	0.861	- 1
26	26 13C-1,2,3,7,8-PeCDF	235824.203	1.466	NO	0.778	9.997	29.96	29.98	1.18	1.18	NO	153.9	76.9	1.50	
27	27 13C-2,3,4,7,8-PeCDF	297258.343	1.562	NO	0.750	9.997	30.95	30.99	1.22	1.22	NO	201.2	101	1.56	
28	28 13C-1,2,3,4,7,8-HxCDF	169905.293	0.517	NO	0.845	9.997	33.77	33.78	0.99	0.99	NO	169.7	84.8	1.98	
29	29 13C-1,2,3,6,7,8-HxCDF	205694.266	0.553	NO	1.03	9.997	33.89	33.90	0.99	0.99	NO	169.2	84.6	1.63	
30	30 13C-2,3,4,6,7,8-HxCDF	184823.559	0.527	NO	0.893	9.997	34.46	34.47	1.01	1.01	NO	174.8	87.4	1.88	
31	31 13C-1,2,3,7,8,9-HxCDF	156543.371	0.490	NO	0.734	9.997	35.37	35.35	1.04	1.03	NO	180.0	90.0	2.28	

Work Order 1903741 Page 166 of 638 Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191218K1\191218K1-12.qld

Last Altered: Friday, December 20, 2019 09:45:49 Pacific Standard Time Friday, December 20, 2019 09:48:42 Pacific Standard Time

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	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	153775.898	0.467	NO	0.754	9.997	37.08	37.09	1.09	1.09	NO	172.2	86.1	1.55	
33	33 13C-1,2,3,4,7,8,9-HpCDF	112007.195	0.428	NO	0.539	9.997	39.11	39.15	1.14	1.15	NO	175.5	87.7	2.17	
34	34 13C-OCDF	221963.953	0.891	NO	0.593	9.997	41.97	41.99	1.23	1.23	NO	316.3	79.1	1.29	
35	35 37CI-2,3,7,8-TCDD	100285.305			1.07	9.997	26.15	26.15	1.03	1.03	NO	70.03	87.5	0.126	
36	36 13C-1,2,3,4-TCDD	267882.633	0.803	NO	1.00	9.997	25.45	25.43	1.00	1.00	NO	200.1	100	0.790	
37	37 13C-1,2,3,4-TCDF	394094.422	0.760	NO	1.00	9.997	23.55	23.52	1.00	1.00	NO	200.1	100	0.841	
38	38 13C-1,2,3,4,6,9-HxCDF	236938.274	0.508	NO	1.00	9.997	34.16	34.16	1.00	1.00	NO	200.1	100	1.68	
39	39 Total Tetra-Dioxins				0.925	9.997	24.62		0.00		NO	0.0000		0.123	0.1586
40	40 Total Penta-Dioxins				0.905	9.997	29.96		0.00		NO			0.0950	
41	41 Total Hexa-Dioxins				0.967	9.997	33.63		0.00		NO	0.1610		0.128	0.2542
42	42 Total Hepta-Dioxins				1.04	9.997	38.80		0.00		NO	0.4901		0.175	0.4901
43	43 Total Tetra-Furans				0.938	9.997	23.61		0.00		NO			0.0422	
44	44 1st Func. Penta-Furans				0.976	9.997	27.04		0.00		NO			0.0273	
45	45 Total Penta-Furans				0.976	9.997	29.27		0.00		NO			0.0354	
46	46 Total Hexa-Furans				1.18	9.997	33.56		0.00		NO	0.0000		0.0243	0.02247
47	47 Total Hepta-Furans				1.13	9.997	37.83		0.00		NO			0.0505	

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Quantify Totals Report MassLynx V4.2 SCN982

Page 1 of 2

Vista Analytical Laboratory

Dataset:

Printed:

U:\VG11.PRO\Results\191218K1\191218K1-12.qld

Last Altered:

Friday, December 20, 2019 09:45:49 Pacific Standard Time Friday, December 20, 2019 09:48:51 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015

Tetra-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 39 Total Tetra-Dioxins	0.00e0	2.44e5	1.404	YES	24.62	23.72	0.0000	0.1586

Penta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

Hexa-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 41 Total Hexa-Dioxins	1.02e2	0.00e0	1.257	NO	33.63	33.19	0.1610	0.1610
2 41 Total Hexa-Dioxins	0.00e0	0.00e0	0.769	YES	33.63	33.17	0.0000	0.09321

Hepta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 42 Total Hepta-Dioxins	2.88e2	1.13e5	1.139	NO	38.80	37.51	0.4901	0.4901

Tetra-Furans

_									
П	# Name	Area	a IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
- 1	<i>"</i> '''	,			****		•••	00110.	0
14									

Penta-Furans function 1

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1									

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-12.qld

Last Altered: Printed:

Friday, December 20, 2019 09:45:49 Pacific Standard Time

Friday, December 20, 2019 09:48:51 Pacific Standard Time

Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015

Penta-Furans

Γ	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
ŀ	1								

Hexa-Furans

[# N:	ame Are	a IS	Area F	₹A	Y/N I	Pred.RT	RT	Conc.	EMPC
-	1 . 46 To	otal Hexa-Furans 0.00e	0 0	.00e0	0.433	YES	33.56	32.80	0.0000	0.0079
ı	2 14 1,	2,3,7,8,9-HxCDF 1.97e	1 1	.57e5	2.611	YES	35.35	35.37	0.0000	0.01454

Hepta-Furans

	# Name	Area IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								

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Last Altered: Printed:

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21.00

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22.00

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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015

23.50

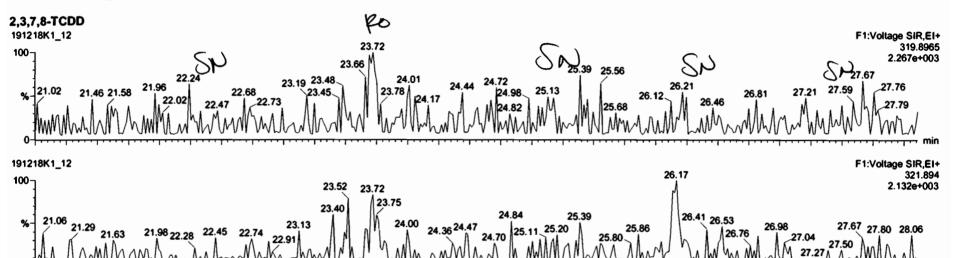
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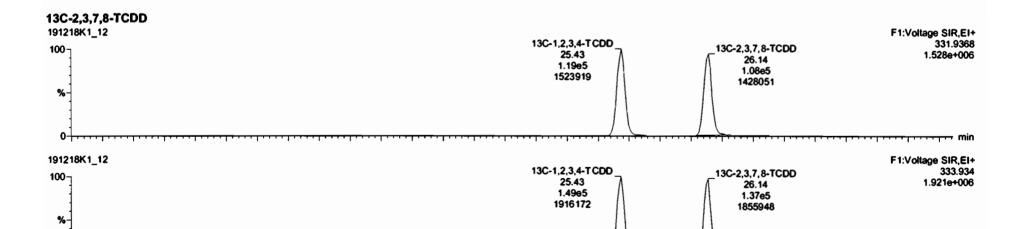
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24.00

23.00

23.00





24.50

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25.00

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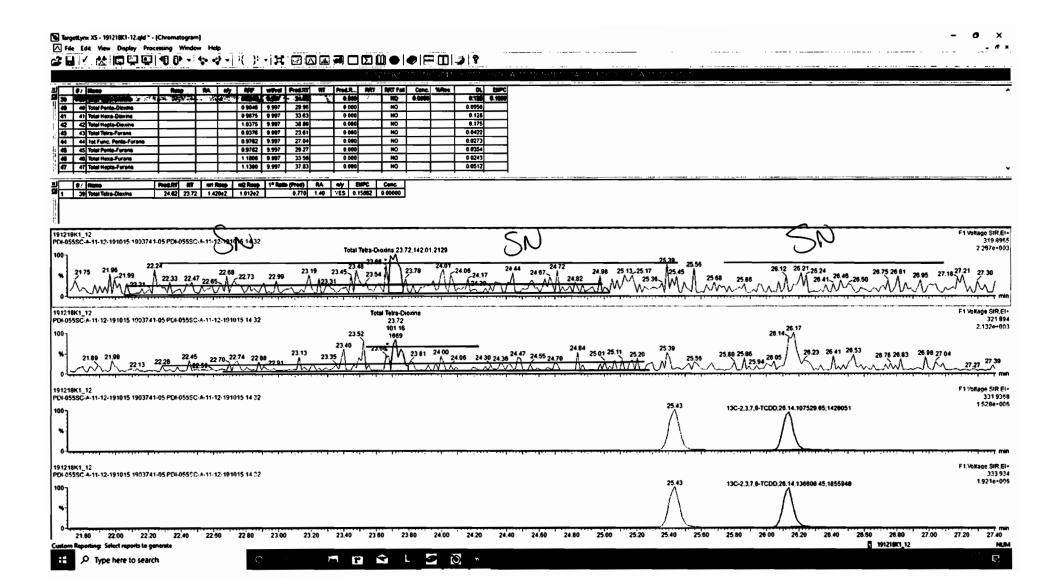
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28.00

- min

28.00

24.50

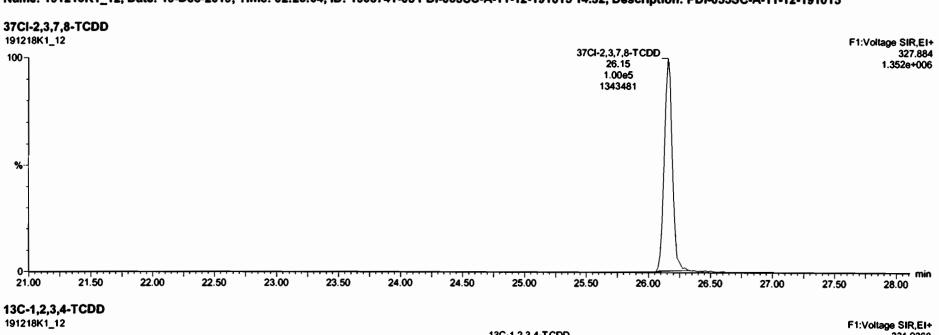


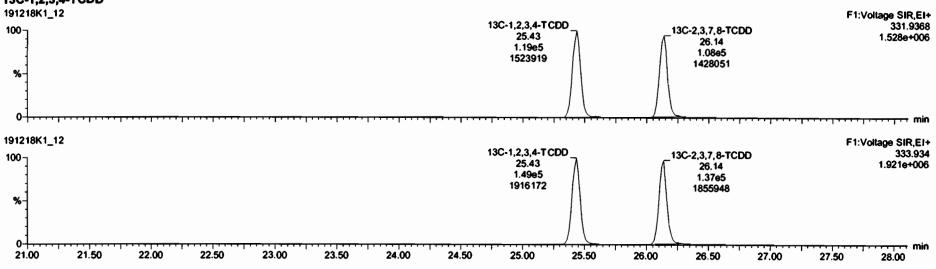
Work Order 1903741 Page 171 of 638



Thursday, December 19, 2019 07:49:20 Pacific Standard Time

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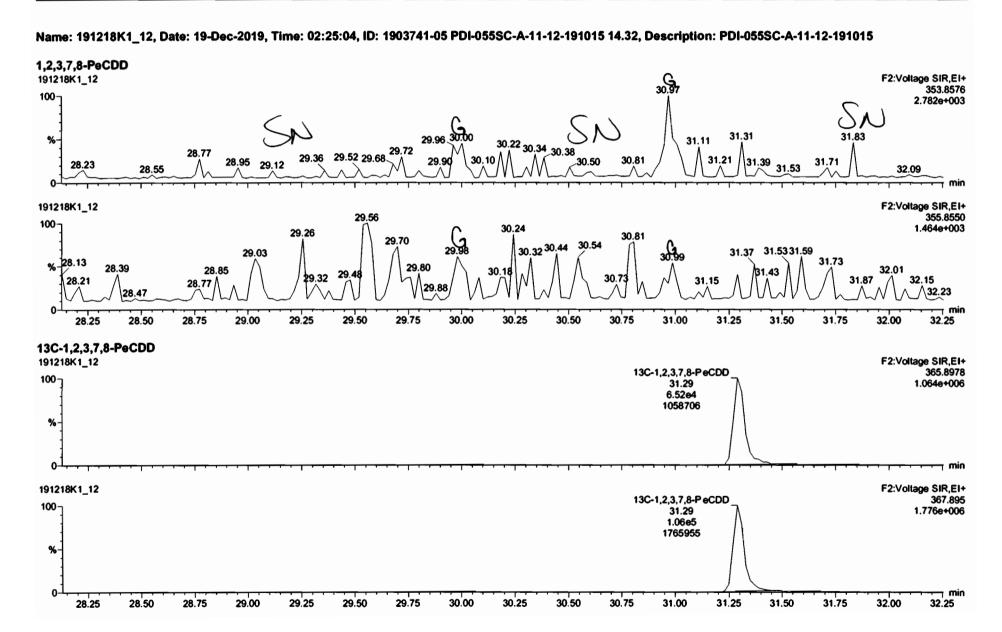


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Last Altered: Printed:

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time



Work Order 1903741

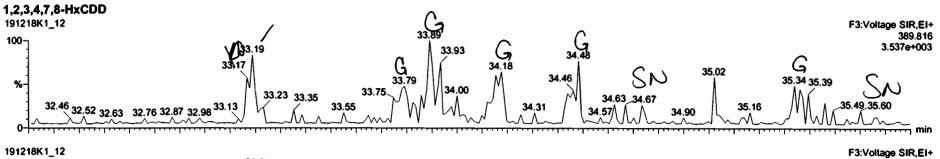
Page 173 of 638

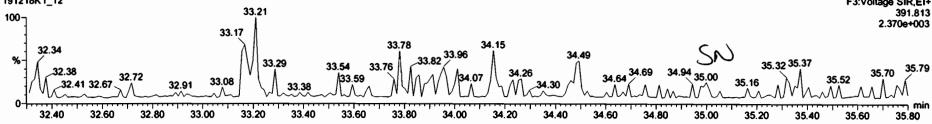
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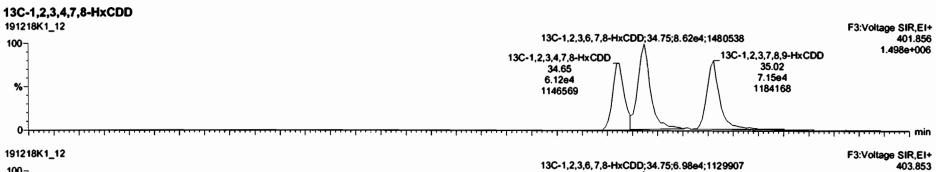
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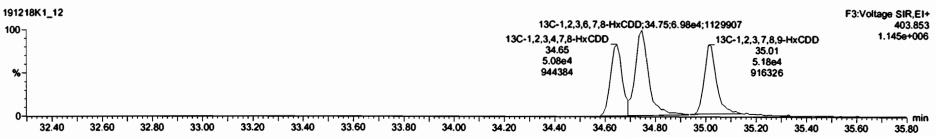
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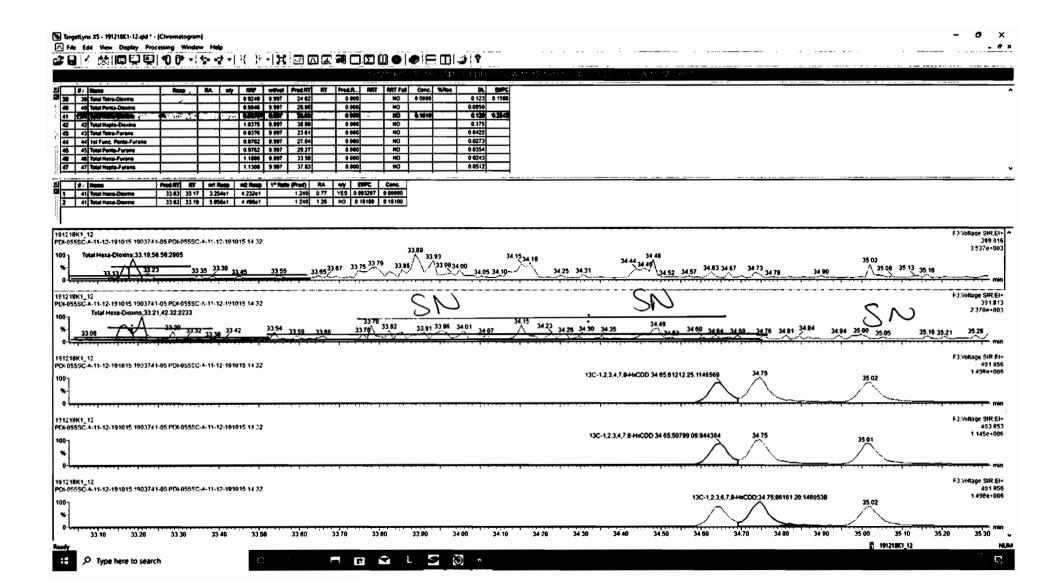








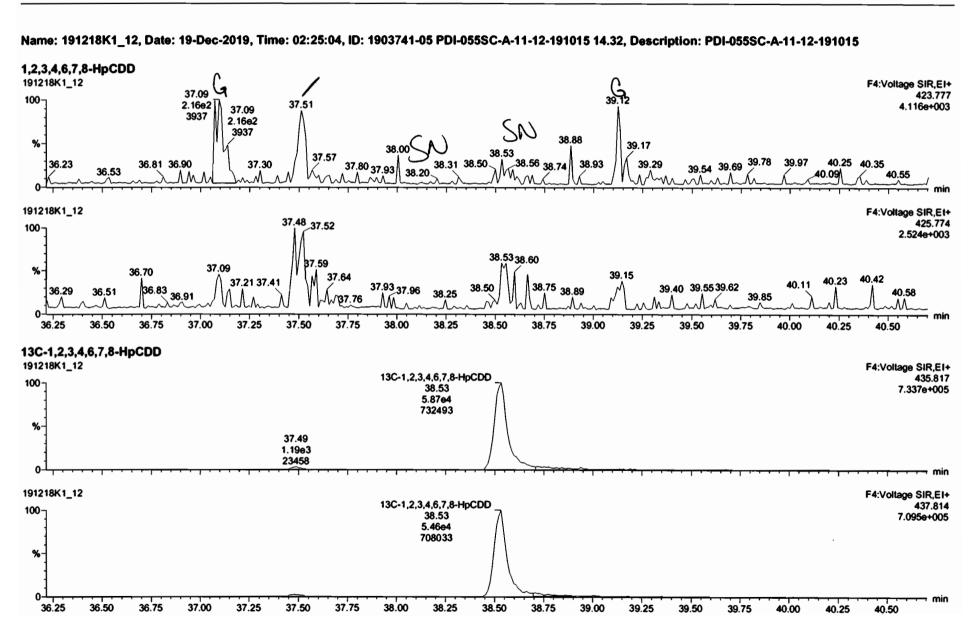
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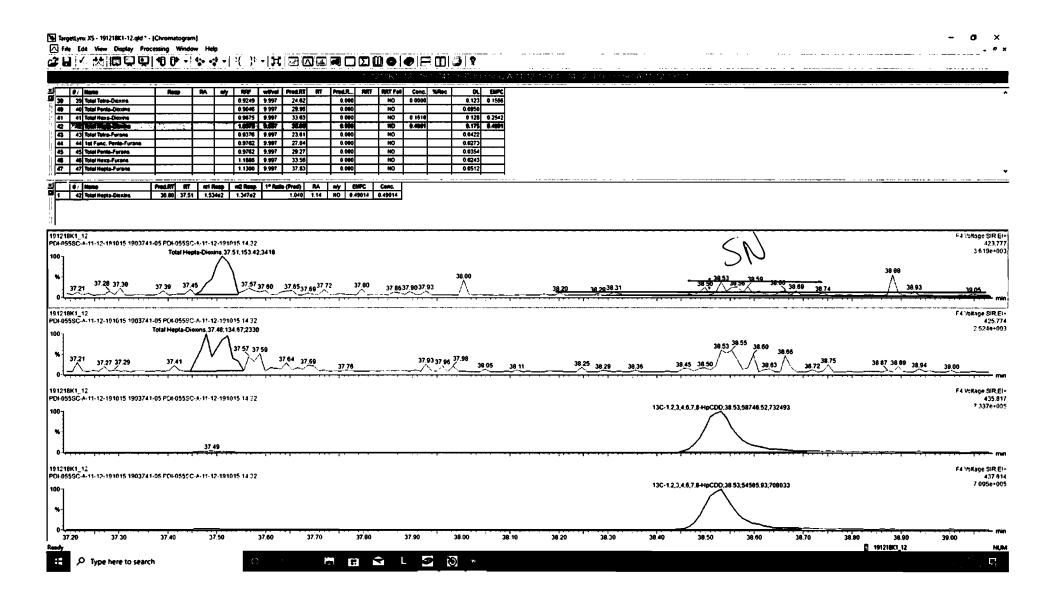
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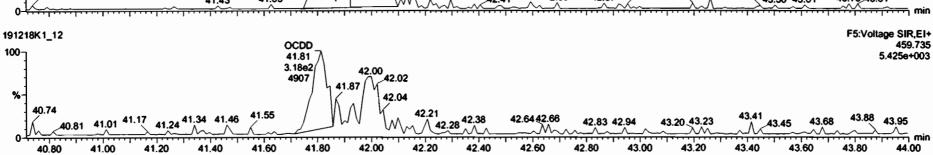
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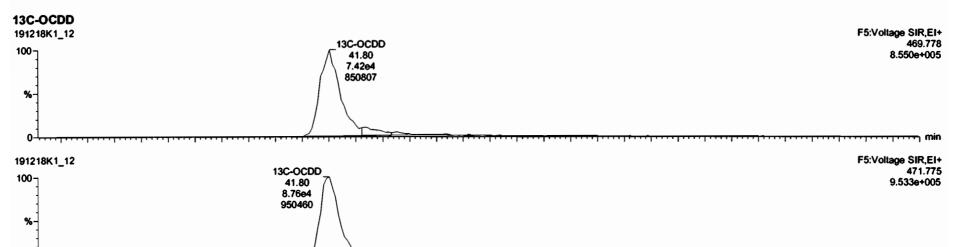


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42.40

41.60

41.40

40.80

41.00

41.20

41.80

42.00

42.20

42.60

43.00

43.20

43.40

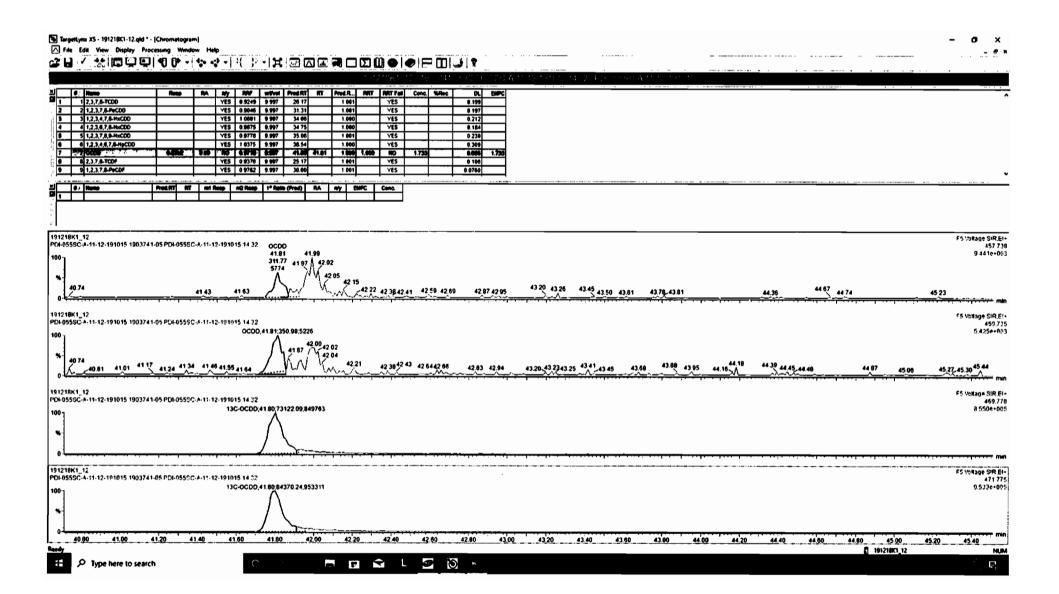
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43.80

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min ా

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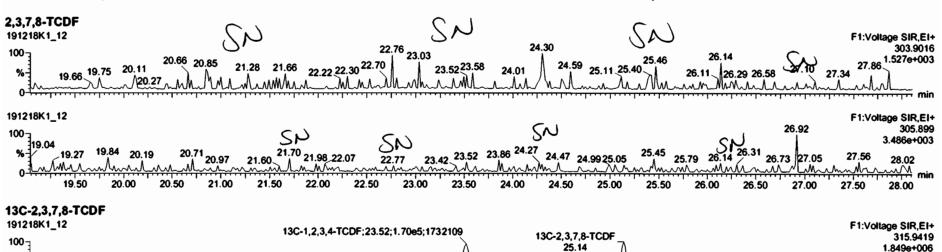
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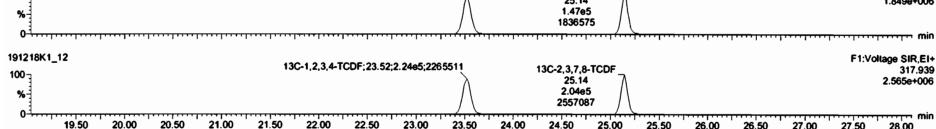
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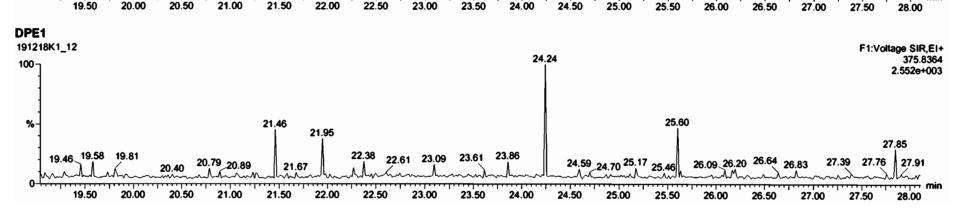
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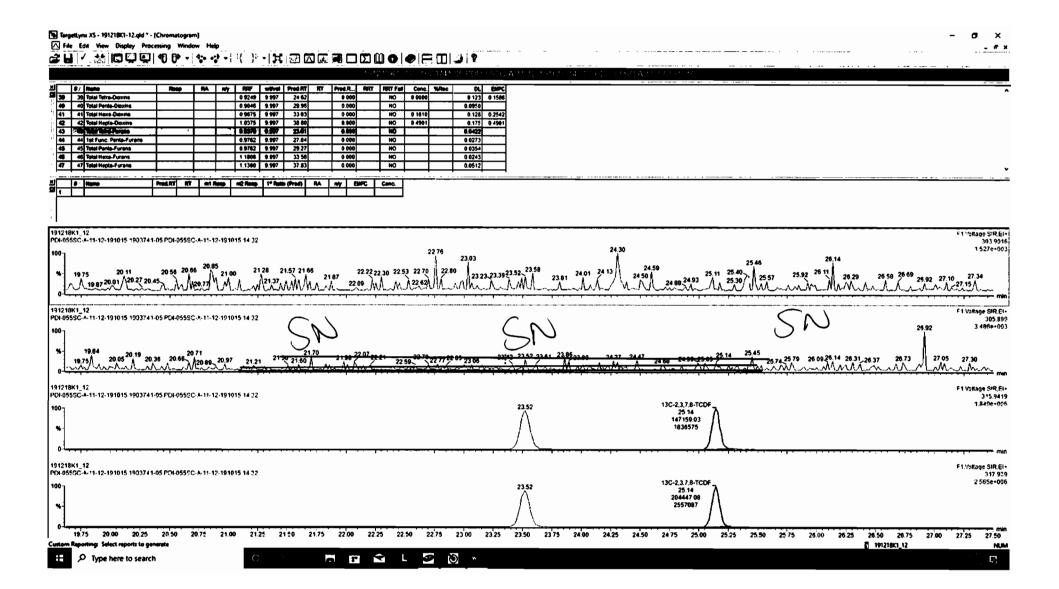
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Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015









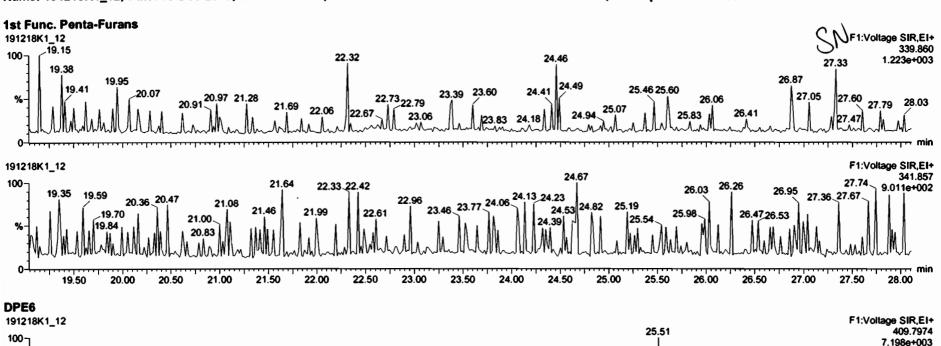
Work Order 1903741 Page 181 of 638

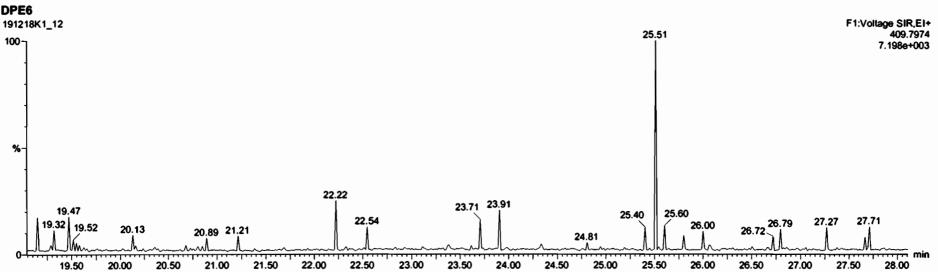
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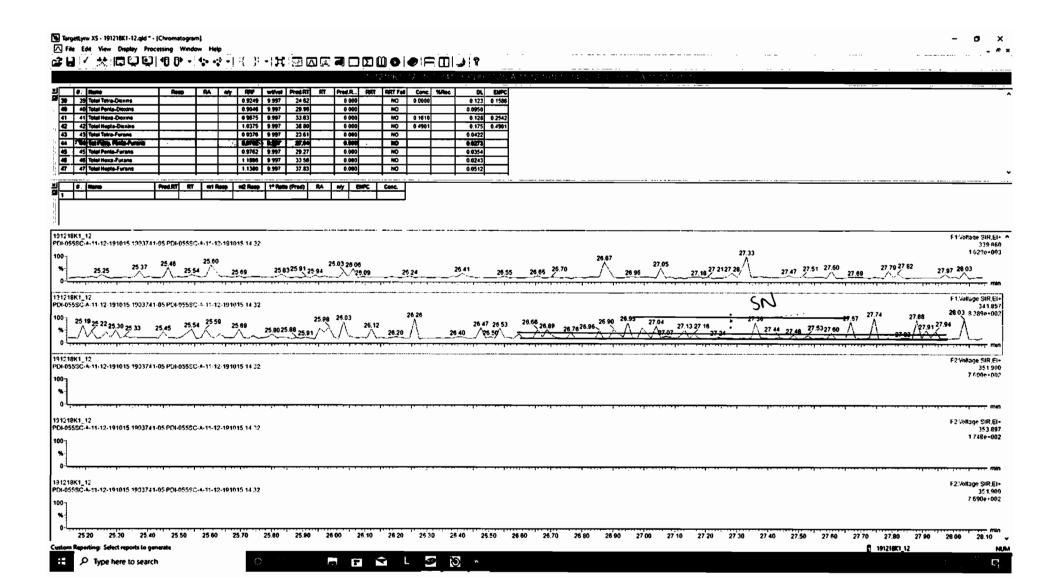
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015







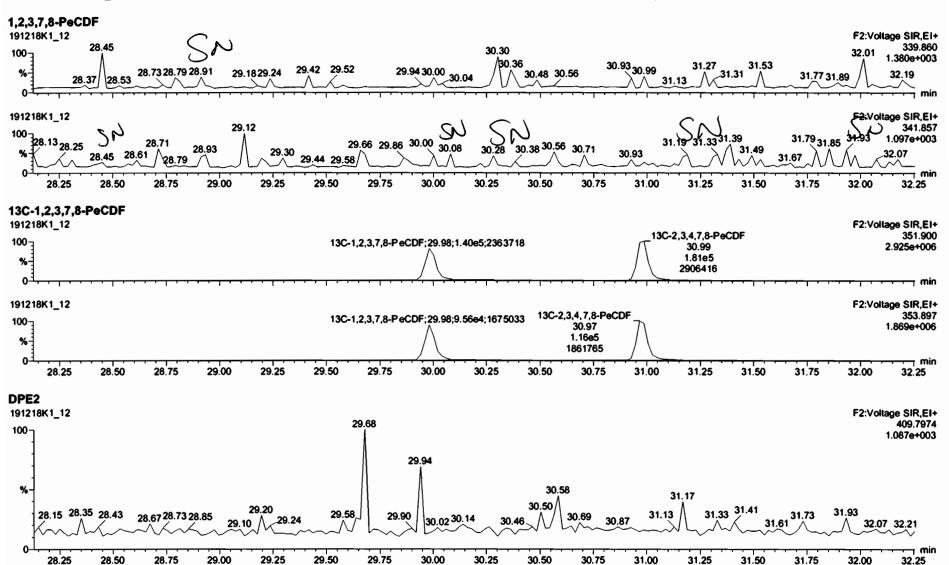
Work Order 1903741 Page 183 of 638

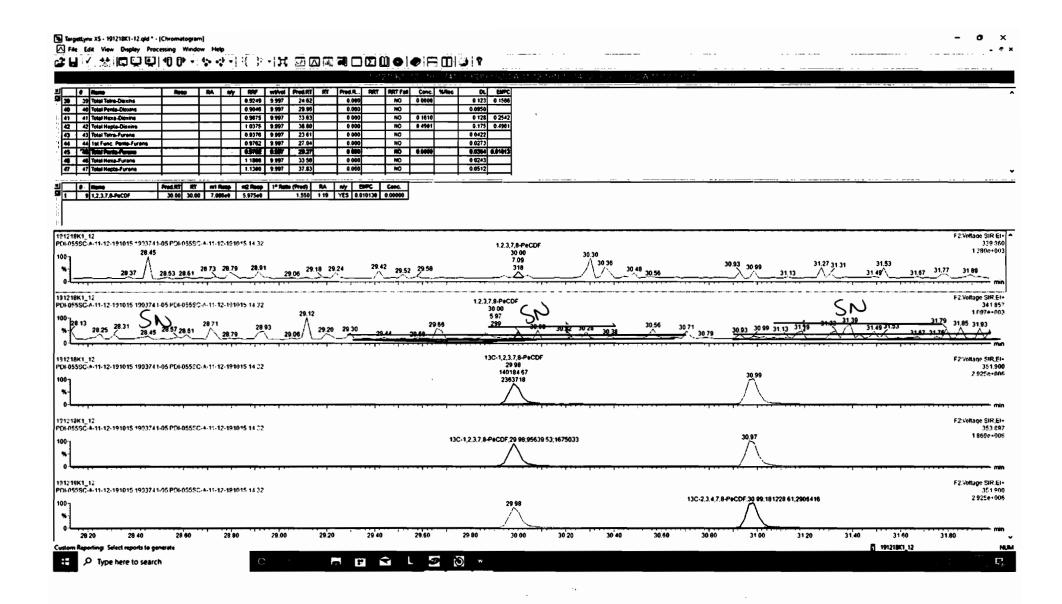
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015



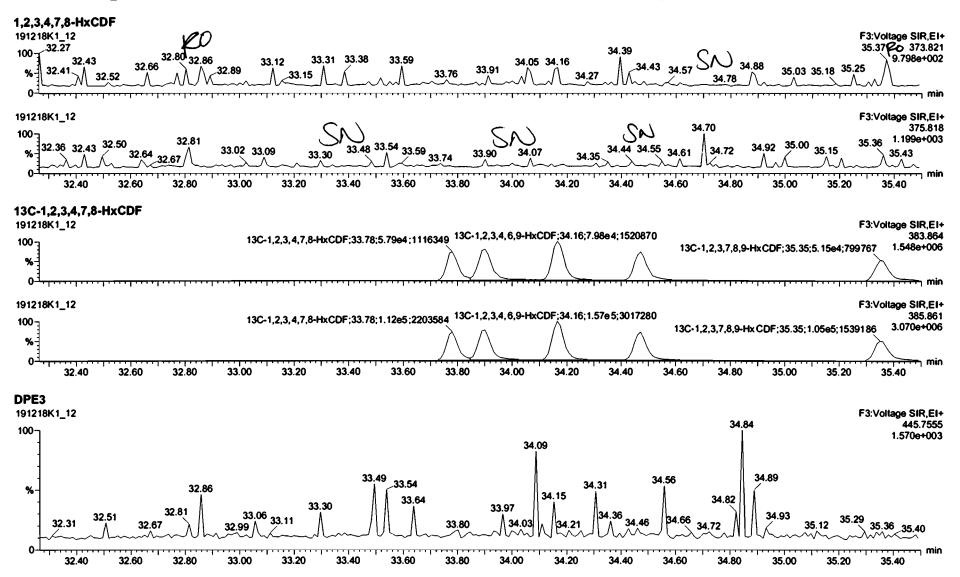


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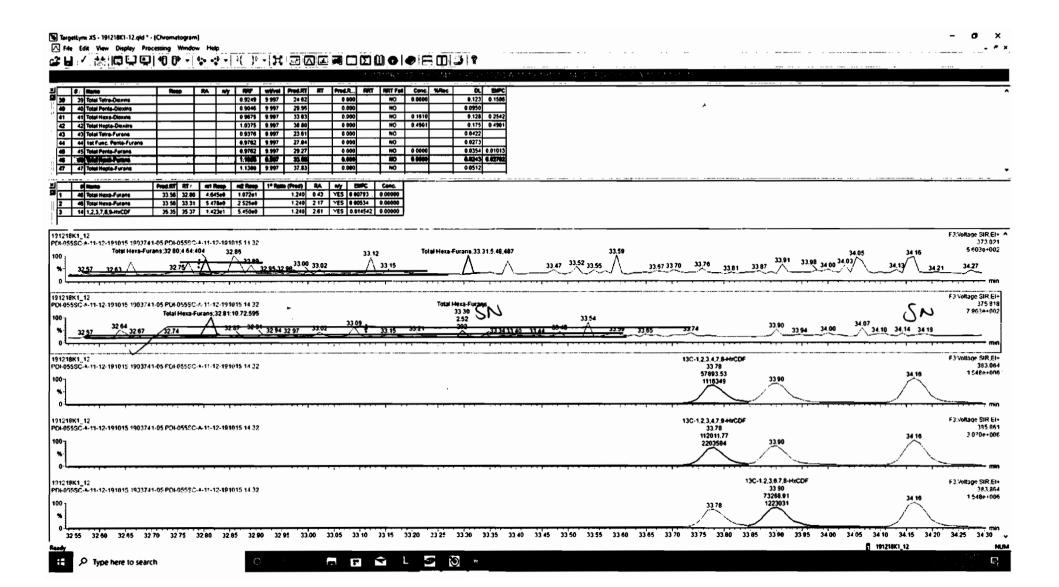
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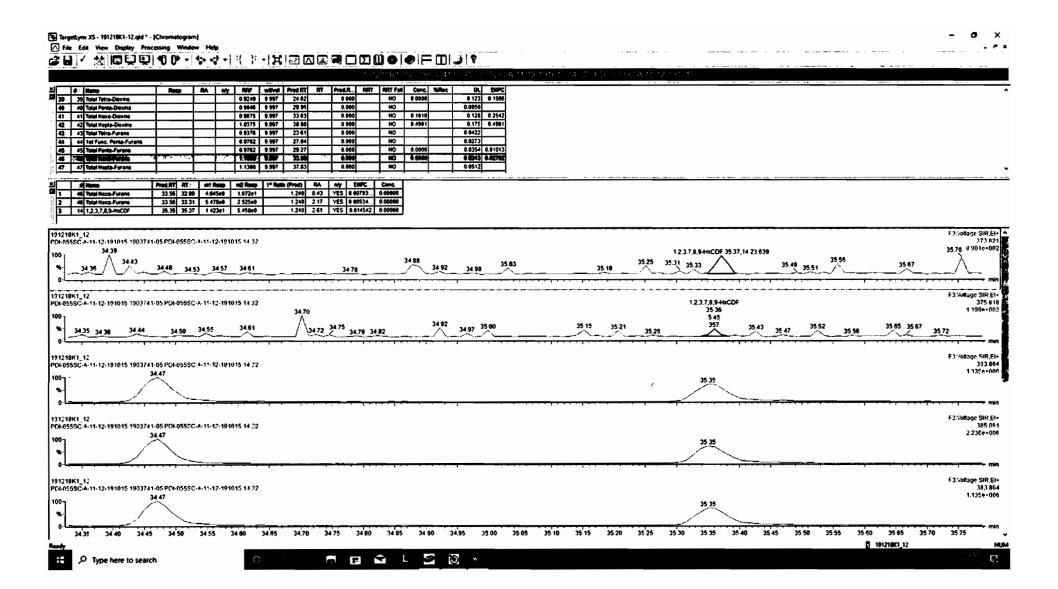
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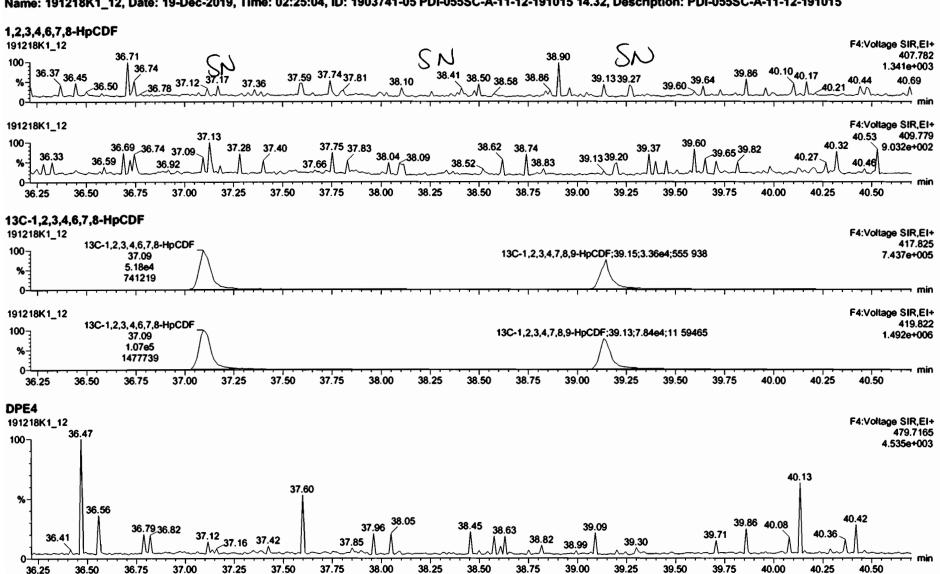
Work Order 1903741 Page 188 of 638

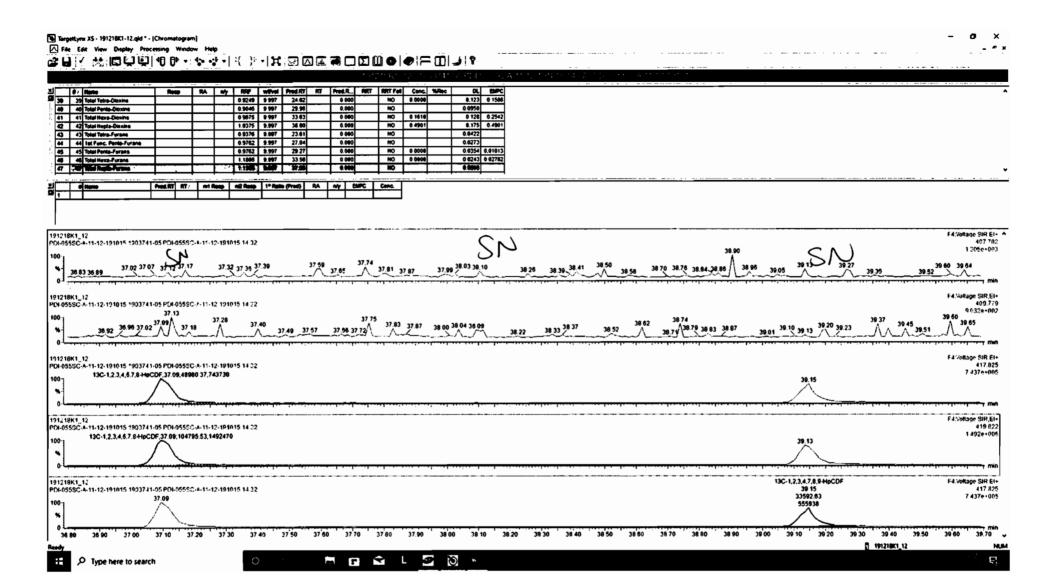
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015



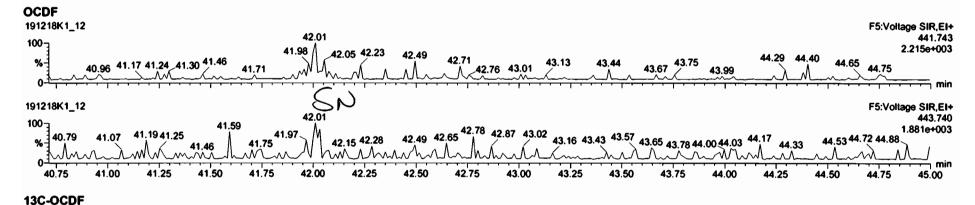


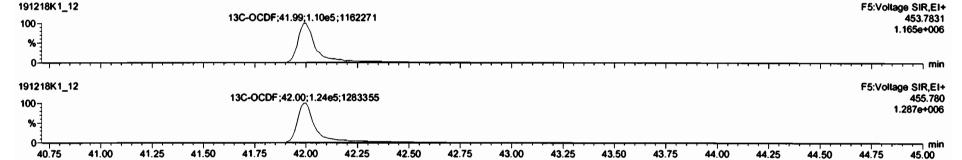
Work Order 1903741 Page 190 of 638

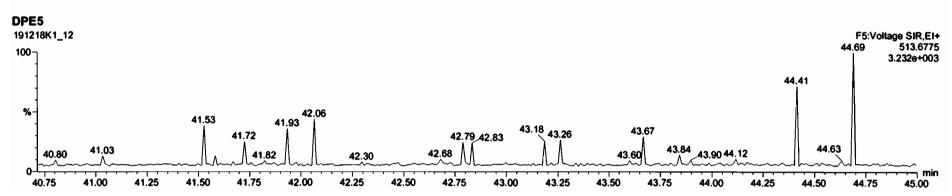
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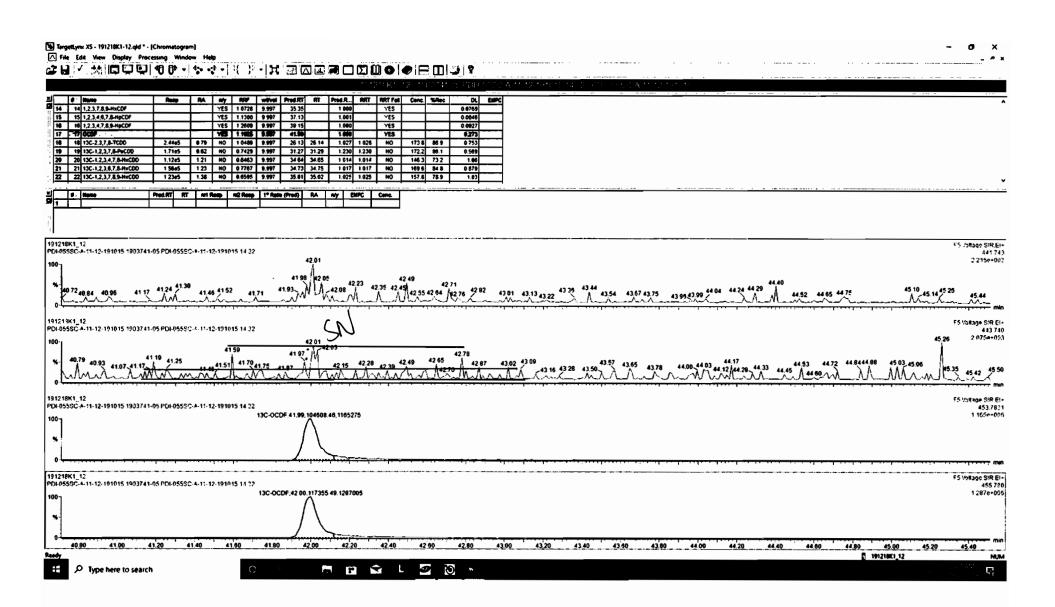
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Work Order 1903741 Page 191 of 638

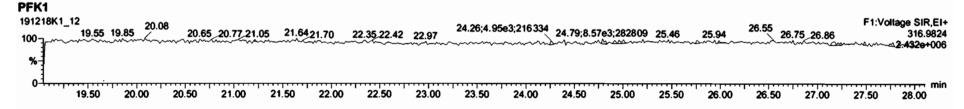


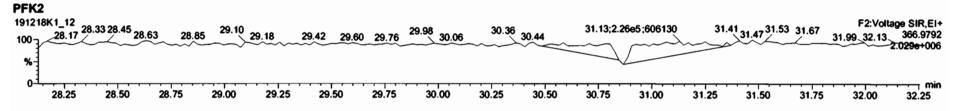
Work Order 1903741 Page 192 of 638

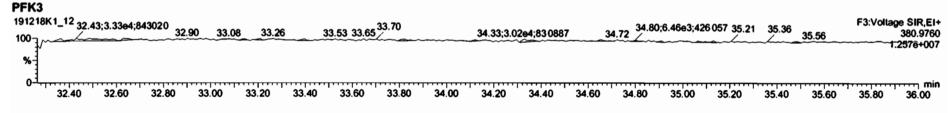
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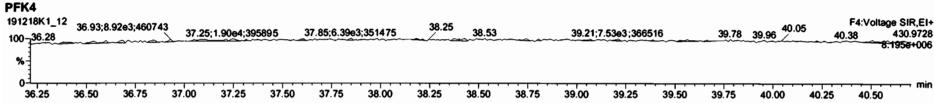
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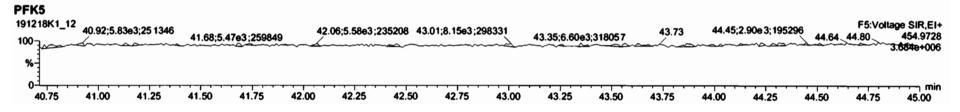
Name: 191218K1_12, Date: 19-Dec-2019, Time: 02:25:04, ID: 1903741-05 PDI-055SC-A-11-12-191015 14.32, Description: PDI-055SC-A-11-12-191015











MassLynx V4.2 SCN982

Page 1 of 2

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-13.qld

Last Altered: Printed:

Friday, December 20, 2019 10:18:15 Pacific Standard Time Friday, December 20, 2019 10:21:43 Pacific Standard Time

GRB 12/20/17 CT12/23/15

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5 1613vg11-5-7-19.cdb 08 May 2019 06:55:45

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2	2 1,2,3,7,8-PeCDD			YES	0.905	10.119	/ 31.31		1.00		YES			0.105	
3	3 1,2,3,4,7,8-HxCDD			YES	1.07	10.119	34.66		1.00		YES			0.165	
4	4 1,2,3,6,7,8-HxCDD			YES	0.967	10.119	34.75		1.00		YES			0.151	
5	5 1,2,3,7,8,9-HxCDD			YES	0.978	10.119	35.06		1.00		YES			0.176	
6	6 1,2,3,4,6,7,8-HpCDD	222.005	1.139	NO	1.04	10.119	38.54	38.54	1.00	1.00	NO	0.2259		0.0850	0.2259
7	7 OCDD	1580.937	1.088	YES	0.972	10.119	41.79	41.81	1.00	1.00	NO	2,003		0.423	1.813
8	8 2,3,7,8-TCDF			YES	0.938	10.119	25.18		1.00		YES	•		0.0663	
9	9 1,2,3,7,8-PeCDF			YES	0.976	10.119	30.00		1.00		YES			0.0415	
10	10 2,3,4,7,8-PeCDF			YES	1.00	10.119	31.00		1.00		YES			0.0397	
11	11 1,2,3,4,7,8-HxCDF			YES	1.24	10.119	33.78		1.00		YES			0.0362	
12	12 1,2,3,6,7,8-HxCDF			YES	1.10	10.119	33.91		1.00		YES			0.0370	
13	13 2,3,4,6,7,8-HxCDF			YES	1.18	10.119	34.51		1.00		YES	_		0.0404	
14	14 1,2,3,7,8,9-HxCDF	26.831	2.319	YES	1.07	10.119	35.36	35.36	1.00	1.00	NO	0.01802		0.9 25 6	0.01081
15	15 1,2,3,4,6,7,8-HpCDF			YES	1.13	10.119	37.13		1.00		YES			0.0407	
16	16 1,2,3,4,7,8,9-HpCDF			YES	1.26	10.119	39.15		1.00		YES			0.0607	
17	17 OCDF			YES	1.10	10.119	41.99		1.00		YES			0.148	
18	18 13C-2,3,7,8-TCDD	392875.000	0.781	NO	1.05	10.119	26.15	26.14	1.03	1.03	NO	183.9	93.0	0.508	
19	19 13C-1,2,3,7,8-PeCDD	302037.172	0.656	NO	0.743	10.119	31.29	31.29	1.23	1.23	NO	199.6	101	0.831	
20	20 13C-1,2,3,4,7,8-HxCDD	220230.493	1.243	NO	0.646	10.119	34.64	34.65	1.01	1.01	NO	148.8	75.3	1.08	
21	21 13C-1,2,3,6,7,8-HxCDD	314446.453	1.164	NO	0.777	10.119	34.73	34.75	1.02	1.02	NO	176.8	89.4	0.902	
22	22 13C-1,2,3,7,8,9-HxCDD	264654.203	1.096	NO	0.659	10.119	35.01	35.02	1.02	1.03	NO	175.2	88.7	1.06	
23	23 13C-1,2,3,4,6,7,8-HpCDD	187242.180	1.079	NO	0.534	10.119	38.51	38.53	1.13	1.13	NO	153.1	77.4	0.917	
24	24 13C-OCDD	321027.922	0.883	NO	0.470	10.119	41.79	41.79	1.22	1.22	NO	298.0	75.4	1.43	
25	25 13C-2,3,7,8-TCDF	553058.938	0.721	NO	0.977	10.119	25.16	25.16	0.99	0.99	NO	164.5	83.2	0.464	
26	26 13C-1,2,3,7,8-PeCDF	473543.079	1.454	NO	0.778	10.119	29.98	29.98	1.18	1.18	NO	177.0	89.5	1.18	
27	27 13C-2,3,4,7,8-PeCDF	452508.015	1.556	NO	0.750	10.119	30.97	30.97	1.22	1.22	NO	175.4	88.7	1.22	
28	28 13C-1,2,3,4,7,8-HxCDF	330971.672	0.530	NO	0.845	10.119	33.77	33.78	0.99	0.99	NO	171.0	86.5	1.47	
29	29 13C-1,2,3,6,7,8-HxCDF	418298.485	0.558	NO	1.03	10.119	33.89	33.90	0.99	0.99	NO	177.9	90.0	1.21	
30	30 13C-2,3,4,6,7,8-HxCDF	355254.625	0.542	NO	0.893	10.119	34.46	34.47	1.01	1.01	NO	173.8	87.9	1.40	
31	31 13C-1,2,3,7,8,9-HxCDF	308632.454	0.531	NO	0.734	10.119	35.37	35.36	1.04	1.04	NO	183.6	92.9	1.70	

Work Order 1903741 Page 194 of 638 Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191218K1\191218K1-13.qld

Last Altered: Friday, December 20, 2019 10:18:15 Pacific Standard Time Friday, December 20, 2019 10:21:43 Pacific Standard Time

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015

	# Name	Abs.Resp	RA	n/y	RRF	wt./vol.	Pred.RT	RT	Pred.RRT	RRT	Check RRT	Conc.	%Rec	DL	EMPC
32	32 13C-1,2,3,4,6,7,8-HpCDF	302801.360	0.412	NO	0.754	10.119	37.08	37.09	1.09	1.09	NO	175.3	88.7	0.950	
33	33 13C-1,2,3,4,7,8,9-HpCDF	188028.367	0.449	NO	0.539	10.119	39.11	39.15	1.14	1.15	NO	152.3	77.1	1.33	
34	34 13C-OCDF	435708.562	0.873	NO	0.593	10.119	41.97	41.99	1.23	1.23	NO	321.1	81.2	1.08	
35	35 37CI-2,3,7,8-TCDD	154697.234			1.07	10.119	26.17	26.17	1.03	1.03	NO	71.02	89.8	0.121	
36	36 13C-1,2,3,4-TCDD	402574.468	0.777	NO	1.00	10.119	25.45	25.45	1.00	1.00	NO	197.7	100	0.533	
37	37 13C-1,2,3,4-TCDF	679988.062	0.748	NO	1.00	10.119	23.55	23.54	1.00	1.00	NO	197.7	100	0.453	
38	38 13C-1,2,3,4,6,9-HxCDF	452628.860	0.568	NO	1.00	10.119	34.16	34.16	1.00	1.00	NO	197.7	100	1.25	
39	39 Total Tetra-Dioxins				0.925	10.119	24.62		0.00		NO			0.0877	
40	40 Total Penta-Dioxins				0.905	10.119	29.96		0.00		NO			0.0394	
41	41 Total Hexa-Dioxins				0.967	10.119	33.63		0.00		NO	0.2634		0.107	0.2634
42	42 Total Hepta-Dioxins				1.04	10.119	38.80		0.00		NO	0.6991		0.0850	0.6991
43	43 Total Tetra-Furans				0.938	10.119	23.61		0.00		NO			0.0295	
44	44 1st Func. Penta-Furans				0.976	10.119	27.04		0.00		NO			0.0130	
45	45 Total Penta-Furans				0.976	10.119	29.27		0.00		NO	0.0000		0.0207	0.01301
46	46 Total Hexa-Furans				1.18	10.119	33.56		0.00		NO	0.0000		0.0255	0.01081
47	47 Total Hepta-Furans				1.13	10.119	37.83		0.00		NO	0.01713		0.0294	0.01713

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Quantify Totals Report MassLynx V4.2 SCN982

Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-13.qld

Last Altered:

Friday, December 20, 2019 10:18:15 Pacific Standard Time

Printed:

Friday, December 20, 2019 10:21:54 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015

Page 1 of 2

Tetra-Dioxins

Ī	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
ŀ	1								

Penta-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1								1

Hexa-Dioxins

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 41 Total Hexa-Dioxins	3.43e2	0.00e0	1.239	NO	33.63	33.19	0.2634	0.2634

Hepta-Dioxins

	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	6 1,2,3,4,6,7,8-HpCDD	2.22e2	1.87e5	1.139	NO	38.54	38.54	0.2259	0.2259
2	42 Total Hepta-Dioxins	4.65e2	1.87e5	1.142	NO	38.80	37.49	0.4732	0.4732

Tetra-Furans

	# Name	Area IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
	# Hallo	71100 107100	101	1714	1100.111	• • • • • • • • • • • • • • • • • • • •	Cono.	
11								- 1

Penta-Furans function 1

-	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
	1								

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Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-13.qld

Last Altered:

Friday, December 20, 2019 10:18:15 Pacific Standard Time

Printed: Friday, December 20, 2019 10:21:54 Pacific Standard Time

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015

Penta-Furans

# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1 45 Total Penta-Furans	0.00e0	0.00e0	0.938	YEŞ	29.27	29.68	0.0000	0.01301

Hexa-Furans

ſ	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
	1 14 1,2,3,7,8,9-HxC	DF 2.68e1	3.09e5	2.319	YES	35.36	35.36	0.0000	0.01081

Hepta-Furans

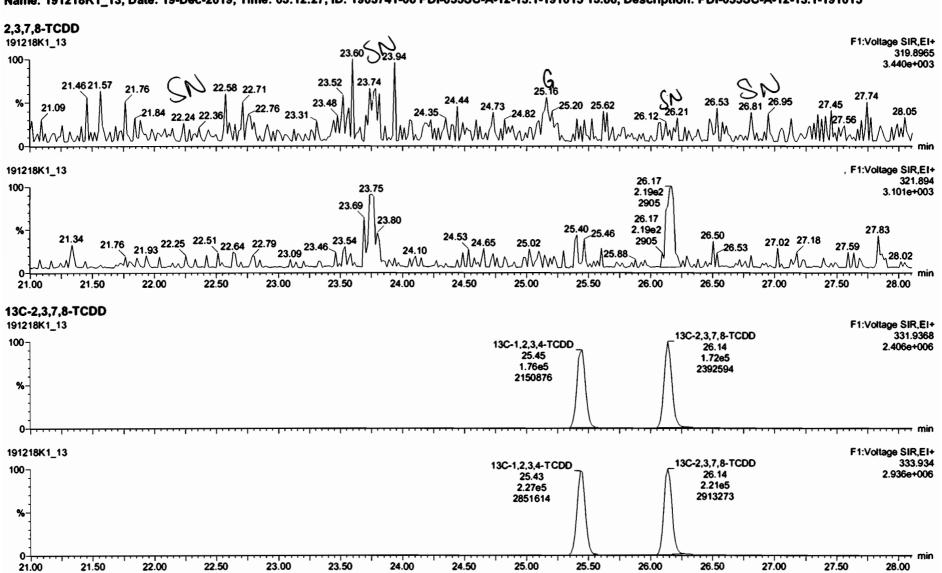
	# Name	Area	IS Area	RA	Y/N	Pred.RT	RT	Conc.	EMPC
1	47 Total Hepta-Furans	2.40e1	0.00e0	1.140	NO	37.83	37.71	0.01713	0.01713

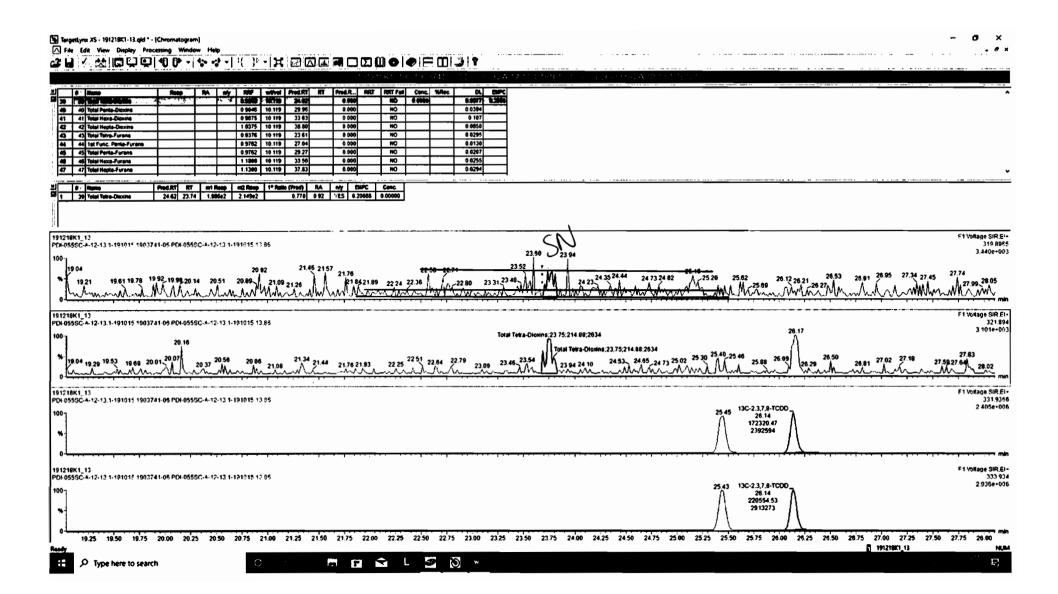
Work Order 1903741 Page 197 of 638

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Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time







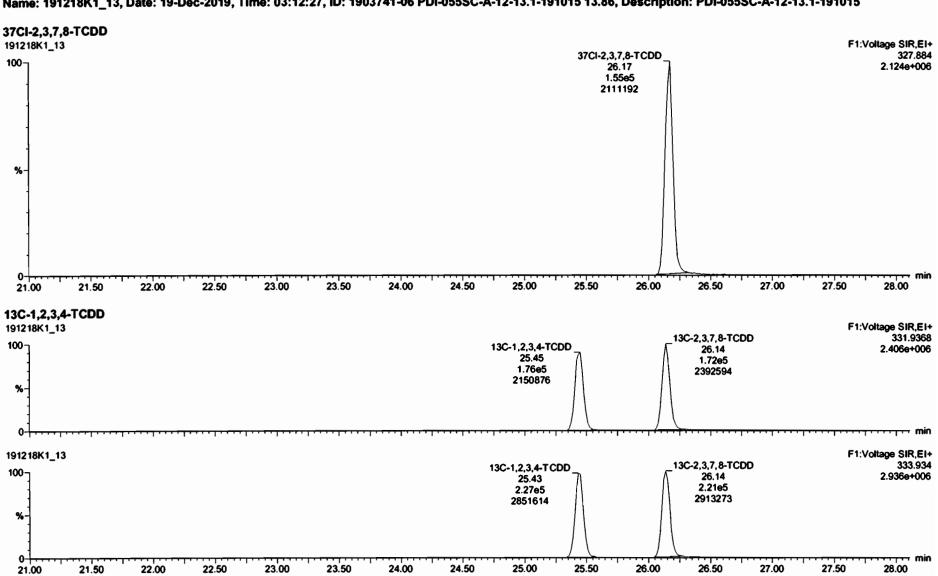
Work Order 1903741 Page 199 of 638

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Last Altered: Printed:

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

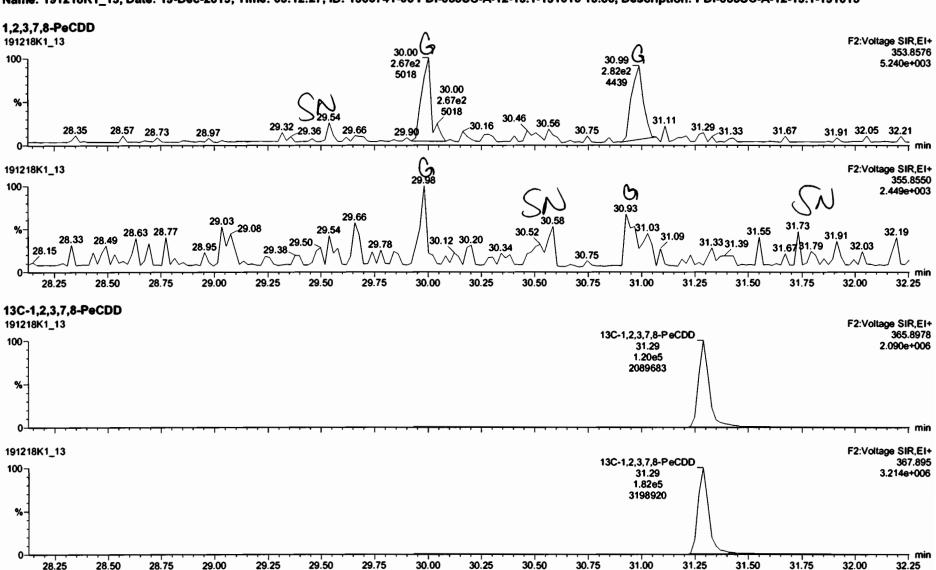


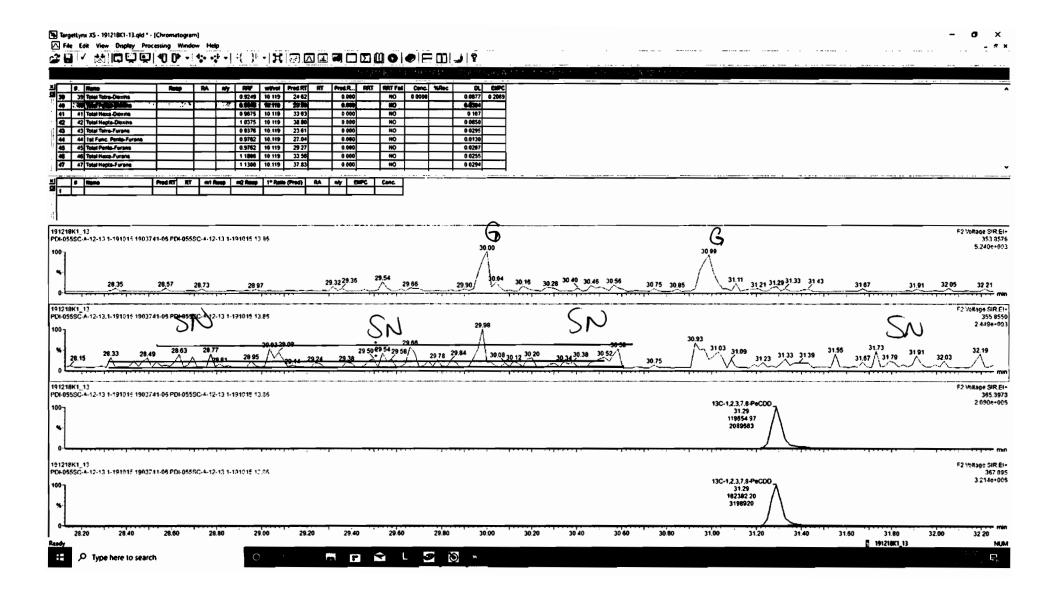


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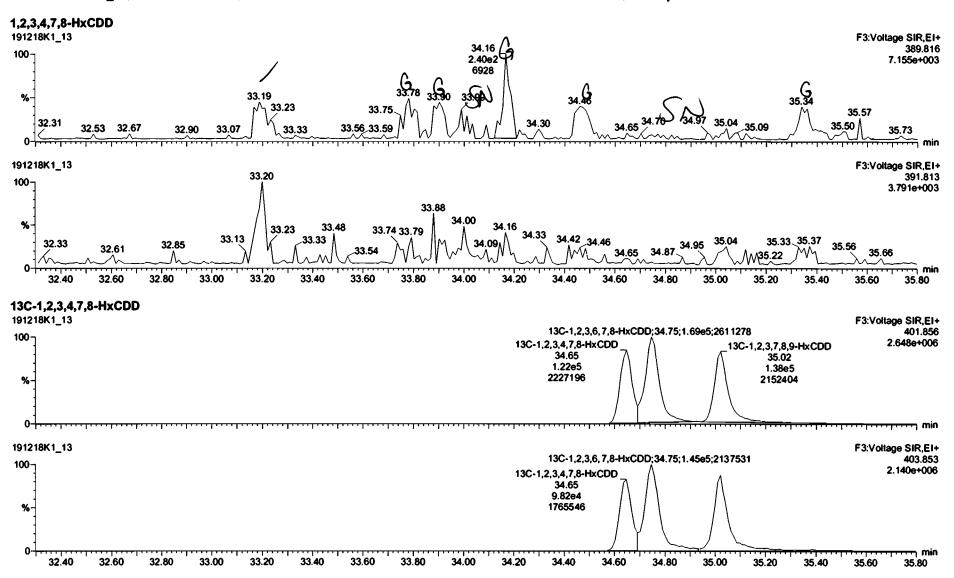


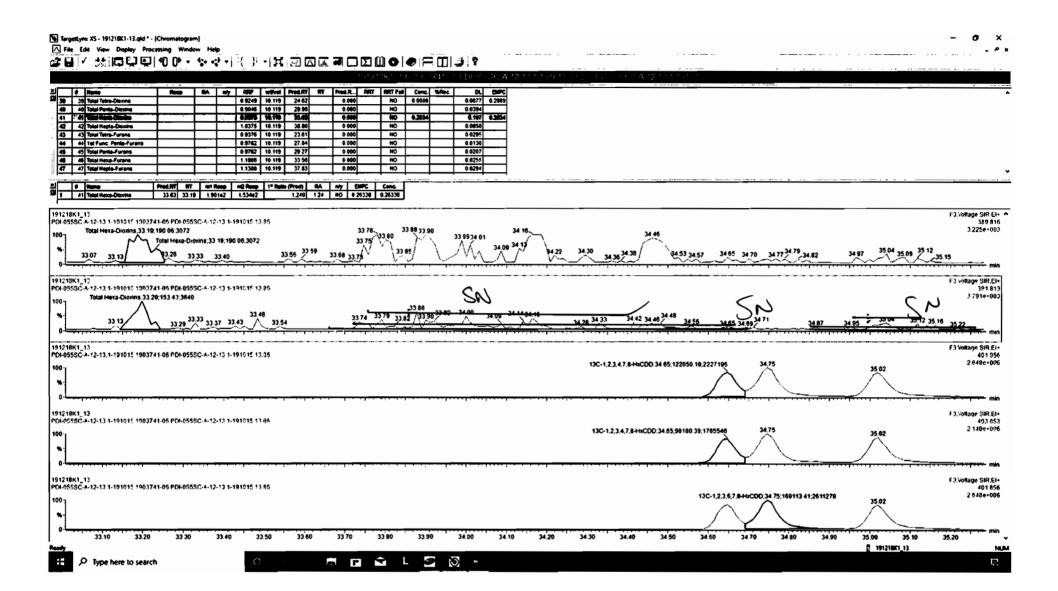
Work Order 1903741 Page 202 of 638

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Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015





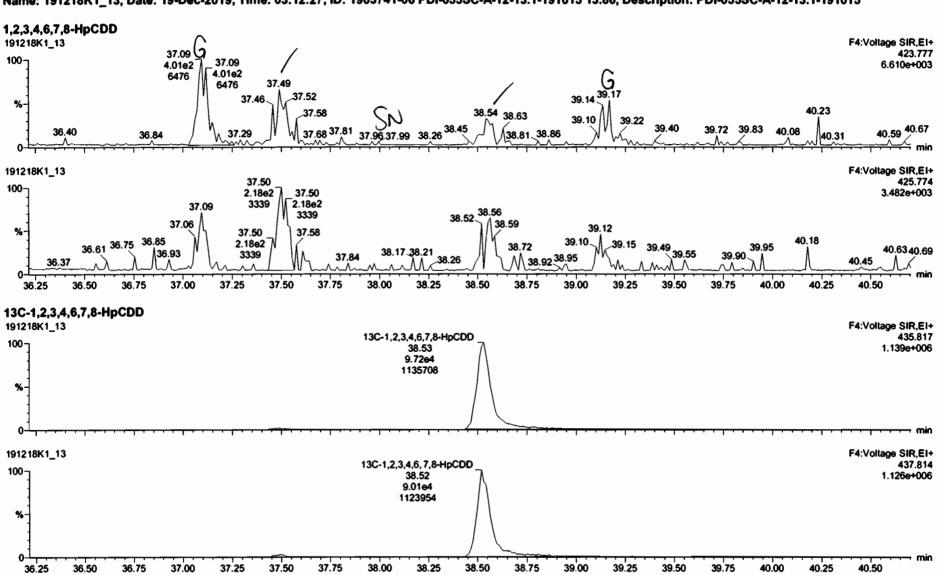
Work Order 1903741 Page 204 of 638

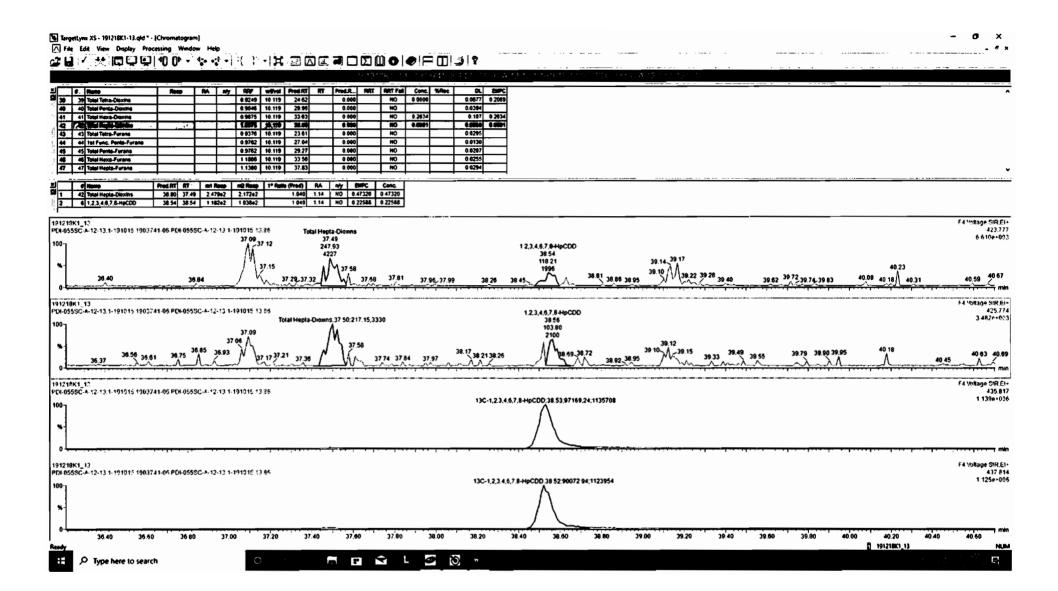
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Last Altered: Printed:

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1 13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015



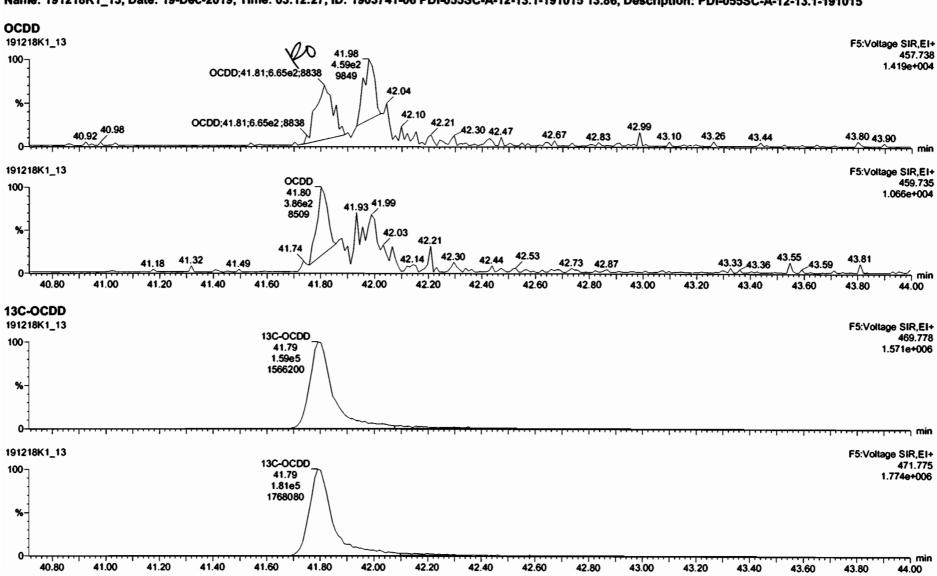


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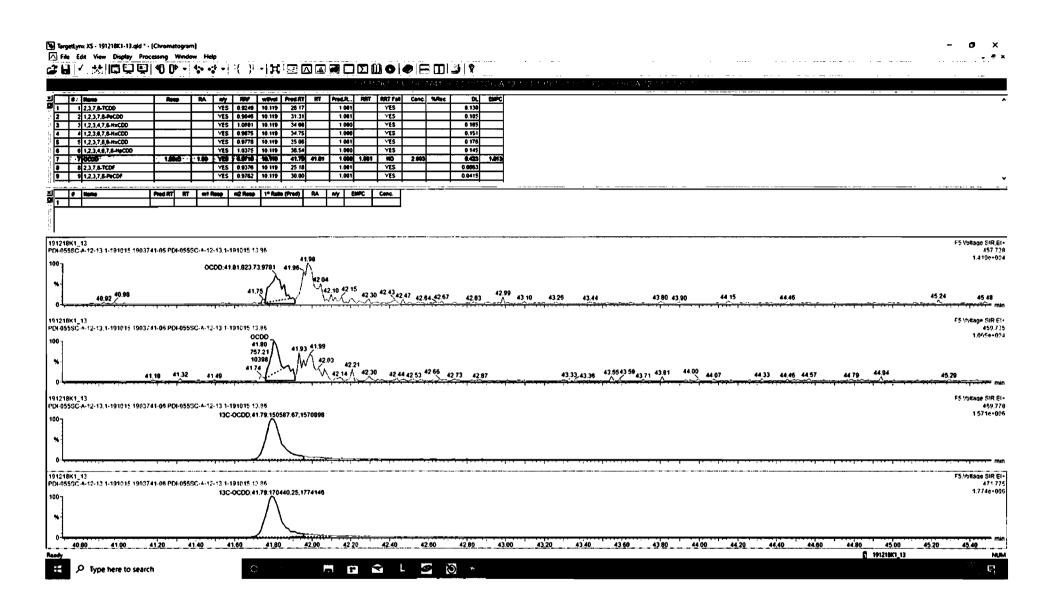
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Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Printed: Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015



Work Order 1903741



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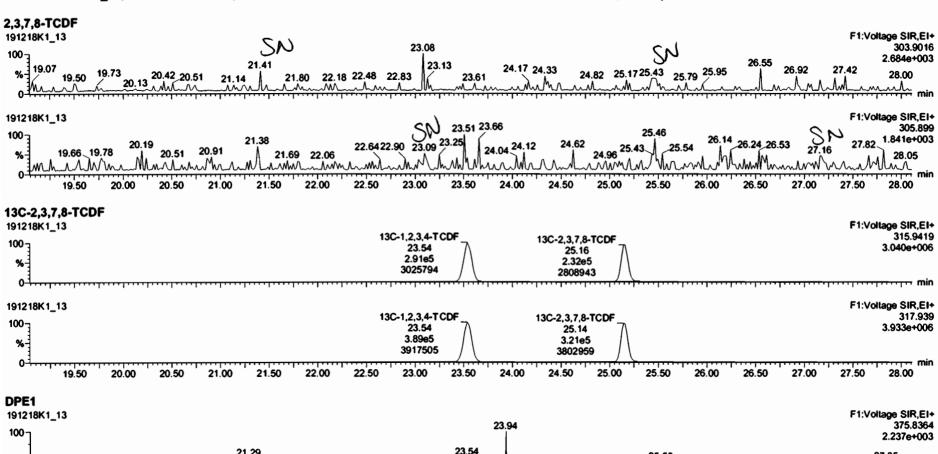
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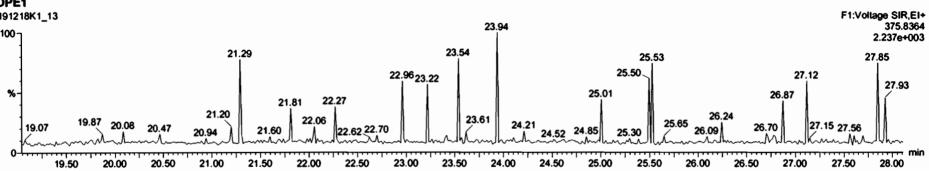
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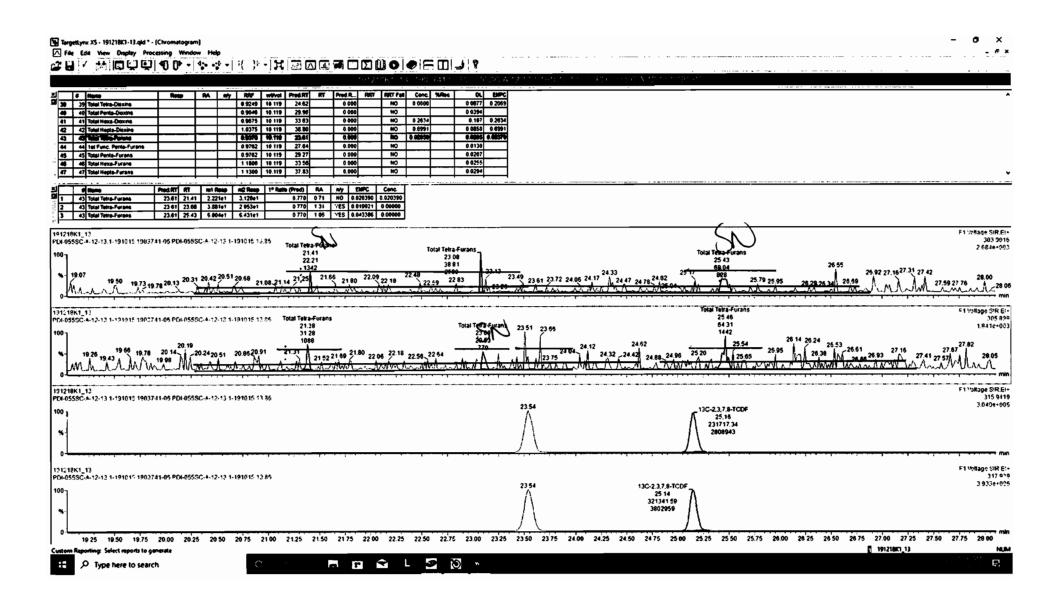
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Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Printed: Thursday, December 19, 2019 07:49:20 Pacific Standard Time









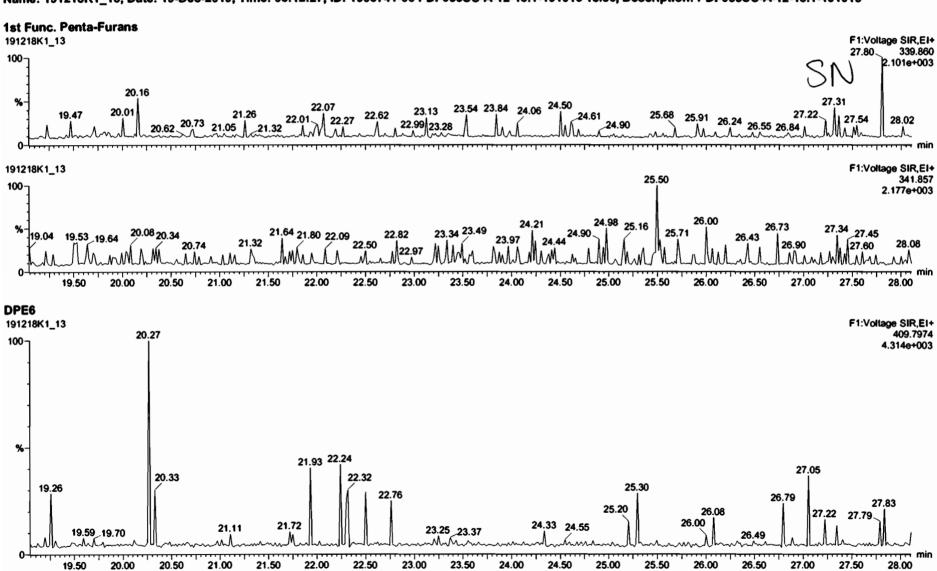
Work Order 1903741 Page 210 of 638

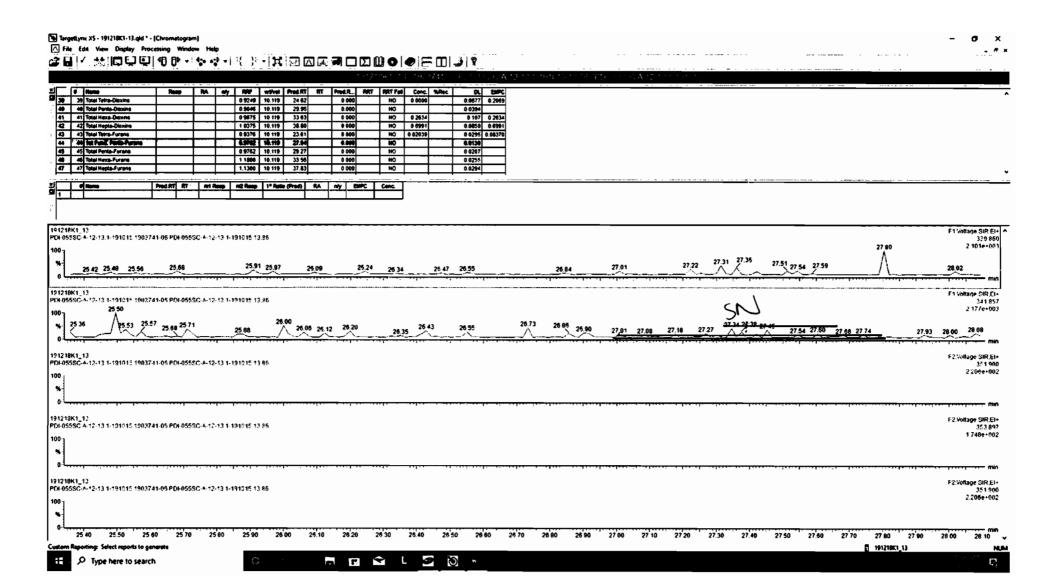
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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015



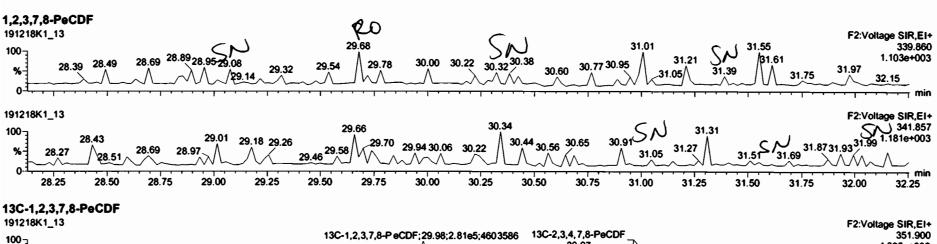


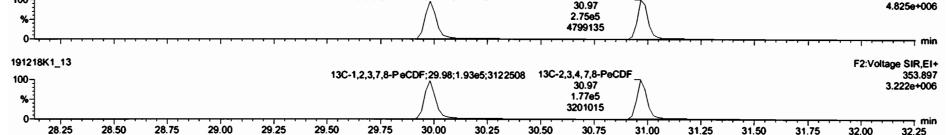
Work Order 1903741 Page 212 of 638

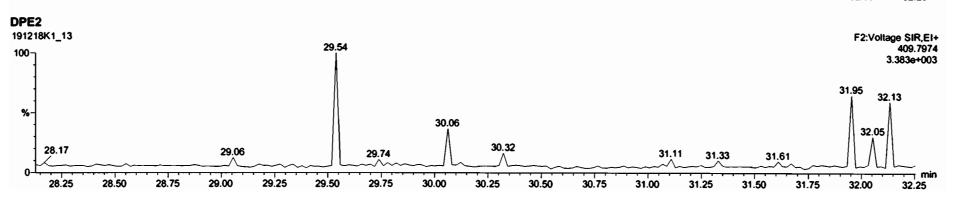
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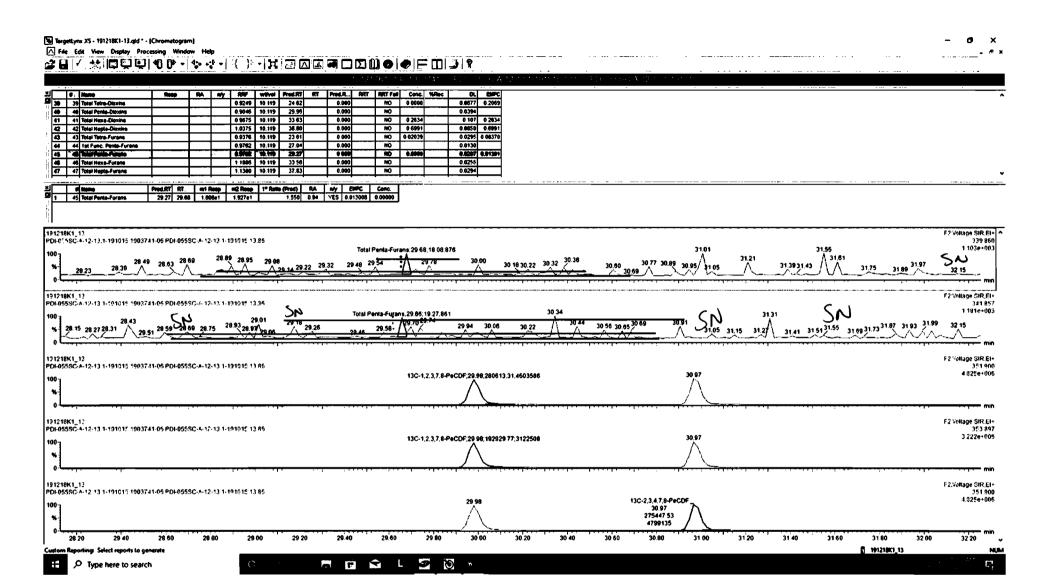
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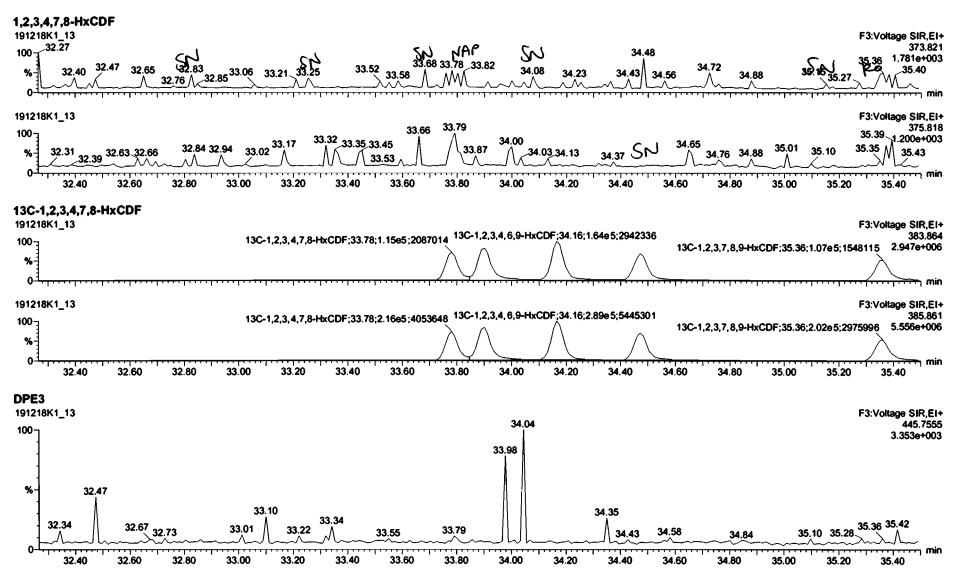


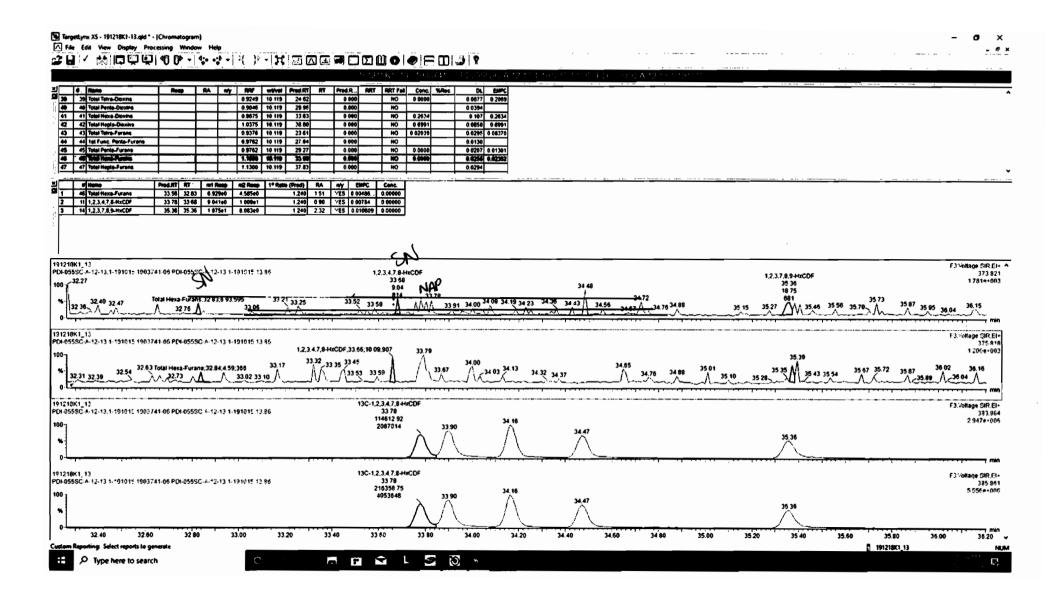
Work Order 1903741 Page 214 of 638

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Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Printed: Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015



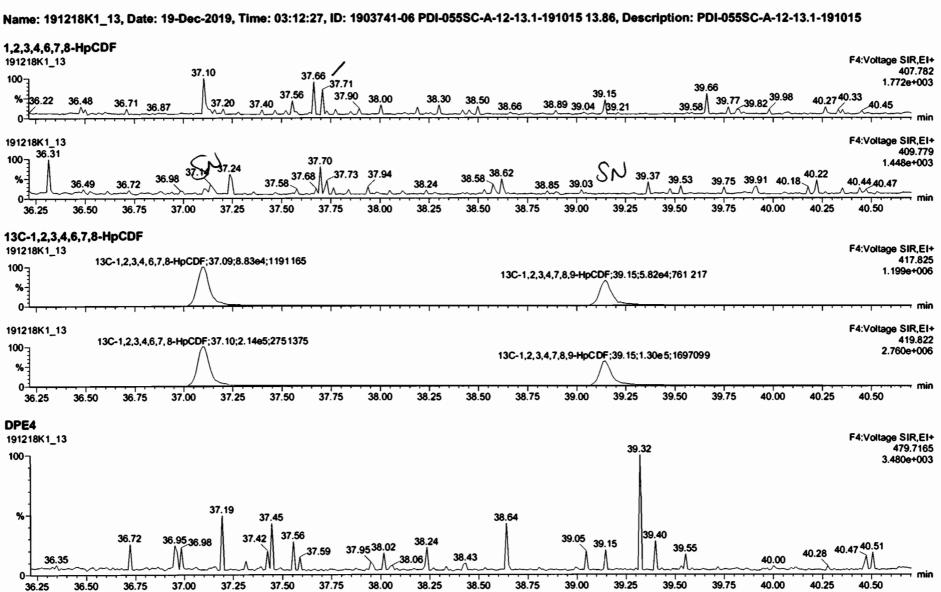


Work Order 1903741 Page 216 of 638

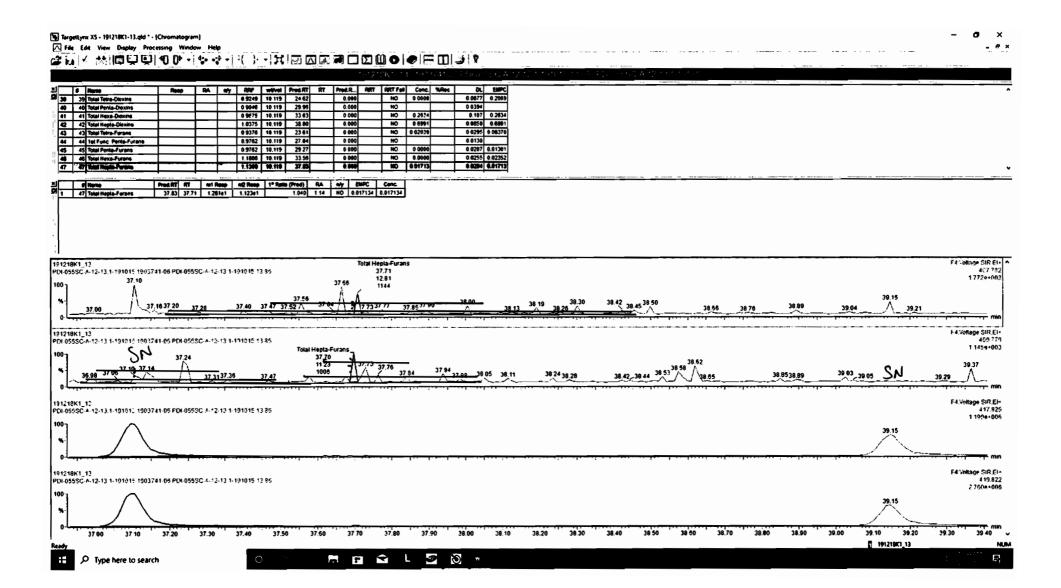
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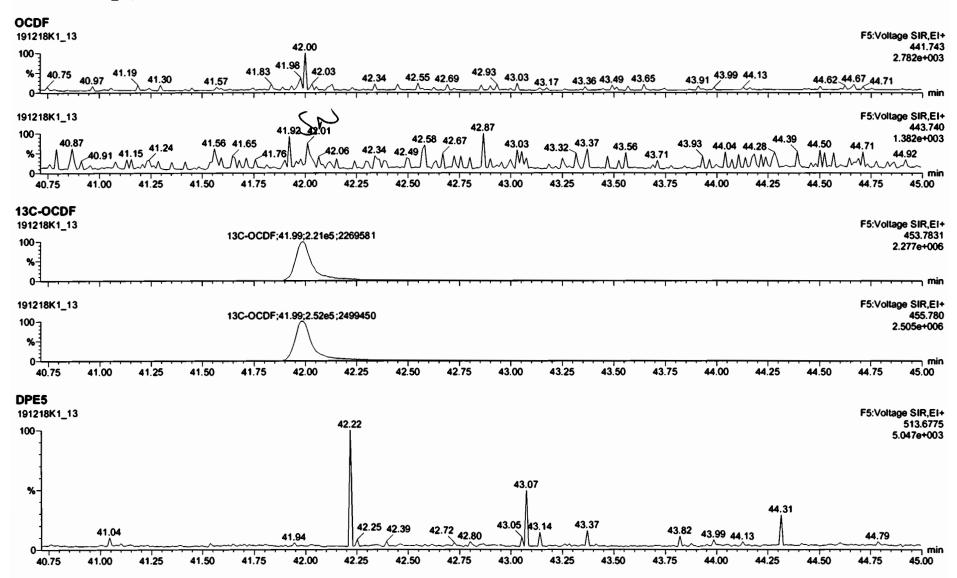
Work Order 1903741 Page 218 of 638

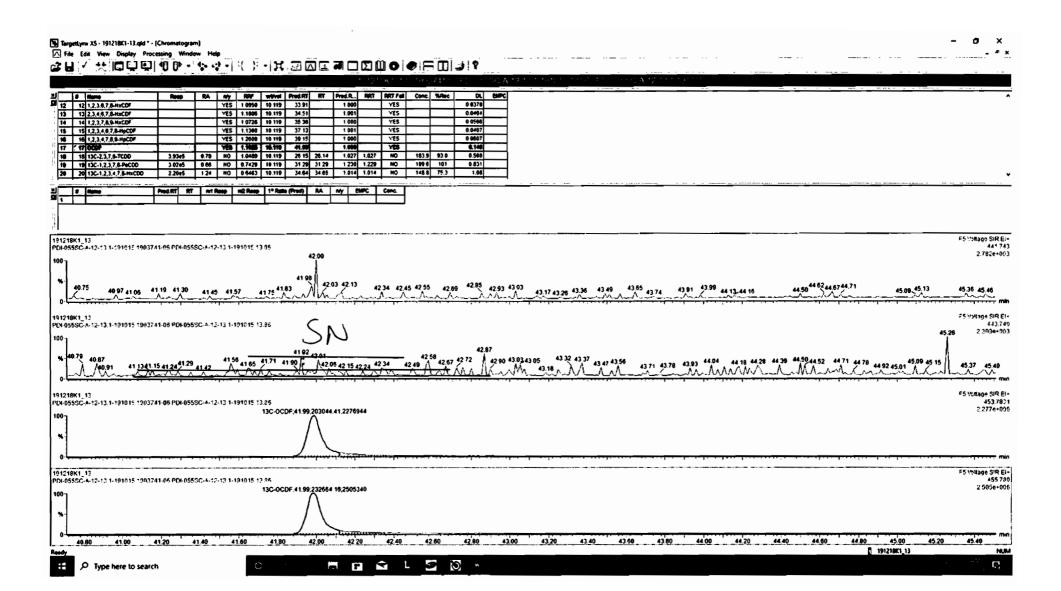
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Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015





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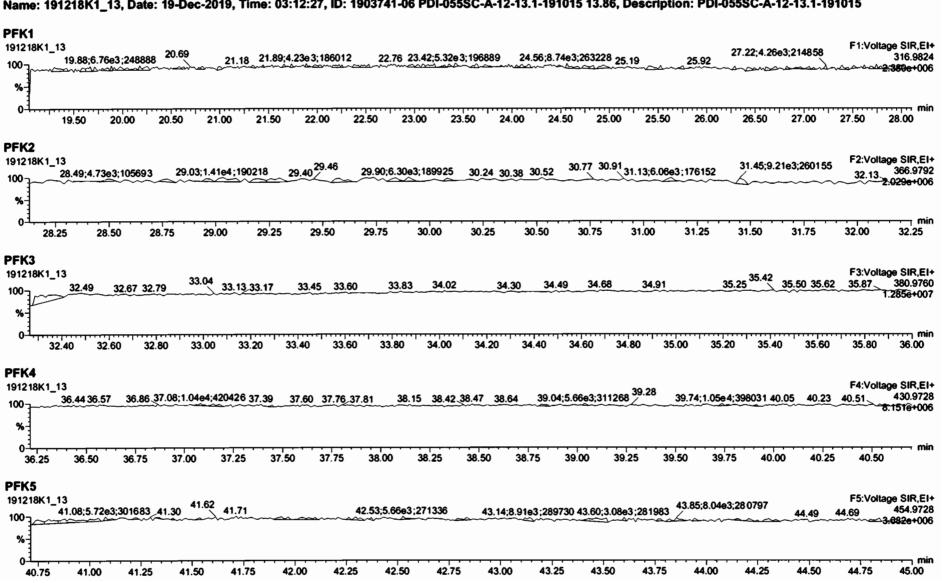
MassLynx 4.1 SCN815

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Untitled Dataset:

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Last Altered: Printed: Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_13, Date: 19-Dec-2019, Time: 03:12:27, ID: 1903741-06 PDI-055SC-A-12-13.1-191015 13.86, Description: PDI-055SC-A-12-13.1-191015



CONTINUING CALIBRATION

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nkm3 CALIBRATION STANDARDS REVIES	/ CHECKLIST
-----------------------------------	-------------

Beg. Calbration ID: ST 19(1081) 1 -1	_		Reviewed By: <u>01 11/11/19</u>	
End Calibration ID:	_		Initials & Date	,
Ion abundance within QC limits?	Beg.	End NA	Mass resolution ≥ Beg.	End
Concentrations within criteria?	\checkmark	ф	□ 5k □ 6-8K □ 8K ☑ 10K 1614 1699 429 1613/1668/8280	
TCDD/TCDF Valleys <25%			Intergrated peaks display correctly?	NA
First and last eluters present?		中	GC Break <20%	
Retention Times within criteria?	\checkmark	Ф	8280 CS1 End Standard:	
Verification Std. named correctly?		ф	- Ratios within limits, S/N <2.5:1, CS1 within 12 hours	NA
(ST-Year-Month-Day-VG ID)				
Forms signed and dated?		Ш	Comments: SIOS CRASUCI) DURING GNI) RES CUECIC	
Correct ICAL referenced?	<u> 7B</u>		2 FUNCTIONS PRINTED) DB 11/11/19	
Run Log:				
- Correct instrument listed?	/	1		
- Samples within 12 hour clock?	(\mathbf{Y})	N		
- Bottle position verfied?				

ID: LR - HCSRC

Rev. No.: 0 Rev. Date: 06/06/2017

Page: 1 of 1

Vista Analytical Laboratory - Injection Log Run file: 191108D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191108D1	1	ST191108D1-1	DB	8-NOV-19	11:54:06	ST191108D1-1	NA
191108D1	2	ST191108D1-2	DB	8-NOV-19	12:42:00	ST191108D1-2	NA
191108D1	3	B9J0316-BS1	DB	8-NOV-19	13:29:56	ST191108D1-1	NA
191108D1	4	B9K0011-BS1	DB	8-NOV-19	14:17:51	ST191108D1-1	NA
191108D1	5	QC191108D1-1	DB	8-NOV-19	15:05:47	ST191108D1-1	NA
191108D1	6	SOLVENT BLANK	DB	8-NOV-19	15:53:43	NA	NA
191108D1	7	B9J0316-BLK1	DB	8-NOV-19	16:41:38	ST191108D1-1	NA
191108D1	8	B9K0011-BLK1	DB	8-NOV-19	17:29:33	ST191108D1-1	NA
191108D1	9	QC191108D1-2	DB	8-NOV-19	18:17:28	ST191108D1-1	NA
191108D1	10	QC191108D1-3	DB	8-NOV-19	19:05:16	ST191108D1-1	NA
191108D1	11	QC191108D1-4	DB	8-NOV-19	19:53:05	ST191108D1-2	NA
191108D1	12	QC191108D1-5	DB	8-NOV-19	20:40:50	ST191108D1-2	NA
191108Dĺ	13	1903584-10RE1	DB	8-NOV-19	21:28:44	ST191108D1-1	NA
191108D1	14	1903580-01RE1	DB	8-NOV-19	22:16:28	ST191108D1-1	NA
191108D1	15	1903430-06RE1	DB	8-NOV-19	23:04:17	ST191108D1-1	NA

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FORM 4A PCDD/PCDF CALIBRATION VERIFICATION

Episode No.: Lab Name: Vista Analytical Laboratory

SAS No.: Contract No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191108D1 S#1 Analysis Date: 8-NOV-19 Time: 11:54:06

	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	0.82	0.65-0.89	У	10.8	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	У	47.9	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	У	48.3	39.0 - 64.0	(3) Contract-required concentration range as specified
1,2,3,6,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	У	52.2	39.0 - 64.0	in Table 6, Method 1613.
1,2,3,7,8,9-HxCDD	M+2/M+4	1.21	1.05-1.43	У	50.6	41.0 - 61.0	
							(4) Contract-required concentration range as specified
1,2,3,4,6,7,8-HpCDD	₩+2/M+4	1.05	0.88-1.20	У	48.7	43.0 - 58.0	in Table 6a, Method 1613, for tetras only.
OCDD	M+2/M+4	0.89	0.76-1.02	У	103	79.0 - 126.0	
2,3,7,8-TCDF	M/M +2	0.78	0.65-0.89	У	9.43	8.4 - 12.0	
						8.6 - 11.6 (4)	
1,2,3,7,8-PeCDF	M+2/M+4	1.69	1.32-1.78	У	50.8	41.0 - 60.0	
2,3,4,7,8-PeCDF	M +2/M+4	1.67	1.32-1.78	У	49.0	41.0 - 61.0	
1,2,3,4,7,8-HxCDF	〒+2/M+4	1.22	1.05-1.43	У	47.6	45.0 - 56.0	
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	У	48.2	44.0 - 57.0	
2,3,4,6,7,8-HxCDF	M+2/M+4	1.24	1.05-1.43	У	49.0	44.0 - 57.0	
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	У	48.8	45.0 - 56.0	3 .
							NA
1,2,3,4,6,7,8-HpCDF	M+2/M+4	1.02	0.88-1.20	У	47.0	45.0 - 55.0	Analyst: 1/13
1,2,3,4,7,8,9-HpCDF	M+2/M+4	1.01	0.88-1.20	У	46.4	43.0 - 58.0	
							Analyst: 18/19
OCDF	M+2/M+4	0.88	0.76-1.02	У	95.7	63.0 - 159.0	Date: 11 8 19

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CCAL ID: ST191108D1-1

FORM 4B PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.:

SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191108D1 S#1 Analysis Date: 8-NOV-19 Time: 11:54:06

FC	M/Z'S DRMING ATIO (1)	ION ABUND. RATIO	QC LIMITS (2)	Pass	CONC. FOUND	CONC. RANGE (ng/mL)
13C-2,3,7,8-TCDD	M/M+2	0.78	0.65-0.89		105	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.62	0.54-0.72	У	115	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD 13C-1,2,3,6,7,8-HxCDD	M+2/M+4 M+2/M+4	1.29	1.05-1.43	•	113 94.7	85.0 - 117.0 85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.27	1.05-1.43	•	105	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpCDI	M+2/M+4	1.06	0.88-1.20	У	117	72.0 - 138.0
13C-OCDD	M/M+2	0.91	0.76-1.02	У	246	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.80	0.65-0.89	У	104	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.57	1.32-1.78	У	111	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.61	1.32-1.78	У	104	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	У	109	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	У	98.2	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	У	102	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	У	109	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpCD	F M+2/M+4	0.44	0.37-0.51	У	109	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpCD	F M+2/M+4	0.45	0.37-0.51	У	123	77.0 - 129.0
13C-OCDF	M+2/M+4	0.88	0.76-1.02	У	248	96.0 - 415.0
CLEANUP STANDARD (3) 37Cl-2,3,7,8-TCDD					10.1	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.

