Analytical Resources, Incorporated
Analytical Chemists and Consultants

12 October 2021

Cindy Fields
Anchor QEA, LLC
1201 3rd Ave, Suite 2600
Seattle, WA 98101

RE: Lower Duwamish AOC4

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)	Associated SDG ID(s)
21G0138	N/A

Susan Dunnihoo

Digitally signed by Susan Dunnihoo
Date: 2021.10.12 09:44:54 -07'00'

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclosed Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Susan Dunnihoo, Director, Client Services

Cert# 100006-012

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CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 3203

Project/Client Name: Duwamish ACCY
Project Number: 180067-02.02
Contact Name: Amara Vanderwort
Sampled By: Windward

Ship to: ARI
Attn: Sue Dunnihoo
Shipper: Courier
Form filled out by: Nicolas Eckhardt

Shipping Date: 7/13/21
Airbill Number: —
Turnaround requested: STD

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	PCB	TOC/TOTAL SOLIDS	Archive	D/F				Comments / Instructions [Jar tag number(s)]
7/13/2021	0659	LDW21-IT608A	3	Sediment	X	X	X					
	0742	LDW21-IT662B	4		X	X	X	X				
	↓	LDW21-IT662C	4		X	X	X	X				
	0742	LDW21-IT662E	4		X	X	X	X				
	0817	LDW21-IT659B	4		X	X	X	X				
	↓	LDW21-IT659C	4		X	X	X	X				
	0817	LDW21-IT659E	4		X	X	X	X				
	0901	LDW21-IT658B	4		X	X	X	X				
	↓	LDW21-IT658C	4		X	X	X	X				
	0901	LDW21-IT658E	4		X	X	X	X				
↓	NE ~~X~~ 1020	LDW21-IT657B	4	↓	X	X	X	X				
7/13/2021	~~0901~~ NE 1020	LDW21-IT657C	4	Sediment	X	X	X	X				
		Total Number of Containers	47	Purchase Order / Statement of Work # CLF-052021-ARI								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: A Vanderwort	Jacob Lutz	Print name:	
Signature:	Company: ARI	Signature:	Company:
Company: Windward		Company:	
Date/Time: 7/13/21 1724	Date/Time: 07/13/2021 1724	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Wind Ward environmental LLC
200 1st Ave W, Suite 500
Seattle, WA 98119
206.378.1364

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

2 of 2 21G0138

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 3205

Project/Client Name: Duwamish AOC4
Project Number: 180067-02.02
Contact Name: Amara Vandervort
Sampled By: Windward

Ship to: ARI
Attn: Sue Dunnihoo
Shipper: Courier
Form filled out by: Nicolas Eckhardt

Shipping Date: 7/13/21
Airbill Number: —
Turnaround requested: STD

Sample Collection Date (m/d/y)	Time	Sample Identification	Volume of Sample / # of Containers	Matrix	Test(s) Requested (check test(s) required) PCB	TOC/TOTAL SOLIDS	Archive	D/F				Comments / Instructions [Jar tag number(s)]
7/13/2021	1132	LDW21-IT648B	4	Sediment	X	X	X	X				
↓	1132	LDW21-IT648C	4		X	X	X	X				
7/13/2021	1216	LDW21-~~IT~~630A	~~TOT~~ 3		X	X	X					
		SC (NE)										
		Total Number of Containers	11	Purchase Order / Statement of Work # CLF-052021-ARI								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: A. Vandervort	Sue Dunnihoo	Print name:	
Signature:	Company: ARI	Signature:	Company:
Company: Windward		Company:	
Date/Time: 7/13/21 1724	Date/Time: 07/13/2021 1724	Date/Time:	Date/Time:

* Distribution: White copies accompany shipment; yellow retained by consignor.

Windward environmental LLC

200 1st Ave W, Suite 500
Seattle, WA 98119

206.378.1364

To be completed by Laboratory upon sample receipt:

Date of receipt::	Laboratory W.O. #:
Condition upon receipt:	Time of receipt:
Cooler temperature:	Received by:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Windward/Anchor

Project Name: Lower Duwamish AOC4

COC No(s): 3203, 3205 NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:_____

Assigned ARI Job No: 21G0138

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 1757 3.1 4.9 ____ ____ ____ ____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: DOO 5206

Cooler Accepted by: JSm Date: 07/13/2021 Time: 1725

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
How were bottles sealed in plastic bags?	Individually	Grouped	Not
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI	NA	_____	

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JSm Date: 07/14/2021 Time: 0822 Labels checked by: JSm

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Anchor QEA, LLC	Project:	Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number:	180067-02.02	**Reported:**
Seattle, WA 98101	Project Manager:	Cindy Fields	10/12/2021 09:20

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
21G0138-01	LDW21-IT608A	Solid	07/13/21 06:59	07/13/21 17:25
21G0138-02	LDW21-IT662B	Solid	07/13/21 07:42	07/13/21 17:25
21G0138-03	LDW21-IT662C	Solid	07/13/21 07:42	07/13/21 17:25
21G0138-04	LDW21-IT662E	Solid	07/13/21 07:42	07/13/21 17:25
21G0138-05	LDW21-IT659B	Solid	07/13/21 08:17	07/13/21 17:25
21G0138-06	LDW21-IT659C	Solid	07/13/21 08:17	07/13/21 17:25
21G0138-07	LDW21-IT659E	Solid	07/13/21 08:17	07/13/21 17:25
21G0138-08	LDW21-IT658B	Solid	07/13/21 09:01	07/13/21 17:25
21G0138-09	LDW21-IT658C	Solid	07/13/21 09:01	07/13/21 17:25
21G0138-10	LDW21-IT658E	Solid	07/13/21 09:01	07/13/21 17:25
21G0138-11	LDW21-IT657B	Solid	07/13/21 10:20	07/13/21 17:25
21G0138-12	LDW21-IT657C	Solid	07/13/21 10:20	07/13/21 17:25
21G0138-13	LDW21-IT648B	Solid	07/13/21 11:32	07/13/21 17:25
21G0138-14	LDW21-IT648C	Solid	07/13/21 11:32	07/13/21 17:25
21G0138-15	LDW21-SC630A	Solid	07/13/21 12:16	07/13/21 17:25

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.02	**Reported:**
Seattle WA, 98101	Project Manager: Cindy Fields	12-Oct-2021 09:20

Case Narrative

Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Work Order: 21G0138

Sample receipt

Samples as listed on the preceding page were received 13-Jul-2021 17:25 under ARI work order 21G0138. For details regarding sample receipt, please refer to the Cooler Receipt Form. Mercury aliquots were frozen to meet QAPP requirements.

Dioxin/Furans - EPA Method 1613

The sample(s) were extracted and analyzed within the recommended holding times. Analysis was performed using an application specific column developed by Restek. The RTX-DIoxin2 column has unique isomer separation for the 2378-TCDF, eliminating the need for confirmation analysis.

Sample LDW21-IT662B and the duplicate were reanalyzed at dilution due to target analytes over the calibrated range of the instrument. Diluted results have been "Z"-flagged.

Initial and continuing calibrations were within method requirements.

Labeled internal standard areas were within limits.

The cleanup surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits, with response for 1,2,3,4,6,7,8-HpCDF,1,2,3,4,6,7,8-HpCDD and OCDD below the reporting limit. Associated positive results have been "B"-flagged.

The OPR (Ongoing Precision and Recovery) standard percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits with the exception of OCDD and 1,2,3,4,6,7,8-HpCDD in the initial analysis, and 1,2,3,7,8-PeCDD, OCDF,OCDD and 1,2,3,4,6,7,8-HpCDD in the dilutions (both the sample and duplicate diluted).

Revised to correct Duplicate Summary and narrative duplicate summary.

QUALIFIERS AND NOTES

Qualifier	Definition
Z	MDL and MRL are elevated due to dilution.
X	Indicates possible CDPE interference.
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
J	Estimated concentration value detected below the reporting limit.
EMPC	Estimated Maximum Possible Concentration qualifier for HRGCMS Dioxin
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
B	This analyte was detected in the method blank.
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-02 C	File ID:	21091115
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/11/21 22:03
% Solids:	61.66	Preparation:	EPA 1613	Initial/Final:	16.23 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.827	0.655-0.886	0.098	0.999	2.63	ng/kg	X
1746-01-6	2,3,7,8-TCDD	1	0.772	0.655-0.886	0.086	0.999	1.86	ng/kg	
57117-41-6	1,2,3,7,8-PeCDF	1	1.599	1.318-1.783	0.102	0.999	3.29	ng/kg	
57117-31-4	2,3,4,7,8-PeCDF	1	1.566	1.318-1.783	0.094	0.999	5.72	ng/kg	
40321-76-4	1,2,3,7,8-PeCDD	1	1.566	1.318-1.783	0.178	0.999	11.3	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.222	1.054-1.426	0.153	0.999	53.0	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.167	1.054-1.426	0.151	0.999	19.5	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.226	1.054-1.426	0.151	0.999	33.4	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.173	1.054-1.426	0.162	0.999	8.92	ng/kg	
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.217	1.054-1.426	0.282	0.999	18.8	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.257	1.054-1.426	0.294	0.999	79.7	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.282	1.054-1.426	0.309	0.999	40.0	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.039	0.893-1.208	0.355	0.999	562	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.078	0.893-1.208	0.485	0.999	60.0	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.067	0.893-1.208	0.847	2.50	2940	ng/kg	E, B
39001-02-0	OCDF	1	0.900	0.757-1.024	0.377	2.50	2480	ng/kg	
3268-87-9	OCDD	1	0.903	0.757-1.024	0.481	9.99	20400	ng/kg	E, B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			0.999	37.5	ng/kg
41903-57-5	Total TCDD	1	0.000			0.999	181	ng/kg
30402-15-4	Total PeCDF	1	0.000			0.999	238	ng/kg
36088-22-9	Total PeCDD	1	0.000			0.999	214	ng/kg
55684-94-1	Total HxCDF	1	0.000			0.999	755	ng/kg
34465-46-8	Total HxCDD	1	0.000			0.999	1160	ng/kg
38998-75-3	Total HpCDF	1	0.000			0.999	2240	ng/kg
37871-00-4	Total HpCDD	1	0.000			0.999	5200	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 83.05
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 83.05

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-02	File ID:	21091115
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/11/21 22:03
Solids Wt%:	61.66	Preparation:	EPA 1613	Initial/Final:	16.23 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.795	0.655-0.886	0.107	77.6	24 - 169 %	
13C12-2,3,7,8-TCDD		0.762	0.655-0.886	0.111	85.3	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.603	1.318-1.783	0.086	85.9	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.595	1.318-1.783	0.090	87.5	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.566	1.318-1.783	0.108	80.7	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.510	0.434-0.587	0.106	74.9	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.512	0.434-0.587	0.098	69.3	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.518	0.434-0.587	0.109	72.7	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.511	0.434-0.587	0.131	80.7	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.268	1.054-1.426	0.106	78.1	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.241	1.054-1.426	0.097	73.8	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.451	0.374-0.506	0.107	76.7	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.462	0.374-0.506	0.131	76.9	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.053	0.893-1.208	0.126	80.7	23 - 140 %	
13C12-OCDD		0.918	0.757-1.024	0.120	92.6	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.044	83.2	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:29:02 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-02, Name: 21091115, Date: 11-Sep-2021, Time: 22:03:56, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.776	1.001	8.886e3	1.075e4	1.108	0.827	0.770	1898	1911	1.33e5	1.66e5	70.2	87.0	NO	dd	dd	1.317
12378-PeCDF	29.921	1.001	1.394e4	8.721e3	1.015	1.599	1.550	2201	1452	2.22e5	1.38e5	100.7	94.9	NO	bb	bb	1.648
23478-PeCDF	31.258	1.000	2.585e4	1.651e4	1.126	1.566	1.550	2201	1452	3.78e5	2.55e5	172.0	175.3	NO	dd	dd	2.860
123478-HxCDF	34.879	1.001	1.606e5	1.315e5	1.017	1.222	1.240	2398	2075	2.60e6	2.14e6	1083.6	1029.3	NO	dd	dd	26.501
234678-HxCDF	35.848	0.999	9.975e4	8.134e4	1.052	1.226	1.240	2398	2075	1.35e6	1.11e6	562.3	535.3	NO	bb	bb	16.736
123678-HxCDF	35.012	1.000	5.899e4	5.054e4	1.037	1.167	1.240	2398	2075	9.51e5	8.02e5	396.5	386.6	NO	db	db	9.751
123789-HxCDF	36.895	1.000	2.349e4	2.002e4	1.030	1.173	1.240	2398	2075	3.60e5	3.05e5	150.0	146.9	NO	bb	bb	4.465
1234678-HpCDF	38.756	1.001	1.573e6	1.513e6	1.327	1.039	1.050	5520	5335	2.68e7	2.52e7	4848.1	4723.2	NO	bb	bb	280.973
1234789-HpCDF	41.006	1.000	1.357e5	1.259e5	1.283	1.078	1.050	5520	5335	2.01e6	1.88e6	364.6	352.6	NO	bb	bb	30.035
OCDF	45.243	1.006	4.618e6	5.134e6	1.447	0.900	0.890	2965	3102	5.70e7	6.38e7	19243.5	20571.8	NO	bb	bb	1240.828
2378-TCDD	26.411	1.001	4.326e3	5.605e3	0.920	0.772	0.770	1341	1064	6.56e4	8.37e4	48.9	78.7	NO	bd	bd	0.932
12378-PeCDD	31.503	1.000	2.459e4	1.570e4	0.995	1.566	1.550	1826	1511	3.50e5	2.23e5	191.8	147.4	NO	bb	bb	5.635
123478-HxCDD	35.993	1.000	4.621e4	3.796e4	1.027	1.217	1.240	3709	3490	7.75e5	6.49e5	209.0	185.8	NO	bd	bd	9.389
123678-HxCDD	36.115	1.001	2.004e5	1.594e5	1.009	1.257	1.240	3709	3490	3.46e6	2.70e6	932.4	773.2	NO	db	db	39.857
123789-HxCDD	36.505	1.011	9.443e4	7.367e4	0.950	1.282	1.240	3709	3490	1.57e6	1.23e6	423.5	353.2	NO	bb	bb	20.013
1234678-HpCDD	40.260	1.001	4.814e6	4.512e6	1.068	1.067	1.050	7399	7254	7.67e7	7.22e7	10360.2	9954.6	NO	bb	bb	1469.270
OCDD	44.996	1.000	3.110e7	3.443e7	1.181	0.903	0.890	3804	2511	4.06e8	4.53e8	106748.5	180365.3	NO	bb	bb	10216.364
13C-2378-TCDF	25.761	1.007	5.962e5	7.502e5	1.427	0.795	0.770	2789	2114	9.27e6	1.17e7	3325.2	5515.8	NO	bb	bb	77.632
13C-12378-PeCDF	29.898	1.169	8.346e5	5.206e5	1.297	1.603	1.550	1785	1780	1.31e7	8.17e6	7330.8	4590.6	NO	bb	bb	85.926
13C-23478-PeCDF	31.247	1.222	8.087e5	5.070e5	1.236	1.595	1.550	1785	1780	1.27e7	7.91e6	7140.1	4443.6	NO	bb	bb	87.529
13C-123478-HxCDF	34.856	0.955	3.661e5	7.176e5	1.242	0.510	0.510	1552	2608	5.81e6	1.14e7	3745.1	4377.1	NO	bd	bd	74.935
13C-123678-HxCDF	35.001	0.959	3.667e5	7.167e5	1.343	0.512	0.510	1552	2608	5.80e6	1.12e7	3735.4	4305.7	NO	db	db	69.280
13C-234678-HxCDF	35.870	0.983	3.509e5	6.772e5	1.215	0.518	0.510	1552	2608	5.74e6	1.11e7	3698.8	4265.8	NO	bb	bb	72.705
13C-123789-HxCDF	36.906	1.012	3.200e5	6.261e5	1.008	0.511	0.510	1552	2608	5.44e6	1.05e7	3502.5	4044.5	NO	bb	bb	80.662
13C-1234678-HpCDF	38.734	1.062	2.570e5	5.704e5	0.926	0.451	0.440	1555	1571	4.30e6	9.65e6	2762.8	6142.9	NO	bb	bb	76.732
13C-1234789-HpCDF	40.984	1.123	2.145e5	4.643e5	0.758	0.462	0.440	1555	1571	3.30e6	7.14e6	2124.7	4544.6	NO	bb	bb	76.943
13C-1234-TCDD	25.579	0.000	5.287e5	6.870e5	1.000	0.770	0.770	2184	1801	8.37e6	1.08e7	3831.1	6019.8	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	5.008e5	6.568e5	1.116	0.762	0.770	2184	1801	7.85e6	1.03e7	3593.3	5701.3	NO	bb	bb	85.286
13C-12378-PeCDD	31.492	1.231	4.385e5	2.799e5	0.732	1.566	1.550	1475	1062	6.89e6	4.35e6	4673.1	4096.4	NO	bb	bb	80.738
13C-123478-HxCDD	35.981	0.986	4.879e5	3.848e5	0.960	1.268	1.240	1068	2127	8.33e6	6.45e6	7801.2	3031.9	NO	bd	bd	78.107
13C-123678-HxCDD	36.093	0.989	4.955e5	3.993e5	1.041	1.241	1.240	1068	2127	8.05e6	6.52e6	7537.0	3063.5	NO	db	db	73.818
13C-1234678-HpCDD	40.237	1.103	3.048e5	2.894e5	0.632	1.053	1.050	1257	1259	4.98e6	4.70e6	3962.1	3735.8	NO	bb	bb	80.729
13C-OCDD	44.986	1.233	5.201e5	5.664e5	0.504	0.918	0.890	1037	865	6.39e6	6.98e6	6157.7	8074.7	NO	bb	bb	185.293
13C-123789-HxCDD	36.483	0.000	6.559e5	5.081e5	1.000	1.291	1.240	1068	2127	1.06e7	8.50e6	9966.1	3997.8	NO	bd	bb	100.000
37CL-2378-TCDD	26.396	1.032	4.383e5		1.084			1515		6.45e6		4257.2			bb		33.273

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Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.253	0.864	2.433e4	3.173e4	1.425	0.767	0.770	1898	1911	3.92e5	4.95e5	206.7	258.8	NO	bb	bb	2.922
1289-TCDF	27.273	1.059	2.274e3	3.005e3	1.043	0.757	0.770	1898	1911	3.28e4	4.20e4	17.3	22.0	NO	dd	dd	0.376
13468-PECDF					1.376		1.550	1194	1048								
12389-PECDF	32.294	1.080	1.965e3	1.246e3	1.000	1.577	1.550	2201	1452	2.63e4	1.83e4	12.0	12.6	NO	db	dd	0.237
123468-HXCDF	33.207	0.953	1.512e5	1.242e5	1.087	1.218	1.240	2398	2075	2.40e6	1.97e6	1000.2	950.0	NO	db	db	23.385
1368-TCDD					0.923		0.770	1341	1064								
1289-TCDD	27.016	1.024	1.504e3	2.424e3	0.794	0.621	0.770	1341	1064	2.46e4	3.27e4	18.4	30.8	YES	bb	bd	0.427
12479-PECDD	28.806	0.915	5.589e5	3.516e5	1.843	1.590	1.550	1826	1511	5.54e6	3.44e6	3032.3	2275.8	NO	bb	bb	68.747
12389-PECDD	31.915	1.013	6.832e3	4.110e3	1.154	1.662	1.550	1826	1511	1.09e5	7.12e4	59.5	47.1	NO	bb	bb	1.320
124679-HXCDD	33.987	0.945	1.905e6	1.523e6	1.125	1.250	1.240	3709	3490	3.00e7	2.41e7	8079.1	6917.1	NO	bb	bb	349.228
1234679-HPCDD	39.201	0.974	4.201e6	3.963e6	1.211	1.060	1.050	7399	7254	7.11e7	6.74e7	9603.7	9289.5	NO	bb	bb	1134.491
Total-tetrafurans			1.363e5		1.192			1898		2.07e6							18.773
Total-penta1			4.599e5					1194		6.80e6							61.567
Total-pentafurans			4.867e5		1.047			2201		6.78e6							57.400
Total-hexafurans			2.247e6		1.045			2398		3.55e7							377.893
Total-heptafurans			5.744e6		1.305			5520		9.56e7							1119.017
Total-Furans			1.369e7		1.158			1898		2.04e8							2875.479
Total-tetradioxins			4.032e5		0.879			1341		6.57e6							90.673
Total-pentadioxins			7.742e5		1.331			1826		8.82e6							106.890
Total-hexadioxins			3.064e6		1.028			3709		4.61e7							581.071
Total-heptadioxins			9.015e6		1.140			7399		1.48e8							2603.761
Total-Dioxins			4.436e7		1.092			1341		6.15e8							13598.773
Total-TEQ			5.805e7					1341		8.19e8							16474.252
FUNCTION1 PFK			3.602e8					609752		6.98e8							
FUNCTION2 PFK			8.169e4					454333		1.52e6							0.000
FUNCTION3 PFK			7.591e5					504839		1.36e7							0.000
FUNCTION4 PFK			2.158e4					344487		1.04e6							
FUNCTION5 PFK			0.000e0					265247		0.00e0							
FUNCTION1 HXCD...			1.314e4					886		1.97e5							0.000
FUNCTION1 HPCD...			3.143e3					866		3.36e4							0.000
FUNCTION2 HPCD...			3.470e3					864		6.24e4							0.000
FUNCTION3 OCDPE			6.223e3					680		9.58e4							0.000
FUNCTION4 NCDPE			9.212e3					838		1.58e5							0.000
FUNCTION5 DCDPE			4.861e3					811		3.98e4							0.000

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Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	22.53	1.142e4	1.469e4	1.192	0.78	0.77	95.4	YES	NO	bb	bb	1.627
2	1368-TCDF	22.25	2.433e4	3.173e4	1.425	0.77	0.77	206.7	YES	NO	bb	bb	2.922
3	2378-TCDF	25.78	8.886e3	1.075e4	1.108	0.83	0.77	70.2	YES	NO	dd	dd	1.317
4	Total-tetrafurans	25.58	4.614e3	5.844e3	1.192	0.79	0.77	25.9	YES	NO	dd	dd	0.652
5	Total-tetrafurans	25.29	2.208e3	2.998e3	1.192	0.74	0.77	14.7	YES	NO	dd	bd	0.324
6	Total-tetrafurans	25.11	3.490e3	4.732e3	1.192	0.74	0.77	27.5	YES	NO	bd	bb	0.512
7	Total-tetrafurans	24.87	1.088e4	1.338e4	1.192	0.81	0.77	87.9	YES	NO	bb	bb	1.511
8	Total-tetrafurans	24.69	1.950e4	2.494e4	1.192	0.78	0.77	158.6	YES	NO	db	db	2.769
9	Total-tetrafurans	24.55	1.013e4	1.232e4	1.192	0.82	0.77	90.3	YES	NO	dd	dd	1.398
10	Total-tetrafurans	24.46	6.529e3	9.155e3	1.192	0.71	0.77	49.8	YES	NO	dd	dd	0.977
11	Total-tetrafurans	24.29	1.056e3	1.278e3	1.192	0.83	0.77	10.5	YES	NO	bd	bd	0.145
12	Total-tetrafurans	24.05	1.025e4	1.220e4	1.192	0.84	0.77	84.8	YES	NO	db	db	1.399
13	1289-TCDF	27.27	2.274e3	3.005e3	1.043	0.76	0.77	17.3	YES	NO	dd	dd	0.376
14	Total-tetrafurans	27.18	1.980e3	2.274e3	1.192	0.87	0.77	14.0	YES	NO	bd	bd	0.265
15	Total-tetrafurans	26.79	6.861e2	7.784e2	1.192	0.88	0.77	7.4	YES	NO	bb	bb	0.091
16	Total-tetrafurans	26.14	1.295e3	1.566e3	1.192	0.83	0.77	11.9	YES	NO	dd	db	0.178
17	Total-tetrafurans	26.00	1.167e4	1.431e4	1.192	0.82	0.77	77.0	YES	NO	dd	dd	1.619
18	Total-tetrafurans	25.91	5.092e3	5.962e3	1.192	0.85	0.77	40.9	YES	NO	dd	dd	0.689

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.42	8.005e2	5.273e2		1.52	1.55	10.4	YES	NO	bb	bb	0.107
2	Total-penta1	27.18	4.591e5	3.047e5		1.51	1.55	5685.3	YES	NO	bb	bb	61.460

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PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.95	1.127e4	7.123e3	1.047	1.58	1.55	82.6	YES	NO	dd	dd	1.316
2	Total-pentafurans	28.84	2.200e5	1.457e5	1.047	1.51	1.55	1255.7	YES	NO	dd	dd	26.164
3	Total-pentafurans	28.66	2.030e4	1.283e4	1.047	1.58	1.55	125.5	YES	NO	dd	dd	2.370
4	Total-pentafurans	28.55	7.184e3	4.517e3	1.047	1.59	1.55	50.8	YES	NO	bd	bd	0.837
5	12389-PECDF	32.29	1.965e3	1.246e3	1.000	1.58	1.55	12.0	YES	NO	db	dd	0.237
6	Total-pentafurans	32.22	1.564e3	1.103e3	1.047	1.42	1.55	11.3	YES	NO	bd	bd	0.191
7	23478-PeCDF	31.26	2.585e4	1.651e4	1.126	1.57	1.55	172.0	YES	NO	dd	dd	2.860
8	Total-pentafurans	31.12	4.190e4	2.689e4	1.047	1.56	1.55	272.9	YES	NO	dd	dd	4.922
9	Total-pentafurans	31.00	6.677e3	3.839e3	1.047	1.74	1.55	45.8	YES	NO	bd	bd	0.752
10	Total-pentafurans	30.77	1.631e3	1.063e3	1.047	1.53	1.55	10.2	YES	NO	bb	bb	0.193
11	Total-pentafurans	30.39	2.290e3	1.721e3	1.047	1.33	1.55	15.8	YES	NO	bb	db	0.287
12	Total-pentafurans	30.12	1.972e4	1.333e4	1.047	1.48	1.55	142.0	YES	NO	bd	bd	2.365
13	12378-PeCDF	29.92	1.394e4	8.721e3	1.015	1.60	1.55	100.7	YES	NO	bb	bb	1.648
14	Total-pentafurans	29.64	1.211e4	8.633e3	1.047	1.40	1.55	87.0	YES	NO	db	db	1.484
15	Total-pentafurans	29.55	2.057e4	1.223e4	1.047	1.68	1.55	135.6	YES	NO	dd	dd	2.346
16	Total-pentafurans	29.45	2.393e4	1.571e4	1.047	1.52	1.55	171.4	YES	NO	dd	dd	2.836
17	Total-pentafurans	29.27	5.578e4	3.637e4	1.047	1.53	1.55	390.1	YES	NO	dd	dd	6.593

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexafurans	33.69	1.038e4	8.884e3	1.045	1.17	1.24	69.0	YES	NO	bb	bb	1.781
2	Total-hexafurans	33.42	4.209e5	3.469e5	1.045	1.21	1.24	2724.0	YES	NO	bb	bb	70.993
3	123468-HXCDF	33.21	1.512e5	1.242e5	1.087	1.22	1.24	1000.2	YES	NO	db	db	23.385
4	123789-HxCDF	36.90	2.349e4	2.002e4	1.030	1.17	1.24	150.0	YES	NO	bb	bb	4.465
5	234678-HxCDF	35.85	9.975e4	8.134e4	1.052	1.23	1.24	562.3	YES	NO	bb	bb	16.736
6	Total-hexafurans	35.54	3.231e3	2.341e3	1.045	1.38	1.24	22.3	YES	NO	bb	bb	0.515
7	Total-hexafurans	35.36	4.720e3	3.799e3	1.045	1.24	1.24	32.1	YES	NO	bb	bb	0.788
8	Total-hexafurans	35.21	2.416e3	2.027e3	1.045	1.19	1.24	19.0	YES	NO	bb	bb	0.411
9	123678-HxCDF	35.01	5.899e4	5.054e4	1.037	1.17	1.24	396.5	YES	NO	db	db	9.751
10	123478-HxCDF	34.88	1.606e5	1.315e5	1.017	1.22	1.24	1083.6	YES	NO	dd	dd	26.501
11	Total-hexafurans	34.72	1.471e4	1.188e4	1.045	1.24	1.24	102.3	YES	NO	bd	bd	2.459
12	Total-hexafurans	34.25	1.212e6	1.013e6	1.045	1.20	1.24	8073.8	YES	NO	bb	bb	205.799
13	Total-hexafurans	33.95	8.438e4	7.038e4	1.045	1.20	1.24	567.0	YES	NO	bb	bb	14.310

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.01	1.357e5	1.259e5	1.283	1.08	1.05	364.6	YES	NO	bb	bb	30.035
2	Total-heptafurans	39.42	4.001e6	3.872e6	1.305	1.03	1.05	12001.4	YES	NO	bb	bb	800.818
3	Total-heptafurans	39.17	3.531e4	3.539e4	1.305	1.00	1.05	102.8	YES	NO	bb	bb	7.191
4	1234678-HpCDF	38.76	1.573e6	1.513e6	1.327	1.04	1.05	4848.1	YES	NO	bb	bb	280.973

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	22.53	1.142e4	1.469e4	1.192	0.78	0.77	95.4	YES	NO	bb	bb	1.627
2	1368-TCDF	22.25	2.433e4	3.173e4	1.425	0.77	0.77	206.7	YES	NO	bb	bb	2.922
3	2378-TCDF	25.78	8.886e3	1.075e4	1.108	0.83	0.77	70.2	YES	NO	dd	dd	1.317
4	Total-tetrafurans	25.58	4.614e3	5.844e3	1.192	0.79	0.77	25.9	YES	NO	dd	dd	0.652
5	Total-tetrafurans	25.29	2.208e3	2.998e3	1.192	0.74	0.77	14.7	YES	NO	dd	bd	0.324
6	Total-tetrafurans	25.11	3.490e3	4.732e3	1.192	0.74	0.77	27.5	YES	NO	bd	bb	0.512
7	Total-tetrafurans	24.87	1.088e4	1.338e4	1.192	0.81	0.77	87.9	YES	NO	bb	bb	1.511
8	Total-tetrafurans	24.69	1.950e4	2.494e4	1.192	0.78	0.77	158.6	YES	NO	db	db	2.769
9	Total-tetrafurans	24.55	1.013e4	1.232e4	1.192	0.82	0.77	90.3	YES	NO	dd	dd	1.398
10	Total-tetrafurans	24.46	6.529e3	9.155e3	1.192	0.71	0.77	49.8	YES	NO	dd	dd	0.977
11	Total-tetrafurans	24.29	1.056e3	1.278e3	1.192	0.83	0.77	10.5	YES	NO	bd	bd	0.145
12	Total-tetrafurans	24.05	1.025e4	1.220e4	1.192	0.84	0.77	84.8	YES	NO	db	db	1.399
13	1289-TCDF	27.27	2.274e3	3.005e3	1.043	0.76	0.77	17.3	YES	NO	dd	dd	0.376
14	Total-tetrafurans	27.18	1.980e3	2.274e3	1.192	0.87	0.77	14.0	YES	NO	bd	bd	0.265
15	Total-tetrafurans	26.79	6.861e2	7.784e2	1.192	0.88	0.77	7.4	YES	NO	bb	bb	0.091
16	Total-tetrafurans	26.14	1.295e3	1.566e3	1.192	0.83	0.77	11.9	YES	NO	dd	db	0.178
17	Total-tetrafurans	26.00	1.167e4	1.431e4	1.192	0.82	0.77	77.0	YES	NO	dd	dd	1.619
18	Total-tetrafurans	25.91	5.092e3	5.962e3	1.192	0.85	0.77	40.9	YES	NO	dd	dd	0.689
19	Total-pentafurans	28.95	1.127e4	7.123e3	1.047	1.58	1.55	82.6	YES	NO	dd	dd	1.316
20	Total-pentafurans	28.84	2.200e5	1.457e5	1.047	1.51	1.55	1255.7	YES	NO	dd	dd	26.164
21	Total-pentafurans	28.66	2.030e4	1.283e4	1.047	1.58	1.55	125.5	YES	NO	dd	dd	2.370
22	Total-pentafurans	28.55	7.184e3	4.517e3	1.047	1.59	1.55	50.8	YES	NO	bd	bd	0.837
23	12389-PECDF	32.29	1.965e3	1.246e3	1.000	1.58	1.55	12.0	YES	NO	db	dd	0.237
24	Total-pentafurans	32.22	1.564e3	1.103e3	1.047	1.42	1.55	11.3	YES	NO	bd	bd	0.191
25	23478-PeCDF	31.26	2.585e4	1.651e4	1.126	1.57	1.55	172.0	YES	NO	dd	dd	2.860
26	Total-pentafurans	31.12	4.190e4	2.689e4	1.047	1.56	1.55	272.9	YES	NO	dd	dd	4.922
27	Total-pentafurans	31.00	6.677e3	3.839e3	1.047	1.74	1.55	45.8	YES	NO	bd	bd	0.752
28	Total-pentafurans	30.77	1.631e3	1.063e3	1.047	1.53	1.55	10.2	YES	NO	bb	bb	0.193
29	Total-pentafurans	30.39	2.290e3	1.721e3	1.047	1.33	1.55	15.8	YES	NO	bb	db	0.287
30	Total-pentafurans	30.12	1.972e4	1.333e4	1.047	1.48	1.55	142.0	YES	NO	bd	bd	2.365
31	12378-PeCDF	29.92	1.394e4	8.721e3	1.015	1.60	1.55	100.7	YES	NO	bb	bb	1.648
32	Total-pentafurans	29.64	1.211e4	8.633e3	1.047	1.40	1.55	87.0	YES	NO	db	db	1.484
33	Total-pentafurans	29.55	2.057e4	1.223e4	1.047	1.68	1.55	135.6	YES	NO	dd	dd	2.346
34	Total-pentafurans	29.45	2.393e4	1.571e4	1.047	1.52	1.55	171.4	YES	NO	dd	dd	2.836
35	Total-pentafurans	29.27	5.578e4	3.637e4	1.047	1.53	1.55	390.1	YES	NO	dd	dd	6.593
36	Total-hexafurans	33.69	1.038e4	8.884e3	1.045	1.17	1.24	69.0	YES	NO	bb	bb	1.781
37	Total-hexafurans	33.42	4.209e5	3.469e5	1.045	1.21	1.24	2724.0	YES	NO	bb	bb	70.993

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	123468-HXCDF	33.21	1.512e5	1.242e5	1.087	1.22	1.24	1000.2	YES	NO	db	db	23.385
39	123789-HxCDF	36.90	2.349e4	2.002e4	1.030	1.17	1.24	150.0	YES	NO	bb	bb	4.465
40	234678-HxCDF	35.85	9.975e4	8.134e4	1.052	1.23	1.24	562.3	YES	NO	bb	bb	16.736
41	Total-hexafurans	35.54	3.231e3	2.341e3	1.045	1.38	1.24	22.3	YES	NO	bb	bb	0.515
42	Total-hexafurans	35.36	4.720e3	3.799e3	1.045	1.24	1.24	32.1	YES	NO	bb	bb	0.788
43	Total-hexafurans	35.21	2.416e3	2.027e3	1.045	1.19	1.24	19.0	YES	NO	bb	bb	0.411
44	123678-HxCDF	35.01	5.899e4	5.054e4	1.037	1.17	1.24	396.5	YES	NO	db	db	9.751
45	123478-HxCDF	34.88	1.606e5	1.315e5	1.017	1.22	1.24	1083.6	YES	NO	dd	dd	26.501
46	Total-hexafurans	34.72	1.471e4	1.188e4	1.045	1.24	1.24	102.3	YES	NO	bd	bd	2.459
47	Total-hexafurans	34.25	1.212e6	1.013e6	1.045	1.20	1.24	8073.8	YES	NO	bb	bb	205.799
48	Total-hexafurans	33.95	8.438e4	7.038e4	1.045	1.20	1.24	567.0	YES	NO	bb	bb	14.310
49	1234789-HpCDF	41.01	1.357e5	1.259e5	1.283	1.08	1.05	364.6	YES	NO	bb	bb	30.035
50	Total-heptafurans	39.42	4.001e6	3.872e6	1.305	1.03	1.05	12001.4	YES	NO	bb	bb	800.818
51	Total-heptafurans	39.17	3.531e4	3.539e4	1.305	1.00	1.05	102.8	YES	NO	bb	bb	7.191
52	1234678-HpCDF	38.76	1.573e6	1.513e6	1.327	1.04	1.05	4848.1	YES	NO	bb	bb	280.973
53	OCDF	45.24	4.618e6	5.134e6	1.447	0.90	0.89	19243.5	YES	NO	bb	bb	1240.8...
54	Total-penta1	27.42	8.005e2	5.273e2		1.52	1.55	10.4	YES	NO	bb	bb	0.107
55	Total-penta1	27.18	4.591e5	3.047e5		1.51	1.55	5685.3	YES	NO	bb	bb	61.460

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.75	1.444e4	1.876e4	0.879	0.77	0.77	147.9	YES	NO	db	db	3.262
2	Total-tetradioxins	24.55	2.400e4	3.052e4	0.879	0.79	0.77	289.6	YES	NO	bd	bd	5.357
3	Total-tetradioxins	24.05	2.261e4	3.232e4	0.879	0.70	0.77	291.1	YES	NO	bb	db	5.397
4	Total-tetradioxins	23.86	1.880e5	2.412e5	0.879	0.78	0.77	2364.0	YES	NO	bb	bd	42.163
5	Total-tetradioxins	23.60	8.606e4	1.093e5	0.879	0.79	0.77	1060.0	YES	NO	bb	bb	19.195
6	Total-tetradioxins	26.53	4.432e3	6.216e3	0.879	0.71	0.77	54.2	YES	NO	db	db	1.046
7	2378-TCDD	26.41	4.326e3	5.605e3	0.920	0.77	0.77	48.9	YES	NO	bd	bd	0.932
8	Total-tetradioxins	26.02	7.002e3	9.239e3	0.879	0.76	0.77	58.2	YES	NO	bb	bb	1.596
9	Total-tetradioxins	25.59	5.686e3	7.076e3	0.879	0.80	0.77	65.7	YES	NO	dd	bd	1.254
10	Total-tetradioxins	25.38	2.430e4	3.091e4	0.879	0.79	0.77	267.3	YES	NO	dd	db	5.424
11	Total-tetradioxins	25.02	2.242e4	2.894e4	0.879	0.77	0.77	251.4	YES	NO	bd	bb	5.046

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.91	6.832e3	4.110e3	1.154	1.66	1.55	59.5	YES	NO	bb	bb	1.320
2	12378-PeCDD	31.50	2.459e4	1.570e4	0.995	1.57	1.55	191.8	YES	NO	bb	bb	5.635
3	Total-pentadioxins	30.83	1.862e4	1.259e4	1.331	1.48	1.55	146.1	YES	NO	bb	bb	3.265
4	Total-pentadioxins	30.44	3.347e4	2.102e4	1.331	1.59	1.55	211.2	YES	NO	db	db	5.699
5	Total-pentadioxins	30.27	3.143e4	1.886e4	1.331	1.67	1.55	288.6	YES	NO	bd	bd	5.260
6	Total-pentadioxins	30.12	2.692e4	1.705e4	1.331	1.58	1.55	246.9	YES	NO	bb	bb	4.599
7	Total-pentadioxins	29.90	3.588e4	2.208e4	1.331	1.63	1.55	320.3	YES	NO	bb	bb	6.062
8	Total-pentadioxins	29.69	1.076e3	7.328e2	1.331	1.47	1.55	9.4	YES	NO	bb	bb	0.189
9	Total-pentadioxins	29.30	3.650e4	2.195e4	1.331	1.66	1.55	327.3	YES	NO	bb	bb	6.114
10	12479-PECDD	28.81	5.589e5	3.516e5	1.843	1.59	1.55	3032.3	YES	NO	bb	bb	68.747

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	34.62	4.728e2	4.359e2	1.028	1.08	1.24	2.9	NO	NO	bb	bb	0.100
2	124679-HXCDD	33.99	1.905e6	1.523e6	1.125	1.25	1.24	8079.1	YES	NO	bb	bb	349.228
3	123789-HxCDD	36.51	9.443e4	7.367e4	0.950	1.28	1.24	423.5	YES	NO	bb	bb	20.013
4	Total-hexadioxins	36.28	2.530e4	2.106e4	1.028	1.20	1.24	126.1	YES	NO	bb	bb	5.104
5	123678-HxCDD	36.12	2.004e5	1.594e5	1.009	1.26	1.24	932.4	YES	NO	db	db	39.857
6	123478-HxCDD	35.99	4.621e4	3.796e4	1.027	1.22	1.24	209.0	YES	NO	bd	bd	9.389
7	Total-hexadioxins	35.22	2.499e4	1.968e4	1.028	1.27	1.24	111.3	YES	NO	db	db	4.919
8	Total-hexadioxins	35.11	5.755e5	4.661e5	1.028	1.23	1.24	1706.6	YES	NO	bd	bd	114.663
9	Total-hexadioxins	34.76	1.915e5	1.519e5	1.028	1.26	1.24	832.9	YES	NO	bb	bb	37.799

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	4.814e6	4.512e6	1.068	1.07	1.05	10360.2	YES	NO	bb	bb	1469.2...
2	1234679-HPCDD	39.20	4.201e6	3.963e6	1.211	1.06	1.05	9603.7	YES	NO	bb	bb	1134.4...

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.75	1.444e4	1.876e4	0.879	0.77	0.77	147.9	YES	NO	db	db	3.262
2	Total-tetradioxins	24.55	2.400e4	3.052e4	0.879	0.79	0.77	289.6	YES	NO	bd	bd	5.357
3	Total-tetradioxins	24.05	2.261e4	3.232e4	0.879	0.70	0.77	291.1	YES	NO	bb	db	5.397
4	Total-tetradioxins	23.86	1.880e5	2.412e5	0.879	0.78	0.77	2364.0	YES	NO	bb	bd	42.163
5	Total-tetradioxins	23.60	8.606e4	1.093e5	0.879	0.79	0.77	1060.0	YES	NO	bb	bb	19.195
6	Total-Dioxins	22.16	7.688e1	9.397e1	1.092	0.82	0.77	1.4	NO	NO	bb	bb	0.014
7	Total-tetradioxins	26.53	4.432e3	6.216e3	0.879	0.71	0.77	54.2	YES	NO	db	db	1.046
8	2378-TCDD	26.41	4.326e3	5.605e3	0.920	0.77	0.77	48.9	YES	NO	bd	bd	0.932
9	Total-tetradioxins	26.02	7.002e3	9.239e3	0.879	0.76	0.77	58.2	YES	NO	bb	bb	1.596
10	Total-tetradioxins	25.59	5.686e3	7.076e3	0.879	0.80	0.77	65.7	YES	NO	dd	bd	1.254
11	Total-tetradioxins	25.38	2.430e4	3.091e4	0.879	0.79	0.77	267.3	YES	NO	dd	db	5.424
12	Total-tetradioxins	25.02	2.242e4	2.894e4	0.879	0.77	0.77	251.4	YES	NO	bd	bb	5.046
13	12389-PECDD	31.91	6.832e3	4.110e3	1.154	1.66	1.55	59.5	YES	NO	bb	bb	1.320
14	12378-PeCDD	31.50	2.459e4	1.570e4	0.995	1.57	1.55	191.8	YES	NO	bb	bb	5.635
15	Total-pentadioxins	30.83	1.862e4	1.259e4	1.331	1.48	1.55	146.1	YES	NO	bb	bb	3.265
16	Total-pentadioxins	30.44	3.347e4	2.102e4	1.331	1.59	1.55	211.2	YES	NO	db	db	5.699
17	Total-pentadioxins	30.27	3.143e4	1.886e4	1.331	1.67	1.55	288.6	YES	NO	bd	bd	5.260
18	Total-pentadioxins	30.12	2.692e4	1.705e4	1.331	1.58	1.55	246.9	YES	NO	bb	bb	4.599
19	Total-pentadioxins	29.90	3.588e4	2.208e4	1.331	1.63	1.55	320.3	YES	NO	bb	bb	6.062
20	Total-pentadioxins	29.69	1.076e3	7.328e2	1.331	1.47	1.55	9.4	YES	NO	bb	bb	0.189
21	Total-pentadioxins	29.30	3.650e4	2.195e4	1.331	1.66	1.55	327.3	YES	NO	bb	bb	6.114
22	12479-PECDD	28.81	5.589e5	3.516e5	1.843	1.59	1.55	3032.3	YES	NO	bb	bb	68.747
23	Total-hexadioxins	34.62	4.728e2	4.359e2	1.028	1.08	1.24	2.9	NO	NO	bb	bb	0.100
24	124679-HXCDD	33.99	1.905e6	1.523e6	1.125	1.25	1.24	8079.1	YES	NO	bb	bb	349.228
25	123789-HxCDD	36.51	9.443e4	7.367e4	0.950	1.28	1.24	423.5	YES	NO	bb	bb	20.013
26	Total-hexadioxins	36.28	2.530e4	2.106e4	1.028	1.20	1.24	126.1	YES	NO	bb	bb	5.104
27	123678-HxCDD	36.12	2.004e5	1.594e5	1.009	1.26	1.24	932.4	YES	NO	db	db	39.857
28	123478-HxCDD	35.99	4.621e4	3.796e4	1.027	1.22	1.24	209.0	YES	NO	bd	bd	9.389
29	Total-hexadioxins	35.22	2.499e4	1.968e4	1.028	1.27	1.24	111.3	YES	NO	db	db	4.919
30	Total-hexadioxins	35.11	5.755e5	4.661e5	1.028	1.23	1.24	1706.6	YES	NO	bd	bd	114.663
31	Total-hexadioxins	34.76	1.915e5	1.519e5	1.028	1.26	1.24	832.9	YES	NO	bb	bb	37.799
32	1234678-HpCDD	40.26	4.814e6	4.512e6	1.068	1.07	1.05	10360.2	YES	NO	bb	bb	1469.2...
33	1234679-HPCDD	39.20	4.201e6	3.963e6	1.211	1.06	1.05	9603.7	YES	NO	bb	bb	1134.4...
34	OCDD	45.00	3.110e7	3.443e7	1.181	0.90	0.89	10674...	YES	NO	bb	bb	10216....

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	22.53	1.142e4	1.469e4	1.192	0.78	0.77	95.4	YES	NO	bb	bb	1.627
2	1368-TCDF	22.25	2.433e4	3.173e4	1.425	0.77	0.77	206.7	YES	NO	bb	bb	2.922
3	2378-TCDF	25.78	8.886e3	1.075e4	1.108	0.83	0.77	70.2	YES	NO	dd	dd	1.317
4	Total-tetrafurans	25.58	4.614e3	5.844e3	1.192	0.79	0.77	25.9	YES	NO	dd	dd	0.652
5	Total-tetrafurans	25.29	2.208e3	2.998e3	1.192	0.74	0.77	14.7	YES	NO	dd	bd	0.324
6	Total-tetrafurans	25.11	3.490e3	4.732e3	1.192	0.74	0.77	27.5	YES	NO	bd	bb	0.512
7	Total-tetrafurans	24.87	1.088e4	1.338e4	1.192	0.81	0.77	87.9	YES	NO	bb	bb	1.511
8	Total-tetrafurans	24.69	1.950e4	2.494e4	1.192	0.78	0.77	158.6	YES	NO	db	db	2.769
9	Total-tetrafurans	24.55	1.013e4	1.232e4	1.192	0.82	0.77	90.3	YES	NO	dd	dd	1.398
10	Total-tetrafurans	24.46	6.529e3	9.155e3	1.192	0.71	0.77	49.8	YES	NO	dd	dd	0.977
11	Total-tetrafurans	24.29	1.056e3	1.278e3	1.192	0.83	0.77	10.5	YES	NO	bd	bd	0.145
12	Total-tetrafurans	24.05	1.025e4	1.220e4	1.192	0.84	0.77	84.8	YES	NO	db	db	1.399
13	1289-TCDF	27.27	2.274e3	3.005e3	1.043	0.76	0.77	17.3	YES	NO	dd	dd	0.376
14	Total-tetrafurans	27.18	1.980e3	2.274e3	1.192	0.87	0.77	14.0	YES	NO	bd	bd	0.265
15	Total-tetrafurans	26.79	6.861e2	7.784e2	1.192	0.88	0.77	7.4	YES	NO	bb	bb	0.091
16	Total-tetrafurans	26.14	1.295e3	1.566e3	1.192	0.83	0.77	11.9	YES	NO	dd	db	0.178
17	Total-tetrafurans	26.00	1.167e4	1.431e4	1.192	0.82	0.77	77.0	YES	NO	dd	dd	1.619
18	Total-tetrafurans	25.91	5.092e3	5.962e3	1.192	0.85	0.77	40.9	YES	NO	dd	dd	0.689
19	Total-pentafurans	28.95	1.127e4	7.123e3	1.047	1.58	1.55	82.6	YES	NO	dd	dd	1.316
20	Total-pentafurans	28.84	2.200e5	1.457e5	1.047	1.51	1.55	1255.7	YES	NO	dd	dd	26.164
21	Total-pentafurans	28.66	2.030e4	1.283e4	1.047	1.58	1.55	125.5	YES	NO	dd	dd	2.370
22	Total-pentafurans	28.55	7.184e3	4.517e3	1.047	1.59	1.55	50.8	YES	NO	bd	bd	0.837
23	12389-PECDF	32.29	1.965e3	1.246e3	1.000	1.58	1.55	12.0	YES	NO	db	dd	0.237
24	Total-pentafurans	32.22	1.564e3	1.103e3	1.047	1.42	1.55	11.3	YES	NO	bd	bd	0.191
25	23478-PeCDF	31.26	2.585e4	1.651e4	1.126	1.57	1.55	172.0	YES	NO	dd	dd	2.860
26	Total-pentafurans	31.12	4.190e4	2.689e4	1.047	1.56	1.55	272.9	YES	NO	dd	dd	4.922
27	Total-pentafurans	31.00	6.677e3	3.839e3	1.047	1.74	1.55	45.8	YES	NO	bd	bd	0.752
28	Total-pentafurans	30.77	1.631e3	1.063e3	1.047	1.53	1.55	10.2	YES	NO	bb	bb	0.193
29	Total-pentafurans	30.39	2.290e3	1.721e3	1.047	1.33	1.55	15.8	YES	NO	bb	db	0.287
30	Total-pentafurans	30.12	1.972e4	1.333e4	1.047	1.48	1.55	142.0	YES	NO	bd	bd	2.365
31	12378-PeCDF	29.92	1.394e4	8.721e3	1.015	1.60	1.55	100.7	YES	NO	bb	bb	1.648
32	Total-pentafurans	29.64	1.211e4	8.633e3	1.047	1.40	1.55	87.0	YES	NO	db	db	1.484
33	Total-pentafurans	29.55	2.057e4	1.223e4	1.047	1.68	1.55	135.6	YES	NO	dd	dd	2.346
34	Total-pentafurans	29.45	2.393e4	1.571e4	1.047	1.52	1.55	171.4	YES	NO	dd	dd	2.836
35	Total-pentafurans	29.27	5.578e4	3.637e4	1.047	1.53	1.55	390.1	YES	NO	dd	dd	6.593
36	Total-hexafurans	33.69	1.038e4	8.884e3	1.045	1.17	1.24	69.0	YES	NO	bb	bb	1.781
37	Total-hexafurans	33.42	4.209e5	3.469e5	1.045	1.21	1.24	2724.0	YES	NO	bb	bb	70.993

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	123468-HXCDF	33.21	1.512e5	1.242e5	1.087	1.22	1.24	1000.2	YES	NO	db	db	23.385
39	123789-HxCDF	36.90	2.349e4	2.002e4	1.030	1.17	1.24	150.0	YES	NO	bb	bb	4.465
40	234678-HxCDF	35.85	9.975e4	8.134e4	1.052	1.23	1.24	562.3	YES	NO	bb	bb	16.736
41	Total-hexafurans	35.54	3.231e3	2.341e3	1.045	1.38	1.24	22.3	YES	NO	bb	bb	0.515
42	Total-hexafurans	35.36	4.720e3	3.799e3	1.045	1.24	1.24	32.1	YES	NO	bb	bb	0.788
43	Total-hexafurans	35.21	2.416e3	2.027e3	1.045	1.19	1.24	19.0	YES	NO	bb	bb	0.411
44	123678-HxCDF	35.01	5.899e4	5.054e4	1.037	1.17	1.24	396.5	YES	NO	db	db	9.751
45	123478-HxCDF	34.88	1.606e5	1.315e5	1.017	1.22	1.24	1083.6	YES	NO	dd	dd	26.501
46	Total-hexafurans	34.72	1.471e4	1.188e4	1.045	1.24	1.24	102.3	YES	NO	bd	bd	2.459
47	Total-hexafurans	34.25	1.212e6	1.013e6	1.045	1.20	1.24	8073.8	YES	NO	bb	bb	205.799
48	Total-hexafurans	33.95	8.438e4	7.038e4	1.045	1.20	1.24	567.0	YES	NO	bb	bb	14.310
49	1234789-HpCDF	41.01	1.357e5	1.259e5	1.283	1.08	1.05	364.6	YES	NO	bb	bb	30.035
50	Total-heptafurans	39.42	4.001e6	3.872e6	1.305	1.03	1.05	12001.4	YES	NO	bb	bb	800.818
51	Total-heptafurans	39.17	3.531e4	3.539e4	1.305	1.00	1.05	102.8	YES	NO	bb	bb	7.191
52	1234678-HpCDF	38.76	1.573e6	1.513e6	1.327	1.04	1.05	4848.1	YES	NO	bb	bb	280.973
53	OCDF	45.24	4.618e6	5.134e6	1.447	0.90	0.89	19243.5	YES	NO	bb	bb	1240.8...
54	Total-penta1	27.42	8.005e2	5.273e2		1.52	1.55	10.4	YES	NO	bb	bb	0.107
55	Total-penta1	27.18	4.591e5	3.047e5		1.51	1.55	5685.3	YES	NO	bb	bb	61.460
56	Total-tetradioxins	24.75	1.444e4	1.876e4	0.879	0.77	0.77	147.9	YES	NO	db	db	3.262
57	Total-tetradioxins	24.55	2.400e4	3.052e4	0.879	0.79	0.77	289.6	YES	NO	bd	bd	5.357
58	Total-tetradioxins	24.05	2.261e4	3.232e4	0.879	0.70	0.77	291.1	YES	NO	bb	db	5.397
59	Total-tetradioxins	23.86	1.880e5	2.412e5	0.879	0.78	0.77	2364.0	YES	NO	bb	bd	42.163
60	Total-tetradioxins	23.60	8.606e4	1.093e5	0.879	0.79	0.77	1060.0	YES	NO	bb	bb	19.195
61	Total-Dioxins	22.16	7.688e1	9.397e1	1.092	0.82	0.77	1.4	NO	NO	bb	bb	0.014
62	Total-tetradioxins	26.53	4.432e3	6.216e3	0.879	0.71	0.77	54.2	YES	NO	db	db	1.046
63	2378-TCDD	26.41	4.326e3	5.605e3	0.920	0.77	0.77	48.9	YES	NO	bd	bd	0.932
64	Total-tetradioxins	26.02	7.002e3	9.239e3	0.879	0.76	0.77	58.2	YES	NO	bb	bb	1.596
65	Total-tetradioxins	25.59	5.686e3	7.076e3	0.879	0.80	0.77	65.7	YES	NO	dd	bd	1.254
66	Total-tetradioxins	25.38	2.430e4	3.091e4	0.879	0.79	0.77	267.3	YES	NO	dd	db	5.424
67	Total-tetradioxins	25.02	2.242e4	2.894e4	0.879	0.77	0.77	251.4	YES	NO	bd	bb	5.046
68	12389-PECDD	31.91	6.832e3	4.110e3	1.154	1.66	1.55	59.5	YES	NO	bb	bb	1.320
69	12378-PeCDD	31.50	2.459e4	1.570e4	0.995	1.57	1.55	191.8	YES	NO	bb	bb	5.635
70	Total-pentadioxins	30.83	1.862e4	1.259e4	1.331	1.48	1.55	146.1	YES	NO	bb	bb	3.265
71	Total-pentadioxins	30.44	3.347e4	2.102e4	1.331	1.59	1.55	211.2	YES	NO	db	db	5.699
72	Total-pentadioxins	30.27	3.143e4	1.886e4	1.331	1.67	1.55	288.6	YES	NO	bd	bd	5.260
73	Total-pentadioxins	30.12	2.692e4	1.705e4	1.331	1.58	1.55	246.9	YES	NO	bb	bb	4.599
74	Total-pentadioxins	29.90	3.588e4	2.208e4	1.331	1.63	1.55	320.3	YES	NO	bb	bb	6.062

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
75	Total-pentadioxins	29.69	1.076e3	7.328e2	1.331	1.47	1.55	9.4	YES	NO	bb	bb	0.189
76	Total-pentadioxins	29.30	3.650e4	2.195e4	1.331	1.66	1.55	327.3	YES	NO	bb	bb	6.114
77	12479-PECDD	28.81	5.589e5	3.516e5	1.843	1.59	1.55	3032.3	YES	NO	bb	bb	68.747
78	Total-hexadioxins	34.62	4.728e2	4.359e2	1.028	1.08	1.24	2.9	NO	NO	bb	bb	0.100
79	124679-HXCDD	33.99	1.905e6	1.523e6	1.125	1.25	1.24	8079.1	YES	NO	bb	bb	349.228
80	123789-HxCDD	36.51	9.443e4	7.367e4	0.950	1.28	1.24	423.5	YES	NO	bb	bb	20.013
81	Total-hexadioxins	36.28	2.530e4	2.106e4	1.028	1.20	1.24	126.1	YES	NO	bb	bb	5.104
82	123678-HxCDD	36.12	2.004e5	1.594e5	1.009	1.26	1.24	932.4	YES	NO	db	db	39.857
83	123478-HxCDD	35.99	4.621e4	3.796e4	1.027	1.22	1.24	209.0	YES	NO	bd	bd	9.389
84	Total-hexadioxins	35.22	2.499e4	1.968e4	1.028	1.27	1.24	111.3	YES	NO	db	db	4.919
85	Total-hexadioxins	35.11	5.755e5	4.661e5	1.028	1.23	1.24	1706.6	YES	NO	bd	bd	114.663
86	Total-hexadioxins	34.76	1.915e5	1.519e5	1.028	1.26	1.24	832.9	YES	NO	bb	bb	37.799
87	1234678-HpCDD	40.26	4.814e6	4.512e6	1.068	1.07	1.05	10360.2	YES	NO	bb	bb	1469.2...
88	1234679-HPCDD	39.20	4.201e6	3.963e6	1.211	1.06	1.05	9603.7	YES	NO	bb	bb	1134.4...
89	OCDD	45.00	3.110e7	3.443e7	1.181	0.90	0.89	10674...	YES	NO	bb	bb	10216....

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.22	6.630e6					95.2	YES		dd		
2	FUNCTION1 PFK	21.09	5.312e6					93.6	YES		bd		
3	FUNCTION1 PFK	27.08	1.919e8					29.6	YES		db		
4	FUNCTION1 PFK	23.55	2.654e7					153.5	YES		bd		
5	FUNCTION1 PFK	22.80	3.558e7					147.1	YES		db		
6	FUNCTION1 PFK	22.45	2.212e7					139.9	YES		dd		
7	FUNCTION1 PFK	22.21	2.124e7					132.4	YES		dd		
8	FUNCTION1 PFK	21.97	2.150e7					126.1	YES		dd		
9	FUNCTION1 PFK	21.65	1.225e7					115.8	YES		dd		
10	FUNCTION1 PFK	21.45	1.717e7					111.1	YES		dd		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.59	8.169e4					3.4	YES		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	35.96	1.385e4					1.0	NO		bb		0.000
2	FUNCTION3 PFK	35.88	8.546e4					4.0	YES		db		0.000
3	FUNCTION3 PFK	35.87	7.997e4					4.0	YES		bd		0.000
4	FUNCTION3 PFK	35.01	1.512e5					4.4	YES		bb		0.000
5	FUNCTION3 PFK	34.89	1.776e5					4.6	YES		bb		0.000
6	FUNCTION3 PFK	37.35	4.570e4					2.6	NO		bb		0.000
7	FUNCTION3 PFK	36.79	1.948e5					5.1	YES		bb		0.000
8	FUNCTION3 PFK	36.38	1.051e4					1.2	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	42.39	1.033e4					1.3	NO		bb		
2	FUNCTION4 PFK	37.99	1.125e4					1.8	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	23.92	1.081e2					2.0	NO		db		0.000
2	FUNCTION1 HXCD...	23.78	3.909e3					72.1	YES		dd		0.000
3	FUNCTION1 HXCD...	23.57	1.126e3					11.3	YES		dd		0.000
4	FUNCTION1 HXCD...	23.43	3.367e2					5.1	YES		bd		0.000
5	FUNCTION1 HXCD...	22.75	1.518e3					25.3	YES		bb		0.000
6	FUNCTION1 HXCD...	22.33	3.725e2					8.1	YES		db		0.000
7	FUNCTION1 HXCD...	22.18	8.412e2					13.6	YES		bd		0.000
8	FUNCTION1 HXCD...	21.91	2.579e2					2.9	NO		bb		0.000
9	FUNCTION1 HXCD...	27.64	3.167e2					5.2	YES		bb		0.000
10	FUNCTION1 HXCD...	27.08	7.643e1					2.3	NO		bb		0.000
11	FUNCTION1 HXCD...	26.77	4.728e2					8.9	YES		bb		0.000
12	FUNCTION1 HXCD...	26.12	1.165e3					22.9	YES		bb		0.000
13	FUNCTION1 HXCD...	25.91	4.684e2					6.5	YES		db		0.000
14	FUNCTION1 HXCD...	25.75	1.507e3					25.2	YES		bd		0.000
15	FUNCTION1 HXCD...	25.23	9.489e1					1.2	NO		bb		0.000
16	FUNCTION1 HXCD...	25.10	4.921e2					7.9	YES		bb		0.000
17	FUNCTION1 HXCD...	24.78	8.236e1					1.5	NO		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.89	6.574e2					10.6	YES		bb		0.000
2	FUNCTION1 HPCD...	27.41	2.669e2					3.8	YES		bb		0.000
3	FUNCTION1 HPCD...	27.08	1.586e2					3.3	YES		bb		0.000
4	FUNCTION1 HPCD...	26.77	9.288e1					2.7	NO		bb		0.000
5	FUNCTION1 HPCD...	23.42	1.834e3					14.7	YES		bb		0.000
6	FUNCTION1 HPCD...	22.33	1.334e2					3.9	YES		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.67	7.672e1					2.3	NO		bb		0.000
2	FUNCTION2 HPCD...	32.19	3.651e2					8.2	YES		bb		0.000
3	FUNCTION2 HPCD...	31.10	3.664e2					5.8	YES		bb		0.000
4	FUNCTION2 HPCD...	29.17	9.064e1					2.7	NO		bb		0.000
5	FUNCTION2 HPCD...	29.07	4.094e2					10.6	YES		bb		0.000
6	FUNCTION2 HPCD...	28.94	1.970e3					36.7	YES		bb		0.000
7	FUNCTION2 HPCD...	28.68	7.984e1					3.0	NO		bb		0.000
8	FUNCTION2 HPCD...	28.51	1.123e2					3.0	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.87	1.178e2					3.3	YES		bb		0.000
2	FUNCTION3 OCDPE	34.19	3.330e3					82.0	YES		bb		0.000
3	FUNCTION3 OCDPE	33.98	2.945e2					5.8	YES		bb		0.000
4	FUNCTION3 OCDPE	33.68	5.782e2					9.5	YES		bb		0.000
5	FUNCTION3 OCDPE	33.42	9.700e1					3.0	YES		bb		0.000
6	FUNCTION3 OCDPE	33.08	1.806e3					37.2	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	39.21	5.312e2					6.5	YES		bb		0.000
2	FUNCTION4 NCDPE	38.41	7.015e3					147.3	YES		db		0.000
3	FUNCTION4 NCDPE	38.31	1.666e3					34.4	YES		bd		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.23	8.405e2					9.1	YES		db		0.000
2	FUNCTION5 DCDPE	45.01	4.021e3					40.0	YES		bd		0.000

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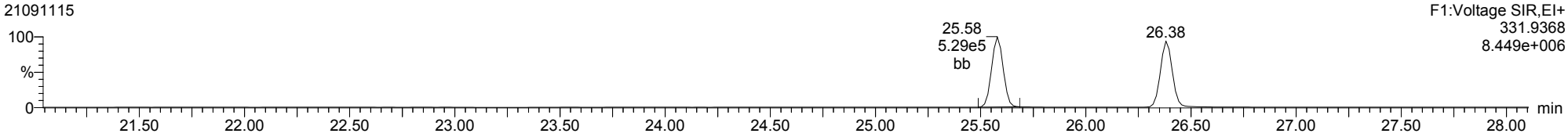

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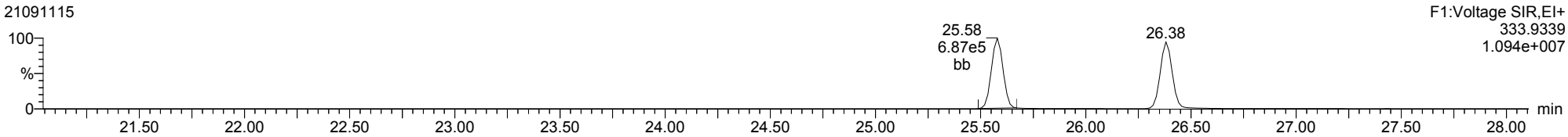

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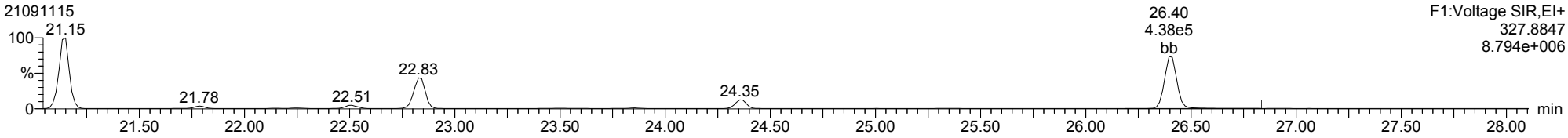

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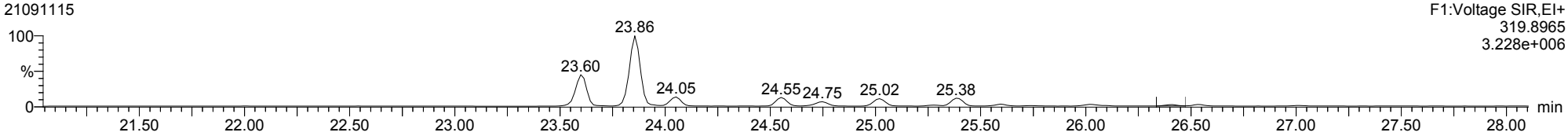

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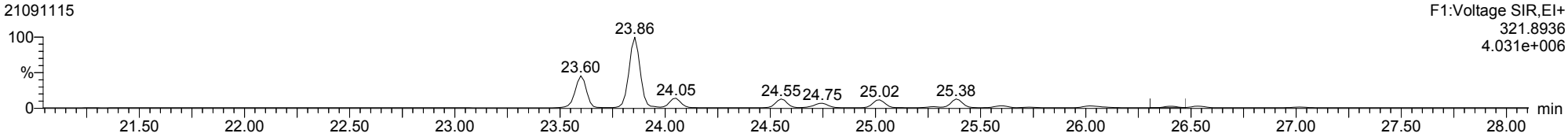

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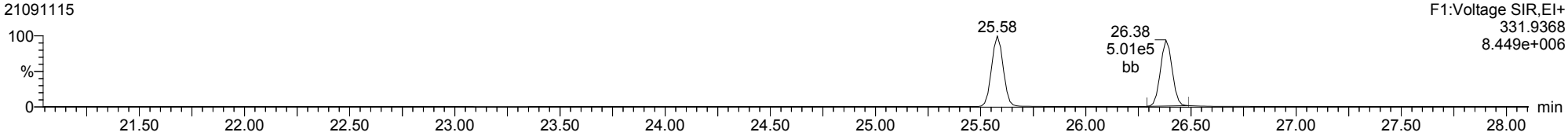

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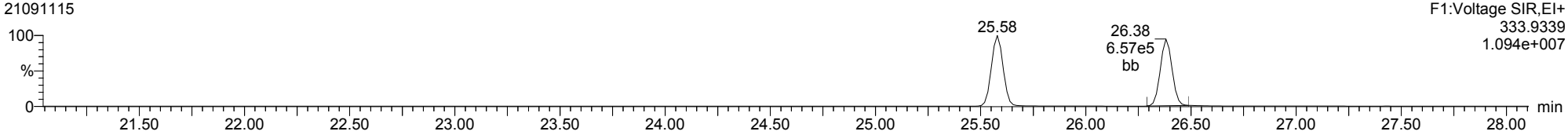

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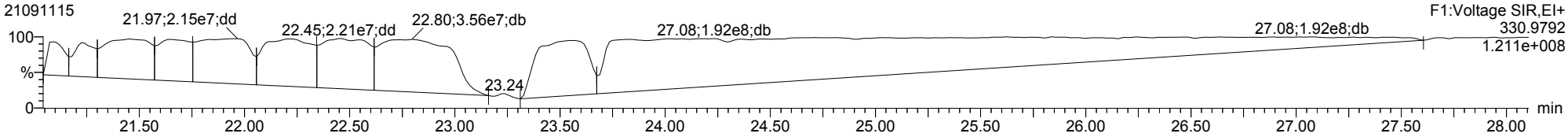

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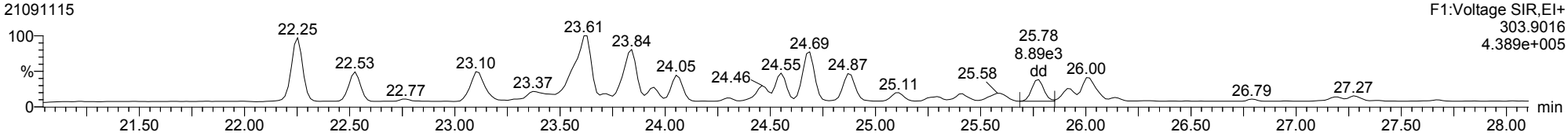
2378-TCDF



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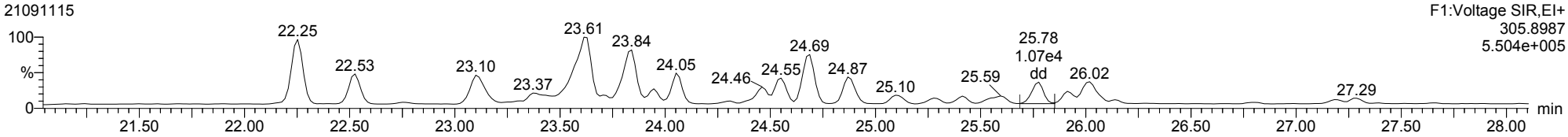

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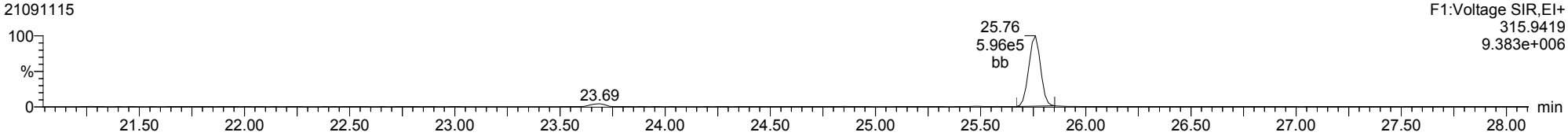

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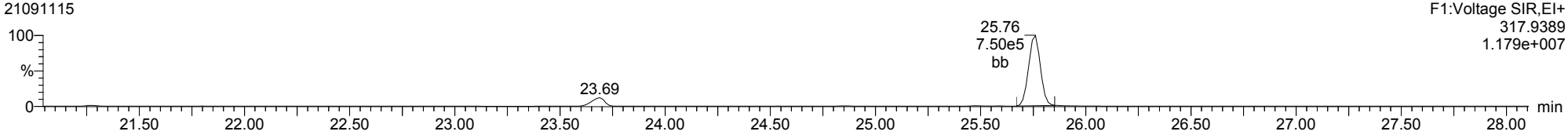

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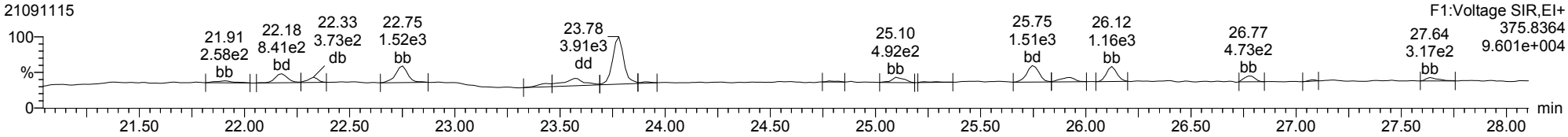

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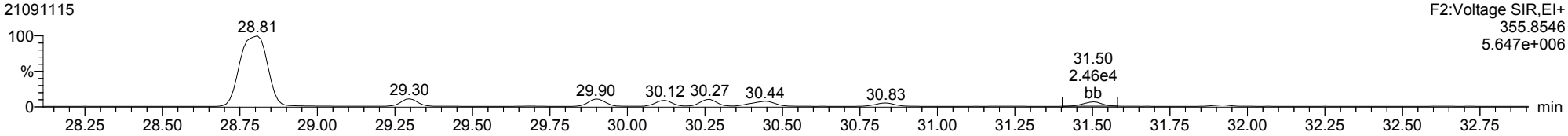

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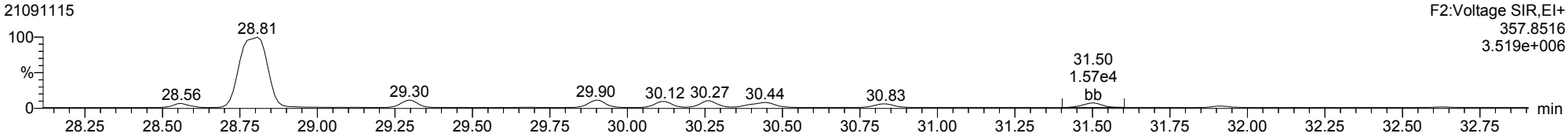

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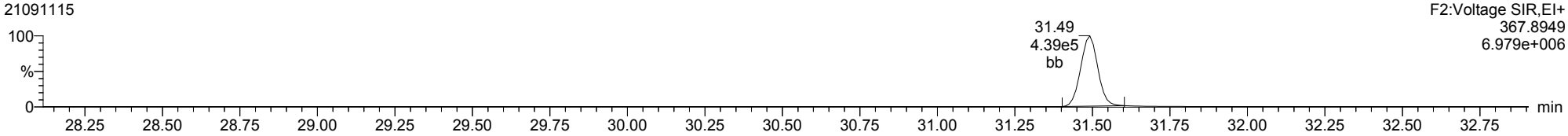

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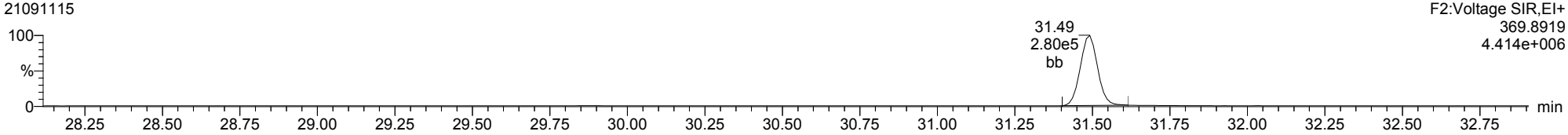

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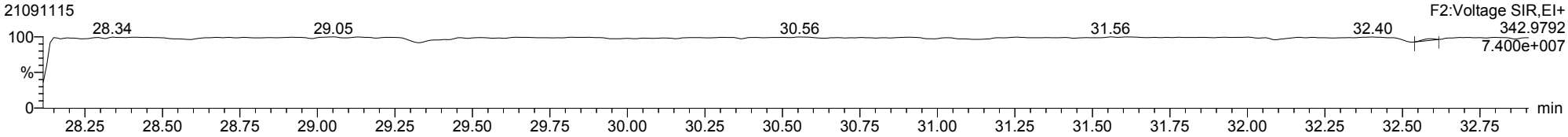

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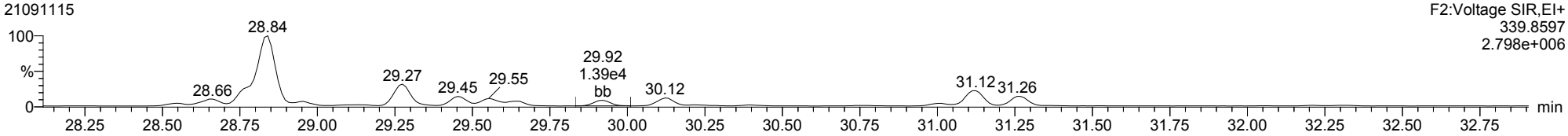

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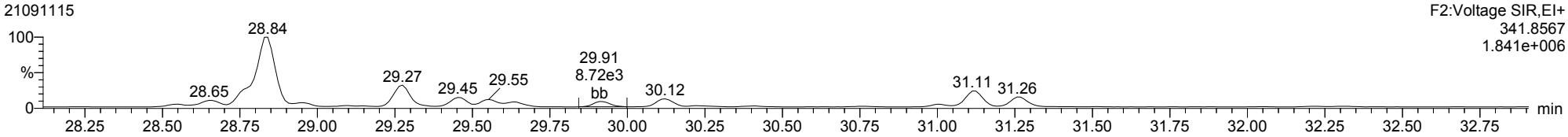

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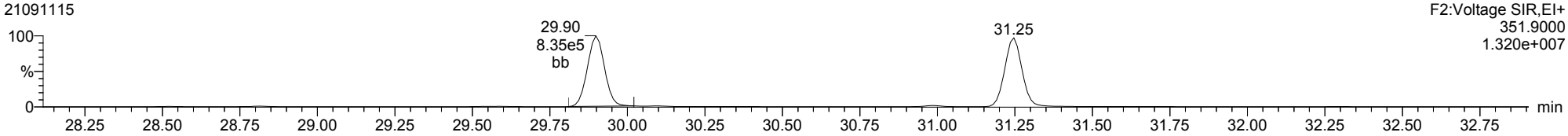

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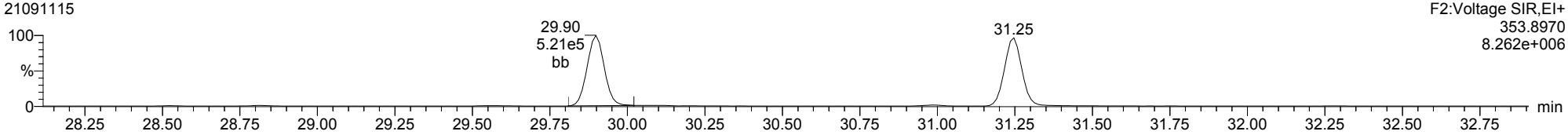

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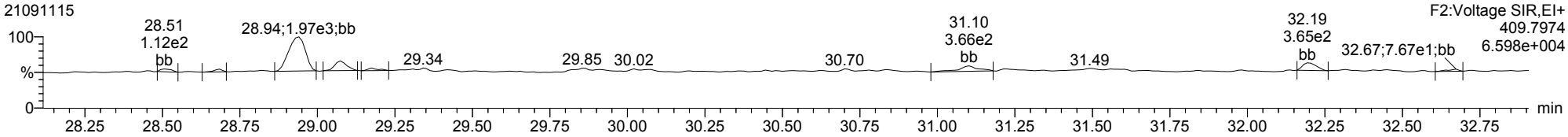

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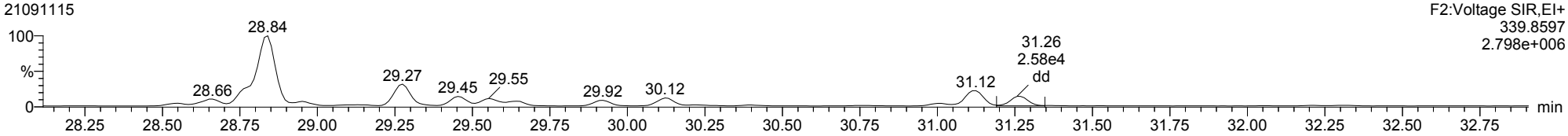

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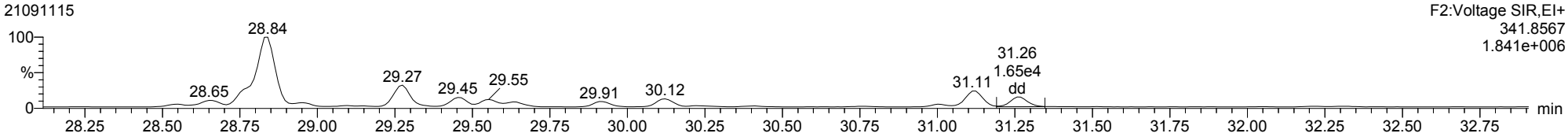

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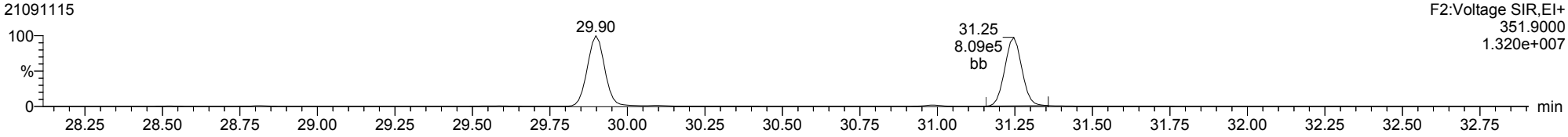

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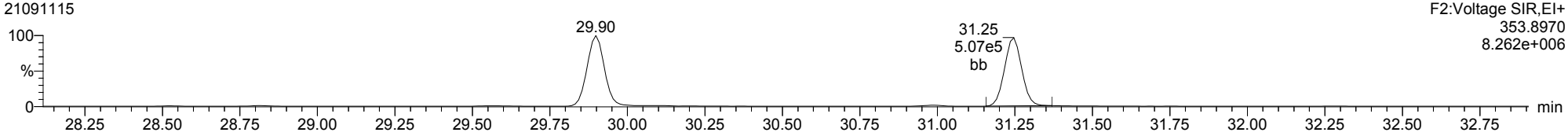

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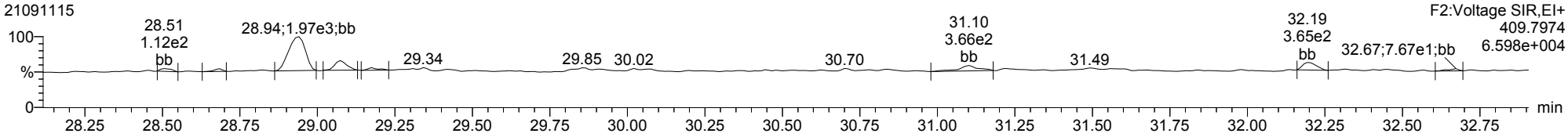

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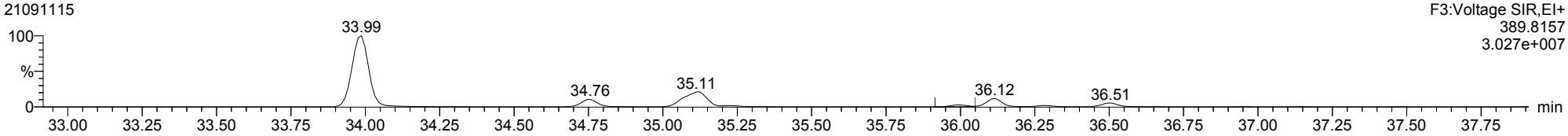

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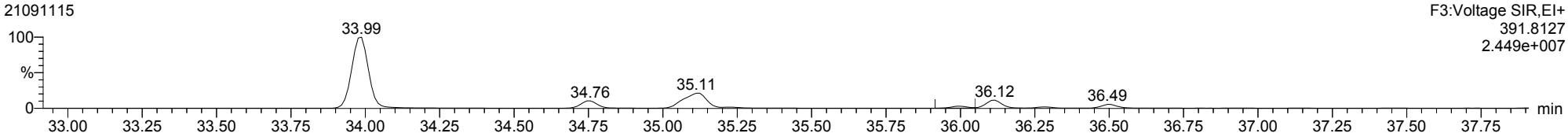

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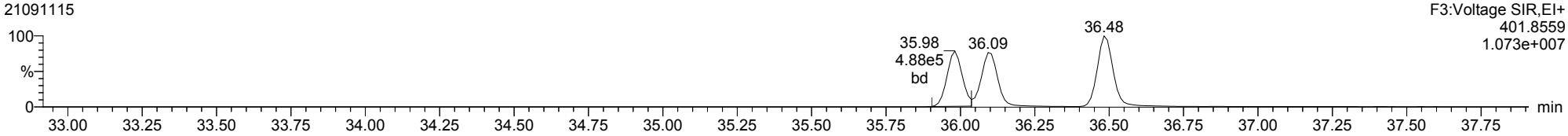

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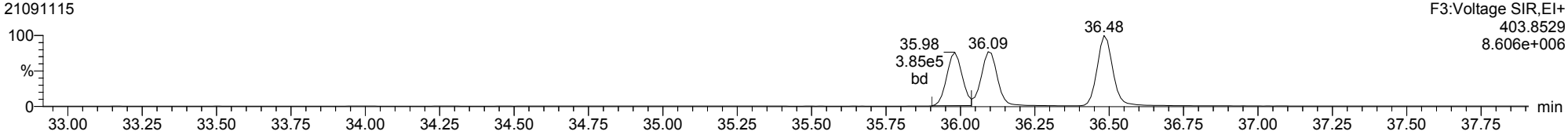

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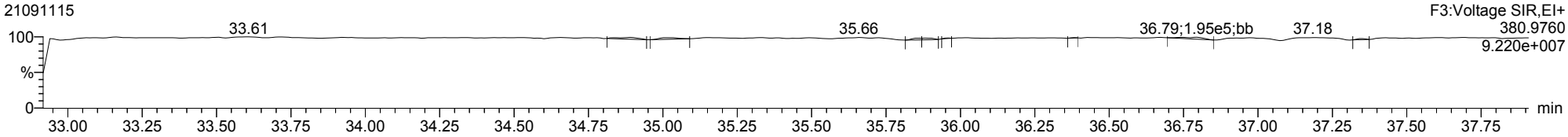

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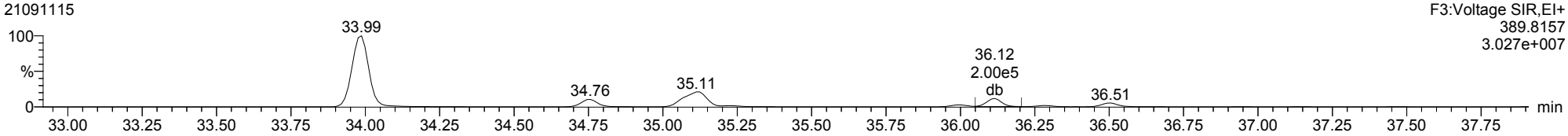

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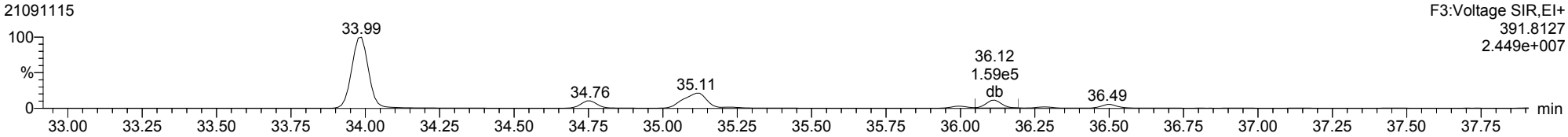

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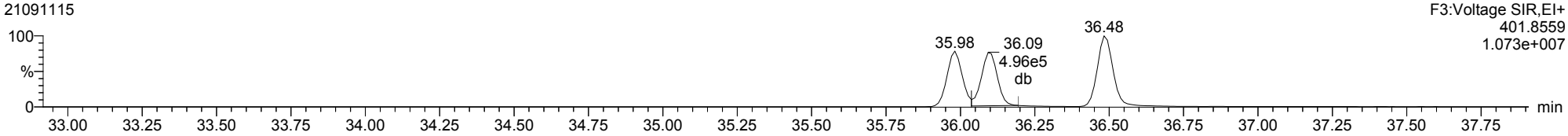

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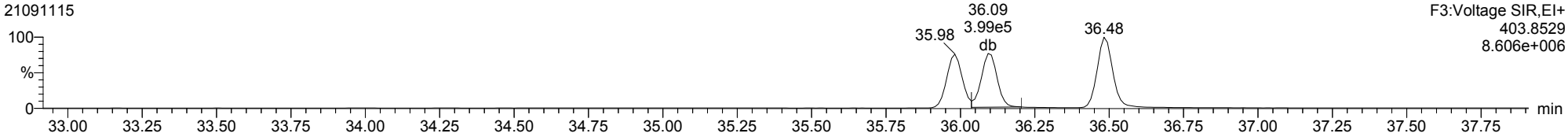

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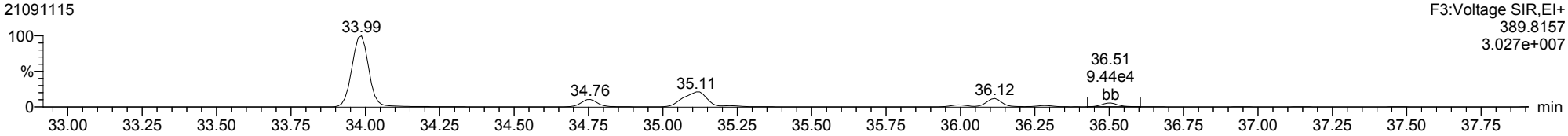

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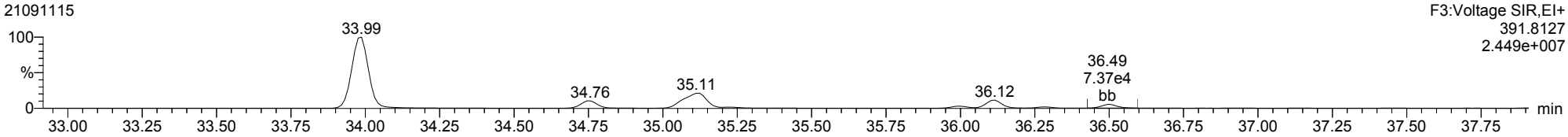

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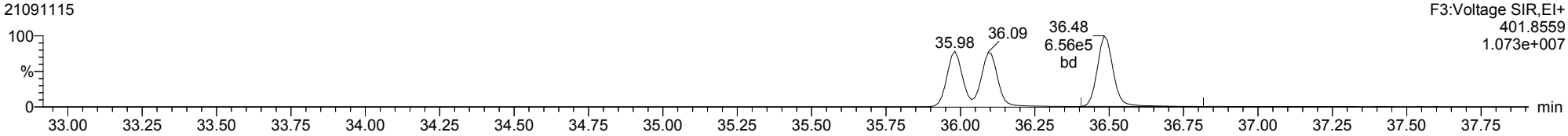

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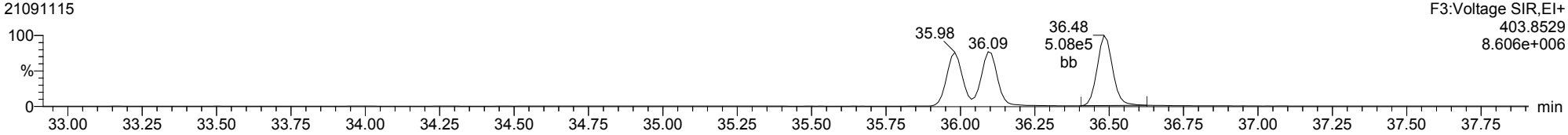

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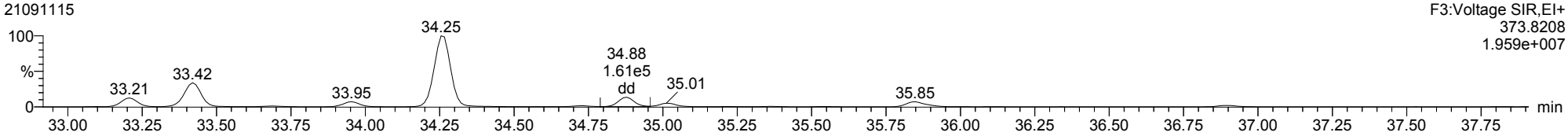

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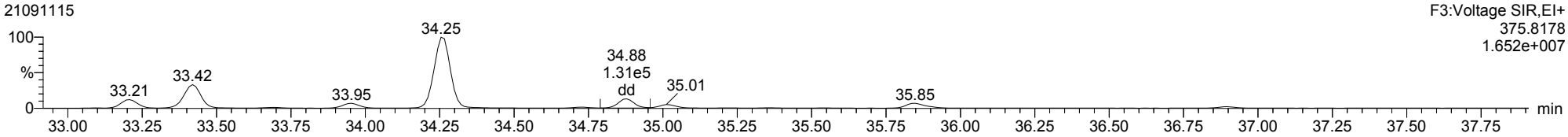

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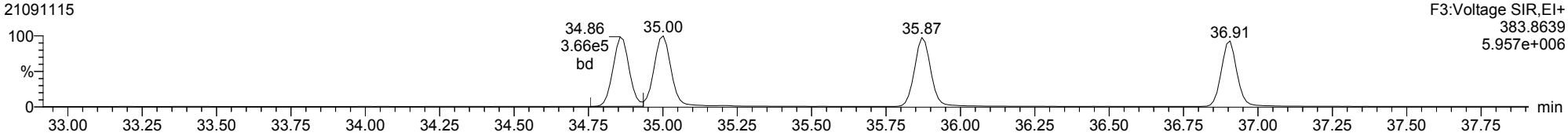

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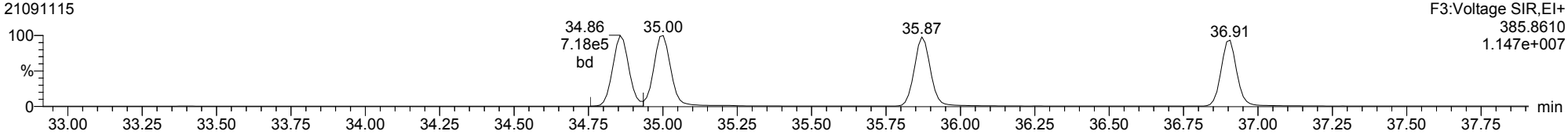

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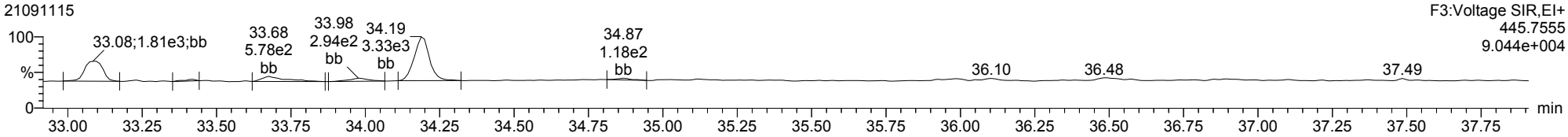

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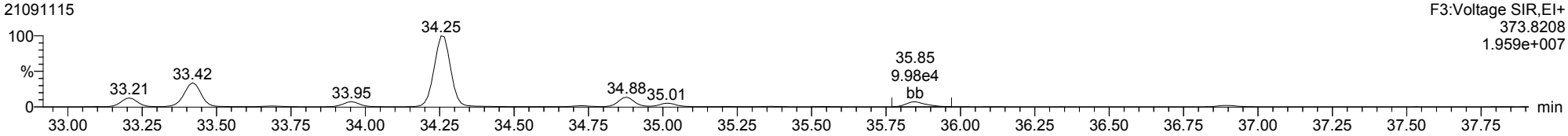

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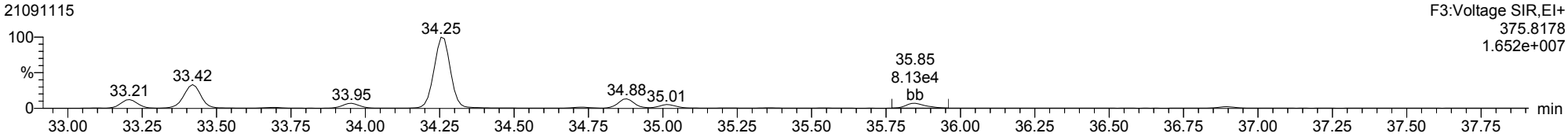

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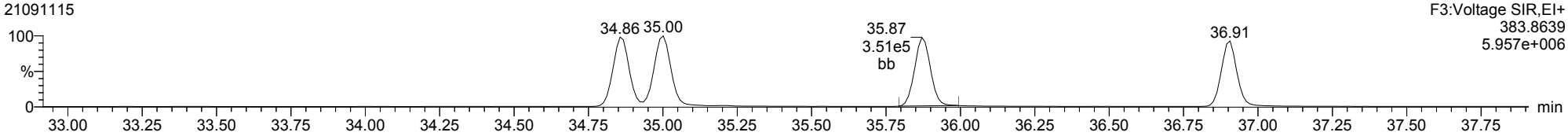

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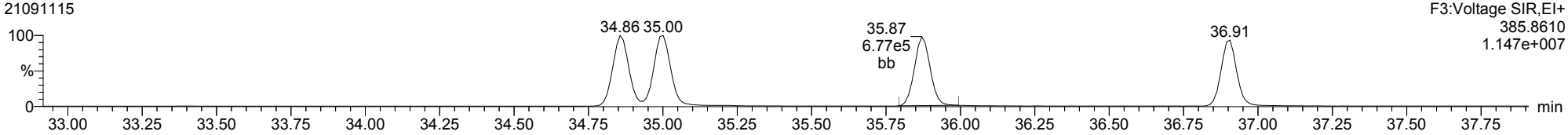

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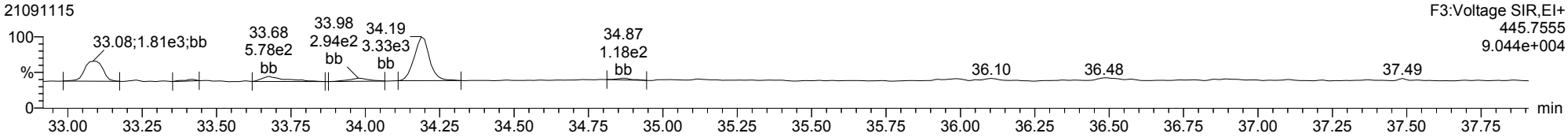

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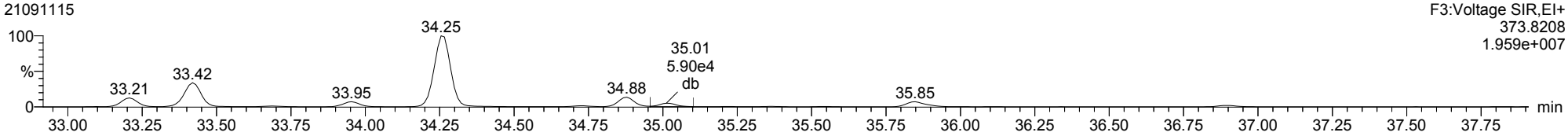

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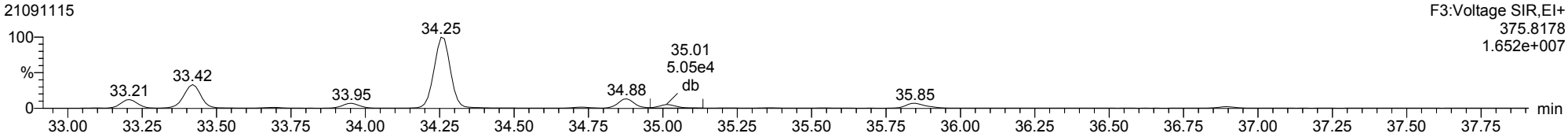

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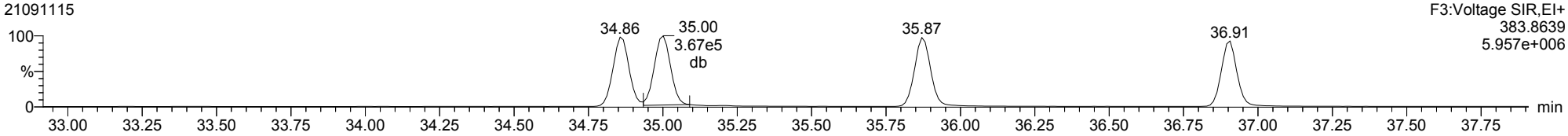

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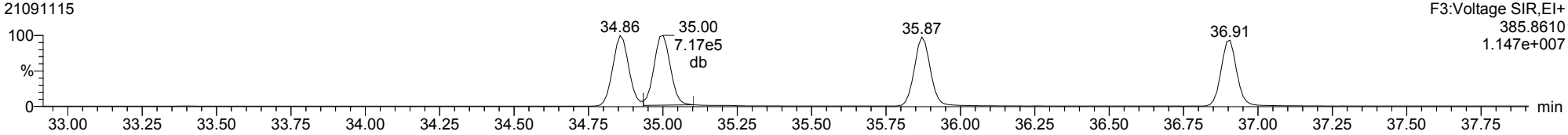

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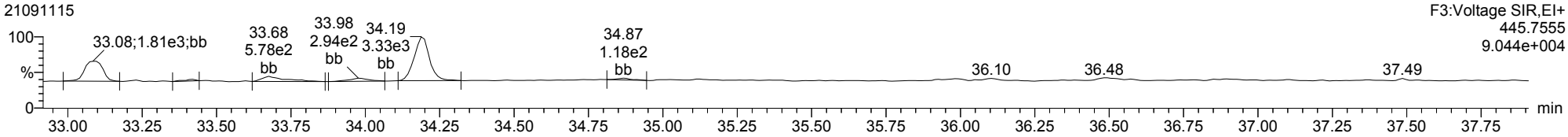

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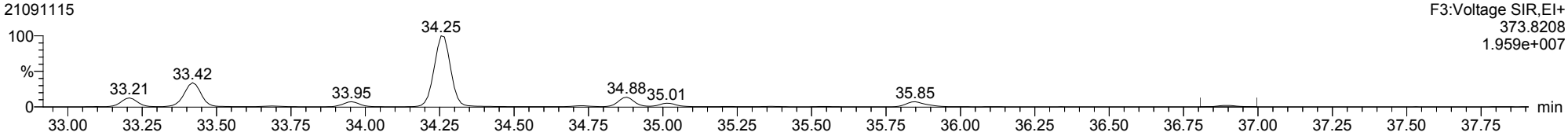

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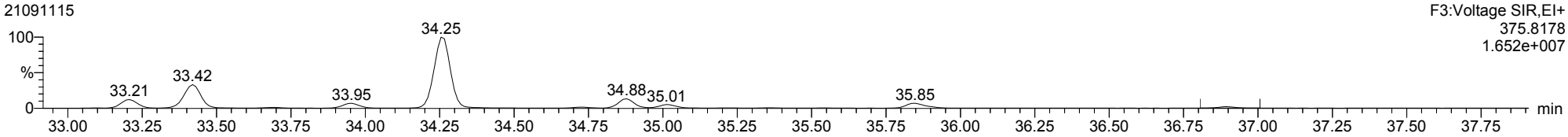

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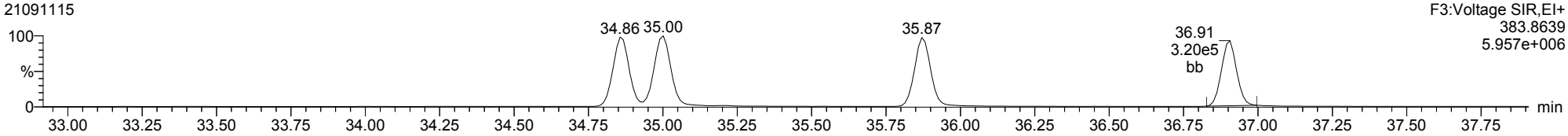

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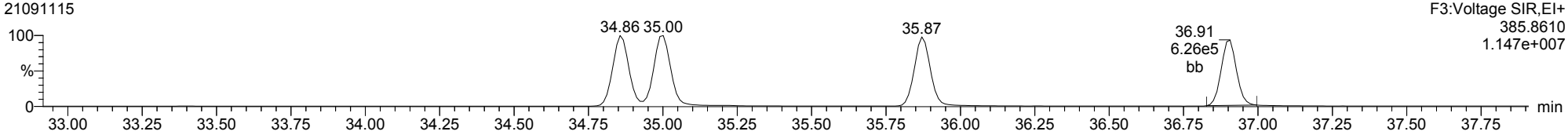

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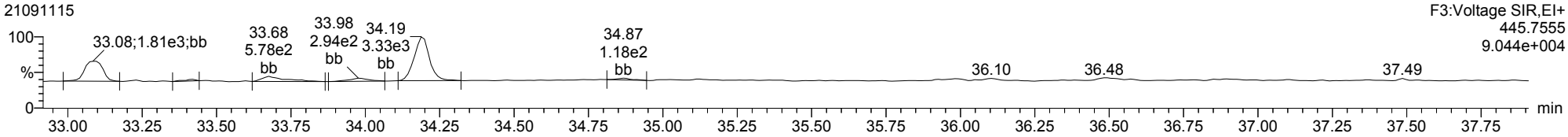

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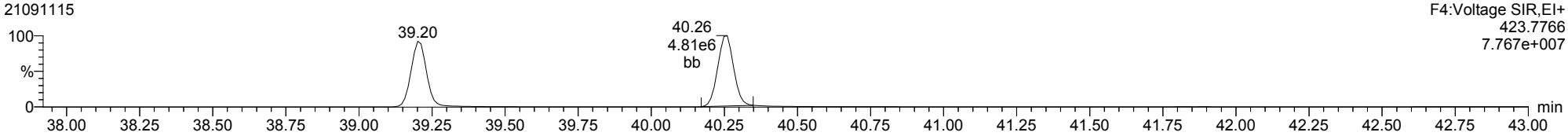

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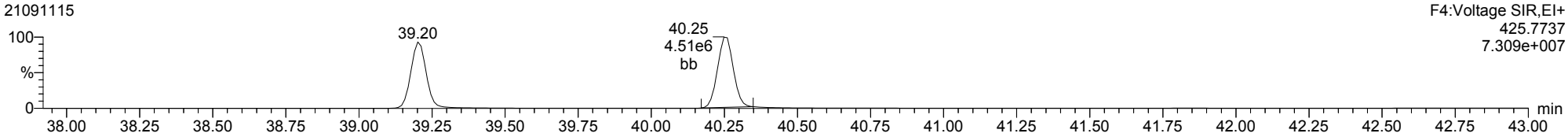

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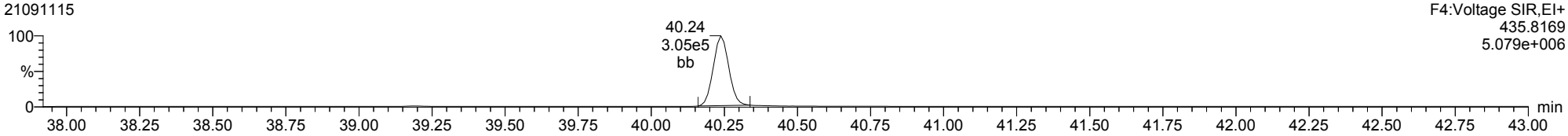

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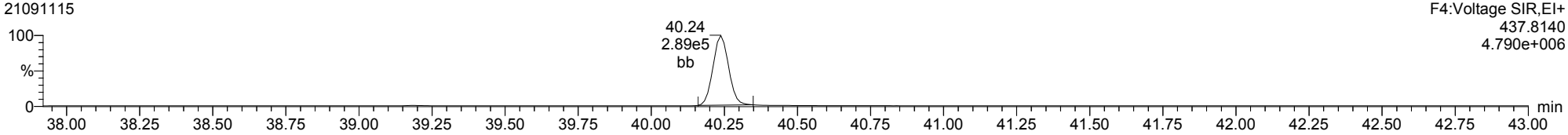

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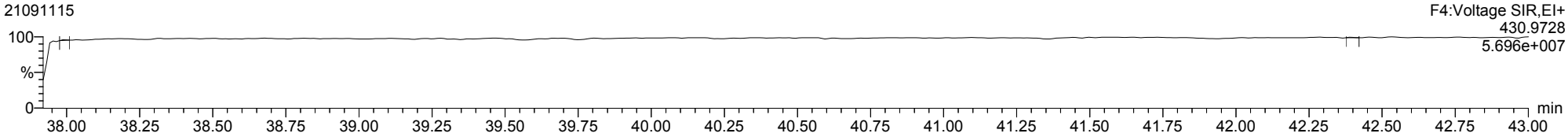

ID: 21G0138-02, Name: 21091115, Date: 11-Sep-2021, Time: 22:03:56, Conditions: AUTOSPEC01, User: pk

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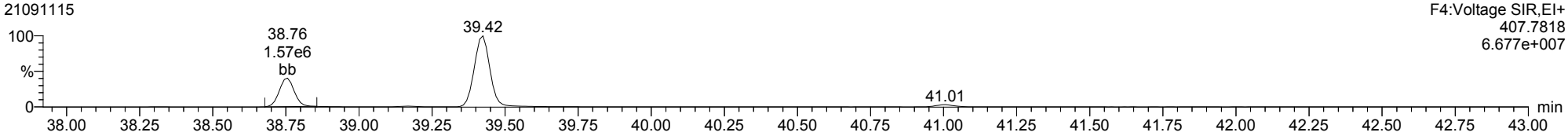

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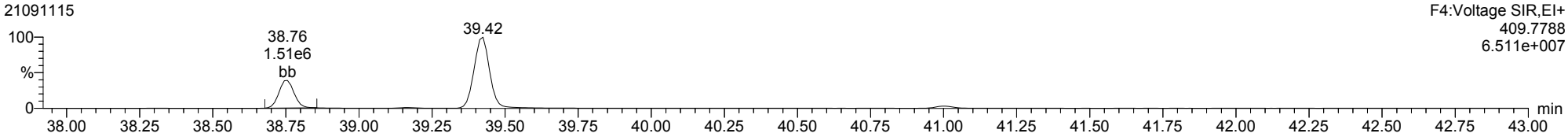

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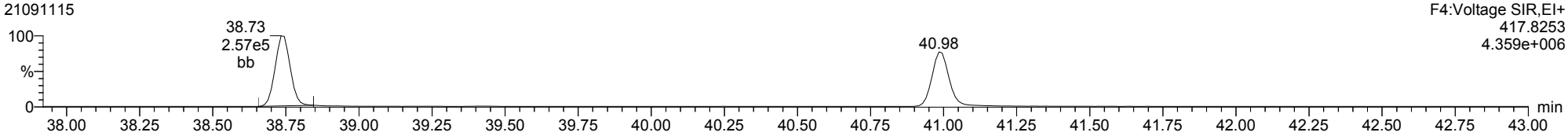

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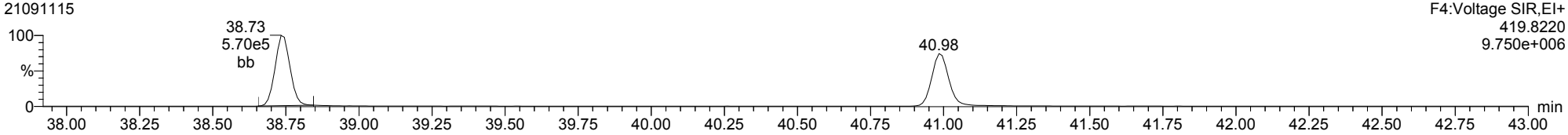
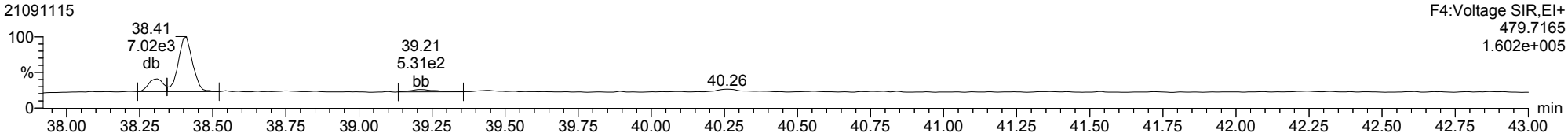


FUNCTION4 NCDPE



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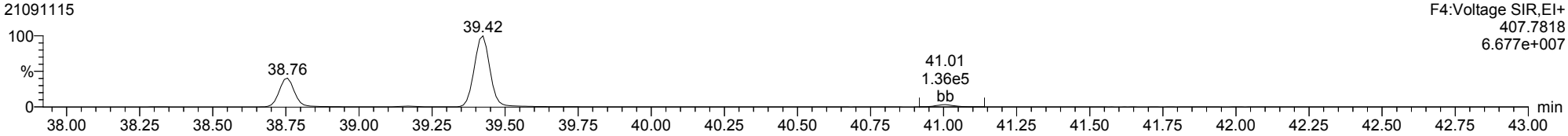

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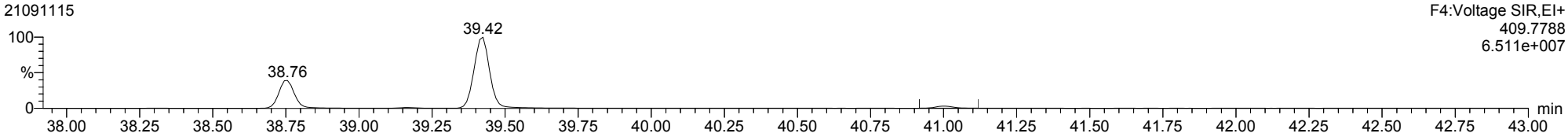

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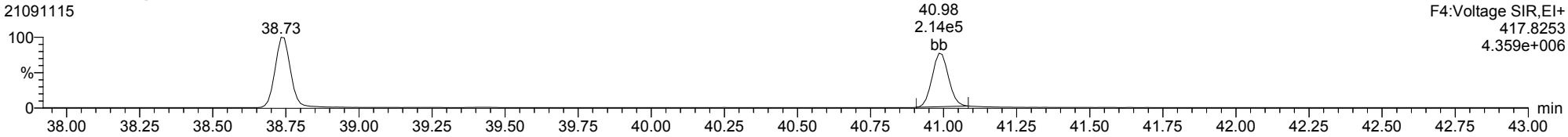

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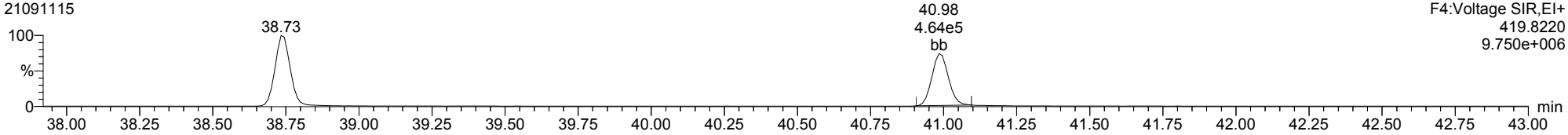
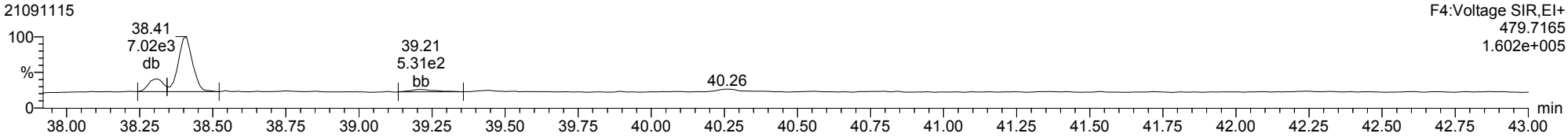
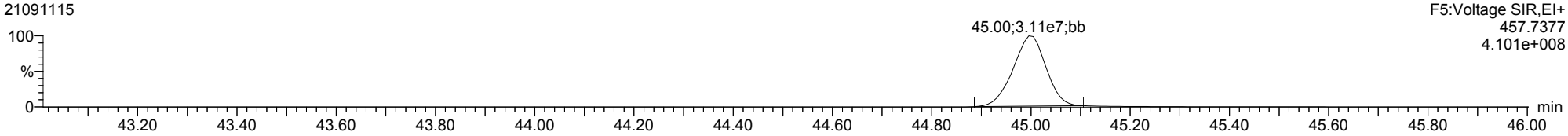


FUNCTION4 NCDPE

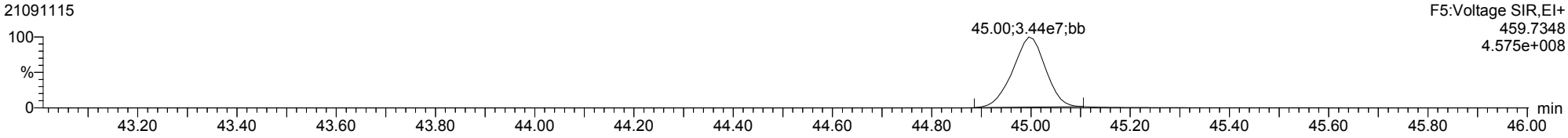


ID: 21G0138-02, Name: 21091115, Date: 11-Sep-2021, Time: 22:03:56, Conditions: AUTOSPEC01, User: pk

OCDD



OCDD



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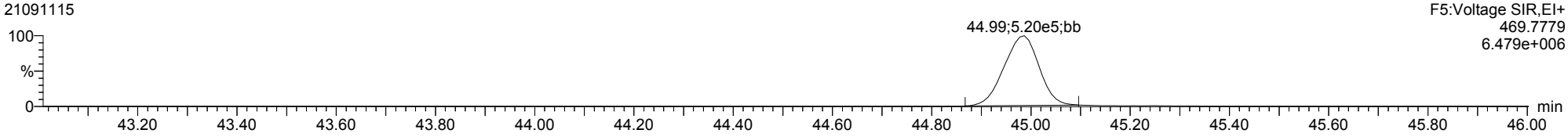

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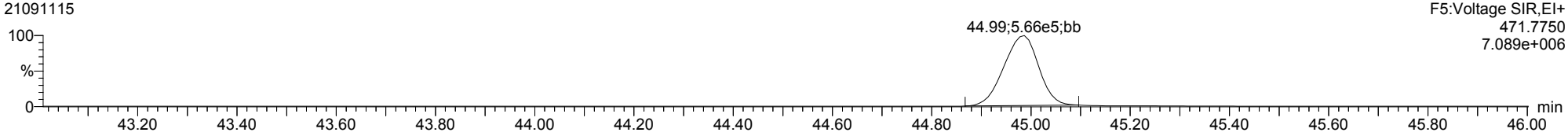
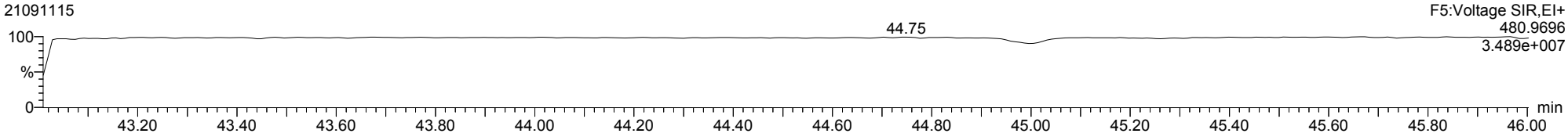
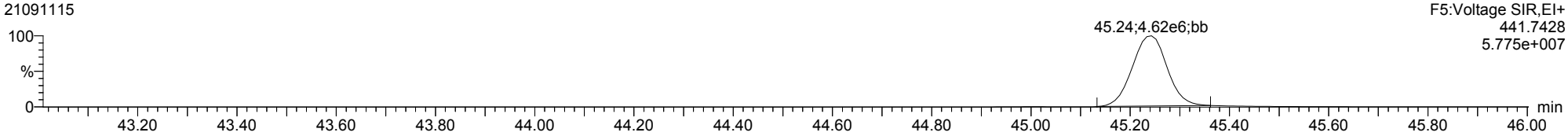


FUNCTION5 PFK

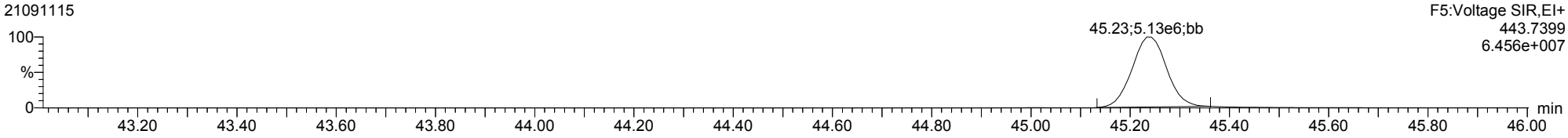


ID: 21G0138-02, Name: 21091115, Date: 11-Sep-2021, Time: 22:03:56, Conditions: AUTOSPEC01, User: pk

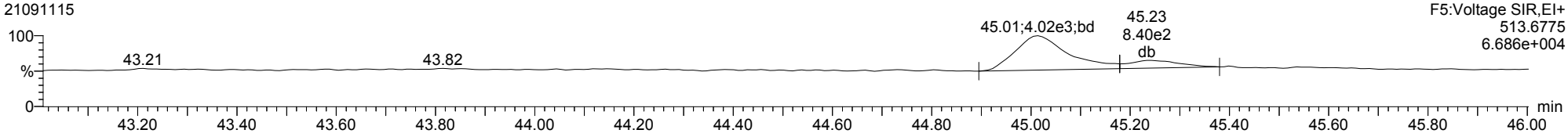
OCDF



OCDF



FUNCTION5 DCDPE



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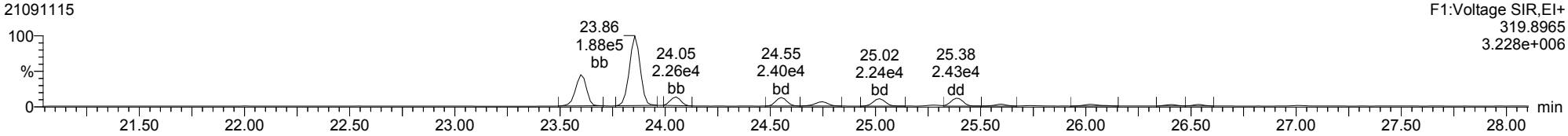
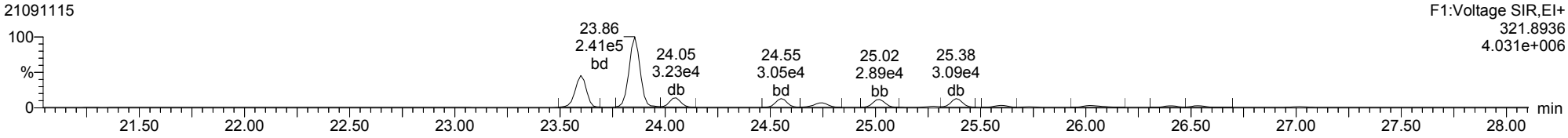
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:29:02 Pacific Daylight Time

ID: 21G0138-02, Name: 21091115, Date: 11-Sep-2021, Time: 22:03:56, Conditions: AUTOSPEC01, User: pk

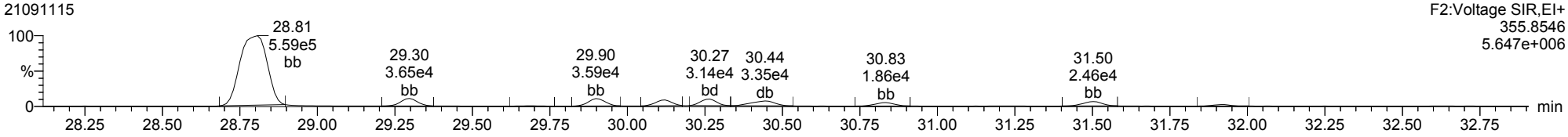
Total-tetradioxins



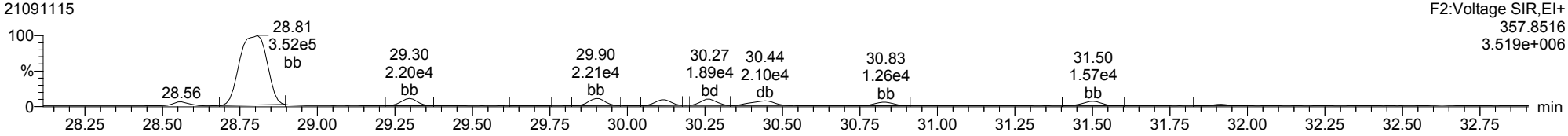
Total-tetradioxins



Total-pentadioxins



Total-pentadioxins



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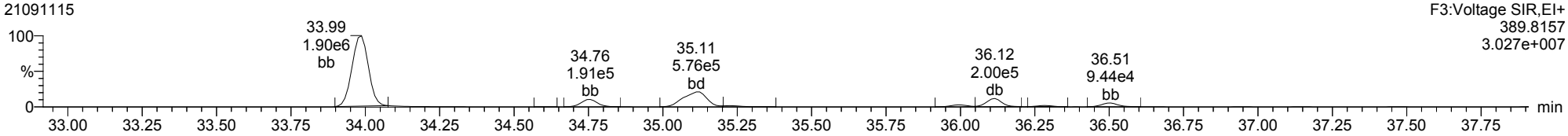
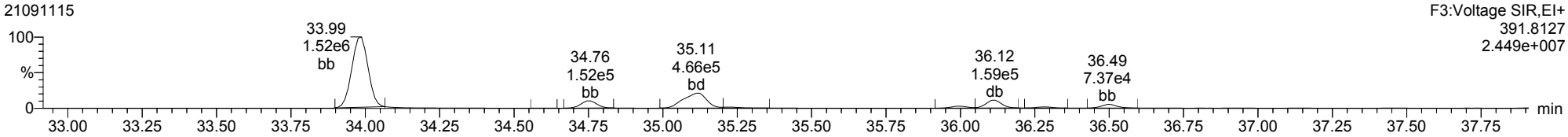
ID: 21G0138-02, Name: 21091115, Date: 11-Sep-2021, Time: 22:03:56, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



Total-hexadioxins



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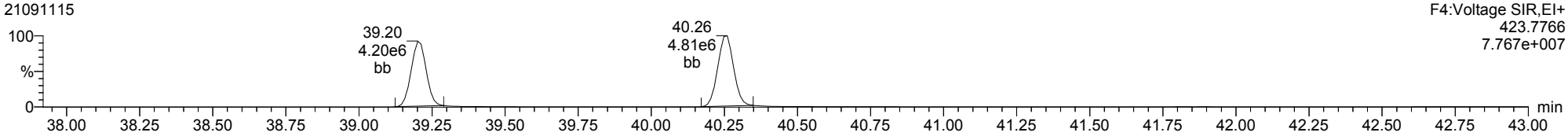

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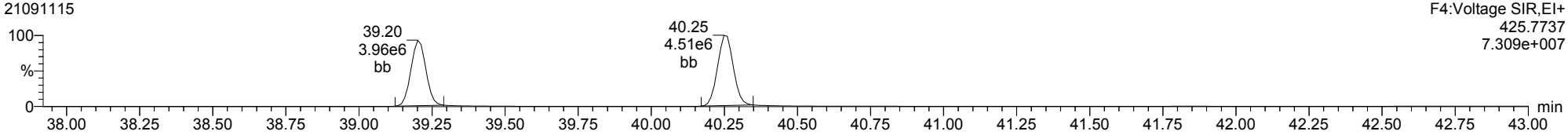
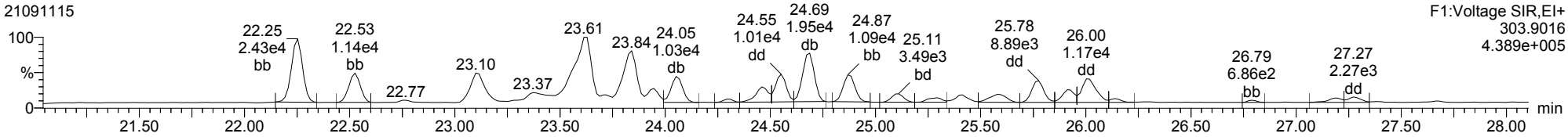


ID: 21G0138-02, Name: 21091115, Date: 11-Sep-2021, Time: 22:03:56, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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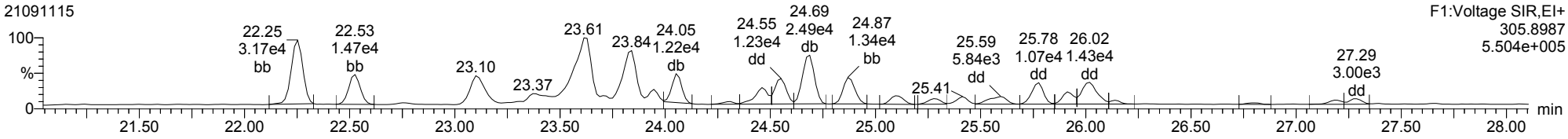

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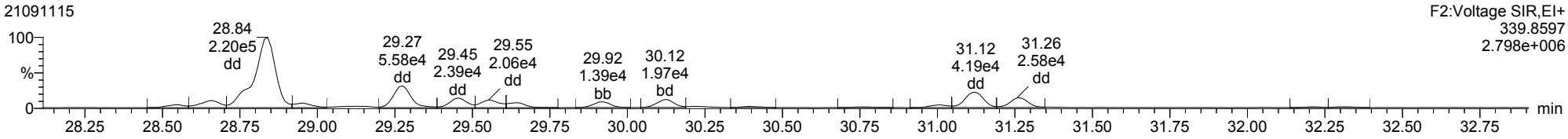

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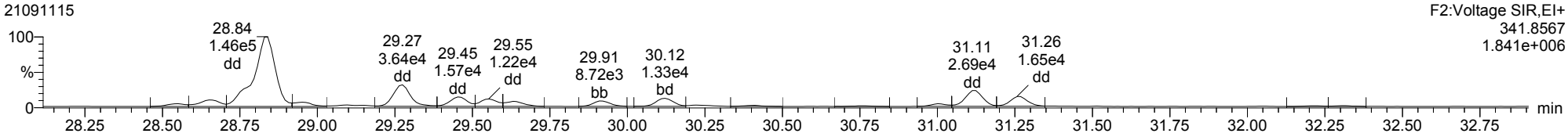

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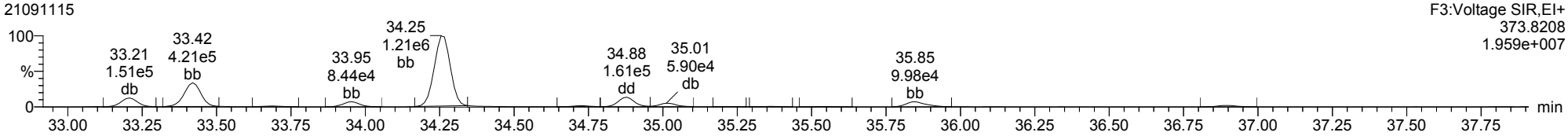

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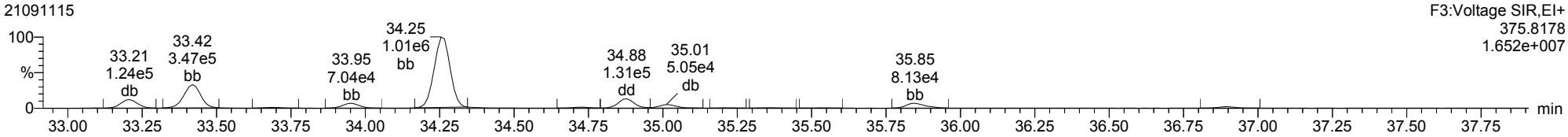

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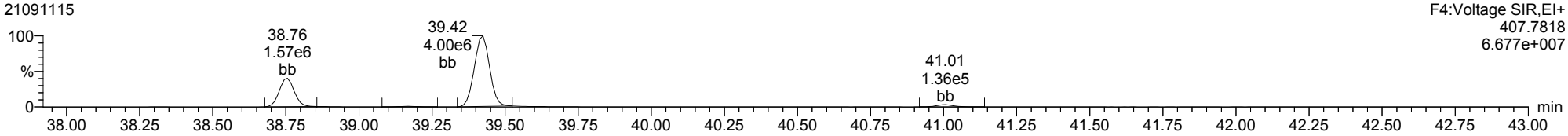

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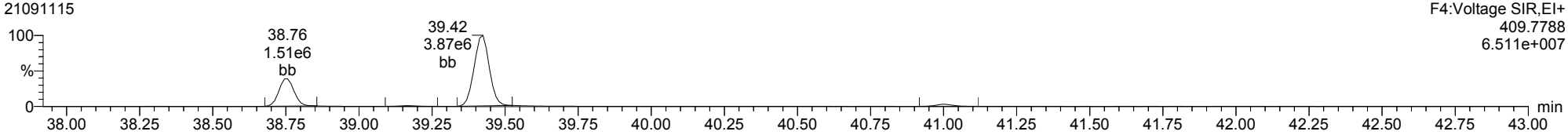

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-02RE1 C	File ID:	21091326
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/14/21 08:25
% Solids:	61.66	Preparation:	EPA 1613	Initial/Final:	16.23 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0191	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	10	0.450	0.655-0.886	0.903	9.99	2.38	ng/kg	EMPC, Z, J
1746-01-6	2,3,7,8-TCDD	10	0.551	0.655-0.886	0.908	9.99	2.32	ng/kg	EMPC, Z, J
57117-41-6	1,2,3,7,8-PeCDF	10	1.490	1.318-1.783	1.23	9.99	3.60	ng/kg	Z, J
57117-31-4	2,3,4,7,8-PeCDF	10	1.515	1.318-1.783	1.16	9.99	5.97	ng/kg	Z, J
40321-76-4	1,2,3,7,8-PeCDD	10	1.410	1.318-1.783	1.26	9.99	11.6	ng/kg	Z
70648-26-9	1,2,3,4,7,8-HxCDF	10	1.179	1.054-1.426	1.18	9.99	51.3	ng/kg	Z
57117-44-9	1,2,3,6,7,8-HxCDF	10	1.092	1.054-1.426	1.10	9.99	19.2	ng/kg	Z
60851-34-5	2,3,4,6,7,8-HxCDF	10	1.314	1.054-1.426	1.16	9.99	34.0	ng/kg	Z
72918-21-9	1,2,3,7,8,9-HxCDF	10	1.278	1.054-1.426	1.37	9.99	8.77	ng/kg	Z, J
39227-28-6	1,2,3,4,7,8-HxCDD	10	1.352	1.054-1.426	1.59	9.99	19.2	ng/kg	Z
57653-85-7	1,2,3,6,7,8-HxCDD	10	1.250	1.054-1.426	1.69	9.99	73.4	ng/kg	Z
19408-74-3	1,2,3,7,8,9-HxCDD	10	1.247	1.054-1.426	1.76	9.99	37.2	ng/kg	Z
67562-39-4	1,2,3,4,6,7,8-HpCDF	10	1.010	0.893-1.208	1.44	9.99	567	ng/kg	Z, B
55673-89-7	1,2,3,4,7,8,9-HpCDF	10	1.033	0.893-1.208	2.05	9.99	59.7	ng/kg	Z
35822-46-9	1,2,3,4,6,7,8-HpCDD	10	1.073	0.893-1.208	3.94	25.0	2840	ng/kg	Z, B
39001-02-0	OCDF	10	0.920	0.757-1.024	3.55	25.0	2570	ng/kg	Z
3268-87-9	OCDD	10	0.897	0.757-1.024	5.23	99.9	20900	ng/kg	Z, B

Homologue Groups

55722-27-5	Total TCDF	10	0.000			0.999	63.1	ng/kg
41903-57-5	Total TCDD	10	0.000			0.999	178	ng/kg
30402-15-4	Total PeCDF	10	0.000			0.999	203	ng/kg
36088-22-9	Total PeCDD	10	0.000			0.999	192	ng/kg
55684-94-1	Total HxCDF	10	0.000			0.999	744	ng/kg
34465-46-8	Total HxCDD	10	0.000			0.999	1110	ng/kg
38998-75-3	Total HpCDF	10	0.000			0.999	2260	ng/kg
37871-00-4	Total HpCDD	10	0.000			0.999	5040	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 82.07
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 82.07

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-02RE1	File ID:	21091326
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/14/21 08:25
Solids Wt%:	61.66	Preparation:	EPA 1613	Initial/Final:	16.23 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0191	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.787	0.655-0.886	1.24	124	24 - 169 %	
13C12-2,3,7,8-TCDD		0.748	0.655-0.886	1.53	124	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.568	1.318-1.783	1.14	128	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.550	1.318-1.783	1.20	130	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.520	1.318-1.783	1.27	127	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.522	0.434-0.587	1.04	109	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.511	0.434-0.587	0.965	104	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.517	0.434-0.587	1.07	106	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.508	0.434-0.587	1.29	109	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.240	1.054-1.426	1.82	119	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.245	1.054-1.426	1.68	111	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.453	0.374-0.506	1.32	105	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.488	0.374-0.506	1.61	102	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.065	0.893-1.208	1.79	108	23 - 140 %	
13C12-OCDD		0.911	0.757-1.024	2.12	123	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.574	117	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:44:07 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	3.351e2	7.453e2	1.108	0.450	0.770	1167	986	5.10e3	1.10e4	4.4	11.2	YES	bb	dd	1.192
12378-PeCDF	29.920	1.001	8.398e2	5.636e2	1.015	1.490	1.550	1107	1388	1.47e4	1.12e4	13.3	8.1	NO	bb	bb	1.802
23478-PeCDF	31.269	1.001	1.505e3	9.937e2	1.126	1.515	1.550	1107	1388	2.03e4	1.55e4	18.3	11.1	NO	db	db	2.987
123478-HxCDF	34.879	1.000	8.425e3	7.146e3	1.017	1.179	1.240	1008	878	1.36e5	1.20e5	135.4	136.7	NO	bd	dd	25.693
234678-HxCDF	35.848	0.999	5.742e3	4.368e3	1.052	1.314	1.240	1008	878	7.62e4	5.93e4	75.6	67.6	NO	bb	bb	17.019
123678-HxCDF	35.023	1.001	3.219e3	2.948e3	1.037	1.092	1.240	1008	878	4.86e4	4.54e4	48.2	51.8	NO	db	dd	9.630
123789-HxCDF	36.906	1.000	1.222e3	9.562e2	1.030	1.278	1.240	1008	878	1.83e4	1.49e4	18.2	16.9	NO	bb	bb	4.389
1234678-HpCDF	38.756	1.000	8.069e4	7.990e4	1.327	1.010	1.050	1329	984	1.36e6	1.32e6	1025.8	1344.7	NO	bb	bd	283.479
1234789-HpCDF	41.017	1.001	6.637e3	6.422e3	1.283	1.033	1.050	1329	984	9.85e4	1.01e5	74.1	102.7	NO	bb	bb	29.857
OCDF	45.243	1.006	2.425e5	2.635e5	1.447	0.920	0.890	1479	1447	2.94e6	3.32e6	1991.5	2291.1	NO	bd	bb	1284.451
2378-TCDD	26.426	1.002	2.419e2	4.391e2	0.920	0.551	0.770	642	672	3.29e3	6.51e3	5.1	9.7	YES	bd	bd	1.163
12378-PeCDD	31.503	1.000	1.449e3	1.027e3	0.995	1.410	1.550	722	637	2.10e4	1.41e4	29.0	22.1	NO	bb	bb	5.792
123478-HxCDD	35.992	1.000	2.856e3	2.113e3	1.027	1.352	1.240	1355	951	5.21e4	3.39e4	38.5	35.7	NO	bd	bd	9.594
123678-HxCDD	36.115	1.001	1.047e4	8.380e3	1.009	1.250	1.240	1355	951	1.85e5	1.47e5	136.2	154.4	NO	db	db	36.722
123789-HxCDD	36.505	1.011	4.978e3	3.990e3	0.950	1.247	1.240	1355	951	8.36e4	6.27e4	61.7	65.9	NO	bb	bd	18.628
1234678-HpCDD	40.259	1.000	2.358e5	2.197e5	1.068	1.073	1.050	1615	1623	3.85e6	3.55e6	2385.1	2185.3	NO	bb	bb	1422.262
OCDD	44.995	1.000	1.592e6	1.774e6	1.181	0.897	0.890	1872	1647	2.05e7	2.29e7	10939.2	13871.1	NO	bb	bb	10469.561
13C-2378-TCDF	25.746	1.007	3.605e4	4.580e4	1.427	0.787	0.770	1256	885	5.69e5	7.15e5	452.7	808.4	NO	bb	bb	12.437
13C-12378-PeCDF	29.898	1.170	4.685e4	2.987e4	1.297	1.568	1.550	1006	785	7.32e5	4.65e5	728.3	593.2	NO	bb	bb	12.819
13C-23478-PeCDF	31.246	1.222	4.517e4	2.915e4	1.236	1.550	1.550	1006	785	6.97e5	4.57e5	693.4	582.4	NO	bb	bd	13.029
13C-123478-HxCDF	34.867	0.955	2.044e4	3.916e4	1.242	0.522	0.510	651	940	3.23e5	6.35e5	495.3	675.0	NO	bd	bd	10.901
13C-123678-HxCDF	35.001	0.959	2.089e4	4.086e4	1.343	0.511	0.510	651	940	3.36e5	6.46e5	515.9	686.7	NO	db	db	10.446
13C-234678-HxCDF	35.881	0.983	1.925e4	3.720e4	1.215	0.517	0.510	651	940	3.15e5	5.96e5	484.0	633.6	NO	bb	bb	10.559
13C-123789-HxCDF	36.906	1.011	1.622e4	3.196e4	1.008	0.508	0.510	651	940	2.71e5	5.59e5	415.3	594.2	NO	bb	bb	10.867
13C-1234678-HpCDF	38.744	1.062	1.331e4	2.937e4	0.926	0.453	0.440	720	778	2.26e5	4.88e5	314.0	626.7	NO	bd	bb	10.469
13C-1234789-HpCDF	40.995	1.123	1.118e4	2.290e4	0.758	0.488	0.440	720	778	1.73e5	3.64e5	240.1	467.4	NO	bb	bb	10.220
13C-1234-TCDD	25.564	0.000	1.985e5	2.629e5	1.000	0.755	0.770	1265	805	3.12e6	4.13e6	2464.3	5133.7	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.032	2.724e4	3.641e4	1.116	0.748	0.770	1265	805	4.04e5	5.28e5	319.0	655.4	NO	bd	bb	12.357
13C-12378-PeCDD	31.491	1.232	2.590e4	1.704e4	0.732	1.520	1.550	589	531	3.92e5	2.55e5	665.5	480.2	NO	bb	bd	12.717
13C-123478-HxCDD	35.981	0.986	2.791e4	2.250e4	0.960	1.240	1.240	1185	960	4.69e5	3.75e5	395.8	391.3	NO	bd	bd	11.936
13C-123678-HxCDD	36.093	0.989	2.822e4	2.266e4	1.041	1.245	1.240	1185	960	4.49e5	3.81e5	379.0	397.6	NO	db	db	11.105
13C-1234678-HpCDD	40.248	1.103	1.547e4	1.452e4	0.632	1.065	1.050	791	598	2.38e5	2.22e5	300.5	371.1	NO	bd	bb	10.775
13C-OCDD	44.986	1.233	2.596e4	2.849e4	0.504	0.911	0.890	734	578	3.26e5	3.55e5	443.7	614.1	NO	bb	bb	24.567
13C-123789-HxCDD	36.494	0.000	2.412e5	1.988e5	1.000	1.213	1.240	1185	960	4.03e6	3.24e6	3403.0	3378.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	2.342e4		1.084			752		3.55e5		472.0			bb		4.686

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:44:07 Pacific Daylight Time

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	1.917e3	2.346e3	1.425	0.817	0.770	1167	986	2.92e4	3.50e4	25.0	35.5	NO	bb	db	3.654
1289-TCDF					1.043		0.770	1167	986								
13468-PECDF					1.376		1.550	511	601								
12389-PECDF					1.000		1.550	1107	1388								
123468-HXCDF	33.218	0.953	8.197e3	6.958e3	1.087	1.178	1.240	1008	878	1.33e5	1.09e5	132.0	123.9	NO	bb	bb	23.404
1368-TCDD	23.523	0.892	5.452e3	6.776e3	0.923	0.805	0.770	642	672	9.19e4	1.09e5	143.1	161.4	NO	bb	bb	20.808
1289-TCDD					0.794		0.770	642	672								
12479-PECDD	28.806	0.915	3.193e4	2.076e4	1.843	1.538	1.550	722	637	3.20e5	1.97e5	443.1	309.1	NO	MM	MM	66.565
12389-PECDD	31.903	1.013	6.035e2	1.445e2	1.154	4.176	1.550	722	637	7.88e3	2.91e3	10.9	4.6	YES	bb	bb	1.510
124679-HXCDD	33.987	0.945	1.071e5	8.426e4	1.125	1.271	1.240	1355	951	1.73e6	1.37e6	1277.1	1444.0	NO	bb	bb	337.398
1234679-HPCDD	39.212	0.974	2.083e5	1.910e5	1.211	1.090	1.050	1615	1623	3.54e6	3.32e6	2191.6	2046.3	NO	bb	bb	1099.696
Total-tetrafurans			1.358e4		1.192			1167		2.05e5							31.556
Total-penta1			2.590e4					511		3.77e5							61.529
Total-pentafurans			1.929e4		1.047			1107		2.66e5							39.888
Total-hexafurans			1.219e5		1.045			1008		1.93e6							372.421
Total-heptafurans			2.985e5		1.305			1329		4.88e6							1130.181
Total-Furans			7.217e5		1.158			1167		1.06e7							2920.026
Total-tetradioxins			2.187e4		0.879			642		3.55e5							89.213
Total-pentadioxins			4.166e4		1.331			722		4.64e5							96.086
Total-hexadioxins			1.691e5		1.028			1355		2.60e6							553.405
Total-heptadioxins			4.440e5		1.140			1615		7.39e6							2521.958
Total-Dioxins			2.269e6		1.092			642		3.13e7							13730.223
Total-TEQ			2.990e6					642		4.19e7							16650.249
FUNCTION1 PFK			1.450e7					268216		3.95e7							
FUNCTION2 PFK			1.428e6					133480		1.04e7							0.000
FUNCTION3 PFK			1.103e5					215205		3.40e6							0.000
FUNCTION4 PFK			1.686e5					138353		4.11e6							
FUNCTION5 PFK			4.190e4					94841		1.70e6							
FUNCTION1 HXCD...			9.555e2					551		1.45e4							0.000
FUNCTION1 HPCD...			1.441e3					602		2.38e4							0.000
FUNCTION2 HPCD...			7.917e2					458		1.26e4							0.000
FUNCTION3 OCDPE			4.794e2					506		8.21e3							0.000
FUNCTION4 NCDPE			5.289e2					638		8.51e3							0.000
FUNCTION5 DCDPE			0.000e0					565		0.00e0							

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.85	7.222e2	9.292e2	1.192	0.78	0.77	7.4	YES	NO	bd	bb	1.693
2	Total-tetrafurans	24.66	1.102e3	1.608e3	1.192	0.69	0.77	15.1	YES	NO	db	db	2.778
3	Total-tetrafurans	24.52	5.744e2	7.741e2	1.192	0.74	0.77	9.2	YES	NO	dd	dd	1.382
4	Total-tetrafurans	23.75	1.708e3	2.055e3	1.192	0.83	0.77	22.1	YES	NO	bd	bd	3.856
5	Total-tetrafurans	23.51	2.693e3	3.388e3	1.192	0.79	0.77	34.1	YES	NO	dd	dd	6.233
6	Total-tetrafurans	23.08	3.890e3	5.407e3	1.192	0.72	0.77	51.6	YES	NO	bd	bb	9.529
7	1368-TCDF	22.24	1.917e3	2.346e3	1.425	0.82	0.77	25.0	YES	NO	bb	db	3.654
8	Total-tetrafurans	25.99	7.116e2	1.037e3	1.192	0.69	0.77	7.2	YES	NO	db	dd	1.792
9	Total-tetrafurans	25.91	2.588e2	3.645e2	1.192	0.71	0.77	3.9	YES	NO	bd	dd	0.639

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.17	2.590e4	1.739e4		1.49	1.55	738.3	YES	NO	bb	bb	61.529

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.27	1.505e3	9.937e2	1.126	1.51	1.55	18.3	YES	NO	db	db	2.987
2	Total-pentafurans	30.13	1.104e3	6.482e2	1.047	1.70	1.55	16.6	YES	NO	bd	bb	2.216
3	12378-PeCDF	29.92	8.398e2	5.636e2	1.015	1.49	1.55	13.3	YES	NO	bb	bb	1.802
4	Total-pentafurans	29.45	1.021e3	7.094e2	1.047	1.44	1.55	15.8	YES	NO	dd	bd	2.190
5	Total-pentafurans	29.27	2.981e3	1.890e3	1.047	1.58	1.55	42.9	YES	NO	bd	bb	6.162
6	Total-pentafurans	28.83	1.184e4	7.546e3	1.047	1.57	1.55	133.2	YES	NO	dd	bb	24.530

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
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ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.91	1.222e3	9.562e2	1.030	1.28	1.24	18.2	YES	NO	bb	bb	4.389
2	234678-HxCDF	35.85	5.742e3	4.368e3	1.052	1.31	1.24	75.6	YES	NO	bb	bb	17.019
3	123678-HxCDF	35.02	3.219e3	2.948e3	1.037	1.09	1.24	48.2	YES	NO	db	dd	9.630
4	123478-HxCDF	34.88	8.425e3	7.146e3	1.017	1.18	1.24	135.4	YES	NO	bd	dd	25.693
5	Total-hexafurans	34.72	7.935e2	6.904e2	1.045	1.15	1.24	12.3	YES	NO	bb	bd	2.515
6	Total-hexafurans	34.27	6.567e4	5.405e4	1.045	1.22	1.24	1056.5	YES	NO	bb	bb	202.876
7	Total-hexafurans	33.95	4.595e3	3.535e3	1.045	1.30	1.24	78.4	YES	NO	bb	bb	13.778
8	Total-hexafurans	33.69	5.961e2	5.258e2	1.045	1.13	1.24	9.2	YES	NO	bb	bb	1.901
9	Total-hexafurans	33.42	2.340e4	1.863e4	1.045	1.26	1.24	347.2	YES	NO	bb	bb	71.217
10	123468-HXCDF	33.22	8.197e3	6.958e3	1.087	1.18	1.24	132.0	YES	NO	bb	bb	23.404

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.02	6.637e3	6.422e3	1.283	1.03	1.05	74.1	YES	NO	bb	bb	29.857
2	Total-heptafurans	39.42	2.094e5	1.962e5	1.305	1.07	1.05	2553.8	YES	NO	bb	bb	809.752
3	Total-heptafurans	39.18	1.738e3	1.815e3	1.305	0.96	1.05	20.3	YES	NO	bb	bb	7.093
4	1234678-HpCDF	38.76	8.069e4	7.990e4	1.327	1.01	1.05	1025.8	YES	NO	bb	bd	283.479

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.85	7.222e2	9.292e2	1.192	0.78	0.77	7.4	YES	NO	bd	bb	1.693
2	Total-tetrafurans	24.66	1.102e3	1.608e3	1.192	0.69	0.77	15.1	YES	NO	db	db	2.778
3	Total-tetrafurans	24.52	5.744e2	7.741e2	1.192	0.74	0.77	9.2	YES	NO	dd	dd	1.382
4	Total-tetrafurans	23.75	1.708e3	2.055e3	1.192	0.83	0.77	22.1	YES	NO	bd	bd	3.856
5	Total-tetrafurans	23.51	2.693e3	3.388e3	1.192	0.79	0.77	34.1	YES	NO	dd	dd	6.233
6	Total-tetrafurans	23.08	3.890e3	5.407e3	1.192	0.72	0.77	51.6	YES	NO	bd	bb	9.529
7	1368-TCDF	22.24	1.917e3	2.346e3	1.425	0.82	0.77	25.0	YES	NO	bb	db	3.654
8	Total-tetrafurans	25.99	7.116e2	1.037e3	1.192	0.69	0.77	7.2	YES	NO	db	dd	1.792
9	Total-tetrafurans	25.91	2.588e2	3.645e2	1.192	0.71	0.77	3.9	YES	NO	bd	dd	0.639
10	23478-PeCDF	31.27	1.505e3	9.937e2	1.126	1.51	1.55	18.3	YES	NO	db	db	2.987
11	Total-pentafurans	30.13	1.104e3	6.482e2	1.047	1.70	1.55	16.6	YES	NO	bd	bb	2.216
12	12378-PeCDF	29.92	8.398e2	5.636e2	1.015	1.49	1.55	13.3	YES	NO	bb	bb	1.802
13	Total-pentafurans	29.45	1.021e3	7.094e2	1.047	1.44	1.55	15.8	YES	NO	dd	bd	2.190
14	Total-pentafurans	29.27	2.981e3	1.890e3	1.047	1.58	1.55	42.9	YES	NO	bd	bb	6.162
15	Total-pentafurans	28.83	1.184e4	7.546e3	1.047	1.57	1.55	133.2	YES	NO	dd	bb	24.530
16	123789-HxCDF	36.91	1.222e3	9.562e2	1.030	1.28	1.24	18.2	YES	NO	bb	bb	4.389
17	234678-HxCDF	35.85	5.742e3	4.368e3	1.052	1.31	1.24	75.6	YES	NO	bb	bb	17.019
18	123678-HxCDF	35.02	3.219e3	2.948e3	1.037	1.09	1.24	48.2	YES	NO	db	dd	9.630
19	123478-HxCDF	34.88	8.425e3	7.146e3	1.017	1.18	1.24	135.4	YES	NO	bd	dd	25.693
20	Total-hexafurans	34.72	7.935e2	6.904e2	1.045	1.15	1.24	12.3	YES	NO	bb	bd	2.515
21	Total-hexafurans	34.27	6.567e4	5.405e4	1.045	1.22	1.24	1056.5	YES	NO	bb	bb	202.876
22	Total-hexafurans	33.95	4.595e3	3.535e3	1.045	1.30	1.24	78.4	YES	NO	bb	bb	13.778
23	Total-hexafurans	33.69	5.961e2	5.258e2	1.045	1.13	1.24	9.2	YES	NO	bb	bb	1.901
24	Total-hexafurans	33.42	2.340e4	1.863e4	1.045	1.26	1.24	347.2	YES	NO	bb	bb	71.217
25	123468-HXCDF	33.22	8.197e3	6.958e3	1.087	1.18	1.24	132.0	YES	NO	bb	bb	23.404
26	1234789-HpCDF	41.02	6.637e3	6.422e3	1.283	1.03	1.05	74.1	YES	NO	bb	bb	29.857
27	Total-heptafurans	39.42	2.094e5	1.962e5	1.305	1.07	1.05	2553.8	YES	NO	bb	bb	809.752
28	Total-heptafurans	39.18	1.738e3	1.815e3	1.305	0.96	1.05	20.3	YES	NO	bb	bb	7.093
29	1234678-HpCDF	38.76	8.069e4	7.990e4	1.327	1.01	1.05	1025.8	YES	NO	bb	bd	283.479
30	OCDF	45.24	2.425e5	2.635e5	1.447	0.92	0.89	1991.5	YES	NO	bd	bb	1284.4...
31	Total-penta1	27.17	2.590e4	1.739e4		1.49	1.55	738.3	YES	NO	bb	bb	61.529

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TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	26.53	3.630e2	4.419e2	0.879	0.82	0.77	8.6	YES	NO	db	db	1.438
2	Total-tetradioxins	25.37	1.331e3	1.763e3	0.879	0.75	0.77	32.9	YES	NO	dd	dd	5.529
3	Total-tetradioxins	24.73	7.595e2	1.151e3	0.879	0.66	0.77	15.4	YES	NO	db	db	3.414
4	Total-tetradioxins	24.52	1.477e3	1.860e3	0.879	0.79	0.77	35.3	YES	NO	bd	bd	5.964
5	Total-tetradioxins	24.01	1.329e3	1.982e3	0.879	0.67	0.77	33.8	YES	NO	bb	db	5.917
6	Total-tetradioxins	23.80	1.116e4	1.466e4	0.879	0.76	0.77	284.2	YES	NO	bb	bd	46.142
7	1368-TCDD	23.52	5.452e3	6.776e3	0.923	0.80	0.77	143.1	YES	NO	bb	bb	20.808

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	30.12	1.534e3	1.071e3	1.331	1.43	1.55	35.3	YES	NO	bd	bb	4.559
2	Total-pentadioxins	29.90	1.736e3	1.177e3	1.331	1.47	1.55	39.6	YES	NO	bb	bb	5.098
3	Total-pentadioxins	29.30	1.905e3	1.116e3	1.331	1.71	1.55	47.2	YES	NO	bb	bb	5.287
4	12378-PeCDD	31.50	1.449e3	1.027e3	0.995	1.41	1.55	29.0	YES	NO	bb	bb	5.792
5	Total-pentadioxins	30.83	1.003e3	6.651e2	1.331	1.51	1.55	20.3	YES	NO	bb	bb	2.919
6	Total-pentadioxins	30.46	2.100e3	1.252e3	1.331	1.68	1.55	28.8	YES	NO	db	db	5.866
7	12479-PECDD	28.81	3.193e4	2.076e4	1.843	1.54	1.55	443.1	YES	NO	MM	MM	66.565

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.51	4.978e3	3.990e3	0.950	1.25	1.24	61.7	YES	NO	bb	bd	18.628
2	Total-hexadioxins	36.28	1.298e3	1.038e3	1.028	1.25	1.24	19.8	YES	NO	bb	bb	4.486
3	123678-HxCDD	36.12	1.047e4	8.380e3	1.009	1.25	1.24	136.2	YES	NO	db	db	36.722
4	123478-HxCDD	35.99	2.856e3	2.113e3	1.027	1.35	1.24	38.5	YES	NO	bd	bd	9.594
5	Total-hexadioxins	35.11	3.216e4	2.550e4	1.028	1.26	1.24	259.9	YES	NO	bd	bd	110.736
6	Total-hexadioxins	34.76	1.027e4	8.386e3	1.028	1.23	1.24	128.9	YES	NO	bb	bb	35.841
7	124679-HXCDD	33.99	1.071e5	8.426e4	1.125	1.27	1.24	1277.1	YES	NO	bb	bb	337.398

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	2.358e5	2.197e5	1.068	1.07	1.05	2385.1	YES	NO	bb	bb	1422.2...
2	1234679-HPCDD	39.21	2.083e5	1.910e5	1.211	1.09	1.05	2191.6	YES	NO	bb	bb	1099.6...

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	26.53	3.630e2	4.419e2	0.879	0.82	0.77	8.6	YES	NO	db	db	1.438
2	Total-tetradioxins	25.37	1.331e3	1.763e3	0.879	0.75	0.77	32.9	YES	NO	dd	dd	5.529
3	Total-tetradioxins	24.73	7.595e2	1.151e3	0.879	0.66	0.77	15.4	YES	NO	db	db	3.414
4	Total-tetradioxins	24.52	1.477e3	1.860e3	0.879	0.79	0.77	35.3	YES	NO	bd	bd	5.964
5	Total-tetradioxins	24.01	1.329e3	1.982e3	0.879	0.67	0.77	33.8	YES	NO	bb	db	5.917
6	Total-tetradioxins	23.80	1.116e4	1.466e4	0.879	0.76	0.77	284.2	YES	NO	bb	bd	46.142
7	1368-TCDD	23.52	5.452e3	6.776e3	0.923	0.80	0.77	143.1	YES	NO	bb	bb	20.808
8	Total-pentadioxins	30.12	1.534e3	1.071e3	1.331	1.43	1.55	35.3	YES	NO	bd	bb	4.559
9	Total-pentadioxins	29.90	1.736e3	1.177e3	1.331	1.47	1.55	39.6	YES	NO	bb	bb	5.098
10	Total-pentadioxins	29.30	1.905e3	1.116e3	1.331	1.71	1.55	47.2	YES	NO	bb	bb	5.287
11	12378-PeCDD	31.50	1.449e3	1.027e3	0.995	1.41	1.55	29.0	YES	NO	bb	bb	5.792
12	Total-pentadioxins	30.83	1.003e3	6.651e2	1.331	1.51	1.55	20.3	YES	NO	bb	bb	2.919
13	Total-pentadioxins	30.46	2.100e3	1.252e3	1.331	1.68	1.55	28.8	YES	NO	db	db	5.866
14	123789-HxCDD	36.51	4.978e3	3.990e3	0.950	1.25	1.24	61.7	YES	NO	bb	bd	18.628
15	Total-hexadioxins	36.28	1.298e3	1.038e3	1.028	1.25	1.24	19.8	YES	NO	bb	bb	4.486
16	123678-HxCDD	36.12	1.047e4	8.380e3	1.009	1.25	1.24	136.2	YES	NO	db	db	36.722
17	123478-HxCDD	35.99	2.856e3	2.113e3	1.027	1.35	1.24	38.5	YES	NO	bd	bd	9.594
18	Total-hexadioxins	35.11	3.216e4	2.550e4	1.028	1.26	1.24	259.9	YES	NO	bd	bd	110.736
19	Total-hexadioxins	34.76	1.027e4	8.386e3	1.028	1.23	1.24	128.9	YES	NO	bb	bb	35.841
20	124679-HXCDD	33.99	1.071e5	8.426e4	1.125	1.27	1.24	1277.1	YES	NO	bb	bb	337.398
21	1234678-HpCDD	40.26	2.358e5	2.197e5	1.068	1.07	1.05	2385.1	YES	NO	bb	bb	1422.2...
22	1234679-HPCDD	39.21	2.083e5	1.910e5	1.211	1.09	1.05	2191.6	YES	NO	bb	bb	1099.6...
23	OCDD	45.00	1.592e6	1.774e6	1.181	0.90	0.89	10939.2	YES	NO	bb	bb	10469....
24	12479-PECDD	28.81	3.193e4	2.076e4	1.843	1.54	1.55	443.1	YES	NO	MM	MM	66.565

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.85	7.222e2	9.292e2	1.192	0.78	0.77	7.4	YES	NO	bd	bb	1.693
2	Total-tetrafurans	24.66	1.102e3	1.608e3	1.192	0.69	0.77	15.1	YES	NO	db	db	2.778
3	Total-tetrafurans	24.52	5.744e2	7.741e2	1.192	0.74	0.77	9.2	YES	NO	dd	dd	1.382
4	Total-tetrafurans	23.75	1.708e3	2.055e3	1.192	0.83	0.77	22.1	YES	NO	bd	bd	3.856
5	Total-tetrafurans	23.51	2.693e3	3.388e3	1.192	0.79	0.77	34.1	YES	NO	dd	dd	6.233
6	Total-tetrafurans	23.08	3.890e3	5.407e3	1.192	0.72	0.77	51.6	YES	NO	bd	bb	9.529
7	1368-TCDF	22.24	1.917e3	2.346e3	1.425	0.82	0.77	25.0	YES	NO	bb	db	3.654
8	Total-tetrafurans	25.99	7.116e2	1.037e3	1.192	0.69	0.77	7.2	YES	NO	db	dd	1.792
9	Total-tetrafurans	25.91	2.588e2	3.645e2	1.192	0.71	0.77	3.9	YES	NO	bd	dd	0.639
10	23478-PeCDF	31.27	1.505e3	9.937e2	1.126	1.51	1.55	18.3	YES	NO	db	db	2.987
11	Total-pentafurans	30.13	1.104e3	6.482e2	1.047	1.70	1.55	16.6	YES	NO	bd	bb	2.216
12	12378-PeCDF	29.92	8.398e2	5.636e2	1.015	1.49	1.55	13.3	YES	NO	bb	bb	1.802
13	Total-pentafurans	29.45	1.021e3	7.094e2	1.047	1.44	1.55	15.8	YES	NO	dd	bd	2.190
14	Total-pentafurans	29.27	2.981e3	1.890e3	1.047	1.58	1.55	42.9	YES	NO	bd	bb	6.162
15	Total-pentafurans	28.83	1.184e4	7.546e3	1.047	1.57	1.55	133.2	YES	NO	dd	bb	24.530
16	123789-HxCDF	36.91	1.222e3	9.562e2	1.030	1.28	1.24	18.2	YES	NO	bb	bb	4.389
17	234678-HxCDF	35.85	5.742e3	4.368e3	1.052	1.31	1.24	75.6	YES	NO	bb	bb	17.019
18	123678-HxCDF	35.02	3.219e3	2.948e3	1.037	1.09	1.24	48.2	YES	NO	db	dd	9.630
19	123478-HxCDF	34.88	8.425e3	7.146e3	1.017	1.18	1.24	135.4	YES	NO	bd	dd	25.693
20	Total-hexafurans	34.72	7.935e2	6.904e2	1.045	1.15	1.24	12.3	YES	NO	bb	bd	2.515
21	Total-hexafurans	34.27	6.567e4	5.405e4	1.045	1.22	1.24	1056.5	YES	NO	bb	bb	202.876
22	Total-hexafurans	33.95	4.595e3	3.535e3	1.045	1.30	1.24	78.4	YES	NO	bb	bb	13.778
23	Total-hexafurans	33.69	5.961e2	5.258e2	1.045	1.13	1.24	9.2	YES	NO	bb	bb	1.901
24	Total-hexafurans	33.42	2.340e4	1.863e4	1.045	1.26	1.24	347.2	YES	NO	bb	bb	71.217
25	123468-HXCDF	33.22	8.197e3	6.958e3	1.087	1.18	1.24	132.0	YES	NO	bb	bb	23.404
26	1234789-HpCDF	41.02	6.637e3	6.422e3	1.283	1.03	1.05	74.1	YES	NO	bb	bb	29.857
27	Total-heptafurans	39.42	2.094e5	1.962e5	1.305	1.07	1.05	2553.8	YES	NO	bb	bb	809.752
28	Total-heptafurans	39.18	1.738e3	1.815e3	1.305	0.96	1.05	20.3	YES	NO	bb	bb	7.093
29	1234678-HpCDF	38.76	8.069e4	7.990e4	1.327	1.01	1.05	1025.8	YES	NO	bb	bd	283.479
30	OCDF	45.24	2.425e5	2.635e5	1.447	0.92	0.89	1991.5	YES	NO	bd	bb	1284.4...
31	Total-penta1	27.17	2.590e4	1.739e4		1.49	1.55	738.3	YES	NO	bb	bb	61.529
32	Total-tetradioxins	26.53	3.630e2	4.419e2	0.879	0.82	0.77	8.6	YES	NO	db	db	1.438
33	Total-tetradioxins	25.37	1.331e3	1.763e3	0.879	0.75	0.77	32.9	YES	NO	dd	dd	5.529
34	Total-tetradioxins	24.73	7.595e2	1.151e3	0.879	0.66	0.77	15.4	YES	NO	db	db	3.414
35	Total-tetradioxins	24.52	1.477e3	1.860e3	0.879	0.79	0.77	35.3	YES	NO	bd	bd	5.964
36	Total-tetradioxins	24.01	1.329e3	1.982e3	0.879	0.67	0.77	33.8	YES	NO	bb	db	5.917
37	Total-tetradioxins	23.80	1.116e4	1.466e4	0.879	0.76	0.77	284.2	YES	NO	bb	bd	46.142

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1368-TCDD	23.52	5.452e3	6.776e3	0.923	0.80	0.77	143.1	YES	NO	bb	bb	20.808
39	Total-pentadioxins	30.12	1.534e3	1.071e3	1.331	1.43	1.55	35.3	YES	NO	bd	bb	4.559
40	Total-pentadioxins	29.90	1.736e3	1.177e3	1.331	1.47	1.55	39.6	YES	NO	bb	bb	5.098
41	Total-pentadioxins	29.30	1.905e3	1.116e3	1.331	1.71	1.55	47.2	YES	NO	bb	bb	5.287
42	12378-PeCDD	31.50	1.449e3	1.027e3	0.995	1.41	1.55	29.0	YES	NO	bb	bb	5.792
43	Total-pentadioxins	30.83	1.003e3	6.651e2	1.331	1.51	1.55	20.3	YES	NO	bb	bb	2.919
44	Total-pentadioxins	30.46	2.100e3	1.252e3	1.331	1.68	1.55	28.8	YES	NO	db	db	5.866
45	123789-HxCDD	36.51	4.978e3	3.990e3	0.950	1.25	1.24	61.7	YES	NO	bb	bd	18.628
46	Total-hexadioxins	36.28	1.298e3	1.038e3	1.028	1.25	1.24	19.8	YES	NO	bb	bb	4.486
47	123678-HxCDD	36.12	1.047e4	8.380e3	1.009	1.25	1.24	136.2	YES	NO	db	db	36.722
48	123478-HxCDD	35.99	2.856e3	2.113e3	1.027	1.35	1.24	38.5	YES	NO	bd	bd	9.594
49	Total-hexadioxins	35.11	3.216e4	2.550e4	1.028	1.26	1.24	259.9	YES	NO	bd	bd	110.736
50	Total-hexadioxins	34.76	1.027e4	8.386e3	1.028	1.23	1.24	128.9	YES	NO	bb	bb	35.841
51	124679-HXCDD	33.99	1.071e5	8.426e4	1.125	1.27	1.24	1277.1	YES	NO	bb	bb	337.398
52	1234678-HpCDD	40.26	2.358e5	2.197e5	1.068	1.07	1.05	2385.1	YES	NO	bb	bb	1422.2...
53	1234679-HPCDD	39.21	2.083e5	1.910e5	1.211	1.09	1.05	2191.6	YES	NO	bb	bb	1099.6...
54	OCDD	45.00	1.592e6	1.774e6	1.181	0.90	0.89	10939.2	YES	NO	bb	bb	10469....
55	12479-PECDD	28.81	3.193e4	2.076e4	1.843	1.54	1.55	443.1	YES	NO	MM	MM	66.565

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.24	8.107e6					52.1	YES		bb		
2	FUNCTION1 PFK	23.10	8.464e5					50.4	YES		db		
3	FUNCTION1 PFK	22.99	5.549e6					45.0	YES		bd		

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.18	2.594e5					21.9	YES		bd		0.000
2	FUNCTION2 PFK	31.95	4.195e3					1.2	NO		bb		0.000
3	FUNCTION2 PFK	31.63	4.487e3					0.9	NO		bb		0.000
4	FUNCTION2 PFK	31.55	5.400e3					1.8	NO		bb		0.000
5	FUNCTION2 PFK	31.37	3.337e3					0.7	NO		bb		0.000
6	FUNCTION2 PFK	31.32	8.037e2					0.5	NO		bb		0.000
7	FUNCTION2 PFK	31.00	4.016e3					1.1	NO		db		0.000
8	FUNCTION2 PFK	30.92	1.324e3					0.6	NO		bd		0.000
9	FUNCTION2 PFK	30.77	8.836e2					0.6	NO		bb		0.000
10	FUNCTION2 PFK	30.13	1.237e3					0.8	NO		bb		0.000
11	FUNCTION2 PFK	30.00	5.902e3					1.8	NO		bb		0.000
12	FUNCTION2 PFK	29.79	7.366e3					1.8	NO		bb		0.000
13	FUNCTION2 PFK	28.98	1.459e4					2.6	NO		db		0.000
14	FUNCTION2 PFK	28.92	2.591e4					4.3	YES		dd		0.000
15	FUNCTION2 PFK	28.80	1.037e5					7.4	YES		dd		0.000
16	FUNCTION2 PFK	28.64	1.631e5					10.9	YES		dd		0.000
17	FUNCTION2 PFK	28.37	8.180e5					17.8	YES		dd		0.000
18	FUNCTION2 PFK	32.84	3.973e3					1.3	NO		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.74	1.112e3					0.5	NO		bb		0.000
2	FUNCTION3 PFK	37.33	4.360e3					0.8	NO		bb		0.000
3	FUNCTION3 PFK	37.28	5.698e3					1.3	NO		bb		0.000
4	FUNCTION3 PFK	37.23	8.627e3					1.5	NO		bb		0.000
5	FUNCTION3 PFK	37.17	1.301e4					2.2	NO		bb		0.000
6	FUNCTION3 PFK	35.81	1.773e4					2.0	NO		bb		0.000
7	FUNCTION3 PFK	35.34	1.909e4					1.7	NO		bb		0.000
8	FUNCTION3 PFK	34.85	4.837e3					0.9	NO		bb		0.000
9	FUNCTION3 PFK	34.47	1.934e4					1.9	NO		bb		0.000
10	FUNCTION3 PFK	33.73	1.078e3					0.4	NO		bb		0.000
11	FUNCTION3 PFK	33.50	1.268e3					0.5	NO		bb		0.000
12	FUNCTION3 PFK	33.25	1.278e4					1.5	NO		bb		0.000
13	FUNCTION3 PFK	33.06	1.382e3					0.6	NO		bb		0.000

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	41.31	4.913e3					1.2	NO		bb		
2	FUNCTION4 PFK	40.91	1.124e4					1.5	NO		bb		
3	FUNCTION4 PFK	40.18	3.417e3					1.0	NO		bb		
4	FUNCTION4 PFK	40.13	4.626e3					1.4	NO		bb		
5	FUNCTION4 PFK	40.07	1.706e4					1.9	NO		db		
6	FUNCTION4 PFK	39.91	2.473e4					1.8	NO		bd		
7	FUNCTION4 PFK	39.77	3.877e3					1.1	NO		bb		
8	FUNCTION4 PFK	39.29	1.828e4					2.1	NO		bb		
9	FUNCTION4 PFK	38.83	5.740e2					0.4	NO		bb		
10	FUNCTION4 PFK	38.74	3.208e3					0.9	NO		bb		
11	FUNCTION4 PFK	38.70	2.993e3					1.1	NO		bb		
12	FUNCTION4 PFK	38.64	2.880e3					0.9	NO		bb		
13	FUNCTION4 PFK	38.57	3.426e3					0.8	NO		bb		
14	FUNCTION4 PFK	38.31	1.480e3					0.4	NO		bb		
15	FUNCTION4 PFK	38.25	1.173e4					1.2	NO		db		
16	FUNCTION4 PFK	38.17	9.783e3					1.2	NO		bd		
17	FUNCTION4 PFK	42.88	5.799e2					0.4	NO		bb		
18	FUNCTION4 PFK	42.82	5.791e3					1.4	NO		bb		
19	FUNCTION4 PFK	42.69	3.444e3					0.9	NO		bb		
20	FUNCTION4 PFK	42.54	8.703e3					1.7	NO		db		
21	FUNCTION4 PFK	42.51	7.198e3					1.9	NO		bd		
22	FUNCTION4 PFK	42.08	3.500e3					0.7	NO		bb		
23	FUNCTION4 PFK	41.73	2.183e3					0.6	NO		bb		
24	FUNCTION4 PFK	41.56	3.078e3					0.9	NO		db		
25	FUNCTION4 PFK	41.52	7.040e3					1.5	NO		bd		
26	FUNCTION4 PFK	41.37	2.865e3					0.9	NO		bb		

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.38	1.442e3					1.0	NO		db		
2	FUNCTION5 PFK	43.35	7.539e2					0.7	NO		bd		
3	FUNCTION5 PFK	43.24	1.445e3					0.9	NO		bb		
4	FUNCTION5 PFK	43.13	3.295e3					1.3	NO		bb		
5	FUNCTION5 PFK	43.06	2.888e3					0.9	NO		bb		
6	FUNCTION5 PFK	45.93	2.836e3					1.3	NO		bb		
7	FUNCTION5 PFK	45.87	5.023e2					0.6	NO		bb		
8	FUNCTION5 PFK	45.84	1.561e3					1.0	NO		bb		
9	FUNCTION5 PFK	45.80	2.713e3					1.1	NO		bb		
10	FUNCTION5 PFK	45.39	1.994e3					1.1	NO		bb		
11	FUNCTION5 PFK	45.33	2.342e3					1.4	NO		bb		
12	FUNCTION5 PFK	45.02	2.077e3					1.2	NO		bb		
13	FUNCTION5 PFK	44.77	1.830e3					1.1	NO		bb		
14	FUNCTION5 PFK	44.50	3.644e3					1.6	NO		bb		
15	FUNCTION5 PFK	44.06	1.258e4					2.8	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	23.84	8.886e1					3.3	YES		db		0.000
2	FUNCTION1 HXCD...	23.73	3.473e2					9.1	YES		bd		0.000
3	FUNCTION1 HXCD...	22.30	1.764e2					3.6	YES		bb		0.000
4	FUNCTION1 HXCD...	22.15	7.609e1					2.3	NO		bb		0.000
5	FUNCTION1 HXCD...	21.95	8.930e1					1.8	NO		bb		0.000
6	FUNCTION1 HXCD...	26.12	9.569e1					3.6	YES		bb		0.000
7	FUNCTION1 HXCD...	25.73	8.186e1					2.5	NO		bb		0.000

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.61	1.741e2					3.3	YES		db		0.000
2	FUNCTION1 HPCD...	27.56	7.218e1					2.9	NO		dd		0.000
3	FUNCTION1 HPCD...	27.45	1.844e2					3.0	YES		bd		0.000
4	FUNCTION1 HPCD...	26.03	7.117e1					2.6	NO		bb		0.000
5	FUNCTION1 HPCD...	25.47	7.176e1					1.8	NO		bb		0.000
6	FUNCTION1 HPCD...	23.76	7.277e1					2.6	NO		bb		0.000
7	FUNCTION1 HPCD...	23.46	9.550e1					4.9	YES		db		0.000
8	FUNCTION1 HPCD...	23.36	5.444e2					15.2	YES		bd		0.000
9	FUNCTION1 HPCD...	23.13	7.157e1					1.8	NO		bb		0.000
10	FUNCTION1 HPCD...	21.63	8.333e1					1.5	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	28.51	1.781e2					6.5	YES		db		0.000
2	FUNCTION2 HPCD...	28.41	1.465e2					3.6	YES		bd		0.000
3	FUNCTION2 HPCD...	31.49	7.436e1					3.9	YES		bb		0.000
4	FUNCTION2 HPCD...	29.93	7.545e1					2.8	NO		bb		0.000
5	FUNCTION2 HPCD...	29.06	1.356e2					4.4	YES		bb		0.000
6	FUNCTION2 HPCD...	28.92	1.817e2					6.3	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.15	9.338e1					1.8	NO		bb		0.000
2	FUNCTION3 OCDPE	34.19	2.503e2					10.8	YES		bb		0.000
3	FUNCTION3 OCDPE	33.07	1.357e2					3.6	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.40	3.701e2					8.6	YES		db		0.000
2	FUNCTION4 NCDPE	38.30	1.588e2					4.8	YES		bd		0.000

ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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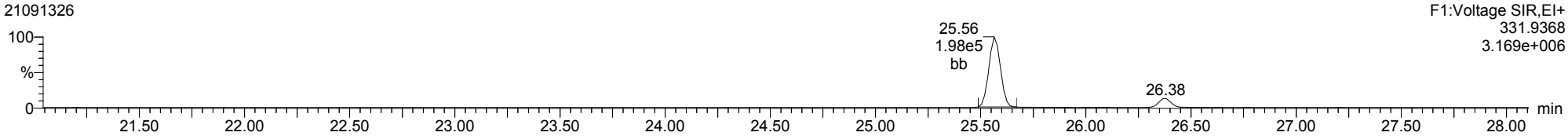

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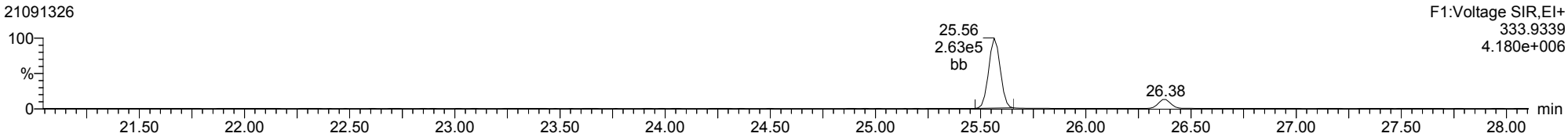

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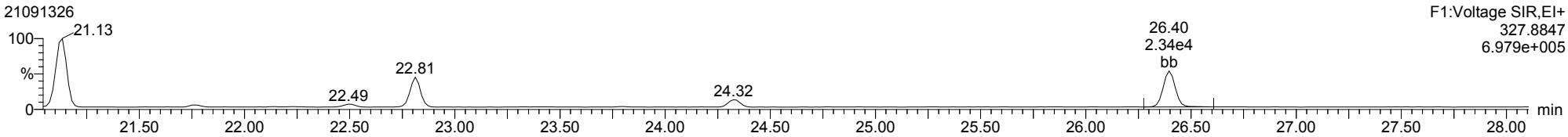

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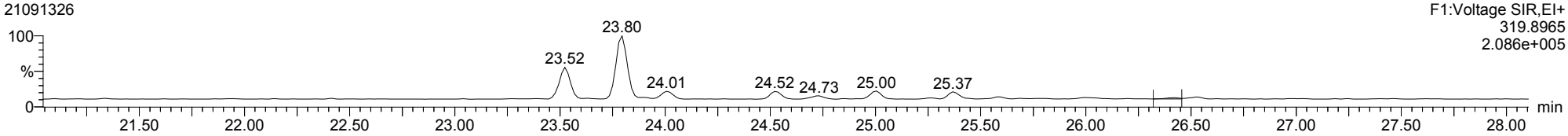

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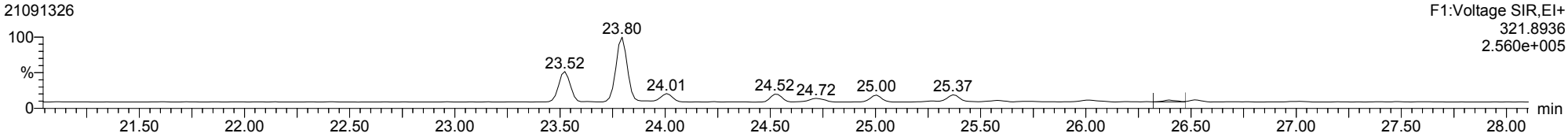

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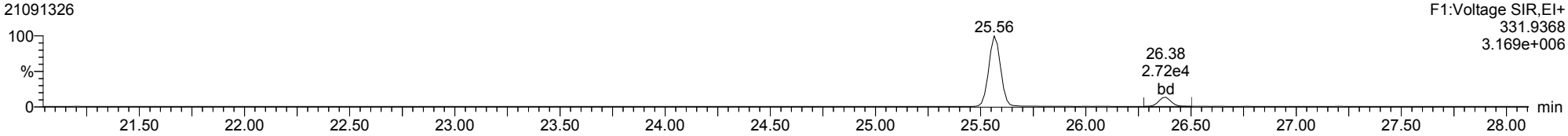

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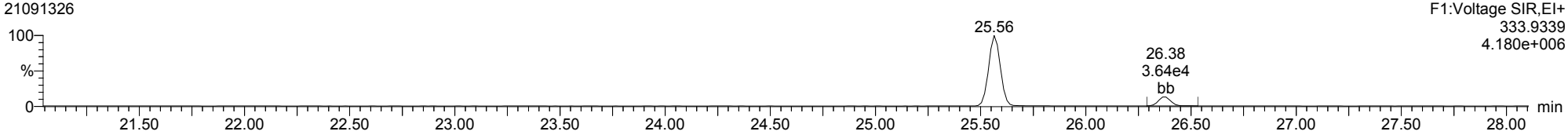

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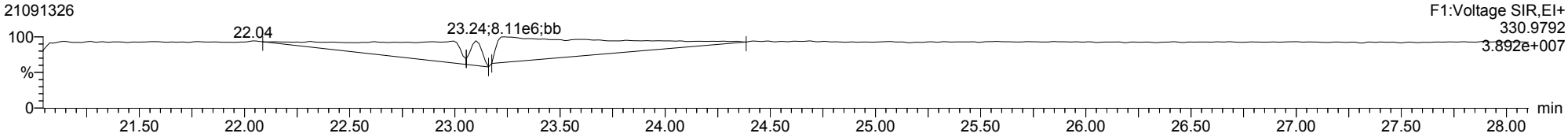

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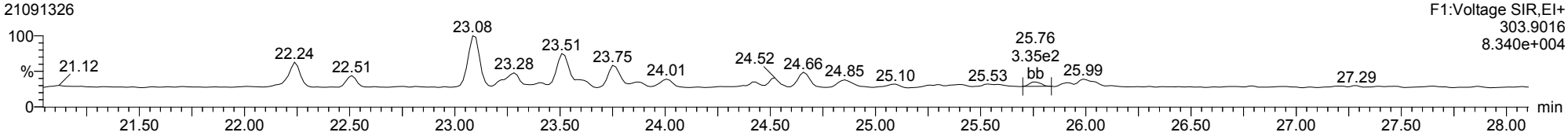

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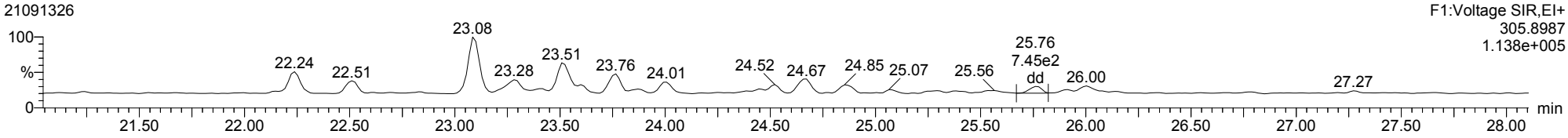

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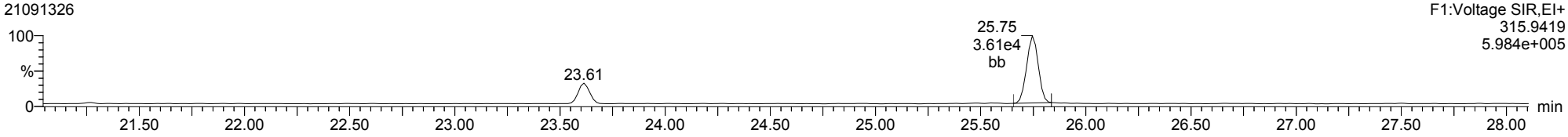

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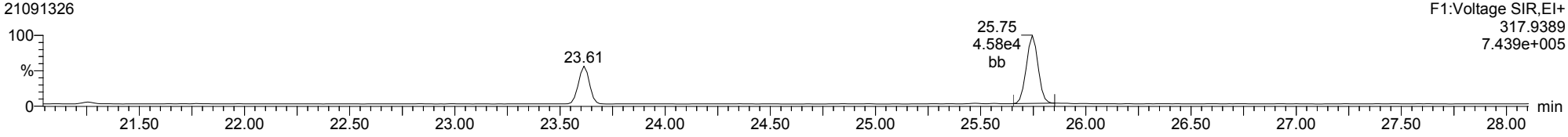

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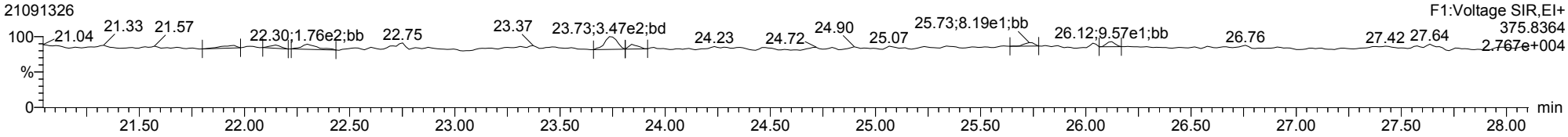

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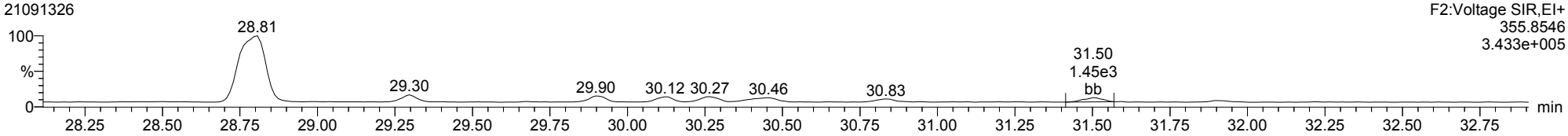
12378-PeCDD



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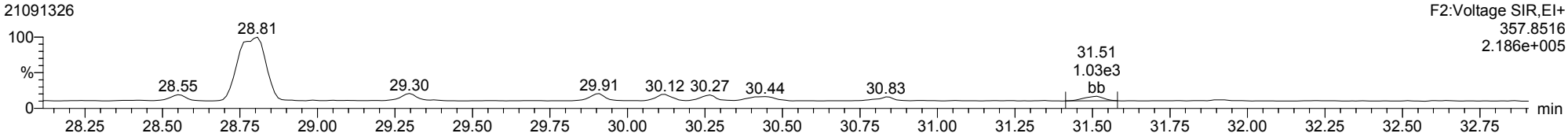

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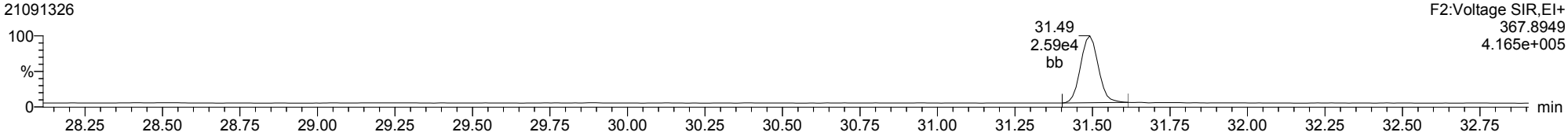

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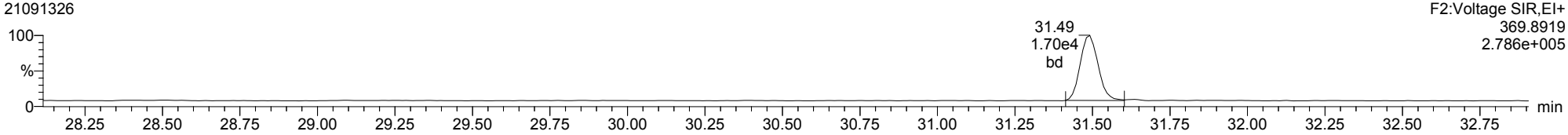
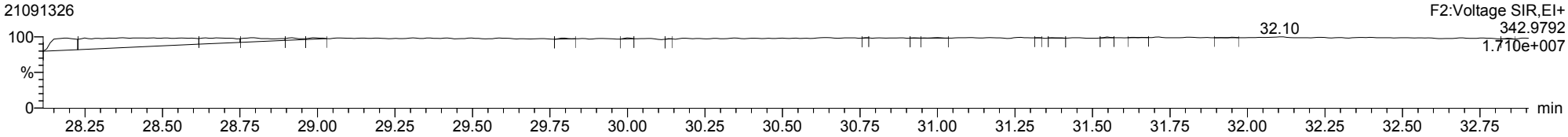


FUNCTION2 PFK



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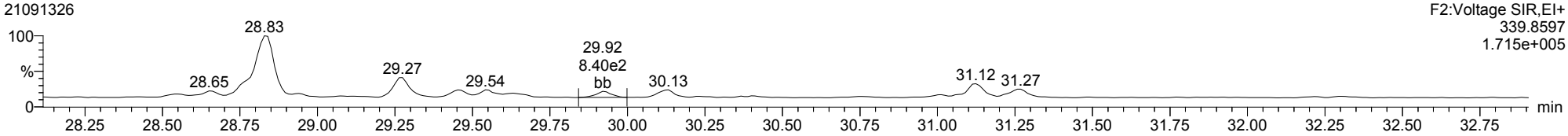

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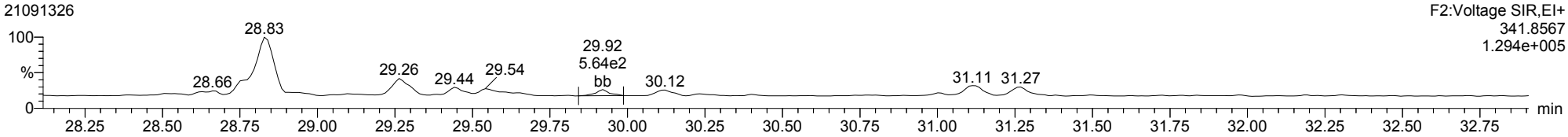

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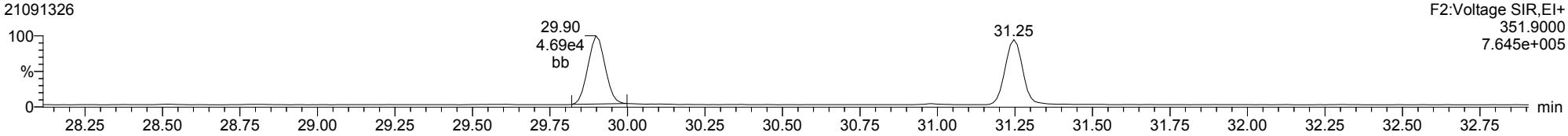

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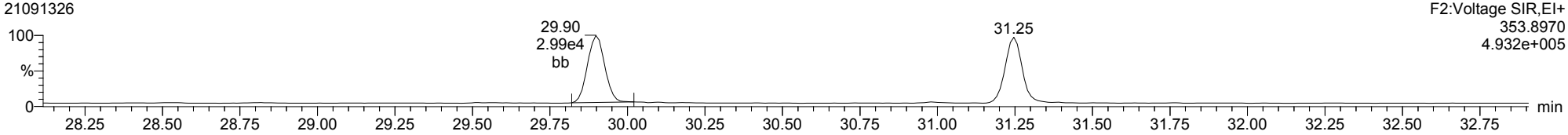
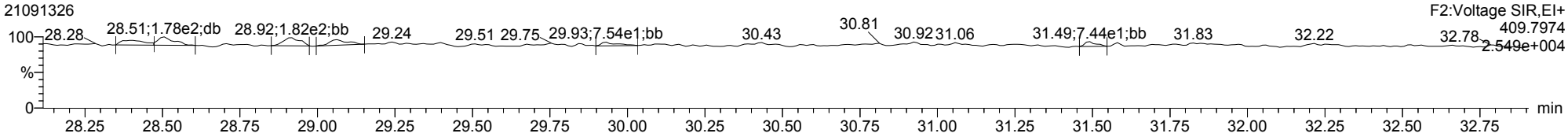


FUNCTION2 HPCDPE



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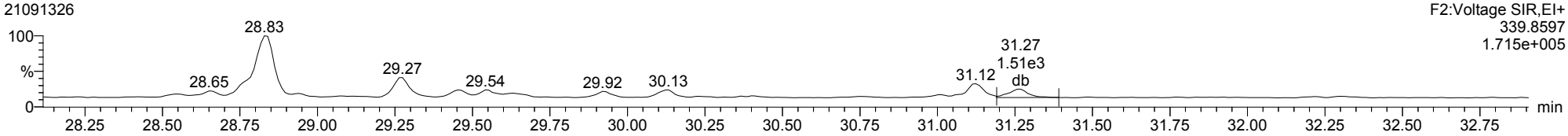
23478-PeCDF



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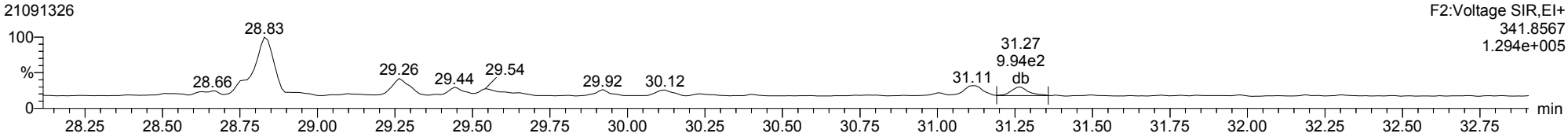

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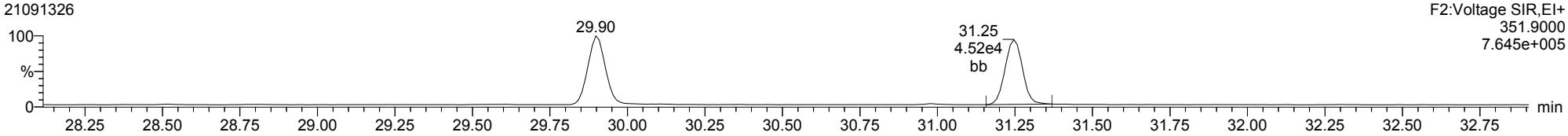

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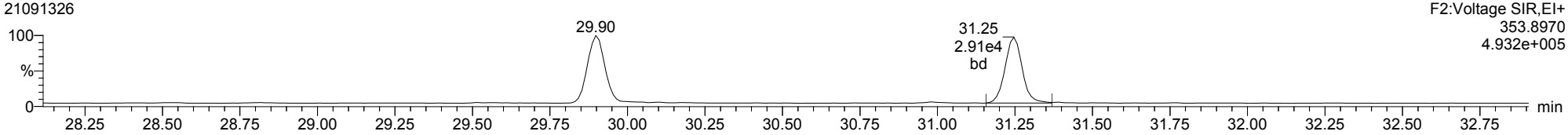

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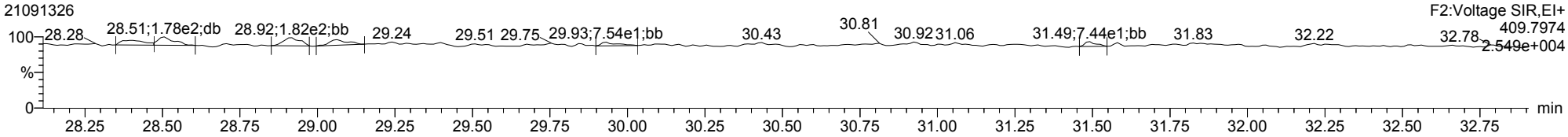

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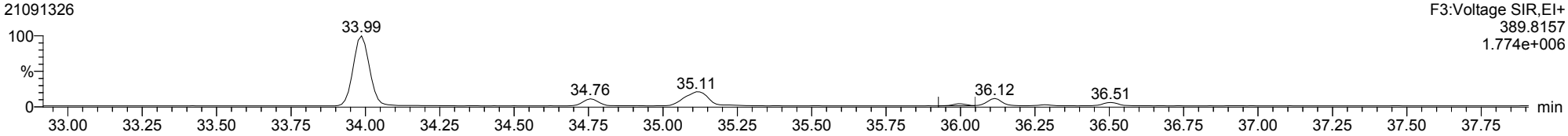

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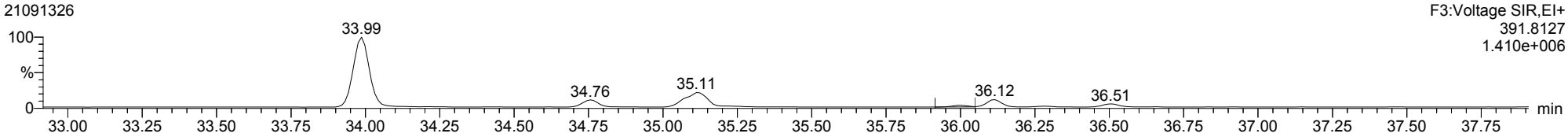

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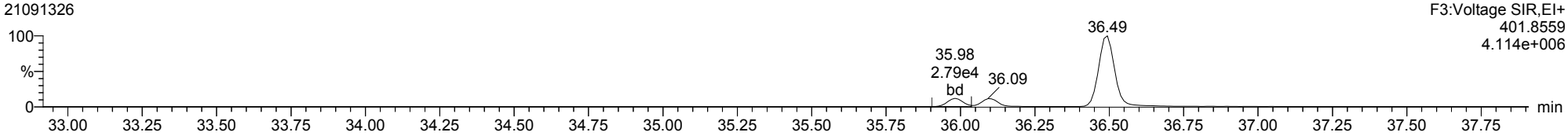

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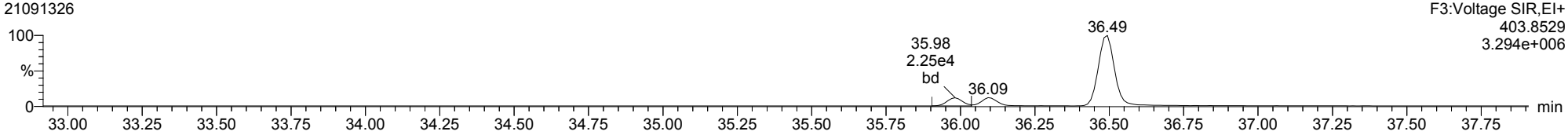

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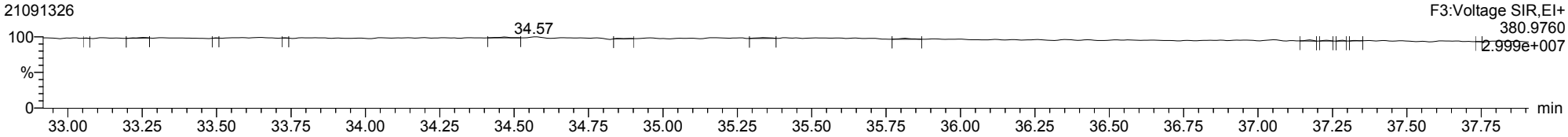

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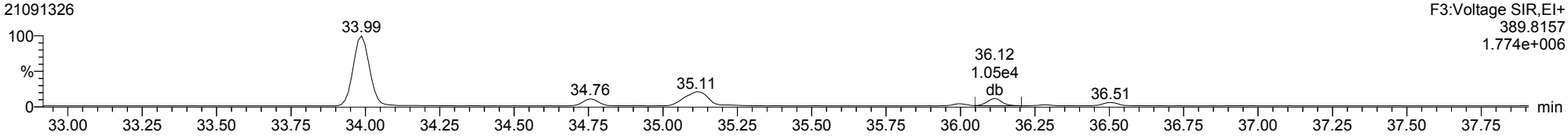

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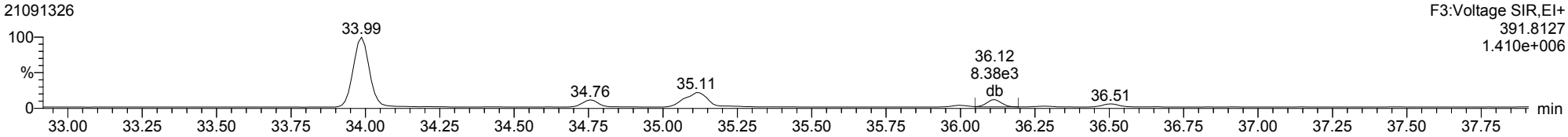

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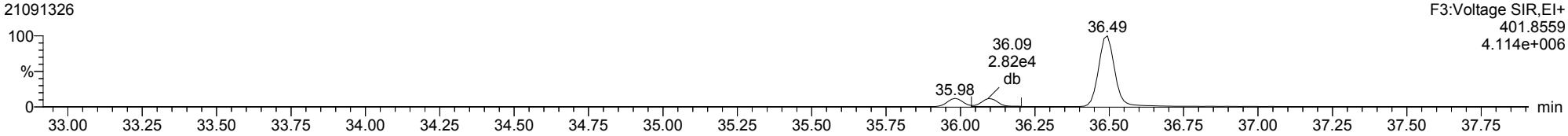

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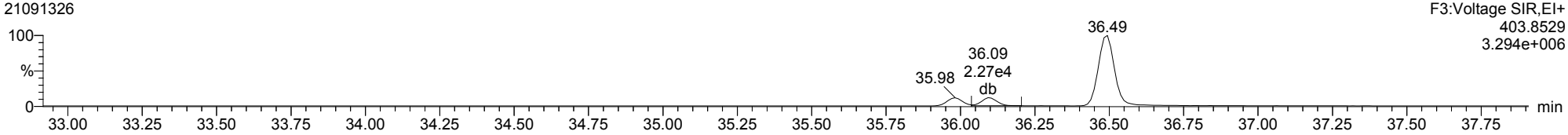

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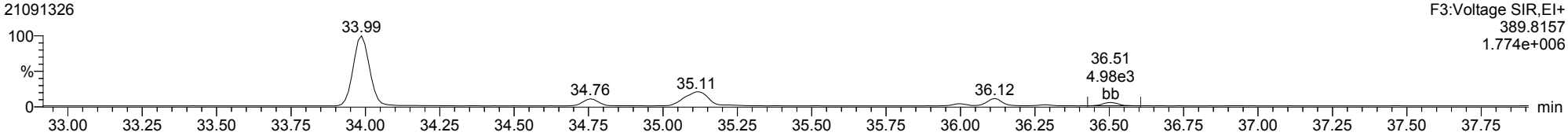

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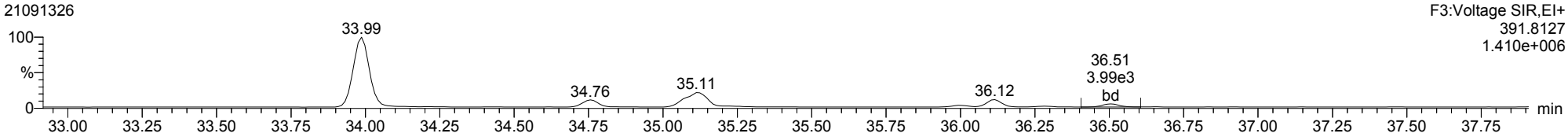

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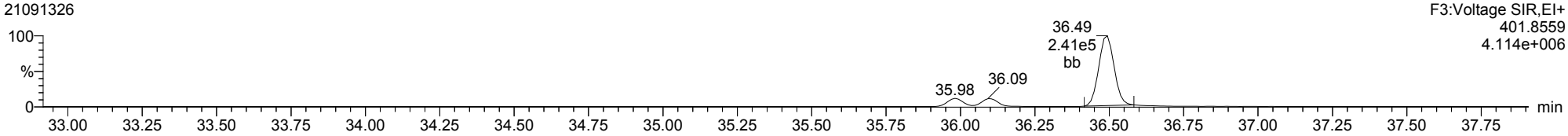

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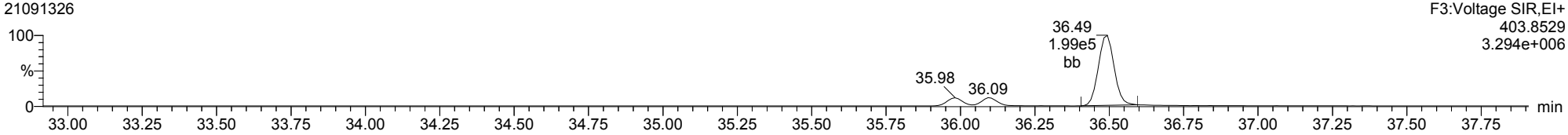

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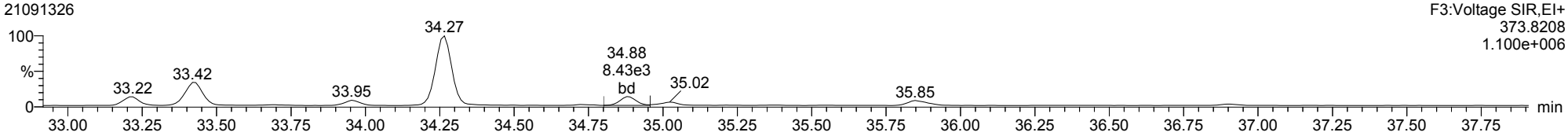

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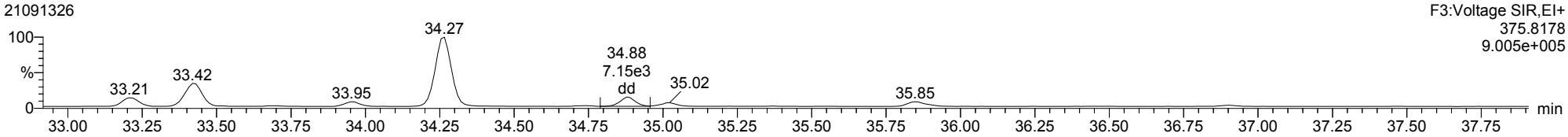

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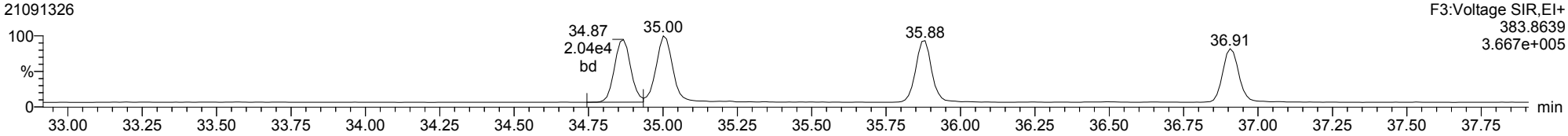

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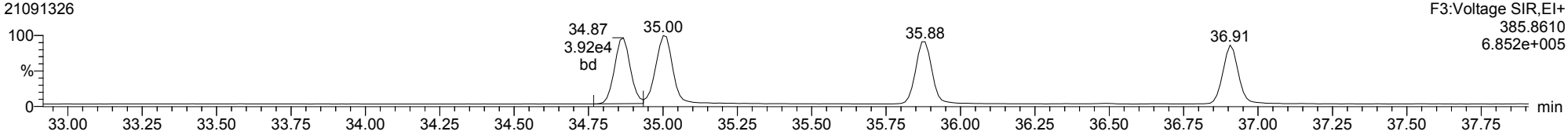

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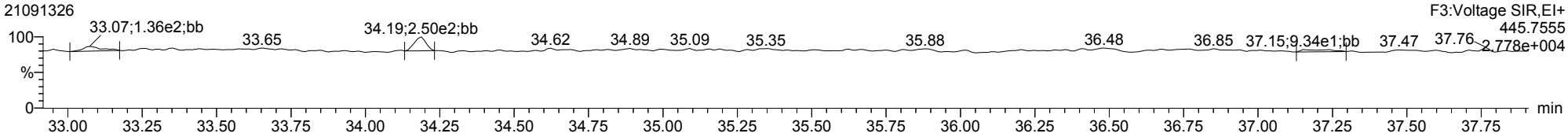

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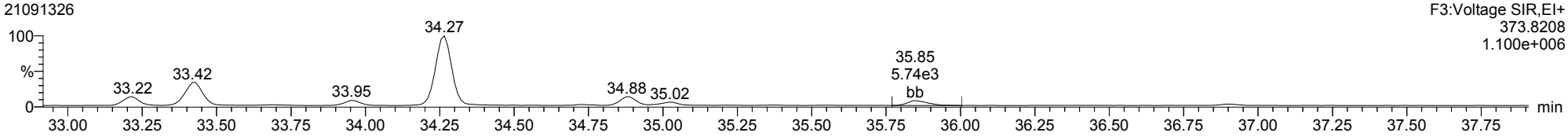

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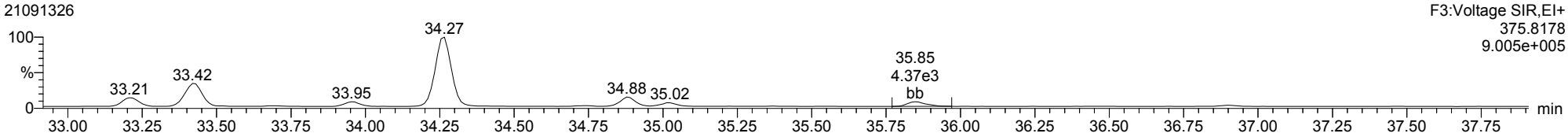

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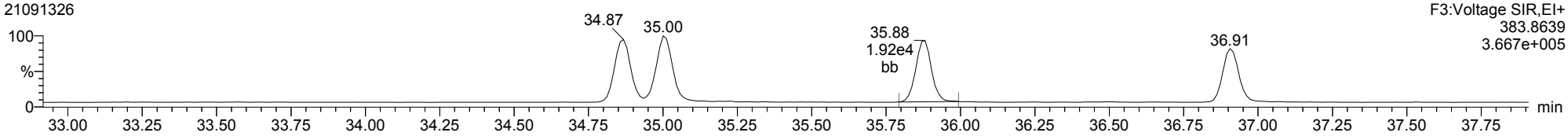

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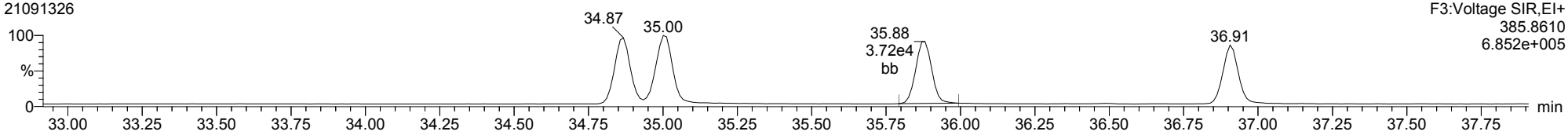

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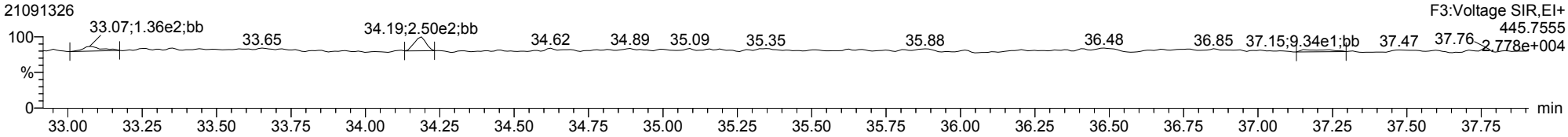

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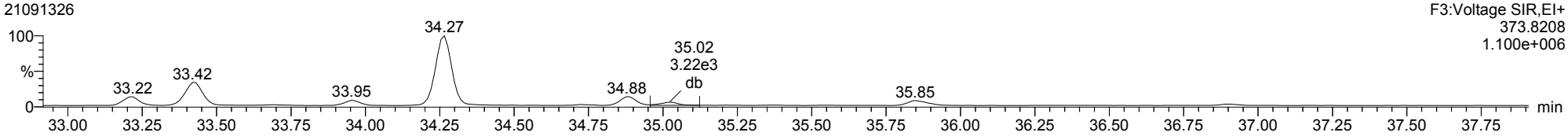

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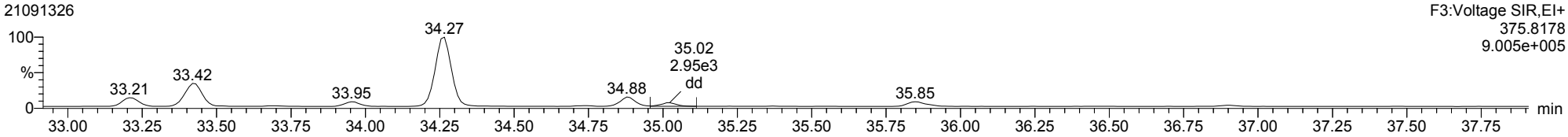

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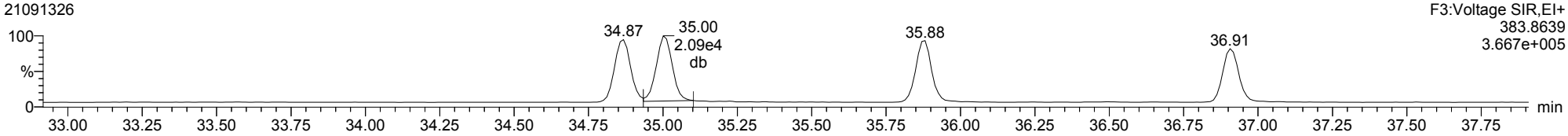

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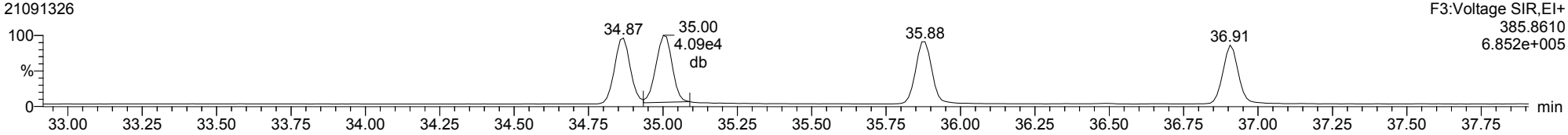

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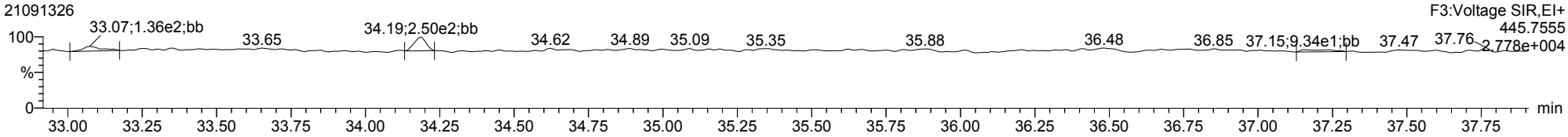

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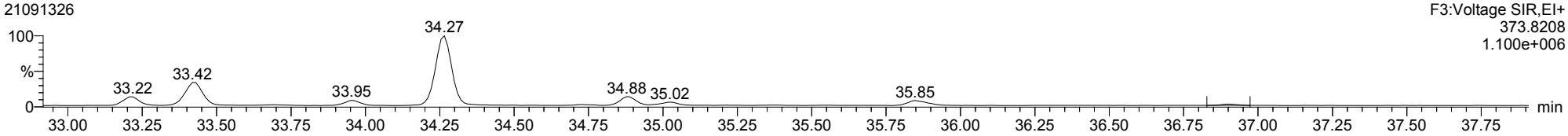

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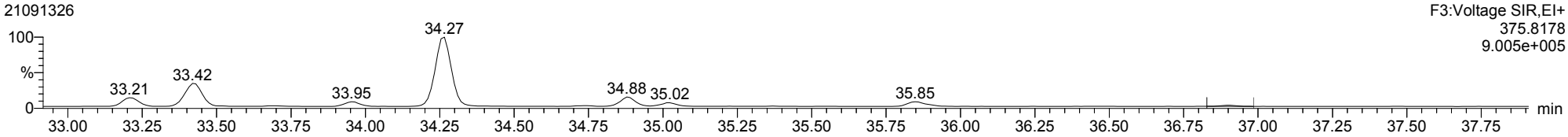

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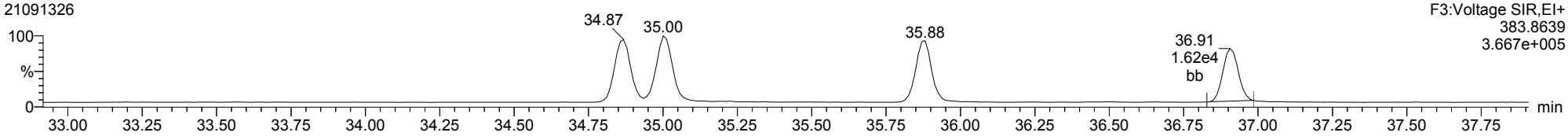

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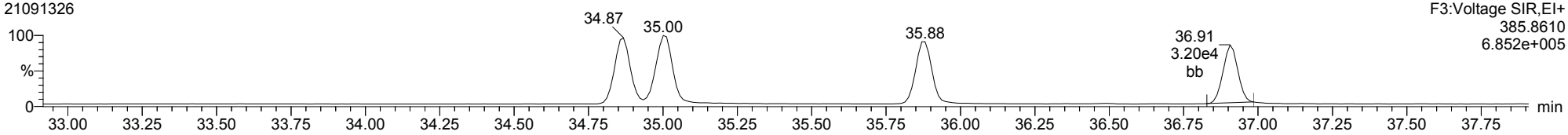

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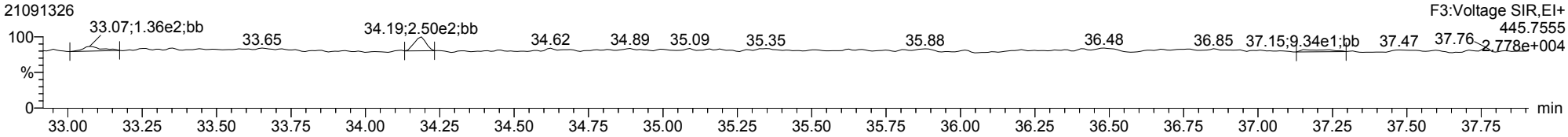

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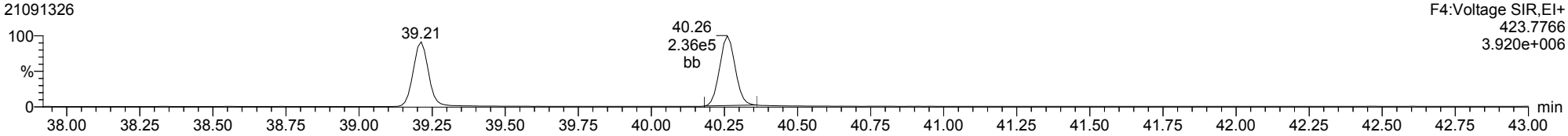

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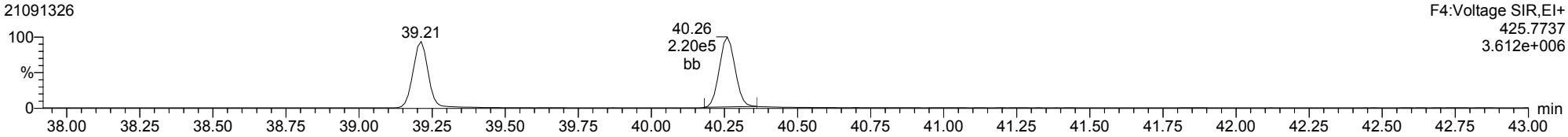

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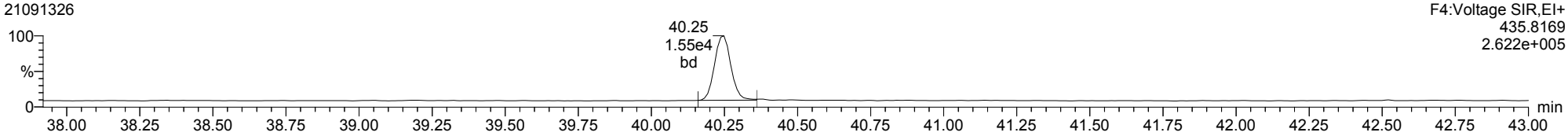

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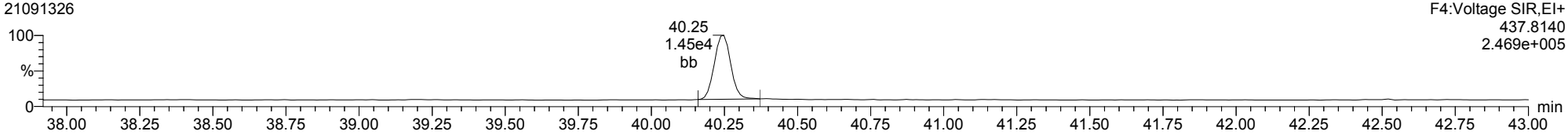
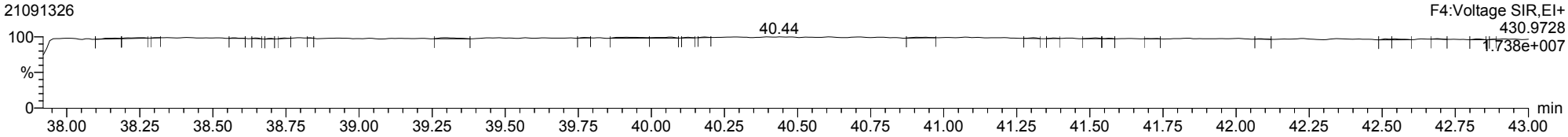


FUNCTION4 PFK



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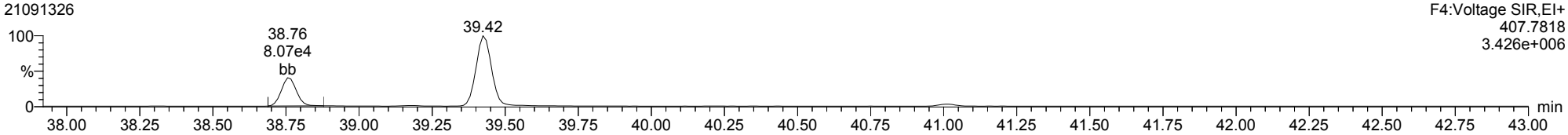

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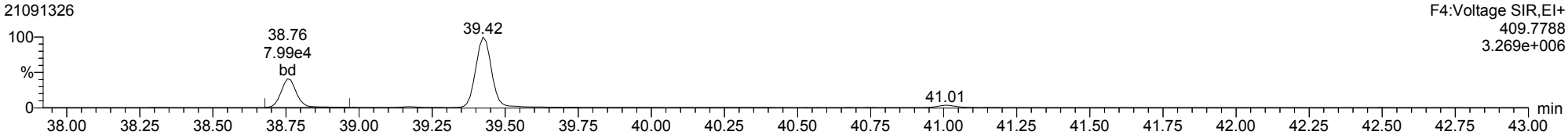

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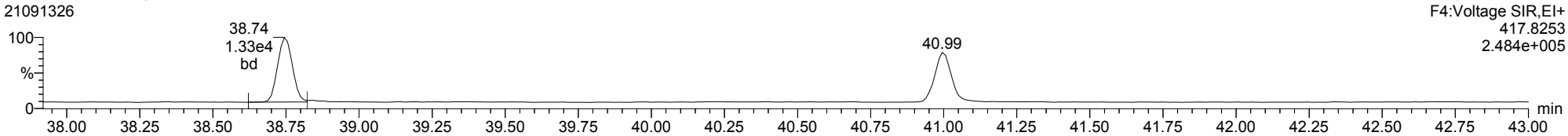

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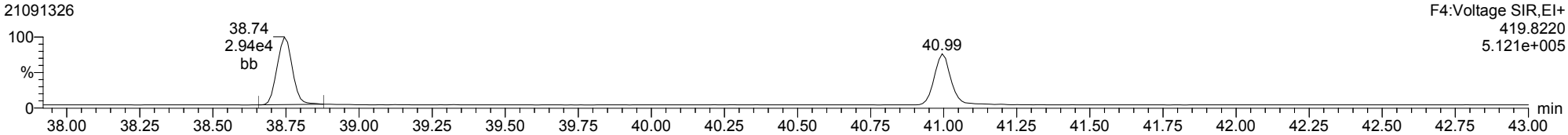

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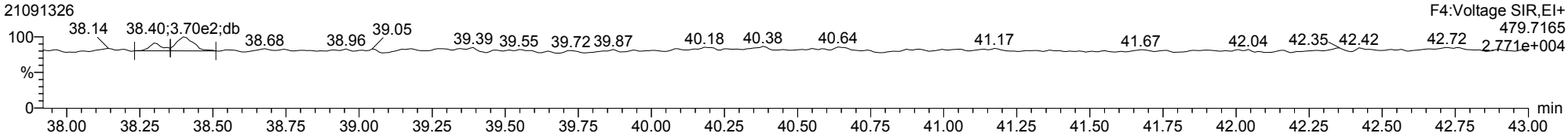

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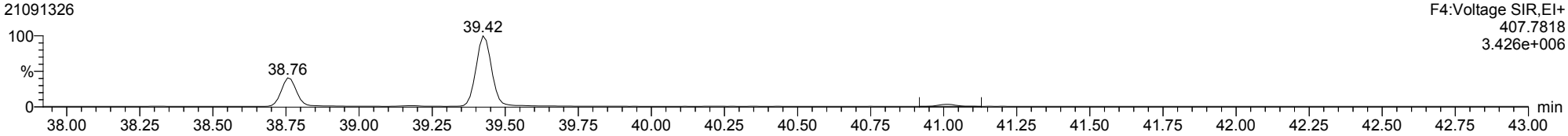

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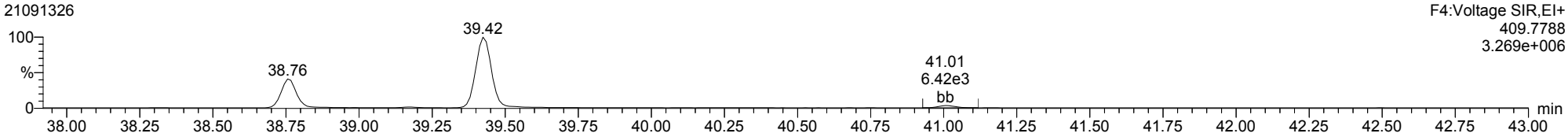

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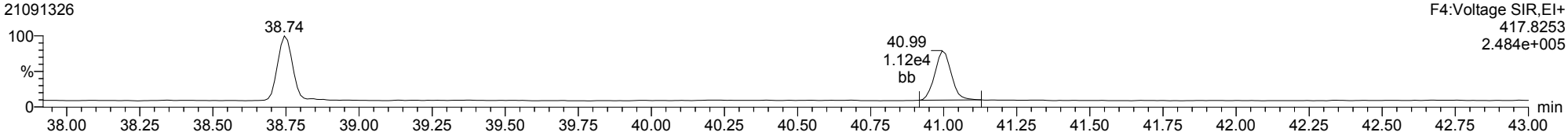

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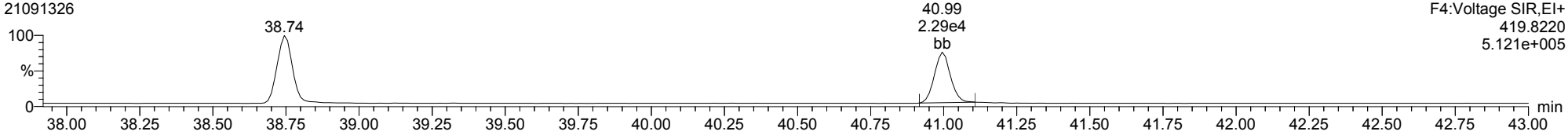

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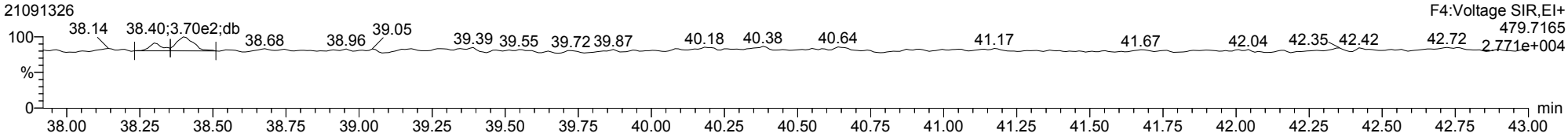

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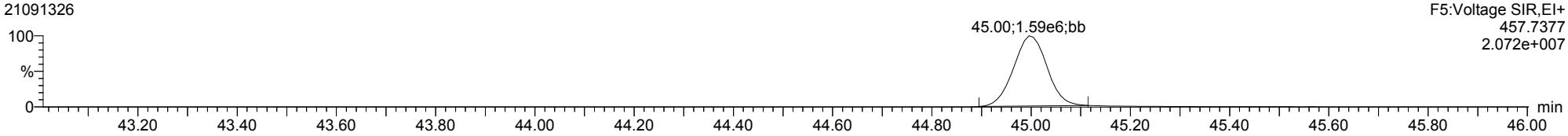

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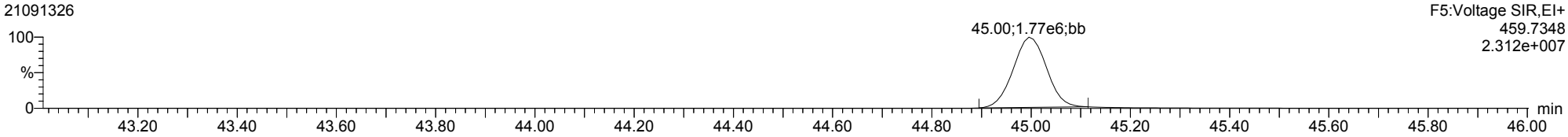

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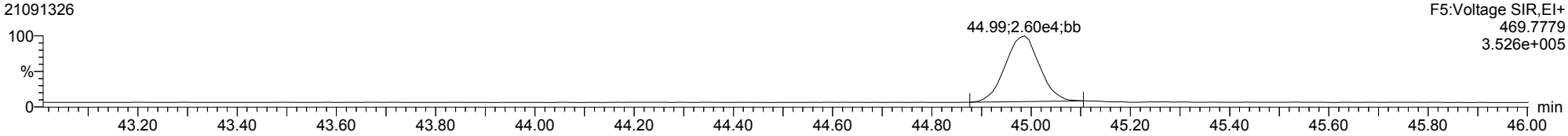

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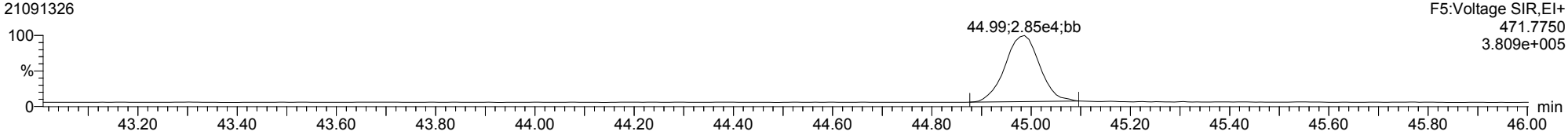
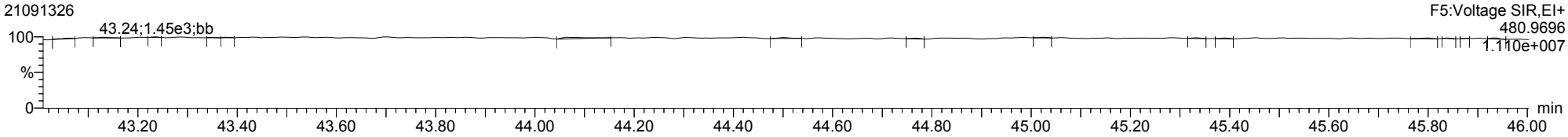
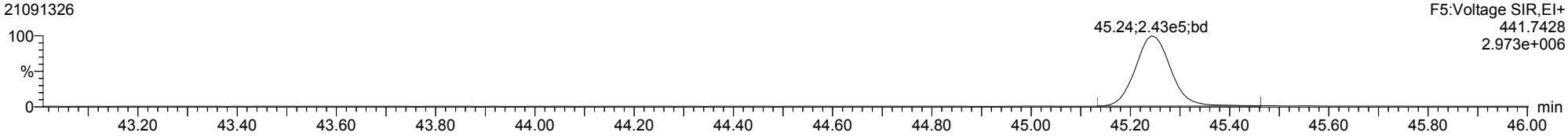


FUNCTION5 PFK

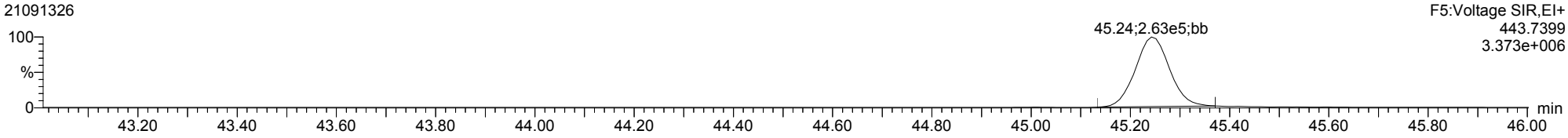


ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

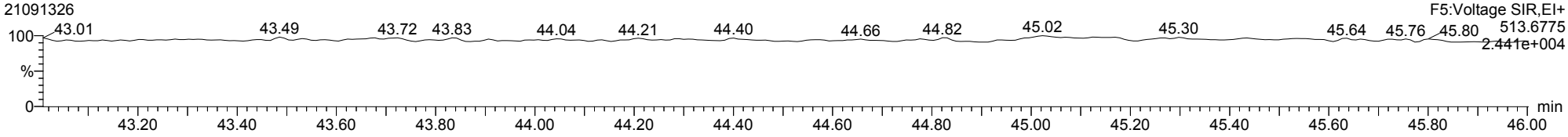
OCDF



OCDF

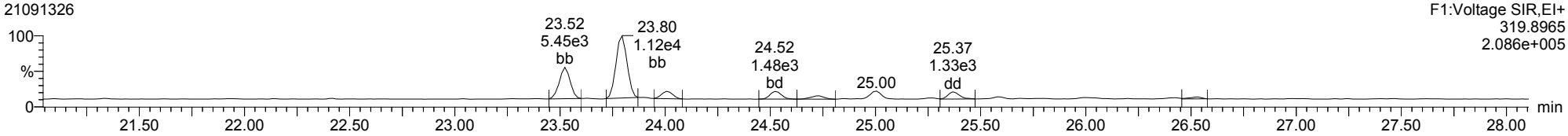


FUNCTION5 DCDPE



ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



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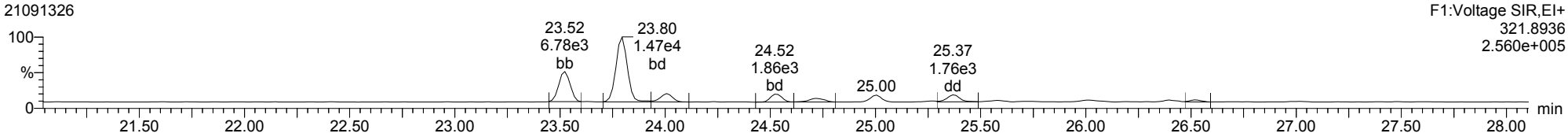
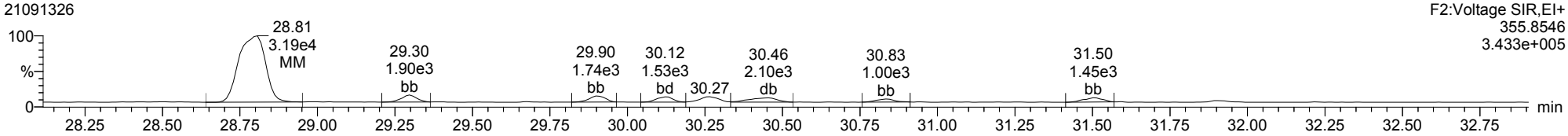
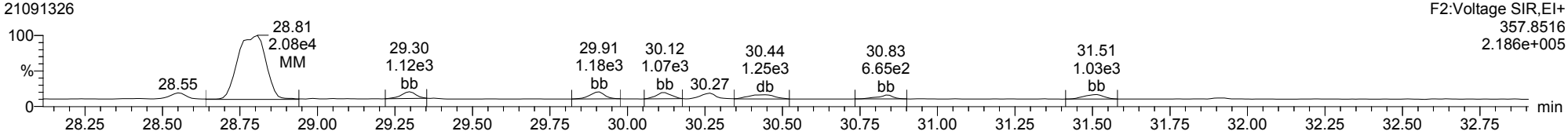


Total-pentadioxins

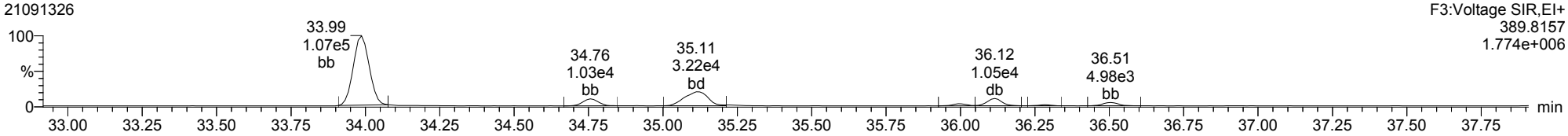


Total-pentadioxins

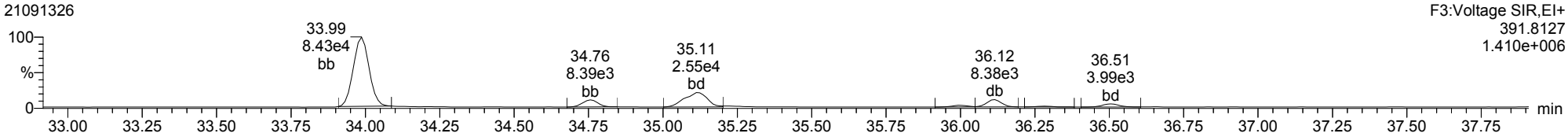


ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



Total-hexadioxins



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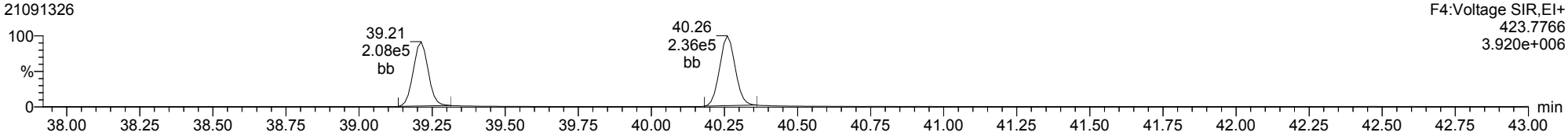

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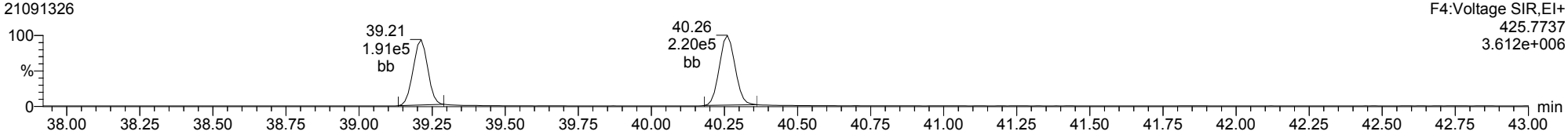
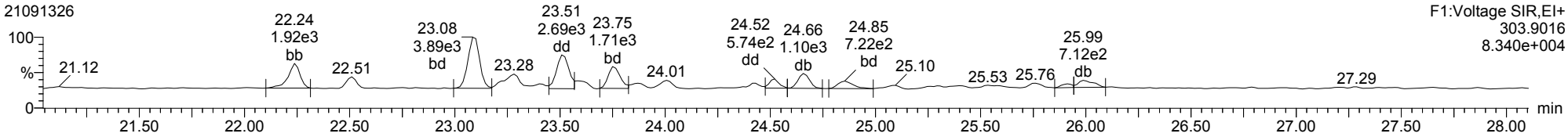
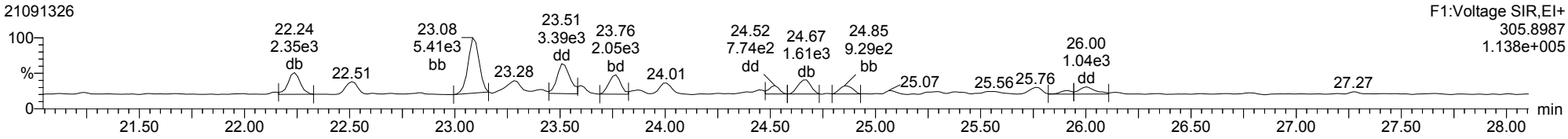


ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



Total-tetrafurans



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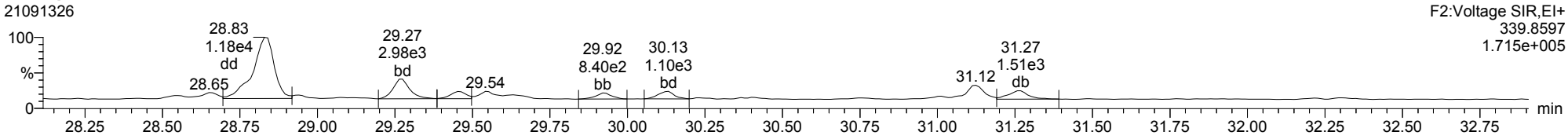
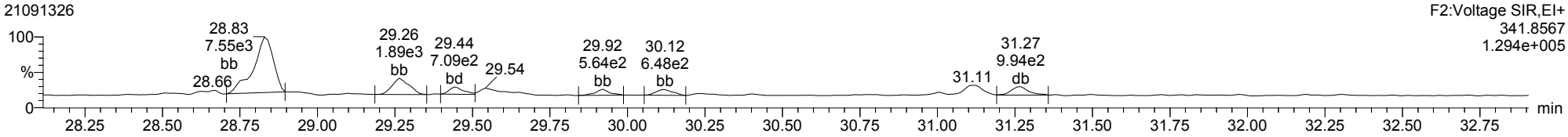
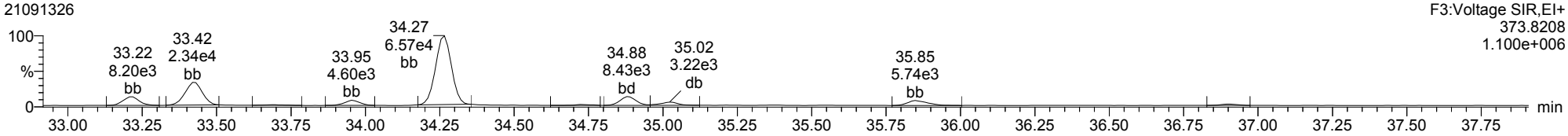


Total-pentafurans

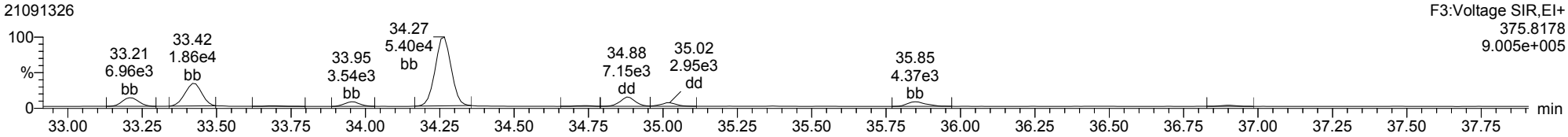


ID: 21G0138-02RE1, Name: 21091326, Date: 14-Sep-2021, Time: 08:25:09, Conditions: AUTOSPEC01, User: pk

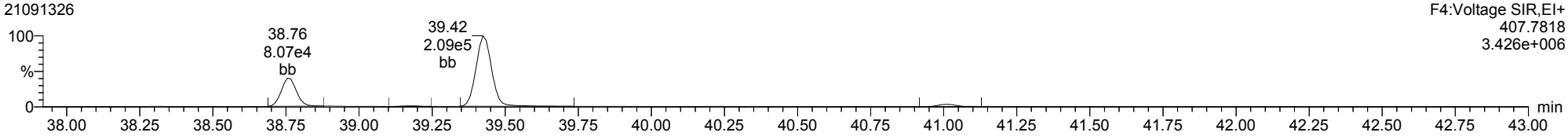
Total-hexafurans



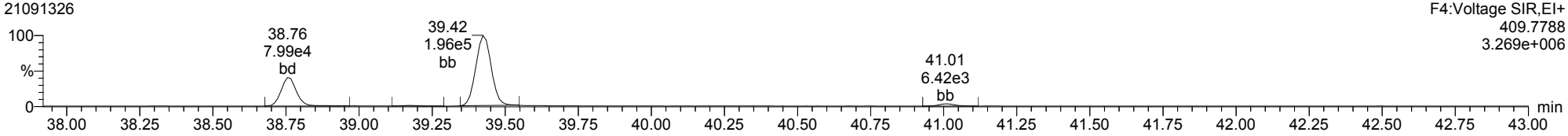
Total-hexafurans



Total-heptafurans



Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662C

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-03 C	File ID:	21091117
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/11/21 23:42
% Solids:	67.36	Preparation:	EPA 1613	Initial/Final:	14.83 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.786	0.655-0.886	0.096	1.00	1.29	ng/kg	X
1746-01-6	2,3,7,8-TCDD	1	0.669	0.655-0.886	0.103	1.00	0.473	ng/kg	J
57117-41-6	1,2,3,7,8-PeCDF	1	1.367	1.318-1.783	0.094	1.00	0.774	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.567	1.318-1.783	0.089	1.00	1.13	ng/kg	
40321-76-4	1,2,3,7,8-PeCDD	1	1.422	1.318-1.783	0.117	1.00	1.92	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.184	1.054-1.426	0.093	1.00	1.94	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.252	1.054-1.426	0.090	1.00	2.10	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.137	1.054-1.426	0.092	1.00	4.00	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.437	1.054-1.426	0.100	1.00	0.501	ng/kg	EMPC, J
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.049	1.054-1.426	0.151	1.00	1.96	ng/kg	EMPC
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.159	1.054-1.426	0.154	1.00	10.4	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.263	1.054-1.426	0.163	1.00	4.88	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.035	0.893-1.208	0.129	1.00	61.3	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.097	0.893-1.208	0.180	1.00	3.46	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.076	0.893-1.208	0.395	2.50	306	ng/kg	B
39001-02-0	OCDF	1	0.890	0.757-1.024	0.250	2.50	182	ng/kg	
3268-87-9	OCDD	1	0.888	0.757-1.024	0.511	10.0	2060	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	24.9	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	14.2	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	57.1	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	18.6	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	66.3	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	104	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	190	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	603	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 9.84
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 9.84

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662C

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-03	File ID:	21091117
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/11/21 23:42
Solids Wt%:	67.36	Preparation:	EPA 1613	Initial/Final:	14.83 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.783	0.655-0.886	0.103	72.7	24 - 169 %	
13C12-2,3,7,8-TCDD		0.763	0.655-0.886	0.110	82.4	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.606	1.318-1.783	0.083	87.2	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.609	1.318-1.783	0.087	87.5	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.559	1.318-1.783	0.099	79.3	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.512	0.434-0.587	0.100	74.8	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.515	0.434-0.587	0.093	68.9	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.513	0.434-0.587	0.102	73.0	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.512	0.434-0.587	0.124	81.1	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.275	1.054-1.426	0.073	78.7	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.263	1.054-1.426	0.067	74.0	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.463	0.374-0.506	0.124	72.8	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.462	0.374-0.506	0.151	75.0	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.052	0.893-1.208	0.130	76.9	23 - 140 %	
13C12-OCDD		0.919	0.757-1.024	0.171	81.6	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.028	80.2	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:29:27 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.776	1.001	3.761e3	4.785e3	1.108	0.786	0.770	863	2520	6.41e4	7.52e4	74.3	29.8	NO	bd	dd	0.642
12378-PeCDF	29.931	1.001	2.973e3	2.175e3	1.015	1.367	1.550	1956	1327	5.06e4	3.13e4	25.9	23.6	NO	bb	bb	0.387
23478-PeCDF	31.280	1.001	4.856e3	3.099e3	1.126	1.567	1.550	1956	1327	7.73e4	4.84e4	39.5	36.5	NO	db	db	0.564
123478-HxCDF	34.889	1.001	5.424e3	4.582e3	1.017	1.184	1.240	1157	1415	8.62e4	7.81e4	74.5	55.2	NO	dd	bd	0.971
234678-HxCDF	35.859	0.999	1.082e4	9.518e3	1.052	1.137	1.240	1157	1415	1.09e5	1.01e5	94.5	71.3	NO	MM	bb	1.997
123678-HxCDF	35.023	1.000	6.111e3	4.880e3	1.037	1.252	1.240	1157	1415	1.05e5	7.56e4	90.9	53.4	NO	db	db	1.049
123789-HxCDF	36.906	1.000	1.354e3	9.421e2	1.030	1.437	1.240	1157	1415	2.33e4	1.49e4	20.2	10.5	YES	bb	bb	0.250
1234678-HpCDF	38.766	1.000	1.521e5	1.470e5	1.327	1.035	1.050	1767	1812	2.69e6	2.53e6	1520.6	1395.0	NO	bb	bb	30.631
1234789-HpCDF	41.017	1.000	7.188e3	6.551e3	1.283	1.097	1.050	1767	1812	1.05e5	9.98e4	59.5	55.1	NO	bb	bb	1.728
OCDF	45.242	1.006	2.776e5	3.118e5	1.447	0.890	0.890	1878	1598	3.48e6	4.01e6	1851.3	2511.1	NO	bb	bb	90.805
2378-TCDD	26.411	1.001	9.293e2	1.388e3	0.920	0.669	0.770	1415	1158	1.11e4	1.90e4	7.9	16.4	NO	bd	dd	0.236
12378-PeCDD	31.514	1.000	3.771e3	2.652e3	0.995	1.422	1.550	1234	831	5.36e4	3.65e4	43.4	43.9	NO	bb	bb	0.959
123478-HxCDD	36.003	1.000	4.249e3	4.051e3	1.027	1.049	1.240	1809	1819	7.70e4	7.35e4	42.5	40.4	YES	bd	bd	0.981
123678-HxCDD	36.126	1.001	2.357e4	2.033e4	1.009	1.159	1.240	1809	1819	3.94e5	3.30e5	218.0	181.5	NO	db	dd	5.178
123789-HxCDD	36.516	1.011	1.075e4	8.511e3	0.950	1.263	1.240	1809	1819	1.90e5	1.51e5	105.1	83.2	NO	bb	bb	2.435
1234678-HpCDD	40.259	1.000	4.494e5	4.176e5	1.068	1.076	1.050	3063	2999	7.26e6	6.74e6	2371.1	2246.1	NO	bb	bb	152.966
OCDD	44.995	1.000	2.559e6	2.881e6	1.181	0.888	0.890	3331	2454	3.29e7	3.78e7	9882.5	15397.4	NO	bb	bb	1026.922
13C-2378-TCDF	25.761	1.007	5.279e5	6.740e5	1.427	0.783	0.770	2609	1964	8.40e6	1.06e7	3217.7	5420.3	NO	bb	bb	72.662
13C-12378-PeCDF	29.909	1.169	8.084e5	5.034e5	1.297	1.606	1.550	1781	1582	1.27e7	7.91e6	7142.5	5001.0	NO	bb	bb	87.211
13C-23478-PeCDF	31.257	1.222	7.735e5	4.807e5	1.236	1.609	1.550	1781	1582	1.21e7	7.52e6	6818.1	4755.5	NO	bb	bb	87.483
13C-123478-HxCDF	34.867	0.955	3.430e5	6.701e5	1.242	0.512	0.510	2038	1678	5.54e6	1.09e7	2718.8	6472.4	NO	bd	bd	74.751
13C-123678-HxCDF	35.012	0.959	3.435e5	6.667e5	1.343	0.515	0.510	2038	1678	5.66e6	1.10e7	2776.8	6571.1	NO	db	db	68.937
13C-234678-HxCDF	35.881	0.983	3.283e5	6.394e5	1.215	0.513	0.510	2038	1678	5.43e6	1.08e7	2666.4	6415.2	NO	bb	bb	73.032
13C-123789-HxCDF	36.917	1.012	3.019e5	5.893e5	1.008	0.512	0.510	2038	1678	5.09e6	9.97e6	2498.0	5944.4	NO	bb	bb	81.087
13C-1234678-HpCDF	38.755	1.062	2.329e5	5.027e5	0.926	0.463	0.440	1453	1965	3.96e6	8.41e6	2724.8	4279.4	NO	bb	bb	72.787
13C-1234789-HpCDF	41.006	1.124	1.958e5	4.239e5	0.758	0.462	0.440	1453	1965	2.94e6	6.28e6	2020.5	3196.8	NO	bb	bb	74.964
13C-1234-TCDD	25.579	0.000	5.052e5	6.542e5	1.000	0.772	0.770	2624	1212	8.18e6	1.06e7	3117.9	8738.5	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	4.615e5	6.049e5	1.116	0.763	0.770	2624	1212	7.09e6	9.37e6	2700.3	7730.5	NO	bb	bb	82.375
13C-12378-PeCDD	31.503	1.232	4.100e5	2.630e5	0.732	1.559	1.550	1007	1261	6.47e6	4.15e6	6422.7	3291.0	NO	bb	bb	79.298
13C-123478-HxCDD	35.992	0.986	4.616e5	3.622e5	0.960	1.275	1.240	1152	928	7.87e6	6.16e6	6830.7	6631.5	NO	bd	bd	78.690
13C-123678-HxCDD	36.104	0.989	4.690e5	3.713e5	1.041	1.263	1.240	1152	928	7.83e6	6.31e6	6796.9	6802.1	NO	db	db	73.974
13C-1234678-HpCDD	40.248	1.103	2.721e5	2.586e5	0.632	1.052	1.050	1370	1085	4.43e6	4.26e6	3233.5	3929.8	NO	bb	bb	76.927
13C-OCDD	44.986	1.233	4.298e5	4.675e5	0.504	0.919	0.890	1145	1425	5.52e6	6.07e6	4820.4	4260.0	NO	bb	bb	163.296
13C-123789-HxCDD	36.493	0.000	6.072e5	4.835e5	1.000	1.256	1.240	1152	928	9.98e6	8.02e6	8663.0	8637.8	NO	bb	bb	100.000
37CL-2378-TCDD	26.411	1.033	4.032e5		1.084			953		6.13e6		6439.2			bd		32.090

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.253	0.864	2.977e3	3.362e3	1.425	0.886	0.770	863	2520	4.90e4	5.48e4	56.8	21.7	NO	bb	bb	0.370
1289-TCDF	27.212	1.056	4.318e2	7.833e2	1.043	0.551	0.770	863	2520	7.25e3	1.08e4	8.4	4.3	YES	dd	dd	0.097
13468-PECDF					1.376		1.550	906	1217								
12389-PECDF	32.227	1.077	2.864e2	2.569e2	1.000	1.115	1.550	1956	1327	5.23e3	4.67e3	2.7	3.5	YES	db	bd	0.041
123468-HXCDF	33.218	0.953	1.763e4	1.472e4	1.087	1.198	1.240	1157	1415	2.78e5	2.38e5	240.4	168.4	NO	bb	bb	2.939
1368-TCDD	23.523	0.892	7.362e3	9.667e3	0.923	0.762	0.770	1415	1158	1.28e5	1.55e5	90.8	133.7	NO	bd	bd	1.730
1289-TCDD	27.016	1.024	4.274e2	7.091e2	0.794	0.603	0.770	1415	1158	5.38e3	9.04e3	3.8	7.8	YES	bb	bb	0.134
12479-PECDD	28.817	0.915	3.595e4	2.264e4	1.843	1.588	1.550	1234	831	3.52e5	2.21e5	285.1	265.3	NO	bb	bb	4.723
12389-PECDD	31.926	1.013	1.394e3	7.880e2	1.154	1.769	1.550	1234	831	1.90e4	1.13e4	15.4	13.6	NO	bb	bb	0.281
124679-HXCDD	33.998	0.945	1.227e5	9.687e4	1.125	1.267	1.240	1809	1819	1.99e6	1.59e6	1102.5	876.1	NO	bb	bb	23.696
1234679-HPCDD	39.212	0.974	4.897e5	4.643e5	1.211	1.055	1.050	3063	2999	8.30e6	7.86e6	2709.0	2621.7	NO	bb	bb	148.461
Total-tetrafurans			7.808e4		1.192			863		1.27e6							12.421
Total-penta1			1.155e5					906		1.79e6							15.853
Total-pentafurans			1.017e5		1.047			1956		1.56e6							12.651
Total-hexafurans			1.850e5		1.045			1157		2.87e6							33.093
Total-heptafurans			4.406e5		1.305			1767		7.47e6							94.819
Total-Furans			1.199e6		1.158			863		1.84e7							259.642
Total-tetradioxins			2.955e4		0.879			1415		4.64e5							7.103
Total-pentadioxins			5.953e4		1.331			1234		7.04e5							9.296
Total-hexadioxins			2.572e5		1.028			1809		3.84e6							52.182
Total-heptadioxins			9.391e5		1.140			3063		1.56e7							301.427
Total-Dioxins			3.844e6		1.092			1415		5.35e7							1396.929
Total-TEQ			5.043e6					1415		7.19e7							1656.571
FUNCTION1 PFK			3.274e7					620119		1.65e8							
FUNCTION2 PFK			1.468e6					402870		5.65e6							0.000
FUNCTION3 PFK			3.823e6					348422		5.02e7							0.000
FUNCTION4 PFK			2.131e5					291619		3.89e6							
FUNCTION5 PFK			0.000e0					227111		0.00e0							
FUNCTION1 HXCD...			5.817e3					748		8.29e4							0.000
FUNCTION1 HPCD...			1.399e3					845		2.29e4							0.000
FUNCTION2 HPCD...			7.660e2					833		1.61e4							0.000
FUNCTION3 OCDPE			7.163e2					578		1.38e4							0.000
FUNCTION4 NCDPE			4.409e3					821		7.03e4							0.000
FUNCTION5 DCDPE			5.160e2					683		5.95e3							0.000

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.67	1.220e4	1.599e4	1.192	0.76	0.77	223.7	YES	NO	db	db	1.967
2	Total-tetrafurans	24.52	1.945e3	2.276e3	1.192	0.85	0.77	34.5	YES	NO	dd	dd	0.295
3	Total-tetrafurans	23.76	1.192e4	1.520e4	1.192	0.78	0.77	223.8	YES	NO	bd	bd	1.893
4	Total-tetrafurans	23.60	1.053e3	1.489e3	1.192	0.71	0.77	21.0	YES	NO	db	db	0.177
5	Total-tetrafurans	23.52	5.309e3	6.565e3	1.192	0.81	0.77	108.7	YES	NO	dd	dd	0.829
6	Total-tetrafurans	23.10	2.273e4	2.956e4	1.192	0.77	0.77	434.3	YES	NO	bb	bd	3.650
7	Total-tetrafurans	22.53	3.960e3	5.428e3	1.192	0.73	0.77	84.9	YES	NO	bb	bb	0.655
8	1368-TCDF	22.25	2.977e3	3.362e3	1.425	0.89	0.77	56.8	YES	NO	bb	bb	0.370
9	Total-tetrafurans	26.02	3.741e3	4.919e3	1.192	0.76	0.77	62.9	YES	NO	dd	dd	0.605
10	Total-tetrafurans	25.93	1.660e3	1.980e3	1.192	0.84	0.77	31.3	YES	NO	dd	dd	0.254
11	2378-TCDF	25.78	3.761e3	4.785e3	1.108	0.79	0.77	74.3	YES	NO	bd	dd	0.642
12	Total-tetrafurans	25.28	1.134e3	1.467e3	1.192	0.77	0.77	19.4	YES	NO	db	bd	0.182
13	Total-tetrafurans	25.11	1.923e3	2.323e3	1.192	0.83	0.77	33.2	YES	NO	bd	bb	0.296
14	Total-tetrafurans	24.87	3.764e3	4.897e3	1.192	0.77	0.77	65.2	YES	NO	bb	bb	0.605

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	1.155e5	7.516e4		1.54	1.55	1970.6	YES	NO	bb	bb	15.853

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PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	29.56	1.401e4	9.246e3	1.047	1.52	1.55	93.8	YES	NO	db	dd	1.732
2	Total-pentafurans	29.46	2.890e3	1.667e3	1.047	1.73	1.55	27.3	YES	NO	dd	dd	0.339
3	Total-pentafurans	28.96	1.583e3	9.604e2	1.047	1.65	1.55	12.3	YES	NO	db	db	0.189
4	Total-pentafurans	28.84	3.560e4	2.379e4	1.047	1.50	1.55	266.9	YES	NO	dd	dd	4.422
5	Total-pentafurans	28.78	1.252e4	9.082e3	1.047	1.38	1.55	128.4	YES	NO	dd	dd	1.609
6	Total-pentafurans	28.66	6.240e3	4.141e3	1.047	1.51	1.55	40.6	YES	NO	dd	dd	0.773
7	23478-PeCDF	31.28	4.856e3	3.099e3	1.126	1.57	1.55	39.5	YES	NO	db	db	0.564
8	Total-pentafurans	31.13	1.097e4	7.591e3	1.047	1.44	1.55	85.4	YES	NO	dd	dd	1.382
9	Total-pentafurans	31.01	2.672e3	1.728e3	1.047	1.55	1.55	21.1	YES	NO	bd	bd	0.328
10	Total-pentafurans	30.77	3.987e2	2.378e2	1.047	1.68	1.55	3.6	YES	NO	db	db	0.047
11	Total-pentafurans	30.24	1.452e3	1.026e3	1.047	1.42	1.55	13.0	YES	NO	dd	dd	0.184
12	Total-pentafurans	30.13	5.518e3	3.803e3	1.047	1.45	1.55	41.0	YES	NO	bd	bd	0.694
13	12378-PeCDF	29.93	2.973e3	2.175e3	1.015	1.37	1.55	25.9	YES	NO	bb	bb	0.387

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDF	35.02	6.111e3	4.880e3	1.037	1.25	1.24	90.9	YES	NO	db	db	1.049
2	123478-HxCDF	34.89	5.424e3	4.582e3	1.017	1.18	1.24	74.5	YES	NO	dd	bd	0.971
3	Total-hexafurans	34.73	1.856e3	1.497e3	1.045	1.24	1.24	28.0	YES	NO	bd	bb	0.331
4	Total-hexafurans	34.27	7.896e4	6.593e4	1.045	1.20	1.24	1095.0	YES	NO	bb	bb	14.292
5	Total-hexafurans	33.95	3.827e3	2.801e3	1.045	1.37	1.24	48.1	YES	NO	bb	bb	0.654
6	Total-hexafurans	33.43	5.976e4	4.928e4	1.045	1.21	1.24	804.1	YES	NO	bb	bb	10.756
7	123468-HXCDF	33.22	1.763e4	1.472e4	1.087	1.20	1.24	240.4	YES	NO	bb	bb	2.939
8	234678-HxCDF	35.86	1.082e4	9.518e3	1.052	1.14	1.24	94.5	YES	NO	MM	bb	1.997
9	Total-hexafurans	35.37	5.666e2	4.876e2	1.045	1.16	1.24	9.2	YES	NO	bb	dd	0.104

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	39.43	2.789e5	2.686e5	1.305	1.04	1.05	2621.7	YES	NO	bb	bb	61.898
2	Total-heptafurans	39.18	2.503e3	2.472e3	1.305	1.01	1.05	25.6	YES	NO	bb	bb	0.562
3	1234678-HpCDF	38.77	1.521e5	1.470e5	1.327	1.03	1.05	1520.6	YES	NO	bb	bb	30.631
4	1234789-HpCDF	41.02	7.188e3	6.551e3	1.283	1.10	1.05	59.5	YES	NO	bb	bb	1.728

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ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.67	1.220e4	1.599e4	1.192	0.76	0.77	223.7	YES	NO	db	db	1.967
2	Total-tetrafurans	24.52	1.945e3	2.276e3	1.192	0.85	0.77	34.5	YES	NO	dd	dd	0.295
3	Total-tetrafurans	23.76	1.192e4	1.520e4	1.192	0.78	0.77	223.8	YES	NO	bd	bd	1.893
4	Total-tetrafurans	23.60	1.053e3	1.489e3	1.192	0.71	0.77	21.0	YES	NO	db	db	0.177
5	Total-tetrafurans	23.52	5.309e3	6.565e3	1.192	0.81	0.77	108.7	YES	NO	dd	dd	0.829
6	Total-tetrafurans	23.10	2.273e4	2.956e4	1.192	0.77	0.77	434.3	YES	NO	bb	bd	3.650
7	Total-tetrafurans	22.53	3.960e3	5.428e3	1.192	0.73	0.77	84.9	YES	NO	bb	bb	0.655
8	1368-TCDF	22.25	2.977e3	3.362e3	1.425	0.89	0.77	56.8	YES	NO	bb	bb	0.370
9	Total-tetrafurans	26.02	3.741e3	4.919e3	1.192	0.76	0.77	62.9	YES	NO	dd	dd	0.605
10	Total-tetrafurans	25.93	1.660e3	1.980e3	1.192	0.84	0.77	31.3	YES	NO	dd	dd	0.254
11	2378-TCDF	25.78	3.761e3	4.785e3	1.108	0.79	0.77	74.3	YES	NO	bd	dd	0.642
12	Total-tetrafurans	25.28	1.134e3	1.467e3	1.192	0.77	0.77	19.4	YES	NO	db	bd	0.182
13	Total-tetrafurans	25.11	1.923e3	2.323e3	1.192	0.83	0.77	33.2	YES	NO	bd	bb	0.296
14	Total-tetrafurans	24.87	3.764e3	4.897e3	1.192	0.77	0.77	65.2	YES	NO	bb	bb	0.605
15	Total-pentafurans	29.56	1.401e4	9.246e3	1.047	1.52	1.55	93.8	YES	NO	db	dd	1.732
16	Total-pentafurans	29.46	2.890e3	1.667e3	1.047	1.73	1.55	27.3	YES	NO	dd	dd	0.339
17	Total-pentafurans	28.96	1.583e3	9.604e2	1.047	1.65	1.55	12.3	YES	NO	db	db	0.189
18	Total-pentafurans	28.84	3.560e4	2.379e4	1.047	1.50	1.55	266.9	YES	NO	dd	dd	4.422
19	Total-pentafurans	28.78	1.252e4	9.082e3	1.047	1.38	1.55	128.4	YES	NO	dd	dd	1.609
20	Total-pentafurans	28.66	6.240e3	4.141e3	1.047	1.51	1.55	40.6	YES	NO	dd	dd	0.773
21	23478-PeCDF	31.28	4.856e3	3.099e3	1.126	1.57	1.55	39.5	YES	NO	db	db	0.564
22	Total-pentafurans	31.13	1.097e4	7.591e3	1.047	1.44	1.55	85.4	YES	NO	dd	dd	1.382
23	Total-pentafurans	31.01	2.672e3	1.728e3	1.047	1.55	1.55	21.1	YES	NO	bd	bd	0.328
24	Total-pentafurans	30.77	3.987e2	2.378e2	1.047	1.68	1.55	3.6	YES	NO	db	db	0.047
25	Total-pentafurans	30.24	1.452e3	1.026e3	1.047	1.42	1.55	13.0	YES	NO	dd	dd	0.184
26	Total-pentafurans	30.13	5.518e3	3.803e3	1.047	1.45	1.55	41.0	YES	NO	bd	bd	0.694
27	12378-PeCDF	29.93	2.973e3	2.175e3	1.015	1.37	1.55	25.9	YES	NO	bb	bb	0.387
28	123678-HxCDF	35.02	6.111e3	4.880e3	1.037	1.25	1.24	90.9	YES	NO	db	db	1.049
29	123478-HxCDF	34.89	5.424e3	4.582e3	1.017	1.18	1.24	74.5	YES	NO	dd	bd	0.971
30	Total-hexafurans	34.73	1.856e3	1.497e3	1.045	1.24	1.24	28.0	YES	NO	bd	bb	0.331
31	Total-hexafurans	34.27	7.896e4	6.593e4	1.045	1.20	1.24	1095.0	YES	NO	bb	bb	14.292
32	Total-hexafurans	33.95	3.827e3	2.801e3	1.045	1.37	1.24	48.1	YES	NO	bb	bb	0.654
33	Total-hexafurans	33.43	5.976e4	4.928e4	1.045	1.21	1.24	804.1	YES	NO	bb	bb	10.756
34	123468-HXCDF	33.22	1.763e4	1.472e4	1.087	1.20	1.24	240.4	YES	NO	bb	bb	2.939
35	234678-HxCDF	35.86	1.082e4	9.518e3	1.052	1.14	1.24	94.5	YES	NO	MM	bb	1.997
36	Total-hexafurans	35.37	5.666e2	4.876e2	1.045	1.16	1.24	9.2	YES	NO	bb	dd	0.104
37	Total-heptafurans	39.43	2.789e5	2.686e5	1.305	1.04	1.05	2621.7	YES	NO	bb	bb	61.898

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-heptafurans	39.18	2.503e3	2.472e3	1.305	1.01	1.05	25.6	YES	NO	bb	bb	0.562
39	1234678-HpCDF	38.77	1.521e5	1.470e5	1.327	1.03	1.05	1520.6	YES	NO	bb	bb	30.631
40	1234789-HpCDF	41.02	7.188e3	6.551e3	1.283	1.10	1.05	59.5	YES	NO	bb	bb	1.728
41	OCDF	45.24	2.776e5	3.118e5	1.447	0.89	0.89	1851.3	YES	NO	bb	bb	90.805
42	Total-penta1	27.18	1.155e5	7.516e4		1.54	1.55	1970.6	YES	NO	bb	bb	15.853

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.28	2.812e2	4.119e2	0.879	0.68	0.77	3.6	YES	NO	bd	bd	0.074
2	Total-tetradioxins	25.02	2.547e3	3.229e3	0.879	0.79	0.77	26.8	YES	NO	bb	bb	0.616
3	Total-tetradioxins	24.54	3.508e3	4.131e3	0.879	0.85	0.77	38.2	YES	NO	dd	bd	0.815
4	Total-tetradioxins	24.02	1.958e3	2.531e3	0.879	0.77	0.77	23.8	YES	NO	bb	bb	0.479
5	Total-tetradioxins	23.81	9.610e3	1.246e4	0.879	0.77	0.77	106.4	YES	NO	bb	bb	2.354
6	1368-TCDD	23.52	7.362e3	9.667e3	0.923	0.76	0.77	90.8	YES	NO	bd	bd	1.730
7	Total-tetradioxins	26.55	9.920e2	1.163e3	0.879	0.85	0.77	8.6	YES	NO	db	db	0.230
8	2378-TCDD	26.41	9.293e2	1.388e3	0.920	0.67	0.77	7.9	YES	NO	bd	dd	0.236
9	Total-tetradioxins	26.03	1.330e3	1.576e3	0.879	0.84	0.77	9.1	YES	NO	bb	bb	0.310
10	Total-tetradioxins	25.59	1.033e3	1.403e3	0.879	0.74	0.77	12.5	YES	NO	bd	dd	0.260

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.93	1.394e3	7.880e2	1.154	1.77	1.55	15.4	YES	NO	bb	bb	0.281
2	12378-PeCDD	31.51	3.771e3	2.652e3	0.995	1.42	1.55	43.4	YES	NO	bb	bb	0.959
3	Total-pentadioxins	30.84	2.007e3	1.307e3	1.331	1.54	1.55	24.3	YES	NO	bb	bb	0.370
4	Total-pentadioxins	30.47	4.707e3	2.916e3	1.331	1.61	1.55	47.1	YES	NO	bb	bb	0.851
5	Total-pentadioxins	30.27	4.145e3	2.368e3	1.331	1.75	1.55	58.6	YES	NO	bb	bb	0.727
6	Total-pentadioxins	30.13	3.851e3	2.498e3	1.331	1.54	1.55	51.8	YES	NO	bb	bb	0.709
7	Total-pentadioxins	29.31	3.701e3	2.353e3	1.331	1.57	1.55	44.6	YES	NO	bb	bb	0.676
8	12479-PECDD	28.82	3.595e4	2.264e4	1.843	1.59	1.55	285.1	YES	NO	bb	bb	4.723

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.52	1.075e4	8.511e3	0.950	1.26	1.24	105.1	YES	NO	bb	bb	2.435
2	123678-HxCDD	36.13	2.357e4	2.033e4	1.009	1.16	1.24	218.0	YES	NO	db	dd	5.178
3	Total-hexadioxins	35.23	2.795e3	2.633e3	1.028	1.06	1.24	30.7	YES	NO	db	db	0.635
4	Total-hexadioxins	35.13	7.831e4	6.068e4	1.028	1.29	1.24	489.9	YES	NO	bd	bd	16.251
5	Total-hexadioxins	34.77	1.904e4	1.506e4	1.028	1.26	1.24	174.6	YES	NO	bb	bb	3.987
6	124679-HXCDD	34.00	1.227e5	9.687e4	1.125	1.27	1.24	1102.5	YES	NO	bb	bb	23.696

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	4.494e5	4.176e5	1.068	1.08	1.05	2371.1	YES	NO	bb	bb	152.966
2	1234679-HPCDD	39.21	4.897e5	4.643e5	1.211	1.05	1.05	2709.0	YES	NO	bb	bb	148.461

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.28	2.812e2	4.119e2	0.879	0.68	0.77	3.6	YES	NO	bd	bd	0.074
2	Total-tetradioxins	25.02	2.547e3	3.229e3	0.879	0.79	0.77	26.8	YES	NO	bb	bb	0.616
3	Total-tetradioxins	24.54	3.508e3	4.131e3	0.879	0.85	0.77	38.2	YES	NO	dd	bd	0.815
4	Total-tetradioxins	24.02	1.958e3	2.531e3	0.879	0.77	0.77	23.8	YES	NO	bb	bb	0.479
5	Total-tetradioxins	23.81	9.610e3	1.246e4	0.879	0.77	0.77	106.4	YES	NO	bb	bb	2.354
6	1368-TCDD	23.52	7.362e3	9.667e3	0.923	0.76	0.77	90.8	YES	NO	bd	bd	1.730
7	Total-tetradioxins	26.55	9.920e2	1.163e3	0.879	0.85	0.77	8.6	YES	NO	db	db	0.230
8	2378-TCDD	26.41	9.293e2	1.388e3	0.920	0.67	0.77	7.9	YES	NO	bd	dd	0.236
9	Total-tetradioxins	26.03	1.330e3	1.576e3	0.879	0.84	0.77	9.1	YES	NO	bb	bb	0.310
10	Total-tetradioxins	25.59	1.033e3	1.403e3	0.879	0.74	0.77	12.5	YES	NO	bd	dd	0.260
11	12389-PECDD	31.93	1.394e3	7.880e2	1.154	1.77	1.55	15.4	YES	NO	bb	bb	0.281
12	12378-PeCDD	31.51	3.771e3	2.652e3	0.995	1.42	1.55	43.4	YES	NO	bb	bb	0.959
13	Total-pentadioxins	30.84	2.007e3	1.307e3	1.331	1.54	1.55	24.3	YES	NO	bb	bb	0.370
14	Total-pentadioxins	30.47	4.707e3	2.916e3	1.331	1.61	1.55	47.1	YES	NO	bb	bb	0.851
15	Total-pentadioxins	30.27	4.145e3	2.368e3	1.331	1.75	1.55	58.6	YES	NO	bb	bb	0.727
16	Total-pentadioxins	30.13	3.851e3	2.498e3	1.331	1.54	1.55	51.8	YES	NO	bb	bb	0.709
17	Total-pentadioxins	29.31	3.701e3	2.353e3	1.331	1.57	1.55	44.6	YES	NO	bb	bb	0.676
18	12479-PECDD	28.82	3.595e4	2.264e4	1.843	1.59	1.55	285.1	YES	NO	bb	bb	4.723
19	123789-HxCDD	36.52	1.075e4	8.511e3	0.950	1.26	1.24	105.1	YES	NO	bb	bb	2.435
20	123678-HxCDD	36.13	2.357e4	2.033e4	1.009	1.16	1.24	218.0	YES	NO	db	dd	5.178
21	Total-hexadioxins	35.23	2.795e3	2.633e3	1.028	1.06	1.24	30.7	YES	NO	db	db	0.635
22	Total-hexadioxins	35.13	7.831e4	6.068e4	1.028	1.29	1.24	489.9	YES	NO	bd	bd	16.251
23	Total-hexadioxins	34.77	1.904e4	1.506e4	1.028	1.26	1.24	174.6	YES	NO	bb	bb	3.987
24	124679-HXCDD	34.00	1.227e5	9.687e4	1.125	1.27	1.24	1102.5	YES	NO	bb	bb	23.696
25	1234678-HpCDD	40.26	4.494e5	4.176e5	1.068	1.08	1.05	2371.1	YES	NO	bb	bb	152.966
26	1234679-HPCDD	39.21	4.897e5	4.643e5	1.211	1.05	1.05	2709.0	YES	NO	bb	bb	148.461
27	OCDD	45.00	2.559e6	2.881e6	1.181	0.89	0.89	9882.5	YES	NO	bb	bb	1026.9...

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.67	1.220e4	1.599e4	1.192	0.76	0.77	223.7	YES	NO	db	db	1.967
2	Total-tetrafurans	24.52	1.945e3	2.276e3	1.192	0.85	0.77	34.5	YES	NO	dd	dd	0.295
3	Total-tetrafurans	23.76	1.192e4	1.520e4	1.192	0.78	0.77	223.8	YES	NO	bd	bd	1.893
4	Total-tetrafurans	23.60	1.053e3	1.489e3	1.192	0.71	0.77	21.0	YES	NO	db	db	0.177
5	Total-tetrafurans	23.52	5.309e3	6.565e3	1.192	0.81	0.77	108.7	YES	NO	dd	dd	0.829
6	Total-tetrafurans	23.10	2.273e4	2.956e4	1.192	0.77	0.77	434.3	YES	NO	bb	bd	3.650
7	Total-tetrafurans	22.53	3.960e3	5.428e3	1.192	0.73	0.77	84.9	YES	NO	bb	bb	0.655
8	1368-TCDF	22.25	2.977e3	3.362e3	1.425	0.89	0.77	56.8	YES	NO	bb	bb	0.370
9	Total-tetrafurans	26.02	3.741e3	4.919e3	1.192	0.76	0.77	62.9	YES	NO	dd	dd	0.605
10	Total-tetrafurans	25.93	1.660e3	1.980e3	1.192	0.84	0.77	31.3	YES	NO	dd	dd	0.254
11	2378-TCDF	25.78	3.761e3	4.785e3	1.108	0.79	0.77	74.3	YES	NO	bd	dd	0.642
12	Total-tetrafurans	25.28	1.134e3	1.467e3	1.192	0.77	0.77	19.4	YES	NO	db	bd	0.182
13	Total-tetrafurans	25.11	1.923e3	2.323e3	1.192	0.83	0.77	33.2	YES	NO	bd	bb	0.296
14	Total-tetrafurans	24.87	3.764e3	4.897e3	1.192	0.77	0.77	65.2	YES	NO	bb	bb	0.605
15	Total-pentafurans	29.56	1.401e4	9.246e3	1.047	1.52	1.55	93.8	YES	NO	db	dd	1.732
16	Total-pentafurans	29.46	2.890e3	1.667e3	1.047	1.73	1.55	27.3	YES	NO	dd	dd	0.339
17	Total-pentafurans	28.96	1.583e3	9.604e2	1.047	1.65	1.55	12.3	YES	NO	db	db	0.189
18	Total-pentafurans	28.84	3.560e4	2.379e4	1.047	1.50	1.55	266.9	YES	NO	dd	dd	4.422
19	Total-pentafurans	28.78	1.252e4	9.082e3	1.047	1.38	1.55	128.4	YES	NO	dd	dd	1.609
20	Total-pentafurans	28.66	6.240e3	4.141e3	1.047	1.51	1.55	40.6	YES	NO	dd	dd	0.773
21	23478-PeCDF	31.28	4.856e3	3.099e3	1.126	1.57	1.55	39.5	YES	NO	db	db	0.564
22	Total-pentafurans	31.13	1.097e4	7.591e3	1.047	1.44	1.55	85.4	YES	NO	dd	dd	1.382
23	Total-pentafurans	31.01	2.672e3	1.728e3	1.047	1.55	1.55	21.1	YES	NO	bd	bd	0.328
24	Total-pentafurans	30.77	3.987e2	2.378e2	1.047	1.68	1.55	3.6	YES	NO	db	db	0.047
25	Total-pentafurans	30.24	1.452e3	1.026e3	1.047	1.42	1.55	13.0	YES	NO	dd	dd	0.184
26	Total-pentafurans	30.13	5.518e3	3.803e3	1.047	1.45	1.55	41.0	YES	NO	bd	bd	0.694
27	12378-PeCDF	29.93	2.973e3	2.175e3	1.015	1.37	1.55	25.9	YES	NO	bb	bb	0.387
28	123678-HxCDF	35.02	6.111e3	4.880e3	1.037	1.25	1.24	90.9	YES	NO	db	db	1.049
29	123478-HxCDF	34.89	5.424e3	4.582e3	1.017	1.18	1.24	74.5	YES	NO	dd	bd	0.971
30	Total-hexafurans	34.73	1.856e3	1.497e3	1.045	1.24	1.24	28.0	YES	NO	bd	bb	0.331
31	Total-hexafurans	34.27	7.896e4	6.593e4	1.045	1.20	1.24	1095.0	YES	NO	bb	bb	14.292
32	Total-hexafurans	33.95	3.827e3	2.801e3	1.045	1.37	1.24	48.1	YES	NO	bb	bb	0.654
33	Total-hexafurans	33.43	5.976e4	4.928e4	1.045	1.21	1.24	804.1	YES	NO	bb	bb	10.756
34	123468-HXCDF	33.22	1.763e4	1.472e4	1.087	1.20	1.24	240.4	YES	NO	bb	bb	2.939
35	234678-HxCDF	35.86	1.082e4	9.518e3	1.052	1.14	1.24	94.5	YES	NO	MM	bb	1.997
36	Total-hexafurans	35.37	5.666e2	4.876e2	1.045	1.16	1.24	9.2	YES	NO	bb	dd	0.104
37	Total-heptafurans	39.43	2.789e5	2.686e5	1.305	1.04	1.05	2621.7	YES	NO	bb	bb	61.898

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-heptafurans	39.18	2.503e3	2.472e3	1.305	1.01	1.05	25.6	YES	NO	bb	bb	0.562
39	1234678-HpCDF	38.77	1.521e5	1.470e5	1.327	1.03	1.05	1520.6	YES	NO	bb	bb	30.631
40	1234789-HpCDF	41.02	7.188e3	6.551e3	1.283	1.10	1.05	59.5	YES	NO	bb	bb	1.728
41	OCDF	45.24	2.776e5	3.118e5	1.447	0.89	0.89	1851.3	YES	NO	bb	bb	90.805
42	Total-penta1	27.18	1.155e5	7.516e4		1.54	1.55	1970.6	YES	NO	bb	bb	15.853
43	Total-tetradioxins	25.28	2.812e2	4.119e2	0.879	0.68	0.77	3.6	YES	NO	bd	bd	0.074
44	Total-tetradioxins	25.02	2.547e3	3.229e3	0.879	0.79	0.77	26.8	YES	NO	bb	bb	0.616
45	Total-tetradioxins	24.54	3.508e3	4.131e3	0.879	0.85	0.77	38.2	YES	NO	dd	bd	0.815
46	Total-tetradioxins	24.02	1.958e3	2.531e3	0.879	0.77	0.77	23.8	YES	NO	bb	bb	0.479
47	Total-tetradioxins	23.81	9.610e3	1.246e4	0.879	0.77	0.77	106.4	YES	NO	bb	bb	2.354
48	1368-TCDD	23.52	7.362e3	9.667e3	0.923	0.76	0.77	90.8	YES	NO	bd	bd	1.730
49	Total-tetradioxins	26.55	9.920e2	1.163e3	0.879	0.85	0.77	8.6	YES	NO	db	db	0.230
50	2378-TCDD	26.41	9.293e2	1.388e3	0.920	0.67	0.77	7.9	YES	NO	bd	dd	0.236
51	Total-tetradioxins	26.03	1.330e3	1.576e3	0.879	0.84	0.77	9.1	YES	NO	bb	bb	0.310
52	Total-tetradioxins	25.59	1.033e3	1.403e3	0.879	0.74	0.77	12.5	YES	NO	bd	dd	0.260
53	12389-PECDD	31.93	1.394e3	7.880e2	1.154	1.77	1.55	15.4	YES	NO	bb	bb	0.281
54	12378-PeCDD	31.51	3.771e3	2.652e3	0.995	1.42	1.55	43.4	YES	NO	bb	bb	0.959
55	Total-pentadioxins	30.84	2.007e3	1.307e3	1.331	1.54	1.55	24.3	YES	NO	bb	bb	0.370
56	Total-pentadioxins	30.47	4.707e3	2.916e3	1.331	1.61	1.55	47.1	YES	NO	bb	bb	0.851
57	Total-pentadioxins	30.27	4.145e3	2.368e3	1.331	1.75	1.55	58.6	YES	NO	bb	bb	0.727
58	Total-pentadioxins	30.13	3.851e3	2.498e3	1.331	1.54	1.55	51.8	YES	NO	bb	bb	0.709
59	Total-pentadioxins	29.31	3.701e3	2.353e3	1.331	1.57	1.55	44.6	YES	NO	bb	bb	0.676
60	12479-PECDD	28.82	3.595e4	2.264e4	1.843	1.59	1.55	285.1	YES	NO	bb	bb	4.723
61	123789-HxCDD	36.52	1.075e4	8.511e3	0.950	1.26	1.24	105.1	YES	NO	bb	bb	2.435
62	123678-HxCDD	36.13	2.357e4	2.033e4	1.009	1.16	1.24	218.0	YES	NO	db	dd	5.178
63	Total-hexadioxins	35.23	2.795e3	2.633e3	1.028	1.06	1.24	30.7	YES	NO	db	db	0.635
64	Total-hexadioxins	35.13	7.831e4	6.068e4	1.028	1.29	1.24	489.9	YES	NO	bd	bd	16.251
65	Total-hexadioxins	34.77	1.904e4	1.506e4	1.028	1.26	1.24	174.6	YES	NO	bb	bb	3.987
66	124679-HXCDD	34.00	1.227e5	9.687e4	1.125	1.27	1.24	1102.5	YES	NO	bb	bb	23.696
67	1234678-HpCDD	40.26	4.494e5	4.176e5	1.068	1.08	1.05	2371.1	YES	NO	bb	bb	152.966
68	1234679-HPCDD	39.21	4.897e5	4.643e5	1.211	1.05	1.05	2709.0	YES	NO	bb	bb	148.461
69	OCDD	45.00	2.559e6	2.881e6	1.181	0.89	0.89	9882.5	YES	NO	bb	bb	1026.9...

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.99	6.948e5					10.7	YES		bd		
2	FUNCTION1 PFK	22.25	5.885e5					7.0	YES		bb		
3	FUNCTION1 PFK	21.86	5.828e5					4.3	YES		db		
4	FUNCTION1 PFK	21.62	5.519e6					20.6	YES		bd		
5	FUNCTION1 PFK	21.21	1.944e6					24.7	YES		bb		
6	FUNCTION1 PFK	26.21	1.314e5					2.6	NO		bd		
7	FUNCTION1 PFK	26.05	2.786e4					0.8	NO		bb		
8	FUNCTION1 PFK	25.81	1.302e5					3.0	YES		bb		
9	FUNCTION1 PFK	25.64	1.320e5					3.0	YES		db		
10	FUNCTION1 PFK	25.59	1.378e5					4.4	YES		dd		
11	FUNCTION1 PFK	25.50	1.728e5					3.4	YES		bd		
12	FUNCTION1 PFK	25.35	1.165e5					2.9	NO		bb		
13	FUNCTION1 PFK	25.22	9.128e4					2.6	NO		bb		
14	FUNCTION1 PFK	24.72	5.401e4					1.6	NO		bb		
15	FUNCTION1 PFK	24.58	7.981e4					2.6	NO		db		
16	FUNCTION1 PFK	24.51	5.736e5					6.6	YES		dd		
17	FUNCTION1 PFK	24.02	6.975e6					28.3	YES		dd		
18	FUNCTION1 PFK	23.80	5.091e6					37.6	YES		bd		
19	FUNCTION1 PFK	23.54	4.224e6					40.8	YES		db		
20	FUNCTION1 PFK	23.36	4.263e6					32.0	YES		dd		
21	FUNCTION1 PFK	23.10	9.080e5					15.6	YES		dd		
22	FUNCTION1 PFK	27.82	3.675e3					0.4	NO		bb		
23	FUNCTION1 PFK	27.67	3.985e4					1.9	NO		bb		
24	FUNCTION1 PFK	27.45	7.456e4					1.9	NO		bb		
25	FUNCTION1 PFK	27.38	1.081e4					0.8	NO		bb		
26	FUNCTION1 PFK	26.58	2.869e4					1.2	NO		db		
27	FUNCTION1 PFK	26.52	3.506e4					1.7	NO		bd		
28	FUNCTION1 PFK	26.35	1.072e5					2.3	NO		db		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.43	1.468e6					14.0	YES		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.79	7.170e4					2.9	NO		bb		0.000
2	FUNCTION3 PFK	33.65	5.941e4					2.3	NO		bb		0.000
3	FUNCTION3 PFK	33.41	5.692e4					1.3	NO		db		0.000
4	FUNCTION3 PFK	33.18	2.278e5					4.8	YES		dd		0.000
5	FUNCTION3 PFK	33.05	8.063e4					3.8	YES		dd		0.000
6	FUNCTION3 PFK	33.01	1.205e4					2.2	NO		bd		0.000
7	FUNCTION3 PFK	35.70	3.131e4					3.7	YES		bb		0.000
8	FUNCTION3 PFK	35.52	9.678e3					1.2	NO		bb		0.000
9	FUNCTION3 PFK	35.39	9.979e3					1.4	NO		bb		0.000
10	FUNCTION3 PFK	35.35	4.653e4					4.3	YES		db		0.000
11	FUNCTION3 PFK	35.30	7.849e4					4.6	YES		dd		0.000
12	FUNCTION3 PFK	35.21	2.005e5					5.1	YES		bd		0.000
13	FUNCTION3 PFK	35.05	1.372e5					5.4	YES		db		0.000
14	FUNCTION3 PFK	34.89	6.363e4					3.1	YES		dd		0.000
15	FUNCTION3 PFK	34.83	4.622e4					2.7	NO		dd		0.000
16	FUNCTION3 PFK	34.78	2.296e4					1.7	NO		dd		0.000
17	FUNCTION3 PFK	34.73	1.938e4					1.9	NO		bd		0.000
18	FUNCTION3 PFK	34.43	1.671e3					0.4	NO		bb		0.000
19	FUNCTION3 PFK	34.24	3.861e4					2.0	NO		bb		0.000
20	FUNCTION3 PFK	34.15	3.190e4					2.1	NO		bb		0.000
21	FUNCTION3 PFK	33.95	2.117e4					2.7	NO		db		0.000
22	FUNCTION3 PFK	33.92	3.232e4					2.3	NO		bd		0.000
23	FUNCTION3 PFK	37.70	1.786e4					2.0	NO		db		0.000
24	FUNCTION3 PFK	37.64	1.472e4					1.5	NO		bd		0.000
25	FUNCTION3 PFK	37.53	1.479e5					5.1	YES		db		0.000
26	FUNCTION3 PFK	37.44	2.529e5					5.2	YES		bd		0.000
27	FUNCTION3 PFK	37.26	1.166e5					6.8	YES		db		0.000
28	FUNCTION3 PFK	37.18	2.115e5					9.0	YES		dd		0.000
29	FUNCTION3 PFK	37.15	1.699e5					8.9	YES		dd		0.000
30	FUNCTION3 PFK	37.02	1.336e5					8.3	YES		dd		0.000
31	FUNCTION3 PFK	36.98	3.209e5					8.1	YES		bd		0.000
32	FUNCTION3 PFK	36.81	5.130e5					9.9	YES		db		0.000
33	FUNCTION3 PFK	36.55	7.166e4					3.6	YES		dd		0.000
34	FUNCTION3 PFK	36.50	1.908e4					2.1	NO		bd		0.000
35	FUNCTION3 PFK	36.39	4.749e4					1.7	NO		bb		0.000
36	FUNCTION3 PFK	36.22	5.688e4					2.3	NO		db		0.000
37	FUNCTION3 PFK	36.03	3.772e5					4.2	YES		bd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	35.76	5.206e4					3.6	YES		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	42.73	5.877e3					1.1	NO		bb		
2	FUNCTION4 PFK	42.14	2.888e4					2.4	NO		bb		
3	FUNCTION4 PFK	40.93	6.807e4					3.0	YES		bb		
4	FUNCTION4 PFK	38.14	2.754e4					1.9	NO		bb		
5	FUNCTION4 PFK	38.06	8.273e4					4.9	YES		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	23.51	1.083e2					2.3	NO		db		0.000
2	FUNCTION1 HXCD...	23.46	1.092e2					3.0	NO		bd		0.000
3	FUNCTION1 HXCD...	22.75	1.286e2					3.6	YES		bb		0.000
4	FUNCTION1 HXCD...	22.36	3.601e2					4.4	YES		db		0.000
5	FUNCTION1 HXCD...	22.19	3.533e2					6.7	YES		bd		0.000
6	FUNCTION1 HXCD...	22.00	2.946e2					2.7	NO		db		0.000
7	FUNCTION1 HXCD...	21.75	1.400e2					1.8	NO		bd		0.000
8	FUNCTION1 HXCD...	21.21	5.042e2					4.4	YES		bb		0.000
9	FUNCTION1 HXCD...	27.65	1.826e2					3.3	YES		bb		0.000
10	FUNCTION1 HXCD...	26.79	4.206e2					7.1	YES		bb		0.000
11	FUNCTION1 HXCD...	26.12	9.629e2					21.3	YES		db		0.000
12	FUNCTION1 HXCD...	25.96	1.054e2					3.3	YES		dd		0.000
13	FUNCTION1 HXCD...	25.91	1.343e2					3.7	YES		bd		0.000
14	FUNCTION1 HXCD...	25.75	6.178e2					12.5	YES		bb		0.000
15	FUNCTION1 HXCD...	25.10	2.023e2					5.4	YES		bb		0.000
16	FUNCTION1 HXCD...	24.45	1.028e2					2.6	NO		bb		0.000
17	FUNCTION1 HXCD...	23.99	1.255e2					2.6	NO		db		0.000
18	FUNCTION1 HXCD...	23.76	9.639e2					20.2	YES		bd		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	25.05	1.337e2					3.2	YES		bb		0.000
2	FUNCTION1 HPCD...	23.37	3.684e2					8.1	YES		bb		0.000
3	FUNCTION1 HPCD...	23.02	2.033e2					3.4	YES		bb		0.000
4	FUNCTION1 HPCD...	22.33	1.563e2					2.4	NO		bb		0.000
5	FUNCTION1 HPCD...	22.19	8.964e1					2.5	NO		bb		0.000
6	FUNCTION1 HPCD...	27.89	1.781e2					3.5	YES		bb		0.000
7	FUNCTION1 HPCD...	26.34	1.984e2					2.2	NO		bb		0.000
8	FUNCTION1 HPCD...	25.78	7.096e1					1.8	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.84	7.347e1					1.8	NO		bb		0.000
2	FUNCTION2 HPCD...	31.32	9.502e1					4.3	YES		bb		0.000
3	FUNCTION2 HPCD...	30.23	1.120e2					3.6	YES		bb		0.000
4	FUNCTION2 HPCD...	28.95	4.000e2					7.8	YES		bb		0.000
5	FUNCTION2 HPCD...	28.62	8.544e1					1.8	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.61	1.091e2					4.4	YES		bb		0.000
2	FUNCTION3 OCDPE	37.45	7.572e1					2.3	NO		bb		0.000
3	FUNCTION3 OCDPE	36.60	9.016e1					4.1	YES		db		0.000
4	FUNCTION3 OCDPE	36.49	2.214e2					6.2	YES		bd		0.000
5	FUNCTION3 OCDPE	35.99	9.750e1					4.1	YES		bb		0.000
6	FUNCTION3 OCDPE	33.98	1.223e2					2.8	NO		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.42	4.409e3					85.7	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.02	5.160e2					8.7	YES		bb		0.000

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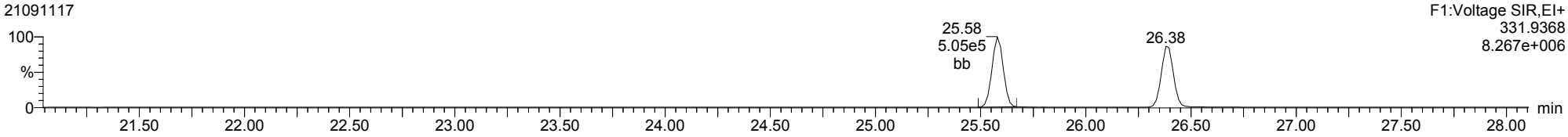

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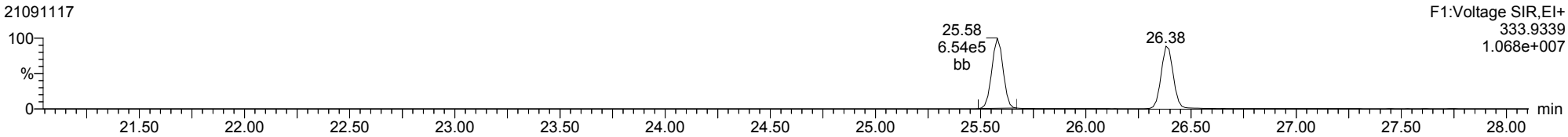

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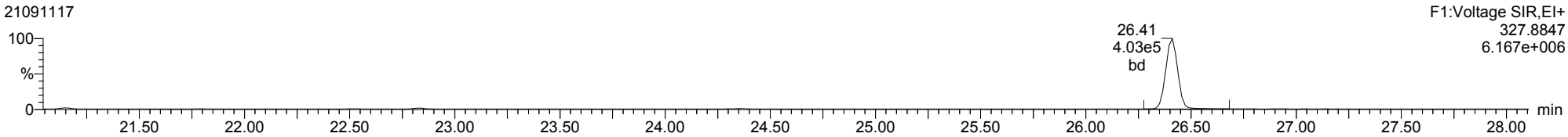

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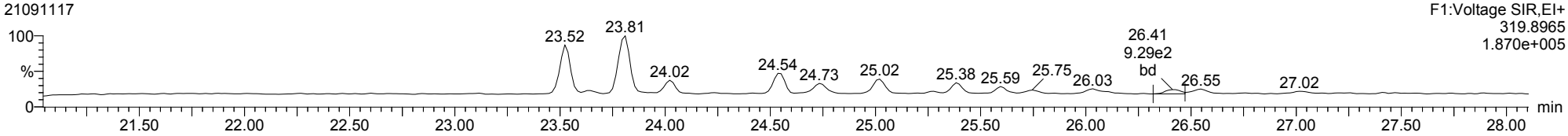

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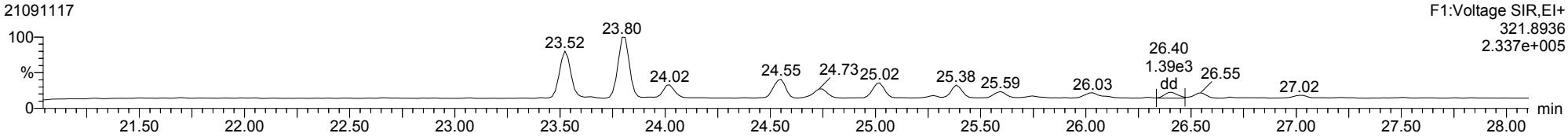

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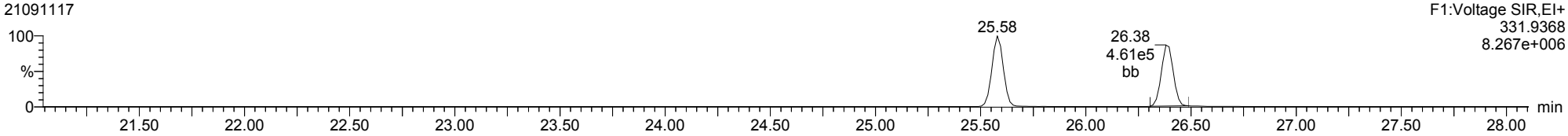

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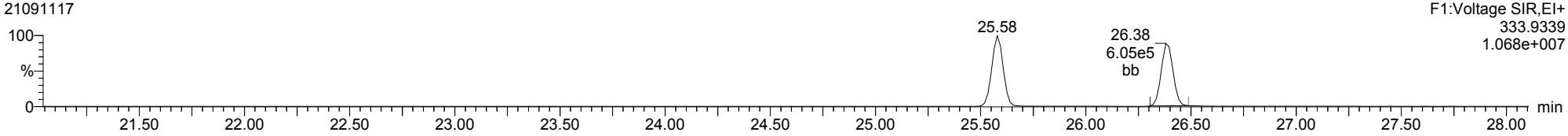

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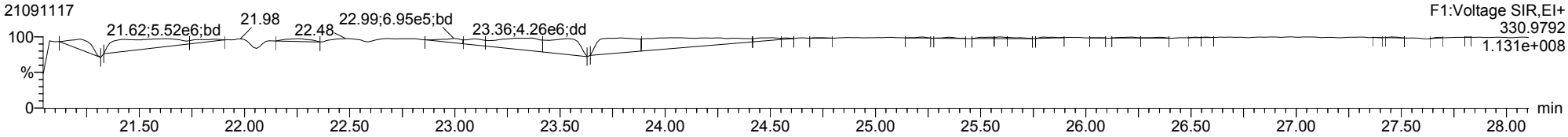

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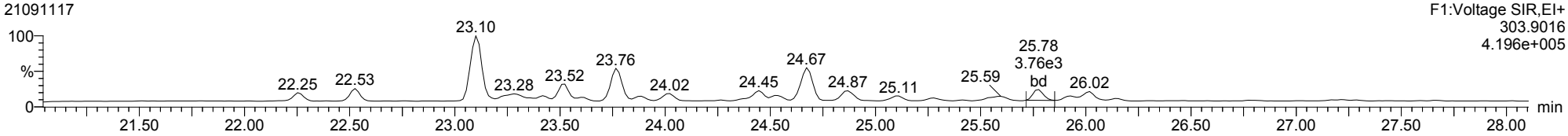

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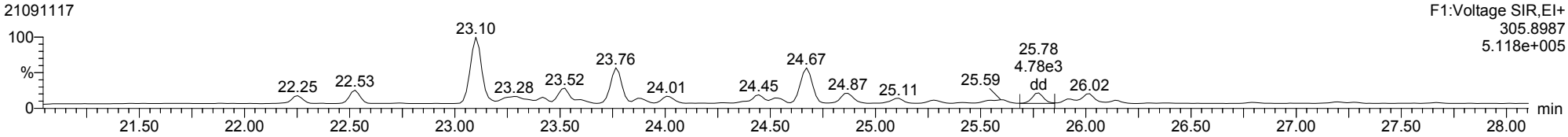

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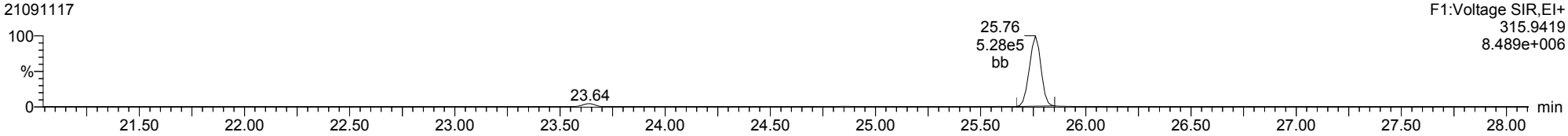

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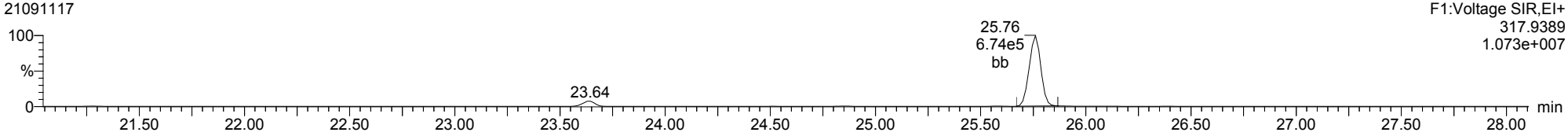

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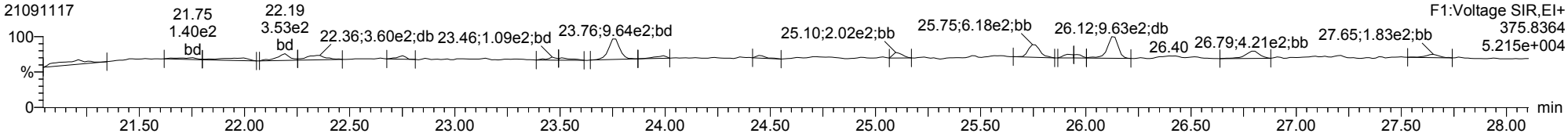

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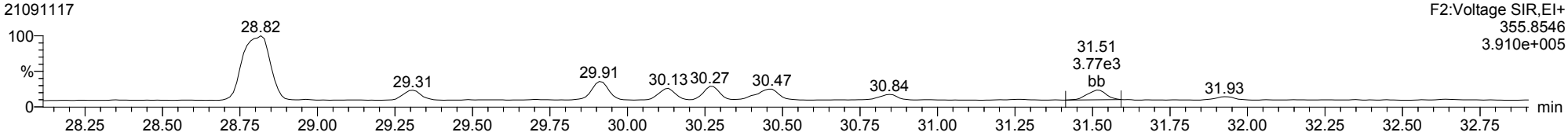

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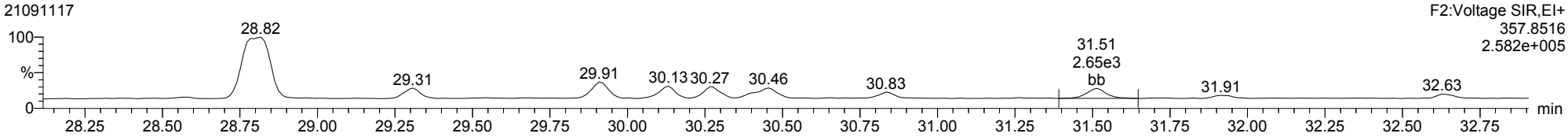

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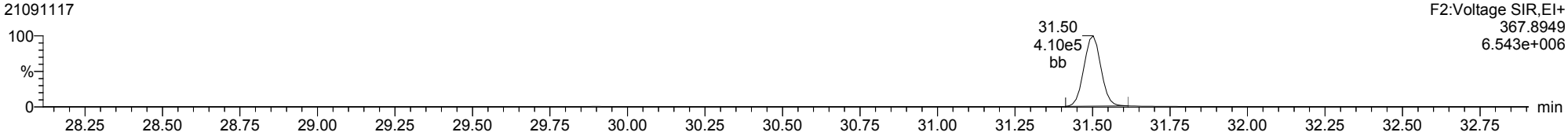

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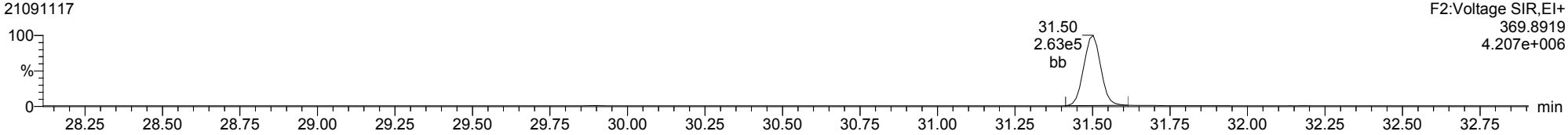
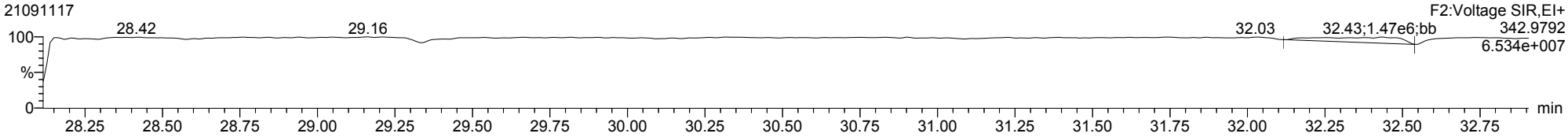


FUNCTION2 PFK



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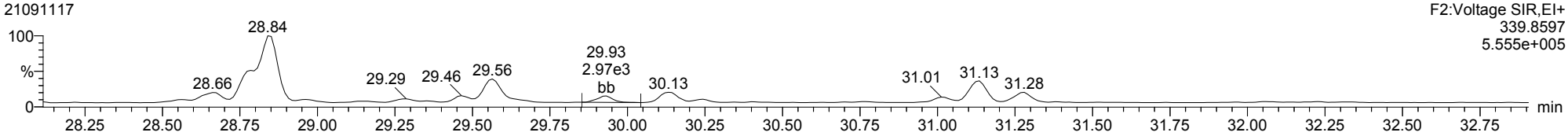

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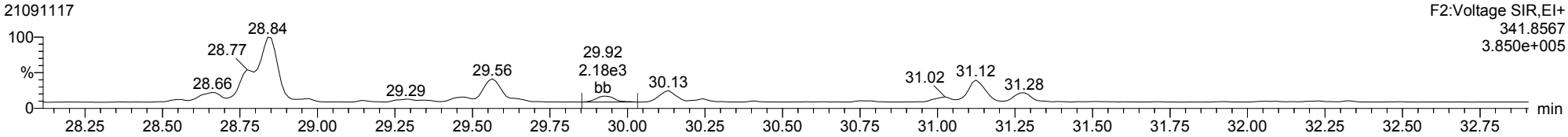

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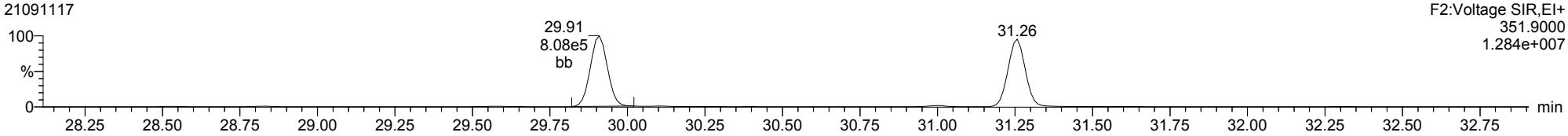

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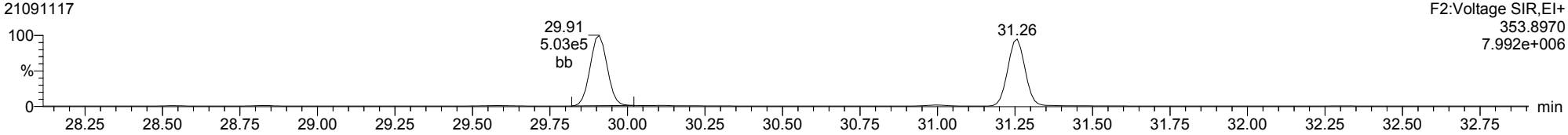

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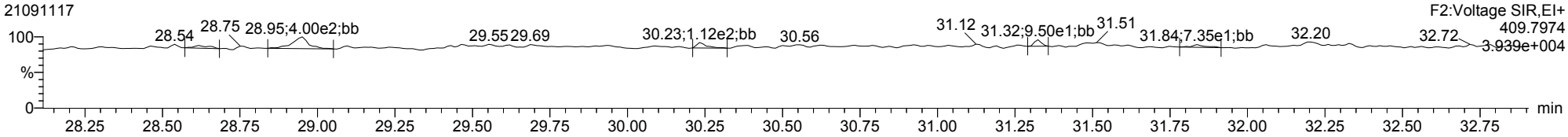

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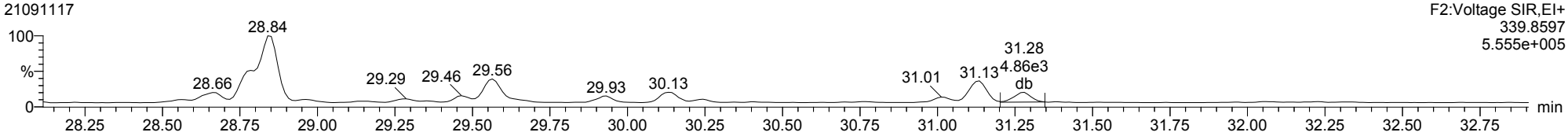
23478-PeCDF



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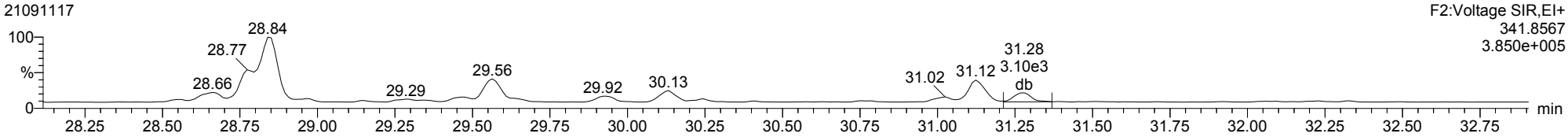

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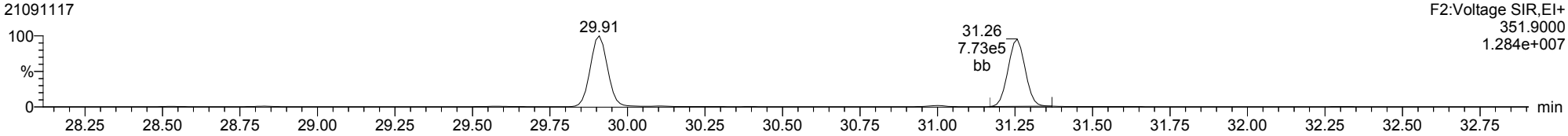

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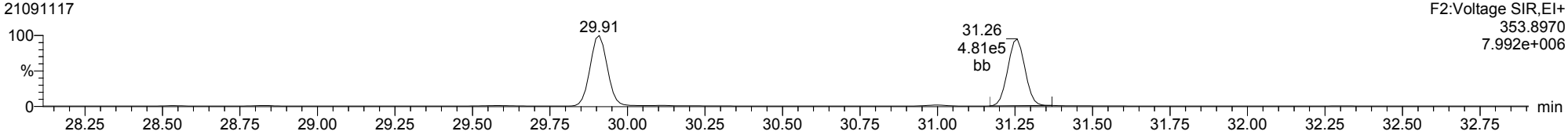

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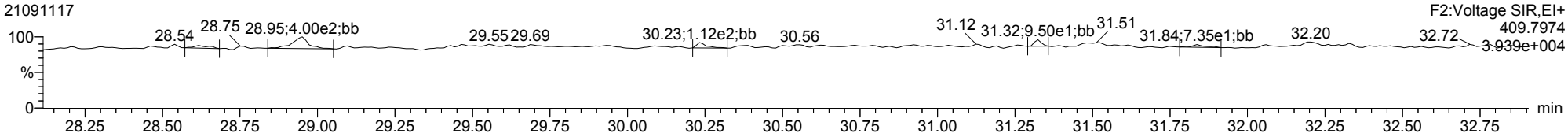

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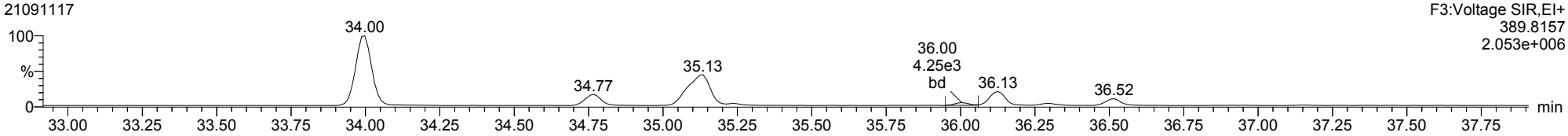

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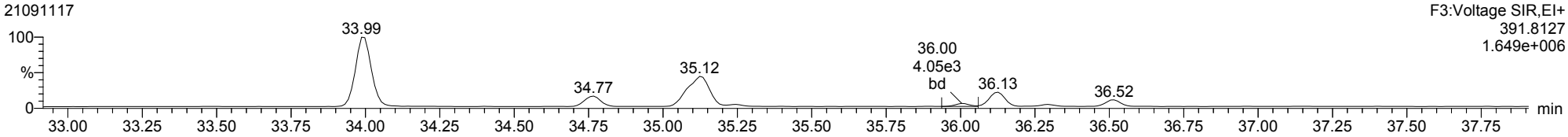

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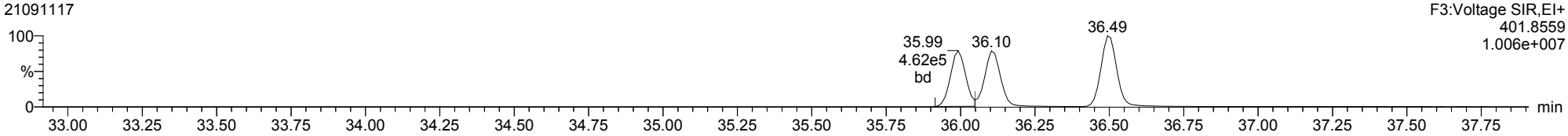

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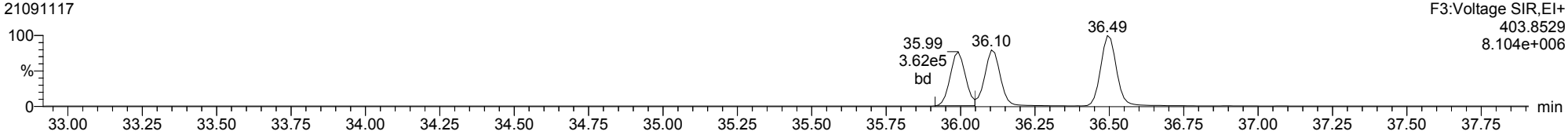

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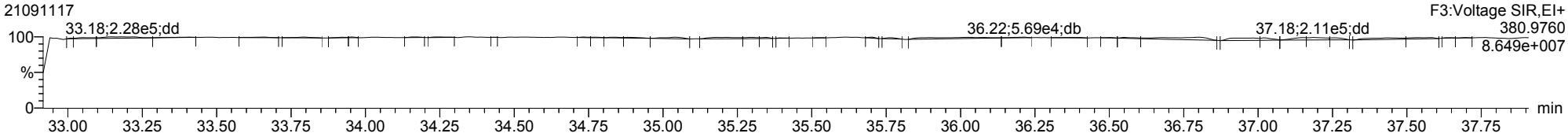

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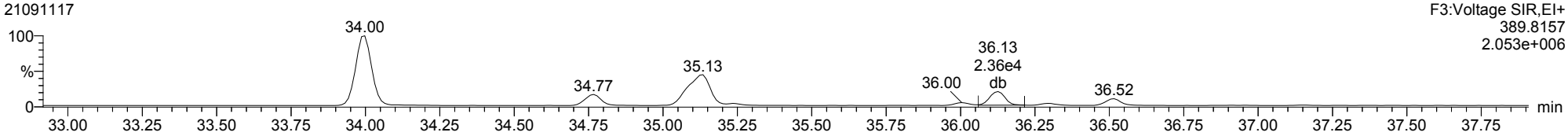

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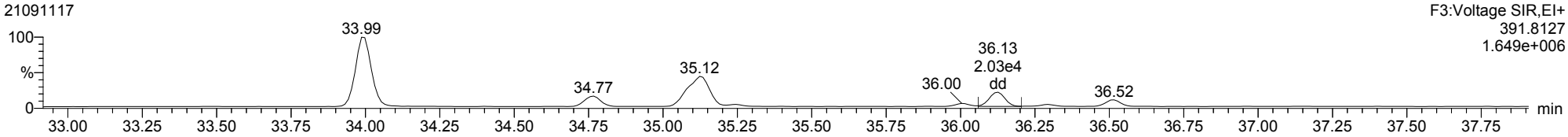

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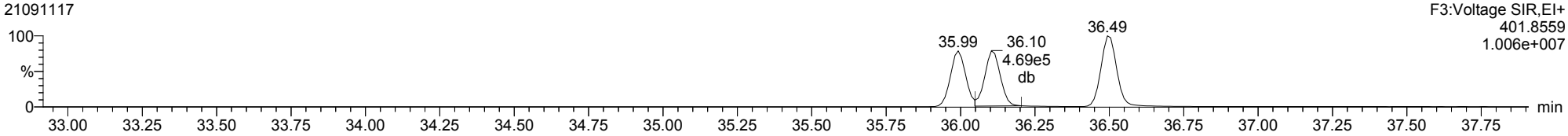

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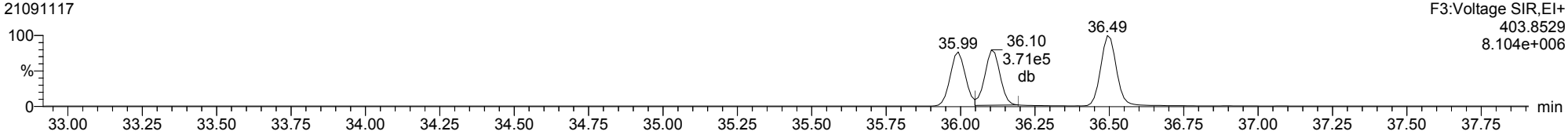

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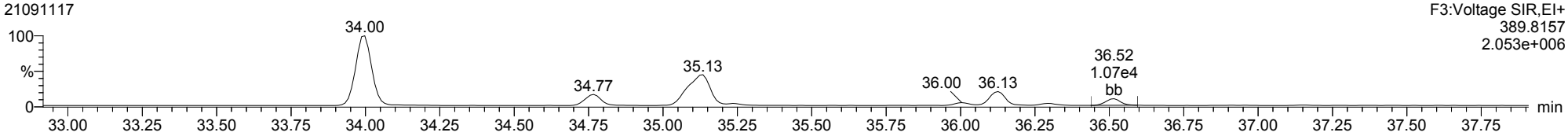

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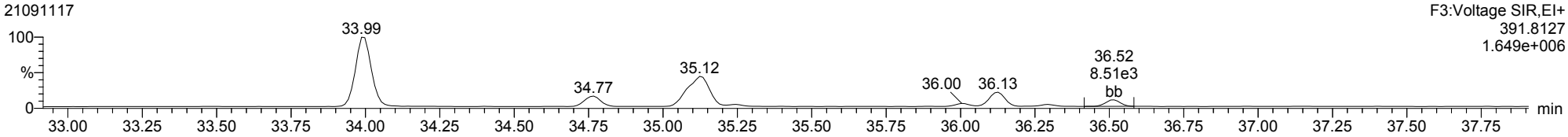

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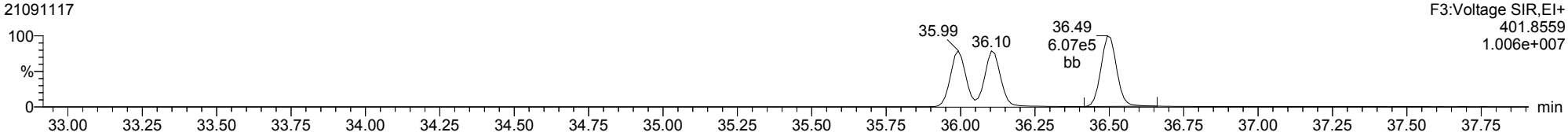

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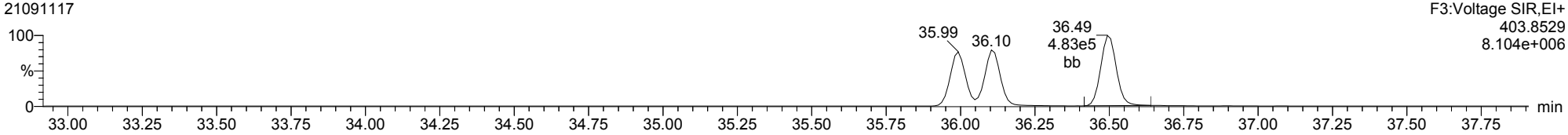

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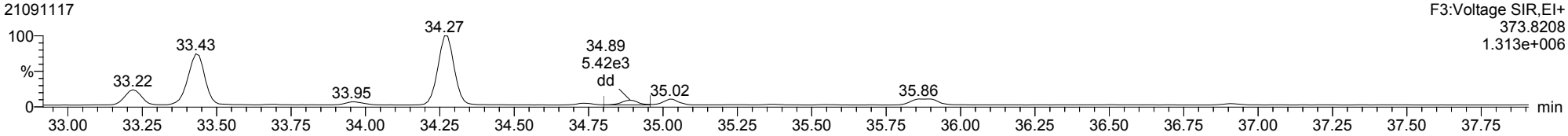

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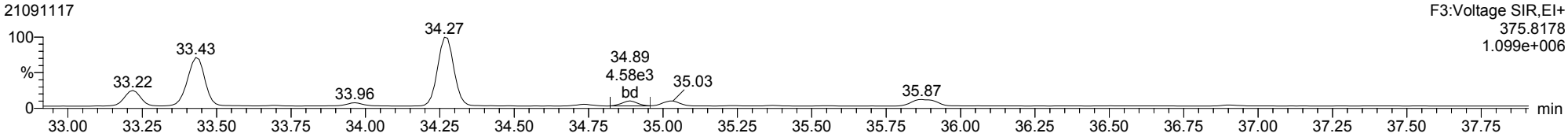

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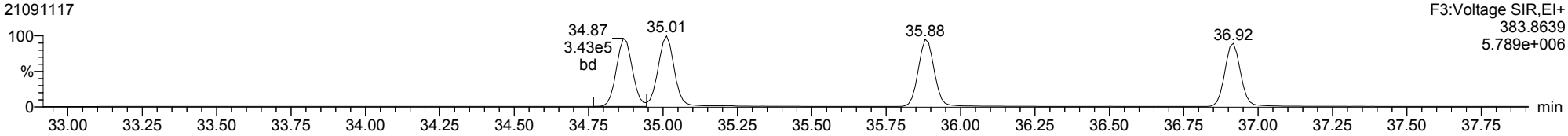

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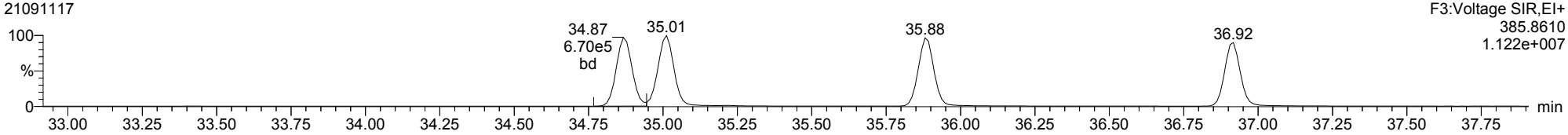

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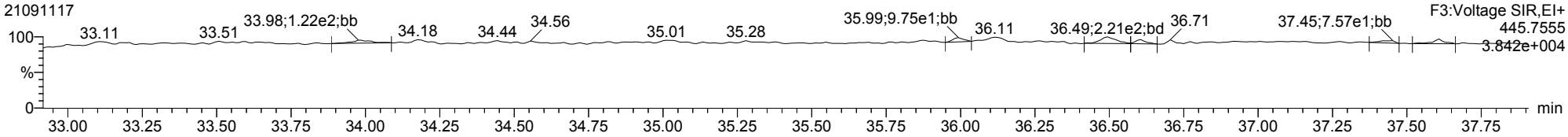

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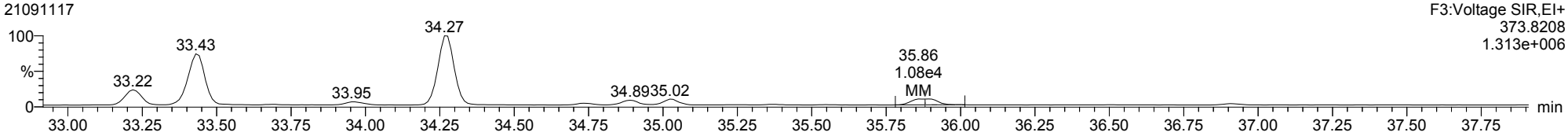

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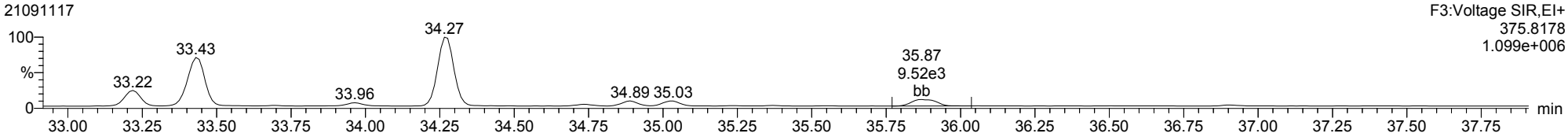

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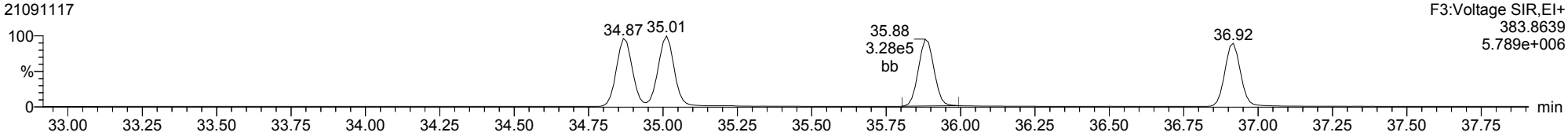

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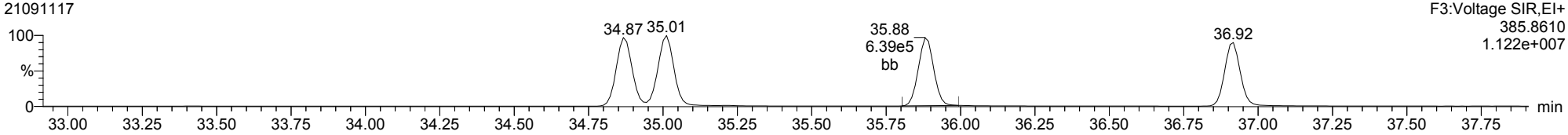

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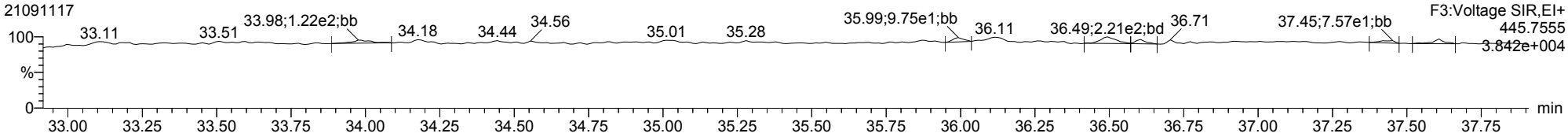

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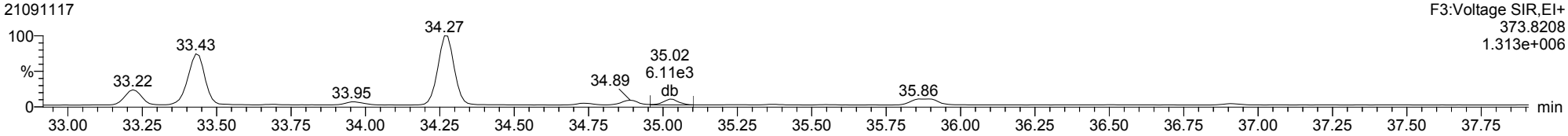

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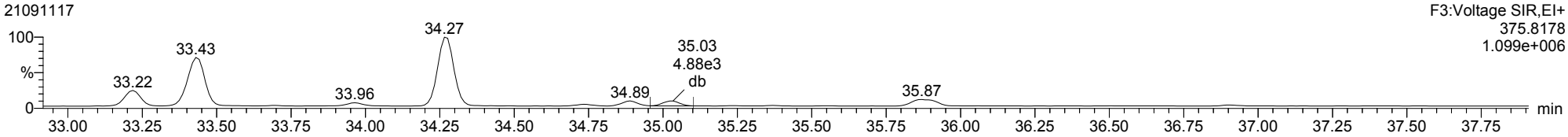

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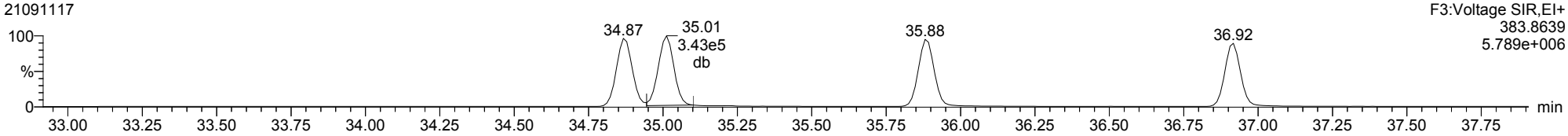

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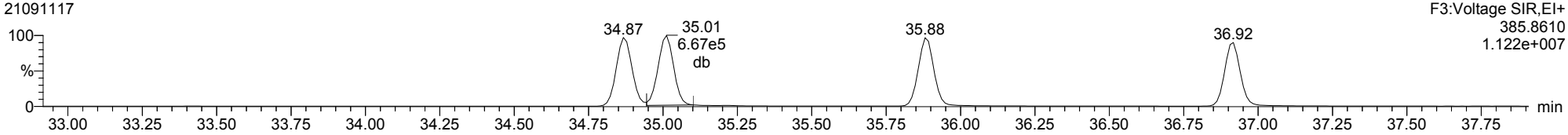

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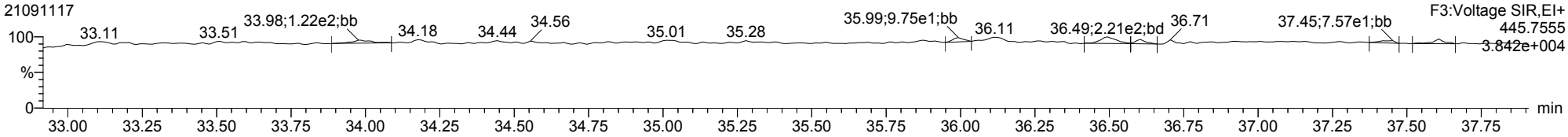

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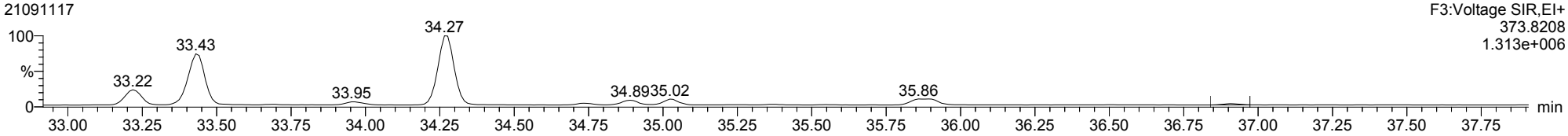

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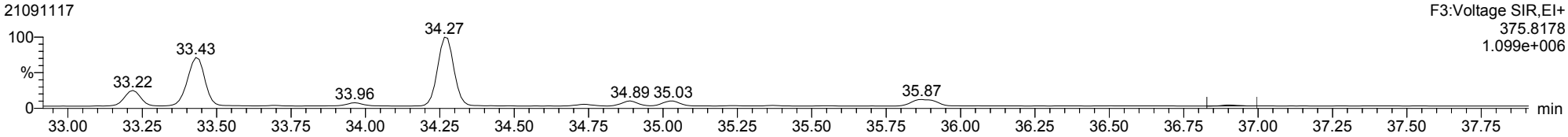

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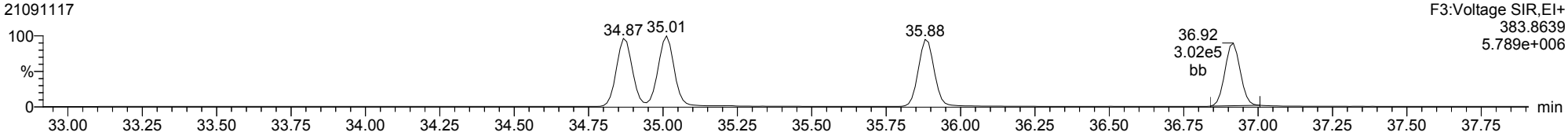

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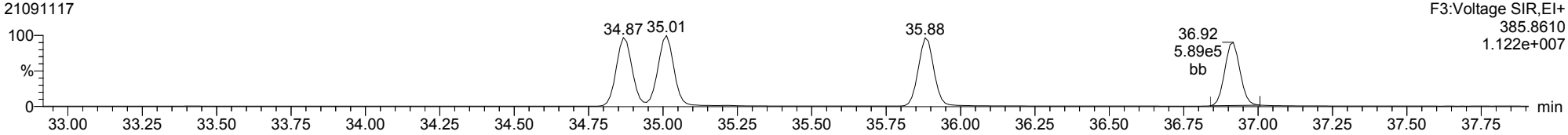

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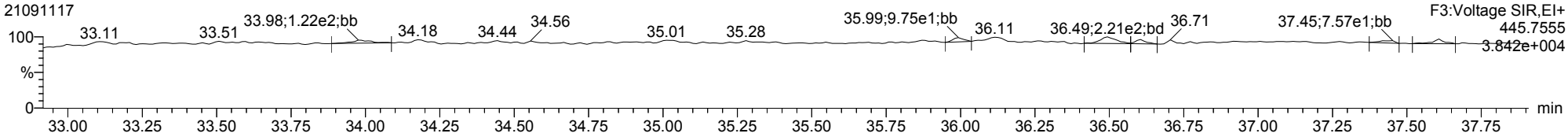

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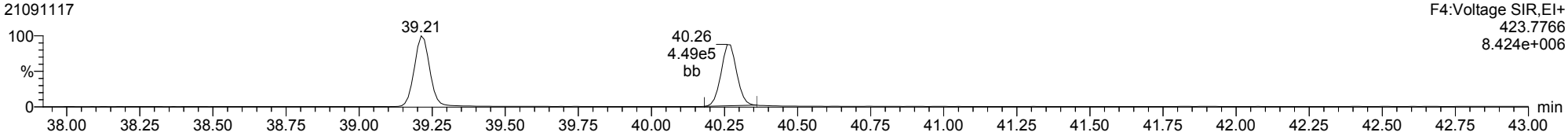

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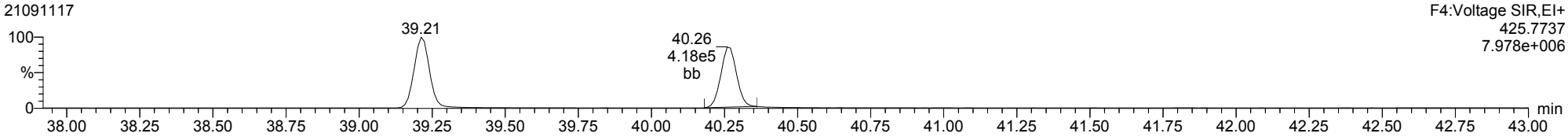

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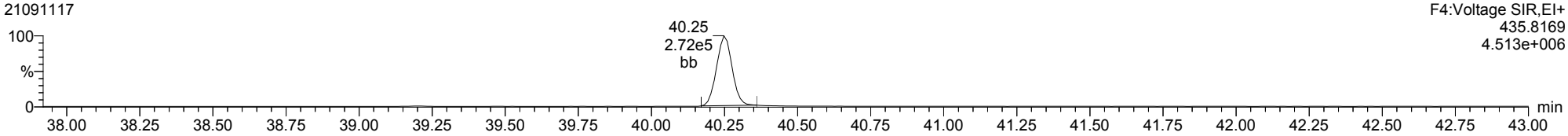

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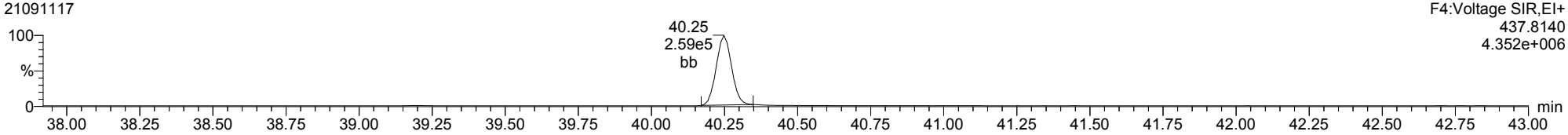

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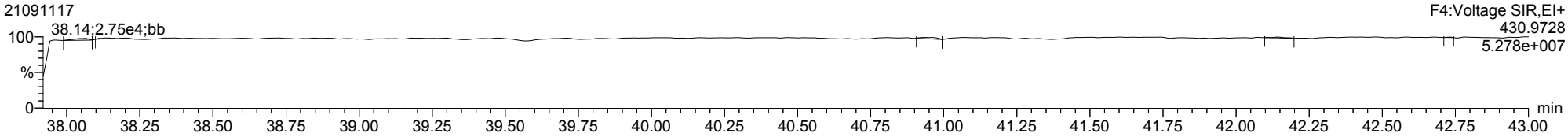

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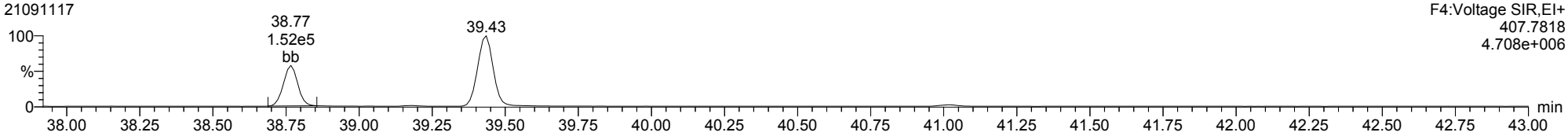

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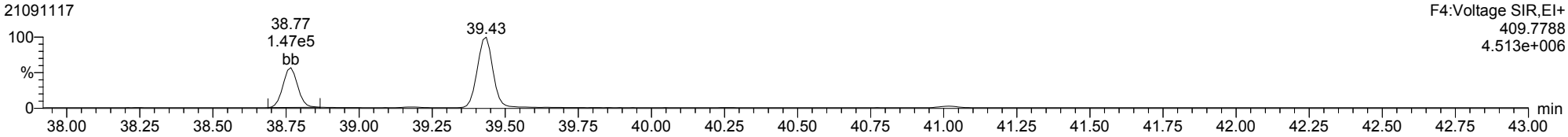

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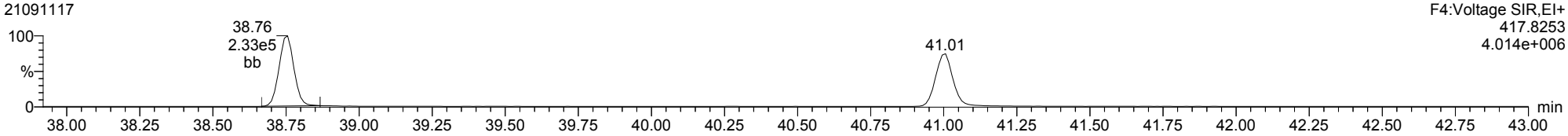

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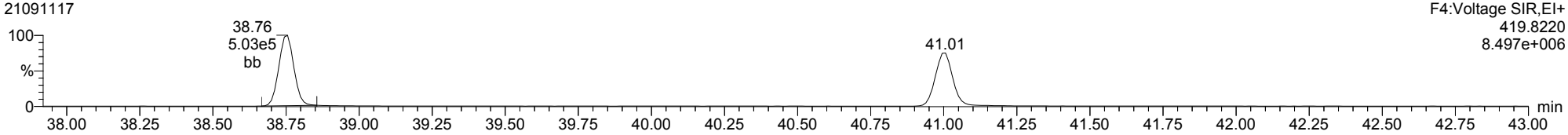

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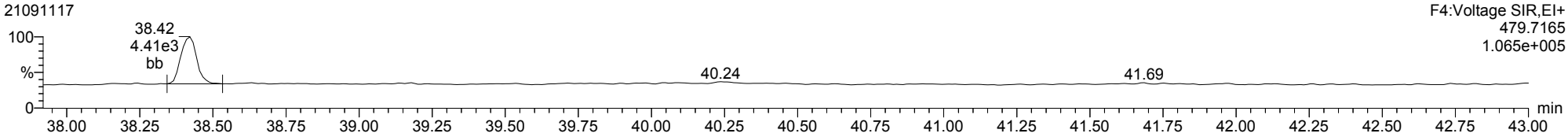

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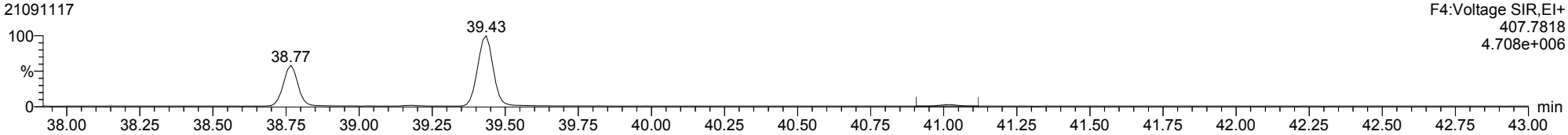

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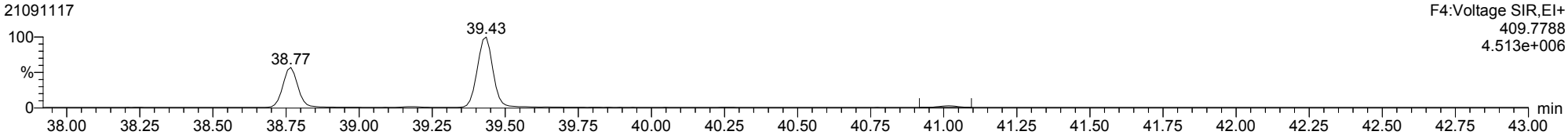

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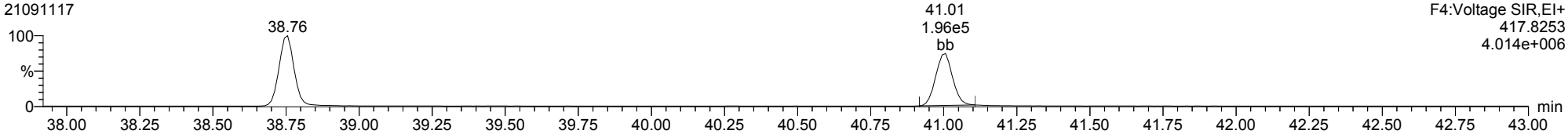

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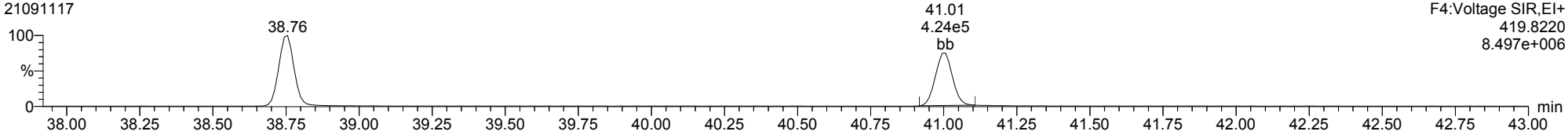

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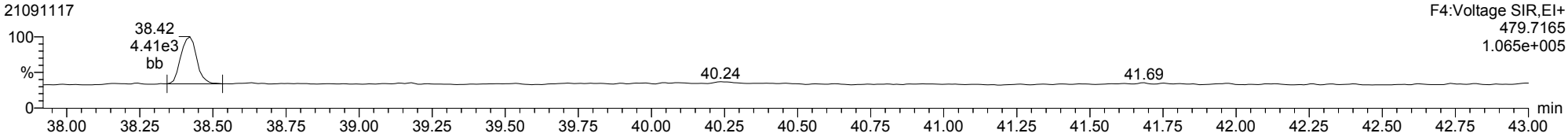

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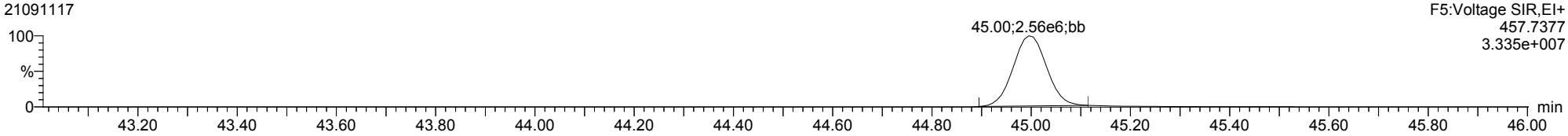

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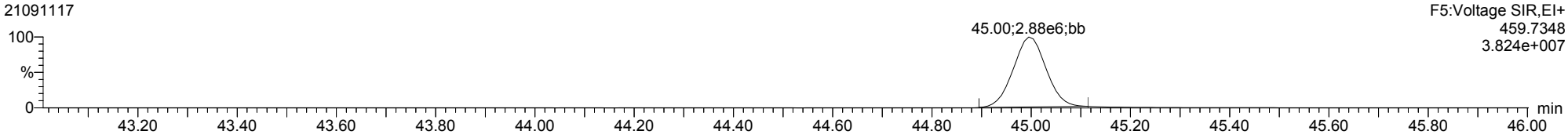
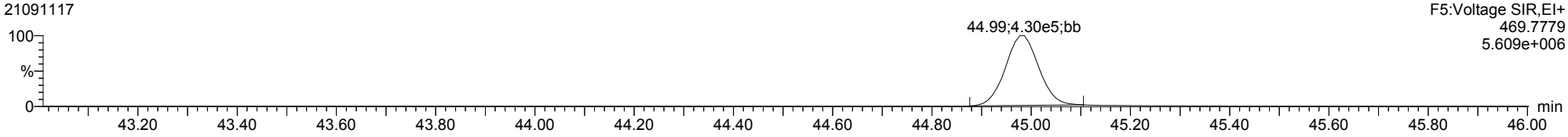


13C-OCDD



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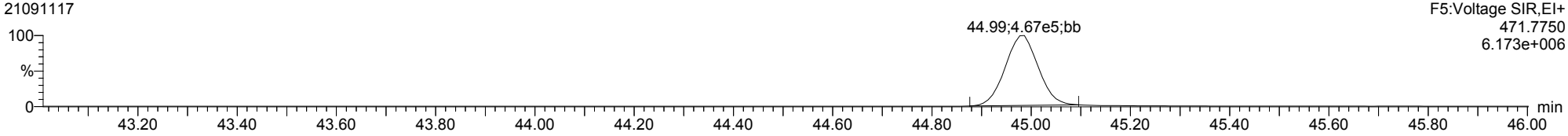
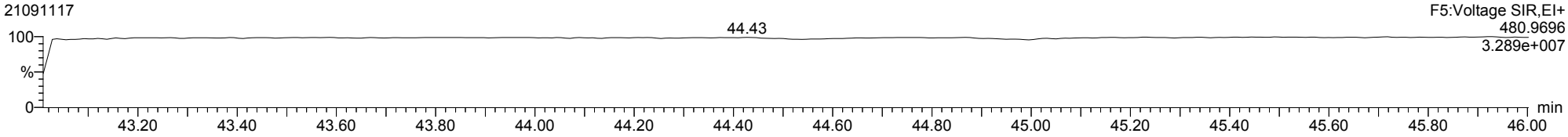
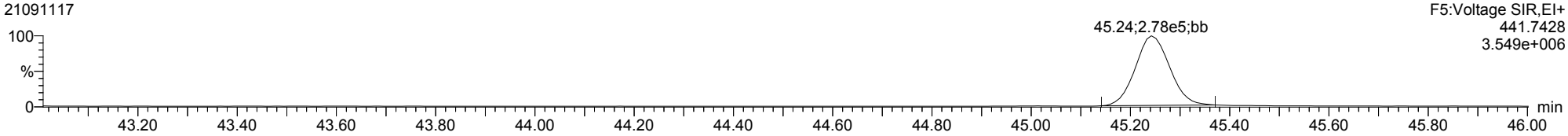


FUNCTION5 PFK

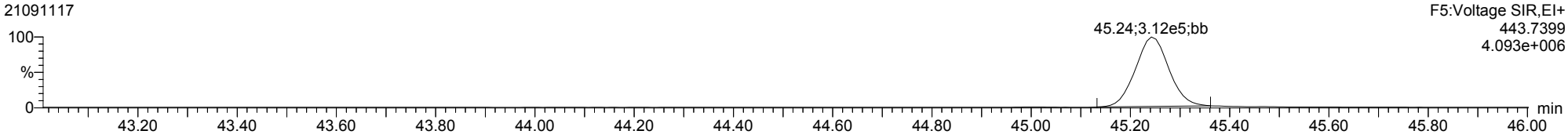


ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

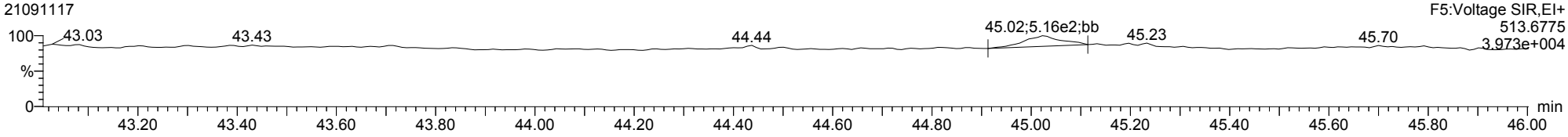
OCDF



OCDF

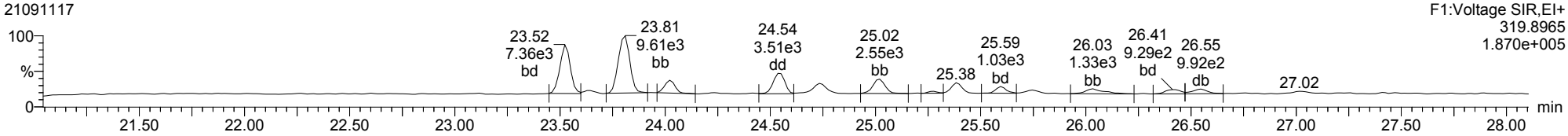


FUNCTION5 DCDPE

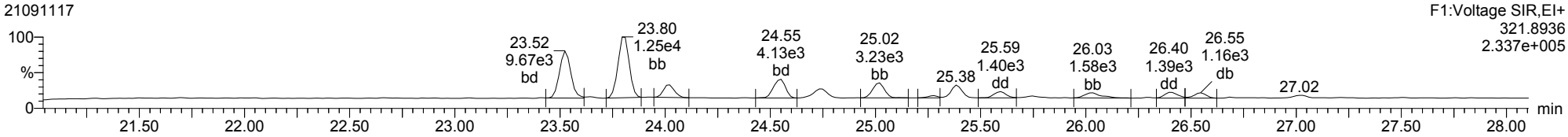


ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

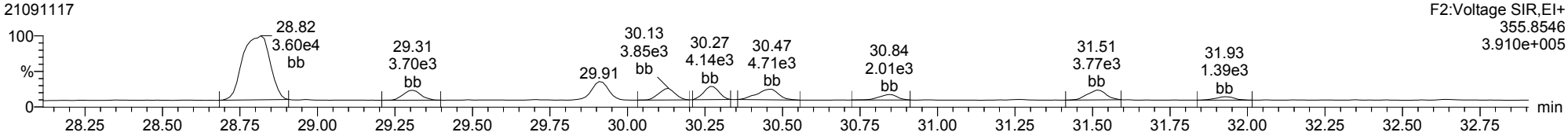
Total-tetradioxins



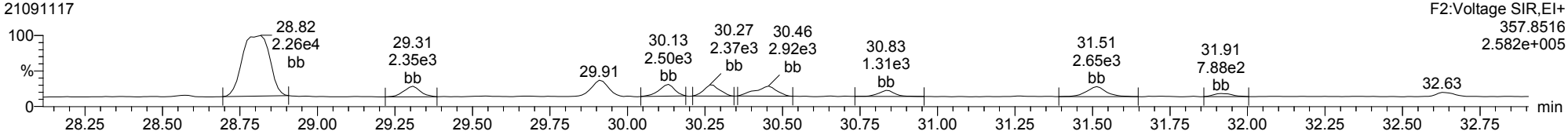
Total-tetradioxins



Total-pentadioxins

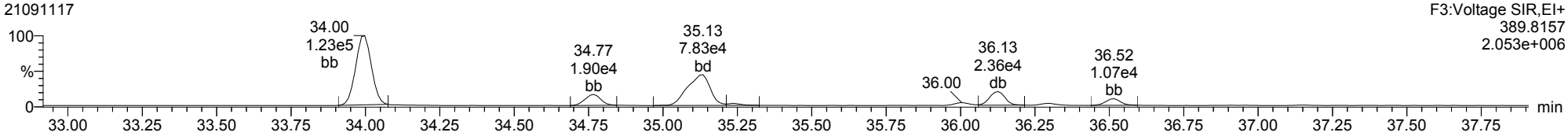


Total-pentadioxins



ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



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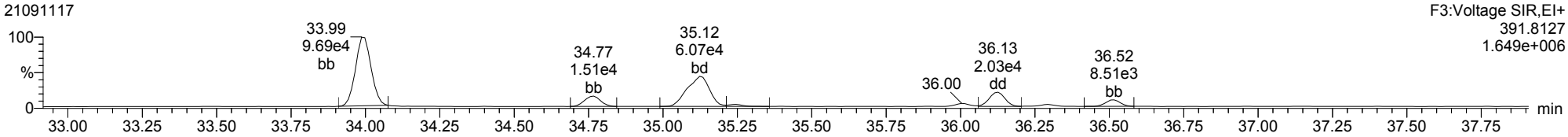

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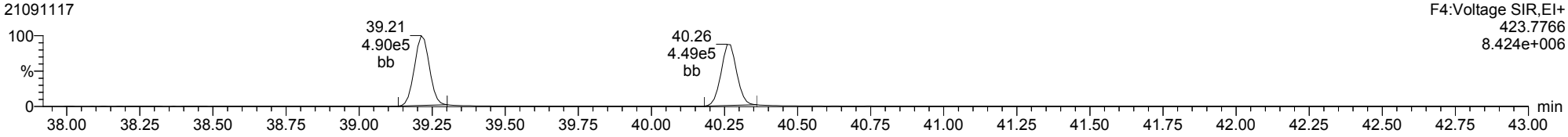
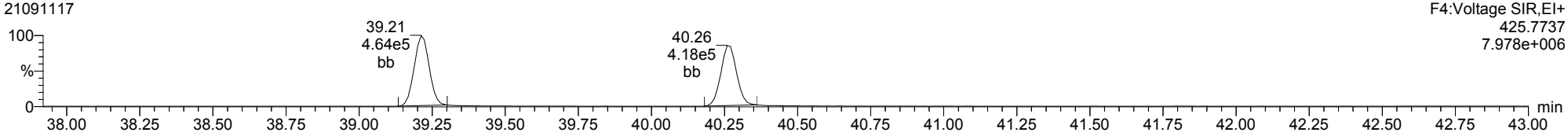
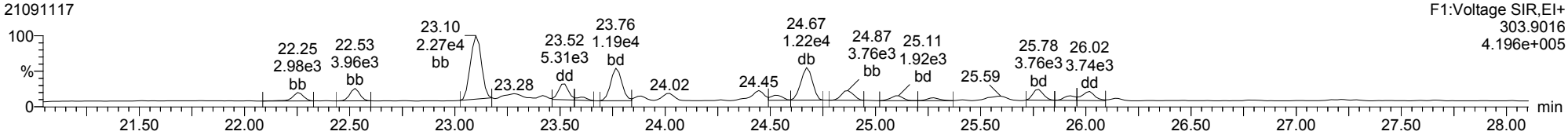


Total-heptadioxins



ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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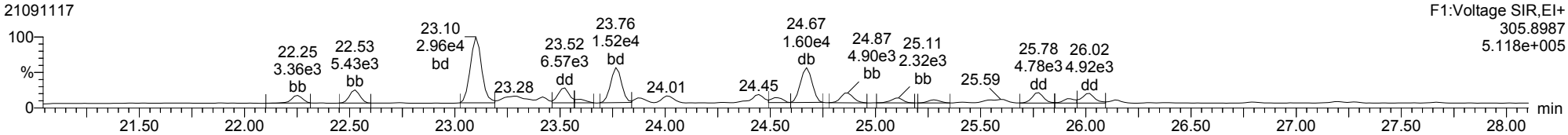

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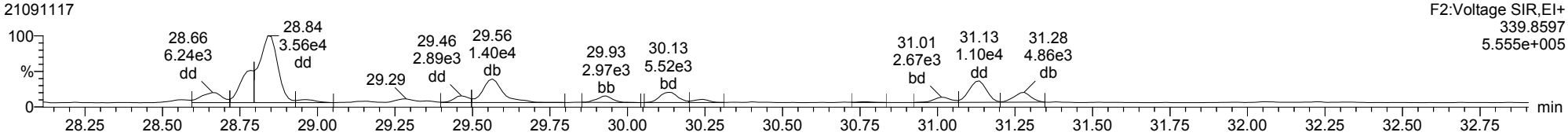

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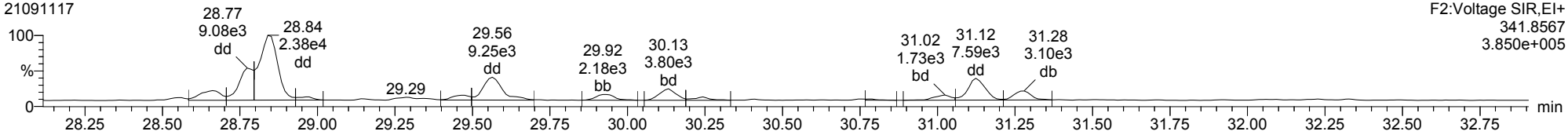
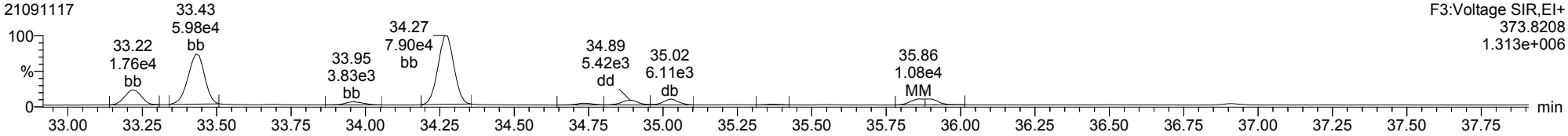
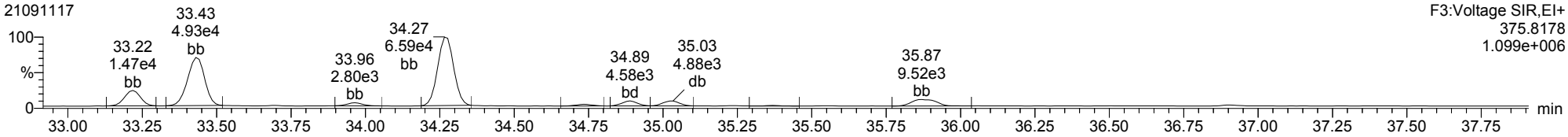


ID: 21G0138-03, Name: 21091117, Date: 11-Sep-2021, Time: 23:42:08, Conditions: AUTOSPEC01, User: pk

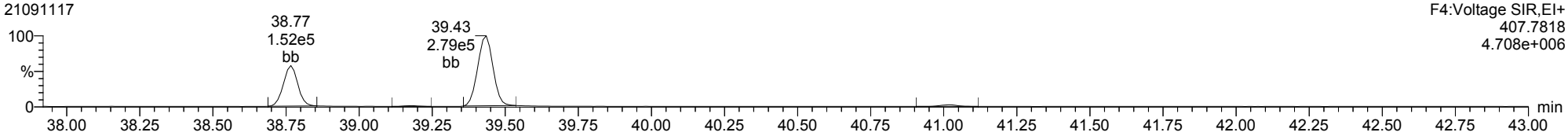
Total-hexafurans



Total-hexafurans



Total-heptafurans



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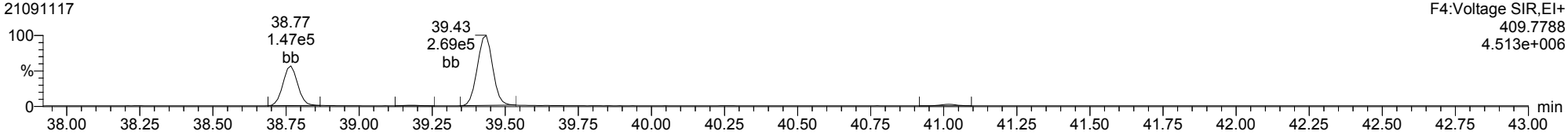

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662E

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-04 C	File ID:	21091118
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 00:31
% Solids:	75.20	Preparation:	EPA 1613	Initial/Final:	13.34 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.765	0.655-0.886	0.067	0.997	0.943	ng/kg	X, J
1746-01-6	2,3,7,8-TCDD	1		0.655-0.886	0.107	0.997	ND	ng/kg	U
57117-41-6	1,2,3,7,8-PeCDF	1		1.318-1.783	0.080	0.997	ND	ng/kg	U
57117-31-4	2,3,4,7,8-PeCDF	1	1.758	1.318-1.783	0.075	0.997	0.224	ng/kg	J
40321-76-4	1,2,3,7,8-PeCDD	1		1.318-1.783	0.090	0.997	ND	ng/kg	U
70648-26-9	1,2,3,4,7,8-HxCDF	1	0.777	1.054-1.426	0.065	0.997	0.177	ng/kg	EMPC, J
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.219	1.054-1.426	0.061	0.997	0.205	ng/kg	J
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.014	1.054-1.426	0.065	0.997	0.198	ng/kg	EMPC, J
72918-21-9	1,2,3,7,8,9-HxCDF	1		1.054-1.426	0.071	0.997	ND	ng/kg	U
39227-28-6	1,2,3,4,7,8-HxCDD	1		1.054-1.426	0.110	0.997	ND	ng/kg	U
57653-85-7	1,2,3,6,7,8-HxCDD	1	0.755	1.054-1.426	0.111	0.997	0.149	ng/kg	EMPC, J
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.235	1.054-1.426	0.118	0.997	0.232	ng/kg	J
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.070	0.893-1.208	0.074	0.997	0.697	ng/kg	J, B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1		0.893-1.208	0.103	0.997	ND	ng/kg	U
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.127	0.893-1.208	0.181	2.49	1.72	ng/kg	J, B
39001-02-0	OCDF	1	1.027	0.757-1.024	0.106	2.49	0.435	ng/kg	EMPC, J
3268-87-9	OCDD	1	0.912	0.757-1.024	0.247	9.97	27.0	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			0.997	7.18	ng/kg
41903-57-5	Total TCDD	1	0.000			0.997	0.990	ng/kg
30402-15-4	Total PeCDF	1	0.000			0.997	8.91	ng/kg
36088-22-9	Total PeCDD	1	0.000			0.997	0.560	ng/kg
55684-94-1	Total HxCDF	1	0.000			0.997	3.18	ng/kg
34465-46-8	Total HxCDD	1	0.000			0.997	1.53	ng/kg
38998-75-3	Total HpCDF	1	0.000			0.997	0.697	ng/kg
37871-00-4	Total HpCDD	1	0.000			0.997	3.65	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.290
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.399

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662E

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-04	File ID:	21091118
Sampled:	07/13/21 07:42	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 00:31
Solids Wt%:	75.20	Preparation:	EPA 1613	Initial/Final:	13.34 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.787	0.655-0.886	0.112	68.6	24 - 169 %	
13C12-2,3,7,8-TCDD		0.769	0.655-0.886	0.114	75.0	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.590	1.318-1.783	0.104	85.9	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.602	1.318-1.783	0.109	85.3	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.558	1.318-1.783	0.122	77.9	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.514	0.434-0.587	0.129	75.6	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.479	0.434-0.587	0.119	68.8	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.517	0.434-0.587	0.132	73.9	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.513	0.434-0.587	0.159	80.4	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.274	1.054-1.426	0.113	80.0	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.217	1.054-1.426	0.104	75.0	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.454	0.374-0.506	0.126	71.9	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.453	0.374-0.506	0.155	75.6	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.044	0.893-1.208	0.146	76.6	23 - 140 %	
13C12-OCDD		0.908	0.757-1.024	0.177	75.1	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.031	72.1	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:29:39 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.746	1.000	2.308e3	3.016e3	1.108	0.765	0.770	1058	941	3.38e4	4.75e4	31.9	50.5	NO	dd	dd	0.473
12378-PeCDF					1.015		1.550	1141	1295								
23478-PeCDF	31.257	1.001	8.826e2	5.022e2	1.126	1.758	1.550	1141	1295	1.26e4	7.86e3	11.1	6.1	NO	db	bb	0.112
123478-HxCDF	34.867	1.000	3.594e2	4.623e2	1.017	0.777	1.240	924	709	7.34e3	6.76e3	7.9	9.5	YES	bd	bd	0.089
234678-HxCDF	35.881	1.000	4.577e2	4.515e2	1.052	1.014	1.240	924	709	7.50e3	8.18e3	8.1	11.5	YES	MM	MM	0.099
123678-HxCDF	35.012	1.001	5.256e2	4.314e2	1.037	1.219	1.240	924	709	7.78e3	7.58e3	8.4	10.7	NO	db	db	0.103
123789-HxCDF					1.030		1.240	924	709								
1234678-HpCDF	38.744	1.000	1.548e3	1.447e3	1.327	1.070	1.050	816	1063	2.90e4	2.51e4	35.5	23.6	NO	bb	bb	0.350
1234789-HpCDF					1.283		1.050	816	1063								
OCDF	45.233	1.006	5.857e2	5.703e2	1.447	1.027	0.890	577	664	7.72e3	6.44e3	13.4	9.7	YES	MM	MM	0.218
2378-TCDD					0.920		0.770	1303	910								
12378-PeCDD					0.995		1.550	747	661								
123478-HxCDD					1.027		1.240	1228	1172								
123678-HxCDD	36.104	1.000	2.451e2	3.246e2	1.009	0.755	1.240	1228	1172	6.09e3	7.02e3	5.0	6.0	YES	dd	dd	0.075
123789-HxCDD	36.505	1.011	4.582e2	3.710e2	0.950	1.235	1.240	1228	1172	8.74e3	6.60e3	7.1	5.6	NO	bb	MM	0.116
1234678-HpCDD	40.248	1.000	2.295e3	2.036e3	1.068	1.127	1.050	1258	1139	3.67e4	3.56e4	29.1	31.2	NO	bb	bb	0.864
OCDD	44.977	1.000	2.791e4	3.061e4	1.181	0.912	0.890	1403	970	3.43e5	3.81e5	244.7	393.1	NO	bb	bb	13.527
13C-2378-TCDF	25.746	1.007	4.478e5	5.688e5	1.427	0.787	0.770	2536	1868	7.14e6	8.93e6	2815.4	4779.4	NO	bb	bb	68.557
13C-12378-PeCDF	29.887	1.169	7.109e5	4.471e5	1.297	1.590	1.550	1940	1799	1.10e7	6.94e6	5695.8	3856.2	NO	bb	bb	85.875
13C-23478-PeCDF	31.235	1.222	6.753e5	4.217e5	1.236	1.602	1.550	1940	1799	1.06e7	6.59e6	5444.2	3666.3	NO	bb	bb	85.346
13C-123478-HxCDF	34.856	0.955	3.089e5	6.015e5	1.242	0.514	0.510	1490	2816	5.01e6	9.73e6	3359.6	3453.6	NO	bd	bd	75.625
13C-123678-HxCDF	34.989	0.959	2.900e5	6.055e5	1.343	0.479	0.510	1490	2816	5.01e6	9.97e6	3360.4	3538.9	NO	bb	db	68.792
13C-234678-HxCDF	35.870	0.983	2.966e5	5.738e5	1.215	0.517	0.510	1490	2816	4.86e6	9.27e6	3264.0	3292.0	NO	bb	bb	73.941
13C-123789-HxCDF	36.895	1.011	2.661e5	5.190e5	1.008	0.513	0.510	1490	2816	4.51e6	8.84e6	3028.3	3139.9	NO	bb	bb	80.403
13C-1234678-HpCDF	38.733	1.062	2.016e5	4.437e5	0.926	0.454	0.440	1244	1912	3.55e6	7.76e6	2856.9	4059.2	NO	bb	bb	71.883
13C-1234789-HpCDF	40.983	1.123	1.733e5	3.822e5	0.758	0.453	0.440	1244	1912	2.64e6	5.79e6	2124.4	3027.8	NO	bb	bb	75.628
13C-1234-TCDD	25.564	0.000	4.503e5	5.892e5	1.000	0.764	0.770	2243	1276	7.16e6	9.40e6	3190.1	7368.8	NO	bb	bb	100.000
13C-2378-TCDD	26.365	1.031	3.786e5	4.921e5	1.116	0.769	0.770	2243	1276	5.84e6	7.66e6	2604.6	6002.1	NO	bb	bb	75.022
13C-12378-PeCDD	31.480	1.231	3.610e5	2.317e5	0.732	1.558	1.550	1401	1063	5.74e6	3.69e6	4098.9	3469.7	NO	bb	bb	77.891
13C-123478-HxCDD	35.970	0.986	4.170e5	3.272e5	0.960	1.274	1.240	1373	1542	7.13e6	5.60e6	5194.4	3634.1	NO	bd	bd	80.011
13C-123678-HxCDD	36.092	0.989	4.152e5	3.411e5	1.041	1.217	1.240	1373	1542	7.03e6	5.54e6	5118.0	3590.1	NO	db	db	74.950
13C-1234678-HpCDD	40.237	1.103	2.397e5	2.295e5	0.632	1.044	1.050	1235	1248	3.78e6	3.66e6	3063.2	2928.4	NO	bb	bb	76.575
13C-OCDD	44.958	1.232	3.486e5	3.841e5	0.504	0.908	0.890	1412	988	4.62e6	5.14e6	3271.7	5198.4	NO	bb	bb	150.112
13C-123789-HxCDD	36.482	0.000	5.403e5	4.287e5	1.000	1.260	1.240	1373	1542	8.98e6	7.08e6	6540.5	4593.1	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	3.251e5		1.084			922		4.98e6		5400.2			bb		28.859

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Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.374	0.869	7.547e1	1.492e2	1.425	0.506	0.770	1058	941	1.53e3	2.59e3	1.4	2.8	YES	dd	dd	0.016
1289-TCDF					1.043		0.770	1058	941								
13468-PECDF					1.376		1.550	725	1315								
12389-PECDF	32.215	1.078	1.042e3	5.270e2	1.000	1.976	1.550	1141	1295	1.73e4	9.38e3	15.1	7.2	YES	bb	bb	0.136
123468-HXCDF	33.207	0.953	7.050e2	7.085e2	1.087	0.995	1.240	924	709	1.03e4	1.19e4	11.1	16.8	YES	bb	db	0.143
1368-TCDD	23.508	0.892	9.206e2	1.304e3	0.923	0.706	0.770	1303	910	1.31e4	2.05e4	10.0	22.6	NO	bb	bb	0.277
1289-TCDD	27.000	1.024	2.098e2	8.403e1	0.794	2.497	0.770	1303	910	3.22e3	1.52e3	2.5	1.7	YES	bb	bb	0.043
12479-PECDD	28.795	0.915	1.038e3	1.115e3	1.843	0.930	1.550	747	661	1.70e4	1.38e4	22.8	20.9	YES	db	bb	0.197
12389-PECDD					1.154		1.550	747	661								
124679-HXCDD	33.987	0.945	1.809e3	1.380e3	1.125	1.311	1.240	1228	1172	2.59e4	2.43e4	21.1	20.8	NO	bb	bb	0.381
1234679-HPCDD	39.201	0.974	2.977e3	2.519e3	1.211	1.182	1.050	1258	1139	4.90e4	4.12e4	38.9	36.2	NO	bb	bb	0.967
Total-tetrafurans			1.930e4		1.192			1058		2.95e5							3.601
Total-penta1			1.637e4					725		2.56e5							2.525
Total-pentafurans			1.401e4		1.047			1141		1.92e5							1.944
Total-hexafurans			7.972e3		1.045			924		1.26e5							1.593
Total-heptafurans			1.548e3		1.305			816		2.90e4							0.350
Total-Furans			5.920e4		1.158			1058		8.98e5							10.012
Total-tetradioxins			1.682e3		0.879			1303		2.43e4							0.496
Total-pentadioxins			1.277e3		1.331			747		1.98e4							0.281
Total-hexadioxins			3.364e3		1.028			1228		5.28e4							0.766
Total-heptadioxins			5.271e3		1.140			1258		8.56e4							1.831
Total-Dioxins			3.951e4		1.092			1303		5.26e5							16.901
Total-TEQ			9.871e4					1303		1.42e6							26.914
FUNCTION1 PFK			5.785e7					672591		4.56e8							
FUNCTION2 PFK			0.000e0					354476		0.00e0							
FUNCTION3 PFK			4.811e5					389589		1.19e7							0.000
FUNCTION4 PFK			0.000e0					262700		0.00e0							
FUNCTION5 PFK			1.120e5					278574		4.44e6							
FUNCTION1 HXCD...			7.655e3					832		1.25e5							0.000
FUNCTION1 HPCD...			1.755e3					1103		2.50e4							0.000
FUNCTION2 HPCD...			1.068e3					883		1.91e4							0.000
FUNCTION3 OCDPE			1.068e3					805		2.00e4							0.000
FUNCTION4 NCDPE			1.359e3					667		2.39e4							0.000
FUNCTION5 DCDPE			1.406e2					553		1.37e3							0.000

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Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.75	3.704e3	4.858e3	1.192	0.76	0.77	58.9	YES	NO	dd	bd	0.707
2	Total-tetrafurans	23.49	8.990e2	1.260e3	1.192	0.71	0.77	12.3	YES	NO	dd	bd	0.178
3	Total-tetrafurans	23.08	3.864e3	4.475e3	1.192	0.86	0.77	55.8	YES	NO	bd	bd	0.688
4	Total-tetrafurans	22.49	1.257e3	1.507e3	1.192	0.83	0.77	16.7	YES	NO	db	db	0.228
5	Total-tetrafurans	26.12	2.060e3	2.358e3	1.192	0.87	0.77	31.2	YES	NO	dd	db	0.365
6	Total-tetrafurans	26.00	7.483e2	1.076e3	1.192	0.70	0.77	8.0	YES	NO	dd	dd	0.151
7	Total-tetrafurans	25.91	2.729e2	3.890e2	1.192	0.70	0.77	4.4	YES	NO	dd	dd	0.055
8	2378-TCDF	25.75	2.308e3	3.016e3	1.108	0.77	0.77	31.9	YES	NO	dd	dd	0.473
9	Total-tetrafurans	24.85	8.463e2	1.092e3	1.192	0.77	0.77	11.5	YES	NO	bb	db	0.160
10	Total-tetrafurans	24.54	2.736e2	3.498e2	1.192	0.78	0.77	4.7	YES	NO	dd	dd	0.051
11	Total-tetrafurans	24.42	9.389e2	1.110e3	1.192	0.85	0.77	11.4	YES	NO	bd	bd	0.169
12	Total-tetrafurans	24.66	2.126e3	2.433e3	1.192	0.87	0.77	32.1	YES	NO	MM	dd	0.376

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.17	1.637e4	1.045e4		1.57	1.55	353.0	YES	NO	bb	bb	2.525

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.26	8.826e2	5.022e2	1.126	1.76	1.55	11.1	YES	NO	db	bb	0.112
2	Total-pentafurans	31.11	2.599e3	1.545e3	1.047	1.68	1.55	34.8	YES	NO	dd	bb	0.351
3	Total-pentafurans	29.54	1.856e3	1.308e3	1.047	1.42	1.55	28.0	YES	NO	dd	db	0.268
4	Total-pentafurans	28.94	2.034e3	1.212e3	1.047	1.68	1.55	28.6	YES	NO	db	db	0.275
5	Total-pentafurans	28.83	6.641e3	4.427e3	1.047	1.50	1.55	65.7	YES	NO	MM	MM	0.938

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDF	35.01	5.256e2	4.314e2	1.037	1.22	1.24	8.4	YES	NO	db	db	0.103
2	Total-hexafurans	34.25	3.681e3	2.858e3	1.045	1.29	1.24	64.6	YES	NO	bb	bb	0.723
3	Total-hexafurans	33.42	3.765e3	3.161e3	1.045	1.19	1.24	62.9	YES	NO	bb	bb	0.766

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.74	1.548e3	1.447e3	1.327	1.07	1.05	35.5	YES	NO	bb	bb	0.350

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.75	3.704e3	4.858e3	1.192	0.76	0.77	58.9	YES	NO	dd	bd	0.707
2	Total-tetrafurans	23.49	8.990e2	1.260e3	1.192	0.71	0.77	12.3	YES	NO	dd	bd	0.178
3	Total-tetrafurans	23.08	3.864e3	4.475e3	1.192	0.86	0.77	55.8	YES	NO	bd	bd	0.688
4	Total-tetrafurans	22.49	1.257e3	1.507e3	1.192	0.83	0.77	16.7	YES	NO	db	db	0.228
5	Total-tetrafurans	26.12	2.060e3	2.358e3	1.192	0.87	0.77	31.2	YES	NO	dd	db	0.365
6	Total-tetrafurans	26.00	7.483e2	1.076e3	1.192	0.70	0.77	8.0	YES	NO	dd	dd	0.151
7	Total-tetrafurans	25.91	2.729e2	3.890e2	1.192	0.70	0.77	4.4	YES	NO	dd	dd	0.055
8	2378-TCDF	25.75	2.308e3	3.016e3	1.108	0.77	0.77	31.9	YES	NO	dd	dd	0.473
9	Total-tetrafurans	24.85	8.463e2	1.092e3	1.192	0.77	0.77	11.5	YES	NO	bb	db	0.160
10	Total-tetrafurans	24.54	2.736e2	3.498e2	1.192	0.78	0.77	4.7	YES	NO	dd	dd	0.051
11	Total-tetrafurans	24.42	9.389e2	1.110e3	1.192	0.85	0.77	11.4	YES	NO	bd	bd	0.169
12	23478-PeCDF	31.26	8.826e2	5.022e2	1.126	1.76	1.55	11.1	YES	NO	db	bb	0.112
13	Total-pentafurans	31.11	2.599e3	1.545e3	1.047	1.68	1.55	34.8	YES	NO	dd	bb	0.351
14	Total-pentafurans	29.54	1.856e3	1.308e3	1.047	1.42	1.55	28.0	YES	NO	dd	db	0.268
15	Total-pentafurans	28.94	2.034e3	1.212e3	1.047	1.68	1.55	28.6	YES	NO	db	db	0.275
16	Total-pentafurans	28.83	6.641e3	4.427e3	1.047	1.50	1.55	65.7	YES	NO	MM	MM	0.938
17	123678-HxCDF	35.01	5.256e2	4.314e2	1.037	1.22	1.24	8.4	YES	NO	db	db	0.103
18	Total-hexafurans	34.25	3.681e3	2.858e3	1.045	1.29	1.24	64.6	YES	NO	bb	bb	0.723
19	Total-hexafurans	33.42	3.765e3	3.161e3	1.045	1.19	1.24	62.9	YES	NO	bb	bb	0.766
20	1234678-HpCDF	38.74	1.548e3	1.447e3	1.327	1.07	1.05	35.5	YES	NO	bb	bb	0.350
21	Total-penta1	27.17	1.637e4	1.045e4		1.57	1.55	353.0	YES	NO	bb	bb	2.525
22	Total-tetrafurans	24.66	2.126e3	2.433e3	1.192	0.87	0.77	32.1	YES	NO	MM	dd	0.376

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	23.80	7.610e2	9.200e2	0.879	0.83	0.77	8.6	YES	NO	bd	db	0.220
2	1368-TCDD	23.51	9.206e2	1.304e3	0.923	0.71	0.77	10.0	YES	NO	bb	bb	0.277

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	29.90	1.277e3	9.373e2	1.331	1.36	1.55	26.5	YES	NO	bd	bd	0.281

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.50	4.582e2	3.710e2	0.950	1.24	1.24	7.1	YES	NO	bb	MM	0.116
2	Total-hexadioxins	34.74	1.097e3	9.756e2	1.028	1.12	1.24	14.8	YES	NO	bb	bb	0.269
3	124679-HXCDD	33.99	1.809e3	1.380e3	1.125	1.31	1.24	21.1	YES	NO	bb	bb	0.381

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.25	2.295e3	2.036e3	1.068	1.13	1.05	29.1	YES	NO	bb	bb	0.864
2	1234679-HPCDD	39.20	2.977e3	2.519e3	1.211	1.18	1.05	38.9	YES	NO	bb	bb	0.967

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	23.80	7.610e2	9.200e2	0.879	0.83	0.77	8.6	YES	NO	bd	db	0.220
2	1368-TCDD	23.51	9.206e2	1.304e3	0.923	0.71	0.77	10.0	YES	NO	bb	bb	0.277
3	Total-pentadioxins	29.90	1.277e3	9.373e2	1.331	1.36	1.55	26.5	YES	NO	bd	bd	0.281
4	123789-HxCDD	36.50	4.582e2	3.710e2	0.950	1.24	1.24	7.1	YES	NO	bb	MM	0.116
5	Total-hexadioxins	34.74	1.097e3	9.756e2	1.028	1.12	1.24	14.8	YES	NO	bb	bb	0.269
6	124679-HXCDD	33.99	1.809e3	1.380e3	1.125	1.31	1.24	21.1	YES	NO	bb	bb	0.381
7	OCDD	44.98	2.791e4	3.061e4	1.181	0.91	0.89	244.7	YES	NO	bb	bb	13.527
8	1234678-HpCDD	40.25	2.295e3	2.036e3	1.068	1.13	1.05	29.1	YES	NO	bb	bb	0.864
9	1234679-HPCDD	39.20	2.977e3	2.519e3	1.211	1.18	1.05	38.9	YES	NO	bb	bb	0.967

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.75	3.704e3	4.858e3	1.192	0.76	0.77	58.9	YES	NO	dd	bd	0.707
2	Total-tetrafurans	23.49	8.990e2	1.260e3	1.192	0.71	0.77	12.3	YES	NO	dd	bd	0.178
3	Total-tetrafurans	23.08	3.864e3	4.475e3	1.192	0.86	0.77	55.8	YES	NO	bd	bd	0.688
4	Total-tetrafurans	22.49	1.257e3	1.507e3	1.192	0.83	0.77	16.7	YES	NO	db	db	0.228
5	Total-tetrafurans	26.12	2.060e3	2.358e3	1.192	0.87	0.77	31.2	YES	NO	dd	db	0.365
6	Total-tetrafurans	26.00	7.483e2	1.076e3	1.192	0.70	0.77	8.0	YES	NO	dd	dd	0.151
7	Total-tetrafurans	25.91	2.729e2	3.890e2	1.192	0.70	0.77	4.4	YES	NO	dd	dd	0.055
8	2378-TCDF	25.75	2.308e3	3.016e3	1.108	0.77	0.77	31.9	YES	NO	dd	dd	0.473
9	Total-tetrafurans	24.85	8.463e2	1.092e3	1.192	0.77	0.77	11.5	YES	NO	bb	db	0.160
10	Total-tetrafurans	24.54	2.736e2	3.498e2	1.192	0.78	0.77	4.7	YES	NO	dd	dd	0.051
11	Total-tetrafurans	24.42	9.389e2	1.110e3	1.192	0.85	0.77	11.4	YES	NO	bd	bd	0.169
12	23478-PeCDF	31.26	8.826e2	5.022e2	1.126	1.76	1.55	11.1	YES	NO	db	bb	0.112
13	Total-pentafurans	31.11	2.599e3	1.545e3	1.047	1.68	1.55	34.8	YES	NO	dd	bb	0.351
14	Total-pentafurans	29.54	1.856e3	1.308e3	1.047	1.42	1.55	28.0	YES	NO	dd	db	0.268
15	Total-pentafurans	28.94	2.034e3	1.212e3	1.047	1.68	1.55	28.6	YES	NO	db	db	0.275
16	Total-pentafurans	28.83	6.641e3	4.427e3	1.047	1.50	1.55	65.7	YES	NO	MM	MM	0.938
17	123678-HxCDF	35.01	5.256e2	4.314e2	1.037	1.22	1.24	8.4	YES	NO	db	db	0.103
18	Total-hexafurans	34.25	3.681e3	2.858e3	1.045	1.29	1.24	64.6	YES	NO	bb	bb	0.723
19	Total-hexafurans	33.42	3.765e3	3.161e3	1.045	1.19	1.24	62.9	YES	NO	bb	bb	0.766
20	1234678-HpCDF	38.74	1.548e3	1.447e3	1.327	1.07	1.05	35.5	YES	NO	bb	bb	0.350
21	Total-penta1	27.17	1.637e4	1.045e4		1.57	1.55	353.0	YES	NO	bb	bb	2.525
22	Total-tetrafurans	24.66	2.126e3	2.433e3	1.192	0.87	0.77	32.1	YES	NO	MM	dd	0.376
23	Total-tetradioxins	23.80	7.610e2	9.200e2	0.879	0.83	0.77	8.6	YES	NO	bd	db	0.220
24	1368-TCDD	23.51	9.206e2	1.304e3	0.923	0.71	0.77	10.0	YES	NO	bb	bb	0.277
25	Total-pentadioxins	29.90	1.277e3	9.373e2	1.331	1.36	1.55	26.5	YES	NO	bd	bd	0.281
26	123789-HxCDD	36.50	4.582e2	3.710e2	0.950	1.24	1.24	7.1	YES	NO	bb	MM	0.116
27	Total-hexadioxins	34.74	1.097e3	9.756e2	1.028	1.12	1.24	14.8	YES	NO	bb	bb	0.269
28	124679-HXCDD	33.99	1.809e3	1.380e3	1.125	1.31	1.24	21.1	YES	NO	bb	bb	0.381
29	OCDD	44.98	2.791e4	3.061e4	1.181	0.91	0.89	244.7	YES	NO	bb	bb	13.527
30	1234678-HpCDD	40.25	2.295e3	2.036e3	1.068	1.13	1.05	29.1	YES	NO	bb	bb	0.864
31	1234679-HPCDD	39.20	2.977e3	2.519e3	1.211	1.18	1.05	38.9	YES	NO	bb	bb	0.967

ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.21	8.090e6					77.6	YES		dd		
2	FUNCTION1 PFK	21.13	3.912e6					77.9	YES		bd		
3	FUNCTION1 PFK	24.84	2.004e4					0.9	NO		bb		
4	FUNCTION1 PFK	23.67	3.635e4					1.2	NO		bb		
5	FUNCTION1 PFK	23.05	5.453e5					8.2	YES		db		
6	FUNCTION1 PFK	22.95	6.492e5					12.4	YES		dd		
7	FUNCTION1 PFK	22.84	8.644e5					15.7	YES		dd		
8	FUNCTION1 PFK	22.78	1.280e6					17.6	YES		dd		
9	FUNCTION1 PFK	22.66	1.911e6					22.1	YES		dd		
10	FUNCTION1 PFK	22.49	1.796e6					28.4	YES		dd		
11	FUNCTION1 PFK	22.40	2.342e6					31.3	YES		dd		
12	FUNCTION1 PFK	22.21	5.587e6					39.5	YES		dd		
13	FUNCTION1 PFK	22.12	1.884e6					39.5	YES		dd		
14	FUNCTION1 PFK	21.97	3.870e6					48.2	YES		dd		
15	FUNCTION1 PFK	21.81	4.047e6					52.8	YES		dd		
16	FUNCTION1 PFK	21.65	6.490e6					61.3	YES		dd		
17	FUNCTION1 PFK	21.57	1.004e7					63.9	YES		dd		
18	FUNCTION1 PFK	21.39	4.091e6					69.8	YES		dd		
19	FUNCTION1 PFK	27.65	8.071e4					1.7	NO		bb		
20	FUNCTION1 PFK	27.06	8.627e4					1.9	NO		bb		
21	FUNCTION1 PFK	26.61	4.363e3					0.4	NO		bb		
22	FUNCTION1 PFK	26.12	3.362e4					1.2	NO		bb		
23	FUNCTION1 PFK	25.56	1.179e4					0.9	NO		db		
24	FUNCTION1 PFK	25.50	1.013e5					2.3	NO		bd		
25	FUNCTION1 PFK	25.13	7.291e4					1.5	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.56	4.624e4					1.9	NO		db		0.000
2	FUNCTION3 PFK	34.48	4.627e3					0.8	NO		bd		0.000
3	FUNCTION3 PFK	34.43	4.416e4					2.2	NO		bb		0.000
4	FUNCTION3 PFK	34.31	2.176e4					1.4	NO		bb		0.000
5	FUNCTION3 PFK	33.90	3.656e3					0.8	NO		bb		0.000
6	FUNCTION3 PFK	33.85	2.779e3					0.6	NO		bb		0.000
7	FUNCTION3 PFK	33.06	2.602e4					2.6	NO		bb		0.000
8	FUNCTION3 PFK	37.40	1.619e4					1.7	NO		bb		0.000
9	FUNCTION3 PFK	36.63	2.178e4					1.6	NO		bb		0.000
10	FUNCTION3 PFK	36.54	5.708e4					3.5	YES		db		0.000
11	FUNCTION3 PFK	36.49	4.548e4					3.7	YES		dd		0.000
12	FUNCTION3 PFK	36.42	5.641e4					2.6	NO		bd		0.000
13	FUNCTION3 PFK	35.60	6.624e4					2.7	NO		bb		0.000
14	FUNCTION3 PFK	35.45	3.265e4					0.6	NO		bb		0.000
15	FUNCTION3 PFK	35.13	1.599e4					1.4	NO		bb		0.000
16	FUNCTION3 PFK	34.92	2.507e3					0.6	NO		bb		0.000
17	FUNCTION3 PFK	34.61	1.757e4					1.8	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.57	1.633e3					0.6	NO		bb		
2	FUNCTION5 PFK	43.53	1.328e3					0.5	NO		bb		
3	FUNCTION5 PFK	43.48	7.810e3					1.1	NO		bb		
4	FUNCTION5 PFK	43.11	9.595e3					1.3	NO		bb		
5	FUNCTION5 PFK	45.67	4.872e3					0.8	NO		bb		
6	FUNCTION5 PFK	45.22	9.130e2					0.4	NO		db		
7	FUNCTION5 PFK	45.20	1.417e3					0.5	NO		bd		
8	FUNCTION5 PFK	45.11	2.384e3					0.5	NO		bb		
9	FUNCTION5 PFK	45.01	4.644e3					0.9	NO		bb		
10	FUNCTION5 PFK	44.84	7.030e3					1.1	NO		db		
11	FUNCTION5 PFK	44.78	2.604e4					1.3	NO		bd		
12	FUNCTION5 PFK	44.67	1.096e4					1.1	NO		bb		
13	FUNCTION5 PFK	44.47	3.814e3					0.6	NO		bb		
14	FUNCTION5 PFK	44.43	4.364e3					0.5	NO		bb		
15	FUNCTION5 PFK	44.07	1.635e3					0.4	NO		db		
16	FUNCTION5 PFK	44.04	1.440e3					0.5	NO		bd		
17	FUNCTION5 PFK	43.95	1.660e3					0.4	NO		bb		
18	FUNCTION5 PFK	43.76	1.977e3					0.5	NO		bb		
19	FUNCTION5 PFK	43.66	6.414e3					1.1	NO		bb		
20	FUNCTION5 PFK	43.60	3.422e3					0.8	NO		bb		
21	FUNCTION5 PFK	45.82	8.613e3					1.0	NO		bb		

ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.41	8.805e1					1.6	NO		bb		0.000
2	FUNCTION1 HXCD...	26.11	1.468e3					25.6	YES		bb		0.000
3	FUNCTION1 HXCD...	25.90	1.798e2					5.0	YES		bb		0.000
4	FUNCTION1 HXCD...	25.75	1.139e3					22.5	YES		bb		0.000
5	FUNCTION1 HXCD...	25.10	4.383e2					9.7	YES		bb		0.000
6	FUNCTION1 HXCD...	24.25	1.109e2					2.0	NO		bb		0.000
7	FUNCTION1 HXCD...	23.73	1.628e3					39.1	YES		bb		0.000
8	FUNCTION1 HXCD...	22.96	1.868e2					1.7	NO		db		0.000
9	FUNCTION1 HXCD...	22.74	4.746e2					10.4	YES		bd		0.000
10	FUNCTION1 HXCD...	21.80	7.876e1					1.8	NO		bb		0.000
11	FUNCTION1 HXCD...	21.51	1.554e2					1.8	NO		db		0.000
12	FUNCTION1 HXCD...	21.32	8.575e1					2.5	NO		dd		0.000
13	FUNCTION1 HXCD...	21.25	1.934e2					4.0	YES		dd		0.000
14	FUNCTION1 HXCD...	21.18	4.651e2					3.6	YES		bd		0.000
15	FUNCTION1 HXCD...	27.62	2.531e2					3.8	YES		bb		0.000
16	FUNCTION1 HXCD...	26.77	7.107e2					15.0	YES		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.88	2.518e2					2.9	NO		bb		0.000
2	FUNCTION1 HPCD...	27.18	1.381e2					1.2	NO		bb		0.000
3	FUNCTION1 HPCD...	25.14	1.288e2					1.7	NO		bb		0.000
4	FUNCTION1 HPCD...	23.13	8.597e1					1.8	NO		bb		0.000
5	FUNCTION1 HPCD...	22.89	1.291e2					1.4	NO		db		0.000
6	FUNCTION1 HPCD...	22.78	9.806e1					0.9	NO		bd		0.000
7	FUNCTION1 HPCD...	22.63	7.704e1					1.4	NO		db		0.000
8	FUNCTION1 HPCD...	22.57	7.110e1					1.7	NO		bd		0.000
9	FUNCTION1 HPCD...	21.80	8.094e1					0.8	NO		bb		0.000
10	FUNCTION1 HPCD...	21.36	9.923e1					1.6	NO		db		0.000
11	FUNCTION1 HPCD...	21.22	3.420e2					3.1	YES		dd		0.000
12	FUNCTION1 HPCD...	21.12	2.529e2					4.0	YES		bd		0.000

ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.19	2.110e2					4.2	YES		bb		0.000
2	FUNCTION2 HPCD...	31.49	1.796e2					4.2	YES		bb		0.000
3	FUNCTION2 HPCD...	28.92	6.775e2					13.2	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.92	9.275e1					1.4	NO		bb		0.000
2	FUNCTION3 OCDPE	36.48	2.068e2					4.6	YES		bb		0.000
3	FUNCTION3 OCDPE	36.08	2.198e2					3.2	YES		db		0.000
4	FUNCTION3 OCDPE	35.97	1.514e2					2.5	NO		bd		0.000
5	FUNCTION3 OCDPE	33.45	8.914e1					3.1	YES		bb		0.000
6	FUNCTION3 OCDPE	33.10	8.664e1					3.7	YES		db		0.000
7	FUNCTION3 OCDPE	33.06	1.439e2					4.8	YES		dd		0.000
8	FUNCTION3 OCDPE	32.97	7.784e1					1.4	NO		bd		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.63	8.425e1					3.0	NO		bb		0.000
2	FUNCTION4 NCDPE	38.40	1.275e3					32.8	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	43.05	1.406e2					2.5	NO		bb		0.000

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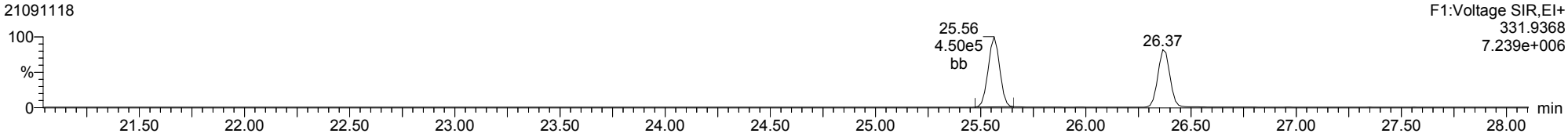

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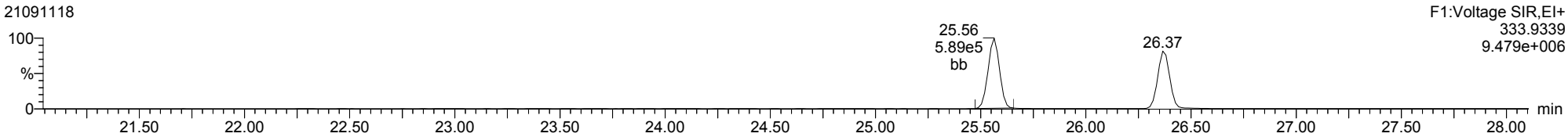

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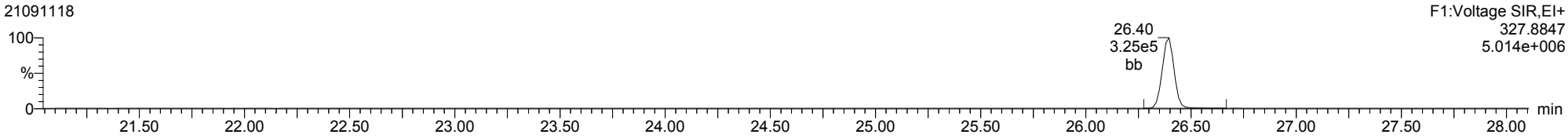

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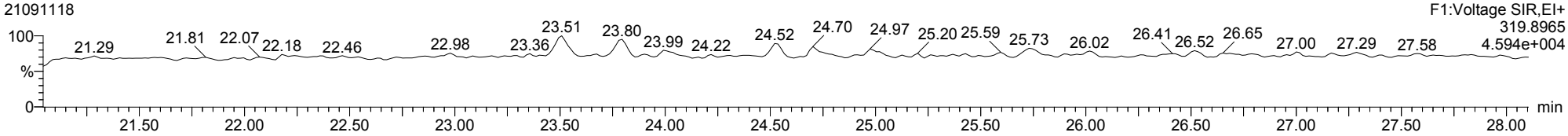

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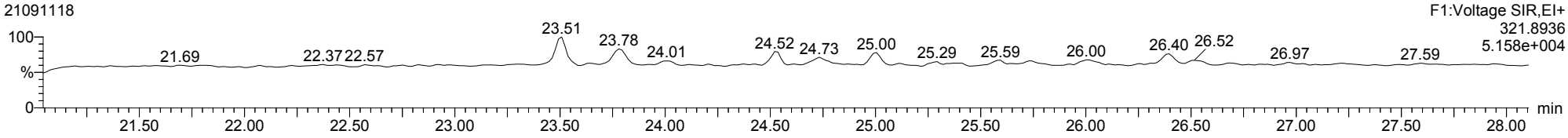

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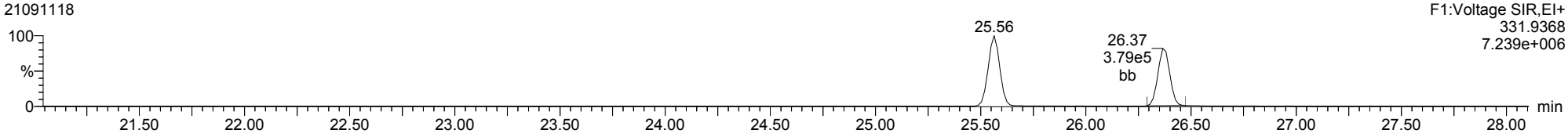

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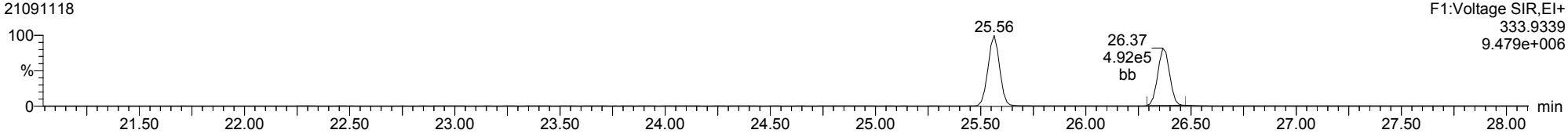

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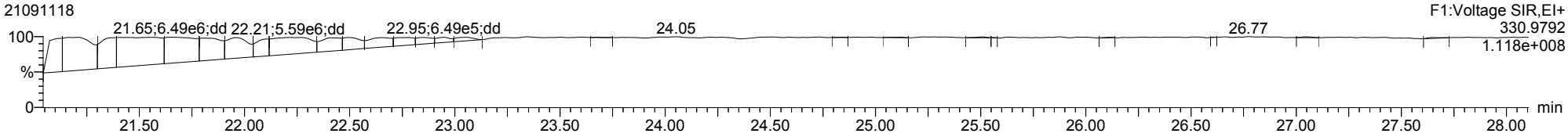

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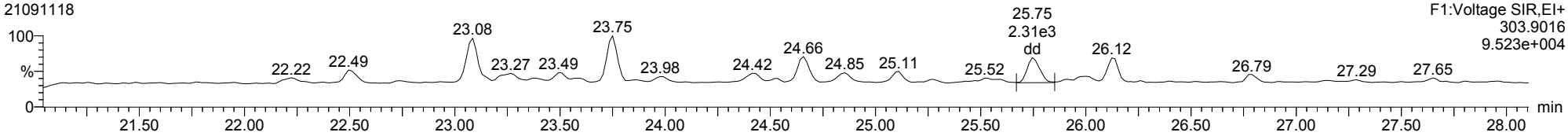
2378-TCDF



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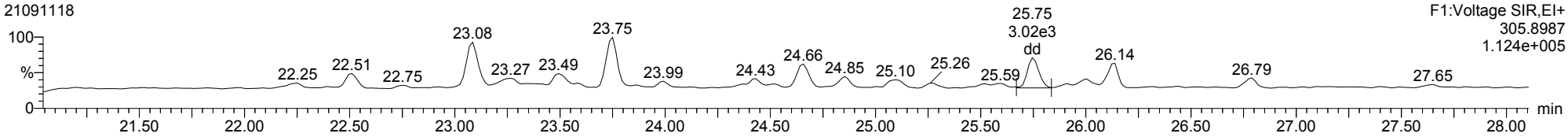

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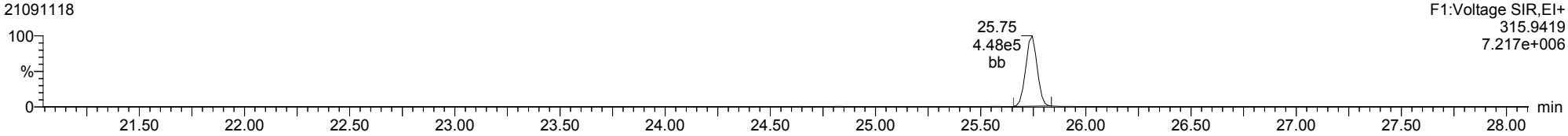

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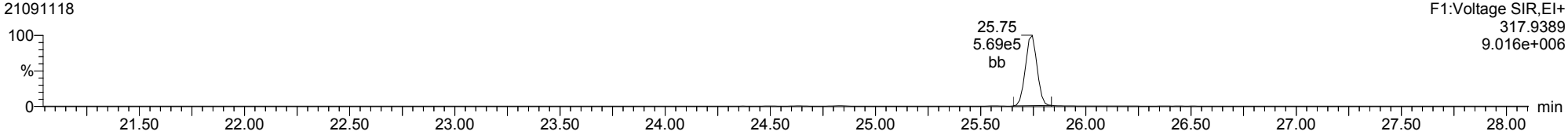

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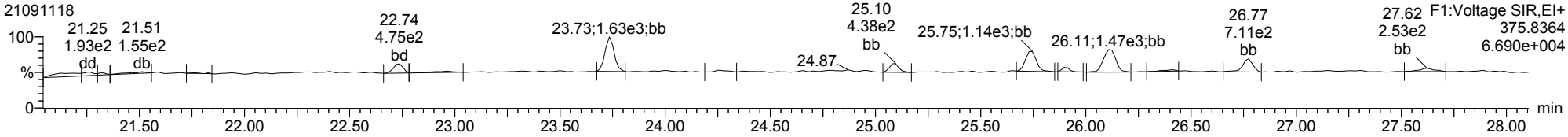

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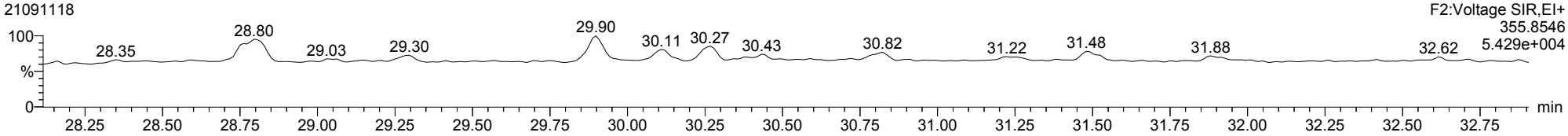

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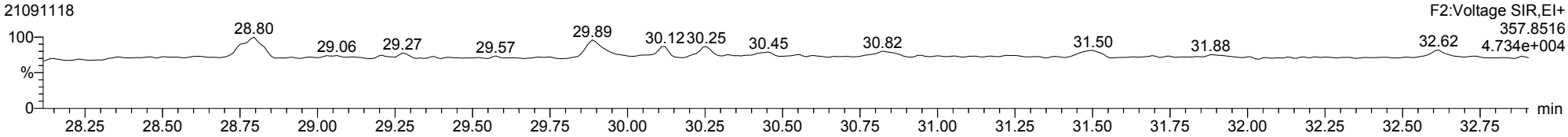

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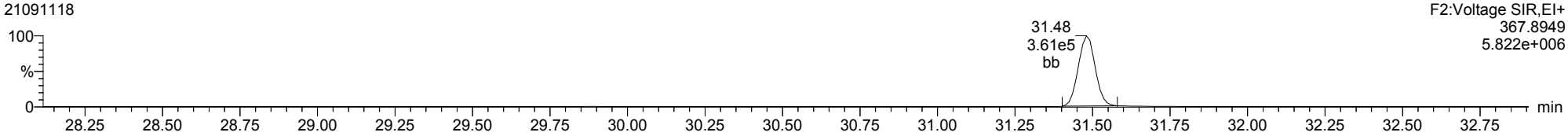

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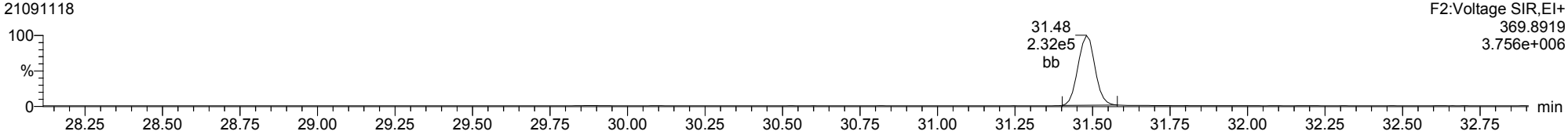

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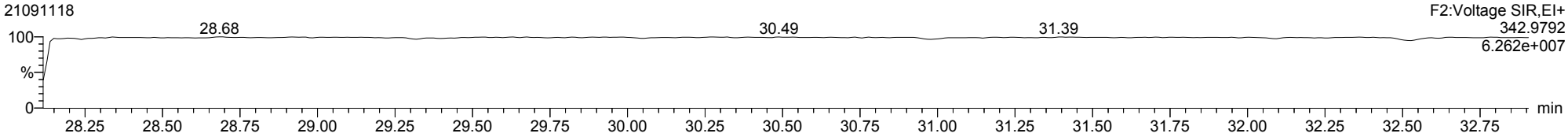

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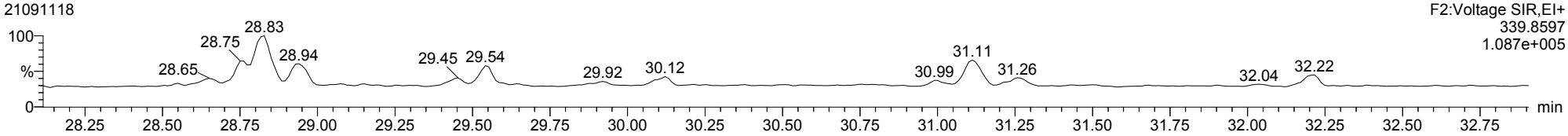
12378-PeCDF



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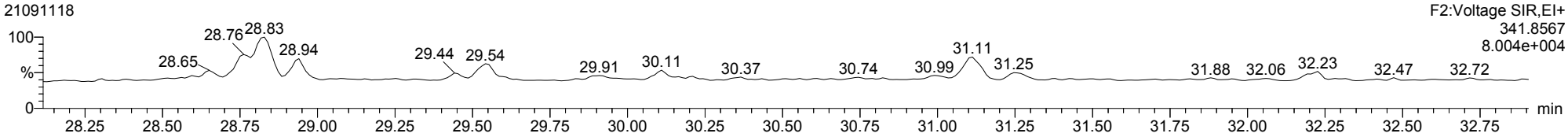

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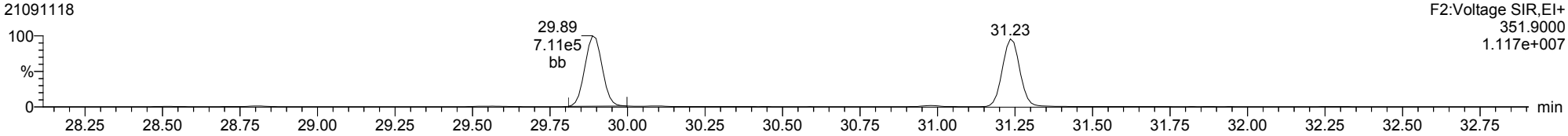

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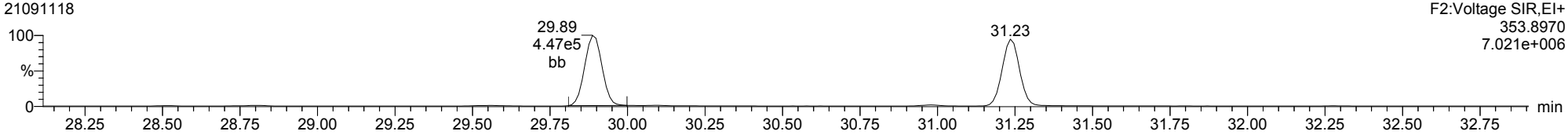

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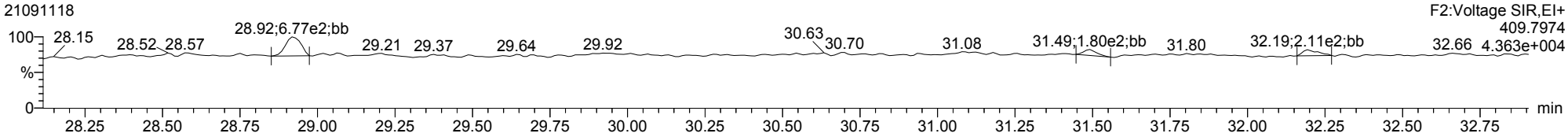

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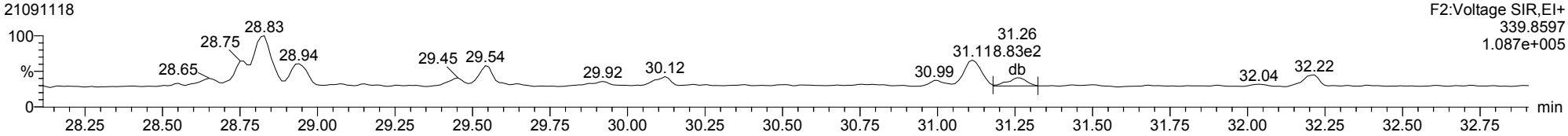

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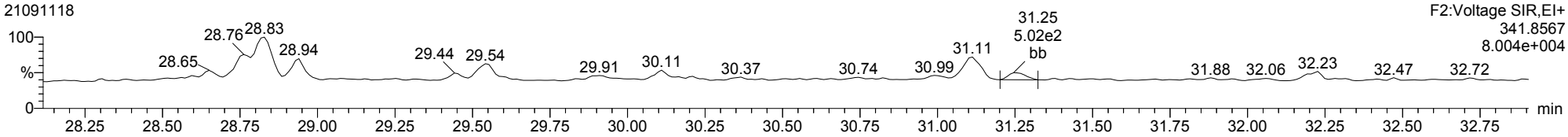

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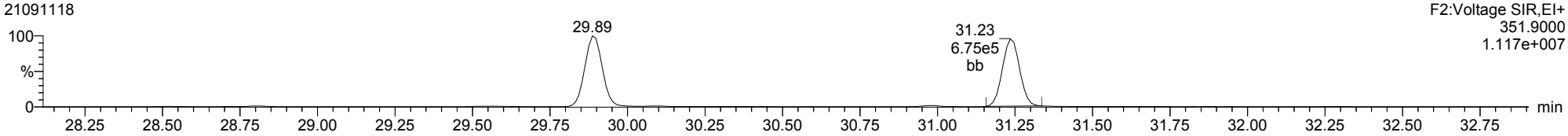

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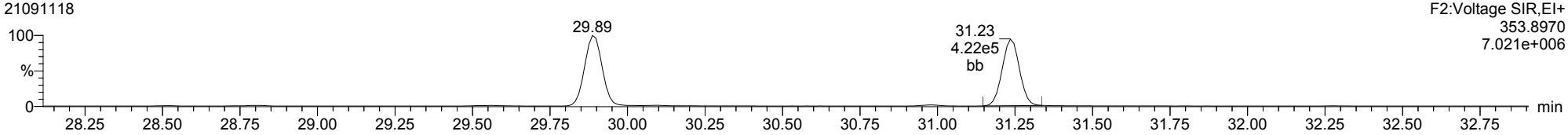

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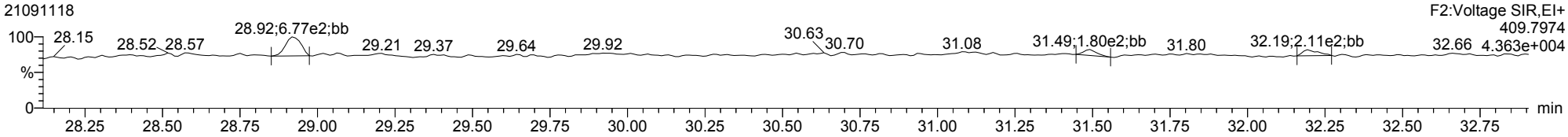

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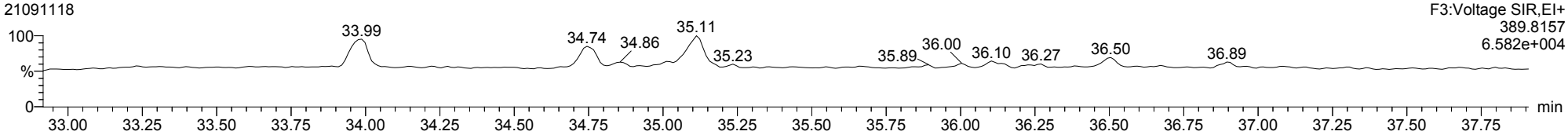

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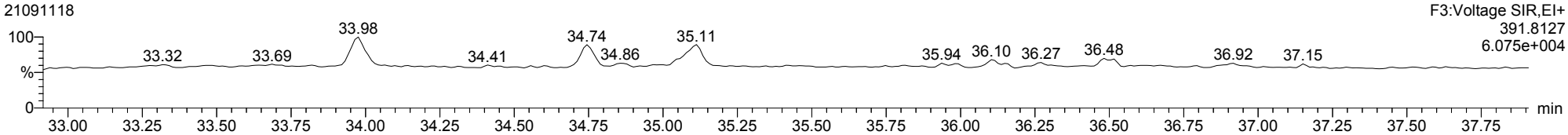

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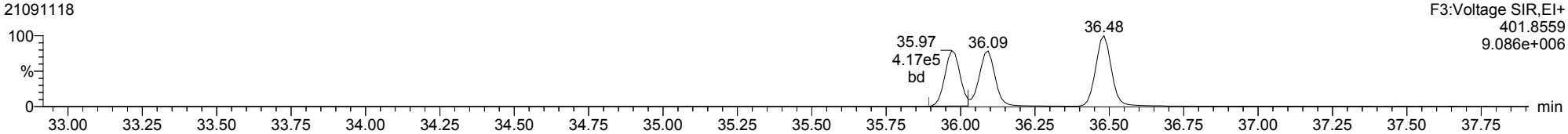

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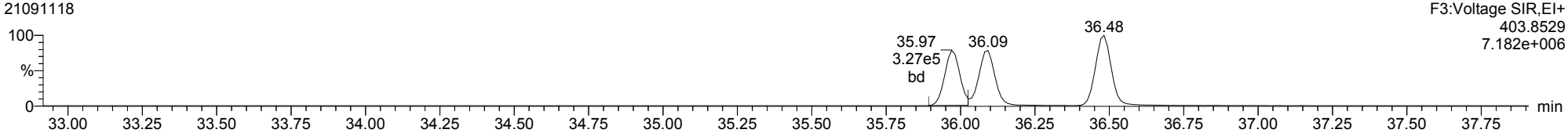

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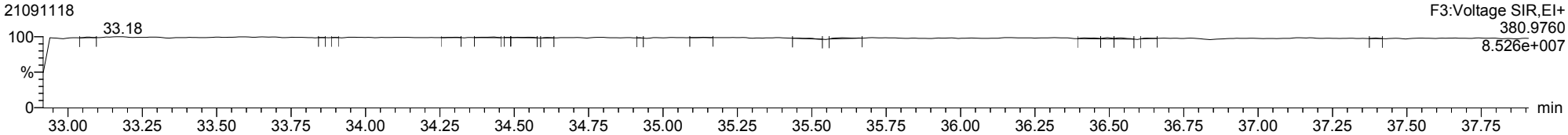

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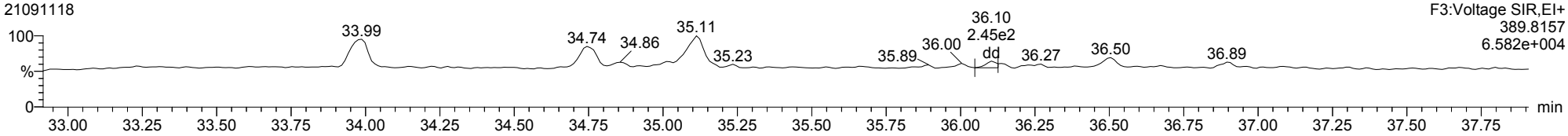

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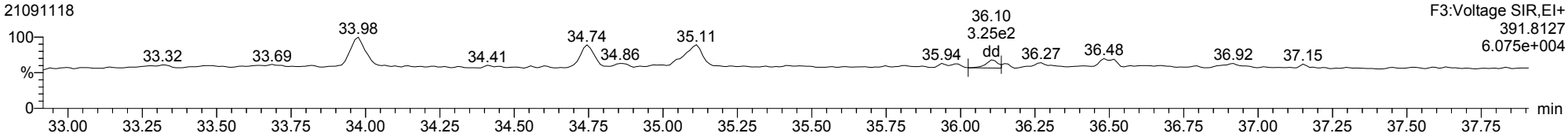

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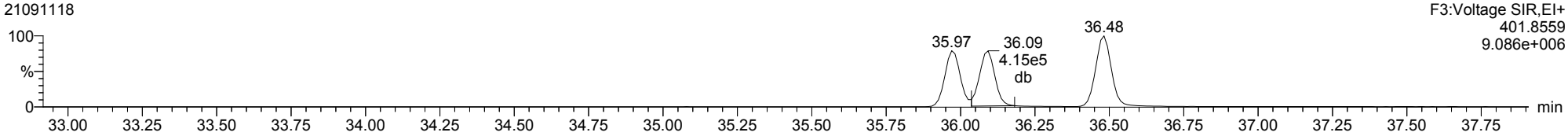

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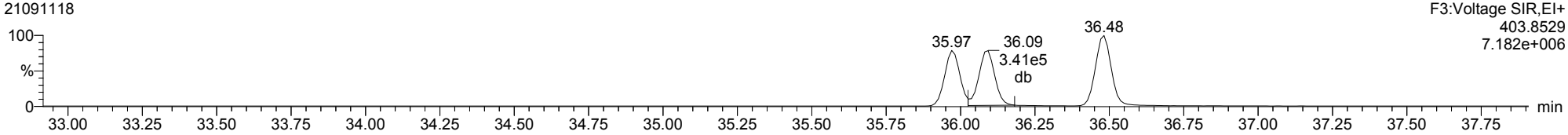

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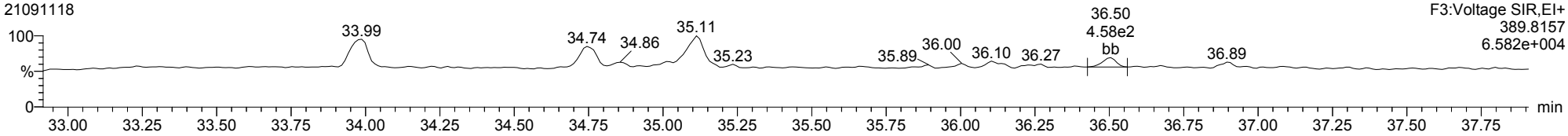

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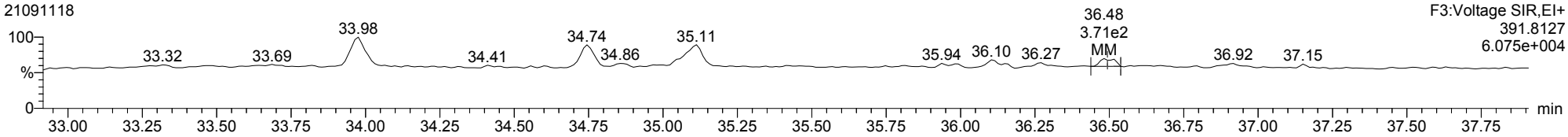

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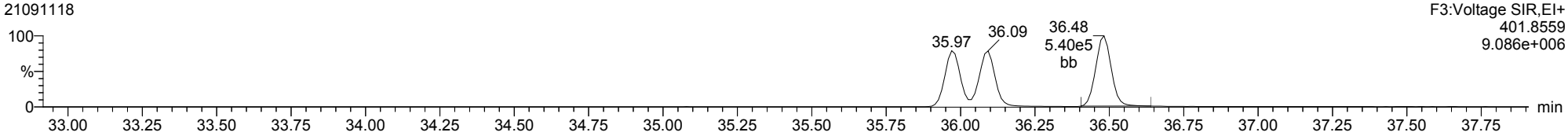

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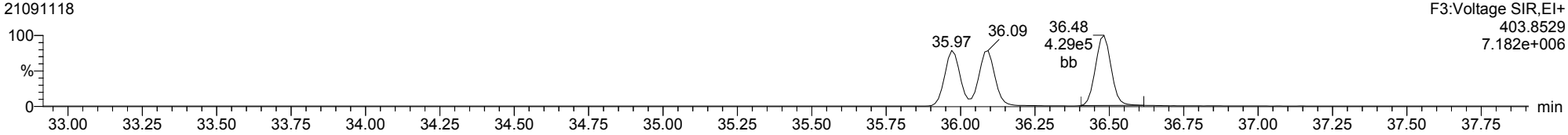

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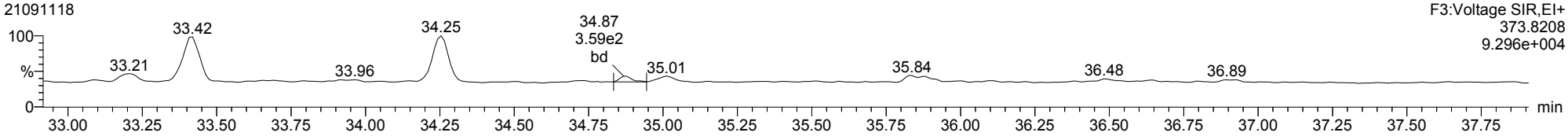

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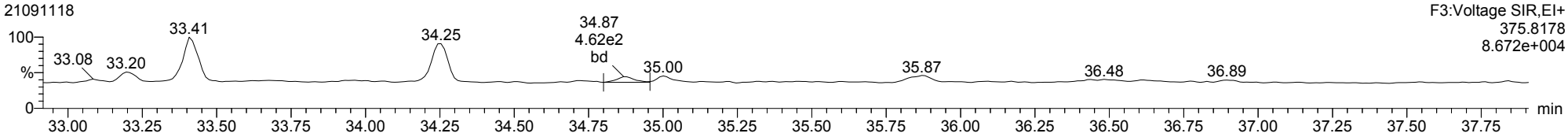

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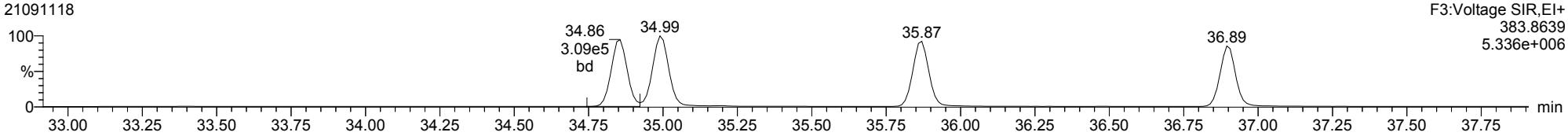

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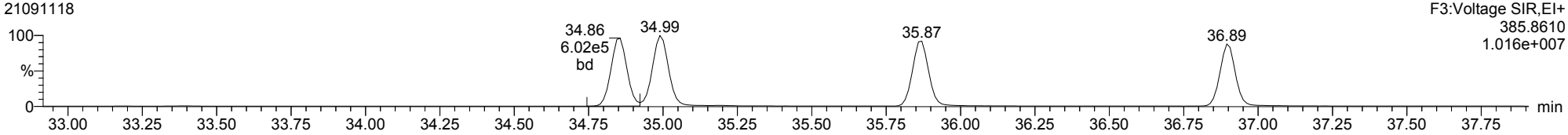

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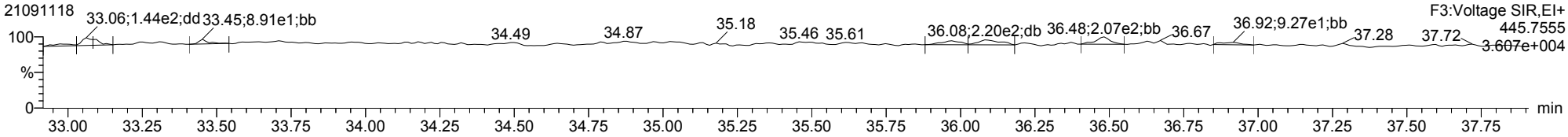

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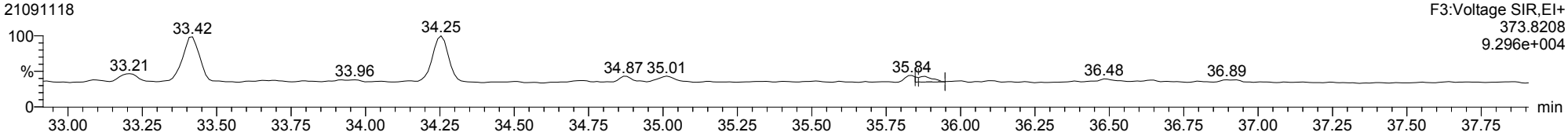

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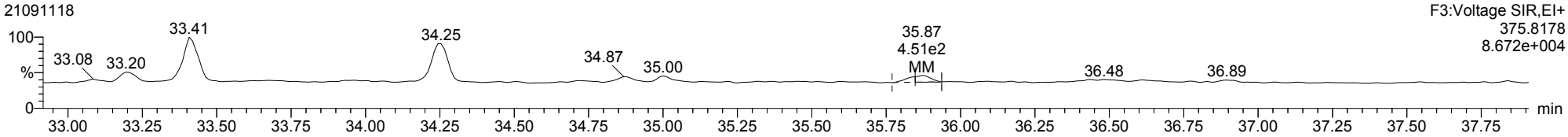

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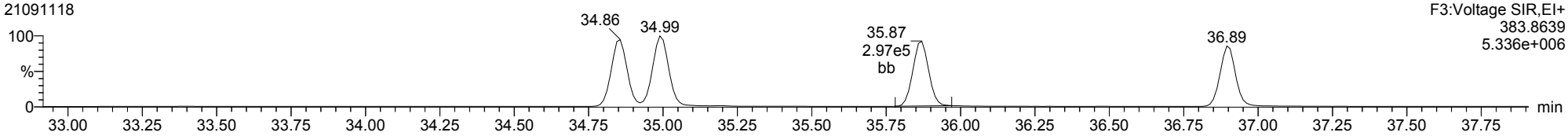

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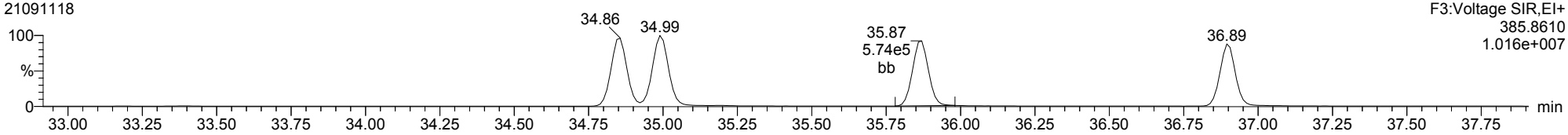

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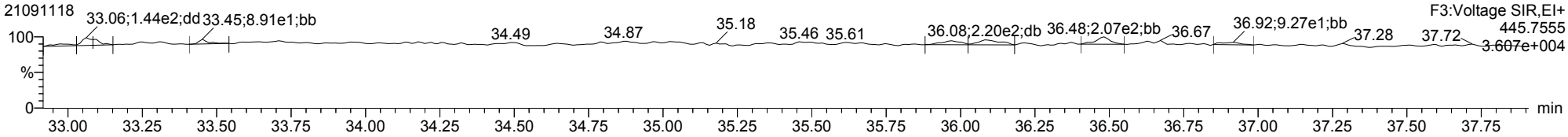

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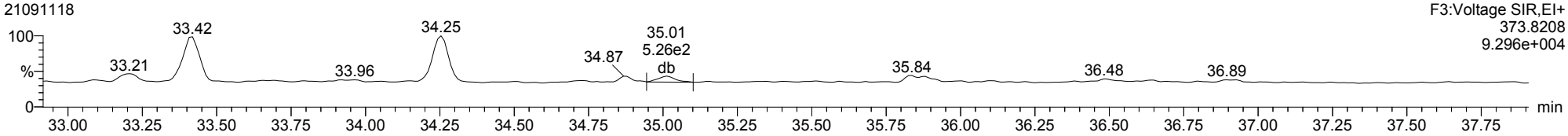

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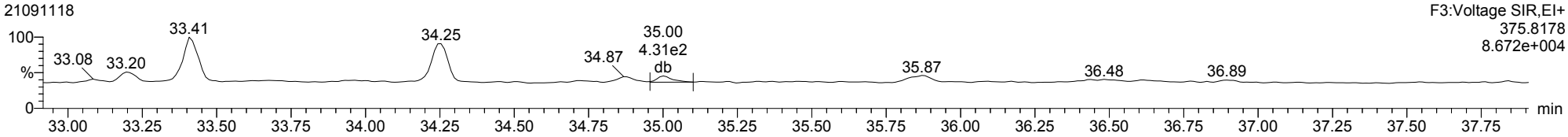

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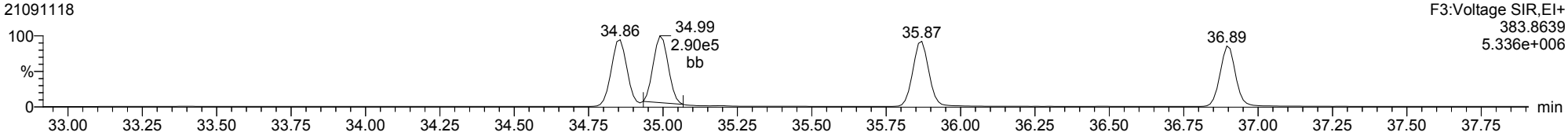

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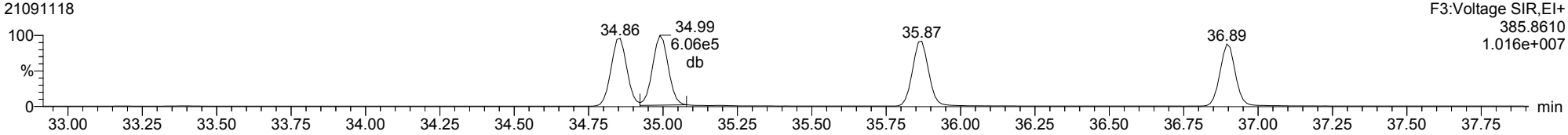

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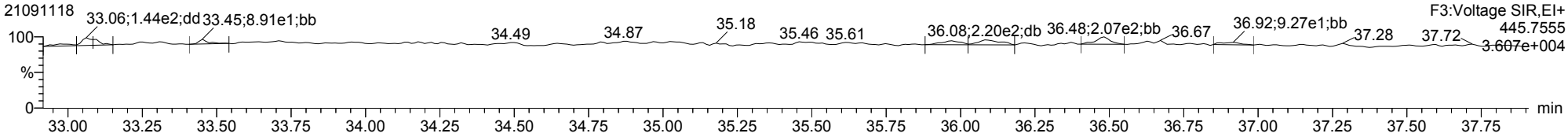

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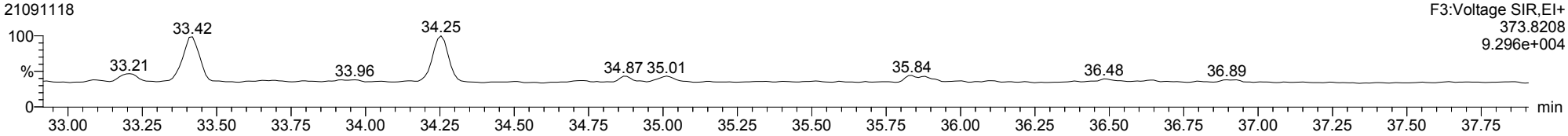

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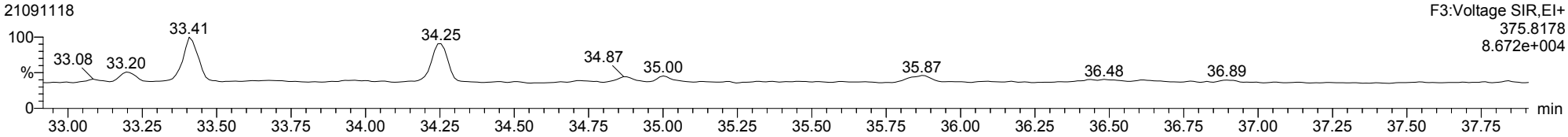

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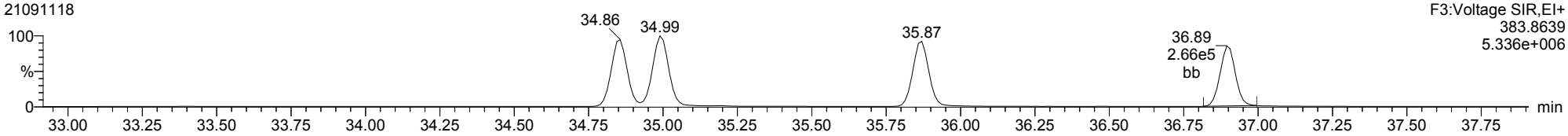

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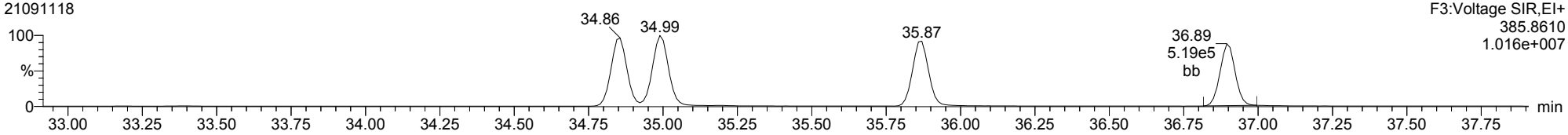

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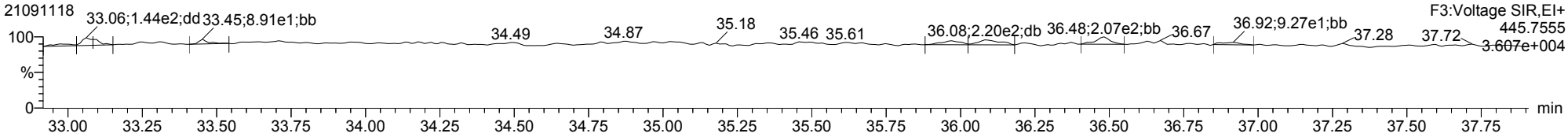

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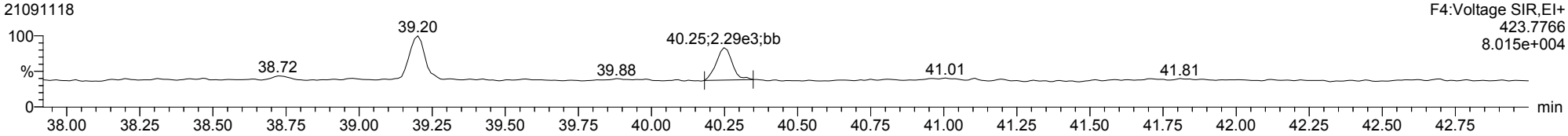

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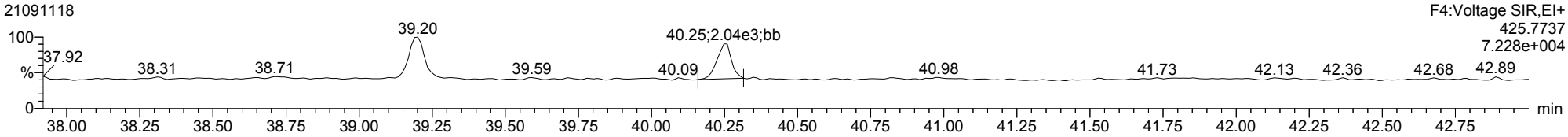

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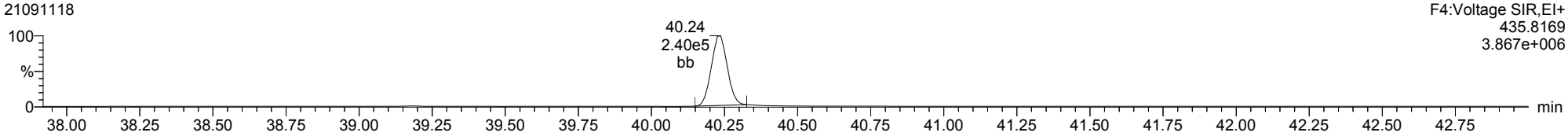

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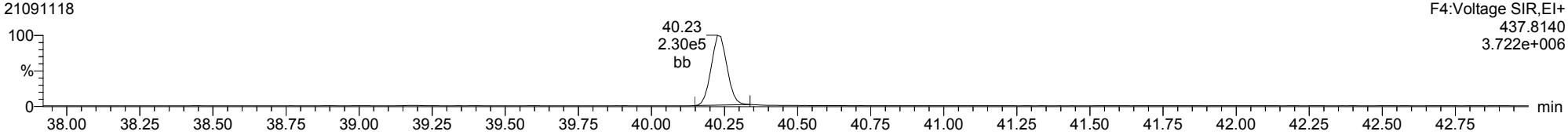

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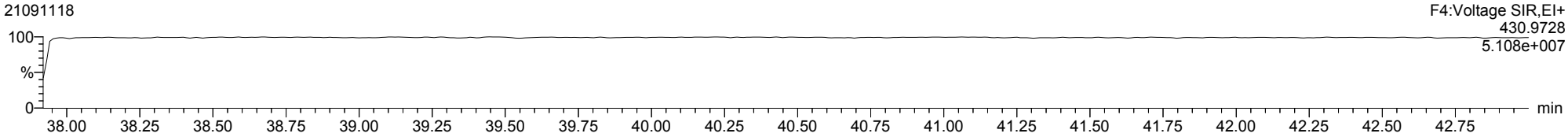

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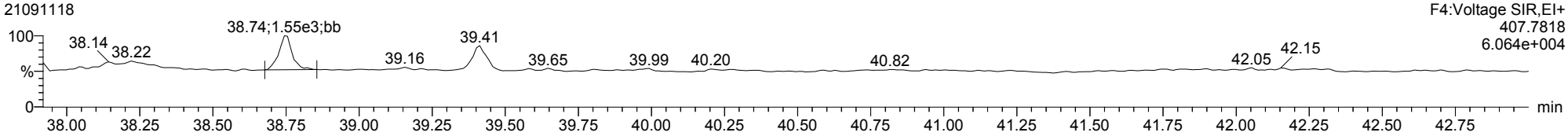

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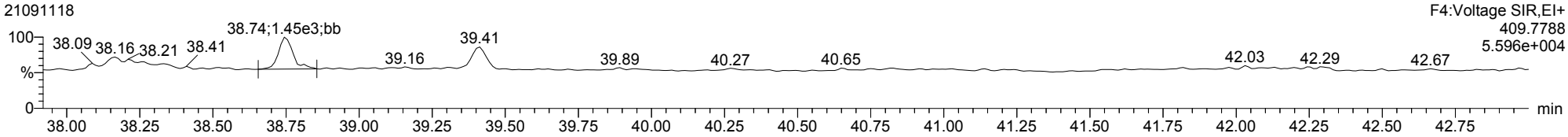

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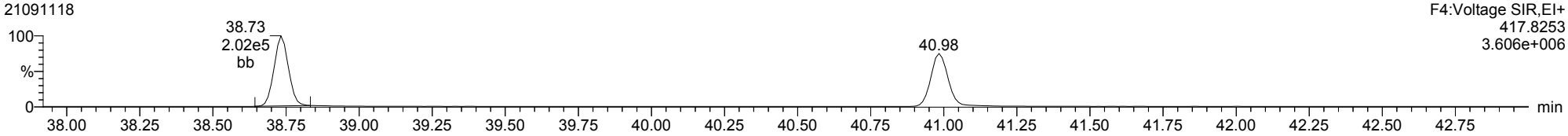

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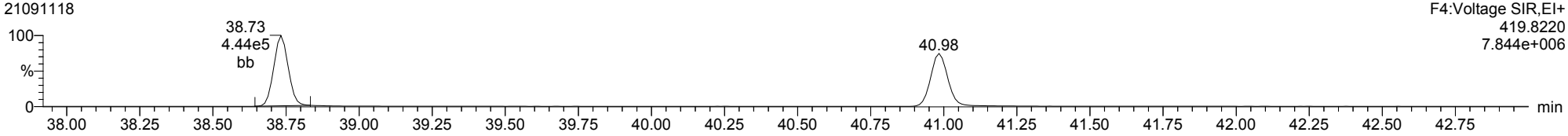

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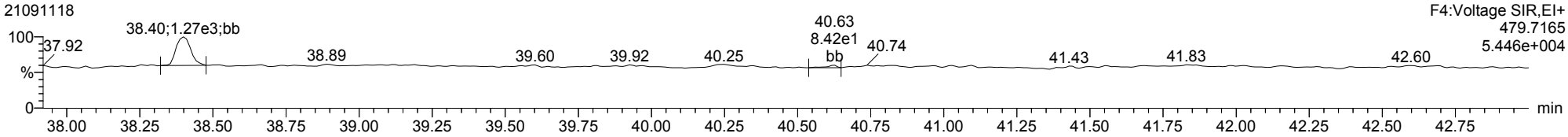
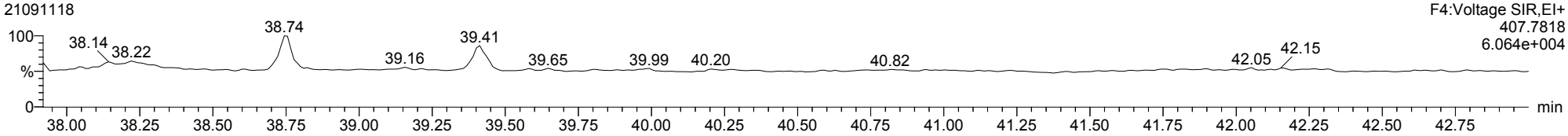
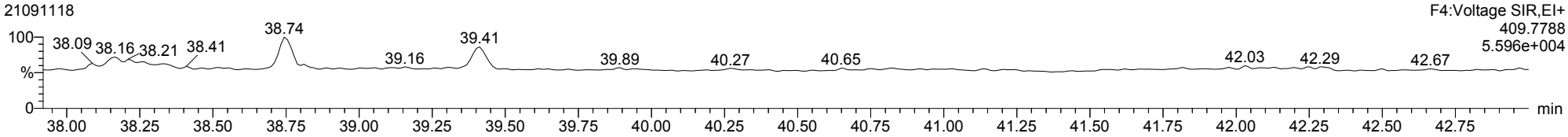


ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF



1234789-HpCDF



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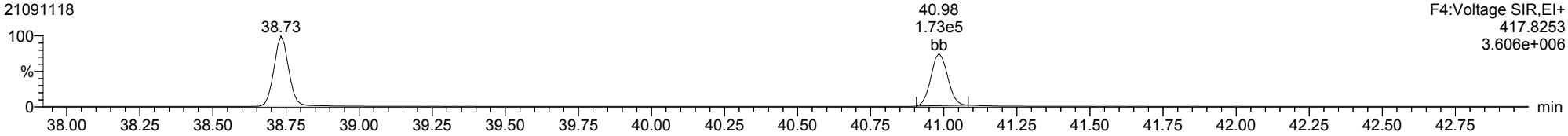

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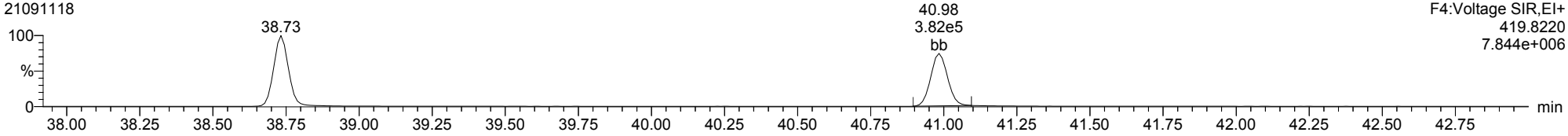
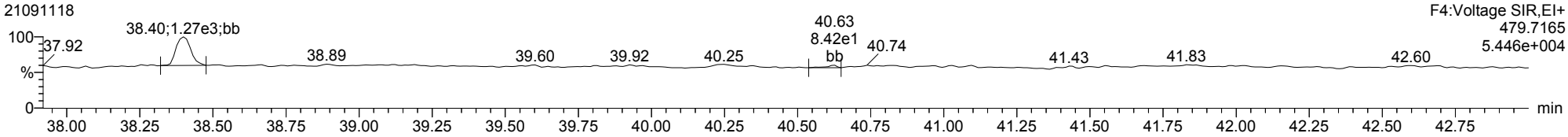


FUNCTION4 NCDPE



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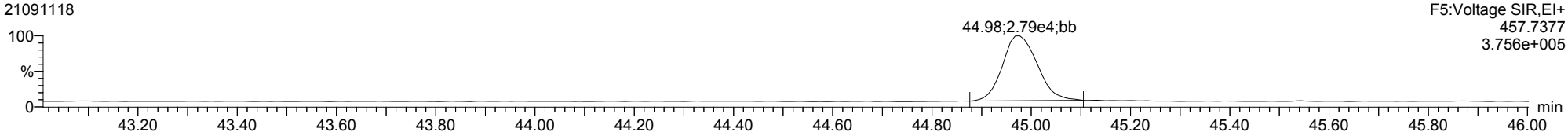
OCDD



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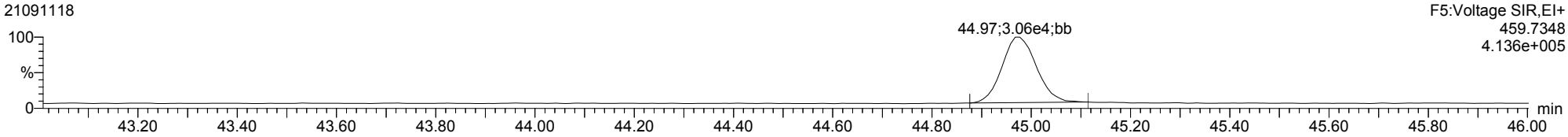

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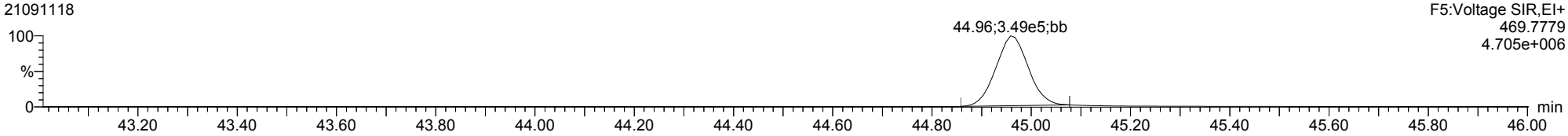

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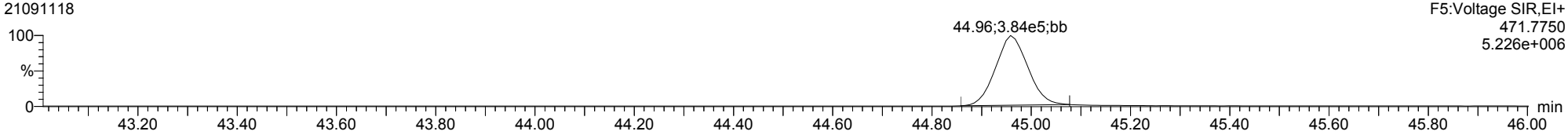
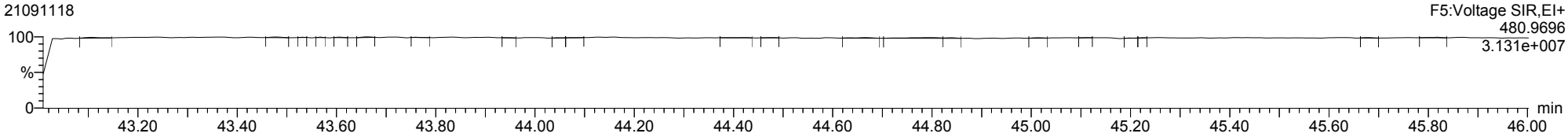


FUNCTION5 PFK



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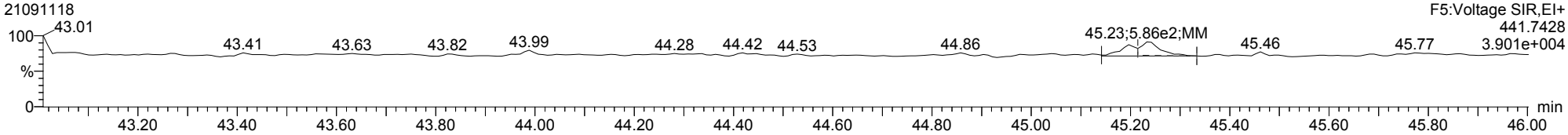
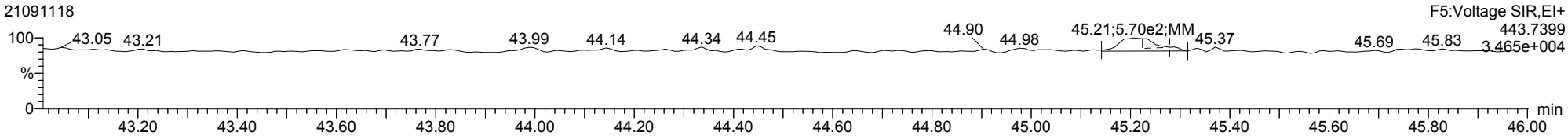
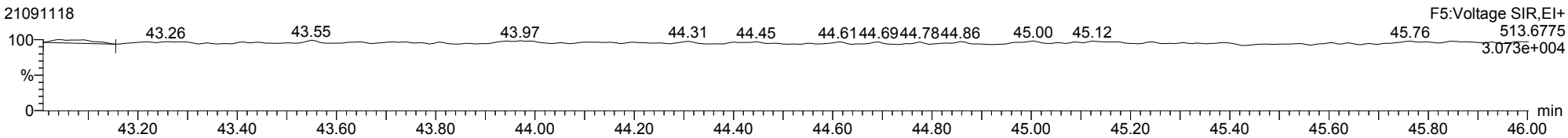


OCDF

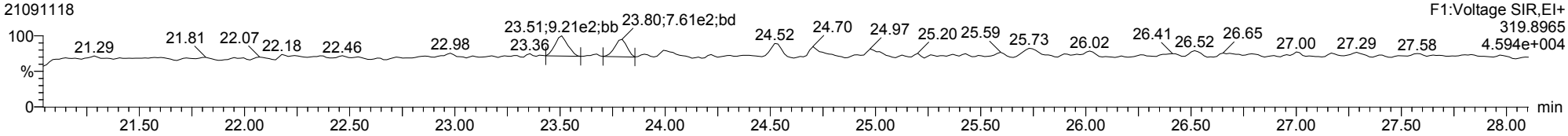


FUNCTION5 DCDPE

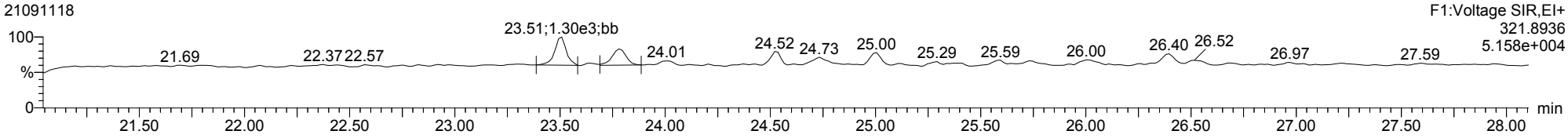


ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



Total-tetradioxins



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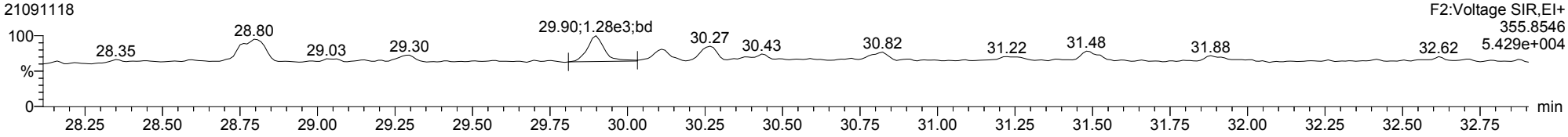

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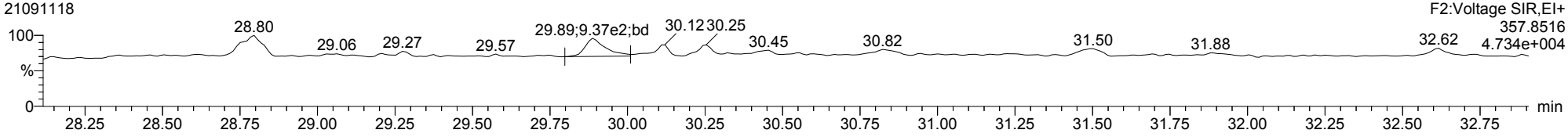

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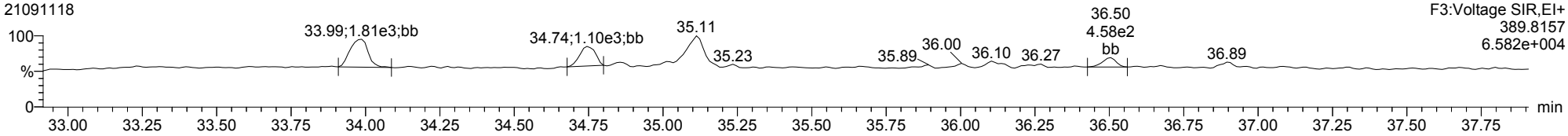
Printed: Wednesday, September 15, 2021 11:29:39 Pacific Daylight Time

ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



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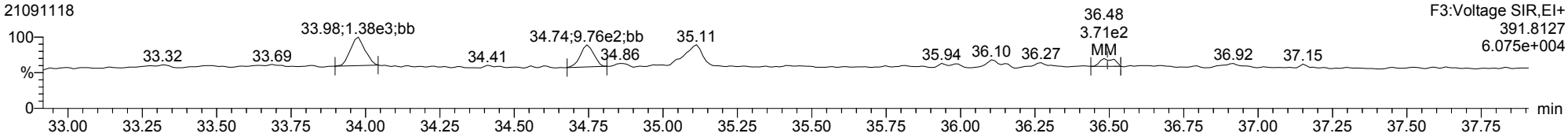

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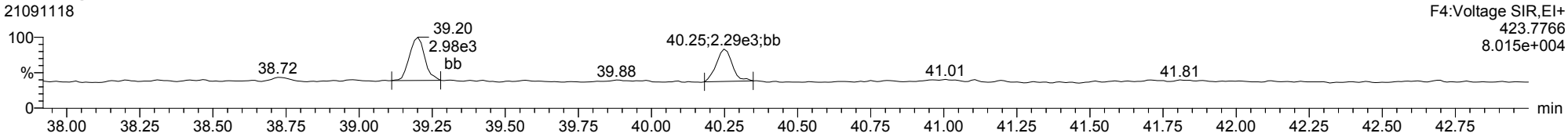

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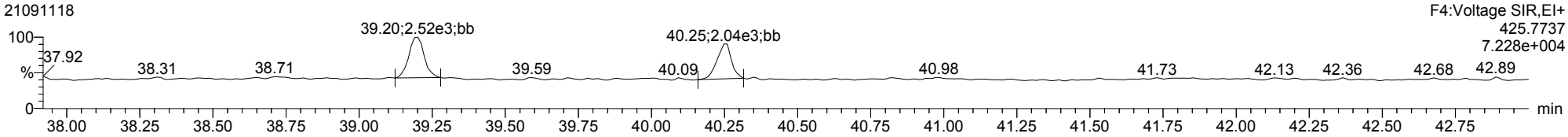

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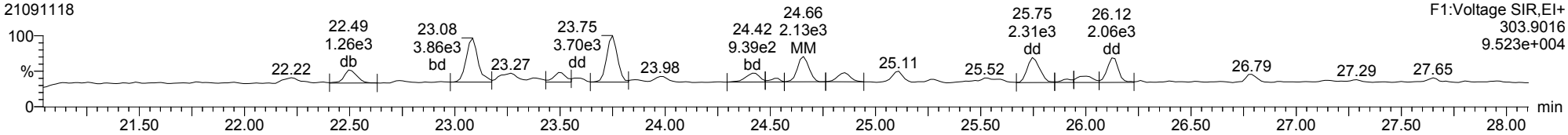
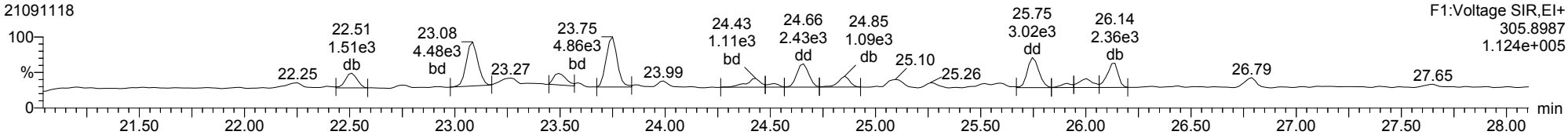
ID: 21G0138-04, Name: 21091118, Date: 12-Sep-2021, Time: 00:31:01, Conditions: AUTOSPEC01, User: pk

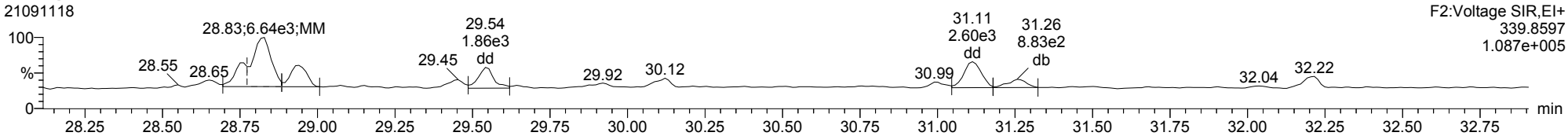
Total-tetrafurans



Total-tetrafurans



Total-pentafurans



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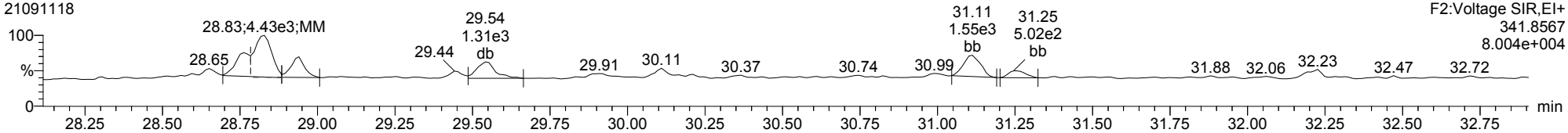

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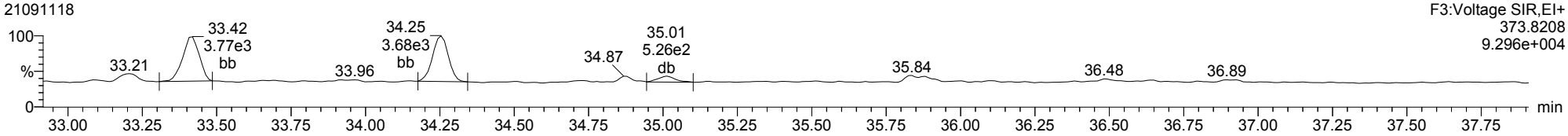
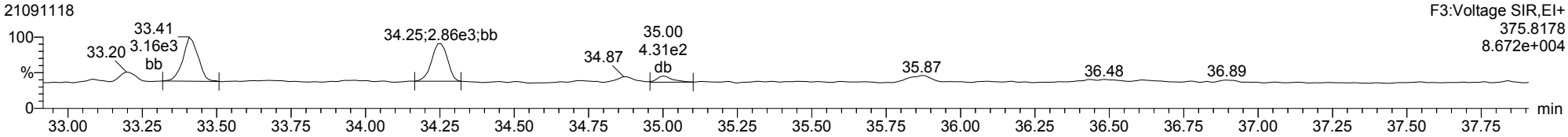
Total-hexafurans



Total-hexafurans



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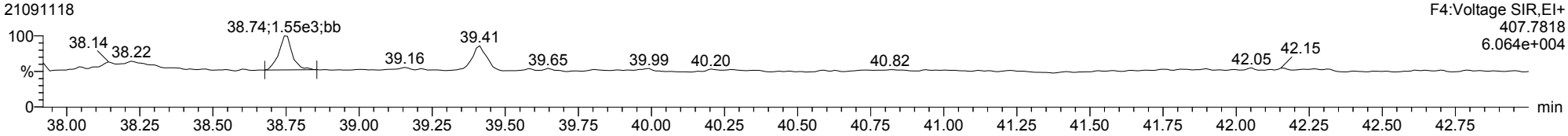
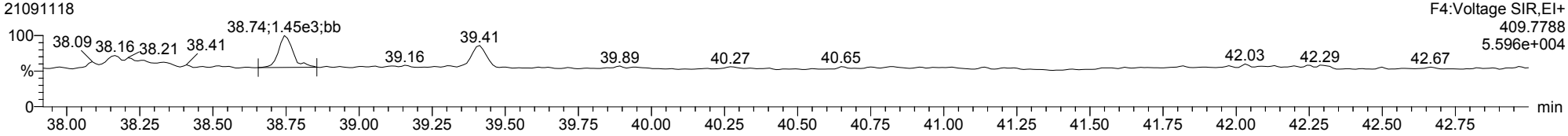


Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT659B

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-05 C	File ID:	21091119
Sampled:	07/13/21 08:17	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 01:20
% Solids:	55.94	Preparation:	EPA 1613	Initial/Final:	17.87 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.767	0.655-0.886	0.117	1.00	1.92	ng/kg	
1746-01-6	2,3,7,8-TCDD	1	0.533	0.655-0.886	0.122	1.00	0.803	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.634	1.318-1.783	0.183	1.00	3.24	ng/kg	
57117-31-4	2,3,4,7,8-PeCDF	1	1.562	1.318-1.783	0.170	1.00	6.01	ng/kg	
40321-76-4	1,2,3,7,8-PeCDD	1	1.593	1.318-1.783	0.228	1.00	37.4	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.214	1.054-1.426	0.137	1.00	82.1	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.207	1.054-1.426	0.132	1.00	14.5	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.212	1.054-1.426	0.135	1.00	21.4	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.220	1.054-1.426	0.162	1.00	12.0	ng/kg	
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.198	1.054-1.426	0.341	1.00	4.93	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.253	1.054-1.426	0.343	1.00	36.9	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.273	1.054-1.426	0.367	1.00	14.3	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.049	0.893-1.208	0.201	1.00	326	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.056	0.893-1.208	0.273	1.00	47.9	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.066	0.893-1.208	0.532	2.50	1030	ng/kg	B
39001-02-0	OCDF	1	0.915	0.757-1.024	0.406	2.50	599	ng/kg	
3268-87-9	OCDD	1	0.897	0.757-1.024	0.283	10.0	7360	ng/kg	E, B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	20.1	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	156	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	101	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	365	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	558	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	1630	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	1270	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	3070	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 75.33
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 75.33

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT659B

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-05	File ID:	21091119
Sampled:	07/13/21 08:17	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 01:20
Solids Wt%:	55.94	Preparation:	EPA 1613	Initial/Final:	17.87 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.791	0.655-0.886	0.094	56.5	24 - 169 %	
13C12-2,3,7,8-TCDD		0.762	0.655-0.886	0.115	61.7	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.602	1.318-1.783	0.104	74.1	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.601	1.318-1.783	0.109	79.8	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.591	1.318-1.783	0.106	72.7	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.516	0.434-0.587	0.089	59.5	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.514	0.434-0.587	0.083	55.2	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.519	0.434-0.587	0.091	58.3	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.517	0.434-0.587	0.110	63.8	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.268	1.054-1.426	0.116	63.9	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.258	1.054-1.426	0.107	59.0	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.463	0.374-0.506	0.116	62.4	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.456	0.374-0.506	0.141	62.8	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.064	0.893-1.208	0.109	66.5	23 - 140 %	
13C12-OCDD		0.899	0.757-1.024	0.122	76.0	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.051	79.8	35 - 197 %	

* Values outside of QC limits

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Printed: Wednesday, September 15, 2021 11:29:49 Pacific Daylight Time

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.821	1.001	3.596e3	4.686e3	1.108	0.767	0.770	1007	1822	4.68e4	6.20e4	46.5	34.0	NO	dd	dd	0.961
12378-PeCDF	29.920	1.001	9.467e3	5.795e3	1.015	1.634	1.550	1765	2939	1.59e5	9.23e4	90.2	31.4	NO	bb	bb	1.619
23478-PeCDF	31.257	1.000	1.964e4	1.258e4	1.126	1.562	1.550	1765	2939	3.00e5	1.93e5	169.8	65.7	NO	db	db	3.003
123478-HxCDF	34.878	1.000	1.829e5	1.506e5	1.017	1.214	1.240	1462	1557	3.02e6	2.51e6	2068.4	1610.2	NO	dd	dd	41.013
234678-HxCDF	35.847	0.999	4.729e4	3.903e4	1.052	1.212	1.240	1462	1557	6.08e5	4.95e5	415.7	317.6	NO	bb	bb	10.706
123678-HxCDF	35.023	1.001	3.291e4	2.727e4	1.037	1.207	1.240	1462	1557	5.28e5	4.41e5	361.3	283.3	NO	db	db	7.242
123789-HxCDF	36.906	1.000	2.367e4	1.940e4	1.030	1.220	1.240	1462	1557	3.52e5	2.85e5	240.8	182.8	NO	bb	bb	6.018
1234678-HpCDF	38.755	1.001	6.918e5	6.592e5	1.327	1.049	1.050	2227	2489	1.19e7	1.14e7	5349.6	4561.3	NO	bb	bb	162.780
1234789-HpCDF	40.995	1.000	8.120e4	7.693e4	1.283	1.056	1.050	2227	2489	1.22e6	1.19e6	547.6	479.9	NO	bb	bb	23.931
OCDF	45.233	1.006	8.571e5	9.365e5	1.447	0.915	0.890	3154	1999	1.07e7	1.18e7	3397.8	5887.7	NO	bb	bb	299.429
2378-TCDD	26.411	1.001	8.547e2	1.605e3	0.920	0.533	0.770	993	916	1.60e4	2.58e4	16.1	28.1	YES	bd	bd	0.402
12378-PeCDD	31.469	1.000	5.878e4	3.690e4	0.995	1.593	1.550	1367	1670	8.66e5	5.54e5	633.1	332.0	NO	bb	bb	18.717
123478-HxCDD	36.003	1.000	9.151e3	7.640e3	1.027	1.198	1.240	3131	3209	1.62e5	1.33e5	51.8	41.6	NO	bd	bd	2.463
123678-HxCDD	36.126	1.001	6.881e4	5.490e4	1.009	1.253	1.240	3131	3209	1.14e6	9.12e5	363.2	284.2	NO	db	db	18.467
123789-HxCDD	36.516	1.011	2.530e4	1.987e4	0.950	1.273	1.240	3131	3209	4.06e5	3.37e5	129.8	105.0	NO	bb	bb	7.161
1234678-HpCDD	40.248	1.000	1.295e6	1.215e6	1.068	1.066	1.050	3506	3498	2.15e7	2.00e7	6136.7	5707.1	NO	bb	bb	516.513
OCDD	44.986	1.000	8.501e6	9.475e6	1.181	0.897	0.890	1840	1097	1.07e8	1.22e8	57888.0	111063.6	NO	bb	bb	3677.173
13C-2378-TCDF	25.806	1.007	3.439e5	4.346e5	1.427	0.791	0.770	1963	1449	5.80e6	7.43e6	2953.0	5127.9	NO	bb	bb	56.516
13C-12378-PeCDF	29.898	1.166	5.718e5	3.569e5	1.297	1.602	1.550	1913	1513	9.38e6	5.83e6	4904.1	3854.9	NO	bb	bb	74.132
13C-23478-PeCDF	31.246	1.219	5.867e5	3.666e5	1.236	1.601	1.550	1913	1513	9.07e6	5.66e6	4743.0	3741.4	NO	bb	bb	79.845
13C-123478-HxCDF	34.867	0.955	2.722e5	5.275e5	1.242	0.516	0.510	1239	2050	4.41e6	8.48e6	3563.4	4137.2	NO	bd	bd	59.542
13C-123678-HxCDF	35.001	0.959	2.721e5	5.294e5	1.343	0.514	0.510	1239	2050	4.49e6	8.67e6	3623.9	4230.2	NO	db	db	55.186
13C-234678-HxCDF	35.881	0.983	2.617e5	5.044e5	1.215	0.519	0.510	1239	2050	4.35e6	8.29e6	3512.0	4046.3	NO	bb	bb	58.330
13C-123789-HxCDF	36.917	1.011	2.369e5	4.578e5	1.008	0.517	0.510	1239	2050	3.71e6	7.32e6	2993.2	3570.9	NO	bb	bb	63.778
13C-1234678-HpCDF	38.733	1.061	1.979e5	4.274e5	0.926	0.463	0.440	1187	1988	3.35e6	7.29e6	2824.8	3669.7	NO	bb	bb	62.427
13C-1234789-HpCDF	40.984	1.123	1.613e5	3.536e5	0.758	0.456	0.440	1187	1988	2.53e6	5.52e6	2130.3	2776.4	NO	bb	bb	62.836
13C-1234-TCDD	25.640	0.000	4.201e5	5.454e5	1.000	0.770	0.770	1981	1272	6.62e6	8.62e6	3343.8	6773.5	NO	bb	bb	100.000
13C-2378-TCDD	26.396	1.030	2.878e5	3.779e5	1.116	0.762	0.770	1981	1272	4.40e6	5.79e6	2221.8	4550.1	NO	bd	bb	61.744
13C-12378-PeCDD	31.480	1.228	3.154e5	1.982e5	0.732	1.591	1.550	942	1027	4.94e6	3.17e6	5245.1	3088.1	NO	bb	bb	72.667
13C-123478-HxCDD	35.992	0.986	3.709e5	2.926e5	0.960	1.268	1.240	2169	1120	6.07e6	4.81e6	2797.0	4296.9	NO	bd	bd	63.943
13C-123678-HxCDD	36.104	0.989	3.699e5	2.940e5	1.041	1.258	1.240	2169	1120	6.12e6	4.93e6	2821.1	4402.9	NO	db	db	58.971
13C-1234678-HpCDD	40.237	1.102	2.345e5	2.205e5	0.632	1.064	1.050	899	1150	3.81e6	3.58e6	4243.2	3114.8	NO	bb	bb	66.538
13C-OCDD	44.968	1.232	3.919e5	4.360e5	0.504	0.899	0.890	1000	827	4.99e6	5.50e6	4989.2	6648.6	NO	bb	bb	152.036
13C-123789-HxCDD	36.505	0.000	6.007e5	4.804e5	1.000	1.250	1.240	2169	1120	9.89e6	7.89e6	4557.3	7039.6	NO	bb	bb	100.000
37CL-2378-TCDD	26.411	1.030	3.338e5		1.084			1401		5.26e6		3757.8			bb		31.903

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Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:29:49 Pacific Daylight Time

ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.298	0.864	1.050e3	1.286e3	1.425	0.817	0.770	1007	1822	1.70e4	2.24e4	16.9	12.3	NO	bb	bb	0.211
1289-TCDF	27.288	1.057	2.940e2	1.985e2	1.043	1.481	0.770	1007	1822	4.98e3	4.71e3	4.9	2.6	YES	dd	db	0.061
13468-PECDF					1.376		1.550	724	1052								
12389-PECDF	32.305	1.081	8.713e2	5.802e2	1.000	1.502	1.550	1765	2939	1.68e4	1.05e4	9.5	3.6	NO	bb	bb	0.156
123468-HXCDF	33.207	0.952	7.427e4	6.281e4	1.087	1.183	1.240	1462	1557	1.18e6	1.01e6	807.9	649.1	NO	bb	bb	15.775
1368-TCDD	23.523	0.891	5.287e4	6.673e4	0.923	0.792	0.770	993	916	8.47e5	1.07e6	853.4	1167.5	NO	bb	bb	19.462
1289-TCDD	27.016	1.023	1.524e3	1.662e3	0.794	0.917	0.770	993	916	2.18e4	2.69e4	21.9	29.4	YES	bd	bb	0.603
12479-PECDD	28.784	0.914	4.039e5	2.476e5	1.843	1.632	1.550	1367	1670	4.03e6	2.47e6	2945.8	1480.4	NO	bb	bb	68.816
12389-PECDD	31.903	1.013	3.215e4	2.032e4	1.154	1.582	1.550	1367	1670	5.03e5	3.19e5	367.6	191.0	NO	bb	bb	8.856
124679-HXCDD	33.987	0.944	2.463e6	2.000e6	1.125	1.232	1.240	3131	3209	4.04e7	3.27e7	12902.9	10178.5	NO	bb	bb	597.822
1234679-HPCDD	39.201	0.974	2.886e6	2.708e6	1.211	1.066	1.050	3506	3498	4.91e7	4.63e7	14016.8	13228.0	NO	bb	bb	1015.473
Total-tetrafurans			4.155e4		1.192			1007		6.46e5							10.033
Total-penta1			8.279e4					724		1.27e6							15.989
Total-pentafurans			2.062e5		1.047			1765		3.03e6							34.453
Total-hexafurans			1.232e6		1.045			1462		1.95e7							278.988
Total-heptafurans			2.484e6		1.305			2227		4.17e7							637.034
Total-Furans			4.903e6		1.158			1007		7.69e7							1275.927
Total-tetradioxins			2.043e5		0.879			993		3.20e6							77.907
Total-pentadioxins			8.568e5		1.331			1367		1.06e7							182.575
Total-hexadioxins			3.267e6		1.028			3131		5.00e7							812.606
Total-heptadioxins			4.181e6		1.140			3506		7.07e7							1531.986
Total-Dioxins			1.701e7		1.092			993		2.41e8							6282.246
Total-TEQ			2.191e7					993		3.18e8							7558.173
FUNCTION1 PFK			2.645e8					519746		7.33e8							
FUNCTION2 PFK			4.204e6					386502		2.43e7							0.000
FUNCTION3 PFK			2.862e7					392841		3.93e7							0.000
FUNCTION4 PFK			1.148e6					240287		7.39e6							
FUNCTION5 PFK			0.000e0					211756		0.00e0							
FUNCTION1 HXCD...			8.127e3					615		9.33e4							0.000
FUNCTION1 HPCD...			2.566e3					1017		4.60e4							0.000
FUNCTION2 HPCD...			1.506e3					1173		3.05e4							0.000
FUNCTION3 OCDPE			1.026e3					568		1.88e4							0.000
FUNCTION4 NCDPE			4.292e3					841		6.51e4							0.000
FUNCTION5 DCDPE			1.374e3					623		1.20e4							0.000

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ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.89	1.370e3	1.950e3	1.192	0.70	0.77	25.3	YES	NO	db	dd	0.358
2	Total-tetrafurans	23.76	3.692e3	4.433e3	1.192	0.83	0.77	60.9	YES	NO	bd	bd	0.876
3	Total-tetrafurans	23.43	1.894e3	2.421e3	1.192	0.78	0.77	28.6	YES	NO	dd	dd	0.465
4	Total-tetrafurans	22.56	4.609e3	5.573e3	1.192	0.83	0.77	77.1	YES	NO	bb	bb	1.097
5	1368-TCDF	22.30	1.050e3	1.286e3	1.425	0.82	0.77	16.9	YES	NO	bb	bb	0.211
6	Total-tetrafurans	26.14	6.990e2	8.223e2	1.192	0.85	0.77	9.6	YES	NO	dd	dd	0.164
7	Total-tetrafurans	26.03	4.018e3	4.861e3	1.192	0.83	0.77	53.6	YES	NO	dd	dd	0.957
8	Total-tetrafurans	25.96	1.712e3	2.011e3	1.192	0.85	0.77	28.7	YES	NO	dd	dd	0.401
9	2378-TCDF	25.82	3.596e3	4.686e3	1.108	0.77	0.77	46.5	YES	NO	dd	dd	0.961
10	Total-tetrafurans	24.87	3.856e3	5.182e3	1.192	0.74	0.77	58.0	YES	NO	bb	db	0.974
11	Total-tetrafurans	24.67	4.695e3	5.868e3	1.192	0.80	0.77	69.9	YES	NO	db	dd	1.138
12	Total-tetrafurans	24.54	3.921e3	4.494e3	1.192	0.87	0.77	60.9	YES	NO	dd	dd	0.907
13	Total-tetrafurans	23.11	6.441e3	7.707e3	1.192	0.84	0.77	105.2	YES	NO	MM	MM	1.525

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	8.279e4	5.336e4		1.55	1.55	1756.7	YES	NO	bb	bb	15.989

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PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	29.63	4.625e3	3.013e3	1.047	1.53	1.55	41.0	YES	NO	db	db	0.776
2	Total-pentafurans	29.55	7.548e3	4.867e3	1.047	1.55	1.55	60.0	YES	NO	dd	dd	1.261
3	Total-pentafurans	29.45	1.140e4	7.538e3	1.047	1.51	1.55	99.4	YES	NO	dd	dd	1.923
4	Total-pentafurans	29.32	9.811e2	6.534e2	1.047	1.50	1.55	8.6	YES	NO	dd	dd	0.166
5	Total-pentafurans	29.15	1.213e3	7.079e2	1.047	1.71	1.55	10.2	YES	NO	dd	dd	0.195
6	Total-pentafurans	28.95	3.347e3	2.213e3	1.047	1.51	1.55	30.9	YES	NO	dd	dd	0.565
7	Total-pentafurans	28.84	1.049e5	6.973e4	1.047	1.50	1.55	828.1	YES	NO	dd	dd	17.736
8	Total-pentafurans	28.66	8.365e3	5.745e3	1.047	1.46	1.55	68.0	YES	NO	dd	dd	1.433
9	Total-pentafurans	28.54	1.618e3	9.201e2	1.047	1.76	1.55	14.4	YES	NO	bd	bd	0.258
10	12389-PECDF	32.30	8.713e2	5.802e2	1.000	1.50	1.55	9.5	YES	NO	bb	bb	0.156
11	23478-PeCDF	31.26	1.964e4	1.258e4	1.126	1.56	1.55	169.8	YES	NO	db	db	3.003
12	Total-pentafurans	31.11	1.733e4	1.144e4	1.047	1.51	1.55	150.0	YES	NO	dd	dd	2.921
13	Total-pentafurans	31.00	1.953e3	1.406e3	1.047	1.39	1.55	18.6	YES	NO	bd	bd	0.341
14	Total-pentafurans	30.22	1.605e3	1.031e3	1.047	1.56	1.55	13.7	YES	NO	dd	db	0.268
15	Total-pentafurans	30.12	1.127e4	6.795e3	1.047	1.66	1.55	106.5	YES	NO	bd	bd	1.834
16	12378-PeCDF	29.92	9.467e3	5.795e3	1.015	1.63	1.55	90.2	YES	NO	bb	bb	1.619

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.85	4.729e4	3.903e4	1.052	1.21	1.24	415.7	YES	NO	bb	bb	10.706
2	Total-hexafurans	35.55	1.122e3	9.600e2	1.045	1.17	1.24	14.5	YES	NO	bb	bb	0.260
3	Total-hexafurans	35.36	3.606e3	2.985e3	1.045	1.21	1.24	40.9	YES	NO	bb	bb	0.824
4	123678-HxCDF	35.02	3.291e4	2.727e4	1.037	1.21	1.24	361.3	YES	NO	db	db	7.242
5	123478-HxCDF	34.88	1.829e5	1.506e5	1.017	1.21	1.24	2068.4	YES	NO	dd	dd	41.013
6	Total-hexafurans	34.72	1.158e4	9.973e3	1.045	1.16	1.24	126.6	YES	NO	bd	bd	2.695
7	Total-hexafurans	34.25	5.817e5	4.769e5	1.045	1.22	1.24	6350.6	YES	NO	bb	bb	132.374
8	Total-hexafurans	33.95	1.091e4	9.249e3	1.045	1.18	1.24	109.9	YES	NO	bb	bb	2.521
9	Total-hexafurans	33.69	1.069e3	8.991e2	1.045	1.19	1.24	12.4	YES	NO	bb	bb	0.246
10	Total-hexafurans	33.42	2.606e5	2.137e5	1.045	1.22	1.24	2824.0	YES	NO	bb	bb	59.312
11	123468-HXCDF	33.21	7.427e4	6.281e4	1.087	1.18	1.24	807.9	YES	NO	bb	bb	15.775
12	123789-HxCDF	36.91	2.367e4	1.940e4	1.030	1.22	1.24	240.8	YES	NO	bb	bb	6.018

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.99	8.120e4	7.693e4	1.283	1.06	1.05	547.6	YES	NO	bb	bb	23.931
2	Total-heptafurans	40.25	9.598e2	8.598e2	1.305	1.12	1.05	7.3	YES	NO	bb	bb	0.245
3	Total-heptafurans	39.42	1.695e6	1.626e6	1.305	1.04	1.05	12710.3	YES	NO	bb	bb	446.262
4	Total-heptafurans	39.17	1.468e4	1.372e4	1.305	1.07	1.05	104.4	YES	NO	bb	bb	3.816
5	1234678-HpCDF	38.76	6.918e5	6.592e5	1.327	1.05	1.05	5349.6	YES	NO	bb	bb	162.780

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.89	1.370e3	1.950e3	1.192	0.70	0.77	25.3	YES	NO	db	dd	0.358
2	Total-tetrafurans	23.76	3.692e3	4.433e3	1.192	0.83	0.77	60.9	YES	NO	bd	bd	0.876
3	Total-tetrafurans	23.43	1.894e3	2.421e3	1.192	0.78	0.77	28.6	YES	NO	dd	dd	0.465
4	Total-tetrafurans	22.56	4.609e3	5.573e3	1.192	0.83	0.77	77.1	YES	NO	bb	bb	1.097
5	1368-TCDF	22.30	1.050e3	1.286e3	1.425	0.82	0.77	16.9	YES	NO	bb	bb	0.211
6	Total-tetrafurans	26.14	6.990e2	8.223e2	1.192	0.85	0.77	9.6	YES	NO	dd	dd	0.164
7	Total-tetrafurans	26.03	4.018e3	4.861e3	1.192	0.83	0.77	53.6	YES	NO	dd	dd	0.957
8	Total-tetrafurans	25.96	1.712e3	2.011e3	1.192	0.85	0.77	28.7	YES	NO	dd	dd	0.401
9	2378-TCDF	25.82	3.596e3	4.686e3	1.108	0.77	0.77	46.5	YES	NO	dd	dd	0.961
10	Total-tetrafurans	24.87	3.856e3	5.182e3	1.192	0.74	0.77	58.0	YES	NO	bb	db	0.974
11	Total-tetrafurans	24.67	4.695e3	5.868e3	1.192	0.80	0.77	69.9	YES	NO	db	dd	1.138
12	Total-tetrafurans	24.54	3.921e3	4.494e3	1.192	0.87	0.77	60.9	YES	NO	dd	dd	0.907
13	Total-pentafurans	29.63	4.625e3	3.013e3	1.047	1.53	1.55	41.0	YES	NO	db	db	0.776
14	Total-pentafurans	29.55	7.548e3	4.867e3	1.047	1.55	1.55	60.0	YES	NO	dd	dd	1.261
15	Total-pentafurans	29.45	1.140e4	7.538e3	1.047	1.51	1.55	99.4	YES	NO	dd	dd	1.923
16	Total-pentafurans	29.32	9.811e2	6.534e2	1.047	1.50	1.55	8.6	YES	NO	dd	dd	0.166
17	Total-pentafurans	29.15	1.213e3	7.079e2	1.047	1.71	1.55	10.2	YES	NO	dd	dd	0.195
18	Total-pentafurans	28.95	3.347e3	2.213e3	1.047	1.51	1.55	30.9	YES	NO	dd	dd	0.565
19	Total-pentafurans	28.84	1.049e5	6.973e4	1.047	1.50	1.55	828.1	YES	NO	dd	dd	17.736
20	Total-pentafurans	28.66	8.365e3	5.745e3	1.047	1.46	1.55	68.0	YES	NO	dd	dd	1.433
21	Total-pentafurans	28.54	1.618e3	9.201e2	1.047	1.76	1.55	14.4	YES	NO	bd	bd	0.258
22	12389-PECDF	32.30	8.713e2	5.802e2	1.000	1.50	1.55	9.5	YES	NO	bb	bb	0.156
23	23478-PeCDF	31.26	1.964e4	1.258e4	1.126	1.56	1.55	169.8	YES	NO	db	db	3.003
24	Total-pentafurans	31.11	1.733e4	1.144e4	1.047	1.51	1.55	150.0	YES	NO	dd	dd	2.921
25	Total-pentafurans	31.00	1.953e3	1.406e3	1.047	1.39	1.55	18.6	YES	NO	bd	bd	0.341
26	Total-pentafurans	30.22	1.605e3	1.031e3	1.047	1.56	1.55	13.7	YES	NO	dd	db	0.268
27	Total-pentafurans	30.12	1.127e4	6.795e3	1.047	1.66	1.55	106.5	YES	NO	bd	bd	1.834
28	12378-PeCDF	29.92	9.467e3	5.795e3	1.015	1.63	1.55	90.2	YES	NO	bb	bb	1.619
29	234678-HxCDF	35.85	4.729e4	3.903e4	1.052	1.21	1.24	415.7	YES	NO	bb	bb	10.706
30	Total-hexafurans	35.55	1.122e3	9.600e2	1.045	1.17	1.24	14.5	YES	NO	bb	bb	0.260
31	Total-hexafurans	35.36	3.606e3	2.985e3	1.045	1.21	1.24	40.9	YES	NO	bb	bb	0.824
32	123678-HxCDF	35.02	3.291e4	2.727e4	1.037	1.21	1.24	361.3	YES	NO	db	db	7.242
33	123478-HxCDF	34.88	1.829e5	1.506e5	1.017	1.21	1.24	2068.4	YES	NO	dd	dd	41.013
34	Total-hexafurans	34.72	1.158e4	9.973e3	1.045	1.16	1.24	126.6	YES	NO	bd	bd	2.695
35	Total-hexafurans	34.25	5.817e5	4.769e5	1.045	1.22	1.24	6350.6	YES	NO	bb	bb	132.374
36	Total-hexafurans	33.95	1.091e4	9.249e3	1.045	1.18	1.24	109.9	YES	NO	bb	bb	2.521
37	Total-hexafurans	33.69	1.069e3	8.991e2	1.045	1.19	1.24	12.4	YES	NO	bb	bb	0.246

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-hexafurans	33.42	2.606e5	2.137e5	1.045	1.22	1.24	2824.0	YES	NO	bb	bb	59.312
39	123468-HXCDF	33.21	7.427e4	6.281e4	1.087	1.18	1.24	807.9	YES	NO	bb	bb	15.775
40	123789-HxCDF	36.91	2.367e4	1.940e4	1.030	1.22	1.24	240.8	YES	NO	bb	bb	6.018
41	1234789-HpCDF	40.99	8.120e4	7.693e4	1.283	1.06	1.05	547.6	YES	NO	bb	bb	23.931
42	Total-heptafurans	40.25	9.598e2	8.598e2	1.305	1.12	1.05	7.3	YES	NO	bb	bb	0.245
43	Total-heptafurans	39.42	1.695e6	1.626e6	1.305	1.04	1.05	12710.3	YES	NO	bb	bb	446.262
44	Total-heptafurans	39.17	1.468e4	1.372e4	1.305	1.07	1.05	104.4	YES	NO	bb	bb	3.816
45	1234678-HpCDF	38.76	6.918e5	6.592e5	1.327	1.05	1.05	5349.6	YES	NO	bb	bb	162.780
46	OCDF	45.23	8.571e5	9.365e5	1.447	0.92	0.89	3397.8	YES	NO	bb	bb	299.429
47	Total-penta1	27.18	8.279e4	5.336e4		1.55	1.55	1756.7	YES	NO	bb	bb	15.989
48	Total-tetrafurans	23.11	6.441e3	7.707e3	1.192	0.84	0.77	105.2	YES	NO	MM	MM	1.525

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.65	4.985e3	5.797e3	0.879	0.86	0.77	87.1	YES	NO	bd	bd	1.842
2	Total-tetradioxins	25.49	4.838e3	6.103e3	0.879	0.79	0.77	70.8	YES	NO	db	db	1.870
3	Total-tetradioxins	25.43	2.655e3	3.581e3	0.879	0.74	0.77	60.1	YES	NO	dd	dd	1.065
4	Total-tetradioxins	25.28	1.390e3	2.034e3	0.879	0.68	0.77	15.7	YES	NO	bd	bd	0.585
5	Total-tetradioxins	25.02	3.759e4	4.692e4	0.879	0.80	0.77	551.7	YES	NO	bb	bb	14.440
6	Total-tetradioxins	24.73	1.126e4	1.487e4	0.879	0.76	0.77	170.7	YES	NO	bb	bb	4.466
7	Total-tetradioxins	24.54	2.551e3	3.099e3	0.879	0.82	0.77	42.9	YES	NO	bb	bb	0.965
8	Total-tetradioxins	24.02	1.761e4	2.164e4	0.879	0.81	0.77	299.2	YES	NO	bb	bb	6.708
9	Total-tetradioxins	23.81	5.213e4	6.650e4	0.879	0.78	0.77	828.8	YES	NO	bb	bb	20.271
10	1368-TCDD	23.52	5.287e4	6.673e4	0.923	0.79	0.77	853.4	YES	NO	bb	bb	19.462
11	Total-tetradioxins	26.53	1.379e4	1.692e4	0.879	0.82	0.77	214.8	YES	NO	db	db	5.247
12	Total-tetradioxins	26.03	2.590e3	3.169e3	0.879	0.82	0.77	27.0	YES	NO	bb	bb	0.984

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	29.90	4.587e4	2.941e4	1.331	1.56	1.55	553.4	YES	NO	bb	bb	11.013
2	Total-pentadioxins	29.30	7.655e4	4.814e4	1.331	1.59	1.55	933.2	YES	NO	bb	bb	18.244
3	12479-PECDD	28.78	4.039e5	2.476e5	1.843	1.63	1.55	2945.8	YES	NO	bb	bb	68.816
4	12389-PECDD	31.90	3.215e4	2.032e4	1.154	1.58	1.55	367.6	YES	NO	bb	bb	8.856
5	12378-PeCDD	31.47	5.878e4	3.690e4	0.995	1.59	1.55	633.1	YES	NO	bb	bb	18.717
6	Total-pentadioxins	30.43	1.449e5	9.026e4	1.331	1.61	1.55	1191.5	YES	NO	db	db	34.409
7	Total-pentadioxins	30.25	3.377e4	2.123e4	1.331	1.59	1.55	423.4	YES	NO	bd	bd	8.047
8	Total-pentadioxins	30.11	6.087e4	3.804e4	1.331	1.60	1.55	734.8	YES	NO	bb	bb	14.471

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.52	2.530e4	1.987e4	0.950	1.27	1.24	129.8	YES	NO	bb	bb	7.161
2	Total-hexadioxins	36.29	1.976e4	1.654e4	1.028	1.19	1.24	108.8	YES	NO	bb	bb	5.320
3	123678-HxCDD	36.13	6.881e4	5.490e4	1.009	1.25	1.24	363.2	YES	NO	db	db	18.467
4	123478-HxCDD	36.00	9.151e3	7.640e3	1.027	1.20	1.24	51.8	YES	NO	bd	bd	2.463
5	Total-hexadioxins	35.23	1.817e4	1.618e4	1.028	1.12	1.24	93.2	YES	NO	db	db	5.034
6	Total-hexadioxins	35.08	5.858e5	4.763e5	1.028	1.23	1.24	1909.7	YES	NO	bd	bd	155.673
7	Total-hexadioxins	34.76	7.745e4	6.354e4	1.028	1.22	1.24	424.5	YES	NO	bb	bb	20.665
8	124679-HXCDD	33.99	2.463e6	2.000e6	1.125	1.23	1.24	12902.9	YES	NO	bb	bb	597.822

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.25	1.295e6	1.215e6	1.068	1.07	1.05	6136.7	YES	NO	bb	bb	516.513
2	1234679-HPCDD	39.20	2.886e6	2.708e6	1.211	1.07	1.05	14016.8	YES	NO	bb	bb	1015.4...

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:29:49 Pacific Daylight Time

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.65	4.985e3	5.797e3	0.879	0.86	0.77	87.1	YES	NO	bd	bd	1.842
2	Total-tetradioxins	25.49	4.838e3	6.103e3	0.879	0.79	0.77	70.8	YES	NO	db	db	1.870
3	Total-tetradioxins	25.43	2.655e3	3.581e3	0.879	0.74	0.77	60.1	YES	NO	dd	dd	1.065
4	Total-tetradioxins	25.28	1.390e3	2.034e3	0.879	0.68	0.77	15.7	YES	NO	bd	bd	0.585
5	Total-tetradioxins	25.02	3.759e4	4.692e4	0.879	0.80	0.77	551.7	YES	NO	bb	bb	14.440
6	Total-tetradioxins	24.73	1.126e4	1.487e4	0.879	0.76	0.77	170.7	YES	NO	bb	bb	4.466
7	Total-tetradioxins	24.54	2.551e3	3.099e3	0.879	0.82	0.77	42.9	YES	NO	bb	bb	0.965
8	Total-tetradioxins	24.02	1.761e4	2.164e4	0.879	0.81	0.77	299.2	YES	NO	bb	bb	6.708
9	Total-tetradioxins	23.81	5.213e4	6.650e4	0.879	0.78	0.77	828.8	YES	NO	bb	bb	20.271
10	1368-TCDD	23.52	5.287e4	6.673e4	0.923	0.79	0.77	853.4	YES	NO	bb	bb	19.462
11	Total-tetradioxins	26.53	1.379e4	1.692e4	0.879	0.82	0.77	214.8	YES	NO	db	db	5.247
12	Total-tetradioxins	26.03	2.590e3	3.169e3	0.879	0.82	0.77	27.0	YES	NO	bb	bb	0.984
13	Total-pentadioxins	29.90	4.587e4	2.941e4	1.331	1.56	1.55	553.4	YES	NO	bb	bb	11.013
14	Total-pentadioxins	29.30	7.655e4	4.814e4	1.331	1.59	1.55	933.2	YES	NO	bb	bb	18.244
15	12479-PECDD	28.78	4.039e5	2.476e5	1.843	1.63	1.55	2945.8	YES	NO	bb	bb	68.816
16	12389-PECDD	31.90	3.215e4	2.032e4	1.154	1.58	1.55	367.6	YES	NO	bb	bb	8.856
17	12378-PeCDD	31.47	5.878e4	3.690e4	0.995	1.59	1.55	633.1	YES	NO	bb	bb	18.717
18	Total-pentadioxins	30.43	1.449e5	9.026e4	1.331	1.61	1.55	1191.5	YES	NO	db	db	34.409
19	Total-pentadioxins	30.25	3.377e4	2.123e4	1.331	1.59	1.55	423.4	YES	NO	bd	bd	8.047
20	Total-pentadioxins	30.11	6.087e4	3.804e4	1.331	1.60	1.55	734.8	YES	NO	bb	bb	14.471
21	123789-HxCDD	36.52	2.530e4	1.987e4	0.950	1.27	1.24	129.8	YES	NO	bb	bb	7.161
22	Total-hexadioxins	36.29	1.976e4	1.654e4	1.028	1.19	1.24	108.8	YES	NO	bb	bb	5.320
23	123678-HxCDD	36.13	6.881e4	5.490e4	1.009	1.25	1.24	363.2	YES	NO	db	db	18.467
24	123478-HxCDD	36.00	9.151e3	7.640e3	1.027	1.20	1.24	51.8	YES	NO	bd	bd	2.463
25	Total-hexadioxins	35.23	1.817e4	1.618e4	1.028	1.12	1.24	93.2	YES	NO	db	db	5.034
26	Total-hexadioxins	35.08	5.858e5	4.763e5	1.028	1.23	1.24	1909.7	YES	NO	bd	bd	155.673
27	Total-hexadioxins	34.76	7.745e4	6.354e4	1.028	1.22	1.24	424.5	YES	NO	bb	bb	20.665
28	124679-HXCDD	33.99	2.463e6	2.000e6	1.125	1.23	1.24	12902.9	YES	NO	bb	bb	597.822
29	OCDD	44.99	8.501e6	9.475e6	1.181	0.90	0.89	57888.0	YES	NO	bb	bb	3677.1...
30	1234678-HpCDD	40.25	1.295e6	1.215e6	1.068	1.07	1.05	6136.7	YES	NO	bb	bb	516.513
31	1234679-HPCDD	39.20	2.886e6	2.708e6	1.211	1.07	1.05	14016.8	YES	NO	bb	bb	1015.4...

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.89	1.370e3	1.950e3	1.192	0.70	0.77	25.3	YES	NO	db	dd	0.358
2	Total-tetrafurans	23.76	3.692e3	4.433e3	1.192	0.83	0.77	60.9	YES	NO	bd	bd	0.876
3	Total-tetrafurans	23.43	1.894e3	2.421e3	1.192	0.78	0.77	28.6	YES	NO	dd	dd	0.465
4	Total-tetrafurans	22.56	4.609e3	5.573e3	1.192	0.83	0.77	77.1	YES	NO	bb	bb	1.097
5	1368-TCDF	22.30	1.050e3	1.286e3	1.425	0.82	0.77	16.9	YES	NO	bb	bb	0.211
6	Total-tetrafurans	26.14	6.990e2	8.223e2	1.192	0.85	0.77	9.6	YES	NO	dd	dd	0.164
7	Total-tetrafurans	26.03	4.018e3	4.861e3	1.192	0.83	0.77	53.6	YES	NO	dd	dd	0.957
8	Total-tetrafurans	25.96	1.712e3	2.011e3	1.192	0.85	0.77	28.7	YES	NO	dd	dd	0.401
9	2378-TCDF	25.82	3.596e3	4.686e3	1.108	0.77	0.77	46.5	YES	NO	dd	dd	0.961
10	Total-tetrafurans	24.87	3.856e3	5.182e3	1.192	0.74	0.77	58.0	YES	NO	bb	db	0.974
11	Total-tetrafurans	24.67	4.695e3	5.868e3	1.192	0.80	0.77	69.9	YES	NO	db	dd	1.138
12	Total-tetrafurans	24.54	3.921e3	4.494e3	1.192	0.87	0.77	60.9	YES	NO	dd	dd	0.907
13	Total-pentafurans	29.63	4.625e3	3.013e3	1.047	1.53	1.55	41.0	YES	NO	db	db	0.776
14	Total-pentafurans	29.55	7.548e3	4.867e3	1.047	1.55	1.55	60.0	YES	NO	dd	dd	1.261
15	Total-pentafurans	29.45	1.140e4	7.538e3	1.047	1.51	1.55	99.4	YES	NO	dd	dd	1.923
16	Total-pentafurans	29.32	9.811e2	6.534e2	1.047	1.50	1.55	8.6	YES	NO	dd	dd	0.166
17	Total-pentafurans	29.15	1.213e3	7.079e2	1.047	1.71	1.55	10.2	YES	NO	dd	dd	0.195
18	Total-pentafurans	28.95	3.347e3	2.213e3	1.047	1.51	1.55	30.9	YES	NO	dd	dd	0.565
19	Total-pentafurans	28.84	1.049e5	6.973e4	1.047	1.50	1.55	828.1	YES	NO	dd	dd	17.736
20	Total-pentafurans	28.66	8.365e3	5.745e3	1.047	1.46	1.55	68.0	YES	NO	dd	dd	1.433
21	Total-pentafurans	28.54	1.618e3	9.201e2	1.047	1.76	1.55	14.4	YES	NO	bd	bd	0.258
22	12389-PECDF	32.30	8.713e2	5.802e2	1.000	1.50	1.55	9.5	YES	NO	bb	bb	0.156
23	23478-PeCDF	31.26	1.964e4	1.258e4	1.126	1.56	1.55	169.8	YES	NO	db	db	3.003
24	Total-pentafurans	31.11	1.733e4	1.144e4	1.047	1.51	1.55	150.0	YES	NO	dd	dd	2.921
25	Total-pentafurans	31.00	1.953e3	1.406e3	1.047	1.39	1.55	18.6	YES	NO	bd	bd	0.341
26	Total-pentafurans	30.22	1.605e3	1.031e3	1.047	1.56	1.55	13.7	YES	NO	dd	db	0.268
27	Total-pentafurans	30.12	1.127e4	6.795e3	1.047	1.66	1.55	106.5	YES	NO	bd	bd	1.834
28	12378-PeCDF	29.92	9.467e3	5.795e3	1.015	1.63	1.55	90.2	YES	NO	bb	bb	1.619
29	234678-HxCDF	35.85	4.729e4	3.903e4	1.052	1.21	1.24	415.7	YES	NO	bb	bb	10.706
30	Total-hexafurans	35.55	1.122e3	9.600e2	1.045	1.17	1.24	14.5	YES	NO	bb	bb	0.260
31	Total-hexafurans	35.36	3.606e3	2.985e3	1.045	1.21	1.24	40.9	YES	NO	bb	bb	0.824
32	123678-HxCDF	35.02	3.291e4	2.727e4	1.037	1.21	1.24	361.3	YES	NO	db	db	7.242
33	123478-HxCDF	34.88	1.829e5	1.506e5	1.017	1.21	1.24	2068.4	YES	NO	dd	dd	41.013
34	Total-hexafurans	34.72	1.158e4	9.973e3	1.045	1.16	1.24	126.6	YES	NO	bd	bd	2.695
35	Total-hexafurans	34.25	5.817e5	4.769e5	1.045	1.22	1.24	6350.6	YES	NO	bb	bb	132.374
36	Total-hexafurans	33.95	1.091e4	9.249e3	1.045	1.18	1.24	109.9	YES	NO	bb	bb	2.521
37	Total-hexafurans	33.69	1.069e3	8.991e2	1.045	1.19	1.24	12.4	YES	NO	bb	bb	0.246

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-hexafurans	33.42	2.606e5	2.137e5	1.045	1.22	1.24	2824.0	YES	NO	bb	bb	59.312
39	123468-HXCDF	33.21	7.427e4	6.281e4	1.087	1.18	1.24	807.9	YES	NO	bb	bb	15.775
40	123789-HxCDF	36.91	2.367e4	1.940e4	1.030	1.22	1.24	240.8	YES	NO	bb	bb	6.018
41	1234789-HpCDF	40.99	8.120e4	7.693e4	1.283	1.06	1.05	547.6	YES	NO	bb	bb	23.931
42	Total-heptafurans	40.25	9.598e2	8.598e2	1.305	1.12	1.05	7.3	YES	NO	bb	bb	0.245
43	Total-heptafurans	39.42	1.695e6	1.626e6	1.305	1.04	1.05	12710.3	YES	NO	bb	bb	446.262
44	Total-heptafurans	39.17	1.468e4	1.372e4	1.305	1.07	1.05	104.4	YES	NO	bb	bb	3.816
45	1234678-HpCDF	38.76	6.918e5	6.592e5	1.327	1.05	1.05	5349.6	YES	NO	bb	bb	162.780
46	OCDF	45.23	8.571e5	9.365e5	1.447	0.92	0.89	3397.8	YES	NO	bb	bb	299.429
47	Total-penta1	27.18	8.279e4	5.336e4		1.55	1.55	1756.7	YES	NO	bb	bb	15.989
48	Total-tetrafurans	23.11	6.441e3	7.707e3	1.192	0.84	0.77	105.2	YES	NO	MM	MM	1.525
49	Total-tetradioxins	25.65	4.985e3	5.797e3	0.879	0.86	0.77	87.1	YES	NO	bd	bd	1.842
50	Total-tetradioxins	25.49	4.838e3	6.103e3	0.879	0.79	0.77	70.8	YES	NO	db	db	1.870
51	Total-tetradioxins	25.43	2.655e3	3.581e3	0.879	0.74	0.77	60.1	YES	NO	dd	dd	1.065
52	Total-tetradioxins	25.28	1.390e3	2.034e3	0.879	0.68	0.77	15.7	YES	NO	bd	bd	0.585
53	Total-tetradioxins	25.02	3.759e4	4.692e4	0.879	0.80	0.77	551.7	YES	NO	bb	bb	14.440
54	Total-tetradioxins	24.73	1.126e4	1.487e4	0.879	0.76	0.77	170.7	YES	NO	bb	bb	4.466
55	Total-tetradioxins	24.54	2.551e3	3.099e3	0.879	0.82	0.77	42.9	YES	NO	bb	bb	0.965
56	Total-tetradioxins	24.02	1.761e4	2.164e4	0.879	0.81	0.77	299.2	YES	NO	bb	bb	6.708
57	Total-tetradioxins	23.81	5.213e4	6.650e4	0.879	0.78	0.77	828.8	YES	NO	bb	bb	20.271
58	1368-TCDD	23.52	5.287e4	6.673e4	0.923	0.79	0.77	853.4	YES	NO	bb	bb	19.462
59	Total-tetradioxins	26.53	1.379e4	1.692e4	0.879	0.82	0.77	214.8	YES	NO	db	db	5.247
60	Total-tetradioxins	26.03	2.590e3	3.169e3	0.879	0.82	0.77	27.0	YES	NO	bb	bb	0.984
61	Total-pentadioxins	29.90	4.587e4	2.941e4	1.331	1.56	1.55	553.4	YES	NO	bb	bb	11.013
62	Total-pentadioxins	29.30	7.655e4	4.814e4	1.331	1.59	1.55	933.2	YES	NO	bb	bb	18.244
63	12479-PECDD	28.78	4.039e5	2.476e5	1.843	1.63	1.55	2945.8	YES	NO	bb	bb	68.816
64	12389-PECDD	31.90	3.215e4	2.032e4	1.154	1.58	1.55	367.6	YES	NO	bb	bb	8.856
65	12378-PeCDD	31.47	5.878e4	3.690e4	0.995	1.59	1.55	633.1	YES	NO	bb	bb	18.717
66	Total-pentadioxins	30.43	1.449e5	9.026e4	1.331	1.61	1.55	1191.5	YES	NO	db	db	34.409
67	Total-pentadioxins	30.25	3.377e4	2.123e4	1.331	1.59	1.55	423.4	YES	NO	bd	bd	8.047
68	Total-pentadioxins	30.11	6.087e4	3.804e4	1.331	1.60	1.55	734.8	YES	NO	bb	bb	14.471
69	123789-HxCDD	36.52	2.530e4	1.987e4	0.950	1.27	1.24	129.8	YES	NO	bb	bb	7.161
70	Total-hexadioxins	36.29	1.976e4	1.654e4	1.028	1.19	1.24	108.8	YES	NO	bb	bb	5.320
71	123678-HxCDD	36.13	6.881e4	5.490e4	1.009	1.25	1.24	363.2	YES	NO	db	db	18.467
72	123478-HxCDD	36.00	9.151e3	7.640e3	1.027	1.20	1.24	51.8	YES	NO	bd	bd	2.463
73	Total-hexadioxins	35.23	1.817e4	1.618e4	1.028	1.12	1.24	93.2	YES	NO	db	db	5.034
74	Total-hexadioxins	35.08	5.858e5	4.763e5	1.028	1.23	1.24	1909.7	YES	NO	bd	bd	155.673

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
75	Total-hexadioxins	34.76	7.745e4	6.354e4	1.028	1.22	1.24	424.5	YES	NO	bb	bb	20.665
76	124679-HXCDD	33.99	2.463e6	2.000e6	1.125	1.23	1.24	12902.9	YES	NO	bb	bb	597.822
77	OCDD	44.99	8.501e6	9.475e6	1.181	0.90	0.89	57888.0	YES	NO	bb	bb	3677.1...
78	1234678-HpCDD	40.25	1.295e6	1.215e6	1.068	1.07	1.05	6136.7	YES	NO	bb	bb	516.513
79	1234679-HPCDD	39.20	2.886e6	2.708e6	1.211	1.07	1.05	14016.8	YES	NO	bb	bb	1015.4...

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	26.83	1.475e7					95.6	YES		dd		
2	FUNCTION1 PFK	26.65	8.609e7					103.3	YES		bd		
3	FUNCTION1 PFK	25.13	2.644e7					133.2	YES		db		
4	FUNCTION1 PFK	24.67	2.161e7					89.6	YES		dd		
5	FUNCTION1 PFK	24.02	6.039e6					27.7	YES		bd		
6	FUNCTION1 PFK	23.48	1.131e6					18.4	YES		db		
7	FUNCTION1 PFK	23.37	2.733e6					25.9	YES		bd		
8	FUNCTION1 PFK	23.11	2.000e6					38.8	YES		db		
9	FUNCTION1 PFK	23.01	3.464e6					47.7	YES		dd		
10	FUNCTION1 PFK	22.84	4.517e6					59.5	YES		dd		
11	FUNCTION1 PFK	22.66	5.380e6					71.6	YES		dd		
12	FUNCTION1 PFK	22.51	8.682e6					82.6	YES		dd		
13	FUNCTION1 PFK	22.30	1.304e7					94.3	YES		dd		
14	FUNCTION1 PFK	22.01	8.340e6					114.2	YES		dd		
15	FUNCTION1 PFK	21.78	2.080e7					129.9	YES		dd		
16	FUNCTION1 PFK	21.57	1.402e7					140.1	YES		bd		
17	FUNCTION1 PFK	27.64	8.145e6					62.4	YES		db		
18	FUNCTION1 PFK	27.33	1.731e7					74.5	YES		dd		

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.72	8.731e5					8.1	YES		bb		0.000
2	FUNCTION2 PFK	32.38	3.918e5					5.3	YES		bb		0.000
3	FUNCTION2 PFK	29.81	3.355e5					1.6	NO		bb		0.000
4	FUNCTION2 PFK	29.49	5.820e5					9.9	YES		db		0.000
5	FUNCTION2 PFK	29.39	1.120e5					7.5	YES		bd		0.000
6	FUNCTION2 PFK	28.72	1.318e6					7.2	YES		bb		0.000
7	FUNCTION2 PFK	28.36	2.564e5					10.3	YES		db		0.000
8	FUNCTION2 PFK	28.25	2.896e5					8.4	YES		dd		0.000
9	FUNCTION2 PFK	28.20	4.541e4					4.6	YES		bd		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.88	3.522e6					14.1	YES		bb		0.000
2	FUNCTION3 PFK	37.25	1.395e7					70.3	YES		db		0.000
3	FUNCTION3 PFK	36.45	1.115e7					15.7	YES		bd		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.71	1.752e5					6.9	YES		db		
2	FUNCTION4 PFK	39.67	7.798e4					6.6	YES		bd		
3	FUNCTION4 PFK	39.36	1.490e5					3.9	YES		db		
4	FUNCTION4 PFK	39.20	1.336e5					9.6	YES		bd		
5	FUNCTION4 PFK	38.81	6.125e5					3.9	YES		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.07	1.256e2					4.1	YES		dd		0.000
2	FUNCTION1 HXCD...	25.02	1.057e2					3.4	YES		bd		0.000
3	FUNCTION1 HXCD...	24.64	1.252e2					2.9	NO		bb		0.000
4	FUNCTION1 HXCD...	23.75	5.078e2					14.6	YES		bb		0.000
5	FUNCTION1 HXCD...	23.40	1.111e2					2.9	NO		bb		0.000
6	FUNCTION1 HXCD...	22.74	2.204e2					4.2	YES		bb		0.000
7	FUNCTION1 HXCD...	22.36	9.882e1					3.8	YES		bb		0.000
8	FUNCTION1 HXCD...	22.24	2.554e2					5.9	YES		bb		0.000
9	FUNCTION1 HXCD...	26.94	1.004e2					2.7	NO		db		0.000
10	FUNCTION1 HXCD...	26.77	3.909e2					6.0	YES		dd		0.000
11	FUNCTION1 HXCD...	26.73	2.036e2					5.8	YES		dd		0.000
12	FUNCTION1 HXCD...	26.53	2.587e2					4.6	YES		dd		0.000
13	FUNCTION1 HXCD...	26.44	3.766e2					6.5	YES		dd		0.000
14	FUNCTION1 HXCD...	26.35	4.253e2					6.2	YES		dd		0.000
15	FUNCTION1 HXCD...	26.15	1.072e3					14.6	YES		dd		0.000
16	FUNCTION1 HXCD...	25.91	9.164e2					10.0	YES		dd		0.000
17	FUNCTION1 HXCD...	25.75	8.946e2					14.9	YES		dd		0.000
18	FUNCTION1 HXCD...	25.67	3.324e2					9.8	YES		dd		0.000
19	FUNCTION1 HXCD...	25.61	5.543e2					9.3	YES		dd		0.000
20	FUNCTION1 HXCD...	25.50	2.997e2					7.0	YES		dd		0.000
21	FUNCTION1 HXCD...	25.43	1.796e2					5.6	YES		bd		0.000
22	FUNCTION1 HXCD...	25.14	5.718e2					7.0	YES		db		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	21.59	8.972e1					1.8	NO		bd		0.000
2	FUNCTION1 HPCD...	27.41	2.028e2					2.6	NO		bd		0.000
3	FUNCTION1 HPCD...	27.02	1.495e2					2.7	NO		bb		0.000
4	FUNCTION1 HPCD...	26.68	7.345e1					1.5	NO		bb		0.000
5	FUNCTION1 HPCD...	26.50	8.385e1					1.7	NO		bb		0.000
6	FUNCTION1 HPCD...	26.00	1.132e2					2.2	NO		bb		0.000
7	FUNCTION1 HPCD...	23.89	9.480e1					2.8	NO		db		0.000
8	FUNCTION1 HPCD...	23.83	1.105e2					1.7	NO		bd		0.000
9	FUNCTION1 HPCD...	23.54	1.162e2					1.2	NO		bb		0.000
10	FUNCTION1 HPCD...	23.39	3.317e2					6.3	YES		bb		0.000
11	FUNCTION1 HPCD...	23.10	1.573e2					2.2	NO		bb		0.000
12	FUNCTION1 HPCD...	22.86	9.206e1					1.6	NO		db		0.000
13	FUNCTION1 HPCD...	22.74	1.447e2					2.8	NO		dd		0.000
14	FUNCTION1 HPCD...	22.62	7.031e1					1.5	NO		bd		0.000
15	FUNCTION1 HPCD...	22.37	1.993e2					2.0	NO		bb		0.000
16	FUNCTION1 HPCD...	22.03	9.314e1					2.4	NO		bb		0.000
17	FUNCTION1 HPCD...	21.66	1.462e2					3.2	YES		db		0.000
18	FUNCTION1 HPCD...	27.92	2.045e2					3.4	YES		bb		0.000
19	FUNCTION1 HPCD...	27.48	9.264e1					1.7	NO		db		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.75	1.267e2					2.0	NO		bb		0.000
2	FUNCTION2 HPCD...	32.22	1.083e2					2.4	NO		db		0.000
3	FUNCTION2 HPCD...	32.18	1.409e2					2.6	NO		bd		0.000
4	FUNCTION2 HPCD...	31.93	8.512e1					2.3	NO		bb		0.000
5	FUNCTION2 HPCD...	31.51	8.115e1					1.3	NO		bb		0.000
6	FUNCTION2 HPCD...	30.98	8.227e1					1.3	NO		bb		0.000
7	FUNCTION2 HPCD...	29.08	2.131e2					4.4	YES		db		0.000
8	FUNCTION2 HPCD...	28.94	6.683e2					9.7	YES		bd		0.000

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ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.20	8.606e1					5.5	YES		db		0.000
2	FUNCTION3 OCDPE	34.17	1.488e2					7.2	YES		bd		0.000
3	FUNCTION3 OCDPE	33.99	2.733e2					7.6	YES		bb		0.000
4	FUNCTION3 OCDPE	33.06	8.547e1					3.0	NO		bb		0.000
5	FUNCTION3 OCDPE	36.50	2.376e2					5.2	YES		bb		0.000
6	FUNCTION3 OCDPE	36.11	1.944e2					4.5	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.41	4.057e3					71.8	YES		db		0.000
2	FUNCTION4 NCDPE	38.30	2.347e2					5.7	YES		bd		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.00	1.374e3					19.3	YES		bb		0.000

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ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

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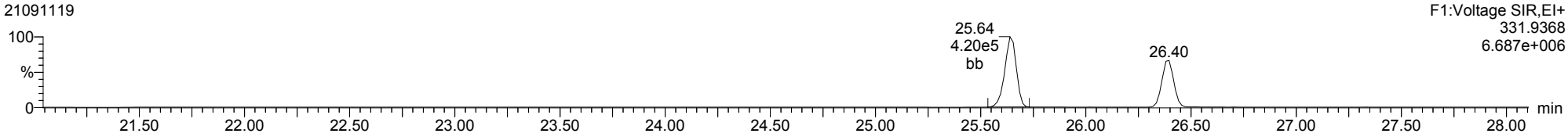

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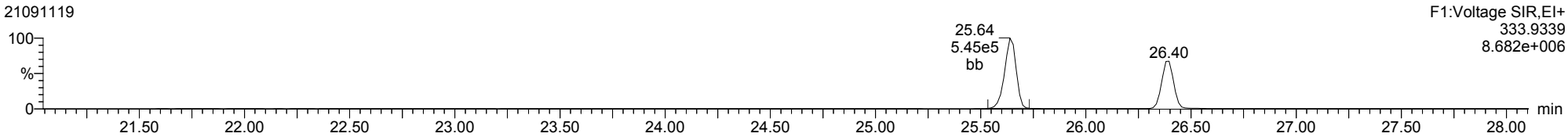
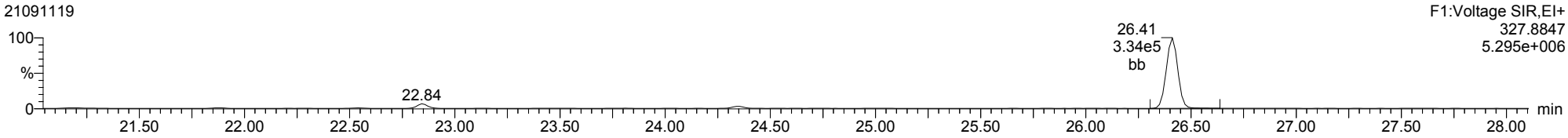


37CL-2378-TCDD



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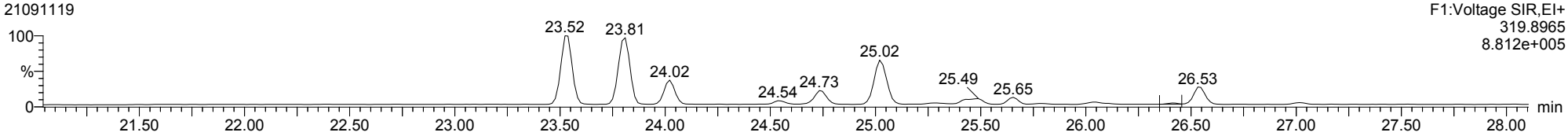
2378-TCDD



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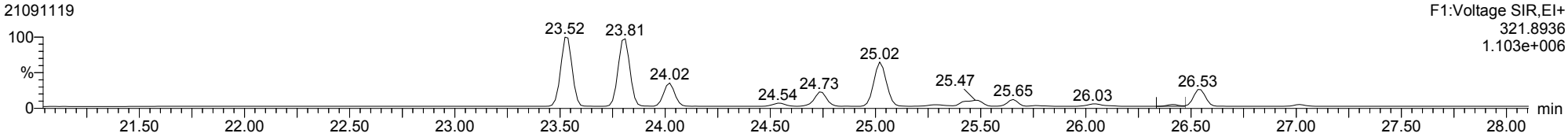

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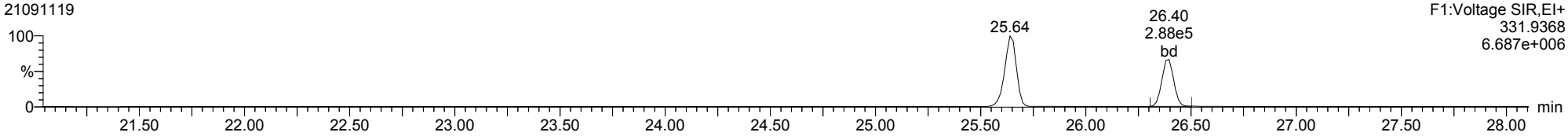

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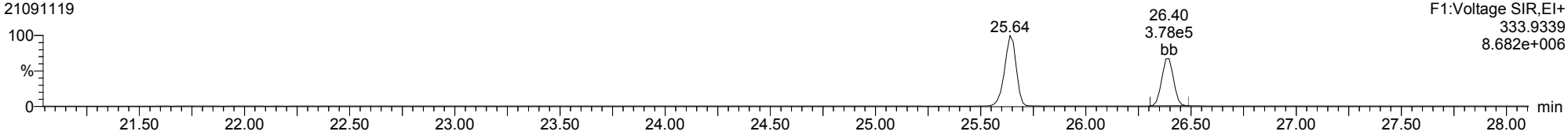

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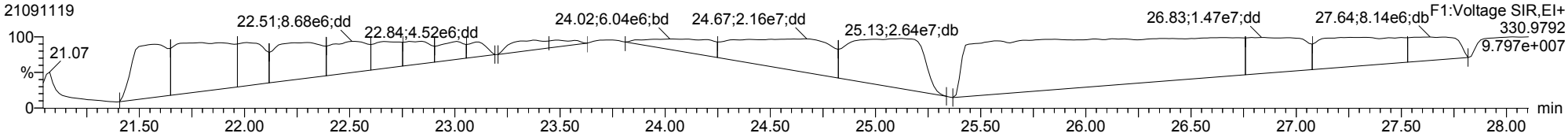

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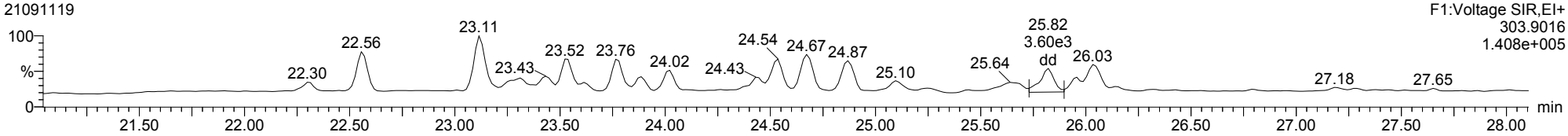
2378-TCDF



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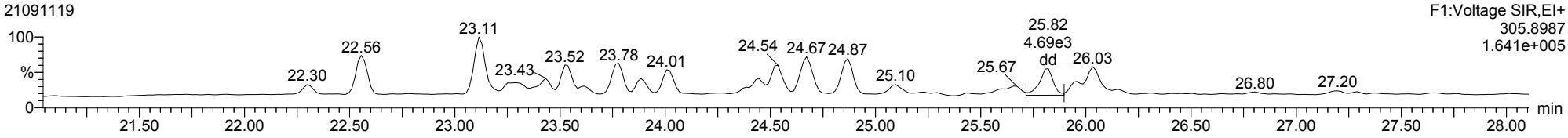

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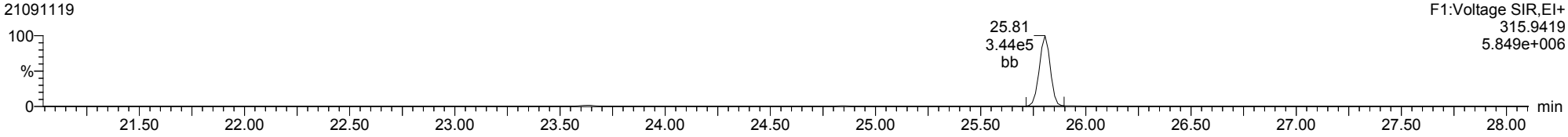

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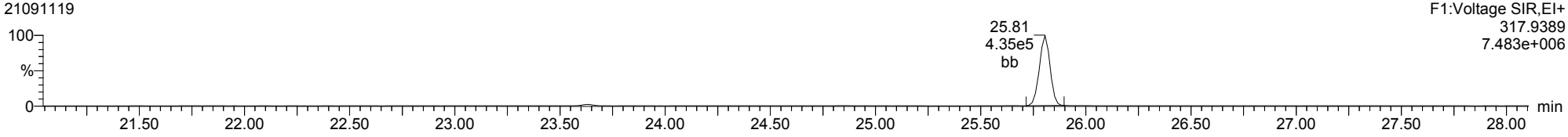
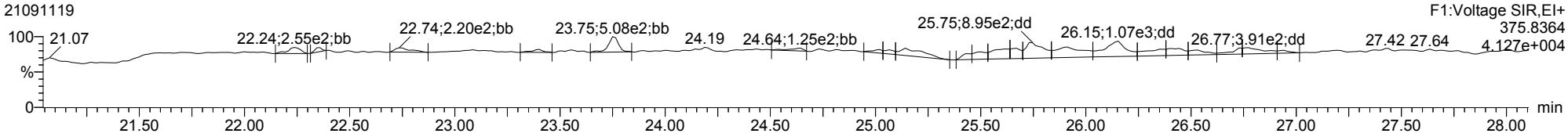


FUNCTION1 HXCDPE



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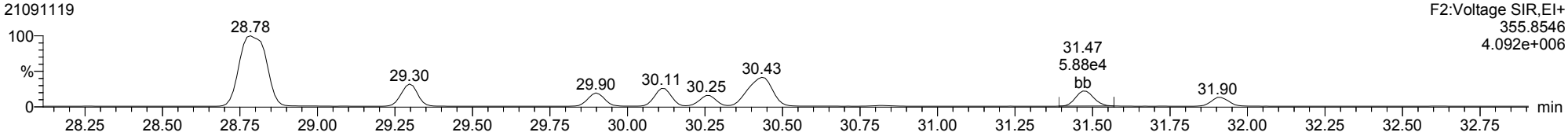
12378-PeCDD



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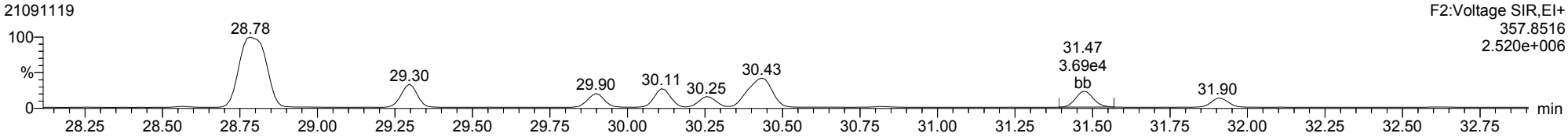

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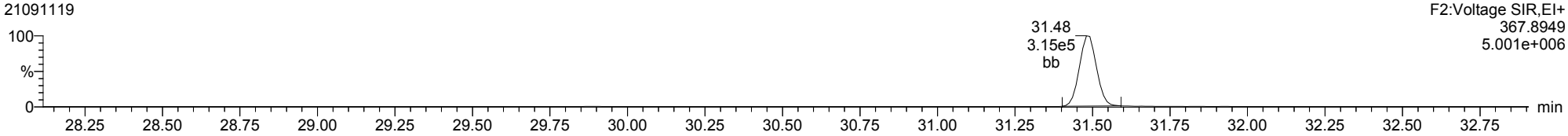

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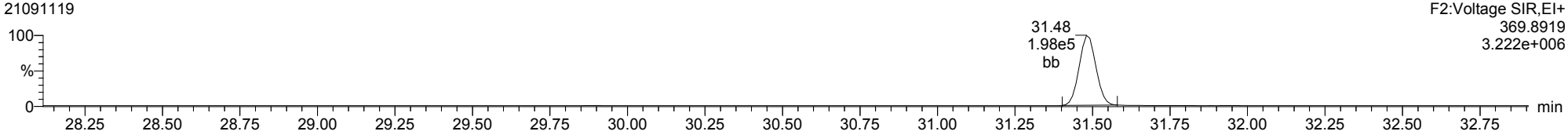

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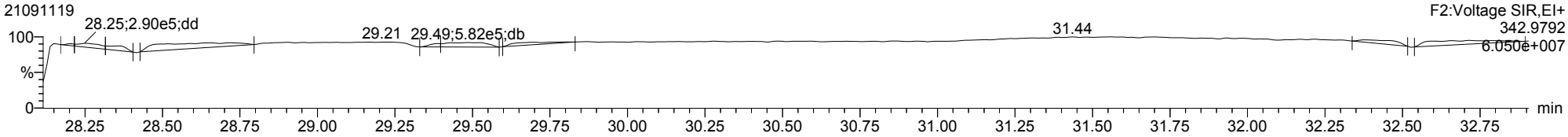

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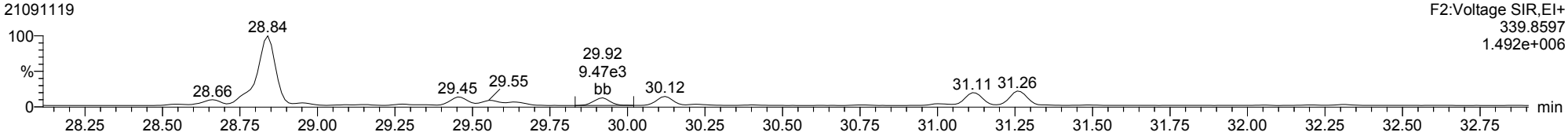

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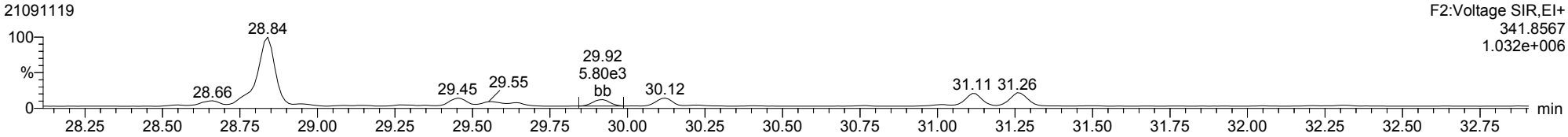

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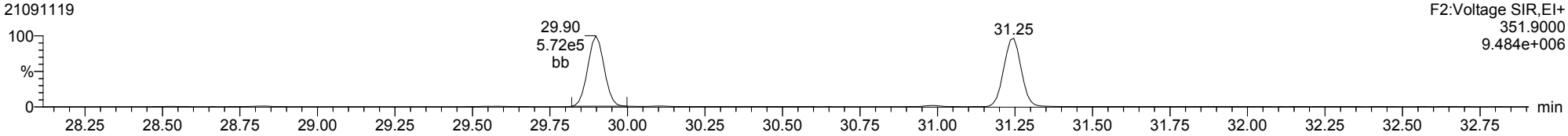

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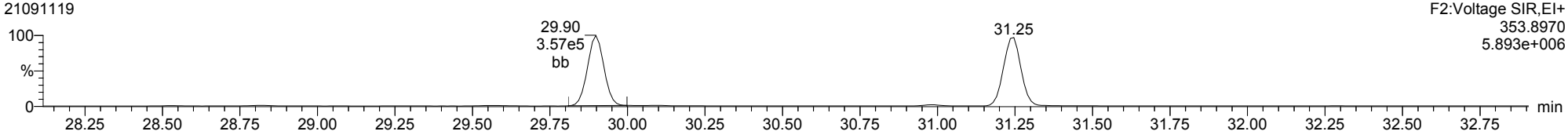
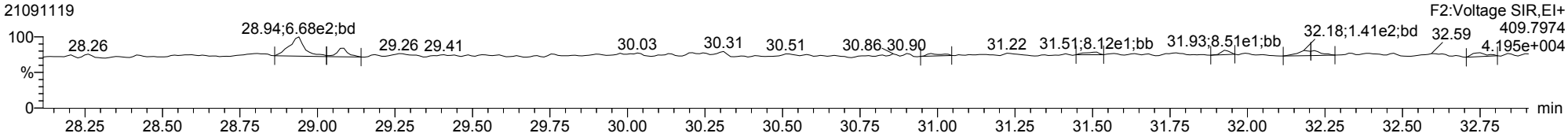


FUNCTION2 HPCDPE



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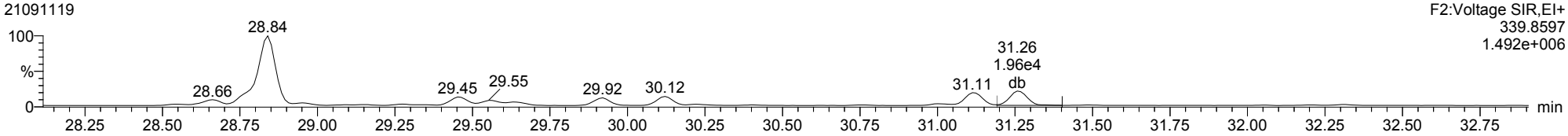

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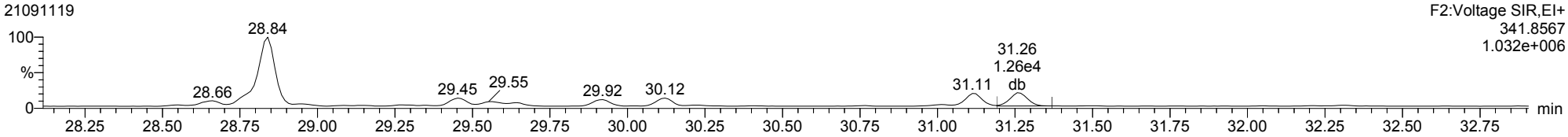

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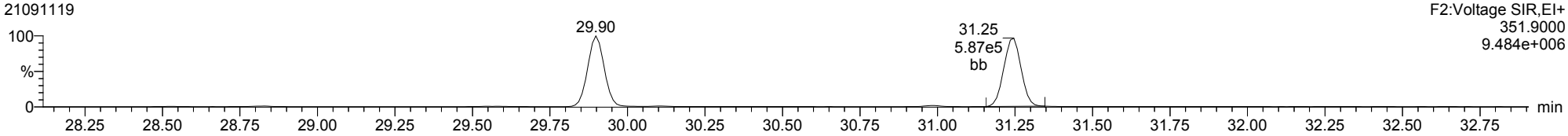

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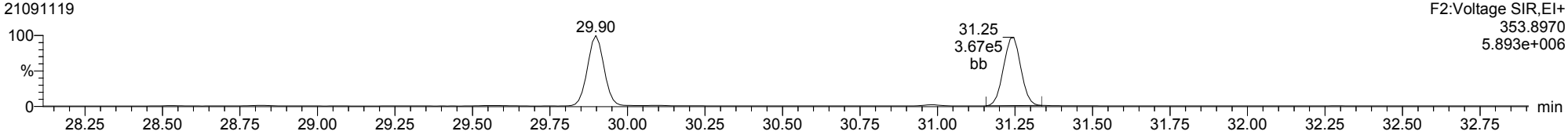

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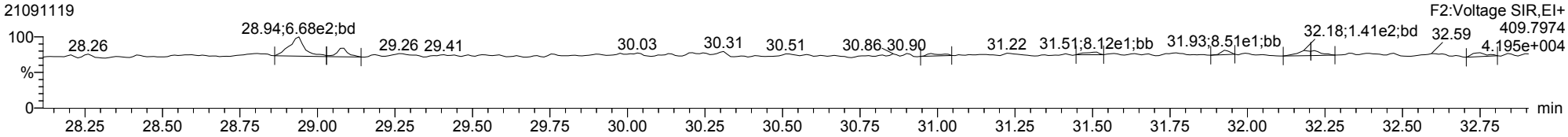

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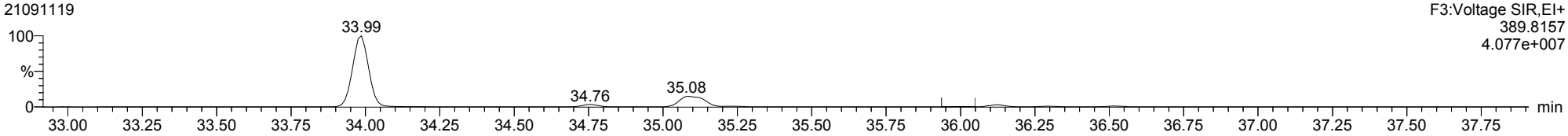
123478-HxCDD



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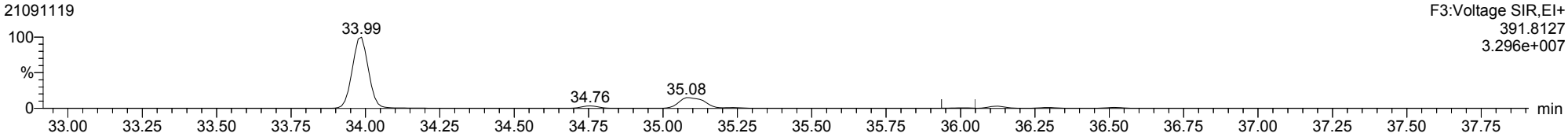

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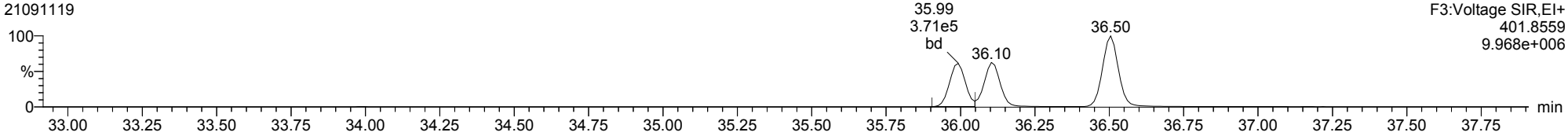

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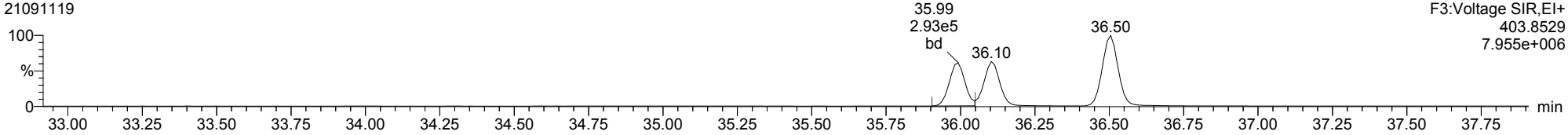
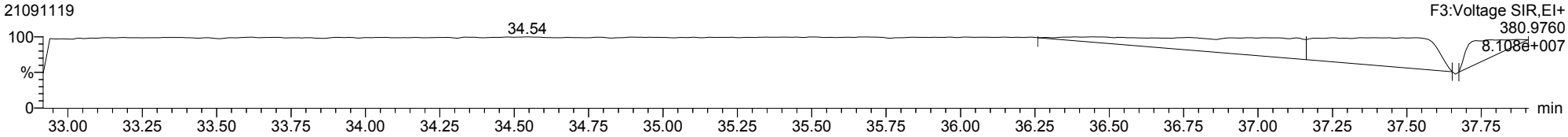


FUNCTION3 PFK



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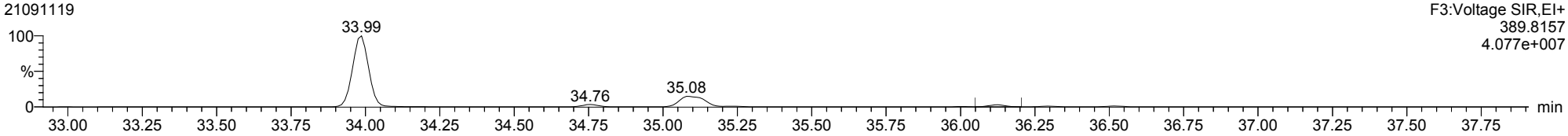

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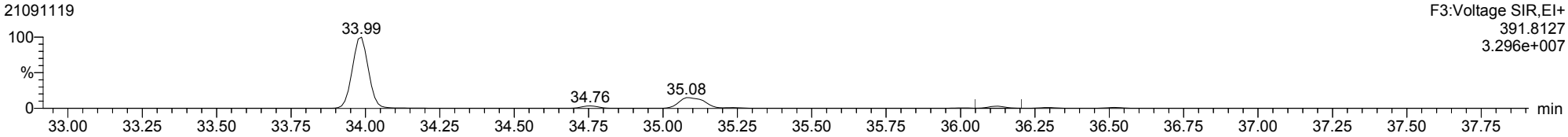

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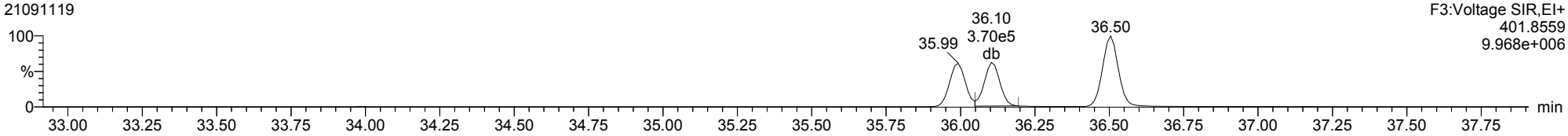

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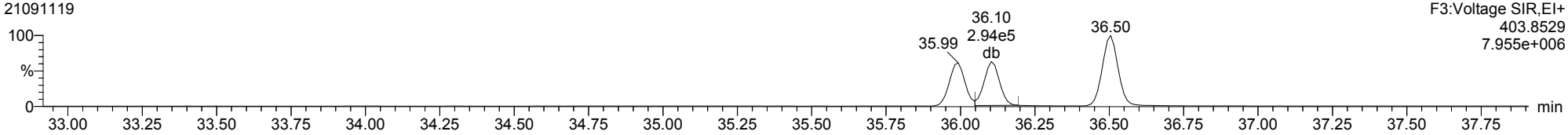

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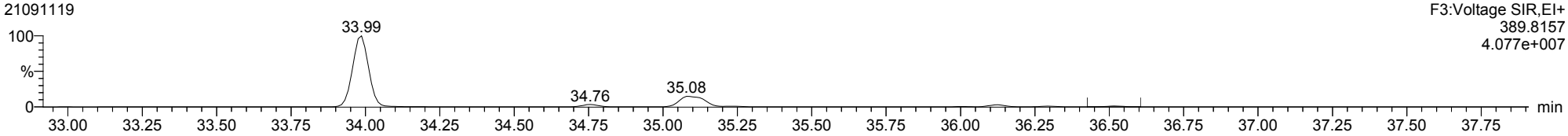

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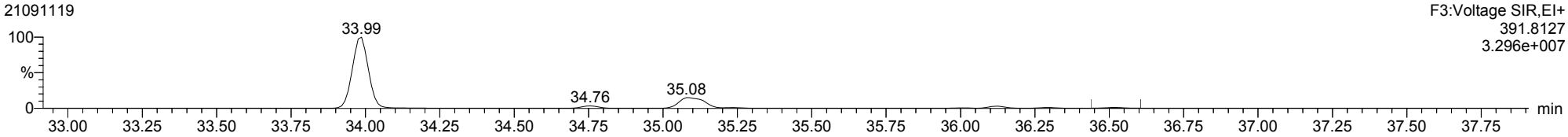

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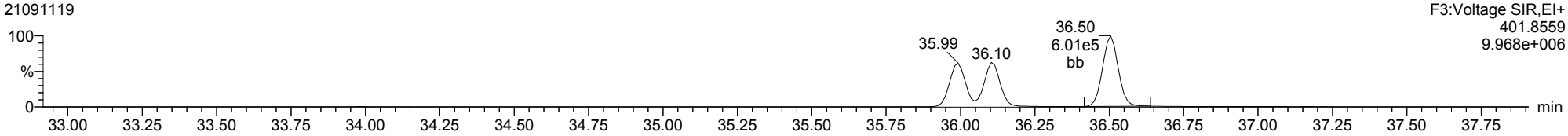

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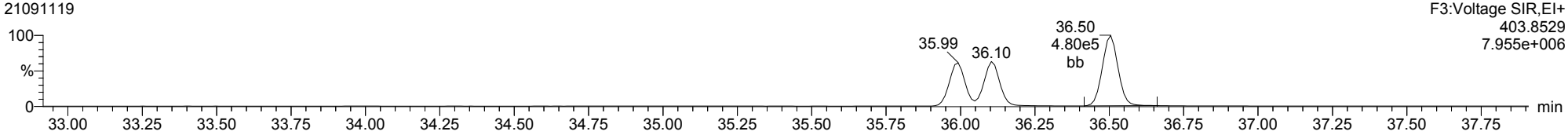

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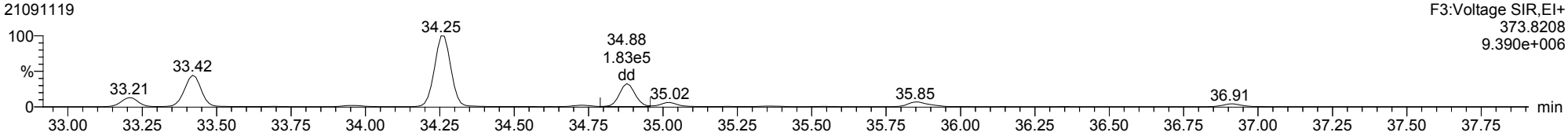

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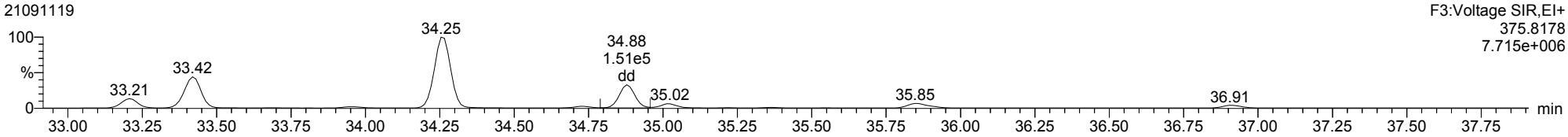

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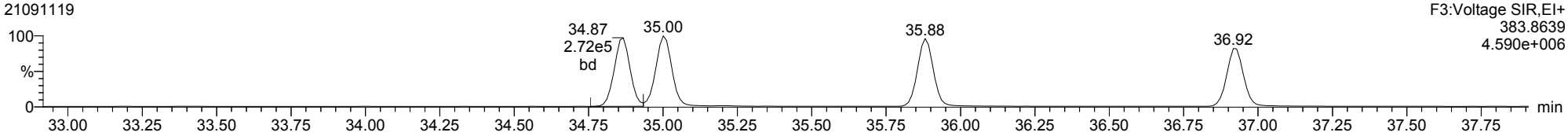

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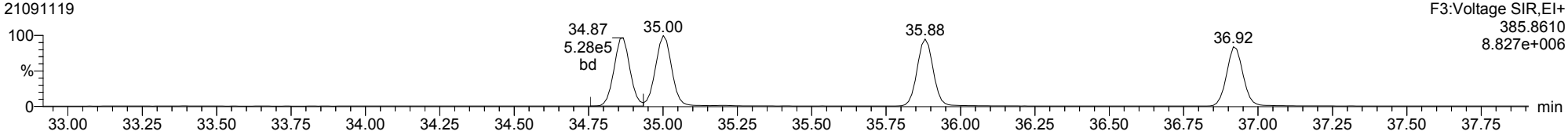

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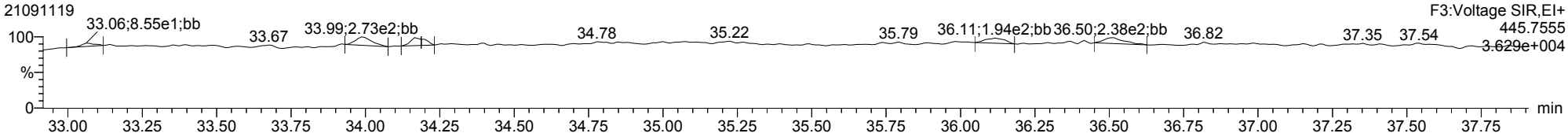

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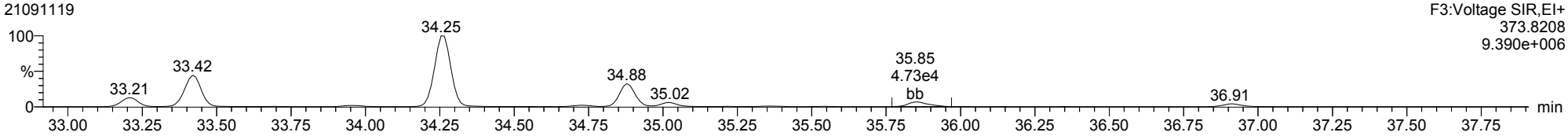
234678-HxCDF



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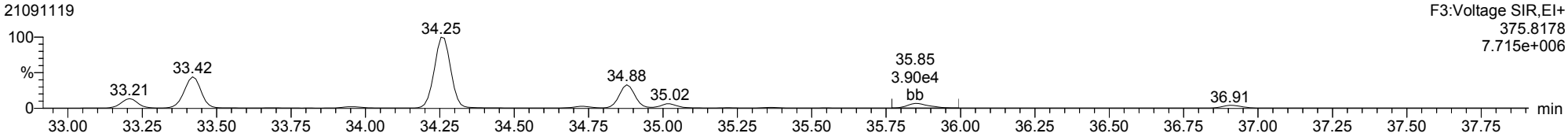

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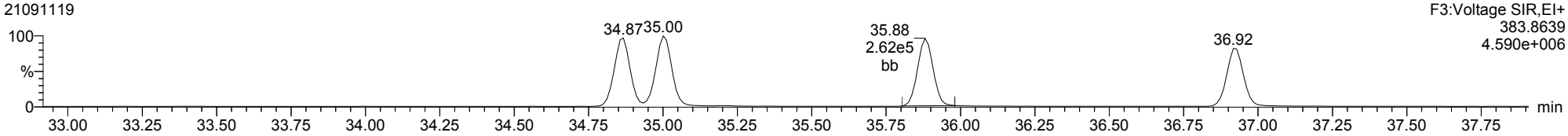

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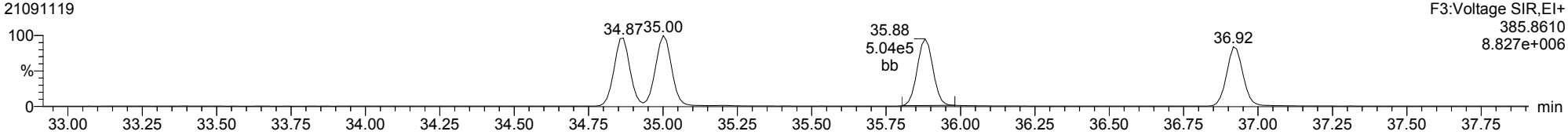
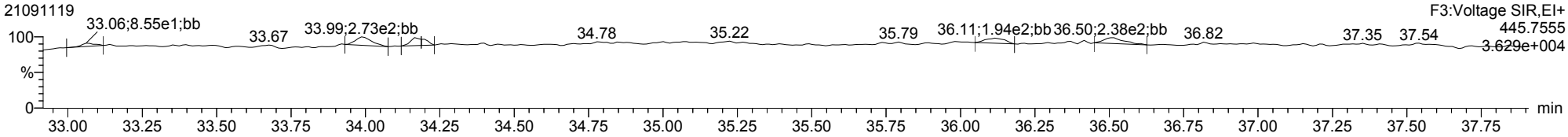


FUNCTION3 OCDPE



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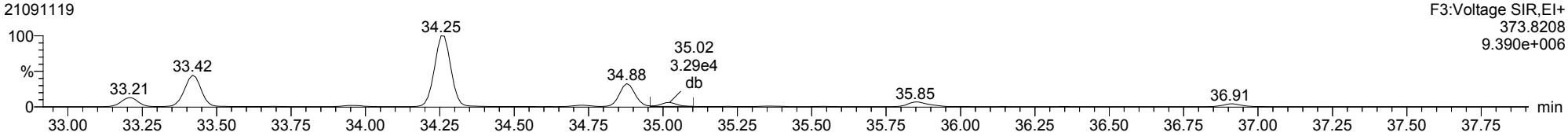
123678-HxCDF



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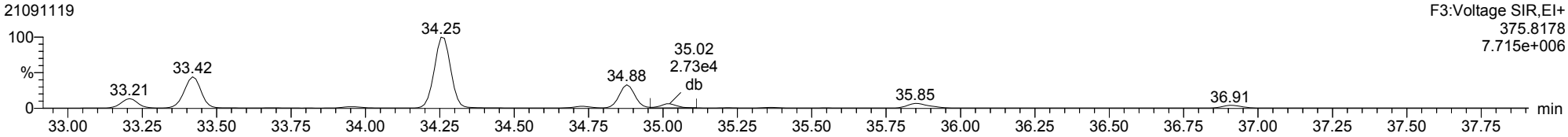

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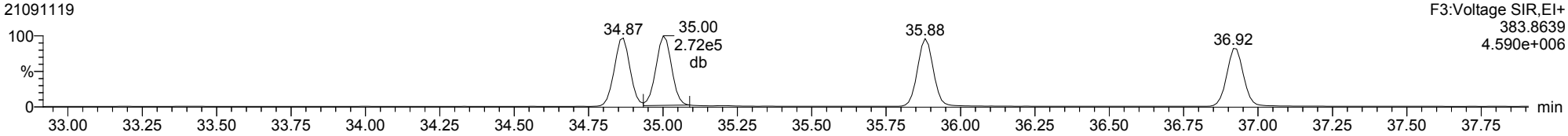

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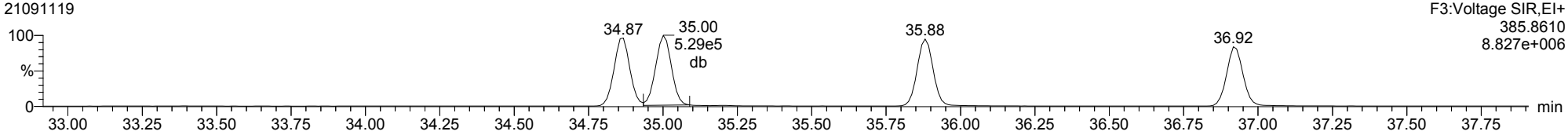
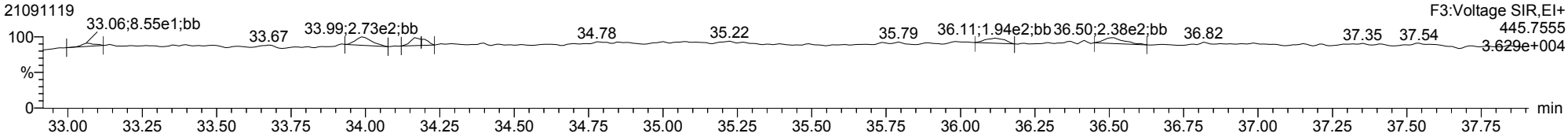


FUNCTION3 OCDPE



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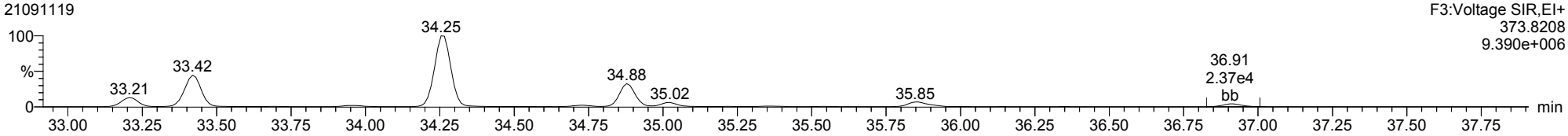
123789-HxCDF



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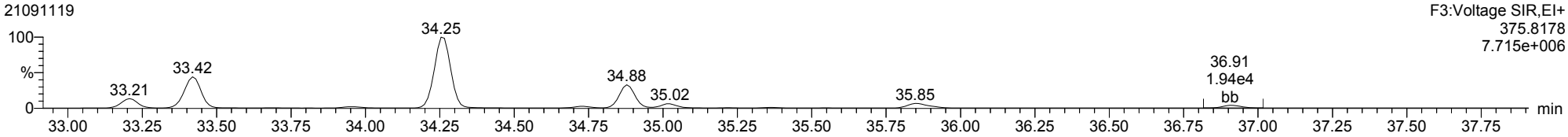

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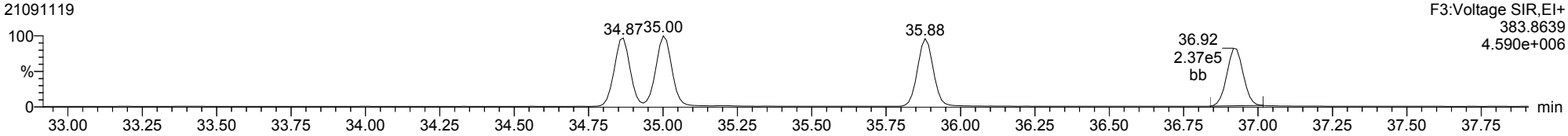

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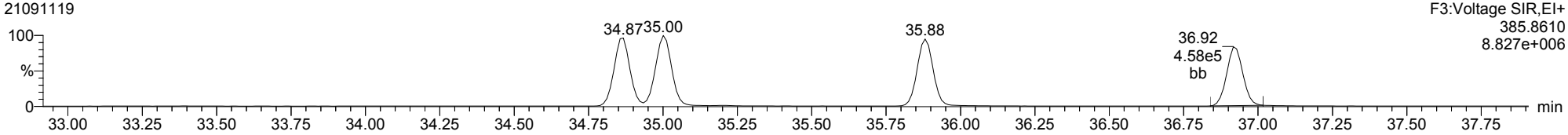
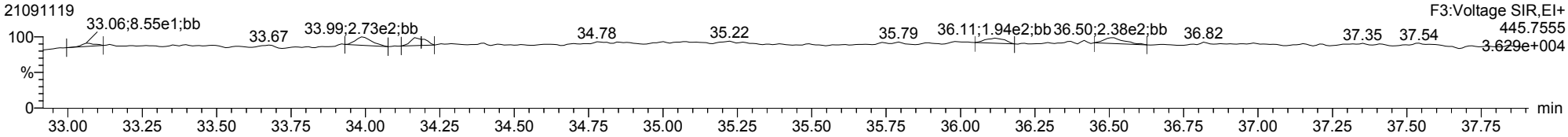


FUNCTION3 OCDPE



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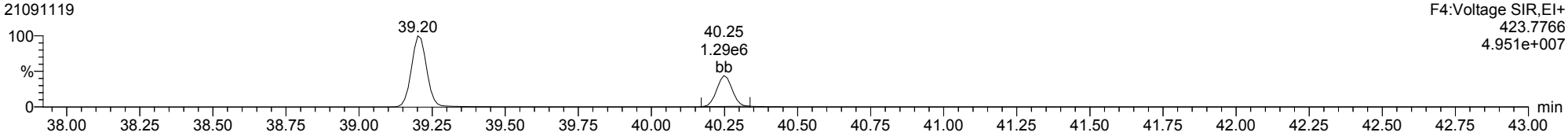
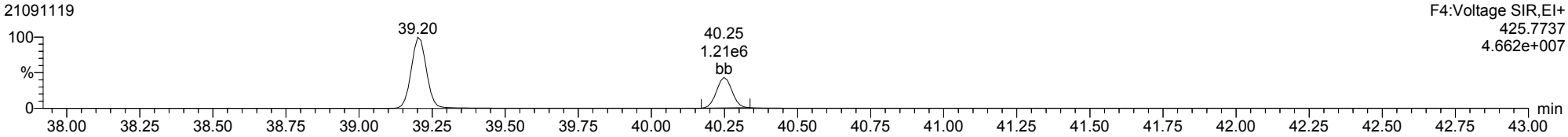
1234678-HpCDD



1234678-HpCDD



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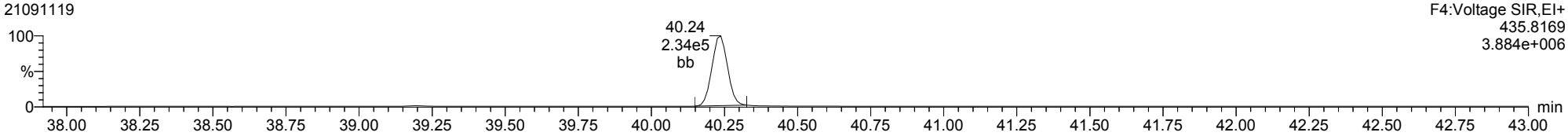

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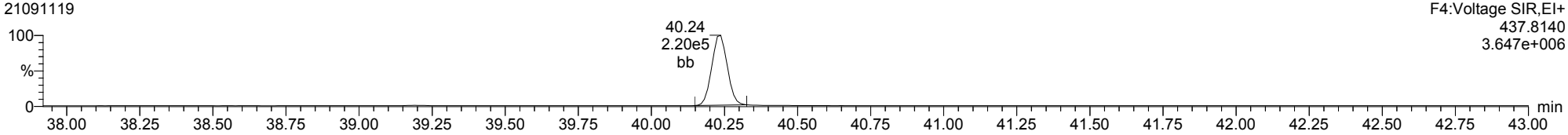

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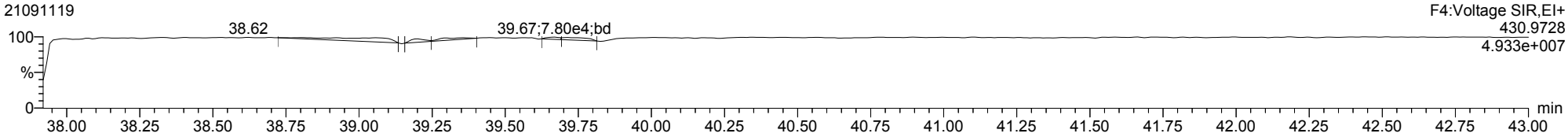

ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

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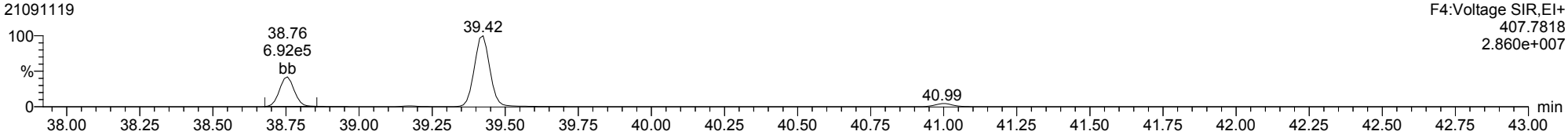

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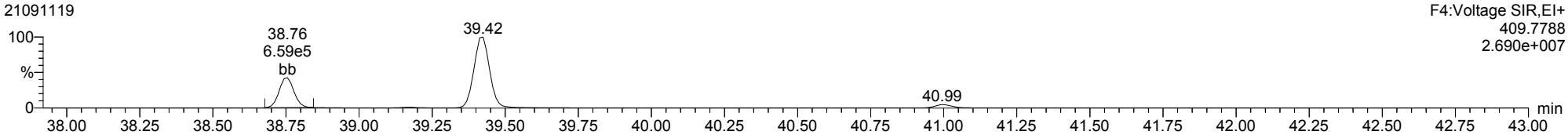

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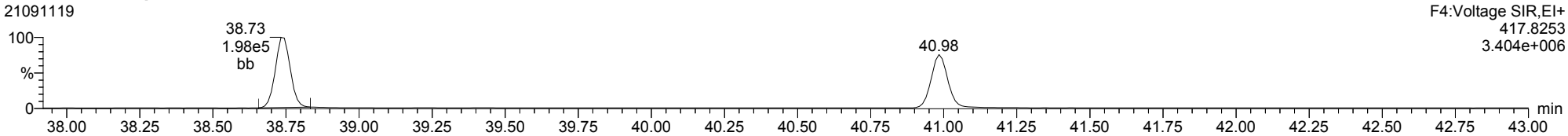

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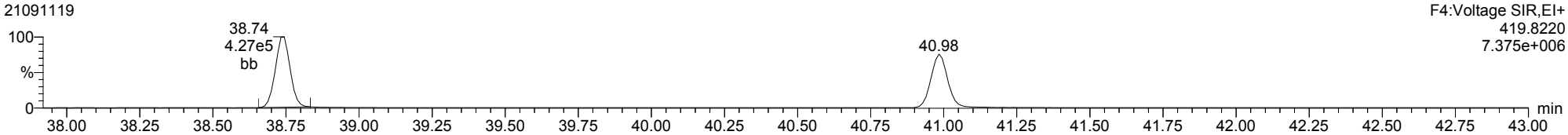

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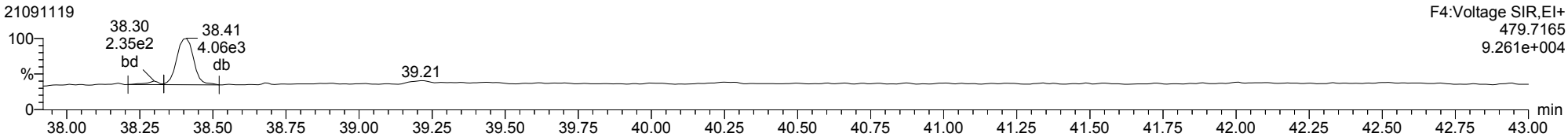

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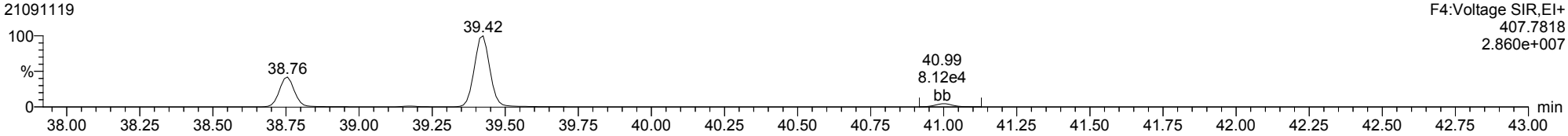

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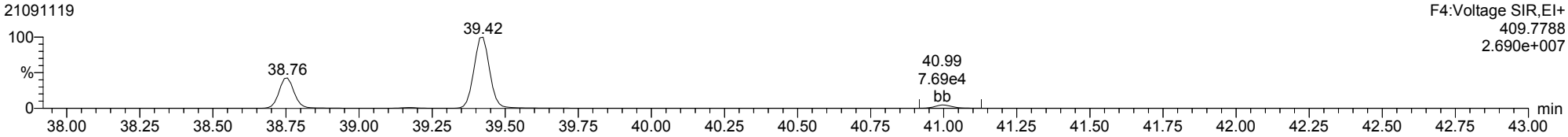

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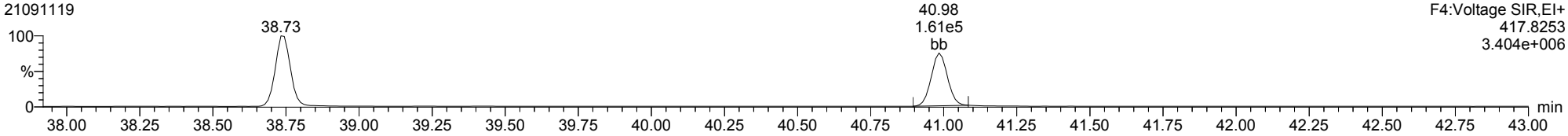

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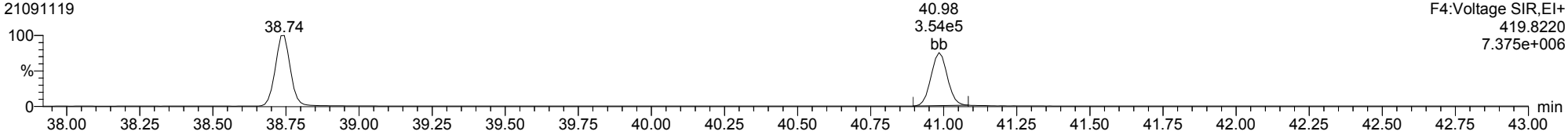
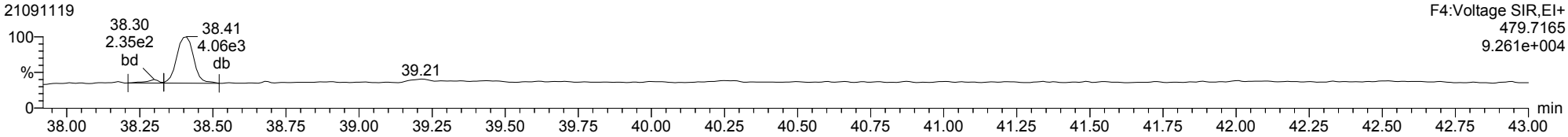
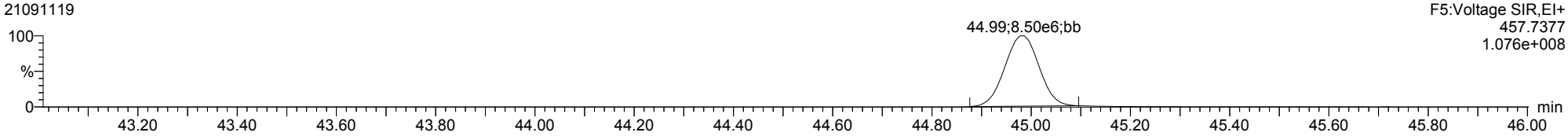


FUNCTION4 NCDPE



ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

OCDD



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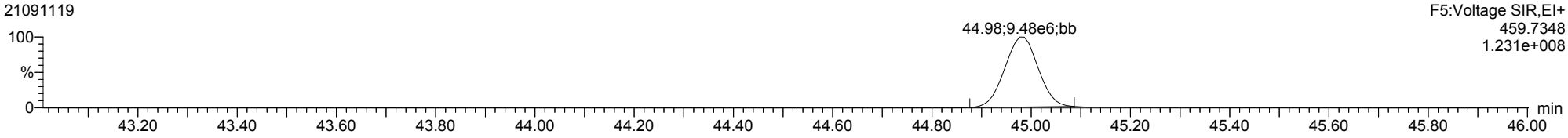

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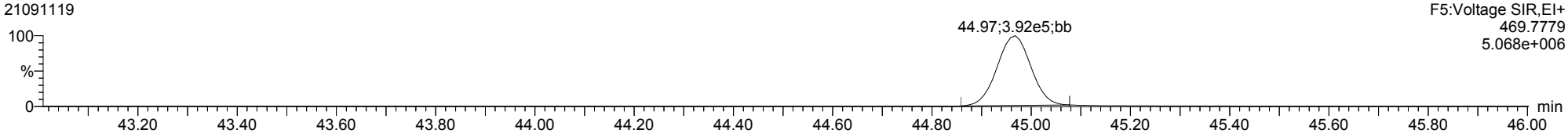

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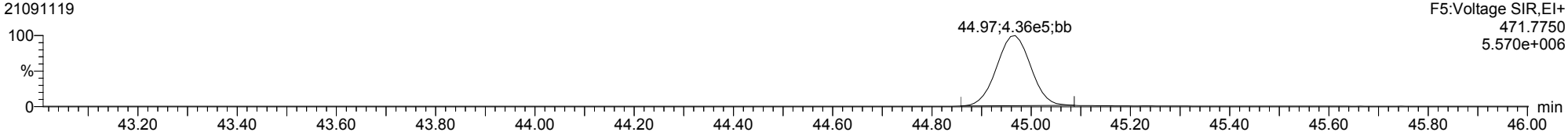

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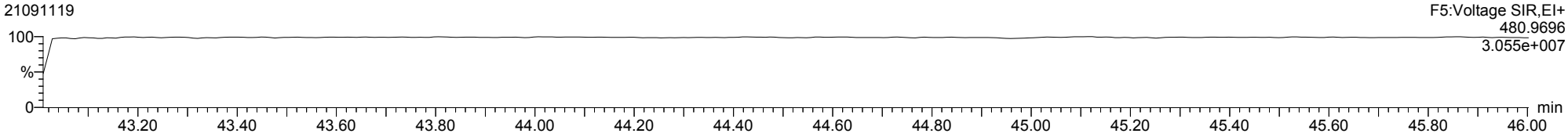

ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

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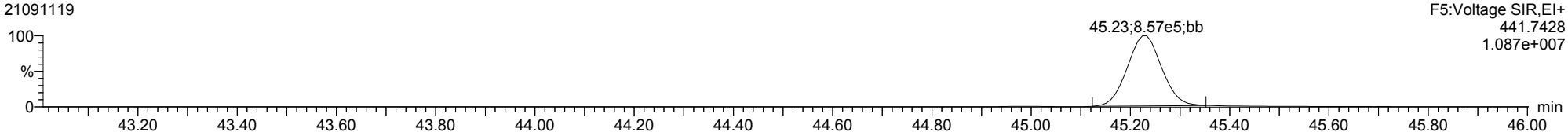

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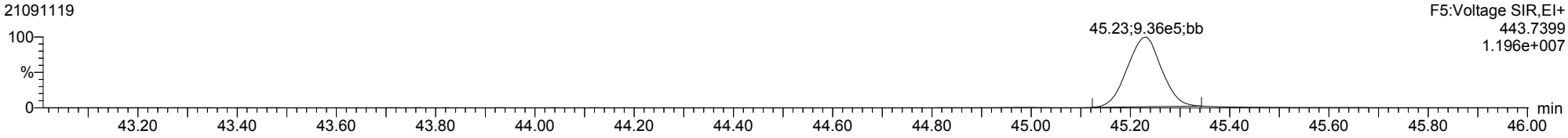
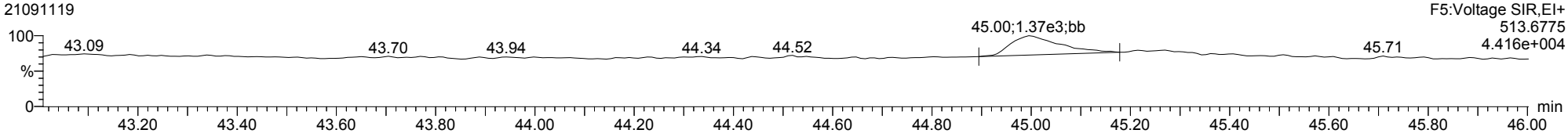
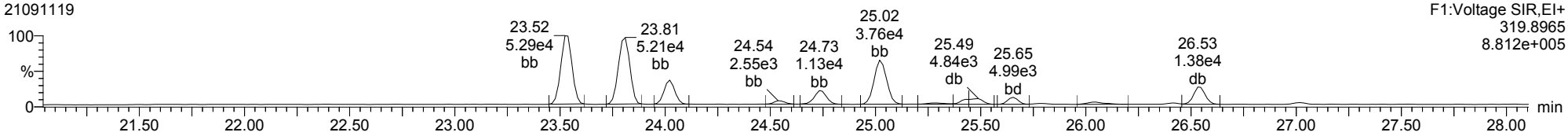


FUNCTION5 DCDPE

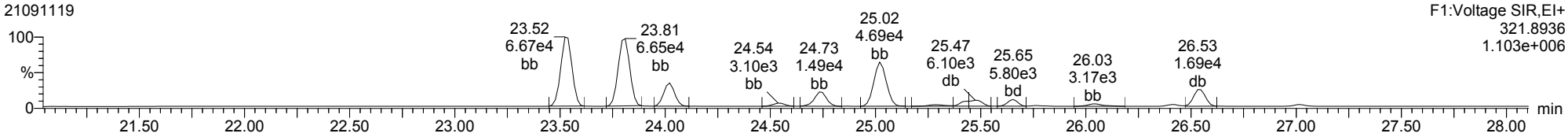


ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



Total-tetradioxins



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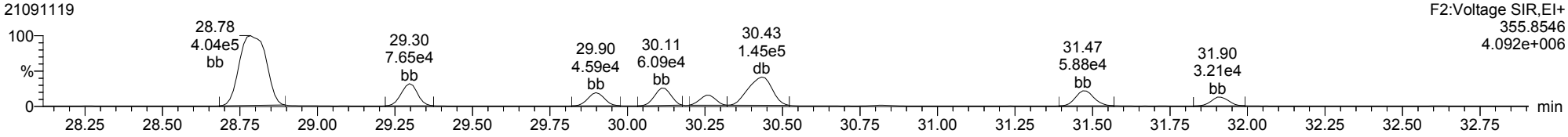
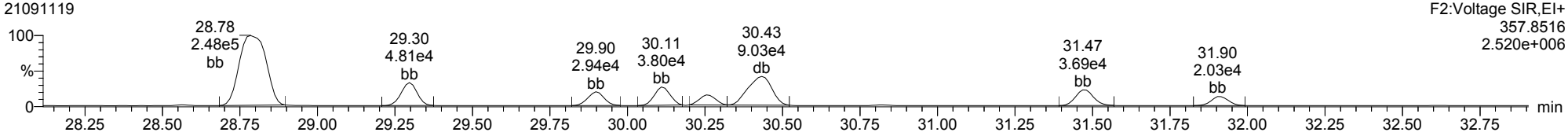


Total-pentadioxins



ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

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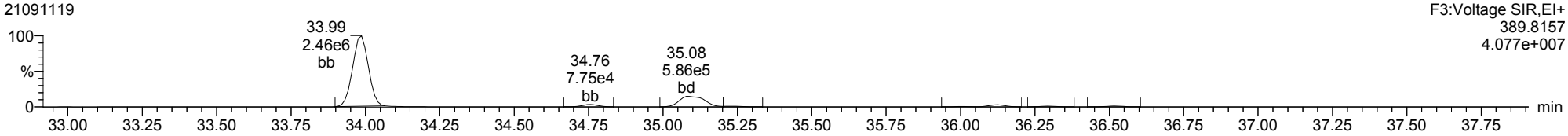
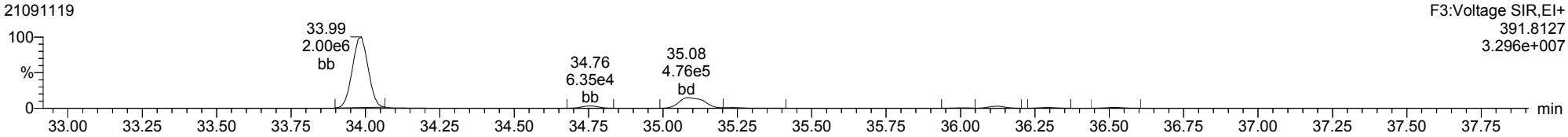


Total-hexadioxins



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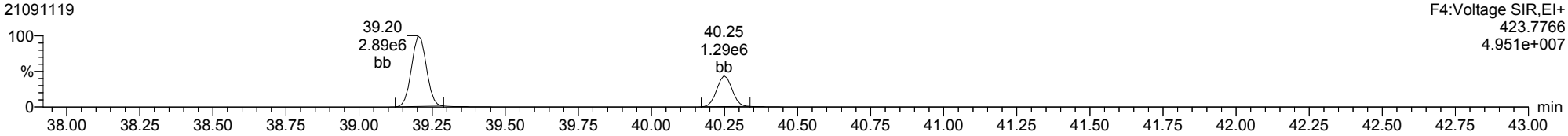
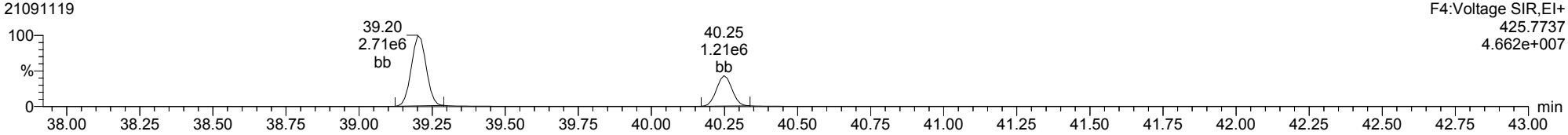


Total-heptadioxins



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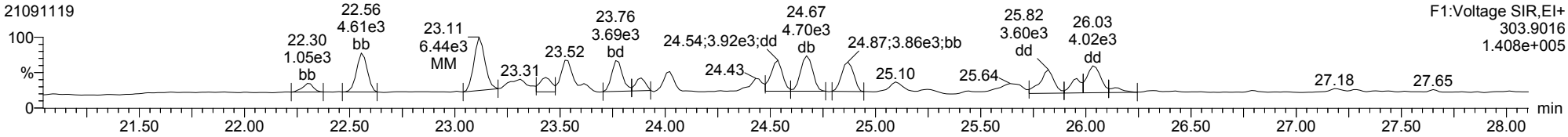
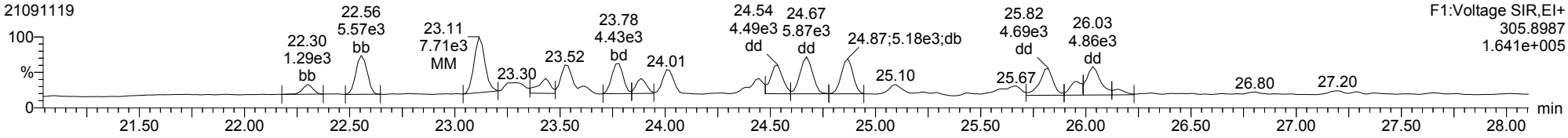
Printed: Wednesday, September 15, 2021 11:29:49 Pacific Daylight Time

ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



Total-tetrafurans



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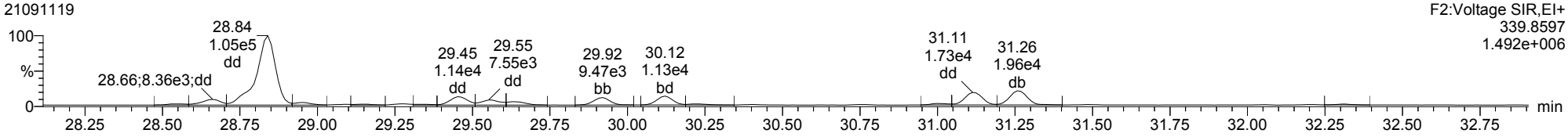

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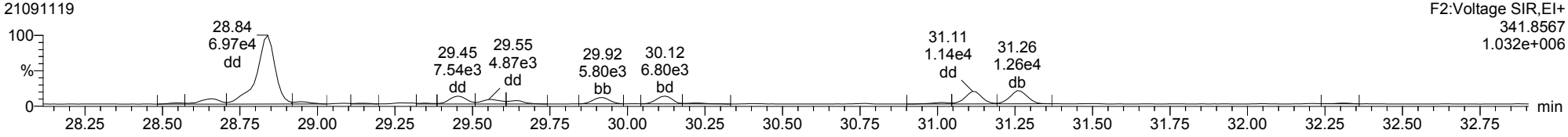

ID: 21G0138-05, Name: 21091119, Date: 12-Sep-2021, Time: 01:20:07, Conditions: AUTOSPEC01, User: pk

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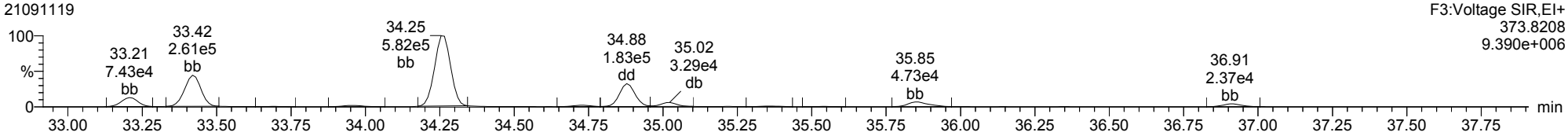
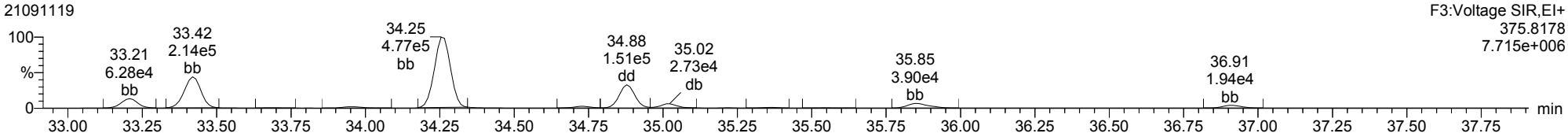
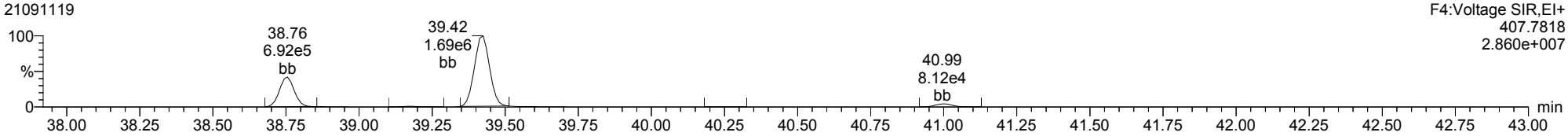


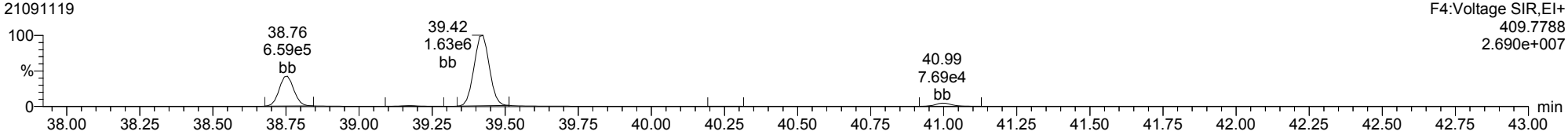
Total-hexafurans



Total-heptafurans



Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT659C

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-06 C	File ID:	21091120
Sampled:	07/13/21 08:17	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 02:09
% Solids:	67.05	Preparation:	EPA 1613	Initial/Final:	14.91 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.720	0.655-0.886	0.143	1.00	1.50	ng/kg	X
1746-01-6	2,3,7,8-TCDD	1	0.320	0.655-0.886	0.092	1.00	0.363	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.352	1.318-1.783	0.100	1.00	0.611	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.518	1.318-1.783	0.096	1.00	1.07	ng/kg	
40321-76-4	1,2,3,7,8-PeCDD	1	1.670	1.318-1.783	0.109	1.00	1.12	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.262	1.054-1.426	0.090	1.00	1.07	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.217	1.054-1.426	0.088	1.00	1.06	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.260	1.054-1.426	0.086	1.00	1.97	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.544	1.054-1.426	0.091	1.00	0.296	ng/kg	EMPC, J
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.334	1.054-1.426	0.100	1.00	0.583	ng/kg	J
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.211	1.054-1.426	0.103	1.00	2.69	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.086	1.054-1.426	0.109	1.00	1.46	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.085	0.893-1.208	0.115	1.00	21.0	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	0.972	0.893-1.208	0.154	1.00	1.19	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.075	0.893-1.208	0.273	2.50	77.1	ng/kg	B
39001-02-0	OCDF	1	0.892	0.757-1.024	0.156	2.50	59.0	ng/kg	
3268-87-9	OCDD	1	0.889	0.757-1.024	0.314	10.0	489	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	21.6	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	6.52	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	37.9	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	7.24	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	26.5	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	29.3	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	61.5	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	174	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 4.04
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 4.04

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT659C

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-06	File ID:	21091120
Sampled:	07/13/21 08:17	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 02:09
Solids Wt%:	67.05	Preparation:	EPA 1613	Initial/Final:	14.91 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.787	0.655-0.886	0.087	81.5	24 - 169 %	
13C12-2,3,7,8-TCDD		0.767	0.655-0.886	0.125	86.4	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.595	1.318-1.783	0.123	91.9	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.595	1.318-1.783	0.129	91.1	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.561	1.318-1.783	0.118	84.5	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.511	0.434-0.587	0.146	72.1	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.512	0.434-0.587	0.135	66.8	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.520	0.434-0.587	0.149	71.6	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.515	0.434-0.587	0.180	80.9	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.289	1.054-1.426	0.122	78.4	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.253	1.054-1.426	0.112	74.1	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.474	0.374-0.506	0.127	73.6	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.467	0.374-0.506	0.155	74.7	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.055	0.893-1.208	0.131	75.4	23 - 140 %	
13C12-OCDD		0.907	0.757-1.024	0.166	77.2	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.027	83.3	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
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Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.776	1.001	4.154e3	5.767e3	1.108	0.720	0.770	1564	3514	6.72e4	8.75e4	43.0	24.9	NO	bd	bd	0.751
12378-PeCDF	29.932	1.001	2.178e3	1.611e3	1.015	1.352	1.550	1530	1803	3.36e4	2.27e4	21.9	12.6	NO	bb	bb	0.305
23478-PeCDF	31.269	1.000	4.187e3	2.759e3	1.126	1.518	1.550	1530	1803	6.81e4	4.42e4	44.5	24.5	NO	dd	db	0.534
123478-HxCDF	34.889	1.001	2.764e3	2.189e3	1.017	1.262	1.240	975	1247	4.58e4	3.50e4	47.0	28.0	NO	dd	dd	0.535
234678-HxCDF	35.892	1.000	5.115e3	4.059e3	1.052	1.260	1.240	975	1247	5.46e4	4.68e4	56.0	37.5	NO	bb	bb	0.985
123678-HxCDF	35.034	1.001	2.750e3	2.259e3	1.037	1.217	1.240	975	1247	4.58e4	3.45e4	46.9	27.7	NO	db	db	0.529
123789-HxCDF	36.906	1.000	7.661e2	4.961e2	1.030	1.544	1.240	975	1247	1.19e4	7.98e3	12.2	6.4	YES	bb	MM	0.148
1234678-HpCDF	38.767	1.000	5.021e4	4.626e4	1.327	1.085	1.050	1411	1505	8.53e5	7.93e5	604.6	527.1	NO	bb	bb	10.479
1234789-HpCDF	41.017	1.000	2.168e3	2.230e3	1.283	0.972	1.050	1411	1505	3.14e4	3.21e4	22.3	21.3	NO	bb	bb	0.595
OCDF	45.243	1.006	7.965e4	8.932e4	1.447	0.892	0.890	1046	863	1.01e6	1.10e6	964.7	1272.9	NO	bb	bd	29.499
2378-TCDD	26.426	1.002	4.011e2	1.252e3	0.920	0.320	0.770	1209	916	5.46e3	2.09e4	4.5	22.8	YES	bd	bd	0.182
12378-PeCDD	31.514	1.000	2.210e3	1.323e3	0.995	1.670	1.550	830	977	3.01e4	1.60e4	36.2	16.4	NO	bb	bb	0.560
123478-HxCDD	36.015	1.001	1.310e3	9.822e2	1.027	1.334	1.240	1167	1061	2.07e4	1.99e4	17.8	18.7	NO	bd	bd	0.292
123678-HxCDD	36.126	1.001	5.841e3	4.822e3	1.009	1.211	1.240	1167	1061	9.68e4	7.80e4	82.9	73.5	NO	db	db	1.345
123789-HxCDD	36.516	1.011	2.803e3	2.580e3	0.950	1.086	1.240	1167	1061	5.02e4	4.70e4	43.0	44.3	NO	bb	bb	0.730
1234678-HpCDD	40.271	1.000	1.035e5	9.627e4	1.068	1.075	1.050	1858	1941	1.63e6	1.54e6	879.0	792.1	NO	bb	bb	38.523
OCDD	44.996	1.000	5.379e5	6.048e5	1.181	0.889	0.890	1624	1505	6.98e6	7.87e6	4299.9	5230.1	NO	bb	bb	244.442
13C-2378-TCDF	25.761	1.007	5.253e5	6.675e5	1.427	0.787	0.770	2278	1163	8.45e6	1.07e7	3710.7	9207.2	NO	bb	bb	81.521
13C-12378-PeCDF	29.909	1.169	7.518e5	4.713e5	1.297	1.595	1.550	2793	1606	1.21e7	7.54e6	4342.5	4696.5	NO	bb	bb	91.919
13C-23478-PeCDF	31.257	1.222	7.103e5	4.453e5	1.236	1.595	1.550	2793	1606	1.14e7	7.24e6	4068.7	4508.9	NO	bb	bb	91.121
13C-123478-HxCDF	34.867	0.955	3.080e5	6.030e5	1.242	0.511	0.510	2889	2071	4.95e6	9.77e6	1712.3	4715.5	NO	bd	bd	72.050
13C-123678-HxCDF	35.012	0.959	3.092e5	6.038e5	1.343	0.512	0.510	2889	2071	4.98e6	9.79e6	1722.5	4728.3	NO	db	db	66.784
13C-234678-HxCDF	35.881	0.983	3.025e5	5.821e5	1.215	0.520	0.510	2889	2071	5.01e6	9.69e6	1734.4	4676.3	NO	bb	bb	71.554
13C-123789-HxCDF	36.917	1.012	2.819e5	5.475e5	1.008	0.515	0.510	2889	2071	4.82e6	9.23e6	1669.1	4458.7	NO	bb	bb	80.885
13C-1234678-HpCDF	38.756	1.062	2.229e5	4.707e5	0.926	0.474	0.440	1292	1917	3.70e6	8.04e6	2862.1	4196.1	NO	bb	bb	73.565
13C-1234789-HpCDF	41.006	1.124	1.833e5	3.929e5	0.758	0.467	0.440	1292	1917	2.82e6	6.08e6	2185.9	3173.2	NO	bb	bb	74.704
13C-1234-TCDD	25.579	0.000	4.452e5	5.805e5	1.000	0.767	0.770	2470	1371	7.18e6	9.35e6	2907.6	6818.2	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	4.293e5	5.596e5	1.116	0.767	0.770	2470	1371	6.54e6	8.59e6	2647.3	6268.0	NO	bb	bb	86.360
13C-12378-PeCDD	31.503	1.232	3.867e5	2.477e5	0.732	1.561	1.550	1223	1162	6.10e6	3.84e6	4987.2	3302.9	NO	bb	bd	84.498
13C-123478-HxCDD	35.993	0.986	4.310e5	3.343e5	0.960	1.289	1.240	1678	1526	7.36e6	5.62e6	4387.3	3686.2	NO	bd	bd	78.355
13C-123678-HxCDD	36.104	0.989	4.368e5	3.486e5	1.041	1.253	1.240	1678	1526	7.15e6	5.77e6	4260.7	3784.4	NO	db	db	74.114
13C-1234678-HpCDD	40.249	1.103	2.493e5	2.363e5	0.632	1.055	1.050	1122	1139	4.01e6	3.81e6	3571.2	3343.5	NO	bb	bb	75.440
13C-OCDD	44.977	1.232	3.767e5	4.151e5	0.504	0.907	0.890	1126	1160	4.82e6	5.34e6	4278.8	4606.2	NO	bb	bb	154.450
13C-123789-HxCDD	36.494	0.000	5.662e5	4.515e5	1.000	1.254	1.240	1678	1526	9.14e6	7.41e6	5448.4	4854.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.411	1.033	3.705e5		1.084			818		5.69e6		6949.4			bb		33.335

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ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.253	0.864	2.082e3	2.612e3	1.425	0.797	0.770	1564	3514	2.58e4	3.05e4	16.5	8.7	NO	db	bb	0.276
1289-TCDF	27.197	1.056	2.932e2	4.748e2	1.043	0.618	0.770	1564	3514	5.85e3	8.87e3	3.7	2.5	YES	dd	bd	0.062
13468-PECDF					1.376		1.550	1374	1529								
12389-PECDF	32.215	1.077	9.653e2	5.895e2	1.000	1.638	1.550	1530	1803	1.62e4	1.11e4	10.6	6.2	NO	dd	dd	0.127
123468-HXCDF	33.218	0.953	6.547e3	5.308e3	1.087	1.233	1.240	975	1247	1.11e5	9.08e4	114.1	72.8	NO	bb	db	1.198
1368-TCDD	23.523	0.892	2.777e3	3.896e3	0.923	0.713	0.770	1209	916	4.30e4	6.02e4	35.6	65.7	NO	bd	bb	0.731
1289-TCDD	27.031	1.025	3.577e2	5.024e2	0.794	0.712	0.770	1209	916	5.32e3	7.73e3	4.4	8.4	NO	bb	bd	0.110
12479-PECDD	28.829	0.915	8.616e3	5.056e3	1.843	1.704	1.550	830	977	8.63e4	6.17e4	104.0	63.1	NO	MM	MM	1.169
12389-PECDD	31.915	1.013	8.220e2	2.941e2	1.154	2.795	1.550	830	977	1.13e4	6.55e3	13.7	6.7	YES	bb	bd	0.153
124679-HXCDD	33.998	0.945	2.976e4	2.356e4	1.125	1.263	1.240	1167	1061	4.82e5	3.83e5	413.4	360.9	NO	bb	bb	6.193
1234679-HPCDD	39.213	0.974	1.497e5	1.361e5	1.211	1.100	1.050	1858	1941	2.53e6	2.33e6	1362.1	1199.1	NO	bb	bb	48.605
Total-tetrafurans			6.749e4		1.192			1564		1.02e6							10.808
Total-penta1			6.518e4					1374		9.96e5							9.572
Total-pentafurans			7.073e4		1.047			1530		9.38e5							9.376
Total-hexafurans			6.750e4		1.045			975		1.08e6							13.260
Total-heptafurans			1.359e5		1.305			1411		2.29e6							30.749
Total-Furans			4.864e5		1.158			1564		7.34e6							103.264
Total-tetradioxins			1.248e4		0.879			1209		1.94e5							3.258
Total-pentadioxins			2.043e4		1.331			830		2.71e5							3.617
Total-hexadioxins			6.603e4		1.028			1167		9.65e5							14.625
Total-heptadioxins			2.532e5		1.140			1858		4.16e6							87.128
Total-Dioxins			8.900e5		1.092			1209		1.26e7							353.071
Total-TEQ			1.376e6					1209		1.99e7							456.335
FUNCTION1 PFK			3.479e7					740779		1.93e8							
FUNCTION2 PFK			7.189e5					431286		5.94e6							0.000
FUNCTION3 PFK			7.758e5					454030		1.03e7							0.000
FUNCTION4 PFK			2.123e4					348417		6.81e5							
FUNCTION5 PFK			1.016e5					202924		3.66e6							
FUNCTION1 HXCD...			8.468e3					674		1.32e5							0.000
FUNCTION1 HPCD...			1.804e3					816		3.06e4							0.000
FUNCTION2 HPCD...			5.976e2					994		9.97e3							0.000
FUNCTION3 OCDPE			8.753e2					597		1.31e4							0.000
FUNCTION4 NCDPE			3.182e3					863		5.29e4							0.000
FUNCTION5 DCDPE			0.000e0					542		0.00e0							

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.45	3.556e3	4.195e3	1.192	0.85	0.77	29.9	YES	NO	bd	bd	0.545
2	Total-tetrafurans	24.01	2.065e3	2.558e3	1.192	0.81	0.77	21.6	YES	NO	db	db	0.325
3	Total-tetrafurans	23.76	9.143e3	1.178e4	1.192	0.78	0.77	89.0	YES	NO	bd	bd	1.471
4	Total-tetrafurans	23.58	1.113e3	1.281e3	1.192	0.87	0.77	12.5	YES	NO	db	db	0.168
5	Total-tetrafurans	23.40	1.886e3	2.682e3	1.192	0.70	0.77	17.5	YES	NO	dd	dd	0.321
6	Total-tetrafurans	23.10	1.526e4	1.904e4	1.192	0.80	0.77	144.5	YES	NO	bd	bd	2.412
7	Total-tetrafurans	22.53	4.658e3	5.780e3	1.192	0.81	0.77	50.4	YES	NO	bb	bb	0.734
8	1368-TCDF	22.25	2.082e3	2.612e3	1.425	0.80	0.77	16.5	YES	NO	db	bb	0.276
9	Total-tetrafurans	26.80	8.106e2	1.046e3	1.192	0.77	0.77	7.4	YES	NO	bb	bb	0.131
10	Total-tetrafurans	26.14	2.925e3	3.807e3	1.192	0.77	0.77	30.1	YES	NO	db	db	0.473
11	Total-tetrafurans	26.00	3.267e3	4.388e3	1.192	0.74	0.77	26.6	YES	NO	dd	dd	0.538
12	2378-TCDF	25.78	4.154e3	5.767e3	1.108	0.72	0.77	43.0	YES	NO	bd	bd	0.751
13	Total-tetrafurans	25.11	2.551e3	3.034e3	1.192	0.84	0.77	21.2	YES	NO	bd	bd	0.393
14	Total-tetrafurans	24.87	3.284e3	4.053e3	1.192	0.81	0.77	33.3	YES	NO	bb	bb	0.516
15	Total-tetrafurans	24.67	8.933e3	1.182e4	1.192	0.76	0.77	94.2	YES	NO	db	db	1.460
16	Total-tetrafurans	24.54	1.804e3	2.352e3	1.192	0.77	0.77	17.4	YES	NO	dd	dd	0.292

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	6.518e4	4.218e4		1.55	1.55	724.5	YES	NO	bb	bb	9.572

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PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	29.46	1.852e3	1.170e3	1.047	1.58	1.55	21.9	YES	NO	dd	bd	0.243
2	Total-pentafurans	29.16	6.720e2	4.089e2	1.047	1.64	1.55	6.6	YES	NO	dd	bb	0.087
3	Total-pentafurans	28.85	3.215e4	2.043e4	1.047	1.57	1.55	228.2	YES	NO	MM	MM	4.224
4	Total-pentafurans	28.66	5.106e3	3.242e3	1.047	1.58	1.55	40.2	YES	NO	dd	dd	0.671
5	Total-pentafurans	28.56	7.855e2	4.724e2	1.047	1.66	1.55	9.4	YES	NO	bd	bd	0.101
6	12389-PECDF	32.22	9.653e2	5.895e2	1.000	1.64	1.55	10.6	YES	NO	dd	dd	0.127
7	23478-PeCDF	31.27	4.187e3	2.759e3	1.126	1.52	1.55	44.5	YES	NO	dd	db	0.534
8	Total-pentafurans	31.14	7.360e3	4.948e3	1.047	1.49	1.55	72.7	YES	NO	dd	dd	0.989
9	Total-pentafurans	31.01	2.103e3	1.587e3	1.047	1.32	1.55	21.0	YES	NO	bd	bd	0.296
10	Total-pentafurans	30.23	9.981e2	6.422e2	1.047	1.55	1.55	11.7	YES	NO	db	db	0.132
11	Total-pentafurans	30.13	3.767e3	2.689e3	1.047	1.40	1.55	38.6	YES	NO	bd	bd	0.519
12	12378-PeCDF	29.93	2.178e3	1.611e3	1.015	1.35	1.55	21.9	YES	NO	bb	bb	0.305
13	Total-pentafurans	29.56	8.609e3	5.686e3	1.047	1.51	1.55	86.1	YES	NO	dd	db	1.148

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.89	5.115e3	4.059e3	1.052	1.26	1.24	56.0	YES	NO	bb	bb	0.985
2	123678-HxCDF	35.03	2.750e3	2.259e3	1.037	1.22	1.24	46.9	YES	NO	db	db	0.529
3	123478-HxCDF	34.89	2.764e3	2.189e3	1.017	1.26	1.24	47.0	YES	NO	dd	dd	0.535
4	Total-hexafurans	34.27	2.516e4	2.077e4	1.045	1.21	1.24	432.1	YES	NO	bb	bb	4.971
5	Total-hexafurans	33.43	2.517e4	2.142e4	1.045	1.17	1.24	412.5	YES	NO	bb	bb	5.042
6	123468-HXCDF	33.22	6.547e3	5.308e3	1.087	1.23	1.24	114.1	YES	NO	bb	db	1.198

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.02	2.168e3	2.230e3	1.283	0.97	1.05	22.3	YES	NO	bb	bb	0.595
2	Total-heptafurans	39.44	8.352e4	7.953e4	1.305	1.05	1.05	995.0	YES	NO	bb	bb	19.675
3	1234678-HpCDF	38.77	5.021e4	4.626e4	1.327	1.09	1.05	604.6	YES	NO	bb	bb	10.479

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ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.45	3.556e3	4.195e3	1.192	0.85	0.77	29.9	YES	NO	bd	bd	0.545
2	Total-tetrafurans	24.01	2.065e3	2.558e3	1.192	0.81	0.77	21.6	YES	NO	db	db	0.325
3	Total-tetrafurans	23.76	9.143e3	1.178e4	1.192	0.78	0.77	89.0	YES	NO	bd	bd	1.471
4	Total-tetrafurans	23.58	1.113e3	1.281e3	1.192	0.87	0.77	12.5	YES	NO	db	db	0.168
5	Total-tetrafurans	23.40	1.886e3	2.682e3	1.192	0.70	0.77	17.5	YES	NO	dd	dd	0.321
6	Total-tetrafurans	23.10	1.526e4	1.904e4	1.192	0.80	0.77	144.5	YES	NO	bd	bd	2.412
7	Total-tetrafurans	22.53	4.658e3	5.780e3	1.192	0.81	0.77	50.4	YES	NO	bb	bb	0.734
8	1368-TCDF	22.25	2.082e3	2.612e3	1.425	0.80	0.77	16.5	YES	NO	db	bb	0.276
9	Total-tetrafurans	26.80	8.106e2	1.046e3	1.192	0.77	0.77	7.4	YES	NO	bb	bb	0.131
10	Total-tetrafurans	26.14	2.925e3	3.807e3	1.192	0.77	0.77	30.1	YES	NO	db	db	0.473
11	Total-tetrafurans	26.00	3.267e3	4.388e3	1.192	0.74	0.77	26.6	YES	NO	dd	dd	0.538
12	2378-TCDF	25.78	4.154e3	5.767e3	1.108	0.72	0.77	43.0	YES	NO	bd	bd	0.751
13	Total-tetrafurans	25.11	2.551e3	3.034e3	1.192	0.84	0.77	21.2	YES	NO	bd	bd	0.393
14	Total-tetrafurans	24.87	3.284e3	4.053e3	1.192	0.81	0.77	33.3	YES	NO	bb	bb	0.516
15	Total-tetrafurans	24.67	8.933e3	1.182e4	1.192	0.76	0.77	94.2	YES	NO	db	db	1.460
16	Total-tetrafurans	24.54	1.804e3	2.352e3	1.192	0.77	0.77	17.4	YES	NO	dd	dd	0.292
17	Total-pentafurans	29.46	1.852e3	1.170e3	1.047	1.58	1.55	21.9	YES	NO	dd	bd	0.243
18	Total-pentafurans	29.16	6.720e2	4.089e2	1.047	1.64	1.55	6.6	YES	NO	dd	bb	0.087
19	Total-pentafurans	28.85	3.215e4	2.043e4	1.047	1.57	1.55	228.2	YES	NO	MM	MM	4.224
20	Total-pentafurans	28.66	5.106e3	3.242e3	1.047	1.58	1.55	40.2	YES	NO	dd	dd	0.671
21	Total-pentafurans	28.56	7.855e2	4.724e2	1.047	1.66	1.55	9.4	YES	NO	bd	bd	0.101
22	12389-PECDF	32.22	9.653e2	5.895e2	1.000	1.64	1.55	10.6	YES	NO	dd	dd	0.127
23	23478-PeCDF	31.27	4.187e3	2.759e3	1.126	1.52	1.55	44.5	YES	NO	dd	db	0.534
24	Total-pentafurans	31.14	7.360e3	4.948e3	1.047	1.49	1.55	72.7	YES	NO	dd	dd	0.989
25	Total-pentafurans	31.01	2.103e3	1.587e3	1.047	1.32	1.55	21.0	YES	NO	bd	bd	0.296
26	Total-pentafurans	30.23	9.981e2	6.422e2	1.047	1.55	1.55	11.7	YES	NO	db	db	0.132
27	Total-pentafurans	30.13	3.767e3	2.689e3	1.047	1.40	1.55	38.6	YES	NO	bd	bd	0.519
28	12378-PeCDF	29.93	2.178e3	1.611e3	1.015	1.35	1.55	21.9	YES	NO	bb	bb	0.305
29	Total-pentafurans	29.56	8.609e3	5.686e3	1.047	1.51	1.55	86.1	YES	NO	dd	db	1.148
30	234678-HxCDF	35.89	5.115e3	4.059e3	1.052	1.26	1.24	56.0	YES	NO	bb	bb	0.985
31	123678-HxCDF	35.03	2.750e3	2.259e3	1.037	1.22	1.24	46.9	YES	NO	db	db	0.529
32	123478-HxCDF	34.89	2.764e3	2.189e3	1.017	1.26	1.24	47.0	YES	NO	dd	dd	0.535
33	Total-hexafurans	34.27	2.516e4	2.077e4	1.045	1.21	1.24	432.1	YES	NO	bb	bb	4.971
34	Total-hexafurans	33.43	2.517e4	2.142e4	1.045	1.17	1.24	412.5	YES	NO	bb	bb	5.042
35	123468-HXCDF	33.22	6.547e3	5.308e3	1.087	1.23	1.24	114.1	YES	NO	bb	db	1.198
36	1234789-HpCDF	41.02	2.168e3	2.230e3	1.283	0.97	1.05	22.3	YES	NO	bb	bb	0.595
37	Total-heptafurans	39.44	8.352e4	7.953e4	1.305	1.05	1.05	995.0	YES	NO	bb	bb	19.675

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1234678-HpCDF	38.77	5.021e4	4.626e4	1.327	1.09	1.05	604.6	YES	NO	bb	bb	10.479
39	OCDF	45.24	7.965e4	8.932e4	1.447	0.89	0.89	964.7	YES	NO	bb	bd	29.499
40	Total-penta1	27.18	6.518e4	4.218e4		1.55	1.55	724.5	YES	NO	bb	bb	9.572

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.59	8.922e2	1.213e3	0.879	0.74	0.77	12.4	YES	NO	bd	bd	0.242
2	Total-tetradioxins	25.38	6.028e2	7.532e2	0.879	0.80	0.77	8.4	YES	NO	db	db	0.156
3	Total-tetradioxins	25.02	1.494e3	1.836e3	0.879	0.81	0.77	18.2	YES	NO	bb	bb	0.383
4	Total-tetradioxins	24.75	1.704e3	2.152e3	0.879	0.79	0.77	20.0	YES	NO	bb	db	0.444
5	Total-tetradioxins	24.54	1.378e3	1.829e3	0.879	0.75	0.77	18.8	YES	NO	bb	bd	0.369
6	Total-tetradioxins	24.02	7.399e2	9.547e2	0.879	0.77	0.77	10.0	YES	NO	bb	bb	0.195
7	Total-tetradioxins	23.80	2.537e3	2.939e3	0.879	0.86	0.77	32.3	YES	NO	bb	bb	0.630
8	1368-TCDD	23.52	2.777e3	3.896e3	0.923	0.71	0.77	35.6	YES	NO	bd	bb	0.731
9	1289-TCDD	27.03	3.577e2	5.024e2	0.794	0.71	0.77	4.4	YES	NO	bb	bd	0.110

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	30.28	2.552e3	1.456e3	1.331	1.75	1.55	51.7	YES	NO	dd	dd	0.475
2	Total-pentadioxins	30.13	2.020e3	1.395e3	1.331	1.45	1.55	34.9	YES	NO	bd	dd	0.405
3	Total-pentadioxins	29.91	3.154e3	2.212e3	1.331	1.43	1.55	65.8	YES	NO	bb	bd	0.636
4	Total-pentadioxins	29.31	1.877e3	1.273e3	1.331	1.47	1.55	34.4	YES	NO	bb	bb	0.373
5	12378-PeCDD	31.51	2.210e3	1.323e3	0.995	1.67	1.55	36.2	YES	NO	bb	bb	0.560
6	12479-PECDD	28.83	8.616e3	5.056e3	1.843	1.70	1.55	104.0	YES	NO	MM	MM	1.169

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.52	2.803e3	2.580e3	0.950	1.09	1.24	43.0	YES	NO	bb	bb	0.730
2	123678-HxCDD	36.13	5.841e3	4.822e3	1.009	1.21	1.24	82.9	YES	NO	db	db	1.345
3	123478-HxCDD	36.01	1.310e3	9.822e2	1.027	1.33	1.24	17.8	YES	NO	bd	bd	0.292
4	Total-hexadioxins	35.12	2.057e4	1.724e4	1.028	1.19	1.24	187.1	YES	NO	bd	bd	4.744
5	Total-hexadioxins	34.77	5.745e3	4.784e3	1.028	1.20	1.24	83.0	YES	NO	bb	bb	1.321
6	124679-HXCDD	34.00	2.976e4	2.356e4	1.125	1.26	1.24	413.4	YES	NO	bb	bb	6.193

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HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.27	1.035e5	9.627e4	1.068	1.08	1.05	879.0	YES	NO	bb	bb	38.523
2	1234679-HPCDD	39.21	1.497e5	1.361e5	1.211	1.10	1.05	1362.1	YES	NO	bb	bb	48.605

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.59	8.922e2	1.213e3	0.879	0.74	0.77	12.4	YES	NO	bd	bd	0.242
2	Total-tetradioxins	25.38	6.028e2	7.532e2	0.879	0.80	0.77	8.4	YES	NO	db	db	0.156
3	Total-tetradioxins	25.02	1.494e3	1.836e3	0.879	0.81	0.77	18.2	YES	NO	bb	bb	0.383
4	Total-tetradioxins	24.75	1.704e3	2.152e3	0.879	0.79	0.77	20.0	YES	NO	bb	db	0.444
5	Total-tetradioxins	24.54	1.378e3	1.829e3	0.879	0.75	0.77	18.8	YES	NO	bb	bd	0.369
6	Total-tetradioxins	24.02	7.399e2	9.547e2	0.879	0.77	0.77	10.0	YES	NO	bb	bb	0.195
7	Total-tetradioxins	23.80	2.537e3	2.939e3	0.879	0.86	0.77	32.3	YES	NO	bb	bb	0.630
8	1368-TCDD	23.52	2.777e3	3.896e3	0.923	0.71	0.77	35.6	YES	NO	bd	bb	0.731
9	1289-TCDD	27.03	3.577e2	5.024e2	0.794	0.71	0.77	4.4	YES	NO	bb	bd	0.110
10	Total-pentadioxins	30.28	2.552e3	1.456e3	1.331	1.75	1.55	51.7	YES	NO	dd	dd	0.475
11	Total-pentadioxins	30.13	2.020e3	1.395e3	1.331	1.45	1.55	34.9	YES	NO	bd	dd	0.405
12	Total-pentadioxins	29.91	3.154e3	2.212e3	1.331	1.43	1.55	65.8	YES	NO	bb	bd	0.636
13	Total-pentadioxins	29.31	1.877e3	1.273e3	1.331	1.47	1.55	34.4	YES	NO	bb	bb	0.373
14	12378-PeCDD	31.51	2.210e3	1.323e3	0.995	1.67	1.55	36.2	YES	NO	bb	bb	0.560
15	123789-HxCDD	36.52	2.803e3	2.580e3	0.950	1.09	1.24	43.0	YES	NO	bb	bb	0.730
16	123678-HxCDD	36.13	5.841e3	4.822e3	1.009	1.21	1.24	82.9	YES	NO	db	db	1.345
17	123478-HxCDD	36.01	1.310e3	9.822e2	1.027	1.33	1.24	17.8	YES	NO	bd	bd	0.292
18	Total-hexadioxins	35.12	2.057e4	1.724e4	1.028	1.19	1.24	187.1	YES	NO	bd	bd	4.744
19	Total-hexadioxins	34.77	5.745e3	4.784e3	1.028	1.20	1.24	83.0	YES	NO	bb	bb	1.321
20	124679-HXCDD	34.00	2.976e4	2.356e4	1.125	1.26	1.24	413.4	YES	NO	bb	bb	6.193
21	OCDD	45.00	5.379e5	6.048e5	1.181	0.89	0.89	4299.9	YES	NO	bb	bb	244.442
22	1234678-HpCDD	40.27	1.035e5	9.627e4	1.068	1.08	1.05	879.0	YES	NO	bb	bb	38.523
23	1234679-HPCDD	39.21	1.497e5	1.361e5	1.211	1.10	1.05	1362.1	YES	NO	bb	bb	48.605
24	12479-PECDD	28.83	8.616e3	5.056e3	1.843	1.70	1.55	104.0	YES	NO	MM	MM	1.169

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:30:02 Pacific Daylight Time

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.45	3.556e3	4.195e3	1.192	0.85	0.77	29.9	YES	NO	bd	bd	0.545
2	Total-tetrafurans	24.01	2.065e3	2.558e3	1.192	0.81	0.77	21.6	YES	NO	db	db	0.325
3	Total-tetrafurans	23.76	9.143e3	1.178e4	1.192	0.78	0.77	89.0	YES	NO	bd	bd	1.471
4	Total-tetrafurans	23.58	1.113e3	1.281e3	1.192	0.87	0.77	12.5	YES	NO	db	db	0.168
5	Total-tetrafurans	23.40	1.886e3	2.682e3	1.192	0.70	0.77	17.5	YES	NO	dd	dd	0.321
6	Total-tetrafurans	23.10	1.526e4	1.904e4	1.192	0.80	0.77	144.5	YES	NO	bd	bd	2.412
7	Total-tetrafurans	22.53	4.658e3	5.780e3	1.192	0.81	0.77	50.4	YES	NO	bb	bb	0.734
8	1368-TCDF	22.25	2.082e3	2.612e3	1.425	0.80	0.77	16.5	YES	NO	db	bb	0.276
9	Total-tetrafurans	26.80	8.106e2	1.046e3	1.192	0.77	0.77	7.4	YES	NO	bb	bb	0.131
10	Total-tetrafurans	26.14	2.925e3	3.807e3	1.192	0.77	0.77	30.1	YES	NO	db	db	0.473
11	Total-tetrafurans	26.00	3.267e3	4.388e3	1.192	0.74	0.77	26.6	YES	NO	dd	dd	0.538
12	2378-TCDF	25.78	4.154e3	5.767e3	1.108	0.72	0.77	43.0	YES	NO	bd	bd	0.751
13	Total-tetrafurans	25.11	2.551e3	3.034e3	1.192	0.84	0.77	21.2	YES	NO	bd	bd	0.393
14	Total-tetrafurans	24.87	3.284e3	4.053e3	1.192	0.81	0.77	33.3	YES	NO	bb	bb	0.516
15	Total-tetrafurans	24.67	8.933e3	1.182e4	1.192	0.76	0.77	94.2	YES	NO	db	db	1.460
16	Total-tetrafurans	24.54	1.804e3	2.352e3	1.192	0.77	0.77	17.4	YES	NO	dd	dd	0.292
17	Total-pentafurans	29.46	1.852e3	1.170e3	1.047	1.58	1.55	21.9	YES	NO	dd	bd	0.243
18	Total-pentafurans	29.16	6.720e2	4.089e2	1.047	1.64	1.55	6.6	YES	NO	dd	bb	0.087
19	Total-pentafurans	28.85	3.215e4	2.043e4	1.047	1.57	1.55	228.2	YES	NO	MM	MM	4.224
20	Total-pentafurans	28.66	5.106e3	3.242e3	1.047	1.58	1.55	40.2	YES	NO	dd	dd	0.671
21	Total-pentafurans	28.56	7.855e2	4.724e2	1.047	1.66	1.55	9.4	YES	NO	bd	bd	0.101
22	12389-PECDF	32.22	9.653e2	5.895e2	1.000	1.64	1.55	10.6	YES	NO	dd	dd	0.127
23	23478-PeCDF	31.27	4.187e3	2.759e3	1.126	1.52	1.55	44.5	YES	NO	dd	db	0.534
24	Total-pentafurans	31.14	7.360e3	4.948e3	1.047	1.49	1.55	72.7	YES	NO	dd	dd	0.989
25	Total-pentafurans	31.01	2.103e3	1.587e3	1.047	1.32	1.55	21.0	YES	NO	bd	bd	0.296
26	Total-pentafurans	30.23	9.981e2	6.422e2	1.047	1.55	1.55	11.7	YES	NO	db	db	0.132
27	Total-pentafurans	30.13	3.767e3	2.689e3	1.047	1.40	1.55	38.6	YES	NO	bd	bd	0.519
28	12378-PeCDF	29.93	2.178e3	1.611e3	1.015	1.35	1.55	21.9	YES	NO	bb	bb	0.305
29	Total-pentafurans	29.56	8.609e3	5.686e3	1.047	1.51	1.55	86.1	YES	NO	dd	db	1.148
30	234678-HxCDF	35.89	5.115e3	4.059e3	1.052	1.26	1.24	56.0	YES	NO	bb	bb	0.985
31	123678-HxCDF	35.03	2.750e3	2.259e3	1.037	1.22	1.24	46.9	YES	NO	db	db	0.529
32	123478-HxCDF	34.89	2.764e3	2.189e3	1.017	1.26	1.24	47.0	YES	NO	dd	dd	0.535
33	Total-hexafurans	34.27	2.516e4	2.077e4	1.045	1.21	1.24	432.1	YES	NO	bb	bb	4.971
34	Total-hexafurans	33.43	2.517e4	2.142e4	1.045	1.17	1.24	412.5	YES	NO	bb	bb	5.042
35	123468-HXCDF	33.22	6.547e3	5.308e3	1.087	1.23	1.24	114.1	YES	NO	bb	db	1.198
36	1234789-HpCDF	41.02	2.168e3	2.230e3	1.283	0.97	1.05	22.3	YES	NO	bb	bb	0.595
37	Total-heptafurans	39.44	8.352e4	7.953e4	1.305	1.05	1.05	995.0	YES	NO	bb	bb	19.675