Analyst:) & Date: 11/8/19

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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: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191108D1 S#1 Analysis Date: 8-NOV-19 Time: 11:54:06

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					
1,2,3,7,8-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	1.000	0.999-1.002					
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.000	0.999-1.002					
LABELED COMPOUNDS								
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.976-1.043					
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.198	1.000-1.567					
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.991	0.923-1.103					
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.152	1.000-1.425					
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.187	1.011-1.526					
37Cl-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052					

Analyst: 75

Date: [[[8/19]

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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: 10-9-19

13C-OCDF

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191108D1 S#1 Analysis Date: 8-NOV-19 Time: 11:54:06

	RETENTION TIME		RRT
NATIVE ANALYTES	REFERENCE	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
1,2,3,6,7,8-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	1.000	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	1.001	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	0.991	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	1.038	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
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.093	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	1.227	1.085-1.365

13C-1,2,3,4,6,9-HxCDF

1.234

1.091-1.371

Analyst: 76

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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: 10-9-19

RT Window Data Filename: 191108D1 S#1 Analysis Date: 8-NOV-19 Time: 11:54:06

ZB-5MS IS Data Filename: 191108D1 S#1 Analysis Date: 8-NOV-19 Time: 11:54:06

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)	22:49	1,3,6,8-TCDF (F)	20:42
1,2,8,9-TCDD (L)	27:04	1,2,8,9-TCDF (L)	27:12
1,2,4,7,9-PeCDD (F)	28:40	1,3,4,6,8-PeCDF (F)	27:10
1,2,3,8,9-PeCDD (L)	31:04	1,2,3,8,9-PeCDF (L)	31:18
1,2,4,6,7,9-HxCDD (F)	32:29	1,2,3,4,6,8-HxCDF (F)	31:57
1,2,3,7,8,9-HxCDD (L)	34:26	1,2,3,7,8,9-HxCDF (L)	34:48
1,2,3,4,6,7,9-HpCDD (F)	37:02	1,2,3,4,6,7,8-HpCDF (F)	36:39
1,2,3,4,6,7,8-HpCDD (L)	37:53	1,2,3,4,7,8,9-HpCDF (L)	38:25

(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, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: 18/19

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Client ID: 1613 CS3 19C2204 Filename: 191108D1 S:1 Acq: 8-NOV-19 11:54:06 ConCal: ST191108D1-1 Page 1 of 1

	CITER ID: 1013 C33 13C2204	r I	Tename. I.	JIIOODI	J.1	Acq. o-m	04-19 11:5	34:00		COIN	Jar. SIIJIIOODI	- т			rage	T OT T
	Lab ID: ST191108D1-1	GC	Column II	D: ZB-51	MS ICal:	: 1613VG7-	10-9-19	wt/vo	1: 1.000	End	CAL: NA					
	Name	Resp	RA	RRF	RT	Conc	Qual r	noise Fac	DL	Name		Conc	EMPC	Qual	noise	DL
	2,3,7,8-TCDD	8.71e+05	0.82 y	0.91	26:12	10.836		* 2.5	*	Total	Tetra-Dioxins	78.5	79.2		*	*
	1,2,3,7,8-PeCDD	3.38e+06	0.63 y	0.90	30:43	47.860		* 2.5	*	Total	Penta-Dioxins	179	179		*	*
	1,2,3,4,7,8-HxCDD	3.70e+06	1.25 y	1.10	34:01	48.335		* 2.5	*	Total	Hexa-Dioxins	220	221	,	*	*
	1,2,3,6,7,8-HxCDD	3.79e+06	1.23 y	0.94	34:08	52.168		* 2.5	*	Total	Hepta-Dioxins	113	114		*	*
	1,2,3,7,8,9-HxCDD	3.94e+06	1.21 y	0.96	34:26	50.556		* 2.5	*	Total	Tetra-Furans	34.1	34.9		*	*
	1,2,3,4,6,7,8-HpCDD	3.50e+06	1.05 y	0.98	37:53	48.712		* 2.5	*	Total	Penta-Furans	211.11	211.66		*	*
	OCDD	6.73e+06	0.89 y	0.96	41:09	102.98		* 2.5	*	Total	Hexa-Furans	257	257		*	*
										Total	Hepta-Furans	93.7	94.3		*	*
	2,3,7,8-TCDF		0.78 y	0.95	25:25	9.4278		* 2.5	*							
	1,2,3,7,8-PeCDF		1.69 y	0.96	29:32	50.783		* 2.5	*							
	2,3,4,7,8-PeCDF		1.67 y	1.01	30:26	48.958		* 2.5	*							
	1,2,3,4,7,8-HxCDF		1.22 y	1.18	33:08	47.606		* 2.5	*							
	1,2,3,6,7,8-HxCDF		1.23 y	1.07	33:15	48.233		* 2.5	*							
	2,3,4,6,7,8-HxCDF		1.24 y	1.11	33:51	48.997		* 2.5	*							
	1,2,3,7,8,9-HxCDF		1.24 y	1.06	34:48	48.840		* 2.5	*							
	1,2,3,4,6,7,8-HpCDF		1.02 y	1.13	36:39	47.036		* 2.5	*							
	1,2,3,4,7,8,9-HpCDF		1.01 y	1.28	38:24	46.432		* 2.5	*							
	OCDF	7.41e+06	0.88 y	0.95	41:23	95.740		* 2.5	*	_						
Ŧ.	120 2 2 7 0 7000	0.000.00	0.70 **	1.10	26.11	104 (1				Rec	Qual					
IS IS			0.78 y 0.62 y	0.88	26:11 30:42	104.61 114.56				105 115						
IS			1.29 y	0.64	34:00	113.18				113						
IS			1.31 y	0.86	34:00	94.674				94.7						
IS			1.27 y	0.81	34:25	105.04				105						
IS			1.06 y	0.65	37:51	117.33				117						
IS		1.36e+07	0.91 y	0.58	41:09	246.16				123						
IS			0.80 y	1.03	25:24	103.75				104						
IS			1.57 y	0.85	29:31	111.14				111						
IS	13C-2,3,4,7,8-PeCDF	1.08e+07	1.61 y	0.85	30:25	104.34				104						
IS	3 13C-1,2,3,4,7,8-HxCDF	8.66e+06	0.51 y	0.83	33:07	108.86				109						
IS	13C-1,2,3,6,7,8-HxCDF	9.72e+06	0.51 y	1.03	33:15	98.249				98.2						
15	3 13C-2,3,4,6,7,8-HxCDF	9.31e+06	0.51 y	0.95	33:50	102.14				102						
15	3 13C-1,2,3,7,8,9-HxCDF	8.62e+06	0.51 y	0.83	34:47	108.95				109						
15	3 13C-1,2,3,4,6,7,8-HpCDF	7.86e+06	0.44 y	0.76	36:38	108.53				109						
15	3 13C-1,2,3,4,7,8,9-HpCDF	6.85 e+ 06	0.45 y	0.58	38:24	123.27				123						
IS	5 13C-OCDF	1.63e+07	0.88 y	0.69	41:22	248.08				124						
C,	/Up 37Cl-2,3,7,8-TCDD	9.41e+05		1.20	26:12	10.136				101	Integra by	ations	Revi by	.ewed		
R.	5/RT 13C-1,2,3,4-TCDD	7.75e+06	0.76 y	1.00	25:37	100.00					Analyst:	クク	Συρο Συγ	vst•	01	
R.			0.80 y	1.00	24:12	100.00							Fuldi	,,,,,,,		
	5/RT 13C-1,2,3,4,6,9-HxCDF		0.51 y	1.00	33:32	100.00					Date:_	18/19	Anal	: <u>11</u>	11/19	
															. ,	

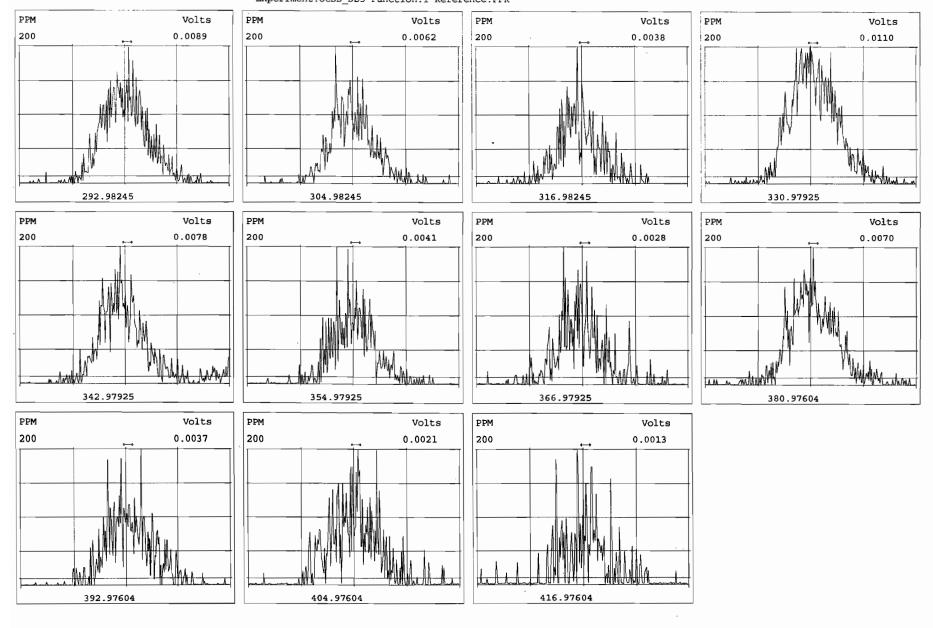
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Vista Analytical Laboratory - Injection Log Run file: 191108D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

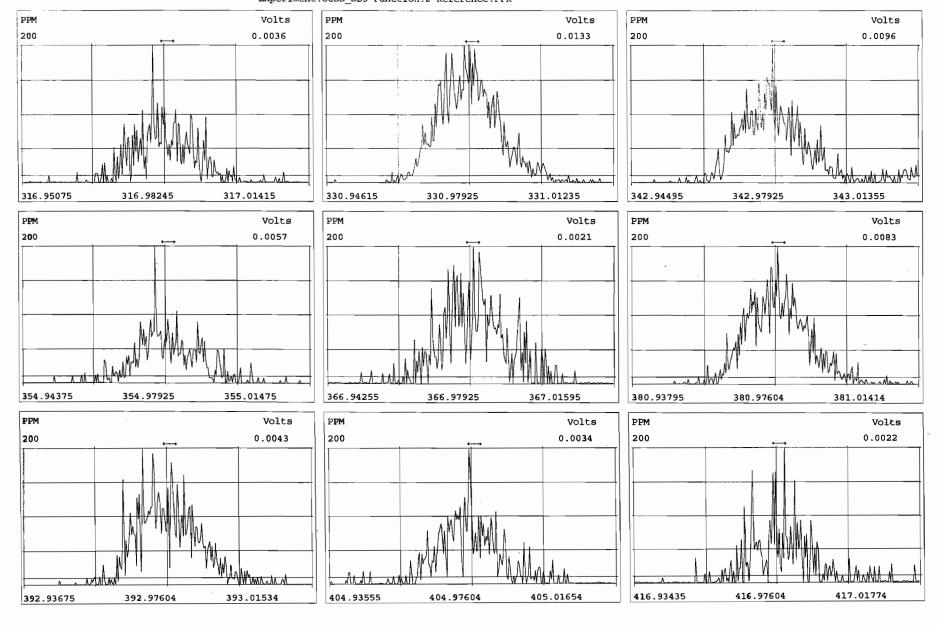
Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191108D1	1	ST191108D1-1	DB	8-NOV-19	11:54:06	ST191108D1-1	NA
191108D1	2	ST191108D1-2	DB	8-NOV-19	12:42:00	ST191108D1-2	NA
191108D1	3	B9J0316-BS1	DB	8-NOV-19	13:29:56	ST191108D1-1	NA
191108D1	4	B9K0011-BS1	DB	8-NOV-19	14:17:51	ST191108D1-1	NA
191108D1	5	QC191108D1-1	DB	8-NOV-19	15:05:47	ST191108D1-1	NA
191108D1	6	SOLVENT BLANK	DB	8-NOV-19	15:53:43	NA	NA
191108D1	7	B9J0316-BLK1	DB	8-NOV-19	16:41:38	ST191108D1-1	NA
191108D1	8	B9K0011-BLK1	DB	8-NOV-19	17:29:33	ST191108D1-1	NA
191108D1	9	QC191108D1-2	DB	8-NOV-19	18:17:28	ST191108D1-1	NA
191108D1	10	QC191108D1-3	DB	8-NOV-19	19:05:16	ST191108D1-1	NA
191108D1	11	QC191108D1-4	DB	8-NOV-19	19:53:05	ST191108D1-2	NA
191108D1	12	QC191108D1-5	DB	8-NOV-19	20:40:50	ST191108D1-2	NA
191108D1	13	1903584-10RE1	DB	8-NOV-19	21:28:44	ST191108D1-1	NA
191108D1	14	1903580-01RE1	DB	8-NOV-19	22:16:28	ST191108D1-1	NA
191108D1	15	1903430-06RE1	DB	8-NOV-19	23:04:17	ST191108D1-1	NA

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Peak Locate Examination: 8-NOV-2019:11:43 File:191108D1 Experiment:OCDD_DB5 Function:1 Reference:PFK

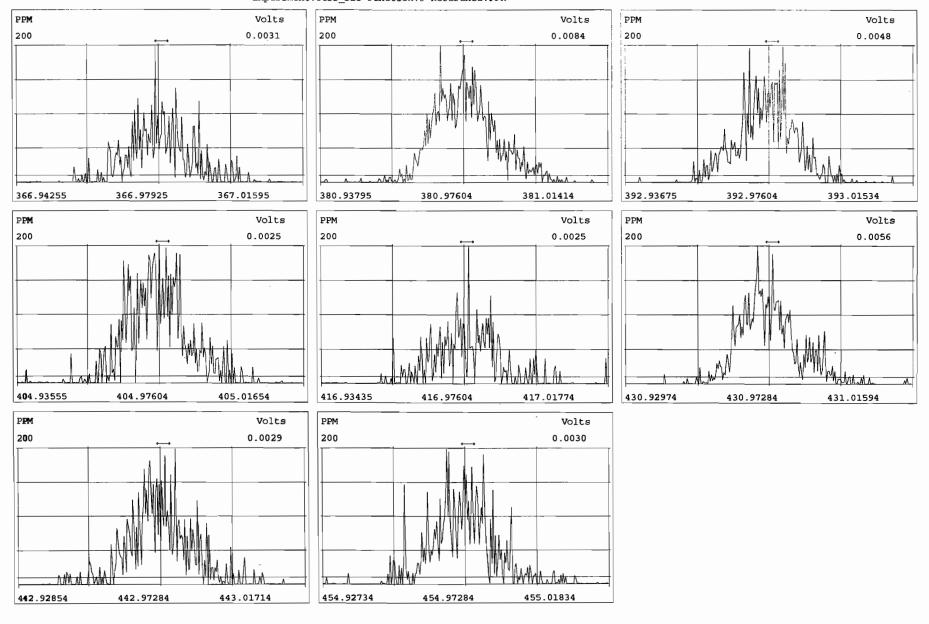


Peak Locate Examination: 8-NOV-2019:11:44 File:191108D1 Experiment:OCDD_DB5 Function:2 Reference:PFK

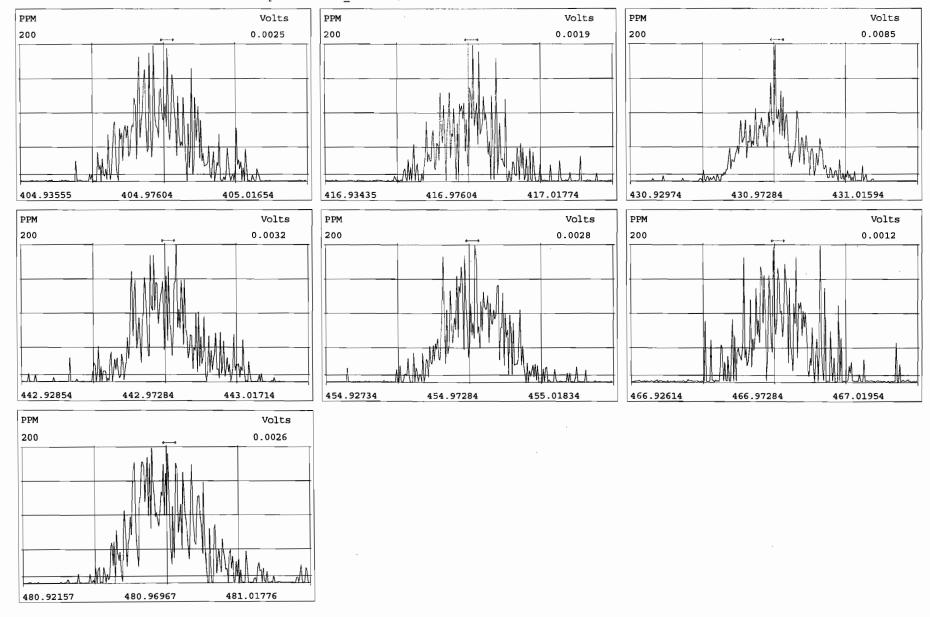


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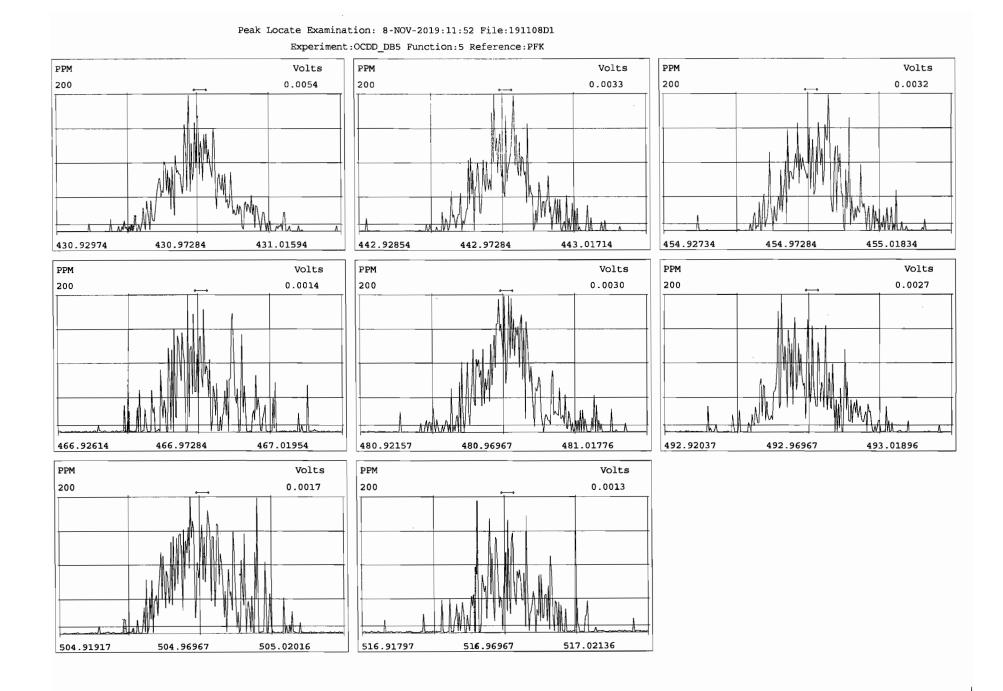
Peak Locate Examination: 8-NOV-2019:11:50 File:191108D1
Experiment:OCDD_DB5 Function:3 Reference:PFK



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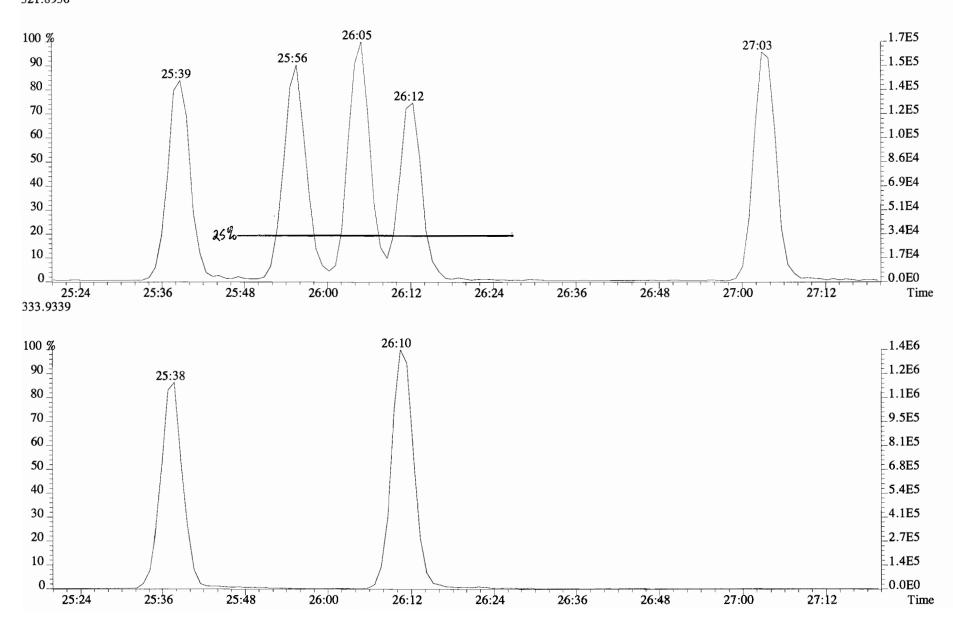


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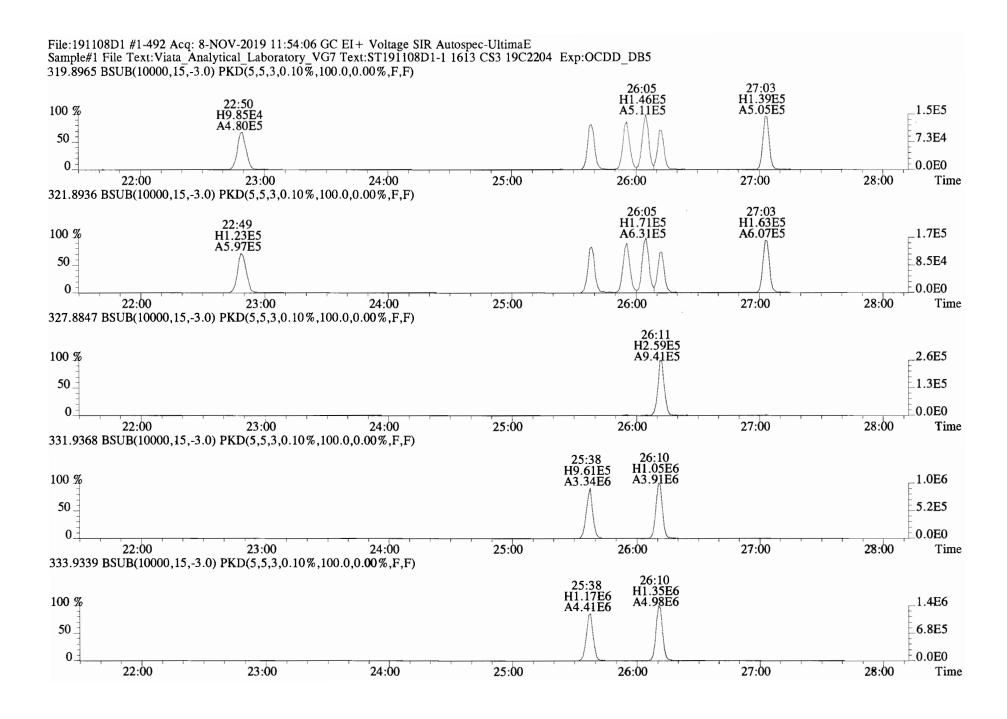


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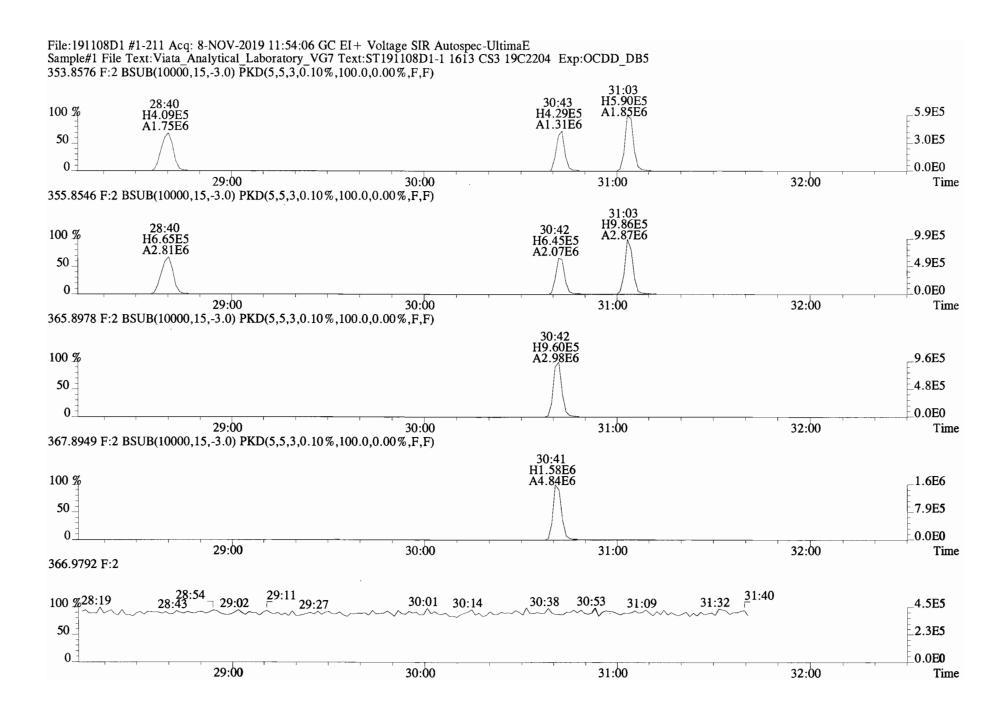
File:191108D1 #1-492 Acq: 8-NOV-2019 11:54:06 GC EI + Voltage SIR Autospec-UltimaE Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191108D1-1 1613 CS3 19C2204 Exp:OCDD_DB5 321.8936



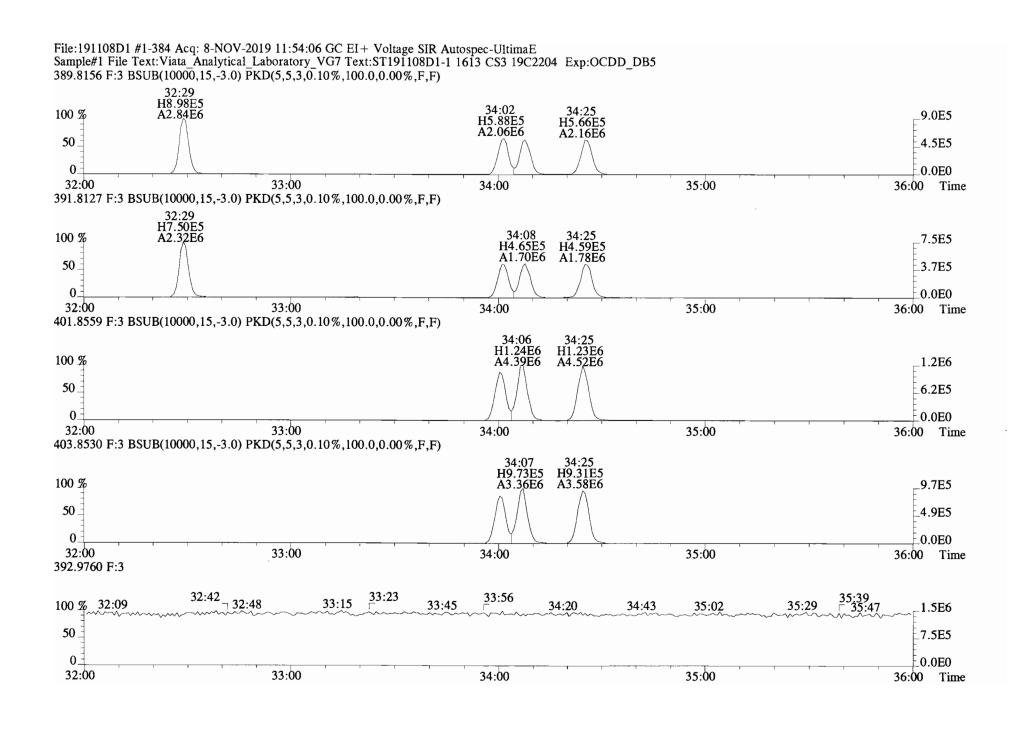
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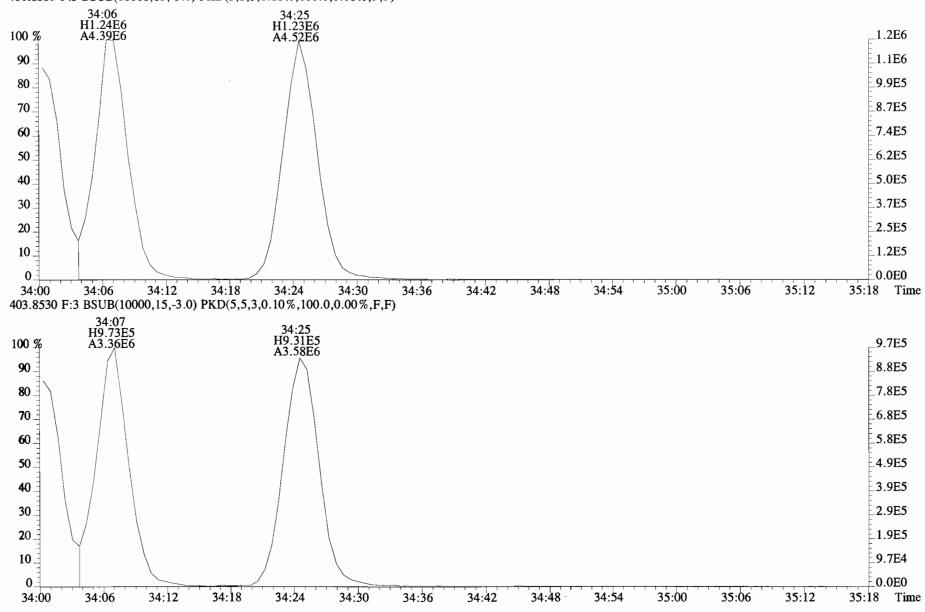


Work Order 1903741 Page 239 of 638

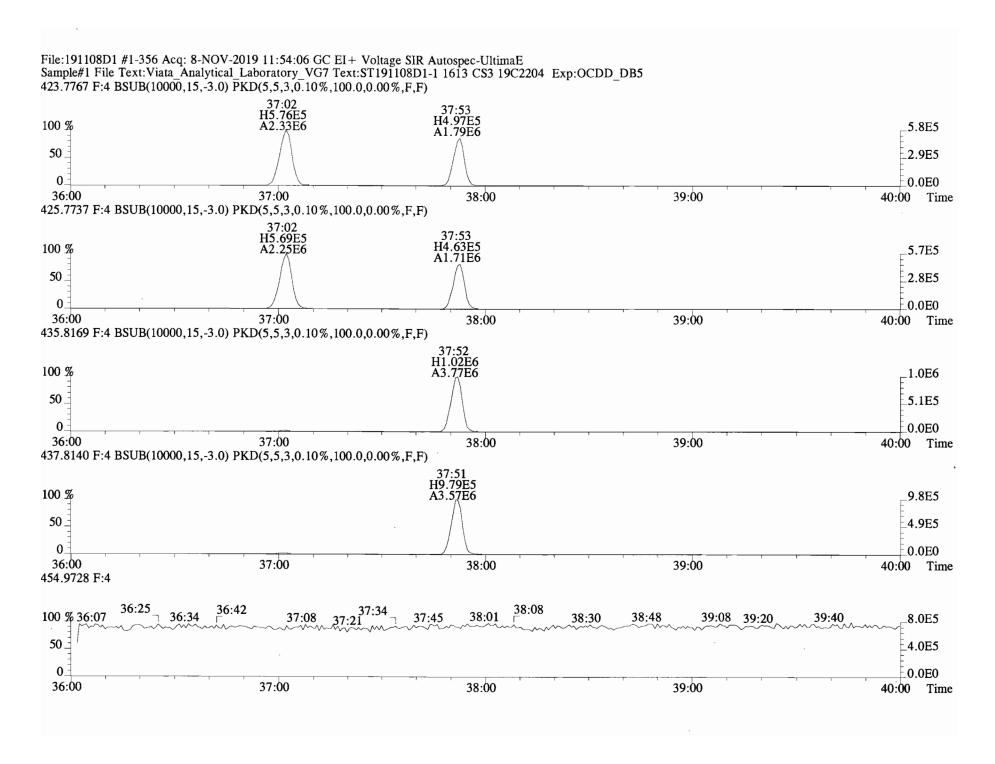


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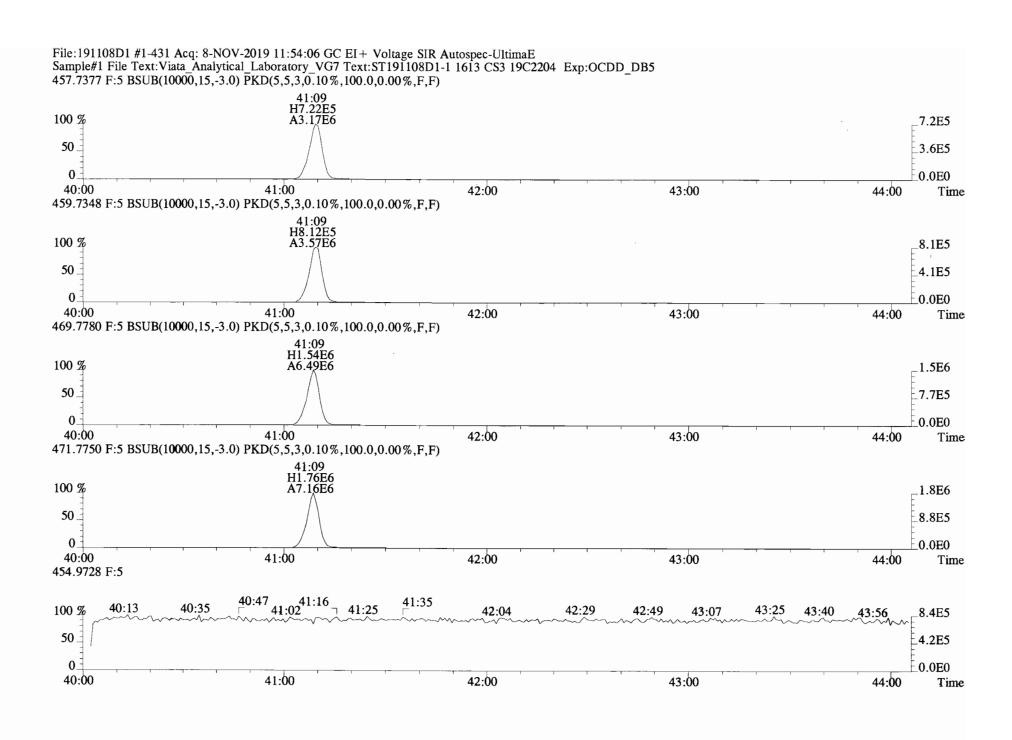
File:191108D1 #1-384 Acq: 8-NOV-2019 11:54:06 GC EI+ Voltage SIR Autospec-UltimaE Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191108D1-1 1613 CS3 19C2204 Exp:OCDD_DB5 401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



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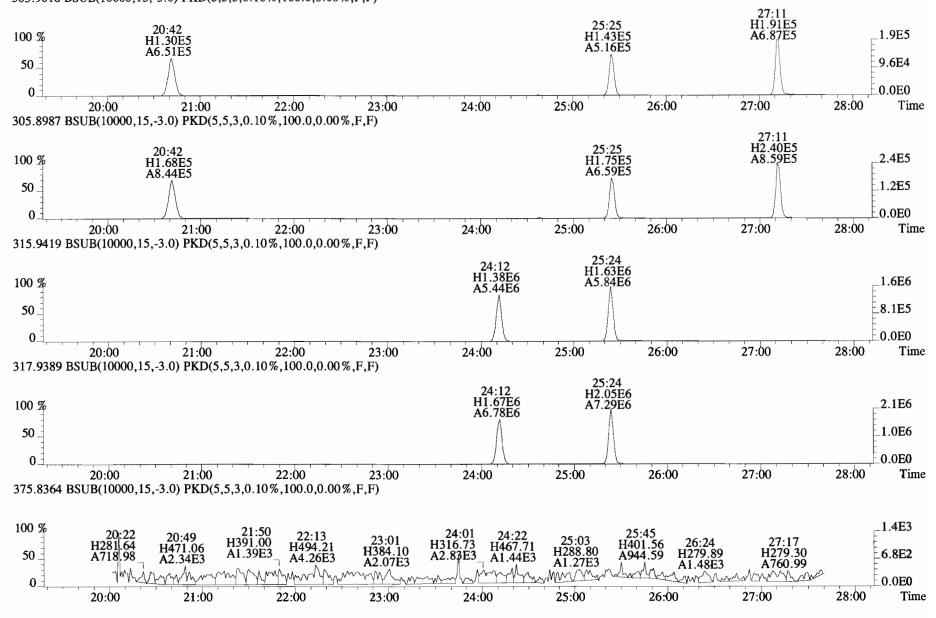


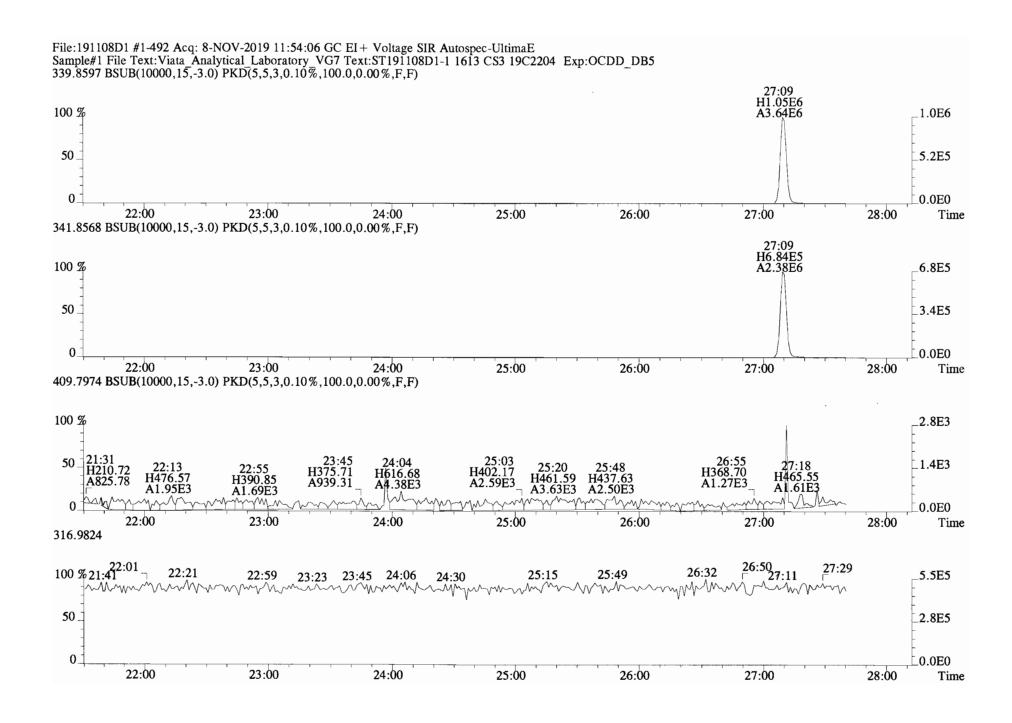
Work Order 1903741 Page 242 of 638



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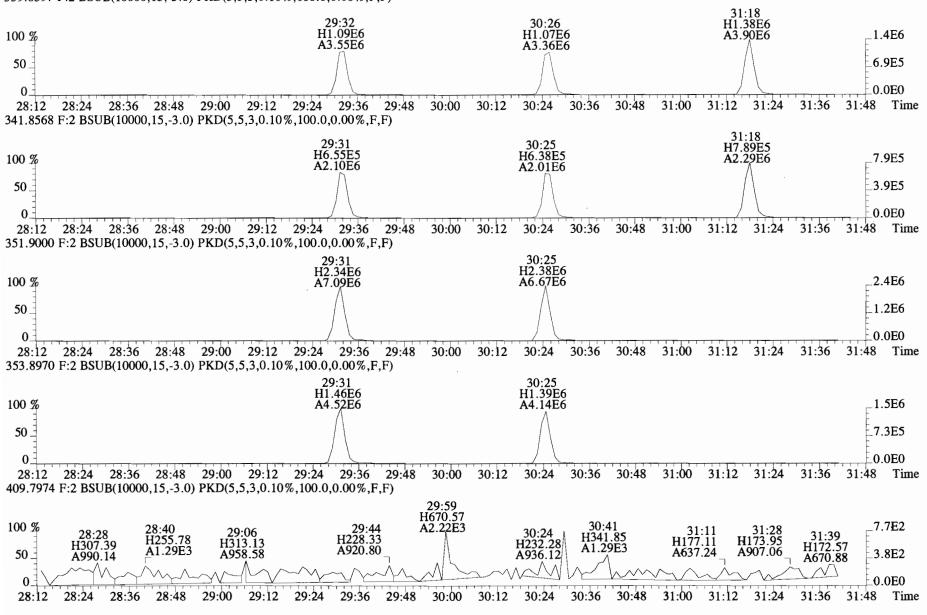
File:191108D1 #1-492 Acq: 8-NOV-2019 11:54:06 GC EI+ Voltage SIR Autospec-UltimaE Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191108D1-1 1613 CS3 19C2204 Exp:OCDD_DB5 303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)





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File:191108D1 #1-211 Acq: 8-NOV-2019 11:54:06 GC EI + Voltage SIR Autospec-UltimaE Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191108D1-1 1613 CS3 19C2204 Exp:OCDD_DB5 339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191108D1 #1-384 Acq: 8-NOV-2019 11:54:06 GC EI+ Voltage SIR Autospec-UltimaE Sample#1 File Text: Viata Analytical Laboratory VG7 Text: ST191108D1-1 1613 CS3 19C2204 Exp: OCDD DB5 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 31:57 H1.14E6 33:15 33:51 H7.90E5 100 % A3.47E6 34:49 _1.1E6 H8.28E5 H₆.23E₅ A2.76E6 A2.81E6 A2.47E6 50 5.7E5 0.0E0 32:00 33:00 34:00 35:00 36:00 Time 375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 31:57 H9.38E5 33:08 33:51 H6.49E5 A2.84E6 9.4E5 100 % 34:48 H₆.82E5 H5.21E5 A2.18E6 A2.27E6 A2.00E6 50. 4.7E5 0.0E0 0. 32:00 33:00 34:00 35:00 36:00 Time 383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 33:15 H9.87E5 33:50 34:47 H7.54E5 H8.61E5 9.9E5 100 % A3.29E6 A3.13E6 A2.92E6 50 4.9£5 0.0E032:00 33:00 34:00 35:00 36:00 Time 385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 33:15 H1.92E6 33:50 H1.79E6 34:47 H1.47E6 100 % A6.42E6 A6.18E6 _1.9E6 A5.70E6 50 _ 9.6E5 .0.0E0 35:00 32:00 33:00 34:00 36:00 Time 445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 33:11 H992.26 32:23 H449.22 35:18 100 % A1.19E3 34:47 1.0E3 32:09 33:29 H612.51 A975.67 34:01 H382.93 H513.63 H415.21 H519.32 35:38 H196.68 A781.03 34:21 32:56 A1.16E3 A726.18 A713.65 H238.06 H242.81 50 A1.05E3 5.0E2 A580.19 A612.86 A697.60 0 .0.0E0

34:00

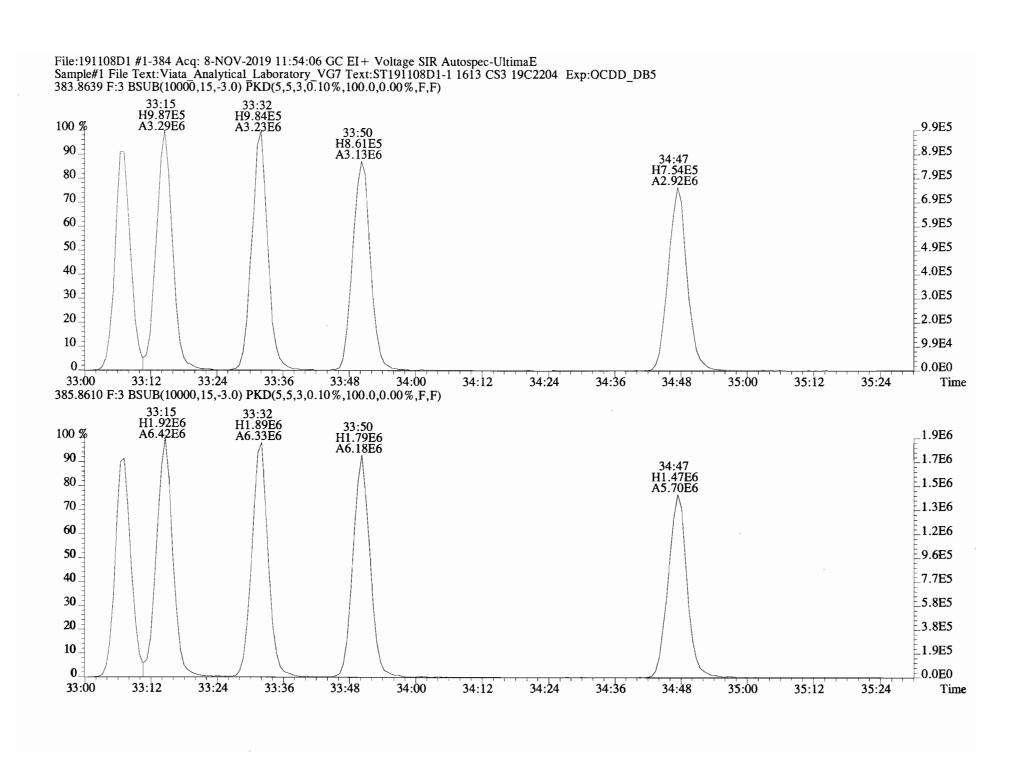
35:00

32:00

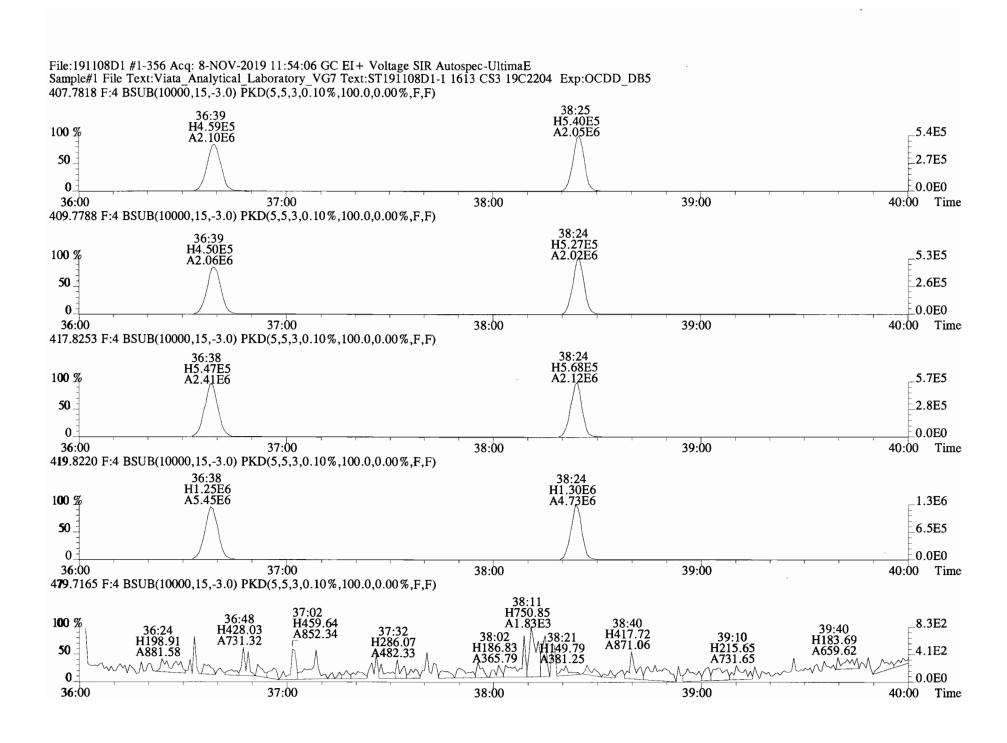
33:00

36:00

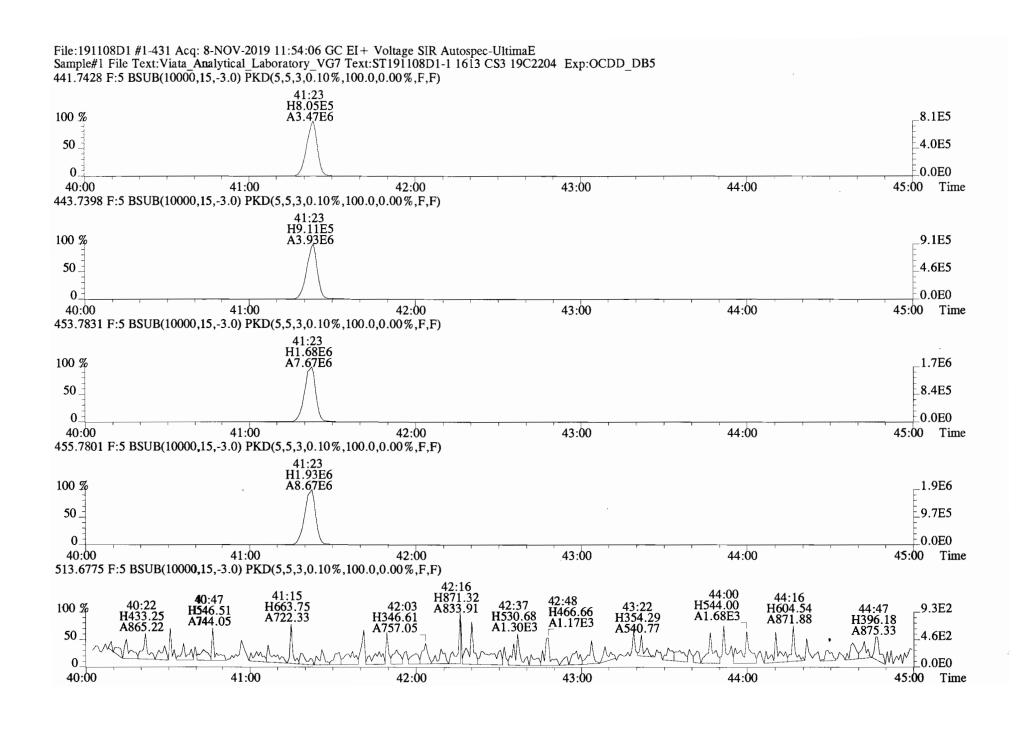
Time



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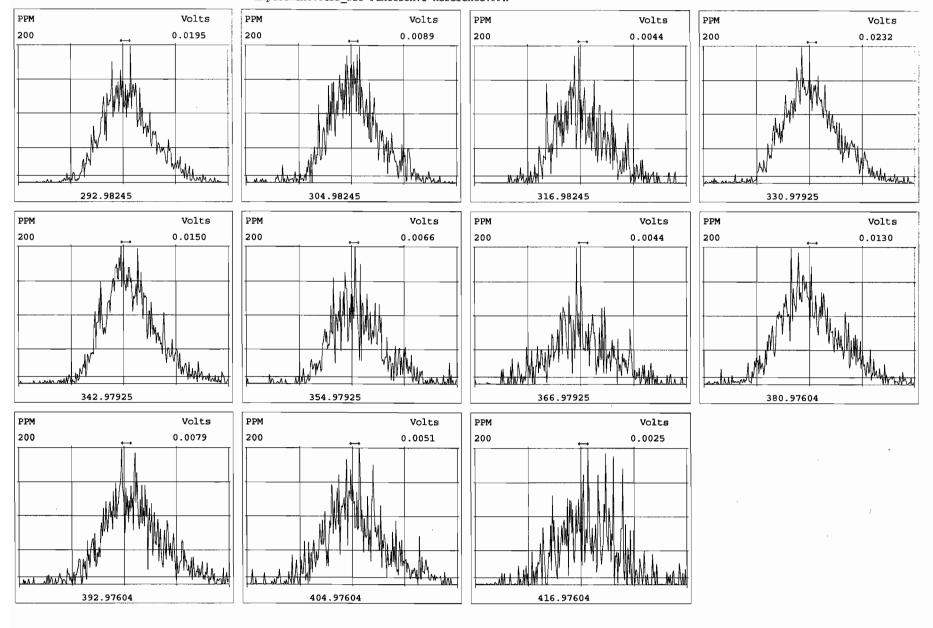


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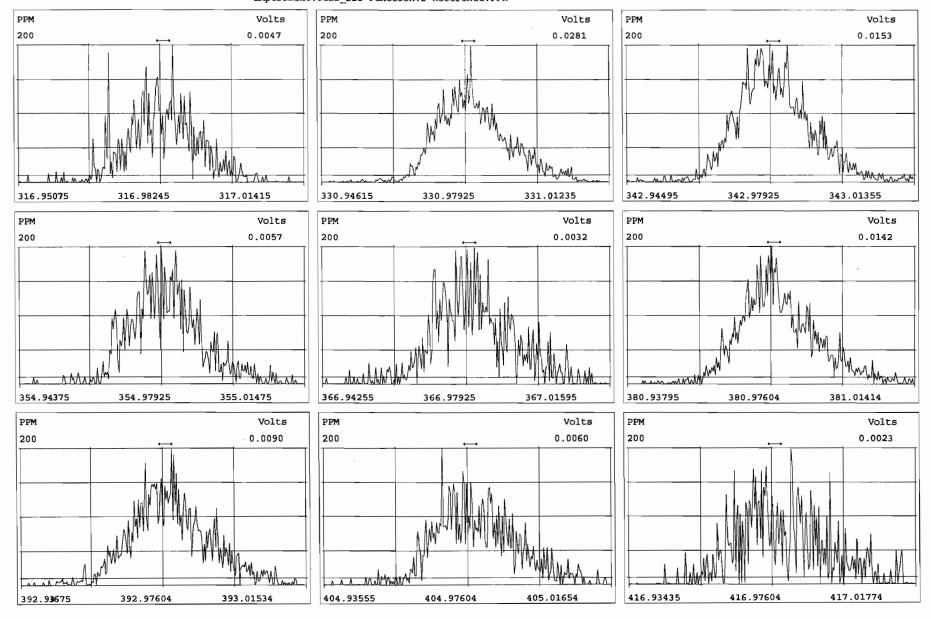


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Peak Locate Examination: 9-NOV-2019:00:01 File:RES_CHECK Experiment:OCDD_DB5 Function:1 Reference:PFK



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HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calbration ID: ST 19121811 - 1	_	F	Reviewed By: <u>GPB (2/19/19</u>		
End Calibration ID:	_		Initials & Date		
Ion abundance within QC limits?	Beg.	End NA	Mass resolution ≥	Beg.	End
Concentrations within criteria?	Image: Control of the	Ф	□ 5k □ 6-8K □ 8K #210K 1614 1699 429 1613/1668/8280	_	
TCDD/TCDF Vaileys <25%			Intergrated peaks display correctly?	Y	N4
First and last eluters present?	\Box		GC Break <20%		
Retention Times within criteria?			8280 CS1 End Standard:		
Verification Std. named correctly?	I		- Ratios within limits, S/N <2.5:1, CS1 within 12 hours		MA
(ST-Year-Month-Day-VG ID)	_/				
Forms signed and dated?	\square	Ш	Comments:		
Correct ICAL referenced?	/h	4			
Run Log:					
- Correct instrument listed?	$\overline{\mathbf{A}}$	NA			
- Samples within 12 hour clock?	\bigcirc	N			
- Bottle position verfied?	17				

ID: LR - HCSRC

Rev. No.: 0 Rev. Date: 06/06/2017

Page: 1 of 1

Page 1 of 2

U:\VG11.PRO\Results\191218K1\191218K1-1.qld Dataset:

Last Altered:

Thursday, December 19, 2019 09:55:43 Pacific Standard Time

Printed:

Thursday, December 19, 2019 09:56:04 Pacific Standard Time

HC 12.19.19

GPB 12/19/19

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_1, Date: 18-Dec-2019, Time: 17:33:49, ID: ST191218K1-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204

#-Name	Resp	: IS Resp	RA -	n/y	RRF	; Pred.RT-	RT	RT Flag	Pred.RRT	RRT :	Conc.	%Rec	STD out
1 2,3,7,8-TCDD	2.44e4	2.62e5	0.76	NO	0.925	26.17	26.17	NO	1.001	1.001	10.086	101	NO
2 1,2,3,7,8-PeCDD	7.44e4	1.58e5	0.65	NO	0.905	31.31	31.31	NO	1.001	1.001	51.864	104	NO
3 1,2,3,4,7,8-HxCDD	6.56e4	1.19e5	1.29	NO	1.07	34.66	34.67	NO	1.000	1.001	51.672	103	NO
4 1,2,3,6,7,8-HxCDD	7.30e4	1.41e5	1.27	NO	0.967	34.76	34.77	NO	1.000	1.000	53.605	107	NO
5 1,2,3,7,8,9-HxCDD	6.36e4	1.27e5	1.26	NO	0.978	35.06	35.03	NO	1.001	1.000	51.135	102	NO
6 1,2,3,4,6,7,8-HpCDD	4.74e4	9.10e4	1.05	NO	1.04	38.54	38.55	NO	1.000	1.001	50.210	100	NO
7 OCDD	8.25e4	1.61e5	0.90	NO	0.972	41.81	41.82	NO	1.000	1.000	105.33	105	NO
8 2,3,7,8-TCDF	3.66e4	3.62e5	0.78	NO	0.938	25.18	25.19	NO	1.001	1.001	10.785	108	NO
9 1,2,3,7,8-PeCDF	1.27e5	2.50e5	1.59	NO	0.976	30.00	30.00	NO	1.001	1.001	51.930	104	NO
10 2,3,4,7,8-PeCDF	1.23e5	2.31e5	1.53	NO	1.00	31.02	30.99	NO	1.001	1.000	53.073	106	NO
11 1,2,3,4,7,8-HxCDF	1.05e5	1.67e5	1.29	NO	1.24	33.78	33.80	NO	1.000	1.001	50.758	102	NO
12 1,2,3,6,7,8-HxCDF	1.20e5	2.07e5	1.21	NO	1.10	33.91	33.92	NO	1.000	1.001	53.035	106	NO
13 2,3,4,6,7,8-HxCDF	1.14e5	1.81e5	1.28	NO	1.18	34.51	34.49	NO	1.001	1.001	53.291	107	NO
14 1,2,3,7,8,9-HxCDF	8.71e4	1.48e5	1.26	NO	1.07	35.36	35.37	NO	1.000	1.000	54.720	109	NO
15 1,2,3,4,6,7,8-HpCDF	8.53e4	1.44e5	1.02	NO	1.13	37.14	37.12	NO	1.001	1.000	52.481	105	NO
16 1,2,3,4,7,8,9-HpCDF	6.48e4	9.69e4	1.00	NO	1.26	39.15	39.16	NO	1.000	1.000	53.041	106	NO
17 17 OCDF	1.13e5	2.17e5	0.90	NO	1.10	42.00	42.01	NO	1.000	1.000	94.527	94.5	NO
18 13C-2,3,7,8-TCDD	2.62e5	2.47e5	0.78	NO	1.05	26.15	26.14	NO	1.027	1.027	101.03	101	NO
19 13C-1,2,3,7,8-PeCDD	1.58e5	2.47e5	0.64	NO	0.743	31.29	31.29	NO	1.230	1.229	86.388	86.4	NO
20 13C-1,2,3,4,7,8-HxCDD	1.19e5	2.13e5	1.26	NO	0.646	34.64	34.65	NO	1.014	1.014	86.382	86.4	NO
21 13C-1,2,3,6,7,8-HxCDD	1.41e5	2.13e5	1.24	NO	0.777	34.73	34.76	NO	1.017	1.017	85.169	85.2	NO
22 13C-1,2,3,7,8,9-HxCDD	1.27e5	2.13e5	1.15	NO	0.659	35.01	35.02	NO	1.025	1.025	90.688	90.7	NO
23 13C-1,2,3,4,6,7,8-HpCE	DD 9.10e4	2.13e5	1.06	NO	0.534	38.51	38.53	NO	1.127	1.128	80.142	80.1	NO
24 13C-OCDD	1.61e5	2.13e5	0.88	NO	0.470	41.79	41.81	NO	1.223	1.224	161.20	80.6	NO
25 13C-2,3,7,8-TCDF	3.62e5	3.83e5	0.72	NO	0.977	25.16	25.16	NO	0.989	0.989	96.665	96.7	NO
26 26 13C-1,2,3,7,8-PeCDF	2.50e5	3.83e5	1.48	NO	0.778	29.98	29.98	NO	1.178	1.178	83.829	83.8	NO
27 13C-2,3,4,7,8-PeCDF	2.31e5	3.83e5	1.55	NO	0.750	30.97	30.99	NO	1.217	1.218	80.244	80.2	NO
28 28 13C-1,2,3,4,7,8-HxCDF	1.67e5	2.13e5	0.52	NO	0.845	33.77	33.78	NO	0.989	0.989	92.801	92.8	NO
29 13C-1,2,3,6,7,8-HxCDF	2.07e5	2.13e5	0.52	NO	1.03	33.89	33.90	NO	0.992	0.992	95.002	95.0	NO
30 13C-2,3,4,6,7,8-HxCDF	1.81e5	2.13e5	0.50	NO	0.893	34.46	34.47	NO	1.009	1.009	95.288	95.3	NO
31 13C-1,2,3,7,8,9-HxCDF	1.48e5	2.13e5	0.52	NO	0.734	35.37	35.36	NO	1.035	1.035	94.970	95.0	NO

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\191218K1\191218K1-1.qld

Last Altered: Thursday, December 19, 2019 09:55:43 Pacific Standard Time Printed: Thursday, December 19, 2019 09:56:04 Pacific Standard Time

Name: 191218K1_1, Date: 18-Dec-2019, Time: 17:33:49, ID: ST191218K1-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204

	: #-Name	Resp	: IS Resp:	RA -	n/y	: RRF	: Pred.RT	- RT	- RT Flag	Pred.RRT	RRT	: Conc.	- %Rec -	STD out
32	; 32 13C-1,2,3,4,6,7,8-HpC	DF 1.44e5	2.13e5	0.43	NO	0.754	37.08	37.10	NO	1.085	1.086	89.722	89.7	NO
33	33 13C-1,2,3,4,7,8,9-HpC	DF 9.69e4	2.13e5	0.44	NO	0.539	39.11	39.15	NO	1.145	1.146	84.560	84.6	NO
34	34 13C-OCDF	2.17e5	2.13e5	0.91	NO	0.593	41.97	42.00	NO	1.229	1.229	172.22	86.1	NO
35	35 37CI-2,3,7,8-TCDD	2.57e4	2.47e5			1.07	26.17	26.17	NO	1.028	1.028	9.7287	97.3	NO
36	36 13C-1,2,3,4-TCDD	2.47e5	2.47e5	0.77	NO	1.00	25.45	25.45	NO	1.000	1.000	100.00	100	NO
37	37 13C-1,2,3,4-TCDF	3.83e5	3.83e5	0.74	NO	1.00	23.55	23.54	NO	1.000	1.000	100.00	100	NO
38	38 13C-1,2,3,4,6,9-HxCD	F 2.13e5	2.13e5	0.50	NO	1.00	34.16	34.16	NO	1.000	1.000	100.00	100	NO

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Quantify Compound Summary Report
Vista Analytical Laboratory VG-11

MassLynx 4.1 SCN815

Page 1 of 1

Dataset:

Untitled

Last Altered: Printed: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:48:47 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613_rrt-12-17-19.mdb 17 Dec 2019 14:52:57 Calibration: U:\VG11.PRO\CurveDB\db5 1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Compound name: 2,3,7,8-TCDD

Name		; Acq.Date	-Acq.Time
1 : 191218K1_1	ST191218K1-1 1613 CS3 19C2204	18-Dec-19	17:33:49
191218K1_2	SOLVENT BLANK	18-Dec-19	18:22:04
3 ្នំ ា ្លូបក្សី 191218K1_3	1903739-02 PDI-026SC-A-12-12.6-191014 1	3 18-Dec-19	19:10:06
៌ ៌ ៌្្លិ ៌ ៎191218K1_4	1903739-03 PDI-077SC-A-14-15-191014 13.	13 18-Dec-19	19:57:23
5 191218K1_5	1903739-04 PDI-077SC-A-15-16-191014 12.	51 18-Dec-19	20:45:44
191218K1_6	1903739-05 PDI-079SC-A-11-12-191014 13.	37 18-Dec-19	21:34:05
191218K1_7	1903739-06 PDI-079SC-A-12-13.3-191014 1	3 18-Dec-19	22:23:46
191218K1_8	1903741-01 PDI-049SC-A-14-15-191015 14.	25 18-Dec-19	23:11:52
191218K1_9	1903741-02 PDI-049SC-A-15-15.5-191015 1	3 18-Dec-19	23:59:08
191218K1_1	0 1903741-03 PDI-052SC-A-11-12-191015 14.	96 19-Dec-19	00:47:28
191218K1_1	1 1903741-04 PDI-052SC-A-12-13.4-191015 1	3 19-Dec-19	01:37:11
2 191218K1_1	2 1903741-05 PDI-055SC-A-11-12-191015 14.	32 19-Dec-19	02:25:04
191218K1_1	3 1903741-06 PDI-055SC-A-12-13.1-191015 1	3 19-Dec-19	03:12:27

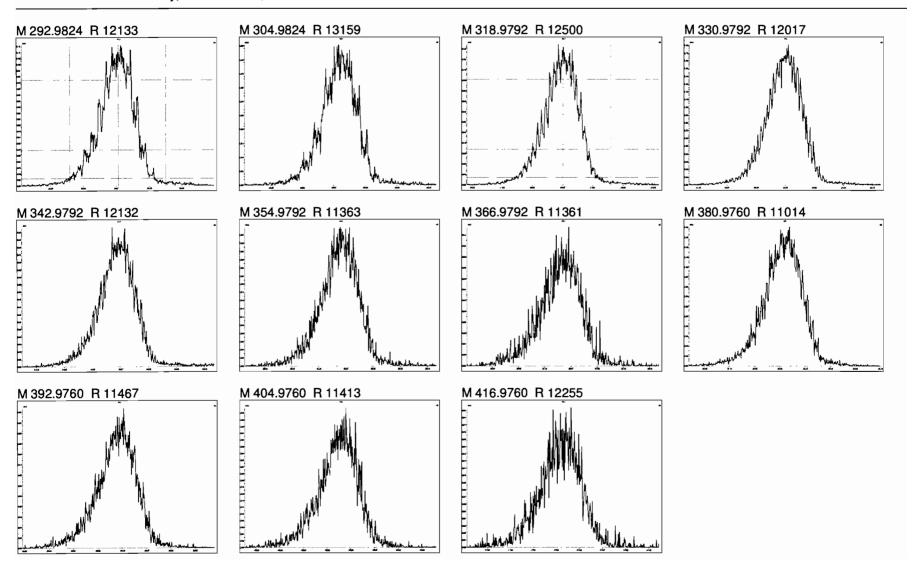
Work Order 1903741 Page 256 of 638

File:

Experiment: ocdd_db5.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed:

Wednesday, December 18, 2019 17:27:06 Pacific Standard Time



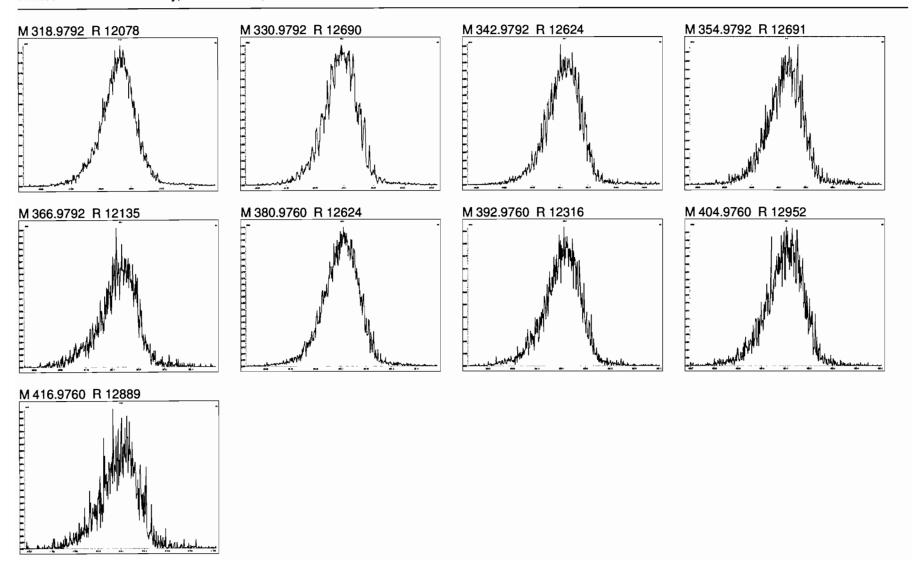
Work Order 1903741 Page 257 of 638

File:

Experiment: ocdd_db5.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed:

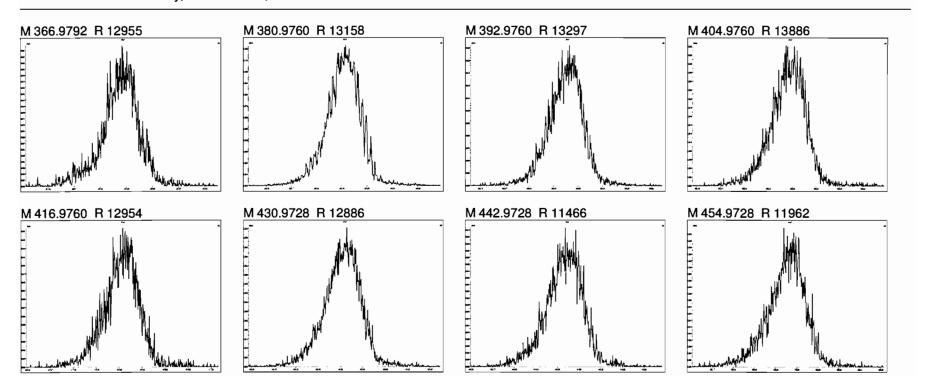
Wednesday, December 18, 2019 17:27:50 Pacific Standard Time



Work Order 1903741 Page 258 of 638

File: Experiment: ocdd_db5.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Wednesday, December 18, 2019 17:28:41 Pacific Standard Time



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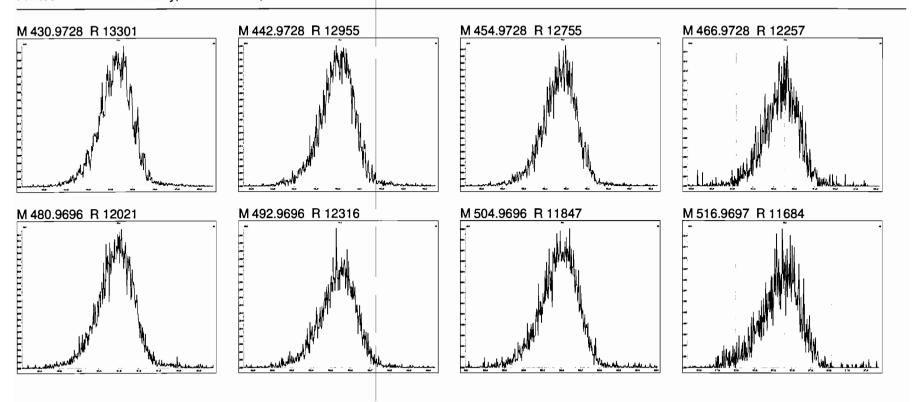
Work Order 1903741 Page 260 of 638

File:

Experiment: ocdd db5.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed:

Wednesday, December 18, 2019 17:30:07 Pacific Standard Time



Work Order 1903741 Page 261 of 638 **Quantify Sample Summary Report** Vista Analytical Laboratory VG-11 MassLynx 4.1 SCN815

Page 1 of 1

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-CPSM.qld

Last Altered:

Thursday, December 19, 2019 09:50:13 Pacific Standard Time

Printed:

Thursday, December 19, 2019 09:50:41 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\CPSM.mdb 18 Dec 2019 17:58:17

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_1, Date: 18-Dec-2019, Time: 17:33:49, ID: ST191218K1-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204

	#	Name -	RT
in the You	1	1,3,6,8-TCDD (First)	21.83
3	2	1,2,8,9-TCDD (Last)	27.19
34778 -:	3	1,2,4,7,9-PeCDD (First)	29.06
	4	1,2,3,8,9-PeCDD (Last)	31.69
5////	5	1,2,4,6,7,9-HxCDD (First)	33.19
6	6	1,2,3,7,8,9-HxCDD (Last)	35.03
7	7	1,2,3,4,6,7,9-HpCDD (First)	37.51
8	8	1,2,3,4,6,7,8-HpCDD (Last)	38.55
9 1	9	1,3,6,8-TCDF (First)	19.76
10	10	1,2,8,9-TCDF (Last)	27.33
	11	1,3,4,6,8-PeCDF (First)	27.31
12	12	1,2,3,8,9-PeCDF (Last)	31.93
13	13	1,2,3,4,6,8-HxCDF (First)	32.64
14	14	1,2,3,7,8,9-HxCDF (Last)	35.37
15	15	1,2,3,4,6,7,8-HpCDF (First)	37.12
16	16	1,2,3,4,7,8,9-HpCDF (Last)	39.16

Quantify Sample Report

MassLynx 4.1 SCN815

Vista Analytical Laboratory VG-11

Dataset:

U:\VG11.PRO\Results\191218K1\191218K1-CPSM.qld

Last Altered:

Thursday, December 19, 2019 09:50:13 Pacific Standard Time

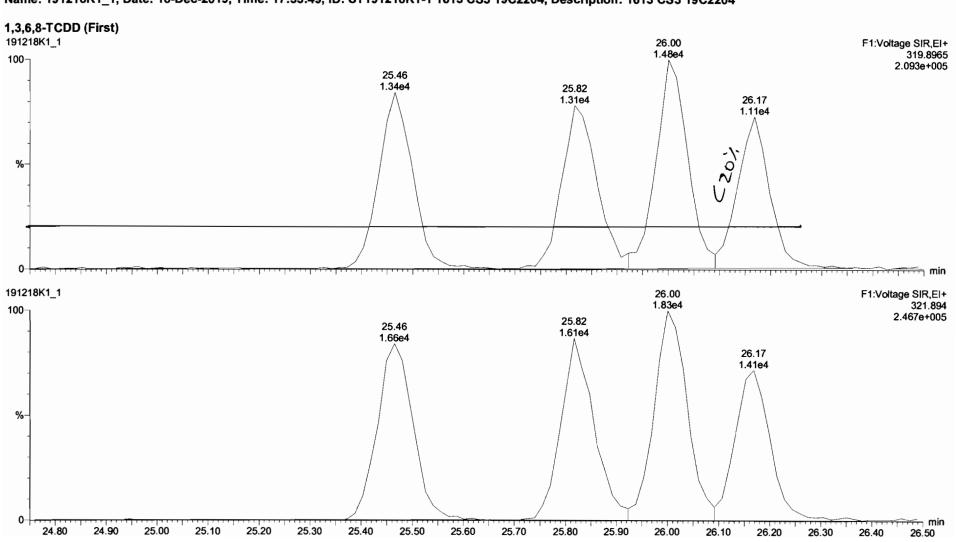
Printed:

Thursday, December 19, 2019 09:50:41 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\CPSM.mdb 18 Dec 2019 17:58:17

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 06:55:45

Name: 191218K1_1, Date: 18-Dec-2019, Time: 17:33:49, ID: ST191218K1-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204



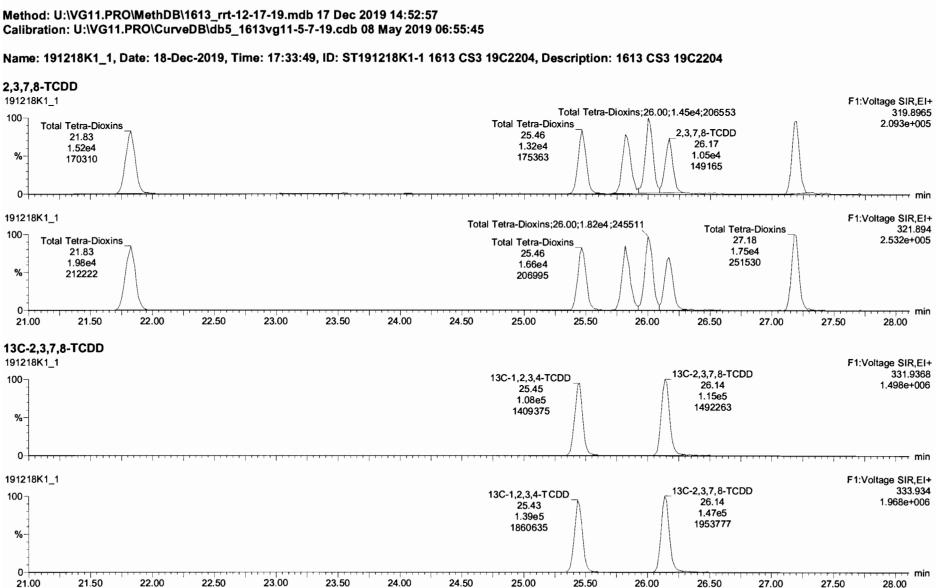
Page 1 of 1

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Untitled

Thursday, December 19, 2019 07:42:21 Pacific Standard Time Last Altered: Printed: Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Method: U:\VG11.PRO\MethDB\1613 rrt-12-17-19.mdb 17 Dec 2019 14:52:57



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Thursday, December 19, 2019 07:42:21 Pacific Standard Time Last Altered: Thursday, December 19, 2019 07:49:20 Pacific Standard Time Printed:

21.50

21.00

22.00

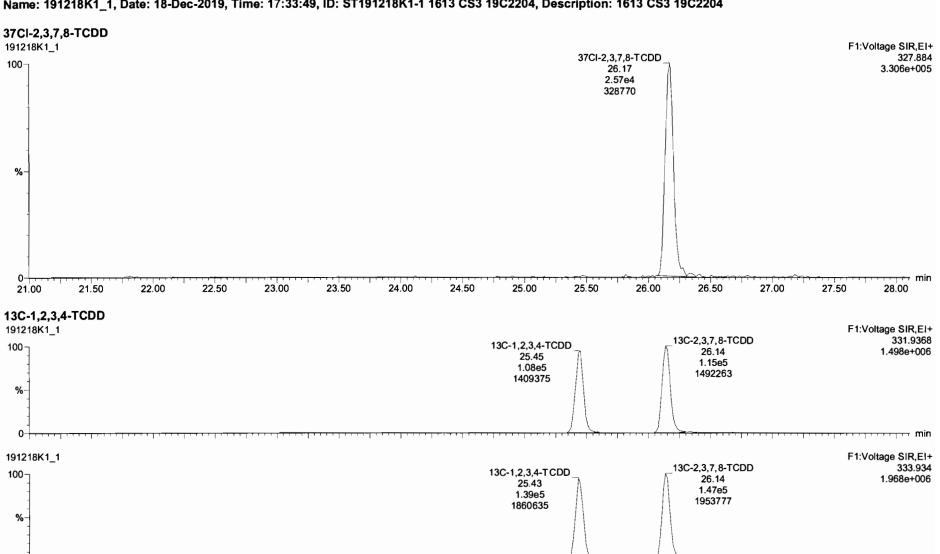
22.50

23.00

23.50

24.00





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24.50

25.00

25.50

26.00

26.50

27.00

27.50

→ min

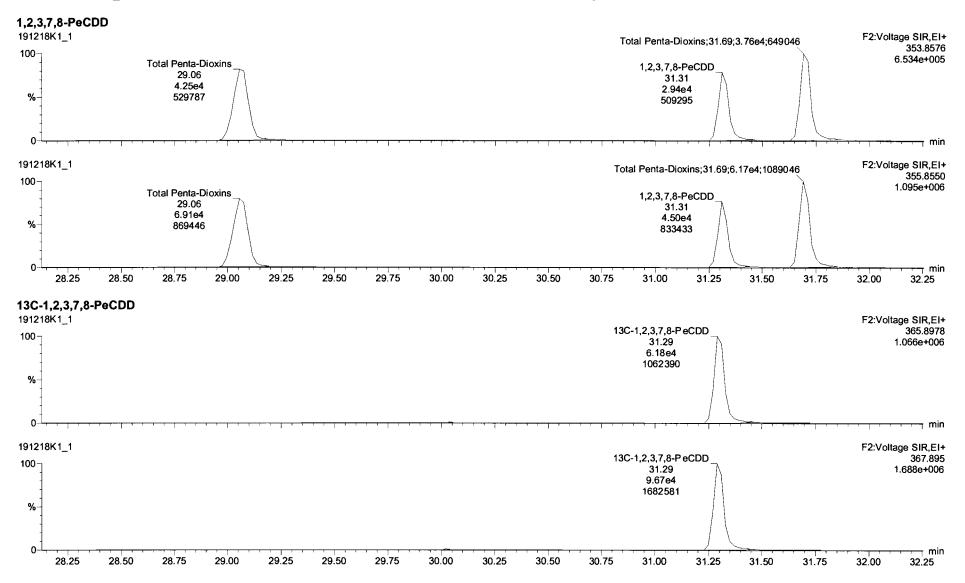
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Dataset:

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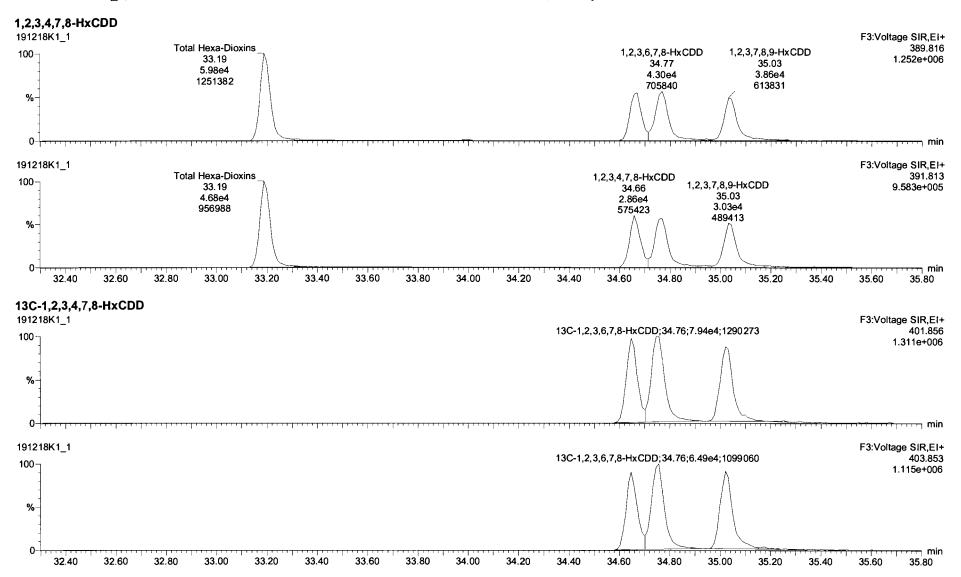
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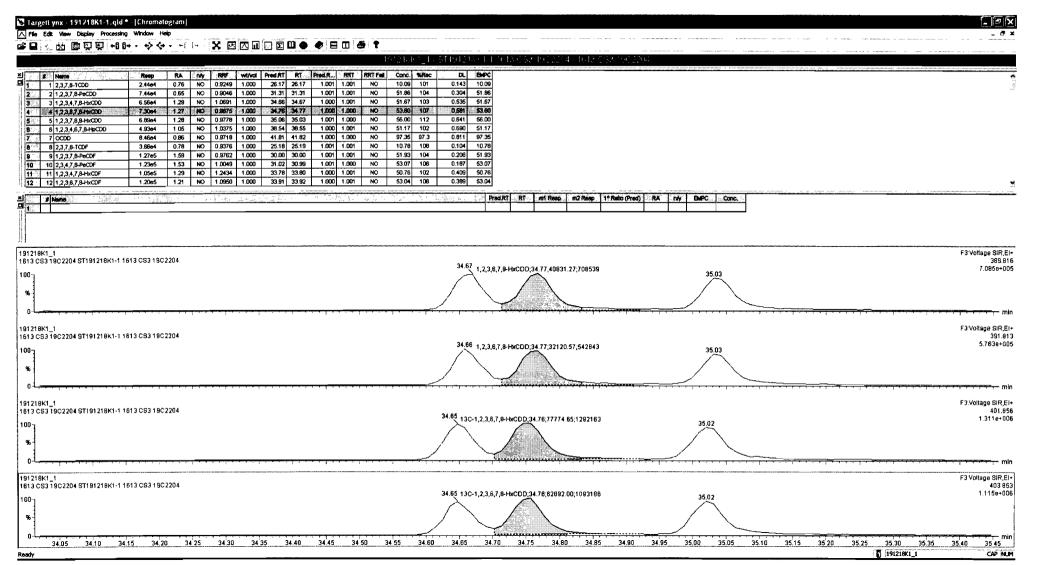


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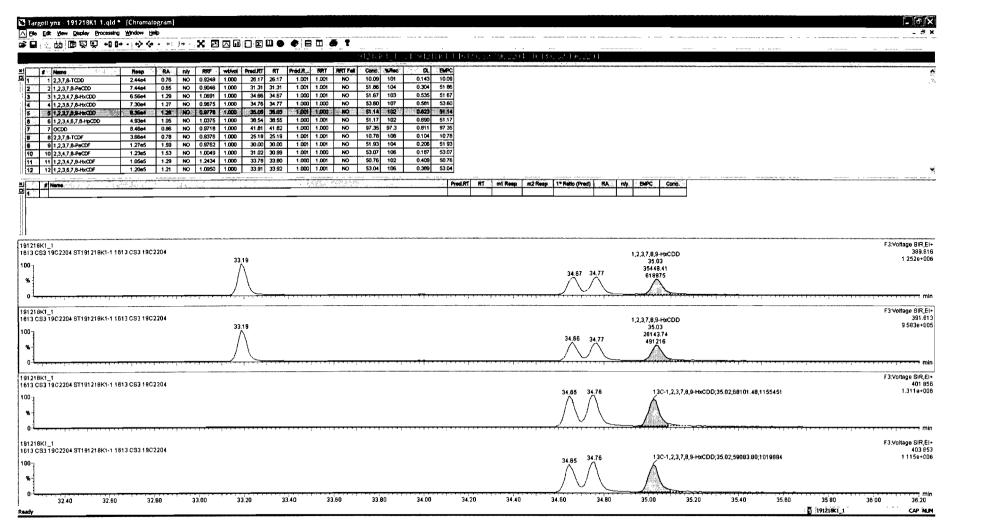
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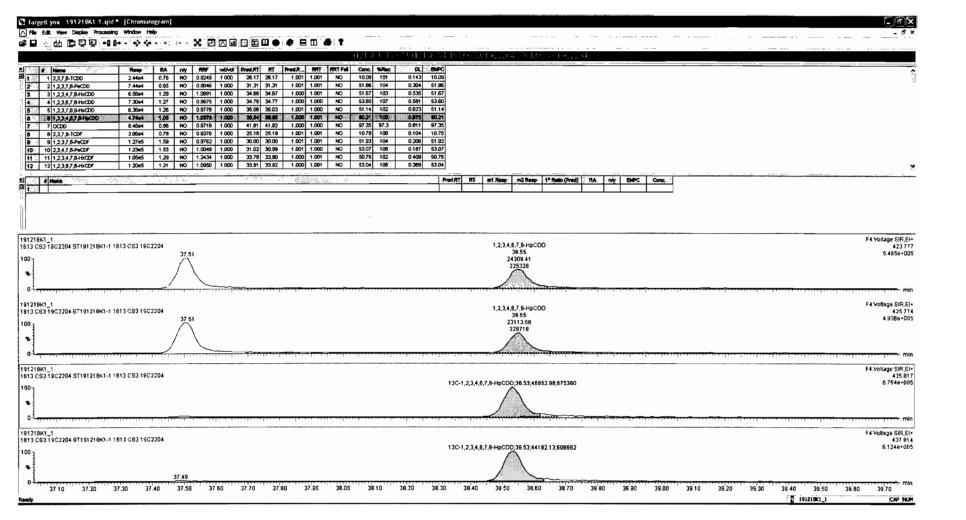


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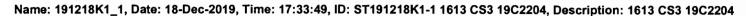


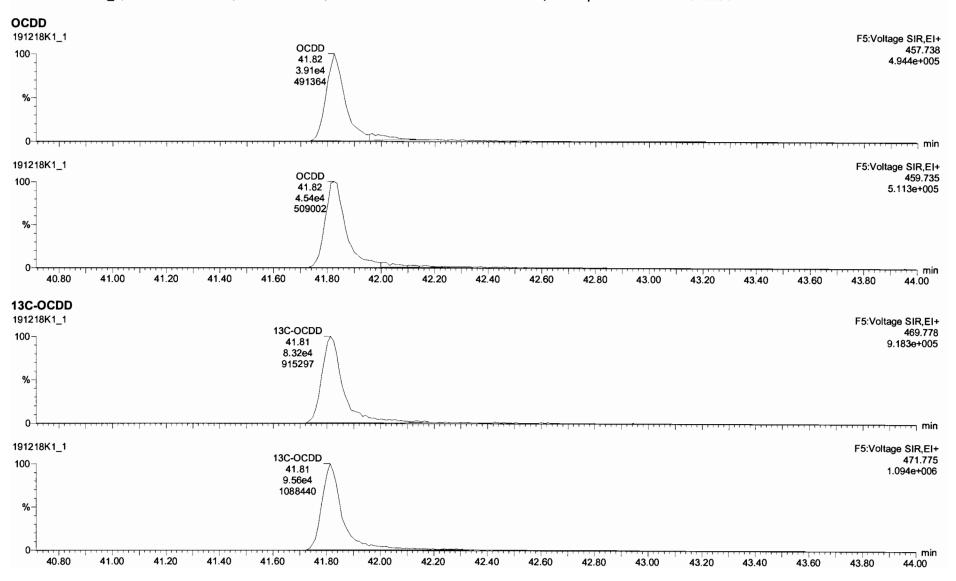
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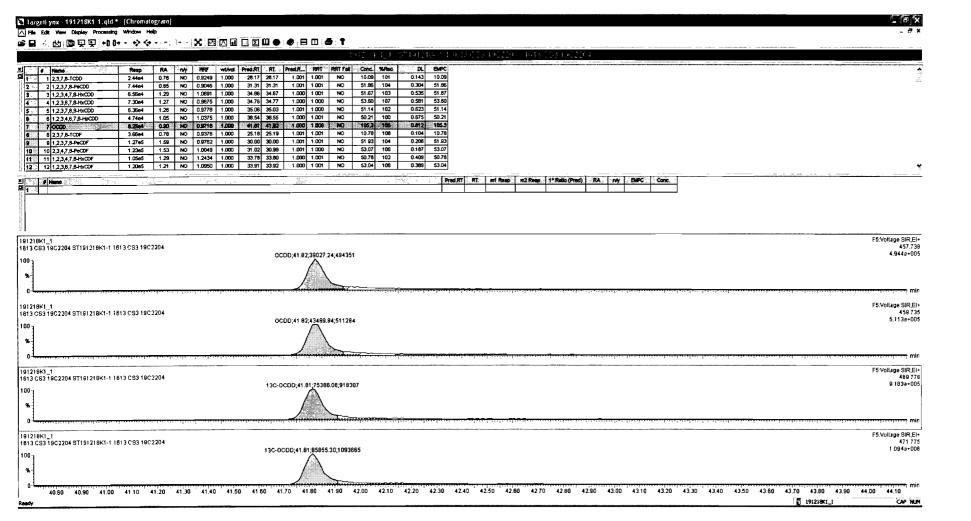


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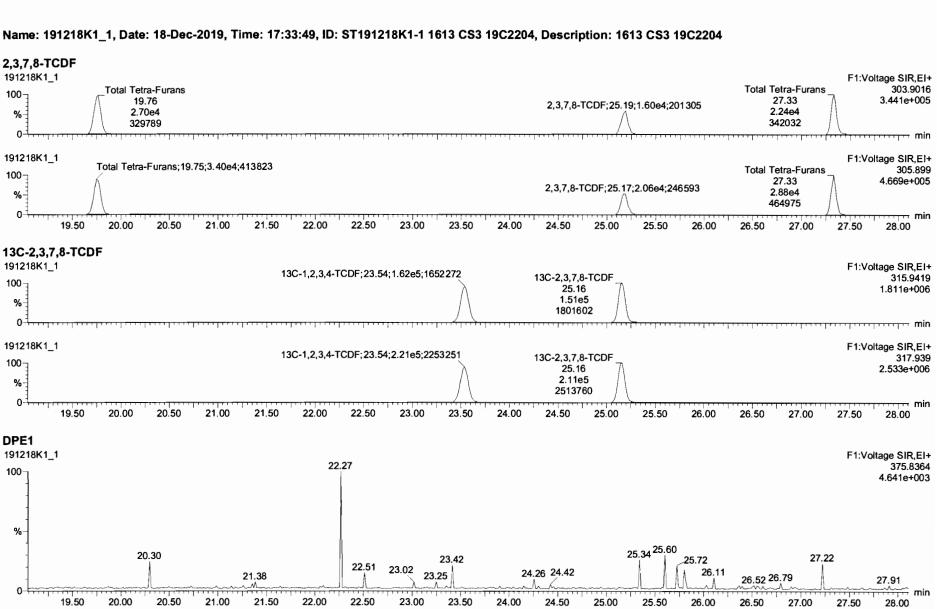
Work Order 1903741 Page 272 of 638



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Thursday, December 19, 2019 07:49:20 Pacific Standard Time Printed:

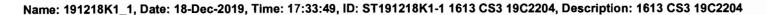
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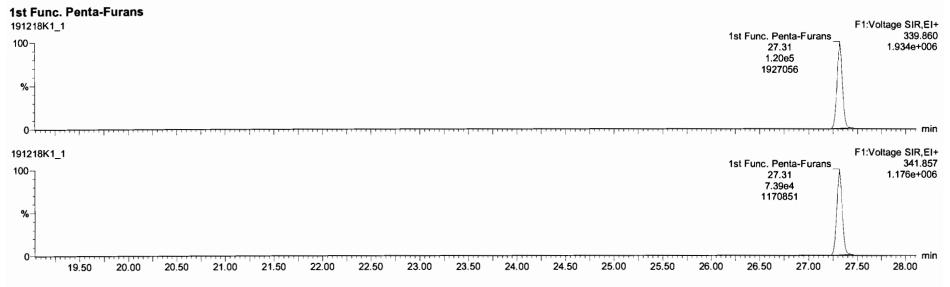


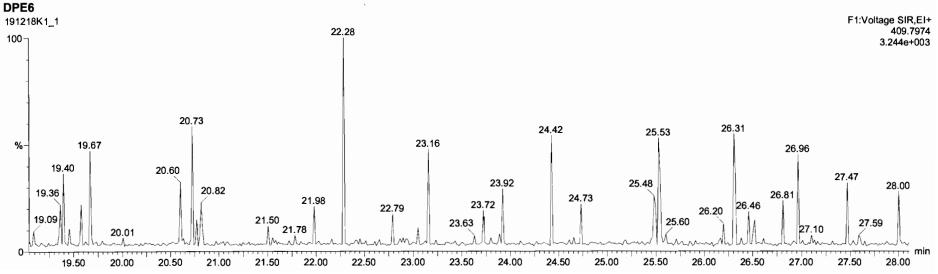
Work Order 1903741 Page 274 of 638

Untitled

Last Altered: Printed: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time





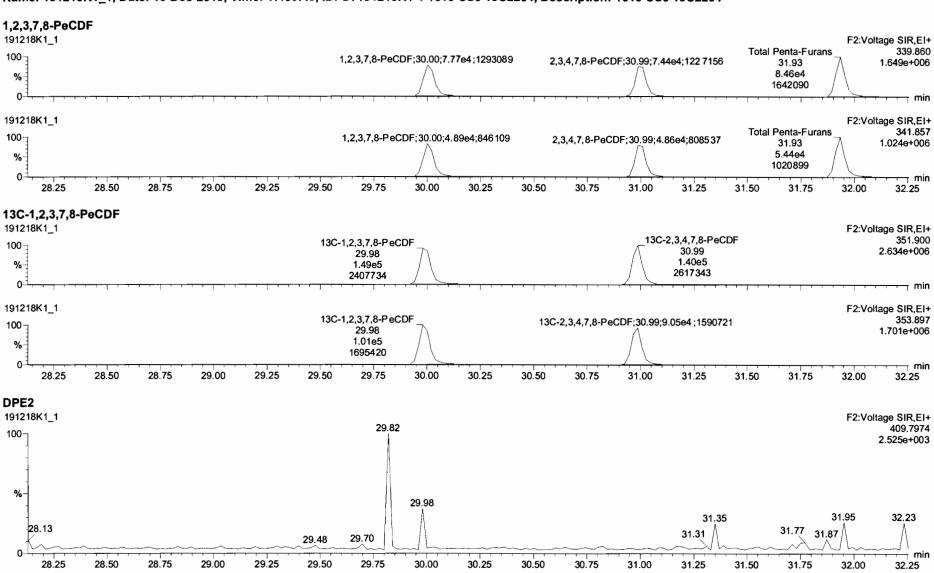


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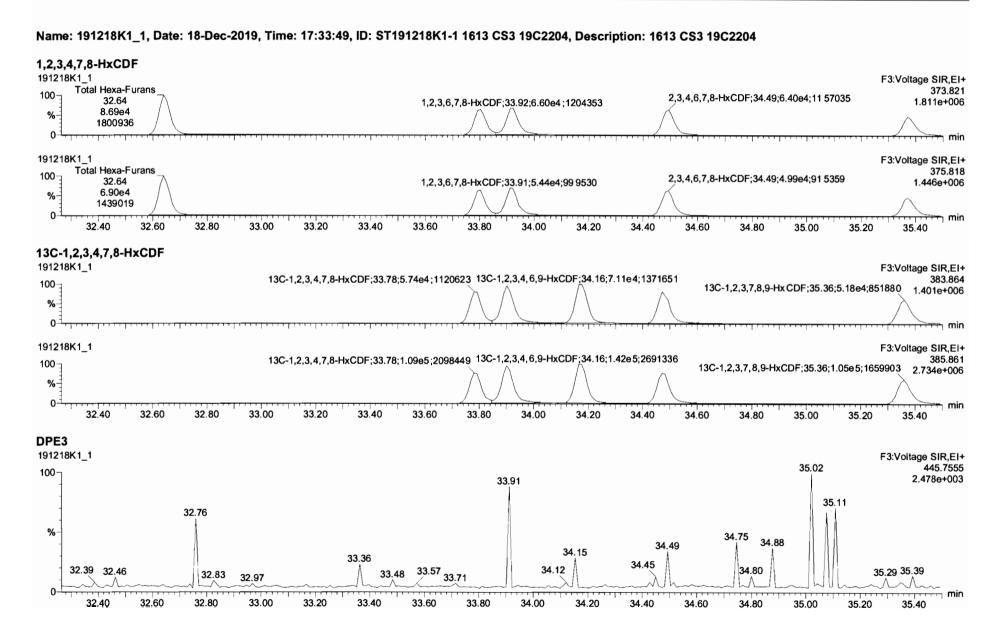
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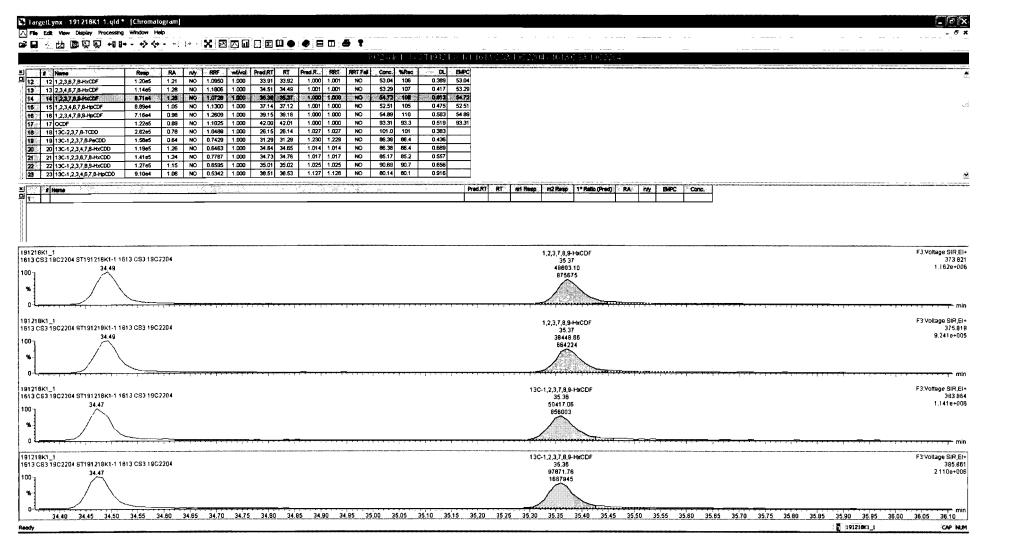
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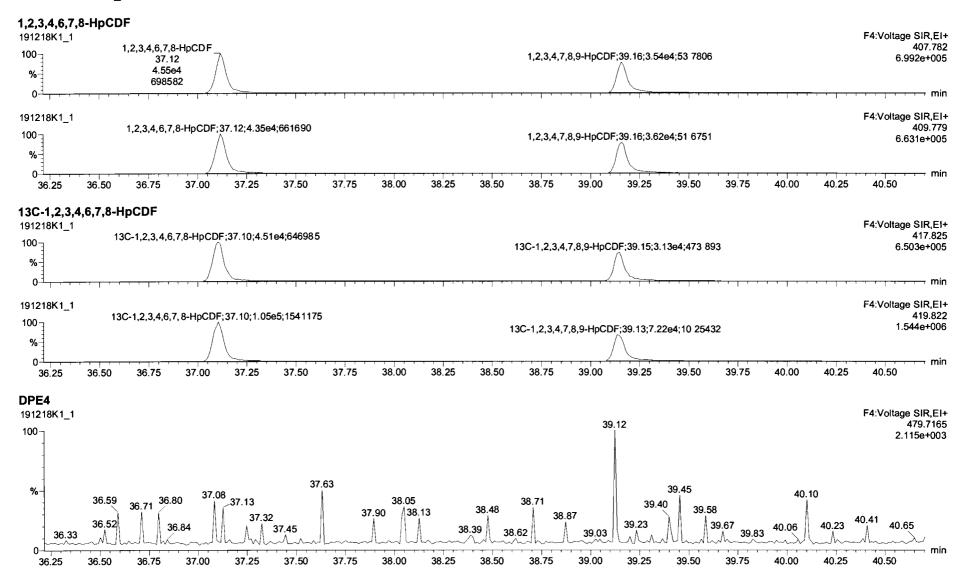


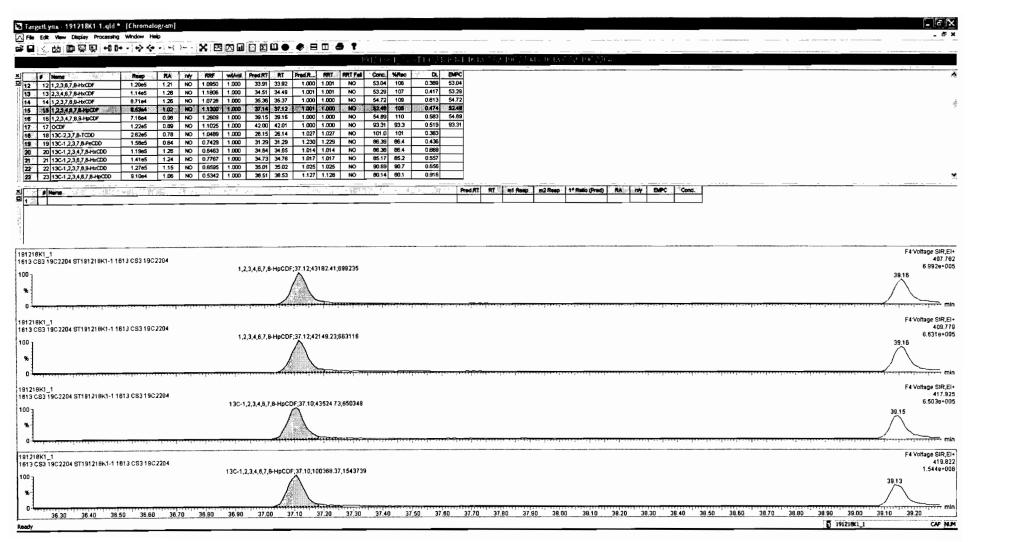
Work Order 1903741 Page 278 of 638

Dataset: Untitled

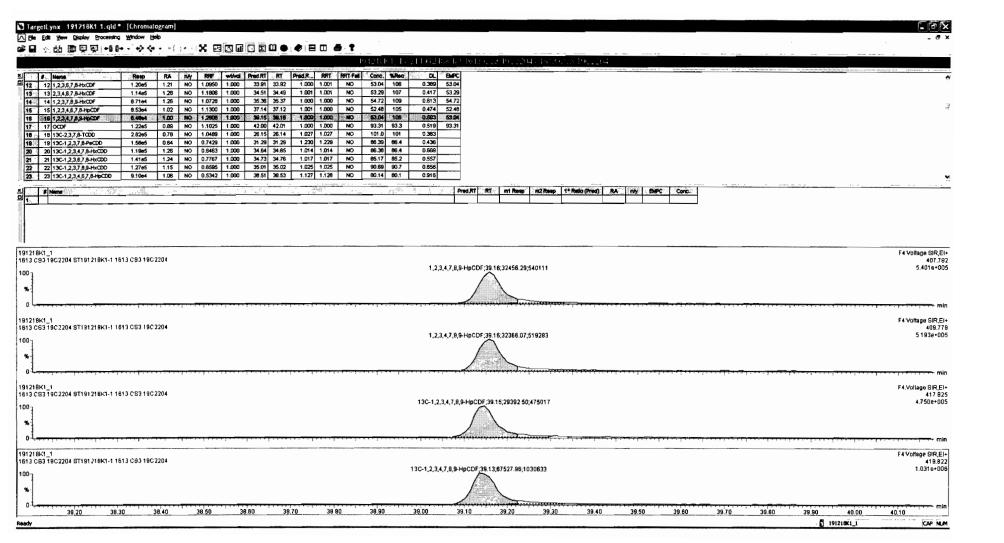
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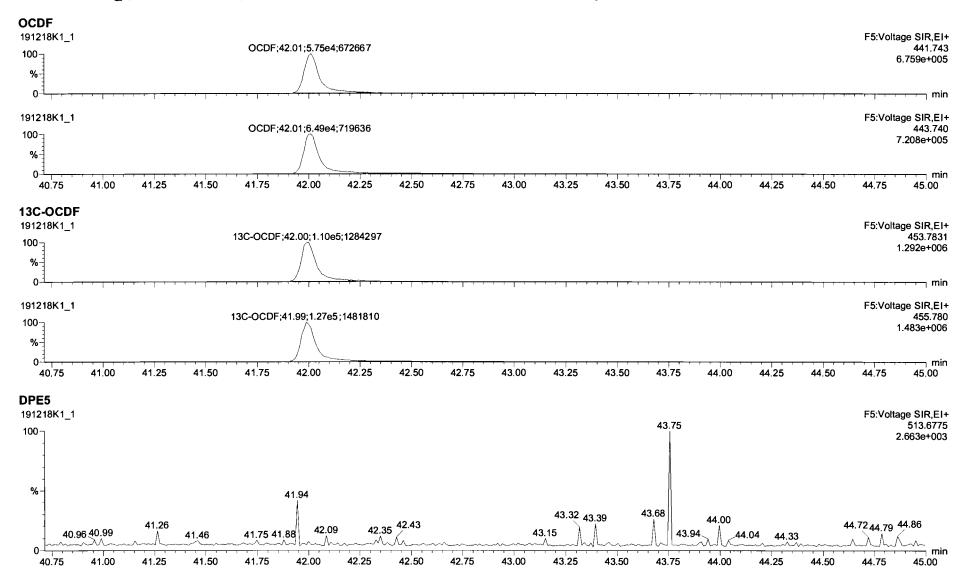


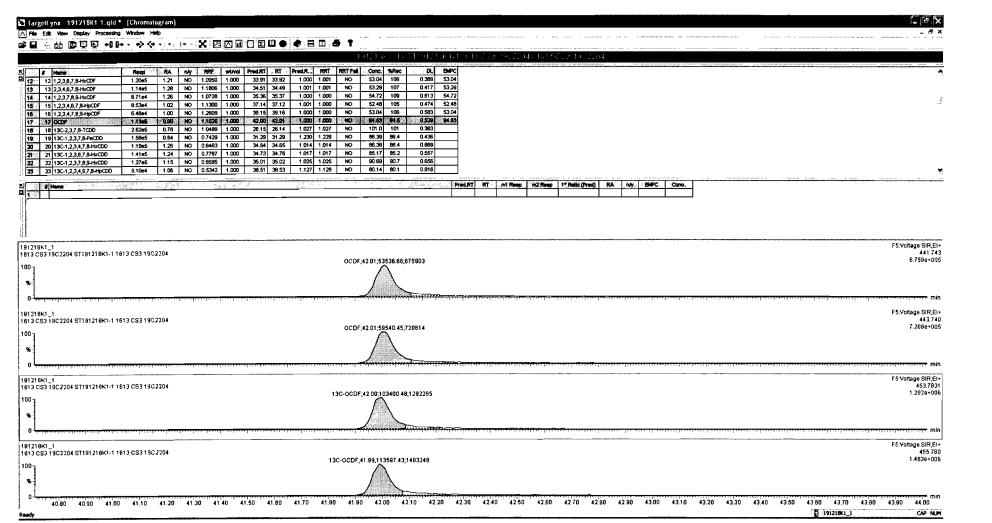
Work Order 1903741 Page 281 of 638

Untitled

Last Altered: Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

Name: 191218K1_1, Date: 18-Dec-2019, Time: 17:33:49, ID: ST191218K1-1 1613 CS3 19C2204, Description: 1613 CS3 19C2204





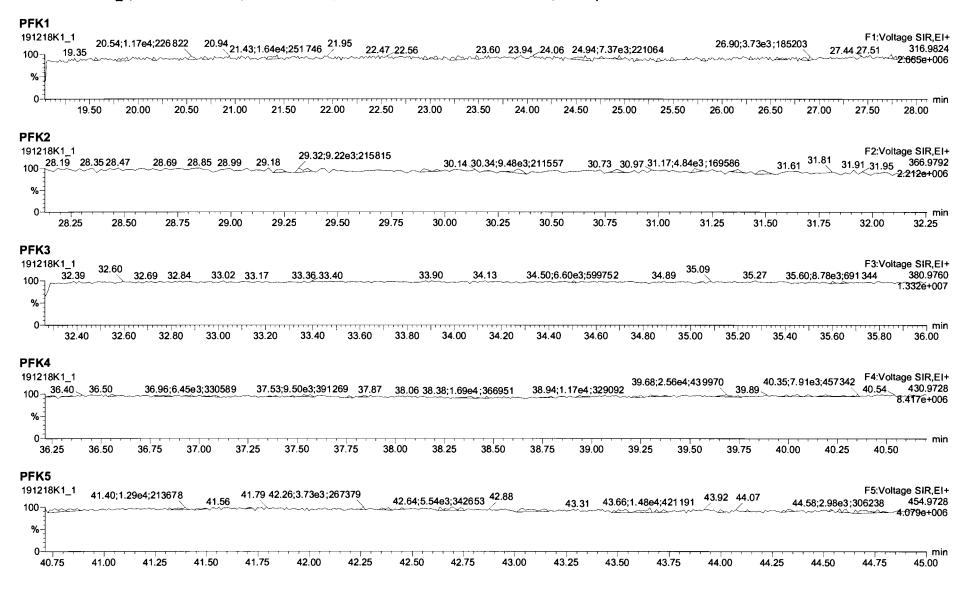
Work Order 1903741 Page 283 of 638

Untitled

Last Altered: Thursday
Printed: Thursday

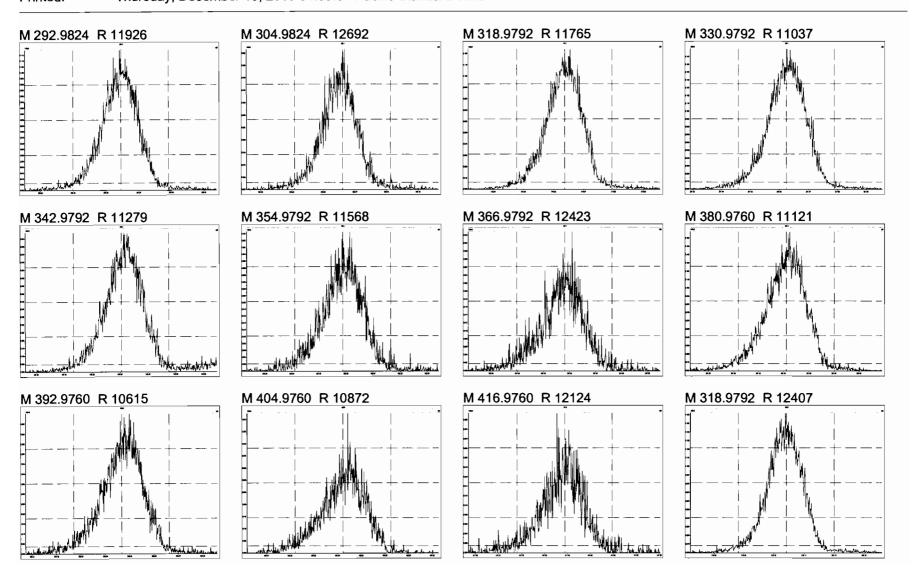
Thursday, December 19, 2019 07:42:21 Pacific Standard Time Thursday, December 19, 2019 07:49:20 Pacific Standard Time

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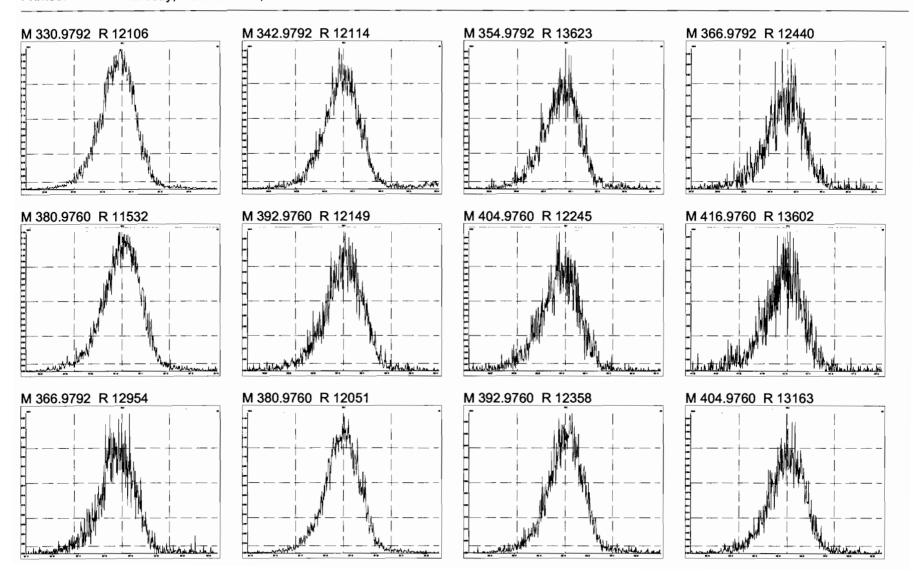
Work Order 1903741

Thursday, December 19, 2019 04:09:34 Pacific Standard Time



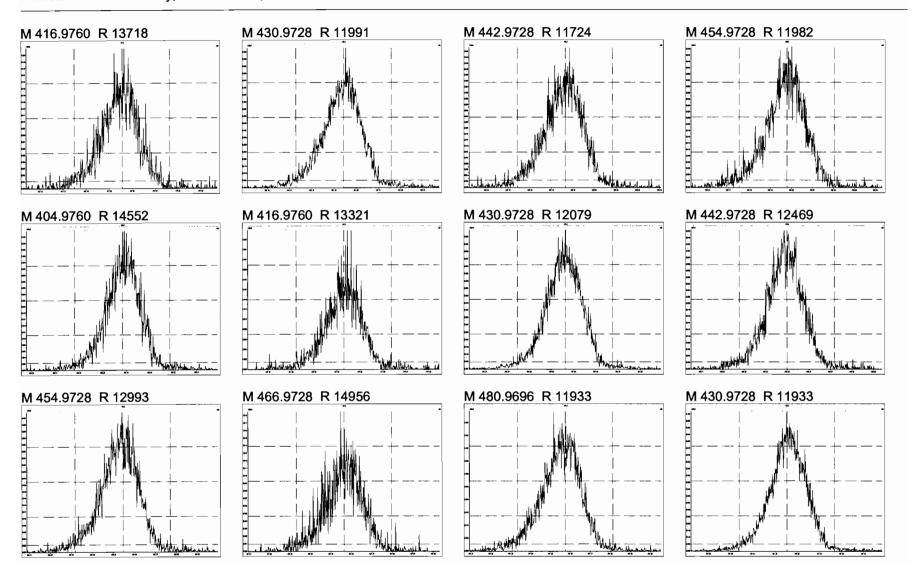
Work Order 1903741 Page 285 of 638

Thursday, December 19, 2019 04:09:34 Pacific Standard Time



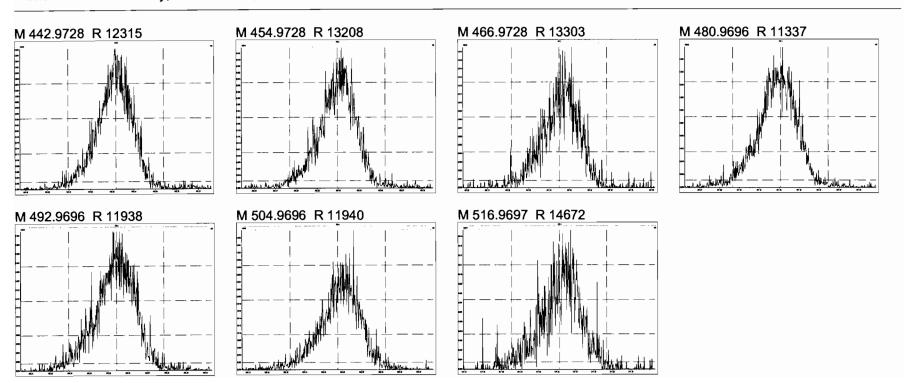
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Thursday, December 19, 2019 04:09:34 Pacific Standard Time



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Thursday, December 19, 2019 04:09:34 Pacific Standard Time



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INITIAL CALIBRATION

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Run: 191009D1				tical Labo:	ratory.			
	Analyte:		Cal:	1613VG 7 -10	-9-19	Inst.	ID. VG-7	
Data filename: 191009D1	l		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
2,3,7,8-TCDD	0.9053	7.55 %	0.84	0.83	0.87	0.99	0.92	0.98
1,2,3,7,8-PeCDD	0.9027	4.95 %	0.86	0.87	0.88	0.88	0.96	0.96
1,2,3,4,7,8-HxCDD	1.1013	3.97 %	1.12	1.13	1.03	1.08	1.09	1.15
1,2,3,6,7,8-HxCDD	0.9386	7.68 %	0.83	0.88	1.01	0.92	0.98	1.00
1,2,3,7,8,9-HxCDD	0.9613	4.62 %	0.95	0.90	0.93	0.95	1.00	1.03
1,2,3,4,6,7,8-HpCDD	0.9794	5.84 %	0.90	0.97	0.95	0.96	1.03	1.06
OCDD	0.9585	4.07 %	0.93	0.94	0.92	0.94	1.01	1.01
			0.70		0.52	0.71	2.01	2.52
2,3,7,8-TCDF	0.9501	8.27 %	1.09	0.90	0.89	0.89	0.95	0.99
1,2,3,7,8-PeCDF	0.9603	4.05 %	0.94	0.94	0.92	0.95	1.00	1.01
2,3,4,7,8-PeCDF	1.0148	3.01 %	1.00	0.99	1.00	1.00	1.03	1.07
1,2,3,4,7,8-HxCDF	1.1768	4.35 %	1.23	1.11	1.15	1.14	1.20	1.24
1,2,3,6,7,8-HxCDF	1.0689	3.63 %	1.01	1.07	1.06	1.05	1.12	1.11
2,3,4,6,7,8-HxCDF	1.1136	5.58 %	1.06	1.03	1.12	1.11	1.16	1.20
1,2,3,7,8,9-HxCDF	1.0616	3.91 %	1.05	1.02	1.02	1.06	1.08	1.13
1,2,3,4,6,7,8-HpCDF	1.1276	3.90 %	1.13	1.13	1.06	1.10	1.17	1.18
1,2,3,4,7,8,9-HpCDF	1.2799	3.29 %	1.30	1.24	1.25	1.25	1.31	1.34
OCDF	0.9472	3.80 %	0.95	0.92	0.91	0.92	1.00	0.98
13C-2,3,7,8-TCDD	1.0954	1.91 %	1.11	1.08	1.06	1.10	1.12	1.11
13C-1,2,3,7,8-PeCDD	0.8814	5.11 %	0.89	0.86	0.83	0.86	0.89	0.96
13C-1,2,3,4,7,8-HxCDD	0.6421	10.35 %	0.65	0.60	0.58	0.61	0.65	0.77
13C-1,2,3,6,7,8-HxCDD	0.8555	4.13 %	0.86	0.87	0.82	0.87	0.80	0.90
13C-1,2,3,7,8,9-HxCDD	0.8066	5.57 %	0.84	0.80	0.76	0.80	0.76	0.88
13C-1,2,3,4,6,7,8-HpCDI	0.6539	9.07 %	0.70	0.63	0.59	0.62	0.63	0.75
13C-OCDD	0.5797	10.98 %	0.60	0.52	0.53	0.55	0.59	0.69
13C-2,3,7,8-TCDF	1.0349	1.62 %	1.04	1.00	1.03	1.05	1.04	1.04
13C-1,2,3,7,8-PeCDF	0.8542	4.58 %	0.84	0.82	0.82	0.87	0.86	0.92
13C-2,3,4,7,8-PeCDF	0.8471	3.79 %	0.81	0.84	0.83	0.84	0.85	0.91
13C-1,2,3,4,7,8-HxCDF	0.8317	8.50 %	0.76	0.80	0.79	0.86	0.83	0.96
13C-1,2,3,6,7,8-HxCDF	1.0344	5.35 %	1.00	1.03	1.03	1.03	0.98	1.14
13C-2,3,4,6,7,8-HxCDF	0.9533	6.17 %	0.94	0.94	0.90	0.93	0.93	1.07
13C-1,2,3,7,8,9-HxCDF	0.8277	8.68 %	0.82	0.80	0.77	0.78	0.83	0.96
13C-1,2,3,4,6,7,8-HpCDH	F 0.7575	6.47 %	0.76	0.73	0.72	0.75	0.73	0.85
13C-1,2,3,4,7,8,9-HpCDH	F 0.5812	8.97 %	0.62	0.54	0.52	0.55	0.58	0.66
13C-OCDF	0.6890	12.48 %	0.69	0.62	0.62	0.65	0.72	0.85
37Cl-2,3,7,8-TCDD	1.1977	8.83 %	1.40	1.16	1.16	1.11	1.15	1.21
120102								
13C-1,2,3,4-TCDD	1.0000	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00
13C-1,2,3,4-TCDF	1.0000	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00
13C-1,2,3,4,6,9-HxCDF	1.0000	0.00 %	1.00	1.00	1.00	1.00	1.00	1.00

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									Page 1 of 6
ਸੂਰ ਜਿਸ	lename:	: 191009D1 S: 1 Acqui	red. 9-00	CT-19 16:13:	. 04				
		. 191009D1 S. 1 Acqui 1009D1 Analyte:		513VG 7 -10-9-		Results			
		text: ST191009D1-1 1613 CS		13 (47-10-9	-19	Results	•		
	ampie (cext. Silylouphi-i lois Cs	0 1902201						
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
1	Unk	2,3,7,8-TCDD	0.25	1.97e+04	0.80 y	26:32	-	0.84	
2	Unk	1,2,3,7,8-PeCDD	1.25	8.06e+04	0.62 y	30:54	_	0.86	
3	Unk	1,2,3,4,7,8-HxCDD	1.25	7.34e+04	1.23 y	34:16	_	1.12	
4	Unk	1,2,3,6,7,8-HxCDD	1.25	7.23e+04	1.12 y	34:23	-	0.83	
5	Unk	1,2,3,7,8,9-HxCDD	1.25	8.01e+04	1.19 y	34:43	_	0.95	
6	Unk	1,2,3,4,6,7,8-HpCDD	1.25	6.39e+04	1.06 y	38:05	_	0.90	
7	Unk	OCDD	2.50	1.14e+05	0.95 y	41:28	_	0.93	
					1				
8	Unk	2,3,7,8-TCDF	0.25	3.62e+04	0.85 y	25:49	_	1.09	
9	Unk	1,2,3,7,8-PeCDF	1.25	1.26e+05	1.52 y	29:46	-	0.94	
10	Unk	2,3,4,7,8-PeCDF	1.25	1.31e+05	1.52 y	30:40	_	1.00	
11	Unk	1,2,3,4,7,8-HxCDF	1.25	9.36e+04	1.22 y	33:22	_	1.23	
12	Unk	1,2,3,6,7,8-HxCDF	1.25	1.02e+05	1.11 y	33:29	_	1.01	
13	Unk	2,3,4,6,7,8-HxCDF	1.25	1.01e+05	1.30 y	34:07	_	1.06	
14	Unk	1,2,3,7,8,9-HxCDF	1.25	8.74e+04	1.10 y	35:08	_	1.05	
15	Unk	1,2,3,4,6,7,8-HpCDF	1.25	8.63e+04	1.01 y	36:57	_	1.13	
16	Unk	1,2,3,4,7,8,9-HpCDF	1.25	8.18e+04	1.14 y	38:40	_	1.30	
17	Unk	OCDF	2.50	1.32e+05	0.94 y	41:43	_	0.95	
36	IS	13C-2,3,7,8-TCDD	100.00	9.40e+06	0.78 y	26:32	-	1.11	
37	IS	13C-1,2,3,7,8-PeCDD	100.00	7.48e+06	0.62 y	30:55	-	0.89	
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	5.24e+06	1.19 y	34:15	-	0.65	
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	6.96e+06	1.32 y	34:22	-	0.86	
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	6.74e+06	1.31 y	34:42	-	0.84	•
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	5.68e+06	1.05 y	38:05	-	0.70	
42	IS	13C-OCDD	200.00	9.75e+06	0.88 у	41:28	-	0.60	
43	IS	13C~2,3,7,8~TCDF	100.00	1.33e+07	0.79 y	25:49	-	1.04	
44	IS	13C-1,2,3,7,8-PeCDF	100.00	1.07e+07	1.58 y	29:46	-	0.84	
45	IS	13C-2,3,4,7,8-PeCDF	100.00	1.05e+07	1.58 y	30:39	-	0.81	
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	6.11e+06	0.51 y	33:21	-	0.76	
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	8.04e+06	0.50 y	33:29	-	1.00	
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	7.61e+06	0.50 y	34:07	-	0.94	
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	6.66e+06	0.48 y	35:07	-	0.82	
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	6.12e+06	0.42 y	36:57	-	0.76	
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	5.02e+06	0.45 y	38:41	-	0.62	
52	IS	13C-OCDF	200.00	1.11e+07	0.90 y	41:43	-	0.69	,
									λ 1
53	C/Up	37Cl-2,3,7,8-TCDD	0.25	2.97e+04		26:33	-	1.40	10/10/14
									1 1
54	RS/RT		100.00	8.45e+06	0.80 y	25:59	-	1.00	in lin 19
55	RS	13C-1,2,3,4-TCDF	100.00	1.28e+07	0.79 y	24:39	-	1.00	10 10
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	8.07e+06	0.52 y	33:47	_	1.00	