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1234678-HpCDF	38.77	5.021e4	4.626e4	1.327	1.09	1.05	604.6	YES	NO	bb	bb	10.479
39	OCDF	45.24	7.965e4	8.932e4	1.447	0.89	0.89	964.7	YES	NO	bb	bd	29.499
40	Total-penta1	27.18	6.518e4	4.218e4		1.55	1.55	724.5	YES	NO	bb	bb	9.572
41	Total-tetradioxins	25.59	8.922e2	1.213e3	0.879	0.74	0.77	12.4	YES	NO	bd	bd	0.242
42	Total-tetradioxins	25.38	6.028e2	7.532e2	0.879	0.80	0.77	8.4	YES	NO	db	db	0.156
43	Total-tetradioxins	25.02	1.494e3	1.836e3	0.879	0.81	0.77	18.2	YES	NO	bb	bb	0.383
44	Total-tetradioxins	24.75	1.704e3	2.152e3	0.879	0.79	0.77	20.0	YES	NO	bb	db	0.444
45	Total-tetradioxins	24.54	1.378e3	1.829e3	0.879	0.75	0.77	18.8	YES	NO	bb	bd	0.369
46	Total-tetradioxins	24.02	7.399e2	9.547e2	0.879	0.77	0.77	10.0	YES	NO	bb	bb	0.195
47	Total-tetradioxins	23.80	2.537e3	2.939e3	0.879	0.86	0.77	32.3	YES	NO	bb	bb	0.630
48	1368-TCDD	23.52	2.777e3	3.896e3	0.923	0.71	0.77	35.6	YES	NO	bd	bb	0.731
49	1289-TCDD	27.03	3.577e2	5.024e2	0.794	0.71	0.77	4.4	YES	NO	bb	bd	0.110
50	Total-pentadioxins	30.28	2.552e3	1.456e3	1.331	1.75	1.55	51.7	YES	NO	dd	dd	0.475
51	Total-pentadioxins	30.13	2.020e3	1.395e3	1.331	1.45	1.55	34.9	YES	NO	bd	dd	0.405
52	Total-pentadioxins	29.91	3.154e3	2.212e3	1.331	1.43	1.55	65.8	YES	NO	bb	bd	0.636
53	Total-pentadioxins	29.31	1.877e3	1.273e3	1.331	1.47	1.55	34.4	YES	NO	bb	bb	0.373
54	12378-PeCDD	31.51	2.210e3	1.323e3	0.995	1.67	1.55	36.2	YES	NO	bb	bb	0.560
55	123789-HxCDD	36.52	2.803e3	2.580e3	0.950	1.09	1.24	43.0	YES	NO	bb	bb	0.730
56	123678-HxCDD	36.13	5.841e3	4.822e3	1.009	1.21	1.24	82.9	YES	NO	db	db	1.345
57	123478-HxCDD	36.01	1.310e3	9.822e2	1.027	1.33	1.24	17.8	YES	NO	bd	bd	0.292
58	Total-hexadioxins	35.12	2.057e4	1.724e4	1.028	1.19	1.24	187.1	YES	NO	bd	bd	4.744
59	Total-hexadioxins	34.77	5.745e3	4.784e3	1.028	1.20	1.24	83.0	YES	NO	bb	bb	1.321
60	124679-HXCDD	34.00	2.976e4	2.356e4	1.125	1.26	1.24	413.4	YES	NO	bb	bb	6.193
61	OCDD	45.00	5.379e5	6.048e5	1.181	0.89	0.89	4299.9	YES	NO	bb	bb	244.442
62	1234678-HpCDD	40.27	1.035e5	9.627e4	1.068	1.08	1.05	879.0	YES	NO	bb	bb	38.523
63	1234679-HPCDD	39.21	1.497e5	1.361e5	1.211	1.10	1.05	1362.1	YES	NO	bb	bb	48.605
64	12479-PECDD	28.83	8.616e3	5.056e3	1.843	1.70	1.55	104.0	YES	NO	MM	MM	1.169

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.04	2.689e6					17.9	YES		dd		
2	FUNCTION1 PFK	22.83	2.343e6					20.5	YES		dd		
3	FUNCTION1 PFK	22.69	1.249e7					22.8	YES		bd		
4	FUNCTION1 PFK	21.97	3.825e6					28.7	YES		db		
5	FUNCTION1 PFK	21.77	2.059e6					23.8	YES		dd		
6	FUNCTION1 PFK	21.62	2.009e6					20.4	YES		dd		
7	FUNCTION1 PFK	21.53	2.664e6					17.8	YES		bd		
8	FUNCTION1 PFK	21.21	2.371e5					5.8	YES		db		
9	FUNCTION1 PFK	21.19	2.743e5					5.8	YES		bd		
10	FUNCTION1 PFK	25.14	6.538e4					1.6	NO		db		
11	FUNCTION1 PFK	25.07	4.454e4					1.3	NO		dd		
12	FUNCTION1 PFK	24.97	1.056e5					1.8	NO		dd		
13	FUNCTION1 PFK	24.87	1.111e5					2.1	NO		bd		
14	FUNCTION1 PFK	24.75	6.146e4					2.1	NO		db		
15	FUNCTION1 PFK	24.67	1.652e5					2.3	NO		dd		
16	FUNCTION1 PFK	24.57	7.484e4					1.4	NO		bd		
17	FUNCTION1 PFK	24.34	4.207e4					1.3	NO		bb		
18	FUNCTION1 PFK	24.08	3.265e4					1.4	NO		db		
19	FUNCTION1 PFK	24.04	4.834e4					1.4	NO		bd		
20	FUNCTION1 PFK	23.96	2.615e4					1.1	NO		bb		
21	FUNCTION1 PFK	23.80	5.529e5					3.4	YES		bb		
22	FUNCTION1 PFK	23.51	1.123e6					11.1	YES		db		
23	FUNCTION1 PFK	23.39	7.653e5					12.5	YES		dd		
24	FUNCTION1 PFK	23.30	1.076e6					14.7	YES		dd		
25	FUNCTION1 PFK	23.19	9.585e5					15.1	YES		dd		
26	FUNCTION1 PFK	28.01	3.817e4					1.6	NO		bb		
27	FUNCTION1 PFK	27.68	6.574e4					2.0	NO		bb		
28	FUNCTION1 PFK	27.62	4.317e4					1.5	NO		bb		
29	FUNCTION1 PFK	27.51	1.340e4					0.4	NO		db		
30	FUNCTION1 PFK	27.45	9.902e4					2.1	NO		bd		
31	FUNCTION1 PFK	27.23	1.253e5					2.3	NO		db		
32	FUNCTION1 PFK	27.17	2.990e4					1.3	NO		dd		
33	FUNCTION1 PFK	27.09	5.244e4					1.7	NO		bd		
34	FUNCTION1 PFK	26.92	1.254e5					1.7	NO		db		
35	FUNCTION1 PFK	26.83	2.014e4					0.9	NO		bd		
36	FUNCTION1 PFK	26.46	1.014e5					1.0	NO		db		
37	FUNCTION1 PFK	26.38	5.441e4					1.0	NO		dd		

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	26.18	6.219e4					1.4	NO		bd		
39	FUNCTION1 PFK	25.90	3.456e4					1.0	NO		bb		
40	FUNCTION1 PFK	25.35	7.860e4					1.7	NO		bb		
41	FUNCTION1 PFK	25.22	5.029e3					0.4	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.71	1.555e5					1.3	NO		bb		0.000
2	FUNCTION2 PFK	31.29	8.488e4					2.2	NO		bb		0.000
3	FUNCTION2 PFK	31.00	1.007e4					1.1	NO		bb		0.000
4	FUNCTION2 PFK	29.39	3.682e4					2.4	NO		bb		0.000
5	FUNCTION2 PFK	29.23	4.316e5					6.7	YES		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.36	2.467e4					1.7	NO		bb		0.000
2	FUNCTION3 PFK	37.26	1.428e5					6.9	YES		db		0.000
3	FUNCTION3 PFK	37.21	4.158e5					8.1	YES		bd		0.000
4	FUNCTION3 PFK	35.89	1.047e5					2.9	NO		bb		0.000
5	FUNCTION3 PFK	33.13	8.787e4					3.0	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.13	7.435e3					0.8	NO		bb		
2	FUNCTION4 PFK	38.08	1.380e4					1.2	NO		bb		

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.24	9.890e3					1.6	NO		bb		
2	FUNCTION5 PFK	44.95	2.466e3					0.8	NO		bb		
3	FUNCTION5 PFK	44.74	1.729e3					0.6	NO		bb		
4	FUNCTION5 PFK	44.39	1.471e4					2.1	NO		bb		
5	FUNCTION5 PFK	44.33	8.928e3					1.3	NO		db		
6	FUNCTION5 PFK	44.26	1.359e4					2.1	NO		bd		
7	FUNCTION5 PFK	44.22	1.542e3					0.6	NO		bb		
8	FUNCTION5 PFK	44.17	2.783e3					0.8	NO		bb		
9	FUNCTION5 PFK	44.14	1.062e3					0.6	NO		bb		
10	FUNCTION5 PFK	44.02	3.767e3					0.7	NO		bb		
11	FUNCTION5 PFK	43.90	1.118e4					1.7	NO		bb		
12	FUNCTION5 PFK	43.83	8.566e3					1.6	NO		bb		
13	FUNCTION5 PFK	43.66	7.125e3					1.0	NO		bb		
14	FUNCTION5 PFK	43.28	5.170e3					1.3	NO		bb		
15	FUNCTION5 PFK	43.19	9.069e3					1.1	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.64	4.328e2					8.8	YES		bb		0.000
2	FUNCTION1 HXCD...	26.79	8.143e2					18.5	YES		bb		0.000
3	FUNCTION1 HXCD...	26.12	2.314e3					57.7	YES		db		0.000
4	FUNCTION1 HXCD...	25.93	3.978e2					9.3	YES		bd		0.000
5	FUNCTION1 HXCD...	25.75	1.148e3					27.8	YES		db		0.000
6	FUNCTION1 HXCD...	25.59	1.031e2					2.0	NO		bd		0.000
7	FUNCTION1 HXCD...	25.29	7.111e1					1.1	NO		bb		0.000
8	FUNCTION1 HXCD...	25.11	6.753e2					15.8	YES		bb		0.000
9	FUNCTION1 HXCD...	23.75	1.566e3					37.8	YES		bb		0.000
10	FUNCTION1 HXCD...	23.30	8.806e1					2.0	NO		bb		0.000
11	FUNCTION1 HXCD...	22.72	2.240e2					5.8	YES		bb		0.000
12	FUNCTION1 HXCD...	22.19	1.488e2					3.1	YES		bb		0.000
13	FUNCTION1 HXCD...	21.83	2.150e2					1.5	NO		bb		0.000
14	FUNCTION1 HXCD...	21.24	9.014e1					1.8	NO		db		0.000
15	FUNCTION1 HXCD...	21.15	1.799e2					2.2	NO		bd		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.36	7.166e1					2.1	NO		db		0.000
2	FUNCTION1 HPCD...	27.32	1.003e2					3.2	YES		bd		0.000
3	FUNCTION1 HPCD...	26.77	1.528e2					2.6	NO		bb		0.000
4	FUNCTION1 HPCD...	25.61	8.356e1					2.4	NO		bb		0.000
5	FUNCTION1 HPCD...	24.52	1.675e2					5.5	YES		bb		0.000
6	FUNCTION1 HPCD...	24.25	1.084e2					2.1	NO		bb		0.000
7	FUNCTION1 HPCD...	23.90	8.114e1					2.3	NO		bb		0.000
8	FUNCTION1 HPCD...	23.37	6.915e2					10.5	YES		bb		0.000
9	FUNCTION1 HPCD...	23.04	1.032e2					2.6	NO		bb		0.000
10	FUNCTION1 HPCD...	22.33	1.453e2					2.0	NO		bb		0.000
11	FUNCTION1 HPCD...	22.09	9.822e1					2.3	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	28.94	5.976e2					10.0	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	35.01	8.357e1					1.6	NO		dd		0.000
2	FUNCTION3 OCDPE	34.92	7.402e1					2.4	NO		bd		0.000
3	FUNCTION3 OCDPE	36.78	7.846e1					2.4	NO		bb		0.000
4	FUNCTION3 OCDPE	36.49	2.849e2					6.7	YES		bb		0.000
5	FUNCTION3 OCDPE	36.10	1.227e2					2.7	NO		db		0.000
6	FUNCTION3 OCDPE	36.00	1.335e2					3.8	YES		bd		0.000
7	FUNCTION3 OCDPE	35.16	9.816e1					2.4	NO		db		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.67	7.184e1					2.3	NO		bb		0.000
2	FUNCTION4 NCDPE	38.42	3.110e3					59.0	YES		bb		0.000

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Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:30:02 Pacific Daylight Time

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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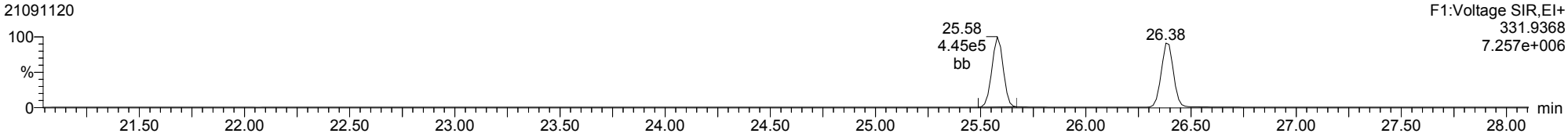

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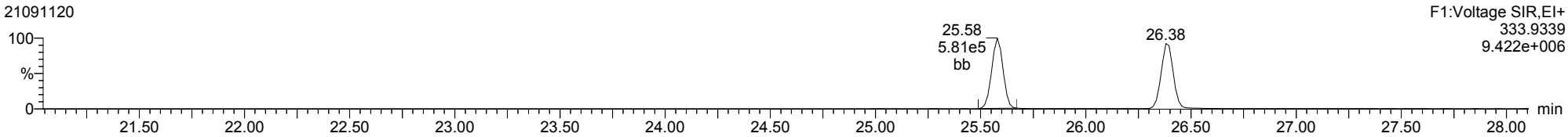
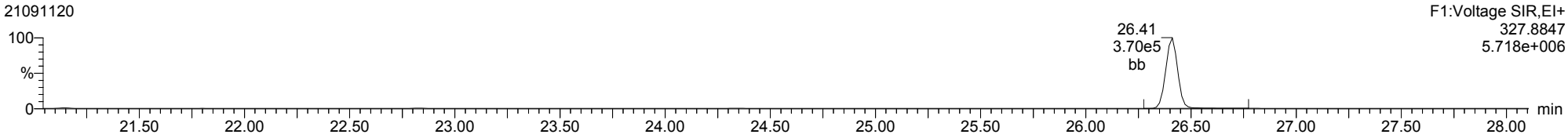


37CL-2378-TCDD



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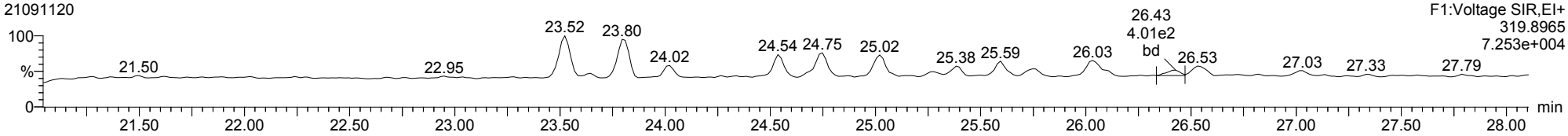
2378-TCDD



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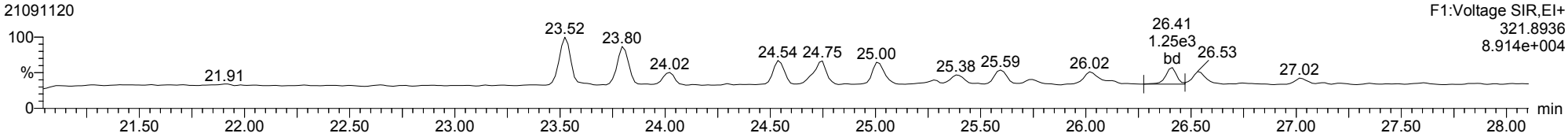

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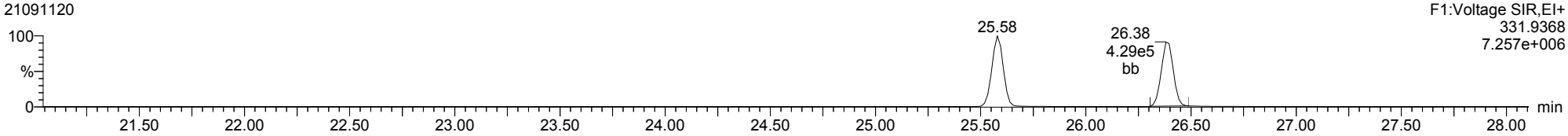

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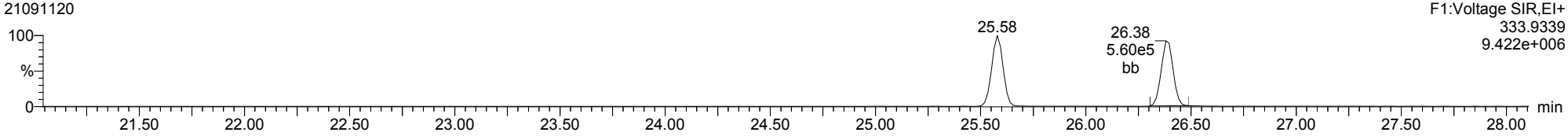

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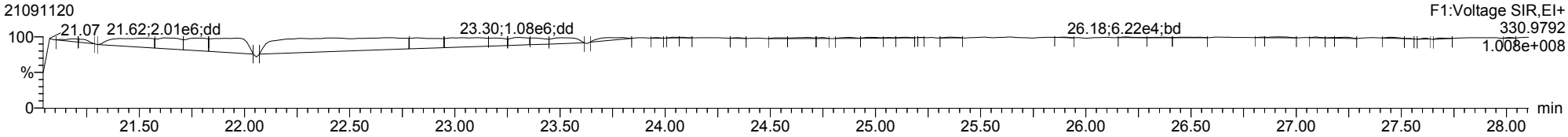

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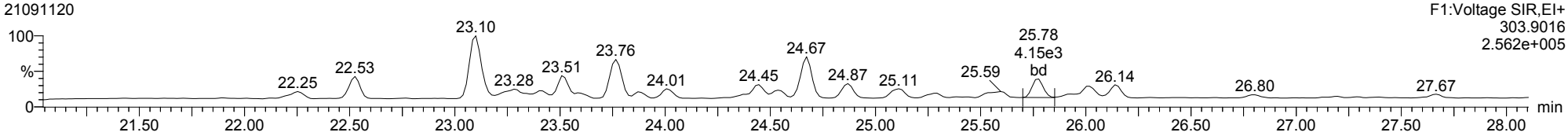
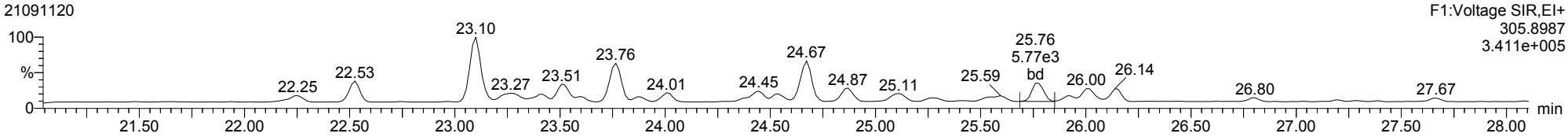
2378-TCDF



2378-TCDF



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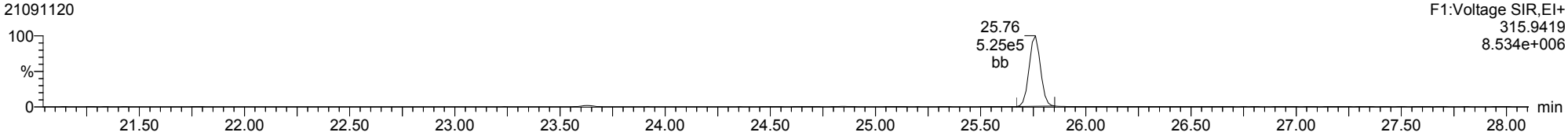

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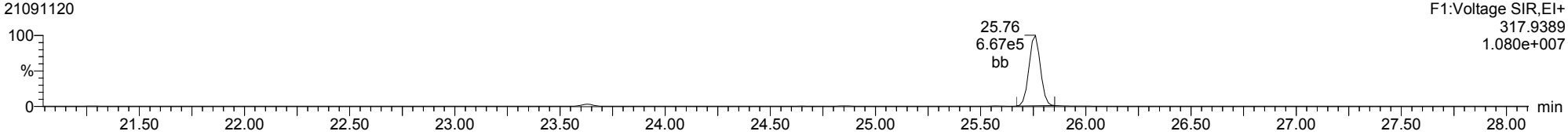
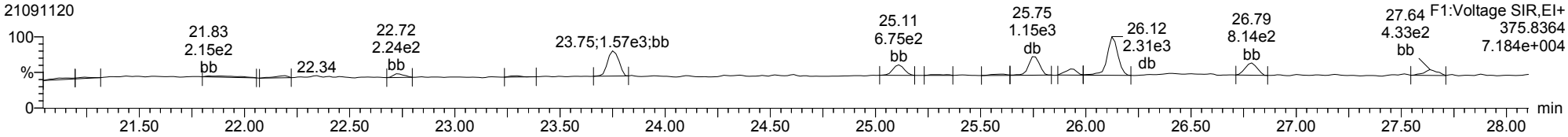


FUNCTION1 HXCDPE



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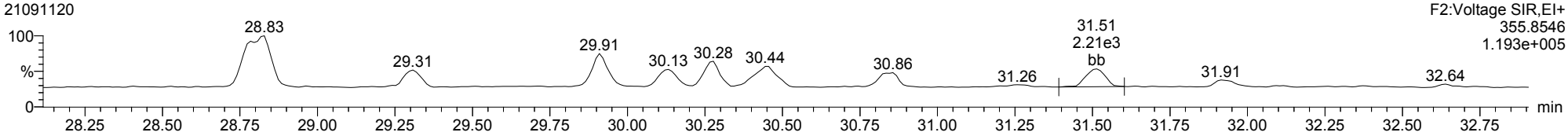
12378-PeCDD



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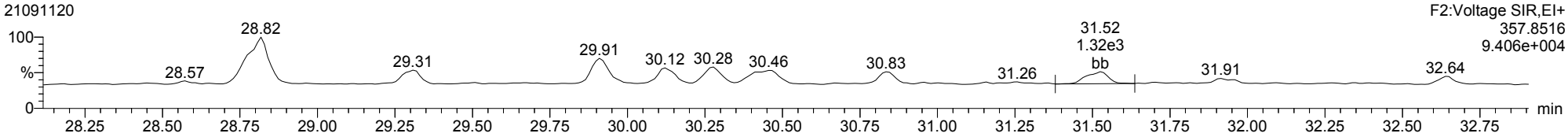

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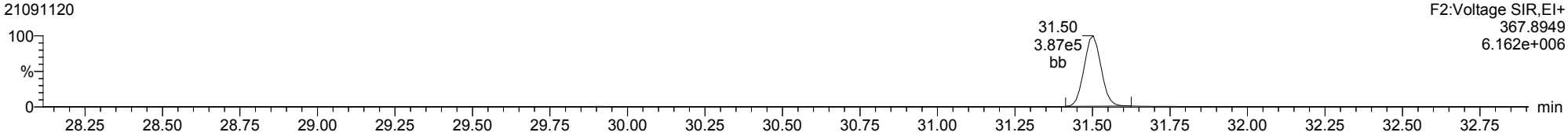

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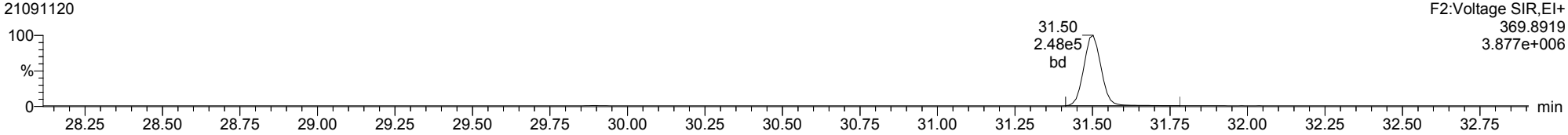
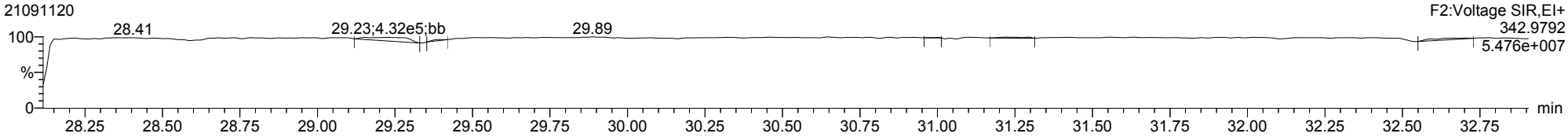


FUNCTION2 PFK



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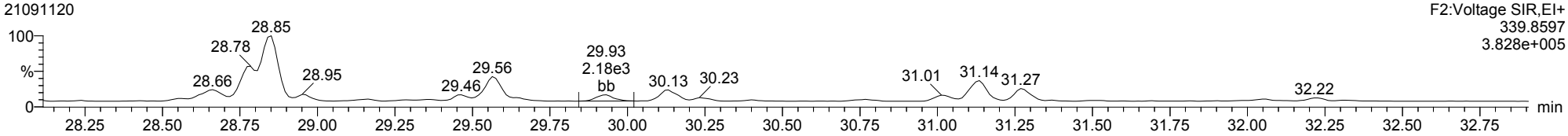
12378-PeCDF



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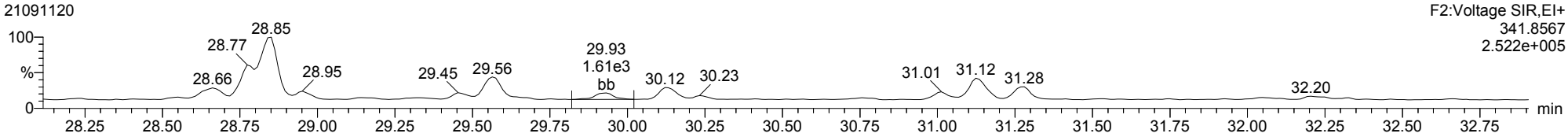

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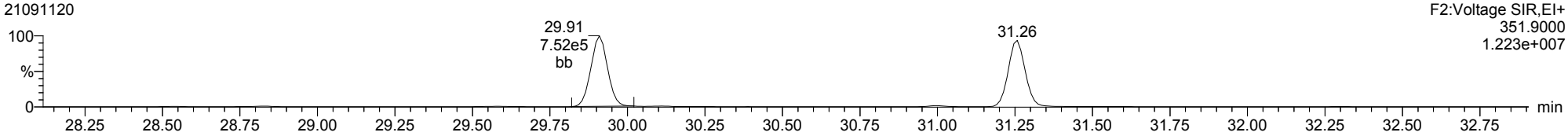

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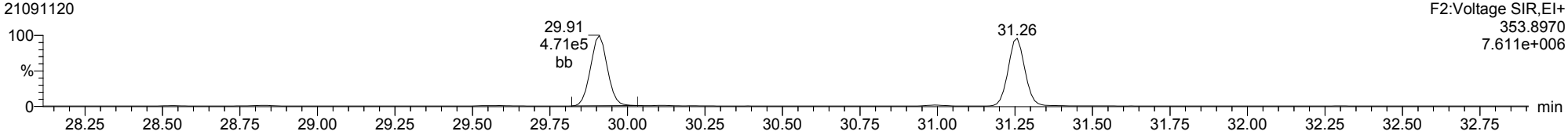

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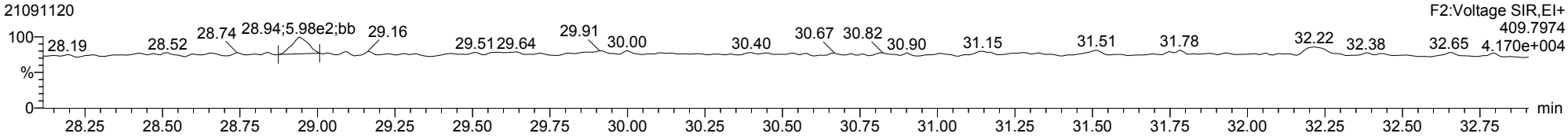

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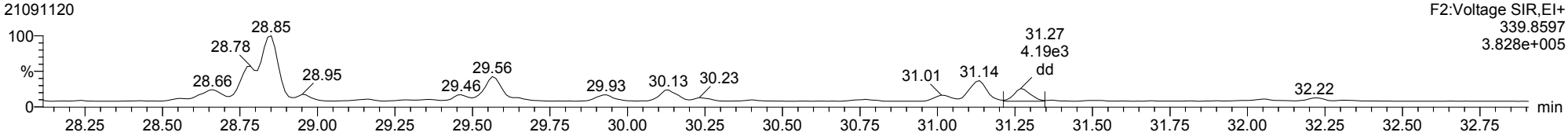
23478-PeCDF



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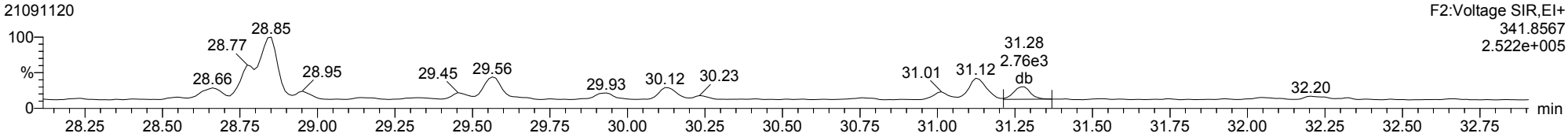

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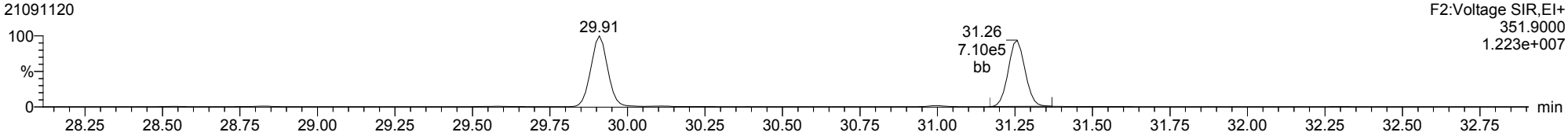

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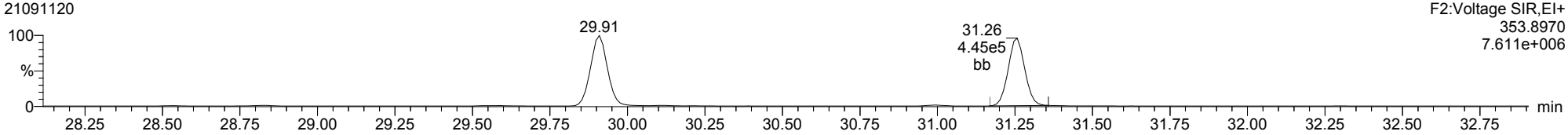

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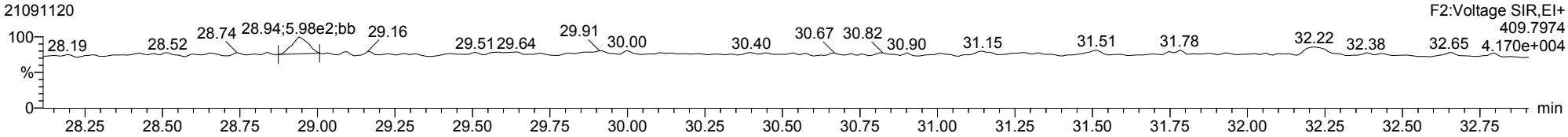

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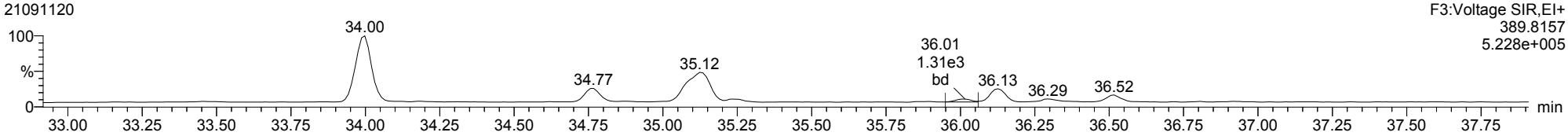

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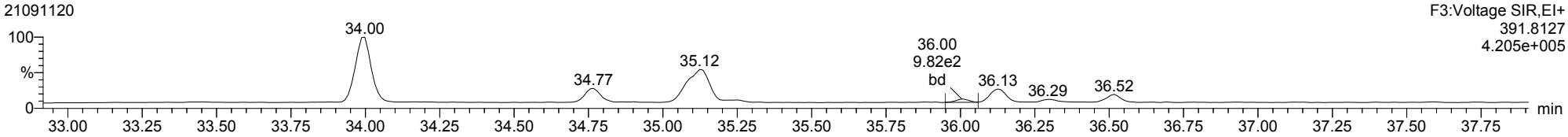

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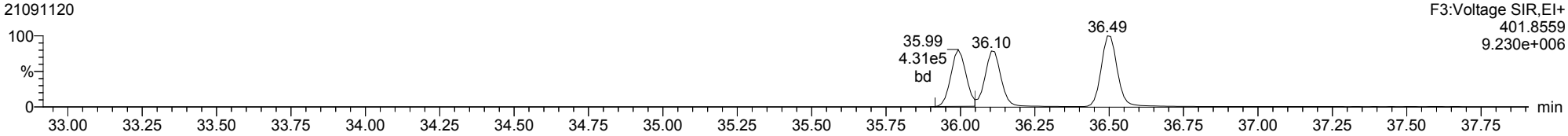

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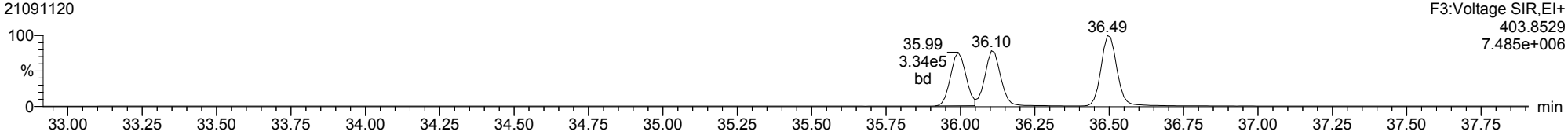

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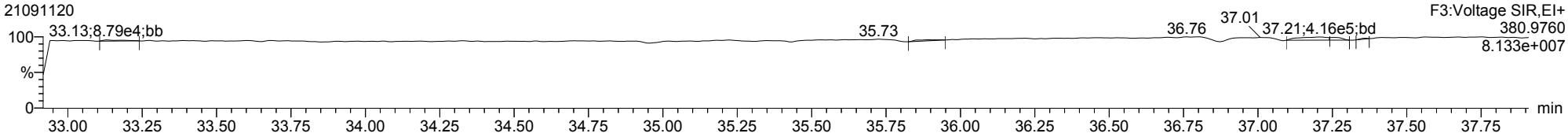

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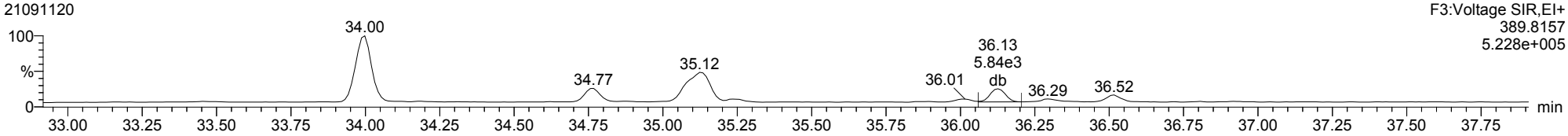

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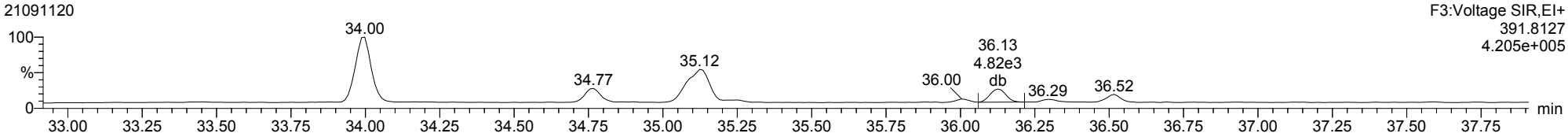

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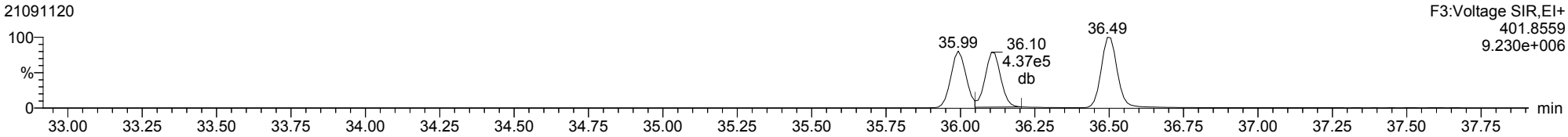

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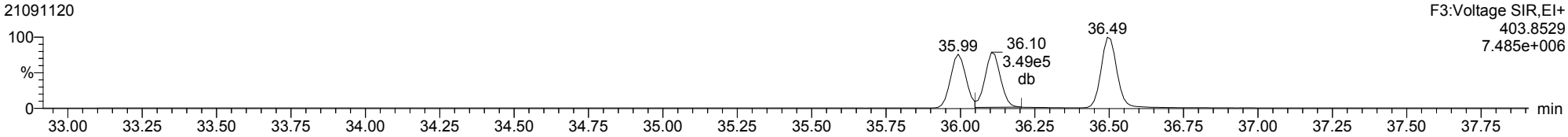

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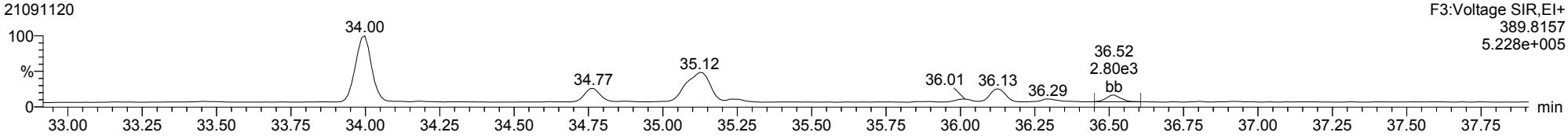

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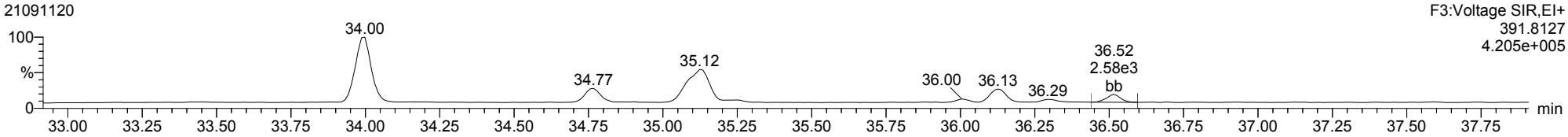

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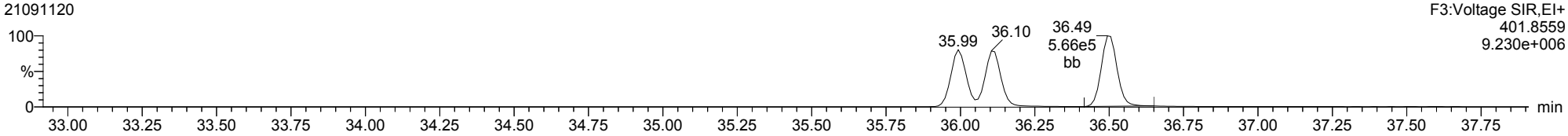

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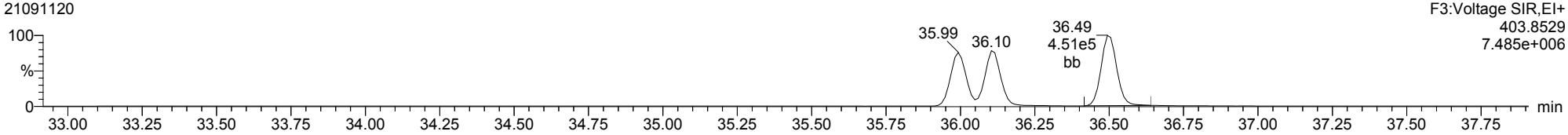

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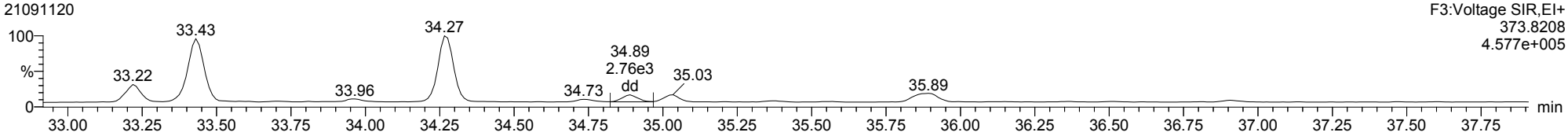

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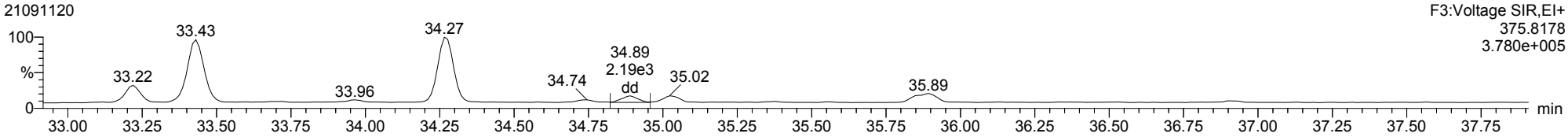

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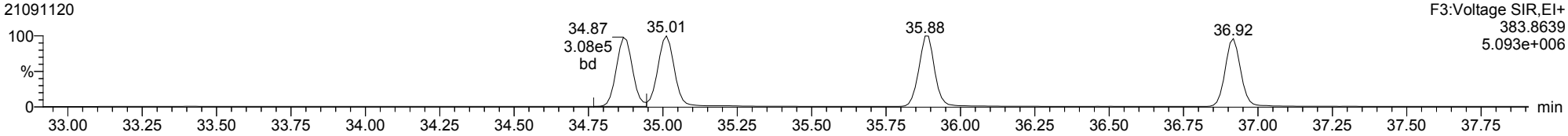

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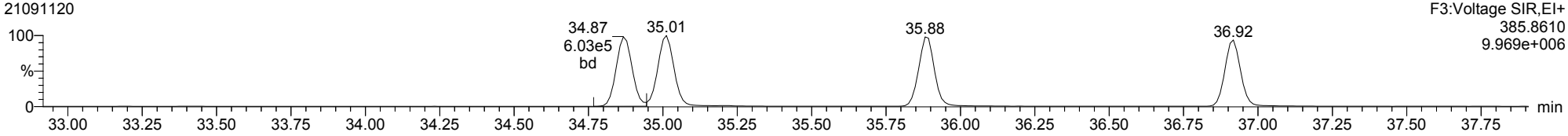

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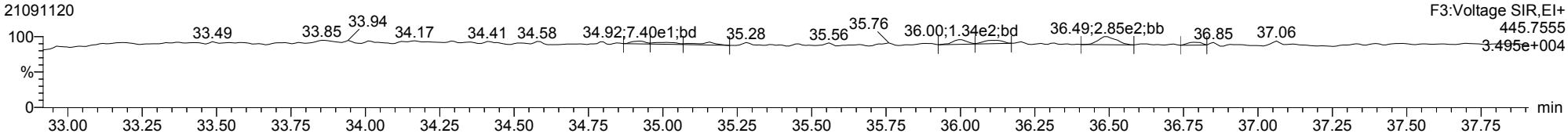

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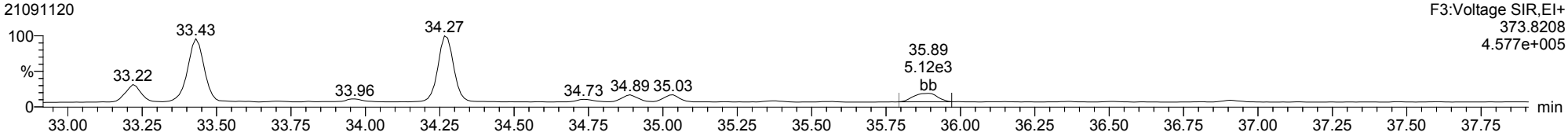

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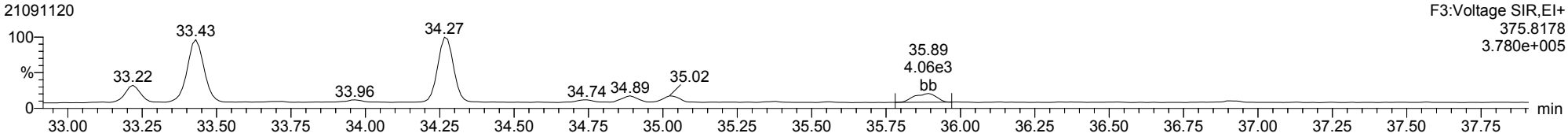

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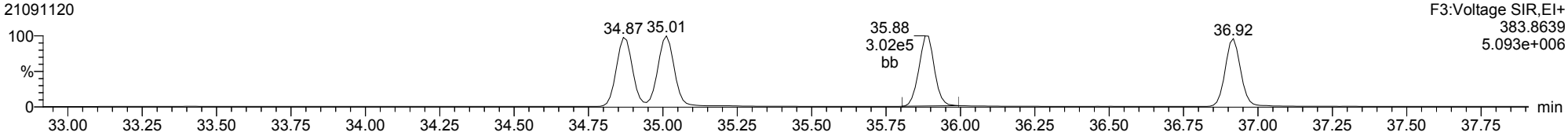

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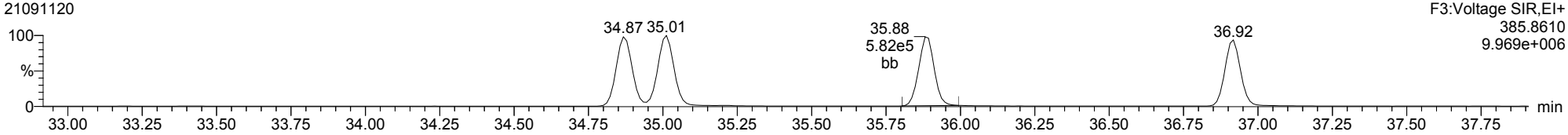

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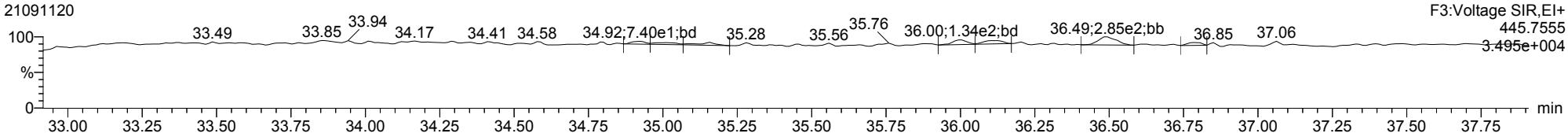

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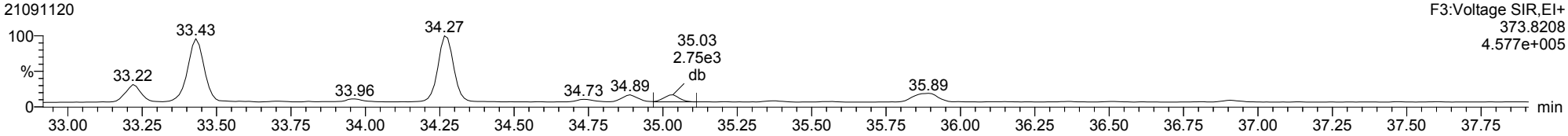

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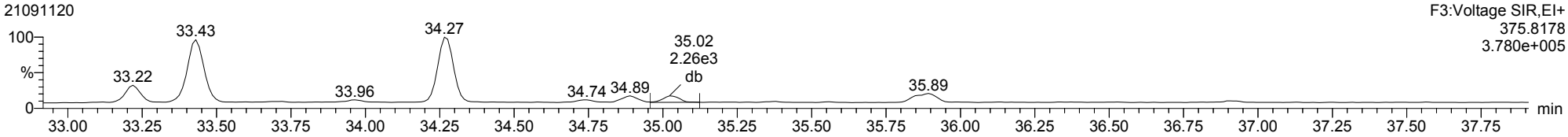

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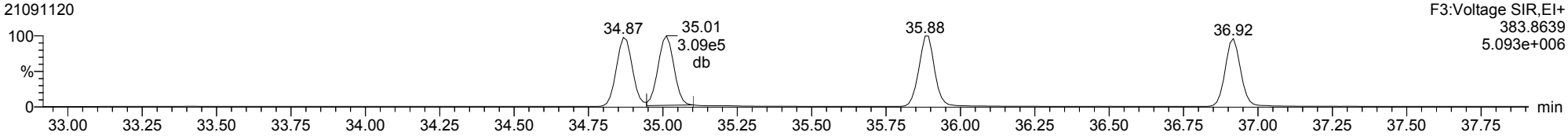

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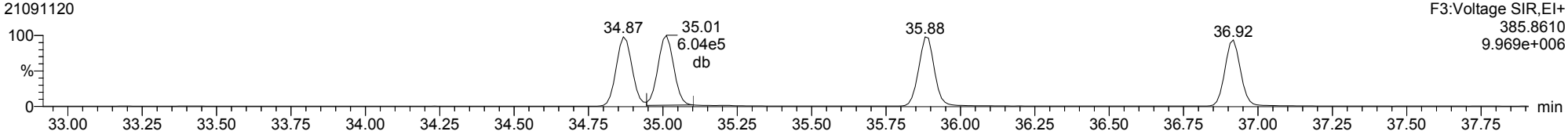

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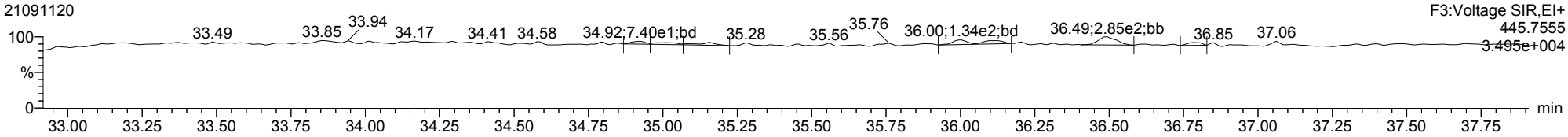

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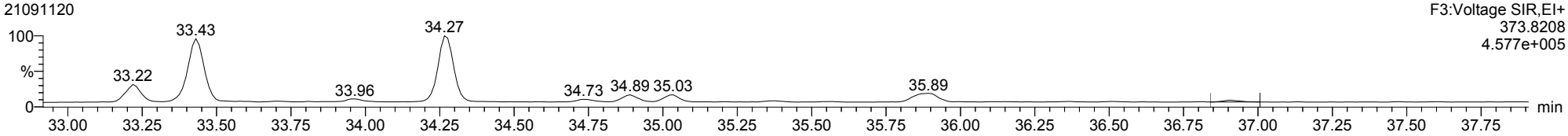

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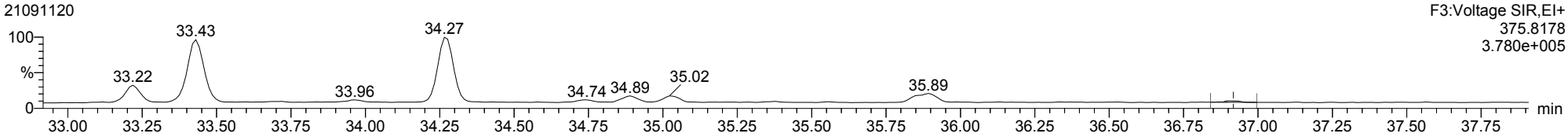

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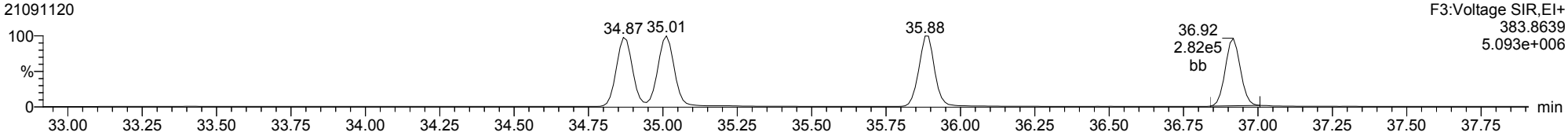

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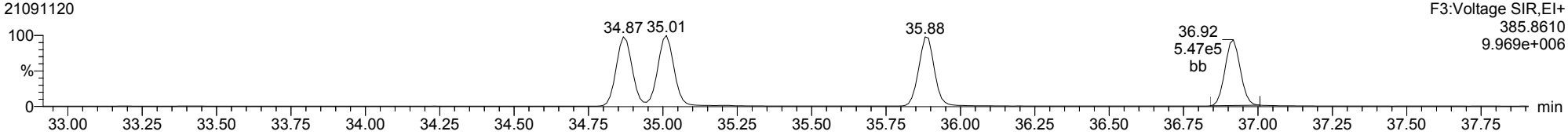
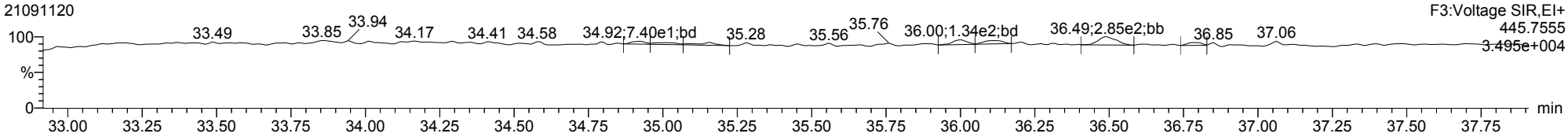


FUNCTION3 OCDPE



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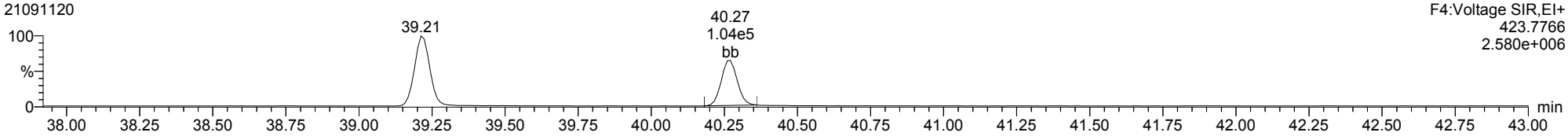

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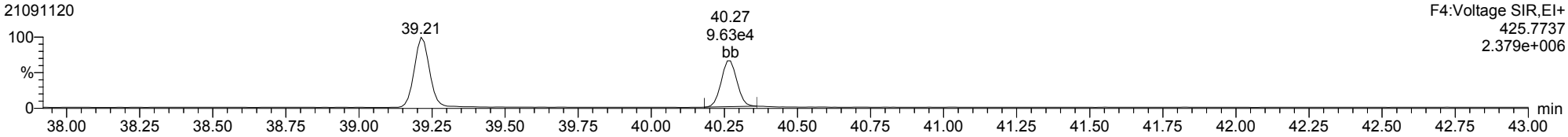

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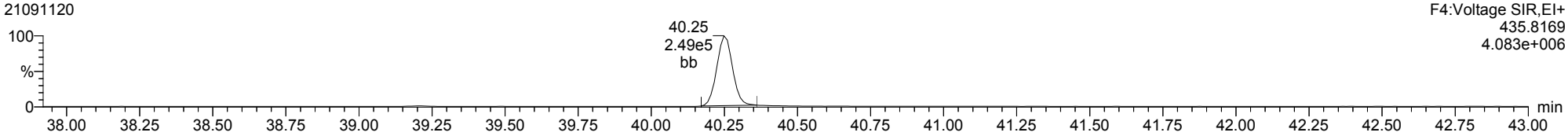

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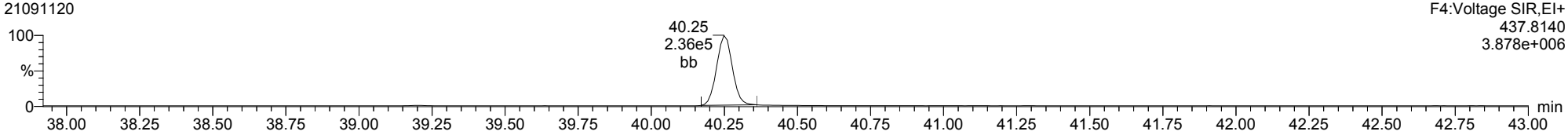
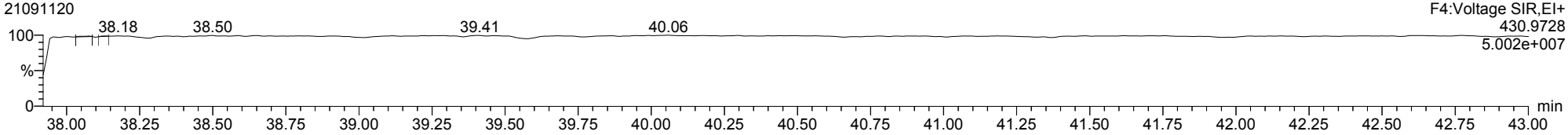


FUNCTION4 PFK



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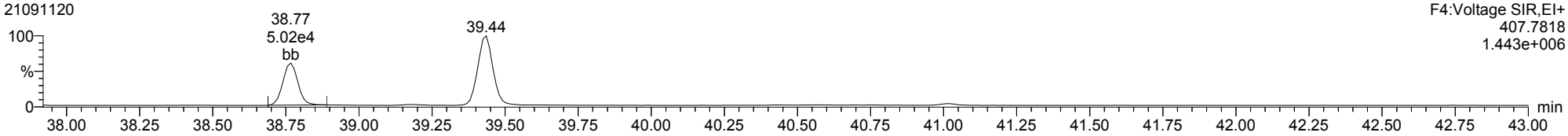

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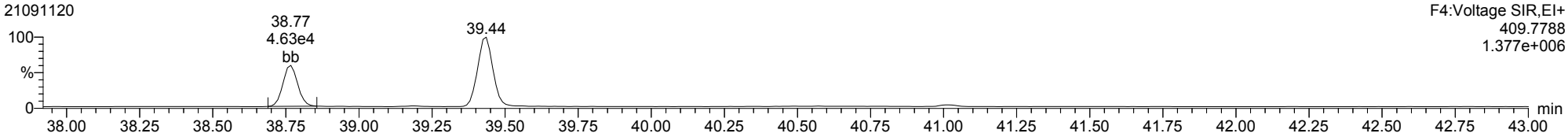

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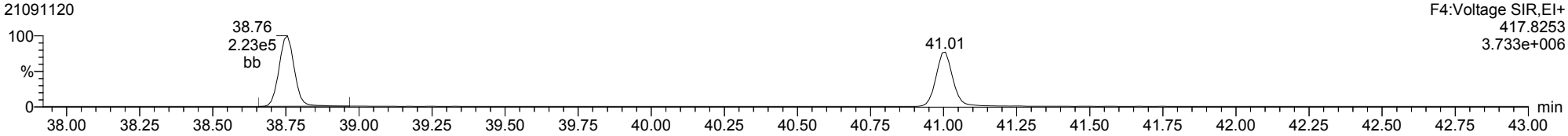

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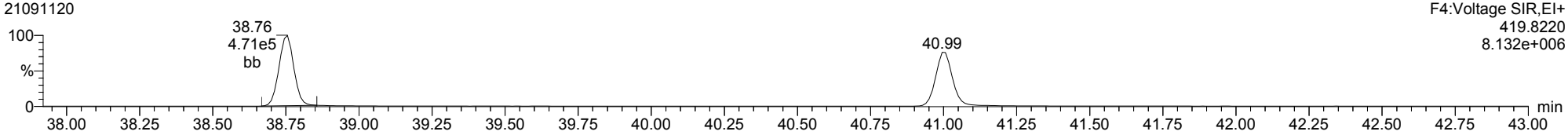
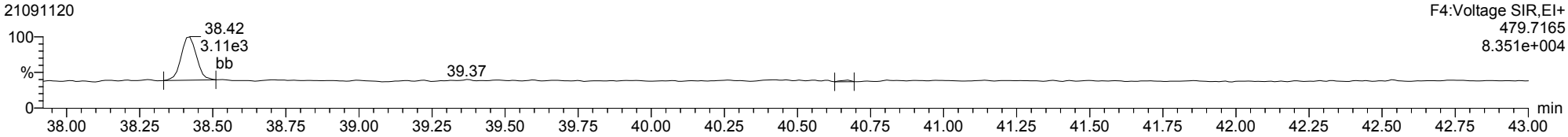
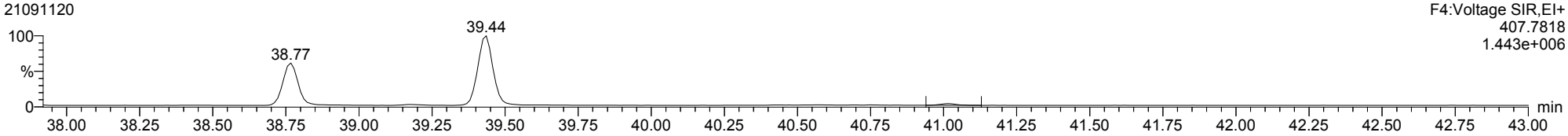


FUNCTION4 NCDPE



ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF



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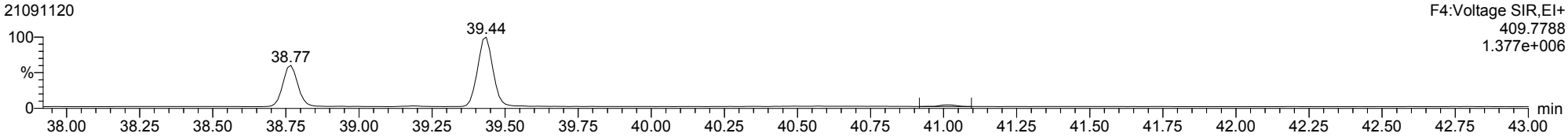

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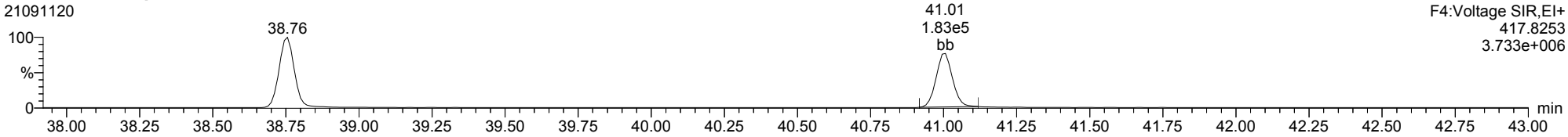

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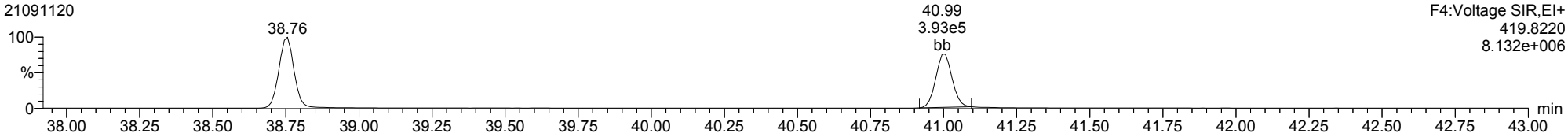
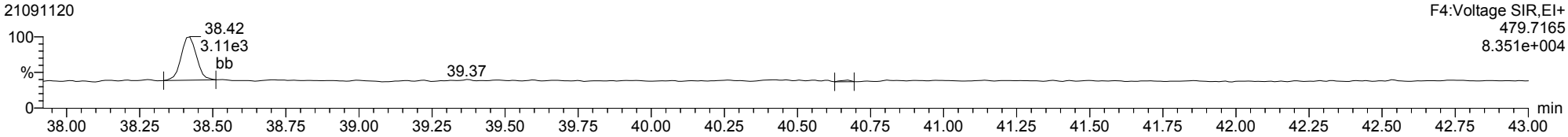


FUNCTION4 NCDPE



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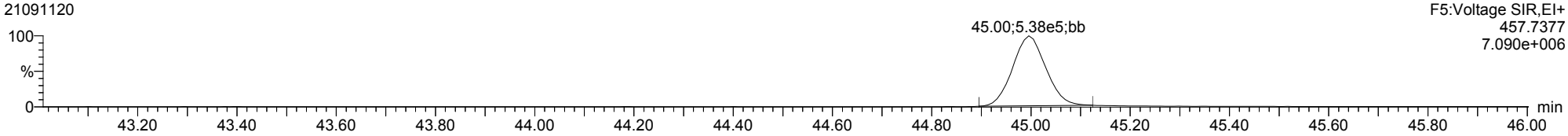
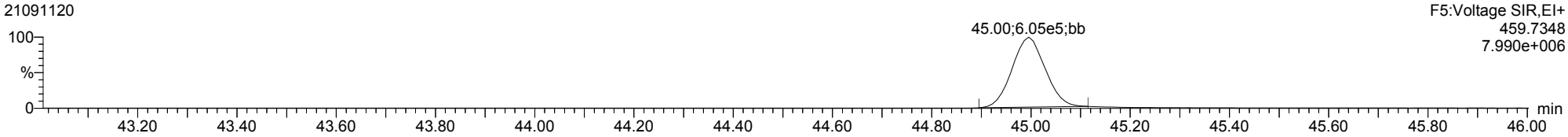
OCDD



OCDD



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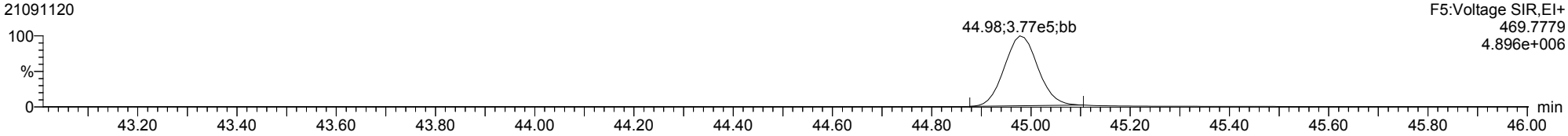

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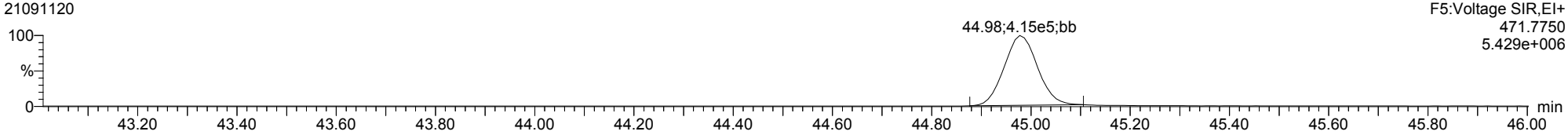
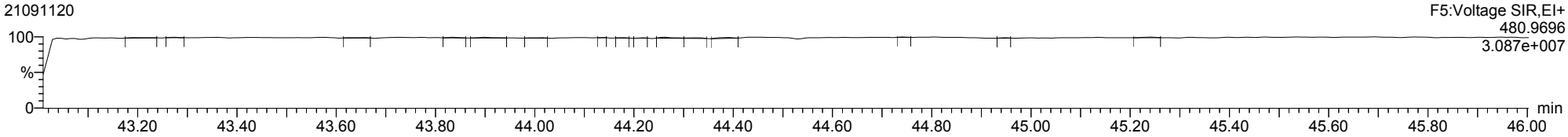


FUNCTION5 PFK



ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

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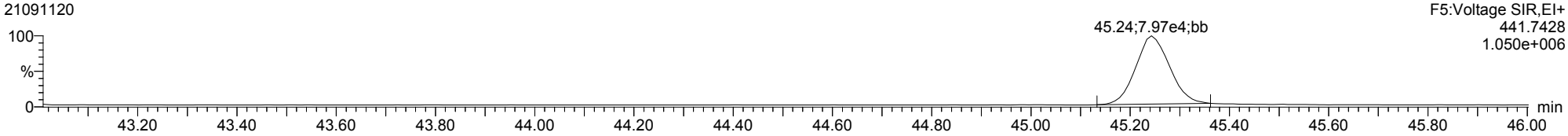
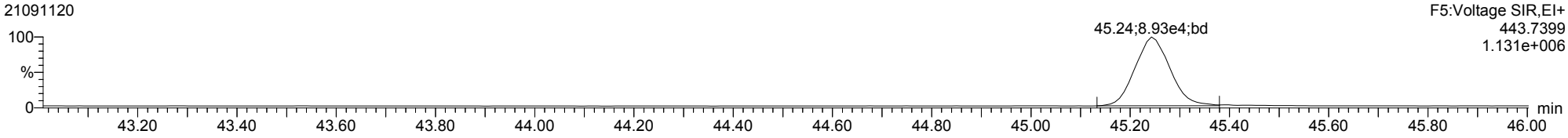
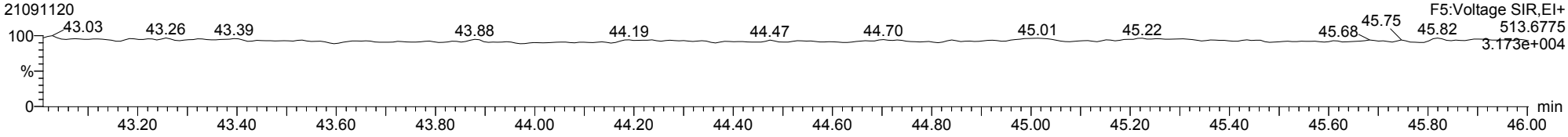


OCDF

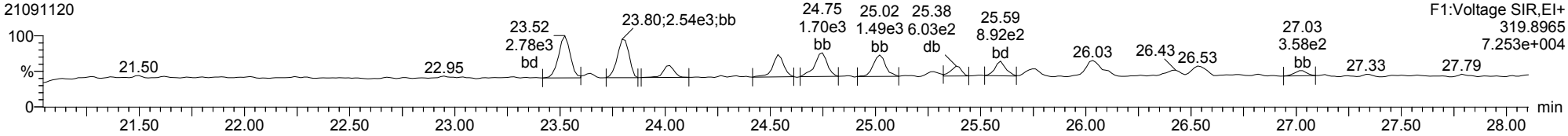


FUNCTION5 DCDPE

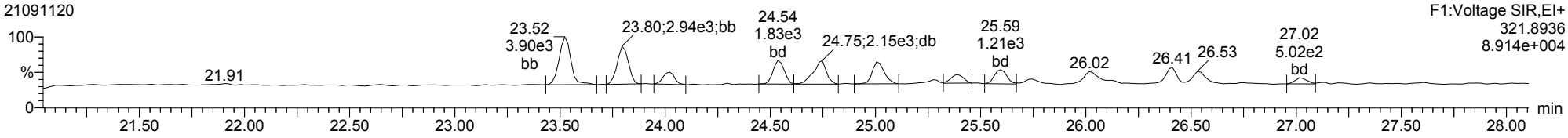


ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



Total-tetradioxins



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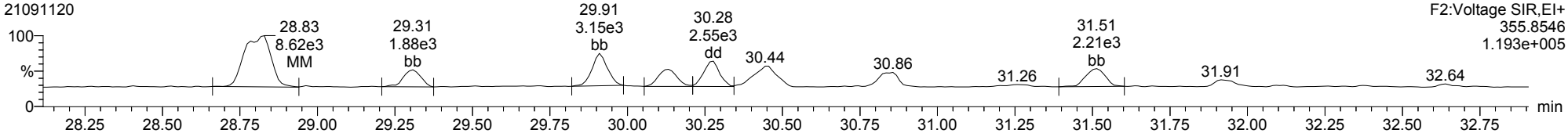
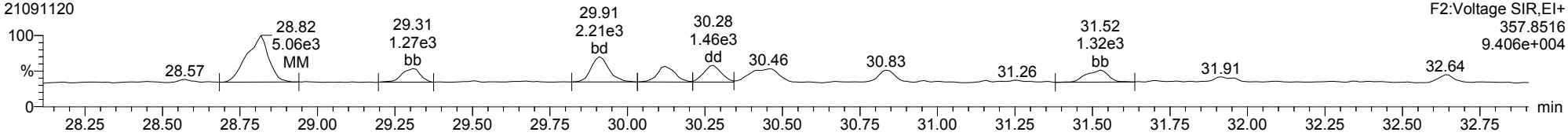


Total-pentadioxins



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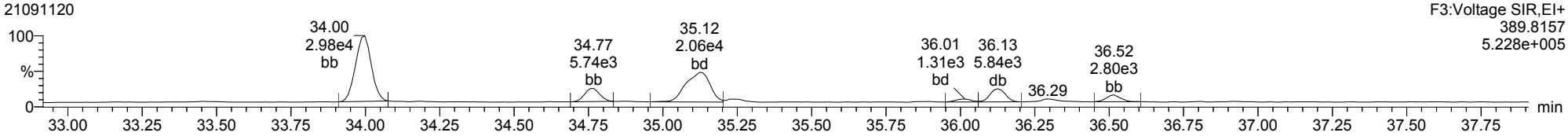
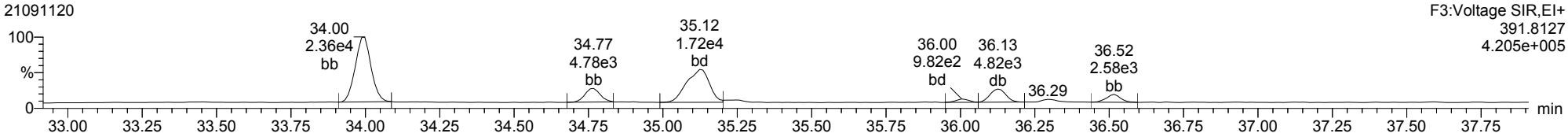
Printed: Wednesday, September 15, 2021 11:30:02 Pacific Daylight Time

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



Total-hexadioxins



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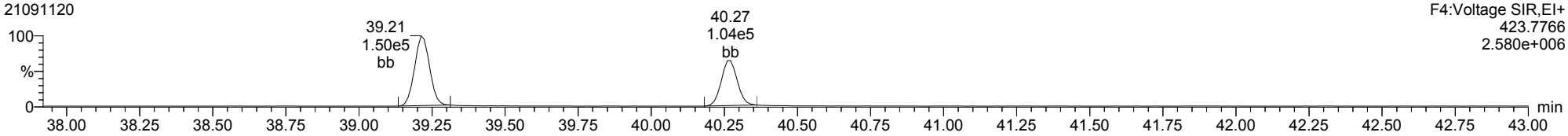
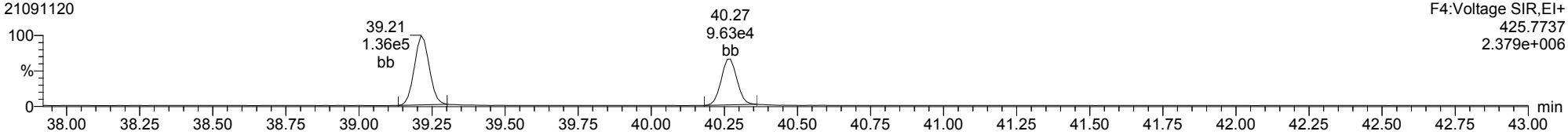


Total-heptadioxins



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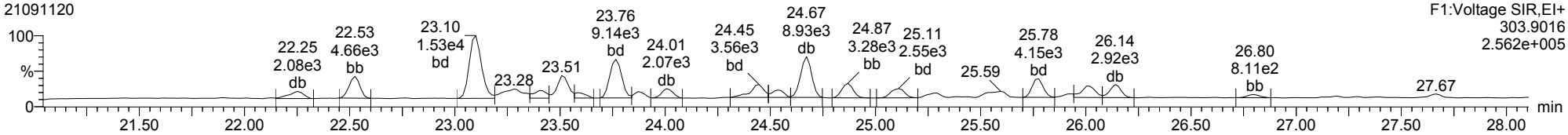
Printed: Wednesday, September 15, 2021 11:30:02 Pacific Daylight Time

ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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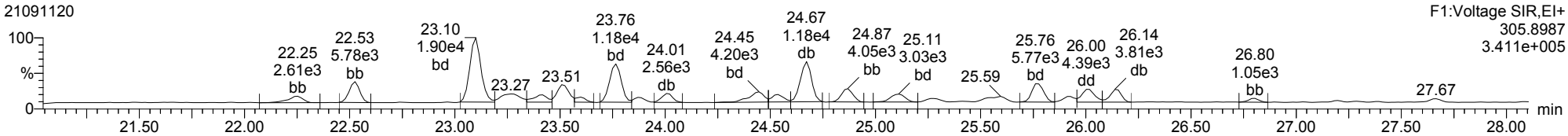

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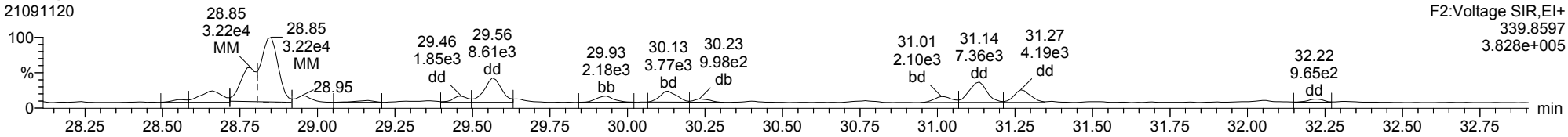
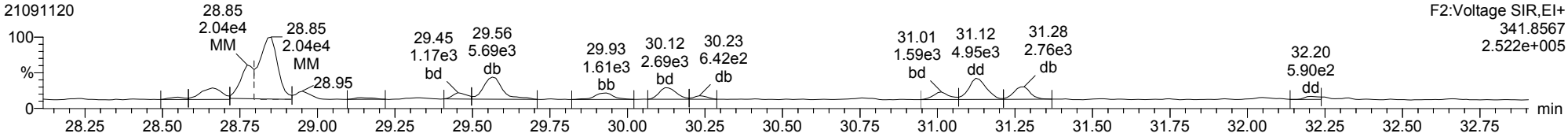


Total-pentafurans



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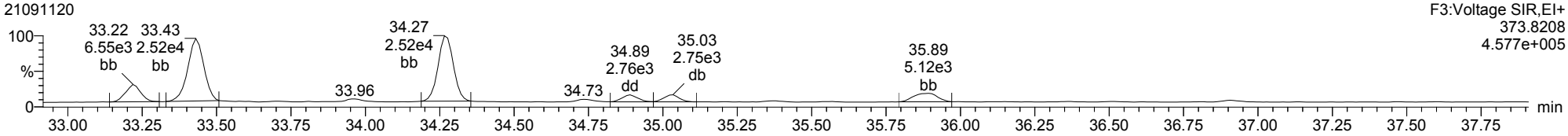
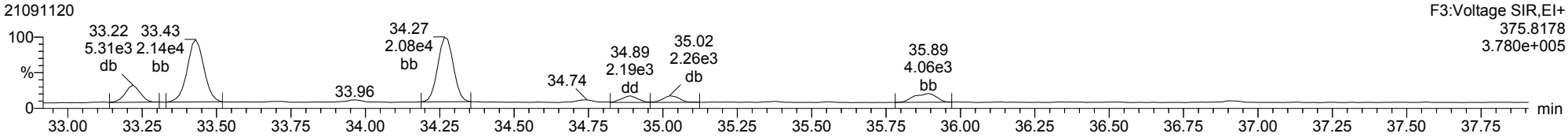
ID: 21G0138-06, Name: 21091120, Date: 12-Sep-2021, Time: 02:09:00, Conditions: AUTOSPEC01, User: pk

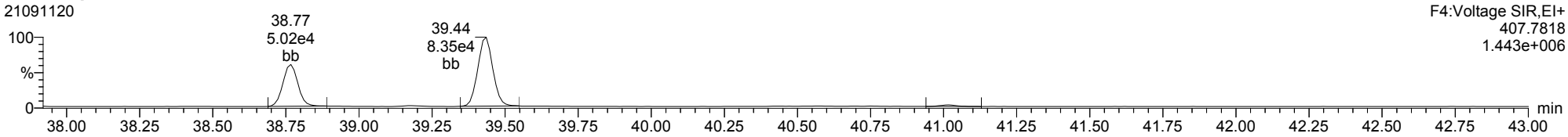
Total-hexafurans



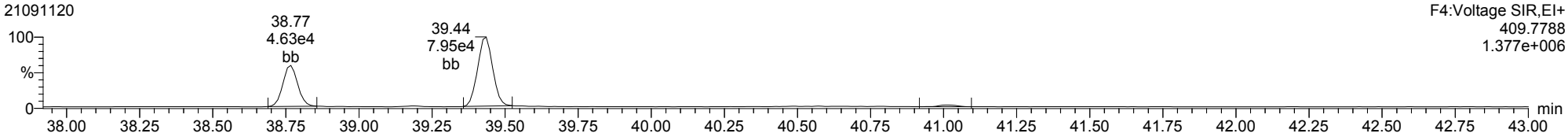
Total-hexafurans



Total-heptafurans



Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT659E

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-07 C	File ID:	21091121
Sampled:	07/13/21 08:17	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 02:58
% Solids:	78.98	Preparation:	EPA 1613	Initial/Final:	12.66 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1		0.655-0.886	0.085	1.00	ND	ng/kg	U
1746-01-6	2,3,7,8-TCDD	1		0.655-0.886	0.093	1.00	ND	ng/kg	U
57117-41-6	1,2,3,7,8-PeCDF	1		1.318-1.783	0.084	1.00	ND	ng/kg	U
57117-31-4	2,3,4,7,8-PeCDF	1		1.318-1.783	0.084	1.00	ND	ng/kg	U
40321-76-4	1,2,3,7,8-PeCDD	1		1.318-1.783	0.122	1.00	ND	ng/kg	U
70648-26-9	1,2,3,4,7,8-HxCDF	1		1.054-1.426	0.080	1.00	ND	ng/kg	U
57117-44-9	1,2,3,6,7,8-HxCDF	1		1.054-1.426	0.072	1.00	ND	ng/kg	U
60851-34-5	2,3,4,6,7,8-HxCDF	1		1.054-1.426	0.080	1.00	ND	ng/kg	U
72918-21-9	1,2,3,7,8,9-HxCDF	1		1.054-1.426	0.092	1.00	ND	ng/kg	U
39227-28-6	1,2,3,4,7,8-HxCDD	1		1.054-1.426	0.125	1.00	ND	ng/kg	U
57653-85-7	1,2,3,6,7,8-HxCDD	1		1.054-1.426	0.128	1.00	ND	ng/kg	U
19408-74-3	1,2,3,7,8,9-HxCDD	1	0.968	1.054-1.426	0.136	1.00	0.213	ng/kg	EMPC, J
67562-39-4	1,2,3,4,6,7,8-HpCDF	1		0.893-1.208	0.141	1.00	ND	ng/kg	U
55673-89-7	1,2,3,4,7,8,9-HpCDF	1		0.893-1.208	0.204	1.00	ND	ng/kg	U
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	0.941	0.893-1.208	0.286	2.50	2.10	ng/kg	J, B
39001-02-0	OCDF	1	0.688	0.757-1.024	0.202	2.50	0.312	ng/kg	EMPC, J
3268-87-9	OCDD	1	0.910	0.757-1.024	0.246	10.0	26.3	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	0.279	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	ND	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	ND	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	0.245	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	0.338	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	2.20	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	0.244	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	5.83	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.050
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.206

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT659E

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-07	File ID:	21091121
Sampled:	07/13/21 08:17	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 02:58
Solids Wt%:	78.98	Preparation:	EPA 1613	Initial/Final:	12.66 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.800	0.655-0.886	0.099	75.1	24 - 169 %	
13C12-2,3,7,8-TCDD		0.758	0.655-0.886	0.121	79.8	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.602	1.318-1.783	0.090	84.5	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.620	1.318-1.783	0.095	80.5	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.600	1.318-1.783	0.116	74.2	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.515	0.434-0.587	0.138	75.1	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.499	0.434-0.587	0.127	72.1	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.510	0.434-0.587	0.141	71.2	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.507	0.434-0.587	0.170	75.5	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.278	1.054-1.426	0.156	78.6	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.255	1.054-1.426	0.144	75.0	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.458	0.374-0.506	0.161	71.4	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.458	0.374-0.506	0.196	69.7	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.071	0.893-1.208	0.190	74.5	23 - 140 %	
13C12-OCDD		0.900	0.757-1.024	0.280	76.4	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.048	83.1	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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Printed: Wednesday, September 15, 2021 11:30:13 Pacific Daylight Time

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF					1.108		0.770	1000	1572								
12378-PeCDF					1.015		1.550	1035	1471								
23478-PeCDF					1.126		1.550	1035	1471								
123478-HxCDF					1.017		1.240	950	797								
234678-HxCDF					1.052		1.240	950	797								
123678-HxCDF					1.037		1.240	950	797								
123789-HxCDF					1.030		1.240	950	797								
1234678-HpCDF					1.327		1.050	1210	1824								
1234789-HpCDF					1.283		1.050	1210	1824								
OCDF	45.206	1.005	3.063e2	4.449e2	1.447	0.688	0.890	918	1161	4.97e3	4.59e3	5.4	4.0	YES	MM	bb	0.156
2378-TCDD					0.920		0.770	1253	795								
12378-PeCDD					0.995		1.550	1017	765								
123478-HxCDD					1.027		1.240	1097	1291								
123678-HxCDD					1.009		1.240	1097	1291								
123789-HxCDD	36.493	1.011	3.300e2	3.408e2	0.950	0.968	1.240	1097	1291	5.98e3	3.95e3	5.4	3.1	YES	bd	MM	0.106
1234678-HpCDD	40.248	1.001	2.210e3	2.348e3	1.068	0.941	1.050	1844	1418	3.81e4	4.01e4	20.6	28.3	NO	bb	bb	1.048
OCDD	44.977	1.000	2.459e4	2.702e4	1.181	0.910	0.890	1257	807	3.06e5	3.38e5	243.6	419.3	NO	bd	bb	13.145
13C-2378-TCDF	25.746	1.007	4.865e5	6.079e5	1.427	0.800	0.770	2627	1209	7.26e6	9.12e6	2764.9	7543.1	NO	bb	bb	75.054
13C-12378-PeCDF	29.887	1.169	6.901e5	4.308e5	1.297	1.602	1.550	1570	1599	1.08e7	6.70e6	6904.6	4187.7	NO	bb	bb	84.524
13C-23478-PeCDF	31.235	1.222	6.289e5	3.881e5	1.236	1.620	1.550	1570	1599	9.84e6	6.13e6	6269.5	3834.3	NO	bb	bb	80.470
13C-123478-HxCDF	34.856	0.955	2.740e5	5.318e5	1.242	0.515	0.510	1839	2229	4.36e6	8.39e6	2369.7	3764.5	NO	bd	bd	75.076
13C-123678-HxCDF	34.989	0.959	2.786e5	5.585e5	1.343	0.499	0.510	1839	2229	4.67e6	9.10e6	2540.1	4085.0	NO	db	MM	72.121
13C-234678-HxCDF	35.870	0.983	2.522e5	4.947e5	1.215	0.510	0.510	1839	2229	4.19e6	8.25e6	2280.0	3699.8	NO	bb	bb	71.160
13C-123789-HxCDF	36.895	1.011	2.209e5	4.359e5	1.008	0.507	0.510	1839	2229	3.72e6	7.34e6	2023.7	3291.6	NO	bb	bb	75.450
13C-1234678-HpCDF	38.733	1.062	1.795e5	3.922e5	0.926	0.458	0.440	1570	1963	3.06e6	6.71e6	1949.0	3417.7	NO	bb	bb	71.437
13C-1234789-HpCDF	40.984	1.123	1.435e5	3.129e5	0.758	0.458	0.440	1570	1963	2.18e6	4.74e6	1390.5	2415.6	NO	bb	bb	69.705
13C-1234-TCDD	25.564	0.000	4.439e5	5.783e5	1.000	0.768	0.770	2239	1421	7.05e6	9.20e6	3149.2	6476.6	NO	bb	bb	100.000
13C-2378-TCDD	26.365	1.031	3.926e5	5.176e5	1.116	0.758	0.770	2239	1421	6.22e6	8.22e6	2779.7	5787.3	NO	bb	bb	79.757
13C-12378-PeCDD	31.480	1.231	3.417e5	2.135e5	0.732	1.600	1.550	1026	1262	5.40e6	3.36e6	5265.1	2662.5	NO	bb	bb	74.198
13C-123478-HxCDD	35.970	0.986	3.655e5	2.859e5	0.960	1.278	1.240	1706	1861	6.24e6	4.87e6	3656.6	2616.7	NO	bd	bd	78.564
13C-123678-HxCDD	36.092	0.989	3.754e5	2.992e5	1.041	1.255	1.240	1706	1861	6.16e6	4.87e6	3610.5	2614.4	NO	db	db	74.981
13C-1234678-HpCDD	40.226	1.103	2.105e5	1.965e5	0.632	1.071	1.050	1414	1434	3.31e6	3.10e6	2343.0	2161.5	NO	bb	bb	74.494
13C-OCDD	44.958	1.232	3.150e5	3.500e5	0.504	0.900	0.890	2177	1174	4.05e6	4.45e6	1858.9	3794.6	NO	bb	bb	152.811
13C-123789-HxCDD	36.482	0.000	4.772e5	3.867e5	1.000	1.234	1.240	1706	1861	7.87e6	6.33e6	4616.0	3399.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	3.682e5		1.084			1407		5.45e6		3877.4			bb		33.241

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Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.223	0.863	4.125e2	5.403e2	1.425	0.763	0.770	1000	1572	5.05e3	6.78e3	5.0	4.3	NO	bb	bd	0.061
1289-TCDF	27.348	1.062	9.667e1	1.579e2	1.043	0.612	0.770	1000	1572	1.82e3	2.25e3	1.8	1.4	YES	bb	db	0.022
13468-PECDF					1.376		1.550	861	1180								
12389-PECDF					1.000		1.550	1035	1471								
123468-HXCDF					1.087		1.240	950	797								
1368-TCDD	23.508	0.892	6.739e2	1.070e3	0.923	0.630	0.770	1253	795	1.22e4	1.75e4	9.8	22.0	YES	bd	bb	0.207
1289-TCDD					0.794		0.770	1253	795								
12479-PECDD					1.843		1.550	1017	765								
12389-PECDD					1.154		1.550	1017	765								
124679-HXCDD	33.976	0.945	1.318e3	1.110e3	1.125	1.188	1.240	1097	1291	2.00e4	1.88e4	18.3	14.5	NO	bb	bb	0.331
1234679-HPCDD	39.201	0.975	4.579e3	3.978e3	1.211	1.151	1.050	1844	1418	7.42e4	5.68e4	40.2	40.1	NO	bd	db	1.736
Total-tetrafurans			8.506e2		1.192			1000		1.06e4							0.139
Total-penta1			0.000e0					861		0.00e0							
Total-pentafurans			0.000e0		1.047			1035		0.00e0							
Total-hexafurans			7.326e2		1.045			950		1.15e4							0.169
Total-heptafurans			4.456e2		1.305			1210		7.28e3							0.122
Total-Furans			2.029e3		1.158			1000		2.94e4							0.430
Total-tetradioxins			0.000e0		0.879			1253		0.00e0							
Total-pentadioxins			5.551e2		1.331			1017		1.18e4							0.122
Total-hexadioxins			4.348e3		1.028			1097		7.13e4							1.102
Total-heptadioxins			7.096e3		1.140			1844		1.19e5							2.917
Total-Dioxins			3.659e4		1.092			1253		5.08e5							17.285
Total-TEQ			3.861e4					1253		5.38e5							17.716
FUNCTION1 PFK			9.377e7					622972		8.44e8							
FUNCTION2 PFK			4.261e5					339996		9.53e6							0.000
FUNCTION3 PFK			1.959e4					437223		8.49e5							0.000
FUNCTION4 PFK			2.153e7					277633		7.60e7							
FUNCTION5 PFK			5.558e4					222103		2.35e6							
FUNCTION1 HXCD...			1.511e3					725		2.11e4							0.000
FUNCTION1 HPCD...			3.552e3					1004		5.06e4							0.000
FUNCTION2 HPCD...			1.192e3					1263		2.68e4							0.000
FUNCTION3 OCDPE			9.309e2					933		2.05e4							0.000
FUNCTION4 NCDPE			2.354e3					1687		5.11e4							0.000
FUNCTION5 DCDPE			9.946e1					815		3.10e3							0.000

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDF	22.22	4.125e2	5.403e2	1.425	0.76	0.77	5.0	YES	NO	bb	bd	0.061
2	Total-tetrafurans	24.64	4.381e2	5.821e2	1.192	0.75	0.77	5.6	YES	NO	db	db	0.078

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexafurans	34.24	3.275e2	2.428e2	1.045	1.35	1.24	6.2	YES	NO	bb	bb	0.072
2	Total-hexafurans	33.40	4.051e2	3.674e2	1.045	1.10	1.24	6.0	YES	NO	bb	bb	0.097

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	40.43	4.456e2	3.736e2	1.305	1.19	1.05	6.0	YES	NO	bb	dd	0.122

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDF	22.22	4.125e2	5.403e2	1.425	0.76	0.77	5.0	YES	NO	bb	bd	0.061
2	Total-tetrafurans	24.64	4.381e2	5.821e2	1.192	0.75	0.77	5.6	YES	NO	db	db	0.078
3	Total-hexafurans	34.24	3.275e2	2.428e2	1.045	1.35	1.24	6.2	YES	NO	bb	bb	0.072
4	Total-hexafurans	33.40	4.051e2	3.674e2	1.045	1.10	1.24	6.0	YES	NO	bb	bb	0.097
5	Total-heptafurans	40.43	4.456e2	3.736e2	1.305	1.19	1.05	6.0	YES	NO	bb	dd	0.122

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TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	30.25	5.551e2	3.483e2	1.331	1.59	1.55	11.6	YES	NO	bb	bb	0.122

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	34.74	3.030e3	2.220e3	1.028	1.36	1.24	46.7	YES	NO	bd	bb	0.770
2	124679-HXCDD	33.98	1.318e3	1.110e3	1.125	1.19	1.24	18.3	YES	NO	bb	bb	0.331

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.25	2.210e3	2.348e3	1.068	0.94	1.05	20.6	YES	NO	bb	bb	1.048
2	1234679-HPCDD	39.20	4.579e3	3.978e3	1.211	1.15	1.05	40.2	YES	NO	bd	db	1.736
3	Total-heptadioxins	40.42	3.072e2	3.051e2	1.140	1.01	1.05	3.6	YES	NO	bb	bb	0.132

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	34.74	3.030e3	2.220e3	1.028	1.36	1.24	46.7	YES	NO	bd	bb	0.770
2	124679-HXCDD	33.98	1.318e3	1.110e3	1.125	1.19	1.24	18.3	YES	NO	bb	bb	0.331
3	Total-pentadioxins	30.25	5.551e2	3.483e2	1.331	1.59	1.55	11.6	YES	NO	bb	bb	0.122
4	1234678-HpCDD	40.25	2.210e3	2.348e3	1.068	0.94	1.05	20.6	YES	NO	bb	bb	1.048
5	1234679-HPCDD	39.20	4.579e3	3.978e3	1.211	1.15	1.05	40.2	YES	NO	bd	db	1.736
6	OCDD	44.98	2.459e4	2.702e4	1.181	0.91	0.89	243.6	YES	NO	bd	bb	13.145
7	Total-heptadioxins	40.42	3.072e2	3.051e2	1.140	1.01	1.05	3.6	YES	NO	bb	bb	0.132

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1368-TCDF	22.22	4.125e2	5.403e2	1.425	0.76	0.77	5.0	YES	NO	bb	bd	0.061
2	Total-tetrafurans	24.64	4.381e2	5.821e2	1.192	0.75	0.77	5.6	YES	NO	db	db	0.078
3	Total-hexafurans	34.24	3.275e2	2.428e2	1.045	1.35	1.24	6.2	YES	NO	bb	bb	0.072
4	Total-hexafurans	33.40	4.051e2	3.674e2	1.045	1.10	1.24	6.0	YES	NO	bb	bb	0.097
5	Total-heptafurans	40.43	4.456e2	3.736e2	1.305	1.19	1.05	6.0	YES	NO	bb	dd	0.122
6	Total-hexadioxins	34.74	3.030e3	2.220e3	1.028	1.36	1.24	46.7	YES	NO	bd	bb	0.770
7	124679-HXCDD	33.98	1.318e3	1.110e3	1.125	1.19	1.24	18.3	YES	NO	bb	bb	0.331
8	Total-pentadioxins	30.25	5.551e2	3.483e2	1.331	1.59	1.55	11.6	YES	NO	bb	bb	0.122
9	1234678-HpCDD	40.25	2.210e3	2.348e3	1.068	0.94	1.05	20.6	YES	NO	bb	bb	1.048
10	1234679-HPCDD	39.20	4.579e3	3.978e3	1.211	1.15	1.05	40.2	YES	NO	bd	db	1.736
11	OCDD	44.98	2.459e4	2.702e4	1.181	0.91	0.89	243.6	YES	NO	bd	bb	13.145
12	Total-heptadioxins	40.42	3.072e2	3.051e2	1.140	1.01	1.05	3.6	YES	NO	bb	bb	0.132

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.53	3.303e6					71.1	YES		dd		
2	FUNCTION1 PFK	21.47	9.470e6					71.9	YES		dd		
3	FUNCTION1 PFK	21.25	2.646e6					72.0	YES		dd		
4	FUNCTION1 PFK	21.19	2.860e6					77.6	YES		dd		
5	FUNCTION1 PFK	21.13	5.127e6					79.0	YES		bd		
6	FUNCTION1 PFK	23.42	2.002e6					30.7	YES		dd		
7	FUNCTION1 PFK	23.18	4.400e6					35.4	YES		dd		
8	FUNCTION1 PFK	23.05	2.823e6					38.9	YES		dd		
9	FUNCTION1 PFK	22.98	1.485e6					40.4	YES		dd		
10	FUNCTION1 PFK	22.93	1.544e6					41.2	YES		dd		
11	FUNCTION1 PFK	22.87	1.576e6					42.3	YES		dd		
12	FUNCTION1 PFK	22.77	2.841e6					44.1	YES		dd		
13	FUNCTION1 PFK	22.69	4.717e6					45.2	YES		dd		
14	FUNCTION1 PFK	22.46	4.617e6					50.9	YES		dd		
15	FUNCTION1 PFK	22.39	2.318e6					49.5	YES		dd		
16	FUNCTION1 PFK	22.25	4.010e6					55.7	YES		dd		
17	FUNCTION1 PFK	22.09	5.879e6					58.7	YES		dd		
18	FUNCTION1 PFK	22.00	5.124e6					61.0	YES		dd		
19	FUNCTION1 PFK	21.84	4.104e6					63.5	YES		dd		
20	FUNCTION1 PFK	21.74	6.845e6					66.7	YES		dd		
21	FUNCTION1 PFK	21.62	3.249e6					69.4	YES		dd		
22	FUNCTION1 PFK	25.46	4.691e4					1.1	NO		dd		
23	FUNCTION1 PFK	25.37	1.132e4					0.5	NO		bd		
24	FUNCTION1 PFK	25.28	7.387e4					1.5	NO		db		
25	FUNCTION1 PFK	25.08	1.391e5					2.2	NO		bd		
26	FUNCTION1 PFK	24.94	5.420e4					2.0	NO		db		
27	FUNCTION1 PFK	24.88	6.127e4					1.9	NO		bd		
28	FUNCTION1 PFK	24.64	1.519e5					3.3	YES		db		
29	FUNCTION1 PFK	24.52	3.800e5					6.3	YES		dd		
30	FUNCTION1 PFK	24.43	4.389e5					8.8	YES		dd		
31	FUNCTION1 PFK	24.19	1.712e6					13.9	YES		dd		
32	FUNCTION1 PFK	24.11	6.962e5					15.5	YES		dd		
33	FUNCTION1 PFK	24.05	6.020e5					16.4	YES		dd		
34	FUNCTION1 PFK	24.02	7.220e5					15.6	YES		dd		
35	FUNCTION1 PFK	23.87	1.176e6					21.0	YES		dd		
36	FUNCTION1 PFK	23.61	4.572e6					27.1	YES		dd		
37	FUNCTION1 PFK	23.49	1.334e6					29.2	YES		dd		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	26.92	9.801e3					0.5	NO		db		
39	FUNCTION1 PFK	26.85	2.664e4					1.0	NO		dd		
40	FUNCTION1 PFK	26.77	2.214e4					0.9	NO		dd		
41	FUNCTION1 PFK	26.71	6.030e4					1.8	NO		dd		
42	FUNCTION1 PFK	26.64	8.444e4					2.1	NO		bd		
43	FUNCTION1 PFK	26.56	2.527e4					1.0	NO		bb		
44	FUNCTION1 PFK	26.37	1.040e4					0.5	NO		db		
45	FUNCTION1 PFK	26.31	1.799e4					0.9	NO		dd		
46	FUNCTION1 PFK	26.24	5.155e4					1.2	NO		dd		
47	FUNCTION1 PFK	26.14	1.889e4					0.8	NO		bd		
48	FUNCTION1 PFK	26.08	5.970e4					1.8	NO		bb		
49	FUNCTION1 PFK	25.96	5.581e4					1.3	NO		bb		
50	FUNCTION1 PFK	25.79	5.907e3					0.4	NO		bb		
51	FUNCTION1 PFK	25.73	2.018e4					0.9	NO		bb		
52	FUNCTION1 PFK	25.65	8.473e3					0.3	NO		bb		
53	FUNCTION1 PFK	25.55	2.101e4					0.8	NO		db		
54	FUNCTION1 PFK	27.29	2.334e4					1.2	NO		db		
55	FUNCTION1 PFK	27.24	3.929e4					1.5	NO		bd		
56	FUNCTION1 PFK	27.15	5.249e4					1.6	NO		db		
57	FUNCTION1 PFK	27.11	2.695e4					1.3	NO		dd		
58	FUNCTION1 PFK	27.05	1.561e4					0.9	NO		bd		

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Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
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ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	30.41	1.042e5					3.8	YES		bb		0.000
2	FUNCTION2 PFK	30.07	2.301e3					0.6	NO		bb		0.000
3	FUNCTION2 PFK	29.49	2.971e4					2.3	NO		bb		0.000
4	FUNCTION2 PFK	29.43	3.627e4					2.2	NO		db		0.000
5	FUNCTION2 PFK	29.35	1.301e4					1.4	NO		bd		0.000
6	FUNCTION2 PFK	28.98	5.475e4					2.8	NO		bb		0.000
7	FUNCTION2 PFK	28.76	2.144e4					1.8	NO		bb		0.000
8	FUNCTION2 PFK	28.42	1.443e4					1.6	NO		bb		0.000
9	FUNCTION2 PFK	28.25	4.990e4					2.8	NO		db		0.000
10	FUNCTION2 PFK	28.20	3.266e4					2.3	NO		bd		0.000
11	FUNCTION2 PFK	32.75	2.195e3					0.6	NO		bb		0.000
12	FUNCTION2 PFK	32.59	1.119e4					1.4	NO		bb		0.000
13	FUNCTION2 PFK	32.24	2.178e3					0.6	NO		bb		0.000
14	FUNCTION2 PFK	31.80	2.821e4					1.5	NO		bb		0.000
15	FUNCTION2 PFK	31.65	1.484e4					1.2	NO		bb		0.000
16	FUNCTION2 PFK	30.51	8.782e3					1.1	NO		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.32	1.959e4					1.9	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.87	5.525e3					1.0	NO		bb		
2	FUNCTION4 PFK	39.47	1.961e5					8.7	YES		db		
3	FUNCTION4 PFK	39.31	5.724e5					17.3	YES		dd		
4	FUNCTION4 PFK	39.22	8.631e5					22.0	YES		dd		
5	FUNCTION4 PFK	38.76	4.225e6					48.3	YES		dd		
6	FUNCTION4 PFK	38.20	9.818e6					78.3	YES		dd		
7	FUNCTION4 PFK	38.18	5.646e6					78.7	YES		bd		
8	FUNCTION4 PFK	42.64	7.637e3					1.2	NO		bb		
9	FUNCTION4 PFK	42.51	1.165e4					1.4	NO		bb		
10	FUNCTION4 PFK	42.44	3.441e3					0.7	NO		bb		
11	FUNCTION4 PFK	42.32	1.306e4					1.6	NO		bb		
12	FUNCTION4 PFK	42.03	1.421e3					0.5	NO		bb		
13	FUNCTION4 PFK	41.72	1.925e4					2.0	NO		bb		
14	FUNCTION4 PFK	41.33	1.183e4					0.6	NO		bb		
15	FUNCTION4 PFK	41.12	1.659e4					1.9	NO		bb		
16	FUNCTION4 PFK	41.06	2.907e4					2.1	NO		bb		
17	FUNCTION4 PFK	40.82	3.414e4					2.1	NO		bb		
18	FUNCTION4 PFK	40.43	1.485e4					1.6	NO		bb		
19	FUNCTION4 PFK	40.38	1.944e3					0.6	NO		bb		
20	FUNCTION4 PFK	40.28	3.927e4					2.2	NO		bb		
21	FUNCTION4 PFK	39.96	1.792e3					0.6	NO		bb		
22	FUNCTION4 PFK	39.91	1.551e3					0.5	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.84	4.596e3					1.2	NO		bb		
2	FUNCTION5 PFK	44.79	1.970e4					2.0	NO		bb		
3	FUNCTION5 PFK	44.60	6.036e3					1.4	NO		bb		
4	FUNCTION5 PFK	44.43	7.260e3					0.9	NO		bb		
5	FUNCTION5 PFK	43.85	1.156e3					0.6	NO		bb		
6	FUNCTION5 PFK	43.27	2.917e3					0.8	NO		bb		
7	FUNCTION5 PFK	43.16	3.090e3					1.5	NO		bb		
8	FUNCTION5 PFK	43.12	1.082e4					2.1	NO		bb		

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.55	1.581e2					2.3	NO		bb		0.000
2	FUNCTION1 HXCD...	23.61	1.095e2					2.5	NO		bb		0.000
3	FUNCTION1 HXCD...	22.19	3.209e2					4.4	YES		bb		0.000
4	FUNCTION1 HXCD...	21.92	7.397e1					2.7	NO		bb		0.000
5	FUNCTION1 HXCD...	21.60	8.520e1					2.3	NO		bb		0.000
6	FUNCTION1 HXCD...	21.21	7.928e1					2.2	NO		db		0.000
7	FUNCTION1 HXCD...	21.16	2.125e2					2.6	NO		bd		0.000
8	FUNCTION1 HXCD...	26.77	9.253e1					2.1	NO		bb		0.000
9	FUNCTION1 HXCD...	26.37	1.046e2					2.2	NO		bb		0.000
10	FUNCTION1 HXCD...	26.11	1.595e2					3.1	YES		db		0.000
11	FUNCTION1 HXCD...	25.90	1.152e2					2.8	NO		bd		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	23.40	1.104e2					2.1	NO		db		0.000
2	FUNCTION1 HPCD...	23.30	1.917e2					2.4	NO		bd		0.000
3	FUNCTION1 HPCD...	22.83	1.213e2					1.9	NO		db		0.000
4	FUNCTION1 HPCD...	22.77	1.060e2					3.1	YES		bd		0.000
5	FUNCTION1 HPCD...	22.54	1.088e2					1.3	NO		bb		0.000
6	FUNCTION1 HPCD...	22.00	1.058e2					2.5	NO		bb		0.000
7	FUNCTION1 HPCD...	21.92	1.031e2					2.2	NO		db		0.000
8	FUNCTION1 HPCD...	21.77	2.153e2					2.9	NO		bd		0.000
9	FUNCTION1 HPCD...	21.59	1.814e2					2.9	NO		db		0.000
10	FUNCTION1 HPCD...	21.50	1.339e2					3.2	YES		bd		0.000
11	FUNCTION1 HPCD...	21.15	2.996e2					3.3	YES		bb		0.000
12	FUNCTION1 HPCD...	27.39	7.184e1					1.5	NO		db		0.000
13	FUNCTION1 HPCD...	27.23	5.351e2					2.3	NO		dd		0.000
14	FUNCTION1 HPCD...	27.00	1.240e2					2.3	NO		dd		0.000
15	FUNCTION1 HPCD...	26.89	1.636e2					2.1	NO		dd		0.000
16	FUNCTION1 HPCD...	26.77	2.678e2					3.6	YES		bd		0.000
17	FUNCTION1 HPCD...	26.59	9.408e1					1.4	NO		bb		0.000
18	FUNCTION1 HPCD...	26.02	7.897e1					1.5	NO		bb		0.000
19	FUNCTION1 HPCD...	25.88	1.619e2					2.2	NO		db		0.000
20	FUNCTION1 HPCD...	25.75	1.037e2					2.1	NO		dd		0.000
21	FUNCTION1 HPCD...	25.65	7.845e1					1.2	NO		bd		0.000
22	FUNCTION1 HPCD...	23.61	1.954e2					2.5	NO		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	30.77	7.894e1					0.9	NO		bb		0.000
2	FUNCTION2 HPCD...	29.51	8.681e1					1.2	NO		bb		0.000
3	FUNCTION2 HPCD...	29.22	9.173e1					1.4	NO		bb		0.000
4	FUNCTION2 HPCD...	28.29	1.483e2					4.3	YES		bb		0.000
5	FUNCTION2 HPCD...	32.67	9.698e1					1.5	NO		bb		0.000
6	FUNCTION2 HPCD...	32.46	2.226e2					4.3	YES		bb		0.000
7	FUNCTION2 HPCD...	32.19	1.034e2					1.7	NO		bb		0.000
8	FUNCTION2 HPCD...	31.70	1.476e2					2.4	NO		bb		0.000
9	FUNCTION2 HPCD...	31.47	1.364e2					2.3	NO		bb		0.000
10	FUNCTION2 HPCD...	31.07	7.931e1					1.3	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.73	9.427e1					2.8	NO		db		0.000
2	FUNCTION3 OCDPE	37.70	1.488e2					3.2	YES		bd		0.000
3	FUNCTION3 OCDPE	37.46	9.266e1					2.8	NO		bb		0.000
4	FUNCTION3 OCDPE	36.58	1.222e2					3.8	YES		bb		0.000
5	FUNCTION3 OCDPE	36.08	9.609e1					2.5	NO		bb		0.000
6	FUNCTION3 OCDPE	35.42	8.200e1					3.0	NO		bb		0.000
7	FUNCTION3 OCDPE	34.97	1.321e2					1.7	NO		bb		0.000
8	FUNCTION3 OCDPE	33.54	7.018e1					1.4	NO		bb		0.000
9	FUNCTION3 OCDPE	33.26	9.245e1					0.9	NO		bb		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.33	1.681e2					1.6	NO		bb		0.000
2	FUNCTION4 NCDPE	41.56	1.003e2					1.1	NO		db		0.000
3	FUNCTION4 NCDPE	41.50	1.008e2					1.5	NO		bd		0.000
4	FUNCTION4 NCDPE	41.40	2.331e2					2.2	NO		bb		0.000
5	FUNCTION4 NCDPE	41.12	7.880e1					1.5	NO		bb		0.000
6	FUNCTION4 NCDPE	40.42	2.558e2					4.1	YES		bb		0.000
7	FUNCTION4 NCDPE	40.21	2.303e2					2.4	NO		db		0.000
8	FUNCTION4 NCDPE	40.10	8.496e1					1.8	NO		dd		0.000
9	FUNCTION4 NCDPE	40.06	8.149e1					1.0	NO		bd		0.000
10	FUNCTION4 NCDPE	39.13	1.649e2					2.8	NO		bb		0.000
11	FUNCTION4 NCDPE	39.06	1.073e2					1.6	NO		bb		0.000
12	FUNCTION4 NCDPE	38.41	6.719e2					6.8	YES		bb		0.000
13	FUNCTION4 NCDPE	38.05	7.660e1					1.8	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.44	9.946e1					3.8	YES		bb		0.000

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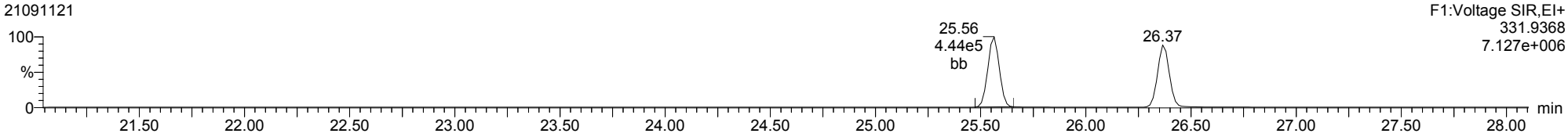

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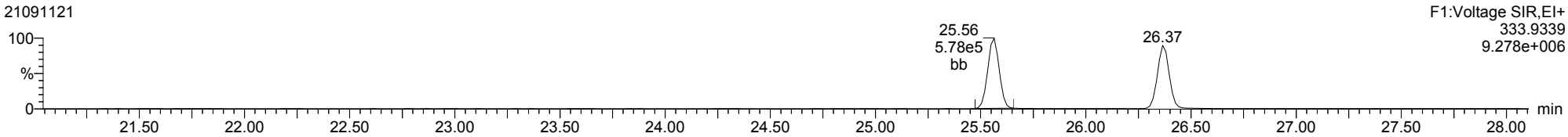

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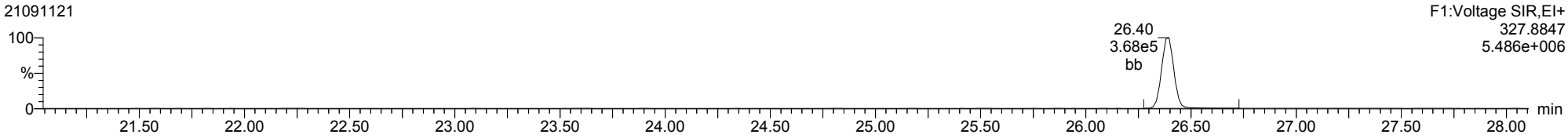

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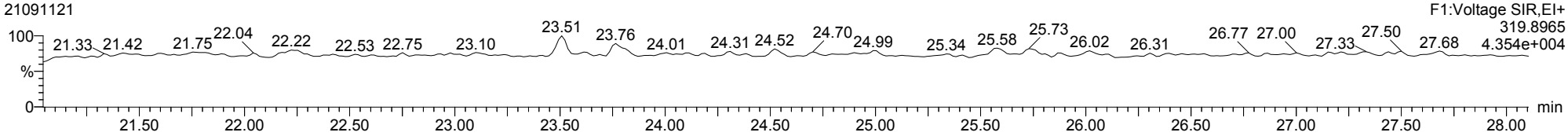

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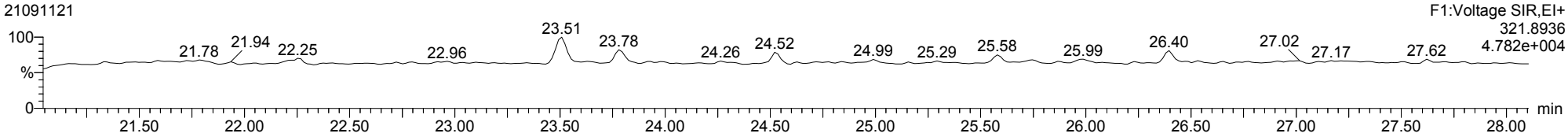

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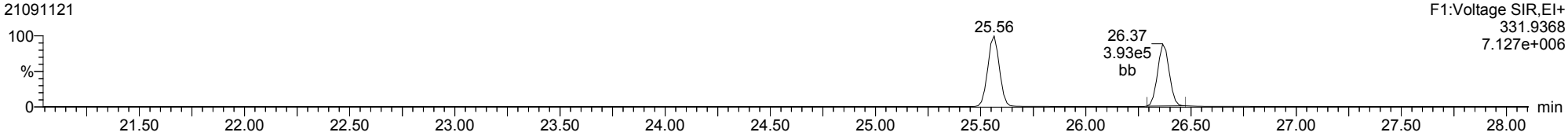

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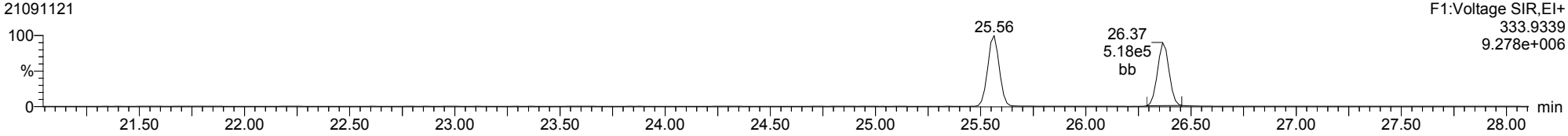

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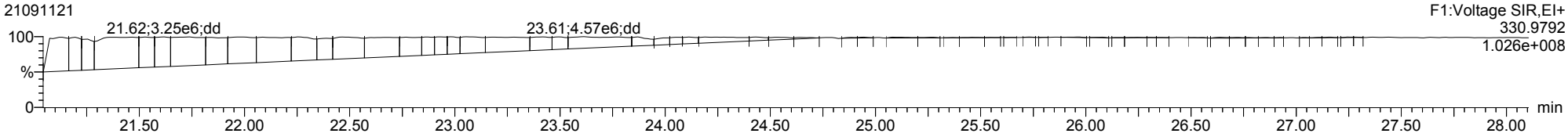

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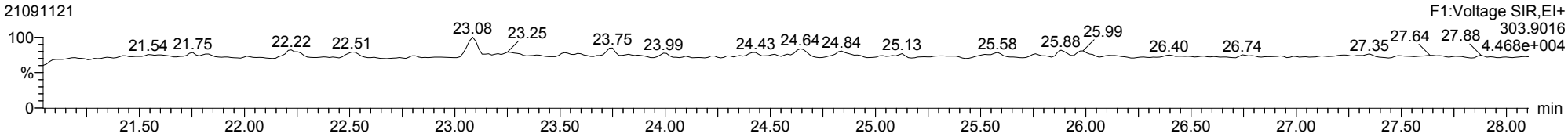
2378-TCDF



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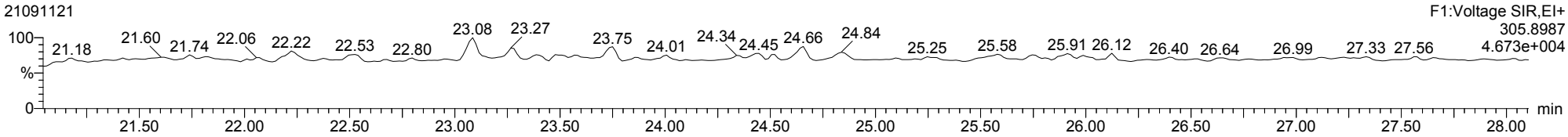

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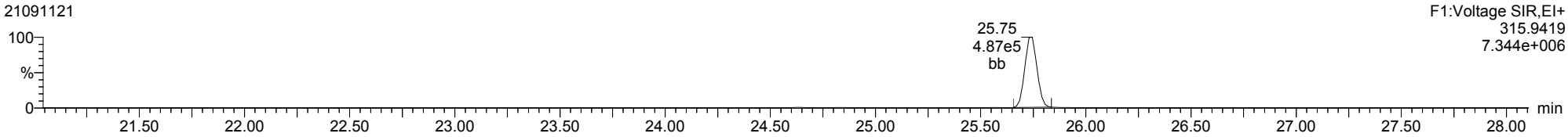

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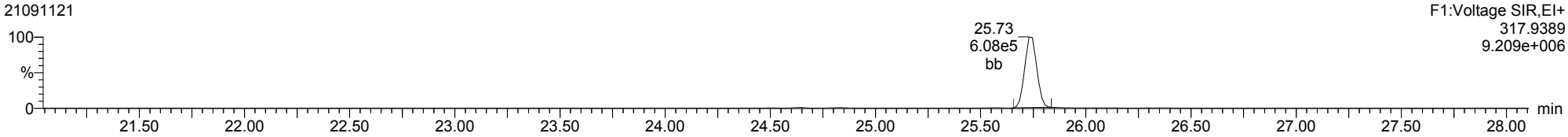

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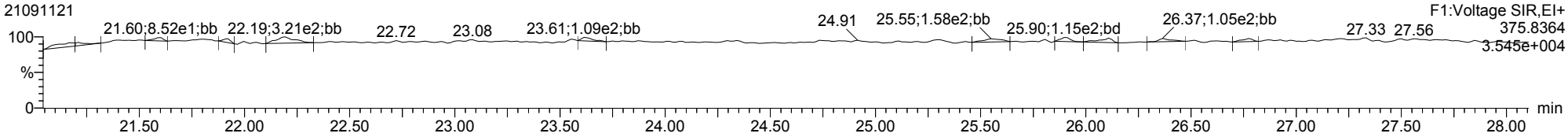

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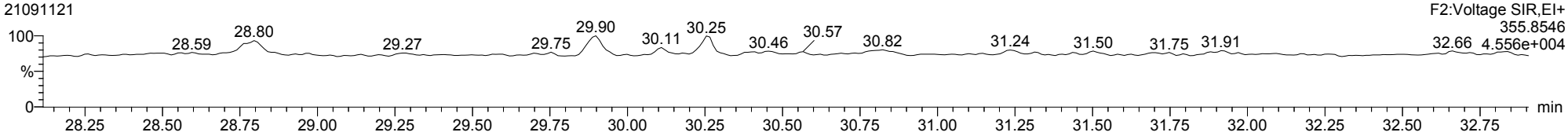
12378-PeCDD



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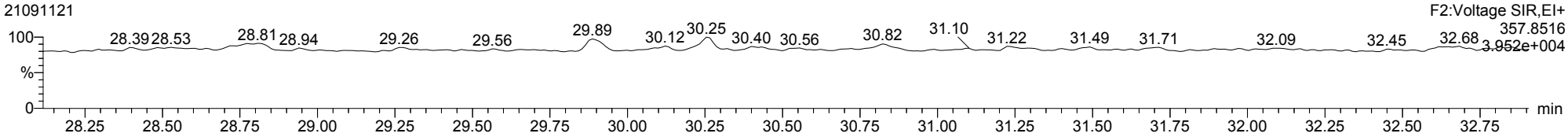

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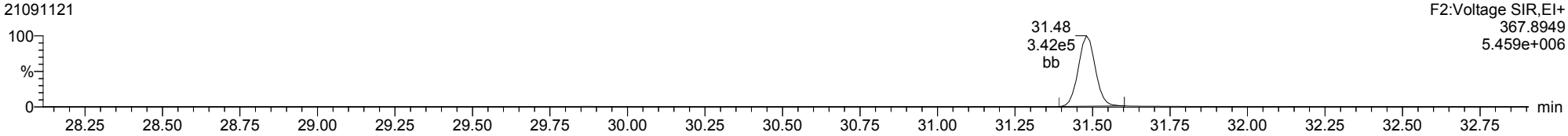

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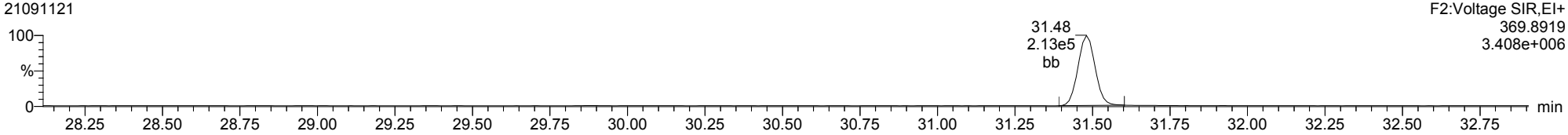
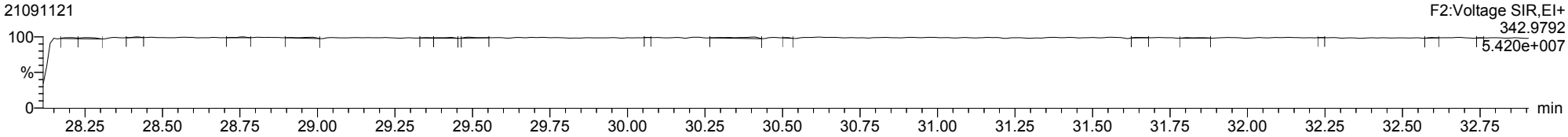


FUNCTION2 PFK



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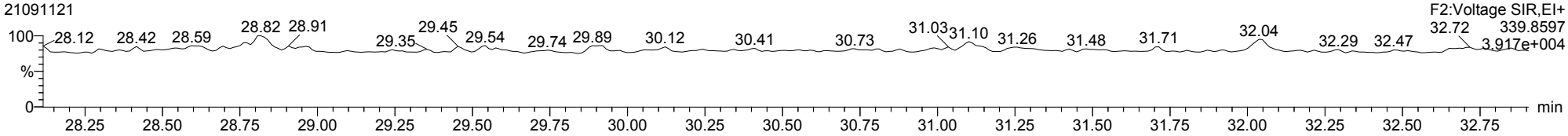
12378-PeCDF



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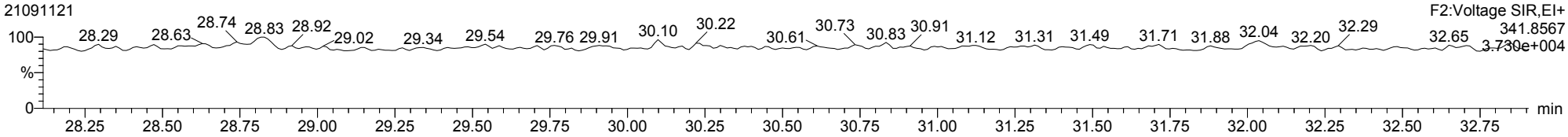

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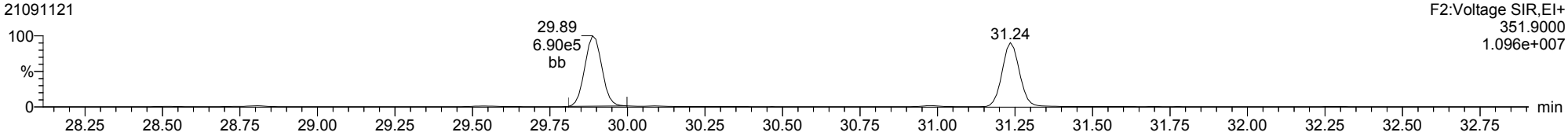

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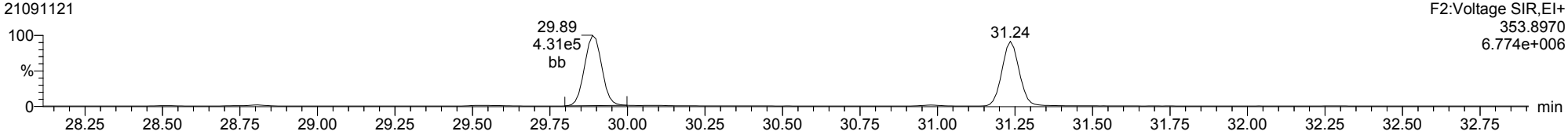
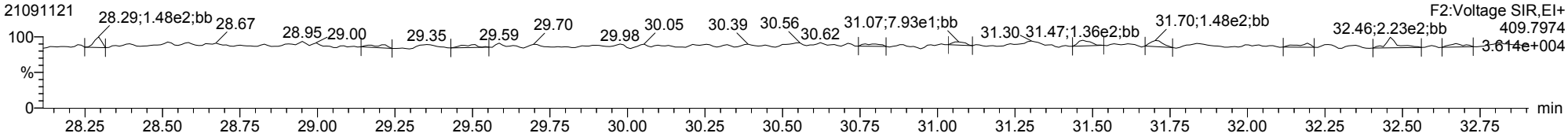


FUNCTION2 HPCDPE



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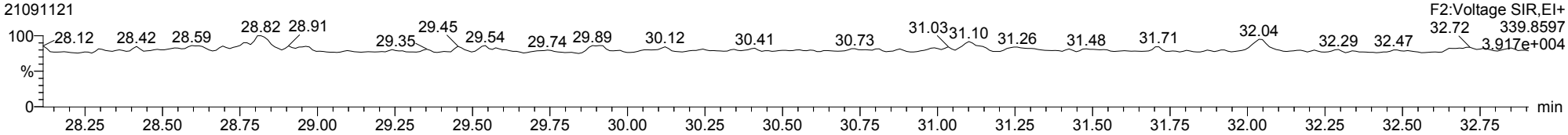
23478-PeCDF



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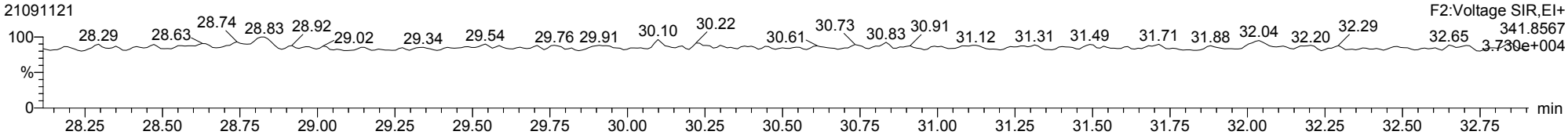

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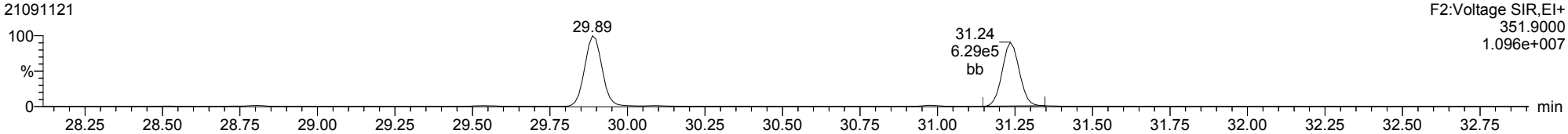

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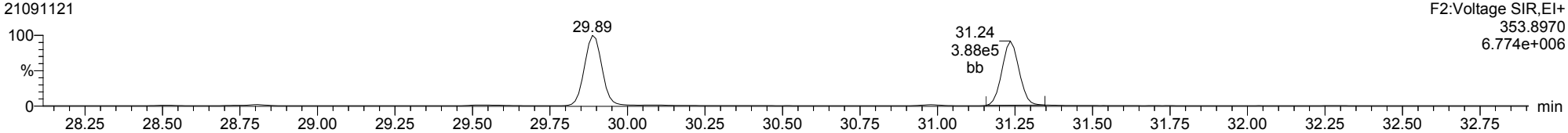

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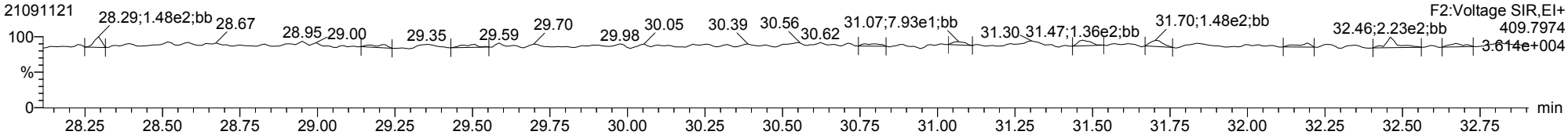

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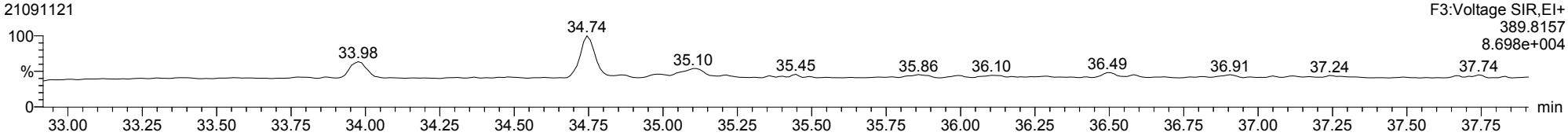

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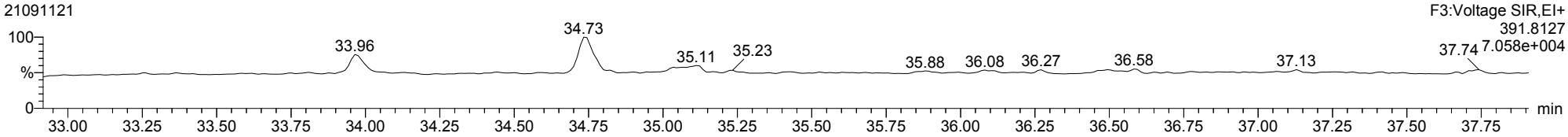

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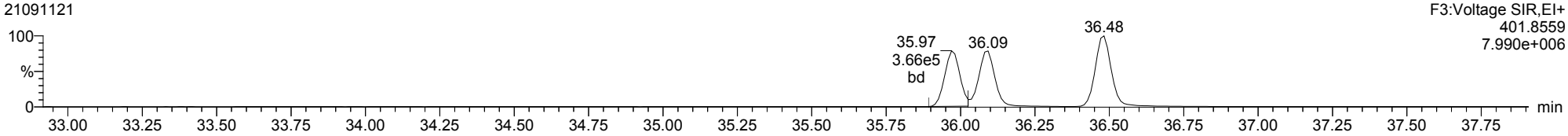

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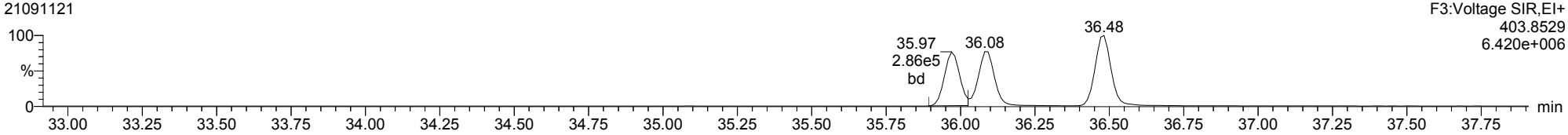

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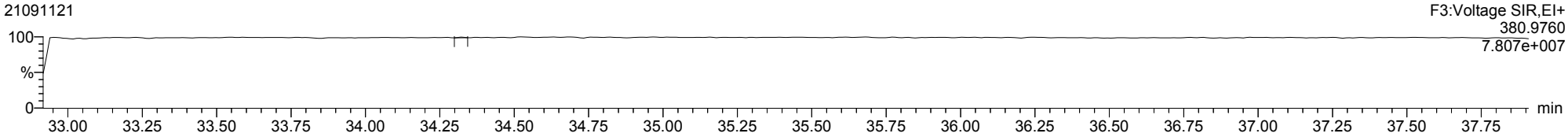

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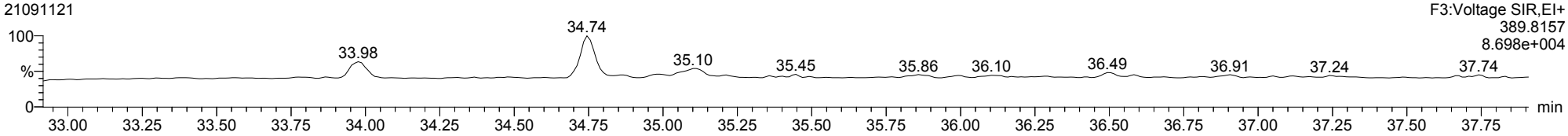

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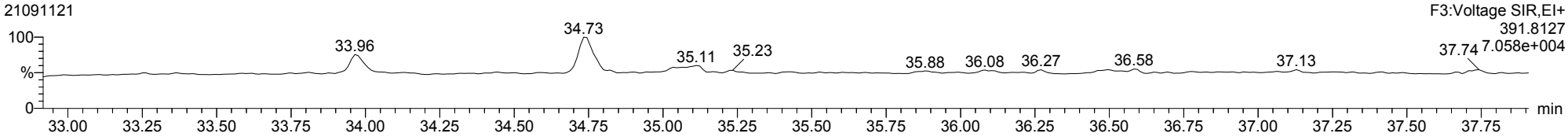

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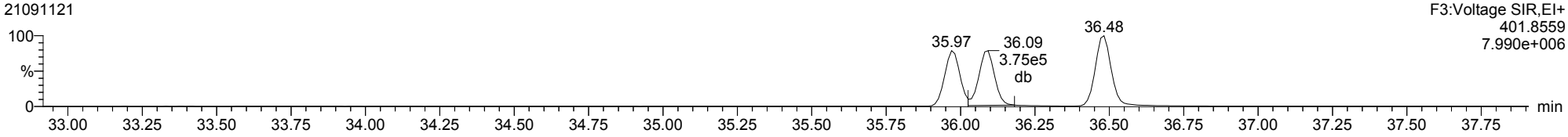

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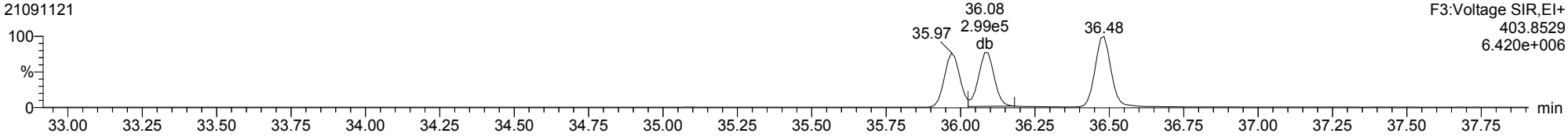

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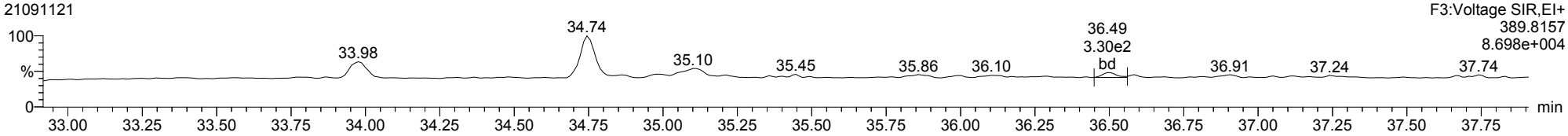

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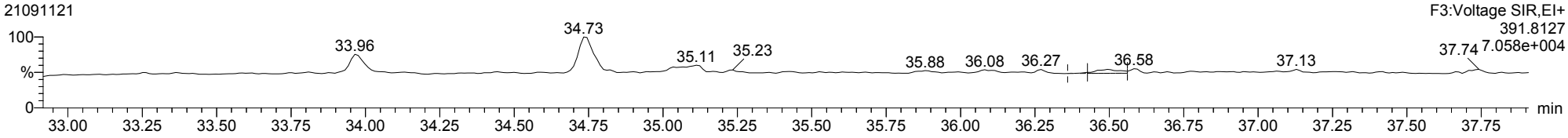

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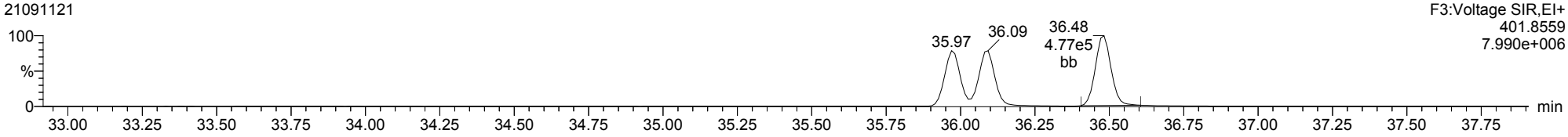

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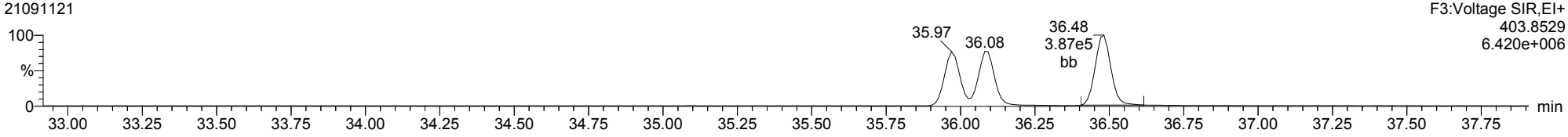

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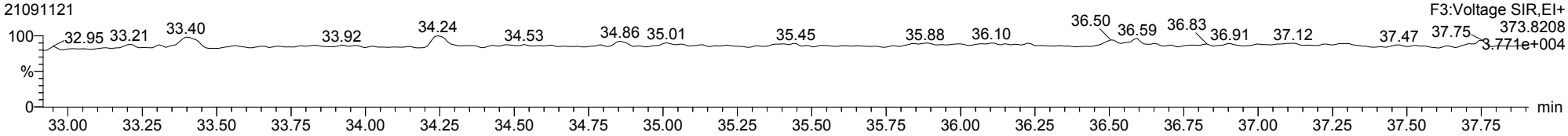

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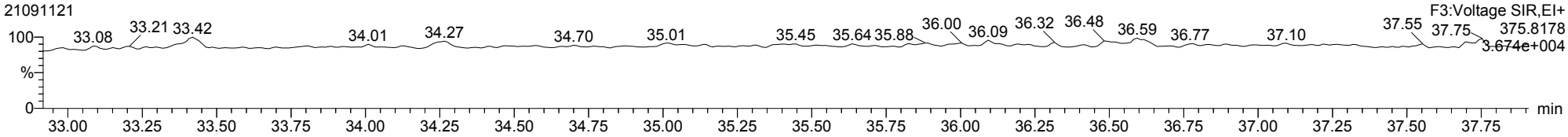

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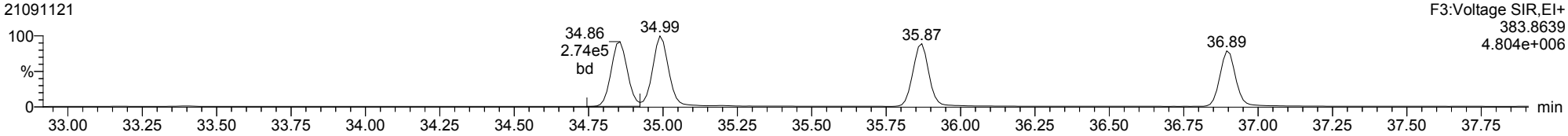

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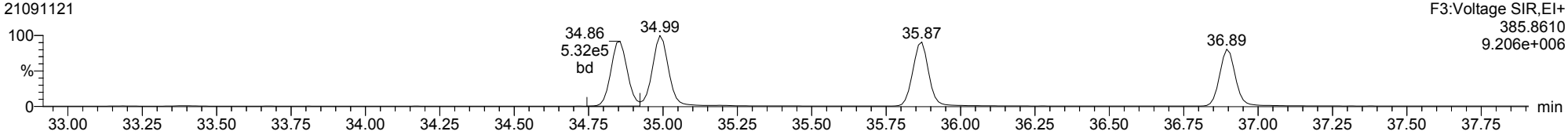

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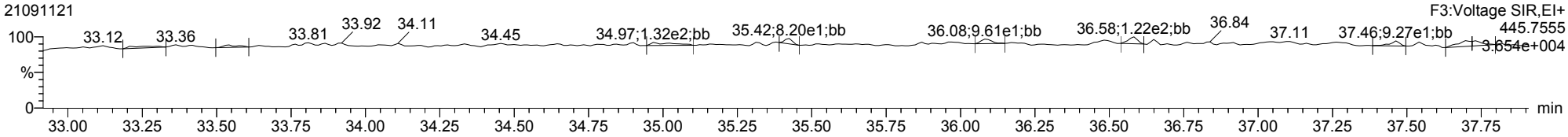

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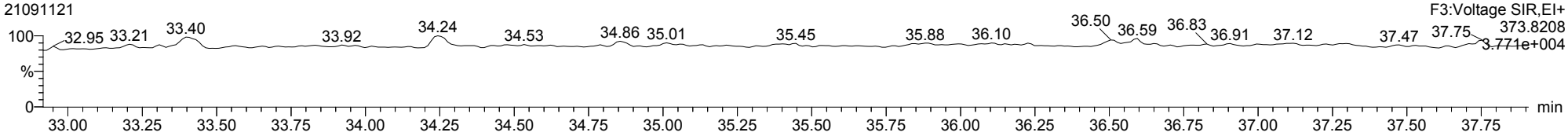
234678-HxCDF



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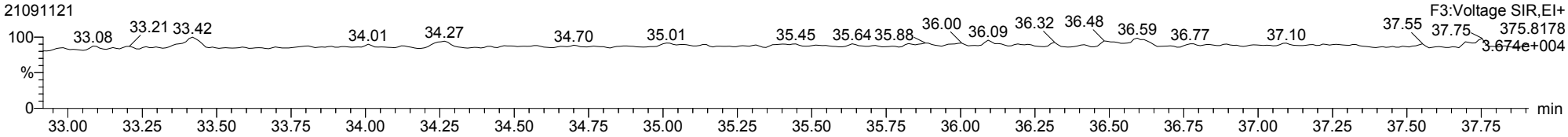

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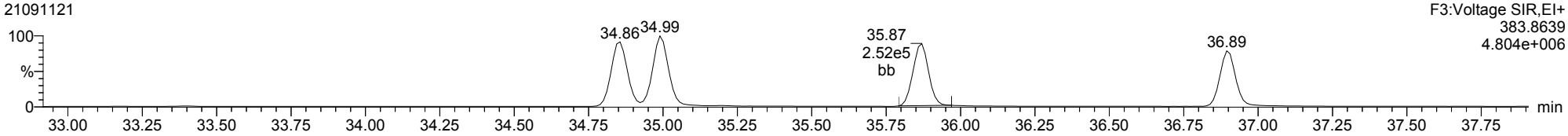

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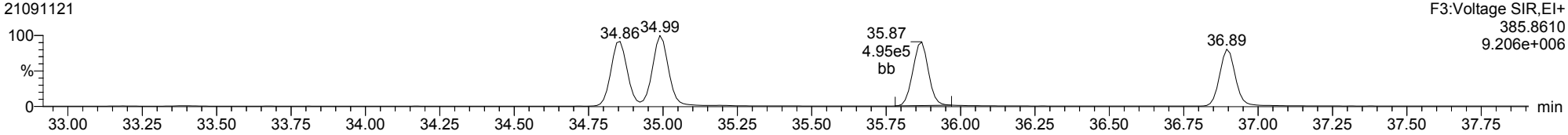

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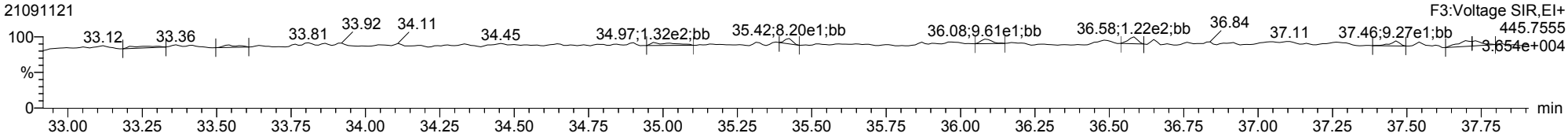

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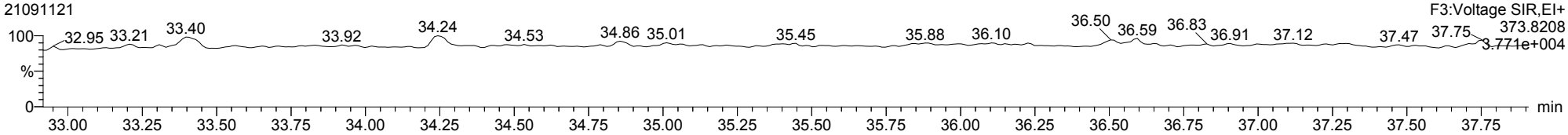

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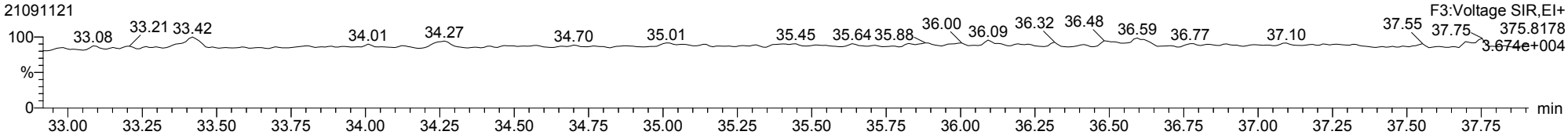

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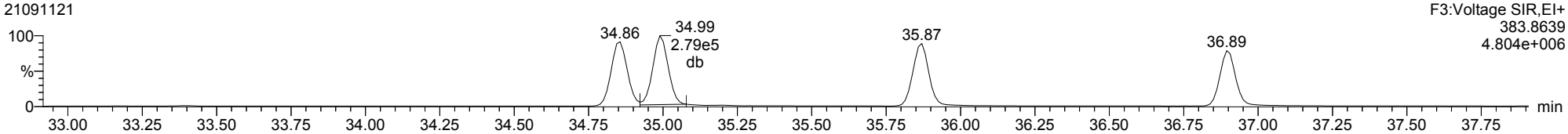

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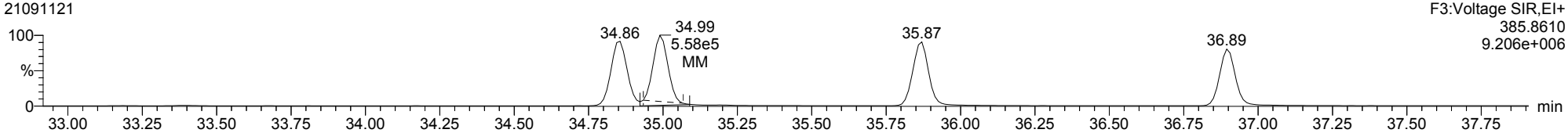

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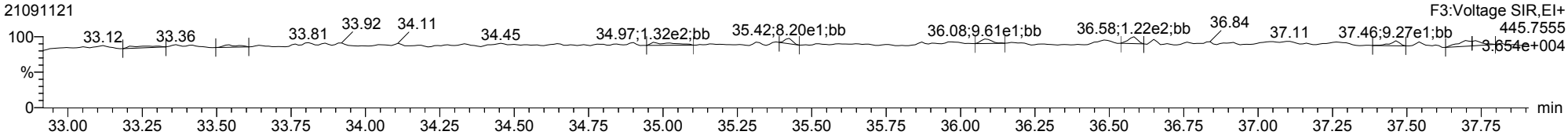

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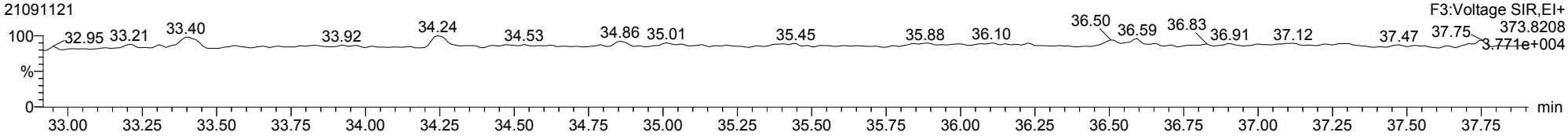

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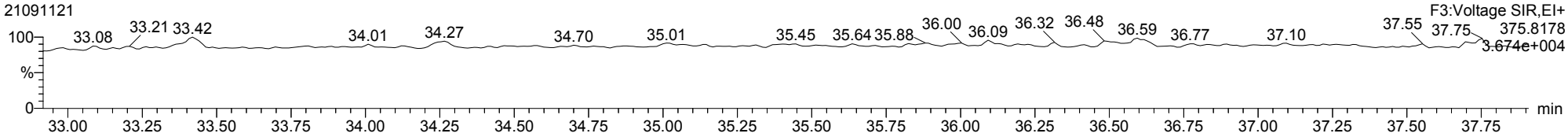

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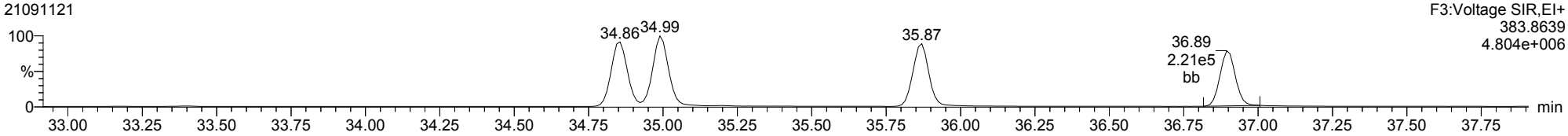

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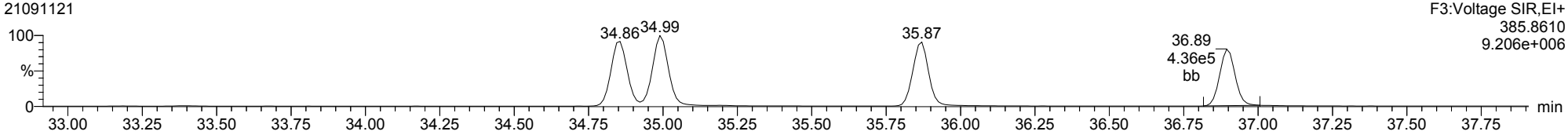

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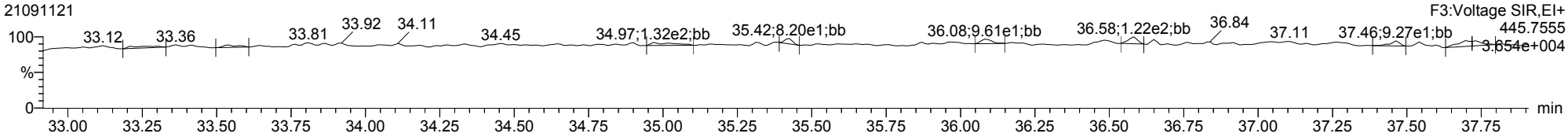

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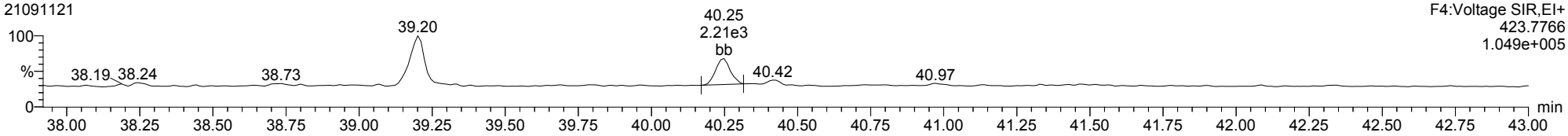

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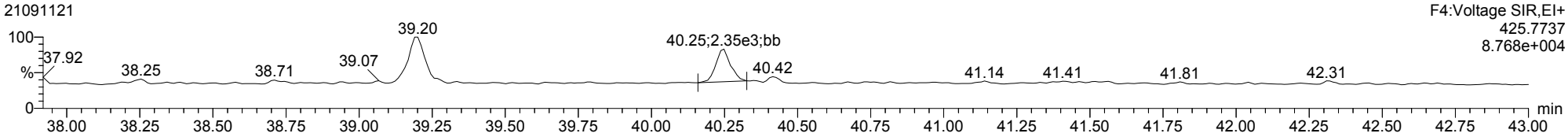

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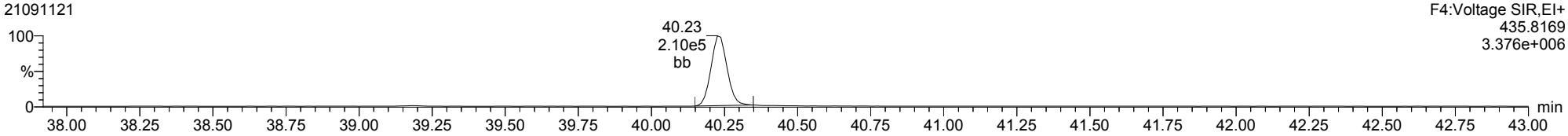

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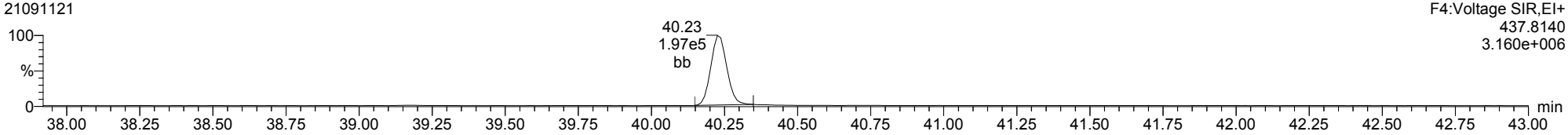
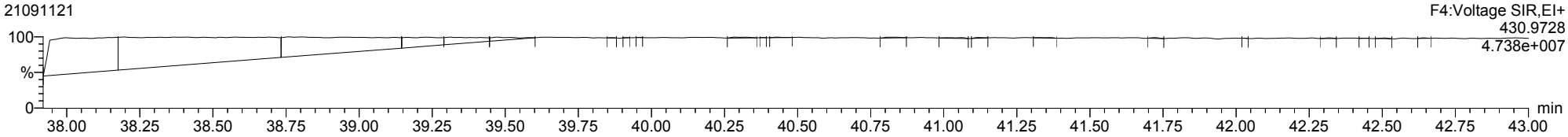


FUNCTION4 PFK



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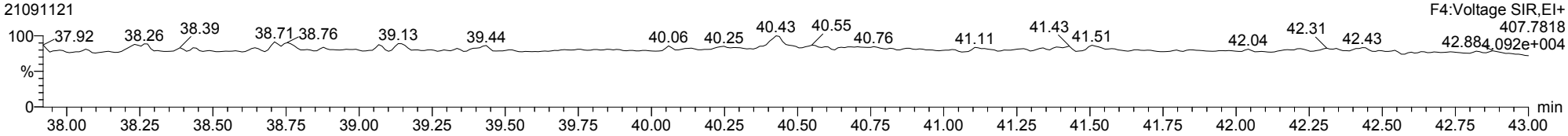

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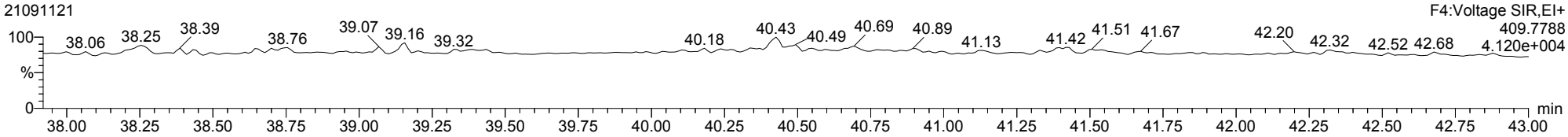

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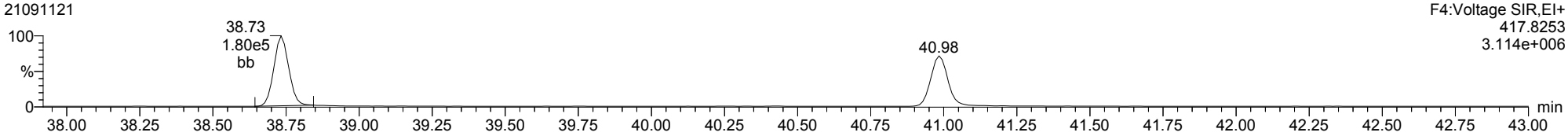

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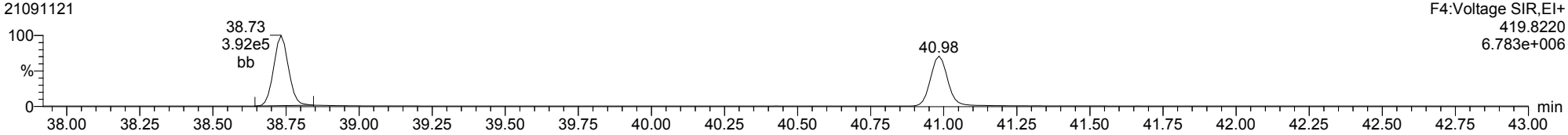
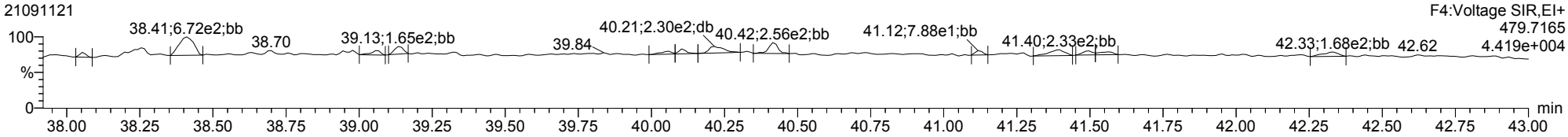


FUNCTION4 NCDPE



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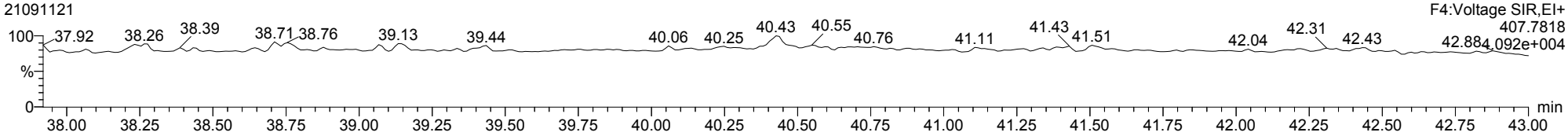
1234789-HpCDF



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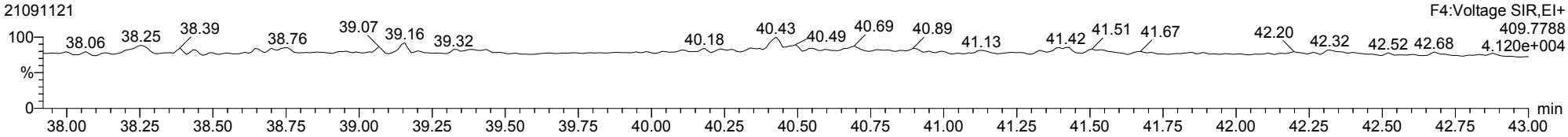
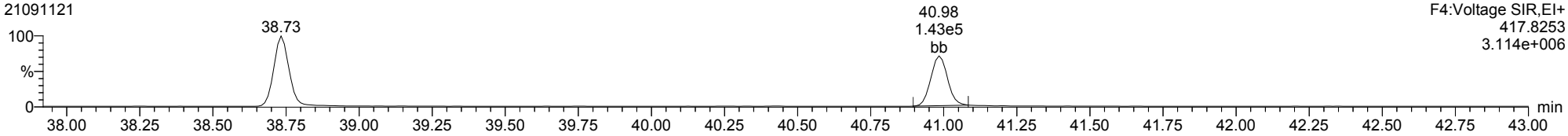


13C-1234789-HpCDF



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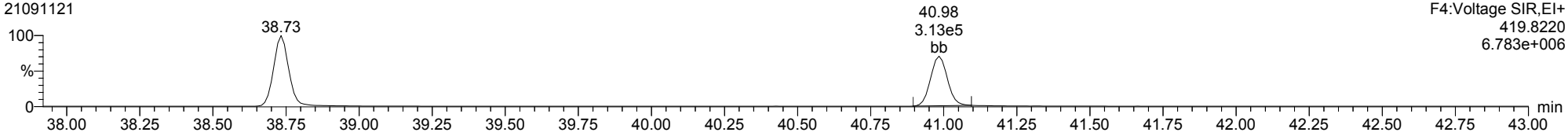
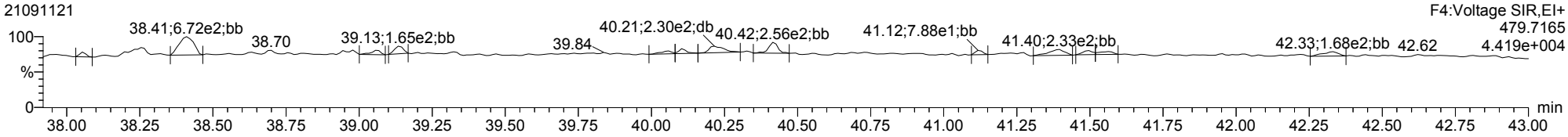
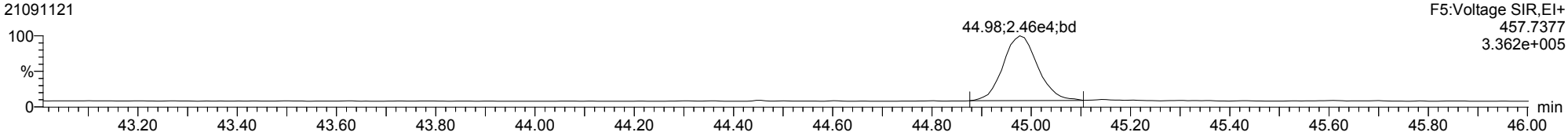


FUNCTION4 NCDPE



ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

OCDD



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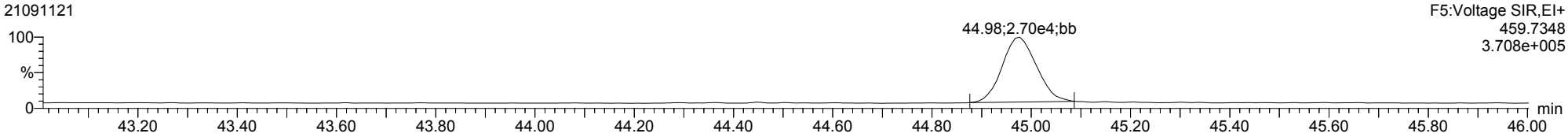

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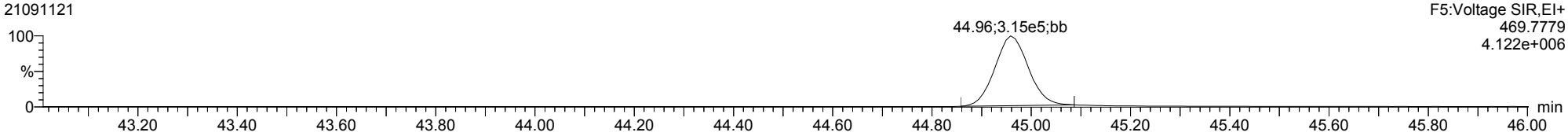

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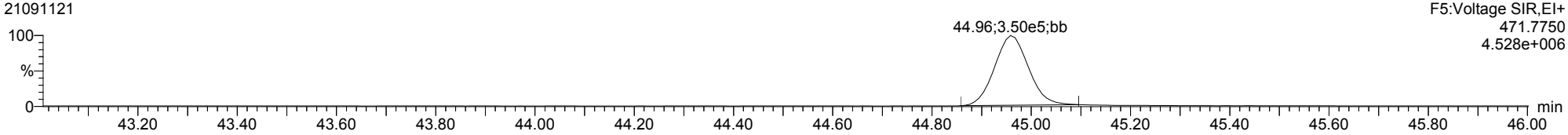
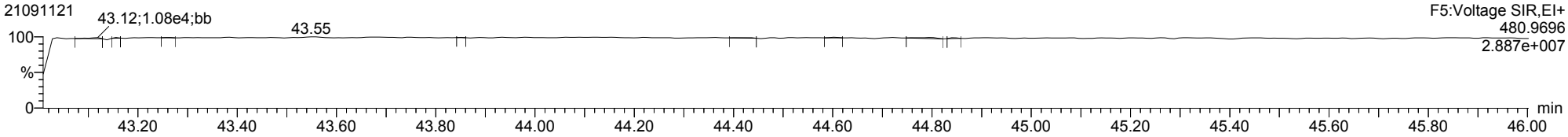
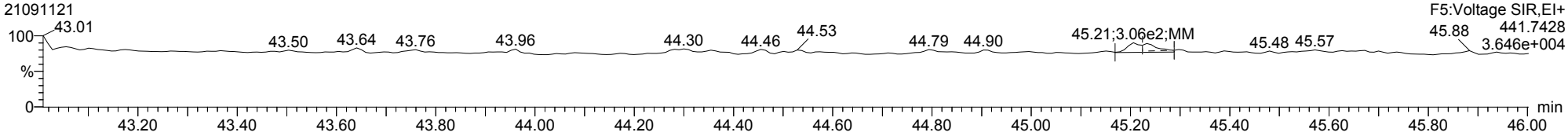


FUNCTION5 PFK

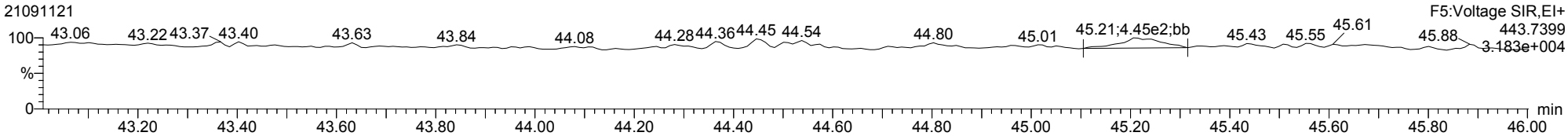


ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

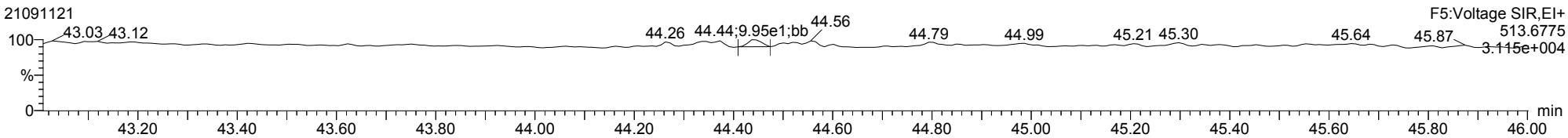
OCDF



OCDF



FUNCTION5 DCDPE



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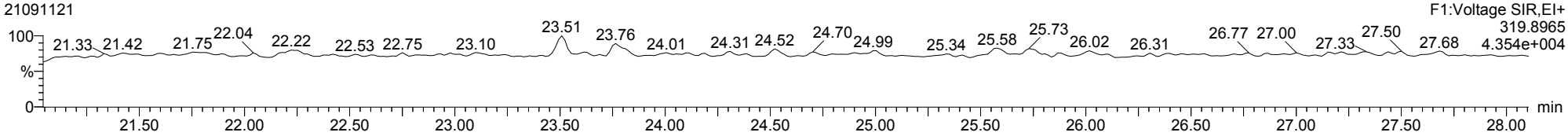
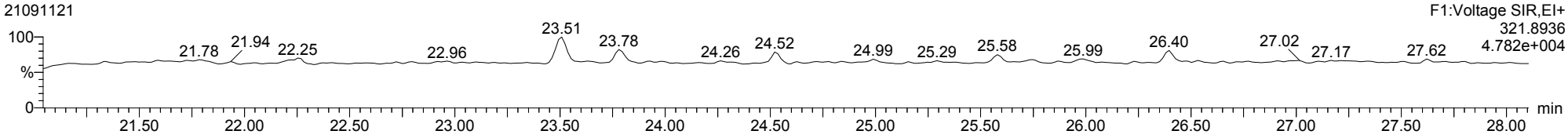
Printed: Wednesday, September 15, 2021 11:30:13 Pacific Daylight Time

ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

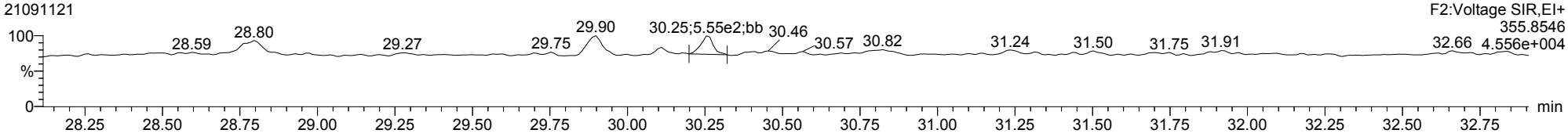
Total-tetradioxins



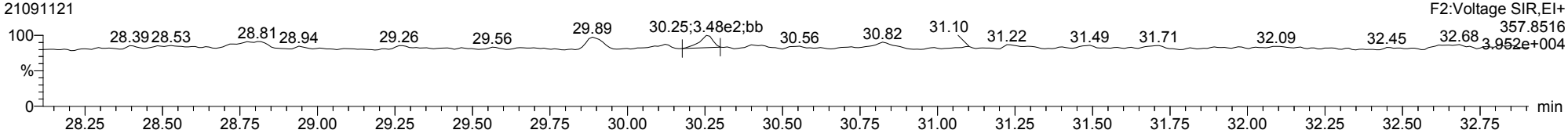
Total-tetradioxins



Total-pentadioxins

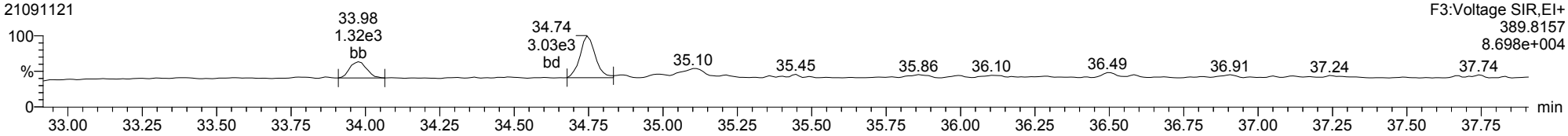


Total-pentadioxins

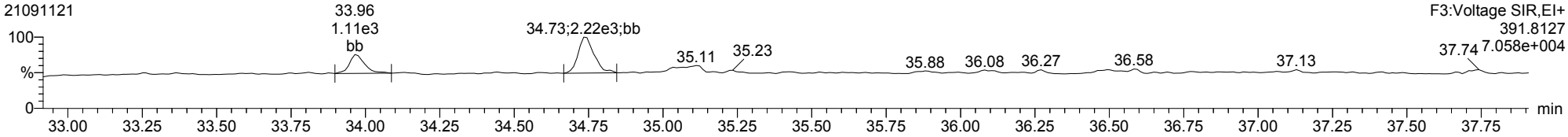


ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



Total-hexadioxins



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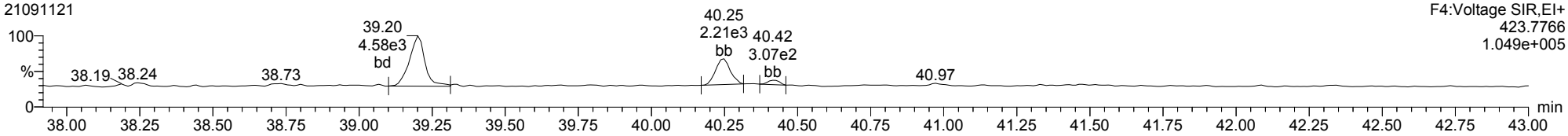
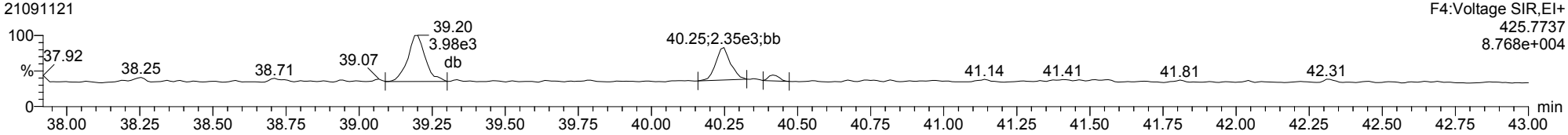


Total-heptadioxins



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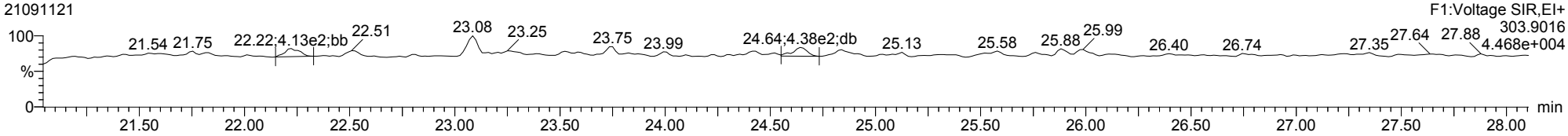
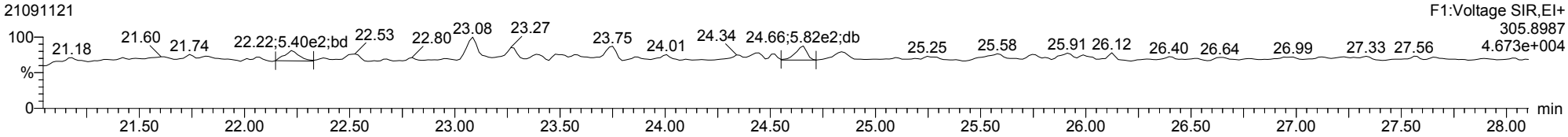
ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

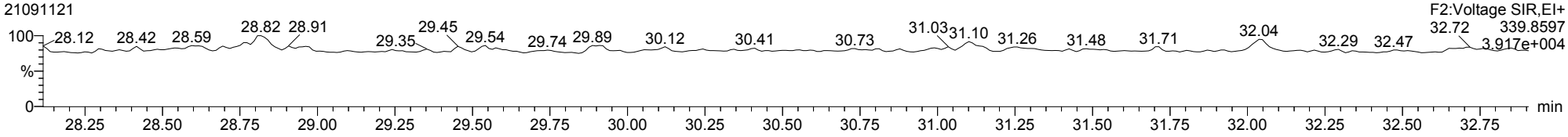
Total-tetrafurans



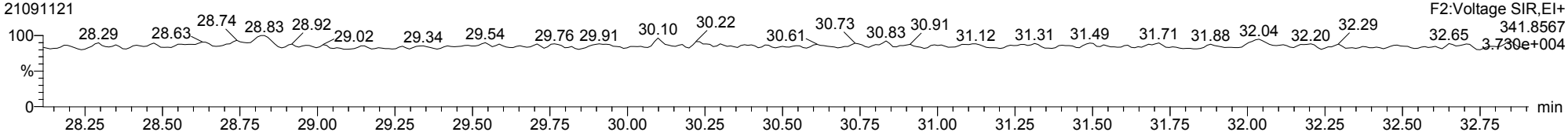
Total-tetrafurans



Total-pentafurans



Total-pentafurans



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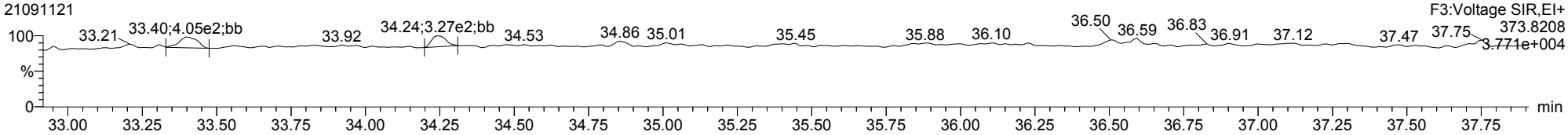
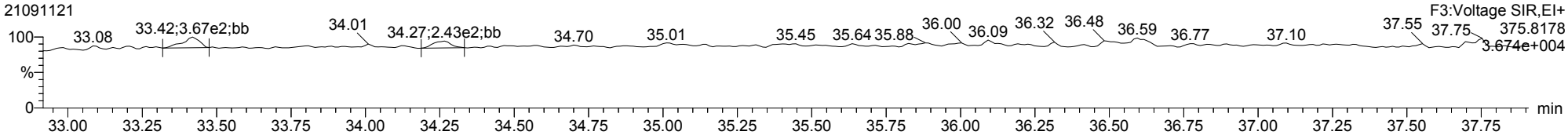
ID: 21G0138-07, Name: 21091121, Date: 12-Sep-2021, Time: 02:58:03, Conditions: AUTOSPEC01, User: pk

Total-hexafurans



Total-hexafurans



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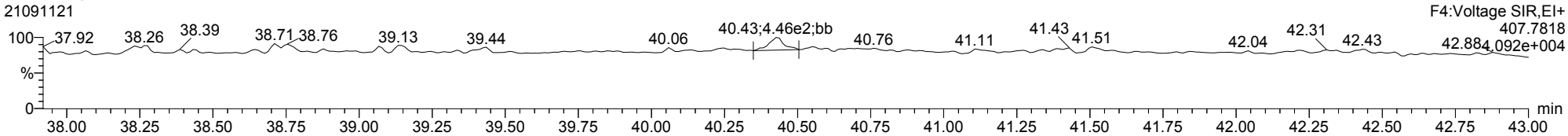

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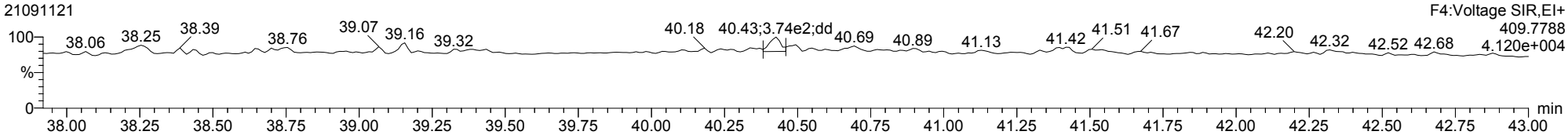

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT658B

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-08 C	File ID:	21091122
Sampled:	07/13/21 09:01	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 03:46
% Solids:	64.66	Preparation:	EPA 1613	Initial/Final:	15.44 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.777	0.655-0.886	0.092	1.00	2.27	ng/kg	X
1746-01-6	2,3,7,8-TCDD	1	0.544	0.655-0.886	0.081	1.00	0.638	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.480	1.318-1.783	0.113	1.00	3.35	ng/kg	
57117-31-4	2,3,4,7,8-PeCDF	1	1.455	1.318-1.783	0.108	1.00	7.37	ng/kg	
40321-76-4	1,2,3,7,8-PeCDD	1	1.619	1.318-1.783	0.118	1.00	4.26	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.200	1.054-1.426	0.177	1.00	76.8	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.199	1.054-1.426	0.173	1.00	13.9	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.277	1.054-1.426	0.174	1.00	22.3	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.181	1.054-1.426	0.193	1.00	11.2	ng/kg	
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.199	1.054-1.426	0.200	1.00	3.96	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.223	1.054-1.426	0.202	1.00	28.8	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.232	1.054-1.426	0.216	1.00	9.98	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.046	0.893-1.208	0.235	1.00	291	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.098	0.893-1.208	0.324	1.00	41.2	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.072	0.893-1.208	0.643	2.50	747	ng/kg	B
39001-02-0	OCDF	1	0.908	0.757-1.024	0.282	2.50	547	ng/kg	
3268-87-9	OCDD	1	0.878	0.757-1.024	0.619	10.0	5590	ng/kg	E, B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	41.1	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	14.6	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	136	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	25.1	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	536	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	178	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	1100	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	1460	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 36.76
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 36.76

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT658B

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-08	File ID:	21091122
Sampled:	07/13/21 09:01	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 03:46
Solids Wt%:	64.66	Preparation:	EPA 1613	Initial/Final:	15.44 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.795	0.655-0.886	0.122	75.9	24 - 169 %	
13C12-2,3,7,8-TCDD		0.763	0.655-0.886	0.110	81.8	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.638	1.318-1.783	0.103	82.9	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.618	1.318-1.783	0.108	82.3	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.614	1.318-1.783	0.106	75.8	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.511	0.434-0.587	0.116	72.1	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.515	0.434-0.587	0.108	66.8	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.520	0.434-0.587	0.119	69.6	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.521	0.434-0.587	0.144	76.7	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.289	1.054-1.426	0.117	77.3	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.263	1.054-1.426	0.108	70.3	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.455	0.374-0.506	0.136	71.7	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.456	0.374-0.506	0.166	70.6	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.063	0.893-1.208	0.143	74.2	23 - 140 %	
13C12-OCDD		0.911	0.757-1.024	0.195	81.5	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.034	83.6	35 - 197 %	

* Values outside of QC limits

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Printed: Wednesday, September 15, 2021 11:30:24 Pacific Daylight Time

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.776	1.001	6.639e3	8.541e3	1.108	0.777	0.770	1602	1560	1.05e5	1.30e5	65.6	83.2	NO	bd	dd	1.135
12378-PeCDF	29.920	1.000	1.215e4	8.207e3	1.015	1.480	1.550	1697	1877	1.93e5	1.28e5	113.9	68.2	NO	bb	bb	1.673
23478-PeCDF	31.268	1.000	2.787e4	1.915e4	1.126	1.455	1.550	1697	1877	4.41e5	3.05e5	259.9	162.6	NO	dd	dd	3.680
123478-HxCDF	34.889	1.001	1.963e5	1.636e5	1.017	1.200	1.240	2210	2250	3.25e6	2.69e6	1468.5	1195.8	NO	bd	bd	38.318
234678-HxCDF	35.859	0.999	5.719e4	4.480e4	1.052	1.277	1.240	2210	2250	7.17e5	5.81e5	324.6	258.1	NO	bb	bb	11.109
123678-HxCDF	35.023	1.000	3.639e4	3.035e4	1.037	1.199	1.240	2210	2250	5.90e5	4.94e5	267.0	219.4	NO	db	db	6.957
123789-HxCDF	36.906	1.000	2.495e4	2.114e4	1.030	1.181	1.240	2210	2250	4.12e5	3.40e5	186.5	151.0	NO	bb	bb	5.613
1234678-HpCDF	38.766	1.001	6.750e5	6.452e5	1.327	1.046	1.050	3057	3007	1.14e7	1.10e7	3731.7	3666.3	NO	bb	bb	145.304
1234789-HpCDF	41.017	1.000	7.629e4	6.950e4	1.283	1.098	1.050	3057	3007	1.16e6	1.05e6	380.5	349.4	NO	bb	bb	20.587
OCDF	45.243	1.006	7.964e5	8.772e5	1.447	0.908	0.890	1288	2327	9.94e6	1.12e7	7719.9	4791.7	NO	bb	bb	273.175
2378-TCDD	26.411	1.001	1.051e3	1.934e3	0.920	0.544	0.770	1147	828	1.67e4	2.77e4	14.5	33.4	YES	bd	bd	0.319
12378-PeCDD	31.514	1.001	8.097e3	5.002e3	0.995	1.619	1.550	896	995	1.22e5	7.76e4	135.9	78.0	NO	bb	bb	2.128
123478-HxCDD	36.004	1.000	8.470e3	7.067e3	1.027	1.199	1.240	2345	1959	1.52e5	1.29e5	64.9	66.0	NO	bd	bd	1.976
123678-HxCDD	36.115	1.000	6.021e4	4.923e4	1.009	1.223	1.240	2345	1959	1.02e6	8.30e5	434.5	423.8	NO	db	db	14.377
123789-HxCDD	36.505	1.011	1.986e4	1.611e4	0.950	1.232	1.240	2345	1959	3.34e5	2.70e5	142.3	137.7	NO	bb	bb	4.981
1234678-HpCDD	40.259	1.000	9.961e5	9.292e5	1.068	1.072	1.050	4949	3922	1.59e7	1.50e7	3212.0	3821.2	NO	bb	bb	372.705
OCDD	44.995	1.000	6.521e6	7.424e6	1.181	0.878	0.890	4001	2483	8.49e7	9.56e7	21229.5	38505.4	NO	bb	bb	2789.066
13C-2378-TCDF	25.761	1.007	5.350e5	6.729e5	1.427	0.795	0.770	3081	2100	8.23e6	1.04e7	2672.3	4932.2	NO	bb	bb	75.936
13C-12378-PeCDF	29.909	1.169	7.446e5	4.545e5	1.297	1.638	1.550	1718	2240	1.16e7	7.15e6	6759.1	3191.8	NO	bb	bb	82.899
13C-23478-PeCDF	31.257	1.222	7.016e5	4.335e5	1.236	1.618	1.550	1718	2240	1.10e7	6.74e6	6378.1	3007.6	NO	bb	bb	82.337
13C-123478-HxCDF	34.867	0.955	3.123e5	6.113e5	1.242	0.511	0.510	2263	1932	5.05e6	9.97e6	2230.5	5159.8	NO	bd	bd	72.094
13C-123678-HxCDF	35.012	0.959	3.144e5	6.108e5	1.343	0.515	0.510	2263	1932	5.07e6	9.79e6	2239.8	5068.1	NO	db	db	66.788
13C-234678-HxCDF	35.881	0.983	2.985e5	5.738e5	1.215	0.520	0.510	2263	1932	5.00e6	9.70e6	2211.8	5019.7	NO	bb	bb	69.635
13C-123789-HxCDF	36.906	1.011	2.729e5	5.243e5	1.008	0.521	0.510	2263	1932	4.61e6	8.92e6	2039.2	4617.5	NO	bb	bb	76.725
13C-1234678-HpCDF	38.744	1.062	2.139e5	4.705e5	0.926	0.455	0.440	1522	2118	3.65e6	8.14e6	2396.8	3842.6	NO	bb	bb	71.653
13C-1234789-HpCDF	40.995	1.123	1.728e5	3.790e5	0.758	0.456	0.440	1522	2118	2.74e6	5.98e6	1802.6	2825.6	NO	bb	bb	70.609
13C-1234-TCDD	25.579	0.000	4.838e5	6.311e5	1.000	0.767	0.770	2183	1460	7.75e6	1.01e7	3551.3	6934.4	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	4.404e5	5.776e5	1.116	0.763	0.770	2183	1460	6.88e6	9.10e6	3149.6	6228.4	NO	bb	bb	81.778
13C-12378-PeCDD	31.492	1.231	3.818e5	2.366e5	0.732	1.614	1.550	1247	1066	5.98e6	3.77e6	4798.6	3533.6	NO	bb	bb	75.767
13C-123478-HxCDD	35.992	0.986	4.310e5	3.343e5	0.960	1.289	1.240	1820	1445	7.08e6	5.45e6	3888.9	3769.7	NO	bd	bd	77.322
13C-123678-HxCDD	36.104	0.989	4.210e5	3.334e5	1.041	1.263	1.240	1820	1445	7.07e6	5.63e6	3887.8	3898.2	NO	db	db	70.258
13C-1234678-HpCDD	40.248	1.103	2.492e5	2.345e5	0.632	1.063	1.050	1176	1444	4.00e6	3.75e6	3400.4	2599.2	NO	bb	bb	74.168
13C-OCDD	44.977	1.232	4.037e5	4.431e5	0.504	0.911	0.890	1341	1511	5.08e6	5.58e6	3790.9	3696.1	NO	bb	bb	163.041
13C-123789-HxCDD	36.494	0.000	5.765e5	4.546e5	1.000	1.268	1.240	1820	1445	9.74e6	7.66e6	5353.3	5301.5	NO	bb	bb	100.000
37CL-2378-TCDD	26.411	1.033	4.042e5		1.084			1089		6.11e6		5612.5			bb		33.455

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
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ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.253	0.864	4.246e3	5.596e3	1.425	0.759	0.770	1602	1560	6.70e4	9.04e4	41.8	58.0	NO	bb	bb	0.572
1289-TCDF	27.197	1.056	9.736e2	1.102e3	1.043	0.883	0.770	1602	1560	1.45e4	1.39e4	9.0	8.9	NO	bd	dd	0.165
13468-PECDF					1.376		1.550	1112	1270								
12389-PECDF	32.215	1.077	1.704e3	1.247e3	1.000	1.367	1.550	1697	1877	3.11e4	2.27e4	18.3	12.1	NO	bd	bd	0.246
123468-HXCDF	33.218	0.953	8.434e4	7.014e4	1.087	1.202	1.240	2210	2250	1.33e6	1.09e6	602.5	486.4	NO	bb	bb	15.394
1368-TCDD	23.523	0.892	7.639e3	9.163e3	0.923	0.834	0.770	1147	828	1.24e5	1.50e5	107.9	180.6	NO	bd	bb	1.788
1289-TCDD	27.016	1.024	5.048e2	4.580e2	0.794	1.102	0.770	1147	828	6.94e3	7.64e3	6.0	9.2	YES	bb	bb	0.119
12479-PECDD	28.817	0.915	3.357e4	2.112e4	1.843	1.589	1.550	896	995	3.49e5	2.03e5	389.8	204.3	NO	bb	bb	4.797
12389-PECDD	31.915	1.013	2.122e3	1.525e3	1.154	1.392	1.550	896	995	3.84e4	2.45e4	42.9	24.6	NO	bb	bb	0.511
124679-HXCDD	33.987	0.944	1.225e5	9.874e4	1.125	1.241	1.240	2345	1959	1.95e6	1.58e6	829.5	807.9	NO	bb	bb	25.704
1234679-HPCDD	39.212	0.974	1.070e6	1.001e6	1.211	1.070	1.050	4949	3922	1.85e7	1.74e7	3743.3	4439.0	NO	bb	bb	353.643
Total-tetrafurans			1.310e5		1.192			1602		2.03e6							20.512
Total-penta1			1.647e5					1112		2.51e6							24.734
Total-pentafurans			3.182e5		1.047			1697		4.61e6							42.947
Total-hexafurans			1.352e6		1.045			2210		2.18e7							267.685
Total-heptafurans			2.342e6		1.305			3057		3.90e7							550.242
Total-Furans			5.105e6		1.158			1602		7.99e7							1179.295
Total-tetradioxins			2.978e4		0.879			1147		4.53e5							7.278
Total-pentadioxins			6.948e4		1.331			896		9.30e5							12.515
Total-hexadioxins			3.925e5		1.028			2345		5.84e6							88.933
Total-heptadioxins			2.067e6		1.140			4949		3.44e7							726.349
Total-Dioxins			9.080e6		1.092			1147		1.27e8							3624.140
Total-TEQ			1.418e7					1147		2.06e8							4803.435
FUNCTION1 PFK			1.125e8					692802		1.01e9							
FUNCTION2 PFK			1.243e6					443663		5.98e6							0.000
FUNCTION3 PFK			3.341e6					399456		2.93e7							0.000
FUNCTION4 PFK			6.910e4					284711		9.85e5							
FUNCTION5 PFK			8.491e6					240252		4.92e6							
FUNCTION1 HXCD...			9.157e3					752		1.44e5							0.000
FUNCTION1 HPCD...			1.942e3					950		2.76e4							0.000
FUNCTION2 HPCD...			2.471e3					1051		4.30e4							0.000
FUNCTION3 OCDPE			1.832e3					655		3.06e4							0.000
FUNCTION4 NCDPE			6.476e3					641		1.12e5							0.000
FUNCTION5 DCDPE			1.008e3					643		9.92e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.54	4.056e3	4.913e3	1.192	0.83	0.77	38.0	YES	NO	dd	dd	0.623
2	Total-tetrafurans	24.45	6.424e3	8.016e3	1.192	0.80	0.77	52.5	YES	NO	dd	dd	1.003
3	Total-tetrafurans	24.01	5.375e3	7.186e3	1.192	0.75	0.77	54.1	YES	NO	db	db	0.872
4	Total-tetrafurans	23.89	3.833e3	5.228e3	1.192	0.73	0.77	37.2	YES	NO	dd	dd	0.629
5	Total-tetrafurans	23.76	1.292e4	1.664e4	1.192	0.78	0.77	131.9	YES	NO	dd	dd	2.053
6	Total-tetrafurans	23.60	3.110e3	3.999e3	1.192	0.78	0.77	32.3	YES	NO	dd	dd	0.494
7	Total-tetrafurans	23.52	9.271e3	1.127e4	1.192	0.82	0.77	96.0	YES	NO	dd	dd	1.427
8	Total-tetrafurans	23.42	5.051e3	6.430e3	1.192	0.79	0.77	46.3	YES	NO	dd	dd	0.798
9	Total-tetrafurans	23.10	1.955e4	2.460e4	1.192	0.79	0.77	192.7	YES	NO	bd	bd	3.066
10	Total-tetrafurans	22.53	5.295e3	6.080e3	1.192	0.87	0.77	51.8	YES	NO	bb	bb	0.790
11	1368-TCDF	22.25	4.246e3	5.596e3	1.425	0.76	0.77	41.8	YES	NO	bb	bb	0.572
12	1289-TCDF	27.20	9.736e2	1.102e3	1.043	0.88	0.77	9.0	YES	NO	bd	dd	0.165
13	Total-tetrafurans	26.80	7.504e2	9.515e2	1.192	0.79	0.77	7.0	YES	NO	bb	bb	0.118
14	Total-tetrafurans	26.14	2.421e3	2.957e3	1.192	0.82	0.77	23.3	YES	NO	db	db	0.374
15	Total-tetrafurans	26.00	6.685e3	8.809e3	1.192	0.76	0.77	59.8	YES	NO	dd	dd	1.076
16	Total-tetrafurans	25.91	3.021e3	3.857e3	1.192	0.78	0.77	29.2	YES	NO	dd	dd	0.478
17	2378-TCDF	25.78	6.639e3	8.541e3	1.108	0.78	0.77	65.6	YES	NO	bd	dd	1.135
18	Total-tetrafurans	25.58	2.124e3	2.583e3	1.192	0.82	0.77	20.4	YES	NO	db	dd	0.327
19	Total-tetrafurans	25.55	1.765e3	2.659e3	1.192	0.66	0.77	21.2	YES	NO	bd	dd	0.307
20	Total-tetrafurans	25.28	2.039e3	2.532e3	1.192	0.81	0.77	18.9	YES	NO	dd	dd	0.318
21	Total-tetrafurans	25.10	3.852e3	4.826e3	1.192	0.80	0.77	35.0	YES	NO	bd	bd	0.603
22	Total-tetrafurans	24.87	6.577e3	8.099e3	1.192	0.81	0.77	63.5	YES	NO	db	bb	1.019
23	Total-tetrafurans	24.67	1.503e4	1.757e4	1.192	0.86	0.77	142.3	YES	NO	dd	db	2.265

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.92	5.618e2	3.344e2		1.68	1.55	8.4	YES	NO	bb	bb	0.082
2	Total-penta1	27.18	1.642e5	1.069e5		1.54	1.55	2253.7	YES	NO	bb	bb	24.653

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PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	30.13	1.659e4	1.126e4	1.047	1.47	1.55	160.4	YES	NO	bd	bd	2.280
2	12378-PeCDF	29.92	1.215e4	8.207e3	1.015	1.48	1.55	113.9	YES	NO	bb	bb	1.673
3	Total-pentafurans	29.64	7.464e3	4.791e3	1.047	1.56	1.55	72.1	YES	NO	db	db	1.003
4	Total-pentafurans	29.56	1.617e4	1.018e4	1.047	1.59	1.55	126.6	YES	NO	dd	dd	2.157
5	Total-pentafurans	29.46	5.480e3	3.456e3	1.047	1.59	1.55	56.5	YES	NO	dd	dd	0.732
6	Total-pentafurans	29.35	2.421e3	1.612e3	1.047	1.50	1.55	27.0	YES	NO	dd	dd	0.330
7	Total-pentafurans	29.29	2.673e3	1.532e3	1.047	1.74	1.55	23.4	YES	NO	dd	bd	0.344
8	Total-pentafurans	28.84	1.681e5	1.100e5	1.047	1.53	1.55	1348.8	YES	NO	dd	dd	22.772
9	Total-pentafurans	28.66	1.655e4	1.029e4	1.047	1.61	1.55	128.1	YES	NO	dd	dd	2.197
10	Total-pentafurans	28.55	3.018e3	1.718e3	1.047	1.76	1.55	29.5	YES	NO	bd	bd	0.388
11	12389-PECDF	32.22	1.704e3	1.247e3	1.000	1.37	1.55	18.3	YES	NO	bd	bd	0.246
12	23478-PeCDF	31.27	2.787e4	1.915e4	1.126	1.46	1.55	259.9	YES	NO	dd	dd	3.680
13	Total-pentafurans	31.12	2.798e4	1.871e4	1.047	1.50	1.55	252.4	YES	NO	dd	dd	3.822
14	Total-pentafurans	31.01	6.040e3	3.600e3	1.047	1.68	1.55	60.0	YES	NO	bd	bd	0.789
15	Total-pentafurans	30.77	1.161e3	8.446e2	1.047	1.38	1.55	9.6	YES	NO	bb	bb	0.164
16	Total-pentafurans	30.40	5.695e2	3.329e2	1.047	1.71	1.55	6.4	YES	NO	bb	bb	0.074
17	Total-pentafurans	30.23	2.201e3	1.398e3	1.047	1.57	1.55	23.0	YES	NO	db	db	0.295

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.86	5.719e4	4.480e4	1.052	1.28	1.24	324.6	YES	NO	bb	bb	11.109
2	Total-hexafurans	35.37	3.676e3	3.028e3	1.045	1.21	1.24	29.5	YES	NO	bb	bb	0.730
3	Total-hexafurans	35.22	1.055e3	7.549e2	1.045	1.40	1.24	8.7	YES	NO	bb	bb	0.197
4	123678-HxCDF	35.02	3.639e4	3.035e4	1.037	1.20	1.24	267.0	YES	NO	db	db	6.957
5	123478-HxCDF	34.89	1.963e5	1.636e5	1.017	1.20	1.24	1468.5	YES	NO	bd	bd	38.318
6	Total-hexafurans	34.73	1.610e4	1.356e4	1.045	1.19	1.24	131.3	YES	NO	bb	bb	3.228
7	Total-hexafurans	34.27	6.304e5	5.247e5	1.045	1.20	1.24	4699.2	YES	NO	bb	bb	125.720
8	Total-hexafurans	33.96	9.776e3	8.482e3	1.045	1.15	1.24	73.0	YES	NO	bb	bb	1.987
9	Total-hexafurans	33.70	1.307e3	1.144e3	1.045	1.14	1.24	10.1	YES	NO	bb	bb	0.267
10	Total-hexafurans	33.43	2.907e5	2.437e5	1.045	1.19	1.24	2063.7	YES	NO	bb	bb	58.165
11	123468-HXCDF	33.22	8.434e4	7.014e4	1.087	1.20	1.24	602.5	YES	NO	bb	bb	15.394
12	123789-HxCDF	36.91	2.495e4	2.114e4	1.030	1.18	1.24	186.5	YES	NO	bb	bb	5.613

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.02	7.629e4	6.950e4	1.283	1.10	1.05	380.5	YES	NO	bb	bb	20.587
2	Total-heptafurans	39.42	1.579e6	1.498e6	1.305	1.05	1.05	8572.1	YES	NO	bb	bb	381.361
3	Total-heptafurans	39.18	1.243e4	1.169e4	1.305	1.06	1.05	66.1	YES	NO	bb	bb	2.990
4	1234678-HpCDF	38.77	6.750e5	6.452e5	1.327	1.05	1.05	3731.7	YES	NO	bb	bb	145.304

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.54	4.056e3	4.913e3	1.192	0.83	0.77	38.0	YES	NO	dd	dd	0.623
2	Total-tetrafurans	24.45	6.424e3	8.016e3	1.192	0.80	0.77	52.5	YES	NO	dd	dd	1.003
3	Total-tetrafurans	24.01	5.375e3	7.186e3	1.192	0.75	0.77	54.1	YES	NO	db	db	0.872
4	Total-tetrafurans	23.89	3.833e3	5.228e3	1.192	0.73	0.77	37.2	YES	NO	dd	dd	0.629
5	Total-tetrafurans	23.76	1.292e4	1.664e4	1.192	0.78	0.77	131.9	YES	NO	dd	dd	2.053
6	Total-tetrafurans	23.60	3.110e3	3.999e3	1.192	0.78	0.77	32.3	YES	NO	dd	dd	0.494
7	Total-tetrafurans	23.52	9.271e3	1.127e4	1.192	0.82	0.77	96.0	YES	NO	dd	dd	1.427
8	Total-tetrafurans	23.42	5.051e3	6.430e3	1.192	0.79	0.77	46.3	YES	NO	dd	dd	0.798
9	Total-tetrafurans	23.10	1.955e4	2.460e4	1.192	0.79	0.77	192.7	YES	NO	bd	bd	3.066
10	Total-tetrafurans	22.53	5.295e3	6.080e3	1.192	0.87	0.77	51.8	YES	NO	bb	bb	0.790
11	1368-TCDF	22.25	4.246e3	5.596e3	1.425	0.76	0.77	41.8	YES	NO	bb	bb	0.572
12	1289-TCDF	27.20	9.736e2	1.102e3	1.043	0.88	0.77	9.0	YES	NO	bd	dd	0.165
13	Total-tetrafurans	26.80	7.504e2	9.515e2	1.192	0.79	0.77	7.0	YES	NO	bb	bb	0.118
14	Total-tetrafurans	26.14	2.421e3	2.957e3	1.192	0.82	0.77	23.3	YES	NO	db	db	0.374
15	Total-tetrafurans	26.00	6.685e3	8.809e3	1.192	0.76	0.77	59.8	YES	NO	dd	dd	1.076
16	Total-tetrafurans	25.91	3.021e3	3.857e3	1.192	0.78	0.77	29.2	YES	NO	dd	dd	0.478
17	2378-TCDF	25.78	6.639e3	8.541e3	1.108	0.78	0.77	65.6	YES	NO	bd	dd	1.135
18	Total-tetrafurans	25.58	2.124e3	2.583e3	1.192	0.82	0.77	20.4	YES	NO	db	dd	0.327
19	Total-tetrafurans	25.55	1.765e3	2.659e3	1.192	0.66	0.77	21.2	YES	NO	bd	dd	0.307
20	Total-tetrafurans	25.28	2.039e3	2.532e3	1.192	0.81	0.77	18.9	YES	NO	dd	dd	0.318
21	Total-tetrafurans	25.10	3.852e3	4.826e3	1.192	0.80	0.77	35.0	YES	NO	bd	bd	0.603
22	Total-tetrafurans	24.87	6.577e3	8.099e3	1.192	0.81	0.77	63.5	YES	NO	db	bb	1.019
23	Total-tetrafurans	24.67	1.503e4	1.757e4	1.192	0.86	0.77	142.3	YES	NO	dd	db	2.265
24	Total-pentafurans	30.13	1.659e4	1.126e4	1.047	1.47	1.55	160.4	YES	NO	bd	bd	2.280
25	12378-PeCDF	29.92	1.215e4	8.207e3	1.015	1.48	1.55	113.9	YES	NO	bb	bb	1.673
26	Total-pentafurans	29.64	7.464e3	4.791e3	1.047	1.56	1.55	72.1	YES	NO	db	db	1.003
27	Total-pentafurans	29.56	1.617e4	1.018e4	1.047	1.59	1.55	126.6	YES	NO	dd	dd	2.157
28	Total-pentafurans	29.46	5.480e3	3.456e3	1.047	1.59	1.55	56.5	YES	NO	dd	dd	0.732
29	Total-pentafurans	29.35	2.421e3	1.612e3	1.047	1.50	1.55	27.0	YES	NO	dd	dd	0.330
30	Total-pentafurans	29.29	2.673e3	1.532e3	1.047	1.74	1.55	23.4	YES	NO	dd	bd	0.344
31	Total-pentafurans	28.84	1.681e5	1.100e5	1.047	1.53	1.55	1348.8	YES	NO	dd	dd	22.772
32	Total-pentafurans	28.66	1.655e4	1.029e4	1.047	1.61	1.55	128.1	YES	NO	dd	dd	2.197
33	Total-pentafurans	28.55	3.018e3	1.718e3	1.047	1.76	1.55	29.5	YES	NO	bd	bd	0.388
34	12389-PECDF	32.22	1.704e3	1.247e3	1.000	1.37	1.55	18.3	YES	NO	bd	bd	0.246
35	23478-PeCDF	31.27	2.787e4	1.915e4	1.126	1.46	1.55	259.9	YES	NO	dd	dd	3.680
36	Total-pentafurans	31.12	2.798e4	1.871e4	1.047	1.50	1.55	252.4	YES	NO	dd	dd	3.822
37	Total-pentafurans	31.01	6.040e3	3.600e3	1.047	1.68	1.55	60.0	YES	NO	bd	bd	0.789

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-pentafurans	30.77	1.161e3	8.446e2	1.047	1.38	1.55	9.6	YES	NO	bb	bb	0.164
39	Total-pentafurans	30.40	5.695e2	3.329e2	1.047	1.71	1.55	6.4	YES	NO	bb	bb	0.074
40	Total-pentafurans	30.23	2.201e3	1.398e3	1.047	1.57	1.55	23.0	YES	NO	db	db	0.295
41	234678-HxCDF	35.86	5.719e4	4.480e4	1.052	1.28	1.24	324.6	YES	NO	bb	bb	11.109
42	Total-hexafurans	35.37	3.676e3	3.028e3	1.045	1.21	1.24	29.5	YES	NO	bb	bb	0.730
43	Total-hexafurans	35.22	1.055e3	7.549e2	1.045	1.40	1.24	8.7	YES	NO	bb	bb	0.197
44	123678-HxCDF	35.02	3.639e4	3.035e4	1.037	1.20	1.24	267.0	YES	NO	db	db	6.957
45	123478-HxCDF	34.89	1.963e5	1.636e5	1.017	1.20	1.24	1468.5	YES	NO	bd	bd	38.318
46	Total-hexafurans	34.73	1.610e4	1.356e4	1.045	1.19	1.24	131.3	YES	NO	bb	bb	3.228
47	Total-hexafurans	34.27	6.304e5	5.247e5	1.045	1.20	1.24	4699.2	YES	NO	bb	bb	125.720
48	Total-hexafurans	33.96	9.776e3	8.482e3	1.045	1.15	1.24	73.0	YES	NO	bb	bb	1.987
49	Total-hexafurans	33.70	1.307e3	1.144e3	1.045	1.14	1.24	10.1	YES	NO	bb	bb	0.267
50	Total-hexafurans	33.43	2.907e5	2.437e5	1.045	1.19	1.24	2063.7	YES	NO	bb	bb	58.165
51	123468-HXCDF	33.22	8.434e4	7.014e4	1.087	1.20	1.24	602.5	YES	NO	bb	bb	15.394
52	123789-HxCDF	36.91	2.495e4	2.114e4	1.030	1.18	1.24	186.5	YES	NO	bb	bb	5.613
53	1234789-HpCDF	41.02	7.629e4	6.950e4	1.283	1.10	1.05	380.5	YES	NO	bb	bb	20.587
54	Total-heptafurans	39.42	1.579e6	1.498e6	1.305	1.05	1.05	8572.1	YES	NO	bb	bb	381.361
55	Total-heptafurans	39.18	1.243e4	1.169e4	1.305	1.06	1.05	66.1	YES	NO	bb	bb	2.990
56	1234678-HpCDF	38.77	6.750e5	6.452e5	1.327	1.05	1.05	3731.7	YES	NO	bb	bb	145.304
57	OCDF	45.24	7.964e5	8.772e5	1.447	0.91	0.89	7719.9	YES	NO	bb	bb	273.175
58	Total-penta1	27.92	5.618e2	3.344e2		1.68	1.55	8.4	YES	NO	bb	bb	0.082
59	Total-penta1	27.18	1.642e5	1.069e5		1.54	1.55	2253.7	YES	NO	bb	bb	24.653

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.02	5.001e3	5.699e3	0.879	0.88	0.77	64.7	YES	NO	bb	bb	1.196
2	Total-tetradioxins	24.73	2.908e3	3.548e3	0.879	0.82	0.77	38.3	YES	NO	bb	bb	0.721
3	Total-tetradioxins	24.02	2.093e3	2.833e3	0.879	0.74	0.77	31.4	YES	NO	bb	bb	0.550
4	Total-tetradioxins	23.81	7.063e3	8.687e3	0.879	0.81	0.77	97.5	YES	NO	bb	bb	1.760
5	1368-TCDD	23.52	7.639e3	9.163e3	0.923	0.83	0.77	107.9	YES	NO	bd	bb	1.788
6	Total-tetradioxins	26.55	1.287e3	1.731e3	0.879	0.74	0.77	15.7	YES	NO	db	db	0.337
7	Total-tetradioxins	26.03	2.147e3	2.528e3	0.879	0.85	0.77	19.8	YES	NO	bb	bb	0.522
8	Total-tetradioxins	25.59	1.645e3	1.974e3	0.879	0.83	0.77	19.5	YES	NO	dd	bd	0.404

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	30.12	7.856e3	4.457e3	1.331	1.76	1.55	145.9	YES	NO	bd	bb	1.496
2	Total-pentadioxins	29.91	1.067e4	6.999e3	1.331	1.52	1.55	192.2	YES	NO	bb	bb	2.147
3	Total-pentadioxins	29.31	3.686e3	2.307e3	1.331	1.60	1.55	68.1	YES	NO	bb	bb	0.728
4	12479-PECDD	28.82	3.357e4	2.112e4	1.843	1.59	1.55	389.8	YES	NO	bb	bb	4.797
5	12389-PECDD	31.91	2.122e3	1.525e3	1.154	1.39	1.55	42.9	YES	NO	bb	bb	0.511
6	12378-PeCDD	31.51	8.097e3	5.002e3	0.995	1.62	1.55	135.9	YES	NO	bb	bb	2.128
7	Total-pentadioxins	30.83	3.492e3	2.322e3	1.331	1.50	1.55	63.9	YES	NO	bb	bd	0.707

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.50	1.986e4	1.611e4	0.950	1.23	1.24	142.3	YES	NO	bb	bb	4.981
2	Total-hexadioxins	36.28	5.278e3	4.077e3	1.028	1.29	1.24	38.9	YES	NO	bb	bb	1.198
3	123678-HxCDD	36.12	6.021e4	4.923e4	1.009	1.22	1.24	434.5	YES	NO	db	db	14.377
4	123478-HxCDD	36.00	8.470e3	7.067e3	1.027	1.20	1.24	64.9	YES	NO	bd	bd	1.976
5	Total-hexadioxins	35.22	4.216e3	3.601e3	1.028	1.17	1.24	31.5	YES	NO	db	db	1.001
6	Total-hexadioxins	35.12	1.429e5	1.149e5	1.028	1.24	1.24	746.5	YES	NO	bd	bd	33.013
7	Total-hexadioxins	34.76	2.907e4	2.312e4	1.028	1.26	1.24	202.9	YES	NO	bb	bb	6.682
8	124679-HXCDD	33.99	1.225e5	9.874e4	1.125	1.24	1.24	829.5	YES	NO	bb	bb	25.704

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	9.961e5	9.292e5	1.068	1.07	1.05	3212.0	YES	NO	bb	bb	372.705
2	1234679-HPCDD	39.21	1.070e6	1.001e6	1.211	1.07	1.05	3743.3	YES	NO	bb	bb	353.643

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.02	5.001e3	5.699e3	0.879	0.88	0.77	64.7	YES	NO	bb	bb	1.196
2	Total-tetradioxins	24.73	2.908e3	3.548e3	0.879	0.82	0.77	38.3	YES	NO	bb	bb	0.721
3	Total-tetradioxins	24.02	2.093e3	2.833e3	0.879	0.74	0.77	31.4	YES	NO	bb	bb	0.550
4	Total-tetradioxins	23.81	7.063e3	8.687e3	0.879	0.81	0.77	97.5	YES	NO	bb	bb	1.760
5	1368-TCDD	23.52	7.639e3	9.163e3	0.923	0.83	0.77	107.9	YES	NO	bd	bb	1.788
6	Total-tetradioxins	26.55	1.287e3	1.731e3	0.879	0.74	0.77	15.7	YES	NO	db	db	0.337
7	Total-tetradioxins	26.03	2.147e3	2.528e3	0.879	0.85	0.77	19.8	YES	NO	bb	bb	0.522
8	Total-tetradioxins	25.59	1.645e3	1.974e3	0.879	0.83	0.77	19.5	YES	NO	dd	bd	0.404
9	Total-pentadioxins	30.12	7.856e3	4.457e3	1.331	1.76	1.55	145.9	YES	NO	bd	bb	1.496
10	Total-pentadioxins	29.91	1.067e4	6.999e3	1.331	1.52	1.55	192.2	YES	NO	bb	bb	2.147
11	Total-pentadioxins	29.31	3.686e3	2.307e3	1.331	1.60	1.55	68.1	YES	NO	bb	bb	0.728
12	12479-PECDD	28.82	3.357e4	2.112e4	1.843	1.59	1.55	389.8	YES	NO	bb	bb	4.797
13	12389-PECDD	31.91	2.122e3	1.525e3	1.154	1.39	1.55	42.9	YES	NO	bb	bb	0.511
14	12378-PeCDD	31.51	8.097e3	5.002e3	0.995	1.62	1.55	135.9	YES	NO	bb	bb	2.128
15	Total-pentadioxins	30.83	3.492e3	2.322e3	1.331	1.50	1.55	63.9	YES	NO	bb	bd	0.707
16	123789-HxCDD	36.50	1.986e4	1.611e4	0.950	1.23	1.24	142.3	YES	NO	bb	bb	4.981
17	Total-hexadioxins	36.28	5.278e3	4.077e3	1.028	1.29	1.24	38.9	YES	NO	bb	bb	1.198
18	123678-HxCDD	36.12	6.021e4	4.923e4	1.009	1.22	1.24	434.5	YES	NO	db	db	14.377
19	123478-HxCDD	36.00	8.470e3	7.067e3	1.027	1.20	1.24	64.9	YES	NO	bd	bd	1.976
20	Total-hexadioxins	35.22	4.216e3	3.601e3	1.028	1.17	1.24	31.5	YES	NO	db	db	1.001
21	Total-hexadioxins	35.12	1.429e5	1.149e5	1.028	1.24	1.24	746.5	YES	NO	bd	bd	33.013
22	Total-hexadioxins	34.76	2.907e4	2.312e4	1.028	1.26	1.24	202.9	YES	NO	bb	bb	6.682
23	124679-HXCDD	33.99	1.225e5	9.874e4	1.125	1.24	1.24	829.5	YES	NO	bb	bb	25.704
24	1234678-HpCDD	40.26	9.961e5	9.292e5	1.068	1.07	1.05	3212.0	YES	NO	bb	bb	372.705
25	1234679-HPCDD	39.21	1.070e6	1.001e6	1.211	1.07	1.05	3743.3	YES	NO	bb	bb	353.643
26	OCDD	45.00	6.521e6	7.424e6	1.181	0.88	0.89	21229.5	YES	NO	bb	bb	2789.0...

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.54	4.056e3	4.913e3	1.192	0.83	0.77	38.0	YES	NO	dd	dd	0.623
2	Total-tetrafurans	24.45	6.424e3	8.016e3	1.192	0.80	0.77	52.5	YES	NO	dd	dd	1.003
3	Total-tetrafurans	24.01	5.375e3	7.186e3	1.192	0.75	0.77	54.1	YES	NO	db	db	0.872
4	Total-tetrafurans	23.89	3.833e3	5.228e3	1.192	0.73	0.77	37.2	YES	NO	dd	dd	0.629
5	Total-tetrafurans	23.76	1.292e4	1.664e4	1.192	0.78	0.77	131.9	YES	NO	dd	dd	2.053
6	Total-tetrafurans	23.60	3.110e3	3.999e3	1.192	0.78	0.77	32.3	YES	NO	dd	dd	0.494
7	Total-tetrafurans	23.52	9.271e3	1.127e4	1.192	0.82	0.77	96.0	YES	NO	dd	dd	1.427
8	Total-tetrafurans	23.42	5.051e3	6.430e3	1.192	0.79	0.77	46.3	YES	NO	dd	dd	0.798
9	Total-tetrafurans	23.10	1.955e4	2.460e4	1.192	0.79	0.77	192.7	YES	NO	bd	bd	3.066
10	Total-tetrafurans	22.53	5.295e3	6.080e3	1.192	0.87	0.77	51.8	YES	NO	bb	bb	0.790
11	1368-TCDF	22.25	4.246e3	5.596e3	1.425	0.76	0.77	41.8	YES	NO	bb	bb	0.572
12	1289-TCDF	27.20	9.736e2	1.102e3	1.043	0.88	0.77	9.0	YES	NO	bd	dd	0.165
13	Total-tetrafurans	26.80	7.504e2	9.515e2	1.192	0.79	0.77	7.0	YES	NO	bb	bb	0.118
14	Total-tetrafurans	26.14	2.421e3	2.957e3	1.192	0.82	0.77	23.3	YES	NO	db	db	0.374
15	Total-tetrafurans	26.00	6.685e3	8.809e3	1.192	0.76	0.77	59.8	YES	NO	dd	dd	1.076
16	Total-tetrafurans	25.91	3.021e3	3.857e3	1.192	0.78	0.77	29.2	YES	NO	dd	dd	0.478
17	2378-TCDF	25.78	6.639e3	8.541e3	1.108	0.78	0.77	65.6	YES	NO	bd	dd	1.135
18	Total-tetrafurans	25.58	2.124e3	2.583e3	1.192	0.82	0.77	20.4	YES	NO	db	dd	0.327
19	Total-tetrafurans	25.55	1.765e3	2.659e3	1.192	0.66	0.77	21.2	YES	NO	bd	dd	0.307
20	Total-tetrafurans	25.28	2.039e3	2.532e3	1.192	0.81	0.77	18.9	YES	NO	dd	dd	0.318
21	Total-tetrafurans	25.10	3.852e3	4.826e3	1.192	0.80	0.77	35.0	YES	NO	bd	bd	0.603
22	Total-tetrafurans	24.87	6.577e3	8.099e3	1.192	0.81	0.77	63.5	YES	NO	db	bb	1.019
23	Total-tetrafurans	24.67	1.503e4	1.757e4	1.192	0.86	0.77	142.3	YES	NO	dd	db	2.265
24	Total-pentafurans	30.13	1.659e4	1.126e4	1.047	1.47	1.55	160.4	YES	NO	bd	bd	2.280
25	12378-PeCDF	29.92	1.215e4	8.207e3	1.015	1.48	1.55	113.9	YES	NO	bb	bb	1.673
26	Total-pentafurans	29.64	7.464e3	4.791e3	1.047	1.56	1.55	72.1	YES	NO	db	db	1.003
27	Total-pentafurans	29.56	1.617e4	1.018e4	1.047	1.59	1.55	126.6	YES	NO	dd	dd	2.157
28	Total-pentafurans	29.46	5.480e3	3.456e3	1.047	1.59	1.55	56.5	YES	NO	dd	dd	0.732
29	Total-pentafurans	29.35	2.421e3	1.612e3	1.047	1.50	1.55	27.0	YES	NO	dd	dd	0.330
30	Total-pentafurans	29.29	2.673e3	1.532e3	1.047	1.74	1.55	23.4	YES	NO	dd	bd	0.344
31	Total-pentafurans	28.84	1.681e5	1.100e5	1.047	1.53	1.55	1348.8	YES	NO	dd	dd	22.772
32	Total-pentafurans	28.66	1.655e4	1.029e4	1.047	1.61	1.55	128.1	YES	NO	dd	dd	2.197
33	Total-pentafurans	28.55	3.018e3	1.718e3	1.047	1.76	1.55	29.5	YES	NO	bd	bd	0.388
34	12389-PECDF	32.22	1.704e3	1.247e3	1.000	1.37	1.55	18.3	YES	NO	bd	bd	0.246
35	23478-PeCDF	31.27	2.787e4	1.915e4	1.126	1.46	1.55	259.9	YES	NO	dd	dd	3.680
36	Total-pentafurans	31.12	2.798e4	1.871e4	1.047	1.50	1.55	252.4	YES	NO	dd	dd	3.822
37	Total-pentafurans	31.01	6.040e3	3.600e3	1.047	1.68	1.55	60.0	YES	NO	bd	bd	0.789

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-pentafurans	30.77	1.161e3	8.446e2	1.047	1.38	1.55	9.6	YES	NO	bb	bb	0.164
39	Total-pentafurans	30.40	5.695e2	3.329e2	1.047	1.71	1.55	6.4	YES	NO	bb	bb	0.074
40	Total-pentafurans	30.23	2.201e3	1.398e3	1.047	1.57	1.55	23.0	YES	NO	db	db	0.295
41	234678-HxCDF	35.86	5.719e4	4.480e4	1.052	1.28	1.24	324.6	YES	NO	bb	bb	11.109
42	Total-hexafurans	35.37	3.676e3	3.028e3	1.045	1.21	1.24	29.5	YES	NO	bb	bb	0.730
43	Total-hexafurans	35.22	1.055e3	7.549e2	1.045	1.40	1.24	8.7	YES	NO	bb	bb	0.197
44	123678-HxCDF	35.02	3.639e4	3.035e4	1.037	1.20	1.24	267.0	YES	NO	db	db	6.957
45	123478-HxCDF	34.89	1.963e5	1.636e5	1.017	1.20	1.24	1468.5	YES	NO	bd	bd	38.318
46	Total-hexafurans	34.73	1.610e4	1.356e4	1.045	1.19	1.24	131.3	YES	NO	bb	bb	3.228
47	Total-hexafurans	34.27	6.304e5	5.247e5	1.045	1.20	1.24	4699.2	YES	NO	bb	bb	125.720
48	Total-hexafurans	33.96	9.776e3	8.482e3	1.045	1.15	1.24	73.0	YES	NO	bb	bb	1.987
49	Total-hexafurans	33.70	1.307e3	1.144e3	1.045	1.14	1.24	10.1	YES	NO	bb	bb	0.267
50	Total-hexafurans	33.43	2.907e5	2.437e5	1.045	1.19	1.24	2063.7	YES	NO	bb	bb	58.165
51	123468-HXCDF	33.22	8.434e4	7.014e4	1.087	1.20	1.24	602.5	YES	NO	bb	bb	15.394
52	123789-HxCDF	36.91	2.495e4	2.114e4	1.030	1.18	1.24	186.5	YES	NO	bb	bb	5.613
53	1234789-HpCDF	41.02	7.629e4	6.950e4	1.283	1.10	1.05	380.5	YES	NO	bb	bb	20.587
54	Total-heptafurans	39.42	1.579e6	1.498e6	1.305	1.05	1.05	8572.1	YES	NO	bb	bb	381.361
55	Total-heptafurans	39.18	1.243e4	1.169e4	1.305	1.06	1.05	66.1	YES	NO	bb	bb	2.990
56	1234678-HpCDF	38.77	6.750e5	6.452e5	1.327	1.05	1.05	3731.7	YES	NO	bb	bb	145.304
57	OCDF	45.24	7.964e5	8.772e5	1.447	0.91	0.89	7719.9	YES	NO	bb	bb	273.175
58	Total-penta1	27.92	5.618e2	3.344e2		1.68	1.55	8.4	YES	NO	bb	bb	0.082
59	Total-penta1	27.18	1.642e5	1.069e5		1.54	1.55	2253.7	YES	NO	bb	bb	24.653
60	Total-tetradioxins	25.02	5.001e3	5.699e3	0.879	0.88	0.77	64.7	YES	NO	bb	bb	1.196
61	Total-tetradioxins	24.73	2.908e3	3.548e3	0.879	0.82	0.77	38.3	YES	NO	bb	bb	0.721
62	Total-tetradioxins	24.02	2.093e3	2.833e3	0.879	0.74	0.77	31.4	YES	NO	bb	bb	0.550
63	Total-tetradioxins	23.81	7.063e3	8.687e3	0.879	0.81	0.77	97.5	YES	NO	bb	bb	1.760
64	1368-TCDD	23.52	7.639e3	9.163e3	0.923	0.83	0.77	107.9	YES	NO	bd	bb	1.788
65	Total-tetradioxins	26.55	1.287e3	1.731e3	0.879	0.74	0.77	15.7	YES	NO	db	db	0.337
66	Total-tetradioxins	26.03	2.147e3	2.528e3	0.879	0.85	0.77	19.8	YES	NO	bb	bb	0.522
67	Total-tetradioxins	25.59	1.645e3	1.974e3	0.879	0.83	0.77	19.5	YES	NO	dd	bd	0.404
68	Total-pentadioxins	30.12	7.856e3	4.457e3	1.331	1.76	1.55	145.9	YES	NO	bd	bb	1.496
69	Total-pentadioxins	29.91	1.067e4	6.999e3	1.331	1.52	1.55	192.2	YES	NO	bb	bb	2.147
70	Total-pentadioxins	29.31	3.686e3	2.307e3	1.331	1.60	1.55	68.1	YES	NO	bb	bb	0.728
71	12479-PECDD	28.82	3.357e4	2.112e4	1.843	1.59	1.55	389.8	YES	NO	bb	bb	4.797
72	12389-PECDD	31.91	2.122e3	1.525e3	1.154	1.39	1.55	42.9	YES	NO	bb	bb	0.511
73	12378-PeCDD	31.51	8.097e3	5.002e3	0.995	1.62	1.55	135.9	YES	NO	bb	bb	2.128
74	Total-pentadioxins	30.83	3.492e3	2.322e3	1.331	1.50	1.55	63.9	YES	NO	bb	bd	0.707

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
75	123789-HxCDD	36.50	1.986e4	1.611e4	0.950	1.23	1.24	142.3	YES	NO	bb	bb	4.981
76	Total-hexadioxins	36.28	5.278e3	4.077e3	1.028	1.29	1.24	38.9	YES	NO	bb	bb	1.198
77	123678-HxCDD	36.12	6.021e4	4.923e4	1.009	1.22	1.24	434.5	YES	NO	db	db	14.377
78	123478-HxCDD	36.00	8.470e3	7.067e3	1.027	1.20	1.24	64.9	YES	NO	bd	bd	1.976
79	Total-hexadioxins	35.22	4.216e3	3.601e3	1.028	1.17	1.24	31.5	YES	NO	db	db	1.001
80	Total-hexadioxins	35.12	1.429e5	1.149e5	1.028	1.24	1.24	746.5	YES	NO	bd	bd	33.013
81	Total-hexadioxins	34.76	2.907e4	2.312e4	1.028	1.26	1.24	202.9	YES	NO	bb	bb	6.682
82	124679-HXCDD	33.99	1.225e5	9.874e4	1.125	1.24	1.24	829.5	YES	NO	bb	bb	25.704
83	1234678-HpCDD	40.26	9.961e5	9.292e5	1.068	1.07	1.05	3212.0	YES	NO	bb	bb	372.705
84	1234679-HPCDD	39.21	1.070e6	1.001e6	1.211	1.07	1.05	3743.3	YES	NO	bb	bb	353.643
85	OCDD	45.00	6.521e6	7.424e6	1.181	0.88	0.89	21229.5	YES	NO	bb	bb	2789.0...

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.24	3.364e6					59.0	YES		dd		
2	FUNCTION1 PFK	21.19	3.041e6					58.7	YES		dd		
3	FUNCTION1 PFK	21.07	3.105e6					60.5	YES		bd		
4	FUNCTION1 PFK	23.51	1.541e6					32.8	YES		dd		
5	FUNCTION1 PFK	23.36	2.746e6					37.1	YES		dd		
6	FUNCTION1 PFK	23.33	3.772e6					36.1	YES		dd		
7	FUNCTION1 PFK	23.10	1.929e6					34.5	YES		dd		
8	FUNCTION1 PFK	22.98	2.969e6					41.3	YES		dd		
9	FUNCTION1 PFK	22.78	5.726e6					43.7	YES		dd		
10	FUNCTION1 PFK	22.66	3.763e6					45.7	YES		dd		
11	FUNCTION1 PFK	22.45	6.927e6					48.5	YES		dd		
12	FUNCTION1 PFK	22.40	9.213e6					48.0	YES		dd		
13	FUNCTION1 PFK	22.12	2.128e6					47.1	YES		dd		
14	FUNCTION1 PFK	21.97	3.850e6					53.9	YES		dd		
15	FUNCTION1 PFK	21.92	3.364e6					53.4	YES		dd		
16	FUNCTION1 PFK	21.81	1.684e6					54.1	YES		dd		
17	FUNCTION1 PFK	21.78	2.257e6					54.5	YES		dd		
18	FUNCTION1 PFK	21.60	8.844e6					58.6	YES		dd		
19	FUNCTION1 PFK	21.41	8.124e6					59.2	YES		dd		
20	FUNCTION1 PFK	24.99	8.315e5					16.5	YES		dd		
21	FUNCTION1 PFK	24.94	1.037e6					17.1	YES		dd		
22	FUNCTION1 PFK	24.84	8.954e5					17.9	YES		dd		
23	FUNCTION1 PFK	24.76	9.430e5					18.6	YES		dd		
24	FUNCTION1 PFK	24.69	7.745e5					19.0	YES		dd		
25	FUNCTION1 PFK	24.64	1.226e6					19.6	YES		dd		
26	FUNCTION1 PFK	24.49	2.566e6					21.3	YES		dd		
27	FUNCTION1 PFK	24.29	2.065e6					22.9	YES		dd		
28	FUNCTION1 PFK	24.20	1.229e6					24.1	YES		dd		
29	FUNCTION1 PFK	24.04	3.987e6					26.8	YES		dd		
30	FUNCTION1 PFK	23.95	8.186e5					26.2	YES		dd		
31	FUNCTION1 PFK	23.90	8.075e5					26.1	YES		dd		
32	FUNCTION1 PFK	23.83	1.365e6					26.5	YES		dd		
33	FUNCTION1 PFK	23.76	1.128e6					27.3	YES		dd		
34	FUNCTION1 PFK	23.70	1.337e6					27.1	YES		bd		
35	FUNCTION1 PFK	23.55	1.692e6					32.6	YES		db		
36	FUNCTION1 PFK	27.32	4.190e5					7.1	YES		dd		
37	FUNCTION1 PFK	27.26	5.408e5					6.6	YES		dd		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	27.09	3.420e5					4.4	YES		dd		
39	FUNCTION1 PFK	26.94	1.192e5					2.8	NO		dd		
40	FUNCTION1 PFK	26.89	2.688e5					2.9	NO		bd		
41	FUNCTION1 PFK	26.43	1.333e4					0.5	NO		bb		
42	FUNCTION1 PFK	26.23	6.904e4					1.6	NO		db		
43	FUNCTION1 PFK	26.14	1.020e5					2.4	NO		dd		
44	FUNCTION1 PFK	26.08	1.311e5					2.8	NO		bd		
45	FUNCTION1 PFK	25.91	3.979e5					6.7	YES		db		
46	FUNCTION1 PFK	25.84	6.459e5					8.4	YES		dd		
47	FUNCTION1 PFK	25.65	1.304e6					10.1	YES		dd		
48	FUNCTION1 PFK	25.50	7.856e5					11.3	YES		dd		
49	FUNCTION1 PFK	25.28	1.970e6					13.7	YES		dd		
50	FUNCTION1 PFK	25.19	1.020e6					14.3	YES		dd		
51	FUNCTION1 PFK	25.08	7.868e5					15.7	YES		dd		
52	FUNCTION1 PFK	27.97	1.697e5					3.2	YES		db		
53	FUNCTION1 PFK	27.89	2.922e5					5.2	YES		dd		
54	FUNCTION1 PFK	27.79	5.950e5					7.4	YES		dd		
55	FUNCTION1 PFK	27.70	4.147e5					7.8	YES		bd		
56	FUNCTION1 PFK	27.50	4.135e5					8.3	YES		db		
57	FUNCTION1 PFK	27.48	2.542e5					8.4	YES		dd		
58	FUNCTION1 PFK	27.42	3.910e5					8.0	YES		dd		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.40	4.832e5					5.8	YES		bb		0.000
2	FUNCTION2 PFK	29.49	1.882e5					1.8	NO		bb		0.000
3	FUNCTION2 PFK	29.19	5.713e5					5.9	YES		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	35.65	6.029e5					7.5	YES		db		0.000
2	FUNCTION3 PFK	35.59	6.837e4					4.5	YES		bd		0.000
3	FUNCTION3 PFK	35.01	1.719e5					5.4	YES		bb		0.000
4	FUNCTION3 PFK	33.04	3.673e4					2.9	NO		bb		0.000
5	FUNCTION3 PFK	37.55	5.377e5					2.3	NO		bb		0.000
6	FUNCTION3 PFK	37.22	5.056e5					15.3	YES		db		0.000
7	FUNCTION3 PFK	37.16	5.653e5					16.4	YES		bd		0.000
8	FUNCTION3 PFK	37.01	6.363e5					13.0	YES		bb		0.000
9	FUNCTION3 PFK	35.89	2.158e5					6.1	YES		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.84	6.910e4					3.5	YES		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.82	8.491e6					20.5	YES		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.75	1.644e3					31.5	YES		bd		0.000
2	FUNCTION1 HXCD...	25.11	5.240e2					11.0	YES		bb		0.000
3	FUNCTION1 HXCD...	23.75	2.399e3					51.5	YES		bb		0.000
4	FUNCTION1 HXCD...	22.75	2.585e2					6.2	YES		bb		0.000
5	FUNCTION1 HXCD...	22.33	3.623e2					7.6	YES		bb		0.000
6	FUNCTION1 HXCD...	22.18	4.226e2					10.4	YES		bb		0.000
7	FUNCTION1 HXCD...	27.65	3.714e2					7.7	YES		bb		0.000
8	FUNCTION1 HXCD...	26.79	5.441e2					10.9	YES		bb		0.000
9	FUNCTION1 HXCD...	26.12	1.796e3					38.4	YES		db		0.000
10	FUNCTION1 HXCD...	25.93	8.355e2					16.7	YES		dd		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.91	3.209e2					4.9	YES		bb		0.000
2	FUNCTION1 HPCD...	27.38	7.262e1					2.5	NO		bb		0.000
3	FUNCTION1 HPCD...	23.37	1.300e3					18.1	YES		bb		0.000
4	FUNCTION1 HPCD...	22.33	2.485e2					3.6	YES		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.20	5.660e2					9.3	YES		bb		0.000
2	FUNCTION2 HPCD...	29.63	7.775e1					2.3	NO		bb		0.000
3	FUNCTION2 HPCD...	29.07	3.364e2					6.6	YES		bb		0.000
4	FUNCTION2 HPCD...	28.94	1.490e3					22.7	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	33.08	2.886e2					8.8	YES		bb		0.000
2	FUNCTION3 OCDPE	37.25	8.080e1					3.9	YES		bb		0.000
3	FUNCTION3 OCDPE	36.49	2.506e2					5.1	YES		bb		0.000
4	FUNCTION3 OCDPE	36.18	8.102e1					3.3	YES		db		0.000
5	FUNCTION3 OCDPE	36.12	1.618e2					4.6	YES		dd		0.000
6	FUNCTION3 OCDPE	35.99	1.999e2					4.6	YES		dd		0.000
7	FUNCTION3 OCDPE	35.90	7.597e1					2.0	NO		bd		0.000
8	FUNCTION3 OCDPE	34.20	6.934e2					14.5	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.41	6.341e3					169.8	YES		db		0.000
2	FUNCTION4 NCDPE	38.31	1.351e2					4.8	YES		bd		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.01	1.008e3					15.4	YES		bb		0.000

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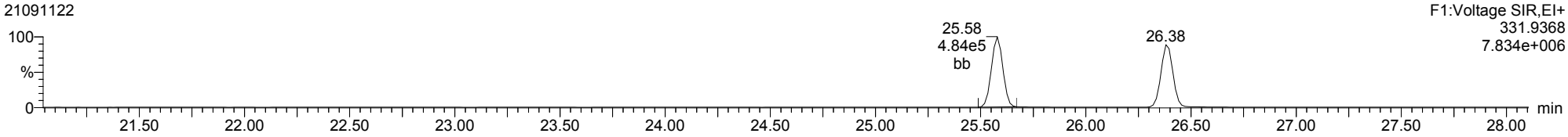

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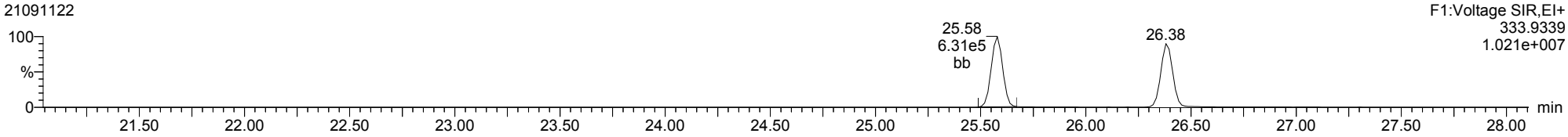

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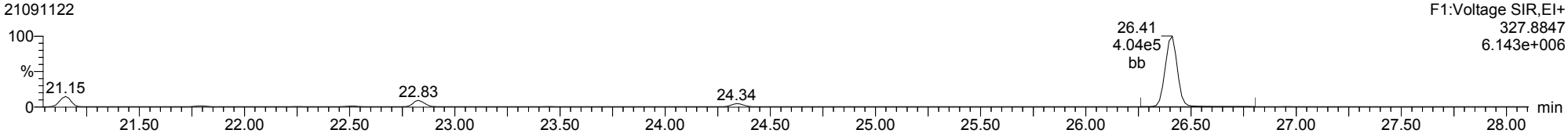

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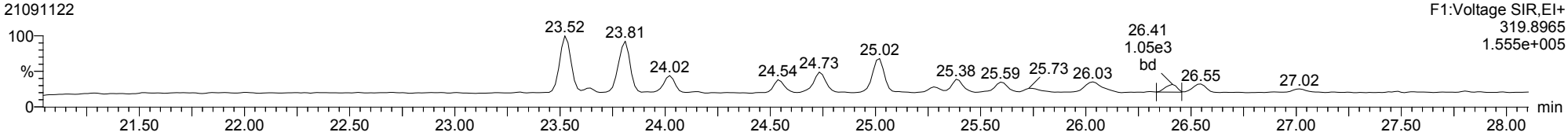
2378-TCDD



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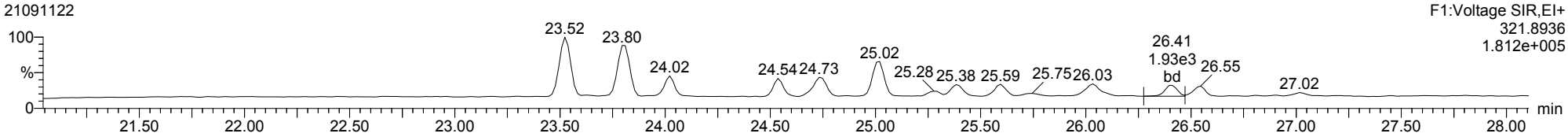

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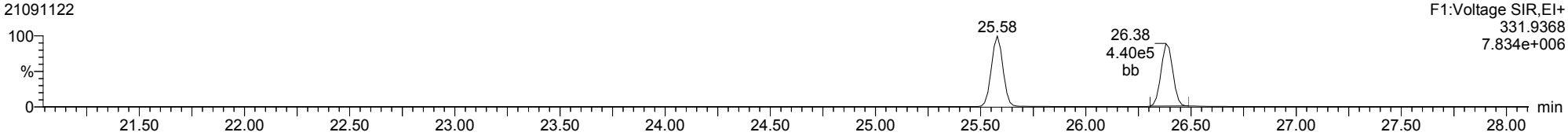

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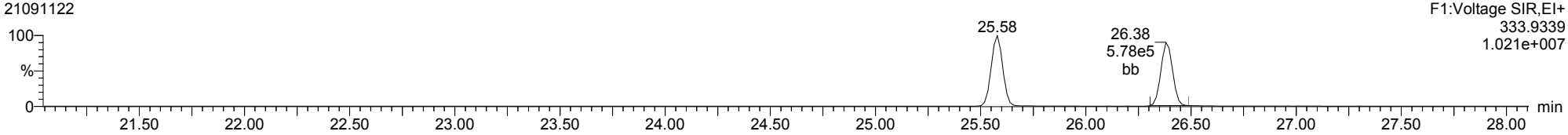
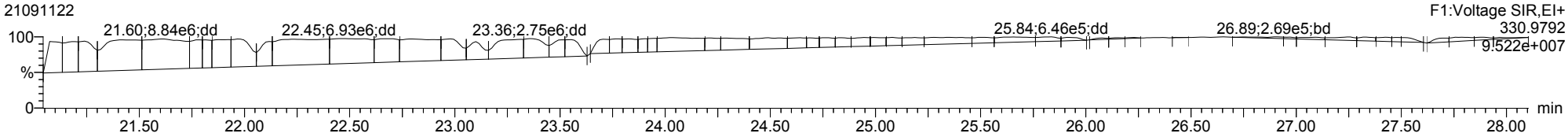


FUNCTION1 PFK



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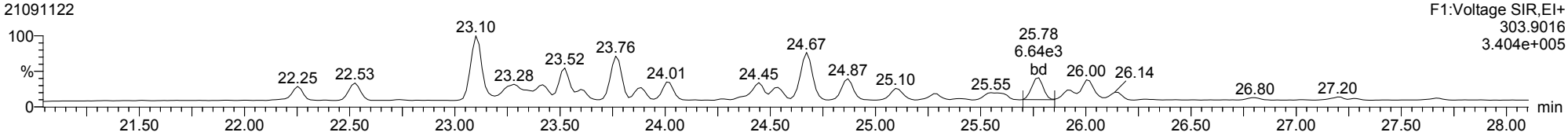
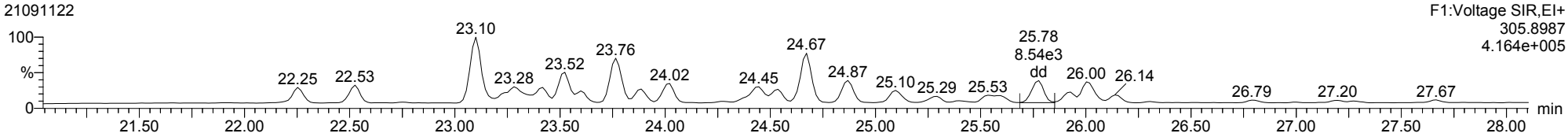
2378-TCDF



2378-TCDF



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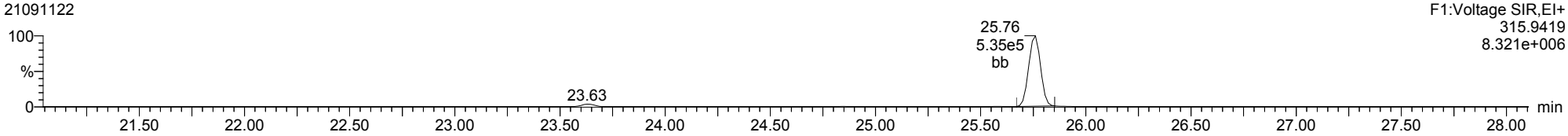

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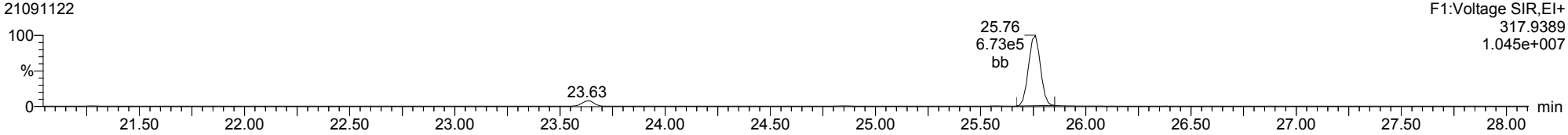
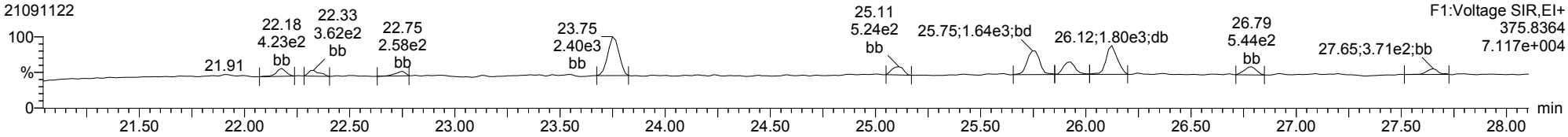


FUNCTION1 HXCDPE



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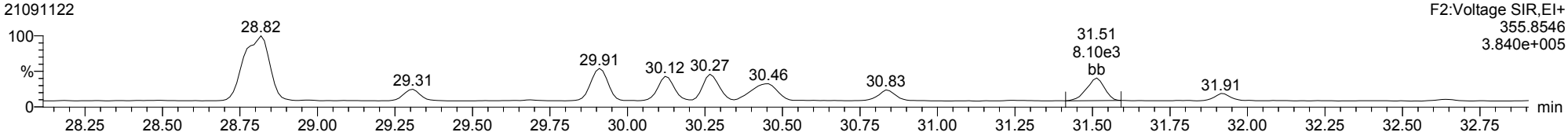
12378-PeCDD



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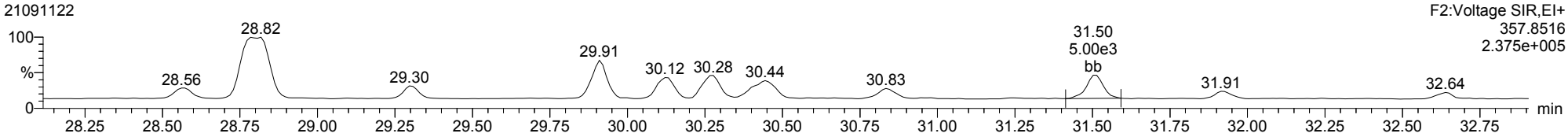

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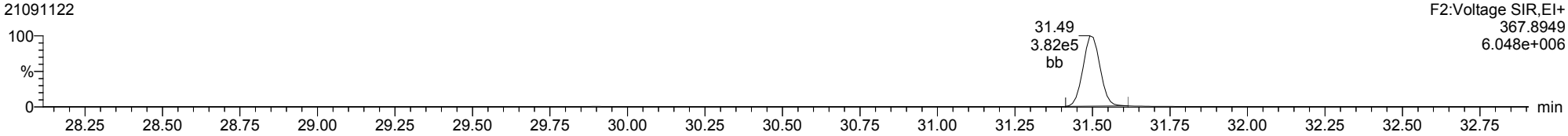

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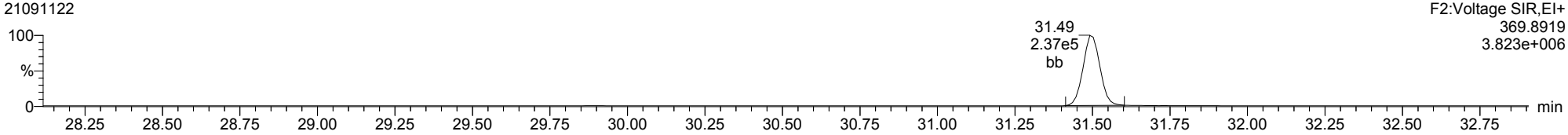

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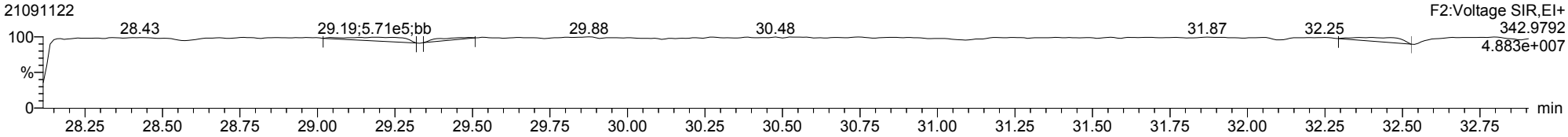

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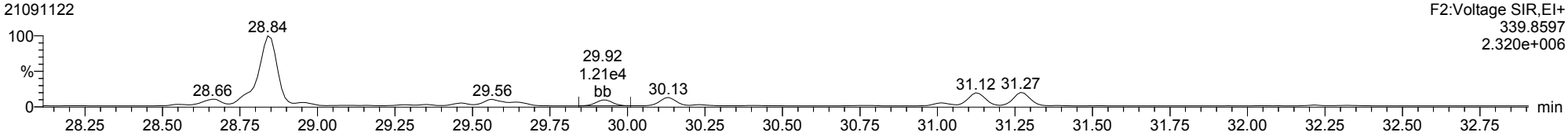

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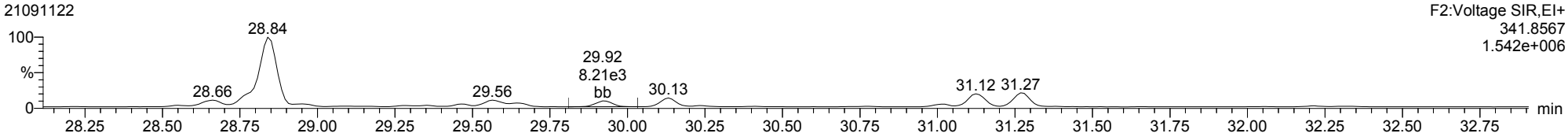

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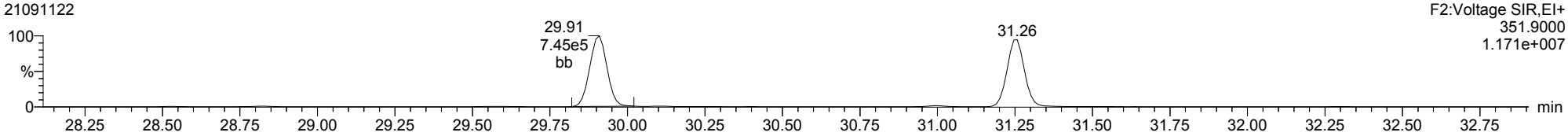

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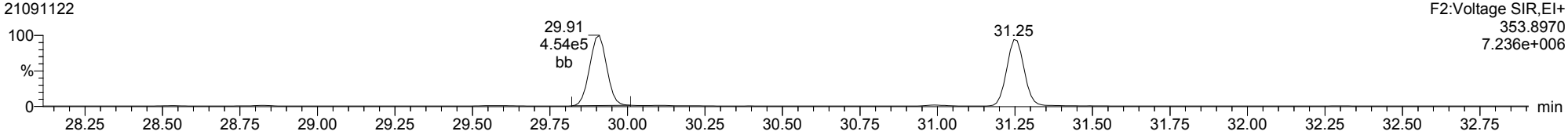
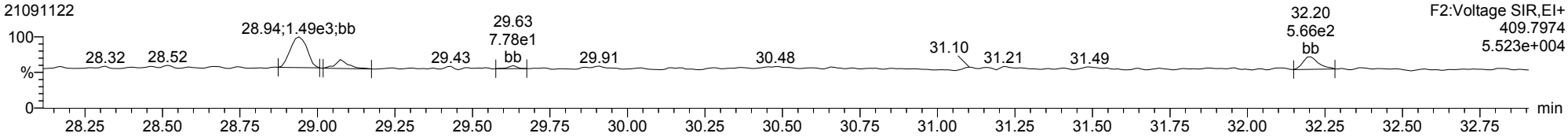


FUNCTION2 HPCDPE



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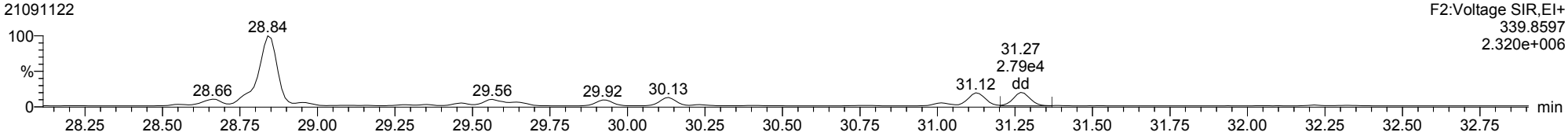
23478-PeCDF



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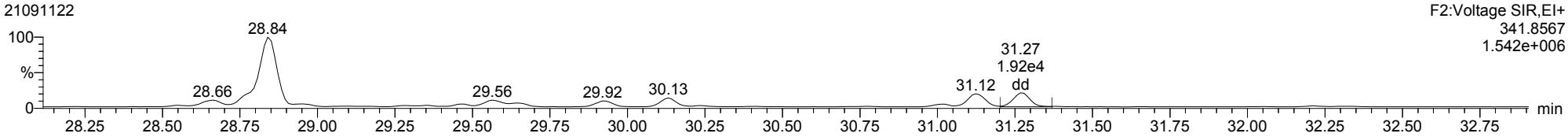

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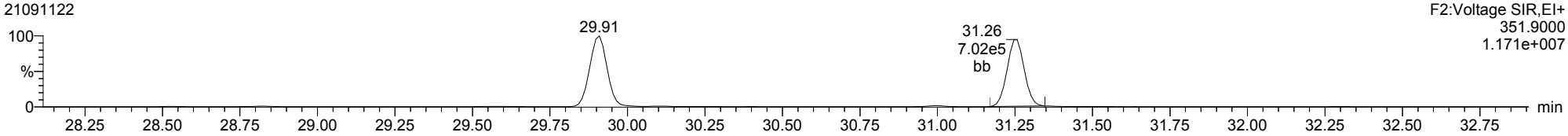

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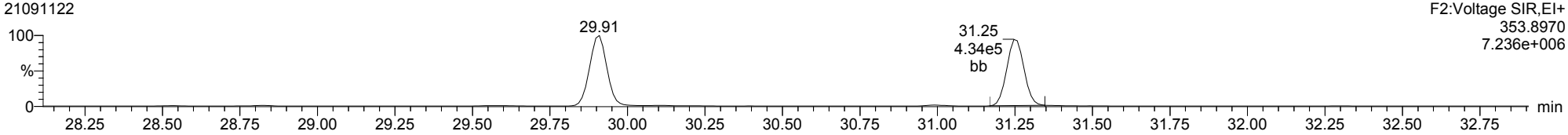

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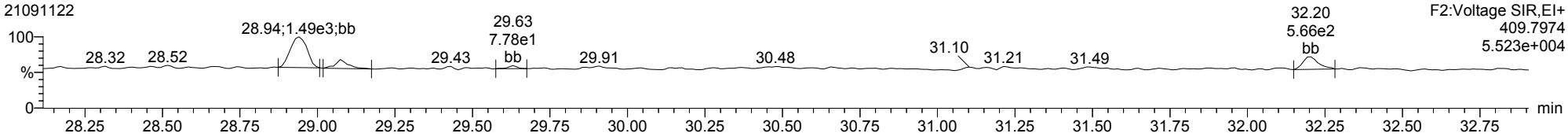

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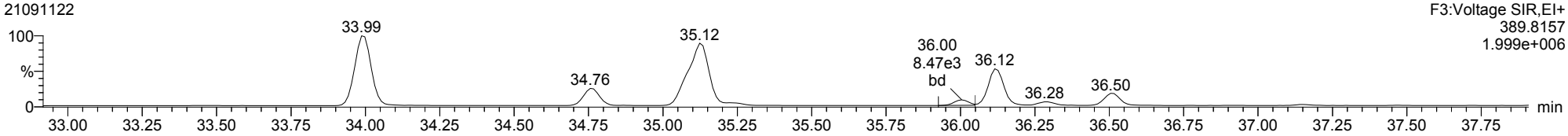

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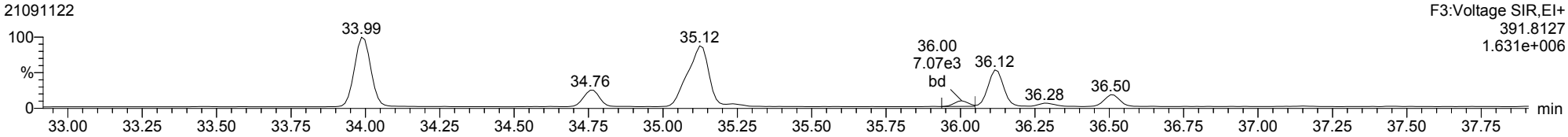

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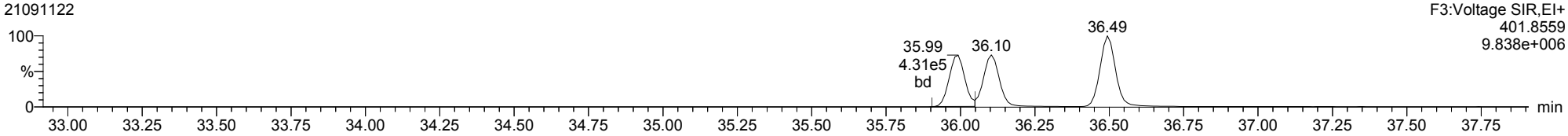

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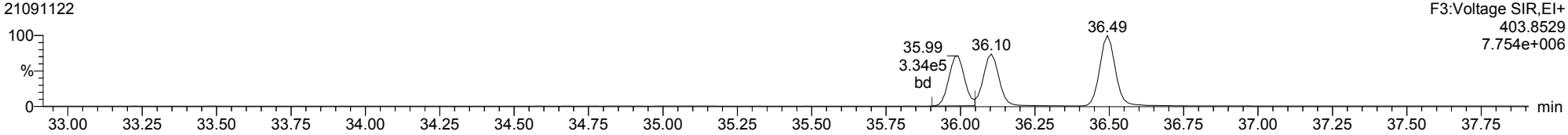

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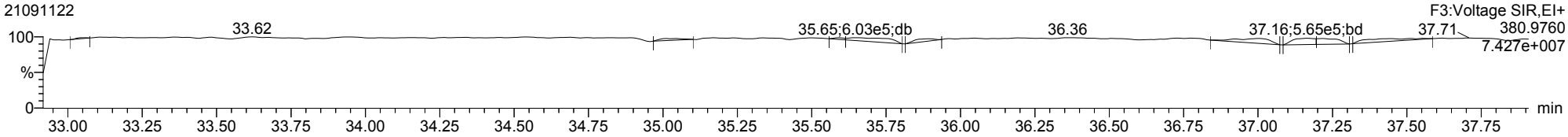

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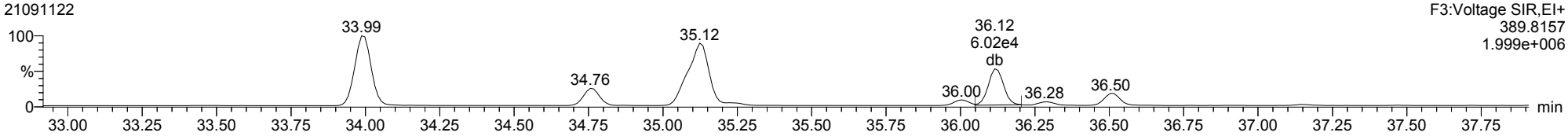
123678-HxCDD



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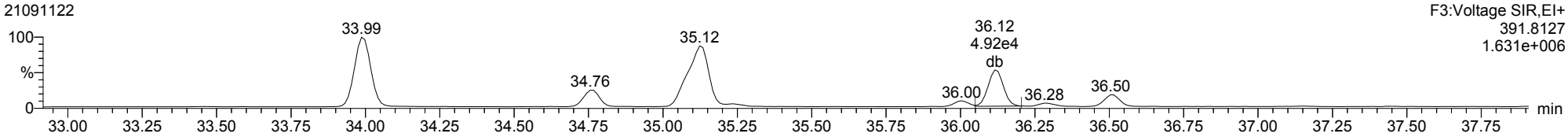

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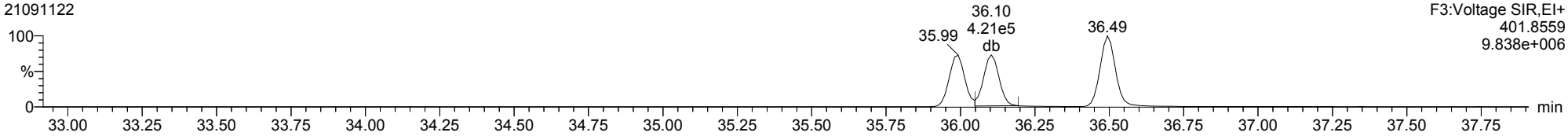

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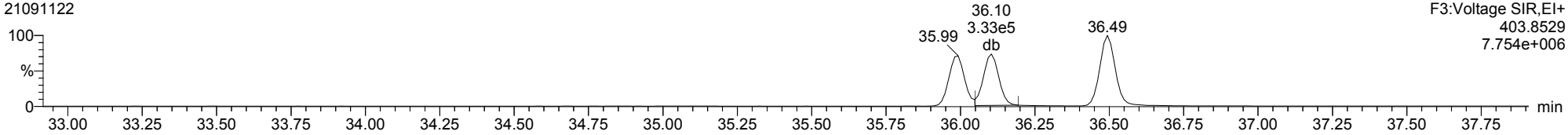

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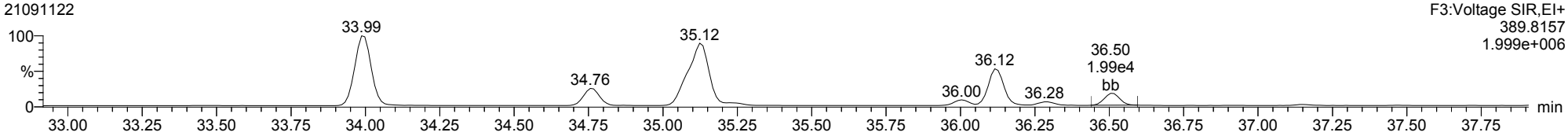

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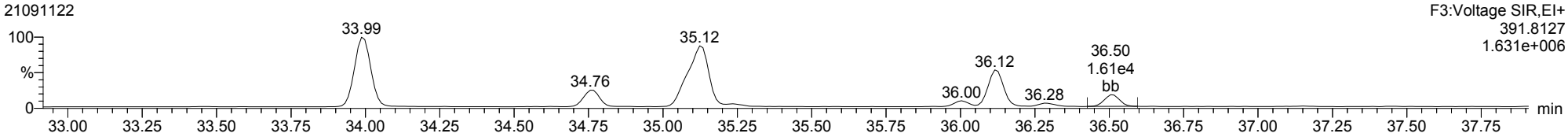

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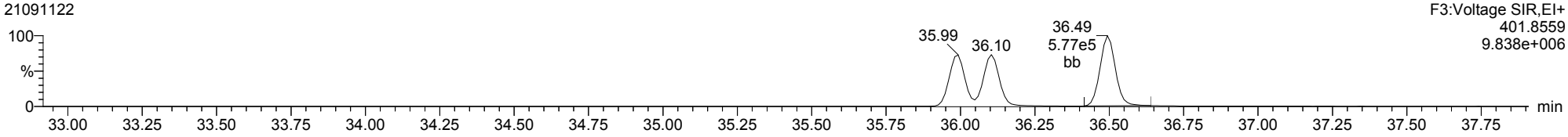

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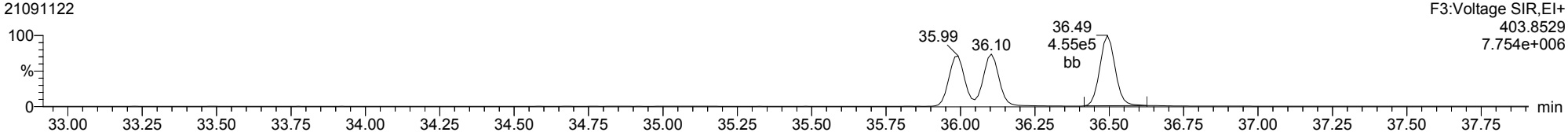

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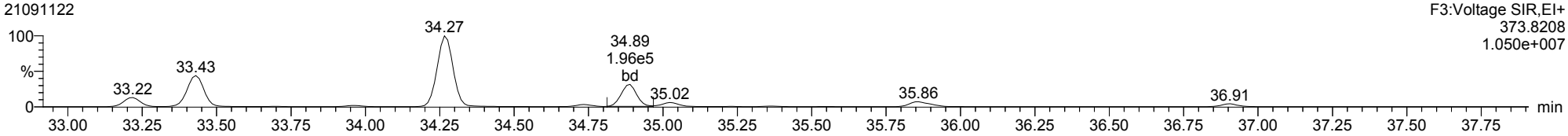

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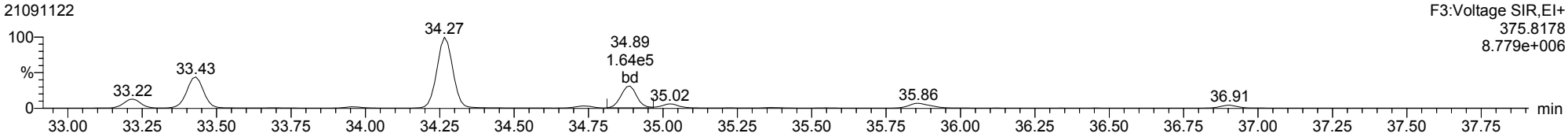

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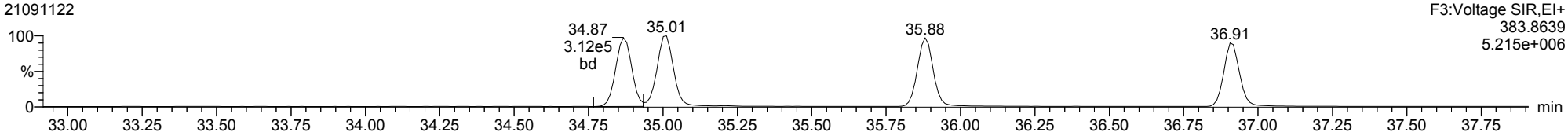

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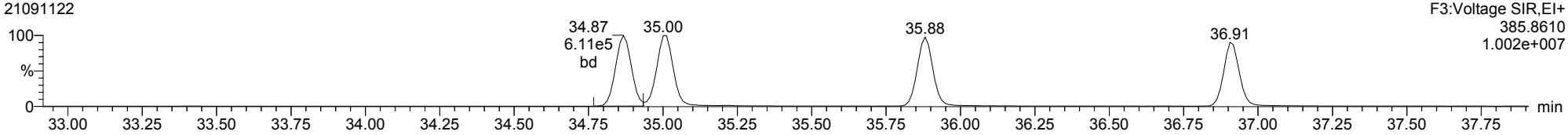
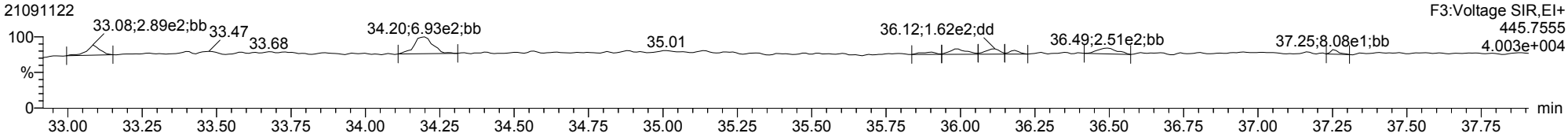


FUNCTION3 OCDPE



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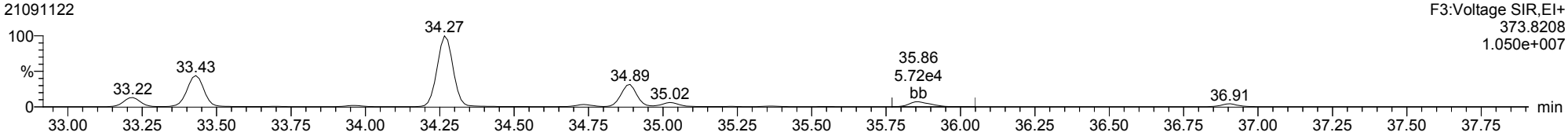
234678-HxCDF



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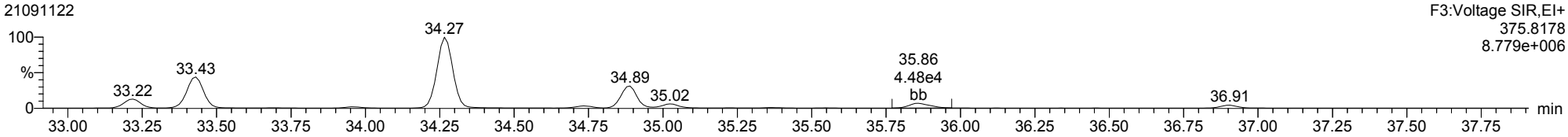

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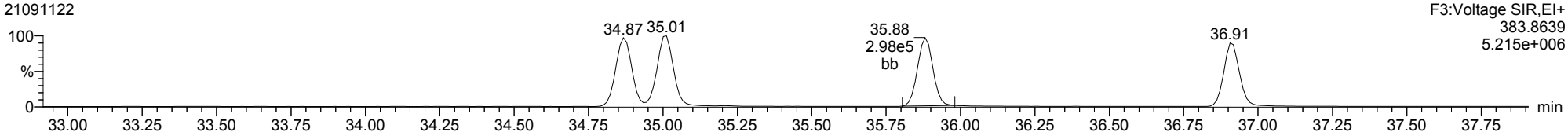

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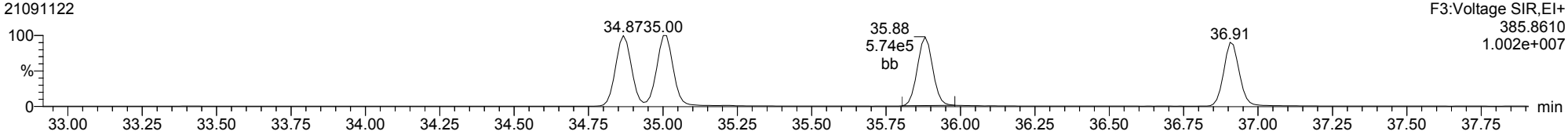
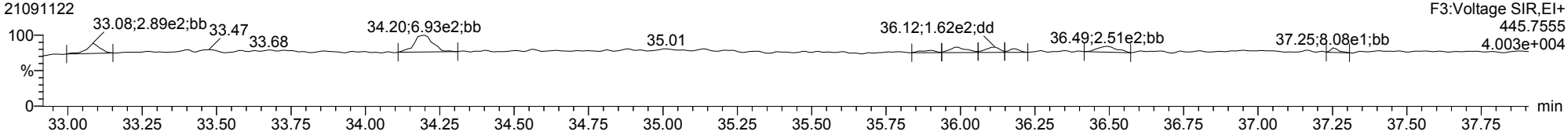


FUNCTION3 OCDPE



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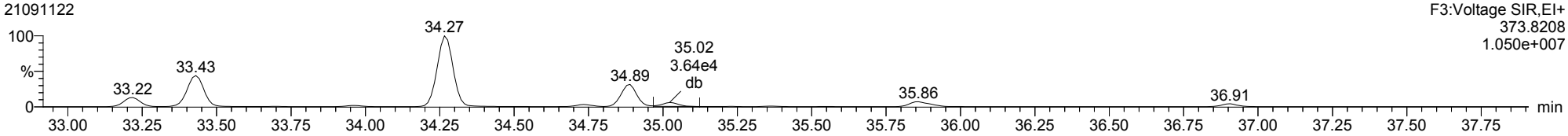

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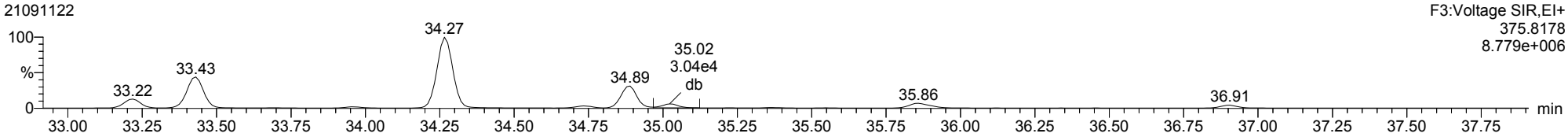

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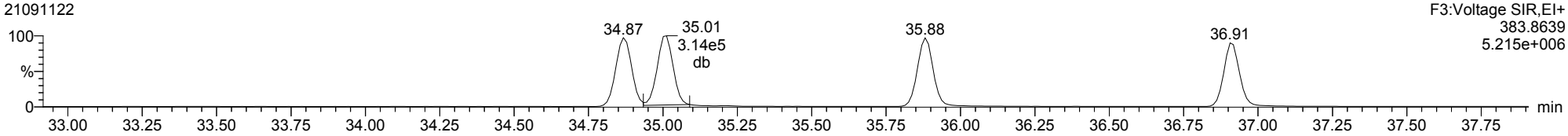

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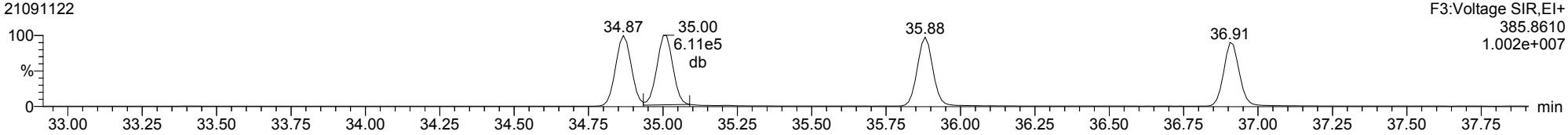
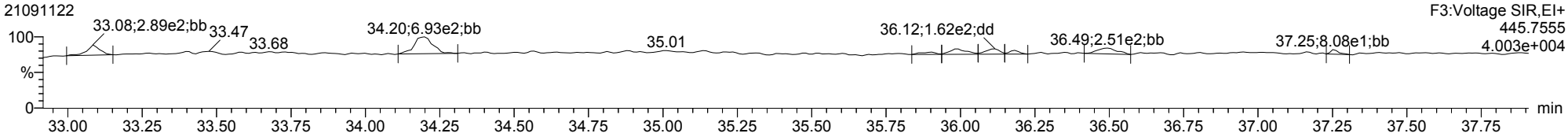


FUNCTION3 OCDPE



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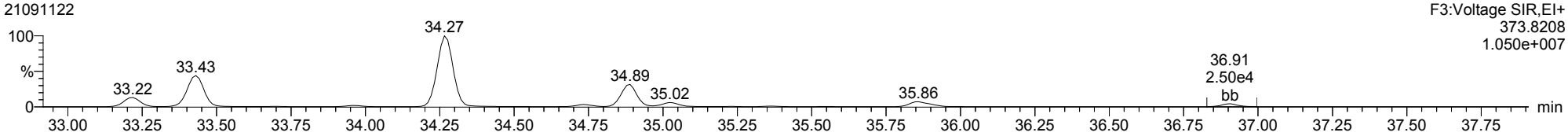
123789-HxCDF



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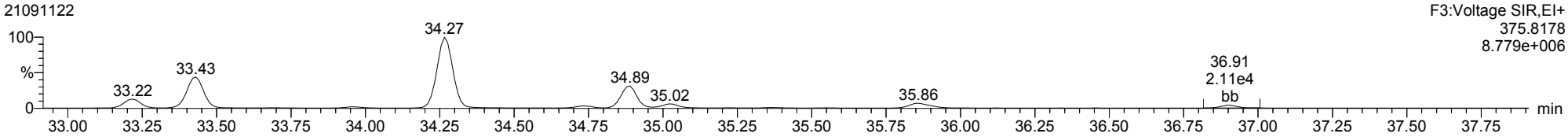

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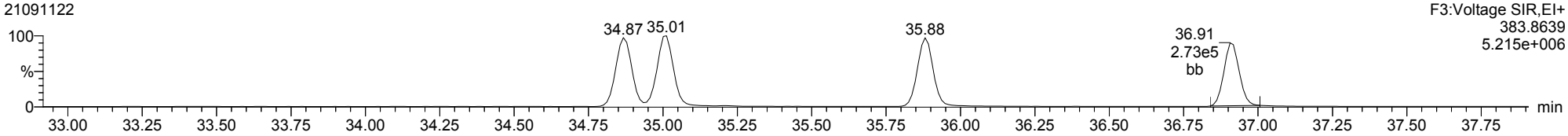

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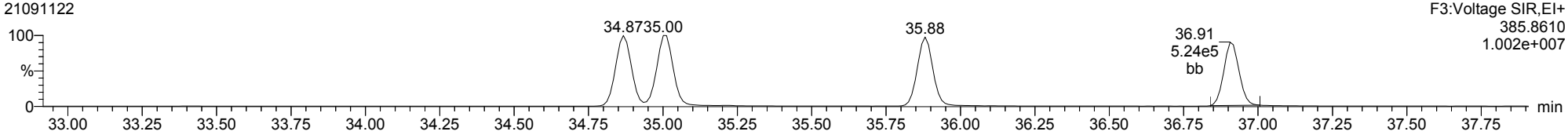

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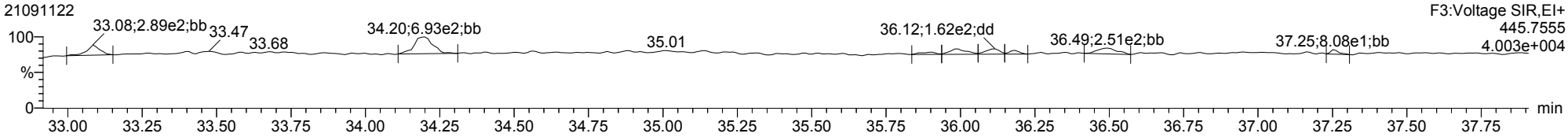

ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

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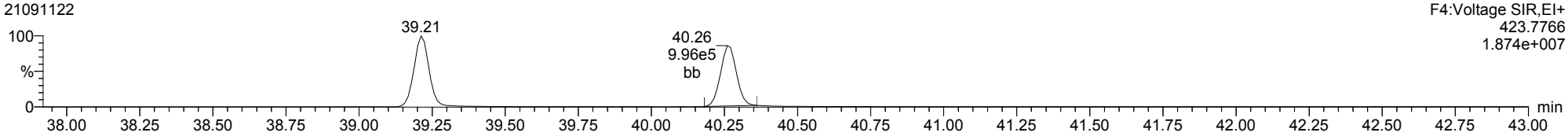

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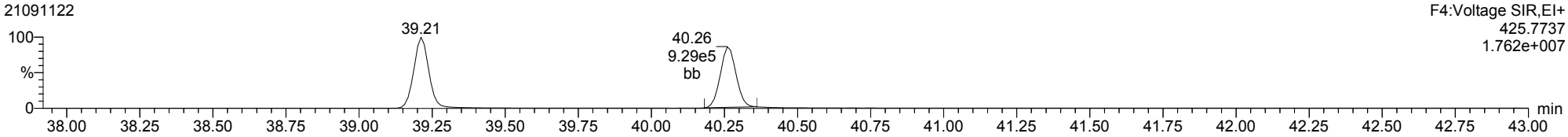

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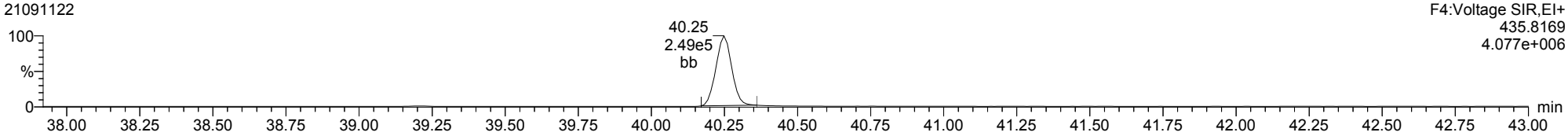

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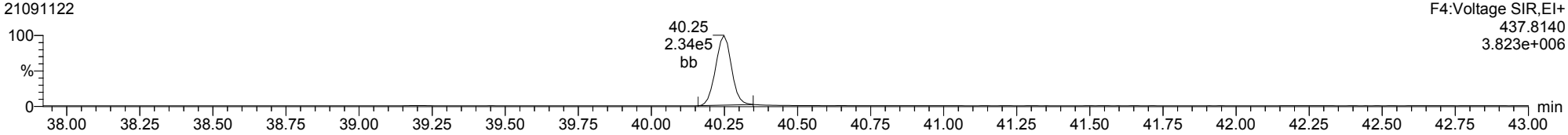
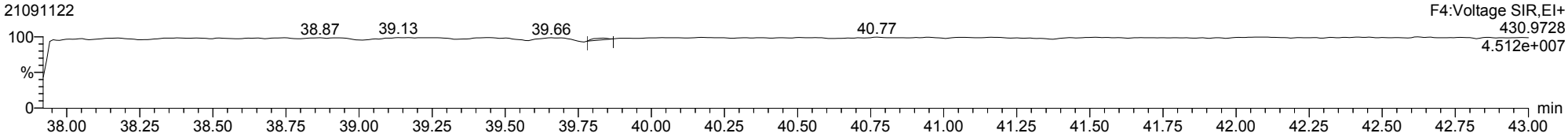


FUNCTION4 PFK



ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

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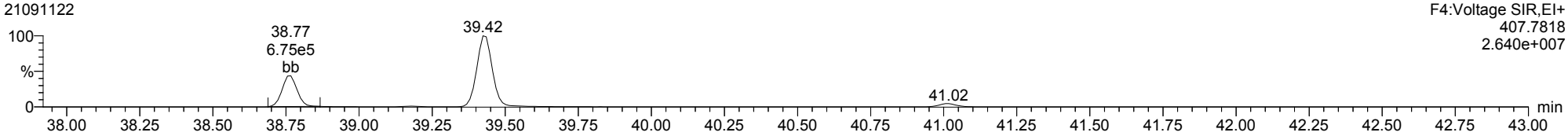

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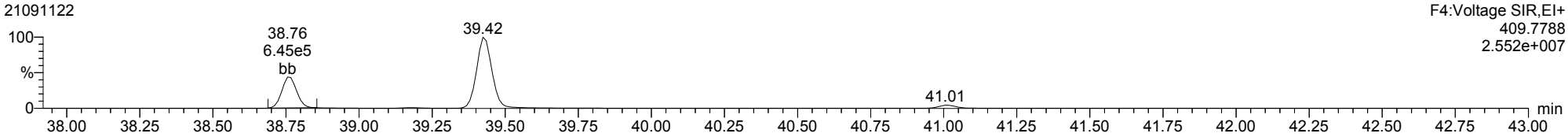

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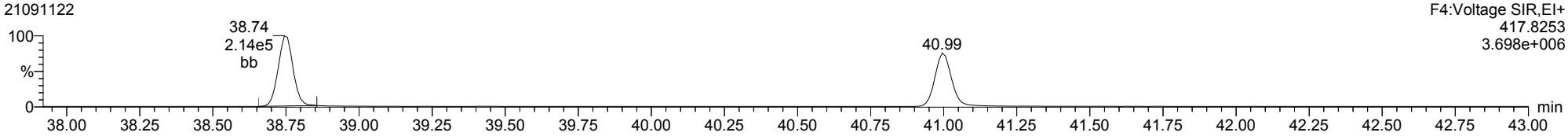

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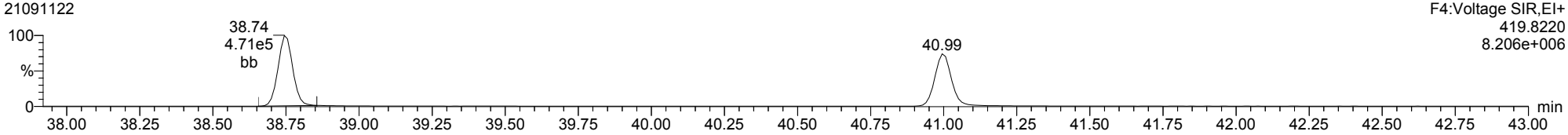
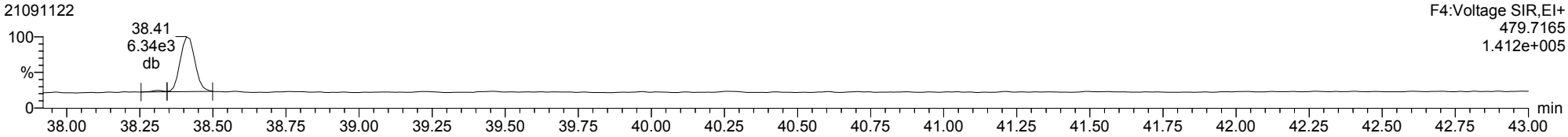


FUNCTION4 NCDPE



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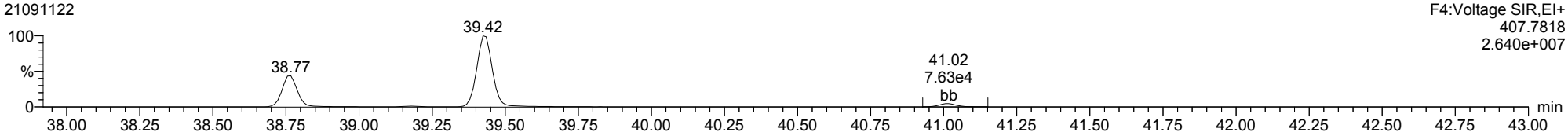

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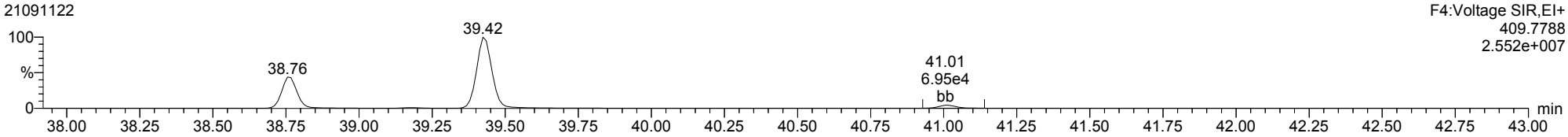

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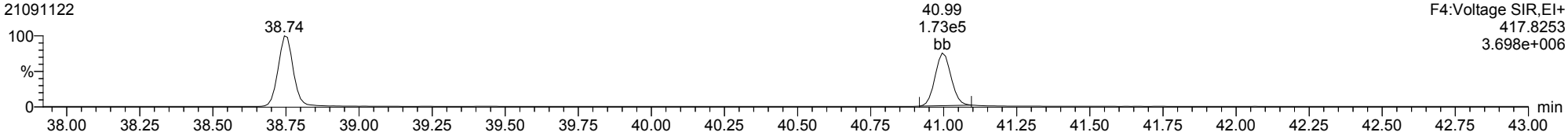

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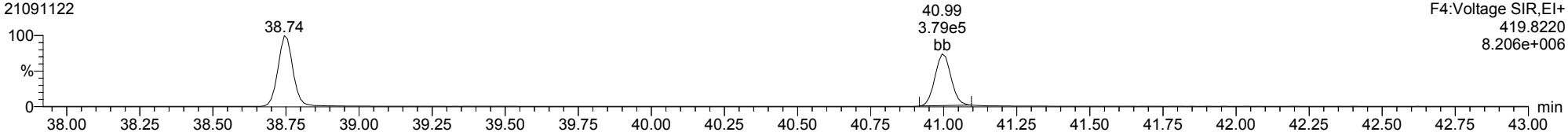
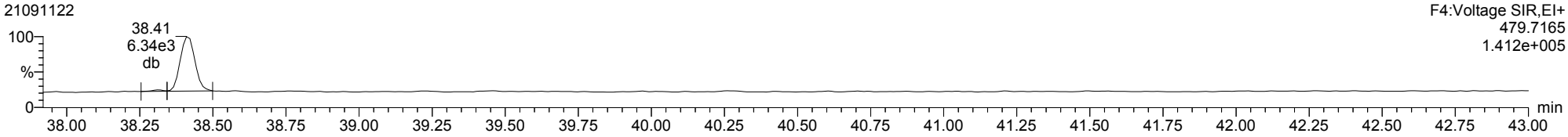
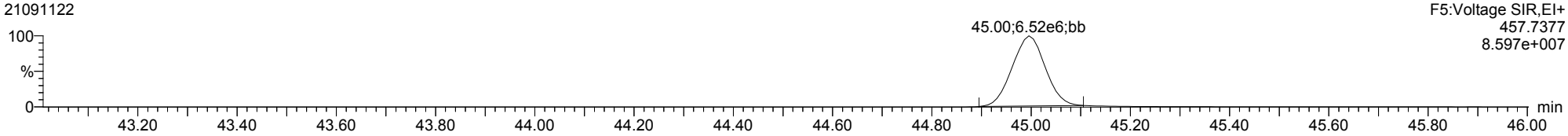


FUNCTION4 NCDPE

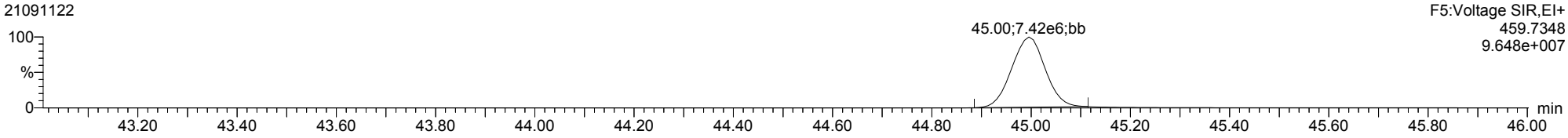


ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

OCDD



OCDD



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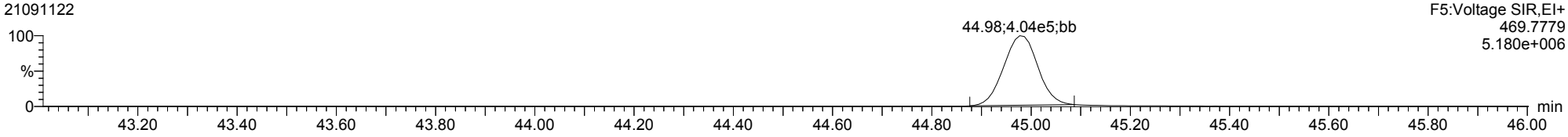

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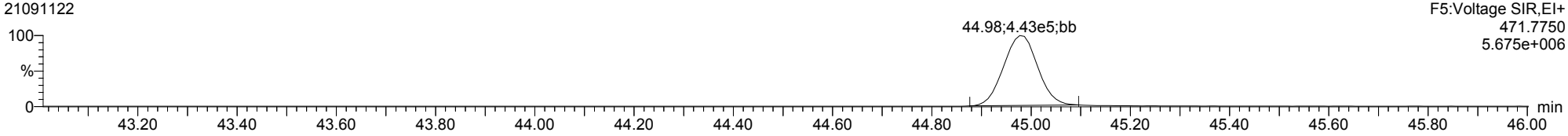

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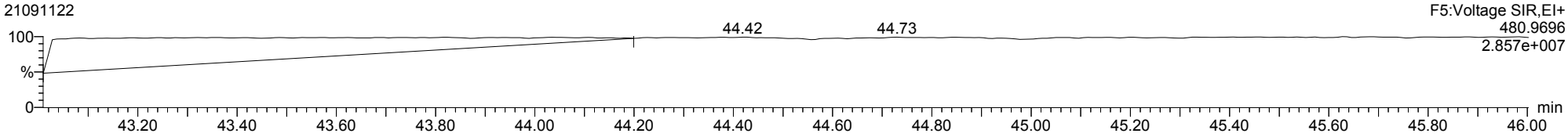

ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

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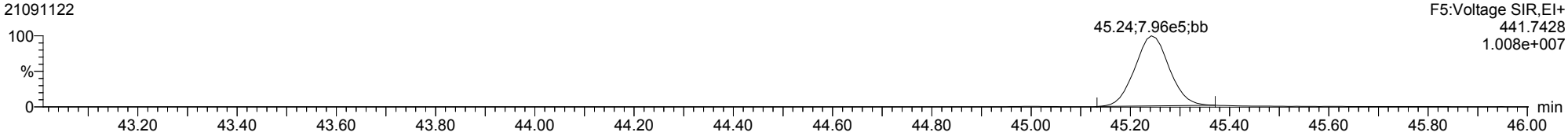

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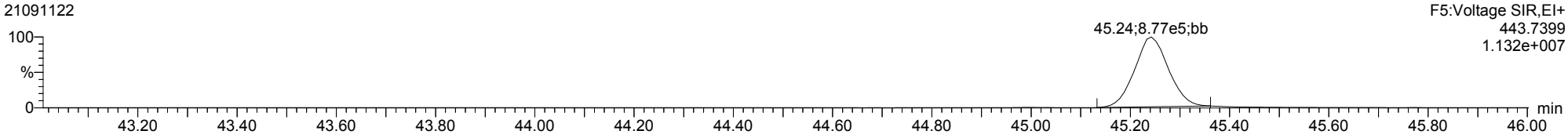

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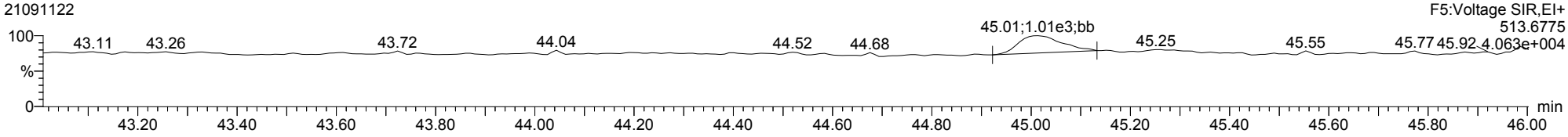

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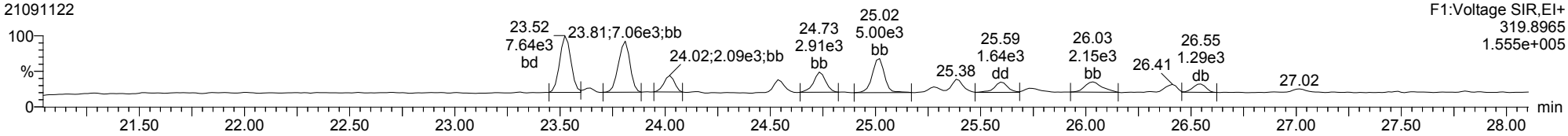
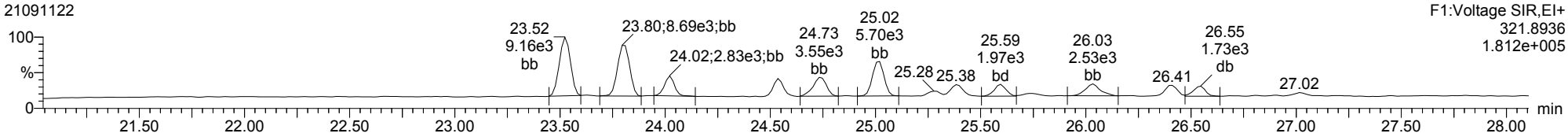
Printed: Wednesday, September 15, 2021 11:30:24 Pacific Daylight Time

ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

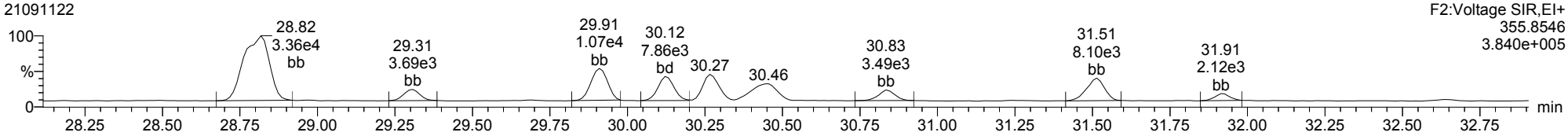
Total-tetradioxins



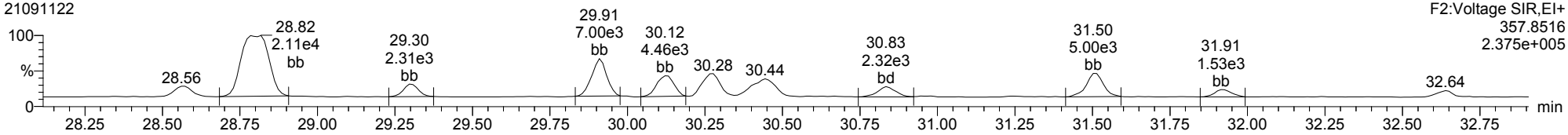
Total-tetradioxins



Total-pentadioxins



Total-pentadioxins



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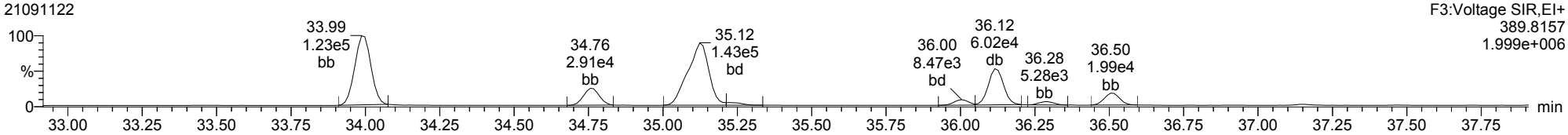
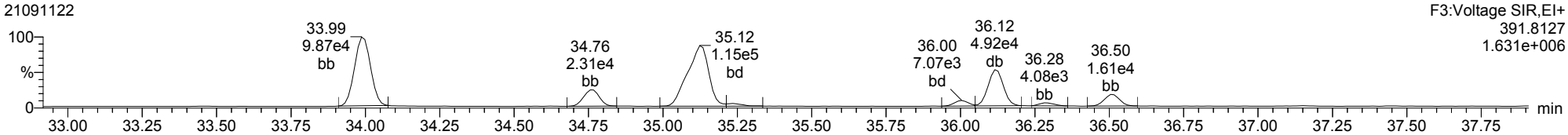


Total-hexadioxins



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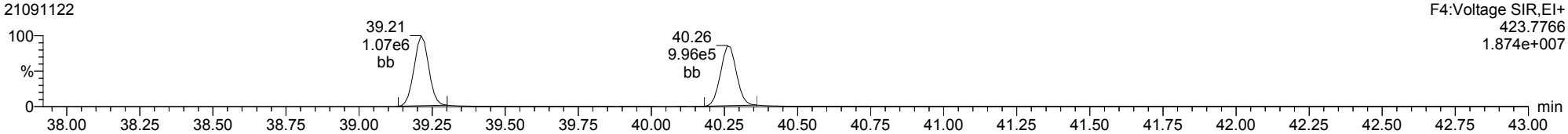
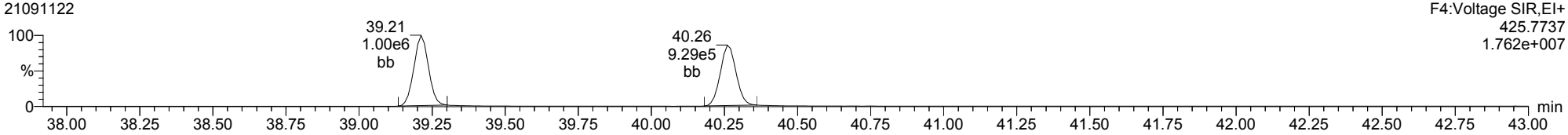


Total-heptadioxins



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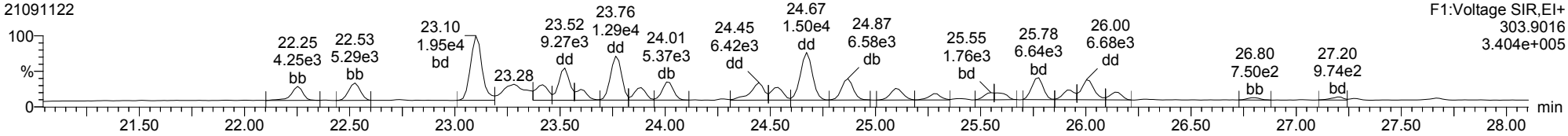
Printed: Wednesday, September 15, 2021 11:30:24 Pacific Daylight Time

ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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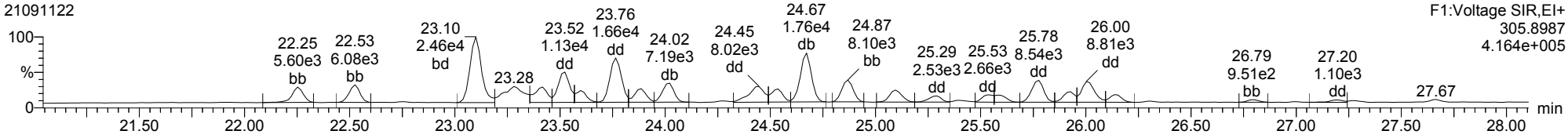

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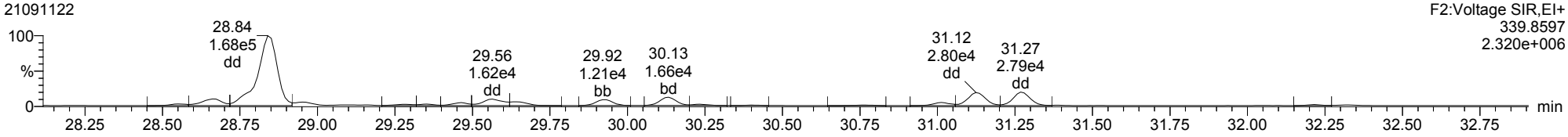
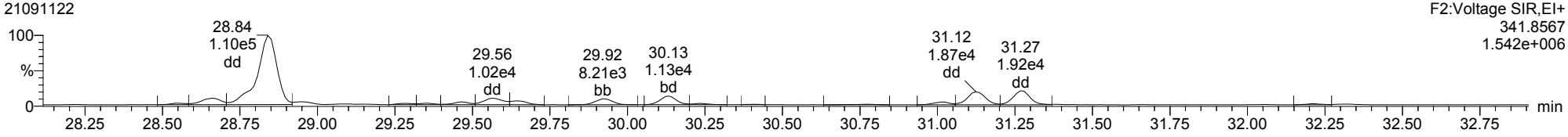
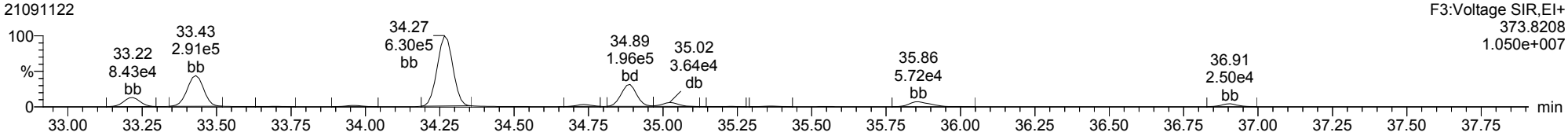


Total-pentafurans

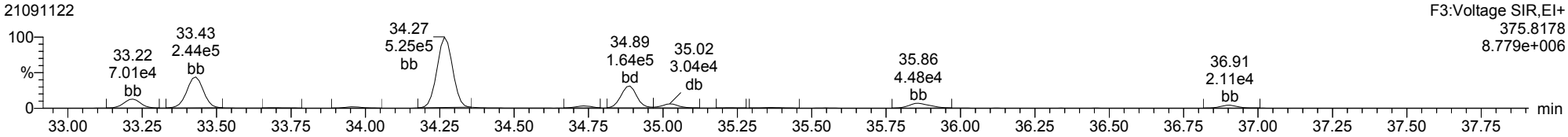


ID: 21G0138-08, Name: 21091122, Date: 12-Sep-2021, Time: 03:46:57, Conditions: AUTOSPEC01, User: pk

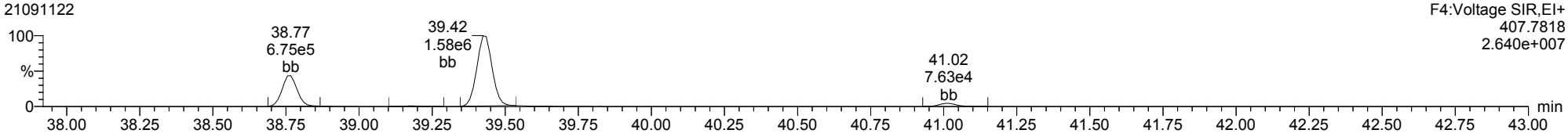
Total-hexafurans



Total-hexafurans



Total-heptafurans



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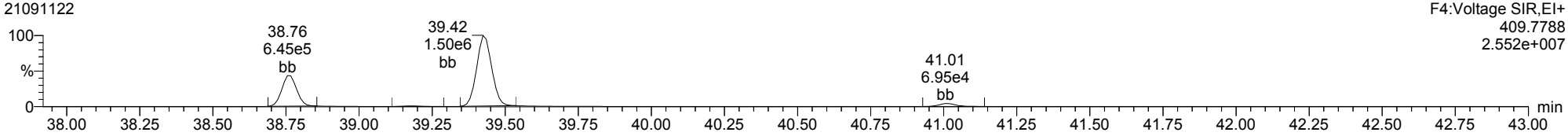

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT658C

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-09 C	File ID:	21091125
Sampled:	07/13/21 09:01	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 06:20
% Solids:	77.79	Preparation:	EPA 1613	Initial/Final:	12.86 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.802	0.655-0.886	0.085	1.00	1.66	ng/kg	X
1746-01-6	2,3,7,8-TCDD	1	0.531	0.655-0.886	0.091	1.00	0.286	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.415	1.318-1.783	0.069	1.00	0.487	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.544	1.318-1.783	0.066	1.00	0.904	ng/kg	J
40321-76-4	1,2,3,7,8-PeCDD	1	1.567	1.318-1.783	0.140	1.00	0.669	ng/kg	J
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.222	1.054-1.426	0.074	1.00	0.853	ng/kg	J
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.046	1.054-1.426	0.069	1.00	0.927	ng/kg	EMPC, J
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.096	1.054-1.426	0.076	1.00	1.96	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.311	1.054-1.426	0.083	1.00	0.308	ng/kg	J
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.366	1.054-1.426	0.101	1.00	0.302	ng/kg	J
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.261	1.054-1.426	0.103	1.00	1.13	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.406	1.054-1.426	0.109	1.00	0.838	ng/kg	J
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.078	0.893-1.208	0.082	1.00	19.7	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.016	0.893-1.208	0.121	1.00	0.566	ng/kg	J
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.098	0.893-1.208	0.173	2.50	22.7	ng/kg	B
39001-02-0	OCDF	1	0.910	0.757-1.024	0.159	2.50	19.8	ng/kg	
3268-87-9	OCDD	1	0.904	0.757-1.024	0.335	10.0	177	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	23.8	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	4.15	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	42.0	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	4.91	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	26.1	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	13.8	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	40.8	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	51.0	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 2.53
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 2.53

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT658C

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-09	File ID:	21091125
Sampled:	07/13/21 09:01	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 06:20
Solids Wt%:	77.79	Preparation:	EPA 1613	Initial/Final:	12.86 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.789	0.655-0.886	0.077	70.8	24 - 169 %	
13C12-2,3,7,8-TCDD		0.756	0.655-0.886	0.091	76.5	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.603	1.318-1.783	0.078	81.7	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.611	1.318-1.783	0.082	79.9	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.579	1.318-1.783	0.100	74.0	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.520	0.434-0.587	0.130	75.2	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.516	0.434-0.587	0.120	69.5	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.522	0.434-0.587	0.133	72.3	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.516	0.434-0.587	0.160	78.2	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.283	1.054-1.426	0.153	80.4	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.246	1.054-1.426	0.141	74.7	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.458	0.374-0.506	0.118	72.0	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.470	0.374-0.506	0.145	68.4	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.046	0.893-1.208	0.164	73.5	23 - 140 %	
13C12-OCDD		0.906	0.757-1.024	0.194	74.3	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.027	77.6	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:35:55 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.776	1.001	4.498e3	5.609e3	1.108	0.802	0.770	1558	1117	7.29e4	9.10e4	46.8	81.5	NO	bd	bb	0.828
12378-PeCDF	29.931	1.001	1.673e3	1.182e3	1.015	1.415	1.550	848	1246	2.78e4	1.80e4	32.8	14.4	NO	bb	bb	0.244
23478-PeCDF	31.268	1.000	3.327e3	2.155e3	1.126	1.544	1.550	848	1246	5.50e4	3.67e4	64.9	29.4	NO	dd	db	0.452
123478-HxCDF	34.878	1.000	2.068e3	1.692e3	1.017	1.222	1.240	876	869	3.28e4	2.80e4	37.5	32.2	NO	dd	dd	0.427
234678-HxCDF	35.881	1.000	4.398e3	4.012e3	1.052	1.096	1.240	876	869	4.95e4	3.97e4	56.5	45.7	NO	bb	MM	0.980
123678-HxCDF	35.023	1.000	2.129e3	2.036e3	1.037	1.046	1.240	876	869	3.56e4	3.43e4	40.7	39.4	YES	db	db	0.464
123789-HxCDF	36.906	1.000	6.577e2	5.017e2	1.030	1.311	1.240	876	869	1.16e4	9.95e3	13.2	11.4	NO	MM	bb	0.154
1234678-HpCDF	38.766	1.001	4.205e4	3.900e4	1.327	1.078	1.050	1034	818	7.12e5	6.72e5	687.9	821.0	NO	bb	bb	9.865
1234789-HpCDF	41.017	1.000	8.798e2	8.661e2	1.283	1.016	1.050	1034	818	1.38e4	1.26e4	13.3	15.4	NO	bb	bb	0.283
OCDF	45.243	1.006	2.364e4	2.598e4	1.447	0.910	0.890	809	854	2.83e5	3.08e5	350.0	360.4	NO	bd	bb	9.883
2378-TCDD	26.396	1.001	4.257e2	8.014e2	0.920	0.531	0.770	1323	723	5.97e3	1.12e4	4.5	15.5	YES	bd	bd	0.143
12378-PeCDD	31.514	1.001	1.200e3	7.656e2	0.995	1.567	1.550	1227	913	1.82e4	9.90e3	14.8	10.8	NO	bb	bb	0.334
123478-HxCDD	36.004	1.000	6.411e2	4.692e2	1.027	1.366	1.240	999	1094	1.03e4	7.99e3	10.3	7.3	NO	bd	bd	0.151
123678-HxCDD	36.126	1.001	2.296e3	1.821e3	1.009	1.261	1.240	999	1094	3.79e4	3.07e4	38.0	28.1	NO	db	db	0.566
123789-HxCDD	36.505	1.011	1.672e3	1.189e3	0.950	1.406	1.240	999	1094	2.69e4	1.80e4	27.0	16.4	NO	bb	bb	0.419
1234678-HpCDD	40.259	1.000	2.733e4	2.488e4	1.068	1.098	1.050	1000	1122	4.36e5	3.92e5	435.9	349.1	NO	bb	bb	11.342
OCDD	44.995	1.000	1.720e5	1.901e5	1.181	0.904	0.890	1334	1522	2.18e6	2.35e6	1632.1	1544.8	NO	bb	bb	88.371
13C-2378-TCDF	25.761	1.007	4.857e5	6.157e5	1.427	0.789	0.770	1898	1258	7.52e6	9.46e6	3959.0	7516.3	NO	bb	bb	70.824
13C-12378-PeCDF	29.909	1.169	7.112e5	4.436e5	1.297	1.603	1.550	1630	1281	1.10e7	6.82e6	6725.8	5318.9	NO	bb	bb	81.658
13C-23478-PeCDF	31.257	1.222	6.649e5	4.127e5	1.236	1.611	1.550	1630	1281	1.05e7	6.44e6	6426.1	5026.9	NO	bb	bb	79.949
13C-123478-HxCDF	34.867	0.955	2.964e5	5.703e5	1.242	0.520	0.510	1729	2384	4.76e6	9.08e6	2751.7	3809.9	NO	bd	bd	75.213
13C-123678-HxCDF	35.012	0.959	2.947e5	5.712e5	1.343	0.516	0.510	1729	2384	4.96e6	9.50e6	2869.6	3983.0	NO	db	db	69.491
13C-234678-HxCDF	35.881	0.983	2.796e5	5.356e5	1.215	0.522	0.510	1729	2384	4.49e6	8.69e6	2599.7	3643.6	NO	bb	bb	72.341
13C-123789-HxCDF	36.917	1.012	2.487e5	4.817e5	1.008	0.516	0.510	1729	2384	4.16e6	8.03e6	2407.2	3366.2	NO	bb	bb	78.157
13C-1234678-HpCDF	38.744	1.062	1.946e5	4.244e5	0.926	0.458	0.440	1011	1784	3.22e6	6.98e6	3179.9	3913.2	NO	bb	bb	72.028
13C-1234789-HpCDF	40.995	1.123	1.536e5	3.271e5	0.758	0.470	0.440	1011	1784	2.29e6	4.97e6	2264.5	2787.9	NO	bb	bb	68.389
13C-1234-TCDD	25.579	0.000	4.753e5	6.148e5	1.000	0.773	0.770	1764	1167	7.55e6	9.71e6	4278.0	8316.3	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	4.006e5	5.300e5	1.116	0.756	0.770	1764	1167	6.28e6	8.29e6	3561.4	7097.0	NO	bb	bb	76.462
13C-12378-PeCDD	31.491	1.231	3.616e5	2.289e5	0.732	1.579	1.550	1233	884	5.64e6	3.60e6	4574.1	4072.7	NO	bb	bb	74.002
13C-123478-HxCDD	35.992	0.986	4.021e5	3.133e5	0.960	1.283	1.240	2113	1623	6.81e6	5.26e6	3222.7	3242.8	NO	bd	bd	80.359
13C-123678-HxCDD	36.104	0.989	4.001e5	3.210e5	1.041	1.246	1.240	2113	1623	6.67e6	5.31e6	3157.5	3274.6	NO	db	db	74.662
13C-1234678-HpCDD	40.248	1.103	2.204e5	2.106e5	0.632	1.046	1.050	1472	1178	3.52e6	3.37e6	2388.9	2860.7	NO	bb	bb	73.465
13C-OCDD	44.977	1.232	3.299e5	3.641e5	0.504	0.906	0.890	1105	1385	4.11e6	4.61e6	3721.9	3331.3	NO	bb	bb	148.535
13C-123789-HxCDD	36.493	0.000	5.126e5	4.149e5	1.000	1.236	1.240	2113	1623	8.45e6	6.77e6	4001.3	4172.7	NO	bb	bb	100.000
37CL-2378-TCDD	26.411	1.033	3.666e5		1.084			831		5.41e6		6512.4			bd		31.034

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:35:55 Pacific Daylight Time

ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.253	0.864	2.034e3	2.746e3	1.425	0.741	0.770	1558	1117	2.49e4	3.48e4	16.0	31.1	NO	bb	db	0.304
1289-TCDF	27.273	1.059	2.575e2	2.294e2	1.043	1.123	0.770	1558	1117	3.89e3	4.87e3	2.5	4.4	YES	dd	db	0.042
13468-PECDF					1.376		1.550	891	1042								
12389-PECDF	32.227	1.077	1.256e3	4.861e2	1.000	2.584	1.550	848	1246	1.96e4	1.52e4	23.1	12.2	YES	bd	db	0.151
123468-HXCDF	33.218	0.953	5.944e3	4.886e3	1.087	1.217	1.240	876	869	9.79e4	8.14e4	111.8	93.6	NO	bb	db	1.150
1368-TCDD	23.523	0.892	2.986e3	4.351e3	0.923	0.686	0.770	1323	723	4.94e4	7.38e4	37.3	102.0	NO	bd	bd	0.854
1289-TCDD					0.794		0.770	1323	723								
12479-PECDD	28.806	0.915	5.615e3	3.366e3	1.843	1.668	1.550	1227	913	5.66e4	3.48e4	46.1	38.1	NO	MM	MM	0.825
12389-PECDD	31.937	1.014	5.148e2	2.319e2	1.154	2.220	1.550	1227	913	8.58e3	5.11e3	7.0	5.6	YES	bb	bb	0.110
124679-HXCDD	33.987	0.944	9.216e3	7.463e3	1.125	1.235	1.240	999	1094	1.42e5	1.24e5	141.9	113.7	NO	bb	bb	2.073
1234679-HPCDD	39.212	0.974	3.802e4	3.591e4	1.211	1.059	1.050	1000	1122	6.53e5	6.21e5	652.7	553.2	NO	bb	bb	14.166
Total-tetrafurans			6.924e4		1.192			1558		1.10e6							11.887
Total-penta1			7.654e4					891		1.19e6							11.858
Total-pentafurans			6.409e4		1.047			848		8.42e5							9.134
Total-hexafurans			6.134e4		1.045			876		9.44e5							13.031
Total-heptafurans			8.027e4		1.305			1034		1.33e6							20.403
Total-Furans			3.751e5		1.158			1558		5.69e6							76.196
Total-tetradioxins			7.466e3		0.879			1323		1.23e5							2.077
Total-pentadioxins			1.314e4		1.331			1227		1.72e5							2.457
Total-hexadioxins			2.920e4		1.028			999		4.13e5							6.922
Total-heptadioxins			6.534e4		1.140			1000		1.09e6							25.509
Total-Dioxins			2.871e5		1.092			1323		3.97e6							125.336
Total-TEQ			6.622e5					1323		9.66e6							201.532
FUNCTION1 PFK			3.298e7					599890		2.86e8							
FUNCTION2 PFK			6.406e5					296726		4.40e6							0.000
FUNCTION3 PFK			2.572e6					385989		4.24e7							0.000
FUNCTION4 PFK			4.349e5					273288		1.04e7							
FUNCTION5 PFK			9.898e4					216320		3.46e6							
FUNCTION1 HXCD...			8.641e3					765		1.35e5							0.000
FUNCTION1 HPCD...			8.838e2					742		1.47e4							0.000
FUNCTION2 HPCD...			1.036e3					932		1.91e4							0.000
FUNCTION3 OCDPE			7.591e2					606		1.08e4							0.000
FUNCTION4 NCDPE			3.277e3					742		5.87e4							0.000
FUNCTION5 DCDPE			0.000e0					514		0.00e0							

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	2.520e3	3.271e3	1.192	0.77	0.77	19.4	YES	NO	bd	bd	0.441
2	Total-tetrafurans	24.01	1.863e3	2.375e3	1.192	0.78	0.77	19.3	YES	NO	db	db	0.323
3	Total-tetrafurans	23.87	9.698e2	1.221e3	1.192	0.79	0.77	11.6	YES	NO	dd	dd	0.167
4	Total-tetrafurans	23.76	1.261e4	1.596e4	1.192	0.79	0.77	138.2	YES	NO	bd	bd	2.177
5	Total-tetrafurans	23.40	1.249e3	1.854e3	1.192	0.67	0.77	12.7	YES	NO	dd	dd	0.236
6	Total-tetrafurans	23.10	1.931e4	2.431e4	1.192	0.79	0.77	201.2	YES	NO	bd	bd	3.322
7	Total-tetrafurans	22.52	2.991e3	3.980e3	1.192	0.75	0.77	29.7	YES	NO	bb	bb	0.531
8	1368-TCDF	22.25	2.034e3	2.746e3	1.425	0.74	0.77	16.0	YES	NO	bb	db	0.304
9	Total-tetrafurans	26.79	1.131e3	1.396e3	1.192	0.81	0.77	11.3	YES	NO	bb	bb	0.193
10	Total-tetrafurans	26.14	2.602e3	3.214e3	1.192	0.81	0.77	25.3	YES	NO	db	db	0.443
11	2378-TCDF	25.78	4.498e3	5.609e3	1.108	0.80	0.77	46.8	YES	NO	bd	bb	0.828
12	Total-tetrafurans	25.10	1.916e3	2.818e3	1.192	0.68	0.77	16.0	YES	NO	dd	bd	0.361
13	Total-tetrafurans	24.87	2.889e3	3.321e3	1.192	0.87	0.77	29.6	YES	NO	bd	bb	0.473
14	Total-tetrafurans	24.67	1.138e4	1.325e4	1.192	0.86	0.77	117.2	YES	NO	db	db	1.876
15	Total-tetrafurans	24.52	1.282e3	1.499e3	1.192	0.86	0.77	12.4	YES	NO	dd	dd	0.212

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	7.654e4	4.903e4		1.56	1.55	1333.0	YES	NO	bb	bb	11.858

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.95	2.636e3	1.811e3	1.047	1.46	1.55	52.7	YES	NO	dd	db	0.381
2	Total-pentafurans	28.84	3.264e4	2.193e4	1.047	1.49	1.55	419.8	YES	NO	MM	MM	4.671
3	23478-PeCDF	31.27	3.327e3	2.155e3	1.126	1.54	1.55	64.9	YES	NO	dd	db	0.452
4	Total-pentafurans	31.12	8.639e3	6.007e3	1.047	1.44	1.55	150.9	YES	NO	dd	dd	1.254
5	Total-pentafurans	31.01	1.497e3	9.174e2	1.047	1.63	1.55	29.3	YES	NO	bd	bd	0.207
6	Total-pentafurans	30.13	3.835e3	2.310e3	1.047	1.66	1.55	68.3	YES	NO	bd	bd	0.526
7	12378-PeCDF	29.93	1.673e3	1.182e3	1.015	1.42	1.55	32.8	YES	NO	bb	bb	0.244
8	Total-pentafurans	29.56	8.562e3	5.709e3	1.047	1.50	1.55	146.0	YES	NO	db	db	1.222
9	Total-pentafurans	29.45	1.275e3	8.085e2	1.047	1.58	1.55	28.3	YES	NO	bd	bd	0.178

ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.91	6.577e2	5.017e2	1.030	1.31	1.24	13.2	YES	NO	MM	bb	0.154
2	234678-HxCDF	35.88	4.398e3	4.012e3	1.052	1.10	1.24	56.5	YES	NO	bb	MM	0.980
3	123478-HxCDF	34.88	2.068e3	1.692e3	1.017	1.22	1.24	37.5	YES	NO	dd	dd	0.427
4	Total-hexafurans	34.73	8.877e2	6.647e2	1.045	1.34	1.24	15.5	YES	NO	bd	bd	0.181
5	Total-hexafurans	34.27	2.273e4	1.907e4	1.045	1.19	1.24	417.2	YES	NO	bb	bb	4.883
6	Total-hexafurans	33.95	7.663e2	5.528e2	1.045	1.39	1.24	15.2	YES	NO	bb	bb	0.154
7	Total-hexafurans	33.43	2.390e4	1.978e4	1.045	1.21	1.24	411.2	YES	NO	bb	bb	5.102
8	123468-HXCDF	33.22	5.944e3	4.886e3	1.087	1.22	1.24	111.8	YES	NO	bb	db	1.150

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.02	8.798e2	8.661e2	1.283	1.02	1.05	13.3	YES	NO	bb	bb	0.283
2	Total-heptafurans	39.42	3.734e4	3.626e4	1.305	1.03	1.05	584.0	YES	NO	bb	bb	10.254
3	1234678-HpCDF	38.77	4.205e4	3.900e4	1.327	1.08	1.05	687.9	YES	NO	bb	bb	9.865

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	2.520e3	3.271e3	1.192	0.77	0.77	19.4	YES	NO	bd	bd	0.441
2	Total-tetrafurans	24.01	1.863e3	2.375e3	1.192	0.78	0.77	19.3	YES	NO	db	db	0.323
3	Total-tetrafurans	23.87	9.698e2	1.221e3	1.192	0.79	0.77	11.6	YES	NO	dd	dd	0.167
4	Total-tetrafurans	23.76	1.261e4	1.596e4	1.192	0.79	0.77	138.2	YES	NO	bd	bd	2.177
5	Total-tetrafurans	23.40	1.249e3	1.854e3	1.192	0.67	0.77	12.7	YES	NO	dd	dd	0.236
6	Total-tetrafurans	23.10	1.931e4	2.431e4	1.192	0.79	0.77	201.2	YES	NO	bd	bd	3.322
7	Total-tetrafurans	22.52	2.991e3	3.980e3	1.192	0.75	0.77	29.7	YES	NO	bb	bb	0.531
8	1368-TCDF	22.25	2.034e3	2.746e3	1.425	0.74	0.77	16.0	YES	NO	bb	db	0.304
9	Total-tetrafurans	26.79	1.131e3	1.396e3	1.192	0.81	0.77	11.3	YES	NO	bb	bb	0.193
10	Total-tetrafurans	26.14	2.602e3	3.214e3	1.192	0.81	0.77	25.3	YES	NO	db	db	0.443
11	2378-TCDF	25.78	4.498e3	5.609e3	1.108	0.80	0.77	46.8	YES	NO	bd	bb	0.828
12	Total-tetrafurans	25.10	1.916e3	2.818e3	1.192	0.68	0.77	16.0	YES	NO	dd	bd	0.361
13	Total-tetrafurans	24.87	2.889e3	3.321e3	1.192	0.87	0.77	29.6	YES	NO	bd	bb	0.473
14	Total-tetrafurans	24.67	1.138e4	1.325e4	1.192	0.86	0.77	117.2	YES	NO	db	db	1.876
15	Total-tetrafurans	24.52	1.282e3	1.499e3	1.192	0.86	0.77	12.4	YES	NO	dd	dd	0.212
16	Total-pentafurans	28.95	2.636e3	1.811e3	1.047	1.46	1.55	52.7	YES	NO	dd	db	0.381
17	Total-pentafurans	28.84	3.264e4	2.193e4	1.047	1.49	1.55	419.8	YES	NO	MM	MM	4.671
18	23478-PeCDF	31.27	3.327e3	2.155e3	1.126	1.54	1.55	64.9	YES	NO	dd	db	0.452
19	Total-pentafurans	31.12	8.639e3	6.007e3	1.047	1.44	1.55	150.9	YES	NO	dd	dd	1.254
20	Total-pentafurans	31.01	1.497e3	9.174e2	1.047	1.63	1.55	29.3	YES	NO	bd	bd	0.207
21	Total-pentafurans	30.13	3.835e3	2.310e3	1.047	1.66	1.55	68.3	YES	NO	bd	bd	0.526
22	12378-PeCDF	29.93	1.673e3	1.182e3	1.015	1.42	1.55	32.8	YES	NO	bb	bb	0.244
23	Total-pentafurans	29.56	8.562e3	5.709e3	1.047	1.50	1.55	146.0	YES	NO	db	db	1.222
24	Total-pentafurans	29.45	1.275e3	8.085e2	1.047	1.58	1.55	28.3	YES	NO	bd	bd	0.178
25	123789-HxCDF	36.91	6.577e2	5.017e2	1.030	1.31	1.24	13.2	YES	NO	MM	bb	0.154
26	234678-HxCDF	35.88	4.398e3	4.012e3	1.052	1.10	1.24	56.5	YES	NO	bb	MM	0.980
27	123478-HxCDF	34.88	2.068e3	1.692e3	1.017	1.22	1.24	37.5	YES	NO	dd	dd	0.427
28	Total-hexafurans	34.73	8.877e2	6.647e2	1.045	1.34	1.24	15.5	YES	NO	bd	bd	0.181
29	Total-hexafurans	34.27	2.273e4	1.907e4	1.045	1.19	1.24	417.2	YES	NO	bb	bb	4.883
30	Total-hexafurans	33.95	7.663e2	5.528e2	1.045	1.39	1.24	15.2	YES	NO	bb	bb	0.154
31	Total-hexafurans	33.43	2.390e4	1.978e4	1.045	1.21	1.24	411.2	YES	NO	bb	bb	5.102
32	123468-HXCDF	33.22	5.944e3	4.886e3	1.087	1.22	1.24	111.8	YES	NO	bb	db	1.150
33	1234789-HpCDF	41.02	8.798e2	8.661e2	1.283	1.02	1.05	13.3	YES	NO	bb	bb	0.283
34	Total-heptafurans	39.42	3.734e4	3.626e4	1.305	1.03	1.05	584.0	YES	NO	bb	bb	10.254
35	1234678-HpCDF	38.77	4.205e4	3.900e4	1.327	1.08	1.05	687.9	YES	NO	bb	bb	9.865
36	OCDF	45.24	2.364e4	2.598e4	1.447	0.91	0.89	350.0	YES	NO	bd	bb	9.883
37	Total-penta1	27.18	7.654e4	4.903e4		1.56	1.55	1333.0	YES	NO	bb	bb	11.858

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TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.02	1.142e3	1.403e3	0.879	0.81	0.77	14.8	YES	NO	bb	bb	0.311
2	Total-tetradioxins	24.73	8.197e2	1.204e3	0.879	0.68	0.77	10.2	YES	NO	bb	db	0.247
3	Total-tetradioxins	23.80	2.519e3	2.921e3	0.879	0.86	0.77	30.6	YES	NO	bb	bb	0.665
4	1368-TCDD	23.52	2.986e3	4.351e3	0.923	0.69	0.77	37.3	YES	NO	bd	bd	0.854

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.51	1.200e3	7.656e2	0.995	1.57	1.55	14.8	YES	NO	bb	bb	0.334
2	Total-pentadioxins	30.83	9.590e2	6.244e2	1.331	1.54	1.55	12.2	YES	NO	bb	bb	0.202
3	Total-pentadioxins	30.46	1.209e3	8.124e2	1.331	1.49	1.55	11.1	YES	NO	bb	db	0.257
4	Total-pentadioxins	30.13	1.115e3	6.825e2	1.331	1.63	1.55	16.1	YES	NO	bb	bd	0.229
5	Total-pentadioxins	29.91	3.042e3	1.754e3	1.331	1.73	1.55	40.2	YES	NO	bb	bb	0.610
6	12479-PECDD	28.81	5.615e3	3.366e3	1.843	1.67	1.55	46.1	YES	NO	MM	MM	0.825

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	34.76	5.777e3	4.920e3	1.028	1.17	1.24	91.1	YES	NO	bd	bd	1.449
2	124679-HXCDD	33.99	9.216e3	7.463e3	1.125	1.24	1.24	141.9	YES	NO	bb	bb	2.073
3	123789-HxCDD	36.50	1.672e3	1.189e3	0.950	1.41	1.24	27.0	YES	NO	bb	bb	0.419
4	123678-HxCDD	36.13	2.296e3	1.821e3	1.009	1.26	1.24	38.0	YES	NO	db	db	0.566
5	123478-HxCDD	36.00	6.411e2	4.692e2	1.027	1.37	1.24	10.3	YES	NO	bd	bd	0.151
6	Total-hexadioxins	35.13	9.594e3	7.128e3	1.028	1.35	1.24	104.7	YES	NO	dd	bb	2.265

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	2.733e4	2.488e4	1.068	1.10	1.05	435.9	YES	NO	bb	bb	11.342
2	1234679-HPCDD	39.21	3.802e4	3.591e4	1.211	1.06	1.05	652.7	YES	NO	bb	bb	14.166

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.02	1.142e3	1.403e3	0.879	0.81	0.77	14.8	YES	NO	bb	bb	0.311
2	Total-tetradioxins	24.73	8.197e2	1.204e3	0.879	0.68	0.77	10.2	YES	NO	bb	db	0.247
3	Total-tetradioxins	23.80	2.519e3	2.921e3	0.879	0.86	0.77	30.6	YES	NO	bb	bb	0.665
4	1368-TCDD	23.52	2.986e3	4.351e3	0.923	0.69	0.77	37.3	YES	NO	bd	bd	0.854
5	12378-PeCDD	31.51	1.200e3	7.656e2	0.995	1.57	1.55	14.8	YES	NO	bb	bb	0.334
6	Total-pentadioxins	30.83	9.590e2	6.244e2	1.331	1.54	1.55	12.2	YES	NO	bb	bb	0.202
7	Total-pentadioxins	30.46	1.209e3	8.124e2	1.331	1.49	1.55	11.1	YES	NO	bb	db	0.257
8	Total-pentadioxins	30.13	1.115e3	6.825e2	1.331	1.63	1.55	16.1	YES	NO	bb	bd	0.229
9	Total-pentadioxins	29.91	3.042e3	1.754e3	1.331	1.73	1.55	40.2	YES	NO	bb	bb	0.610
10	Total-hexadioxins	34.76	5.777e3	4.920e3	1.028	1.17	1.24	91.1	YES	NO	bd	bd	1.449
11	124679-HXCDD	33.99	9.216e3	7.463e3	1.125	1.24	1.24	141.9	YES	NO	bb	bb	2.073
12	123789-HxCDD	36.50	1.672e3	1.189e3	0.950	1.41	1.24	27.0	YES	NO	bb	bb	0.419
13	123678-HxCDD	36.13	2.296e3	1.821e3	1.009	1.26	1.24	38.0	YES	NO	db	db	0.566
14	123478-HxCDD	36.00	6.411e2	4.692e2	1.027	1.37	1.24	10.3	YES	NO	bd	bd	0.151
15	Total-hexadioxins	35.13	9.594e3	7.128e3	1.028	1.35	1.24	104.7	YES	NO	dd	bb	2.265
16	OCDD	45.00	1.720e5	1.901e5	1.181	0.90	0.89	1632.1	YES	NO	bb	bb	88.371
17	1234678-HpCDD	40.26	2.733e4	2.488e4	1.068	1.10	1.05	435.9	YES	NO	bb	bb	11.342
18	1234679-HPCDD	39.21	3.802e4	3.591e4	1.211	1.06	1.05	652.7	YES	NO	bb	bb	14.166
19	12479-PECDD	28.81	5.615e3	3.366e3	1.843	1.67	1.55	46.1	YES	NO	MM	MM	0.825

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	2.520e3	3.271e3	1.192	0.77	0.77	19.4	YES	NO	bd	bd	0.441
2	Total-tetrafurans	24.01	1.863e3	2.375e3	1.192	0.78	0.77	19.3	YES	NO	db	db	0.323
3	Total-tetrafurans	23.87	9.698e2	1.221e3	1.192	0.79	0.77	11.6	YES	NO	dd	dd	0.167
4	Total-tetrafurans	23.76	1.261e4	1.596e4	1.192	0.79	0.77	138.2	YES	NO	bd	bd	2.177
5	Total-tetrafurans	23.40	1.249e3	1.854e3	1.192	0.67	0.77	12.7	YES	NO	dd	dd	0.236
6	Total-tetrafurans	23.10	1.931e4	2.431e4	1.192	0.79	0.77	201.2	YES	NO	bd	bd	3.322
7	Total-tetrafurans	22.52	2.991e3	3.980e3	1.192	0.75	0.77	29.7	YES	NO	bb	bb	0.531
8	1368-TCDF	22.25	2.034e3	2.746e3	1.425	0.74	0.77	16.0	YES	NO	bb	db	0.304
9	Total-tetrafurans	26.79	1.131e3	1.396e3	1.192	0.81	0.77	11.3	YES	NO	bb	bb	0.193
10	Total-tetrafurans	26.14	2.602e3	3.214e3	1.192	0.81	0.77	25.3	YES	NO	db	db	0.443
11	2378-TCDF	25.78	4.498e3	5.609e3	1.108	0.80	0.77	46.8	YES	NO	bd	bb	0.828
12	Total-tetrafurans	25.10	1.916e3	2.818e3	1.192	0.68	0.77	16.0	YES	NO	dd	bd	0.361
13	Total-tetrafurans	24.87	2.889e3	3.321e3	1.192	0.87	0.77	29.6	YES	NO	bd	bb	0.473
14	Total-tetrafurans	24.67	1.138e4	1.325e4	1.192	0.86	0.77	117.2	YES	NO	db	db	1.876
15	Total-tetrafurans	24.52	1.282e3	1.499e3	1.192	0.86	0.77	12.4	YES	NO	dd	dd	0.212
16	Total-pentafurans	28.95	2.636e3	1.811e3	1.047	1.46	1.55	52.7	YES	NO	dd	db	0.381
17	Total-pentafurans	28.84	3.264e4	2.193e4	1.047	1.49	1.55	419.8	YES	NO	MM	MM	4.671
18	23478-PeCDF	31.27	3.327e3	2.155e3	1.126	1.54	1.55	64.9	YES	NO	dd	db	0.452
19	Total-pentafurans	31.12	8.639e3	6.007e3	1.047	1.44	1.55	150.9	YES	NO	dd	dd	1.254
20	Total-pentafurans	31.01	1.497e3	9.174e2	1.047	1.63	1.55	29.3	YES	NO	bd	bd	0.207
21	Total-pentafurans	30.13	3.835e3	2.310e3	1.047	1.66	1.55	68.3	YES	NO	bd	bd	0.526
22	12378-PeCDF	29.93	1.673e3	1.182e3	1.015	1.42	1.55	32.8	YES	NO	bb	bb	0.244
23	Total-pentafurans	29.56	8.562e3	5.709e3	1.047	1.50	1.55	146.0	YES	NO	db	db	1.222
24	Total-pentafurans	29.45	1.275e3	8.085e2	1.047	1.58	1.55	28.3	YES	NO	bd	bd	0.178
25	123789-HxCDF	36.91	6.577e2	5.017e2	1.030	1.31	1.24	13.2	YES	NO	MM	bb	0.154
26	234678-HxCDF	35.88	4.398e3	4.012e3	1.052	1.10	1.24	56.5	YES	NO	bb	MM	0.980
27	123478-HxCDF	34.88	2.068e3	1.692e3	1.017	1.22	1.24	37.5	YES	NO	dd	dd	0.427
28	Total-hexafurans	34.73	8.877e2	6.647e2	1.045	1.34	1.24	15.5	YES	NO	bd	bd	0.181
29	Total-hexafurans	34.27	2.273e4	1.907e4	1.045	1.19	1.24	417.2	YES	NO	bb	bb	4.883
30	Total-hexafurans	33.95	7.663e2	5.528e2	1.045	1.39	1.24	15.2	YES	NO	bb	bb	0.154
31	Total-hexafurans	33.43	2.390e4	1.978e4	1.045	1.21	1.24	411.2	YES	NO	bb	bb	5.102
32	123468-HXCDF	33.22	5.944e3	4.886e3	1.087	1.22	1.24	111.8	YES	NO	bb	db	1.150
33	1234789-HpCDF	41.02	8.798e2	8.661e2	1.283	1.02	1.05	13.3	YES	NO	bb	bb	0.283
34	Total-heptafurans	39.42	3.734e4	3.626e4	1.305	1.03	1.05	584.0	YES	NO	bb	bb	10.254
35	1234678-HpCDF	38.77	4.205e4	3.900e4	1.327	1.08	1.05	687.9	YES	NO	bb	bb	9.865
36	OCDF	45.24	2.364e4	2.598e4	1.447	0.91	0.89	350.0	YES	NO	bd	bb	9.883
37	Total-penta1	27.18	7.654e4	4.903e4		1.56	1.55	1333.0	YES	NO	bb	bb	11.858

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-tetradioxins	25.02	1.142e3	1.403e3	0.879	0.81	0.77	14.8	YES	NO	bb	bb	0.311
39	Total-tetradioxins	24.73	8.197e2	1.204e3	0.879	0.68	0.77	10.2	YES	NO	bb	db	0.247
40	Total-tetradioxins	23.80	2.519e3	2.921e3	0.879	0.86	0.77	30.6	YES	NO	bb	bb	0.665
41	1368-TCDD	23.52	2.986e3	4.351e3	0.923	0.69	0.77	37.3	YES	NO	bd	bd	0.854
42	12378-PeCDD	31.51	1.200e3	7.656e2	0.995	1.57	1.55	14.8	YES	NO	bb	bb	0.334
43	Total-pentadioxins	30.83	9.590e2	6.244e2	1.331	1.54	1.55	12.2	YES	NO	bb	bb	0.202
44	Total-pentadioxins	30.46	1.209e3	8.124e2	1.331	1.49	1.55	11.1	YES	NO	bb	db	0.257
45	Total-pentadioxins	30.13	1.115e3	6.825e2	1.331	1.63	1.55	16.1	YES	NO	bb	bd	0.229
46	Total-pentadioxins	29.91	3.042e3	1.754e3	1.331	1.73	1.55	40.2	YES	NO	bb	bb	0.610
47	Total-hexadioxins	34.76	5.777e3	4.920e3	1.028	1.17	1.24	91.1	YES	NO	bd	bd	1.449
48	124679-HXCDD	33.99	9.216e3	7.463e3	1.125	1.24	1.24	141.9	YES	NO	bb	bb	2.073
49	123789-HxCDD	36.50	1.672e3	1.189e3	0.950	1.41	1.24	27.0	YES	NO	bb	bb	0.419
50	123678-HxCDD	36.13	2.296e3	1.821e3	1.009	1.26	1.24	38.0	YES	NO	db	db	0.566
51	123478-HxCDD	36.00	6.411e2	4.692e2	1.027	1.37	1.24	10.3	YES	NO	bd	bd	0.151
52	Total-hexadioxins	35.13	9.594e3	7.128e3	1.028	1.35	1.24	104.7	YES	NO	dd	bb	2.265
53	OCDD	45.00	1.720e5	1.901e5	1.181	0.90	0.89	1632.1	YES	NO	bb	bb	88.371
54	1234678-HpCDD	40.26	2.733e4	2.488e4	1.068	1.10	1.05	435.9	YES	NO	bb	bb	11.342
55	1234679-HPCDD	39.21	3.802e4	3.591e4	1.211	1.06	1.05	652.7	YES	NO	bb	bb	14.166
56	12479-PECDD	28.81	5.615e3	3.366e3	1.843	1.67	1.55	46.1	YES	NO	MM	MM	0.825

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.19	1.580e5					5.5	YES		dd		
2	FUNCTION1 PFK	21.13	3.270e4					1.8	NO		bd		
3	FUNCTION1 PFK	23.48	4.174e5					12.0	YES		dd		
4	FUNCTION1 PFK	23.36	1.214e6					14.2	YES		dd		
5	FUNCTION1 PFK	23.24	1.068e6					15.4	YES		dd		
6	FUNCTION1 PFK	23.13	6.964e5					16.1	YES		dd		
7	FUNCTION1 PFK	22.96	1.823e6					17.9	YES		dd		
8	FUNCTION1 PFK	22.83	1.428e6					18.5	YES		dd		
9	FUNCTION1 PFK	22.69	1.397e6					20.3	YES		dd		
10	FUNCTION1 PFK	22.63	8.888e5					20.6	YES		dd		
11	FUNCTION1 PFK	22.49	1.514e6					22.1	YES		dd		
12	FUNCTION1 PFK	22.43	3.731e6					22.9	YES		dd		
13	FUNCTION1 PFK	22.18	1.381e6					23.1	YES		bd		
14	FUNCTION1 PFK	21.95	2.102e6					30.3	YES		db		
15	FUNCTION1 PFK	21.86	2.882e6					27.2	YES		dd		
16	FUNCTION1 PFK	21.62	2.602e6					19.9	YES		dd		
17	FUNCTION1 PFK	21.41	8.950e5					11.8	YES		bd		
18	FUNCTION1 PFK	21.24	1.327e5					6.0	YES		db		
19	FUNCTION1 PFK	25.28	6.290e4					1.7	NO		dd		
20	FUNCTION1 PFK	25.22	4.547e4					1.8	NO		dd		
21	FUNCTION1 PFK	25.16	5.426e4					1.5	NO		dd		
22	FUNCTION1 PFK	25.08	5.967e4					1.7	NO		dd		
23	FUNCTION1 PFK	25.02	1.539e4					0.9	NO		bd		
24	FUNCTION1 PFK	24.87	3.967e4					1.2	NO		bb		
25	FUNCTION1 PFK	24.49	1.789e5					3.7	YES		db		
26	FUNCTION1 PFK	24.42	1.519e5					3.9	YES		dd		
27	FUNCTION1 PFK	24.28	4.031e5					6.1	YES		dd		
28	FUNCTION1 PFK	24.25	1.320e5					5.3	YES		dd		
29	FUNCTION1 PFK	24.13	3.731e5					7.2	YES		dd		
30	FUNCTION1 PFK	23.95	9.759e5					8.5	YES		dd		
31	FUNCTION1 PFK	23.84	2.845e5					8.5	YES		dd		
32	FUNCTION1 PFK	23.73	6.722e5					9.9	YES		dd		
33	FUNCTION1 PFK	23.67	4.022e5					10.5	YES		dd		
34	FUNCTION1 PFK	23.55	6.866e5					12.1	YES		dd		
35	FUNCTION1 PFK	27.08	9.746e4					2.6	NO		bd		
36	FUNCTION1 PFK	26.70	3.054e4					1.2	NO		bb		
37	FUNCTION1 PFK	26.56	4.237e4					1.1	NO		bb		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	26.34	1.615e4					0.8	NO		bb		
39	FUNCTION1 PFK	26.24	2.416e4					1.3	NO		db		
40	FUNCTION1 PFK	26.18	7.036e4					2.1	NO		bd		
41	FUNCTION1 PFK	26.05	5.382e4					1.6	NO		db		
42	FUNCTION1 PFK	25.99	3.900e4					1.4	NO		bd		
43	FUNCTION1 PFK	25.90	8.673e4					2.9	NO		db		
44	FUNCTION1 PFK	25.84	6.222e4					2.7	NO		dd		
45	FUNCTION1 PFK	25.81	6.607e4					2.8	NO		dd		
46	FUNCTION1 PFK	25.73	1.322e5					2.9	NO		dd		
47	FUNCTION1 PFK	25.66	8.530e4					3.0	NO		dd		
48	FUNCTION1 PFK	25.59	6.317e4					2.5	NO		dd		
49	FUNCTION1 PFK	25.52	1.356e5					1.9	NO		dd		
50	FUNCTION1 PFK	25.35	4.605e4					1.7	NO		dd		
51	FUNCTION1 PFK	27.92	3.372e5					5.1	YES		db		
52	FUNCTION1 PFK	27.86	2.184e5					5.6	YES		dd		
53	FUNCTION1 PFK	27.74	5.264e5					9.2	YES		dd		
54	FUNCTION1 PFK	27.70	2.736e5					8.8	YES		bd		
55	FUNCTION1 PFK	27.54	3.717e5					8.7	YES		db		
56	FUNCTION1 PFK	27.48	7.280e5					8.7	YES		dd		
57	FUNCTION1 PFK	27.27	3.039e5					4.8	YES		dd		
58	FUNCTION1 PFK	27.12	2.680e5					2.8	NO		dd		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.67	1.485e5					3.1	YES		bb		0.000
2	FUNCTION2 PFK	32.40	2.484e5					5.0	YES		bb		0.000
3	FUNCTION2 PFK	29.37	2.850e4					2.8	NO		bb		0.000
4	FUNCTION2 PFK	29.20	2.152e5					4.0	YES		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.13	1.490e5					7.6	YES		dd		0.000
2	FUNCTION3 PFK	33.06	1.906e5					8.2	YES		bd		0.000
3	FUNCTION3 PFK	34.43	5.832e3					0.8	NO		bb		0.000
4	FUNCTION3 PFK	34.33	8.843e3					1.0	NO		db		0.000
5	FUNCTION3 PFK	34.29	5.793e3					0.6	NO		bd		0.000
6	FUNCTION3 PFK	34.12	1.487e4					1.6	NO		bb		0.000
7	FUNCTION3 PFK	34.06	3.350e4					2.7	NO		db		0.000
8	FUNCTION3 PFK	34.02	3.747e4					2.6	NO		dd		0.000
9	FUNCTION3 PFK	33.98	4.178e4					1.8	NO		bd		0.000
10	FUNCTION3 PFK	33.84	1.572e3					0.4	NO		bb		0.000
11	FUNCTION3 PFK	33.76	1.207e4					1.1	NO		bb		0.000
12	FUNCTION3 PFK	33.69	2.432e4					1.5	NO		bb		0.000
13	FUNCTION3 PFK	33.51	1.590e4					1.8	NO		db		0.000
14	FUNCTION3 PFK	33.46	6.813e4					4.1	YES		dd		0.000
15	FUNCTION3 PFK	33.41	2.497e5					4.5	YES		dd		0.000
16	FUNCTION3 PFK	33.27	8.808e4					5.9	YES		dd		0.000
17	FUNCTION3 PFK	33.21	1.300e5					6.9	YES		dd		0.000
18	FUNCTION3 PFK	33.17	1.200e5					7.5	YES		dd		0.000
19	FUNCTION3 PFK	35.76	2.067e4					1.4	NO		db		0.000
20	FUNCTION3 PFK	35.74	1.420e4					1.2	NO		bd		0.000
21	FUNCTION3 PFK	35.64	3.505e4					1.1	NO		bb		0.000
22	FUNCTION3 PFK	35.50	5.256e4					1.6	NO		bb		0.000
23	FUNCTION3 PFK	35.38	1.209e4					1.2	NO		bb		0.000
24	FUNCTION3 PFK	35.33	1.541e4					1.7	NO		bb		0.000
25	FUNCTION3 PFK	35.28	1.535e4					1.4	NO		db		0.000
26	FUNCTION3 PFK	35.19	6.117e4					2.6	NO		dd		0.000
27	FUNCTION3 PFK	35.15	2.943e4					2.5	NO		bd		0.000
28	FUNCTION3 PFK	35.09	6.197e3					0.5	NO		bb		0.000
29	FUNCTION3 PFK	34.88	4.353e4					1.9	NO		db		0.000
30	FUNCTION3 PFK	34.83	2.135e4					1.7	NO		bd		0.000
31	FUNCTION3 PFK	34.74	1.177e4					1.6	NO		bb		0.000
32	FUNCTION3 PFK	34.70	1.460e4					1.2	NO		db		0.000
33	FUNCTION3 PFK	34.64	1.404e4					1.3	NO		bd		0.000
34	FUNCTION3 PFK	34.59	1.222e4					1.4	NO		bb		0.000
35	FUNCTION3 PFK	37.67	4.067e4					0.9	NO		db		0.000
36	FUNCTION3 PFK	37.62	1.394e4					1.6	NO		bd		0.000
37	FUNCTION3 PFK	37.47	1.347e3					0.3	NO		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	37.27	5.294e4					2.9	NO		db		0.000
39	FUNCTION3 PFK	37.18	1.039e5					4.3	YES		dd		0.000
40	FUNCTION3 PFK	37.14	8.694e4					3.5	YES		bd		0.000
41	FUNCTION3 PFK	36.91	2.665e5					4.6	YES		bb		0.000
42	FUNCTION3 PFK	36.58	3.481e5					1.8	NO		bb		0.000
43	FUNCTION3 PFK	36.52	1.600e4					1.3	NO		bb		0.000
44	FUNCTION3 PFK	36.38	1.332e4					1.5	NO		bb		0.000
45	FUNCTION3 PFK	36.32	2.235e4					1.2	NO		bb		0.000
46	FUNCTION3 PFK	35.88	2.860e4					1.3	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.30	3.596e3					0.7	NO		bb		
2	FUNCTION4 PFK	38.09	1.173e4					1.5	NO		db		
3	FUNCTION4 PFK	38.00	3.862e4					2.7	NO		bd		
4	FUNCTION4 PFK	41.30	1.665e4					2.1	NO		bd		
5	FUNCTION4 PFK	41.21	1.531e4					1.0	NO		bb		
6	FUNCTION4 PFK	41.12	3.840e3					0.6	NO		bb		
7	FUNCTION4 PFK	40.65	1.401e3					0.5	NO		bb		
8	FUNCTION4 PFK	40.23	8.122e3					1.1	NO		db		
9	FUNCTION4 PFK	40.18	1.052e4					1.4	NO		bd		
10	FUNCTION4 PFK	39.94	8.269e3					1.0	NO		db		
11	FUNCTION4 PFK	39.88	2.114e4					2.0	NO		bd		
12	FUNCTION4 PFK	39.78	5.912e3					1.1	NO		bb		
13	FUNCTION4 PFK	39.27	1.492e4					1.0	NO		db		
14	FUNCTION4 PFK	39.21	3.211e3					0.6	NO		bd		
15	FUNCTION4 PFK	38.89	4.999e3					0.8	NO		bb		
16	FUNCTION4 PFK	38.83	6.778e3					1.1	NO		bb		
17	FUNCTION4 PFK	38.68	2.806e3					0.6	NO		bb		
18	FUNCTION4 PFK	38.52	6.393e3					0.9	NO		bb		
19	FUNCTION4 PFK	38.44	9.548e3					0.8	NO		bb		
20	FUNCTION4 PFK	42.94	2.498e4					1.2	NO		bb		
21	FUNCTION4 PFK	42.51	1.149e4					1.3	NO		db		
22	FUNCTION4 PFK	42.48	8.256e3					1.3	NO		bd		
23	FUNCTION4 PFK	42.11	7.578e3					1.2	NO		bb		
24	FUNCTION4 PFK	41.98	1.406e4					1.3	NO		bb		
25	FUNCTION4 PFK	41.71	2.131e4					1.6	NO		db		
26	FUNCTION4 PFK	41.65	7.742e3					1.0	NO		dd		
27	FUNCTION4 PFK	41.56	4.255e4					3.0	NO		bd		
28	FUNCTION4 PFK	41.47	8.165e4					2.8	NO		db		
29	FUNCTION4 PFK	41.34	2.156e4					1.9	NO		dd		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.90	7.311e2					0.4	NO		bb		
2	FUNCTION5 PFK	43.82	1.856e3					0.5	NO		bb		
3	FUNCTION5 PFK	43.50	1.167e4					1.5	NO		bb		
4	FUNCTION5 PFK	43.27	4.243e3					0.8	NO		db		
5	FUNCTION5 PFK	43.19	2.086e4					2.1	NO		bd		
6	FUNCTION5 PFK	45.66	3.200e3					0.9	NO		db		
7	FUNCTION5 PFK	45.64	4.406e3					0.9	NO		bd		
8	FUNCTION5 PFK	45.55	6.250e3					1.2	NO		bb		
9	FUNCTION5 PFK	45.49	7.598e2					0.4	NO		bb		
10	FUNCTION5 PFK	45.45	5.074e3					0.8	NO		bb		
11	FUNCTION5 PFK	44.89	1.038e4					1.2	NO		bb		
12	FUNCTION5 PFK	44.39	1.400e4					1.5	NO		bb		
13	FUNCTION5 PFK	44.11	5.176e3					1.2	NO		bb		
14	FUNCTION5 PFK	44.03	4.747e3					0.9	NO		bb		
15	FUNCTION5 PFK	43.96	4.491e3					1.1	NO		bb		
16	FUNCTION5 PFK	43.92	1.125e3					0.6	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.10	6.496e2					13.4	YES		bd		0.000
2	FUNCTION1 HXCD...	23.75	2.275e3					47.5	YES		bb		0.000
3	FUNCTION1 HXCD...	22.74	3.703e2					8.2	YES		bb		0.000
4	FUNCTION1 HXCD...	22.27	1.073e2					3.0	YES		bb		0.000
5	FUNCTION1 HXCD...	27.65	2.862e2					5.8	YES		bb		0.000
6	FUNCTION1 HXCD...	26.79	6.914e2					13.7	YES		bb		0.000
7	FUNCTION1 HXCD...	26.12	2.377e3					47.6	YES		bb		0.000
8	FUNCTION1 HXCD...	25.91	3.194e2					7.0	YES		bb		0.000
9	FUNCTION1 HXCD...	25.75	1.494e3					28.6	YES		bb		0.000
10	FUNCTION1 HXCD...	25.23	7.059e1					2.1	NO		db		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.91	2.836e2					6.8	YES		bb		0.000
2	FUNCTION1 HPCD...	26.59	1.034e2					2.7	NO		bb		0.000
3	FUNCTION1 HPCD...	23.66	1.122e2					2.7	NO		bb		0.000
4	FUNCTION1 HPCD...	23.36	2.965e2					5.4	YES		bb		0.000
5	FUNCTION1 HPCD...	21.09	8.811e1					2.3	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	29.93	1.180e2					2.6	NO		bb		0.000
2	FUNCTION2 HPCD...	28.94	9.184e2					17.8	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.49	2.204e2					4.7	YES		bb		0.000
2	FUNCTION3 OCDPE	36.10	1.298e2					3.1	YES		db		0.000
3	FUNCTION3 OCDPE	35.99	2.073e2					4.8	YES		bd		0.000
4	FUNCTION3 OCDPE	34.87	7.771e1					2.4	NO		bb		0.000
5	FUNCTION3 OCDPE	33.69	1.239e2					2.8	NO		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.70	9.223e1					4.3	YES		bb		0.000
2	FUNCTION4 NCDPE	40.26	9.380e1					3.1	YES		bb		0.000
3	FUNCTION4 NCDPE	38.41	3.091e3					71.8	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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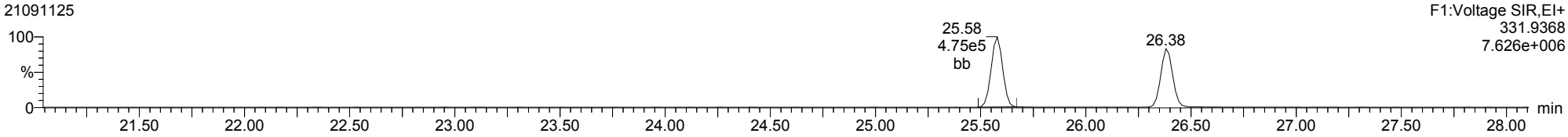
13C-1234-TCDD



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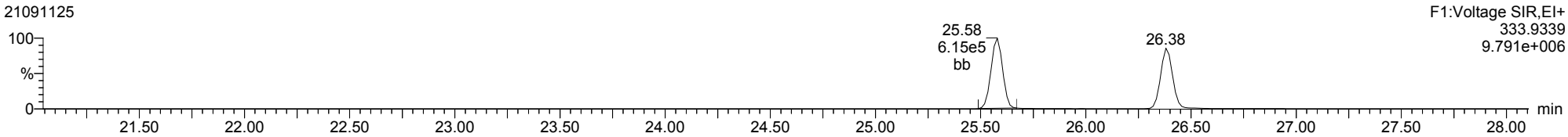
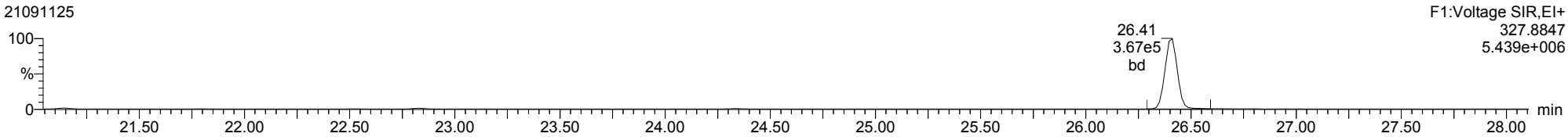


37CL-2378-TCDD



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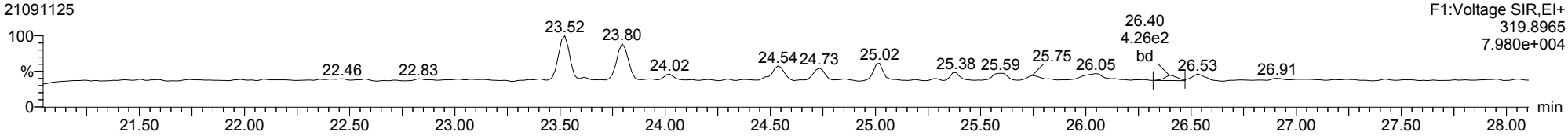
2378-TCDD



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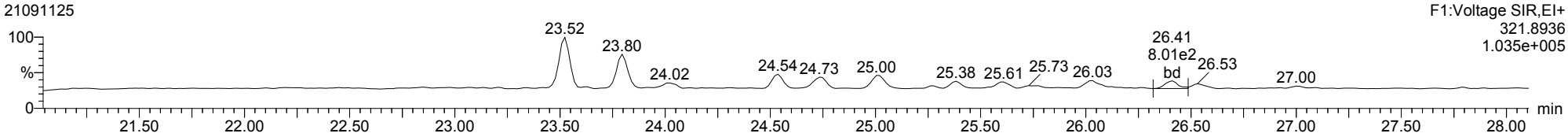

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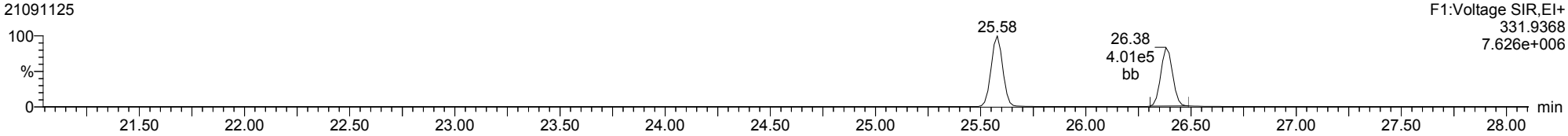

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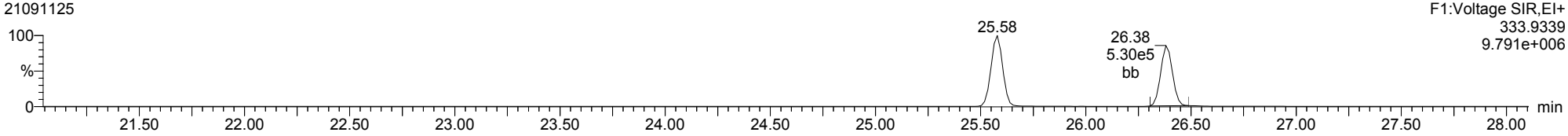
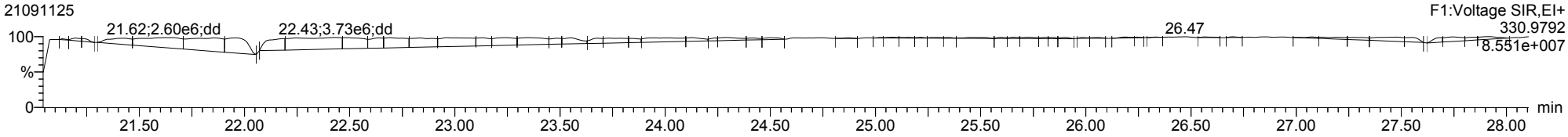


FUNCTION1 PFK



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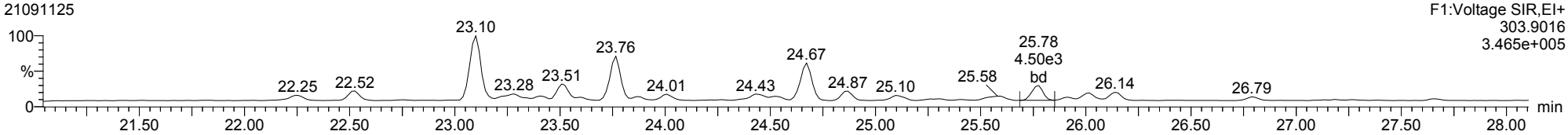
2378-TCDF



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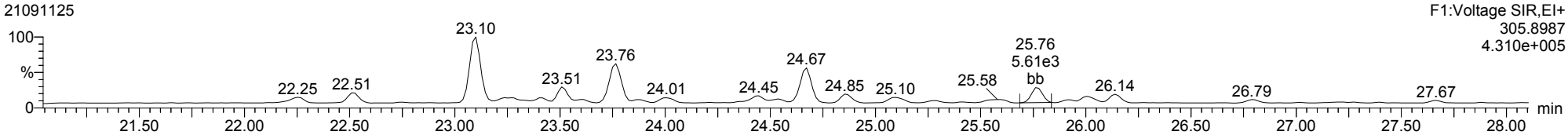

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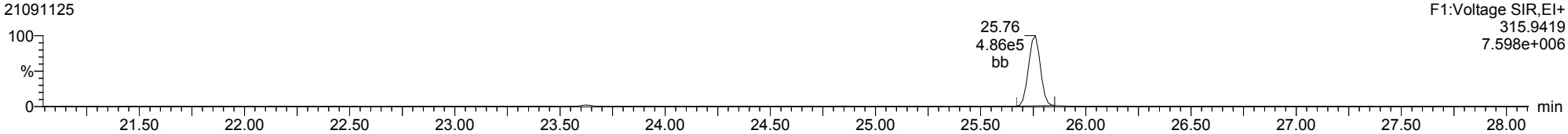

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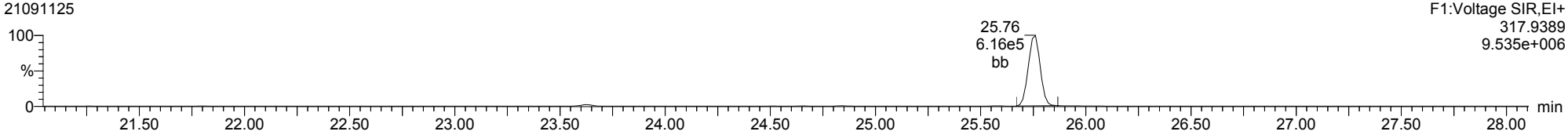
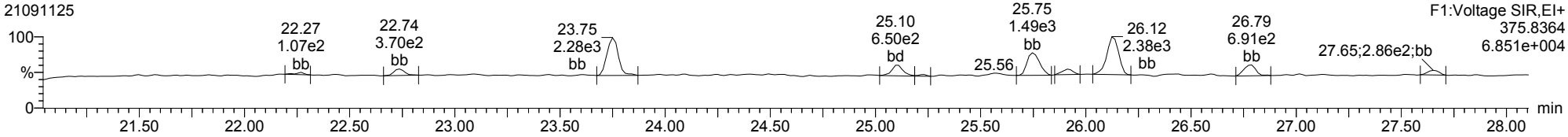


FUNCTION1 HXCDPE



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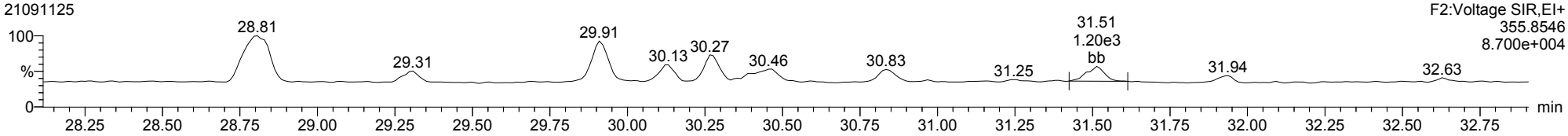
12378-PeCDD



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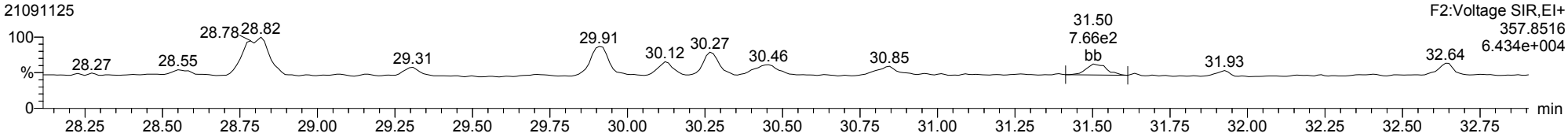

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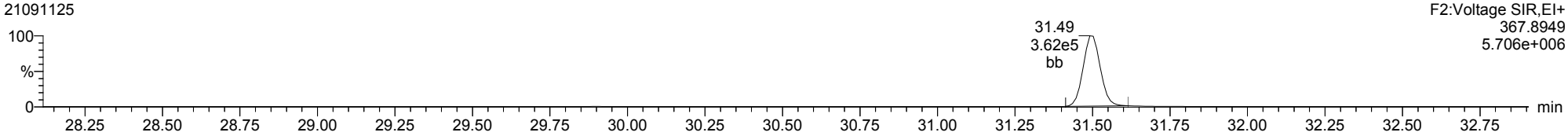

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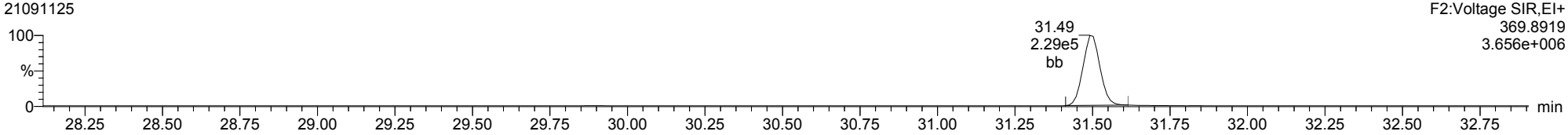

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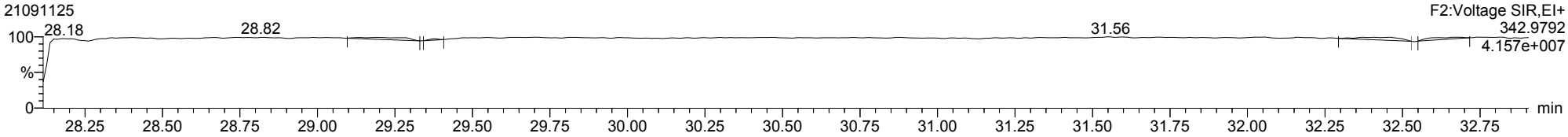

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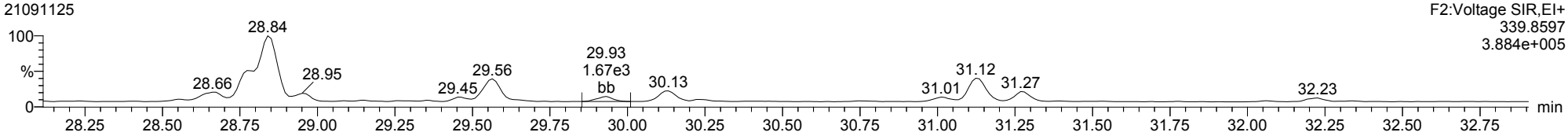

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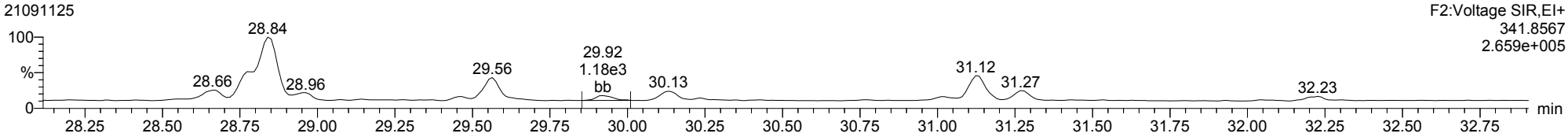

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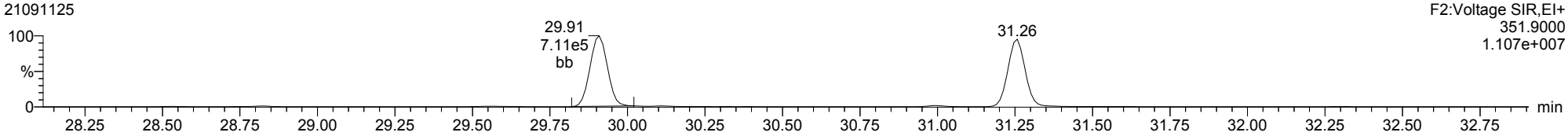

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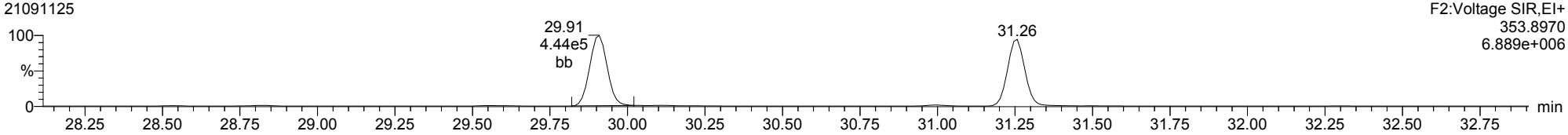
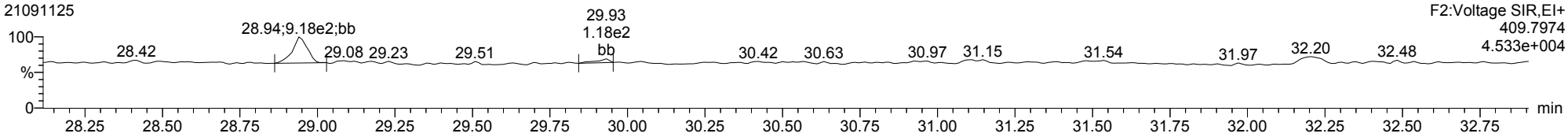


FUNCTION2 HPCDPE



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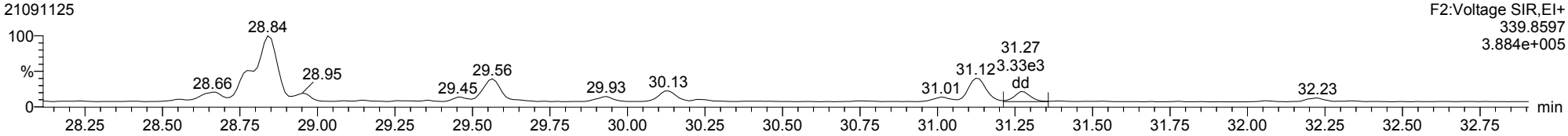

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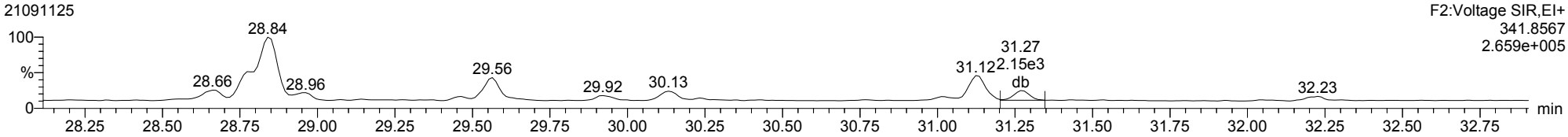

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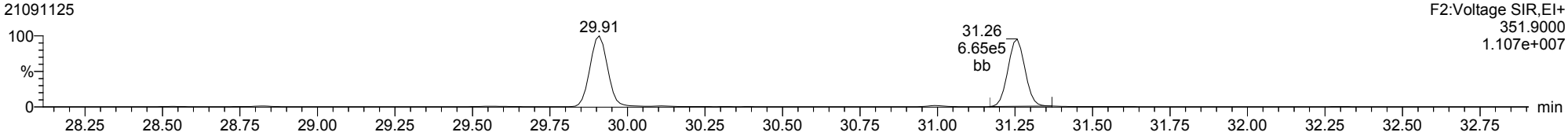

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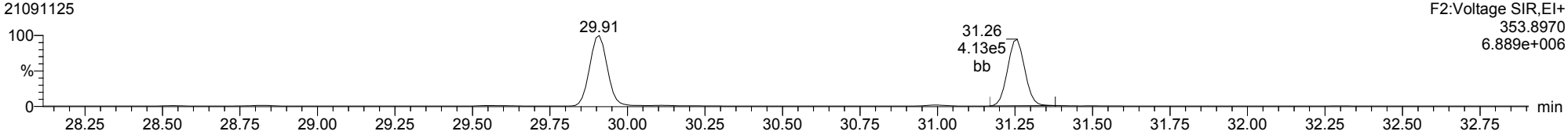

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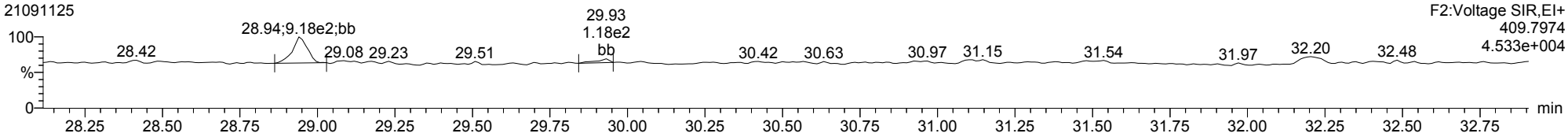

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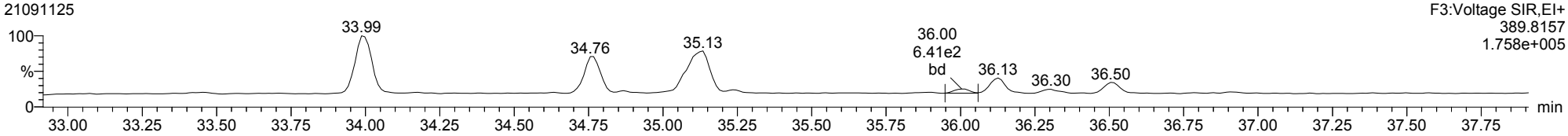

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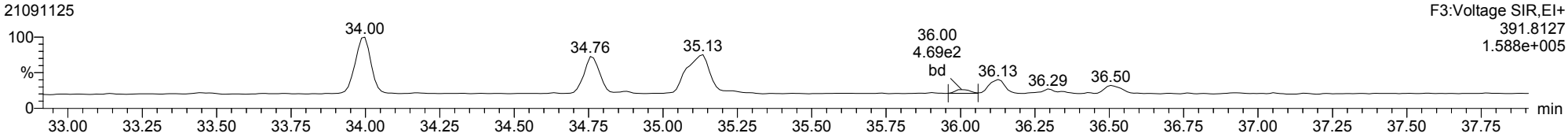

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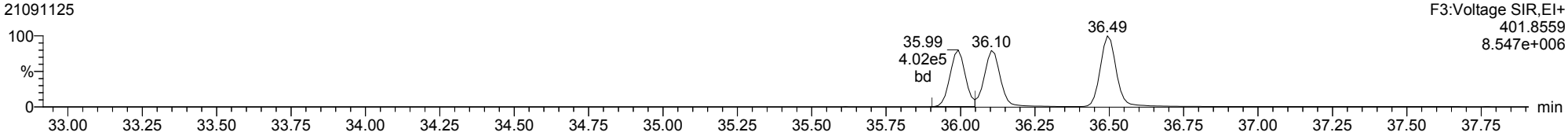

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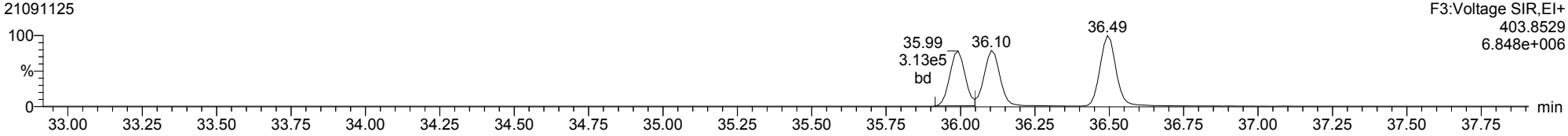

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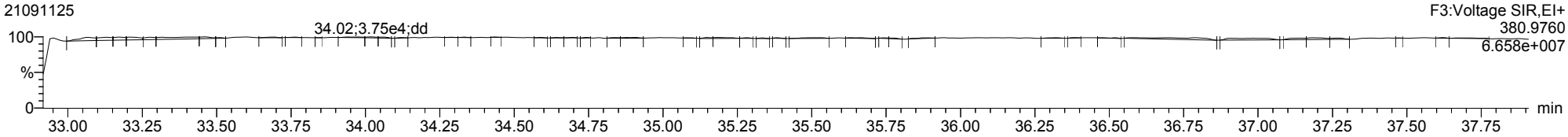

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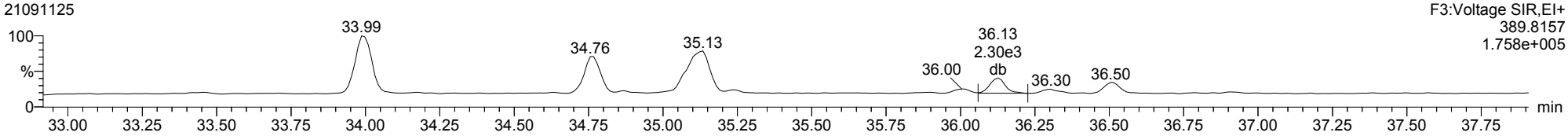

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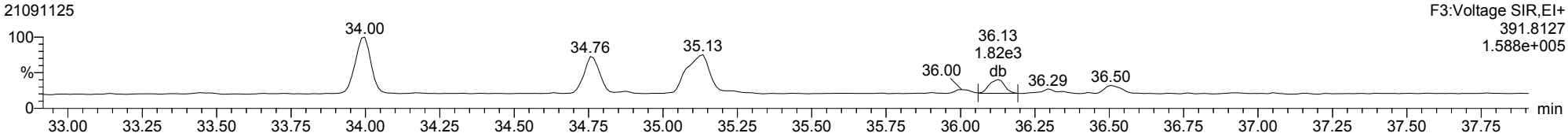

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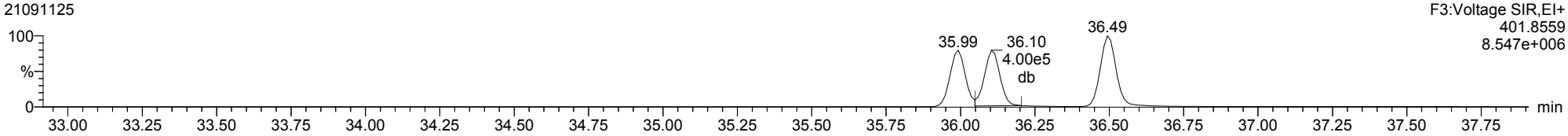

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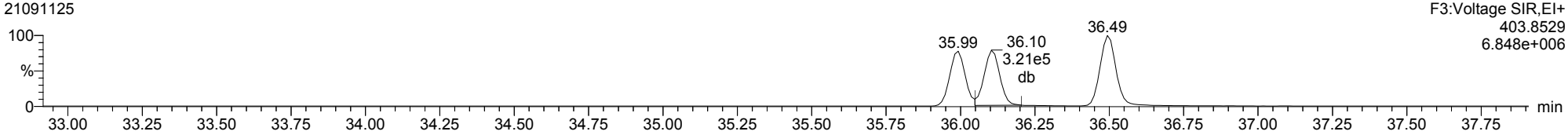

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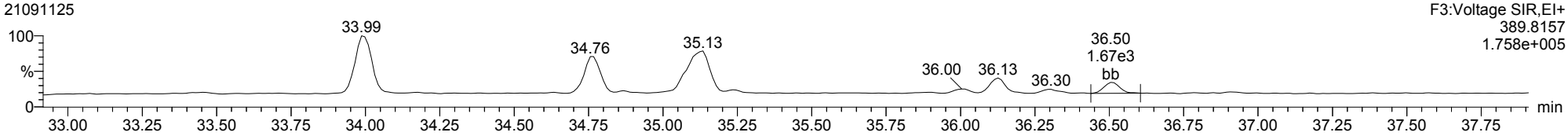

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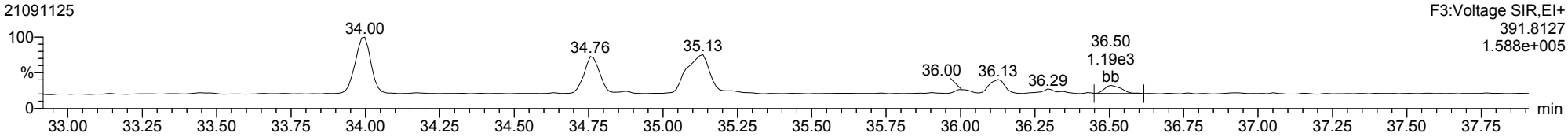

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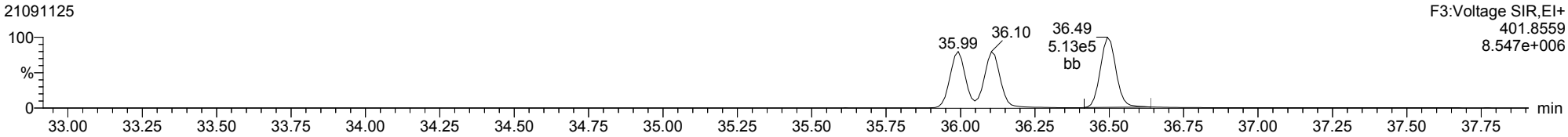

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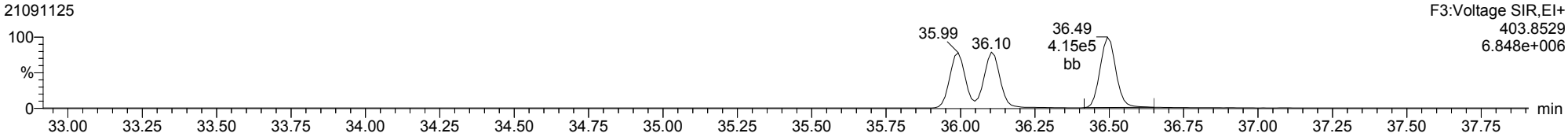

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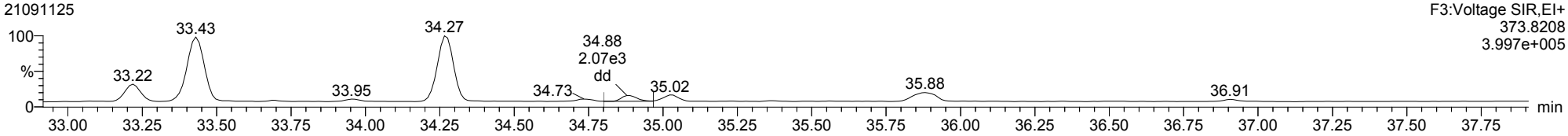

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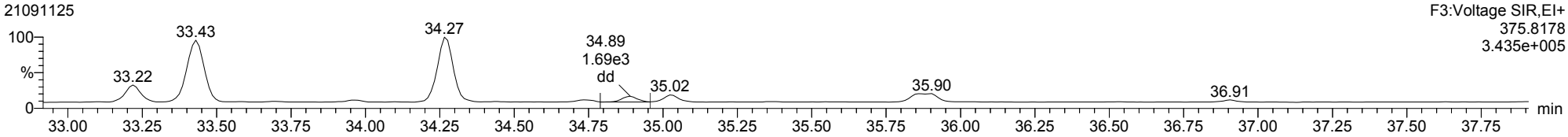

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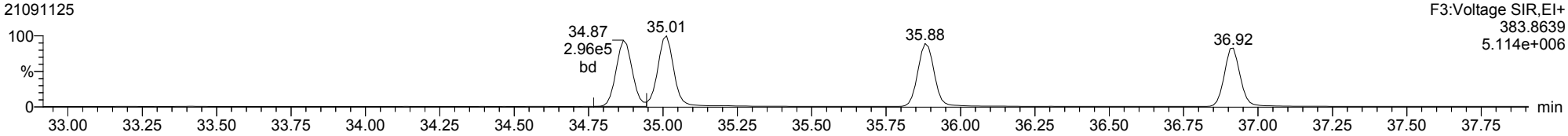

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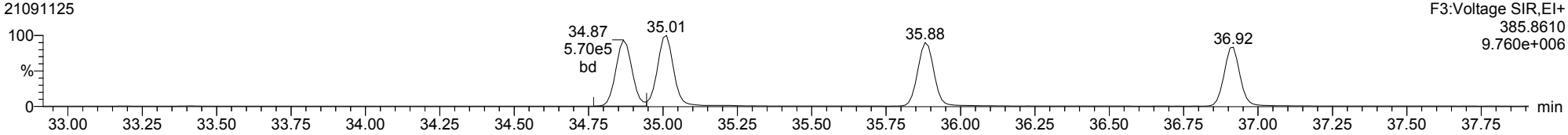

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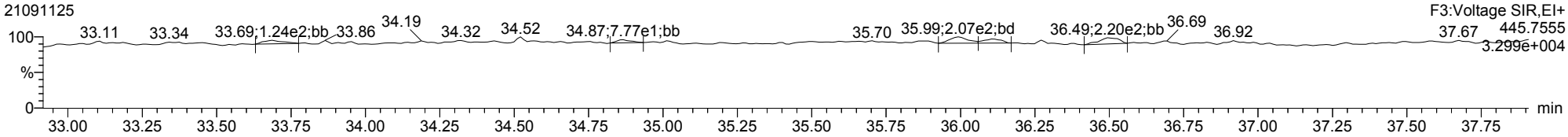

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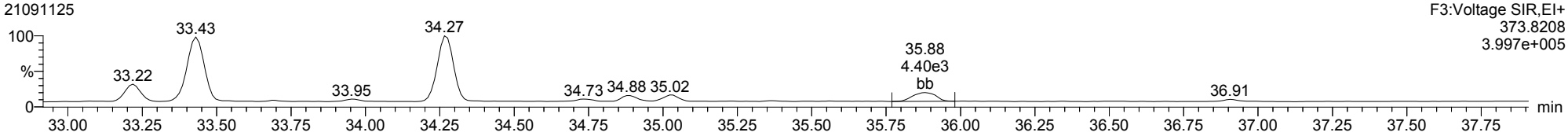

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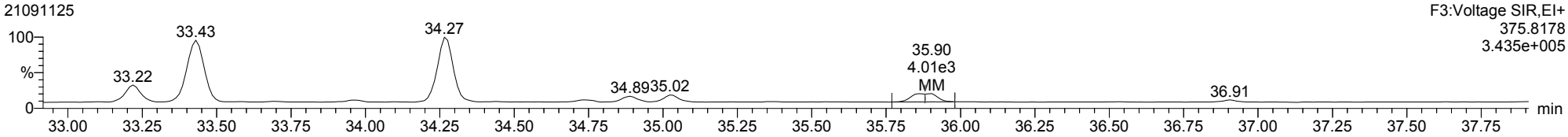

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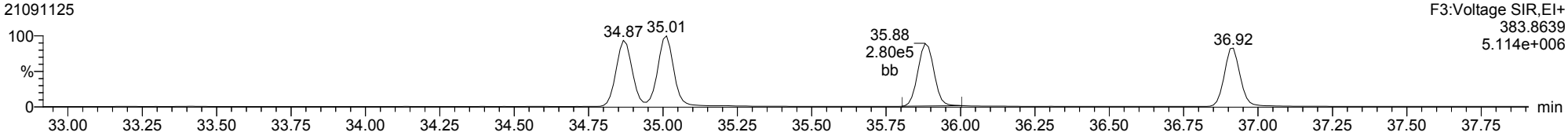

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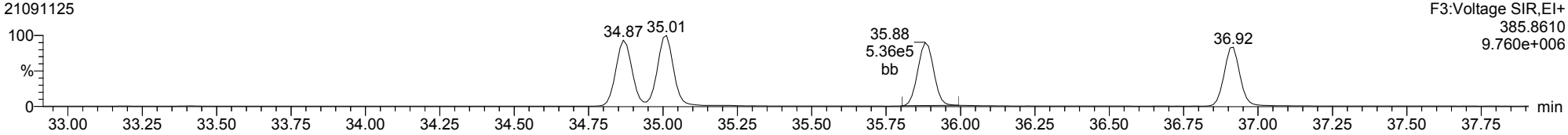
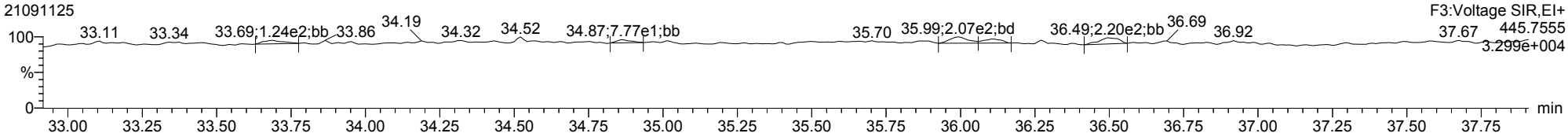


FUNCTION3 OCDPE



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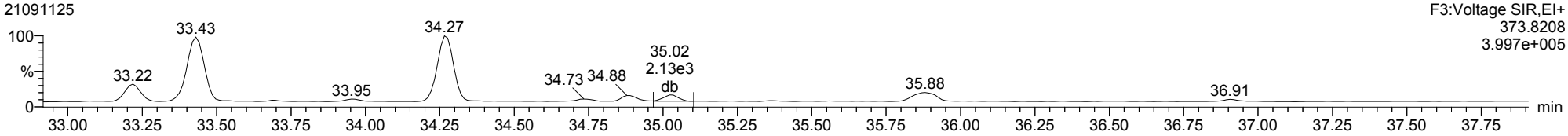

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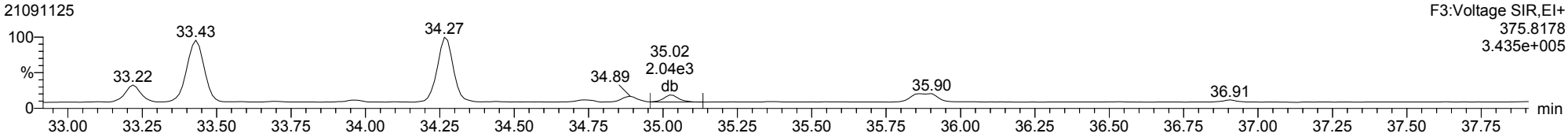

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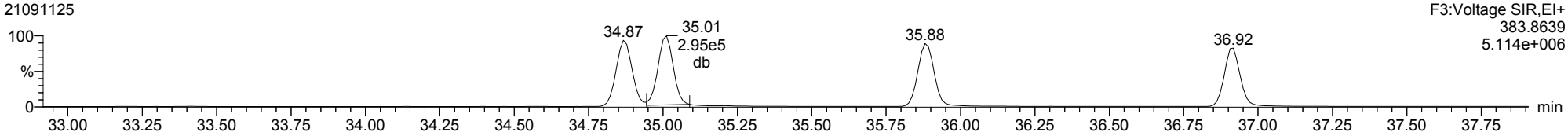

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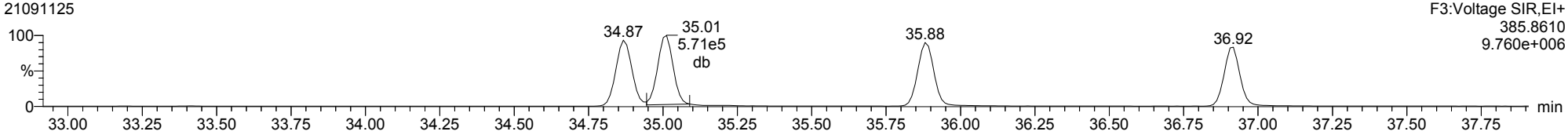
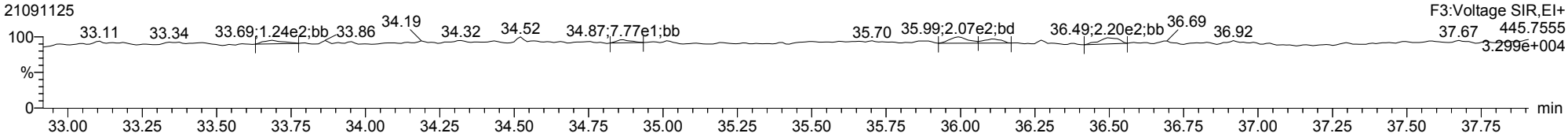


FUNCTION3 OCDPE



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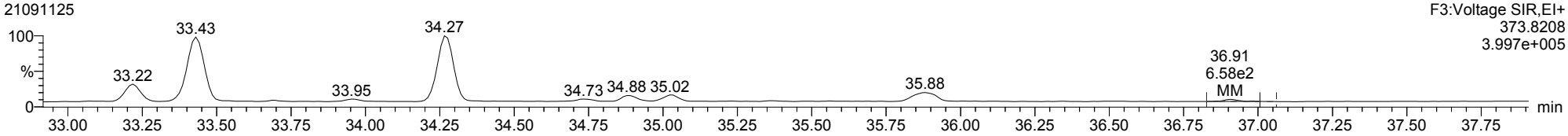

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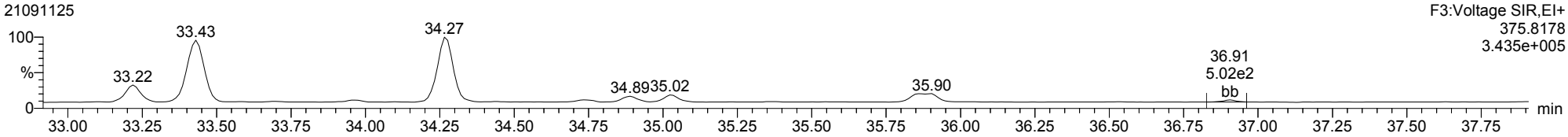

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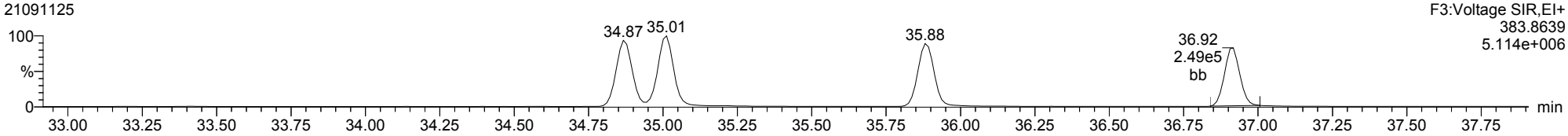

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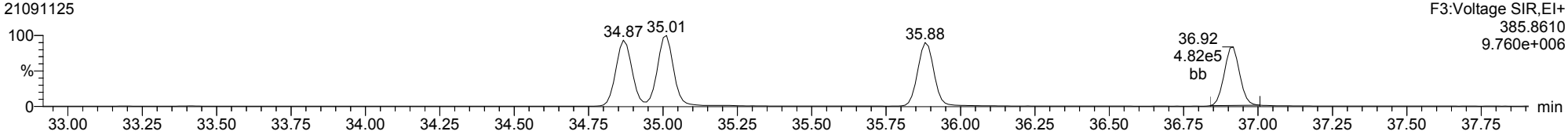

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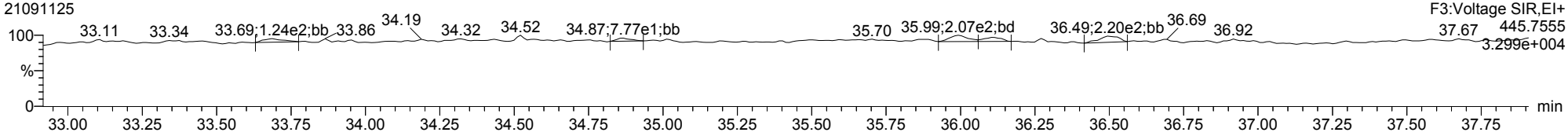

ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

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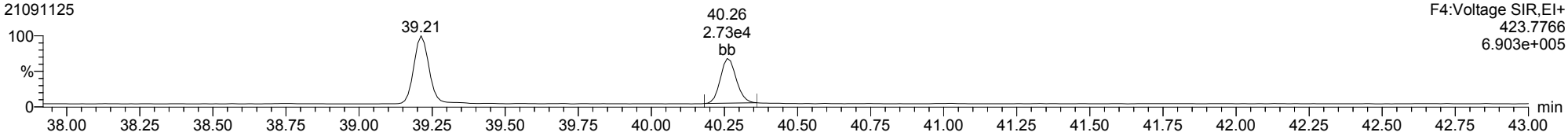

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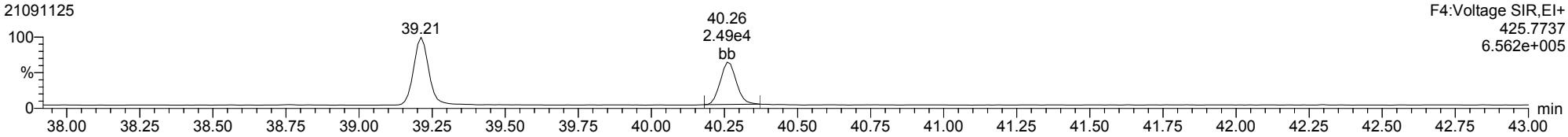

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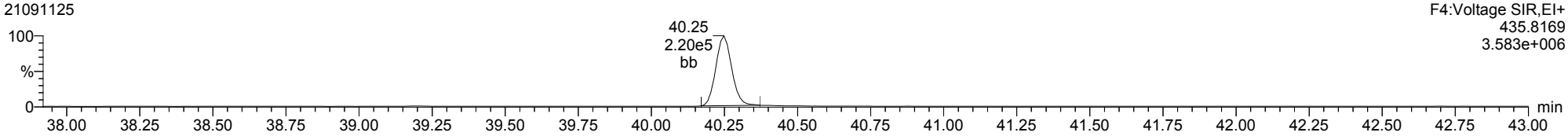

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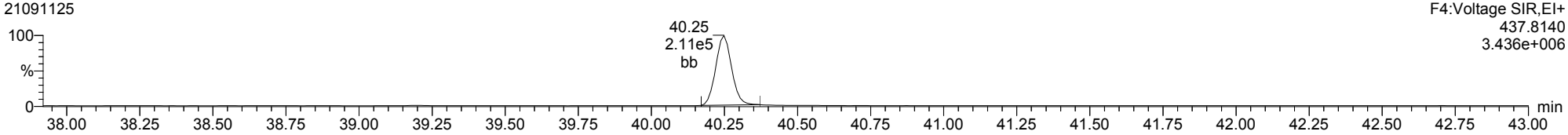
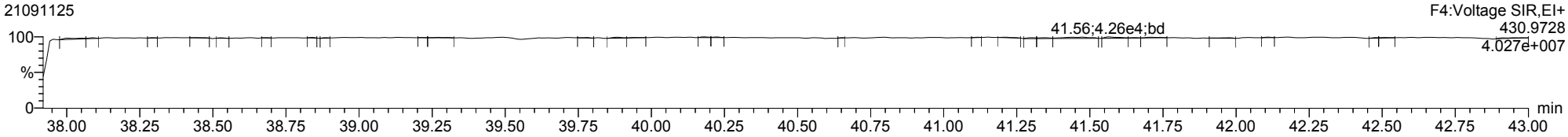


FUNCTION4 PFK



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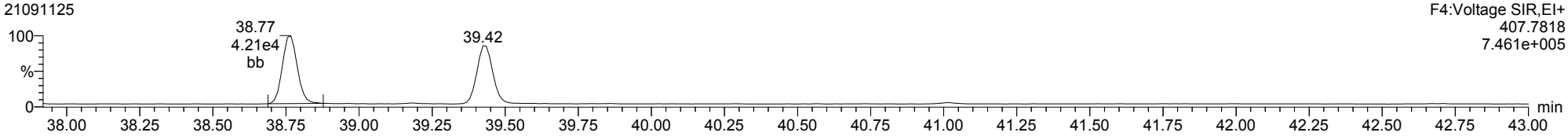

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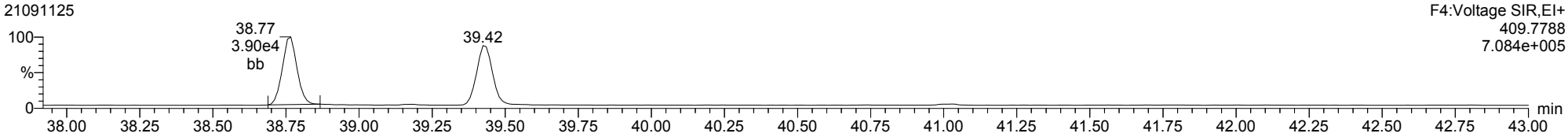

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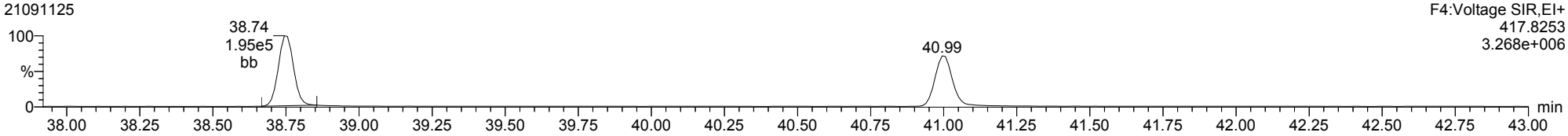

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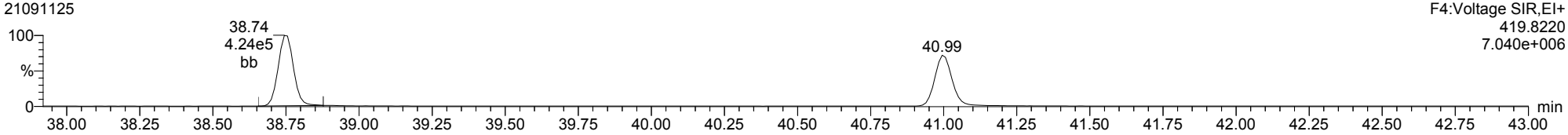
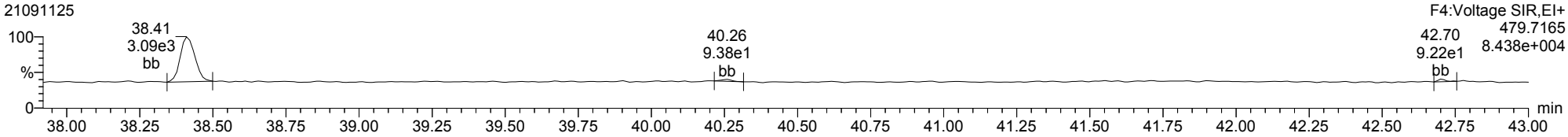


FUNCTION4 NCDPE



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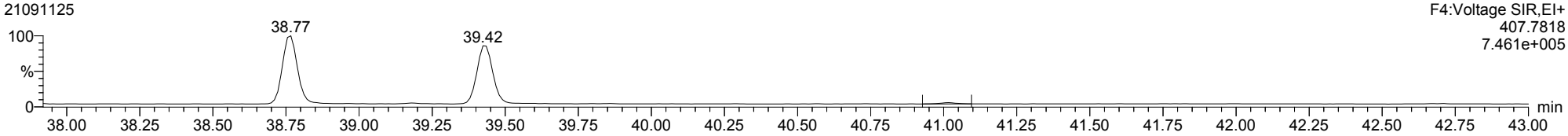
1234789-HpCDF



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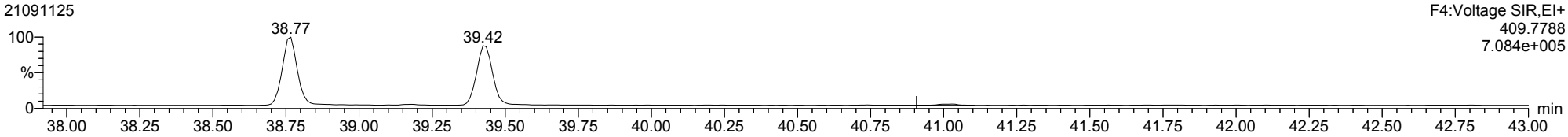

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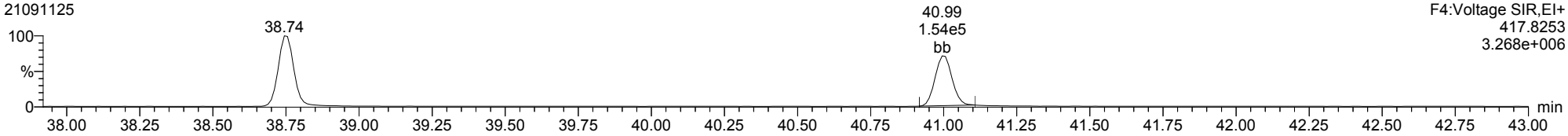

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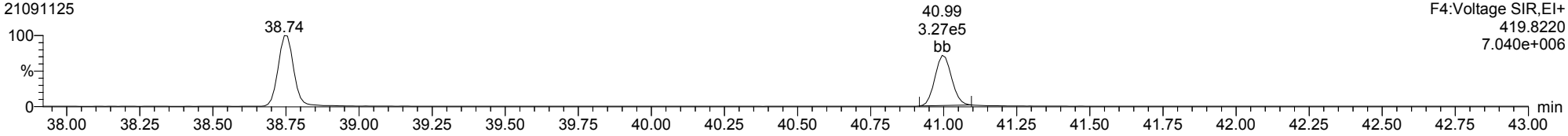
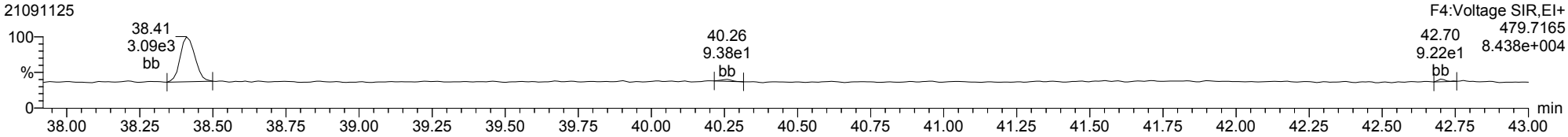
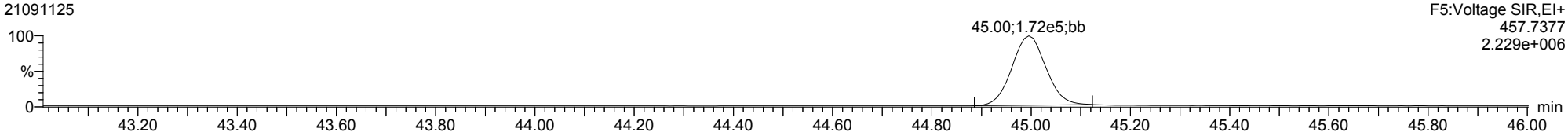


FUNCTION4 NCDPE



ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

OCDD



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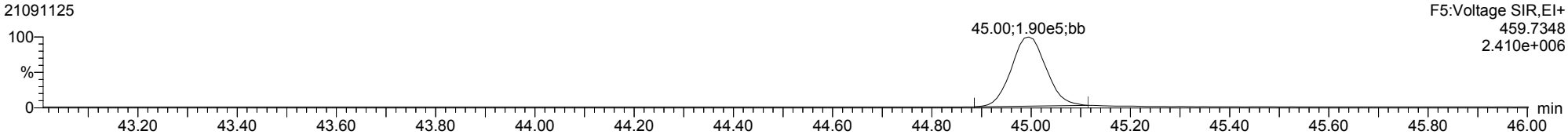

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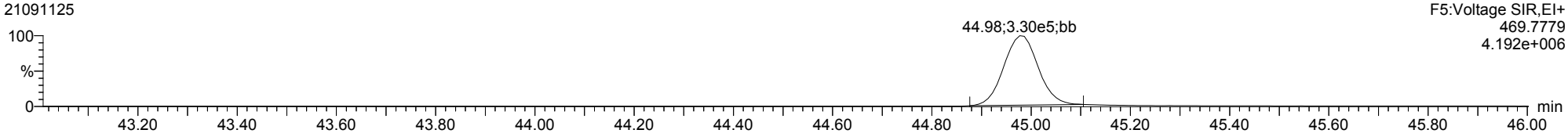

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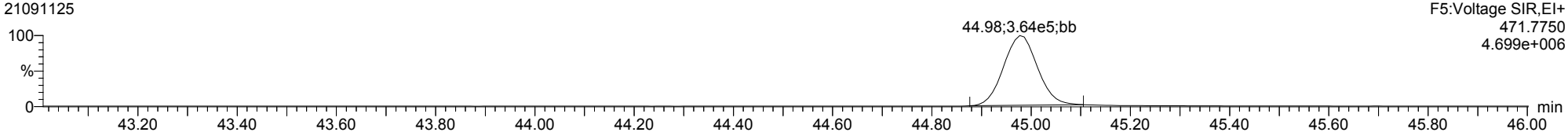
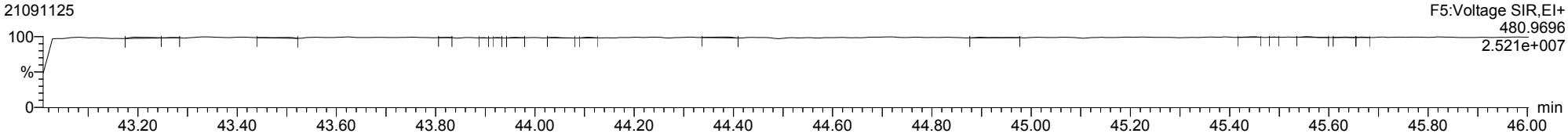
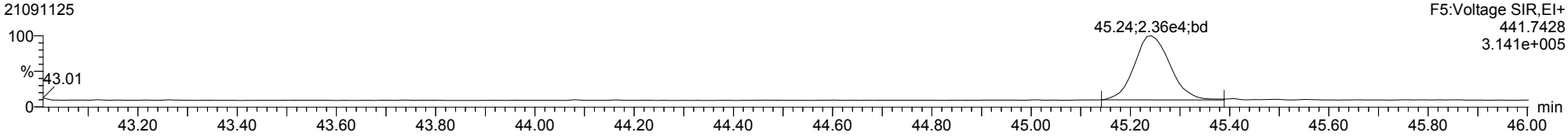


FUNCTION5 PFK



ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

OCDF



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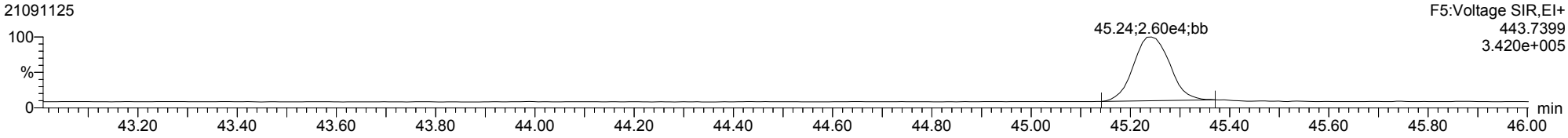

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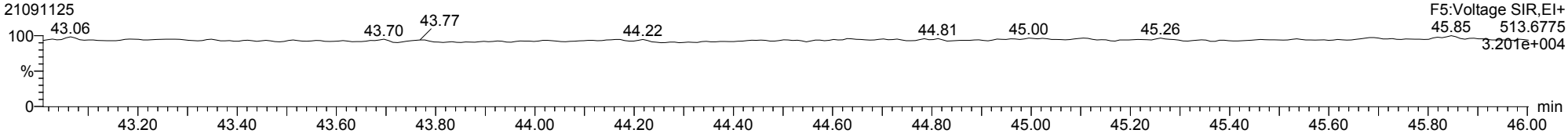
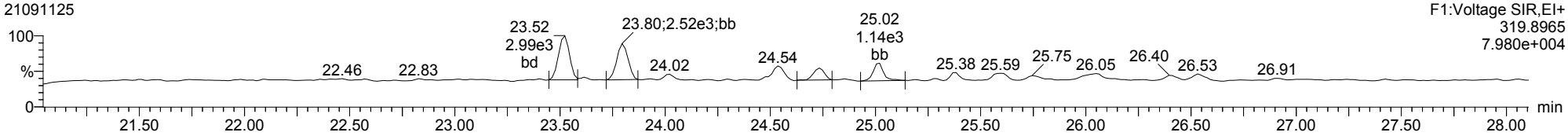
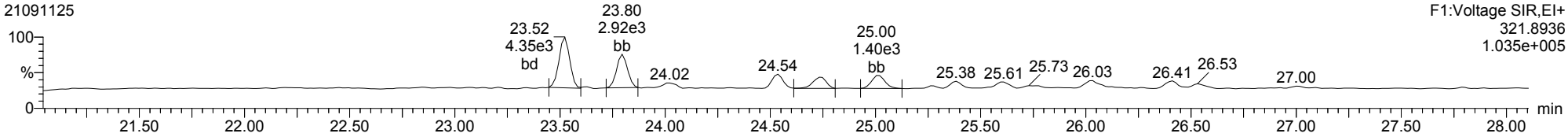


ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

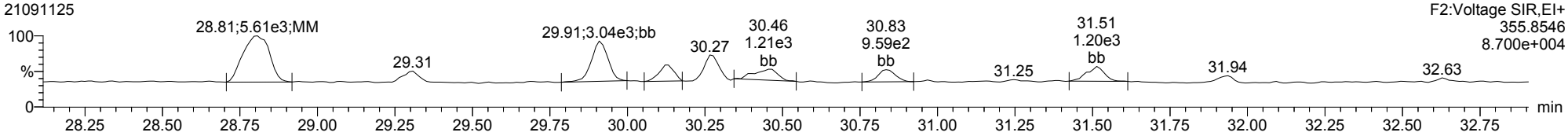
Total-tetradioxins



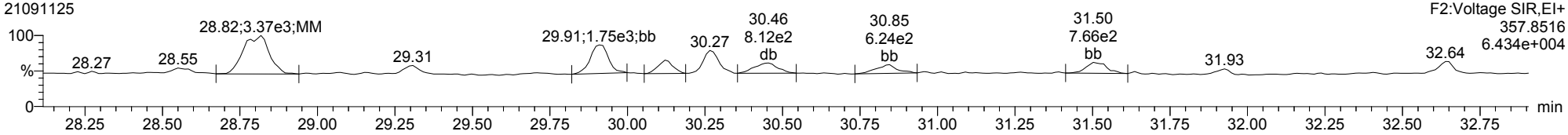
Total-tetradioxins



Total-pentadioxins



Total-pentadioxins



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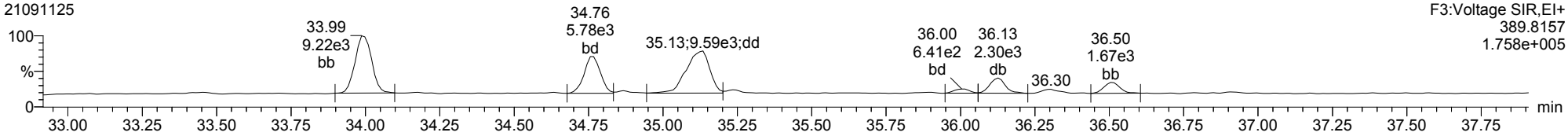
Total-hexadioxins



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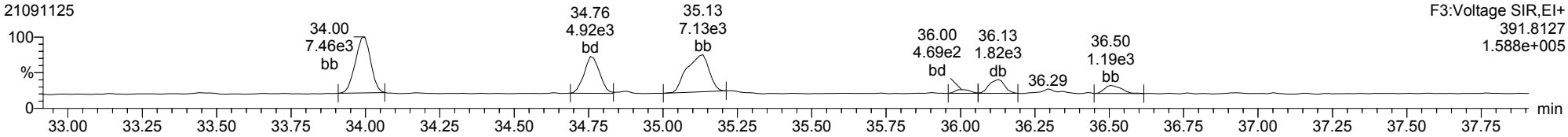

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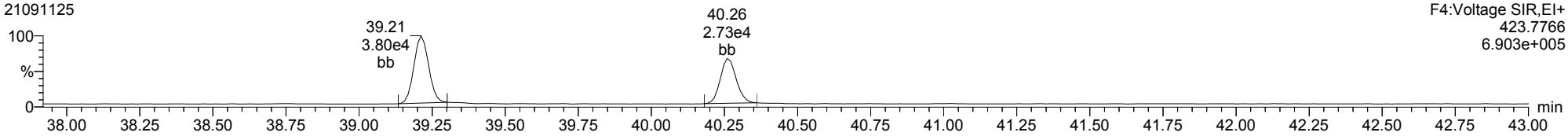
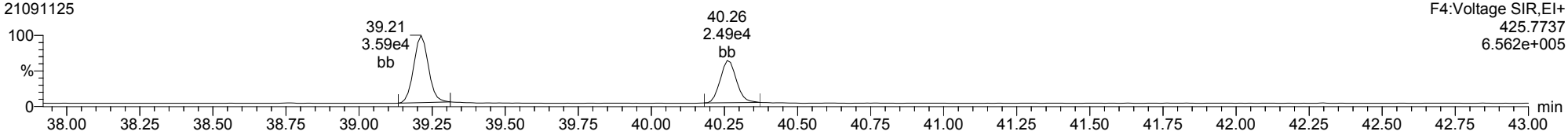


Total-heptadioxins



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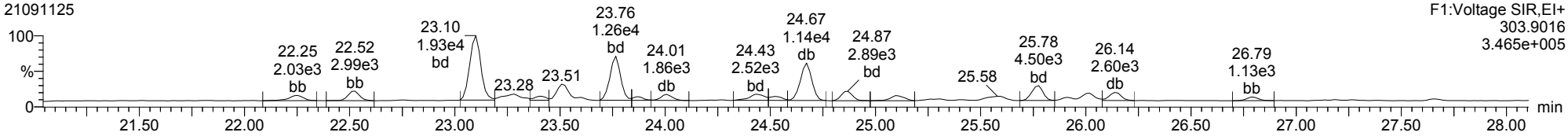
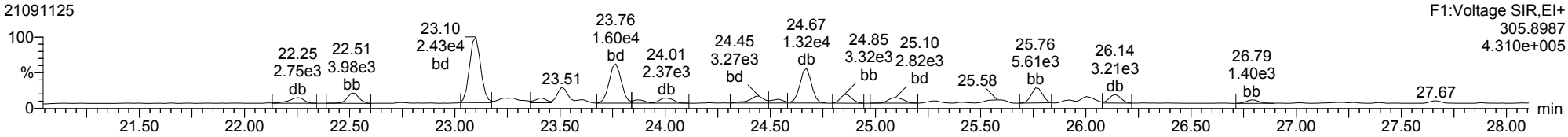
Printed: Wednesday, September 15, 2021 11:35:55 Pacific Daylight Time

ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



Total-tetrafurans



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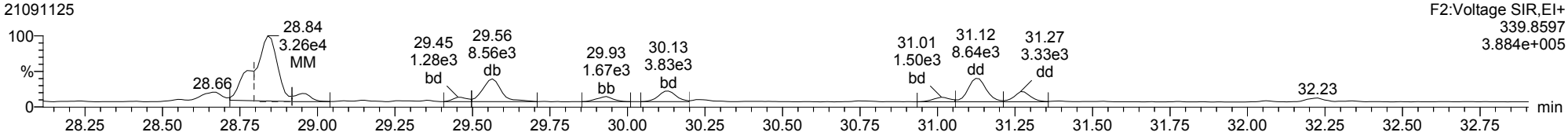

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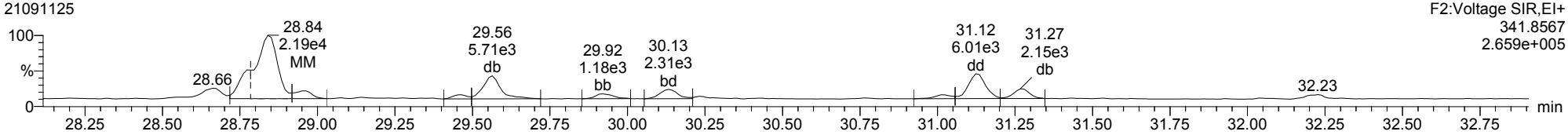

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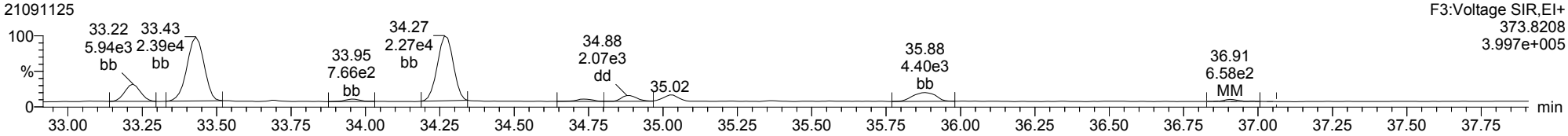
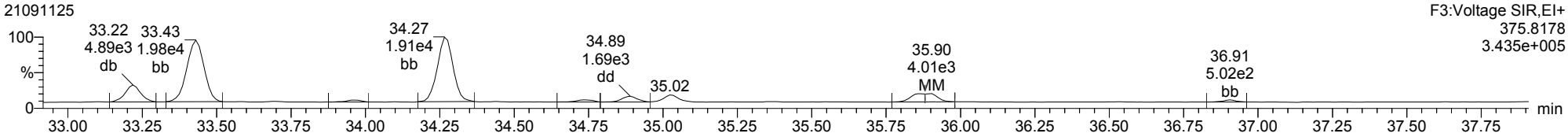
ID: 21G0138-09, Name: 21091125, Date: 12-Sep-2021, Time: 06:20:35, Conditions: AUTOSPEC01, User: pk

Total-hexafurans



Total-hexafurans



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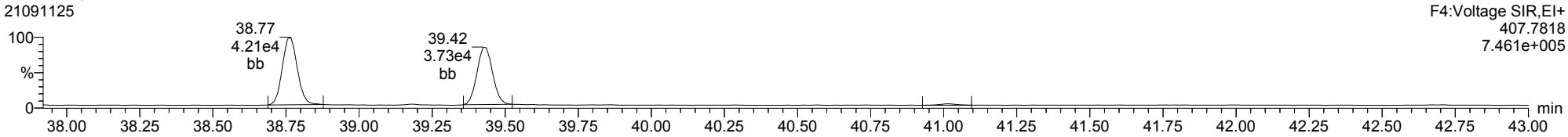

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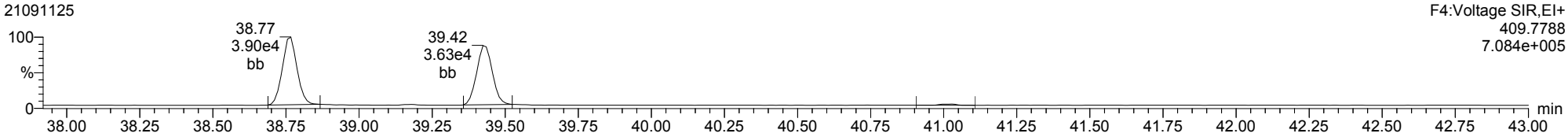

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT658E

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-10 C	File ID:	21091126
Sampled:	07/13/21 09:01	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 07:09
% Solids:	66.32	Preparation:	EPA 1613	Initial/Final:	15.08 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.850	0.655-0.886	0.072	1.00	2.56	ng/kg	X
1746-01-6	2,3,7,8-TCDD	1	0.227	0.655-0.886	0.073	1.00	0.193	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.557	1.318-1.783	0.074	1.00	0.313	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.535	1.318-1.783	0.068	1.00	0.511	ng/kg	J
40321-76-4	1,2,3,7,8-PeCDD	1	1.534	1.318-1.783	0.106	1.00	0.623	ng/kg	J
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.115	1.054-1.426	0.054	1.00	0.557	ng/kg	J
57117-44-9	1,2,3,6,7,8-HxCDF	1	0.957	1.054-1.426	0.049	1.00	0.515	ng/kg	EMPC, J
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.477	1.054-1.426	0.051	1.00	0.499	ng/kg	EMPC, J
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.632	1.054-1.426	0.055	1.00	0.176	ng/kg	EMPC, J
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.607	1.054-1.426	0.070	1.00	0.177	ng/kg	EMPC, J
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.425	1.054-1.426	0.074	1.00	0.526	ng/kg	J
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.327	1.054-1.426	0.077	1.00	0.454	ng/kg	J
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.137	0.893-1.208	0.057	1.00	1.43	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1		0.893-1.208	0.081	1.00	ND	ng/kg	U
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.011	0.893-1.208	0.102	2.50	3.45	ng/kg	B
39001-02-0	OCDF	1	0.680	0.757-1.024	0.108	2.50	0.938	ng/kg	EMPC, J
3268-87-9	OCDD	1	0.890	0.757-1.024	0.201	10.0	26.4	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	24.7	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	3.84	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	30.1	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	3.55	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	9.23	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	6.52	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	2.87	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	7.46	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 1.58
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 1.58

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT658E

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-10	File ID:	21091126
Sampled:	07/13/21 09:01	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 07:09
Solids Wt%:	66.32	Preparation:	EPA 1613	Initial/Final:	15.08 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.793	0.655-0.886	0.078	82.9	24 - 169 %	
13C12-2,3,7,8-TCDD		0.765	0.655-0.886	0.111	88.1	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.607	1.318-1.783	0.109	90.6	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.599	1.318-1.783	0.114	90.7	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.594	1.318-1.783	0.081	81.4	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.514	0.434-0.587	0.111	77.0	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.509	0.434-0.587	0.103	72.2	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.520	0.434-0.587	0.114	76.0	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.517	0.434-0.587	0.137	84.2	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.268	1.054-1.426	0.081	81.5	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.261	1.054-1.426	0.074	75.6	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.471	0.374-0.506	0.116	76.5	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.456	0.374-0.506	0.141	77.0	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.047	0.893-1.208	0.140	78.0	23 - 140 %	
13C12-OCDD		0.910	0.757-1.024	0.180	85.1	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.034	88.2	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:07 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-10, Name: 21091126, Date: 12-Sep-2021, Time: 07:09:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	8.783e3	1.033e4	1.108	0.850	0.770	937	1857	1.41e5	1.53e5	150.5	82.2	NO	bd	bd	1.280
12378-PeCDF	29.920	1.001	1.294e3	8.312e2	1.015	1.557	1.550	1387	1210	2.30e4	1.43e4	16.6	11.9	NO	bb	bb	0.156
23478-PeCDF	31.257	1.000	2.225e3	1.450e3	1.126	1.535	1.550	1387	1210	3.67e4	2.58e4	26.4	21.3	NO	db	db	0.255
123478-HxCDF	34.878	1.001	1.593e3	1.428e3	1.017	1.115	1.240	709	796	2.51e4	2.11e4	35.4	26.5	NO	dd	dd	0.279
234678-HxCDF	35.892	1.001	1.611e3	1.090e3	1.052	1.477	1.240	709	796	2.78e4	2.75e4	39.2	34.5	YES	MM	MM	0.250
123678-HxCDF	35.023	1.001	1.411e3	1.474e3	1.037	0.957	1.240	709	796	2.19e4	2.29e4	30.8	28.8	YES	db	db	0.258
123789-HxCDF	36.884	0.999	5.310e2	3.254e2	1.030	1.632	1.240	709	796	7.54e3	5.59e3	10.6	7.0	YES	bb	bb	0.088
1234678-HpCDF	38.755	1.000	3.975e3	3.495e3	1.327	1.137	1.050	792	939	6.50e4	5.97e4	82.1	63.5	NO	bb	bb	0.713
1234789-HpCDF					1.283		1.050	792	939								
OCDF	45.243	1.006	1.312e3	1.929e3	1.447	0.680	0.890	637	922	1.57e4	2.96e4	24.6	32.1	YES	bb	bb	0.469
2378-TCDD	26.396	1.001	1.844e2	8.111e2	0.920	0.227	0.770	1280	696	4.23e3	1.20e4	3.3	17.3	YES	bd	MM	0.096
12378-PeCDD	31.503	1.000	1.276e3	8.319e2	0.995	1.534	1.550	1206	666	2.02e4	1.13e4	16.8	16.9	NO	bb	bb	0.312
123478-HxCDD	35.992	1.000	4.894e2	3.045e2	1.027	1.607	1.240	930	869	8.25e3	7.18e3	8.9	8.3	YES	dd	bd	0.089
123678-HxCDD	36.115	1.000	1.368e3	9.601e2	1.009	1.425	1.240	930	869	2.20e4	1.49e4	23.6	17.2	NO	dd	dd	0.263
123789-HxCDD	36.505	1.011	1.077e3	8.117e2	0.950	1.327	1.240	930	869	1.88e4	1.66e4	20.2	19.1	NO	bb	bb	0.227
1234678-HpCDD	40.259	1.000	5.093e3	5.036e3	1.068	1.011	1.050	820	771	7.83e4	7.72e4	95.4	100.2	NO	bb	bb	1.725
OCDD	44.986	1.000	3.511e4	3.945e4	1.181	0.890	0.890	1010	1363	4.63e5	5.06e5	458.2	371.5	NO	bb	bb	13.225
13C-2378-TCDF	25.746	1.007	5.964e5	7.516e5	1.427	0.793	0.770	2143	1143	9.33e6	1.19e7	4351.6	10386.2	NO	bb	bb	82.869
13C-12378-PeCDF	29.898	1.169	8.257e5	5.138e5	1.297	1.607	1.550	1904	2260	1.27e7	7.98e6	6691.3	3530.1	NO	bb	bb	90.552
13C-23478-PeCDF	31.246	1.222	7.867e5	4.920e5	1.236	1.599	1.550	1904	2260	1.25e7	7.83e6	6559.8	3463.7	NO	bb	bb	90.692
13C-123478-HxCDF	34.856	0.955	3.618e5	7.042e5	1.242	0.514	0.510	1821	2365	5.63e6	1.10e7	3089.8	4655.1	NO	bd	bd	77.002
13C-123678-HxCDF	35.001	0.959	3.643e5	7.158e5	1.343	0.509	0.510	1821	2365	6.01e6	1.18e7	3303.1	4975.5	NO	db	db	72.151
13C-234678-HxCDF	35.870	0.983	3.518e5	6.766e5	1.215	0.520	0.510	1821	2365	5.77e6	1.12e7	3168.2	4715.1	NO	bb	bb	75.970
13C-123789-HxCDF	36.906	1.011	3.224e5	6.232e5	1.008	0.517	0.510	1821	2365	5.46e6	1.06e7	2996.6	4490.8	NO	bb	bb	84.218
13C-1234678-HpCDF	38.744	1.062	2.527e5	5.368e5	0.926	0.471	0.440	1637	1612	4.36e6	9.33e6	2665.2	5786.5	NO	bb	bb	76.477
13C-1234789-HpCDF	40.995	1.123	2.037e5	4.466e5	0.758	0.456	0.440	1637	1612	3.12e6	6.67e6	1905.4	4135.2	NO	bb	bb	77.010
13C-1234-TCDD	25.564	0.000	4.969e5	6.433e5	1.000	0.772	0.770	2242	1411	7.71e6	9.96e6	3436.7	7063.5	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.032	4.857e5	6.354e5	1.116	0.765	0.770	2242	1411	7.66e6	9.93e6	3416.6	7039.2	NO	bb	bb	88.067
13C-12378-PeCDD	31.491	1.232	4.176e5	2.620e5	0.732	1.594	1.550	845	908	6.53e6	4.11e6	7724.7	4521.6	NO	bb	bb	81.433
13C-123478-HxCDD	35.981	0.986	4.875e5	3.846e5	0.960	1.268	1.240	1250	1100	8.36e6	6.57e6	6688.9	5969.7	NO	bd	bd	81.536
13C-123678-HxCDD	36.104	0.989	4.890e5	3.878e5	1.041	1.261	1.240	1250	1100	8.03e6	6.33e6	6428.2	5754.2	NO	db	db	75.565
13C-1234678-HpCDD	40.237	1.103	2.812e5	2.686e5	0.632	1.047	1.050	1218	1462	4.48e6	4.34e6	3674.5	2971.2	NO	bb	bb	78.012
13C-OCDD	44.977	1.232	4.551e5	4.998e5	0.504	0.910	0.890	1298	1446	5.72e6	6.35e6	4404.9	4392.8	NO	bb	bb	170.126
13C-123789-HxCDD	36.494	0.000	6.222e5	4.920e5	1.000	1.265	1.240	1250	1100	1.02e7	7.89e6	8127.4	7171.2	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	4.360e5		1.084			1094		6.82e6		6232.1			bb		35.284

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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ID: 21G0138-10, Name: 21091126, Date: 12-Sep-2021, Time: 07:09:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	1.530e3	3.426e3	1.425	0.447	0.770	937	1857	2.58e4	3.43e4	27.5	18.5	YES	db	bb	0.258
1289-TCDF	27.273	1.059	1.198e2	2.668e2	1.043	0.449	0.770	937	1857	2.53e3	4.57e3	2.7	2.5	YES	db	db	0.028
13468-PECDF					1.376		1.550	839	1209								
12389-PECDF	32.215	1.077	3.649e3	2.303e3	1.000	1.585	1.550	1387	1210	5.96e4	3.56e4	43.0	29.4	NO	bd	bb	0.445
123468-HXCDF	33.207	0.953	2.427e3	1.945e3	1.087	1.248	1.240	709	796	3.87e4	3.14e4	54.6	39.5	NO	db	db	0.377
1368-TCDD	23.508	0.891	2.837e3	3.967e3	0.923	0.715	0.770	1280	696	4.48e4	6.06e4	35.0	87.0	NO	bb	bb	0.657
1289-TCDD	27.016	1.024	1.763e2	2.108e2	0.794	0.836	0.770	1280	696	3.68e3	3.76e3	2.9	5.4	NO	bb	bb	0.043
12479-PECDD	28.806	0.915	4.464e3	2.717e3	1.843	1.643	1.550	1206	666	4.96e4	3.33e4	41.2	50.0	NO	bb	bb	0.573
12389-PECDD	31.915	1.013	4.958e2	2.948e2	1.154	1.682	1.550	1206	666	6.84e3	5.35e3	5.7	8.0	NO	bb	bb	0.101
124679-HXCDD	33.987	0.945	4.526e3	3.864e3	1.125	1.171	1.240	930	869	7.06e4	5.98e4	75.9	68.9	NO	bb	bb	0.855
1234679-HPCDD	39.201	0.974	6.930e3	6.407e3	1.211	1.082	1.050	820	771	1.18e5	1.08e5	144.0	139.7	NO	bb	bb	2.003
Total-tetrafurans			8.711e4		1.192			937		1.34e6							12.341
Total-penta1			5.442e4					839		8.11e5							7.374
Total-pentafurans			6.308e4		1.047			1387		8.88e5							7.653
Total-hexafurans			2.768e4		1.045			709		4.47e5							4.618
Total-heptafurans			7.483e3		1.305			792		1.21e5							1.434
Total-Furans			2.398e5		1.158			937		3.61e6							33.420
Total-tetradioxins			8.232e3		0.879			1280		1.29e5							1.922
Total-pentadioxins			1.070e4		1.331			1206		1.45e5							1.775
Total-hexadioxins			1.667e4		1.028			930		2.42e5							3.259
Total-heptadioxins			1.202e4		1.140			820		1.96e5							3.728
Total-Dioxins			8.274e4		1.092			1280		1.18e6							23.910
Total-TEQ			3.225e5					1280		4.79e6							57.330
FUNCTION1 PFK			1.772e7					579930		7.79e7							
FUNCTION2 PFK			0.000e0					295717		0.00e0							
FUNCTION3 PFK			5.502e6					481873		8.06e7							0.000
FUNCTION4 PFK			1.671e7					267112		1.00e8							
FUNCTION5 PFK			2.851e5					191091		9.04e6							
FUNCTION1 HXCD...			2.611e4					758		4.29e5							0.000
FUNCTION1 HPCD...			2.468e3					918		3.46e4							0.000
FUNCTION2 HPCD...			4.236e3					882		7.18e4							0.000
FUNCTION3 OCDPE			1.070e3					520		1.93e4							0.000
FUNCTION4 NCDPE			5.108e3					738		9.85e4							0.000
FUNCTION5 DCDPE			2.584e2					592		4.47e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-10, Name: 21091126, Date: 12-Sep-2021, Time: 07:09:28, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	3.423e3	4.140e3	1.192	0.83	0.77	43.5	YES	NO	dd	dd	0.471
2	Total-tetrafurans	23.99	1.610e3	2.305e3	1.192	0.70	0.77	27.2	YES	NO	db	db	0.244
3	Total-tetrafurans	23.86	8.286e2	1.192e3	1.192	0.70	0.77	13.0	YES	NO	dd	dd	0.126
4	Total-tetrafurans	23.75	1.659e4	2.069e4	1.192	0.80	0.77	283.4	YES	NO	bd	dd	2.321
5	Total-tetrafurans	23.60	9.468e2	1.151e3	1.192	0.82	0.77	21.3	YES	NO	db	dd	0.131
6	Total-tetrafurans	23.51	4.819e3	6.039e3	1.192	0.80	0.77	83.8	YES	NO	dd	dd	0.676
7	Total-tetrafurans	23.40	1.622e3	2.414e3	1.192	0.67	0.77	26.9	YES	NO	dd	dd	0.251
8	Total-tetrafurans	23.08	1.375e4	1.724e4	1.192	0.80	0.77	223.9	YES	NO	bd	bd	1.929
9	Total-tetrafurans	22.51	4.105e3	5.240e3	1.192	0.78	0.77	71.7	YES	NO	bb	bb	0.582
10	Total-tetrafurans	26.79	2.729e3	3.175e3	1.192	0.86	0.77	44.4	YES	NO	bb	bb	0.367
11	Total-tetrafurans	26.14	7.178e3	8.687e3	1.192	0.83	0.77	118.5	YES	NO	db	db	0.987
12	Total-tetrafurans	26.00	1.913e3	2.753e3	1.192	0.69	0.77	27.3	YES	NO	dd	dd	0.290
13	Total-tetrafurans	25.91	8.220e2	1.186e3	1.192	0.69	0.77	15.1	YES	NO	dd	dd	0.125
14	2378-TCDF	25.76	8.783e3	1.033e4	1.108	0.85	0.77	150.5	YES	NO	bd	bd	1.280
15	Total-tetrafurans	25.55	1.701e3	2.477e3	1.192	0.69	0.77	17.0	YES	NO	db	db	0.260
16	Total-tetrafurans	25.11	3.163e3	4.061e3	1.192	0.78	0.77	47.3	YES	NO	bb	bd	0.450
17	Total-tetrafurans	24.87	2.561e3	3.297e3	1.192	0.78	0.77	40.3	YES	NO	db	bb	0.365
18	Total-tetrafurans	24.66	7.930e3	9.898e3	1.192	0.80	0.77	130.9	YES	NO	dd	db	1.110
19	Total-tetrafurans	24.54	1.416e3	1.607e3	1.192	0.88	0.77	26.6	YES	NO	dd	dd	0.188
20	Total-tetrafurans	27.65	1.223e3	1.811e3	1.192	0.68	0.77	20.6	YES	NO	bb	bb	0.189

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.91	1.544e3	1.038e3		1.49	1.55	25.3	YES	NO	bb	bb	0.210
2	Total-penta1	27.18	5.288e4	3.512e4		1.51	1.55	941.3	YES	NO	bb	bb	7.164

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PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.94	7.360e3	5.166e3	1.047	1.42	1.55	91.5	YES	NO	db	db	0.914
2	Total-pentafurans	28.84	2.186e4	1.453e4	1.047	1.50	1.55	179.5	YES	NO	MM	MM	2.656
3	Total-pentafurans	28.66	3.427e3	2.130e3	1.047	1.61	1.55	32.8	YES	NO	dd	dd	0.406
4	Total-pentafurans	28.54	7.673e2	5.651e2	1.047	1.36	1.55	9.1	YES	NO	bd	dd	0.097
5	12389-PECDF	32.22	3.649e3	2.303e3	1.000	1.58	1.55	43.0	YES	NO	bd	bb	0.445
6	23478-PeCDF	31.26	2.225e3	1.450e3	1.126	1.53	1.55	26.4	YES	NO	db	db	0.255
7	Total-pentafurans	31.11	8.241e3	5.356e3	1.047	1.54	1.55	84.3	YES	NO	dd	dd	0.992
8	Total-pentafurans	31.01	1.545e3	9.100e2	1.047	1.70	1.55	16.7	YES	NO	bd	bd	0.179
9	Total-pentafurans	30.21	5.801e2	3.869e2	1.047	1.50	1.55	6.9	YES	NO	db	db	0.071
10	Total-pentafurans	30.12	3.011e3	2.278e3	1.047	1.32	1.55	31.9	YES	NO	bd	bd	0.386
11	12378-PeCDF	29.92	1.294e3	8.312e2	1.015	1.56	1.55	16.6	YES	NO	bb	bb	0.156
12	Total-pentafurans	29.65	3.487e2	2.519e2	1.047	1.38	1.55	6.7	YES	NO	db	db	0.044
13	Total-pentafurans	29.55	7.239e3	4.614e3	1.047	1.57	1.55	75.1	YES	NO	dd	dd	0.865
14	Total-pentafurans	29.45	1.525e3	1.030e3	1.047	1.48	1.55	19.4	YES	NO	bd	bd	0.186

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.88	1.593e3	1.428e3	1.017	1.12	1.24	35.4	YES	NO	dd	dd	0.279
2	Total-hexafurans	34.73	5.023e2	4.232e2	1.045	1.19	1.24	9.1	YES	NO	bd	bd	0.086
3	Total-hexafurans	34.27	1.076e4	8.334e3	1.045	1.29	1.24	251.5	YES	NO	bb	bb	1.775
4	Total-hexafurans	33.42	1.239e4	1.021e4	1.045	1.21	1.24	280.1	YES	NO	bb	bb	2.101
5	123468-HXCDF	33.21	2.427e3	1.945e3	1.087	1.25	1.24	54.6	YES	NO	db	db	0.377

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	39.42	3.508e3	3.272e3	1.305	1.07	1.05	70.7	YES	NO	bb	bb	0.722
2	1234678-HpCDF	38.76	3.975e3	3.495e3	1.327	1.14	1.05	82.1	YES	NO	bb	bb	0.713

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	3.423e3	4.140e3	1.192	0.83	0.77	43.5	YES	NO	dd	dd	0.471
2	Total-tetrafurans	23.99	1.610e3	2.305e3	1.192	0.70	0.77	27.2	YES	NO	db	db	0.244
3	Total-tetrafurans	23.86	8.286e2	1.192e3	1.192	0.70	0.77	13.0	YES	NO	dd	dd	0.126
4	Total-tetrafurans	23.75	1.659e4	2.069e4	1.192	0.80	0.77	283.4	YES	NO	bd	dd	2.321
5	Total-tetrafurans	23.60	9.468e2	1.151e3	1.192	0.82	0.77	21.3	YES	NO	db	dd	0.131
6	Total-tetrafurans	23.51	4.819e3	6.039e3	1.192	0.80	0.77	83.8	YES	NO	dd	dd	0.676
7	Total-tetrafurans	23.40	1.622e3	2.414e3	1.192	0.67	0.77	26.9	YES	NO	dd	dd	0.251
8	Total-tetrafurans	23.08	1.375e4	1.724e4	1.192	0.80	0.77	223.9	YES	NO	bd	bd	1.929
9	Total-tetrafurans	22.51	4.105e3	5.240e3	1.192	0.78	0.77	71.7	YES	NO	bb	bb	0.582
10	Total-tetrafurans	26.79	2.729e3	3.175e3	1.192	0.86	0.77	44.4	YES	NO	bb	bb	0.367
11	Total-tetrafurans	26.14	7.178e3	8.687e3	1.192	0.83	0.77	118.5	YES	NO	db	db	0.987
12	Total-tetrafurans	26.00	1.913e3	2.753e3	1.192	0.69	0.77	27.3	YES	NO	dd	dd	0.290
13	Total-tetrafurans	25.91	8.220e2	1.186e3	1.192	0.69	0.77	15.1	YES	NO	dd	dd	0.125
14	2378-TCDF	25.76	8.783e3	1.033e4	1.108	0.85	0.77	150.5	YES	NO	bd	bd	1.280
15	Total-tetrafurans	25.55	1.701e3	2.477e3	1.192	0.69	0.77	17.0	YES	NO	db	db	0.260
16	Total-tetrafurans	25.11	3.163e3	4.061e3	1.192	0.78	0.77	47.3	YES	NO	bb	bd	0.450
17	Total-tetrafurans	24.87	2.561e3	3.297e3	1.192	0.78	0.77	40.3	YES	NO	db	bb	0.365
18	Total-tetrafurans	24.66	7.930e3	9.898e3	1.192	0.80	0.77	130.9	YES	NO	dd	db	1.110
19	Total-tetrafurans	24.54	1.416e3	1.607e3	1.192	0.88	0.77	26.6	YES	NO	dd	dd	0.188
20	Total-tetrafurans	27.65	1.223e3	1.811e3	1.192	0.68	0.77	20.6	YES	NO	bb	bb	0.189
21	Total-pentafurans	28.94	7.360e3	5.166e3	1.047	1.42	1.55	91.5	YES	NO	db	db	0.914
22	Total-pentafurans	28.84	2.186e4	1.453e4	1.047	1.50	1.55	179.5	YES	NO	MM	MM	2.656
23	Total-pentafurans	28.66	3.427e3	2.130e3	1.047	1.61	1.55	32.8	YES	NO	dd	dd	0.406
24	Total-pentafurans	28.54	7.673e2	5.651e2	1.047	1.36	1.55	9.1	YES	NO	bd	dd	0.097
25	12389-PECDF	32.22	3.649e3	2.303e3	1.000	1.58	1.55	43.0	YES	NO	bd	bb	0.445
26	23478-PeCDF	31.26	2.225e3	1.450e3	1.126	1.53	1.55	26.4	YES	NO	db	db	0.255
27	Total-pentafurans	31.11	8.241e3	5.356e3	1.047	1.54	1.55	84.3	YES	NO	dd	dd	0.992
28	Total-pentafurans	31.01	1.545e3	9.100e2	1.047	1.70	1.55	16.7	YES	NO	bd	bd	0.179
29	Total-pentafurans	30.21	5.801e2	3.869e2	1.047	1.50	1.55	6.9	YES	NO	db	db	0.071
30	Total-pentafurans	30.12	3.011e3	2.278e3	1.047	1.32	1.55	31.9	YES	NO	bd	bd	0.386
31	12378-PeCDF	29.92	1.294e3	8.312e2	1.015	1.56	1.55	16.6	YES	NO	bb	bb	0.156
32	Total-pentafurans	29.65	3.487e2	2.519e2	1.047	1.38	1.55	6.7	YES	NO	db	db	0.044
33	Total-pentafurans	29.55	7.239e3	4.614e3	1.047	1.57	1.55	75.1	YES	NO	dd	dd	0.865
34	Total-pentafurans	29.45	1.525e3	1.030e3	1.047	1.48	1.55	19.4	YES	NO	bd	bd	0.186
35	123478-HxCDF	34.88	1.593e3	1.428e3	1.017	1.12	1.24	35.4	YES	NO	dd	dd	0.279
36	Total-hexafurans	34.73	5.023e2	4.232e2	1.045	1.19	1.24	9.1	YES	NO	bd	bd	0.086
37	Total-hexafurans	34.27	1.076e4	8.334e3	1.045	1.29	1.24	251.5	YES	NO	bb	bb	1.775

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-hexafurans	33.42	1.239e4	1.021e4	1.045	1.21	1.24	280.1	YES	NO	bb	bb	2.101
39	123468-HXCDF	33.21	2.427e3	1.945e3	1.087	1.25	1.24	54.6	YES	NO	db	db	0.377
40	Total-heptafurans	39.42	3.508e3	3.272e3	1.305	1.07	1.05	70.7	YES	NO	bb	bb	0.722
41	1234678-HpCDF	38.76	3.975e3	3.495e3	1.327	1.14	1.05	82.1	YES	NO	bb	bb	0.713
42	Total-penta1	27.91	1.544e3	1.038e3		1.49	1.55	25.3	YES	NO	bb	bb	0.210
43	Total-penta1	27.18	5.288e4	3.512e4		1.51	1.55	941.3	YES	NO	bb	bb	7.164

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.38	4.562e2	6.446e2	0.879	0.71	0.77	5.5	YES	NO	bb	db	0.112
2	Total-tetradioxins	25.00	1.199e3	1.678e3	0.879	0.71	0.77	14.9	YES	NO	bb	bb	0.292
3	Total-tetradioxins	24.54	1.215e3	1.674e3	0.879	0.73	0.77	14.4	YES	NO	bd	bd	0.293
4	Total-tetradioxins	24.01	3.579e2	5.390e2	0.879	0.66	0.77	3.7	YES	NO	bb	bb	0.091
5	Total-tetradioxins	23.78	1.991e3	2.280e3	0.879	0.87	0.77	24.3	YES	NO	bb	bb	0.433
6	1368-TCDD	23.51	2.837e3	3.967e3	0.923	0.72	0.77	35.0	YES	NO	bb	bb	0.657
7	1289-TCDD	27.02	1.763e2	2.108e2	0.794	0.84	0.77	2.9	NO	NO	bb	bb	0.043

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	29.29	7.457e2	4.607e2	1.331	1.62	1.55	8.5	YES	NO	bb	bb	0.133
2	12479-PECDD	28.81	4.464e3	2.717e3	1.843	1.64	1.55	41.2	YES	NO	bb	bb	0.573
3	12389-PECDD	31.91	4.958e2	2.948e2	1.154	1.68	1.55	5.7	YES	NO	bb	bb	0.101
4	12378-PeCDD	31.50	1.276e3	8.319e2	0.995	1.53	1.55	16.8	YES	NO	bb	bb	0.312
5	Total-pentadioxins	30.27	2.070e3	1.273e3	1.331	1.63	1.55	26.3	YES	NO	dd	dd	0.370
6	Total-pentadioxins	30.12	1.646e3	9.424e2	1.331	1.75	1.55	21.8	YES	NO	MM	bd	0.286

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.50	1.077e3	8.117e2	0.950	1.33	1.24	20.2	YES	NO	bb	bb	0.227
2	123678-HxCDD	36.11	1.368e3	9.601e2	1.009	1.43	1.24	23.6	YES	NO	dd	dd	0.263
3	Total-hexadioxins	35.12	5.380e3	4.111e3	1.028	1.31	1.24	65.4	YES	NO	bb	bb	1.056
4	Total-hexadioxins	34.76	4.322e3	3.389e3	1.028	1.28	1.24	75.2	YES	NO	bd	bd	0.858
5	124679-HXCDD	33.99	4.526e3	3.864e3	1.125	1.17	1.24	75.9	YES	NO	bb	bb	0.855

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HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	5.093e3	5.036e3	1.068	1.01	1.05	95.4	YES	NO	bb	bb	1.725
2	1234679-HPCDD	39.20	6.930e3	6.407e3	1.211	1.08	1.05	144.0	YES	NO	bb	bb	2.003

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.38	4.562e2	6.446e2	0.879	0.71	0.77	5.5	YES	NO	bb	db	0.112
2	Total-tetradioxins	25.00	1.199e3	1.678e3	0.879	0.71	0.77	14.9	YES	NO	bb	bb	0.292
3	Total-tetradioxins	24.54	1.215e3	1.674e3	0.879	0.73	0.77	14.4	YES	NO	bd	bd	0.293
4	Total-tetradioxins	24.01	3.579e2	5.390e2	0.879	0.66	0.77	3.7	YES	NO	bb	bb	0.091
5	Total-tetradioxins	23.78	1.991e3	2.280e3	0.879	0.87	0.77	24.3	YES	NO	bb	bb	0.433
6	1368-TCDD	23.51	2.837e3	3.967e3	0.923	0.72	0.77	35.0	YES	NO	bb	bb	0.657
7	1289-TCDD	27.02	1.763e2	2.108e2	0.794	0.84	0.77	2.9	NO	NO	bb	bb	0.043
8	Total-pentadioxins	29.29	7.457e2	4.607e2	1.331	1.62	1.55	8.5	YES	NO	bb	bb	0.133
9	12479-PECDD	28.81	4.464e3	2.717e3	1.843	1.64	1.55	41.2	YES	NO	bb	bb	0.573
10	12389-PECDD	31.91	4.958e2	2.948e2	1.154	1.68	1.55	5.7	YES	NO	bb	bb	0.101
11	12378-PeCDD	31.50	1.276e3	8.319e2	0.995	1.53	1.55	16.8	YES	NO	bb	bb	0.312
12	Total-pentadioxins	30.27	2.070e3	1.273e3	1.331	1.63	1.55	26.3	YES	NO	dd	dd	0.370
13	123789-HxCDD	36.50	1.077e3	8.117e2	0.950	1.33	1.24	20.2	YES	NO	bb	bb	0.227
14	123678-HxCDD	36.11	1.368e3	9.601e2	1.009	1.43	1.24	23.6	YES	NO	dd	dd	0.263
15	Total-hexadioxins	35.12	5.380e3	4.111e3	1.028	1.31	1.24	65.4	YES	NO	bb	bb	1.056
16	Total-hexadioxins	34.76	4.322e3	3.389e3	1.028	1.28	1.24	75.2	YES	NO	bd	bd	0.858
17	124679-HXCDD	33.99	4.526e3	3.864e3	1.125	1.17	1.24	75.9	YES	NO	bb	bb	0.855
18	1234678-HpCDD	40.26	5.093e3	5.036e3	1.068	1.01	1.05	95.4	YES	NO	bb	bb	1.725
19	1234679-HPCDD	39.20	6.930e3	6.407e3	1.211	1.08	1.05	144.0	YES	NO	bb	bb	2.003
20	OCDD	44.99	3.511e4	3.945e4	1.181	0.89	0.89	458.2	YES	NO	bb	bb	13.225
21	Total-pentadioxins	30.12	1.646e3	9.424e2	1.331	1.75	1.55	21.8	YES	NO	MM	bd	0.286

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:07 Pacific Daylight Time

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	3.423e3	4.140e3	1.192	0.83	0.77	43.5	YES	NO	dd	dd	0.471
2	Total-tetrafurans	23.99	1.610e3	2.305e3	1.192	0.70	0.77	27.2	YES	NO	db	db	0.244
3	Total-tetrafurans	23.86	8.286e2	1.192e3	1.192	0.70	0.77	13.0	YES	NO	dd	dd	0.126
4	Total-tetrafurans	23.75	1.659e4	2.069e4	1.192	0.80	0.77	283.4	YES	NO	bd	dd	2.321
5	Total-tetrafurans	23.60	9.468e2	1.151e3	1.192	0.82	0.77	21.3	YES	NO	db	dd	0.131
6	Total-tetrafurans	23.51	4.819e3	6.039e3	1.192	0.80	0.77	83.8	YES	NO	dd	dd	0.676
7	Total-tetrafurans	23.40	1.622e3	2.414e3	1.192	0.67	0.77	26.9	YES	NO	dd	dd	0.251
8	Total-tetrafurans	23.08	1.375e4	1.724e4	1.192	0.80	0.77	223.9	YES	NO	bd	bd	1.929
9	Total-tetrafurans	22.51	4.105e3	5.240e3	1.192	0.78	0.77	71.7	YES	NO	bb	bb	0.582
10	Total-tetrafurans	26.79	2.729e3	3.175e3	1.192	0.86	0.77	44.4	YES	NO	bb	bb	0.367
11	Total-tetrafurans	26.14	7.178e3	8.687e3	1.192	0.83	0.77	118.5	YES	NO	db	db	0.987
12	Total-tetrafurans	26.00	1.913e3	2.753e3	1.192	0.69	0.77	27.3	YES	NO	dd	dd	0.290
13	Total-tetrafurans	25.91	8.220e2	1.186e3	1.192	0.69	0.77	15.1	YES	NO	dd	dd	0.125
14	2378-TCDF	25.76	8.783e3	1.033e4	1.108	0.85	0.77	150.5	YES	NO	bd	bd	1.280
15	Total-tetrafurans	25.55	1.701e3	2.477e3	1.192	0.69	0.77	17.0	YES	NO	db	db	0.260
16	Total-tetrafurans	25.11	3.163e3	4.061e3	1.192	0.78	0.77	47.3	YES	NO	bb	bd	0.450
17	Total-tetrafurans	24.87	2.561e3	3.297e3	1.192	0.78	0.77	40.3	YES	NO	db	bb	0.365
18	Total-tetrafurans	24.66	7.930e3	9.898e3	1.192	0.80	0.77	130.9	YES	NO	dd	db	1.110
19	Total-tetrafurans	24.54	1.416e3	1.607e3	1.192	0.88	0.77	26.6	YES	NO	dd	dd	0.188
20	Total-tetrafurans	27.65	1.223e3	1.811e3	1.192	0.68	0.77	20.6	YES	NO	bb	bb	0.189
21	Total-pentafurans	28.94	7.360e3	5.166e3	1.047	1.42	1.55	91.5	YES	NO	db	db	0.914
22	Total-pentafurans	28.84	2.186e4	1.453e4	1.047	1.50	1.55	179.5	YES	NO	MM	MM	2.656
23	Total-pentafurans	28.66	3.427e3	2.130e3	1.047	1.61	1.55	32.8	YES	NO	dd	dd	0.406
24	Total-pentafurans	28.54	7.673e2	5.651e2	1.047	1.36	1.55	9.1	YES	NO	bd	dd	0.097
25	12389-PECDF	32.22	3.649e3	2.303e3	1.000	1.58	1.55	43.0	YES	NO	bd	bb	0.445
26	23478-PeCDF	31.26	2.225e3	1.450e3	1.126	1.53	1.55	26.4	YES	NO	db	db	0.255
27	Total-pentafurans	31.11	8.241e3	5.356e3	1.047	1.54	1.55	84.3	YES	NO	dd	dd	0.992
28	Total-pentafurans	31.01	1.545e3	9.100e2	1.047	1.70	1.55	16.7	YES	NO	bd	bd	0.179
29	Total-pentafurans	30.21	5.801e2	3.869e2	1.047	1.50	1.55	6.9	YES	NO	db	db	0.071
30	Total-pentafurans	30.12	3.011e3	2.278e3	1.047	1.32	1.55	31.9	YES	NO	bd	bd	0.386
31	12378-PeCDF	29.92	1.294e3	8.312e2	1.015	1.56	1.55	16.6	YES	NO	bb	bb	0.156
32	Total-pentafurans	29.65	3.487e2	2.519e2	1.047	1.38	1.55	6.7	YES	NO	db	db	0.044
33	Total-pentafurans	29.55	7.239e3	4.614e3	1.047	1.57	1.55	75.1	YES	NO	dd	dd	0.865
34	Total-pentafurans	29.45	1.525e3	1.030e3	1.047	1.48	1.55	19.4	YES	NO	bd	bd	0.186
35	123478-HxCDF	34.88	1.593e3	1.428e3	1.017	1.12	1.24	35.4	YES	NO	dd	dd	0.279
36	Total-hexafurans	34.73	5.023e2	4.232e2	1.045	1.19	1.24	9.1	YES	NO	bd	bd	0.086
37	Total-hexafurans	34.27	1.076e4	8.334e3	1.045	1.29	1.24	251.5	YES	NO	bb	bb	1.775

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-hexafurans	33.42	1.239e4	1.021e4	1.045	1.21	1.24	280.1	YES	NO	bb	bb	2.101
39	123468-HXCDF	33.21	2.427e3	1.945e3	1.087	1.25	1.24	54.6	YES	NO	db	db	0.377
40	Total-heptafurans	39.42	3.508e3	3.272e3	1.305	1.07	1.05	70.7	YES	NO	bb	bb	0.722
41	1234678-HpCDF	38.76	3.975e3	3.495e3	1.327	1.14	1.05	82.1	YES	NO	bb	bb	0.713
42	Total-penta1	27.91	1.544e3	1.038e3		1.49	1.55	25.3	YES	NO	bb	bb	0.210
43	Total-penta1	27.18	5.288e4	3.512e4		1.51	1.55	941.3	YES	NO	bb	bb	7.164
44	Total-tetradioxins	25.38	4.562e2	6.446e2	0.879	0.71	0.77	5.5	YES	NO	bb	db	0.112
45	Total-tetradioxins	25.00	1.199e3	1.678e3	0.879	0.71	0.77	14.9	YES	NO	bb	bb	0.292
46	Total-tetradioxins	24.54	1.215e3	1.674e3	0.879	0.73	0.77	14.4	YES	NO	bd	bd	0.293
47	Total-tetradioxins	24.01	3.579e2	5.390e2	0.879	0.66	0.77	3.7	YES	NO	bb	bb	0.091
48	Total-tetradioxins	23.78	1.991e3	2.280e3	0.879	0.87	0.77	24.3	YES	NO	bb	bb	0.433
49	1368-TCDD	23.51	2.837e3	3.967e3	0.923	0.72	0.77	35.0	YES	NO	bb	bb	0.657
50	1289-TCDD	27.02	1.763e2	2.108e2	0.794	0.84	0.77	2.9	NO	NO	bb	bb	0.043
51	Total-pentadioxins	29.29	7.457e2	4.607e2	1.331	1.62	1.55	8.5	YES	NO	bb	bb	0.133
52	12479-PECDD	28.81	4.464e3	2.717e3	1.843	1.64	1.55	41.2	YES	NO	bb	bb	0.573
53	12389-PECDD	31.91	4.958e2	2.948e2	1.154	1.68	1.55	5.7	YES	NO	bb	bb	0.101
54	12378-PeCDD	31.50	1.276e3	8.319e2	0.995	1.53	1.55	16.8	YES	NO	bb	bb	0.312
55	Total-pentadioxins	30.27	2.070e3	1.273e3	1.331	1.63	1.55	26.3	YES	NO	dd	dd	0.370
56	123789-HxCDD	36.50	1.077e3	8.117e2	0.950	1.33	1.24	20.2	YES	NO	bb	bb	0.227
57	123678-HxCDD	36.11	1.368e3	9.601e2	1.009	1.43	1.24	23.6	YES	NO	dd	dd	0.263
58	Total-hexadioxins	35.12	5.380e3	4.111e3	1.028	1.31	1.24	65.4	YES	NO	bb	bb	1.056
59	Total-hexadioxins	34.76	4.322e3	3.389e3	1.028	1.28	1.24	75.2	YES	NO	bd	bd	0.858
60	124679-HXCDD	33.99	4.526e3	3.864e3	1.125	1.17	1.24	75.9	YES	NO	bb	bb	0.855
61	1234678-HpCDD	40.26	5.093e3	5.036e3	1.068	1.01	1.05	95.4	YES	NO	bb	bb	1.725
62	1234679-HPCDD	39.20	6.930e3	6.407e3	1.211	1.08	1.05	144.0	YES	NO	bb	bb	2.003
63	OCDD	44.99	3.511e4	3.945e4	1.181	0.89	0.89	458.2	YES	NO	bb	bb	13.225
64	Total-pentadioxins	30.12	1.646e3	9.424e2	1.331	1.75	1.55	21.8	YES	NO	MM	bd	0.286

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	25.28	1.894e4					1.0	NO		bb		
2	FUNCTION1 PFK	25.16	1.470e4					0.8	NO		bb		
3	FUNCTION1 PFK	23.36	1.389e5					2.7	NO		bb		
4	FUNCTION1 PFK	23.07	5.654e4					2.4	NO		db		
5	FUNCTION1 PFK	23.01	6.569e4					3.0	YES		dd		
6	FUNCTION1 PFK	22.63	4.543e6					12.4	YES		dd		
7	FUNCTION1 PFK	22.27	2.702e6					20.8	YES		bd		
8	FUNCTION1 PFK	21.89	2.320e6					23.3	YES		db		
9	FUNCTION1 PFK	21.63	3.779e6					17.7	YES		dd		
10	FUNCTION1 PFK	21.44	9.463e5					12.8	YES		dd		
11	FUNCTION1 PFK	21.22	1.862e5					6.5	YES		dd		
12	FUNCTION1 PFK	21.19	3.501e5					6.5	YES		bd		
13	FUNCTION1 PFK	28.09	2.007e4					0.5	NO		bb		
14	FUNCTION1 PFK	27.88	3.325e5					6.9	YES		db		
15	FUNCTION1 PFK	27.86	1.028e6					6.6	YES		bd		
16	FUNCTION1 PFK	27.35	1.013e6					4.3	YES		bb		
17	FUNCTION1 PFK	26.82	3.918e3					0.4	NO		bb		
18	FUNCTION1 PFK	26.38	1.472e4					0.9	NO		bb		
19	FUNCTION1 PFK	25.93	5.060e4					1.9	NO		bb		
20	FUNCTION1 PFK	25.53	1.150e5					1.7	NO		bb		
21	FUNCTION1 PFK	25.35	2.392e4					1.3	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:07 Pacific Daylight Time

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.67	7.550e4					1.6	NO		bb		0.000
2	FUNCTION3 PFK	33.27	1.556e4					1.4	NO		bb		0.000
3	FUNCTION3 PFK	33.07	9.374e3					1.0	NO		db		0.000
4	FUNCTION3 PFK	33.04	5.460e3					0.8	NO		bd		0.000
5	FUNCTION3 PFK	33.00	2.409e4					1.9	NO		bb		0.000
6	FUNCTION3 PFK	35.45	1.988e4					1.2	NO		bb		0.000
7	FUNCTION3 PFK	35.31	3.196e4					1.8	NO		bb		0.000
8	FUNCTION3 PFK	35.23	6.097e4					2.8	NO		db		0.000
9	FUNCTION3 PFK	35.19	4.467e4					3.1	YES		dd		0.000
10	FUNCTION3 PFK	35.16	7.720e4					3.9	YES		dd		0.000
11	FUNCTION3 PFK	35.12	3.324e5					4.1	YES		bd		0.000
12	FUNCTION3 PFK	34.89	1.687e5					6.2	YES		db		0.000
13	FUNCTION3 PFK	34.80	1.696e5					4.4	YES		dd		0.000
14	FUNCTION3 PFK	34.77	1.389e5					4.5	YES		dd		0.000
15	FUNCTION3 PFK	34.70	5.318e4					3.0	NO		dd		0.000
16	FUNCTION3 PFK	34.64	3.741e4					2.4	NO		dd		0.000
17	FUNCTION3 PFK	34.58	1.548e4					0.7	NO		dd		0.000
18	FUNCTION3 PFK	34.57	1.003e4					0.9	NO		bd		0.000
19	FUNCTION3 PFK	34.15	3.771e4					2.1	NO		bb		0.000
20	FUNCTION3 PFK	34.03	1.043e4					1.1	NO		bb		0.000
21	FUNCTION3 PFK	33.99	6.566e3					0.9	NO		bb		0.000
22	FUNCTION3 PFK	37.54	3.967e5					8.0	YES		dd		0.000
23	FUNCTION3 PFK	37.42	4.187e5					9.6	YES		dd		0.000
24	FUNCTION3 PFK	37.35	2.014e5					9.5	YES		bd		0.000
25	FUNCTION3 PFK	37.24	4.892e5					10.5	YES		db		0.000
26	FUNCTION3 PFK	37.15	3.003e5					9.2	YES		bd		0.000
27	FUNCTION3 PFK	37.01	3.020e5					7.9	YES		db		0.000
28	FUNCTION3 PFK	36.92	1.966e5					5.6	YES		bd		0.000
29	FUNCTION3 PFK	36.69	5.115e3					0.6	NO		bb		0.000
30	FUNCTION3 PFK	36.52	2.015e3					0.4	NO		bb		0.000
31	FUNCTION3 PFK	36.47	8.608e3					0.7	NO		bb		0.000
32	FUNCTION3 PFK	36.03	2.952e5					4.7	YES		db		0.000
33	FUNCTION3 PFK	35.90	4.338e5					7.0	YES		bd		0.000
34	FUNCTION3 PFK	35.75	1.241e5					7.0	YES		db		0.000
35	FUNCTION3 PFK	35.68	3.276e5					6.2	YES		dd		0.000
36	FUNCTION3 PFK	35.62	6.531e4					4.7	YES		dd		0.000
37	FUNCTION3 PFK	35.58	6.311e4					3.4	YES		bd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	37.79	7.186e4					4.0	YES		db		0.000
39	FUNCTION3 PFK	37.70	1.678e5					5.3	YES		dd		0.000
40	FUNCTION3 PFK	37.65	1.861e5					6.7	YES		dd		0.000
41	FUNCTION3 PFK	37.60	1.012e5					6.8	YES		dd		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.15	3.711e3					0.7	NO		bb		
2	FUNCTION4 PFK	39.81	6.850e4					3.7	YES		bb		
3	FUNCTION4 PFK	39.68	7.484e4					4.4	YES		db		
4	FUNCTION4 PFK	39.64	5.717e4					3.9	YES		bd		
5	FUNCTION4 PFK	39.17	5.668e5					14.7	YES		db		
6	FUNCTION4 PFK	39.10	2.496e5					17.6	YES		dd		
7	FUNCTION4 PFK	38.90	1.168e6					30.0	YES		dd		
8	FUNCTION4 PFK	38.51	4.323e6					52.5	YES		dd		
9	FUNCTION4 PFK	38.14	6.158e6					73.4	YES		dd		
10	FUNCTION4 PFK	38.04	2.015e6					77.9	YES		dd		
11	FUNCTION4 PFK	37.99	1.883e6					80.9	YES		bd		
12	FUNCTION4 PFK	42.88	3.418e3					0.7	NO		bb		
13	FUNCTION4 PFK	42.69	1.330e4					1.6	NO		db		
14	FUNCTION4 PFK	42.65	1.222e4					2.1	NO		bd		
15	FUNCTION4 PFK	42.61	8.437e3					1.3	NO		db		
16	FUNCTION4 PFK	42.55	1.786e4					1.7	NO		bd		
17	FUNCTION4 PFK	42.51	1.728e4					1.1	NO		bb		
18	FUNCTION4 PFK	42.19	1.406e4					1.4	NO		bb		
19	FUNCTION4 PFK	41.71	7.372e3					1.2	NO		bb		
20	FUNCTION4 PFK	41.42	1.100e4					1.6	NO		db		
21	FUNCTION4 PFK	41.35	9.978e3					1.0	NO		bd		
22	FUNCTION4 PFK	41.30	1.936e3					0.5	NO		bb		
23	FUNCTION4 PFK	41.16	9.879e3					0.0	NO		bb		
24	FUNCTION4 PFK	40.74	6.265e3					1.0	NO		bb		
25	FUNCTION4 PFK	40.64	7.652e3					1.2	NO		bb		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.06	2.170e4					3.2	YES		bd		
2	FUNCTION5 PFK	44.45	5.281e3					1.2	NO		bd		
3	FUNCTION5 PFK	44.40	1.969e3					0.7	NO		bb		
4	FUNCTION5 PFK	44.36	8.776e2					0.5	NO		bb		
5	FUNCTION5 PFK	44.15	7.356e2					0.4	NO		bb		
6	FUNCTION5 PFK	44.08	5.628e3					1.4	NO		bb		
7	FUNCTION5 PFK	44.02	5.860e3					1.3	NO		db		
8	FUNCTION5 PFK	43.97	1.093e4					1.7	NO		bd		
9	FUNCTION5 PFK	43.92	2.320e3					0.6	NO		bb		
10	FUNCTION5 PFK	43.74	7.148e3					1.4	NO		db		
11	FUNCTION5 PFK	43.70	4.601e3					1.2	NO		dd		
12	FUNCTION5 PFK	43.68	3.068e3					1.0	NO		bd		
13	FUNCTION5 PFK	43.62	4.161e3					1.2	NO		bb		
14	FUNCTION5 PFK	43.38	6.936e3					1.5	NO		bb		
15	FUNCTION5 PFK	43.30	2.331e4					2.7	NO		db		
16	FUNCTION5 PFK	43.19	5.462e4					3.0	NO		dd		
17	FUNCTION5 PFK	43.12	1.187e4					2.1	NO		dd		
18	FUNCTION5 PFK	45.63	3.041e3					0.9	NO		db		
19	FUNCTION5 PFK	45.60	6.320e3					1.4	NO		bd		
20	FUNCTION5 PFK	45.54	8.294e3					1.6	NO		db		
21	FUNCTION5 PFK	45.50	1.133e4					1.8	NO		dd		
22	FUNCTION5 PFK	45.46	7.807e3					1.6	NO		bd		
23	FUNCTION5 PFK	45.43	2.086e3					0.7	NO		bb		
24	FUNCTION5 PFK	45.32	2.130e3					0.8	NO		bb		
25	FUNCTION5 PFK	45.27	3.876e3					0.9	NO		db		
26	FUNCTION5 PFK	45.24	4.623e3					1.1	NO		dd		
27	FUNCTION5 PFK	45.21	1.255e4					1.3	NO		bd		
28	FUNCTION5 PFK	45.05	4.503e3					0.8	NO		bb		
29	FUNCTION5 PFK	44.95	1.157e4					1.6	NO		bb		
30	FUNCTION5 PFK	44.88	6.157e3					1.3	NO		bb		
31	FUNCTION5 PFK	44.74	1.080e4					1.6	NO		bb		
32	FUNCTION5 PFK	44.66	1.684e3					0.5	NO		bb		
33	FUNCTION5 PFK	44.48	9.392e2					0.5	NO		db		
34	FUNCTION5 PFK	45.97	6.671e3					1.3	NO		bb		
35	FUNCTION5 PFK	45.91	2.968e3					0.8	NO		bb		
36	FUNCTION5 PFK	45.85	4.613e3					1.0	NO		db		
37	FUNCTION5 PFK	45.81	2.091e3					0.6	NO		bd		

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	24.66	1.791e2					3.0	NO		bb		0.000
2	FUNCTION1 HXCD...	23.95	1.325e2					3.9	YES		bb		0.000
3	FUNCTION1 HXCD...	23.75	8.426e3					186.2	YES		bb		0.000
4	FUNCTION1 HXCD...	23.11	9.091e1					2.3	NO		db		0.000
5	FUNCTION1 HXCD...	23.05	8.189e1					2.2	NO		dd		0.000
6	FUNCTION1 HXCD...	22.95	7.547e1					1.4	NO		bd		0.000
7	FUNCTION1 HXCD...	22.72	9.996e2					20.5	YES		bb		0.000
8	FUNCTION1 HXCD...	22.15	7.590e1					2.4	NO		bb		0.000
9	FUNCTION1 HXCD...	21.38	3.813e2					3.2	YES		db		0.000
10	FUNCTION1 HXCD...	21.25	1.348e2					2.9	NO		dd		0.000
11	FUNCTION1 HXCD...	21.13	3.226e2					3.6	YES		bd		0.000
12	FUNCTION1 HXCD...	27.64	7.099e2					16.6	YES		bb		0.000
13	FUNCTION1 HXCD...	27.36	1.022e2					2.7	NO		bb		0.000
14	FUNCTION1 HXCD...	26.89	9.539e1					1.7	NO		db		0.000
15	FUNCTION1 HXCD...	26.77	2.091e3					41.6	YES		bd		0.000
16	FUNCTION1 HXCD...	26.12	6.081e3					134.9	YES		bb		0.000
17	FUNCTION1 HXCD...	25.91	4.154e2					9.1	YES		bb		0.000
18	FUNCTION1 HXCD...	25.75	4.209e3					96.6	YES		bb		0.000
19	FUNCTION1 HXCD...	25.58	1.078e2					1.6	NO		bb		0.000
20	FUNCTION1 HXCD...	25.10	1.397e3					29.3	YES		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	25.28	3.478e2					1.7	NO		bb		0.000
2	FUNCTION1 HPCD...	24.58	1.413e2					2.2	NO		bb		0.000
3	FUNCTION1 HPCD...	23.05	7.947e1					1.8	NO		bb		0.000
4	FUNCTION1 HPCD...	21.21	1.566e2					3.0	NO		db		0.000
5	FUNCTION1 HPCD...	21.15	8.891e1					2.7	NO		dd		0.000
6	FUNCTION1 HPCD...	21.10	1.976e2					3.7	YES		bd		0.000
7	FUNCTION1 HPCD...	27.91	7.533e2					10.5	YES		bb		0.000
8	FUNCTION1 HPCD...	27.15	1.099e2					1.6	NO		bb		0.000
9	FUNCTION1 HPCD...	26.47	2.294e2					3.0	YES		db		0.000
10	FUNCTION1 HPCD...	26.27	1.390e2					1.9	NO		bd		0.000
11	FUNCTION1 HPCD...	25.79	9.886e1					2.3	NO		db		0.000
12	FUNCTION1 HPCD...	25.69	1.253e2					3.2	YES		bd		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.20	1.119e3					19.9	YES		bb		0.000
2	FUNCTION2 HPCD...	31.09	2.593e2					4.3	YES		bb		0.000
3	FUNCTION2 HPCD...	29.19	1.532e2					4.8	YES		bb		0.000
4	FUNCTION2 HPCD...	28.93	2.634e3					50.7	YES		bb		0.000
5	FUNCTION2 HPCD...	28.47	7.123e1					1.7	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.79	8.541e1					4.1	YES		bd		0.000
2	FUNCTION3 OCDPE	34.18	1.087e2					3.7	YES		bb		0.000
3	FUNCTION3 OCDPE	33.10	1.855e2					8.6	YES		bb		0.000
4	FUNCTION3 OCDPE	36.48	2.328e2					5.9	YES		bb		0.000
5	FUNCTION3 OCDPE	35.98	2.135e2					5.3	YES		bb		0.000
6	FUNCTION3 OCDPE	35.01	8.461e1					2.7	NO		bb		0.000
7	FUNCTION3 OCDPE	34.84	1.593e2					6.7	YES		db		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.41	5.108e3					133.4	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.80	7.847e1					2.3	NO		bb		0.000
2	FUNCTION5 DCDPE	45.02	8.501e1					2.5	NO		bb		0.000
3	FUNCTION5 DCDPE	43.54	9.487e1					2.8	NO		bb		0.000

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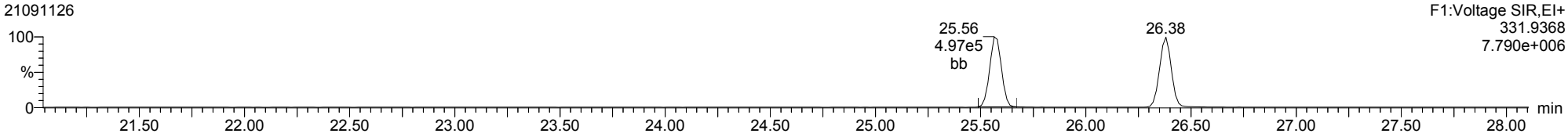
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-10, Name: 21091126, Date: 12-Sep-2021, Time: 07:09:28, Conditions: AUTOSPEC01, User: pk

13C-1234-TCDD



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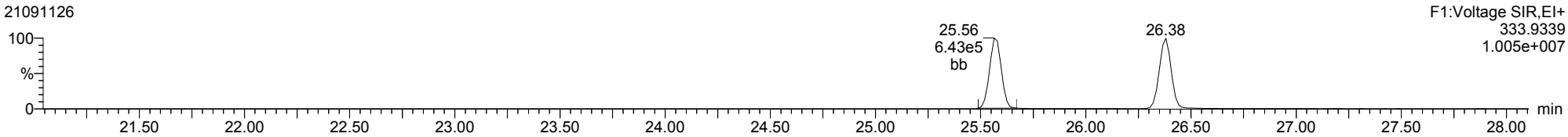
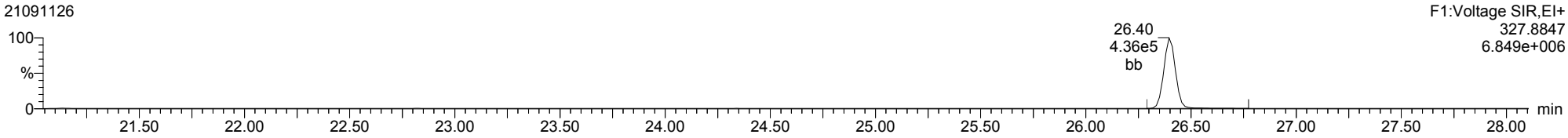


37CL-2378-TCDD



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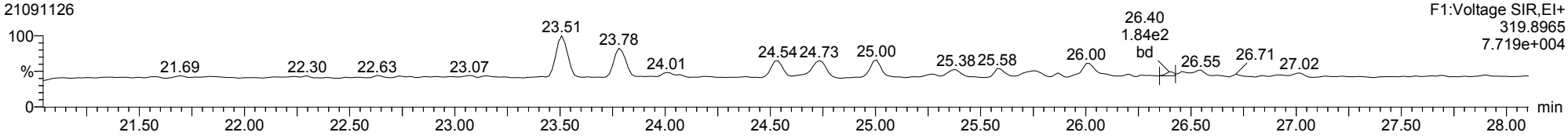

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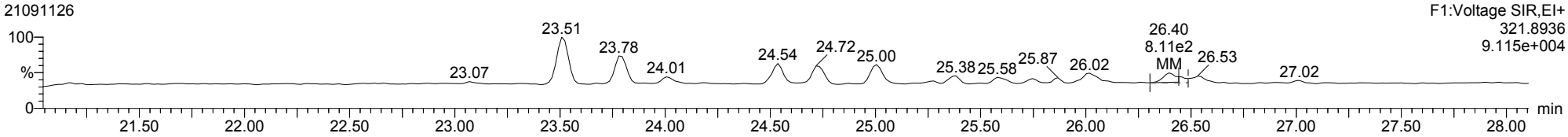

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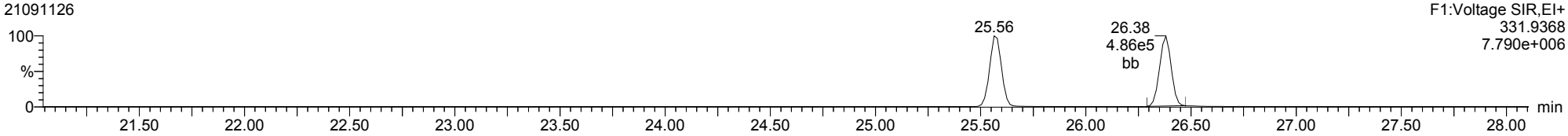

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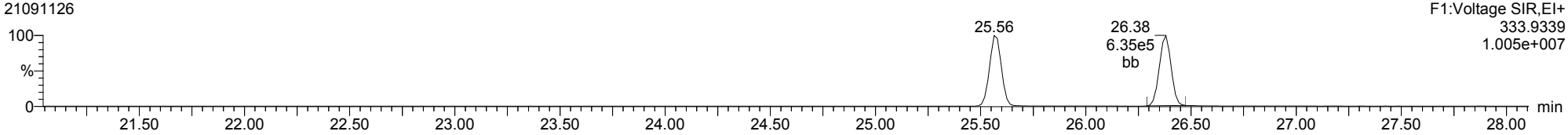

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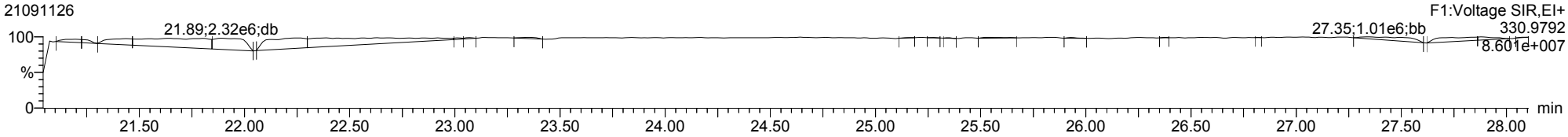

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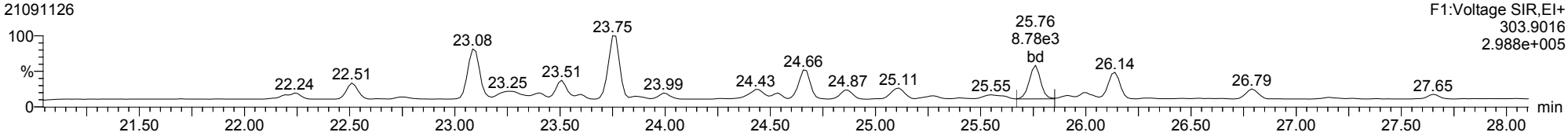

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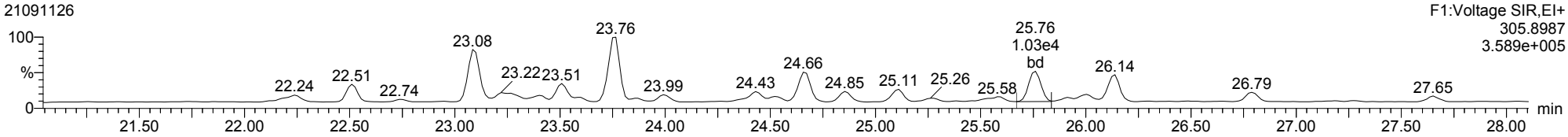

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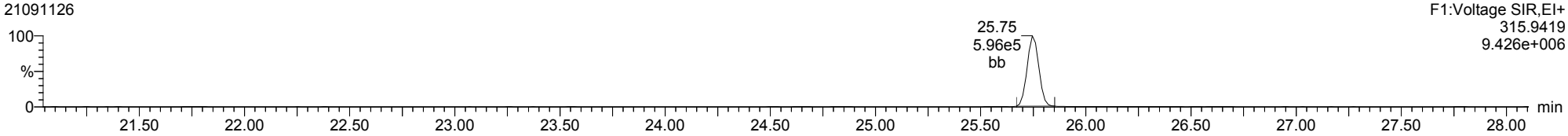

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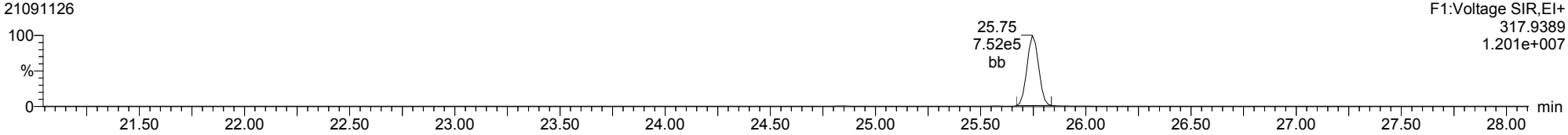

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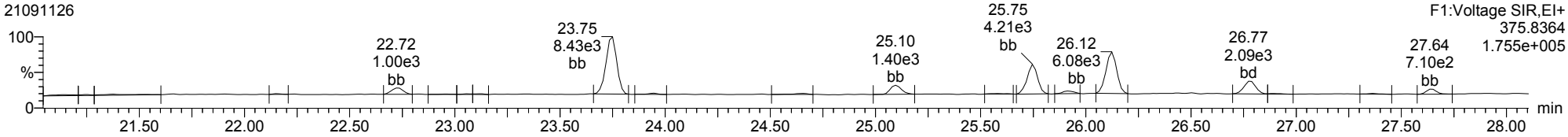

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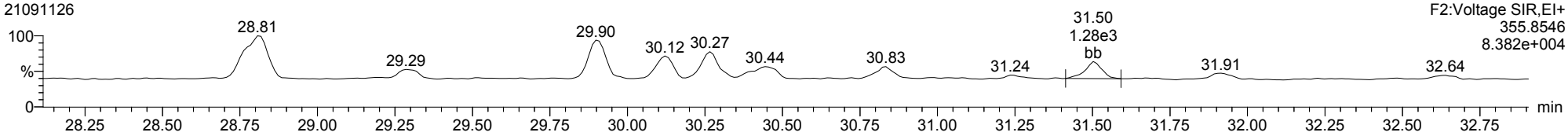

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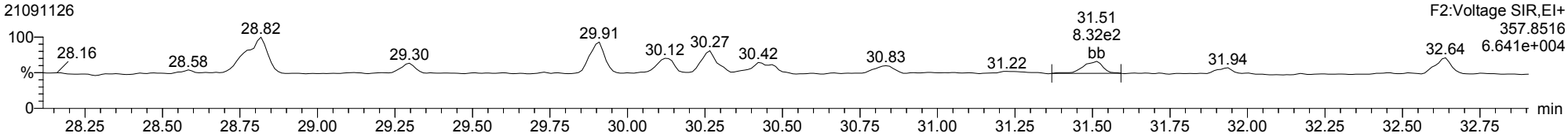

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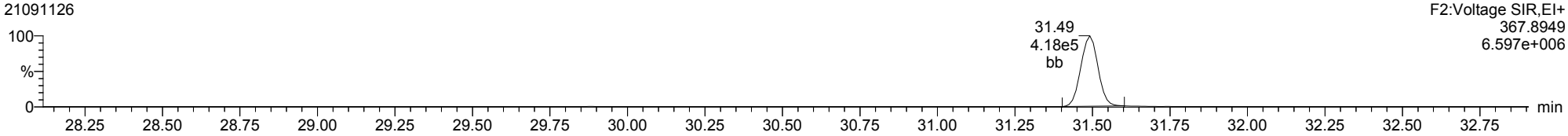

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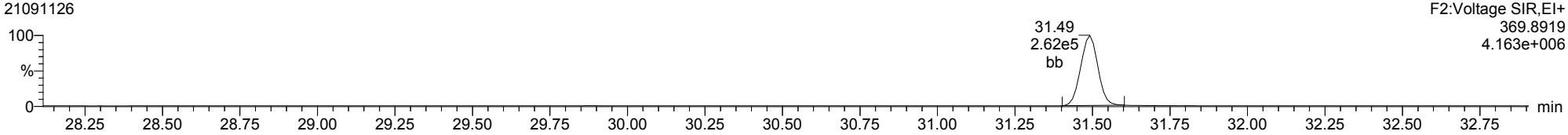

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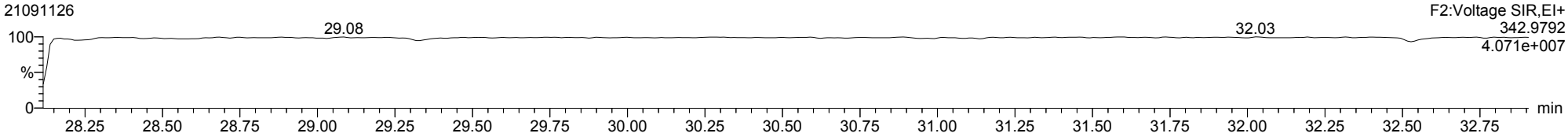

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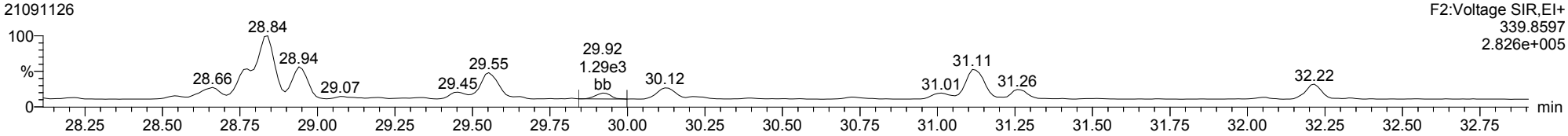

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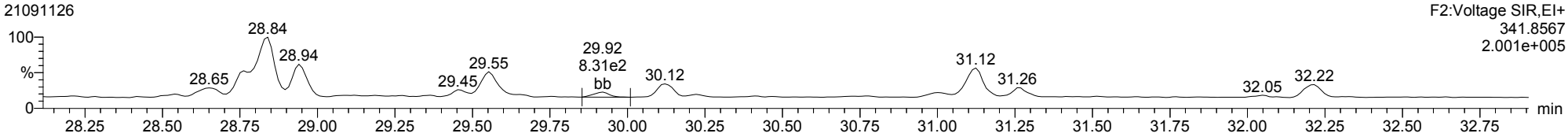

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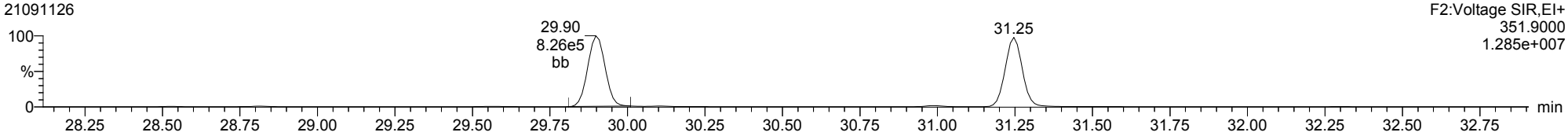

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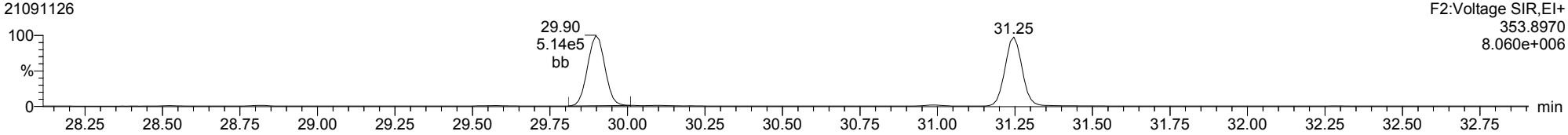
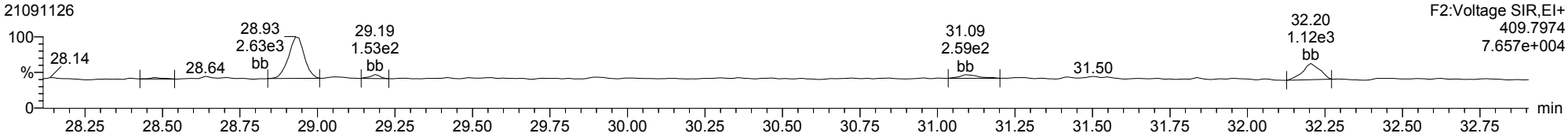


FUNCTION2 HPCDPE



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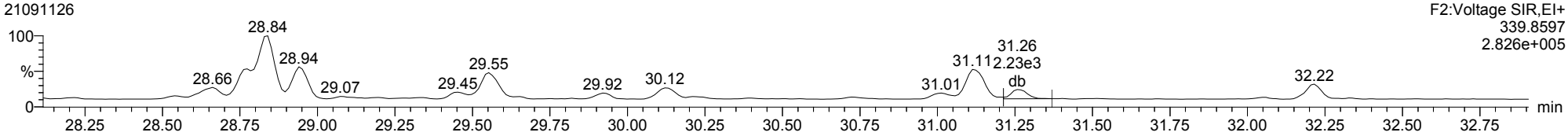

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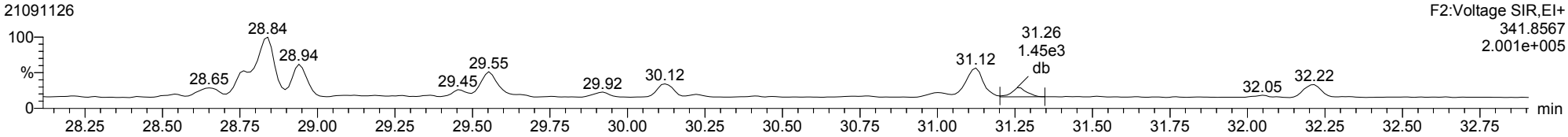

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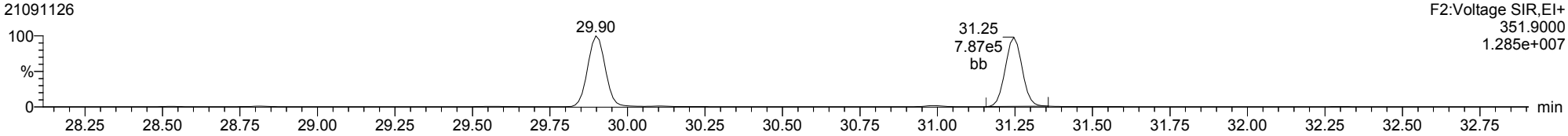

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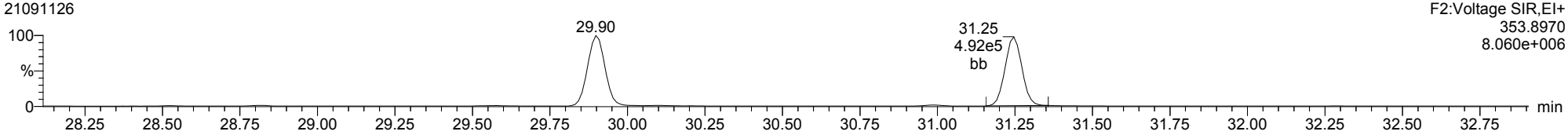

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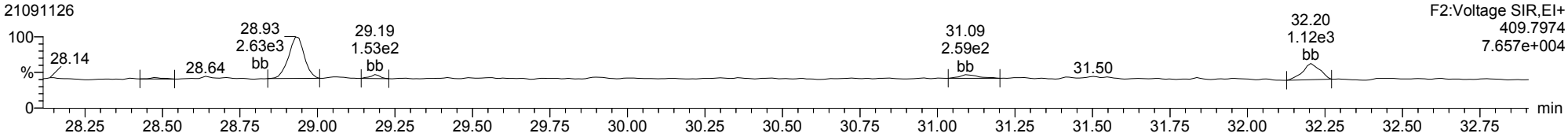

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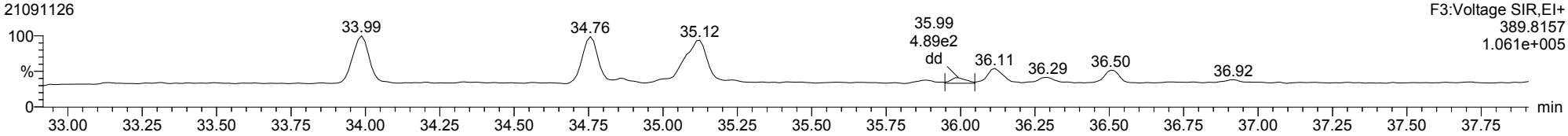

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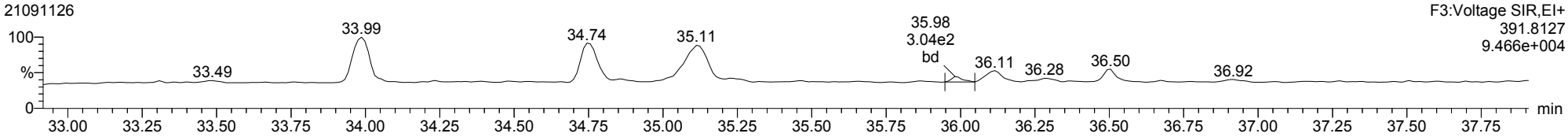

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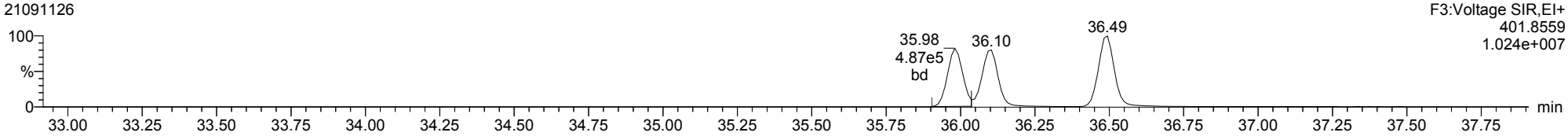

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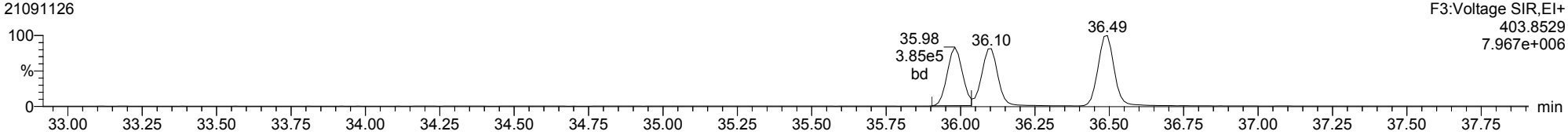

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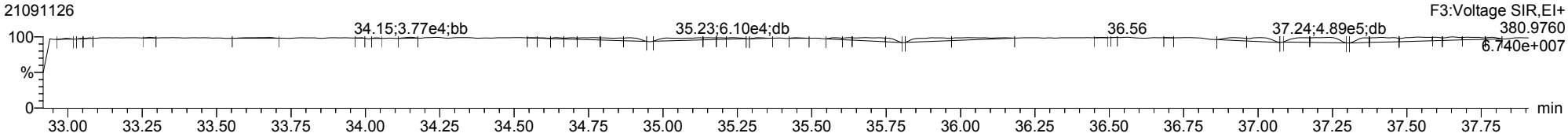

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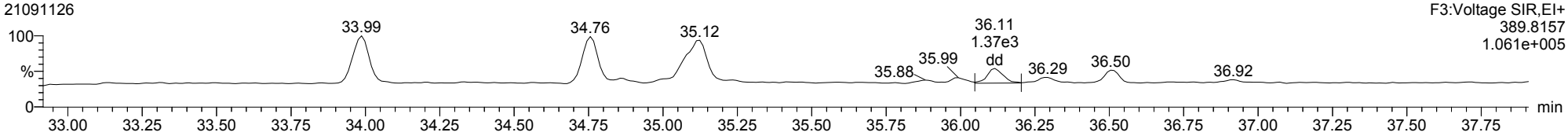

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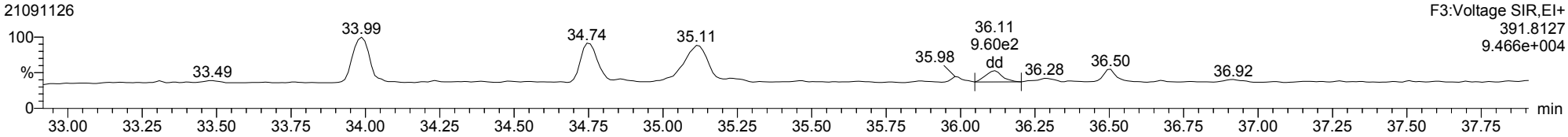

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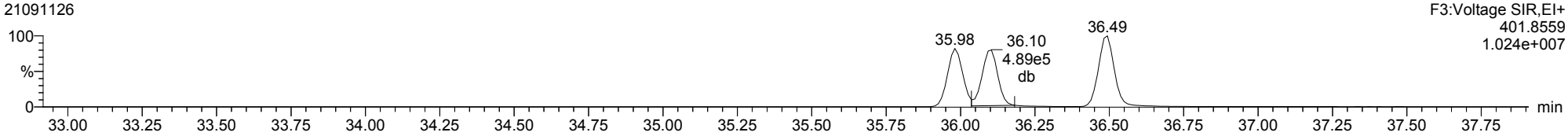

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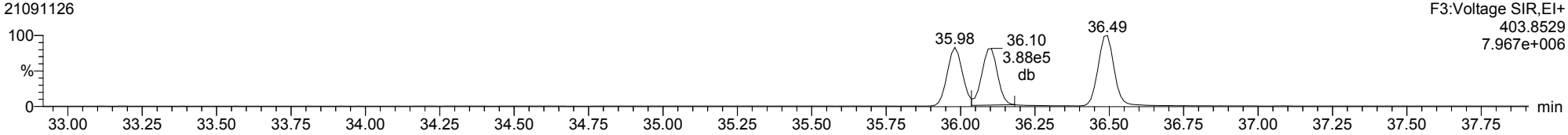

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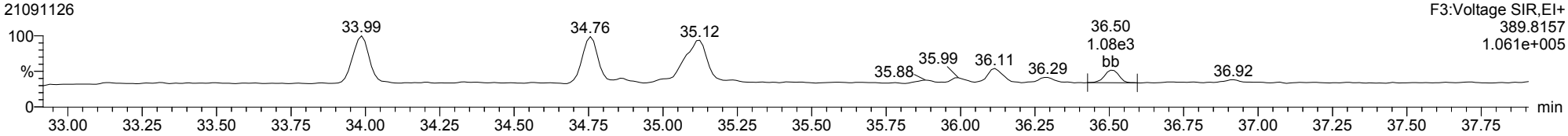

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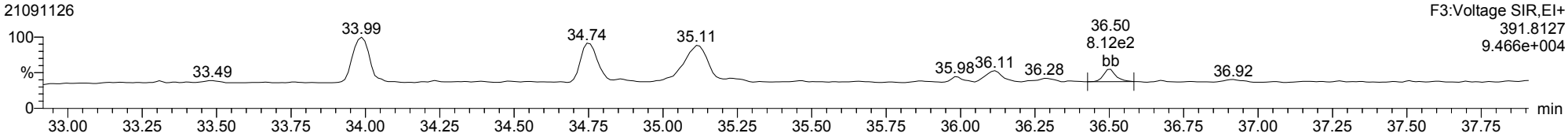

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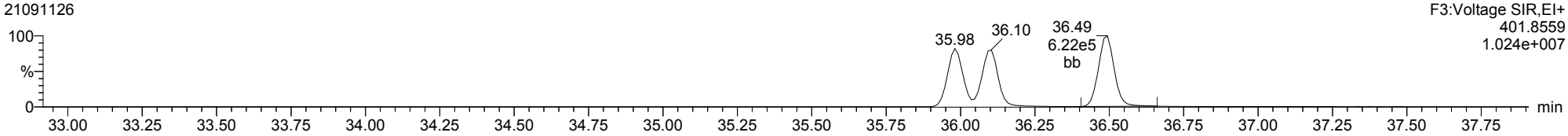

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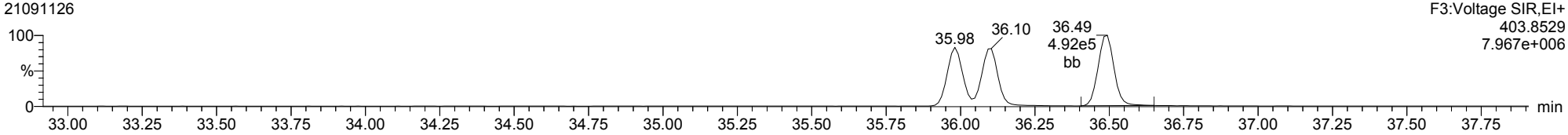

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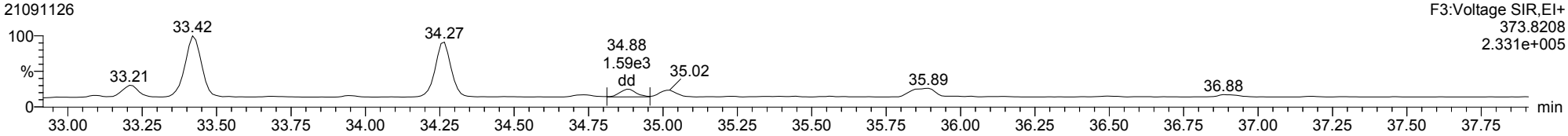

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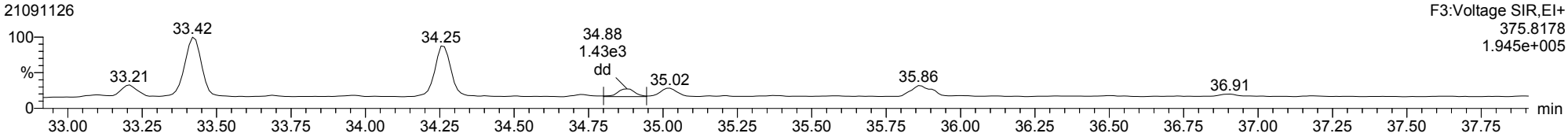

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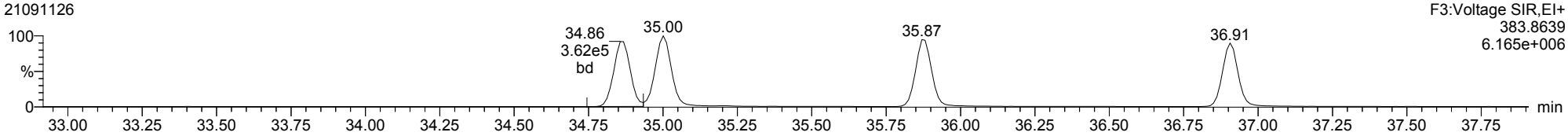

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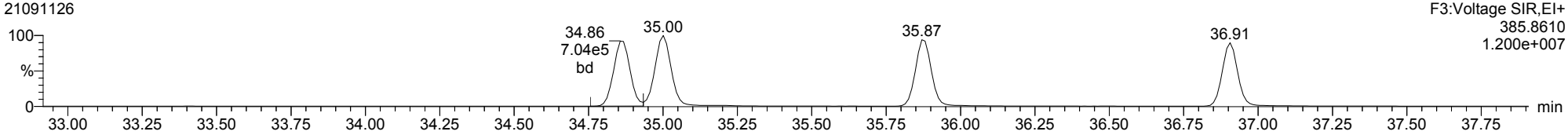
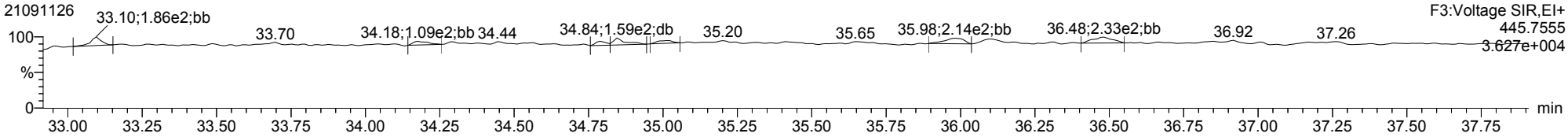


FUNCTION3 OCDPE



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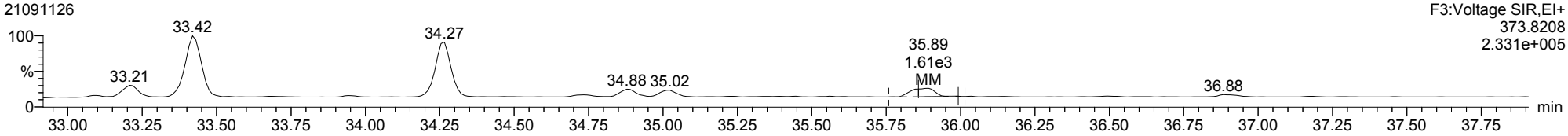
234678-HxCDF



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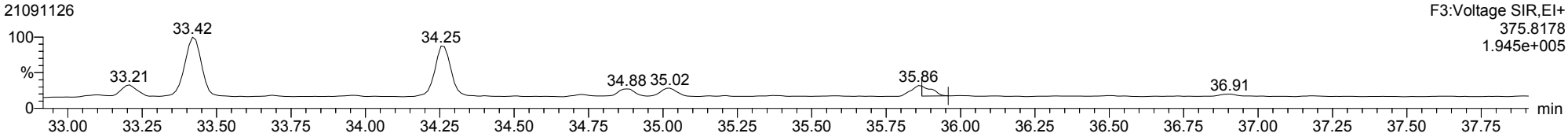

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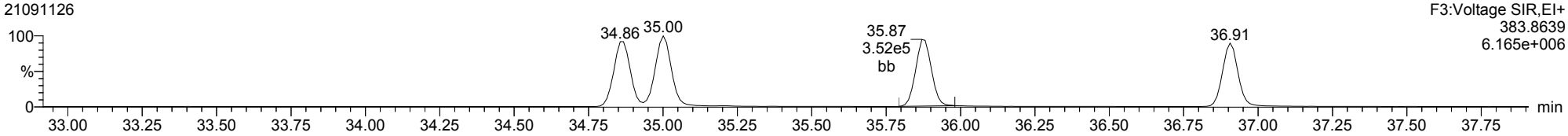

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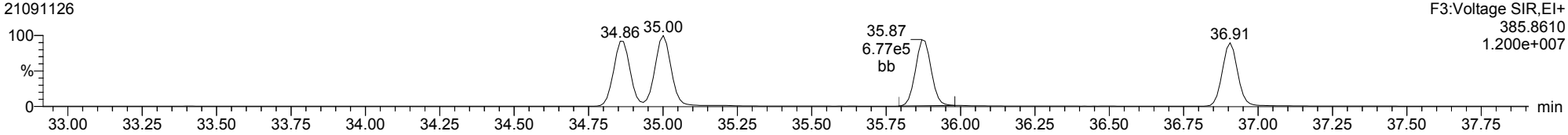
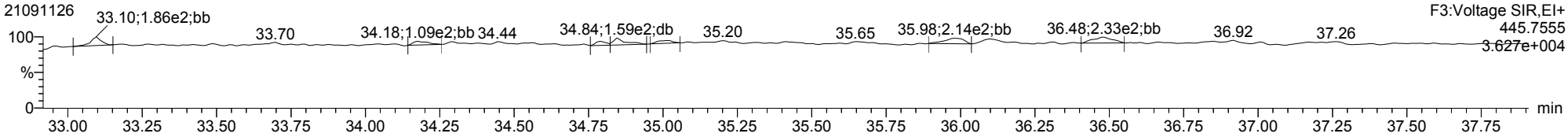


FUNCTION3 OCDPE



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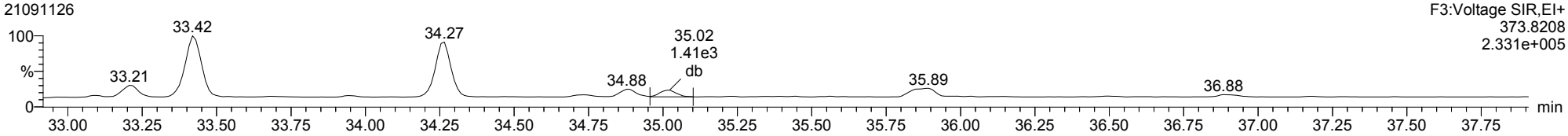

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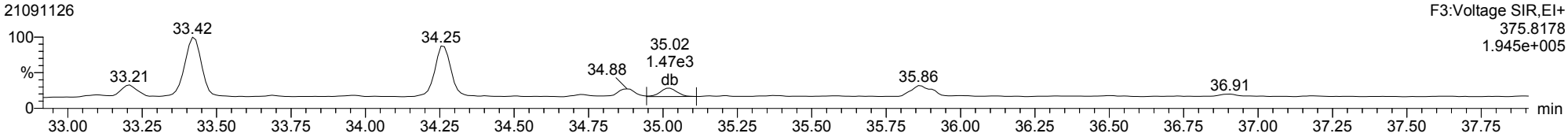

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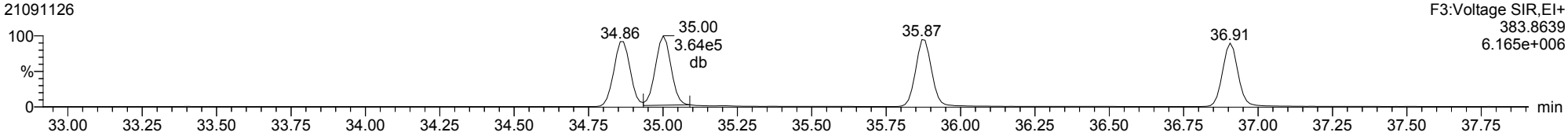

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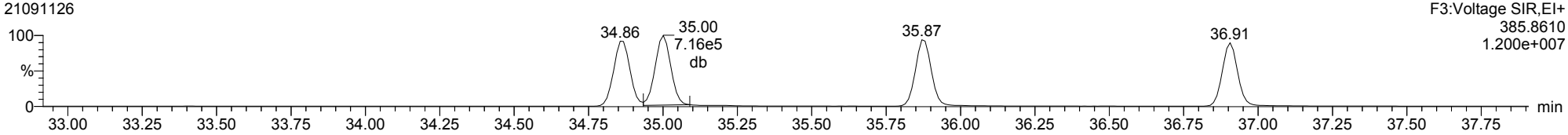

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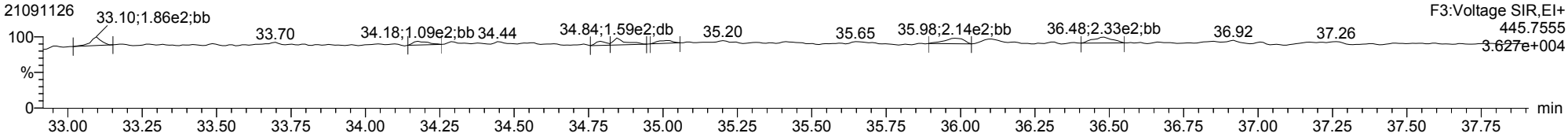

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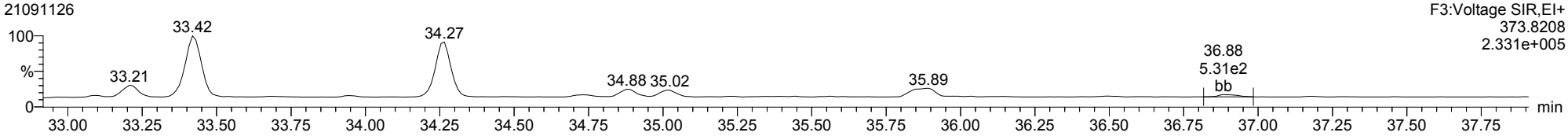

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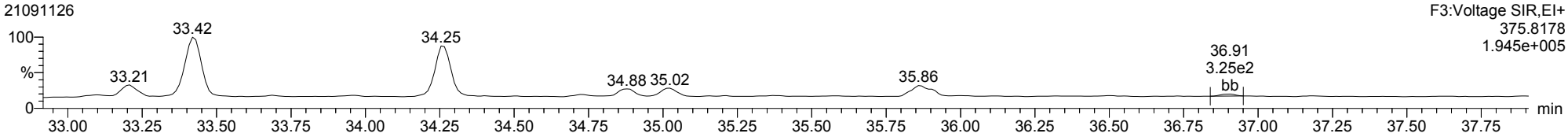

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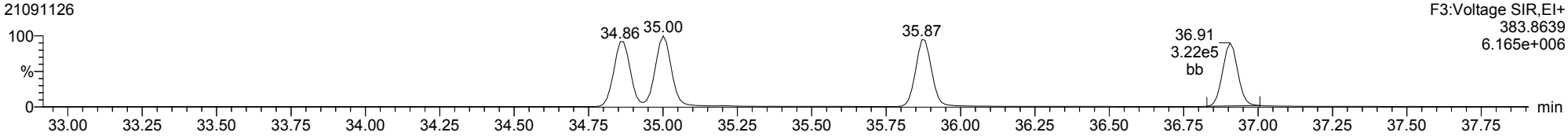

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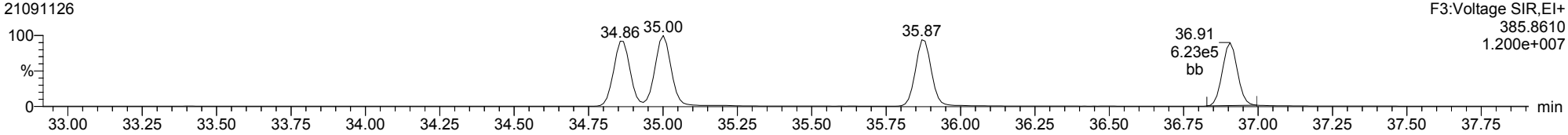

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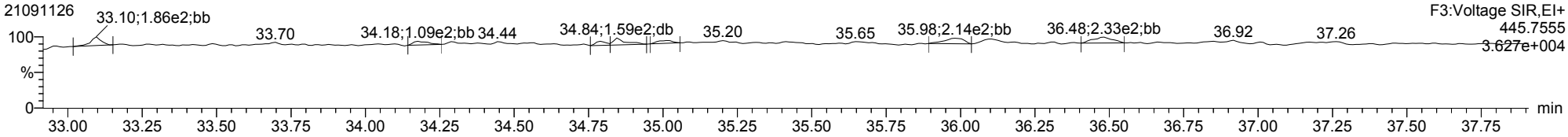

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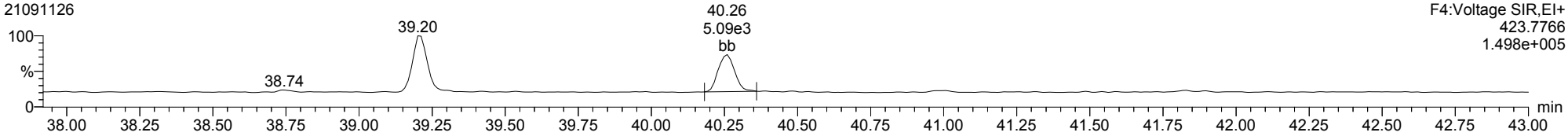

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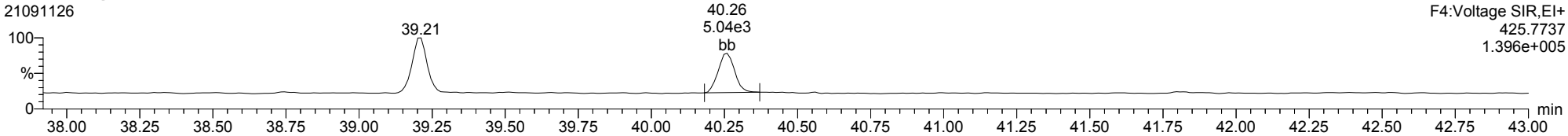

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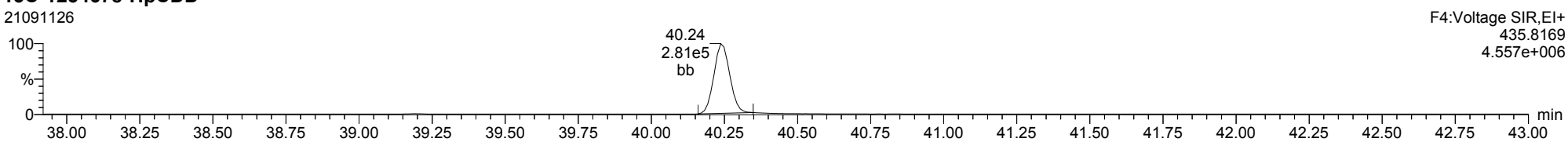

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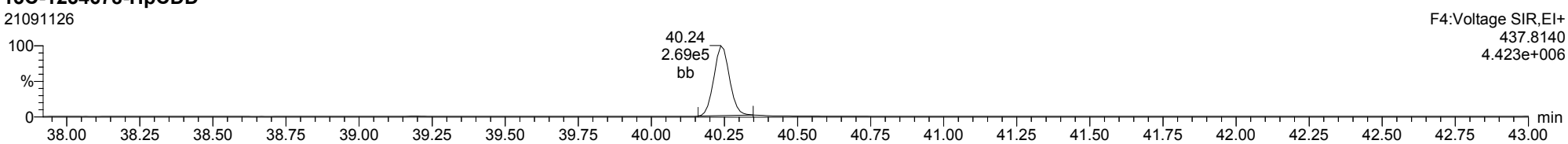
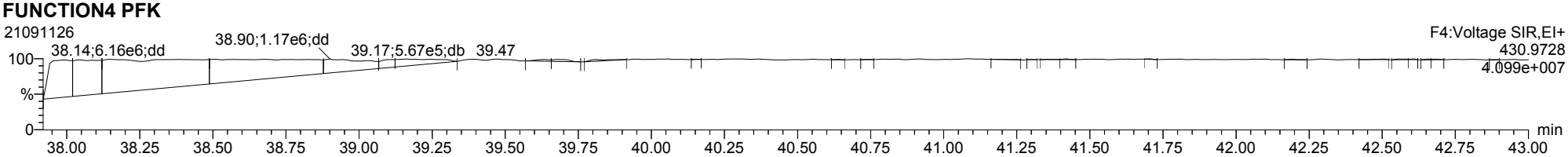


FUNCTION4 PFK



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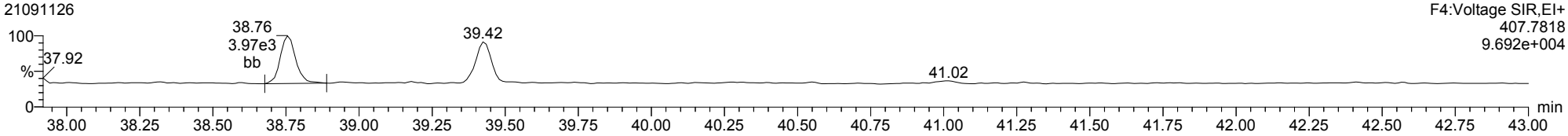

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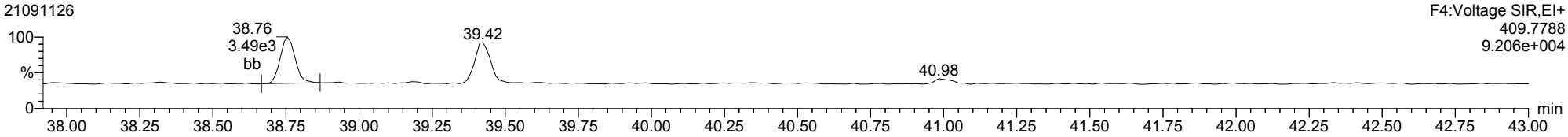

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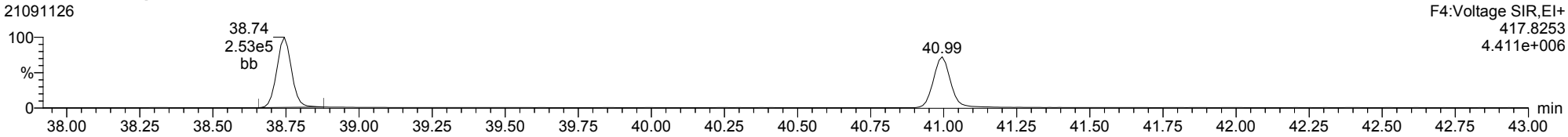

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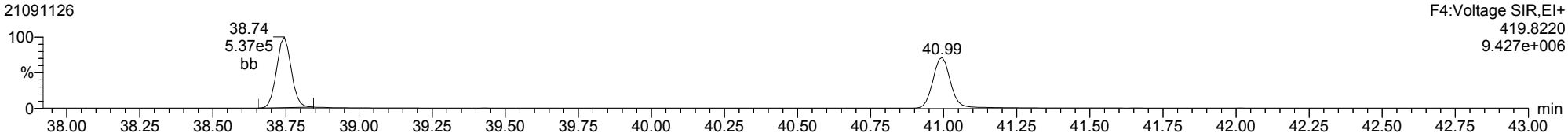

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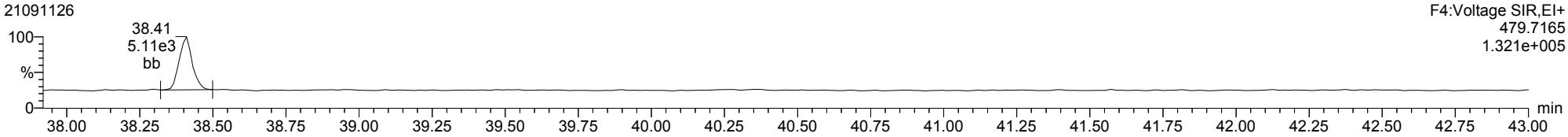

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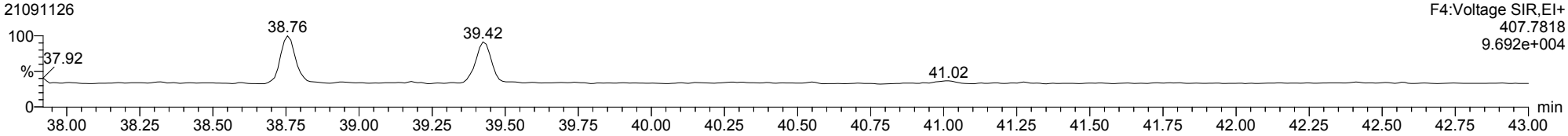

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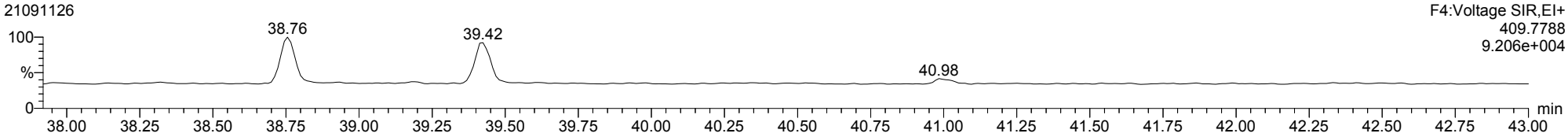

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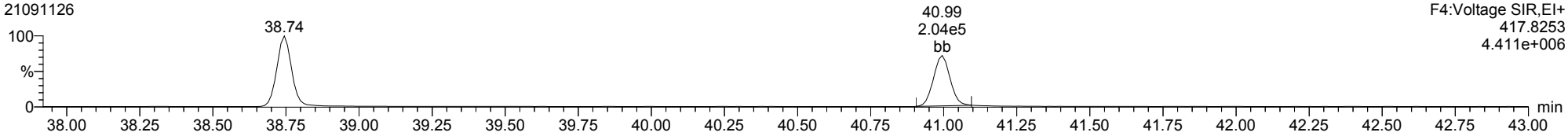

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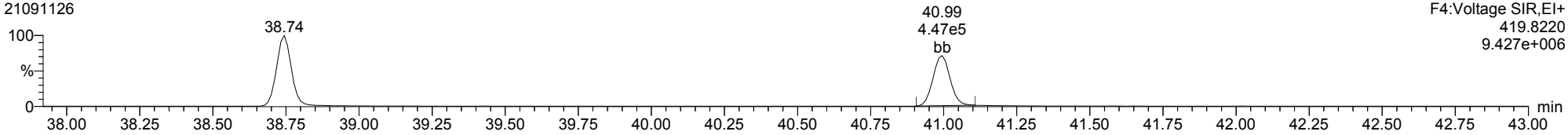

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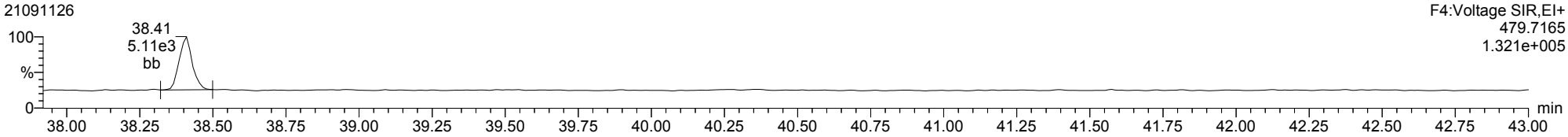

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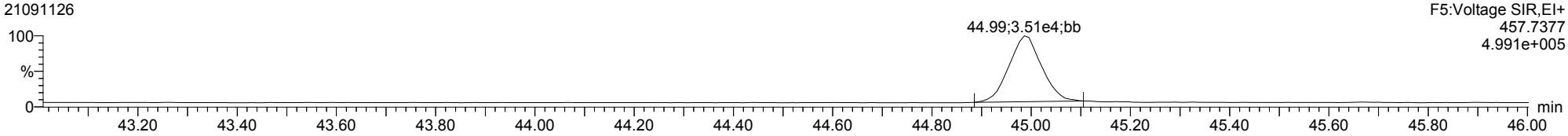

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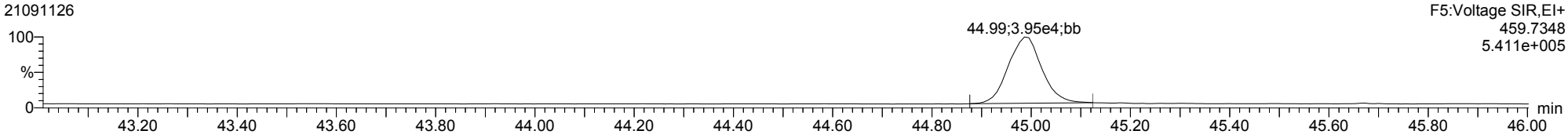

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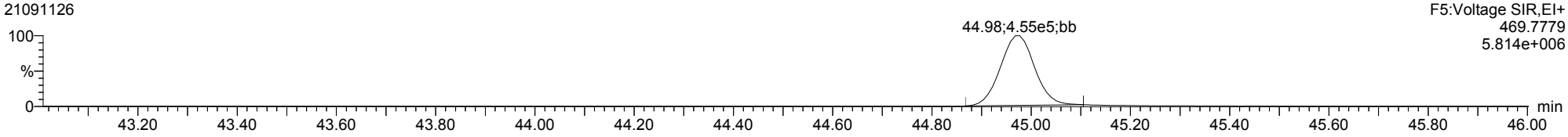

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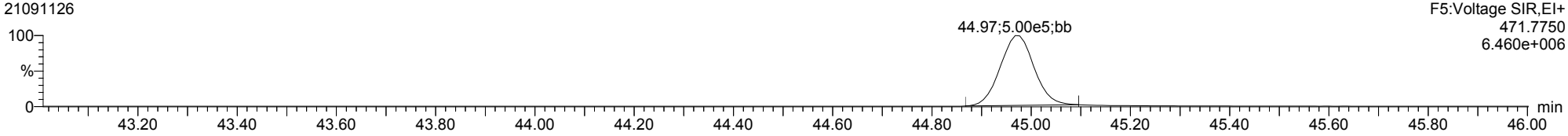
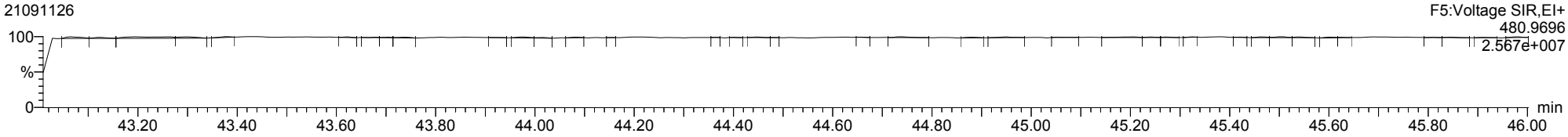


FUNCTION5 PFK



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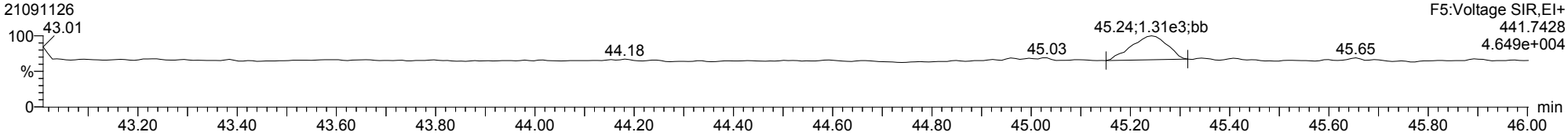

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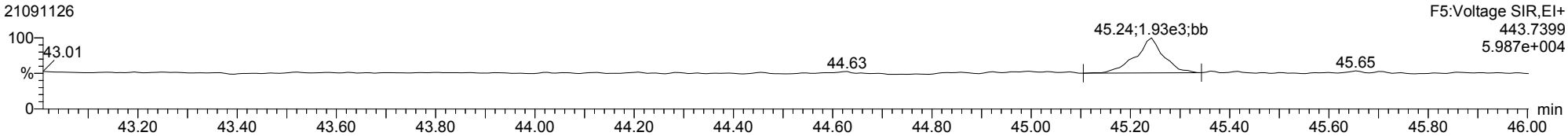

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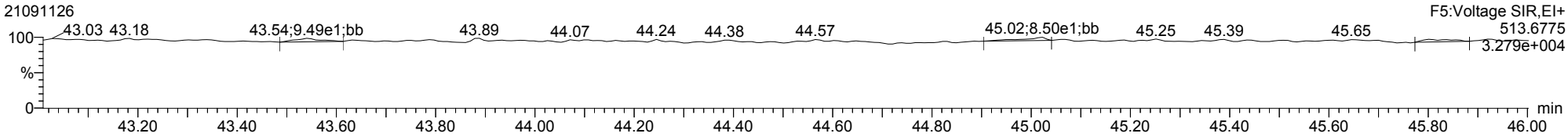

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Printed: Wednesday, September 15, 2021 11:36:07 Pacific Daylight Time

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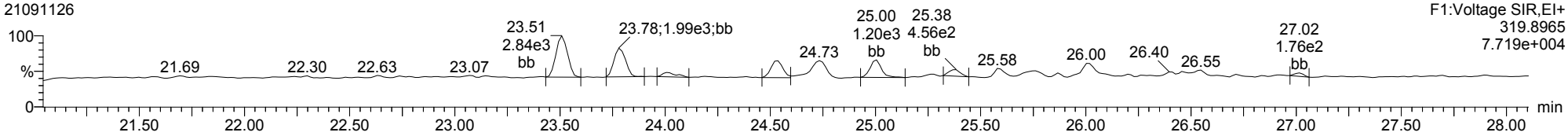
Total-tetradioxins



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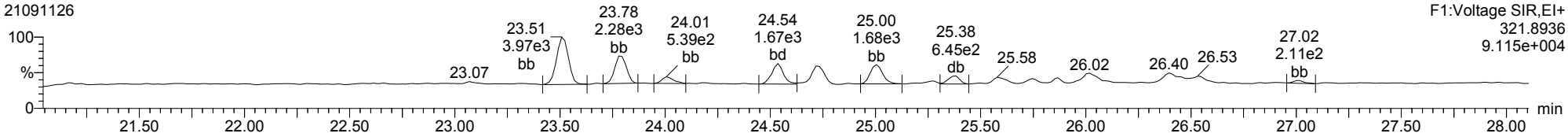

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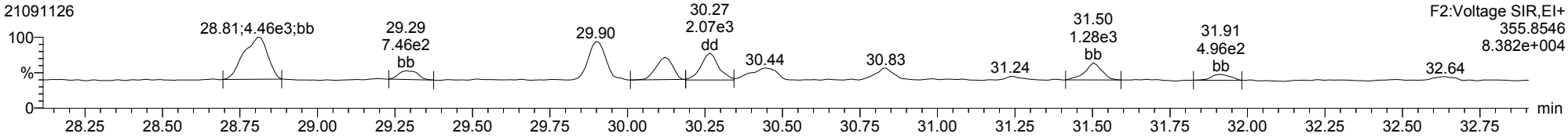

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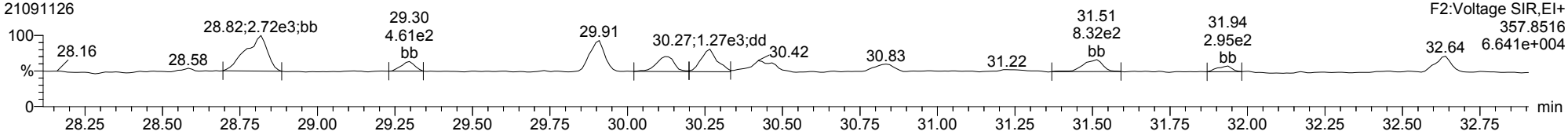

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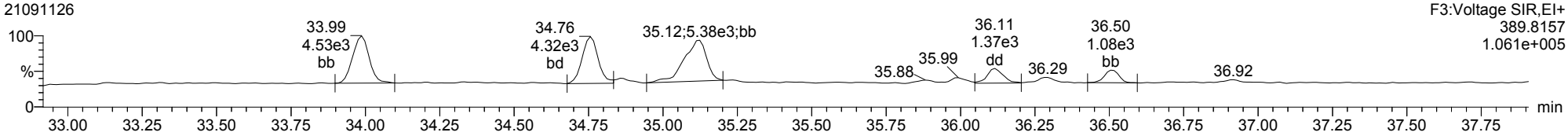
Total-hexadioxins



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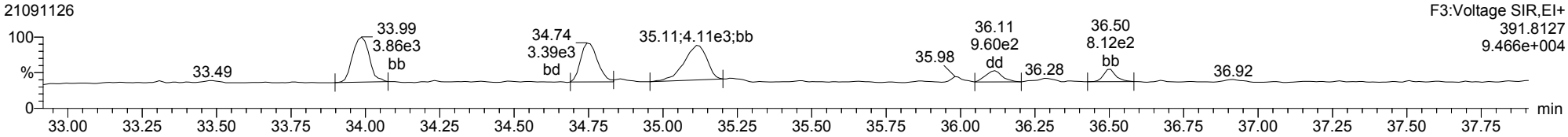

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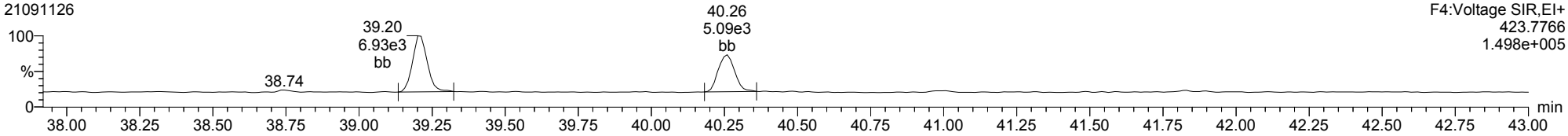

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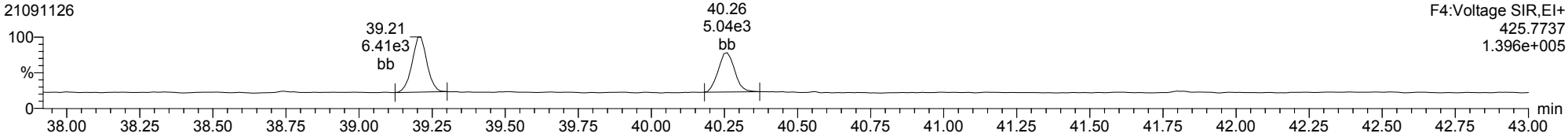

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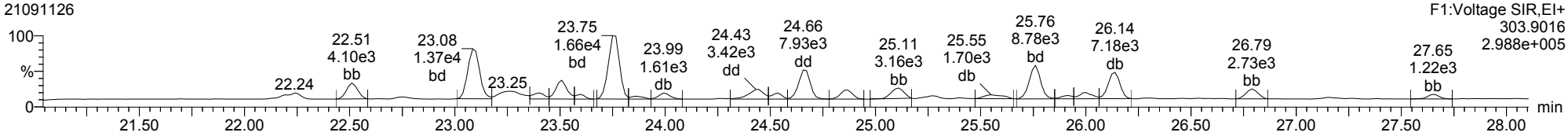
Total-tetrafurans



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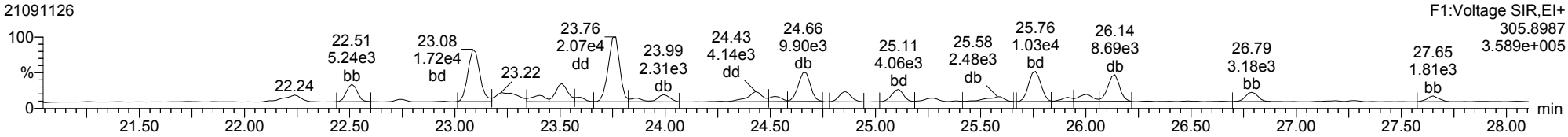

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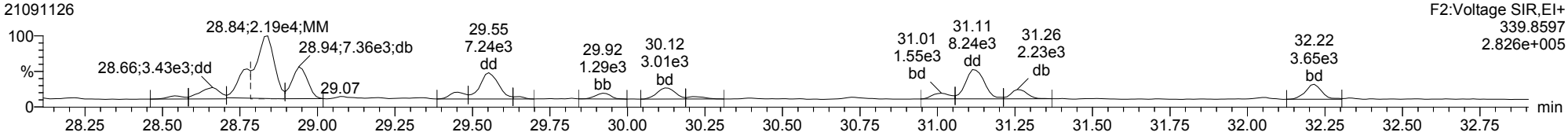

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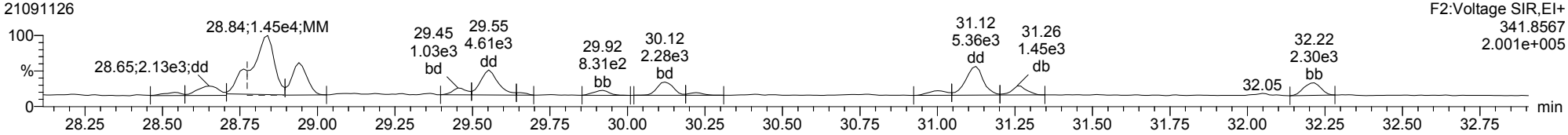

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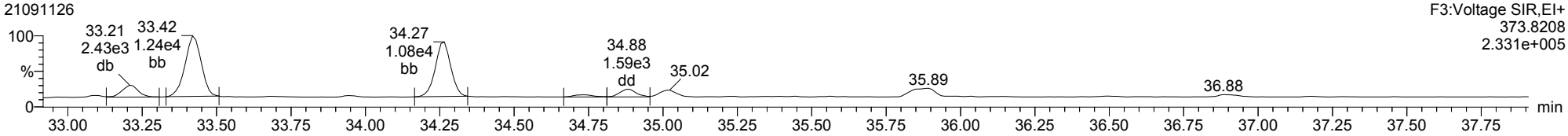
Total-hexafurans



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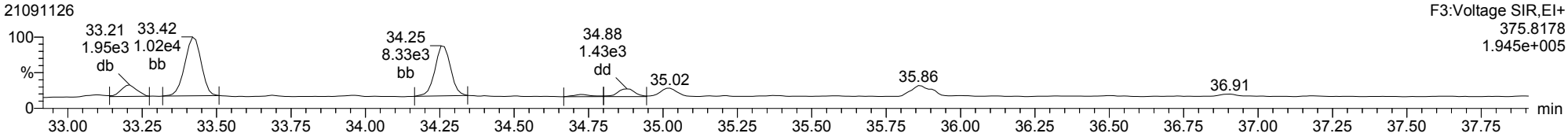

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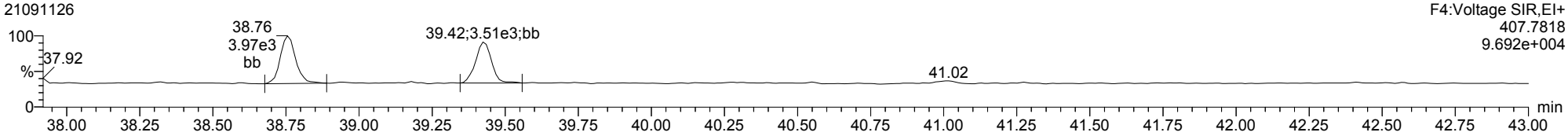
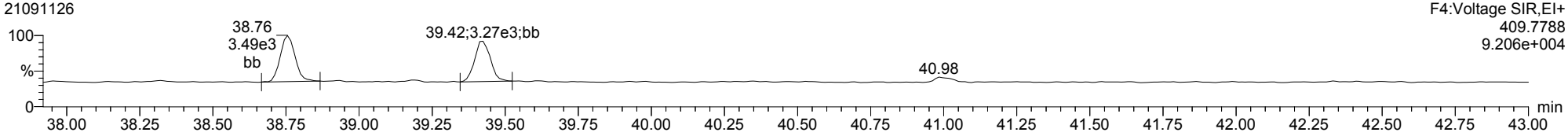


Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT657B

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-11 C	File ID:	21091127
Sampled:	07/13/21 10:20	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 07:58
% Solids:	60.84	Preparation:	EPA 1613	Initial/Final:	16.46 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.901	0.655-0.886	0.141	0.999	0.724	ng/kg	EMPC, J
1746-01-6	2,3,7,8-TCDD	1	0.377	0.655-0.886	0.096	0.999	0.299	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.603	1.318-1.783	0.082	0.999	0.344	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.349	1.318-1.783	0.077	0.999	0.544	ng/kg	J
40321-76-4	1,2,3,7,8-PeCDD	1	1.616	1.318-1.783	0.104	0.999	0.890	ng/kg	J
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.279	1.054-1.426	0.072	0.999	1.78	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.116	1.054-1.426	0.069	0.999	0.833	ng/kg	J
60851-34-5	2,3,4,6,7,8-HxCDF	1	0.759	1.054-1.426	0.073	0.999	0.590	ng/kg	EMPC, J
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.739	1.054-1.426	0.084	0.999	0.472	ng/kg	EMPC, J
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.347	1.054-1.426	0.090	0.999	0.773	ng/kg	J
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.156	1.054-1.426	0.088	0.999	2.89	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.291	1.054-1.426	0.095	0.999	1.99	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.023	0.893-1.208	0.074	0.999	12.9	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	0.830	0.893-1.208	0.102	0.999	1.10	ng/kg	EMPC
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.070	0.893-1.208	0.221	2.50	85.2	ng/kg	B
39001-02-0	OCDF	1	0.892	0.757-1.024	0.129	2.50	29.4	ng/kg	
3268-87-9	OCDD	1	0.888	0.757-1.024	0.260	9.99	678	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			0.999	5.78	ng/kg
41903-57-5	Total TCDD	1	0.000			0.999	1.27	ng/kg
30402-15-4	Total PeCDF	1	0.000			0.999	8.45	ng/kg
36088-22-9	Total PeCDD	1	0.000			0.999	4.83	ng/kg
55684-94-1	Total HxCDF	1	0.000			0.999	21.2	ng/kg
34465-46-8	Total HxCDD	1	0.000			0.999	28.0	ng/kg
38998-75-3	Total HpCDF	1	0.000			0.999	41.3	ng/kg
37871-00-4	Total HpCDD	1	0.000			0.999	232	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 3.57
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 3.57

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT657B

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-11	File ID:	21091127
Sampled:	07/13/21 10:20	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 07:58
Solids Wt%:	60.84	Preparation:	EPA 1613	Initial/Final:	16.46 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.790	0.655-0.886	0.072	62.4	24 - 169 %	
13C12-2,3,7,8-TCDD		0.763	0.655-0.886	0.099	68.2	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.611	1.318-1.783	0.103	83.0	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.615	1.318-1.783	0.108	83.2	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.597	1.318-1.783	0.095	76.3	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.512	0.434-0.587	0.107	76.2	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.512	0.434-0.587	0.099	70.1	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.517	0.434-0.587	0.110	74.6	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.511	0.434-0.587	0.132	68.7	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.269	1.054-1.426	0.084	80.3	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.257	1.054-1.426	0.078	75.6	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.457	0.374-0.506	0.117	77.0	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.458	0.374-0.506	0.143	75.0	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.044	0.893-1.208	0.127	78.0	23 - 140 %	
13C12-OCDD		0.912	0.757-1.024	0.148	83.3	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.025	66.8	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:20 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-11, Name: 21091127, Date: 12-Sep-2021, Time: 07:58:33, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	1.894e3	2.102e3	1.108	0.901	0.770	2245	1823	3.05e4	3.46e4	13.6	19.0	YES	bd	dd	0.362
12378-PeCDF	29.931	1.001	1.294e3	8.075e2	1.015	1.603	1.550	1436	1160	1.92e4	1.46e4	13.3	12.6	NO	bb	bb	0.172
23478-PeCDF	31.269	1.001	2.024e3	1.501e3	1.126	1.349	1.550	1436	1160	4.00e4	2.19e4	27.9	18.9	NO	bb	db	0.272
123478-HxCDF	34.889	1.000	4.899e3	3.832e3	1.017	1.279	1.240	936	948	7.62e4	6.06e4	81.4	63.9	NO	dd	dd	0.890
234678-HxCDF	35.915	1.000	1.239e3	1.634e3	1.052	0.759	1.240	936	948	2.62e4	2.42e4	28.0	25.5	YES	dd	db	0.296
123678-HxCDF	35.034	1.001	2.190e3	1.962e3	1.037	1.116	1.240	936	948	3.54e4	3.16e4	37.8	33.4	NO	db	db	0.417
123789-HxCDF	36.906	1.000	1.090e3	6.268e2	1.030	1.739	1.240	936	948	1.27e4	1.15e4	13.6	12.1	YES	MM	bb	0.236
1234678-HpCDF	38.767	1.000	3.147e4	3.077e4	1.327	1.023	1.050	1054	915	5.32e5	5.24e5	504.9	573.4	NO	bb	bb	6.457
1234789-HpCDF	41.006	1.000	1.865e3	2.248e3	1.283	0.830	1.050	1054	915	3.03e4	3.32e4	28.8	36.3	YES	bb	bb	0.553
OCDF	45.243	1.006	4.284e4	4.803e4	1.447	0.892	0.890	790	890	5.46e5	6.06e5	691.0	680.9	NO	bb	bb	14.700
2378-TCDD	26.411	1.001	3.212e2	8.514e2	0.920	0.377	0.770	1173	804	5.38e3	1.41e4	4.6	17.6	YES	bd	MM	0.150
12378-PeCDD	31.514	1.001	1.713e3	1.060e3	0.995	1.616	1.550	955	770	2.21e4	1.43e4	23.1	18.6	NO	bb	bb	0.446
123478-HxCDD	36.037	1.001	1.792e3	1.330e3	1.027	1.347	1.240	1193	746	3.11e4	2.38e4	26.0	32.0	NO	bd	bd	0.387
123678-HxCDD	36.148	1.001	6.287e3	5.438e3	1.009	1.156	1.240	1193	746	1.10e5	9.52e4	92.5	127.5	NO	db	db	1.449
123789-HxCDD	36.527	1.011	4.240e3	3.286e3	0.950	1.291	1.240	1193	746	7.71e4	5.42e4	64.6	72.7	NO	bb	bb	0.998
1234678-HpCDD	40.259	1.000	1.183e5	1.106e5	1.068	1.070	1.050	1604	1589	1.93e6	1.83e6	1205.8	1150.0	NO	bb	bb	42.655
OCDD	44.995	1.000	8.051e5	9.072e5	1.181	0.888	0.890	1072	1689	1.03e7	1.15e7	9584.0	6781.5	NO	bb	bb	339.387
13C-2378-TCDF	25.746	1.007	4.395e5	5.559e5	1.427	0.790	0.770	1557	1371	6.91e6	8.81e6	4435.7	6425.3	NO	bb	bb	62.383
13C-12378-PeCDF	29.898	1.169	7.428e5	4.610e5	1.297	1.611	1.550	2410	1416	1.16e7	7.23e6	4808.5	5105.1	NO	bb	bb	82.963
13C-23478-PeCDF	31.246	1.222	7.102e5	4.399e5	1.236	1.615	1.550	2410	1416	1.11e7	6.93e6	4615.1	4895.6	NO	bb	bb	83.158
13C-123478-HxCDF	34.878	0.955	3.267e5	6.379e5	1.242	0.512	0.510	1383	2445	5.23e6	1.01e7	3783.9	4124.5	NO	bd	bd	76.219
13C-123678-HxCDF	35.012	0.959	3.250e5	6.349e5	1.343	0.512	0.510	1383	2445	5.31e6	1.04e7	3841.4	4255.1	NO	db	db	70.144
13C-234678-HxCDF	35.903	0.983	3.150e5	6.087e5	1.215	0.517	0.510	1383	2445	5.02e6	9.69e6	3628.5	3963.4	NO	bb	bb	74.647
13C-123789-HxCDF	36.917	1.011	2.384e5	4.665e5	1.008	0.511	0.510	1383	2445	4.43e6	8.67e6	3204.3	3544.7	NO	bb	bb	68.685
13C-1234678-HpCDF	38.756	1.061	2.278e5	4.985e5	0.926	0.457	0.440	1353	1767	3.77e6	8.52e6	2786.8	4821.0	NO	bb	bb	76.960
13C-1234789-HpCDF	40.995	1.123	1.818e5	3.974e5	0.758	0.458	0.440	1353	1767	2.83e6	6.19e6	2092.0	3501.9	NO	bb	bb	75.028
13C-1234-TCDD	25.579	0.000	4.864e5	6.321e5	1.000	0.769	0.770	1965	1200	7.45e6	9.66e6	3790.7	8056.3	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	3.687e5	4.833e5	1.116	0.763	0.770	1965	1200	5.79e6	7.54e6	2949.5	6286.4	NO	bb	bb	68.228
13C-12378-PeCDD	31.492	1.231	3.843e5	2.407e5	0.732	1.597	1.550	916	1067	6.17e6	3.88e6	6738.4	3639.1	NO	bb	bb	76.346
13C-123478-HxCDD	36.015	0.986	4.389e5	3.459e5	0.960	1.269	1.240	1225	1103	7.03e6	5.61e6	5737.0	5082.4	NO	bd	bd	80.276
13C-123678-HxCDD	36.126	0.989	4.466e5	3.554e5	1.041	1.257	1.240	1225	1103	7.32e6	5.81e6	5980.6	5270.2	NO	db	db	75.615
13C-1234678-HpCDD	40.249	1.102	2.565e5	2.457e5	0.632	1.044	1.050	1118	1182	4.14e6	3.93e6	3702.8	3324.4	NO	bb	bb	77.971
13C-OCDD	44.986	1.232	4.075e5	4.470e5	0.504	0.912	0.890	1071	1069	5.15e6	5.62e6	4806.5	5256.0	NO	bb	bb	166.543
13C-123789-HxCDD	36.516	0.000	5.677e5	4.509e5	1.000	1.259	1.240	1225	1103	9.59e6	7.62e6	7827.6	6913.2	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.032	3.239e5		1.084			762		4.96e6		6505.9			db		26.724

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:20 Pacific Daylight Time

ID: 21G0138-11, Name: 21091127, Date: 12-Sep-2021, Time: 07:58:33, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	6.349e2	5.780e2	1.425	1.098	0.770	2245	1823	7.51e3	8.69e3	3.3	4.8	YES	bb	db	0.086
1289-TCDF					1.043		0.770	2245	1823								
13468-PECDF					1.376		1.550	944	1090								
12389-PECDF	32.204	1.077	4.418e2	4.146e2	1.000	1.066	1.550	1436	1160	6.74e3	6.15e3	4.7	5.3	YES	bb	bd	0.071
123468-HXCDF	33.218	0.952	5.884e3	4.671e3	1.087	1.260	1.240	936	948	9.08e4	7.61e4	97.0	80.2	NO	bb	bb	1.007
1368-TCDD	23.508	0.891	8.643e2	1.126e3	0.923	0.767	0.770	1173	804	1.47e4	1.89e4	12.5	23.6	NO	bb	bb	0.253
1289-TCDD	27.001	1.023	4.107e2	2.723e2	0.794	1.508	0.770	1173	804	9.26e3	3.20e3	7.9	4.0	YES	bb	bb	0.101
12479-PECDD	28.806	0.915	3.630e3	2.327e3	1.843	1.560	1.550	955	770	3.44e4	2.45e4	36.0	31.8	NO	bb	bb	0.517
12389-PECDD	31.915	1.013	6.694e2	2.723e2	1.154	2.459	1.550	955	770	1.01e4	4.22e3	10.5	5.5	YES	bb	bb	0.131
124679-HXCDD	33.998	0.944	2.224e4	1.753e4	1.125	1.269	1.240	1193	746	3.47e5	2.71e5	291.0	363.2	NO	bb	bb	4.504
1234679-HPCDD	39.212	0.974	2.314e5	2.155e5	1.211	1.074	1.050	1604	1589	3.99e6	3.75e6	2489.9	2359.5	NO	bb	bb	73.485
Total-tetrafurans			1.498e4		1.192			2245		2.25e5							2.892
Total-penta1			2.169e4					944		3.37e5							3.279
Total-pentafurans			7.110e3		1.047			1436		1.18e5							0.950
Total-hexafurans			5.544e4		1.045			936		8.89e5							10.597
Total-heptafurans			9.358e4		1.305			1054		1.60e6							20.700
Total-Furans			2.362e5		1.158			2245		3.72e6							53.238
Total-tetradioxins			2.037e3		0.879			1173		3.38e4							0.637
Total-pentadioxins			1.263e4		1.331			955		1.70e5							2.417
Total-hexadioxins			6.409e4		1.028			1193		9.18e5							14.001
Total-heptadioxins			3.497e5		1.140			1604		5.93e6							116.140
Total-Dioxins			1.234e6		1.092			1173		1.73e7							472.582
Total-TEQ			1.470e6					1173		2.10e7							525.820
FUNCTION1 PFK			5.771e7					570543		4.33e8							
FUNCTION2 PFK			9.640e6					377320		1.88e7							0.000
FUNCTION3 PFK			1.614e7					395768		6.66e7							0.000
FUNCTION4 PFK			8.405e5					294966		2.05e7							
FUNCTION5 PFK			1.430e5					178532		2.57e6							
FUNCTION1 HXCD...			4.880e3					642		7.06e4							0.000
FUNCTION1 HPCD...			9.037e3					905		1.52e5							0.000
FUNCTION2 HPCD...			4.265e2					818		9.43e3							0.000
FUNCTION3 OCDPE			6.286e2					637		1.13e4							0.000
FUNCTION4 NCDPE			4.165e3					701		6.93e4							0.000
FUNCTION5 DCDPE			7.434e1					604		1.99e3							0.000

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:20 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-11, Name: 21091127, Date: 12-Sep-2021, Time: 07:58:33, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	1.513e3	1.735e3	1.192	0.87	0.77	9.0	YES	NO	bd	dd	0.274
2	Total-tetrafurans	23.87	1.085e3	1.376e3	1.192	0.79	0.77	6.8	YES	NO	dd	dd	0.207
3	Total-tetrafurans	23.75	2.274e3	2.965e3	1.192	0.77	0.77	16.8	YES	NO	bd	bd	0.442
4	Total-tetrafurans	23.40	9.571e2	1.157e3	1.192	0.83	0.77	6.6	YES	NO	dd	dd	0.178
5	Total-tetrafurans	23.08	4.260e3	5.508e3	1.192	0.77	0.77	28.6	YES	NO	bd	bd	0.823
6	Total-tetrafurans	26.14	7.055e2	9.185e2	1.192	0.77	0.77	5.7	YES	NO	db	db	0.137
7	Total-tetrafurans	26.00	1.922e3	2.645e3	1.192	0.73	0.77	11.3	YES	NO	dd	dd	0.385
8	Total-tetrafurans	25.28	5.392e2	6.728e2	1.192	0.80	0.77	3.8	YES	NO	db	dd	0.102
9	Total-tetrafurans	25.10	6.176e2	8.261e2	1.192	0.75	0.77	4.0	YES	NO	bd	bd	0.122
10	Total-tetrafurans	24.87	1.103e3	1.529e3	1.192	0.72	0.77	7.6	YES	NO	bb	bb	0.222

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	2.169e4	1.451e4		1.49	1.55	356.9	YES	NO	bb	bb	3.279

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.27	2.024e3	1.501e3	1.126	1.35	1.55	27.9	YES	NO	bb	db	0.272
2	Total-pentafurans	31.12	2.320e3	1.363e3	1.047	1.70	1.55	23.3	YES	NO	db	dd	0.299
3	Total-pentafurans	30.12	1.471e3	1.075e3	1.047	1.37	1.55	17.8	YES	NO	bb	bd	0.207
4	12378-PeCDF	29.93	1.294e3	8.075e2	1.015	1.60	1.55	13.3	YES	NO	bb	bb	0.172

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDF	35.03	2.190e3	1.962e3	1.037	1.12	1.24	37.8	YES	NO	db	db	0.417
2	123478-HxCDF	34.89	4.899e3	3.832e3	1.017	1.28	1.24	81.4	YES	NO	dd	dd	0.890
3	Total-hexafurans	34.74	1.019e3	8.671e2	1.045	1.17	1.24	18.2	YES	NO	bd	bd	0.203
4	Total-hexafurans	34.27	2.265e4	1.825e4	1.045	1.24	1.24	392.6	YES	NO	bb	bb	4.408
5	Total-hexafurans	33.95	5.061e2	4.558e2	1.045	1.11	1.24	9.0	YES	NO	bb	bb	0.104
6	Total-hexafurans	33.43	1.829e4	1.482e4	1.045	1.23	1.24	313.7	YES	NO	bb	bb	3.568
7	123468-HXCDF	33.22	5.884e3	4.671e3	1.087	1.26	1.24	97.0	YES	NO	bb	bb	1.007

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	39.42	6.117e4	5.846e4	1.305	1.05	1.05	996.0	YES	NO	bb	bb	14.040
2	Total-heptafurans	39.18	9.363e2	7.919e2	1.305	1.18	1.05	15.8	YES	NO	bb	bb	0.203
3	1234678-HpCDF	38.77	3.147e4	3.077e4	1.327	1.02	1.05	504.9	YES	NO	bb	bb	6.457

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	1.513e3	1.735e3	1.192	0.87	0.77	9.0	YES	NO	bd	dd	0.274
2	Total-tetrafurans	23.87	1.085e3	1.376e3	1.192	0.79	0.77	6.8	YES	NO	dd	dd	0.207
3	Total-tetrafurans	23.75	2.274e3	2.965e3	1.192	0.77	0.77	16.8	YES	NO	bd	bd	0.442
4	Total-tetrafurans	23.40	9.571e2	1.157e3	1.192	0.83	0.77	6.6	YES	NO	dd	dd	0.178
5	Total-tetrafurans	23.08	4.260e3	5.508e3	1.192	0.77	0.77	28.6	YES	NO	bd	bd	0.823
6	Total-Furans	21.18	6.141e2	7.606e2	1.158	0.81	0.77	2.1	NO	NO	bb	bd	0.119
7	Total-tetrafurans	26.14	7.055e2	9.185e2	1.192	0.77	0.77	5.7	YES	NO	db	db	0.137
8	Total-tetrafurans	26.00	1.922e3	2.645e3	1.192	0.73	0.77	11.3	YES	NO	dd	dd	0.385
9	Total-tetrafurans	25.28	5.392e2	6.728e2	1.192	0.80	0.77	3.8	YES	NO	db	dd	0.102
10	Total-tetrafurans	25.10	6.176e2	8.261e2	1.192	0.75	0.77	4.0	YES	NO	bd	bd	0.122
11	Total-tetrafurans	24.87	1.103e3	1.529e3	1.192	0.72	0.77	7.6	YES	NO	bb	bb	0.222
12	23478-PeCDF	31.27	2.024e3	1.501e3	1.126	1.35	1.55	27.9	YES	NO	bb	db	0.272
13	Total-pentafurans	31.12	2.320e3	1.363e3	1.047	1.70	1.55	23.3	YES	NO	db	dd	0.299
14	Total-pentafurans	30.12	1.471e3	1.075e3	1.047	1.37	1.55	17.8	YES	NO	bb	bd	0.207
15	12378-PeCDF	29.93	1.294e3	8.075e2	1.015	1.60	1.55	13.3	YES	NO	bb	bb	0.172
16	123678-HxCDF	35.03	2.190e3	1.962e3	1.037	1.12	1.24	37.8	YES	NO	db	db	0.417
17	123478-HxCDF	34.89	4.899e3	3.832e3	1.017	1.28	1.24	81.4	YES	NO	dd	dd	0.890
18	Total-hexafurans	34.74	1.019e3	8.671e2	1.045	1.17	1.24	18.2	YES	NO	bd	bd	0.203
19	Total-hexafurans	34.27	2.265e4	1.825e4	1.045	1.24	1.24	392.6	YES	NO	bb	bb	4.408
20	Total-hexafurans	33.95	5.061e2	4.558e2	1.045	1.11	1.24	9.0	YES	NO	bb	bb	0.104
21	Total-hexafurans	33.43	1.829e4	1.482e4	1.045	1.23	1.24	313.7	YES	NO	bb	bb	3.568
22	123468-HXCDF	33.22	5.884e3	4.671e3	1.087	1.26	1.24	97.0	YES	NO	bb	bb	1.007
23	Total-heptafurans	39.42	6.117e4	5.846e4	1.305	1.05	1.05	996.0	YES	NO	bb	bb	14.040
24	Total-heptafurans	39.18	9.363e2	7.919e2	1.305	1.18	1.05	15.8	YES	NO	bb	bb	0.203
25	1234678-HpCDF	38.77	3.147e4	3.077e4	1.327	1.02	1.05	504.9	YES	NO	bb	bb	6.457
26	OCDF	45.24	4.284e4	4.803e4	1.447	0.89	0.89	691.0	YES	NO	bb	bb	14.700
27	Total-penta1	27.18	2.169e4	1.451e4		1.49	1.55	356.9	YES	NO	bb	bb	3.279

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TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.01	2.840e2	4.007e2	0.879	0.71	0.77	4.4	YES	NO	bb	db	0.091
2	Total-tetradioxins	23.80	8.891e2	1.301e3	0.879	0.68	0.77	11.9	YES	NO	bb	bd	0.292
3	1368-TCDD	23.51	8.643e2	1.126e3	0.923	0.77	0.77	12.5	YES	NO	bb	bb	0.253

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.51	1.713e3	1.060e3	0.995	1.62	1.55	23.1	YES	NO	bb	bb	0.446
2	Total-pentadioxins	30.83	4.962e2	2.927e2	1.331	1.70	1.55	6.7	YES	NO	bb	bb	0.095
3	Total-pentadioxins	30.46	1.407e3	8.935e2	1.331	1.57	1.55	15.9	YES	NO	bb	bb	0.277
4	Total-pentadioxins	30.27	1.208e3	8.424e2	1.331	1.43	1.55	20.5	YES	NO	bb	bb	0.246
5	Total-pentadioxins	30.12	1.484e3	9.416e2	1.331	1.58	1.55	25.9	YES	NO	bb	bb	0.292
6	Total-pentadioxins	29.91	1.560e3	1.014e3	1.331	1.54	1.55	26.5	YES	NO	bb	bb	0.309
7	Total-pentadioxins	29.31	1.129e3	8.241e2	1.331	1.37	1.55	23.0	YES	NO	bb	bb	0.235
8	12479-PECDD	28.81	3.630e3	2.327e3	1.843	1.56	1.55	36.0	YES	NO	bb	bb	0.517

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.53	4.240e3	3.286e3	0.950	1.29	1.24	64.6	YES	NO	bb	bb	0.998
2	123678-HxCDD	36.15	6.287e3	5.438e3	1.009	1.16	1.24	92.5	YES	NO	db	db	1.449
3	123478-HxCDD	36.04	1.792e3	1.330e3	1.027	1.35	1.24	26.0	YES	NO	bd	bd	0.387
4	Total-hexadioxins	35.25	2.827e3	2.485e3	1.028	1.14	1.24	38.5	YES	NO	db	db	0.651
5	Total-hexadioxins	35.13	2.226e4	1.867e4	1.028	1.19	1.24	195.0	YES	NO	bd	bd	5.019
6	Total-hexadioxins	34.77	4.445e3	3.652e3	1.028	1.22	1.24	61.7	YES	NO	bb	bb	0.993
7	124679-HXCDD	34.00	2.224e4	1.753e4	1.125	1.27	1.24	291.0	YES	NO	bb	bb	4.504

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	1.183e5	1.106e5	1.068	1.07	1.05	1205.8	YES	NO	bb	bb	42.655
2	1234679-HPCDD	39.21	2.314e5	2.155e5	1.211	1.07	1.05	2489.9	YES	NO	bb	bb	73.485

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.01	2.840e2	4.007e2	0.879	0.71	0.77	4.4	YES	NO	bb	db	0.091
2	Total-tetradioxins	23.80	8.891e2	1.301e3	0.879	0.68	0.77	11.9	YES	NO	bb	bd	0.292
3	1368-TCDD	23.51	8.643e2	1.126e3	0.923	0.77	0.77	12.5	YES	NO	bb	bb	0.253
4	12378-PeCDD	31.51	1.713e3	1.060e3	0.995	1.62	1.55	23.1	YES	NO	bb	bb	0.446
5	Total-pentadioxins	30.83	4.962e2	2.927e2	1.331	1.70	1.55	6.7	YES	NO	bb	bb	0.095
6	Total-pentadioxins	30.46	1.407e3	8.935e2	1.331	1.57	1.55	15.9	YES	NO	bb	bb	0.277
7	Total-pentadioxins	30.27	1.208e3	8.424e2	1.331	1.43	1.55	20.5	YES	NO	bb	bb	0.246
8	Total-pentadioxins	30.12	1.484e3	9.416e2	1.331	1.58	1.55	25.9	YES	NO	bb	bb	0.292
9	Total-pentadioxins	29.91	1.560e3	1.014e3	1.331	1.54	1.55	26.5	YES	NO	bb	bb	0.309
10	Total-pentadioxins	29.31	1.129e3	8.241e2	1.331	1.37	1.55	23.0	YES	NO	bb	bb	0.235
11	12479-PECDD	28.81	3.630e3	2.327e3	1.843	1.56	1.55	36.0	YES	NO	bb	bb	0.517
12	123789-HxCDD	36.53	4.240e3	3.286e3	0.950	1.29	1.24	64.6	YES	NO	bb	bb	0.998
13	123678-HxCDD	36.15	6.287e3	5.438e3	1.009	1.16	1.24	92.5	YES	NO	db	db	1.449
14	123478-HxCDD	36.04	1.792e3	1.330e3	1.027	1.35	1.24	26.0	YES	NO	bd	bd	0.387
15	Total-hexadioxins	35.25	2.827e3	2.485e3	1.028	1.14	1.24	38.5	YES	NO	db	db	0.651
16	Total-hexadioxins	35.13	2.226e4	1.867e4	1.028	1.19	1.24	195.0	YES	NO	bd	bd	5.019
17	Total-hexadioxins	34.77	4.445e3	3.652e3	1.028	1.22	1.24	61.7	YES	NO	bb	bb	0.993
18	124679-HXCDD	34.00	2.224e4	1.753e4	1.125	1.27	1.24	291.0	YES	NO	bb	bb	4.504
19	OCDD	45.00	8.051e5	9.072e5	1.181	0.89	0.89	9584.0	YES	NO	bb	bb	339.387
20	1234678-HpCDD	40.26	1.183e5	1.106e5	1.068	1.07	1.05	1205.8	YES	NO	bb	bb	42.655
21	1234679-HPCDD	39.21	2.314e5	2.155e5	1.211	1.07	1.05	2489.9	YES	NO	bb	bb	73.485

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.43	1.513e3	1.735e3	1.192	0.87	0.77	9.0	YES	NO	bd	dd	0.274
2	Total-tetrafurans	23.87	1.085e3	1.376e3	1.192	0.79	0.77	6.8	YES	NO	dd	dd	0.207
3	Total-tetrafurans	23.75	2.274e3	2.965e3	1.192	0.77	0.77	16.8	YES	NO	bd	bd	0.442
4	Total-tetrafurans	23.40	9.571e2	1.157e3	1.192	0.83	0.77	6.6	YES	NO	dd	dd	0.178
5	Total-tetrafurans	23.08	4.260e3	5.508e3	1.192	0.77	0.77	28.6	YES	NO	bd	bd	0.823
6	Total-Furans	21.18	6.141e2	7.606e2	1.158	0.81	0.77	2.1	NO	NO	bb	bd	0.119
7	Total-tetrafurans	26.14	7.055e2	9.185e2	1.192	0.77	0.77	5.7	YES	NO	db	db	0.137
8	Total-tetrafurans	26.00	1.922e3	2.645e3	1.192	0.73	0.77	11.3	YES	NO	dd	dd	0.385
9	Total-tetrafurans	25.28	5.392e2	6.728e2	1.192	0.80	0.77	3.8	YES	NO	db	dd	0.102
10	Total-tetrafurans	25.10	6.176e2	8.261e2	1.192	0.75	0.77	4.0	YES	NO	bd	bd	0.122
11	Total-tetrafurans	24.87	1.103e3	1.529e3	1.192	0.72	0.77	7.6	YES	NO	bb	bb	0.222
12	23478-PeCDF	31.27	2.024e3	1.501e3	1.126	1.35	1.55	27.9	YES	NO	bb	db	0.272
13	Total-pentafurans	31.12	2.320e3	1.363e3	1.047	1.70	1.55	23.3	YES	NO	db	dd	0.299
14	Total-pentafurans	30.12	1.471e3	1.075e3	1.047	1.37	1.55	17.8	YES	NO	bb	bd	0.207
15	12378-PeCDF	29.93	1.294e3	8.075e2	1.015	1.60	1.55	13.3	YES	NO	bb	bb	0.172
16	123678-HxCDF	35.03	2.190e3	1.962e3	1.037	1.12	1.24	37.8	YES	NO	db	db	0.417
17	123478-HxCDF	34.89	4.899e3	3.832e3	1.017	1.28	1.24	81.4	YES	NO	dd	dd	0.890
18	Total-hexafurans	34.74	1.019e3	8.671e2	1.045	1.17	1.24	18.2	YES	NO	bd	bd	0.203
19	Total-hexafurans	34.27	2.265e4	1.825e4	1.045	1.24	1.24	392.6	YES	NO	bb	bb	4.408
20	Total-hexafurans	33.95	5.061e2	4.558e2	1.045	1.11	1.24	9.0	YES	NO	bb	bb	0.104
21	Total-hexafurans	33.43	1.829e4	1.482e4	1.045	1.23	1.24	313.7	YES	NO	bb	bb	3.568
22	123468-HXCDF	33.22	5.884e3	4.671e3	1.087	1.26	1.24	97.0	YES	NO	bb	bb	1.007
23	Total-heptafurans	39.42	6.117e4	5.846e4	1.305	1.05	1.05	996.0	YES	NO	bb	bb	14.040
24	Total-heptafurans	39.18	9.363e2	7.919e2	1.305	1.18	1.05	15.8	YES	NO	bb	bb	0.203
25	1234678-HpCDF	38.77	3.147e4	3.077e4	1.327	1.02	1.05	504.9	YES	NO	bb	bb	6.457
26	OCDF	45.24	4.284e4	4.803e4	1.447	0.89	0.89	691.0	YES	NO	bb	bb	14.700
27	Total-penta1	27.18	2.169e4	1.451e4		1.49	1.55	356.9	YES	NO	bb	bb	3.279
28	Total-tetradioxins	24.01	2.840e2	4.007e2	0.879	0.71	0.77	4.4	YES	NO	bb	db	0.091
29	Total-tetradioxins	23.80	8.891e2	1.301e3	0.879	0.68	0.77	11.9	YES	NO	bb	bd	0.292
30	1368-TCDD	23.51	8.643e2	1.126e3	0.923	0.77	0.77	12.5	YES	NO	bb	bb	0.253
31	12378-PeCDD	31.51	1.713e3	1.060e3	0.995	1.62	1.55	23.1	YES	NO	bb	bb	0.446
32	Total-pentadioxins	30.83	4.962e2	2.927e2	1.331	1.70	1.55	6.7	YES	NO	bb	bb	0.095
33	Total-pentadioxins	30.46	1.407e3	8.935e2	1.331	1.57	1.55	15.9	YES	NO	bb	bb	0.277
34	Total-pentadioxins	30.27	1.208e3	8.424e2	1.331	1.43	1.55	20.5	YES	NO	bb	bb	0.246
35	Total-pentadioxins	30.12	1.484e3	9.416e2	1.331	1.58	1.55	25.9	YES	NO	bb	bb	0.292
36	Total-pentadioxins	29.91	1.560e3	1.014e3	1.331	1.54	1.55	26.5	YES	NO	bb	bb	0.309
37	Total-pentadioxins	29.31	1.129e3	8.241e2	1.331	1.37	1.55	23.0	YES	NO	bb	bb	0.235

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	12479-PECDD	28.81	3.630e3	2.327e3	1.843	1.56	1.55	36.0	YES	NO	bb	bb	0.517
39	123789-HxCDD	36.53	4.240e3	3.286e3	0.950	1.29	1.24	64.6	YES	NO	bb	bb	0.998
40	123678-HxCDD	36.15	6.287e3	5.438e3	1.009	1.16	1.24	92.5	YES	NO	db	db	1.449
41	123478-HxCDD	36.04	1.792e3	1.330e3	1.027	1.35	1.24	26.0	YES	NO	bd	bd	0.387
42	Total-hexadioxins	35.25	2.827e3	2.485e3	1.028	1.14	1.24	38.5	YES	NO	db	db	0.651
43	Total-hexadioxins	35.13	2.226e4	1.867e4	1.028	1.19	1.24	195.0	YES	NO	bd	bd	5.019
44	Total-hexadioxins	34.77	4.445e3	3.652e3	1.028	1.22	1.24	61.7	YES	NO	bb	bb	0.993
45	124679-HXCDD	34.00	2.224e4	1.753e4	1.125	1.27	1.24	291.0	YES	NO	bb	bb	4.504
46	OCDD	45.00	8.051e5	9.072e5	1.181	0.89	0.89	9584.0	YES	NO	bb	bb	339.387
47	1234678-HpCDD	40.26	1.183e5	1.106e5	1.068	1.07	1.05	1205.8	YES	NO	bb	bb	42.655
48	1234679-HPCDD	39.21	2.314e5	2.155e5	1.211	1.07	1.05	2489.9	YES	NO	bb	bb	73.485

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.75	1.818e6					53.3	YES		dd		
2	FUNCTION1 PFK	21.57	7.307e6					58.4	YES		dd		
3	FUNCTION1 PFK	21.44	5.510e6					60.7	YES		dd		
4	FUNCTION1 PFK	21.15	8.163e6					67.9	YES		bd		
5	FUNCTION1 PFK	23.96	9.449e4					1.5	NO		db		
6	FUNCTION1 PFK	23.80	2.750e5					5.1	YES		dd		
7	FUNCTION1 PFK	23.57	1.071e6					10.7	YES		dd		
8	FUNCTION1 PFK	23.52	4.083e5					9.9	YES		dd		
9	FUNCTION1 PFK	23.37	1.021e6					15.2	YES		dd		
10	FUNCTION1 PFK	23.28	4.287e5					17.0	YES		dd		
11	FUNCTION1 PFK	23.24	1.157e6					18.1	YES		dd		
12	FUNCTION1 PFK	23.05	1.375e6					22.1	YES		dd		
13	FUNCTION1 PFK	22.78	4.458e6					29.0	YES		dd		
14	FUNCTION1 PFK	22.68	2.267e6					30.9	YES		dd		
15	FUNCTION1 PFK	22.48	4.235e6					35.3	YES		dd		
16	FUNCTION1 PFK	22.25	2.984e6					41.8	YES		dd		
17	FUNCTION1 PFK	22.19	2.176e6					42.6	YES		dd		
18	FUNCTION1 PFK	22.13	1.258e6					40.6	YES		dd		
19	FUNCTION1 PFK	21.97	3.167e6					47.7	YES		dd		
20	FUNCTION1 PFK	21.81	3.388e6					51.6	YES		dd		
21	FUNCTION1 PFK	26.34	3.957e3					0.5	NO		bb		
22	FUNCTION1 PFK	26.26	2.754e4					1.3	NO		db		
23	FUNCTION1 PFK	26.20	2.642e4					1.4	NO		bd		
24	FUNCTION1 PFK	25.88	3.891e5					3.9	YES		bb		
25	FUNCTION1 PFK	25.61	5.359e5					7.2	YES		db		
26	FUNCTION1 PFK	25.52	3.425e5					6.6	YES		bd		
27	FUNCTION1 PFK	25.32	4.521e5					6.3	YES		db		
28	FUNCTION1 PFK	25.22	2.259e5					5.6	YES		dd		
29	FUNCTION1 PFK	25.17	1.780e5					5.8	YES		dd		
30	FUNCTION1 PFK	25.07	4.321e5					5.7	YES		dd		
31	FUNCTION1 PFK	24.93	1.570e5					5.1	YES		dd		
32	FUNCTION1 PFK	24.85	2.826e5					5.4	YES		dd		
33	FUNCTION1 PFK	24.73	4.123e5					5.2	YES		dd		
34	FUNCTION1 PFK	24.54	3.067e5					4.6	YES		dd		
35	FUNCTION1 PFK	24.45	2.349e5					4.1	YES		bd		
36	FUNCTION1 PFK	24.22	5.033e4					1.5	NO		bb		
37	FUNCTION1 PFK	27.98	1.165e4					0.6	NO		bb		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	27.91	3.009e4					1.4	NO		bb		
39	FUNCTION1 PFK	27.67	1.406e5					2.7	NO		db		
40	FUNCTION1 PFK	27.58	6.474e4					2.0	NO		bd		
41	FUNCTION1 PFK	27.45	1.096e5					2.7	NO		db		
42	FUNCTION1 PFK	27.29	2.657e5					5.2	YES		dd		
43	FUNCTION1 PFK	27.23	1.122e5					4.1	YES		bd		
44	FUNCTION1 PFK	27.11	9.008e4					4.0	YES		db		
45	FUNCTION1 PFK	27.06	2.187e5					4.0	YES		bd		
46	FUNCTION1 PFK	26.82	1.631e4					0.9	NO		bb		
47	FUNCTION1 PFK	26.52	3.673e4					1.1	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.91	4.674e6					15.0	YES		bb		0.000
2	FUNCTION2 PFK	29.40	2.364e5					13.7	YES		db		0.000
3	FUNCTION2 PFK	29.04	4.731e6					21.0	YES		bd		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.56	1.161e4					1.3	NO		bb		0.000
2	FUNCTION3 PFK	37.24	1.817e6					16.0	YES		db		0.000
3	FUNCTION3 PFK	37.01	2.786e6					47.9	YES		bd		0.000
4	FUNCTION3 PFK	36.68	5.654e6					49.8	YES		db		0.000
5	FUNCTION3 PFK	36.32	4.121e6					26.3	YES		dd		0.000
6	FUNCTION3 PFK	36.17	1.579e6					18.0	YES		bd		0.000
7	FUNCTION3 PFK	35.77	2.661e4					2.1	NO		bb		0.000
8	FUNCTION3 PFK	35.61	3.397e4					2.0	NO		bb		0.000
9	FUNCTION3 PFK	33.16	6.509e4					2.5	NO		bb		0.000
10	FUNCTION3 PFK	33.06	4.575e4					2.5	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.25	1.622e4					1.1	NO		db		
2	FUNCTION4 PFK	38.13	6.155e4					3.6	YES		dd		
3	FUNCTION4 PFK	38.11	4.018e4					3.7	YES		dd		
4	FUNCTION4 PFK	38.06	2.042e4					2.5	NO		dd		
5	FUNCTION4 PFK	38.02	5.010e4					3.9	YES		bd		
6	FUNCTION4 PFK	40.18	2.963e4					1.9	NO		bb		
7	FUNCTION4 PFK	40.05	1.269e4					1.5	NO		bb		
8	FUNCTION4 PFK	39.99	2.098e4					1.3	NO		db		
9	FUNCTION4 PFK	39.93	7.942e3					1.1	NO		dd		
10	FUNCTION4 PFK	39.89	5.543e3					0.9	NO		dd		
11	FUNCTION4 PFK	39.85	1.175e4					1.0	NO		bd		
12	FUNCTION4 PFK	39.71	1.879e4					2.1	NO		db		
13	FUNCTION4 PFK	39.66	5.343e4					2.7	NO		bd		
14	FUNCTION4 PFK	39.47	1.059e4					1.7	NO		db		
15	FUNCTION4 PFK	39.39	4.760e4					2.2	NO		dd		
16	FUNCTION4 PFK	39.28	2.102e4					1.2	NO		bd		
17	FUNCTION4 PFK	39.07	9.945e3					1.0	NO		bb		
18	FUNCTION4 PFK	38.98	1.389e4					1.5	NO		db		
19	FUNCTION4 PFK	38.93	9.466e3					1.2	NO		dd		
20	FUNCTION4 PFK	38.88	1.535e4					1.5	NO		bd		
21	FUNCTION4 PFK	38.60	1.006e3					0.3	NO		bb		
22	FUNCTION4 PFK	41.67	2.219e3					0.4	NO		bb		
23	FUNCTION4 PFK	41.49	7.678e3					1.0	NO		db		
24	FUNCTION4 PFK	41.41	2.996e4					1.6	NO		bd		
25	FUNCTION4 PFK	41.30	1.930e4					1.3	NO		db		
26	FUNCTION4 PFK	41.22	1.686e3					0.4	NO		bd		
27	FUNCTION4 PFK	41.16	1.645e4					1.7	NO		db		
28	FUNCTION4 PFK	41.12	2.688e4					1.4	NO		bd		
29	FUNCTION4 PFK	40.96	1.032e3					0.3	NO		bb		
30	FUNCTION4 PFK	40.92	1.644e3					0.5	NO		bb		
31	FUNCTION4 PFK	40.82	1.392e4					1.6	NO		bb		
32	FUNCTION4 PFK	40.75	2.706e4					2.3	NO		db		
33	FUNCTION4 PFK	40.71	1.493e4					1.9	NO		dd		
34	FUNCTION4 PFK	40.67	3.218e4					2.3	NO		bd		
35	FUNCTION4 PFK	40.60	3.620e3					0.6	NO		db		
36	FUNCTION4 PFK	40.53	3.326e4					1.8	NO		dd		
37	FUNCTION4 PFK	40.48	1.214e4					1.2	NO		bd		

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION4 PFK	42.97	7.620e3					1.1	NO		db		
39	FUNCTION4 PFK	42.90	1.414e4					1.1	NO		dd		
40	FUNCTION4 PFK	42.84	1.075e4					1.1	NO		bd		
41	FUNCTION4 PFK	42.68	9.022e3					1.0	NO		bb		
42	FUNCTION4 PFK	42.60	5.289e3					0.7	NO		bb		
43	FUNCTION4 PFK	42.48	6.285e3					1.0	NO		db		
44	FUNCTION4 PFK	42.42	1.595e4					1.1	NO		bd		
45	FUNCTION4 PFK	42.21	1.153e4					1.0	NO		bb		
46	FUNCTION4 PFK	42.08	2.024e3					0.4	NO		bb		
47	FUNCTION4 PFK	41.88	4.613e3					0.6	NO		db		
48	FUNCTION4 PFK	41.82	1.135e4					1.1	NO		dd		
49	FUNCTION4 PFK	41.75	1.992e4					1.3	NO		bd		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.23	6.748e4					2.3	NO		bb		
2	FUNCTION5 PFK	43.10	4.364e3					1.7	NO		bb		
3	FUNCTION5 PFK	43.06	2.968e3					1.1	NO		bb		
4	FUNCTION5 PFK	45.26	6.337e3					1.6	NO		bb		
5	FUNCTION5 PFK	45.17	9.313e2					0.6	NO		bb		
6	FUNCTION5 PFK	45.06	5.752e3					1.4	NO		bb		
7	FUNCTION5 PFK	44.83	2.347e4					2.2	NO		bb		
8	FUNCTION5 PFK	44.16	8.179e3					0.3	NO		bb		
9	FUNCTION5 PFK	43.81	2.272e4					2.7	NO		bb		
10	FUNCTION5 PFK	43.67	8.337e2					0.5	NO		bb		

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	22.71	9.530e1					3.1	YES		bd		0.000
2	FUNCTION1 HXCD...	22.45	1.184e2					4.0	YES		db		0.000
3	FUNCTION1 HXCD...	22.33	2.336e2					4.1	YES		dd		0.000
4	FUNCTION1 HXCD...	22.19	1.203e2					3.6	YES		dd		0.000
5	FUNCTION1 HXCD...	22.16	1.187e2					3.4	YES		bd		0.000
6	FUNCTION1 HXCD...	21.83	8.229e1					1.6	NO		bb		0.000
7	FUNCTION1 HXCD...	21.25	1.184e2					3.5	YES		db		0.000
8	FUNCTION1 HXCD...	21.13	3.022e2					4.1	YES		bd		0.000
9	FUNCTION1 HXCD...	27.89	1.041e2					2.3	NO		bb		0.000
10	FUNCTION1 HXCD...	27.65	1.098e2					2.1	NO		bb		0.000
11	FUNCTION1 HXCD...	26.77	2.871e2					7.1	YES		bb		0.000
12	FUNCTION1 HXCD...	26.59	7.036e1					2.0	NO		bb		0.000
13	FUNCTION1 HXCD...	26.38	1.368e2					2.9	NO		bb		0.000
14	FUNCTION1 HXCD...	26.12	6.042e2					14.6	YES		bb		0.000
15	FUNCTION1 HXCD...	25.91	5.245e2					9.9	YES		db		0.000
16	FUNCTION1 HXCD...	25.75	4.509e2					9.7	YES		dd		0.000
17	FUNCTION1 HXCD...	25.58	1.584e2					2.4	NO		bd		0.000
18	FUNCTION1 HXCD...	25.10	7.717e1					2.5	NO		bb		0.000
19	FUNCTION1 HXCD...	23.86	1.907e2					2.2	NO		db		0.000
20	FUNCTION1 HXCD...	23.75	7.075e2					16.5	YES		bd		0.000
21	FUNCTION1 HXCD...	22.96	1.058e2					3.6	YES		bb		0.000
22	FUNCTION1 HXCD...	22.77	1.638e2					4.5	YES		db		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	21.38	1.175e2					1.9	NO		bd		0.000
2	FUNCTION1 HPCD...	27.91	1.043e2					2.8	NO		db		0.000
3	FUNCTION1 HPCD...	27.79	1.317e2					2.0	NO		bd		0.000
4	FUNCTION1 HPCD...	26.96	2.098e2					7.3	YES		bb		0.000
5	FUNCTION1 HPCD...	25.96	1.046e2					1.9	NO		bb		0.000
6	FUNCTION1 HPCD...	25.64	8.914e1					1.9	NO		db		0.000
7	FUNCTION1 HPCD...	25.55	1.018e2					1.5	NO		bd		0.000
8	FUNCTION1 HPCD...	25.23	9.857e1					1.8	NO		bb		0.000
9	FUNCTION1 HPCD...	24.45	1.020e2					1.9	NO		bb		0.000
10	FUNCTION1 HPCD...	23.58	9.764e1					1.5	NO		db		0.000
11	FUNCTION1 HPCD...	23.48	7.369e1					1.5	NO		dd		0.000
12	FUNCTION1 HPCD...	23.36	9.076e2					10.4	YES		bd		0.000
13	FUNCTION1 HPCD...	23.07	2.479e2					3.2	YES		db		0.000
14	FUNCTION1 HPCD...	22.96	1.516e2					2.8	NO		bd		0.000
15	FUNCTION1 HPCD...	22.42	1.222e2					2.7	NO		bb		0.000
16	FUNCTION1 HPCD...	22.06	6.030e3					121.0	YES		bb		0.000
17	FUNCTION1 HPCD...	21.51	3.463e2					2.4	NO		db		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.05	7.343e1					1.4	NO		bb		0.000
2	FUNCTION2 HPCD...	29.16	7.512e1					3.2	YES		bb		0.000
3	FUNCTION2 HPCD...	28.93	2.780e2					6.9	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.85	9.059e1					3.0	NO		bb		0.000
2	FUNCTION3 OCDPE	36.52	2.995e2					6.6	YES		bb		0.000
3	FUNCTION3 OCDPE	36.01	1.416e2					4.3	YES		bb		0.000
4	FUNCTION3 OCDPE	34.18	9.686e1					3.8	YES		bb		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.16	1.302e2					4.1	YES		bb		0.000
2	FUNCTION4 NCDPE	38.41	4.035e3					94.8	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	43.63	7.434e1					3.3	YES		bb		0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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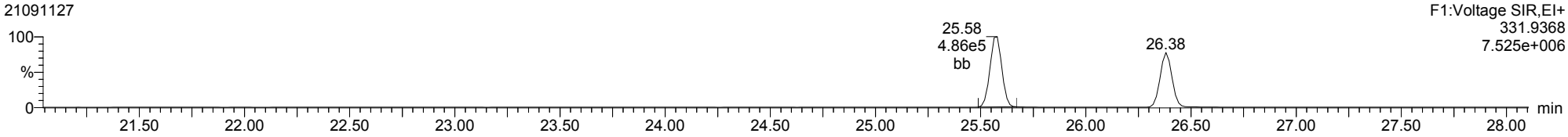
13C-1234-TCDD



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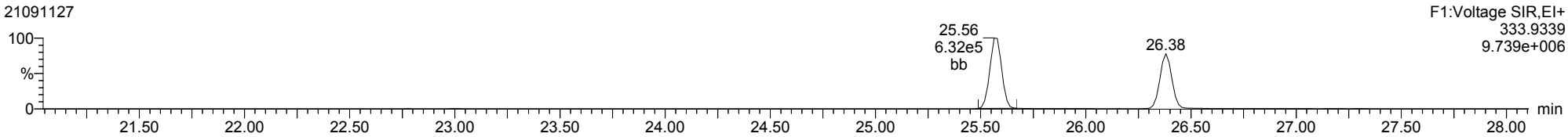
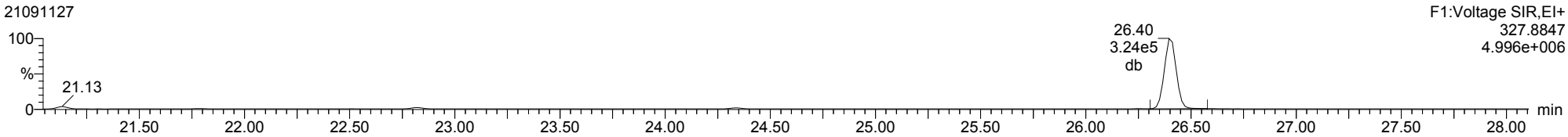


37CL-2378-TCDD



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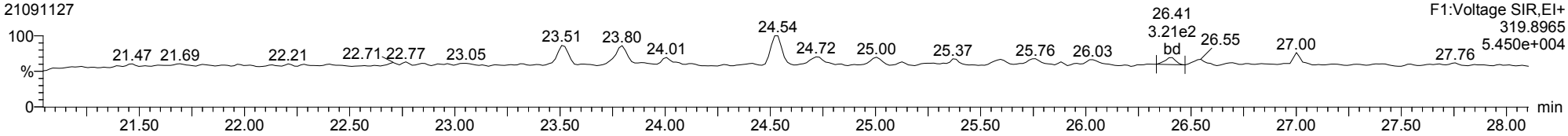
2378-TCDD



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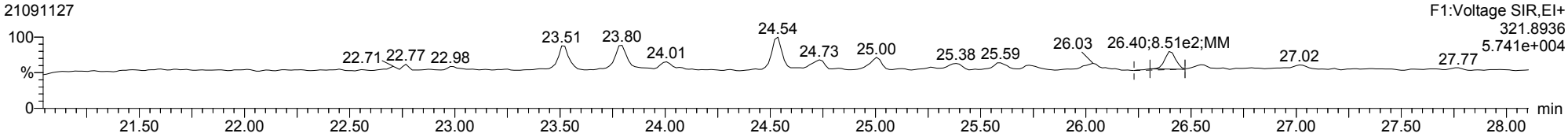

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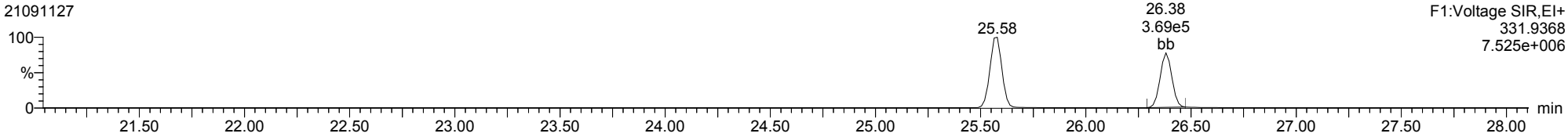

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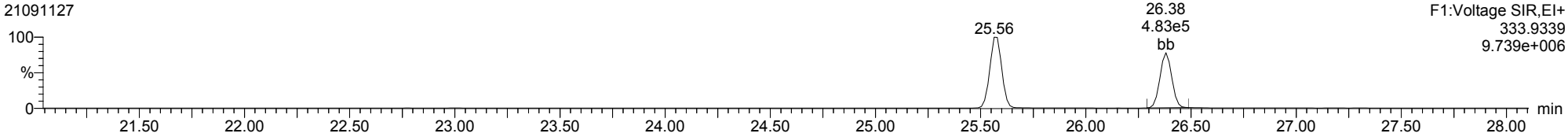

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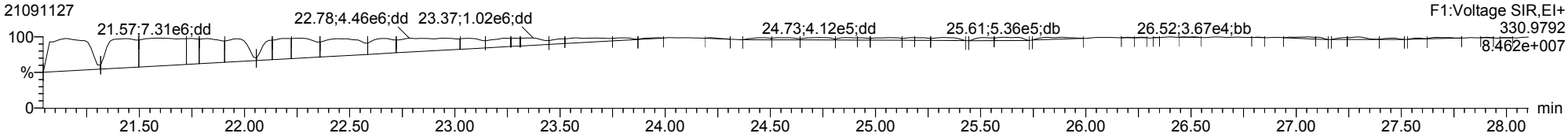

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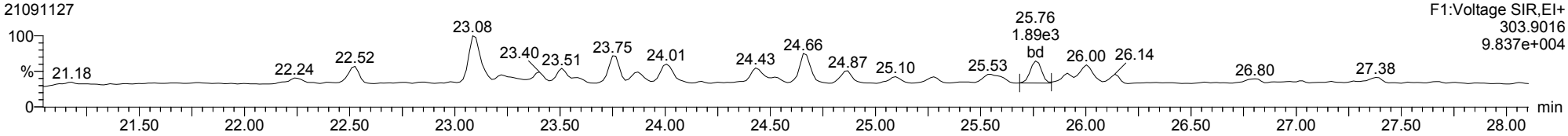
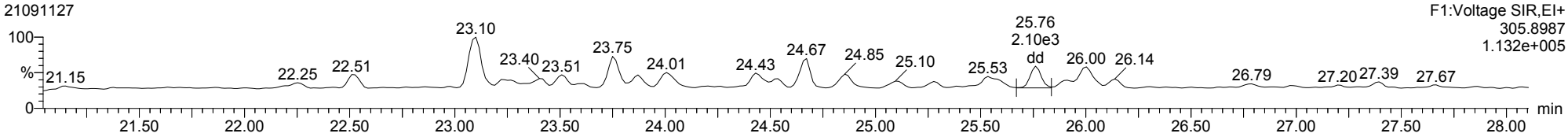
2378-TCDF



2378-TCDF



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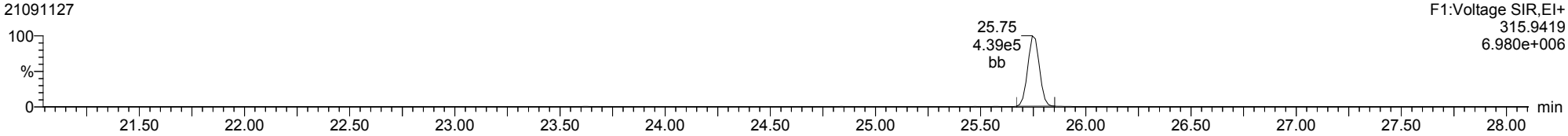

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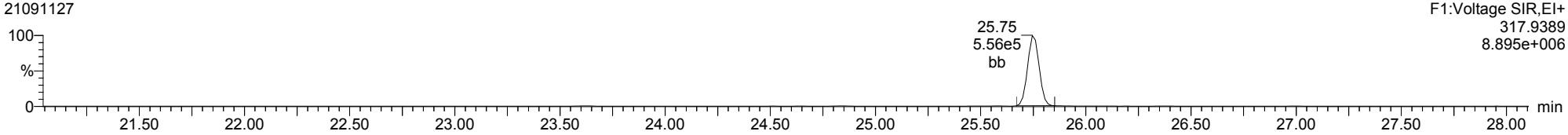

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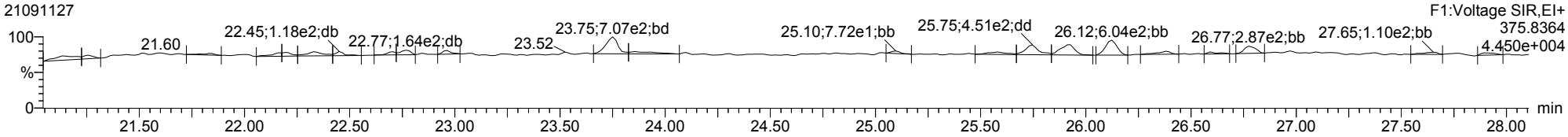

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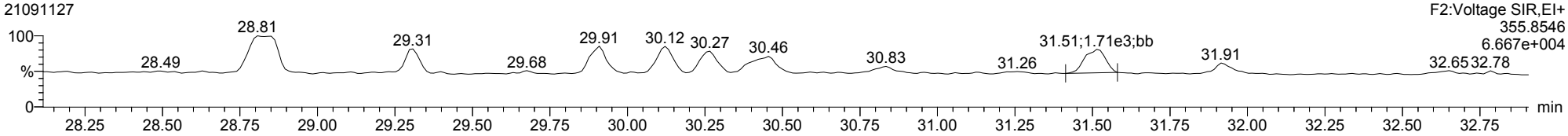
12378-PeCDD



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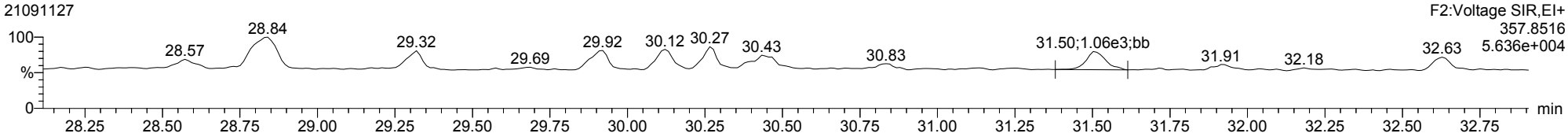

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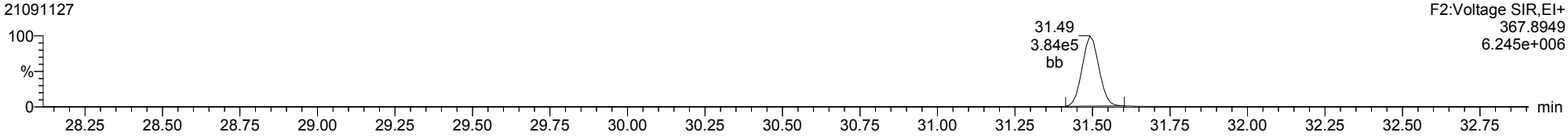

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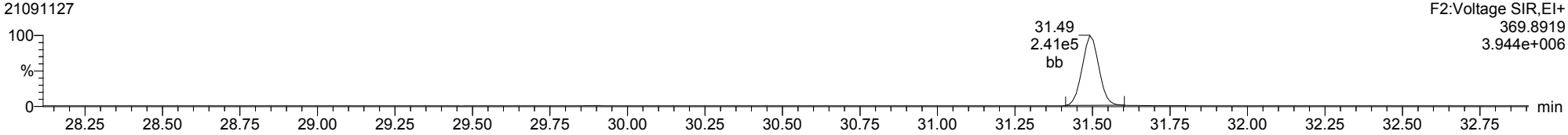

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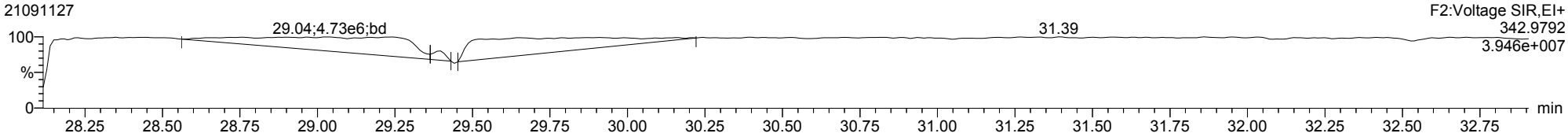

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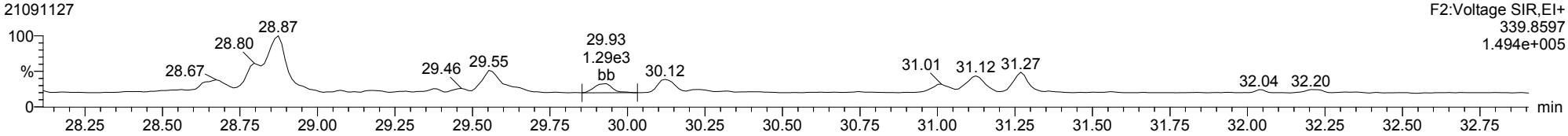

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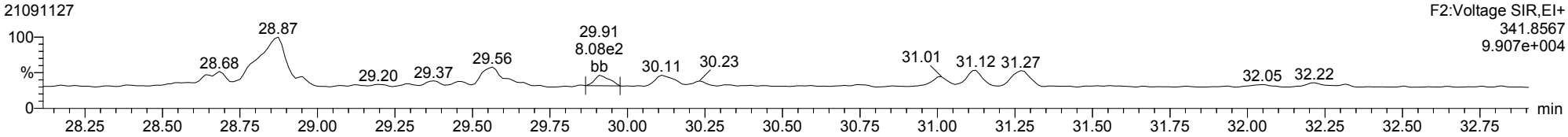

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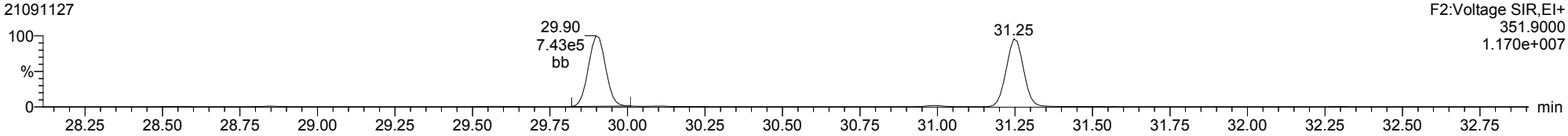

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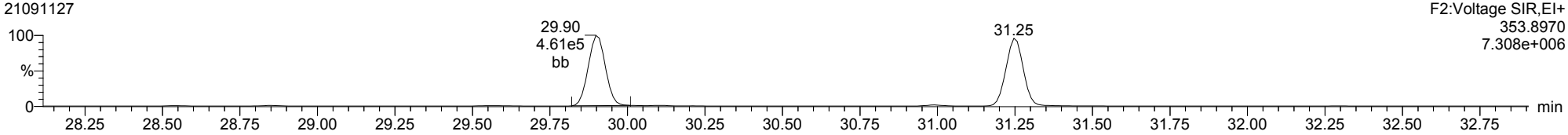

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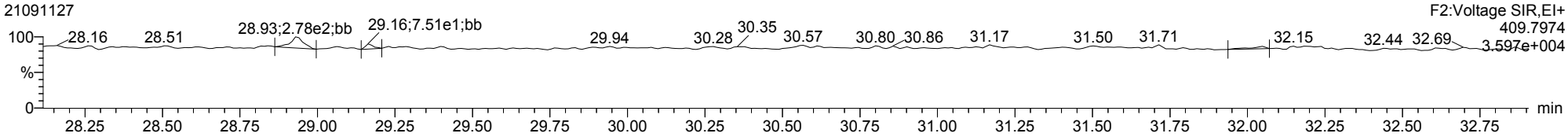

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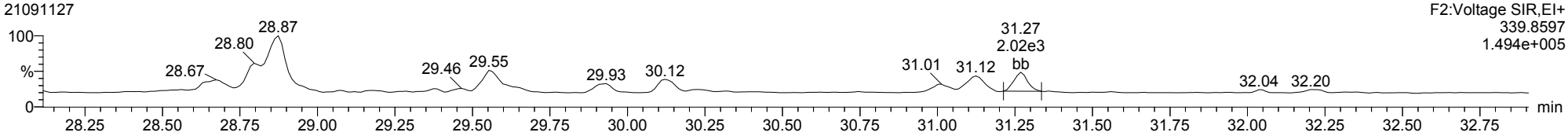

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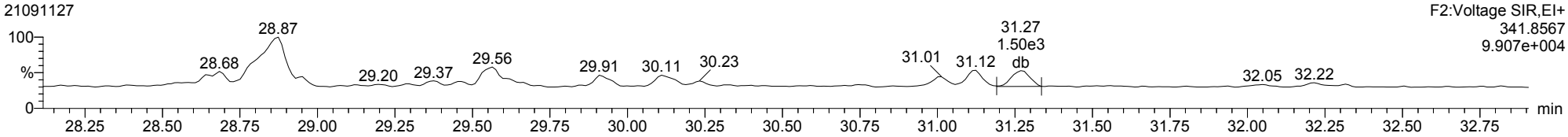

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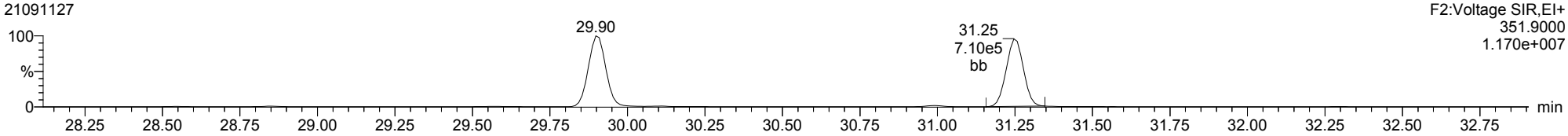

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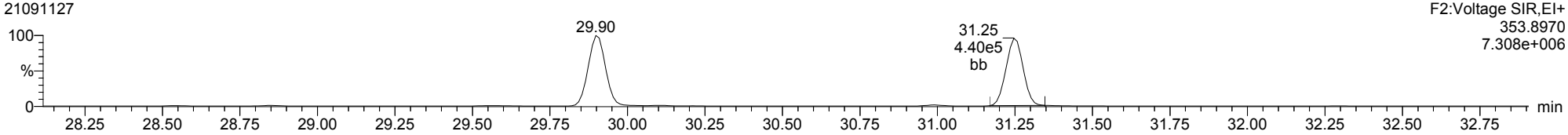

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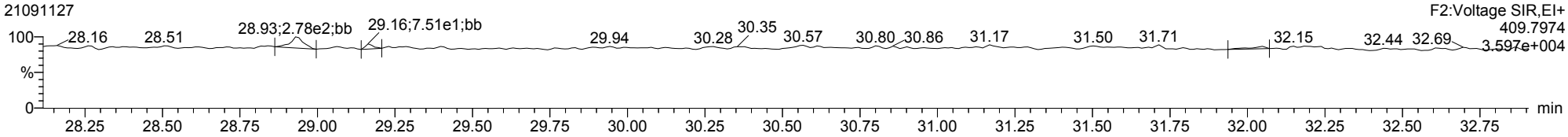

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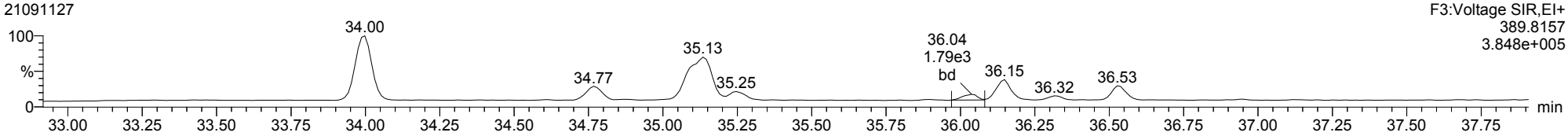
123478-HxCDD



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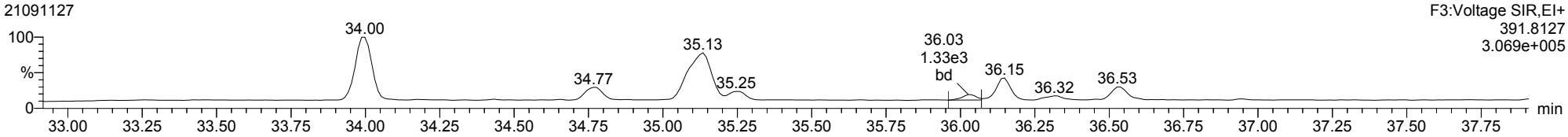

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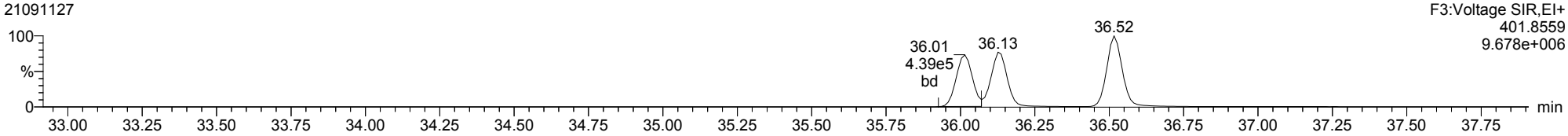

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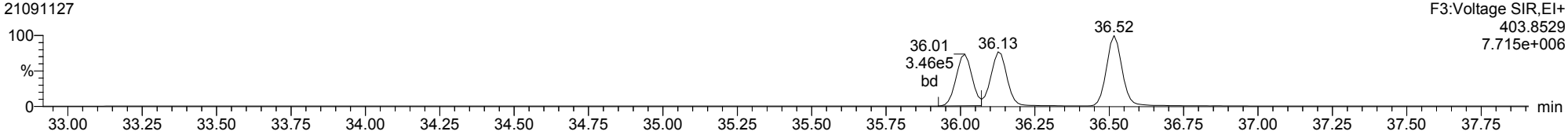

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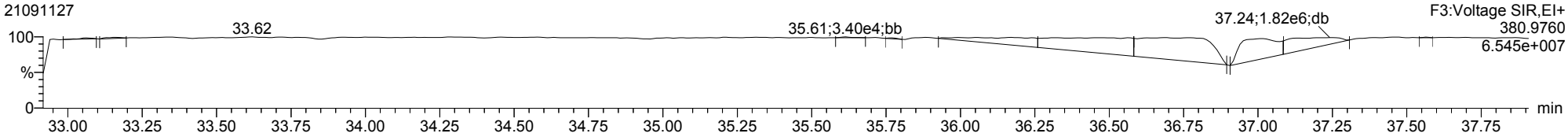

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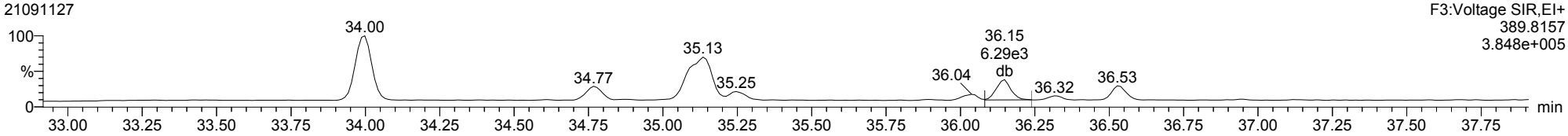

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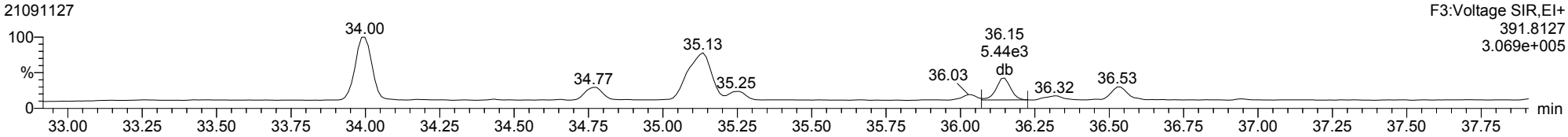

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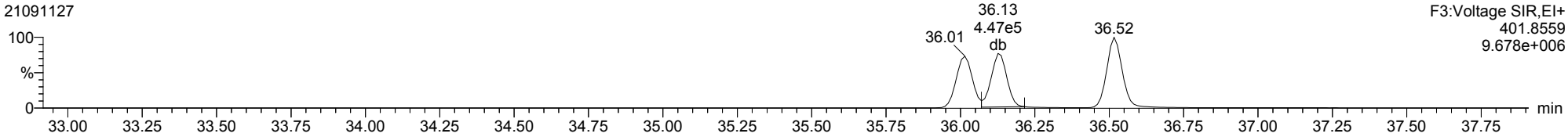

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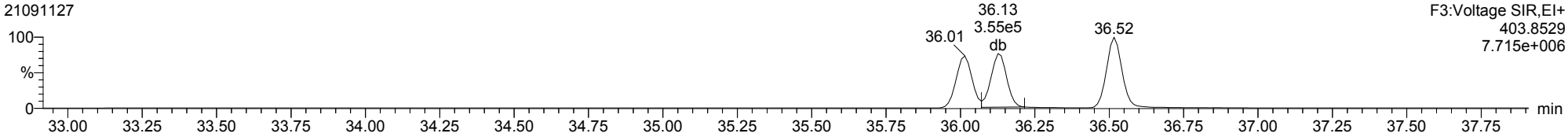

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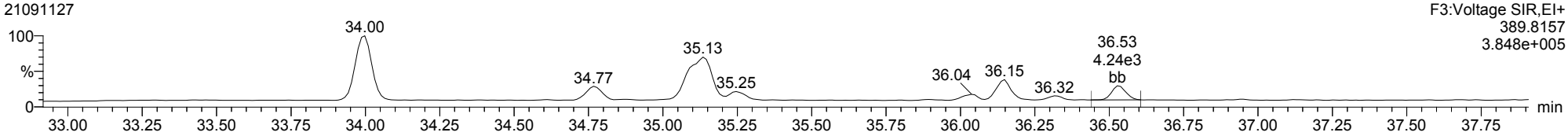

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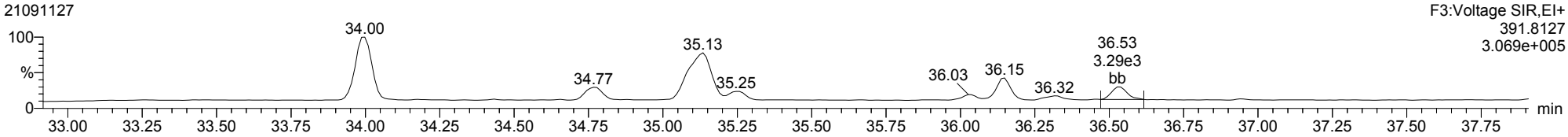

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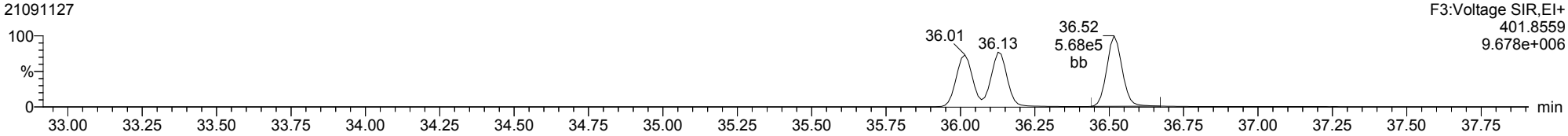

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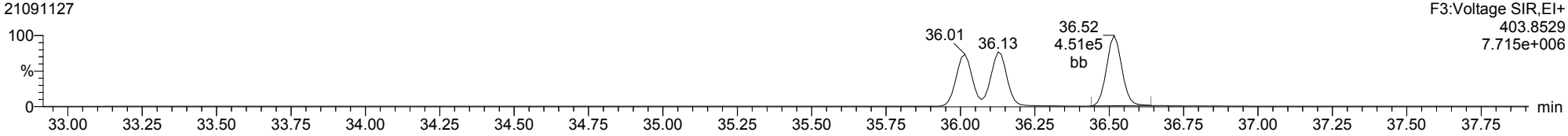

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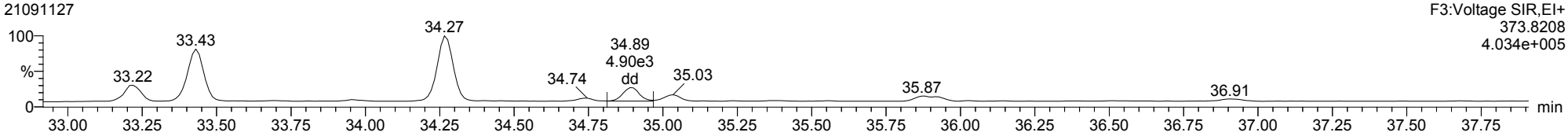

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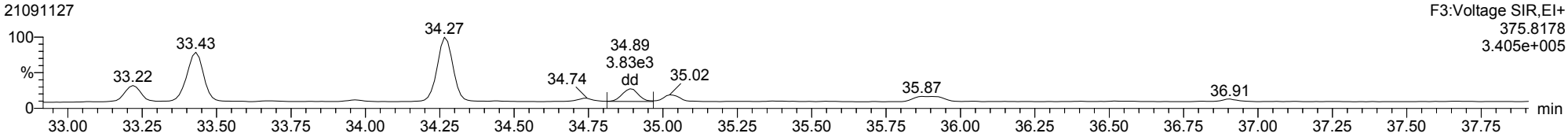

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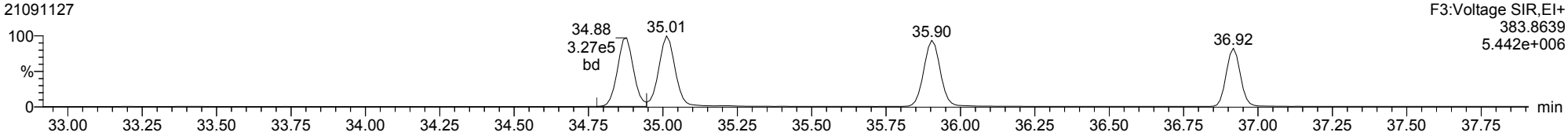

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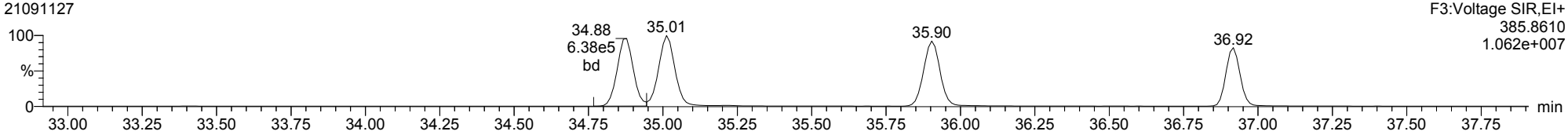

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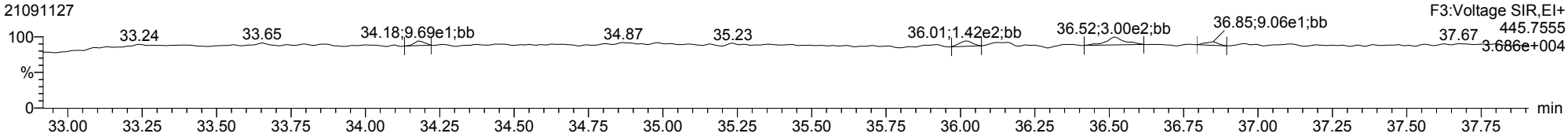

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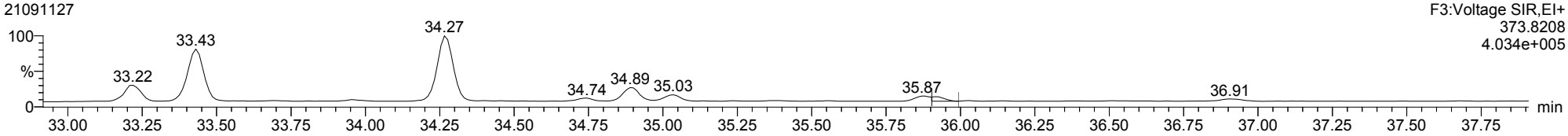
234678-HxCDF



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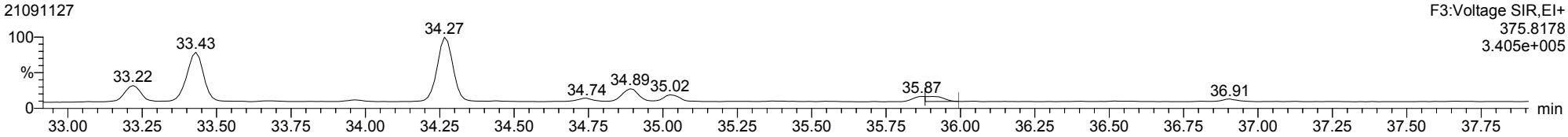

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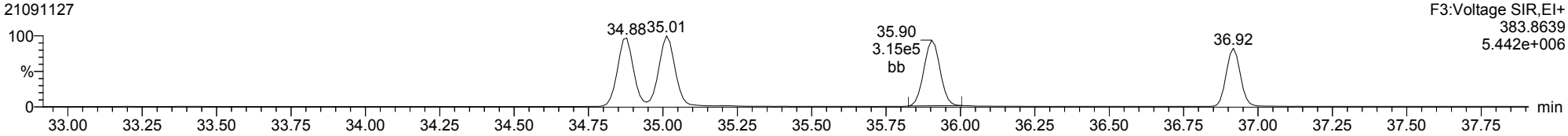