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	'ilanama	: 191009D1 S: 2 Acqui	red. 9.00	CT-19 17:00	. 45	,			
		: 191009D1 S: 2 Acqui 1009D1 Analyte:		613VG7-10-9		Resul	lta.		
		text: ST191009D1-2 1613 CS		513 VG / - 10 - 9	- 19	Resul	LCS:		
	Dampie	cext. SIT91009DI-2 1013 CS	1902202						
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
1	Unk	2,3,7,8-TCDD	0.50	3.54e+04	0.78 y	26:34	-	0.83	
2	Unk	1,2,3,7,8-PeCDD	2.50	1.46e+05	0.60 y	30:56	_	0.87	
3	Unk	1,2,3,4,7,8-HxCDD	2.50	1.25e+05	1.20 y	34:16	-	1.13	
4	Unk	1,2,3,6,7,8-HxCDD	2.50	1.40e+05	1.22 y	34:23	_	0.88	
5	Unk	1,2,3,7,8,9-HxCDD	2.50	1.33e+05	1.22 y 1.15 y	34:43	-	0.90	
6	Unk	1,2,3,4,6,7,8-HpCDD	2.50	1.13e+05	0.97 y	38:06	_	0.90	
7	Unk				-				
,	OHK	OCDD	5.00	1.78e+05	0.90 y	41:28	-	0.94	
8	Unk	2,3,7,8-TCDF	0.50	5.25e+04	0.74 y	25:51	_	0.90	
9	Unk				-				
10	Unk	1,2,3,7,8-PeCDF	2.50	2.25e+05 2.42e+05	1.59 y	29:48	-	0.94	
		2,3,4,7,8-PeCDF	2.50		1.50 y	30:40	-	0.99	
11	Unk	1,2,3,4,7,8-HxCDF	2.50	1.62e+05	1.16 y	33:22	-	1.11	
12 13	Unk Unk	1,2,3,6,7,8-HxCDF	2.50	2.03e+05	1.20 y	33:30	-	1.07	
		2,3,4,6,7,8-HxCDF	2.50	1.79e+05	1.30 y	34:07	-	1.03	
14	Unk	1,2,3,7,8,9-HxCDF	2.50	1.49e+05	1.24 y	35:08	-	1.02	
15	Unk	1,2,3,4,6,7,8-HpCDF	2.50	1.51e+05	0.91 y	36:57	-	1.13	
16	Unk	1,2,3,4,7,8,9-HpCDF	2.50	1.23e+05	0.94 y	38:41	-	1.24	
17	Unk	OCDF	5.00	2.09e+05	0.91 y	41:43	-	0.92	
36	IS	13C-2,3,7,8-TCDD	100.00	8.50e+06	0.78 y	26:34	-	1.08	
37	IS	13C-1,2,3,7,8-PeCDD	100.00	6.74e+06	0.63 y	30:56	-	0.86	
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	4.41e+06	1.38 y	34:16	_	0.60	
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	6.35e+06	1.20 y	34:23	-	0.87	
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	5.87e+06	1.26 y	34:42	-	0.80	
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	4.64e+06	1.05 y	38:05	-	0.63	
42	IS	13C-OCDD	200.00	7.58e+06	0.89 y	41:28	-	0.52	
43	IS	13C-2,3,7,8-TCDF	100.00	1.17e+07	0.80 y	25:51	-	1.00	
44	IS	13C-1,2,3,7,8-PeCDF	100.00	9.60e+06	1.59 y	29:48	-	0.82	
45	IS	13C-2,3,4,7,8-PeCDF	100.00	9.80e+06	1.58 y	30:40	-	0.84	
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	5.84e+06	0.52 y	33:21	-	0.80	
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	7.58e+06	0.51 y	33:29	-	1.03	
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	6.92e+06	0.51 y	34:07	-	0.94	
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	5.84e+06	0.49 y	35:08	-	0.80	
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	5.38e+06	0.43 y	36:57	-	0.73	
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	3.99e+06	0.43 y	38:41	-	0.54	
52	IS	13C-OCDF	200.00	9.05e+06	0.88 y	41:43	-	0.62	
53	C/Up	37C1-2,3,7,8-TCDD	0.50	4.55e+04		26:34	-	1.16	
54	RS/RT	13C-1,2,3,4-TCDD	100.00	7.86e+06	0.77 y	26:01	-	1.00	
55	RS	13C-1,2,3,4-TCDF	100.00	1.17e+07	0.83 y	24:41	-	1.00	
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	7.33e+06	0.52 y	33:47	-	1.00	
					•				

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Fi	lename	: 191009D1 S: 3 Acqui	red: 9-0	CT-19 17:48	. 27				
		1009D1 Analyte:		613VG7-10-9		Resul	ts:		
		text: ST191009D1-3 1613 CS				110001			
	-								
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
	Unk	2,3,7,8-TCDD	2.00	1.35e+05	0.74 y	26:33	-	0.87	
	Unk	1,2,3,7,8-PeCDD	10.00	5.33e+05	0.64 y	30:56	-	0.88	
	Unk	1,2,3,4,7,8-HxCDD	10.00	3.94e+05	1.22 y	34:16	-	1.03	
	Unk	1,2,3,6,7,8-HxCDD	10.00	5.50e+05	1.25 y	34:23	-	1.01	
	Unk	1,2,3,7,8,9-HxCDD	10.00	4.71e+05	1.36 y	34:43	-	0.93	
	Unk	1,2,3,4,6,7,8-HpCDD	10.00	3.70e+05	1.02 y	38:06	-	0.95	
	Unk	OCDD	20.00	6.41e+05	0.90 y	41:29	_	0.92	
					_				
	Unk	2,3,7,8-TCDF	2.00	1.90e+05	0.83 y	25:49	-	0.89	
	Unk	1,2,3,7,8-PeCDF	10.00	7.88e+05	1.58 y	29:47	-	0.92	
)	Unk	2,3,4,7,8-PeCDF	10.00	8.71e+05	1.56 y	30:40	-	1.00	
	Unk	1,2,3,4,7,8-HxCDF	10.00	6.02e+05	1.14 y	33:22	-	1.15	
2	Unk	1,2,3,6,7,8-HxCDF	10.00	7.20e+05	1.27 y	33:30	_	1.06	
3	Unk	2,3,4,6,7,8-HxCDF	10.00	6.66e+05	1.26 y	34:08	_	1.12	
1	Unk	1,2,3,7,8,9-HxCDF	10.00	5.16e+05	1.16 y	35:08	_	1.02	
,	Unk	1,2,3,4,6,7,8-HpCDF	10.00	5.02e+05	1.05 y	36:57	_	1.06	
	Unk	1,2,3,4,7,8,9-HpCDF	10.00	4.31e+05	1.08 y	38:41	=	1.25	
7	Unk	OCDF	20.00	7.38e+05	0.91 y	41:44	-	0.91	
					•				
6	IS	13C-2,3,7,8-TCDD	100.00	7.73e+06	0.78 y	26:33	_	1.06	
7	IS	13C-1,2,3,7,8-PeCDD	100.00	6.03e+06	0.62 y	30:55	_	0.83	
}	IS	13C-1,2,3,4,7,8-HxCDD	100.00	3.81e+06	1.24 y	34:15	~	0.58	
	IS	13C-1,2,3,6,7,8-HxCDD	100.00	5.44e+06	1.28 y	34:22	-	0.82	
	IS	13C-1,2,3,7,8,9-HxCDD	100.00	5.03e+06	1.21 y	34:42	-	0.76	
	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	3.89e+06	1.09 y	38:05	-	0.59	
	IS	13C-OCDD	200.00	6.97e+06	0.90 y	41:28	-	0.53	
3	IS	13C-2,3,7,8-TCDF	100.00	1.08e+07	0.82 y	25:49	_	1.03	
1	IS	13C-1,2,3,7,8-PeCDF	100.00	8.55e+06	1.59 y	29:47	-	0.82	
5	IS	13C-2,3,4,7,8-PeCDF	100.00	8.70e+06	1.59 y	30:40	_	0.83	
5	IS	13C-1,2,3,4,7,8-HxCDF	100.00	5.22e+06	0.49 y	33:21	-	0.79	
7	IS	13C-1,2,3,6,7,8-HxCDF	100.00	6.80e+06	0.51 y	33:29	-	1.03	
8	IS	13C-2,3,4,6,7,8-HxCDF	100.00	5.93e+06	0.52 y	34:07	-	0.90	
9	IS	13C-1,2,3,7,8,9-HxCDF	100.00	5.05e+06	0.51 y	35:08	-	0.77	
0	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	4.73e+06	0.44 y	36:57	_	0.72	
1	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	3.46e+06	0.45 y	38:41	-	0.52	
2	IS	13C-OCDF	200.00	8.15e+06	0.92 y	41:44	-	0.62	
					•				
3	C/Up	37C1-2,3,7,8-TCDD	2.00	1.69e+05		26:33	-	1.16	
4	RS/RT	13C-1,2,3,4-TCDD	100.00	7.29e+06	0.77 y	25:59	-	1.00	
5	RS	13C-1,2,3,4-TCDF	100.00	1.04e+07	0.82 y	24:39	-	1.00	
	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	6.60e+06	0.52 y	33:47	_	1.00	

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Unk										
Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results: Typ Name Amount Resp RA RT RF RRF 1 Unk 2,3,7,8-PeCDD 50.00 8.37e-05 0.80 y 26:35 - 0.99 2 Unk 1,2,3,47,8-HECDD 50.00 2.94e+06 0.61 y 30:56 - 0.88 3 Unk 1,2,3,67,8-HECDD 50.00 2.94e+06 1.21 y 34:16 - 1.08 4 Unk 1,2,3,47,8-HECDD 50.00 2.96e+06 1.21 y 34:16 - 1.08 5 Unk 1,2,3,47,8-HECDD 50.00 2.96e+06 1.21 y 34:16 - 1.08 6 Unk 1,2,3,4,67,8-HECDD 50.00 2.74e+06 1.24 y 34:42 - 0.95 6 Unk 1,2,3,4,67,8-HECDD 100.00 3.73e+06 0.91 y 41:28 - 0.94 8 Unk 2,3,7,8-TCDF 10.00 1.05e+06 0.80 y 25:51 - 0.89 9 Unk 1,2,3,47,8-HECDF 50.00 4.65e+06 1.59 y 29:47 - 0.95 10 Unk 2,3,47,8-HECDF 50.00 4.70e+06 1.68 y 30:40 - 1.00 11 Unk 1,2,3,47,8-HECDF 50.00 3.74e+06 1.24 y 33:21 - 1.04 12 Unk 1,2,3,4,67,8-HECDF 50.00 3.74e+06 1.25 y 33:21 - 1.05 13 Unk 2,3,4,67,8-HECDF 50.00 3.74e+06 1.25 y 33:21 - 1.05 14 Unk 1,2,3,4,67,8-HECDF 50.00 3.74e+06 1.25 y 33:21 - 1.05 15 Unk 1,2,3,4,67,8-HECDF 50.00 3.74e+06 1.25 y 33:27 - 1.10 16 Unk 1,2,3,4,67,8-HECDF 50.00 3.74e+06 1.25 y 33:27 - 1.10 16 Unk 1,2,3,4,67,8-HECDF 50.00 3.74e+06 1.19 y 35:07 - 1.06 17 Unk 0,2,3,4,7,8,9-HECDF 50.00 3.74e+06 1.25 y 34:07 - 1.11 18 Unk 1,2,3,4,7,8,9-HECDF 50.00 3.74e+06 1.19 y 35:07 - 1.06 18 Unk 1,2,3,4,7,8-HECDF 50.00 3.74e+06 1.25 y 34:11 - 0.80 19 Unk 1,2,3,4,7,8-HECDF 50.00 3.74e+06 1.25 y 36:57 - 0.86 10 Unk 1,2,3,4,7,8-HECDD 100.00 4.33e+06 0.91 y 41:43 - 0.92 10 Unk 1,2,3,4,7,8-HECDD 100.00 6.66e+06 0.62 y 30:55 - 0.86 11 Unk 1,2,3,4,7,8-HECDD 100.00 6.56e+06 0.62 y 30:55 - 0.86 12 Unk 1,2,3,4,7,8-HECDD 100.00 7.70e+06 1.62 y 34:15 - 0.61 13 Unk 1,2,3,4,7,8-HECDF 100.00 9.79e+06 1.04 y 33:15 - 0.61 13 Unk 1,2,3,4,7,8-HECDF 100.00 9.79e+06 0.94 y 41:27 - 0.55 13 Unk 1,2,3,4,7,8-HECDF 100.00 9.79e+06 0.94 y 41:27 - 0.55 13 Unk 1,2,3,4,7,8-HECDF 100.00 9.79e+06 0.94 y 41:27 - 0.55 13 Unk 1,2,3,4,7,8-HECDF 100.00 9.79e+06 0.94 y 41:27 - 0.87 13 Unk 1,2,3,4,7,8-HECDF 100.00 9.79e+06 0.94 y 41:27 - 0.87 13 Unk 13 Unk 14										
Typ Name Amount Resp RA RT RF RRF 1.0 Unk 2.3.7,8-FCDD 10.00 8.37e-05 0.80 y 26:35 - 0.99 1.0 Unk 1.2.3,4,7,8-FCDD 50.00 2.96e-06 1.21 y 36:16 - 1.08 1.0 Unk 1.2.3,4,7,8-FCDD 50.00 2.96e-06 1.21 y 36:26 - 0.88 1.0 Unk 1.2.3,4,7,8-FCDD 50.00 2.96e-06 1.21 y 36:26 - 0.88 1.0 Unk 1.2.3,4,7,8-FCDD 50.00 2.96e-06 1.21 y 36:26 - 0.99 1.0 Unk 1.2.3,4,6,8-FCDD 50.00 2.96e-06 1.21 y 36:23 - 0.92 1.0 Unk 1.2.3,4,6,7,8-HCDD 50.00 2.96e-06 1.21 y 36:23 - 0.92 1.0 Unk 1.2.3,4,6,7,8-HCDD 50.00 2.96e-06 1.21 y 36:23 - 0.95 1.0 Unk 1.2.3,4,6,7,8-HCDD 50.00 2.96e-06 1.00 y 38:05 - 0.96 1.0 Unk 0.0 CDD 100.00 3.73e-06 1.03 y 38:05 - 0.96 1.0 Unk 0.0 CDD 100.00 3.73e-06 0.91 y 41:28 - 0.94 1.0 Unk 2.3,4,7,8-FCDF 50.00 4.65e-06 1.59 y 29:47 - 0.95 1.0 Unk 2.3,4,7,8-FCDF 50.00 4.70e-06 1.65 y 30:40 - 1.00 1.0 Unk 1.2.3,4,7,8-FCDF 50.00 4.70e-06 1.65 y 30:40 - 1.00 1.0 Unk 1.2,3,4,7,8-FCDF 50.00 3.52e-06 1.24 y 33:21 - 1.14 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.52e-06 1.25 y 33:29 - 1.05 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.74e-06 1.25 y 33:29 - 1.05 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.74e-06 1.25 y 33:29 - 1.05 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.74e-06 1.25 y 33:29 - 1.05 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.74e-06 1.25 y 33:29 - 1.05 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.74e-06 1.25 y 33:29 - 1.05 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.74e-06 1.25 y 33:29 - 1.05 1.0 Unk 1.2,3,4,6,7,8-HCDF 50.00 3.74e-06 1.25 y 34:07 - 1.11 1.0 Unk 1.2,3,4,7,8-PCDF 50.00 3.74e-06 1.25 y 34:07 - 1.16 1.0 Unk 1.2,3,7,8-TCDD 100.00 6.66e-06 0.02 y 30:55 - 0.86 1.0 Unk 1.2,3,4,7,8-PCDF 100.00 7.79e-06 0.74 y 26:33 - 1.00 1.0 Unk 1.2,3,4,7,8-PCDF 100.00 7.79e-06 0.79 y 25:50 - 0.86 1.1 IS 13C-1,2,3,7,8-TCDF 100.00 7.79e-06 0.94 y 41:27 - 0.55 1.1 IS 13C-1,2,3,4,6,7,8-HCDF 100.00 7.79e-06 0.94 y 41:27 - 0.55 1.1 IS 13C-1,2,3,4,6,7,8-HCDF 100.00 7.99e-06 0.94 y 41:27 - 0.55 1.1 IS 13C-1,2,3,4,6,7,8-HCDF 100.00 7.79e-06 0.94 y 41:27 - 0.55 1.1 IS 13C-1,2,3,4,6,7,8-HCDF 100.00 7.79e-06 0.94 y 41:33 - 0.66 1.1										
Typ Name Amount Resp RA RT RF RRF Unk			•		613VG 7 -10-9	-19	Result	s:		
Unk	1	Sample t	text: ST191009D1-4 1613 CS	3 19C2204						
Unk		_								
Unk 1,2,3,4,7,8-PeCDD 50.00 2.94e+06 0.61 y 30:56 0.88					-					
Unk 1,2,3,4,7,8-HXCDD 50.00 2.38e+06 1.21 y 34:16 - 1.08	1					-				
Unk	2					-				
Unk 1,2,3,7,8,9-HXCDD 50.00 2.74e+06 1.24 y 34:42 0.95	3					-				
Unk 1,2,3,4,6,7,8-HpCDD 50.00 2.15e+06 1.03 y 38:05 - 0.06 Unk 2,3,7,8-TCDF 10.00 1.05e+06 0.80 y 25:51 - 0.89 Unk 1,2,3,7,8-PeCDF 50.00 4.56e+06 1.59 y 29:47 - 0.95 Unk 1,2,3,4,7,8-PeCDF 50.00 4.70e+06 1.68 y 30:40 - 1.00 Unk 1,2,3,4,7,8-PeCDF 50.00 3.52e+06 1.64 y 33:21 - 1.14 Unk 1,2,3,4,7,8-HxCDF 50.00 3.52e+06 1.24 y 33:21 - 1.05 1 Unk 1,2,3,4,7,8-HxCDF 50.00 3.92e+06 1.25 y 33:29 - 1.05 1 Unk 1,2,3,7,8,9-HxCDF 50.00 3.74e+06 1.25 y 33:29 - 1.05 1 Unk 1,2,3,7,8,9-HxCDF 50.00 3.70e+06 1.25 y 33:29 - 1.05 1 Unk 1,2,3,4,6,7,8-HxCDF 50.00 3.00e+06 1.29 y 34:07 - 1.11 2 Unk 1,2,3,4,6,7,8-HxCDF 50.00 2.79e+06 1.24 y 36:57 - 1.10 3 Unk 1,2,3,4,7,8,9-HxCDF 50.00 2.79e+06 1.04 y 36:57 - 1.10 4 Unk 1,2,3,4,7,8,9-HxCDF 50.00 2.79e+06 1.07 y 38:41 - 1.25 5 Unk 1,2,3,4,7,8-PCDD 100.00 4.33e+06 0.91 y 41:43 - 0.92 6 IS 13C-1,2,3,7,8-PCDD 100.00 4.3ee+06 0.74 y 26:33 - 1.10 7 IS 13C-1,2,3,7,8-PCDD 100.00 4.42e+06 1.25 y 34:15 - 0.61 8 IS 13C-1,2,3,7,8-PxCDD 100.00 4.42e+06 1.25 y 34:15 - 0.61 9 IS 13C-1,2,3,7,8-PxCDD 100.00 5.76e+06 1.28 y 34:22 - 0.87 10 IS 13C-1,2,3,7,8-PxCDD 100.00 5.76e+06 1.27 y 34:41 - 0.80 10 IS 13C-1,2,3,4,6,7,8-HxCDD 100.00 5.76e+06 1.27 y 34:41 - 0.80 10 IS 13C-1,2,3,4,6,7,8-HxCDD 100.00 6.30e+06 0.94 y 41:27 - 0.55 13 IS 13C-1,2,3,4,7,8-PCDF 100.00 7.99e+06 0.94 y 41:27 - 0.87 14 IS 13C-1,2,3,4,7,8-PCDF 100.00 7.99e+06 0.94 y 34:06 - 0.93 15 IS 13C-1,2,3,4,7,8-PCDF 100.00 0.79e+06 0.50 y 33:21 - 0.86 15 IS 13C-1,2,3,4,7,8-PCDF 100.00 7.99e+06 0.49 y 34:06 - 0.93 16 IS 13C-1,2,3,4,7,8-PCDF 100.00 6.75e+06 0.51 y 33:29 - 1.03 16 IS 13C-1,2,3,4,7,8-PCDF 100.00 7.99e+06 0.49 y	4					-				
Unk	5					-				
10	6		•			-		-		
Unk	7	Unk	OCDD	100.00	3.73e+06	0.91 y	41:28	-	0.94	
Unk			0	46.51						
10. Unk	8					_				
11 Unk	9					_				
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188 IS 13C-1,2,3,4,7,8-HxCDD 100.00 4.42e+06 1.25 y 34:15 - 0.61 199 IS 13C-1,2,3,6,7,8-HxCDD 100.00 6.30e+06 1.28 y 34:22 - 0.87 100 IS 13C-1,2,3,7,8,9-HxCDD 100.00 5.76e+06 1.27 y 34:41 - 0.80 11 IS 13C-1,2,3,4,6,7,8-HpCDD 100.00 4.47e+06 1.05 y 38:05 - 0.62 12 IS 13C-0CDD 200.00 7.90e+06 0.94 y 41:27 - 0.55 13 IS 13C-1,2,3,7,8-FpCDF 100.00 1.18e+07 0.79 y 25:50 - 1.05 14 IS 13C-1,2,3,7,8-PpCDF 100.00 9.79e+06 1.62 y 29:47 - 0.87 15 IS 13C-2,3,7,8-PpCDF 100.00 9.79e+06 1.61 y 30:39 - 0.84 16 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 17 IS 13C-1,2,3,4,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.49 y 35:07 - 0.75 11 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.49 y 35:07 - 0.75 11 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.49 y 35:07 - 0.75 11 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.49 y 36:55 - 0.75 11 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 13 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 13 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 13 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 7.70e+06 0.75 y 26:00 - 1.00 13 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 7.70e+06 0.75 y 26:00 - 1.00 13 IS 13C-1,2,3,4,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 13 IS IS 13C-1,2,3,4,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 13 IS IS 13C-1,2,3,4,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 13 IS						-		-		
18						-		-		
10 IS 13C-1,2,3,7,8,9-HxCDD 100.00 5.76e+06 1.27 y 34:41 - 0.80 1 IS 13C-1,2,3,4,6,7,8-HpCDD 100.00 4.47e+06 1.05 y 38:05 - 0.62 1 IS 13C-0CDD 200.00 7.90e+06 0.94 y 41:27 - 0.55 1 IS 13C-2,3,7,8-TCDF 100.00 1.18e+07 0.79 y 25:50 - 1.05 1 IS 13C-1,2,3,7,8-PeCDF 100.00 9.79e+06 1.62 y 29:47 - 0.87 1.55 IS 13C-2,3,4,7,8-PeCDF 100.00 9.43e+06 1.61 y 30:39 - 0.84 1.66 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 1.75 IS 13C-1,2,3,4,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 1.88 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 1.81 13C-1,2,3,7,8,9-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 1.81 13C-1,2,3,4,6,7,8-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 1.81 13C-1,2,3,4,6,7,8-HyCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 1.81 13C-1,2,3,4,6,7,8-HyCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 5.40e+06 0.44 y 38:40 - 0.55 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.65 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.65 1.81 13C-1,2,3,4,7,8,9-HyCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00 1.00 1.00 1.13e+07 0.82 y 24:41 - 1.00 1.00 1.13e+07 0.82 y 24:41 - 1.00 1.00 1.00 1.13e+07 0.82 y 24:41 - 1.00 1.00 1.13e+07 0.82						-		-		
11 IS 13C-1,2,3,4,6,7,8-HpCDD 100.00 4.47e+06 1.05 y 38:05 - 0.62 12 IS 13C-0CDD 200.00 7.90e+06 0.94 y 41:27 - 0.55 13 IS 13C-2,3,7,8-TCDF 100.00 1.18e+07 0.79 y 25:50 - 1.05 14 IS 13C-1,2,3,7,8-PeCDF 100.00 9.79e+06 1.62 y 29:47 - 0.87 15 IS 13C-2,3,4,7,8-PeCDF 100.00 9.43e+06 1.61 y 30:39 - 0.84 16 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 17 IS 13C-1,2,3,6,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 11 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 12 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 13 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 13 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 14 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 15 RS 13C-1,2,3,4-TCDD 100.00 1.13e+07 0.82 y 24:41 - 1.00						-				
13C - OCDD 200.00 7.90e+06 0.94 y 41:27 - 0.55 13 IS 13C-2,3,7,8-TCDF 100.00 1.18e+07 0.79 y 25:50 - 1.05 14 IS 13C-1,2,3,7,8-PeCDF 100.00 9.79e+06 1.62 y 29:47 - 0.87 15 IS 13C-2,3,4,7,8-PeCDF 100.00 9.43e+06 1.61 y 30:39 - 0.84 16 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 17 IS 13C-1,2,3,6,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HyCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 10 IS 13C-1,2,3,4,6,7,8-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 11 IS 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-0CDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37C1-2,3,7,8-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 15 RS 13C-1,2,3,4-TCDD 100.00 1.13e+07 0.82 y 24:41 - 1.00						-				
IS 13C-2,3,7,8-TCDF 100.00 1.18e+07 0.79 y 25:50 - 1.05 IS 13C-1,2,3,7,8-PeCDF 100.00 9.79e+06 1.62 y 29:47 - 0.87 IS 13C-2,3,4,7,8-PeCDF 100.00 9.43e+06 1.61 y 30:39 - 0.84 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 IS 13C-1,2,3,6,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 9.37e+06 0.89 y 41:43 - 0.65 IS 13C-1,2,3,4,7,8-TCDD 100.00 7.70e+06 0.89 y 41:43 - 0.65						-				
14 IS 13C-1,2,3,7,8-PeCDF 100.00 9.79e+06 1.62 y 29:47 - 0.87 15 IS 13C-2,3,4,7,8-PeCDF 100.00 9.43e+06 1.61 y 30:39 - 0.84 16 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 17 IS 13C-1,2,3,6,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 11 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-0CDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11						-		-		
15 IS 13C-2,3,4,7,8-PeCDF 100.00 9.43e+06 1.61 y 30:39 - 0.84 16 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 17 IS 13C-1,2,3,6,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HyCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 11 IS 13C-1,2,3,4,7,8,9-HyCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-0CDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 14 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 15 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	13					-		-		
166 IS 13C-1,2,3,4,7,8-HxCDF 100.00 6.19e+06 0.50 y 33:21 - 0.86 17 IS 13C-1,2,3,6,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 11 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-0CDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 15 4 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 15 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	44					1.62 y		-		
17 IS 13C-1,2,3,6,7,8-HxCDF 100.00 7.47e+06 0.51 y 33:29 - 1.03 18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 11 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-0CDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 14 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 15 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	45					-		-		
18 IS 13C-2,3,4,6,7,8-HxCDF 100.00 6.75e+06 0.49 y 34:06 - 0.93 19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 11 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-0CDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 14 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 15 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	46			100.00	6.19e+06	0.50 y	33:21	-	0.86	
19 IS 13C-1,2,3,7,8,9-HxCDF 100.00 5.64e+06 0.49 y 35:07 - 0.78 10 IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 11 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 12 IS 13C-0CDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 13 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 14 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 15 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	7.47e+06	0.51 y	33:29	-	1.03	
IS 13C-1,2,3,4,6,7,8-HpCDF 100.00 5.40e+06 0.43 y 36:55 - 0.75 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 IS 13C-OCDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 A RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 S RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	6.75e+06	0.49 y	34:06	-	0.93	
S1 IS 13C-1,2,3,4,7,8,9-HpCDF 100.00 3.99e+06 0.44 y 38:40 - 0.55 S2 IS 13C-OCDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 S3 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 S4 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 S5 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	5.64e+06	0.49 y	35:07	-	0.78	
32 IS 13C-OCDF 200.00 9.37e+06 0.89 y 41:43 - 0.65 33 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 34 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 35 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	5.40e+06	0.43 y	36:55	-	0.75	
33 C/Up 37Cl-2,3,7,8-TCDD 10.00 8.56e+05 26:35 - 1.11 34 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 35 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	3.99e+06	0.44 y	38:40	-	0.55	
34 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 55 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	52	IS	13C-OCDF	200.00	9.37e+06	0.89 y	41:43	-	0.65	
34 RS/RT 13C-1,2,3,4-TCDD 100.00 7.70e+06 0.75 y 26:00 - 1.00 55 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00										
55 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00	53	C/Up	37Cl-2,3,7,8-TCDD	10.00	8.56e+05		26:35	-	1.11	
55 RS 13C-1,2,3,4-TCDF 100.00 1.13e+07 0.82 y 24:41 - 1.00										
	54	RS/RT	13C-1,2,3,4-TCDD	100.00	7.70e+06	0.75 y	26:00	-	1.00	
SC DC/DE 120 1 2 2 4 C 0 INCDE 100 00 7 222 0C 0 51 22 22 47	55	RS	13C-1,2,3,4-TCDF	100.00	1.13e+07	0.82 y	24:41	-	1.00	
70 R5/R1 13C-1,2,3,4,6,9-HXCDF 100.00 7.23E+06 0.51 Y 33:47 - 1.00	56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	7.23e+06	0.51 y	33:47	-	1.00	

Work Order 1903741 Page 294 of 638

Filename: 191009D1 S: 5 Acquired: 9-OCT-19 19:23:46

Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:

Sample text: ST191009D1-5 1613 CS4 19C2205

	-							
	Тур	Name	Amount	Resp	RA	RT	RF	RRF
1	Unk	2,3,7,8-TCDD	40.00	3.53e+06	0.81 y	26:35	-	0.92
2	Unk	1,2,3,7,8-PeCDD	200.00	1.48e+07	0.63 y	30:55	-	0.96
3	Unk	1,2,3,4,7,8-HxCDD	200.00	1.19e+07	1.19 y	34:15	=	1.09
4	Unk	1,2,3,6,7,8-HxCDD	200.00	1.34e+07	1.20 y	34:22	-	0.98
5	Unk	1,2,3,7,8,9-HxCDD	200.00	1.30e+07	1.18 y	34:41	-	1.00
6	Unk	1,2,3,4,6,7,8-HpCDD	200.00	1.10e+07	1.03 y	38:04	-	1.03
7	Unk	OCDD	400.00	2.03e+07	0.91 y	41:26	-	1.01
8	Unk	2,3,7,8-TCDF	40.00	5.17e+06	0.77 y	25:52	-	0.95
9	Unk	1,2,3,7,8-PeCDF	200.00	2.24e+07	1.58 y	29:47	-	1.00
10	Unk	2,3,4,7,8-PeCDF	200.00	2.29e+07	1.55 y	30:40	-	1.03
11	Unk	1,2,3,4,7,8-HxCDF	200.00	1.69e+07	1.21 y	33:21	-	1.20
12	Unk	1,2,3,6,7,8-HxCDF	200.00	1.85e+07	1.21 y	33:29	-	1.12
13	Unk	2,3,4,6,7,8-HxCDF	200.00	1.83e+07	1.21 y	34:06	-	1.16
14	Unk	1,2,3,7,8,9-HxCDF	200.00	1.53e+07	1.22 y	35:06	-	1.08
15	Unk	1,2,3,4,6,7,8-HpCDF	200.00	1.46e+07	1.04 y	36:56	-	1.17
16	Unk	1,2,3,4,7,8,9-HpCDF	200.00	1.30e+07	1.05 y	38:39	-	1.31
17	Unk	OCDF	400.00	2.42e+07	0.91 y	41:41	-	1.00
36	IS	13C-2,3,7,8-TCDD	100.00	9.63e+06	0.75 y	26:34	-	1.12
37	IS	13C-1,2,3,7,8-PeCDD	100.00	7.72e+06	0.63 y	30:54	-	0.89
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	5.48e+06	1.31 y	34:14	-	0.65
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	6.83e+06	1.22 y	34:21	-	0.80
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	6.48e+06	1.26 y	34:40	-	0.76
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	5.36e+06	1.08 y	38:03	-	0.63
42	IS	13C-OCDD	200.00	1.01e+07	0.91 y	41:25	-	0.59
43	IS	13C-2,3,7,8-TCDF	100.00	1.36e+07	0.80 y	25:51	-	1.04
44	IS	13C-1,2,3,7,8-PeCDF	100.00	1.12e+07	1.57 y	29:46	-	0.86
45	IS	13C-2,3,4,7,8-PeCDF	100.00	1.11e+07	1.52 y	30:39	-	0.85
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	7.05e+06	0.50 y	33:20	-	0.83
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	8.28e+06	0.49 y	33:28	-	0.98
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	7.90e+06	0.51 y	34:05	-	0.93
49	IS	13C-1,2,3,7,8,9-HxCDF	100.00	7.08e+06	0.51 y	35:06	-	0.83
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	6.23e+06	0.46 y	36:55	-	0.73
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	4.95e+06	0.44 y	38:38	-	0.58
52	IS	13C-OCDF	200.00	1.22e+07	0.90 y	41:40	=	0.72
	C/IIn	2701 2 2 7 0 HODD	40.00	3 060.06		26.25		7 7 5
53	C/Up	37C1-2,3,7,8-TCDD	40.00	3.9 6 e+06		26:35	-	1.15
54	RS/RT	13C-1,2,3,4-TCDD	100.00	8.64e+06	0.78 y	26:00		1.00
55	RS RS	13C-1,2,3,4-TCDF	100.00	1.30e+07	0.78 y 0.83 y	24:41	_	1.00
56	RS/RT		100.00	8.48e+06	-	33:46	_	1.00
26	KO/KT	13C-1,2,3,4,6,9-HXCDF	100.00	8.48e+U6	0.51 y	33:46	-	1.00

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									Page 6 of 6
	. 1	10100001 0 6		Om 40 00 44					
		_		CT-19 20:11:					
		1009D1 Analyte:		513VG 7 -10-9-	- 19	Results:			
	Sample	text: ST191009D1-6 1613 C	S5 19C2206						
	Тур	Name	Amount	Resp	RA	RT	RF	RRF	
1	Unk	2,3,7,8-TCDD	300.00	2.80e+07	0.81 y	26:35	-	0.98	
2	Unk	1,2,3,7,8-PeCDD	1500.00	1.19e+08	0.62 y	30:55	~	0.96	
3	Unk	1,2,3,4,7,8-HxCDD	1500.00	1.04e+08	1.22 y	34:15	-	1.15	
4	Unk	1,2,3,6,7,8-HxCDD	1500.00	1.07e+08	1.21 y	34:22	-	1.00	
5	Unk	1,2,3,7,8,9-HxCDD	1500.00	1.06e+08	1.23 y	34:41	-	1.03	
6	Unk	1,2,3,4,6,7,8-HpCDD	1500.00	9.32e+07	1.05 y	38:03	-	1.06	
7	Unk	OCDD	3000.00	1.64e+08	0.92 y	41:25	-	1.01	
8	Unk	2,3,7,8-TCDF	300.00	3.95e+07	0.79 y	25:52	_	0.99	
9	Unk	1,2,3,7,8-PeCDF	1500.00	1.79e+08	1.58 y	29:47	_	1.01	
10	Unk	2,3,4,7,8-PeCDF	1500.00	1.86e+08	1.57 y	30:39	_	1.07	
11	Unk	1,2,3,4,7,8-HxCDF	1500.00	1.40e+08	1.20 y	33:21	_	1.24	
12	Unk	1,2,3,6,7,8-HxCDF	1500.00	1.48e+08	1.21 y	33:29	-	1.11	
13	Unk	2,3,4,6,7,8-HxCDF	1500.00	1.51e+08	1.22 y	34:06	_	1.20	
14	Unk	1,2,3,7,8,9-HxCDF	1500.00	1.28e+08	1.25 y	35:06	_	1.13	
15	Unk	1,2,3,4,6,7,8-HpCDF	1500.00	1.18e+08	1.03 y	36:55	_	1.18	
16	Unk	1,2,3,4,7,8,9-HpCDF	1500.00	1.04e+08	1.05 y	38:38	-	1.34	
17	Unk	OCDF	3000.00	1.96e+08	0.91 y	41:40	-	0.98	
36	IS	13C-2,3,7,8-TCDD	100.00	9.53e+06	0.73 y	26:33	_	1.11	
37	IS	13C-1,2,3,7,8-PeCDD	100.00	8.28e+06	0.64 y	30:54	_	0.96	
38	IS	13C-1,2,3,4,7,8-HxCDD	100.00	6.01e+06	1.21 y	34:14	_	0.77	
39	IS	13C-1,2,3,6,7,8-HxCDD	100.00	7.08e+06	1.32 y	34:21	_	0.90	
40	IS	13C-1,2,3,7,8,9-HxCDD	100.00	6.90e+06	1.26 y	34:39	_	0.88	
41	IS	13C-1,2,3,4,6,7,8-HpCDD	100.00	5.86e+06	1.08 y	38:03	~	0.75	·
42	IS	13C-OCDD	200.00	1.08e+07	0.92 y	41:25	-	0.69	
43	IS	13C-2,3,7,8-TCDF	100.00	1.33e+07	0.80 y	25:51	-	1.04	
44	IS	13C-1,2,3,7,8-PeCDF	100.00	1.18e+07	1.59 y	29:46	-	0.92	
45	IS	13C-2,3,4,7,8-PeCDF	100.00	1.16e+07	1.60 y	30:38	~	0.91	
46	IS	13C-1,2,3,4,7,8-HxCDF	100.00	7.52e+06	0.51 y	33:20	-	0.96	
47	IS	13C-1,2,3,6,7,8-HxCDF	100.00	8.92e+06	0.50 y	33:28	-	1.14	
48	IS	13C-2,3,4,6,7,8-HxCDF	100.00	8.38e+06	0.51 y	34:05	-	1.07	
49	IS	13C-1,2,3,7,8,9~HxCDF	100.00	7.57e+06	0.52 y	35:05	-	0.96	
50	IS	13C-1,2,3,4,6,7,8-HpCDF	100.00	6.70e+06	0.43 y	36:54	-	0.85	
51	IS	13C-1,2,3,4,7,8,9-HpCDF	100.00	5.19e+06	0.43 y	38:37	-	0.66	
52	IS	13C-OCDF	200.00	1.33e+07	0.89 y	41:39	-	0.85	
53	C/Up	37Cl-2,3,7,8-TCDD	199.98	2.09e+07		26:35	_	1.21	λ_{Λ}
									DB 10/10/19
54	RS/RT	13C-1,2,3,4-TCDD	100.00	8.62e+06	0.76 y	26:01	-	1.00	
55	RS	13C-1,2,3,4-TCDF	100.00	1.27e+07	0.84 y	24:41	-	1.00	10/10/19
56	RS/RT	13C-1,2,3,4,6,9-HxCDF	100.00	7.85e+06	0.49 y	33:45	-	1.00	10/10/17

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Initial Calibration RRE	Summary (I	CAL) V	ista Analy	tical Labo	ratory				Page 1 of
Run: 191009D1	Analyte:		Cal:	1613 V G7- 10	9-19	Inst. ID.	VG-7		
Data filename: 191009D1	L		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	0.9053	7.55 %	0.84	0.83	0.87	0.99	0.92	0.98	
TCDD EMPC	0.9053	7.55 %	0.84	0.83	0.87	0.99	0.92	0.98	
Total Penta-Dioxins	0.9027	4.95 %	0.86	0.87	0.88	0.88	0.96	0.96	
PeCDD EMPC	0.9027	4.95 %	0.86	0.87	0.88	0.88	0.96	0.96	
Total Hexa-Dioxins	0.9918	4.02 %	0.95	0.96	0.99	0.97	1.02	1.06	
HxCDD EMPC	0.9918	4.02 %	0.95	0.96	0.99	0.97	1.02	1.06	
Total Hepta-Dioxins	0.9794	5.84 %	0.90	0.97	0.95	0.96	1.03	1.06	
HpCDD EMPC	0.9794	5.84 %	0.90	0.97	0.95	0.96	1.03	1.06	
Total Tetra-Furans	0.9501	8.27 %	1.09	0.90	0.89	0.89	0.95	0.99	
TCDF EMPC	0.9501	8.27 %	1.09	0.90	0.89	0.89	0.95	0.99	
1st Func. Penta-Furans	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04	
1st Func. PeCDF EMPC	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04	
Total Penta-Furans	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04	
PeCDF EMPC	0.9875	3.40 %	0.97	0.96	0.96	0.97	1.02	1.04	
Total Hexa-Furans	1.1033	3.70 %	1.08	1.06	1.09	1.09	1.14	1.17	
HxCDF EMPC	1.1033	3.70 %	1.08	1.06	1.09	1.09	1.14	1.17	
Total Hepta-Furans	1.1937	3.56 %	1.21	1.17	1.14	1.16	1.23	1.25	
HpCDF EMPC	1.1937	3.56 %	1.21	1.17	1.14	1.16	1.23	1.25	

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Initial Calibration RRF Run: 191009D1	Summary (ICAL) Analyte:	Vista Analy	tical Labo: 1613VG7- 10	-	Inct	ID. VG-7		Page 1 of 1
Run: 191009D1	Anaryce:	Cai:	1013/07-10	- 9-19	msc.	1D. VG-7		
Data filename: 191009D1		Samp# 1	Samp# 2	Samp# 3	Samp# 4	Samp# 5	Samp# 6	
		0.25	0.50	2.0	10	40	300	
	RRT Limits							
Name	Lower Upper	RRT#1	RRT#2	RRT#3	RRT#4	RRT#5	RRT#6	
2,3,7,8-TCDD	0.999 -1.002	1.000	1.000	1.000	1.001	1.001	1.001	
1,2,3,7,8-PeCDD	0.999 -1.002	0.999	1.000	1.001	1.001	1.001	1.001	
1,2,3,4,7,8-HxCDD	0.999 -1.001	1.000	1.000	1.001	1.000	1.000	1.000	
1,2,3,6,7,8-HxCDD	0.998 -1.004	1.000	1.000	1.000	1.001	1.001	1.000	
1,2,3,7,8,9-HxCDD	0.998 -1.004	1.001	1.000	1.000	1.000	1.001	1.001	
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	1.000	1.000	1.000	1.001	1.001	1.001	
1,2,3,7,8-PeCDF	0.999 -1.002	1.000	1.000	1.000	1.000	1.000	1.001	
2,3,4,7,8-PeCDF	0.999 -1.002	1.000	1.000	1.000	1.001	1.001	1.001	
1,2,3,4,7,8-HxCDF	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
1,2,3,6,7,8-HxCDF	0.997 -1.005	1.000	1.000	1.001	1.000	1.000	1.000	
2,3,4,6,7,8-HxCDF	0.999 -1.001	1.000	1.000	1.000	1.001	1.001	1.000	
1,2,3,7,8,9-HxCDF	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
1,2,3,4,6,7,8-HpCDF	0.999 -1.001	1.000	1.000	1.000	1.001	1.000	1.000	
1,2,3,4,7,8,9-HpCDF	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
OCDF	0.999 -1.001	1.000	1.000	1.000	1.000	1.000	1.000	
13C-2,3,7,8-TCDD	0.976 -1.043	1.022	1.022	1.022	1.021	1.021	1.021	
13C-1,2,3,7,8-PeCDD	1.000 -1.567	1.190	1.189	1.190	1.189	1.188	1.188	
13C-1,2,3,4,7,8-HxCDD	1.000 -1.007	1.014	1.014	1.014	1.014	1.014	1.014	
13C-1,2,3,6,7,8-HxCDD	1.007 -1.029	1.017	1.014	1.014	1.014	1.017	1.018	
13C-1,2,3,7,8,9-HxCDD	1.014 -1.038	1.027	1.027	1.027	1.027	1.027	1.027	
13C-1,2,3,4,6,7,8-HpCDD		1.127	1.127	1.128	1.127	1.127	1.127	
13C-OCDD	1.085 -1.365	1.227	1.227	1.228	1.227	1.227	1.227	
13C-2,3,7,8-TCDF	0.923 -1.103	0.994	0.994	0.994	0.994	0.994	0.994	
13C-1,2,3,7,8-PeCDF	1.000 -1.425	1.146	1.146	1.146	1.145	1.145	1.144	
13C-2,3,4,7,8-PeCDF	1.011 -1.526	1.180	1.179	1.180	1.179	1.178	1.178	
13C-1,2,3,4,7,8-HxCDF	0.975 -1.001	0.987	0.987	0.987	0.987	0.987	0.987	
13C-1,2,3,6,7,8-HxCDF	0.979 -1.005	0.991	0.991	0.991	0.991	0.991	0.991	
13C-2,3,4,6,7,8-HxCDF	1.001 -1.020	1.010	1.010	1.010	1.009	1.009	1.010	
13C-1,2,3,7,8,9-HxCDF	1.002 -1.072	1.040	1.040	1.040	1.039	1.039	1.039	
13C-1,2,3,4,6,7,8-HpCDF		1.093	1.093	1.094	1.093	1.093	1.093	
13C-1,2,3,4,7,8,9-HpCDF		1.145	1.145	1.145	1.145	1.144	1.144	
13C-OCDF	1.091 -1.371	1.235	1.234	1.235	1.235	1.234	1.234	
37Cl-2,3,7,8-TCDD	0.989 -1.052	1.022	1.021	1.022	1.022	1.022	1.022	$\lambda \mathcal{A}$
13C-1,2,3,4-TCDD	0.000 -0.000	*	*	*	*	*	*	<i>y.</i>
13C-1,2,3,4-TCDF	0.000 -0.000	*	*	*	*	*	*	10/10/10
	0.000							111110117

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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: 10-9-19

RT Window Data Filename: 191009D1 S#4 Analysis Date: 9-OCT-19 Time: 18:36:09

ZB-5MS IS Data Filename: 191009D1 S#4 Analysis Date: 9-OCT-19 Time: 18:36:09

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)	23:24	1,3,6,8-TCDF (F)	21:25
1,2,8,9-TCDD (L)	27:24	1,2,8,9-TCDF (L)	27:33
1,2,4,7,9-PeCDD (F)	28:55	1,3,4,6,8-PeCDF (F)	27:28
1,2,3,8,9-PeCDD (L)	31:17	1,2,3,8,9-PeCDF (L)	31:32
1,2,4,6,7,9-HxCDD (F)	32:41	1,2,3,4,6,8-HxCDF (F)	32:08
1,2,3,7,8,9-HxCDD (L)	34:42	1,2,3,7,8,9-HxCDF (L)	35:07
1,2,3,4,6,7,9-HpCDD (F)	37:16	1,2,3,4,6,7,8-HpCDF (F)	36:57
1,2,3,4,6,7,8-HpCDD (L)	38:05	1,2,3,4,7,8,9-HpCDF (L)	38:41

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

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT BETWEEN

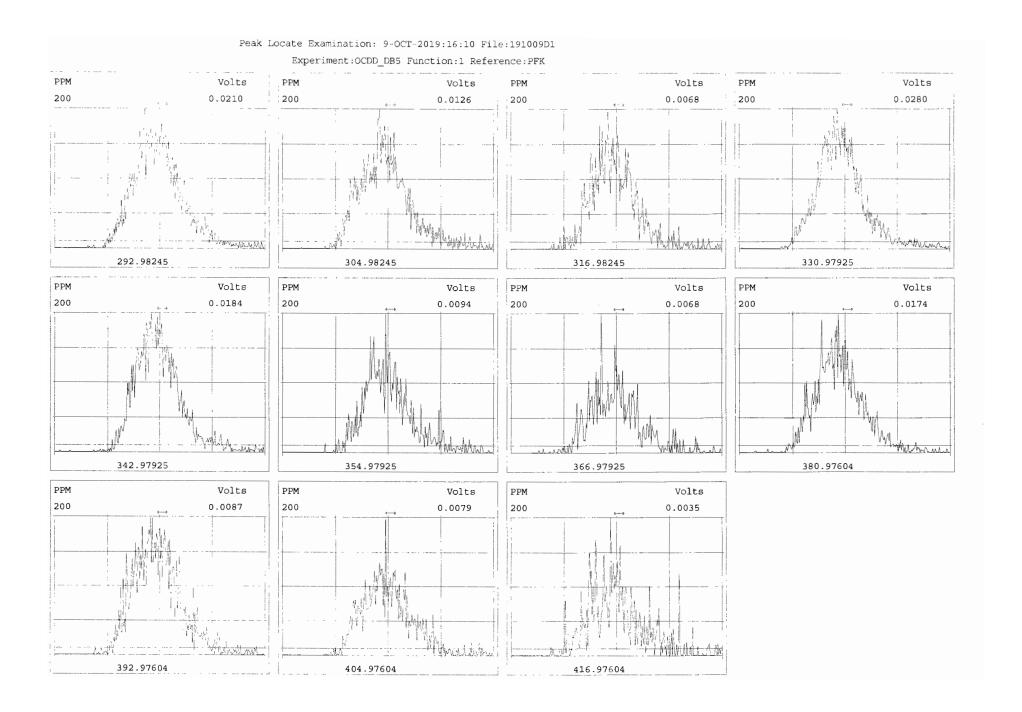
COMPARED PEAKS (1)

<25%

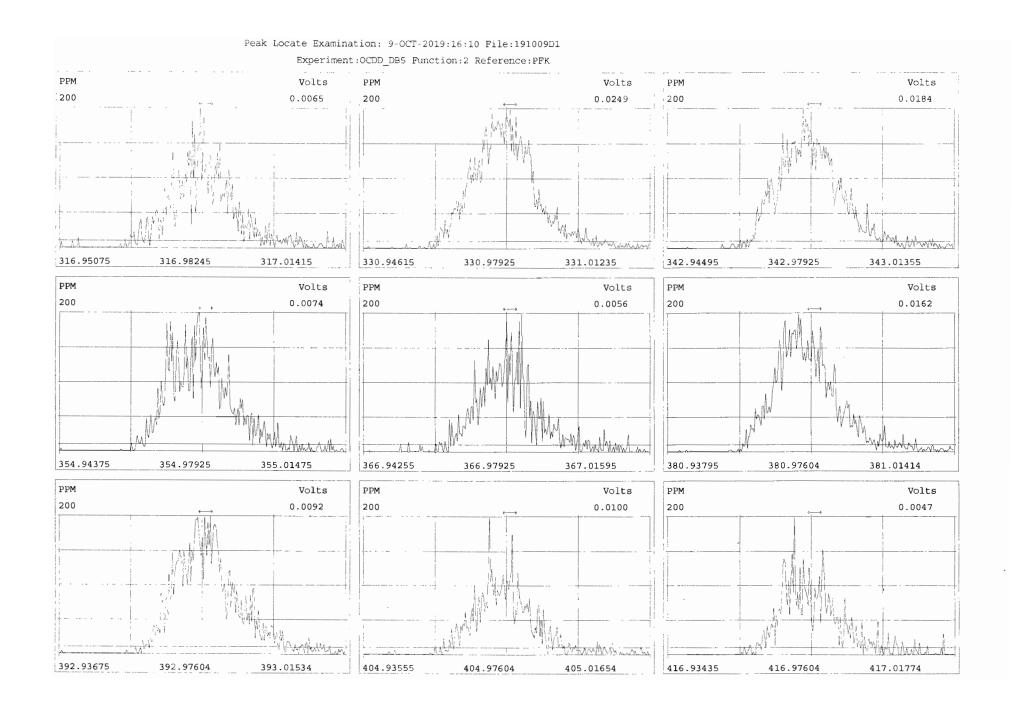
(1) To meet contract requirements, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: 10/10/19

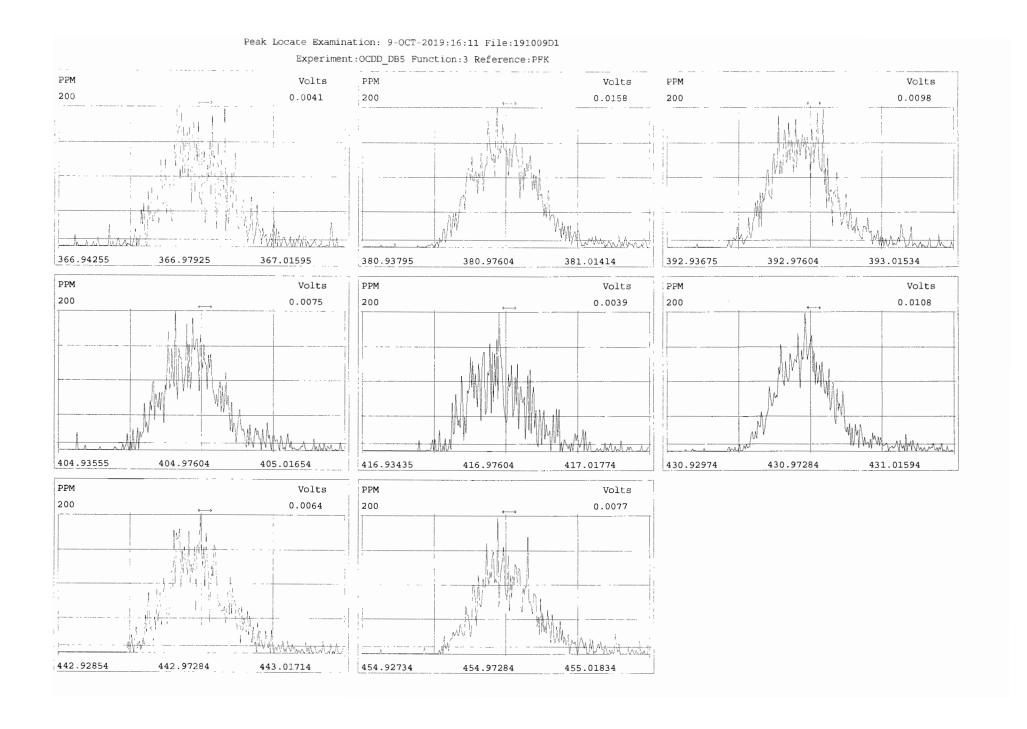
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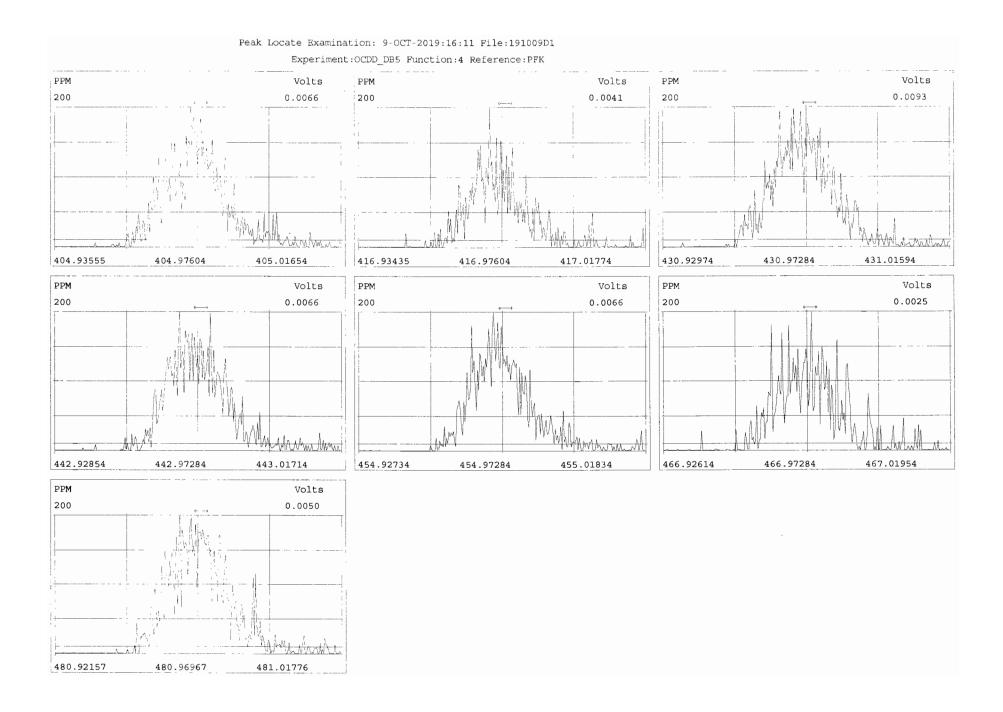
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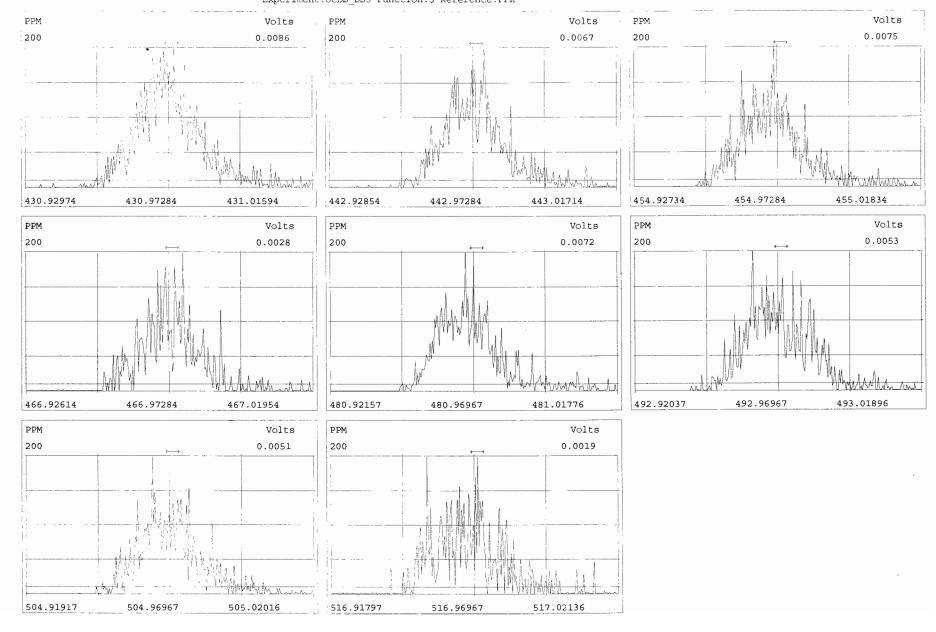


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Peak Locate Examination: 9-OCT-2019:16:12 File:191009D1 Experiment:OCDD DB5 Function:5 Reference:PFK

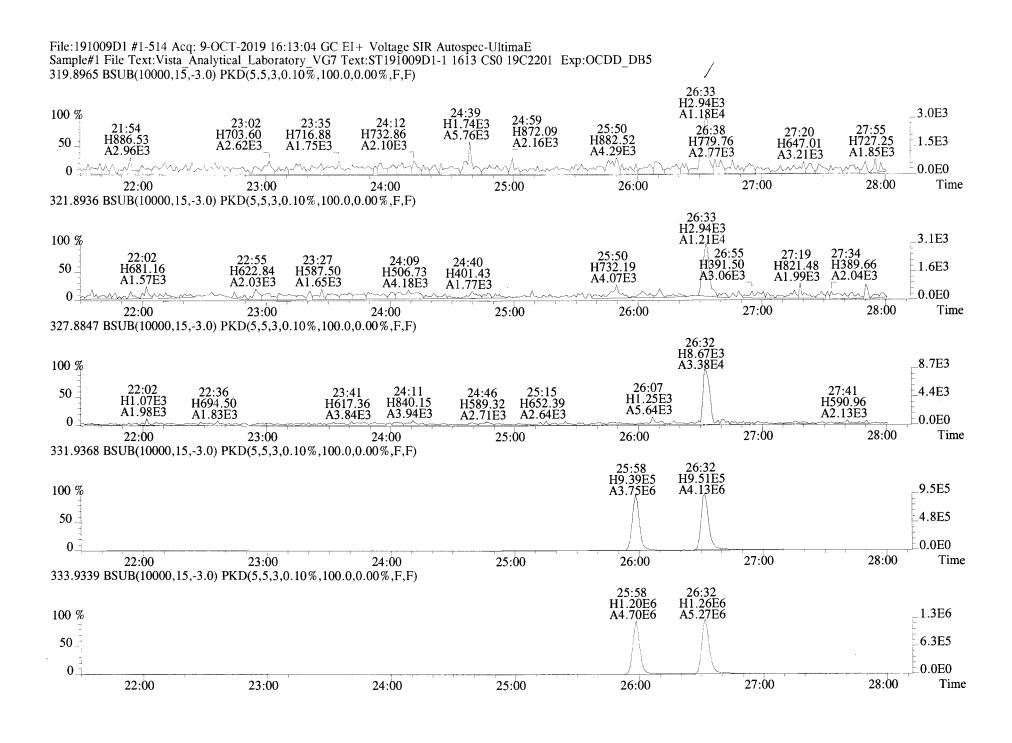


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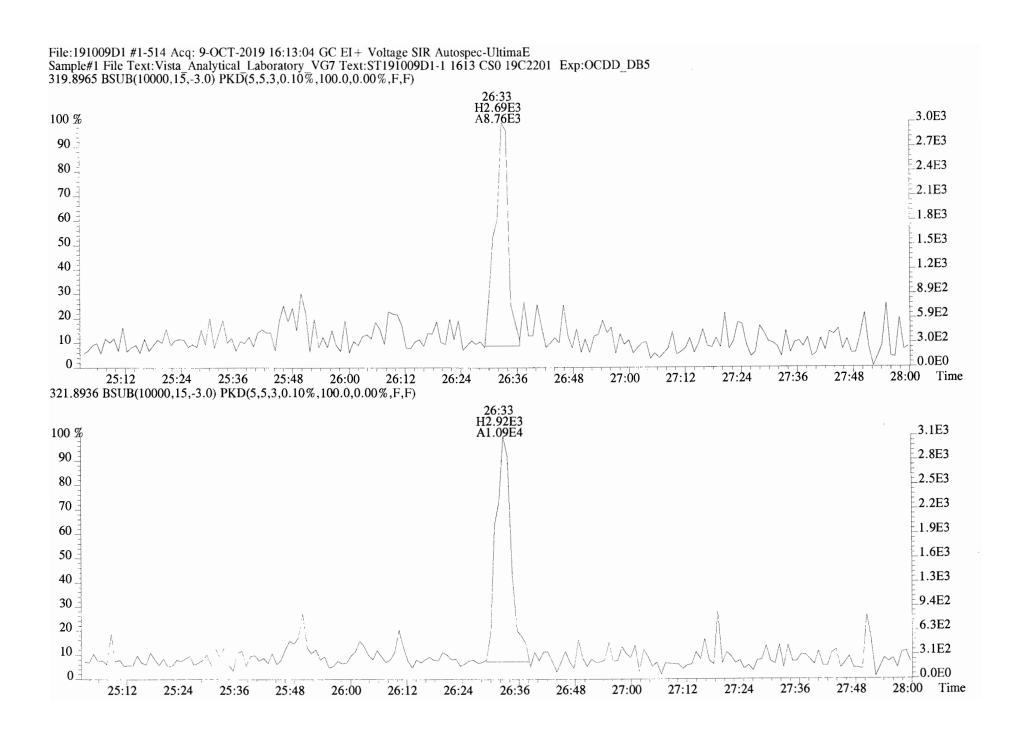
Vista Anal	lytical 1	Laboratory - Injection Log Run file: 191009D1	Instrument ID:	VG-7 GC	Column ID:	ZB-5MS	
Data file	S#	Sample ID	Analyst	Acq date	Acq time	CCal	ECal
191009D1	1	ST191009D1-1	DB	9-OCT-19	16:13:04	ST191009D1-4	NA
191009D1	2	ST191009D1-2	DB	9-OCT-19	17:00:45	ST191009D1-4	NA
191009D1	3	ST191009D1-3	DB	9-OCT-19	17:48:27	ST191009D1-4	NA
191009D1	4	ST191009D1-4	DB	9-OCT-19	18:36:09	ST191009D1-4	NA
191009D1	5	ST191009D1-5	DB	9-OCT-19	19:23:46	ST191009D1-4	NA
191009D1	6	ST191009D1-6	DB	9-OCT-19	20:11:17	ST191009D1-4	NA
191009D1	7	SOLVENT BLANK	DB	9-OCT-19	20:58:57	ST191009D1-4	NA
191009D1	8	SS191009D1-1	DB	9-OCT-19	21:46:34	ST191009D1-4	NA
191009D1	9	B9J0001-BS1	DB	9-OCT-19	22:34:09	ST191009D1-4	NA
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191009D1	11	B9J0001-BLK1	DB	10-OCT-19	00:09:30	ST191009D1-4	NA
191009D1	12	QC191007D1-1	DB	10-OCT-19	00:57:00	ST191009D1-4	NA
191009D1	13	1903285-08	DB	10-OCT-19	01:44:36	ST191009D1-4	NA
191009D1	14	1903285-09	DB	10-OCT-19	02:32:11	ST191009D1-4	NA
191009D1	15	1903285-10	DB	10-OCT-19	03:19:47	ST191009D1-4	NA
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191009D1	17	1903103-01@5X	DB	10-OCT-19	04:54:54	ST191009D1-4	NA
191009D1	18	B9I0240-DUP1@5X	DB	10-OCT-19	05:42:38	ST191009D1-4	NA

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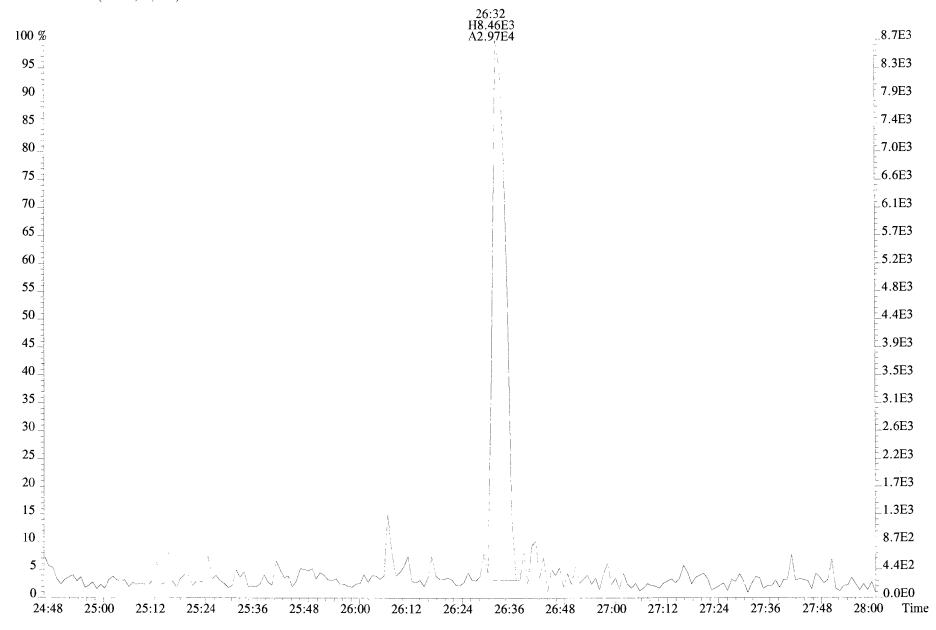


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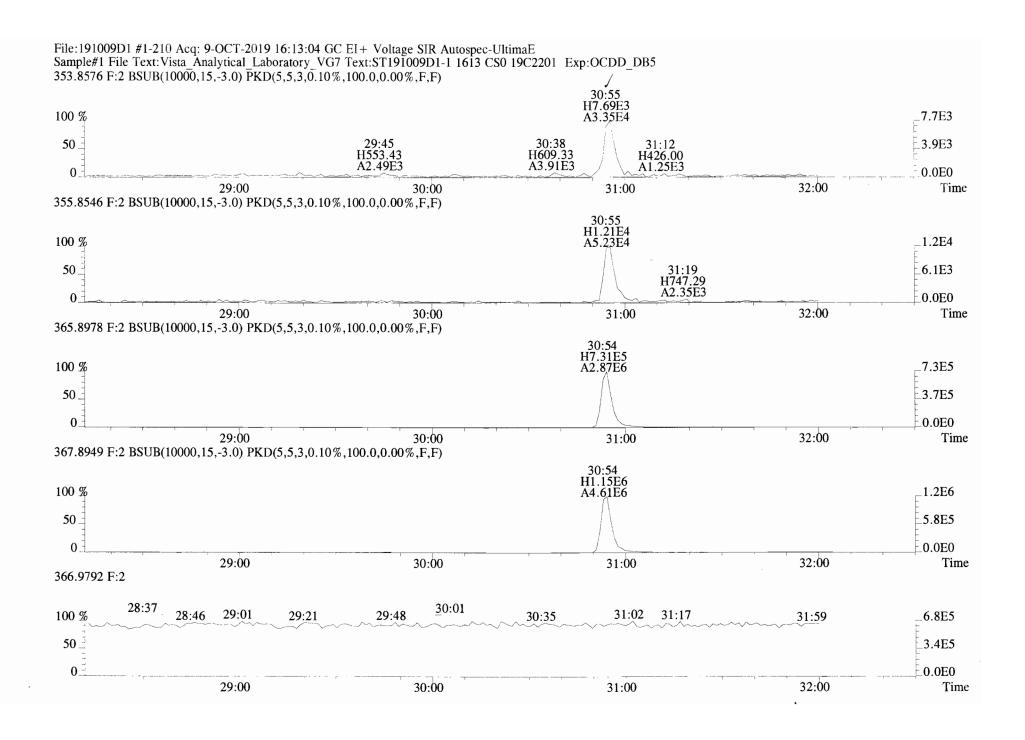


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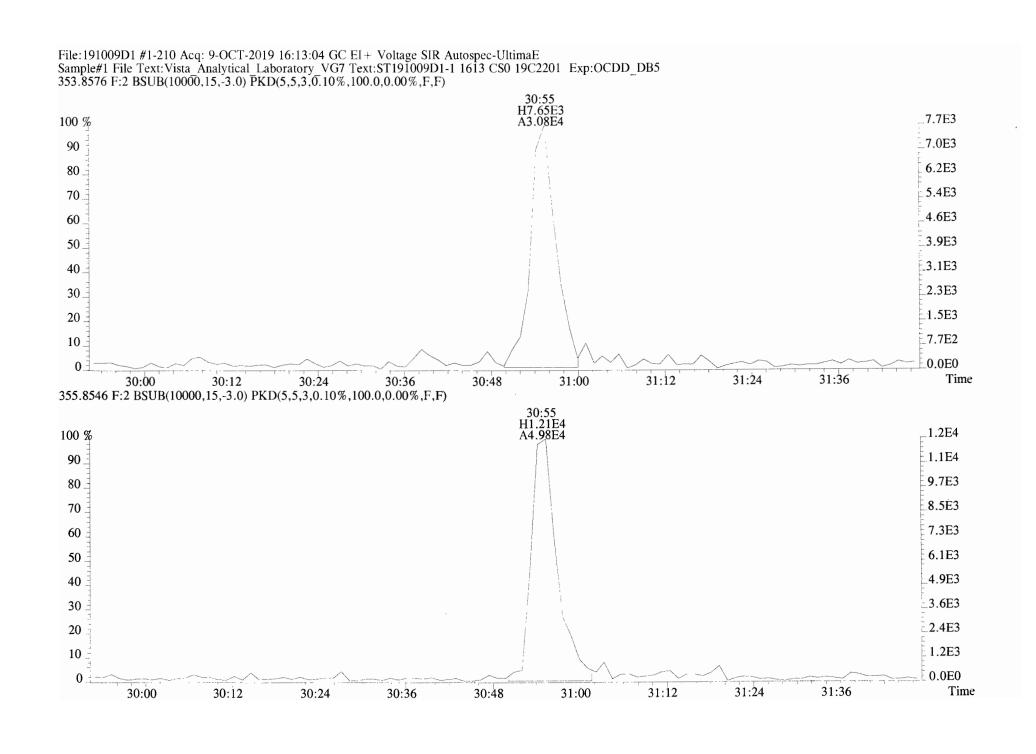
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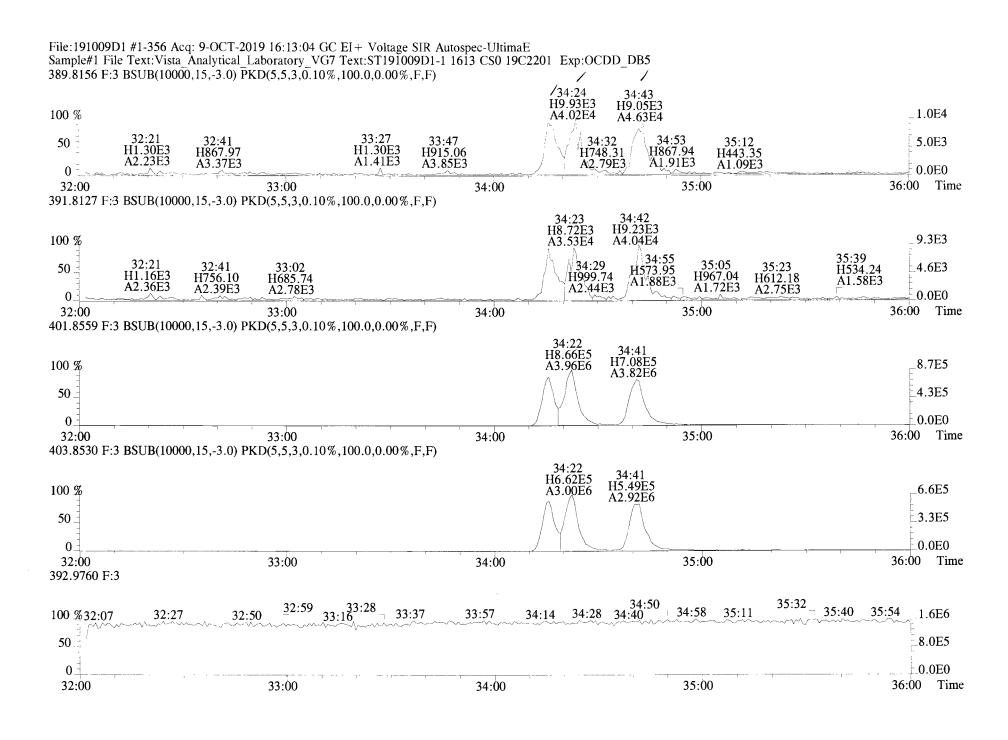
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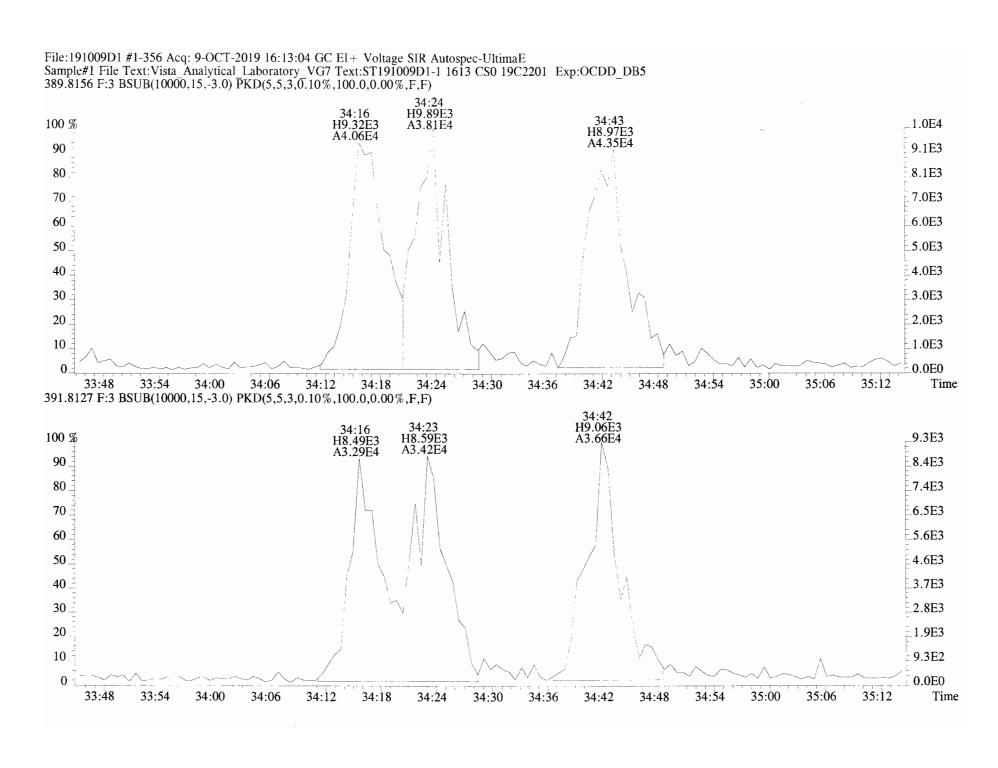
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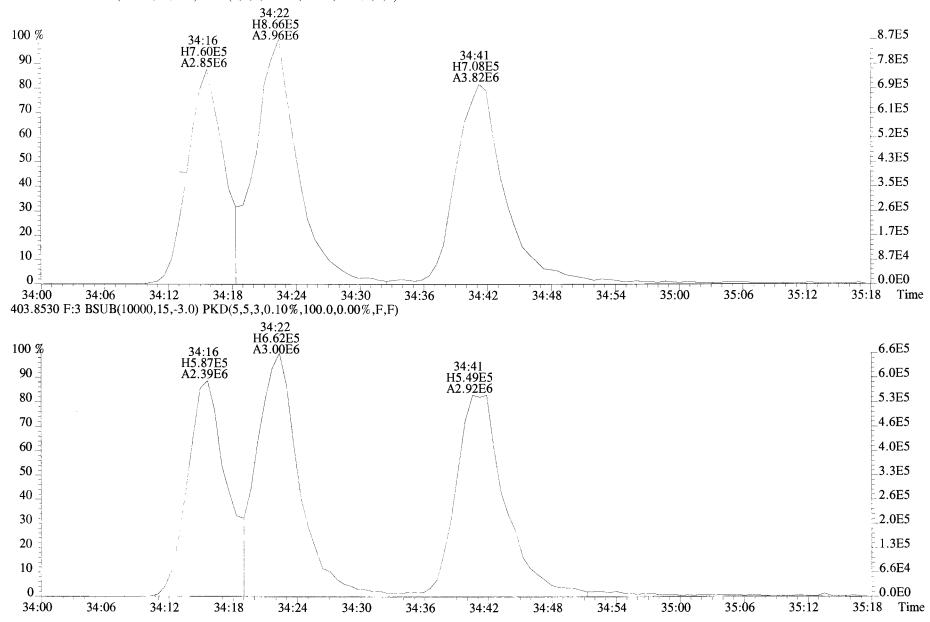


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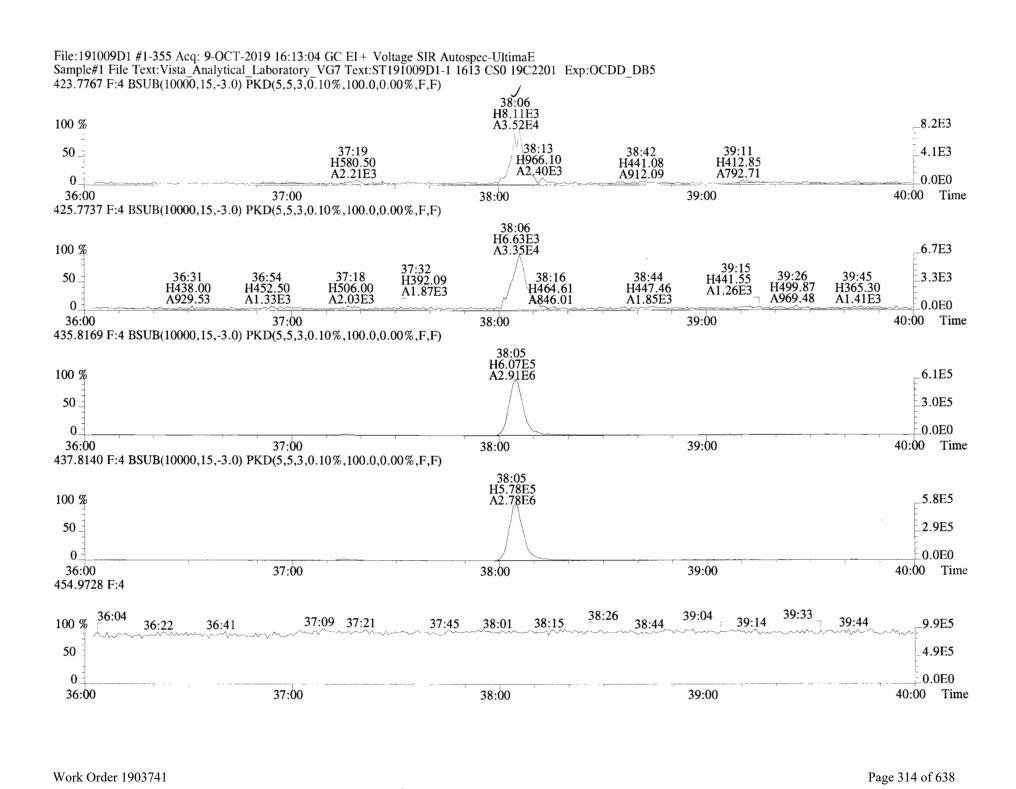


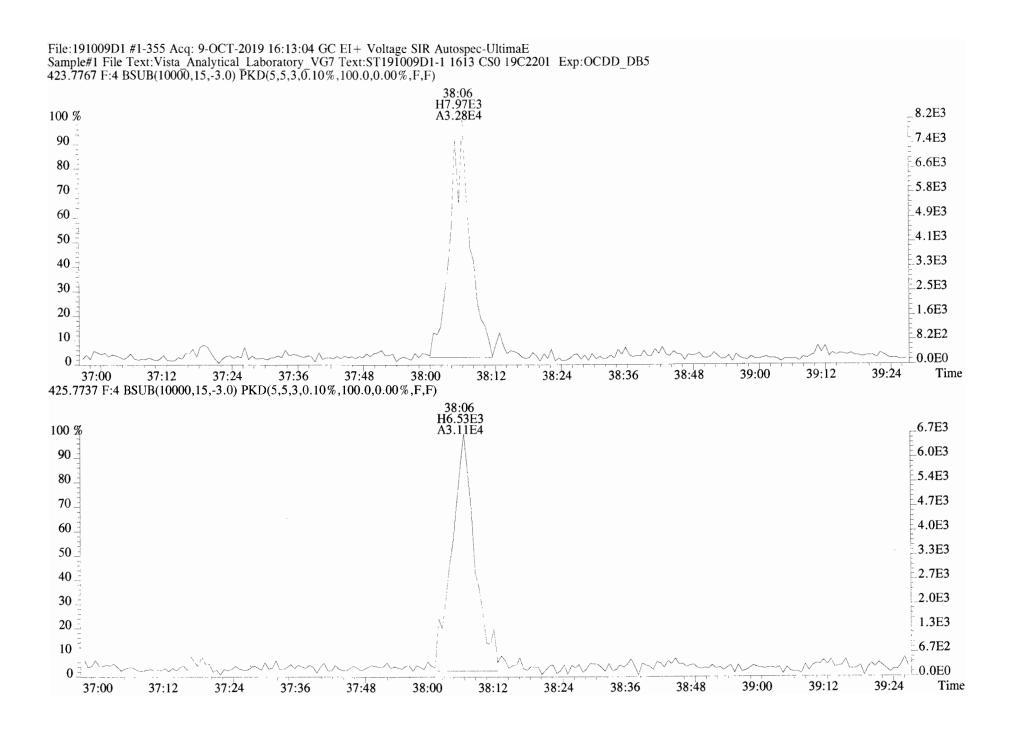
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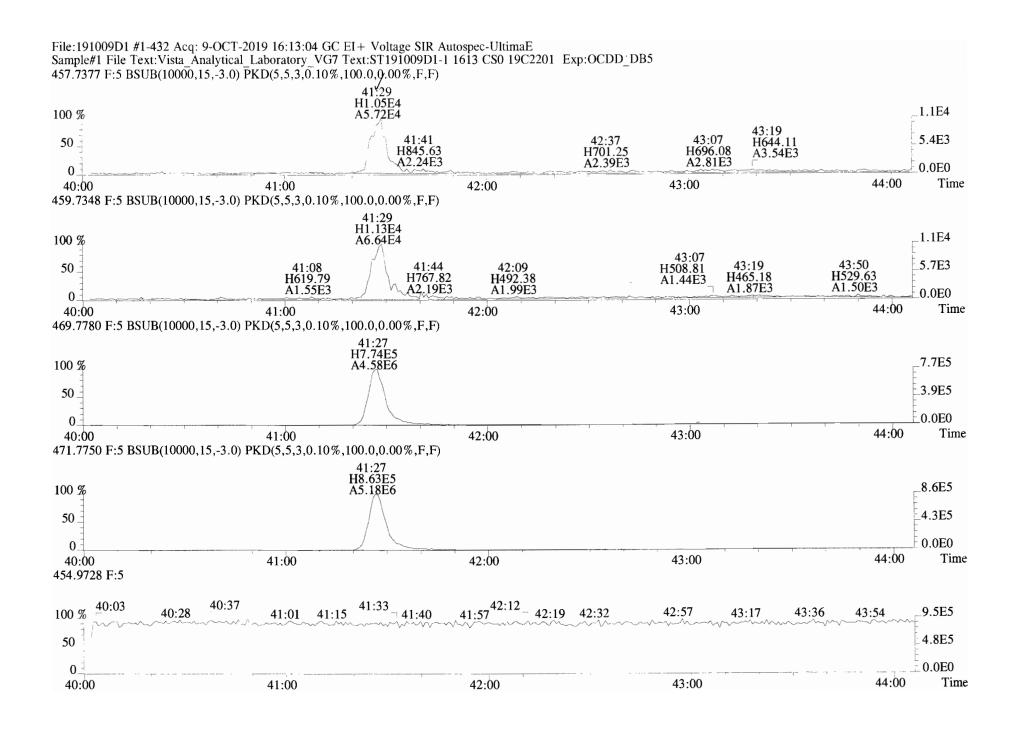


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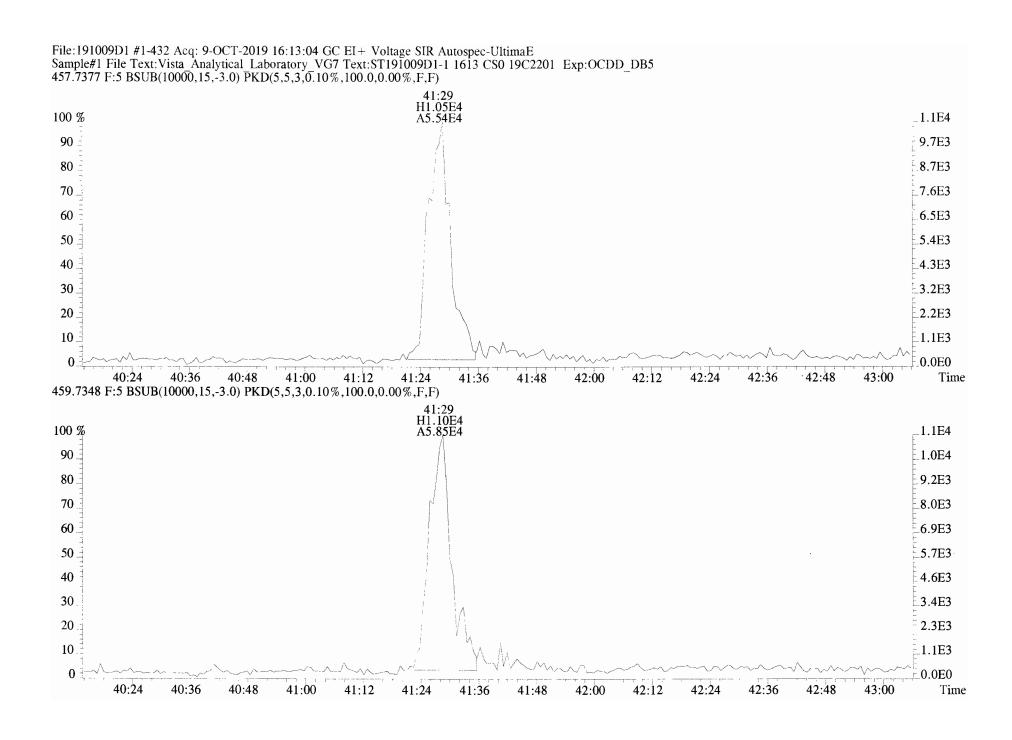




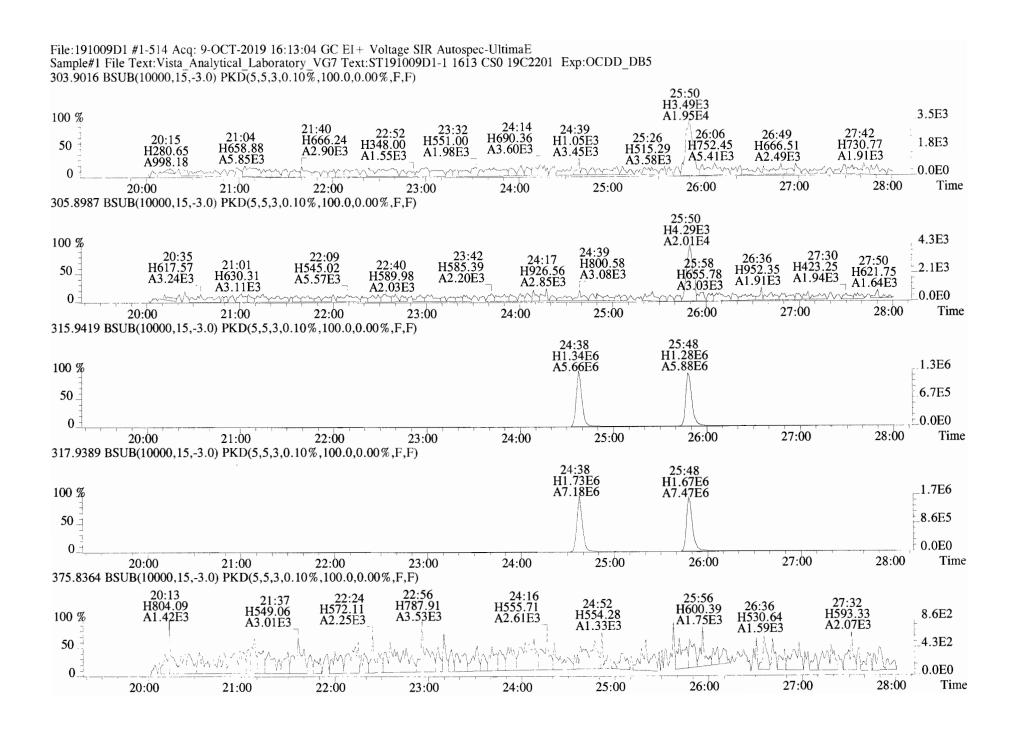
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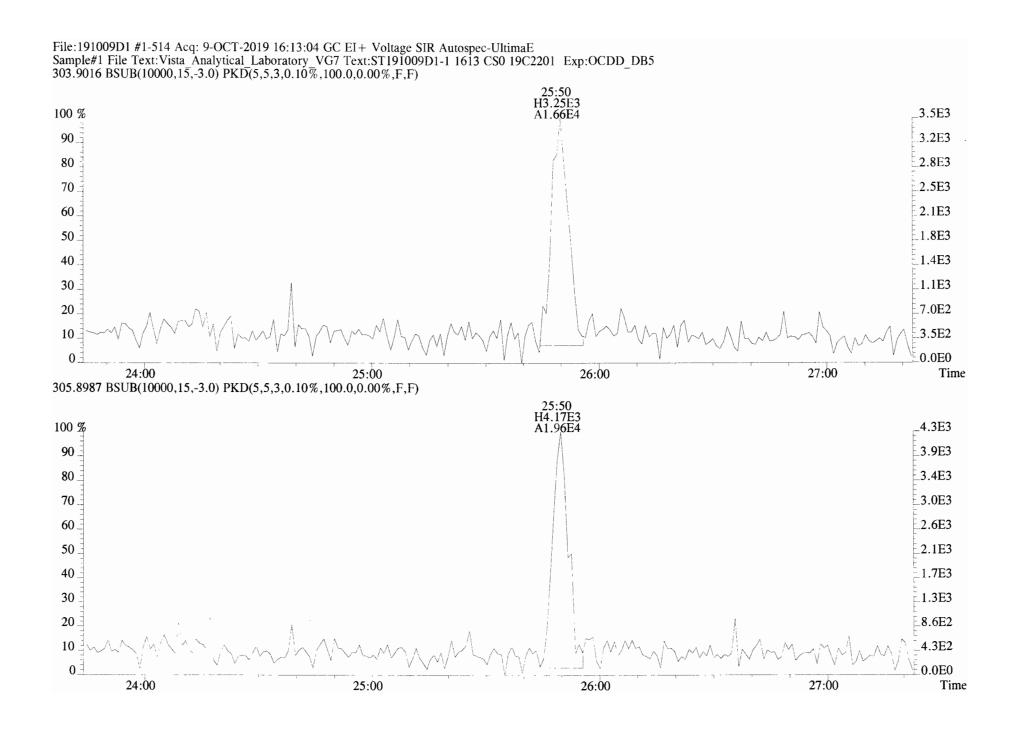
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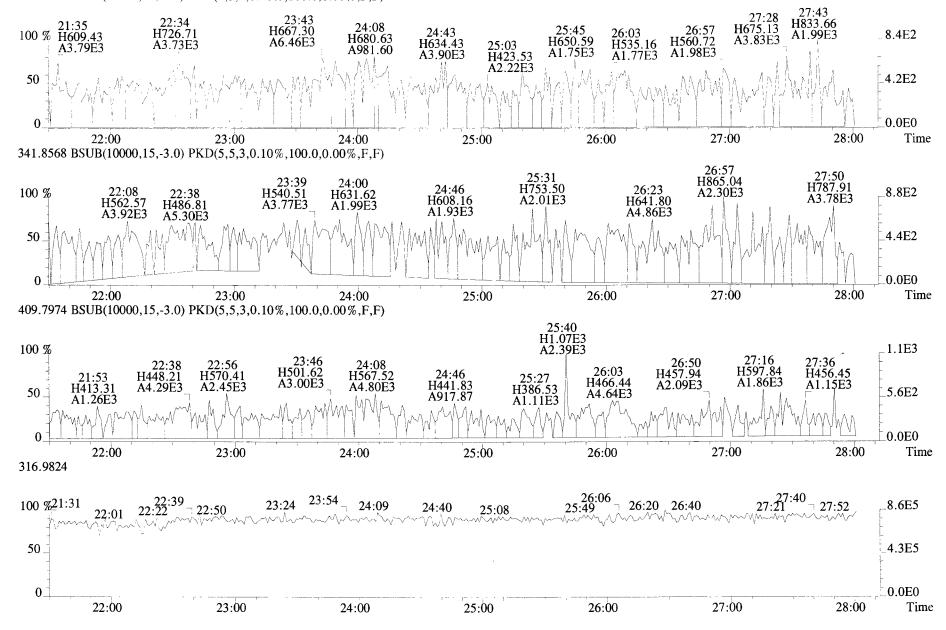


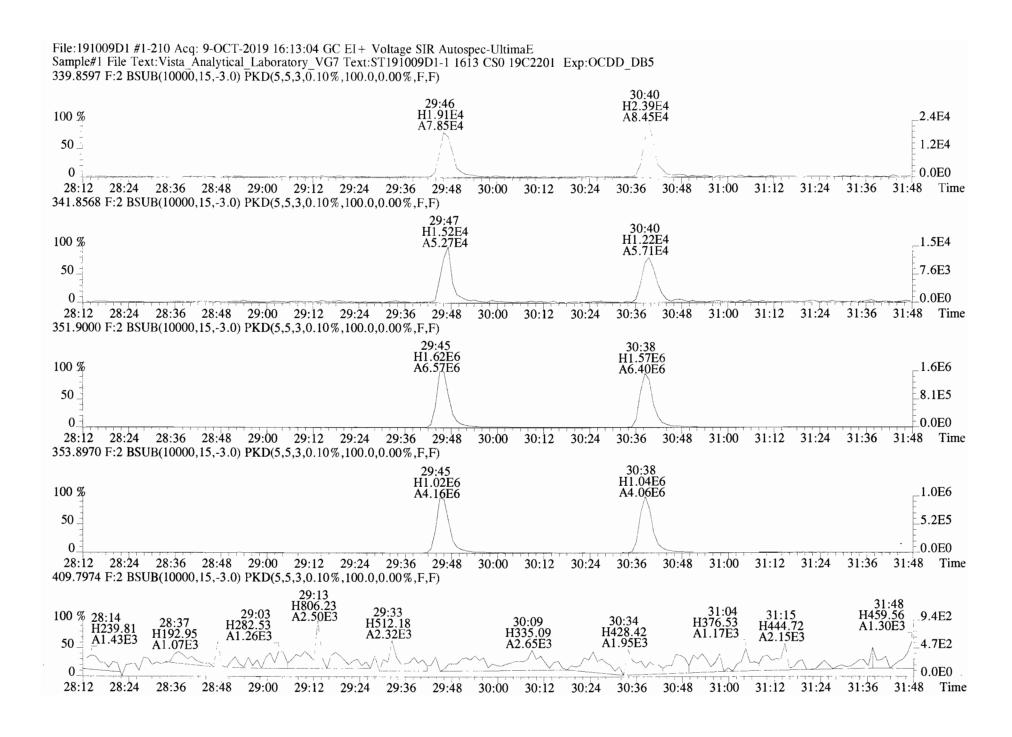
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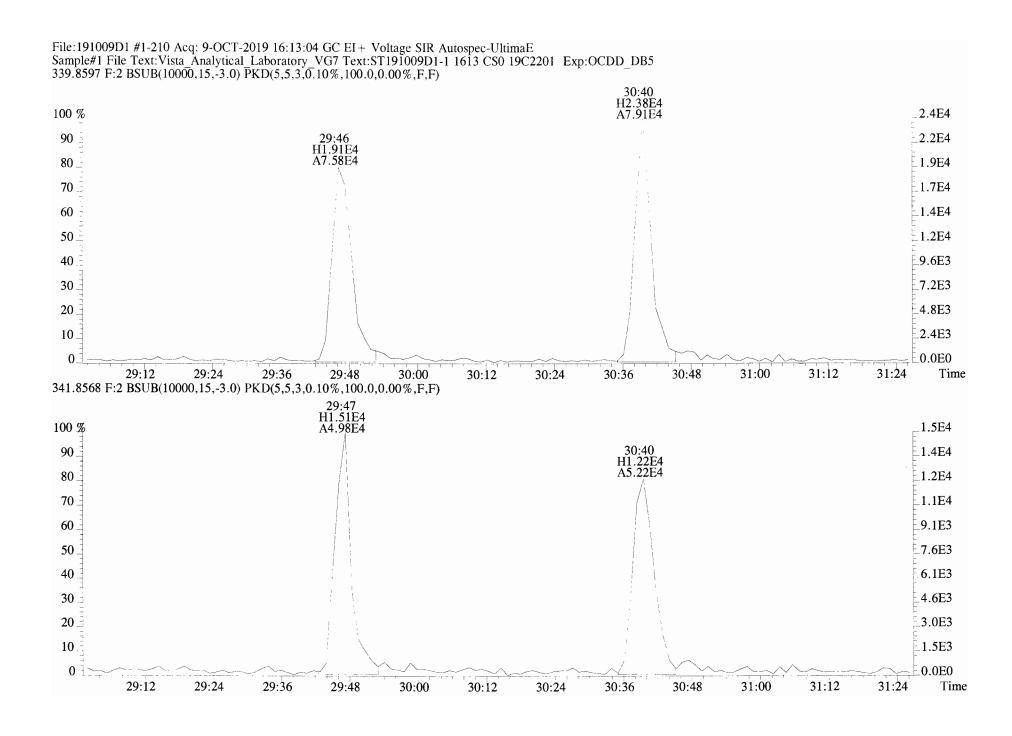
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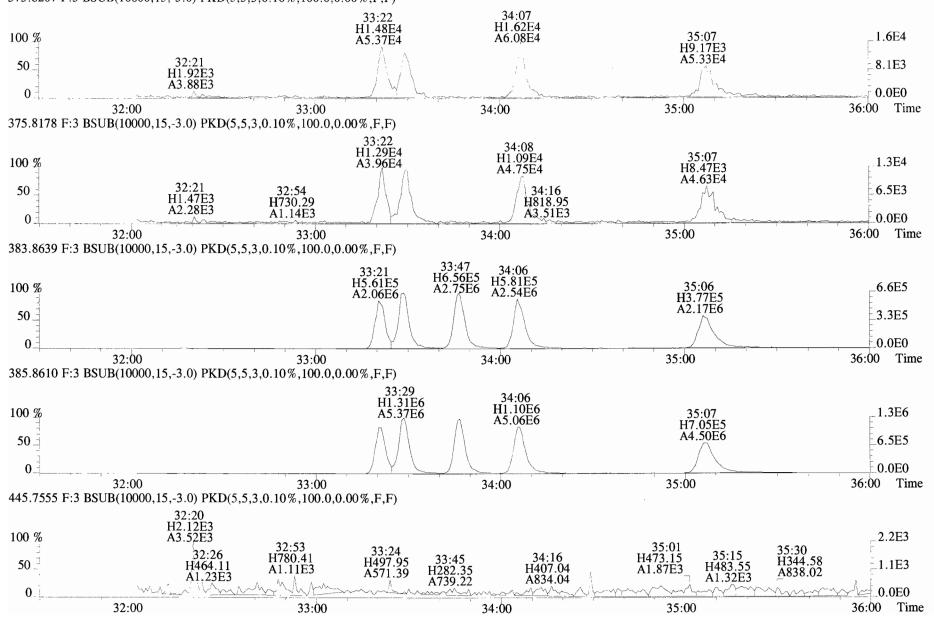


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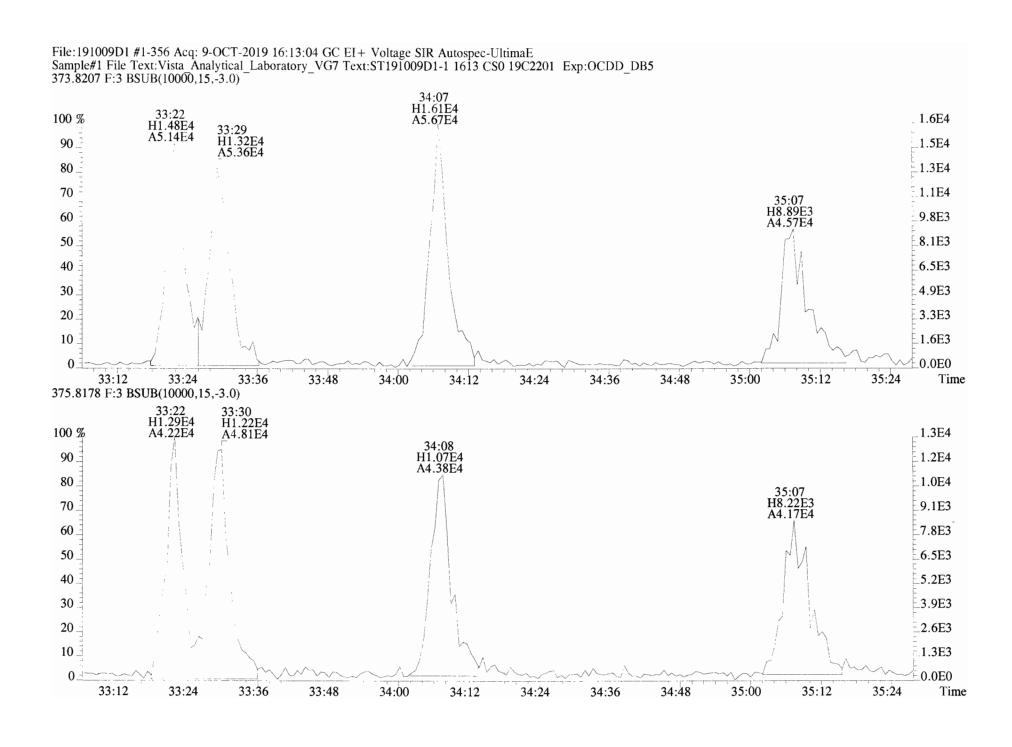


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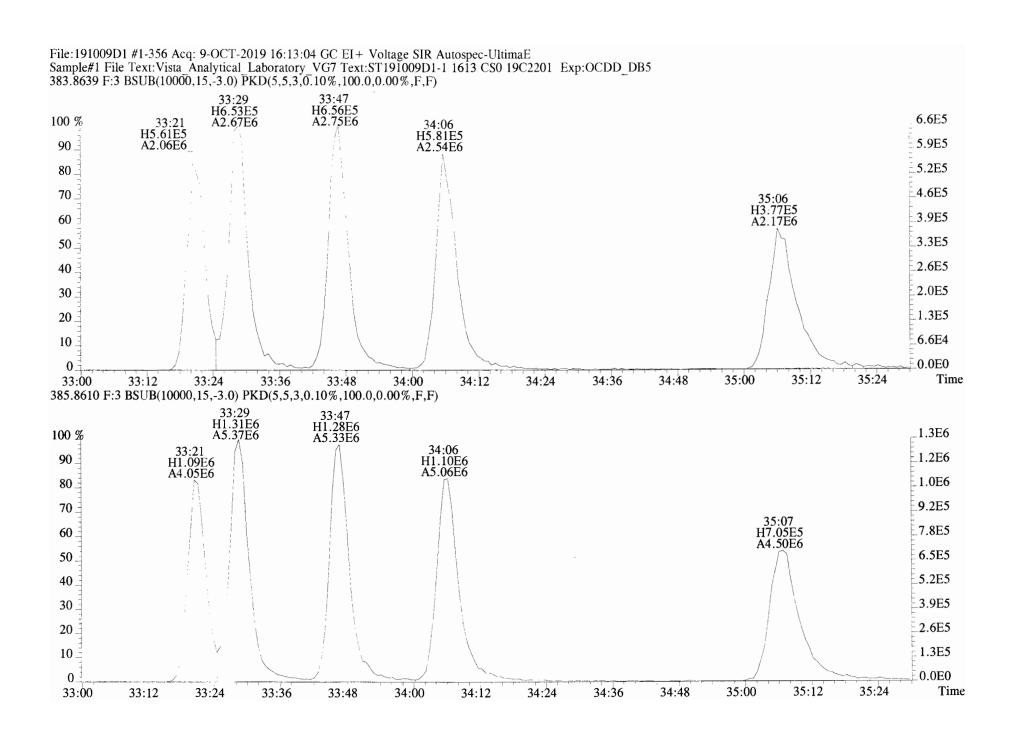
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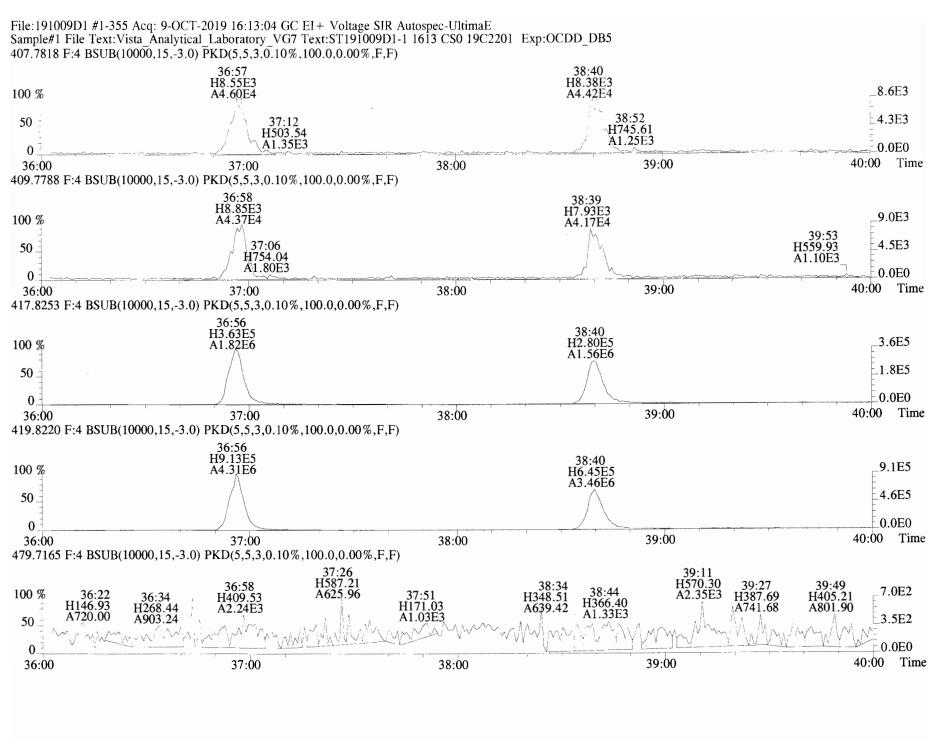
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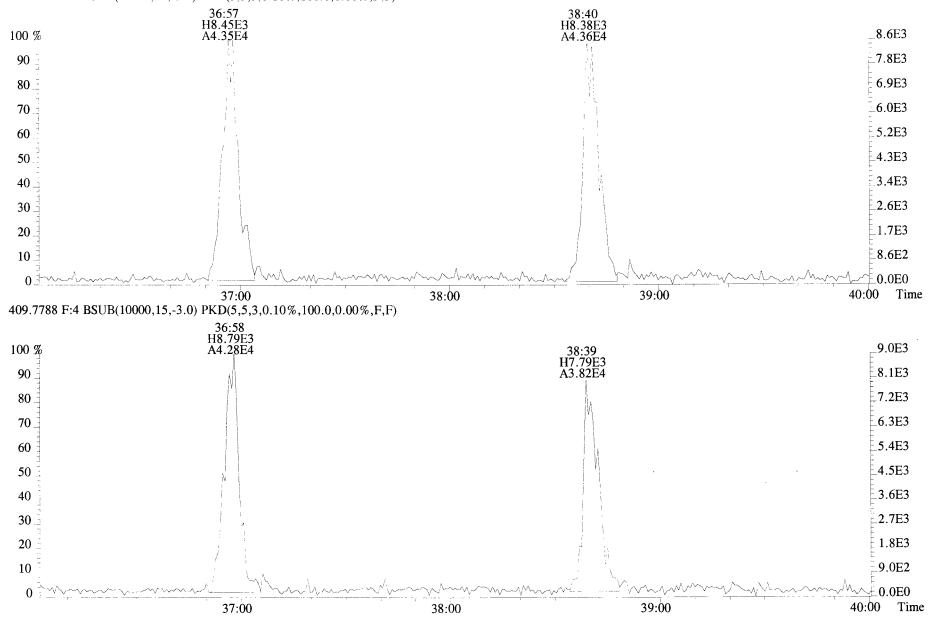
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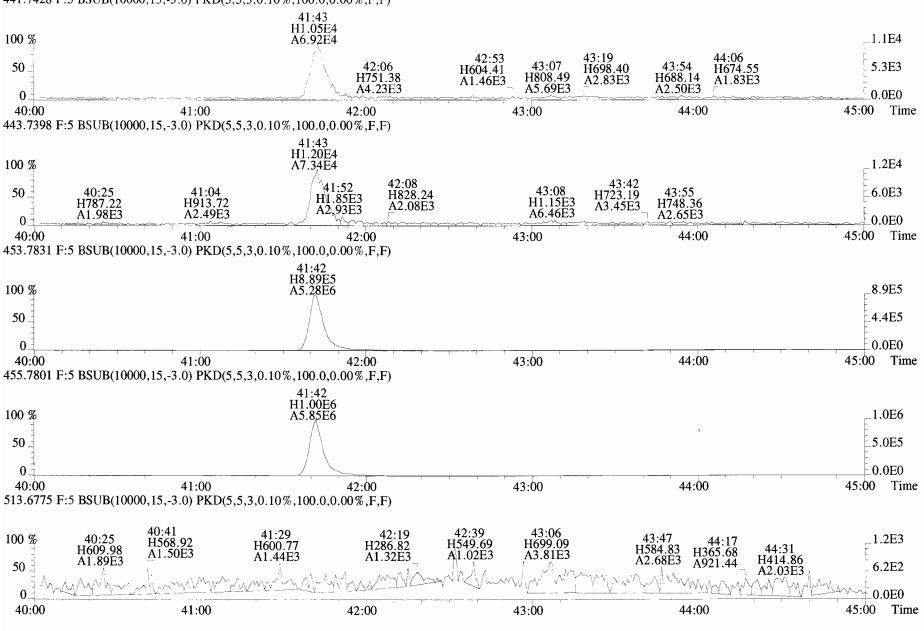
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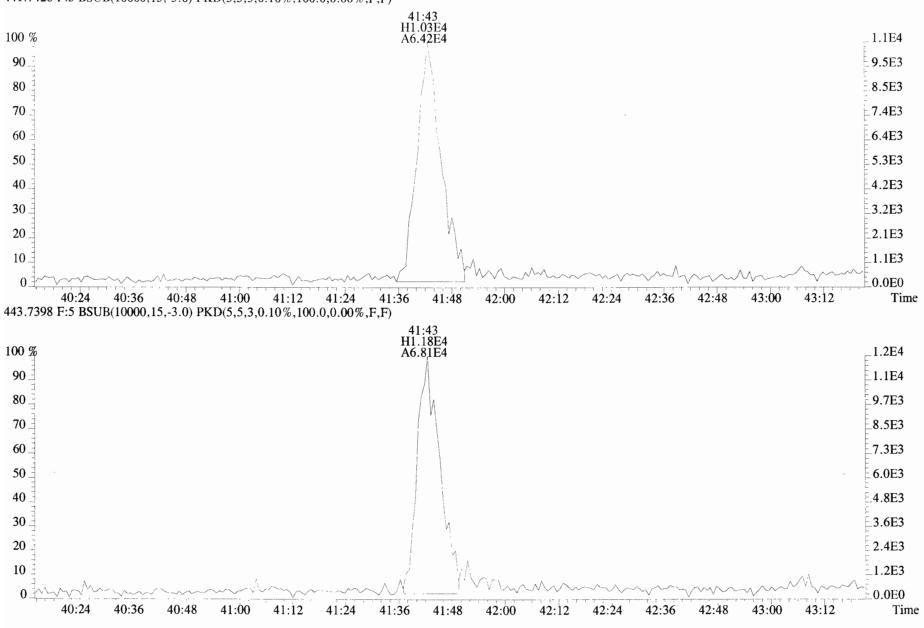
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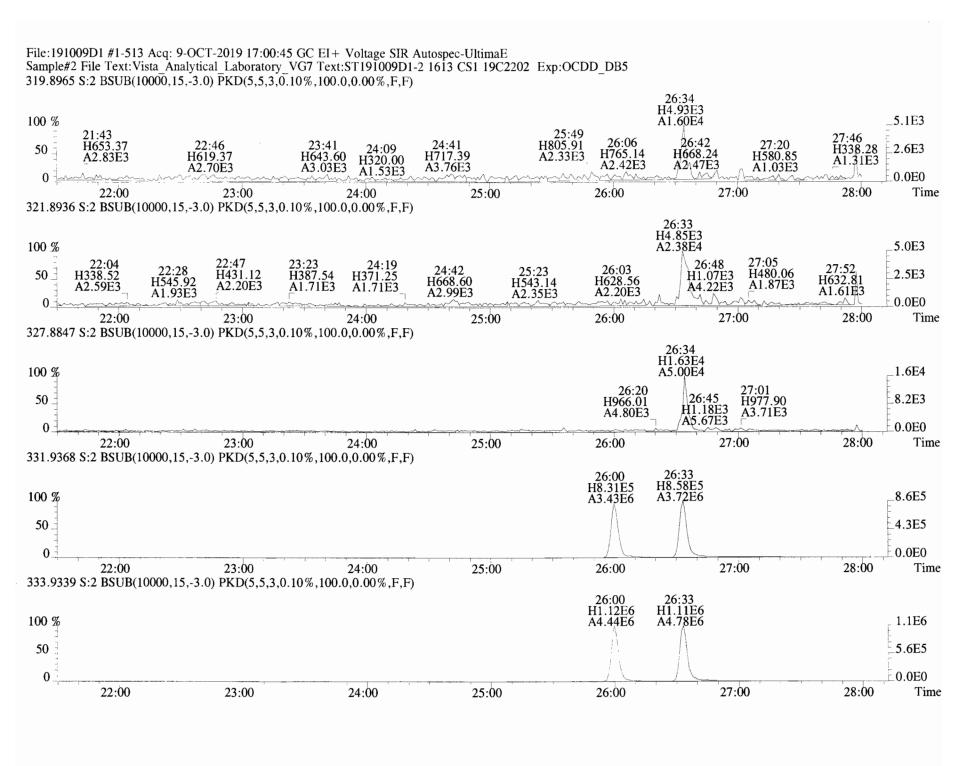


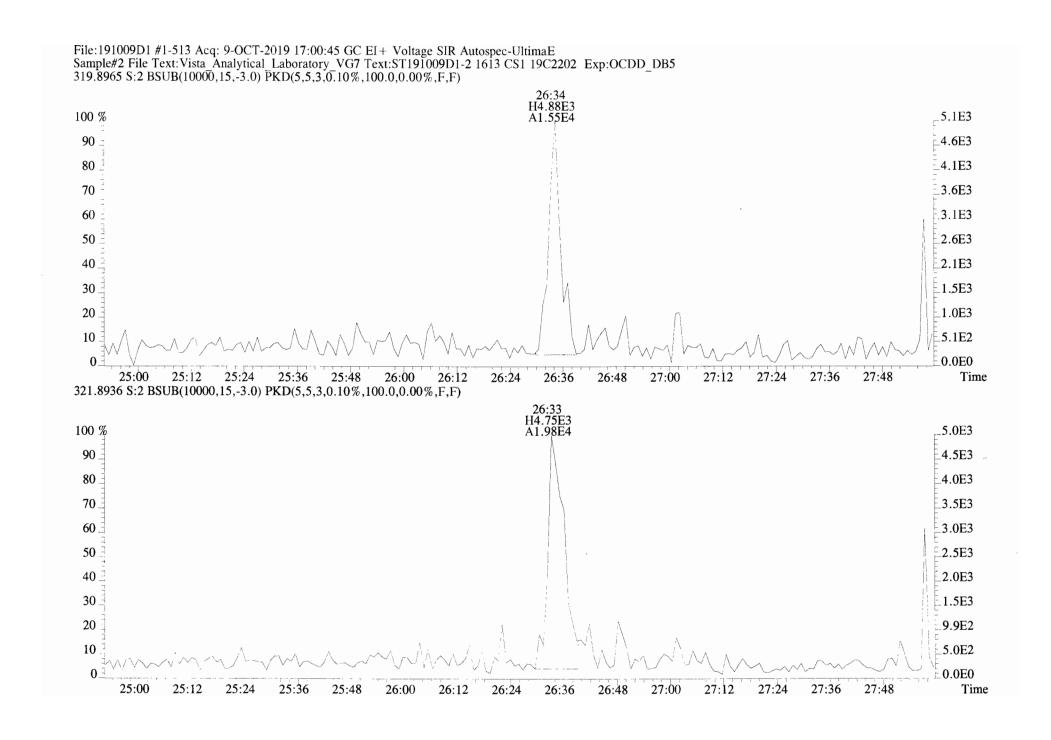
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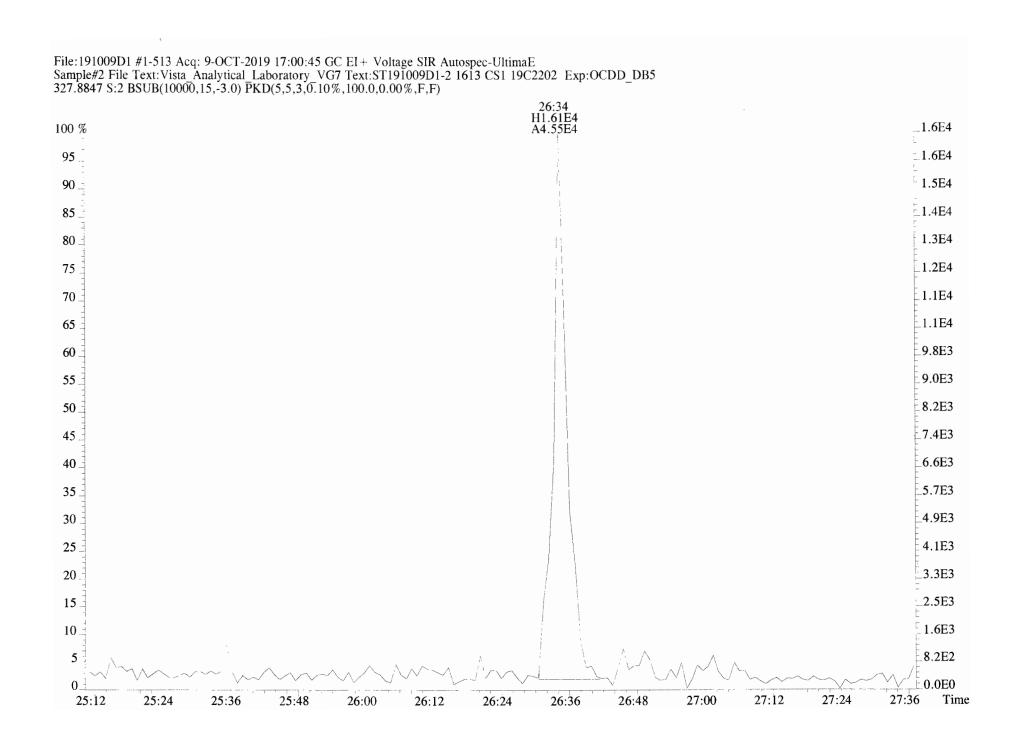
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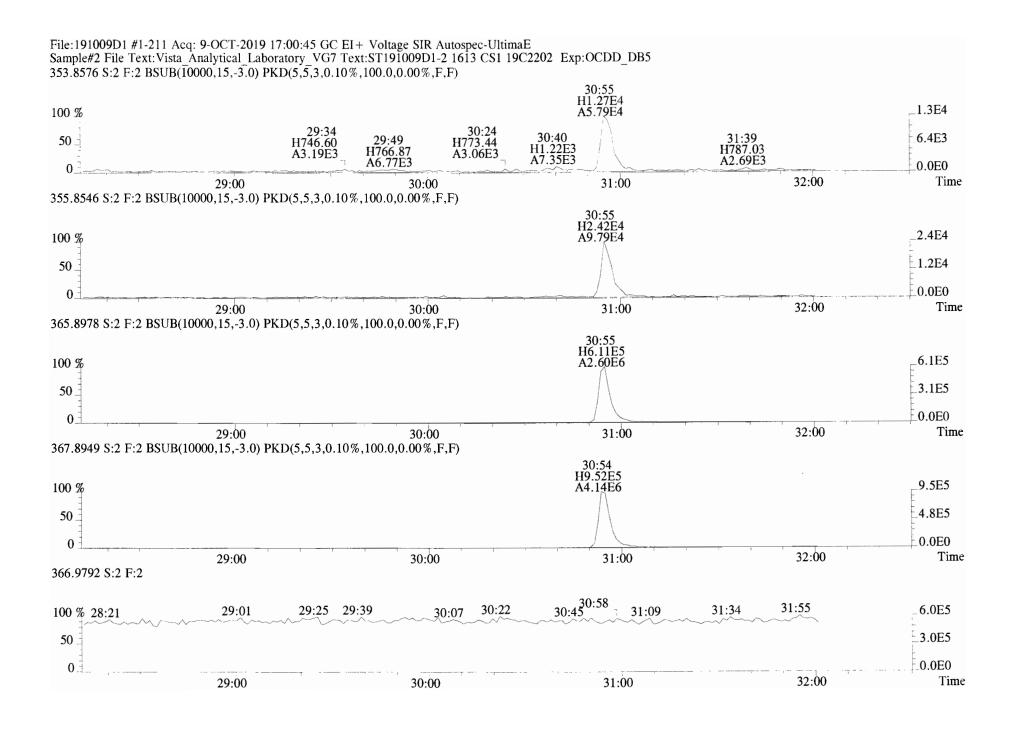




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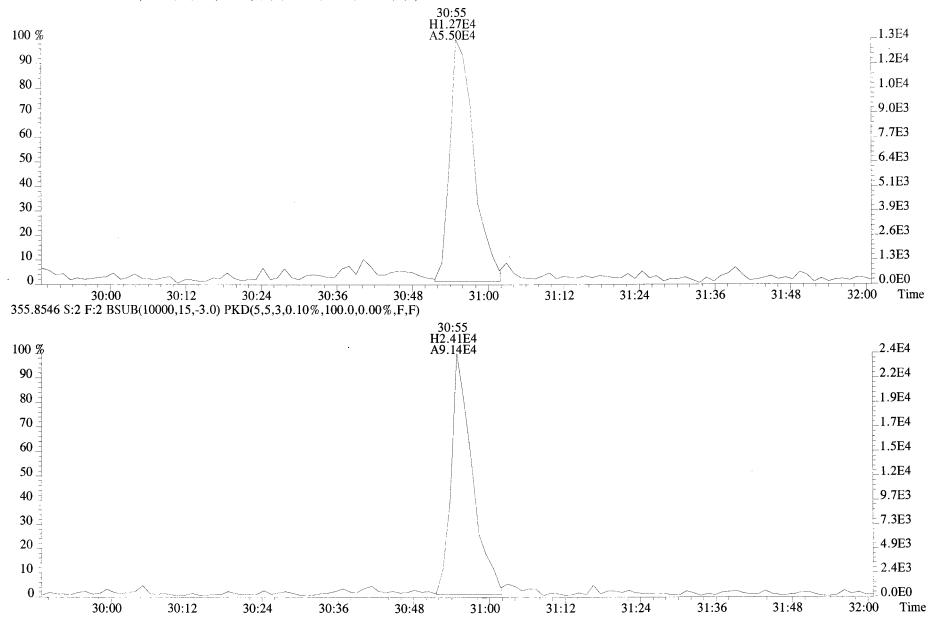


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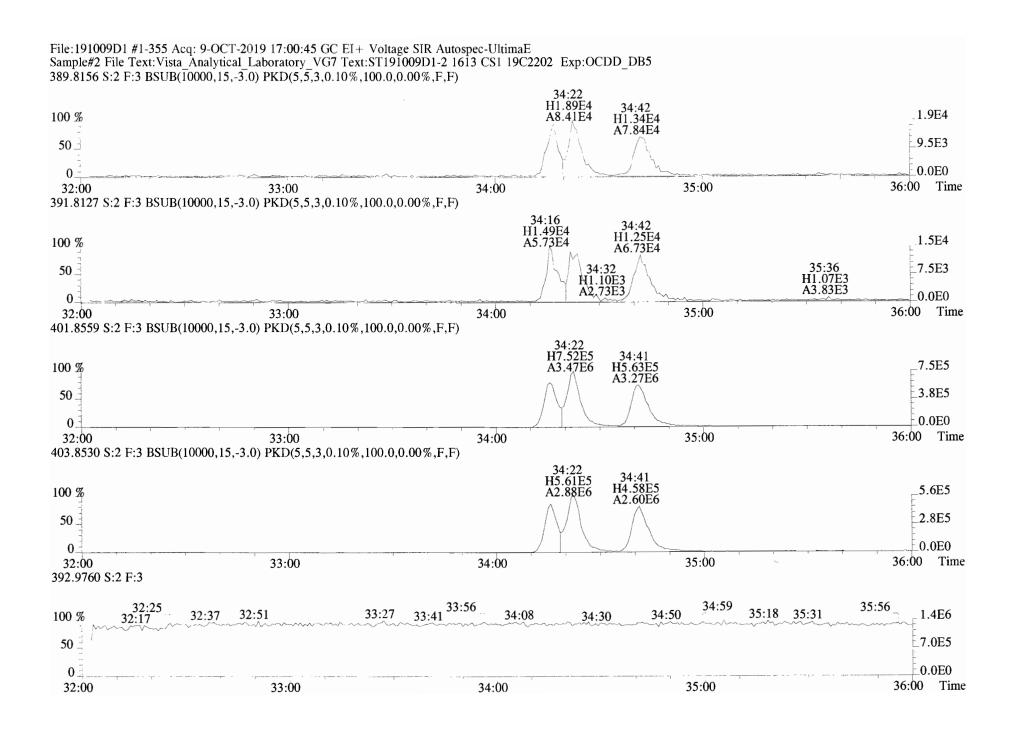


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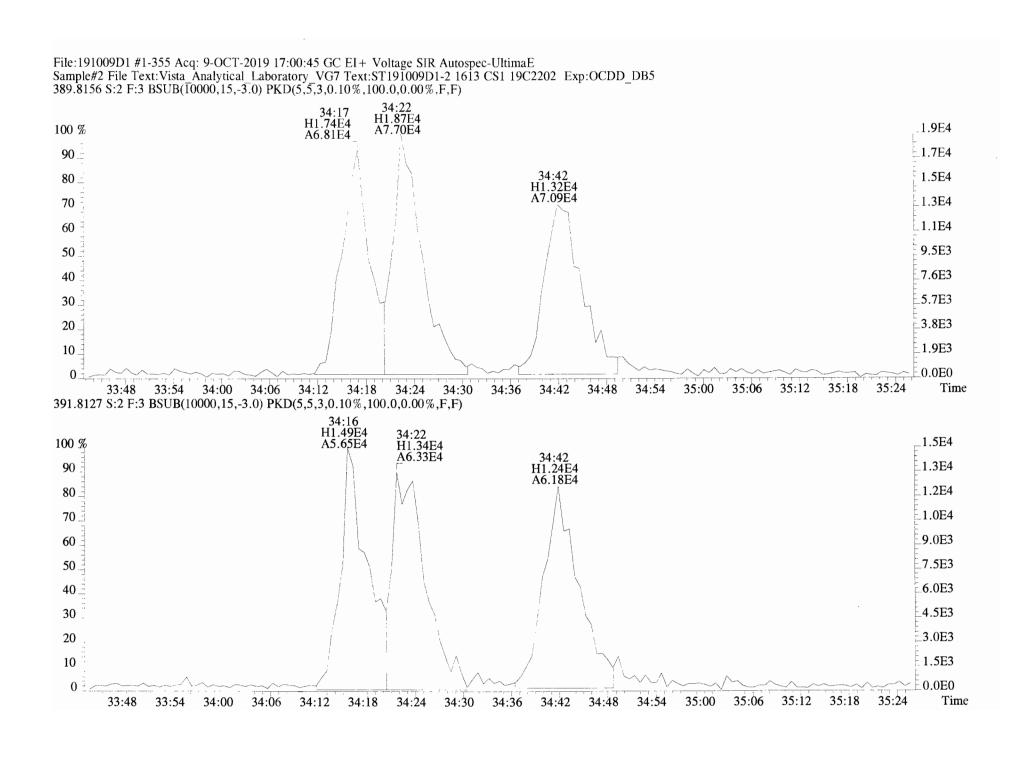
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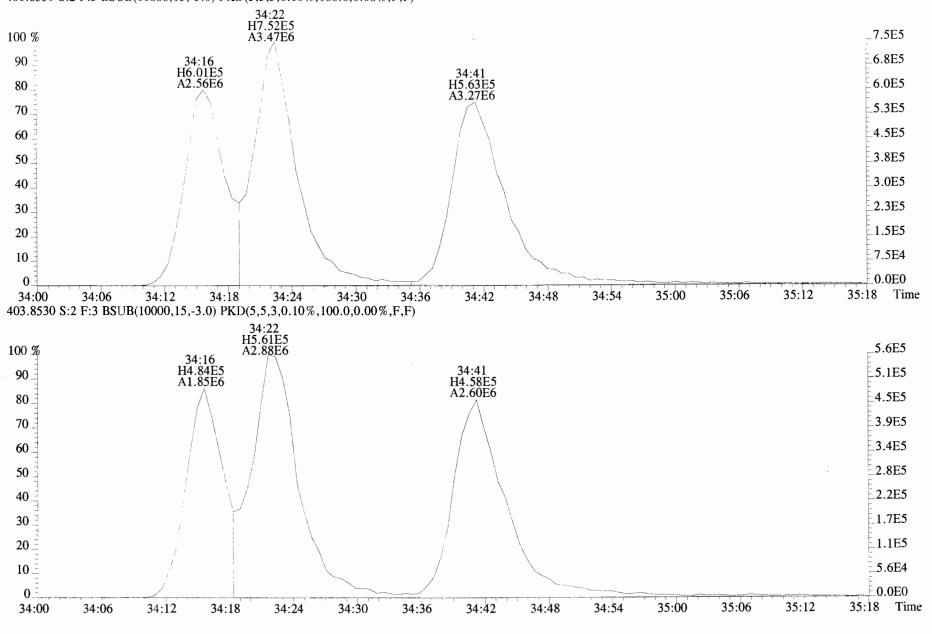


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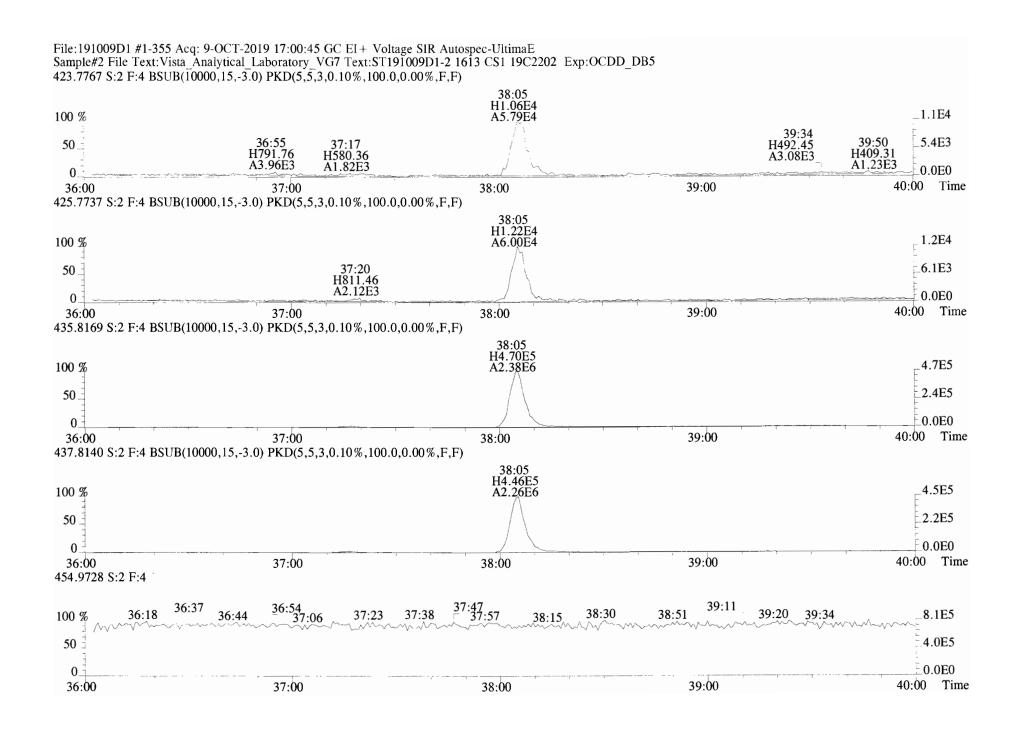


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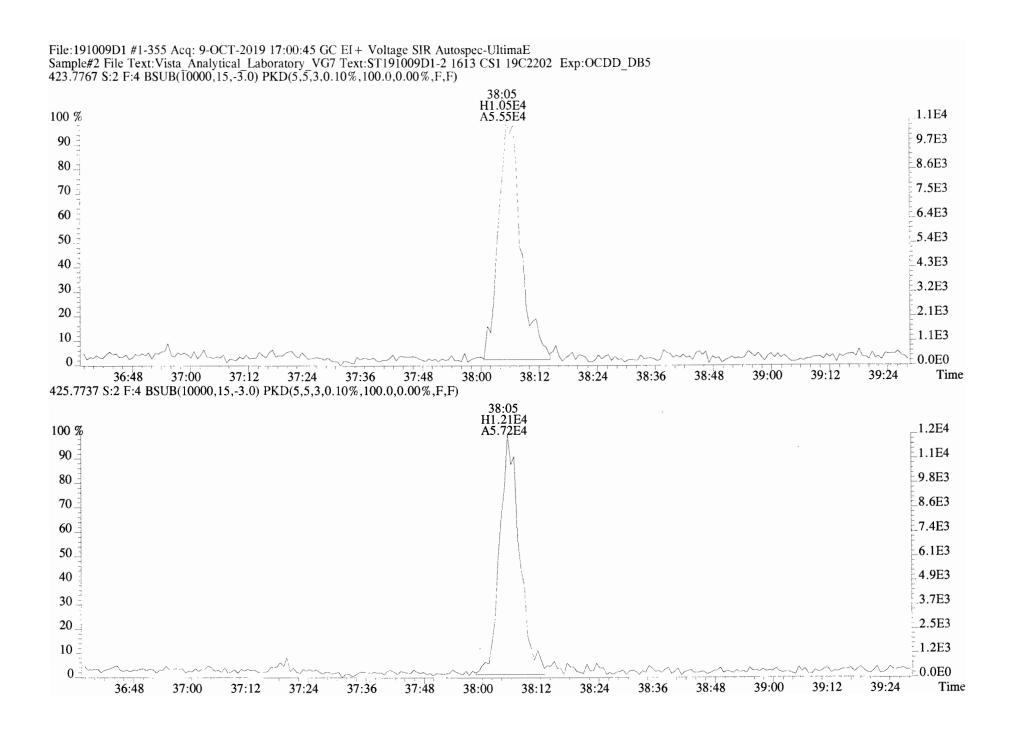
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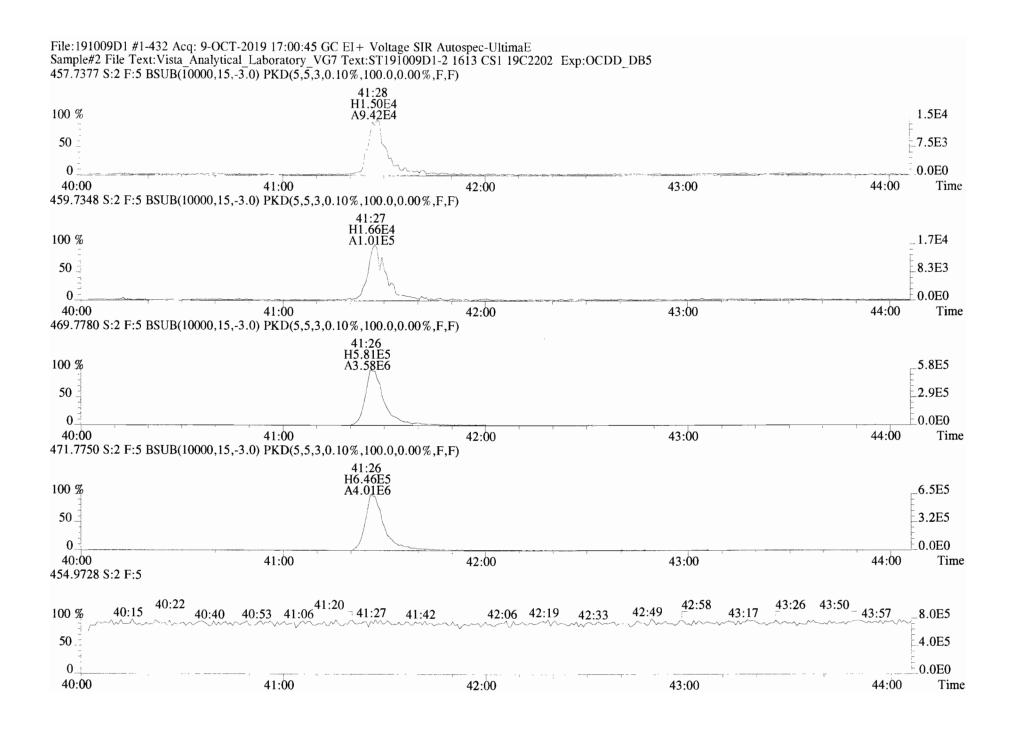
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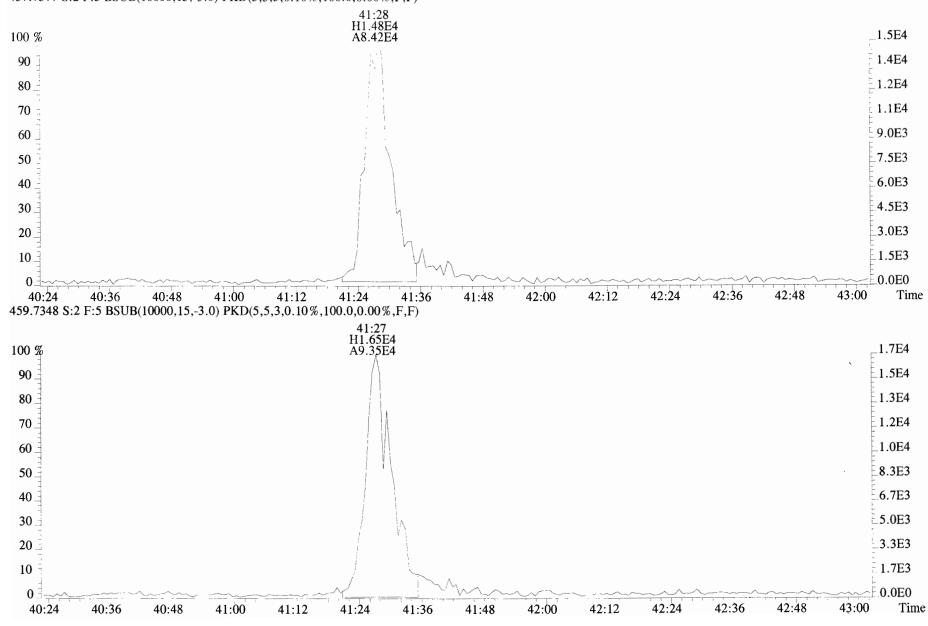


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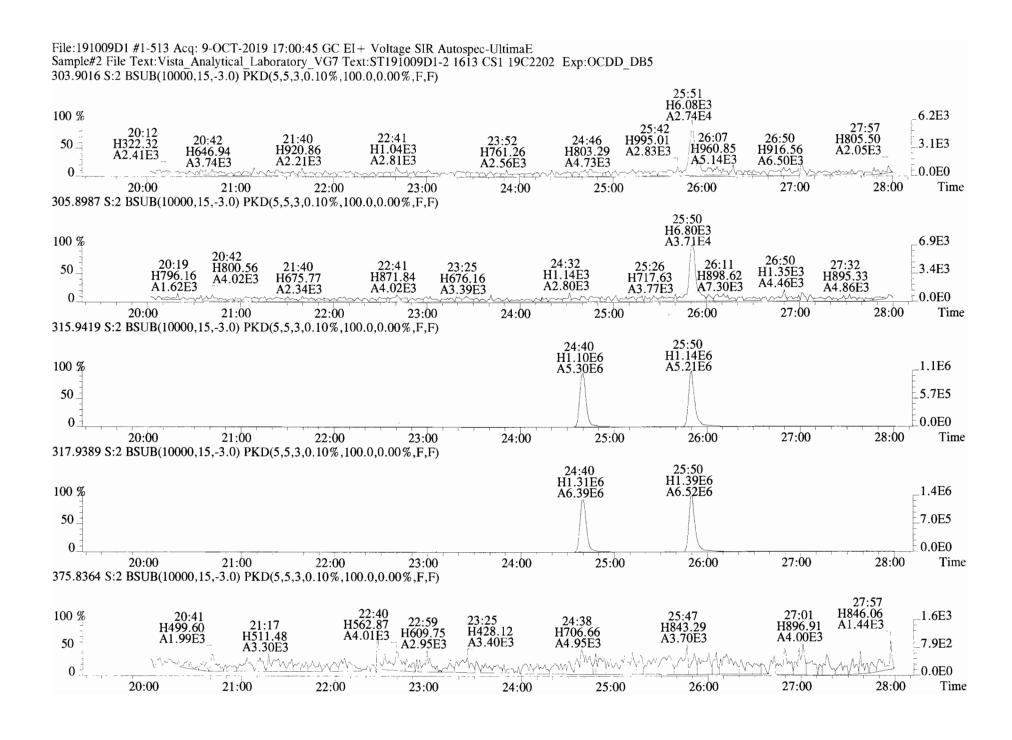


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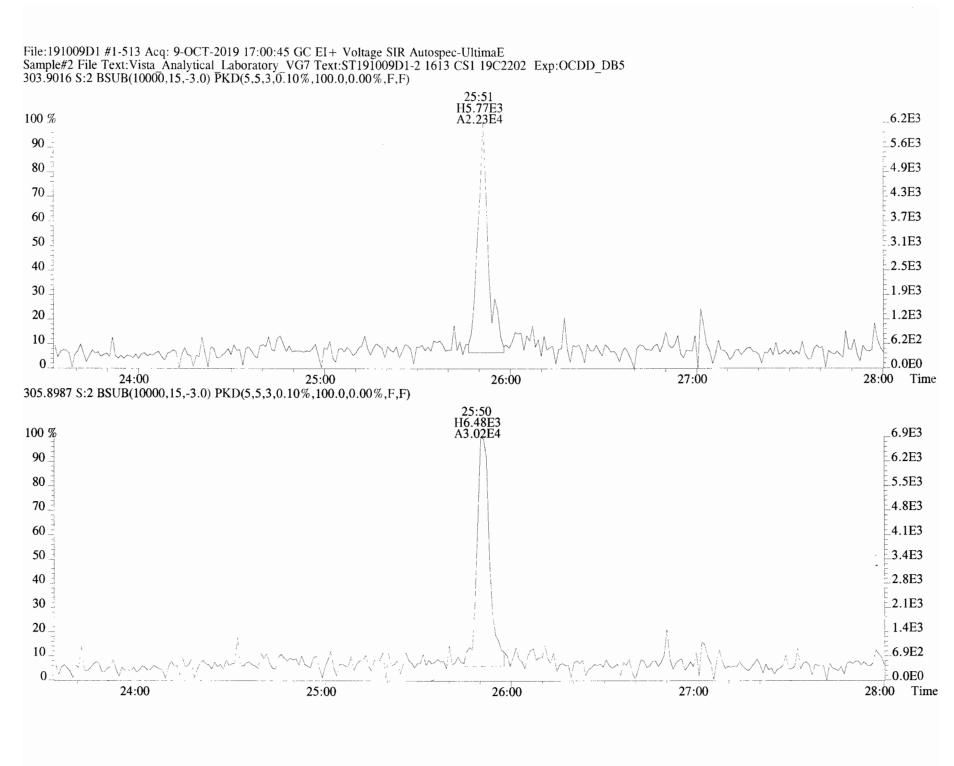
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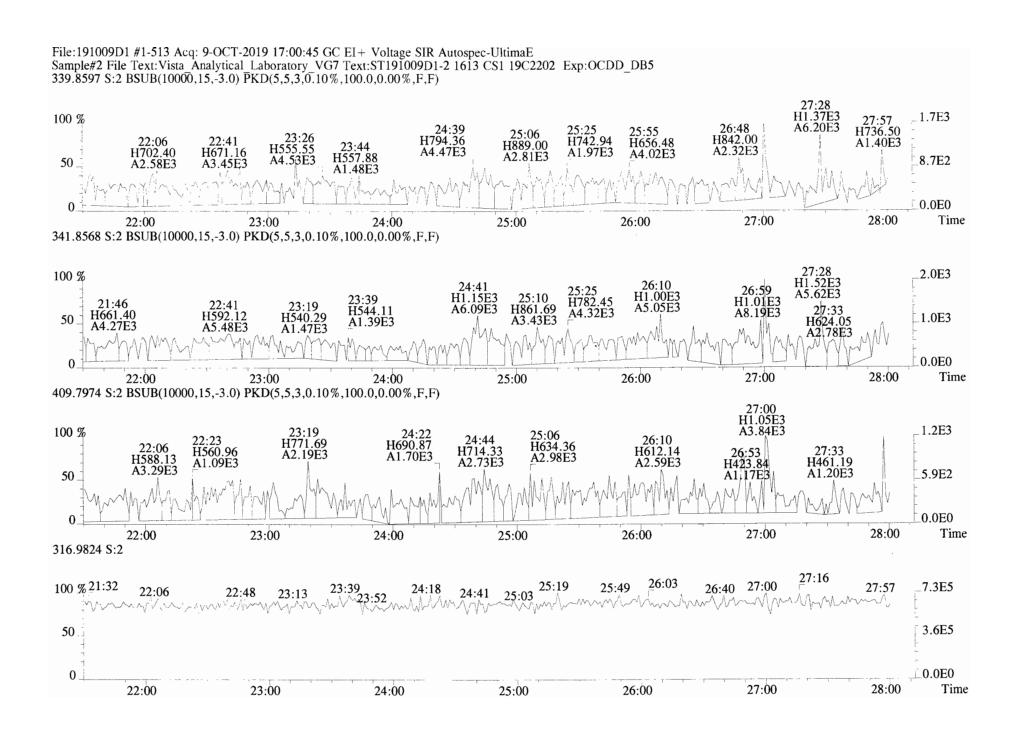


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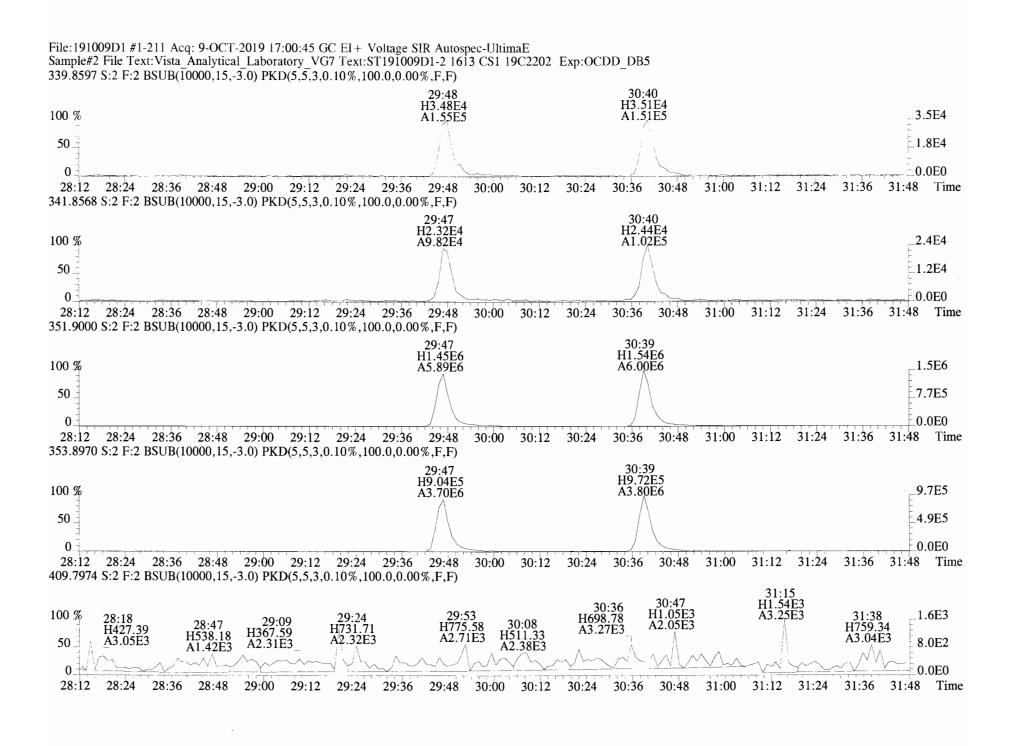


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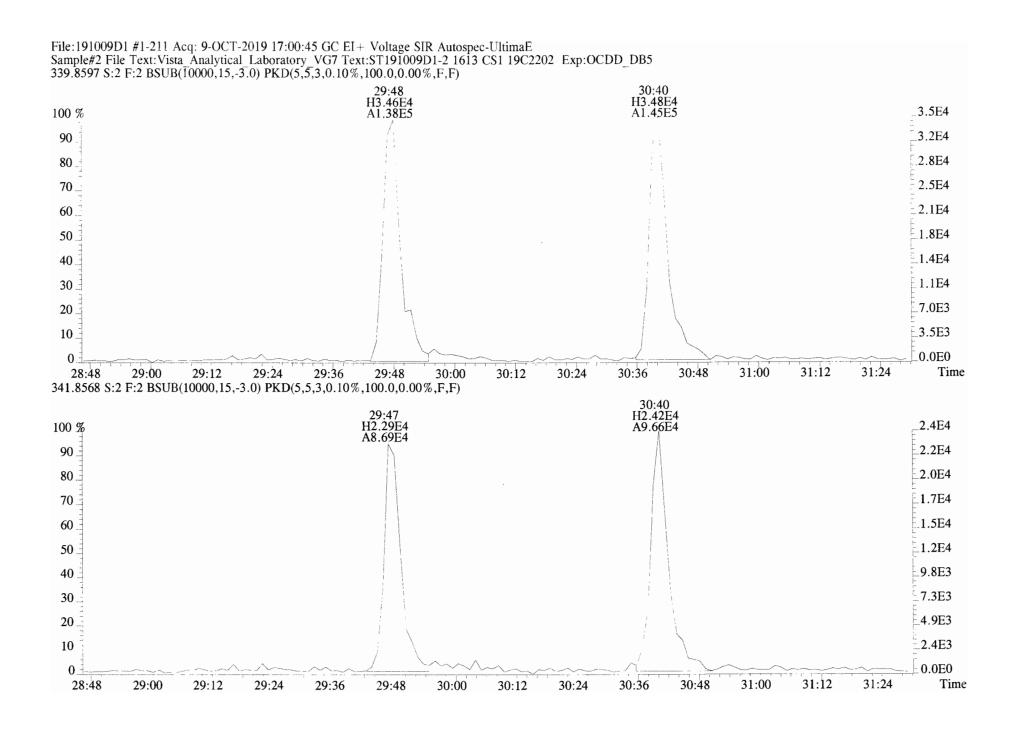




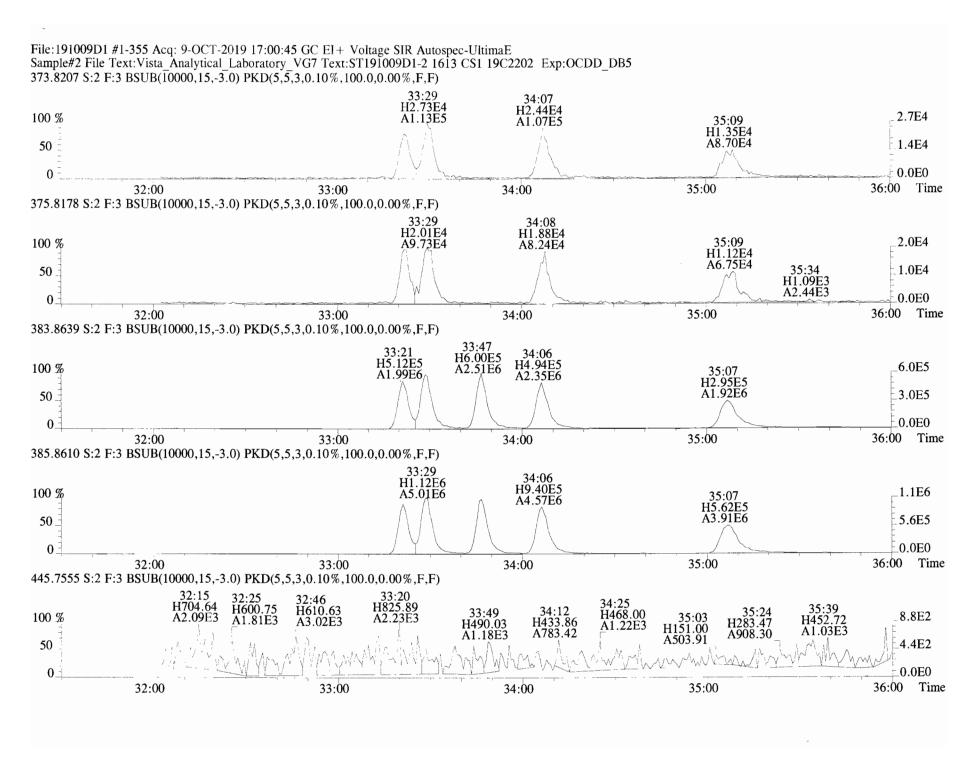
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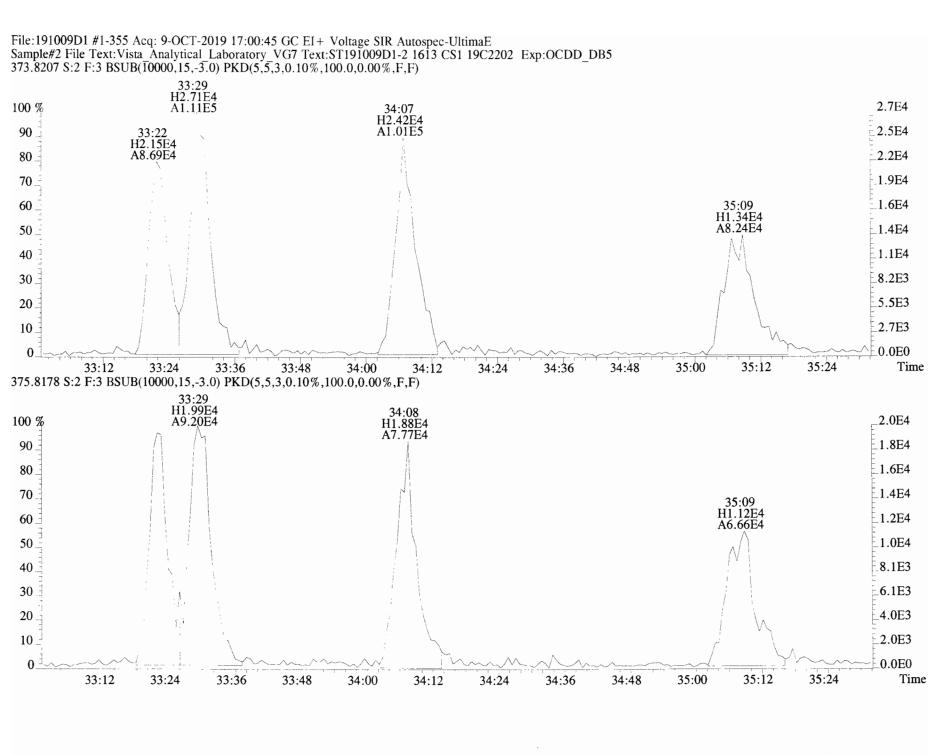
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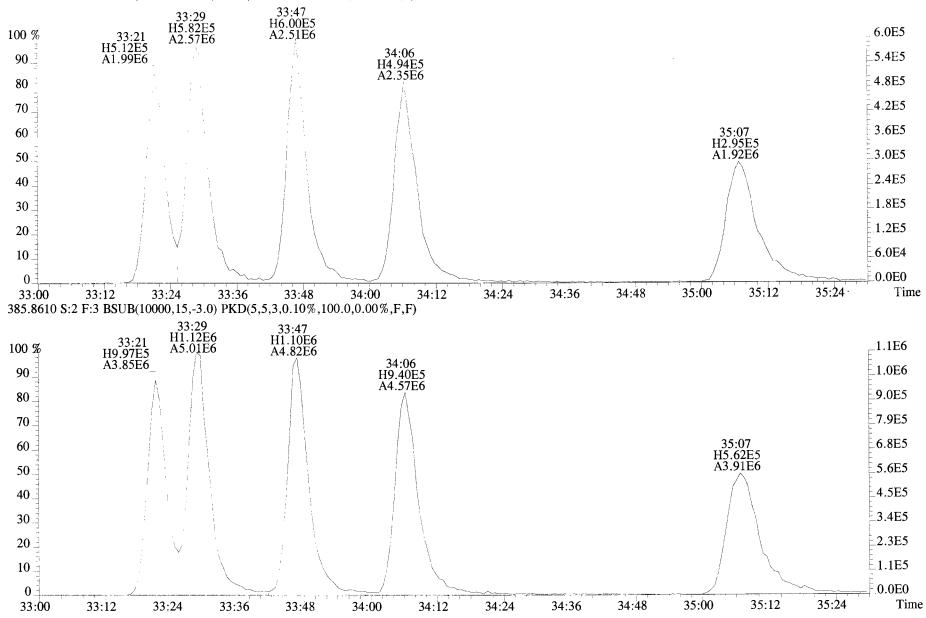
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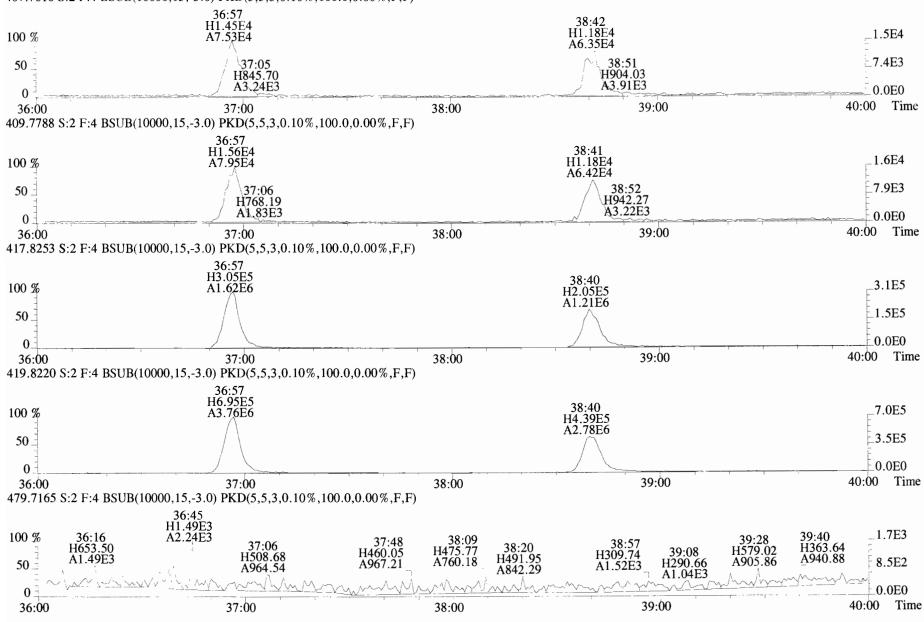


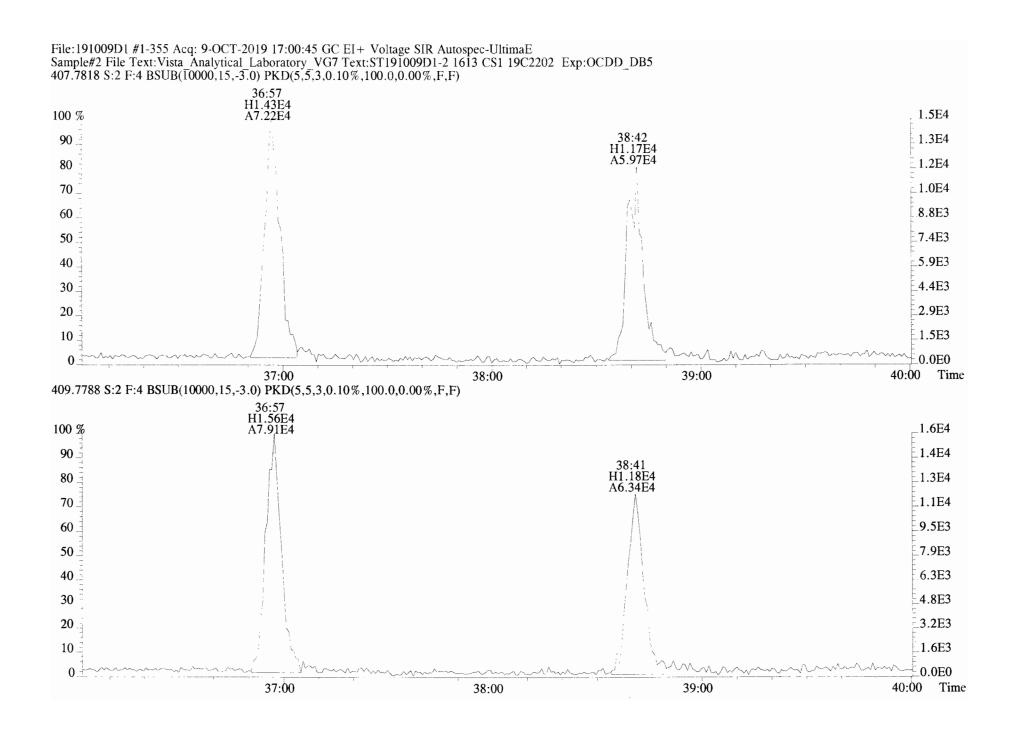
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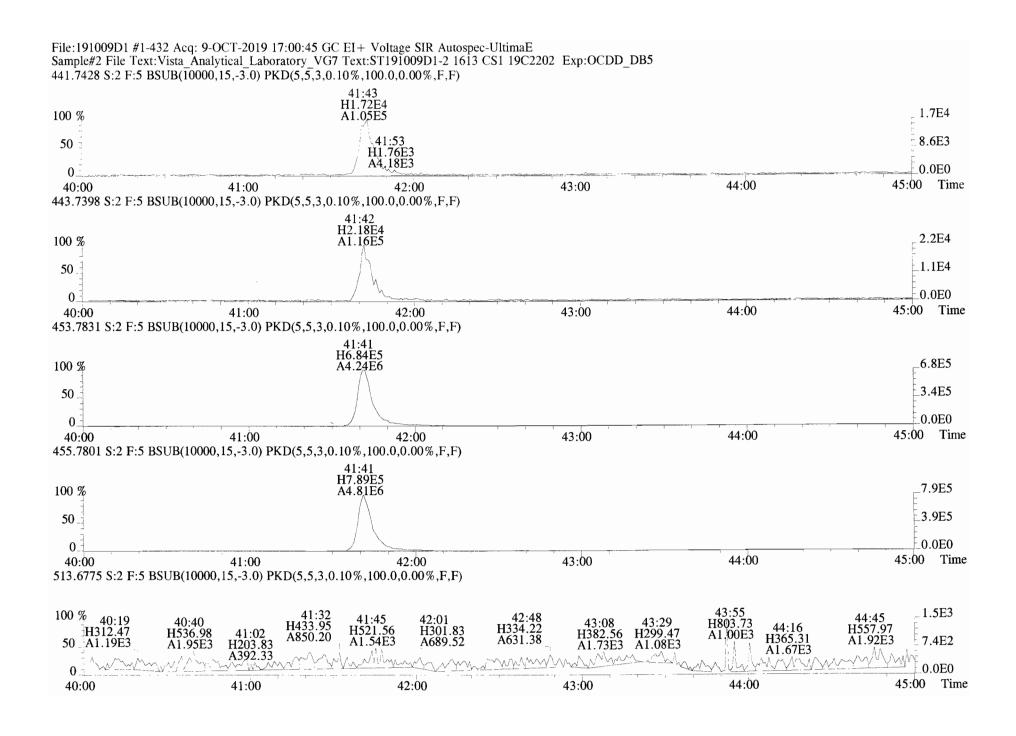
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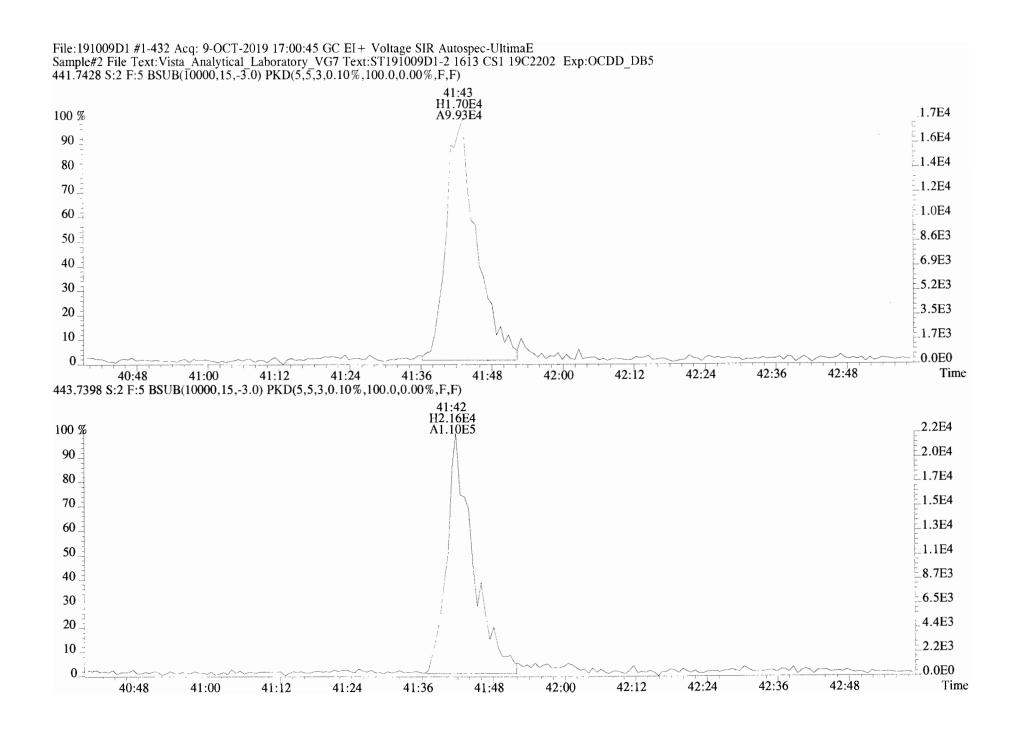




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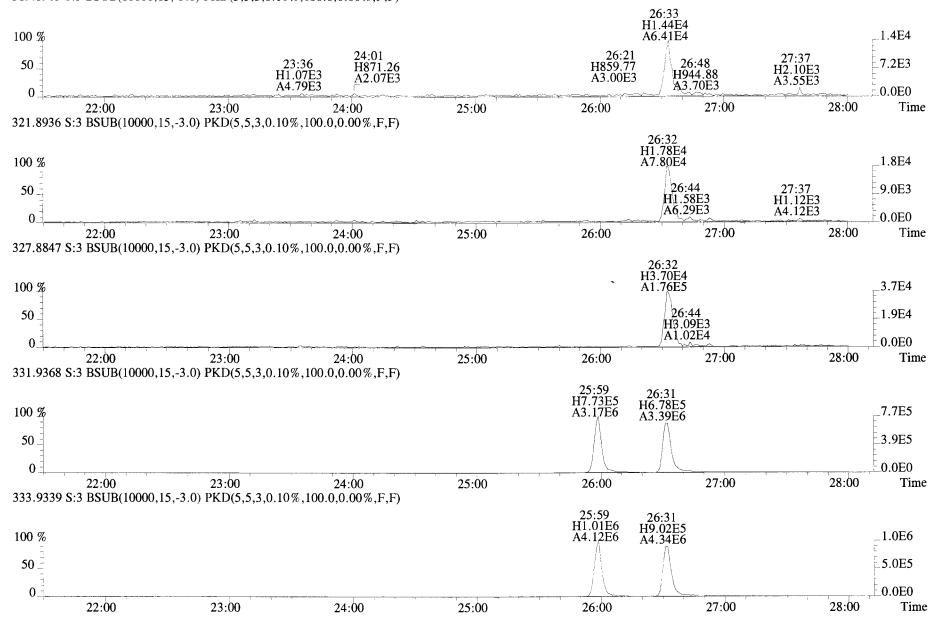


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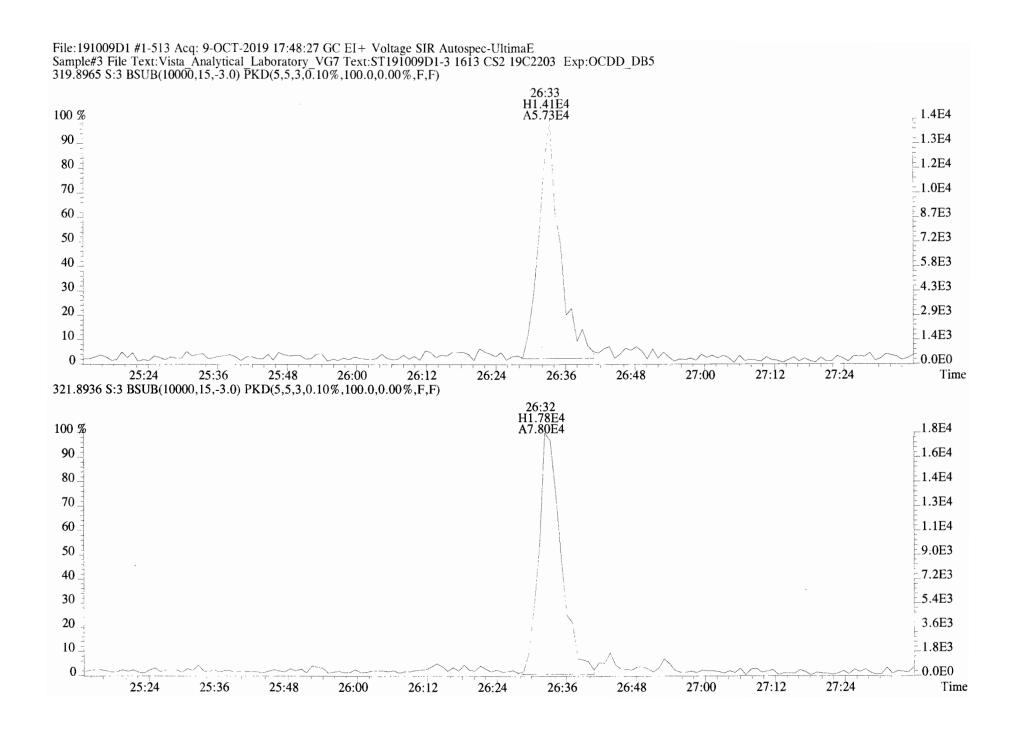


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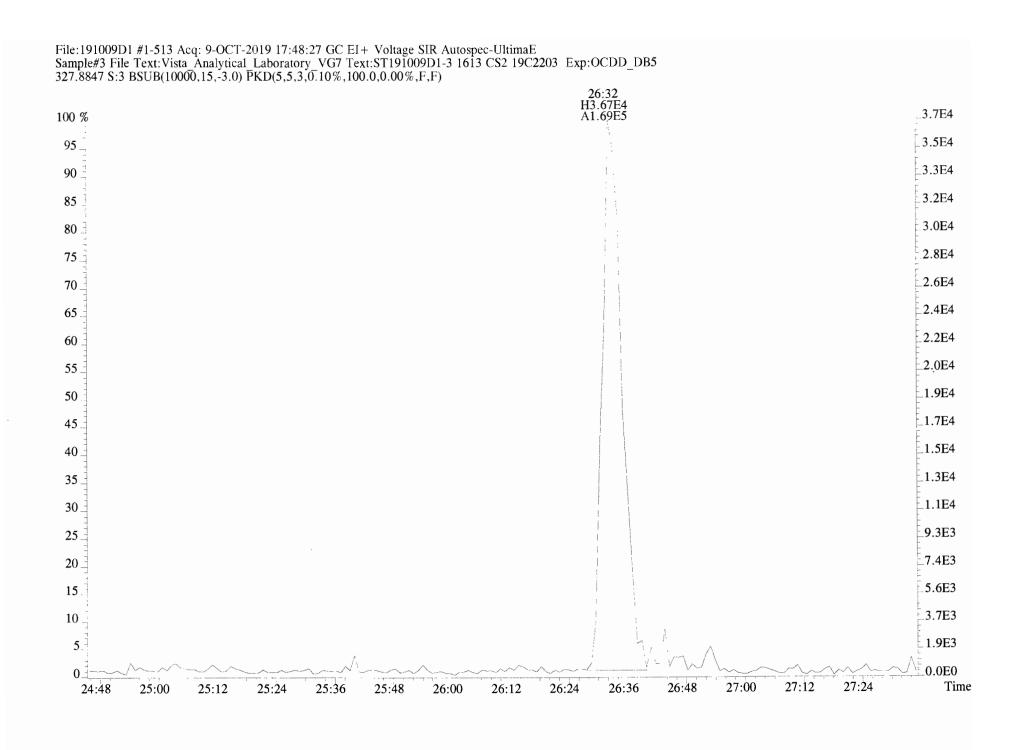
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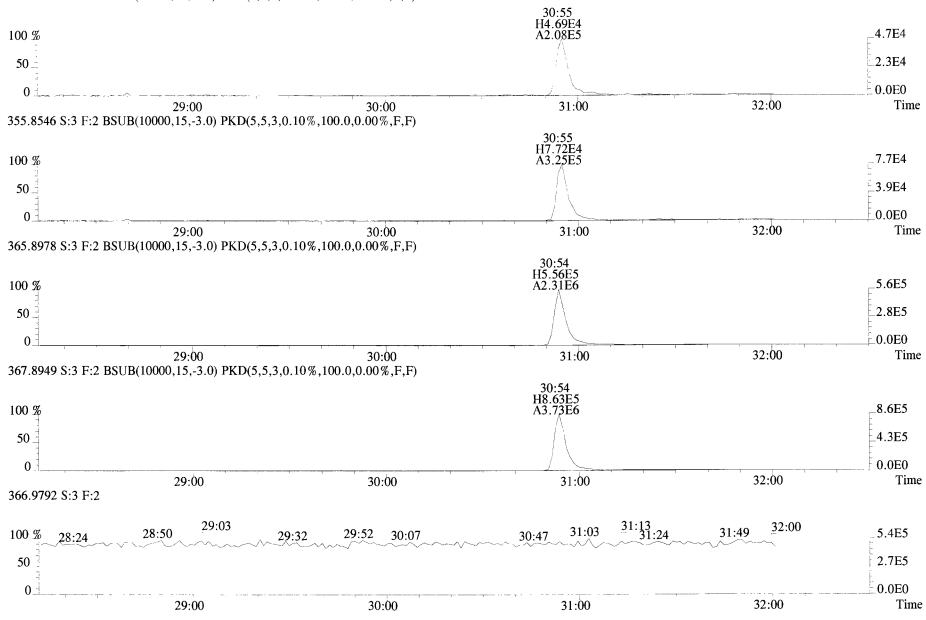
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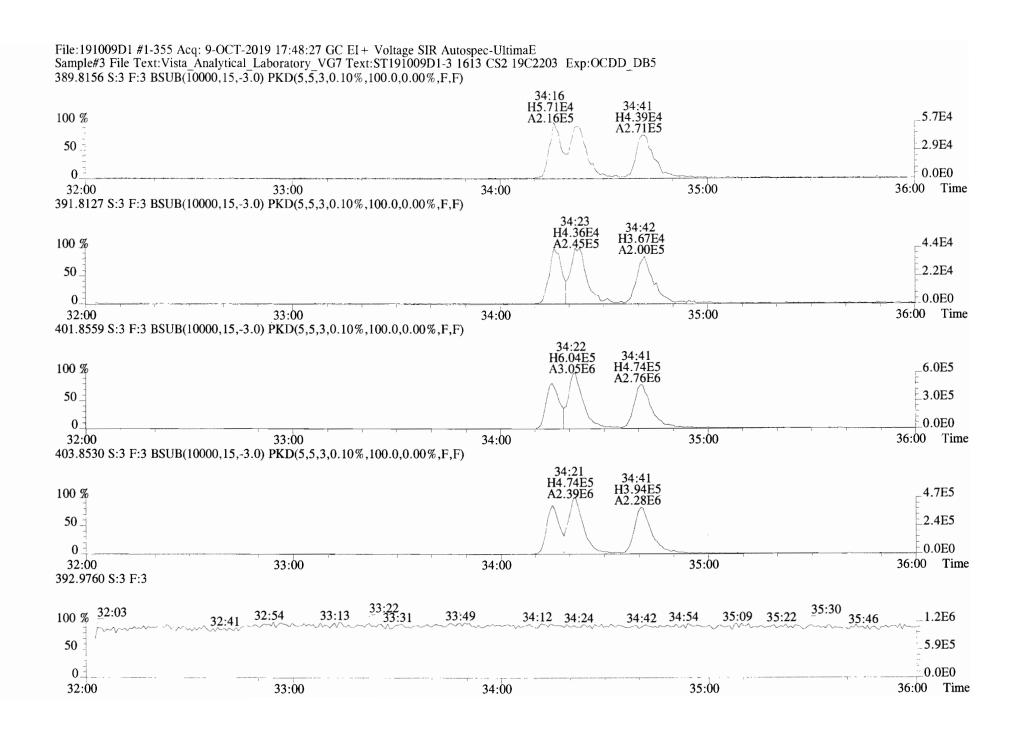


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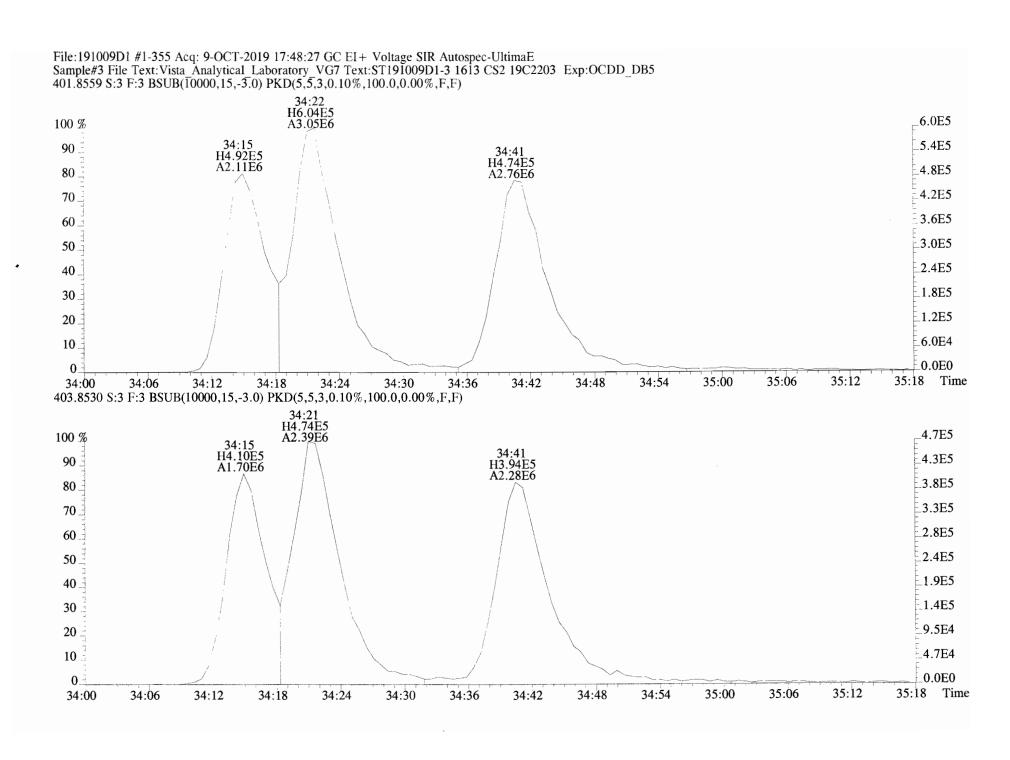


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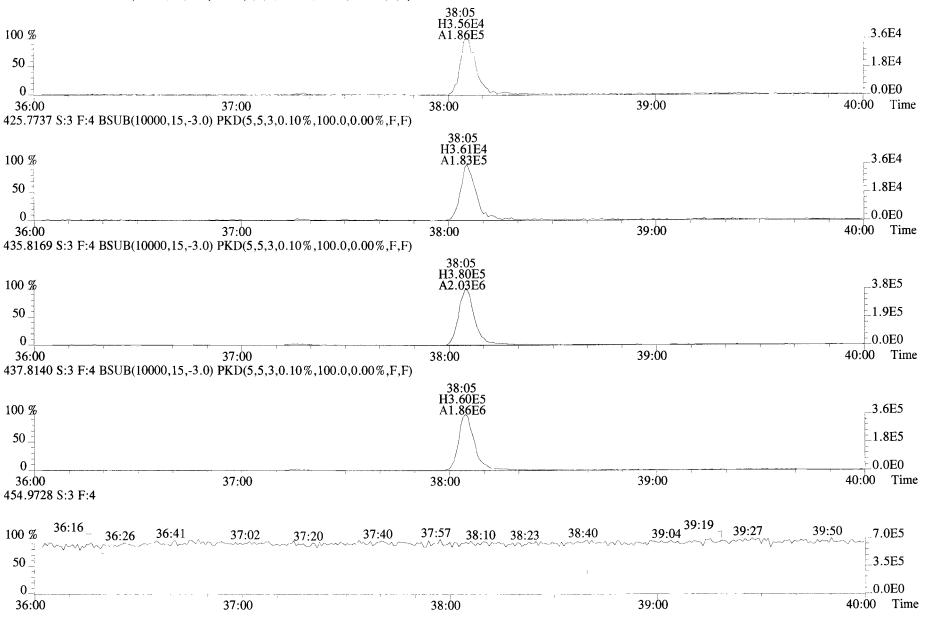


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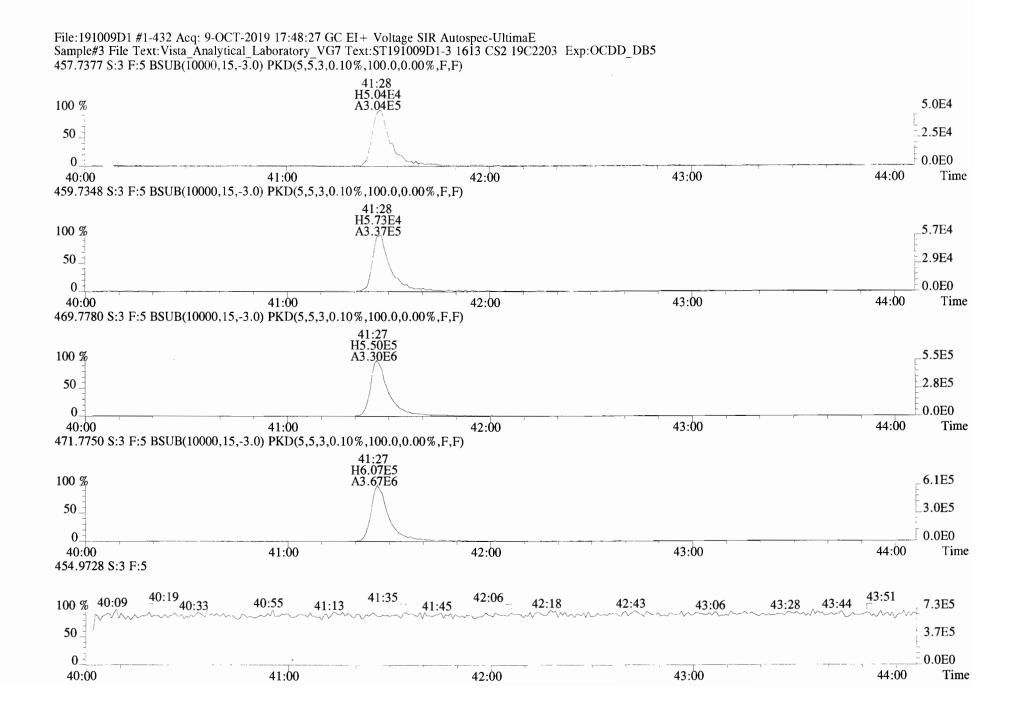


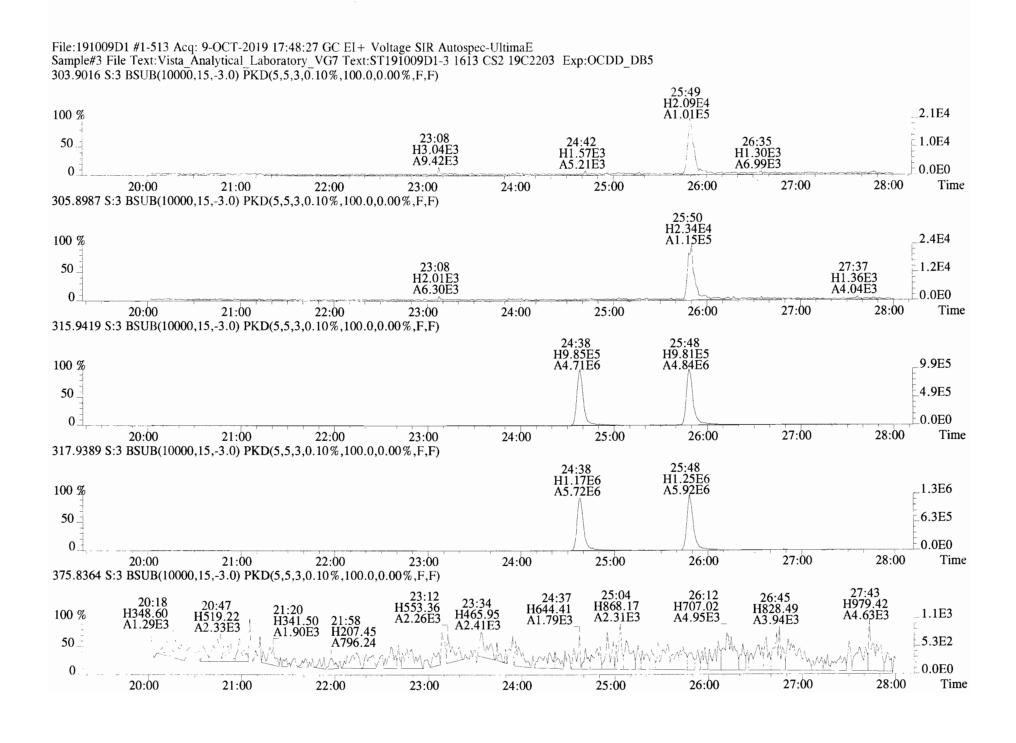
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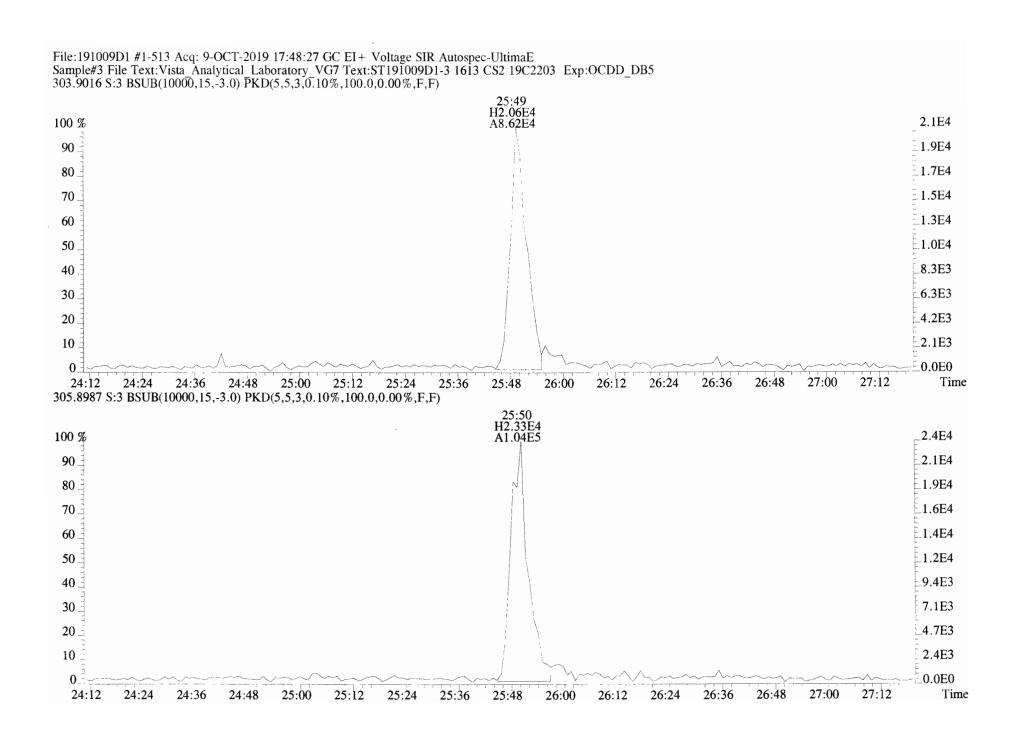


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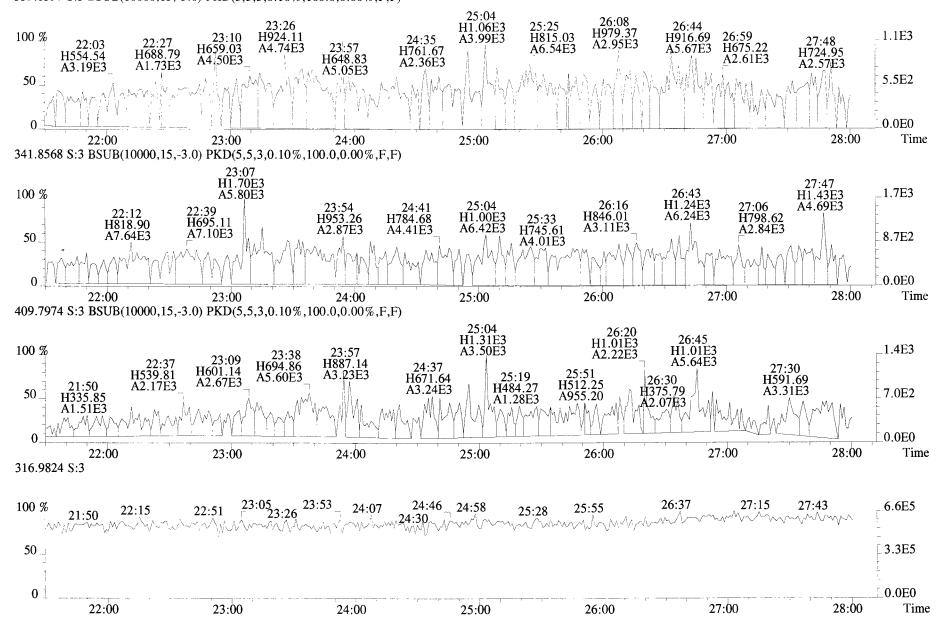


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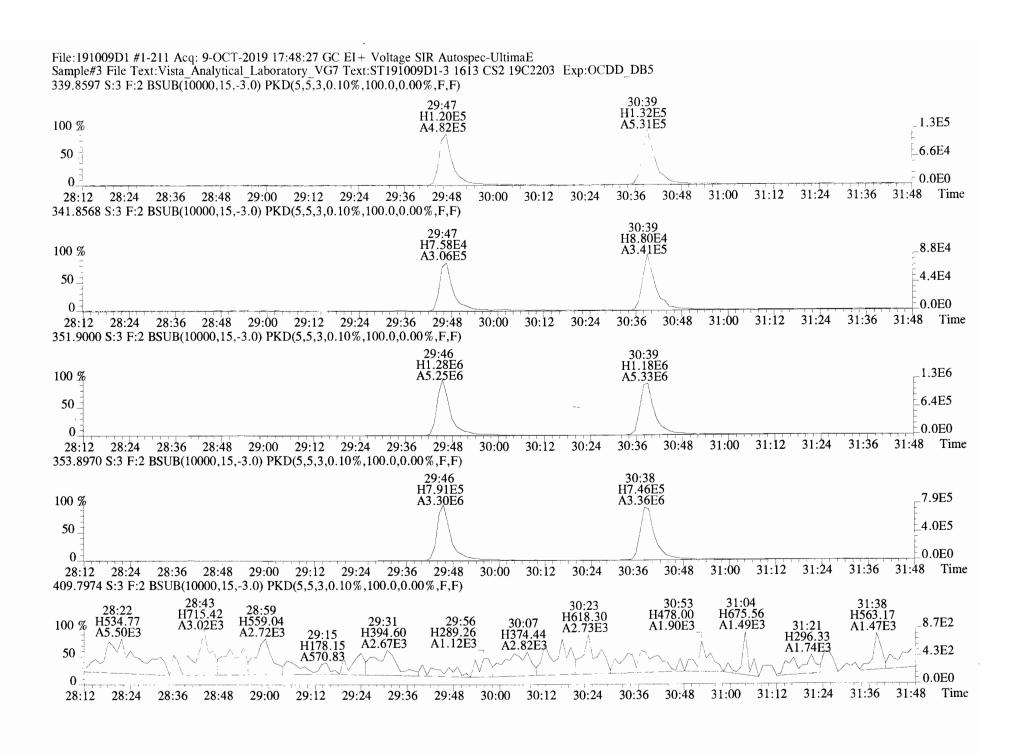


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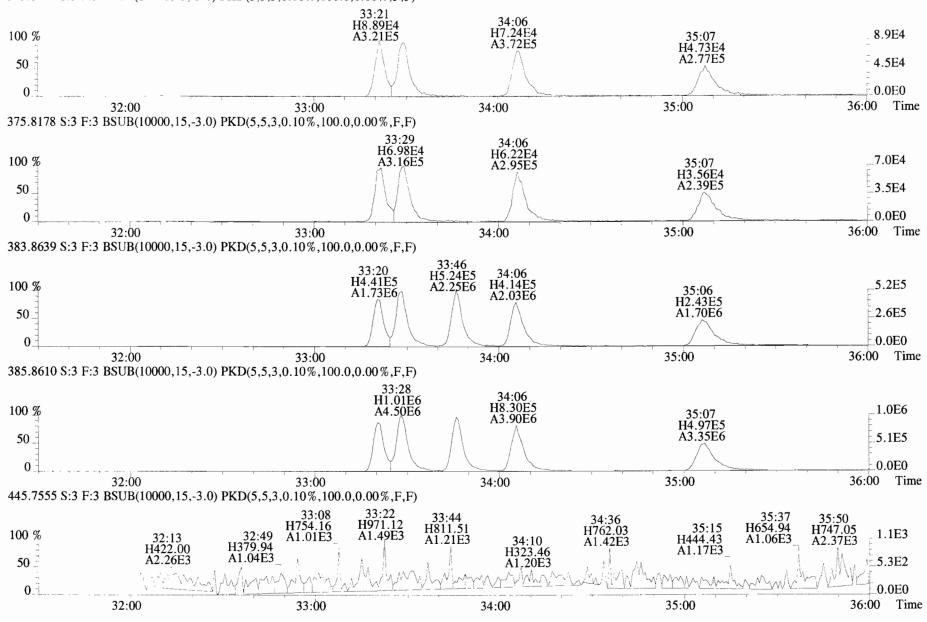
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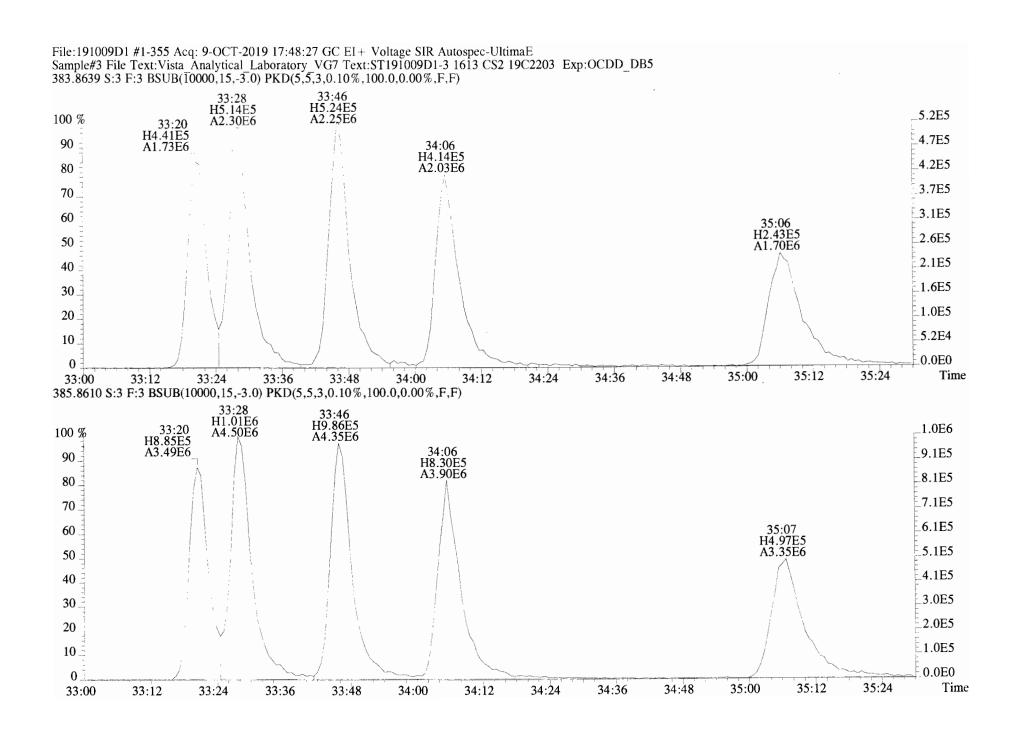
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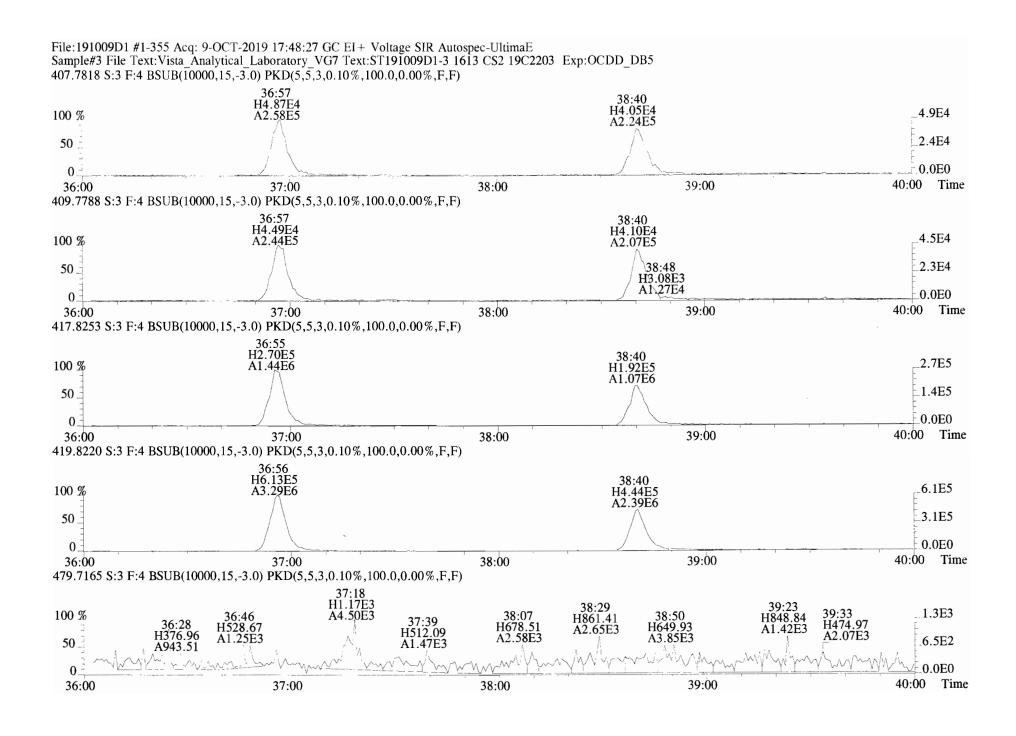
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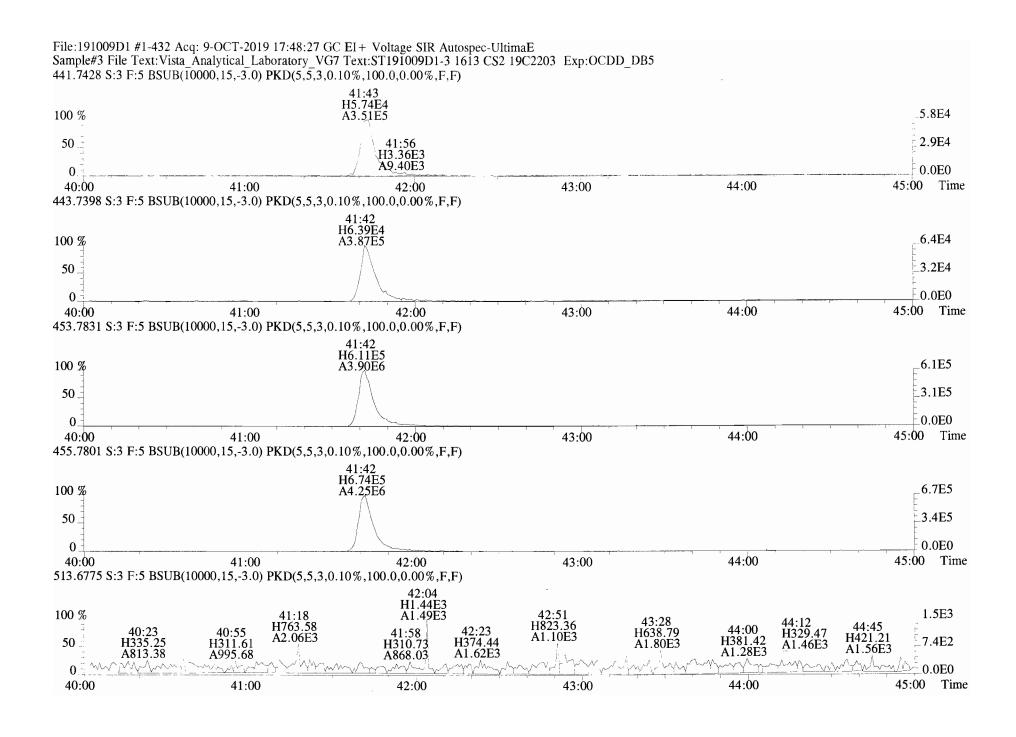
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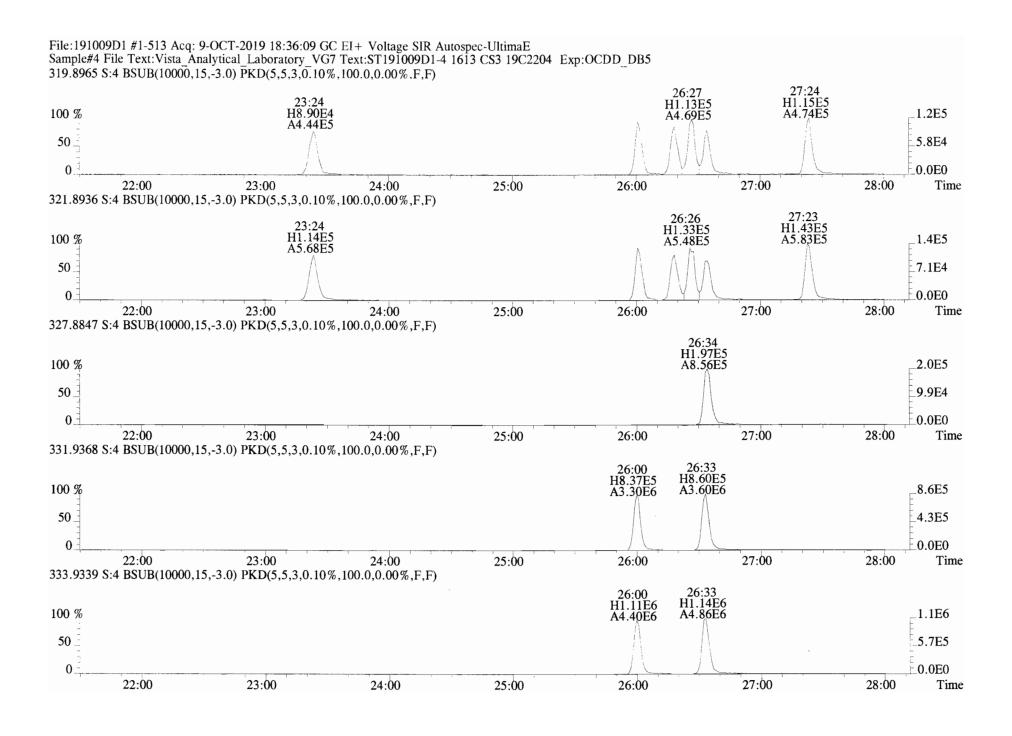
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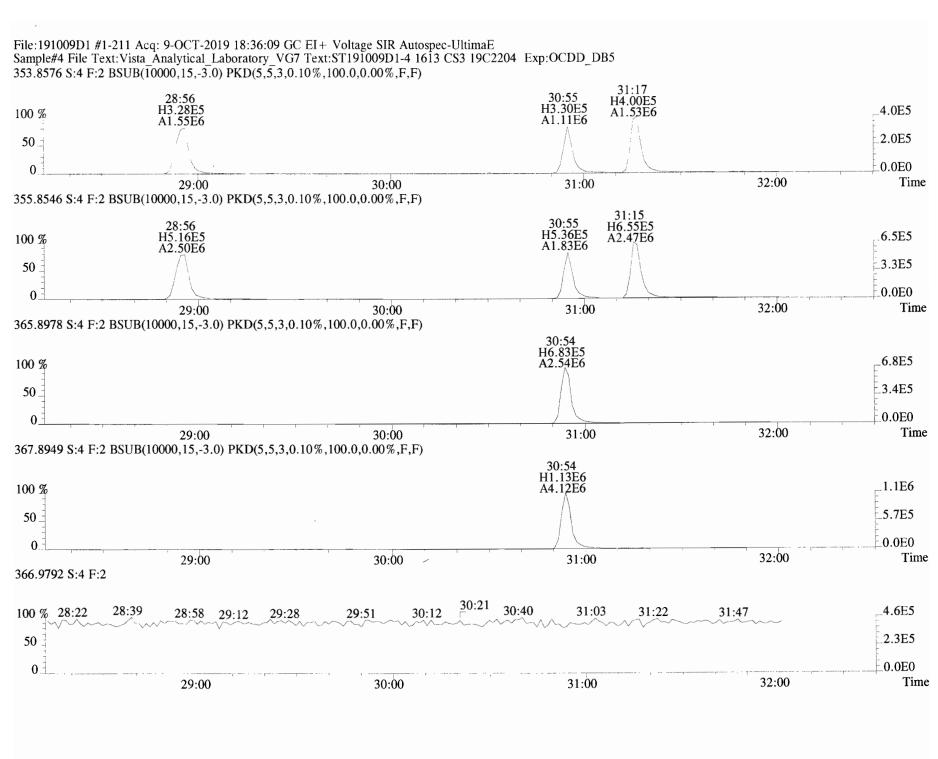
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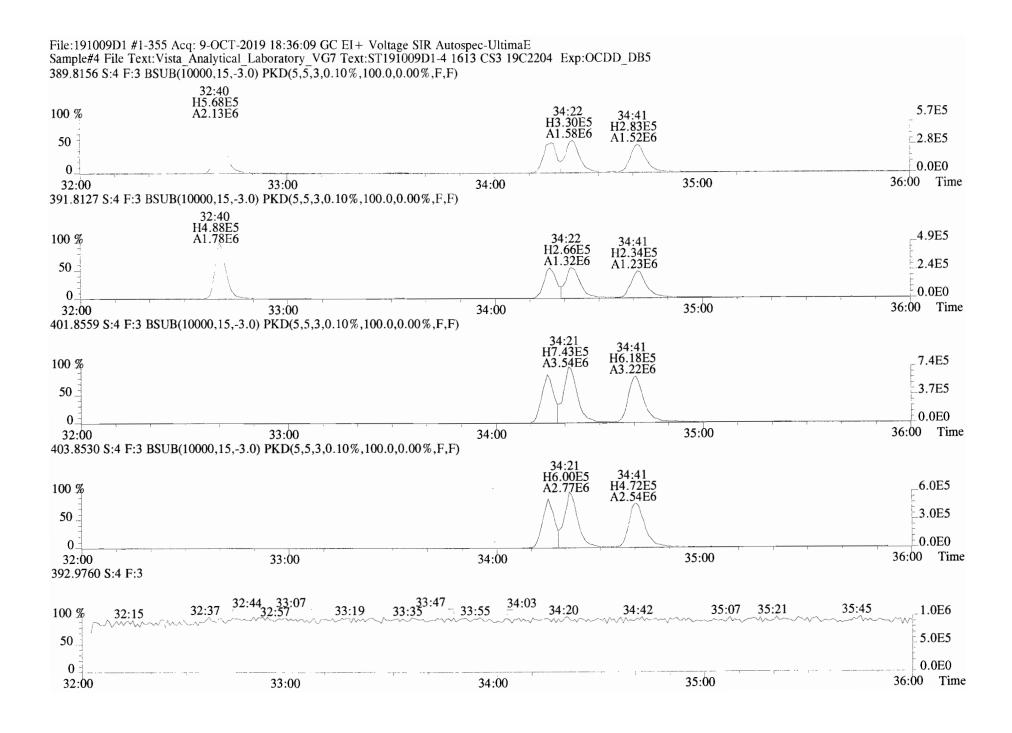


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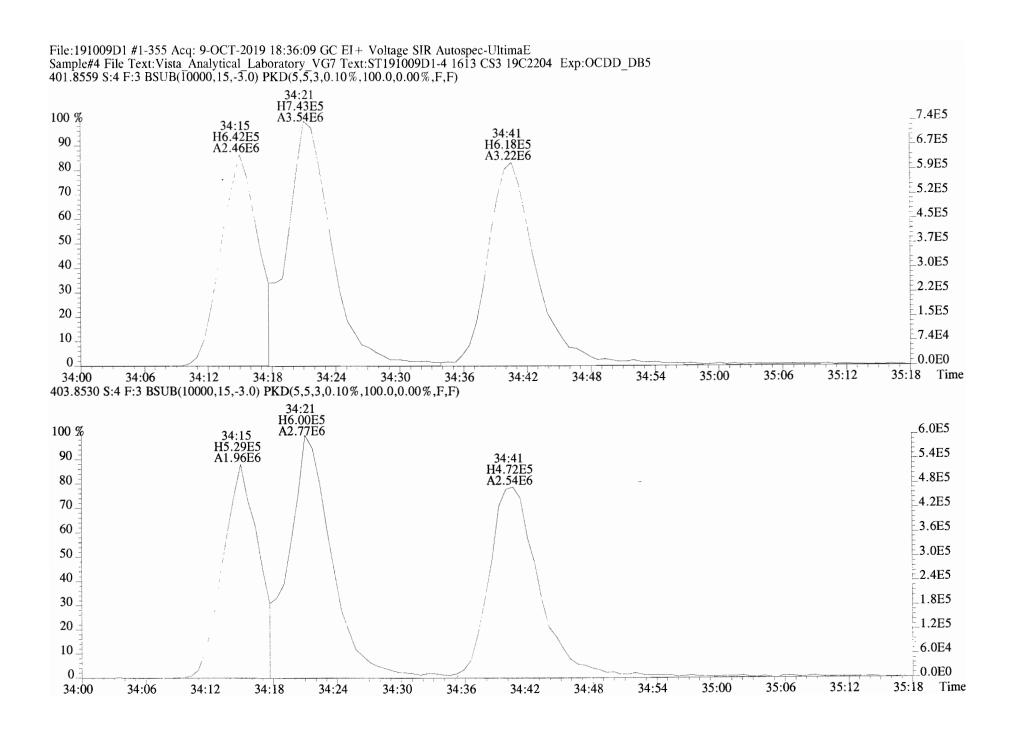


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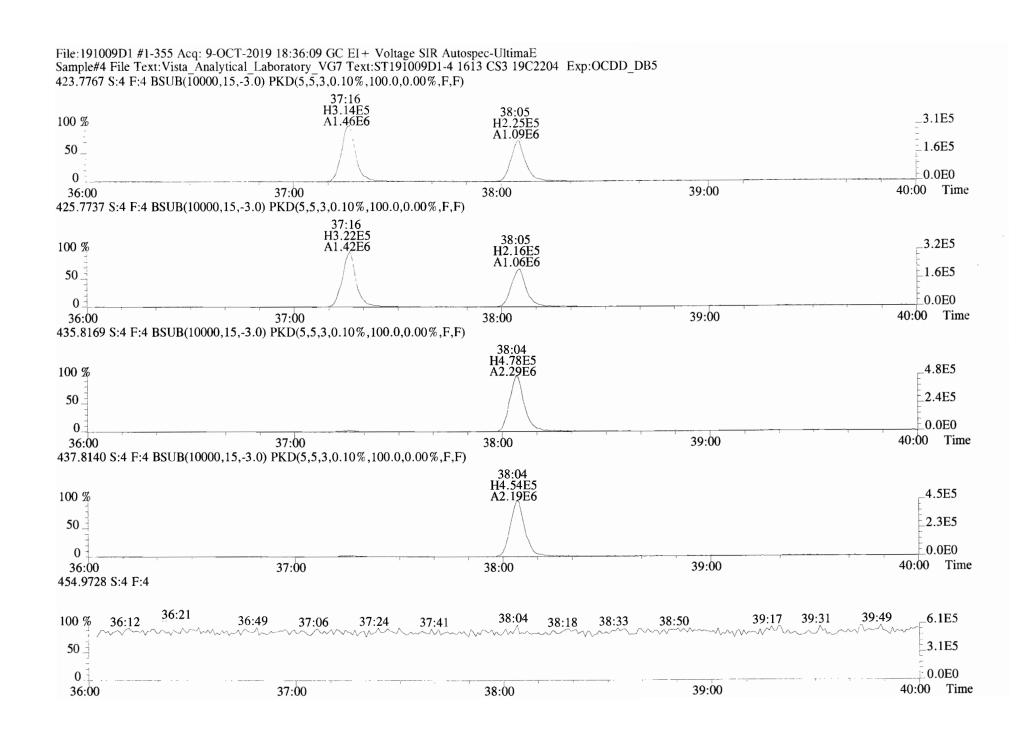




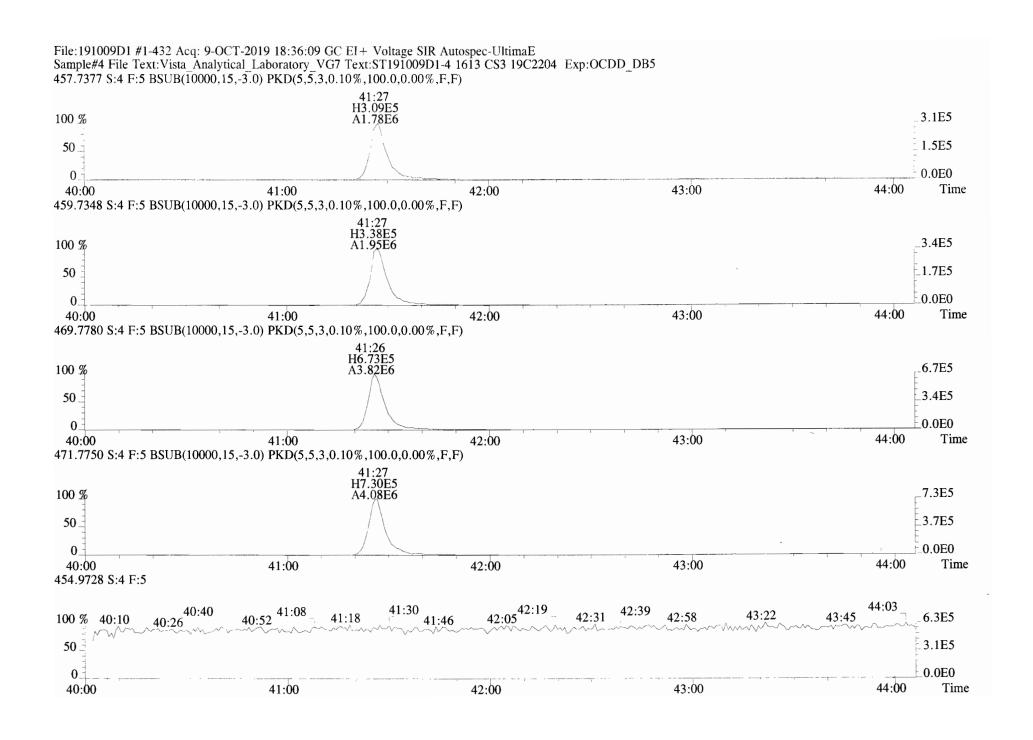
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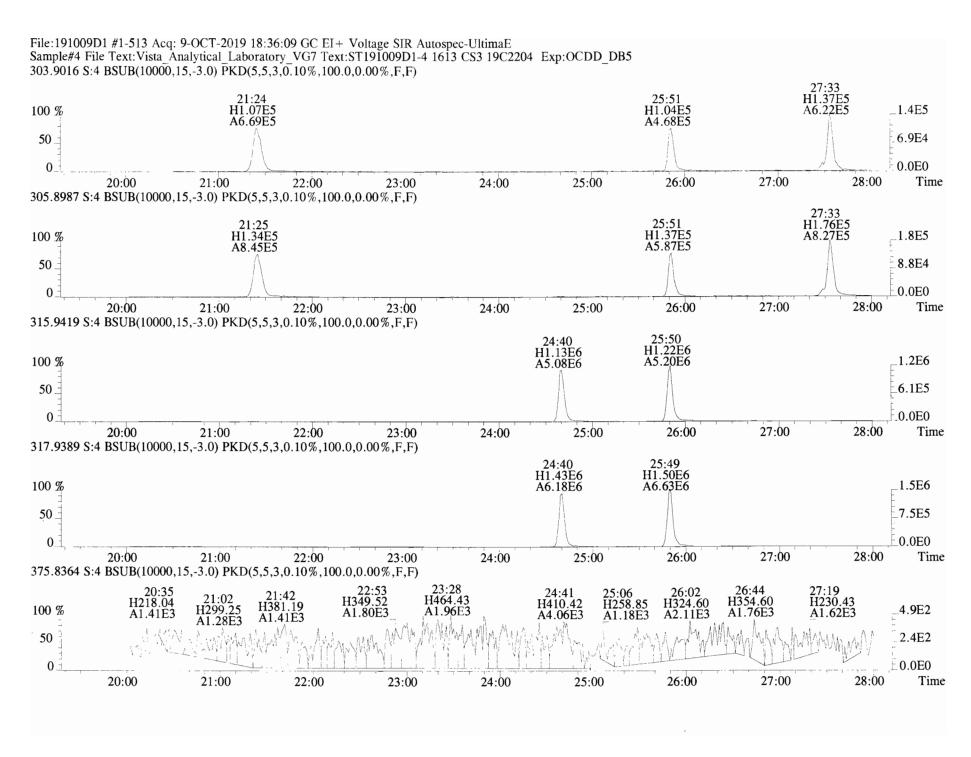
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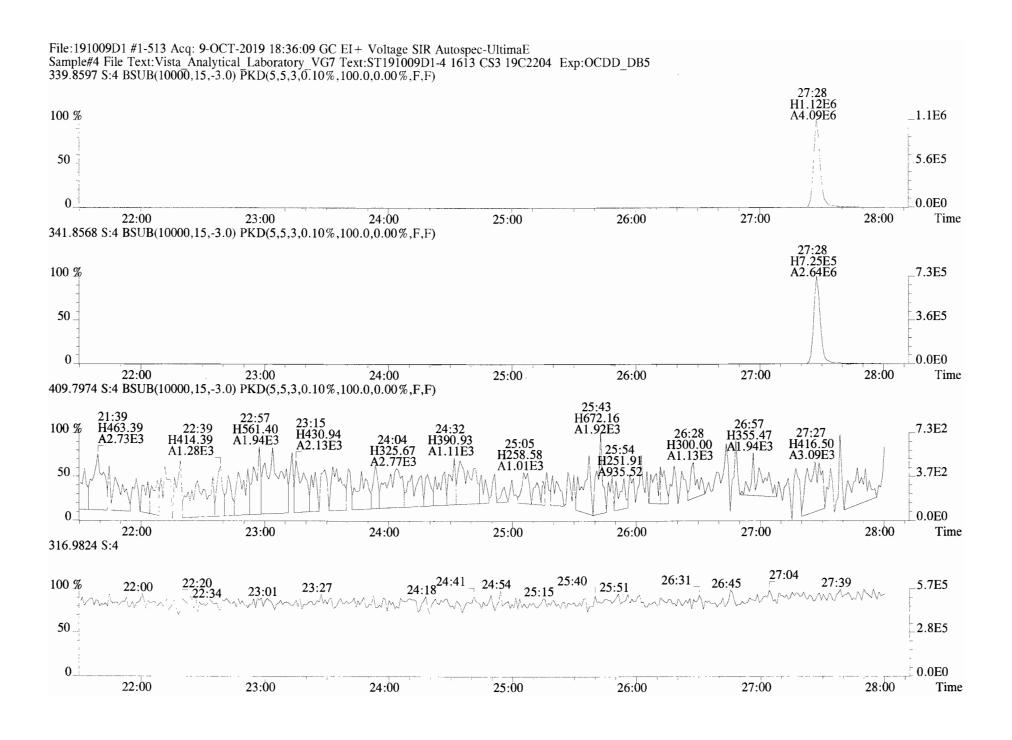
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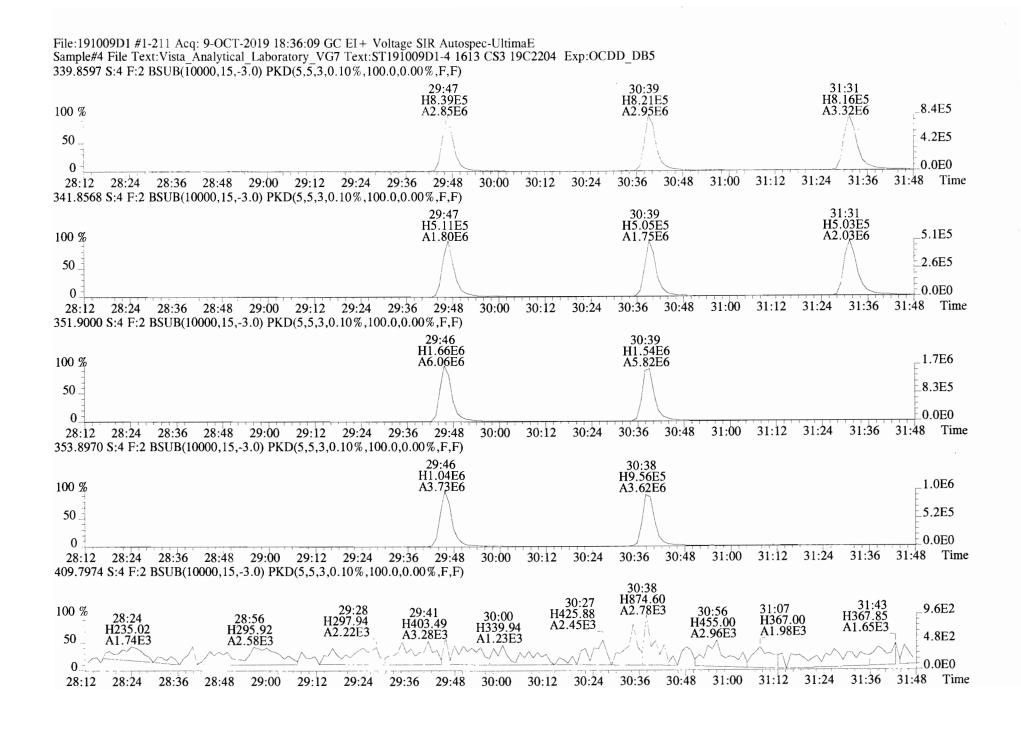
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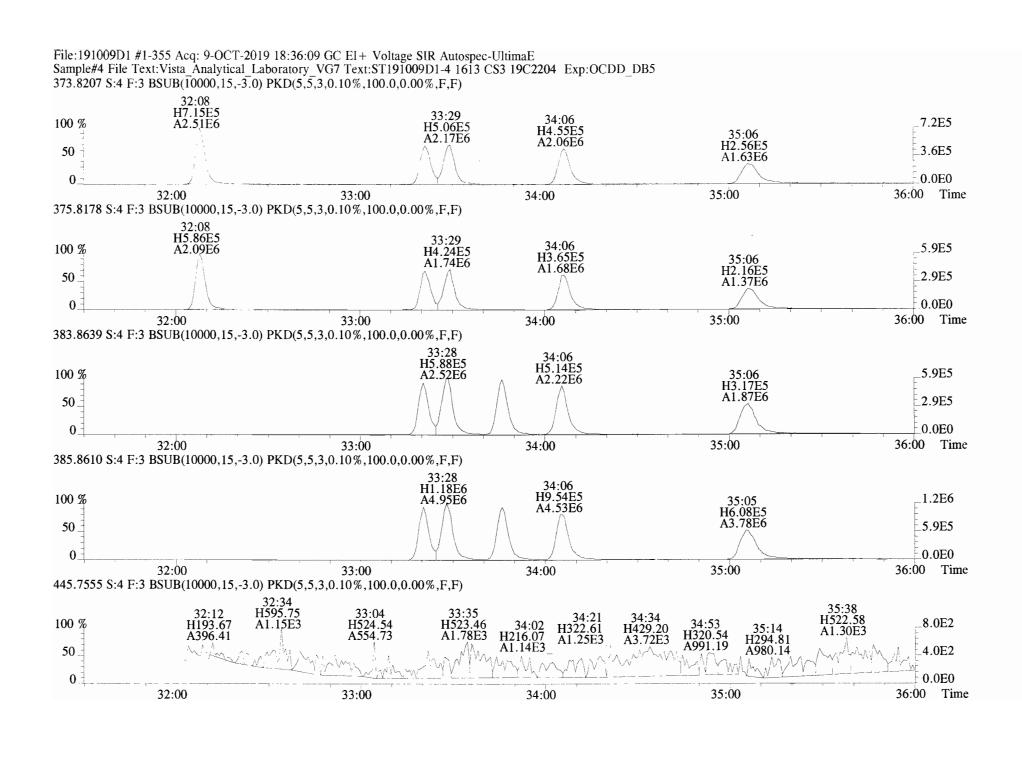
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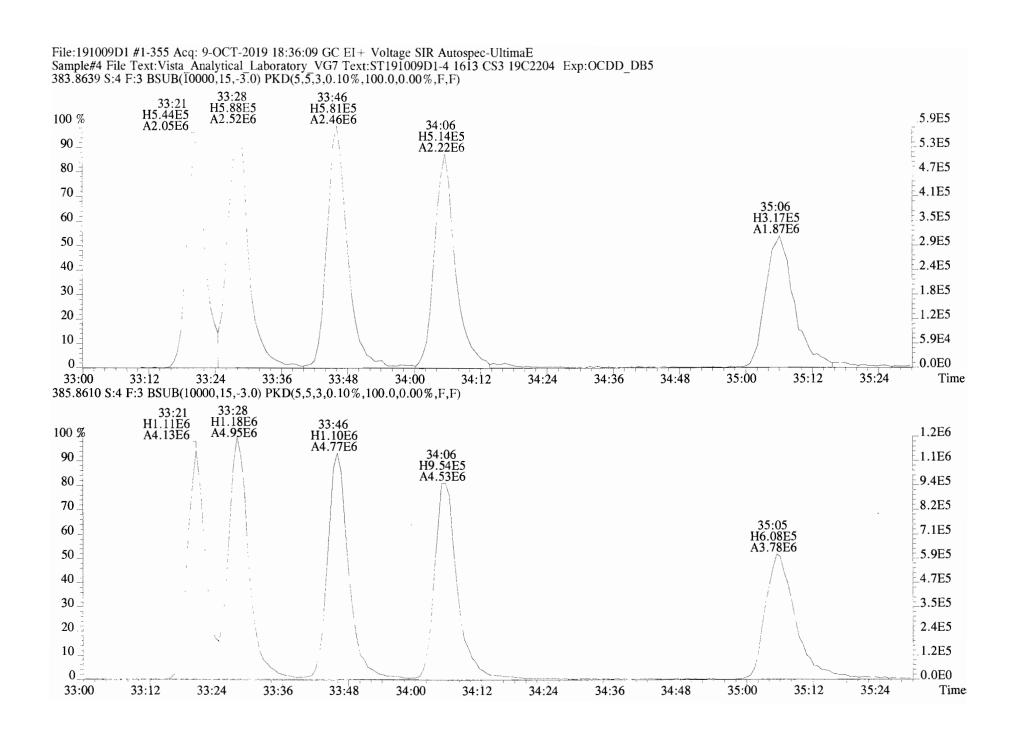


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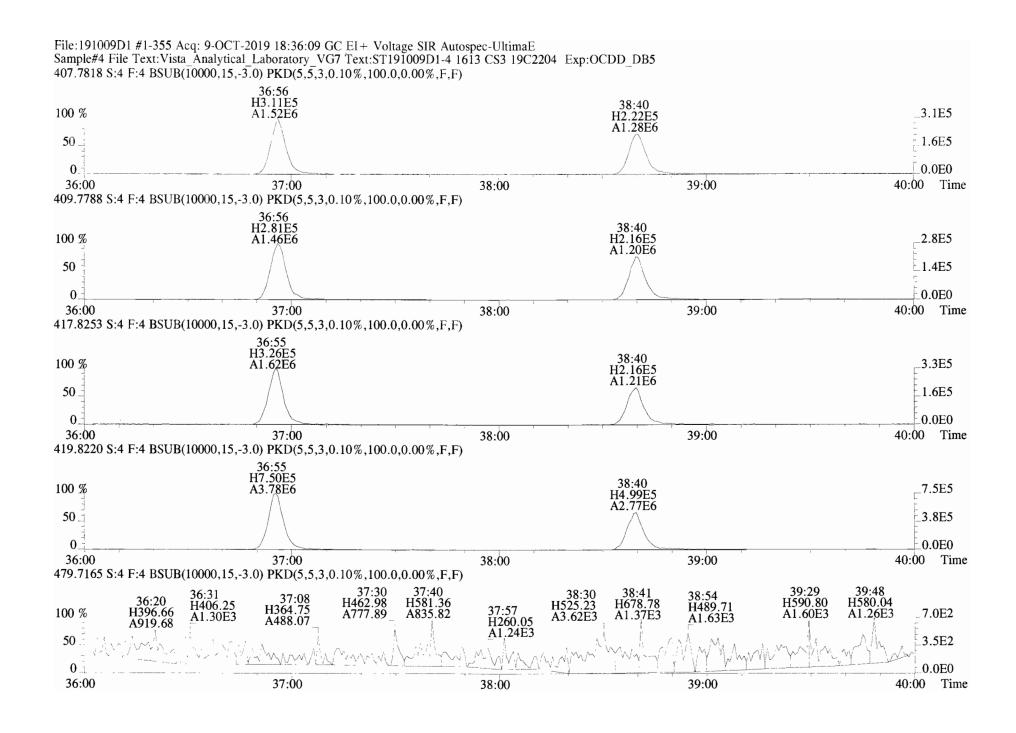


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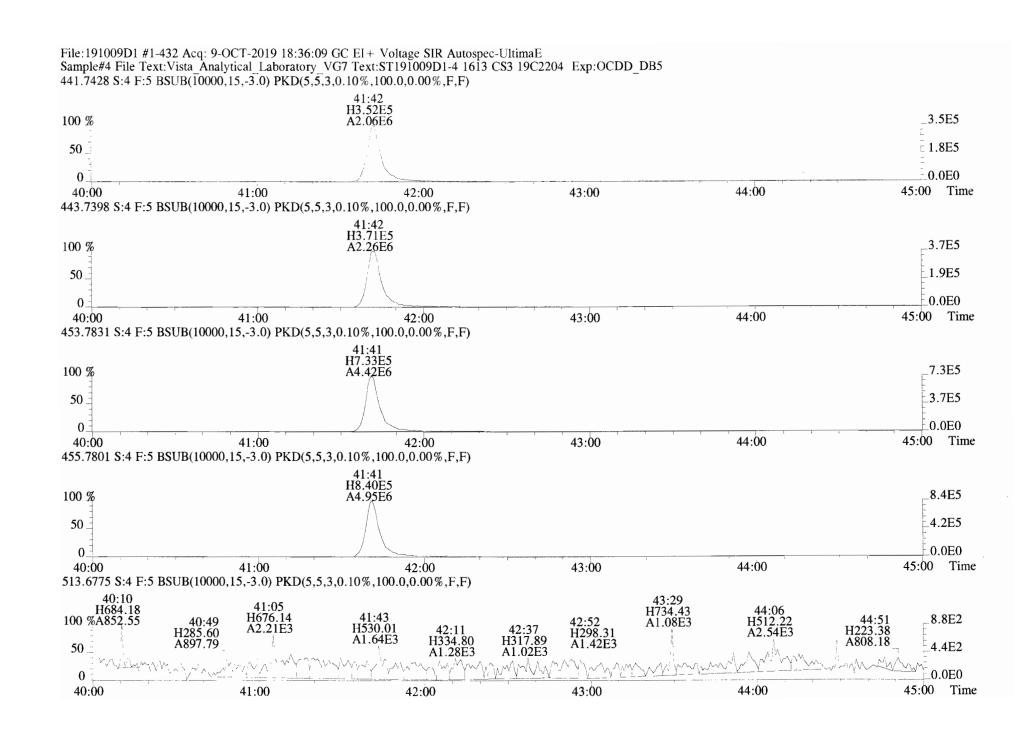