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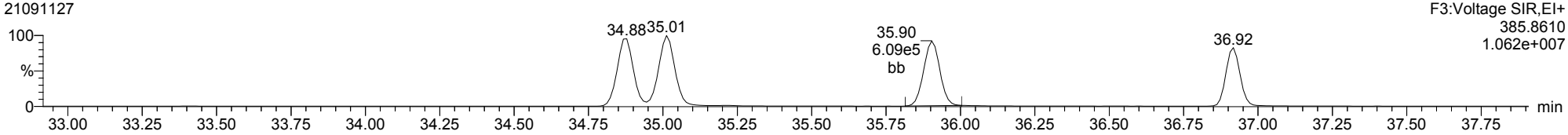

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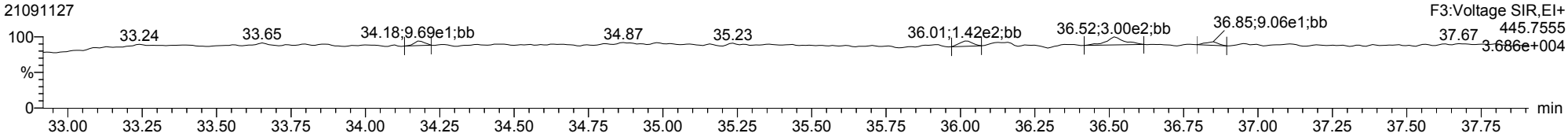

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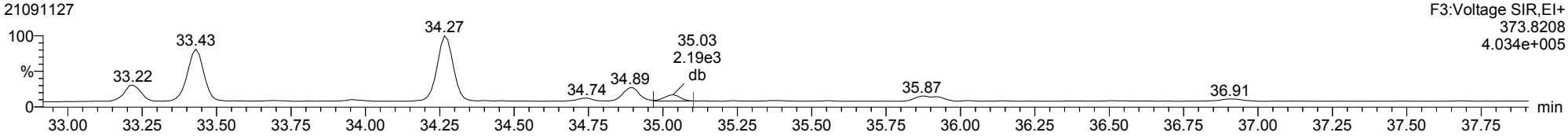

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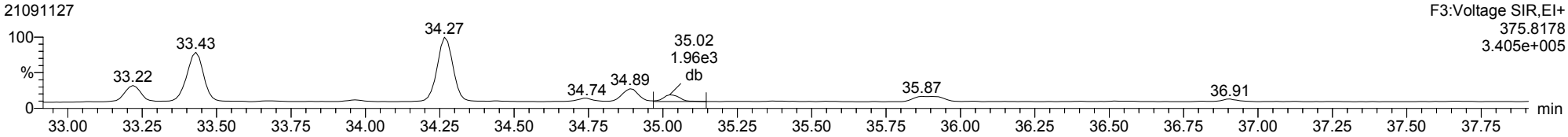

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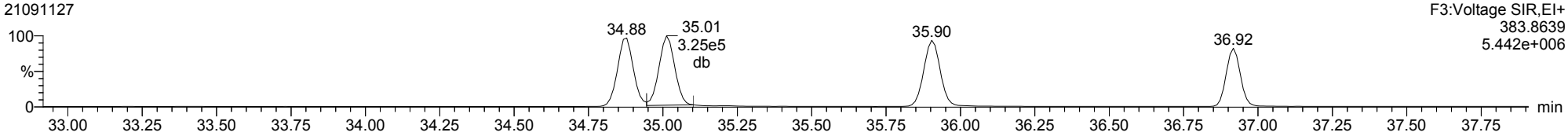

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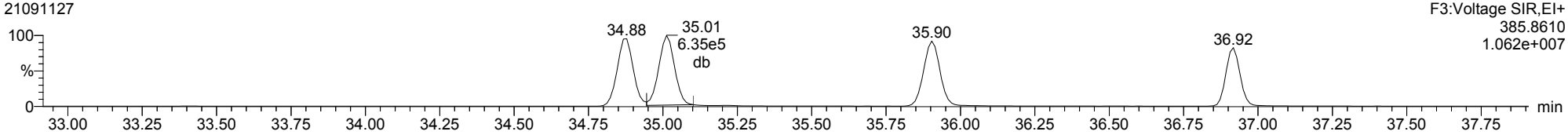
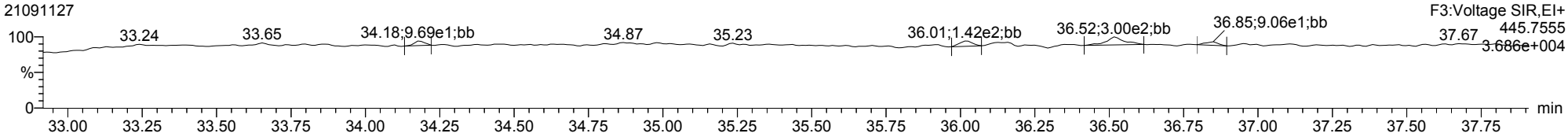


FUNCTION3 OCDPE



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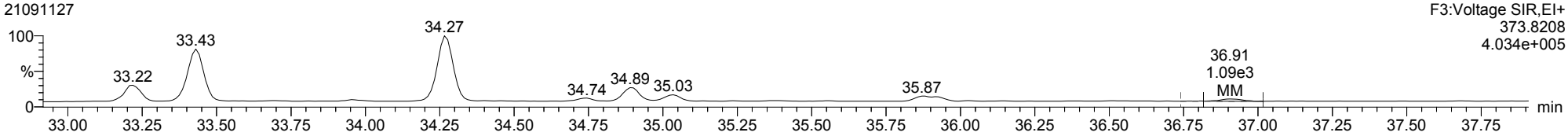

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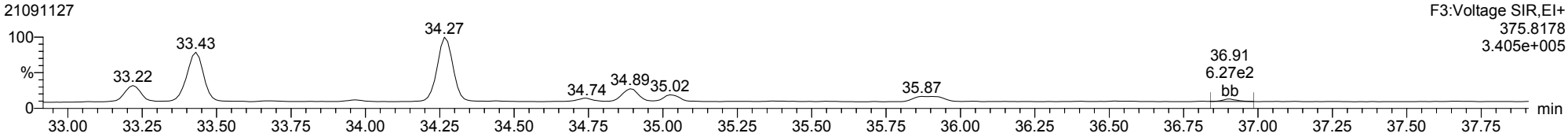

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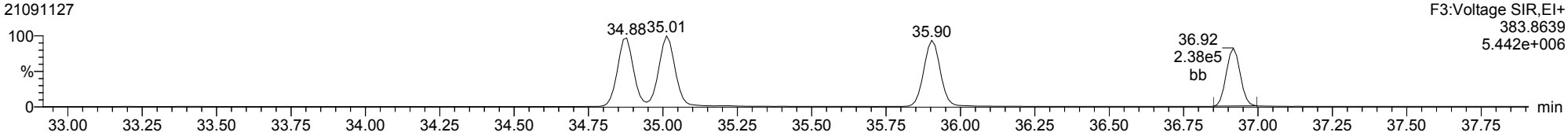

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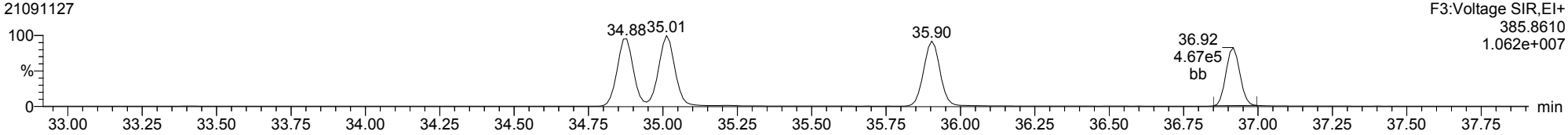

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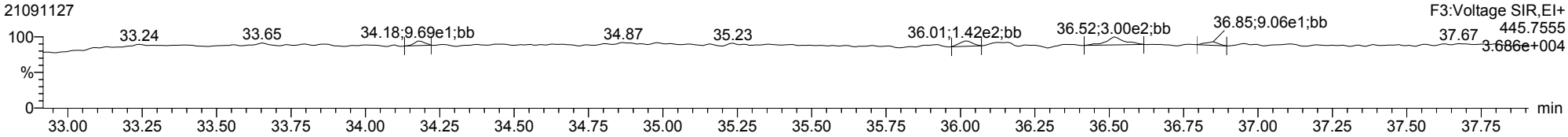

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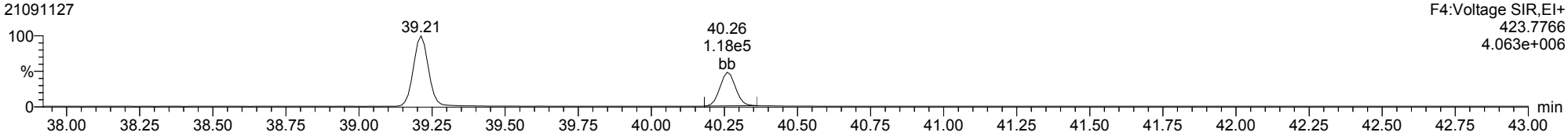

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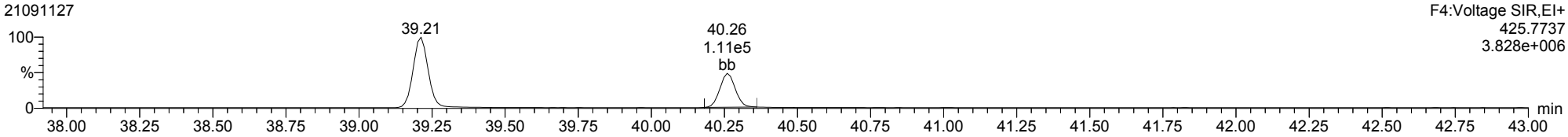

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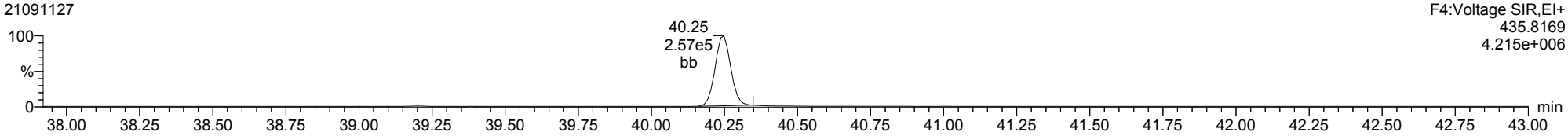

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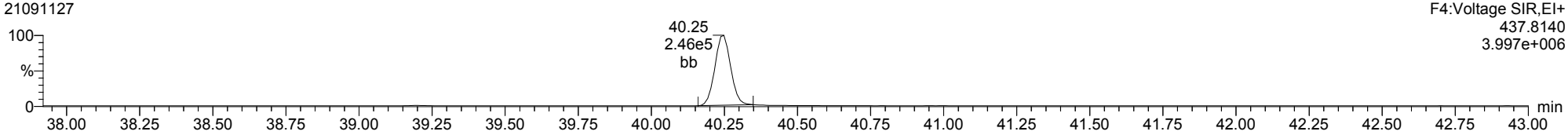

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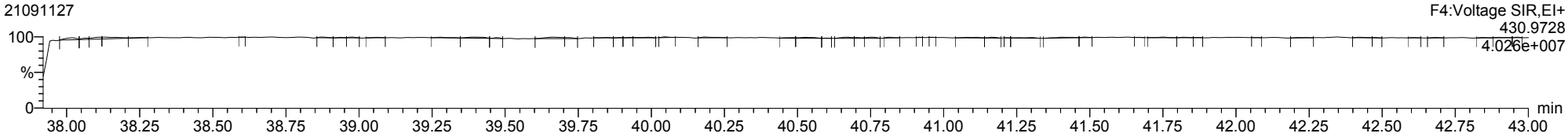

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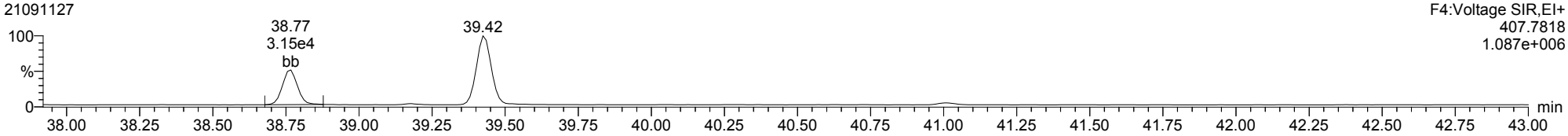

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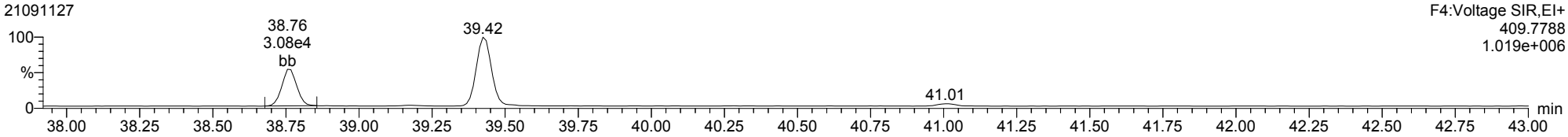

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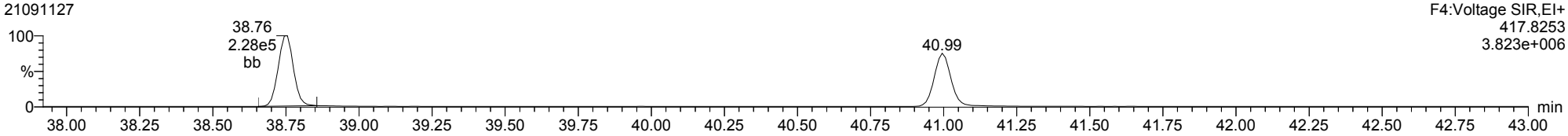

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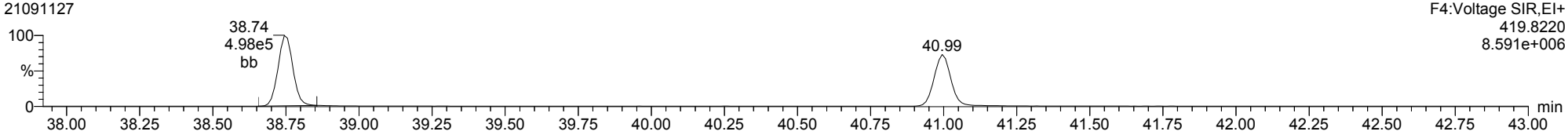
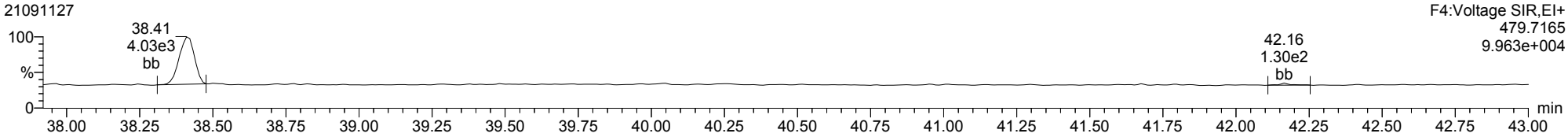


FUNCTION4 NCDPE



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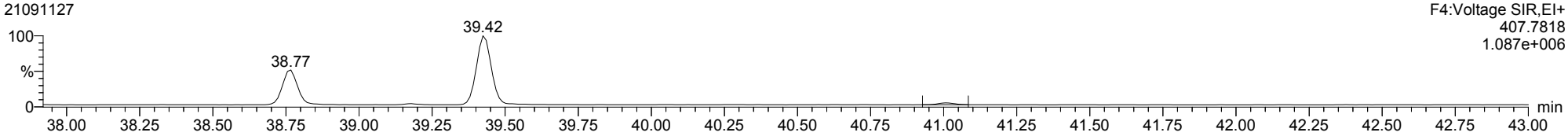

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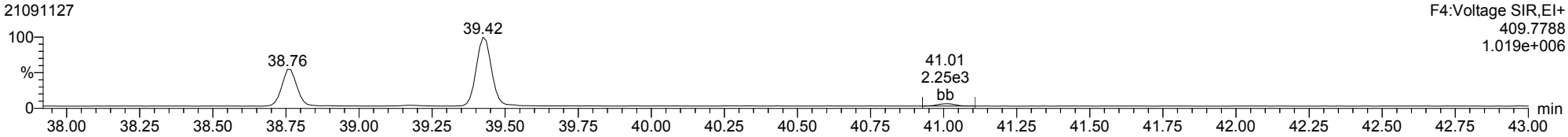

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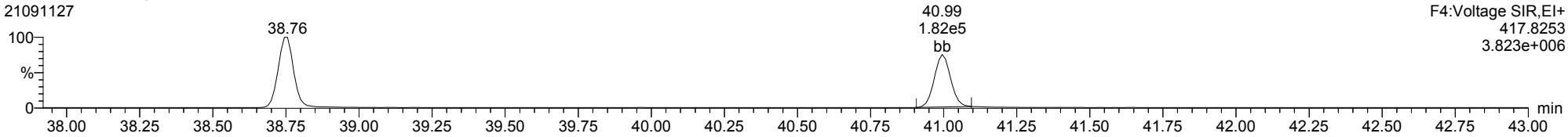

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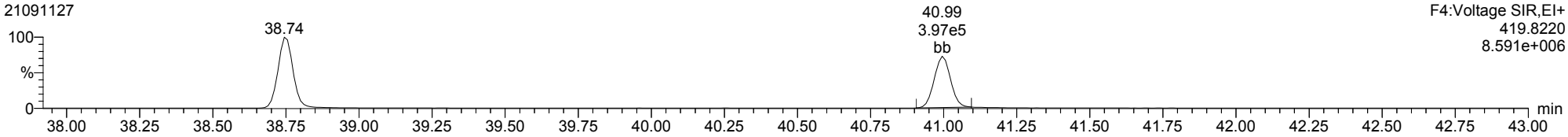
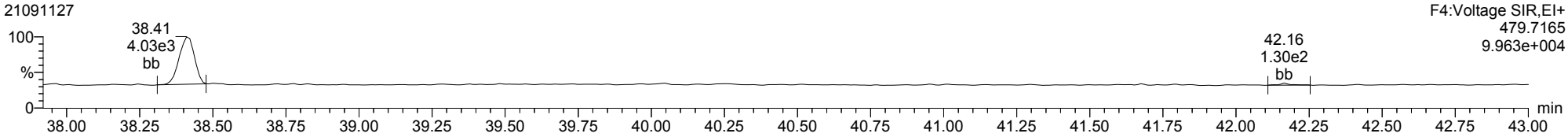


FUNCTION4 NCDPE



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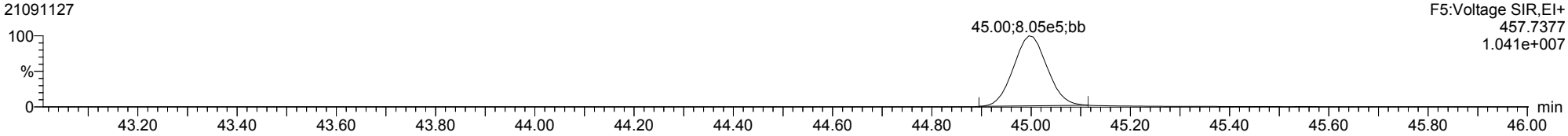

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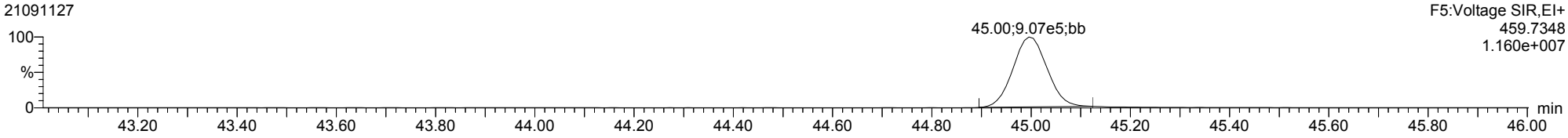

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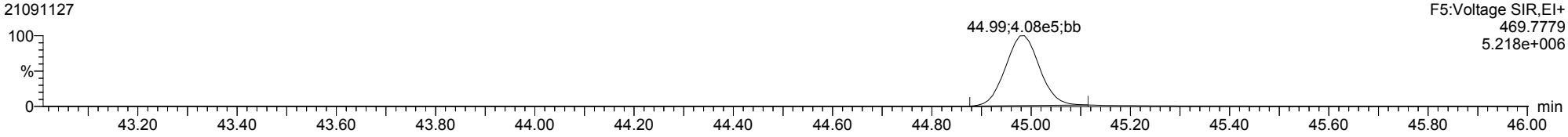

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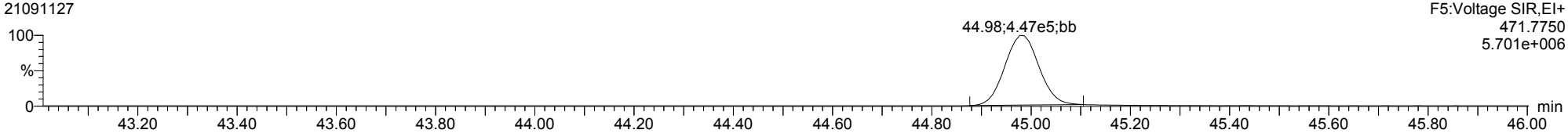
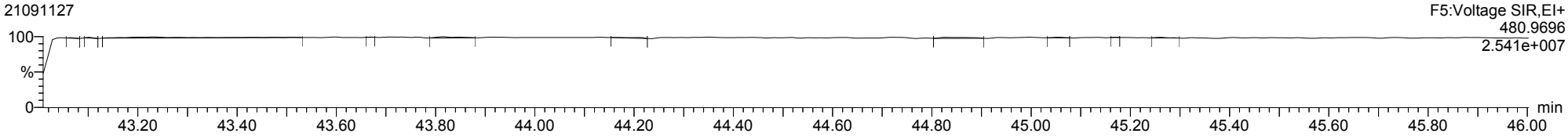


FUNCTION5 PFK



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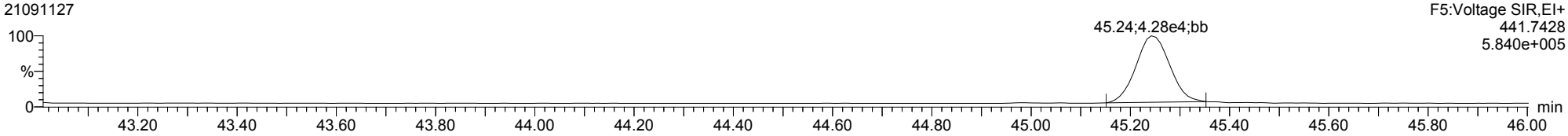

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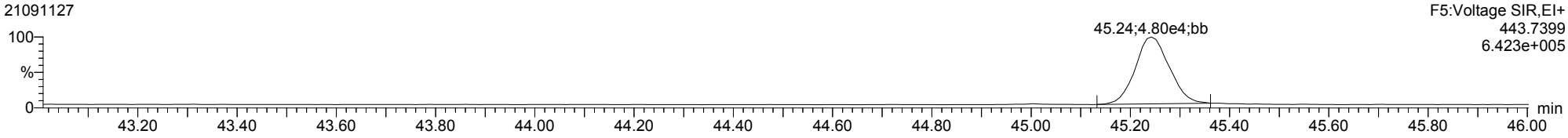

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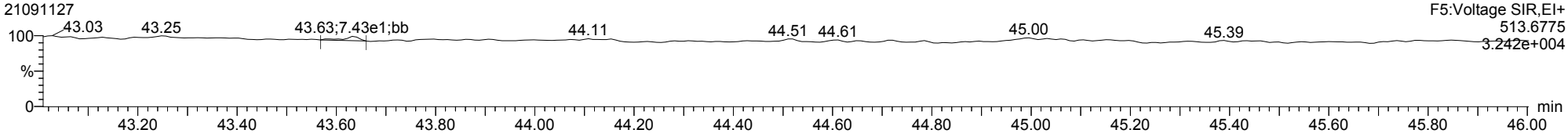

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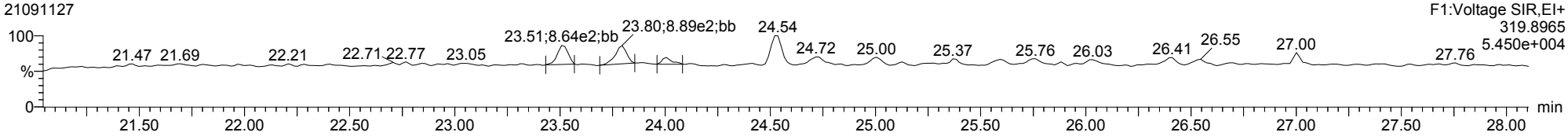
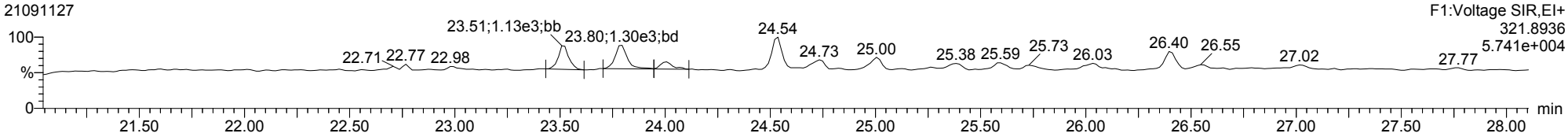
Printed: Wednesday, September 15, 2021 11:36:20 Pacific Daylight Time

ID: 21G0138-11, Name: 21091127, Date: 12-Sep-2021, Time: 07:58:33, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



Total-tetradioxins



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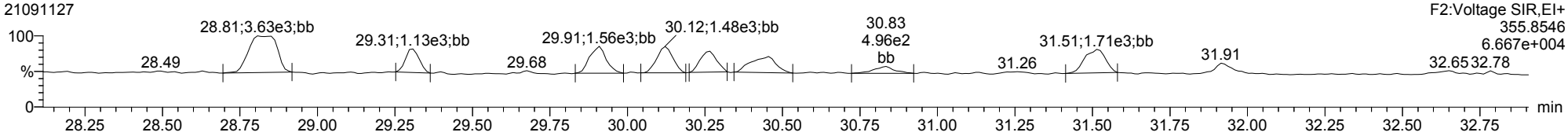
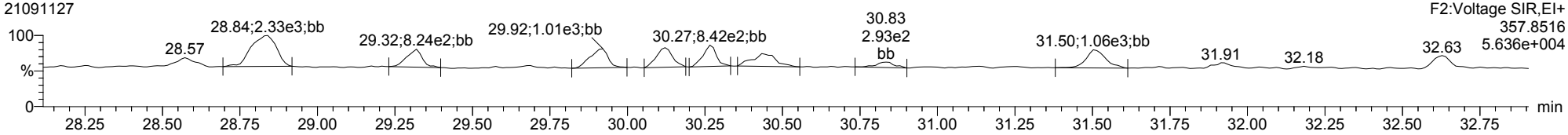


Total-pentadioxins



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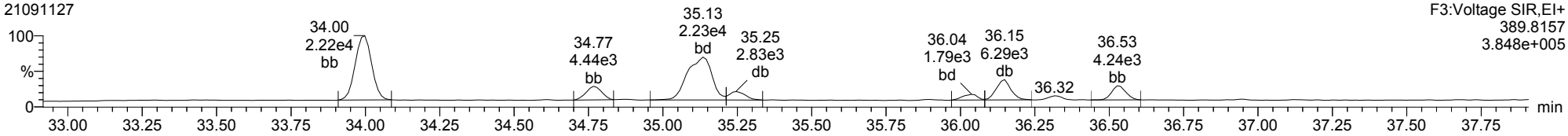
ID: 21G0138-11, Name: 21091127, Date: 12-Sep-2021, Time: 07:58:33, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



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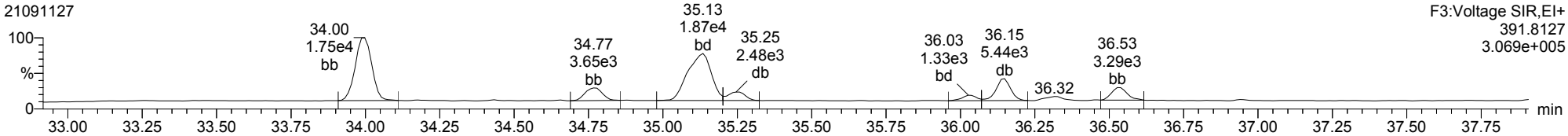

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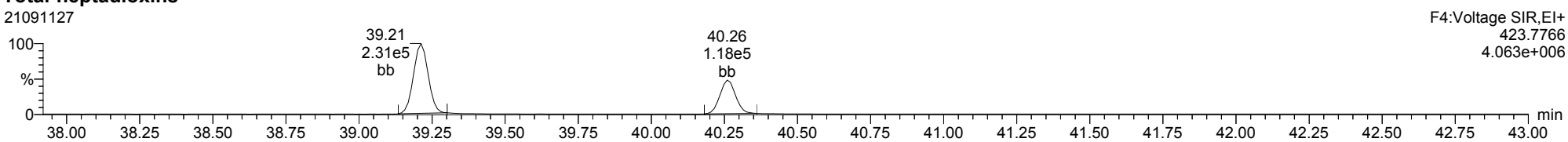

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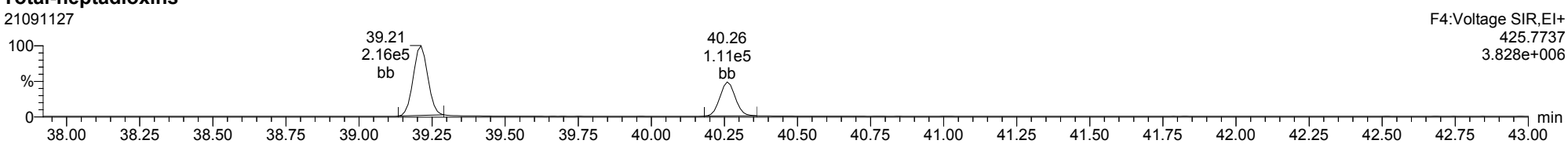

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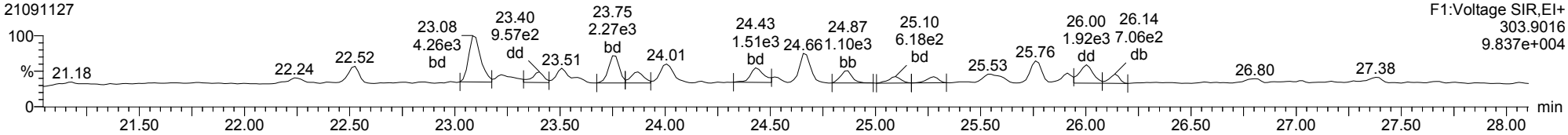
ID: 21G0138-11, Name: 21091127, Date: 12-Sep-2021, Time: 07:58:33, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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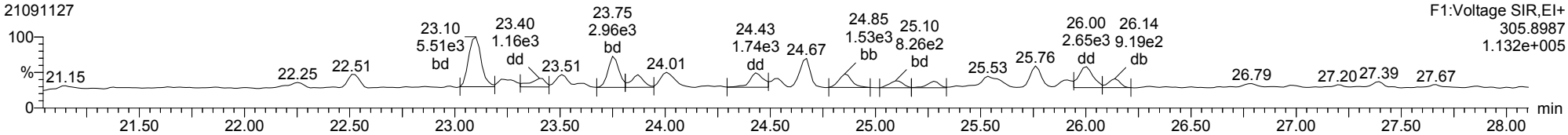

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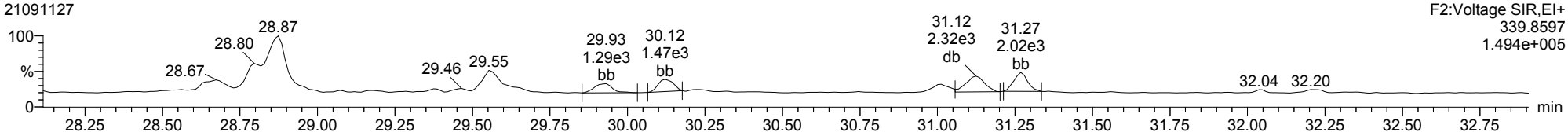

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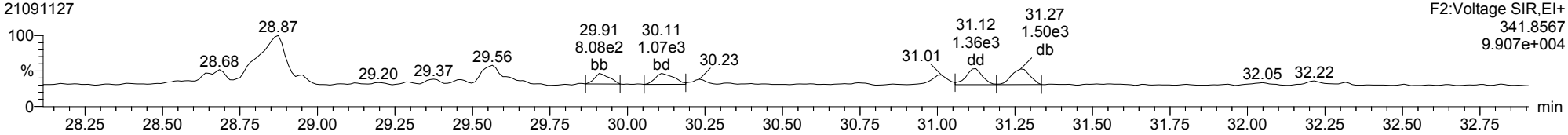

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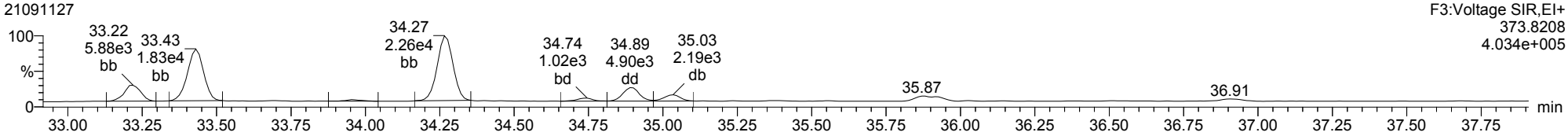
Total-hexafurans



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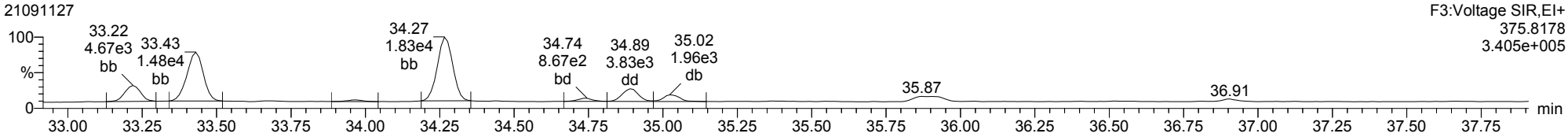

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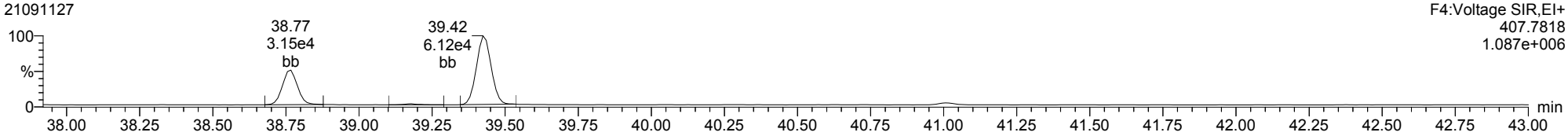

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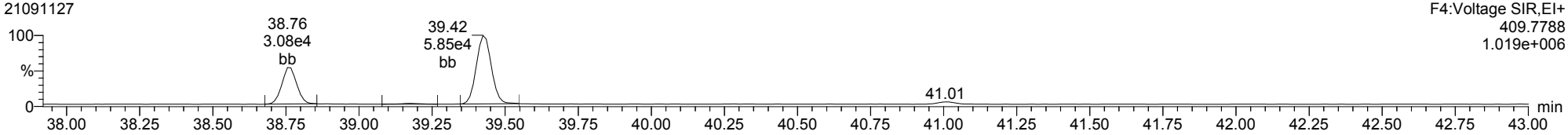

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT657C

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-12 C	File ID:	21091128
Sampled:	07/13/21 10:20	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 08:47
% Solids:	65.38	Preparation:	EPA 1613	Initial/Final:	15.04 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.879	0.655-0.886	0.066	1.02	0.899	ng/kg	J
1746-01-6	2,3,7,8-TCDD	1	0.353	0.655-0.886	0.079	1.02	0.475	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.440	1.318-1.783	0.090	1.02	0.517	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.450	1.318-1.783	0.085	1.02	0.814	ng/kg	J
40321-76-4	1,2,3,7,8-PeCDD	1	1.729	1.318-1.783	0.155	1.02	2.18	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.289	1.054-1.426	0.074	1.02	3.17	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.428	1.054-1.426	0.072	1.02	1.15	ng/kg	EMPC
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.107	1.054-1.426	0.072	1.02	1.82	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.208	1.054-1.426	0.083	1.02	0.696	ng/kg	J
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.358	1.054-1.426	0.119	1.02	1.97	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.223	1.054-1.426	0.122	1.02	4.81	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.164	1.054-1.426	0.129	1.02	4.48	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.056	0.893-1.208	0.089	1.02	20.7	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.222	0.893-1.208	0.128	1.02	2.05	ng/kg	EMPC
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.075	0.893-1.208	0.285	2.54	111	ng/kg	B
39001-02-0	OCDF	1	0.918	0.757-1.024	0.236	2.54	44.9	ng/kg	
3268-87-9	OCDD	1	0.900	0.757-1.024	0.345	10.2	714	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.02	11.0	ng/kg
41903-57-5	Total TCDD	1	0.000			1.02	4.79	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.02	18.9	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.02	12.4	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.02	33.6	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.02	51.6	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.02	65.2	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.02	267	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 6.38
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 6.38

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT657C

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-12	File ID:	21091128
Sampled:	07/13/21 10:20	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 08:47
Solids Wt%:	65.38	Preparation:	EPA 1613	Initial/Final:	15.04 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.799	0.655-0.886	0.085	80.4	24 - 169 %	
13C12-2,3,7,8-TCDD		0.761	0.655-0.886	0.118	85.0	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.632	1.318-1.783	0.115	85.4	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.605	1.318-1.783	0.120	83.8	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.558	1.318-1.783	0.098	77.8	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.514	0.434-0.587	0.100	75.7	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.514	0.434-0.587	0.092	71.1	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.519	0.434-0.587	0.102	73.1	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.512	0.434-0.587	0.123	79.8	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.270	1.054-1.426	0.113	80.9	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.258	1.054-1.426	0.104	74.7	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.459	0.374-0.506	0.155	71.4	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.454	0.374-0.506	0.189	69.0	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.070	0.893-1.208	0.151	73.1	23 - 140 %	
13C12-OCDD		0.911	0.757-1.024	0.153	74.5	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.033	85.8	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:31 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	2.506e3	2.850e3	1.108	0.879	0.770	1069	887	4.09e4	5.06e4	38.3	57.1	NO	bd	bd	0.442
12378-PeCDF	29.921	1.001	1.612e3	1.120e3	1.015	1.440	1.550	1377	1107	2.34e4	1.67e4	17.0	15.1	NO	bb	bb	0.254
23478-PeCDF	31.269	1.001	2.638e3	1.819e3	1.126	1.450	1.550	1377	1107	4.16e4	2.57e4	30.2	23.3	NO	dd	db	0.400
123478-HxCDF	34.890	1.001	7.201e3	5.588e3	1.017	1.289	1.240	886	722	1.16e5	9.32e4	131.2	129.0	NO	dd	bb	1.559
234678-HxCDF	35.881	1.000	3.771e3	3.406e3	1.052	1.107	1.240	886	722	3.92e4	3.80e4	44.2	52.6	NO	bb	bb	0.895
123678-HxCDF	35.023	1.000	2.818e3	1.973e3	1.037	1.428	1.240	886	722	5.00e4	3.29e4	56.4	45.6	YES	db	bb	0.564
123789-HxCDF	36.906	1.000	1.331e3	1.102e3	1.030	1.208	1.240	886	722	1.99e4	1.70e4	22.5	23.5	NO	bb	bb	0.342
1234678-HpCDF	38.756	1.000	3.945e4	3.734e4	1.327	1.056	1.050	1095	760	6.47e5	6.30e5	590.5	828.0	NO	bb	bb	10.194
1234789-HpCDF	41.006	1.000	3.198e3	2.617e3	1.283	1.222	1.050	1095	760	4.85e4	3.88e4	44.2	51.0	YES	bb	bb	1.009
OCDF	45.243	1.006	4.924e4	5.366e4	1.447	0.918	0.890	657	1674	6.13e5	6.78e5	933.6	405.2	NO	bb	bb	22.097
2378-TCDD	26.411	1.001	5.087e2	1.440e3	0.920	0.353	0.770	1079	627	7.12e3	2.16e4	6.6	34.5	YES	bd	bd	0.234
12378-PeCDD	31.503	1.000	3.667e3	2.122e3	0.995	1.729	1.550	966	1249	5.30e4	3.00e4	54.9	24.0	NO	bb	bb	1.070
123478-HxCDD	36.004	1.000	3.812e3	2.808e3	1.027	1.358	1.240	1131	1161	6.19e4	5.04e4	54.8	43.4	NO	bd	bd	0.966
123678-HxCDD	36.126	1.001	8.756e3	7.161e3	1.009	1.223	1.240	1131	1161	1.44e5	1.19e5	127.1	102.2	NO	db	db	2.364
123789-HxCDD	36.505	1.011	7.506e3	6.447e3	0.950	1.164	1.240	1131	1161	1.25e5	1.10e5	110.1	94.6	NO	bb	bb	2.201
1234678-HpCDD	40.260	1.000	1.199e5	1.115e5	1.068	1.075	1.050	1581	1573	1.96e6	1.81e6	1241.2	1152.2	NO	bb	bb	54.558
OCDD	44.996	1.000	6.317e5	7.017e5	1.181	0.900	0.890	972	1809	7.97e6	8.94e6	8198.6	4941.9	NO	bb	bb	350.853
13C-2378-TCDF	25.746	1.007	4.859e5	6.085e5	1.427	0.799	0.770	1611	1385	7.29e6	9.33e6	4525.3	6739.0	NO	bb	bb	80.356
13C-12378-PeCDF	29.899	1.169	6.562e5	4.021e5	1.297	1.632	1.550	1424	2244	1.03e7	6.32e6	7237.8	2816.1	NO	bb	bb	85.448
13C-23478-PeCDF	31.247	1.222	6.098e5	3.798e5	1.236	1.605	1.550	1424	2244	9.73e6	6.10e6	6832.5	2718.0	NO	bb	bb	83.832
13C-123478-HxCDF	34.868	0.955	2.740e5	5.328e5	1.242	0.514	0.510	1655	1333	4.43e6	8.75e6	2679.1	6562.7	NO	bd	bd	75.675
13C-123678-HxCDF	35.012	0.959	2.783e5	5.417e5	1.343	0.514	0.510	1655	1333	4.47e6	8.78e6	2700.1	6585.5	NO	db	db	71.126
13C-234678-HxCDF	35.881	0.983	2.603e5	5.014e5	1.215	0.519	0.510	1655	1333	4.42e6	8.53e6	2670.7	6399.7	NO	bb	bb	73.062
13C-123789-HxCDF	36.917	1.012	2.337e5	4.563e5	1.008	0.512	0.510	1655	1333	3.89e6	7.59e6	2351.6	5695.4	NO	bb	bb	79.790
13C-1234678-HpCDF	38.745	1.062	1.785e5	3.890e5	0.926	0.459	0.440	1617	1833	3.02e6	6.63e6	1865.8	3617.3	NO	bb	bb	71.381
13C-1234789-HpCDF	40.995	1.123	1.401e5	3.089e5	0.758	0.454	0.440	1617	1833	2.15e6	4.74e6	1332.7	2587.7	NO	bb	bb	69.029
13C-1234-TCDD	25.580	0.000	4.146e5	5.401e5	1.000	0.767	0.770	1930	1322	6.54e6	8.46e6	3388.8	6397.2	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	3.915e5	5.144e5	1.116	0.761	0.770	1930	1322	6.20e6	8.18e6	3210.5	6186.2	NO	bb	bb	84.989
13C-12378-PeCDD	31.492	1.231	3.310e5	2.124e5	0.732	1.558	1.550	825	943	5.33e6	3.48e6	6460.3	3692.7	NO	bb	bb	77.755
13C-123478-HxCDD	35.993	0.986	3.730e5	2.937e5	0.960	1.270	1.240	1375	1247	6.41e6	5.01e6	4660.8	4017.1	NO	bd	bd	80.940
13C-123678-HxCDD	36.104	0.989	3.718e5	2.956e5	1.041	1.258	1.240	1375	1247	6.32e6	4.97e6	4596.3	3984.5	NO	db	db	74.674
13C-1234678-HpCDD	40.249	1.103	2.052e5	1.918e5	0.632	1.070	1.050	1033	1270	3.27e6	3.13e6	3166.7	2462.8	NO	bb	bb	73.143
13C-OCDD	44.978	1.232	3.069e5	3.368e5	0.504	0.911	0.890	927	925	3.97e6	4.32e6	4283.6	4669.9	NO	bb	bb	148.902
13C-123789-HxCDD	36.494	0.000	4.776e5	3.805e5	1.000	1.255	1.240	1375	1247	8.18e6	6.47e6	5952.7	5184.8	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.032	3.550e5		1.084			882		5.49e6		6224.4			db		34.317

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:31 Pacific Daylight Time

ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	1.091e3	1.454e3	1.425	0.750	0.770	1069	887	1.64e4	2.02e4	15.4	22.8	NO	bb	dd	0.163
1289-TCDF					1.043		0.770	1069	887								
13468-PECDF					1.376		1.550	763	1040								
12389-PECDF	32.216	1.077	3.033e2	1.707e2	1.000	1.776	1.550	1377	1107	5.87e3	4.84e3	4.3	4.4	NO	bb	bb	0.045
123468-HXCDF	33.218	0.953	6.804e3	5.673e3	1.087	1.199	1.240	886	722	1.03e5	8.89e4	116.5	123.0	NO	bb	bb	1.423
1368-TCDD	23.523	0.892	1.863e3	2.438e3	0.923	0.764	0.770	1079	627	3.07e4	3.87e4	28.5	61.8	NO	bb	bb	0.514
1289-TCDD					0.794		0.770	1079	627								
12479-PECDD	28.818	0.915	1.023e4	6.357e3	1.843	1.609	1.550	966	1249	1.10e5	6.75e4	113.7	54.0	NO	bb	bb	1.656
12389-PECDD	31.926	1.014	1.224e3	7.887e2	1.154	1.552	1.550	966	1249	1.75e4	1.45e4	18.1	11.6	NO	bb	bb	0.321
124679-HXCDD	33.987	0.944	2.356e4	2.001e4	1.125	1.177	1.240	1131	1161	3.72e5	3.18e5	329.3	274.4	NO	bb	bb	5.810
1234679-HPCDD	39.213	0.974	1.917e5	1.773e5	1.211	1.081	1.050	1581	1573	3.33e6	3.10e6	2106.1	1970.8	NO	bb	bb	76.745
Total-tetrafurans			3.144e4		1.192			1069		4.92e5							5.424
Total-penta1			2.666e4					763		4.10e5							4.592
Total-pentafurans			3.025e4		1.047			1377		4.70e5							4.700
Total-hexafurans			7.326e4		1.045			886		1.15e6							16.509
Total-heptafurans			1.133e5		1.305			1095		1.88e6							32.078
Total-Furans			3.241e5		1.158			1069		5.01e6							85.400
Total-tetradioxins			8.095e3		0.879			1079		1.15e5							2.353
Total-pentadioxins			2.876e4		1.331			966		3.95e5							6.118
Total-hexadioxins			9.674e4		1.028			1131		1.39e6							25.352
Total-heptadioxins			3.115e5		1.140			1581		5.29e6							131.303
Total-Dioxins			1.077e6		1.092			1079		1.52e7							515.979
Total-TEQ			1.401e6					1079		2.02e7							601.378
FUNCTION1 PFK			6.583e5					593693		1.37e7							
FUNCTION2 PFK			2.258e6					342062		5.68e6							0.000
FUNCTION3 PFK			3.845e5					387404		2.35e6							0.000
FUNCTION4 PFK			3.586e4					249832		8.90e5							
FUNCTION5 PFK			0.000e0					165785		0.00e0							
FUNCTION1 HXCD...			3.494e3					726		6.02e4							0.000
FUNCTION1 HPCD...			1.577e4					957		2.67e5							0.000
FUNCTION2 HPCD...			5.030e2					819		1.06e4							0.000
FUNCTION3 OCDPE			4.067e2					623		7.33e3							0.000
FUNCTION4 NCDPE			4.327e3					560		7.43e4							0.000
FUNCTION5 DCDPE			1.387e2					680		1.62e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.99	1.581e3	2.254e3	1.192	0.70	0.77	23.0	YES	NO	db	db	0.294
2	Total-tetrafurans	23.87	9.295e2	1.302e3	1.192	0.71	0.77	13.8	YES	NO	dd	dd	0.171
3	Total-tetrafurans	23.75	3.348e3	4.426e3	1.192	0.76	0.77	50.2	YES	NO	bd	dd	0.596
4	Total-tetrafurans	23.60	7.106e2	8.777e2	1.192	0.81	0.77	13.3	YES	NO	db	dd	0.122
5	Total-tetrafurans	23.51	2.172e3	2.769e3	1.192	0.78	0.77	29.2	YES	NO	dd	dd	0.379
6	Total-tetrafurans	23.40	1.670e3	2.237e3	1.192	0.75	0.77	21.6	YES	NO	dd	dd	0.300
7	Total-tetrafurans	23.22	6.203e2	8.927e2	1.192	0.69	0.77	13.6	YES	NO	dd	dd	0.116
8	Total-tetrafurans	23.10	5.864e3	6.740e3	1.192	0.87	0.77	87.9	YES	NO	bd	bd	0.966
9	Total-tetrafurans	22.51	1.595e3	2.213e3	1.192	0.72	0.77	23.2	YES	NO	bb	bb	0.292
10	1368-TCDF	22.24	1.091e3	1.454e3	1.425	0.75	0.77	15.4	YES	NO	bb	dd	0.163
11	Total-tetrafurans	26.14	7.014e2	8.135e2	1.192	0.86	0.77	10.2	YES	NO	db	db	0.116
12	Total-tetrafurans	26.00	2.150e3	2.553e3	1.192	0.84	0.77	28.7	YES	NO	dd	dd	0.361
13	Total-tetrafurans	25.91	8.926e2	1.080e3	1.192	0.83	0.77	14.0	YES	NO	dd	dd	0.151
14	2378-TCDF	25.76	2.506e3	2.850e3	1.108	0.88	0.77	38.3	YES	NO	bd	bd	0.442
15	Total-tetrafurans	25.28	6.055e2	7.247e2	1.192	0.84	0.77	8.0	YES	NO	dd	dd	0.102
16	Total-tetrafurans	24.66	3.520e3	4.097e3	1.192	0.86	0.77	49.9	YES	NO	db	db	0.584
17	Total-tetrafurans	24.52	1.482e3	2.039e3	1.192	0.73	0.77	20.1	YES	NO	dd	dd	0.270

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	2.666e4	1.790e4		1.49	1.55	538.1	YES	NO	bb	bb	4.592

ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDF	29.92	1.612e3	1.120e3	1.015	1.44	1.55	17.0	YES	NO	bb	bb	0.254
2	Total-pentafurans	29.46	6.895e2	4.364e2	1.047	1.58	1.55	9.2	YES	NO	bd	bd	0.105
3	Total-pentafurans	28.95	1.177e3	8.904e2	1.047	1.32	1.55	14.6	YES	NO	dd	db	0.193
4	Total-pentafurans	28.84	1.175e4	7.925e3	1.047	1.48	1.55	126.0	YES	NO	dd	dd	1.835
5	Total-pentafurans	28.78	4.127e3	2.941e3	1.047	1.40	1.55	57.3	YES	NO	dd	dd	0.660
6	Total-pentafurans	28.66	3.257e3	1.962e3	1.047	1.66	1.55	27.0	YES	NO	dd	dd	0.487
7	12389-PECDF	32.22	3.033e2	1.707e2	1.000	1.78	1.55	4.3	YES	NO	bb	bb	0.045
8	23478-PeCDF	31.27	2.638e3	1.819e3	1.126	1.45	1.55	30.2	YES	NO	dd	db	0.400
9	Total-pentafurans	31.12	3.318e3	2.093e3	1.047	1.59	1.55	36.8	YES	NO	dd	dd	0.505
10	Total-pentafurans	31.01	1.379e3	9.291e2	1.047	1.48	1.55	18.7	YES	NO	bd	bd	0.215

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.91	1.331e3	1.102e3	1.030	1.21	1.24	22.5	YES	NO	bb	bb	0.342
2	234678-HxCDF	35.88	3.771e3	3.406e3	1.052	1.11	1.24	44.2	YES	NO	bb	bb	0.895
3	123478-HxCDF	34.89	7.201e3	5.588e3	1.017	1.29	1.24	131.2	YES	NO	dd	bb	1.559
4	Total-hexafurans	34.27	3.082e4	2.557e4	1.045	1.21	1.24	585.5	YES	NO	bb	bb	7.014
5	Total-hexafurans	33.95	8.754e2	6.302e2	1.045	1.39	1.24	15.8	YES	NO	bb	bb	0.187
6	Total-hexafurans	33.43	2.246e4	1.845e4	1.045	1.22	1.24	377.8	YES	NO	bb	bb	5.088
7	123468-HXCDF	33.22	6.804e3	5.673e3	1.087	1.20	1.24	116.5	YES	NO	bb	bb	1.423

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.76	3.945e4	3.734e4	1.327	1.06	1.05	590.5	YES	NO	bb	bb	10.194
2	Total-heptafurans	39.42	7.381e4	7.138e4	1.305	1.03	1.05	1124.2	YES	NO	bb	bb	21.885

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.99	1.581e3	2.254e3	1.192	0.70	0.77	23.0	YES	NO	db	db	0.294
2	Total-tetrafurans	23.87	9.295e2	1.302e3	1.192	0.71	0.77	13.8	YES	NO	dd	dd	0.171
3	Total-tetrafurans	23.75	3.348e3	4.426e3	1.192	0.76	0.77	50.2	YES	NO	bd	dd	0.596
4	Total-tetrafurans	23.60	7.106e2	8.777e2	1.192	0.81	0.77	13.3	YES	NO	db	dd	0.122
5	Total-tetrafurans	23.51	2.172e3	2.769e3	1.192	0.78	0.77	29.2	YES	NO	dd	dd	0.379
6	Total-tetrafurans	23.40	1.670e3	2.237e3	1.192	0.75	0.77	21.6	YES	NO	dd	dd	0.300
7	Total-tetrafurans	23.22	6.203e2	8.927e2	1.192	0.69	0.77	13.6	YES	NO	dd	dd	0.116
8	Total-tetrafurans	23.10	5.864e3	6.740e3	1.192	0.87	0.77	87.9	YES	NO	bd	bd	0.966
9	Total-tetrafurans	22.51	1.595e3	2.213e3	1.192	0.72	0.77	23.2	YES	NO	bb	bb	0.292
10	1368-TCDF	22.24	1.091e3	1.454e3	1.425	0.75	0.77	15.4	YES	NO	bb	dd	0.163
11	Total-tetrafurans	26.14	7.014e2	8.135e2	1.192	0.86	0.77	10.2	YES	NO	db	db	0.116
12	Total-tetrafurans	26.00	2.150e3	2.553e3	1.192	0.84	0.77	28.7	YES	NO	dd	dd	0.361
13	Total-tetrafurans	25.91	8.926e2	1.080e3	1.192	0.83	0.77	14.0	YES	NO	dd	dd	0.151
14	2378-TCDF	25.76	2.506e3	2.850e3	1.108	0.88	0.77	38.3	YES	NO	bd	bd	0.442
15	Total-tetrafurans	25.28	6.055e2	7.247e2	1.192	0.84	0.77	8.0	YES	NO	dd	dd	0.102
16	Total-tetrafurans	24.66	3.520e3	4.097e3	1.192	0.86	0.77	49.9	YES	NO	db	db	0.584
17	Total-tetrafurans	24.52	1.482e3	2.039e3	1.192	0.73	0.77	20.1	YES	NO	dd	dd	0.270
18	12378-PeCDF	29.92	1.612e3	1.120e3	1.015	1.44	1.55	17.0	YES	NO	bb	bb	0.254
19	Total-pentafurans	29.46	6.895e2	4.364e2	1.047	1.58	1.55	9.2	YES	NO	bd	bd	0.105
20	Total-pentafurans	28.95	1.177e3	8.904e2	1.047	1.32	1.55	14.6	YES	NO	dd	db	0.193
21	Total-pentafurans	28.84	1.175e4	7.925e3	1.047	1.48	1.55	126.0	YES	NO	dd	dd	1.835
22	Total-pentafurans	28.78	4.127e3	2.941e3	1.047	1.40	1.55	57.3	YES	NO	dd	dd	0.660
23	Total-pentafurans	28.66	3.257e3	1.962e3	1.047	1.66	1.55	27.0	YES	NO	dd	dd	0.487
24	12389-PECDF	32.22	3.033e2	1.707e2	1.000	1.78	1.55	4.3	YES	NO	bb	bb	0.045
25	23478-PeCDF	31.27	2.638e3	1.819e3	1.126	1.45	1.55	30.2	YES	NO	dd	db	0.400
26	Total-pentafurans	31.12	3.318e3	2.093e3	1.047	1.59	1.55	36.8	YES	NO	dd	dd	0.505
27	Total-pentafurans	31.01	1.379e3	9.291e2	1.047	1.48	1.55	18.7	YES	NO	bd	bd	0.215
28	123789-HxCDF	36.91	1.331e3	1.102e3	1.030	1.21	1.24	22.5	YES	NO	bb	bb	0.342
29	234678-HxCDF	35.88	3.771e3	3.406e3	1.052	1.11	1.24	44.2	YES	NO	bb	bb	0.895
30	123478-HxCDF	34.89	7.201e3	5.588e3	1.017	1.29	1.24	131.2	YES	NO	dd	bb	1.559
31	Total-hexafurans	34.27	3.082e4	2.557e4	1.045	1.21	1.24	585.5	YES	NO	bb	bb	7.014
32	Total-hexafurans	33.95	8.754e2	6.302e2	1.045	1.39	1.24	15.8	YES	NO	bb	bb	0.187
33	Total-hexafurans	33.43	2.246e4	1.845e4	1.045	1.22	1.24	377.8	YES	NO	bb	bb	5.088
34	123468-HXCDF	33.22	6.804e3	5.673e3	1.087	1.20	1.24	116.5	YES	NO	bb	bb	1.423
35	1234678-HpCDF	38.76	3.945e4	3.734e4	1.327	1.06	1.05	590.5	YES	NO	bb	bb	10.194
36	OCDF	45.24	4.924e4	5.366e4	1.447	0.92	0.89	933.6	YES	NO	bb	bb	22.097
37	Total-heptafurans	39.42	7.381e4	7.138e4	1.305	1.03	1.05	1124.2	YES	NO	bb	bb	21.885

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-penta1	27.18	2.666e4	1.790e4		1.49	1.55	538.1	YES	NO	bb	bb	4.592

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	26.03	9.168e2	1.326e3	0.879	0.69	0.77	8.2	YES	NO	bb	db	0.282
2	Total-tetradioxins	25.00	1.236e3	1.664e3	0.879	0.74	0.77	14.3	YES	NO	bb	bb	0.364
3	Total-tetradioxins	24.73	1.077e3	1.343e3	0.879	0.80	0.77	13.9	YES	NO	bb	bb	0.304
4	Total-tetradioxins	24.54	1.063e3	1.574e3	0.879	0.68	0.77	13.3	YES	NO	db	bb	0.331
5	Total-tetradioxins	23.80	1.532e3	1.896e3	0.879	0.81	0.77	23.4	YES	NO	bb	bb	0.430
6	1368-TCDD	23.52	1.863e3	2.438e3	0.923	0.76	0.77	28.5	YES	NO	bb	bb	0.514
7	Total-tetradioxins	26.53	4.067e2	6.091e2	0.879	0.67	0.77	5.0	YES	NO	dd	db	0.128

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.50	3.667e3	2.122e3	0.995	1.73	1.55	54.9	YES	NO	bb	bb	1.070
2	Total-pentadioxins	30.83	1.455e3	8.300e2	1.331	1.75	1.55	22.7	YES	NO	bb	bb	0.316
3	Total-pentadioxins	30.44	3.546e3	2.090e3	1.331	1.70	1.55	46.2	YES	NO	db	db	0.779
4	Total-pentadioxins	30.27	4.215e3	2.441e3	1.331	1.73	1.55	71.4	YES	NO	dd	dd	0.921
5	Total-pentadioxins	29.91	3.124e3	2.276e3	1.331	1.37	1.55	57.6	YES	NO	bb	bb	0.747
6	Total-pentadioxins	29.30	1.295e3	9.266e2	1.331	1.40	1.55	24.3	YES	NO	bb	bb	0.307
7	12479-PECDD	28.82	1.023e4	6.357e3	1.843	1.61	1.55	113.7	YES	NO	bb	bb	1.656
8	12389-PECDD	31.93	1.224e3	7.887e2	1.154	1.55	1.55	18.1	YES	NO	bb	bb	0.321

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.51	7.506e3	6.447e3	0.950	1.16	1.24	110.1	YES	NO	bb	bb	2.201
2	Total-hexadioxins	36.29	3.274e3	2.536e3	1.028	1.29	1.24	47.9	YES	NO	bb	bb	0.847
3	123678-HxCDD	36.13	8.756e3	7.161e3	1.009	1.22	1.24	127.1	YES	NO	db	db	2.364
4	123478-HxCDD	36.00	3.812e3	2.808e3	1.027	1.36	1.24	54.8	YES	NO	bd	bd	0.966
5	Total-hexadioxins	35.24	3.267e3	2.898e3	1.028	1.13	1.24	53.3	YES	NO	db	db	0.899
6	Total-hexadioxins	35.12	3.460e4	2.781e4	1.028	1.24	1.24	326.0	YES	NO	bd	bd	9.102
7	Total-hexadioxins	34.76	1.197e4	9.720e3	1.028	1.23	1.24	177.3	YES	NO	bb	bb	3.163
8	124679-HXCDD	33.99	2.356e4	2.001e4	1.125	1.18	1.24	329.3	YES	NO	bb	bb	5.810

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HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	1.199e5	1.115e5	1.068	1.08	1.05	1241.2	YES	NO	bb	bb	54.558
2	1234679-HPCDD	39.21	1.917e5	1.773e5	1.211	1.08	1.05	2106.1	YES	NO	bb	bb	76.745

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	26.03	9.168e2	1.326e3	0.879	0.69	0.77	8.2	YES	NO	bb	db	0.282
2	Total-tetradioxins	25.00	1.236e3	1.664e3	0.879	0.74	0.77	14.3	YES	NO	bb	bb	0.364
3	Total-tetradioxins	24.73	1.077e3	1.343e3	0.879	0.80	0.77	13.9	YES	NO	bb	bb	0.304
4	Total-tetradioxins	24.54	1.063e3	1.574e3	0.879	0.68	0.77	13.3	YES	NO	db	bb	0.331
5	Total-tetradioxins	23.80	1.532e3	1.896e3	0.879	0.81	0.77	23.4	YES	NO	bb	bb	0.430
6	1368-TCDD	23.52	1.863e3	2.438e3	0.923	0.76	0.77	28.5	YES	NO	bb	bb	0.514
7	Total-tetradioxins	26.53	4.067e2	6.091e2	0.879	0.67	0.77	5.0	YES	NO	dd	db	0.128
8	12378-PeCDD	31.50	3.667e3	2.122e3	0.995	1.73	1.55	54.9	YES	NO	bb	bb	1.070
9	Total-pentadioxins	30.83	1.455e3	8.300e2	1.331	1.75	1.55	22.7	YES	NO	bb	bb	0.316
10	Total-pentadioxins	30.44	3.546e3	2.090e3	1.331	1.70	1.55	46.2	YES	NO	db	db	0.779
11	Total-pentadioxins	30.27	4.215e3	2.441e3	1.331	1.73	1.55	71.4	YES	NO	dd	dd	0.921
12	Total-pentadioxins	29.91	3.124e3	2.276e3	1.331	1.37	1.55	57.6	YES	NO	bb	bb	0.747
13	Total-pentadioxins	29.30	1.295e3	9.266e2	1.331	1.40	1.55	24.3	YES	NO	bb	bb	0.307
14	12479-PECDD	28.82	1.023e4	6.357e3	1.843	1.61	1.55	113.7	YES	NO	bb	bb	1.656
15	12389-PECDD	31.93	1.224e3	7.887e2	1.154	1.55	1.55	18.1	YES	NO	bb	bb	0.321
16	123789-HxCDD	36.51	7.506e3	6.447e3	0.950	1.16	1.24	110.1	YES	NO	bb	bb	2.201
17	Total-hexadioxins	36.29	3.274e3	2.536e3	1.028	1.29	1.24	47.9	YES	NO	bb	bb	0.847
18	123678-HxCDD	36.13	8.756e3	7.161e3	1.009	1.22	1.24	127.1	YES	NO	db	db	2.364
19	123478-HxCDD	36.00	3.812e3	2.808e3	1.027	1.36	1.24	54.8	YES	NO	bd	bd	0.966
20	Total-hexadioxins	35.24	3.267e3	2.898e3	1.028	1.13	1.24	53.3	YES	NO	db	db	0.899
21	Total-hexadioxins	35.12	3.460e4	2.781e4	1.028	1.24	1.24	326.0	YES	NO	bd	bd	9.102
22	Total-hexadioxins	34.76	1.197e4	9.720e3	1.028	1.23	1.24	177.3	YES	NO	bb	bb	3.163
23	124679-HXCDD	33.99	2.356e4	2.001e4	1.125	1.18	1.24	329.3	YES	NO	bb	bb	5.810
24	1234678-HpCDD	40.26	1.199e5	1.115e5	1.068	1.08	1.05	1241.2	YES	NO	bb	bb	54.558
25	1234679-HPCDD	39.21	1.917e5	1.773e5	1.211	1.08	1.05	2106.1	YES	NO	bb	bb	76.745
26	OCDD	45.00	6.317e5	7.017e5	1.181	0.90	0.89	8198.6	YES	NO	bb	bb	350.853

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:31 Pacific Daylight Time

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.99	1.581e3	2.254e3	1.192	0.70	0.77	23.0	YES	NO	db	db	0.294
2	Total-tetrafurans	23.87	9.295e2	1.302e3	1.192	0.71	0.77	13.8	YES	NO	dd	dd	0.171
3	Total-tetrafurans	23.75	3.348e3	4.426e3	1.192	0.76	0.77	50.2	YES	NO	bd	dd	0.596
4	Total-tetrafurans	23.60	7.106e2	8.777e2	1.192	0.81	0.77	13.3	YES	NO	db	dd	0.122
5	Total-tetrafurans	23.51	2.172e3	2.769e3	1.192	0.78	0.77	29.2	YES	NO	dd	dd	0.379
6	Total-tetrafurans	23.40	1.670e3	2.237e3	1.192	0.75	0.77	21.6	YES	NO	dd	dd	0.300
7	Total-tetrafurans	23.22	6.203e2	8.927e2	1.192	0.69	0.77	13.6	YES	NO	dd	dd	0.116
8	Total-tetrafurans	23.10	5.864e3	6.740e3	1.192	0.87	0.77	87.9	YES	NO	bd	bd	0.966
9	Total-tetrafurans	22.51	1.595e3	2.213e3	1.192	0.72	0.77	23.2	YES	NO	bb	bb	0.292
10	1368-TCDF	22.24	1.091e3	1.454e3	1.425	0.75	0.77	15.4	YES	NO	bb	dd	0.163
11	Total-tetrafurans	26.14	7.014e2	8.135e2	1.192	0.86	0.77	10.2	YES	NO	db	db	0.116
12	Total-tetrafurans	26.00	2.150e3	2.553e3	1.192	0.84	0.77	28.7	YES	NO	dd	dd	0.361
13	Total-tetrafurans	25.91	8.926e2	1.080e3	1.192	0.83	0.77	14.0	YES	NO	dd	dd	0.151
14	2378-TCDF	25.76	2.506e3	2.850e3	1.108	0.88	0.77	38.3	YES	NO	bd	bd	0.442
15	Total-tetrafurans	25.28	6.055e2	7.247e2	1.192	0.84	0.77	8.0	YES	NO	dd	dd	0.102
16	Total-tetrafurans	24.66	3.520e3	4.097e3	1.192	0.86	0.77	49.9	YES	NO	db	db	0.584
17	Total-tetrafurans	24.52	1.482e3	2.039e3	1.192	0.73	0.77	20.1	YES	NO	dd	dd	0.270
18	12378-PeCDF	29.92	1.612e3	1.120e3	1.015	1.44	1.55	17.0	YES	NO	bb	bb	0.254
19	Total-pentafurans	29.46	6.895e2	4.364e2	1.047	1.58	1.55	9.2	YES	NO	bd	bd	0.105
20	Total-pentafurans	28.95	1.177e3	8.904e2	1.047	1.32	1.55	14.6	YES	NO	dd	db	0.193
21	Total-pentafurans	28.84	1.175e4	7.925e3	1.047	1.48	1.55	126.0	YES	NO	dd	dd	1.835
22	Total-pentafurans	28.78	4.127e3	2.941e3	1.047	1.40	1.55	57.3	YES	NO	dd	dd	0.660
23	Total-pentafurans	28.66	3.257e3	1.962e3	1.047	1.66	1.55	27.0	YES	NO	dd	dd	0.487
24	12389-PECDF	32.22	3.033e2	1.707e2	1.000	1.78	1.55	4.3	YES	NO	bb	bb	0.045
25	23478-PeCDF	31.27	2.638e3	1.819e3	1.126	1.45	1.55	30.2	YES	NO	dd	db	0.400
26	Total-pentafurans	31.12	3.318e3	2.093e3	1.047	1.59	1.55	36.8	YES	NO	dd	dd	0.505
27	Total-pentafurans	31.01	1.379e3	9.291e2	1.047	1.48	1.55	18.7	YES	NO	bd	bd	0.215
28	123789-HxCDF	36.91	1.331e3	1.102e3	1.030	1.21	1.24	22.5	YES	NO	bb	bb	0.342
29	234678-HxCDF	35.88	3.771e3	3.406e3	1.052	1.11	1.24	44.2	YES	NO	bb	bb	0.895
30	123478-HxCDF	34.89	7.201e3	5.588e3	1.017	1.29	1.24	131.2	YES	NO	dd	bb	1.559
31	Total-hexafurans	34.27	3.082e4	2.557e4	1.045	1.21	1.24	585.5	YES	NO	bb	bb	7.014
32	Total-hexafurans	33.95	8.754e2	6.302e2	1.045	1.39	1.24	15.8	YES	NO	bb	bb	0.187
33	Total-hexafurans	33.43	2.246e4	1.845e4	1.045	1.22	1.24	377.8	YES	NO	bb	bb	5.088
34	123468-HXCDF	33.22	6.804e3	5.673e3	1.087	1.20	1.24	116.5	YES	NO	bb	bb	1.423
35	1234678-HpCDF	38.76	3.945e4	3.734e4	1.327	1.06	1.05	590.5	YES	NO	bb	bb	10.194
36	OCDF	45.24	4.924e4	5.366e4	1.447	0.92	0.89	933.6	YES	NO	bb	bb	22.097
37	Total-heptafurans	39.42	7.381e4	7.138e4	1.305	1.03	1.05	1124.2	YES	NO	bb	bb	21.885

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-penta1	27.18	2.666e4	1.790e4		1.49	1.55	538.1	YES	NO	bb	bb	4.592
39	Total-tetradioxins	26.03	9.168e2	1.326e3	0.879	0.69	0.77	8.2	YES	NO	bb	db	0.282
40	Total-tetradioxins	25.00	1.236e3	1.664e3	0.879	0.74	0.77	14.3	YES	NO	bb	bb	0.364
41	Total-tetradioxins	24.73	1.077e3	1.343e3	0.879	0.80	0.77	13.9	YES	NO	bb	bb	0.304
42	Total-tetradioxins	24.54	1.063e3	1.574e3	0.879	0.68	0.77	13.3	YES	NO	db	bb	0.331
43	Total-tetradioxins	23.80	1.532e3	1.896e3	0.879	0.81	0.77	23.4	YES	NO	bb	bb	0.430
44	1368-TCDD	23.52	1.863e3	2.438e3	0.923	0.76	0.77	28.5	YES	NO	bb	bb	0.514
45	Total-tetradioxins	26.53	4.067e2	6.091e2	0.879	0.67	0.77	5.0	YES	NO	dd	db	0.128
46	12378-PeCDD	31.50	3.667e3	2.122e3	0.995	1.73	1.55	54.9	YES	NO	bb	bb	1.070
47	Total-pentadioxins	30.83	1.455e3	8.300e2	1.331	1.75	1.55	22.7	YES	NO	bb	bb	0.316
48	Total-pentadioxins	30.44	3.546e3	2.090e3	1.331	1.70	1.55	46.2	YES	NO	db	db	0.779
49	Total-pentadioxins	30.27	4.215e3	2.441e3	1.331	1.73	1.55	71.4	YES	NO	dd	dd	0.921
50	Total-pentadioxins	29.91	3.124e3	2.276e3	1.331	1.37	1.55	57.6	YES	NO	bb	bb	0.747
51	Total-pentadioxins	29.30	1.295e3	9.266e2	1.331	1.40	1.55	24.3	YES	NO	bb	bb	0.307
52	12479-PECDD	28.82	1.023e4	6.357e3	1.843	1.61	1.55	113.7	YES	NO	bb	bb	1.656
53	12389-PECDD	31.93	1.224e3	7.887e2	1.154	1.55	1.55	18.1	YES	NO	bb	bb	0.321
54	123789-HxCDD	36.51	7.506e3	6.447e3	0.950	1.16	1.24	110.1	YES	NO	bb	bb	2.201
55	Total-hexadioxins	36.29	3.274e3	2.536e3	1.028	1.29	1.24	47.9	YES	NO	bb	bb	0.847
56	123678-HxCDD	36.13	8.756e3	7.161e3	1.009	1.22	1.24	127.1	YES	NO	db	db	2.364
57	123478-HxCDD	36.00	3.812e3	2.808e3	1.027	1.36	1.24	54.8	YES	NO	bd	bd	0.966
58	Total-hexadioxins	35.24	3.267e3	2.898e3	1.028	1.13	1.24	53.3	YES	NO	db	db	0.899
59	Total-hexadioxins	35.12	3.460e4	2.781e4	1.028	1.24	1.24	326.0	YES	NO	bd	bd	9.102
60	Total-hexadioxins	34.76	1.197e4	9.720e3	1.028	1.23	1.24	177.3	YES	NO	bb	bb	3.163
61	124679-HXCDD	33.99	2.356e4	2.001e4	1.125	1.18	1.24	329.3	YES	NO	bb	bb	5.810
62	1234678-HpCDD	40.26	1.199e5	1.115e5	1.068	1.08	1.05	1241.2	YES	NO	bb	bb	54.558
63	1234679-HPCDD	39.21	1.917e5	1.773e5	1.211	1.08	1.05	2106.1	YES	NO	bb	bb	76.745
64	OCDD	45.00	6.317e5	7.017e5	1.181	0.90	0.89	8198.6	YES	NO	bb	bb	350.853

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	26.70	1.279e4					0.9	NO		bb		
2	FUNCTION1 PFK	24.90	4.702e4					1.8	NO		db		
3	FUNCTION1 PFK	24.84	2.834e4					1.3	NO		bd		
4	FUNCTION1 PFK	24.72	4.747e3					0.5	NO		bb		
5	FUNCTION1 PFK	24.07	7.341e4					1.9	NO		bb		
6	FUNCTION1 PFK	23.84	1.971e4					1.1	NO		bb		
7	FUNCTION1 PFK	23.37	7.245e4					2.2	NO		db		
8	FUNCTION1 PFK	23.31	4.045e4					1.8	NO		bd		
9	FUNCTION1 PFK	22.78	3.338e4					0.9	NO		bb		
10	FUNCTION1 PFK	22.72	1.149e4					0.8	NO		bb		
11	FUNCTION1 PFK	22.10	1.342e5					4.1	YES		bb		
12	FUNCTION1 PFK	21.33	1.612e4					1.1	NO		bb		
13	FUNCTION1 PFK	21.21	6.875e4					1.6	NO		db		
14	FUNCTION1 PFK	21.16	3.894e4					1.7	NO		bd		
15	FUNCTION1 PFK	27.51	5.652e4					1.4	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.89	1.522e6					4.8	YES		bb		0.000
2	FUNCTION2 PFK	29.20	7.203e5					9.3	YES		bb		0.000
3	FUNCTION2 PFK	28.26	1.543e4					2.4	NO		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.00	3.845e5					6.1	YES		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	42.68	4.804e3					1.0	NO		bb		
2	FUNCTION4 PFK	38.02	3.105e4					2.5	NO		bb		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	22.74	2.535e2					6.4	YES		bb		0.000
2	FUNCTION1 HXCD...	22.31	2.262e2					4.9	YES		bb		0.000
3	FUNCTION1 HXCD...	22.18	1.601e2					5.1	YES		bb		0.000
4	FUNCTION1 HXCD...	21.97	8.970e1					1.7	NO		bb		0.000
5	FUNCTION1 HXCD...	27.64	1.561e2					3.5	YES		bb		0.000
6	FUNCTION1 HXCD...	26.76	2.958e2					5.9	YES		bb		0.000
7	FUNCTION1 HXCD...	26.12	4.482e2					11.4	YES		bb		0.000
8	FUNCTION1 HXCD...	25.91	6.452e2					15.5	YES		db		0.000
9	FUNCTION1 HXCD...	25.75	4.526e2					9.5	YES		bd		0.000
10	FUNCTION1 HXCD...	25.37	7.509e1					1.9	NO		bb		0.000
11	FUNCTION1 HXCD...	25.11	1.589e2					4.1	YES		bb		0.000
12	FUNCTION1 HXCD...	23.75	5.331e2					12.8	YES		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	23.05	2.326e2					3.1	YES		bd		0.000
2	FUNCTION1 HPCD...	22.54	7.224e1					1.8	NO		bb		0.000
3	FUNCTION1 HPCD...	22.43	2.850e2					5.1	YES		bb		0.000
4	FUNCTION1 HPCD...	22.30	1.985e2					4.9	YES		bb		0.000
5	FUNCTION1 HPCD...	22.06	1.215e4					213.8	YES		bb		0.000
6	FUNCTION1 HPCD...	21.62	1.566e2					2.9	NO		bb		0.000
7	FUNCTION1 HPCD...	21.33	7.384e1					1.7	NO		bb		0.000
8	FUNCTION1 HPCD...	27.92	1.996e2					3.6	YES		db		0.000
9	FUNCTION1 HPCD...	27.88	9.457e1					2.6	NO		bd		0.000
10	FUNCTION1 HPCD...	26.97	9.984e1					1.7	NO		bb		0.000
11	FUNCTION1 HPCD...	25.91	7.763e1					2.7	NO		bb		0.000
12	FUNCTION1 HPCD...	24.19	1.535e2					3.2	YES		bb		0.000
13	FUNCTION1 HPCD...	23.90	8.689e1					1.9	NO		bb		0.000
14	FUNCTION1 HPCD...	23.37	9.839e2					18.1	YES		db		0.000
15	FUNCTION1 HPCD...	23.30	9.053e2					11.9	YES		dd		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.18	8.274e1					2.3	NO		bb		0.000
2	FUNCTION2 HPCD...	29.73	7.262e1					2.2	NO		bb		0.000
3	FUNCTION2 HPCD...	28.98	7.485e1					3.0	YES		db		0.000
4	FUNCTION2 HPCD...	28.93	2.728e2					5.5	YES		bd		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.52	7.749e1					2.9	NO		bb		0.000
2	FUNCTION3 OCDPE	34.21	1.145e2					4.0	YES		bb		0.000
3	FUNCTION3 OCDPE	36.73	9.604e1					2.0	NO		bb		0.000
4	FUNCTION3 OCDPE	35.98	1.186e2					2.9	NO		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.41	4.327e3					132.6	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.54	1.387e2					2.4	NO		bb		0.000

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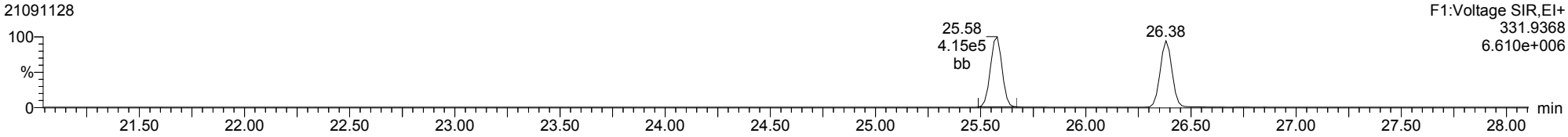

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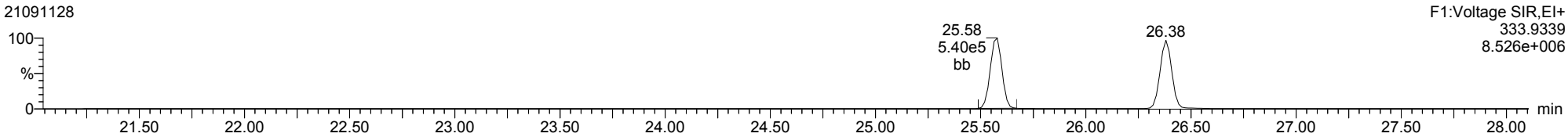
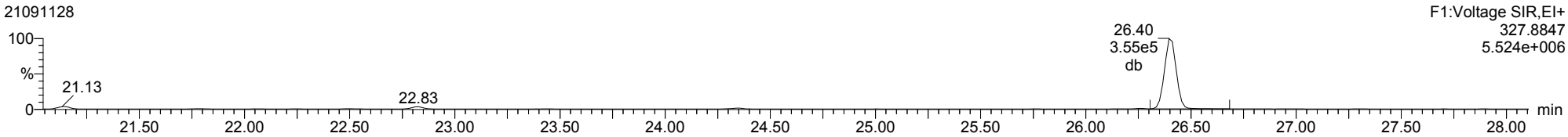


37CL-2378-TCDD



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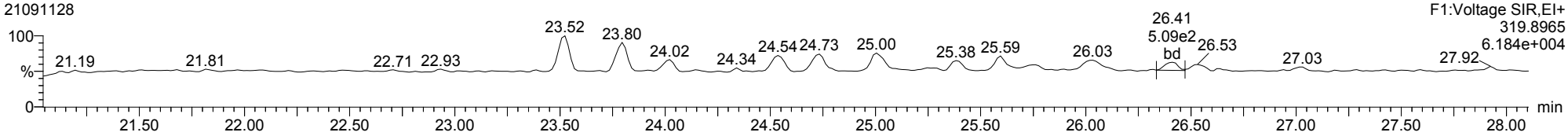
2378-TCDD



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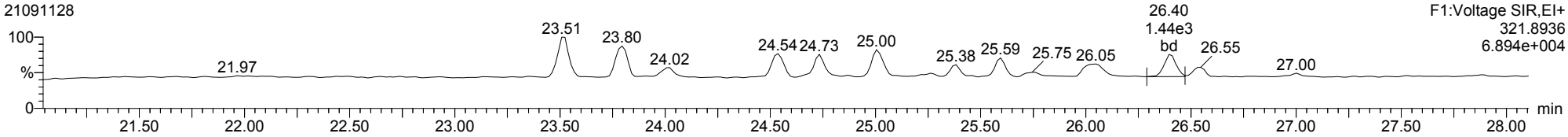

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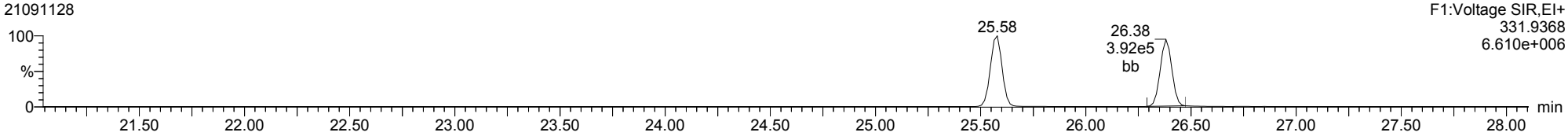

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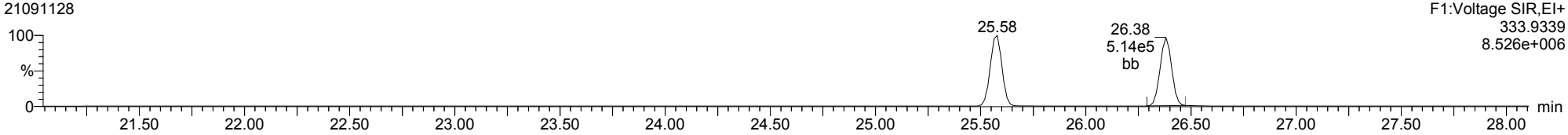

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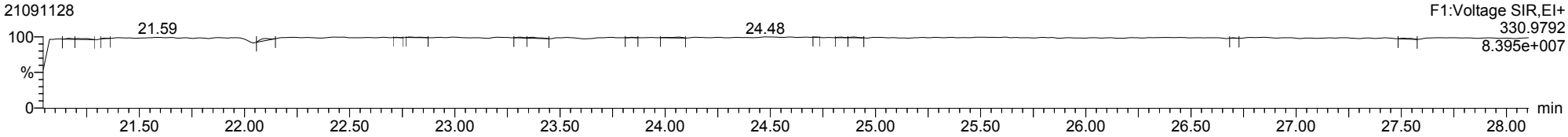

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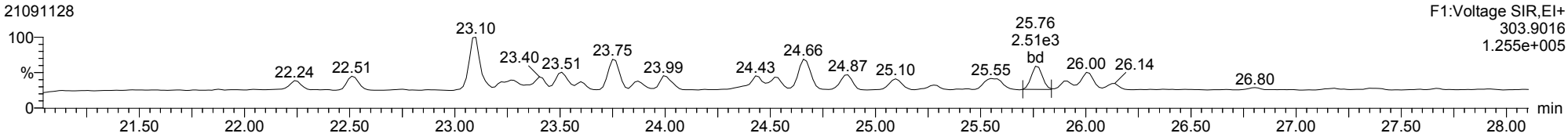
2378-TCDF



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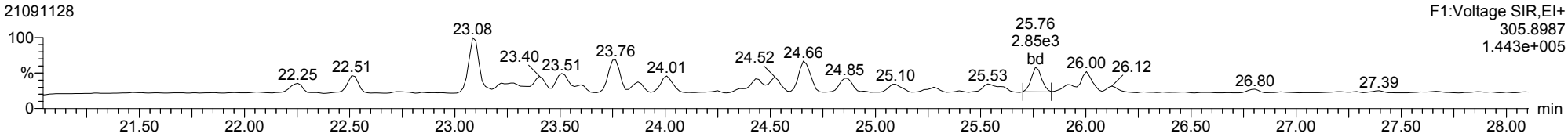

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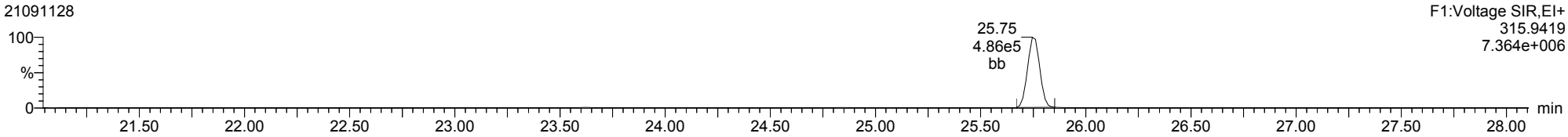

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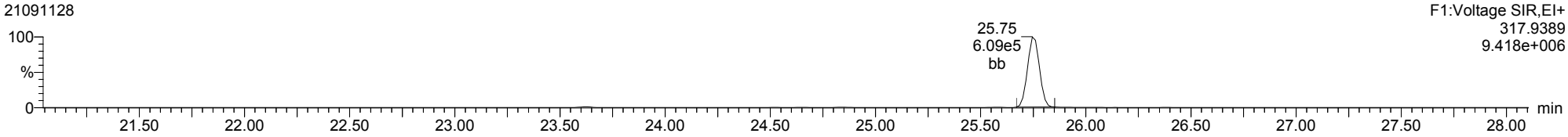

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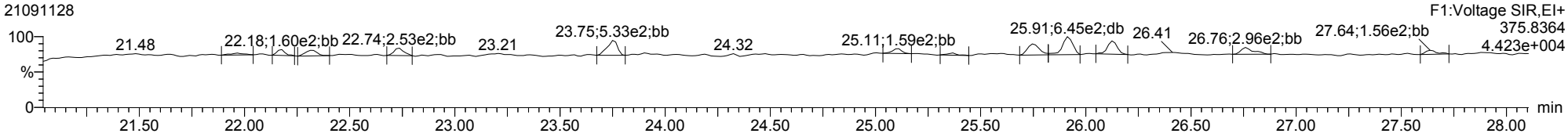

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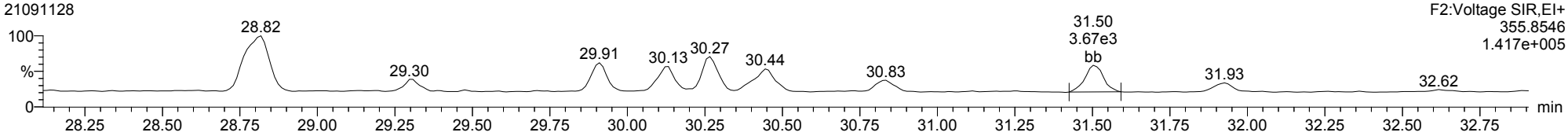
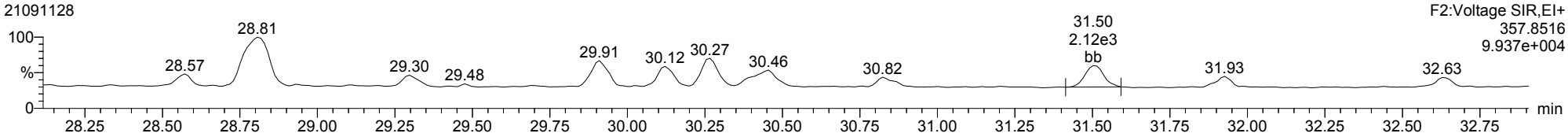
12378-PeCDD



12378-PeCDD



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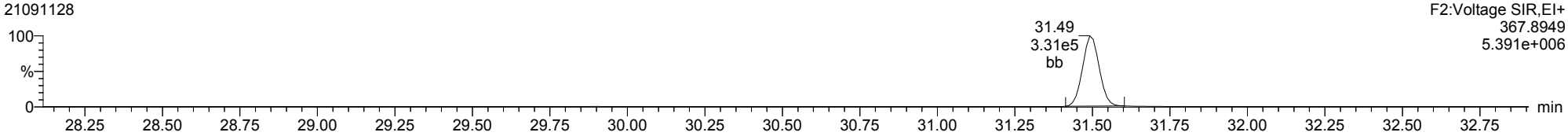

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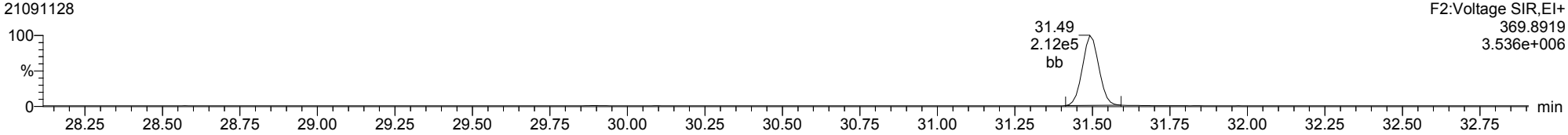
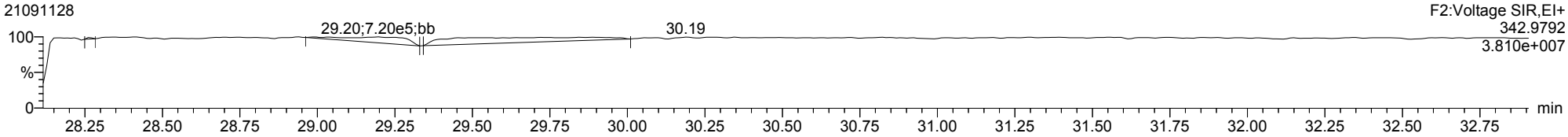


FUNCTION2 PFK



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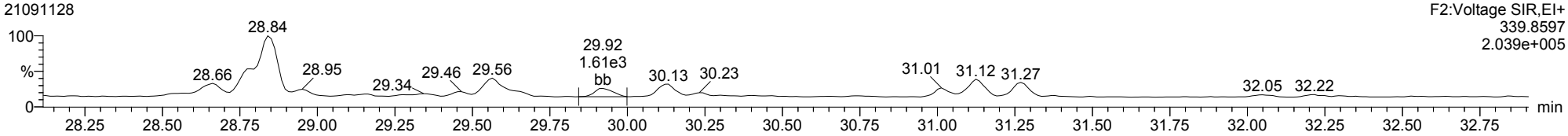
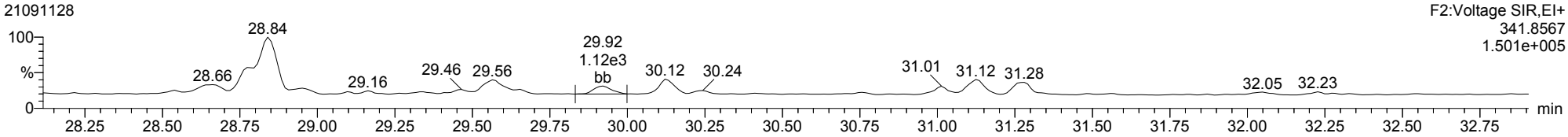
12378-PeCDF



12378-PeCDF



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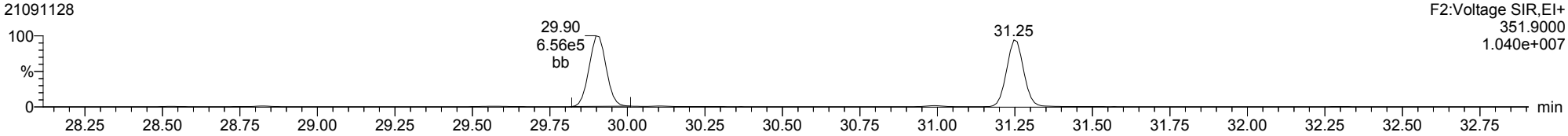

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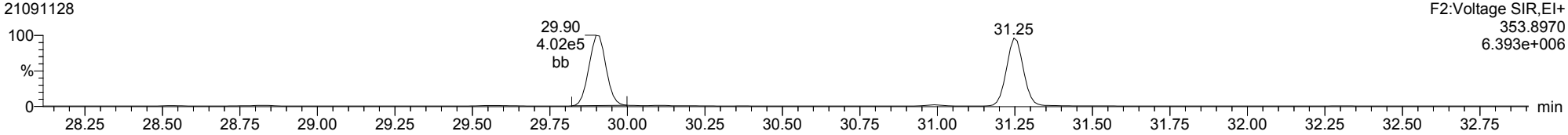

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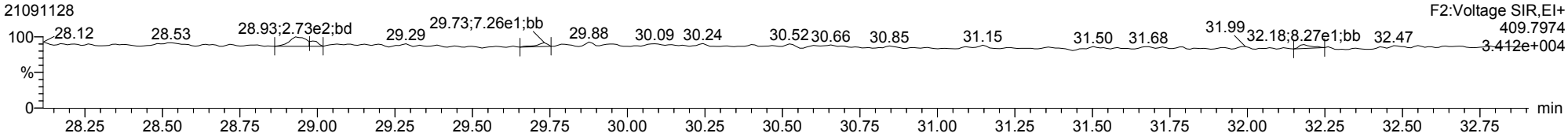

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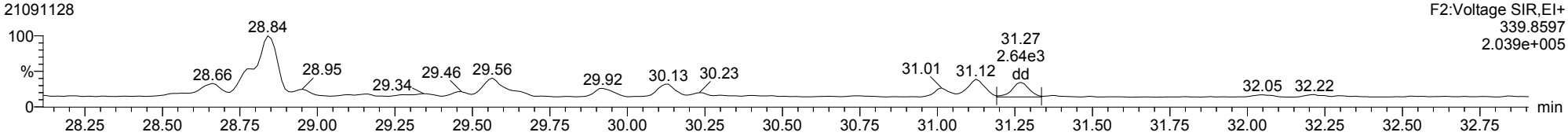
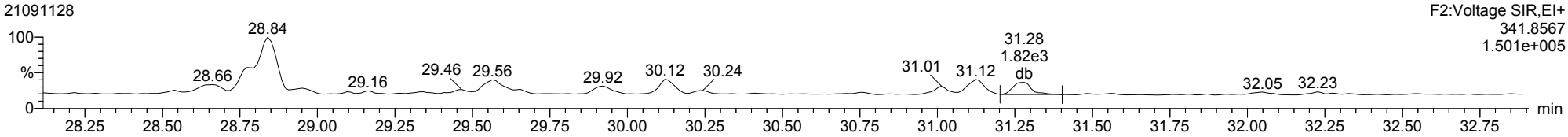
23478-PeCDF



23478-PeCDF



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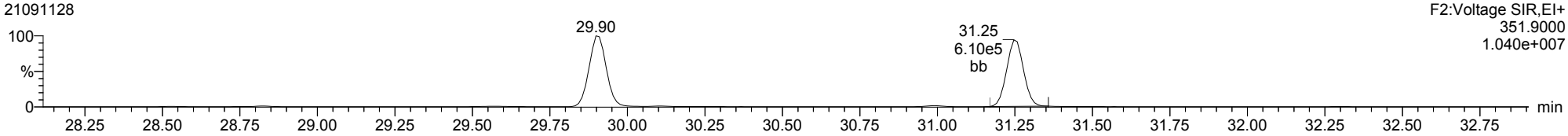

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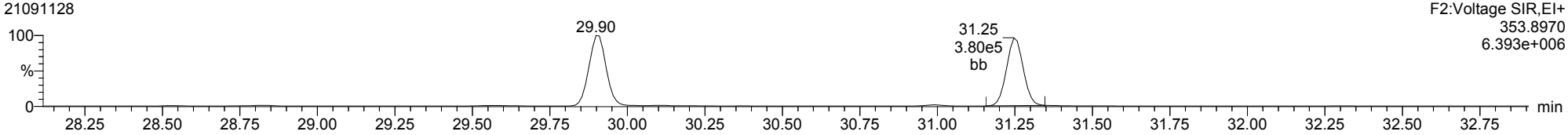

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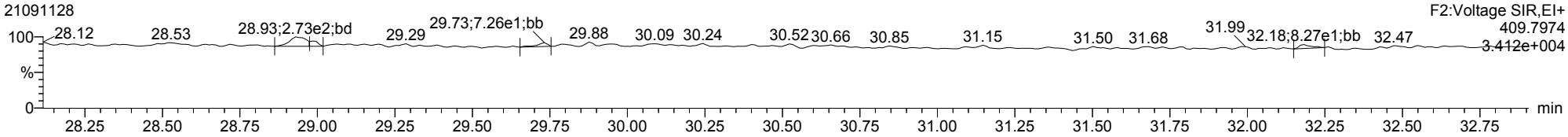

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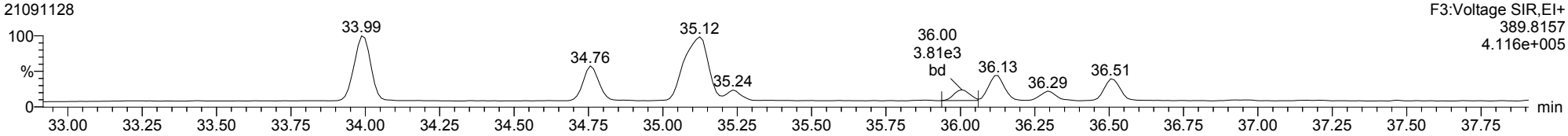

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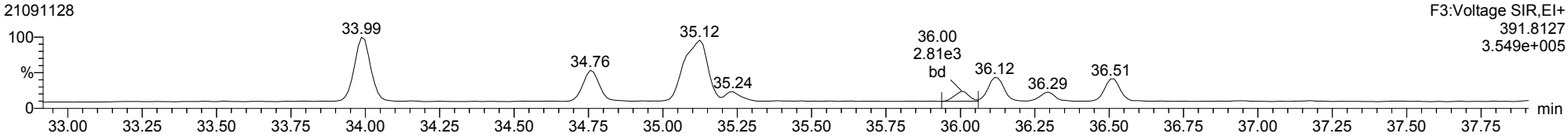

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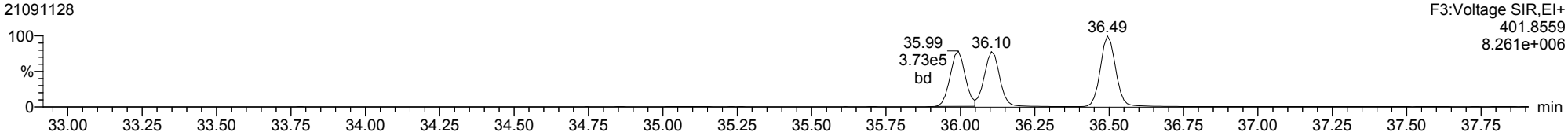

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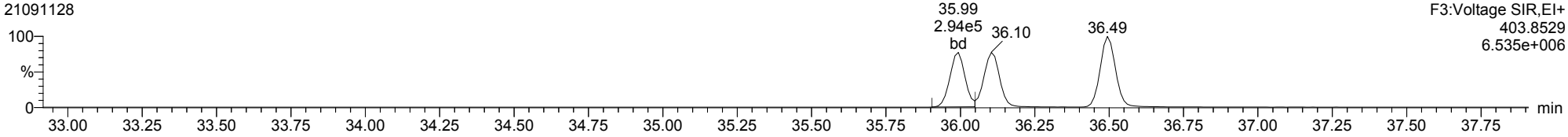

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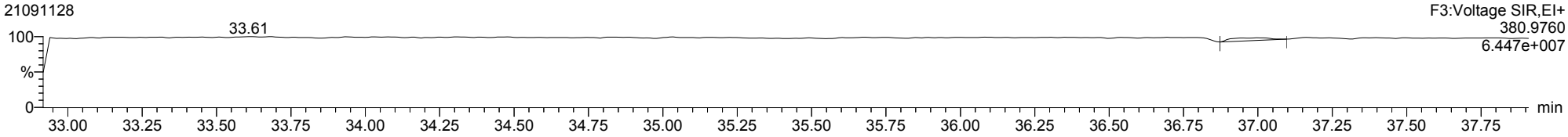

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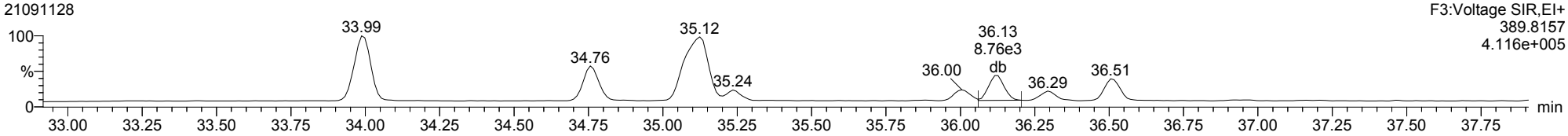

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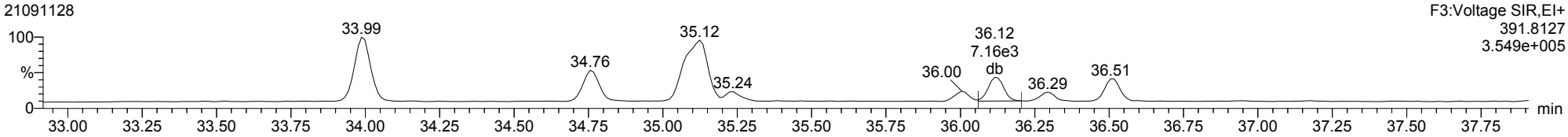

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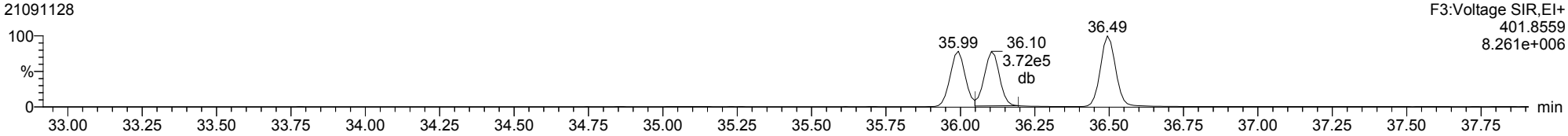

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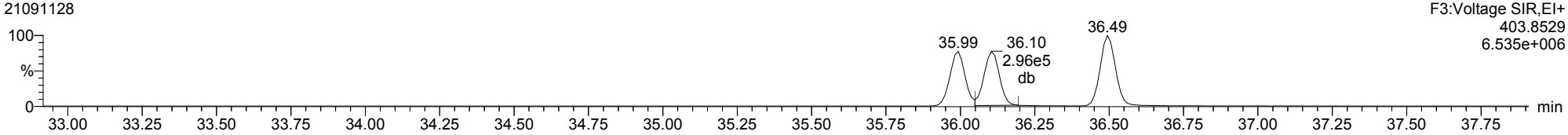

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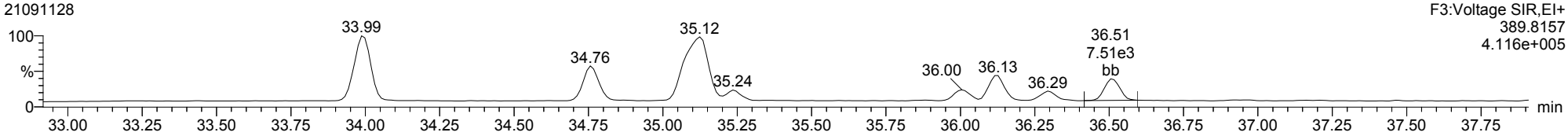

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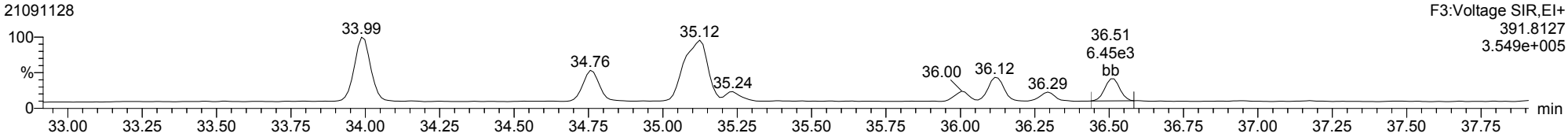

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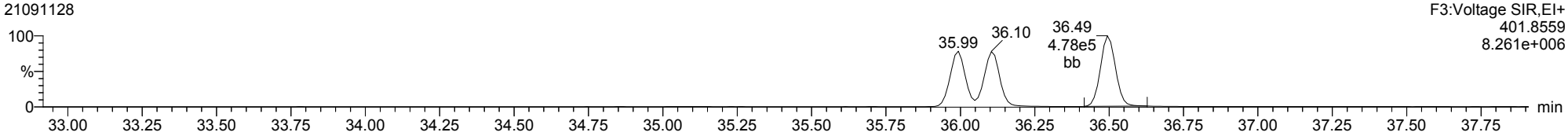

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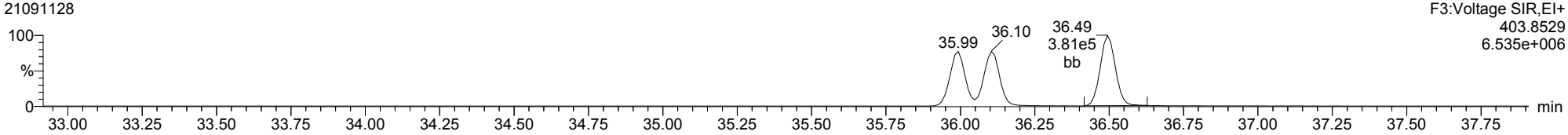

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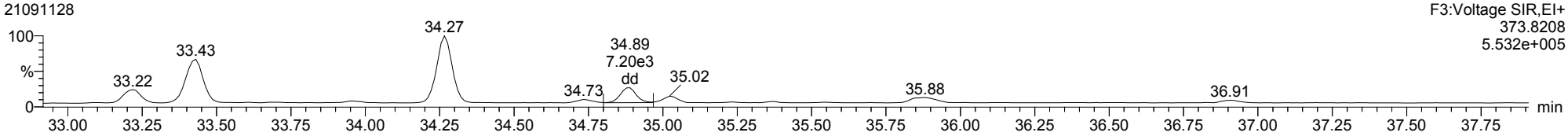

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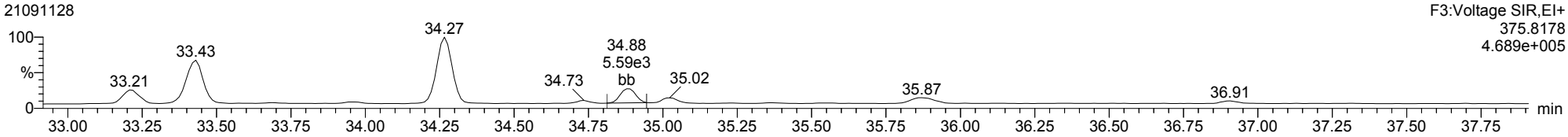

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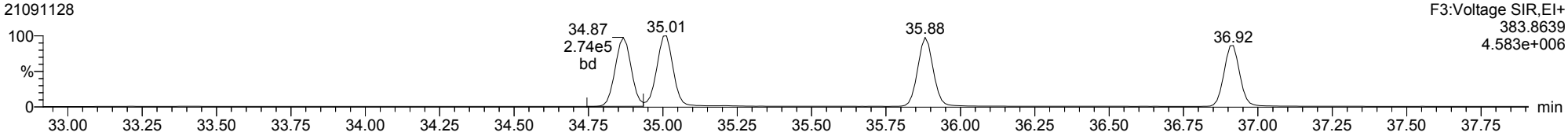

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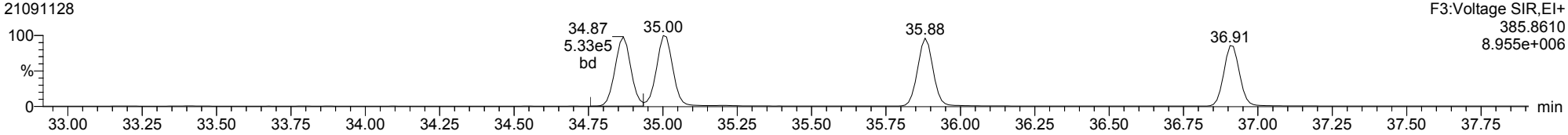

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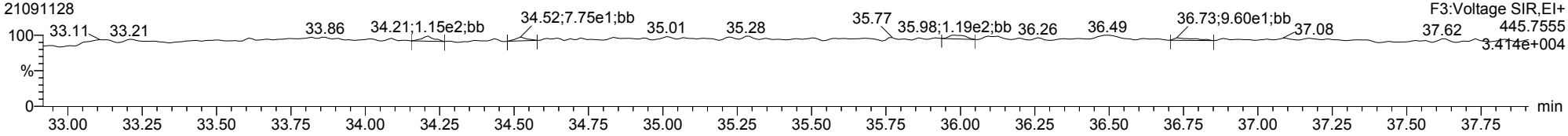

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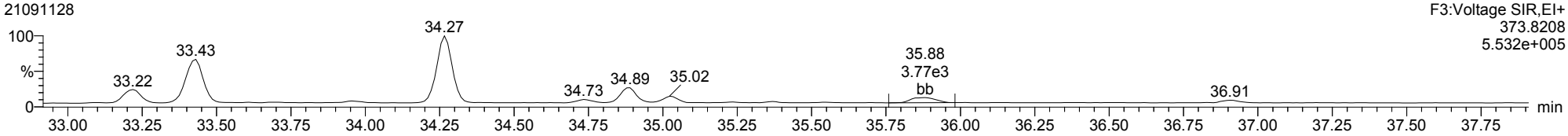

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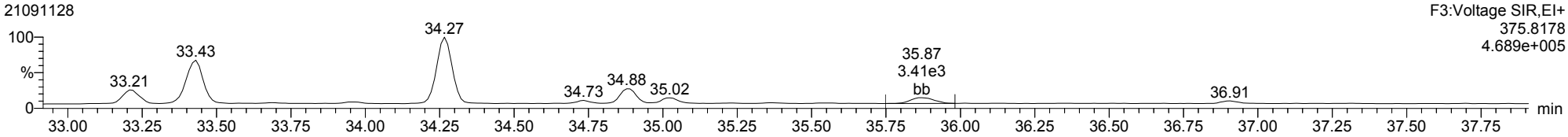

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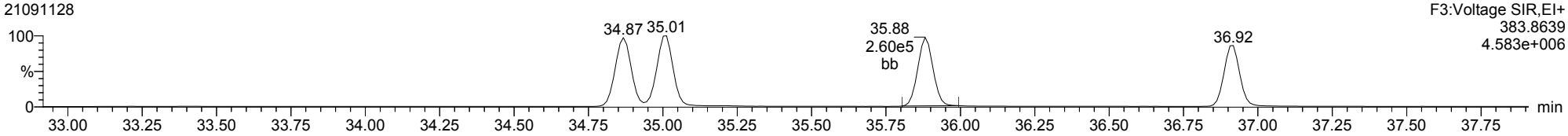

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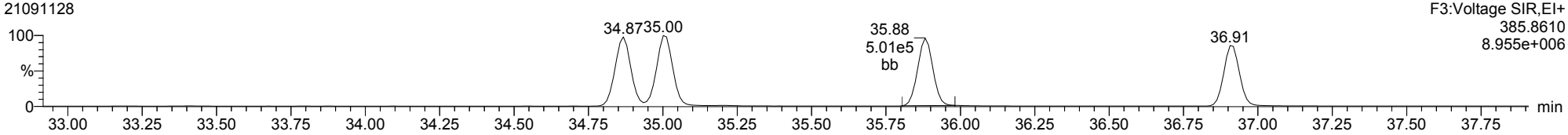

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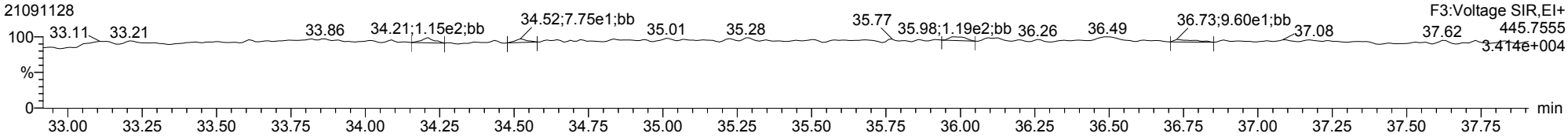

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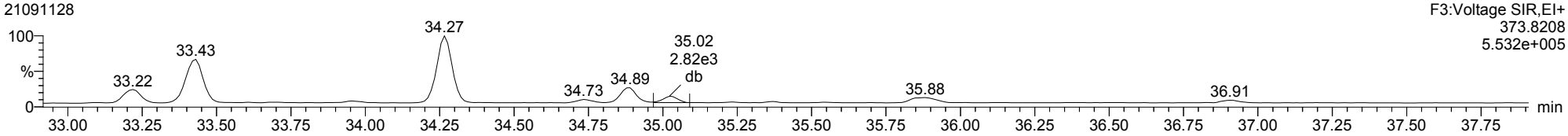

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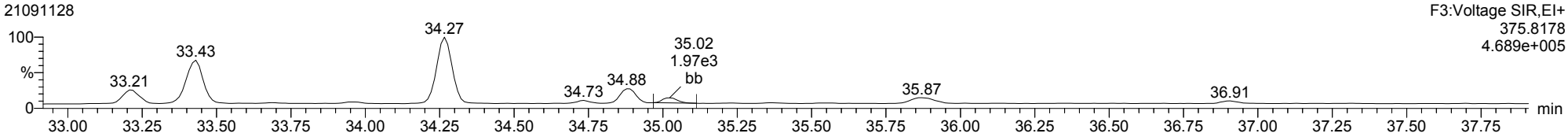

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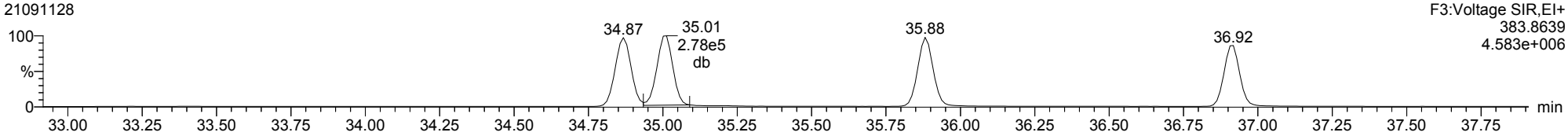

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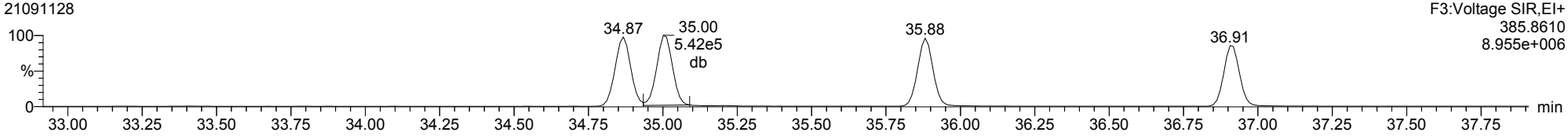

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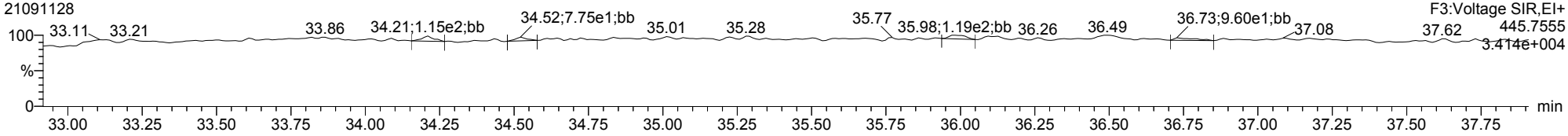

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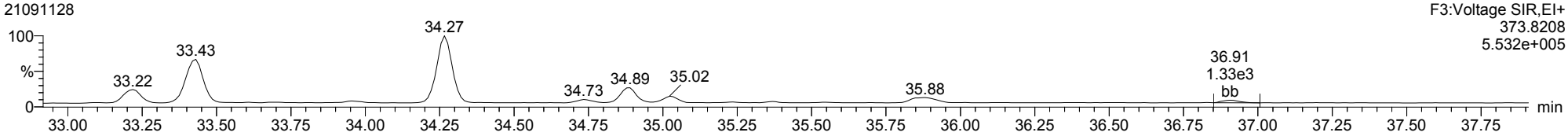

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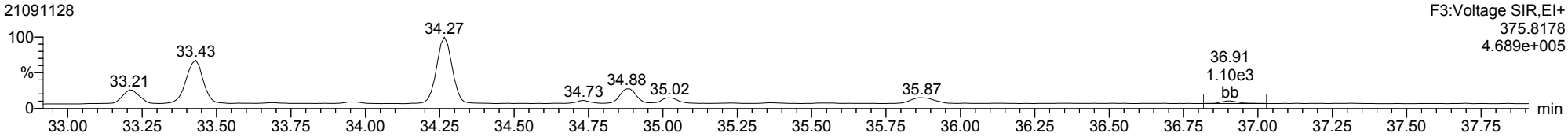

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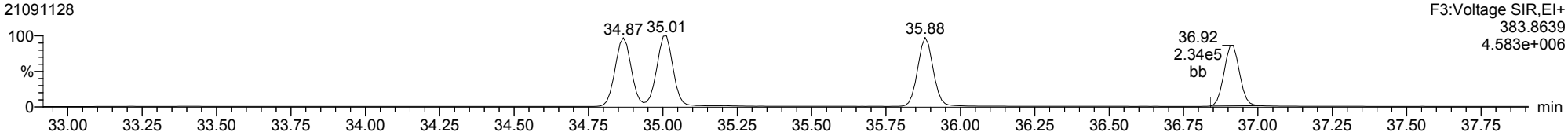

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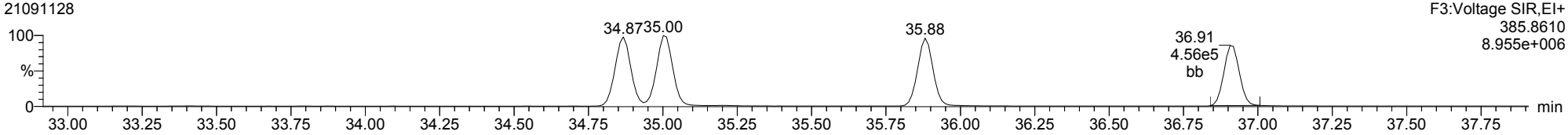

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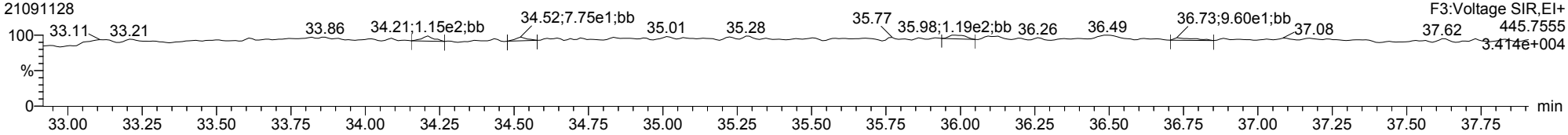

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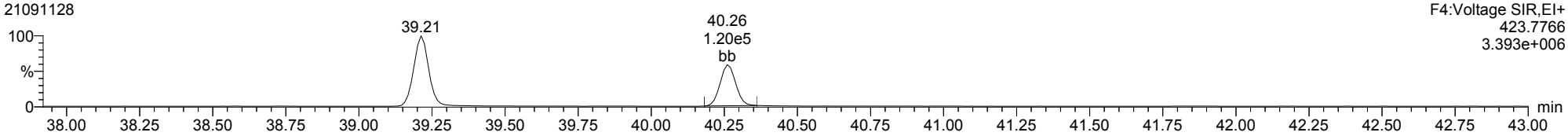

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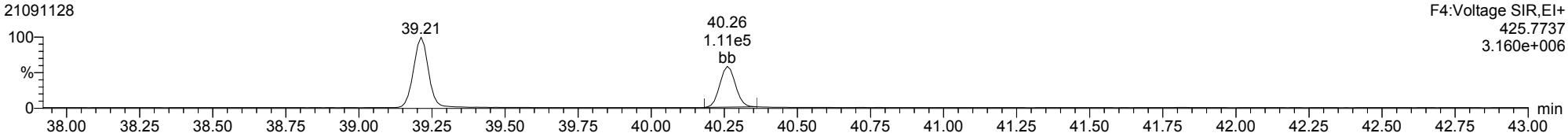

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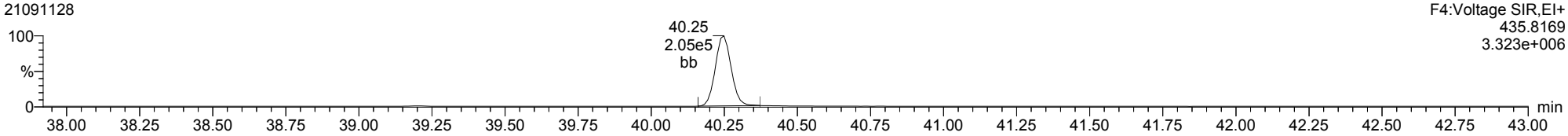

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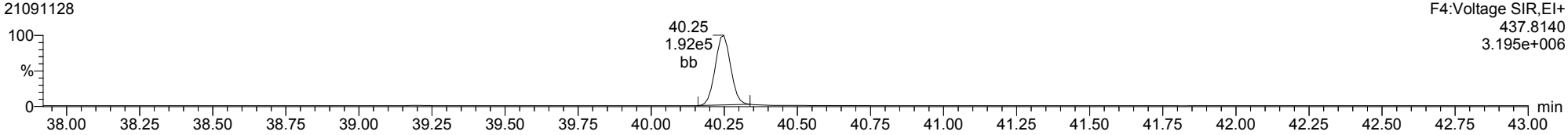
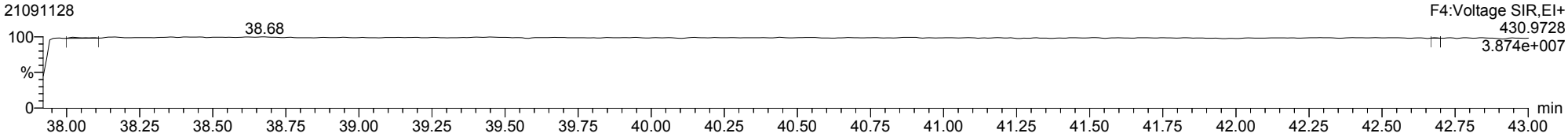


FUNCTION4 PFK



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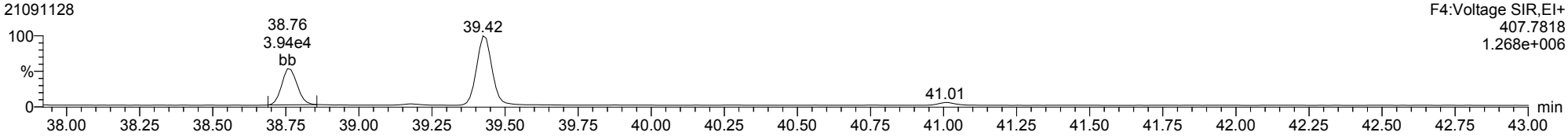

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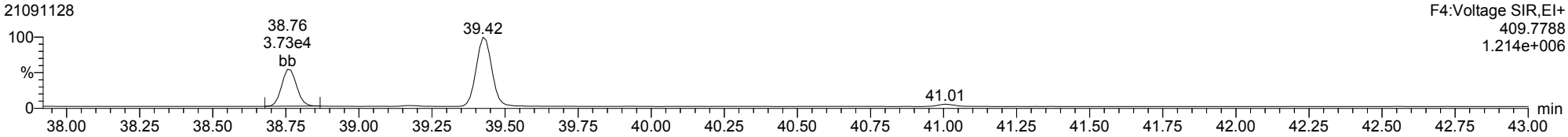

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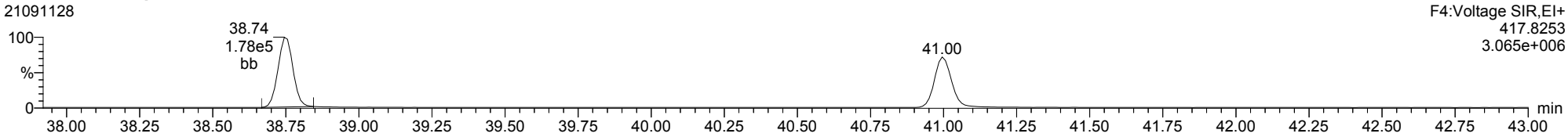

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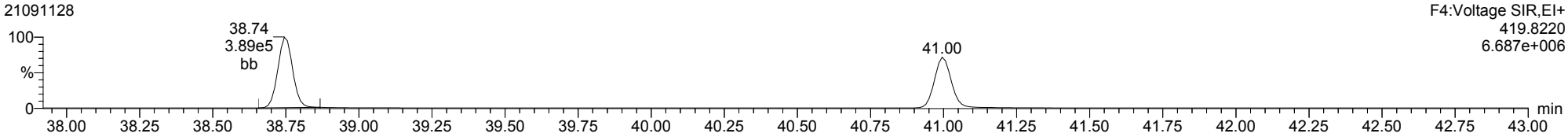
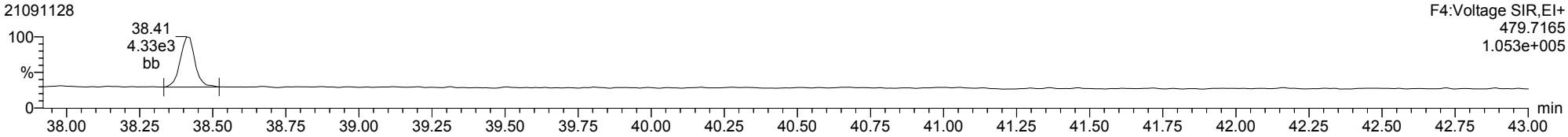


FUNCTION4 NCDPE



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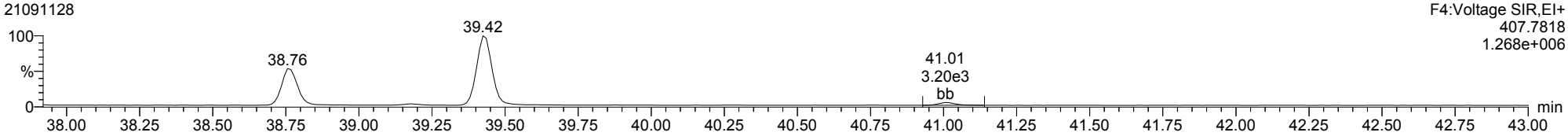

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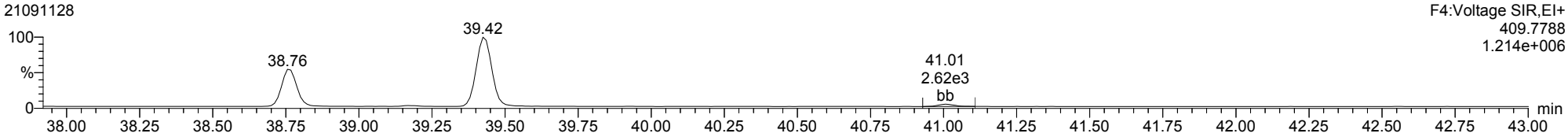

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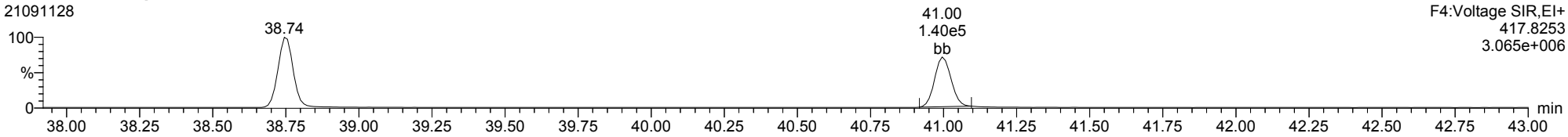

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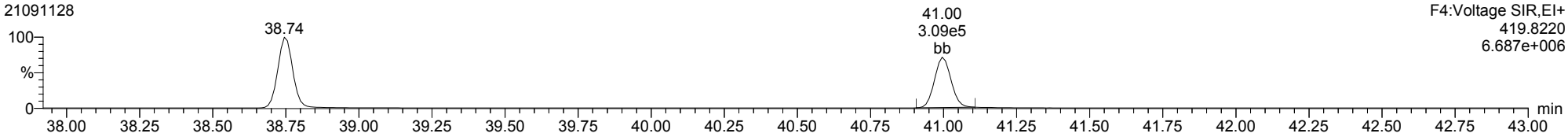
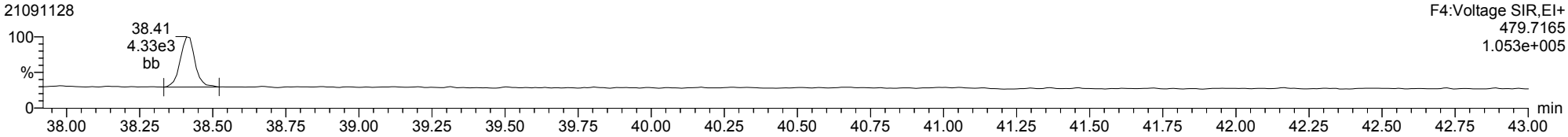
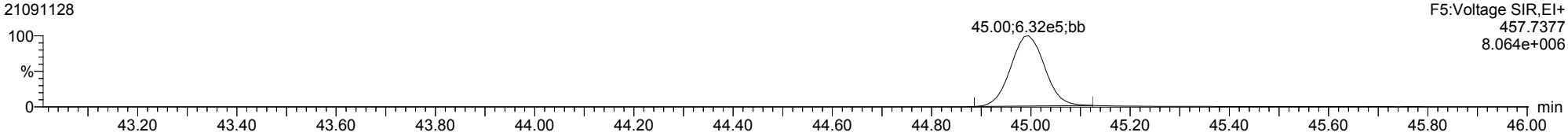


FUNCTION4 NCDPE



ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

OCDD



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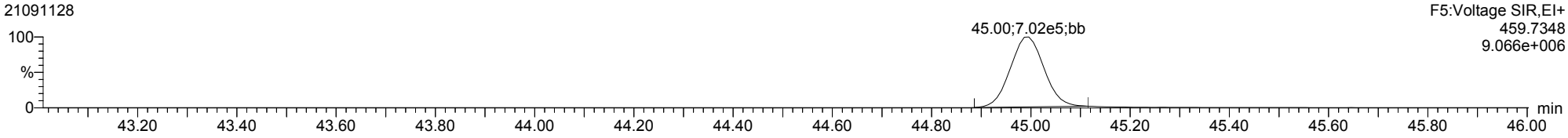

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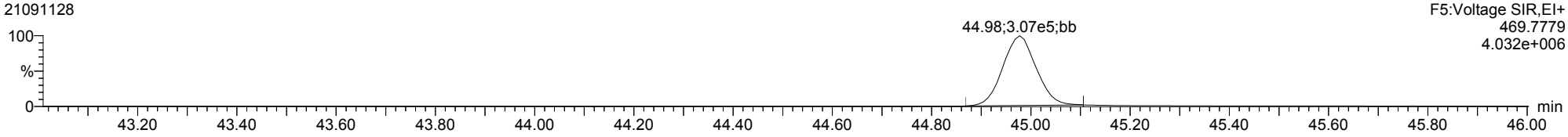

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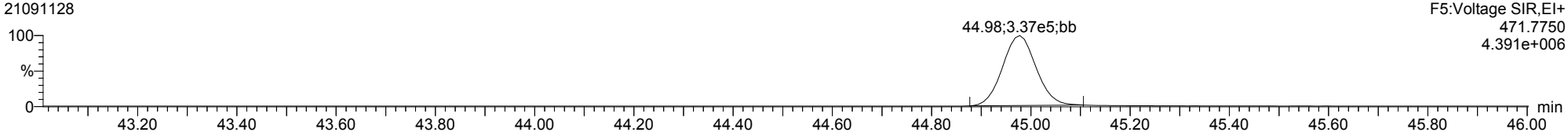
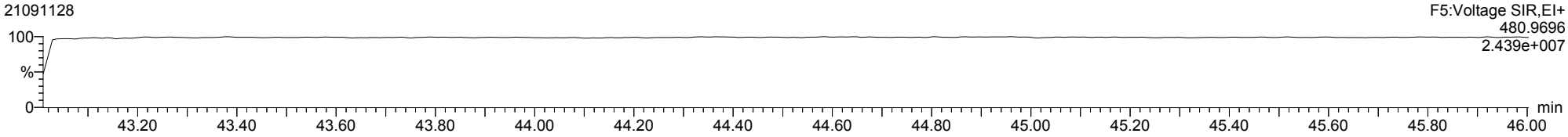


FUNCTION5 PFK



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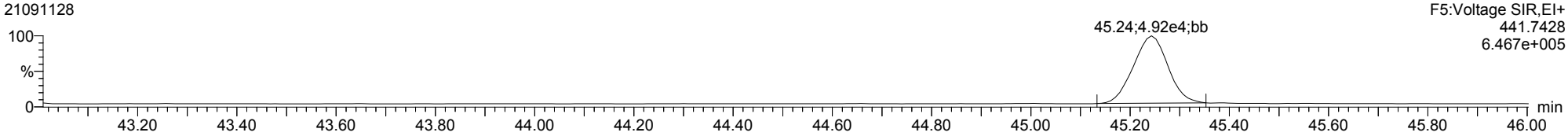
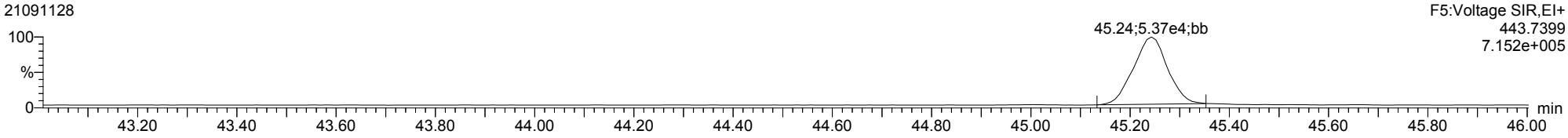
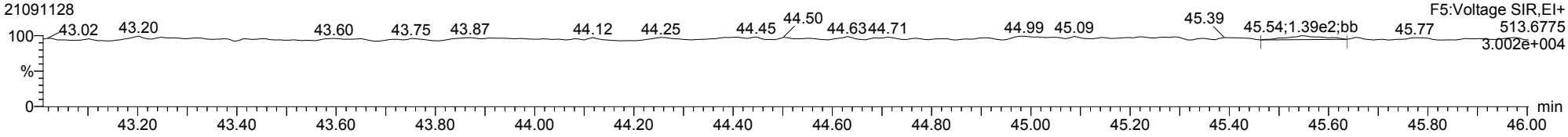


OCDF



FUNCTION5 DCDPE



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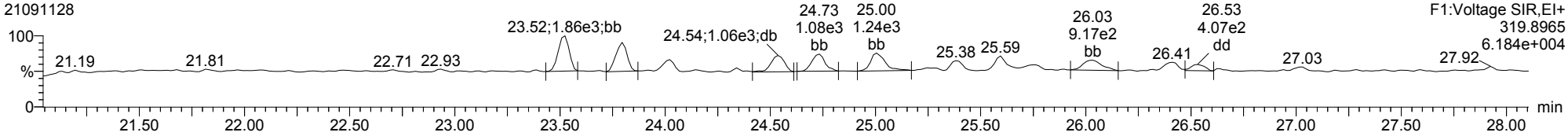
Printed: Wednesday, September 15, 2021 11:36:31 Pacific Daylight Time

ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



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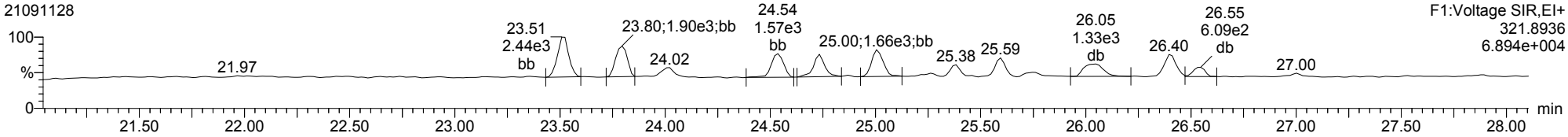

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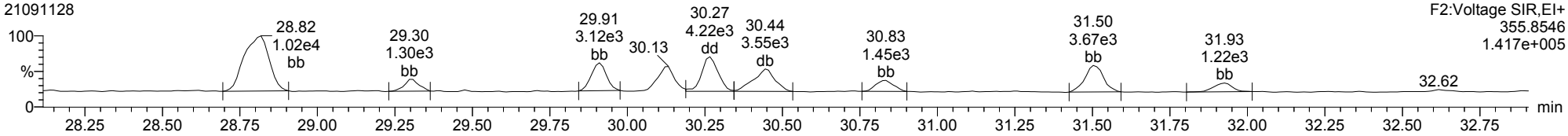
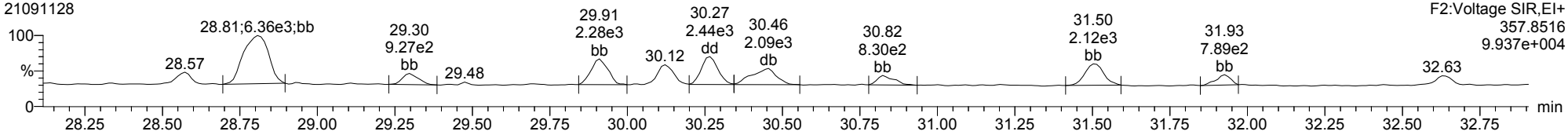


Total-pentadioxins



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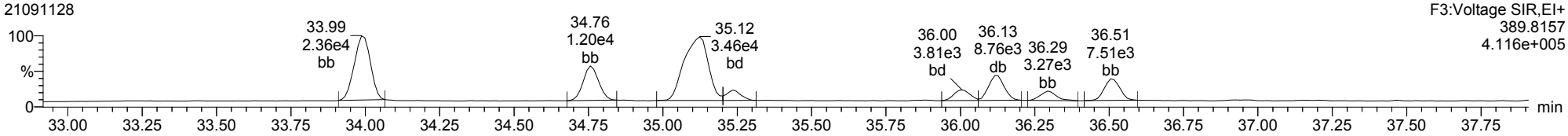
Total-hexadioxins



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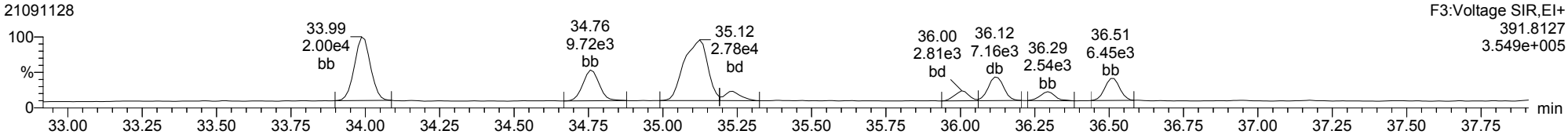

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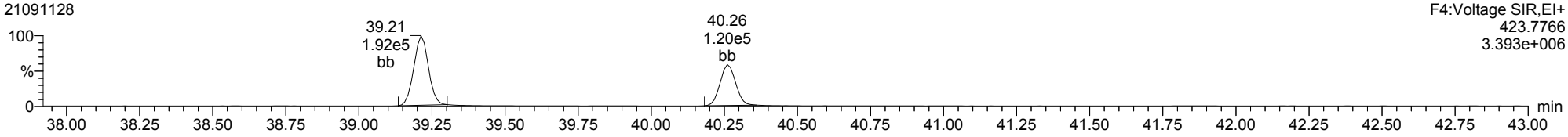

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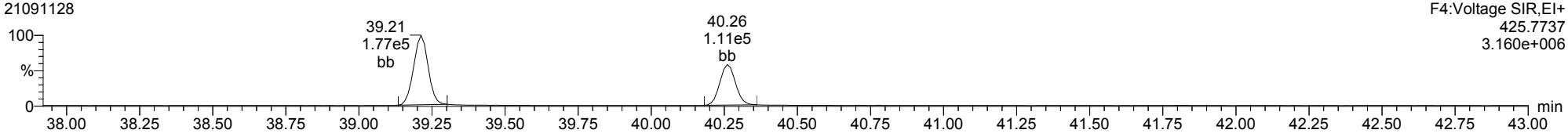

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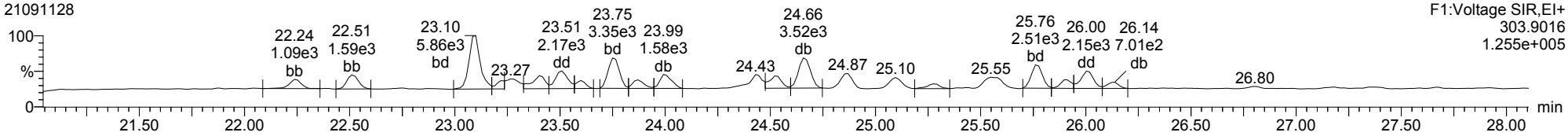
Printed: Wednesday, September 15, 2021 11:36:31 Pacific Daylight Time

ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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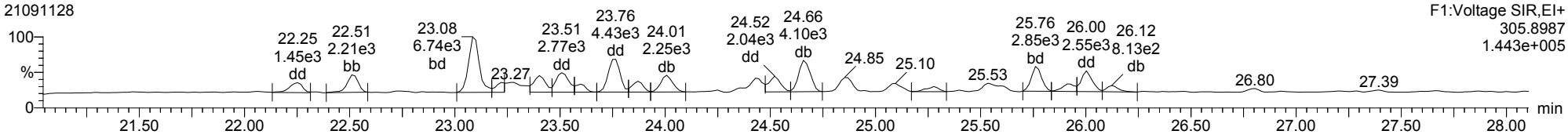
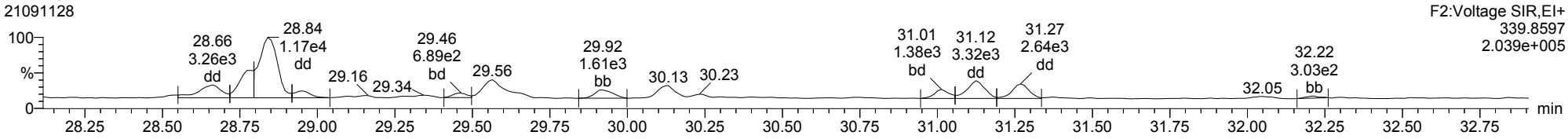
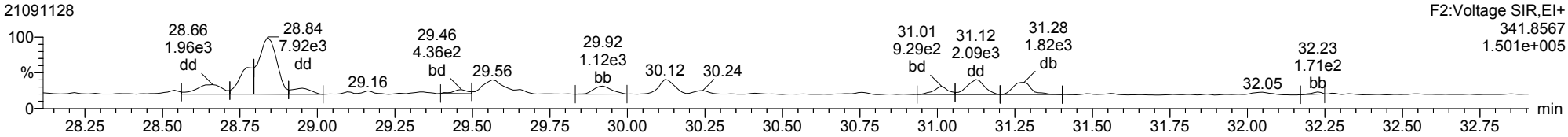


Total-pentafurans



Total-pentafurans



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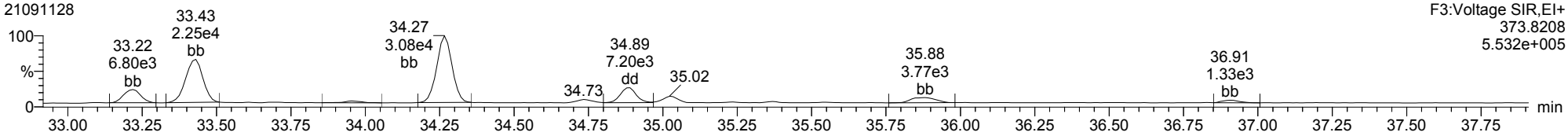
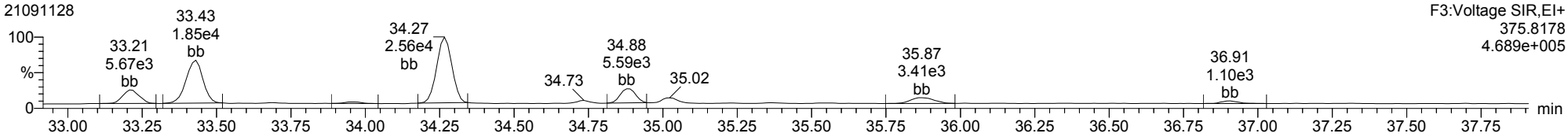
ID: 21G0138-12, Name: 21091128, Date: 12-Sep-2021, Time: 08:47:25, Conditions: AUTOSPEC01, User: pk

Total-hexafurans



Total-hexafurans



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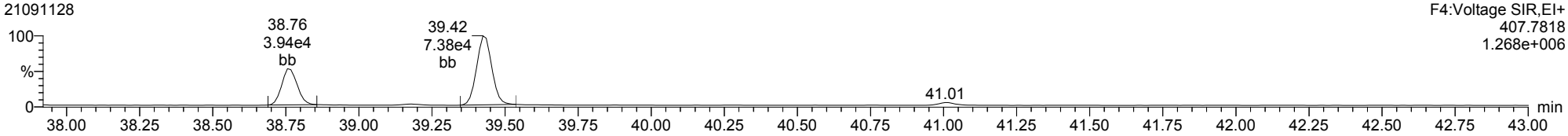

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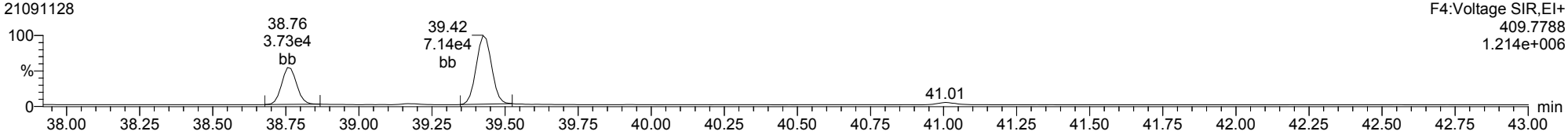

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT648B

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-13 C	File ID:	21091129
Sampled:	07/13/21 11:32	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 09:36
% Solids:	62.78	Preparation:	EPA 1613	Initial/Final:	15.94 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.717	0.655-0.886	0.090	0.999	0.743	ng/kg	J
1746-01-6	2,3,7,8-TCDD	1	0.473	0.655-0.886	0.078	0.999	0.452	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.364	1.318-1.783	0.096	0.999	0.545	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.519	1.318-1.783	0.092	0.999	0.821	ng/kg	J
40321-76-4	1,2,3,7,8-PeCDD	1	1.525	1.318-1.783	0.157	0.999	1.94	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.102	1.054-1.426	0.096	0.999	3.24	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.243	1.054-1.426	0.091	0.999	1.39	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.189	1.054-1.426	0.097	0.999	1.18	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.088	1.054-1.426	0.102	0.999	0.775	ng/kg	J
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.123	1.054-1.426	0.133	0.999	1.97	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.282	1.054-1.426	0.127	0.999	6.74	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.258	1.054-1.426	0.140	0.999	4.36	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.012	0.893-1.208	0.082	0.999	26.4	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.010	0.893-1.208	0.122	0.999	2.52	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.056	0.893-1.208	0.271	2.50	163	ng/kg	B
39001-02-0	OCDF	1	0.918	0.757-1.024	0.183	2.50	68.4	ng/kg	
3268-87-9	OCDD	1	0.903	0.757-1.024	0.408	9.99	1210	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			0.999	9.02	ng/kg
41903-57-5	Total TCDD	1	0.000			0.999	3.52	ng/kg
30402-15-4	Total PeCDF	1	0.000			0.999	16.6	ng/kg
36088-22-9	Total PeCDD	1	0.000			0.999	8.58	ng/kg
55684-94-1	Total HxCDF	1	0.000			0.999	38.8	ng/kg
34465-46-8	Total HxCDD	1	0.000			0.999	60.2	ng/kg
38998-75-3	Total HpCDF	1	0.000			0.999	90.1	ng/kg
37871-00-4	Total HpCDD	1	0.000			0.999	399	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 7.00
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 7.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT648B

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-13	File ID:	21091129
Sampled:	07/13/21 11:32	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 09:36
Solids Wt%:	62.78	Preparation:	EPA 1613	Initial/Final:	15.94 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.789	0.655-0.886	0.065	66.4	24 - 169 %	
13C12-2,3,7,8-TCDD		0.767	0.655-0.886	0.095	74.7	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.603	1.318-1.783	0.074	81.8	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.613	1.318-1.783	0.078	81.1	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.639	1.318-1.783	0.083	73.7	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.513	0.434-0.587	0.124	75.5	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.507	0.434-0.587	0.114	70.0	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.516	0.434-0.587	0.127	73.3	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.517	0.434-0.587	0.153	76.9	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.291	1.054-1.426	0.095	78.1	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.230	1.054-1.426	0.088	72.0	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.466	0.374-0.506	0.110	71.4	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.462	0.374-0.506	0.134	68.1	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.062	0.893-1.208	0.117	71.5	23 - 140 %	
13C12-OCDD		0.903	0.757-1.024	0.304	77.1	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.030	74.7	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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Printed: Wednesday, September 15, 2021 11:36:42 Pacific Daylight Time

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: 21G0138-13, Name: 21091129, Date: 12-Sep-2021, Time: 09:36:30, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	1.802e3	2.512e3	1.108	0.717	0.770	1344	1375	2.56e4	3.82e4	19.1	27.8	NO	bb	bd	0.372
12378-PeCDF	29.909	1.000	1.874e3	1.374e3	1.015	1.364	1.550	1365	1601	3.00e4	1.79e4	22.0	11.2	NO	bb	bb	0.273
23478-PeCDF	31.257	1.000	3.091e3	2.036e3	1.126	1.519	1.550	1365	1601	4.75e4	3.52e4	34.8	22.0	NO	db	db	0.411
123478-HxCDF	34.878	1.000	7.777e3	7.056e3	1.017	1.102	1.240	1049	1278	1.33e5	1.21e5	127.1	94.8	NO	bd	dd	1.621
234678-HxCDF	35.881	1.000	2.891e3	2.432e3	1.052	1.189	1.240	1049	1278	4.52e4	4.24e4	43.1	33.2	NO	db	MM	0.591
123678-HxCDF	35.023	1.001	3.598e3	2.894e3	1.037	1.243	1.240	1049	1278	5.76e4	5.12e4	54.9	40.0	NO	db	db	0.694
123789-HxCDF	36.895	1.000	1.547e3	1.422e3	1.030	1.088	1.240	1049	1278	2.62e4	1.96e4	25.0	15.3	NO	bb	bb	0.388
1234678-HpCDF	38.756	1.000	5.596e4	5.532e4	1.327	1.012	1.050	968	982	9.76e5	9.15e5	1008.3	931.5	NO	bb	bd	13.201
1234789-HpCDF	41.006	1.000	4.024e3	3.982e3	1.283	1.010	1.050	968	982	6.28e4	6.29e4	64.9	64.0	NO	bb	bb	1.260
OCDF	45.234	1.006	8.841e4	9.634e4	1.447	0.918	0.890	895	1171	1.10e6	1.16e6	1231.1	988.0	NO	bb	bb	34.234
2378-TCDD	26.396	1.001	6.171e2	1.303e3	0.920	0.473	0.770	863	827	9.80e3	1.90e4	11.3	23.0	YES	bd	bd	0.226
12378-PeCDD	31.503	1.000	3.481e3	2.283e3	0.995	1.525	1.550	1188	1220	4.76e4	3.26e4	40.0	26.7	NO	bb	bb	0.970
123478-HxCDD	36.015	1.001	3.855e3	3.431e3	1.027	1.123	1.240	1575	1047	6.62e4	5.96e4	42.0	56.9	NO	bd	bd	0.986
123678-HxCDD	36.126	1.000	1.378e4	1.075e4	1.009	1.282	1.240	1575	1047	2.44e5	1.79e5	154.7	170.7	NO	db	db	3.374
123789-HxCDD	36.516	1.011	8.310e3	6.604e3	0.950	1.258	1.240	1575	1047	1.43e5	1.16e5	90.9	111.1	NO	bb	bd	2.180
1234678-HpCDD	40.260	1.001	1.937e5	1.835e5	1.068	1.056	1.050	1935	1405	3.11e6	2.89e6	1605.4	2060.4	NO	bb	bb	81.334
OCDD	44.986	1.000	1.264e6	1.400e6	1.181	0.903	0.890	1459	2306	1.60e7	1.77e7	10986.3	7659.5	NO	bb	bb	604.743
13C-2378-TCDF	25.746	1.007	4.617e5	5.853e5	1.427	0.789	0.770	1730	1034	7.22e6	9.17e6	4175.4	8869.1	NO	bb	bb	66.371
13C-12378-PeCDF	29.898	1.169	7.225e5	4.507e5	1.297	1.603	1.550	1597	1262	1.13e7	6.91e6	7050.2	5478.1	NO	bb	bb	81.783
13C-23478-PeCDF	31.246	1.222	6.846e5	4.245e5	1.236	1.613	1.550	1597	1262	1.06e7	6.58e6	6654.0	5216.5	NO	bb	bb	81.119
13C-123478-HxCDF	34.867	0.955	3.054e5	5.947e5	1.242	0.513	0.510	1653	2412	4.87e6	9.54e6	2944.6	3955.7	NO	bd	bd	75.462
13C-123678-HxCDF	35.001	0.959	3.038e5	5.990e5	1.343	0.507	0.510	1653	2412	4.95e6	9.76e6	2995.4	4044.1	NO	db	db	69.994
13C-234678-HxCDF	35.892	0.983	2.912e5	5.642e5	1.215	0.516	0.510	1653	2412	4.64e6	8.91e6	2806.7	3693.9	NO	bb	bb	73.343
13C-123789-HxCDF	36.906	1.011	2.533e5	4.902e5	1.008	0.517	0.510	1653	2412	4.54e6	8.85e6	2743.0	3667.4	NO	bb	bb	76.853
13C-1234678-HpCDF	38.744	1.061	2.020e5	4.331e5	0.926	0.466	0.440	1372	1314	3.41e6	7.44e6	2484.1	5658.8	NO	bb	bb	71.398
13C-1234789-HpCDF	40.995	1.123	1.566e5	3.388e5	0.758	0.462	0.440	1372	1314	2.37e6	5.12e6	1726.1	3892.8	NO	bb	bb	68.075
13C-1234-TCDD	25.564	0.000	4.793e5	6.264e5	1.000	0.765	0.770	2121	1014	7.69e6	1.01e7	3626.5	9986.2	NO	bb	bb	100.000
13C-2378-TCDD	26.365	1.031	4.003e5	5.218e5	1.116	0.767	0.770	2121	1014	6.13e6	7.99e6	2888.9	7886.3	NO	bb	bb	74.688
13C-12378-PeCDD	31.491	1.232	3.706e5	2.262e5	0.732	1.639	1.550	845	953	5.75e6	3.57e6	6803.3	3744.9	NO	bb	bb	73.731
13C-123478-HxCDD	35.993	0.986	4.055e5	3.140e5	0.960	1.291	1.240	1432	989	6.47e6	5.10e6	4516.8	5151.0	NO	bd	bd	78.087
13C-123678-HxCDD	36.115	0.989	3.973e5	3.230e5	1.041	1.230	1.240	1432	989	6.75e6	5.35e6	4712.7	5407.6	NO	db	db	72.047
13C-1234678-HpCDD	40.237	1.102	2.236e5	2.106e5	0.632	1.062	1.050	1067	894	3.56e6	3.37e6	3341.7	3774.6	NO	bb	bb	71.522
13C-OCDD	44.977	1.232	3.539e5	3.920e5	0.504	0.903	0.890	1705	2344	4.44e6	4.94e6	2606.7	2106.7	NO	bb	bb	154.248
13C-123789-HxCDD	36.505	0.000	5.306e5	4.294e5	1.000	1.236	1.240	1432	989	8.76e6	7.01e6	6114.7	7081.2	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	3.581e5		1.084			959		5.53e6		5764.5			db		29.884

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:42 Pacific Daylight Time

ID: 21G0138-13, Name: 21091129, Date: 12-Sep-2021, Time: 09:36:30, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	5.354e2	7.484e2	1.425	0.715	0.770	1344	1375	7.82e3	1.17e4	5.8	8.5	NO	bb	bb	0.086
1289-TCDF	27.363	1.063	6.519e2	6.177e2	1.043	1.055	0.770	1344	1375	1.11e4	9.92e3	8.3	7.2	YES	bb	db	0.116
13468-PECDF					1.376		1.550	756	975								
12389-PECDF					1.000		1.550	1365	1601								
123468-HXCDF	33.207	0.952	8.787e3	7.319e3	1.087	1.201	1.240	1049	1278	1.40e5	1.12e5	133.5	87.3	NO	bb	bb	1.647
1368-TCDD	23.508	0.892	1.785e3	2.021e3	0.923	0.883	0.770	863	827	2.98e4	3.41e4	34.5	41.3	NO	bd	bb	0.447
1289-TCDD					0.794		0.770	863	827								
12479-PECDD	28.817	0.915	6.042e3	3.886e3	1.843	1.555	1.550	1188	1220	5.94e4	3.91e4	50.0	32.1	NO	bb	bb	0.903
12389-PECDD	31.915	1.013	8.495e2	6.520e2	1.154	1.303	1.550	1188	1220	1.53e4	9.77e3	12.9	8.0	YES	bb	bb	0.218
124679-HXCDD	33.987	0.944	3.840e4	3.002e4	1.125	1.279	1.240	1575	1047	6.15e5	4.87e5	390.4	464.9	NO	bb	bb	8.452
1234679-HPCDD	39.201	0.974	3.206e5	3.009e5	1.211	1.066	1.050	1935	1405	5.40e6	5.11e6	2788.5	3635.8	NO	bb	bb	118.199
Total-tetrafurans			2.389e4		1.192			1344		3.54e5							4.513
Total-penta1			2.460e4					756		3.61e5							3.774
Total-pentafurans			3.279e4		1.047			1365		4.35e5							4.543
Total-hexafurans			9.480e4		1.045			1049		1.54e6							19.428
Total-heptafurans			1.753e5		1.305			968		2.96e6							45.069
Total-Furans			4.397e5		1.158			1344		6.76e6							111.560
Total-tetradioxins			6.309e3		0.879			863		1.01e5							1.761
Total-pentadioxins			2.119e4		1.331			1188		2.92e5							4.291
Total-hexadioxins			1.261e5		1.028			1575		1.82e6							30.144
Total-heptadioxins			5.144e5		1.140			1935		8.50e6							199.533
Total-Dioxins			1.932e6		1.092			863		2.67e7							840.472
Total-TEQ			2.372e6					863		3.35e7							952.032
FUNCTION1 PFK			1.083e7					534273		3.48e7							
FUNCTION2 PFK			1.858e6					310066		9.06e6							0.000
FUNCTION3 PFK			9.696e6					429976		1.56e7							0.000
FUNCTION4 PFK			9.378e4					243154		2.47e6							
FUNCTION5 PFK			5.974e6					186555		3.79e7							
FUNCTION1 HXCD...			1.714e3					782		2.33e4							0.000
FUNCTION1 HPCD...			4.292e3					921		7.32e4							0.000
FUNCTION2 HPCD...			2.205e2					1007		5.32e3							0.000
FUNCTION3 OCDPE			6.781e2					726		1.12e4							0.000
FUNCTION4 NCDPE			1.905e3					750		3.67e4							0.000
FUNCTION5 DCDPE			8.179e1					684		1.95e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.84	1.635e3	1.881e3	1.192	0.87	0.77	17.8	YES	NO	bb	bb	0.282
2	Total-tetrafurans	24.66	2.410e3	3.073e3	1.192	0.78	0.77	25.5	YES	NO	db	db	0.439
3	Total-tetrafurans	24.51	1.056e3	1.572e3	1.192	0.67	0.77	12.2	YES	NO	dd	dd	0.211
4	Total-tetrafurans	24.42	1.869e3	2.565e3	1.192	0.73	0.77	19.0	YES	NO	bd	dd	0.355
5	Total-tetrafurans	23.87	1.306e3	1.945e3	1.192	0.67	0.77	15.1	YES	NO	db	dd	0.260
6	Total-tetrafurans	23.75	1.697e3	2.582e3	1.192	0.66	0.77	24.1	YES	NO	bd	dd	0.343
7	Total-tetrafurans	23.08	3.871e3	5.234e3	1.192	0.74	0.77	42.9	YES	NO	bd	bd	0.730
8	Total-tetrafurans	22.51	1.747e3	2.449e3	1.192	0.71	0.77	19.2	YES	NO	bb	db	0.336
9	1368-TCDF	22.24	5.354e2	7.484e2	1.425	0.72	0.77	5.8	YES	NO	bb	bb	0.086
10	Total-tetrafurans	25.99	2.721e3	3.551e3	1.192	0.77	0.77	28.0	YES	NO	db	db	0.503
11	Total-tetrafurans	25.90	9.048e2	1.227e3	1.192	0.74	0.77	12.8	YES	NO	bd	dd	0.171
12	2378-TCDF	25.76	1.802e3	2.512e3	1.108	0.72	0.77	19.1	YES	NO	bb	bd	0.372
13	Total-tetrafurans	25.53	1.816e3	2.257e3	1.192	0.80	0.77	15.6	YES	NO	MM	MM	0.326
14	Total-tetrafurans	25.28	5.174e2	7.132e2	1.192	0.73	0.77	6.1	YES	NO	bb	bd	0.099

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.17	2.460e4	1.600e4		1.54	1.55	477.1	YES	NO	bb	bb	3.774

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	30.12	2.664e3	1.685e3	1.047	1.58	1.55	31.2	YES	NO	bd	bd	0.364
2	12378-PeCDF	29.91	1.874e3	1.374e3	1.015	1.36	1.55	22.0	YES	NO	bb	bb	0.273
3	Total-pentafurans	29.45	1.119e3	8.191e2	1.047	1.37	1.55	16.3	YES	NO	dd	dd	0.162
4	Total-pentafurans	28.65	2.919e3	2.028e3	1.047	1.44	1.55	30.4	YES	NO	dd	dd	0.414
5	Total-pentafurans	28.55	4.486e2	2.520e2	1.047	1.78	1.55	7.9	YES	NO	bd	bd	0.059
6	23478-PeCDF	31.26	3.091e3	2.036e3	1.126	1.52	1.55	34.8	YES	NO	db	db	0.411
7	Total-pentafurans	31.11	2.407e3	1.730e3	1.047	1.39	1.55	25.4	YES	NO	dd	dd	0.346
8	Total-pentafurans	30.99	1.587e3	9.143e2	1.047	1.74	1.55	18.9	YES	NO	bd	bd	0.209
9	Total-pentafurans	30.21	4.380e2	3.192e2	1.047	1.37	1.55	7.2	YES	NO	db	db	0.063
10	Total-pentafurans	28.84	1.624e4	1.053e4	1.047	1.54	1.55	124.9	YES	NO	MM	MM	2.241

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HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexafurans	34.74	1.147e3	1.037e3	1.045	1.11	1.24	16.3	YES	NO	bb	bd	0.246
2	Total-hexafurans	34.25	3.551e4	2.940e4	1.045	1.21	1.24	555.7	YES	NO	bb	bb	7.307
3	Total-hexafurans	33.95	1.056e3	7.793e2	1.045	1.35	1.24	16.9	YES	NO	bb	bb	0.207
4	Total-hexafurans	33.42	2.992e4	2.492e4	1.045	1.20	1.24	446.9	YES	NO	bb	bb	6.173
5	123468-HXCDF	33.21	8.787e3	7.319e3	1.087	1.20	1.24	133.5	YES	NO	bb	bb	1.647
6	123789-HxCDF	36.90	1.547e3	1.422e3	1.030	1.09	1.24	25.0	YES	NO	bb	bb	0.388
7	234678-HxCDF	35.88	2.891e3	2.432e3	1.052	1.19	1.24	43.1	YES	NO	db	MM	0.591
8	Total-hexafurans	35.86	2.256e3	2.086e3	1.045	1.08	1.24	44.7	YES	NO	bd	MM	0.489
9	Total-hexafurans	35.37	3.053e2	2.877e2	1.045	1.06	1.24	6.1	YES	NO	bb	bb	0.067
10	123678-HxCDF	35.02	3.598e3	2.894e3	1.037	1.24	1.24	54.9	YES	NO	db	db	0.694
11	123478-HxCDF	34.88	7.777e3	7.056e3	1.017	1.10	1.24	127.1	YES	NO	bd	dd	1.621

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	39.42	1.139e5	1.092e5	1.305	1.04	1.05	1960.9	YES	NO	bb	bb	30.237
2	Total-heptafurans	39.17	1.409e3	1.328e3	1.305	1.06	1.05	26.1	YES	NO	bb	bb	0.371
3	1234678-HpCDF	38.76	5.596e4	5.532e4	1.327	1.01	1.05	1008.3	YES	NO	bb	bd	13.201
4	1234789-HpCDF	41.01	4.024e3	3.982e3	1.283	1.01	1.05	64.9	YES	NO	bb	bb	1.260

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.84	1.635e3	1.881e3	1.192	0.87	0.77	17.8	YES	NO	bb	bb	0.282
2	Total-tetrafurans	24.66	2.410e3	3.073e3	1.192	0.78	0.77	25.5	YES	NO	db	db	0.439
3	Total-tetrafurans	24.51	1.056e3	1.572e3	1.192	0.67	0.77	12.2	YES	NO	dd	dd	0.211
4	Total-tetrafurans	24.42	1.869e3	2.565e3	1.192	0.73	0.77	19.0	YES	NO	bd	dd	0.355
5	Total-tetrafurans	23.87	1.306e3	1.945e3	1.192	0.67	0.77	15.1	YES	NO	db	dd	0.260
6	Total-tetrafurans	23.75	1.697e3	2.582e3	1.192	0.66	0.77	24.1	YES	NO	bd	dd	0.343
7	Total-tetrafurans	23.08	3.871e3	5.234e3	1.192	0.74	0.77	42.9	YES	NO	bd	bd	0.730
8	Total-tetrafurans	22.51	1.747e3	2.449e3	1.192	0.71	0.77	19.2	YES	NO	bb	db	0.336
9	1368-TCDF	22.24	5.354e2	7.484e2	1.425	0.72	0.77	5.8	YES	NO	bb	bb	0.086
10	Total-tetrafurans	25.99	2.721e3	3.551e3	1.192	0.77	0.77	28.0	YES	NO	db	db	0.503
11	Total-tetrafurans	25.90	9.048e2	1.227e3	1.192	0.74	0.77	12.8	YES	NO	bd	dd	0.171
12	2378-TCDF	25.76	1.802e3	2.512e3	1.108	0.72	0.77	19.1	YES	NO	bb	bd	0.372
13	Total-tetrafurans	25.53	1.816e3	2.257e3	1.192	0.80	0.77	15.6	YES	NO	MM	MM	0.326
14	Total-tetrafurans	25.28	5.174e2	7.132e2	1.192	0.73	0.77	6.1	YES	NO	bb	bd	0.099
15	Total-pentafurans	30.12	2.664e3	1.685e3	1.047	1.58	1.55	31.2	YES	NO	bd	bd	0.364
16	12378-PeCDF	29.91	1.874e3	1.374e3	1.015	1.36	1.55	22.0	YES	NO	bb	bb	0.273
17	Total-pentafurans	29.45	1.119e3	8.191e2	1.047	1.37	1.55	16.3	YES	NO	dd	dd	0.162
18	Total-pentafurans	28.65	2.919e3	2.028e3	1.047	1.44	1.55	30.4	YES	NO	dd	dd	0.414
19	Total-pentafurans	28.55	4.486e2	2.520e2	1.047	1.78	1.55	7.9	YES	NO	bd	bd	0.059
20	23478-PeCDF	31.26	3.091e3	2.036e3	1.126	1.52	1.55	34.8	YES	NO	db	db	0.411
21	Total-pentafurans	31.11	2.407e3	1.730e3	1.047	1.39	1.55	25.4	YES	NO	dd	dd	0.346
22	Total-pentafurans	30.99	1.587e3	9.143e2	1.047	1.74	1.55	18.9	YES	NO	bd	bd	0.209
23	Total-pentafurans	30.21	4.380e2	3.192e2	1.047	1.37	1.55	7.2	YES	NO	db	db	0.063
24	Total-hexafurans	34.74	1.147e3	1.037e3	1.045	1.11	1.24	16.3	YES	NO	bb	bd	0.246
25	Total-hexafurans	34.25	3.551e4	2.940e4	1.045	1.21	1.24	555.7	YES	NO	bb	bb	7.307
26	Total-hexafurans	33.95	1.056e3	7.793e2	1.045	1.35	1.24	16.9	YES	NO	bb	bb	0.207
27	Total-hexafurans	33.42	2.992e4	2.492e4	1.045	1.20	1.24	446.9	YES	NO	bb	bb	6.173
28	123468-HXCDF	33.21	8.787e3	7.319e3	1.087	1.20	1.24	133.5	YES	NO	bb	bb	1.647
29	123789-HxCDF	36.90	1.547e3	1.422e3	1.030	1.09	1.24	25.0	YES	NO	bb	bb	0.388
30	234678-HxCDF	35.88	2.891e3	2.432e3	1.052	1.19	1.24	43.1	YES	NO	db	MM	0.591
31	Total-hexafurans	35.86	2.256e3	2.086e3	1.045	1.08	1.24	44.7	YES	NO	bd	MM	0.489
32	Total-hexafurans	35.37	3.053e2	2.877e2	1.045	1.06	1.24	6.1	YES	NO	bb	bb	0.067
33	123678-HxCDF	35.02	3.598e3	2.894e3	1.037	1.24	1.24	54.9	YES	NO	db	db	0.694
34	123478-HxCDF	34.88	7.777e3	7.056e3	1.017	1.10	1.24	127.1	YES	NO	bd	dd	1.621
35	Total-heptafurans	39.42	1.139e5	1.092e5	1.305	1.04	1.05	1960.9	YES	NO	bb	bb	30.237
36	Total-heptafurans	39.17	1.409e3	1.328e3	1.305	1.06	1.05	26.1	YES	NO	bb	bb	0.371
37	1234678-HpCDF	38.76	5.596e4	5.532e4	1.327	1.01	1.05	1008.3	YES	NO	bb	bd	13.201

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDF	45.23	8.841e4	9.634e4	1.447	0.92	0.89	1231.1	YES	NO	bb	bb	34.234
39	1234789-HpCDF	41.01	4.024e3	3.982e3	1.283	1.01	1.05	64.9	YES	NO	bb	bb	1.260
40	Total-penta1	27.17	2.460e4	1.600e4		1.54	1.55	477.1	YES	NO	bb	bb	3.774
41	Total-pentafurans	28.84	1.624e4	1.053e4	1.047	1.54	1.55	124.9	YES	NO	MM	MM	2.241

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.99	9.832e2	1.473e3	0.879	0.67	0.77	18.1	YES	NO	bb	bb	0.303
2	Total-tetradioxins	24.72	8.226e2	1.077e3	0.879	0.76	0.77	12.4	YES	NO	bb	db	0.234
3	Total-tetradioxins	23.78	1.529e3	1.974e3	0.879	0.77	0.77	28.3	YES	NO	dd	bd	0.432
4	1368-TCDD	23.51	1.785e3	2.021e3	0.923	0.88	0.77	34.5	YES	NO	bd	bb	0.447
5	Total-tetradioxins	26.52	3.677e2	5.039e2	0.879	0.73	0.77	6.6	YES	NO	db	db	0.108
6	Total-tetradioxins	25.58	4.323e2	6.401e2	0.879	0.68	0.77	8.6	YES	NO	bd	bd	0.132
7	Total-tetradioxins	25.37	3.896e2	4.586e2	0.879	0.85	0.77	8.0	YES	NO	db	db	0.105

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	29.30	1.956e3	1.127e3	1.331	1.74	1.55	28.4	YES	NO	bb	MM	0.388
2	12479-PECDD	28.82	6.042e3	3.886e3	1.843	1.55	1.55	50.0	YES	NO	bb	bb	0.903
3	12378-PeCDD	31.50	3.481e3	2.283e3	0.995	1.52	1.55	40.0	YES	NO	bb	bb	0.970
4	Total-pentadioxins	30.82	1.801e3	1.094e3	1.331	1.65	1.55	23.4	YES	NO	bb	bb	0.365
5	Total-pentadioxins	30.44	2.698e3	1.920e3	1.331	1.41	1.55	27.6	YES	NO	bb	db	0.582
6	Total-pentadioxins	30.25	2.147e3	1.313e3	1.331	1.64	1.55	33.3	YES	NO	bb	dd	0.436
7	Total-pentadioxins	30.11	3.061e3	2.084e3	1.331	1.47	1.55	42.8	YES	NO	bb	bd	0.648

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.52	8.310e3	6.604e3	0.950	1.26	1.24	90.9	YES	NO	bb	bd	2.180
2	Total-hexadioxins	36.30	2.881e3	2.372e3	1.028	1.21	1.24	32.9	YES	NO	bb	bb	0.710
3	123678-HxCDD	36.13	1.378e4	1.075e4	1.009	1.28	1.24	154.7	YES	NO	db	db	3.374
4	123478-HxCDD	36.01	3.855e3	3.431e3	1.027	1.12	1.24	42.0	YES	NO	bd	bd	0.986
5	Total-hexadioxins	35.24	5.086e3	3.776e3	1.028	1.35	1.24	47.6	YES	NO	db	db	1.198
6	Total-hexadioxins	35.12	4.580e4	3.771e4	1.028	1.21	1.24	313.3	YES	NO	bd	bd	11.285
7	Total-hexadioxins	34.76	8.014e3	6.488e3	1.028	1.24	1.24	86.2	YES	NO	bb	bb	1.960
8	124679-HXCDD	33.99	3.840e4	3.002e4	1.125	1.28	1.24	390.4	YES	NO	bb	bb	8.452

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	1.937e5	1.835e5	1.068	1.06	1.05	1605.4	YES	NO	bb	bb	81.334
2	1234679-HPCDD	39.20	3.206e5	3.009e5	1.211	1.07	1.05	2788.5	YES	NO	bb	bb	118.199

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.99	9.832e2	1.473e3	0.879	0.67	0.77	18.1	YES	NO	bb	bb	0.303
2	Total-tetradioxins	24.72	8.226e2	1.077e3	0.879	0.76	0.77	12.4	YES	NO	bb	db	0.234
3	Total-tetradioxins	23.78	1.529e3	1.974e3	0.879	0.77	0.77	28.3	YES	NO	dd	bd	0.432
4	1368-TCDD	23.51	1.785e3	2.021e3	0.923	0.88	0.77	34.5	YES	NO	bd	bb	0.447
5	Total-tetradioxins	26.52	3.677e2	5.039e2	0.879	0.73	0.77	6.6	YES	NO	db	db	0.108
6	Total-tetradioxins	25.58	4.323e2	6.401e2	0.879	0.68	0.77	8.6	YES	NO	bd	bd	0.132
7	Total-tetradioxins	25.37	3.896e2	4.586e2	0.879	0.85	0.77	8.0	YES	NO	db	db	0.105
8	Total-pentadioxins	29.30	1.956e3	1.127e3	1.331	1.74	1.55	28.4	YES	NO	bb	MM	0.388
9	12479-PECDD	28.82	6.042e3	3.886e3	1.843	1.55	1.55	50.0	YES	NO	bb	bb	0.903
10	12378-PeCDD	31.50	3.481e3	2.283e3	0.995	1.52	1.55	40.0	YES	NO	bb	bb	0.970
11	Total-pentadioxins	30.82	1.801e3	1.094e3	1.331	1.65	1.55	23.4	YES	NO	bb	bb	0.365
12	Total-pentadioxins	30.44	2.698e3	1.920e3	1.331	1.41	1.55	27.6	YES	NO	bb	db	0.582
13	Total-pentadioxins	30.25	2.147e3	1.313e3	1.331	1.64	1.55	33.3	YES	NO	bb	dd	0.436
14	Total-pentadioxins	30.11	3.061e3	2.084e3	1.331	1.47	1.55	42.8	YES	NO	bb	bd	0.648
15	123789-HxCDD	36.52	8.310e3	6.604e3	0.950	1.26	1.24	90.9	YES	NO	bb	bd	2.180
16	Total-hexadioxins	36.30	2.881e3	2.372e3	1.028	1.21	1.24	32.9	YES	NO	bb	bb	0.710
17	123678-HxCDD	36.13	1.378e4	1.075e4	1.009	1.28	1.24	154.7	YES	NO	db	db	3.374
18	123478-HxCDD	36.01	3.855e3	3.431e3	1.027	1.12	1.24	42.0	YES	NO	bd	bd	0.986
19	Total-hexadioxins	35.24	5.086e3	3.776e3	1.028	1.35	1.24	47.6	YES	NO	db	db	1.198
20	Total-hexadioxins	35.12	4.580e4	3.771e4	1.028	1.21	1.24	313.3	YES	NO	bd	bd	11.285
21	Total-hexadioxins	34.76	8.014e3	6.488e3	1.028	1.24	1.24	86.2	YES	NO	bb	bb	1.960
22	124679-HXCDD	33.99	3.840e4	3.002e4	1.125	1.28	1.24	390.4	YES	NO	bb	bb	8.452
23	1234678-HpCDD	40.26	1.937e5	1.835e5	1.068	1.06	1.05	1605.4	YES	NO	bb	bb	81.334
24	1234679-HPCDD	39.20	3.206e5	3.009e5	1.211	1.07	1.05	2788.5	YES	NO	bb	bb	118.199
25	OCDD	44.99	1.264e6	1.400e6	1.181	0.90	0.89	10986.3	YES	NO	bb	bb	604.743

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.84	1.635e3	1.881e3	1.192	0.87	0.77	17.8	YES	NO	bb	bb	0.282
2	Total-tetrafurans	24.66	2.410e3	3.073e3	1.192	0.78	0.77	25.5	YES	NO	db	db	0.439
3	Total-tetrafurans	24.51	1.056e3	1.572e3	1.192	0.67	0.77	12.2	YES	NO	dd	dd	0.211
4	Total-tetrafurans	24.42	1.869e3	2.565e3	1.192	0.73	0.77	19.0	YES	NO	bd	dd	0.355
5	Total-tetrafurans	23.87	1.306e3	1.945e3	1.192	0.67	0.77	15.1	YES	NO	db	dd	0.260
6	Total-tetrafurans	23.75	1.697e3	2.582e3	1.192	0.66	0.77	24.1	YES	NO	bd	dd	0.343
7	Total-tetrafurans	23.08	3.871e3	5.234e3	1.192	0.74	0.77	42.9	YES	NO	bd	bd	0.730
8	Total-tetrafurans	22.51	1.747e3	2.449e3	1.192	0.71	0.77	19.2	YES	NO	bb	db	0.336
9	1368-TCDF	22.24	5.354e2	7.484e2	1.425	0.72	0.77	5.8	YES	NO	bb	bb	0.086
10	Total-tetrafurans	25.99	2.721e3	3.551e3	1.192	0.77	0.77	28.0	YES	NO	db	db	0.503
11	Total-tetrafurans	25.90	9.048e2	1.227e3	1.192	0.74	0.77	12.8	YES	NO	bd	dd	0.171
12	2378-TCDF	25.76	1.802e3	2.512e3	1.108	0.72	0.77	19.1	YES	NO	bb	bd	0.372
13	Total-tetrafurans	25.53	1.816e3	2.257e3	1.192	0.80	0.77	15.6	YES	NO	MM	MM	0.326
14	Total-tetrafurans	25.28	5.174e2	7.132e2	1.192	0.73	0.77	6.1	YES	NO	bb	bd	0.099
15	Total-pentafurans	30.12	2.664e3	1.685e3	1.047	1.58	1.55	31.2	YES	NO	bd	bd	0.364
16	12378-PeCDF	29.91	1.874e3	1.374e3	1.015	1.36	1.55	22.0	YES	NO	bb	bb	0.273
17	Total-pentafurans	29.45	1.119e3	8.191e2	1.047	1.37	1.55	16.3	YES	NO	dd	dd	0.162
18	Total-pentafurans	28.65	2.919e3	2.028e3	1.047	1.44	1.55	30.4	YES	NO	dd	dd	0.414
19	Total-pentafurans	28.55	4.486e2	2.520e2	1.047	1.78	1.55	7.9	YES	NO	bd	bd	0.059
20	23478-PeCDF	31.26	3.091e3	2.036e3	1.126	1.52	1.55	34.8	YES	NO	db	db	0.411
21	Total-pentafurans	31.11	2.407e3	1.730e3	1.047	1.39	1.55	25.4	YES	NO	dd	dd	0.346
22	Total-pentafurans	30.99	1.587e3	9.143e2	1.047	1.74	1.55	18.9	YES	NO	bd	bd	0.209
23	Total-pentafurans	30.21	4.380e2	3.192e2	1.047	1.37	1.55	7.2	YES	NO	db	db	0.063
24	Total-hexafurans	34.74	1.147e3	1.037e3	1.045	1.11	1.24	16.3	YES	NO	bb	bd	0.246
25	Total-hexafurans	34.25	3.551e4	2.940e4	1.045	1.21	1.24	555.7	YES	NO	bb	bb	7.307
26	Total-hexafurans	33.95	1.056e3	7.793e2	1.045	1.35	1.24	16.9	YES	NO	bb	bb	0.207
27	Total-hexafurans	33.42	2.992e4	2.492e4	1.045	1.20	1.24	446.9	YES	NO	bb	bb	6.173
28	123468-HXCDF	33.21	8.787e3	7.319e3	1.087	1.20	1.24	133.5	YES	NO	bb	bb	1.647
29	123789-HxCDF	36.90	1.547e3	1.422e3	1.030	1.09	1.24	25.0	YES	NO	bb	bb	0.388
30	234678-HxCDF	35.88	2.891e3	2.432e3	1.052	1.19	1.24	43.1	YES	NO	db	MM	0.591
31	Total-hexafurans	35.86	2.256e3	2.086e3	1.045	1.08	1.24	44.7	YES	NO	bd	MM	0.489
32	Total-hexafurans	35.37	3.053e2	2.877e2	1.045	1.06	1.24	6.1	YES	NO	bb	bb	0.067
33	123678-HxCDF	35.02	3.598e3	2.894e3	1.037	1.24	1.24	54.9	YES	NO	db	db	0.694
34	123478-HxCDF	34.88	7.777e3	7.056e3	1.017	1.10	1.24	127.1	YES	NO	bd	dd	1.621
35	Total-heptafurans	39.42	1.139e5	1.092e5	1.305	1.04	1.05	1960.9	YES	NO	bb	bb	30.237
36	Total-heptafurans	39.17	1.409e3	1.328e3	1.305	1.06	1.05	26.1	YES	NO	bb	bb	0.371
37	1234678-HpCDF	38.76	5.596e4	5.532e4	1.327	1.01	1.05	1008.3	YES	NO	bb	bd	13.201

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDF	45.23	8.841e4	9.634e4	1.447	0.92	0.89	1231.1	YES	NO	bb	bb	34.234
39	1234789-HpCDF	41.01	4.024e3	3.982e3	1.283	1.01	1.05	64.9	YES	NO	bb	bb	1.260
40	Total-penta1	27.17	2.460e4	1.600e4		1.54	1.55	477.1	YES	NO	bb	bb	3.774
41	Total-pentafurans	28.84	1.624e4	1.053e4	1.047	1.54	1.55	124.9	YES	NO	MM	MM	2.241
42	Total-tetradioxins	24.99	9.832e2	1.473e3	0.879	0.67	0.77	18.1	YES	NO	bb	bb	0.303
43	Total-tetradioxins	24.72	8.226e2	1.077e3	0.879	0.76	0.77	12.4	YES	NO	bb	db	0.234
44	Total-tetradioxins	23.78	1.529e3	1.974e3	0.879	0.77	0.77	28.3	YES	NO	dd	bd	0.432
45	1368-TCDD	23.51	1.785e3	2.021e3	0.923	0.88	0.77	34.5	YES	NO	bd	bb	0.447
46	Total-tetradioxins	26.52	3.677e2	5.039e2	0.879	0.73	0.77	6.6	YES	NO	db	db	0.108
47	Total-tetradioxins	25.58	4.323e2	6.401e2	0.879	0.68	0.77	8.6	YES	NO	bd	bd	0.132
48	Total-tetradioxins	25.37	3.896e2	4.586e2	0.879	0.85	0.77	8.0	YES	NO	db	db	0.105
49	Total-pentadioxins	29.30	1.956e3	1.127e3	1.331	1.74	1.55	28.4	YES	NO	bb	MM	0.388
50	12479-PECDD	28.82	6.042e3	3.886e3	1.843	1.55	1.55	50.0	YES	NO	bb	bb	0.903
51	12378-PeCDD	31.50	3.481e3	2.283e3	0.995	1.52	1.55	40.0	YES	NO	bb	bb	0.970
52	Total-pentadioxins	30.82	1.801e3	1.094e3	1.331	1.65	1.55	23.4	YES	NO	bb	bb	0.365
53	Total-pentadioxins	30.44	2.698e3	1.920e3	1.331	1.41	1.55	27.6	YES	NO	bb	db	0.582
54	Total-pentadioxins	30.25	2.147e3	1.313e3	1.331	1.64	1.55	33.3	YES	NO	bb	dd	0.436
55	Total-pentadioxins	30.11	3.061e3	2.084e3	1.331	1.47	1.55	42.8	YES	NO	bb	bd	0.648
56	123789-HxCDD	36.52	8.310e3	6.604e3	0.950	1.26	1.24	90.9	YES	NO	bb	bd	2.180
57	Total-hexadioxins	36.30	2.881e3	2.372e3	1.028	1.21	1.24	32.9	YES	NO	bb	bb	0.710
58	123678-HxCDD	36.13	1.378e4	1.075e4	1.009	1.28	1.24	154.7	YES	NO	db	db	3.374
59	123478-HxCDD	36.01	3.855e3	3.431e3	1.027	1.12	1.24	42.0	YES	NO	bd	bd	0.986
60	Total-hexadioxins	35.24	5.086e3	3.776e3	1.028	1.35	1.24	47.6	YES	NO	db	db	1.198
61	Total-hexadioxins	35.12	4.580e4	3.771e4	1.028	1.21	1.24	313.3	YES	NO	bd	bd	11.285
62	Total-hexadioxins	34.76	8.014e3	6.488e3	1.028	1.24	1.24	86.2	YES	NO	bb	bb	1.960
63	124679-HXCDD	33.99	3.840e4	3.002e4	1.125	1.28	1.24	390.4	YES	NO	bb	bb	8.452
64	1234678-HpCDD	40.26	1.937e5	1.835e5	1.068	1.06	1.05	1605.4	YES	NO	bb	bb	81.334
65	1234679-HPCDD	39.20	3.206e5	3.009e5	1.211	1.07	1.05	2788.5	YES	NO	bb	bb	118.199
66	OCDD	44.99	1.264e6	1.400e6	1.181	0.90	0.89	10986.3	YES	NO	bb	bb	604.743

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.08	1.268e5					4.8	YES		bb		
2	FUNCTION1 PFK	22.96	1.641e5					3.7	YES		bb		
3	FUNCTION1 PFK	22.19	1.215e6					9.6	YES		bb		
4	FUNCTION1 PFK	21.97	4.129e5					14.5	YES		db		
5	FUNCTION1 PFK	21.60	8.495e6					28.0	YES		bd		
6	FUNCTION1 PFK	21.15	1.044e4					1.3	NO		bb		
7	FUNCTION1 PFK	23.33	4.068e5					3.3	YES		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.65	7.919e5					5.4	YES		db		0.000
2	FUNCTION2 PFK	29.39	1.829e5					10.9	YES		bd		0.000
3	FUNCTION2 PFK	29.19	8.835e5					12.9	YES		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.17	4.989e6					22.6	YES		bb		0.000
2	FUNCTION3 PFK	36.44	4.707e6					13.6	YES		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	42.74	1.532e4					1.3	NO		bb		
2	FUNCTION4 PFK	42.57	3.698e4					1.9	NO		bb		
3	FUNCTION4 PFK	42.42	1.281e4					2.1	NO		bb		
4	FUNCTION4 PFK	42.32	9.601e3					1.6	NO		bb		
5	FUNCTION4 PFK	41.32	9.110e3					1.6	NO		bb		
6	FUNCTION4 PFK	40.68	9.965e3					1.6	NO		bb		

ID: 21G0138-13, Name: 21091129, Date: 12-Sep-2021, Time: 09:36:30, Conditions: AUTOSPEC01, User: pk

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.82	4.118e3					0.9	NO		bb		
2	FUNCTION5 PFK	45.61	2.412e3					0.8	NO		bb		
3	FUNCTION5 PFK	45.02	2.622e3					0.8	NO		bb		
4	FUNCTION5 PFK	44.88	6.937e3					1.2	NO		bb		
5	FUNCTION5 PFK	44.64	2.703e3					1.1	NO		bb		
6	FUNCTION5 PFK	44.60	8.566e3					1.7	NO		bb		
7	FUNCTION5 PFK	43.46	2.427e6					36.6	YES		db		
8	FUNCTION5 PFK	43.32	1.978e6					44.9	YES		dd		
9	FUNCTION5 PFK	43.12	6.549e5					56.2	YES		dd		
10	FUNCTION5 PFK	43.06	8.862e5					58.7	YES		bd		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	23.63	1.656e2					3.1	YES		bd		0.000
2	FUNCTION1 HXCD...	23.42	8.344e1					2.4	NO		bb		0.000
3	FUNCTION1 HXCD...	22.92	9.801e1					1.9	NO		bb		0.000
4	FUNCTION1 HXCD...	22.31	8.258e1					2.3	NO		bb		0.000
5	FUNCTION1 HXCD...	21.45	1.799e2					1.2	NO		bb		0.000
6	FUNCTION1 HXCD...	27.15	9.486e1					1.3	NO		db		0.000
7	FUNCTION1 HXCD...	27.00	1.558e2					2.9	NO		bd		0.000
8	FUNCTION1 HXCD...	26.40	9.250e1					1.9	NO		bb		0.000
9	FUNCTION1 HXCD...	25.78	1.008e2					1.9	NO		bb		0.000
10	FUNCTION1 HXCD...	24.96	8.006e1					1.4	NO		db		0.000
11	FUNCTION1 HXCD...	24.76	2.115e2					2.1	NO		bd		0.000
12	FUNCTION1 HXCD...	24.46	1.009e2					1.4	NO		bb		0.000
13	FUNCTION1 HXCD...	24.08	7.787e1					2.7	NO		bb		0.000
14	FUNCTION1 HXCD...	23.73	1.899e2					3.2	YES		db		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	23.36	1.034e2					2.7	NO		bb		0.000
2	FUNCTION1 HPCD...	23.05	1.002e2					2.5	NO		bb		0.000
3	FUNCTION1 HPCD...	22.46	1.464e2					1.8	NO		bb		0.000
4	FUNCTION1 HPCD...	22.04	2.978e3					54.9	YES		bb		0.000
5	FUNCTION1 HPCD...	21.83	1.121e2					1.9	NO		bb		0.000
6	FUNCTION1 HPCD...	21.35	8.179e1					1.6	NO		bb		0.000
7	FUNCTION1 HPCD...	27.89	1.254e2					1.6	NO		bb		0.000
8	FUNCTION1 HPCD...	26.03	1.074e2					2.0	NO		bb		0.000
9	FUNCTION1 HPCD...	25.34	8.930e1					1.4	NO		bb		0.000
10	FUNCTION1 HPCD...	24.49	1.065e2					2.1	NO		bb		0.000
11	FUNCTION1 HPCD...	24.04	1.151e2					2.8	NO		bb		0.000
12	FUNCTION1 HPCD...	23.78	1.516e2					2.6	NO		bb		0.000
13	FUNCTION1 HPCD...	23.64	7.557e1					1.4	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.40	7.884e1					2.7	NO		bb		0.000
2	FUNCTION2 HPCD...	30.76	1.416e2					2.6	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.51	1.778e2					4.2	YES		bb		0.000
2	FUNCTION3 OCDPE	36.12	1.479e2					3.6	YES		db		0.000
3	FUNCTION3 OCDPE	35.99	1.330e2					2.9	NO		bd		0.000
4	FUNCTION3 OCDPE	34.19	1.444e2					2.4	NO		bb		0.000
5	FUNCTION3 OCDPE	34.00	7.497e1					2.4	NO		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.40	1.905e3					49.0	YES		bb		0.000

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ID: 21G0138-13, Name: 21091129, Date: 12-Sep-2021, Time: 09:36:30, Conditions: AUTOSPEC01, User: pk

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.04	8.179e1					2.9	NO		bb		0.000

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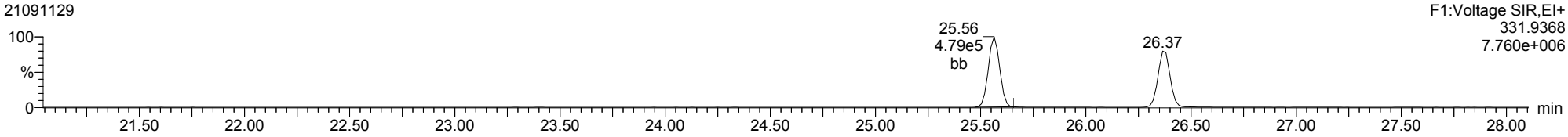

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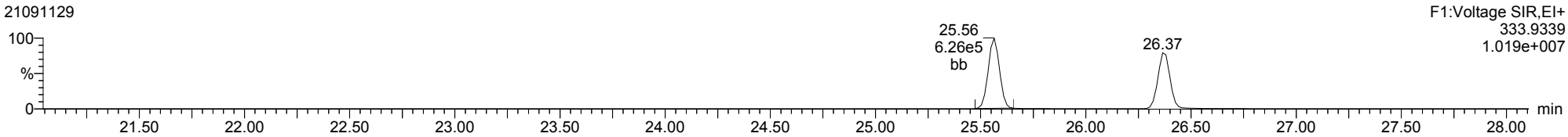

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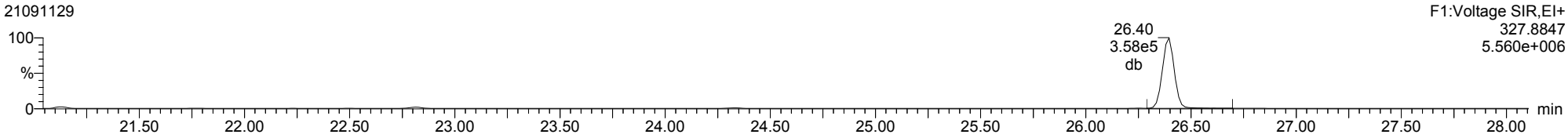

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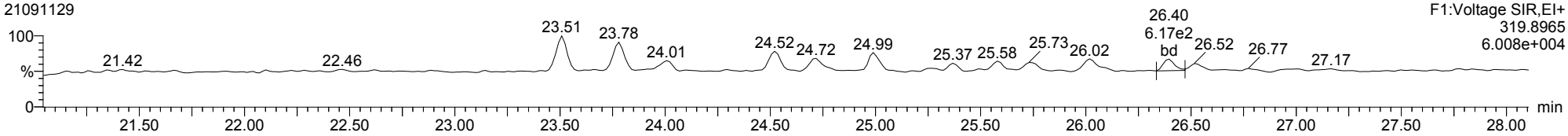

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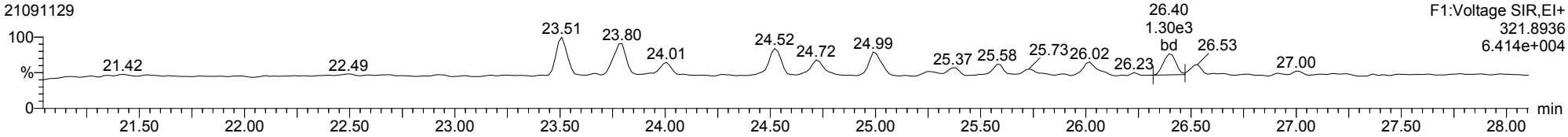

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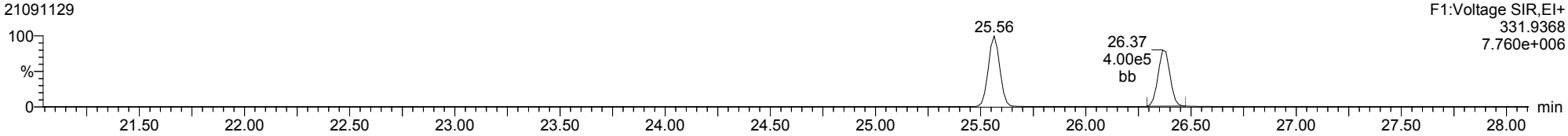

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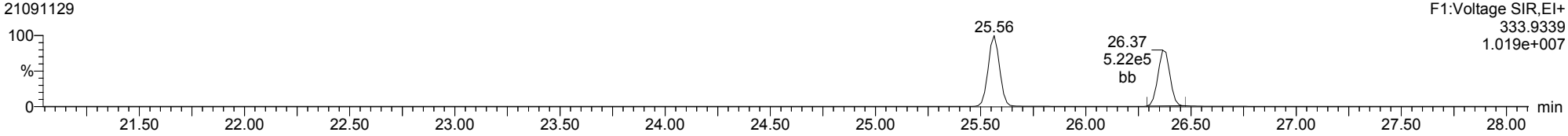

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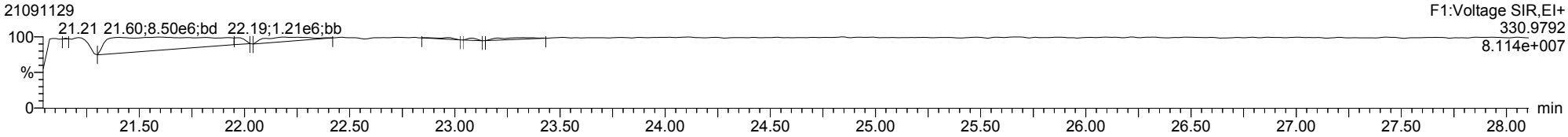

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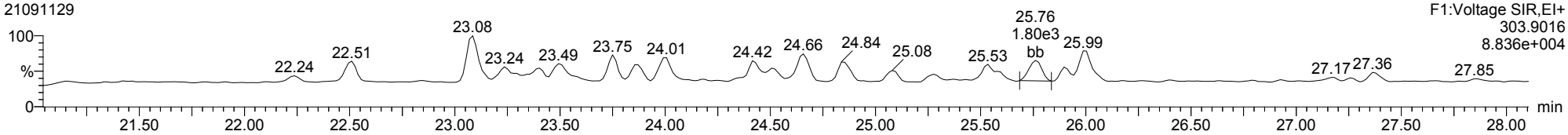

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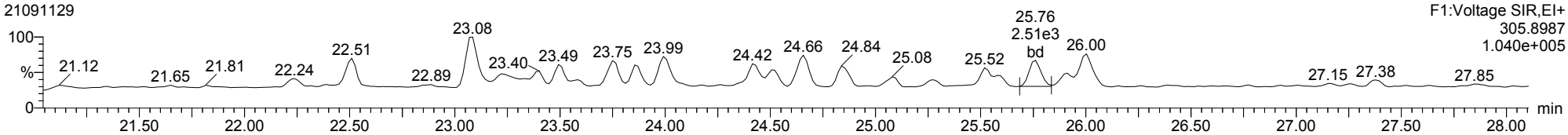

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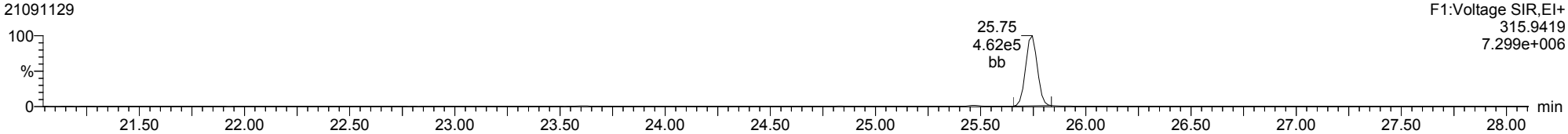

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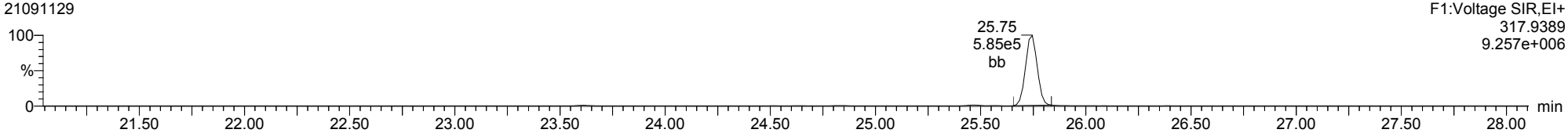
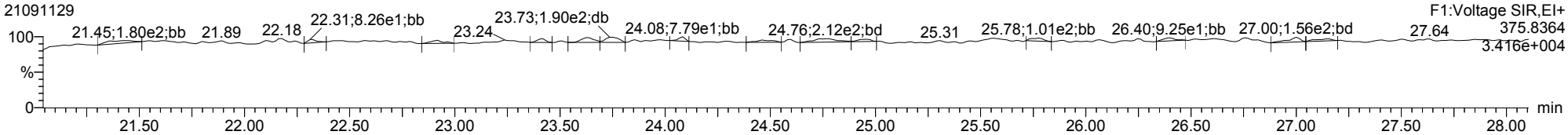


FUNCTION1 HXCDPE



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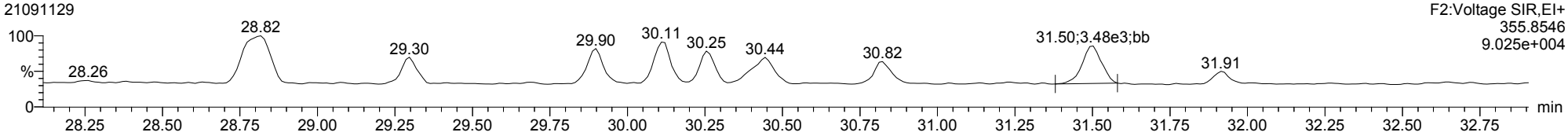
12378-PeCDD



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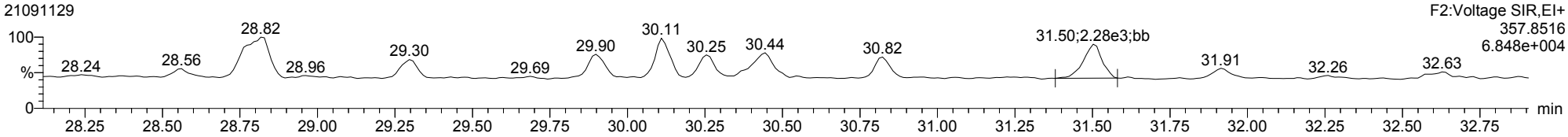

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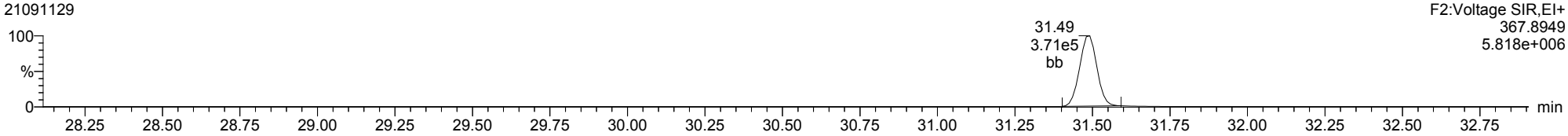

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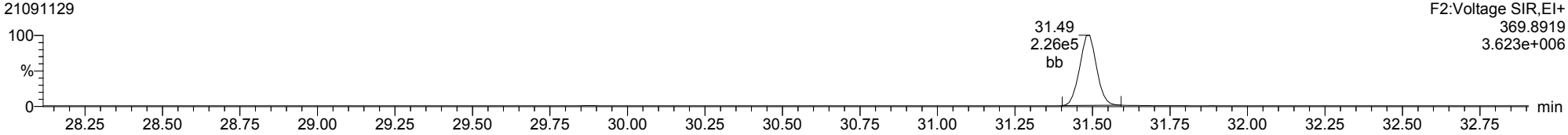

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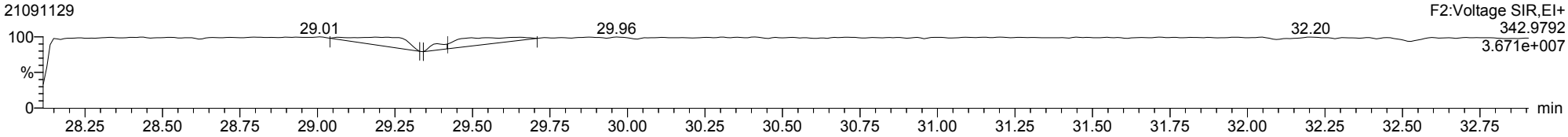

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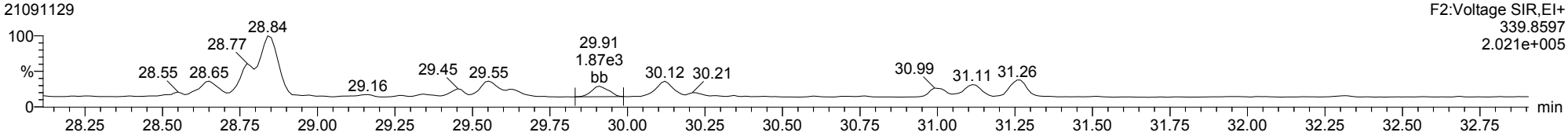

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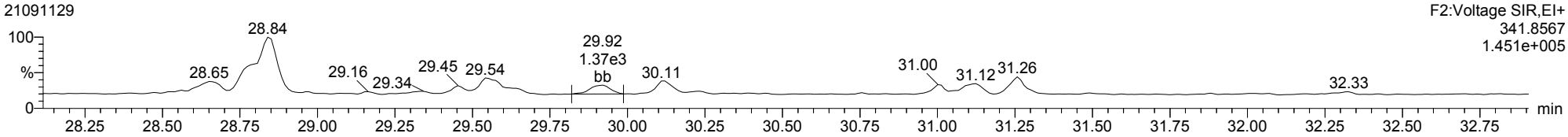

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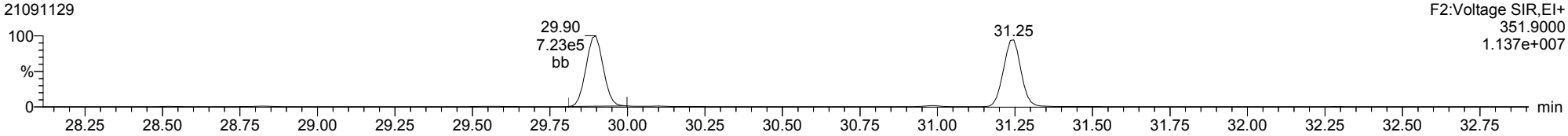

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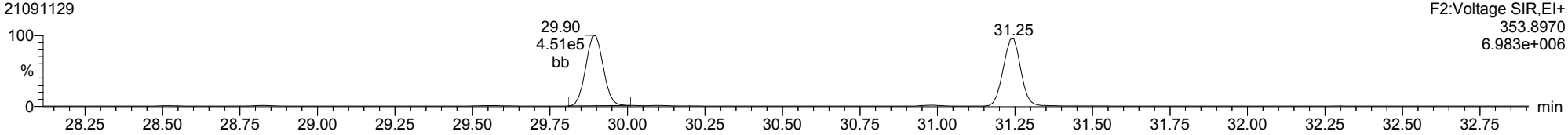
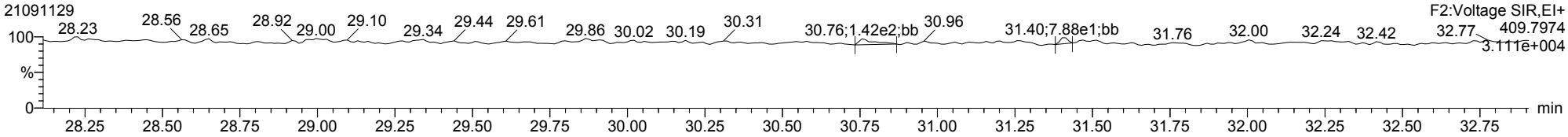


FUNCTION2 HPCDPE



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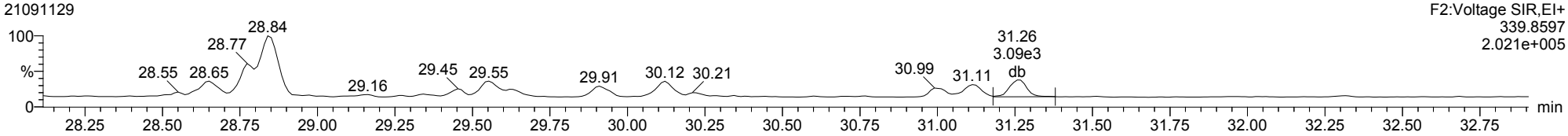
23478-PeCDF



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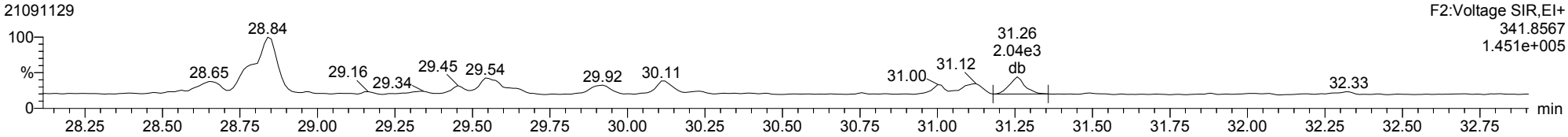

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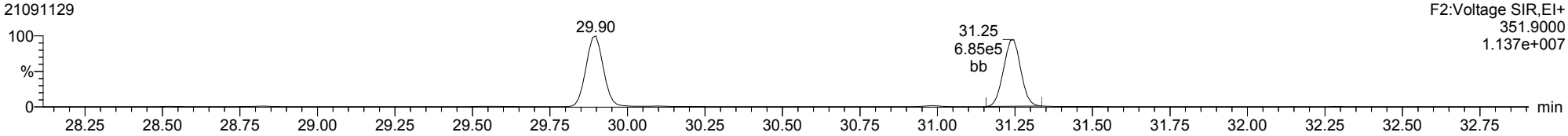

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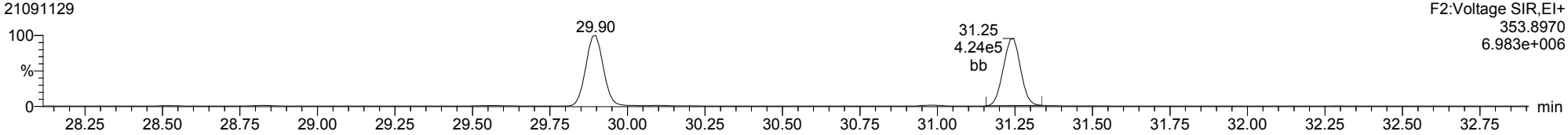

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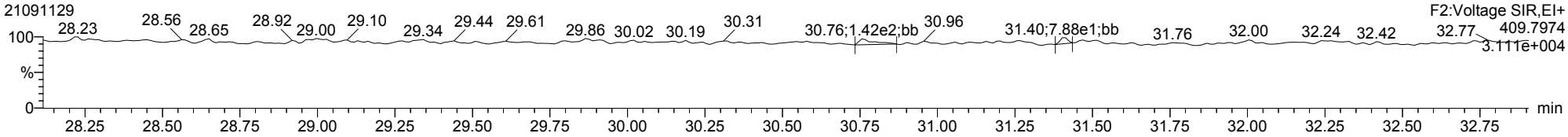

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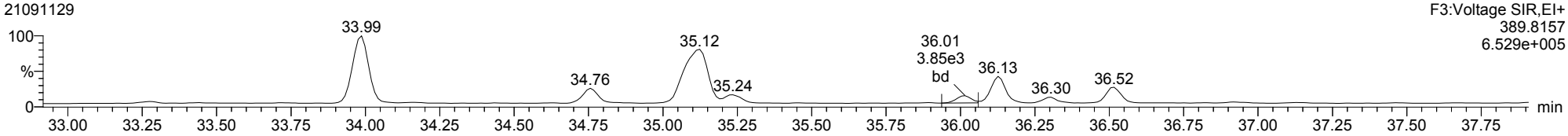
123478-HxCDD



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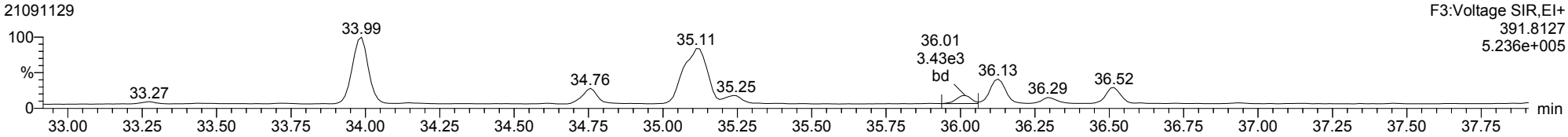

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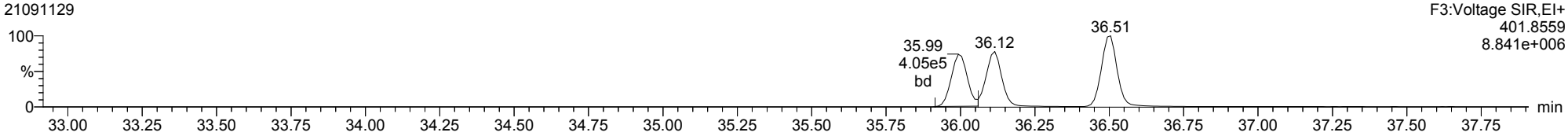

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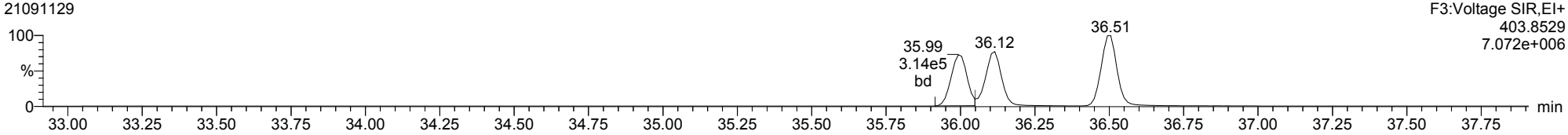

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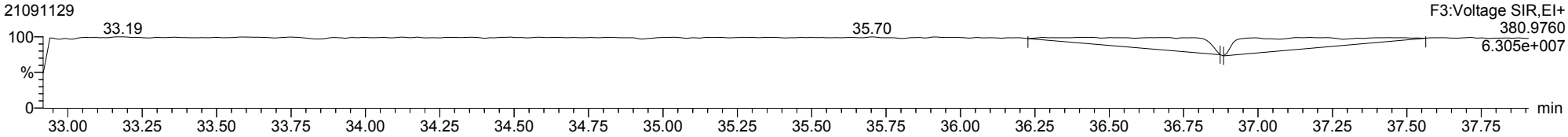

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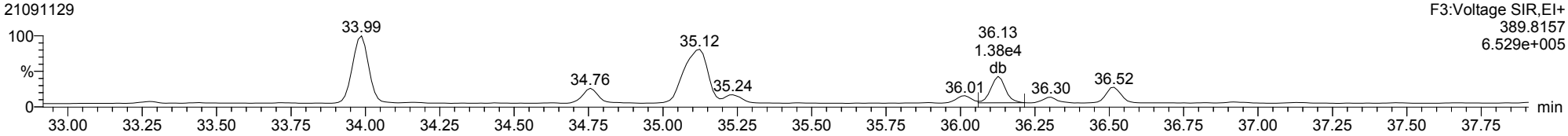

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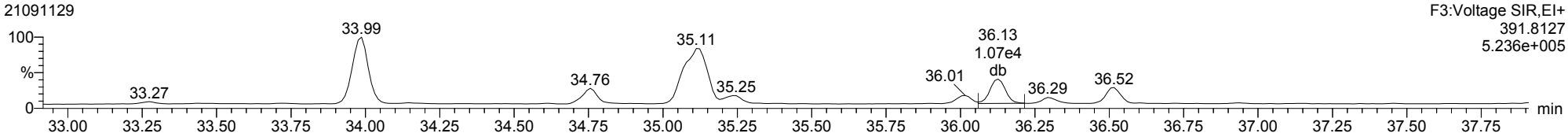

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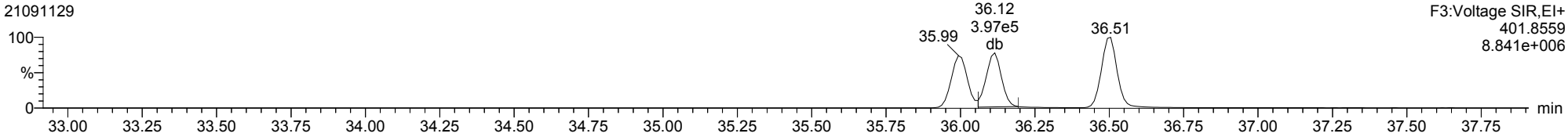

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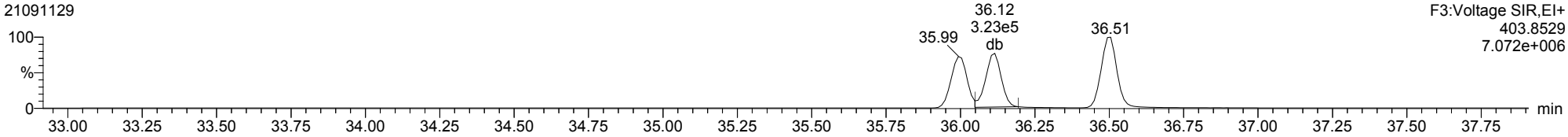

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ID: 21G0138-13, Name: 21091129, Date: 12-Sep-2021, Time: 09:36:30, Conditions: AUTOSPEC01, User: pk

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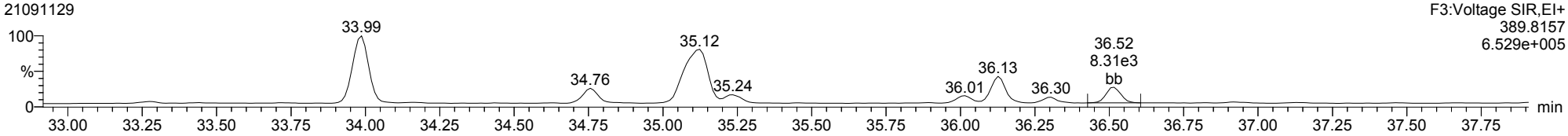

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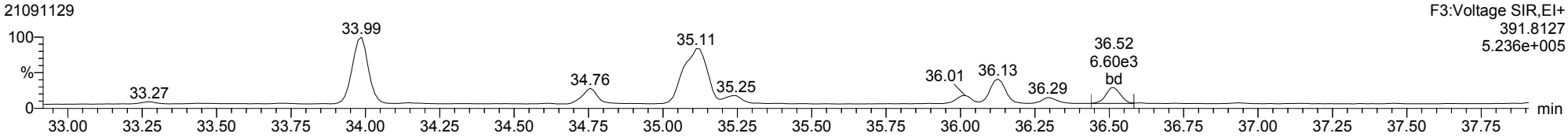

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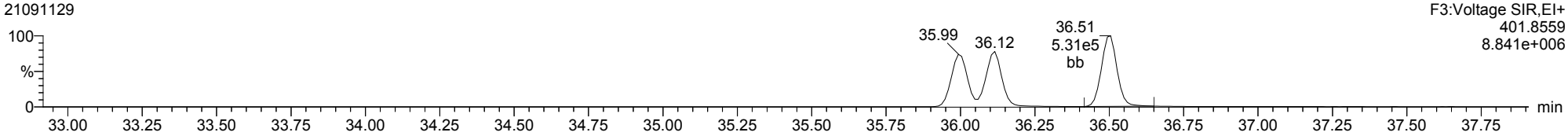

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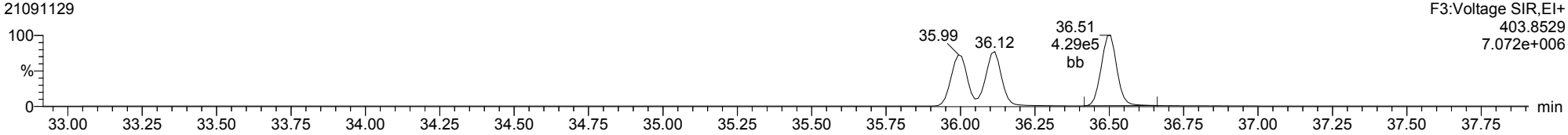

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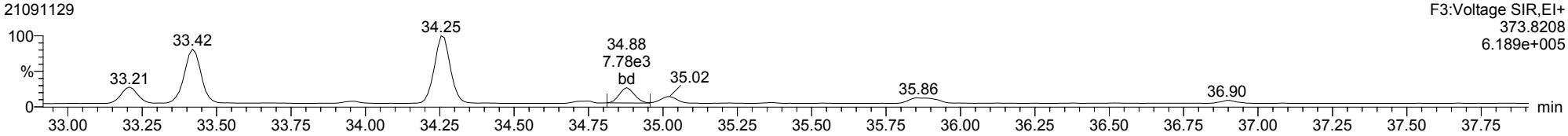

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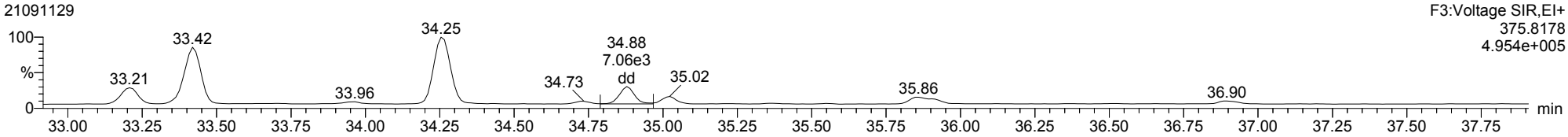

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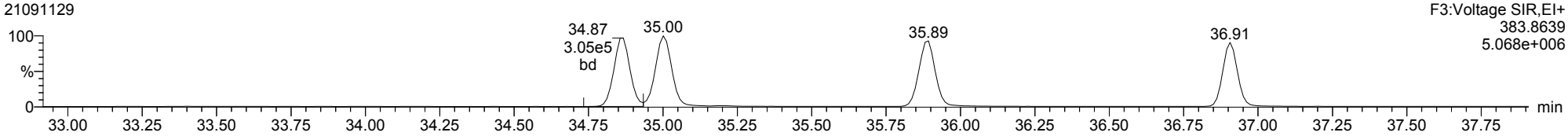

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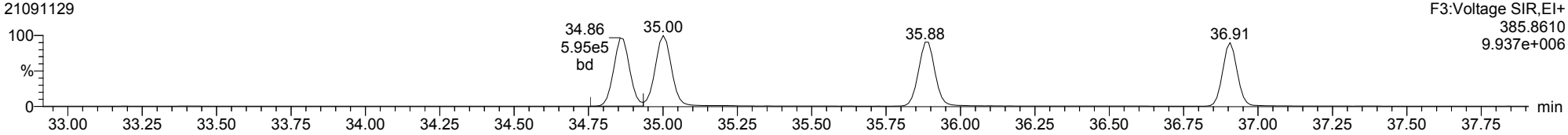

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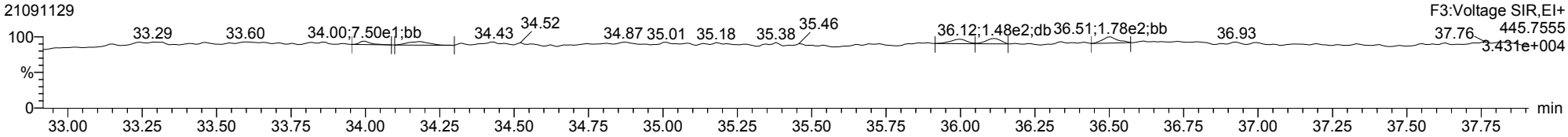

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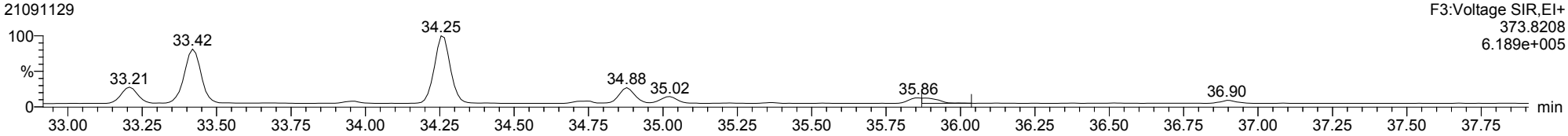

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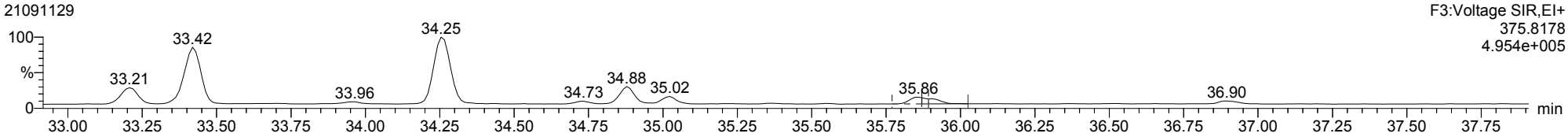

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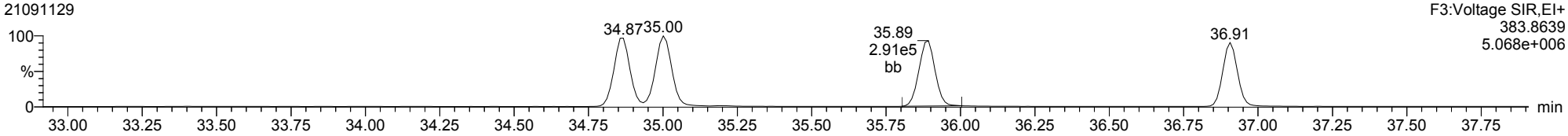

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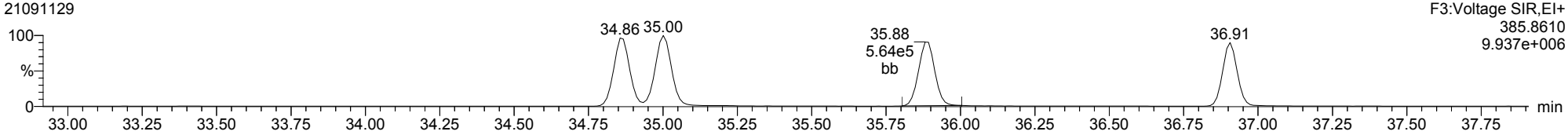

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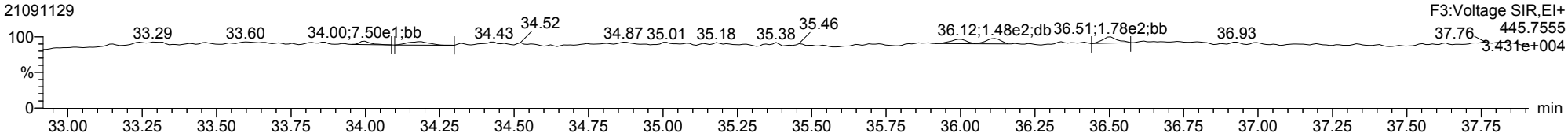

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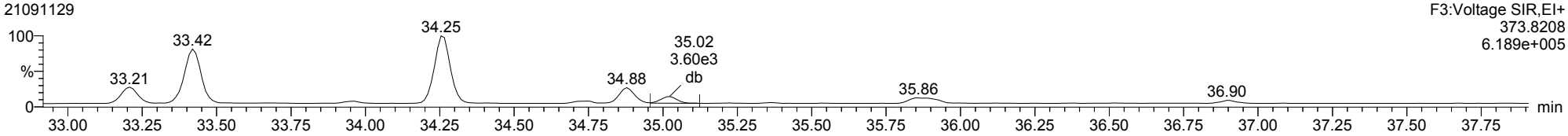

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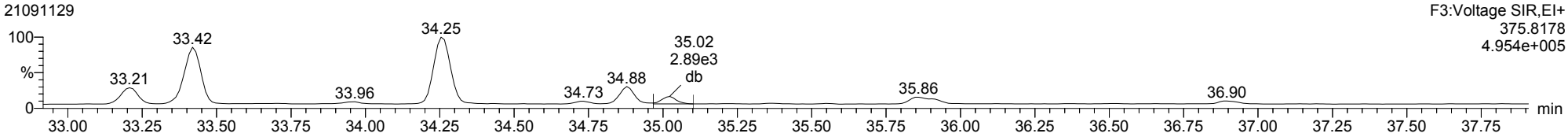

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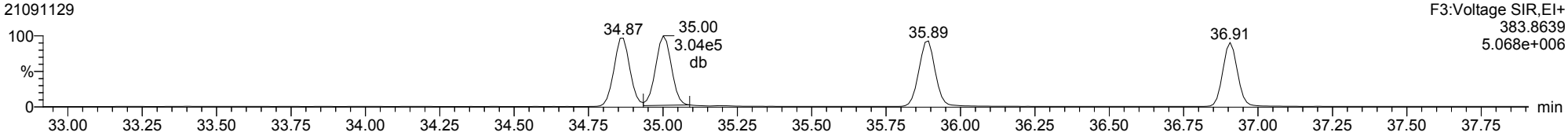

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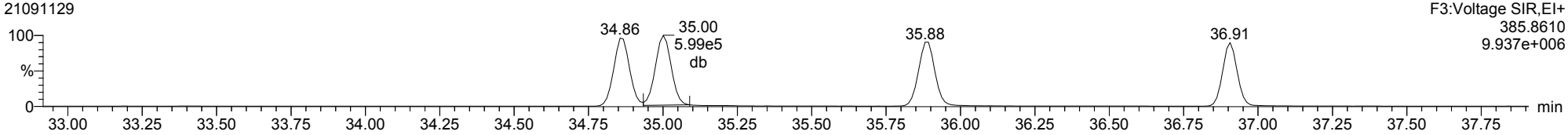

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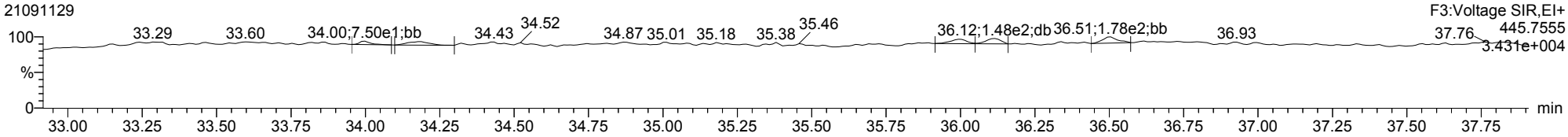

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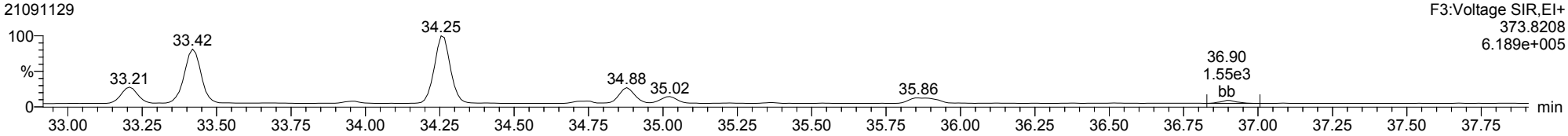

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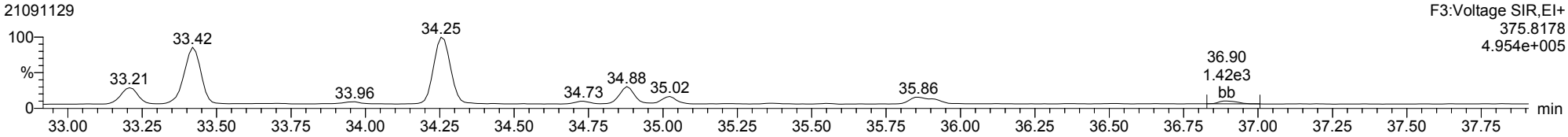

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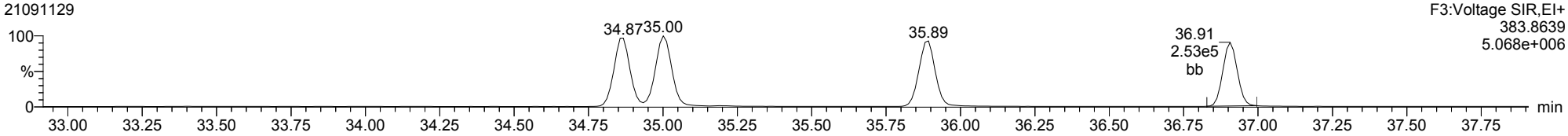

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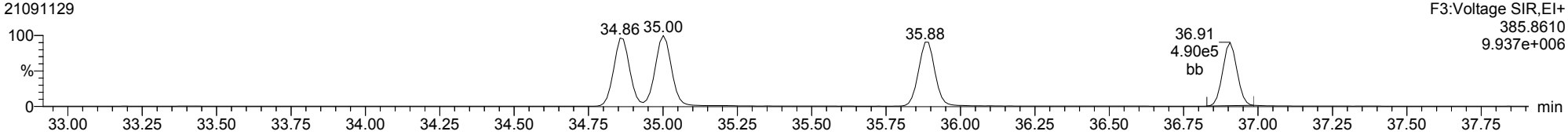

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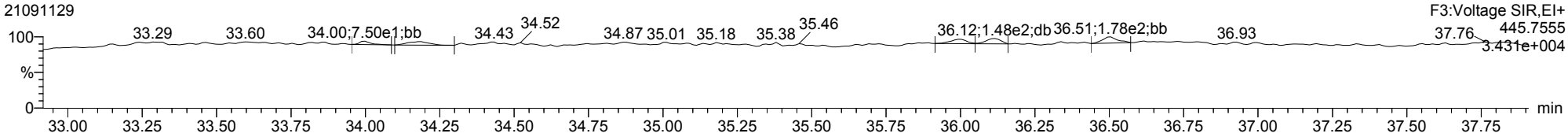

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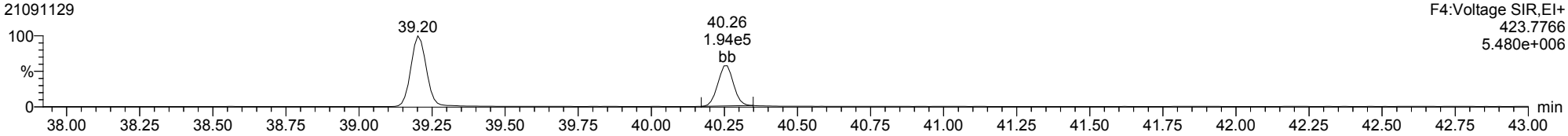

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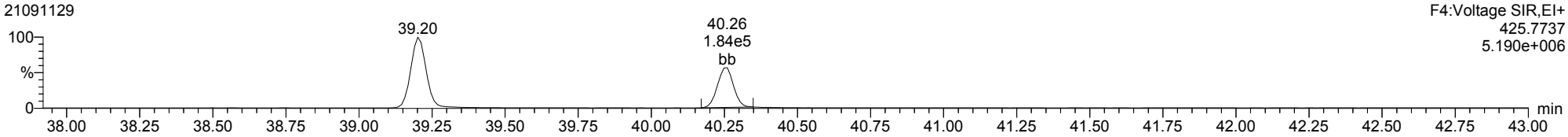

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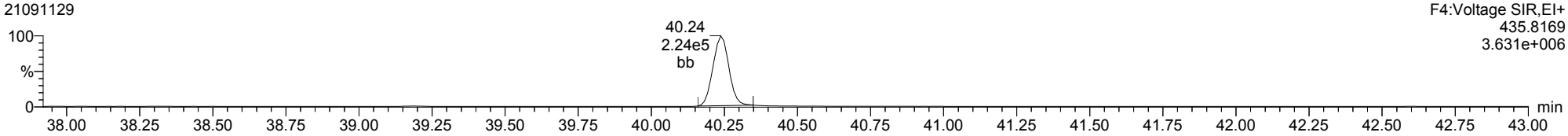

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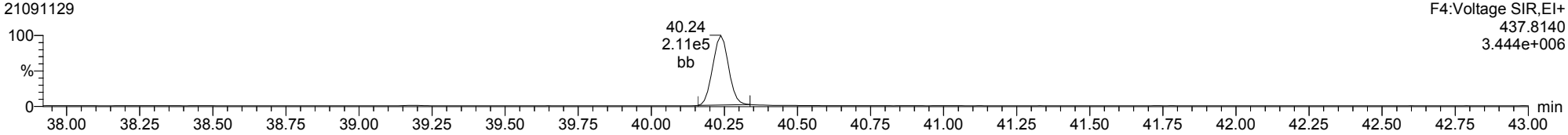

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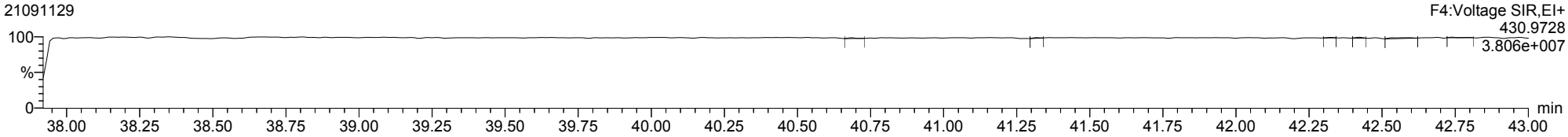

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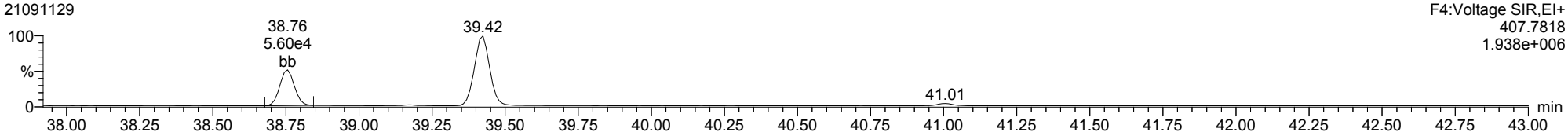

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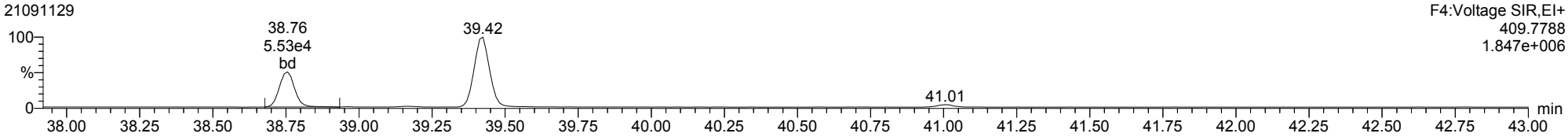

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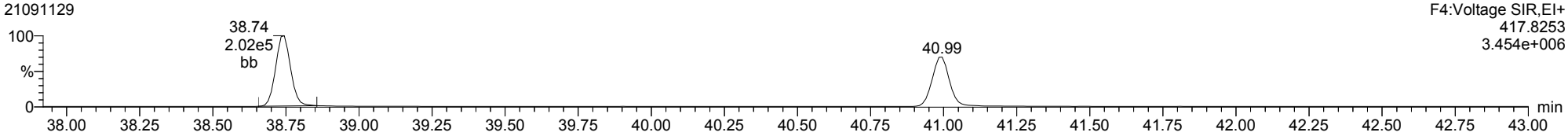

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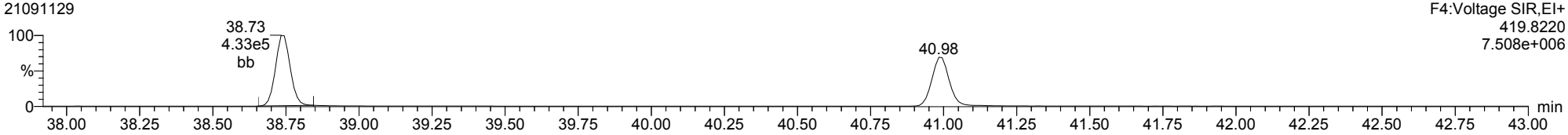

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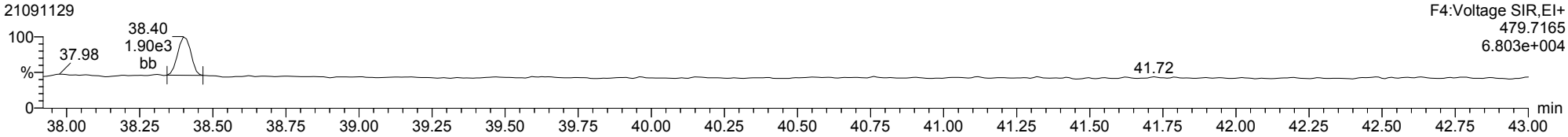

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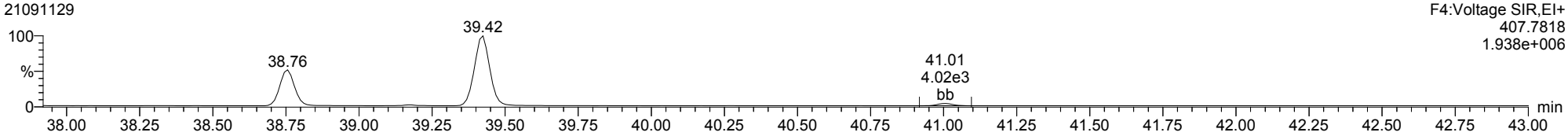

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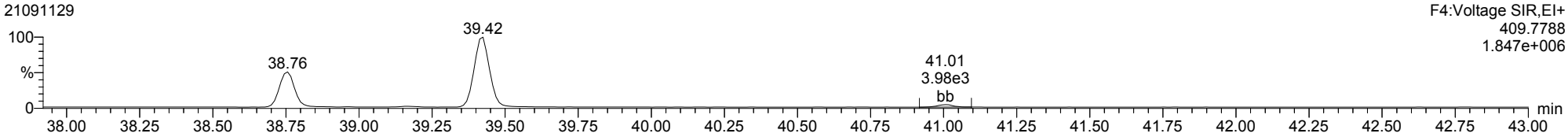

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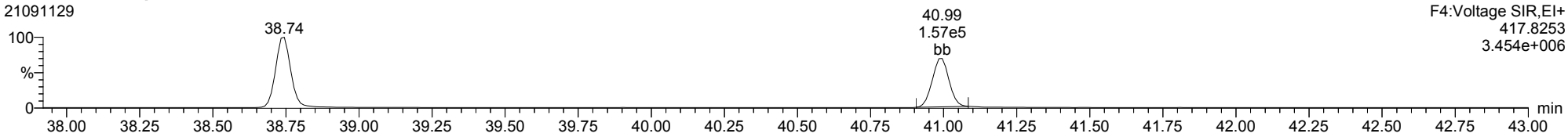

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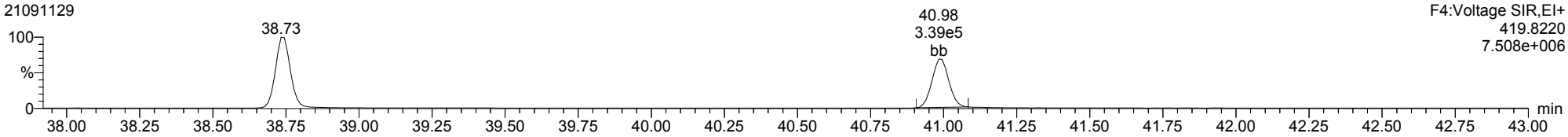

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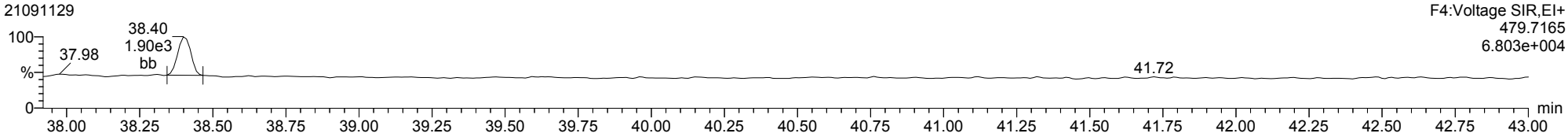

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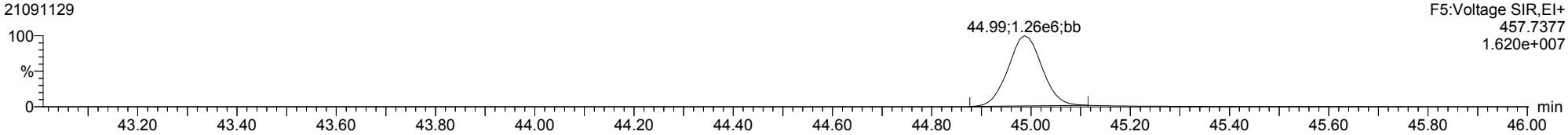

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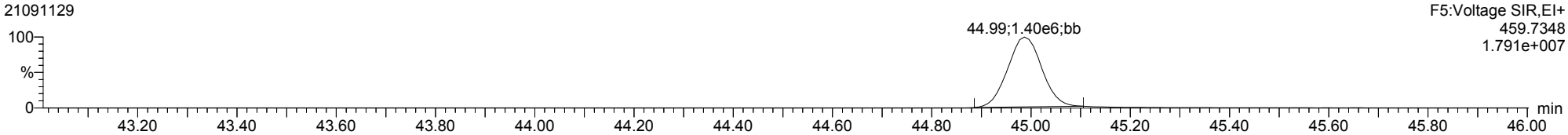

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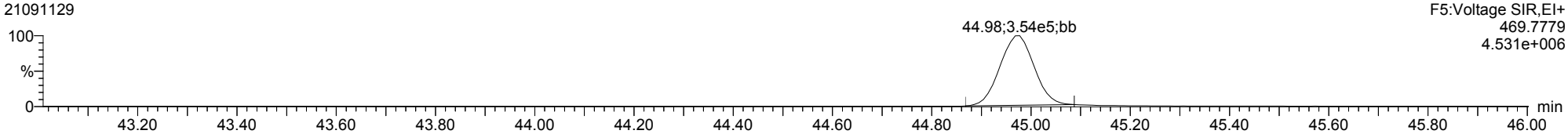

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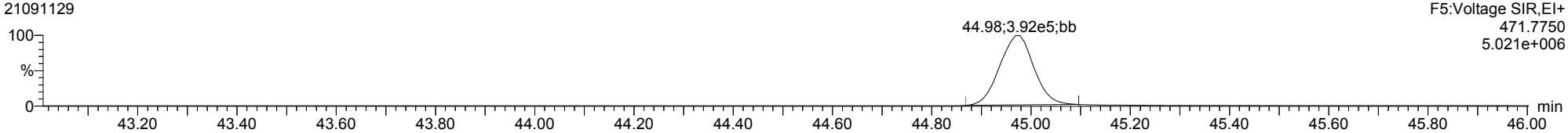

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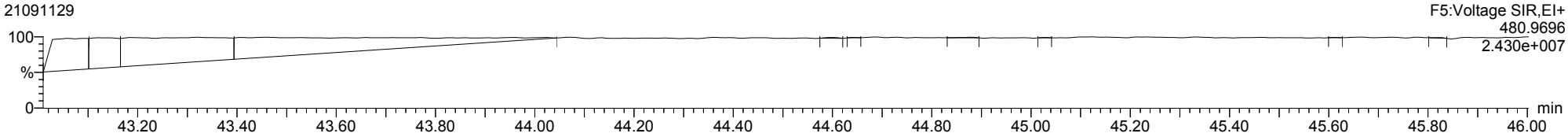

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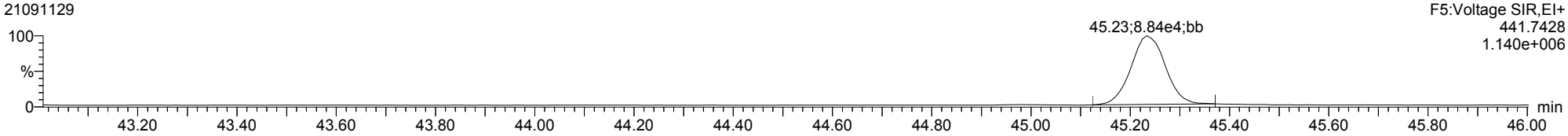

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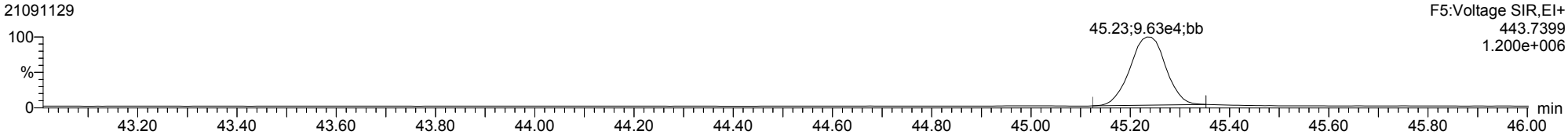

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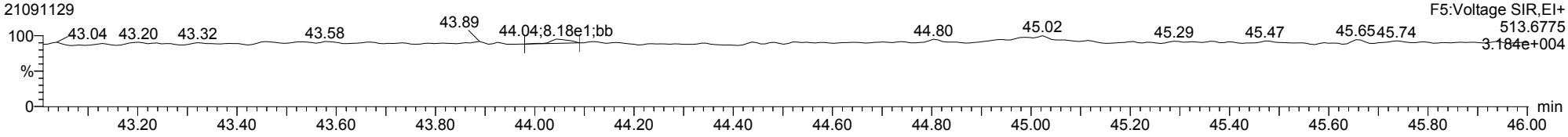

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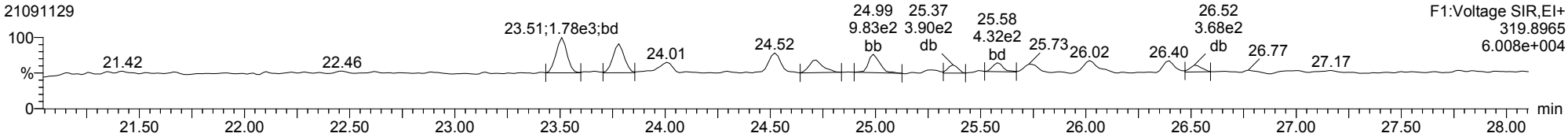
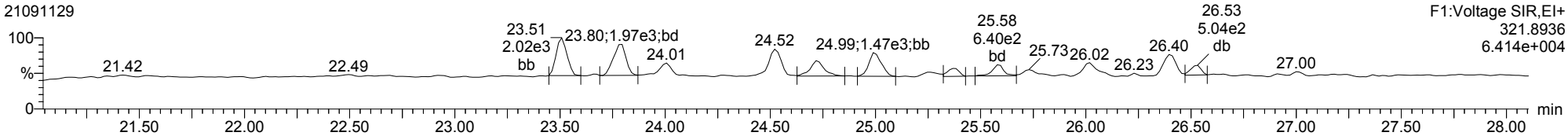
Total-tetradioxins



Total-tetradioxins



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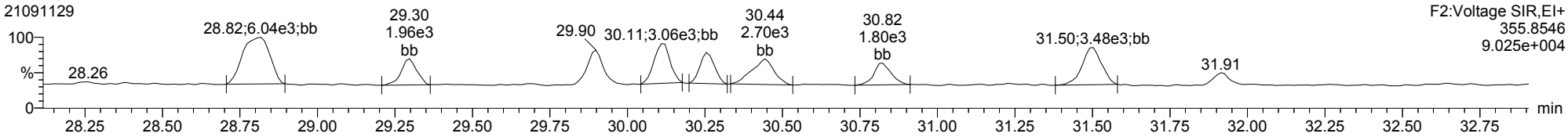
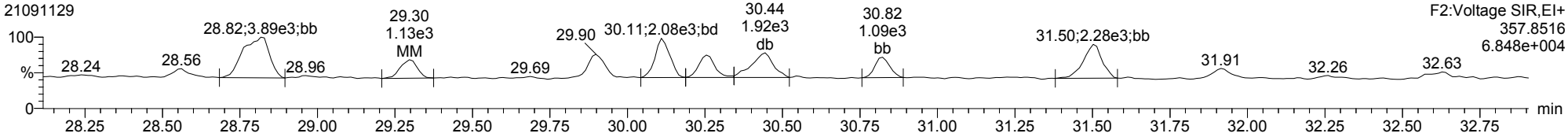


Total-pentadioxins



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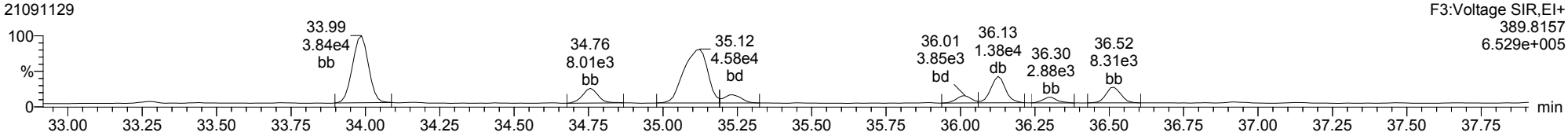
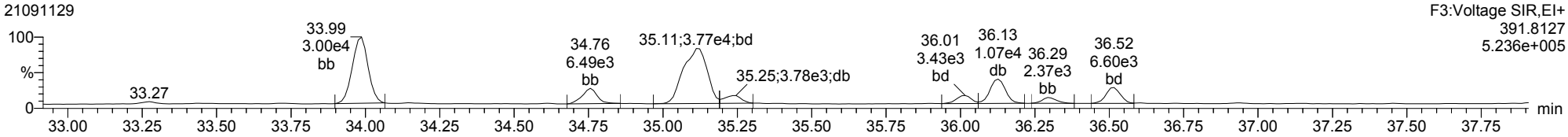
Total-hexadioxins



Total-hexadioxins



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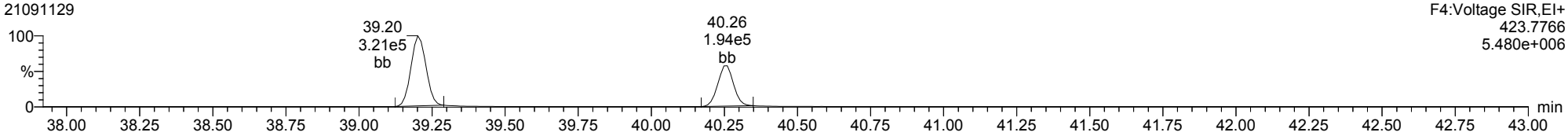

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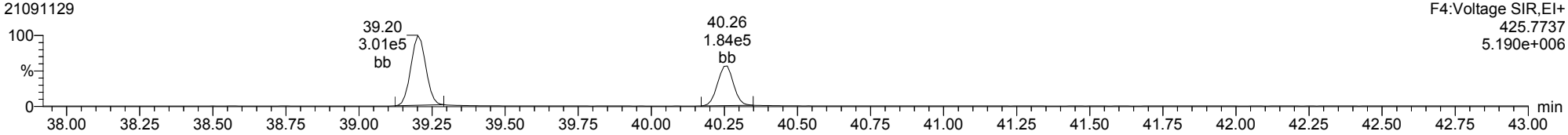

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Printed: Wednesday, September 15, 2021 11:36:42 Pacific Daylight Time

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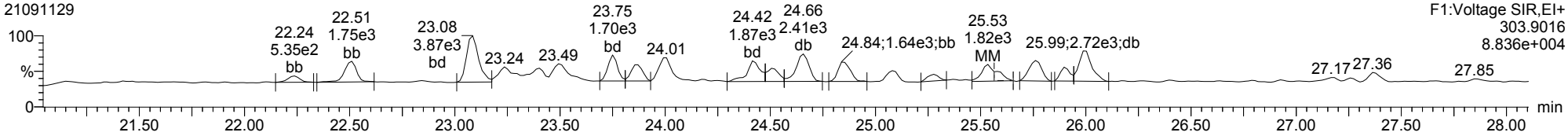
Total-tetrafurans



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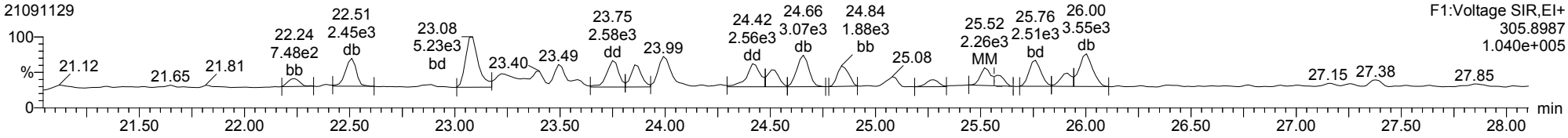

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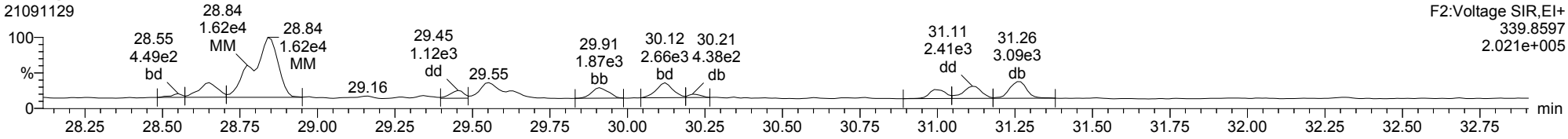

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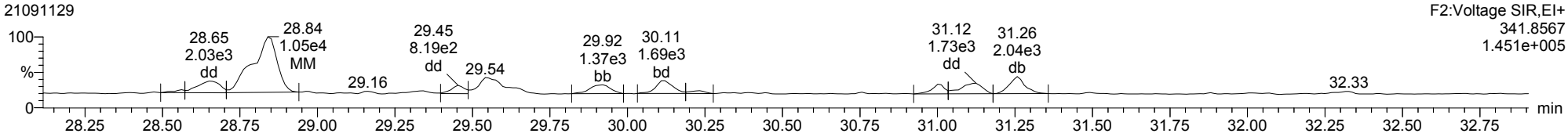

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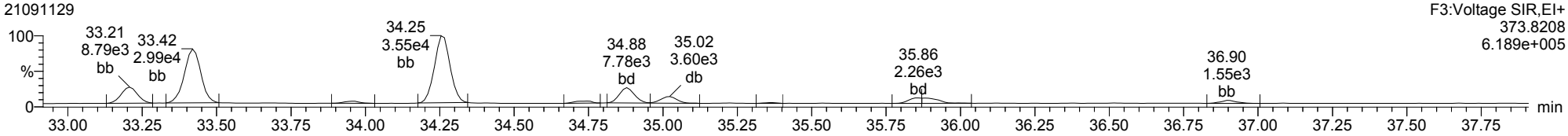
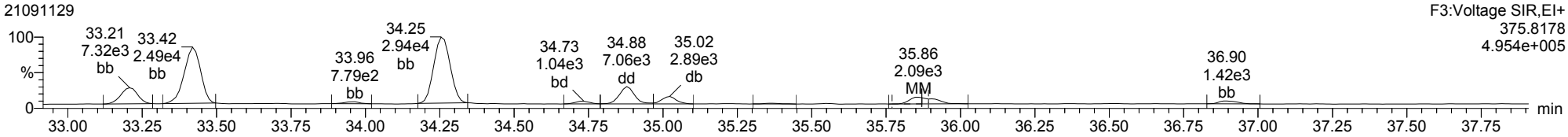
Total-hexafurans



Total-hexafurans



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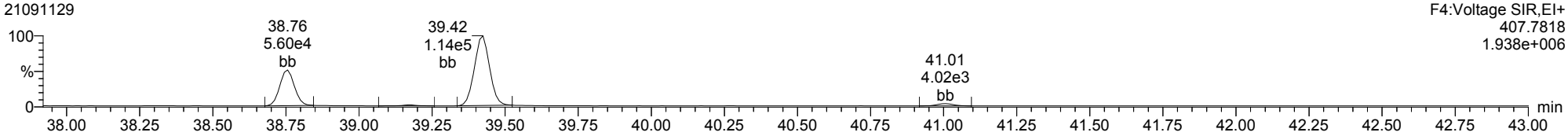

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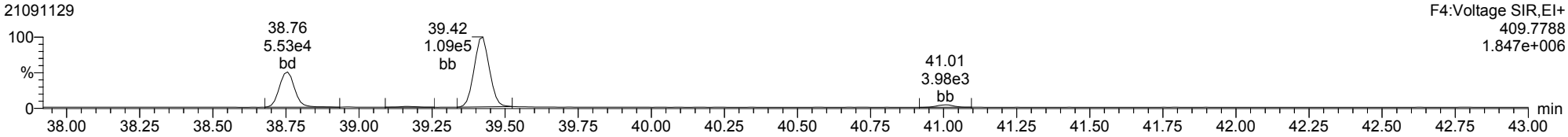

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT648C

Form 1
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21G0138-14 C	File ID:	21091130
Sampled:	07/13/21 11:32	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 10:25
% Solids:	68.58	Preparation:	EPA 1613	Initial/Final:	14.56 g Wet / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.711	0.655-0.886	0.061	1.00	1.37	ng/kg	X
1746-01-6	2,3,7,8-TCDD	1	0.588	0.655-0.886	0.077	1.00	0.531	ng/kg	EMPC, J
57117-41-6	1,2,3,7,8-PeCDF	1	1.495	1.318-1.783	0.074	1.00	0.884	ng/kg	J
57117-31-4	2,3,4,7,8-PeCDF	1	1.472	1.318-1.783	0.072	1.00	1.98	ng/kg	
40321-76-4	1,2,3,7,8-PeCDD	1	1.556	1.318-1.783	0.133	1.00	2.04	ng/kg	
70648-26-9	1,2,3,4,7,8-HxCDF	1	1.152	1.054-1.426	0.080	1.00	9.24	ng/kg	
57117-44-9	1,2,3,6,7,8-HxCDF	1	1.071	1.054-1.426	0.075	1.00	2.57	ng/kg	
60851-34-5	2,3,4,6,7,8-HxCDF	1	1.142	1.054-1.426	0.079	1.00	3.90	ng/kg	
72918-21-9	1,2,3,7,8,9-HxCDF	1	1.208	1.054-1.426	0.089	1.00	1.73	ng/kg	
39227-28-6	1,2,3,4,7,8-HxCDD	1	1.203	1.054-1.426	0.194	1.00	1.57	ng/kg	
57653-85-7	1,2,3,6,7,8-HxCDD	1	1.216	1.054-1.426	0.205	1.00	9.26	ng/kg	
19408-74-3	1,2,3,7,8,9-HxCDD	1	1.276	1.054-1.426	0.214	1.00	5.06	ng/kg	
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.023	0.893-1.208	0.110	1.00	52.2	ng/kg	B
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	1.047	0.893-1.208	0.157	1.00	5.85	ng/kg	
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	1.048	0.893-1.208	0.253	2.50	206	ng/kg	B
39001-02-0	OCDF	1	0.874	0.757-1.024	0.177	2.50	127	ng/kg	
3268-87-9	OCDD	1	0.899	0.757-1.024	0.386	10.0	1490	ng/kg	B

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	18.5	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	6.68	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	37.8	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	11.9	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	80.6	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	72.1	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	180	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	426	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 9.79
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 9.79

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT648C

Form 2
ORGANIC ANALYSIS DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21G0138-14	File ID:	21091130
Sampled:	07/13/21 11:32	Prepared:	08/24/21 14:05	Analyzed:	09/12/21 10:25
Solids Wt%:	68.58	Preparation:	EPA 1613	Initial/Final:	14.56 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF		0.803	0.655-0.886	0.070	77.8	24 - 169 %	
13C12-2,3,7,8-TCDD		0.756	0.655-0.886	0.082	81.8	25 - 164 %	
13C12-1,2,3,7,8-PeCDF		1.614	1.318-1.783	0.104	84.7	24 - 185 %	
13C12-2,3,4,7,8-PeCDF		1.611	1.318-1.783	0.109	82.2	21 - 178 %	
13C12-1,2,3,7,8-PeCDD		1.559	1.318-1.783	0.105	76.0	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF		0.512	0.434-0.587	0.108	73.9	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF		0.511	0.434-0.587	0.100	69.1	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF		0.519	0.434-0.587	0.110	71.2	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF		0.512	0.434-0.587	0.133	71.5	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD		1.266	1.054-1.426	0.099	78.0	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD		1.258	1.054-1.426	0.091	72.3	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF		0.463	0.374-0.506	0.136	71.9	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF		0.459	0.374-0.506	0.166	71.9	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD		1.051	0.893-1.208	0.155	75.7	23 - 140 %	
13C12-OCDD		0.902	0.757-1.024	0.221	82.2	17 - 157 %	
37Cl4-2,3,7,8-TCDD		328.000		0.031	81.9	35 - 197 %	

* Values outside of QC limits

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Printed: Wednesday, September 15, 2021 11:36:54 Pacific Daylight Time

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.776	1.001	3.729e3	5.242e3	1.108	0.711	0.770	873	1224	5.66e4	7.51e4	64.8	61.3	NO	bd	bd	0.682
12378-PeCDF	29.920	1.000	3.157e3	2.112e3	1.015	1.495	1.550	1083	1241	4.48e4	3.35e4	41.4	27.0	NO	bd	bb	0.441
23478-PeCDF	31.268	1.000	7.189e3	4.884e3	1.126	1.472	1.550	1083	1241	1.10e5	7.92e4	101.2	63.8	NO	dd	db	0.986
123478-HxCDF	34.889	1.001	2.270e4	1.971e4	1.017	1.152	1.240	1041	884	3.73e5	3.08e5	358.1	348.5	NO	bb	dd	4.612
234678-HxCDF	35.870	0.999	9.301e3	8.144e3	1.052	1.142	1.240	1041	884	1.07e5	9.48e4	102.9	107.2	NO	bb	bb	1.945
123678-HxCDF	35.034	1.001	6.287e3	5.868e3	1.037	1.071	1.240	1041	884	1.11e5	9.70e4	106.8	109.7	NO	bb	db	1.283
123789-HxCDF	36.906	1.000	3.458e3	2.862e3	1.030	1.208	1.240	1041	884	5.38e4	4.34e4	51.7	49.1	NO	bb	bb	0.865
1234678-HpCDF	38.766	1.000	1.147e5	1.122e5	1.327	1.023	1.050	1219	1517	1.99e6	1.90e6	1633.9	1253.1	NO	bb	bd	26.075
1234789-HpCDF	41.017	1.000	1.029e4	9.831e3	1.283	1.047	1.050	1219	1517	1.57e5	1.58e5	128.7	104.4	NO	bb	bb	2.922
OCDF	45.251	1.006	1.741e5	1.993e5	1.447	0.874	0.890	879	1332	2.15e6	2.46e6	2450.8	1848.0	NO	bb	bb	63.329
2378-TCDD	26.411	1.001	8.834e2	1.502e3	0.920	0.588	0.770	1033	754	1.19e4	2.27e4	11.5	30.0	YES	dd	bd	0.265
12378-PeCDD	31.503	1.000	3.670e3	2.359e3	0.995	1.556	1.550	973	1057	5.14e4	3.11e4	52.8	29.4	NO	bb	bb	1.017
123478-HxCDD	36.015	1.000	3.243e3	2.696e3	1.027	1.203	1.240	2657	1488	5.18e4	4.41e4	19.5	29.7	NO	bd	bd	0.784
123678-HxCDD	36.137	1.001	1.898e4	1.561e4	1.009	1.216	1.240	2657	1488	3.17e5	2.55e5	119.3	171.2	NO	dd	dd	4.625
123789-HxCDD	36.527	1.011	9.945e3	7.792e3	0.950	1.276	1.240	2657	1488	1.74e5	1.28e5	65.5	86.3	NO	db	bb	2.524
1234678-HpCDD	40.271	1.001	2.648e5	2.527e5	1.068	1.048	1.050	1670	1660	4.20e6	3.98e6	2516.6	2399.3	NO	bb	bb	102.714
OCDD	45.005	1.000	1.699e6	1.889e6	1.181	0.899	0.890	2136	1796	2.23e7	2.46e7	10454.3	13717.2	NO	bb	bb	745.332
13C-2378-TCDF	25.761	1.007	5.289e5	6.584e5	1.427	0.803	0.770	1516	1321	8.26e6	1.02e7	5446.8	7733.9	NO	bb	bb	77.770
13C-12378-PeCDF	29.909	1.169	7.264e5	4.501e5	1.297	1.614	1.550	1870	1954	1.15e7	7.17e6	6144.4	3667.2	NO	bb	bb	84.749
13C-23478-PeCDF	31.257	1.222	6.711e5	4.166e5	1.236	1.611	1.550	1870	1954	1.07e7	6.60e6	5713.5	3376.6	NO	bb	bb	82.195
13C-123478-HxCDF	34.867	0.955	3.060e5	5.982e5	1.242	0.512	0.510	1431	2207	4.83e6	9.40e6	3372.6	4256.9	NO	bd	bd	73.903
13C-123678-HxCDF	35.012	0.959	3.089e5	6.049e5	1.343	0.511	0.510	1431	2207	5.02e6	9.80e6	3507.0	4438.0	NO	db	db	69.081
13C-234678-HxCDF	35.892	0.983	2.912e5	5.610e5	1.215	0.519	0.510	1431	2207	4.74e6	9.33e6	3313.5	4228.0	NO	bb	bb	71.242
13C-123789-HxCDF	36.917	1.011	2.401e5	4.690e5	1.008	0.512	0.510	1431	2207	4.26e6	8.36e6	2978.3	3785.6	NO	bb	bb	71.463
13C-1234678-HpCDF	38.755	1.062	2.076e5	4.479e5	0.926	0.463	0.440	1375	2035	3.57e6	7.63e6	2599.7	3748.9	NO	bb	bb	71.856
13C-1234789-HpCDF	41.006	1.123	1.689e5	3.678e5	0.758	0.459	0.440	1375	2035	2.57e6	5.51e6	1866.7	2707.1	NO	bb	bb	71.905
13C-1234-TCDD	25.579	0.000	4.647e5	6.054e5	1.000	0.768	0.770	1544	1048	7.42e6	9.68e6	4806.4	9237.8	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	4.206e5	5.566e5	1.116	0.756	0.770	1544	1048	6.49e6	8.67e6	4201.8	8273.8	NO	bb	bb	81.791
13C-12378-PeCDD	31.503	1.232	3.627e5	2.327e5	0.732	1.559	1.550	1113	1066	5.61e6	3.58e6	5043.5	3357.1	NO	bb	bb	76.007
13C-123478-HxCDD	36.004	0.986	4.122e5	3.255e5	0.960	1.266	1.240	1201	1381	6.98e6	5.47e6	5813.3	3958.7	NO	bd	bd	78.050
13C-123678-HxCDD	36.115	0.989	4.130e5	3.282e5	1.041	1.258	1.240	1201	1381	6.72e6	5.39e6	5593.7	3904.0	NO	db	db	72.283
13C-1234678-HpCDD	40.248	1.102	2.417e5	2.300e5	0.632	1.051	1.050	1647	1010	3.80e6	3.63e6	2308.4	3591.5	NO	bb	bb	75.738
13C-OCDD	44.986	1.232	3.867e5	4.285e5	0.504	0.902	0.890	1803	1217	4.91e6	5.46e6	2725.2	4487.3	NO	bb	bb	164.346
13C-123789-HxCDD	36.505	0.000	5.484e5	4.363e5	1.000	1.257	1.240	1201	1381	9.07e6	7.31e6	7554.2	5292.6	NO	bb	bb	100.000
37CL-2378-TCDD	26.411	1.033	3.799e5		1.084			959		5.76e6		6008.5			db		32.763

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:54 Pacific Daylight Time

ID: 21G0138-14, Name: 21091130, Date: 12-Sep-2021, Time: 10:25:24, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.268	0.864	1.955e3	2.059e3	1.425	0.949	0.770	873	1224	2.62e4	3.08e4	30.0	25.2	YES	bb	db	0.237
1289-TCDF	27.197	1.056	3.027e2	2.384e2	1.043	1.270	0.770	873	1224	5.79e3	5.48e3	6.6	4.5	YES	dd	bb	0.044
13468-PECDF					1.376		1.550	862	931								
12389-PECDF	32.227	1.077	4.858e2	3.596e2	1.000	1.351	1.550	1083	1241	8.98e3	8.63e3	8.3	7.0	NO	bd	bb	0.072
123468-HXCDF	33.218	0.953	1.520e4	1.302e4	1.087	1.167	1.240	1041	884	2.50e5	2.15e5	239.8	242.8	NO	db	bb	2.873
1368-TCDD	23.523	0.892	2.955e3	3.595e3	0.923	0.822	0.770	1033	754	4.74e4	5.99e4	45.9	79.4	NO	bb	bb	0.726
1289-TCDD	27.016	1.024	4.665e2	1.732e2	0.794	2.694	0.770	1033	754	5.57e3	3.46e3	5.4	4.6	YES	db	db	0.082
12479-PECDD	28.817	0.915	1.086e4	7.363e3	1.843	1.475	1.550	973	1057	1.10e5	8.05e4	113.3	76.2	NO	bb	bb	1.661
12389-PECDD	31.937	1.014	8.962e2	5.584e2	1.154	1.605	1.550	973	1057	1.38e4	7.09e3	14.2	6.7	NO	bb	bb	0.212
124679-HXCDD	33.998	0.944	5.141e4	4.063e4	1.125	1.265	1.240	2657	1488	8.37e5	6.54e5	315.1	439.7	NO	bb	bb	11.092
1234679-HPCDD	39.212	0.974	3.239e5	3.036e5	1.211	1.067	1.050	1670	1660	5.50e6	5.15e6	3292.3	3101.0	NO	bb	bb	109.869
Total-tetrafurans			5.531e4		1.192			873		8.65e5							9.247
Total-penta1			5.032e4					862		7.41e5							7.668
Total-pentafurans			8.001e4		1.047			1083		1.01e6							11.228
Total-hexafurans			1.948e5		1.045			1041		3.09e6							40.256
Total-heptafurans			3.673e5		1.305			1219		6.15e6							90.017
Total-Furans			9.219e5		1.158			873		1.40e7							221.746
Total-tetradioxins			1.314e4		0.879			1033		1.93e5							3.337
Total-pentadioxins			2.992e4		1.331			973		3.98e5							5.930
Total-hexadioxins			1.548e5		1.028			2657		2.25e6							35.992
Total-heptadioxins			5.887e5		1.140			1670		9.70e6							212.583
Total-Dioxins			2.485e6		1.092			1033		3.49e7							1003.174
Total-TEQ			3.407e6					1033		4.89e7							1224.920
FUNCTION1 PFK			4.501e7					535383		1.29e8							
FUNCTION2 PFK			3.906e6					297351		9.63e6							0.000
FUNCTION3 PFK			8.839e6					408474		3.22e7							0.000
FUNCTION4 PFK			5.459e5					185883		4.03e6							
FUNCTION5 PFK			0.000e0					225112		0.00e0							
FUNCTION1 HXCD...			5.660e3					599		8.74e4							0.000
FUNCTION1 HPCD...			3.685e3					847		6.31e4							0.000
FUNCTION2 HPCD...			8.757e2					937		1.85e4							0.000
FUNCTION3 OCDPE			5.486e2					728		1.06e4							0.000
FUNCTION4 NCDPE			2.955e3					600		5.48e4							0.000
FUNCTION5 DCDPE			2.272e2					434		3.36e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.26	1.829e2	2.338e2	1.192	0.78	0.77	4.1	YES	NO	dd	bb	0.029
2	Total-tetrafurans	24.01	3.622e3	4.170e3	1.192	0.87	0.77	63.9	YES	NO	db	db	0.551
3	Total-tetrafurans	23.87	2.739e3	3.147e3	1.192	0.87	0.77	52.3	YES	NO	dd	dd	0.416
4	Total-tetrafurans	23.76	5.476e3	7.115e3	1.192	0.77	0.77	111.5	YES	NO	bd	bd	0.890
5	Total-tetrafurans	23.52	4.523e3	6.794e3	1.192	0.67	0.77	81.8	YES	NO	dd	MM	0.800
6	Total-tetrafurans	23.42	2.780e3	3.484e3	1.192	0.80	0.77	38.8	YES	NO	dd	dd	0.443
7	Total-tetrafurans	23.28	2.934e3	4.323e3	1.192	0.68	0.77	31.6	YES	NO	dd	dd	0.513
8	Total-tetrafurans	23.10	7.911e3	1.175e4	1.192	0.67	0.77	155.9	YES	NO	bd	bd	1.390
9	Total-tetrafurans	22.53	4.285e3	5.432e3	1.192	0.79	0.77	82.2	YES	NO	bb	bb	0.687
10	Total-tetrafurans	26.00	4.281e3	5.195e3	1.192	0.82	0.77	71.2	YES	NO	dd	dd	0.670
11	2378-TCDF	25.78	3.729e3	5.242e3	1.108	0.71	0.77	64.8	YES	NO	bd	bd	0.682
12	Total-tetrafurans	25.10	2.008e3	3.033e3	1.192	0.66	0.77	29.8	YES	NO	bb	bb	0.356
13	Total-tetrafurans	24.85	3.006e3	3.907e3	1.192	0.77	0.77	53.1	YES	NO	bb	bb	0.489
14	Total-tetrafurans	24.67	5.693e3	8.410e3	1.192	0.68	0.77	110.2	YES	NO	db	MM	0.997
15	Total-tetrafurans	24.54	2.142e3	2.623e3	1.192	0.82	0.77	39.7	YES	NO	dd	dd	0.337

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	5.032e4	3.242e4		1.55	1.55	860.0	YES	NO	bb	bb	7.668

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	30.13	5.960e3	3.694e3	1.047	1.61	1.55	85.6	YES	NO	dd	bd	0.815
2	12378-PeCDF	29.92	3.157e3	2.112e3	1.015	1.49	1.55	41.4	YES	NO	bd	bb	0.441
3	Total-pentafurans	29.56	6.994e3	4.223e3	1.047	1.66	1.55	82.3	YES	NO	dd	dd	0.947
4	Total-pentafurans	29.46	2.203e3	1.583e3	1.047	1.39	1.55	37.3	YES	NO	bd	bd	0.320
5	Total-pentafurans	28.86	3.925e4	2.753e4	1.047	1.43	1.55	392.9	YES	NO	db	MM	5.636
6	Total-pentafurans	28.66	5.612e3	3.375e3	1.047	1.66	1.55	53.3	YES	NO	bd	dd	0.759
7	12389-PECDF	32.23	4.858e2	3.596e2	1.000	1.35	1.55	8.3	YES	NO	bd	bb	0.072
8	23478-PeCDF	31.27	7.189e3	4.884e3	1.126	1.47	1.55	101.2	YES	NO	dd	db	0.986
9	Total-pentafurans	31.13	7.153e3	4.406e3	1.047	1.62	1.55	97.7	YES	NO	dd	dd	0.976
10	Total-pentafurans	31.01	2.003e3	1.287e3	1.047	1.56	1.55	30.5	YES	NO	bd	bd	0.278

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HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.91	3.458e3	2.862e3	1.030	1.21	1.24	51.7	YES	NO	bb	bb	0.865
2	234678-HxCDF	35.87	9.301e3	8.144e3	1.052	1.14	1.24	102.9	YES	NO	bb	bb	1.945
3	Total-hexafurans	35.37	9.049e2	6.645e2	1.045	1.36	1.24	14.3	YES	NO	bb	bb	0.178
4	123678-HxCDF	35.03	6.287e3	5.868e3	1.037	1.07	1.24	106.8	YES	NO	bb	db	1.283
5	123478-HxCDF	34.89	2.270e4	1.971e4	1.017	1.15	1.24	358.1	YES	NO	bb	dd	4.612
6	Total-hexafurans	34.74	2.502e3	2.137e3	1.045	1.17	1.24	39.6	YES	NO	bb	bd	0.526
7	Total-hexafurans	34.28	7.964e4	6.598e4	1.045	1.21	1.24	1222.2	YES	NO	bb	bb	16.500
8	Total-hexafurans	33.96	2.152e3	1.685e3	1.045	1.28	1.24	33.8	YES	NO	bb	bb	0.435
9	Total-hexafurans	33.43	5.266e4	4.476e4	1.045	1.18	1.24	799.1	YES	NO	bb	bb	11.039
10	123468-HXCDF	33.22	1.520e4	1.302e4	1.087	1.17	1.24	239.8	YES	NO	db	bb	2.873

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.02	1.029e4	9.831e3	1.283	1.05	1.05	128.7	YES	NO	bb	bb	2.922
2	Total-heptafurans	39.44	2.400e5	2.305e5	1.305	1.04	1.05	3255.7	YES	NO	bb	bb	60.465
3	Total-heptafurans	39.18	2.272e3	2.052e3	1.305	1.11	1.05	28.3	YES	NO	bb	bb	0.556
4	1234678-HpCDF	38.77	1.147e5	1.122e5	1.327	1.02	1.05	1633.9	YES	NO	bb	bd	26.075

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.26	1.829e2	2.338e2	1.192	0.78	0.77	4.1	YES	NO	dd	bb	0.029
2	Total-tetrafurans	24.01	3.622e3	4.170e3	1.192	0.87	0.77	63.9	YES	NO	db	db	0.551
3	Total-tetrafurans	23.87	2.739e3	3.147e3	1.192	0.87	0.77	52.3	YES	NO	dd	dd	0.416
4	Total-tetrafurans	23.76	5.476e3	7.115e3	1.192	0.77	0.77	111.5	YES	NO	bd	bd	0.890
5	Total-tetrafurans	23.52	4.523e3	6.794e3	1.192	0.67	0.77	81.8	YES	NO	dd	MM	0.800
6	Total-tetrafurans	23.42	2.780e3	3.484e3	1.192	0.80	0.77	38.8	YES	NO	dd	dd	0.443
7	Total-tetrafurans	23.28	2.934e3	4.323e3	1.192	0.68	0.77	31.6	YES	NO	dd	dd	0.513
8	Total-tetrafurans	23.10	7.911e3	1.175e4	1.192	0.67	0.77	155.9	YES	NO	bd	bd	1.390
9	Total-tetrafurans	22.53	4.285e3	5.432e3	1.192	0.79	0.77	82.2	YES	NO	bb	bb	0.687
10	Total-tetrafurans	26.00	4.281e3	5.195e3	1.192	0.82	0.77	71.2	YES	NO	dd	dd	0.670
11	2378-TCDF	25.78	3.729e3	5.242e3	1.108	0.71	0.77	64.8	YES	NO	bd	bd	0.682
12	Total-tetrafurans	25.10	2.008e3	3.033e3	1.192	0.66	0.77	29.8	YES	NO	bb	bb	0.356
13	Total-tetrafurans	24.85	3.006e3	3.907e3	1.192	0.77	0.77	53.1	YES	NO	bb	bb	0.489
14	Total-tetrafurans	24.67	5.693e3	8.410e3	1.192	0.68	0.77	110.2	YES	NO	db	MM	0.997
15	Total-tetrafurans	24.54	2.142e3	2.623e3	1.192	0.82	0.77	39.7	YES	NO	dd	dd	0.337
16	Total-pentafurans	30.13	5.960e3	3.694e3	1.047	1.61	1.55	85.6	YES	NO	dd	bd	0.815
17	12378-PeCDF	29.92	3.157e3	2.112e3	1.015	1.49	1.55	41.4	YES	NO	bd	bb	0.441
18	Total-pentafurans	29.56	6.994e3	4.223e3	1.047	1.66	1.55	82.3	YES	NO	dd	dd	0.947
19	Total-pentafurans	29.46	2.203e3	1.583e3	1.047	1.39	1.55	37.3	YES	NO	bd	bd	0.320
20	Total-pentafurans	28.86	3.925e4	2.753e4	1.047	1.43	1.55	392.9	YES	NO	db	MM	5.636
21	Total-pentafurans	28.66	5.612e3	3.375e3	1.047	1.66	1.55	53.3	YES	NO	bd	dd	0.759
22	12389-PECDF	32.23	4.858e2	3.596e2	1.000	1.35	1.55	8.3	YES	NO	bd	bb	0.072
23	23478-PeCDF	31.27	7.189e3	4.884e3	1.126	1.47	1.55	101.2	YES	NO	dd	db	0.986
24	Total-pentafurans	31.13	7.153e3	4.406e3	1.047	1.62	1.55	97.7	YES	NO	dd	dd	0.976
25	Total-pentafurans	31.01	2.003e3	1.287e3	1.047	1.56	1.55	30.5	YES	NO	bd	bd	0.278
26	123789-HxCDF	36.91	3.458e3	2.862e3	1.030	1.21	1.24	51.7	YES	NO	bb	bb	0.865
27	234678-HxCDF	35.87	9.301e3	8.144e3	1.052	1.14	1.24	102.9	YES	NO	bb	bb	1.945
28	Total-hexafurans	35.37	9.049e2	6.645e2	1.045	1.36	1.24	14.3	YES	NO	bb	bb	0.178
29	123678-HxCDF	35.03	6.287e3	5.868e3	1.037	1.07	1.24	106.8	YES	NO	bb	db	1.283
30	123478-HxCDF	34.89	2.270e4	1.971e4	1.017	1.15	1.24	358.1	YES	NO	bb	dd	4.612
31	Total-hexafurans	34.74	2.502e3	2.137e3	1.045	1.17	1.24	39.6	YES	NO	bb	bd	0.526
32	Total-hexafurans	34.28	7.964e4	6.598e4	1.045	1.21	1.24	1222.2	YES	NO	bb	bb	16.500
33	Total-hexafurans	33.96	2.152e3	1.685e3	1.045	1.28	1.24	33.8	YES	NO	bb	bb	0.435
34	Total-hexafurans	33.43	5.266e4	4.476e4	1.045	1.18	1.24	799.1	YES	NO	bb	bb	11.039
35	123468-HXCDF	33.22	1.520e4	1.302e4	1.087	1.17	1.24	239.8	YES	NO	db	bb	2.873
36	1234789-HpCDF	41.02	1.029e4	9.831e3	1.283	1.05	1.05	128.7	YES	NO	bb	bb	2.922
37	Total-heptafurans	39.44	2.400e5	2.305e5	1.305	1.04	1.05	3255.7	YES	NO	bb	bb	60.465

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-heptafurans	39.18	2.272e3	2.052e3	1.305	1.11	1.05	28.3	YES	NO	bb	bb	0.556
39	1234678-HpCDF	38.77	1.147e5	1.122e5	1.327	1.02	1.05	1633.9	YES	NO	bb	bd	26.075
40	OCDF	45.25	1.741e5	1.993e5	1.447	0.87	0.89	2450.8	YES	NO	bb	bb	63.329
41	Total-penta1	27.18	5.032e4	3.242e4		1.55	1.55	860.0	YES	NO	bb	bb	7.668

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	26.03	1.477e3	1.719e3	0.879	0.86	0.77	15.8	YES	NO	bd	dd	0.372
2	Total-tetradioxins	25.76	4.043e2	5.786e2	0.879	0.70	0.77	5.0	YES	NO	db	dd	0.114
3	Total-tetradioxins	25.38	5.243e2	7.906e2	0.879	0.66	0.77	8.2	YES	NO	db	db	0.153
4	Total-tetradioxins	25.28	3.419e2	4.129e2	0.879	0.83	0.77	4.4	YES	NO	bd	bd	0.088
5	Total-tetradioxins	25.00	1.379e3	1.571e3	0.879	0.88	0.77	21.0	YES	NO	bb	bb	0.343
6	Total-tetradioxins	24.73	9.514e2	1.310e3	0.879	0.73	0.77	10.9	YES	NO	bd	db	0.263
7	Total-tetradioxins	24.54	1.206e3	1.377e3	0.879	0.88	0.77	18.1	YES	NO	bb	dd	0.301
8	Total-tetradioxins	24.02	1.177e3	1.336e3	0.879	0.88	0.77	16.8	YES	NO	db	bb	0.292
9	Total-tetradioxins	23.80	2.722e3	3.157e3	0.879	0.86	0.77	40.2	YES	NO	bd	bb	0.684
10	1368-TCDD	23.52	2.955e3	3.595e3	0.923	0.82	0.77	45.9	YES	NO	bb	bb	0.726

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	29.31	1.875e3	1.197e3	1.331	1.57	1.55	34.1	YES	NO	bb	bb	0.388
2	12479-PECDD	28.82	1.086e4	7.363e3	1.843	1.48	1.55	113.3	YES	NO	bb	bb	1.661
3	12389-PECDD	31.94	8.962e2	5.584e2	1.154	1.60	1.55	14.2	YES	NO	bb	bb	0.212
4	12378-PeCDD	31.50	3.670e3	2.359e3	0.995	1.56	1.55	52.8	YES	NO	bb	bb	1.017
5	Total-pentadioxins	30.85	9.977e2	6.461e2	1.331	1.54	1.55	14.4	YES	NO	bb	bb	0.207
6	Total-pentadioxins	30.46	3.099e3	2.066e3	1.331	1.50	1.55	37.9	YES	NO	bb	bb	0.652
7	Total-pentadioxins	30.28	2.184e3	1.455e3	1.331	1.50	1.55	39.3	YES	NO	db	bb	0.459
8	Total-pentadioxins	30.13	2.946e3	1.822e3	1.331	1.62	1.55	49.4	YES	NO	bd	bb	0.602
9	Total-pentadioxins	29.91	3.389e3	2.414e3	1.331	1.40	1.55	53.9	YES	NO	bb	bb	0.732

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	35.25	2.884e3	2.286e3	1.028	1.26	1.24	19.4	YES	NO	db	db	0.680
2	Total-hexadioxins	35.13	5.766e4	4.645e4	1.028	1.24	1.24	245.6	YES	NO	bd	bd	13.697
3	Total-hexadioxins	34.77	8.521e3	7.049e3	1.028	1.21	1.24	53.6	YES	NO	dd	bb	2.048
4	124679-HXCDD	34.00	5.141e4	4.063e4	1.125	1.27	1.24	315.1	YES	NO	bb	bb	11.092
5	123789-HxCDD	36.53	9.945e3	7.792e3	0.950	1.28	1.24	65.5	YES	NO	db	bb	2.524
6	Total-hexadioxins	36.32	2.113e3	2.002e3	1.028	1.06	1.24	10.6	YES	NO	dd	db	0.541
7	123678-HxCDD	36.14	1.898e4	1.561e4	1.009	1.22	1.24	119.3	YES	NO	dd	dd	4.625
8	123478-HxCDD	36.01	3.243e3	2.696e3	1.027	1.20	1.24	19.5	YES	NO	bd	bd	0.784

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.27	2.648e5	2.527e5	1.068	1.05	1.05	2516.6	YES	NO	bb	bb	102.714
2	1234679-HPCDD	39.21	3.239e5	3.036e5	1.211	1.07	1.05	3292.3	YES	NO	bb	bb	109.869

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:36:54 Pacific Daylight Time

ID: 21G0138-14, Name: 21091130, Date: 12-Sep-2021, Time: 10:25:24, Conditions: AUTOSPEC01, User: pk

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	26.03	1.477e3	1.719e3	0.879	0.86	0.77	15.8	YES	NO	bd	dd	0.372
2	Total-tetradioxins	25.76	4.043e2	5.786e2	0.879	0.70	0.77	5.0	YES	NO	db	dd	0.114
3	Total-tetradioxins	25.38	5.243e2	7.906e2	0.879	0.66	0.77	8.2	YES	NO	db	db	0.153
4	Total-tetradioxins	25.28	3.419e2	4.129e2	0.879	0.83	0.77	4.4	YES	NO	bd	bd	0.088
5	Total-tetradioxins	25.00	1.379e3	1.571e3	0.879	0.88	0.77	21.0	YES	NO	bb	bb	0.343
6	Total-tetradioxins	24.73	9.514e2	1.310e3	0.879	0.73	0.77	10.9	YES	NO	bd	db	0.263
7	Total-tetradioxins	24.54	1.206e3	1.377e3	0.879	0.88	0.77	18.1	YES	NO	bb	dd	0.301
8	Total-tetradioxins	24.02	1.177e3	1.336e3	0.879	0.88	0.77	16.8	YES	NO	db	bb	0.292
9	Total-tetradioxins	23.80	2.722e3	3.157e3	0.879	0.86	0.77	40.2	YES	NO	bd	bb	0.684
10	1368-TCDD	23.52	2.955e3	3.595e3	0.923	0.82	0.77	45.9	YES	NO	bb	bb	0.726
11	Total-pentadioxins	29.31	1.875e3	1.197e3	1.331	1.57	1.55	34.1	YES	NO	bb	bb	0.388
12	12479-PECDD	28.82	1.086e4	7.363e3	1.843	1.48	1.55	113.3	YES	NO	bb	bb	1.661
13	12389-PECDD	31.94	8.962e2	5.584e2	1.154	1.60	1.55	14.2	YES	NO	bb	bb	0.212
14	12378-PeCDD	31.50	3.670e3	2.359e3	0.995	1.56	1.55	52.8	YES	NO	bb	bb	1.017
15	Total-pentadioxins	30.85	9.977e2	6.461e2	1.331	1.54	1.55	14.4	YES	NO	bb	bb	0.207
16	Total-pentadioxins	30.46	3.099e3	2.066e3	1.331	1.50	1.55	37.9	YES	NO	bb	bb	0.652
17	Total-pentadioxins	30.28	2.184e3	1.455e3	1.331	1.50	1.55	39.3	YES	NO	db	bb	0.459
18	Total-pentadioxins	30.13	2.946e3	1.822e3	1.331	1.62	1.55	49.4	YES	NO	bd	bb	0.602
19	Total-pentadioxins	29.91	3.389e3	2.414e3	1.331	1.40	1.55	53.9	YES	NO	bb	bb	0.732
20	Total-hexadioxins	35.25	2.884e3	2.286e3	1.028	1.26	1.24	19.4	YES	NO	db	db	0.680
21	Total-hexadioxins	35.13	5.766e4	4.645e4	1.028	1.24	1.24	245.6	YES	NO	bd	bd	13.697
22	Total-hexadioxins	34.77	8.521e3	7.049e3	1.028	1.21	1.24	53.6	YES	NO	dd	bb	2.048
23	124679-HXCDD	34.00	5.141e4	4.063e4	1.125	1.27	1.24	315.1	YES	NO	bb	bb	11.092
24	123789-HxCDD	36.53	9.945e3	7.792e3	0.950	1.28	1.24	65.5	YES	NO	db	bb	2.524
25	Total-hexadioxins	36.32	2.113e3	2.002e3	1.028	1.06	1.24	10.6	YES	NO	dd	db	0.541
26	123678-HxCDD	36.14	1.898e4	1.561e4	1.009	1.22	1.24	119.3	YES	NO	dd	dd	4.625
27	123478-HxCDD	36.01	3.243e3	2.696e3	1.027	1.20	1.24	19.5	YES	NO	bd	bd	0.784
28	1234678-HpCDD	40.27	2.648e5	2.527e5	1.068	1.05	1.05	2516.6	YES	NO	bb	bb	102.714
29	1234679-HPCDD	39.21	3.239e5	3.036e5	1.211	1.07	1.05	3292.3	YES	NO	bb	bb	109.869
30	OCDD	45.00	1.699e6	1.889e6	1.181	0.90	0.89	10454.3	YES	NO	bb	bb	745.332

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
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ID: 21G0138-14, Name: 21091130, Date: 12-Sep-2021, Time: 10:25:24, Conditions: AUTOSPEC01, User: pk

TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.26	1.829e2	2.338e2	1.192	0.78	0.77	4.1	YES	NO	dd	bb	0.029
2	Total-tetrafurans	24.01	3.622e3	4.170e3	1.192	0.87	0.77	63.9	YES	NO	db	db	0.551
3	Total-tetrafurans	23.87	2.739e3	3.147e3	1.192	0.87	0.77	52.3	YES	NO	dd	dd	0.416
4	Total-tetrafurans	23.76	5.476e3	7.115e3	1.192	0.77	0.77	111.5	YES	NO	bd	bd	0.890
5	Total-tetrafurans	23.52	4.523e3	6.794e3	1.192	0.67	0.77	81.8	YES	NO	dd	MM	0.800
6	Total-tetrafurans	23.42	2.780e3	3.484e3	1.192	0.80	0.77	38.8	YES	NO	dd	dd	0.443
7	Total-tetrafurans	23.28	2.934e3	4.323e3	1.192	0.68	0.77	31.6	YES	NO	dd	dd	0.513
8	Total-tetrafurans	23.10	7.911e3	1.175e4	1.192	0.67	0.77	155.9	YES	NO	bd	bd	1.390
9	Total-tetrafurans	22.53	4.285e3	5.432e3	1.192	0.79	0.77	82.2	YES	NO	bb	bb	0.687
10	Total-tetrafurans	26.00	4.281e3	5.195e3	1.192	0.82	0.77	71.2	YES	NO	dd	dd	0.670
11	2378-TCDF	25.78	3.729e3	5.242e3	1.108	0.71	0.77	64.8	YES	NO	bd	bd	0.682
12	Total-tetrafurans	25.10	2.008e3	3.033e3	1.192	0.66	0.77	29.8	YES	NO	bb	bb	0.356
13	Total-tetrafurans	24.85	3.006e3	3.907e3	1.192	0.77	0.77	53.1	YES	NO	bb	bb	0.489
14	Total-tetrafurans	24.67	5.693e3	8.410e3	1.192	0.68	0.77	110.2	YES	NO	db	MM	0.997
15	Total-tetrafurans	24.54	2.142e3	2.623e3	1.192	0.82	0.77	39.7	YES	NO	dd	dd	0.337
16	Total-pentafurans	30.13	5.960e3	3.694e3	1.047	1.61	1.55	85.6	YES	NO	dd	bd	0.815
17	12378-PeCDF	29.92	3.157e3	2.112e3	1.015	1.49	1.55	41.4	YES	NO	bd	bb	0.441
18	Total-pentafurans	29.56	6.994e3	4.223e3	1.047	1.66	1.55	82.3	YES	NO	dd	dd	0.947
19	Total-pentafurans	29.46	2.203e3	1.583e3	1.047	1.39	1.55	37.3	YES	NO	bd	bd	0.320
20	Total-pentafurans	28.86	3.925e4	2.753e4	1.047	1.43	1.55	392.9	YES	NO	db	MM	5.636
21	Total-pentafurans	28.66	5.612e3	3.375e3	1.047	1.66	1.55	53.3	YES	NO	bd	dd	0.759
22	12389-PECDF	32.23	4.858e2	3.596e2	1.000	1.35	1.55	8.3	YES	NO	bd	bb	0.072
23	23478-PeCDF	31.27	7.189e3	4.884e3	1.126	1.47	1.55	101.2	YES	NO	dd	db	0.986
24	Total-pentafurans	31.13	7.153e3	4.406e3	1.047	1.62	1.55	97.7	YES	NO	dd	dd	0.976
25	Total-pentafurans	31.01	2.003e3	1.287e3	1.047	1.56	1.55	30.5	YES	NO	bd	bd	0.278
26	123789-HxCDF	36.91	3.458e3	2.862e3	1.030	1.21	1.24	51.7	YES	NO	bb	bb	0.865
27	234678-HxCDF	35.87	9.301e3	8.144e3	1.052	1.14	1.24	102.9	YES	NO	bb	bb	1.945
28	Total-hexafurans	35.37	9.049e2	6.645e2	1.045	1.36	1.24	14.3	YES	NO	bb	bb	0.178
29	123678-HxCDF	35.03	6.287e3	5.868e3	1.037	1.07	1.24	106.8	YES	NO	bb	db	1.283
30	123478-HxCDF	34.89	2.270e4	1.971e4	1.017	1.15	1.24	358.1	YES	NO	bb	dd	4.612
31	Total-hexafurans	34.74	2.502e3	2.137e3	1.045	1.17	1.24	39.6	YES	NO	bb	bd	0.526
32	Total-hexafurans	34.28	7.964e4	6.598e4	1.045	1.21	1.24	1222.2	YES	NO	bb	bb	16.500
33	Total-hexafurans	33.96	2.152e3	1.685e3	1.045	1.28	1.24	33.8	YES	NO	bb	bb	0.435
34	Total-hexafurans	33.43	5.266e4	4.476e4	1.045	1.18	1.24	799.1	YES	NO	bb	bb	11.039
35	123468-HXCDF	33.22	1.520e4	1.302e4	1.087	1.17	1.24	239.8	YES	NO	db	bb	2.873
36	1234789-HpCDF	41.02	1.029e4	9.831e3	1.283	1.05	1.05	128.7	YES	NO	bb	bb	2.922
37	Total-heptafurans	39.44	2.400e5	2.305e5	1.305	1.04	1.05	3255.7	YES	NO	bb	bb	60.465

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-heptafurans	39.18	2.272e3	2.052e3	1.305	1.11	1.05	28.3	YES	NO	bb	bb	0.556
39	1234678-HpCDF	38.77	1.147e5	1.122e5	1.327	1.02	1.05	1633.9	YES	NO	bb	bd	26.075
40	OCDF	45.25	1.741e5	1.993e5	1.447	0.87	0.89	2450.8	YES	NO	bb	bb	63.329
41	Total-penta1	27.18	5.032e4	3.242e4		1.55	1.55	860.0	YES	NO	bb	bb	7.668
42	Total-tetradioxins	26.03	1.477e3	1.719e3	0.879	0.86	0.77	15.8	YES	NO	bd	dd	0.372
43	Total-tetradioxins	25.76	4.043e2	5.786e2	0.879	0.70	0.77	5.0	YES	NO	db	dd	0.114
44	Total-tetradioxins	25.38	5.243e2	7.906e2	0.879	0.66	0.77	8.2	YES	NO	db	db	0.153
45	Total-tetradioxins	25.28	3.419e2	4.129e2	0.879	0.83	0.77	4.4	YES	NO	bd	bd	0.088
46	Total-tetradioxins	25.00	1.379e3	1.571e3	0.879	0.88	0.77	21.0	YES	NO	bb	bb	0.343
47	Total-tetradioxins	24.73	9.514e2	1.310e3	0.879	0.73	0.77	10.9	YES	NO	bd	db	0.263
48	Total-tetradioxins	24.54	1.206e3	1.377e3	0.879	0.88	0.77	18.1	YES	NO	bb	dd	0.301
49	Total-tetradioxins	24.02	1.177e3	1.336e3	0.879	0.88	0.77	16.8	YES	NO	db	bb	0.292
50	Total-tetradioxins	23.80	2.722e3	3.157e3	0.879	0.86	0.77	40.2	YES	NO	bd	bb	0.684
51	1368-TCDD	23.52	2.955e3	3.595e3	0.923	0.82	0.77	45.9	YES	NO	bb	bb	0.726
52	Total-pentadioxins	29.31	1.875e3	1.197e3	1.331	1.57	1.55	34.1	YES	NO	bb	bb	0.388
53	12479-PECDD	28.82	1.086e4	7.363e3	1.843	1.48	1.55	113.3	YES	NO	bb	bb	1.661
54	12389-PECDD	31.94	8.962e2	5.584e2	1.154	1.60	1.55	14.2	YES	NO	bb	bb	0.212
55	12378-PeCDD	31.50	3.670e3	2.359e3	0.995	1.56	1.55	52.8	YES	NO	bb	bb	1.017
56	Total-pentadioxins	30.85	9.977e2	6.461e2	1.331	1.54	1.55	14.4	YES	NO	bb	bb	0.207
57	Total-pentadioxins	30.46	3.099e3	2.066e3	1.331	1.50	1.55	37.9	YES	NO	bb	bb	0.652
58	Total-pentadioxins	30.28	2.184e3	1.455e3	1.331	1.50	1.55	39.3	YES	NO	db	bb	0.459
59	Total-pentadioxins	30.13	2.946e3	1.822e3	1.331	1.62	1.55	49.4	YES	NO	bd	bb	0.602
60	Total-pentadioxins	29.91	3.389e3	2.414e3	1.331	1.40	1.55	53.9	YES	NO	bb	bb	0.732
61	Total-hexadioxins	35.25	2.884e3	2.286e3	1.028	1.26	1.24	19.4	YES	NO	db	db	0.680
62	Total-hexadioxins	35.13	5.766e4	4.645e4	1.028	1.24	1.24	245.6	YES	NO	bd	bd	13.697
63	Total-hexadioxins	34.77	8.521e3	7.049e3	1.028	1.21	1.24	53.6	YES	NO	dd	bb	2.048
64	124679-HXCDD	34.00	5.141e4	4.063e4	1.125	1.27	1.24	315.1	YES	NO	bb	bb	11.092
65	123789-HxCDD	36.53	9.945e3	7.792e3	0.950	1.28	1.24	65.5	YES	NO	db	bb	2.524
66	Total-hexadioxins	36.32	2.113e3	2.002e3	1.028	1.06	1.24	10.6	YES	NO	dd	db	0.541
67	123678-HxCDD	36.14	1.898e4	1.561e4	1.009	1.22	1.24	119.3	YES	NO	dd	dd	4.625
68	123478-HxCDD	36.01	3.243e3	2.696e3	1.027	1.20	1.24	19.5	YES	NO	bd	bd	0.784
69	1234678-HpCDD	40.27	2.648e5	2.527e5	1.068	1.05	1.05	2516.6	YES	NO	bb	bb	102.714
70	1234679-HPCDD	39.21	3.239e5	3.036e5	1.211	1.07	1.05	3292.3	YES	NO	bb	bb	109.869
71	OCDD	45.00	1.699e6	1.889e6	1.181	0.90	0.89	10454.3	YES	NO	bb	bb	745.332

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	27.73	2.674e5					5.1	YES		bb		
2	FUNCTION1 PFK	27.56	3.189e4					2.0	NO		bb		
3	FUNCTION1 PFK	27.45	3.552e5					7.6	YES		bb		
4	FUNCTION1 PFK	23.69	1.102e5					3.8	YES		bb		
5	FUNCTION1 PFK	23.36	3.960e6					22.5	YES		bb		
6	FUNCTION1 PFK	23.10	1.125e6					33.6	YES		db		
7	FUNCTION1 PFK	22.96	2.280e6					46.5	YES		dd		
8	FUNCTION1 PFK	22.80	2.747e7					54.0	YES		bd		
9	FUNCTION1 PFK	21.95	9.258e6					61.7	YES		bb		
10	FUNCTION1 PFK	21.18	1.547e5					3.5	YES		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.06	1.209e6					8.7	YES		bd		0.000
2	FUNCTION2 PFK	29.81	2.562e6					14.2	YES		bb		0.000
3	FUNCTION2 PFK	29.39	1.353e5					9.4	YES		db		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.88	2.240e4					2.0	NO		bb		0.000
2	FUNCTION3 PFK	37.43	1.833e5					3.3	YES		bb		0.000
3	FUNCTION3 PFK	37.16	1.500e6					21.8	YES		db		0.000
4	FUNCTION3 PFK	36.98	1.905e6					32.7	YES		bd		0.000
5	FUNCTION3 PFK	36.43	4.874e6					12.9	YES		bb		0.000
6	FUNCTION3 PFK	35.21	1.458e4					1.5	NO		bb		0.000
7	FUNCTION3 PFK	34.86	3.391e5					4.9	YES		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.57	4.200e4					4.5	YES		bb		
2	FUNCTION4 PFK	39.67	1.889e5					9.5	YES		bb		
3	FUNCTION4 PFK	39.18	3.149e5					7.6	YES		bb		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.65	1.330e2					4.5	YES		bb		0.000
2	FUNCTION1 HXCD...	26.76	5.349e2					11.2	YES		bb		0.000
3	FUNCTION1 HXCD...	26.12	1.178e3					33.5	YES		db		0.000
4	FUNCTION1 HXCD...	26.03	7.288e1					3.0	YES		dd		0.000
5	FUNCTION1 HXCD...	25.91	7.741e2					19.0	YES		dd		0.000
6	FUNCTION1 HXCD...	25.76	6.597e2					15.7	YES		bd		0.000
7	FUNCTION1 HXCD...	25.10	5.426e2					15.9	YES		bb		0.000
8	FUNCTION1 HXCD...	23.73	9.655e2					22.6	YES		bb		0.000
9	FUNCTION1 HXCD...	22.72	1.673e2					3.9	YES		bb		0.000
10	FUNCTION1 HXCD...	22.33	2.002e2					5.7	YES		db		0.000
11	FUNCTION1 HXCD...	22.27	1.028e2					3.4	YES		dd		0.000
12	FUNCTION1 HXCD...	22.19	3.287e2					7.7	YES		bd		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.42	1.777e2					3.2	YES		dd		0.000
2	FUNCTION1 HPCD...	22.34	9.161e1					2.1	NO		bd		0.000
3	FUNCTION1 HPCD...	22.07	1.676e3					36.7	YES		bb		0.000
4	FUNCTION1 HPCD...	27.27	7.321e1					1.4	NO		bb		0.000
5	FUNCTION1 HPCD...	26.43	1.543e2					4.7	YES		bb		0.000
6	FUNCTION1 HPCD...	24.97	8.108e1					1.6	NO		bb		0.000
7	FUNCTION1 HPCD...	24.19	9.053e1					2.1	NO		bb		0.000
8	FUNCTION1 HPCD...	23.73	8.136e1					1.6	NO		bb		0.000
9	FUNCTION1 HPCD...	23.36	1.181e3					18.3	YES		bb		0.000
10	FUNCTION1 HPCD...	22.53	7.767e1					2.9	NO		db		0.000

ID: 21G0138-14, Name: 21091130, Date: 12-Sep-2021, Time: 10:25:24, Conditions: AUTOSPEC01, User: pk

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.66	8.213e1					2.2	NO		bb		0.000
2	FUNCTION2 HPCD...	32.19	1.350e2					2.9	NO		bb		0.000
3	FUNCTION2 HPCD...	31.10	1.044e2					2.0	NO		db		0.000
4	FUNCTION2 HPCD...	30.99	1.040e2					2.2	NO		dd		0.000
5	FUNCTION2 HPCD...	30.96	7.103e1					1.6	NO		bd		0.000
6	FUNCTION2 HPCD...	28.94	3.790e2					8.9	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	33.64	7.848e1					3.0	NO		bb		0.000
2	FUNCTION3 OCDPE	36.98	1.076e2					2.8	NO		db		0.000
3	FUNCTION3 OCDPE	36.94	1.235e2					3.4	YES		bd		0.000
4	FUNCTION3 OCDPE	36.52	1.391e2					3.3	YES		bb		0.000
5	FUNCTION3 OCDPE	34.21	9.994e1					2.2	NO		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.30	1.308e2					3.5	YES		bb		0.000
2	FUNCTION4 NCDPE	38.41	2.824e3					87.7	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.34	7.145e1					2.9	NO		bb		0.000
2	FUNCTION5 DCDPE	45.01	1.557e2					4.8	YES		bb		0.000

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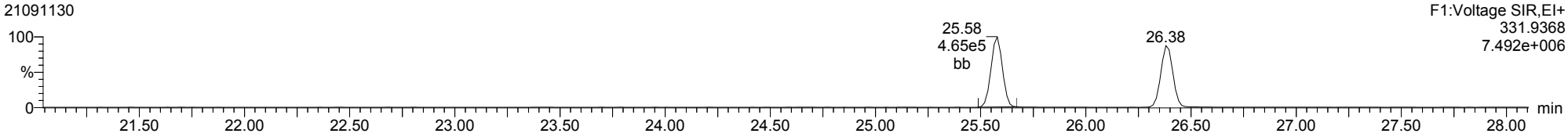

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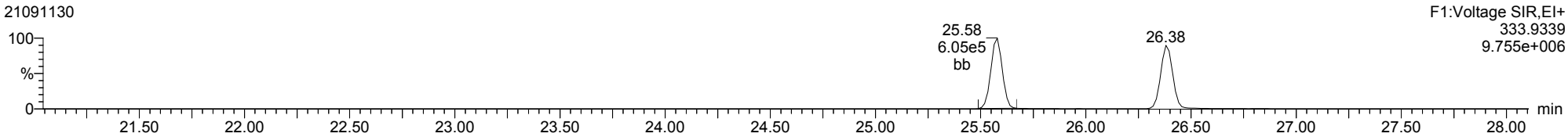

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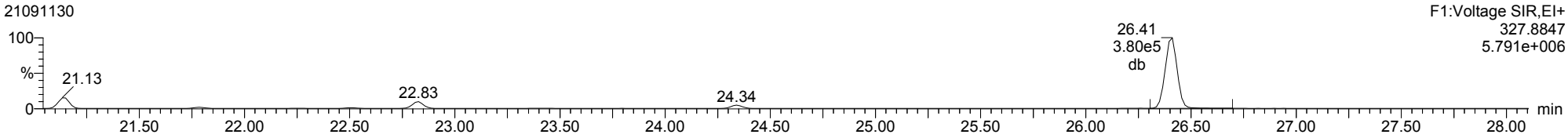