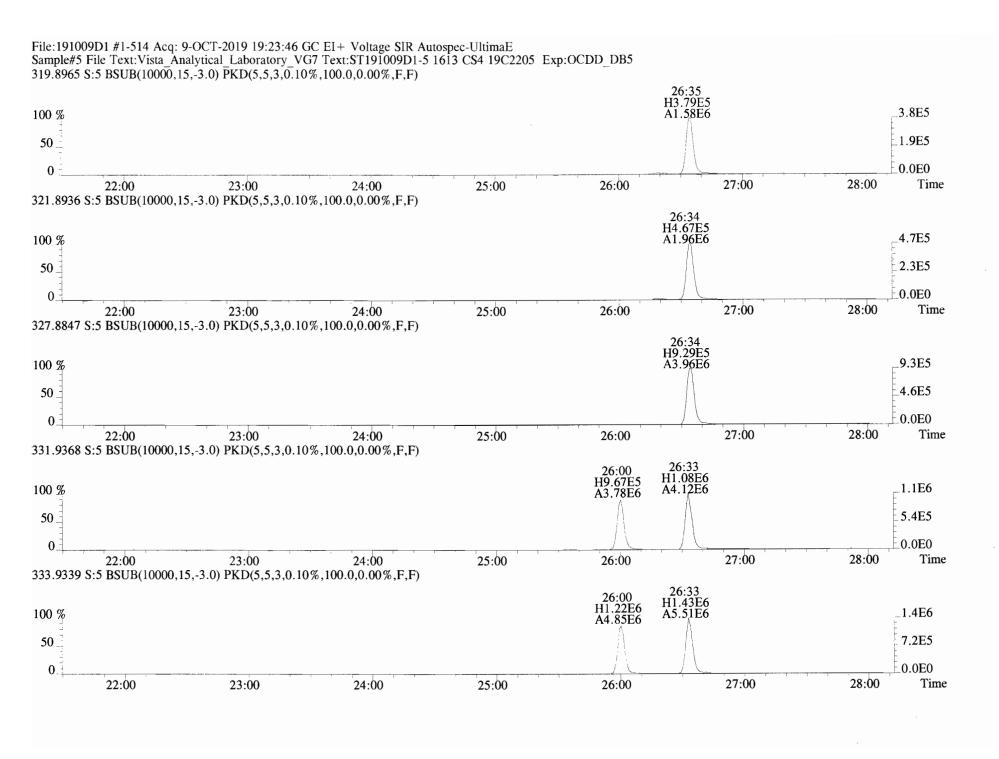
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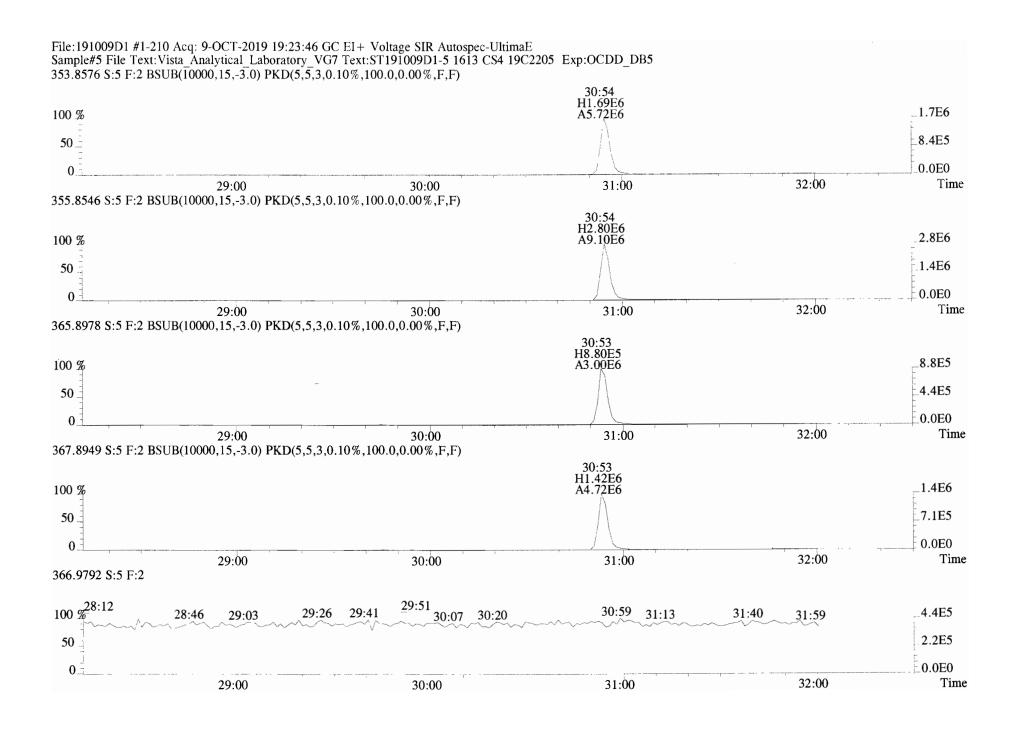


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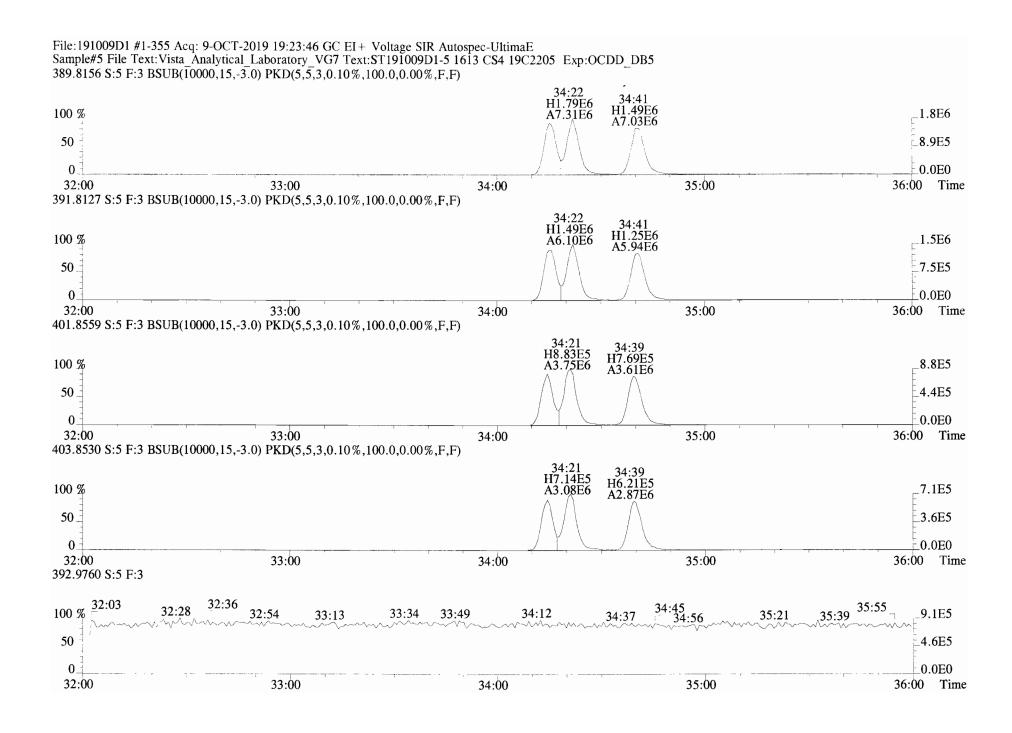


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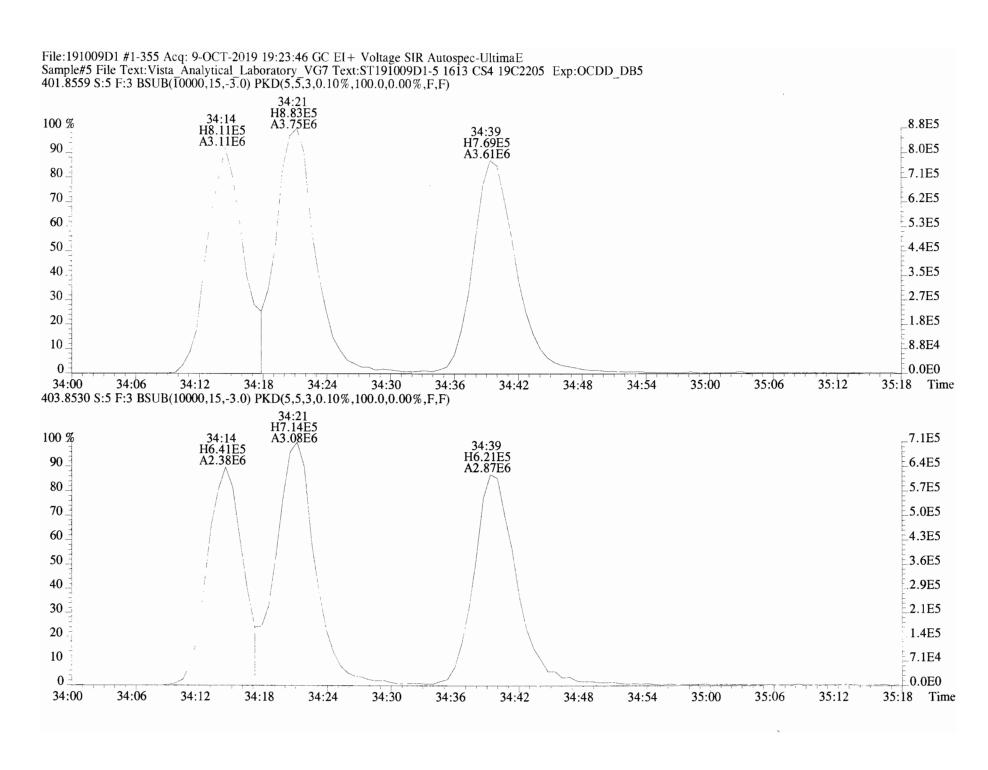




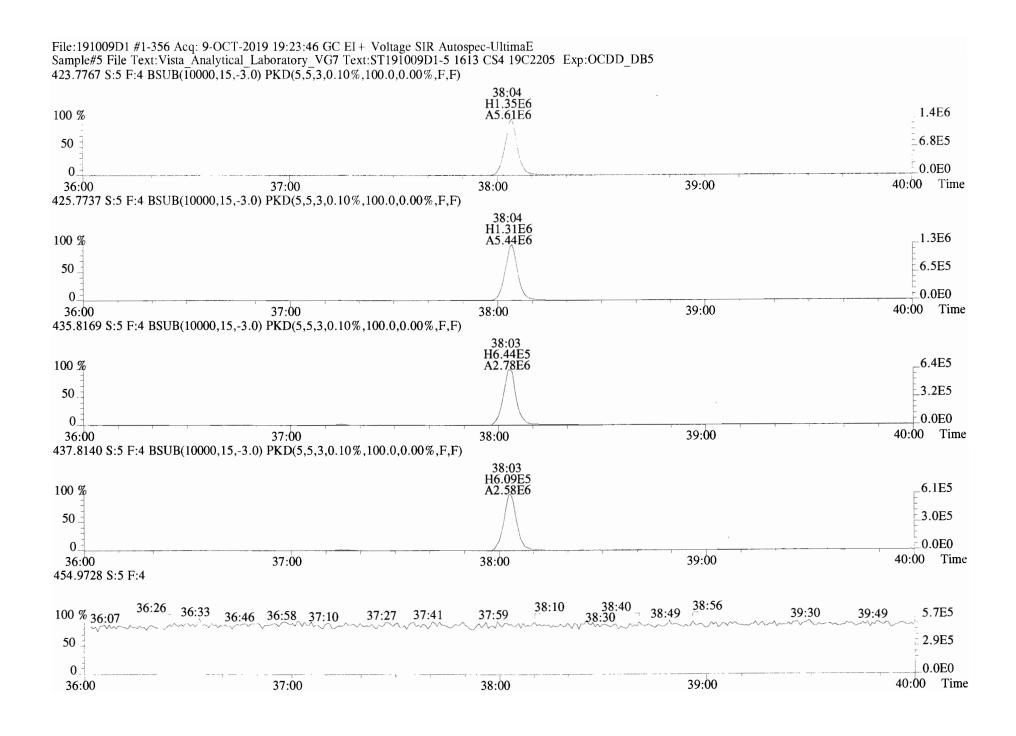
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42:00

43:00

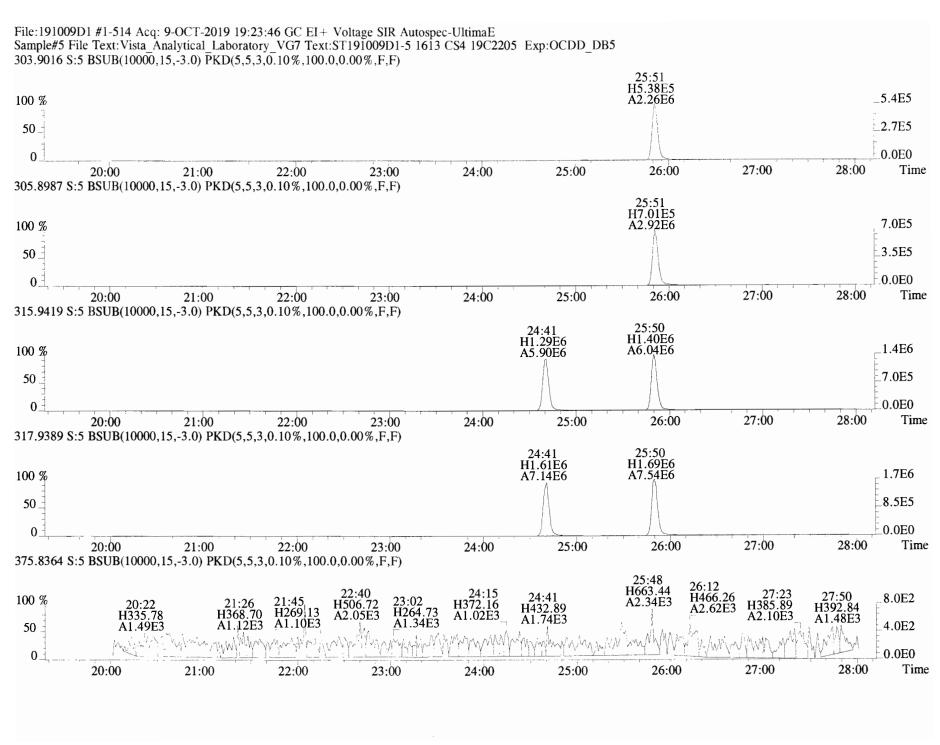
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41:00

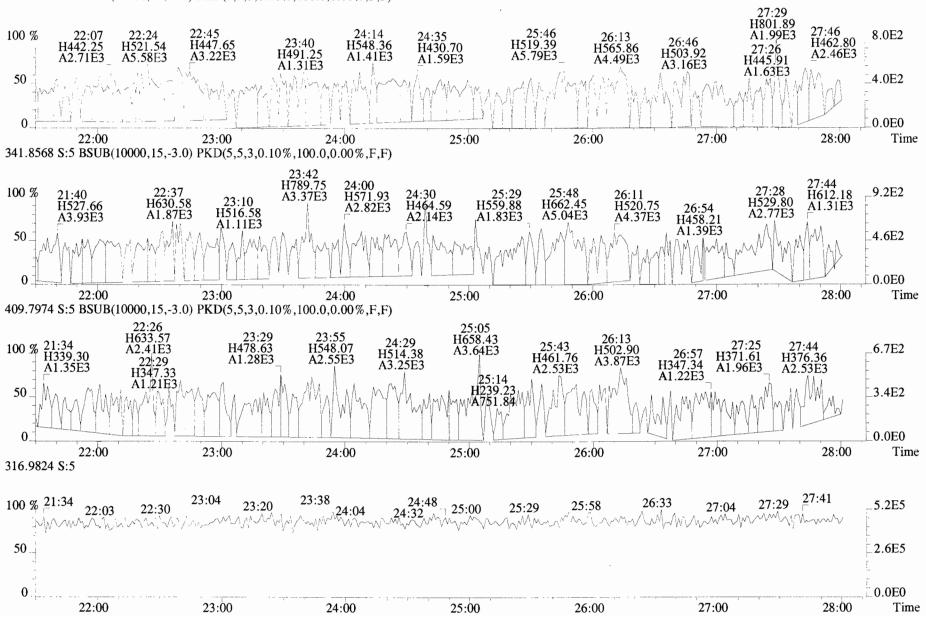
± 0.0E0

Time

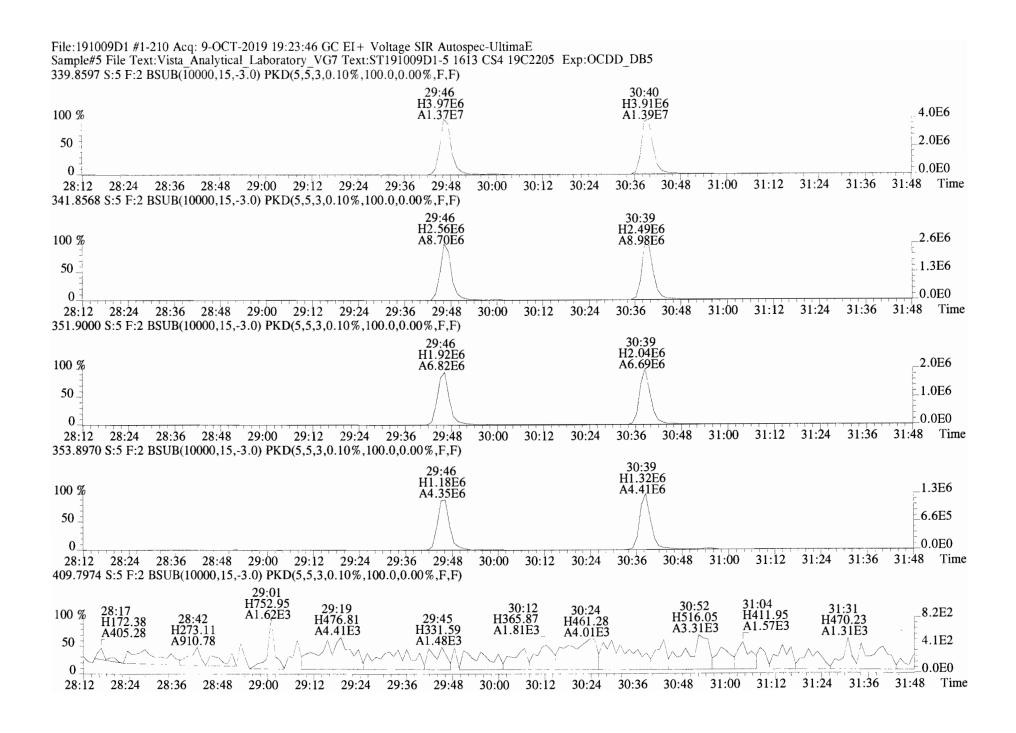
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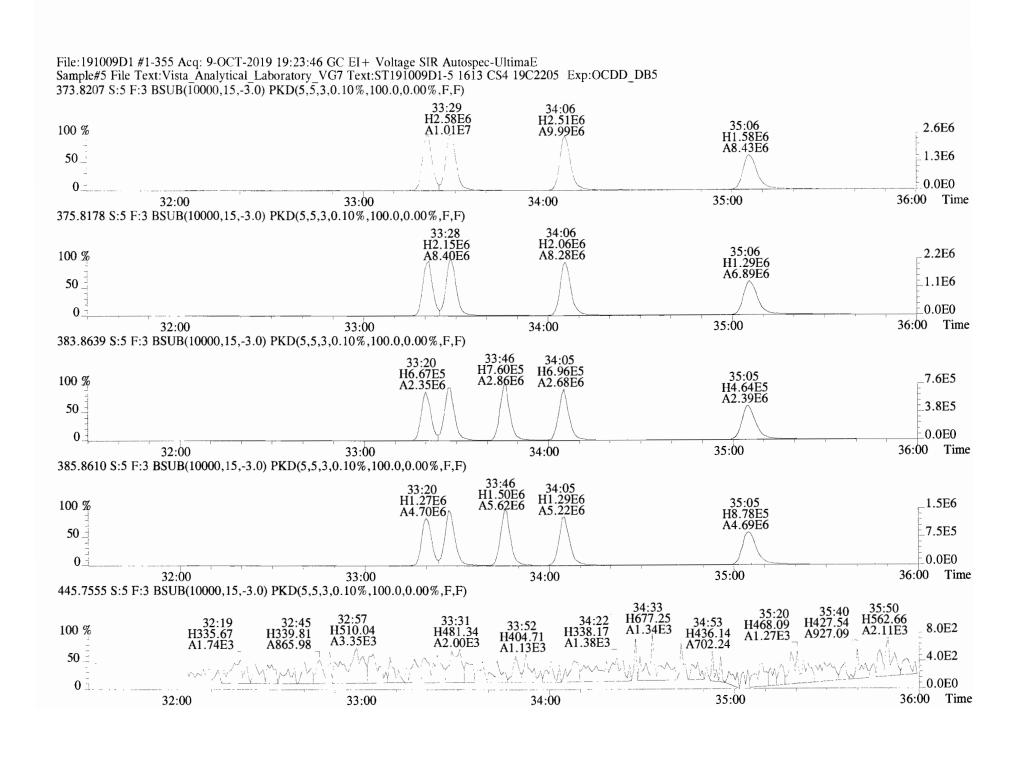
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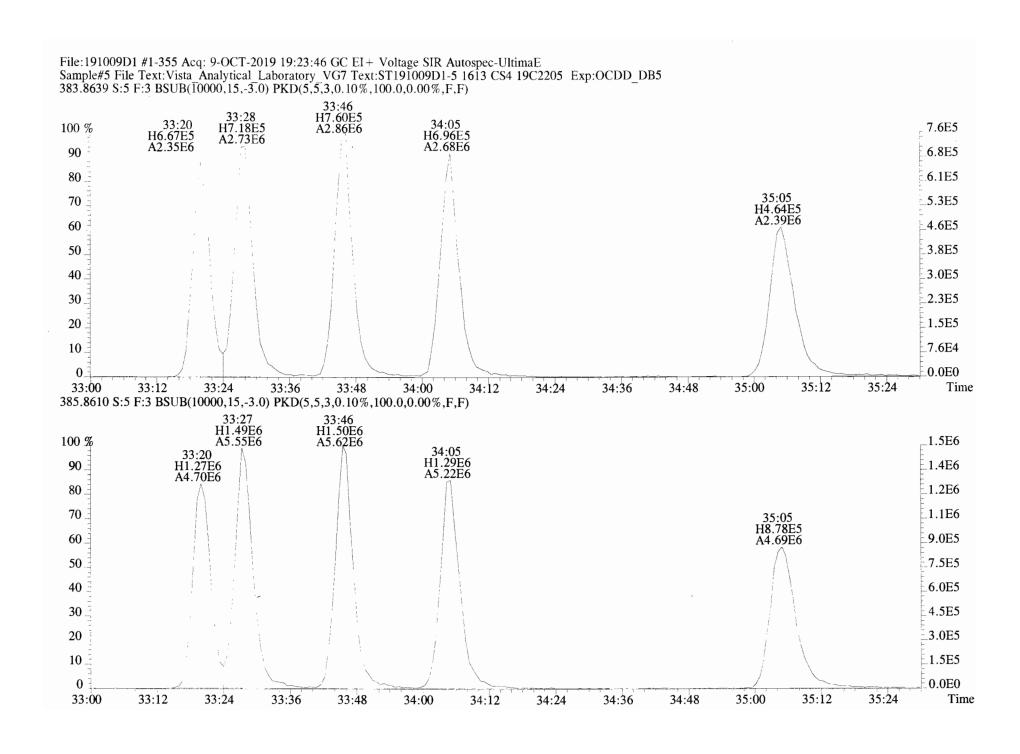
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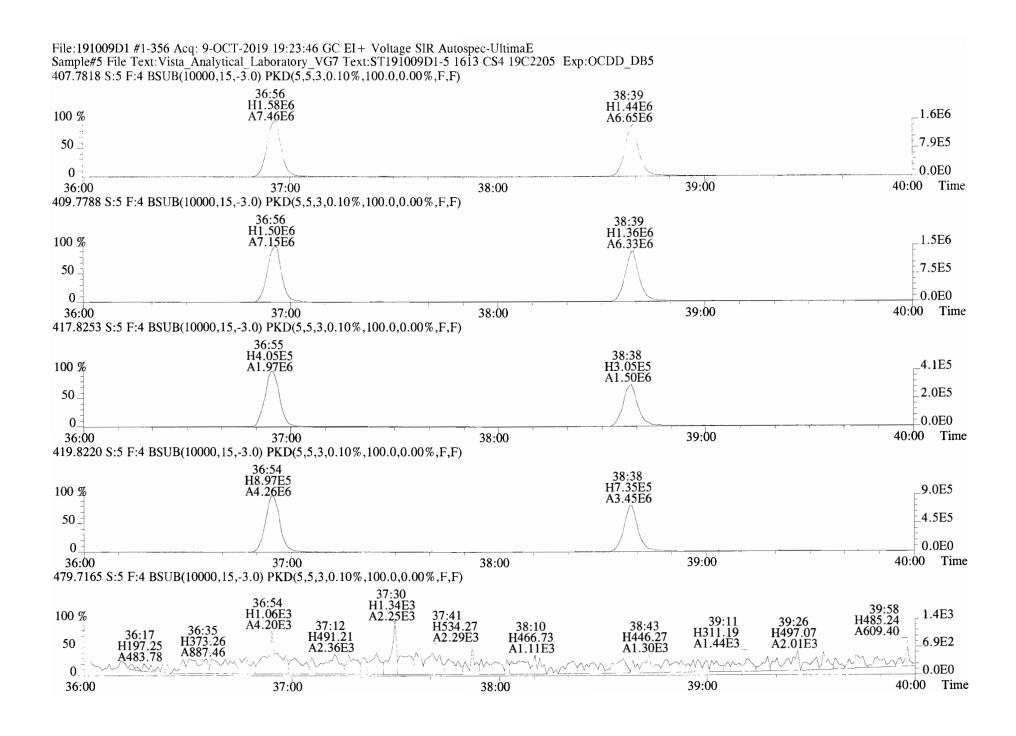
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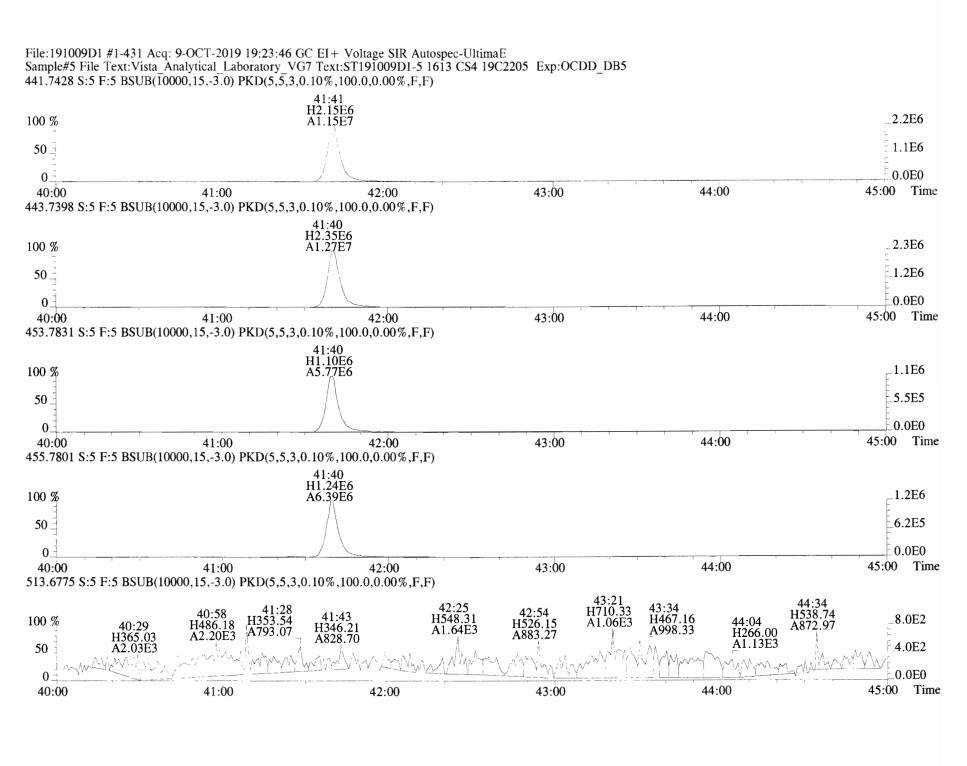
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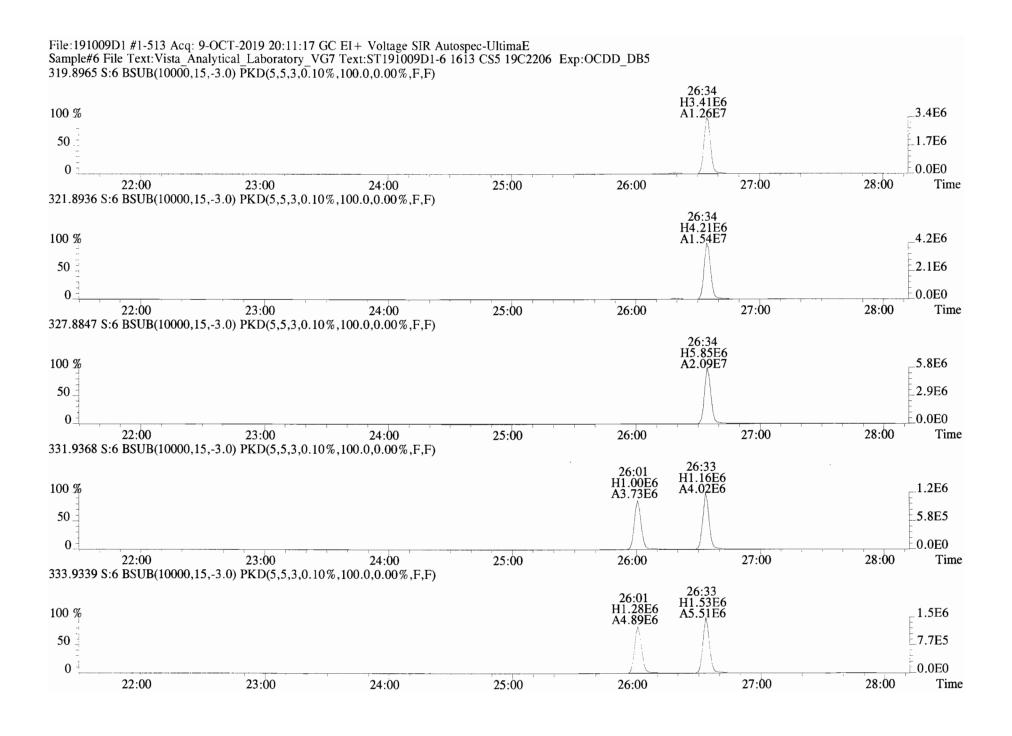


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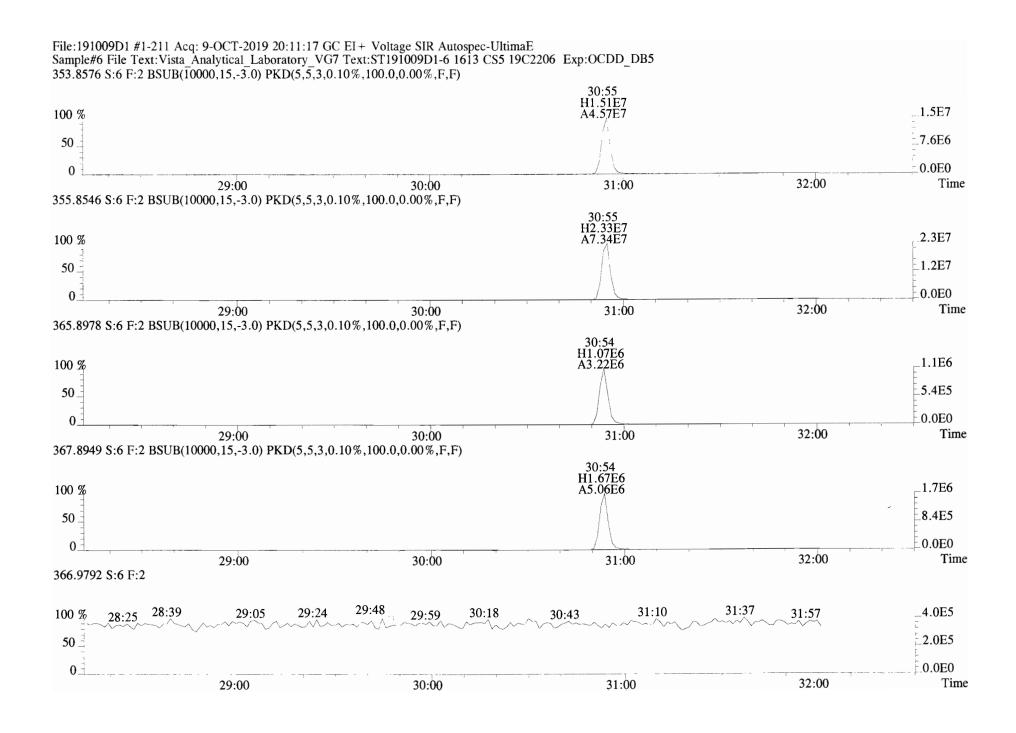


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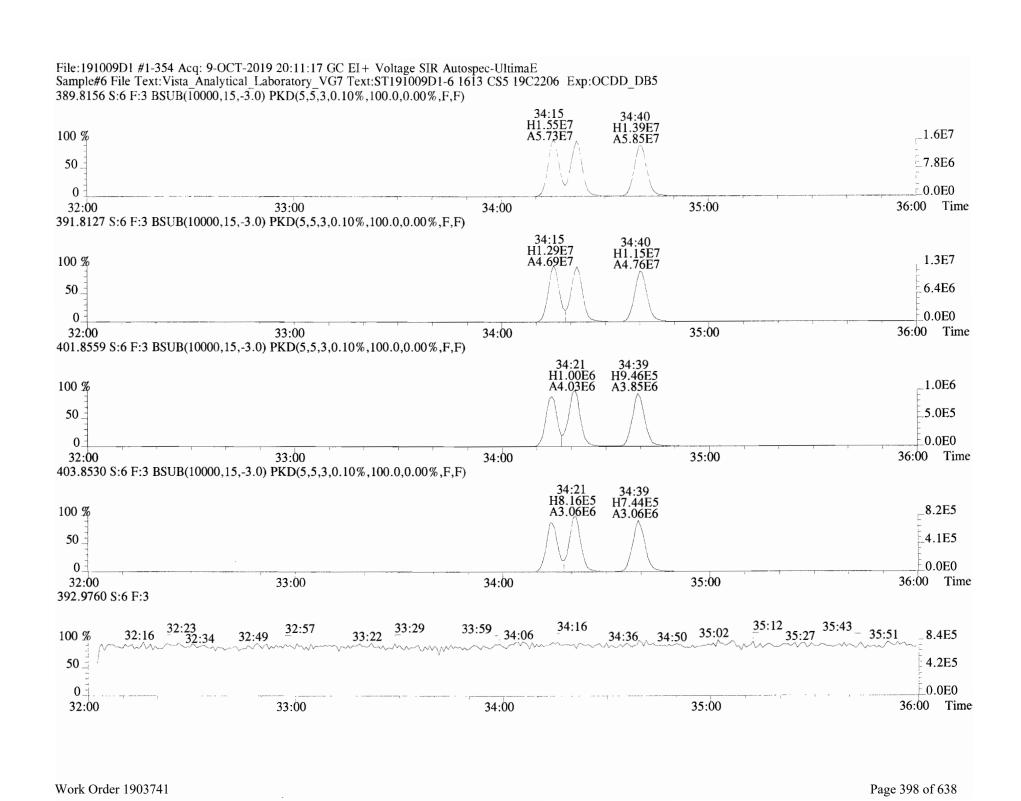




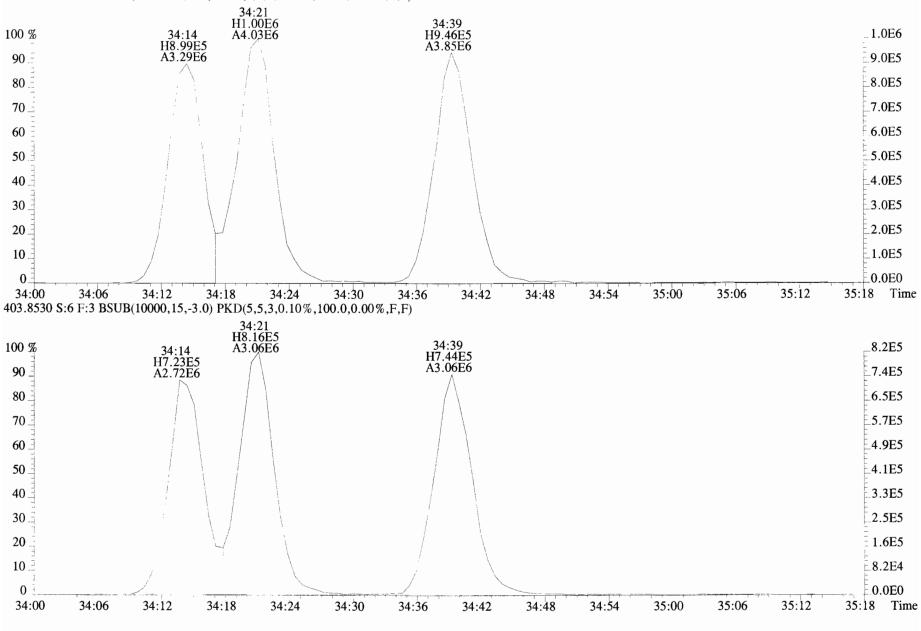
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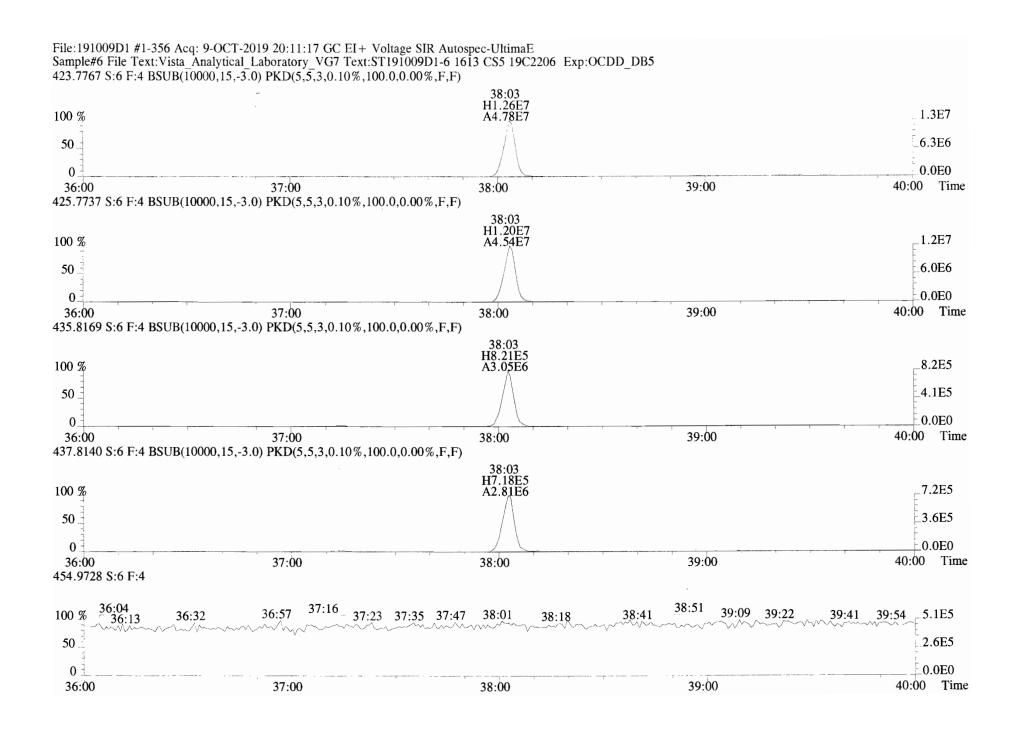
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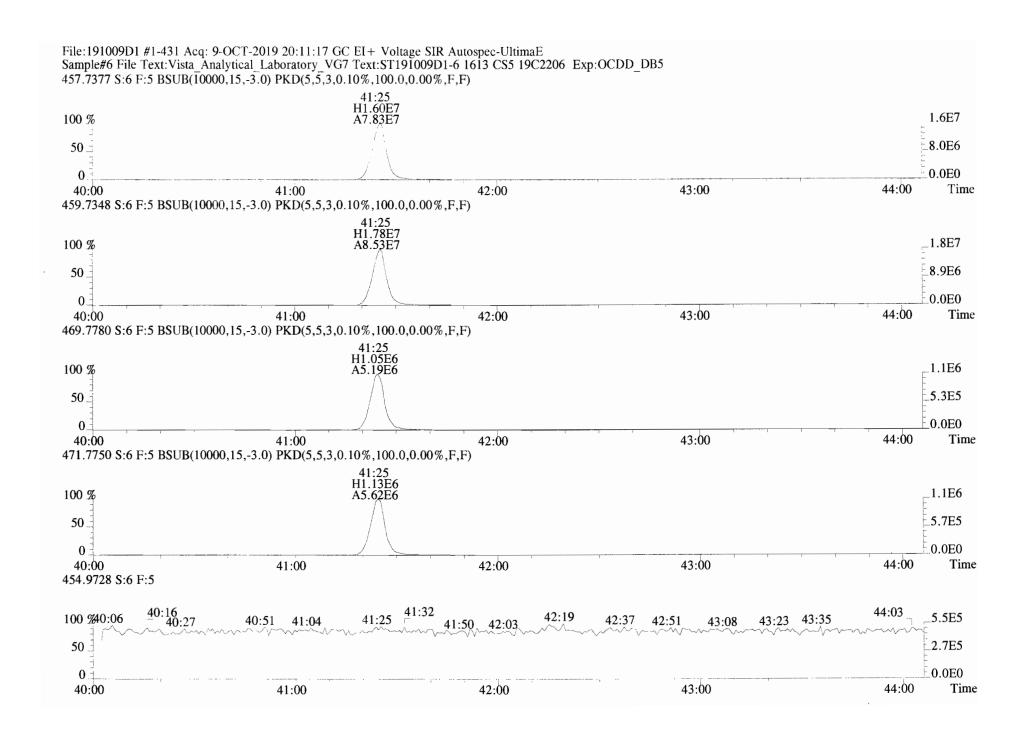
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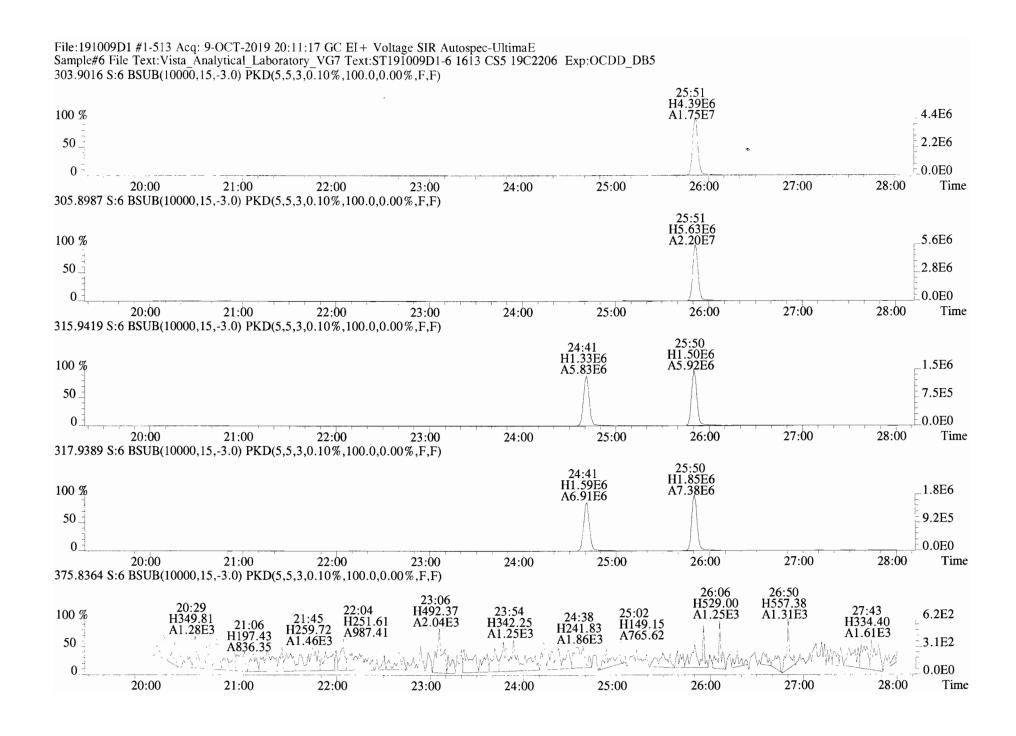
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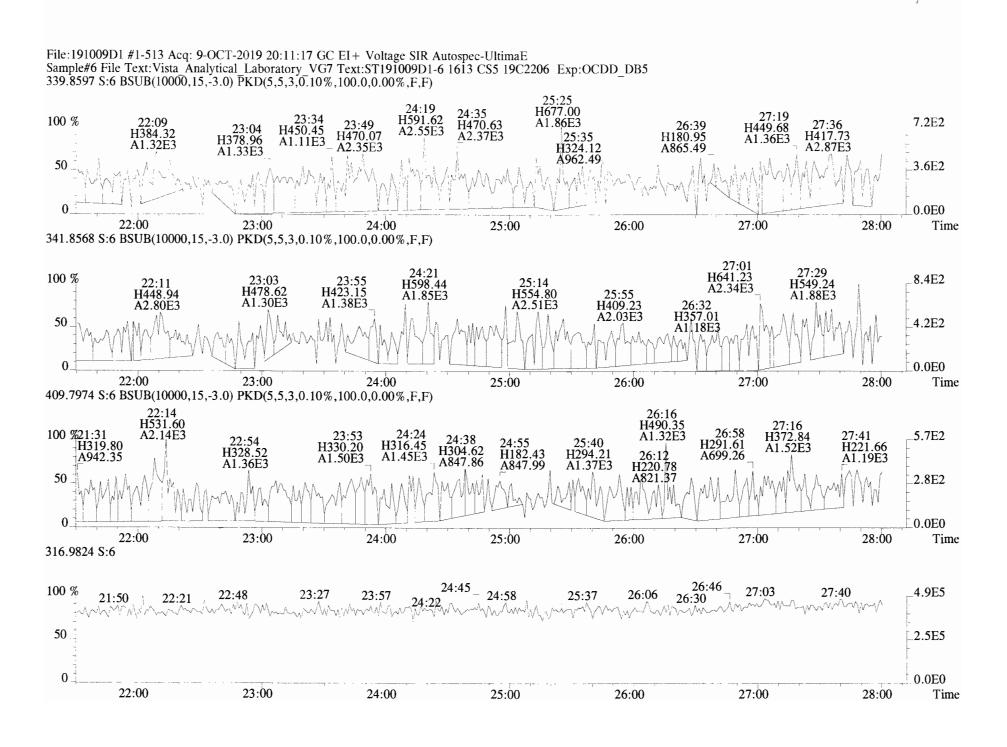
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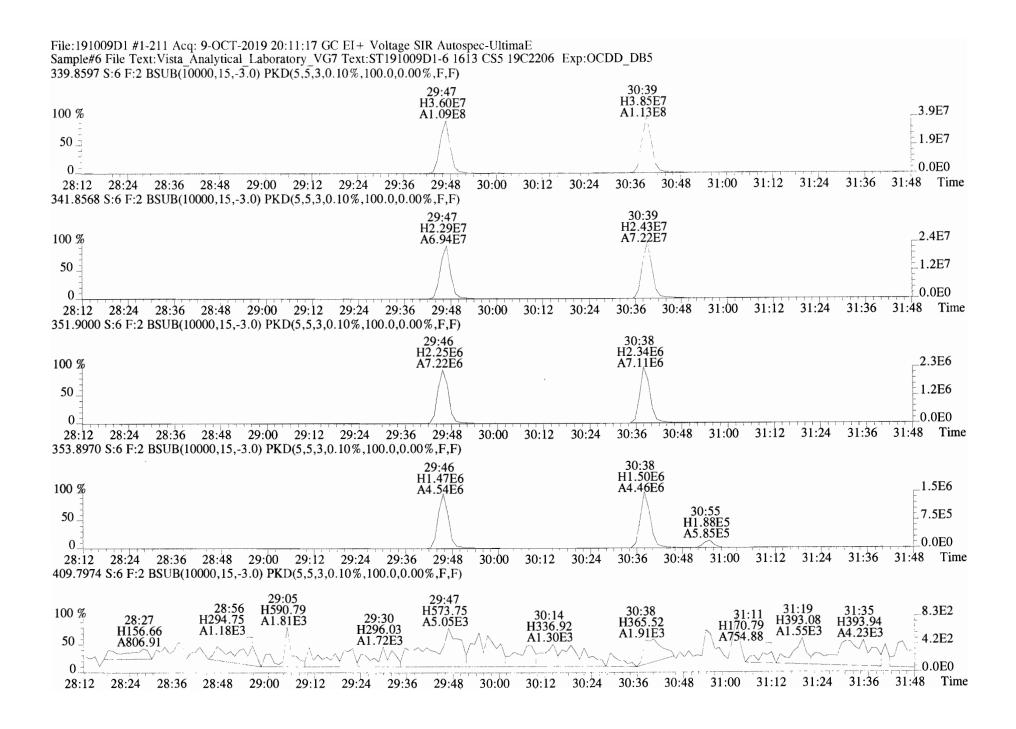
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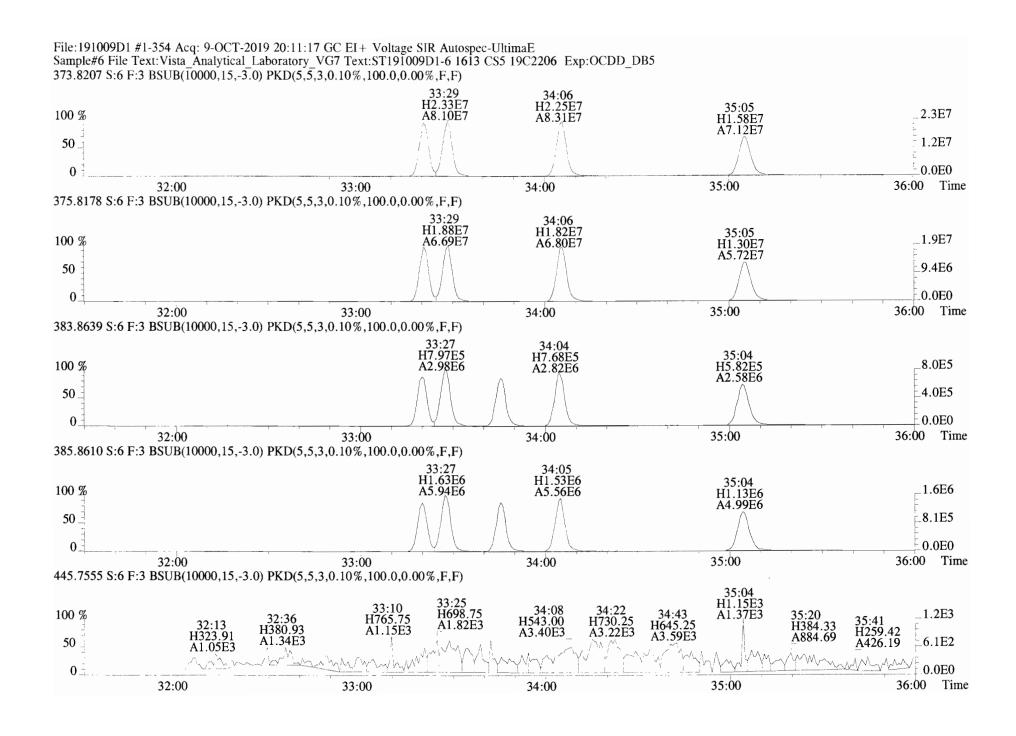
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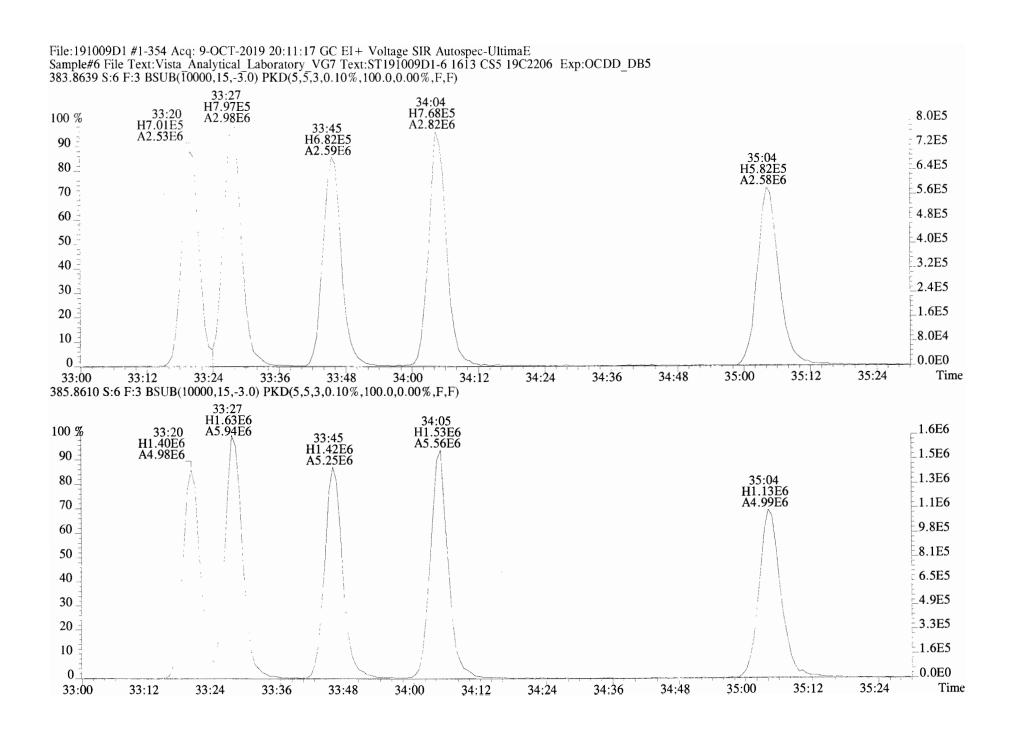
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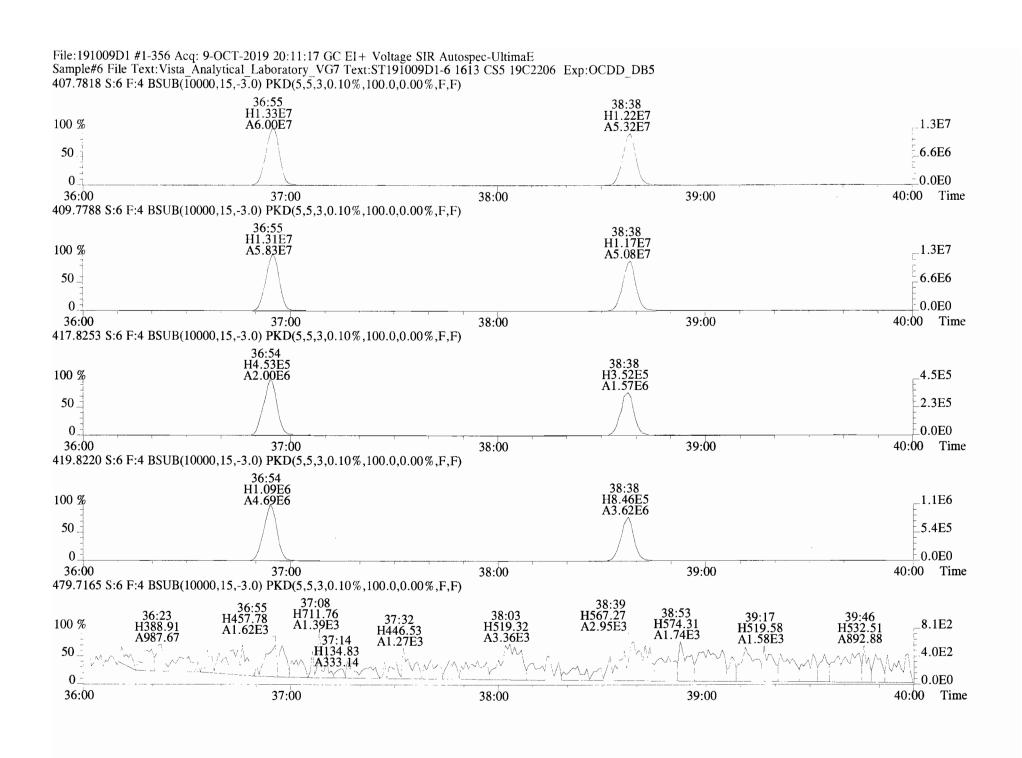
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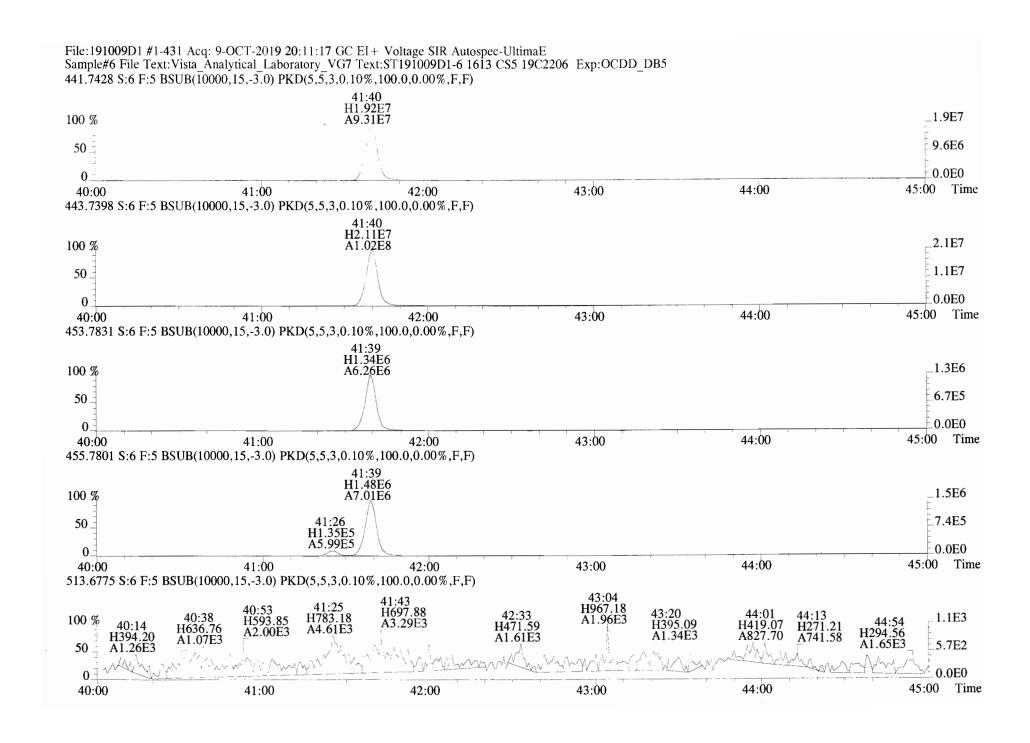


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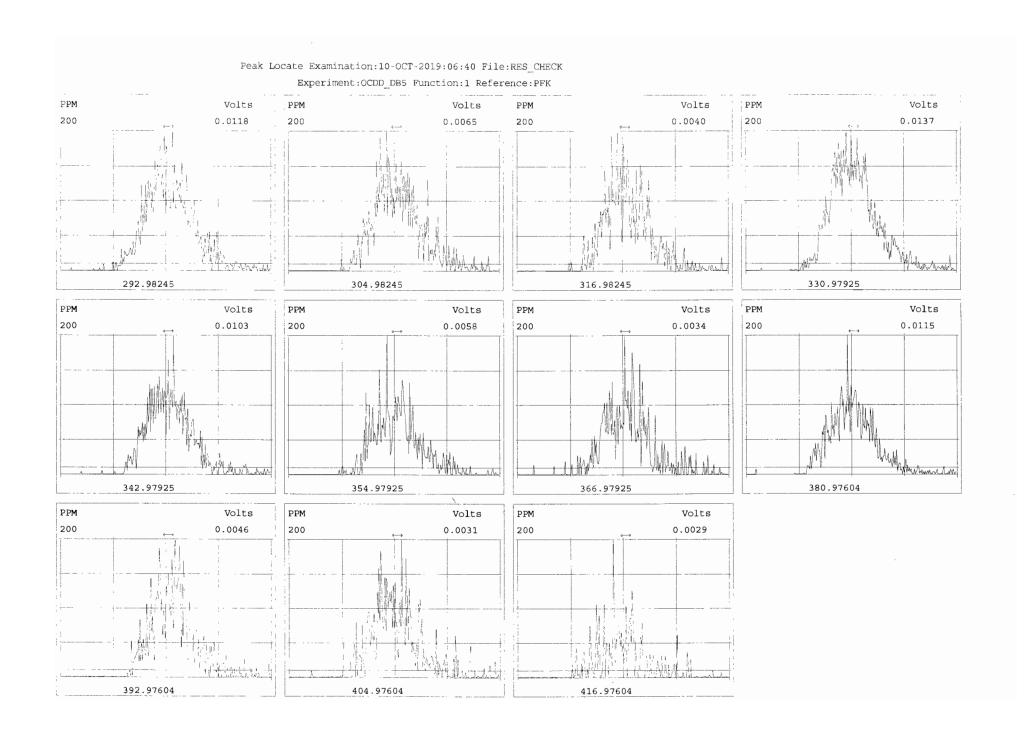


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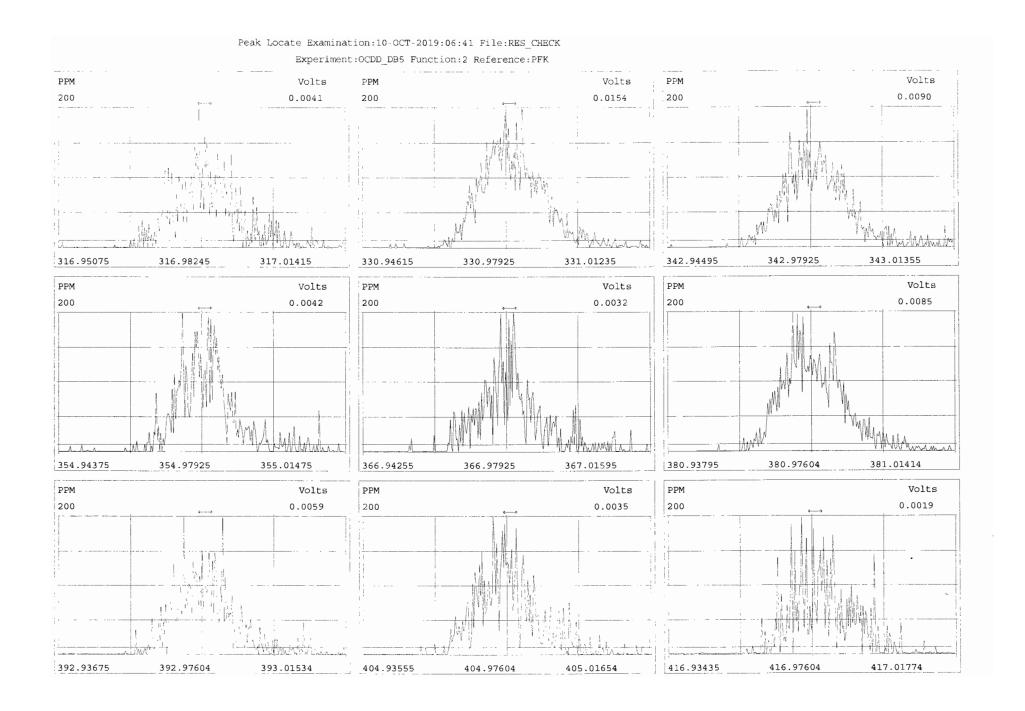




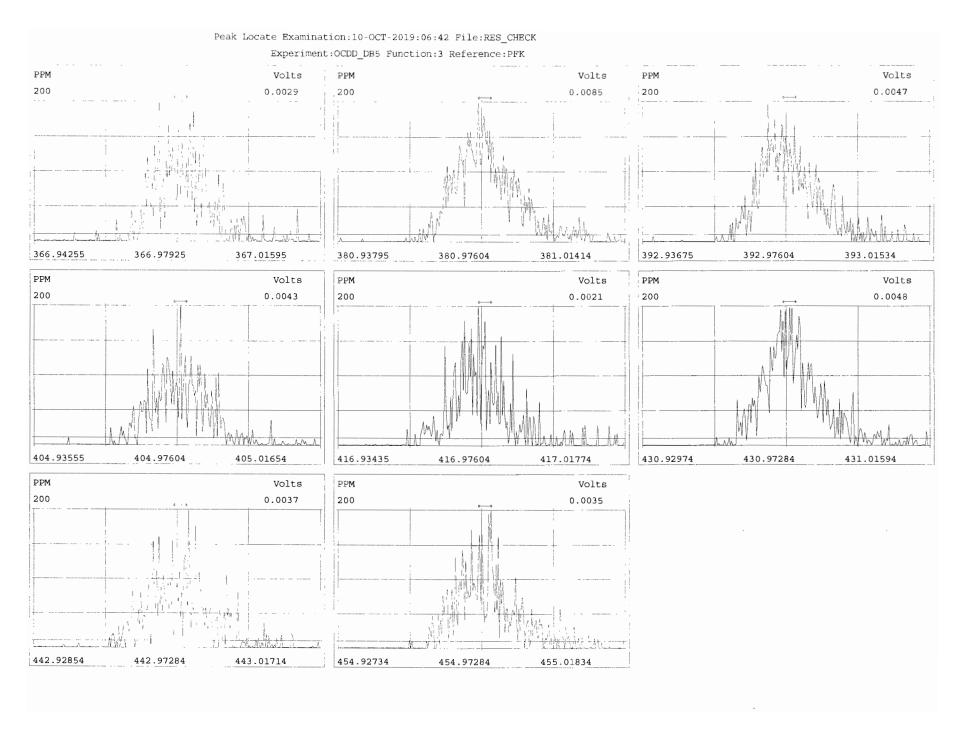
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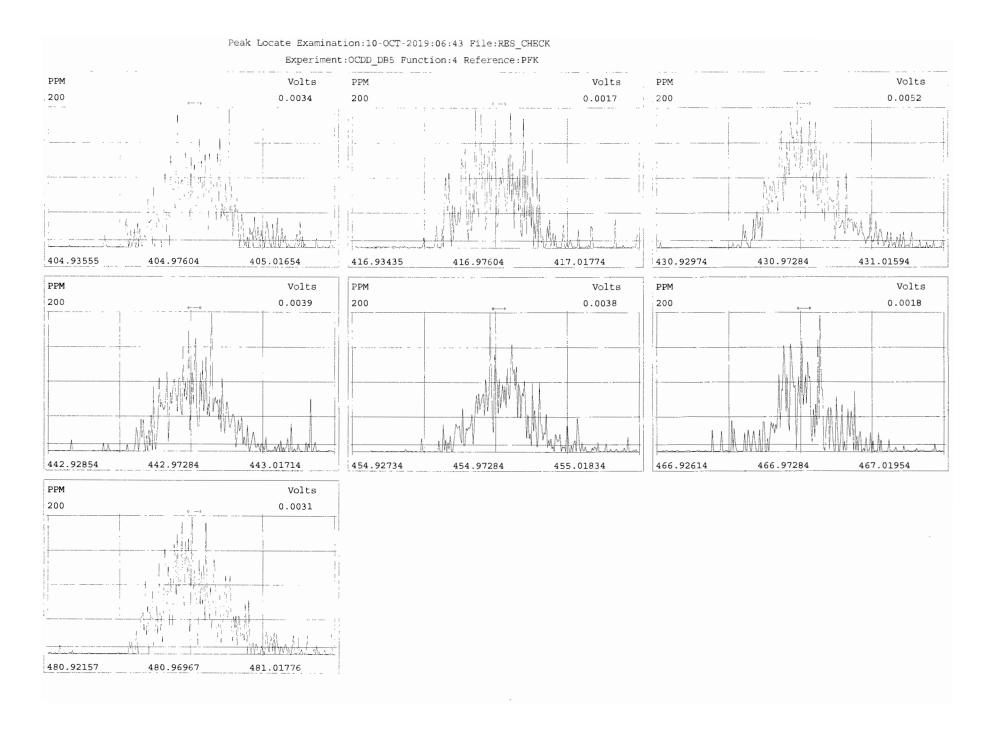
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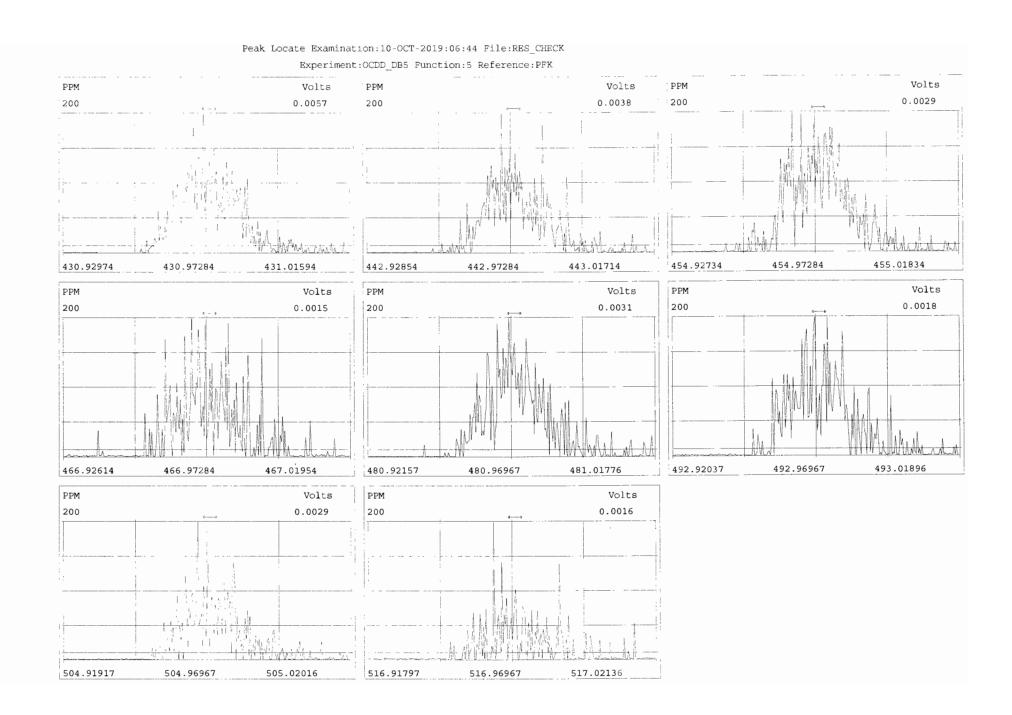
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FORM 4A

PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

	M/Z'S FORMING	ION ABUND.	QC LIMITS		CONC.	CONC. RANGE (3)	
	RATIO (1)	RATIO	(2)	Pass	FOUND	(ng/mL)	
NATIVE ANALYTES							
							(1) See Table 8, Method 1613, for m/z
2,3,7,8-TCDD	M/M+2	0.83	0.65-0.89	У	10.2	7.8 - 12.9	
						8.2 - 12.3 (4)	(2) Ion Abundance Ratio Control Limits
1,2,3,7,8-PeCDD	M/M+2	0.63	0.54-0.72	У	51.3	39.0 - 65.0	in Table 9, Method 1613.
1,2,3,4,7,8-HxCDD	M+2/M+4	1.31	1.05-1.43	У	48.9	39.0 - 64.0	(3) Contract-required concentration ra
1,2,3,6,7,8-HxCDD	M+2/M+4	1.18	1.05-1.43	У	52.4	39.0 - 64.0	in Table 6, Method 1613.
1,2,3,7,8,9-HxCDD	M+2/M+4	1.17	1.05-1.43	У	50.4	41.0 - 61.0	
							(4) Contract-required concentration ran
1,2,3,4,6,7,8-HpCD	D M+2/M+4	1.02	0.88-1.20	У	51.9	43.0 - 58.0	in Table 6a, Method 1613, for tetras of
OCDD	M+2/M+4	0.92	0.76-1.02	У	105	79.0 - 126.0	
2,3,7,8-TCDF	M/M+2	0.78	0.65-0.89	У	10.3	8.4 - 12.0	
						8.6 - 11.6 (4)	
1,2,3,7,8-PeCDF	M+2/M+4	1.54	1.32-1.78	У	50.2	41.0 - 60.0	
2,3,4,7,8-PeCDF	M+2/M+4	1.60	1.32-1.78	У	56.7	41.0 - 61.0	
1,2,3,4,7,8-HxCDF	M+2/M+4	1.22	1.05-1.43	У	51.1	45.0 - 56.0	
1,2,3,6,7,8-HxCDF	M+2/M+4	1.23	1.05-1.43	-	51.5	44.0 - 57.0	
2,3,4,6,7,8-HxCDF	M+2/M+4	1.20	1.05-1.43	-	51.5	44.0 - 57.0	
1,2,3,7,8,9-HxCDF	M+2/M+4	1.24	1.05-1.43	-	50.9	45.0 - 56.0	
1,2,3,4,6,7,8-HpCD	F M+2/M+4	1.05	0.88-1.20	v	53.0	45.0 - 55.0	Analyst: /
1,2,3,4,7,8,9-HpCD		1.05	0.88-1.20	-	50.2	43.0 - 58.0	
,,_,_,_,_,_,_,_,_,_,_,_,_,_,_,_,				,			Analyst:/
OCDF	M+2/M+4	0.92	0.76-1.02	У	102	63.0 - 159.0	Date: 10//

specifications.

CCAL ID: SS191009D1-1

s as specified

cange as specified

cange as specified only.

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FORM 4B

PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.:

SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

	M/Z'S FORMING	ION ABUND.	QC LIMITS		CONC.	CONC. RANGE
	RATIO (1)	RATIO	(2)	Pass	FOUND	(ng/mL)
13C-2,3,7,8-TCDD	M/M +2	0.72	0.65-0.89	У	100	82.0 - 121.0
13C-1,2,3,7,8-PeCDD	M/M+2	0.64	0.54-0.72	У	101	62.0 - 160.0
13C-1,2,3,4,7,8-HxCDD	M+2/M+4	1.23	1.05-1.43	У	95.9	85.0 - 117.0
13C-1,2,3,6,7,8-HxCDD	M+2/M+4	1.25	1.05-1.43	У	95.6	85.0 - 118.0
13C-1,2,3,7,8,9-HxCDD	M+2/M+4	1.26	1.05-1.43	У	94.3	85.0 - 118.0
13C-1,2,3,4,6,7,8-HpC	OD M+2/M+4	1.06	0.88-1.20	У	91.7	72.0 - 138.0
13C-OCDD	M/M+2	0.92	0.76-1.02	У	190	96.0 - 415.0
13C-2,3,7,8-TCDF	M+2/M+4	0.78	0.65-0.89	У	97.2	71.0 - 140.0
13C-1,2,3,7,8-PeCDF	M+2/M+4	1.62	1.32-1.78	У	97.4	76.0 - 130.0
13C-2,3,4,7,8-PeCDF	M+2/M+4	1.59	1.32-1.78	У	96.6	77.0 - 130.0
13C-1,2,3,4,7,8-HxCDF	M/M+2	0.51	0.43-0.59	У	102	76.0 - 131.0
13C-1,2,3,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	У	101	70.0 - 143.0
13C-2,3,4,6,7,8-HxCDF	M/M+2	0.51	0.43-0.59	У	97.1	73.0 - 137.0
13C-1,2,3,7,8,9-HxCDF	M/M+2	0.51	0.43-0.59	Y	99.0	74.0 - 135.0
13C-1,2,3,4,6,7,8-HpC	OF M+2/M+4	0.43	0.37-0.51	У	96.6	78.0 - 129.0
13C-1,2,3,4,7,8,9-HpC	OF M+2/M+4	0.44	0.37-0.51	У	102	77.0 - 129.0
13C-OCDF	M+2/M+4	0.88	0.76-1.02	У	197	96.0 - 415.0
CLEANUP STANDARD (3)						
37Cl-2,3,7,8-TCDD					9.08	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.

Analyst:)B

Date: 10 10 19

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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: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

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
1,2,3,7,8-PeCDD	13C-1,2,3,7,8-PeCDD	1.000	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	1.000	0.999-1.002
2,3,4,7,8-PeCDF	13C-2,3,4,7,8-PeCDF	1.000	0.999-1.002
LABELED COMPOUNDS			
13C-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.976-1.043
13C-1,2,3,7,8-PeCDD	13C-1,2,3,4-TCDD	1.189	1.000-1.567
13C-2,3,7,8-TCDF	13C-1,2,3,4-TCDD	0.994	0.923-1.103
13C-1,2,3,7,8-PeCDF	13C-1,2,3,4-TCDD	1.145	1.000-1.425
13C-2,3,4,7,8-PeCDF	13C-1,2,3,4-TCDD	1.179	1.011-1.526
37C1-2,3,7,8-TCDD	13C-1,2,3,4-TCDD	1.022	0.989-1.052

Analyst: 1)2

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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: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

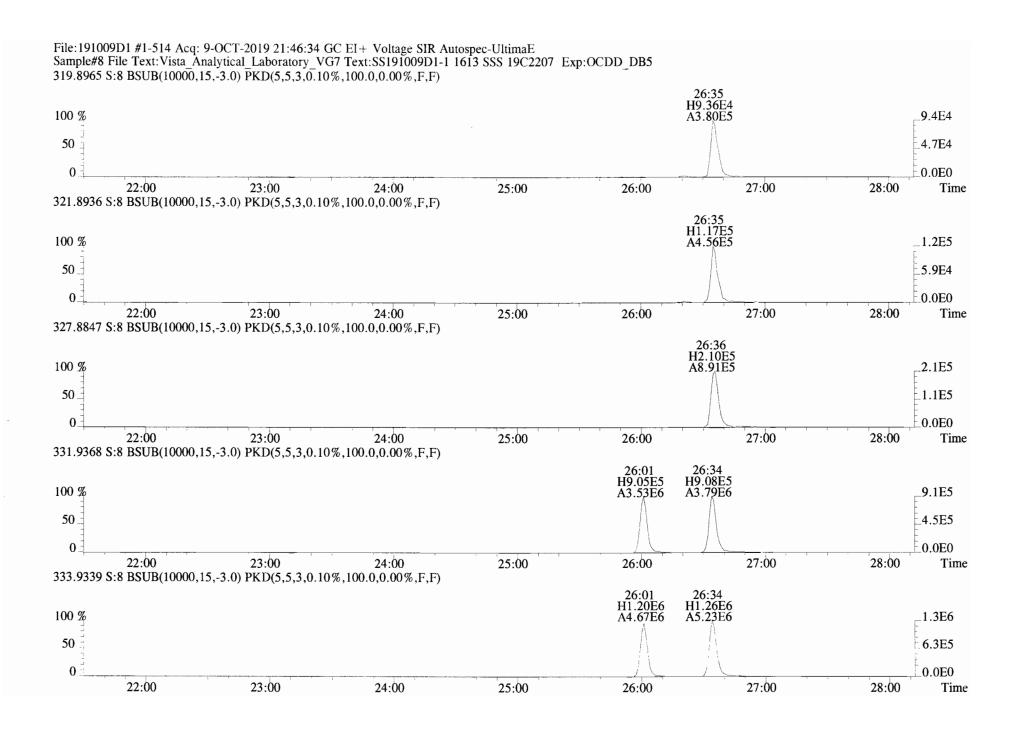
NATIVE ANALYTES	RETENTION TIME REFERENCE	RRT	RRT QC LIMITS (1)
1,2,3,4,7,8-HxCDF	13C-1,2,3,4,7,8-HxCDF	1.000	0.999-1.001
1,2,3,6,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	1.000	0.997-1.005
2,3,4,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	1.000	0.999-1.001
1,2,3,7,8,9-HxCDF	13C-1,2,3,7,8,9-HxCDF	1.001	0.999-1.001
1,2,3,4,7,8-HxCDD	13C-1,2,3,4,7,8-HxCDD	1.001	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	1.001	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	0.987	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	1.010	1.001-1.020
13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,9-HxCDF	1.040	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	1.018	1.007-1.029
13C-1,2,3,7,8,9-HxCDD	13C-1,2,3,4,6,9-HxCDF	1.027	1.014-1.038
13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,6,9-HxCDF	1.093	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	1.127	1.117-1.141
13C-OCDD	13C-1,2,3,4,6,9-HxCDF	1.227	1.085-1.365
13C-OCDF	13C-1,2,3,4,6,9-HxCDF	1.235	1.091-1.371

Analyst: 10 10 19

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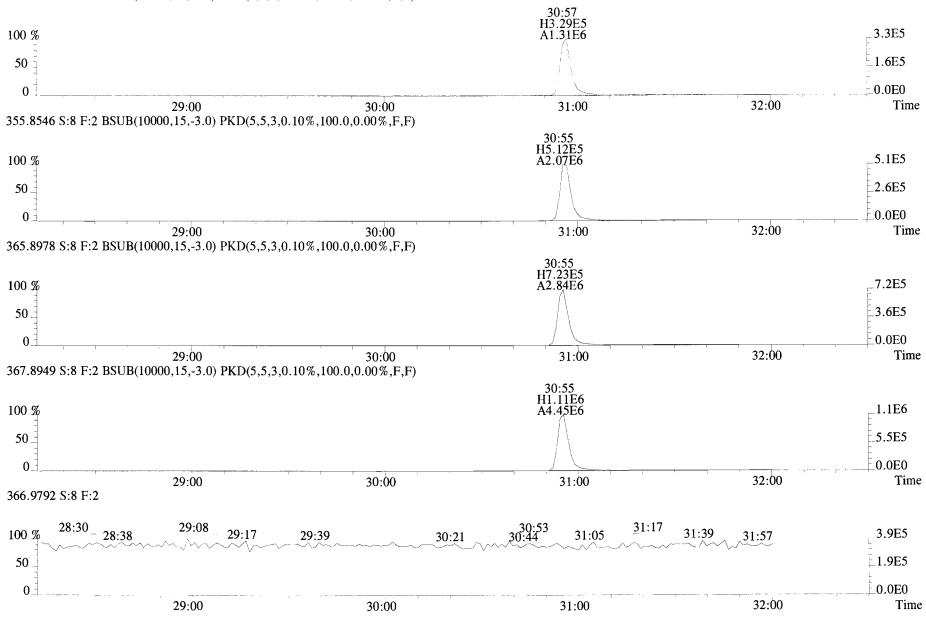
Cl:	lent ID: 1613 SSS 19C2207	Fi	lename: 1	91009D1	S:8	Acq: 9-00	CT-19 2	1:46:34		ConCa	l: ST191009D1-	- 4			Page	1 of 1
Lal	DID: SS191009D1-1					1613VG7-			: 1.000	EndCA	L: NA					
	Name	Resp	RA	RRF	RT	Conc	Qual	noise Fac	DL	Name		Conc	EMPC	Qual	noise	DL
	2,3,7,8-TCDD	8.36e+05	0.83 y	0.91	26:36	10.234		* 2.5	*	Total T	etra-Dioxins	10.4	11.4		*	*
	1,2,3,7,8-PeCDD	3.38e+06	0.63 y	0.90	30:57	51.323		* 2.5	*	Total P	enta-Dioxins	51.4	51.7		*	*
	1,2,3,4,7,8-HxCDD	2.55e+06	1.31 y	1.10	34:18	48.909		* 2.5	*	Total H	exa-Dioxins	153	153		*	*
	1,2,3,6,7,8-HxCDD	3.09e+06	1.18 y	0.94	34:24	52.378		* 2.5	*	Total H	epta-Dioxins	53.5	54.4		*	*
	1,2,3,7,8,9-HxCDD	2.83e+06	1.17 y	0.96	34:44	50.434		* 2.5	*	Total T	etra-Furans	10.7	11.4		*	*
	1,2,3,4,6,7,8-HpCDD		1.02 y	0.98	38:07	51.915		* 2.5	*	Total P	enta-Furans	110.38	111.73		*	*
		4.27e+06	0.92 y	0.96	41:30	105.37		* 2.5	*	Total H	exa-Furans	205	207		*	*
										Total H	epta-Furans	104	106		*	*
	2,3,7,8-TCDF	1.24e+06	0.78 y	0.95	25:53	10.342		* 2.5	*							
	1,2,3,7,8-PeCDF	5.03e+06	1.54 y	0.96	29:48	50.200		* 2.5	*							
	2,3,4,7,8-PeCDF	5.90e+06	1.60 y	1.01	30:42	56.719		* 2.5	*							
	1,2,3,4,7,8-HxCDF	3.94e+06	1.22 y	1.18	33:23	51.086		* 2.5	*							
	1,2,3,6,7,8-HxCDF		1.23 y	1.07	33:31	51.491		* 2.5	*							
	2,3,4,6,7,8-HxCDF		1.20 y	1.11	34:08	51.474		* 2.5	*							
	1,2,3,7,8,9-HxCDF		1.24 y	1.06	35:10	50.903		* 2.5	*							
	1,2,3,4,6,7,8-HpCDF		1.05 y	1.13	36:58	53.010		* 2.5	*							
	1,2,3,4,7,8,9-HpCDF		1.05 y	1.28	38:42	50.216		* 2.5	*							
	-	5.04e+06	0.92 y	0.95	41:45	102.23		* 2.5	*							
			2							Rec	Oual					
IS	13C-2,3,7,8-TCDD	9.02e+06	0.72 y	1.10	26:35	100.49				100	-					
IS	13C-1,2,3,7,8-PeCDD		0.64 y	0.88	30:56	100.87				101						
IS	13C-1,2,3,4,7,8-HxCDD		1.23 y	0.64	34:16	95.948				95.9						
IS	13C-1,2,3,6,7,8-HxCDD		1.25 y	0.86	34:24	95.558				95.6						
IS	13C-1,2,3,7,8,9-HxCDD		1.26 y	0.81	34:43	94.306				94.3						
IS	13C-1,2,3,4,6,7,8-HpCDD		1.06 y	0.65	38:06	91.680				91.7						
IS		8.45e+06	0.92 y	0.58	41:29	189.68				94.8						
IS	13C-2,3,7,8-TCDF		0.78 y	1.03	25:52	97.199				97.2						
IS	13C-1,2,3,7,8-PeCDF		1.62 y	0.85	29:48	97.425				97.4						
IS	13C-2,3,4,7,8-PeCDF		1.59 y	0.85	30:41	96.649				96.6						
IS	13C-1,2,3,4,7,8-HxCDF		0.51 y	0.83	33:22	102.43				102						
IS	13C-1,2,3,6,7,8-HxCDF		0.51 y	1.03	33:30	101.42				101						
IS	13C-2,3,4,6,7,8-HxCDF		0.51 y	0.95	34:08	97.073				97.1						
IS	13C-1,2,3,7,8,9-HxCDF		0.51 y	0.83	35:09	98.999				99.0						
IS	13C-1,2,3,4,6,7,8-HpCDF		0.43 y	0.76	36:57	96.588				96.6						
IS	13C-1,2,3,4,7,8,9-HpCDF		0.44 y	0.58	38:42	102.46				102						
IS		1.04e+07	0.88 y	0.69	41:44	196.65				98.3						
	100 0021		0.00 1	0.05		150.05										
C/Up	37Cl-2,3,7,8-TCDD	8.91e+05		1.20	26:36	9.0817				90.8	Integr	ations	Rev:	lewed		
											by	72	by		_	
RS/R	13C-1,2,3,4-TCDD	8.20e+06	0.76 y	1.00	26:01	100.00					Analyst:	<u>(1)(1)</u>	Ana	Lyst:_	C7	
RS	13C-1,2,3,4-TCDF	1.25e+07	0.82 y	1.00	24:42	100.00										
RS/R	13C-1,2,3,4,6,9-HxCDF	7.68e+06	0.50 y	1.00	33:48	100.00					Analyst:	0/10/19	Date	e: <u>/(</u>	10/19	
												t I			,	

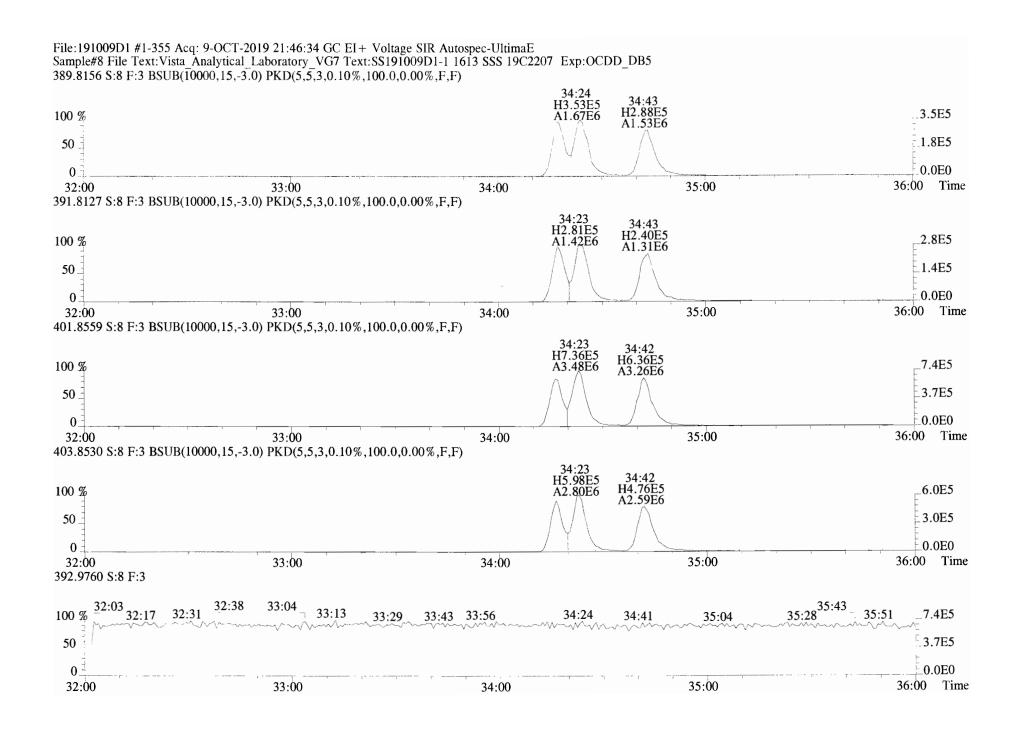
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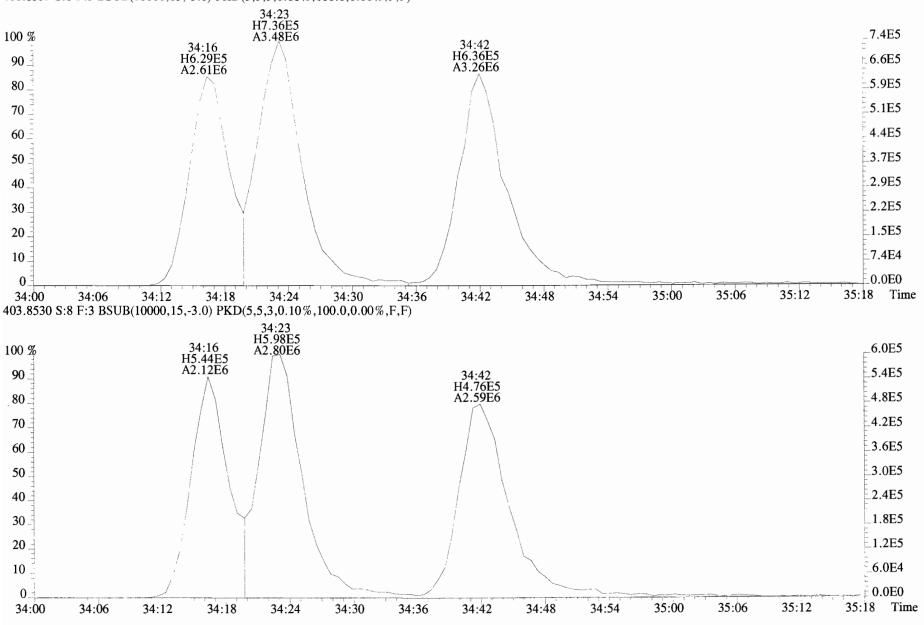
File:191009D1 #1-210 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5 353.8576 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

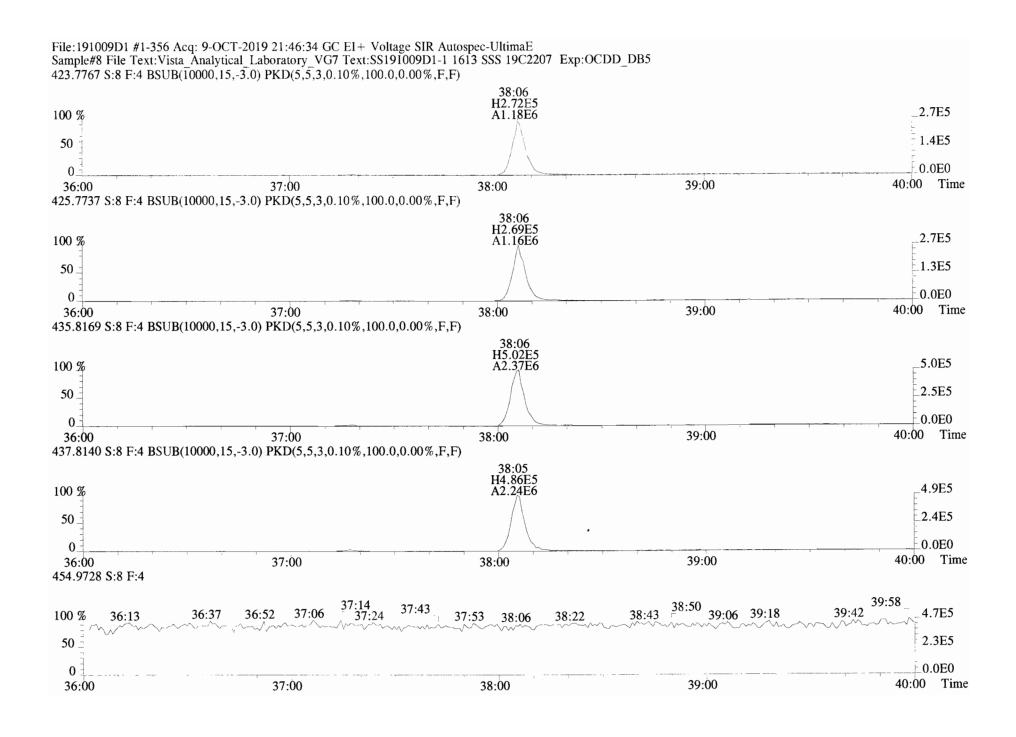




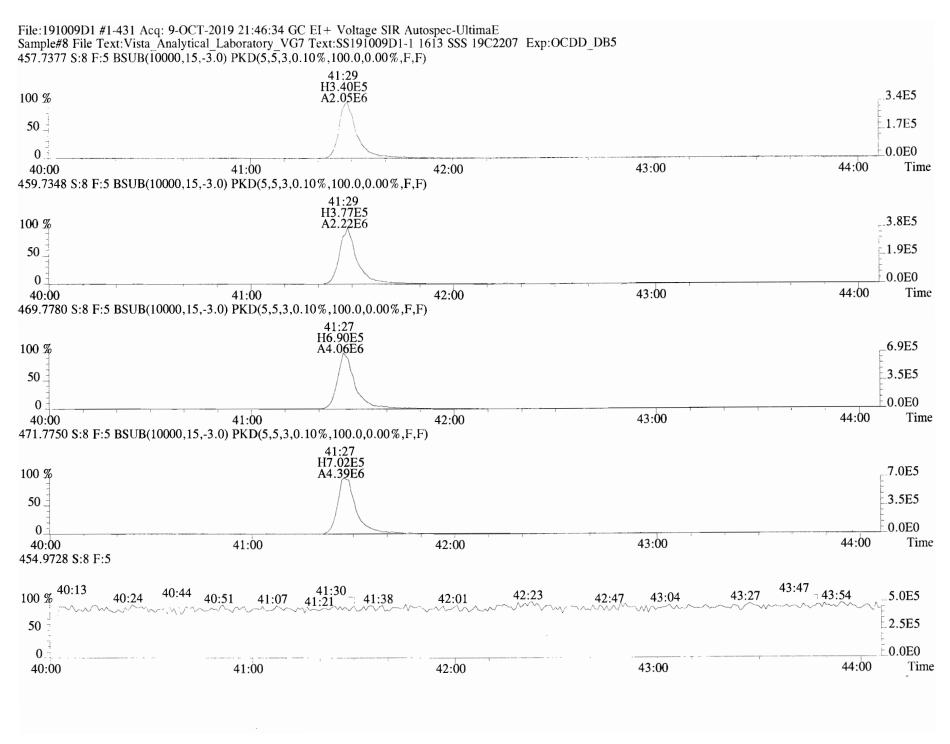
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File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE Sample#8 File Text:Vista Analytical Laboratory VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5 401.8559 S:8 F:3 BSUB(\overline{1}0000,15,-\overline{3}.0) PKD(5,\overline{5},3,0.10\%,100.0,0.00\%,F,F)





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File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE Sample#8 File Text:Vista Analytical Laboratory VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5 303.9016 S:8 BSUB(10000.15.-3.0) PKD(5.5.3.0.10%.100.0.0.00%.F.F) H1.18E5 _1.2E5 100 % A5.43E5 _5.9E4 50 0.0E0 26:00 27:00 28:00 Time 25:00 20:00 21:00 22:00 23:00 24:00 305.8987 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) H1.43E5 _1.4E5 A6.95E5 100 % 50. _7.1E4 _0.0E0 27:00 28:00 25:00 26:00 Time 20:00 21:00 22:00 23:00 24:00 315.9419 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 24:42 H1.27E6 25:51 H1.27E6 A5.52E6 _1.3E6 100 % A5.66E6 50_ 6.4E5 0.0E0 0. 28:00 26:00 27:00 22:00 24:00 25:00 Time 20:00 21:00 23:00 317.9389 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 24:41 H1.60E6 25:51 H1.56E6 1.6E6 100 % A6.87E6 A7.08E6 .8.0E5 50_ 0.0E0 0 27:00 28:00 20:00 21:00 22:00 26:00 Time 23:00 24:00 25:00 375.8364 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F) 23:48 26:20 H554.27 25:45 H372.89 H590.95 24:53 H335.86 A1.52E3 100 % 7.0E2 A1.72E3 27:28 H268.14 20:10 21:20 H113.43 A2.49E3 A1.64E3 H261.51 26:48 H199.61 A665.85 H147.22 50. A788.04 H122.89 3.5E2 A690.93A306.54

24:00

25:00

0.

20:00

21:00

22:00

23:00

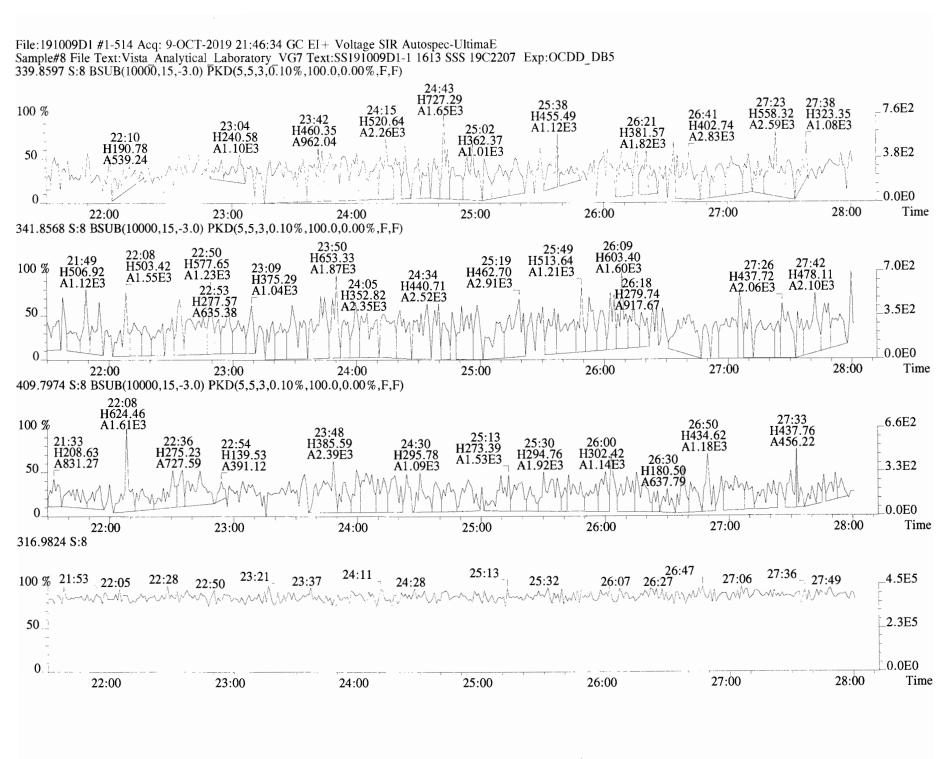
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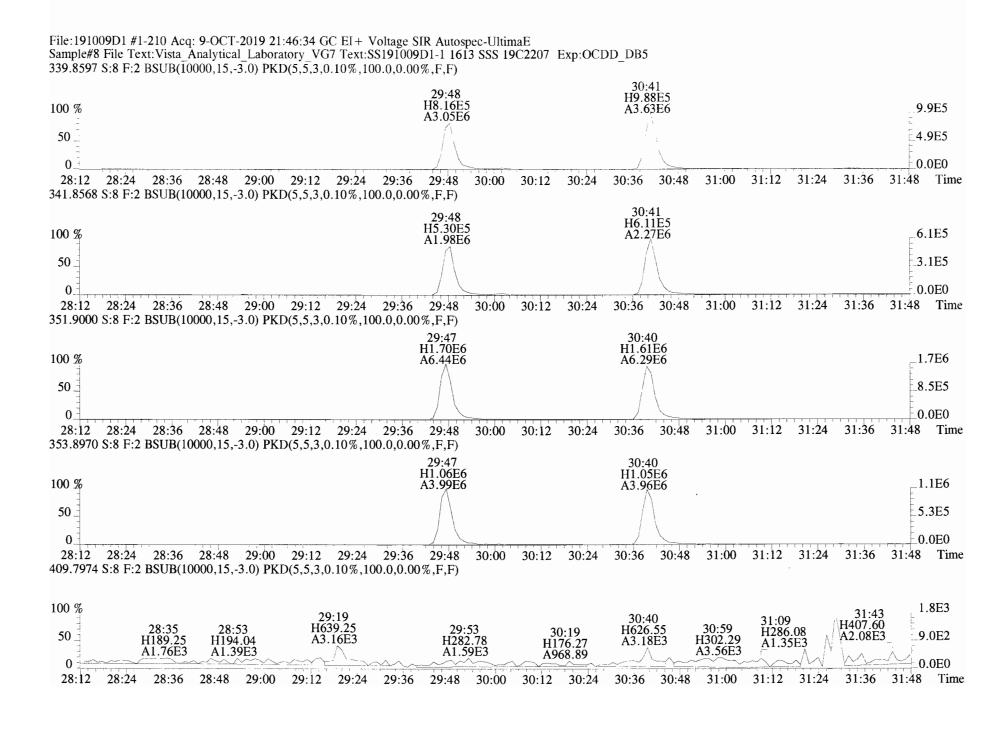
Time

28:00

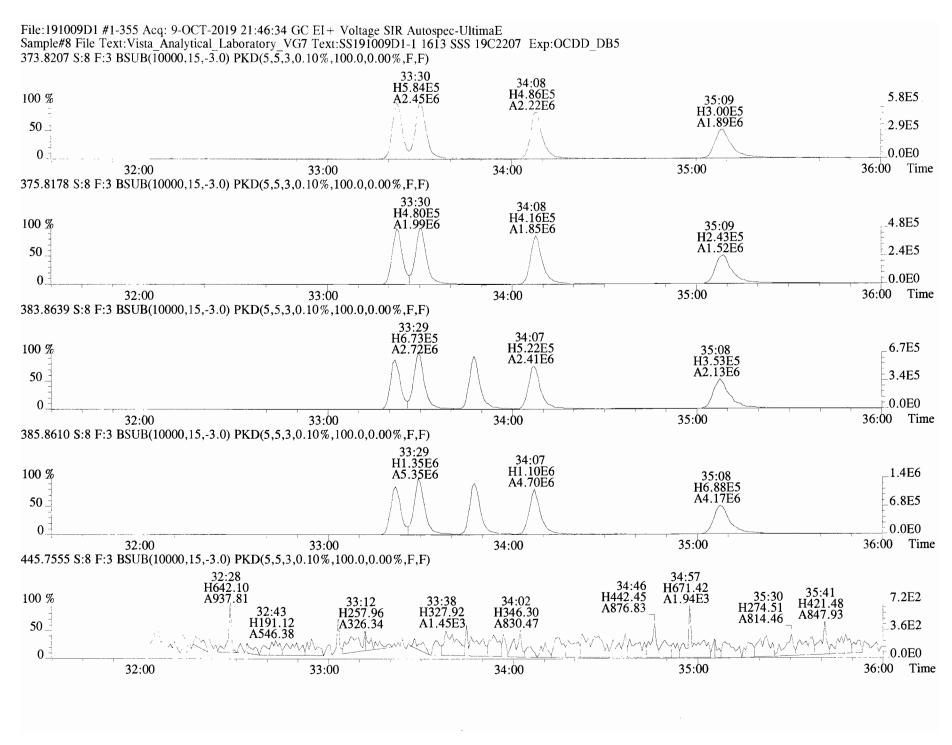
26:00

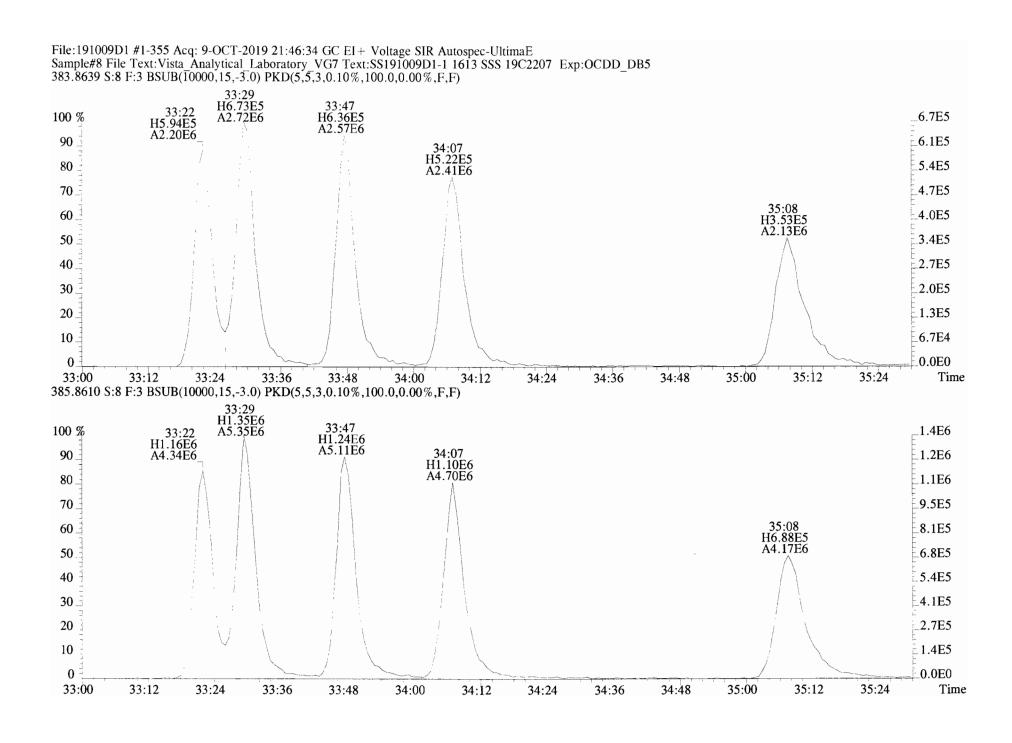
27:00



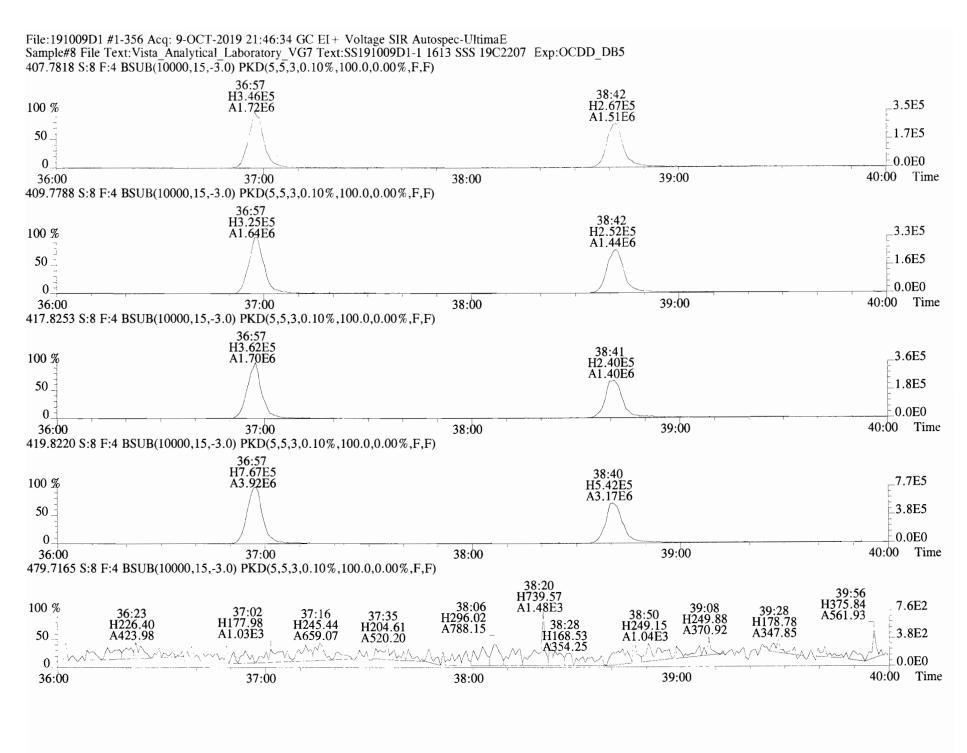


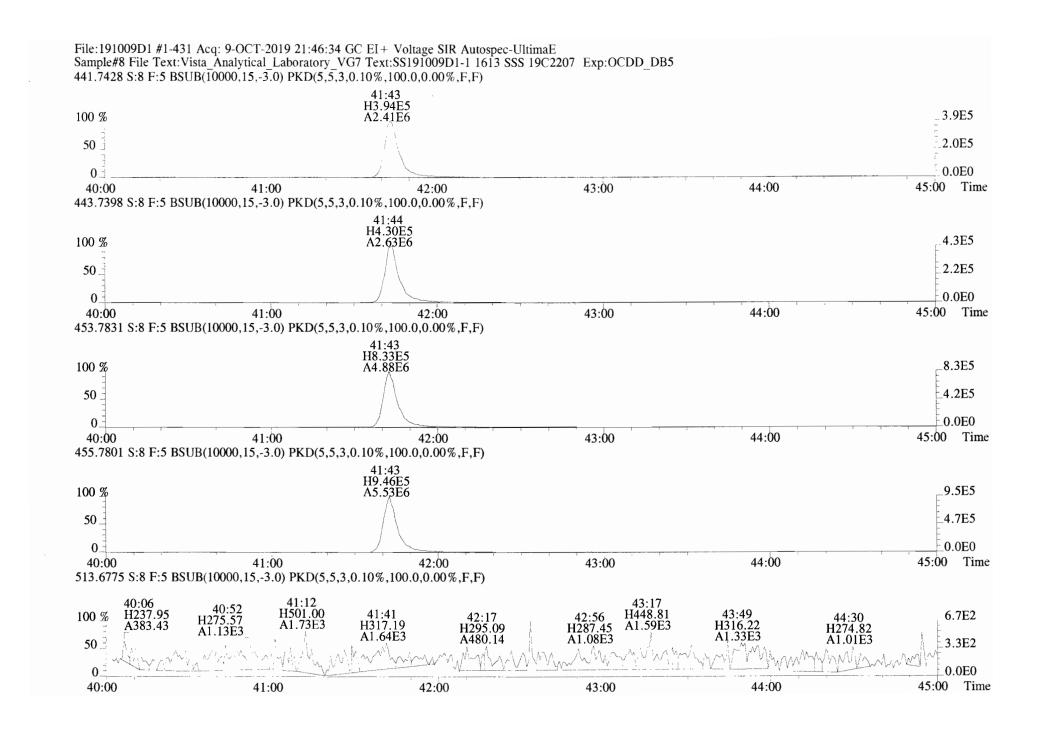
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Quantify Compound Summary Report MassLynx 4.1 SCN815

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Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

HC 5.8.19

DB 5/20/19

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Compound name: 2,3,7,8-TCDD Response Factor: 0.924948

RRF SD: 0.0405637, Relative SD: 4.38551

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: RF

:Name	Std. Conc	RA .	n/y	, RT.	RRT-	Resp:	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
1 190507K1_2	0.250	0.88	NO	26.34	1.000	1.33e3	5.80e5	0.247	-1.2	0.914	MM
2 190507K1_3	10.0	0.78	NO	26.36	1.001	5.65e4	6.19e5	9.87	-1.3	0.913	MM
3 190507K1_4	0.500	0.80	NO	26.36	1.001	3.15e3	6.64e5	0.513	2.7	0.950	MM
4 190507K1_5	2.00	0.79	NO	26.34	1.001	1.19e4	6.91e5	1.85	-7.3	0.857	MM
5 19050 7K1_6	40.0	0.78	NO	26.36	1.001	2.26e5	6.01e5	40.7	1.8	0.941	bb
6 190507K1_7	300	0.78	NO	26.36	1.001	2.60e6	8.87e5	316	5.4	0.975	bb

Compound name: 1,2,3,7,8-PeCDD

Response Factor: 0.904644

RRF SD: 0.0649505, Relative SD: 7.17968

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y ;	RT-	RRT.	Resp:	IS Resp	Conc.	; %Dev ;	RRF:	X = dropped
1 19050 7K1_2	1.25	0.67	NO	31.14	1.001	4.13e3	3.79e5	1.20	-3.7	0.871	MM
2 19050 7K1_3	50.0	0.63	NO	31.14	1.001	1.80e5	4.47e5	44.5	-11.0	0.806	MM
3 19050 7K1_4	2.50	0.57	NO	31.14	1.001	1.07e4	4.65e5	2.54	1.6	0.919	bb
4 19050 7K1_5	10.0	0.66	NO	31.14	1.001	4.19e4	4.73e5	9.78	-2.2	0.885	ММ
5 19050 7K1_6	200	0.61	NO	31.14	1.001	8.32e5	4.25e5	216	8.1	0.978	bb
6 19050 7K1_7	1500	0.62	NO	31.14	1.001	1.00e7	6.89e5	1610	7.1	0.969	MM

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Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 1,2,3,4,7,8-HxCDD

Response Factor: 1.06909

RRF SD: 0.071776, Relative SD: 6.71372

Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y	RT-	RRT-	Resp;	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
190507K1_2	1.25	1.38	NO	34.42	1.001	3.85e3	3.03e5	1.19	-4.8	1.02	bd
2 190507K1_3	50.0	1.28	NO	34.42	1.000	1.76e5	3.36e5	49.0	-2.0	1.05	bd
3 190507K1_4	2.50	1.25	NO	34.41	1.000	8.65e3	3.49e5	2.32	-7.4	0.990	bd
4 190507K1_5	10.0	1.24	NO	34.41	1.000	3.88e4	3.69e5	9.82	-1.8	1.05	MM
5 190507K1_6	200	1.25	NO	34.41	1.000	7.36e5	3.27e5	210	5.2	1.13	bd
6 190507K1_7	1500	1.25	NO	34.42	1.001	9.53e6	5.37e5	1660	10.7	1.18	bd

Compound name: 1,2,3,6,7,8-HxCDD

Response Factor: 0.967479

RRF SD: 0.0402916, Relative SD: 4.16459

Response type: Internal Std (Ref 21), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA	n/y :	RT.	RRT-	Resp:	IS Resp :	Conc,	: %Dev ;	RRF;	K = dropped
1 190507K1_2	1.25	1.40	NO	34.53	1.001	4.41e3	3.71e5	1.23	-1.6	0.952	MM
2 ;190507K1_3	50.0	1.26	NO	34.53	1.000	1.92e5	4.10e5	48.5	-3.0	0.938	db
3 190507K1_4	2.50	1.17	NO	34.53	1.001	9.34e3	4.07e5	2.37	- 5.1	0.918	MM
4 190507K1_5	10.0	1.22	NO	34.52	1.000	4.16e4	4.30e5	9.99	-0.1	0.967	db
5 19050 7K1_6	200	1.25	NO	34.52	1.000	7.88e5	3.86e5	211	5.5	1.02	db
6 19050 7K1_7	1500	1.25	NO	34.52	1.000	1.02e7	6.73e5	1560	4.3	1.01	d b

Compound name: 1,2,3,7,8,9-HxCDD

Response Factor: 0.977795

RRF SD: 0.0369, Relative SD: 3.7738

Response type: Internal Std (Ref 22), Area * (IS Conc. / IS Area)

Curve type: RF

[Name	Std. Conc	. RA	n/y	; RT.	RRT.	Resp:	IS Resp	Conc	%Dev :	RRF;	X = dropped
١	1 190507K1_2	1.25	1.09	NO	34.81	1.000	3.66e3	2.90e5	1.29	3.2	1.01	ММ
١	2 190507K1_3	5 0.0	1.35	NO	34.81	1.000	1.63e5	3.44e5	48.4	-3.2	0.947	bb

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Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\190507K1\190507K1-CRV.qid

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 1,2,3,7,8,9-HxCDD

Name	Std. Conc	; RA	n/y	RT-	RRT.	Resp:	IS Resp	Conc.	%Dev	RRF:	K = dropped
3 190507K1_4	2.50	1.22	NO	34.80	1.000	8.28e3	3.44e5	2.46	-1.4	0.964	MM
4 19050 7K1_5	10.0	1.22	NO	34.80	1.000	3.65e4	3.93e5	9.51	-4 .9	0.929	bb
5 19050 7K1_6	200	1.22	NO	34.80	1.000	6.68e5	3.27e5	209	4.6	1.02	ММ
6 19050 7K1_7	1500	1.20	NO	34.81	1.000	8.68e6	5.82e5	1530	1.8	0.995	MM

Compound name: 1,2,3,4,6,7,8-HpCDD

Response Factor: 1.03751

RRF SD: 0.0369608, Relative SD: 3.56246

Response type: Internal Std (Ref 23), Area * (IS Conc. / IS Area)

Curve type: RF

; Name	Std. Conc	; RA -	n/y :	RT-	RRT.	Resp:	IS Resp	Conc.	; %Dev	: RRF: X	= dropped
1 190507K1_2	1.25	0.97	NO	38.32	1.001	3.20e3	2.52e5	1.23	-1.9	1.02	ММ
2 190507K1_3	50.0	1.03	NO	38.32	1.000	1.42e5	2.76e5	49.5	- 0.9	1.03	bb
3 :190507K1_4	2.50	1.16	NO	38.31	1.000	7.08e3	2.70e5	2.53	1.0	1.05	bb
4 190507K1_5	10.0	1.05	NO	38.31	1.000	2.98e4	3.04e5	9.46	-5.4	0.981	мм
5 190507K1_6	200	1.03	NO	38.31	1.000	5.83e5	2.74e5	205	2.5	1.06	MM
6 190507K1_7	1500	1.05	NO	38.31	1.000	7.58e6	4.65e5	1570	4.8	1.09	bb

Compound name: OCDD Response Factor: 0.971773

RRF SD: 0.0504127, Relative SD: 5.1877

Response type: Internal Std (Ref 24), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	; RT-	RRT-	Resp:	IS Resp	Conc.	: %Dev :	RRF:	X = dropped
190507K1_2	2.50	0.90	NO	41.48	1.001	5.20e3	4.62e5	2.32	-7.4	0.900	ММ
2 190507K1_3	100	0.90	NO	41.48	1.000	2.35e5	4.72e5	103	2.6	0.997	ММ
3 , 190507K1_4	5.00	0.95	NO	41.46	1.000	1.13e4	4.66e5	4.97	- 0.5	0.966	ММ
4 190507K1_5	⁴ 20.0	0.89	NO	41.47	1.000	4.71e4	5.06e5	19.2	-4.2	0.931	мм
5 190507K1_6	400	0.90	NO	41.47	1.000	9.61e5	4.83e5	410	2.4	0.995	MM
6 190507K1_7	3000	0.90	NO	41.48	1.000	1.35e7	8.65e5	3210	7.0	1.04	MM

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Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 2,3,7,8-TCDF Response Factor: 0.937613

RRF SD: 0.0427885, Relative SD: 4.56356

Response type: Internal Std (Ref 25), Area * (IS Conc. / IS Area)

Curve type: RF

Dataset:

(A. V.)	Name	; Std. Conc ;	RA .	n/y	RT-	RRT-	Resp	IS Resp	Conc.	: %Dev :	RRF;	X = dropped
1	; 190507K1_2	0.250	0.81	NO	25.50	1.001	1.85e3	8.07e5	0.245	-2.1	0.918	мм
2	; 190507K1_3	10.0	0.78	NO	25.51	1.001	7.75e4	8.61e5	9.59	-4.1	0.899	bb
3	, 190507K1_4	0.500	0.80	NO	25.50	1.001	4.06e3	8.97e5	0.482	-3.6	0.904	MM
4	190507K1_5	2.00	0.77	NO	25.50	1.001	1.71e4	9.28e5	1.97	-1.7	0.922	bb
5	-190507K1_6	40.0	0.77	NO	25.50	1.001	3.18e5	8.09e5	42.0	5.0	0.984	bb
6	190507K1_7	300	0.78	NO	25.51	1.001	3.44e6	1.15e6	320	6.5	0.999	bb

Compound name: 1,2,3,7,8-PeCDF

Response Factor: 0.976196

RRF SD: 0.0578773, Relative SD: 5.92886

Response type: Internal Std (Ref 26), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	RT-	RRT.	Resp:	IS Resp	; Conc.	: %Dev :	RRF;	X = dropped
1 190507K1_2	1.25	1.71	NO	29.89	1.000	6.85e3	6.20e5	1.13	-9.3	0.885	ММ
2 19050 7K1_3	50.0	1.58	NO	29.91	1.001	3.23e5	6.71e5	49.3	-1.4	0.962	bb
3 , 19050 7K1_4	2.50	1.55	NO	29.89	1.000	1.67e4	6.91e5	2.48	-0.8	0.968	ММ
4 190507K1_5	10.0	1.65	NO	29.89	1.000	6.93e4	7.19e5	9.86	-1.4	0.963	bd
5 190507K1_6	200	1.63	NO	29.89	1.000	1.34e6	6.45e5	213	6.7	1.04	bd
6 19050 7K1_7	1500	1.57	NO	29.91	1.001	1.58e7	1.02e6	1590	6.3	1.04	bb

Compound name: 2,3,4,7,8-PeCDF

Response Factor: 1.00488

RRF SD: 0.0625517, Relative SD: 6.22482

Response type: Internal Std (Ref 27), Area * (IS Conc. / IS Area)

Curve type: RF

: Name	Std. Conc	RA .	n/y	: RT.	RRT.	Resp:	IS Resp	Conc.	: %Dev	RRF:)	C = dropped
1 190507K1_2	1.25	1.69	NO	30.86	1.001	6.68e3	5.77e5	1.15	-7 .8	0.926	MM
2 190507K1_3	50.0	1.58	NO	30.86	1.001	3.17e5	6.3 5 e5	49.7	-0.5	1.00	bb

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Compound name: 2,3,4,7,8-PeCDF

Name	Std. Conc	RA .	n/y	RT.	RRT	Resp:	IS Resp	Conc.	: %Dev	RRF: X	(= dropped
3 190507K1_4	2.50	1.59	NO	30.86	1.001	1.67e4	6.65e5	2.50	0.0	1.00	bb
4 19050 7K1_5	10.0	1.58	NO	30.86	1.001	6.82e4	7.20e5	9.42	-5.8	0.947	bb
5 190507K1_6	200	1.58	NO	30.86	1.001	1.34e6	6.22e5	214	6.9	1.07	bb
6 19050 7K1_7	1500	1.58	NO	30.86	1.001	1.61e7	9.94e5	1610	7.2	1.08	bb

Compound name: 1,2,3,4,7,8-HxCDF

Response Factor: 1.24344

RRF SD: 0.0556273, Relative SD: 4.47366

Response type: Internal Std (Ref 28), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y :	RT-	RRT.	Resp;	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
1 19050 7K1_2	1.25	1.34	NO	33.54	1.000	6.00e3	4.01e5	1.20	-3.7	1.20	bd
2 19050 7K1_3	50.0	1.25	NO	33.56	1.001	2.69e5	4.41e5	49.1	-1.8	1.22	bd
3 :190507K1_4	2.50	1.24	NO	33.54	1.001	1.35e4	4.57e5	2.38	-4 .9	1.18	bd
4 19050 7K1_5	10.0	1.26	NO	33.54	1.001	5.97e4	4.82e5	9.96	-0.4	1.24	bd
5 19050 7K1_6	200	1.24	NO	33.54	1.000	1.10e6	4.20e5	211	5.5	1.31	bd
6 19050 7K1_7	1500	1.24	NO	33.54	1.000	1.38e7	7.03e5	1580	5.4	1.31	bd

Compound name: 1,2,3,6,7,8-HxCDF

Response Factor: 1.09501

RRF SD: 0.0731388, Relative SD: 6.67929

Response type: Internal Std (Ref 29), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y	: RT.	RRT -	Resp;	IS Resp	Conc.	: %Dev :	RRF:	(= dropped
1 190507K1_2	1.25	1.35	NO	33.67	1.000	6.12e3	4.90e5	1.14	-8.8	0.999	MM
2 190507K1_3	50.0	1.26	NO	33.68	1.000	3.02e5	5.46e5	50.5	1.0	1.11	MM
3 190507K1_4	2.50	1.14	NO	33.68	1.001	1.42e4	5.55e5	2.33	-6.7	1.02	ММ
4 190507K1_5	10.0	1.22	' NO	33.67	1.000	6.32e4	5.73e5	10.1	0.7	1.10	ММ
5 190507K1_6	200	1.23	NO	33.67	1.000	1.18e6	5.09e5	211	5.5	1.16	db
6 190507K1_7	1500	1.24	NO	33.68	1.000	1.52e7	8.53e5	1620	8.3	1.19	db

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Compound name: 2,3,4,6,7,8-HxCDF

Response Factor: 1.1806

RRF SD: 0.0976101, Relative SD: 8.26786

Response type: Internal Std (Ref 30), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	; RA -	n/y :	RT.	RRT.	Resp;	IS Resp	Conc.	%Dev :	RRF;	X = dropped
1 190507K1_2	1.25	1.22	NO	34.26	1.000	5.74e3	4.48e5	1.09	-13.1	1.03	MM
2 190507K1_3	50.0	1.26	NO	34.27	1.001	2.75e5	4.57e5	51.0	2.0	1.20	bb
3 190507K1_4	2.50	1.27	NO	34.26	1.000	1.40e4	4.86e5	2.43	-2 .7	1.15	bd
4 190507K1_5	10.0	1.22	NO	34.26	1.001	5.76e4	5.05e5	9.67	-3.3	1.14	MM
5 190507K1_6	200	1.25	NO	34.26	1.001	1.12e6	4.40e5	216	8.1	1.28	bb
6 190507K1_7	1500	1.24	NO	34.26	1.000	1.40e7	7.27e5	1640	9.1	1.29	MM

Compound name: 1,2,3,7,8,9-HxCDF

Response Factor: 1.07281

RRF SD: 0.121558, Relative SD: 11.3308

Response type: Internal Std (Ref 31), Area * (IS Conc. / IS Area)

Curve type: RF

	Name	Std. Conc	RA .	n/y :	RT.	RRT	Resp	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
1	; 190507K1_2	1.25	1.19	NO	35.17	1.000	3.73e3	3.43e5	1.01	-19.1	0.868	MM
2	, 190507K1_3	50.0	1.25	NO	35.19	1.000	2.00e5	3.80e5	49.1	-1.8	1.05	MM
3	, 190507K1_4	2.50	1.26	NO	35.18	1.000	1.02e4	3.91e5	2.42	-3.1	1.04	MM
4 (1)	190507K1_5	10.0	1.25	NO	35.18	1.000	4.51e4	4.16e5	10.1	1.1	1.08	MM
5	190507K1_6	200	1.25	NO	35.18	1.001	8.63e5	3.64e5	221	10.4	1.18	MM
6	190507K1_7	1500	1.24	NO	35.19	1.001	1.15e7	6.37e5	1690	12.5	1.21	bb

Compound name: 1,2,3,4,6,7,8-HpCDF

Response Factor: 1.12998

RRF SD: 0.056055, Relative SD: 4.96072

Response type: Internal Std (Ref 32), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	. RA	n/y	: RT	RRT.	Resp;	IS Resp	: Conc.	: %Dev	: RRF:	X = dropped
190507K1_2	1.25	1.19	NO	36.92	1.001	4.83e3	3.64e5	1.18	-5.9	1.06	ММ
2 190507K1_3	50.0	1.05	NO	36.94	1.001	2.21e5	3.98e5	49.3	-1.5	1.11	bb

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Compound name: 1,2,3,4,6,7,8-HpCDF

Name Name	Std. Conc :	RA -	n/y	RT.	RRT-	Resp:	IS Resp :	Conc.	; %Dev ;	RRF; X	= dropped
3 19050 7K1_4	2.50	1.03	NO	36.91	1.000	1.12e4	4.08e5	2.44	-2.4	1.10	ММ
4 190507K1_5	10.0	1.01	NO	36.91	1.000	4.63e4	4.18e5	9.80	-2.0	1.11	bb
5 190507K1_6	200	1.03	NO	36.91	1.000	8.93e5	3.80e5	208	4.0	1.18	MM
6 190507K1_7	1500	1.04	NO	36.92	1.000	1.14e7	6.22e5	1620	7.7	1.22	bb

Compound name: 1,2,3,4,7,8,9-HpCDF

Response Factor: 1.26094

RRF SD: 0.121952, Relative SD: 9.67152

Response type: Internal Std (Ref 33), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y :	RT.	RRT.	Resp*	IS Resp ;	Conc.	: %Dev :	RRF;	X = dropped
1 190507K1_2	1.25	1.07	NO	38.86	1.000	4.31e3	2.51e5	1.36	9.0	1.37	MM
2 19050 7K1_3	50.0	1.10	NO	38.87	1.000	1.69e5	2.88e5	46.4	-7.1	1.17	MM
3 190507K1_4	2.50	1.04	NO	38.86	1.000	8.36e3	2.91e5	2.28	- 9.0	1.15	MM
4 19050 7K1_5	10.0	1.04	NO	38.86	1.000	3.47e4	3.06e5	8.99	-10.1	1.13	MM
5 190507K1_6	200	1.06	NO	38.86	1.000	7.19e5	2.58e5	221	10.3	1.39	bb
6 190507K1_7	1500	1.03	NO	38.87	1.000	9.34e6	4.62e5	1600	6.9	1.35	bb

Compound name: OCDF Response Factor: 1.10253

RRF SD: 0.218115, Relative SD: 19.7831

Response type: Internal Std (Ref 34), Area * (IS Conc. / IS Area)

Curve type: RF

Name growing	Std. Conc :	RA -	n/y	: RT	RRT.	Resp:	IS Resp	Conc.	: %Dev :	RRF:	X = dropped
1 190507K1_2	2.50	0.91	NO	41.69	1.000	1.12e4	5.83e5	3.49	39.5	1.54	MM
2 190507K1_3	100	0.90	NO	41.71	1.000	3.03e5	6.08e5	90.4	-9.6	0.997	ММ
3 190507K1_4	5.00	0.89	NO	41.70	1.000	1.58e4	6.30e5	4.54	-9.2	1.00	MM
4 190507K1_5	20.0 '	0.93	NO	41.69	1.000	6.07e4	6.40e5	17.2	-13.9	0.950	, WW
5 19050 7K1_6	400	0.90	NO	41.70	1.000	1.21e6	5.80e5	378	-5.5	1.04	MM
6 · 190507K1_7	3000	0.91	NO	41.71	1.000	1.71e7	1.05e6	2960	-1.3	1.09	MM

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Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Last Altered: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time Printed:

Compound name: 13C-2,3,7,8-TCDD

Response Factor: 1.04889

RRF SD: 0.0285302, Relative SD: 2.72003

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

Nar	me :	Std. Conc	RA .	n/y ;	RT.	RRT-	Resp;	IS Resp ;	Conc.	%Dev	RRF;	X = dropped
1 190)507K1_2	100	0.78	NO	26.34	1.026	5.80e5	5.62e5	98.5	-1.5	1.03	bb
2 190	0507K1_3	100	0.80	NO	26.34	1.026	6.19e5	6.00e5	98.4	-1.6	1.03	bb
3	0507K1_4	100	0.78	NO	26.33	1.026	6.64e5	6.32e5	100	0.1	1.05	bb
4 190	0507K1_5	100	0.78	NO	26.33	1.025	6.91e5	6.60e5	99.9	-0.1	1.05	bb
5 190)507K1_6	100	0.79	NO	26.34	1.026	6.01e5	5.86e5	97.8	-2.2	1.03	bb
6 -190	0507K1_7	100	0.78	NO	26.34	1.026	8.87e5	8.04e5	105	5.3	1.10	bb

Compound name: 13C-1,2,3,7,8-PeCDD

Response Factor: 0.7429

RRF SD: 0.0610463, Relative SD: 8.21729

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	: RA :	n/y :	RT.	RRT.	Resp;	IS Resp	Conc.	: %Dev :	RRF:	X = dropped
1 190507K1_2	100	0.63	NO	31.12	1.212	3.79e5	5.62e5	90.9	- 9.1	0.675	MM
2 ,190507K1_3	100	0.61	NO	31.12	1.212	4.47e5	6.00e5	100	0.4	0.746	bb
3 . 190507K1_4	100	0.64	NO	31.12	1.212	4.65e5	6.32e5	99.1	-0.9	0.736	bb
4 190507K1_5	100	0.59	NO	31.12	1.212	4.73e5	6.60e5	96.5	-3.5	0.717	MM
5 190507K1_6	100	0.60	NO	31.12	1.212	4.25e5	5.86e5	97.8	-2.2	0.726	MM
6 1 190507K1_7	100	0.63	NO	31.12	1.212	6.89e5	8.04e5	115	15.4	0.857	MM

Compound name: 13C-1,2,3,4,7,8-HxCDD

Response Factor: 0.646258

RRF SD: 0.0314471, Relative SD: 4.86603

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	; RA	n/y	RT.	RRT.	Resp;	IS Resp	Conc.	: %Dev	RRF; X	= dropped
1 19050 7K1_2	100	1.34	NO	34.40	1.014	3.03e5	4.98e5	94.1	-5.9	0.608	bd
2 190507K1_3	100	1.24	NO	34.41	1.014	3.36e5	5.10e5	102	1.8	0.658	bd

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Compound name: 13C-1,2,3,4,7,8-HxCDD

Name	Std. Conc	; RA	n/y :	RT.	RRT-	Resp:	IS Resp	Conc.	%Dev	RRF;	K = dropped
3 190507K1_4	100	1.31	NO	34.40	1.014	3.49e5	5.59e5	96.7	-3.3	0.625	bd
4 19050 7K1_5	100	1.32	NO	34.40	1.014	3.69e5	5.73e5	99.7	-0.3	0.644	MM
5 190507K1_6	100	1.26	NO	34.40	1.014	3.27e5	5.09e5	99.5	-0.5	0.643	bd
6 19050 7K1_7	100	1.27	NO	34.40	1.014	5.37e5	7.67e5	108	8.3	0.700	bd

Compound name: 13C-1,2,3,6,7,8-HxCDD

Response Factor: 0.776669

RRF SD: 0.0552613, Relative SD: 7.11516

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	; RA	n/y	RT.	RRT.	Resp:	IS Resp ;	Conc.	; %Dev ;	RRF:	X = dropped
100507K1_2	100	1.28	NO	34.51	1.017	3.71e5	4.98e5	95.9	-4.1	0.745	MM
2 19050 7K1_3	100	1.25	NO	34.52	1.017	4.10e5	5.10e5	103	3.3	0.802	db
3 :190507K1_4	100	1.28	NO	34.51	1.017	4.07e5	5.59e5	93.6	-6.4	0.727	MM
4 19050 7K1_5	100	1.26	NO	34.51	1.017	4.30e5	5.73e5	96.7	-3.3	0.751	db
5 19050 7K1_6	100	1.28	NO	34.51	1.017	3.86e5	5.09e5	97.5	-2.5	0.758	db
6 19050 7K1_7	100	1.27	NO	34.51	1.017	6.73e5	7.67e5	113	12.9	0.877	db

Compound name: 13C-1,2,3,7,8,9-HxCDD

Response Factor: 0.659499

RRF SD: 0.0613845, Relative SD: 9.30774

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y :	RT.	RRT-	Resp;	IS Resp :	Conc.	: %Dev :	RRF	X = dropped
1 190507K1_2	100	1.25	NO	34.80	1.025	2.90e5	4.98e5	88.4	-11.6	0.583	MM
2 19050 7K1_3	100	1.18	NO	34.80	1.025	3.44e5	5.10e5	102	2.2	0.674	MM
3 190507K1_4	100	1.26	NO	34.78	1.025	3.44e5	5.59e5	93.2	-6.8	0.615	MM
190507K1_5	100	1.25	NO '	34.78	1.025	3.93e5	5.73e5	104	3.9	0.685	bb
5 19050 7K1_6	100	1.32	NO	34.78	1.025	3.27e5	5.09e5	97.3	-2.7	0.642	MM
6 190507K1_7	100	1.25	NO	34.80	1.026	5.82e5	7.67e5	115	15.0	0.758	bb

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Compound name: 13C-1,2,3,4,6,7,8-HpCDD

Response Factor: 0.534168

RRF SD: 0.0414632, Relative SD: 7.76221

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y	RT-	RRT-	Resp:	IS Resp	Conc.	; %Dev ;	RRF: X	= dropped
1 19050 7K1_2	100	1.01	NO	38.30	1.128	2.52e5	4.98e5	94.6	- 5.4	0.506	MM
2 , 19050 7K1_3	100	1.05	NO	38.31	1.129	2.76e5	5.10e5	101	1.3	0.541	MM
3 19050 7K1_4	100	1.06	NO	38.30	1.129	2.70e5	5.59e5	90.5	- 9.5	0.484	MM
4 19050 7K1_5	100	1.09	NO	38.30	1.129	3.04e5	5.73e5	99.3	-0.7	0.530	MM
5 190507K1_6	100	1.06	NO	38.30	1.129	2.74e5	5.09e5	101	8.0	0.539	MM
6 190507K1_7	100	1.07	NO	38.31	1.129	4.65e5	7.67e5	113	13.4	0.606	bb

Compound name: 13C-OCDD Response Factor: 0.470365

RRF SD: 0.0499896, Relative SD: 10.6278

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	RT.	RRT.	Resp:	IS Resp	Conc.	: %Dev :	RRF:	X = dropped
1 190507K1_2	200	0.91	NO	41.46	1.221	4.62e5	4.98e5	198	-1.2	0.465	MM
2 190507K1_3	200	0.89	NO	41.47	1.222	4.72e5	5.10e5	196	-1.8	0.462	ММ
3 - 190507K1_4	200	0.89	NO	41.46	1.222	4.66e5	5.59e5	177	-11.4	0.417	MM
4 190507K1_5	200	0.89	NO	41.46	1.222	5.06e5	5.73e5	188	-6.2	0.441	MM
5 19050 7K1_6	200	0.91	NO	41.46	1.222	4.83e5	5.09e5	202	8.0	0.474	ММ
6 19050 7K1_7	200	0.90	NO	41.47	1.222	8.65e5	7.67e5	240	19.8	0.563	MM

Compound name: 13C-2,3,7,8-TCDF

Response Factor: 0.9775

RRF SD: 0.00806645, Relative SD: 0.825212

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

	Std. Conc	: RA	n/y	; RT	RRT.	Resp:	IS Resp	Conc.	: %Dev :	RRF;	X = dropped
1 190507K1_2	100	0.79	NO	25.48	0.992	8.07e5	8.33e5	99.2	-0.8	0.970	bb
2 190507K1_3	100	0.76	NO	25.48	0.992	8.61e5	8.73e5	101	0.9	0.987	bb

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Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-2,3,7,8-TCDF

Name	: Std. Conc	RA .	n/y	RT-	RRT.	Resp:	IS Resp	Conc.	%Dev	RRF;	X = dropped
3 190507K1_4	100	0.78	NO	25.48	0.993	8.97e5	9.16e5	100	0.2	0.979	bb
4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100	0.78	NO	25.48	0.992	9.28e5	9.50e5	99.9	-0.1	0.977	bb
5 19050 7K1_6	100	0.77	NO	25.48	0.992	8.09e5	8.36e5	98.9	-1.1	0.967	bb
6 19050 7K1_7	100	0.79	NO	25.48	0.992	1.15e6	1.17e6	101	0.8	0.986	bb

Compound name: 13C-1,2,3,7,8-PeCDF

Response Factor: 0.777829

RRF SD: 0.0468157, Relative SD: 6.01876

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	. RT.	RRT-	Resp:	IS Resp ;	Conc.	: %Dev	RRF:	X = dropped
1 190507K1_2	100	1.64	NO	29.89	1.164	6.20e5	8.33e5	95.7	-4.3	0.744	bd
2 190507K1_3	100	1.52	NO	29.89	1.164	6.71e5	8.73e5	98.8	-1.2	0.769	bb
3 190507K1_4	100	1.58	NO	29.89	1.165	6.91e5	9.16e5	97.0	-3.0	0.754	bb
4 190507K1_5	100	1.58	NO	29.89	1.164	7.19e5	9.50e5	97.4	-2.6	0.758	bb
5 19050 7K1_6	100	1.57	NO	29.89	1.164	6.45e5	8.36e5	99.1	-0.9	0.771	bb
6 190507K1_7	100	1.58	NO	29.89	1.164	1.02e6	1.17e6	112	12.0	0.871	bb

Compound name: 13C-2,3,4,7,8-PeCDF

Response Factor: 0.749922

RRF SD: 0.0548586, Relative SD: 7.31524

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA .	n/y	; RT	RRT.	Resp	IS Resp	: Conc.	: %Dev :	RRF:	X = dropped
1 19050 7K1_2	100	1.56	NO	30.84	1.201	5.77e5	8.33e5	92.4	-7.6	0.693	bb
2 190507K1_3	100	1.60	NO	30.84	1.201	6.35e5	8.73e5	97.0	-3.0	0.727	bb
3 190507K1_4	100	1.61	NO	30.84	1.201	6.65e5	9.16e5	96.8	-3.2	0.726	bb
4 190507K1_5	100	1.58	NO	30.84	1.201	7.20e5	9.50e5	101	1.1	0.758	bb '
5 190507K1_6	100	1.58	NO	30.84	1.201	6.22e5	8.36e5	99.1	-0.9	0.743	bb
6 190507K1_7	100	1.59	NO	30.84	1.201	9.94e5	1.17e6	114	13.7	0.853	bb

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U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-1,2,3,4,7,8-HxCDF

Response Factor: 0.845154

RRF SD: 0.04026, Relative SD: 4.76363

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Dataset:

Name Manual Wall	Std. Conc	; RA	n/y	: RT	RRT-	Resp;	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
1 190507K1_2	100	0.52	NO	33.53	0.988	4.01e5	4.98e5	95.3	-4.7	0.806	bd
2 [190507K1_3	100	0.52	NO	33.53	0.988	4.41e5	5.10e5	102	2.3	0.864	bd
3 190507K1_4	100	0.51	NO	33.52	0.988	4.57e5	5.59e5	96.8	-3.2	0.818	bd
4 19050 7K1_5	100	0.52	NO	33.52	0.988	4.82e5	5.73e5	99.5	-0.5	0.841	bd
5 190507K1_6	100	0.52	NO	33.53	0.988	4.20e5	5.09e5	97.7	-2.3	0.826	bd
6 190507K1_7	100	0.53	NO	33.53	0.988	7.03e5	7.67e5	108	8.4	0.916	bd

Compound name: 13C-1,2,3,6,7,8-HxCDF

Response Factor: 1.02668

RRF SD: 0.0516295, Relative SD: 5.02879

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA -	n/y :	RT.	RRT.	Resp:	IS Resp	: Conc.	: %Dev :	RRF:	X = dropped
1 190507K1_2	100	0.53	NO	33.65	0.992	4.90e5	4.98e5	96.0	-4.0	0.986	db
2 190507K1_3	100	0.53	NO	33.67	0.992	5.46e5	5.10e5	104	4.2	1.07	db
3 190507K1_4	100	0.53	NO	33.65	0.992	5.55e5	5.59e5	96.7	-3.3	0.993	db
4 190507K1_5	100	0.54	NO	33.65	0.992	5.73e5	5.73e5	97.4	-2 .6	1.00	MM
5 190507K1_6	100	0.52	NO	33.65	0.992	5.09e5	5.09e5	97.4	-2.6	1.00	db
6 19050 7K1_7	100	0.52	NO	33.67	0.992	8.53e5	7.67e5	108	8.3	1.11	db

Compound name: 13C-2,3,4,6,7,8-HxCDF

Response Factor: 0.89286

RRF SD: 0.0303616, Relative SD: 3.40049

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

: Name	: Std. Conc	: RA	- n/y	RT-	RRT	Resp:	IS Resp	Conc.	; %Dev	RRF:	X = dropped
190507K1_2	100	0.50	NO	34.25	1.009	4.48e5	4.98e5	101	0.8	0.900	bb
2 19050 7K1_3	100	0.52	NO	34.25	1.009	4.57e5	5.10e5	100	0.2	0.895	bb

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-2,3,4,6,7,8-HxCDF

Mame Haller	Std. Conc	: RA -	n/y	RT.	RRT-	Resp:	IS Resp	Conc.	: %Dev :	RRF;)	K = dropped
3 11 19050 7K1_4	100	0.53	NO	34.25	1.009	4.86e5	5.59e5	97.2	-2.8	0.868	bb
4 19050 7K1_5	100	0.53	NO	34.24	1.009	5.05e5	5.73e5	98.7	-1.3	0.881	MM
5 19050 7K1_6	100	0.52	NO	34.24	1.009	4.40e5	5.09e5	96.9	-3.1	0.865	MM
6 19050 7K1_7	100	0.52	NO	34.25	1.009	7.27e5	7.67e5	106	6.2	0.948	bb

Compound name: 13C-1,2,3,7,8,9-HxCDF

Response Factor: 0.734263

RRF SD: 0.05054, Relative SD: 6.88309

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA	n/y ː	RT.	RRT-	Resp:	IS Resp	Conc.	; %Dev ;	RRF:	X = dropped
1 190507K1_2	100	0.53	NO	35.17	1.036	3.43e5	4.98e5	94.0	- 6.0	0.690	MM
2 ,190507K1_3	100	0.51	NO	35.18	1.036	3.80e5	5.10e5	101	1.5	0.745	bb
3 190507K1_4	100	0.52	NO	35.17	1.036	3.91e5	5.59e5	95.3	-4.7	0.700	MM
4 190507K1_5	100	0.53	NO	35.17	1.037	4.16e5	5.73e5	98.8	-1.2	0.725	MM
5 19050 7K1_6	100	0.54	NO	35.16	1.036	3.64e5	5.09e5	97.5	-2.5	0.716	MM
6 190507K1_7	100	0.52	NO	35.17	1.036	6.37e5	7.67e5	113	13.0	0.830	MM

Compound name: 13C-1,2,3,4,6,7,8-HpCDF

Response Factor: 0.75417

RRF SD: 0.0338797, Relative SD: 4.49232

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc :	RA -	n/y	RT.	RRT-	Resp;	IS Resp	Conc.	; %Dev ;	RRF; X	= dropped
1 190507K1_2	100	0.47	NO	36.90	1.087	3.64e5	4.98e5	96.9	-3.1	0.731	bb
2 190507K1_3	100	0.45	NO	36.91	1.088	3.98e5	5.10e5	103	3.3	0.779	bd
3 190507K1_4	100	0.43	NO	36.90	1.088	4.08e5	5.59e5	96.7	-3.3	0.729	bb
4 190507K1_5	100	0.47	NO	36.90	1.088	4.18e5	5.73e5	96.7	-3.3	0.729	bd
5 190507K1_6	100	0.45	NO	36.90	1.088	3.80e5	5.09e5	98.9	-1 .1	0.746	bd
6 190507K1_7	100	0.45	NO	36.91	1.088	6.22e5	7.67e5	108	7.6	0.811	bb

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Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-1,2,3,4,7,8,9-HpCDF

Response Factor: 0.53899

RRF SD: 0.0380601, Relative SD: 7.06137

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA	n/y ;	RT.	RRT-	Resp;	IS Resp	Conc.	; %Dev ;	RRF;	X = dropped
1 190507K1_2	100	0.45	NO	38.85	1.145	2.51e5	4.98e5	93.5	-6.5	0.504	ММ
2 , 190507K1_3	100	0.44	NO	38.86	1.145	2.88e5	5.10e5	105	4.8	0.565	bd
3 190507K1_4	100	0.42	NO	38.85	1.145	2.91e5	5.59e5	96.6	-3.4	0.521	bb
4 190507K1_5	100	0.43	NO	38.85	1.145	3.06e5	5.73e5	99.2	-0.8	0.535	bb
5 190507K1_6	100	0.43	NO	38.85	1.145	2.58e5	5.09e5	94.1	-5.9	0.507	MM
6 190507K1_7	100	0.46	NO	38.86	1.145	4.62e5	7.67e5	112	11.7	0.602	bd

Compound name: 13C-OCDF Response Factor: 0.592524

RRF SD: 0.046422, Relative SD: 7.83462

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

: Name	: Std. Conc	: RA	n/y	RT.	RRT.	Resp:	IS Resp	; Conc.	; %Dev ;	RRF;	X = dropped
190507K1_2	200	0.89	NO	41.69	1.228	5.83e5	4.98e5	198	-1.2	0.586	MM
2 19050 7K1_3	200	0.88	NO	41.70	1.229	6.08e5	5.10e5	201	0.6	0.596	MM
3	200	0.90	NO	41.69	1.229	6.30e5	5.59e5	190	-5.0	0.563	MM
4 19050 7K1_5	200	0.88	NO	41.68	1.228	6.40e5	5.73e5	188	-5.8	0.558	MM
5 19050 7K1_6	200	0.90	NO	41.69	1.229	5.80e5	5.09e5	192	-3.8	0.570	MM
6 19050 7K1_7	200	0.89	NO	41.70	1.229	1.05e6	7.67e5	230	15.2	0.683	MM

Compound name: 37Cl-2,3,7,8-TCDD

Response Factor: 1.06948

RRF SD: 0.0767834, Relative SD: 7.17951

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc. RA	n/y RT	RRT-	Resp:	IS Resp	: Conc.	: %Dev	RRF	X = dropped
1 19050 7K1_2	0.250	26.34	1.026	1.45e3	5.62e5	0.241	-3.6	1.03	bb
2 190507K1_3	10.0	26.36	1.026	6.16e4	6.00e5	9.60	-4.0	1.03	bb

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Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 37CI-2,3,7,8-TCDD

Name Name	Std. Conc : RA	n/y RT-	RRT.	Resp	IS Resp	Conc.	%Dev	RRF:	X = dropped
3 190507K1_4	0.500	26.36	1.027	3.13e3	6.32e5	0.463	-7.4	0.990	bb
4 190507K1_5	2.00	26.36	1.026	1.45e4	6.60e5	2.06	2.8	1.10	bd
5 0 190507K1_6	40.0	26.36	1.026	2.49e5	5.86e5	39.7	-0.6	1.06	bb
6 190507K1_7	200	26.36	1.026	1.94e6	8.04e5	226	12.9	1.21	bb

Compound name: 13C-1,2,3,4-TCDD

Response Factor: 1

RRF SD: 4.96507e-017, Relative SD: 4.96507e-015

Response type: Internal Std (Ref 36), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	; RA	n/y	: RT-	RRT.	Resp:	IS Resp ;	Conc.	: %Dev :	RRF;	X = dropped
1 19050 7K1_2	100	0.79	NO	25.68	1.000	5.62e5	5.62e5	100	0.0	1.00	bb
2 , 19050 7K1_3	100	0.79	NO	25.68	1.000	6.00e5	6.00e5	100	0.0	1.00	bb
3 190507K1_4	100	0.80	NO	25.67	1.000	6.32e5	6.32e5	100	0.0	1.00	bb
4 190507K1_5	100	0.80	NO	25.68	1.000	6.60e5	6.60e5	100	0.0	1.00	bb
5 190507K1_6	100	0.80	NO	25.68	1.000	5.86e5	5.86e5	100	-0.0	1.00	bb
6 19050 7K1_7	100	0.77	NO	25.68	1.000	8.04e5	8.04e5	100	0.0	1.00	bb

Compound name: 13C-1,2,3,4-TCDF

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 37), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA	n/y	: RT-	RRT-	Resp:	IS Resp ;	Conc.	: %Dev :	RRF;	(= dropped
1 190507K1_2	100	0.81	NO	24.05	1.000	8.33e5	8.33e5	100	0.0	1.00	bb
2 [190507K1_3	100	0.80	NO	24.05	1.000	8.73e5	8.73e5	100	0.0	1.00	bb
3 190507K1_4	100	0.79	NO	24.05	1.000	9.16e5	9.16e5	100	0.0	1.00	bb
4 190507K1_5	100	0.78	NO	24.03	1.000	9.50e5	'9.50e5	100	0.0	1.00	bb
5 190507K1_6	100	0.78	NO	24.05	1.000	8.36e5	8.36e5	100	0.0	1.00	bb
6 190507K1_7	100	0.79	NO	24.05	1.000	1.17e6	1.17e6	100	0.0	1.00	bb

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Dataset: U:\VG11.PRO\Results\190507K1\190507K1-CRV.qld

Last Altered: Wednesday, May 08, 2019 7:55:45 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:57:59 AM Pacific Daylight Time

Compound name: 13C-1,2,3,4,6,9-HxCDF

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 38), Area * (IS Conc. / IS Area)

Curve type: RF

Name	Std. Conc	RA :	n/y	; RT-	RRT.	Resp;	IS Resp	Conc.	; %Dev ;	RRF;	K = dropped
1 19050 7K1_2	100	0.53	NO	33.94	1.000	4.98e5	4.98e5	100	0.0	1.00	bd
2 19050 7K1_3	100	0.51	NO	33.94	1.000	5.10e5	5.10e5	100	0.0	1.00	MM
3 19050 7K1_4	100	0.52	NO	33.93	1.000	5.59e5	5.59e5	100	0.0	1.00	bb
4 19050 7K1_5	100	0.52	NO	33.93	1.000	5.73e5	5.73e5	100	0.0	1.00	bb
5 19050 7K1_6	100	0.52	NO	33.93	1.000	5.09e5	5.09e5	100	0.0	1.00	bb
6 190507K1_7	100	0.52	NO	33.93	1.000	7.67e5	7.67e5	100	0.0	1.00	bb

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MassLynx 4.1 SCN815

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Dataset:

Untitled

Last Altered: Printed:

Wednesday, May 08, 2019 8:06:43 AM Pacific Daylight Time Wednesday, May 08, 2019 8:06:44 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\CPSM-5-7-19.mdb 07 May 2019 13:29:19

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K1_3, Date: 07-May-2019, Time: 12:16:36, ID: ST190507K1_3 1613 CS3 19C2204, Description: 1613 CS3 19C2204

30000	#	Name	RT
1 Continue	1	1,3,6,8-TCDD (First)	22.43
2	2	1,2,8,9-TCDD (Last)	27.29
3	3	1,2,4,7,9-PeCDD (First)	29.01
4	4	1,2,3,8,9-PeCDD (Last)	31.50
5	5	1,2,4,6,7,9-HxCDD (First)	32.92
6	6	1,2,3,7,8,9-HxCDD (Last)	34.81
7	7	1,2,3,4,6,7,9-HpCDD (First)	37.32
8 ;	8	1,2,3,4,6,7,8-HpCDD (Last)	38.32
9	9	1,3,6,8-TCDF (First)	20.23
10 ;	10	1,2,8,9-TCDF (Last)	27.46
11 ;	11	1,3,4,6,8-PeCDF (First)	27.36
12 :	12	1,2,3,8,9-PeCDF (Last)	31.76
13	13	1,2,3,4,6,8-HxCDF (First)	32.39
14	14	1,2,3,7,8,9-HxCDF (Last)	35.19
15	15	1,2,3,4,6,7,8-HpCDF (First)	36.94
16	16	1,2,3,4,7,8,9-HpCDF (Last)	38.87

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Quantify Compound Summary Report Vista Analytical Laboratory VG-11 MassLynx 4.1 SCN815

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Dataset:

Untitled

Last Altered: Printed:

Wednesday, May 08, 2019 8:00:20 AM Pacific Daylight Time Wednesday, May 08, 2019 8:00:34 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Compound name: 2,3,7,8-TCDD

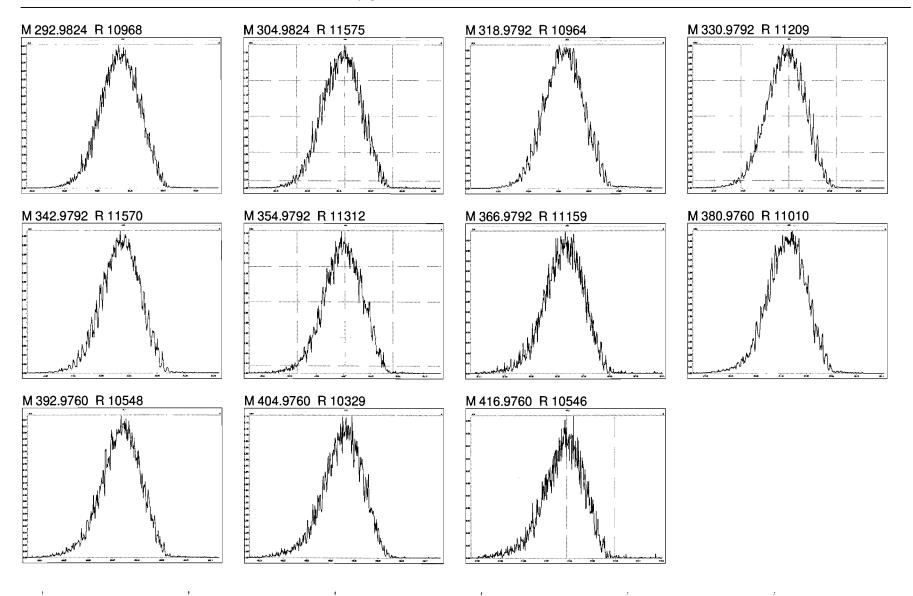
	;Name	:ID.se	: Acq Date	-Acq.Time
1	: 190507K1_1	ST190507K1_1 1613 CS3 18J1008	07-May-19	10:05:54
2	; 190507K1_2	ST190507K1_2 1613 CS0 19C2201	07-May-19	11:18:22
3	190507K1_3	ST190507K1_3 1613 CS3 19C2204	07-May-19	12:16:36
4	190507K1_4	ST190507K1_4 1613 CS1 19C2202	07-May-19	13:04:59
5	190507K1_5	ST190507K1_5 1613 CS2 19C2203	07-May-19	13:51:47
6	190507K1_6	ST190507K1_6 1613 CS4 19C2205	07-May-19	14:39:24
7	: 190507K1_7	ST190507K1_7 1613 CS5 19C2206	07-May-19	15:27:02
8	190507K1_8	SS190507K1_1 1613 SSS 19C2207	07-May-19	16:16:59
9		SOLVENT BLANK	07-May-19	17:12:35
10	190507K1_10	QC190507K1-1 1613 Method Blank 1	07-May-19	18:00:01
11	: 190507K2_1	ST190507K2_1 1613 CS3 18J1008	07-May-19	18:48:10

A) not used, used do get windows in new column 1/2 5-8-19

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File: Experiment: ocdd_db5.exp Reference: pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, May 07, 2019 11:13:04 Pacific Daylight Time



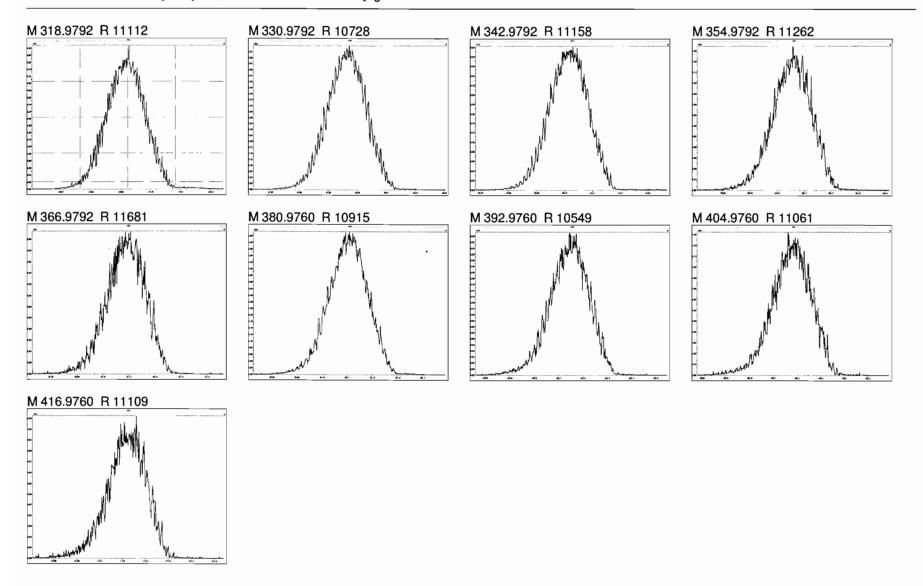
Work Order 1903741 Page 450 of 638

File:

Experiment: ocdd_db5.exp Reference: pfk.ref Function: 2 @ 200 (ppm)

Printed:

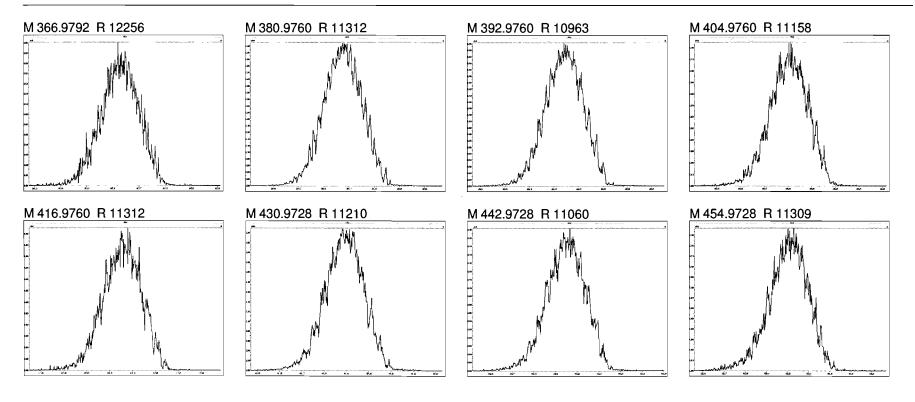
Tuesday, May 07, 2019 11:13:43 Pacific Daylight Time



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File: Experiment: ocdd_db5.exp Reference: pfk.ref Function: 3 @ 200 (ppm)

Printed: Tuesday, May 07, 2019 11:14:13 Pacific Daylight Time



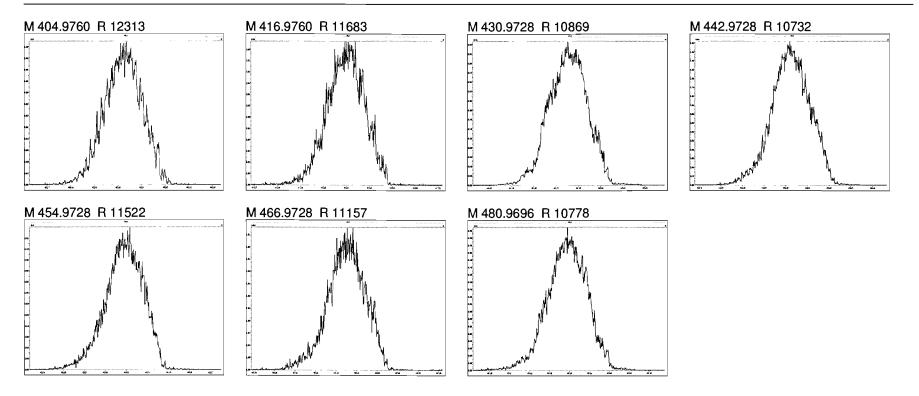
Work Order 1903741 Page 452 of 638

File:

Experiment: ocdd_db5.exp Reference: pfk.ref Function: 4 @ 200 (ppm)

Printed:

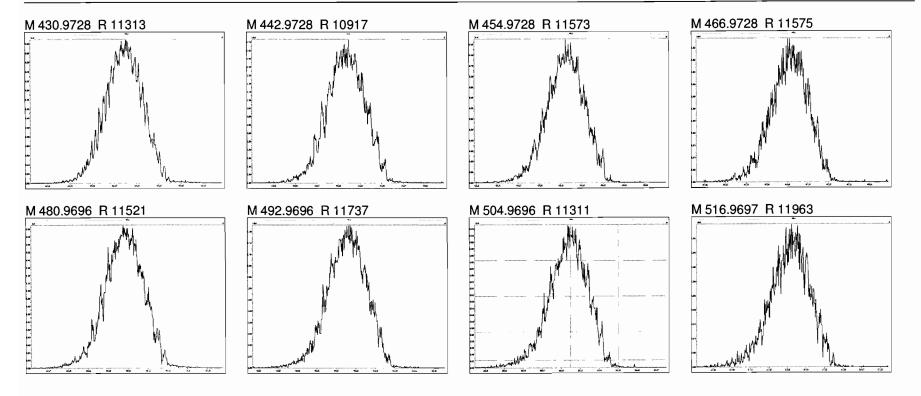
Tuesday, May 07, 2019 11:14:57 Pacific Daylight Time



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File: Experiment: ocdd_db5.exp Reference: pfk.ref Function: 5 @ 200 (ppm)

Printed: Tuesday, May 07, 2019 11:15:30 Pacific Daylight Time



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Quantify Sample Report

MassLynx 4.1 SCN815

Page 1 of 1

Vista Analytical Laboratory VG-11

Dataset:

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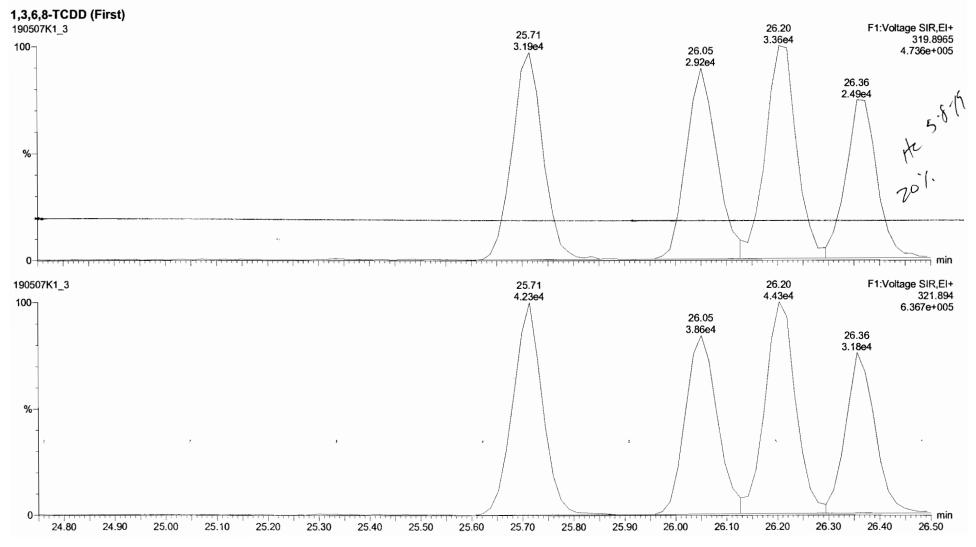
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Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K1_3, Date: 07-May-2019, Time: 12:16:36, ID: ST190507K1_3 1613 CS3 19C2204, Description: 1613 CS3 19C2204



Work Order 1903741

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Dataset:

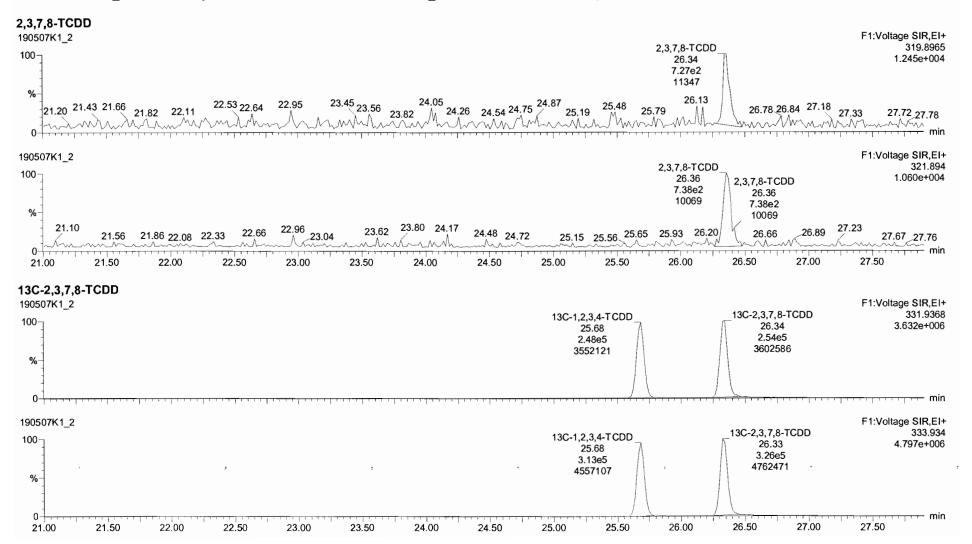
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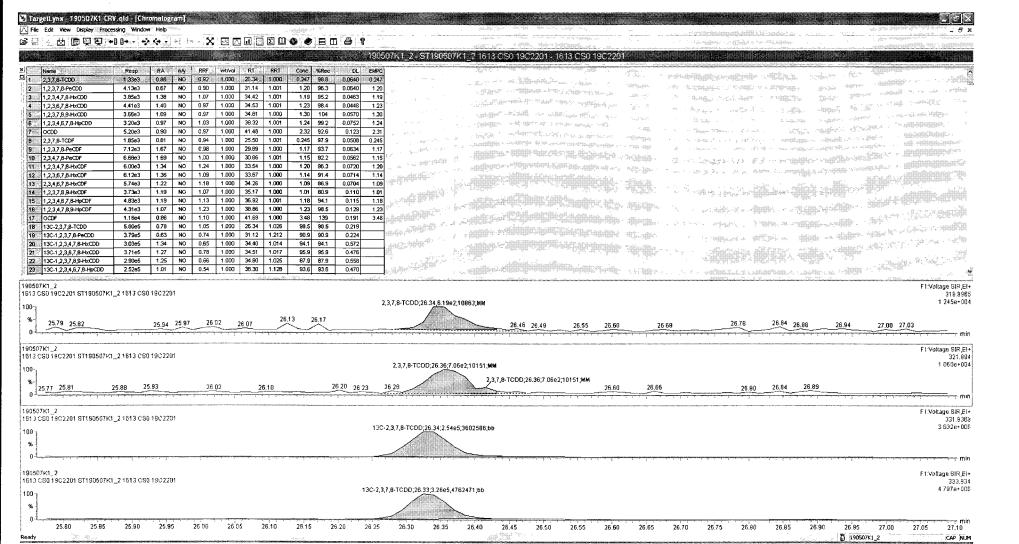
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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

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Name: 190507K1_2, Date: 07-May-2019, Time: 11:18:22, ID: ST190507K1_2 1613 CS0 19C2201, Description: 1613 CS0 19C2201





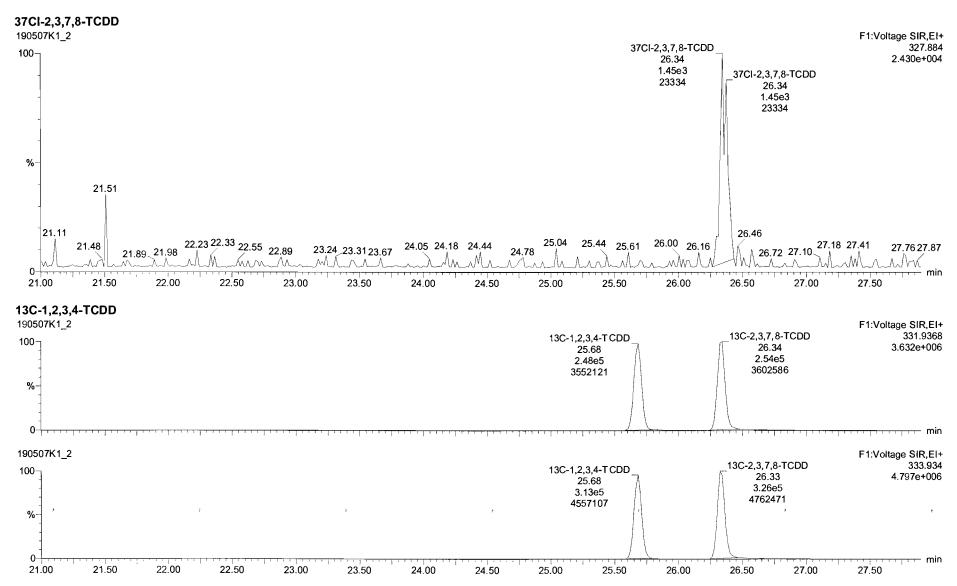
Work Order 1903741 Page 457 of 638

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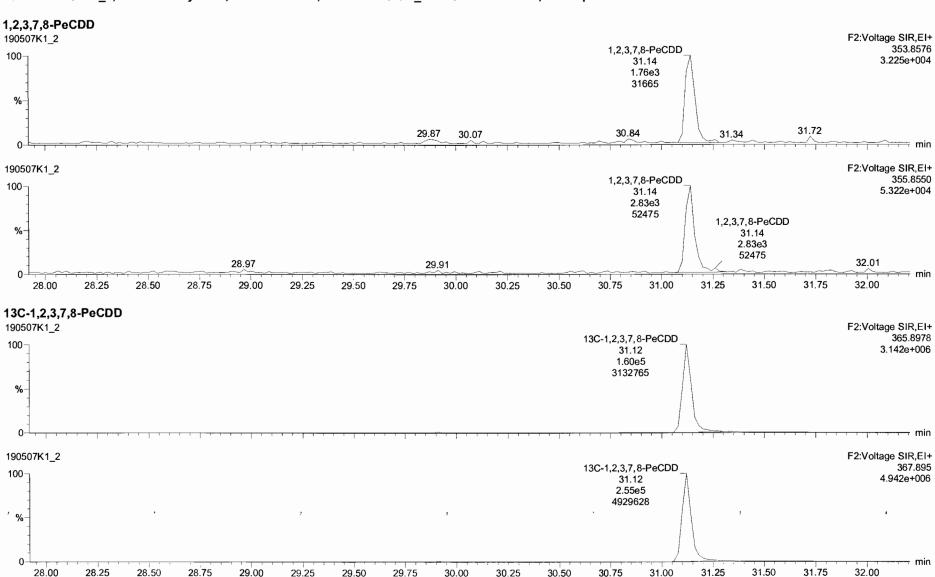


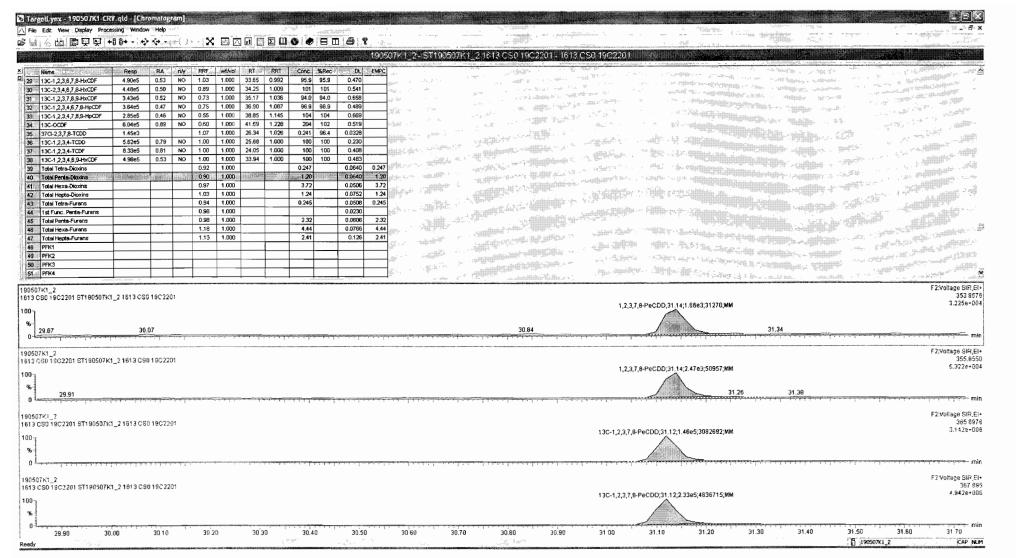
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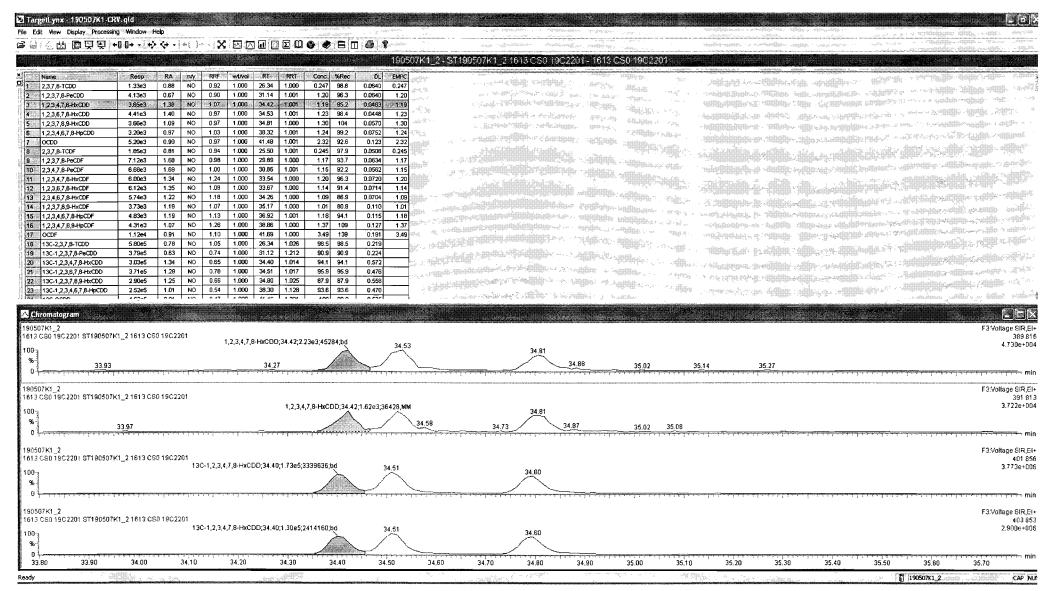
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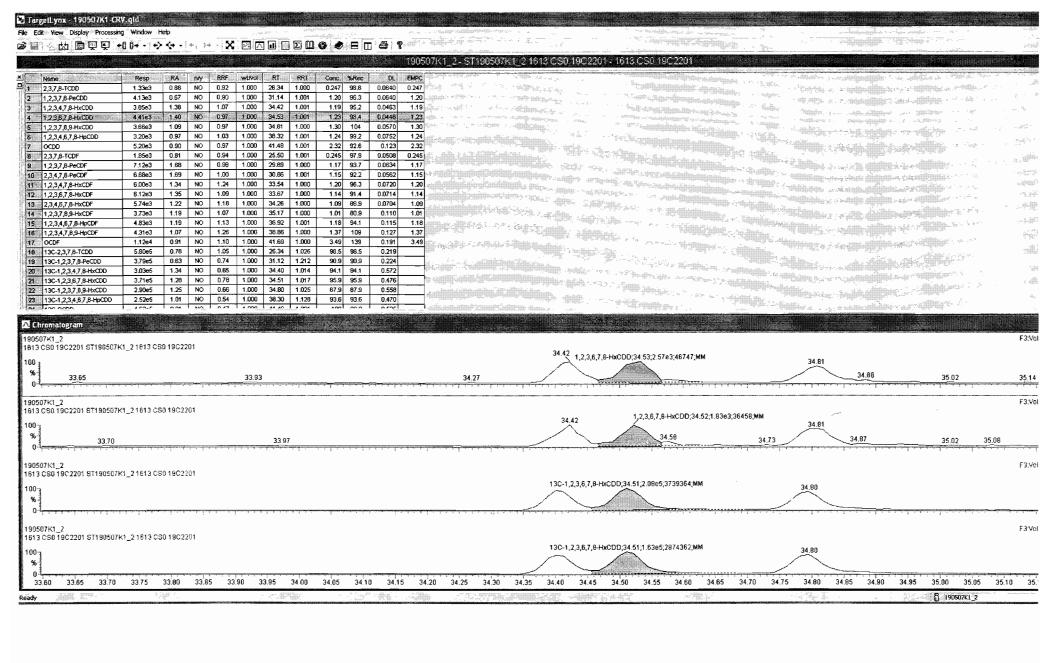


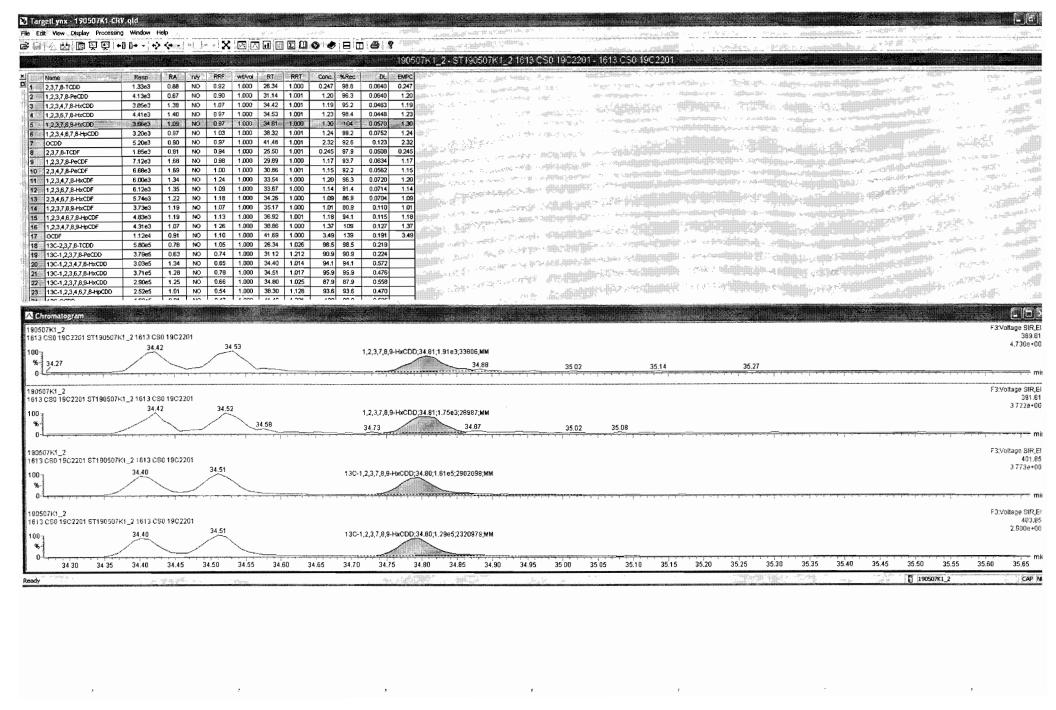


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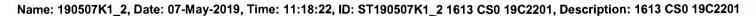


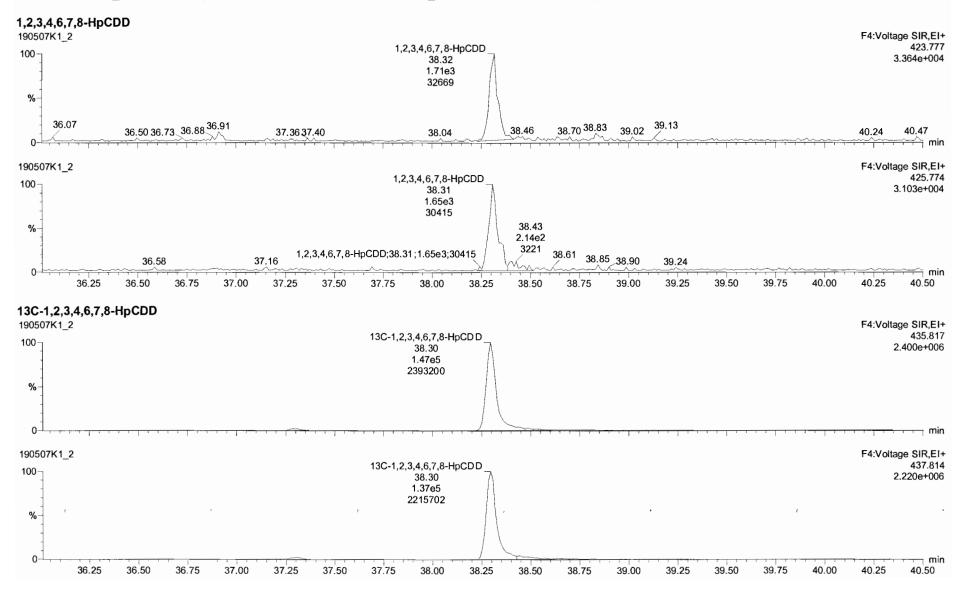
Work Order 1903741 Page 462 of 638

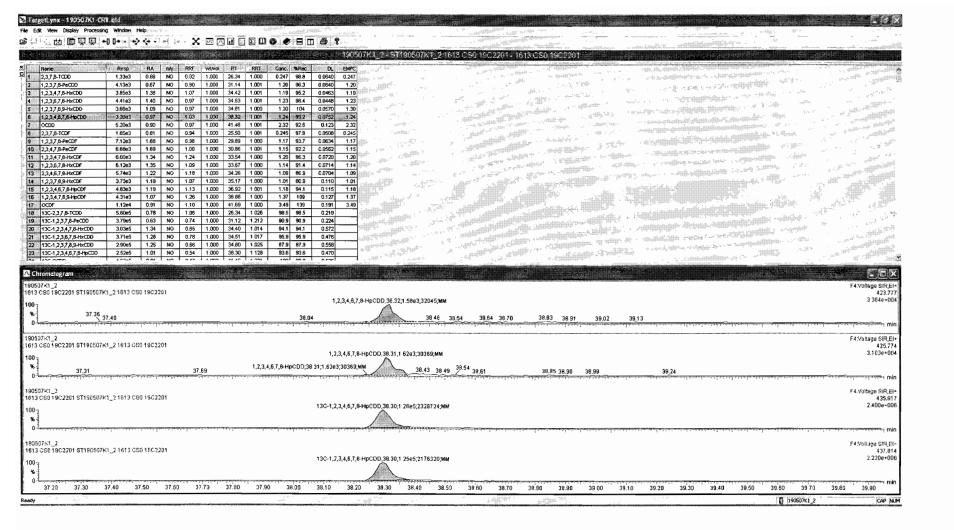




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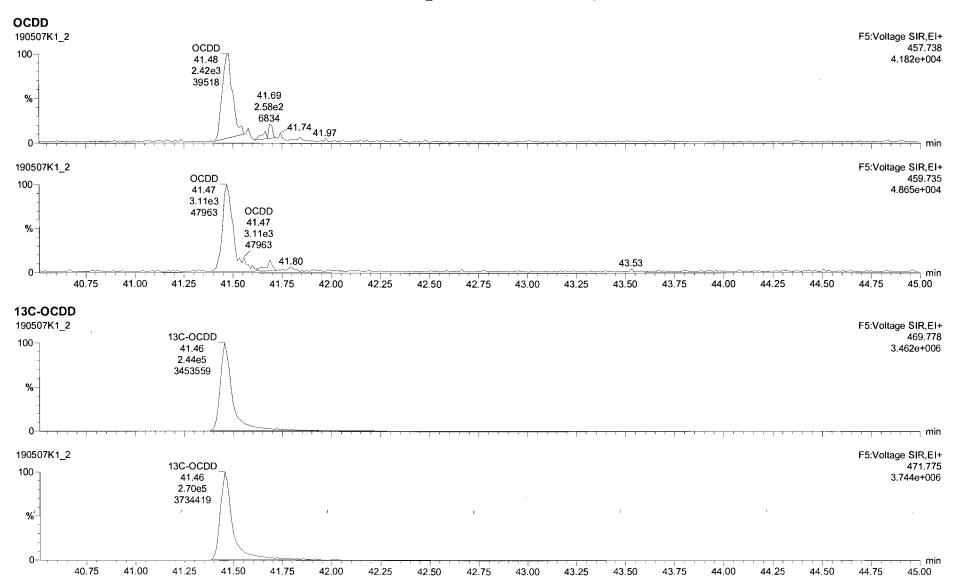
Work Order 1903741 Page 466 of 638

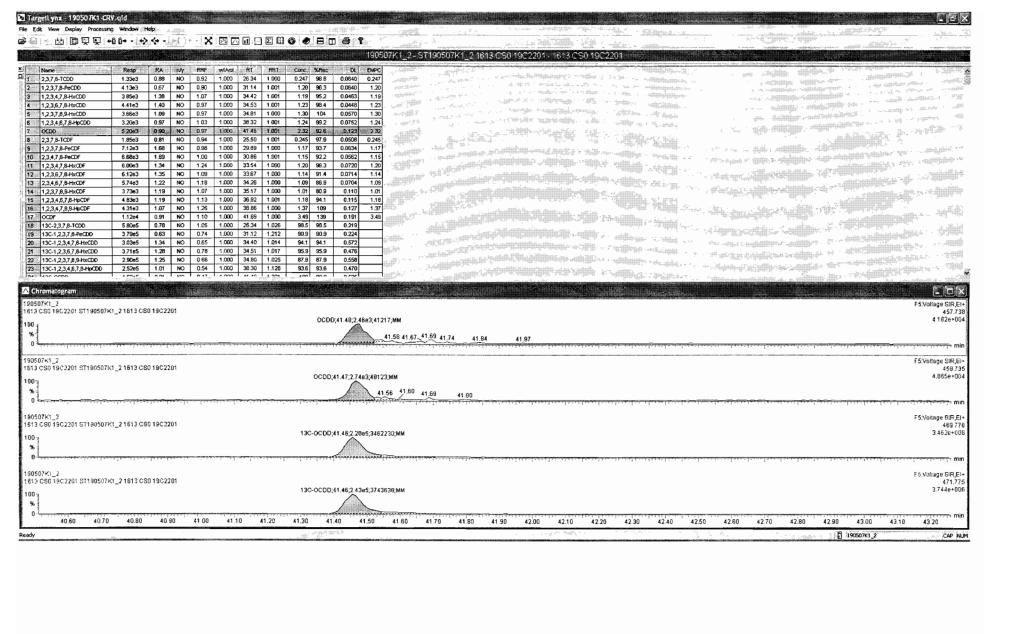
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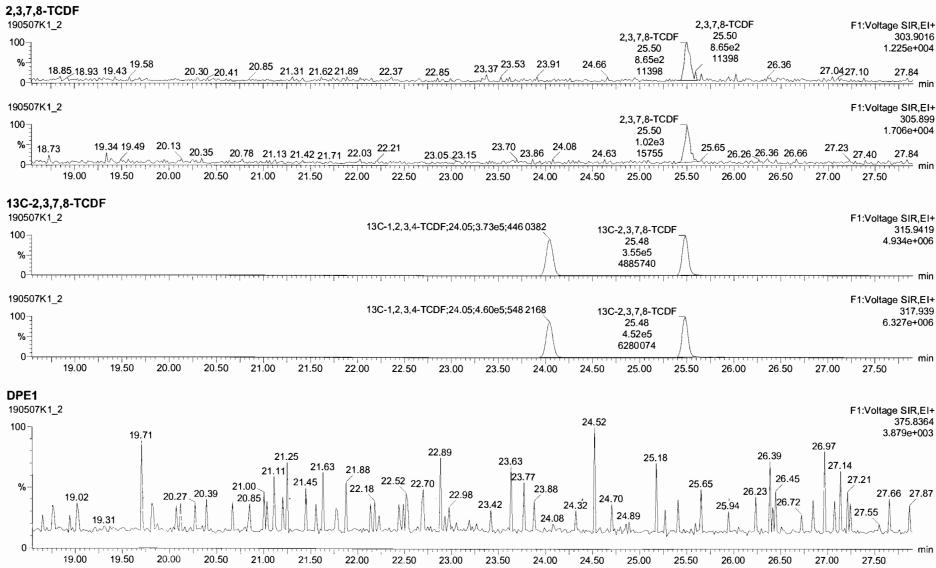
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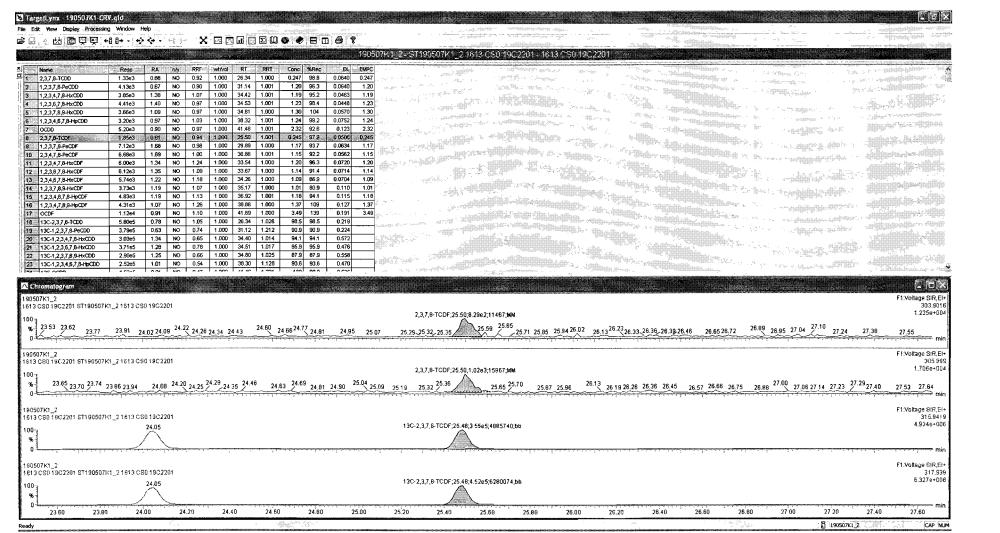
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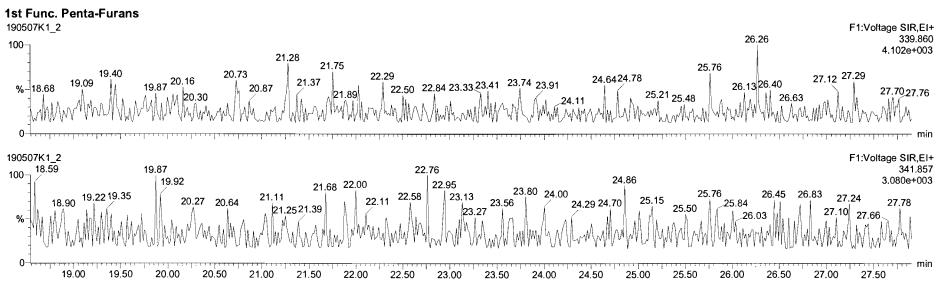


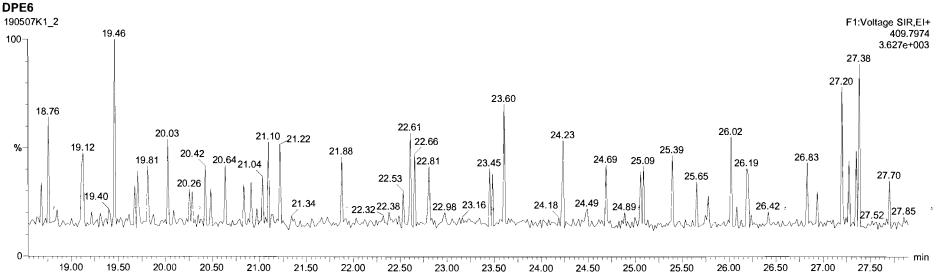
Work Order 1903741 Page 470 of 638

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Last Altered: Printed:

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



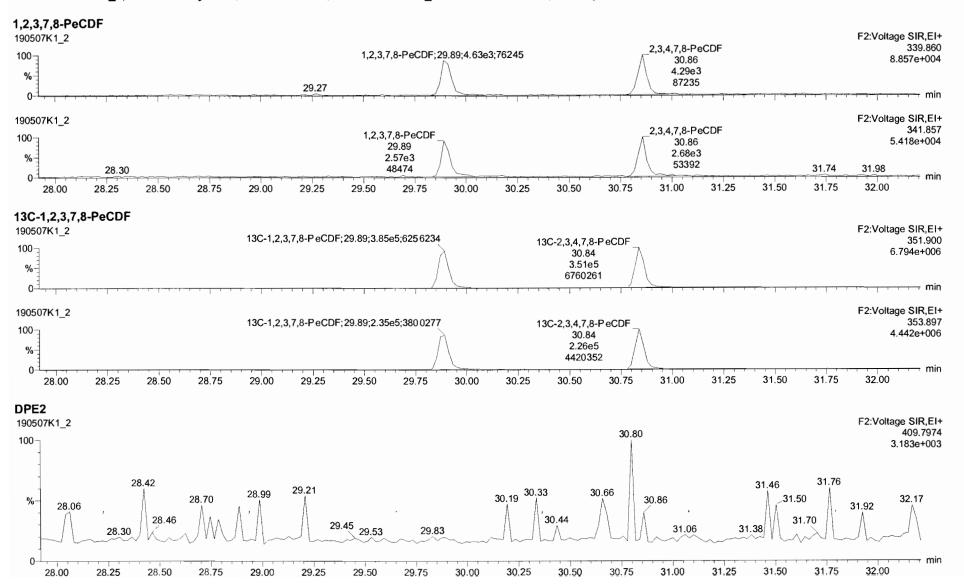


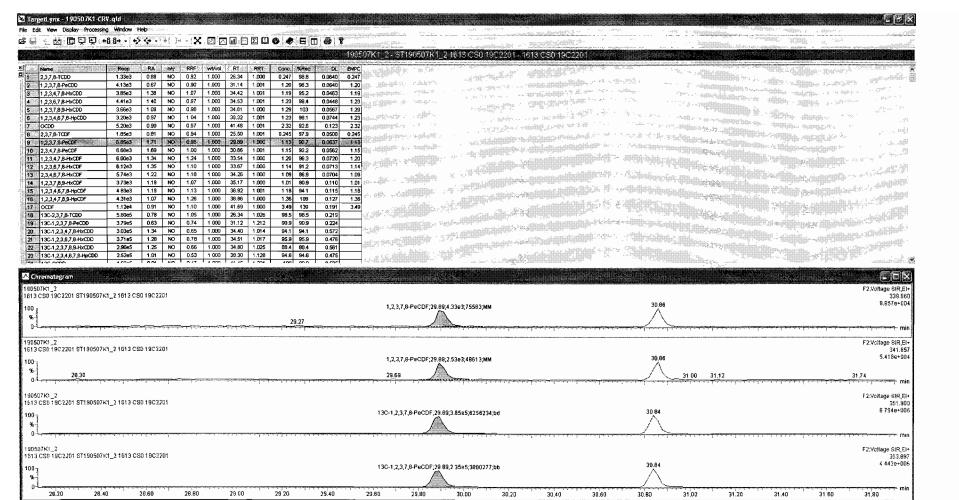
Quantify Sample Report Vista Analytical Laboratory

Dataset:

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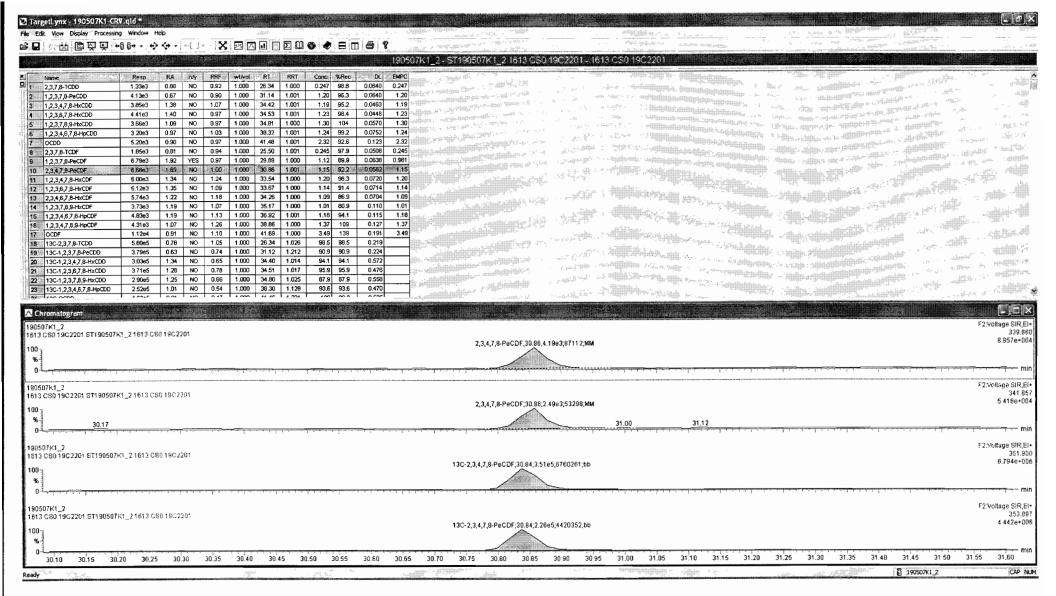




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CAP NUM



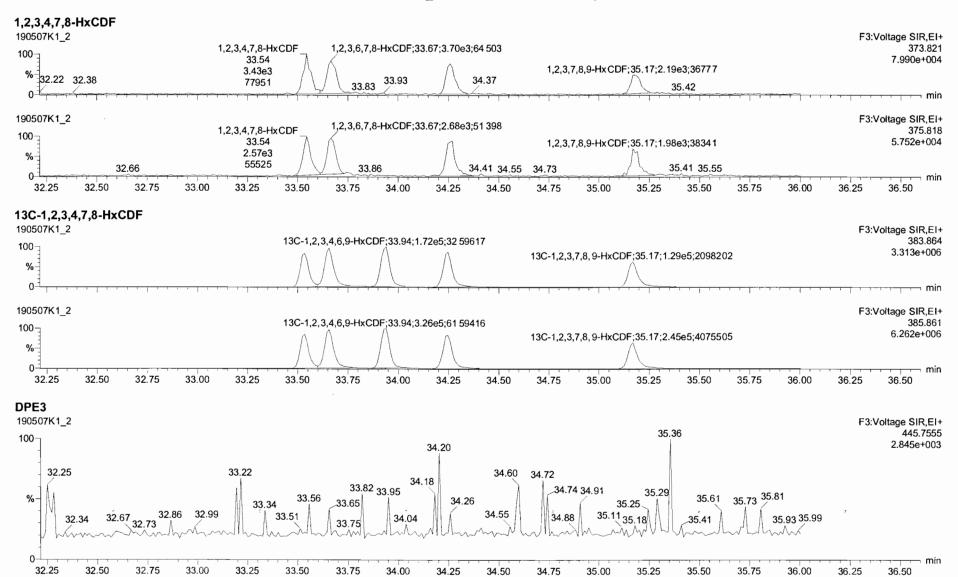
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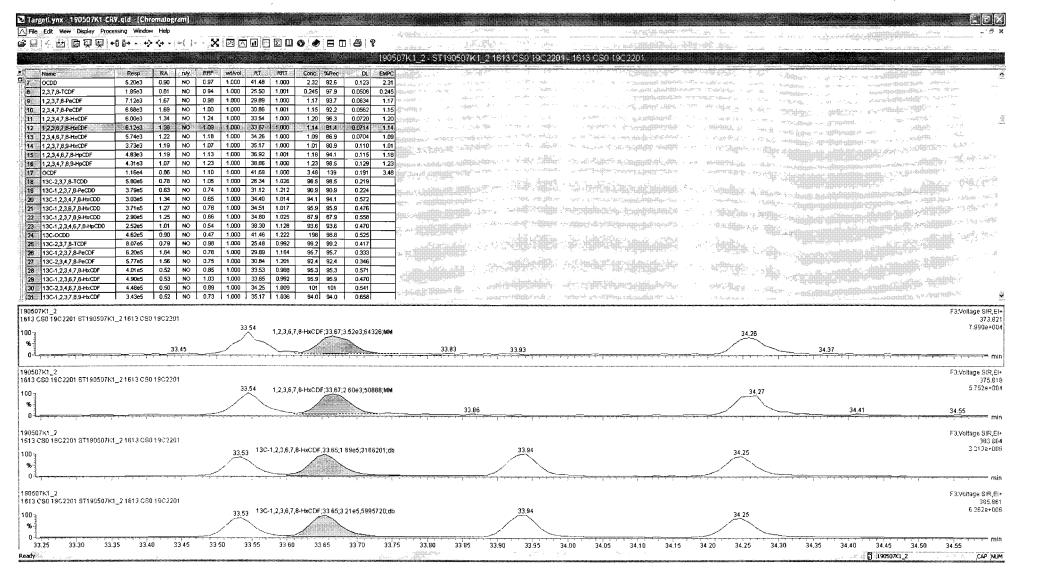
Quantify Sample Report

Vista Analytical Laboratory

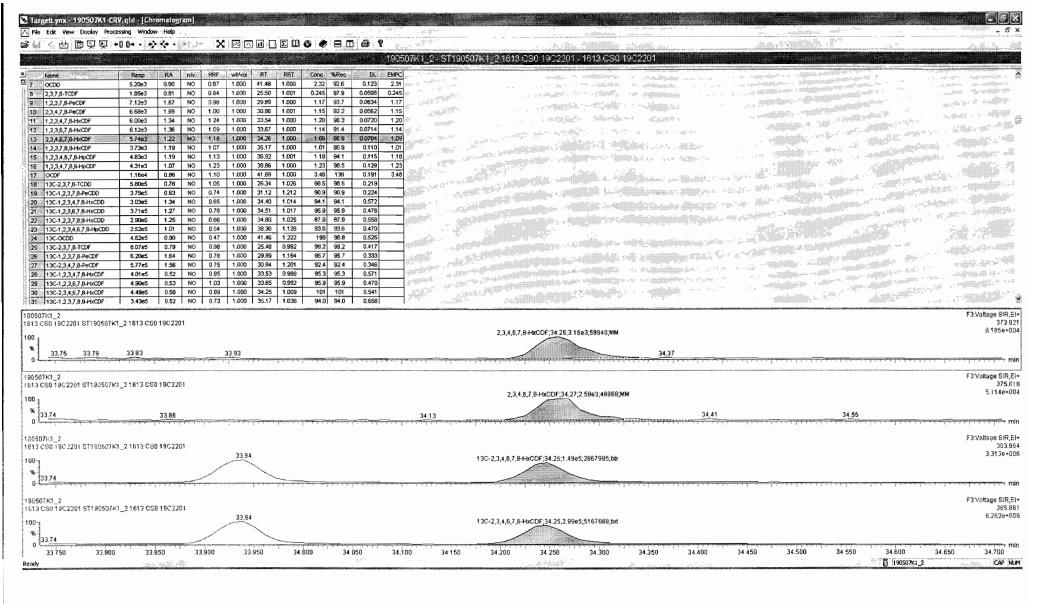
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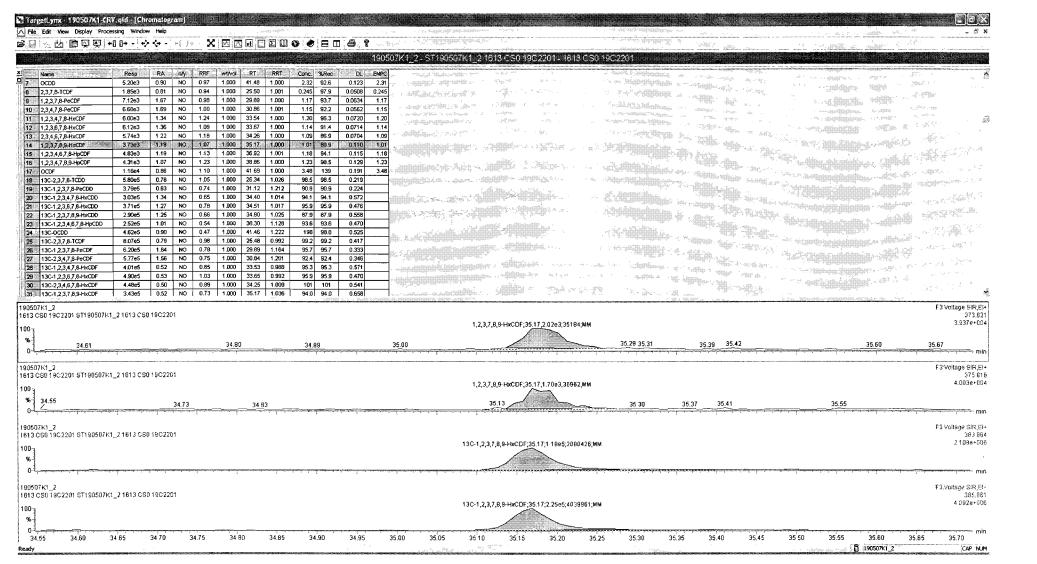




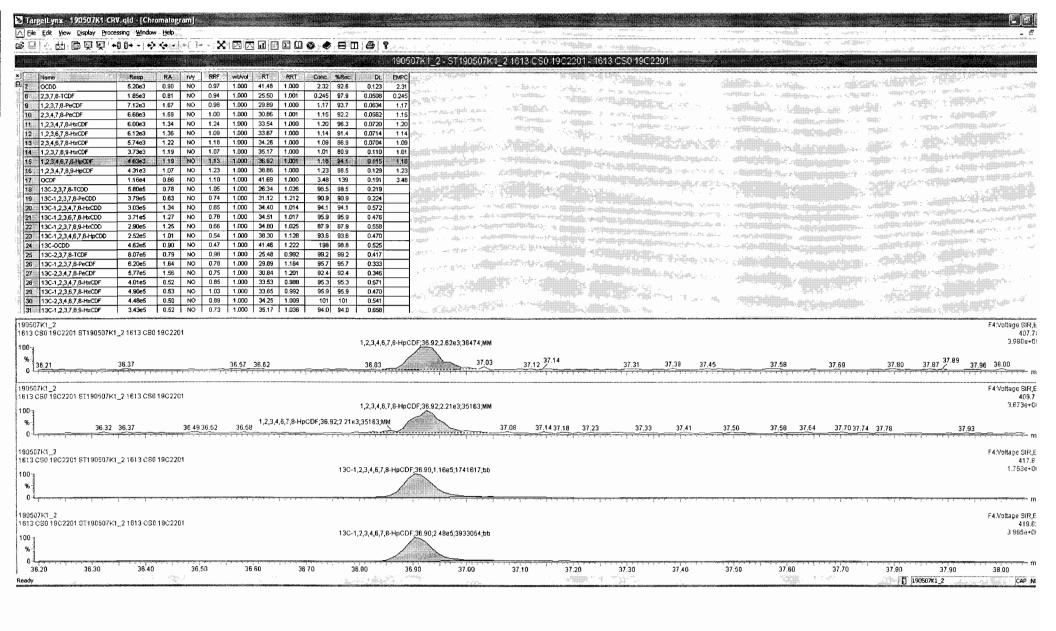
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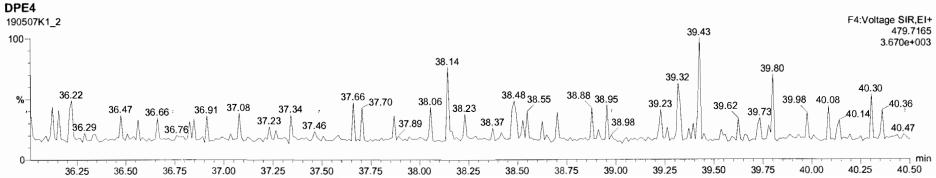
Work Order 1903741 Page 477 of 638

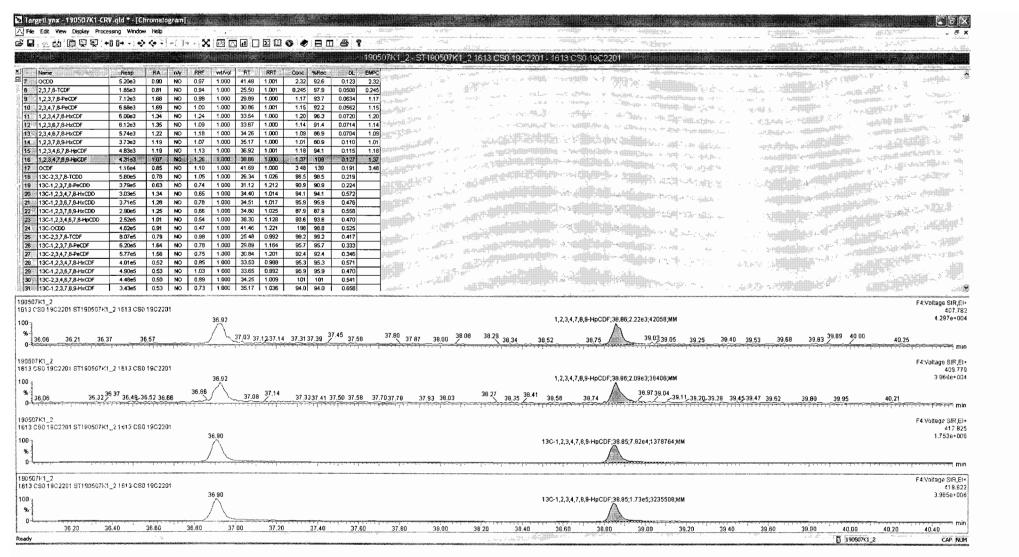


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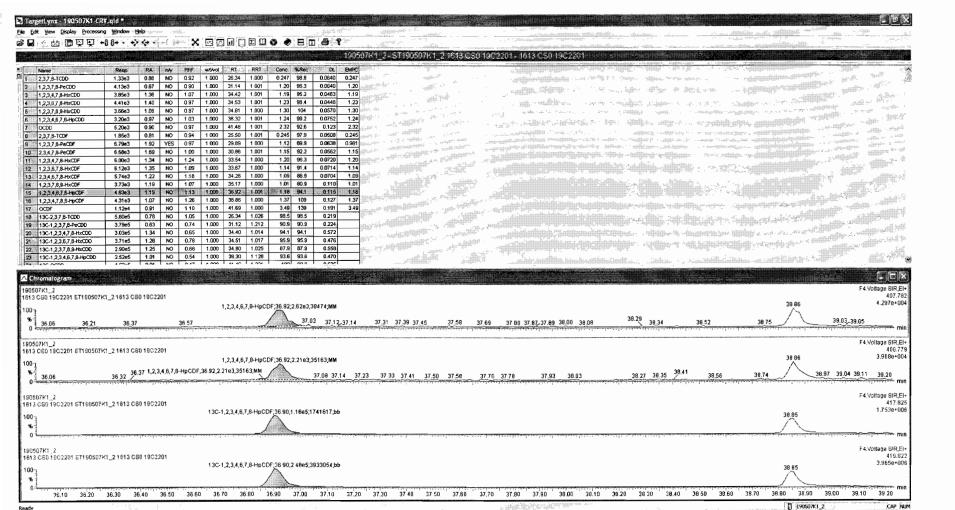


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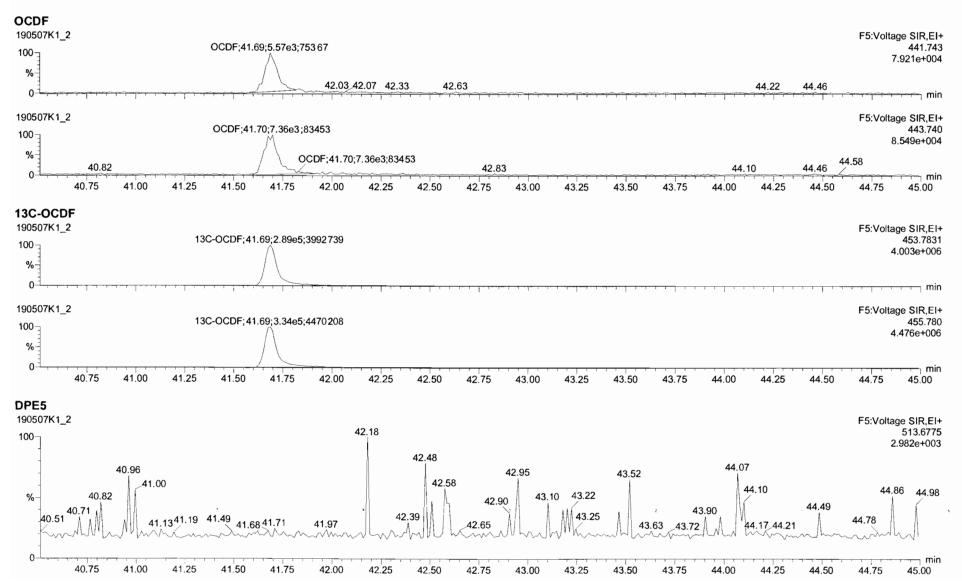
Work Order 1903741 Page 481 of 638

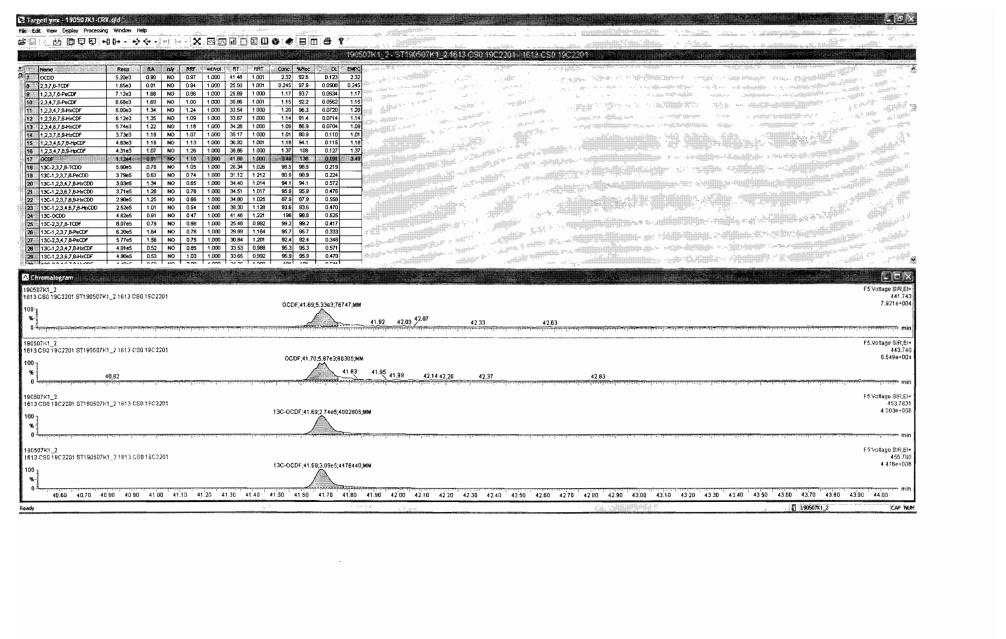


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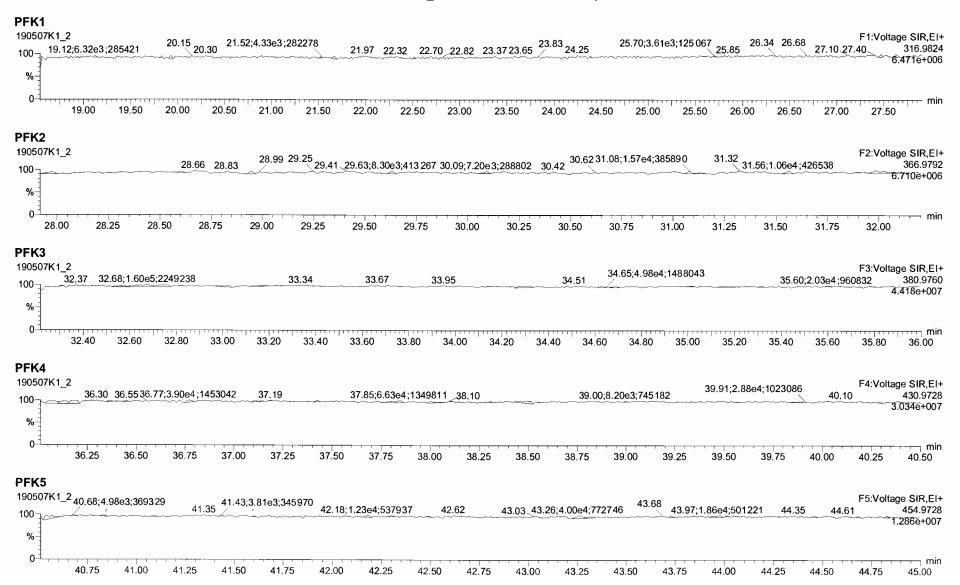




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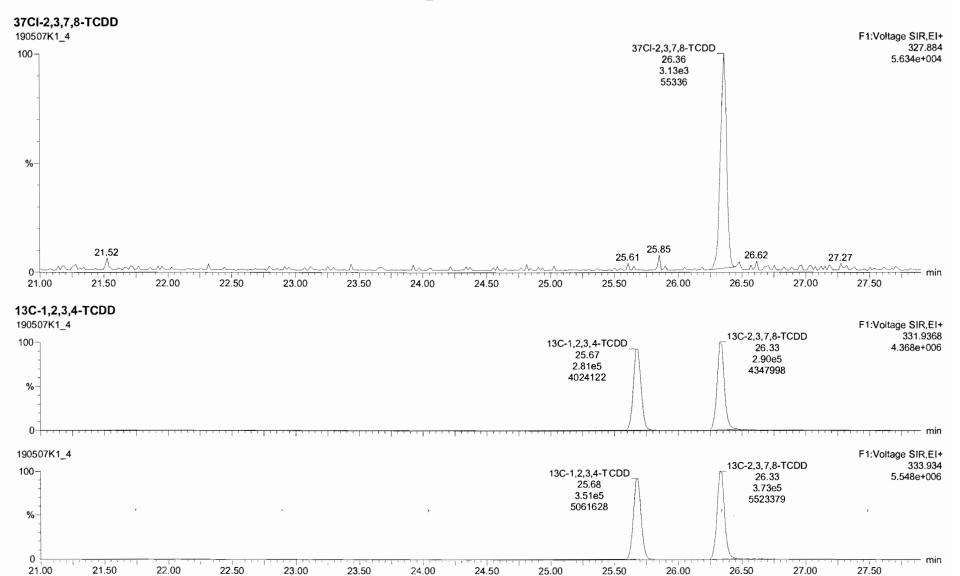
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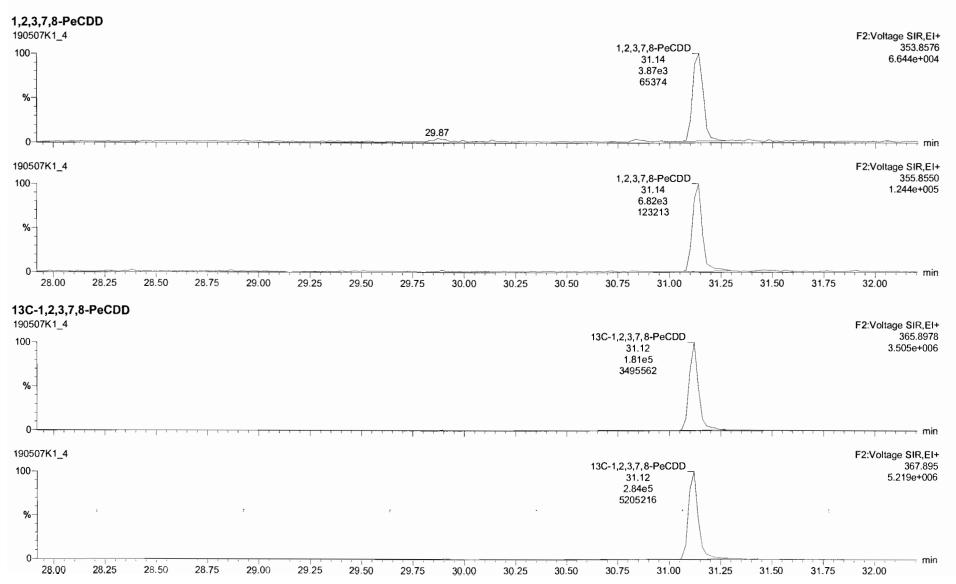
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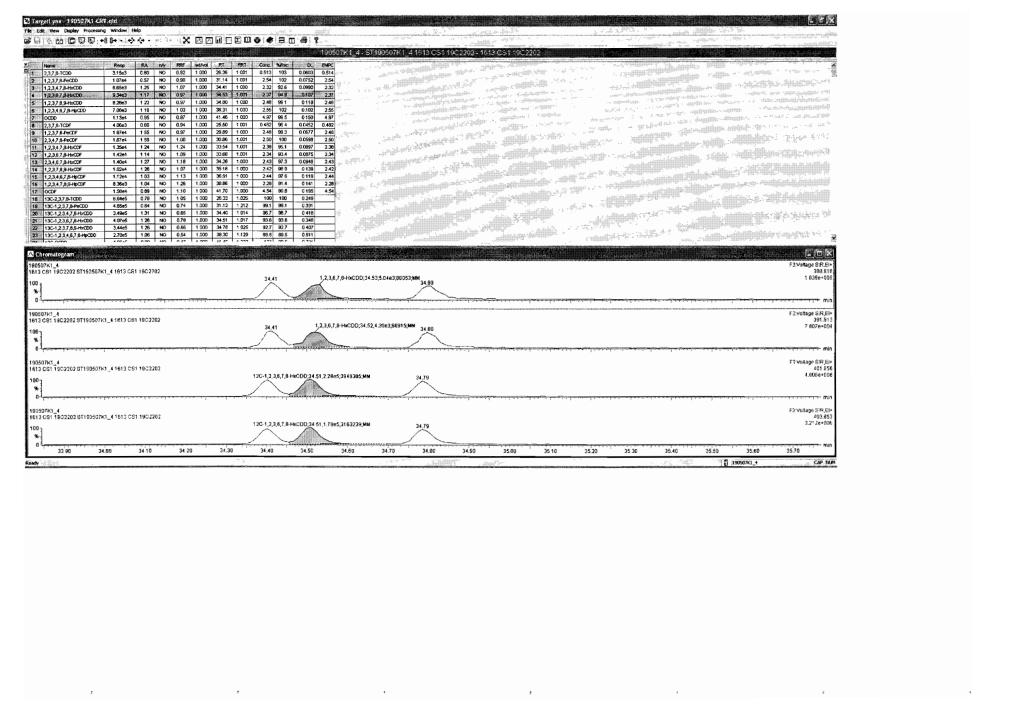
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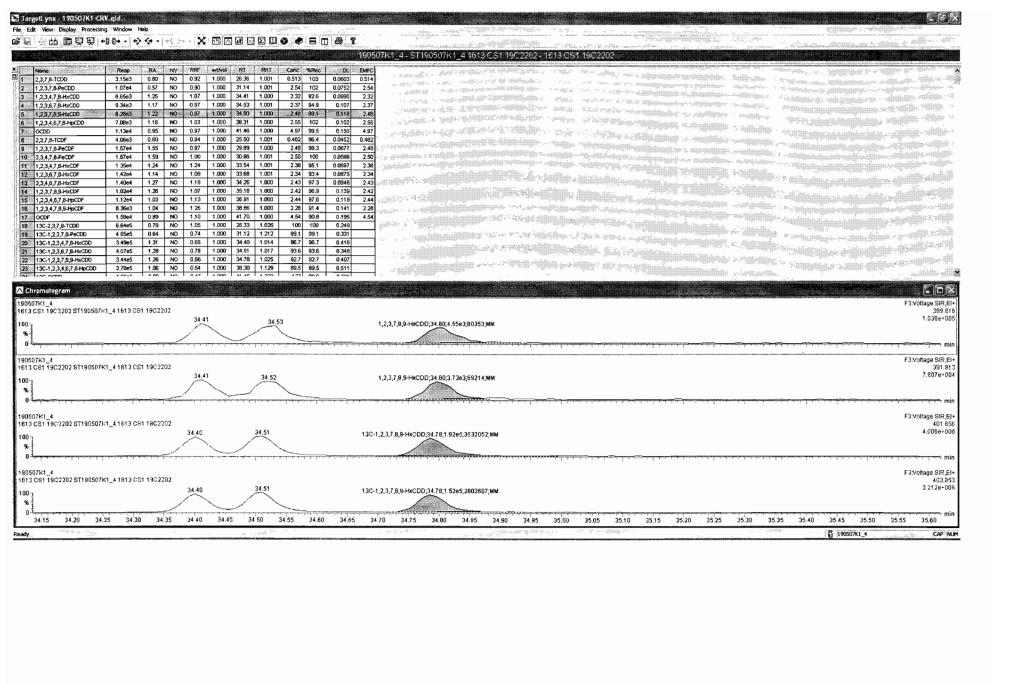
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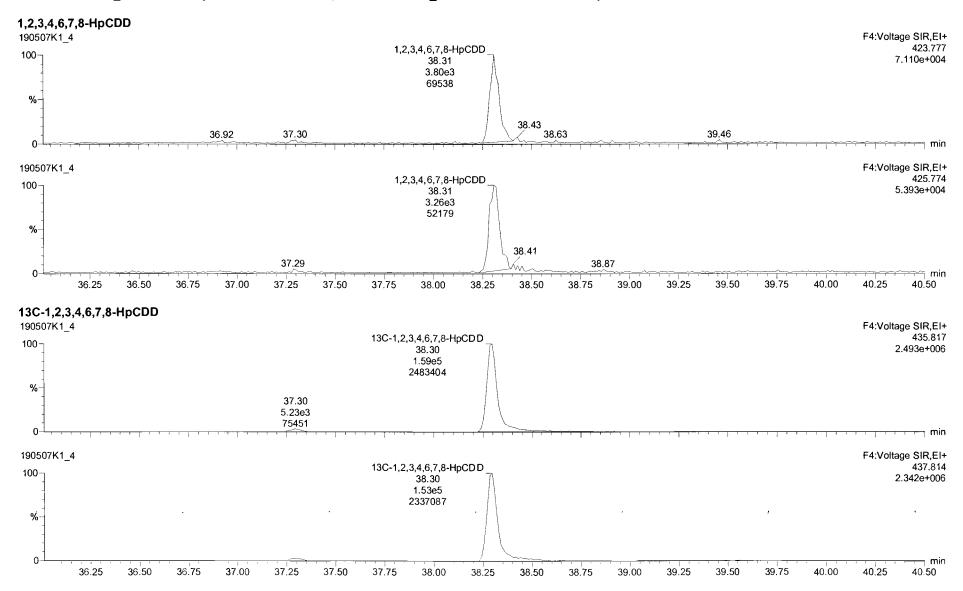


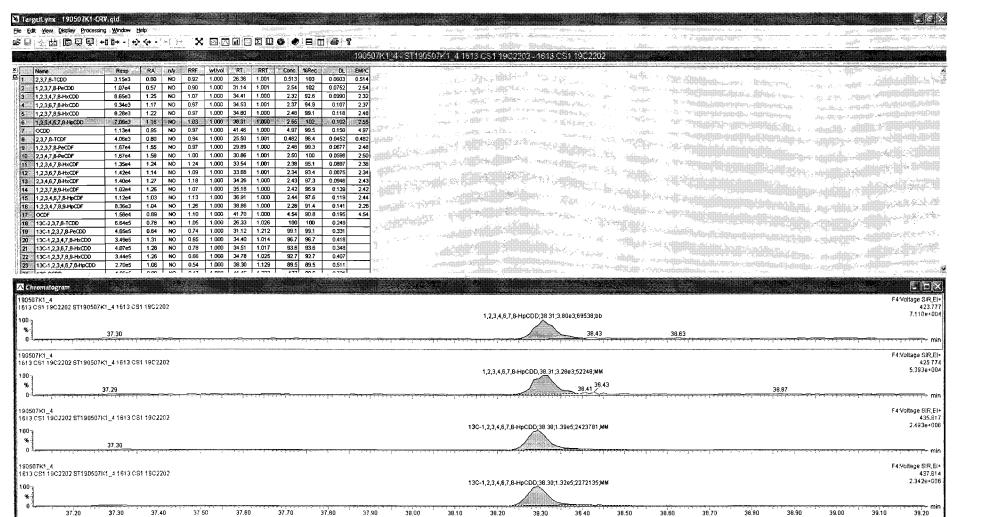
Work Order 1903741 Page 492 of 638

Quantify Sample Report Vista Analytical Laboratory

Dataset: Untitled

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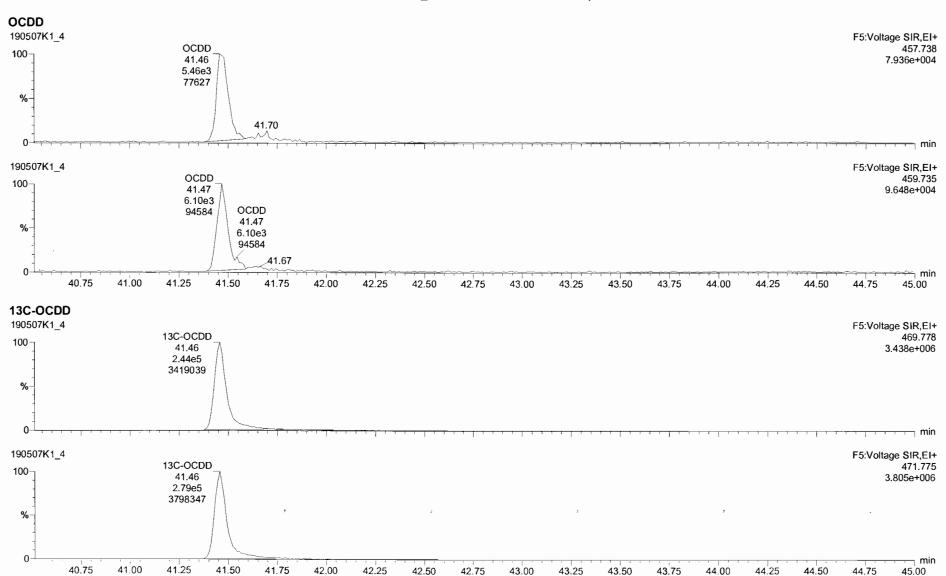
Work Order 1903741 Page 494 of 638

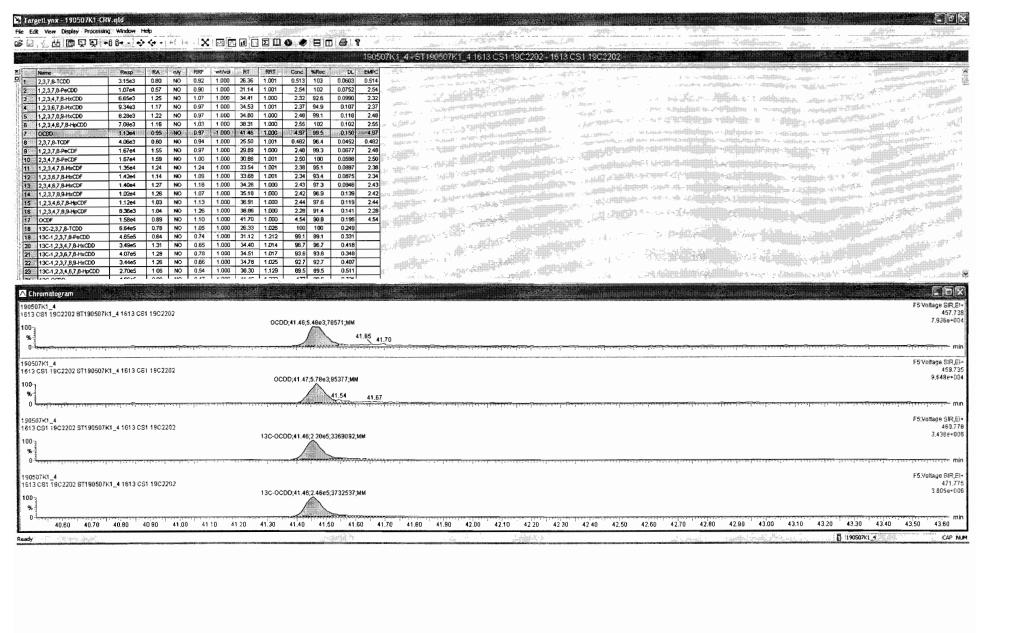
190507K1 4

CAP NUM

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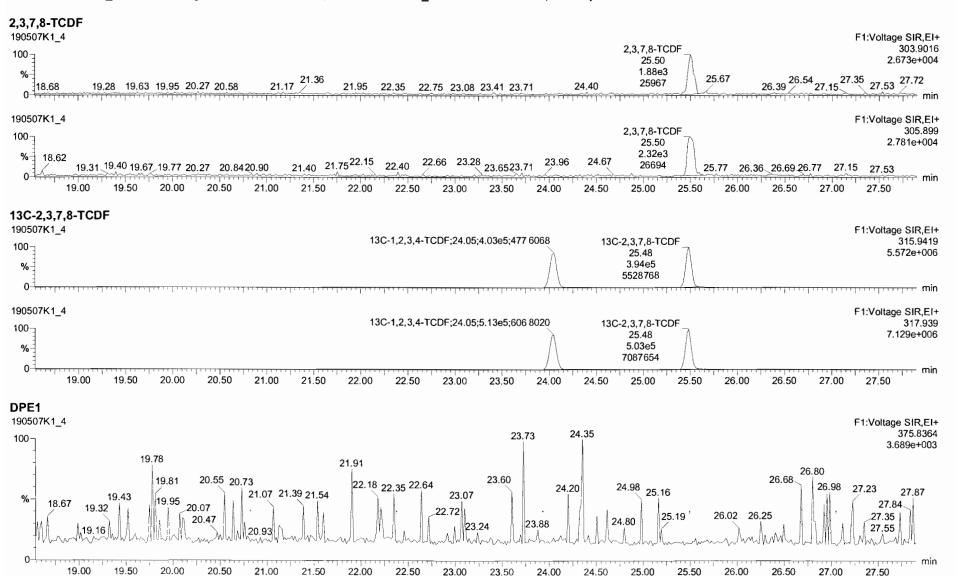


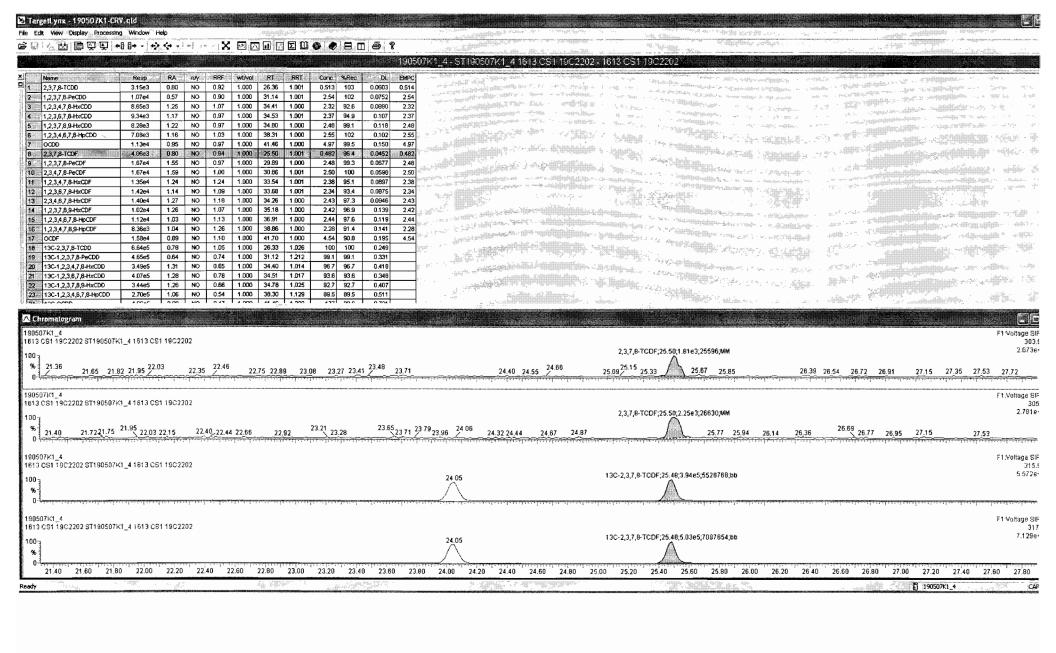
Work Order 1903741 Page 496 of 638

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Last Altered: Printed:

Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



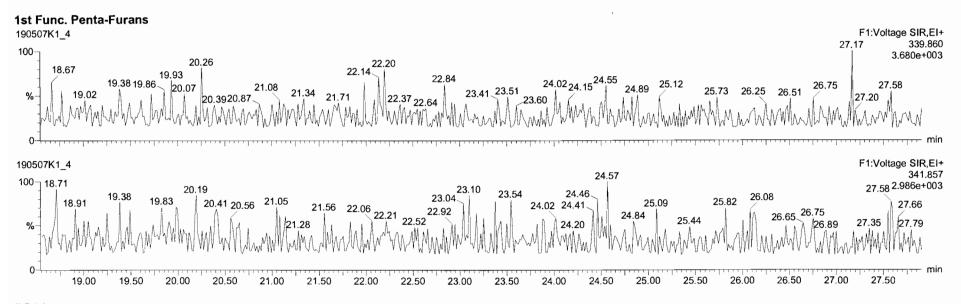


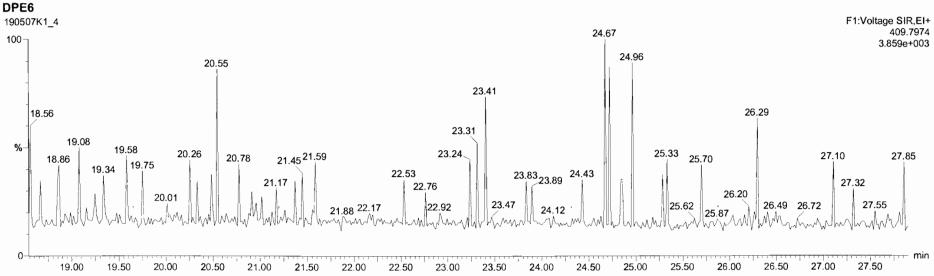
Work Order 1903741 Page 498 of 638

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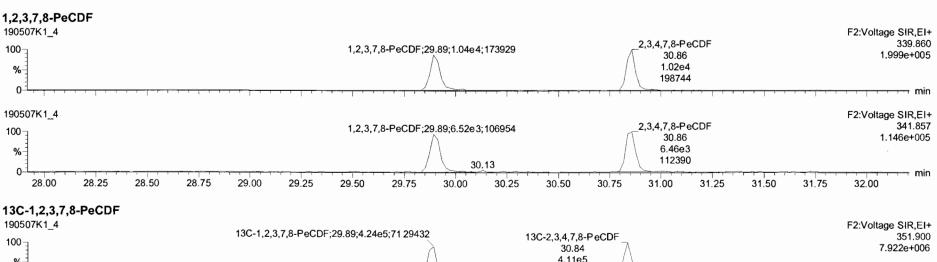


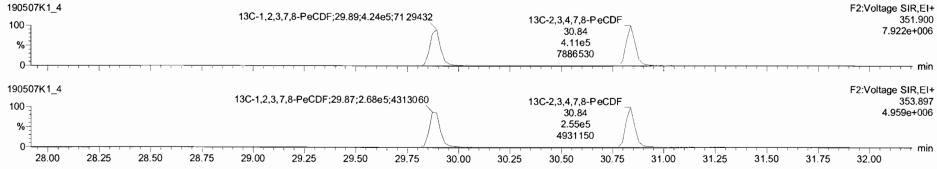


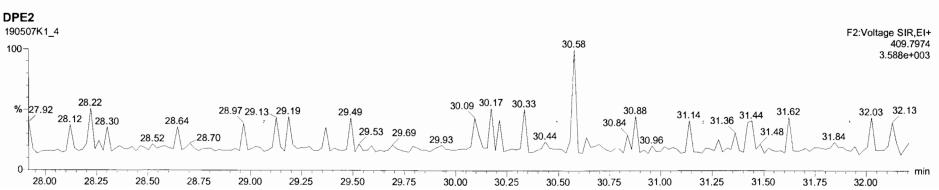
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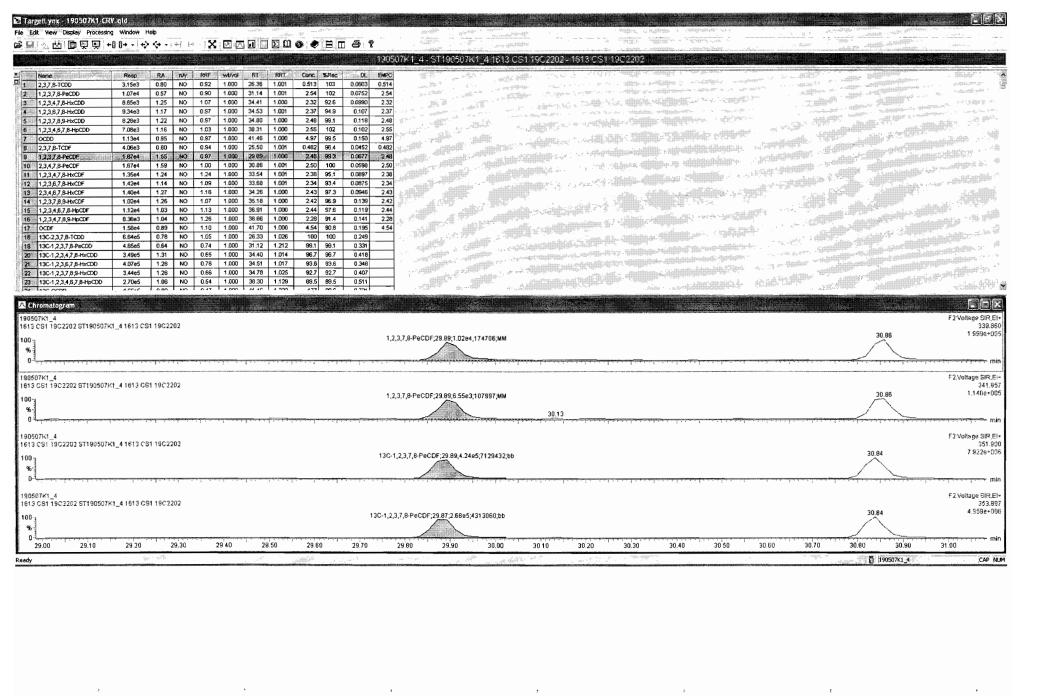
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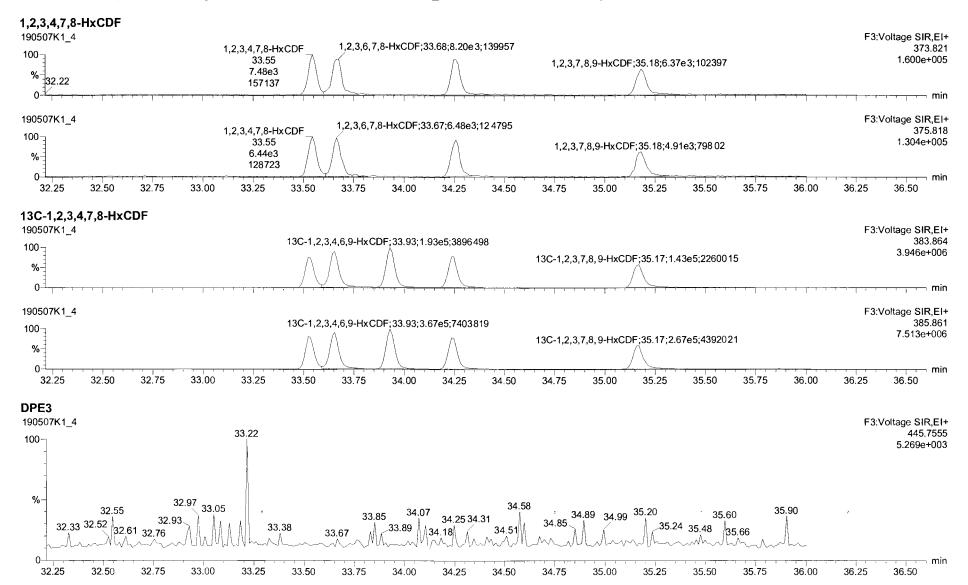


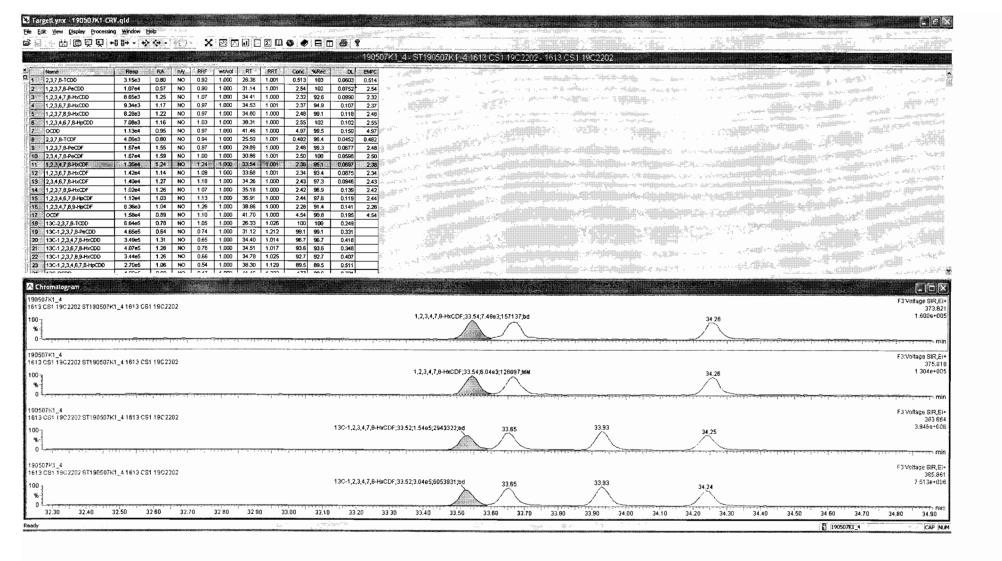


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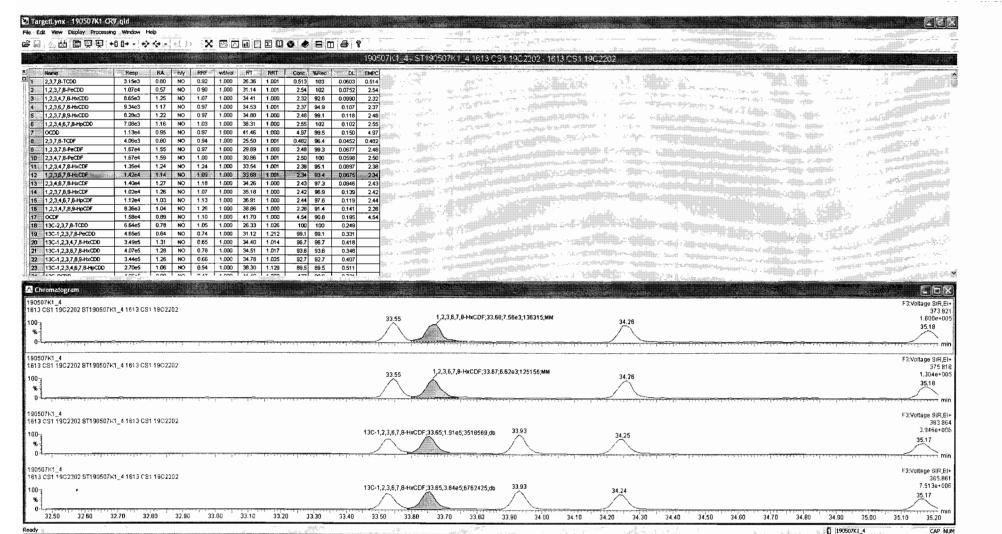
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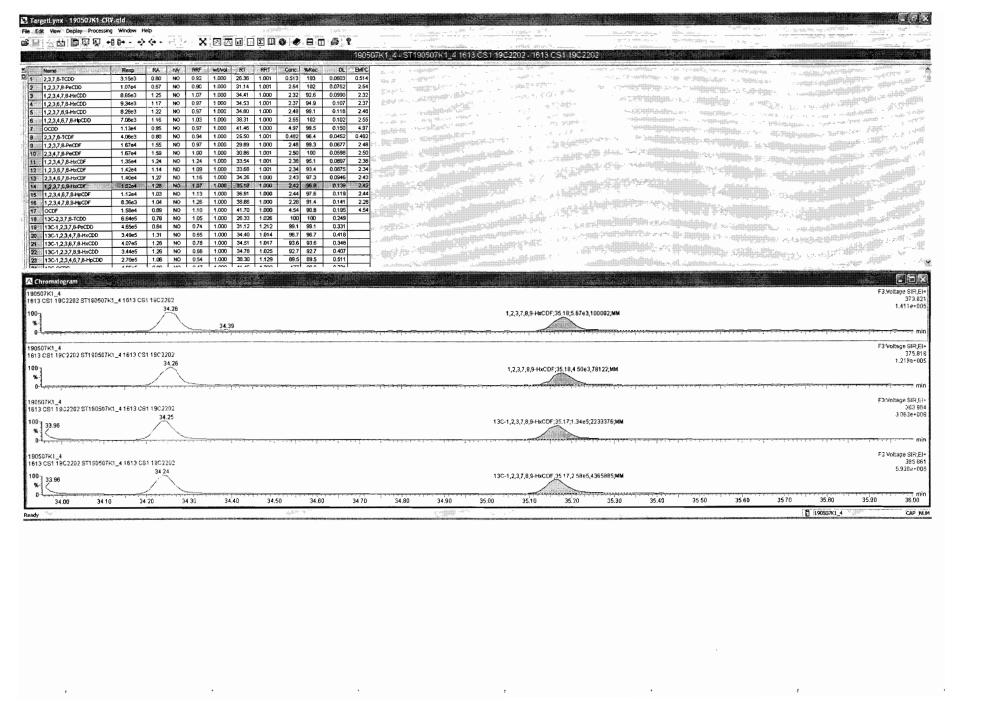




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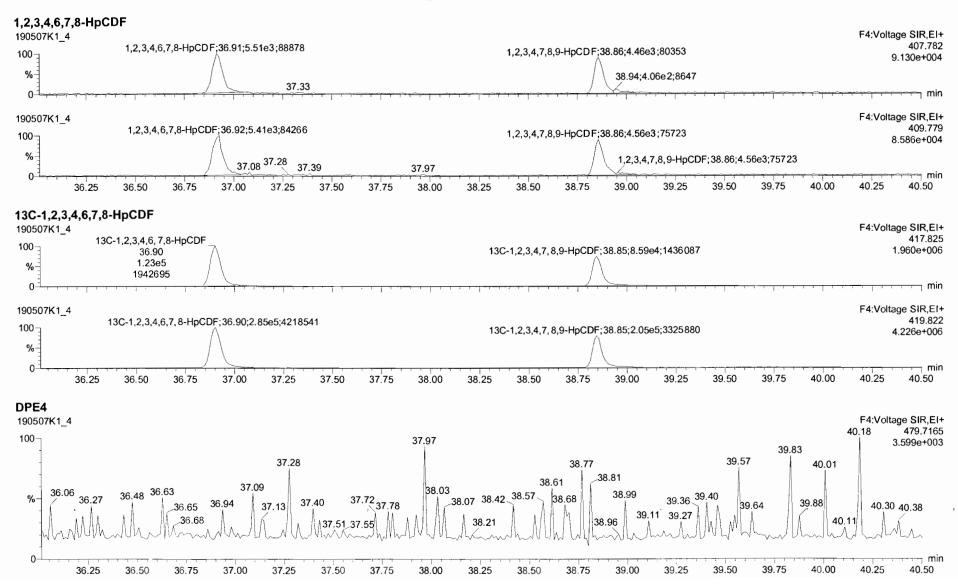


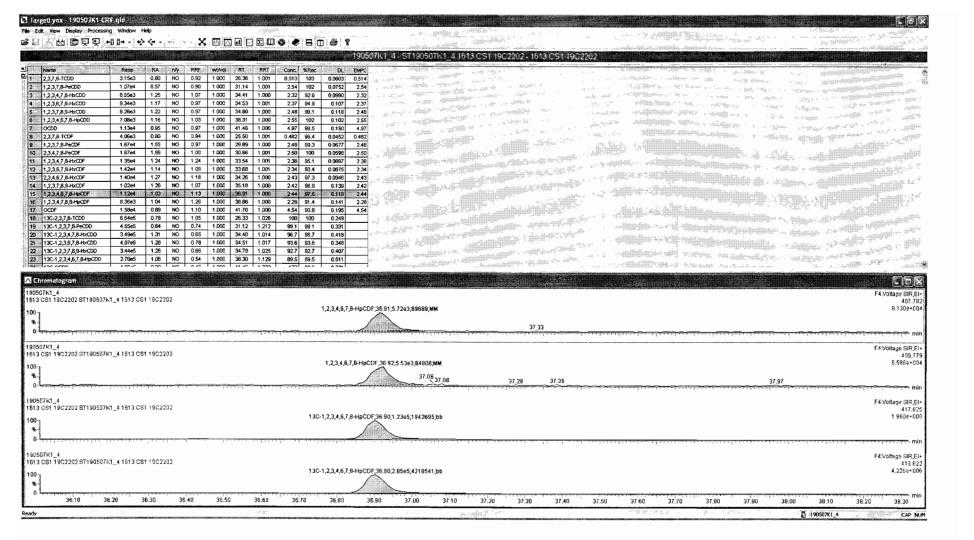
Work Order 1903741 Page 505 of 638

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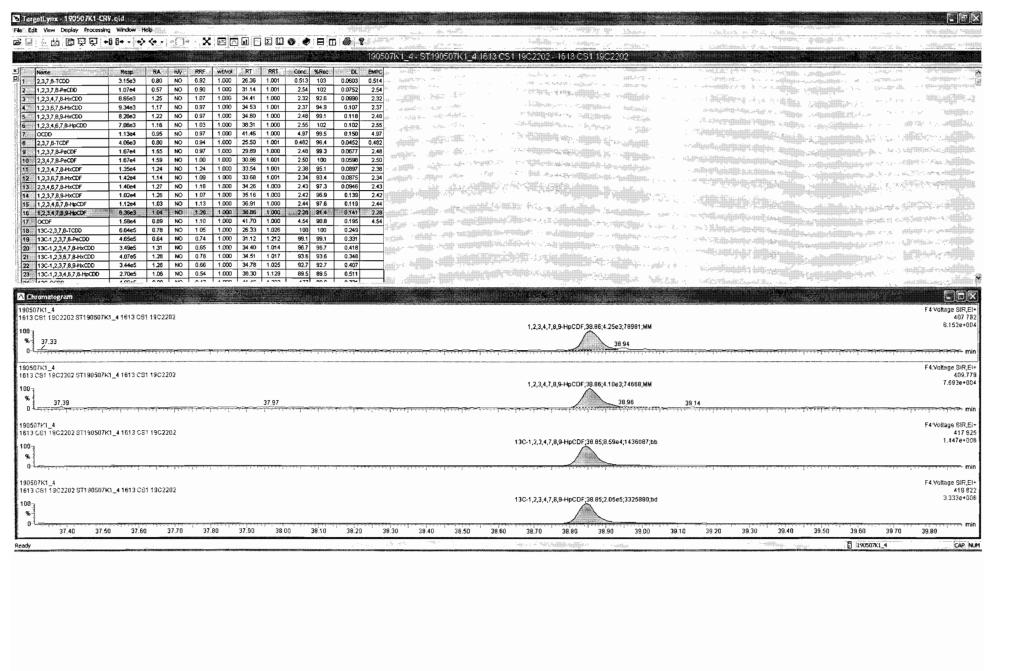
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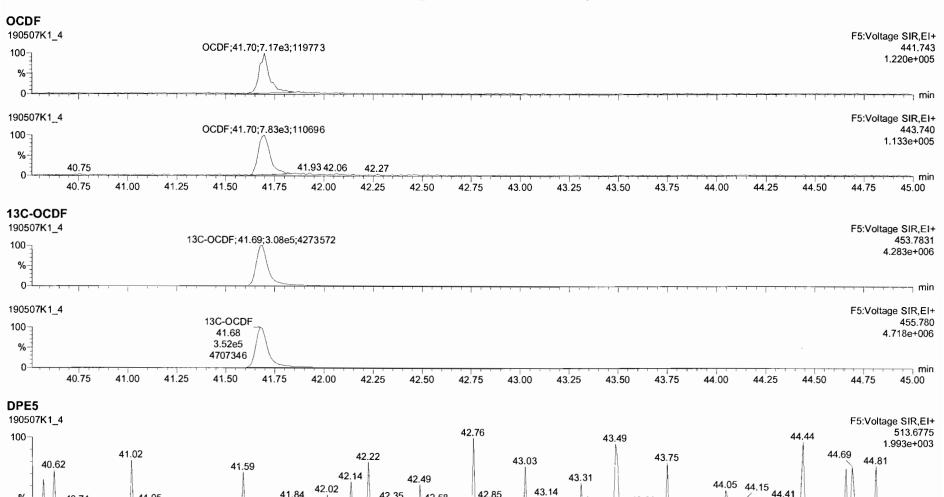


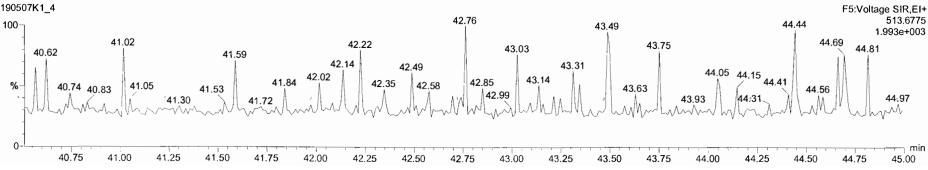
Work Order 1903741 Page 508 of 638

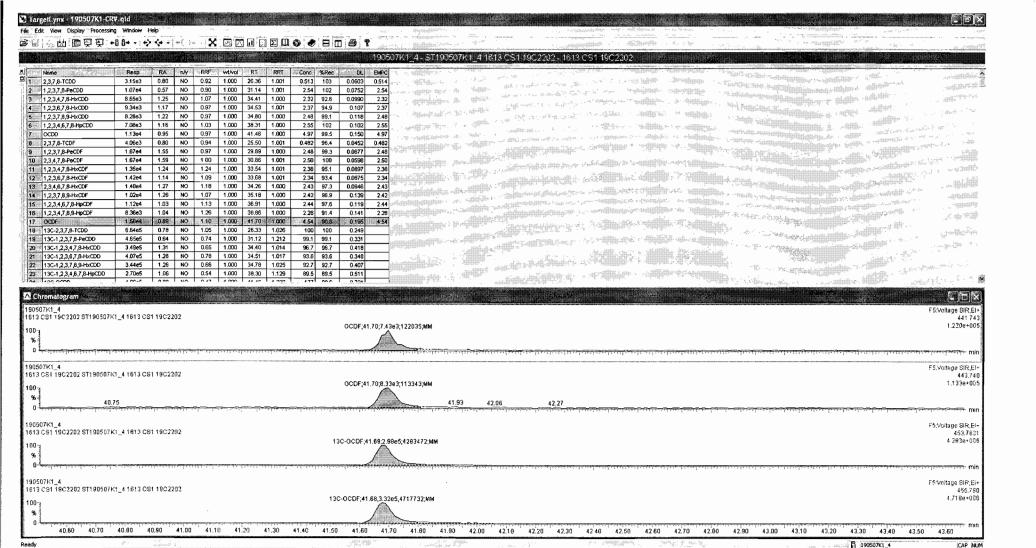
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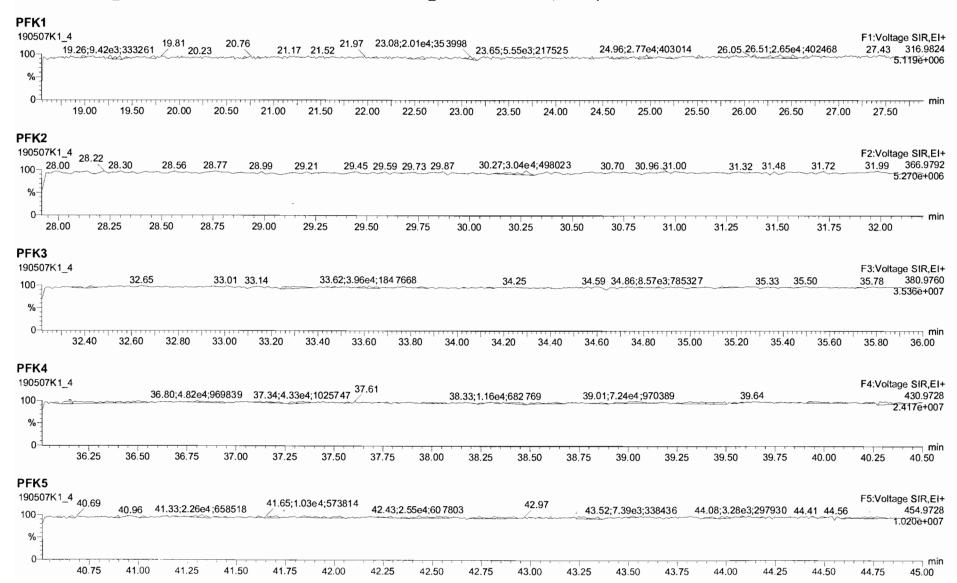


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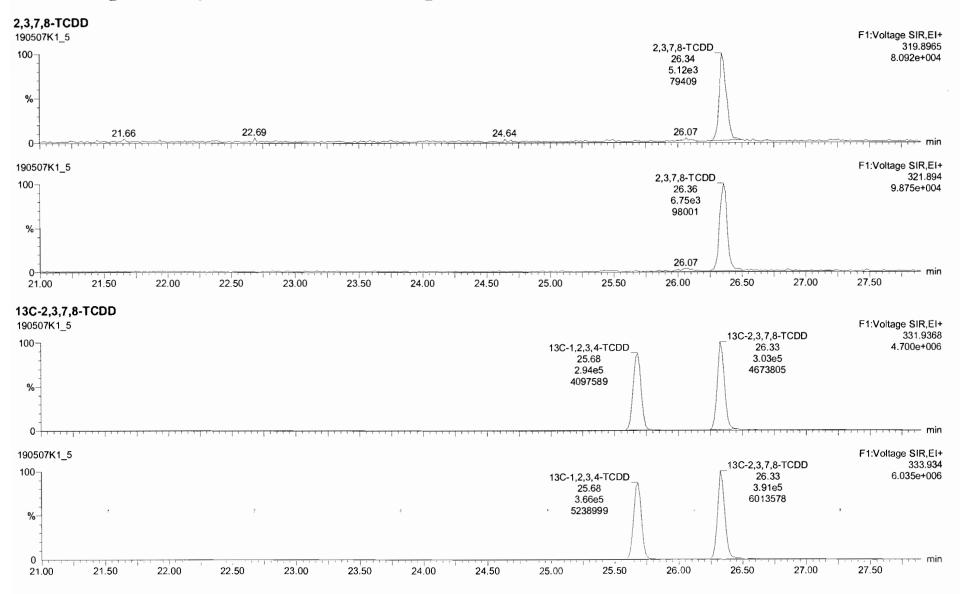
Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

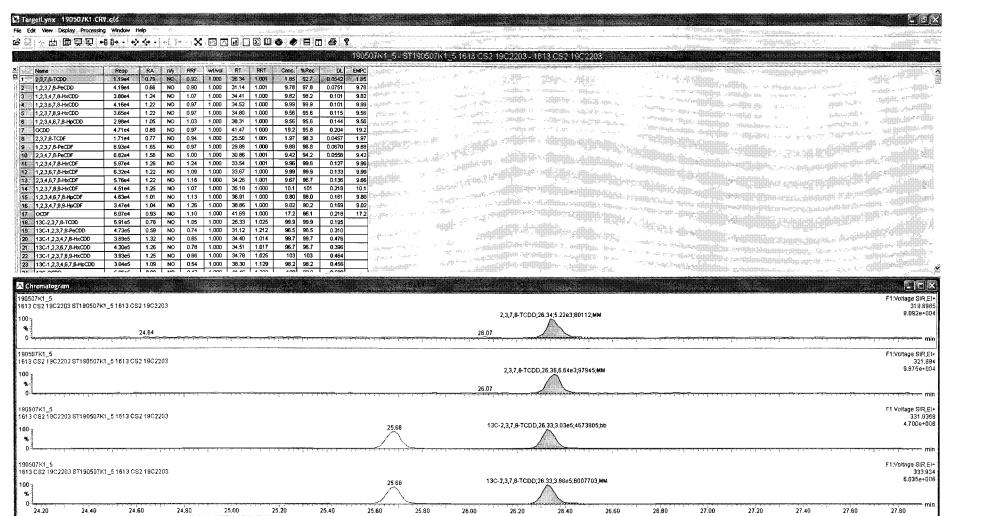


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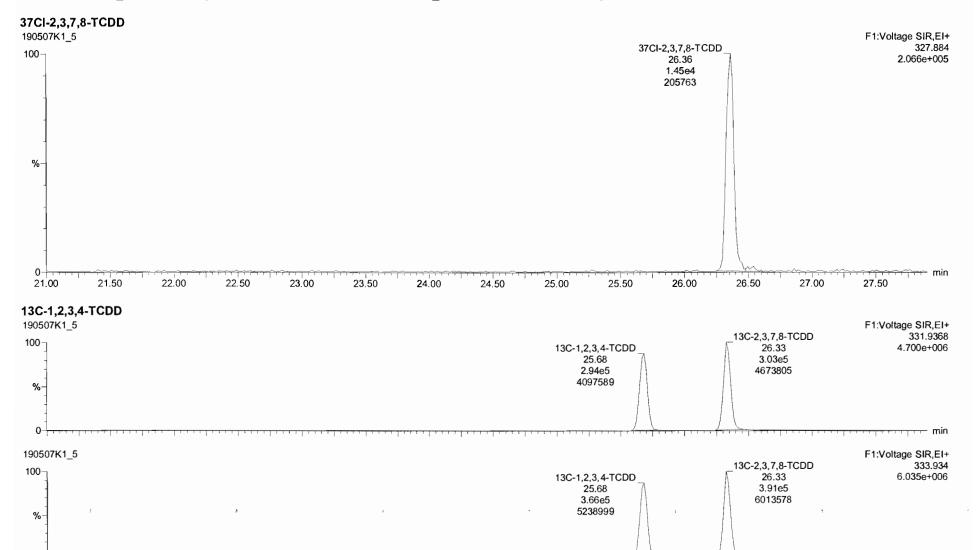
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Name: 190507K1_5, Date: 07-May-2019, Time: 13:51:47, ID: ST190507K1_5 1613 CS2 19C2203, Description: 1613 CS2 19C2203



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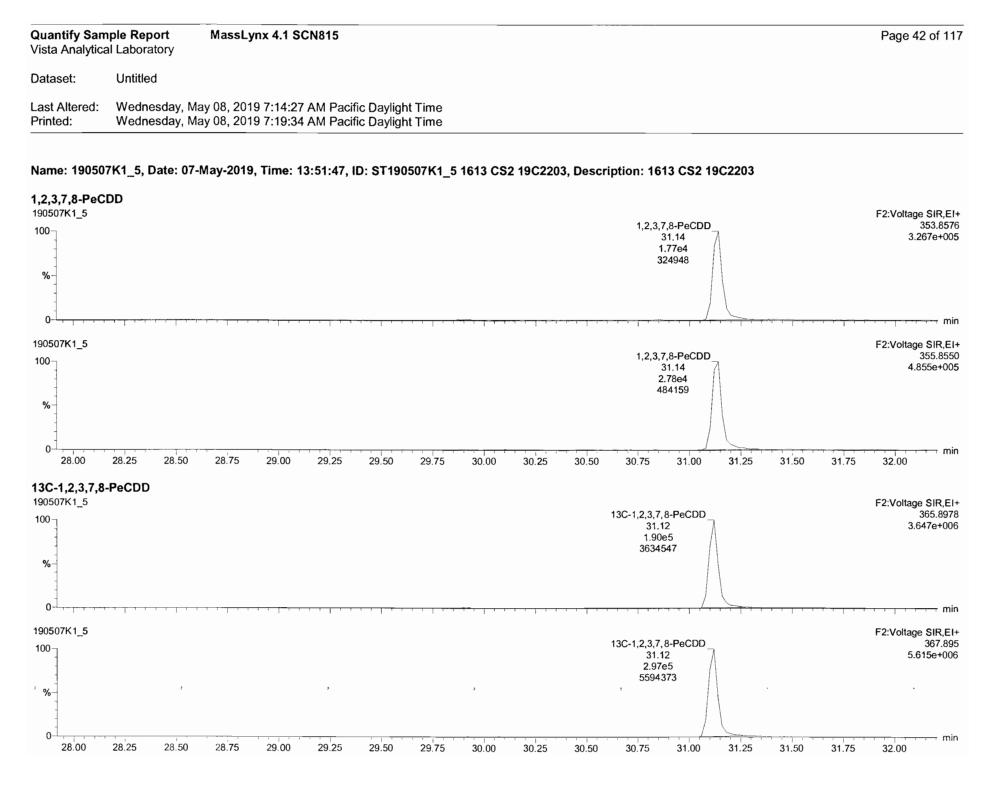
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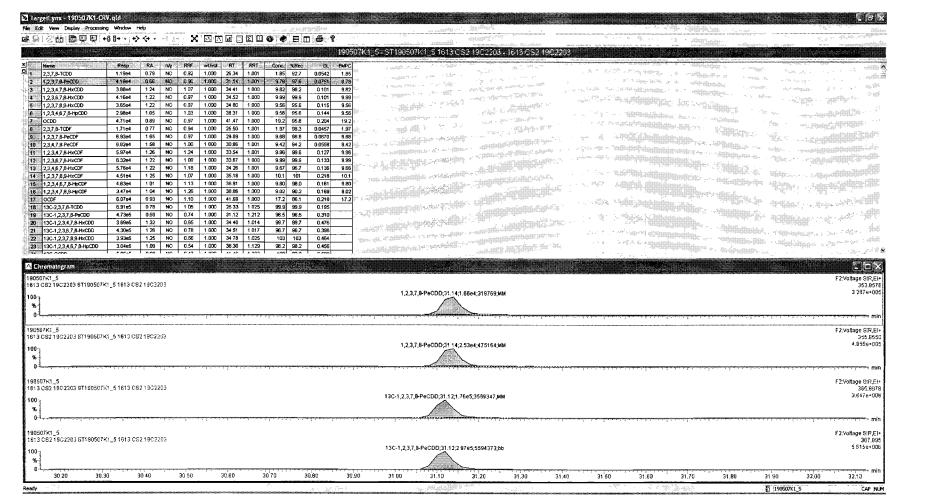
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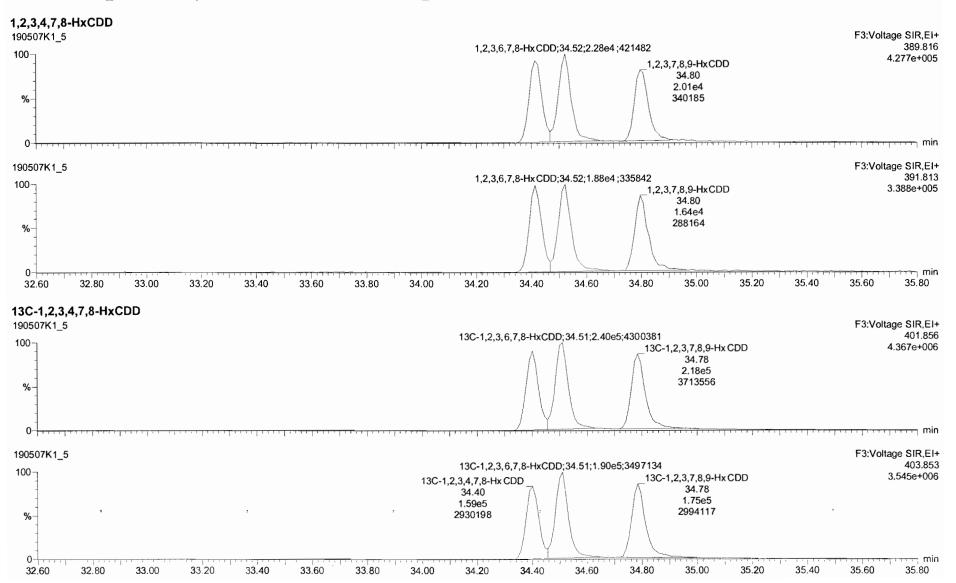
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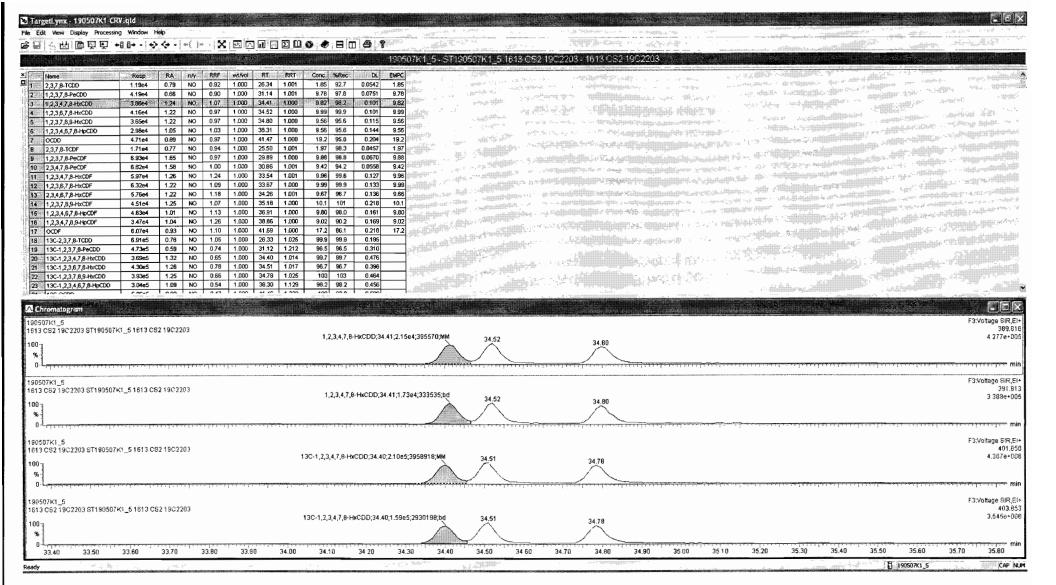


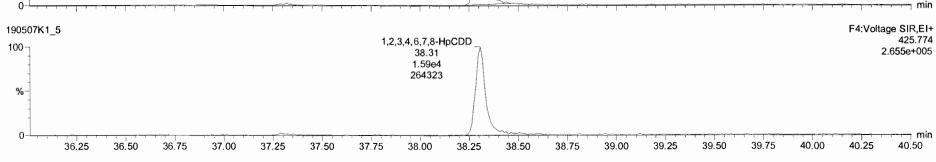
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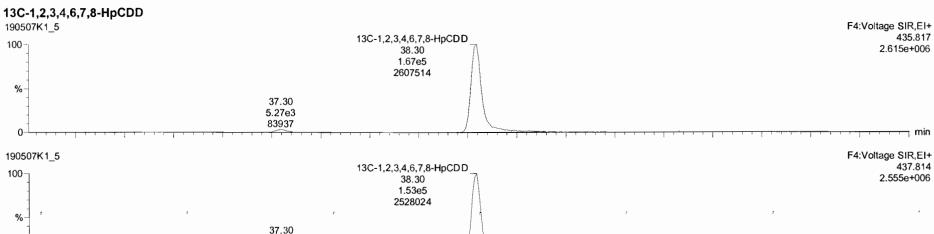
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38.25

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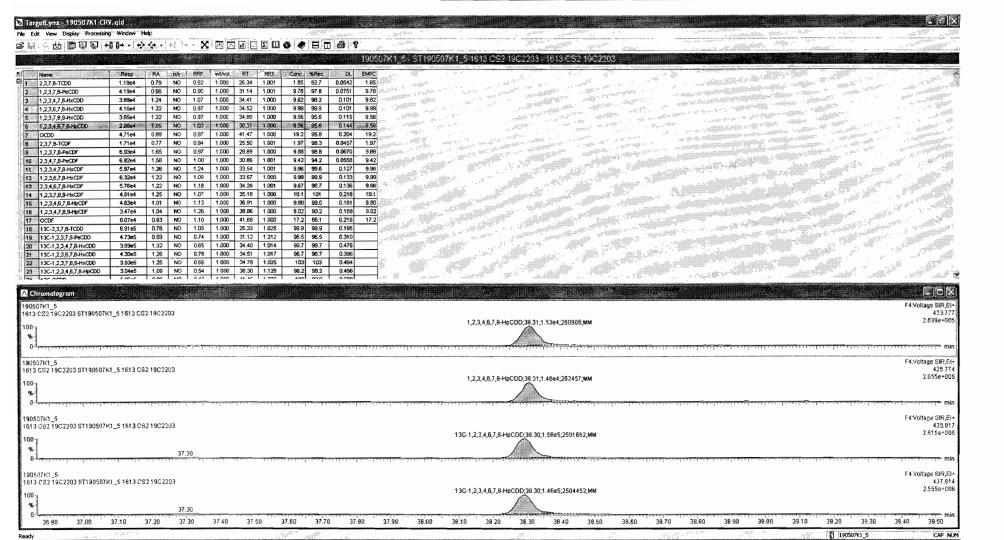
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36.75

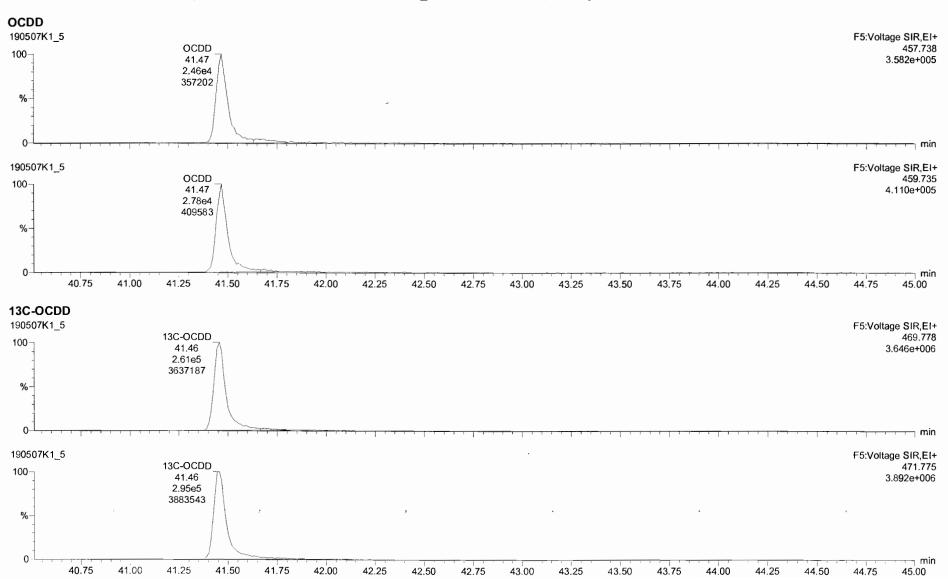
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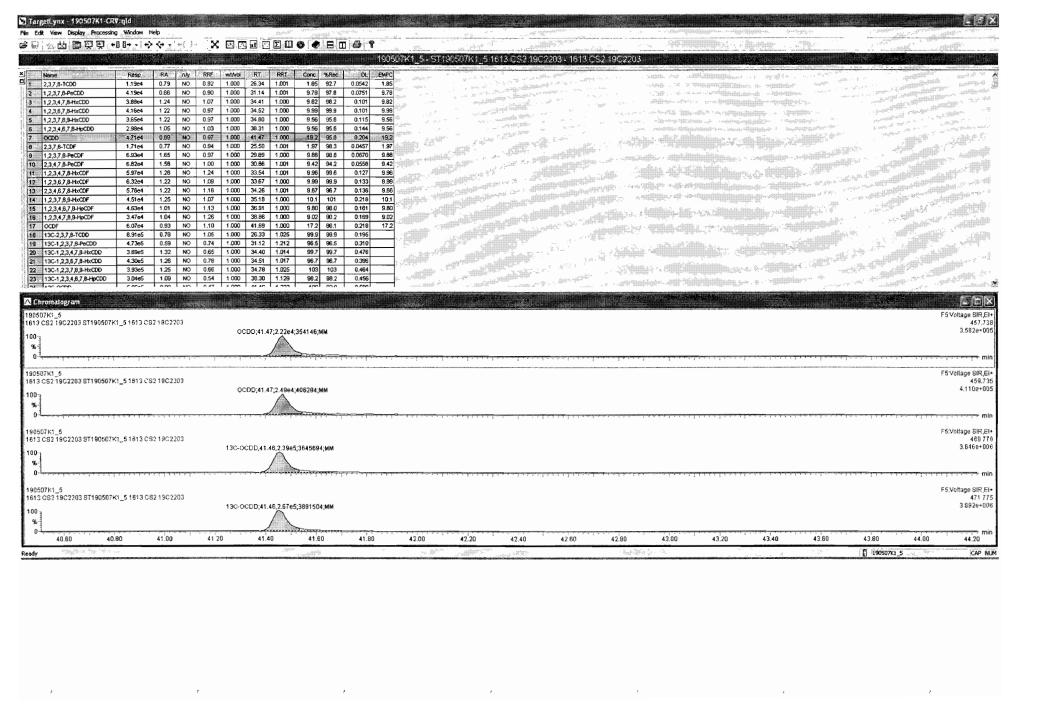


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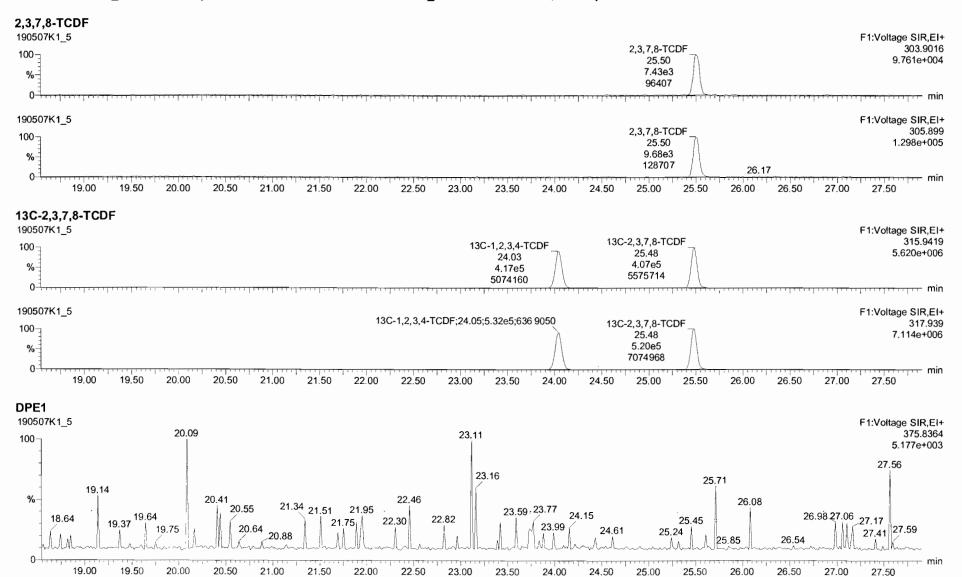




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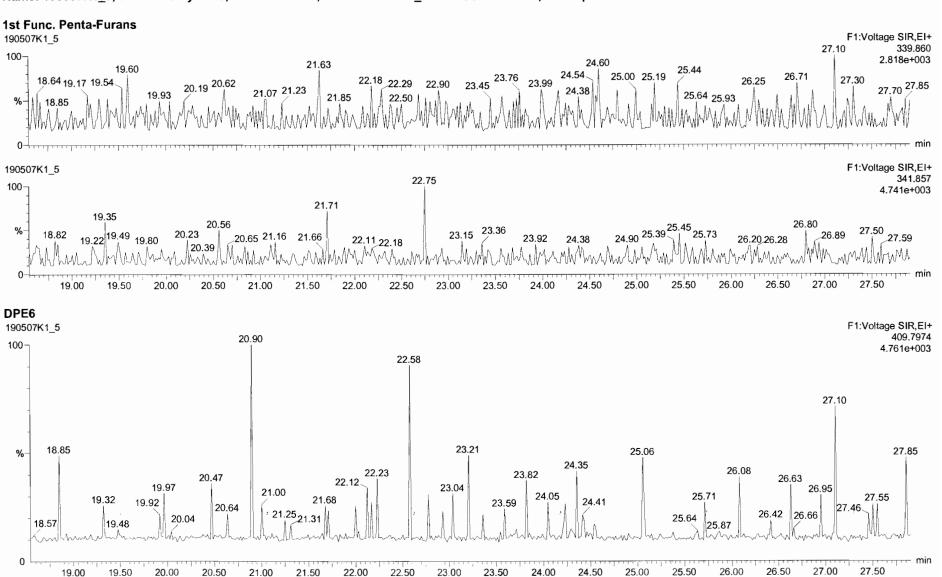
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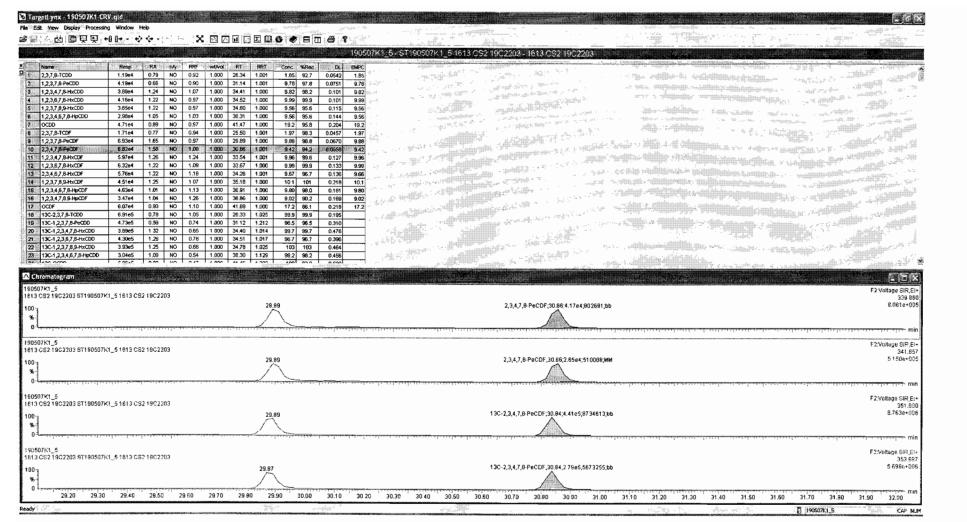
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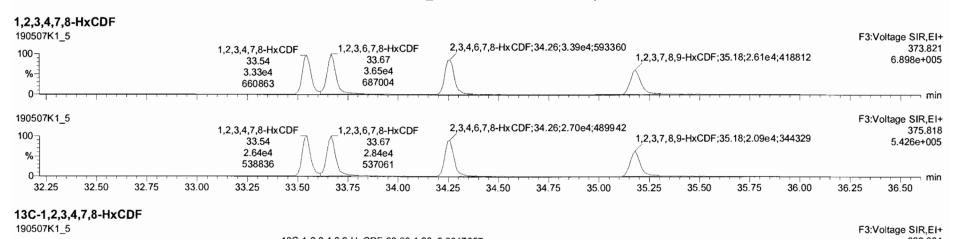


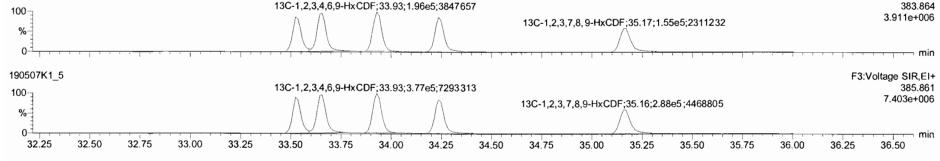


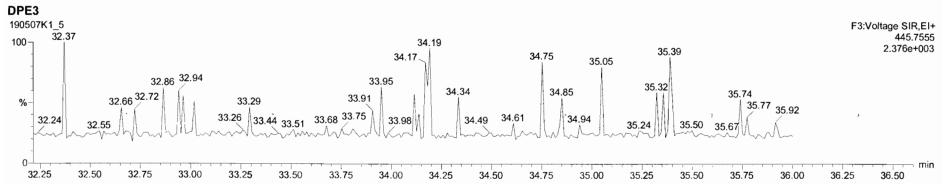
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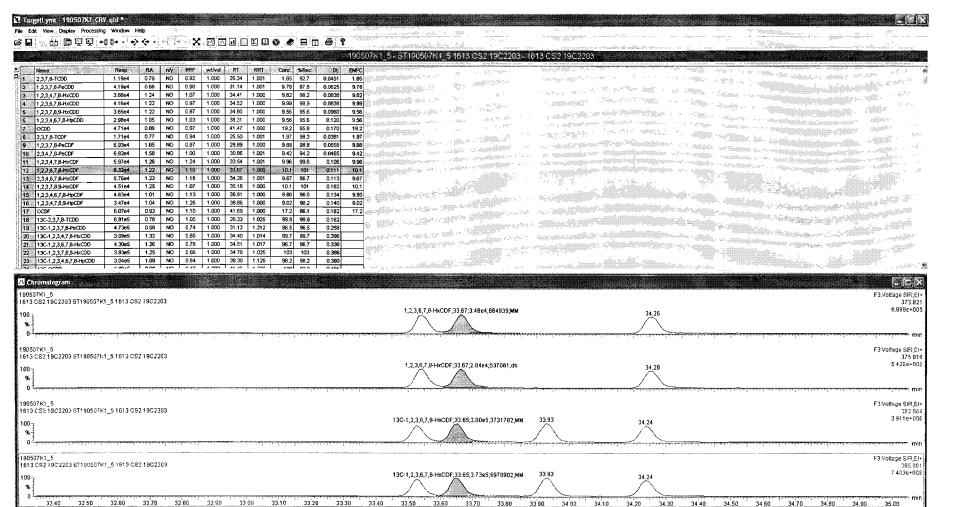
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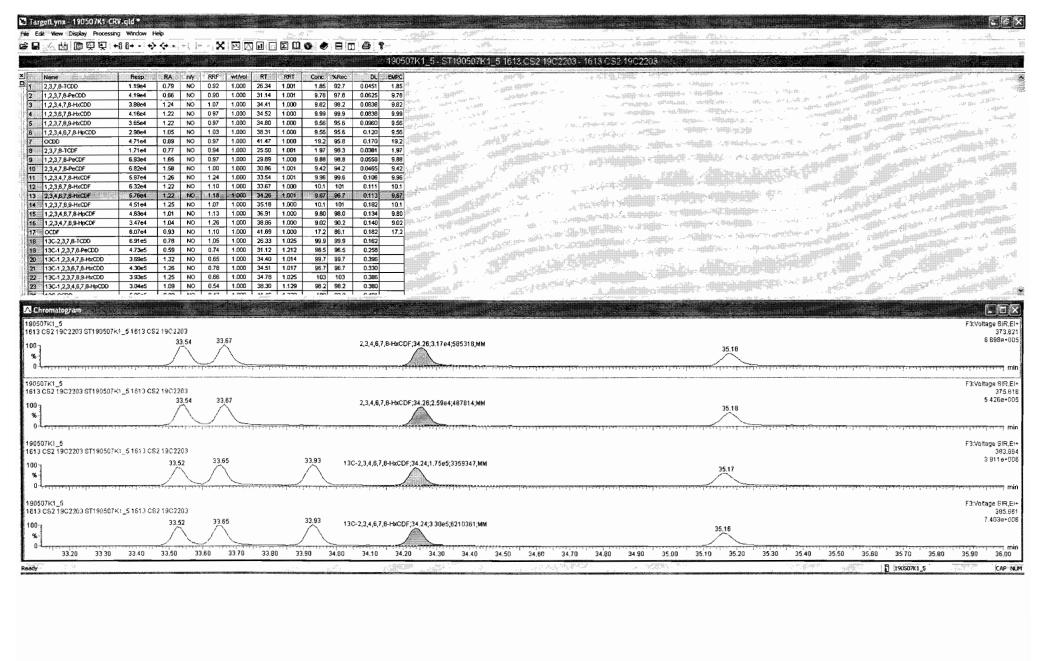




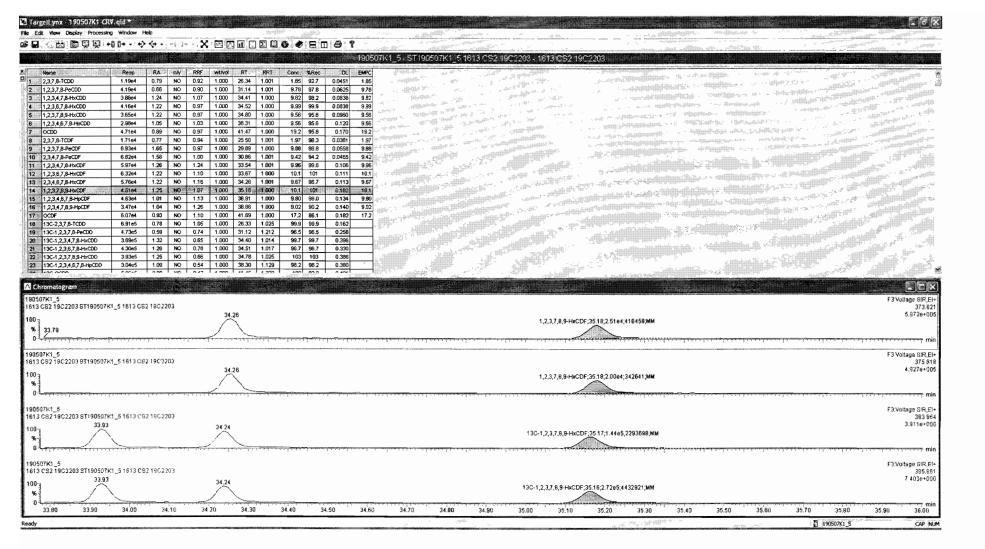


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190507K1_5



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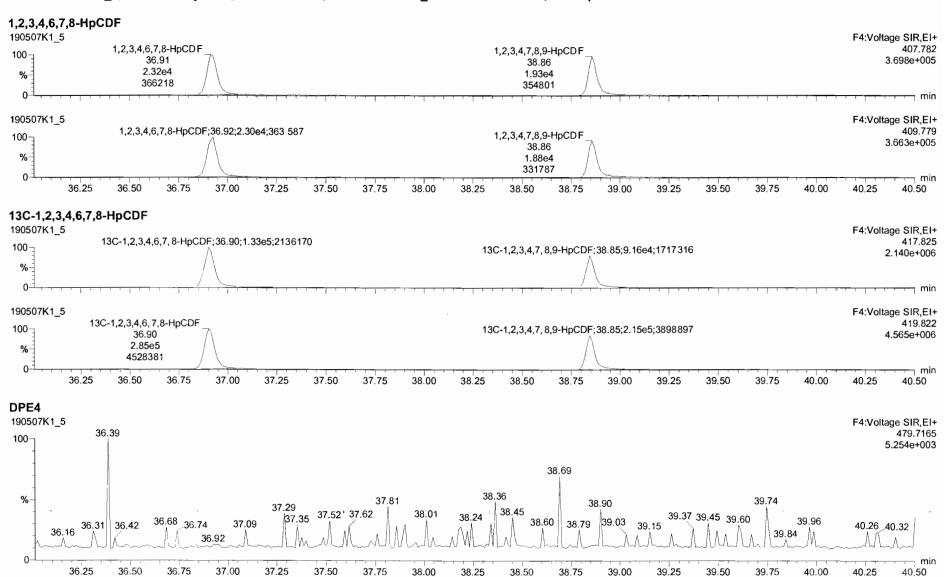


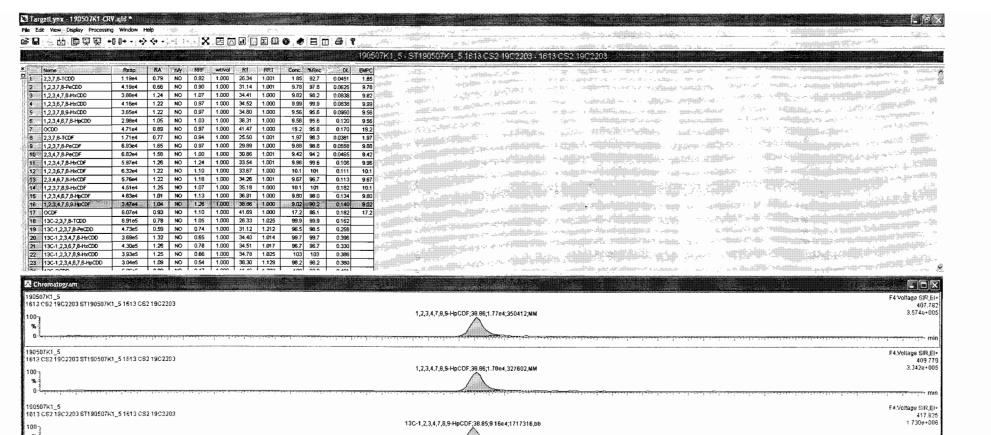
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40.00

190507K1_5

38.80

190507K1 5

37.50

1613 C82 19C2203 ST190507K1_51613 CS2 19C2203

37.70

37 80

37.90

38,00

38.10

38 20

38.30

38 40

38.50

38.60

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Work Order 1903741 Page 532 of 638

F4 Voltage SIR,EI

419.622

3 91 26+006

40.30

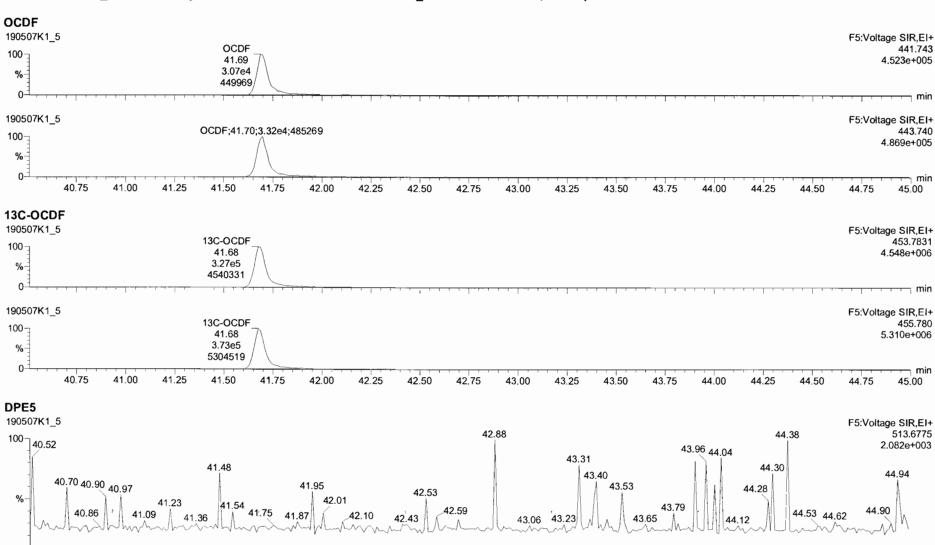
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40.75

41.00

41.25

41.50

41.75

42.00

42.25

42.50

42.75

43.00

43.25

43.50

43.75

44.00

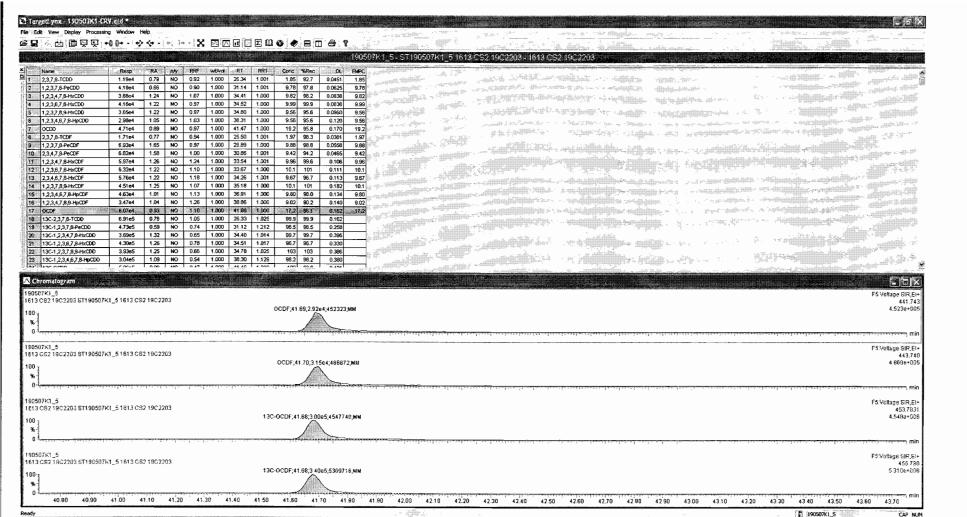
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¬ min

45.00



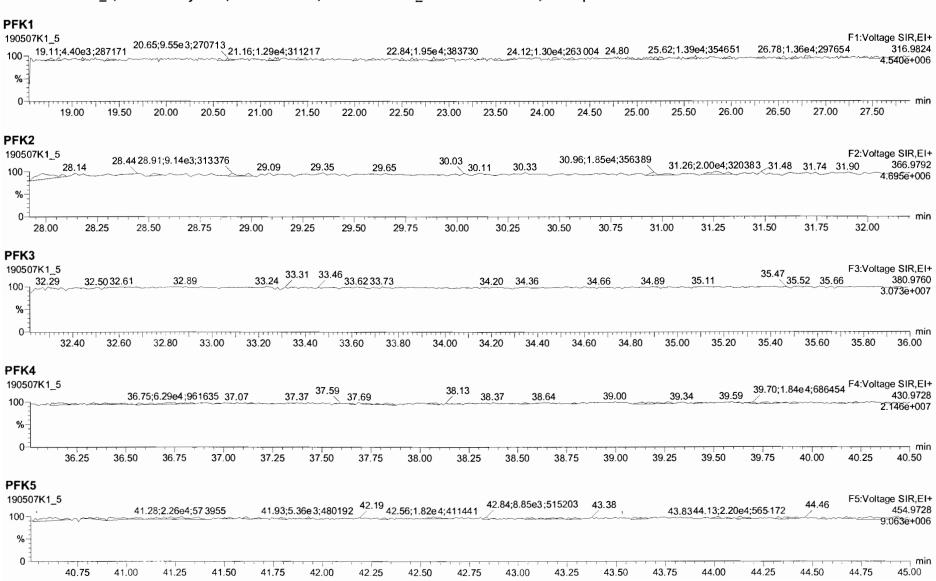
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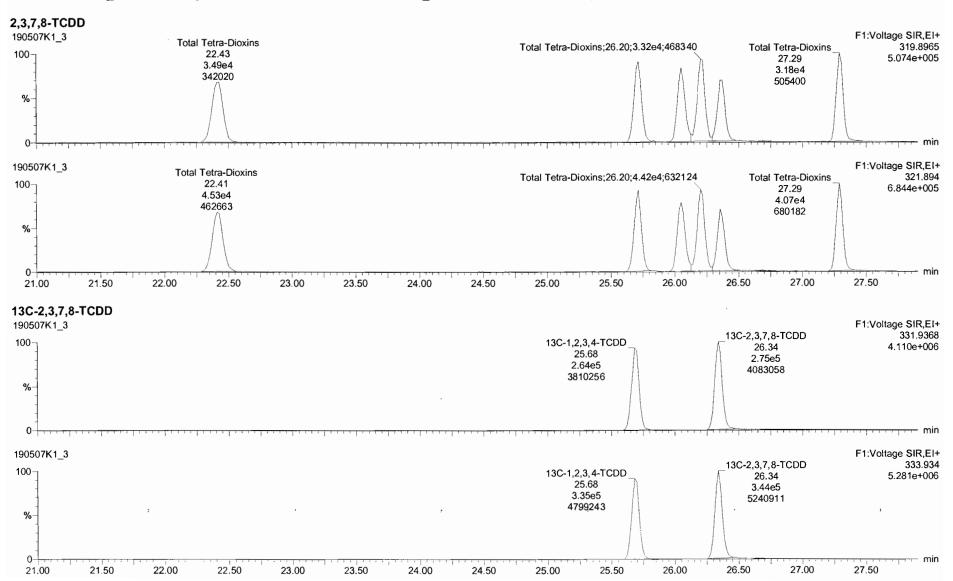
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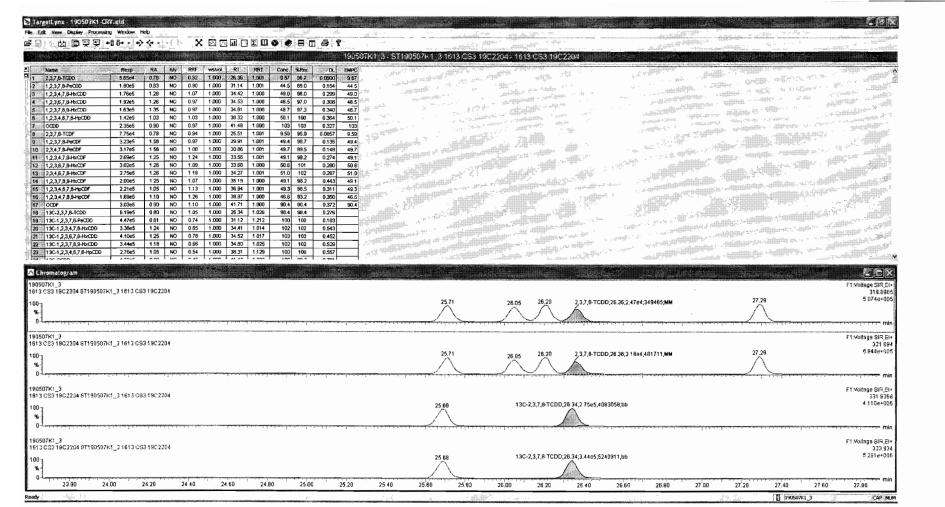


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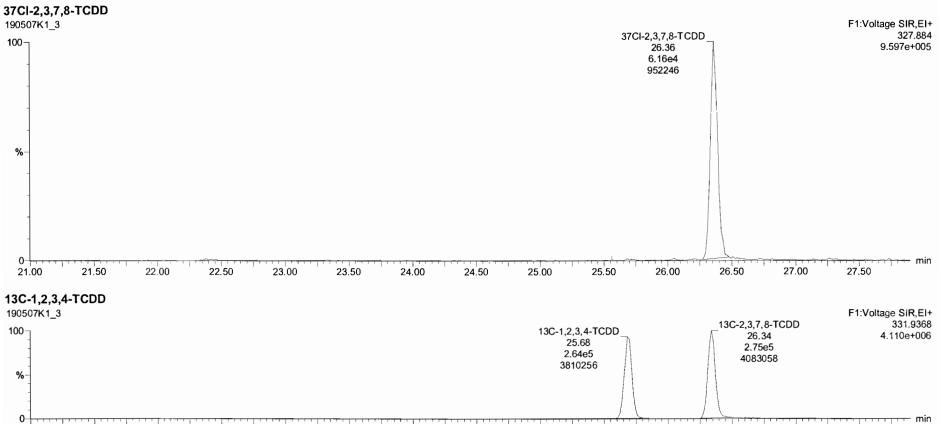
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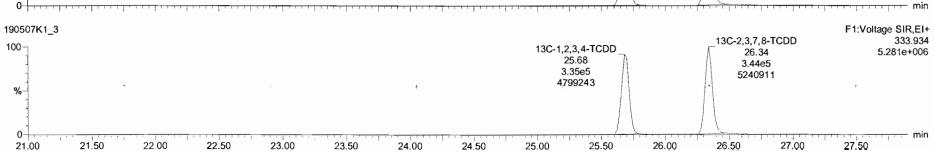
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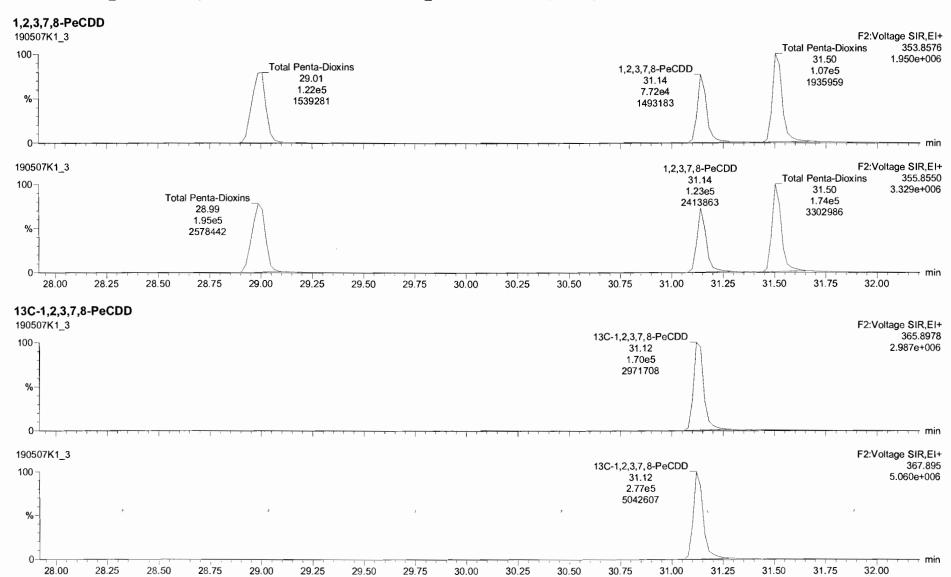


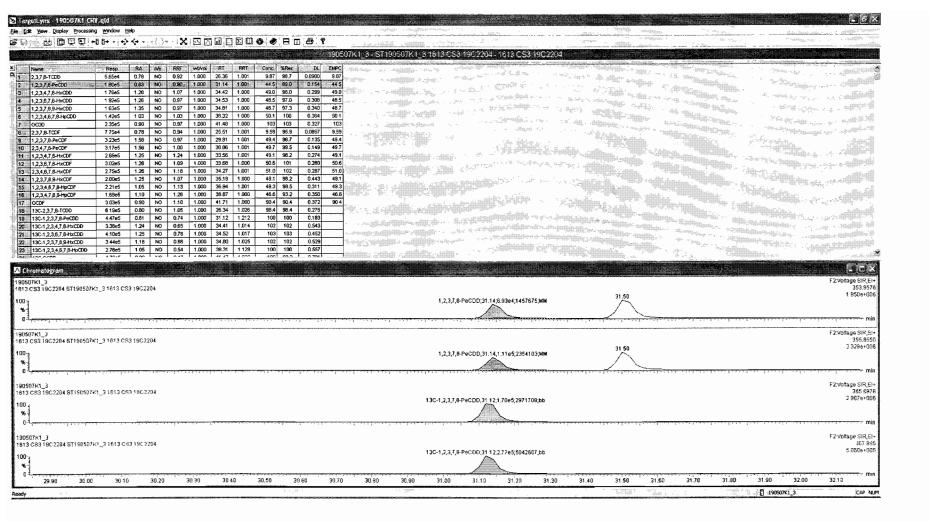
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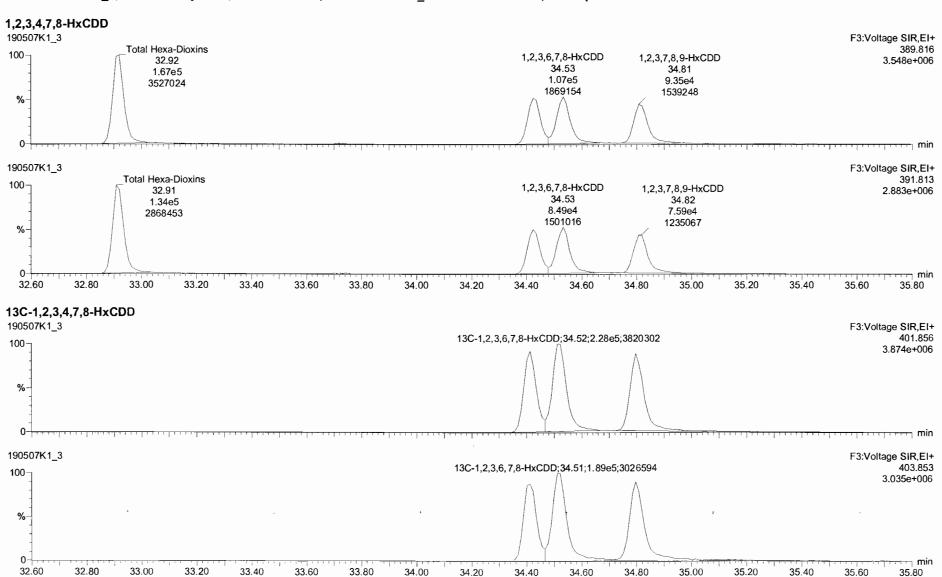
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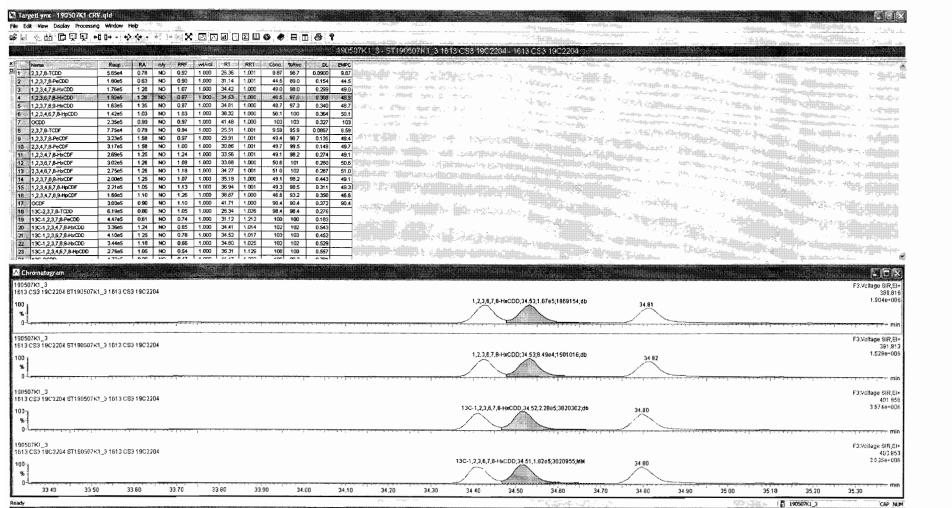
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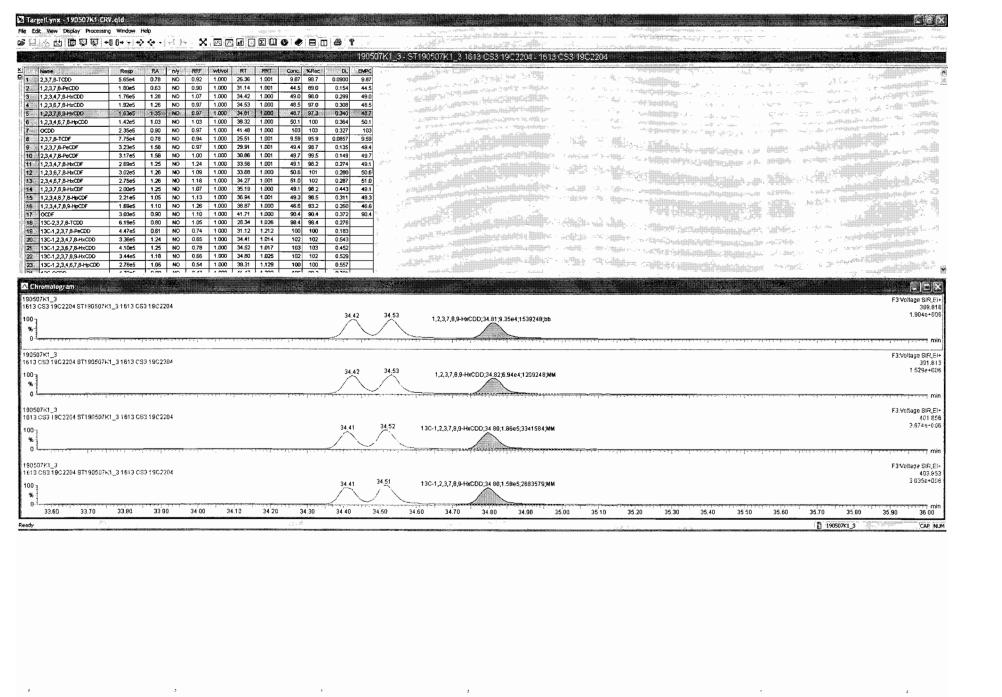
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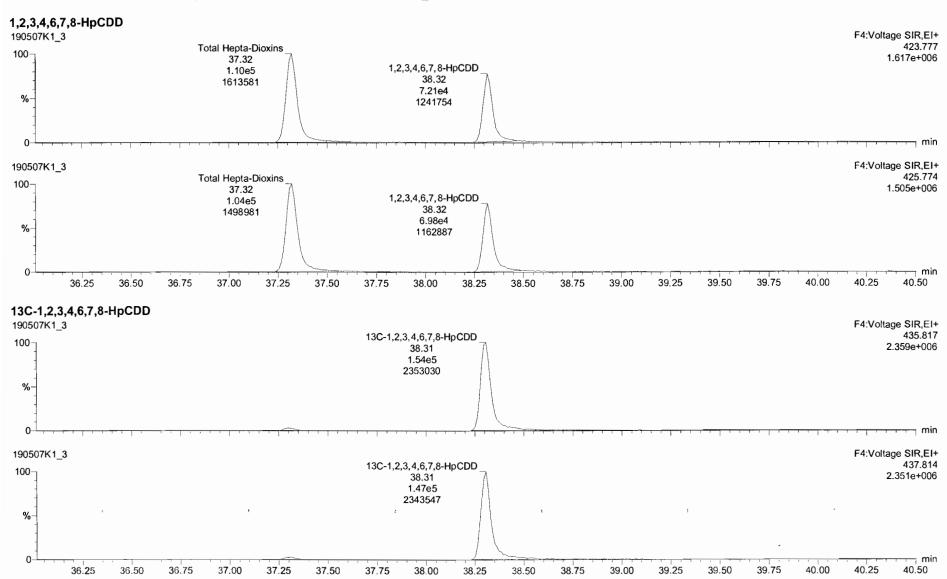


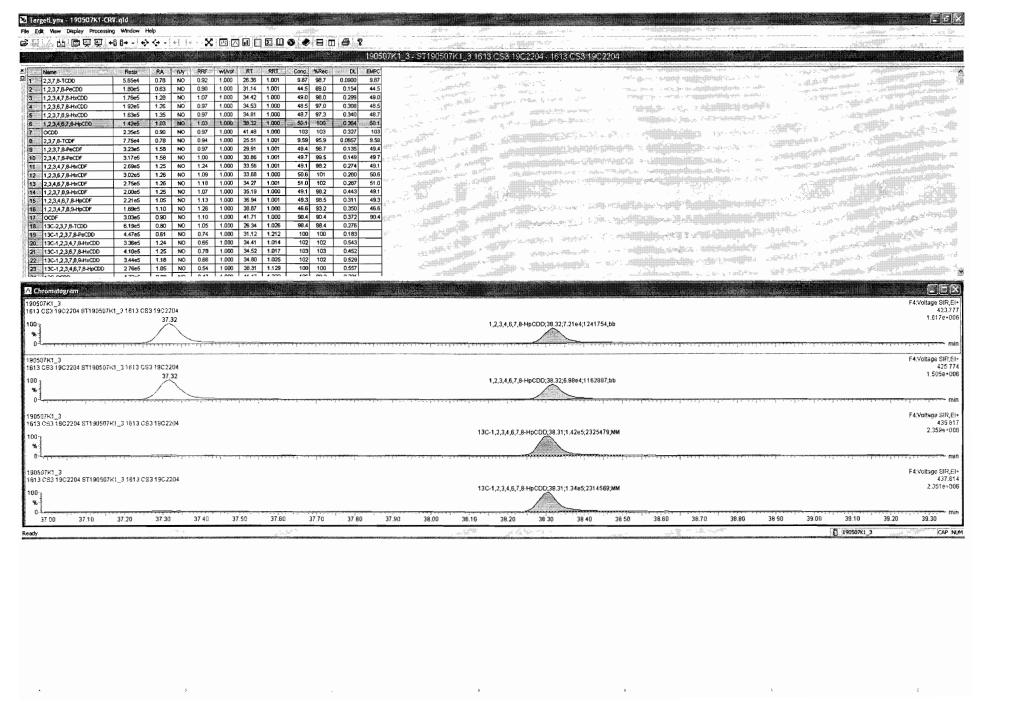
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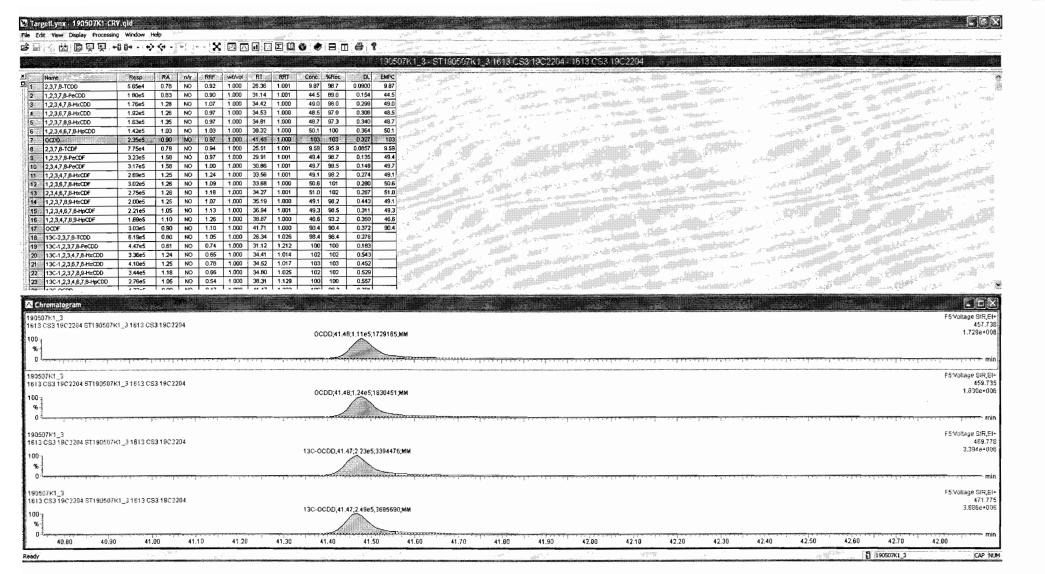
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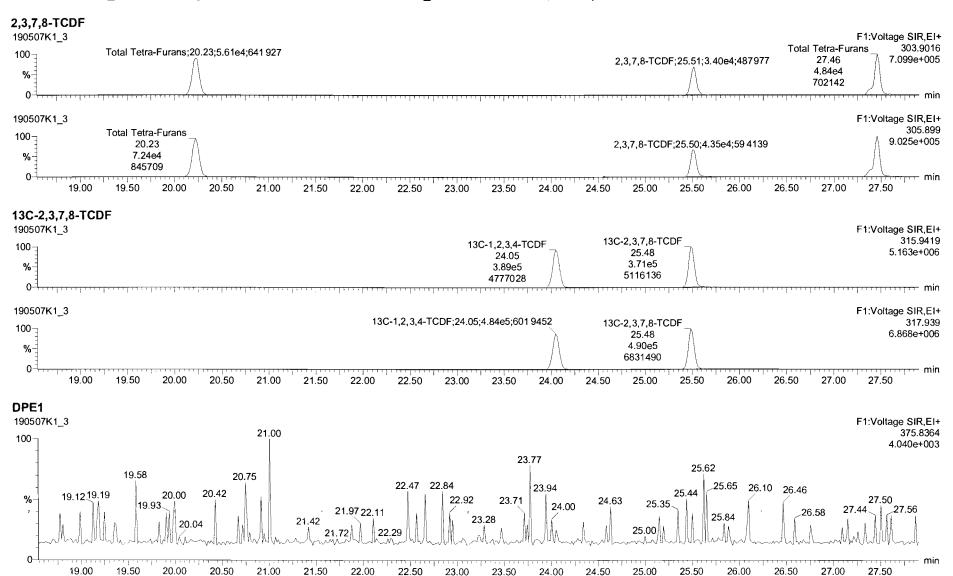
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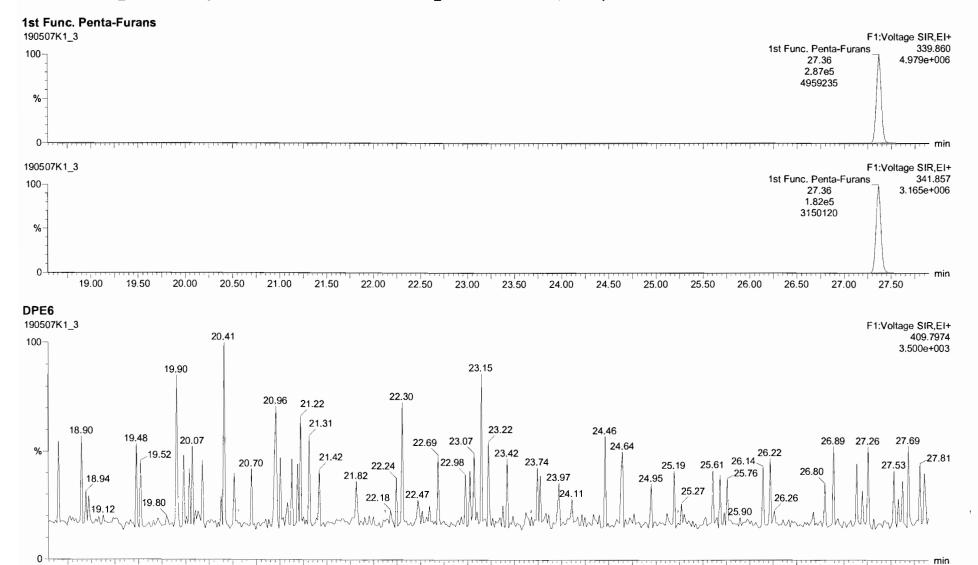
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19.00

19.50

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22.00

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23.00

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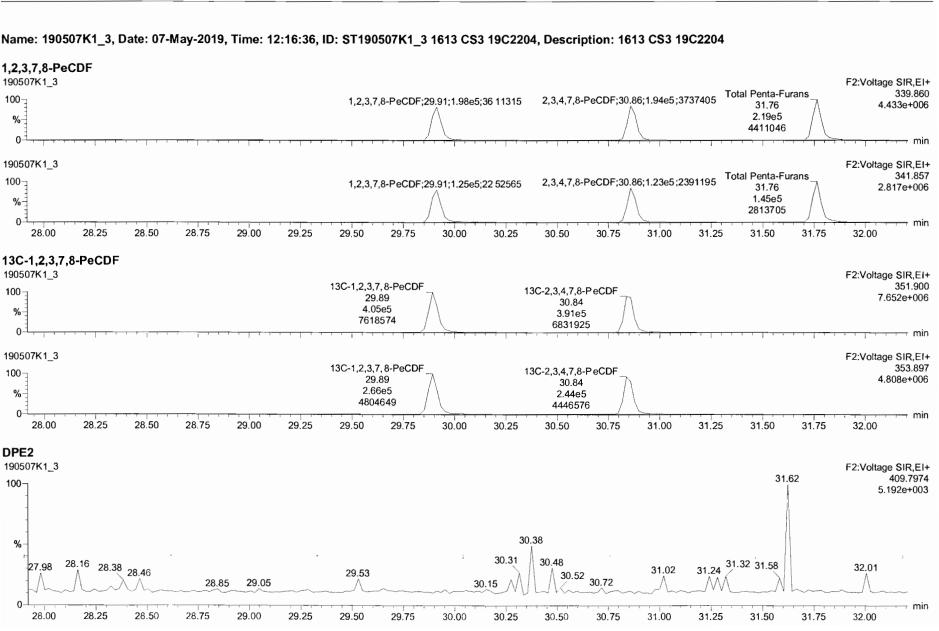
25.00

26.00

26.50

27.50

27.00

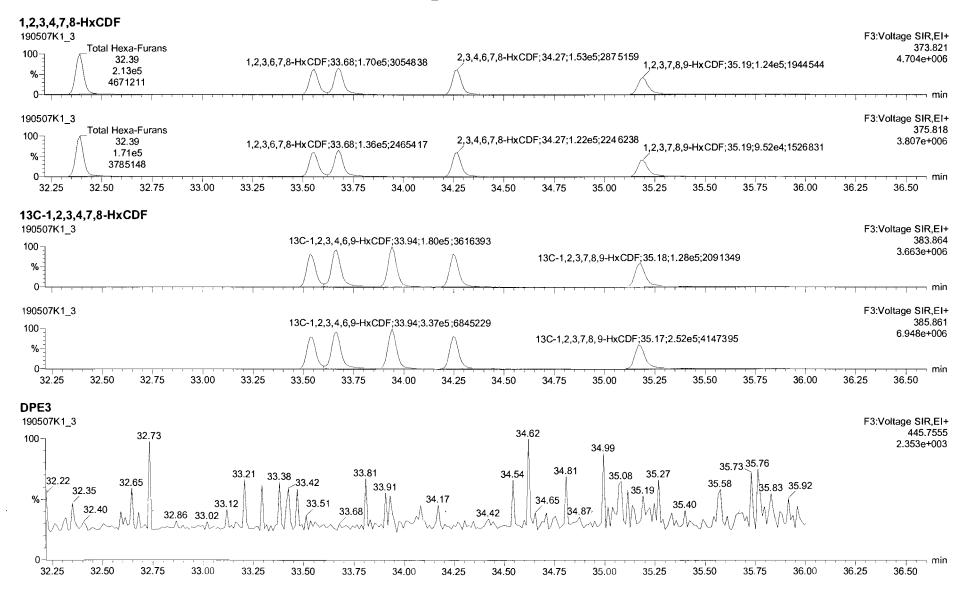


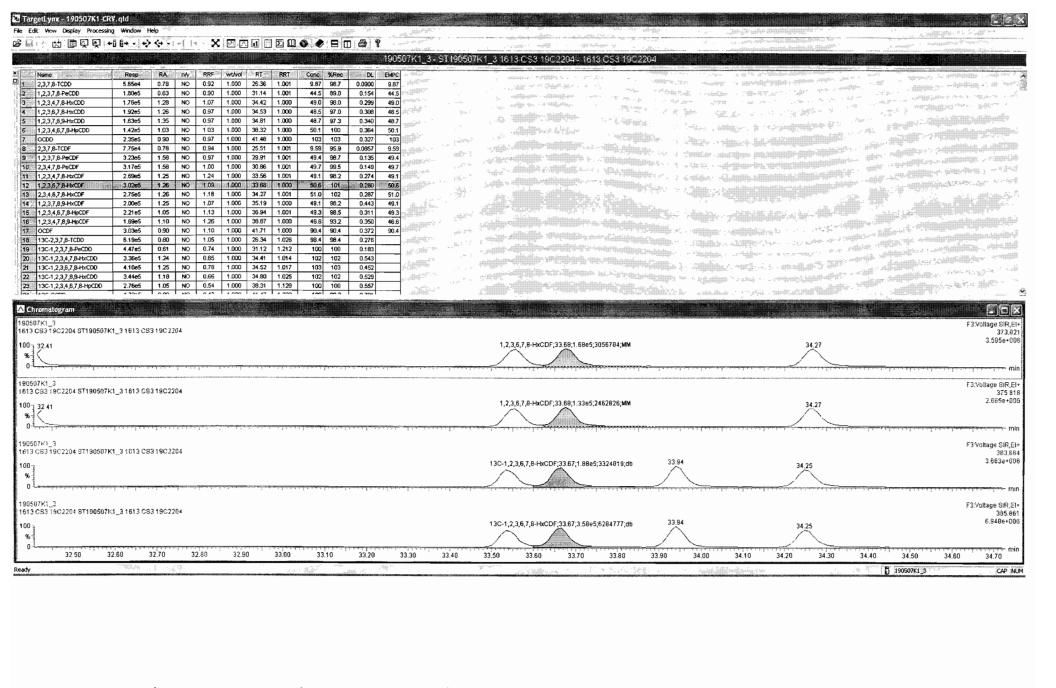
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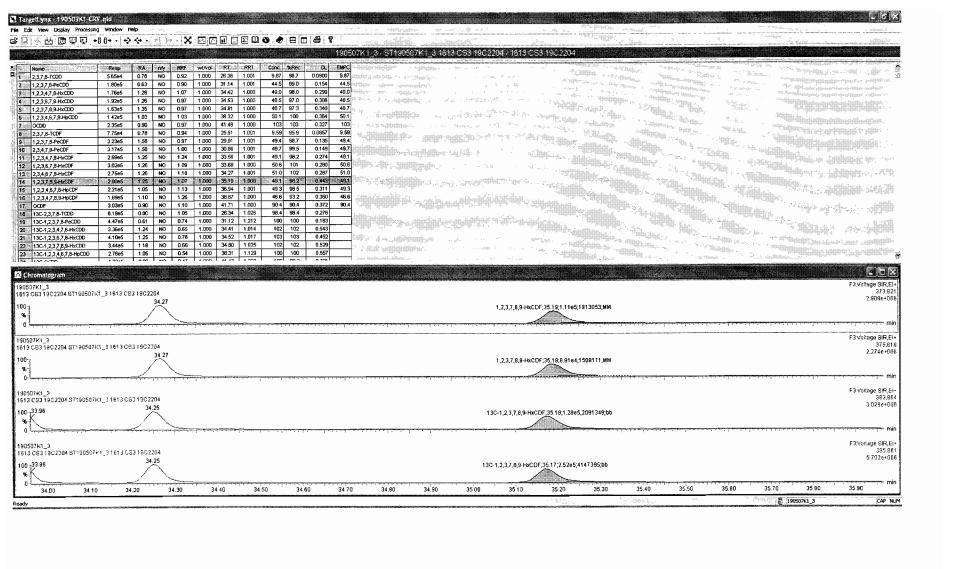
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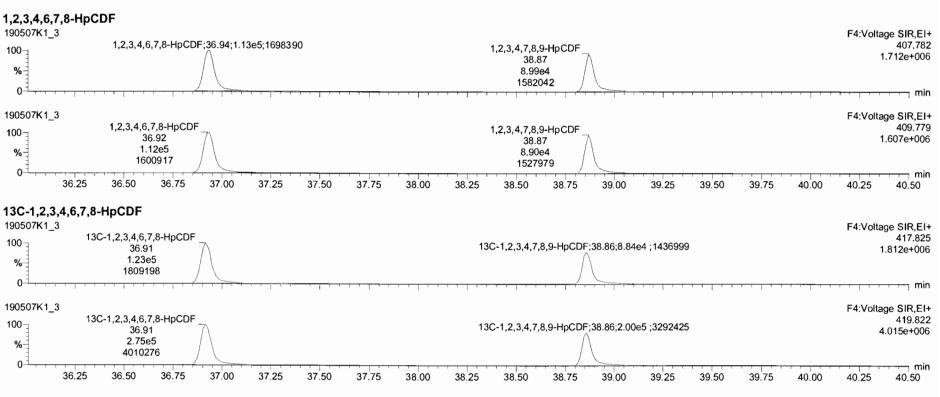


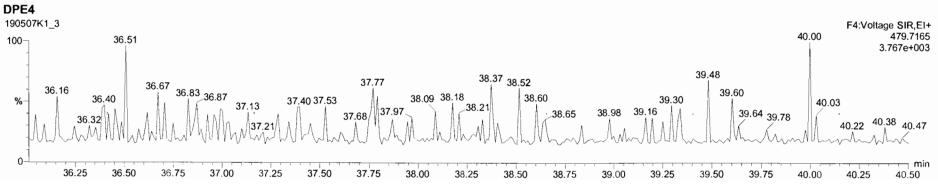
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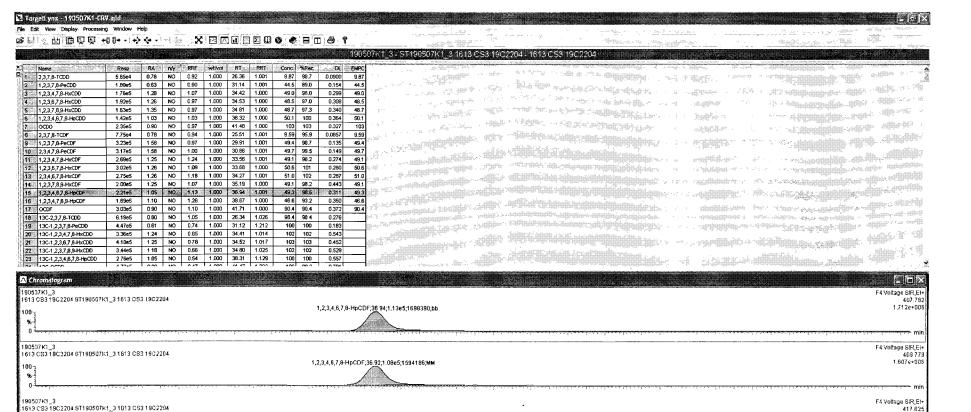
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36.90

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37.40

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37.70

37.60

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[] 190507K1_3

38.20

190507k1 3

1613 CS3 19C2204 ST190507K1_3 1613 CS3 19C2204

36.20

36.30

36.40

36 50

36.60

36 70

36 80

36.10

Work Order 1903741 Page 555 of 638

417.825 1.812e+006

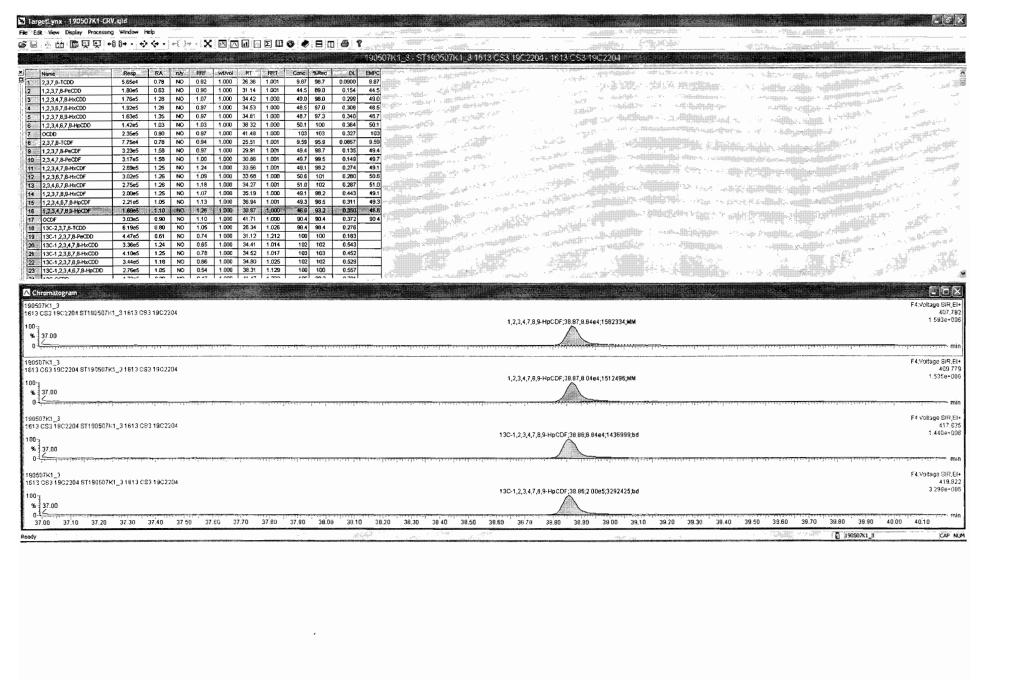
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CAP NUM

4 015e+008

F4 Voltage SIR,EI+

36,30

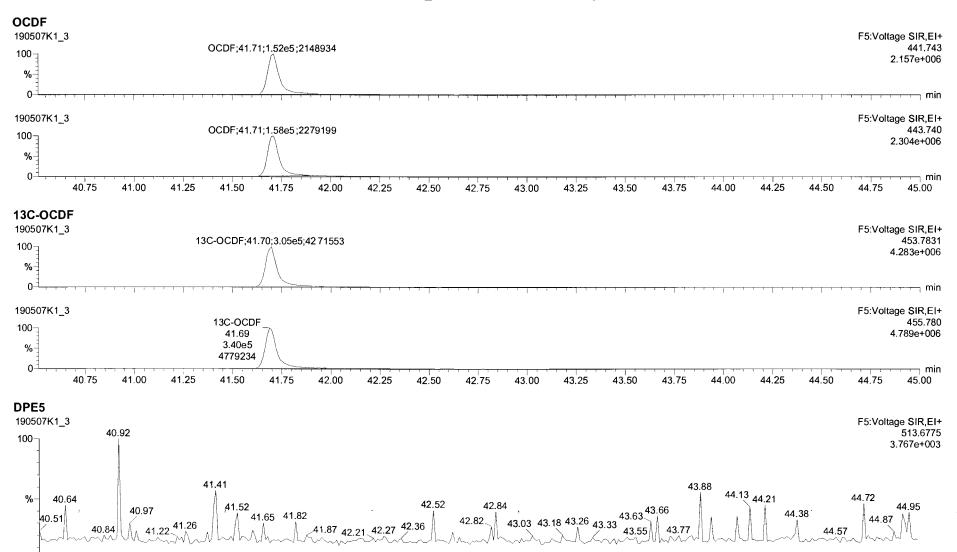


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40.75

41.00

41.25

41.50

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42.50

42.75

43.00

43.25

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43.75

44.00

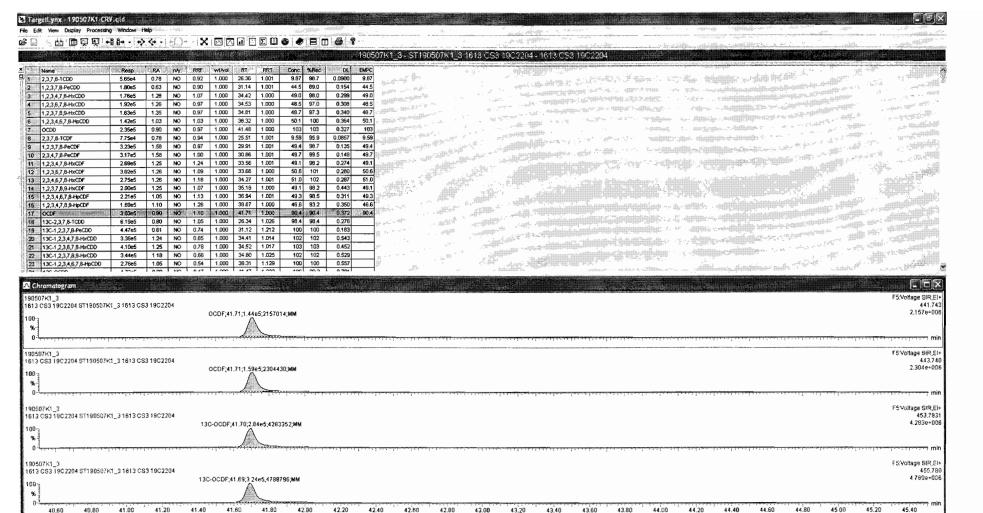
44.25

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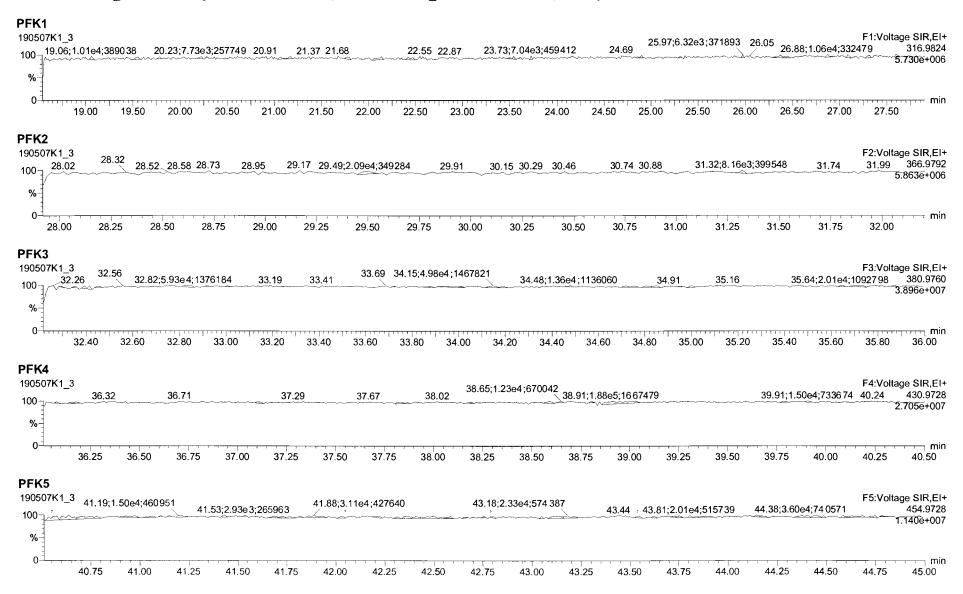
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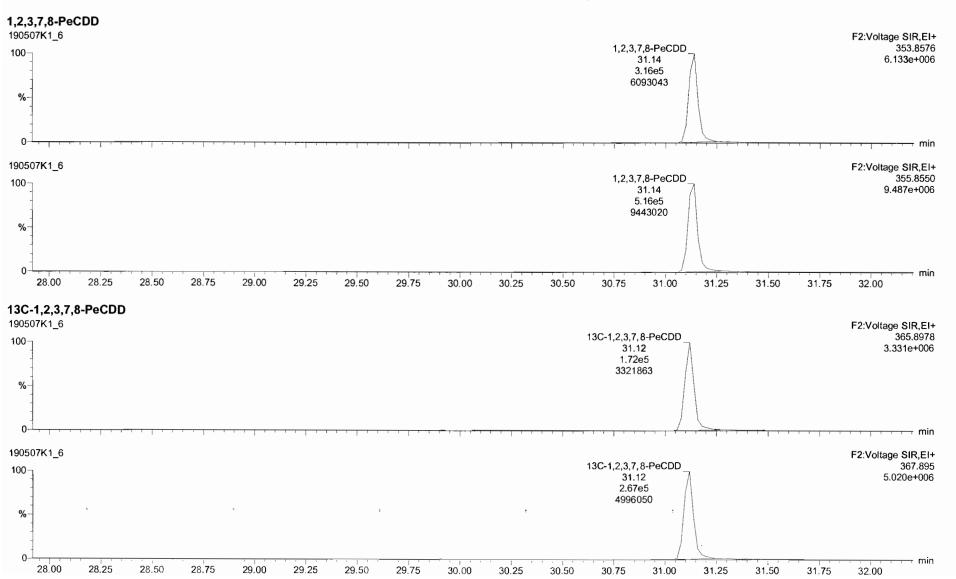
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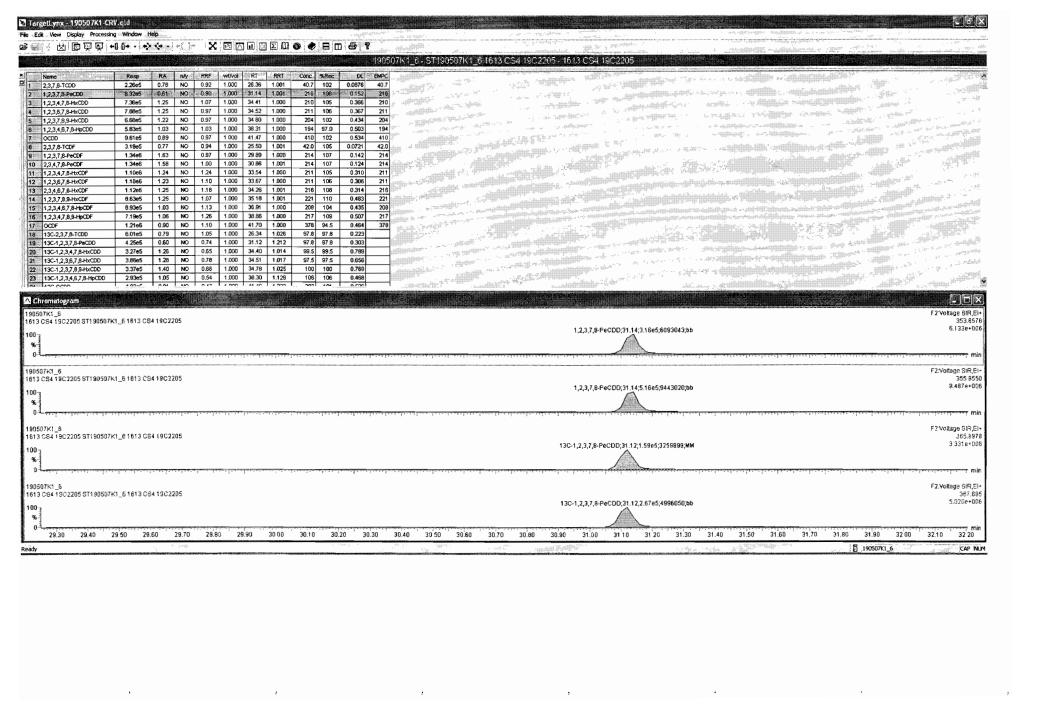
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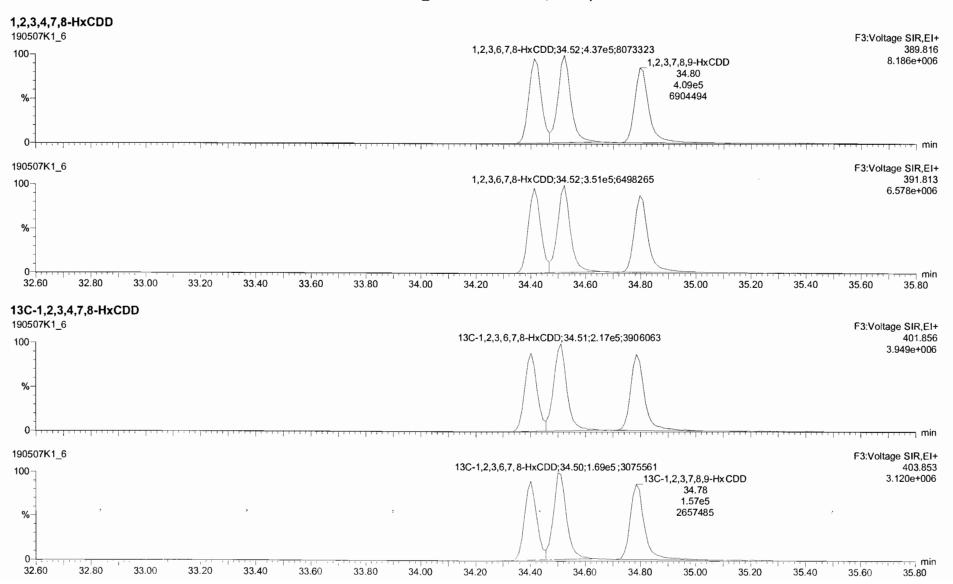


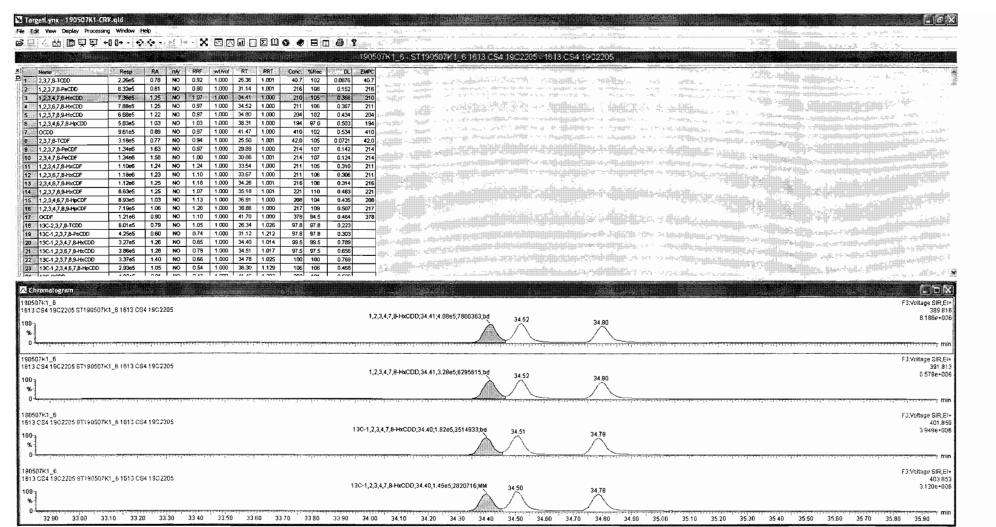
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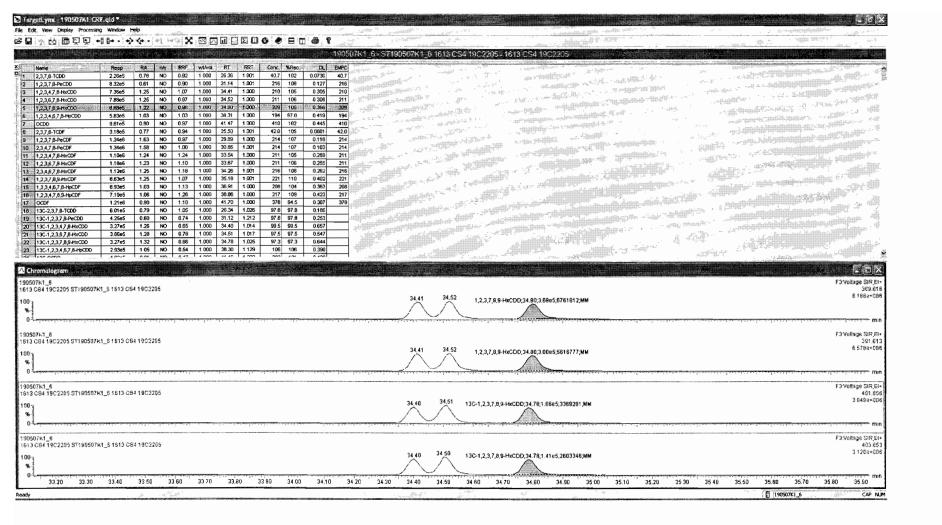




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ពី 190507K1 6

CAP NUM

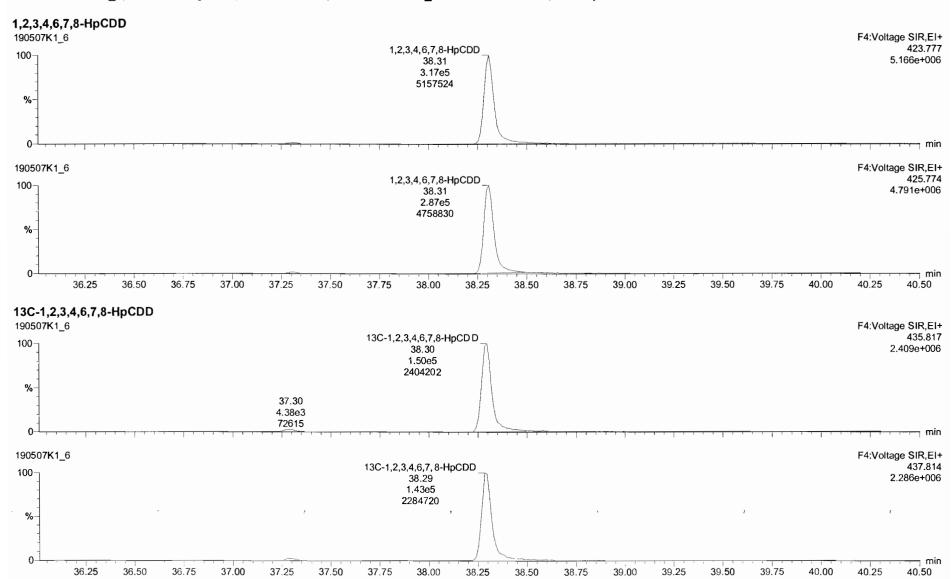


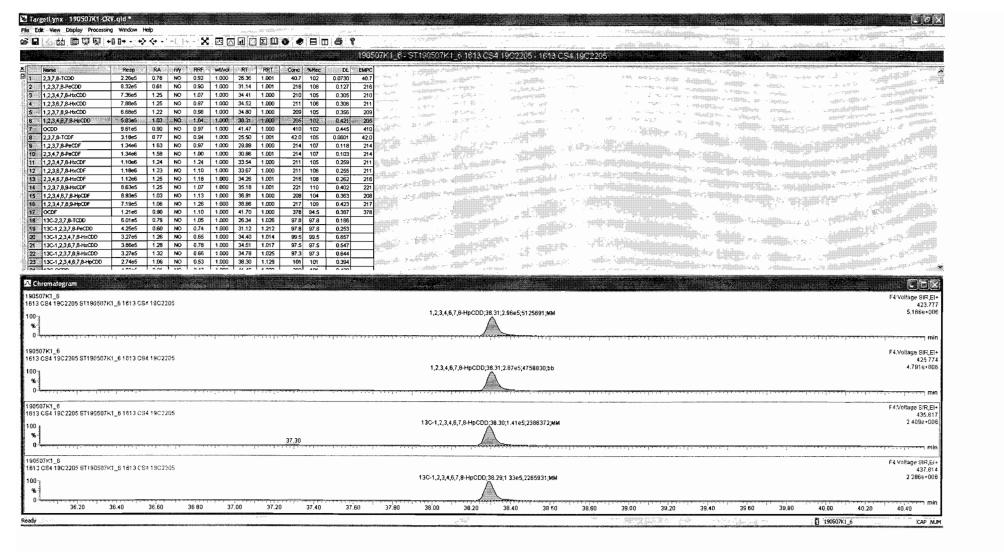
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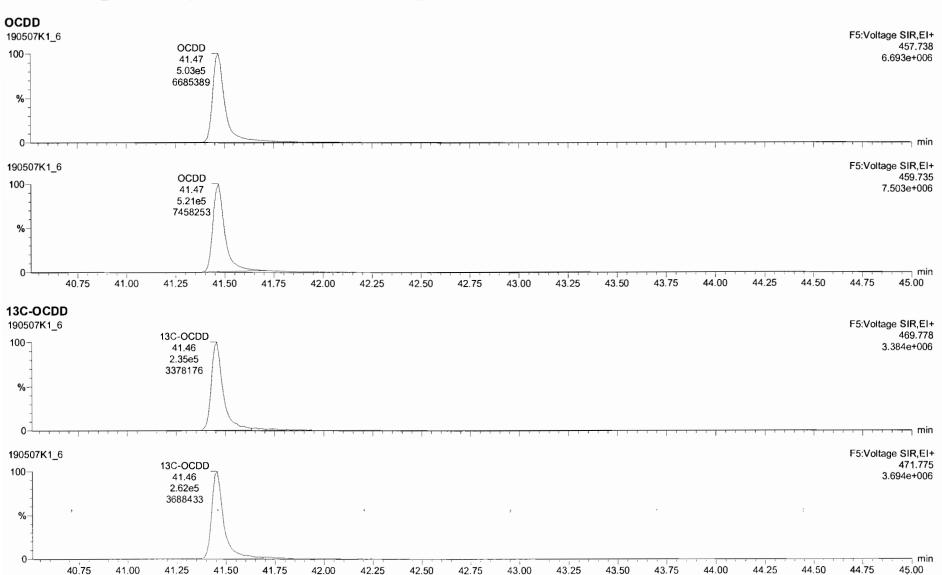


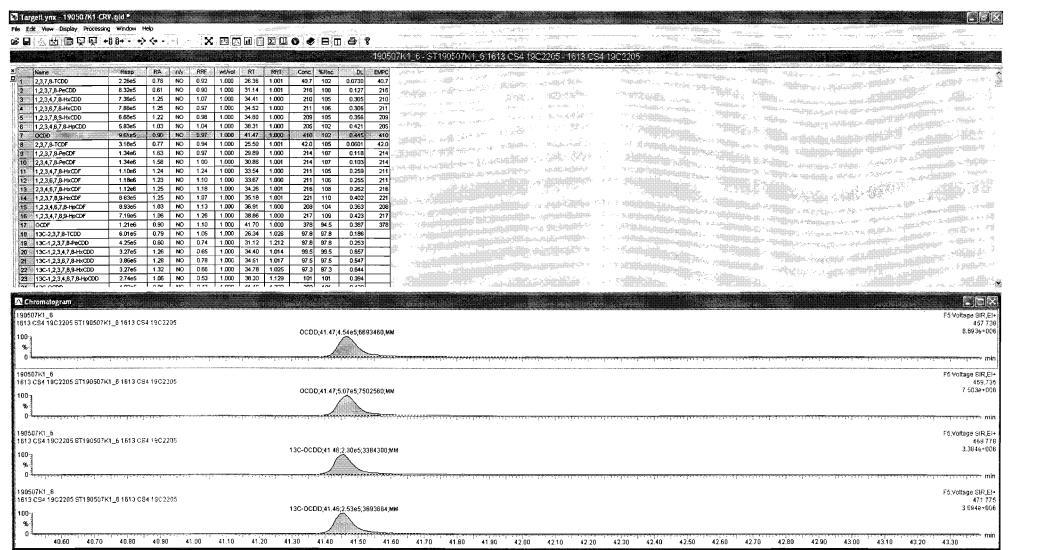
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190507K1_6

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23.00

23.51

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25.00

25.61

25.50

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26.14

26.00

21.08

20.79

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20.50

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21.50

19.42

19.50

20.00

18.83

19.00

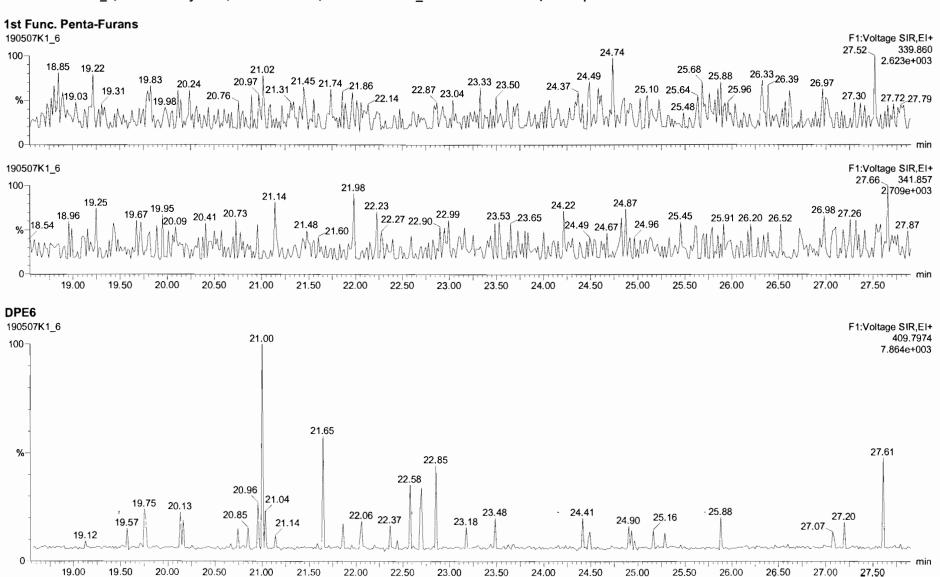
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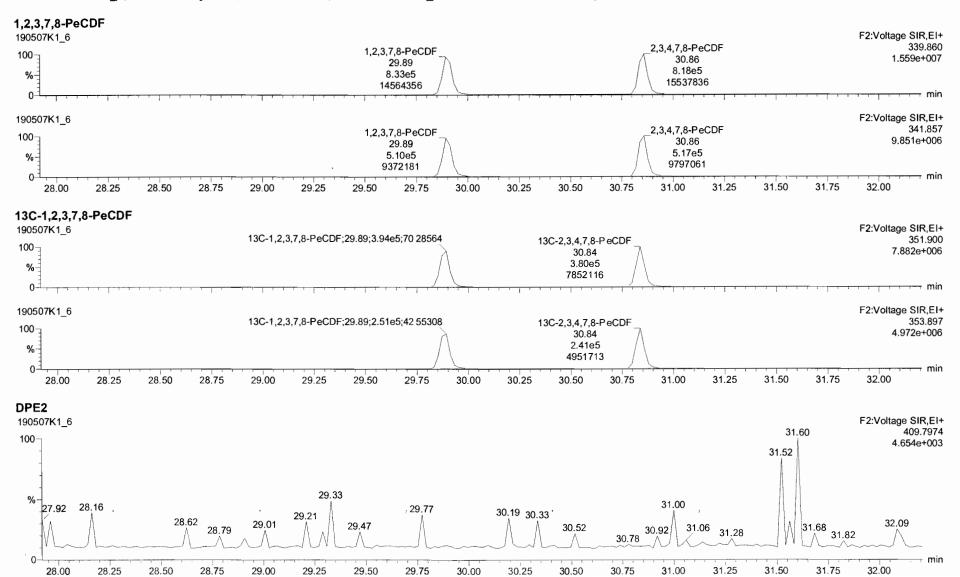
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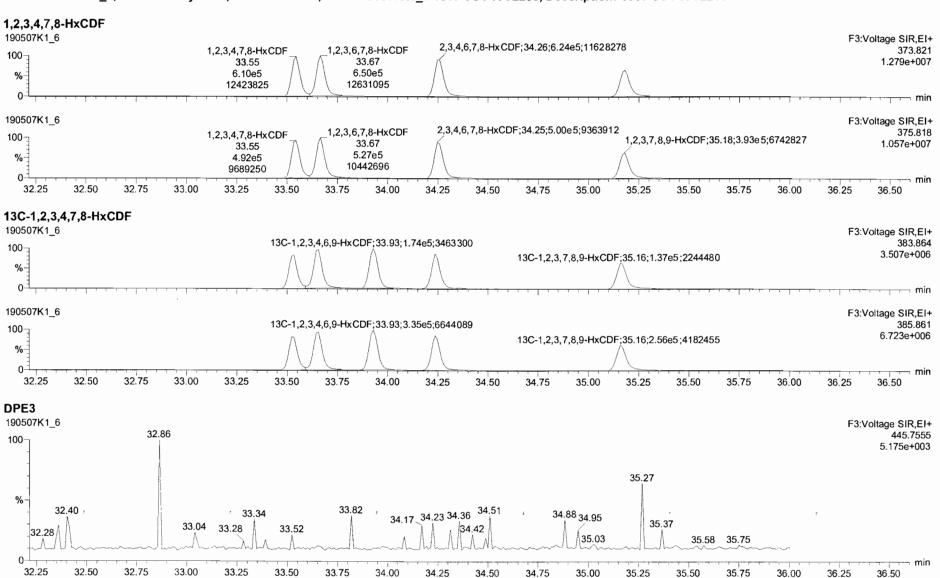
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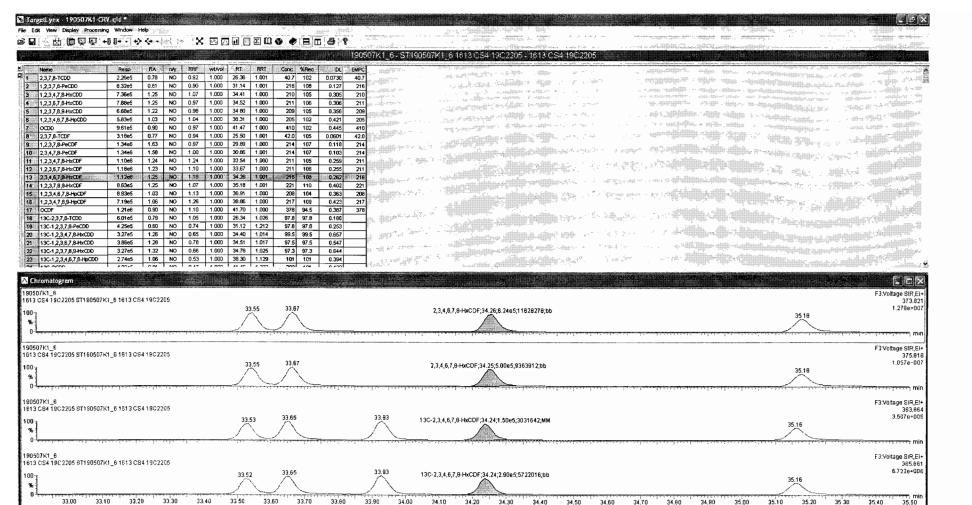


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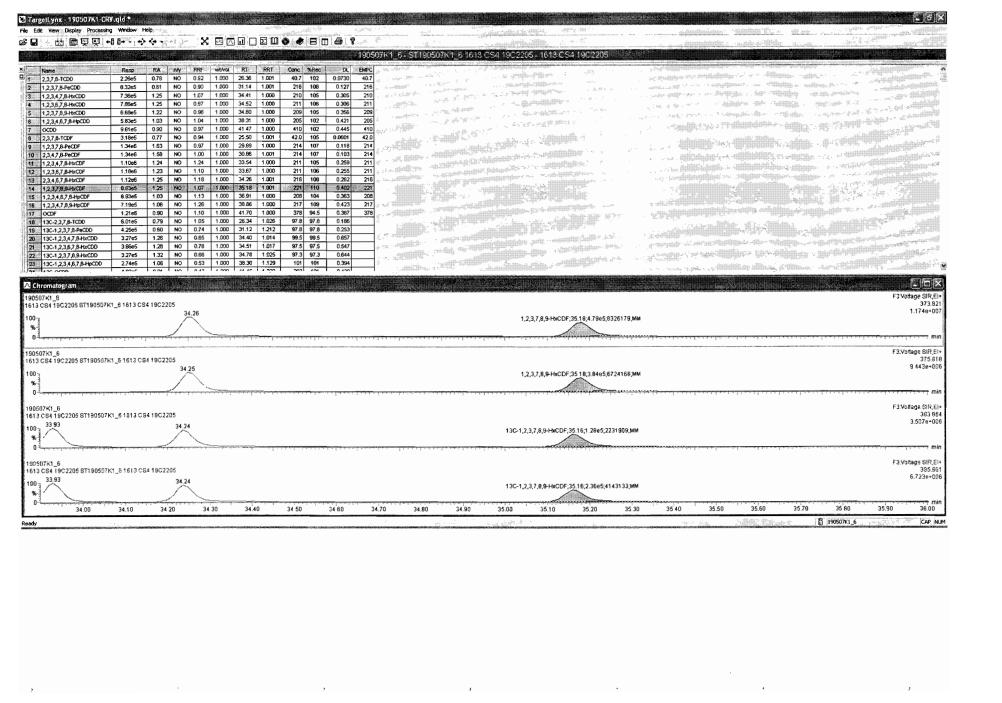
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35.40

35.50

CAP NUM

34 00

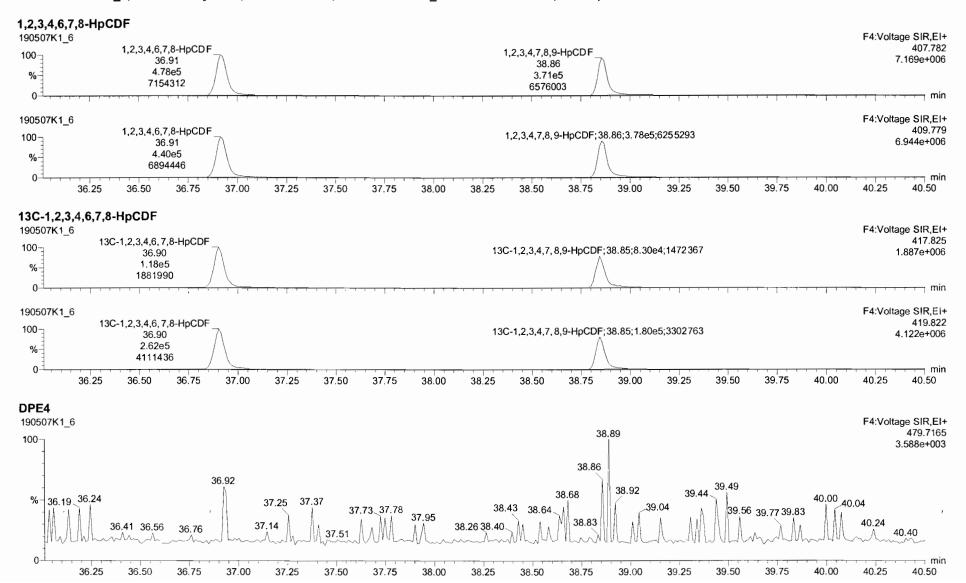


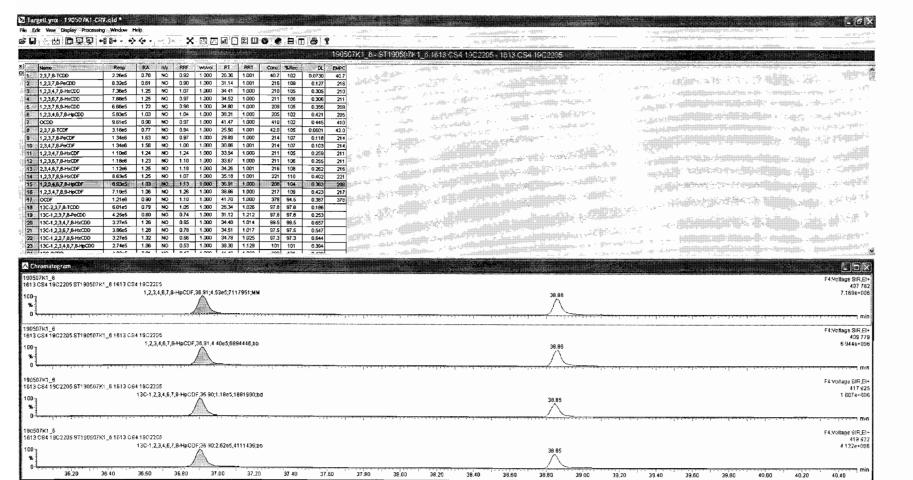
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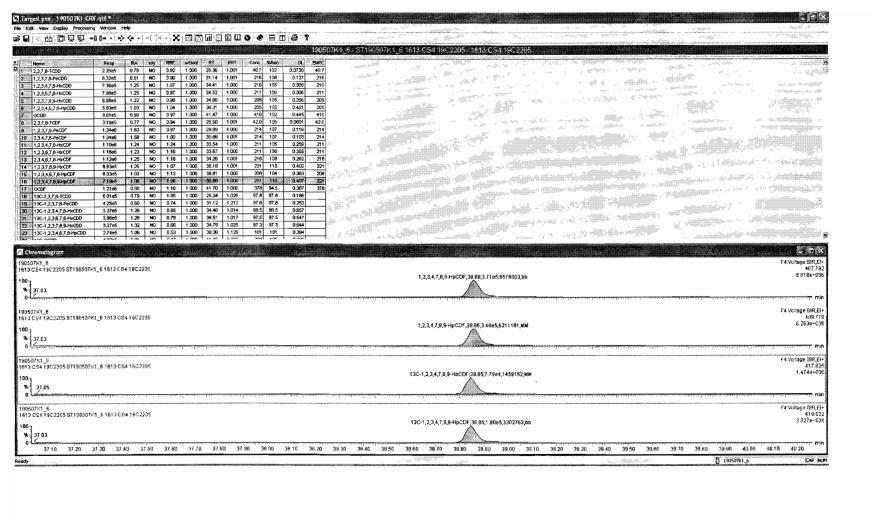




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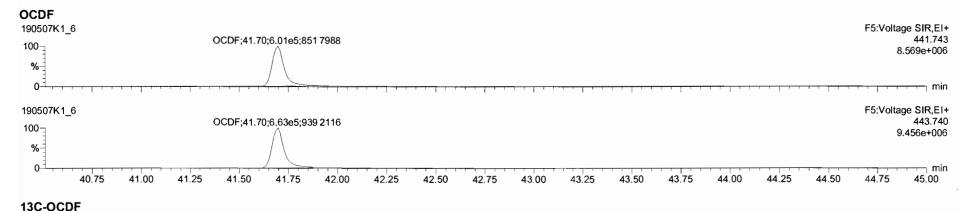
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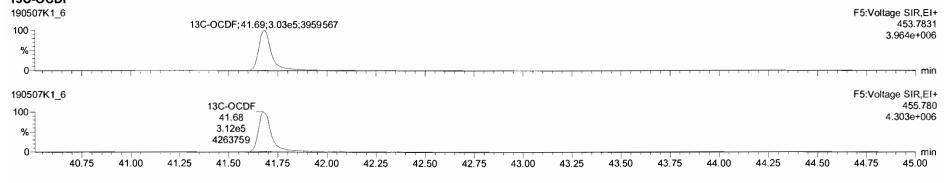


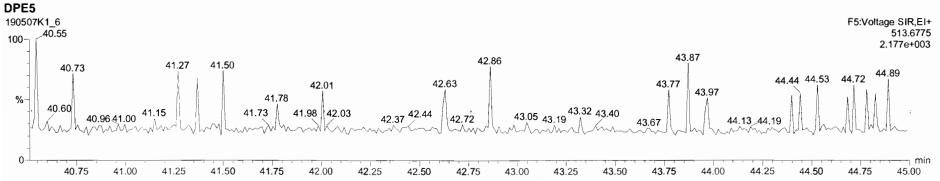
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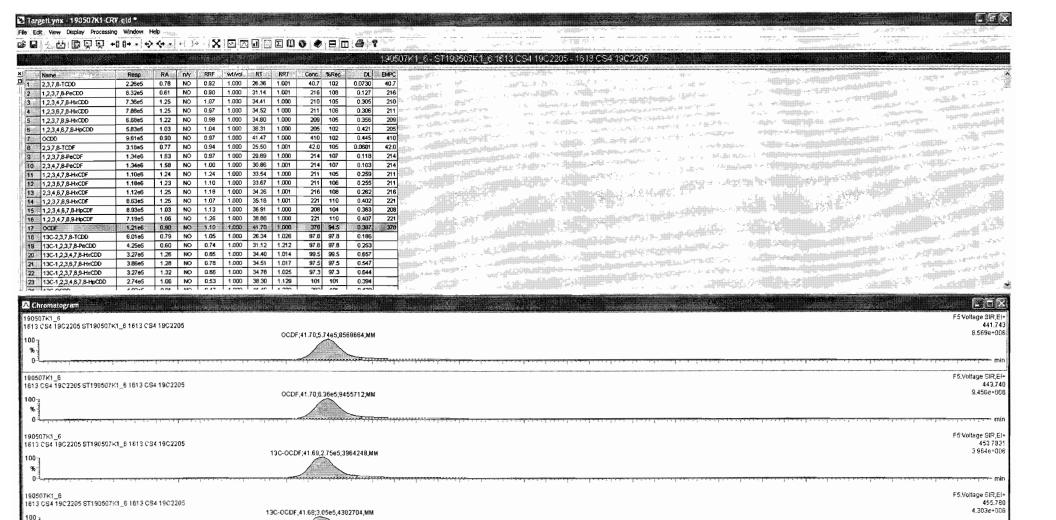
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42.60

42.70

42.80

42,90

43.00

តី 190507K1 6

43.10

43 20

CAP NUM

41.50

41.60

41.70

41.80

41.90

42.00

42 10

42.20

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42.40

42.50

41.40

41.20

41.10

Ready

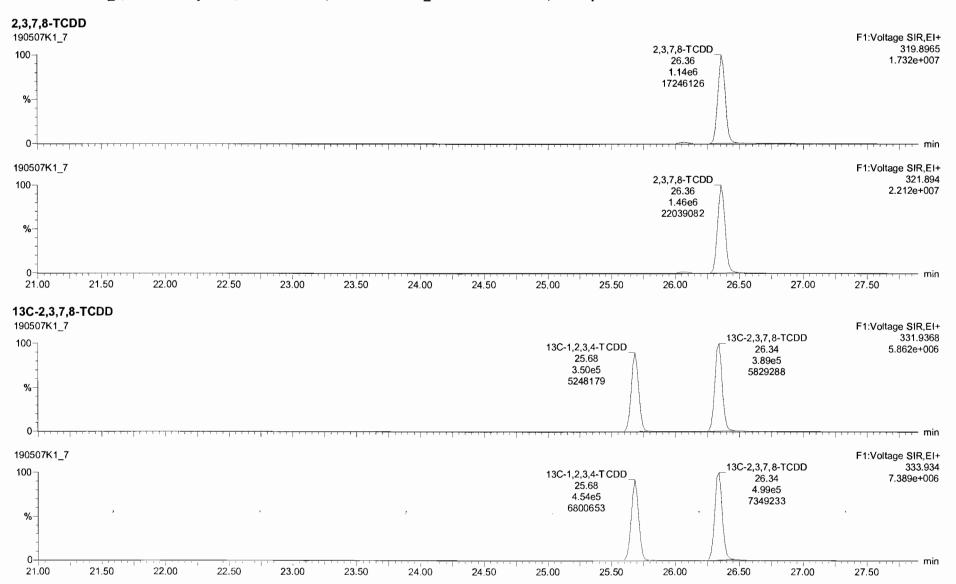
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Work Order 1903741 Page 582 of 638

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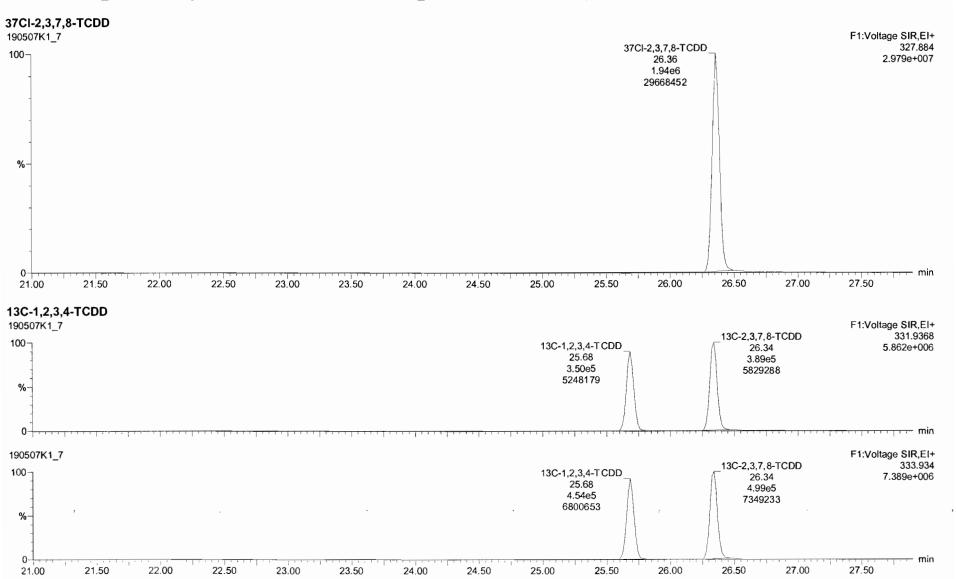
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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



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Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

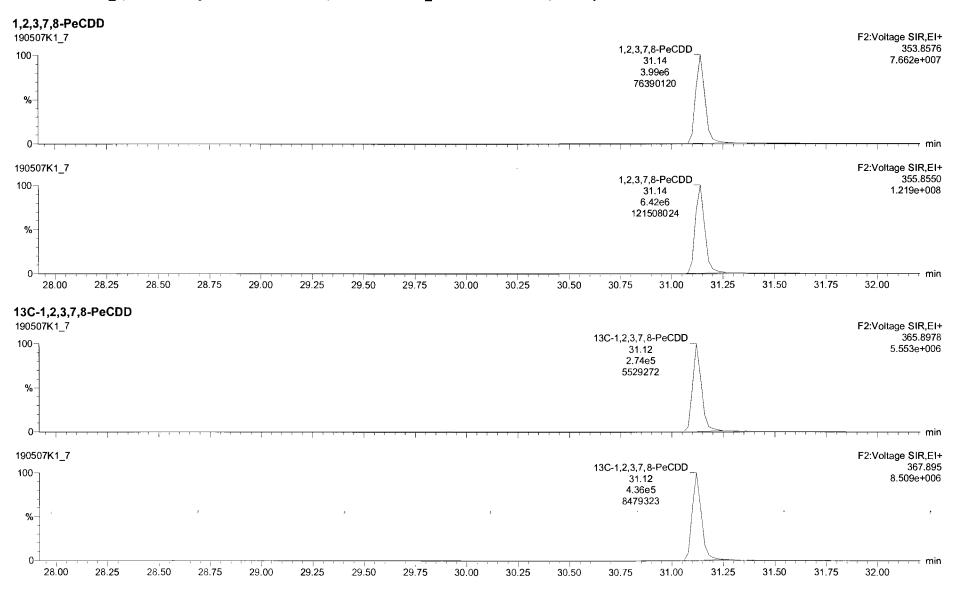


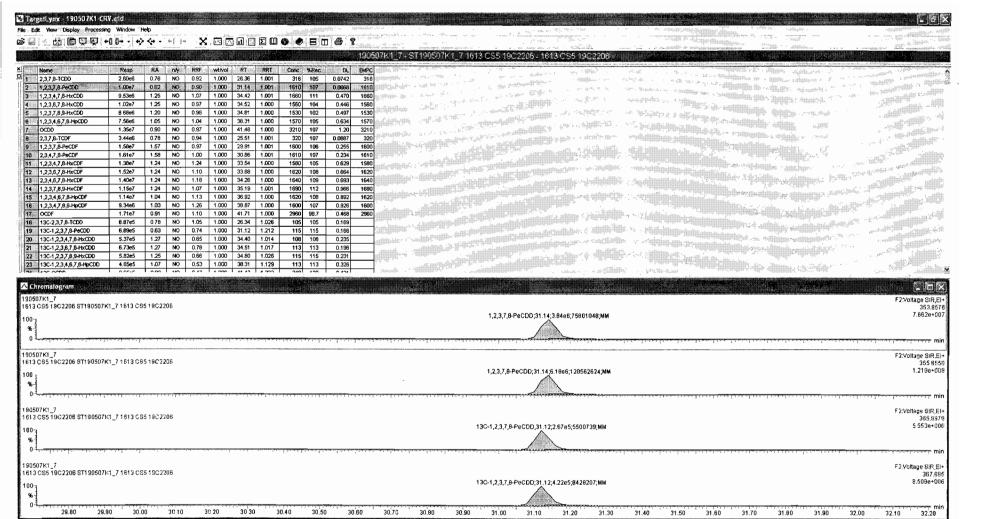
Quantify Sample Report Vista Analytical Laboratory

Dataset:

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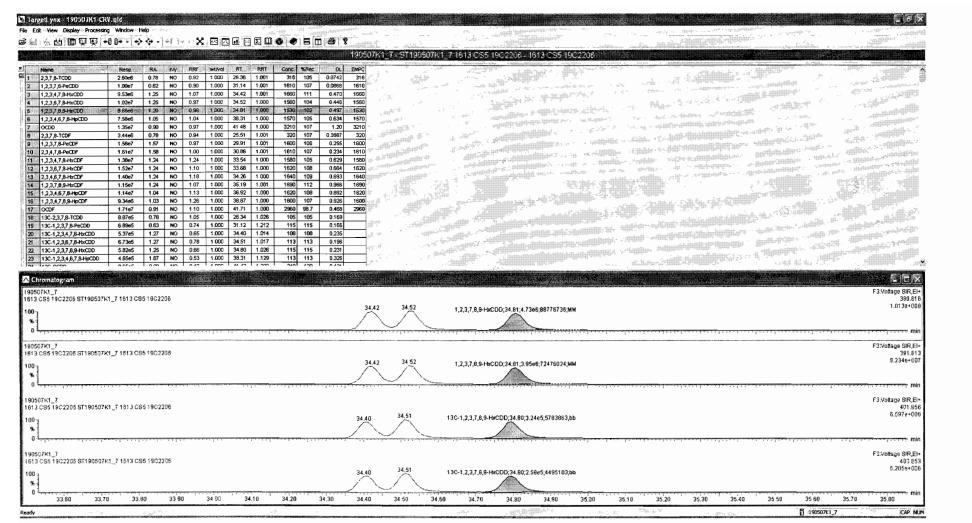




Ready

ត្តិ 190507K1_7

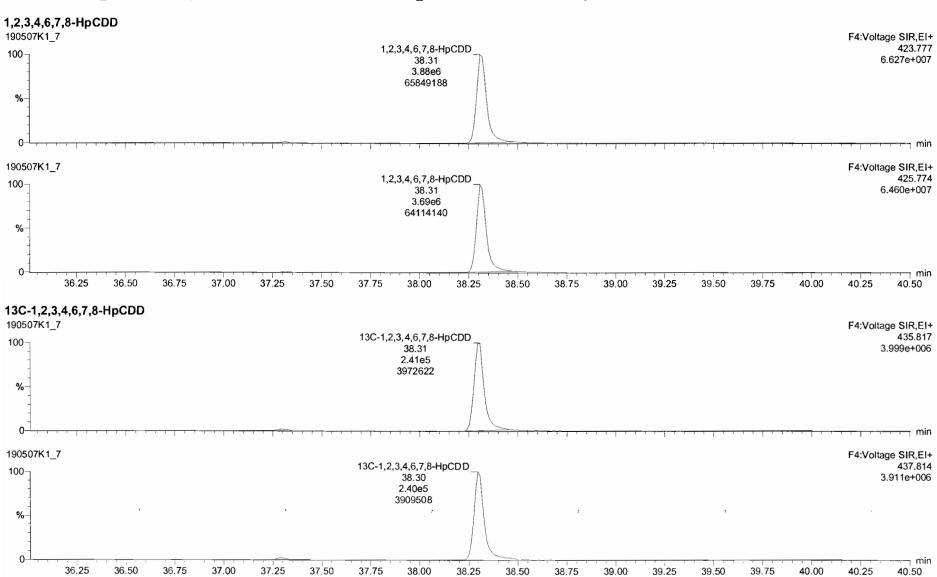
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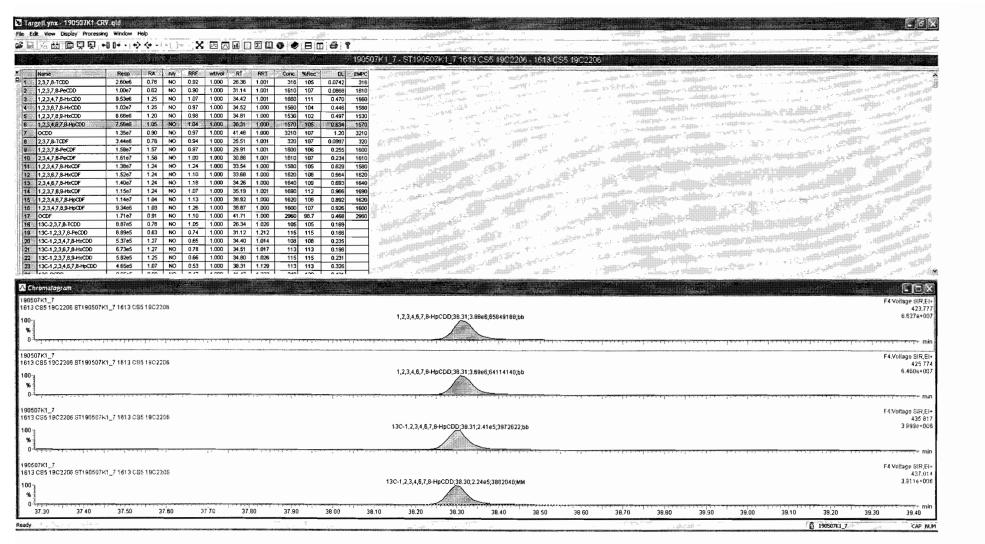


Work Order 1903741 Page 588 of 638

Dataset: Untitled

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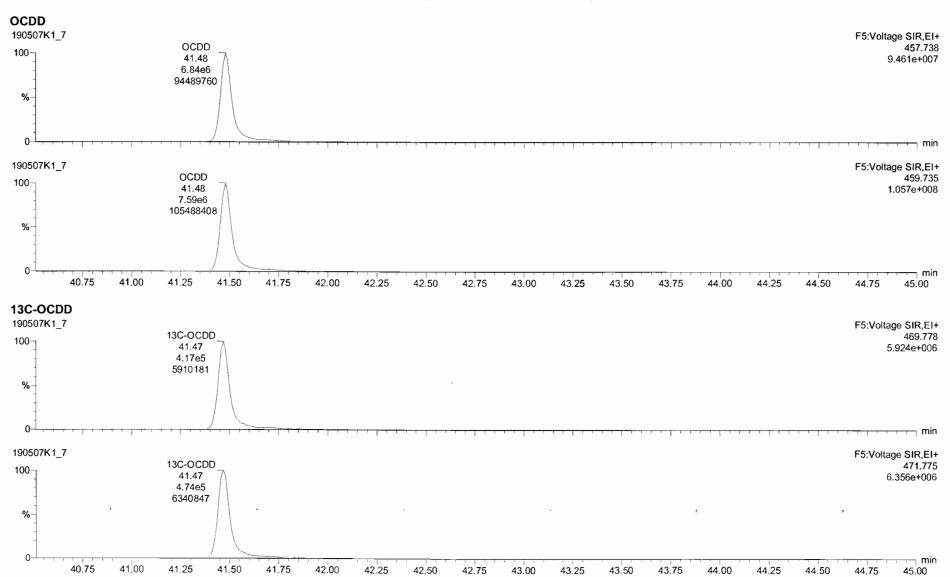


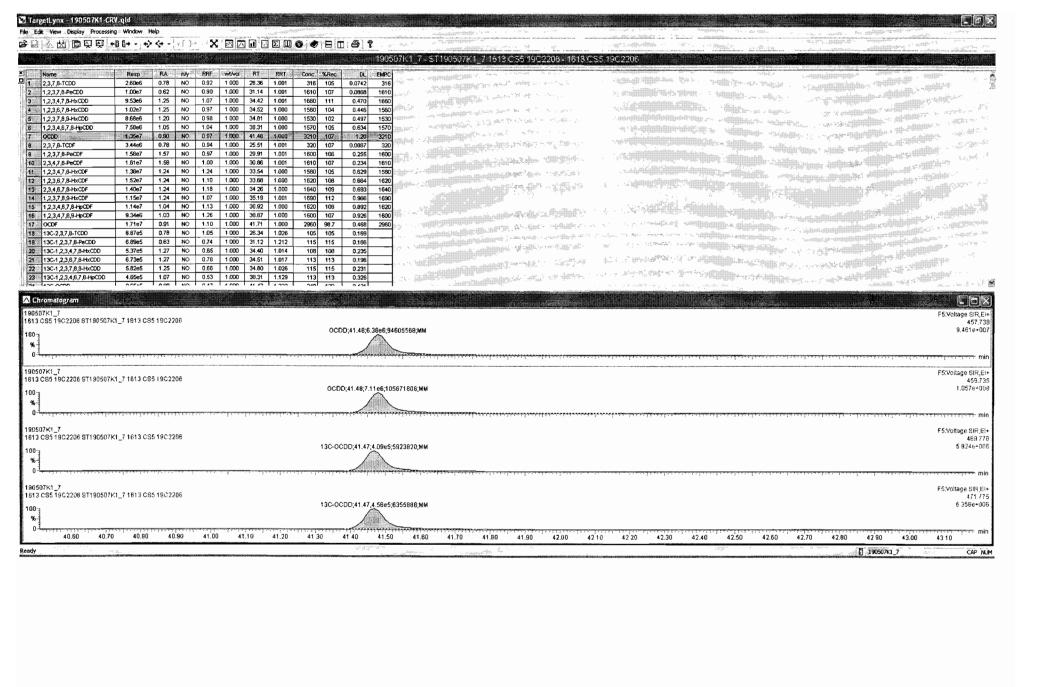


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Untitled

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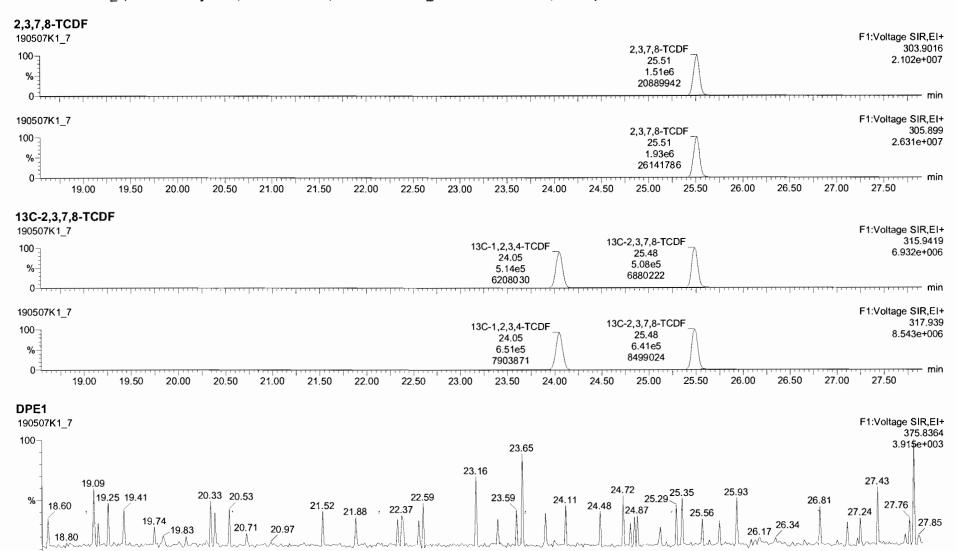
Page 72 of 117

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Name: 190507K1_7, Date: 07-May-2019, Time: 15:27:02, ID: ST190507K1_7 1613 CS5 19C2206, Description: 1613 CS5 19C2206



19.00

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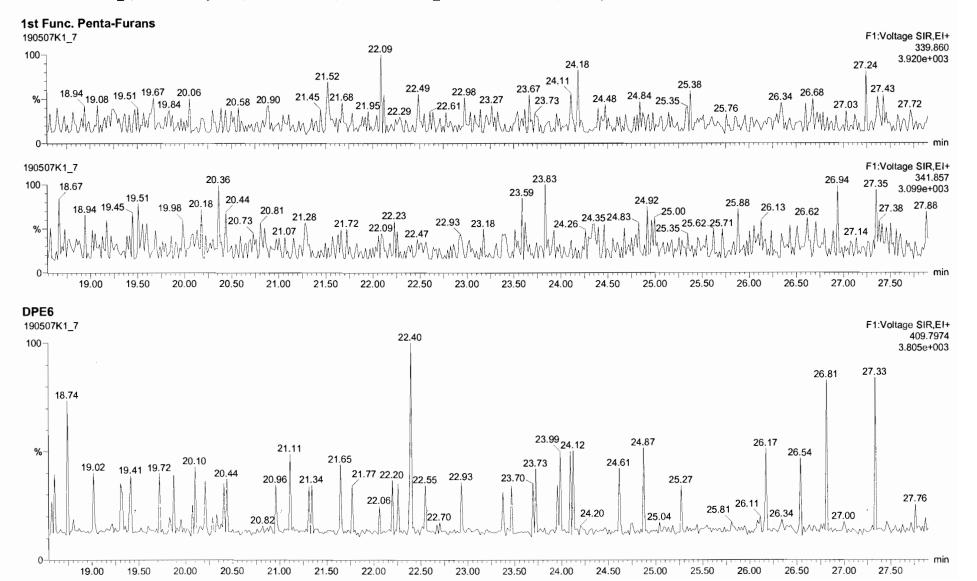
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27.50

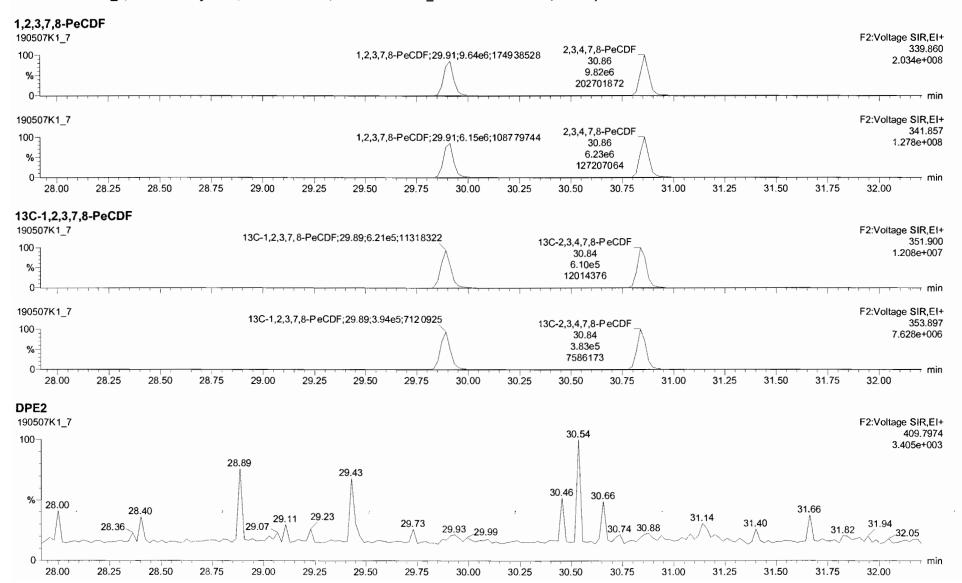
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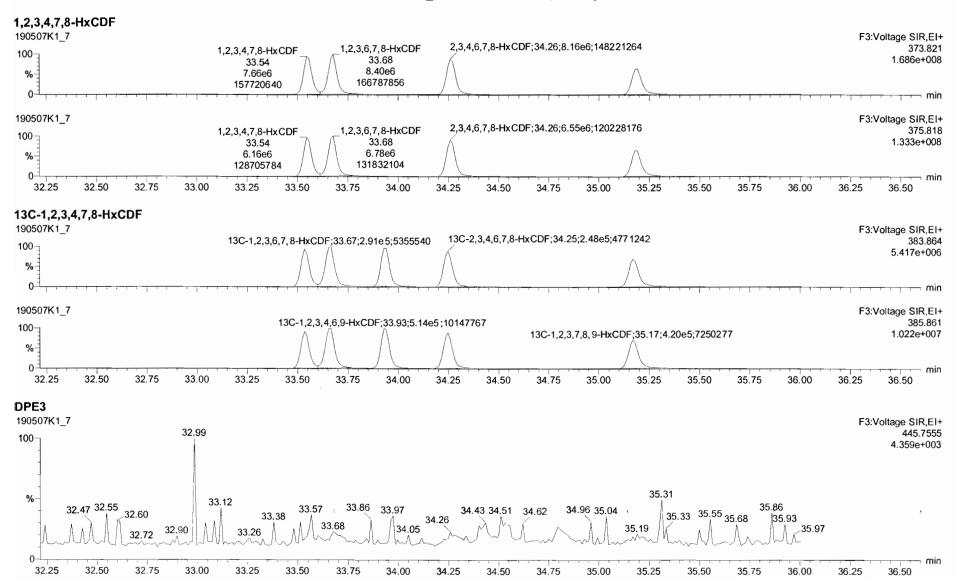
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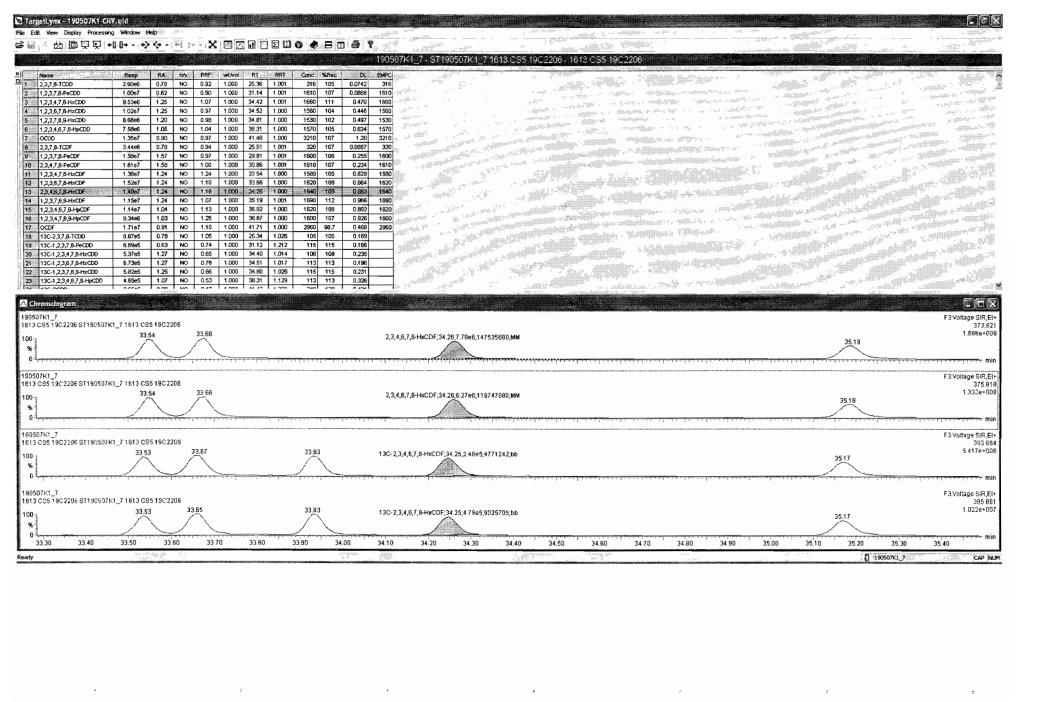


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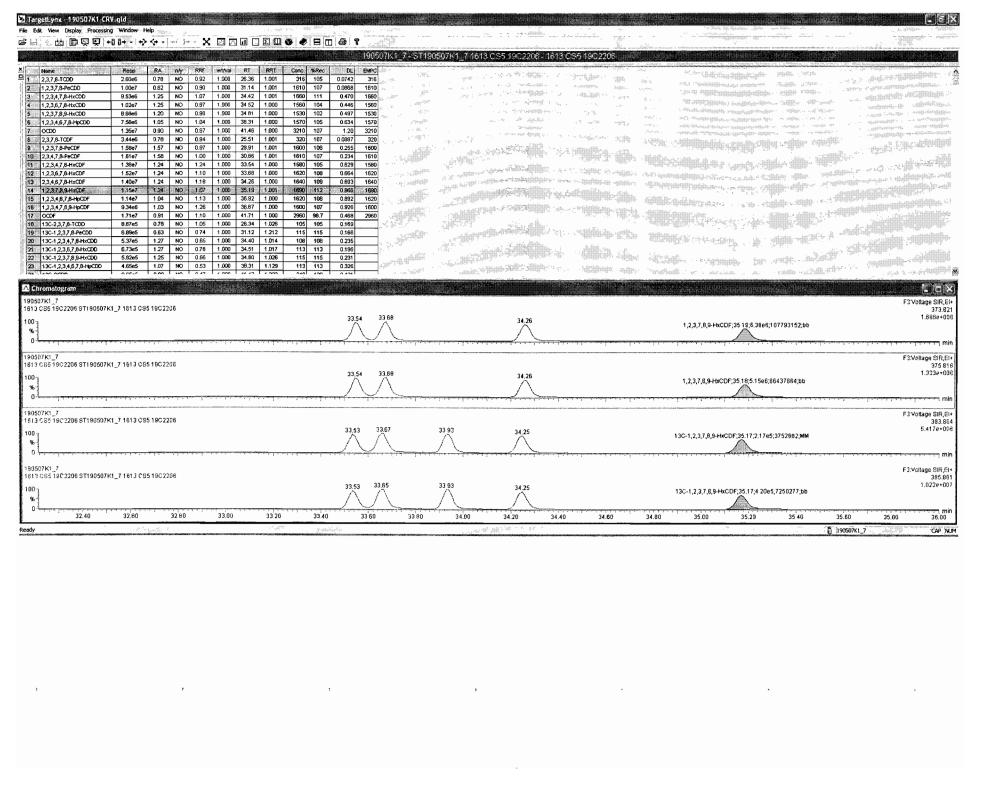
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Work Order 1903741 Page 597 of 638

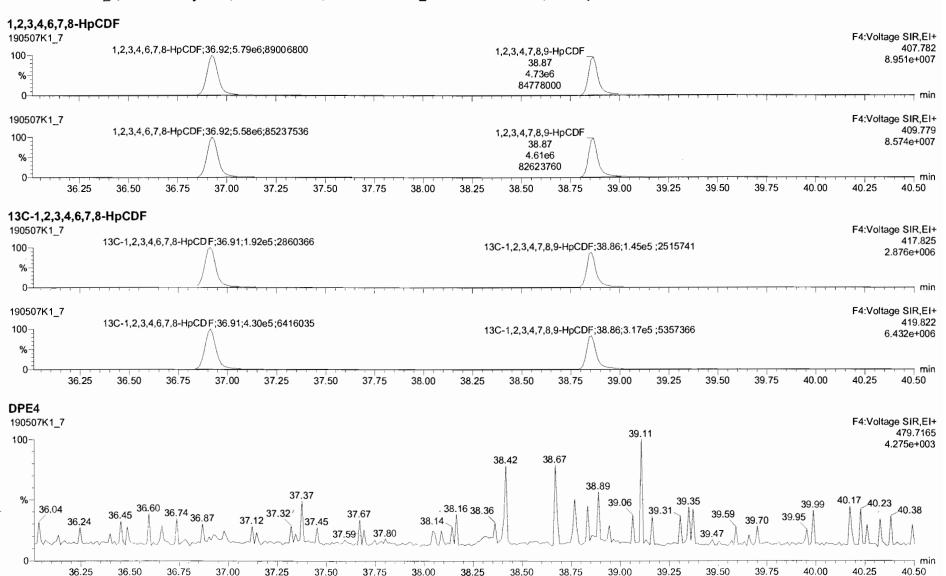


Work Order 1903741 Page 598 of 638

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Last Altered: Printed:

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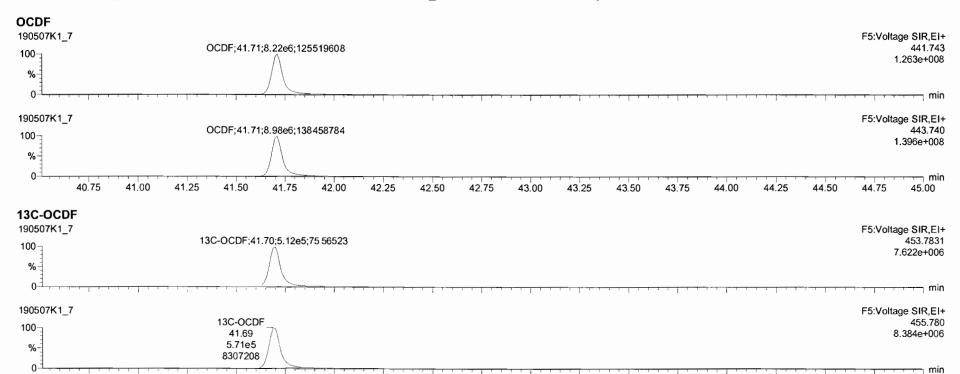


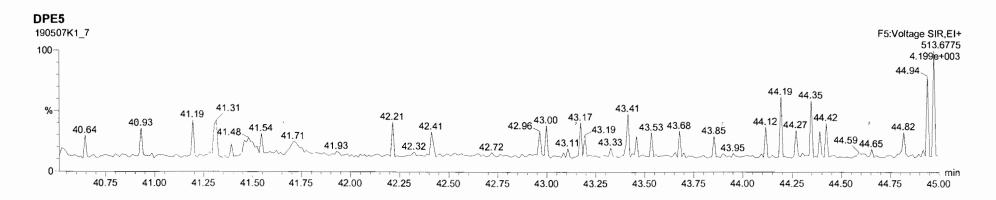
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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

Name: 190507K1_7, Date: 07-May-2019, Time: 15:27:02, ID: ST190507K1_7 1613 CS5 19C2206, Description: 1613 CS5 19C2206





42.75

43,00

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45.00

42.50

42.25

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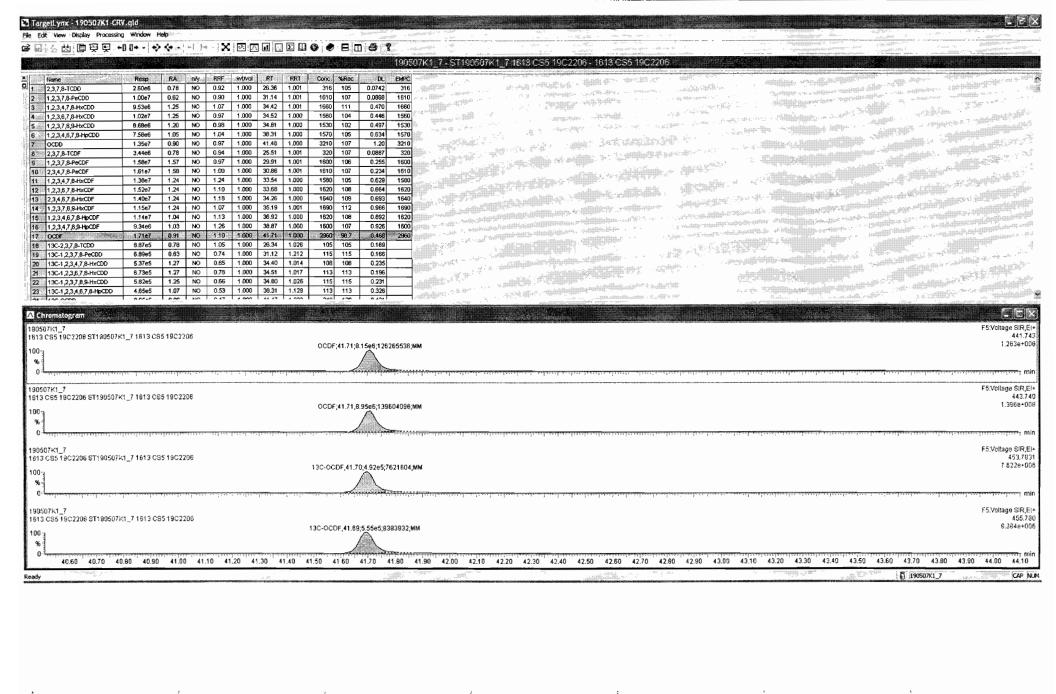
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41.25

41.50

41.75

42.00

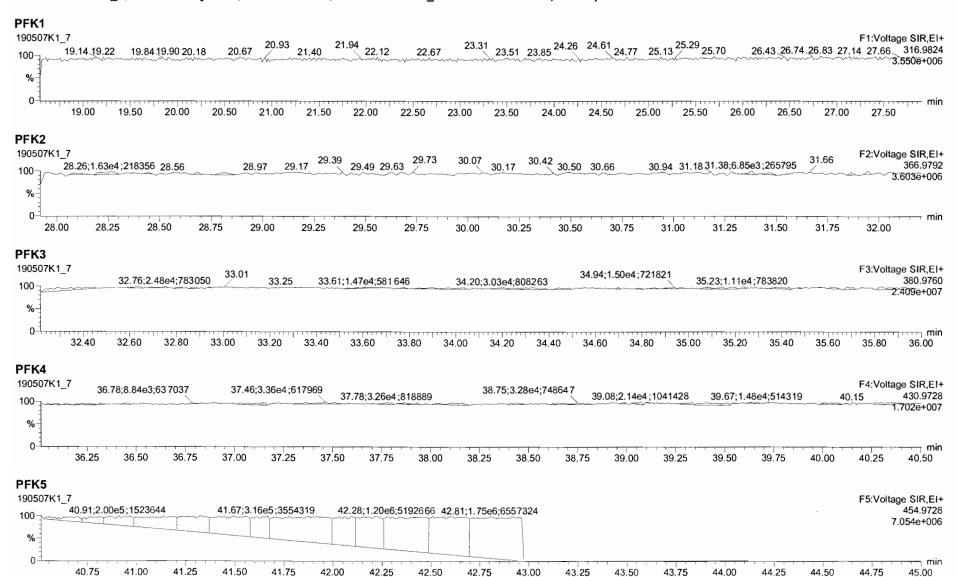


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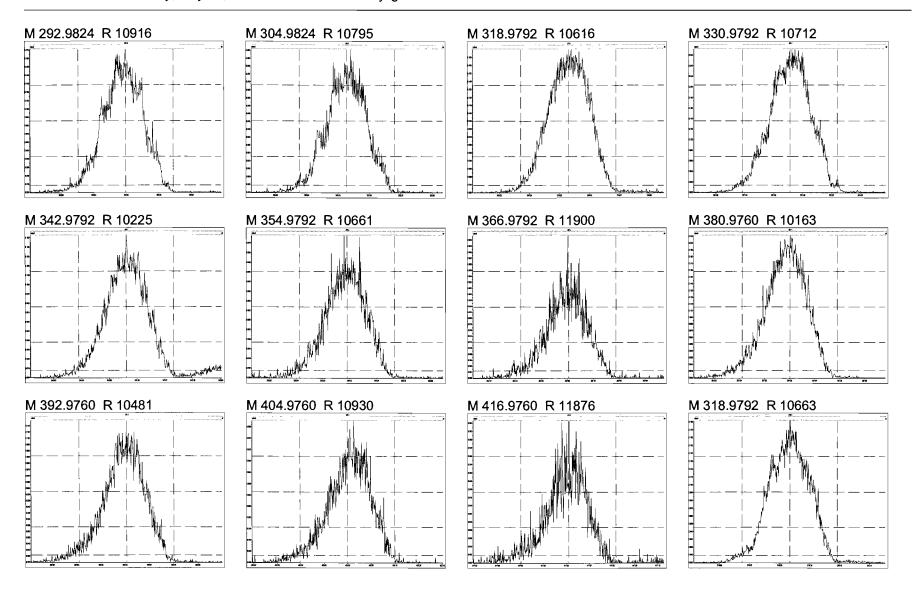
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Last Altered: Printed:

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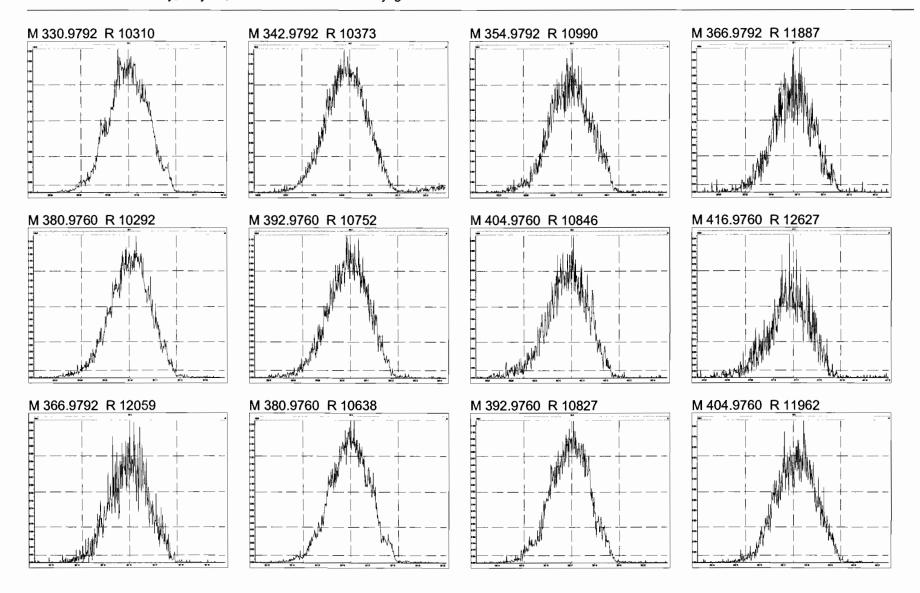


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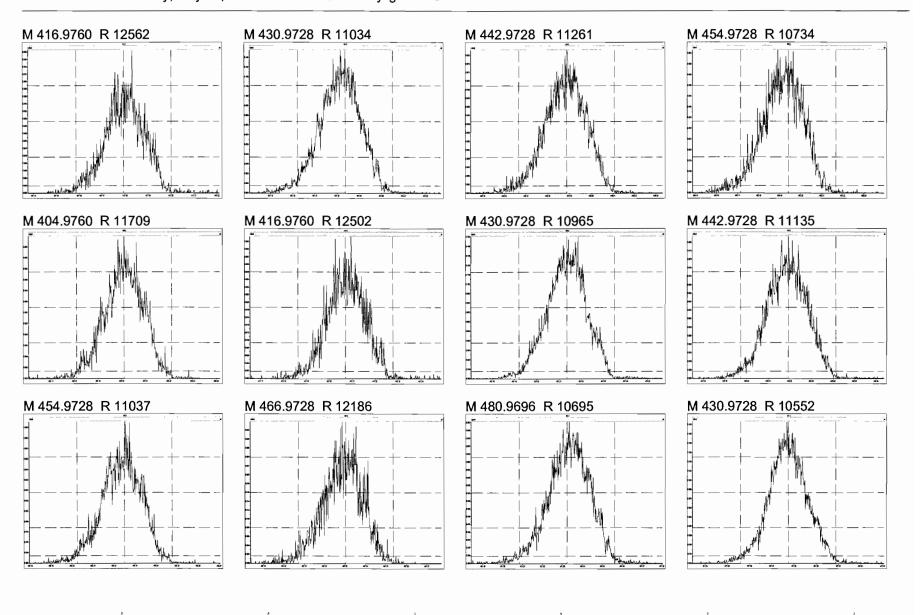


Work Order 1903741 Page 603 of 638

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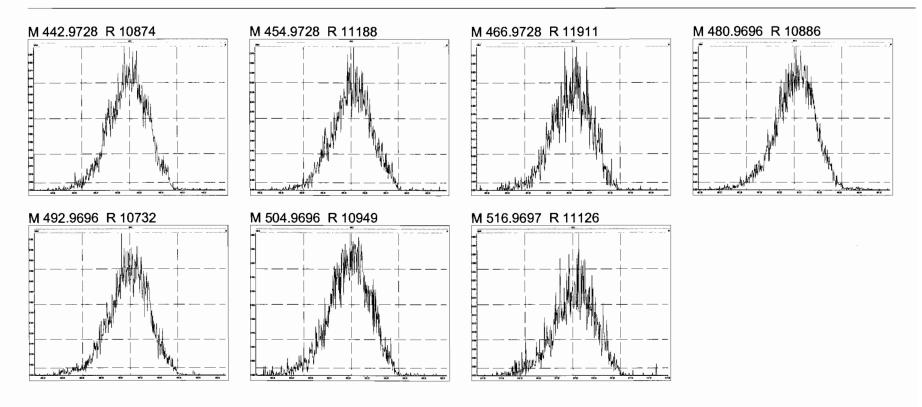


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Tuesday, May 07, 2019 17:12:33 Pacific Daylight Time



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MassLynx 4.1 SCN815

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Vista Analytical Laboratory

Dataset:

U:\VG11.PRO\Results\190507K1\190507K1-8.qld

Last Altered: Printed:

Wednesday, May 08, 2019 8:00:45 AM Pacific Daylight Time Wednesday, May 08, 2019 8:07:46 AM Pacific Daylight Time

pt 5.8.19

DB 5/20/19

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K1_8, Date: 07-May-2019, Time: 16:16:59, ID: SS190507K1_1 1613 SSS 19C2207, Description: 1613 SSS 19C2207

#-Name	Resp	' RA	- n/y	RRF	wt/vol	Pred.RT	RT	Pred.RRT	RRT	Conc.	- %Rec -	July DL-	EMPC
1 2,3,7,8-TCDD	7.60e4	0.76	NO	0.925	1.000	26.372	26.36	1.001	1.001	9.9167	99.2 St	0.0527	9.92
2 1,2,3,7,8-PeCDD	2.83e5	0.63	NO	0.905	1.000	31.141	31.14	1.001	1.001	52.411	105	0.0779	52.4
3 1,2,3,4,7,8-HxCDD	2.56e5	1.24	NO	1.07	1.000	34.422	34.42	1.000	1.000	51.689	103	0.157	51.7
4 1,2,3,6,7,8-HxCDD	2.85e5	1.28	NO	0.967	1.000	34.511	34.53	1.000	1.001	54.377	109	0.161	54.4
5 1,2,3,7,8,9-HxCDD	2.46e5	1.25	NO	0.978	1.000	34.831	34.81	1.001	1.000	50.269	101	0.173	50.3
6 1,2,3,4,6,7,8-HpCDD	1.96e5	1.05	NO	1.04	1.000	38.308	38.32	1.000	1.001	47.654	95.3	0.186	47.7
7 OCDD	3.61e5	0.90	NO	0.972	1.000	41.457	41.47	1.000	1.000	105.18	105	0.228	105
8 2,3,7,8-TCDF	1.06e5	0.77	NO	0.938	1.000	25.510	25.51	1.001	1.001	10.161	102	0.0528	10.2
9 1,2,3,7,8-PeCDF	4.45e5	1.56	NO	0.976	1.000	29.913	29.91	1.001	1.001	51.910	104	0.0756	51.9
10 2,3,4,7,8-PeCDF	4.90e5	1.55	NO	1.00	1.000	30.869	30.86	1.001	1.001	56.296	113	0.0742	56.3
11 1,2,3,4,7,8-HxCDF	3.98e5	1.24	NO	1.24	1.000	33.534	33.56	1.000	1.001	53.288	107	0.159	53.3
12 1,2,3,6,7,8-HxCDF	4.37e5	1.15	NO	1.10	1.000	33.665	33.68	1.000	1.001	54.868	110	0.164	54.9
13 - 13 2,3,4,6,7,8-HxCDF	3.80e5	1.25	NO	1.18	1.000	34.282	34.27	1.001	1.001	51.927	104	0.183	51.9
14 1,2,3,7,8,9-HxCDF	3.02e5	1.22	NO	1.07	1.000	35.169	35.19	1.000	1.001	53.429	107	0.261	53.4
15 1,2,3,4,6,7,8-HpCDF	3.31e5	1.04	NO	1.13	1.000	36.951	36.92	1.001	1.000	56.517	113	0.264	56.5
16 1,2,3,4,7,8,9-HpCDF	2.56e5	0.99	NO	1.26	1.000	38.856	38.87	1.000	1.000	53.867	108	0.275	53.9
17 17 OCDF	4.34e5	0.87	NO	1.10	1.000	41.687	41.70	1.000	1.000	93.430	93.4	√ 0.200	93.4
18 13C-2,3,7,8-TCDD	8.29e5	0.78	NO	1.05	1.000	26.343	26.34	1.026	1.026	102.10	102	0.130	
19 13C-1,2,3,7,8-PeCDD	5.96e5	0.63	NO	0.743	1.000	31.123	31.12	1.212	1.212	103.75	104	0.218	
20 13C-1,2,3,4,7,8-HxCDD	4.63e5	1.29	NO	0.646	1.000	34.402	34.41	1.014	1.014	102.33	102	0.354	
21 13C-1,2,3,6,7,8-HxCDD	5.41e5	1.25	NO	0.777	1.000	34.510	34.51	1.017	1.017	99.464	99.5	0.295	
22 13C-1,2,3,7,8,9-HxCDD	5.00e5	1.25	NO	0.659	1.000	34.799	34.80	1.025	1.025	108.25	108	0.347	
23 13C-1,2,3,4,6,7,8-HpCDD	3.97e5	1.11	NO	0.534	1.000	38.301	38.30	1.128	1.128	106.06	106	0.355	
24 13C-OCDD	7.05e5	0.93	NO	0.470	1.000	41.461	41.46	1.222	1.222	214.10	107	0.519	
25 25 13C-2,3,7,8-TCDF	1.11e6	0.77	NO	0.977	1.000	25.483	25.48	0.992	0.992	101.03	101	0.194	
26 26 13C-1,2,3,7,8-PeCDF	8.78e5	1.59	NO	0.778	1.000	29.892	29.89	1.164	1.164	100.03	100	0.293	
27 , 27 13C-2,3,4,7,8-PeCDF	8.67e5	1.59	NO	0.750	1.000	30.843	30.84	1.201	1.201	102.41	102	0.304	
28 13C-1,2,3,4,7,8-HxCDF	6.01e5	0.51	NO	0.845	1.000	33.529	33.53	. 0.988	0.988	101.56 .	102	0.419	,
29 13C-1,2,3,6,7,8-HxCDF	7.27e5	0.52	NO	1.03	1.000	33.652	33.65	0.992	0.992	101.03	101	0.345	
30 13C-2,3,4,6,7,8-HxCDF	6.20e5	0.53	NO	0.893	1.000	34.249	34.25	1.009	1.009	99.164	99.2	0.397	
31 13C-1,2,3,7,8,9-HxCDF	5.26e5	0.53	NO	0.734	1.000	35.169	35.17	1.036	1.036	102.34	102	0.483	

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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K1-8.qld

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Name: 190507K1_8, Date: 07-May-2019, Time: 16:16:59, ID: SS190507K1_1 1613 SSS 19C2207, Description: 1613 SSS 19C2207

#-Name	Resp	; RA	n/y	RRF	wt/vol	Pred.RT:	RT	Pred.RRT	RRT	Conc.	- %Rec -	DL- EMPC
32 13C-1,2,3,4,6,7,8-HpCDF	5.19e5	0.45	NO	0.754	1.000	36.900	36.91	1.087	1.088	98.155	98.2	0.323
33 13C-1,2,3,4,7,8,9-HpCDF	3.76e5	0.44	NO	0.539	1.000	38.851	38.86	1.145	1.145	99.700	99.7	0.452
34 34 13C-OCDF	8.43e5	0.90	NO	0.593	1.000	41.689	41.69	1.228	1.228	202.98	101	0.322
35 37Cl-2,3,7,8-TCDD	8.22e4			1.07	1.000	26.343	26.36	1.026	1.026	9.9341	99.3	0.0341
36 13C-1,2,3,4-TCDD	7.74e5	0.80	NO	1.00	1.000	25.680	25.68	1.000	1.000	100.00	100	0.137
37 13C-1,2,3,4-TCDF	1.13e6	0.79	NO	1.00	1.000	24.050	24.05	1.000	1.000	100.00	100	0.190
38 13C-1,2,3,4,6,9-HxCDF	7.01e5	0.53	NO	1.00	1.000	33.940	33.94	1.000	1.000	100.00	100	0.354

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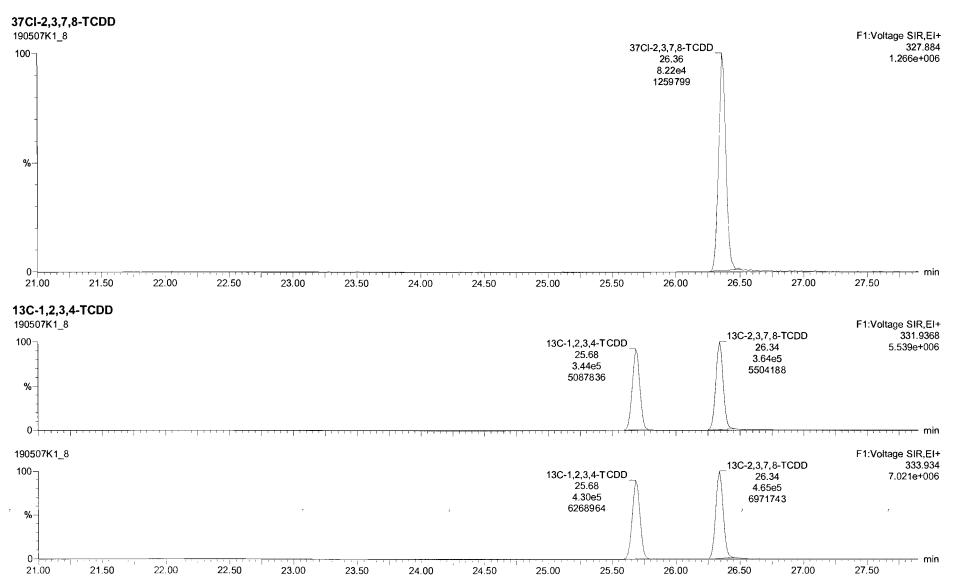
Quantify Sample Report Vista Analytical Laboratory

Dataset:

Untitled

Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

Name: 190507K1_8, Date: 07-May-2019, Time: 16:16:59, ID: SS190507K1_1 1613 SSS 19C2207, Description: 1613 SSS 19C2207



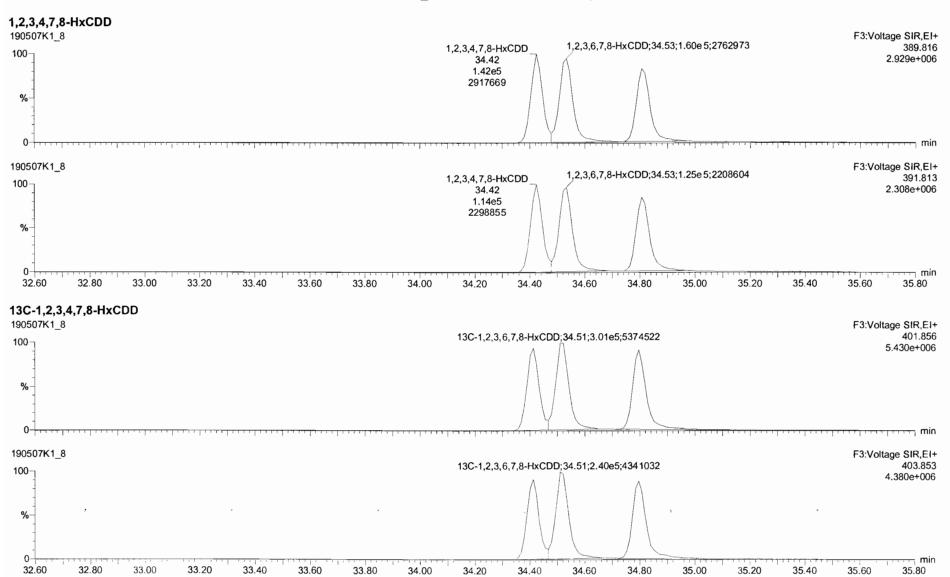
Vista Analytical Laboratory

Dataset:

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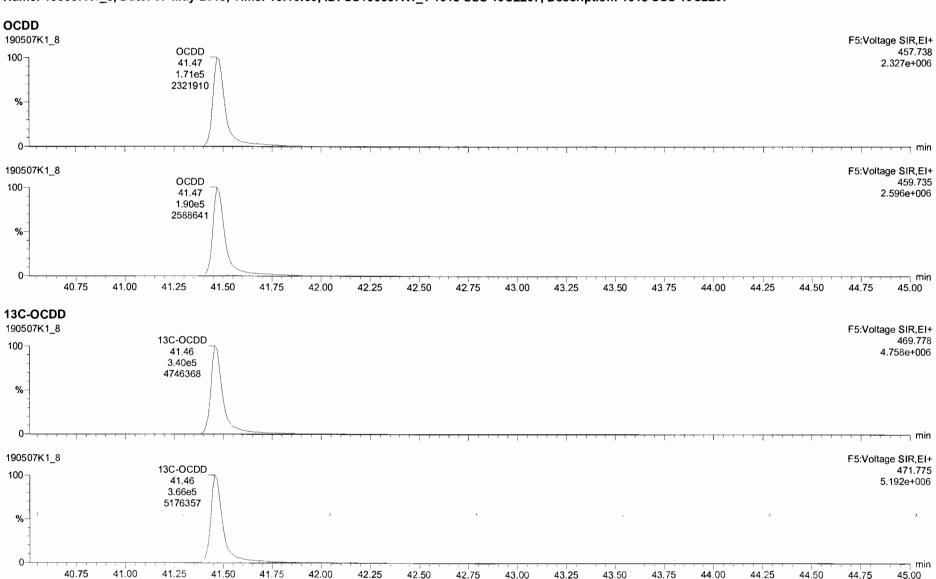
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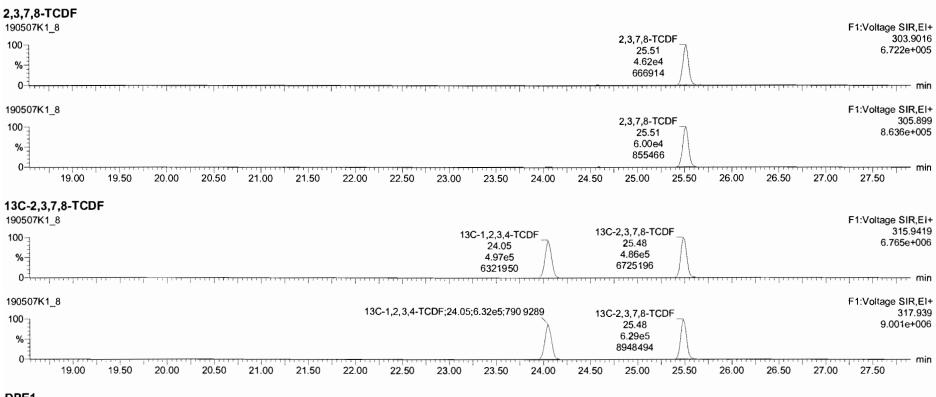
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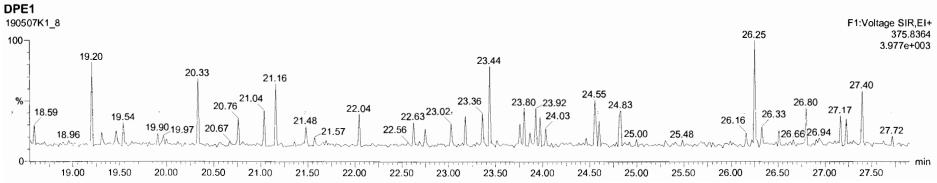
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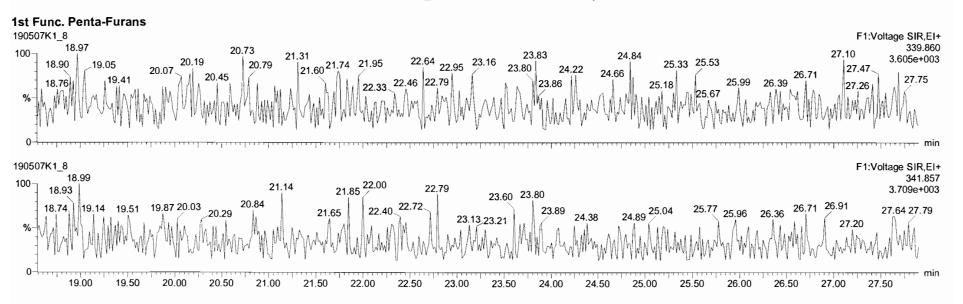
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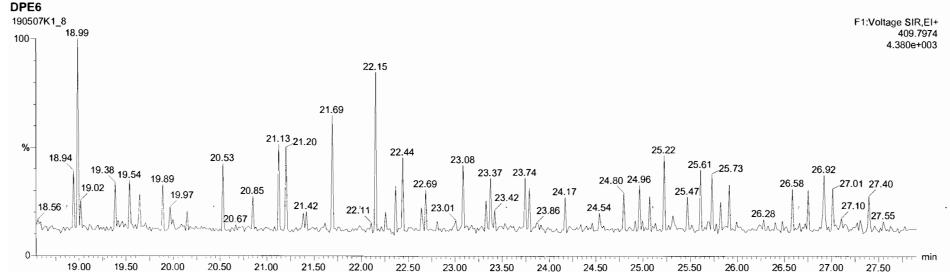




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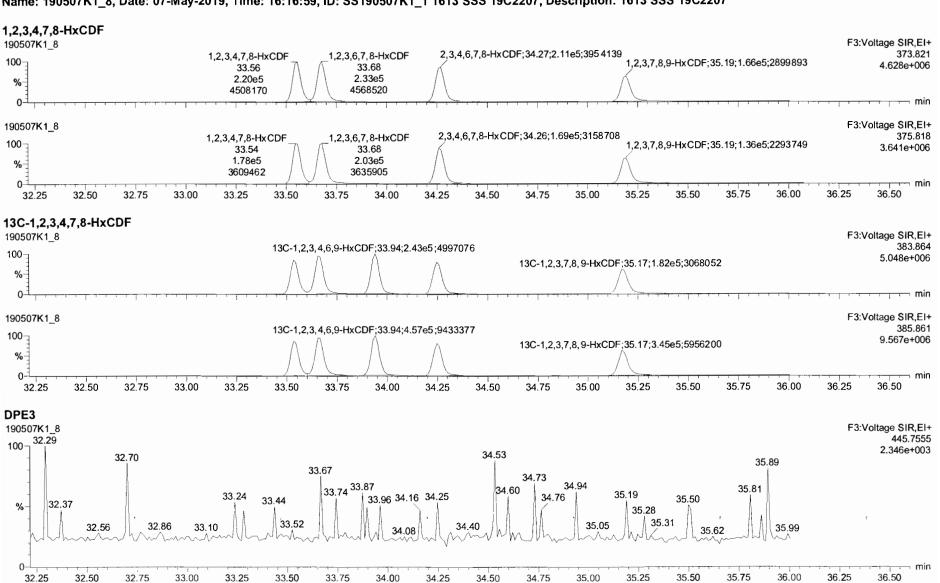
Vista Analytical Laboratory

Dataset:

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Last Altered: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Printed: Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time

Name: 190507K1_8, Date: 07-May-2019, Time: 16:16:59, ID: SS190507K1_1 1613 SSS 19C2207, Description: 1613 SSS 19C2207

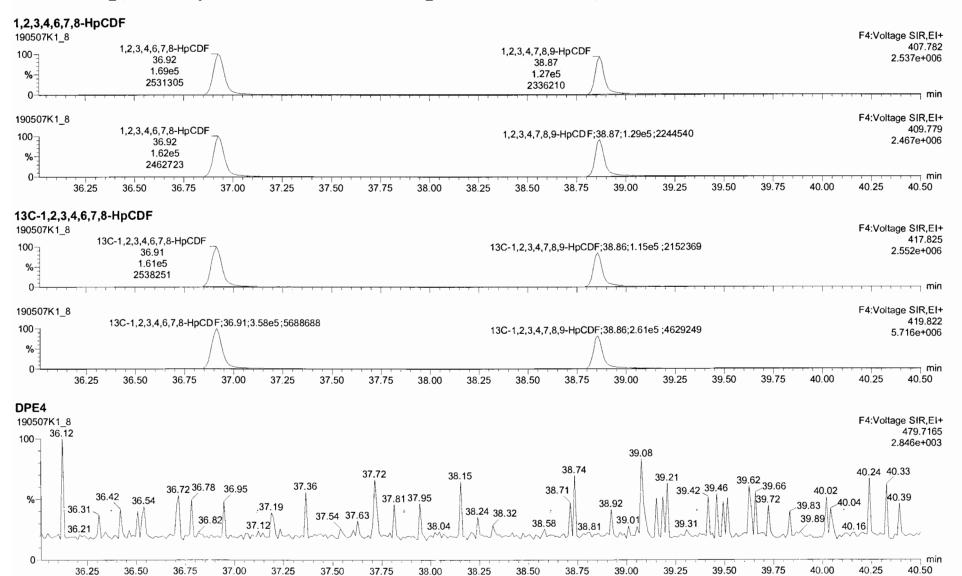


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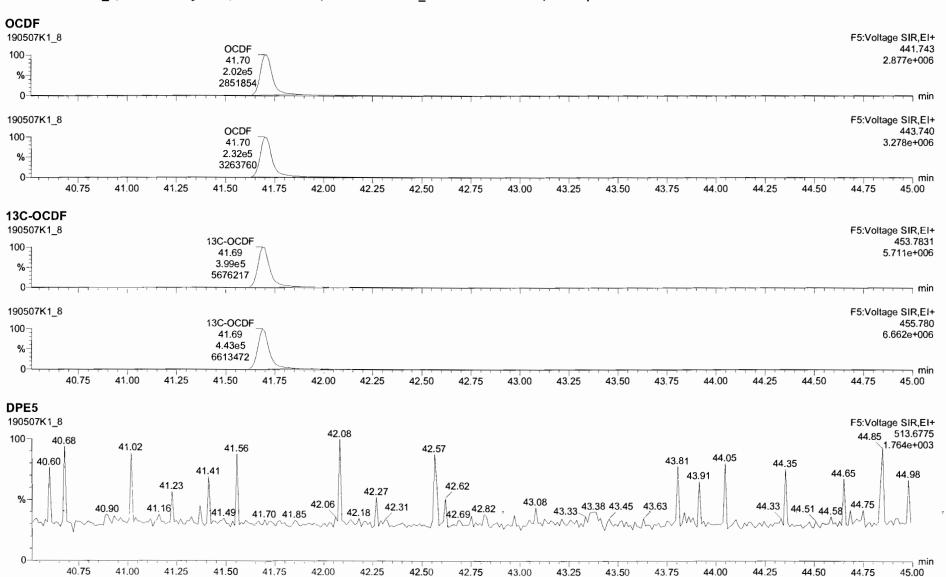
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Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



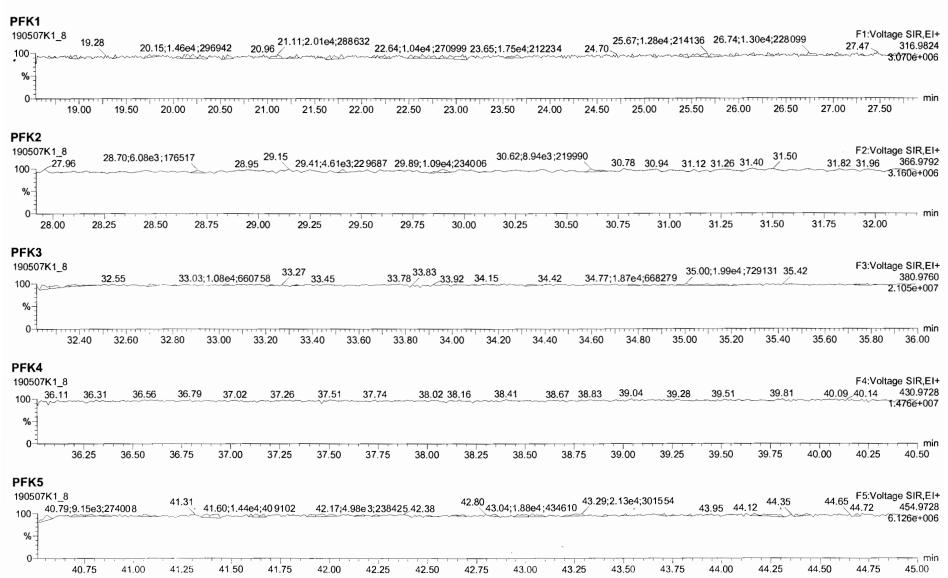
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Last Altered: Printed: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



Untitled

Last Altered: Printed: Wednesday, May 08, 2019 7:14:27 AM Pacific Daylight Time Wednesday, May 08, 2019 7:19:34 AM Pacific Daylight Time



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Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K2-1.qld

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Jr 5-8-19

DB 5/20/19

Method: U:\VG11.PRO\MethDB\1613_rrt-5-7-19.mdb 07 May 2019 12:51:47 Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K2_1, Date: 07-May-2019, Time: 18:48:10, ID: ST190507K2_1 1613 CS3 18J1008, Description: 1613 CS3 18J1008

7.20°	# Name	Resp	RA	n/y	RRF	wt/vol	Pred.RT	RT	Pred.RRT	RRT	Conc.	%Rec	DL	EMPC
12.49	1 2,3,7,8-TCDD	4.96e4	0.78	NO	0.925	1.000	26.372	26.36	1.001	1.001	9.7504	97.5	0.0601	9.75
2	2 1,2,3,7,8-PeCDD	1.92e5	0.60	NO	0.905	1.000	31.141	31.14	1.001	1.001	52.019	104	0.135	52.0
3	3 1,2,3,4,7,8-HxCDD	1.65e5	1.26	NO	1.07	1.000	34.422	34.42	1.000	1.000	40.468	80.9	0.208	40.5
4 Hage	4 1,2,3,6,7,8-HxCDD	1.70e5	1.27	NO	0.967	1.000	34.522	34.53	1.000	1.000	52.044	104	0.299	52.0
5	5 1,2,3,7,8,9-HxCDD	1.57e5	1.21	NO	0.978	1.000	34.831	34.81	1.001	1.000	49.488	99.0	0.295	49.5
6 Guidhean	6 1,2,3,4,6,7,8-HpCDD	1.25e5	1.09	NO	1.04	1.000	38.308	38.32	1.000	1.001	46.558	93.1	0.278	46.6
7	7 OCDD	2.20e5	0.89	NO	0.972	1.000	41.468	41.48	1.000	1.000	116.21	116	0.310	116
8	8 2,3,7,8-TCDF	6.88e4	0.78	NO	0.938	1.000	25.510	25.51	1.001	1.001	9.8653	98.7	0.0599	9.87
9	9 1,2,3,7,8-PeCDF	2.98e5	1.59	NO	0.976	1.000	29.913	29.91	1.001	1.001	48.808	97.6	0.107	48.8
10	10 2,3,4,7,8-PeCDF	3.02e5	1.60	NO	1.00	1.000	30.869	30.86	1.001	1.001	50.503	101	0.112	50.5
11	11 1,2,3,4,7,8-HxCDF	2.51e5	1.28	NO	1.24	1.000	33.534	33.56	1.000	1.001	42.310	84.6	0.183	42.3
12	12 1,2,3,6,7,8-HxCDF	2.65e5	1.25	NO	1.10	1.000	33.676	33.68	1.000	1.000	49.107	98.2	0.216	49.1
13	13 2,3,4,6,7,8-HxCDF	2.52e5	1.24	NO	1.18	1.000	34.282	34.27	1.001	1.001	47.589	95.2	0.219	47.6
14	14 1,2,3,7,8,9-HxCDF	1.94e5	1.26	NO	1.07	1.000	35.169	35.19	1.000	1.001	48.711	97.4	0.322	48.7
15	15 1,2,3,4,6,7,8-HpCDF	1.91e5	1.04	NO	1.13	1.000	36.951	36.92	1.001	1.000	50.687	101	0.231	50.7
16	16 1,2,3,4,7,8,9-HpCDF	1.57e5	0.99	NO	1.26	1.000	38.856	38.87	1.000	1.000	51.308	103	0.248	51.3
17	17 OCDF	2.63e5	0.85	NO	1.10	1.000	41.687	41.70	1.000	1.000	92.671	92.7	0.237	92.7
18	18 13C-2,3,7,8-TCDD	5.49e5	0.79	NO	1.05	1.000	26.343	26.34	1.026	1.026	101.33	101	0.176	
19	19 13C-1,2,3,7,8-PeCDD	4.08e5	0.63	NO	0.743	1.000	31.123	31.12	1.212	1.212	106.23	106	0.222	
20	20 13C-1,2,3,4,7,8-HxCDD	3.81e5	1.26	NO	0.646	1.000	34.402	34.41	1.014	1.014	127.08	127	0.322	
21	21 13C-1,2,3,6,7,8-HxCDD	3.37e5	1.28	NO	0.777	1.000	34.510	34.52	1.017	1.017	93.509	93.5	0.268	
22	22 13C-1,2,3,7,8,9-HxCDD	3.24e5	1.27	NO	0.659	1.000	34.799	34.80	1.025	1.025	105.79	106	0.315	
23 24	23 13C-1,2,3,4,6,7,8-HpCDD	2.59e5	1.05	NO	0.534	1.000	38.301	38.30	1.128	1.128	104.55	105	0.389	
24	24 13C-OCDD	3.90e5	88.0	NO	0.470	1.000	41.461	41.47	1.222	1.222	178.53	89.3	0.468	
25	25 13C-2,3,7,8-TCDF	7.44e5	0.79	NO	0.977	1.000	25.483	25.48	0.992	0.992	101.65	102	0.294	
26	26 13C-1,2,3,7,8-PeCDF	6.25e5	1.56	NO	0.778	1.000	29.893	29.89	1.164	1.164	107.38	107	0.390	
27	27 13C-2,3,4,7,8-PeCDF	5.95e5	1.57	NO	0.750	1.000	30.843	30.84	1.201	1.201	106.00	106	0.405	
28	28 13C-1,2,3,4,7,8-HxCDF	4.78e5	0.51	NO	0.845	1.000	33.529	33.53	0.988	0.988	121.85	122	0.545	
29	29 13C-1,2,3,6,7,8-HxCDF	4.92e5	0.52	NO	1.03	1.000	33.652	33.67	0.992	0.992	103.24	103	0.448	}
30 '	30 13C-2,3,4,6,7,8-HxCDF	4.49e5	0.52	NO	0.893	1.000	34.249	34.25	1.009	1.009	108.34	108	0.515	
31	31 13C-1,2,3,7,8,9-HxCDF	3.71e5	0.54	NO	0.734	1.000	35.169	35.17	1.036	1.036	108.96	109	0.627	
32	32_13C-1,2,3,4,6,7,8-HpCDF	3.34e5	0.43	NO	0.754	1.000	36.900	36.91	1.087	1.088	95.313	95.3	0.389	

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Quantify Sample Summary Report MassLynx 4.1 SCN815 Page 2 of 2

Vista Analytical Laboratory

Dataset: U:\VG11.PRO\Results\190507K1\190507K2-1.qld

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Name: 190507K2_1, Date: 07-May-2019, Time: 18:48:10, ID: ST190507K2_1 1613 CS3 18J1008, Description: 1613 CS3 18J1008

	# Name	Resp	RA	n/y	RRF	wt/vol	Pred.RT	RT	Pred.RRT	RRT	Conc.	%Rec	DL	EMPC
33	33 13C-1,2,3,4,7,8,9-HpCDF	2.42e5	0.47	NO	0.539	1.000	38.851	38.86	1.145	1.145	96.836	96.8	0.545	
34	34 13C-OCDF	5.14e5	0.89	NO	0.593	1.000	41.689	41.69	1.228	1.228	186.97	93.5	0.402	
35	35 37Cl-2,3,7,8-TCDD	5.28e4			1.07	1.000	26.343	26.36	1.026	1.026	9.5583	95.6	0.0488	
36	36 13C-1,2,3,4-TCDD	5.17e5	0.77	NO	1.00	1.000	25.680	25.68	1.000	1.000	100.00	100	0.184	
37	37 13C-1,2,3,4-TCDF	7.49e5	0.80	NO	1.00	1.000	24.050	24.06	1.000	1.000	100.00	100	0.288	
38	38 13C-1,2,3,4,6,9-HxCDF	4.64e5	0.51	NO	1.00	1.000	33.940	33.94	1.000	1.000	100.00	100	0.460	

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Wednesday, May 08, 2019 8:05:38 AM Pacific Daylight Time Wednesday, May 08, 2019 8:05:41 AM Pacific Daylight Time

Method: U:\VG11.PRO\MethDB\CPSM-5-7-19.mdb 07 May 2019 13:29:19

Calibration: U:\VG11.PRO\CurveDB\db5_1613vg11-5-7-19.cdb 08 May 2019 07:55:45

Name: 190507K2_1, Date: 07-May-2019, Time: 18:48:10, ID: ST190507K2_1 1613 CS3 18J1008, Description: 1613 CS3 18J1008

	#-Name	RT
1	1 1,3,6,8-TCDD (First)	22.41
2	2 1,2,8,9-TCDD (Last)	27.29
3	3 1,2,4,7,9-PeCDD (First)	28.99
4	4 1,2,3,8,9-PeCDD (Last)	31.50
5	5 1,2,4,6,7,9-HxCDD (First)	32.91
6	6 1,2,3,7,8,9-HxCDD (Last)	34.81
7	7 1,2,3,4,6,7,9-HpCDD (First)	37.31
8	8 1,2,3,4,6,7,8-HpCDD (Last)	38.32
9	9 1,3,6,8-TCDF (First)	20.23
10	10 1,2,8,9-TCDF (Last)	27.46
11	11 1,3,4,6,8-PeCDF (First)	27.36
12	. 12 1,2,3,8,9-PeCDF (Last)	31.76
13	13 1,2,3,4,6,8-HxCDF (First)	32.38
14	14 1,2,3,7,8,9-HxCDF (Last)	35.19
15	15 1,2,3,4,6,7,8-HpCDF (First)	36.92
16	16 1,2,3,4,7,8,9-HpCDF (Last)	38.87

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Quantify Sample Report

MassLynx 4.1 SCN815

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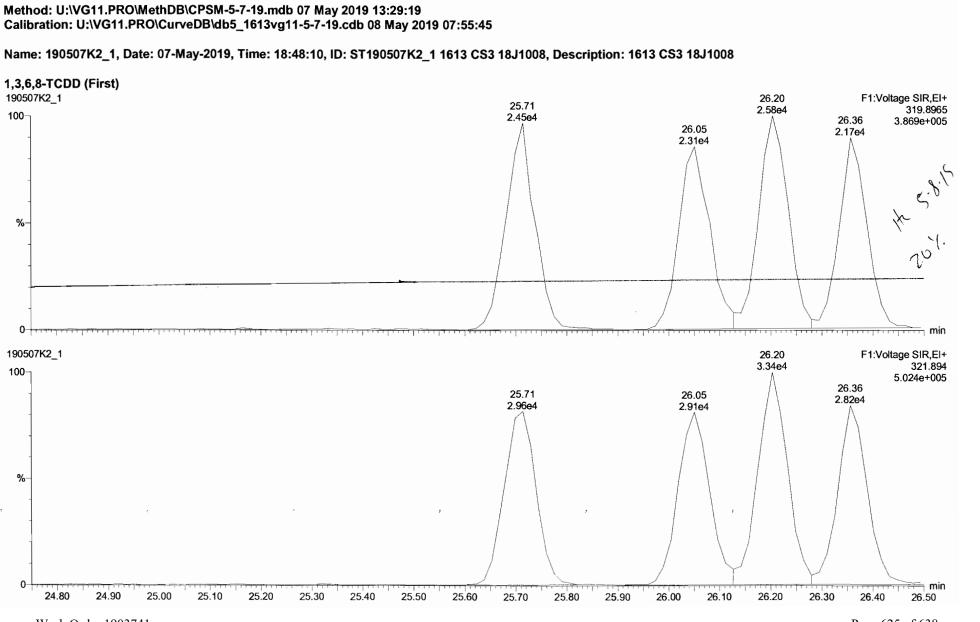
Vista Analytical Laboratory VG-11

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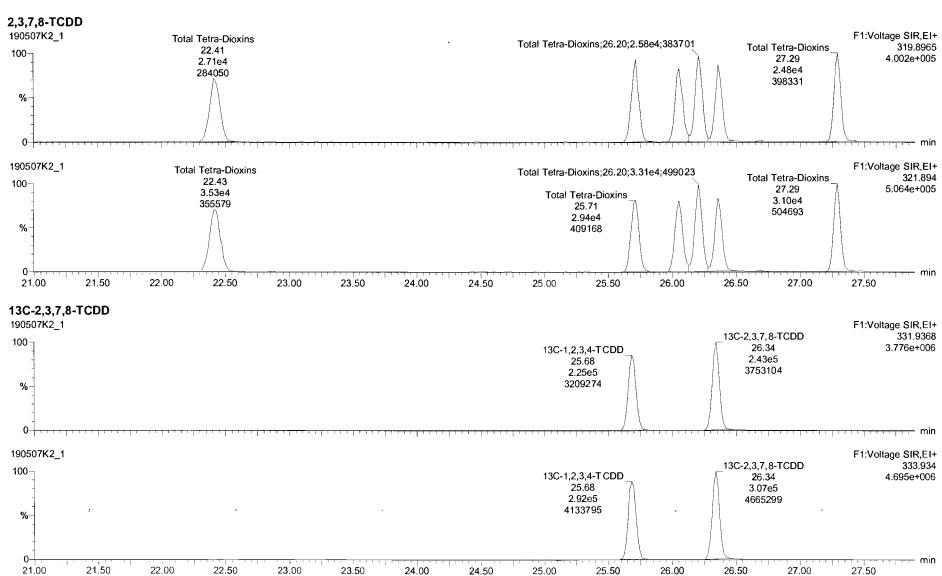
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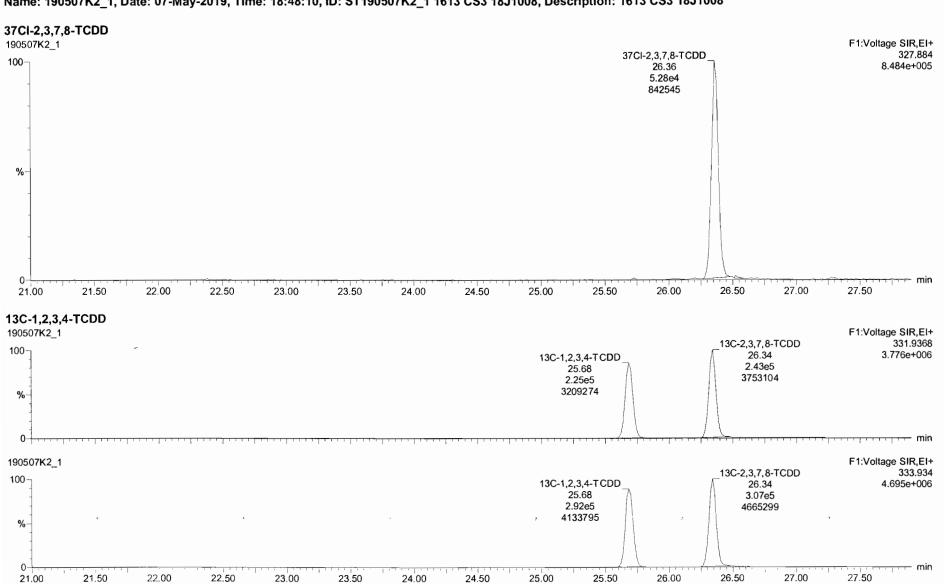
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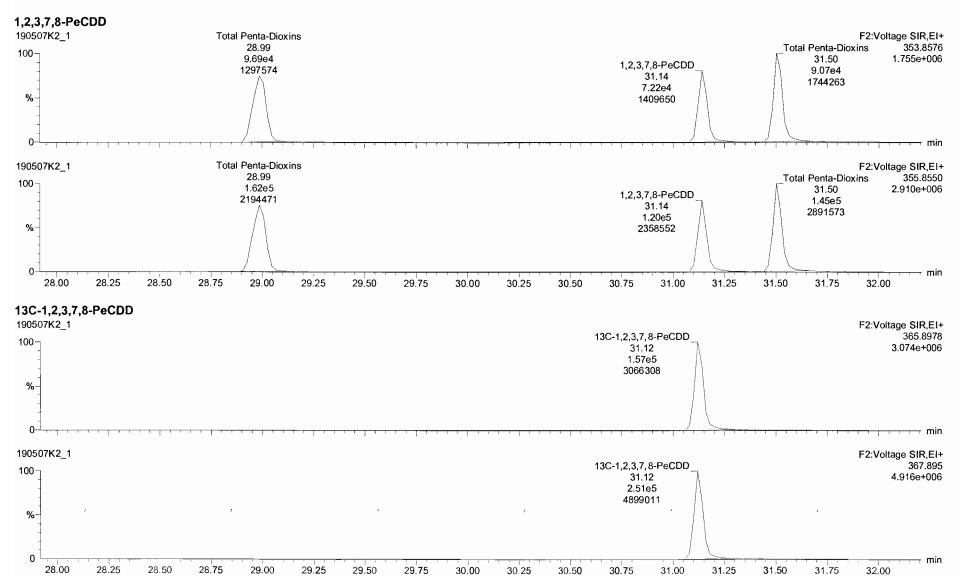


Quantify Sample Report Vista Analytical Laboratory

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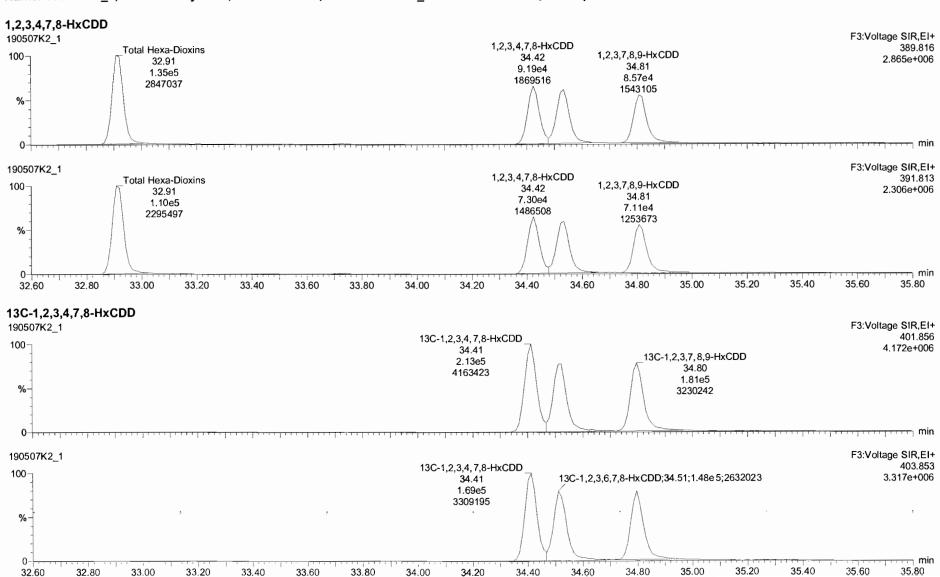
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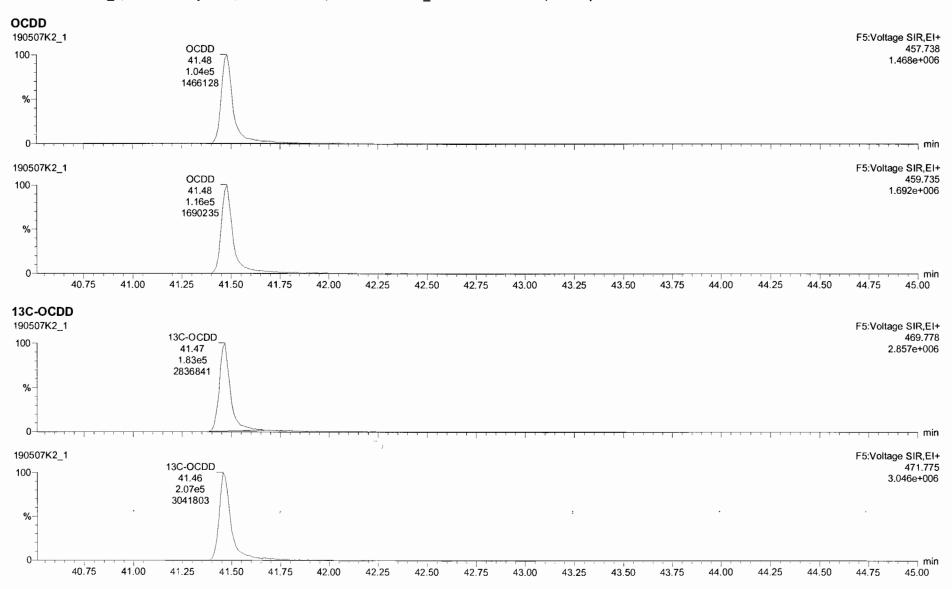
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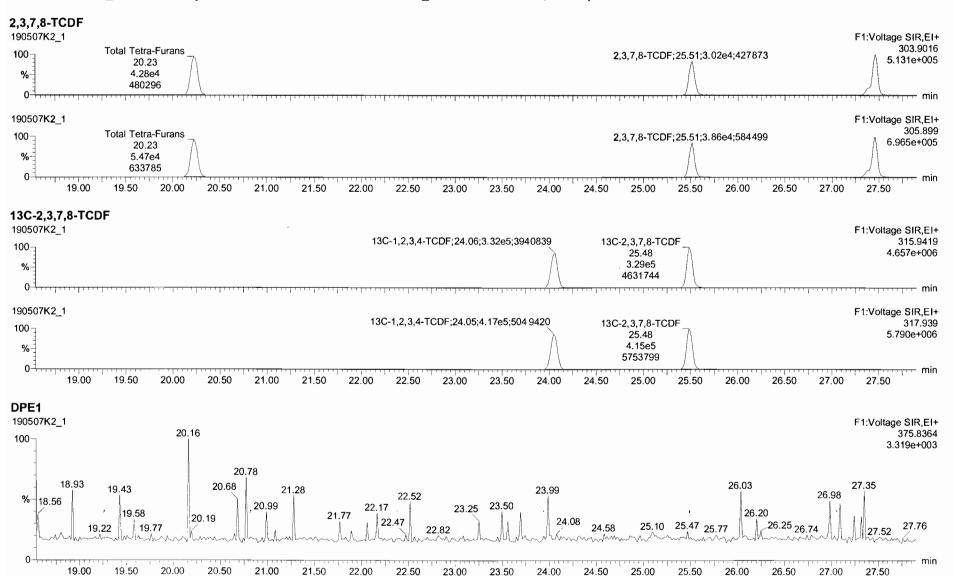


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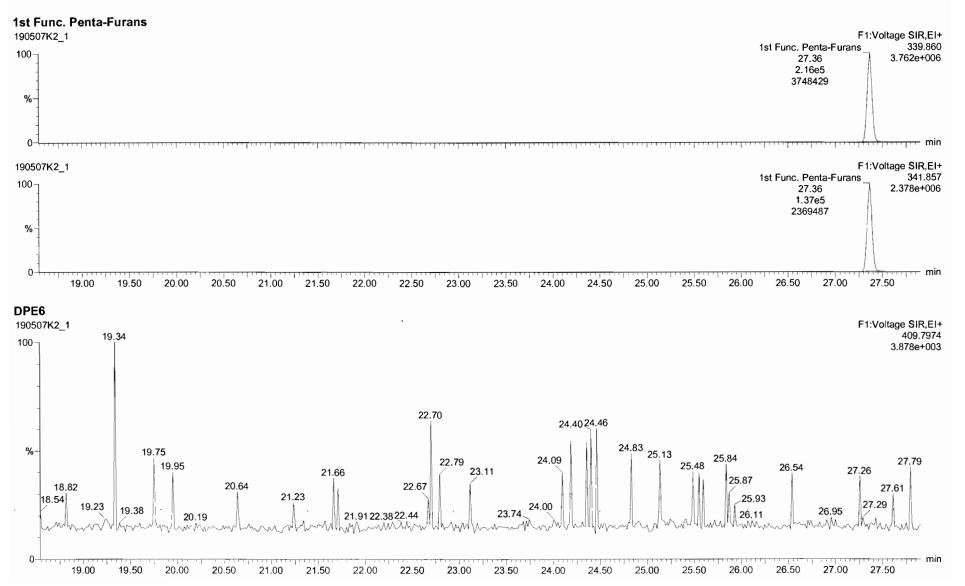
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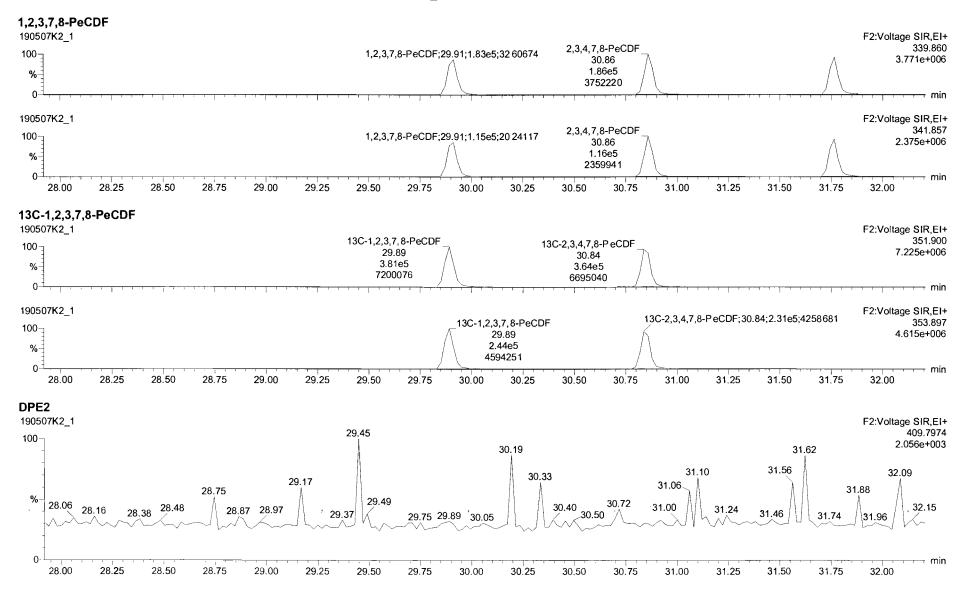
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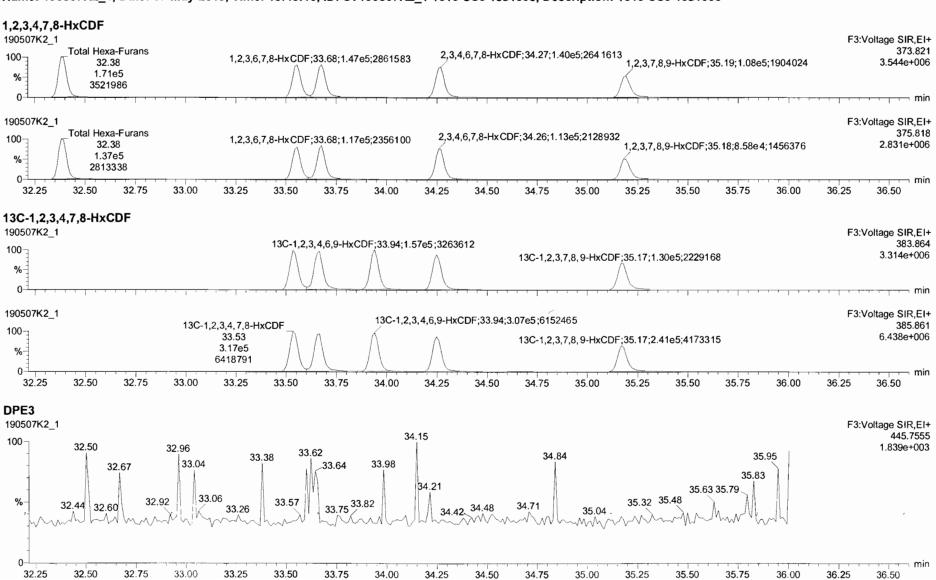


Quantify Sample Report Vista Analytical Laboratory

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38.50

38.00

38.00

38.11

38.69

38.75

39.00

39.59 39.67

39.50

39.75

39.35 39.40

39.25

40.36

min

40.50

40.16

40.25

40.00

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37.59

37.75

37.50

36.78

36.75

36.09

36.32

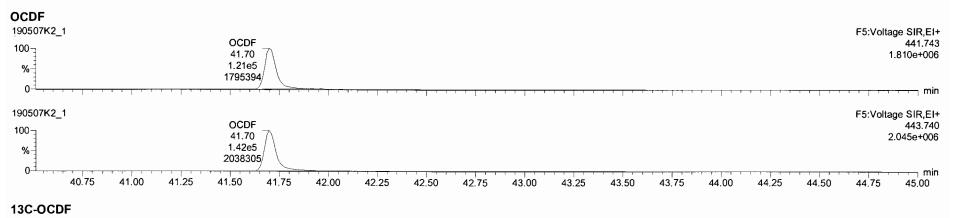
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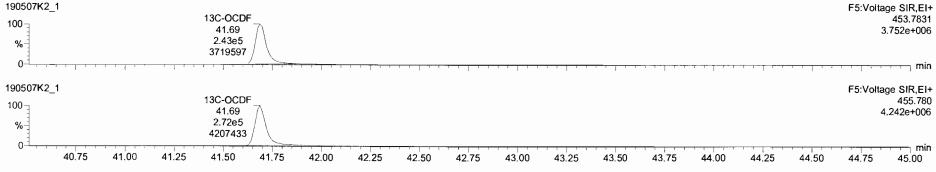
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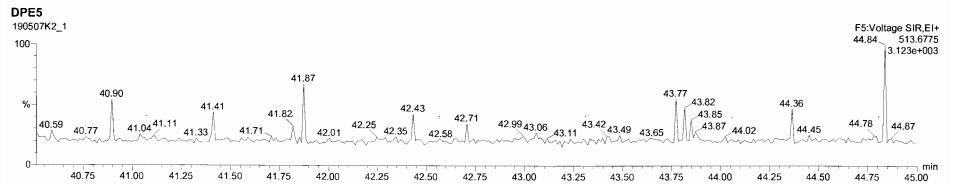
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