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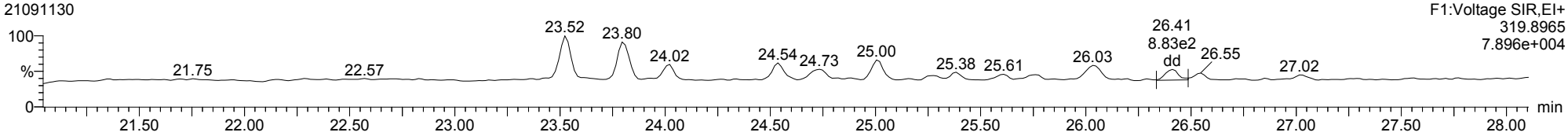

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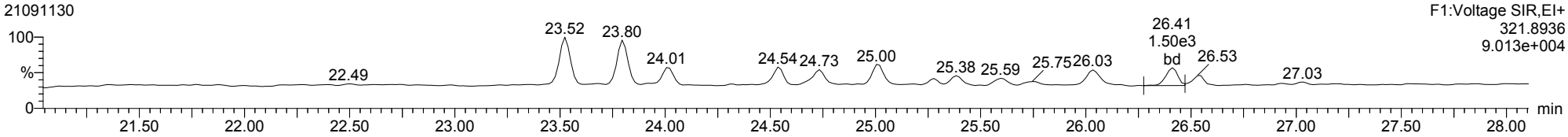

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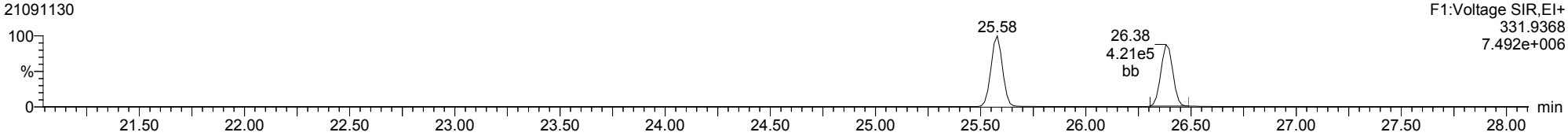

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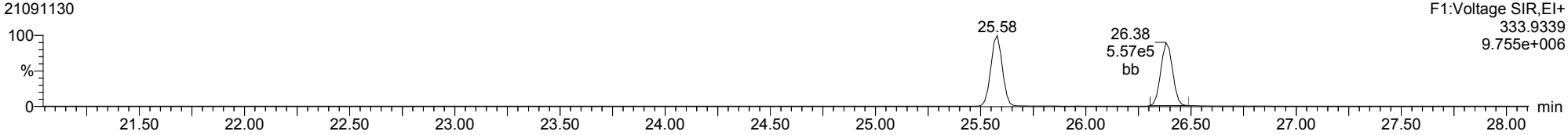

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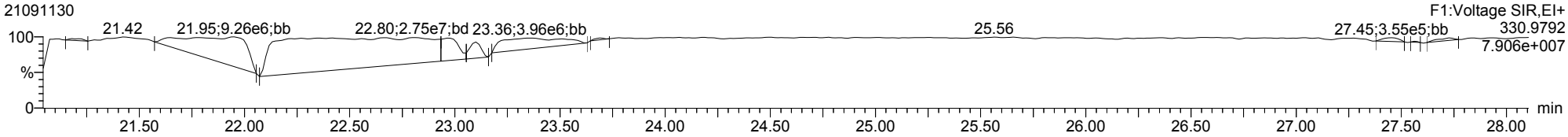

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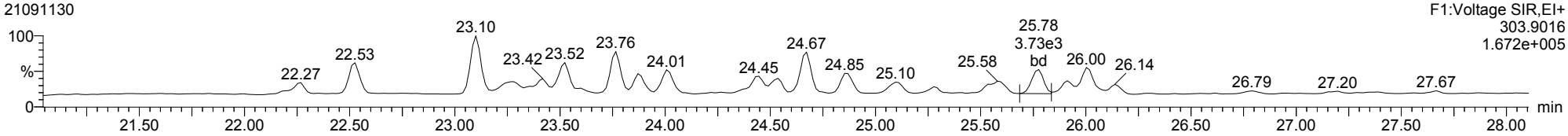

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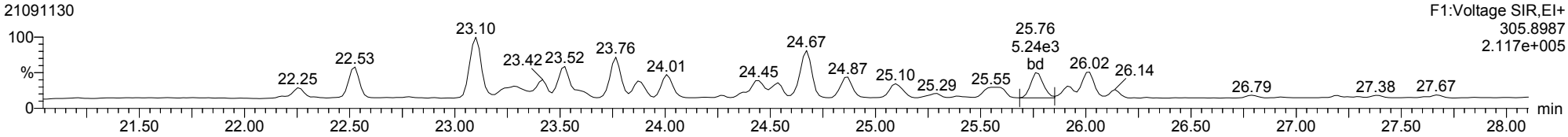

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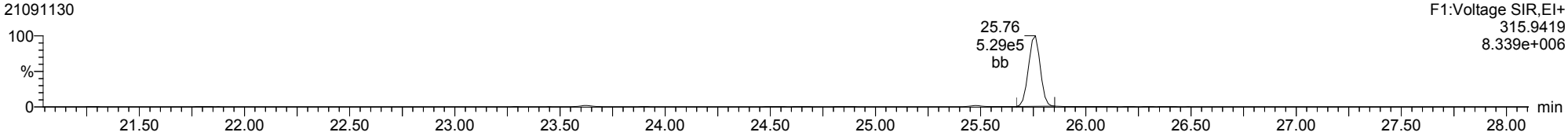

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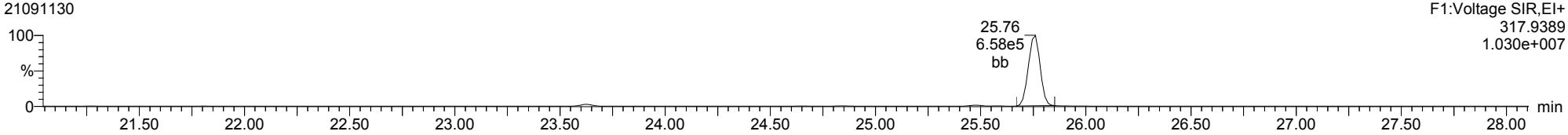

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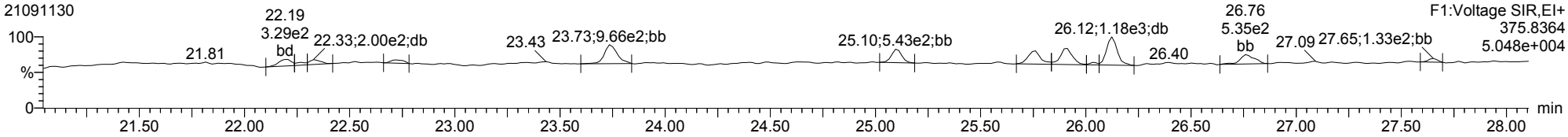

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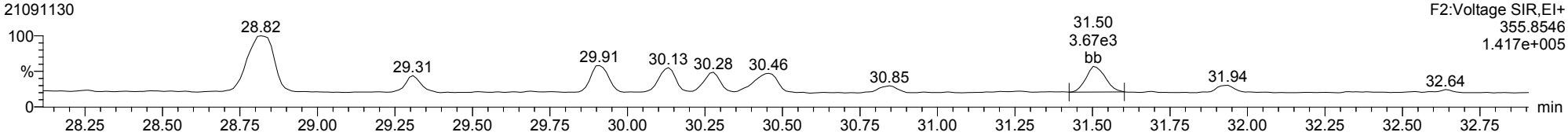

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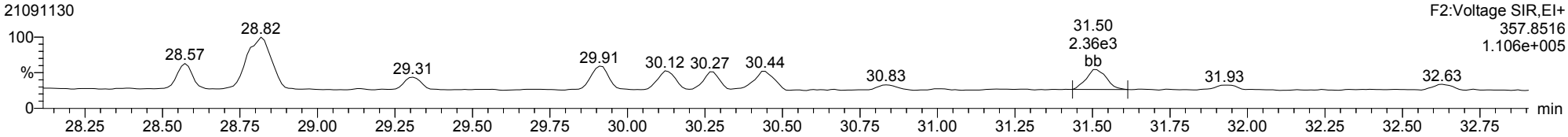

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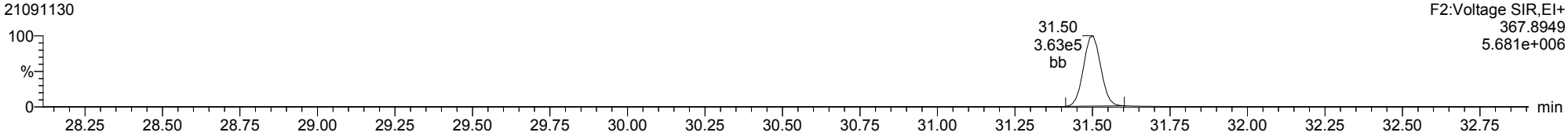

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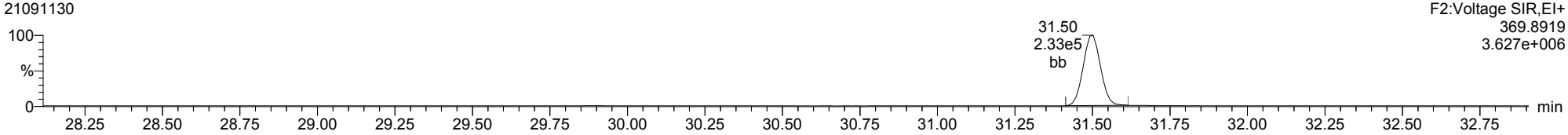

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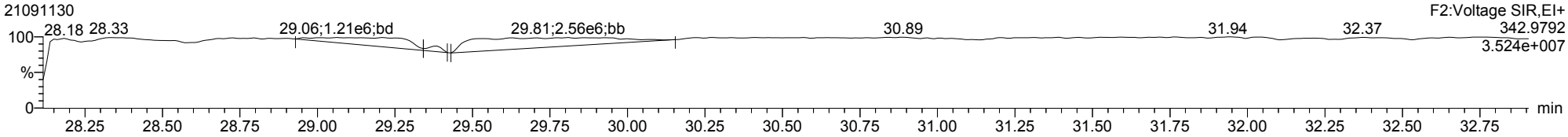

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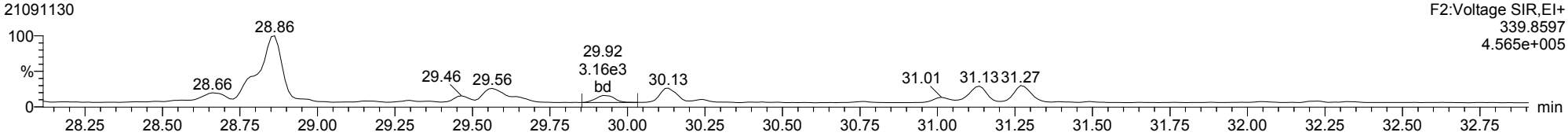

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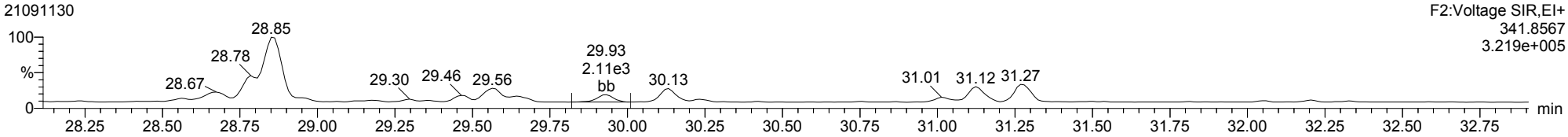

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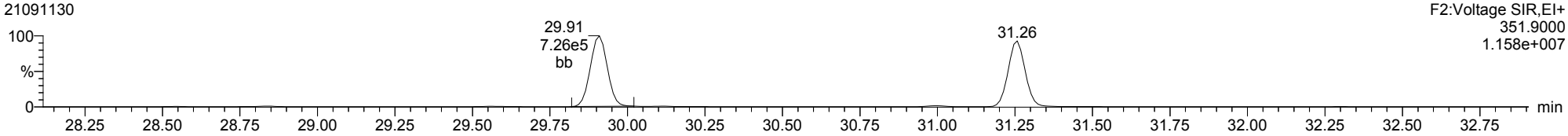

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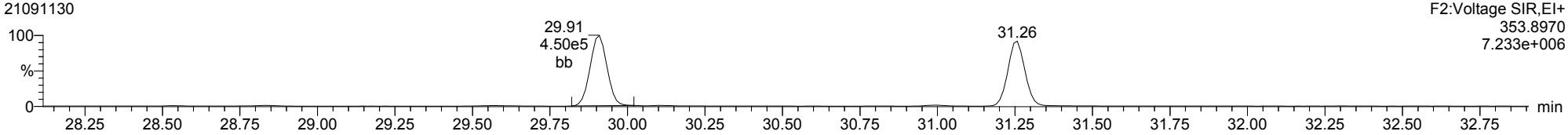

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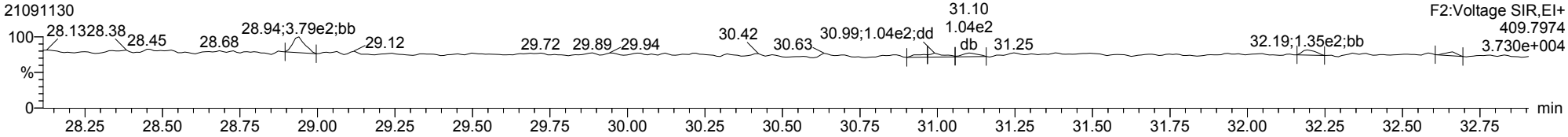

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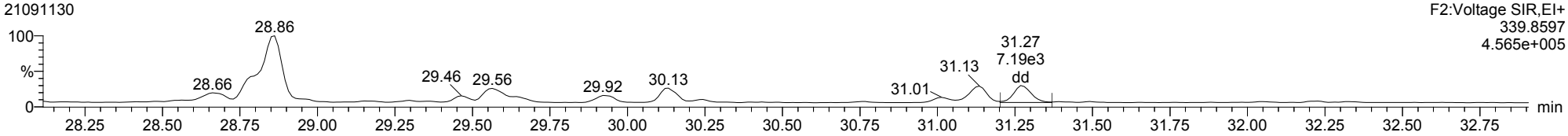
23478-PeCDF



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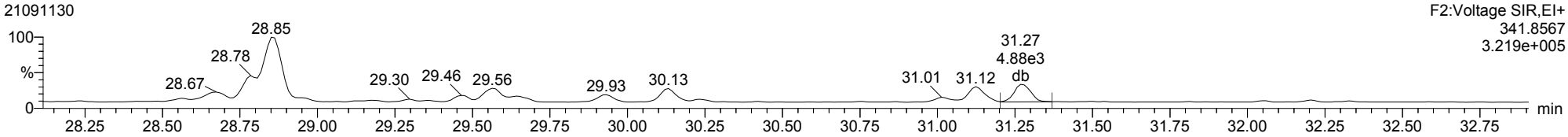

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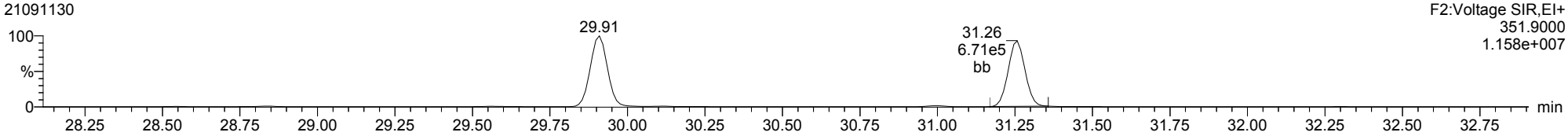

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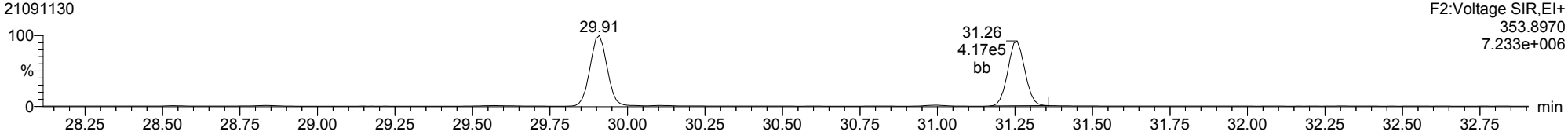

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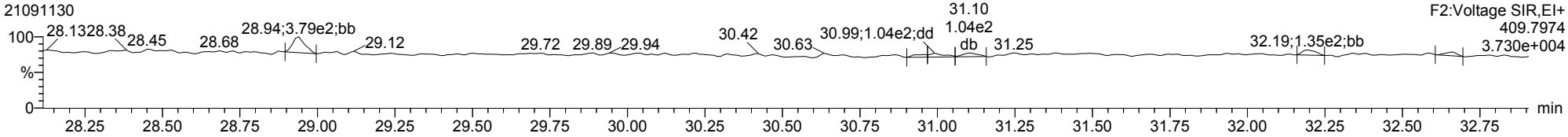

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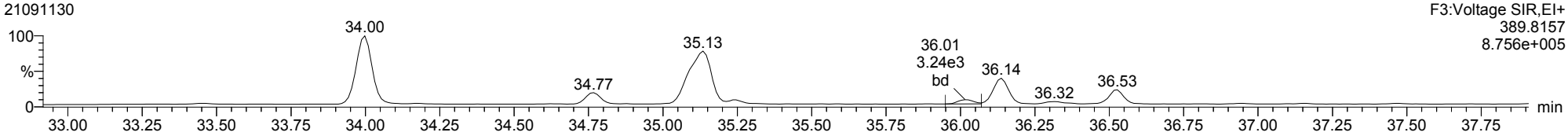

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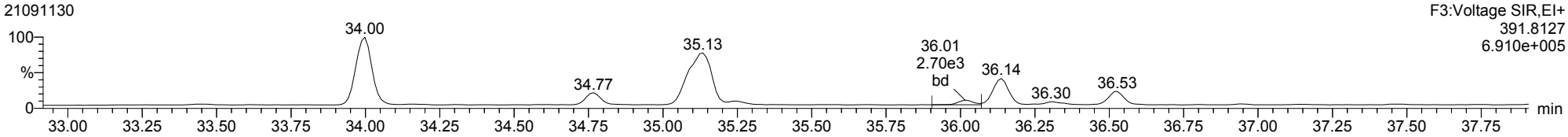

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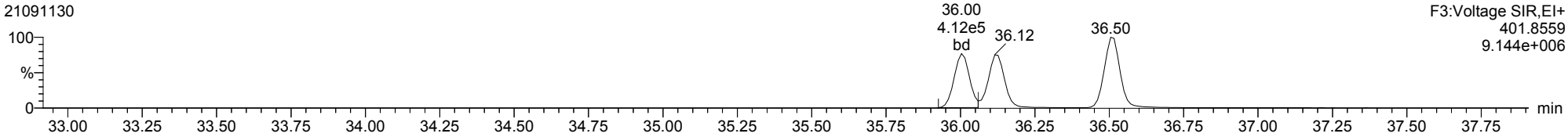

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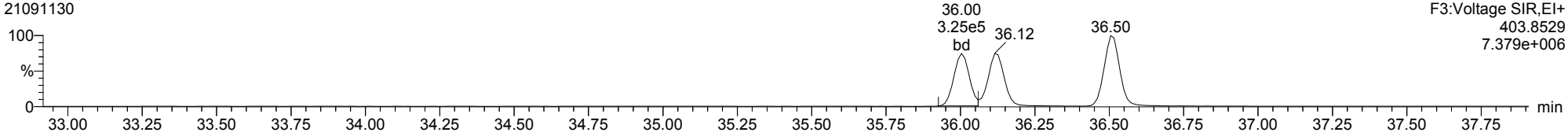

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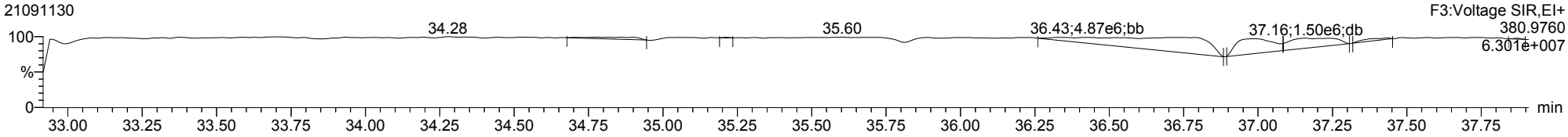

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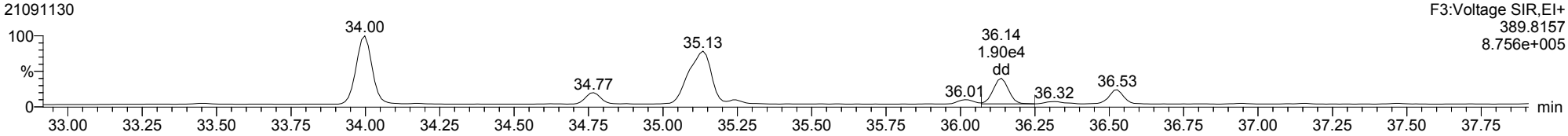

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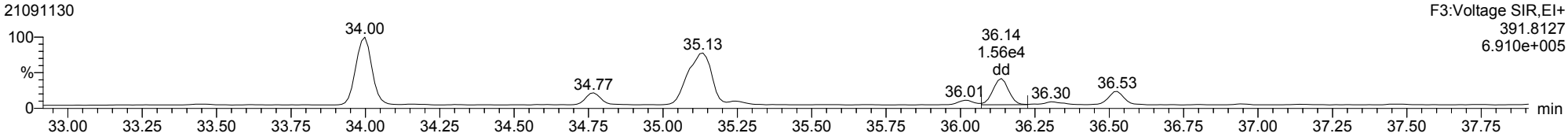

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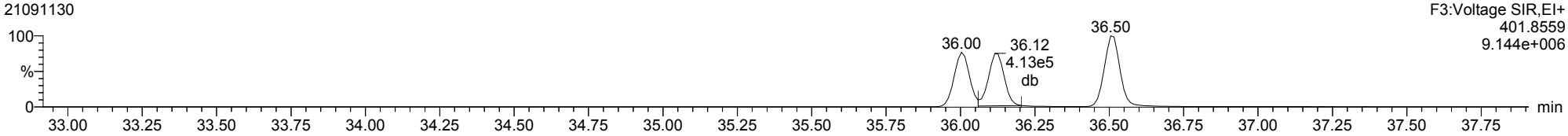

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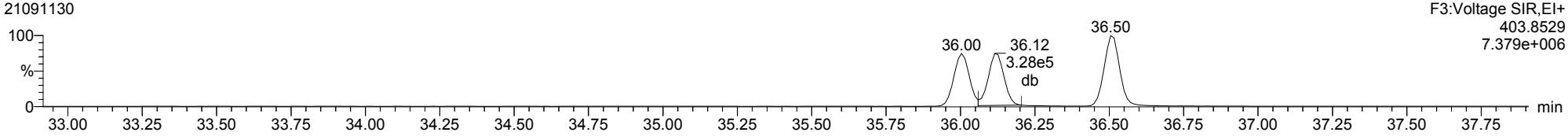

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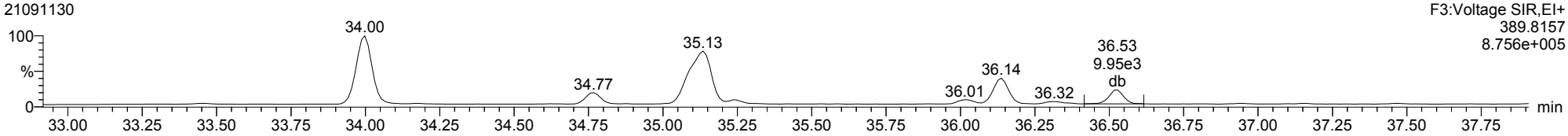

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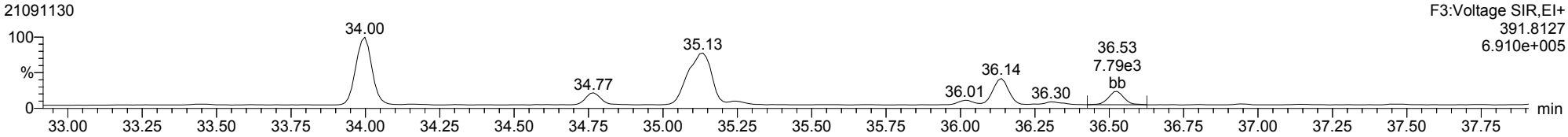

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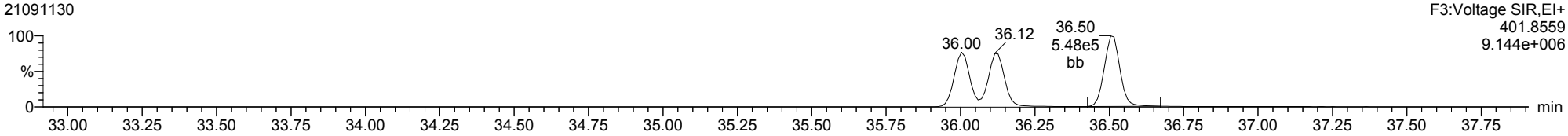

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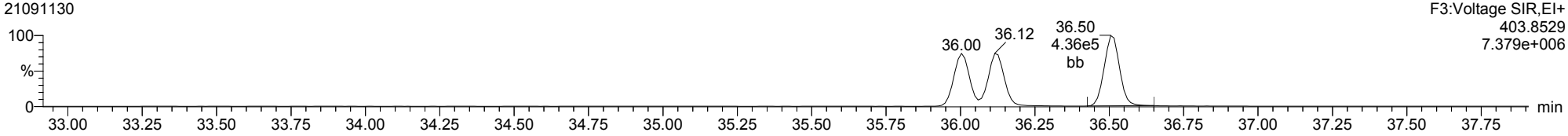

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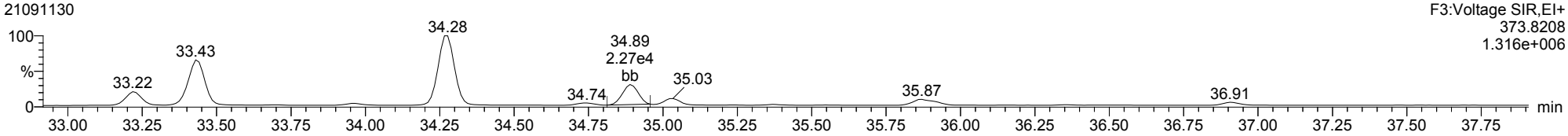

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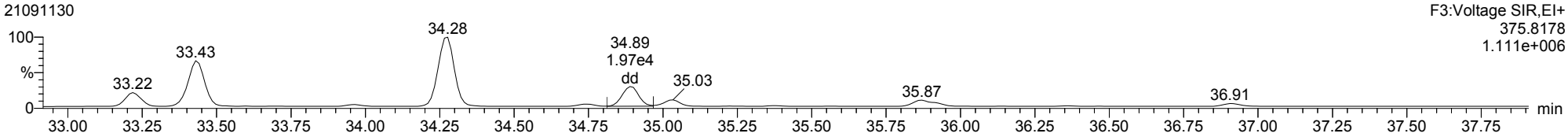

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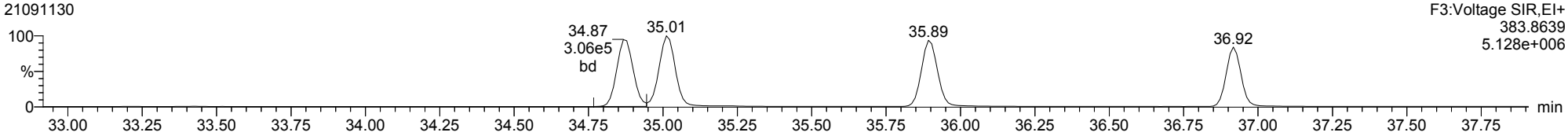

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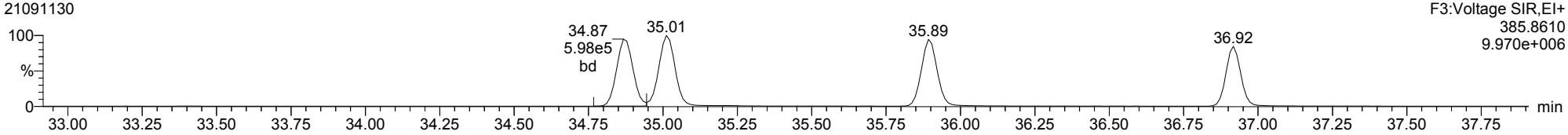

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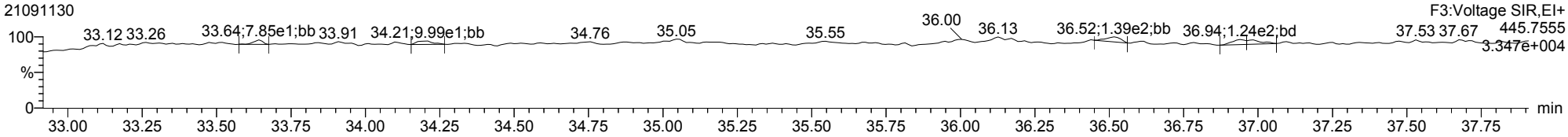

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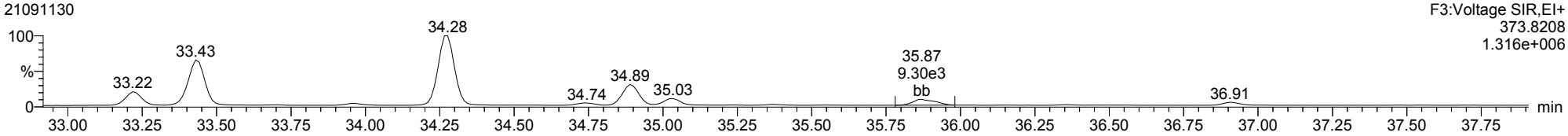

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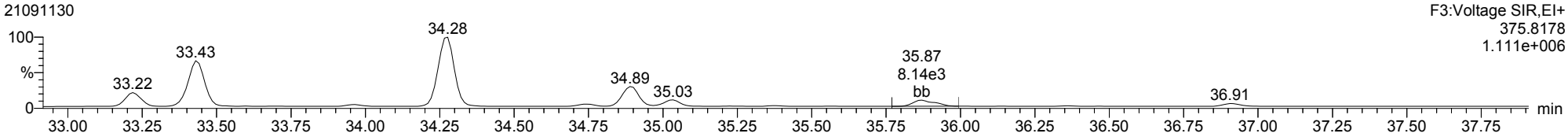

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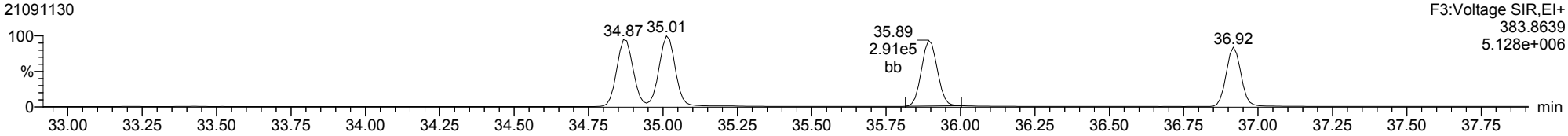

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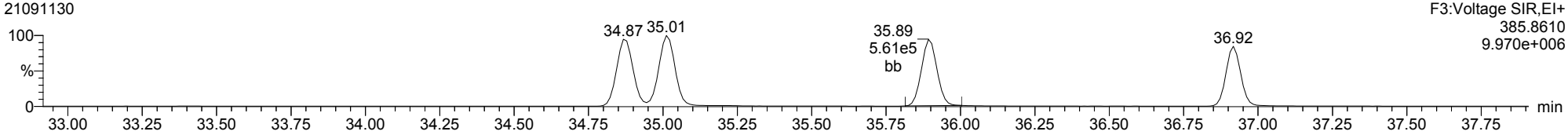

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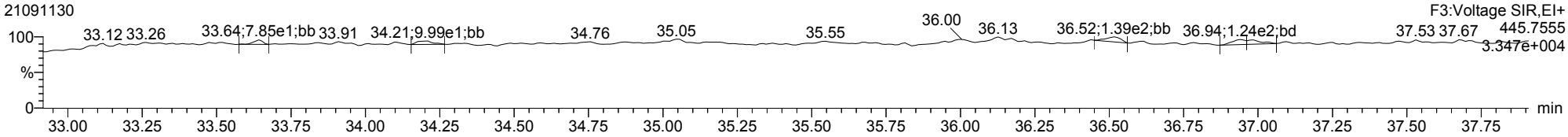

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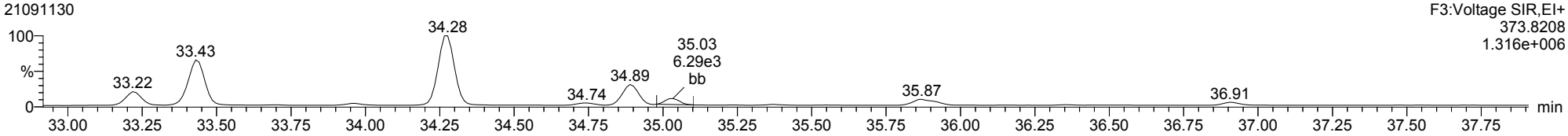

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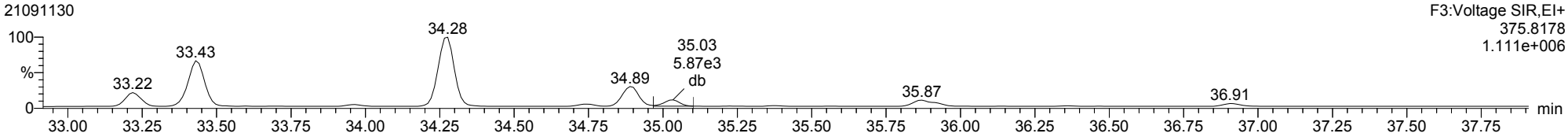

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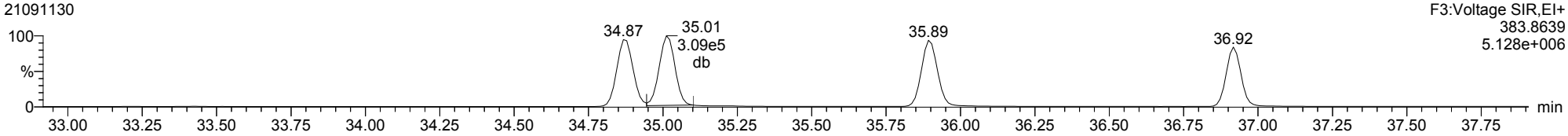

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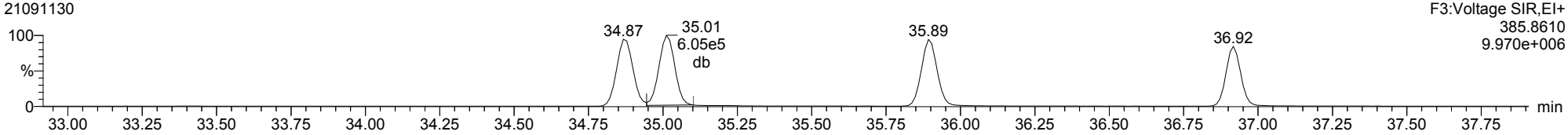

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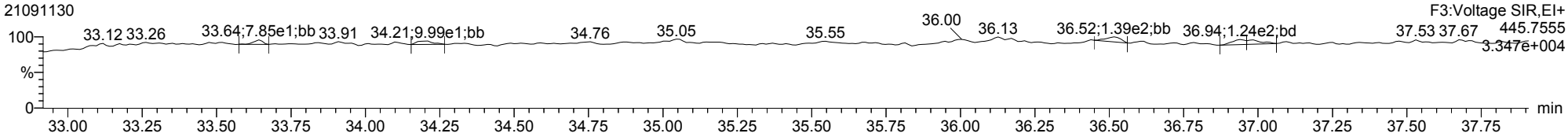

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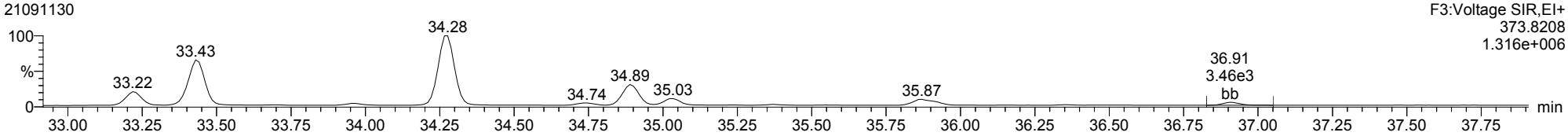

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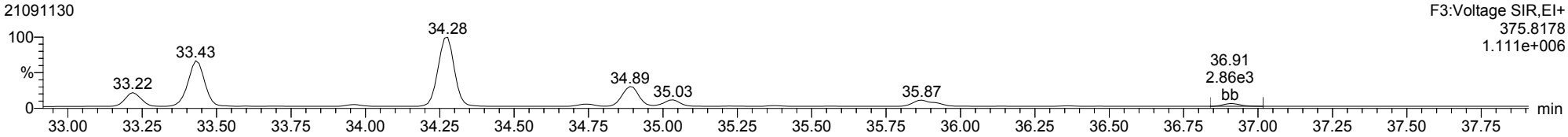

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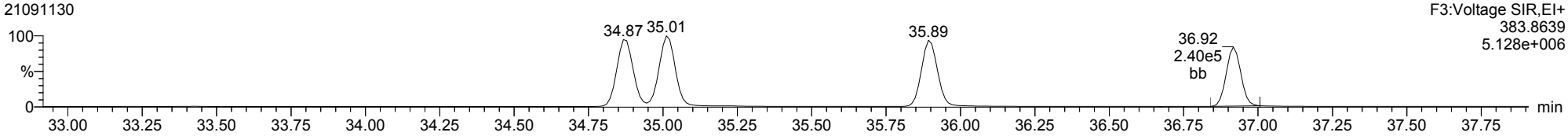

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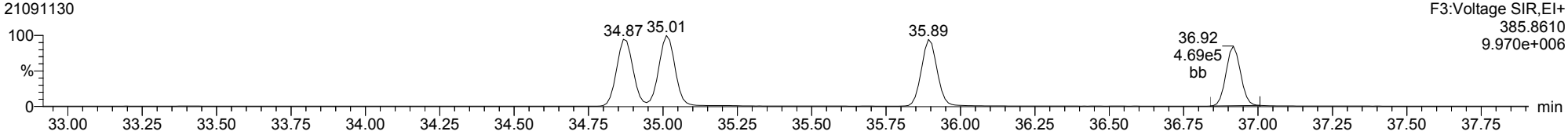

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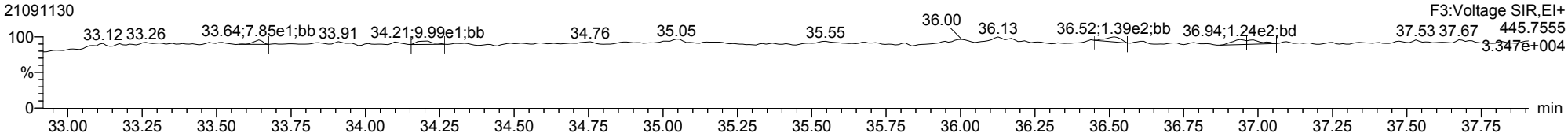

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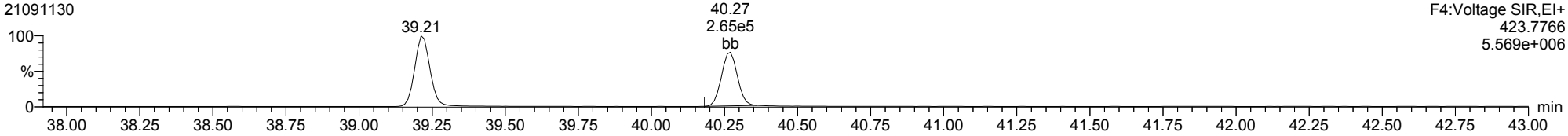

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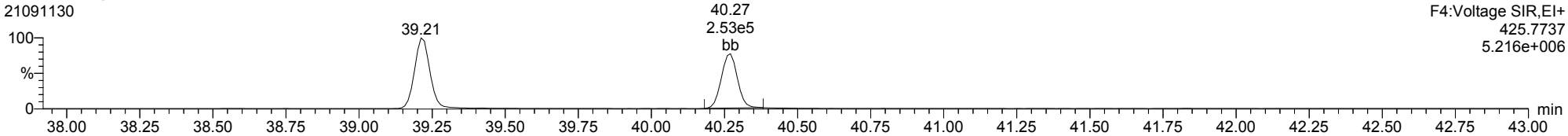

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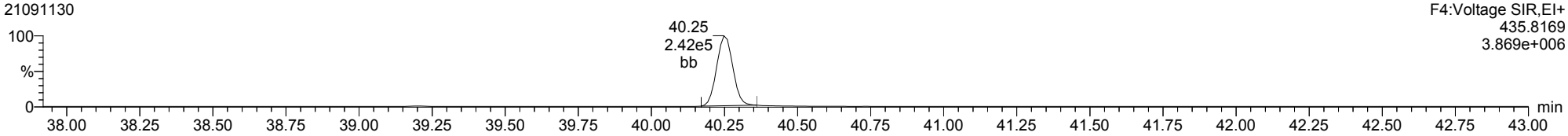

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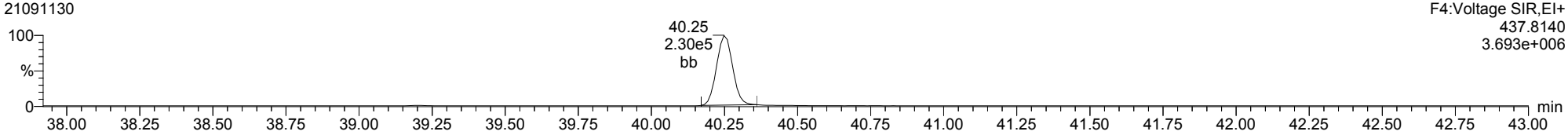

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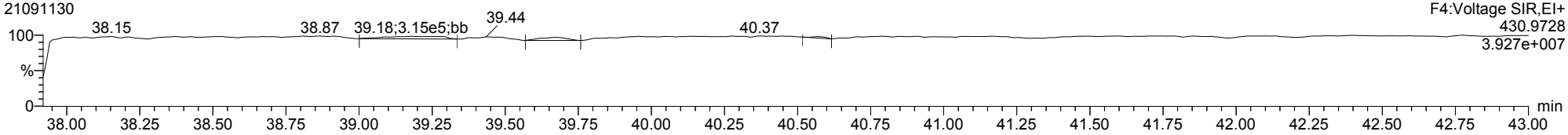

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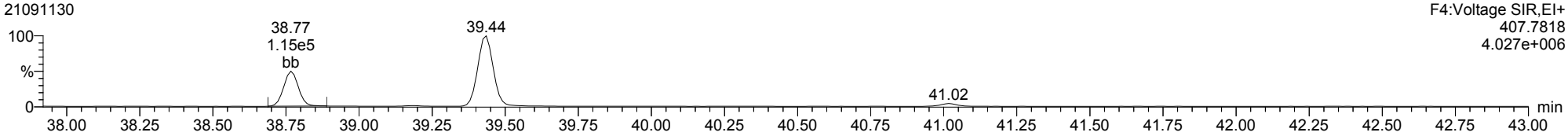

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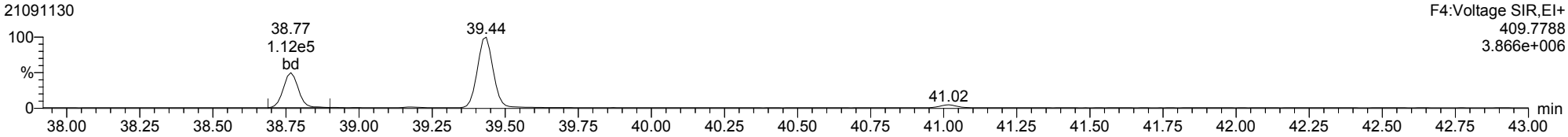

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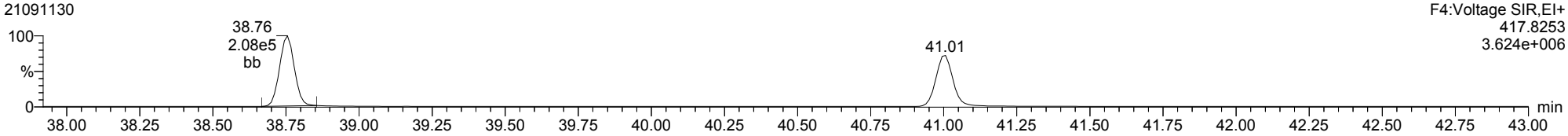

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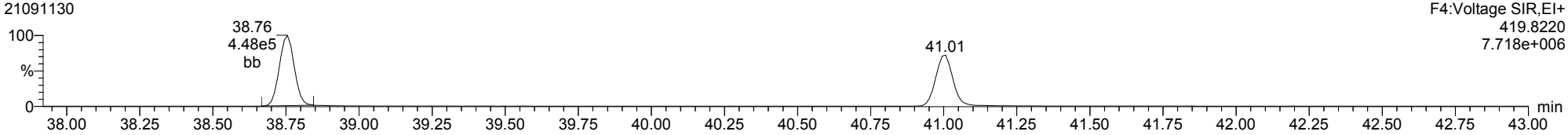

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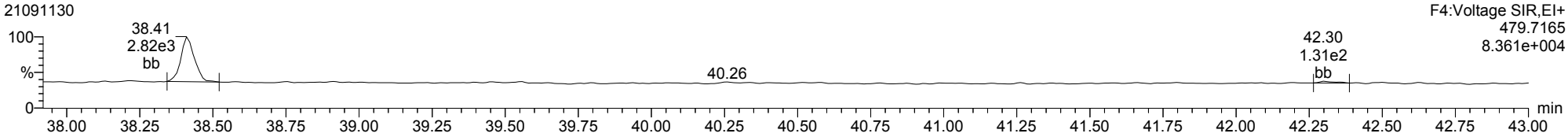

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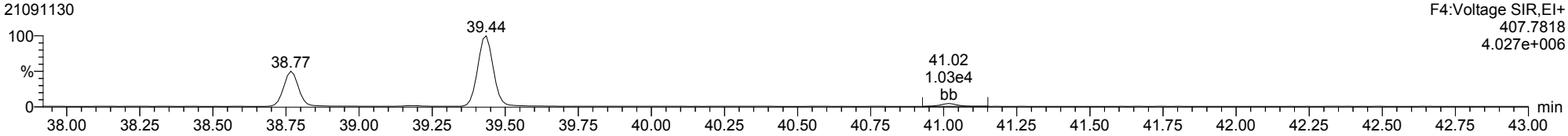

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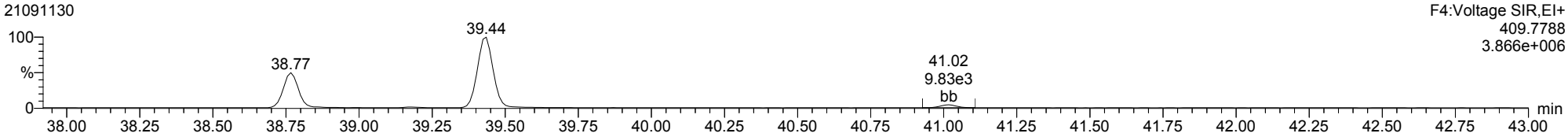

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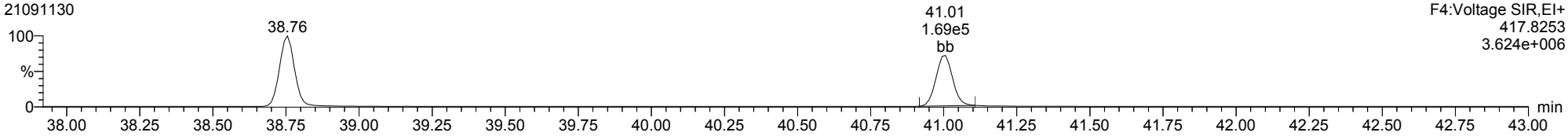

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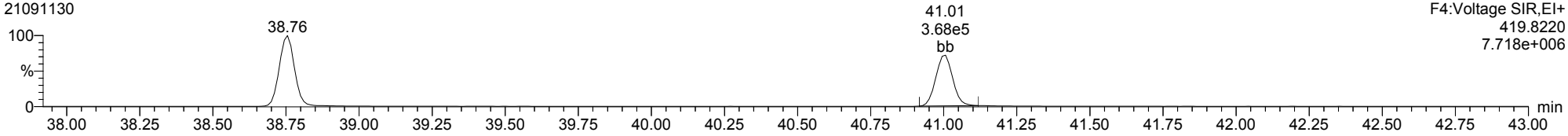

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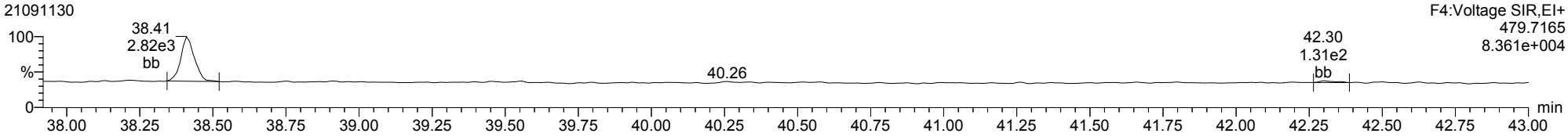

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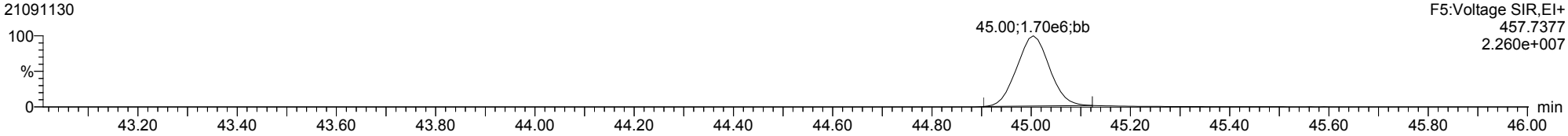

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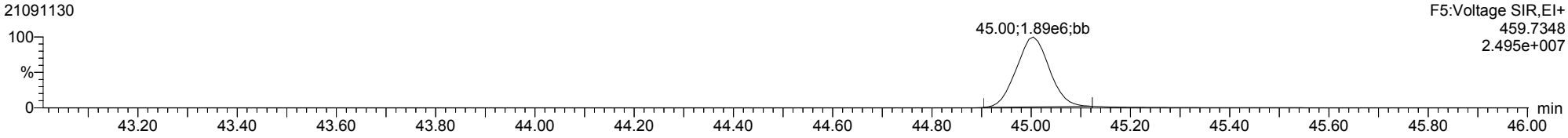

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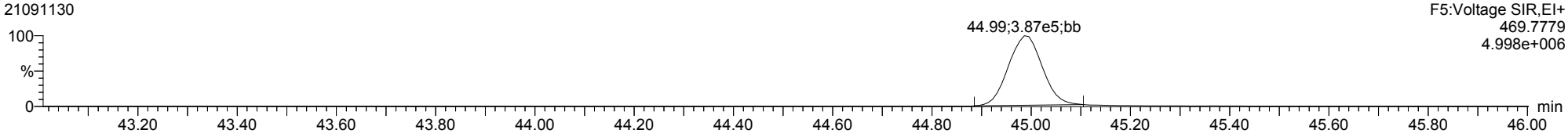

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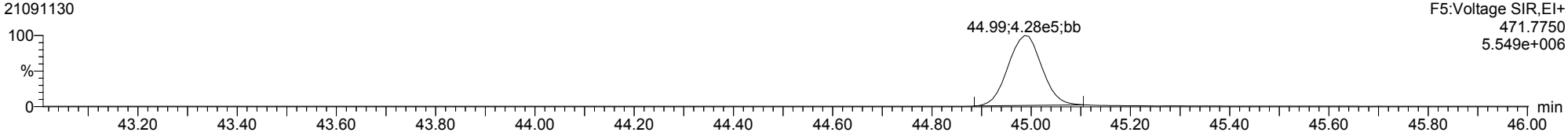

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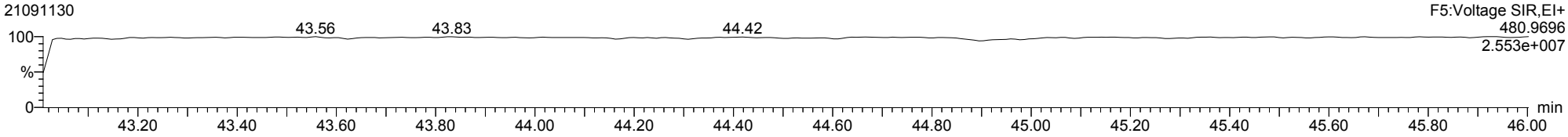

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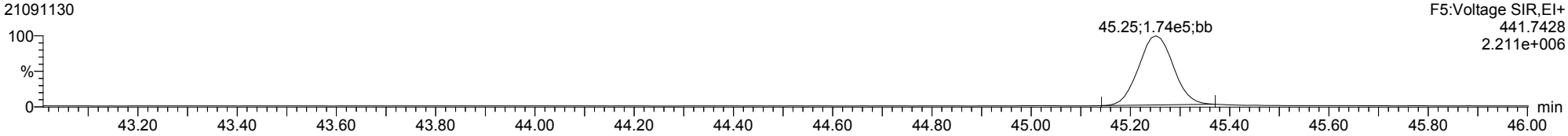

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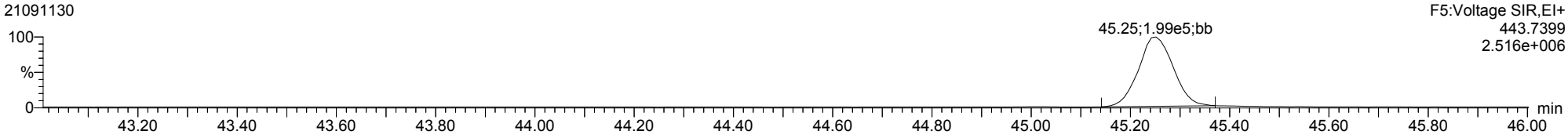

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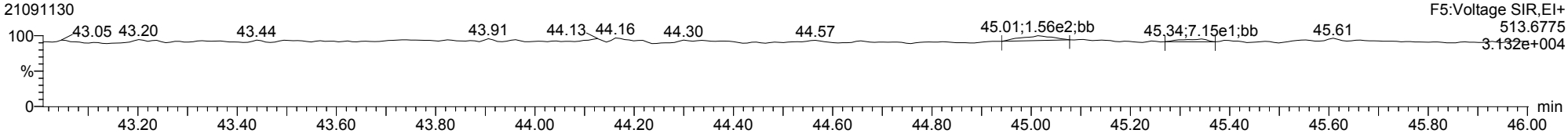

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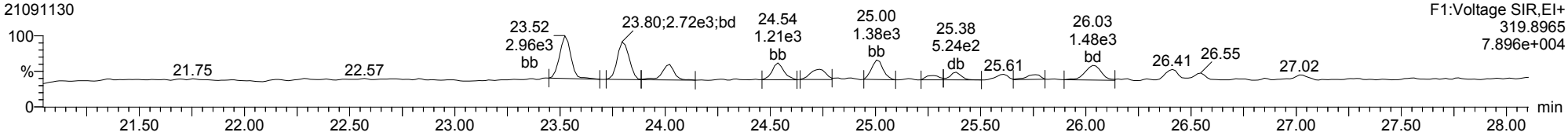

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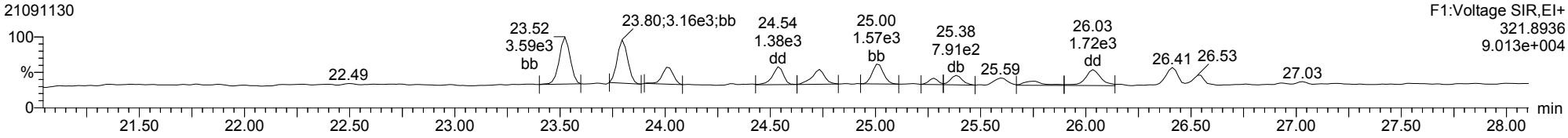

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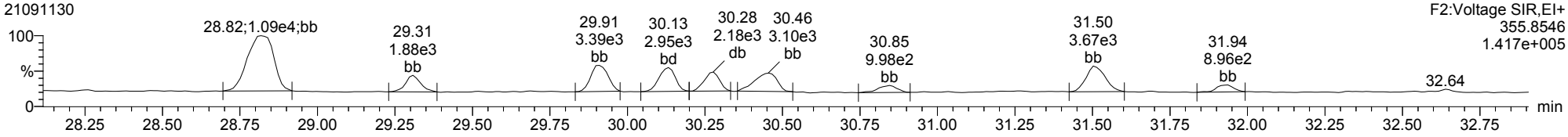

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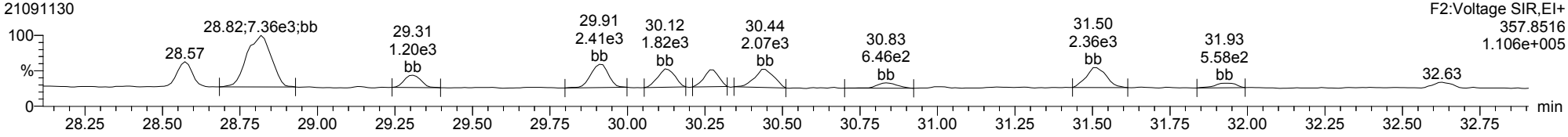

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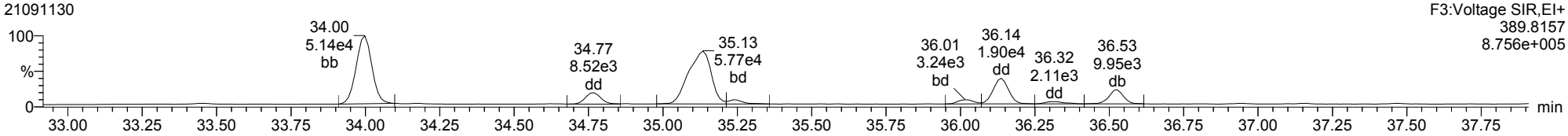
ID: 21G0138-14, Name: 21091130, Date: 12-Sep-2021, Time: 10:25:24, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



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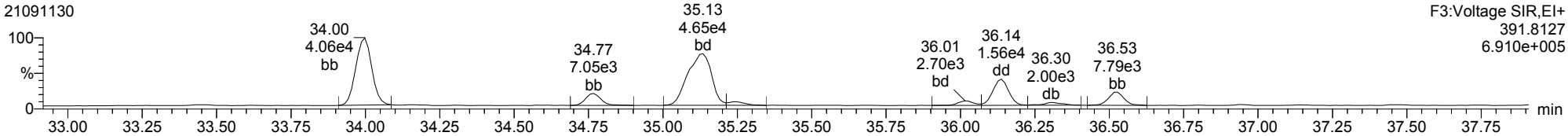

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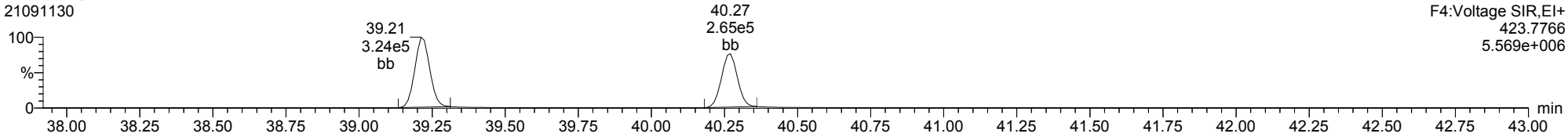

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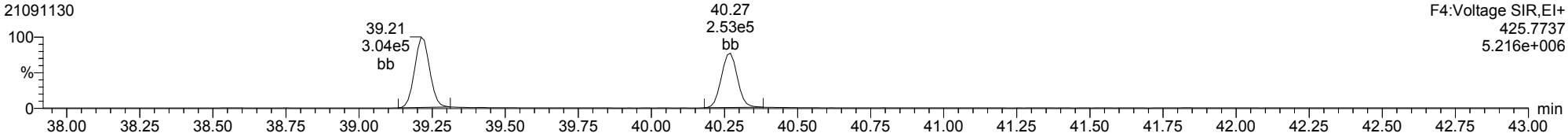

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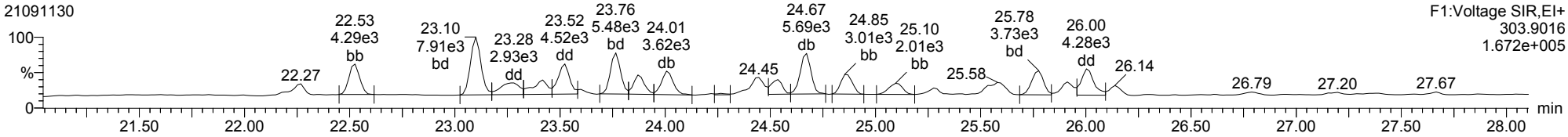
Total-tetrafurans



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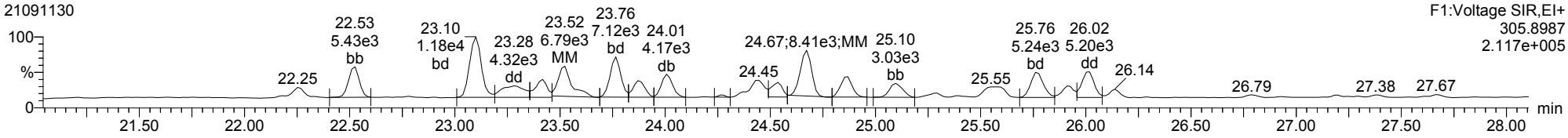

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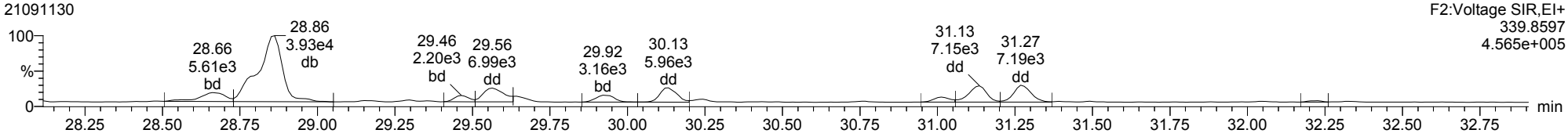

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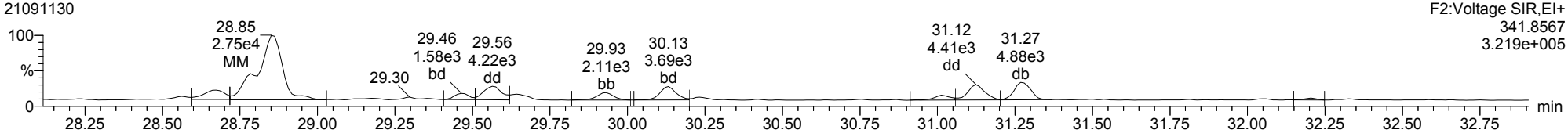

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Printed: Wednesday, September 15, 2021 11:36:54 Pacific Daylight Time

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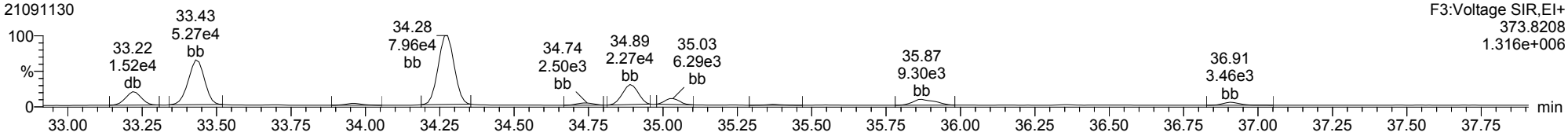

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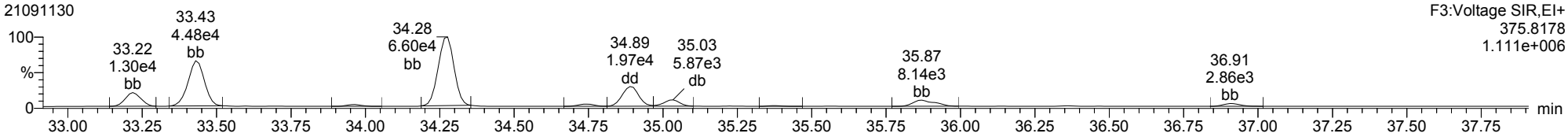

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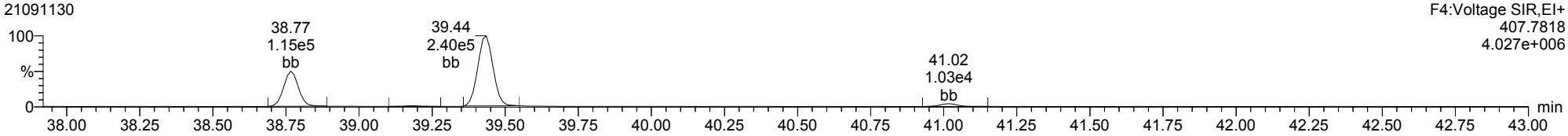
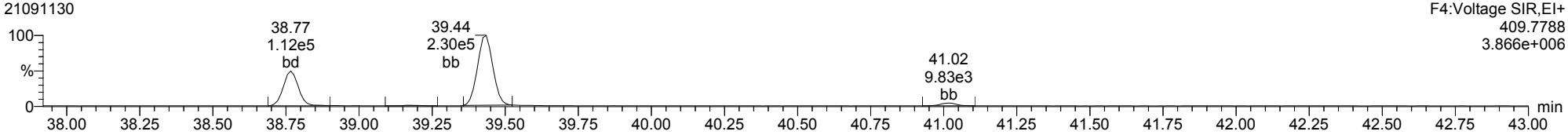


Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 1613B

Laboratory: Analytical Resources, Inc. SDG: 21G0138

Client: Anchor QEA, LLC Project: Lower Duwamish AOC4

Batch: BJH0150 Batch Matrix: Solid Preparation: EPA 1613

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT662B	21G0138-02	21091115	08/24/21 14:05	
LDW21-IT662B	21G0138-02RE1	21091326	08/24/21 14:05	Added 9/13/2021 by PK
LDW21-IT662C	21G0138-03	21091117	08/24/21 14:05	
LDW21-IT662E	21G0138-04	21091118	08/24/21 14:05	
LDW21-IT659B	21G0138-05	21091119	08/24/21 14:05	
LDW21-IT659C	21G0138-06	21091120	08/24/21 14:05	
LDW21-IT659E	21G0138-07	21091121	08/24/21 14:05	
LDW21-IT658B	21G0138-08	21091122	08/24/21 14:05	
LDW21-IT658C	21G0138-09	21091125	08/24/21 14:05	
LDW21-IT658E	21G0138-10	21091126	08/24/21 14:05	
LDW21-IT657B	21G0138-11	21091127	08/24/21 14:05	
LDW21-IT657C	21G0138-12	21091128	08/24/21 14:05	
LDW21-IT648B	21G0138-13	21091129	08/24/21 14:05	
LDW21-IT648C	21G0138-14	21091130	08/24/21 14:05	
Blank	BJH0150-BLK1	21091104	08/24/21 14:05	
LCS	BJH0150-BS1	21091105	08/24/21 14:05	
LDW21-IT662B	BJH0150-DUP2	21091116	08/24/21 14:05	
LDW21-IT662B	BJH0150-DUP3	21091327	08/24/21 14:05	Added 9/13/2021 by PK
Reference	BJH0150-SRM1	21091106	08/24/21 14:05	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HRGCMS Dioxin/Furan Preparation Bench Sheet EPA Methods 8290A & 1613B

Batch: BJH0150

Solid Samples

ARI Work Orders:	21G0132,21G0138		
Matrix (circle one)	Soil	Sediment	Oil Tissue
Extraction Method	Start Date/Time:	End Date/Time:	
Soxhlet SepF Shake out	8/24/21 14:05	8/25/21 0621	

Reagents/Equipment Used	NA	ID / Lot Number	Initials	Date
Balance		24650344	NLB	8/24/21
Toluene		J007944	NLB	8/24/21
Hexane		J006933	NLB	8/25/21 / 9/1/21
CH2Cl2		J007764	M	9/1/21
H2SO4		F000922	NLB	8/26/21
Na2SO4		J008511/J008000	NLB	8/24/21 / 8/26/21 / 9/1/21
Glasswool		I006679	M	9/1/21
~~(98:2) Hex/DCM~~				
Basic Silica		J002641	M	9/1/21
Acid Silica		J007981	M	9/1/21
0% Silica		J005622	NLB / M	8/24/21 / 9/1/21
Activated Florisil		J002451	M	9/1/21
Nonane		H006038	M	9/2/21
~~Other~~ SRM1		J006843	NLB	8/24/21

Lab Number & Container	Sample Name	% Solids	Sample Weight Equal to dry (g) (Target Dry)	Actual	RotoVap 45 °C	Water Trap Vol (mL)	Final Vol. (uL)
~~21G0132-19 A~~	~~RM10W-G-SD21-2107 11-0-35-....~~	~~47.31~~	~~(21.14)~~		~~1 / 2~~		~~20~~
21G0132-19 A	RM10W-G-SD21-2107 11-0-35-....	47.31	(21.14)	21.19	1 (2)	11.0	20
21G0132-20 A	RM10W-G-SD24-2107 11-0-37-....	46.15	(21.67)	21.67	1 (2)	11.0	20
21G0132-21 A	RM10W-G-SD27-2107 11-0-35-....	61.44	(16.28)	16.28	(1) 2	7.0	20
21G0132-22 A	RM10W-G-SD30-2107 11-0-35-....	50.05	(19.98)	19.97	(1) 2	11.0	20
21G0132-23 A	RM10W-FD02	40.51	(24.69)	24.68	1 (2)	14.5	20
~~21G0138-02 C~~	~~LDW21-IT662B~~	~~61.66~~	~~(16.22)~~		~~1 / 2~~		~~20~~
21G0138-02 C	LDW21-IT662B	61.66	(16.22)	16.23	1 (2)	7.0	20
21G0138-03 C	LDW21-IT662C	67.36	(14.85)	14.83	(1) / 2	5.0	20
21G0138-04 C	LDW21-IT662E	75.2	(13.30)	13.34 ~~13.29~~ NLB 8/24/21	(1) / 2	3.0	20
21G0138-05 C	LDW21-IT659B	55.94	(17.88)	17.87	1 (2)	6.0	20
21G0138-06 C	LDW21-IT659C	67.05	(14.91)	14.91	1 (2)	4.5	20
21G0138-07 C	LDW21-IT659E	78.98	(12.66)	12.66	(1) 2	2.5	20
21G0138-08 C	LDW21-IT658B	64.66	(15.47)	15.44	1 (2)	5.0	20
21G0138-09 C	LDW21-IT658C	77.79	(12.86)	12.86	(1) 2	5.0	20
21G0138-10 C	LDW21-IT658E	66.32	(15.08)	15.08	(1) 2	4.5	20
21G0138-11 C	LDW21-IT657B	60.84	(16.44)	16.46	1 (2)	5.0	20
21G0138-12 ~~D~~ C NLB 8/24/21	LDW21-IT657C	66.54	(15.03)	15.04	1 (2)	5.0	20
21G0138-13 C	LDW21-IT648B	62.78	(15.93)	15.94	(1) 2	5.8	20
21G0138-14 C	LDW21-IT648C	68.58	(14.58)	14.56	1 (2)	4.5	20
BJH0150-BLK1	Blank	100	()		1 (2)	0.0	20
BJH0150-BS1	LCS	100	()		(1) 2	0.0	20
21G0132-19A BJH0150-DUP1	Duplicate	47.31	(21.14)	21.14	1 (2)	11.0	20
21G0138-02C BJH0150-DUP2	Duplicate	61.66	(16.22	16.22	(1) / 2	5.5	20
BJH0150-SRM1	Reference	100	() 10	9.99	(1) 2	0.0	20
Prep Analyst / Date:	NLB 8/24/21			NLB 8/25/21	NLB 8/25/21	M 9/2/21	

Analytical Resources, Incorporated
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HRGCMS Dioxin/Furan Preparation Bench Sheet EPA Methods 8290A & 1613B

Batch: BJH0150

Solid Samples

Standards Used	Vol	ID / Lot Number	Concentration	Expiration Date	Analyst	Witness	Date
Recovery Standard	1.0 mL	J0007665	2/4 ng/mL	7/27/22	VLB	M	8/24/21
OPR	1.0 mL	J0001260	0.2/1.0/2.0 ng/mL	2/13/22	VLB	M	8/24/21
~~QLS Standard~~	~~1.0 mL~~		~~0.01/0.05/0.1ng/mL ng/m~~				
Cleanu-up Standard	1.0 mL	J0007666	0.8 ng/mL	7/27/22	M	VLB	9/1/21

Verify Client ID	
Analyst / Date: VLB 8/24/21	
Acid Clean	
Analyst / Date: VLB 8/26/21	[Y] / N
Silica-Florisil Clean	
Analyst / Date: M 9/1/21	[Y] / N

Supervisor Review By 9/2/21
Date

Printed: 8/5/2021 12:39:17PM

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Page 2 of 2

Analytical Resources, Incorporated
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Dioxin Extraction Laboratory – Glasswa

Batch ID: BJH0150 Work Order: 21G0132, 21G0138 Extraction Parameter: Dioxin ARI Analyst

ARI Sample ID	300 mL Flat Bottom	Small Soxhlet	Large Soxhlet	250 mL Beaker	Funnel	Column	Florisil Column	Turbo Tube	Sep Funnel	Erlenmeyer Flask	Centrifuge Bottle	Turbo-Vap	Vortex Mixer	Heating Element
BJH0150 - BLK1	80	56		263	81	165	67	69				4	4	A1
- BS1	84	46		8	4	142	121	8				4	4	A2
- DUP1	38		61	199	11	196	161	64				4	4	A3
- DUP2	59		70	177	27	211	161	58				4	4	A4
- SRM1	56	81		2	82	197	156	24				4	4	A5
21G0132 - 19A	86		32	~~199~~ 11	31	220	116	9				4	4	A6
- 20A	46		25	194	1	2	135	1				4	4	B1
- 21A	3		73	202	30	161	9	79				4	4	B2
- 22A	4		57	34	59	207	6	72				4	4	B3
- 23A	11		35	259	61	175	2	04				4	4	B4
21G0138 - 02C	22		76	235	25	229	140	12				4	4	B5
- 03C	85	89		188	57	156	99	10				4	4	B6
- 04C	83	111		~~0~~ 28	122	125	86	37				4	4	C1
- 05C	15		71	256	62	208	164	14				4	4	C2
- 06C	82	104		231	91	26	16	23				4	4	C3
- 07C	13	79		247	26	203	145	59				4	4	C4
- 08C	63	83		38	33	121	24	11				4	4	C5
- 09C	7	102		18	88	217	127	28				4	4	C6
- 10C	70	77		260	9	204	108	56				4	4	D1
- 11C	53		66	14	50	198	131	35				4	4	D2
- 12C	28	109		257	41	199	113	61				4	4	D3
14C ~~13C~~	77	67		23	34	3	137	36				4	4	D4
13C ~~14C~~	37	80		163	24	223	147	5				4	4	~~D4~~ D5

3095F
Dioxin Extraction Laboratory - Glassware Tracking

Revision 1

Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: Dioxin Extraction Batch BJH0150

Total Solids Batch: BJH0038 Work Order(s): 21G0132

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☒ Standing Water Decanted (Not shared)= 132-1,2,3,4,5,6,7,8,9,10,11,12,13,14	DP 8/3/21
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☒ Other (Details)= Also Standing Water decanted = 132, 15, 16, 17, 18, 19, 20	DP 8/3/21
All Samples = Wet Sludge	
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
☐ Share Samples Y / N	
☐ Multiple Jars Y / N	
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Organic Extractions Laboratory Analyst Notes

Extraction Parameter: Dioxin Extraction Batch BJH0150

Total Solids Batch: BJH0040 Work Order(s): 21G0132

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☒ Standing Water Decanted (Not shared)= 132-21, 22, 23	DAP 8/3/21
☐ Standing Water Homogenized (Shared samples)=	
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☒ Other (Details)= All samples = Wet Sludge	DAP 8/3/21
Aqueous:	
☐ No Anomalies	
☐ Turbid/Color=	
☐ Particulates(%)=(Note: >5%=Notify Supervisor/Lead)	
☐ Emulsions (%)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Other (Details)=	
☐ Received in 1.0L Bottle(s)=No Bottle Rinse=	
☐ Other Notes/Comments= (Note problems, concerns, corrective actions).	
☐ Share Samples Y / N	
☐ Multiple Jars Y / N	
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJI0010	Cleanup Type:	Sulfuric Acid
Cleanup Method:	z-EPA 3665A Sulfuric Acid Cleanup (mL) DO NOT USE	Analysis:	EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Duplicate	BJH0150-DUP2	21091116	08/26/2021	
LDW21-IT648B	21G0138-13	21091129	08/26/2021	
LDW21-IT662E	21G0138-04	21091118	08/26/2021	
LDW21-IT662C	21G0138-03	21091117	08/26/2021	
LDW21-IT662B	21G0138-02	21091115	08/26/2021	
LDW21-IT659C	21G0138-06	21091120	08/26/2021	
LDW21-IT658E	21G0138-10	21091126	08/26/2021	
LDW21-IT659B	21G0138-05	21091119	08/26/2021	
Blank	BJH0150-BLK1	21091104	08/26/2021	
LDW21-IT659E	21G0138-07	21091121	08/26/2021	
Duplicate	BJH0150-DUP3	21091327	08/26/2021	Added 9/13/2021 by PK
LDW21-IT657B	21G0138-11	21091127	08/26/2021	
Reference	BJH0150-SRM1	21091106	08/26/2021	
LDW21-IT648C	21G0138-14	21091130	08/26/2021	
LDW21-IT658B	21G0138-08	21091122	08/26/2021	
LDW21-IT657C	21G0138-12	21091128	08/26/2021	
LCS	BJH0150-BS1	21091105	08/26/2021	
LDW21-IT658C	21G0138-09	21091125	08/26/2021	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJI0010

Matrix: Solid **Cleanup using: Organics - z-EPA 3665A Sulfuric Acid Cleanup (mL) DO NOT USE** **Printed: 9/16/2021 11:22:28AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0138-14	C	LDW21-IT648C	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-13	C	LDW21-IT648B	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-09	C	LDW21-IT658C	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-10	C	LDW21-IT658E	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-11	C	LDW21-IT657B	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-12	C	LDW21-IT657C	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-03	C	LDW21-IT662C	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-04	C	LDW21-IT662E	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-02	C	LDW21-IT662B	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-05	C	LDW21-IT659B	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-06	C	LDW21-IT659C	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-07	C	LDW21-IT659E	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-08	C	LDW21-IT658B	C 01	20	20	1613B Dioxin	8/26/2021	VB	
21G0138-02	C	LDW21-IT662B	C 01	20	20	8290 Dioxin	8/26/2021	VB	
21G0132-19	A	RM10W-G-SD21-210711-0_25cm	A 01	20	20	8290 Dioxin	8/26/2021	VB	
21G0132-20	A	RM10W-G-SD24-210711-0_27cm	A 01	20	20	8290 Dioxin	8/26/2021	VB	
21G0132-21	A	RM10W-G-SD27-210711-0_25cm	A 01	20	20	8290 Dioxin	8/26/2021	VB	
21G0132-22	A	RM10W-G-SD30-210711-0_25cm	A 01	20	20	8290 Dioxin	8/26/2021	VB	
21G0132-23	A	RM10W-FD02	A 01	20	20	8290 Dioxin	8/26/2021	VB	
21G0132-19	A	RM10W-G-SD21-210711-0_25cm	A 01	20	20	1613B Dioxin	8/26/2021	VB	
BJH0150-SRM1	-	Reference	-	20	20	-	8/26/2021	VB	
BJH0150-DUP2	-	Duplicate	-	20	20	-	8/26/2021	VB	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJI0010

Matrix: Solid **Cleanup using: Organics - z-EPA 3665A Sulfuric Acid Cleanup (mL) DO NOT USE** **Printed: 9/16/2021 11:22:28AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
BJH0150-BLK1	-	Blank	-	20	20	-	8/26/2021	VB	
BJH0150-BS1	-	LCS	-	20	20	-	8/26/2021	VB	
BJH0150-DUP1	-	Duplicate	-	20	20	-	8/26/2021	VB	
BJH0150-DUP3	-	DUP DL	-	20	20	-	8/26/2021	VB	Added 9/13/2021 by PK

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJI0011	Cleanup Type:	Silica Gel
Cleanup Method:	EPA 3630C Silica Gel Cleanup	Analysis:	EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT648B	21G0138-13	21091129	09/01/2021	
LDW21-IT659B	21G0138-05	21091119	09/01/2021	
LDW21-IT659C	21G0138-06	21091120	09/01/2021	
LDW21-IT659E	21G0138-07	21091121	09/01/2021	
LDW21-IT662B	21G0138-02	21091115	09/01/2021	
LDW21-IT662C	21G0138-03	21091117	09/01/2021	
LDW21-IT658B	21G0138-08	21091122	09/01/2021	
LDW21-IT658E	21G0138-10	21091126	09/01/2021	
LDW21-IT657B	21G0138-11	21091127	09/01/2021	
LDW21-IT648C	21G0138-14	21091130	09/01/2021	
LDW21-IT658C	21G0138-09	21091125	09/01/2021	
Reference	BJH0150-SRM1	21091106	09/01/2021	
LDW21-IT662E	21G0138-04	21091118	09/01/2021	
LCS	BJH0150-BS1	21091105	09/01/2021	
Duplicate	BJH0150-DUP3	21091327	09/01/2021	Added 9/13/2021 by PK
Duplicate	BJH0150-DUP2	21091116	09/01/2021	
Blank	BJH0150-BLK1	21091104	09/01/2021	
LDW21-IT657C	21G0138-12	21091128	09/01/2021	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJI0011

Matrix: Solid **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** **Printed: 9/2/2021 10:01:35AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0138-14	C	LDW21-IT648C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-13	C	LDW21-IT648B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-09	C	LDW21-IT658C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-10	C	LDW21-IT658E	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-11	C	LDW21-IT657B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-12	C	LDW21-IT657C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-03	C	LDW21-IT662C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-04	C	LDW21-IT662E	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-02	C	LDW21-IT662B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-05	C	LDW21-IT659B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-06	C	LDW21-IT659C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-07	C	LDW21-IT659E	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-08	C	LDW21-IT658B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-02	C	LDW21-IT662B	C 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-19	A	RM10W-G-SD21-210711-0_25cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-20	A	RM10W-G-SD24-210711-0_27cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-21	A	RM10W-G-SD27-210711-0_25cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-22	A	RM10W-G-SD30-210711-0_25cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-23	A	RM10W-FD02	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-19	A	RM10W-G-SD21-210711-0_25cm	A 01	20	20	1613B Dioxin	9/1/2021	NPL	
BJH0150-SRM1	-	Reference	-	20	20	-	9/1/2021	NPL	
BJH0150-DUP2	-	Duplicate	-	20	20	-	9/1/2021	NPL	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJI0011

Matrix: Solid **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** **Printed: 9/2/2021 10:01:35AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
BJH0150-BLK1	-	Blank	-	20	20	-	9/1/2021	NPL	
BJH0150-BS1	-	LCS	-	20	20	-	9/1/2021	NPL	
BJH0150-DUP1	-	Duplicate	-	20	20	-	9/1/2021	NPL	

Analytical Resources, Incorporated
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CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJI0012	Cleanup Type:	Florisil
Cleanup Method:	z-EPA 3620B Florisil Cleanup (mL) DO NOT USE	Analysis:	EPA 1613B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT648C	21G0138-14	21091130	09/01/2021	
LCS	BJH0150-BS1	21091105	09/01/2021	
Duplicate	BJH0150-DUP3	21091327	09/01/2021	Added 9/13/2021 by PK
Duplicate	BJH0150-DUP2	21091116	09/01/2021	
Blank	BJH0150-BLK1	21091104	09/01/2021	
LDW21-IT662E	21G0138-04	21091118	09/01/2021	
LDW21-IT662C	21G0138-03	21091117	09/01/2021	
LDW21-IT659C	21G0138-06	21091120	09/01/2021	
LDW21-IT659E	21G0138-07	21091121	09/01/2021	
LDW21-IT662B	21G0138-02	21091115	09/01/2021	
LDW21-IT659B	21G0138-05	21091119	09/01/2021	
LDW21-IT658E	21G0138-10	21091126	09/01/2021	
LDW21-IT658C	21G0138-09	21091125	09/01/2021	
LDW21-IT658B	21G0138-08	21091122	09/01/2021	
LDW21-IT657C	21G0138-12	21091128	09/01/2021	
LDW21-IT657B	21G0138-11	21091127	09/01/2021	
Reference	BJH0150-SRM1	21091106	09/01/2021	
LDW21-IT648B	21G0138-13	21091129	09/01/2021	

Analytical Resources, Incorporated
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CLEANUP BENCH SHEET

CJI0012

Matrix: Solid **Cleanup using: Organics - EPA 3620B Florisil Cleanup (mL)** **Printed: 9/2/2021 10:02:11AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21G0138-14	C	LDW21-IT648C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-13	C	LDW21-IT648B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-09	C	LDW21-IT658C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-10	C	LDW21-IT658E	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-11	C	LDW21-IT657B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-12	C	LDW21-IT657C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-03	C	LDW21-IT662C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-04	C	LDW21-IT662E	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-02	C	LDW21-IT662B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-05	C	LDW21-IT659B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-06	C	LDW21-IT659C	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-07	C	LDW21-IT659E	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-08	C	LDW21-IT658B	C 01	20	20	1613B Dioxin	9/1/2021	NPL	
21G0138-02	C	LDW21-IT662B	C 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-19	A	RM10W-G-SD21-210711-0_25cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-20	A	RM10W-G-SD24-210711-0_27cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-21	A	RM10W-G-SD27-210711-0_25cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-22	A	RM10W-G-SD30-210711-0_25cm	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-23	A	RM10W-FD02	A 01	20	20	8290 Dioxin	9/1/2021	NPL	
21G0132-19	A	RM10W-G-SD21-210711-0_25cm	A 01	20	20	1613B Dioxin	9/1/2021	NPL	
BJH0150-SRM1	-	Reference	-	20	20	-	9/1/2021	NPL	
BJH0150-DUP2	-	Duplicate	-	20	20	-	9/1/2021	NPL	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJI0012

Matrix: Solid **Cleanup using: Organics - EPA 3620B Florisil Cleanup (mL)** **Printed: 9/2/2021 10:02:11AM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
BJH0150-BLK1	-	Blank	-	20	20	-	9/1/2021	NPL	
BJH0150-BS1	-	LCS	-	20	20	-	9/1/2021	NPL	
BJH0150-DUP1	-	Duplicate	-	20	20	-	9/1/2021	NPL	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Blank

Form 1
METHOD BLANK DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BJH0150-BLK1	File ID:	21091104
Sampled:	N/A	Prepared:	08/24/21 14:05	Analyzed:	09/11/21 12:58
Solids Wt%:		Preparation:	EPA 1613	Initial/Final:	10 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

CAS NO.	COMPOUND	DF/Split	Ion Ratio	Ratio Limits	EDL	RL	Result	Units	Q
51207-31-9	2,3,7,8-TCDF	1	0.000	0.655-0.886	0.048	1.00	ND	ng/kg	U
1746-01-6	2,3,7,8-TCDD	1	0.000	0.655-0.886	0.095	1.00	ND	ng/kg	U
57117-41-6	1,2,3,7,8-PeCDF	1	0.000	1.318-1.783	0.062	1.00	ND	ng/kg	U
57117-31-4	2,3,4,7,8-PeCDF	1	0.000	1.318-1.783	0.061	1.00	ND	ng/kg	U
40321-76-4	1,2,3,7,8-PeCDD	1	0.000	1.318-1.783	0.115	1.00	ND	ng/kg	U
70648-26-9	1,2,3,4,7,8-HxCDF	1	0.000	1.054-1.426	0.075	1.00	ND	ng/kg	U
57117-44-9	1,2,3,6,7,8-HxCDF	1	0.000	1.054-1.426	0.069	1.00	ND	ng/kg	U
60851-34-5	2,3,4,6,7,8-HxCDF	1	0.000	1.054-1.426	0.077	1.00	ND	ng/kg	U
72918-21-9	1,2,3,7,8,9-HxCDF	1	0.000	1.054-1.426	0.092	1.00	ND	ng/kg	U
39227-28-6	1,2,3,4,7,8-HxCDD	1	0.000	1.054-1.426	0.087	1.00	ND	ng/kg	U
57653-85-7	1,2,3,6,7,8-HxCDD	1	0.000	1.054-1.426	0.089	1.00	ND	ng/kg	U
19408-74-3	1,2,3,7,8,9-HxCDD	1	0.000	1.054-1.426	0.094	1.00	ND	ng/kg	U
67562-39-4	1,2,3,4,6,7,8-HpCDF	1	1.727	0.893-1.208	0.065	1.00	0.0955	ng/kg	EMPC, J
55673-89-7	1,2,3,4,7,8,9-HpCDF	1	0.000	0.893-1.208	0.096	1.00	ND	ng/kg	U
35822-46-9	1,2,3,4,6,7,8-HpCDD	1	2.466	0.893-1.208	0.140	2.50	0.180	ng/kg	EMPC, J
39001-02-0	OCDF	1	0.000	0.757-1.024	0.185	2.50	ND	ng/kg	U
3268-87-9	OCDD	1	0.834	0.757-1.024	0.214	10.0	2.03	ng/kg	J

Homologue Groups

55722-27-5	Total TCDF	1	0.000			1.00	ND	ng/kg
41903-57-5	Total TCDD	1	0.000			1.00	ND	ng/kg
30402-15-4	Total PeCDF	1	0.000			1.00	ND	ng/kg
36088-22-9	Total PeCDD	1	0.000			1.00	ND	ng/kg
55684-94-1	Total HxCDF	1	0.000			1.00	ND	ng/kg
34465-46-8	Total HxCDD	1	0.000			1.00	0.159	ng/kg
38998-75-3	Total HpCDF	1	0.000			1.00	ND	ng/kg
37871-00-4	Total HpCDD	1	0.000			1.00	ND	ng/kg

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.003
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.151

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Blank

Form 2
METHOD BLANK DATA SHEET
EPA 1613B
Dioxins/Furans by HRGC/HRMS

Laboratory:	Analytical Resources, Inc.			SDG:	21G0138
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BJH0150-BLK1	File ID:	21091104
Sampled:	N/A	Prepared:	08/24/21 14:05	Analyzed:	09/11/21 12:58
Solids Wt%:	0.00	Preparation:	EPA 1613	Initial/Final:	10 g / 20 uL
Result Basis:	Dry	Sequence:	SJI0175	Calibration:	EH00030
Batch:	BJH0150	Instrument:	AUTOSPEC01	Column:	RTX-Dioxin2

Labels	DF/Split	Ion Ratio	Ratio Limits	EDL	% REC	QC LIMITS	Q
13C12-2,3,7,8-TCDF	1	0.804	0.655-0.886	0.08	91.1	24 - 169 %	
13C12-2,3,7,8-TCDD	1	0.762	0.655-0.886	0.11	88.0	25 - 164 %	
13C12-1,2,3,7,8-PeCDF	1	1.593	1.318-1.783	0.24	93.0	24 - 185 %	
13C12-2,3,4,7,8-PeCDF	1	1.605	1.318-1.783	0.25	90.8	21 - 178 %	
13C12-1,2,3,7,8-PeCDD	1	1.569	1.318-1.783	0.13	84.6	25 - 181 %	
13C12-1,2,3,4,7,8-HxCDF	1	0.518	0.434-0.587	0.23	81.2	26 - 152 %	
13C12-1,2,3,6,7,8-HxCDF	1	0.504	0.434-0.587	0.21	77.2	26 - 123 %	
13C12-2,3,4,6,7,8-HxCDF	1	0.512	0.434-0.587	0.23	77.8	28 - 136 %	
13C12-1,2,3,7,8,9-HxCDF	1	0.513	0.434-0.587	0.28	78.5	29 - 147 %	
13C12-1,2,3,4,7,8-HxCDD	1	1.281	1.054-1.426	0.14	83.3	32 - 141 %	
13C12-1,2,3,6,7,8-HxCDD	1	1.269	1.054-1.426	0.13	82.4	28 - 130 %	
13C12-1,2,3,4,6,7,8-HpCDF	1	0.458	0.374-0.506	0.20	79.7	28 - 143 %	
13C12-1,2,3,4,7,8,9-HpCDF	1	0.466	0.374-0.506	0.25	73.8	26 - 138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1	1.058	0.893-1.208	0.20	74.5	23 - 140 %	
13C12-OCDD	1	0.918	0.757-1.024	0.25	77.7	17 - 157 %	
37Cl4-2,3,7,8-TCDD	1	328.000		0.05	85.2	35 - 197 %	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:21:12 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF					1.108		0.770	485	832								
12378-PeCDF					1.015		1.550	626	815								
23478-PeCDF					1.126		1.550	626	815								
123478-HxCDF					1.017		1.240	642	643								
234678-HxCDF					1.052		1.240	642	643								
123678-HxCDF					1.037		1.240	642	643								
123789-HxCDF					1.030		1.240	642	643								
1234678-HpCDF	38.744	1.001	1.910e2	1.106e2	1.327	1.727	1.050	521	584	3.59e3	1.88e3	6.9	3.2	YES	bb	bb	0.048
1234789-HpCDF					1.283		1.050	521	584								
OCDF					1.447		0.890	644	744								
2378-TCDD					0.920		0.770	859	694								
12378-PeCDD					0.995		1.550	823	501								
123478-HxCDD					1.027		1.240	733	571								
123678-HxCDD					1.009		1.240	733	571								
123789-HxCDD					0.950		1.240	733	571								
1234678-HpCDD	40.226	1.000	2.080e2	8.438e1	1.068	2.466	1.050	593	585	4.79e3	2.54e3	8.1	4.3	YES	bb	bb	0.090
OCDD	44.950	1.000	1.376e3	1.650e3	1.181	0.834	0.890	619	694	2.02e4	2.04e4	32.7	29.3	NO	bb	bb	1.016
13C-2378-TCDF	25.730	1.007	4.222e5	5.251e5	1.427	0.804	0.770	1108	1174	6.56e6	8.14e6	5920.2	6932.4	NO	bb	bb	91.141
13C-12378-PeCDF	29.876	1.169	5.401e5	3.391e5	1.297	1.593	1.550	2279	3690	8.41e6	5.23e6	3689.5	1416.8	NO	bb	bb	93.006
13C-23478-PeCDF	31.224	1.222	5.042e5	3.142e5	1.236	1.605	1.550	2279	3690	7.70e6	4.84e6	3378.3	1310.4	NO	bb	bb	90.844
13C-123478-HxCDF	34.834	0.955	2.220e5	4.284e5	1.242	0.518	0.510	2025	2737	3.47e6	6.71e6	1712.1	2452.9	NO	bd	bd	81.243
13C-123678-HxCDF	34.979	0.959	2.240e5	4.447e5	1.343	0.504	0.510	2025	2737	3.60e6	6.98e6	1776.0	2551.0	NO	db	db	77.246
13C-234678-HxCDF	35.848	0.983	2.062e5	4.028e5	1.215	0.512	0.510	2025	2737	3.21e6	6.25e6	1587.1	2282.5	NO	bb	bb	77.806
13C-123789-HxCDF	36.884	1.011	1.729e5	3.369e5	1.008	0.513	0.510	2025	2737	2.75e6	5.41e6	1355.7	1978.0	NO	bb	bb	78.516
13C-1234678-HpCDF	38.722	1.062	1.495e5	3.260e5	0.926	0.458	0.440	1393	1758	2.40e6	5.22e6	1720.9	2968.7	NO	bb	bb	79.653
13C-1234789-HpCDF	40.973	1.123	1.146e5	2.460e5	0.758	0.466	0.440	1393	1758	1.72e6	3.64e6	1231.6	2070.0	NO	bb	bb	73.841
13C-1234-TCDD	25.549	0.000	3.157e5	4.129e5	1.000	0.765	0.770	1477	881	4.94e6	6.53e6	3342.5	7411.4	NO	bb	bb	100.000
13C-2378-TCDD	26.351	1.031	3.094e5	4.063e5	1.116	0.762	0.770	1477	881	4.62e6	6.13e6	3125.8	6958.1	NO	bb	bb	87.972
13C-12378-PeCDD	31.469	1.232	2.755e5	1.756e5	0.732	1.569	1.550	1008	863	4.22e6	2.67e6	4189.4	3094.1	NO	bb	bb	84.579
13C-123478-HxCDD	35.959	0.986	2.893e5	2.259e5	0.960	1.281	1.240	1103	1144	4.89e6	3.86e6	4431.5	3369.5	NO	bd	bd	83.290
13C-123678-HxCDD	36.082	0.989	3.093e5	2.438e5	1.041	1.269	1.240	1103	1144	4.90e6	3.91e6	4440.0	3416.1	NO	db	db	82.428
13C-1234678-HpCDD	40.215	1.103	1.560e5	1.475e5	0.632	1.058	1.050	1161	941	2.42e6	2.27e6	2086.3	2407.8	NO	bb	bb	74.471
13C-OCDD	44.941	1.232	2.415e5	2.632e5	0.504	0.918	0.890	1123	1008	2.98e6	3.26e6	2654.4	3238.2	NO	bb	bb	155.486
13C-123789-HxCDD	36.472	0.000	3.630e5	2.814e5	1.000	1.290	1.240	1103	1144	5.68e6	4.46e6	5148.3	3894.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.381	1.033	2.689e5		1.084			1114		4.08e6		3662.4			bd		34.063

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
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ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					1.425		0.770	485	832								
1289-TCDF					1.043		0.770	485	832								
13468-PECDF	27.061	0.906	1.153e2	2.099e2	1.376	0.549	1.550	518	821	1.23e3	1.86e3	2.4	2.3	YES	bd	bd	0.027
12389-PECDF					1.000		1.550	626	815								
123468-HXCDF					1.087		1.240	642	643								
1368-TCDD					0.923		0.770	859	694								
1289-TCDD					0.794		0.770	859	694								
12479-PECDD					1.843		1.550	823	501								
12389-PECDD					1.154		1.550	823	501								
124679-HXCDD					1.125		1.240	733	571								
1234679-HPCDD	39.168	0.974	7.760e1	2.306e2	1.211	0.336	1.050	593	585	1.84e3	4.10e3	3.1	7.0	YES	bd	bb	0.084
Total-tetrafurans			0.000e0		1.192			485		0.00e0							
Total-penta1			0.000e0					518		0.00e0							
Total-pentafurans			0.000e0		1.047			626		0.00e0							
Total-hexafurans			0.000e0		1.045			642		0.00e0							
Total-heptafurans			0.000e0		1.305			521		0.00e0							
Total-Furans			0.000e0		1.158			485		0.00e0							
Total-tetradioxins			0.000e0		0.879			859		0.00e0							
Total-pentadioxins			0.000e0		1.331			823		0.00e0							
Total-hexadioxins			2.457e2		1.028			733		4.03e3							0.079
Total-heptadioxins			0.000e0		1.140			593		0.00e0							
Total-Dioxins			1.724e3		1.092			859		2.59e4							1.126
Total-TEQ			1.724e3					859		2.59e4							1.126
FUNCTION1 PFK			1.892e5					385430		4.14e6							
FUNCTION2 PFK			1.185e7					253169		1.20e8							0.000
FUNCTION3 PFK			1.358e4					402784		5.83e5							0.000
FUNCTION4 PFK			0.000e0					226387		0.00e0							
FUNCTION5 PFK			4.149e6					169422		2.10e7							
FUNCTION1 HXCD...			3.519e2					541		4.25e3							0.000
FUNCTION1 HPCD...			2.806e2					689		4.06e3							0.000
FUNCTION2 HPCD...			3.220e2					698		7.31e3							0.000
FUNCTION3 OCDPE			1.823e2					533		3.47e3							0.000
FUNCTION4 NCDPE			1.511e2					643		2.77e3							0.000
FUNCTION5 DCDPE			7.792e1					566		1.44e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	34.98	2.457e2	1.906e2	1.028	1.29	1.24	5.5	YES	NO	db	bb	0.079

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-Dioxins	22.04	1.021e2	1.366e2	1.092	0.75	0.77	2.0	NO	NO	db	bb	0.031
2	Total-hexadioxins	34.98	2.457e2	1.906e2	1.028	1.29	1.24	5.5	YES	NO	db	bb	0.079
3	OCDD	44.95	1.376e3	1.650e3	1.181	0.83	0.89	32.7	YES	NO	bb	bb	1.016

TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.80	2.602e4					2.1	NO		bb		
2	FUNCTION1 PFK	23.13	2.831e4					2.2	NO		bb		
3	FUNCTION1 PFK	22.87	9.323e4					3.3	YES		bb		
4	FUNCTION1 PFK	21.16	4.163e4					3.1	YES		bb		

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.75	5.009e3					0.8	NO		bb		0.000
2	FUNCTION2 PFK	29.61	2.899e3					0.6	NO		bb		0.000
3	FUNCTION2 PFK	29.51	1.826e5					3.4	YES		db		0.000
4	FUNCTION2 PFK	29.33	1.991e5					11.4	YES		dd		0.000
5	FUNCTION2 PFK	29.31	9.710e4					11.8	YES		dd		0.000
6	FUNCTION2 PFK	29.21	4.656e5					16.3	YES		dd		0.000
7	FUNCTION2 PFK	28.95	1.229e6					27.8	YES		dd		0.000
8	FUNCTION2 PFK	28.91	4.033e5					29.6	YES		dd		0.000
9	FUNCTION2 PFK	28.86	2.555e5					30.8	YES		dd		0.000
10	FUNCTION2 PFK	28.66	1.941e6					41.0	YES		dd		0.000
11	FUNCTION2 PFK	28.61	5.977e5					43.1	YES		dd		0.000
12	FUNCTION2 PFK	28.52	2.453e6					47.3	YES		dd		0.000
13	FUNCTION2 PFK	28.33	1.074e6					55.5	YES		dd		0.000
14	FUNCTION2 PFK	28.25	1.121e6					58.0	YES		dd		0.000
15	FUNCTION2 PFK	28.18	1.494e6					61.0	YES		bd		0.000
16	FUNCTION2 PFK	31.86	1.403e3					0.4	NO		bd		0.000
17	FUNCTION2 PFK	31.71	6.011e3					0.9	NO		bb		0.000
18	FUNCTION2 PFK	31.64	1.240e4					1.4	NO		bb		0.000
19	FUNCTION2 PFK	31.55	3.608e3					0.8	NO		bb		0.000
20	FUNCTION2 PFK	31.28	6.783e3					1.1	NO		db		0.000
21	FUNCTION2 PFK	31.25	5.106e3					0.8	NO		bd		0.000
22	FUNCTION2 PFK	31.13	5.857e3					0.9	NO		bb		0.000
23	FUNCTION2 PFK	31.07	5.475e3					0.9	NO		bb		0.000
24	FUNCTION2 PFK	30.93	5.719e3					0.8	NO		bb		0.000
25	FUNCTION2 PFK	30.80	1.880e4					1.7	NO		db		0.000
26	FUNCTION2 PFK	30.76	1.722e4					2.2	NO		dd		0.000
27	FUNCTION2 PFK	30.69	3.185e4					2.4	NO		dd		0.000
28	FUNCTION2 PFK	30.63	4.816e4					3.2	YES		bd		0.000
29	FUNCTION2 PFK	30.12	7.867e3					0.6	NO		bb		0.000
30	FUNCTION2 PFK	29.97	4.155e4					2.2	NO		bb		0.000
31	FUNCTION2 PFK	29.80	3.991e3					0.9	NO		bb		0.000
32	FUNCTION2 PFK	32.67	3.951e3					0.8	NO		bb		0.000
33	FUNCTION2 PFK	32.63	1.918e3					0.4	NO		bb		0.000
34	FUNCTION2 PFK	32.55	8.533e3					1.1	NO		bb		0.000
35	FUNCTION2 PFK	32.42	2.837e3					0.5	NO		bb		0.000
36	FUNCTION2 PFK	32.35	1.751e4					1.8	NO		db		0.000
37	FUNCTION2 PFK	32.29	3.826e3					0.7	NO		dd		0.000

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	32.25	1.243e4					1.3	NO		bd		0.000
39	FUNCTION2 PFK	32.13	4.490e3					0.9	NO		bb		0.000
40	FUNCTION2 PFK	32.08	8.590e3					1.4	NO		db		0.000
41	FUNCTION2 PFK	32.04	1.312e4					1.7	NO		dd		0.000
42	FUNCTION2 PFK	31.98	1.324e4					1.3	NO		dd		0.000
43	FUNCTION2 PFK	31.90	2.180e4					2.0	NO		dd		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.64	1.358e4					1.4	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.86	9.436e2					0.6	NO		bb		
2	FUNCTION5 PFK	45.79	1.235e4					2.0	NO		db		
3	FUNCTION5 PFK	45.76	1.200e3					0.6	NO		bd		
4	FUNCTION5 PFK	45.48	4.408e3					1.5	NO		bb		
5	FUNCTION5 PFK	44.35	3.547e3					0.8	NO		bb		
6	FUNCTION5 PFK	44.18	2.982e3					1.0	NO		bb		
7	FUNCTION5 PFK	43.80	2.099e4					4.5	YES		db		
8	FUNCTION5 PFK	43.65	2.815e5					16.0	YES		dd		
9	FUNCTION5 PFK	43.23	2.691e6					44.9	YES		dd		
10	FUNCTION5 PFK	43.10	1.130e6					52.2	YES		bd		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.79	1.717e2					3.2	YES		bb		0.000
2	FUNCTION1 HXCD...	26.35	7.394e1					2.6	NO		bb		0.000
3	FUNCTION1 HXCD...	24.34	1.063e2					2.1	NO		bb		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.04	1.020e2					2.3	NO		bb		0.000
2	FUNCTION1 HPCD...	25.56	7.278e1					1.6	NO		bb		0.000
3	FUNCTION1 HPCD...	22.89	1.058e2					2.0	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.77	9.214e1					3.1	YES		bb		0.000
2	FUNCTION2 HPCD...	32.64	8.169e1					3.0	NO		bb		0.000
3	FUNCTION2 HPCD...	30.51	7.088e1					2.8	NO		db		0.000
4	FUNCTION2 HPCD...	30.41	7.728e1					1.6	NO		bd		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.84	1.052e2					3.2	YES		bb		0.000
2	FUNCTION3 OCDPE	35.96	7.717e1					3.3	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	41.57	7.242e1					1.5	NO		bb		0.000
2	FUNCTION4 NCDPE	38.86	7.863e1					2.8	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	43.36	7.792e1					2.5	NO		bb		0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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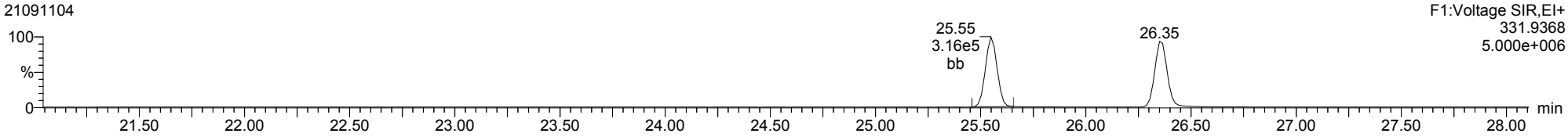
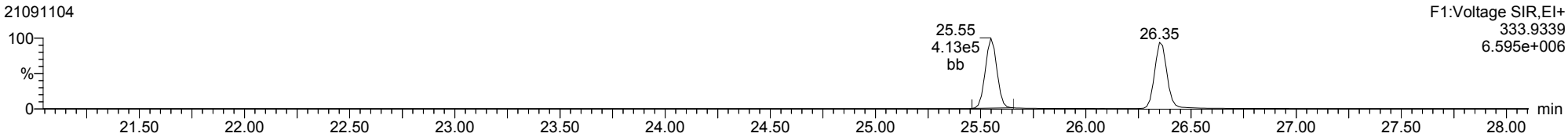
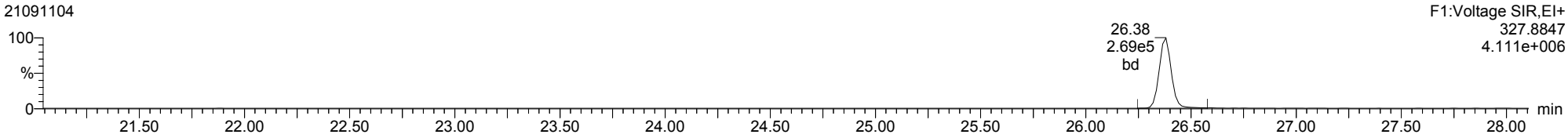
13C-1234-TCDD



13C-1234-TCDD



37CL-2378-TCDD



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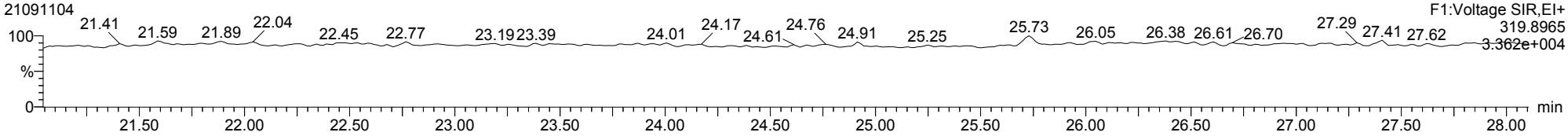
2378-TCDD



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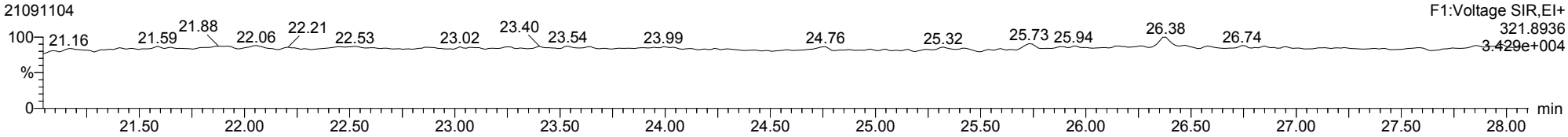

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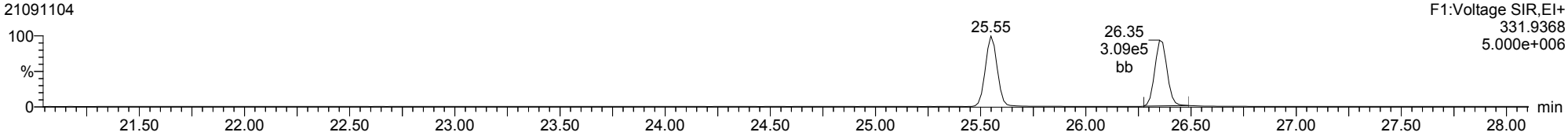

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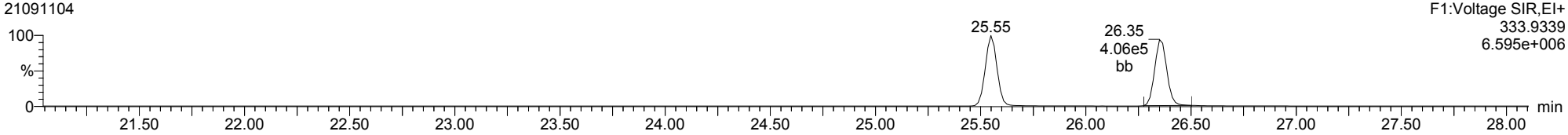
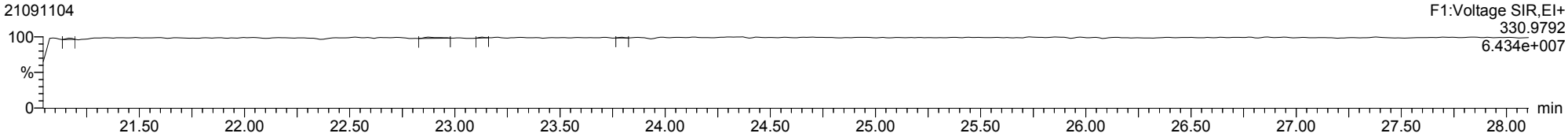


FUNCTION1 PFK



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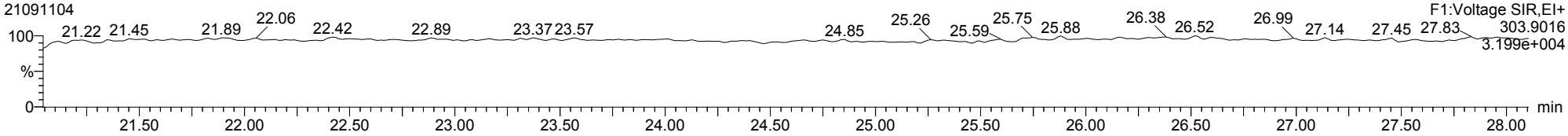
2378-TCDF



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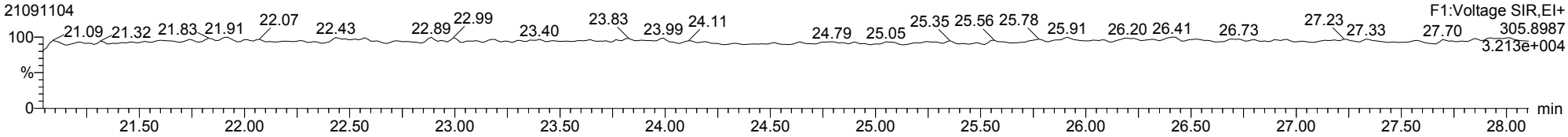

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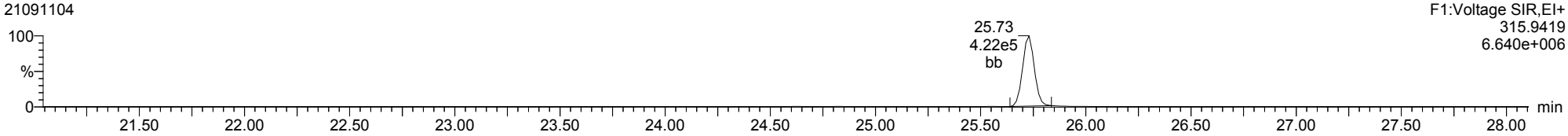

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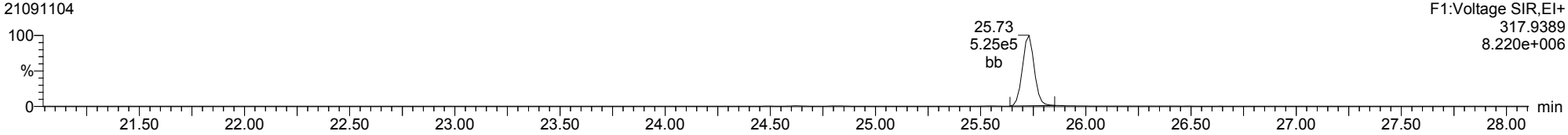
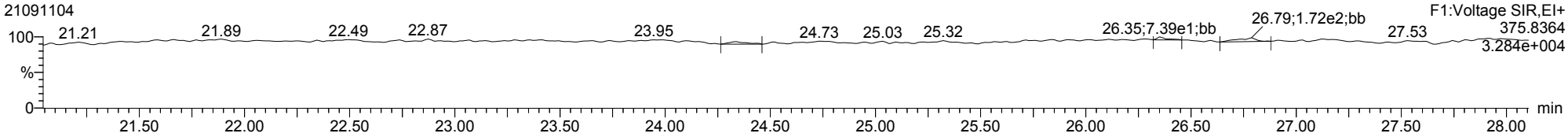


FUNCTION1 HXCDPE



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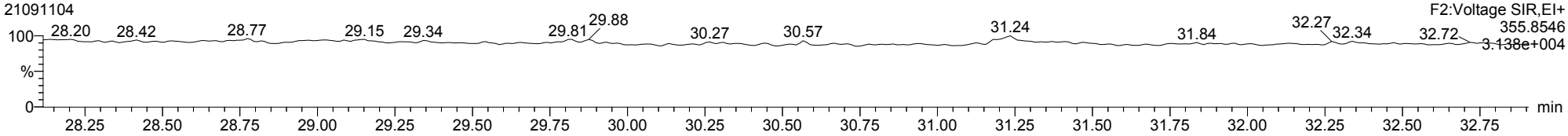
12378-PeCDD



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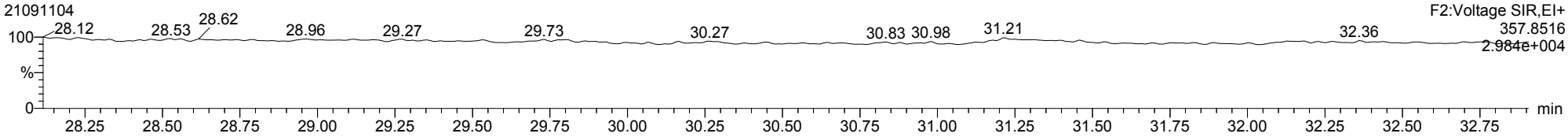

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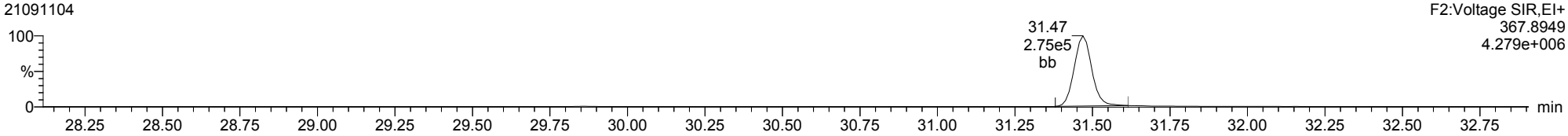

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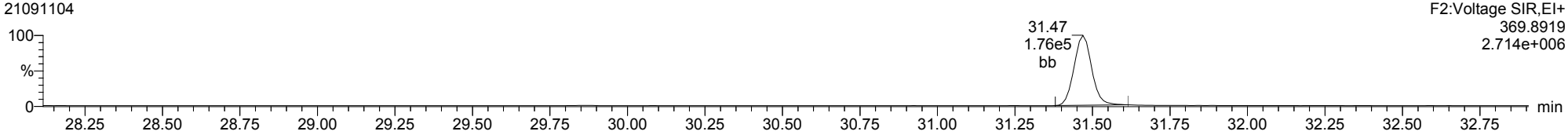

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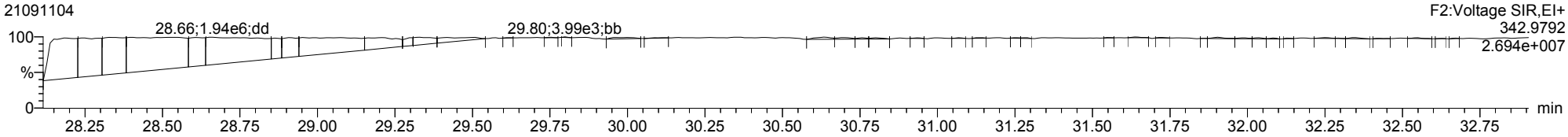

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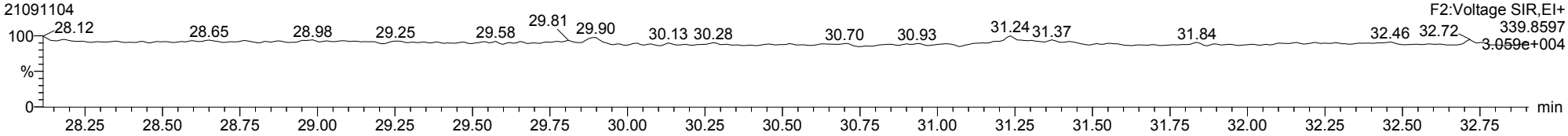

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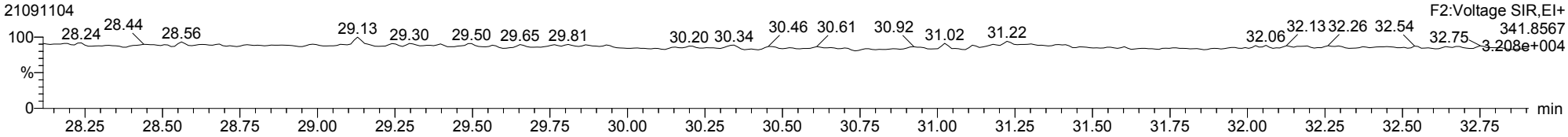

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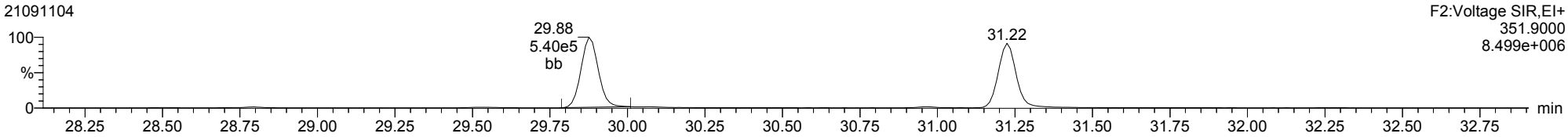

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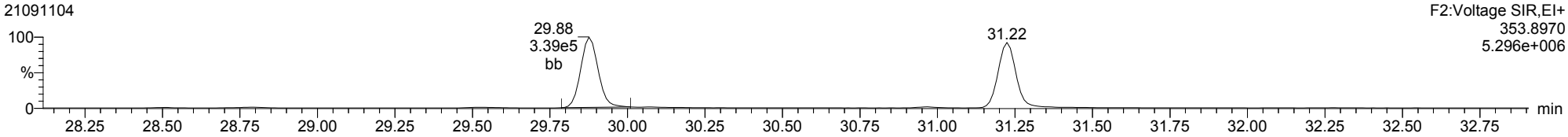
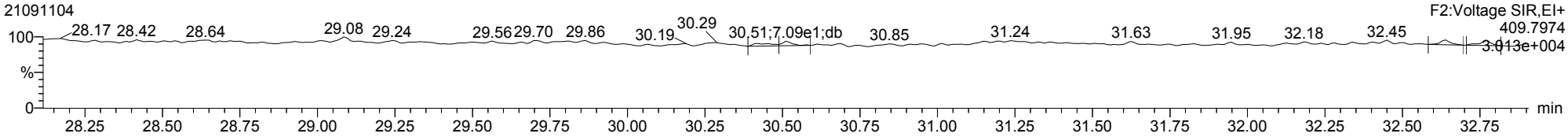


FUNCTION2 HPCDPE



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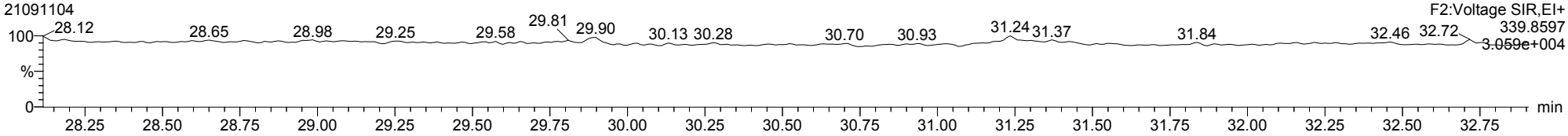
23478-PeCDF



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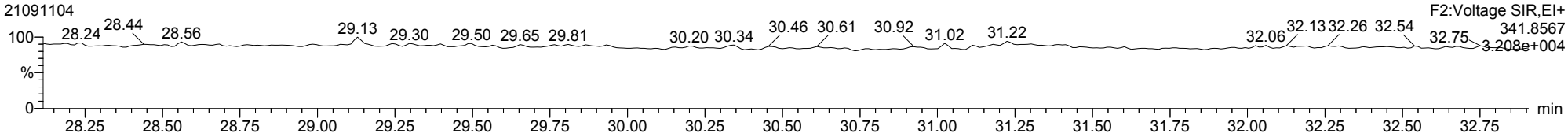

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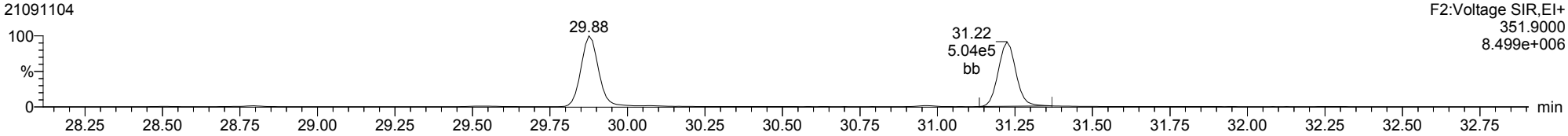

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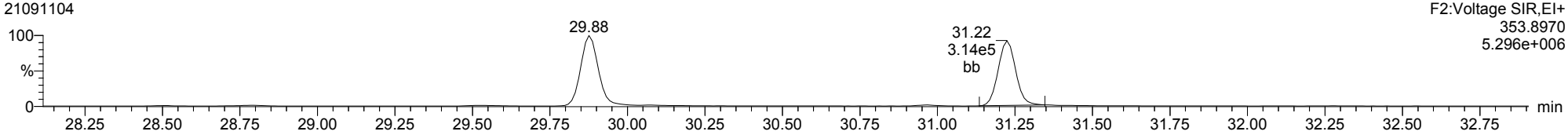
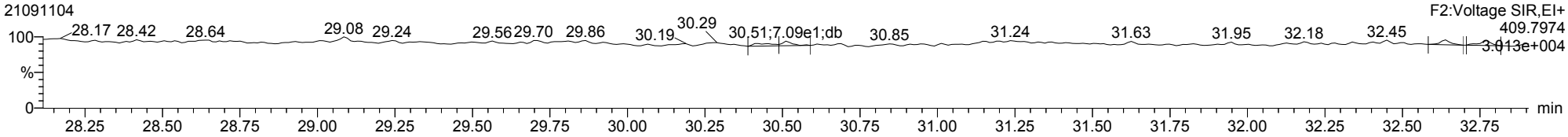


FUNCTION2 HPCDPE



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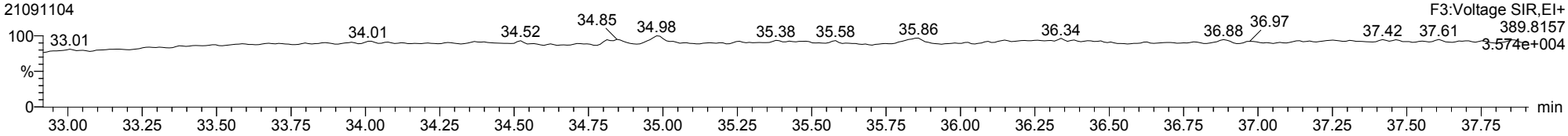

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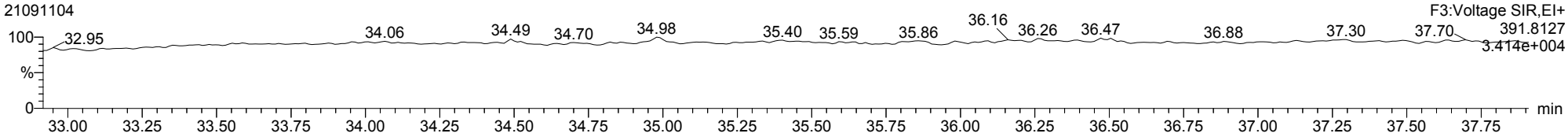

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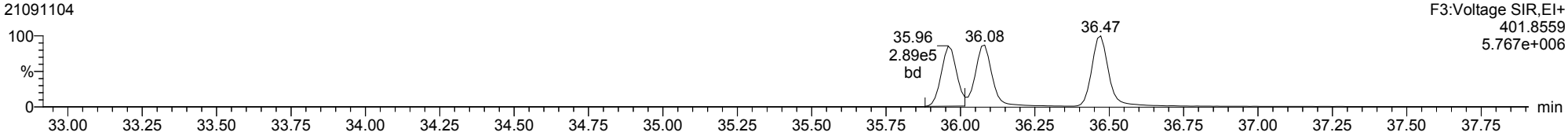

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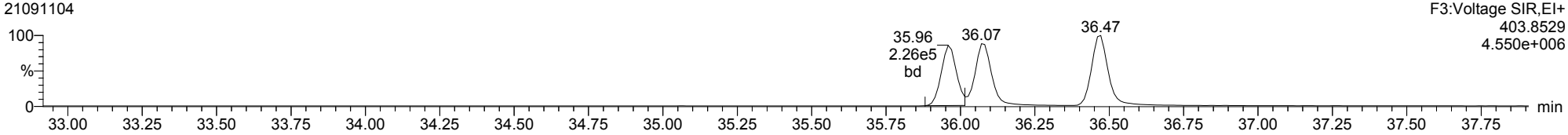

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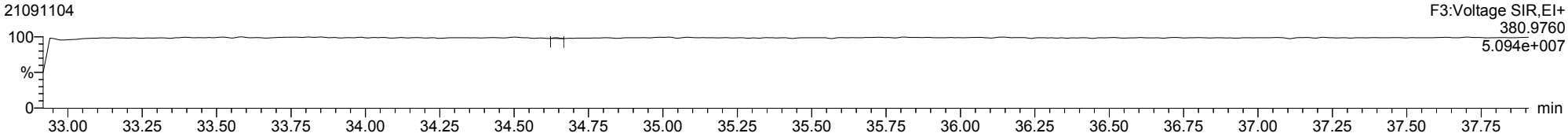

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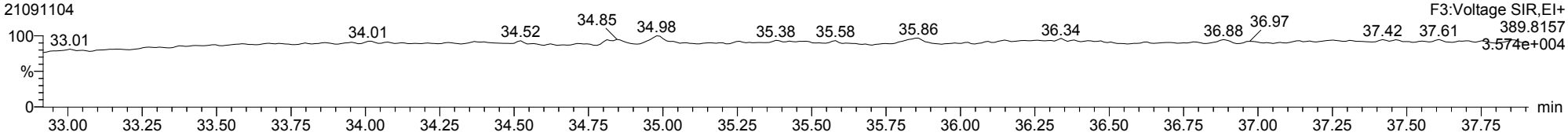

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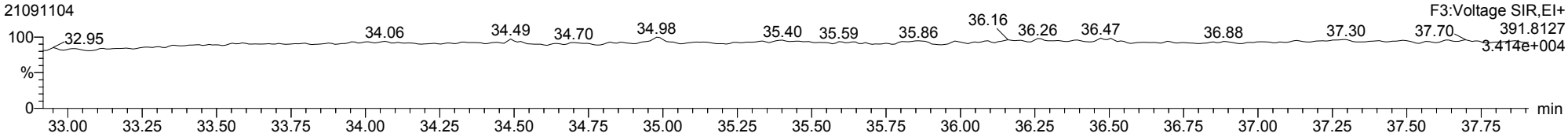

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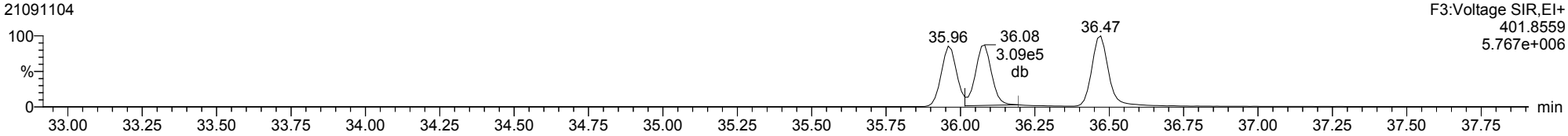

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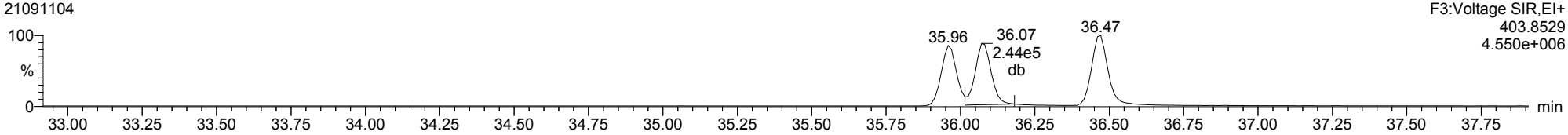

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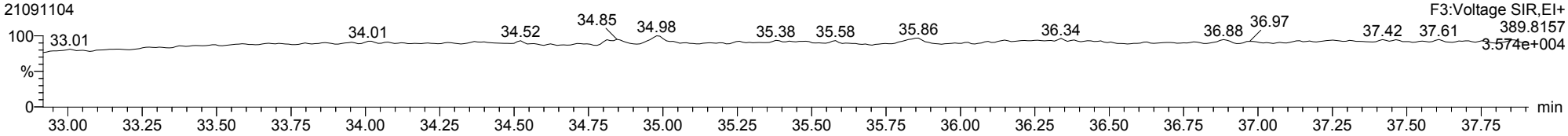

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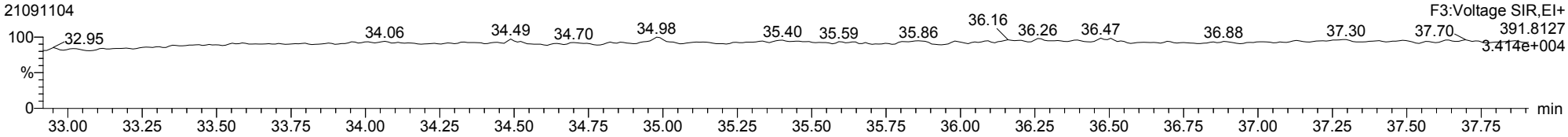

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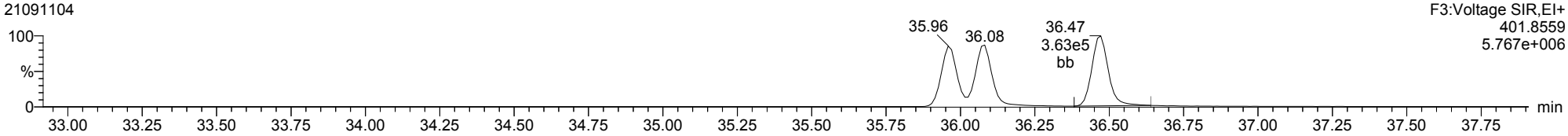

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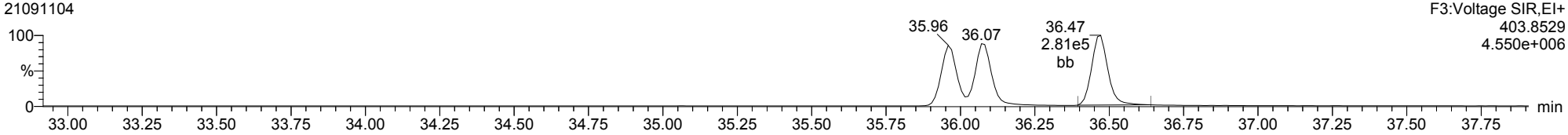

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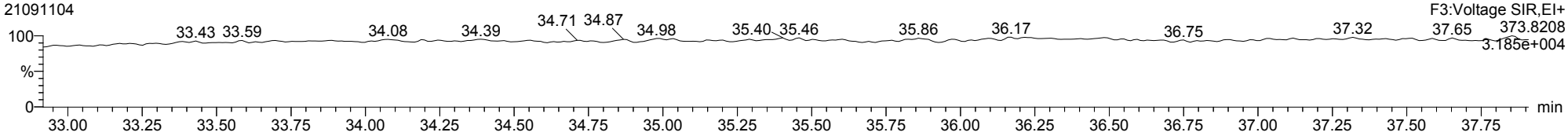

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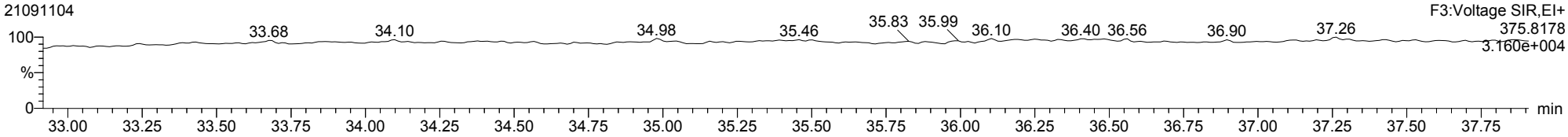

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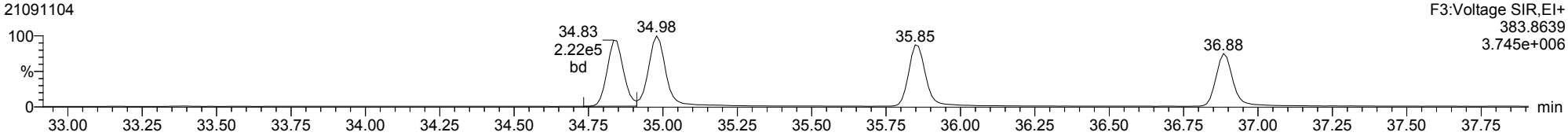

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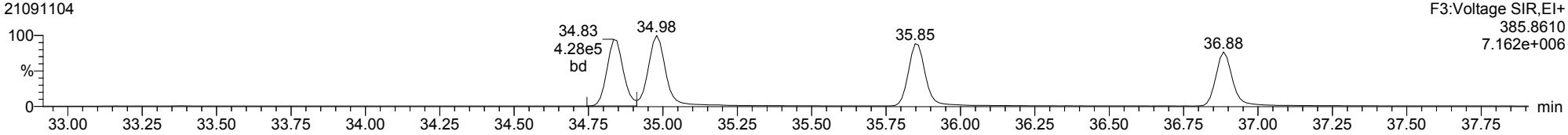

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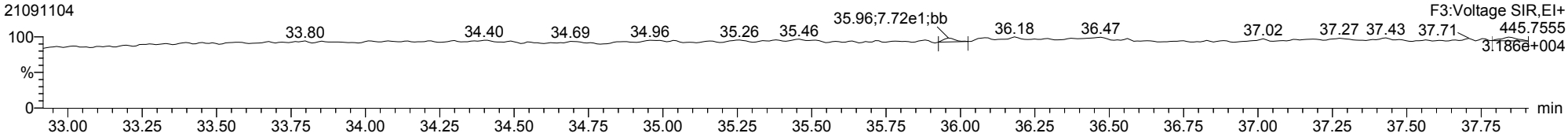

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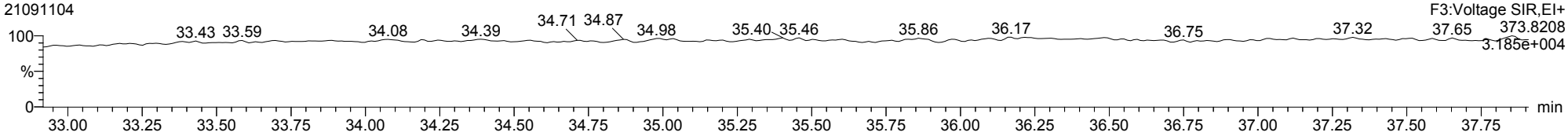

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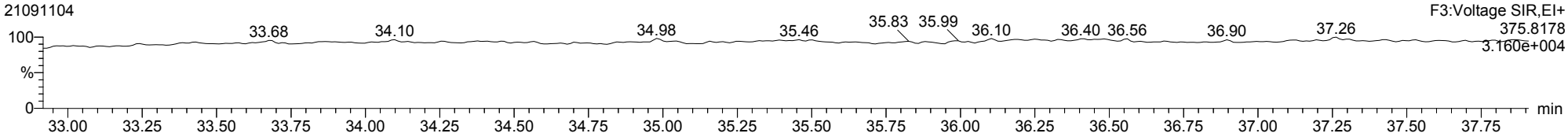

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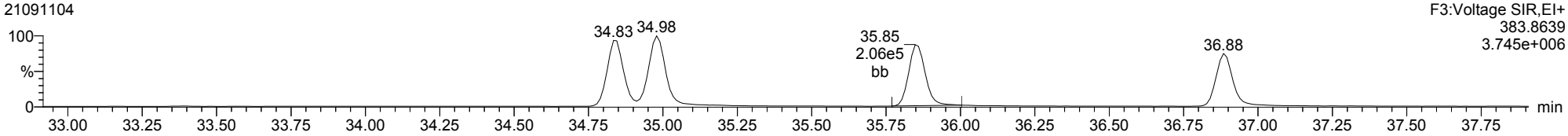

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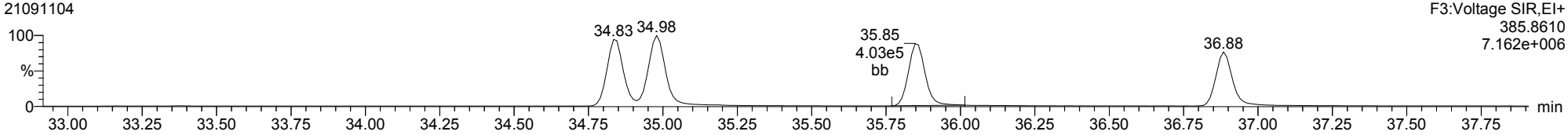

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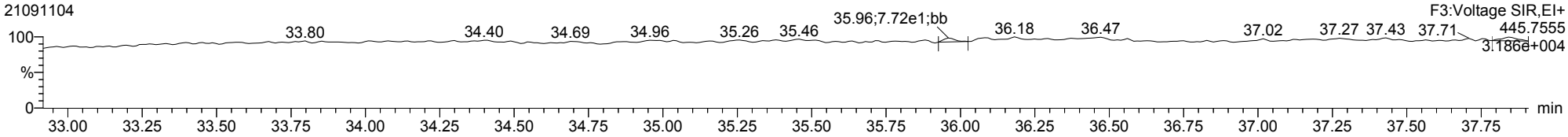

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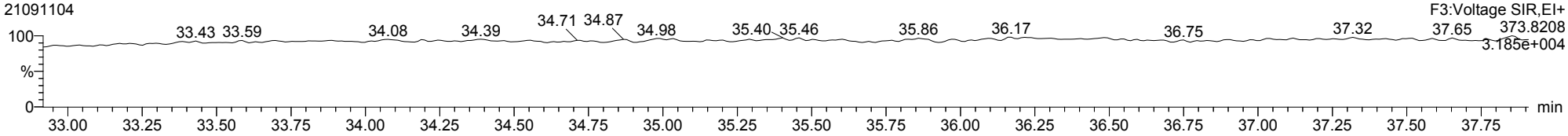

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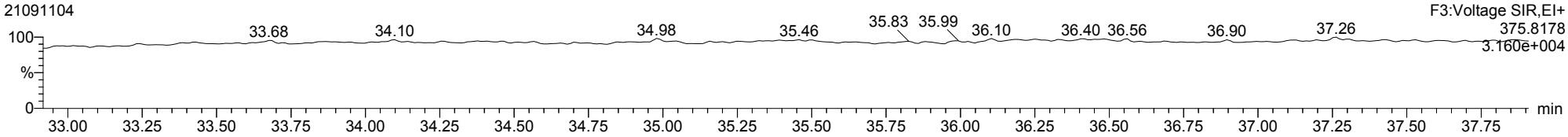

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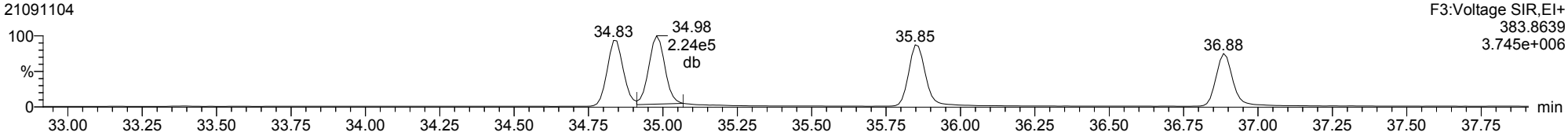

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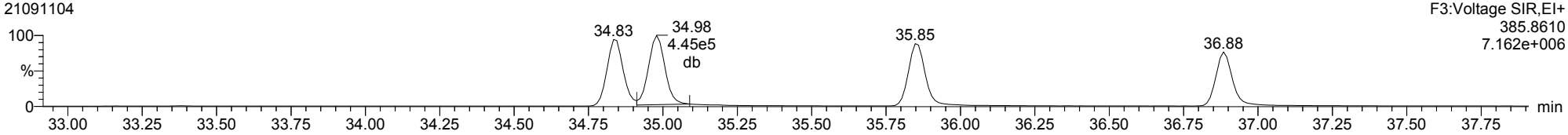
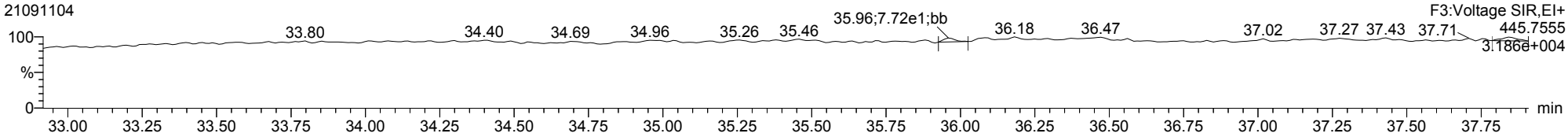


FUNCTION3 OCDPE



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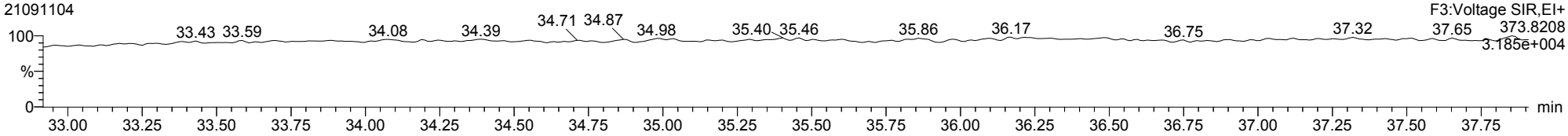

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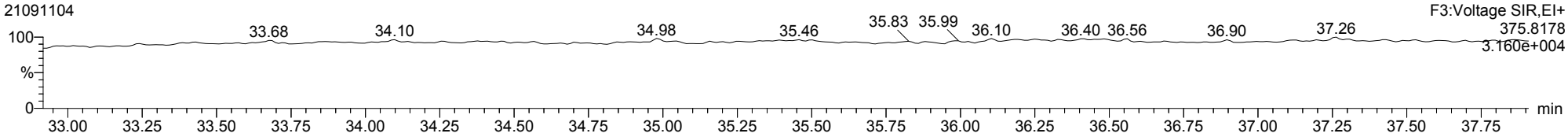

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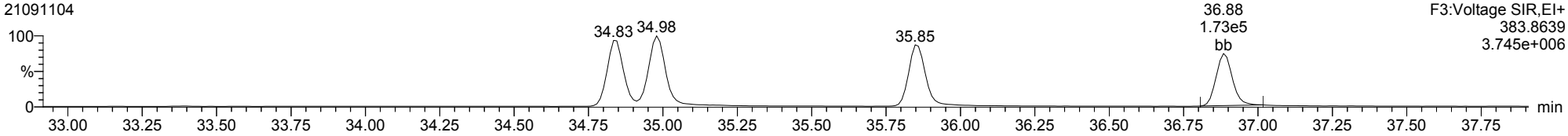

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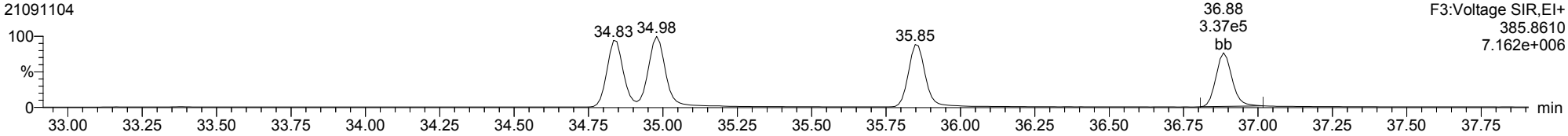
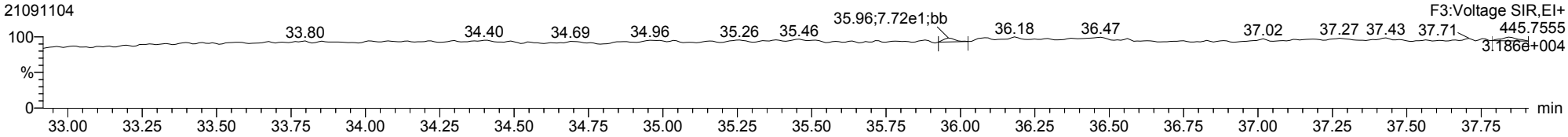


FUNCTION3 OCDPE



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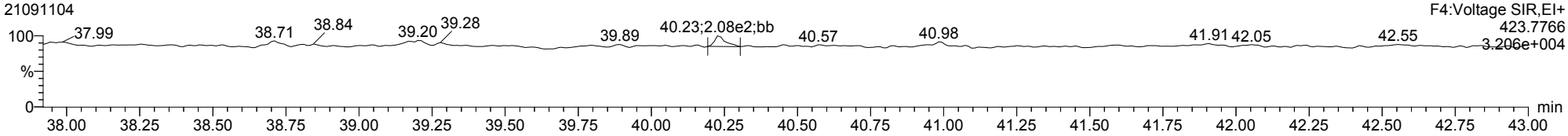
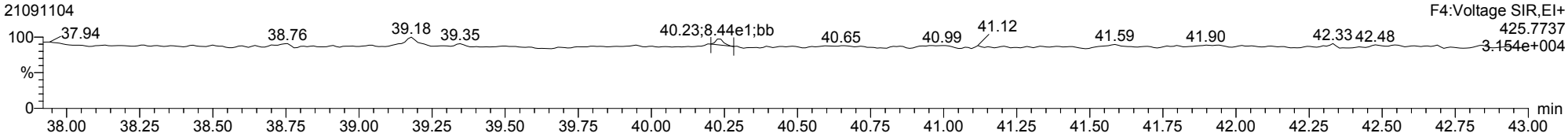
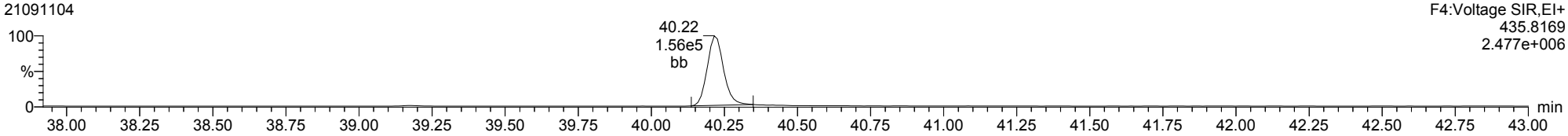
1234678-HpCDD



1234678-HpCDD



13C-1234678-HpCDD



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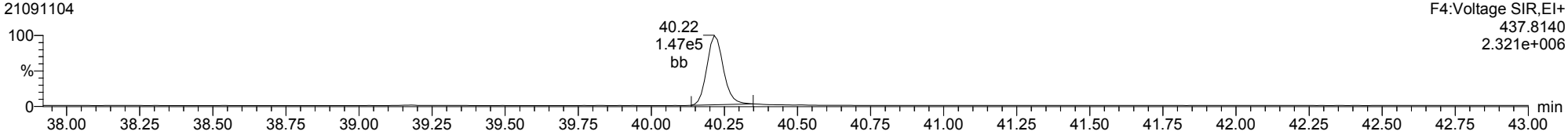
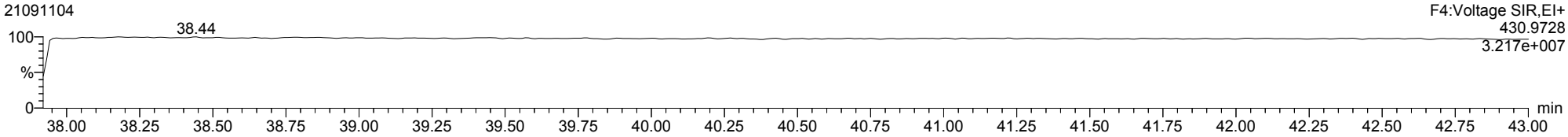
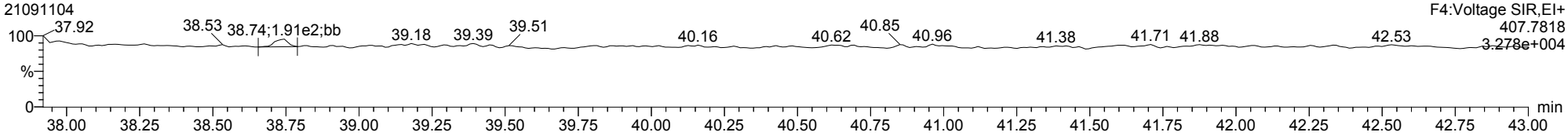


FUNCTION4 PFK



ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF



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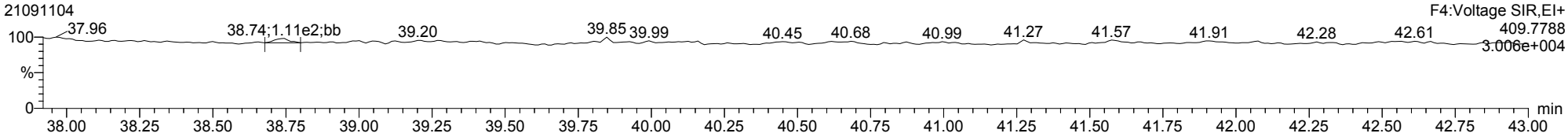

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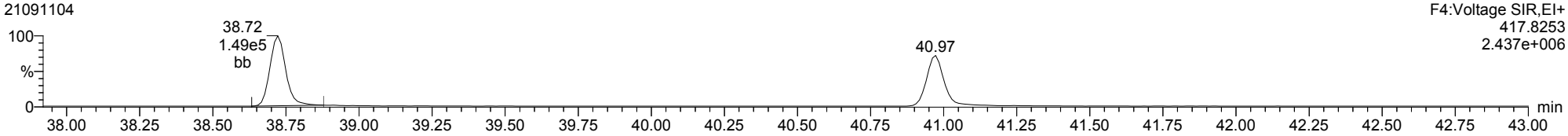

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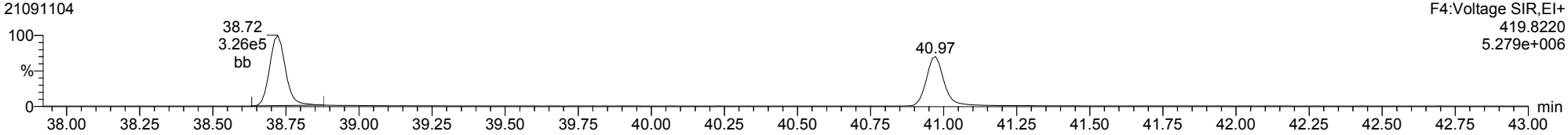
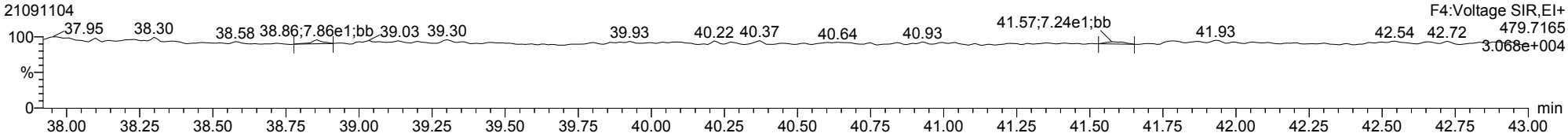
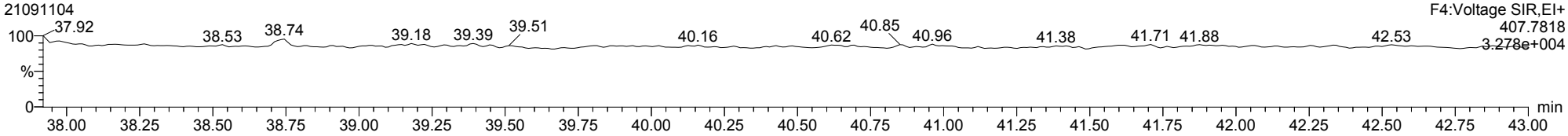


FUNCTION4 NCDPE



ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF



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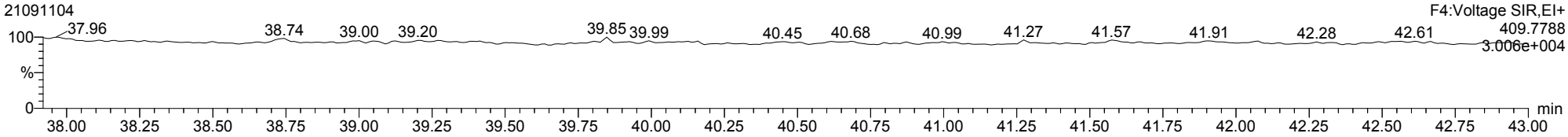

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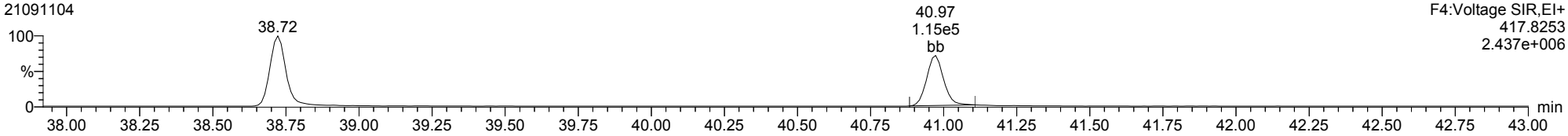

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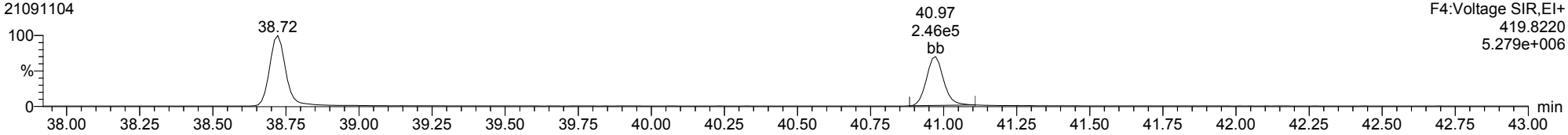
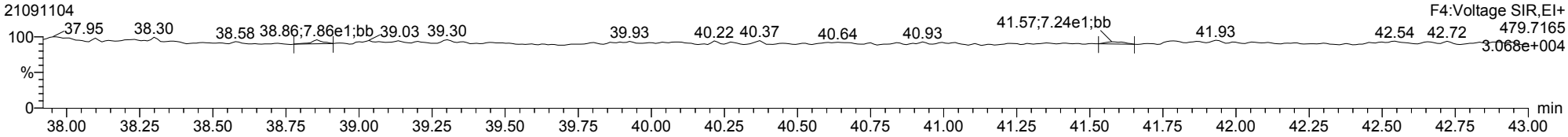
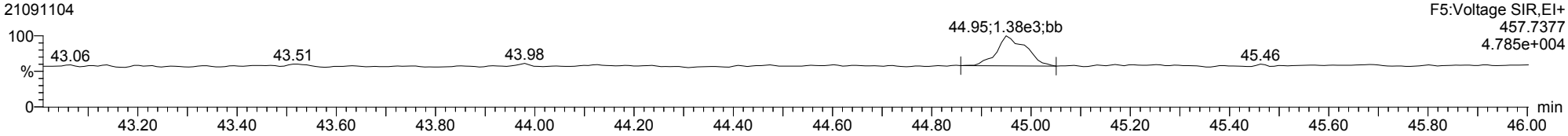


FUNCTION4 NCDPE

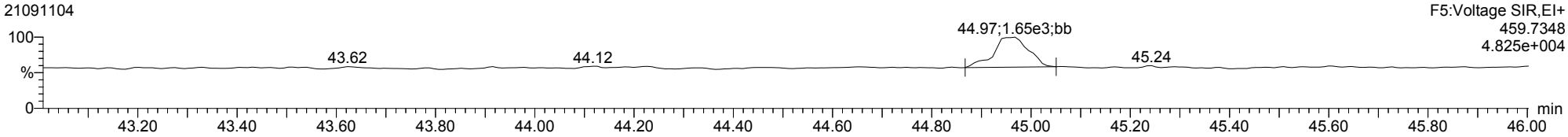


ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

OCDD



OCDD



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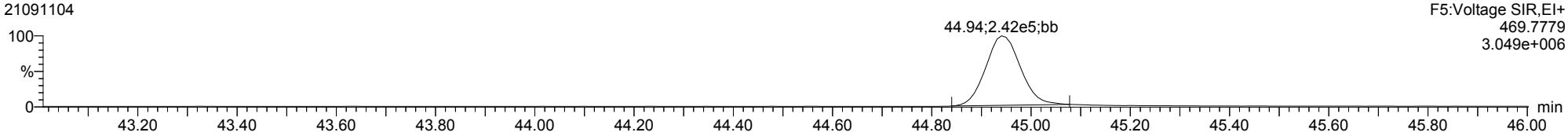
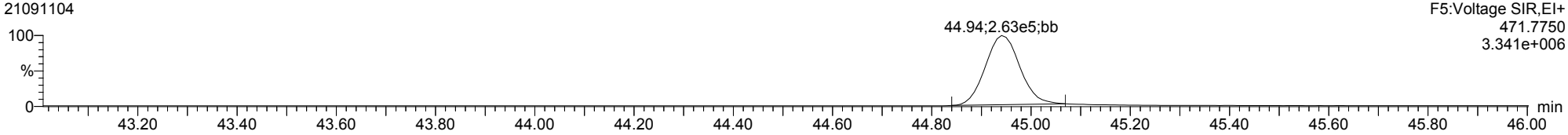
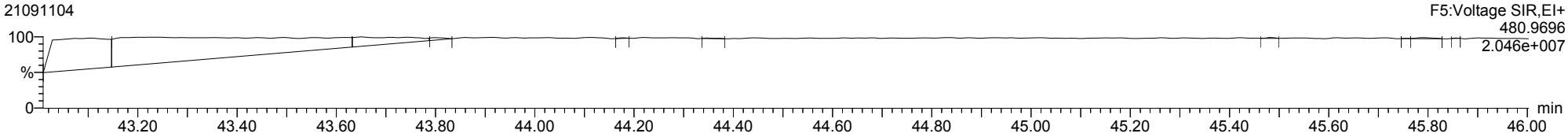


13C-OCDD

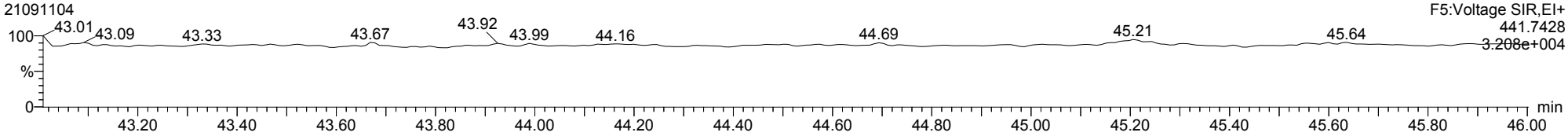


FUNCTION5 PFK

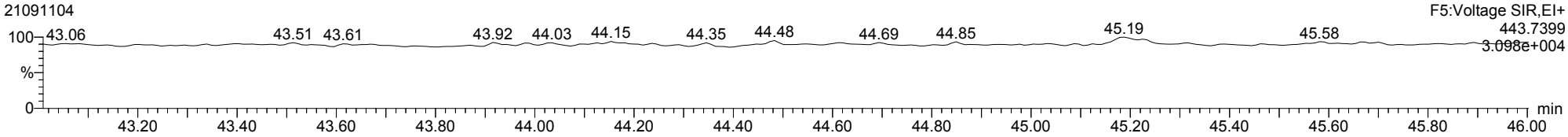


ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

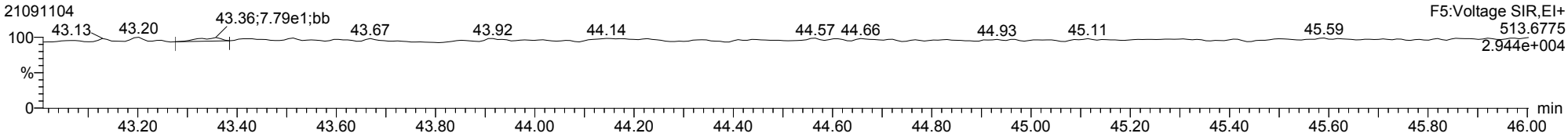
OCDF



OCDF



FUNCTION5 DCDPE



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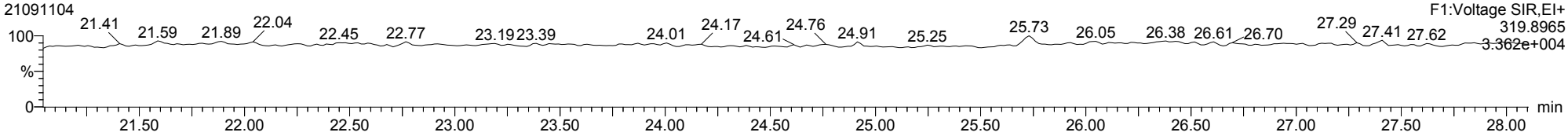
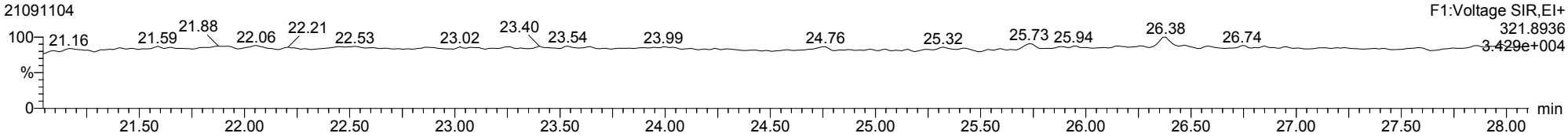
Printed: Wednesday, September 15, 2021 11:21:12 Pacific Daylight Time

ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

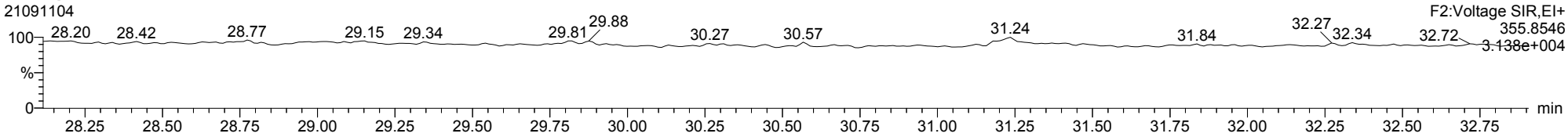
Total-tetradioxins



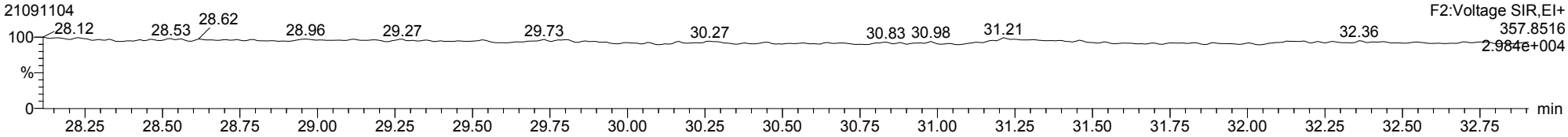
Total-tetradioxins



Total-pentadioxins

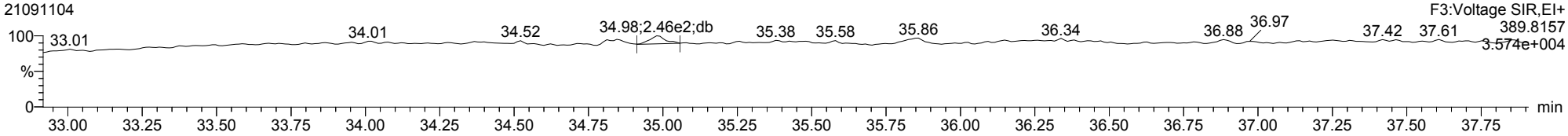


Total-pentadioxins

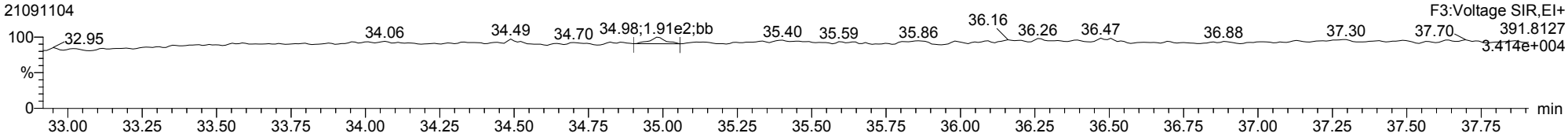


ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



Total-hexadioxins



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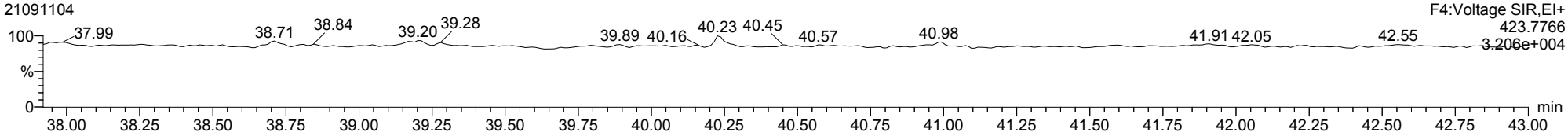
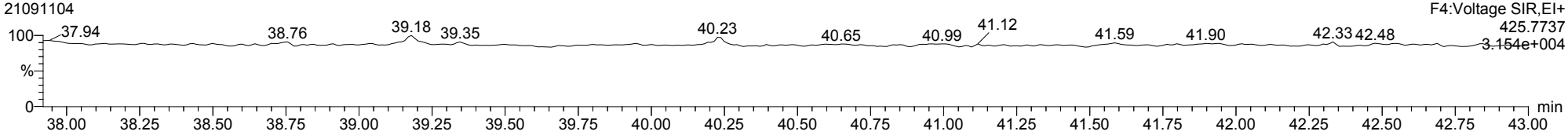


Total-heptadioxins



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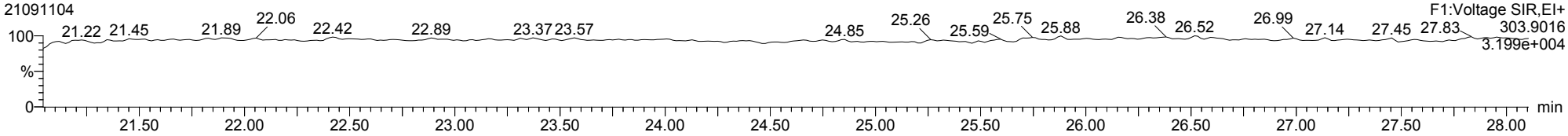
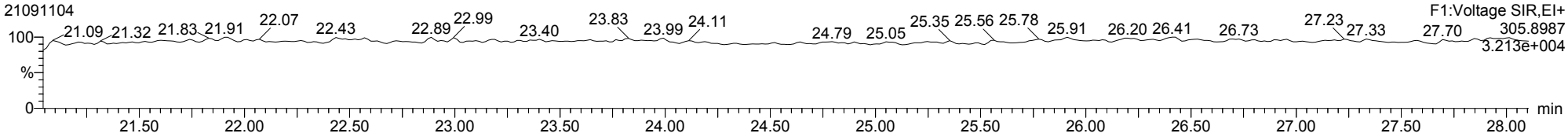
Printed: Wednesday, September 15, 2021 11:21:12 Pacific Daylight Time

ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

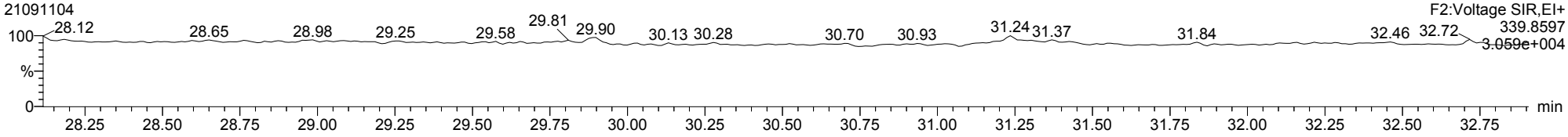
Total-tetrafurans



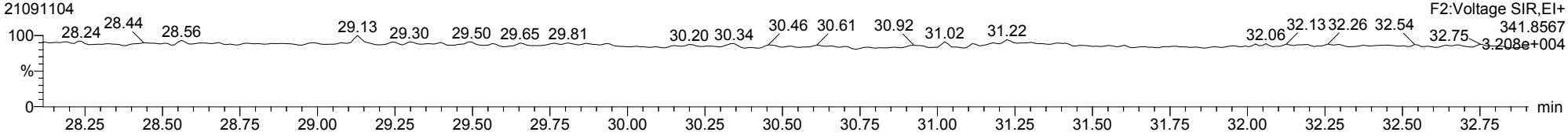
Total-tetrafurans



Total-pentafurans



Total-pentafurans



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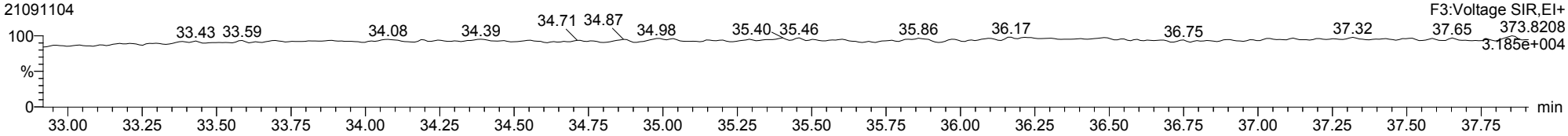
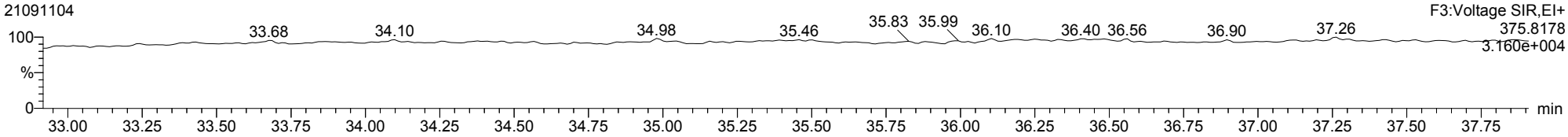
ID: BJH0150-BLK1, Name: 21091104, Date: 11-Sep-2021, Time: 12:58:34, Conditions: AUTOSPEC01, User: pk

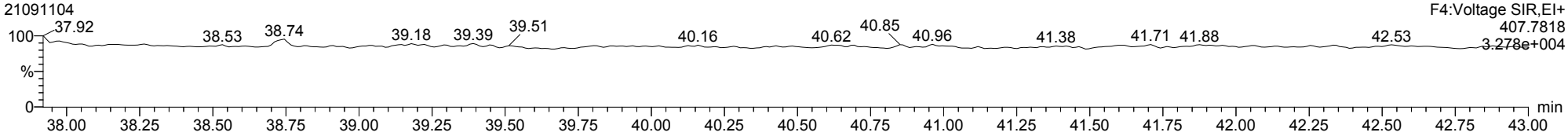
Total-hexafurans



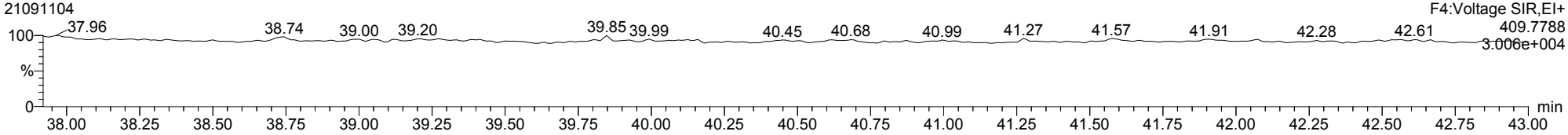
Total-hexafurans



Total-heptafurans



Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LCS RECOVERY
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	09/11/21 13:47
Batch:	BJH0150	Laboratory ID:	BJH0150-BS1
Preparation:	EPA 1613	Sequence Name:	LCS
Initial/Final:	10 g / 20 uL		

COMPOUND	SPIKE ADDED (ng/kg wet)	LCS CONCENTRATION (ng/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
2,3,7,8-TCDF	20.0	19.1		95.5	75 - 158
2,3,7,8-TCDD	20.0	20.1		101	67 - 158
1,2,3,7,8-PeCDF	100	94.0		94.0	80 - 134
2,3,4,7,8-PeCDF	100	96.1		96.1	68 - 160
1,2,3,7,8-PeCDD	100	110		110	70 - 142
1,2,3,4,7,8-HxCDF	100	100		100	72 - 134
1,2,3,6,7,8-HxCDF	100	99.3		99.3	84 - 130
2,3,4,6,7,8-HxCDF	100	96.5		96.5	70 - 156
1,2,3,7,8,9-HxCDF	100	96.5		96.5	78 - 130
1,2,3,4,7,8-HxCDD	100	94.4		94.4	70 - 164
1,2,3,6,7,8-HxCDD	100	96.9		96.9	76 - 134
1,2,3,7,8,9-HxCDD	100	98.7		98.7	64 - 162
1,2,3,4,6,7,8-HpCDF	100	99.6	B	99.6	82 - 122
1,2,3,4,7,8,9-HpCDF	100	106		106	78 - 138
1,2,3,4,6,7,8-HpCDD	100	105	B	105	70 - 140
OCDF	200	181		90.7	63 - 170
OCDD	200	191	B	95.3	78 - 144

* Indicates values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:21:20 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.746	1.001	4.711e4	5.774e4	1.108	0.816	0.770	590	871	7.28e5	9.19e5	1233.6	1054.4	NO	bb	bb	9.552
12378-PeCDF	29.898	1.000	2.938e5	1.961e5	1.015	1.498	1.550	2681	1534	4.54e6	3.03e6	1695.4	1978.3	NO	bb	bb	47.006
23478-PeCDF	31.246	1.000	3.140e5	2.070e5	1.126	1.517	1.550	2681	1534	4.76e6	3.17e6	1774.8	2067.6	NO	bb	bb	48.039
123478-HxCDF	34.867	1.001	2.145e5	1.785e5	1.017	1.202	1.240	1485	1250	3.45e6	2.86e6	2322.4	2288.0	NO	bd	bd	50.071
234678-HxCDF	35.881	1.001	2.011e5	1.716e5	1.052	1.172	1.240	1485	1250	3.38e6	2.76e6	2273.2	2205.7	NO	bb	bb	48.272
123678-HxCDF	35.001	1.000	2.248e5	1.843e5	1.037	1.220	1.240	1485	1250	3.54e6	2.91e6	2383.5	2328.2	NO	db	db	49.665
123789-HxCDF	36.906	1.000	1.634e5	1.318e5	1.030	1.240	1.240	1485	1250	2.73e6	2.21e6	1838.9	1764.8	NO	bb	bb	48.245
1234678-HpCDF	38.744	1.000	1.851e5	1.821e5	1.327	1.017	1.050	1973	1799	3.10e6	3.00e6	1573.9	1664.8	NO	bb	bb	49.783
1234789-HpCDF	40.995	1.000	1.431e5	1.379e5	1.283	1.038	1.050	1973	1799	2.04e6	1.99e6	1033.5	1107.1	NO	bd	bd	53.174
OCDF	45.215	1.006	1.840e5	2.057e5	1.447	0.895	0.890	1733	1253	2.27e6	2.53e6	1311.0	2016.2	NO	bb	bb	90.663
2378-TCDD	26.381	1.001	3.252e4	3.987e4	0.920	0.816	0.770	991	686	4.92e5	6.27e5	496.8	915.2	NO	bb	bb	10.052
12378-PeCDD	31.491	1.001	1.811e5	1.132e5	0.995	1.600	1.550	1311	956	2.82e6	1.79e6	2153.0	1877.0	NO	bb	bb	55.093
123478-HxCDD	35.981	1.000	1.685e5	1.372e5	1.027	1.228	1.240	1172	1027	2.87e6	2.37e6	2447.6	2304.9	NO	bd	bd	47.216
123678-HxCDD	36.093	1.000	1.810e5	1.433e5	1.009	1.263	1.240	1172	1027	2.84e6	2.30e6	2426.5	2238.7	NO	db	db	48.444
123789-HxCDD	36.483	1.011	1.656e5	1.377e5	0.950	1.202	1.240	1172	1027	2.67e6	2.21e6	2282.4	2148.8	NO	bb	bb	49.331
1234678-HpCDD	40.237	1.000	1.049e5	9.938e4	1.068	1.056	1.050	958	1148	1.64e6	1.54e6	1716.7	1344.8	NO	bb	bb	52.567
OCDD	44.968	1.000	1.578e5	1.764e5	1.181	0.895	0.890	1834	1059	1.98e6	2.23e6	1081.5	2106.1	NO	bb	bb	95.265
13C-2378-TCDF	25.730	1.007	4.422e5	5.489e5	1.427	0.806	0.770	1505	1083	6.71e6	8.33e6	4460.8	7686.0	NO	bb	bb	77.812
13C-12378-PeCDF	29.887	1.170	6.322e5	3.947e5	1.297	1.602	1.550	1412	1467	9.64e6	5.99e6	6825.5	4083.6	NO	bb	bb	88.653
13C-23478-PeCDF	31.235	1.223	5.895e5	3.740e5	1.236	1.576	1.550	1412	1467	8.82e6	5.55e6	6248.0	3779.6	NO	bb	bb	87.285
13C-123478-HxCDF	34.845	0.955	2.620e5	5.098e5	1.242	0.514	0.510	2206	3179	4.23e6	8.29e6	1919.0	2607.1	NO	bd	bd	79.005
13C-123678-HxCDF	34.990	0.959	2.735e5	5.210e5	1.343	0.525	0.510	2206	3179	4.22e6	8.14e6	1914.6	2559.9	NO	db	db	75.209
13C-234678-HxCDF	35.859	0.983	2.546e5	4.791e5	1.215	0.531	0.510	2206	3179	4.08e6	7.78e6	1848.7	2447.2	NO	bb	bb	76.807
13C-123789-HxCDF	36.895	1.012	2.005e5	3.934e5	1.008	0.510	0.510	2206	3179	3.31e6	6.49e6	1500.2	2042.4	NO	bb	bb	74.960
13C-1234678-HpCDF	38.733	1.062	1.746e5	3.810e5	0.926	0.458	0.440	1286	2138	2.81e6	6.17e6	2184.7	2884.6	NO	bb	bb	76.276
13C-1234789-HpCDF	40.973	1.123	1.318e5	2.799e5	0.758	0.471	0.440	1286	2138	1.96e6	4.12e6	1526.2	1926.7	NO	bb	bb	69.086
13C-1234-TCDD	25.549	0.000	3.881e5	5.047e5	1.000	0.769	0.770	1541	1345	5.91e6	7.74e6	3836.1	5753.1	NO	bb	bb	100.000
13C-2378-TCDD	26.365	1.032	3.358e5	4.469e5	1.116	0.751	0.770	1541	1345	5.19e6	6.94e6	3369.7	5160.4	NO	bb	bb	78.514
13C-12378-PeCDD	31.469	1.232	3.273e5	2.093e5	0.732	1.564	1.550	1104	748	4.99e6	3.19e6	4516.2	4265.4	NO	bb	bb	82.123
13C-123478-HxCDD	35.970	0.986	3.514e5	2.788e5	0.960	1.260	1.240	1370	1708	5.73e6	4.56e6	4180.1	2668.2	NO	bd	bd	83.513
13C-123678-HxCDD	36.082	0.989	3.676e5	2.959e5	1.041	1.242	1.240	1370	1708	6.01e6	4.76e6	4385.9	2786.9	NO	db	db	81.034
13C-1234678-HpCDD	40.226	1.103	1.877e5	1.761e5	0.632	1.066	1.050	1513	922	2.88e6	2.70e6	1902.0	2927.2	NO	bb	bb	73.166
13C-OCDD	44.950	1.232	2.802e5	3.139e5	0.504	0.893	0.890	942	1526	3.57e6	3.89e6	3783.4	2552.4	NO	bb	bb	149.998
13C-123789-HxCDD	36.472	0.000	4.377e5	3.486e5	1.000	1.256	1.240	1370	1708	6.93e6	5.59e6	5056.3	3274.7	NO	bb	bb	100.000
37CL-2378-TCDD	26.381	1.033	3.004e5		1.084			1037		4.59e6		4429.0			bb		31.051

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
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ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF					1.425		0.770	590	871								
1289-TCDF					1.043		0.770	590	871								
13468-PECDF					1.376		1.550	628	801								
12389-PECDF	32.282	1.080	2.295e3	1.345e3	1.000	1.706	1.550	2681	1534	3.07e4	2.17e4	11.4	14.1	NO	bb	bb	0.355
123468-HXCDF	33.196	0.953	3.541e2	4.104e2	1.087	0.863	1.240	1485	1250	6.68e3	6.59e3	4.5	5.3	YES	bb	bb	0.091
1368-TCDD					0.923		0.770	991	686								
1289-TCDD					0.794		0.770	991	686								
12479-PECDD					1.843		1.550	1311	956								
12389-PECDD					1.154		1.550	1311	956								
124679-HXCDD					1.125		1.240	1172	1027								
1234679-HPCDD	39.201	0.975	9.036e2	9.271e2	1.211	0.975	1.050	958	1148	1.72e4	1.50e4	17.9	13.1	NO	bb	bb	0.416
Total-tetrafurans			4.883e4		1.192			590		7.54e5							9.884
Total-penta1			0.000e0					628		0.00e0							
Total-pentafurans			6.140e5		1.047			2681		9.39e6							96.002
Total-hexafurans			8.048e5		1.045			1485		1.31e7							196.483
Total-heptafurans			3.289e5		1.305			1973		5.15e6							103.169
Total-Furans			1.980e6		1.158			590		3.07e7							496.200
Total-tetradioxins			3.252e4		0.879			991		4.92e5							10.052
Total-pentadioxins			1.811e5		1.331			1311		2.82e6							55.093
Total-hexadioxins			5.151e5		1.028			1172		8.39e6							144.992
Total-heptadioxins			1.058e5		1.140			958		1.66e6							52.982
Total-Dioxins			9.923e5		1.092			991		1.53e7							358.383
Total-TEQ			2.973e6					991		4.60e7							854.583
FUNCTION1 PFK			1.841e7					510335		7.55e7							
FUNCTION2 PFK			1.904e7					229275		2.23e8							0.000
FUNCTION3 PFK			3.587e7					379262		3.86e8							0.000
FUNCTION4 PFK			5.037e4					179249		6.48e5							
FUNCTION5 PFK			0.000e0					183358		0.00e0							
FUNCTION1 HXCD...			7.700e2					605		8.58e3							0.000
FUNCTION1 HPCD...			9.504e2					762		1.43e4							0.000
FUNCTION2 HPCD...			1.515e2					759		2.56e3							0.000
FUNCTION3 OCDPE			6.268e2					557		7.84e3							0.000
FUNCTION4 NCDPE			1.415e2					648		3.01e3							0.000
FUNCTION5 DCDPE			0.000e0					647		0.00e0							

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.75	4.711e4	5.774e4	1.108	0.82	0.77	1233.6	YES	NO	bb	bb	9.552
2	Total-tetrafurans	24.84	4.243e2	5.142e2	1.192	0.83	0.77	12.1	YES	NO	bb	bb	0.079
3	Total-tetrafurans	24.66	9.657e2	1.173e3	1.192	0.82	0.77	23.4	YES	NO	db	bb	0.181
4	Total-tetrafurans	24.52	3.310e2	5.029e2	1.192	0.66	0.77	9.8	YES	NO	bd	bb	0.071

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.25	3.140e5	2.070e5	1.126	1.52	1.55	1774.8	YES	NO	bb	bb	48.039
2	12378-PeCDF	29.90	2.938e5	1.961e5	1.015	1.50	1.55	1695.4	YES	NO	bb	bb	47.006
3	Total-pentafurans	29.53	1.698e3	1.046e3	1.047	1.62	1.55	10.0	YES	NO	bd	bb	0.263
4	Total-pentafurans	28.82	2.243e3	1.279e3	1.047	1.75	1.55	10.6	YES	NO	db	db	0.338
5	12389-PECDF	32.28	2.295e3	1.345e3	1.000	1.71	1.55	11.4	YES	NO	bb	bb	0.355

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.91	1.634e5	1.318e5	1.030	1.24	1.24	1838.9	YES	NO	bb	bb	48.245
2	234678-HxCDF	35.88	2.011e5	1.716e5	1.052	1.17	1.24	2273.2	YES	NO	bb	bb	48.272
3	123678-HxCDF	35.00	2.248e5	1.843e5	1.037	1.22	1.24	2383.5	YES	NO	db	db	49.665
4	123478-HxCDF	34.87	2.145e5	1.785e5	1.017	1.20	1.24	2322.4	YES	NO	bd	bd	50.071
5	Total-hexafurans	33.40	9.675e2	7.748e2	1.045	1.25	1.24	9.0	YES	NO	bb	bb	0.231

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.99	1.431e5	1.379e5	1.283	1.04	1.05	1033.5	YES	NO	bd	bd	53.174
2	Total-heptafurans	39.40	7.212e2	6.228e2	1.305	1.16	1.05	5.1	YES	NO	bb	bb	0.213
3	1234678-HpCDF	38.74	1.851e5	1.821e5	1.327	1.02	1.05	1573.9	YES	NO	bb	bb	49.783

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.75	4.711e4	5.774e4	1.108	0.82	0.77	1233.6	YES	NO	bb	bb	9.552
2	Total-tetrafurans	24.84	4.243e2	5.142e2	1.192	0.83	0.77	12.1	YES	NO	bb	bb	0.079
3	Total-tetrafurans	24.66	9.657e2	1.173e3	1.192	0.82	0.77	23.4	YES	NO	db	bb	0.181
4	Total-tetrafurans	24.52	3.310e2	5.029e2	1.192	0.66	0.77	9.8	YES	NO	bd	bb	0.071
5	23478-PeCDF	31.25	3.140e5	2.070e5	1.126	1.52	1.55	1774.8	YES	NO	bb	bb	48.039
6	12378-PeCDF	29.90	2.938e5	1.961e5	1.015	1.50	1.55	1695.4	YES	NO	bb	bb	47.006
7	Total-pentafurans	29.53	1.698e3	1.046e3	1.047	1.62	1.55	10.0	YES	NO	bd	bb	0.263
8	Total-pentafurans	28.82	2.243e3	1.279e3	1.047	1.75	1.55	10.6	YES	NO	db	db	0.338
9	12389-PECDF	32.28	2.295e3	1.345e3	1.000	1.71	1.55	11.4	YES	NO	bb	bb	0.355
10	123789-HxCDF	36.91	1.634e5	1.318e5	1.030	1.24	1.24	1838.9	YES	NO	bb	bb	48.245
11	234678-HxCDF	35.88	2.011e5	1.716e5	1.052	1.17	1.24	2273.2	YES	NO	bb	bb	48.272
12	123678-HxCDF	35.00	2.248e5	1.843e5	1.037	1.22	1.24	2383.5	YES	NO	db	db	49.665
13	123478-HxCDF	34.87	2.145e5	1.785e5	1.017	1.20	1.24	2322.4	YES	NO	bd	bd	50.071
14	Total-hexafurans	33.40	9.675e2	7.748e2	1.045	1.25	1.24	9.0	YES	NO	bb	bb	0.231
15	1234789-HpCDF	40.99	1.431e5	1.379e5	1.283	1.04	1.05	1033.5	YES	NO	bd	bd	53.174
16	Total-heptafurans	39.40	7.212e2	6.228e2	1.305	1.16	1.05	5.1	YES	NO	bb	bb	0.213
17	1234678-HpCDF	38.74	1.851e5	1.821e5	1.327	1.02	1.05	1573.9	YES	NO	bb	bb	49.783
18	OCDF	45.22	1.840e5	2.057e5	1.447	0.89	0.89	1311.0	YES	NO	bb	bb	90.663

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.38	3.252e4	3.987e4	0.920	0.82	0.77	496.8	YES	NO	bb	bb	10.052

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.49	1.811e5	1.132e5	0.995	1.60	1.55	2153.0	YES	NO	bb	bb	55.093

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.48	1.656e5	1.377e5	0.950	1.20	1.24	2282.4	YES	NO	bb	bb	49.331
2	123678-HxCDD	36.09	1.810e5	1.433e5	1.009	1.26	1.24	2426.5	YES	NO	db	db	48.444
3	123478-HxCDD	35.98	1.685e5	1.372e5	1.027	1.23	1.24	2447.6	YES	NO	bd	bd	47.216

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
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HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.24	1.049e5	9.938e4	1.068	1.06	1.05	1716.7	YES	NO	bb	bb	52.567
2	1234679-HPCDD	39.20	9.036e2	9.271e2	1.211	0.97	1.05	17.9	YES	NO	bb	bb	0.416

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.38	3.252e4	3.987e4	0.920	0.82	0.77	496.8	YES	NO	bb	bb	10.052
2	123789-HxCDD	36.48	1.656e5	1.377e5	0.950	1.20	1.24	2282.4	YES	NO	bb	bb	49.331
3	123678-HxCDD	36.09	1.810e5	1.433e5	1.009	1.26	1.24	2426.5	YES	NO	db	db	48.444
4	123478-HxCDD	35.98	1.685e5	1.372e5	1.027	1.23	1.24	2447.6	YES	NO	bd	bd	47.216
5	12378-PeCDD	31.49	1.811e5	1.132e5	0.995	1.60	1.55	2153.0	YES	NO	bb	bb	55.093
6	1234678-HpCDD	40.24	1.049e5	9.938e4	1.068	1.06	1.05	1716.7	YES	NO	bb	bb	52.567
7	1234679-HPCDD	39.20	9.036e2	9.271e2	1.211	0.97	1.05	17.9	YES	NO	bb	bb	0.416
8	OCDD	44.97	1.578e5	1.764e5	1.181	0.89	0.89	1081.5	YES	NO	bb	bb	95.265

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.75	4.711e4	5.774e4	1.108	0.82	0.77	1233.6	YES	NO	bb	bb	9.552
2	Total-tetrafurans	24.84	4.243e2	5.142e2	1.192	0.83	0.77	12.1	YES	NO	bb	bb	0.079
3	Total-tetrafurans	24.66	9.657e2	1.173e3	1.192	0.82	0.77	23.4	YES	NO	db	bb	0.181
4	Total-tetrafurans	24.52	3.310e2	5.029e2	1.192	0.66	0.77	9.8	YES	NO	bd	bb	0.071
5	23478-PeCDF	31.25	3.140e5	2.070e5	1.126	1.52	1.55	1774.8	YES	NO	bb	bb	48.039
6	12378-PeCDF	29.90	2.938e5	1.961e5	1.015	1.50	1.55	1695.4	YES	NO	bb	bb	47.006
7	Total-pentafurans	29.53	1.698e3	1.046e3	1.047	1.62	1.55	10.0	YES	NO	bd	bb	0.263
8	Total-pentafurans	28.82	2.243e3	1.279e3	1.047	1.75	1.55	10.6	YES	NO	db	db	0.338
9	12389-PECDF	32.28	2.295e3	1.345e3	1.000	1.71	1.55	11.4	YES	NO	bb	bb	0.355
10	123789-HxCDF	36.91	1.634e5	1.318e5	1.030	1.24	1.24	1838.9	YES	NO	bb	bb	48.245
11	234678-HxCDF	35.88	2.011e5	1.716e5	1.052	1.17	1.24	2273.2	YES	NO	bb	bb	48.272
12	123678-HxCDF	35.00	2.248e5	1.843e5	1.037	1.22	1.24	2383.5	YES	NO	db	db	49.665
13	123478-HxCDF	34.87	2.145e5	1.785e5	1.017	1.20	1.24	2322.4	YES	NO	bd	bd	50.071
14	Total-hexafurans	33.40	9.675e2	7.748e2	1.045	1.25	1.24	9.0	YES	NO	bb	bb	0.231
15	1234789-HpCDF	40.99	1.431e5	1.379e5	1.283	1.04	1.05	1033.5	YES	NO	bd	bd	53.174
16	Total-heptafurans	39.40	7.212e2	6.228e2	1.305	1.16	1.05	5.1	YES	NO	bb	bb	0.213
17	1234678-HpCDF	38.74	1.851e5	1.821e5	1.327	1.02	1.05	1573.9	YES	NO	bb	bb	49.783
18	OCDF	45.22	1.840e5	2.057e5	1.447	0.89	0.89	1311.0	YES	NO	bb	bb	90.663
19	2378-TCDD	26.38	3.252e4	3.987e4	0.920	0.82	0.77	496.8	YES	NO	bb	bb	10.052
20	123789-HxCDD	36.48	1.656e5	1.377e5	0.950	1.20	1.24	2282.4	YES	NO	bb	bb	49.331
21	123678-HxCDD	36.09	1.810e5	1.433e5	1.009	1.26	1.24	2426.5	YES	NO	db	db	48.444
22	123478-HxCDD	35.98	1.685e5	1.372e5	1.027	1.23	1.24	2447.6	YES	NO	bd	bd	47.216
23	12378-PeCDD	31.49	1.811e5	1.132e5	0.995	1.60	1.55	2153.0	YES	NO	bb	bb	55.093
24	1234678-HpCDD	40.24	1.049e5	9.938e4	1.068	1.06	1.05	1716.7	YES	NO	bb	bb	52.567
25	1234679-HPCDD	39.20	9.036e2	9.271e2	1.211	0.97	1.05	17.9	YES	NO	bb	bb	0.416
26	OCDD	44.97	1.578e5	1.764e5	1.181	0.89	0.89	1081.5	YES	NO	bb	bb	95.265

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:21:20 Pacific Daylight Time

ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.80	3.674e4					1.6	NO		bb		
2	FUNCTION1 PFK	22.53	1.143e4					0.8	NO		bb		
3	FUNCTION1 PFK	22.22	4.816e5					8.9	YES		db		
4	FUNCTION1 PFK	21.95	1.992e6					19.2	YES		dd		
5	FUNCTION1 PFK	21.24	1.166e7					45.2	YES		dd		
6	FUNCTION1 PFK	21.12	3.649e6					49.6	YES		bd		
7	FUNCTION1 PFK	28.04	4.756e3					0.6	NO		bb		
8	FUNCTION1 PFK	27.91	3.265e4					1.4	NO		db		
9	FUNCTION1 PFK	27.85	2.466e4					1.2	NO		bd		
10	FUNCTION1 PFK	27.21	1.750e4					1.1	NO		bb		
11	FUNCTION1 PFK	26.94	2.367e4					1.4	NO		bb		
12	FUNCTION1 PFK	26.35	2.978e3					0.4	NO		bb		
13	FUNCTION1 PFK	25.96	1.072e4					0.8	NO		bb		
14	FUNCTION1 PFK	25.88	3.842e4					1.5	NO		bb		
15	FUNCTION1 PFK	25.35	3.249e3					0.4	NO		bb		
16	FUNCTION1 PFK	25.29	3.991e3					0.5	NO		bb		
17	FUNCTION1 PFK	24.29	4.598e4					1.5	NO		bb		
18	FUNCTION1 PFK	24.04	1.019e5					3.1	YES		db		
19	FUNCTION1 PFK	23.99	7.665e4					3.5	YES		bd		
20	FUNCTION1 PFK	23.89	1.878e5					4.4	YES		bb		
21	FUNCTION1 PFK	23.05	5.284e3					0.7	NO		bb		

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.37	7.519e5					33.0	YES		dd		0.000
2	FUNCTION2 PFK	29.30	3.583e5					35.5	YES		dd		0.000
3	FUNCTION2 PFK	29.17	1.494e6					40.4	YES		dd		0.000
4	FUNCTION2 PFK	29.07	6.583e5					43.7	YES		dd		0.000
5	FUNCTION2 PFK	28.87	2.051e6					50.7	YES		dd		0.000
6	FUNCTION2 PFK	28.83	5.291e5					52.2	YES		dd		0.000
7	FUNCTION2 PFK	28.76	8.100e5					53.8	YES		dd		0.000
8	FUNCTION2 PFK	28.72	1.280e6					55.2	YES		dd		0.000
9	FUNCTION2 PFK	28.61	7.468e5					59.7	YES		dd		0.000
10	FUNCTION2 PFK	28.56	6.142e5					60.4	YES		dd		0.000
11	FUNCTION2 PFK	28.49	1.605e6					63.1	YES		dd		0.000
12	FUNCTION2 PFK	28.36	1.178e6					68.0	YES		dd		0.000
13	FUNCTION2 PFK	28.35	5.217e5					68.0	YES		dd		0.000
14	FUNCTION2 PFK	28.29	6.930e5					68.9	YES		dd		0.000
15	FUNCTION2 PFK	28.22	1.265e6					72.1	YES		dd		0.000
16	FUNCTION2 PFK	28.18	1.053e6					72.3	YES		bd		0.000
17	FUNCTION2 PFK	32.30	1.484e3					0.6	NO		bb		0.000
18	FUNCTION2 PFK	32.12	4.381e3					0.9	NO		bb		0.000
19	FUNCTION2 PFK	31.99	9.078e3					1.1	NO		bb		0.000
20	FUNCTION2 PFK	31.56	5.941e3					1.0	NO		db		0.000
21	FUNCTION2 PFK	31.54	6.258e3					1.1	NO		bd		0.000
22	FUNCTION2 PFK	31.11	1.550e4					1.8	NO		bb		0.000
23	FUNCTION2 PFK	30.97	4.996e4					2.6	NO		bb		0.000
24	FUNCTION2 PFK	30.88	2.786e3					0.0	NO		bb		0.000
25	FUNCTION2 PFK	30.77	1.069e4					1.3	NO		bb		0.000
26	FUNCTION2 PFK	30.70	1.000e4					1.9	NO		bb		0.000
27	FUNCTION2 PFK	30.56	5.129e3					0.9	NO		db		0.000
28	FUNCTION2 PFK	30.49	4.869e3					0.7	NO		bd		0.000
29	FUNCTION2 PFK	30.44	4.959e3					1.0	NO		bb		0.000
30	FUNCTION2 PFK	30.29	1.454e4					2.0	NO		db		0.000
31	FUNCTION2 PFK	29.65	1.930e6					24.3	YES		dd		0.000
32	FUNCTION2 PFK	29.46	1.346e6					30.4	YES		dd		0.000
33	FUNCTION2 PFK	32.76	5.699e3					1.0	NO		bb		0.000
34	FUNCTION2 PFK	32.59	9.756e2					0.4	NO		bb		0.000
35	FUNCTION2 PFK	32.52	5.785e3					0.9	NO		bb		0.000
36	FUNCTION2 PFK	32.39	1.394e3					0.5	NO		bb		0.000

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Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
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ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.88	2.374e6					45.0	YES		dd		0.000
2	FUNCTION3 PFK	33.81	1.557e6					46.5	YES		dd		0.000
3	FUNCTION3 PFK	33.70	2.061e6					49.8	YES		dd		0.000
4	FUNCTION3 PFK	33.57	2.376e6					52.1	YES		dd		0.000
5	FUNCTION3 PFK	33.49	1.348e6					53.8	YES		dd		0.000
6	FUNCTION3 PFK	33.39	1.853e6					56.0	YES		dd		0.000
7	FUNCTION3 PFK	33.35	9.515e5					56.6	YES		dd		0.000
8	FUNCTION3 PFK	33.29	1.458e6					58.3	YES		dd		0.000
9	FUNCTION3 PFK	33.25	1.998e6					58.9	YES		dd		0.000
10	FUNCTION3 PFK	33.13	1.797e6					61.7	YES		dd		0.000
11	FUNCTION3 PFK	32.97	3.973e6					64.3	YES		bd		0.000
12	FUNCTION3 PFK	35.51	1.241e5					7.1	YES		dd		0.000
13	FUNCTION3 PFK	35.47	1.168e5					7.4	YES		dd		0.000
14	FUNCTION3 PFK	35.38	2.642e5					10.2	YES		dd		0.000
15	FUNCTION3 PFK	35.34	2.638e5					10.9	YES		dd		0.000
16	FUNCTION3 PFK	35.27	3.571e5					12.8	YES		dd		0.000
17	FUNCTION3 PFK	35.06	1.139e6					17.1	YES		dd		0.000
18	FUNCTION3 PFK	34.95	6.271e5					20.0	YES		dd		0.000
19	FUNCTION3 PFK	34.87	7.035e5					21.7	YES		dd		0.000
20	FUNCTION3 PFK	34.70	1.567e6					24.9	YES		dd		0.000
21	FUNCTION3 PFK	34.57	1.361e6					28.5	YES		dd		0.000
22	FUNCTION3 PFK	34.44	1.226e6					30.4	YES		dd		0.000
23	FUNCTION3 PFK	34.33	1.806e6					34.3	YES		dd		0.000
24	FUNCTION3 PFK	34.21	1.372e6					37.4	YES		dd		0.000
25	FUNCTION3 PFK	34.17	6.192e5					36.7	YES		dd		0.000
26	FUNCTION3 PFK	34.08	1.132e6					39.7	YES		dd		0.000
27	FUNCTION3 PFK	34.01	8.568e5					41.6	YES		dd		0.000
28	FUNCTION3 PFK	37.12	2.642e4					1.3	NO		db		0.000
29	FUNCTION3 PFK	37.04	8.362e3					0.7	NO		bd		0.000
30	FUNCTION3 PFK	36.87	2.788e4					2.1	NO		db		0.000
31	FUNCTION3 PFK	36.83	2.296e4					1.6	NO		dd		0.000
32	FUNCTION3 PFK	36.76	3.826e4					2.2	NO		dd		0.000
33	FUNCTION3 PFK	36.73	2.102e4					1.7	NO		dd		0.000
34	FUNCTION3 PFK	36.67	1.520e4					1.2	NO		dd		0.000
35	FUNCTION3 PFK	36.61	2.010e4					1.3	NO		dd		0.000
36	FUNCTION3 PFK	36.53	2.941e4					1.8	NO		dd		0.000
37	FUNCTION3 PFK	36.49	1.251e4					1.2	NO		bd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	36.28	1.469e4					0.9	NO		bb		0.000
39	FUNCTION3 PFK	36.18	7.596e3					0.8	NO		bb		0.000
40	FUNCTION3 PFK	36.06	7.852e3					0.7	NO		bb		0.000
41	FUNCTION3 PFK	35.89	3.643e4					1.0	NO		bb		0.000
42	FUNCTION3 PFK	35.65	4.061e4					2.5	NO		db		0.000
43	FUNCTION3 PFK	35.59	1.395e5					4.9	YES		dd		0.000
44	FUNCTION3 PFK	37.89	1.673e4					0.9	NO		bb		0.000
45	FUNCTION3 PFK	37.81	8.109e3					0.7	NO		bb		0.000
46	FUNCTION3 PFK	37.74	7.419e3					0.8	NO		bb		0.000
47	FUNCTION3 PFK	37.69	1.231e4					1.0	NO		bb		0.000
48	FUNCTION3 PFK	37.53	1.706e4					1.0	NO		bb		0.000
49	FUNCTION3 PFK	37.43	4.227e4					2.1	NO		bb		0.000
50	FUNCTION3 PFK	37.32	1.106e4					0.9	NO		bb		0.000
51	FUNCTION3 PFK	37.18	6.338e3					0.7	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.83	5.037e4					3.6	YES		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.13	1.956e2					2.7	NO		bb		0.000
2	FUNCTION1 HXCD...	23.16	1.249e2					2.1	NO		db		0.000
3	FUNCTION1 HXCD...	23.10	1.170e2					4.1	YES		bd		0.000
4	FUNCTION1 HXCD...	22.16	7.821e1					1.5	NO		bb		0.000
5	FUNCTION1 HXCD...	27.85	1.178e2					1.8	NO		bb		0.000
6	FUNCTION1 HXCD...	27.56	1.366e2					1.9	NO		bb		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.64	9.823e1					1.5	NO		bb		0.000
2	FUNCTION1 HPCD...	25.03	9.163e1					1.5	NO		db		0.000
3	FUNCTION1 HPCD...	24.97	7.273e1					1.8	NO		bd		0.000
4	FUNCTION1 HPCD...	23.11	9.449e1					2.3	NO		bb		0.000
5	FUNCTION1 HPCD...	22.27	1.297e2					1.5	NO		db		0.000
6	FUNCTION1 HPCD...	22.09	7.906e1					2.1	NO		bd		0.000
7	FUNCTION1 HPCD...	21.51	7.700e1					2.0	NO		bb		0.000
8	FUNCTION1 HPCD...	21.33	7.361e1					1.9	NO		db		0.000
9	FUNCTION1 HPCD...	21.25	7.972e1					2.0	NO		dd		0.000
10	FUNCTION1 HPCD...	21.12	1.542e2					2.0	NO		bd		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.37	7.801e1					1.8	NO		bb		0.000
2	FUNCTION2 HPCD...	29.79	7.350e1					1.6	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.48	1.940e2					4.0	YES		bb		0.000
2	FUNCTION3 OCDPE	36.08	2.302e2					4.5	YES		db		0.000
3	FUNCTION3 OCDPE	35.97	9.828e1					3.6	YES		bd		0.000
4	FUNCTION3 OCDPE	35.17	1.044e2					2.0	NO		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.93	7.128e1					2.2	NO		bb		0.000
2	FUNCTION4 NCDPE	42.02	7.022e1					2.5	NO		bb		0.000

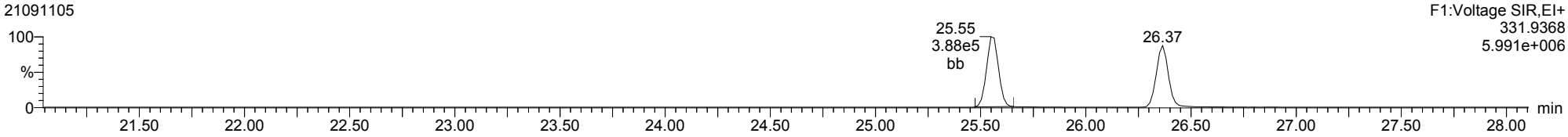
ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

13C-1234-TCDD



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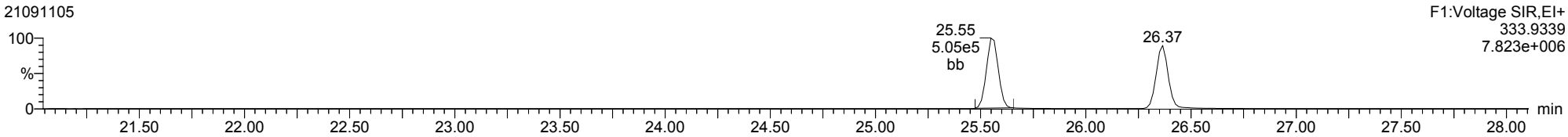
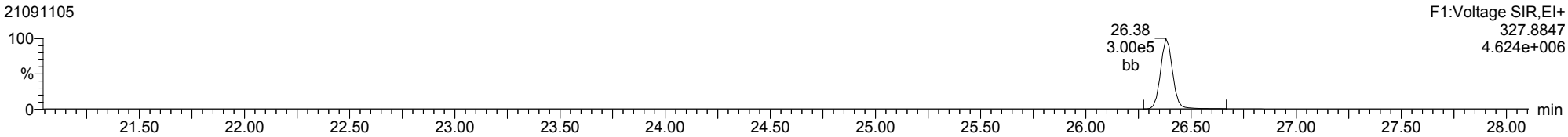


37CL-2378-TCDD



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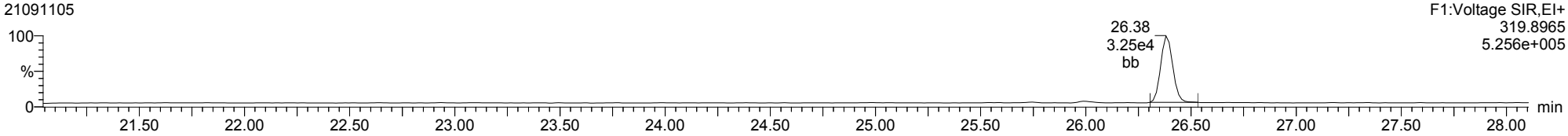
2378-TCDD



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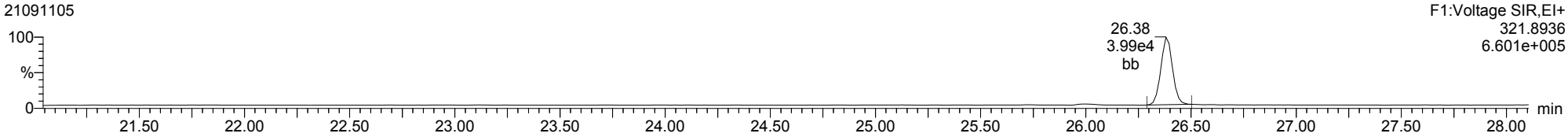

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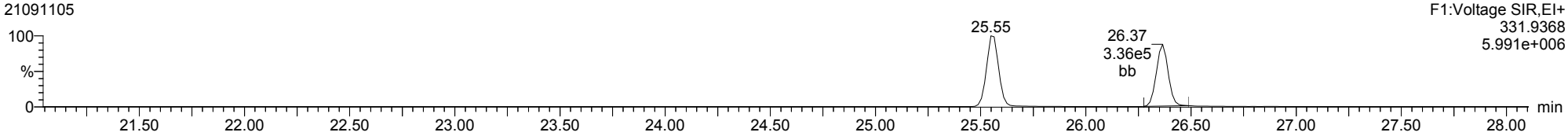

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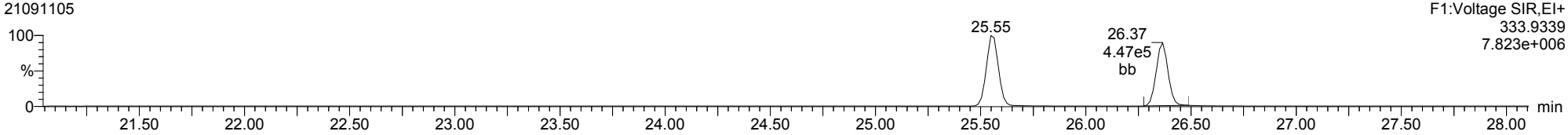
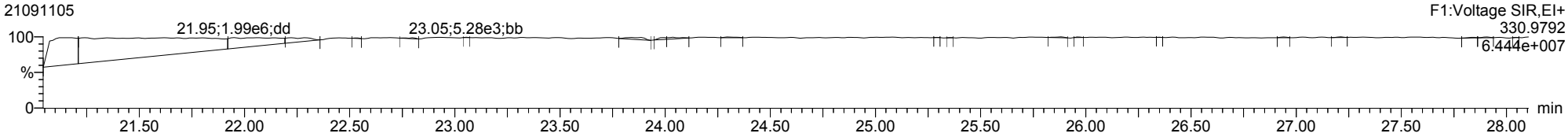


FUNCTION1 PFK



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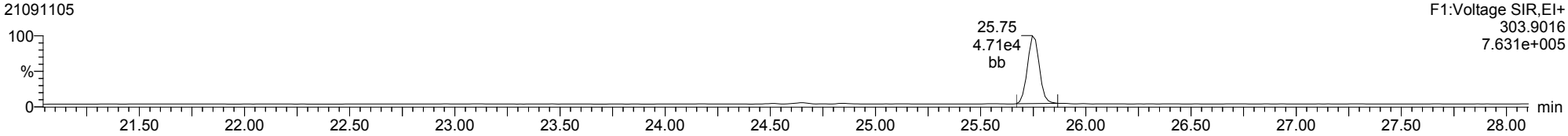
2378-TCDF



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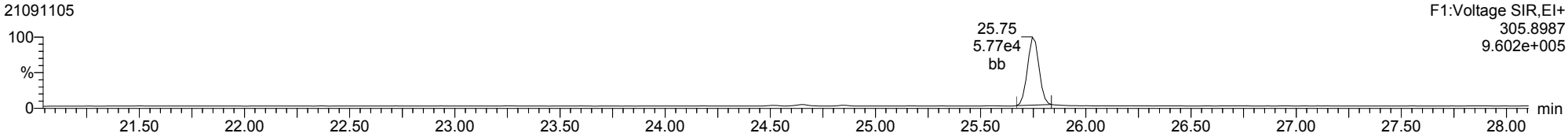

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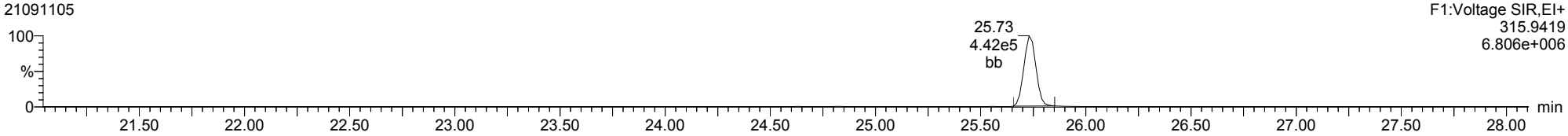

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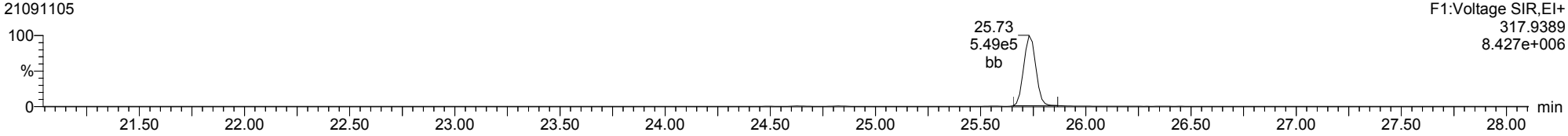

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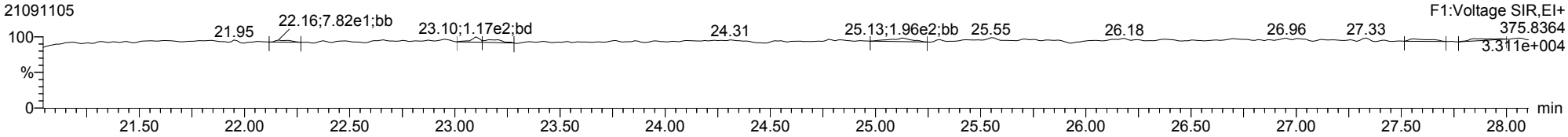

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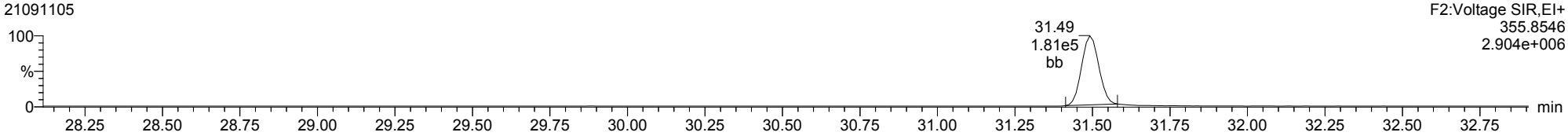
12378-PeCDD



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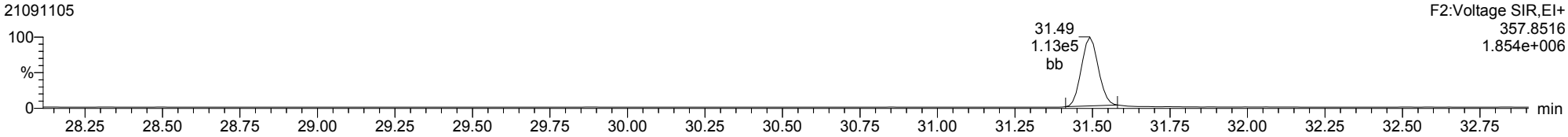

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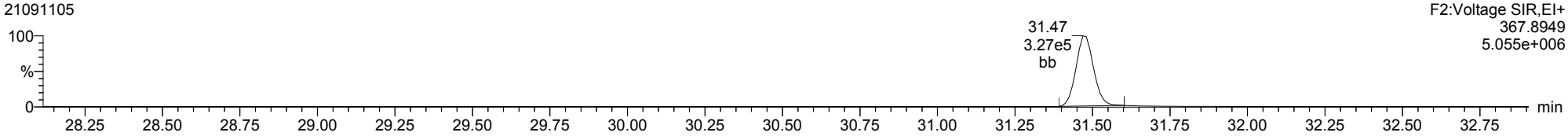

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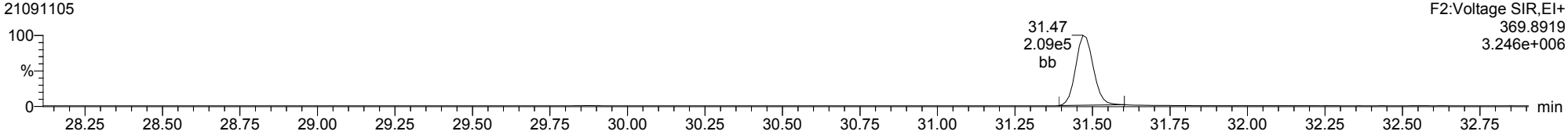
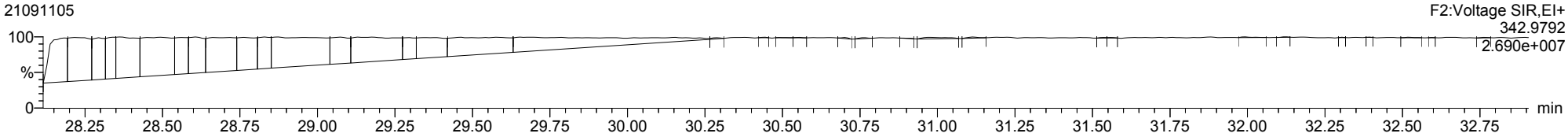


FUNCTION2 PFK



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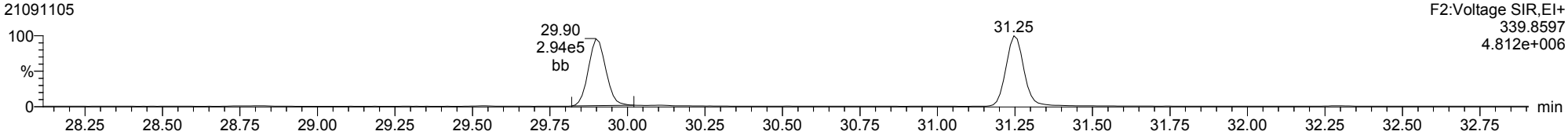

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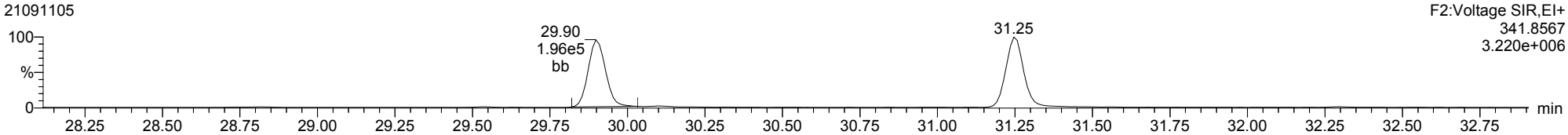

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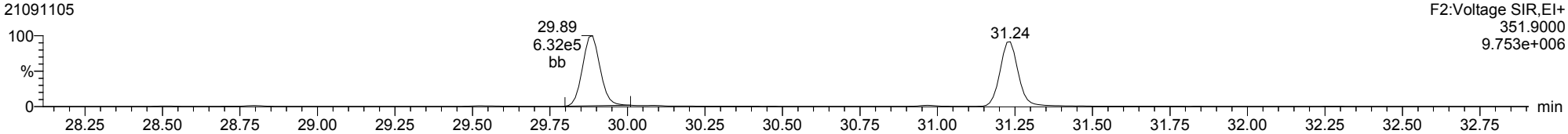

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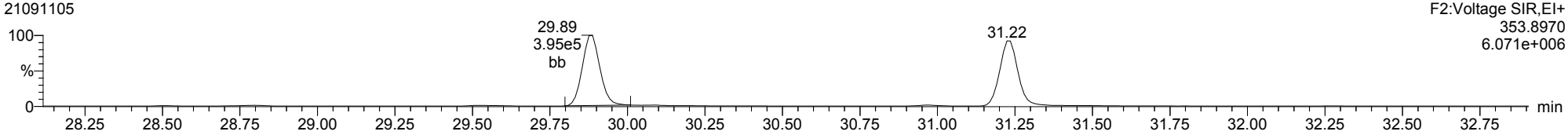

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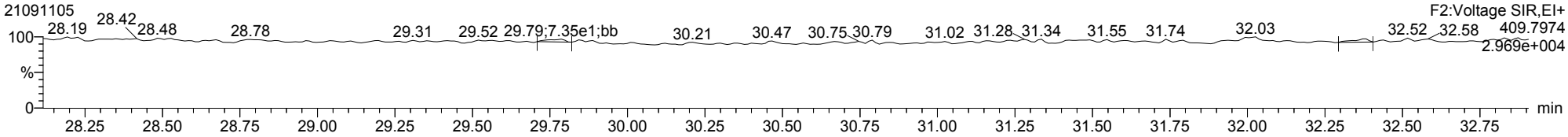

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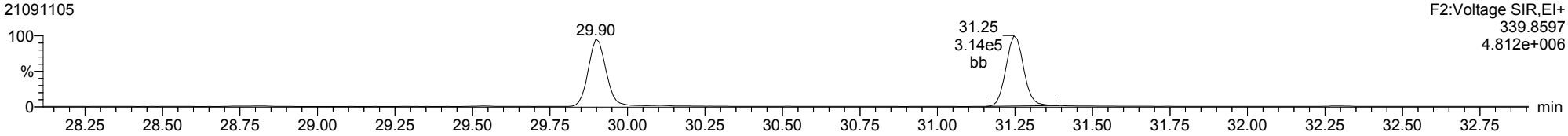
23478-PeCDF



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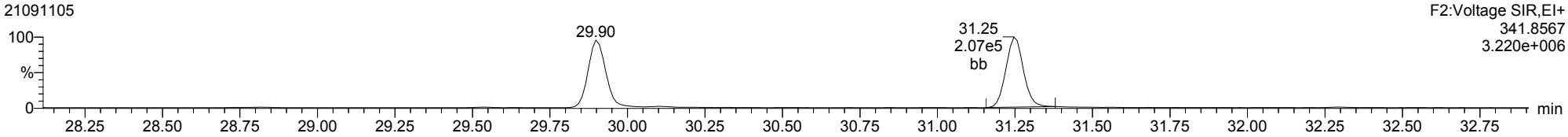

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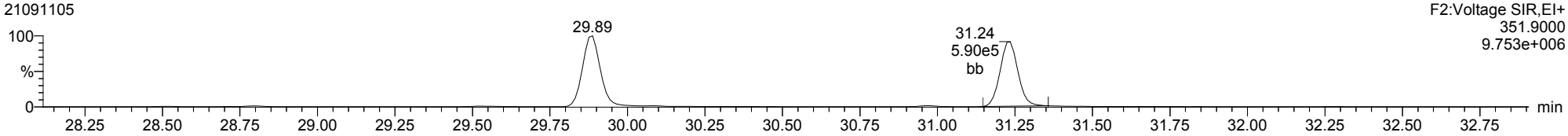

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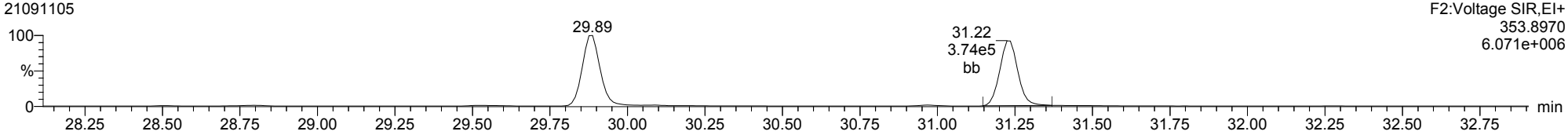

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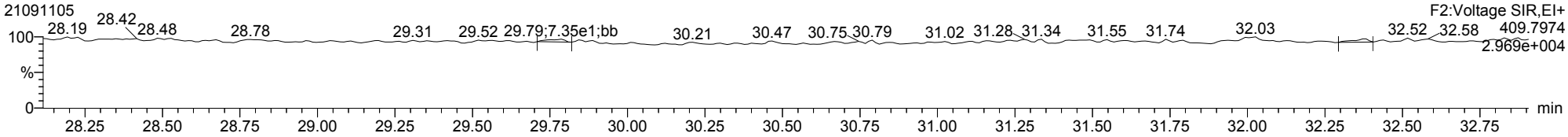

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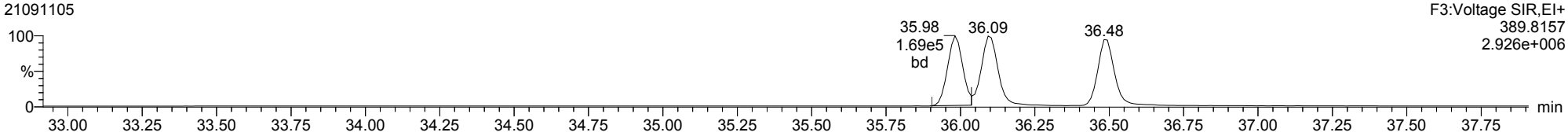

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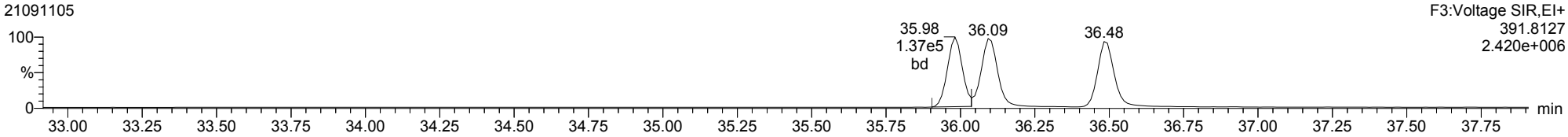

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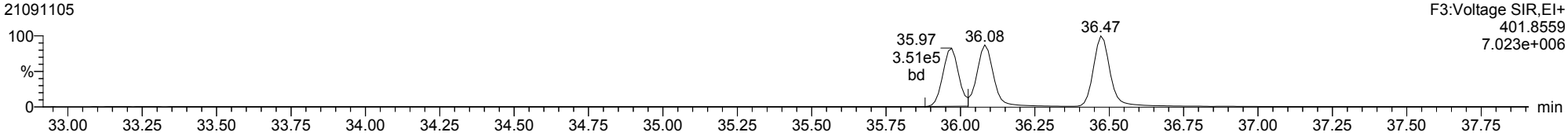

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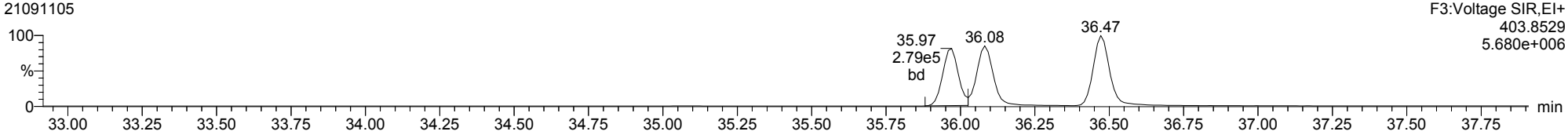

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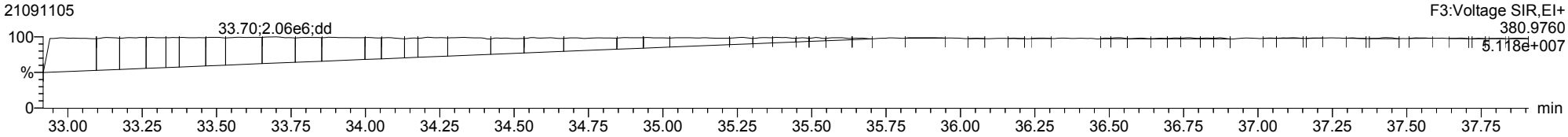

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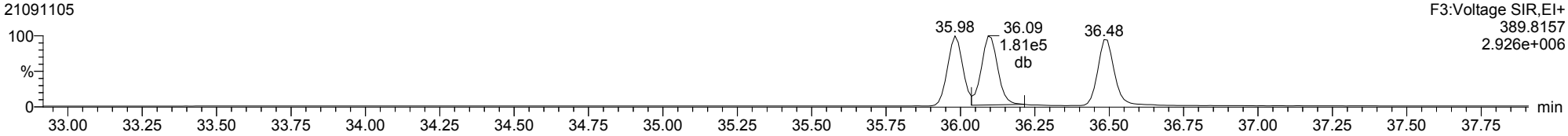

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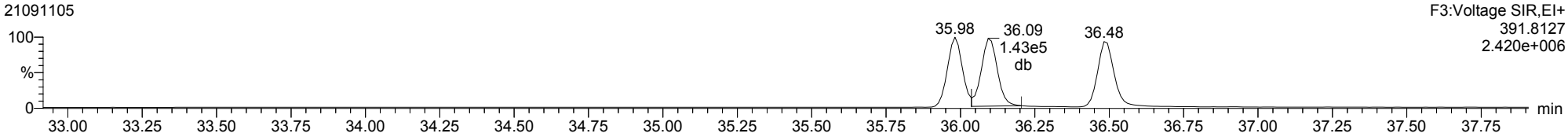

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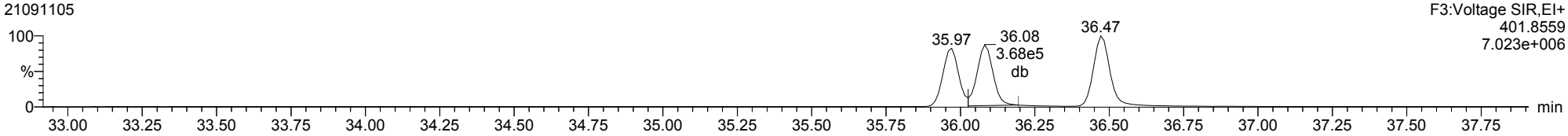

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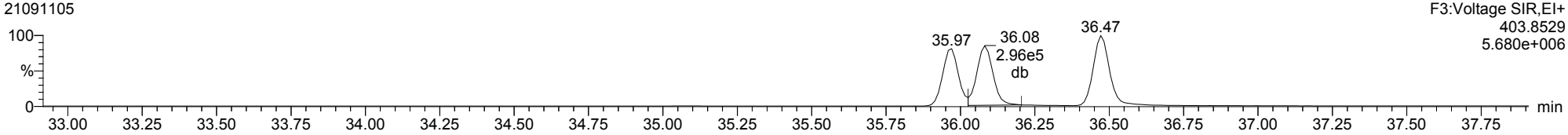

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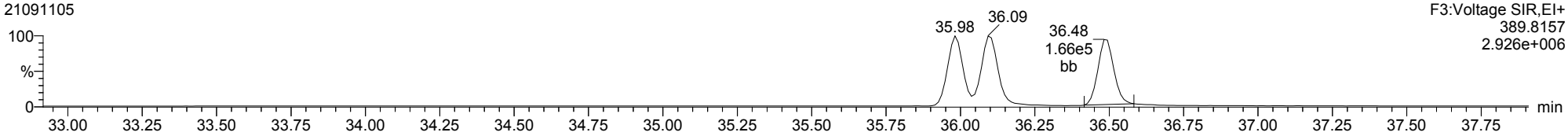

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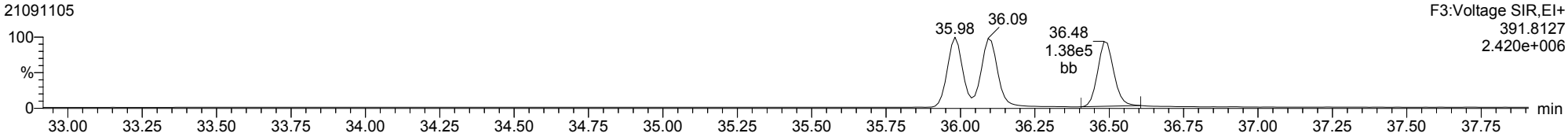

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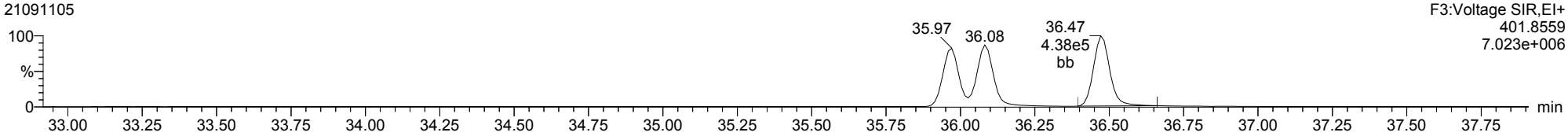

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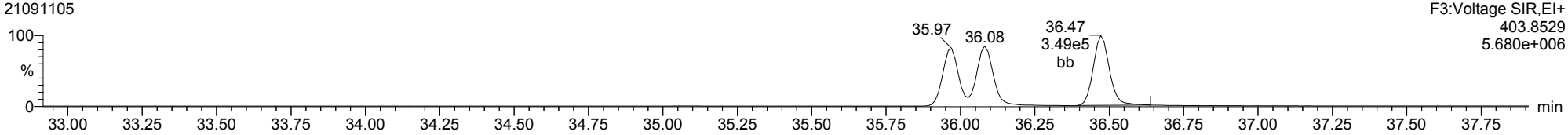

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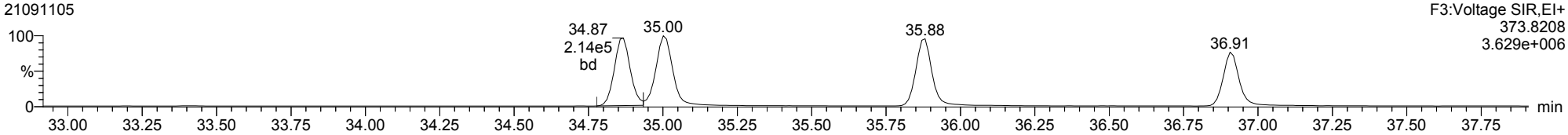

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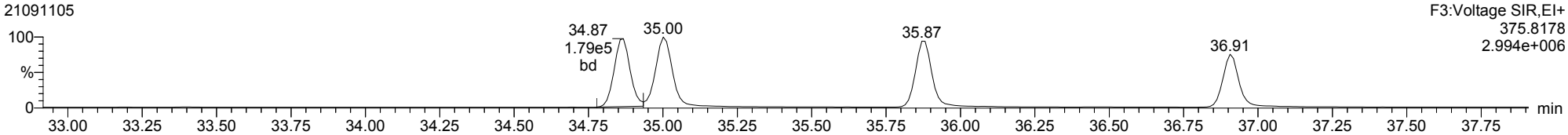

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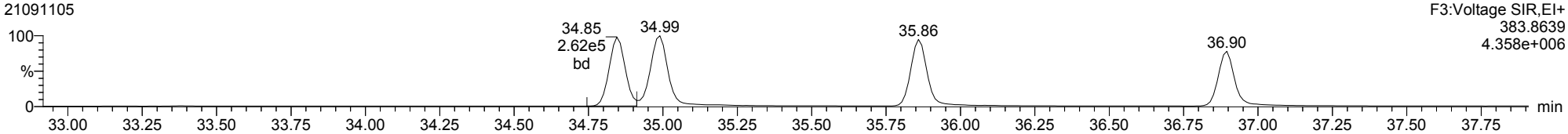

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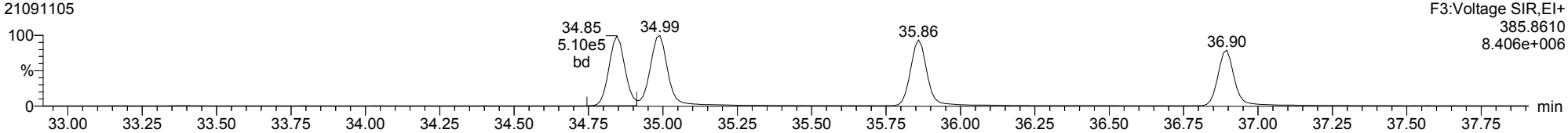

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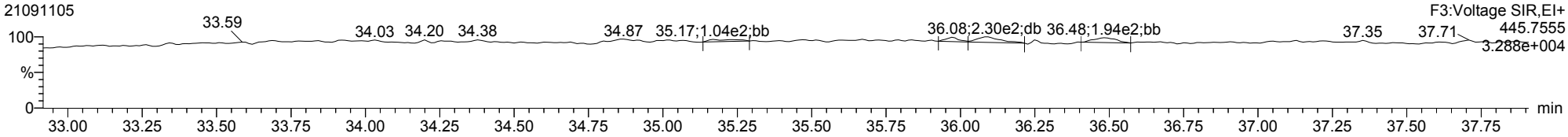

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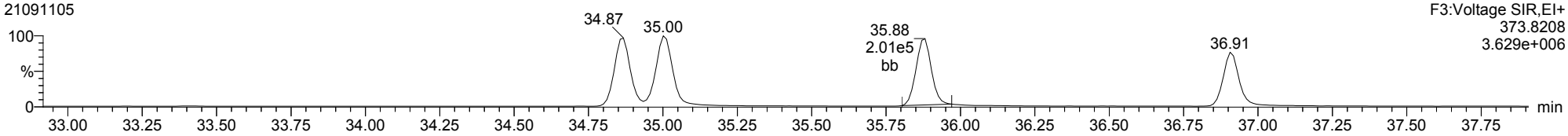

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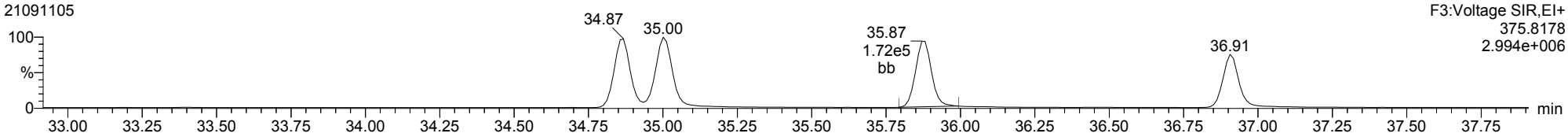

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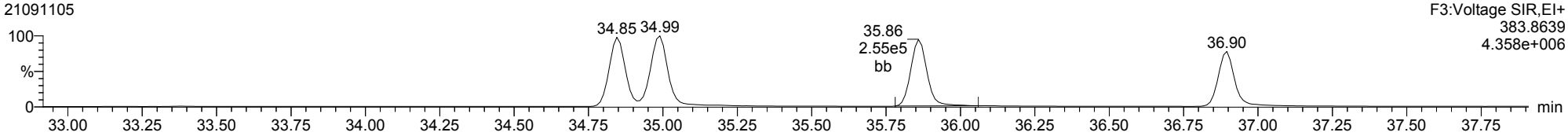

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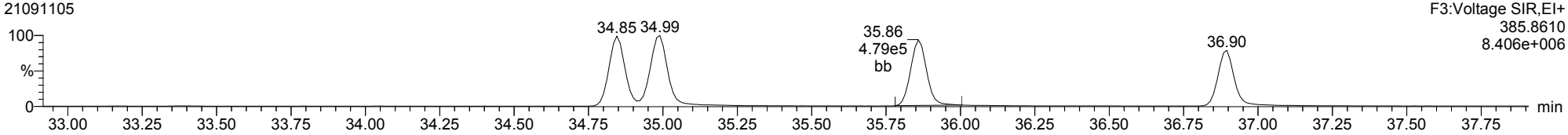

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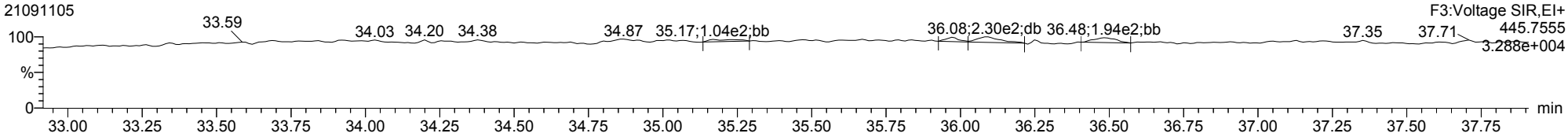

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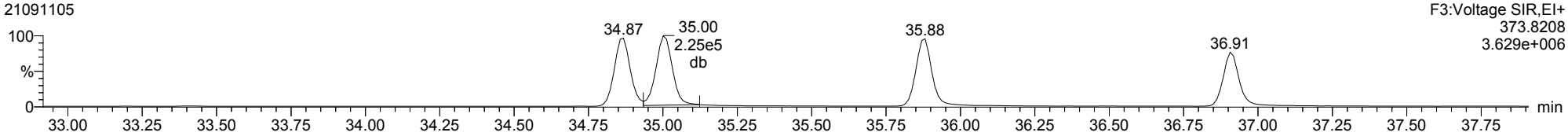

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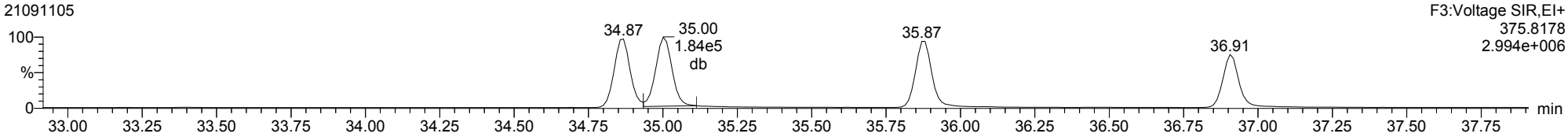

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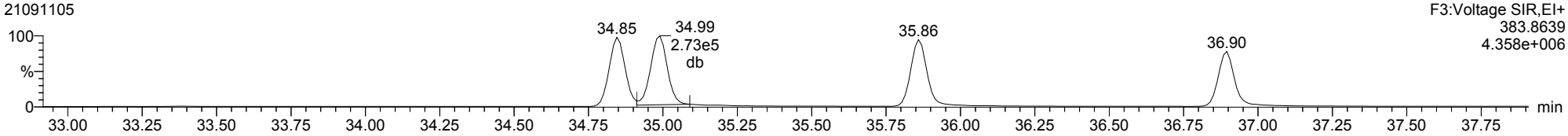

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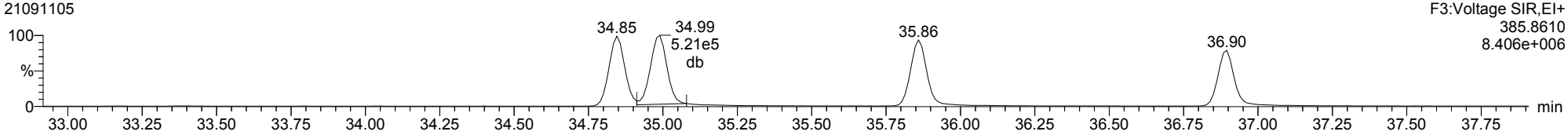

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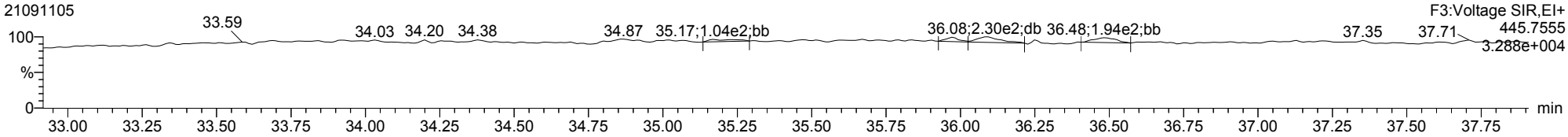

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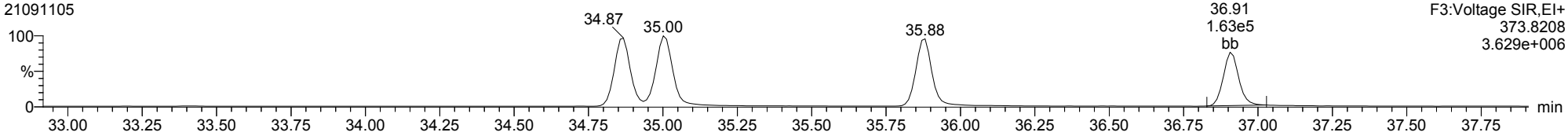

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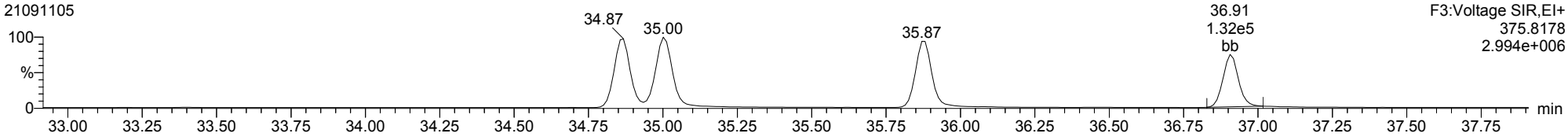

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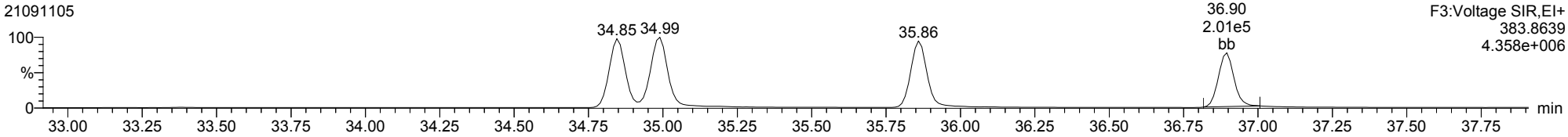

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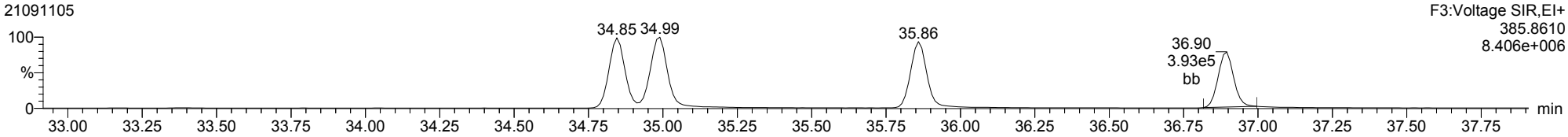

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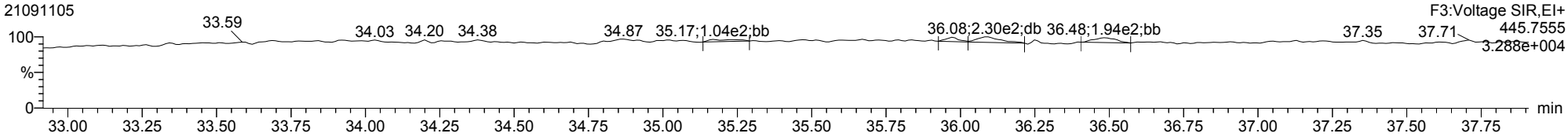

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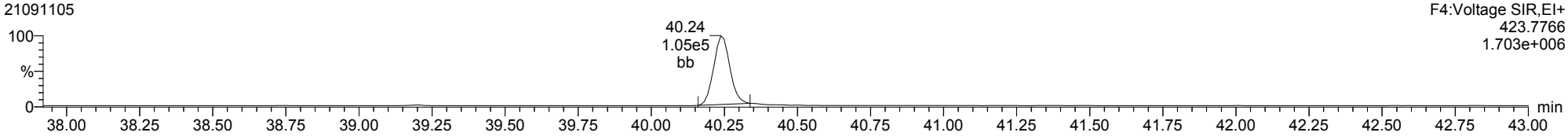

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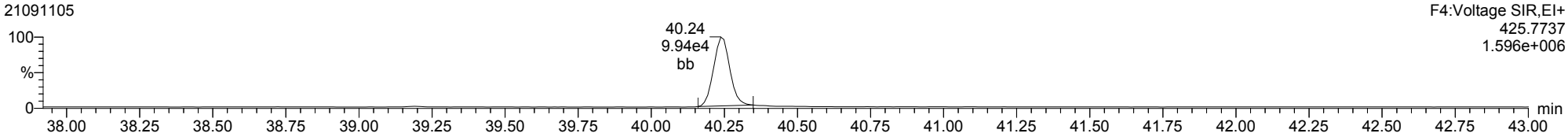

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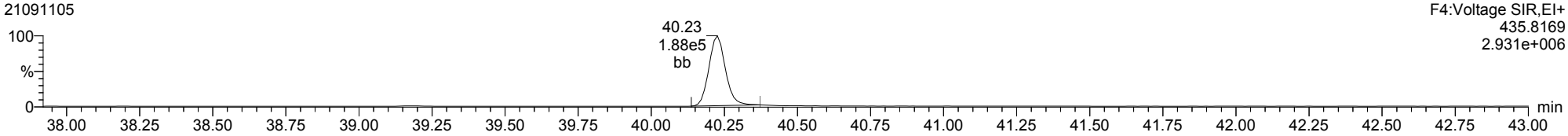

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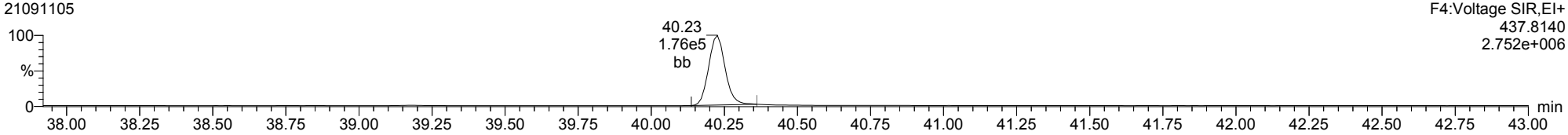
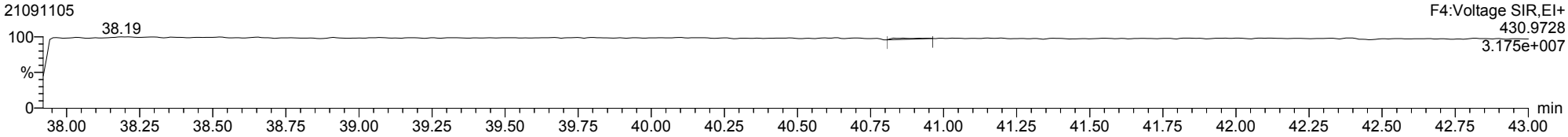
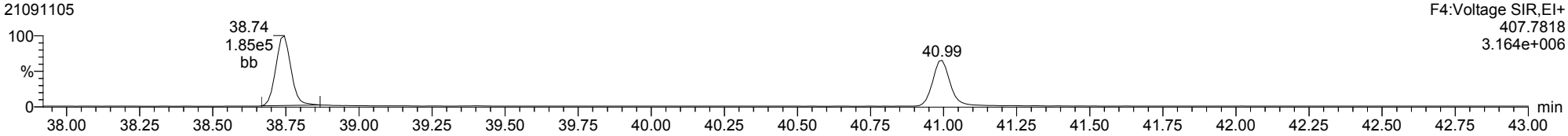


FUNCTION4 PFK



ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

1234678-HpCDF



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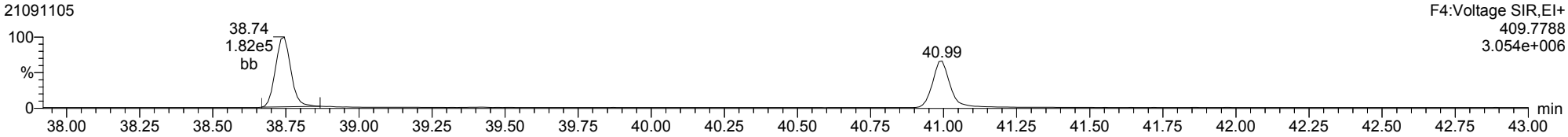

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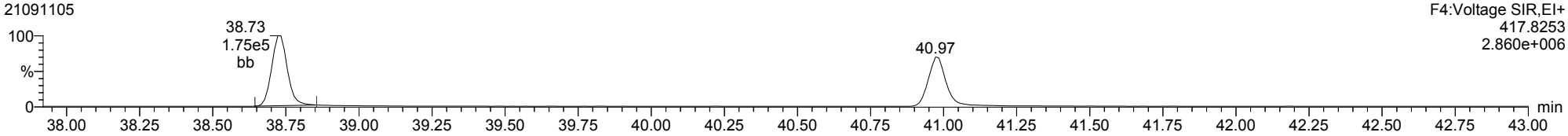

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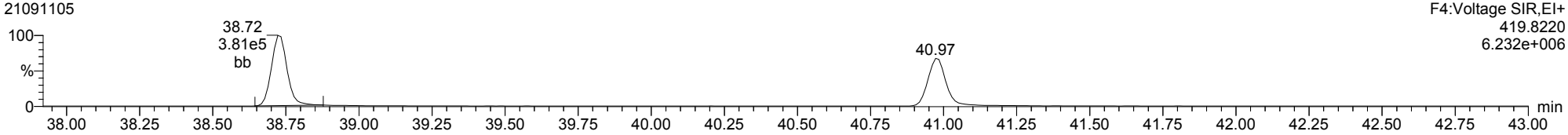
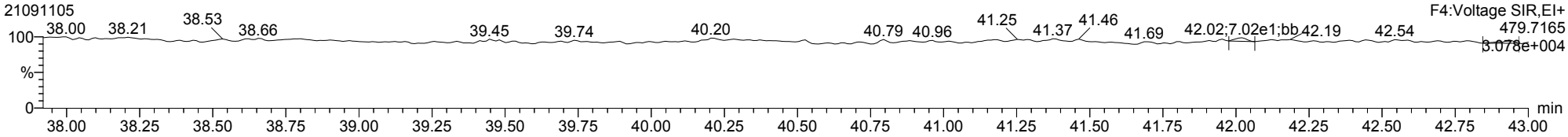
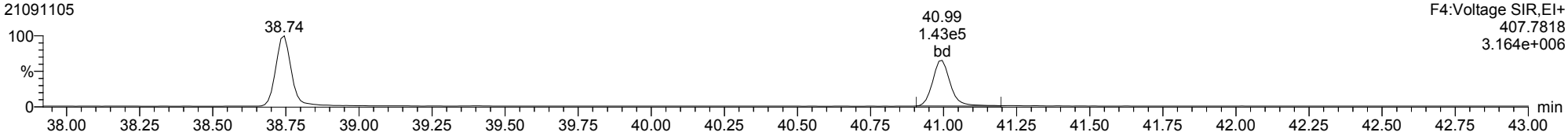


FUNCTION4 NCDPE

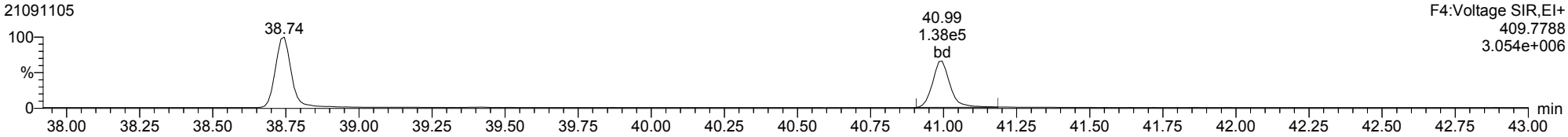


ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

1234789-HpCDF



1234789-HpCDF



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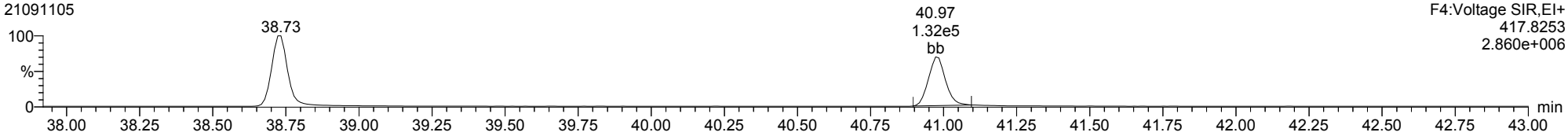

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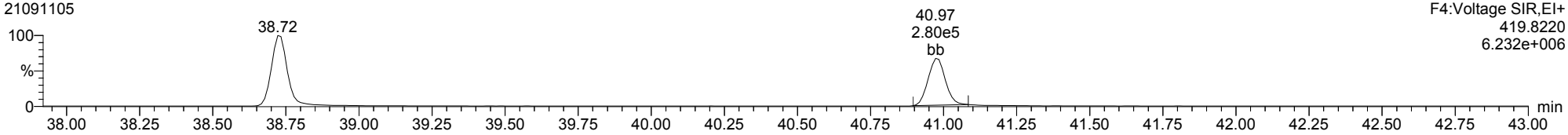
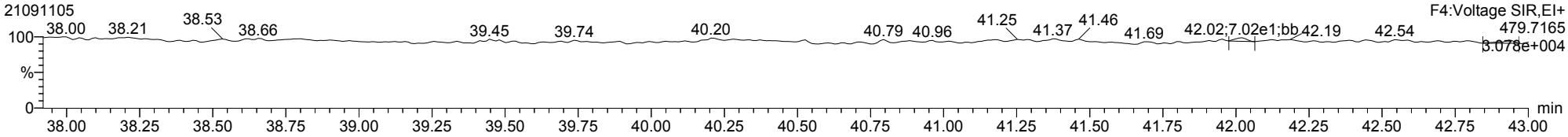
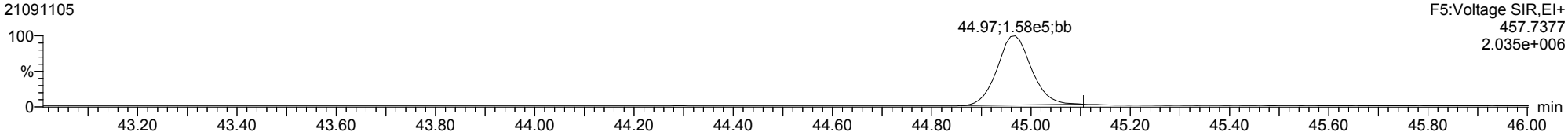


FUNCTION4 NCDPE

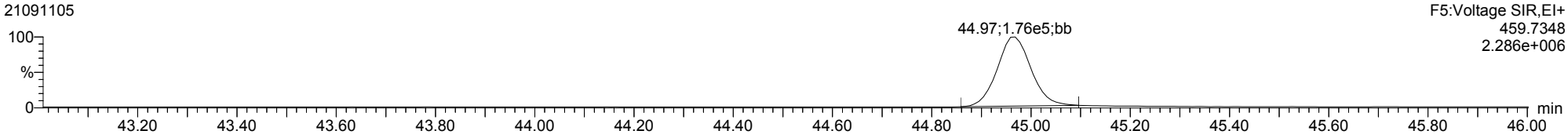


ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

OCDD



OCDD



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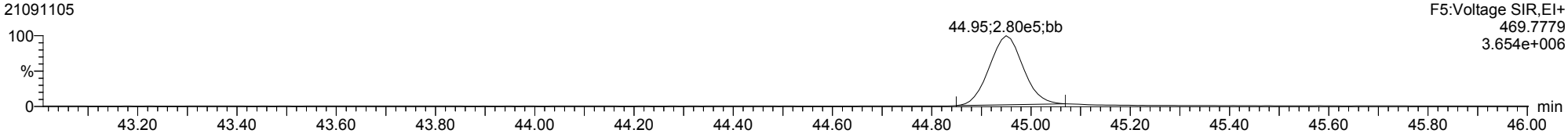

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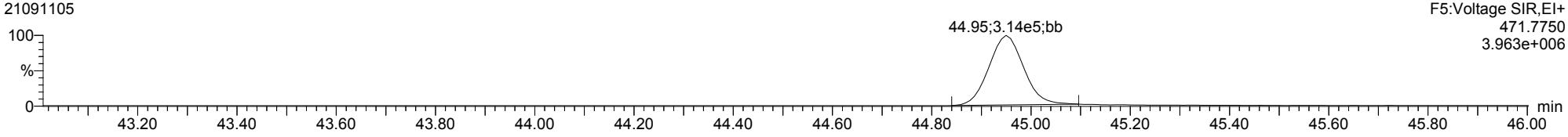
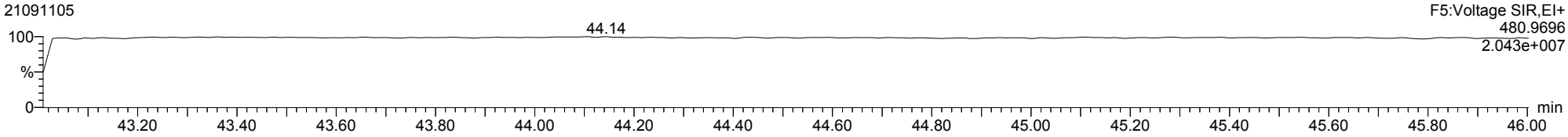


FUNCTION5 PFK



ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

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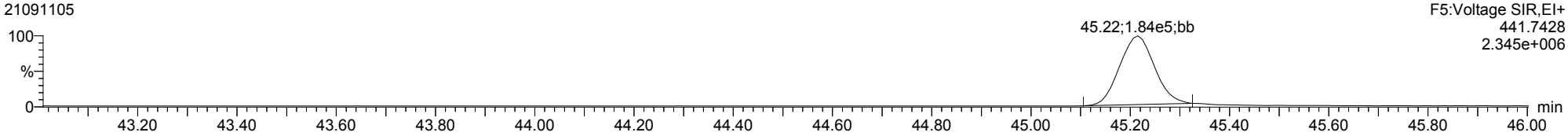

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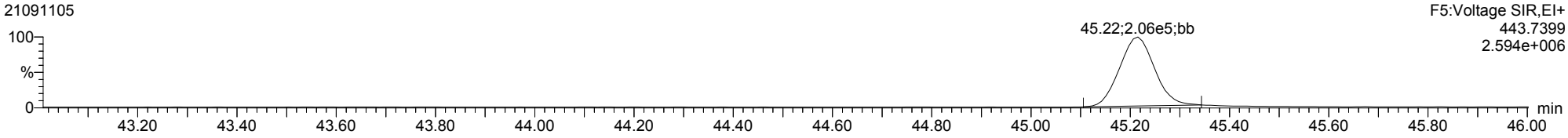
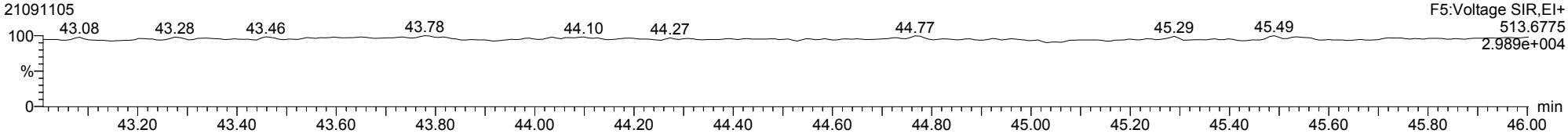


FUNCTION5 DCDPE



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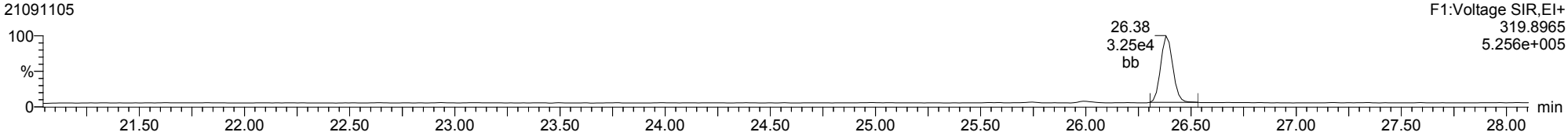
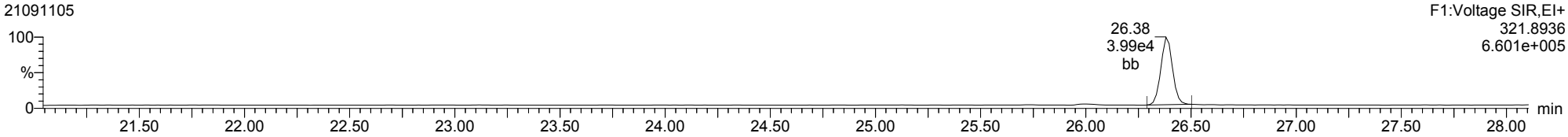
Printed: Wednesday, September 15, 2021 11:21:20 Pacific Daylight Time

ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

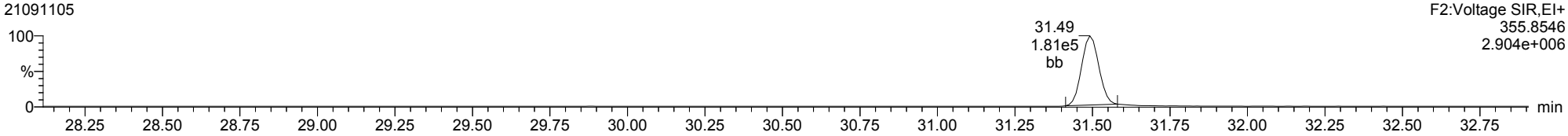
Total-tetradioxins



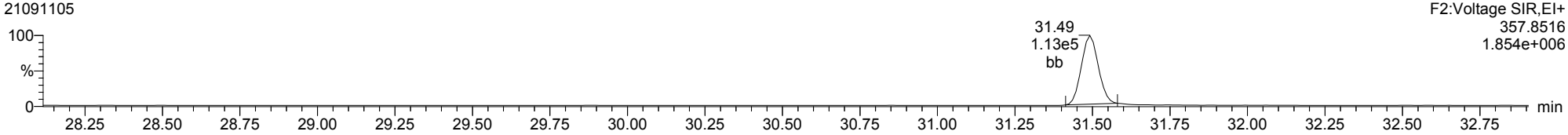
Total-tetradioxins



Total-pentadioxins

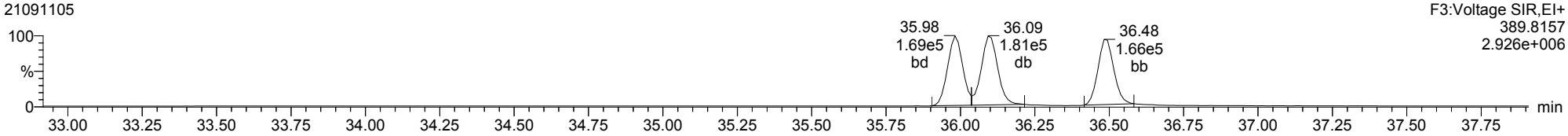


Total-pentadioxins

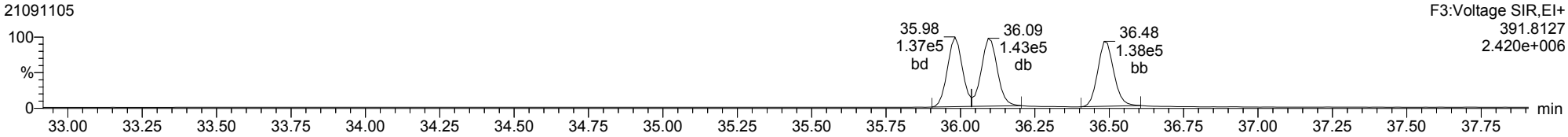


ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



Total-hexadioxins



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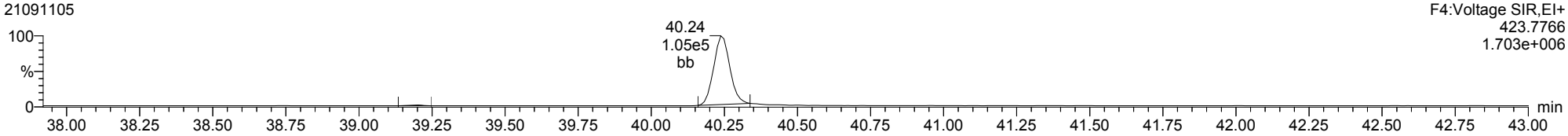
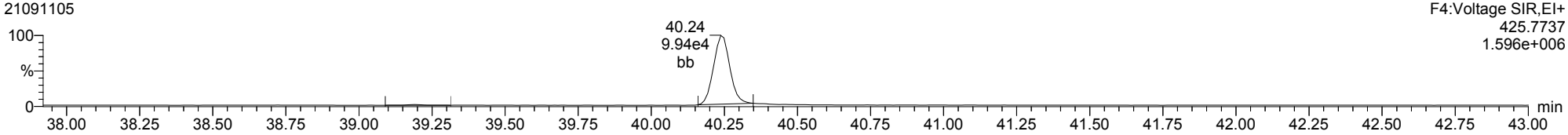


Total-heptadioxins



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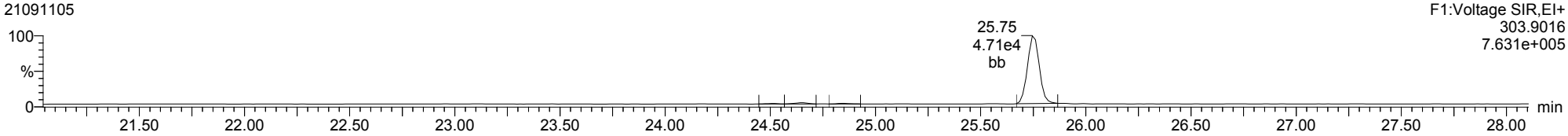
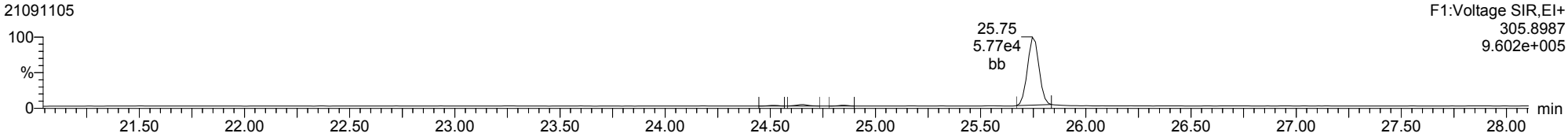
ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



Total-tetrafurans



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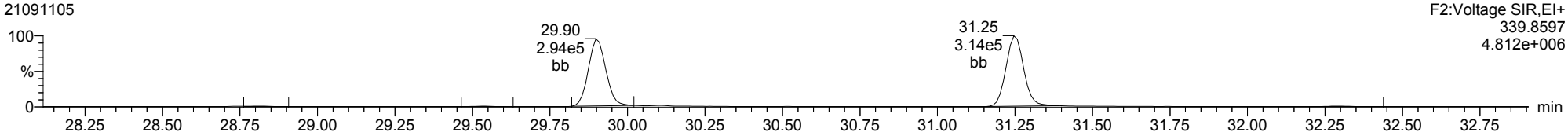
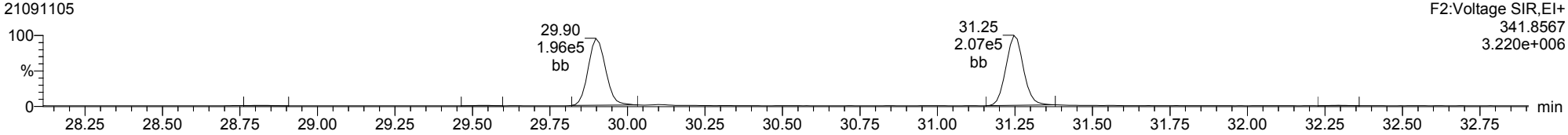


Total-pentafurans



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ID: BJH0150-BS1, Name: 21091105, Date: 11-Sep-2021, Time: 13:47:40, Conditions: AUTOSPEC01, User: pk

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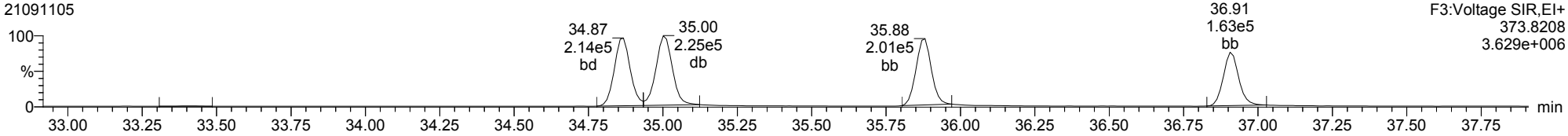
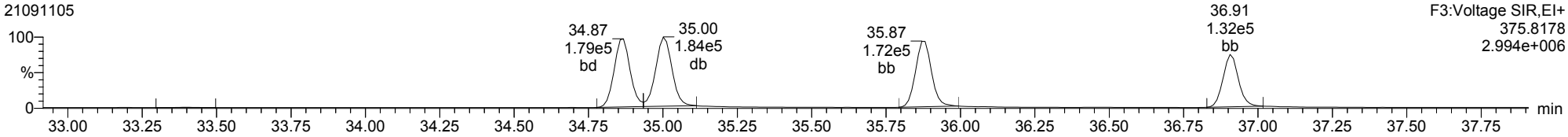


Total-hexafurans



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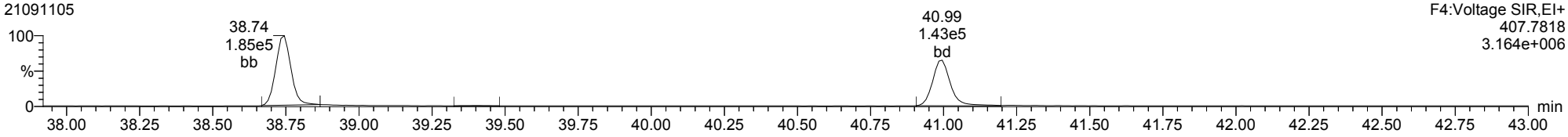
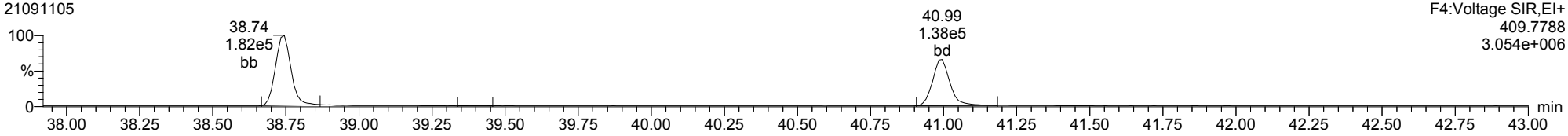


Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

DUPLICATES
EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0150-DUP2
Batch: BJH0150
Lab Source ID: 21G0138-02
Preparation: EPA 1613
Initial/Final: 16.22 g / 20 uL
Source Sample Name: LDW21-IT662B
% Solids: 61.66

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
2,3,7,8-TCDF	25	2.63	2.54	3.46	
2,3,7,8-TCDD	25	1.86	1.61	14.9	
1,2,3,7,8-PeCDF	25	3.29	2.82	15.5	
2,3,4,7,8-PeCDF	25	5.72	4.56	22.4	
1,2,3,7,8-PeCDD	25	11.3	10.9	3.21	
1,2,3,4,7,8-HxCDF	25	53.0	45.2	15.9	
1,2,3,6,7,8-HxCDF	25	19.5	16.5	16.8	
2,3,4,6,7,8-HxCDF	25	33.4	28.7	15.1	
1,2,3,7,8,9-HxCDF	25	8.92	7.73	14.3	
1,2,3,4,7,8-HxCDD	25	18.8	17.2	8.96	
1,2,3,6,7,8-HxCDD	25	79.7	69.0	14.4	
1,2,3,7,8,9-HxCDD	25	40.0	34.4	14.9	
1,2,3,4,6,7,8-HpCDF	25	562	468	18.1	
1,2,3,4,7,8,9-HpCDF	25	60.0	50.2	17.9	
1,2,3,4,6,7,8-HpCDD	25	2940	5770	65.2	*
OCDF	25	2480	2330	6.07	
OCDD	25	20400	188000	161	*
Total TCDF	200	37.5	51.6	31.6	
Total TCDD	200	181	76.6	81.2	
Total PeCDF	200	238	167	34.8	
Total PeCDD	200	214	134	45.6	
Total HxCDF	200	755	587	25.1	
Total HxCDD	200	1160	845	31.5	
Total HpCDF	200	2240	1860	18.2	
Total HpCDD	200	5200	11900	78.0	
13C12-2,3,7,8-TCDF		155	172		
13C12-2,3,7,8-TCDD		170	190		

* Values outside of QC limits
L Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

DUPLICATES
EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0150-DUP2
Batch: BJH0150
Lab Source ID: 21G0138-02
Preparation: EPA 1613
Initial/Final: 16.22 g / 20 uL
Source Sample Name: LDW21-IT662B
% Solids: 61.66

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
13C12-1,2,3,7,8-PeCDF		172	189		
13C12-2,3,4,7,8-PeCDF		175	188		
13C12-1,2,3,7,8-PeCDD		161	171		
13C12-1,2,3,4,7,8-HxCDF		150	159		
13C12-1,2,3,6,7,8-HxCDF		138	145		
13C12-2,3,4,6,7,8-HxCDF		145	154		
13C12-1,2,3,7,8,9-HxCDF		161	175		
13C12-1,2,3,4,7,8-HxCDD		156	171		
13C12-1,2,3,6,7,8-HxCDD		148	155		
13C12-1,2,3,4,6,7,8-HpCDF		153	145		
13C12-1,2,3,4,7,8,9-HpCDF		154	158		
13C12-1,2,3,4,6,7,8-HpCDD		161	159		
13C12-OCDD		370	285		
37Cl4-2,3,7,8-TCDD		66.5	74.4		

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-DUP2, Name: 21091116, Date: 11-Sep-2021, Time: 22:52:48, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.791	1.001	7.001e3	9.301e3	1.108	0.753	0.770	2051	1127	1.05e5	1.43e5	51.0	126.7	NO	bd	dd	1.271
12378-PeCDF	29.920	1.000	1.010e4	6.480e3	1.015	1.558	1.550	1458	1724	1.64e5	9.46e4	112.7	54.9	NO	bb	bb	1.410
23478-PeCDF	31.268	1.000	1.785e4	1.033e4	1.126	1.727	1.550	1458	1724	2.78e5	1.79e5	190.5	103.8	NO	db	bb	2.282
123478-HxCDF	34.878	1.000	1.079e5	8.949e4	1.017	1.206	1.240	2268	2729	1.76e6	1.49e6	777.4	544.6	NO	bd	bd	22.588
234678-HxCDF	35.859	0.999	6.808e4	5.505e4	1.052	1.237	1.240	2268	2729	9.24e5	7.50e5	407.3	274.9	NO	bb	bb	14.376
123678-HxCDF	35.023	1.001	3.988e4	3.278e4	1.037	1.217	1.240	2268	2729	6.65e5	5.47e5	293.4	200.4	NO	db	db	8.233
123789-HxCDF	36.906	1.000	1.687e4	1.368e4	1.030	1.233	1.240	2268	2729	2.59e5	2.05e5	114.2	75.1	NO	bb	bb	3.868
1234678-HpCDF	38.756	1.000	9.353e5	8.782e5	1.327	1.065	1.050	3808	3598	1.60e7	1.52e7	4206.4	4231.5	NO	bb	bb	234.212
1234789-HpCDF	41.006	1.000	8.712e4	8.041e4	1.283	1.084	1.050	3808	3598	1.32e6	1.25e6	345.8	346.3	NO	bb	bb	25.089
OCDF	45.288	1.005	2.500e6	2.779e6	1.447	0.899	0.890	3265	1133	2.78e7	3.10e7	8518.7	27329.9	NO	bb	bb	1167.065
2378-TCDD	26.426	1.001	3.249e3	4.150e3	0.920	0.783	0.770	1170	1150	4.94e4	6.25e4	42.2	54.4	NO	bd	bd	0.803
12378-PeCDD	31.514	1.000	1.961e4	1.258e4	0.995	1.559	1.550	1615	1409	2.61e5	1.74e5	161.8	123.5	NO	bb	bb	5.454
123478-HxCDD	36.004	1.001	3.499e4	2.804e4	1.027	1.248	1.240	4017	3894	6.15e5	4.68e5	153.2	120.3	NO	bd	bd	8.578
123678-HxCDD	36.115	1.000	1.362e5	1.084e5	1.009	1.257	1.240	4017	3894	2.25e6	1.83e6	560.5	470.5	NO	dd	dd	34.483
123789-HxCDD	36.505	1.011	6.380e4	5.233e4	0.950	1.219	1.240	4017	3894	1.08e6	8.67e5	267.7	222.7	NO	bb	bb	17.226
1234678-HpCDD	40.259	1.000	6.952e6	6.541e6	1.068	1.063	1.050	19900	16848	1.13e8	1.07e8	5671.0	6362.7	NO	bb	bb	2887.522
OCDD	45.096	1.001	1.702e8	1.774e8	1.181	0.959	0.890	6161	834	1.05e9	1.06e9	171135.7	1268120.7	NO	bb	bb	94177.506
13C-2378-TCDF	25.776	1.007	5.108e5	6.472e5	1.427	0.789	0.770	3595	2838	8.04e6	1.01e7	2237.0	3572.4	NO	bb	bb	85.857
13C-12378-PeCDF	29.909	1.169	7.140e5	4.447e5	1.297	1.605	1.550	2106	1579	1.14e7	7.00e6	5434.5	4433.9	NO	bb	bb	94.462
13C-23478-PeCDF	31.257	1.221	6.776e5	4.194e5	1.236	1.616	1.550	2106	1579	1.07e7	6.68e6	5079.6	4232.8	NO	bb	bb	93.839
13C-123478-HxCDF	34.867	0.955	2.906e5	5.686e5	1.242	0.511	0.510	1852	2238	4.68e6	9.20e6	2526.1	4110.2	NO	bd	bd	79.400
13C-123678-HxCDF	35.001	0.959	2.889e5	5.623e5	1.343	0.514	0.510	1852	2238	4.66e6	9.08e6	2518.6	4059.1	NO	db	db	72.747
13C-234678-HxCDF	35.881	0.983	2.800e5	5.338e5	1.215	0.525	0.510	1852	2238	4.60e6	8.90e6	2482.4	3977.8	NO	bb	bb	76.909
13C-123789-HxCDF	36.906	1.011	2.608e5	5.059e5	1.008	0.515	0.510	1852	2238	4.25e6	8.35e6	2296.0	3730.2	NO	bb	bb	87.363
13C-1234678-HpCDF	38.744	1.062	1.852e5	3.981e5	0.926	0.465	0.440	1621	1992	3.18e6	6.82e6	1959.3	3424.8	NO	bb	bb	72.295
13C-1234789-HpCDF	40.995	1.123	1.641e5	3.562e5	0.758	0.461	0.440	1621	1992	2.55e6	5.50e6	1573.7	2759.5	NO	bb	bb	78.819
13C-1234-TCDD	25.594	0.000	4.116e5	5.338e5	1.000	0.771	0.770	2640	1415	6.60e6	8.55e6	2500.7	6041.8	NO	bb	bb	100.000
13C-2378-TCDD	26.396	1.031	4.342e5	5.675e5	1.116	0.765	0.770	2640	1415	6.81e6	8.89e6	2580.8	6281.6	NO	bb	bb	94.890
13C-12378-PeCDD	31.503	1.231	3.639e5	2.290e5	0.732	1.589	1.550	1231	1328	5.62e6	3.59e6	4563.1	2701.6	NO	bb	bb	85.665
13C-123478-HxCDD	35.981	0.986	4.005e5	3.148e5	0.960	1.272	1.240	1892	1514	6.50e6	5.08e6	3436.1	3357.6	NO	bd	bd	85.569
13C-123678-HxCDD	36.104	0.989	3.891e5	3.141e5	1.041	1.239	1.240	1892	1514	6.58e6	5.25e6	3475.6	3465.8	NO	db	db	77.534
13C-1234678-HpCDD	40.248	1.103	2.280e5	2.095e5	0.632	1.089	1.050	1093	1122	3.55e6	3.33e6	3247.9	2967.2	NO	bd	bb	79.429
13C-OCDD	45.069	1.235	3.082e5	3.171e5	0.504	0.972	0.890	1047	899	2.10e6	2.21e6	2000.9	2458.4	NO	bb	bb	142.509
13C-123789-HxCDD	36.494	0.000	4.834e5	3.876e5	1.000	1.247	1.240	1892	1514	8.02e6	6.50e6	4240.7	4290.7	NO	bb	bb	100.000
37CL-2378-TCDD	26.411	1.032	3.812e5		1.084			1087		5.83e6		5366.5			bd		37.205

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ID: BJH0150-DUP2, Name: 21091116, Date: 11-Sep-2021, Time: 22:52:48, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.268	0.864	1.138e4	1.410e4	1.425	0.807	0.770	2051	1127	1.89e5	2.46e5	92.3	218.5	NO	bb	bb	1.544
1289-TCDF	27.288	1.059	1.861e3	2.389e3	1.043	0.779	0.770	2051	1127	2.84e4	3.78e4	13.9	33.6	NO	dd	dd	0.352
13468-PECDF					1.376		1.550	1195	1161								
12389-PECDF	32.316	1.081	1.402e3	5.693e2	1.000	2.464	1.550	1458	1724	1.96e4	1.18e4	13.4	6.9	YES	db	bb	0.170
123468-HXCDF	33.218	0.953	9.708e4	7.919e4	1.087	1.226	1.240	2268	2729	1.54e6	1.27e6	679.1	464.7	NO	db	bb	18.881
1368-TCDD	23.599	0.894	3.548e4	4.408e4	0.923	0.805	0.770	1170	1150	5.63e5	7.31e5	481.1	635.8	NO	bb	bb	8.602
1289-TCDD	27.031	1.024	1.381e3	1.923e3	0.794	0.718	0.770	1170	1150	2.11e4	2.83e4	18.0	24.6	NO	bb	dd	0.415
12479-PECDD	28.817	0.915	2.376e5	1.489e5	1.843	1.596	1.550	1615	1409	2.36e6	1.46e6	1458.7	1033.5	NO	bb	bb	35.369
12389-PECDD	31.915	1.013	5.704e3	3.520e3	1.154	1.620	1.550	1615	1409	8.61e4	5.20e4	53.3	36.9	NO	bb	bb	1.349
124679-HXCDD	33.987	0.945	8.695e5	6.985e5	1.125	1.245	1.240	4017	3894	1.41e7	1.12e7	3506.2	2874.9	NO	bb	bb	194.864
1234679-HPCDD	39.212	0.974	8.358e6	7.752e6	1.211	1.078	1.050	19900	16848	1.44e8	1.34e8	7224.6	7937.1	NO	bb	bb	3040.814
Total-tetrafurans			1.563e5		1.192			2051		2.14e6							25.805
Total-penta1			2.657e5					1195		3.94e6							41.221
Total-pentafurans			3.061e5		1.047			1458		4.26e6							42.428
Total-hexafurans			1.393e6		1.045			2268		2.21e7							293.518
Total-heptafurans			3.492e6		1.305			3808		5.84e7							931.689
Total-Furans			8.113e6		1.158			2051		1.19e8							2501.725
Total-tetradioxins			1.502e5		0.879			1170		2.40e6							38.303
Total-pentadioxins			3.826e5		1.331			1615		4.53e6							67.180
Total-hexadioxins			1.780e6		1.028			4017		2.71e7							422.491
Total-heptadioxins			1.531e7		1.140			19900		2.57e8							5928.336
Total-Dioxins			1.878e8		1.092			1170		1.35e9							100633....
Total-TEQ			1.960e8					1170		1.46e9							103135....
FUNCTION1 PFK			1.650e8					721783		7.81e8							
FUNCTION2 PFK			8.675e5					342214		5.16e6							0.000
FUNCTION3 PFK			6.914e5					578485		7.61e6							0.000
FUNCTION4 PFK			3.650e4					387315		9.61e5							
FUNCTION5 PFK			4.033e7					247527		4.19e7							
FUNCTION1 HXCD...			1.194e4					778		1.77e5							0.000
FUNCTION1 HPCD...			2.174e3					928		2.81e4							0.000
FUNCTION2 HPCD...			2.284e3					1032		4.16e4							0.000
FUNCTION3 OCDPE			3.591e3					678		5.80e4							0.000
FUNCTION4 NCDPE			7.795e3					940		1.28e5							0.000
FUNCTION5 DCDPE			2.224e4					513		1.31e5							0.000

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.48	5.596e3	6.327e3	1.192	0.88	0.77	37.7	YES	NO	dd	dd	0.864
2	Total-tetrafurans	24.31	5.228e2	6.044e2	1.192	0.87	0.77	4.4	YES	NO	bd	bd	0.082
3	Total-tetrafurans	24.07	8.452e3	1.157e4	1.192	0.73	0.77	71.1	YES	NO	db	db	1.451
4	Total-tetrafurans	23.95	4.292e3	6.260e3	1.192	0.69	0.77	32.7	YES	NO	dd	dd	0.765
5	Total-tetrafurans	23.84	1.497e4	1.960e4	1.192	0.76	0.77	92.0	YES	NO	dd	dd	2.505
6	Total-tetrafurans	23.61	2.738e4	3.574e4	1.192	0.77	0.77	127.4	YES	NO	dd	dd	4.574
7	Total-tetrafurans	23.48	3.699e3	4.965e3	1.192	0.75	0.77	23.3	YES	NO	dd	dd	0.628
8	Total-tetrafurans	23.36	4.202e3	6.109e3	1.192	0.69	0.77	22.0	YES	NO	dd	dd	0.747
9	Total-tetrafurans	23.11	8.407e3	1.052e4	1.192	0.80	0.77	53.4	YES	NO	bd	bd	1.372
10	Total-tetrafurans	22.54	7.372e3	9.850e3	1.192	0.75	0.77	62.4	YES	NO	bb	bb	1.248
11	1368-TCDF	22.27	1.138e4	1.410e4	1.425	0.81	0.77	92.3	YES	NO	bb	bb	1.544
12	1289-TCDF	27.29	1.861e3	2.389e3	1.043	0.78	0.77	13.9	YES	NO	dd	dd	0.352
13	Total-tetrafurans	27.21	1.117e3	1.514e3	1.192	0.74	0.77	8.0	YES	NO	bd	bd	0.191
14	Total-tetrafurans	26.02	1.073e4	1.360e4	1.192	0.79	0.77	62.5	YES	NO	dd	dd	1.762
15	Total-tetrafurans	25.93	3.575e3	4.070e3	1.192	0.88	0.77	26.1	YES	NO	dd	dd	0.554
16	2378-TCDF	25.79	7.001e3	9.301e3	1.108	0.75	0.77	51.0	YES	NO	bd	dd	1.271
17	Total-tetrafurans	25.61	3.476e3	4.881e3	1.192	0.71	0.77	19.4	YES	NO	bb	dd	0.606
18	Total-tetrafurans	25.31	1.257e3	1.668e3	1.192	0.75	0.77	9.2	YES	NO	bb	dd	0.212
19	Total-tetrafurans	25.11	3.089e3	4.418e3	1.192	0.70	0.77	24.1	YES	NO	bb	bd	0.544
20	Total-tetrafurans	24.88	8.476e3	1.119e4	1.192	0.76	0.77	63.5	YES	NO	bb	bb	1.425
21	Total-tetrafurans	24.69	1.393e4	1.695e4	1.192	0.82	0.77	106.0	YES	NO	db	db	2.238
22	Total-tetrafurans	24.57	5.473e3	6.575e3	1.192	0.83	0.77	39.7	YES	NO	dd	dd	0.873

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.92	8.372e2	6.034e2		1.39	1.55	9.7	YES	NO	db	bb	0.136
2	Total-penta1	27.18	2.649e5	1.717e5		1.54	1.55	3282.8	YES	NO	bb	bb	41.085

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PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	29.29	2.188e4	1.397e4	1.047	1.57	1.55	222.2	YES	NO	dd	dd	3.037
2	Total-pentafurans	29.15	1.445e3	1.029e3	1.047	1.40	1.55	18.3	YES	NO	dd	dd	0.210
3	Total-pentafurans	28.95	8.139e3	5.530e3	1.047	1.47	1.55	81.9	YES	NO	dd	dd	1.158
4	Total-pentafurans	28.85	1.448e5	9.519e4	1.047	1.52	1.55	1241.0	YES	NO	dd	dd	20.328
5	Total-pentafurans	28.66	1.592e4	9.669e3	1.047	1.65	1.55	147.0	YES	NO	dd	dd	2.168
6	Total-pentafurans	28.55	4.473e3	3.230e3	1.047	1.38	1.55	57.0	YES	NO	bd	bd	0.653
7	23478-PeCDF	31.27	1.785e4	1.033e4	1.126	1.73	1.55	190.5	YES	NO	db	bb	2.282
8	Total-pentafurans	31.12	2.794e4	1.699e4	1.047	1.64	1.55	284.1	YES	NO	dd	db	3.806
9	Total-pentafurans	30.77	1.508e3	8.669e2	1.047	1.74	1.55	16.2	YES	NO	bb	bb	0.201
10	Total-pentafurans	30.41	1.508e3	8.968e2	1.047	1.68	1.55	16.7	YES	NO	db	bb	0.204
11	Total-pentafurans	30.13	1.497e4	8.652e3	1.047	1.73	1.55	159.8	YES	NO	bd	bb	2.001
12	12378-PeCDF	29.92	1.010e4	6.480e3	1.015	1.56	1.55	112.7	YES	NO	bb	bb	1.410
13	Total-pentafurans	29.64	1.029e4	6.691e3	1.047	1.54	1.55	104.5	YES	NO	db	db	1.438
14	Total-pentafurans	29.56	1.549e4	9.793e3	1.047	1.58	1.55	159.5	YES	NO	dd	dd	2.142
15	Total-pentafurans	29.46	9.886e3	6.551e3	1.047	1.51	1.55	110.5	YES	NO	dd	dd	1.392

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.86	6.808e4	5.505e4	1.052	1.24	1.24	407.3	YES	NO	bb	bb	14.376
2	Total-hexafurans	35.55	1.663e3	1.502e3	1.045	1.11	1.24	12.8	YES	NO	bb	bb	0.368
3	Total-hexafurans	35.37	3.736e3	2.640e3	1.045	1.42	1.24	26.6	YES	NO	bb	db	0.742
4	Total-hexafurans	35.22	2.106e3	1.544e3	1.045	1.36	1.24	15.3	YES	NO	bb	bd	0.425
5	123678-HxCDF	35.02	3.988e4	3.278e4	1.037	1.22	1.24	293.4	YES	NO	db	db	8.233
6	123478-HxCDF	34.88	1.079e5	8.949e4	1.017	1.21	1.24	777.4	YES	NO	bd	bd	22.588
7	Total-hexafurans	34.73	1.200e4	9.789e3	1.045	1.23	1.24	92.5	YES	NO	bb	bb	2.536
8	Total-hexafurans	34.27	7.343e5	6.021e5	1.045	1.22	1.24	5231.3	YES	NO	bb	bb	155.502
9	Total-hexafurans	33.95	3.144e4	2.672e4	1.045	1.18	1.24	212.6	YES	NO	bb	bb	6.767
10	Total-hexafurans	33.69	3.199e3	2.943e3	1.045	1.09	1.24	23.4	YES	NO	bb	bb	0.715
11	Total-hexafurans	33.43	2.751e5	2.278e5	1.045	1.21	1.24	1858.4	YES	NO	bb	bb	58.517
12	123468-HXCDF	33.22	9.708e4	7.919e4	1.087	1.23	1.24	679.1	YES	NO	db	bb	18.881
13	123789-HxCDF	36.91	1.687e4	1.368e4	1.030	1.23	1.24	114.2	YES	NO	bb	bb	3.868

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	39.42	2.441e6	2.346e6	1.305	1.04	1.05	10678.8	YES	NO	bb	bb	664.568
2	Total-heptafurans	39.18	2.861e4	2.772e4	1.305	1.03	1.05	118.8	YES	NO	bb	bb	7.821
3	1234678-HpCDF	38.76	9.353e5	8.782e5	1.327	1.07	1.05	4206.4	YES	NO	bb	bb	234.212
4	1234789-HpCDF	41.01	8.712e4	8.041e4	1.283	1.08	1.05	345.8	YES	NO	bb	bb	25.089

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ID: BJH0150-DUP2, Name: 21091116, Date: 11-Sep-2021, Time: 22:52:48, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.48	5.596e3	6.327e3	1.192	0.88	0.77	37.7	YES	NO	dd	dd	0.864
2	Total-tetrafurans	24.31	5.228e2	6.044e2	1.192	0.87	0.77	4.4	YES	NO	bd	bd	0.082
3	Total-tetrafurans	24.07	8.452e3	1.157e4	1.192	0.73	0.77	71.1	YES	NO	db	db	1.451
4	Total-tetrafurans	23.95	4.292e3	6.260e3	1.192	0.69	0.77	32.7	YES	NO	dd	dd	0.765
5	Total-tetrafurans	23.84	1.497e4	1.960e4	1.192	0.76	0.77	92.0	YES	NO	dd	dd	2.505
6	Total-tetrafurans	23.61	2.738e4	3.574e4	1.192	0.77	0.77	127.4	YES	NO	dd	dd	4.574
7	Total-tetrafurans	23.48	3.699e3	4.965e3	1.192	0.75	0.77	23.3	YES	NO	dd	dd	0.628
8	Total-tetrafurans	23.36	4.202e3	6.109e3	1.192	0.69	0.77	22.0	YES	NO	dd	dd	0.747
9	Total-tetrafurans	23.11	8.407e3	1.052e4	1.192	0.80	0.77	53.4	YES	NO	bd	bd	1.372
10	Total-tetrafurans	22.54	7.372e3	9.850e3	1.192	0.75	0.77	62.4	YES	NO	bb	bb	1.248
11	1368-TCDF	22.27	1.138e4	1.410e4	1.425	0.81	0.77	92.3	YES	NO	bb	bb	1.544
12	1289-TCDF	27.29	1.861e3	2.389e3	1.043	0.78	0.77	13.9	YES	NO	dd	dd	0.352
13	Total-tetrafurans	27.21	1.117e3	1.514e3	1.192	0.74	0.77	8.0	YES	NO	bd	bd	0.191
14	Total-tetrafurans	26.02	1.073e4	1.360e4	1.192	0.79	0.77	62.5	YES	NO	dd	dd	1.762
15	Total-tetrafurans	25.93	3.575e3	4.070e3	1.192	0.88	0.77	26.1	YES	NO	dd	dd	0.554
16	2378-TCDF	25.79	7.001e3	9.301e3	1.108	0.75	0.77	51.0	YES	NO	bd	dd	1.271
17	Total-tetrafurans	25.61	3.476e3	4.881e3	1.192	0.71	0.77	19.4	YES	NO	bb	dd	0.606
18	Total-tetrafurans	25.31	1.257e3	1.668e3	1.192	0.75	0.77	9.2	YES	NO	bb	dd	0.212
19	Total-tetrafurans	25.11	3.089e3	4.418e3	1.192	0.70	0.77	24.1	YES	NO	bb	bd	0.544
20	Total-tetrafurans	24.88	8.476e3	1.119e4	1.192	0.76	0.77	63.5	YES	NO	bb	bb	1.425
21	Total-tetrafurans	24.69	1.393e4	1.695e4	1.192	0.82	0.77	106.0	YES	NO	db	db	2.238
22	Total-tetrafurans	24.57	5.473e3	6.575e3	1.192	0.83	0.77	39.7	YES	NO	dd	dd	0.873
23	Total-pentafurans	29.29	2.188e4	1.397e4	1.047	1.57	1.55	222.2	YES	NO	dd	dd	3.037
24	Total-pentafurans	29.15	1.445e3	1.029e3	1.047	1.40	1.55	18.3	YES	NO	dd	dd	0.210
25	Total-pentafurans	28.95	8.139e3	5.530e3	1.047	1.47	1.55	81.9	YES	NO	dd	dd	1.158
26	Total-pentafurans	28.85	1.448e5	9.519e4	1.047	1.52	1.55	1241.0	YES	NO	dd	dd	20.328
27	Total-pentafurans	28.66	1.592e4	9.669e3	1.047	1.65	1.55	147.0	YES	NO	dd	dd	2.168
28	Total-pentafurans	28.55	4.473e3	3.230e3	1.047	1.38	1.55	57.0	YES	NO	bd	bd	0.653
29	23478-PeCDF	31.27	1.785e4	1.033e4	1.126	1.73	1.55	190.5	YES	NO	db	bb	2.282
30	Total-pentafurans	31.12	2.794e4	1.699e4	1.047	1.64	1.55	284.1	YES	NO	dd	db	3.806
31	Total-pentafurans	30.77	1.508e3	8.669e2	1.047	1.74	1.55	16.2	YES	NO	bb	bb	0.201
32	Total-pentafurans	30.41	1.508e3	8.968e2	1.047	1.68	1.55	16.7	YES	NO	db	bb	0.204
33	Total-pentafurans	30.13	1.497e4	8.652e3	1.047	1.73	1.55	159.8	YES	NO	bd	bb	2.001
34	12378-PeCDF	29.92	1.010e4	6.480e3	1.015	1.56	1.55	112.7	YES	NO	bb	bb	1.410
35	Total-pentafurans	29.64	1.029e4	6.691e3	1.047	1.54	1.55	104.5	YES	NO	db	db	1.438
36	Total-pentafurans	29.56	1.549e4	9.793e3	1.047	1.58	1.55	159.5	YES	NO	dd	dd	2.142
37	Total-pentafurans	29.46	9.886e3	6.551e3	1.047	1.51	1.55	110.5	YES	NO	dd	dd	1.392

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	234678-HxCDF	35.86	6.808e4	5.505e4	1.052	1.24	1.24	407.3	YES	NO	bb	bb	14.376
39	Total-hexafurans	35.55	1.663e3	1.502e3	1.045	1.11	1.24	12.8	YES	NO	bb	bb	0.368
40	Total-hexafurans	35.37	3.736e3	2.640e3	1.045	1.42	1.24	26.6	YES	NO	bb	db	0.742
41	Total-hexafurans	35.22	2.106e3	1.544e3	1.045	1.36	1.24	15.3	YES	NO	bb	bd	0.425
42	123678-HxCDF	35.02	3.988e4	3.278e4	1.037	1.22	1.24	293.4	YES	NO	db	db	8.233
43	123478-HxCDF	34.88	1.079e5	8.949e4	1.017	1.21	1.24	777.4	YES	NO	bd	bd	22.588
44	Total-hexafurans	34.73	1.200e4	9.789e3	1.045	1.23	1.24	92.5	YES	NO	bb	bb	2.536
45	Total-hexafurans	34.27	7.343e5	6.021e5	1.045	1.22	1.24	5231.3	YES	NO	bb	bb	155.502
46	Total-hexafurans	33.95	3.144e4	2.672e4	1.045	1.18	1.24	212.6	YES	NO	bb	bb	6.767
47	Total-hexafurans	33.69	3.199e3	2.943e3	1.045	1.09	1.24	23.4	YES	NO	bb	bb	0.715
48	Total-hexafurans	33.43	2.751e5	2.278e5	1.045	1.21	1.24	1858.4	YES	NO	bb	bb	58.517
49	123468-HXCDF	33.22	9.708e4	7.919e4	1.087	1.23	1.24	679.1	YES	NO	db	bb	18.881
50	123789-HxCDF	36.91	1.687e4	1.368e4	1.030	1.23	1.24	114.2	YES	NO	bb	bb	3.868
51	Total-heptafurans	39.42	2.441e6	2.346e6	1.305	1.04	1.05	10678.8	YES	NO	bb	bb	664.568
52	Total-heptafurans	39.18	2.861e4	2.772e4	1.305	1.03	1.05	118.8	YES	NO	bb	bb	7.821
53	1234678-HpCDF	38.76	9.353e5	8.782e5	1.327	1.07	1.05	4206.4	YES	NO	bb	bb	234.212
54	1234789-HpCDF	41.01	8.712e4	8.041e4	1.283	1.08	1.05	345.8	YES	NO	bb	bb	25.089
55	OCDF	45.29	2.500e6	2.779e6	1.447	0.90	0.89	8518.7	YES	NO	bb	bb	1167.0...
56	Total-penta1	27.92	8.372e2	6.034e2		1.39	1.55	9.7	YES	NO	db	bb	0.136
57	Total-penta1	27.18	2.649e5	1.717e5		1.54	1.55	3282.8	YES	NO	bb	bb	41.085

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.76	1.035e4	1.255e4	0.879	0.82	0.77	114.7	YES	NO	db	bb	2.601
2	Total-tetradioxins	24.57	3.974e3	4.512e3	0.879	0.88	0.77	55.7	YES	NO	bd	bb	0.964
3	Total-tetradioxins	24.05	1.259e4	1.580e4	0.879	0.80	0.77	180.9	YES	NO	db	db	3.224
4	Total-tetradioxins	23.87	5.216e4	6.752e4	0.879	0.77	0.77	742.0	YES	NO	bd	bd	13.589
5	1368-TCDD	23.60	3.548e4	4.408e4	0.923	0.80	0.77	481.1	YES	NO	bb	bb	8.602
6	1289-TCDD	27.03	1.381e3	1.923e3	0.794	0.72	0.77	18.0	YES	NO	bb	dd	0.415
7	Total-tetradioxins	26.55	4.209e3	5.202e3	0.879	0.81	0.77	54.8	YES	NO	dd	dd	1.069
8	2378-TCDD	26.43	3.249e3	4.150e3	0.920	0.78	0.77	42.2	YES	NO	bd	bd	0.803
9	Total-tetradioxins	25.61	4.656e3	5.851e3	0.879	0.80	0.77	62.9	YES	NO	bd	bd	1.193
10	Total-tetradioxins	25.40	5.621e3	7.542e3	0.879	0.75	0.77	76.1	YES	NO	db	db	1.495
11	Total-tetradioxins	25.29	2.380e3	3.168e3	0.879	0.75	0.77	33.9	YES	NO	bd	bd	0.630
12	Total-tetradioxins	25.03	1.413e4	1.862e4	0.879	0.76	0.77	186.4	YES	NO	bd	bb	3.718

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.91	5.704e3	3.520e3	1.154	1.62	1.55	53.3	YES	NO	bb	bb	1.349
2	12378-PeCDD	31.51	1.961e4	1.258e4	0.995	1.56	1.55	161.8	YES	NO	bb	bb	5.454
3	Total-pentadioxins	30.83	1.485e4	9.676e3	1.331	1.53	1.55	136.3	YES	NO	bb	bb	3.108
4	Total-pentadioxins	30.46	2.282e4	1.523e4	1.331	1.50	1.55	158.4	YES	NO	bb	db	4.824
5	Total-pentadioxins	30.27	2.120e4	1.442e4	1.331	1.47	1.55	224.7	YES	NO	bb	dd	4.515
6	Total-pentadioxins	30.12	1.908e4	1.271e4	1.331	1.50	1.55	191.8	YES	NO	bb	bd	4.030
7	Total-pentadioxins	29.91	2.639e4	1.592e4	1.331	1.66	1.55	264.7	YES	NO	bb	bb	5.364
8	Total-pentadioxins	29.69	5.770e2	4.060e2	1.331	1.42	1.55	6.4	YES	NO	bb	bb	0.125
9	Total-pentadioxins	29.31	1.471e4	9.296e3	1.331	1.58	1.55	150.3	YES	NO	bb	bb	3.042
10	12479-PECDD	28.82	2.376e5	1.489e5	1.843	1.60	1.55	1458.7	YES	NO	bb	bb	35.369

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.50	6.380e4	5.233e4	0.950	1.22	1.24	267.7	YES	NO	bb	bb	17.226
2	Total-hexadioxins	36.29	2.904e4	2.324e4	1.028	1.25	1.24	112.9	YES	NO	db	db	7.170
3	123678-HxCDD	36.11	1.362e5	1.084e5	1.009	1.26	1.24	560.5	YES	NO	dd	dd	34.483
4	123478-HxCDD	36.00	3.499e4	2.804e4	1.027	1.25	1.24	153.2	YES	NO	bd	bd	8.578
5	Total-hexadioxins	35.23	2.632e4	2.049e4	1.028	1.28	1.24	108.3	YES	NO	db	db	6.420
6	Total-hexadioxins	35.12	4.072e5	3.301e5	1.028	1.23	1.24	1144.9	YES	NO	bd	bd	101.124
7	Total-hexadioxins	34.76	2.126e5	1.711e5	1.028	1.24	1.24	902.3	YES	NO	bb	bb	52.627
8	124679-HXCDD	33.99	8.695e5	6.985e5	1.125	1.24	1.24	3506.2	YES	NO	bb	bb	194.864

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	6.952e6	6.541e6	1.068	1.06	1.05	5671.0	YES	NO	bb	bb	2887.5...
2	1234679-HPCDD	39.21	8.358e6	7.752e6	1.211	1.08	1.05	7224.6	YES	NO	bb	bb	3040.8...

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.76	1.035e4	1.255e4	0.879	0.82	0.77	114.7	YES	NO	db	bb	2.601
2	Total-tetradioxins	24.57	3.974e3	4.512e3	0.879	0.88	0.77	55.7	YES	NO	bd	bb	0.964
3	Total-tetradioxins	24.05	1.259e4	1.580e4	0.879	0.80	0.77	180.9	YES	NO	db	db	3.224
4	Total-tetradioxins	23.87	5.216e4	6.752e4	0.879	0.77	0.77	742.0	YES	NO	bd	bd	13.589
5	1368-TCDD	23.60	3.548e4	4.408e4	0.923	0.80	0.77	481.1	YES	NO	bb	bb	8.602
6	1289-TCDD	27.03	1.381e3	1.923e3	0.794	0.72	0.77	18.0	YES	NO	bb	dd	0.415
7	Total-tetradioxins	26.55	4.209e3	5.202e3	0.879	0.81	0.77	54.8	YES	NO	dd	dd	1.069
8	2378-TCDD	26.43	3.249e3	4.150e3	0.920	0.78	0.77	42.2	YES	NO	bd	bd	0.803
9	Total-tetradioxins	25.61	4.656e3	5.851e3	0.879	0.80	0.77	62.9	YES	NO	bd	bd	1.193
10	Total-tetradioxins	25.40	5.621e3	7.542e3	0.879	0.75	0.77	76.1	YES	NO	db	db	1.495
11	Total-tetradioxins	25.29	2.380e3	3.168e3	0.879	0.75	0.77	33.9	YES	NO	bd	bd	0.630
12	Total-tetradioxins	25.03	1.413e4	1.862e4	0.879	0.76	0.77	186.4	YES	NO	bd	bb	3.718
13	12389-PECDD	31.91	5.704e3	3.520e3	1.154	1.62	1.55	53.3	YES	NO	bb	bb	1.349
14	12378-PeCDD	31.51	1.961e4	1.258e4	0.995	1.56	1.55	161.8	YES	NO	bb	bb	5.454
15	Total-pentadioxins	30.83	1.485e4	9.676e3	1.331	1.53	1.55	136.3	YES	NO	bb	bb	3.108
16	Total-pentadioxins	30.46	2.282e4	1.523e4	1.331	1.50	1.55	158.4	YES	NO	bb	db	4.824
17	Total-pentadioxins	30.27	2.120e4	1.442e4	1.331	1.47	1.55	224.7	YES	NO	bb	dd	4.515
18	Total-pentadioxins	30.12	1.908e4	1.271e4	1.331	1.50	1.55	191.8	YES	NO	bb	bd	4.030
19	Total-pentadioxins	29.91	2.639e4	1.592e4	1.331	1.66	1.55	264.7	YES	NO	bb	bb	5.364
20	Total-pentadioxins	29.69	5.770e2	4.060e2	1.331	1.42	1.55	6.4	YES	NO	bb	bb	0.125
21	Total-pentadioxins	29.31	1.471e4	9.296e3	1.331	1.58	1.55	150.3	YES	NO	bb	bb	3.042
22	12479-PECDD	28.82	2.376e5	1.489e5	1.843	1.60	1.55	1458.7	YES	NO	bb	bb	35.369
23	123789-HxCDD	36.50	6.380e4	5.233e4	0.950	1.22	1.24	267.7	YES	NO	bb	bb	17.226
24	Total-hexadioxins	36.29	2.904e4	2.324e4	1.028	1.25	1.24	112.9	YES	NO	db	db	7.170
25	123678-HxCDD	36.11	1.362e5	1.084e5	1.009	1.26	1.24	560.5	YES	NO	dd	dd	34.483
26	123478-HxCDD	36.00	3.499e4	2.804e4	1.027	1.25	1.24	153.2	YES	NO	bd	bd	8.578
27	Total-hexadioxins	35.23	2.632e4	2.049e4	1.028	1.28	1.24	108.3	YES	NO	db	db	6.420
28	Total-hexadioxins	35.12	4.072e5	3.301e5	1.028	1.23	1.24	1144.9	YES	NO	bd	bd	101.124
29	Total-hexadioxins	34.76	2.126e5	1.711e5	1.028	1.24	1.24	902.3	YES	NO	bb	bb	52.627
30	124679-HXCDD	33.99	8.695e5	6.985e5	1.125	1.24	1.24	3506.2	YES	NO	bb	bb	194.864
31	1234678-HpCDD	40.26	6.952e6	6.541e6	1.068	1.06	1.05	5671.0	YES	NO	bb	bb	2887.5...
32	1234679-HPCDD	39.21	8.358e6	7.752e6	1.211	1.08	1.05	7224.6	YES	NO	bb	bb	3040.8...
33	OCDD	45.10	1.702e8	1.774e8	1.181	0.96	0.89	17113...	YES	NO	bb	bb	94177....

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.48	5.596e3	6.327e3	1.192	0.88	0.77	37.7	YES	NO	dd	dd	0.864
2	Total-tetrafurans	24.31	5.228e2	6.044e2	1.192	0.87	0.77	4.4	YES	NO	bd	bd	0.082
3	Total-tetrafurans	24.07	8.452e3	1.157e4	1.192	0.73	0.77	71.1	YES	NO	db	db	1.451
4	Total-tetrafurans	23.95	4.292e3	6.260e3	1.192	0.69	0.77	32.7	YES	NO	dd	dd	0.765
5	Total-tetrafurans	23.84	1.497e4	1.960e4	1.192	0.76	0.77	92.0	YES	NO	dd	dd	2.505
6	Total-tetrafurans	23.61	2.738e4	3.574e4	1.192	0.77	0.77	127.4	YES	NO	dd	dd	4.574
7	Total-tetrafurans	23.48	3.699e3	4.965e3	1.192	0.75	0.77	23.3	YES	NO	dd	dd	0.628
8	Total-tetrafurans	23.36	4.202e3	6.109e3	1.192	0.69	0.77	22.0	YES	NO	dd	dd	0.747
9	Total-tetrafurans	23.11	8.407e3	1.052e4	1.192	0.80	0.77	53.4	YES	NO	bd	bd	1.372
10	Total-tetrafurans	22.54	7.372e3	9.850e3	1.192	0.75	0.77	62.4	YES	NO	bb	bb	1.248
11	1368-TCDF	22.27	1.138e4	1.410e4	1.425	0.81	0.77	92.3	YES	NO	bb	bb	1.544
12	1289-TCDF	27.29	1.861e3	2.389e3	1.043	0.78	0.77	13.9	YES	NO	dd	dd	0.352
13	Total-tetrafurans	27.21	1.117e3	1.514e3	1.192	0.74	0.77	8.0	YES	NO	bd	bd	0.191
14	Total-tetrafurans	26.02	1.073e4	1.360e4	1.192	0.79	0.77	62.5	YES	NO	dd	dd	1.762
15	Total-tetrafurans	25.93	3.575e3	4.070e3	1.192	0.88	0.77	26.1	YES	NO	dd	dd	0.554
16	2378-TCDF	25.79	7.001e3	9.301e3	1.108	0.75	0.77	51.0	YES	NO	bd	dd	1.271
17	Total-tetrafurans	25.61	3.476e3	4.881e3	1.192	0.71	0.77	19.4	YES	NO	bb	dd	0.606
18	Total-tetrafurans	25.31	1.257e3	1.668e3	1.192	0.75	0.77	9.2	YES	NO	bb	dd	0.212
19	Total-tetrafurans	25.11	3.089e3	4.418e3	1.192	0.70	0.77	24.1	YES	NO	bb	bd	0.544
20	Total-tetrafurans	24.88	8.476e3	1.119e4	1.192	0.76	0.77	63.5	YES	NO	bb	bb	1.425
21	Total-tetrafurans	24.69	1.393e4	1.695e4	1.192	0.82	0.77	106.0	YES	NO	db	db	2.238
22	Total-tetrafurans	24.57	5.473e3	6.575e3	1.192	0.83	0.77	39.7	YES	NO	dd	dd	0.873
23	Total-pentafurans	29.29	2.188e4	1.397e4	1.047	1.57	1.55	222.2	YES	NO	dd	dd	3.037
24	Total-pentafurans	29.15	1.445e3	1.029e3	1.047	1.40	1.55	18.3	YES	NO	dd	dd	0.210
25	Total-pentafurans	28.95	8.139e3	5.530e3	1.047	1.47	1.55	81.9	YES	NO	dd	dd	1.158
26	Total-pentafurans	28.85	1.448e5	9.519e4	1.047	1.52	1.55	1241.0	YES	NO	dd	dd	20.328
27	Total-pentafurans	28.66	1.592e4	9.669e3	1.047	1.65	1.55	147.0	YES	NO	dd	dd	2.168
28	Total-pentafurans	28.55	4.473e3	3.230e3	1.047	1.38	1.55	57.0	YES	NO	bd	bd	0.653
29	23478-PeCDF	31.27	1.785e4	1.033e4	1.126	1.73	1.55	190.5	YES	NO	db	bb	2.282
30	Total-pentafurans	31.12	2.794e4	1.699e4	1.047	1.64	1.55	284.1	YES	NO	dd	db	3.806
31	Total-pentafurans	30.77	1.508e3	8.669e2	1.047	1.74	1.55	16.2	YES	NO	bb	bb	0.201
32	Total-pentafurans	30.41	1.508e3	8.968e2	1.047	1.68	1.55	16.7	YES	NO	db	bb	0.204
33	Total-pentafurans	30.13	1.497e4	8.652e3	1.047	1.73	1.55	159.8	YES	NO	bd	bb	2.001
34	12378-PeCDF	29.92	1.010e4	6.480e3	1.015	1.56	1.55	112.7	YES	NO	bb	bb	1.410
35	Total-pentafurans	29.64	1.029e4	6.691e3	1.047	1.54	1.55	104.5	YES	NO	db	db	1.438
36	Total-pentafurans	29.56	1.549e4	9.793e3	1.047	1.58	1.55	159.5	YES	NO	dd	dd	2.142
37	Total-pentafurans	29.46	9.886e3	6.551e3	1.047	1.51	1.55	110.5	YES	NO	dd	dd	1.392

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	234678-HxCDF	35.86	6.808e4	5.505e4	1.052	1.24	1.24	407.3	YES	NO	bb	bb	14.376
39	Total-hexafurans	35.55	1.663e3	1.502e3	1.045	1.11	1.24	12.8	YES	NO	bb	bb	0.368
40	Total-hexafurans	35.37	3.736e3	2.640e3	1.045	1.42	1.24	26.6	YES	NO	bb	db	0.742
41	Total-hexafurans	35.22	2.106e3	1.544e3	1.045	1.36	1.24	15.3	YES	NO	bb	bd	0.425
42	123678-HxCDF	35.02	3.988e4	3.278e4	1.037	1.22	1.24	293.4	YES	NO	db	db	8.233
43	123478-HxCDF	34.88	1.079e5	8.949e4	1.017	1.21	1.24	777.4	YES	NO	bd	bd	22.588
44	Total-hexafurans	34.73	1.200e4	9.789e3	1.045	1.23	1.24	92.5	YES	NO	bb	bb	2.536
45	Total-hexafurans	34.27	7.343e5	6.021e5	1.045	1.22	1.24	5231.3	YES	NO	bb	bb	155.502
46	Total-hexafurans	33.95	3.144e4	2.672e4	1.045	1.18	1.24	212.6	YES	NO	bb	bb	6.767
47	Total-hexafurans	33.69	3.199e3	2.943e3	1.045	1.09	1.24	23.4	YES	NO	bb	bb	0.715
48	Total-hexafurans	33.43	2.751e5	2.278e5	1.045	1.21	1.24	1858.4	YES	NO	bb	bb	58.517
49	123468-HXCDF	33.22	9.708e4	7.919e4	1.087	1.23	1.24	679.1	YES	NO	db	bb	18.881
50	123789-HxCDF	36.91	1.687e4	1.368e4	1.030	1.23	1.24	114.2	YES	NO	bb	bb	3.868
51	Total-heptafurans	39.42	2.441e6	2.346e6	1.305	1.04	1.05	10678.8	YES	NO	bb	bb	664.568
52	Total-heptafurans	39.18	2.861e4	2.772e4	1.305	1.03	1.05	118.8	YES	NO	bb	bb	7.821
53	1234678-HpCDF	38.76	9.353e5	8.782e5	1.327	1.07	1.05	4206.4	YES	NO	bb	bb	234.212
54	1234789-HpCDF	41.01	8.712e4	8.041e4	1.283	1.08	1.05	345.8	YES	NO	bb	bb	25.089
55	OCDF	45.29	2.500e6	2.779e6	1.447	0.90	0.89	8518.7	YES	NO	bb	bb	1167.0...
56	Total-penta1	27.92	8.372e2	6.034e2		1.39	1.55	9.7	YES	NO	db	bb	0.136
57	Total-penta1	27.18	2.649e5	1.717e5		1.54	1.55	3282.8	YES	NO	bb	bb	41.085
58	Total-tetradioxins	24.76	1.035e4	1.255e4	0.879	0.82	0.77	114.7	YES	NO	db	bb	2.601
59	Total-tetradioxins	24.57	3.974e3	4.512e3	0.879	0.88	0.77	55.7	YES	NO	bd	bb	0.964
60	Total-tetradioxins	24.05	1.259e4	1.580e4	0.879	0.80	0.77	180.9	YES	NO	db	db	3.224
61	Total-tetradioxins	23.87	5.216e4	6.752e4	0.879	0.77	0.77	742.0	YES	NO	bd	bd	13.589
62	1368-TCDD	23.60	3.548e4	4.408e4	0.923	0.80	0.77	481.1	YES	NO	bb	bb	8.602
63	1289-TCDD	27.03	1.381e3	1.923e3	0.794	0.72	0.77	18.0	YES	NO	bb	dd	0.415
64	Total-tetradioxins	26.55	4.209e3	5.202e3	0.879	0.81	0.77	54.8	YES	NO	dd	dd	1.069
65	2378-TCDD	26.43	3.249e3	4.150e3	0.920	0.78	0.77	42.2	YES	NO	bd	bd	0.803
66	Total-tetradioxins	25.61	4.656e3	5.851e3	0.879	0.80	0.77	62.9	YES	NO	bd	bd	1.193
67	Total-tetradioxins	25.40	5.621e3	7.542e3	0.879	0.75	0.77	76.1	YES	NO	db	db	1.495
68	Total-tetradioxins	25.29	2.380e3	3.168e3	0.879	0.75	0.77	33.9	YES	NO	bd	bd	0.630
69	Total-tetradioxins	25.03	1.413e4	1.862e4	0.879	0.76	0.77	186.4	YES	NO	bd	bb	3.718
70	12389-PECDD	31.91	5.704e3	3.520e3	1.154	1.62	1.55	53.3	YES	NO	bb	bb	1.349
71	12378-PeCDD	31.51	1.961e4	1.258e4	0.995	1.56	1.55	161.8	YES	NO	bb	bb	5.454
72	Total-pentadioxins	30.83	1.485e4	9.676e3	1.331	1.53	1.55	136.3	YES	NO	bb	bb	3.108
73	Total-pentadioxins	30.46	2.282e4	1.523e4	1.331	1.50	1.55	158.4	YES	NO	bb	db	4.824
74	Total-pentadioxins	30.27	2.120e4	1.442e4	1.331	1.47	1.55	224.7	YES	NO	bb	dd	4.515

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
75	Total-pentadioxins	30.12	1.908e4	1.271e4	1.331	1.50	1.55	191.8	YES	NO	bb	bd	4.030
76	Total-pentadioxins	29.91	2.639e4	1.592e4	1.331	1.66	1.55	264.7	YES	NO	bb	bb	5.364
77	Total-pentadioxins	29.69	5.770e2	4.060e2	1.331	1.42	1.55	6.4	YES	NO	bb	bb	0.125
78	Total-pentadioxins	29.31	1.471e4	9.296e3	1.331	1.58	1.55	150.3	YES	NO	bb	bb	3.042
79	12479-PECDD	28.82	2.376e5	1.489e5	1.843	1.60	1.55	1458.7	YES	NO	bb	bb	35.369
80	123789-HxCDD	36.50	6.380e4	5.233e4	0.950	1.22	1.24	267.7	YES	NO	bb	bb	17.226
81	Total-hexadioxins	36.29	2.904e4	2.324e4	1.028	1.25	1.24	112.9	YES	NO	db	db	7.170
82	123678-HxCDD	36.11	1.362e5	1.084e5	1.009	1.26	1.24	560.5	YES	NO	dd	dd	34.483
83	123478-HxCDD	36.00	3.499e4	2.804e4	1.027	1.25	1.24	153.2	YES	NO	bd	bd	8.578
84	Total-hexadioxins	35.23	2.632e4	2.049e4	1.028	1.28	1.24	108.3	YES	NO	db	db	6.420
85	Total-hexadioxins	35.12	4.072e5	3.301e5	1.028	1.23	1.24	1144.9	YES	NO	bd	bd	101.124
86	Total-hexadioxins	34.76	2.126e5	1.711e5	1.028	1.24	1.24	902.3	YES	NO	bb	bb	52.627
87	124679-HXCDD	33.99	8.695e5	6.985e5	1.125	1.24	1.24	3506.2	YES	NO	bb	bb	194.864
88	1234678-HpCDD	40.26	6.952e6	6.541e6	1.068	1.06	1.05	5671.0	YES	NO	bb	bb	2887.5...
89	1234679-HPCDD	39.21	8.358e6	7.752e6	1.211	1.08	1.05	7224.6	YES	NO	bb	bb	3040.8...
90	OCDD	45.10	1.702e8	1.774e8	1.181	0.96	0.89	17113...	YES	NO	bb	bb	94177....

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.57	7.030e6					95.6	YES		dd		
2	FUNCTION1 PFK	22.45	1.325e7					92.1	YES		dd		
3	FUNCTION1 PFK	22.22	1.304e7					84.0	YES		dd		
4	FUNCTION1 PFK	22.00	1.443e7					74.3	YES		dd		
5	FUNCTION1 PFK	21.68	6.806e6					59.5	YES		dd		
6	FUNCTION1 PFK	21.44	9.813e6					48.8	YES		dd		
7	FUNCTION1 PFK	21.25	1.902e6					35.6	YES		bd		
8	FUNCTION1 PFK	27.76	4.574e5					3.9	YES		bb		
9	FUNCTION1 PFK	24.84	1.197e7					12.1	YES		db		
10	FUNCTION1 PFK	24.23	1.757e7					57.0	YES		dd		
11	FUNCTION1 PFK	23.84	1.342e7					85.5	YES		dd		
12	FUNCTION1 PFK	23.60	9.920e6					101.5	YES		dd		
13	FUNCTION1 PFK	23.42	1.351e7					114.6	YES		bd		
14	FUNCTION1 PFK	23.22	6.282e5					14.3	YES		db		
15	FUNCTION1 PFK	22.98	8.050e6					99.5	YES		dd		
16	FUNCTION1 PFK	22.72	2.322e7					103.4	YES		dd		

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.43	3.548e5					6.9	YES		bb		0.000
2	FUNCTION2 PFK	31.18	1.799e4					2.0	NO		bb		0.000
3	FUNCTION2 PFK	29.17	4.948e5					6.2	YES		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	35.01	1.731e5					3.8	YES		bb		0.000
2	FUNCTION3 PFK	33.05	7.554e4					3.4	YES		bb		0.000
3	FUNCTION3 PFK	37.00	4.428e5					5.9	YES		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.02	3.650e4					2.5	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.55	6.788e6					34.2	YES		bb		
2	FUNCTION5 PFK	44.89	2.333e6					65.6	YES		db		
3	FUNCTION5 PFK	43.68	3.121e7					69.6	YES		bd		

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	23.51	1.921e2					5.7	YES		dd		0.000
2	FUNCTION1 HXCD...	23.48	4.577e2					5.2	YES		bd		0.000
3	FUNCTION1 HXCD...	22.77	1.140e3					21.8	YES		bb		0.000
4	FUNCTION1 HXCD...	22.54	1.384e2					2.1	NO		db		0.000
5	FUNCTION1 HXCD...	22.36	3.682e2					6.0	YES		dd		0.000
6	FUNCTION1 HXCD...	22.21	3.920e2					6.9	YES		bd		0.000
7	FUNCTION1 HXCD...	21.66	1.045e2					2.1	NO		bb		0.000
8	FUNCTION1 HXCD...	21.38	1.223e2					1.7	NO		bb		0.000
9	FUNCTION1 HXCD...	27.17	1.225e2					2.5	NO		db		0.000
10	FUNCTION1 HXCD...	27.09	1.311e2					2.4	NO		dd		0.000
11	FUNCTION1 HXCD...	26.96	8.294e1					1.7	NO		bd		0.000
12	FUNCTION1 HXCD...	26.79	5.763e2					12.1	YES		bb		0.000
13	FUNCTION1 HXCD...	26.38	1.364e2					2.6	NO		bb		0.000
14	FUNCTION1 HXCD...	26.14	1.553e3					34.3	YES		db		0.000
15	FUNCTION1 HXCD...	26.03	8.724e1					2.4	NO		dd		0.000
16	FUNCTION1 HXCD...	25.93	7.574e2					13.5	YES		dd		0.000
17	FUNCTION1 HXCD...	25.76	1.247e3					22.7	YES		bd		0.000
18	FUNCTION1 HXCD...	25.56	1.013e2					1.7	NO		bb		0.000
19	FUNCTION1 HXCD...	25.23	7.948e1					1.9	NO		db		0.000
20	FUNCTION1 HXCD...	25.13	4.668e2					9.5	YES		bd		0.000
21	FUNCTION1 HXCD...	24.78	1.994e2					2.2	NO		db		0.000
22	FUNCTION1 HXCD...	24.61	8.531e1					2.4	NO		bd		0.000
23	FUNCTION1 HXCD...	23.80	2.522e3					49.6	YES		bb		0.000
24	FUNCTION1 HXCD...	23.58	6.847e2					9.2	YES		db		0.000
25	FUNCTION1 HXCD...	27.68	1.163e2					3.3	YES		db		0.000
26	FUNCTION1 HXCD...	27.64	8.006e1					2.4	NO		bd		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.94	6.302e2					7.4	YES		bb		0.000
2	FUNCTION1 HPCD...	27.42	1.980e2					4.5	YES		bb		0.000
3	FUNCTION1 HPCD...	23.40	1.346e3					18.4	YES		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.19	3.918e2					6.5	YES		bb		0.000
2	FUNCTION2 HPCD...	31.49	1.425e2					2.5	NO		bb		0.000
3	FUNCTION2 HPCD...	29.07	2.801e2					4.6	YES		bb		0.000
4	FUNCTION2 HPCD...	28.95	1.470e3					26.7	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	33.75	1.015e2					3.7	YES		db		0.000
2	FUNCTION3 OCDPE	33.69	2.717e2					8.3	YES		bd		0.000
3	FUNCTION3 OCDPE	33.41	1.301e2					4.6	YES		bb		0.000
4	FUNCTION3 OCDPE	33.10	9.306e2					22.2	YES		bb		0.000
5	FUNCTION3 OCDPE	35.89	9.853e1					2.8	NO		bb		0.000
6	FUNCTION3 OCDPE	34.20	2.059e3					43.8	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.28	7.617e2					7.7	YES		bb		0.000
2	FUNCTION4 NCDPE	39.22	4.535e2					7.1	YES		bb		0.000
3	FUNCTION4 NCDPE	38.62	7.551e1					2.0	NO		bb		0.000
4	FUNCTION4 NCDPE	38.41	5.751e3					102.6	YES		db		0.000
5	FUNCTION4 NCDPE	38.31	7.532e2					17.1	YES		bd		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.12	2.224e4					254.6	YES		bb		0.000

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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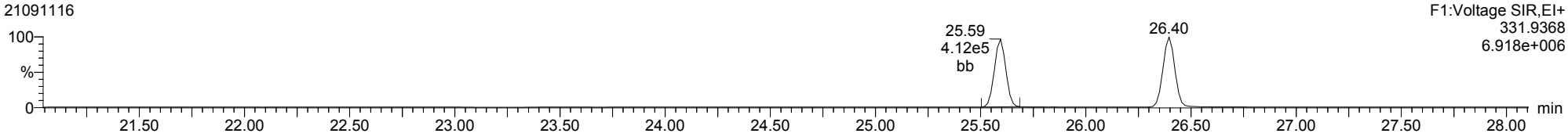
13C-1234-TCDD



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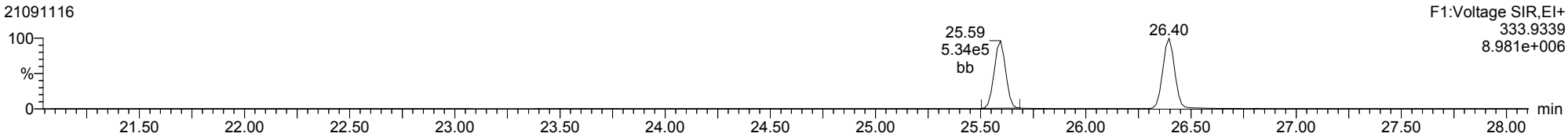

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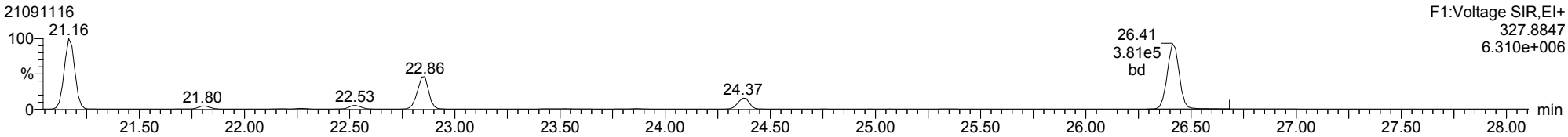

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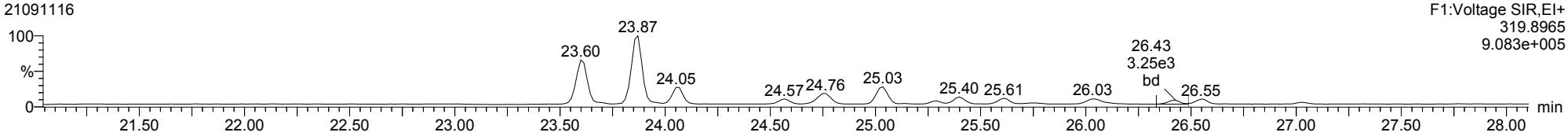
Printed: Wednesday, September 15, 2021 11:29:14 Pacific Daylight Time

ID: BJH0150-DUP2, Name: 21091116, Date: 11-Sep-2021, Time: 22:52:48, Conditions: AUTOSPEC01, User: pk

2378-TCDD



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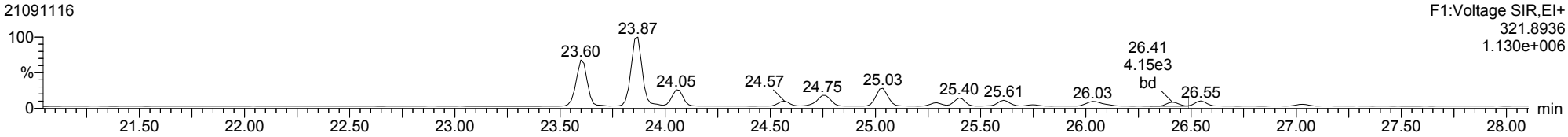

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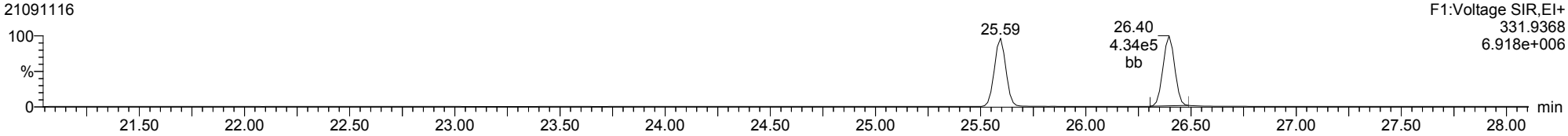

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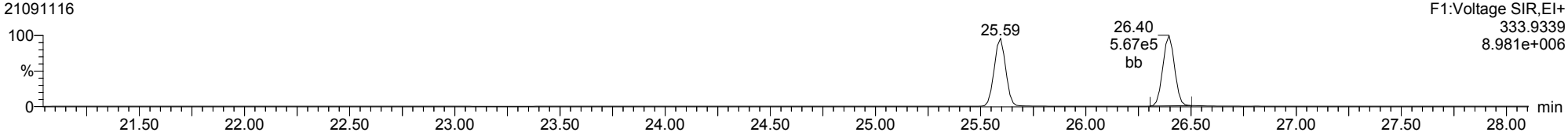
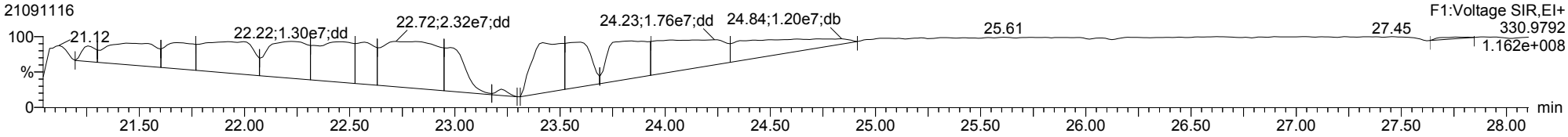
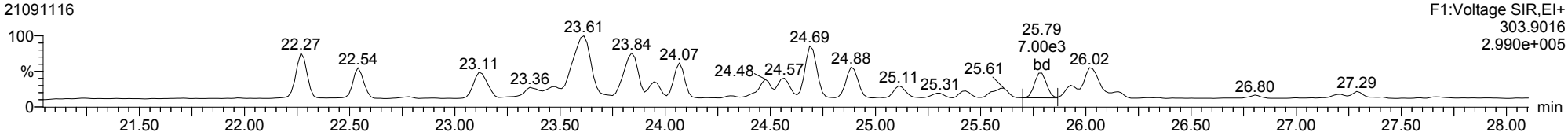


FUNCTION1 PFK



ID: BJH0150-DUP2, Name: 21091116, Date: 11-Sep-2021, Time: 22:52:48, Conditions: AUTOSPEC01, User: pk

2378-TCDF



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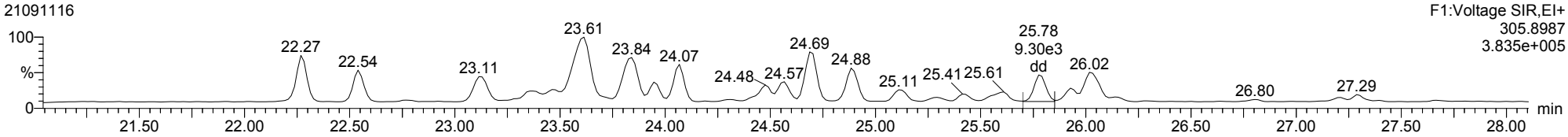

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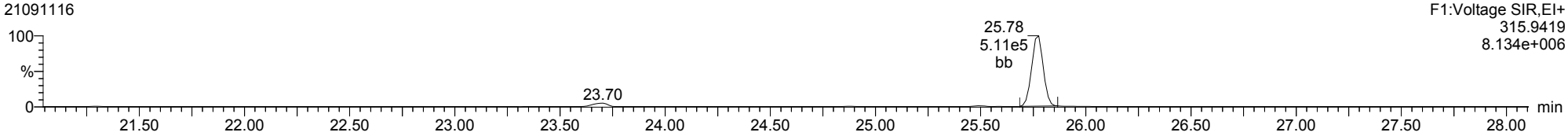

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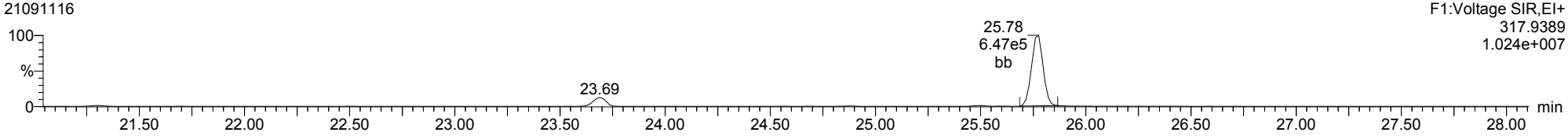
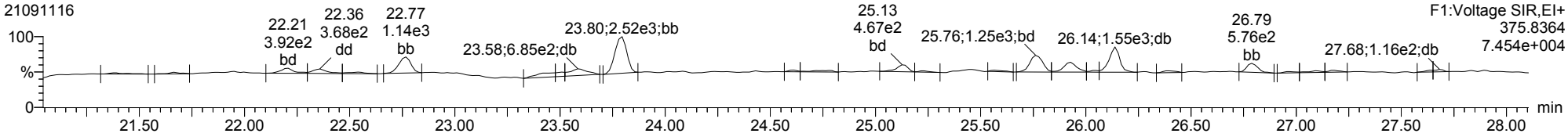


FUNCTION1 HXCDPE



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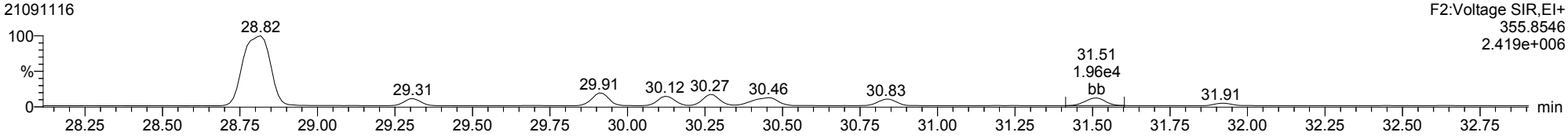
12378-PeCDD



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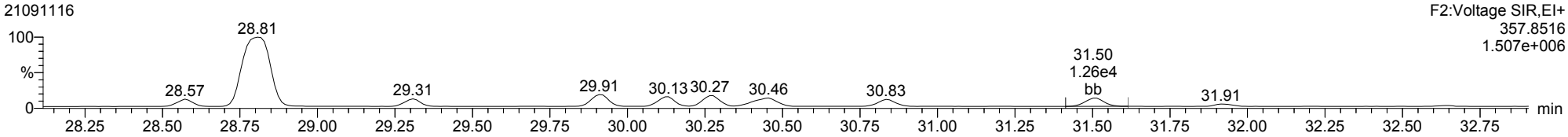

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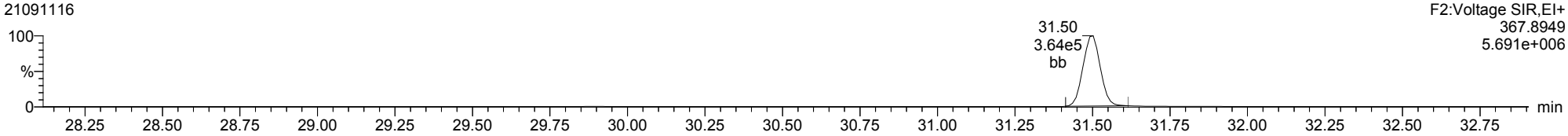

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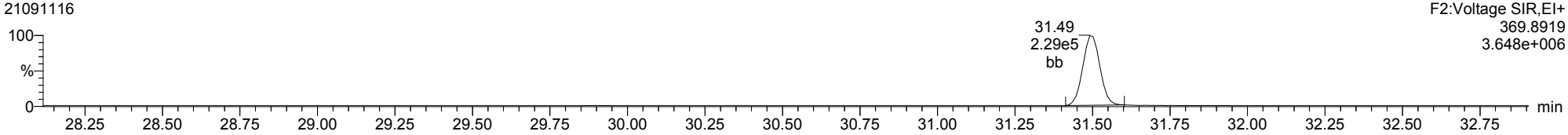
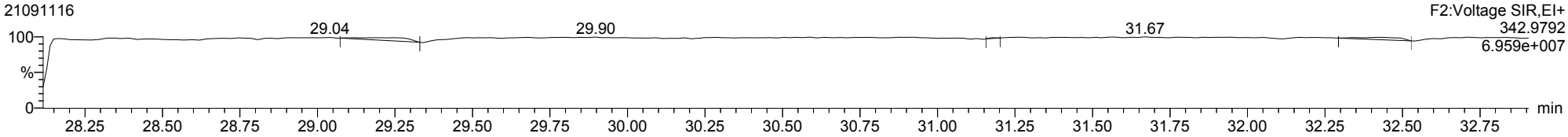


FUNCTION2 PFK



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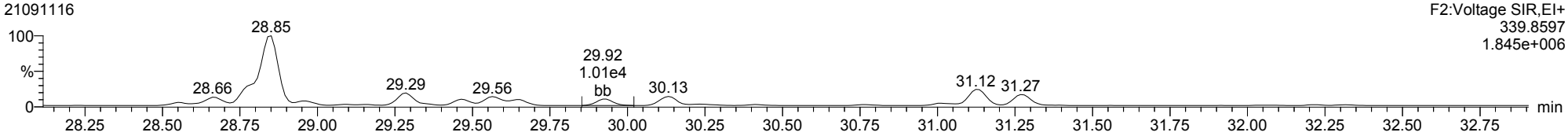
12378-PeCDF



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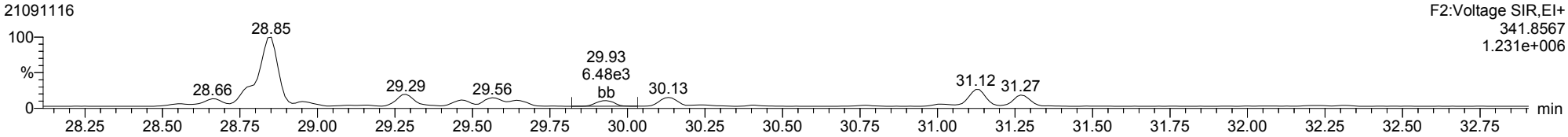

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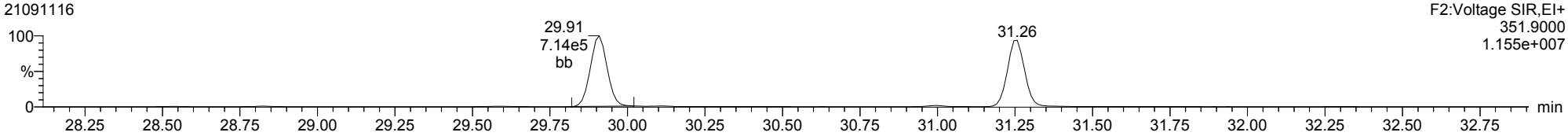

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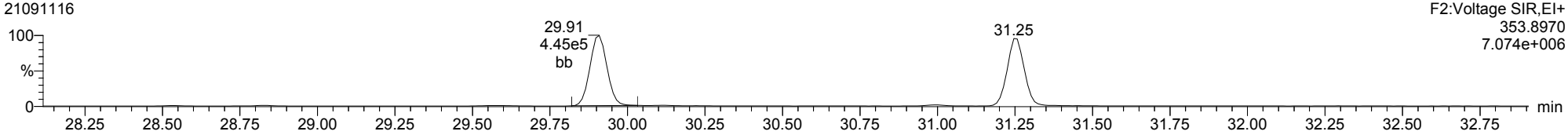
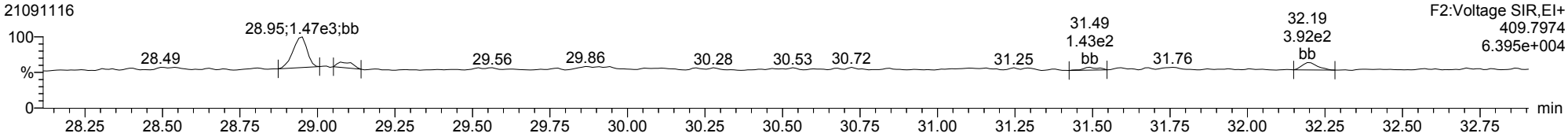


FUNCTION2 HPCDPE



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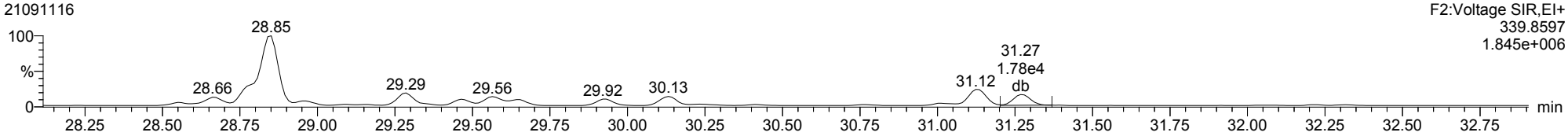
23478-PeCDF



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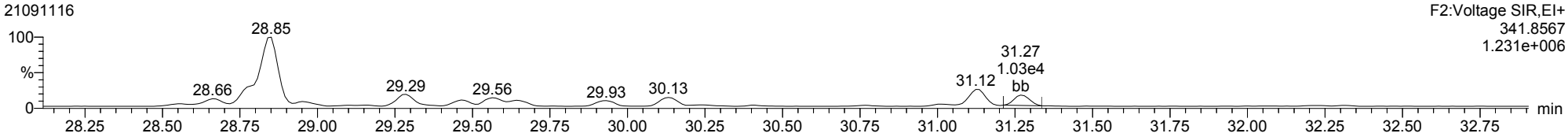

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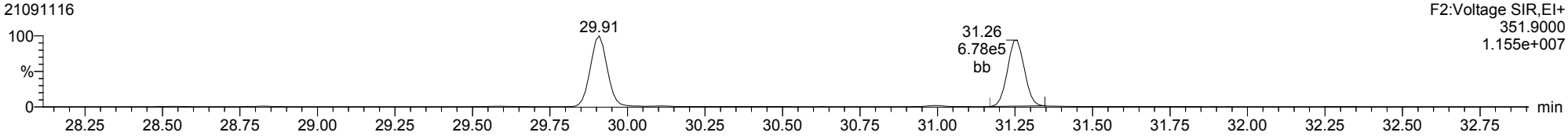

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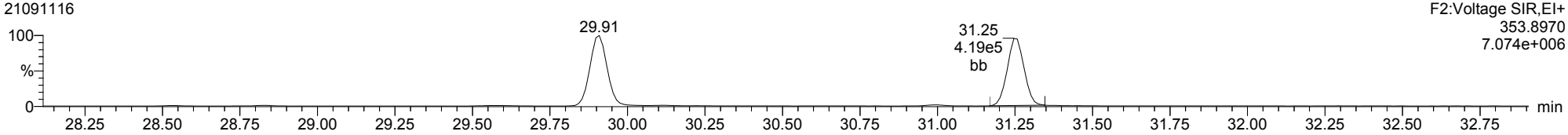
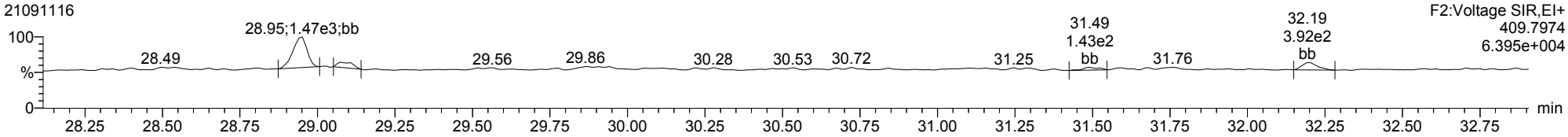


FUNCTION2 HPCDPE



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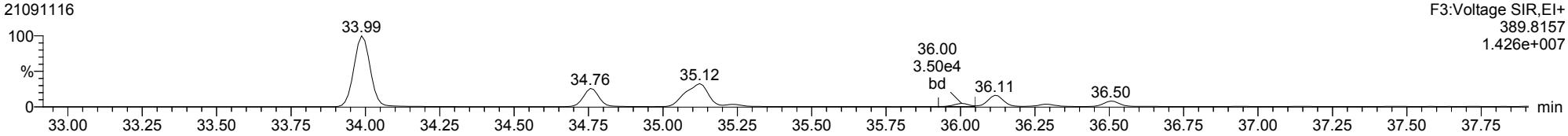
123478-HxCDD



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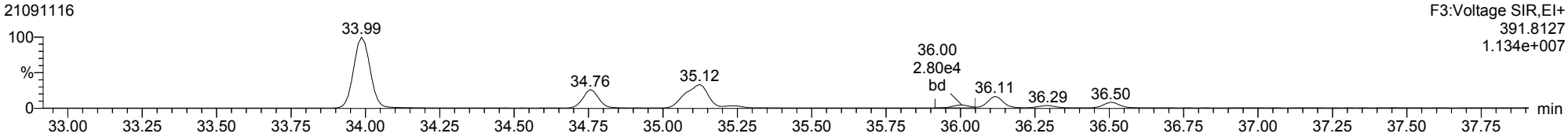

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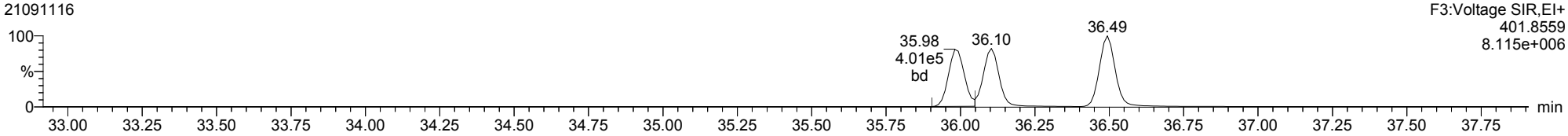

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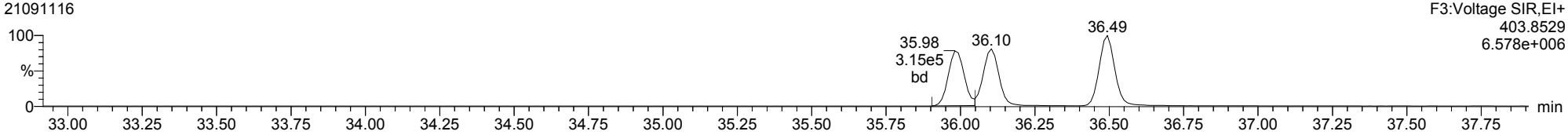
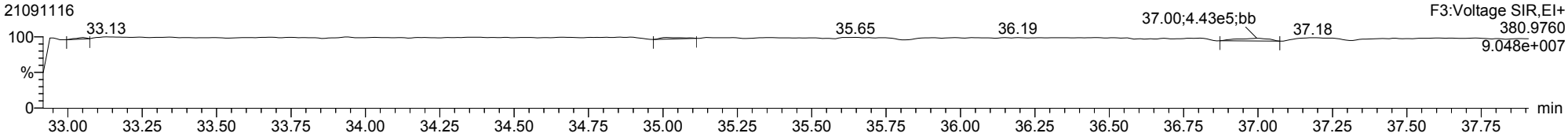


FUNCTION3 PFK



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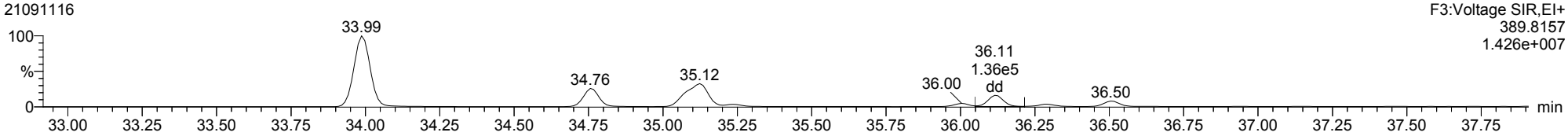
123678-HxCDD



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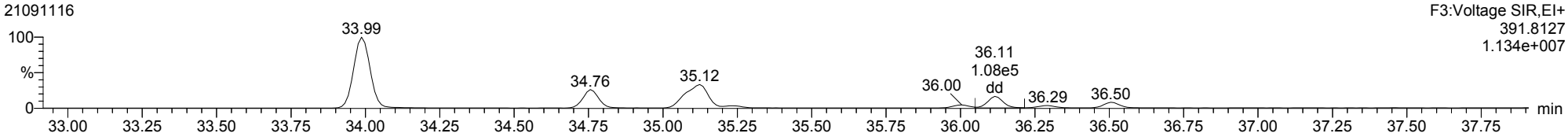

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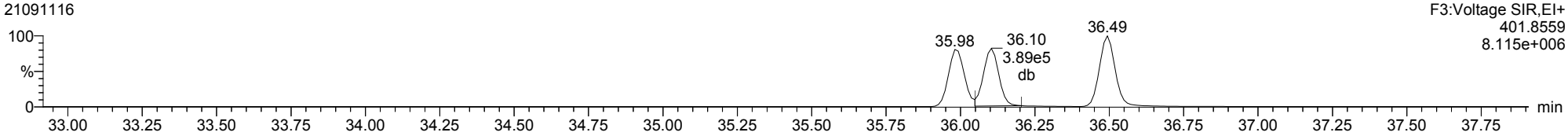

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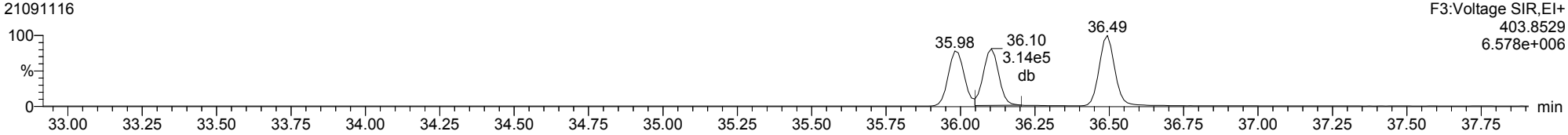

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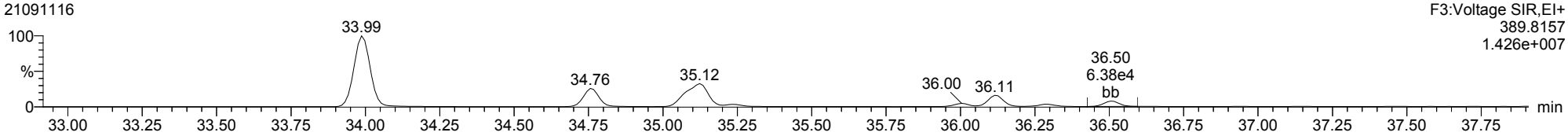

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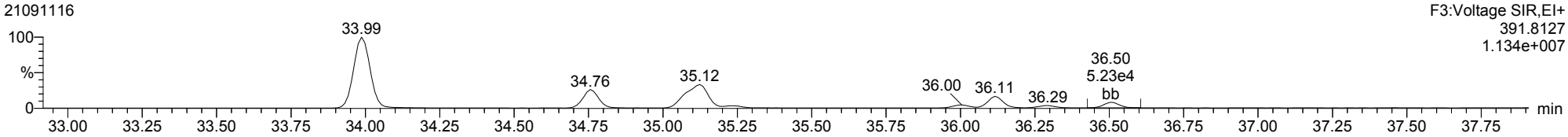

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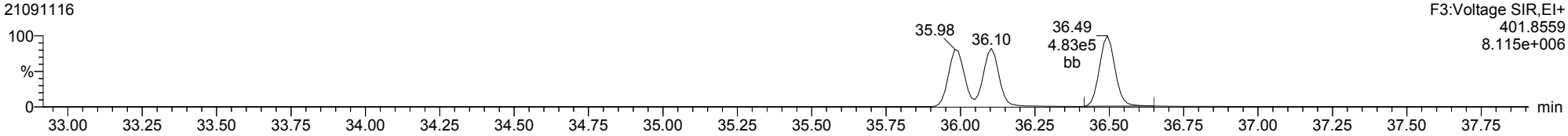

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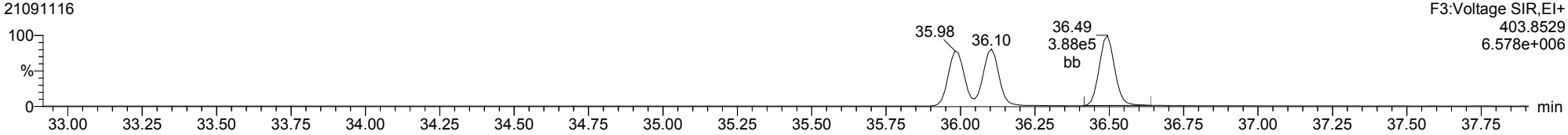

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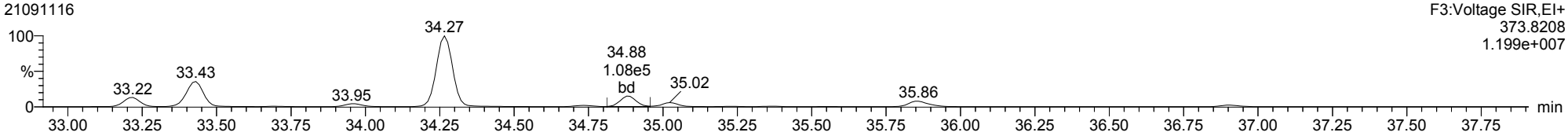
123478-HxCDF



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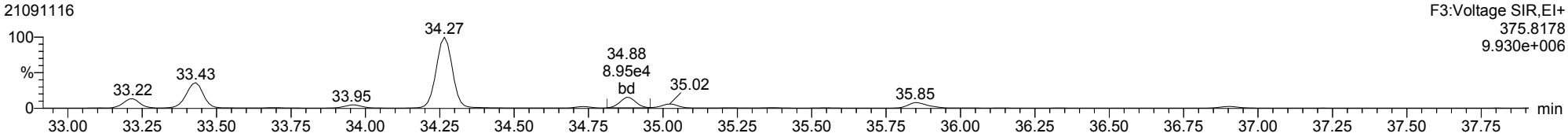

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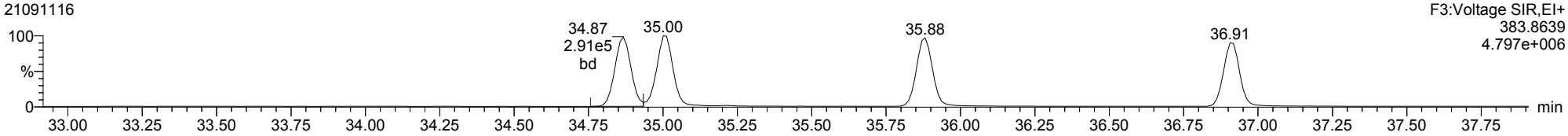

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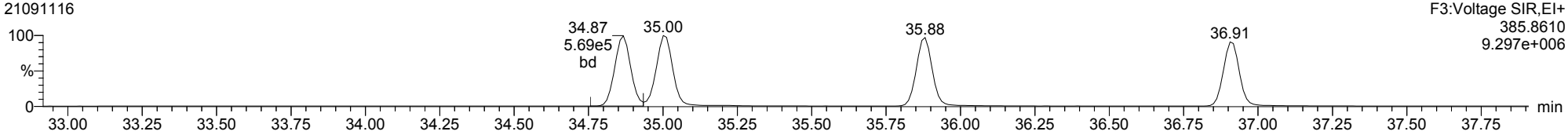
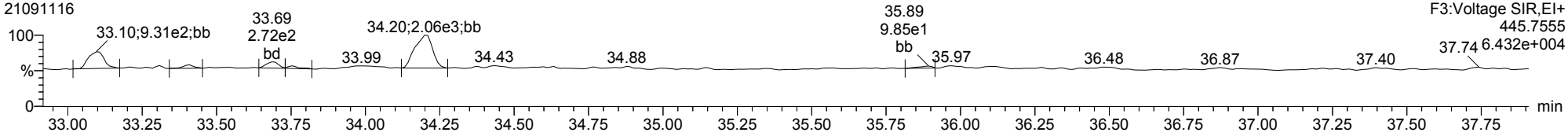


FUNCTION3 OCDPE



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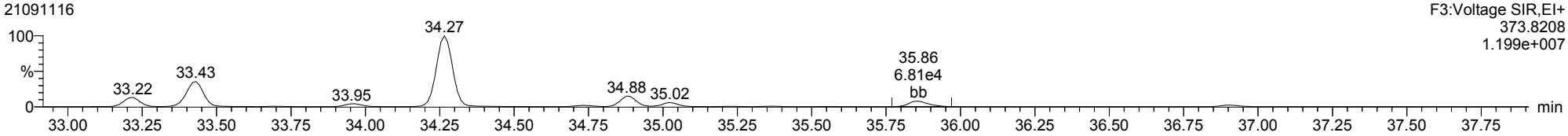
234678-HxCDF



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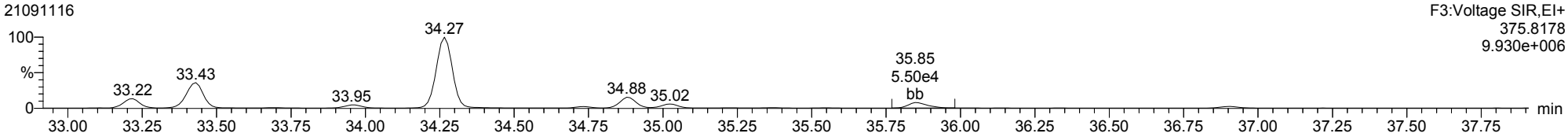

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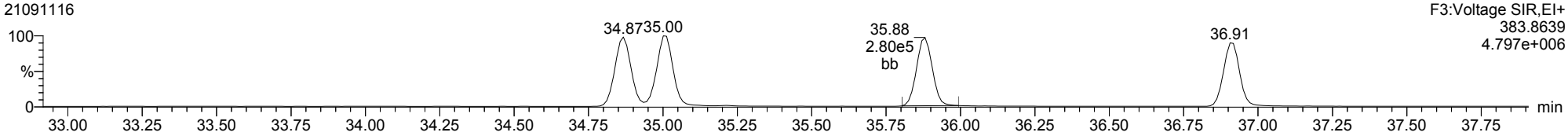

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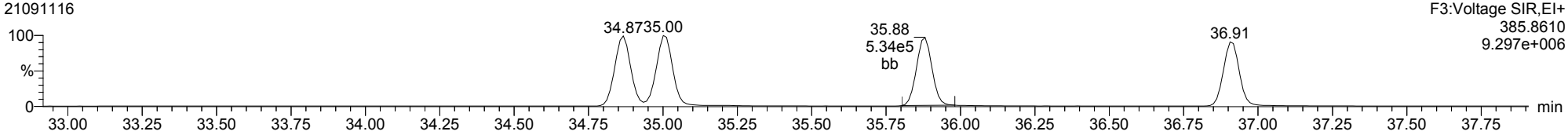
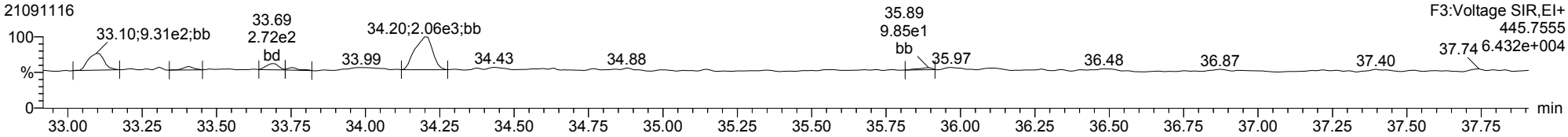
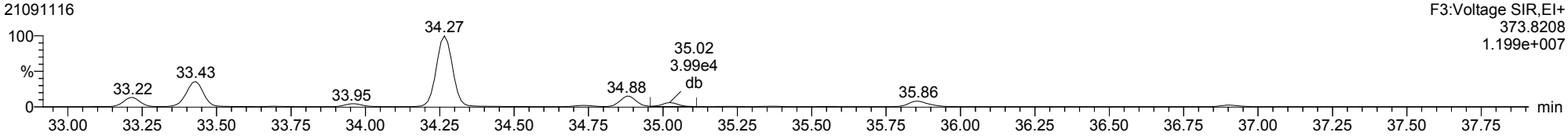


FUNCTION3 OCDPE

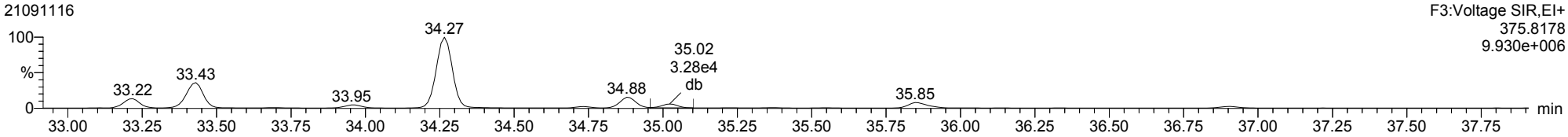


ID: BJH0150-DUP2, Name: 21091116, Date: 11-Sep-2021, Time: 22:52:48, Conditions: AUTOSPEC01, User: pk

123678-HxCDF



123678-HxCDF



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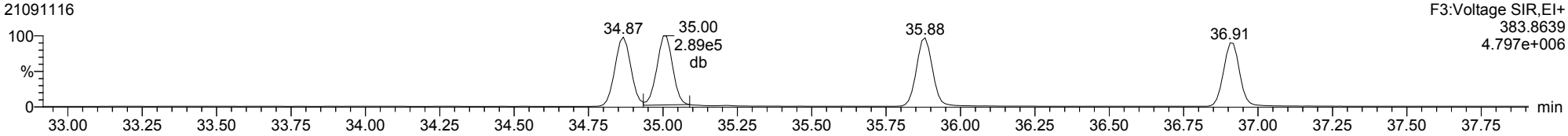

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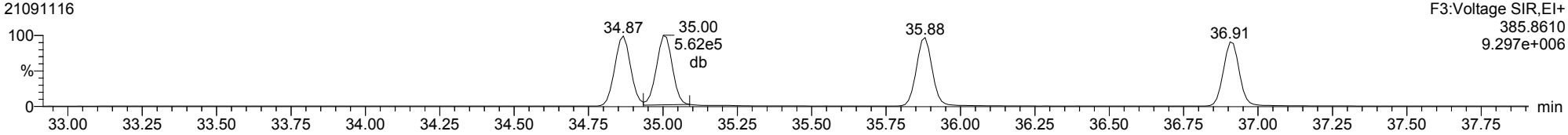

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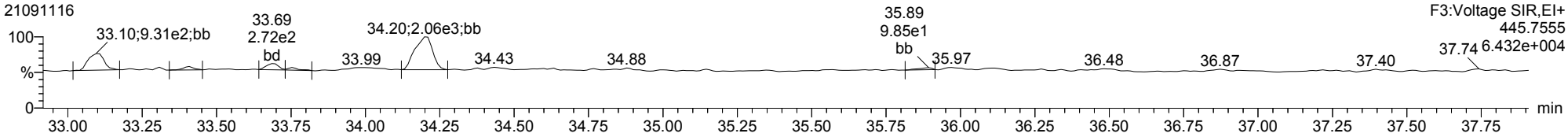

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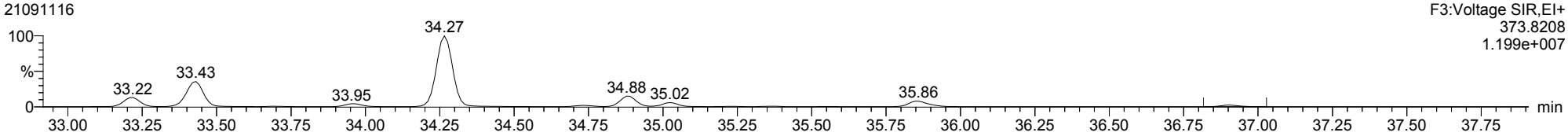
123789-HxCDF



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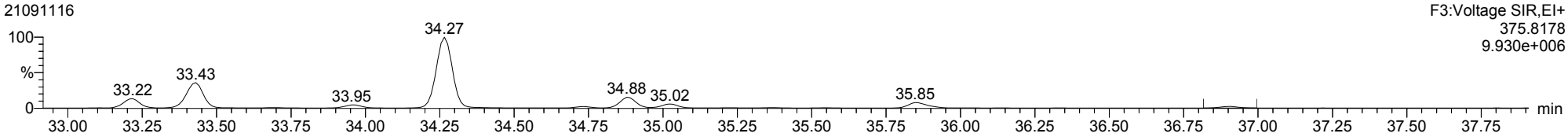

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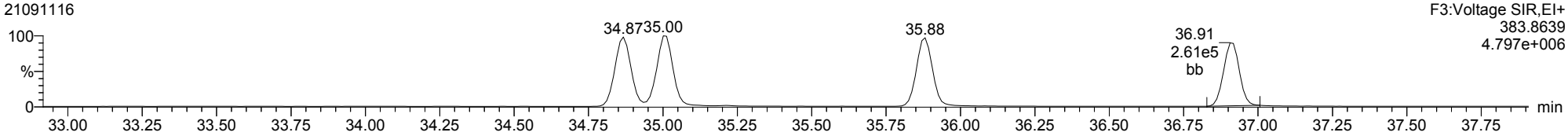

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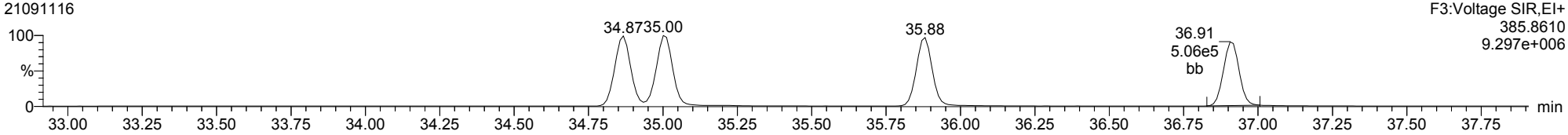
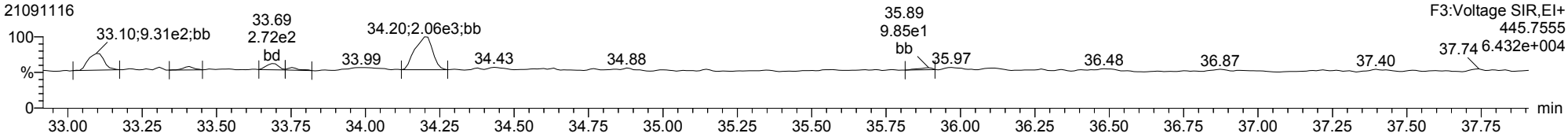


FUNCTION3 OCDPE



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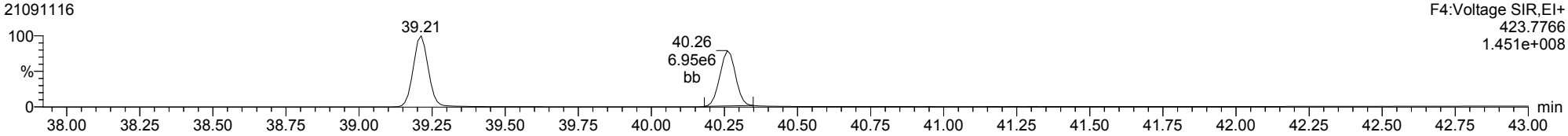

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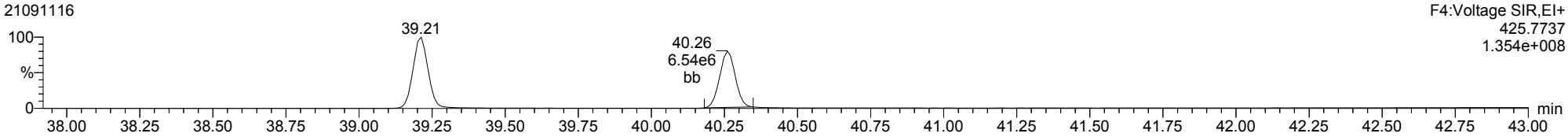

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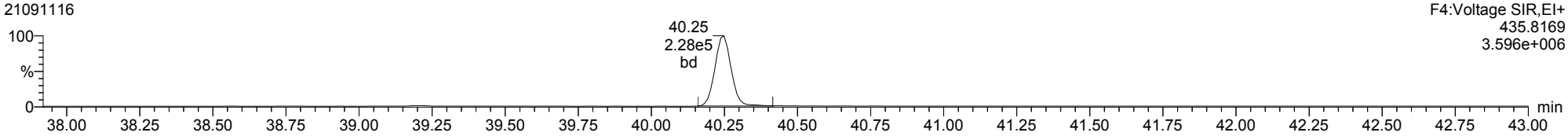

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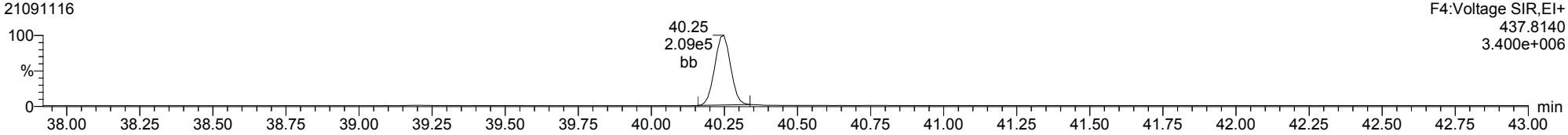

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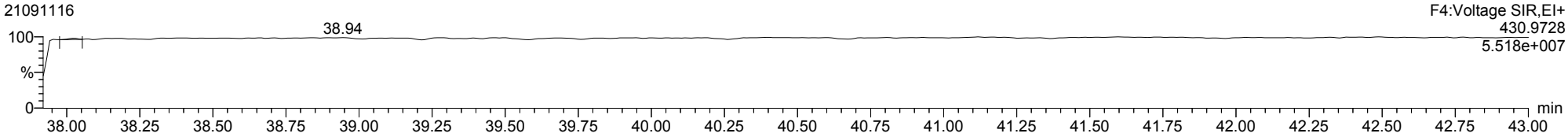

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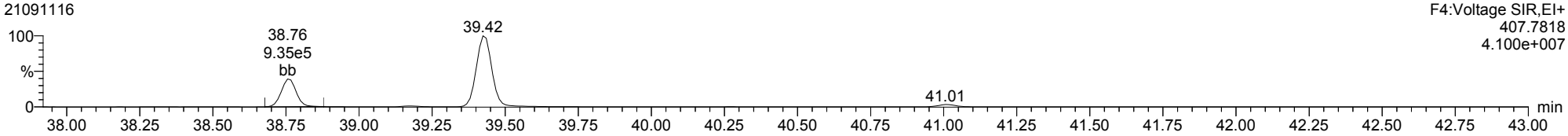

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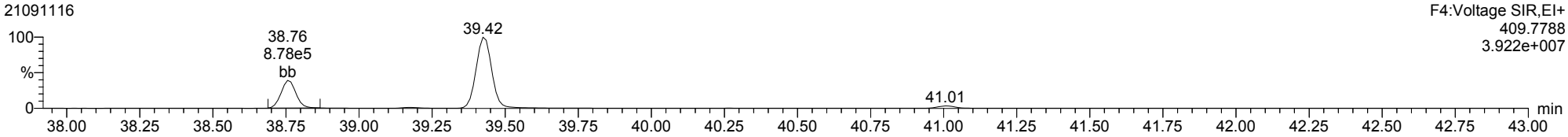

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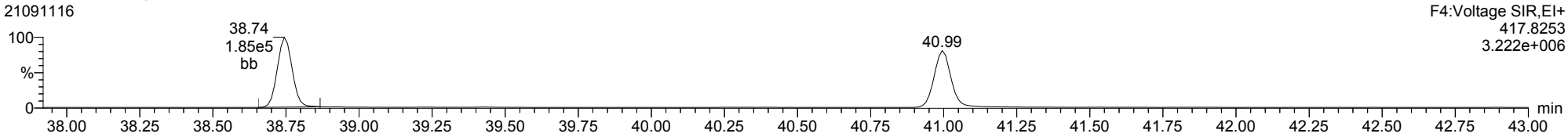

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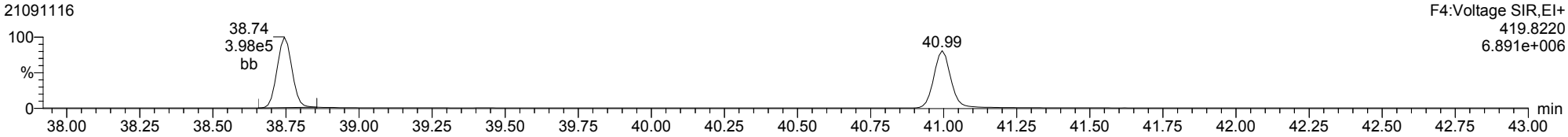

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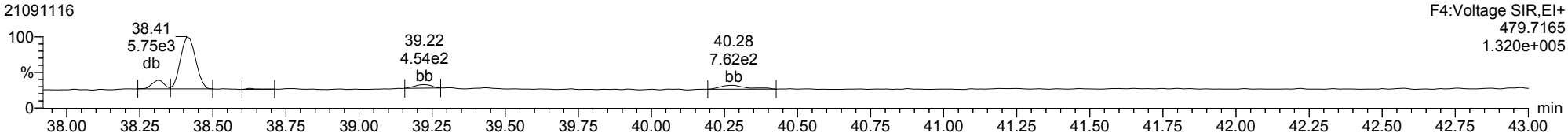

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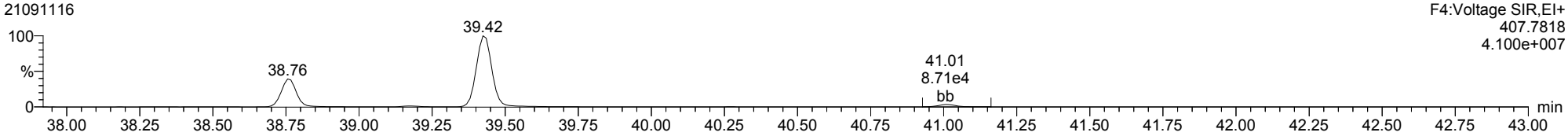

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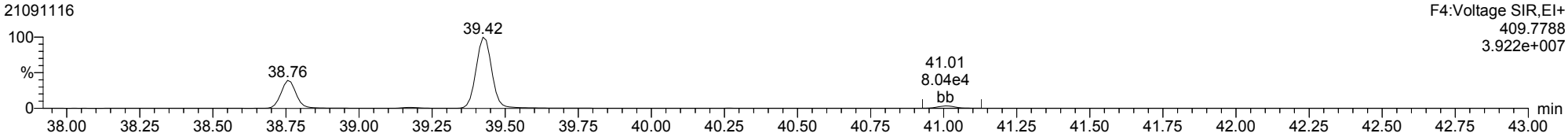

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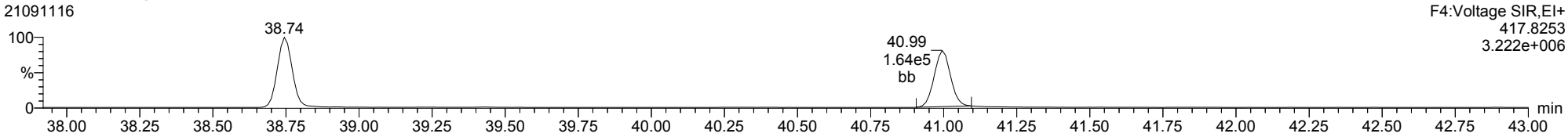

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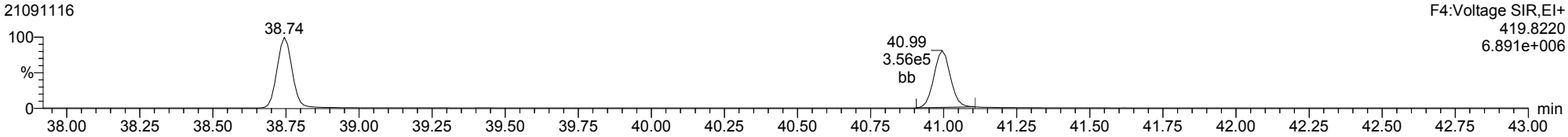

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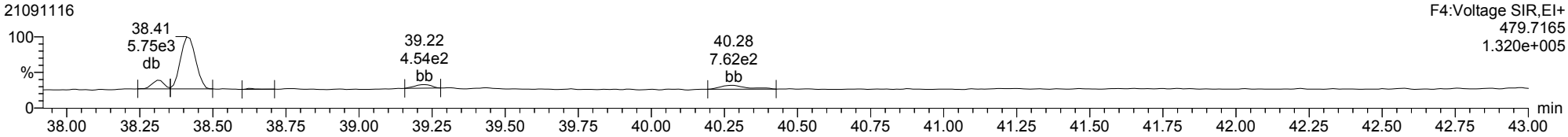

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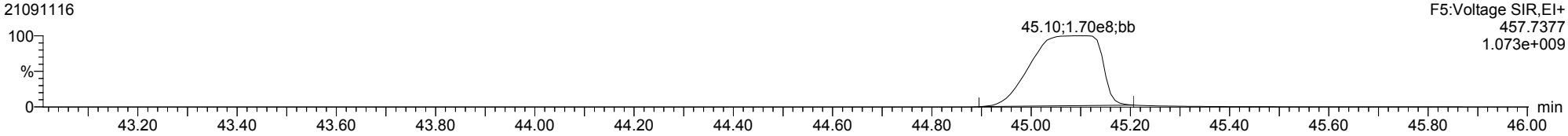

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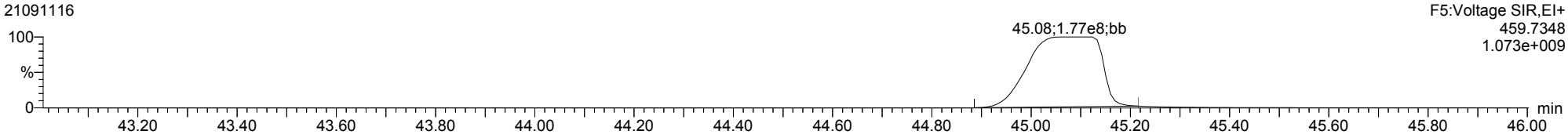

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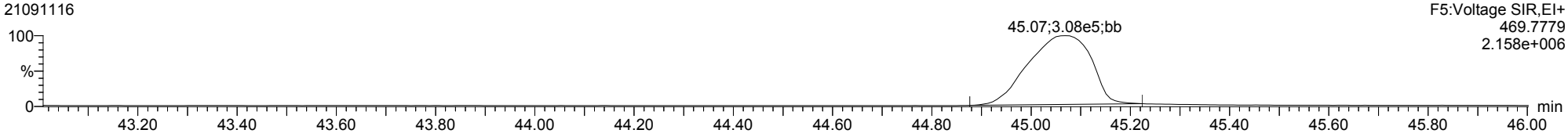

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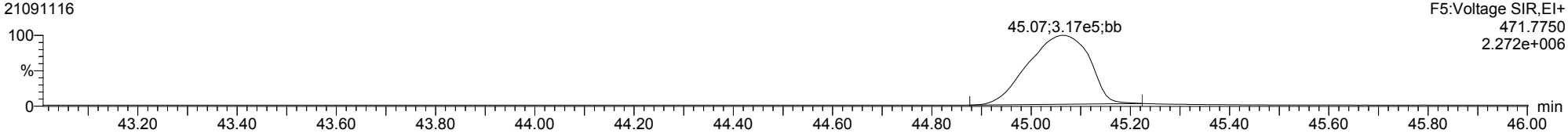

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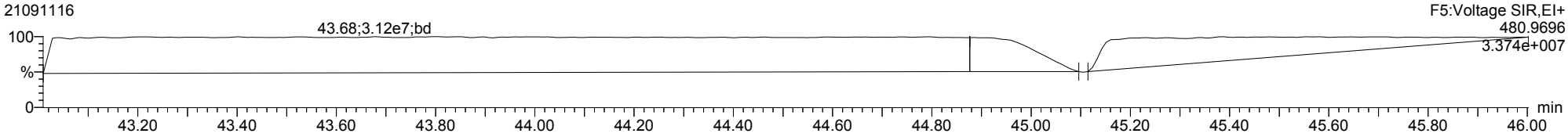

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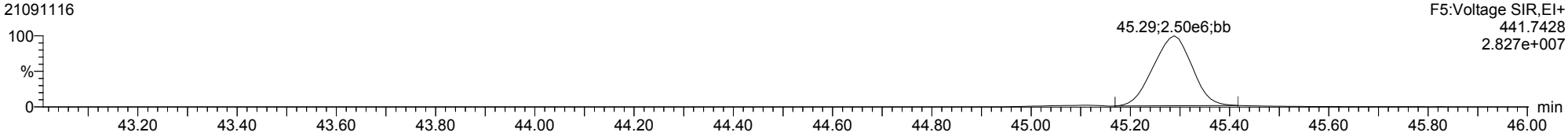

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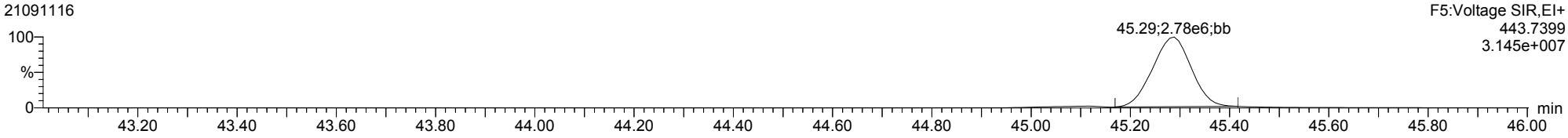

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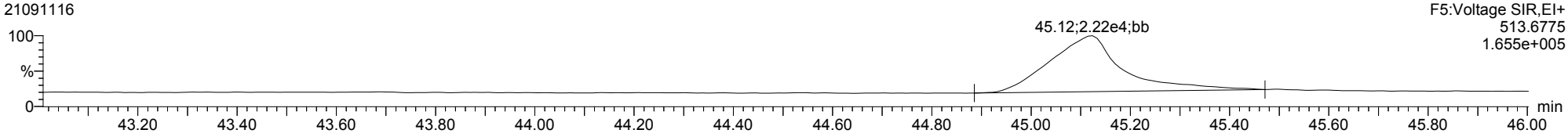

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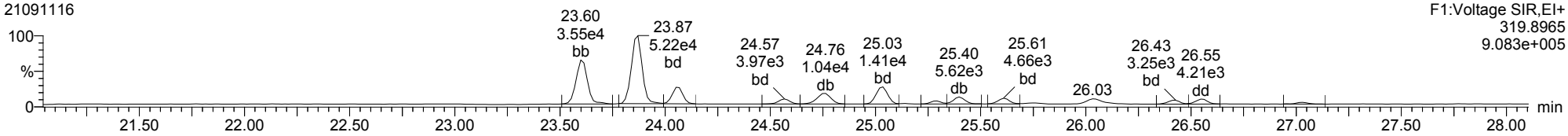
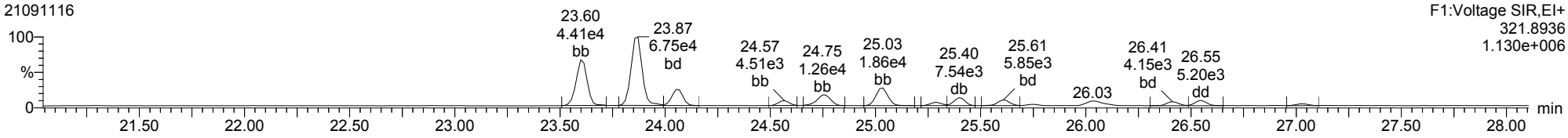
Printed: Wednesday, September 15, 2021 11:29:14 Pacific Daylight Time

ID: BJH0150-DUP2, Name: 21091116, Date: 11-Sep-2021, Time: 22:52:48, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



Total-tetradioxins



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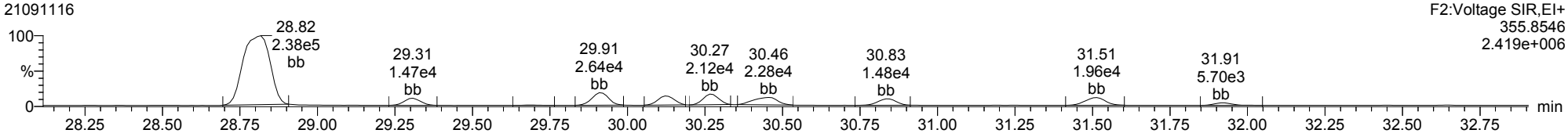

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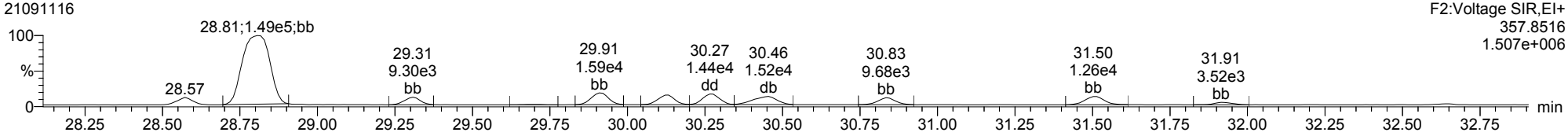

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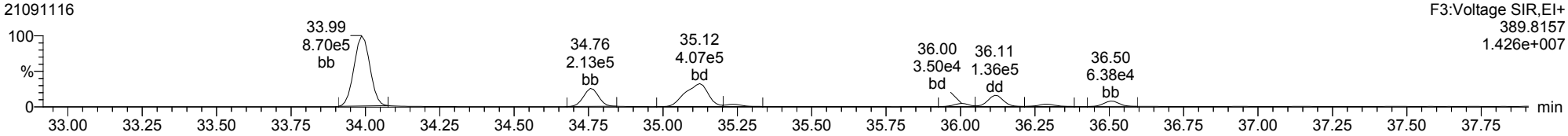

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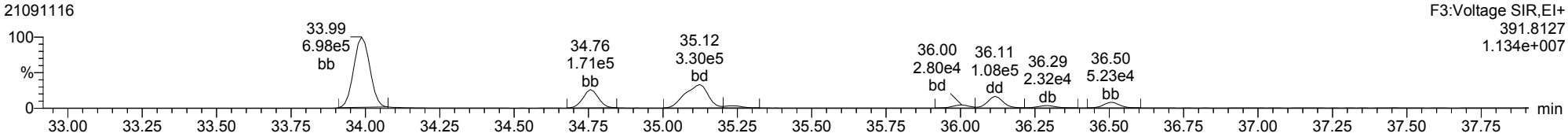

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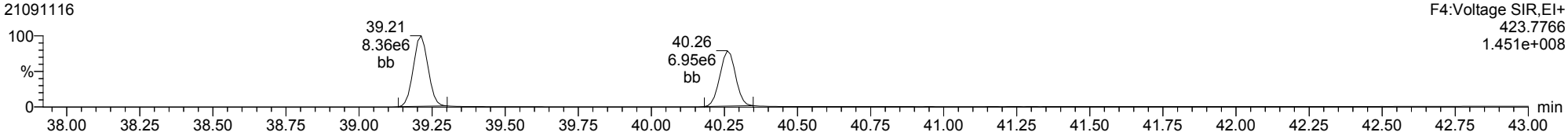

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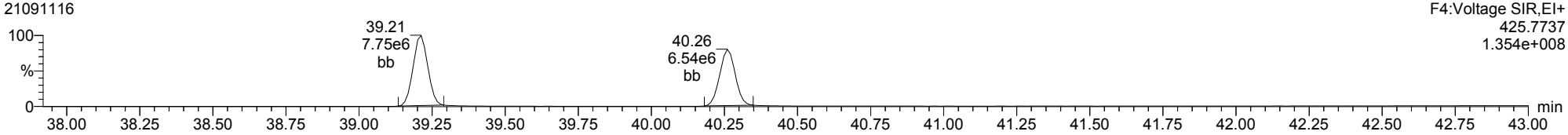

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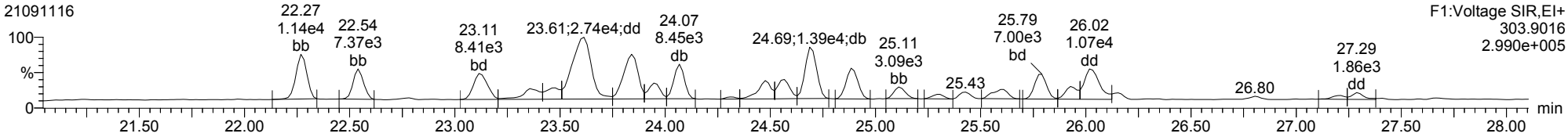
Total-tetrafurans



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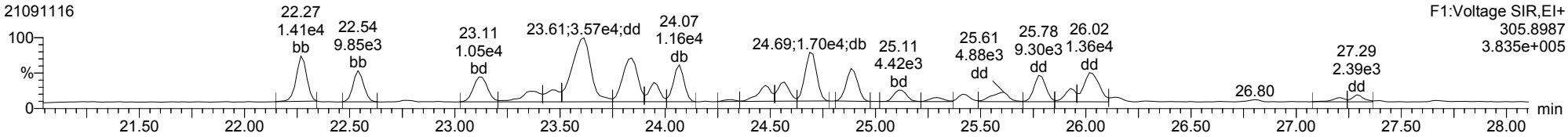

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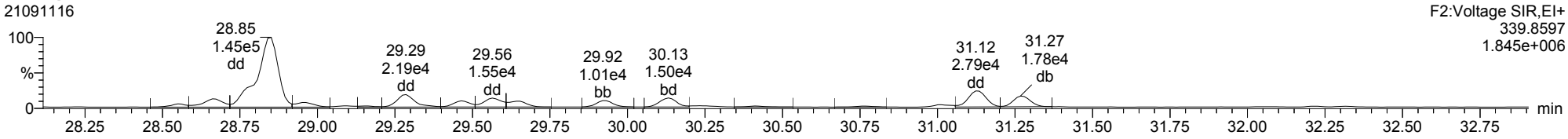

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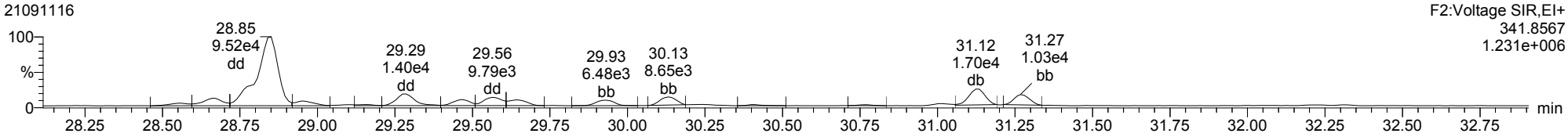

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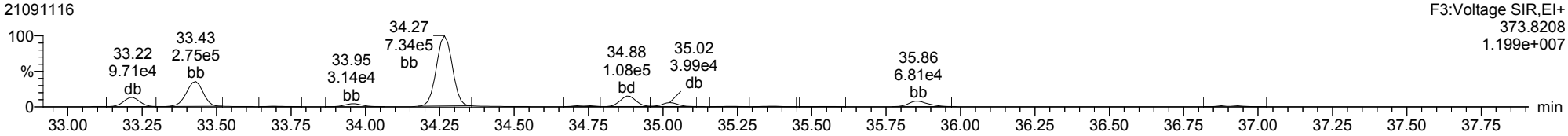
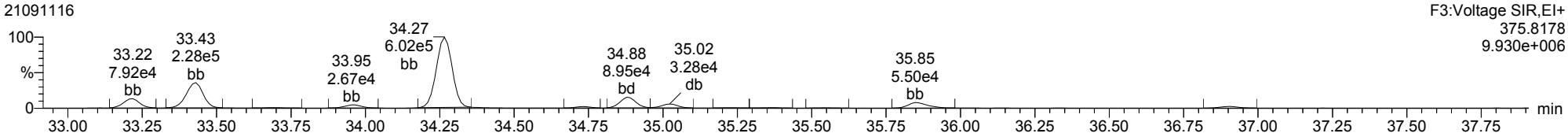
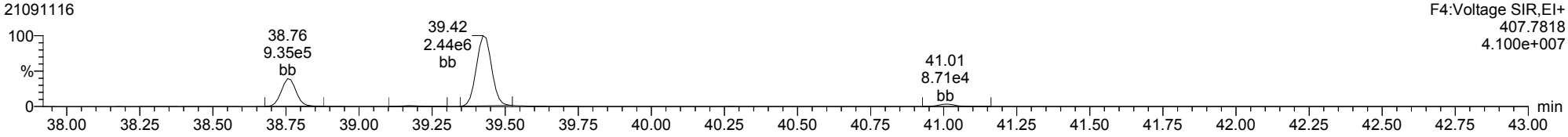


Total-hexafurans



Total-heptafurans



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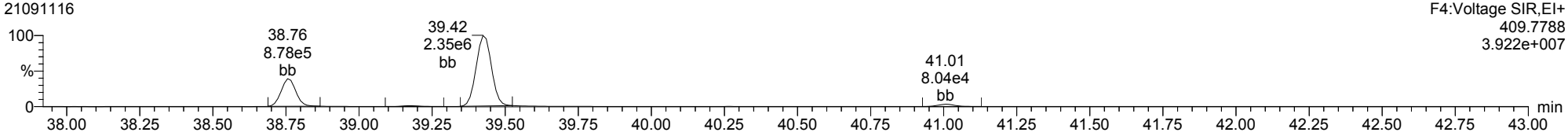

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

DUPLICATES
EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0150-DUP3
Batch: BJH0150
Lab Source ID: 21G0138-02RE1
Preparation: EPA 1613
Initial/Final: 16.22 g / 20 uL
Source Sample Name: LDW21-IT662B
% Solids: 61.66

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
2,3,7,8-TCDF	25	2.38	2.43	1.96	
2,3,7,8-TCDD	25	2.32	2.09	10.4	
1,2,3,7,8-PeCDF	25	3.60	2.71	28.4	*
2,3,4,7,8-PeCDF	25	5.97	5.33	11.4	
1,2,3,7,8-PeCDD	25	11.6	9.96	15.0	
1,2,3,4,7,8-HxCDF	25	51.3	45.0	13.3	
1,2,3,6,7,8-HxCDF	25	19.2	16.2	16.9	
2,3,4,6,7,8-HxCDF	25	34.0	30.0	12.6	
1,2,3,7,8,9-HxCDF	25	8.77	8.49	3.22	
1,2,3,4,7,8-HxCDD	25	19.2	16.2	16.8	
1,2,3,6,7,8-HxCDD	25	73.4	65.3	11.6	
1,2,3,7,8,9-HxCDD	25	37.2	31.4	16.9	
1,2,3,4,6,7,8-HpCDF	25	567	474	17.8	
1,2,3,4,7,8,9-HpCDF	25	59.7	51.9	13.9	
1,2,3,4,6,7,8-HpCDD	25	2840	5950	70.7	*
OCDF	25	2570	3420	28.6	*
OCDD	25	20900	258000	170	*
Total TCDF	200	63.1	55.1	13.6	
Total TCDD	200	178	24.5	152	
Total PeCDF	200	203	147	31.6	
Total PeCDD	200	192	136	34.5	
Total HxCDF	200	744	578	25.2	
Total HxCDD	200	1110	936	16.7	
Total HpCDF	200	2260	1960	14.1	
Total HpCDD	200	5040	13900	93.5	
13C12-2,3,7,8-TCDF		249	204		
13C12-2,3,7,8-TCDD		247	194		

* Values outside of QC limits
L Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT662B

DUPLICATES
EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0150-DUP3
Batch: BJH0150
Lab Source ID: 21G0138-02RE1
Preparation: EPA 1613
Initial/Final: 16.22 g / 20 uL
Source Sample Name: LDW21-IT662B
% Solids: 61.66

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD %	Q
13C12-1,2,3,7,8-PeCDF		256	204		
13C12-2,3,4,7,8-PeCDF		260	200		
13C12-1,2,3,7,8-PeCDD		254	180		
13C12-1,2,3,4,7,8-HxCDF		218	164		
13C12-1,2,3,6,7,8-HxCDF		209	159		
13C12-2,3,4,6,7,8-HxCDF		211	156		
13C12-1,2,3,7,8,9-HxCDF		217	177		
13C12-1,2,3,4,7,8-HxCDD		239	147		
13C12-1,2,3,6,7,8-HxCDD		222	147		
13C12-1,2,3,4,6,7,8-HpCDF		209	133		
13C12-1,2,3,4,7,8,9-HpCDF		204	142		
13C12-1,2,3,4,6,7,8-HpCDD		215	97.6		
13C12-OCDD		491	170		
37Cl4-2,3,7,8-TCDD		93.6	75.8		

*: Values outside of QC limits
L: Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:44:19 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	4.019e2	5.225e2	1.108	0.769	0.770	765	1014	7.18e3	8.09e3	9.4	8.0	NO	bb	bb	1.215
12378-PeCDF	29.932	1.001	4.414e2	4.173e2	1.015	1.058	1.550	868	952	7.16e3	6.23e3	8.3	6.5	YES	bb	bb	1.354
23478-PeCDF	31.269	1.000	1.044e3	7.072e2	1.126	1.477	1.550	868	952	1.49e4	1.22e4	17.2	12.8	NO	db	db	2.664
123478-HxCDF	34.889	1.001	5.407e3	4.589e3	1.017	1.178	1.240	723	642	8.71e4	7.50e4	120.5	116.9	NO	bd	dd	22.484
234678-HxCDF	35.870	1.000	3.523e3	2.880e3	1.052	1.224	1.240	723	642	4.44e4	3.79e4	61.4	59.1	NO	bb	bb	14.995
123678-HxCDF	35.034	1.001	2.121e3	1.742e3	1.037	1.218	1.240	723	642	3.43e4	2.86e4	47.5	44.6	NO	db	db	8.122
123789-HxCDF	36.906	1.000	8.747e2	7.985e2	1.030	1.095	1.240	723	642	1.43e4	1.06e4	19.8	16.6	NO	bb	bb	4.247
1234678-HpCDF	38.766	1.000	4.251e4	4.033e4	1.327	1.054	1.050	1332	898	7.30e5	6.77e5	548.4	753.4	NO	bb	bb	236.923
1234789-HpCDF	41.006	1.000	4.020e3	3.669e3	1.283	1.096	1.050	1332	898	5.94e4	5.77e4	44.6	64.2	NO	bd	bb	25.951
OCDF	45.252	1.005	1.076e5	1.197e5	1.447	0.899	0.890	697	785	1.35e6	1.46e6	1939.1	1865.7	NO	bb	bb	1712.183
2378-TCDD	26.411	1.001	2.346e2	2.571e2	0.920	0.912	0.770	617	537	3.78e3	4.05e3	6.1	7.5	YES	bd	bd	1.047
12378-PeCDD	31.503	1.000	8.911e2	6.546e2	0.995	1.361	1.550	722	966	1.30e4	8.38e3	18.0	8.7	NO	MM	MM	4.982
123478-HxCDD	36.004	1.000	1.395e3	1.130e3	1.027	1.234	1.240	971	1040	2.59e4	1.76e4	26.7	16.9	NO	bd	bd	8.104
123678-HxCDD	36.115	1.000	5.974e3	4.857e3	1.009	1.230	1.240	971	1040	9.58e4	8.66e4	98.7	83.3	NO	dd	db	32.671
123789-HxCDD	36.516	1.011	2.755e3	1.967e3	0.950	1.401	1.240	971	1040	4.83e4	3.33e4	49.7	32.0	NO	bb	bb	15.723
1234678-HpCDD	40.271	1.001	2.172e5	2.038e5	1.068	1.066	1.050	3278	2877	3.48e6	3.28e6	1061.9	1140.2	NO	bb	bb	2975.579
OCDD	45.014	1.000	6.609e6	7.349e6	1.181	0.899	0.890	2879	1472	8.90e7	9.86e7	30912.8	66964.1	NO	bb	bb	128830....
13C-2378-TCDF	25.746	1.007	3.066e4	3.805e4	1.427	0.806	0.770	1504	946	4.51e5	5.68e5	299.5	600.8	NO	bb	bb	10.204
13C-12378-PeCDF	29.909	1.169	3.829e4	2.421e4	1.297	1.582	1.550	894	810	5.94e5	3.69e5	664.4	455.4	NO	bb	bb	10.206
13C-23478-PeCDF	31.257	1.222	3.628e4	2.214e4	1.236	1.639	1.550	894	810	5.45e5	3.42e5	609.8	422.4	NO	bb	bb	10.009
13C-123478-HxCDF	34.867	0.955	1.505e4	2.867e4	1.242	0.525	0.510	581	1216	2.40e5	4.56e5	412.4	374.9	NO	bd	bd	8.203
13C-123678-HxCDF	35.012	0.959	1.520e4	3.067e4	1.343	0.495	0.510	581	1216	2.53e5	5.04e5	434.9	414.6	NO	db	db	7.959
13C-234678-HxCDF	35.881	0.983	1.375e4	2.682e4	1.215	0.513	0.510	581	1216	2.22e5	4.47e5	381.4	367.8	NO	bb	bb	7.784
13C-123789-HxCDF	36.917	1.012	1.335e4	2.490e4	1.008	0.536	0.510	581	1216	2.26e5	4.18e5	389.2	343.8	NO	bb	bb	8.847
13C-1234678-HpCDF	38.755	1.062	8.497e3	1.784e4	0.926	0.476	0.440	680	791	1.43e5	3.12e5	210.2	395.0	NO	bb	bb	6.628
13C-1234789-HpCDF	41.006	1.124	7.224e3	1.586e4	0.758	0.455	0.440	680	791	1.13e5	2.47e5	165.8	312.4	NO	bb	bb	7.101
13C-1234-TCDD	25.579	0.000	2.034e5	2.686e5	1.000	0.757	0.770	1446	760	3.19e6	4.20e6	2204.9	5524.3	NO	bb	bb	100.000
13C-2378-TCDD	26.381	1.031	2.175e4	2.927e4	1.116	0.743	0.770	1446	760	3.33e5	4.54e5	230.2	597.6	NO	bb	bb	9.682
13C-12378-PeCDD	31.492	1.231	1.909e4	1.207e4	0.732	1.581	1.550	675	643	3.06e5	1.89e5	452.7	294.5	NO	bb	bb	9.020
13C-123478-HxCDD	35.993	0.986	1.708e4	1.324e4	0.960	1.290	1.240	1156	1022	2.88e5	2.23e5	248.8	218.5	NO	bd	bd	7.365
13C-123678-HxCDD	36.104	0.989	1.798e4	1.487e4	1.041	1.209	1.240	1156	1022	2.96e5	2.61e5	255.8	255.7	NO	db	db	7.355
13C-1234678-HpCDD	40.249	1.103	6.782e3	6.466e3	0.632	1.049	1.050	491	368	1.11e5	1.01e5	224.9	275.7	NO	bb	bb	4.883
13C-OCDD	45.005	1.233	9.378e3	8.972e3	0.504	1.045	0.890	608	509	1.17e5	1.10e5	193.2	216.8	YES	bb	bb	8.492
13C-123789-HxCDD	36.494	0.000	2.380e5	1.910e5	1.000	1.246	1.240	1156	1022	3.94e6	3.20e6	3407.1	3132.2	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.032	1.938e4		1.084			718		2.85e5		396.3			bb		3.789

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
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ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	7.563e2	1.195e3	1.425	0.633	0.770	765	1014	1.04e4	1.42e4	13.6	14.0	YES	db	bb	1.993
1289-TCDF	27.273	1.059	1.266e2	2.187e2	1.043	0.579	0.770	765	1014	2.01e3	3.27e3	2.6	3.2	YES	bb	db	0.482
13468-PECDF					1.376		1.550	528	632								
12389-PECDF					1.000		1.550	868	952								
123468-HXCDF	33.218	0.953	5.296e3	4.252e3	1.087	1.245	1.240	723	642	8.15e4	6.55e4	112.8	102.0	NO	db	bb	20.099
1368-TCDD	23.523	0.892	2.053e3	2.679e3	0.923	0.766	0.770	617	537	3.45e4	3.97e4	55.9	74.0	NO	bd	bb	10.042
1289-TCDD					0.794		0.770	617	537								
12479-PECDD	28.784	0.914	1.288e4	8.172e3	1.843	1.576	1.550	722	966	1.21e5	8.02e4	168.0	83.1	NO	bb	bb	36.637
12389-PECDD	31.926	1.014	2.419e2	2.800e2	1.154	0.864	1.550	722	966	3.86e3	5.20e3	5.4	5.4	YES	bb	bb	1.452
124679-HXCDD	33.998	0.945	4.524e4	3.721e4	1.125	1.216	1.240	971	1040	7.36e5	6.14e5	758.0	590.7	NO	bb	bb	241.675
1234679-HPCDD	39.212	0.974	3.312e5	3.057e5	1.211	1.083	1.050	3278	2877	5.58e6	5.23e6	1701.0	1818.0	NO	bb	bb	3970.378
Total-tetrafurans			9.759e3		1.192			765		1.35e5							27.530
Total-penta1			1.437e4					528		2.12e5							42.766
Total-pentafurans			1.178e4		1.047			868		1.59e5							30.926
Total-hexafurans			6.949e4		1.045			723		1.09e6							288.912
Total-heptafurans			1.640e5		1.305			1332		2.75e6							981.005
Total-Furans			3.770e5		1.158			765		5.70e6							3083.321
Total-tetradioxins			2.464e3		0.879			617		3.93e4							12.274
Total-pentadioxins			2.051e4		1.331			722		2.41e5							67.765
Total-hexadioxins			8.615e4		1.028			971		1.30e6							467.969
Total-heptadioxins			5.484e5		1.140			3278		9.06e6							6945.957
Total-Dioxins			7.266e6		1.092			617		9.96e7							136324....
Total-TEQ			7.643e6					617		1.05e8							139407....
FUNCTION1 PFK			8.715e6					270877		3.86e7							
FUNCTION2 PFK			3.858e5					152368		6.63e6							0.000
FUNCTION3 PFK			1.050e5					187949		2.98e6							0.000
FUNCTION4 PFK			1.488e4					144961		3.90e5							
FUNCTION5 PFK			0.000e0					105662		0.00e0							
FUNCTION1 HXCD...			2.137e2					779		3.77e3							0.000
FUNCTION1 HPCD...			3.809e2					553		5.54e3							0.000
FUNCTION2 HPCD...			1.548e2					578		2.66e3							0.000
FUNCTION3 OCDPE			3.192e2					515		5.59e3							0.000
FUNCTION4 NCDPE			2.105e2					579		3.79e3							0.000
FUNCTION5 DCDPE			7.027e2					454		8.52e3							0.000

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.76	1.221e3	1.435e3	1.192	0.85	0.77	25.5	YES	NO	dd	bd	3.243
2	Total-tetrafurans	23.60	2.700e2	3.386e2	1.192	0.80	0.77	5.6	YES	NO	dd	db	0.743
3	Total-tetrafurans	23.51	1.754e3	2.261e3	1.192	0.78	0.77	31.2	YES	NO	dd	dd	4.901
4	Total-tetrafurans	23.40	4.834e2	6.058e2	1.192	0.80	0.77	7.3	YES	NO	dd	dd	1.330
5	Total-tetrafurans	23.28	1.073e3	1.298e3	1.192	0.83	0.77	13.6	YES	NO	dd	dd	2.895
6	Total-tetrafurans	23.10	2.430e3	3.434e3	1.192	0.71	0.77	44.0	YES	NO	dd	dd	7.160
7	Total-tetrafurans	26.02	5.499e2	7.662e2	1.192	0.72	0.77	9.1	YES	NO	bb	db	1.607
8	2378-TCDF	25.76	4.019e2	5.225e2	1.108	0.77	0.77	9.4	YES	NO	bb	bb	1.215
9	Total-tetrafurans	25.58	2.173e2	2.693e2	1.192	0.81	0.77	4.4	YES	NO	bb	dd	0.594
10	Total-tetrafurans	24.66	9.862e2	1.344e3	1.192	0.73	0.77	20.0	YES	NO	db	dd	2.846
11	Total-tetrafurans	24.43	3.730e2	4.427e2	1.192	0.84	0.77	6.9	YES	NO	dd	dd	0.996

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.18	1.437e4	1.014e4		1.42	1.55	400.4	YES	NO	bb	bb	42.766

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.84	8.059e3	5.286e3	1.047	1.52	1.55	114.8	YES	NO	dd	dd	21.088
2	23478-PeCDF	31.27	1.044e3	7.072e2	1.126	1.48	1.55	17.2	YES	NO	db	db	2.664
3	Total-pentafurans	31.12	1.453e3	9.718e2	1.047	1.50	1.55	26.8	YES	NO	bd	bd	3.832
4	Total-pentafurans	30.13	7.543e2	5.589e2	1.047	1.35	1.55	15.4	YES	NO	bb	bb	2.075
5	Total-pentafurans	29.46	4.727e2	3.288e2	1.047	1.44	1.55	9.3	YES	NO	bd	bd	1.267

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
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ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	234678-HxCDF	35.87	3.523e3	2.880e3	1.052	1.22	1.24	61.4	YES	NO	bb	bb	14.995
2	123678-HxCDF	35.03	2.121e3	1.742e3	1.037	1.22	1.24	47.5	YES	NO	db	db	8.122
3	123478-HxCDF	34.89	5.407e3	4.589e3	1.017	1.18	1.24	120.5	YES	NO	bd	dd	22.484
4	Total-hexafurans	34.27	3.680e4	3.072e4	1.045	1.20	1.24	826.4	YES	NO	bb	bb	153.535
5	Total-hexafurans	33.96	1.652e3	1.401e3	1.045	1.18	1.24	37.5	YES	NO	bb	bb	6.942
6	Total-hexafurans	33.43	1.382e4	1.190e4	1.045	1.16	1.24	286.7	YES	NO	bb	bb	58.488
7	123468-HXCDF	33.22	5.296e3	4.252e3	1.087	1.25	1.24	112.8	YES	NO	db	bb	20.099
8	123789-HxCDF	36.91	8.747e2	7.985e2	1.030	1.10	1.24	19.8	YES	NO	bb	bb	4.247

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.01	4.020e3	3.669e3	1.283	1.10	1.05	44.6	YES	NO	bd	bb	25.951
2	Total-heptafurans	39.44	1.175e5	1.142e5	1.305	1.03	1.05	1470.2	YES	NO	bb	bb	718.130
3	1234678-HpCDF	38.77	4.251e4	4.033e4	1.327	1.05	1.05	548.4	YES	NO	bb	bb	236.923

ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.76	1.221e3	1.435e3	1.192	0.85	0.77	25.5	YES	NO	dd	bd	3.243
2	Total-tetrafurans	23.60	2.700e2	3.386e2	1.192	0.80	0.77	5.6	YES	NO	dd	db	0.743
3	Total-tetrafurans	23.51	1.754e3	2.261e3	1.192	0.78	0.77	31.2	YES	NO	dd	dd	4.901
4	Total-tetrafurans	23.40	4.834e2	6.058e2	1.192	0.80	0.77	7.3	YES	NO	dd	dd	1.330
5	Total-tetrafurans	23.28	1.073e3	1.298e3	1.192	0.83	0.77	13.6	YES	NO	dd	dd	2.895
6	Total-tetrafurans	23.10	2.430e3	3.434e3	1.192	0.71	0.77	44.0	YES	NO	dd	dd	7.160
7	Total-tetrafurans	26.02	5.499e2	7.662e2	1.192	0.72	0.77	9.1	YES	NO	bb	db	1.607
8	2378-TCDF	25.76	4.019e2	5.225e2	1.108	0.77	0.77	9.4	YES	NO	bb	bb	1.215
9	Total-tetrafurans	25.58	2.173e2	2.693e2	1.192	0.81	0.77	4.4	YES	NO	bb	dd	0.594
10	Total-tetrafurans	24.66	9.862e2	1.344e3	1.192	0.73	0.77	20.0	YES	NO	db	dd	2.846
11	Total-tetrafurans	24.43	3.730e2	4.427e2	1.192	0.84	0.77	6.9	YES	NO	dd	dd	0.996
12	Total-pentafurans	28.84	8.059e3	5.286e3	1.047	1.52	1.55	114.8	YES	NO	dd	dd	21.088
13	23478-PeCDF	31.27	1.044e3	7.072e2	1.126	1.48	1.55	17.2	YES	NO	db	db	2.664
14	Total-pentafurans	31.12	1.453e3	9.718e2	1.047	1.50	1.55	26.8	YES	NO	bd	bd	3.832
15	Total-pentafurans	30.13	7.543e2	5.589e2	1.047	1.35	1.55	15.4	YES	NO	bb	bb	2.075
16	Total-pentafurans	29.46	4.727e2	3.288e2	1.047	1.44	1.55	9.3	YES	NO	bd	bd	1.267
17	234678-HxCDF	35.87	3.523e3	2.880e3	1.052	1.22	1.24	61.4	YES	NO	bb	bb	14.995
18	123678-HxCDF	35.03	2.121e3	1.742e3	1.037	1.22	1.24	47.5	YES	NO	db	db	8.122
19	123478-HxCDF	34.89	5.407e3	4.589e3	1.017	1.18	1.24	120.5	YES	NO	bd	dd	22.484
20	Total-hexafurans	34.27	3.680e4	3.072e4	1.045	1.20	1.24	826.4	YES	NO	bb	bb	153.535
21	Total-hexafurans	33.96	1.652e3	1.401e3	1.045	1.18	1.24	37.5	YES	NO	bb	bb	6.942
22	Total-hexafurans	33.43	1.382e4	1.190e4	1.045	1.16	1.24	286.7	YES	NO	bb	bb	58.488
23	123468-HXCDF	33.22	5.296e3	4.252e3	1.087	1.25	1.24	112.8	YES	NO	db	bb	20.099
24	123789-HxCDF	36.91	8.747e2	7.985e2	1.030	1.10	1.24	19.8	YES	NO	bb	bb	4.247
25	1234789-HpCDF	41.01	4.020e3	3.669e3	1.283	1.10	1.05	44.6	YES	NO	bd	bb	25.951
26	Total-heptafurans	39.44	1.175e5	1.142e5	1.305	1.03	1.05	1470.2	YES	NO	bb	bb	718.130
27	1234678-HpCDF	38.77	4.251e4	4.033e4	1.327	1.05	1.05	548.4	YES	NO	bb	bb	236.923
28	OCDF	45.25	1.076e5	1.197e5	1.447	0.90	0.89	1939.1	YES	NO	bb	bb	1712.1...
29	Total-penta1	27.18	1.437e4	1.014e4		1.42	1.55	400.4	YES	NO	bb	bb	42.766

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.38	4.112e2	5.900e2	0.879	0.70	0.77	7.8	YES	NO	bb	db	2.232
2	1368-TCDD	23.52	2.053e3	2.679e3	0.923	0.77	0.77	55.9	YES	NO	bd	bb	10.042

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12479-PECDD	28.78	1.288e4	8.172e3	1.843	1.58	1.55	168.0	YES	NO	bb	bb	36.637
2	12378-PeCDD	31.50	8.911e2	6.546e2	0.995	1.36	1.55	18.0	YES	NO	MM	MM	4.982
3	Total-pentadioxins	30.83	7.584e2	4.620e2	1.331	1.64	1.55	17.2	YES	NO	bb	bb	2.942
4	Total-pentadioxins	30.46	1.358e3	7.630e2	1.331	1.78	1.55	22.5	YES	NO	db	db	5.114
5	Total-pentadioxins	30.27	1.344e3	7.732e2	1.331	1.74	1.55	32.1	YES	NO	dd	dd	5.105
6	Total-pentadioxins	30.13	1.128e3	6.874e2	1.331	1.64	1.55	27.8	YES	NO	bd	bd	4.376
7	Total-pentadioxins	29.91	1.284e3	8.861e2	1.331	1.45	1.55	28.7	YES	NO	bb	bb	5.233
8	Total-pentadioxins	29.30	8.659e2	5.343e2	1.331	1.62	1.55	19.2	YES	NO	bb	bb	3.376

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.52	2.755e3	1.967e3	0.950	1.40	1.24	49.7	YES	NO	bb	bb	15.723
2	123678-HxCDD	36.12	5.974e3	4.857e3	1.009	1.23	1.24	98.7	YES	NO	dd	db	32.671
3	123478-HxCDD	36.00	1.395e3	1.130e3	1.027	1.23	1.24	26.7	YES	NO	bd	bd	8.104
4	Total-hexadioxins	35.13	2.032e4	1.575e4	1.028	1.29	1.24	228.3	YES	NO	bd	bd	111.070
5	Total-hexadioxins	34.77	1.047e4	8.599e3	1.028	1.22	1.24	177.5	YES	NO	bd	bb	58.725
6	124679-HXCDD	34.00	4.524e4	3.721e4	1.125	1.22	1.24	758.0	YES	NO	bb	bb	241.675

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234679-HPCDD	39.21	3.312e5	3.057e5	1.211	1.08	1.05	1701.0	YES	NO	bb	bb	3970.3...
2	1234678-HpCDD	40.27	2.172e5	2.038e5	1.068	1.07	1.05	1061.9	YES	NO	bb	bb	2975.5...

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.38	4.112e2	5.900e2	0.879	0.70	0.77	7.8	YES	NO	bb	db	2.232
2	1368-TCDD	23.52	2.053e3	2.679e3	0.923	0.77	0.77	55.9	YES	NO	bd	bb	10.042
3	12479-PECDD	28.78	1.288e4	8.172e3	1.843	1.58	1.55	168.0	YES	NO	bb	bb	36.637
4	12378-PeCDD	31.50	8.911e2	6.546e2	0.995	1.36	1.55	18.0	YES	NO	MM	MM	4.982
5	Total-pentadioxins	30.83	7.584e2	4.620e2	1.331	1.64	1.55	17.2	YES	NO	bb	bb	2.942
6	Total-pentadioxins	30.46	1.358e3	7.630e2	1.331	1.78	1.55	22.5	YES	NO	db	db	5.114
7	Total-pentadioxins	30.27	1.344e3	7.732e2	1.331	1.74	1.55	32.1	YES	NO	dd	dd	5.105
8	Total-pentadioxins	30.13	1.128e3	6.874e2	1.331	1.64	1.55	27.8	YES	NO	bd	bd	4.376
9	Total-pentadioxins	29.91	1.284e3	8.861e2	1.331	1.45	1.55	28.7	YES	NO	bb	bb	5.233
10	Total-pentadioxins	29.30	8.659e2	5.343e2	1.331	1.62	1.55	19.2	YES	NO	bb	bb	3.376
11	123789-HxCDD	36.52	2.755e3	1.967e3	0.950	1.40	1.24	49.7	YES	NO	bb	bb	15.723
12	123678-HxCDD	36.12	5.974e3	4.857e3	1.009	1.23	1.24	98.7	YES	NO	dd	db	32.671
13	123478-HxCDD	36.00	1.395e3	1.130e3	1.027	1.23	1.24	26.7	YES	NO	bd	bd	8.104
14	Total-hexadioxins	35.13	2.032e4	1.575e4	1.028	1.29	1.24	228.3	YES	NO	bd	bd	111.070
15	Total-hexadioxins	34.77	1.047e4	8.599e3	1.028	1.22	1.24	177.5	YES	NO	bd	bb	58.725
16	124679-HXCDD	34.00	4.524e4	3.721e4	1.125	1.22	1.24	758.0	YES	NO	bb	bb	241.675
17	1234679-HPCDD	39.21	3.312e5	3.057e5	1.211	1.08	1.05	1701.0	YES	NO	bb	bb	3970.3...
18	OCDD	45.01	6.609e6	7.349e6	1.181	0.90	0.89	30912.8	YES	NO	bb	bb	12883...
19	1234678-HpCDD	40.27	2.172e5	2.038e5	1.068	1.07	1.05	1061.9	YES	NO	bb	bb	2975.5...

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	23.76	1.221e3	1.435e3	1.192	0.85	0.77	25.5	YES	NO	dd	bd	3.243
2	Total-tetrafurans	23.60	2.700e2	3.386e2	1.192	0.80	0.77	5.6	YES	NO	dd	db	0.743
3	Total-tetrafurans	23.51	1.754e3	2.261e3	1.192	0.78	0.77	31.2	YES	NO	dd	dd	4.901
4	Total-tetrafurans	23.40	4.834e2	6.058e2	1.192	0.80	0.77	7.3	YES	NO	dd	dd	1.330
5	Total-tetrafurans	23.28	1.073e3	1.298e3	1.192	0.83	0.77	13.6	YES	NO	dd	dd	2.895
6	Total-tetrafurans	23.10	2.430e3	3.434e3	1.192	0.71	0.77	44.0	YES	NO	dd	dd	7.160
7	Total-tetrafurans	26.02	5.499e2	7.662e2	1.192	0.72	0.77	9.1	YES	NO	bb	db	1.607
8	2378-TCDF	25.76	4.019e2	5.225e2	1.108	0.77	0.77	9.4	YES	NO	bb	bb	1.215
9	Total-tetrafurans	25.58	2.173e2	2.693e2	1.192	0.81	0.77	4.4	YES	NO	bb	dd	0.594
10	Total-tetrafurans	24.66	9.862e2	1.344e3	1.192	0.73	0.77	20.0	YES	NO	db	dd	2.846
11	Total-tetrafurans	24.43	3.730e2	4.427e2	1.192	0.84	0.77	6.9	YES	NO	dd	dd	0.996
12	Total-pentafurans	28.84	8.059e3	5.286e3	1.047	1.52	1.55	114.8	YES	NO	dd	dd	21.088
13	23478-PeCDF	31.27	1.044e3	7.072e2	1.126	1.48	1.55	17.2	YES	NO	db	db	2.664
14	Total-pentafurans	31.12	1.453e3	9.718e2	1.047	1.50	1.55	26.8	YES	NO	bd	bd	3.832
15	Total-pentafurans	30.13	7.543e2	5.589e2	1.047	1.35	1.55	15.4	YES	NO	bb	bb	2.075
16	Total-pentafurans	29.46	4.727e2	3.288e2	1.047	1.44	1.55	9.3	YES	NO	bd	bd	1.267
17	234678-HxCDF	35.87	3.523e3	2.880e3	1.052	1.22	1.24	61.4	YES	NO	bb	bb	14.995
18	123678-HxCDF	35.03	2.121e3	1.742e3	1.037	1.22	1.24	47.5	YES	NO	db	db	8.122
19	123478-HxCDF	34.89	5.407e3	4.589e3	1.017	1.18	1.24	120.5	YES	NO	bd	dd	22.484
20	Total-hexafurans	34.27	3.680e4	3.072e4	1.045	1.20	1.24	826.4	YES	NO	bb	bb	153.535
21	Total-hexafurans	33.96	1.652e3	1.401e3	1.045	1.18	1.24	37.5	YES	NO	bb	bb	6.942
22	Total-hexafurans	33.43	1.382e4	1.190e4	1.045	1.16	1.24	286.7	YES	NO	bb	bb	58.488
23	123468-HXCDF	33.22	5.296e3	4.252e3	1.087	1.25	1.24	112.8	YES	NO	db	bb	20.099
24	123789-HxCDF	36.91	8.747e2	7.985e2	1.030	1.10	1.24	19.8	YES	NO	bb	bb	4.247
25	1234789-HpCDF	41.01	4.020e3	3.669e3	1.283	1.10	1.05	44.6	YES	NO	bd	bb	25.951
26	Total-heptafurans	39.44	1.175e5	1.142e5	1.305	1.03	1.05	1470.2	YES	NO	bb	bb	718.130
27	1234678-HpCDF	38.77	4.251e4	4.033e4	1.327	1.05	1.05	548.4	YES	NO	bb	bb	236.923
28	OCDF	45.25	1.076e5	1.197e5	1.447	0.90	0.89	1939.1	YES	NO	bb	bb	1712.1...
29	Total-penta1	27.18	1.437e4	1.014e4		1.42	1.55	400.4	YES	NO	bb	bb	42.766
30	Total-tetradioxins	25.38	4.112e2	5.900e2	0.879	0.70	0.77	7.8	YES	NO	bb	db	2.232
31	1368-TCDD	23.52	2.053e3	2.679e3	0.923	0.77	0.77	55.9	YES	NO	bd	bb	10.042
32	12479-PECDD	28.78	1.288e4	8.172e3	1.843	1.58	1.55	168.0	YES	NO	bb	bb	36.637
33	12378-PeCDD	31.50	8.911e2	6.546e2	0.995	1.36	1.55	18.0	YES	NO	MM	MM	4.982
34	Total-pentadioxins	30.83	7.584e2	4.620e2	1.331	1.64	1.55	17.2	YES	NO	bb	bb	2.942
35	Total-pentadioxins	30.46	1.358e3	7.630e2	1.331	1.78	1.55	22.5	YES	NO	db	db	5.114
36	Total-pentadioxins	30.27	1.344e3	7.732e2	1.331	1.74	1.55	32.1	YES	NO	dd	dd	5.105
37	Total-pentadioxins	30.13	1.128e3	6.874e2	1.331	1.64	1.55	27.8	YES	NO	bd	bd	4.376

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	Total-pentadioxins	29.91	1.284e3	8.861e2	1.331	1.45	1.55	28.7	YES	NO	bb	bb	5.233
39	Total-pentadioxins	29.30	8.659e2	5.343e2	1.331	1.62	1.55	19.2	YES	NO	bb	bb	3.376
40	123789-HxCDD	36.52	2.755e3	1.967e3	0.950	1.40	1.24	49.7	YES	NO	bb	bb	15.723
41	123678-HxCDD	36.12	5.974e3	4.857e3	1.009	1.23	1.24	98.7	YES	NO	dd	db	32.671
42	123478-HxCDD	36.00	1.395e3	1.130e3	1.027	1.23	1.24	26.7	YES	NO	bd	bd	8.104
43	Total-hexadioxins	35.13	2.032e4	1.575e4	1.028	1.29	1.24	228.3	YES	NO	bd	bd	111.070
44	Total-hexadioxins	34.77	1.047e4	8.599e3	1.028	1.22	1.24	177.5	YES	NO	bd	bb	58.725
45	124679-HXCDD	34.00	4.524e4	3.721e4	1.125	1.22	1.24	758.0	YES	NO	bb	bb	241.675
46	1234679-HPCDD	39.21	3.312e5	3.057e5	1.211	1.08	1.05	1701.0	YES	NO	bb	bb	3970.3...
47	OCDD	45.01	6.609e6	7.349e6	1.181	0.90	0.89	30912.8	YES	NO	bb	bb	12883...
48	1234678-HpCDD	40.27	2.172e5	2.038e5	1.068	1.07	1.05	1061.9	YES	NO	bb	bb	2975.5...

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	23.24	4.025e6					42.3	YES		bb		
2	FUNCTION1 PFK	23.10	7.047e5					40.1	YES		db		
3	FUNCTION1 PFK	23.01	1.495e6					34.5	YES		dd		
4	FUNCTION1 PFK	22.83	2.491e6					25.6	YES		bd		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.83	3.329e3					1.0	NO		bb		0.000
2	FUNCTION2 PFK	32.19	1.585e3					0.6	NO		bb		0.000
3	FUNCTION2 PFK	31.34	4.849e3					1.3	NO		bb		0.000
4	FUNCTION2 PFK	31.02	2.883e3					0.9	NO		bb		0.000
5	FUNCTION2 PFK	30.83	2.137e3					0.6	NO		bb		0.000
6	FUNCTION2 PFK	30.51	2.380e3					0.7	NO		bb		0.000
7	FUNCTION2 PFK	30.04	3.211e3					1.0	NO		bb		0.000
8	FUNCTION2 PFK	29.82	3.912e3					1.0	NO		bb		0.000
9	FUNCTION2 PFK	29.59	7.498e2					0.4	NO		bb		0.000
10	FUNCTION2 PFK	29.45	5.235e3					1.4	NO		bb		0.000
11	FUNCTION2 PFK	28.39	1.412e4					3.3	YES		db		0.000
12	FUNCTION2 PFK	28.36	1.048e5					4.6	YES		dd		0.000
13	FUNCTION2 PFK	28.23	8.705e4					11.2	YES		dd		0.000
14	FUNCTION2 PFK	28.15	1.496e5					15.4	YES		bd		0.000

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:44:19 Pacific Daylight Time

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.15	1.300e4					1.8	NO		bb		0.000
2	FUNCTION3 PFK	36.99	8.737e3					1.2	NO		bb		0.000
3	FUNCTION3 PFK	36.15	1.588e3					0.7	NO		db		0.000
4	FUNCTION3 PFK	36.10	6.091e3					1.5	NO		bd		0.000
5	FUNCTION3 PFK	34.92	1.715e4					2.2	NO		bb		0.000
6	FUNCTION3 PFK	34.81	1.642e4					1.6	NO		bb		0.000
7	FUNCTION3 PFK	34.67	5.623e3					1.2	NO		bb		0.000
8	FUNCTION3 PFK	33.99	4.464e3					1.1	NO		db		0.000
9	FUNCTION3 PFK	33.92	1.741e4					2.6	NO		bd		0.000
10	FUNCTION3 PFK	33.25	1.450e4					2.0	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.21	1.488e4					2.7	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	23.75	2.137e2					4.8	YES		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	23.36	3.809e2					10.0	YES		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.70	8.157e1					2.2	NO		bb		0.000
2	FUNCTION2 HPCD...	28.52	7.319e1					2.4	NO		bb		0.000

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:44:19 Pacific Daylight Time

ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.19	2.098e2					8.1	YES		bb		0.000
2	FUNCTION3 OCDPE	33.24	1.094e2					2.7	NO		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.43	2.105e2					6.5	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.02	7.027e2					18.7	YES		bb		0.000

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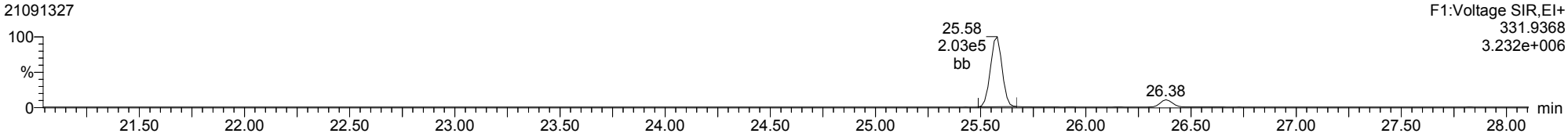
ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

13C-1234-TCDD



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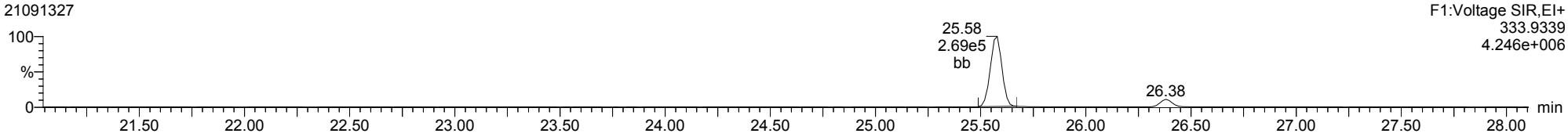
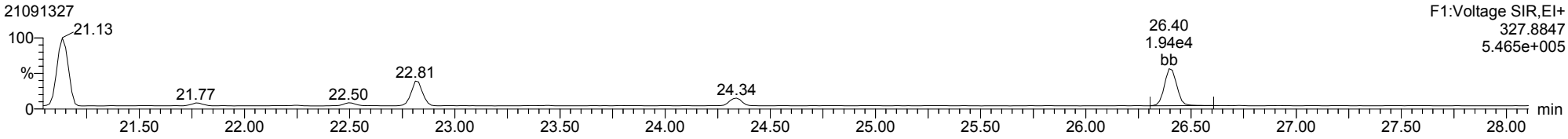


37CL-2378-TCDD



ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

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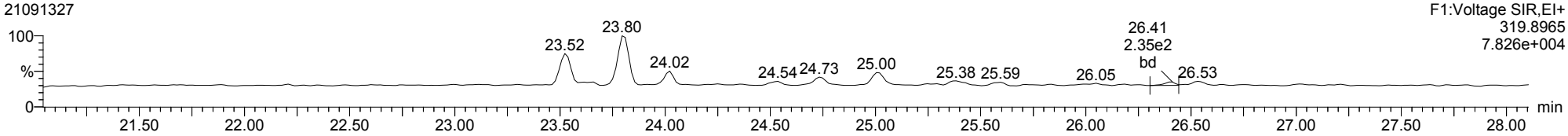

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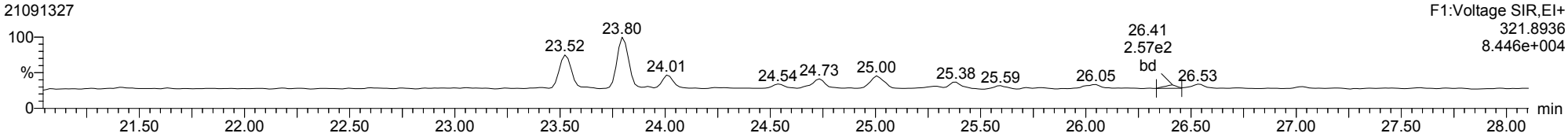

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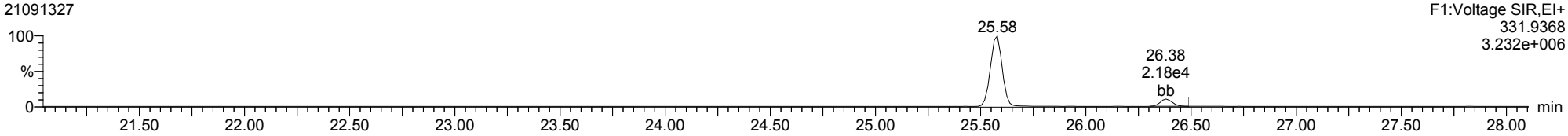

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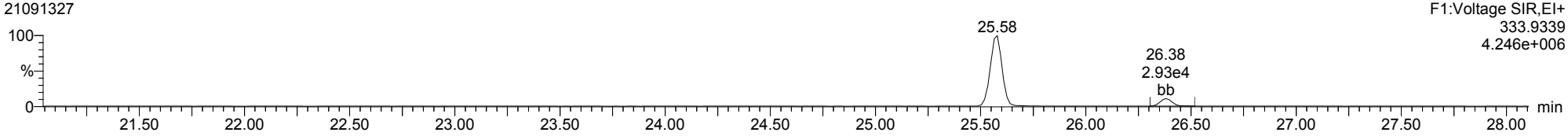
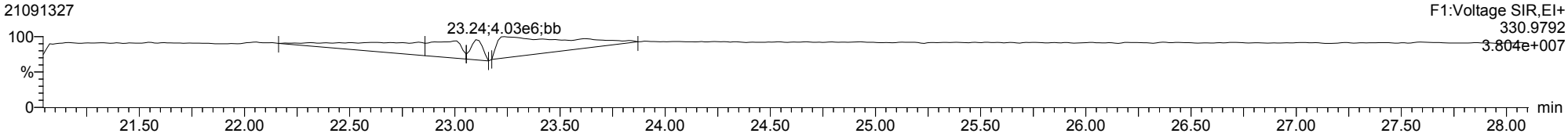
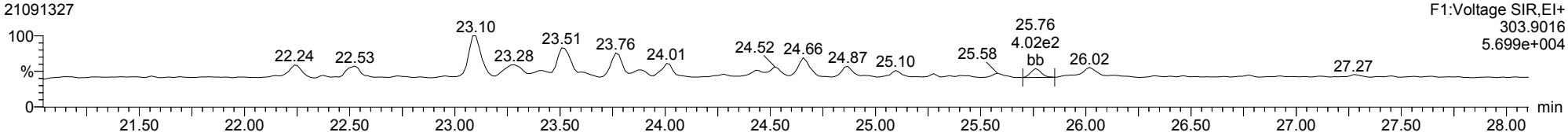


FUNCTION1 PFK



ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

2378-TCDF



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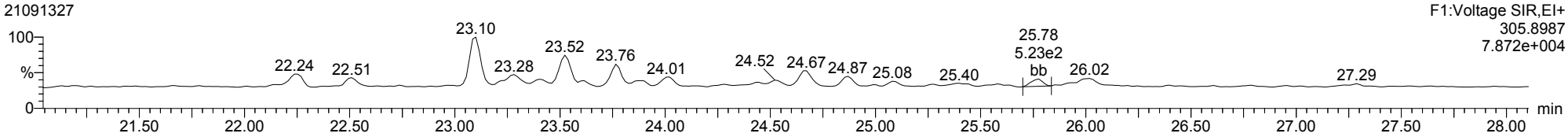

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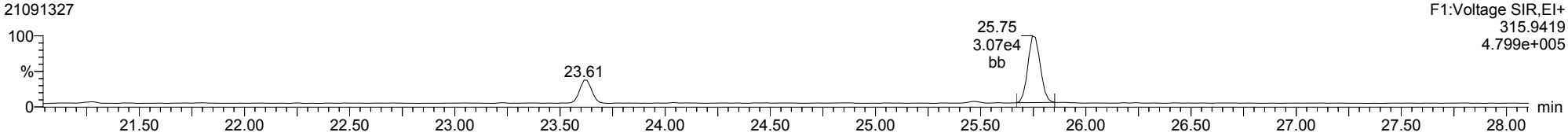

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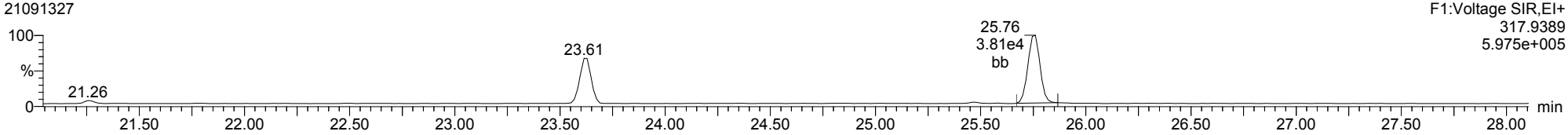

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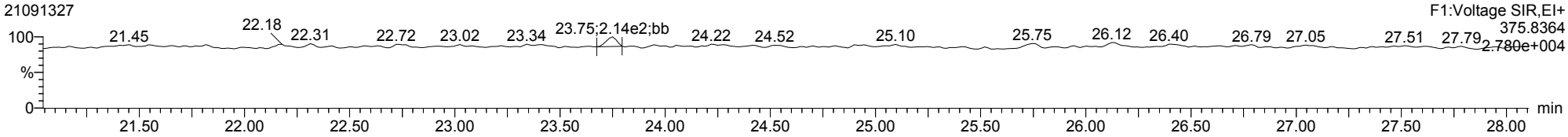
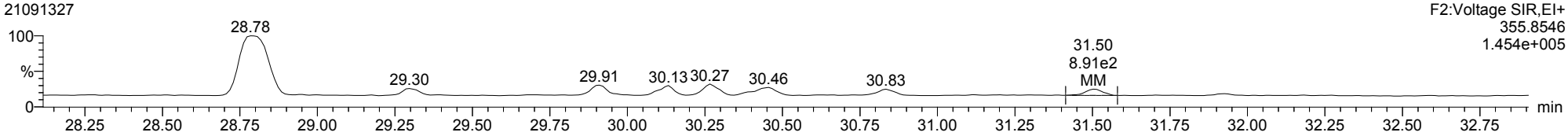


ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

12378-PeCDD



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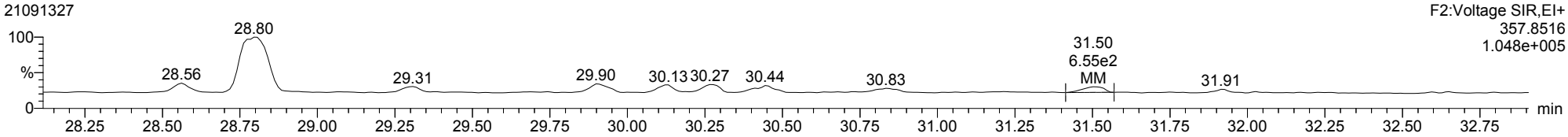

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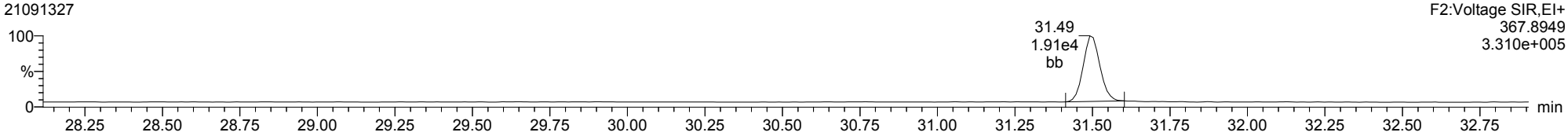

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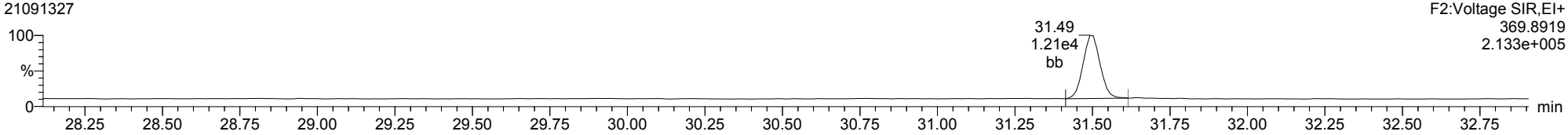
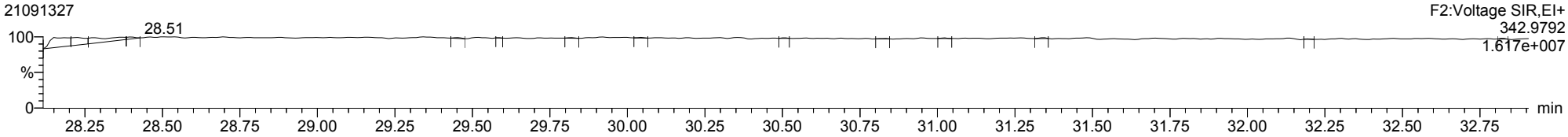


FUNCTION2 PFK



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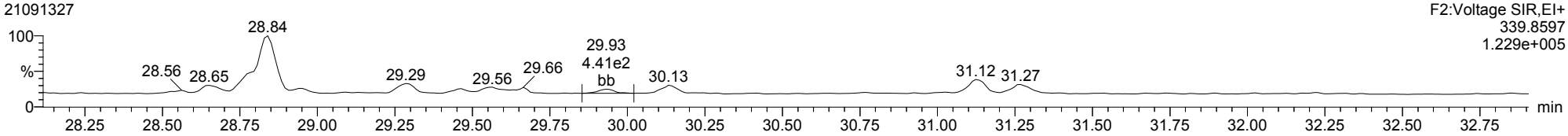

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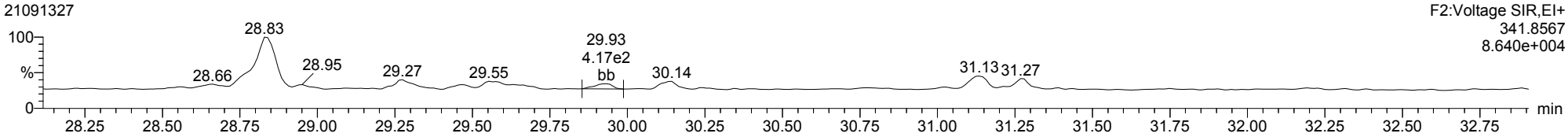

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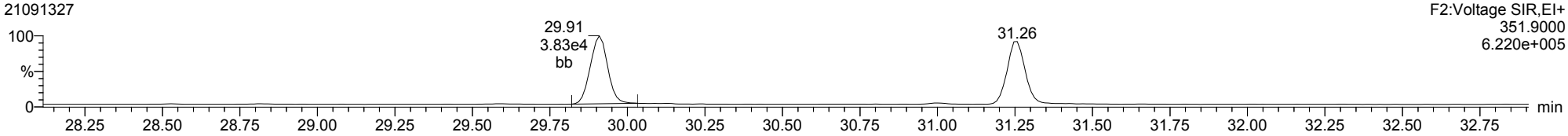

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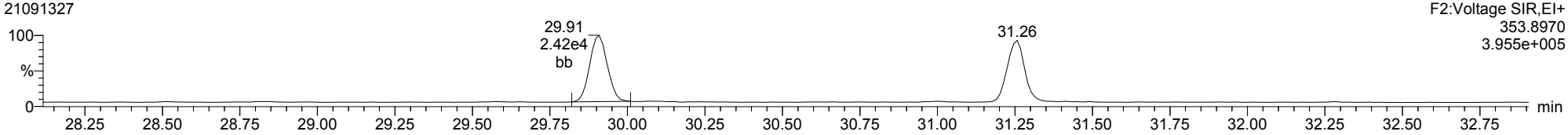
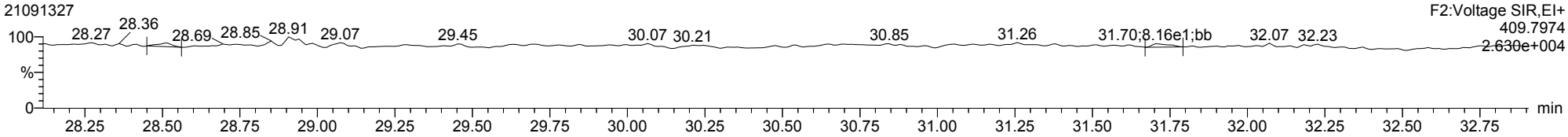


FUNCTION2 HPCDPE



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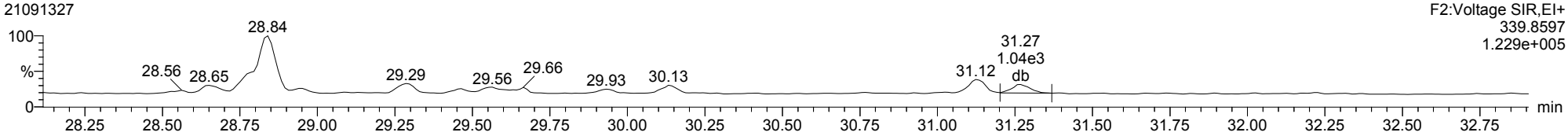
23478-PeCDF



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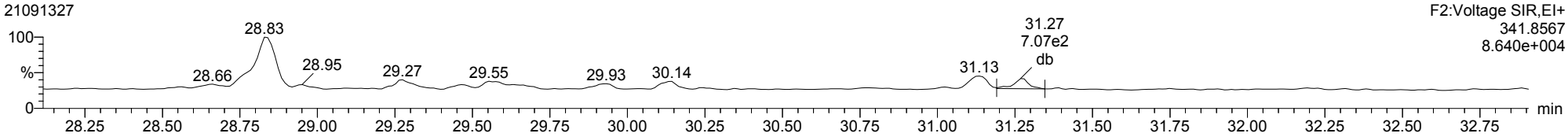

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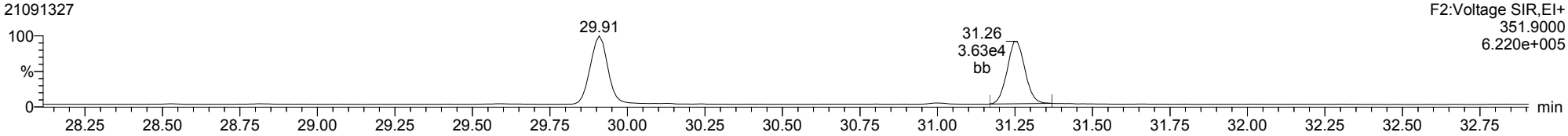

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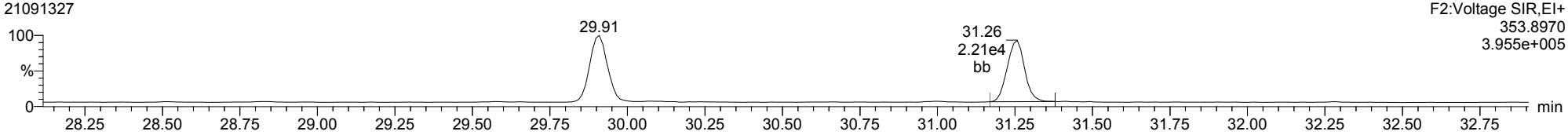
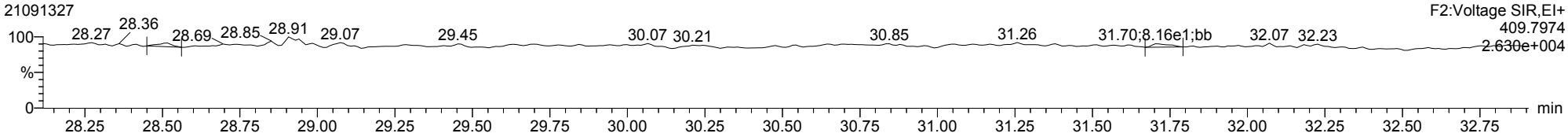


FUNCTION2 HPCDPE



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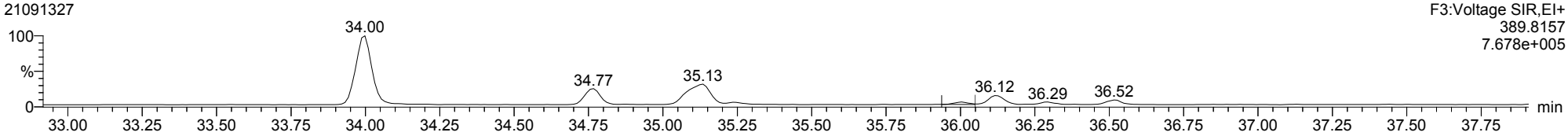
123478-HxCDD



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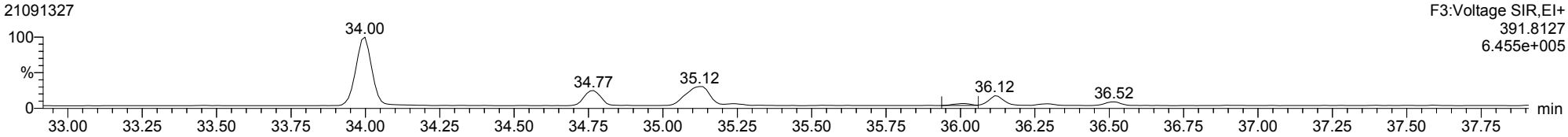

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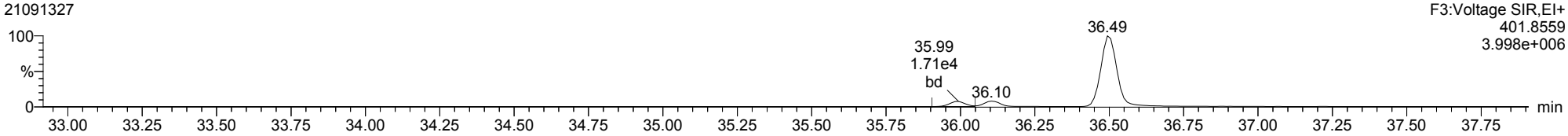

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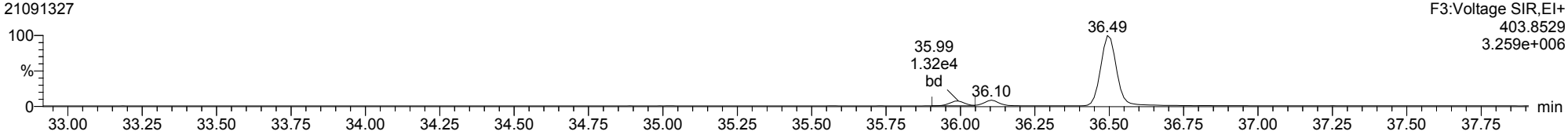
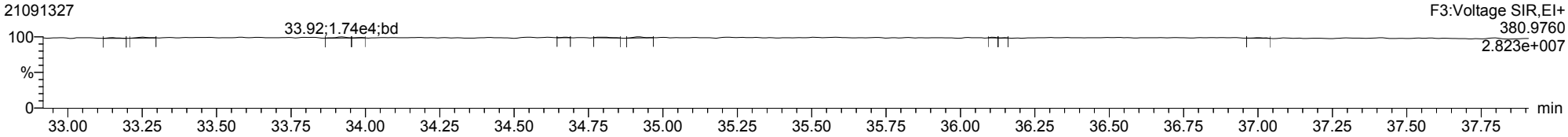


FUNCTION3 PFK



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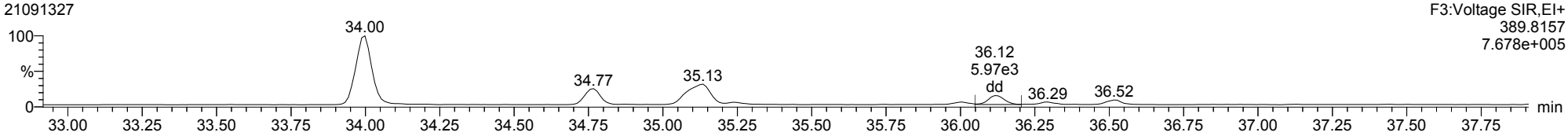

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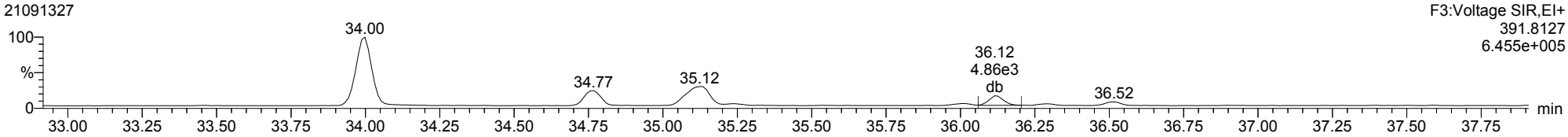

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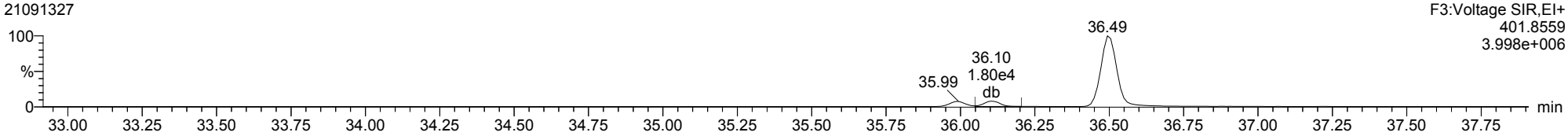

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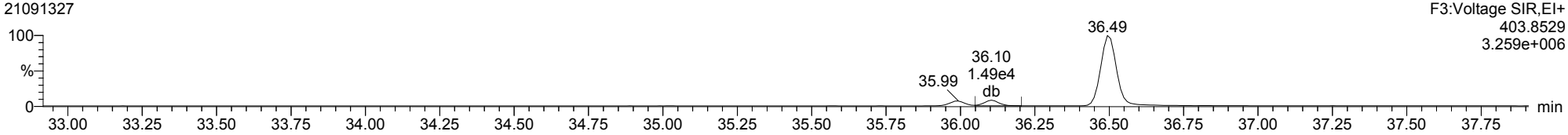

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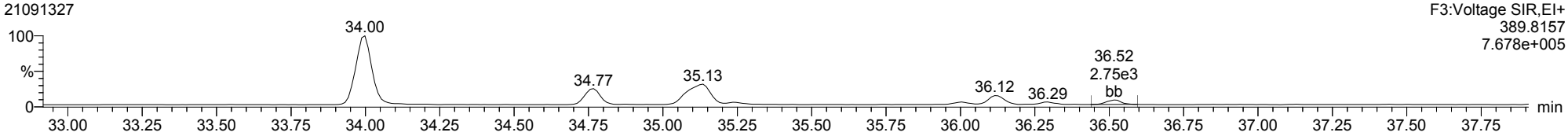

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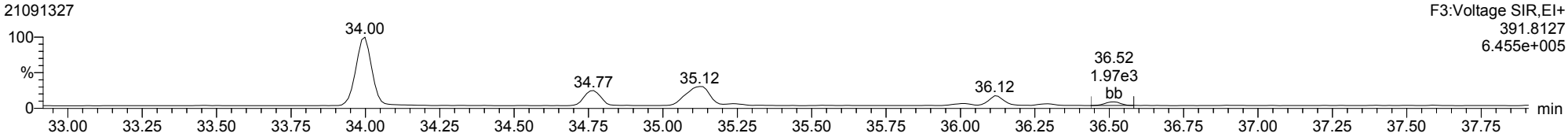

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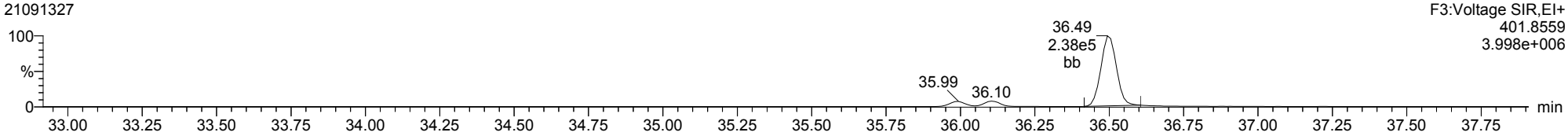

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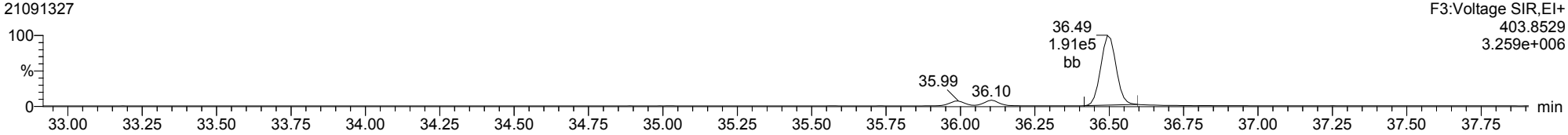

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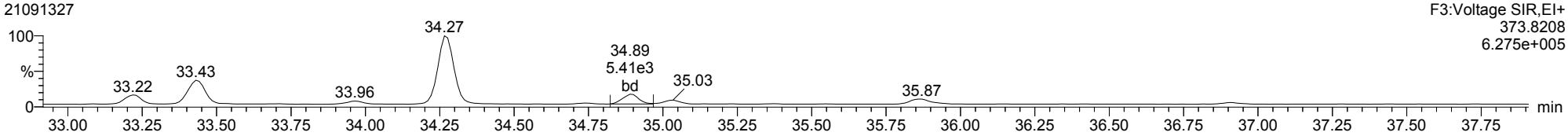
123478-HxCDF



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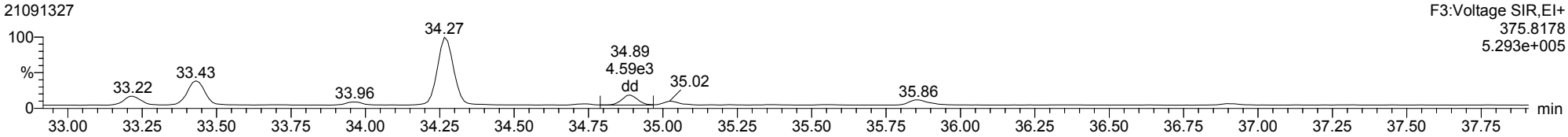

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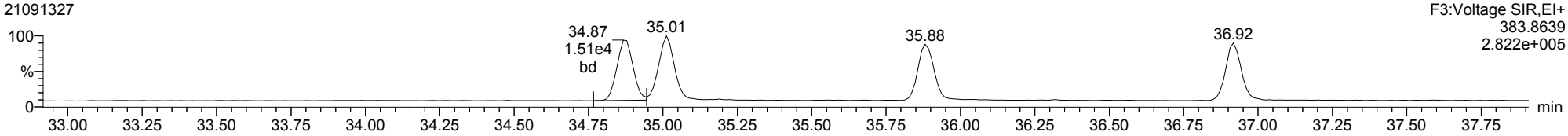

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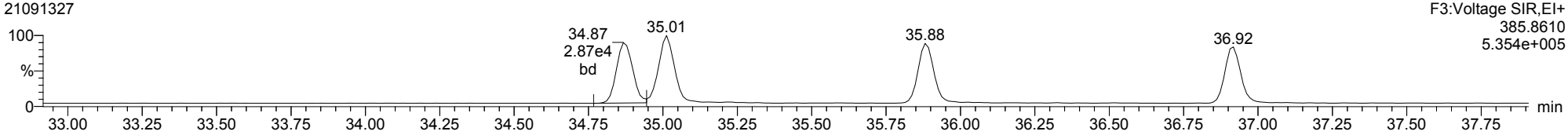
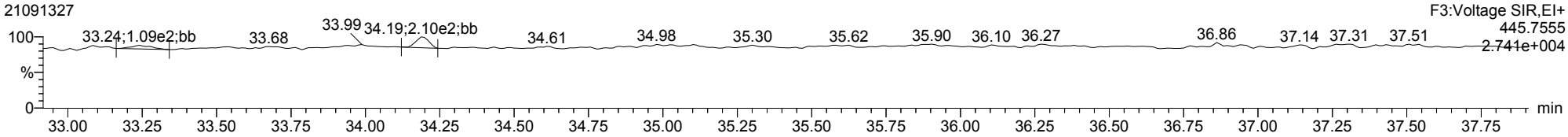


FUNCTION3 OCDPE



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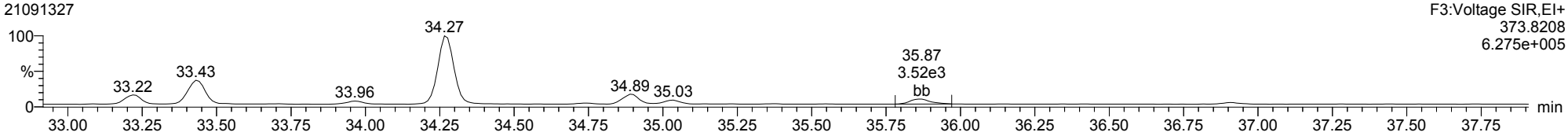
234678-HxCDF



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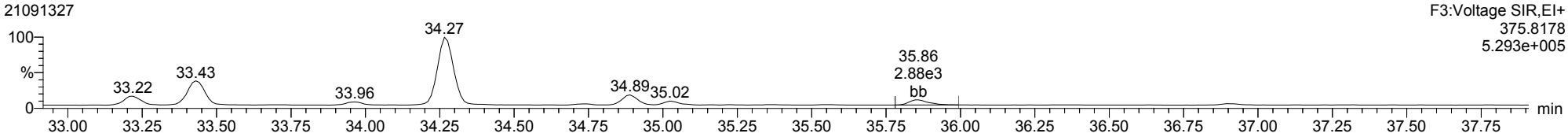

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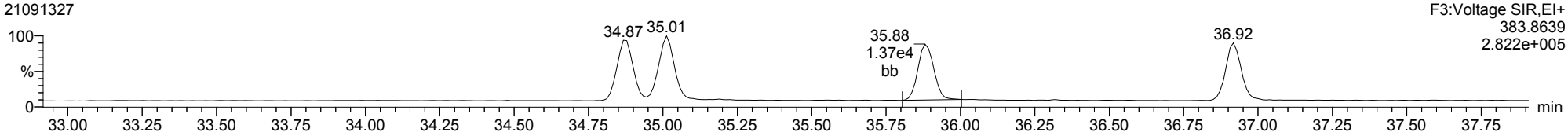

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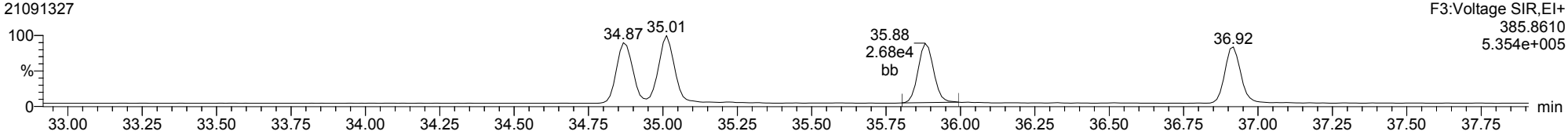

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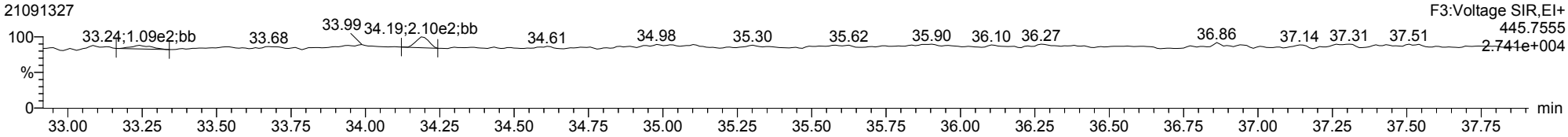

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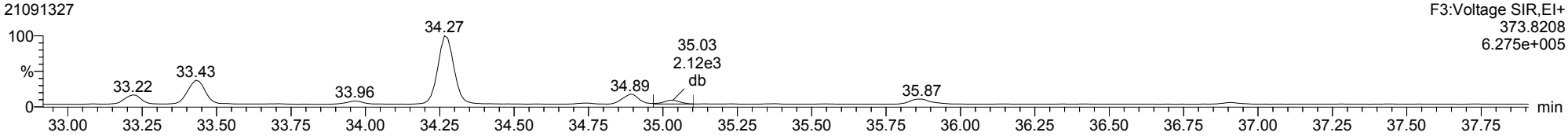

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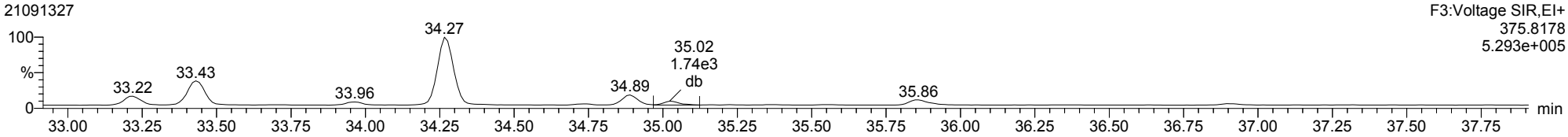

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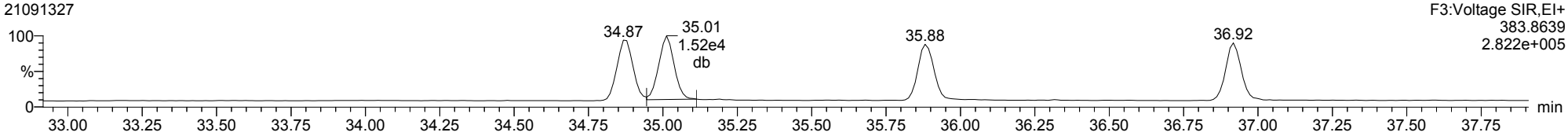

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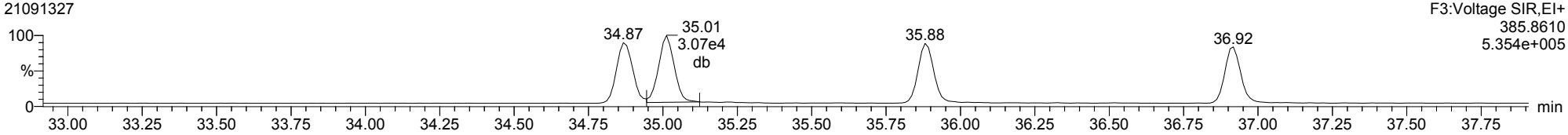

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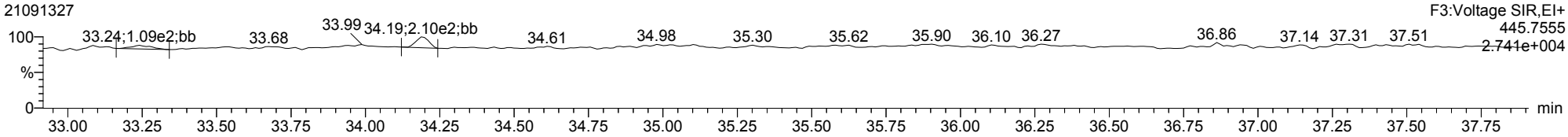

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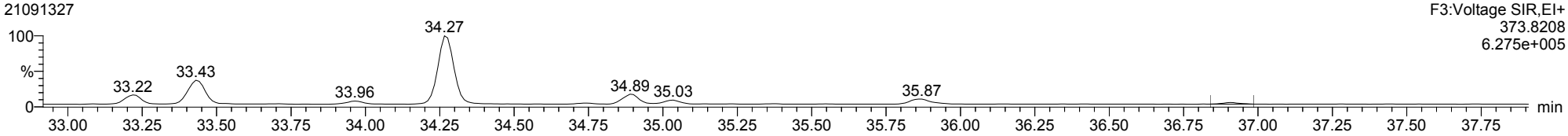

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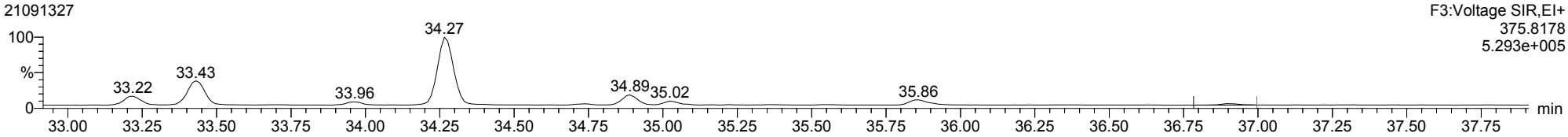

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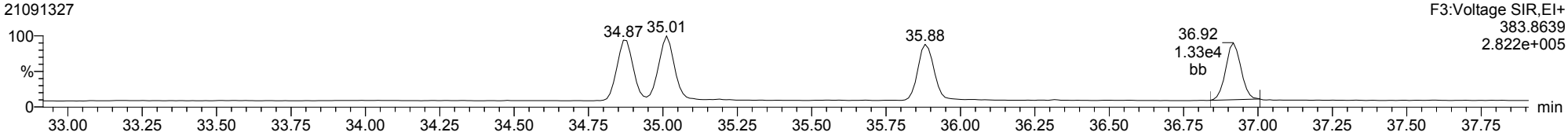

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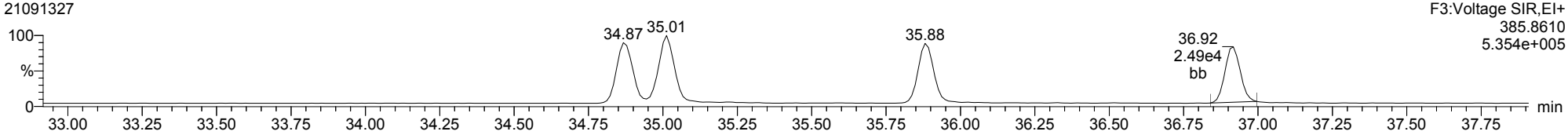

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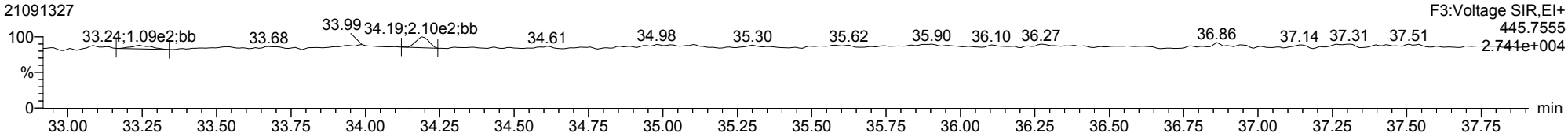

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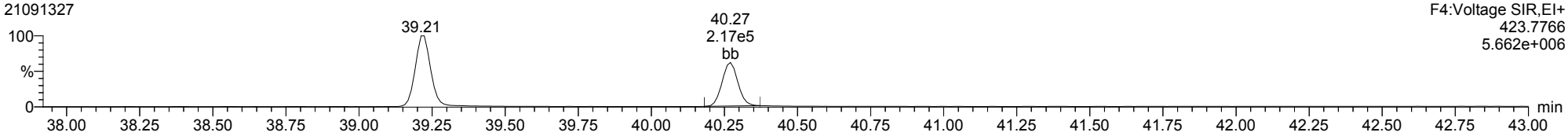

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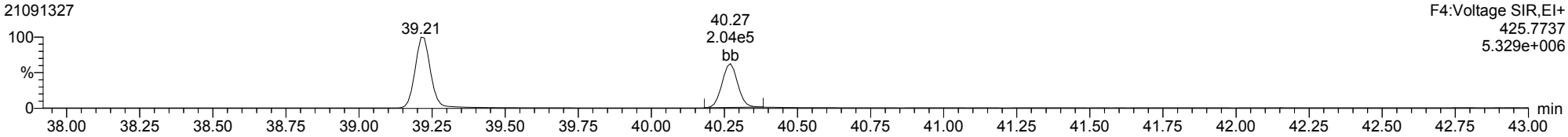

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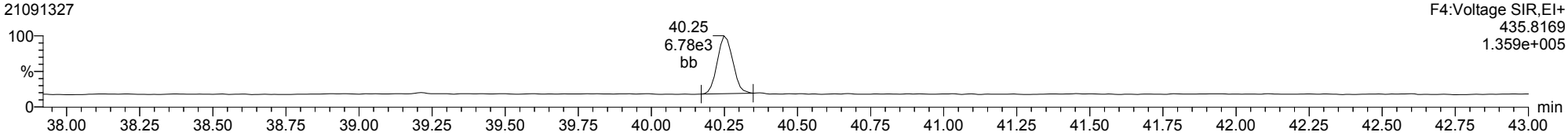

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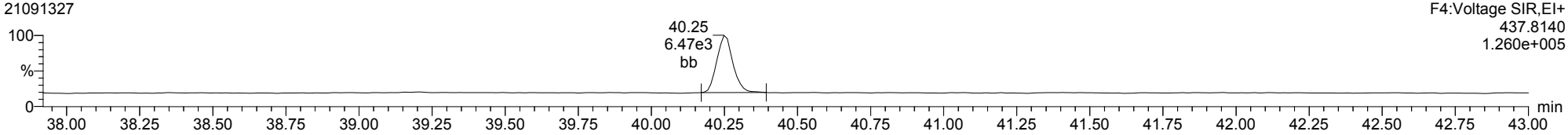

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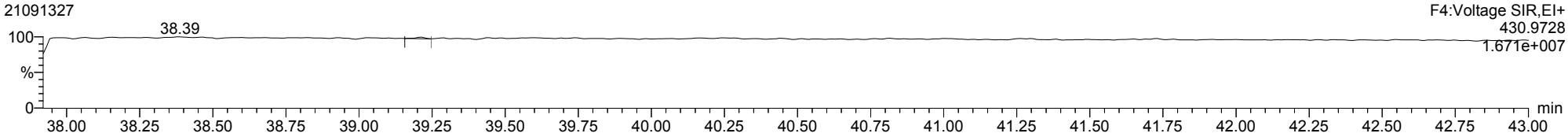

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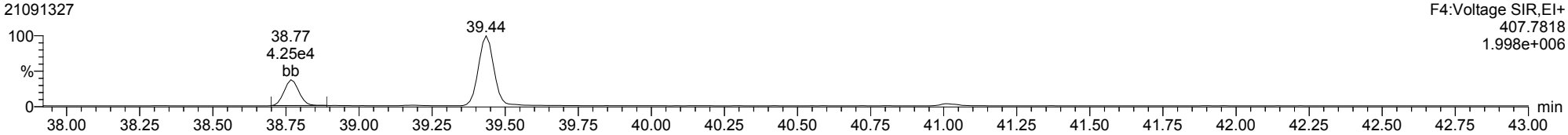

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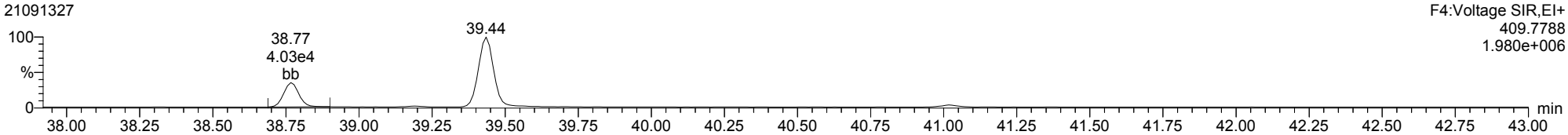

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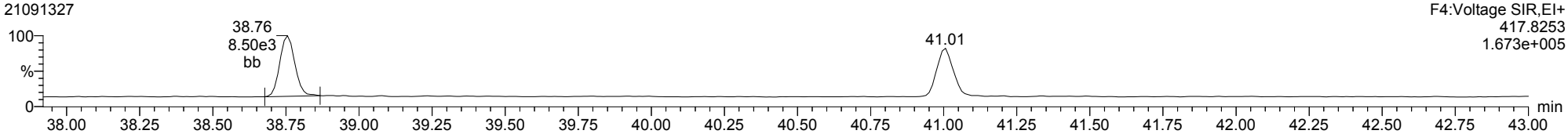

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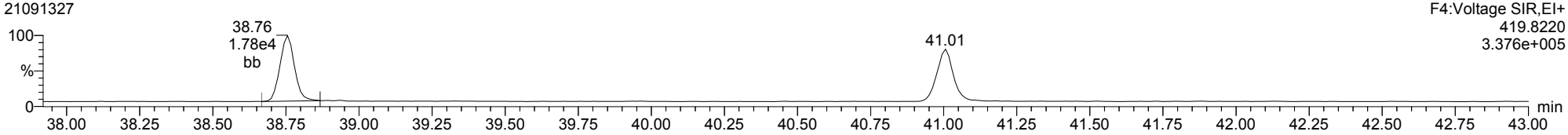

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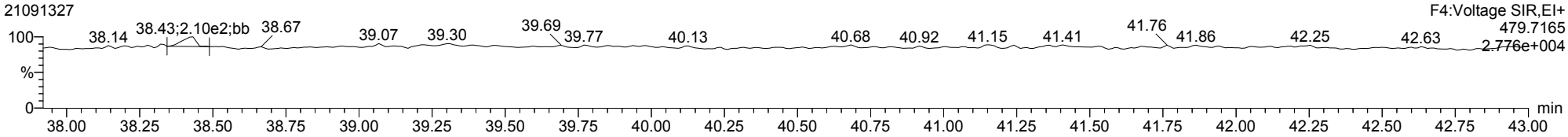

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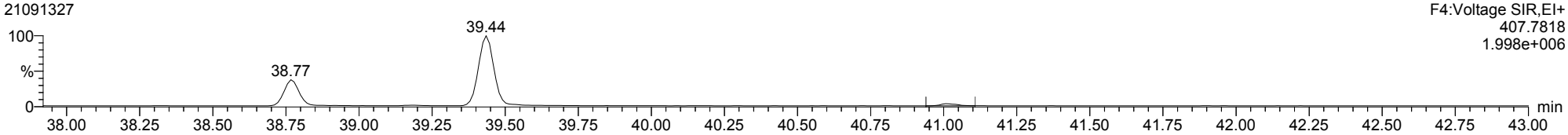

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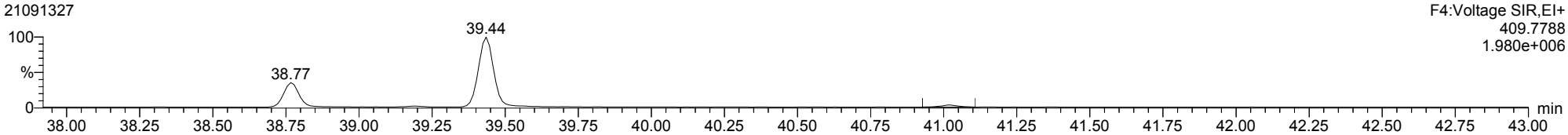

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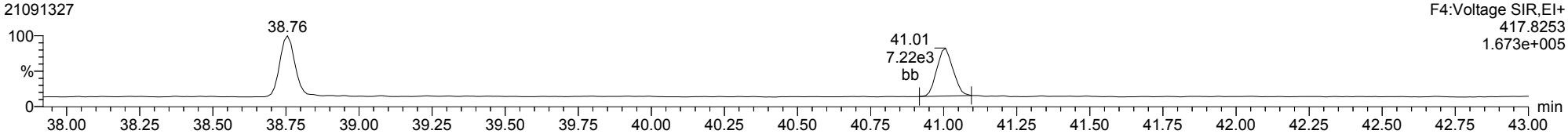

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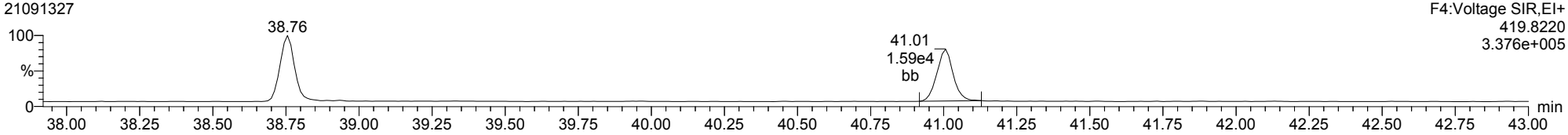

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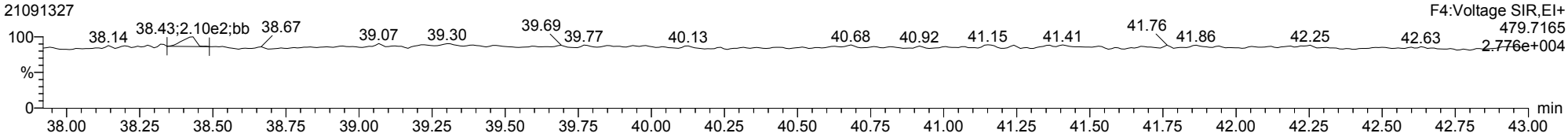

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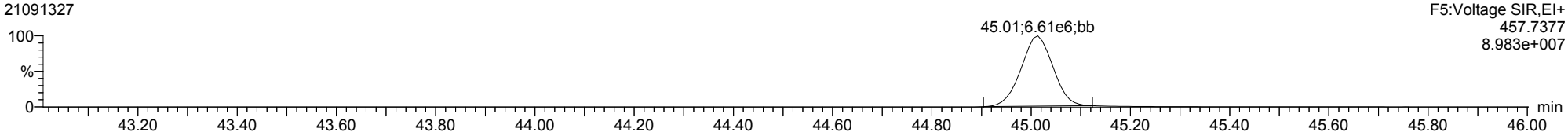

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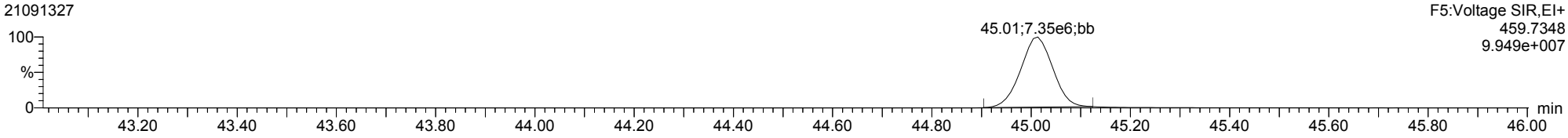

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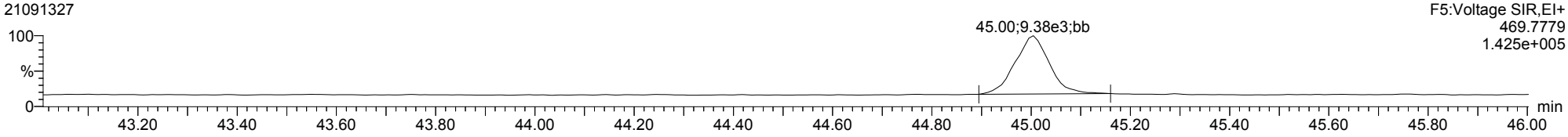

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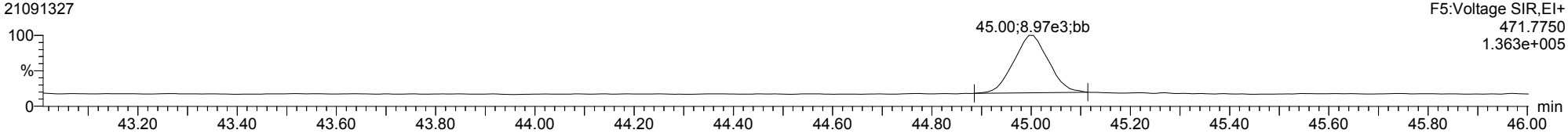
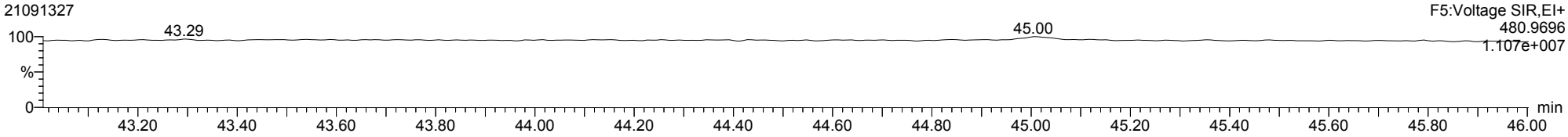


FUNCTION5 PFK



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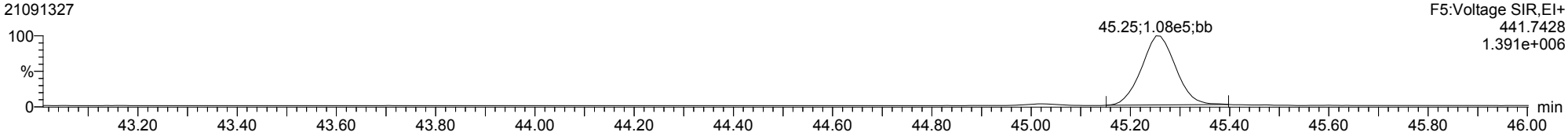

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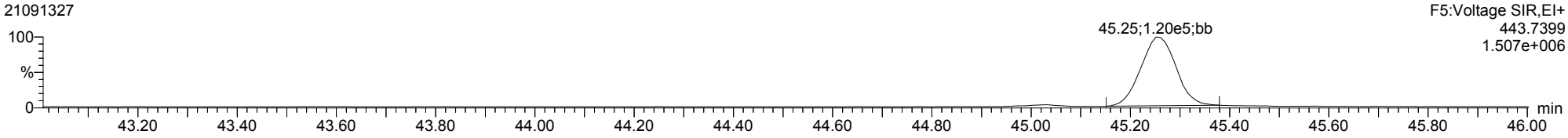

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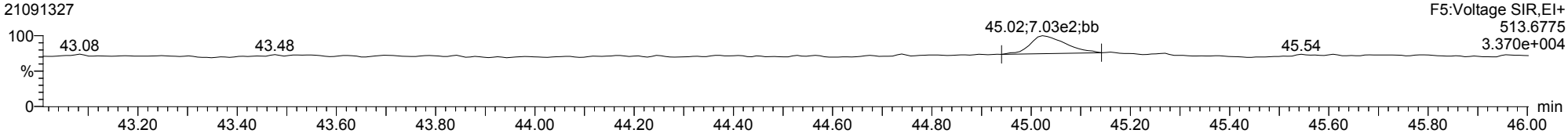

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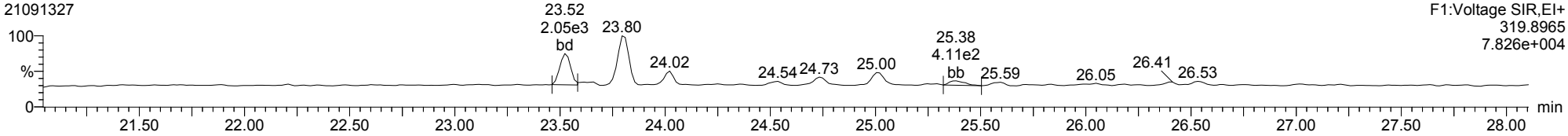
ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



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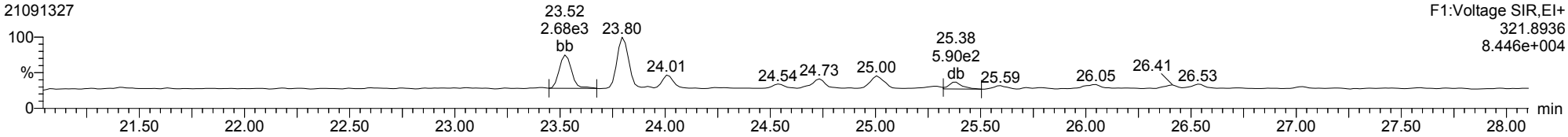

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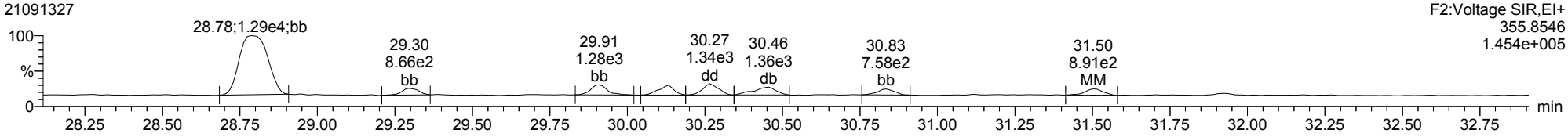

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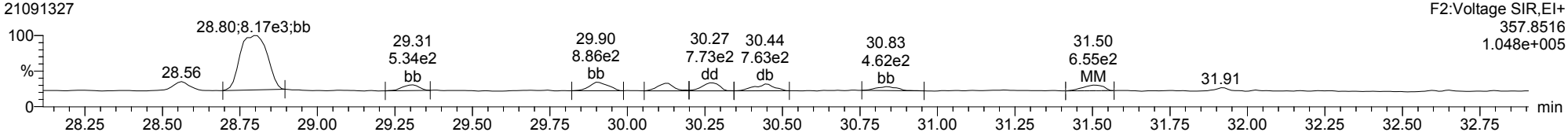

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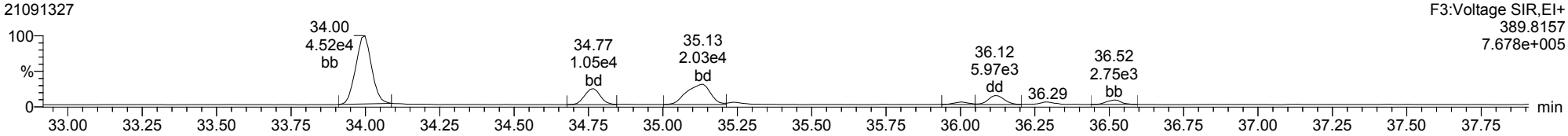

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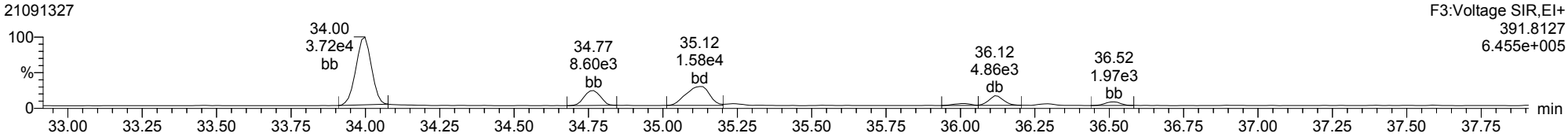

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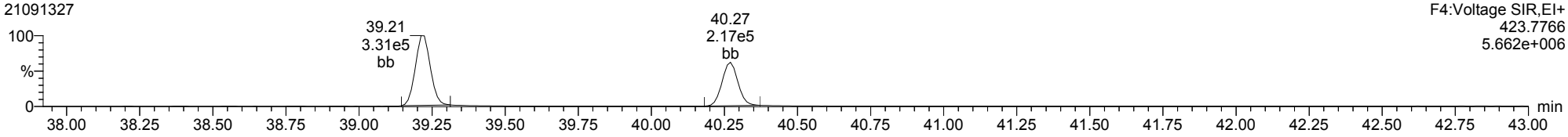

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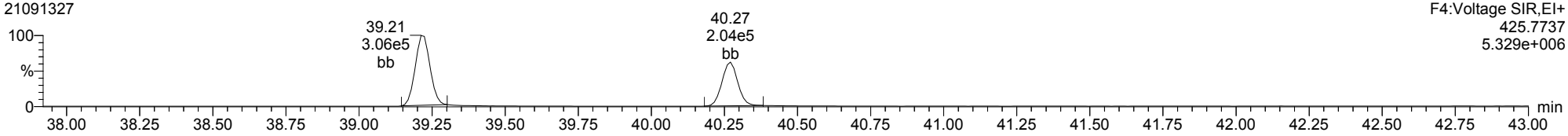

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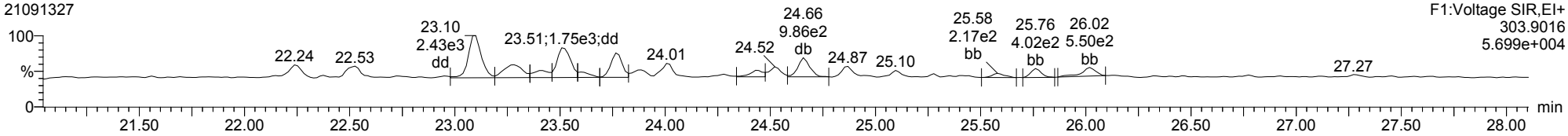
Total-tetrafurans



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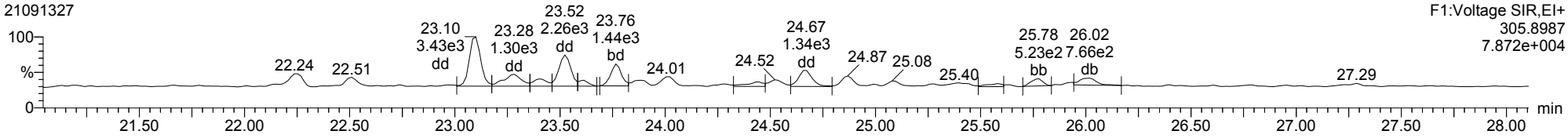

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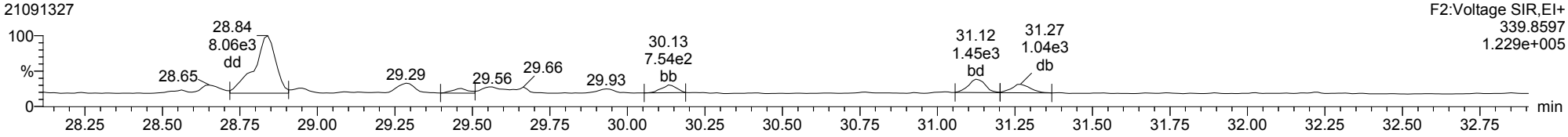

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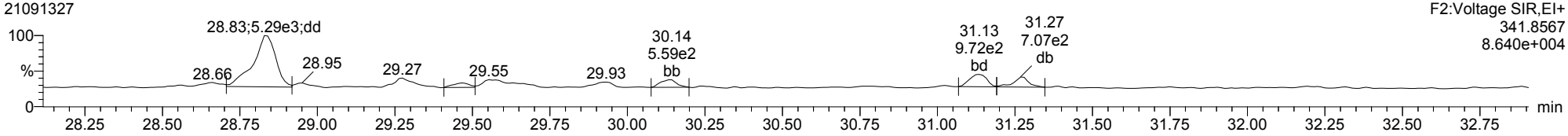

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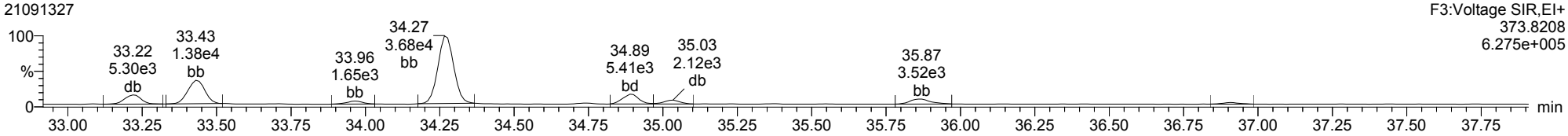
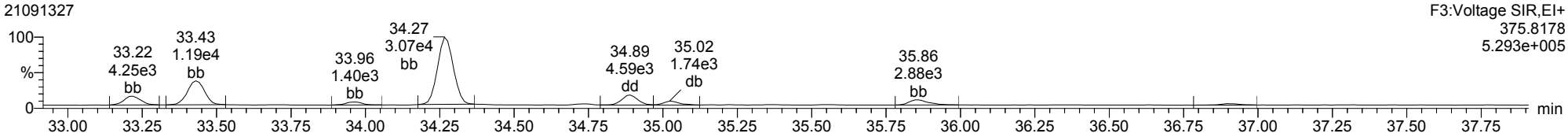
Printed: Wednesday, September 15, 2021 14:44:19 Pacific Daylight Time

ID: BJH0150-DUP3, Name: 21091327, Date: 14-Sep-2021, Time: 09:14:02, Conditions: AUTOSPEC01, User: pk

Total-hexafurans



Total-hexafurans



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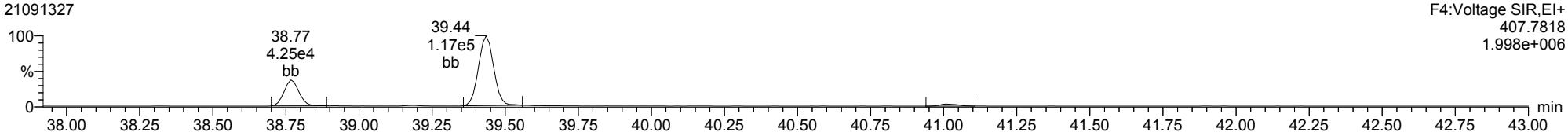
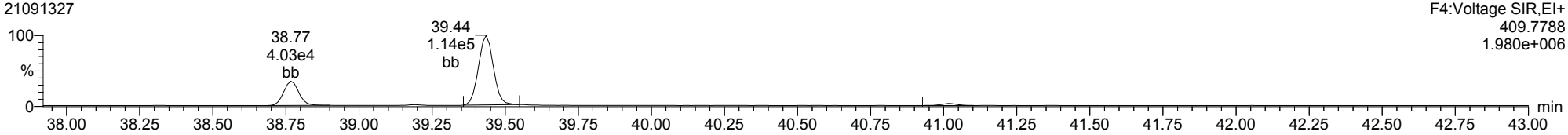


Total-heptafurans



Analytical Resources, Incorporated
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0150-SRM1
Batch: BJH0150
Initial/Final: 9.99 g / 20 uL
Preparation: EPA 1613
Analyzed: 09/11/2021 14:36
Standard ID: J006843
Expires: 12/28/2021
Standard Lot#: PSRM0137
Description: Puget Sound reference-SRM

ANALYTE	TRUE (ng/kg wet)	FOUND (ng/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
2,3,7,8-TCDF	1.1110	0.865	0.119	1.00	J	77.9	50 - 150
2,3,7,8-TCDD	1.0509	1.08	0.150	1.00		103	50 - 150
1,2,3,7,8-PeCDF	1.2311	0.928	0.240	1.00	J	75.3	50 - 150
2,3,4,7,8-PeCDF	1.0710	0.918	0.220	1.00	J	85.7	50 - 150
1,2,3,7,8-PeCDD	1.0810	1.44	0.170	1.00		133	50 - 150
1,2,3,4,7,8-HxCDF	3.0227	3.13	0.280	1.00		104	50 - 150
1,2,3,6,7,8-HxCDF	1.0910	1.10	0.200	1.00		101	50 - 150
2,3,4,6,7,8-HxCDF	1.8316	1.96	0.170	1.00		107	50 - 150
1,2,3,7,8,9-HxCDF	0.51146	0.630	0.190	1.00	EMPC, J	123	50 - 150
1,2,3,4,7,8-HxCDD	1.5914	1.42	0.170	1.00		89.0	50 - 150
1,2,3,6,7,8-HxCDD	3.8835	3.73	0.180	1.00		96.0	50 - 150
1,2,3,7,8,9-HxCDD	3.0427	2.91	0.220	1.00		95.6	50 - 150
1,2,3,4,6,7,8-HpCDF	18.717	20.3	0.210	1.00	B	109	50 - 150
1,2,3,4,7,8,9-HpCDF	1.6315	1.83	0.240	1.00		112	50 - 150
1,2,3,4,6,7,8-HpCDD	90.682	104	0.561	2.50	B	114	50 - 150
OCDF	58.453	56.0	1.10	2.50		95.8	50 - 150
OCDD	811.73	796	4.60	10.0	B	98.0	50 - 150

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:21:32 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-SRM1, Name: 21091106, Date: 11-Sep-2021, Time: 14:36:32, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	2.028e3	2.813e3	1.108	0.721	0.770	1673	1740	2.84e4	4.38e4	17.0	25.2	NO	bd	dd	0.432
12378-PeCDF	29.909	1.000	2.711e3	1.912e3	1.015	1.417	1.550	1282	1764	4.82e4	3.06e4	37.6	17.3	NO	bb	bb	0.463
23478-PeCDF	31.257	1.001	2.830e3	2.057e3	1.126	1.376	1.550	1282	1764	3.90e4	3.13e4	30.4	17.7	NO	db	dd	0.459
123478-HxCDF	34.878	1.001	6.701e3	5.515e3	1.017	1.215	1.240	1314	1186	1.02e5	8.47e4	77.5	71.4	NO	bd	dd	1.563
234678-HxCDF	35.892	1.000	4.389e3	3.233e3	1.052	1.358	1.240	1314	1186	4.91e4	3.96e4	37.4	33.4	NO	bb	bb	0.977
123678-HxCDF	35.012	1.000	2.384e3	2.033e3	1.037	1.173	1.240	1314	1186	3.75e4	3.16e4	28.6	26.6	NO	db	db	0.549
123789-HxCDF	36.895	1.000	1.083e3	1.040e3	1.030	1.041	1.240	1314	1186	1.42e4	1.62e4	10.8	13.6	YES	bb	bb	0.315
1234678-HpCDF	38.744	1.000	3.873e4	3.622e4	1.327	1.069	1.050	1247	1193	6.40e5	6.12e5	513.1	512.9	NO	bb	bb	10.151
1234789-HpCDF	40.995	1.000	2.879e3	2.494e3	1.283	1.154	1.050	1247	1193	4.51e4	4.14e4	36.2	34.7	NO	bb	bb	0.915
OCDF	45.233	1.006	6.140e4	6.683e4	1.447	0.919	0.890	1359	1252	7.50e5	8.14e5	551.8	650.1	NO	bb	bb	27.963
2378-TCDD	26.396	1.001	1.684e3	2.268e3	0.920	0.742	0.770	1489	1060	2.46e4	3.65e4	16.5	34.4	NO	dd	bd	0.538
12378-PeCDD	31.503	1.001	2.350e3	1.433e3	0.995	1.640	1.550	1098	1174	3.58e4	1.98e4	32.6	16.8	NO	bb	bb	0.721
123478-HxCDD	36.004	1.000	2.691e3	1.939e3	1.027	1.388	1.240	1216	1414	4.39e4	3.52e4	36.1	24.9	NO	bd	bd	0.707
123678-HxCDD	36.115	1.000	6.741e3	5.439e3	1.009	1.239	1.240	1216	1414	1.09e5	9.07e4	89.8	64.2	NO	db	dd	1.862
123789-HxCDD	36.505	1.011	4.866e3	4.011e3	0.950	1.213	1.240	1216	1414	8.32e4	6.42e4	68.4	45.4	NO	bb	bb	1.453
1234678-HpCDD	40.248	1.000	1.126e5	1.065e5	1.068	1.056	1.050	2386	1733	1.82e6	1.70e6	763.6	980.0	NO	bb	bb	51.833
OCDD	44.977	1.000	7.019e5	7.858e5	1.181	0.893	0.890	2187	930	8.90e6	9.89e6	4071.6	10635.0	NO	bb	bb	397.521
13C-2378-TCDF	25.746	1.007	4.504e5	5.607e5	1.427	0.803	0.770	5242	2416	6.92e6	8.59e6	1320.9	3554.8	NO	bb	bb	79.931
13C-12378-PeCDF	29.898	1.169	6.025e5	3.807e5	1.297	1.583	1.550	1584	1829	9.39e6	5.92e6	5931.6	3238.4	NO	bb	bb	85.466
13C-23478-PeCDF	31.235	1.222	5.816e5	3.650e5	1.236	1.594	1.550	1584	1829	9.01e6	5.70e6	5687.6	3117.6	NO	bb	bb	86.335
13C-123478-HxCDF	34.856	0.955	2.622e5	5.061e5	1.242	0.518	0.510	1947	1804	4.33e6	8.38e6	2223.7	4645.0	NO	bd	bd	70.534
13C-123678-HxCDF	35.001	0.959	2.606e5	5.161e5	1.343	0.505	0.510	1947	1804	4.20e6	8.13e6	2156.5	4505.8	NO	db	db	65.934
13C-234678-HxCDF	35.881	0.983	2.512e5	4.902e5	1.215	0.512	0.510	1947	1804	4.06e6	7.86e6	2084.0	4358.7	NO	bb	bb	69.611
13C-123789-HxCDF	36.906	1.011	2.217e5	4.333e5	1.008	0.512	0.510	1947	1804	3.85e6	7.57e6	1977.8	4196.9	NO	bb	bb	74.151
13C-1234678-HpCDF	38.733	1.061	1.749e5	3.813e5	0.926	0.459	0.440	1354	1743	3.00e6	6.50e6	2215.5	3729.9	NO	bb	bb	68.480
13C-1234789-HpCDF	40.984	1.123	1.439e5	3.139e5	0.758	0.458	0.440	1354	1743	2.23e6	4.83e6	1650.1	2768.5	NO	bb	bb	68.896
13C-1234-TCDD	25.564	0.000	3.847e5	5.021e5	1.000	0.766	0.770	2511	1645	6.02e6	7.83e6	2396.5	4761.2	NO	bb	bb	100.000
13C-2378-TCDD	26.365	1.031	3.465e5	4.512e5	1.116	0.768	0.770	2511	1645	5.26e6	6.93e6	2095.4	4212.6	NO	bb	bb	80.571
13C-12378-PeCDD	31.480	1.231	3.254e5	2.020e5	0.732	1.611	1.550	1778	1105	5.12e6	3.19e6	2878.4	2885.4	NO	bb	bb	81.242
13C-123478-HxCDD	35.993	0.986	3.551e5	2.818e5	0.960	1.260	1.240	1847	1383	5.80e6	4.54e6	3139.1	3285.6	NO	bd	bd	75.686
13C-123678-HxCDD	36.104	0.989	3.574e5	2.907e5	1.041	1.229	1.240	1847	1383	5.89e6	4.71e6	3192.0	3403.4	NO	db	db	70.993
13C-1234678-HpCDD	40.237	1.103	1.981e5	1.976e5	0.632	1.003	1.050	1371	1287	3.14e6	3.05e6	2289.7	2367.2	NO	bb	bd	71.369
13C-OCDD	44.959	1.232	3.021e5	3.318e5	0.504	0.910	0.890	1404	1406	3.85e6	4.22e6	2746.0	3004.2	NO	bb	bb	143.522
13C-123789-HxCDD	36.494	0.000	4.881e5	3.887e5	1.000	1.256	1.240	1847	1383	8.17e6	6.55e6	4422.1	4738.3	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	3.354e5		1.084			1516		5.07e6		3340.1			dd		34.910

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
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ID: BJH0150-SRM1, Name: 21091106, Date: 11-Sep-2021, Time: 14:36:32, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	5.742e2	6.813e2	1.425	0.843	0.770	1673	1740	9.40e3	9.23e3	5.6	5.3	NO	bb	bb	0.087
1289-TCDF					1.043		0.770	1673	1740								
13468-PECDF	27.076	0.906	1.120e3	8.323e2	1.376	1.345	1.550	736	1046	2.32e4	1.66e4	31.6	15.8	NO	bd	dd	0.144
12389-PECDF					1.000		1.550	1282	1764								
123468-HXCDF	33.196	0.952	6.089e3	4.823e3	1.087	1.263	1.240	1314	1186	9.93e4	7.68e4	75.6	64.8	NO	bb	bb	1.307
1368-TCDD	23.508	0.892	1.350e3	1.551e3	0.923	0.870	0.770	1489	1060	2.26e4	2.61e4	15.2	24.6	NO	bb	bd	0.394
1289-TCDD					0.794		0.770	1489	1060								
12479-PECDD	28.806	0.915	3.540e3	1.326e3	1.843	2.670	1.550	1098	1174	3.41e4	2.38e4	31.0	20.3	YES	bb	db	0.501
12389-PECDD	31.926	1.014	6.338e2	2.819e2	1.154	2.248	1.550	1098	1174	7.17e3	5.28e3	6.5	4.5	YES	bb	bb	0.151
124679-HXCDD	33.976	0.944	1.768e4	1.430e4	1.125	1.236	1.240	1216	1414	2.87e5	2.34e5	236.3	165.5	NO	bb	bb	4.463
1234679-HPCDD	39.201	0.974	1.760e5	1.621e5	1.211	1.086	1.050	2386	1733	3.03e6	2.82e6	1267.9	1625.2	NO	bb	bb	70.555
Total-tetrafurans			2.908e4		1.192			1673		4.30e5							5.719
Total-penta1			1.721e4					736		2.56e5							3.236
Total-pentafurans			3.083e4		1.047			1282		4.70e5							4.977
Total-hexafurans			6.614e4		1.045			1314		1.02e6							15.348
Total-heptafurans			1.223e5		1.305			1247		2.00e6							34.946
Total-Furans			3.291e5		1.158			1673		4.97e6							92.526
Total-tetradioxins			4.515e3		0.879			1489		6.69e4							1.405
Total-pentadioxins			5.097e3		1.331			1098		8.27e4							1.392
Total-hexadioxins			5.972e4		1.028			1216		8.63e5							16.090
Total-heptadioxins			2.885e5		1.140			2386		4.85e6							122.388
Total-Dioxins			1.060e6		1.092			1489		1.48e7							538.795
Total-TEQ			1.389e6					1489		1.97e7							631.322
FUNCTION1 PFK			1.543e8					952693		1.46e9							
FUNCTION2 PFK			1.497e7					1021536		6.28e7							0.000
FUNCTION3 PFK			3.306e7					947136		1.25e8							0.000
FUNCTION4 PFK			2.418e6					636370		4.47e7							
FUNCTION5 PFK			0.000e0					286840		0.00e0							
FUNCTION1 HXCD...			3.005e3					980		4.78e4							0.000
FUNCTION1 HPCD...			2.184e4					984		3.74e5							0.000
FUNCTION2 HPCD...			6.228e2					1196		1.00e4							0.000
FUNCTION3 OCDPE			3.797e2					613		7.58e3							0.000
FUNCTION4 NCDPE			9.040e3					834		1.60e5							0.000
FUNCTION5 DCDPE			0.000e0					555		0.00e0							

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:21:32 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: BJH0150-SRM1, Name: 21091106, Date: 11-Sep-2021, Time: 14:36:32, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.17	1.138e3	1.445e3	1.192	0.79	0.77	11.1	YES	NO	db	db	0.214
2	Total-tetrafurans	24.02	2.630e3	3.751e3	1.192	0.70	0.77	18.7	YES	NO	bd	dd	0.529
3	Total-tetrafurans	23.87	1.421e3	1.887e3	1.192	0.75	0.77	13.6	YES	NO	db	dd	0.275
4	Total-tetrafurans	23.75	1.568e3	1.881e3	1.192	0.83	0.77	15.8	YES	NO	dd	bd	0.286
5	Total-tetrafurans	23.49	1.652e3	2.198e3	1.192	0.75	0.77	14.3	YES	NO	dd	dd	0.319
6	Total-tetrafurans	23.40	1.702e3	2.559e3	1.192	0.66	0.77	14.7	YES	NO	dd	dd	0.354
7	Total-tetrafurans	23.27	1.414e3	1.979e3	1.192	0.71	0.77	7.7	YES	NO	dd	dd	0.282
8	Total-tetrafurans	23.08	3.000e3	3.887e3	1.192	0.77	0.77	26.4	YES	NO	bd	bd	0.571
9	1368-TCDF	22.24	5.742e2	6.813e2	1.425	0.84	0.77	5.6	YES	NO	bb	bb	0.087
10	Total-tetrafurans	27.38	1.243e3	1.586e3	1.192	0.78	0.77	12.7	YES	NO	bb	bb	0.235
11	Total-tetrafurans	25.88	1.482e3	2.215e3	1.192	0.67	0.77	12.0	YES	NO	dd	dd	0.307
12	2378-TCDF	25.76	2.028e3	2.813e3	1.108	0.72	0.77	17.0	YES	NO	bd	dd	0.432
13	Total-tetrafurans	25.46	8.125e2	1.066e3	1.192	0.76	0.77	8.9	YES	NO	dd	dd	0.156
14	Total-tetrafurans	25.25	7.326e2	1.008e3	1.192	0.73	0.77	4.2	YES	NO	bd	bd	0.144
15	Total-tetrafurans	25.08	8.273e2	1.149e3	1.192	0.72	0.77	7.4	YES	NO	bb	db	0.164
16	Total-tetrafurans	24.85	3.012e3	4.088e3	1.192	0.74	0.77	29.7	YES	NO	bb	dd	0.589
17	Total-tetrafurans	24.64	1.902e3	2.866e3	1.192	0.66	0.77	17.1	YES	NO	db	dd	0.396
18	Total-tetrafurans	24.42	1.936e3	2.621e3	1.192	0.74	0.77	20.3	YES	NO	bd	bd	0.378

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-penta1	27.17	1.721e4	1.196e4		1.44	1.55	347.6	YES	NO	dd	db	3.236

ID: BJH0150-SRM1, Name: 21091106, Date: 11-Sep-2021, Time: 14:36:32, Conditions: AUTOSPEC01, User: pk

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	29.64	5.514e2	3.779e2	1.047	1.46	1.55	10.7	YES	NO	db	db	0.092
2	Total-pentafurans	28.84	7.597e3	4.488e3	1.047	1.69	1.55	89.9	YES	NO	dd	db	1.197
3	Total-pentafurans	28.77	3.577e3	2.230e3	1.047	1.60	1.55	47.4	YES	NO	dd	dd	0.575
4	Total-pentafurans	28.48	4.416e3	2.847e3	1.047	1.55	1.55	49.5	YES	NO	dd	dd	0.719
5	Total-pentafurans	28.41	1.342e3	9.181e2	1.047	1.46	1.55	19.6	YES	NO	bd	bd	0.224
6	Total-pentafurans	28.17	1.113e3	6.993e2	1.047	1.59	1.55	14.5	YES	NO	bb	bb	0.179
7	23478-PeCDF	31.26	2.830e3	2.057e3	1.126	1.38	1.55	30.4	YES	NO	db	dd	0.459
8	Total-pentafurans	31.12	1.740e3	1.021e3	1.047	1.71	1.55	23.2	YES	NO	dd	dd	0.273
9	Total-pentafurans	31.00	1.265e3	8.625e2	1.047	1.47	1.55	14.8	YES	NO	bd	bd	0.211
10	Total-pentafurans	30.12	3.682e3	2.227e3	1.047	1.65	1.55	29.3	YES	NO	bd	MM	0.585
11	12378-PeCDF	29.91	2.711e3	1.912e3	1.015	1.42	1.55	37.6	YES	NO	bb	bb	0.463

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexafurans	34.25	2.590e4	2.029e4	1.045	1.28	1.24	318.8	YES	NO	bb	bb	6.013
2	Total-hexafurans	33.95	6.417e2	5.759e2	1.045	1.11	1.24	8.1	YES	NO	bb	bb	0.159
3	Total-hexafurans	33.42	2.004e4	1.668e4	1.045	1.20	1.24	230.8	YES	NO	bb	bb	4.780
4	123468-HXCDF	33.20	6.089e3	4.823e3	1.087	1.26	1.24	75.6	YES	NO	bb	bb	1.307
5	234678-HxCDF	35.89	4.389e3	3.233e3	1.052	1.36	1.24	37.4	YES	NO	bb	bb	0.977
6	123678-HxCDF	35.01	2.384e3	2.033e3	1.037	1.17	1.24	28.6	YES	NO	db	db	0.549
7	123478-HxCDF	34.88	6.701e3	5.515e3	1.017	1.22	1.24	77.5	YES	NO	bd	dd	1.563

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-heptafurans	39.41	7.994e4	7.649e4	1.305	1.04	1.05	1045.1	YES	NO	bd	bb	23.635
2	Total-heptafurans	39.17	8.078e2	8.118e2	1.305	1.00	1.05	10.5	YES	NO	bb	bb	0.245
3	1234678-HpCDF	38.74	3.873e4	3.622e4	1.327	1.07	1.05	513.1	YES	NO	bb	bb	10.151
4	1234789-HpCDF	40.99	2.879e3	2.494e3	1.283	1.15	1.05	36.2	YES	NO	bb	bb	0.915

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.17	1.138e3	1.445e3	1.192	0.79	0.77	11.1	YES	NO	db	db	0.214
2	Total-tetrafurans	24.02	2.630e3	3.751e3	1.192	0.70	0.77	18.7	YES	NO	bd	dd	0.529
3	Total-tetrafurans	23.87	1.421e3	1.887e3	1.192	0.75	0.77	13.6	YES	NO	db	dd	0.275
4	Total-tetrafurans	23.75	1.568e3	1.881e3	1.192	0.83	0.77	15.8	YES	NO	dd	bd	0.286
5	Total-tetrafurans	23.49	1.652e3	2.198e3	1.192	0.75	0.77	14.3	YES	NO	dd	dd	0.319
6	Total-tetrafurans	23.40	1.702e3	2.559e3	1.192	0.66	0.77	14.7	YES	NO	dd	dd	0.354
7	Total-tetrafurans	23.27	1.414e3	1.979e3	1.192	0.71	0.77	7.7	YES	NO	dd	dd	0.282
8	Total-tetrafurans	23.08	3.000e3	3.887e3	1.192	0.77	0.77	26.4	YES	NO	bd	bd	0.571
9	1368-TCDF	22.24	5.742e2	6.813e2	1.425	0.84	0.77	5.6	YES	NO	bb	bb	0.087
10	Total-Furans	21.35	4.191e2	5.663e2	1.158	0.74	0.77	4.6	YES	NO	db	db	0.084
11	Total-Furans	27.85	5.804e2	7.025e2	1.158	0.83	0.77	5.1	YES	NO	bb	bb	0.110
12	Total-tetrafurans	27.38	1.243e3	1.586e3	1.192	0.78	0.77	12.7	YES	NO	bb	bb	0.235
13	Total-tetrafurans	25.88	1.482e3	2.215e3	1.192	0.67	0.77	12.0	YES	NO	dd	dd	0.307
14	2378-TCDF	25.76	2.028e3	2.813e3	1.108	0.72	0.77	17.0	YES	NO	bd	dd	0.432
15	Total-tetrafurans	25.46	8.125e2	1.066e3	1.192	0.76	0.77	8.9	YES	NO	dd	dd	0.156
16	Total-tetrafurans	25.25	7.326e2	1.008e3	1.192	0.73	0.77	4.2	YES	NO	bd	bd	0.144
17	Total-tetrafurans	25.08	8.273e2	1.149e3	1.192	0.72	0.77	7.4	YES	NO	bb	db	0.164
18	Total-tetrafurans	24.85	3.012e3	4.088e3	1.192	0.74	0.77	29.7	YES	NO	bb	dd	0.589
19	Total-tetrafurans	24.64	1.902e3	2.866e3	1.192	0.66	0.77	17.1	YES	NO	db	dd	0.396
20	Total-tetrafurans	24.42	1.936e3	2.621e3	1.192	0.74	0.77	20.3	YES	NO	bd	bd	0.378
21	Total-pentafurans	29.64	5.514e2	3.779e2	1.047	1.46	1.55	10.7	YES	NO	db	db	0.092
22	Total-pentafurans	28.84	7.597e3	4.488e3	1.047	1.69	1.55	89.9	YES	NO	dd	db	1.197
23	Total-pentafurans	28.77	3.577e3	2.230e3	1.047	1.60	1.55	47.4	YES	NO	dd	dd	0.575
24	Total-pentafurans	28.48	4.416e3	2.847e3	1.047	1.55	1.55	49.5	YES	NO	dd	dd	0.719
25	Total-pentafurans	28.41	1.342e3	9.181e2	1.047	1.46	1.55	19.6	YES	NO	bd	bd	0.224
26	Total-pentafurans	28.17	1.113e3	6.993e2	1.047	1.59	1.55	14.5	YES	NO	bb	bb	0.179
27	23478-PeCDF	31.26	2.830e3	2.057e3	1.126	1.38	1.55	30.4	YES	NO	db	dd	0.459
28	Total-pentafurans	31.12	1.740e3	1.021e3	1.047	1.71	1.55	23.2	YES	NO	dd	dd	0.273
29	Total-pentafurans	31.00	1.265e3	8.625e2	1.047	1.47	1.55	14.8	YES	NO	bd	bd	0.211
30	Total-pentafurans	30.12	3.682e3	2.227e3	1.047	1.65	1.55	29.3	YES	NO	bd	MM	0.585
31	12378-PeCDF	29.91	2.711e3	1.912e3	1.015	1.42	1.55	37.6	YES	NO	bb	bb	0.463
32	Total-hexafurans	34.25	2.590e4	2.029e4	1.045	1.28	1.24	318.8	YES	NO	bb	bb	6.013
33	Total-hexafurans	33.95	6.417e2	5.759e2	1.045	1.11	1.24	8.1	YES	NO	bb	bb	0.159
34	Total-hexafurans	33.42	2.004e4	1.668e4	1.045	1.20	1.24	230.8	YES	NO	bb	bb	4.780
35	123468-HXCDF	33.20	6.089e3	4.823e3	1.087	1.26	1.24	75.6	YES	NO	bb	bb	1.307
36	234678-HxCDF	35.89	4.389e3	3.233e3	1.052	1.36	1.24	37.4	YES	NO	bb	bb	0.977
37	123678-HxCDF	35.01	2.384e3	2.033e3	1.037	1.17	1.24	28.6	YES	NO	db	db	0.549

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	123478-HxCDF	34.88	6.701e3	5.515e3	1.017	1.22	1.24	77.5	YES	NO	bd	dd	1.563
39	Total-heptafurans	39.41	7.994e4	7.649e4	1.305	1.04	1.05	1045.1	YES	NO	bd	bb	23.635
40	Total-heptafurans	39.17	8.078e2	8.118e2	1.305	1.00	1.05	10.5	YES	NO	bb	bb	0.245
41	1234678-HpCDF	38.74	3.873e4	3.622e4	1.327	1.07	1.05	513.1	YES	NO	bb	bb	10.151
42	OCDF	45.23	6.140e4	6.683e4	1.447	0.92	0.89	551.8	YES	NO	bb	bb	27.963
43	1234789-HpCDF	40.99	2.879e3	2.494e3	1.283	1.15	1.05	36.2	YES	NO	bb	bb	0.915
44	Total-penta1	27.17	1.721e4	1.196e4		1.44	1.55	347.6	YES	NO	dd	db	3.236
45	13468-PECDF	27.08	1.120e3	8.323e2	1.376	1.35	1.55	31.6	YES	NO	bd	dd	0.144

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.99	1.171e3	1.437e3	0.879	0.81	0.77	10.2	YES	NO	bb	bb	0.372
2	1368-TCDD	23.51	1.350e3	1.551e3	0.923	0.87	0.77	15.2	YES	NO	bb	bd	0.394
3	Total-tetradioxins	26.53	3.111e2	3.974e2	0.879	0.78	0.77	3.1	YES	NO	db	db	0.101
4	2378-TCDD	26.40	1.684e3	2.268e3	0.920	0.74	0.77	16.5	YES	NO	dd	bd	0.538

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	30.12	1.663e3	1.202e3	1.331	1.38	1.55	23.8	YES	NO	bb	dd	0.408
2	Total-pentadioxins	29.29	1.083e3	7.596e2	1.331	1.43	1.55	19.0	YES	NO	bb	bb	0.263
3	12378-PeCDD	31.50	2.350e3	1.433e3	0.995	1.64	1.55	32.6	YES	NO	bb	bb	0.721

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.51	4.866e3	4.011e3	0.950	1.21	1.24	68.4	YES	NO	bb	bb	1.453
2	Total-hexadioxins	36.29	9.815e2	7.911e2	1.028	1.24	1.24	15.5	YES	NO	bb	db	0.268
3	123678-HxCDD	36.12	6.741e3	5.439e3	1.009	1.24	1.24	89.8	YES	NO	db	dd	1.862
4	123478-HxCDD	36.00	2.691e3	1.939e3	1.027	1.39	1.24	36.1	YES	NO	bd	bd	0.707
5	Total-hexadioxins	35.24	1.933e3	1.668e3	1.028	1.16	1.24	29.4	YES	NO	db	db	0.545
6	Total-hexadioxins	35.11	2.097e4	1.713e4	1.028	1.22	1.24	182.5	YES	NO	bd	bd	5.768
7	Total-hexadioxins	34.74	3.862e3	2.888e3	1.028	1.34	1.24	51.8	YES	NO	bb	bb	1.022
8	124679-HXCDD	33.98	1.768e4	1.430e4	1.125	1.24	1.24	236.3	YES	NO	bb	bb	4.463

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HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.25	1.126e5	1.065e5	1.068	1.06	1.05	763.6	YES	NO	bb	bb	51.833
2	1234679-HPCDD	39.20	1.760e5	1.621e5	1.211	1.09	1.05	1267.9	YES	NO	bb	bb	70.555

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.99	1.171e3	1.437e3	0.879	0.81	0.77	10.2	YES	NO	bb	bb	0.372
2	1368-TCDD	23.51	1.350e3	1.551e3	0.923	0.87	0.77	15.2	YES	NO	bb	bd	0.394
3	Total-tetradioxins	26.53	3.111e2	3.974e2	0.879	0.78	0.77	3.1	YES	NO	db	db	0.101
4	2378-TCDD	26.40	1.684e3	2.268e3	0.920	0.74	0.77	16.5	YES	NO	dd	bd	0.538
5	Total-pentadioxins	30.12	1.663e3	1.202e3	1.331	1.38	1.55	23.8	YES	NO	bb	dd	0.408
6	Total-pentadioxins	29.29	1.083e3	7.596e2	1.331	1.43	1.55	19.0	YES	NO	bb	bb	0.263
7	12378-PeCDD	31.50	2.350e3	1.433e3	0.995	1.64	1.55	32.6	YES	NO	bb	bb	0.721
8	123789-HxCDD	36.51	4.866e3	4.011e3	0.950	1.21	1.24	68.4	YES	NO	bb	bb	1.453
9	Total-hexadioxins	36.29	9.815e2	7.911e2	1.028	1.24	1.24	15.5	YES	NO	bb	db	0.268
10	123678-HxCDD	36.12	6.741e3	5.439e3	1.009	1.24	1.24	89.8	YES	NO	db	dd	1.862
11	123478-HxCDD	36.00	2.691e3	1.939e3	1.027	1.39	1.24	36.1	YES	NO	bd	bd	0.707
12	Total-hexadioxins	35.24	1.933e3	1.668e3	1.028	1.16	1.24	29.4	YES	NO	db	db	0.545
13	Total-hexadioxins	35.11	2.097e4	1.713e4	1.028	1.22	1.24	182.5	YES	NO	bd	bd	5.768
14	Total-hexadioxins	34.74	3.862e3	2.888e3	1.028	1.34	1.24	51.8	YES	NO	bb	bb	1.022
15	124679-HXCDD	33.98	1.768e4	1.430e4	1.125	1.24	1.24	236.3	YES	NO	bb	bb	4.463
16	1234678-HpCDD	40.25	1.126e5	1.065e5	1.068	1.06	1.05	763.6	YES	NO	bb	bb	51.833
17	1234679-HPCDD	39.20	1.760e5	1.621e5	1.211	1.09	1.05	1267.9	YES	NO	bb	bb	70.555
18	OCDD	44.98	7.019e5	7.858e5	1.181	0.89	0.89	4071.6	YES	NO	bb	bb	397.521

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetrafurans	24.17	1.138e3	1.445e3	1.192	0.79	0.77	11.1	YES	NO	db	db	0.214
2	Total-tetrafurans	24.02	2.630e3	3.751e3	1.192	0.70	0.77	18.7	YES	NO	bd	dd	0.529
3	Total-tetrafurans	23.87	1.421e3	1.887e3	1.192	0.75	0.77	13.6	YES	NO	db	dd	0.275
4	Total-tetrafurans	23.75	1.568e3	1.881e3	1.192	0.83	0.77	15.8	YES	NO	dd	bd	0.286
5	Total-tetrafurans	23.49	1.652e3	2.198e3	1.192	0.75	0.77	14.3	YES	NO	dd	dd	0.319
6	Total-tetrafurans	23.40	1.702e3	2.559e3	1.192	0.66	0.77	14.7	YES	NO	dd	dd	0.354
7	Total-tetrafurans	23.27	1.414e3	1.979e3	1.192	0.71	0.77	7.7	YES	NO	dd	dd	0.282
8	Total-tetrafurans	23.08	3.000e3	3.887e3	1.192	0.77	0.77	26.4	YES	NO	bd	bd	0.571
9	1368-TCDF	22.24	5.742e2	6.813e2	1.425	0.84	0.77	5.6	YES	NO	bb	bb	0.087
10	Total-Furans	21.35	4.191e2	5.663e2	1.158	0.74	0.77	4.6	YES	NO	db	db	0.084
11	Total-Furans	27.85	5.804e2	7.025e2	1.158	0.83	0.77	5.1	YES	NO	bb	bb	0.110
12	Total-tetrafurans	27.38	1.243e3	1.586e3	1.192	0.78	0.77	12.7	YES	NO	bb	bb	0.235
13	Total-tetrafurans	25.88	1.482e3	2.215e3	1.192	0.67	0.77	12.0	YES	NO	dd	dd	0.307
14	2378-TCDF	25.76	2.028e3	2.813e3	1.108	0.72	0.77	17.0	YES	NO	bd	dd	0.432
15	Total-tetrafurans	25.46	8.125e2	1.066e3	1.192	0.76	0.77	8.9	YES	NO	dd	dd	0.156
16	Total-tetrafurans	25.25	7.326e2	1.008e3	1.192	0.73	0.77	4.2	YES	NO	bd	bd	0.144
17	Total-tetrafurans	25.08	8.273e2	1.149e3	1.192	0.72	0.77	7.4	YES	NO	bb	db	0.164
18	Total-tetrafurans	24.85	3.012e3	4.088e3	1.192	0.74	0.77	29.7	YES	NO	bb	dd	0.589
19	Total-tetrafurans	24.64	1.902e3	2.866e3	1.192	0.66	0.77	17.1	YES	NO	db	dd	0.396
20	Total-tetrafurans	24.42	1.936e3	2.621e3	1.192	0.74	0.77	20.3	YES	NO	bd	bd	0.378
21	Total-pentafurans	29.64	5.514e2	3.779e2	1.047	1.46	1.55	10.7	YES	NO	db	db	0.092
22	Total-pentafurans	28.84	7.597e3	4.488e3	1.047	1.69	1.55	89.9	YES	NO	dd	db	1.197
23	Total-pentafurans	28.77	3.577e3	2.230e3	1.047	1.60	1.55	47.4	YES	NO	dd	dd	0.575
24	Total-pentafurans	28.48	4.416e3	2.847e3	1.047	1.55	1.55	49.5	YES	NO	dd	dd	0.719
25	Total-pentafurans	28.41	1.342e3	9.181e2	1.047	1.46	1.55	19.6	YES	NO	bd	bd	0.224
26	Total-pentafurans	28.17	1.113e3	6.993e2	1.047	1.59	1.55	14.5	YES	NO	bb	bb	0.179
27	23478-PeCDF	31.26	2.830e3	2.057e3	1.126	1.38	1.55	30.4	YES	NO	db	dd	0.459
28	Total-pentafurans	31.12	1.740e3	1.021e3	1.047	1.71	1.55	23.2	YES	NO	dd	dd	0.273
29	Total-pentafurans	31.00	1.265e3	8.625e2	1.047	1.47	1.55	14.8	YES	NO	bd	bd	0.211
30	Total-pentafurans	30.12	3.682e3	2.227e3	1.047	1.65	1.55	29.3	YES	NO	bd	MM	0.585
31	12378-PeCDF	29.91	2.711e3	1.912e3	1.015	1.42	1.55	37.6	YES	NO	bb	bb	0.463
32	Total-hexafurans	34.25	2.590e4	2.029e4	1.045	1.28	1.24	318.8	YES	NO	bb	bb	6.013
33	Total-hexafurans	33.95	6.417e2	5.759e2	1.045	1.11	1.24	8.1	YES	NO	bb	bb	0.159
34	Total-hexafurans	33.42	2.004e4	1.668e4	1.045	1.20	1.24	230.8	YES	NO	bb	bb	4.780
35	123468-HXCDF	33.20	6.089e3	4.823e3	1.087	1.26	1.24	75.6	YES	NO	bb	bb	1.307
36	234678-HxCDF	35.89	4.389e3	3.233e3	1.052	1.36	1.24	37.4	YES	NO	bb	bb	0.977
37	123678-HxCDF	35.01	2.384e3	2.033e3	1.037	1.17	1.24	28.6	YES	NO	db	db	0.549

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	123478-HxCDF	34.88	6.701e3	5.515e3	1.017	1.22	1.24	77.5	YES	NO	bd	dd	1.563
39	Total-heptafurans	39.41	7.994e4	7.649e4	1.305	1.04	1.05	1045.1	YES	NO	bd	bb	23.635
40	Total-heptafurans	39.17	8.078e2	8.118e2	1.305	1.00	1.05	10.5	YES	NO	bb	bb	0.245
41	1234678-HpCDF	38.74	3.873e4	3.622e4	1.327	1.07	1.05	513.1	YES	NO	bb	bb	10.151
42	OCDF	45.23	6.140e4	6.683e4	1.447	0.92	0.89	551.8	YES	NO	bb	bb	27.963
43	1234789-HpCDF	40.99	2.879e3	2.494e3	1.283	1.15	1.05	36.2	YES	NO	bb	bb	0.915
44	Total-penta1	27.17	1.721e4	1.196e4		1.44	1.55	347.6	YES	NO	dd	db	3.236
45	13468-PECDF	27.08	1.120e3	8.323e2	1.376	1.35	1.55	31.6	YES	NO	bd	dd	0.144
46	Total-tetradioxins	24.99	1.171e3	1.437e3	0.879	0.81	0.77	10.2	YES	NO	bb	bb	0.372
47	1368-TCDD	23.51	1.350e3	1.551e3	0.923	0.87	0.77	15.2	YES	NO	bb	bd	0.394
48	Total-tetradioxins	26.53	3.111e2	3.974e2	0.879	0.78	0.77	3.1	YES	NO	db	db	0.101
49	2378-TCDD	26.40	1.684e3	2.268e3	0.920	0.74	0.77	16.5	YES	NO	dd	bd	0.538
50	Total-pentadioxins	30.12	1.663e3	1.202e3	1.331	1.38	1.55	23.8	YES	NO	bb	dd	0.408
51	Total-pentadioxins	29.29	1.083e3	7.596e2	1.331	1.43	1.55	19.0	YES	NO	bb	bb	0.263
52	12378-PeCDD	31.50	2.350e3	1.433e3	0.995	1.64	1.55	32.6	YES	NO	bb	bb	0.721
53	123789-HxCDD	36.51	4.866e3	4.011e3	0.950	1.21	1.24	68.4	YES	NO	bb	bb	1.453
54	Total-hexadioxins	36.29	9.815e2	7.911e2	1.028	1.24	1.24	15.5	YES	NO	bb	db	0.268
55	123678-HxCDD	36.12	6.741e3	5.439e3	1.009	1.24	1.24	89.8	YES	NO	db	dd	1.862
56	123478-HxCDD	36.00	2.691e3	1.939e3	1.027	1.39	1.24	36.1	YES	NO	bd	bd	0.707
57	Total-hexadioxins	35.24	1.933e3	1.668e3	1.028	1.16	1.24	29.4	YES	NO	db	db	0.545
58	Total-hexadioxins	35.11	2.097e4	1.713e4	1.028	1.22	1.24	182.5	YES	NO	bd	bd	5.768
59	Total-hexadioxins	34.74	3.862e3	2.888e3	1.028	1.34	1.24	51.8	YES	NO	bb	bb	1.022
60	124679-HXCDD	33.98	1.768e4	1.430e4	1.125	1.24	1.24	236.3	YES	NO	bb	bb	4.463
61	1234678-HpCDD	40.25	1.126e5	1.065e5	1.068	1.06	1.05	763.6	YES	NO	bb	bb	51.833
62	1234679-HPCDD	39.20	1.760e5	1.621e5	1.211	1.09	1.05	1267.9	YES	NO	bb	bb	70.555
63	OCDD	44.98	7.019e5	7.858e5	1.181	0.89	0.89	4071.6	YES	NO	bb	bb	397.521

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
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ID: BJH0150-SRM1, Name: 21091106, Date: 11-Sep-2021, Time: 14:36:32, Conditions: AUTOSPEC01, User: pk

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.21	4.997e6					50.5	YES		dd		
2	FUNCTION1 PFK	22.10	3.766e6					49.5	YES		dd		
3	FUNCTION1 PFK	21.97	5.068e6					59.6	YES		dd		
4	FUNCTION1 PFK	21.88	5.184e6					61.5	YES		dd		
5	FUNCTION1 PFK	21.80	6.370e6					64.0	YES		dd		
6	FUNCTION1 PFK	21.68	5.706e6					67.4	YES		dd		
7	FUNCTION1 PFK	21.59	5.878e6					69.1	YES		dd		
8	FUNCTION1 PFK	21.53	3.982e6					69.6	YES		dd		
9	FUNCTION1 PFK	21.44	6.149e6					72.3	YES		dd		
10	FUNCTION1 PFK	21.38	6.798e6					72.5	YES		dd		
11	FUNCTION1 PFK	21.22	5.935e6					78.2	YES		dd		
12	FUNCTION1 PFK	21.18	4.499e6					79.4	YES		dd		
13	FUNCTION1 PFK	21.12	6.693e6					78.4	YES		bd		
14	FUNCTION1 PFK	24.96	1.025e5					2.3	NO		bd		
15	FUNCTION1 PFK	24.85	1.885e5					2.0	NO		db		
16	FUNCTION1 PFK	24.72	6.668e4					1.1	NO		bd		
17	FUNCTION1 PFK	24.32	2.469e4					0.8	NO		bb		
18	FUNCTION1 PFK	24.20	8.768e4					1.7	NO		bb		
19	FUNCTION1 PFK	24.07	5.396e4					1.4	NO		bb		
20	FUNCTION1 PFK	23.72	2.120e5					3.2	YES		db		
21	FUNCTION1 PFK	23.64	1.669e6					6.3	YES		bd		
22	FUNCTION1 PFK	23.30	3.338e6					23.5	YES		db		
23	FUNCTION1 PFK	23.19	2.120e6					25.8	YES		dd		
24	FUNCTION1 PFK	23.11	7.403e6					28.9	YES		dd		
25	FUNCTION1 PFK	22.81	5.039e6					36.6	YES		dd		
26	FUNCTION1 PFK	22.68	3.231e6					39.8	YES		dd		
27	FUNCTION1 PFK	22.66	2.842e6					39.5	YES		dd		
28	FUNCTION1 PFK	22.46	8.188e6					45.9	YES		dd		
29	FUNCTION1 PFK	22.39	7.000e6					47.3	YES		dd		
30	FUNCTION1 PFK	26.49	1.571e6					19.1	YES		dd		
31	FUNCTION1 PFK	26.40	1.685e6					17.7	YES		dd		
32	FUNCTION1 PFK	26.29	1.061e6					15.8	YES		dd		
33	FUNCTION1 PFK	26.18	2.303e6					14.1	YES		dd		
34	FUNCTION1 PFK	26.05	3.519e5					7.2	YES		dd		
35	FUNCTION1 PFK	25.94	6.246e5					10.7	YES		dd		
36	FUNCTION1 PFK	25.87	1.815e6					11.0	YES		dd		
37	FUNCTION1 PFK	25.70	4.291e5					8.0	YES		dd		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	25.62	7.487e5					7.6	YES		dd		
39	FUNCTION1 PFK	25.52	3.068e5					6.1	YES		dd		
40	FUNCTION1 PFK	25.47	2.489e5					4.3	YES		dd		
41	FUNCTION1 PFK	25.38	1.386e5					3.0	NO		dd		
42	FUNCTION1 PFK	25.32	9.432e4					2.5	NO		dd		
43	FUNCTION1 PFK	25.28	1.860e5					2.7	NO		dd		
44	FUNCTION1 PFK	25.20	7.478e4					2.2	NO		bd		
45	FUNCTION1 PFK	25.02	3.335e4					1.2	NO		db		
46	FUNCTION1 PFK	27.86	2.002e6					15.9	YES		db		
47	FUNCTION1 PFK	27.83	1.017e6					16.5	YES		dd		
48	FUNCTION1 PFK	27.77	2.497e6					18.0	YES		bd		
49	FUNCTION1 PFK	27.47	5.163e6					29.6	YES		db		
50	FUNCTION1 PFK	27.27	7.535e6					29.3	YES		dd		
51	FUNCTION1 PFK	27.06	3.297e6					26.9	YES		dd		
52	FUNCTION1 PFK	26.92	4.753e6					24.5	YES		dd		
53	FUNCTION1 PFK	26.68	1.175e6					21.7	YES		dd		
54	FUNCTION1 PFK	26.65	9.007e5					21.4	YES		dd		
55	FUNCTION1 PFK	26.58	1.699e6					20.7	YES		dd		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.38	1.619e6					8.7	YES		bb		0.000
2	FUNCTION2 PFK	29.68	3.131e6					6.4	YES		db		0.000
3	FUNCTION2 PFK	29.37	5.550e5					11.0	YES		bd		0.000
4	FUNCTION2 PFK	29.21	7.489e6					24.5	YES		bb		0.000
5	FUNCTION2 PFK	28.32	2.135e5					3.9	YES		bb		0.000
6	FUNCTION2 PFK	32.75	1.966e6					7.0	YES		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.36	1.216e5					3.0	NO		bb		0.000
2	FUNCTION3 PFK	37.25	2.484e6					11.1	YES		db		0.000
3	FUNCTION3 PFK	37.02	2.247e6					22.5	YES		dd		0.000
4	FUNCTION3 PFK	36.96	1.362e6					24.1	YES		bd		0.000
5	FUNCTION3 PFK	36.42	2.184e7					27.9	YES		db		0.000
6	FUNCTION3 PFK	35.95	1.797e6					17.6	YES		bd		0.000
7	FUNCTION3 PFK	35.68	2.330e6					11.6	YES		db		0.000
8	FUNCTION3 PFK	35.50	2.905e5					5.4	YES		bd		0.000
9	FUNCTION3 PFK	34.89	5.028e5					6.1	YES		bb		0.000
10	FUNCTION3 PFK	33.04	6.240e4					1.7	NO		bb		0.000
11	FUNCTION3 PFK	32.97	2.213e4					1.4	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.09	7.566e3					1.1	NO		bb		
2	FUNCTION4 PFK	38.01	9.568e4					2.7	NO		bb		
3	FUNCTION4 PFK	40.24	1.452e4					0.7	NO		bb		
4	FUNCTION4 PFK	40.11	7.473e3					0.7	NO		db		
5	FUNCTION4 PFK	40.04	8.665e4					2.1	NO		dd		
6	FUNCTION4 PFK	39.95	3.222e5					4.2	YES		dd		
7	FUNCTION4 PFK	39.81	1.713e5					5.1	YES		bd		
8	FUNCTION4 PFK	39.70	1.385e5					5.5	YES		db		
9	FUNCTION4 PFK	39.67	2.422e5					5.2	YES		bd		
10	FUNCTION4 PFK	39.47	3.000e4					0.3	NO		bb		
11	FUNCTION4 PFK	39.37	5.427e3					0.8	NO		bb		
12	FUNCTION4 PFK	39.16	2.600e4					1.0	NO		bb		
13	FUNCTION4 PFK	38.93	2.882e4					0.8	NO		bb		
14	FUNCTION4 PFK	38.70	5.677e4					1.4	NO		bb		
15	FUNCTION4 PFK	38.34	2.153e4					0.8	NO		bb		
16	FUNCTION4 PFK	38.25	6.049e3					0.6	NO		db		
17	FUNCTION4 PFK	38.21	4.854e4					1.5	NO		dd		
18	FUNCTION4 PFK	38.13	2.918e4					1.2	NO		bd		
19	FUNCTION4 PFK	41.67	6.764e4					2.6	NO		dd		
20	FUNCTION4 PFK	41.60	1.881e5					2.8	NO		dd		
21	FUNCTION4 PFK	41.50	7.148e4					2.9	NO		dd		
22	FUNCTION4 PFK	41.46	6.986e4					2.7	NO		bd		
23	FUNCTION4 PFK	41.40	8.930e3					0.9	NO		bb		
24	FUNCTION4 PFK	41.34	5.807e3					0.5	NO		bb		
25	FUNCTION4 PFK	41.21	3.378e4					1.4	NO		db		
26	FUNCTION4 PFK	41.13	9.950e4					2.0	NO		bd		
27	FUNCTION4 PFK	40.85	2.124e4					1.1	NO		db		
28	FUNCTION4 PFK	40.77	1.021e5					1.6	NO		bd		
29	FUNCTION4 PFK	40.63	2.226e4					0.7	NO		bb		
30	FUNCTION4 PFK	40.56	2.201e4					0.8	NO		bb		
31	FUNCTION4 PFK	40.48	3.737e4					1.9	NO		db		
32	FUNCTION4 PFK	40.44	3.240e4					1.4	NO		bd		
33	FUNCTION4 PFK	40.37	1.202e4					0.6	NO		bb		
34	FUNCTION4 PFK	40.28	2.635e3					0.4	NO		bb		
35	FUNCTION4 PFK	42.78	8.505e3					0.6	NO		bb		
36	FUNCTION4 PFK	42.58	9.134e3					0.7	NO		bb		
37	FUNCTION4 PFK	42.45	5.554e4					1.2	NO		bb		

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION4 PFK	42.37	5.352e3					0.8	NO		bb		
39	FUNCTION4 PFK	42.31	1.896e4					1.0	NO		db		
40	FUNCTION4 PFK	42.28	1.967e4					1.0	NO		bd		
41	FUNCTION4 PFK	41.79	9.692e4					2.5	NO		db		
42	FUNCTION4 PFK	41.73	6.860e4					2.5	NO		dd		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	24.90	2.013e2					3.1	YES		db		0.000
2	FUNCTION1 HXCD...	24.79	1.752e2					3.4	YES		bd		0.000
3	FUNCTION1 HXCD...	24.64	2.048e2					1.7	NO		bb		0.000
4	FUNCTION1 HXCD...	23.73	1.899e2					3.9	YES		bb		0.000
5	FUNCTION1 HXCD...	22.31	1.647e2					2.5	NO		bb		0.000
6	FUNCTION1 HXCD...	22.18	2.442e2					4.8	YES		bb		0.000
7	FUNCTION1 HXCD...	27.53	2.246e2					3.7	YES		bb		0.000
8	FUNCTION1 HXCD...	26.77	1.252e2					2.3	NO		bb		0.000
9	FUNCTION1 HXCD...	26.11	1.876e2					3.3	YES		bb		0.000
10	FUNCTION1 HXCD...	25.91	1.168e3					17.9	YES		bb		0.000
11	FUNCTION1 HXCD...	25.75	1.188e2					2.3	NO		bb		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	24.64	1.803e2					4.0	YES		bd		0.000
2	FUNCTION1 HPCD...	23.36	1.826e3					28.0	YES		db		0.000
3	FUNCTION1 HPCD...	23.28	6.222e2					10.5	YES		bd		0.000
4	FUNCTION1 HPCD...	23.05	3.264e2					5.3	YES		bb		0.000
5	FUNCTION1 HPCD...	22.87	7.369e1					1.4	NO		bb		0.000
6	FUNCTION1 HPCD...	22.51	9.225e1					1.9	NO		db		0.000
7	FUNCTION1 HPCD...	22.42	2.051e2					3.7	YES		dd		0.000
8	FUNCTION1 HPCD...	22.31	1.278e2					3.4	YES		bd		0.000
9	FUNCTION1 HPCD...	22.04	1.732e4					304.7	YES		bb		0.000
10	FUNCTION1 HPCD...	21.35	7.093e1					1.5	NO		bb		0.000
11	FUNCTION1 HPCD...	27.73	7.206e1					1.2	NO		bb		0.000
12	FUNCTION1 HPCD...	26.83	1.222e2					1.3	NO		bb		0.000
13	FUNCTION1 HPCD...	26.49	8.619e1					1.9	NO		db		0.000
14	FUNCTION1 HPCD...	26.41	8.892e1					1.4	NO		bd		0.000
15	FUNCTION1 HPCD...	25.41	7.081e1					1.8	NO		db		0.000
16	FUNCTION1 HPCD...	25.23	1.578e2					1.9	NO		bd		0.000
17	FUNCTION1 HPCD...	24.91	1.386e2					2.2	NO		db		0.000
18	FUNCTION1 HPCD...	24.84	1.474e2					2.0	NO		bd		0.000
19	FUNCTION1 HPCD...	24.72	1.095e2					2.2	NO		db		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.33	8.263e1					1.4	NO		bb		0.000
2	FUNCTION2 HPCD...	32.16	1.081e2					1.6	NO		bb		0.000
3	FUNCTION2 HPCD...	31.48	1.815e2					2.0	NO		bb		0.000
4	FUNCTION2 HPCD...	28.95	1.571e2					1.8	NO		bb		0.000
5	FUNCTION2 HPCD...	28.34	9.340e1					1.5	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.72	1.068e2					3.4	YES		bb		0.000
2	FUNCTION3 OCDPE	36.49	1.705e2					5.4	YES		bb		0.000
3	FUNCTION3 OCDPE	35.99	1.025e2					3.7	YES		bb		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.40	9.040e3					191.7	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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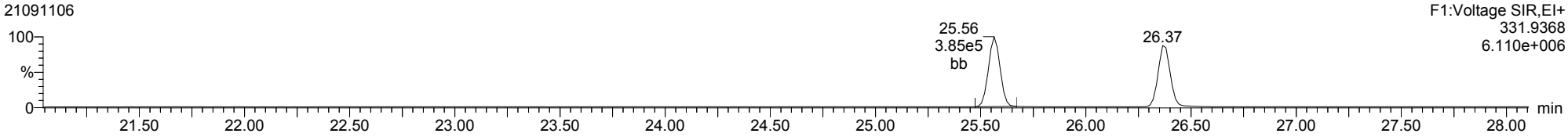
13C-1234-TCDD



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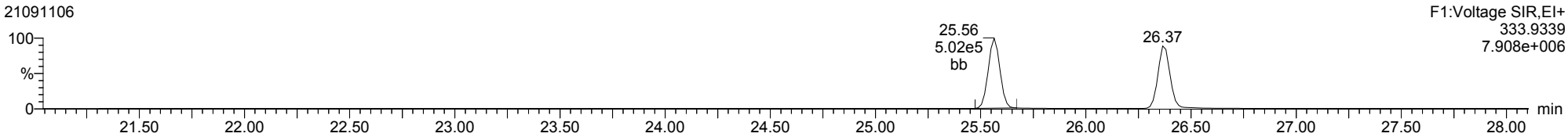
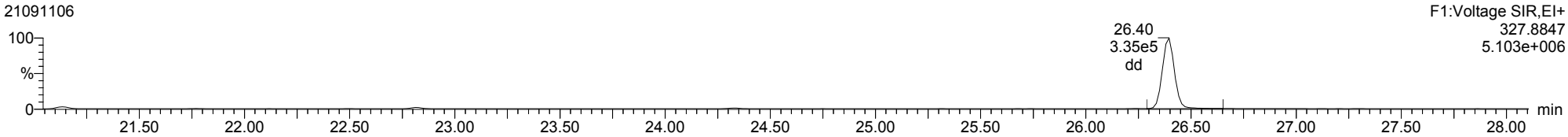


37CL-2378-TCDD



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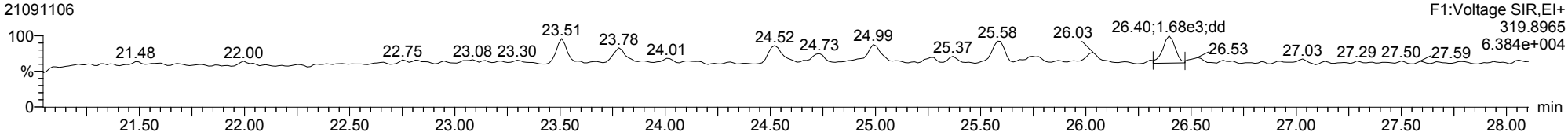
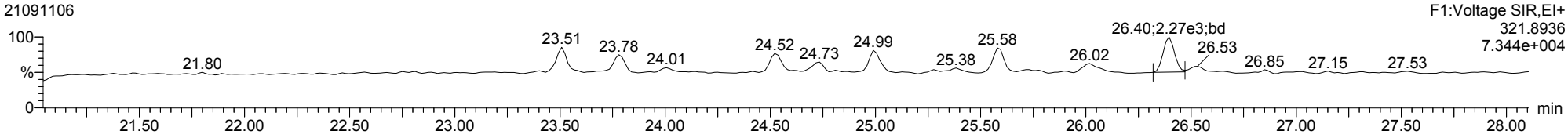
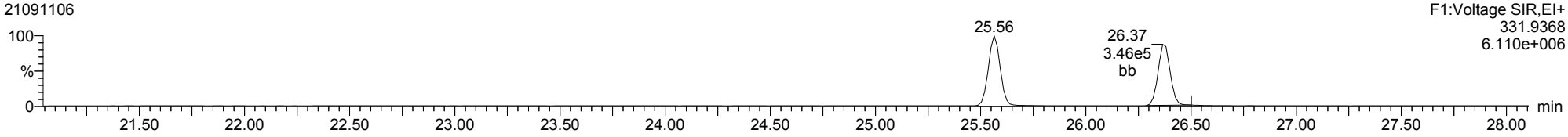
2378-TCDD



2378-TCDD



13C-2378-TCDD



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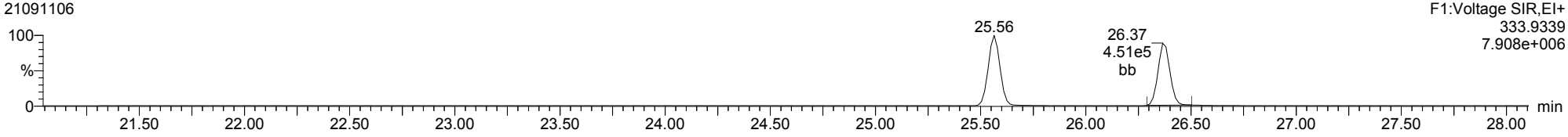

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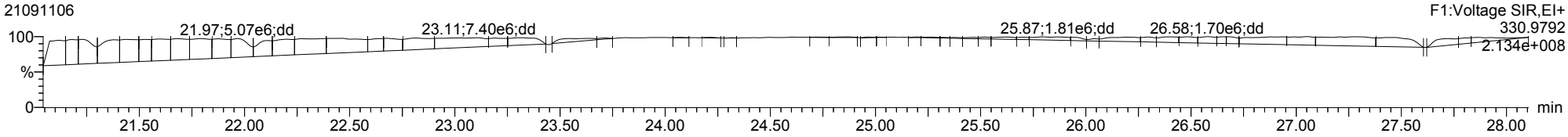

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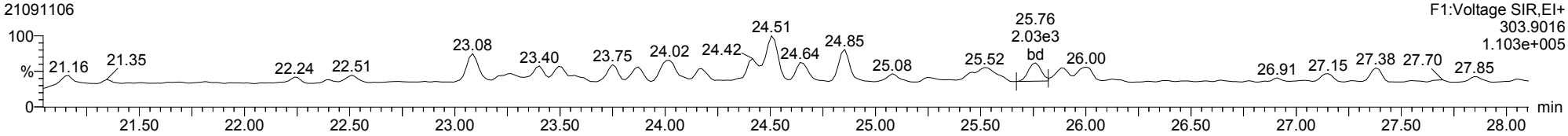
2378-TCDF



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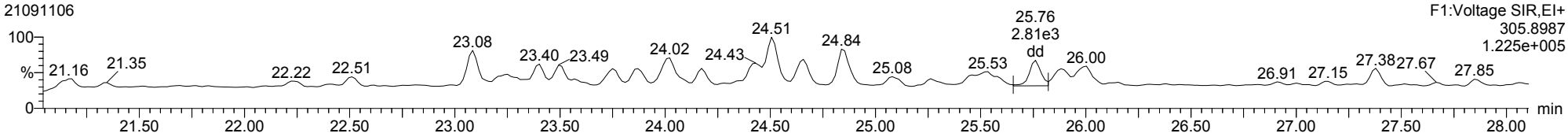

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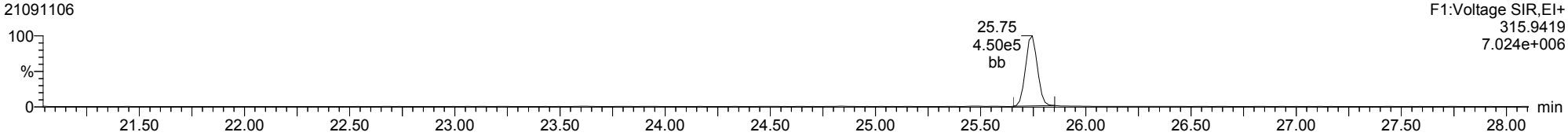

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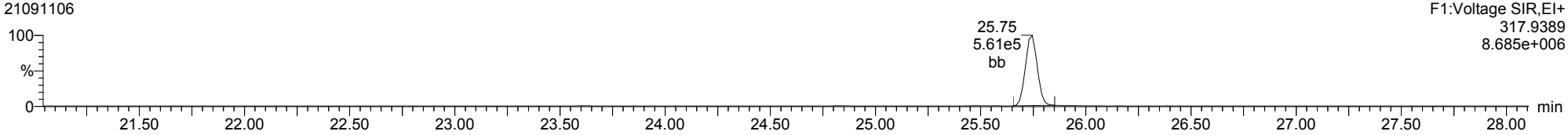
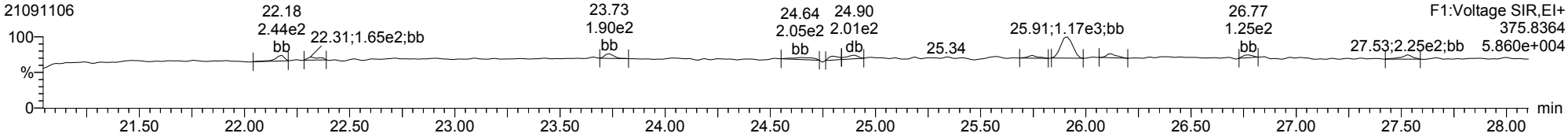


FUNCTION1 HXCDPE



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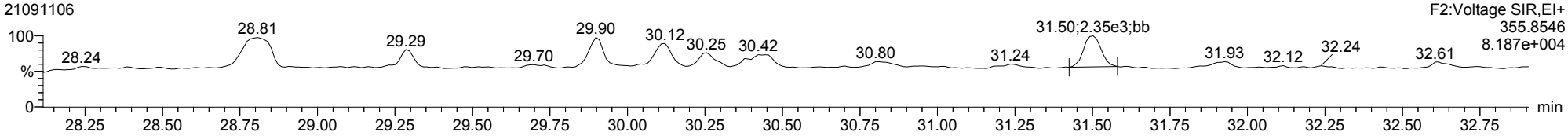
12378-PeCDD



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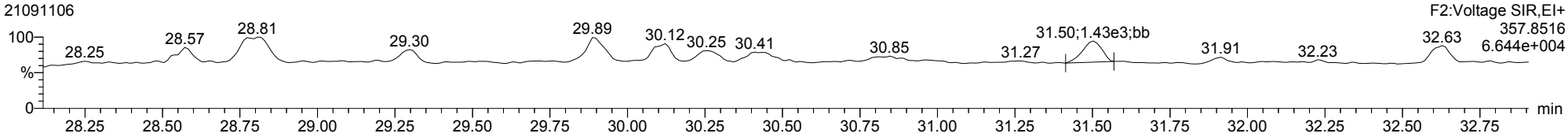

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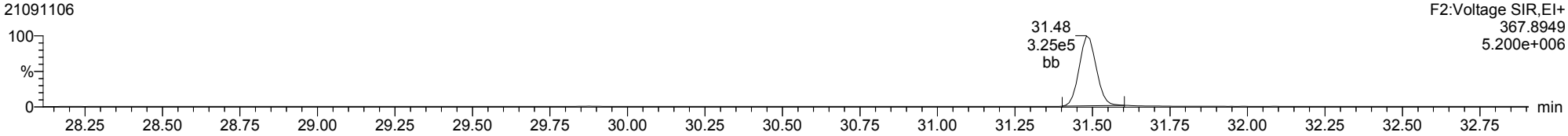

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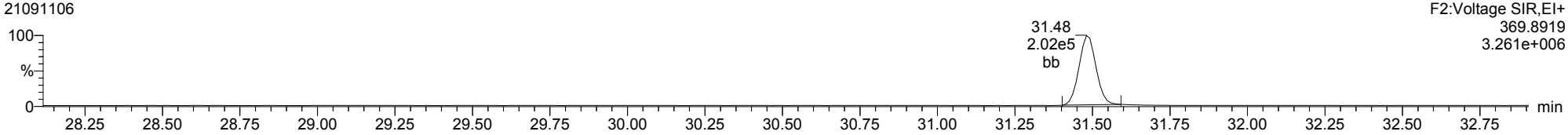

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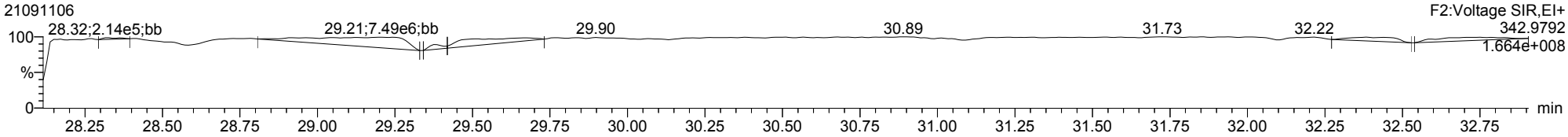

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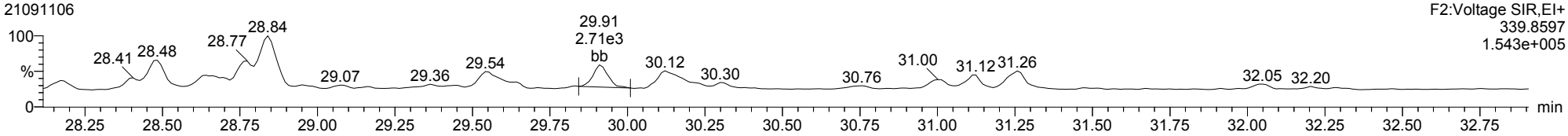

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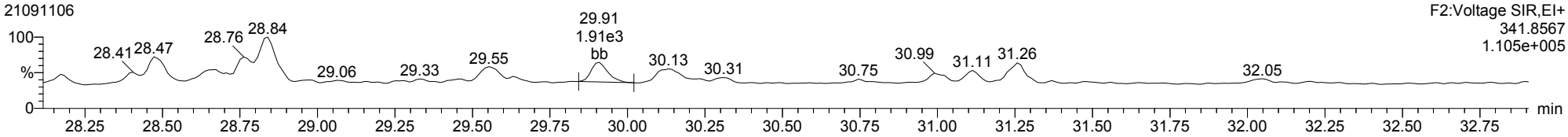

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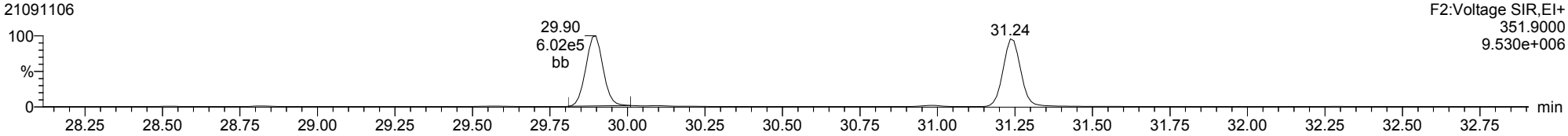

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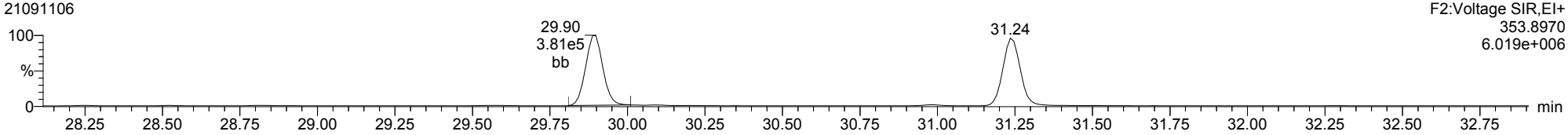
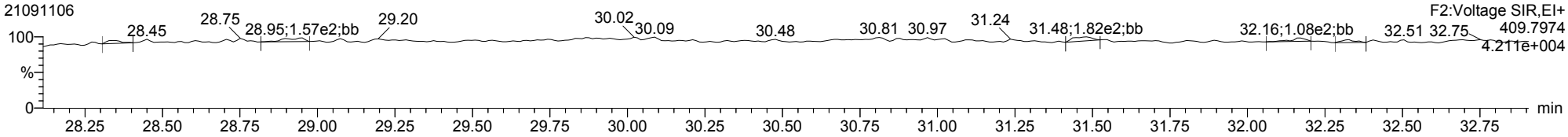


FUNCTION2 HPCDPE



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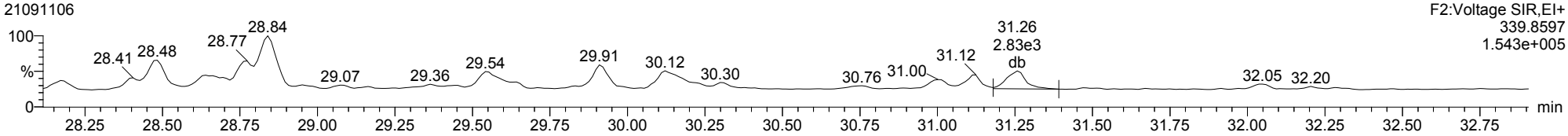
23478-PeCDF



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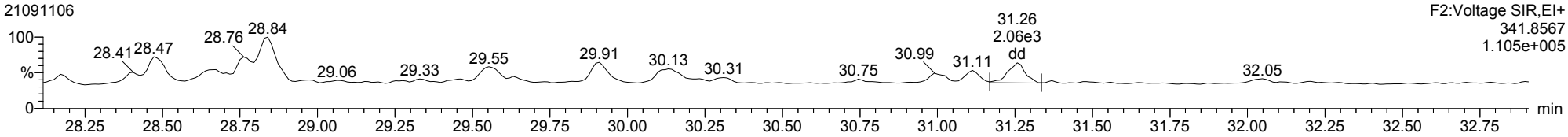

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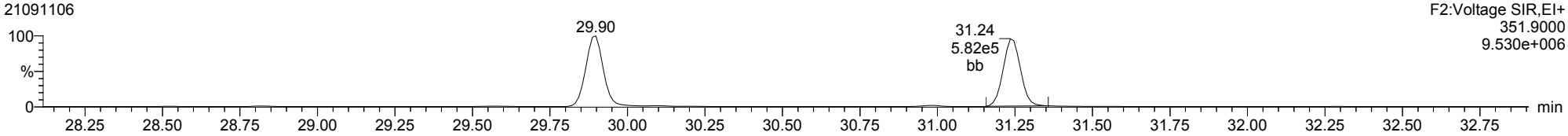

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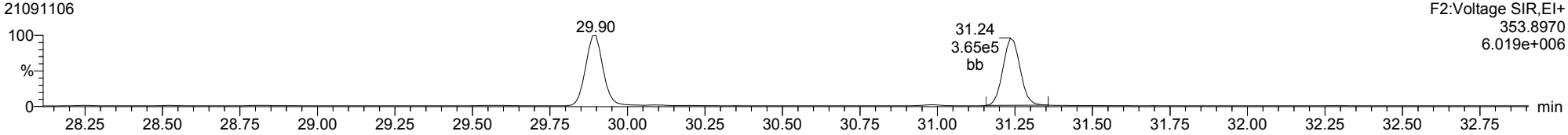

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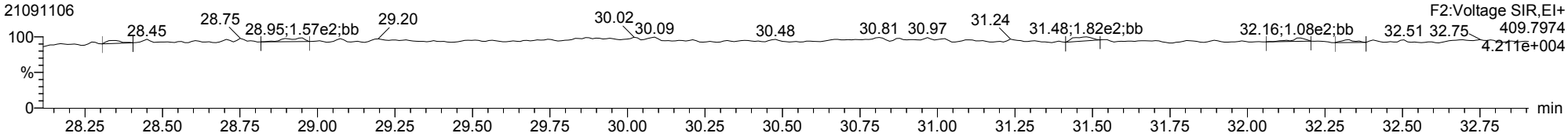

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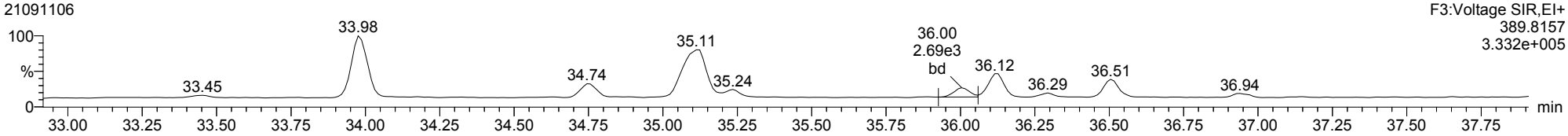
123478-HxCDD



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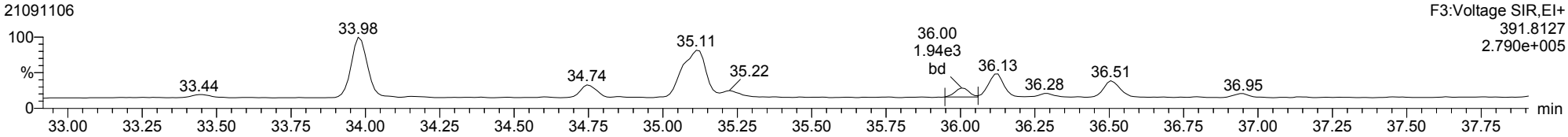

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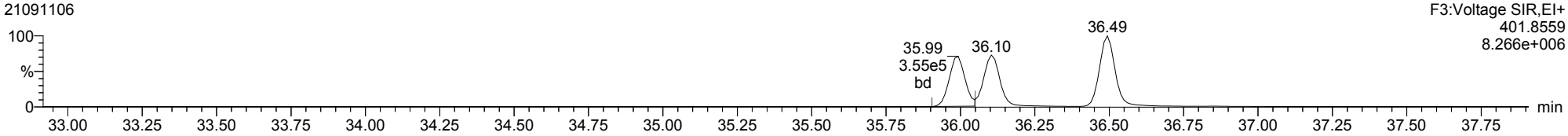

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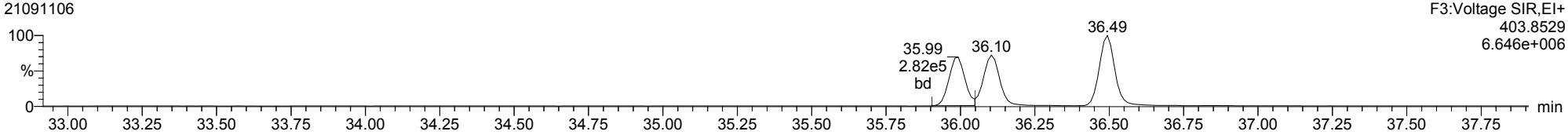

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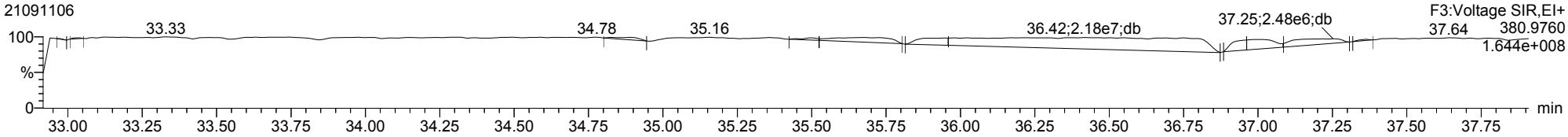

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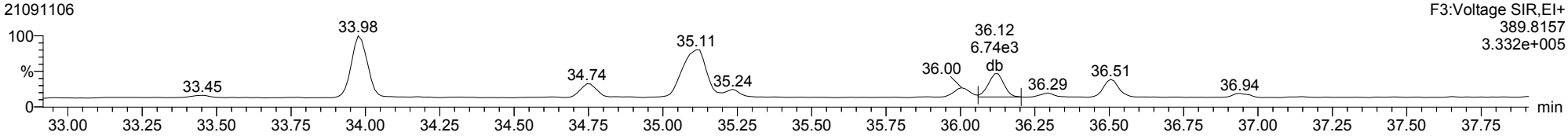
123678-HxCDD



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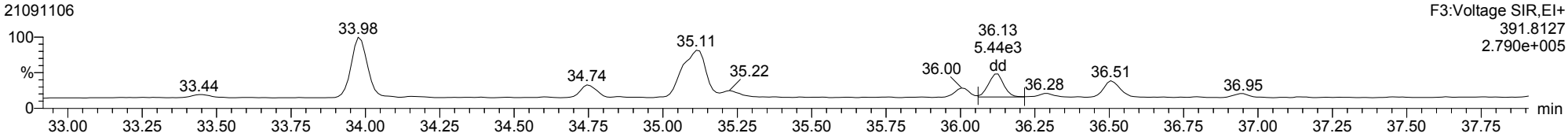

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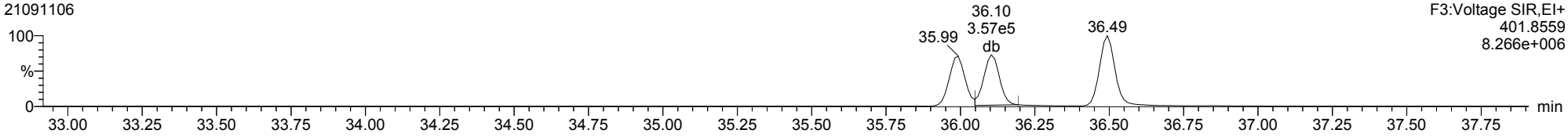

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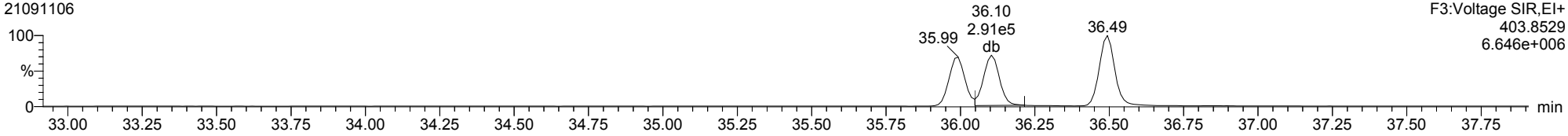

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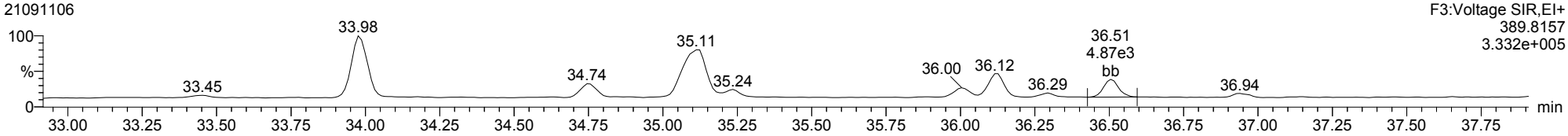

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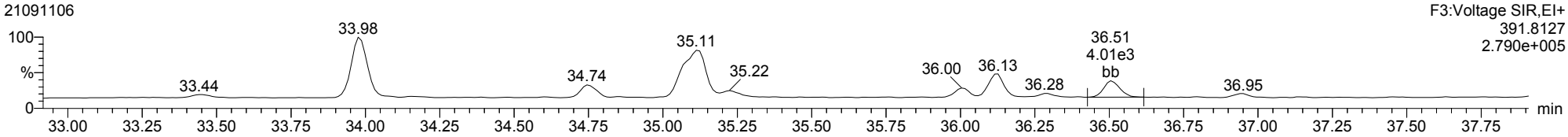

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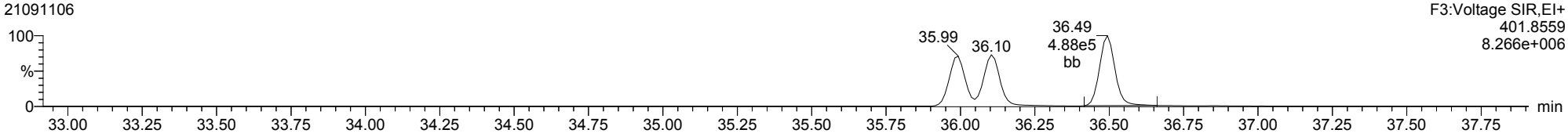

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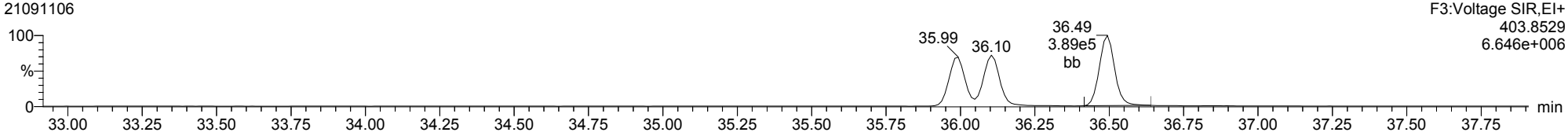

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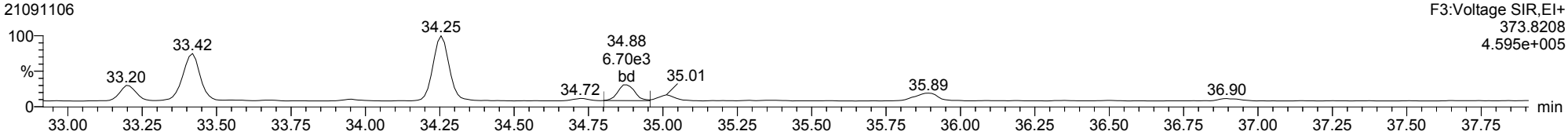

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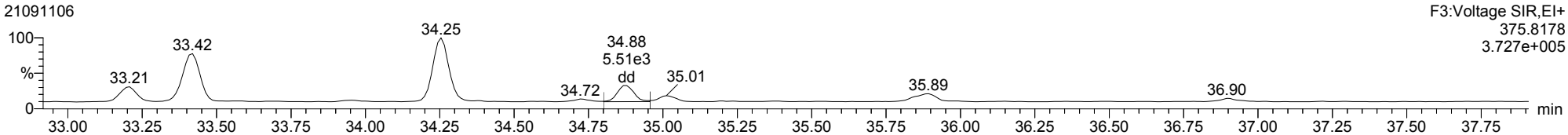

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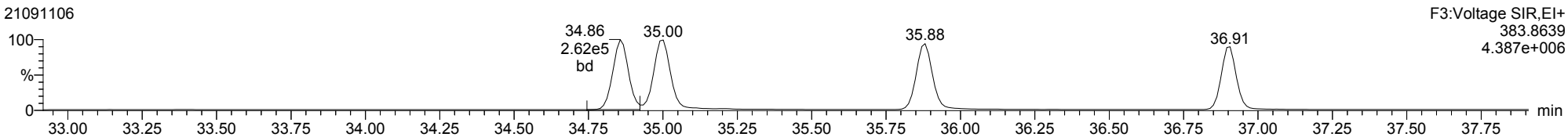

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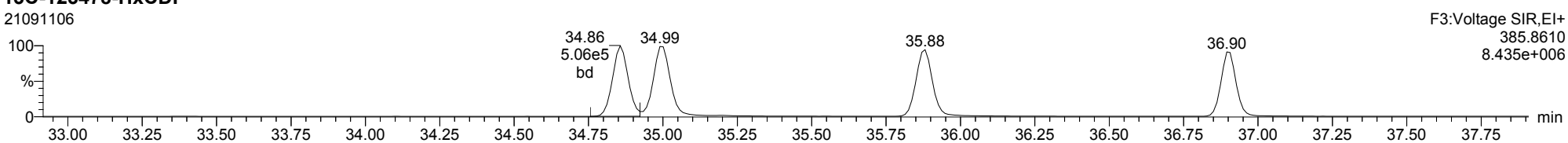
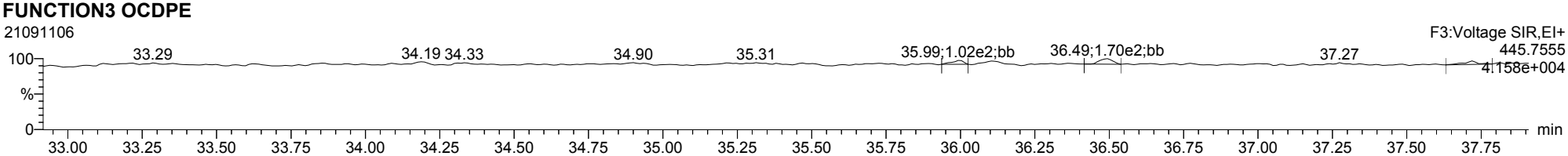


FUNCTION3 OCDPE



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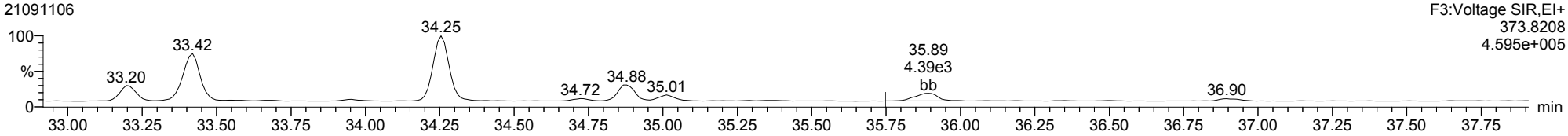
234678-HxCDF



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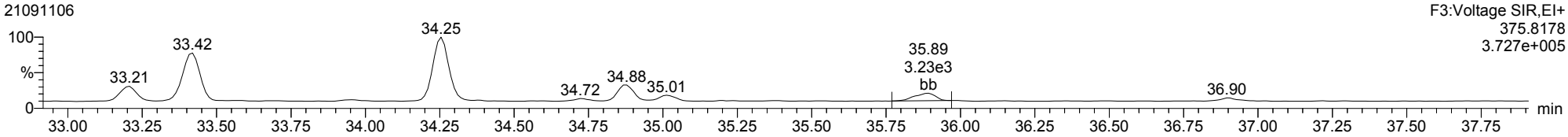

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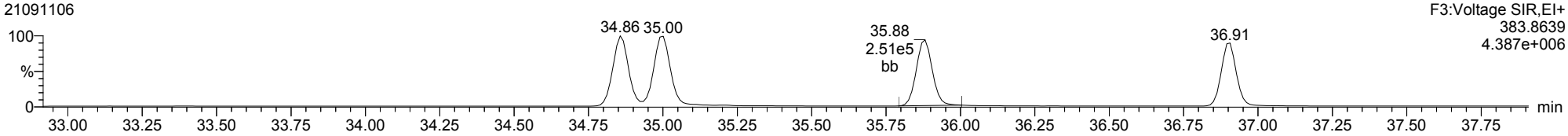

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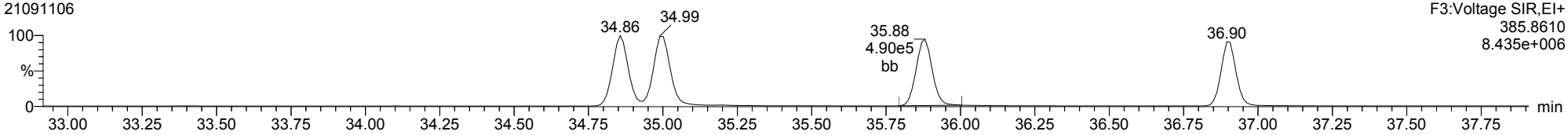
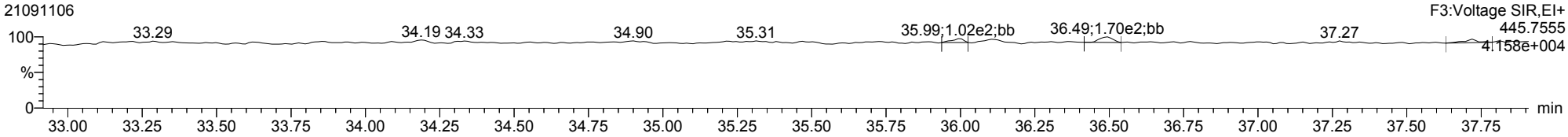


FUNCTION3 OCDPE



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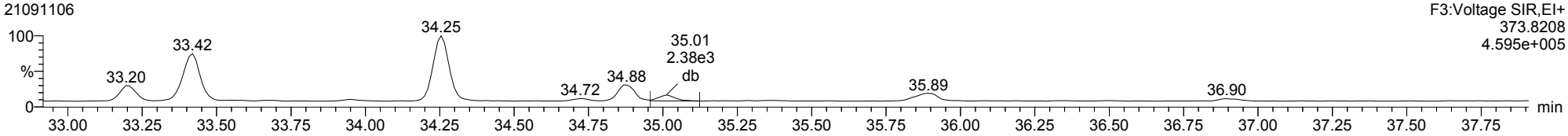

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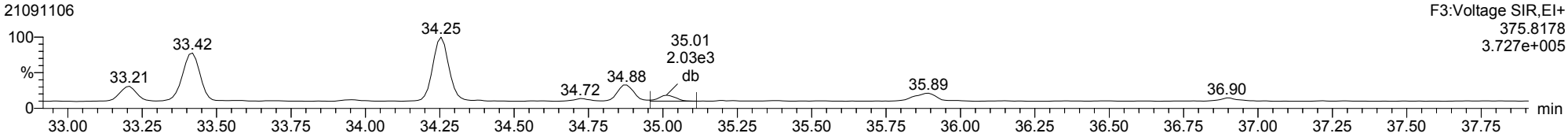

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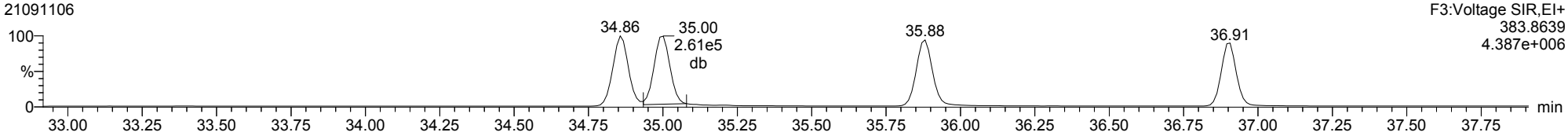

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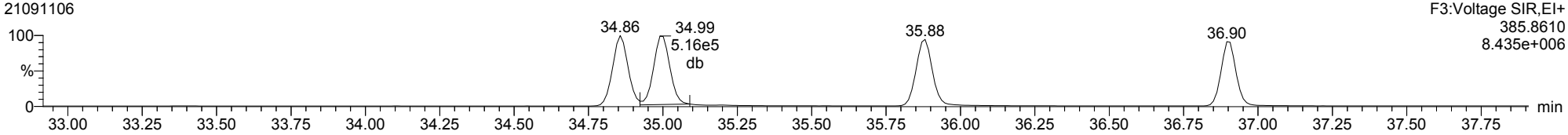

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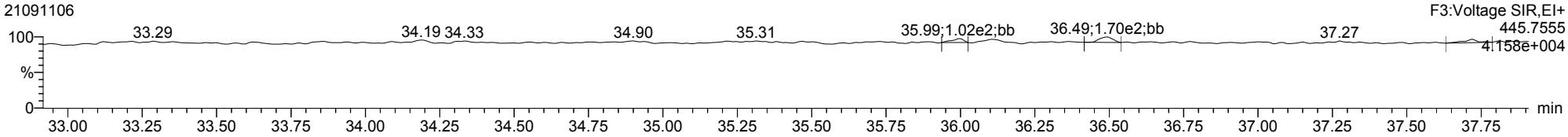

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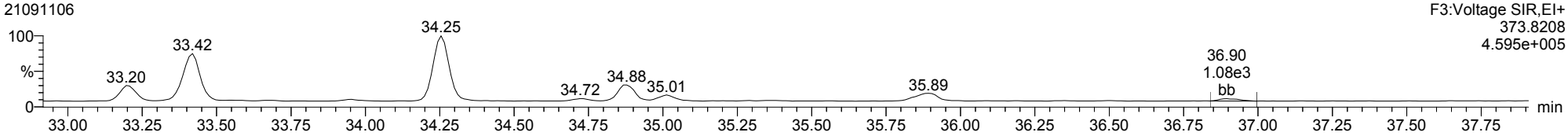

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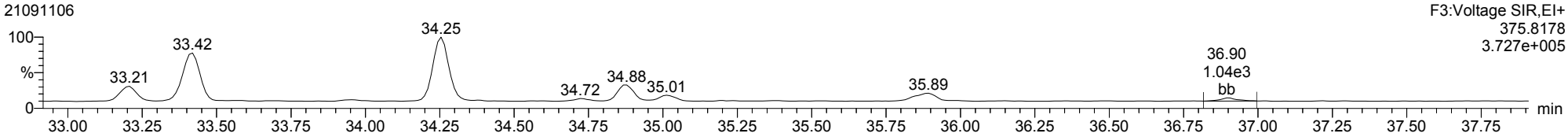

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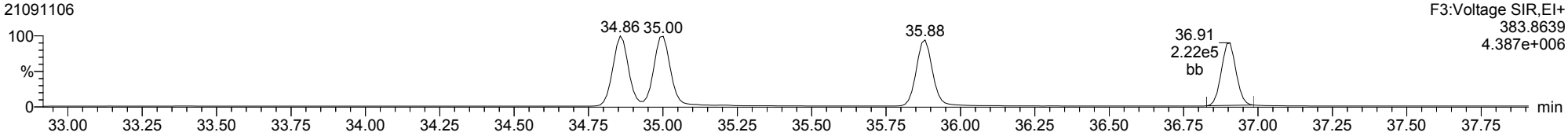

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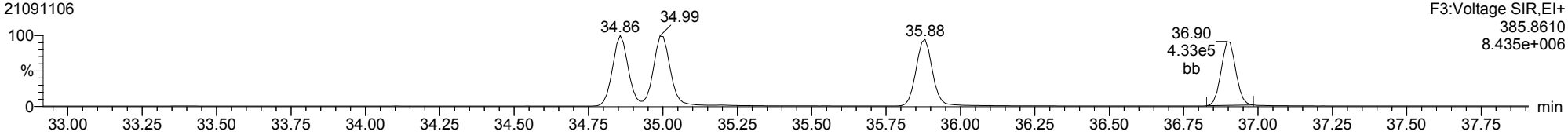

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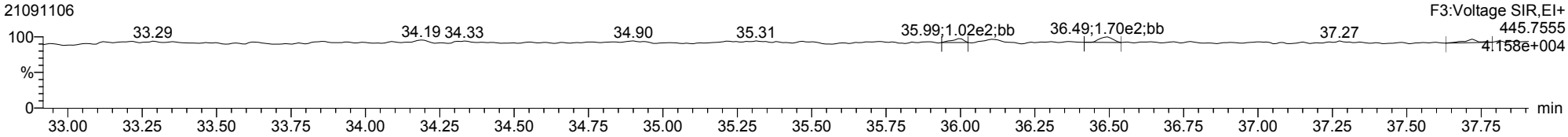

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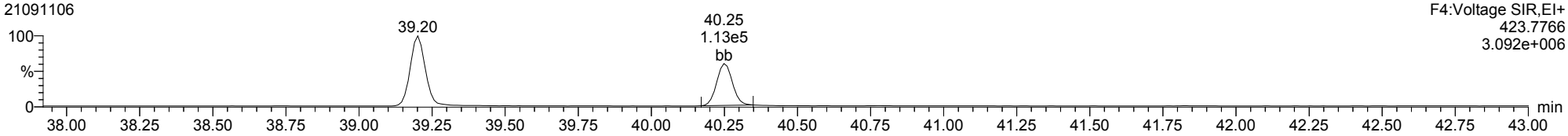

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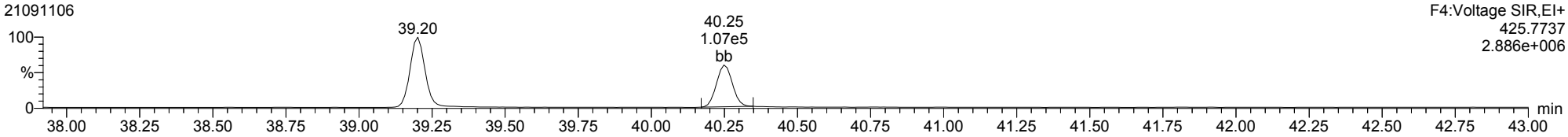

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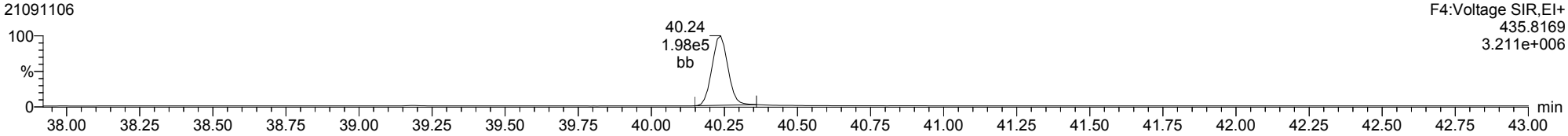

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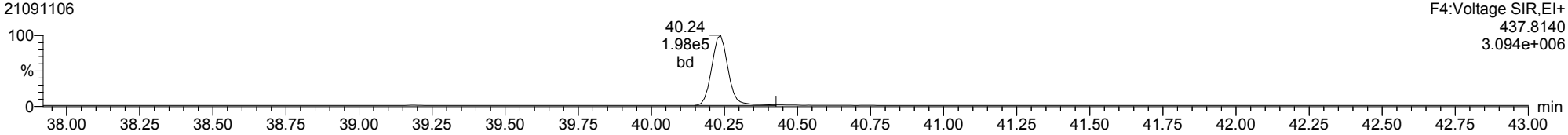

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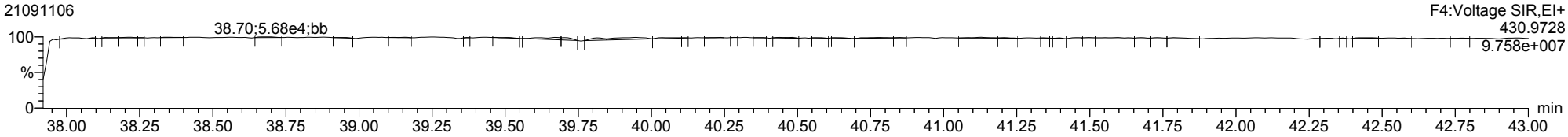

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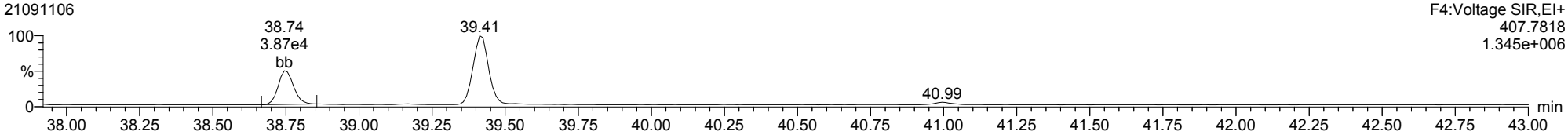

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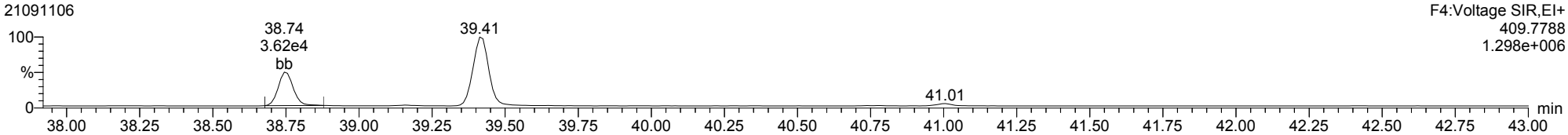

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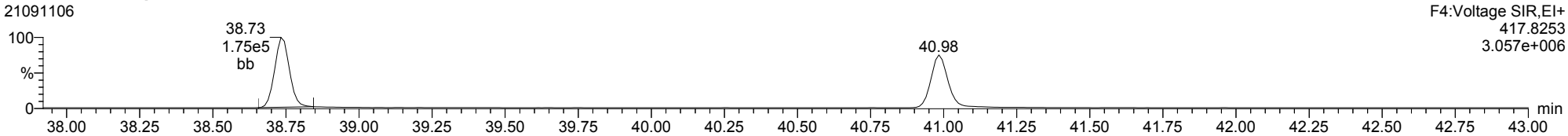

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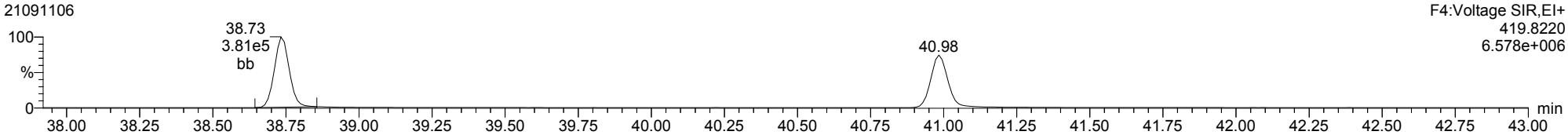

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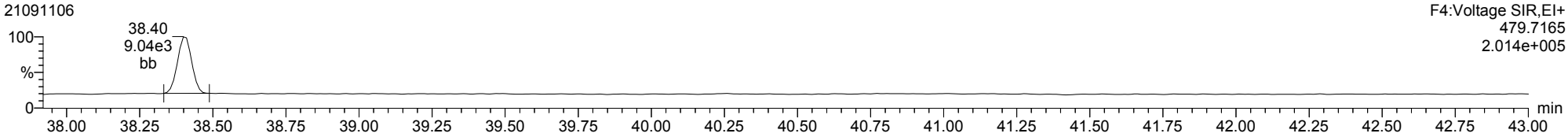

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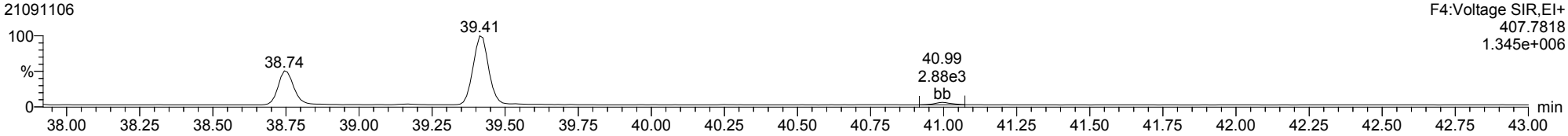

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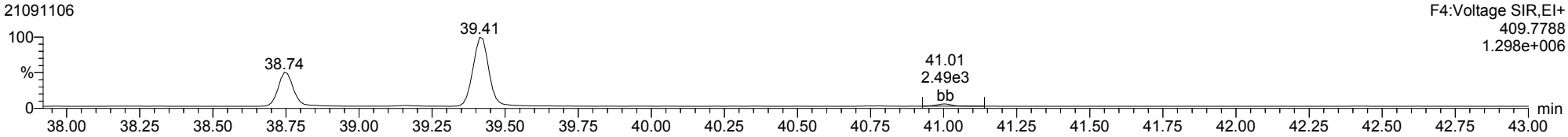

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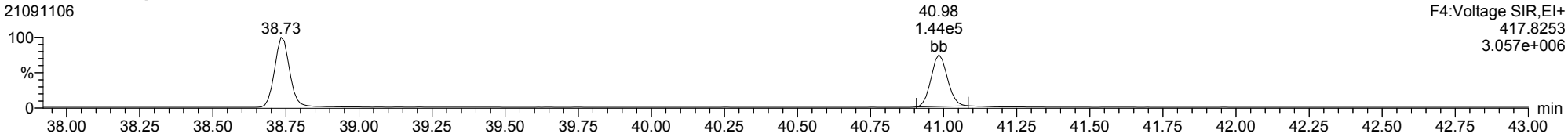

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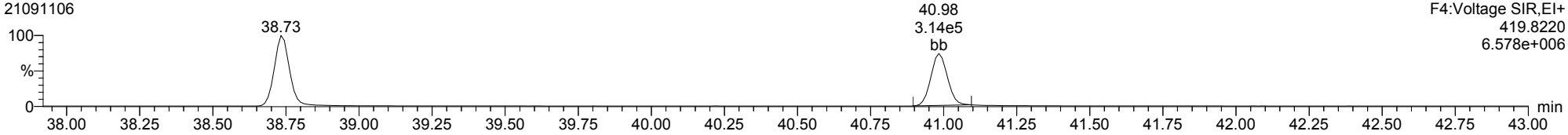

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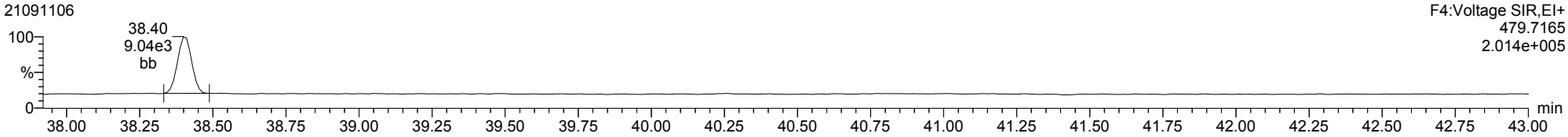

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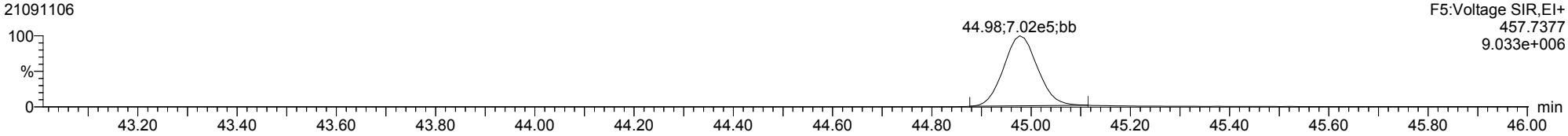

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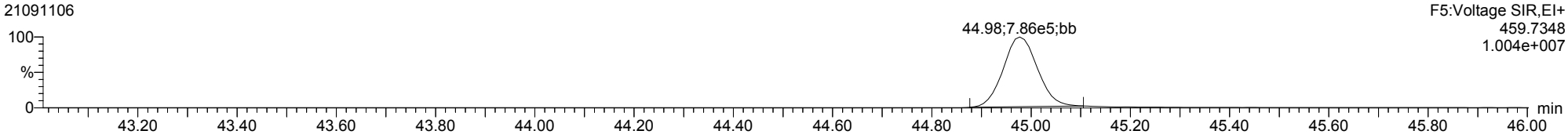

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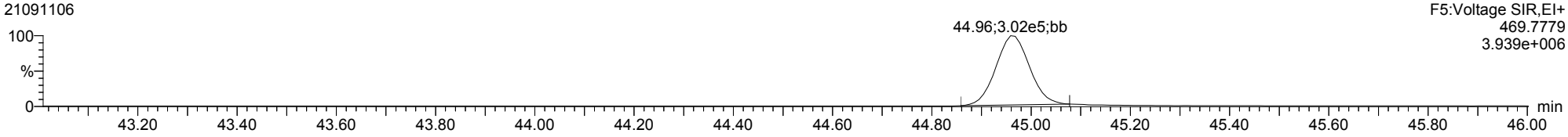

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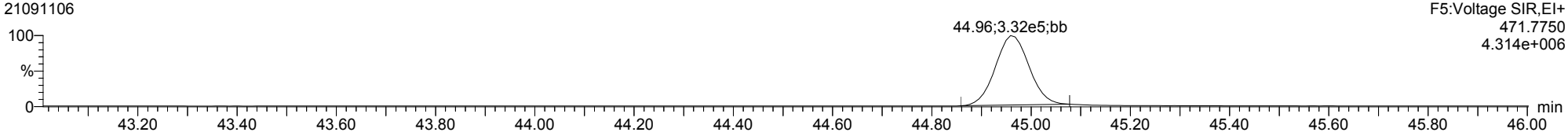

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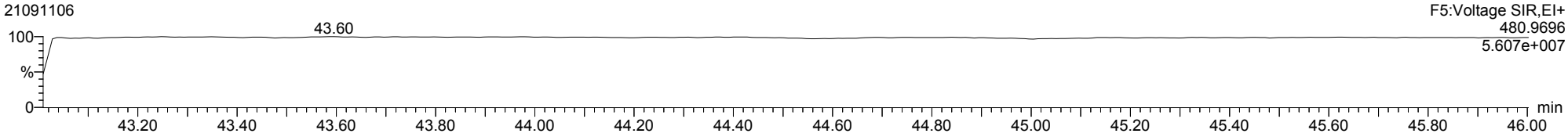

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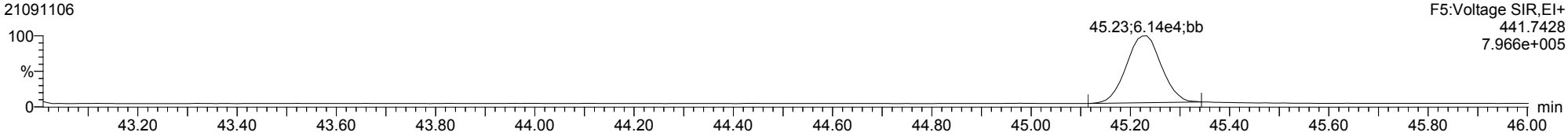

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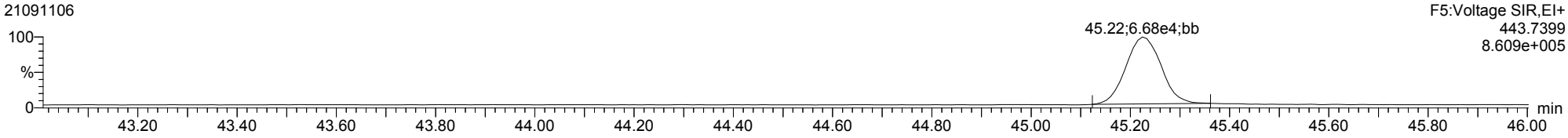

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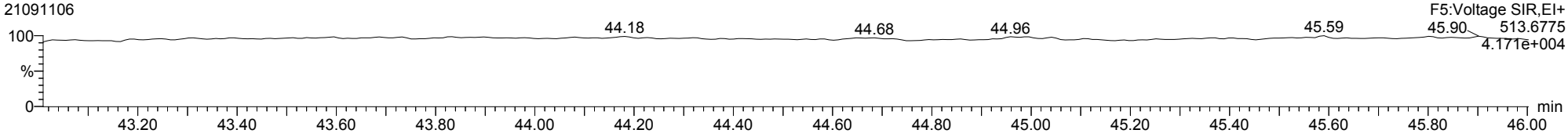

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Printed: Wednesday, September 15, 2021 11:21:32 Pacific Daylight Time

ID: BJH0150-SRM1, Name: 21091106, Date: 11-Sep-2021, Time: 14:36:32, Conditions: AUTOSPEC01, User: pk

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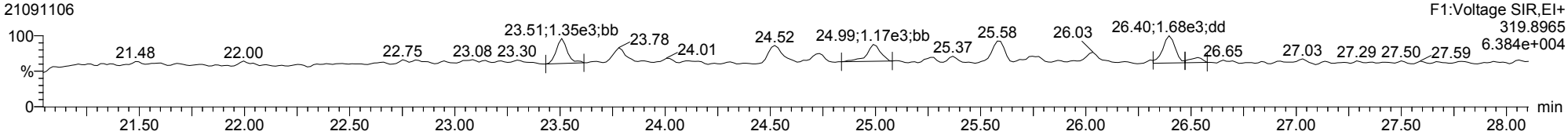

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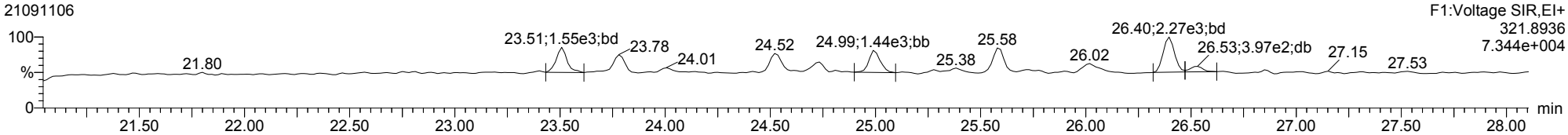

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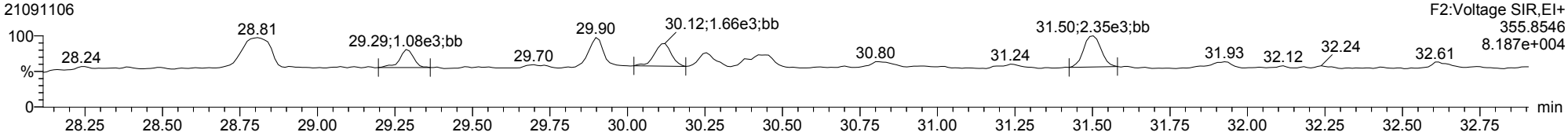

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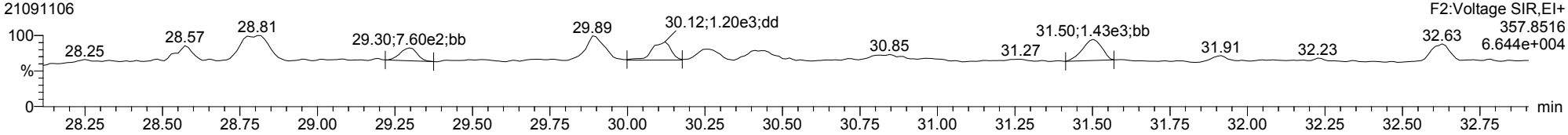

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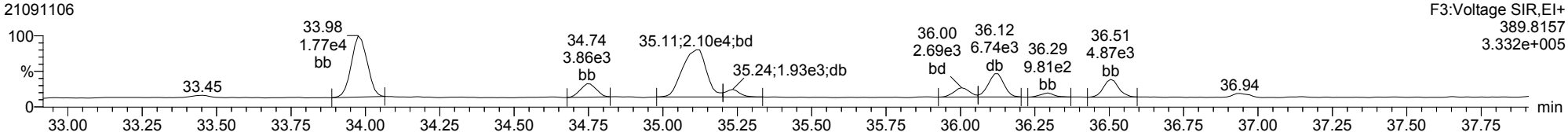

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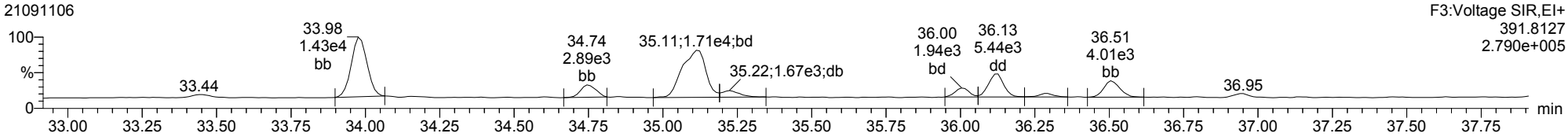

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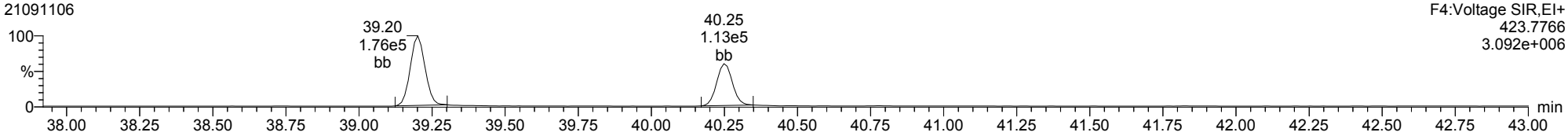

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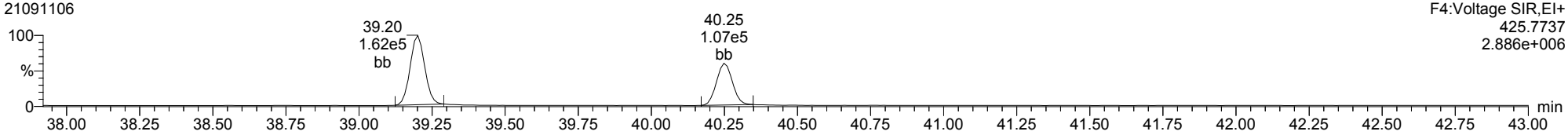

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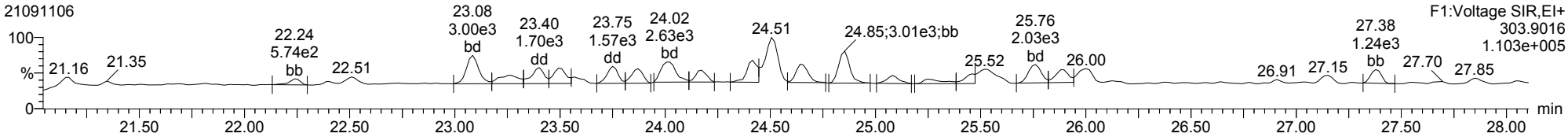
Total-tetrafurans



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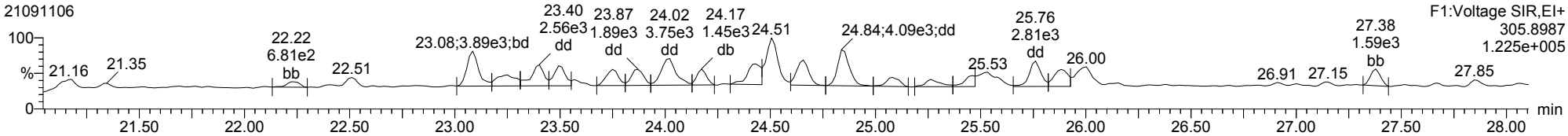

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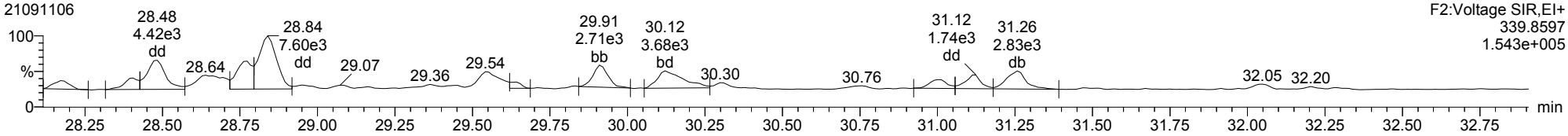

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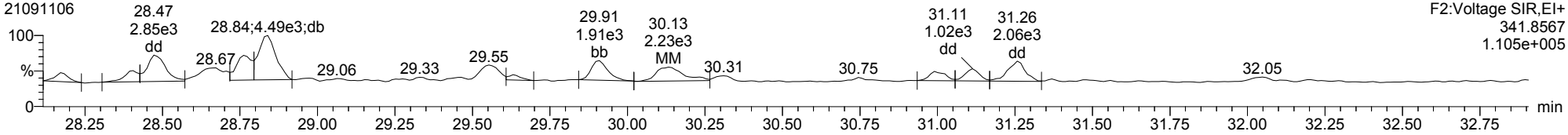

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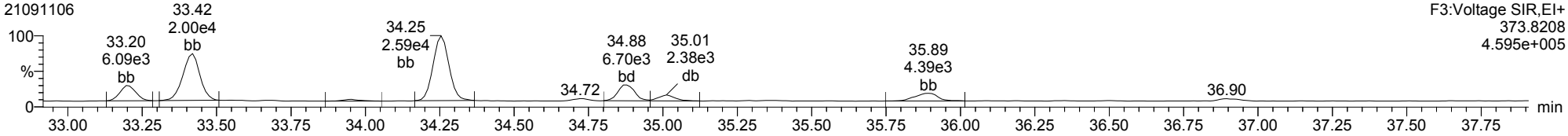
Total-hexafurans



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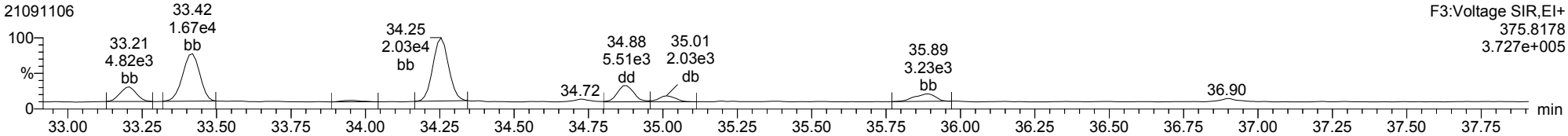

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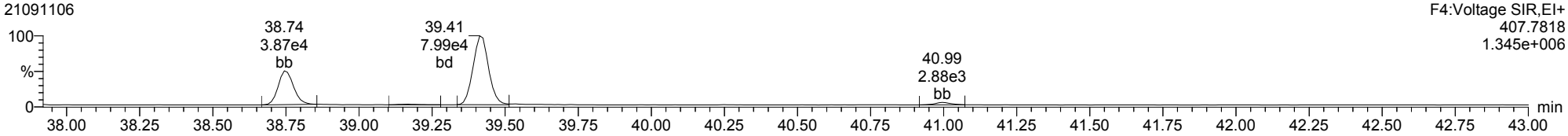

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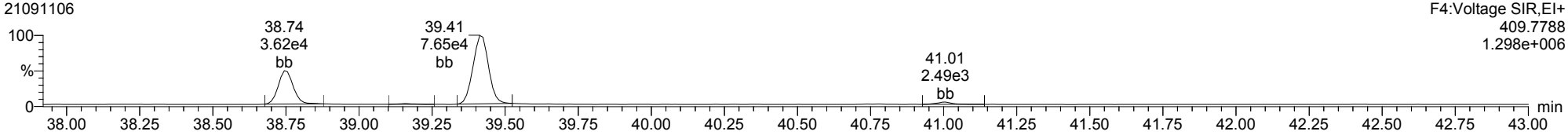

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 1613B

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Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00030	Instrument:	AUTOSPEC01
Calibration Date:	08/11/2021	Column (1):	RTX-Dioxin2

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
2,3,7,8-TCDF			0.5	1.177779	2	1.089564	10	1.083206	40	1.09573	200	1.091684
2,3,7,8-TCDD			0.5	0.9055873	2	0.9678062	10	0.9085186	40	0.8960008	200	0.9235243
1,2,3,7,8-PeCDF	0.5	1.055376	2.5	0.9749948	10	0.9890582	50	1.04064	200	1.01544	1000	1.013695
2,3,4,7,8-PeCDF	0.5	1.154709	2.5	1.162487	10	1.08879	50	1.108527	200	1.12263	1000	1.116149
1,2,3,7,8-PeCDD	0.5	1.042847	2.5	0.9347965	10	1.000426	50	1.023433	200	0.967595	1000	1.00284
1,2,3,4,7,8-HxCDF	0.5	0.9510236	2.5	1.043616	10	1.027461	50	1.004481	200	1.030496	1000	1.044283
1,2,3,6,7,8-HxCDF	0.5	1.146121	2.5	1.02211	10	1.074838	50	0.9512592	200	1.003115	1000	1.02354
2,3,4,6,7,8-HxCDF	0.5	1.127526	2.5	1.070857	10	1.079018	50	1.043215	200	1.009624	1000	0.9845533
1,2,3,7,8,9-HxCDF	0.5	1.098409	2.5	1.018068	10	1.023691	50	1.015326	200	1.012664	1000	1.012763
1,2,3,4,7,8-HxCDD	0.5	1.061437	2.5	1.066813	10	1.04129	50	0.9862893	200	0.988471	1000	1.019875
1,2,3,6,7,8-HxCDD	0.5	0.9987812	2.5	1.00345	10	1.014563	50	1.005616	200	1.025933	1000	1.005535
1,2,3,7,8,9-HxCDD	0.5	0.9340398	2.5	0.9232118	10	0.9937847	50	0.9399502	200	0.9446474	1000	0.9672851
1,2,3,4,6,7,8-HpCDF	0.5	1.389904	2.5	1.344079	10	1.329355	50	1.296772	200	1.274981	1000	1.329007
1,2,3,4,7,8,9-HpCDF	0.5	1.296099	2.5	1.298231	10	1.306049	50	1.250104	200	1.264967	1000	1.284581
1,2,3,4,6,7,8-HpCDD	0.5	1.188982	2.5	0.9715609	10	1.075415	50	1.051009	200	1.0446	1000	1.076963
OCDF	1	1.386229	5	1.321192	20	1.473428	100	1.440564	400	1.519487	2000	1.540503
OCDD			5	1.230403	20	1.209327	100	1.133227	400	1.156307	2000	1.174851
13C12-2,3,7,8-TCDF	100	1.368644	100	1.423872	100	1.423929	100	1.432983	100	1.427899	100	1.482172
13C12-2,3,7,8-TCDD	100	1.085201	100	1.102248	100	1.115748	100	1.11594	100	1.126097	100	1.153713
13C12-1,2,3,7,8-PeCDF	100	1.199089	100	1.277562	100	1.315098	100	1.301019	100	1.280476	100	1.410636
13C12-2,3,4,7,8-PeCDF	100	1.157138	100	1.217571	100	1.208288	100	1.25174	100	1.225075	100	1.35907
13C12-1,2,3,7,8-PeCDD	100	0.6771591	100	0.7210236	100	0.7142954	100	0.7228749	100	0.7511038	100	0.805443
13C12-1,2,3,4,7,8-HxCDF	100	1.286327	100	1.201751	100	1.230613	100	1.269148	100	1.245045	100	1.221854
13C12-1,2,3,6,7,8-HxCDF	100	1.339141	100	1.30779	100	1.316908	100	1.430696	100	1.354788	100	1.311536
13C12-2,3,4,6,7,8-HxCDF	100	1.24279	100	1.168157	100	1.194712	100	1.212905	100	1.242651	100	1.227916
13C12-1,2,3,7,8,9-HxCDF	100	1.031792	100	0.9827749	100	0.9825353	100	1.01982	100	0.9970797	100	1.03182
13C12-1,2,3,4,7,8-HxCDD	100	0.9931736	100	0.9197633	100	0.9354684	100	0.9847809	100	0.9652949	100	0.9604585
13C12-1,2,3,6,7,8-HxCDD	100	1.065671	100	1.027995	100	1.028764	100	1.057951	100	1.039041	100	1.028891

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00030	Instrument:	AUTOSPEC01
Calibration Date:	08/11/2021	Column (1):	RTX-Dioxin2

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
13C12-1,2,3,4,6,7,8-HpCDF	100	0.9372866	100	0.9086205	100	0.9102718	100	0.922368	100	0.9442818	100	0.9359936
13C12-1,2,3,4,7,8,9-HpCDF	100	0.7416153	100	0.7182342	100	0.7567011	100	0.7658258	100	0.7723607	100	0.7927589
13C12-1,2,3,4,6,7,8-HpCDD	100	0.6435664	100	0.6169459	100	0.6151049	100	0.6260609	100	0.6432814	100	0.6497259
13C12-OCDD	200	0.4894078	200	0.4833068	200	0.4662427	200	0.5014182	200	0.5191023	200	0.5629814
37Cl4-2,3,7,8-TCDD	0.1	1.029849	0.5	1.178508	2	1.088624	10	1.009798	40	1.061277	200	1.133499
13C12-1,2,3,4-TCDD	100	1	100	1	100	1	100	1	100	1	100	1
13C12-1,2,3,7,8,9-HxCDD	100	1	100	1	100	1	100	1	100	1	100	1

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00030	Instrument:	AUTOSPEC01
Calibration Date:	08/11/2021	Column (1):	RTX-Dioxin2

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
2,3,7,8-TCDF	1.107593	3.6			RSD ()	
2,3,7,8-TCDD	0.9202875	3.1			RSD ()	
1,2,3,7,8-PeCDF	1.014867	3.0			RSD ()	
2,3,4,7,8-PeCDF	1.125549	2.5			RSD ()	
1,2,3,7,8-PeCDD	0.9953229	3.9			RSD ()	
1,2,3,4,7,8-HxCDF	1.016893	3.5			RSD ()	
1,2,3,6,7,8-HxCDF	1.036831	6.4			RSD ()	
2,3,4,6,7,8-HxCDF	1.052466	4.9			RSD ()	
1,2,3,7,8,9-HxCDF	1.030154	3.3			RSD ()	
1,2,3,4,7,8-HxCDD	1.027363	3.4			RSD ()	
1,2,3,6,7,8-HxCDD	1.00898	1.0			RSD ()	
1,2,3,7,8,9-HxCDD	0.9504865	2.7			RSD ()	
1,2,3,4,6,7,8-HpCDF	1.32735	3.0			RSD ()	
1,2,3,4,7,8,9-HpCDF	1.283338	1.7			RSD ()	
1,2,3,4,6,7,8-HpCDD	1.068088	6.6			RSD ()	
OCDF	1.446901	5.7			RSD ()	
OCDD	1.180823	3.3			RSD ()	
13C12-2,3,7,8-TCDF	1.426583	2.5			RSD ()	
13C12-2,3,7,8-TCDD	1.116491	2.1			RSD ()	
13C12-1,2,3,7,8-PeCDF	1.297313	5.3			RSD ()	
13C12-2,3,4,7,8-PeCDF	1.23648	5.5			RSD ()	
13C12-1,2,3,7,8-PeCDD	0.7319833	5.9			RSD ()	
13C12-1,2,3,4,7,8-HxCDF	1.242456	2.5			RSD ()	
13C12-1,2,3,6,7,8-HxCDF	1.343476	3.5			RSD ()	
13C12-2,3,4,6,7,8-HxCDF	1.214855	2.4			RSD ()	
13C12-1,2,3,7,8,9-HxCDF	1.007637	2.3			RSD ()	
13C12-1,2,3,4,7,8-HxCDD	0.9598233	2.9			RSD ()	
13C12-1,2,3,6,7,8-HxCDD	1.041385	1.6			RSD ()	
13C12-1,2,3,4,6,7,8-HpCDF	0.9264704	1.6			RSD ()	
13C12-1,2,3,4,7,8,9-HpCDF	0.757916	3.4			RSD ()	
13C12-1,2,3,4,6,7,8-HpCDD	0.6324476	2.4			RSD ()	

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00030	Instrument:	AUTOSPEC01
Calibration Date:	08/11/2021	Column (1):	RTX-Dioxin2

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
13C12-OCDD	0.5037432	6.7			RSD ()	
37Cl4-2,3,7,8-TCDD	1.083593	5.9			RSD ()	
13C12-1,2,3,4-TCDD	1	0.0			RSD ()	
13C12-1,2,3,7,8,9-HxCDD	1	0.0			RSD ()	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1613B

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00030
Sequence: SJH0117

SDG: 21G0138
Project: Lower Duwamish AOC4
Laboratory ID: SJH0117-SCV1
Sequence Name: ICVCV
Standard ID: G001361

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
2,3,7,8-TCDF	10.000	10.1	1.1	20.00
2,3,7,8-TCDD	10.000	11.1	10.6	20.00
1,2,3,7,8-PeCDF	50.000	52.8	5.7	20.00
2,3,4,7,8-PeCDF	50.000	50.7	1.4	20.00
1,2,3,7,8-PeCDD	50.000	52.2	4.4	20.00
1,2,3,4,7,8-HxCDF	50.000	54.0	8.0	20.00
1,2,3,6,7,8-HxCDF	50.000	51.5	3.0	20.00
2,3,4,6,7,8-HxCDF	50.000	55.5	11.0	20.00
1,2,3,7,8,9-HxCDF	50.000	53.6	7.2	20.00
1,2,3,4,7,8-HxCDD	50.000	54.6	9.3	20.00
1,2,3,6,7,8-HxCDD	50.000	50.6	1.1	20.00
1,2,3,7,8,9-HxCDD	50.000	52.3	4.7	20.00
1,2,3,4,6,7,8-HpCDF	50.000	54.8	9.6	20.00
1,2,3,4,7,8,9-HpCDF	50.000	59.1	18.3	20.00
1,2,3,4,6,7,8-HpCDD	50.000	51.9	3.7	20.00
OCDF	100.00	105	5.4	20.00
OCDD	100.00	105	5.0	20.00
13C12-2,3,7,8-TCDF	100.00	102	1.7	20.00
13C12-2,3,7,8-TCDD	100.00	81.6	-18.4	20.00
13C12-1,2,3,7,8-PeCDF	100.00	105	4.8	20.00
13C12-2,3,4,7,8-PeCDF	100.00	104	4.3	20.00
13C12-1,2,3,7,8-PeCDD	100.00	98.4	-1.6	20.00
13C12-1,2,3,4,7,8-HxCDF	100.00	116	15.9	20.00
13C12-1,2,3,6,7,8-HxCDF	100.00	119	19.4	20.00
13C12-2,3,4,6,7,8-HxCDF	100.00	109	8.8	20.00
13C12-1,2,3,7,8,9-HxCDF	100.00	113	13.2	20.00
13C12-1,2,3,4,7,8-HxCDD	100.00	114	14.1	20.00
13C12-1,2,3,6,7,8-HxCDD	100.00	119	19.5	20.00
13C12-1,2,3,4,6,7,8-HpCDF	100.00	114	13.7	20.00
13C12-1,2,3,4,7,8,9-HpCDF	100.00	110	9.8	20.00
13C12-1,2,3,4,6,7,8-HpCDD	100.00	110	10.5	20.00
13C12-OCDD	200.00	212	5.9	20.00
37Cl4-2,3,7,8-TCDD	10.000	10.4	4.0	20.00

* Indicates values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
Last Altered: Friday, August 13, 2021 13:47:27 Pacific Daylight Time
Printed: Friday, August 13, 2021 13:51:56 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.655	1.001	8.598e4	1.128e5	1.108	0.762	0.770	1727	2357	1.26e6	1.68e6	728.4	713.0	NO	bb	bb	10.110
12378-PeCDF	29.816	1.000	5.436e5	3.483e5	1.015	1.561	1.550	6428	5298	7.67e6	4.88e6	1193.2	921.9	NO	bd	bd	52.831
23478-PeCDF	31.165	1.001	5.567e5	3.442e5	1.126	1.617	1.550	6428	5298	7.71e6	5.06e6	1200.0	955.7	NO	dd	bb	50.709
123478-HxCDF	34.797	1.000	3.790e5	3.119e5	1.017	1.215	1.240	6025	4489	5.81e6	4.80e6	963.5	1070.0	NO	bd	bd	54.003
234678-HxCDF	35.810	1.001	3.741e5	3.010e5	1.052	1.243	1.240	6025	4489	5.56e6	4.51e6	922.2	1004.3	NO	bb	bb	55.515
123678-HxCDF	34.941	1.001	4.107e5	3.376e5	1.037	1.217	1.240	6025	4489	5.99e6	4.89e6	994.0	1090.0	NO	db	db	51.475
123789-HxCDF	36.835	1.000	3.029e5	2.474e5	1.030	1.224	1.240	6025	4489	4.62e6	3.69e6	767.5	821.7	NO	bb	bb	53.582
1234678-HpCDF	38.685	1.000	3.428e5	3.268e5	1.327	1.049	1.050	5528	5142	5.22e6	4.97e6	945.1	966.6	NO	bb	bb	54.784
1234789-HpCDF	40.924	1.000	2.799e5	2.719e5	1.283	1.029	1.050	5528	5142	3.60e6	3.43e6	650.7	667.0	NO	bd	bd	59.145
OCDF	45.140	1.006	3.368e5	3.743e5	1.447	0.900	0.890	5198	2808	3.79e6	4.27e6	729.8	1522.4	NO	bb	bb	105.415
2378-TCDD	26.305	1.001	4.924e4	6.425e4	0.920	0.766	0.770	2440	1603	7.12e5	9.28e5	291.6	579.2	NO	bb	db	11.057
12378-PeCDD	31.421	1.001	2.834e5	1.748e5	0.995	1.621	1.550	4032	3115	4.22e6	2.62e6	1046.5	841.2	NO	bb	bb	52.211
123478-HxCDD	35.922	1.000	2.965e5	2.407e5	1.027	1.232	1.240	4241	3010	4.65e6	3.73e6	1096.7	1237.9	NO	bd	bd	54.629
123678-HxCDD	36.044	1.001	3.082e5	2.464e5	1.009	1.251	1.240	4241	3010	4.61e6	3.72e6	1085.9	1237.1	NO	db	db	50.555
123789-HxCDD	36.423	1.011	2.887e5	2.199e5	0.950	1.313	1.240	4241	3010	4.19e6	3.34e6	989.1	1108.9	NO	bd	bb	52.339
1234678-HpCDD	40.178	1.000	1.757e5	1.625e5	1.068	1.081	1.050	3111	3083	2.53e6	2.35e6	814.6	763.1	NO	bb	bb	51.865
OCDD	44.903	1.000	2.642e5	3.138e5	1.181	0.842	0.890	2972	3108	3.12e6	3.44e6	1050.3	1105.9	NO	bb	bd	104.997
13C-2378-TCDF	25.640	1.007	7.798e5	9.953e5	1.427	0.784	0.770	3469	3089	1.16e7	1.43e7	3339.4	4613.3	NO	bb	bb	101.689
13C-12378-PeCDF	29.806	1.171	1.051e6	6.125e5	1.297	1.716	1.550	4922	3645	1.42e7	8.62e6	2881.8	2364.6	NO	bd	bb	104.785
13C-23478-PeCDF	31.142	1.223	9.754e5	6.030e5	1.236	1.617	1.550	4922	3645	1.41e7	8.69e6	2860.8	2384.9	NO	bb	bb	104.321
13C-123478-HxCDF	34.785	0.955	4.274e5	8.307e5	1.242	0.514	0.510	5265	6298	6.41e6	1.24e7	1218.4	1973.2	NO	bd	bd	115.885
13C-123678-HxCDF	34.919	0.959	4.860e5	9.161e5	1.343	0.530	0.510	5265	6298	7.00e6	1.35e7	1330.1	2144.5	NO	db	db	119.442
13C-234678-HxCDF	35.788	0.983	3.967e5	7.587e5	1.215	0.523	0.510	5265	6298	5.75e6	1.13e7	1091.4	1799.0	NO	bb	bb	108.848
13C-123789-HxCDF	36.824	1.011	3.447e5	6.522e5	1.008	0.529	0.510	5265	6298	5.11e6	9.81e6	969.9	1558.1	NO	bb	bb	113.229
13C-1234678-HpCDF	38.674	1.062	3.005e5	6.203e5	0.926	0.484	0.440	3480	6125	4.35e6	9.34e6	1249.4	1525.5	NO	bd	bb	113.744
13C-1234789-HpCDF	40.902	1.123	2.223e5	5.047e5	0.758	0.440	0.440	3480	6125	2.90e6	6.30e6	833.4	1029.2	NO	bb	bb	109.773
13C-1234-TCDD	25.458	0.000	5.298e5	6.938e5	1.000	0.764	0.770	5513	2305	7.87e6	1.03e7	1428.2	4481.1	NO	bb	bb	100.000
13C-2378-TCDD	26.275	1.032	4.826e5	6.328e5	1.116	0.763	0.770	5513	2305	7.09e6	9.32e6	1285.5	4044.7	NO	bb	bb	81.637
13C-12378-PeCDD	31.399	1.233	5.423e5	3.395e5	0.732	1.598	1.550	2388	2135	7.53e6	4.95e6	3154.4	2319.5	NO	bb	bb	98.449
13C-123478-HxCDD	35.911	0.986	5.361e5	4.211e5	0.960	1.273	1.240	3574	5521	8.65e6	6.70e6	2421.3	1213.6	NO	bd	bd	114.124
13C-123678-HxCDD	36.022	0.989	6.017e5	4.857e5	1.041	1.239	1.240	3574	5521	9.06e6	7.24e6	2535.4	1311.0	NO	db	db	119.499
13C-1234678-HpCDD	40.167	1.103	3.074e5	3.031e5	0.632	1.014	1.050	3260	2760	4.30e6	4.19e6	1318.4	1519.0	NO	bb	bb	110.470
13C-OCDD	44.884	1.233	4.208e5	5.116e5	0.504	0.822	0.890	2744	3477	4.92e6	5.55e6	1792.3	1596.9	NO	bb	bd	211.835
13C-123789-HxCDD	36.412	0.000	4.843e5	3.895e5	1.000	1.243	1.240	3574	5521	7.18e6	5.79e6	2010.2	1047.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.305	1.033	1.379e5		1.084			1849		1.90e6		1029.2			bd		10.397

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
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ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.147	0.864	1.063e5	1.324e5	1.425	0.802	0.770	1727	2357	1.66e6	2.09e6	959.0	886.5	NO	bb	bb	9.436
1289-TCDF	27.152	1.059	5.661e4	7.137e4	1.043	0.793	0.770	1727	2357	8.15e5	1.06e6	472.0	447.8	NO	bb	bb	6.913
13468-PECDF	27.015	0.906	5.743e5	3.714e5	1.376	1.546	1.550	1557	1759	8.45e6	5.45e6	5425.9	3099.7	NO	bb	bb	41.310
12389-PECDF	32.201	1.080	4.075e5	2.638e5	1.000	1.544	1.550	6428	5298	5.63e6	3.72e6	875.5	702.7	NO	bb	bb	40.376
123468-HXCDF	33.125	0.952	4.315e5	3.546e5	1.087	1.217	1.240	6025	4489	6.40e6	5.20e6	1061.8	1158.1	NO	bb	bb	57.507
1368-TCDD	23.417	0.891	5.716e4	7.362e4	0.923	0.776	0.770	2440	1603	8.73e5	1.13e6	357.6	706.6	NO	bb	bb	12.700
1289-TCDD	26.895	1.024	4.776e4	6.026e4	0.794	0.793	0.770	2440	1603	6.91e5	8.63e5	283.1	538.1	NO	bb	bb	12.197
12479-PECDD	28.691	0.914	4.186e5	2.632e5	1.843	1.590	1.550	4032	3115	3.99e6	2.51e6	988.7	804.5	NO	bb	bb	41.945
12389-PECDD	31.822	1.013	2.780e5	1.664e5	1.154	1.671	1.550	4032	3115	4.00e6	2.46e6	992.1	791.3	NO	bb	bb	43.683
124679-HXCDD	33.905	0.944	3.632e5	2.896e5	1.125	1.254	1.240	4241	3010	5.57e6	4.44e6	1314.1	1475.1	NO	bb	bb	60.629
1234679-HPCDD	39.141	0.975	2.129e5	1.840e5	1.211	1.157	1.050	3111	3083	2.93e6	2.75e6	941.5	893.1	NO	bd	bb	53.689
Total-tetrafurans			2.574e5		1.192			1727		3.86e6							27.363
Total-penta1			5.743e5					1557		8.45e6							41.310
Total-pentafurans			1.602e6		1.047			6428		2.23e7							153.079
Total-hexafurans			1.898e6		1.045			6025		2.84e7							272.082
Total-heptafurans			6.227e5		1.305			5528		8.82e6							113.929
Total-Furans			5.291e6		1.158			1727		7.56e7							713.177
Total-tetradioxins			2.709e5		0.879			2440		3.41e6							62.800
Total-pentadioxins			9.817e5		1.331			4032		1.22e7							138.087
Total-hexadioxins			1.266e6		1.028			4241		1.92e7							219.741
Total-heptadioxins			3.886e5		1.140			3111		5.46e6							105.554
Total-Dioxins			3.171e6		1.092			2440		4.34e7							631.178
Total-TEQ			8.462e6					2440		1.19e8							1344.355
FUNCTION1 PFK			6.450e7					839971		2.37e8							
FUNCTION2 PFK			0.000e0					483349		0.00e0							
FUNCTION3 PFK			5.184e7					675979		4.54e8							0.000
FUNCTION4 PFK			3.964e5					425264		1.39e7							
FUNCTION5 PFK			3.414e4					345829		1.67e6							
FUNCTION1 HXCD...			2.903e3					1258		5.64e4							0.000
FUNCTION1 HPCD...			2.863e3					1421		5.44e4							0.000
FUNCTION2 HPCD...			2.720e3					1471		5.70e4							0.000
FUNCTION3 OCDPE			1.392e3					890		2.72e4							0.000
FUNCTION4 NCDPE			1.187e3					1520		2.23e4							0.000
FUNCTION5 DCDPE			1.665e2					1065		6.42e3							0.000

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Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
2	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
3	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
4	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
5	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
2	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
3	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
4	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
5	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
2	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020
7	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
8	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
9	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
10	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
11	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831
12	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
13	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
14	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
15	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
16	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003
17	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
18	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145
19	OCDF	45.14	3.368e5	3.743e5	1.447	0.90	0.89	729.8	YES	NO	bb	bb	105.415
20	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
2	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
3	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
4	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
5	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
6	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
2	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
3	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
4	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
2	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
3	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
4	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
5	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
6	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865
2	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
2	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
3	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
4	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
5	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
6	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057
7	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
8	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
9	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
10	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945
11	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
12	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
13	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
14	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
15	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
16	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325
17	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865
18	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689
19	OCDD	44.90	2.642e5	3.138e5	1.181	0.84	0.89	1050.3	YES	NO	bb	bd	104.997

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020
7	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
8	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
9	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
10	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
11	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831
12	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
13	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
14	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
15	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
16	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003
17	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
18	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145
19	OCDF	45.14	3.368e5	3.743e5	1.447	0.90	0.89	729.8	YES	NO	bb	bb	105.415
20	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310
21	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
22	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
23	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
24	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
25	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
26	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057
27	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
28	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
29	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
30	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945
31	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
32	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
33	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
34	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
35	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
36	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325
37	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689
39	OCDD	44.90	2.642e5	3.138e5	1.181	0.84	0.89	1050.3	YES	NO	bb	bd	104.997

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.34	1.094e7					29.2	YES		db		
2	FUNCTION1 PFK	22.07	1.938e7					38.3	YES		dd		
3	FUNCTION1 PFK	21.38	2.077e7					61.6	YES		dd		
4	FUNCTION1 PFK	21.25	7.452e6					64.7	YES		dd		
5	FUNCTION1 PFK	21.10	5.199e6					69.3	YES		bd		
6	FUNCTION1 PFK	27.62	5.202e4					1.5	NO		bb		
7	FUNCTION1 PFK	26.61	3.088e4					1.4	NO		bb		
8	FUNCTION1 PFK	26.53	3.772e4					1.3	NO		bb		
9	FUNCTION1 PFK	26.21	4.215e4					1.3	NO		bb		
10	FUNCTION1 PFK	26.14	2.091e4					0.7	NO		bb		
11	FUNCTION1 PFK	25.90	2.782e4					1.0	NO		bb		
12	FUNCTION1 PFK	25.64	2.244e4					0.9	NO		bb		
13	FUNCTION1 PFK	25.38	4.475e4					1.3	NO		bb		
14	FUNCTION1 PFK	25.32	8.085e4					1.5	NO		bb		
15	FUNCTION1 PFK	25.10	6.333e4					1.7	NO		db		
16	FUNCTION1 PFK	24.94	2.192e5					2.0	NO		dd		
17	FUNCTION1 PFK	24.82	2.857e4					1.1	NO		bd		
18	FUNCTION1 PFK	24.63	2.787e4					1.0	NO		bb		
19	FUNCTION1 PFK	24.35	1.463e4					0.7	NO		bb		
20	FUNCTION1 PFK	23.43	4.951e4					1.7	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.47	2.892e5					8.3	YES		dd		0.000
2	FUNCTION3 PFK	34.42	3.441e5					9.9	YES		dd		0.000
3	FUNCTION3 PFK	34.30	9.123e5					14.6	YES		dd		0.000
4	FUNCTION3 PFK	33.96	4.870e6					27.1	YES		dd		0.000
5	FUNCTION3 PFK	33.92	6.208e5					27.9	YES		dd		0.000
6	FUNCTION3 PFK	33.75	6.775e6					34.2	YES		dd		0.000
7	FUNCTION3 PFK	33.58	8.843e5					39.8	YES		dd		0.000
8	FUNCTION3 PFK	33.52	4.828e6					42.2	YES		dd		0.000
9	FUNCTION3 PFK	33.37	2.844e6					47.3	YES		dd		0.000
10	FUNCTION3 PFK	33.18	5.432e6					54.3	YES		dd		0.000
11	FUNCTION3 PFK	33.04	5.575e6					59.2	YES		dd		0.000
12	FUNCTION3 PFK	32.95	3.680e6					62.9	YES		dd		0.000
13	FUNCTION3 PFK	32.86	7.904e6					65.6	YES		dd		0.000
14	FUNCTION3 PFK	32.74	1.549e6					69.1	YES		dd		0.000
15	FUNCTION3 PFK	32.67	4.268e6					72.4	YES		bd		0.000
16	FUNCTION3 PFK	36.86	8.449e3					0.3	NO		bb		0.000
17	FUNCTION3 PFK	36.72	6.925e4					2.0	NO		bb		0.000
18	FUNCTION3 PFK	36.59	5.799e4					1.2	NO		bb		0.000
19	FUNCTION3 PFK	36.30	7.563e3					0.7	NO		bb		0.000
20	FUNCTION3 PFK	36.04	6.922e3					0.5	NO		bb		0.000
21	FUNCTION3 PFK	35.83	2.532e4					1.1	NO		bb		0.000
22	FUNCTION3 PFK	35.75	1.516e4					0.9	NO		bb		0.000
23	FUNCTION3 PFK	35.63	1.004e4					0.7	NO		bb		0.000
24	FUNCTION3 PFK	35.33	1.433e4					0.8	NO		bb		0.000
25	FUNCTION3 PFK	35.04	1.089e4					0.6	NO		bb		0.000
26	FUNCTION3 PFK	34.97	5.517e3					0.7	NO		bb		0.000
27	FUNCTION3 PFK	34.89	3.001e4					1.0	NO		bb		0.000
28	FUNCTION3 PFK	34.81	1.594e4					1.0	NO		db		0.000
29	FUNCTION3 PFK	34.76	3.092e4					1.3	NO		bd		0.000
30	FUNCTION3 PFK	34.60	1.659e5					4.5	YES		db		0.000
31	FUNCTION3 PFK	34.53	2.985e5					6.7	YES		dd		0.000
32	FUNCTION3 PFK	37.64	2.742e4					1.1	NO		bb		0.000
33	FUNCTION3 PFK	37.58	2.711e4					1.4	NO		db		0.000
34	FUNCTION3 PFK	37.54	1.758e4					0.9	NO		dd		0.000
35	FUNCTION3 PFK	37.49	3.447e4					1.6	NO		dd		0.000
36	FUNCTION3 PFK	37.45	2.646e4					1.5	NO		dd		0.000
37	FUNCTION3 PFK	37.38	4.745e4					1.5	NO		dd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	37.34	2.452e4					1.6	NO		bd		0.000
39	FUNCTION3 PFK	37.29	9.653e3					0.8	NO		bb		0.000
40	FUNCTION3 PFK	37.08	5.064e3					0.5	NO		bb		0.000
41	FUNCTION3 PFK	36.98	6.612e4					1.7	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.42	2.469e3					0.5	NO		bb		
2	FUNCTION4 PFK	38.08	2.954e4					1.7	NO		bb		
3	FUNCTION4 PFK	37.98	4.856e4					2.3	NO		db		
4	FUNCTION4 PFK	37.94	3.614e4					2.6	NO		bd		
5	FUNCTION4 PFK	37.85	8.390e3					1.0	NO		bb		
6	FUNCTION4 PFK	40.91	1.035e4					1.0	NO		bb		
7	FUNCTION4 PFK	40.71	1.742e3					0.4	NO		bb		
8	FUNCTION4 PFK	40.68	3.176e3					0.5	NO		bb		
9	FUNCTION4 PFK	40.61	6.362e3					0.7	NO		bb		
10	FUNCTION4 PFK	40.38	7.075e3					0.8	NO		bb		
11	FUNCTION4 PFK	40.32	3.115e4					1.2	NO		bb		
12	FUNCTION4 PFK	39.94	4.461e3					0.6	NO		bb		
13	FUNCTION4 PFK	39.80	5.746e3					0.6	NO		bb		
14	FUNCTION4 PFK	39.51	2.799e3					0.4	NO		bb		
15	FUNCTION4 PFK	39.43	1.949e3					0.4	NO		bb		
16	FUNCTION4 PFK	39.36	2.879e3					0.6	NO		bb		
17	FUNCTION4 PFK	39.32	5.365e3					1.1	NO		bb		
18	FUNCTION4 PFK	39.28	3.621e3					0.8	NO		bb		
19	FUNCTION4 PFK	39.21	1.666e4					1.0	NO		bb		
20	FUNCTION4 PFK	39.07	6.512e3					0.8	NO		bb		
21	FUNCTION4 PFK	38.46	1.263e4					1.2	NO		bb		
22	FUNCTION4 PFK	42.68	1.445e4					0.9	NO		bb		
23	FUNCTION4 PFK	42.62	2.052e4					1.7	NO		bb		
24	FUNCTION4 PFK	42.51	2.321e3					0.5	NO		bb		
25	FUNCTION4 PFK	42.43	3.121e4					1.9	NO		bb		
26	FUNCTION4 PFK	42.18	7.742e3					0.8	NO		bb		
27	FUNCTION4 PFK	42.05	1.748e4					1.2	NO		db		
28	FUNCTION4 PFK	41.97	1.470e4					1.2	NO		bd		
29	FUNCTION4 PFK	41.63	2.487e3					0.5	NO		bb		
30	FUNCTION4 PFK	41.48	1.442e4					1.2	NO		bb		
31	FUNCTION4 PFK	41.24	1.211e4					1.0	NO		bb		
32	FUNCTION4 PFK	41.17	1.136e4					1.2	NO		bb		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.97	5.710e3					1.0	NO		bb		
2	FUNCTION5 PFK	45.74	1.859e3					0.6	NO		bb		
3	FUNCTION5 PFK	43.26	1.526e4					1.8	NO		bb		
4	FUNCTION5 PFK	42.93	1.131e4					1.5	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.35	1.892e2					4.2	YES		db		0.000
2	FUNCTION1 HXCD...	25.23	1.187e2					1.3	NO		bd		0.000
3	FUNCTION1 HXCD...	24.87	7.961e1					1.9	NO		db		0.000
4	FUNCTION1 HXCD...	24.81	1.259e2					2.7	NO		bd		0.000
5	FUNCTION1 HXCD...	24.72	1.584e2					1.4	NO		bb		0.000
6	FUNCTION1 HXCD...	24.40	9.113e1					1.6	NO		bb		0.000
7	FUNCTION1 HXCD...	23.72	7.480e1					1.5	NO		bb		0.000
8	FUNCTION1 HXCD...	23.61	1.381e2					2.9	NO		bb		0.000
9	FUNCTION1 HXCD...	23.11	9.740e1					2.5	NO		bb		0.000
10	FUNCTION1 HXCD...	22.43	1.791e2					2.1	NO		db		0.000
11	FUNCTION1 HXCD...	22.30	7.125e1					1.5	NO		bd		0.000
12	FUNCTION1 HXCD...	22.19	7.195e1					1.3	NO		bb		0.000
13	FUNCTION1 HXCD...	21.98	1.102e2					1.5	NO		db		0.000
14	FUNCTION1 HXCD...	21.89	2.251e2					4.2	YES		bd		0.000
15	FUNCTION1 HXCD...	21.80	1.414e2					2.0	NO		bb		0.000
16	FUNCTION1 HXCD...	27.03	2.453e2					2.4	NO		bb		0.000
17	FUNCTION1 HXCD...	26.29	2.686e2					2.1	NO		db		0.000
18	FUNCTION1 HXCD...	26.12	1.763e2					2.9	NO		dd		0.000
19	FUNCTION1 HXCD...	26.03	9.387e1					1.2	NO		bd		0.000
20	FUNCTION1 HXCD...	25.82	1.399e2					2.0	NO		bb		0.000
21	FUNCTION1 HXCD...	25.46	1.064e2					1.7	NO		bb		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.51	7.992e1					1.4	NO		bb		0.000
2	FUNCTION1 HPCD...	22.07	1.029e2					2.1	NO		bb		0.000
3	FUNCTION1 HPCD...	21.98	1.510e2					1.6	NO		db		0.000
4	FUNCTION1 HPCD...	21.88	1.949e2					3.5	YES		bd		0.000
5	FUNCTION1 HPCD...	21.75	2.528e2					1.8	NO		bb		0.000
6	FUNCTION1 HPCD...	21.47	1.508e2					2.1	NO		bb		0.000
7	FUNCTION1 HPCD...	21.25	1.018e2					1.3	NO		db		0.000
8	FUNCTION1 HPCD...	21.16	1.149e2					1.6	NO		dd		0.000
9	FUNCTION1 HPCD...	21.09	2.200e2					3.0	NO		bd		0.000
10	FUNCTION1 HPCD...	27.00	1.586e2					1.8	NO		bb		0.000
11	FUNCTION1 HPCD...	26.83	9.159e1					0.8	NO		bb		0.000
12	FUNCTION1 HPCD...	26.59	1.663e2					2.5	NO		bb		0.000
13	FUNCTION1 HPCD...	26.32	1.753e2					1.6	NO		db		0.000
14	FUNCTION1 HPCD...	26.14	2.616e2					2.2	NO		bd		0.000
15	FUNCTION1 HPCD...	25.59	8.230e1					1.9	NO		bb		0.000
16	FUNCTION1 HPCD...	25.44	8.713e1					1.0	NO		bb		0.000
17	FUNCTION1 HPCD...	25.16	7.125e1					1.1	NO		db		0.000
18	FUNCTION1 HPCD...	25.05	1.030e2					1.1	NO		bd		0.000
19	FUNCTION1 HPCD...	24.07	1.494e2					2.5	NO		bb		0.000
20	FUNCTION1 HPCD...	23.83	1.478e2					3.3	YES		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	28.48	1.146e2					2.7	NO		bb		0.000
2	FUNCTION2 HPCD...	28.07	8.040e1					1.2	NO		db		0.000
3	FUNCTION2 HPCD...	27.98	1.117e2					1.5	NO		bd		0.000
4	FUNCTION2 HPCD...	27.82	9.308e1					2.0	NO		bb		0.000
5	FUNCTION2 HPCD...	31.82	1.073e2					1.6	NO		bb		0.000
6	FUNCTION2 HPCD...	31.41	3.440e2					4.0	YES		bb		0.000
7	FUNCTION2 HPCD...	31.18	9.044e1					1.2	NO		db		0.000
8	FUNCTION2 HPCD...	31.11	9.781e1					2.1	NO		dd		0.000
9	FUNCTION2 HPCD...	31.03	7.279e2					8.6	YES		bd		0.000
10	FUNCTION2 HPCD...	30.26	7.257e1					1.3	NO		bb		0.000
11	FUNCTION2 HPCD...	30.21	7.122e1					1.7	NO		db		0.000
12	FUNCTION2 HPCD...	30.14	1.157e2					1.5	NO		dd		0.000
13	FUNCTION2 HPCD...	30.06	7.412e1					1.1	NO		dd		0.000
14	FUNCTION2 HPCD...	29.98	7.219e1					1.2	NO		dd		0.000
15	FUNCTION2 HPCD...	29.91	9.212e1					2.0	NO		bd		0.000
16	FUNCTION2 HPCD...	29.69	7.977e1					1.3	NO		bb		0.000
17	FUNCTION2 HPCD...	29.08	1.408e2					1.5	NO		db		0.000
18	FUNCTION2 HPCD...	28.96	1.497e2					1.4	NO		bd		0.000
19	FUNCTION2 HPCD...	28.71	8.490e1					1.0	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.65	1.580e2					2.6	NO		db		0.000
2	FUNCTION3 OCDPE	37.55	1.150e2					2.8	NO		bd		0.000
3	FUNCTION3 OCDPE	36.42	1.835e2					2.9	NO		bb		0.000
4	FUNCTION3 OCDPE	36.04	2.520e2					4.7	YES		db		0.000
5	FUNCTION3 OCDPE	35.93	1.106e2					3.8	YES		dd		0.000
6	FUNCTION3 OCDPE	35.90	1.018e2					3.4	YES		bd		0.000
7	FUNCTION3 OCDPE	34.40	1.321e2					5.0	YES		bb		0.000
8	FUNCTION3 OCDPE	33.58	1.010e2					2.3	NO		bb		0.000
9	FUNCTION3 OCDPE	32.70	2.382e2					3.1	YES		bb		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.42	7.136e1					0.9	NO		bb		0.000
2	FUNCTION4 NCDPE	40.16	1.641e2					1.6	NO		bb		0.000
3	FUNCTION4 NCDPE	39.69	1.182e2					1.5	NO		bb		0.000
4	FUNCTION4 NCDPE	38.52	1.487e2					1.6	NO		db		0.000
5	FUNCTION4 NCDPE	38.34	2.790e2					2.3	NO		dd		0.000
6	FUNCTION4 NCDPE	38.26	1.556e2					2.2	NO		bd		0.000
7	FUNCTION4 NCDPE	41.34	1.448e2					1.6	NO		bb		0.000
8	FUNCTION4 NCDPE	40.81	1.056e2					2.8	NO		bb		0.000

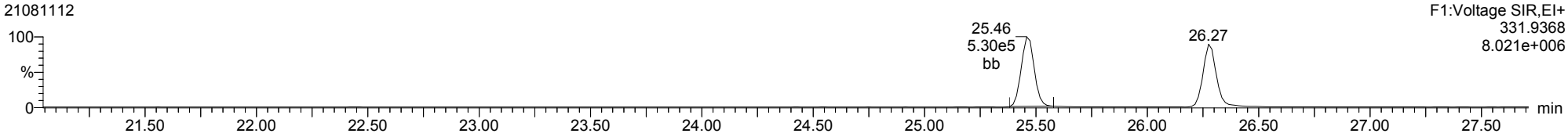
ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.58	7.112e1					3.0	NO		bb		0.000
2	FUNCTION5 DCDPE	43.59	9.542e1					3.1	YES		bb		0.000

Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

13C-1234-TCDD



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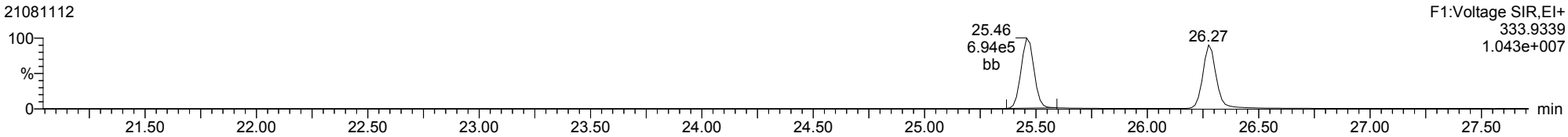
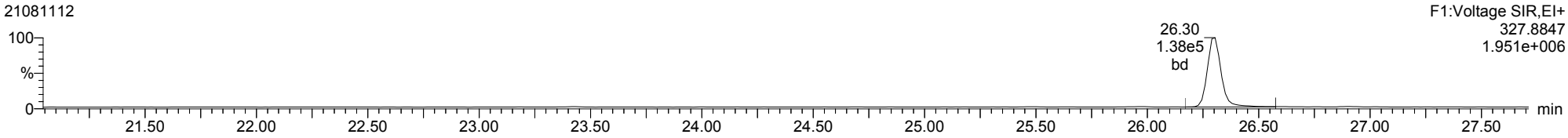


37CL-2378-TCDD



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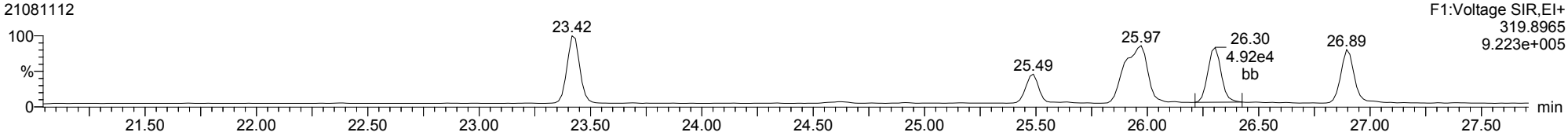

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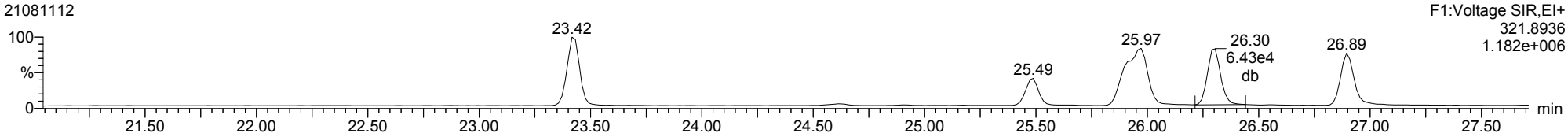

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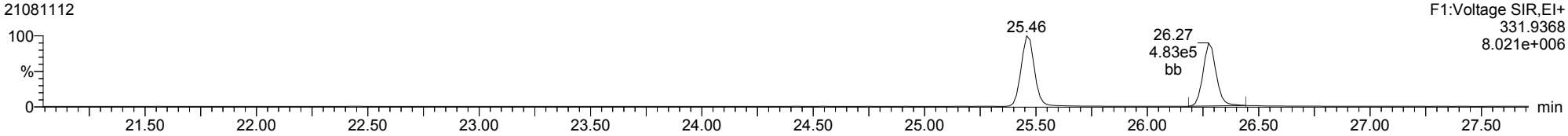

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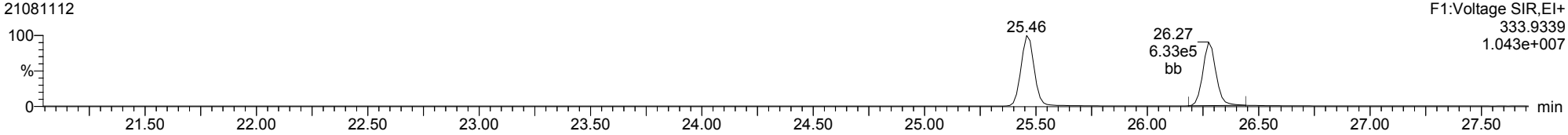

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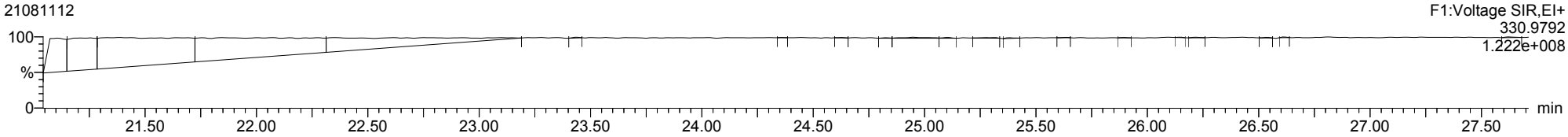

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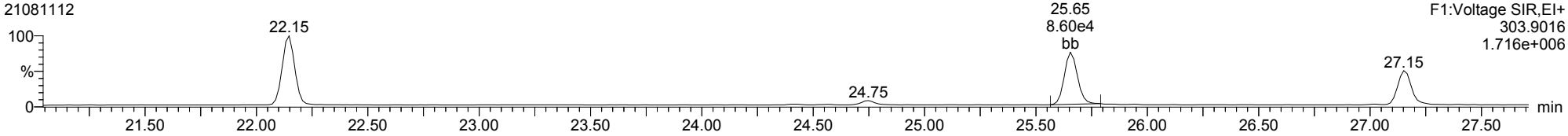

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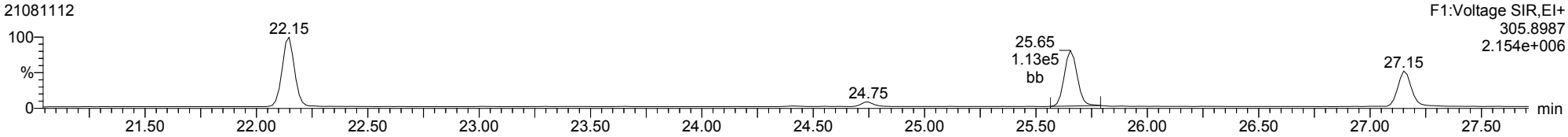

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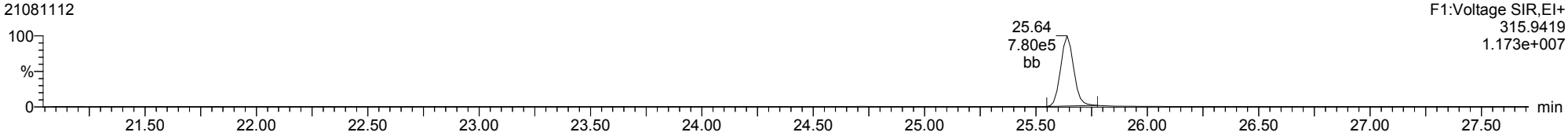

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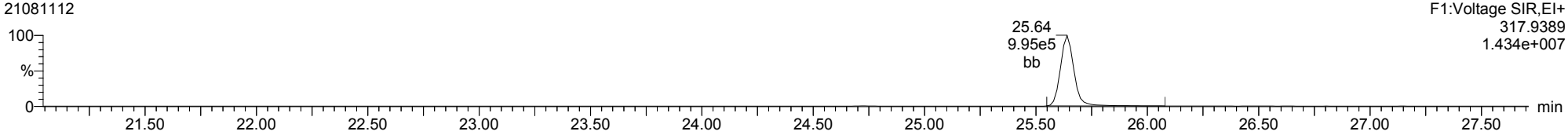

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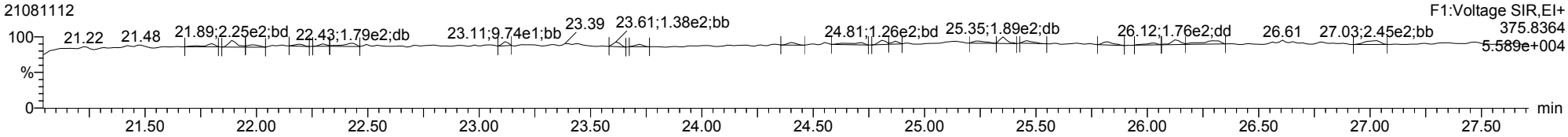

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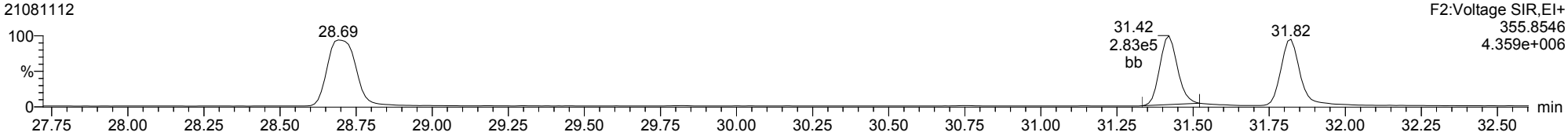
12378-PeCDD



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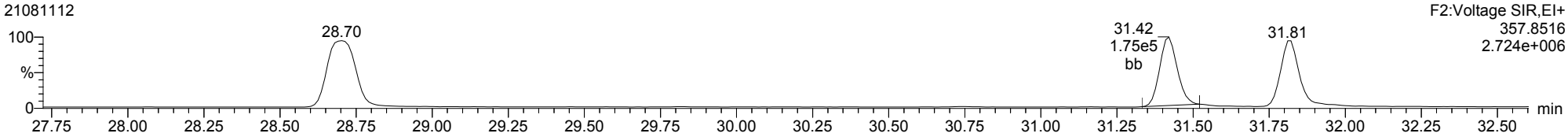

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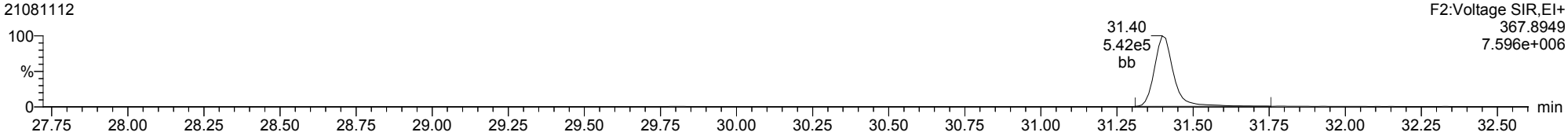

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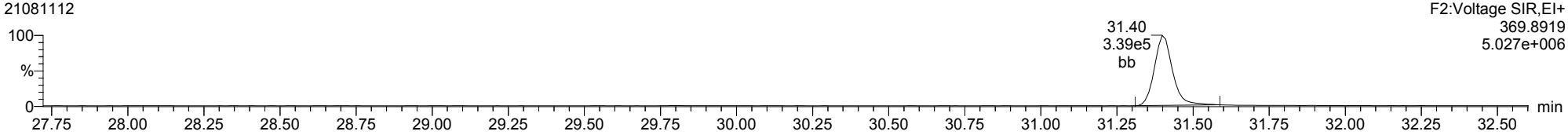

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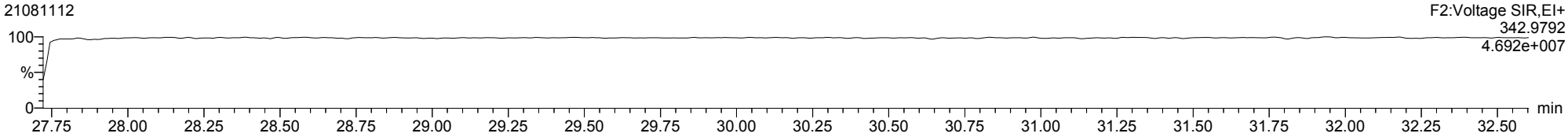

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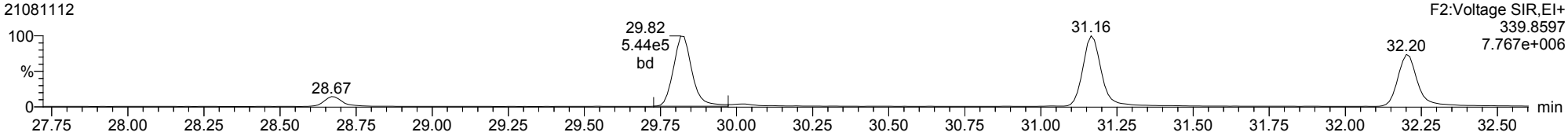

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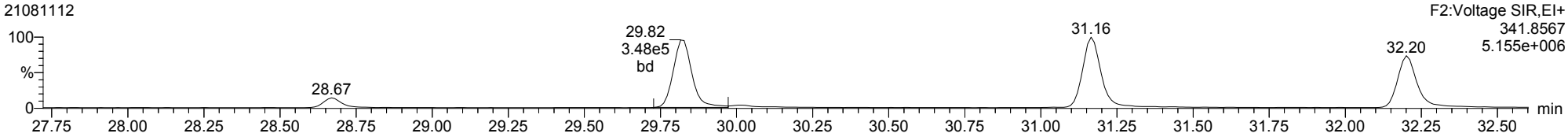

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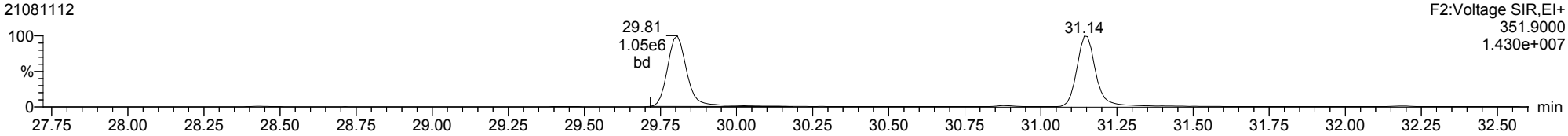

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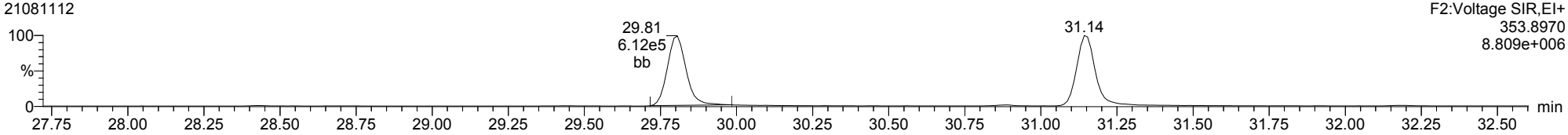
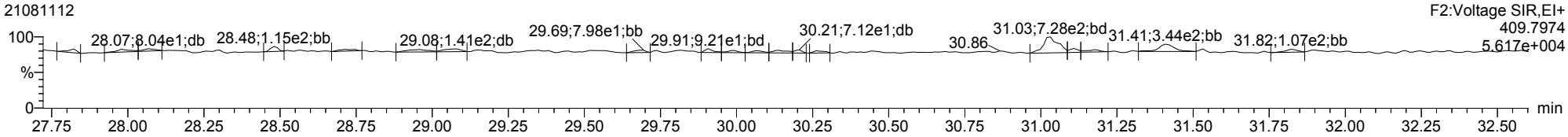


FUNCTION2 HPCDPE



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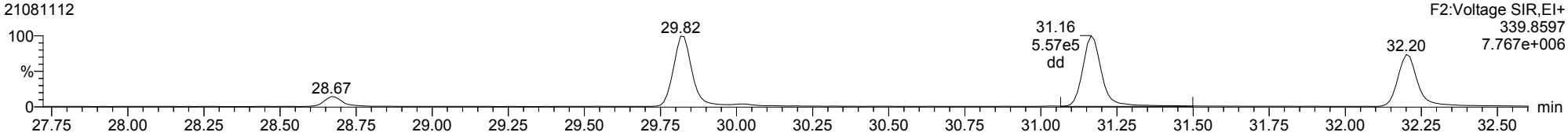
23478-PeCDF



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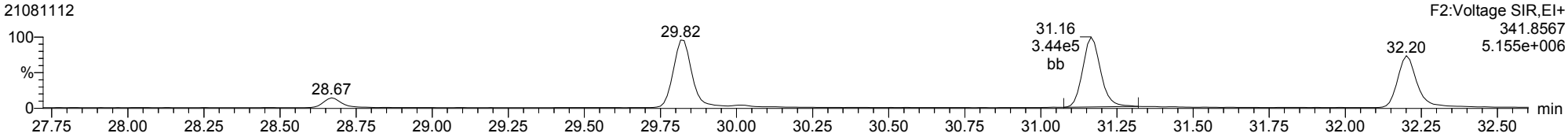

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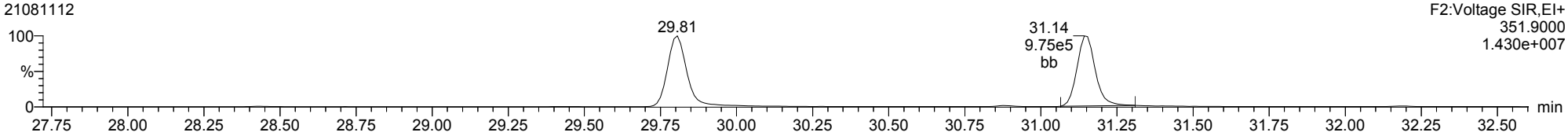

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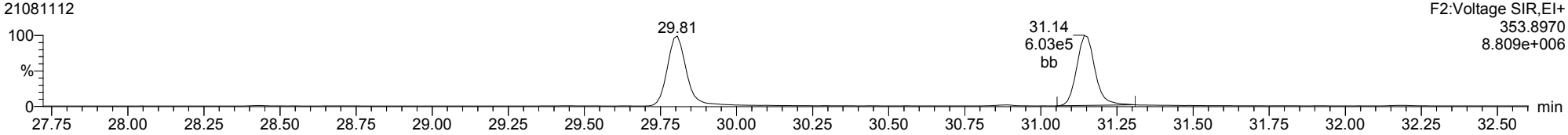
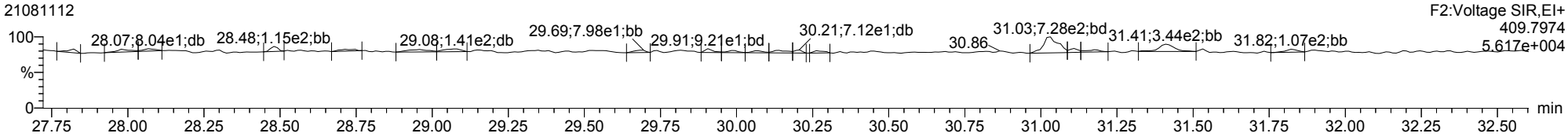


FUNCTION2 HPCDPE



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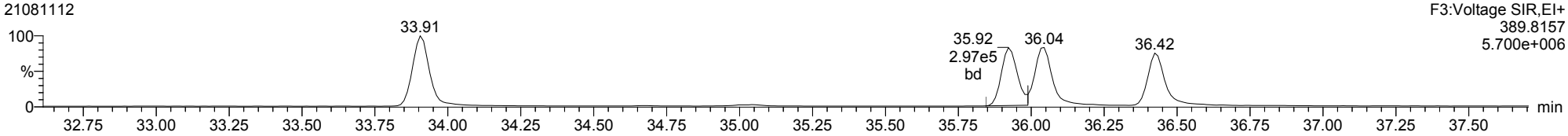

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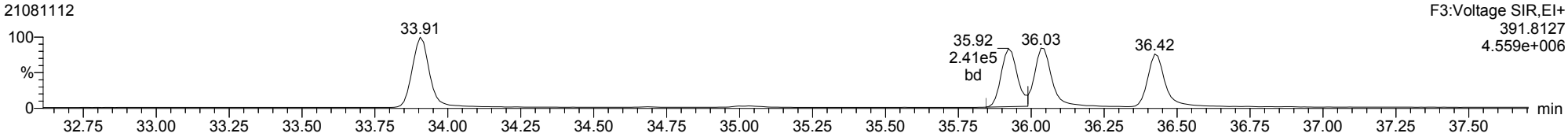

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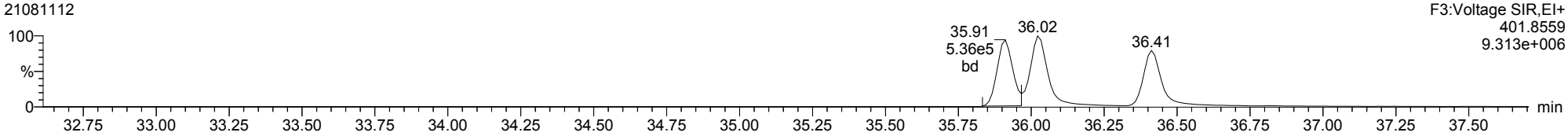

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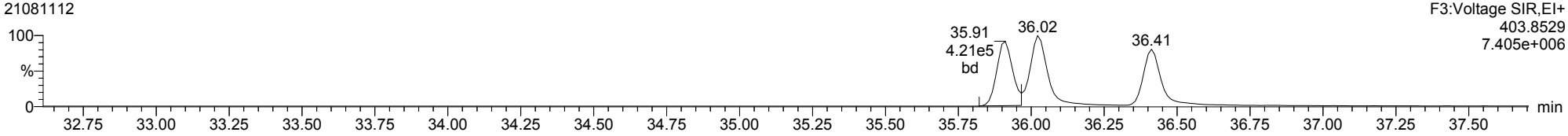

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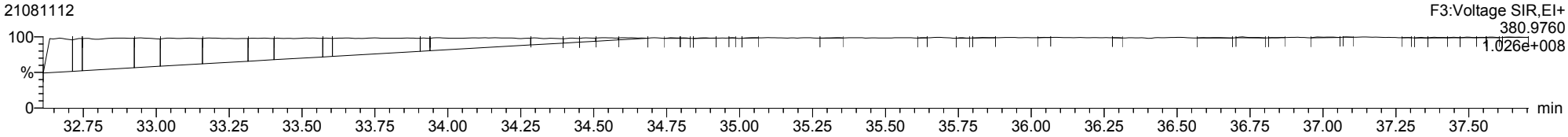

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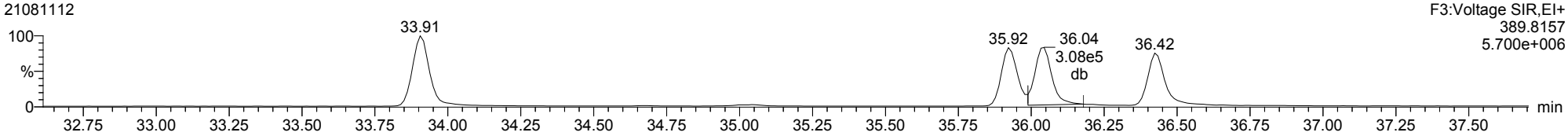

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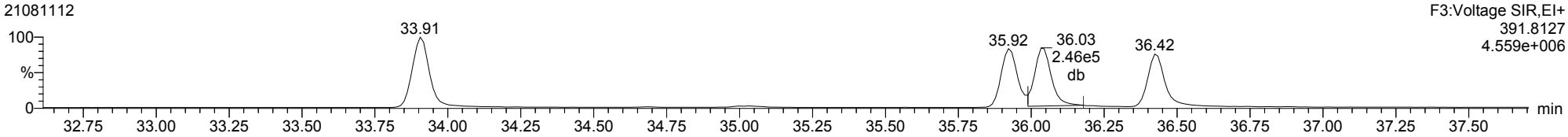

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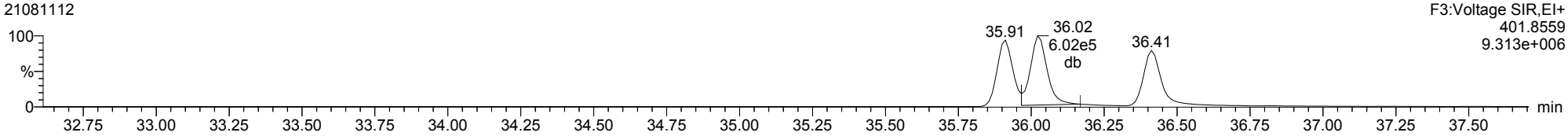

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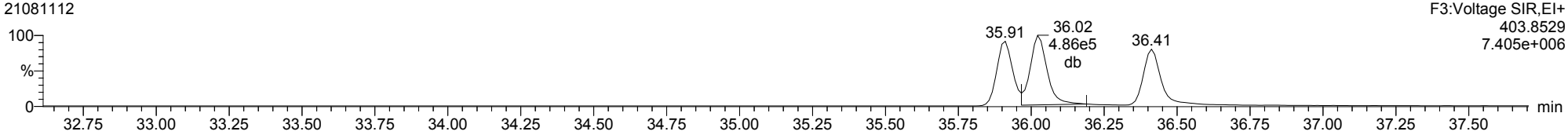

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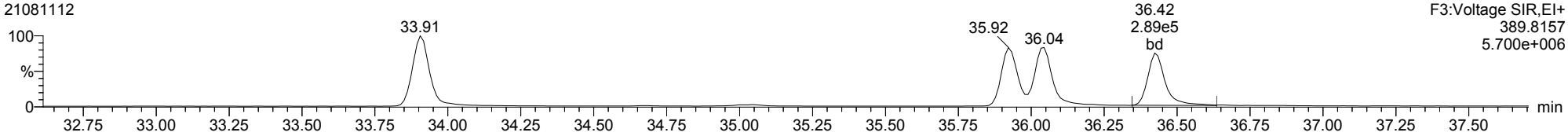

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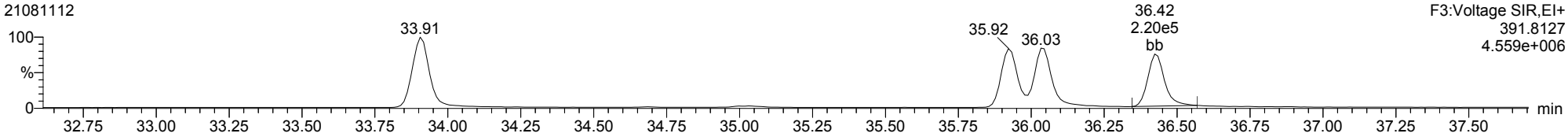

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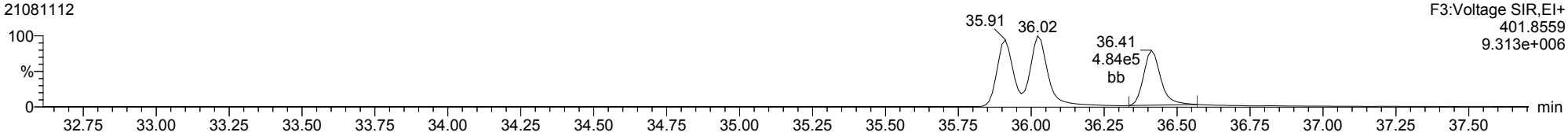

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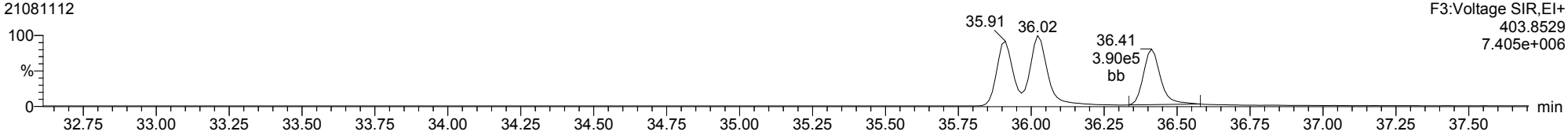

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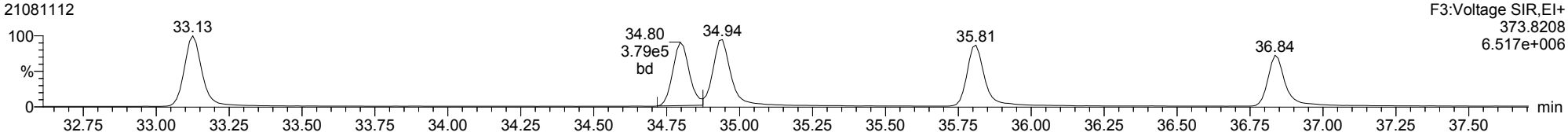

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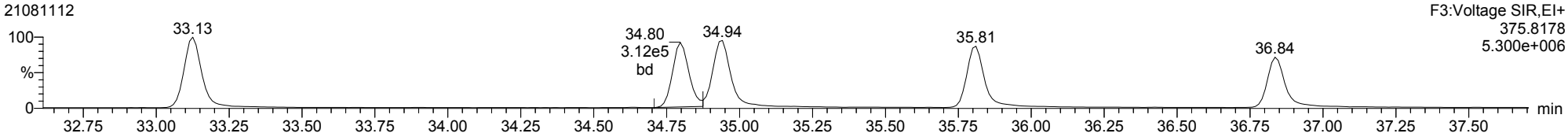

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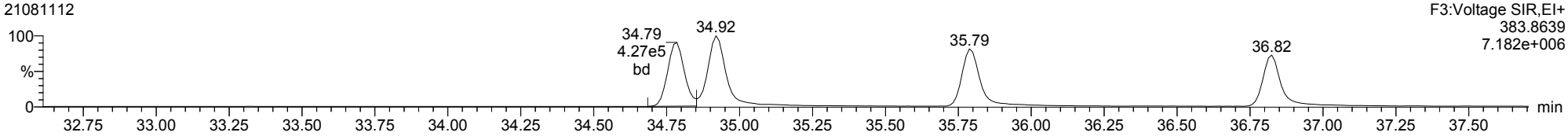

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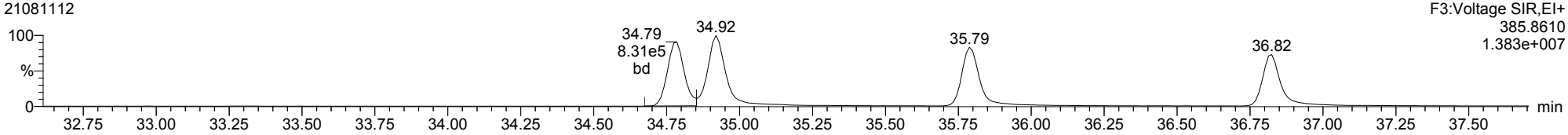
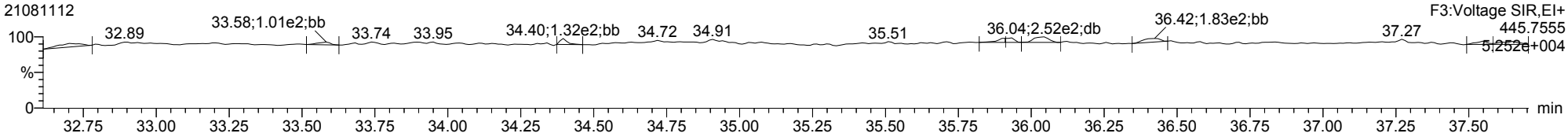


FUNCTION3 OCDPE



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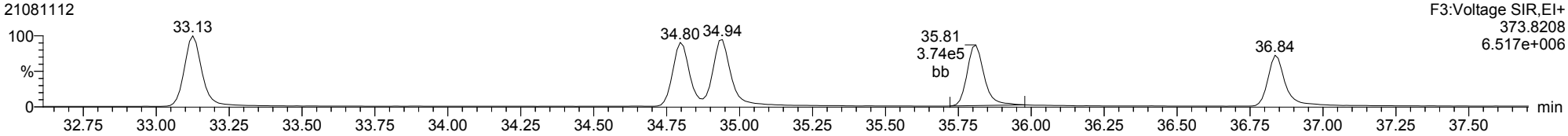
234678-HxCDF



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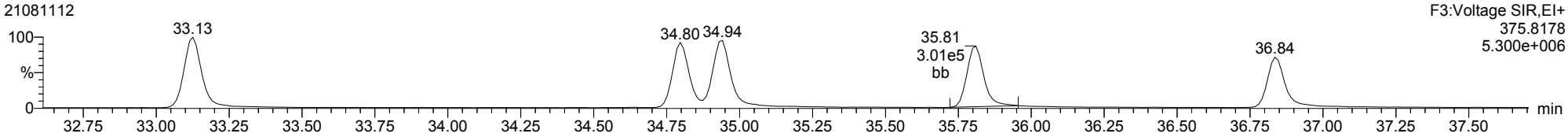

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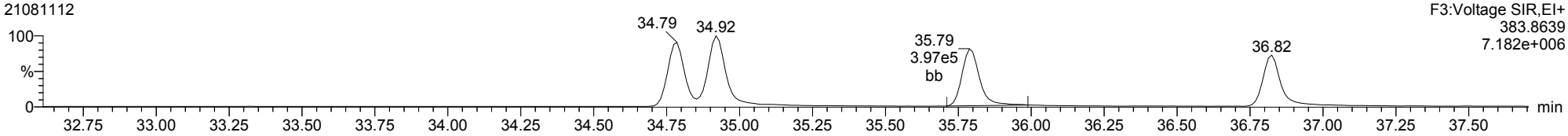

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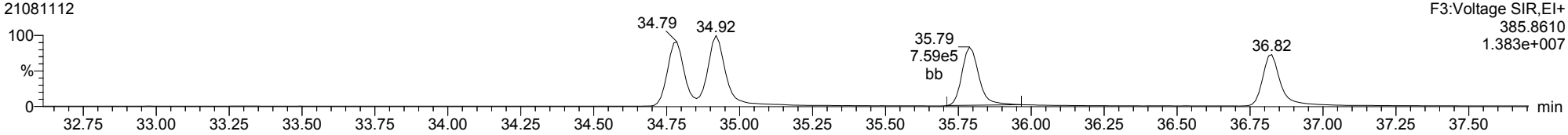
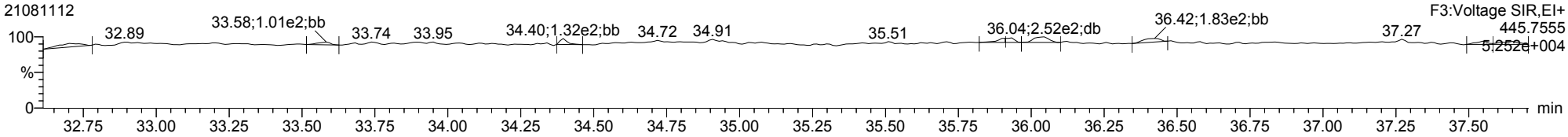


FUNCTION3 OCDPE



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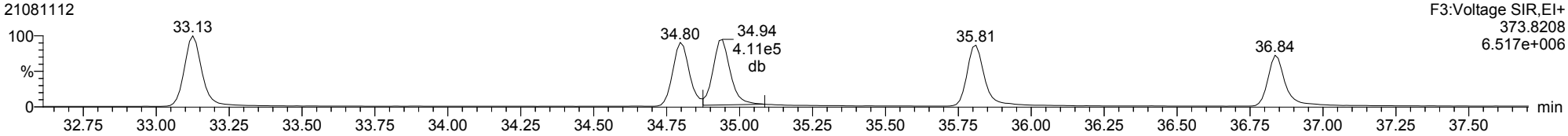

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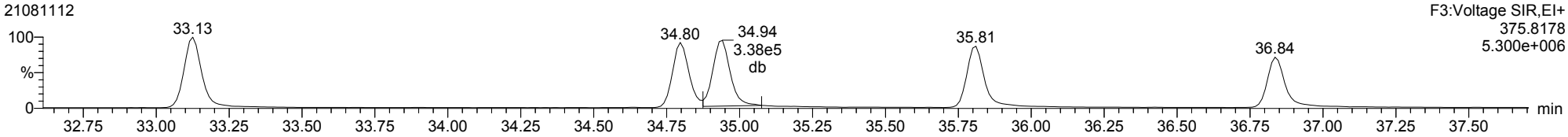

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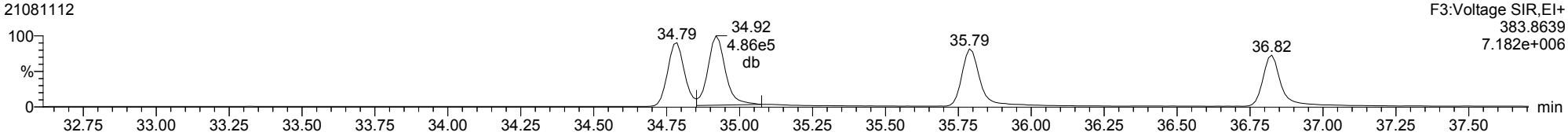

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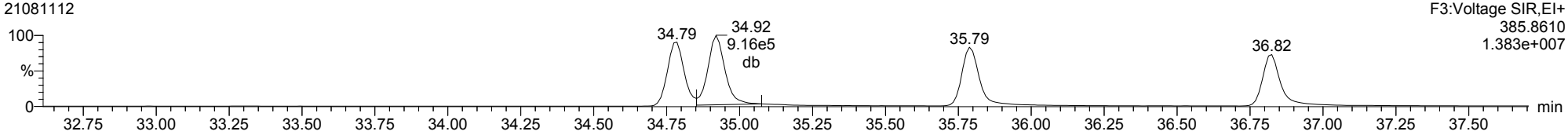

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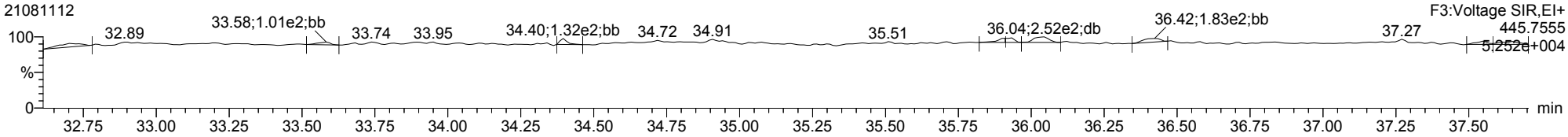

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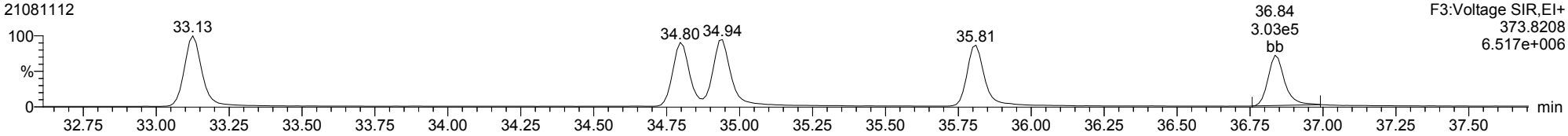

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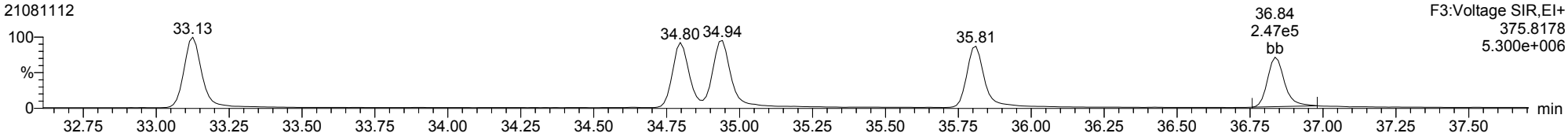

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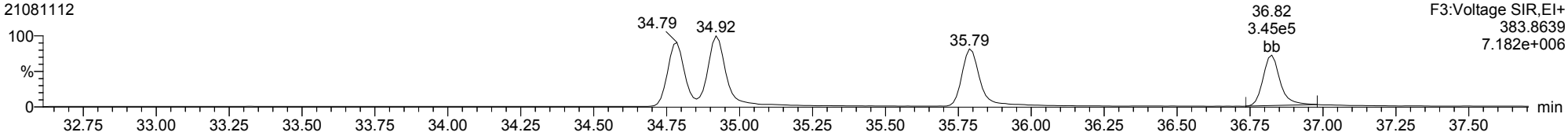

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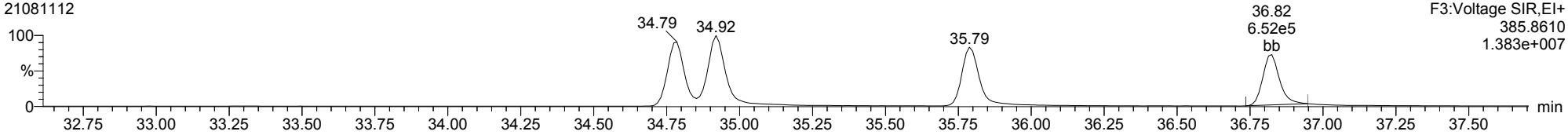

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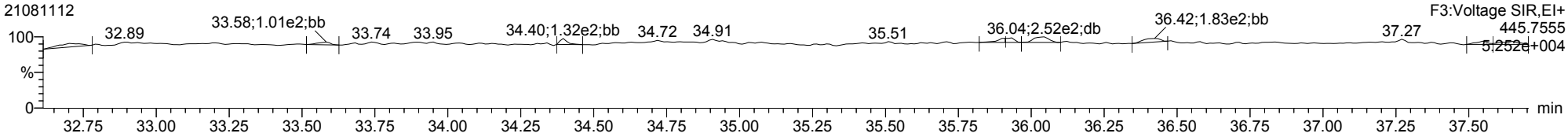

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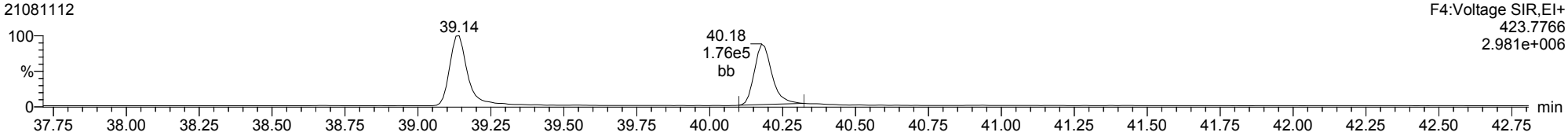

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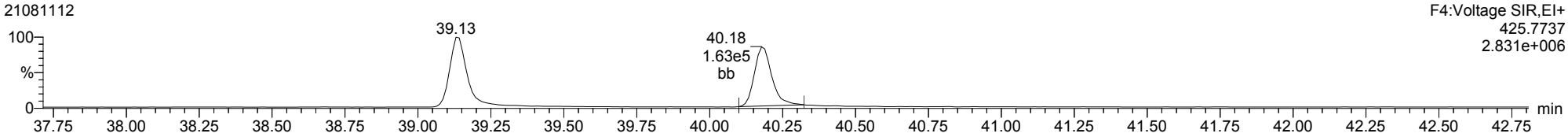

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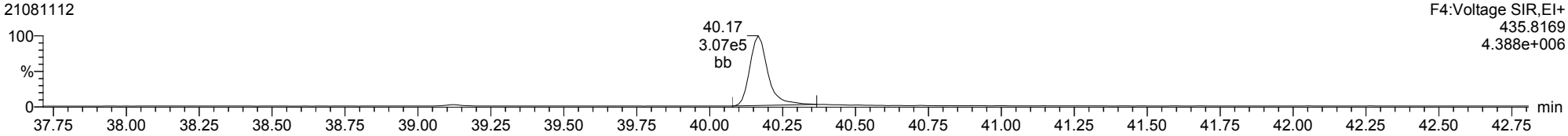

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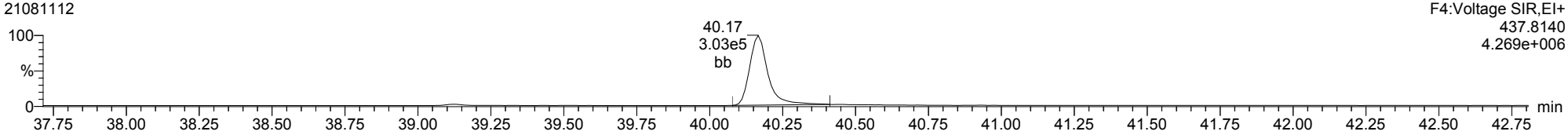

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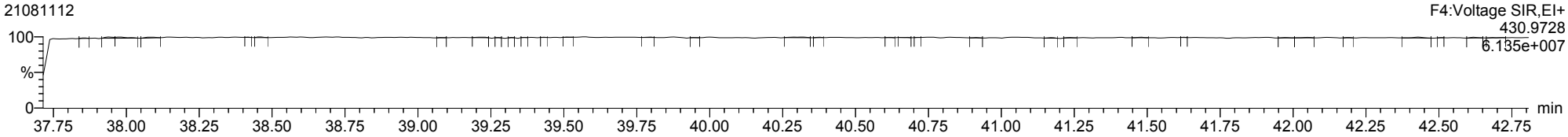

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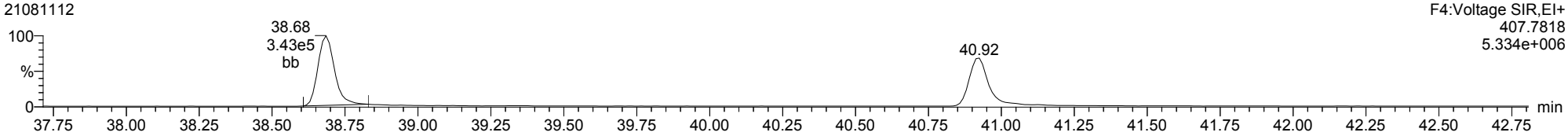

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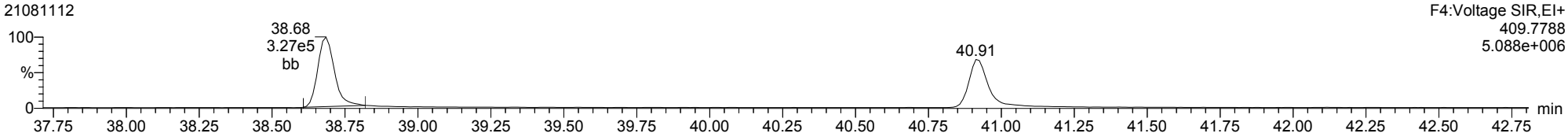

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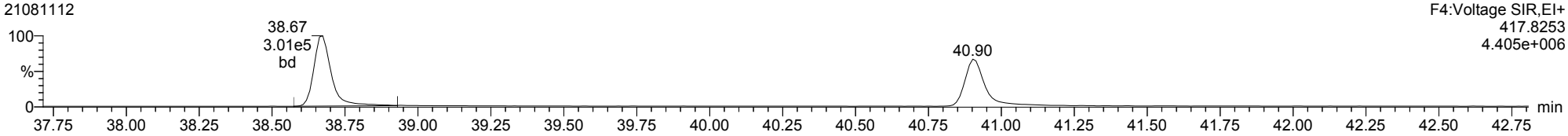

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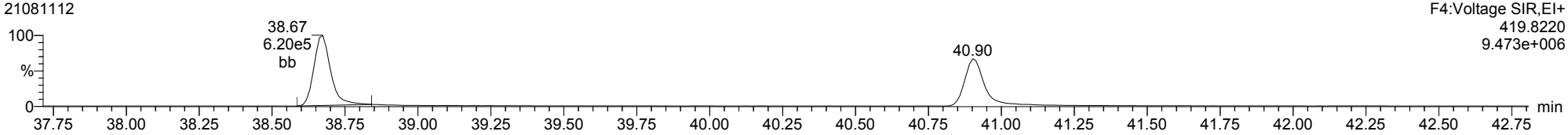

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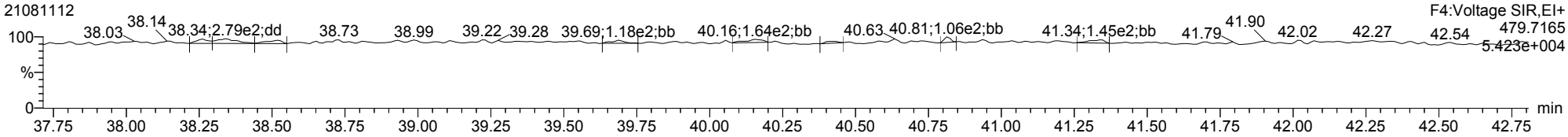

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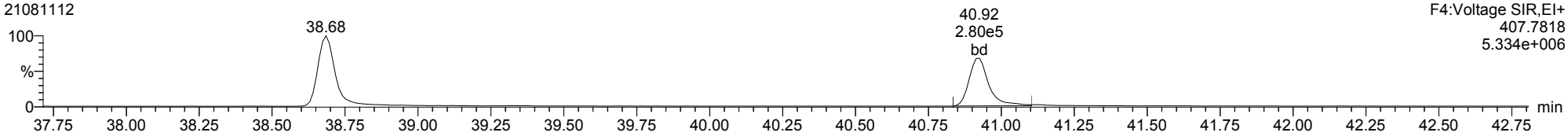

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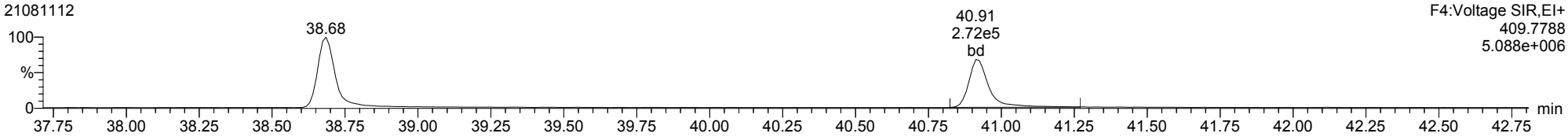

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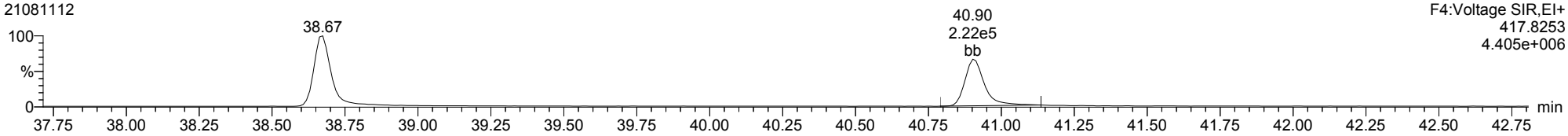

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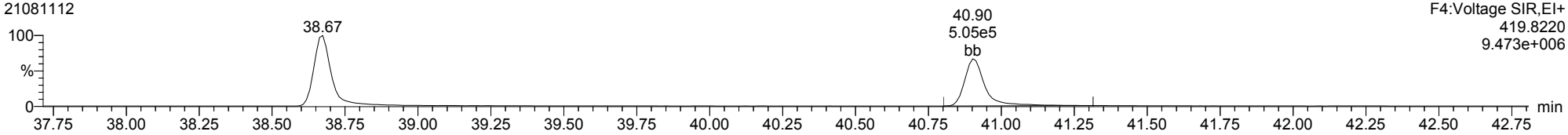

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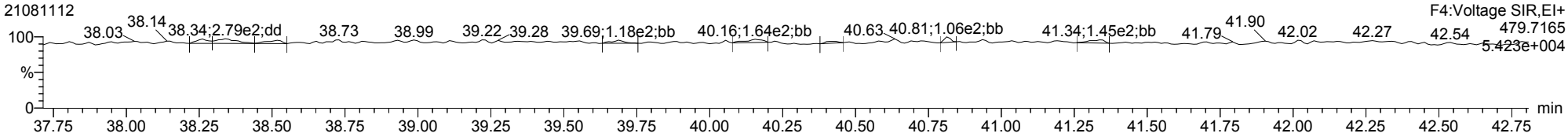

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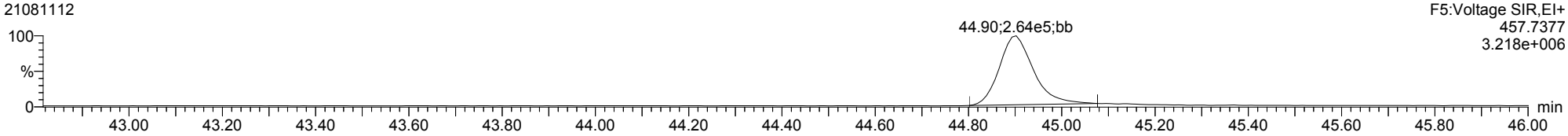

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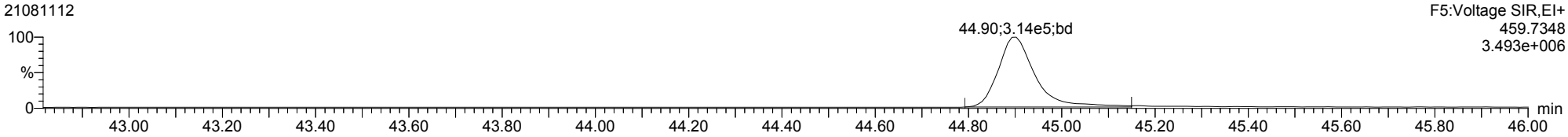

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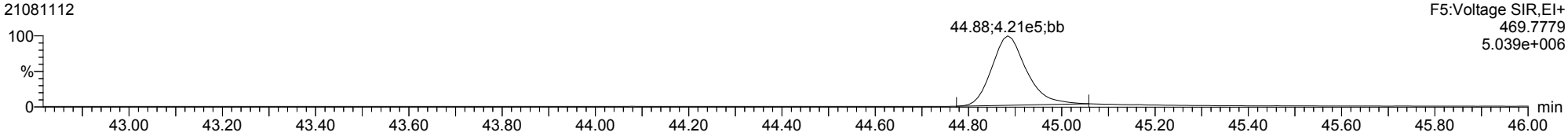

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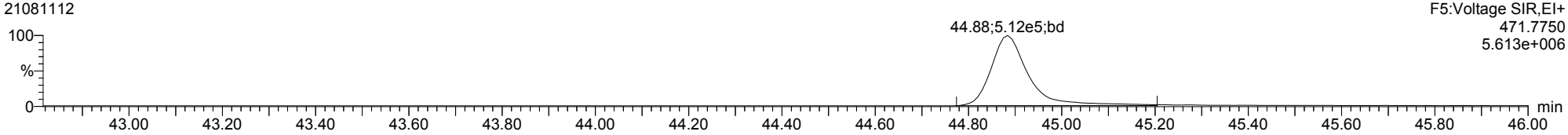

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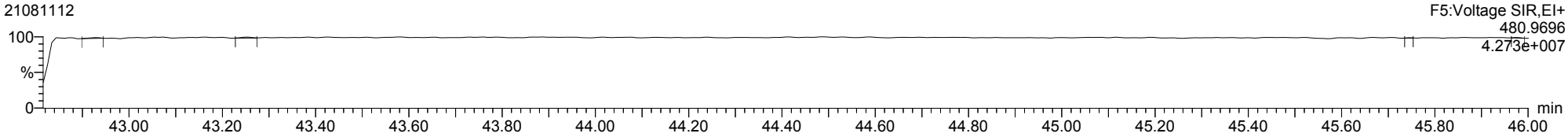

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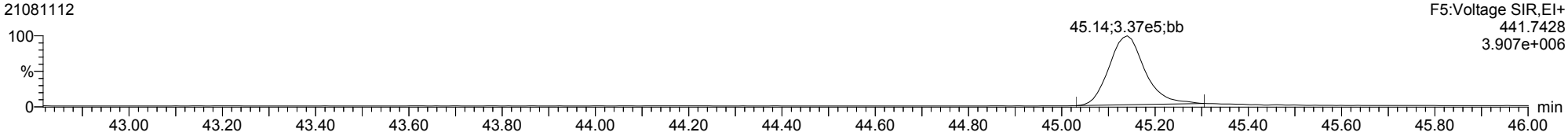

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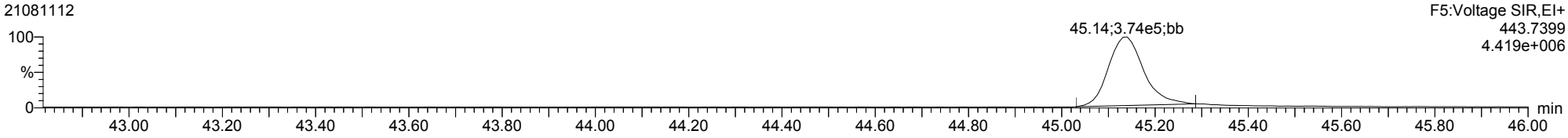

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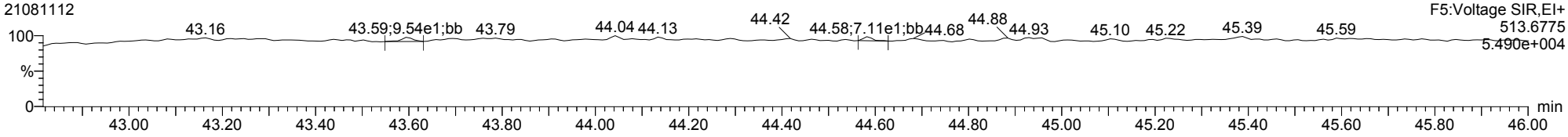

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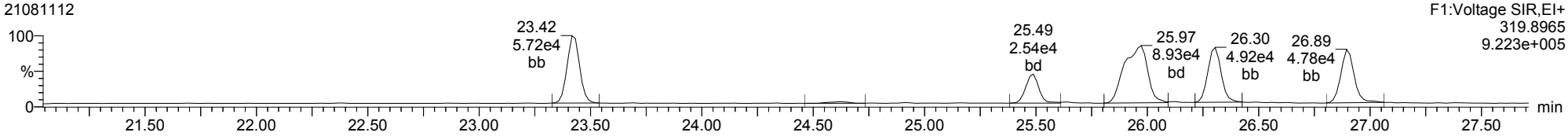

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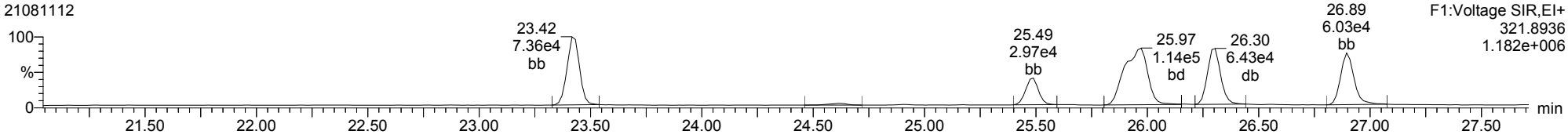

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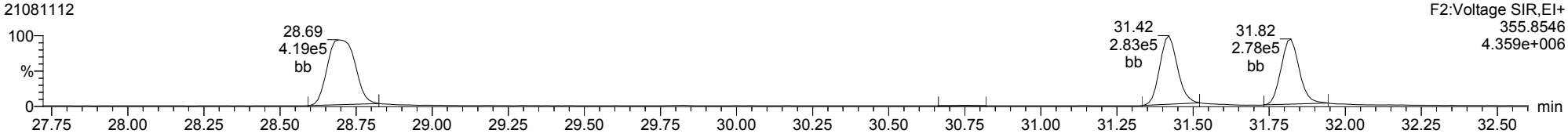

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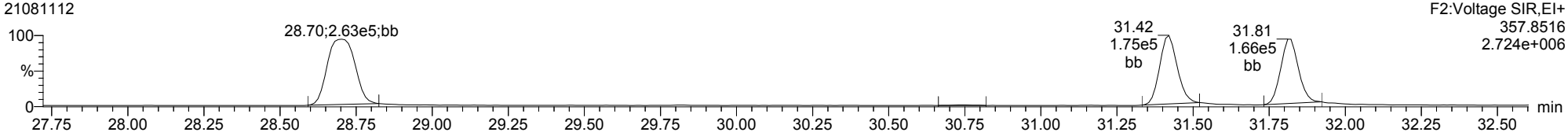

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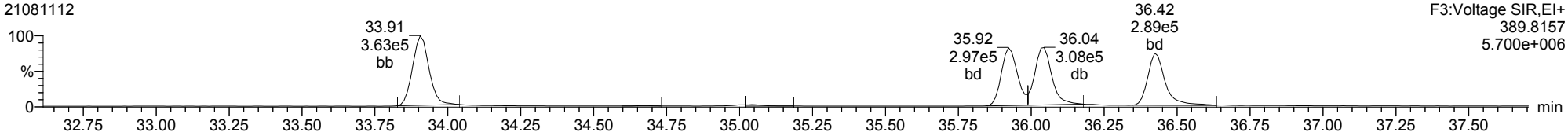

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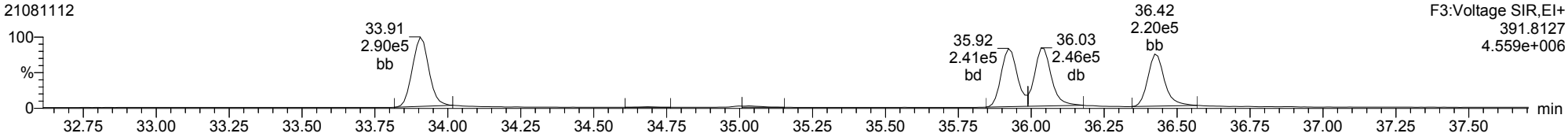

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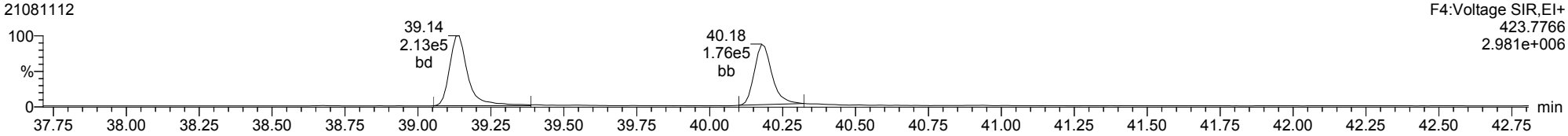

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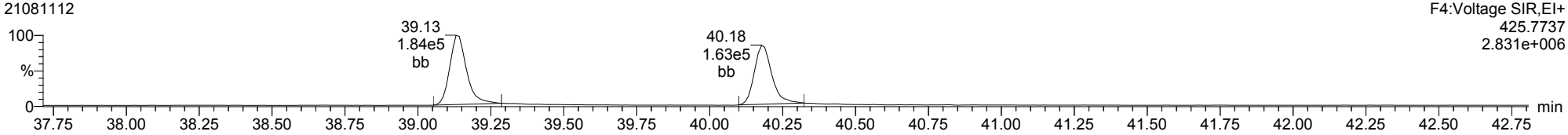

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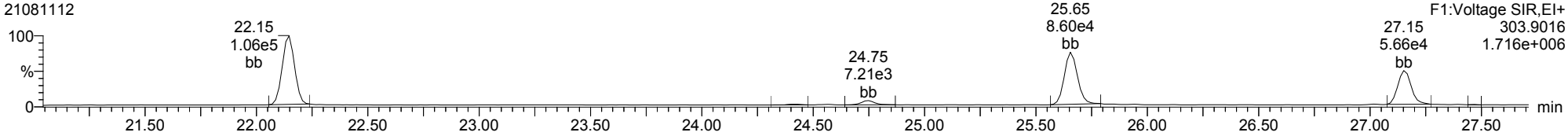

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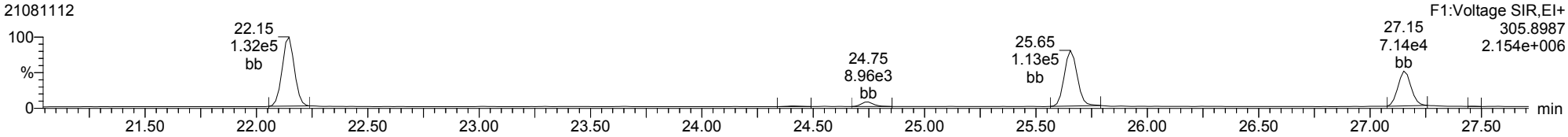

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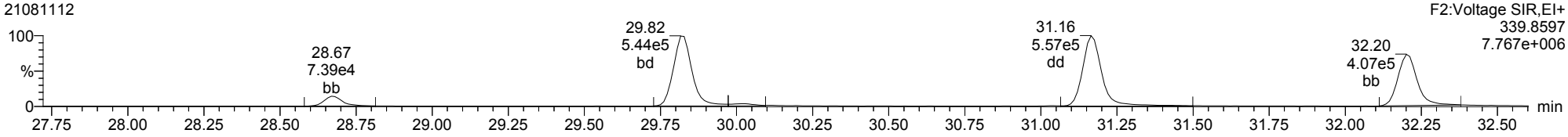

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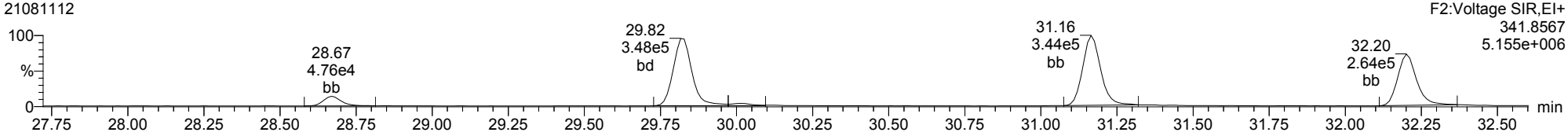

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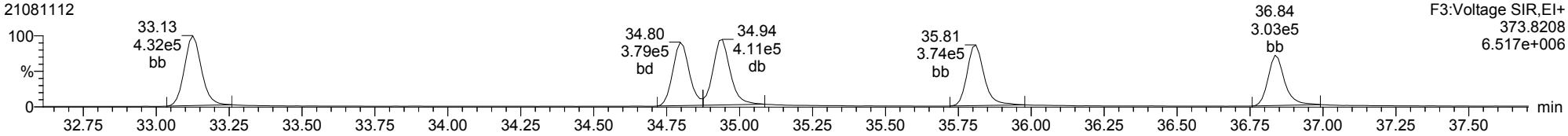

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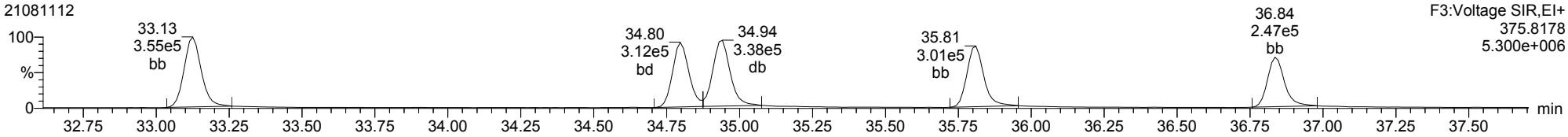

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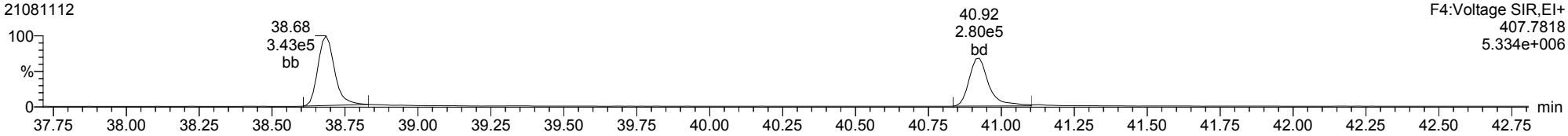

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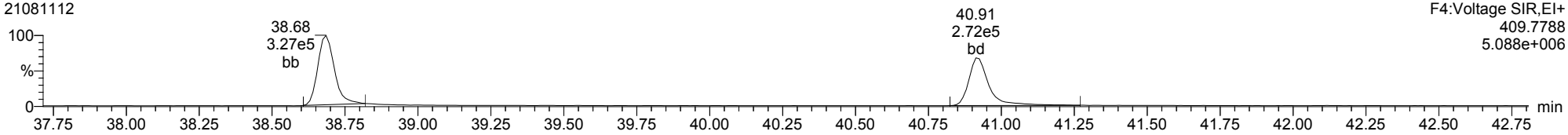

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Calibration: EH00030
Laboratory ID: SJH0117-SCV1
Sequence: SJH0117
Standard ID: G001361

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
OCDF	100.00	105	5.4	20.00
OCDD	100.00	105	5.0	20.00
13C12-2,3,7,8-TCDF	100.00	102	1.7	20.00
13C12-2,3,7,8-TCDD	100.00	81.6	-18.4	20.00
13C12-1,2,3,7,8-PeCDF	100.00	105	4.8	20.00
13C12-2,3,4,7,8-PeCDF	100.00	104	4.3	20.00
13C12-1,2,3,7,8-PeCDD	100.00	98.4	-1.6	20.00
13C12-1,2,3,4,7,8-HxCDF	100.00	116	15.9	20.00
13C12-1,2,3,6,7,8-HxCDF	100.00	119	19.4	20.00
13C12-2,3,4,6,7,8-HxCDF	100.00	109	8.8	20.00
13C12-1,2,3,7,8,9-HxCDF	100.00	113	13.2	20.00
13C12-1,2,3,4,7,8-HxCDD	100.00	114	14.1	20.00
13C12-1,2,3,6,7,8-HxCDD	100.00	119	19.5	20.00
13C12-1,2,3,4,6,7,8-HpCDF	100.00	114	13.7	20.00
13C12-1,2,3,4,7,8,9-HpCDF	100.00	110	9.8	20.00
13C12-1,2,3,4,6,7,8-HpCDD	100.00	110	10.5	20.00
13C12-OCDD	200.00	212	5.9	20.00
37Cl4-2,3,7,8-TCDD	10.000	10.4	4.0	20.00

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
Last Altered: Friday, August 13, 2021 13:47:27 Pacific Daylight Time
Printed: Friday, August 13, 2021 13:51:56 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.655	1.001	8.598e4	1.128e5	1.108	0.762	0.770	1727	2357	1.26e6	1.68e6	728.4	713.0	NO	bb	bb	10.110
12378-PeCDF	29.816	1.000	5.436e5	3.483e5	1.015	1.561	1.550	6428	5298	7.67e6	4.88e6	1193.2	921.9	NO	bd	bd	52.831
23478-PeCDF	31.165	1.001	5.567e5	3.442e5	1.126	1.617	1.550	6428	5298	7.71e6	5.06e6	1200.0	955.7	NO	dd	bb	50.709
123478-HxCDF	34.797	1.000	3.790e5	3.119e5	1.017	1.215	1.240	6025	4489	5.81e6	4.80e6	963.5	1070.0	NO	bd	bd	54.003
234678-HxCDF	35.810	1.001	3.741e5	3.010e5	1.052	1.243	1.240	6025	4489	5.56e6	4.51e6	922.2	1004.3	NO	bb	bb	55.515
123678-HxCDF	34.941	1.001	4.107e5	3.376e5	1.037	1.217	1.240	6025	4489	5.99e6	4.89e6	994.0	1090.0	NO	db	db	51.475
123789-HxCDF	36.835	1.000	3.029e5	2.474e5	1.030	1.224	1.240	6025	4489	4.62e6	3.69e6	767.5	821.7	NO	bb	bb	53.582
1234678-HpCDF	38.685	1.000	3.428e5	3.268e5	1.327	1.049	1.050	5528	5142	5.22e6	4.97e6	945.1	966.6	NO	bb	bb	54.784
1234789-HpCDF	40.924	1.000	2.799e5	2.719e5	1.283	1.029	1.050	5528	5142	3.60e6	3.43e6	650.7	667.0	NO	bd	bd	59.145
OCDF	45.140	1.006	3.368e5	3.743e5	1.447	0.900	0.890	5198	2808	3.79e6	4.27e6	729.8	1522.4	NO	bb	bb	105.415
2378-TCDD	26.305	1.001	4.924e4	6.425e4	0.920	0.766	0.770	2440	1603	7.12e5	9.28e5	291.6	579.2	NO	bb	db	11.057
12378-PeCDD	31.421	1.001	2.834e5	1.748e5	0.995	1.621	1.550	4032	3115	4.22e6	2.62e6	1046.5	841.2	NO	bb	bb	52.211
123478-HxCDD	35.922	1.000	2.965e5	2.407e5	1.027	1.232	1.240	4241	3010	4.65e6	3.73e6	1096.7	1237.9	NO	bd	bd	54.629
123678-HxCDD	36.044	1.001	3.082e5	2.464e5	1.009	1.251	1.240	4241	3010	4.61e6	3.72e6	1085.9	1237.1	NO	db	db	50.555
123789-HxCDD	36.423	1.011	2.887e5	2.199e5	0.950	1.313	1.240	4241	3010	4.19e6	3.34e6	989.1	1108.9	NO	bd	bb	52.339
1234678-HpCDD	40.178	1.000	1.757e5	1.625e5	1.068	1.081	1.050	3111	3083	2.53e6	2.35e6	814.6	763.1	NO	bb	bb	51.865
OCDD	44.903	1.000	2.642e5	3.138e5	1.181	0.842	0.890	2972	3108	3.12e6	3.44e6	1050.3	1105.9	NO	bb	bd	104.997
13C-2378-TCDF	25.640	1.007	7.798e5	9.953e5	1.427	0.784	0.770	3469	3089	1.16e7	1.43e7	3339.4	4613.3	NO	bb	bb	101.689
13C-12378-PeCDF	29.806	1.171	1.051e6	6.125e5	1.297	1.716	1.550	4922	3645	1.42e7	8.62e6	2881.8	2364.6	NO	bd	bb	104.785
13C-23478-PeCDF	31.142	1.223	9.754e5	6.030e5	1.236	1.617	1.550	4922	3645	1.41e7	8.69e6	2860.8	2384.9	NO	bb	bb	104.321
13C-123478-HxCDF	34.785	0.955	4.274e5	8.307e5	1.242	0.514	0.510	5265	6298	6.41e6	1.24e7	1218.4	1973.2	NO	bd	bd	115.885
13C-123678-HxCDF	34.919	0.959	4.860e5	9.161e5	1.343	0.530	0.510	5265	6298	7.00e6	1.35e7	1330.1	2144.5	NO	db	db	119.442
13C-234678-HxCDF	35.788	0.983	3.967e5	7.587e5	1.215	0.523	0.510	5265	6298	5.75e6	1.13e7	1091.4	1799.0	NO	bb	bb	108.848
13C-123789-HxCDF	36.824	1.011	3.447e5	6.522e5	1.008	0.529	0.510	5265	6298	5.11e6	9.81e6	969.9	1558.1	NO	bb	bb	113.229
13C-1234678-HpCDF	38.674	1.062	3.005e5	6.203e5	0.926	0.484	0.440	3480	6125	4.35e6	9.34e6	1249.4	1525.5	NO	bd	bb	113.744
13C-1234789-HpCDF	40.902	1.123	2.223e5	5.047e5	0.758	0.440	0.440	3480	6125	2.90e6	6.30e6	833.4	1029.2	NO	bb	bb	109.773
13C-1234-TCDD	25.458	0.000	5.298e5	6.938e5	1.000	0.764	0.770	5513	2305	7.87e6	1.03e7	1428.2	4481.1	NO	bb	bb	100.000
13C-2378-TCDD	26.275	1.032	4.826e5	6.328e5	1.116	0.763	0.770	5513	2305	7.09e6	9.32e6	1285.5	4044.7	NO	bb	bb	81.637
13C-12378-PeCDD	31.399	1.233	5.423e5	3.395e5	0.732	1.598	1.550	2388	2135	7.53e6	4.95e6	3154.4	2319.5	NO	bb	bb	98.449
13C-123478-HxCDD	35.911	0.986	5.361e5	4.211e5	0.960	1.273	1.240	3574	5521	8.65e6	6.70e6	2421.3	1213.6	NO	bd	bd	114.124
13C-123678-HxCDD	36.022	0.989	6.017e5	4.857e5	1.041	1.239	1.240	3574	5521	9.06e6	7.24e6	2535.4	1311.0	NO	db	db	119.499
13C-1234678-HpCDD	40.167	1.103	3.074e5	3.031e5	0.632	1.014	1.050	3260	2760	4.30e6	4.19e6	1318.4	1519.0	NO	bb	bb	110.470
13C-OCDD	44.884	1.233	4.208e5	5.116e5	0.504	0.822	0.890	2744	3477	4.92e6	5.55e6	1792.3	1596.9	NO	bb	bd	211.835
13C-123789-HxCDD	36.412	0.000	4.843e5	3.895e5	1.000	1.243	1.240	3574	5521	7.18e6	5.79e6	2010.2	1047.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.305	1.033	1.379e5		1.084			1849		1.90e6		1029.2			bd		10.397

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ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.147	0.864	1.063e5	1.324e5	1.425	0.802	0.770	1727	2357	1.66e6	2.09e6	959.0	886.5	NO	bb	bb	9.436
1289-TCDF	27.152	1.059	5.661e4	7.137e4	1.043	0.793	0.770	1727	2357	8.15e5	1.06e6	472.0	447.8	NO	bb	bb	6.913
13468-PECDF	27.015	0.906	5.743e5	3.714e5	1.376	1.546	1.550	1557	1759	8.45e6	5.45e6	5425.9	3099.7	NO	bb	bb	41.310
12389-PECDF	32.201	1.080	4.075e5	2.638e5	1.000	1.544	1.550	6428	5298	5.63e6	3.72e6	875.5	702.7	NO	bb	bb	40.376
123468-HXCDF	33.125	0.952	4.315e5	3.546e5	1.087	1.217	1.240	6025	4489	6.40e6	5.20e6	1061.8	1158.1	NO	bb	bb	57.507
1368-TCDD	23.417	0.891	5.716e4	7.362e4	0.923	0.776	0.770	2440	1603	8.73e5	1.13e6	357.6	706.6	NO	bb	bb	12.700
1289-TCDD	26.895	1.024	4.776e4	6.026e4	0.794	0.793	0.770	2440	1603	6.91e5	8.63e5	283.1	538.1	NO	bb	bb	12.197
12479-PECDD	28.691	0.914	4.186e5	2.632e5	1.843	1.590	1.550	4032	3115	3.99e6	2.51e6	988.7	804.5	NO	bb	bb	41.945
12389-PECDD	31.822	1.013	2.780e5	1.664e5	1.154	1.671	1.550	4032	3115	4.00e6	2.46e6	992.1	791.3	NO	bb	bb	43.683
124679-HXCDD	33.905	0.944	3.632e5	2.896e5	1.125	1.254	1.240	4241	3010	5.57e6	4.44e6	1314.1	1475.1	NO	bb	bb	60.629
1234679-HPCDD	39.141	0.975	2.129e5	1.840e5	1.211	1.157	1.050	3111	3083	2.93e6	2.75e6	941.5	893.1	NO	bd	bb	53.689
Total-tetrafurans			2.574e5		1.192			1727		3.86e6							27.363
Total-penta1			5.743e5					1557		8.45e6							41.310
Total-pentafurans			1.602e6		1.047			6428		2.23e7							153.079
Total-hexafurans			1.898e6		1.045			6025		2.84e7							272.082
Total-heptafurans			6.227e5		1.305			5528		8.82e6							113.929
Total-Furans			5.291e6		1.158			1727		7.56e7							713.177
Total-tetradioxins			2.709e5		0.879			2440		3.41e6							62.800
Total-pentadioxins			9.817e5		1.331			4032		1.22e7							138.087
Total-hexadioxins			1.266e6		1.028			4241		1.92e7							219.741
Total-heptadioxins			3.886e5		1.140			3111		5.46e6							105.554
Total-Dioxins			3.171e6		1.092			2440		4.34e7							631.178
Total-TEQ			8.462e6					2440		1.19e8							1344.355
FUNCTION1 PFK			6.450e7					839971		2.37e8							
FUNCTION2 PFK			0.000e0					483349		0.00e0							
FUNCTION3 PFK			5.184e7					675979		4.54e8							0.000
FUNCTION4 PFK			3.964e5					425264		1.39e7							
FUNCTION5 PFK			3.414e4					345829		1.67e6							
FUNCTION1 HXCD...			2.903e3					1258		5.64e4							0.000
FUNCTION1 HPCD...			2.863e3					1421		5.44e4							0.000
FUNCTION2 HPCD...			2.720e3					1471		5.70e4							0.000
FUNCTION3 OCDPE			1.392e3					890		2.72e4							0.000
FUNCTION4 NCDPE			1.187e3					1520		2.23e4							0.000
FUNCTION5 DCDPE			1.665e2					1065		6.42e3							0.000

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Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
2	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
3	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
4	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
5	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
2	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
3	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
4	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
5	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
2	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020
7	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
8	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
9	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
10	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
11	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831
12	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
13	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
14	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
15	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
16	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003
17	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
18	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145
19	OCDF	45.14	3.368e5	3.743e5	1.447	0.90	0.89	729.8	YES	NO	bb	bb	105.415
20	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
2	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
3	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
4	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
5	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
6	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
2	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
3	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
4	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
2	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
3	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
4	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
5	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
6	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865
2	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
2	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
3	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
4	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
5	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
6	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057
7	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
8	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
9	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
10	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945
11	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
12	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
13	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
14	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
15	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
16	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325
17	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865
18	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689
19	OCDD	44.90	2.642e5	3.138e5	1.181	0.84	0.89	1050.3	YES	NO	bb	bd	104.997

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020
7	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
8	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
9	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
10	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
11	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831
12	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
13	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
14	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
15	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
16	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003
17	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
18	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145
19	OCDF	45.14	3.368e5	3.743e5	1.447	0.90	0.89	729.8	YES	NO	bb	bb	105.415
20	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310
21	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
22	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
23	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
24	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
25	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
26	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057
27	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
28	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
29	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
30	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945
31	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
32	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
33	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
34	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
35	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
36	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325
37	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689
39	OCDD	44.90	2.642e5	3.138e5	1.181	0.84	0.89	1050.3	YES	NO	bb	bd	104.997

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.34	1.094e7					29.2	YES		db		
2	FUNCTION1 PFK	22.07	1.938e7					38.3	YES		dd		
3	FUNCTION1 PFK	21.38	2.077e7					61.6	YES		dd		
4	FUNCTION1 PFK	21.25	7.452e6					64.7	YES		dd		
5	FUNCTION1 PFK	21.10	5.199e6					69.3	YES		bd		
6	FUNCTION1 PFK	27.62	5.202e4					1.5	NO		bb		
7	FUNCTION1 PFK	26.61	3.088e4					1.4	NO		bb		
8	FUNCTION1 PFK	26.53	3.772e4					1.3	NO		bb		
9	FUNCTION1 PFK	26.21	4.215e4					1.3	NO		bb		
10	FUNCTION1 PFK	26.14	2.091e4					0.7	NO		bb		
11	FUNCTION1 PFK	25.90	2.782e4					1.0	NO		bb		
12	FUNCTION1 PFK	25.64	2.244e4					0.9	NO		bb		
13	FUNCTION1 PFK	25.38	4.475e4					1.3	NO		bb		
14	FUNCTION1 PFK	25.32	8.085e4					1.5	NO		bb		
15	FUNCTION1 PFK	25.10	6.333e4					1.7	NO		db		
16	FUNCTION1 PFK	24.94	2.192e5					2.0	NO		dd		
17	FUNCTION1 PFK	24.82	2.857e4					1.1	NO		bd		
18	FUNCTION1 PFK	24.63	2.787e4					1.0	NO		bb		
19	FUNCTION1 PFK	24.35	1.463e4					0.7	NO		bb		
20	FUNCTION1 PFK	23.43	4.951e4					1.7	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.47	2.892e5					8.3	YES		dd		0.000
2	FUNCTION3 PFK	34.42	3.441e5					9.9	YES		dd		0.000
3	FUNCTION3 PFK	34.30	9.123e5					14.6	YES		dd		0.000
4	FUNCTION3 PFK	33.96	4.870e6					27.1	YES		dd		0.000
5	FUNCTION3 PFK	33.92	6.208e5					27.9	YES		dd		0.000
6	FUNCTION3 PFK	33.75	6.775e6					34.2	YES		dd		0.000
7	FUNCTION3 PFK	33.58	8.843e5					39.8	YES		dd		0.000
8	FUNCTION3 PFK	33.52	4.828e6					42.2	YES		dd		0.000
9	FUNCTION3 PFK	33.37	2.844e6					47.3	YES		dd		0.000
10	FUNCTION3 PFK	33.18	5.432e6					54.3	YES		dd		0.000
11	FUNCTION3 PFK	33.04	5.575e6					59.2	YES		dd		0.000
12	FUNCTION3 PFK	32.95	3.680e6					62.9	YES		dd		0.000
13	FUNCTION3 PFK	32.86	7.904e6					65.6	YES		dd		0.000
14	FUNCTION3 PFK	32.74	1.549e6					69.1	YES		dd		0.000
15	FUNCTION3 PFK	32.67	4.268e6					72.4	YES		bd		0.000
16	FUNCTION3 PFK	36.86	8.449e3					0.3	NO		bb		0.000
17	FUNCTION3 PFK	36.72	6.925e4					2.0	NO		bb		0.000
18	FUNCTION3 PFK	36.59	5.799e4					1.2	NO		bb		0.000
19	FUNCTION3 PFK	36.30	7.563e3					0.7	NO		bb		0.000
20	FUNCTION3 PFK	36.04	6.922e3					0.5	NO		bb		0.000
21	FUNCTION3 PFK	35.83	2.532e4					1.1	NO		bb		0.000
22	FUNCTION3 PFK	35.75	1.516e4					0.9	NO		bb		0.000
23	FUNCTION3 PFK	35.63	1.004e4					0.7	NO		bb		0.000
24	FUNCTION3 PFK	35.33	1.433e4					0.8	NO		bb		0.000
25	FUNCTION3 PFK	35.04	1.089e4					0.6	NO		bb		0.000
26	FUNCTION3 PFK	34.97	5.517e3					0.7	NO		bb		0.000
27	FUNCTION3 PFK	34.89	3.001e4					1.0	NO		bb		0.000
28	FUNCTION3 PFK	34.81	1.594e4					1.0	NO		db		0.000
29	FUNCTION3 PFK	34.76	3.092e4					1.3	NO		bd		0.000
30	FUNCTION3 PFK	34.60	1.659e5					4.5	YES		db		0.000
31	FUNCTION3 PFK	34.53	2.985e5					6.7	YES		dd		0.000
32	FUNCTION3 PFK	37.64	2.742e4					1.1	NO		bb		0.000
33	FUNCTION3 PFK	37.58	2.711e4					1.4	NO		db		0.000
34	FUNCTION3 PFK	37.54	1.758e4					0.9	NO		dd		0.000
35	FUNCTION3 PFK	37.49	3.447e4					1.6	NO		dd		0.000
36	FUNCTION3 PFK	37.45	2.646e4					1.5	NO		dd		0.000
37	FUNCTION3 PFK	37.38	4.745e4					1.5	NO		dd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	37.34	2.452e4					1.6	NO		bd		0.000
39	FUNCTION3 PFK	37.29	9.653e3					0.8	NO		bb		0.000
40	FUNCTION3 PFK	37.08	5.064e3					0.5	NO		bb		0.000
41	FUNCTION3 PFK	36.98	6.612e4					1.7	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.42	2.469e3					0.5	NO		bb		
2	FUNCTION4 PFK	38.08	2.954e4					1.7	NO		bb		
3	FUNCTION4 PFK	37.98	4.856e4					2.3	NO		db		
4	FUNCTION4 PFK	37.94	3.614e4					2.6	NO		bd		
5	FUNCTION4 PFK	37.85	8.390e3					1.0	NO		bb		
6	FUNCTION4 PFK	40.91	1.035e4					1.0	NO		bb		
7	FUNCTION4 PFK	40.71	1.742e3					0.4	NO		bb		
8	FUNCTION4 PFK	40.68	3.176e3					0.5	NO		bb		
9	FUNCTION4 PFK	40.61	6.362e3					0.7	NO		bb		
10	FUNCTION4 PFK	40.38	7.075e3					0.8	NO		bb		
11	FUNCTION4 PFK	40.32	3.115e4					1.2	NO		bb		
12	FUNCTION4 PFK	39.94	4.461e3					0.6	NO		bb		
13	FUNCTION4 PFK	39.80	5.746e3					0.6	NO		bb		
14	FUNCTION4 PFK	39.51	2.799e3					0.4	NO		bb		
15	FUNCTION4 PFK	39.43	1.949e3					0.4	NO		bb		
16	FUNCTION4 PFK	39.36	2.879e3					0.6	NO		bb		
17	FUNCTION4 PFK	39.32	5.365e3					1.1	NO		bb		
18	FUNCTION4 PFK	39.28	3.621e3					0.8	NO		bb		
19	FUNCTION4 PFK	39.21	1.666e4					1.0	NO		bb		
20	FUNCTION4 PFK	39.07	6.512e3					0.8	NO		bb		
21	FUNCTION4 PFK	38.46	1.263e4					1.2	NO		bb		
22	FUNCTION4 PFK	42.68	1.445e4					0.9	NO		bb		
23	FUNCTION4 PFK	42.62	2.052e4					1.7	NO		bb		
24	FUNCTION4 PFK	42.51	2.321e3					0.5	NO		bb		
25	FUNCTION4 PFK	42.43	3.121e4					1.9	NO		bb		
26	FUNCTION4 PFK	42.18	7.742e3					0.8	NO		bb		
27	FUNCTION4 PFK	42.05	1.748e4					1.2	NO		db		
28	FUNCTION4 PFK	41.97	1.470e4					1.2	NO		bd		
29	FUNCTION4 PFK	41.63	2.487e3					0.5	NO		bb		
30	FUNCTION4 PFK	41.48	1.442e4					1.2	NO		bb		
31	FUNCTION4 PFK	41.24	1.211e4					1.0	NO		bb		
32	FUNCTION4 PFK	41.17	1.136e4					1.2	NO		bb		

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.97	5.710e3					1.0	NO		bb		
2	FUNCTION5 PFK	45.74	1.859e3					0.6	NO		bb		
3	FUNCTION5 PFK	43.26	1.526e4					1.8	NO		bb		
4	FUNCTION5 PFK	42.93	1.131e4					1.5	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.35	1.892e2					4.2	YES		db		0.000
2	FUNCTION1 HXCD...	25.23	1.187e2					1.3	NO		bd		0.000
3	FUNCTION1 HXCD...	24.87	7.961e1					1.9	NO		db		0.000
4	FUNCTION1 HXCD...	24.81	1.259e2					2.7	NO		bd		0.000
5	FUNCTION1 HXCD...	24.72	1.584e2					1.4	NO		bb		0.000
6	FUNCTION1 HXCD...	24.40	9.113e1					1.6	NO		bb		0.000
7	FUNCTION1 HXCD...	23.72	7.480e1					1.5	NO		bb		0.000
8	FUNCTION1 HXCD...	23.61	1.381e2					2.9	NO		bb		0.000
9	FUNCTION1 HXCD...	23.11	9.740e1					2.5	NO		bb		0.000
10	FUNCTION1 HXCD...	22.43	1.791e2					2.1	NO		db		0.000
11	FUNCTION1 HXCD...	22.30	7.125e1					1.5	NO		bd		0.000
12	FUNCTION1 HXCD...	22.19	7.195e1					1.3	NO		bb		0.000
13	FUNCTION1 HXCD...	21.98	1.102e2					1.5	NO		db		0.000
14	FUNCTION1 HXCD...	21.89	2.251e2					4.2	YES		bd		0.000
15	FUNCTION1 HXCD...	21.80	1.414e2					2.0	NO		bb		0.000
16	FUNCTION1 HXCD...	27.03	2.453e2					2.4	NO		bb		0.000
17	FUNCTION1 HXCD...	26.29	2.686e2					2.1	NO		db		0.000
18	FUNCTION1 HXCD...	26.12	1.763e2					2.9	NO		dd		0.000
19	FUNCTION1 HXCD...	26.03	9.387e1					1.2	NO		bd		0.000
20	FUNCTION1 HXCD...	25.82	1.399e2					2.0	NO		bb		0.000
21	FUNCTION1 HXCD...	25.46	1.064e2					1.7	NO		bb		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.51	7.992e1					1.4	NO		bb		0.000
2	FUNCTION1 HPCD...	22.07	1.029e2					2.1	NO		bb		0.000
3	FUNCTION1 HPCD...	21.98	1.510e2					1.6	NO		db		0.000
4	FUNCTION1 HPCD...	21.88	1.949e2					3.5	YES		bd		0.000
5	FUNCTION1 HPCD...	21.75	2.528e2					1.8	NO		bb		0.000
6	FUNCTION1 HPCD...	21.47	1.508e2					2.1	NO		bb		0.000
7	FUNCTION1 HPCD...	21.25	1.018e2					1.3	NO		db		0.000
8	FUNCTION1 HPCD...	21.16	1.149e2					1.6	NO		dd		0.000
9	FUNCTION1 HPCD...	21.09	2.200e2					3.0	NO		bd		0.000
10	FUNCTION1 HPCD...	27.00	1.586e2					1.8	NO		bb		0.000
11	FUNCTION1 HPCD...	26.83	9.159e1					0.8	NO		bb		0.000
12	FUNCTION1 HPCD...	26.59	1.663e2					2.5	NO		bb		0.000
13	FUNCTION1 HPCD...	26.32	1.753e2					1.6	NO		db		0.000
14	FUNCTION1 HPCD...	26.14	2.616e2					2.2	NO		bd		0.000
15	FUNCTION1 HPCD...	25.59	8.230e1					1.9	NO		bb		0.000
16	FUNCTION1 HPCD...	25.44	8.713e1					1.0	NO		bb		0.000
17	FUNCTION1 HPCD...	25.16	7.125e1					1.1	NO		db		0.000
18	FUNCTION1 HPCD...	25.05	1.030e2					1.1	NO		bd		0.000
19	FUNCTION1 HPCD...	24.07	1.494e2					2.5	NO		bb		0.000
20	FUNCTION1 HPCD...	23.83	1.478e2					3.3	YES		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	28.48	1.146e2					2.7	NO		bb		0.000
2	FUNCTION2 HPCD...	28.07	8.040e1					1.2	NO		db		0.000
3	FUNCTION2 HPCD...	27.98	1.117e2					1.5	NO		bd		0.000
4	FUNCTION2 HPCD...	27.82	9.308e1					2.0	NO		bb		0.000
5	FUNCTION2 HPCD...	31.82	1.073e2					1.6	NO		bb		0.000
6	FUNCTION2 HPCD...	31.41	3.440e2					4.0	YES		bb		0.000
7	FUNCTION2 HPCD...	31.18	9.044e1					1.2	NO		db		0.000
8	FUNCTION2 HPCD...	31.11	9.781e1					2.1	NO		dd		0.000
9	FUNCTION2 HPCD...	31.03	7.279e2					8.6	YES		bd		0.000
10	FUNCTION2 HPCD...	30.26	7.257e1					1.3	NO		bb		0.000
11	FUNCTION2 HPCD...	30.21	7.122e1					1.7	NO		db		0.000
12	FUNCTION2 HPCD...	30.14	1.157e2					1.5	NO		dd		0.000
13	FUNCTION2 HPCD...	30.06	7.412e1					1.1	NO		dd		0.000
14	FUNCTION2 HPCD...	29.98	7.219e1					1.2	NO		dd		0.000
15	FUNCTION2 HPCD...	29.91	9.212e1					2.0	NO		bd		0.000
16	FUNCTION2 HPCD...	29.69	7.977e1					1.3	NO		bb		0.000
17	FUNCTION2 HPCD...	29.08	1.408e2					1.5	NO		db		0.000
18	FUNCTION2 HPCD...	28.96	1.497e2					1.4	NO		bd		0.000
19	FUNCTION2 HPCD...	28.71	8.490e1					1.0	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.65	1.580e2					2.6	NO		db		0.000
2	FUNCTION3 OCDPE	37.55	1.150e2					2.8	NO		bd		0.000
3	FUNCTION3 OCDPE	36.42	1.835e2					2.9	NO		bb		0.000
4	FUNCTION3 OCDPE	36.04	2.520e2					4.7	YES		db		0.000
5	FUNCTION3 OCDPE	35.93	1.106e2					3.8	YES		dd		0.000
6	FUNCTION3 OCDPE	35.90	1.018e2					3.4	YES		bd		0.000
7	FUNCTION3 OCDPE	34.40	1.321e2					5.0	YES		bb		0.000
8	FUNCTION3 OCDPE	33.58	1.010e2					2.3	NO		bb		0.000
9	FUNCTION3 OCDPE	32.70	2.382e2					3.1	YES		bb		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.42	7.136e1					0.9	NO		bb		0.000
2	FUNCTION4 NCDPE	40.16	1.641e2					1.6	NO		bb		0.000
3	FUNCTION4 NCDPE	39.69	1.182e2					1.5	NO		bb		0.000
4	FUNCTION4 NCDPE	38.52	1.487e2					1.6	NO		db		0.000
5	FUNCTION4 NCDPE	38.34	2.790e2					2.3	NO		dd		0.000
6	FUNCTION4 NCDPE	38.26	1.556e2					2.2	NO		bd		0.000
7	FUNCTION4 NCDPE	41.34	1.448e2					1.6	NO		bb		0.000
8	FUNCTION4 NCDPE	40.81	1.056e2					2.8	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.58	7.112e1					3.0	NO		bb		0.000
2	FUNCTION5 DCDPE	43.59	9.542e1					3.1	YES		bb		0.000

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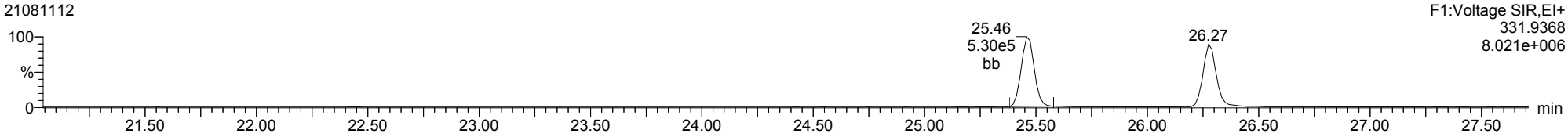

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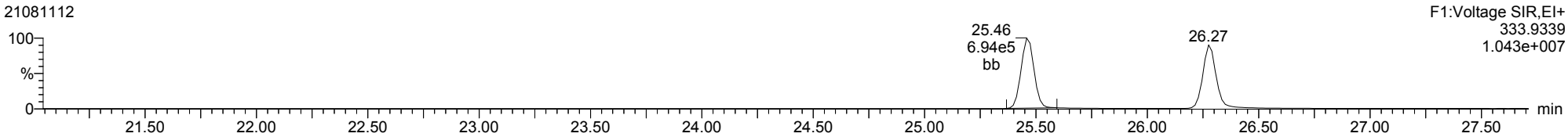

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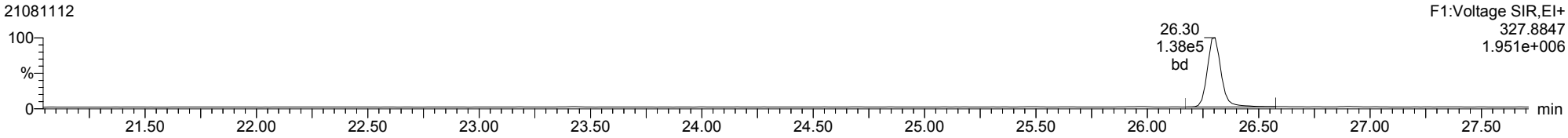

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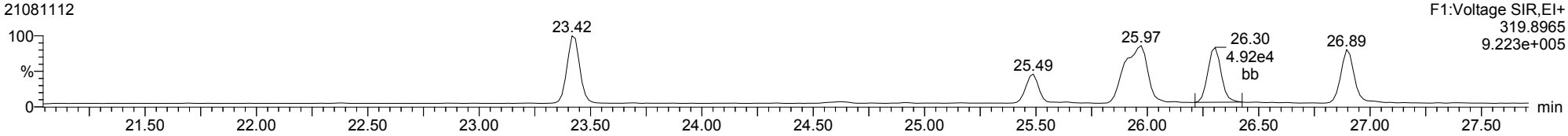

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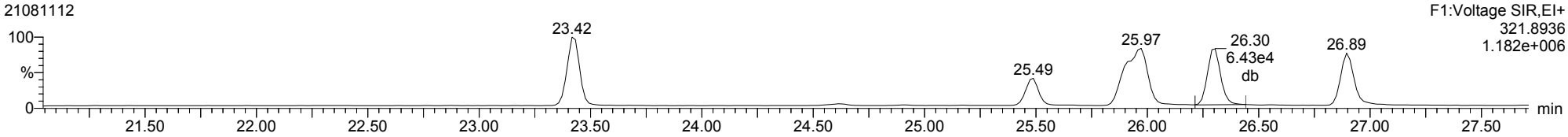

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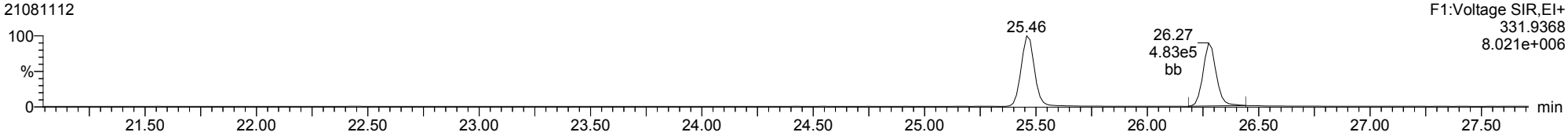

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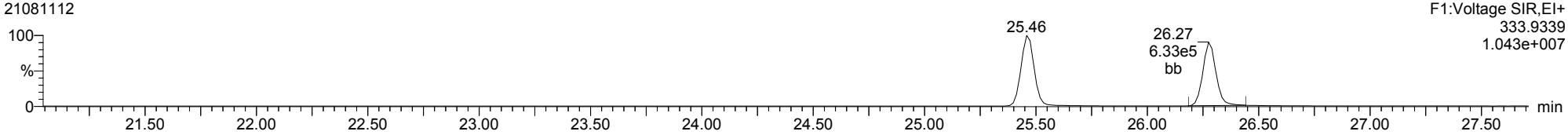

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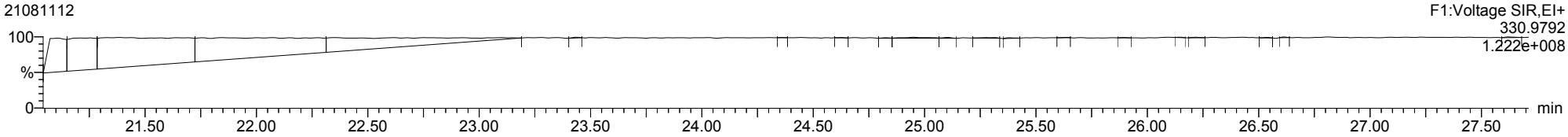

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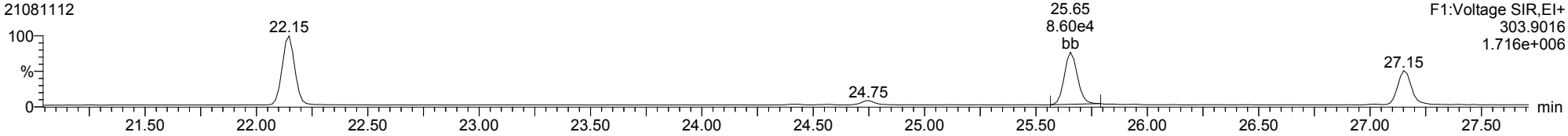

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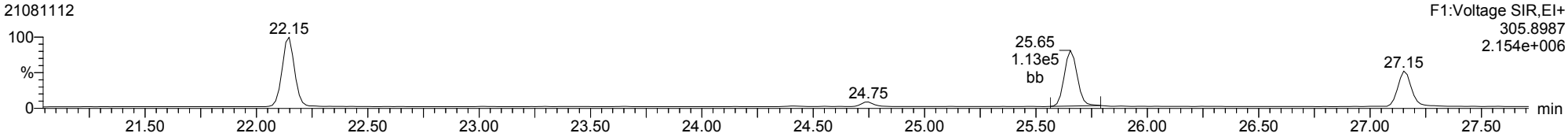

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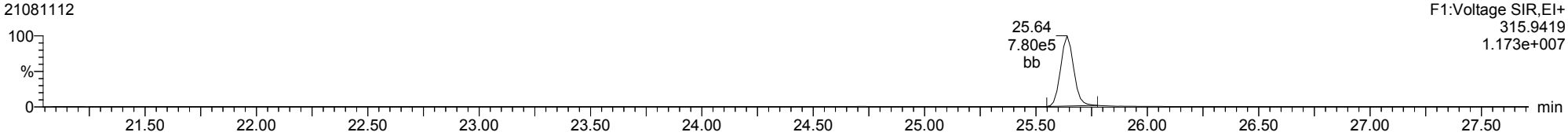

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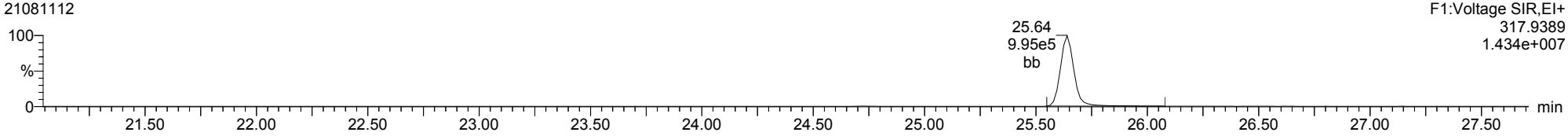

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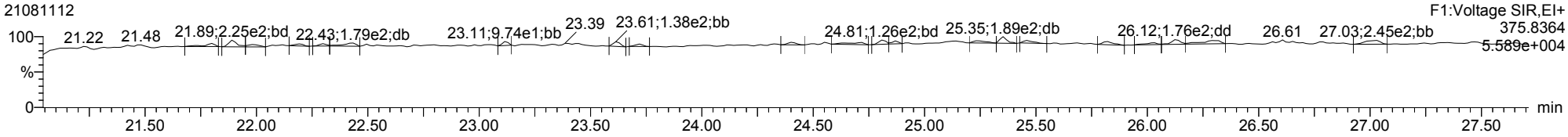

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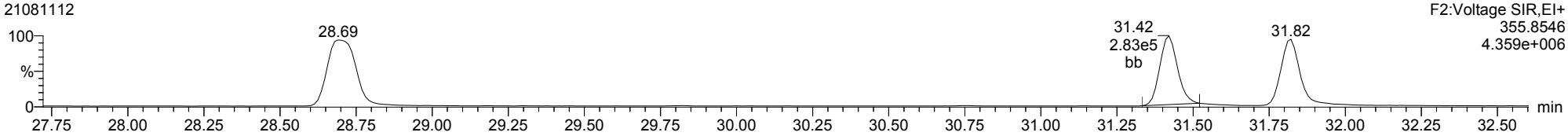

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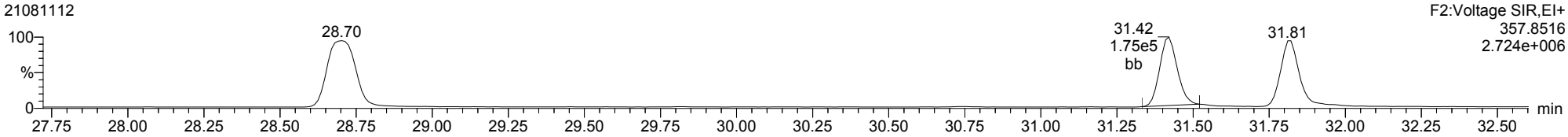

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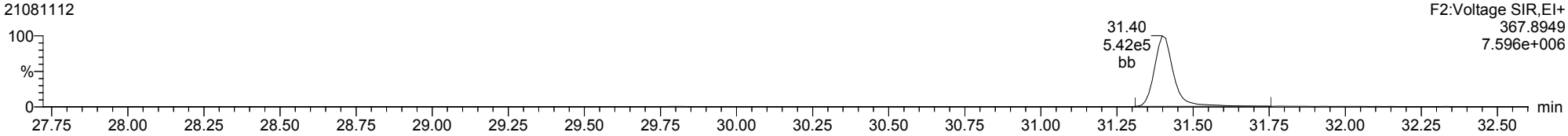

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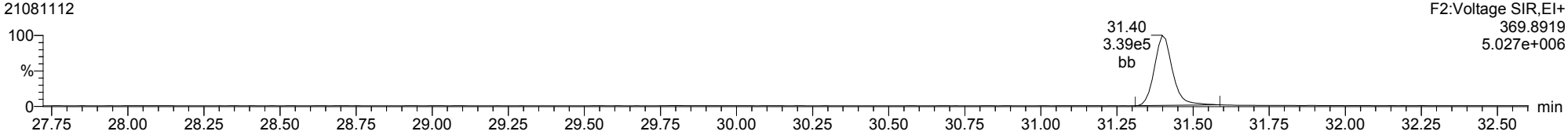
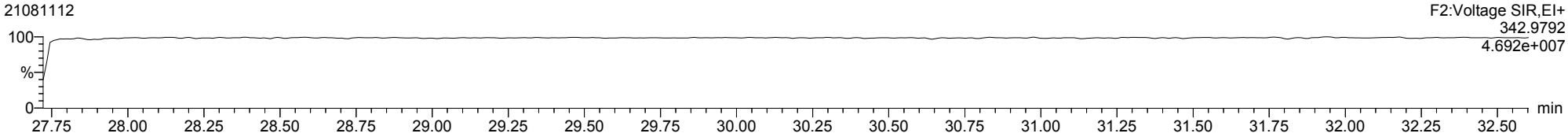


FUNCTION2 PFK



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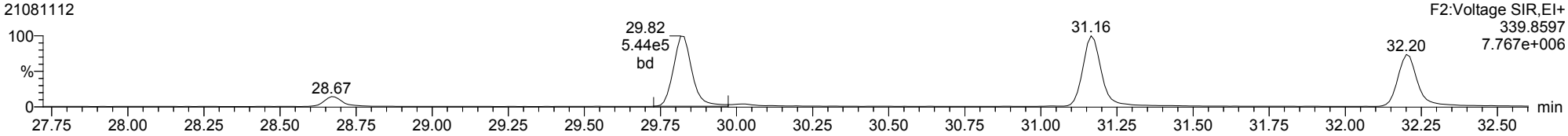

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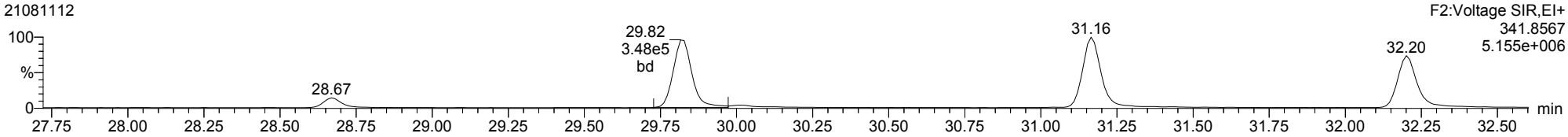

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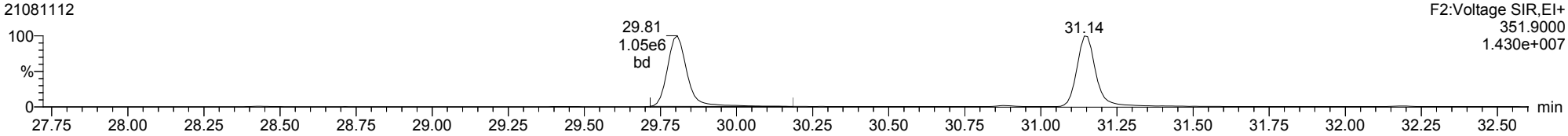

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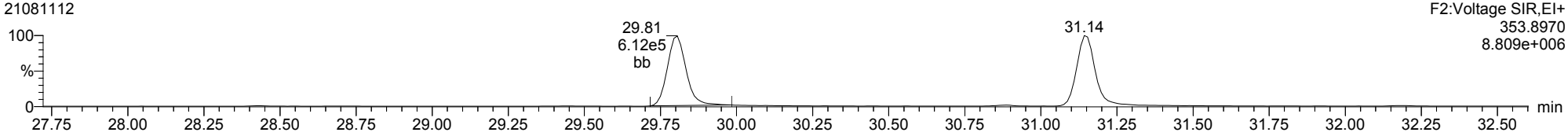

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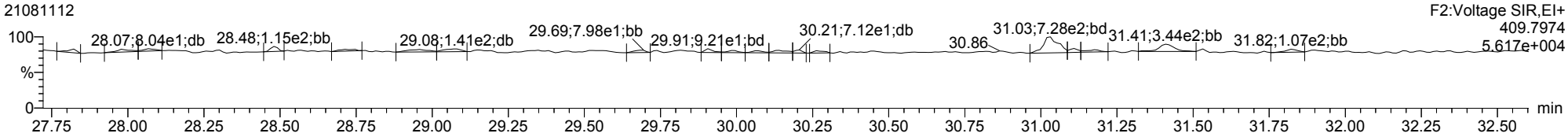

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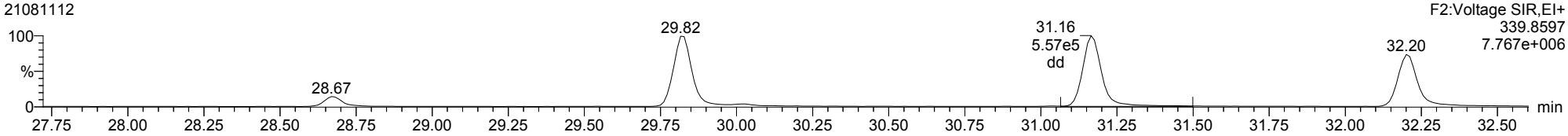
23478-PeCDF



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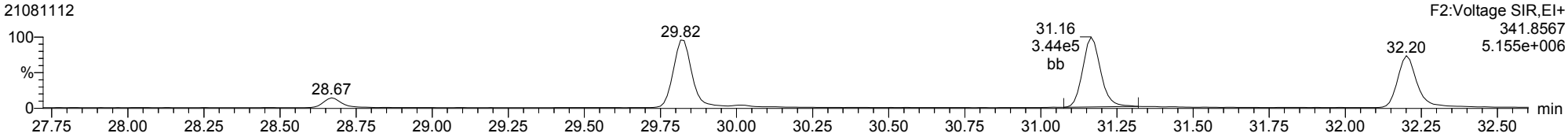

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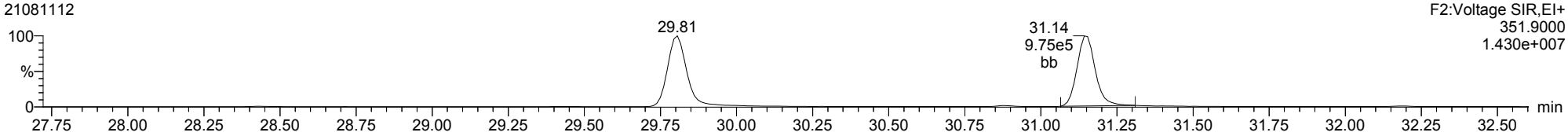

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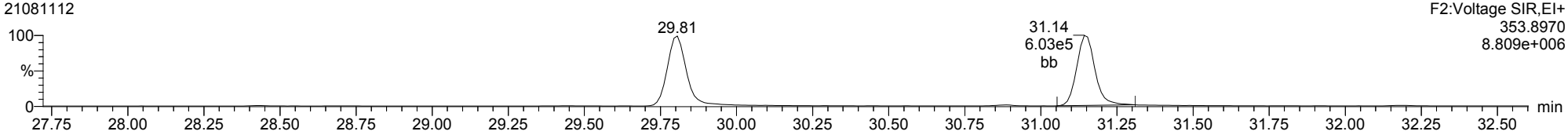

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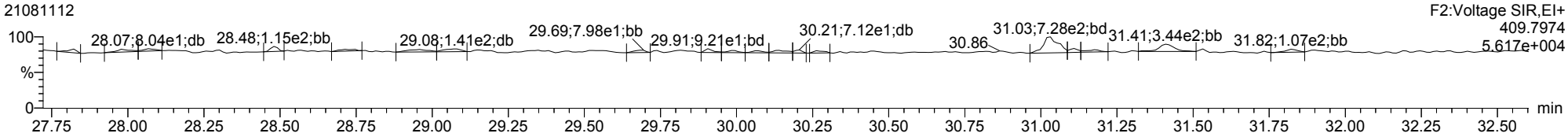

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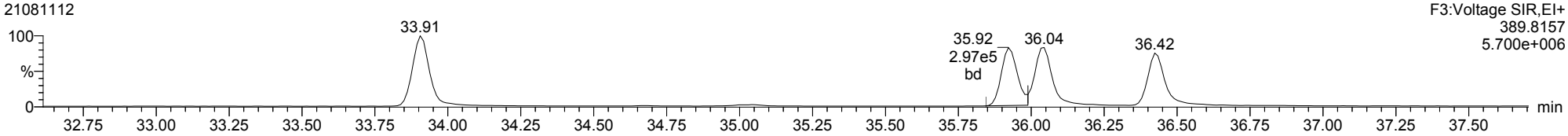

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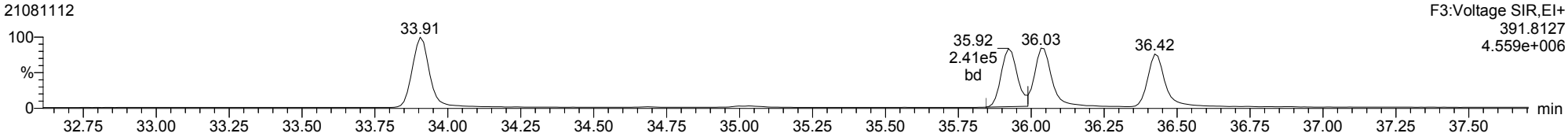

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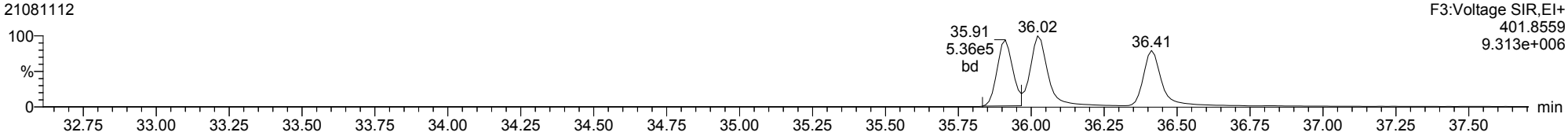

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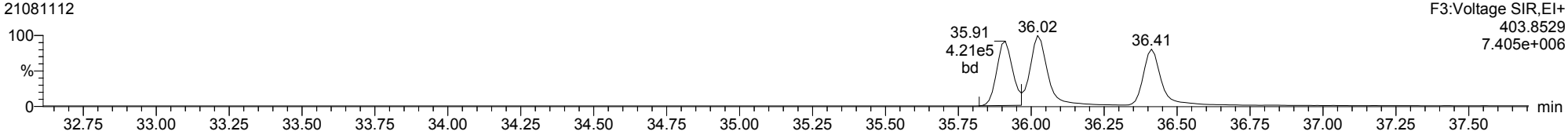

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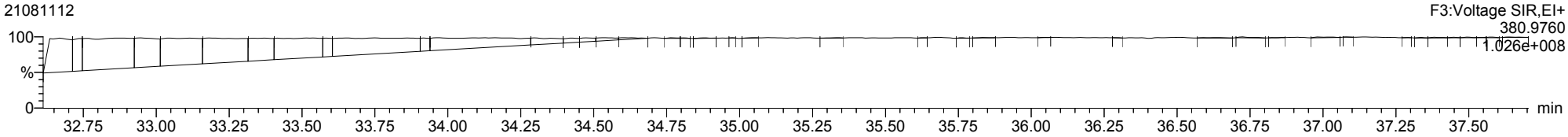

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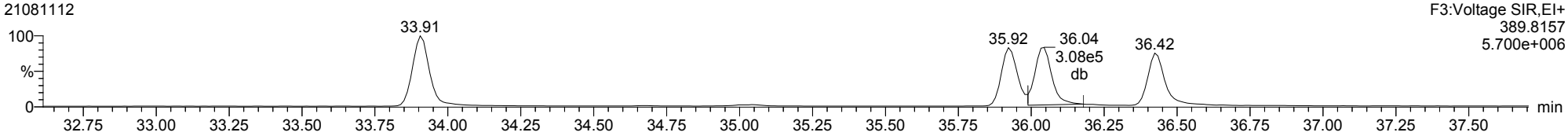

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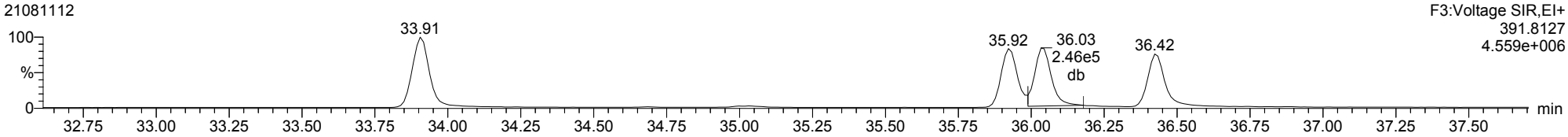

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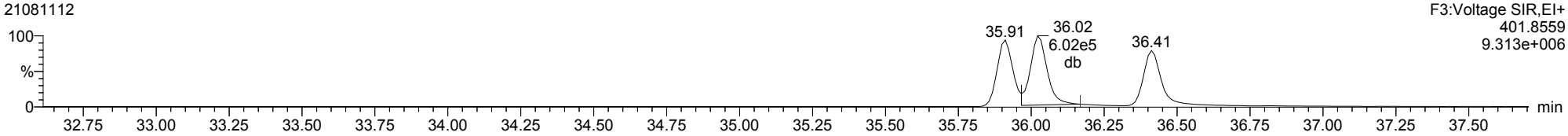

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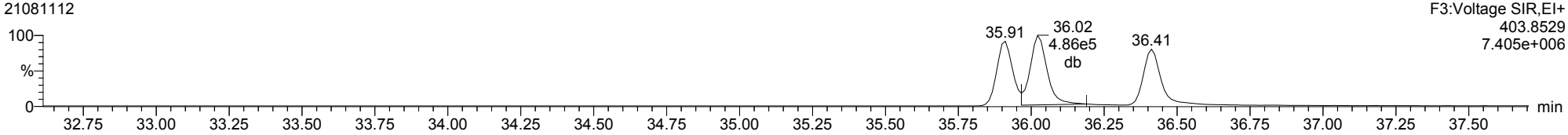

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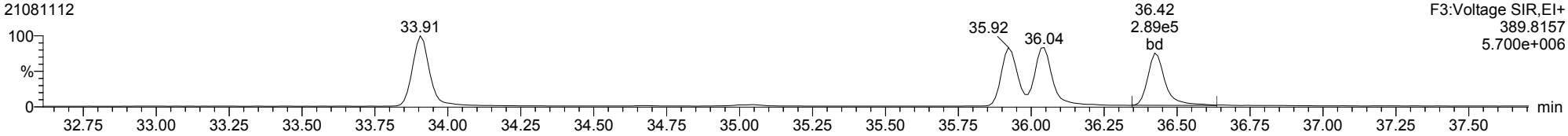

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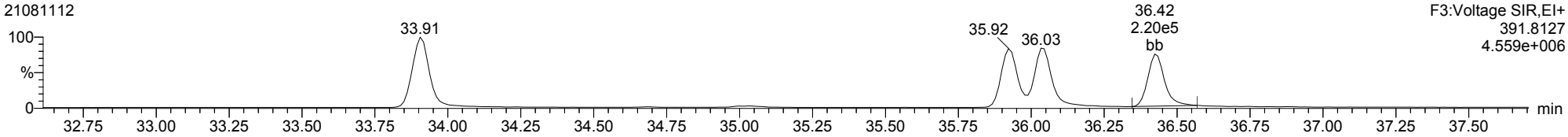

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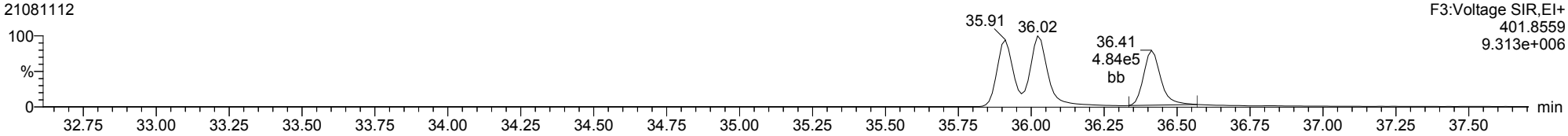

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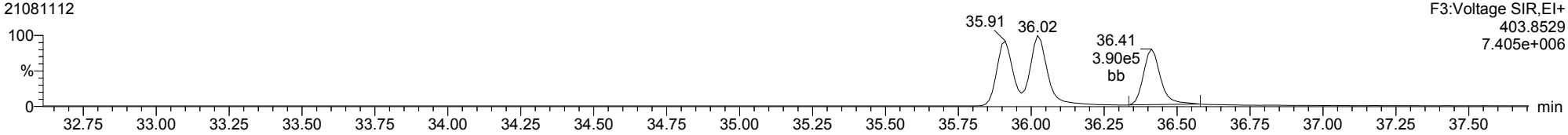

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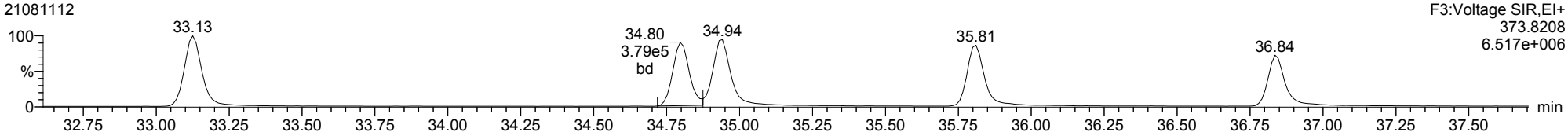

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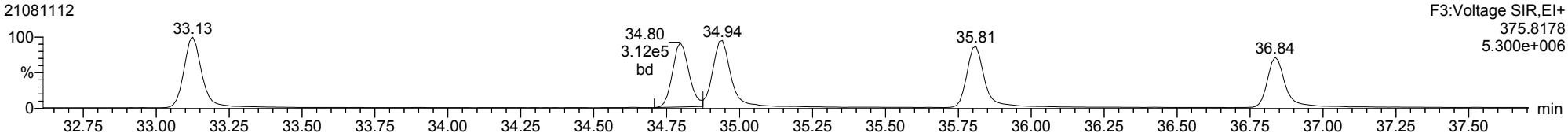

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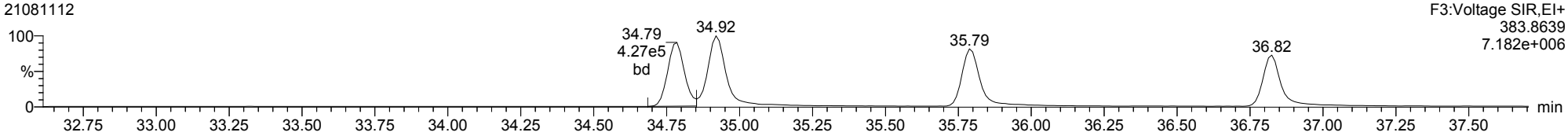

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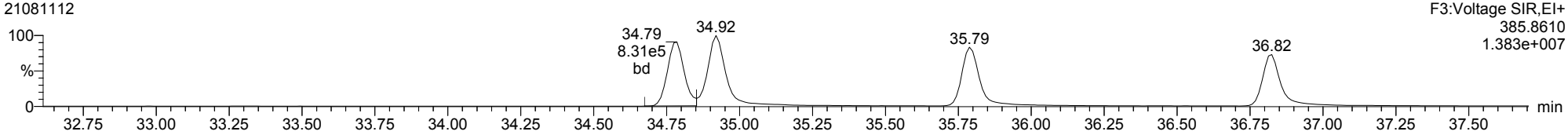

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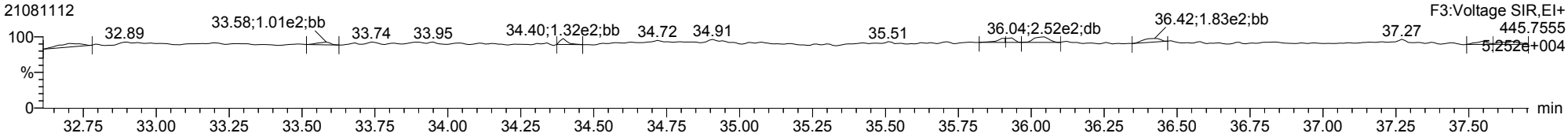

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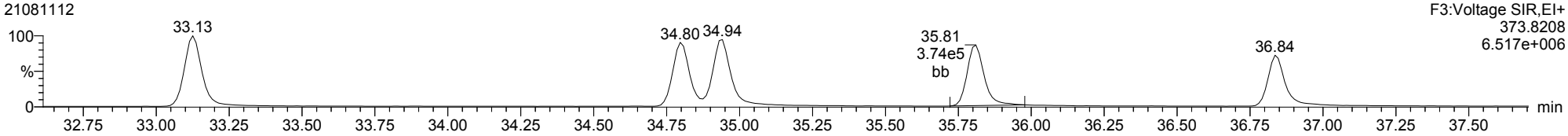

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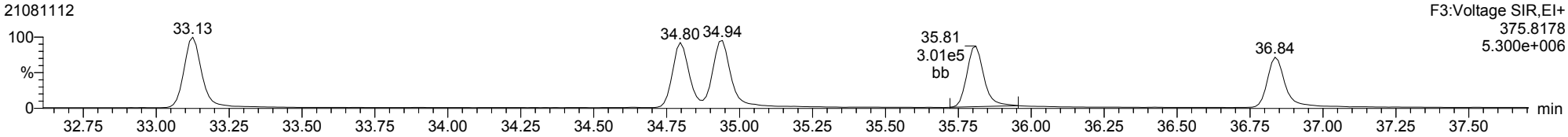

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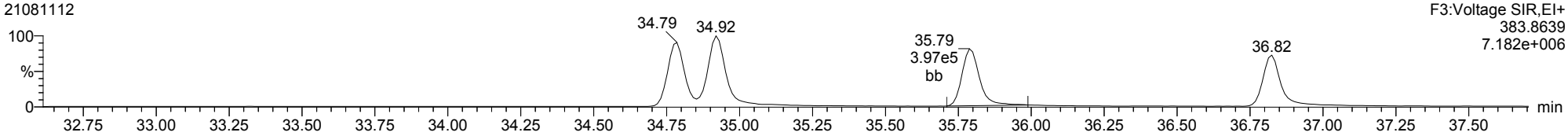

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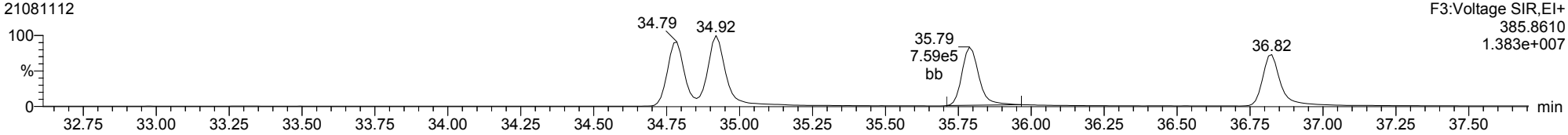

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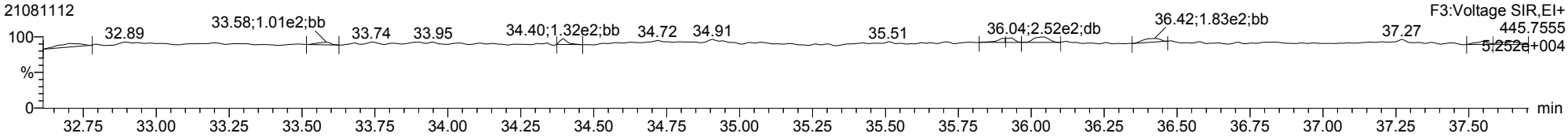

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ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

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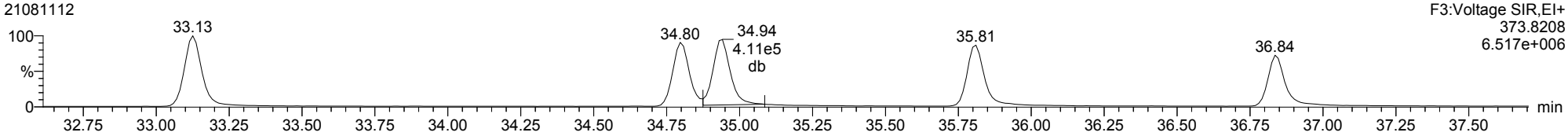

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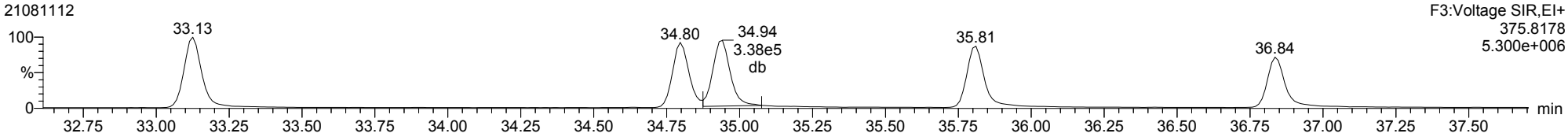

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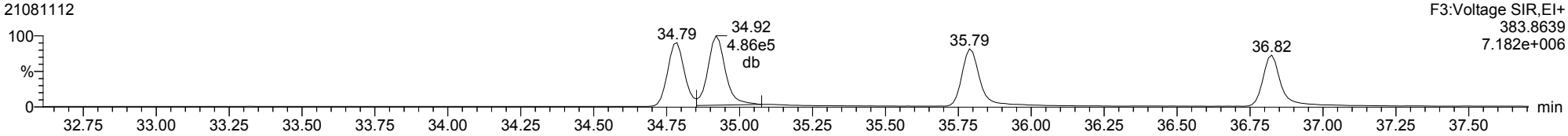

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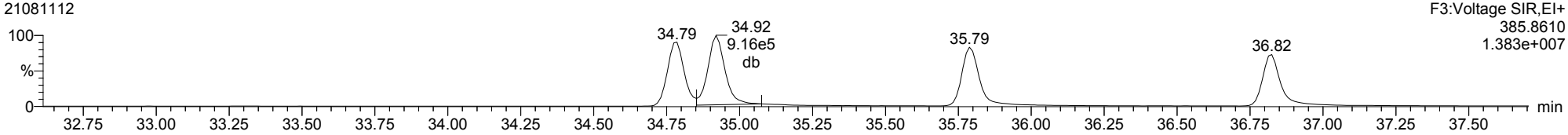

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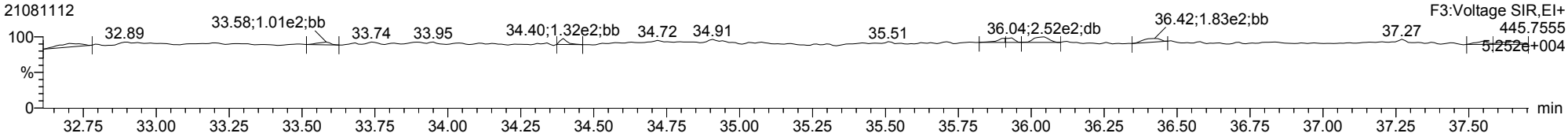

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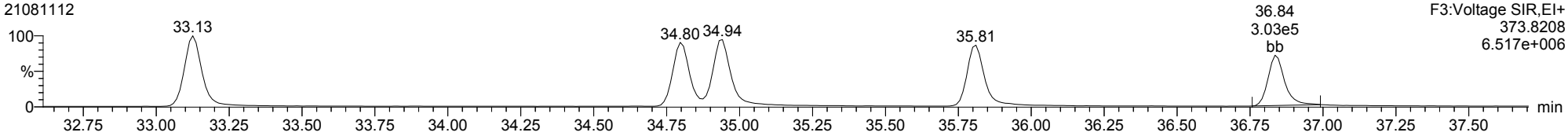

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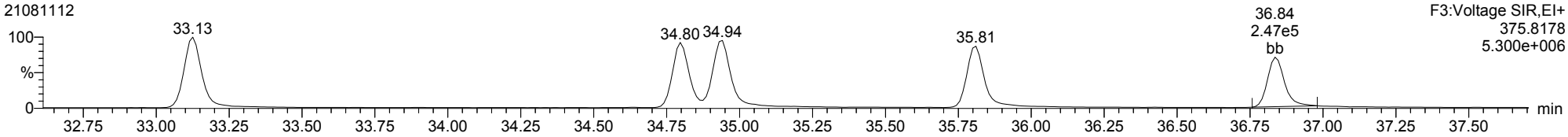

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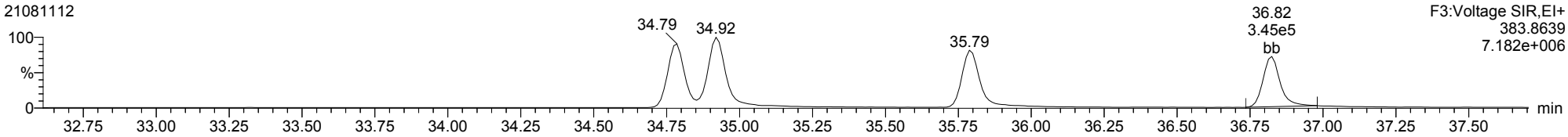

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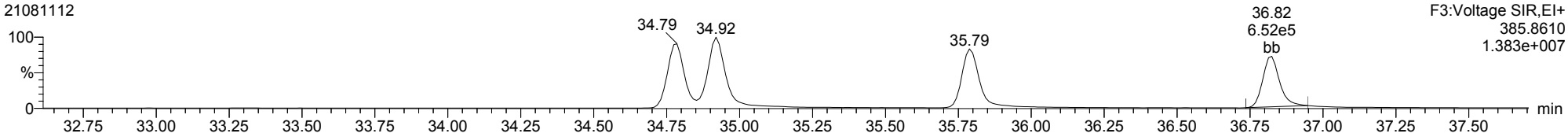

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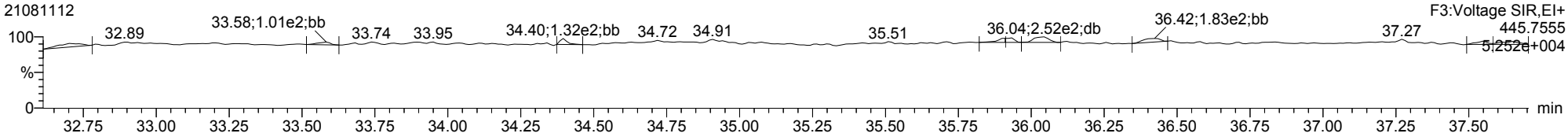

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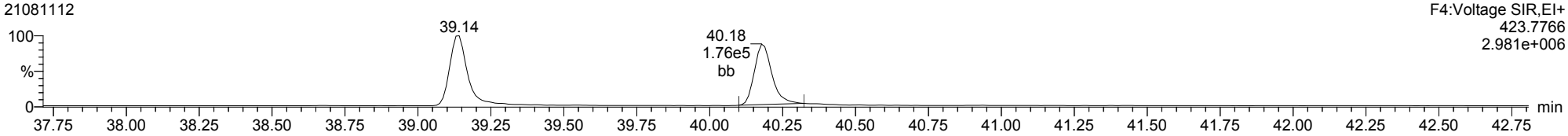

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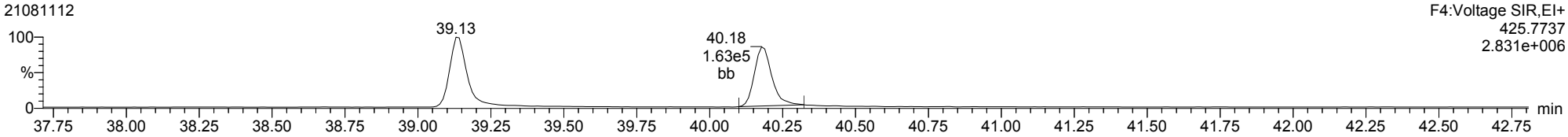

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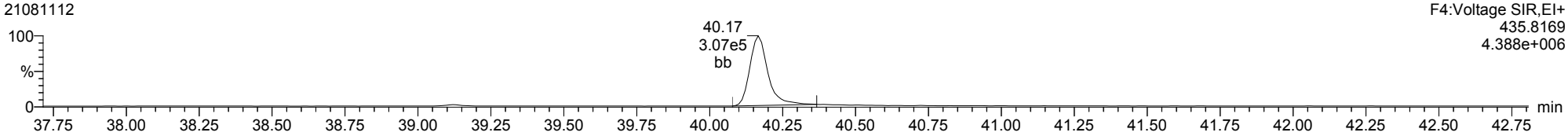

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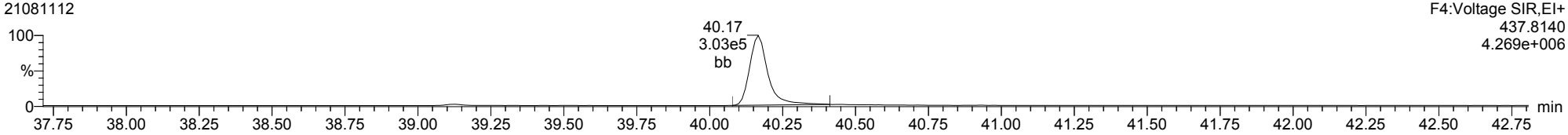
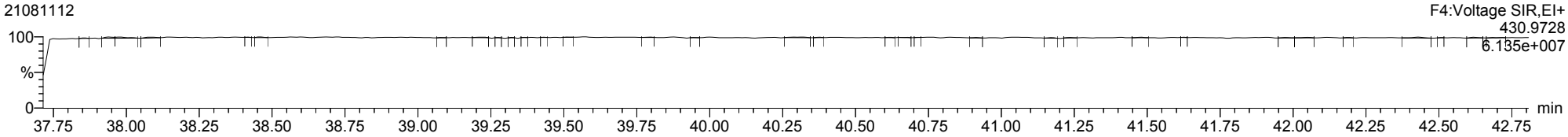


FUNCTION4 PFK



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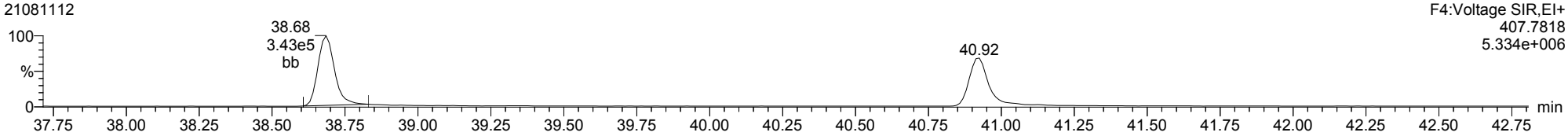

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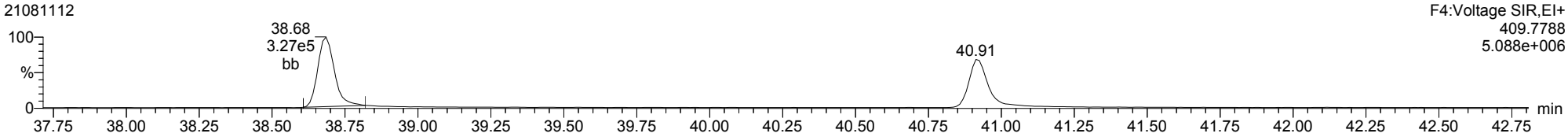

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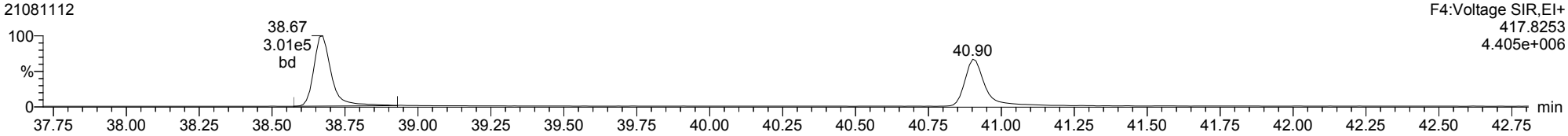

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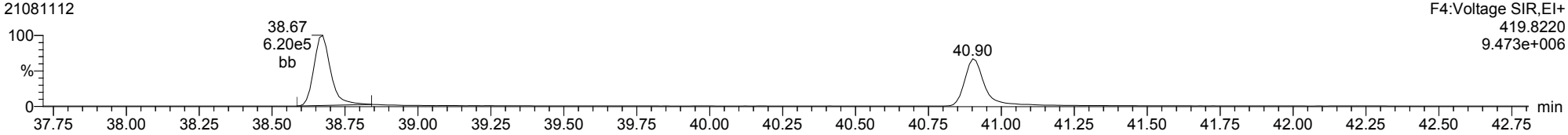

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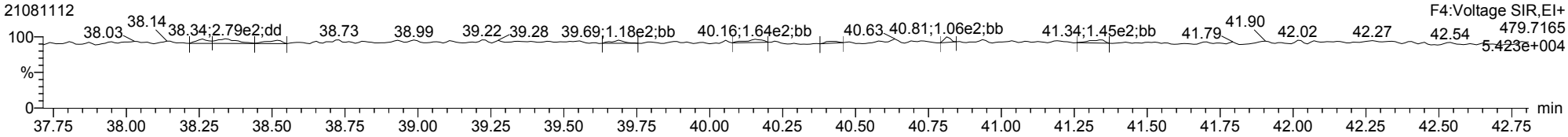

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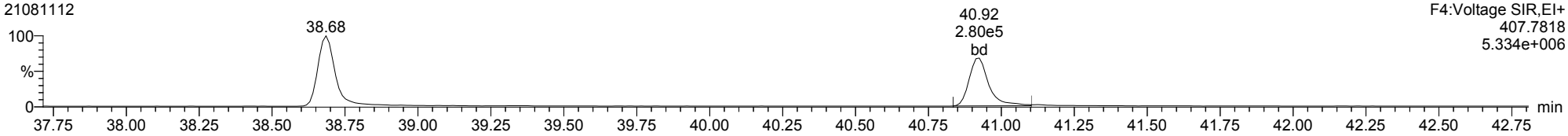

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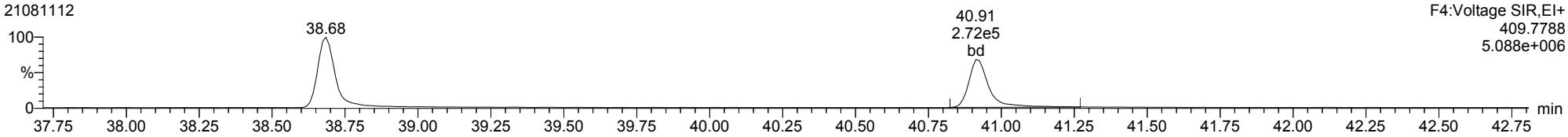

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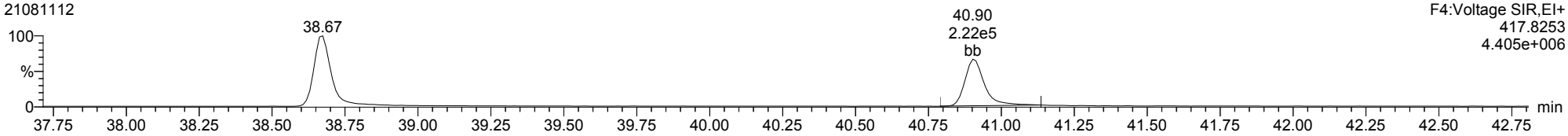

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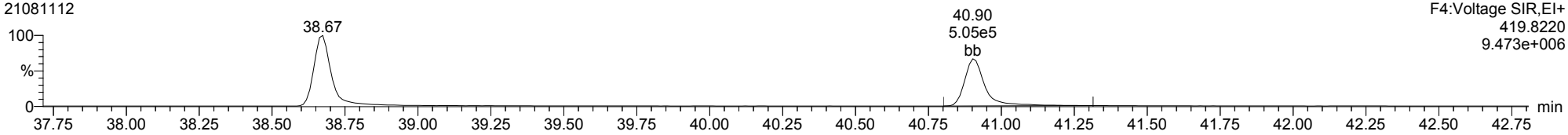

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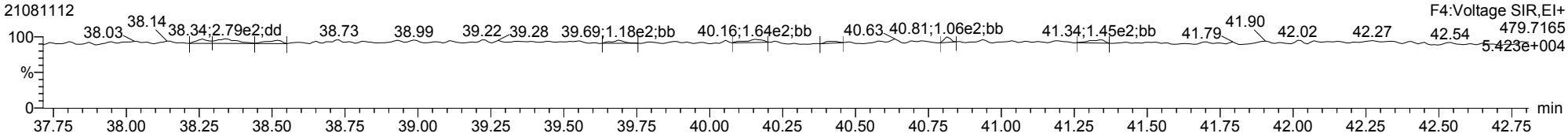

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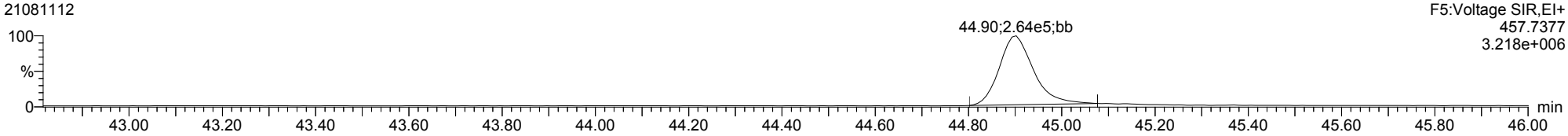
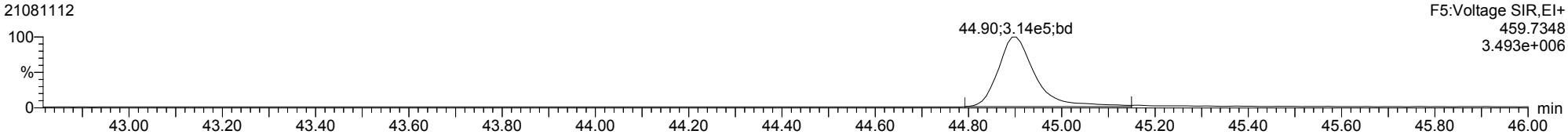
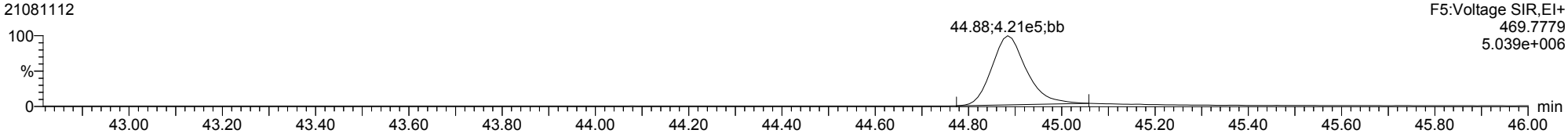


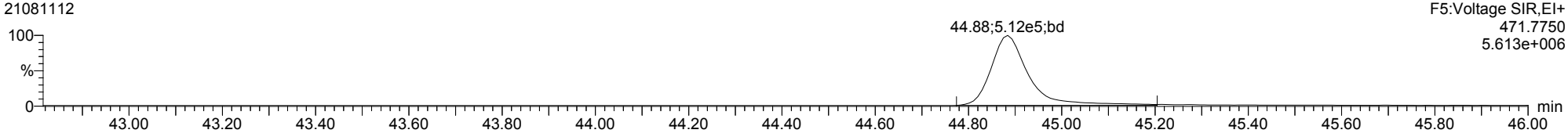
OCDD



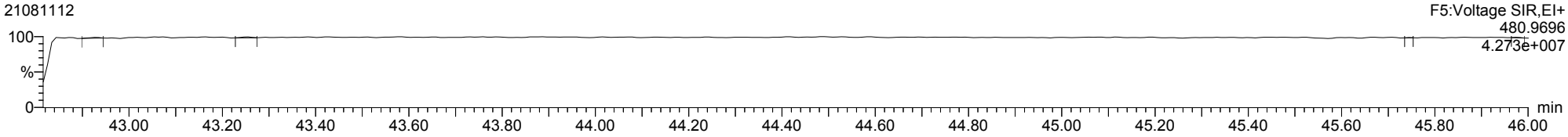
13C-OCDD



13C-OCDD

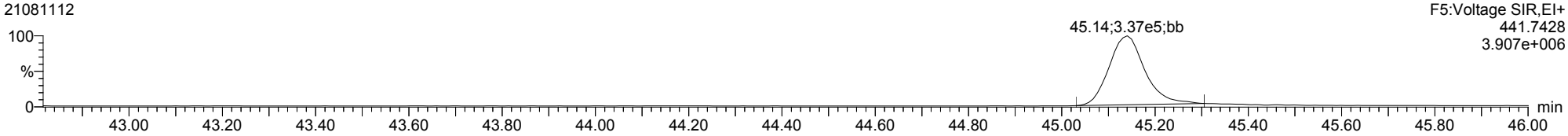


FUNCTION5 PFK

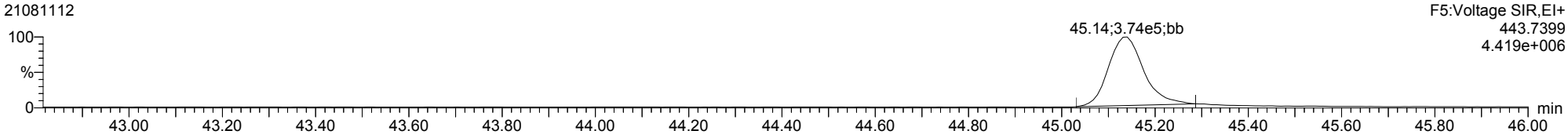


ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

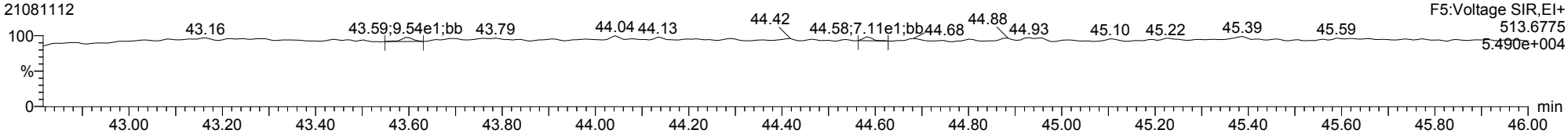
OCDF



OCDF

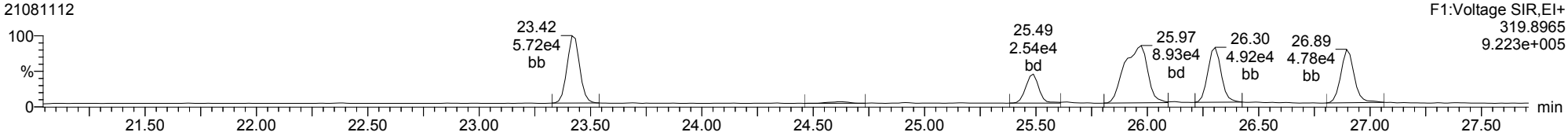


FUNCTION5 DCDPE



ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Total-tetradioxins



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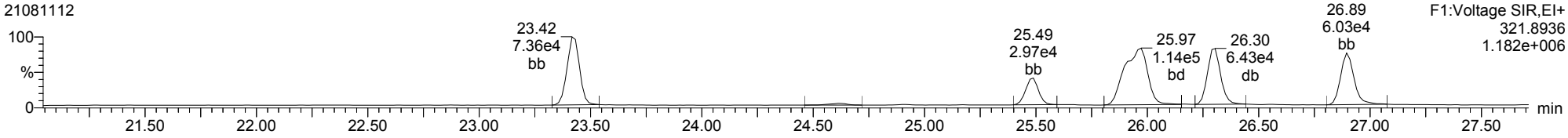
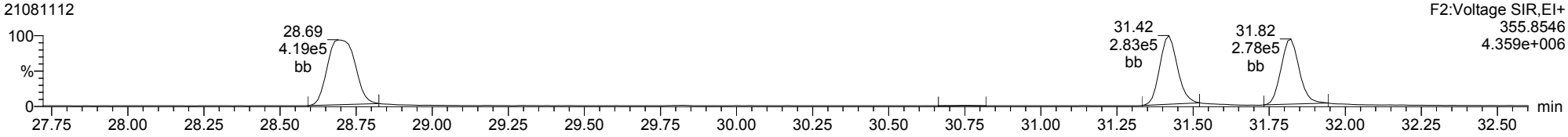
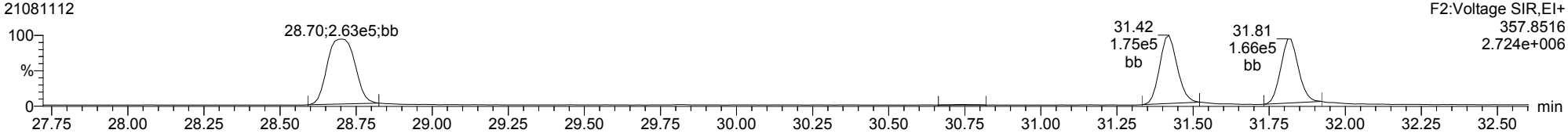


Total-pentadioxins

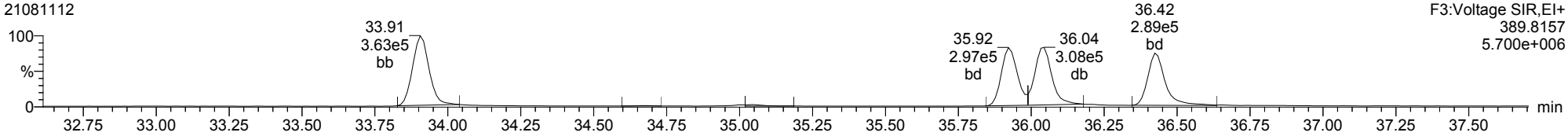


Total-pentadioxins

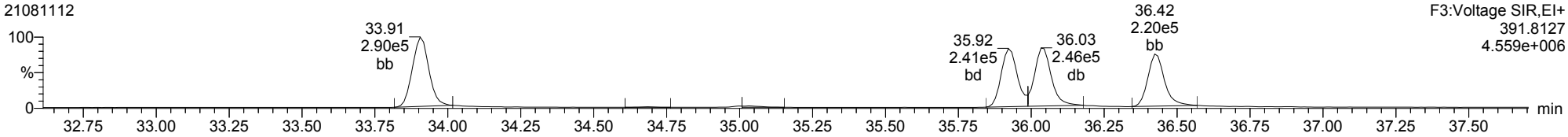


ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Total-hexadioxins



Total-hexadioxins



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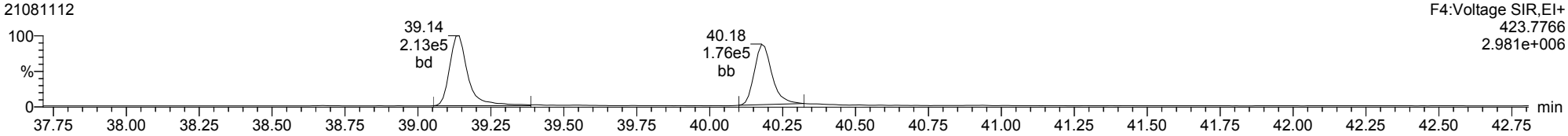
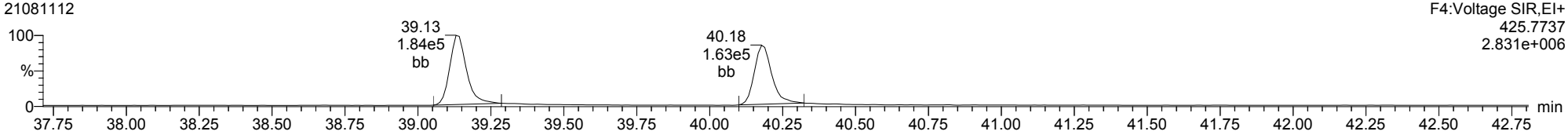
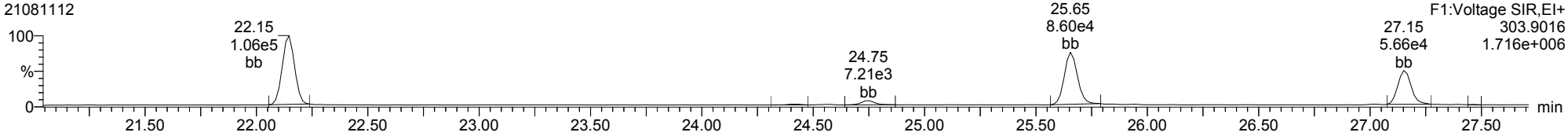


Total-heptadioxins



ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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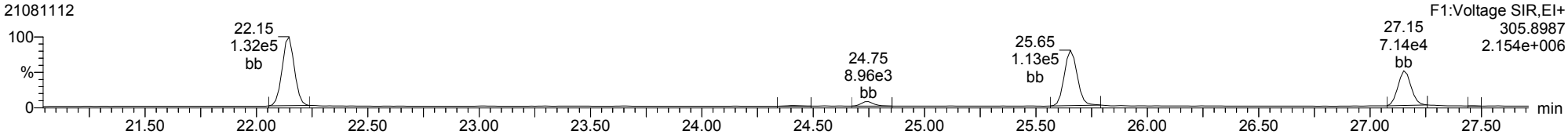

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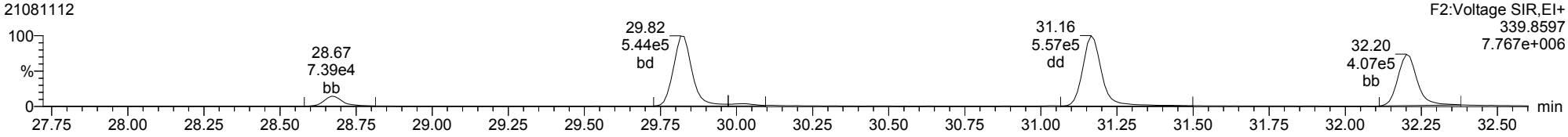

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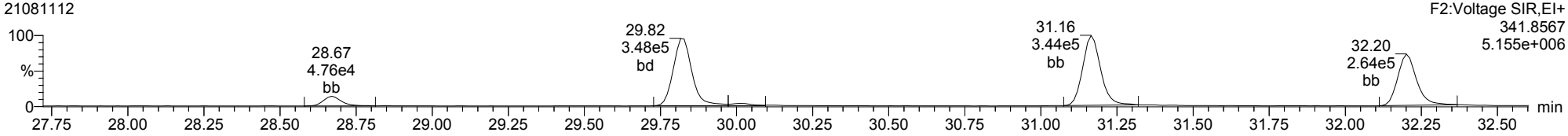
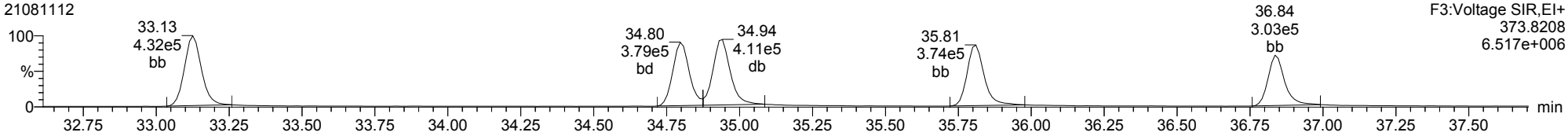


ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Total-hexafurans



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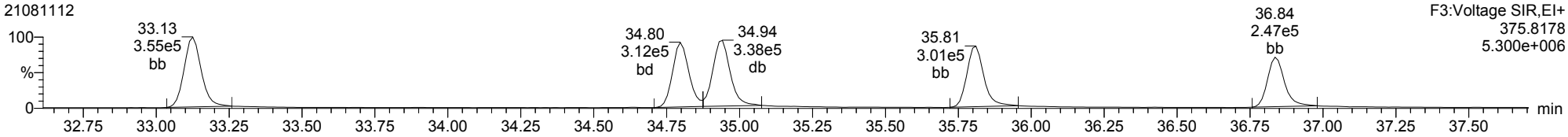
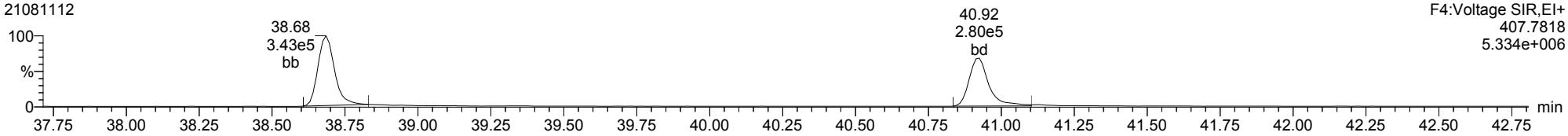


Total-heptafurans



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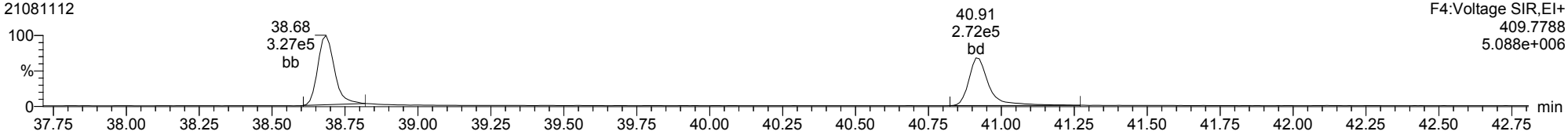

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21081102A	Calibration Date:	08/11/2021
Sequence:	SJH0117	Injection Date:	08/11/21
Lab Sample ID:	SJH0117-ICV1	Injection Time:	15:52
Sequence Name:	CS3Z1		

		CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	10.0	1.1075930	1.1077110		0.01	+/-16
2,3,7,8-TCDD	A	10.000	10.1	0.9202875	0.9284105		0.9	+/-22
1,2,3,7,8-PeCDF	A	50.000	49.2	1.0148670	0.9995080		-1.5	+/-18
2,3,4,7,8-PeCDF	A	50.000	48.7	1.1255490	1.0954980		-2.7	+/-18
1,2,3,7,8-PeCDD	A	50.000	50.2	0.9953229	0.9990428		0.4	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	50.2	1.0168930	1.0212530		0.4	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	47.8	1.0368310	0.9915618		-4.4	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	50.4	1.0524660	1.0603150		0.7	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	48.8	1.0301540	1.0057070		-2.4	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	47.3	1.0273630	0.9722491		-5.4	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	50.0	1.0089800	1.0086830		-0.03	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	50.4	0.9504865	0.9588368		0.9	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	47.0	1.3273500	1.2489740		-5.9	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.8	1.2833380	1.2794880		-0.3	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	49.1	1.0680880	1.0488330		-1.8	+/-14
OCDF	A	100.00	102	1.4469010	1.4716110		1.7	+/-37
OCDD	A	100.00	101	1.1808230	1.1910740		0.9	+/-21
13C12-2,3,7,8-TCDF	A	100.00	97.0	1.4265830	1.3833974		-3.0	+/-29
13C12-2,3,7,8-TCDD	A	100.00	98.2	1.1164910	1.0967480		-1.8	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	101	1.2973130	1.3060196		0.7	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	98.5	1.2364800	1.2175454		-1.5	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	97.6	0.7319833	0.7145332		-2.4	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	100	1.2424560	1.2464182		0.3	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	97.8	1.3434760	1.3144117		-2.2	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	97.5	1.2148550	1.1850193		-2.5	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	101	1.0076370	1.0160317		0.8	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	102	0.9598233	0.9797140		2.1	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	98.4	1.0413850	1.0245183		-1.6	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	104	0.9264704	0.9662886		4.3	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	98.3	0.7579160	0.7446856		-1.7	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	100	0.6324476	0.6342498		0.3	+/-18

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21081102A	Calibration Date:	08/11/2021
Sequence:	SJH0117	Injection Date:	08/11/21
Lab Sample ID:	SJH0117-ICV1	Injection Time:	15:52
Sequence Name:	CS3Z1		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-OCDD	A	200.00	192	0.5037432	0.4842057		-3.9	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.10	1.0835930	0.9862871		-9.0	+/-21

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210811OPIH.qld
Last Altered: Friday, August 13, 2021 13:46:19 Pacific Daylight Time
Printed: Friday, August 13, 2021 13:51:18 Pacific Daylight Time

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Z1, Name: 21081102, Date: 11-Aug-2021, Time: 15:52:29, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.670	1.001	8.902e4	1.133e5	1.108	0.786	0.770	1958	2663	1.32e6	1.68e6	673.9	629.8	NO	bb	bb	10.001
12378-PeCDF	29.839	1.001	5.239e5	3.377e5	1.015	1.551	1.550	4825	3545	7.60e6	4.90e6	1575.8	1380.8	NO	bd	bd	49.243
23478-PeCDF	31.176	1.000	5.339e5	3.465e5	1.126	1.541	1.550	4825	3545	7.99e6	5.23e6	1655.4	1475.6	NO	bb	bb	48.665
123478-HxCDF	34.808	1.001	3.922e5	3.304e5	1.017	1.187	1.240	5108	3767	6.13e6	5.10e6	1199.4	1354.2	NO	bd	bd	50.214
234678-HxCDF	35.811	1.000	3.798e5	3.334e5	1.052	1.139	1.240	5108	3767	5.91e6	5.06e6	1156.4	1342.6	NO	bb	bd	50.373
123678-HxCDF	34.953	1.001	3.986e5	3.412e5	1.037	1.168	1.240	5108	3767	6.15e6	5.27e6	1203.5	1400.2	NO	db	db	47.817
123789-HxCDF	36.847	1.001	3.213e5	2.587e5	1.030	1.242	1.240	5108	3767	5.03e6	4.09e6	985.1	1084.6	NO	bb	bb	48.813
1234678-HpCDF	38.686	1.000	3.490e5	3.361e5	1.327	1.039	1.050	3058	3315	5.66e6	5.48e6	1851.1	1652.8	NO	bb	bb	47.048
1234789-HpCDF	40.925	1.000	2.753e5	2.656e5	1.283	1.037	1.050	3058	3315	3.99e6	3.76e6	1303.3	1135.6	NO	bb	bb	49.850
OCDF	45.151	1.006	3.754e5	4.336e5	1.447	0.866	0.890	3320	3912	4.43e6	4.94e6	1334.9	1262.9	NO	bb	bd	101.708
2378-TCDD	26.320	1.001	5.926e4	7.515e4	0.920	0.789	0.770	1939	1555	8.85e5	1.10e6	456.4	706.1	NO	bd	bd	10.088
12378-PeCDD	31.433	1.000	2.927e5	1.785e5	0.995	1.640	1.550	3470	2936	4.58e6	2.76e6	1321.1	939.4	NO	bb	bb	50.187
123478-HxCDD	35.934	1.000	2.991e5	2.416e5	1.027	1.238	1.240	3219	3115	4.94e6	3.87e6	1534.6	1241.1	NO	bd	bd	47.318
123678-HxCDD	36.045	1.000	3.233e5	2.634e5	1.009	1.227	1.240	3219	3115	5.00e6	4.08e6	1551.8	1310.0	NO	db	db	49.985
123789-HxCDD	36.435	1.011	3.026e5	2.429e5	0.950	1.246	1.240	3219	3115	4.82e6	3.92e6	1498.5	1258.1	NO	bb	bb	50.439
1234678-HpCDD	40.190	1.001	1.957e5	1.819e5	1.068	1.076	1.050	2559	2522	3.01e6	2.73e6	1176.5	1082.4	NO	bb	bb	49.099
OCDD	44.913	1.000	3.198e5	3.350e5	1.181	0.955	0.890	4357	2991	3.74e6	3.99e6	858.0	1332.5	NO	bd	bb	100.868
13C-2378-TCDF	25.655	1.007	8.206e5	1.006e6	1.427	0.816	0.770	4075	2692	1.20e7	1.49e7	2955.7	5529.6	NO	bb	bb	96.973
13C-12378-PeCDF	29.817	1.170	1.070e6	6.544e5	1.297	1.635	1.550	4411	4646	1.56e7	9.58e6	3543.1	2061.5	NO	bd	bd	100.671
13C-23478-PeCDF	31.165	1.223	9.932e5	6.141e5	1.236	1.617	1.550	4411	4646	1.50e7	9.23e6	3411.4	1986.3	NO	bb	bb	98.469
13C-123478-HxCDF	34.786	0.955	4.832e5	9.318e5	1.242	0.519	0.510	4989	3890	7.30e6	1.43e7	1462.4	3668.4	NO	bd	bd	100.319
13C-123678-HxCDF	34.931	0.959	5.150e5	9.773e5	1.343	0.527	0.510	4989	3890	7.77e6	1.50e7	1557.9	3855.7	NO	db	db	97.837
13C-234678-HxCDF	35.800	0.983	4.651e5	8.803e5	1.215	0.528	0.510	4989	3890	7.33e6	1.38e7	1468.6	3541.1	NO	bb	bb	97.544
13C-123789-HxCDF	36.825	1.011	3.927e5	7.608e5	1.008	0.516	0.510	4989	3890	6.26e6	1.20e7	1253.7	3088.4	NO	bb	bb	100.833
13C-1234678-HpCDF	38.674	1.062	3.449e5	7.522e5	0.926	0.458	0.440	3145	4311	5.29e6	1.14e7	1682.9	2655.1	NO	bb	bb	104.298
13C-1234789-HpCDF	40.914	1.123	2.744e5	5.710e5	0.758	0.481	0.440	3145	4311	3.76e6	8.07e6	1195.1	1872.2	NO	bd	bb	98.254
13C-1234-TCDD	25.489	0.000	5.718e5	7.482e5	1.000	0.764	0.770	4151	2043	8.73e6	1.13e7	2103.4	5543.5	NO	bb	bb	100.000
13C-2378-TCDD	26.305	1.032	6.240e5	8.238e5	1.116	0.757	0.770	4151	2043	9.25e6	1.20e7	2227.1	5882.2	NO	bb	bb	98.232
13C-12378-PeCDD	31.421	1.233	5.778e5	3.654e5	0.732	1.581	1.550	1938	1666	8.67e6	5.50e6	4471.7	3304.0	NO	bb	bb	97.616
13C-123478-HxCDD	35.923	0.986	6.206e5	4.917e5	0.960	1.262	1.240	3942	2807	1.00e7	7.88e6	2545.3	2806.9	NO	bd	bd	102.072
13C-123678-HxCDD	36.034	0.989	6.519e5	5.112e5	1.041	1.275	1.240	3942	2807	1.04e7	8.03e6	2629.6	2860.2	NO	db	db	98.380
13C-1234678-HpCDD	40.167	1.103	3.581e5	3.620e5	0.632	0.989	1.050	2149	2958	5.25e6	5.15e6	2444.3	1742.2	NO	bb	bd	100.285
13C-OCDD	44.895	1.233	5.278e5	5.716e5	0.504	0.923	0.890	3201	2192	6.40e6	6.96e6	2000.9	3177.8	NO	bb	bb	192.243
13C-123789-HxCDD	36.424	0.000	6.319e5	5.034e5	1.000	1.255	1.240	3942	2807	1.01e7	7.97e6	2559.4	2838.3	NO	bb	bb	100.000
37CL-2378-TCDD	26.320	1.033	1.302e5		1.084			2110		1.92e6		908.2			bb		9.102

Dataset: T:\Autospec\Processed Data Batch\210811OPIH.qld
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Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.162	0.864	1.165e5	1.476e5	1.425	0.789	0.770	1958	2663	1.81e6	2.35e6	924.6	882.7	NO	bb	bb	10.147
1289-TCDF	27.167	1.059	8.551e4	1.118e5	1.043	0.765	0.770	1958	2663	1.20e6	1.60e6	613.2	599.1	NO	bd	bb	10.361
13468-PECDF	27.031	0.907	7.097e5	4.633e5	1.376	1.532	1.550	1203	1679	1.10e7	7.18e6	9107.9	4274.2	NO	bb	bb	49.438
12389-PECDF	32.223	1.081	5.049e5	3.400e5	1.000	1.485	1.550	4825	3545	7.23e6	4.67e6	1498.0	1315.9	NO	bb	bb	49.030
123468-HXCDF	33.137	0.953	4.194e5	3.428e5	1.087	1.224	1.240	5108	3767	6.33e6	5.17e6	1238.3	1372.7	NO	bb	bb	49.568
1368-TCDD	23.447	0.891	6.078e4	7.571e4	0.923	0.803	0.770	1939	1555	9.27e5	1.19e6	478.0	768.3	NO	bb	bb	10.211
1289-TCDD	26.910	1.023	4.979e4	6.423e4	0.794	0.775	0.770	1939	1555	6.99e5	9.07e5	360.5	583.0	NO	bb	bb	9.919
12479-PECDD	28.703	0.914	5.225e5	3.218e5	1.843	1.624	1.550	3470	2936	5.14e6	3.13e6	1480.8	1067.3	NO	bb	bb	48.556
12389-PECDD	31.834	1.013	3.395e5	2.081e5	1.154	1.631	1.550	3470	2936	5.21e6	3.19e6	1502.4	1086.5	NO	bb	bb	50.328
124679-HXCDD	33.917	0.944	3.417e5	2.767e5	1.125	1.235	1.240	3219	3115	5.35e6	4.35e6	1662.2	1396.7	NO	bb	bb	49.416
1234679-HPCDD	39.143	0.975	2.374e5	2.053e5	1.211	1.156	1.050	2559	2522	3.59e6	3.25e6	1401.9	1288.3	NO	bd	bb	50.762
Total-tetrafurans			2.912e5		1.192			1958		4.34e6							30.532
Total-penta1			7.097e5					1203		1.10e7							49.438
Total-pentafurans			1.650e6		1.047			4825		2.41e7							155.272
Total-hexafurans			1.912e6		1.045			5108		2.95e7							246.824
Total-heptafurans			6.258e5		1.305			3058		9.68e6							97.121
Total-Furans			5.564e6		1.158			1958		8.31e7							680.896
Total-tetradioxins			2.884e5		0.879			1939		3.90e6							51.498
Total-pentadioxins			1.155e6		1.331			3470		1.49e7							149.072
Total-hexadioxins			1.267e6		1.028			3219		2.01e7							197.158
Total-heptadioxins			4.333e5		1.140			2559		6.61e6							99.909
Total-Dioxins			3.463e6		1.092			1939		4.93e7							598.505
Total-TEQ			9.027e6					1939		1.32e8							1279.400
FUNCTION1 PFK			7.497e7					931555		7.57e8							
FUNCTION2 PFK			1.403e4					495160		7.03e5							0.000
FUNCTION3 PFK			1.559e7					777216		1.63e8							0.000
FUNCTION4 PFK			9.472e5					399457		2.55e7							
FUNCTION5 PFK			1.427e5					401172		4.69e6							
FUNCTION1 HXCD...			2.128e3					1303		3.87e4							0.000
FUNCTION1 HPCD...			2.207e3					986		4.23e4							0.000
FUNCTION2 HPCD...			1.749e3					1290		3.83e4							0.000
FUNCTION3 OCDPE			2.044e3					954		3.94e4							0.000
FUNCTION4 NCDPE			1.068e3					1777		2.89e4							0.000
FUNCTION5 DCDPE			3.560e2					996		9.06e3							0.000

Dataset: T:\Autospec\Processed Data Batch\210811OPIH.qld
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Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.67	8.902e4	1.133e5	1.108	0.79	0.77	673.9	YES	NO	bb	bb	10.001
2	1368-TCDF	22.16	1.165e5	1.476e5	1.425	0.79	0.77	924.6	YES	NO	bb	bb	10.147
3	1289-TCDF	27.17	8.551e4	1.118e5	1.043	0.76	0.77	613.2	YES	NO	bd	bb	10.361
4	Total-tetrafurans	27.03	1.982e2	3.027e2	1.192	0.65	0.77	2.7	NO	NO	bb	bb	0.023

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.03	7.097e5	4.633e5	1.376	1.53	1.55	9107.9	YES	NO	bb	bb	49.438

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.18	5.339e5	3.465e5	1.126	1.54	1.55	1655.4	YES	NO	bb	bb	48.665
2	Total-pentafurans	30.31	2.312e2	1.330e2	1.047	1.74	1.55	1.5	NO	NO	db	bb	0.021
3	12378-PeCDF	29.84	5.239e5	3.377e5	1.015	1.55	1.55	1575.8	YES	NO	bd	bd	49.243
4	Total-pentafurans	28.69	8.724e4	5.768e4	1.047	1.51	1.55	273.5	YES	NO	bb	bb	8.313
5	12389-PECDF	32.22	5.049e5	3.400e5	1.000	1.48	1.55	1498.0	YES	NO	bb	bb	49.030

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.81	3.922e5	3.304e5	1.017	1.19	1.24	1199.4	YES	NO	bd	bd	50.214
2	Total-hexafurans	33.61	2.863e2	2.564e2	1.045	1.12	1.24	2.0	NO	NO	db	bb	0.038
3	123468-HXCDF	33.14	4.194e5	3.428e5	1.087	1.22	1.24	1238.3	YES	NO	bb	bb	49.568
4	123789-HxCDF	36.85	3.213e5	2.587e5	1.030	1.24	1.24	985.1	YES	NO	bb	bb	48.813
5	234678-HxCDF	35.81	3.798e5	3.334e5	1.052	1.14	1.24	1156.4	YES	NO	bb	bd	50.373
6	123678-HxCDF	34.95	3.986e5	3.412e5	1.037	1.17	1.24	1203.5	YES	NO	db	db	47.817

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.69	3.490e5	3.361e5	1.327	1.04	1.05	1851.1	YES	NO	bb	bb	47.048
2	Total-heptafurans	41.42	4.189e2	4.634e2	1.305	0.90	1.05	5.0	NO	NO	bd	bd	0.070
3	1234789-HpCDF	40.93	2.753e5	2.656e5	1.283	1.04	1.05	1303.3	YES	NO	bb	bb	49.850
4	Total-heptafurans	39.35	1.023e3	9.285e2	1.305	1.10	1.05	6.8	YES	NO	db	bb	0.154

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.67	8.902e4	1.133e5	1.108	0.79	0.77	673.9	YES	NO	bb	bb	10.001
2	1368-TCDF	22.16	1.165e5	1.476e5	1.425	0.79	0.77	924.6	YES	NO	bb	bb	10.147
3	1289-TCDF	27.17	8.551e4	1.118e5	1.043	0.76	0.77	613.2	YES	NO	bd	bb	10.361
4	Total-tetrafurans	27.03	1.982e2	3.027e2	1.192	0.65	0.77	2.7	NO	NO	bb	bb	0.023
5	23478-PeCDF	31.18	5.339e5	3.465e5	1.126	1.54	1.55	1655.4	YES	NO	bb	bb	48.665
6	Total-pentafurans	30.31	2.312e2	1.330e2	1.047	1.74	1.55	1.5	NO	NO	db	bb	0.021
7	12378-PeCDF	29.84	5.239e5	3.377e5	1.015	1.55	1.55	1575.8	YES	NO	bd	bd	49.243
8	Total-pentafurans	28.69	8.724e4	5.768e4	1.047	1.51	1.55	273.5	YES	NO	bb	bb	8.313
9	12389-PECDF	32.22	5.049e5	3.400e5	1.000	1.48	1.55	1498.0	YES	NO	bb	bb	49.030
10	123478-HxCDF	34.81	3.922e5	3.304e5	1.017	1.19	1.24	1199.4	YES	NO	bd	bd	50.214
11	Total-hexafurans	33.61	2.863e2	2.564e2	1.045	1.12	1.24	2.0	NO	NO	db	bb	0.038
12	123468-HXCDF	33.14	4.194e5	3.428e5	1.087	1.22	1.24	1238.3	YES	NO	bb	bb	49.568
13	123789-HxCDF	36.85	3.213e5	2.587e5	1.030	1.24	1.24	985.1	YES	NO	bb	bb	48.813
14	234678-HxCDF	35.81	3.798e5	3.334e5	1.052	1.14	1.24	1156.4	YES	NO	bb	bd	50.373
15	123678-HxCDF	34.95	3.986e5	3.412e5	1.037	1.17	1.24	1203.5	YES	NO	db	db	47.817
16	1234678-HpCDF	38.69	3.490e5	3.361e5	1.327	1.04	1.05	1851.1	YES	NO	bb	bb	47.048
17	Total-heptafurans	41.42	4.189e2	4.634e2	1.305	0.90	1.05	5.0	NO	NO	bd	bd	0.070
18	1234789-HpCDF	40.93	2.753e5	2.656e5	1.283	1.04	1.05	1303.3	YES	NO	bb	bb	49.850
19	Total-heptafurans	39.35	1.023e3	9.285e2	1.305	1.10	1.05	6.8	YES	NO	db	bb	0.154
20	OCDF	45.15	3.754e5	4.336e5	1.447	0.87	0.89	1334.9	YES	NO	bb	bd	101.708
21	13468-PECDF	27.03	7.097e5	4.633e5	1.376	1.53	1.55	9107.9	YES	NO	bb	bb	49.438

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TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.50	2.869e4	3.525e4	0.879	0.81	0.77	221.4	YES	NO	bd	bb	5.023
2	Total-tetradioxins	24.64	1.460e3	1.658e3	0.879	0.88	0.77	11.7	YES	NO	db	db	0.245
3	1368-TCDD	23.45	6.078e4	7.571e4	0.923	0.80	0.77	478.0	YES	NO	bb	bb	10.211
4	1289-TCDD	26.91	4.979e4	6.423e4	0.794	0.78	0.77	360.5	YES	NO	bb	bb	9.919
5	2378-TCDD	26.32	5.926e4	7.515e4	0.920	0.79	0.77	456.4	YES	NO	bd	bd	10.088
6	Total-tetradioxins	25.99	8.845e4	1.153e5	0.879	0.77	0.77	484.2	YES	NO	bb	bb	16.011

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12479-PECDD	28.70	5.225e5	3.218e5	1.843	1.62	1.55	1480.8	YES	NO	bb	bb	48.556
2	12389-PECDD	31.83	3.395e5	2.081e5	1.154	1.63	1.55	1502.4	YES	NO	bb	bb	50.328
3	12378-PeCDD	31.43	2.927e5	1.785e5	0.995	1.64	1.55	1321.1	YES	NO	bb	bb	50.187

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HXCDD	33.92	3.417e5	2.767e5	1.125	1.23	1.24	1662.2	YES	NO	bb	bb	49.416
2	123789-HxCDD	36.44	3.026e5	2.429e5	0.950	1.25	1.24	1498.5	YES	NO	bb	bb	50.439
3	123678-HxCDD	36.04	3.233e5	2.634e5	1.009	1.23	1.24	1551.8	YES	NO	db	db	49.985
4	123478-HxCDD	35.93	2.991e5	2.416e5	1.027	1.24	1.24	1534.6	YES	NO	bd	bd	47.318

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.19	1.957e5	1.819e5	1.068	1.08	1.05	1176.5	YES	NO	bb	bb	49.099
2	Total-heptadioxins	39.60	2.092e2	1.843e2	1.140	1.14	1.05	3.3	NO	NO	bb	bb	0.048
3	1234679-HPCDD	39.14	2.374e5	2.053e5	1.211	1.16	1.05	1401.9	YES	NO	bd	bb	50.762

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.50	2.869e4	3.525e4	0.879	0.81	0.77	221.4	YES	NO	bd	bb	5.023
2	Total-tetradioxins	24.64	1.460e3	1.658e3	0.879	0.88	0.77	11.7	YES	NO	db	db	0.245
3	1368-TCDD	23.45	6.078e4	7.571e4	0.923	0.80	0.77	478.0	YES	NO	bb	bb	10.211
4	1289-TCDD	26.91	4.979e4	6.423e4	0.794	0.78	0.77	360.5	YES	NO	bb	bb	9.919
5	2378-TCDD	26.32	5.926e4	7.515e4	0.920	0.79	0.77	456.4	YES	NO	bd	bd	10.088
6	Total-tetradioxins	25.99	8.845e4	1.153e5	0.879	0.77	0.77	484.2	YES	NO	bb	bb	16.011
7	12479-PECDD	28.70	5.225e5	3.218e5	1.843	1.62	1.55	1480.8	YES	NO	bb	bb	48.556
8	12389-PECDD	31.83	3.395e5	2.081e5	1.154	1.63	1.55	1502.4	YES	NO	bb	bb	50.328
9	12378-PeCDD	31.43	2.927e5	1.785e5	0.995	1.64	1.55	1321.1	YES	NO	bb	bb	50.187
10	124679-HXCDD	33.92	3.417e5	2.767e5	1.125	1.23	1.24	1662.2	YES	NO	bb	bb	49.416
11	123789-HxCDD	36.44	3.026e5	2.429e5	0.950	1.25	1.24	1498.5	YES	NO	bb	bb	50.439
12	123678-HxCDD	36.04	3.233e5	2.634e5	1.009	1.23	1.24	1551.8	YES	NO	db	db	49.985
13	123478-HxCDD	35.93	2.991e5	2.416e5	1.027	1.24	1.24	1534.6	YES	NO	bd	bd	47.318
14	1234678-HpCDD	40.19	1.957e5	1.819e5	1.068	1.08	1.05	1176.5	YES	NO	bb	bb	49.099
15	Total-heptadioxins	39.60	2.092e2	1.843e2	1.140	1.14	1.05	3.3	NO	NO	bb	bb	0.048
16	1234679-HPCDD	39.14	2.374e5	2.053e5	1.211	1.16	1.05	1401.9	YES	NO	bd	bb	50.762
17	OCDD	44.91	3.198e5	3.350e5	1.181	0.95	0.89	858.0	YES	NO	bd	bb	100.868

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.67	8.902e4	1.133e5	1.108	0.79	0.77	673.9	YES	NO	bb	bb	10.001
2	1368-TCDF	22.16	1.165e5	1.476e5	1.425	0.79	0.77	924.6	YES	NO	bb	bb	10.147
3	1289-TCDF	27.17	8.551e4	1.118e5	1.043	0.76	0.77	613.2	YES	NO	bd	bb	10.361
4	Total-tetrafurans	27.03	1.982e2	3.027e2	1.192	0.65	0.77	2.7	NO	NO	bb	bb	0.023
5	23478-PeCDF	31.18	5.339e5	3.465e5	1.126	1.54	1.55	1655.4	YES	NO	bb	bb	48.665
6	Total-pentafurans	30.31	2.312e2	1.330e2	1.047	1.74	1.55	1.5	NO	NO	db	bb	0.021
7	12378-PeCDF	29.84	5.239e5	3.377e5	1.015	1.55	1.55	1575.8	YES	NO	bd	bd	49.243
8	Total-pentafurans	28.69	8.724e4	5.768e4	1.047	1.51	1.55	273.5	YES	NO	bb	bb	8.313
9	12389-PECDF	32.22	5.049e5	3.400e5	1.000	1.48	1.55	1498.0	YES	NO	bb	bb	49.030
10	123478-HxCDF	34.81	3.922e5	3.304e5	1.017	1.19	1.24	1199.4	YES	NO	bd	bd	50.214
11	Total-hexafurans	33.61	2.863e2	2.564e2	1.045	1.12	1.24	2.0	NO	NO	db	bb	0.038
12	123468-HXCDF	33.14	4.194e5	3.428e5	1.087	1.22	1.24	1238.3	YES	NO	bb	bb	49.568
13	123789-HxCDF	36.85	3.213e5	2.587e5	1.030	1.24	1.24	985.1	YES	NO	bb	bb	48.813
14	234678-HxCDF	35.81	3.798e5	3.334e5	1.052	1.14	1.24	1156.4	YES	NO	bb	bd	50.373
15	123678-HxCDF	34.95	3.986e5	3.412e5	1.037	1.17	1.24	1203.5	YES	NO	db	db	47.817
16	1234678-HpCDF	38.69	3.490e5	3.361e5	1.327	1.04	1.05	1851.1	YES	NO	bb	bb	47.048
17	Total-heptafurans	41.42	4.189e2	4.634e2	1.305	0.90	1.05	5.0	NO	NO	bd	bd	0.070
18	1234789-HpCDF	40.93	2.753e5	2.656e5	1.283	1.04	1.05	1303.3	YES	NO	bb	bb	49.850
19	Total-heptafurans	39.35	1.023e3	9.285e2	1.305	1.10	1.05	6.8	YES	NO	db	bb	0.154
20	OCDF	45.15	3.754e5	4.336e5	1.447	0.87	0.89	1334.9	YES	NO	bb	bd	101.708
21	13468-PECDF	27.03	7.097e5	4.633e5	1.376	1.53	1.55	9107.9	YES	NO	bb	bb	49.438
22	Total-tetradioxins	25.50	2.869e4	3.525e4	0.879	0.81	0.77	221.4	YES	NO	bd	bb	5.023
23	Total-tetradioxins	24.64	1.460e3	1.658e3	0.879	0.88	0.77	11.7	YES	NO	db	db	0.245
24	1368-TCDD	23.45	6.078e4	7.571e4	0.923	0.80	0.77	478.0	YES	NO	bb	bb	10.211
25	1289-TCDD	26.91	4.979e4	6.423e4	0.794	0.78	0.77	360.5	YES	NO	bb	bb	9.919
26	2378-TCDD	26.32	5.926e4	7.515e4	0.920	0.79	0.77	456.4	YES	NO	bd	bd	10.088
27	Total-tetradioxins	25.99	8.845e4	1.153e5	0.879	0.77	0.77	484.2	YES	NO	bb	bb	16.011
28	12479-PECDD	28.70	5.225e5	3.218e5	1.843	1.62	1.55	1480.8	YES	NO	bb	bb	48.556
29	12389-PECDD	31.83	3.395e5	2.081e5	1.154	1.63	1.55	1502.4	YES	NO	bb	bb	50.328
30	12378-PeCDD	31.43	2.927e5	1.785e5	0.995	1.64	1.55	1321.1	YES	NO	bb	bb	50.187
31	124679-HXCDD	33.92	3.417e5	2.767e5	1.125	1.23	1.24	1662.2	YES	NO	bb	bb	49.416
32	123789-HxCDD	36.44	3.026e5	2.429e5	0.950	1.25	1.24	1498.5	YES	NO	bb	bb	50.439
33	123678-HxCDD	36.04	3.233e5	2.634e5	1.009	1.23	1.24	1551.8	YES	NO	db	db	49.985
34	123478-HxCDD	35.93	2.991e5	2.416e5	1.027	1.24	1.24	1534.6	YES	NO	bd	bd	47.318
35	1234678-HpCDD	40.19	1.957e5	1.819e5	1.068	1.08	1.05	1176.5	YES	NO	bb	bb	49.099
36	Total-heptadioxins	39.60	2.092e2	1.843e2	1.140	1.14	1.05	3.3	NO	NO	bb	bb	0.048
37	1234679-HPCDD	39.14	2.374e5	2.053e5	1.211	1.16	1.05	1401.9	YES	NO	bd	bb	50.762

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDD	44.91	3.198e5	3.350e5	1.181	0.95	0.89	858.0	YES	NO	bd	bb	100.868

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.09	3.173e6					32.9	YES		dd		
2	FUNCTION1 PFK	21.95	4.338e6					35.4	YES		dd		
3	FUNCTION1 PFK	21.89	1.994e6					35.6	YES		dd		
4	FUNCTION1 PFK	21.78	3.620e6					37.5	YES		dd		
5	FUNCTION1 PFK	21.72	1.602e6					38.4	YES		dd		
6	FUNCTION1 PFK	21.47	9.633e6					42.3	YES		dd		
7	FUNCTION1 PFK	21.42	1.809e6					43.0	YES		dd		
8	FUNCTION1 PFK	21.36	3.029e6					43.7	YES		dd		
9	FUNCTION1 PFK	21.30	2.466e6					44.4	YES		dd		
10	FUNCTION1 PFK	21.24	2.474e6					44.4	YES		dd		
11	FUNCTION1 PFK	21.19	2.531e6					45.0	YES		dd		
12	FUNCTION1 PFK	21.10	3.864e6					46.5	YES		bd		
13	FUNCTION1 PFK	24.14	6.769e5					4.7	YES		dd		
14	FUNCTION1 PFK	24.02	3.800e5					6.1	YES		dd		
15	FUNCTION1 PFK	23.92	2.778e6					7.7	YES		dd		
16	FUNCTION1 PFK	23.58	1.868e6					12.1	YES		dd		
17	FUNCTION1 PFK	23.37	1.553e6					14.8	YES		dd		
18	FUNCTION1 PFK	23.33	1.032e6					15.4	YES		dd		
19	FUNCTION1 PFK	23.25	1.094e6					16.3	YES		dd		
20	FUNCTION1 PFK	23.18	9.303e5					17.1	YES		dd		
21	FUNCTION1 PFK	23.10	9.838e5					18.2	YES		dd		
22	FUNCTION1 PFK	23.04	1.325e6					19.7	YES		dd		
23	FUNCTION1 PFK	22.98	8.500e5					20.6	YES		dd		
24	FUNCTION1 PFK	22.72	1.033e7					24.4	YES		dd		
25	FUNCTION1 PFK	22.46	1.941e6					28.2	YES		dd		
26	FUNCTION1 PFK	22.39	2.401e6					28.6	YES		dd		
27	FUNCTION1 PFK	22.25	2.940e6					30.7	YES		dd		
28	FUNCTION1 PFK	22.19	1.738e6					31.2	YES		dd		
29	FUNCTION1 PFK	26.47	3.766e4					1.0	NO		bd		
30	FUNCTION1 PFK	26.32	5.897e4					1.5	NO		bb		
31	FUNCTION1 PFK	26.20	1.093e5					1.6	NO		db		
32	FUNCTION1 PFK	26.06	5.774e4					1.0	NO		bd		
33	FUNCTION1 PFK	25.94	4.523e4					1.0	NO		db		
34	FUNCTION1 PFK	25.87	9.264e3					0.4	NO		bd		
35	FUNCTION1 PFK	25.56	1.026e5					1.4	NO		db		
36	FUNCTION1 PFK	25.37	1.980e5					1.7	NO		bd		
37	FUNCTION1 PFK	25.25	9.606e4					2.0	NO		db		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	25.19	4.790e4					1.1	NO		bd		
39	FUNCTION1 PFK	25.11	3.360e4					1.3	NO		bb		
40	FUNCTION1 PFK	24.96	1.063e5					1.2	NO		db		
41	FUNCTION1 PFK	24.84	4.838e4					1.2	NO		bd		
42	FUNCTION1 PFK	24.64	1.224e5					1.3	NO		bb		
43	FUNCTION1 PFK	24.57	1.472e4					0.4	NO		bb		
44	FUNCTION1 PFK	24.34	1.687e5					1.6	NO		db		
45	FUNCTION1 PFK	27.42	6.094e4					1.0	NO		bb		
46	FUNCTION1 PFK	27.29	2.824e4					0.9	NO		bb		
47	FUNCTION1 PFK	27.09	6.781e4					1.1	NO		bb		
48	FUNCTION1 PFK	26.89	6.876e4					1.6	NO		bb		
49	FUNCTION1 PFK	26.80	5.058e4					1.6	NO		bb		
50	FUNCTION1 PFK	26.62	7.413e3					0.5	NO		db		
51	FUNCTION1 PFK	26.53	7.589e4					1.4	NO		dd		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.85	1.403e4					1.4	NO		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.01	7.783e6					23.7	YES		dd		0.000
2	FUNCTION3 PFK	32.88	9.169e5					27.5	YES		dd		0.000
3	FUNCTION3 PFK	32.85	9.863e5					28.8	YES		dd		0.000
4	FUNCTION3 PFK	32.81	1.264e6					29.5	YES		dd		0.000
5	FUNCTION3 PFK	32.75	7.788e5					30.7	YES		dd		0.000
6	FUNCTION3 PFK	32.67	2.840e6					34.0	YES		bd		0.000
7	FUNCTION3 PFK	35.59	6.449e4					2.1	NO		dd		0.000
8	FUNCTION3 PFK	35.53	1.779e4					1.0	NO		bd		0.000
9	FUNCTION3 PFK	35.48	2.087e4					1.2	NO		bb		0.000
10	FUNCTION3 PFK	35.41	1.092e4					0.7	NO		bb		0.000
11	FUNCTION3 PFK	35.37	1.064e4					0.7	NO		bb		0.000
12	FUNCTION3 PFK	35.29	8.205e4					2.0	NO		bb		0.000
13	FUNCTION3 PFK	35.21	3.975e3					0.5	NO		bb		0.000
14	FUNCTION3 PFK	35.00	2.888e4					1.4	NO		db		0.000
15	FUNCTION3 PFK	34.96	1.601e4					0.8	NO		bd		0.000
16	FUNCTION3 PFK	34.89	7.327e4					1.5	NO		bb		0.000
17	FUNCTION3 PFK	34.45	1.429e4					0.9	NO		bb		0.000
18	FUNCTION3 PFK	34.37	8.429e4					1.7	NO		bb		0.000
19	FUNCTION3 PFK	34.21	2.012e4					1.0	NO		db		0.000
20	FUNCTION3 PFK	34.16	1.256e4					0.7	NO		bd		0.000
21	FUNCTION3 PFK	33.79	2.693e4					0.9	NO		bb		0.000
22	FUNCTION3 PFK	33.65	1.251e5					2.0	NO		db		0.000
23	FUNCTION3 PFK	37.46	4.002e4					1.5	NO		dd		0.000
24	FUNCTION3 PFK	37.43	1.823e4					1.2	NO		bd		0.000
25	FUNCTION3 PFK	37.20	1.493e4					0.7	NO		bb		0.000
26	FUNCTION3 PFK	37.08	5.227e3					0.6	NO		bb		0.000
27	FUNCTION3 PFK	37.04	4.983e3					0.5	NO		db		0.000
28	FUNCTION3 PFK	36.95	9.875e4					2.1	NO		bd		0.000
29	FUNCTION3 PFK	36.89	7.600e3					0.9	NO		bb		0.000
30	FUNCTION3 PFK	36.85	1.525e4					0.8	NO		db		0.000
31	FUNCTION3 PFK	36.77	1.939e4					0.9	NO		bd		0.000
32	FUNCTION3 PFK	36.70	1.915e4					1.1	NO		bb		0.000
33	FUNCTION3 PFK	36.57	4.814e3					0.4	NO		bb		0.000
34	FUNCTION3 PFK	36.37	3.520e3					0.4	NO		bb		0.000
35	FUNCTION3 PFK	35.89	9.707e3					0.6	NO		bb		0.000
36	FUNCTION3 PFK	35.77	2.145e4					1.1	NO		db		0.000
37	FUNCTION3 PFK	35.71	4.477e4					1.4	NO		bd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	35.63	2.324e4					1.4	NO		db		0.000
39	FUNCTION3 PFK	37.49	5.980e4					1.5	NO		db		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.76	8.996e3					0.9	NO		bb		
2	FUNCTION4 PFK	39.19	4.206e3					0.6	NO		db		
3	FUNCTION4 PFK	39.12	2.936e4					1.3	NO		bd		
4	FUNCTION4 PFK	38.99	1.486e4					1.1	NO		bb		
5	FUNCTION4 PFK	38.79	2.766e3					0.5	NO		bb		
6	FUNCTION4 PFK	38.65	3.231e4					1.7	NO		db		
7	FUNCTION4 PFK	38.61	1.927e4					1.5	NO		bd		
8	FUNCTION4 PFK	38.53	3.522e4					1.5	NO		bb		
9	FUNCTION4 PFK	38.23	1.012e4					0.7	NO		db		
10	FUNCTION4 PFK	38.12	5.430e4					2.0	NO		bd		
11	FUNCTION4 PFK	38.04	5.219e4					2.1	NO		db		
12	FUNCTION4 PFK	37.95	4.466e4					2.6	NO		dd		
13	FUNCTION4 PFK	37.91	2.126e4					1.9	NO		bd		
14	FUNCTION4 PFK	37.85	1.298e4					1.0	NO		bb		
15	FUNCTION4 PFK	40.78	4.265e4					2.7	NO		db		
16	FUNCTION4 PFK	40.72	2.035e4					1.3	NO		dd		
17	FUNCTION4 PFK	40.67	8.429e3					1.0	NO		bd		
18	FUNCTION4 PFK	40.57	1.661e4					1.8	NO		db		
19	FUNCTION4 PFK	40.54	4.509e4					2.4	NO		bd		
20	FUNCTION4 PFK	40.47	3.385e3					0.8	NO		bb		
21	FUNCTION4 PFK	40.39	6.137e3					0.6	NO		bb		
22	FUNCTION4 PFK	40.28	2.283e4					1.9	NO		bb		
23	FUNCTION4 PFK	40.20	8.726e3					0.8	NO		bb		
24	FUNCTION4 PFK	40.13	6.294e3					0.8	NO		bb		
25	FUNCTION4 PFK	40.09	8.720e3					0.8	NO		db		
26	FUNCTION4 PFK	40.03	2.220e4					1.4	NO		bd		
27	FUNCTION4 PFK	39.99	5.215e3					0.8	NO		db		
28	FUNCTION4 PFK	39.96	2.681e4					1.7	NO		dd		
29	FUNCTION4 PFK	39.89	2.427e4					1.4	NO		dd		
30	FUNCTION4 PFK	39.81	2.079e4					1.6	NO		bd		
31	FUNCTION4 PFK	42.31	1.016e4					1.0	NO		bb		
32	FUNCTION4 PFK	42.17	7.068e3					0.7	NO		bb		
33	FUNCTION4 PFK	42.02	2.868e4					1.4	NO		bb		
34	FUNCTION4 PFK	41.92	3.621e4					1.9	NO		bb		
35	FUNCTION4 PFK	41.77	1.967e3					0.4	NO		bb		
36	FUNCTION4 PFK	41.52	2.070e3					0.5	NO		bb		
37	FUNCTION4 PFK	41.47	2.761e4					1.4	NO		db		

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION4 PFK	41.40	1.729e4					1.4	NO		bd		
39	FUNCTION4 PFK	41.34	2.985e4					1.8	NO		db		
40	FUNCTION4 PFK	41.26	2.077e4					1.6	NO		dd		
41	FUNCTION4 PFK	41.21	3.432e4					1.9	NO		dd		
42	FUNCTION4 PFK	41.17	9.450e3					1.0	NO		dd		
43	FUNCTION4 PFK	41.11	1.268e4					1.4	NO		bd		
44	FUNCTION4 PFK	40.97	2.039e3					0.5	NO		bb		
45	FUNCTION4 PFK	40.93	1.121e4					1.6	NO		bb		
46	FUNCTION4 PFK	40.84	2.327e3					0.5	NO		bb		
47	FUNCTION4 PFK	42.70	1.335e3					0.3	NO		bb		
48	FUNCTION4 PFK	42.52	3.683e4					1.5	NO		bb		
49	FUNCTION4 PFK	42.43	2.432e4					1.7	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.68	2.713e4					2.3	NO		bb		
2	FUNCTION5 PFK	44.63	3.894e4					2.3	NO		bb		
3	FUNCTION5 PFK	44.13	7.444e3					0.7	NO		db		
4	FUNCTION5 PFK	44.04	3.156e4					2.0	NO		bd		
5	FUNCTION5 PFK	43.68	2.182e3					0.6	NO		bb		
6	FUNCTION5 PFK	42.95	7.553e3					1.2	NO		db		
7	FUNCTION5 PFK	42.92	6.122e3					0.9	NO		bd		
8	FUNCTION5 PFK	42.88	2.178e4					1.7	NO		bb		

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	21.59	7.138e1					1.4	NO		bb		0.000
2	FUNCTION1 HXCD...	21.33	1.000e2					1.3	NO		db		0.000
3	FUNCTION1 HXCD...	21.10	4.139e2					3.5	YES		bd		0.000
4	FUNCTION1 HXCD...	27.58	1.695e2					3.0	YES		bb		0.000
5	FUNCTION1 HXCD...	27.03	3.219e2					3.2	YES		bb		0.000
6	FUNCTION1 HXCD...	25.65	2.069e2					3.0	NO		bb		0.000
7	FUNCTION1 HXCD...	24.79	1.674e2					3.2	YES		db		0.000
8	FUNCTION1 HXCD...	24.73	2.092e2					3.6	YES		bd		0.000
9	FUNCTION1 HXCD...	23.93	9.598e1					1.7	NO		bb		0.000
10	FUNCTION1 HXCD...	22.87	7.158e1					1.5	NO		bb		0.000
11	FUNCTION1 HXCD...	22.43	1.167e2					1.9	NO		db		0.000
12	FUNCTION1 HXCD...	22.36	8.047e1					1.5	NO		bd		0.000
13	FUNCTION1 HXCD...	21.97	1.028e2					0.8	NO		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.98	1.022e2					2.1	NO		bb		0.000
2	FUNCTION1 HPCD...	22.59	8.983e1					1.5	NO		bb		0.000
3	FUNCTION1 HPCD...	22.36	8.747e1					2.0	NO		bb		0.000
4	FUNCTION1 HPCD...	21.53	7.248e1					1.3	NO		bb		0.000
5	FUNCTION1 HPCD...	21.13	8.355e1					1.4	NO		bb		0.000
6	FUNCTION1 HPCD...	27.51	1.422e2					3.6	YES		bb		0.000
7	FUNCTION1 HPCD...	27.02	8.162e1					1.5	NO		bb		0.000
8	FUNCTION1 HPCD...	26.44	1.173e2					2.5	NO		db		0.000
9	FUNCTION1 HPCD...	26.40	7.265e1					2.1	NO		dd		0.000
10	FUNCTION1 HPCD...	26.34	1.188e2					2.4	NO		dd		0.000
11	FUNCTION1 HPCD...	26.29	1.274e2					2.4	NO		bd		0.000
12	FUNCTION1 HPCD...	25.73	7.017e1					1.4	NO		db		0.000
13	FUNCTION1 HPCD...	25.64	8.937e1					1.9	NO		bd		0.000
14	FUNCTION1 HPCD...	25.47	1.517e2					2.6	NO		db		0.000
15	FUNCTION1 HPCD...	25.35	1.256e2					1.7	NO		bd		0.000
16	FUNCTION1 HPCD...	24.43	1.810e2					3.6	YES		db		0.000
17	FUNCTION1 HPCD...	24.29	2.180e2					4.2	YES		bd		0.000
18	FUNCTION1 HPCD...	23.75	1.061e2					1.8	NO		db		0.000
19	FUNCTION1 HPCD...	23.64	9.229e1					1.2	NO		bd		0.000
20	FUNCTION1 HPCD...	23.24	7.719e1					1.6	NO		bb		0.000

ID: CS3Z1, Name: 21081102, Date: 11-Aug-2021, Time: 15:52:29, Conditions: AUTOSPEC01, User: pk

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.94	8.628e1					2.0	NO		db		0.000
2	FUNCTION2 HPCD...	31.83	1.344e2					1.6	NO		bd		0.000
3	FUNCTION2 HPCD...	31.41	2.117e2					3.2	YES		bb		0.000
4	FUNCTION2 HPCD...	31.17	1.613e2					2.6	NO		db		0.000
5	FUNCTION2 HPCD...	31.08	2.279e2					6.5	YES		dd		0.000
6	FUNCTION2 HPCD...	31.04	3.363e2					6.2	YES		bd		0.000
7	FUNCTION2 HPCD...	29.94	9.143e1					1.8	NO		bb		0.000
8	FUNCTION2 HPCD...	29.84	2.839e2					3.8	YES		bb		0.000
9	FUNCTION2 HPCD...	28.51	2.158e2					2.0	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	35.23	1.310e2					2.6	NO		db		0.000
2	FUNCTION3 OCDPE	35.12	7.107e1					1.5	NO		bd		0.000
3	FUNCTION3 OCDPE	34.95	1.507e2					4.9	YES		bb		0.000
4	FUNCTION3 OCDPE	33.33	1.299e2					2.4	NO		bb		0.000
5	FUNCTION3 OCDPE	32.80	1.182e2					2.0	NO		db		0.000
6	FUNCTION3 OCDPE	32.68	1.291e2					2.2	NO		bd		0.000
7	FUNCTION3 OCDPE	37.09	1.175e2					2.2	NO		bb		0.000
8	FUNCTION3 OCDPE	37.00	1.454e2					5.6	YES		bb		0.000
9	FUNCTION3 OCDPE	36.87	1.897e2					2.2	NO		bb		0.000
10	FUNCTION3 OCDPE	36.42	2.617e2					4.4	YES		bb		0.000
11	FUNCTION3 OCDPE	36.03	2.699e2					4.4	YES		db		0.000
12	FUNCTION3 OCDPE	35.98	8.747e1					2.8	NO		dd		0.000
13	FUNCTION3 OCDPE	35.92	2.421e2					4.1	YES		bd		0.000

ID: CS3Z1, Name: 21081102, Date: 11-Aug-2021, Time: 15:52:29, Conditions: AUTOSPEC01, User: pk

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.10	1.342e2					2.3	NO		db		0.000
2	FUNCTION4 NCDPE	41.98	1.389e2					1.8	NO		bd		0.000
3	FUNCTION4 NCDPE	41.62	7.171e1					1.6	NO		bb		0.000
4	FUNCTION4 NCDPE	41.16	1.127e2					1.2	NO		bb		0.000
5	FUNCTION4 NCDPE	40.50	1.801e2					3.0	NO		bb		0.000
6	FUNCTION4 NCDPE	40.30	7.660e1					1.3	NO		bb		0.000
7	FUNCTION4 NCDPE	39.49	7.809e1					1.2	NO		bb		0.000
8	FUNCTION4 NCDPE	38.49	1.017e2					1.0	NO		bb		0.000
9	FUNCTION4 NCDPE	42.59	1.744e2					2.8	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.94	7.613e1					1.8	NO		bb		0.000
2	FUNCTION5 DCDPE	44.94	7.585e1					2.3	NO		db		0.000
3	FUNCTION5 DCDPE	44.89	9.293e1					2.2	NO		bd		0.000
4	FUNCTION5 DCDPE	43.04	1.111e2					2.7	NO		bb		0.000

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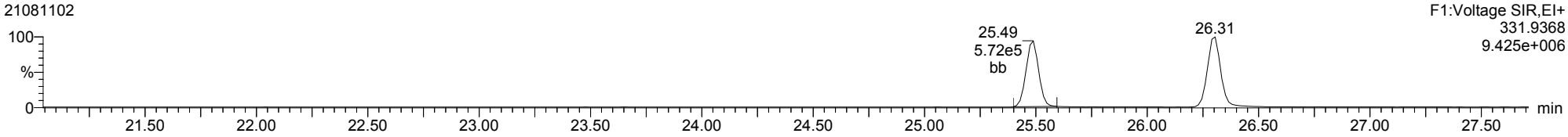
13C-1234-TCDD



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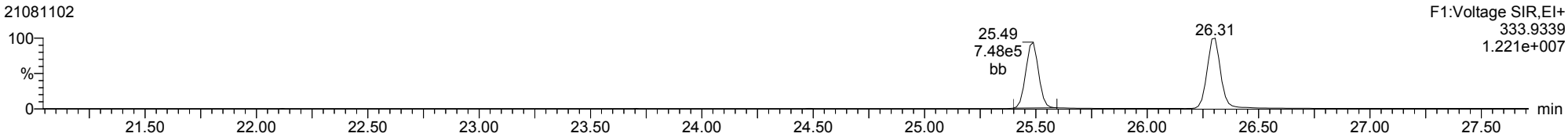
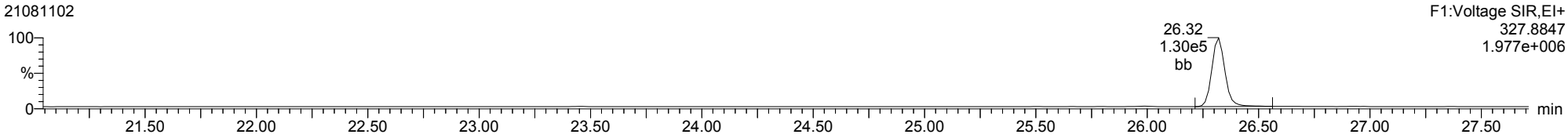


37CL-2378-TCDD



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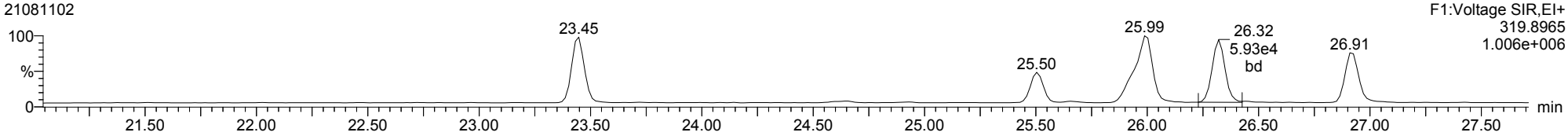

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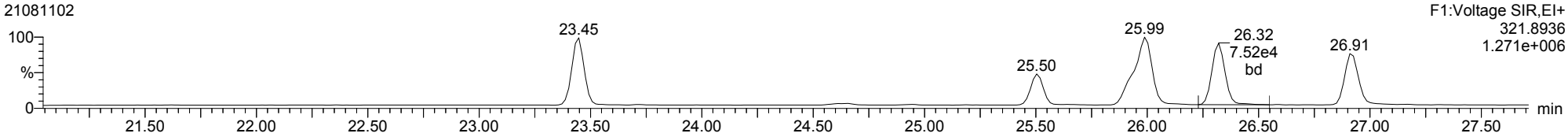

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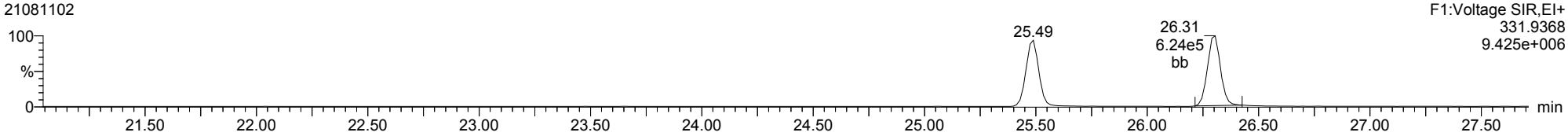

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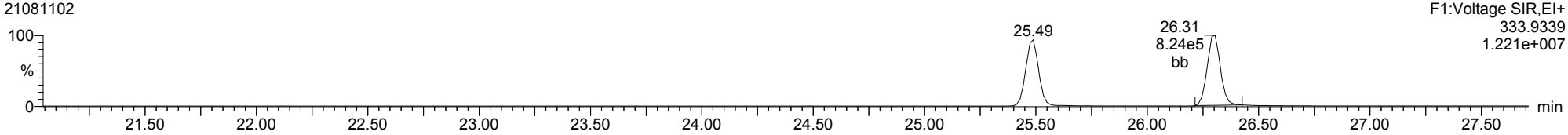

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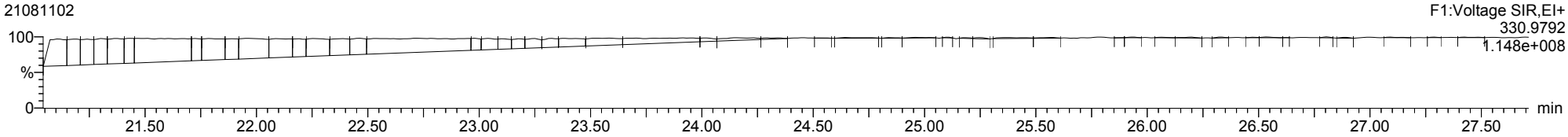

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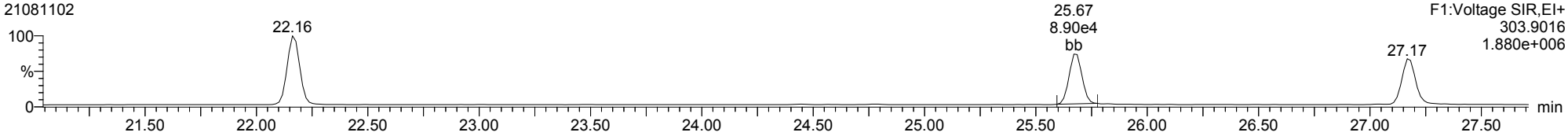

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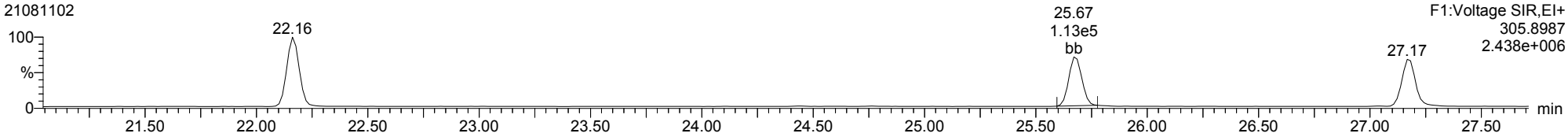

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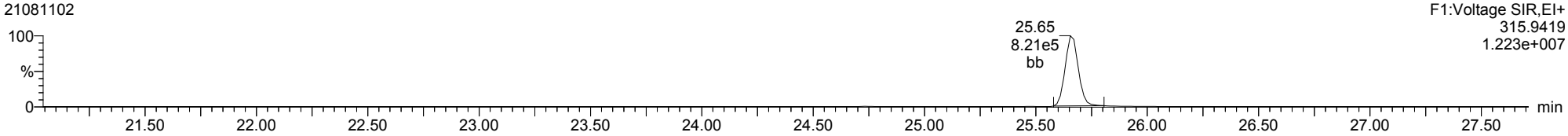

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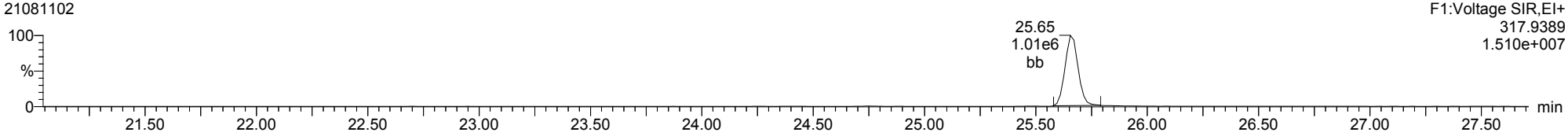

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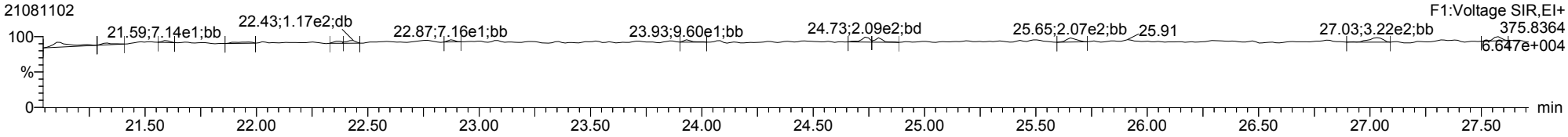

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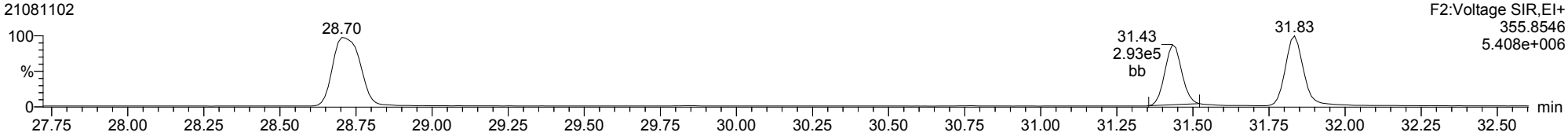

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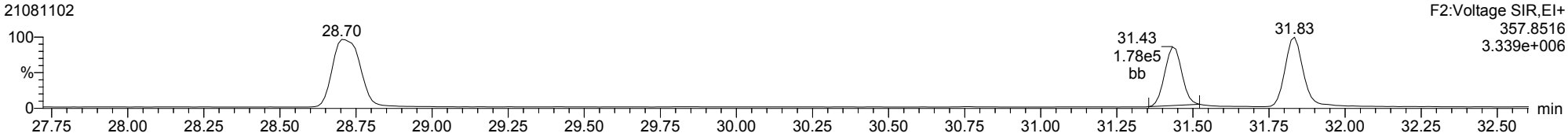

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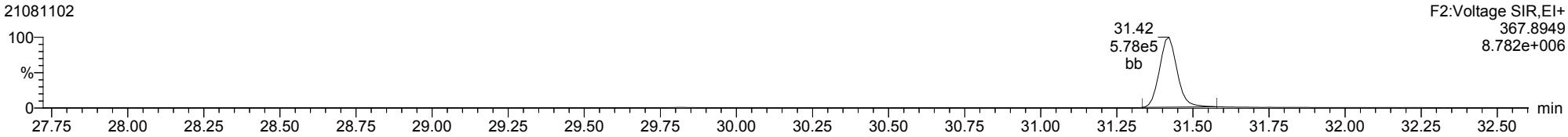

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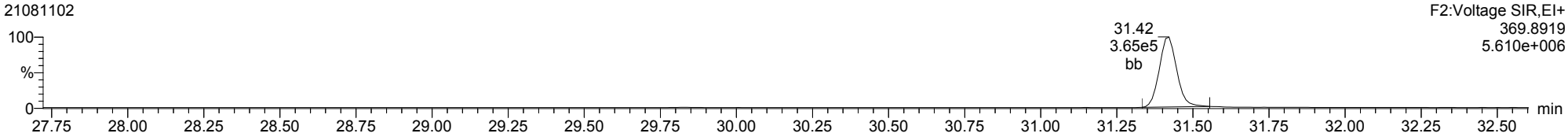

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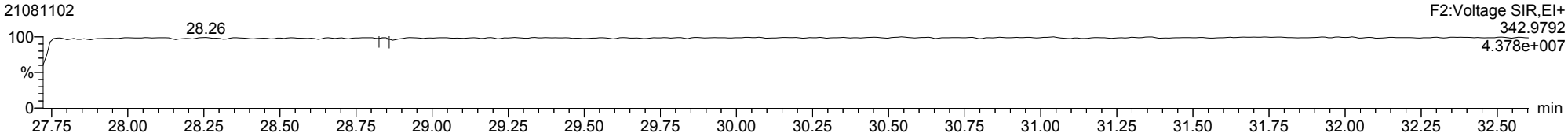

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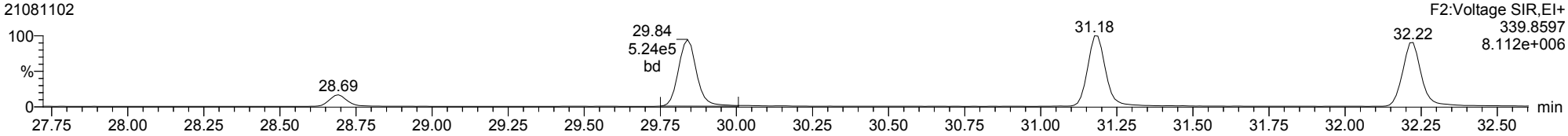

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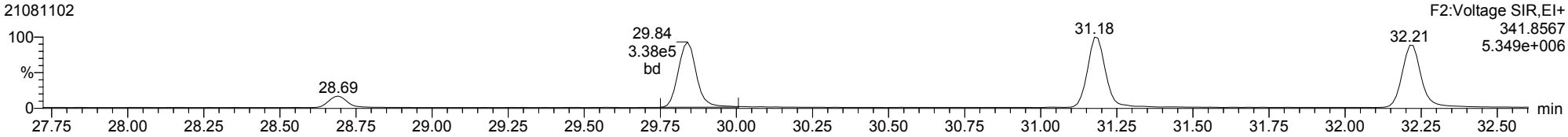

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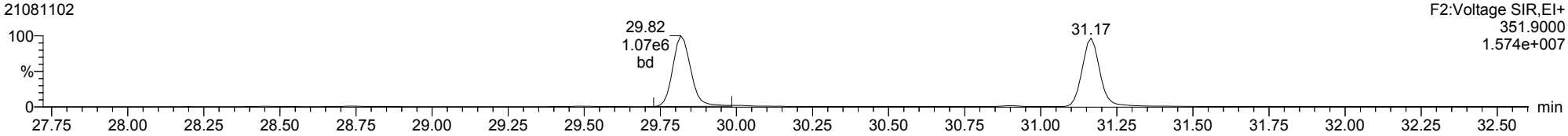

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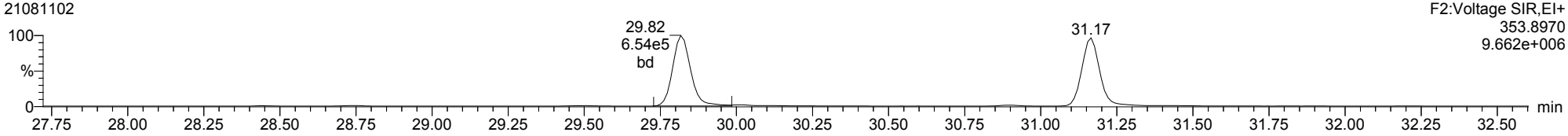
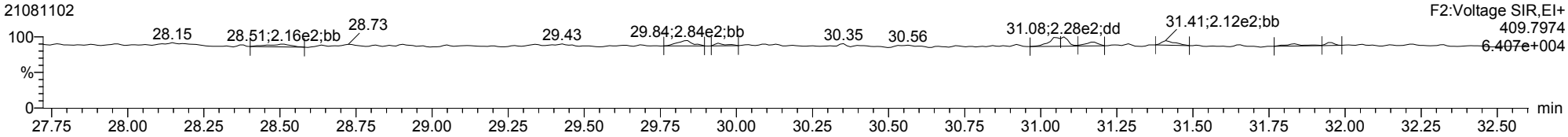


FUNCTION2 HPCDPE



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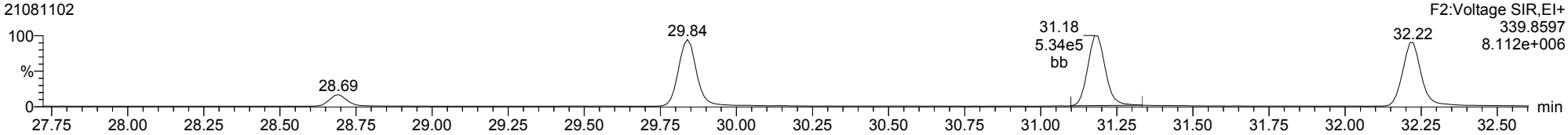
23478-PeCDF



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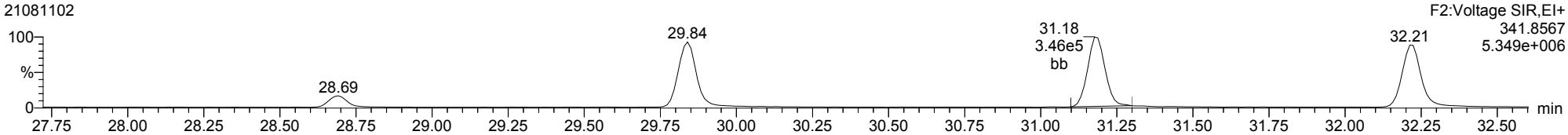

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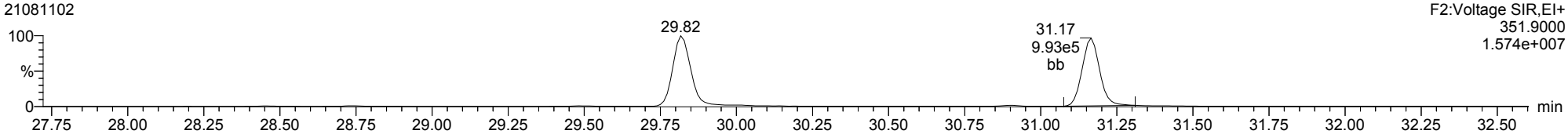

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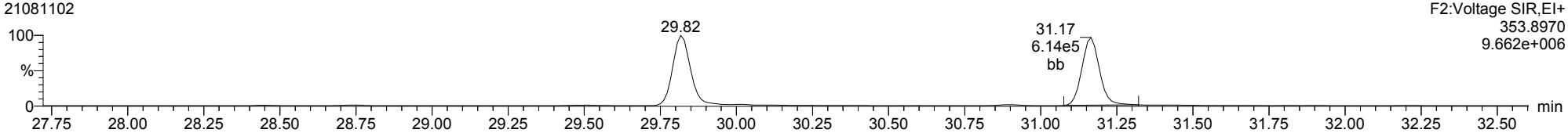

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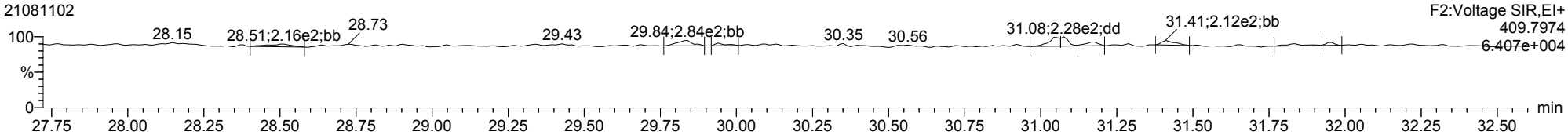

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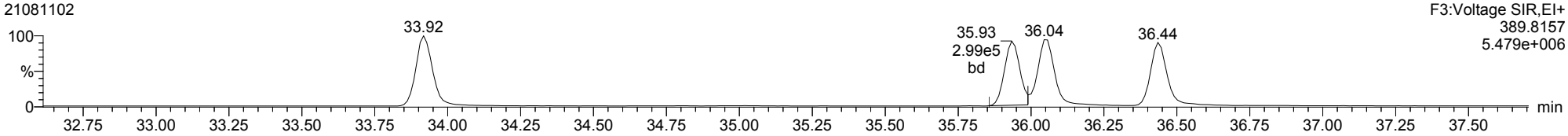
123478-HxCDD



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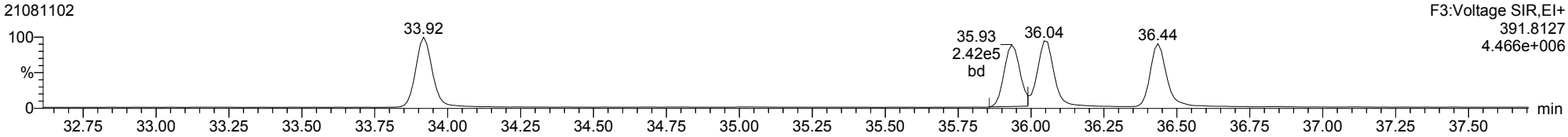

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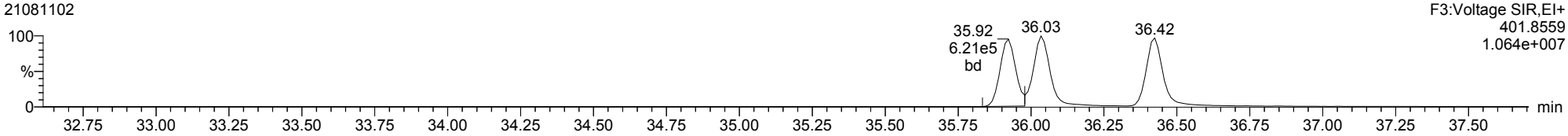

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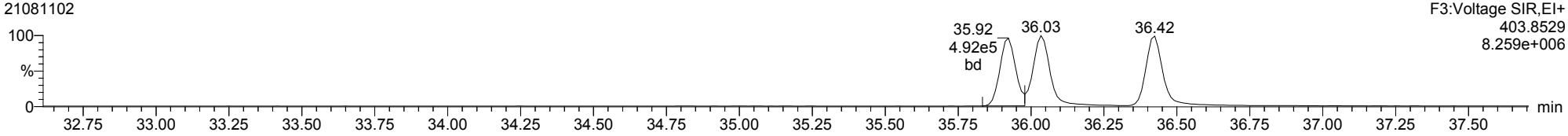

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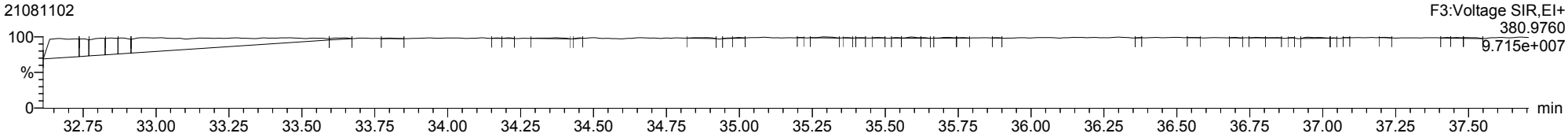

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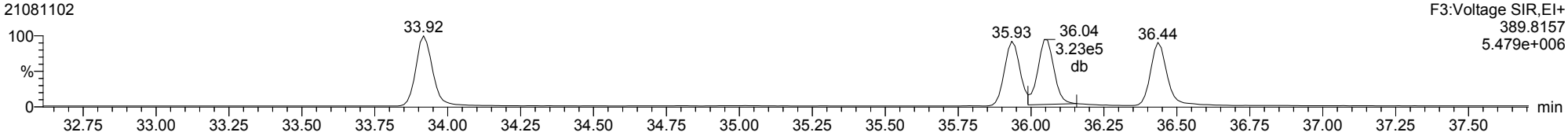

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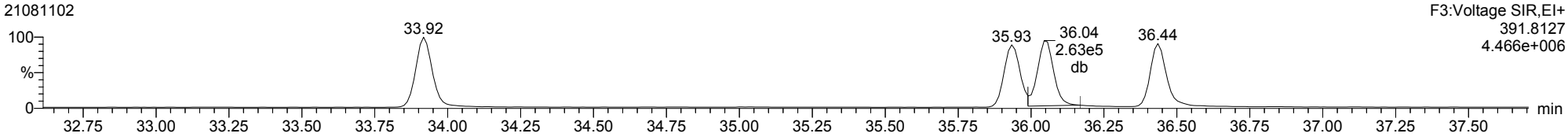

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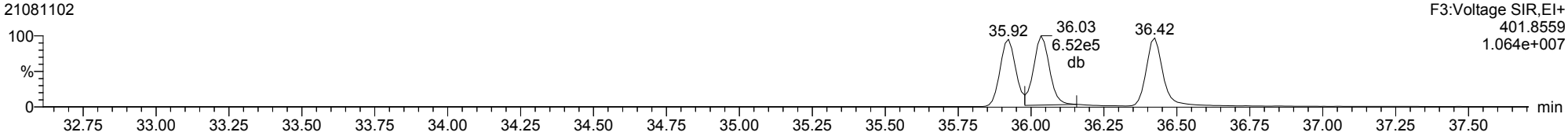

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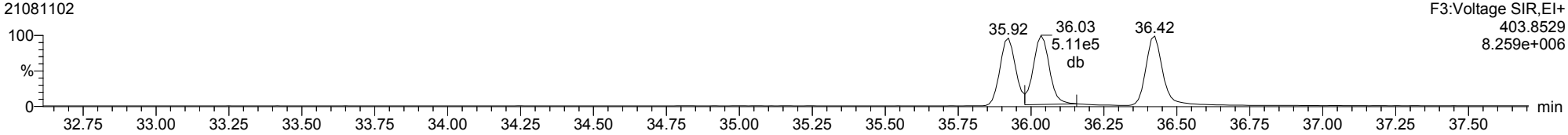

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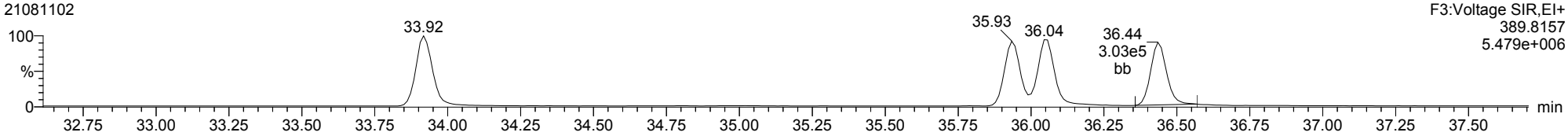

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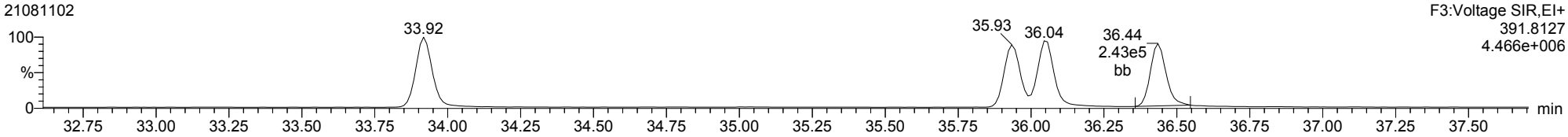

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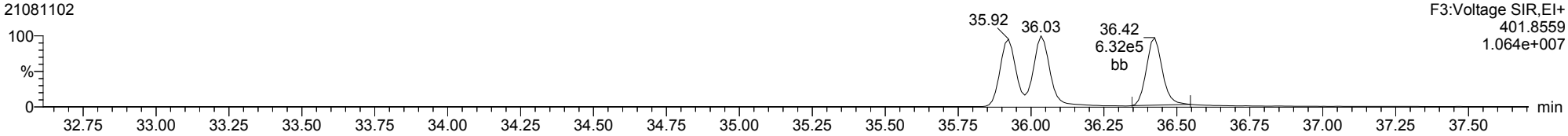

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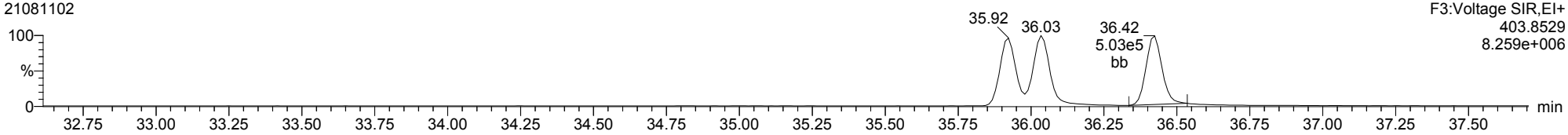

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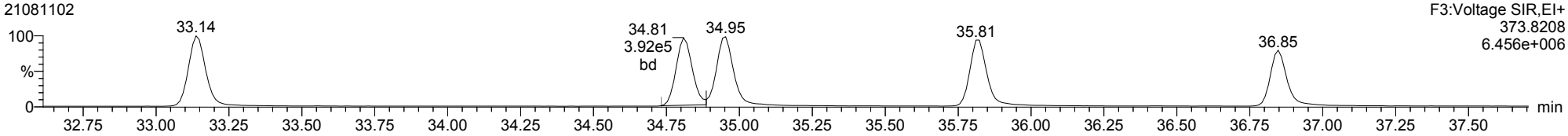

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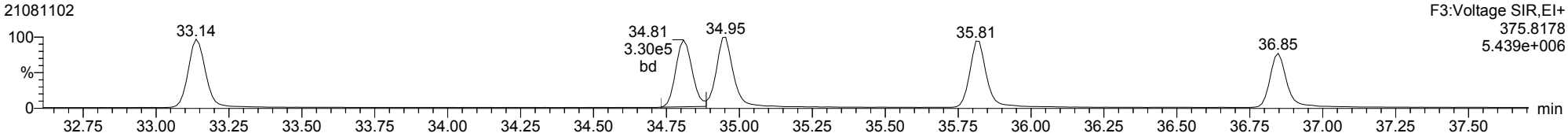

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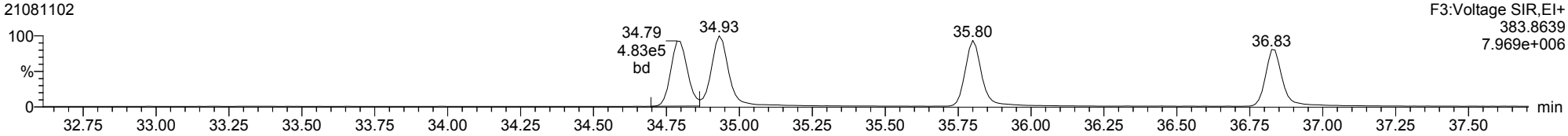

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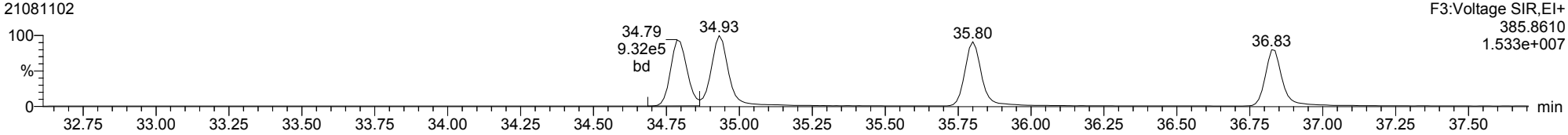

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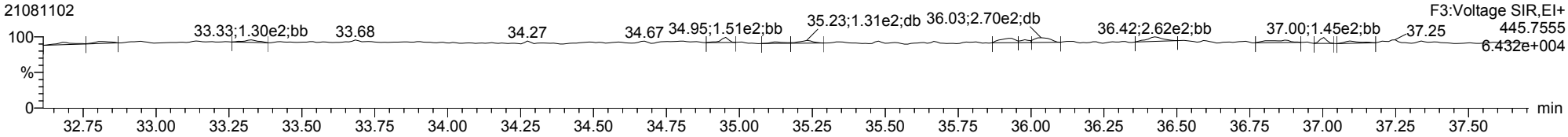

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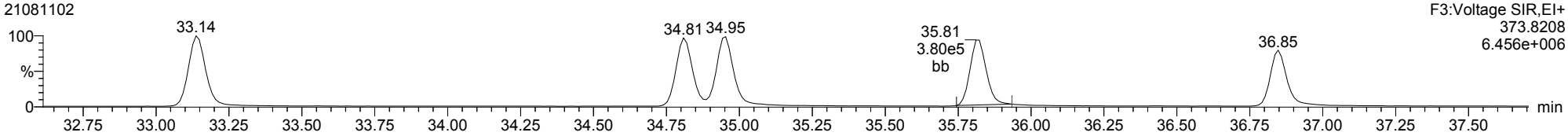

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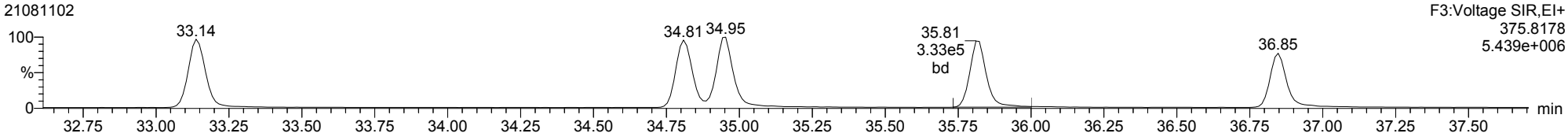

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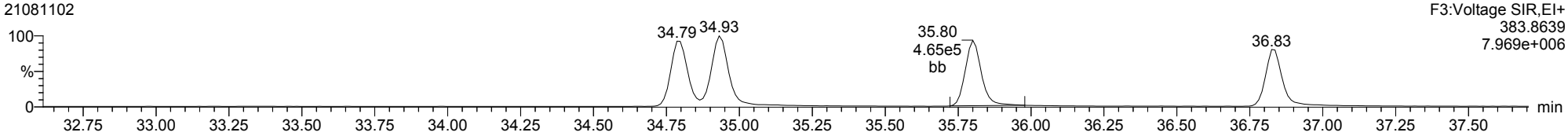

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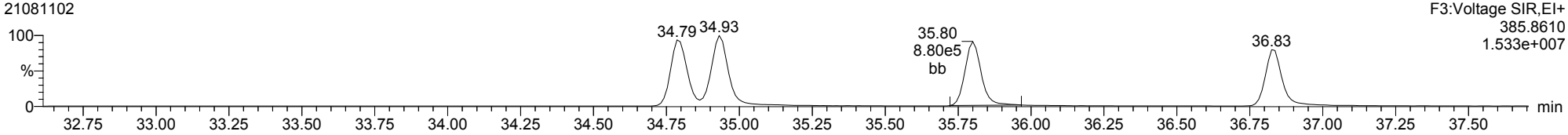

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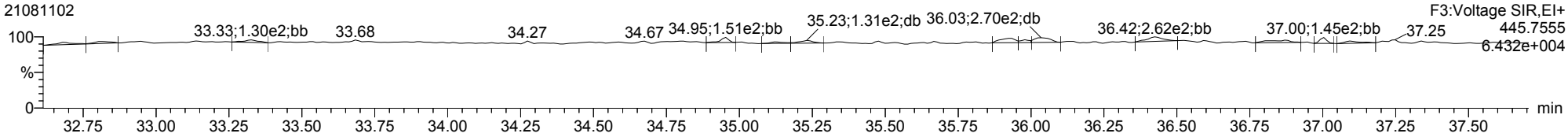

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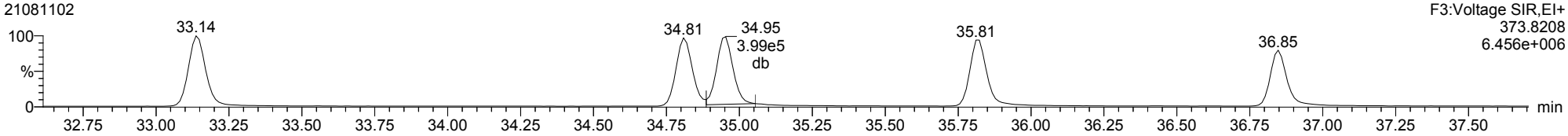

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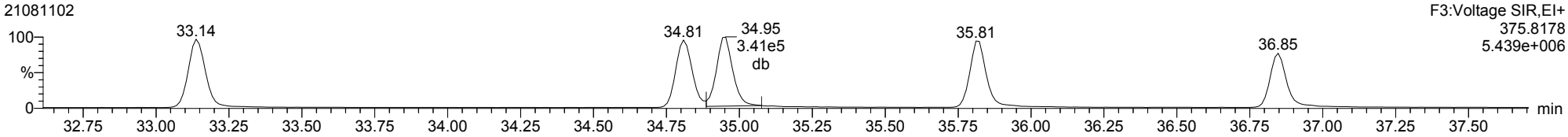

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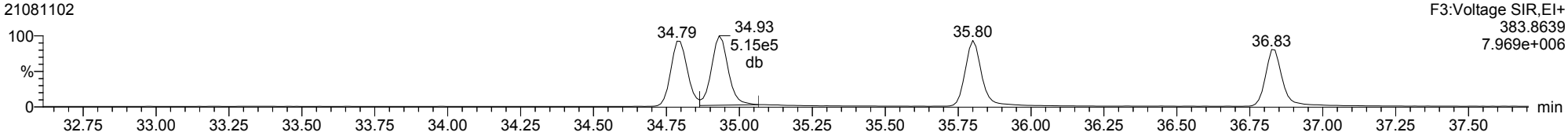

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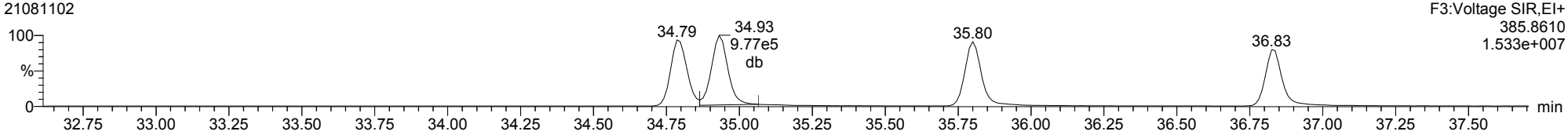

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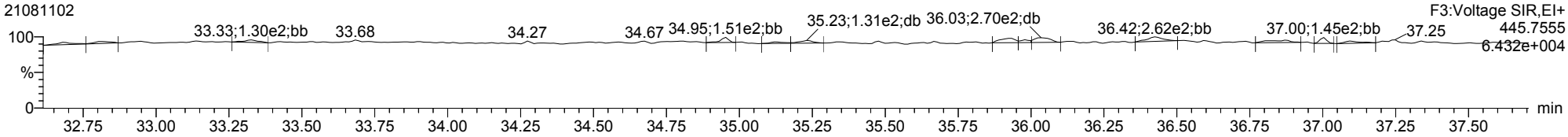

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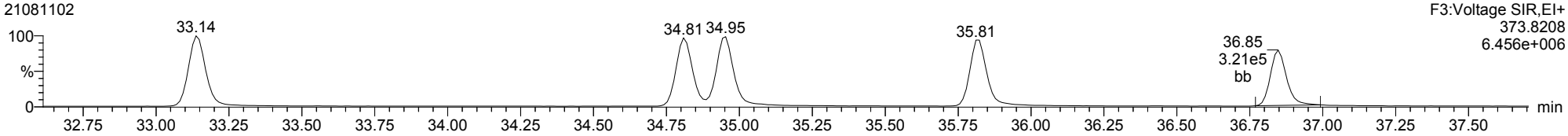

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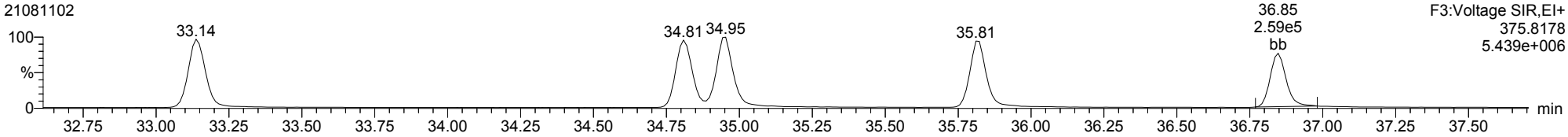

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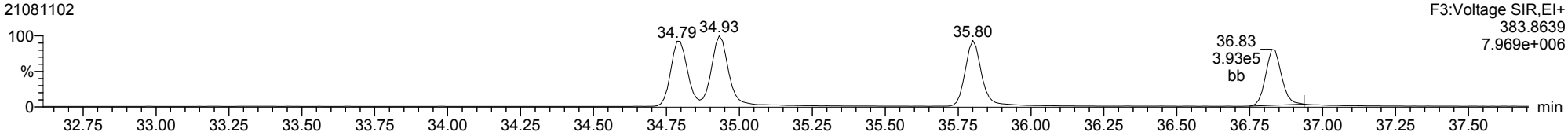

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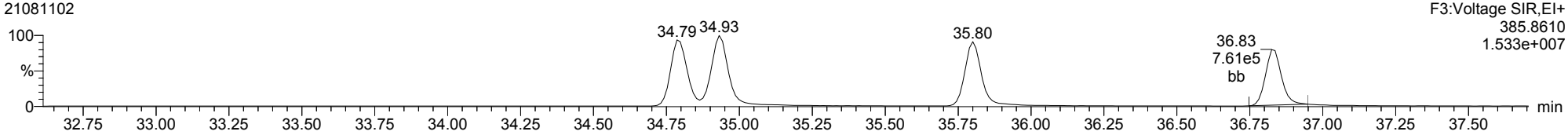

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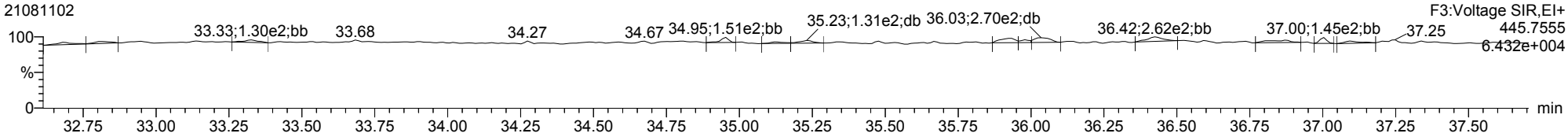

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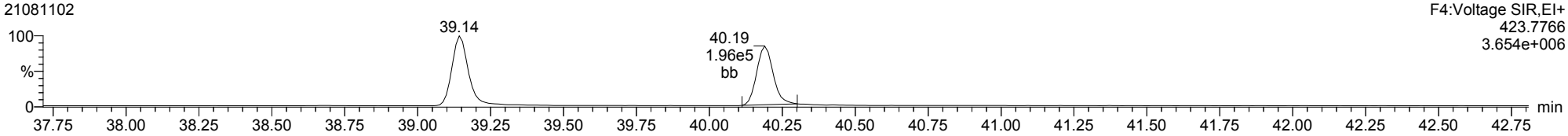

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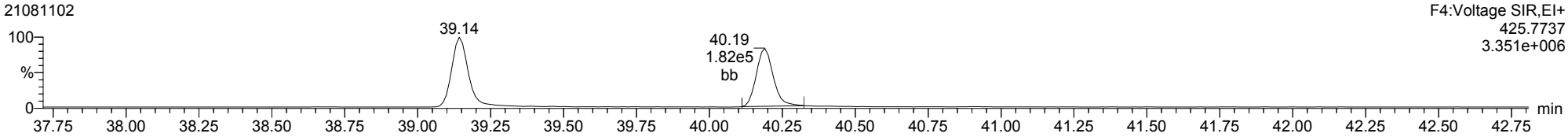

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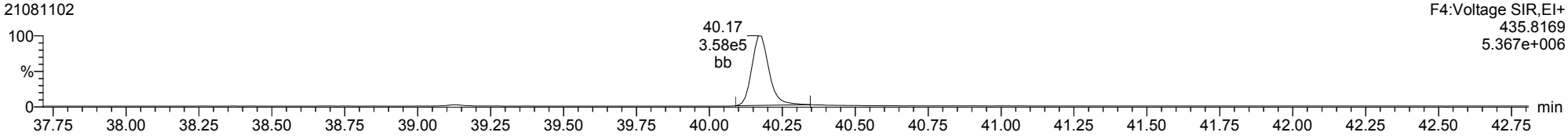

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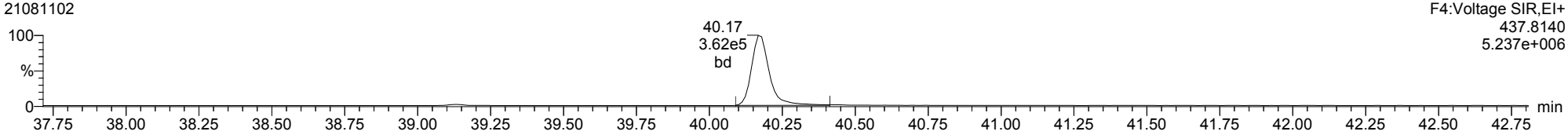

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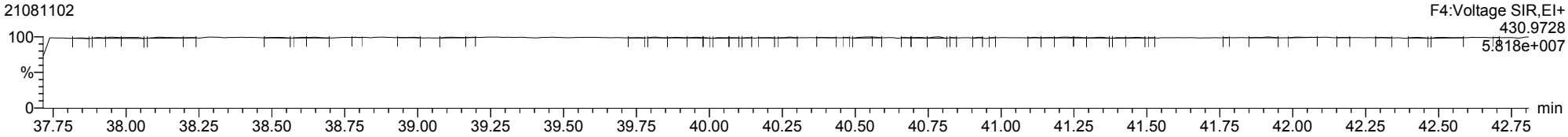

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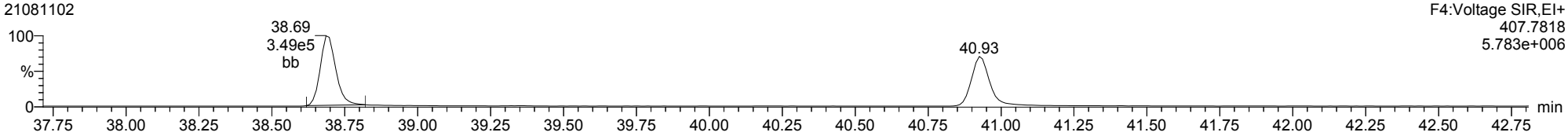

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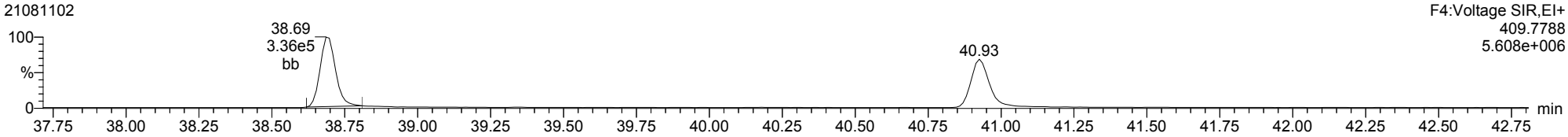

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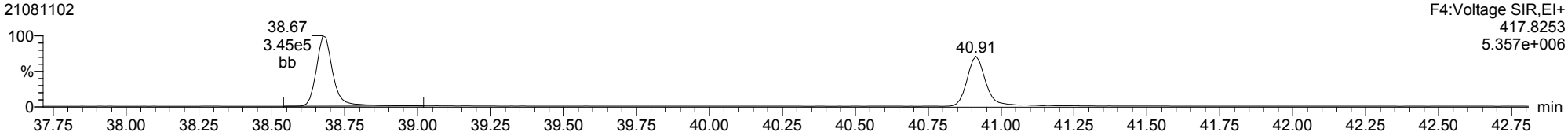

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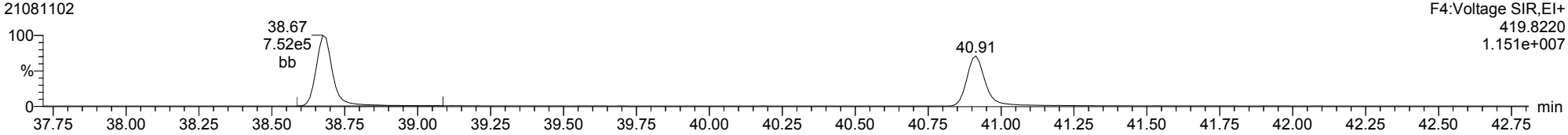

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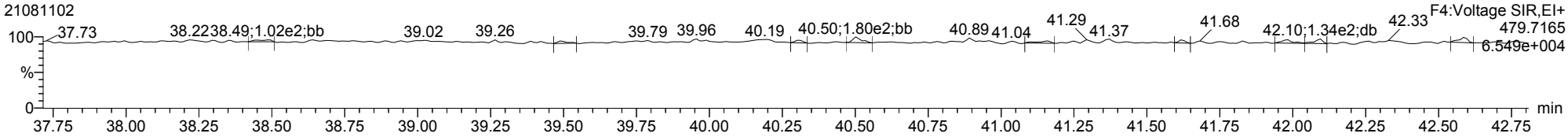

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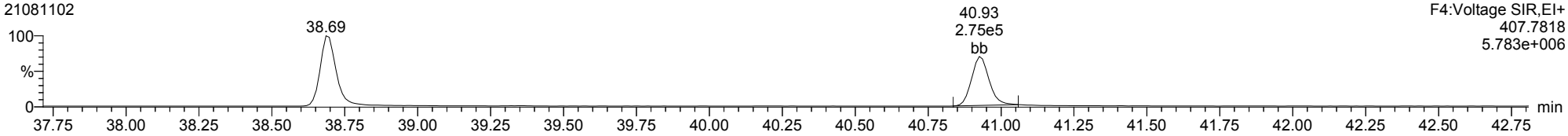

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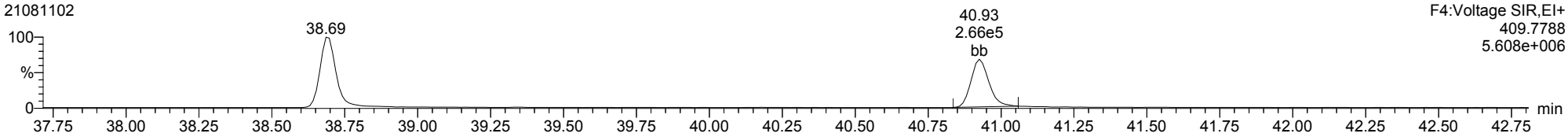

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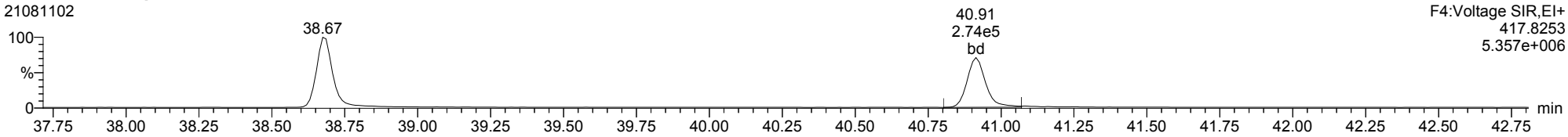

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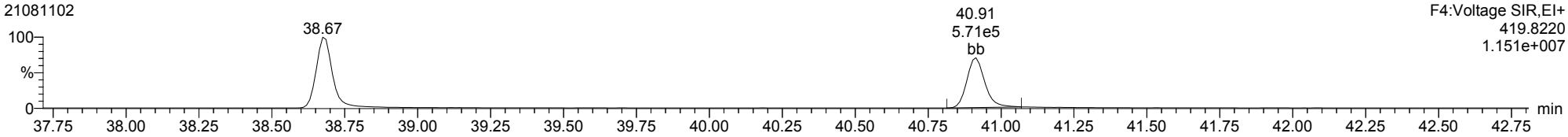

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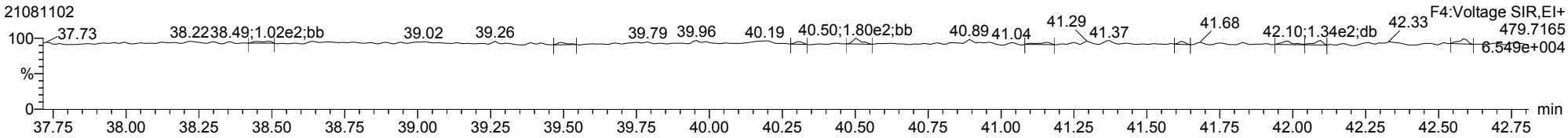

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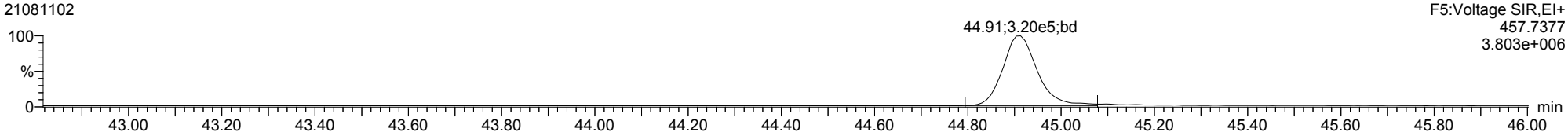

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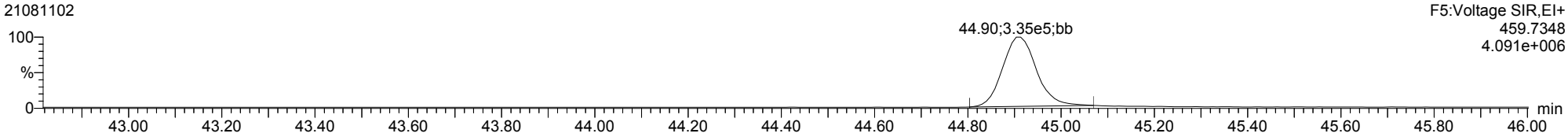

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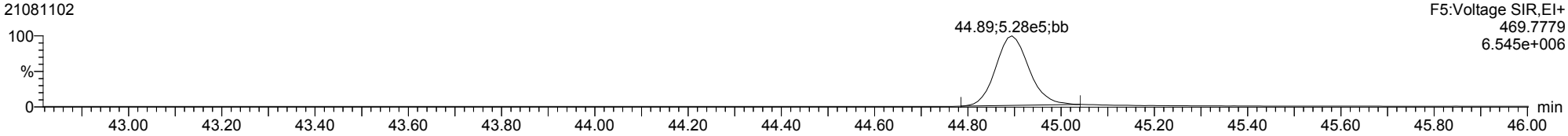

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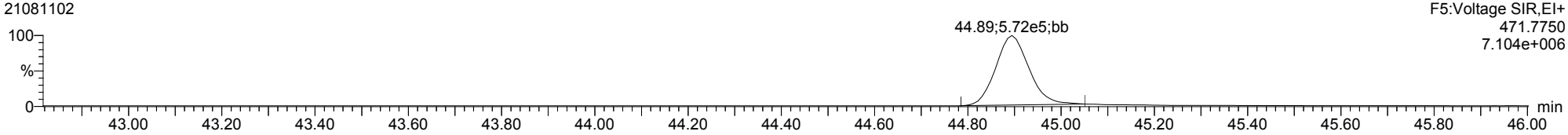

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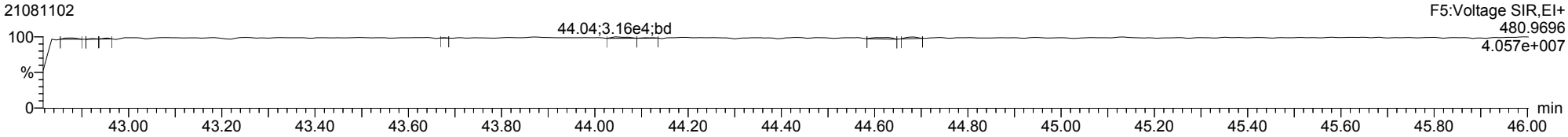

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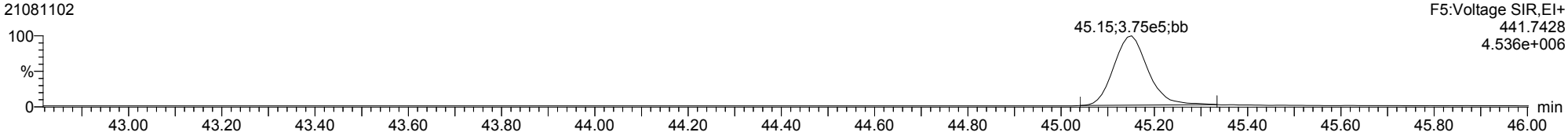

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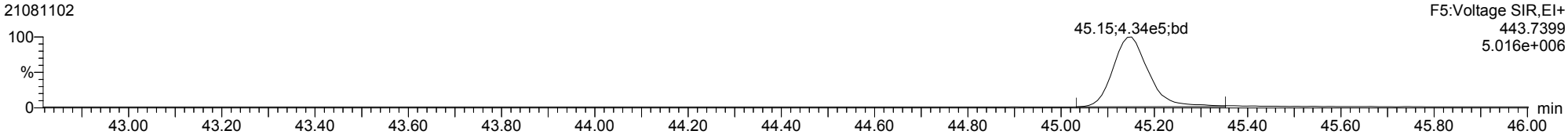

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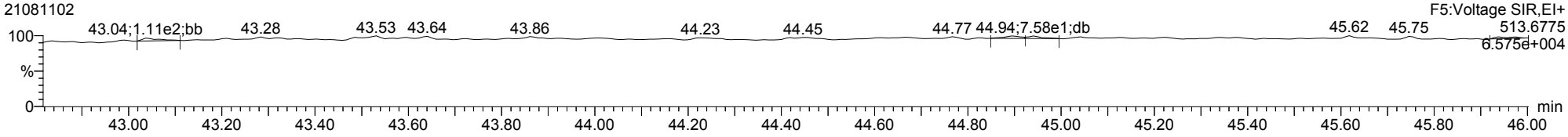

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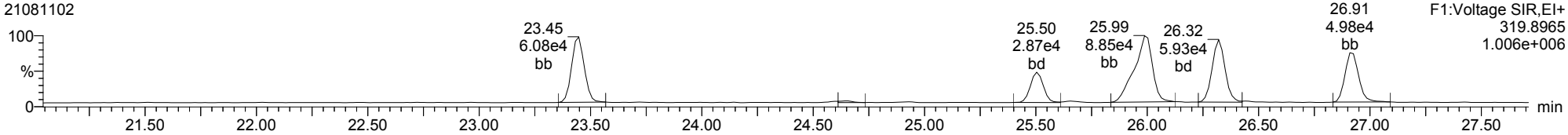

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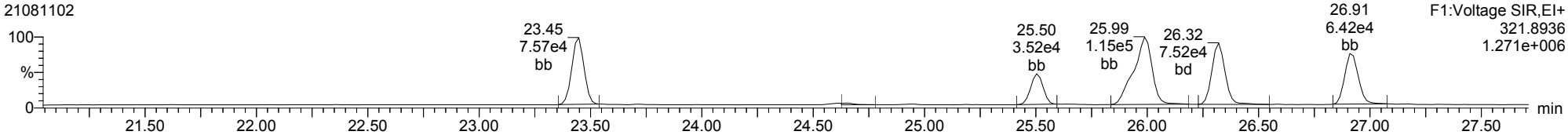

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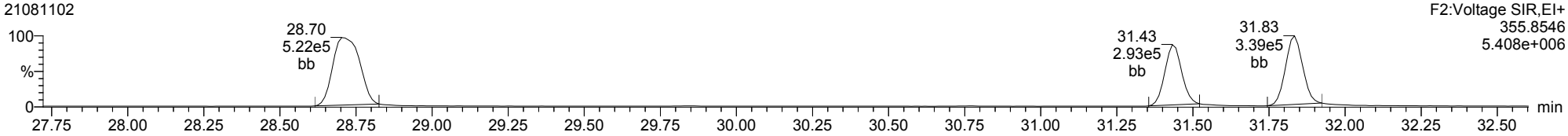

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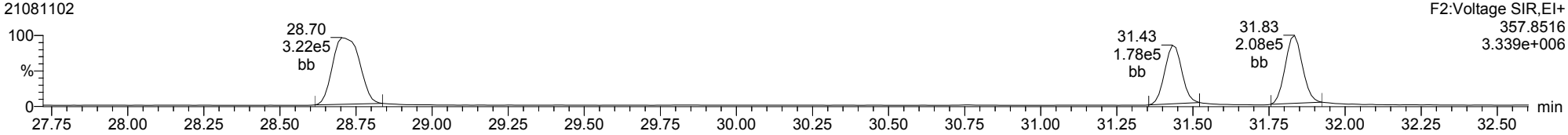

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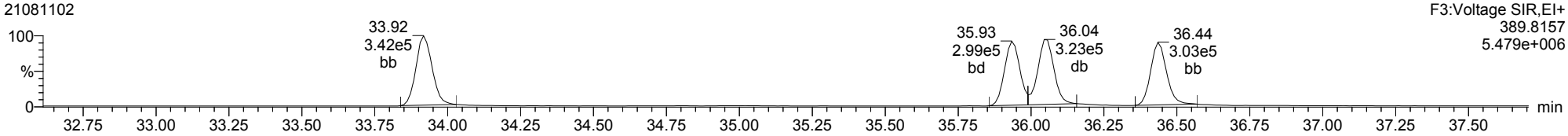
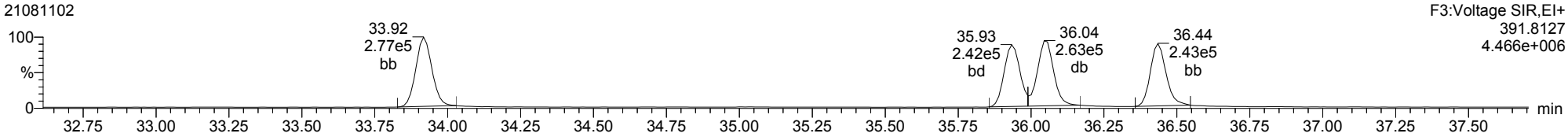
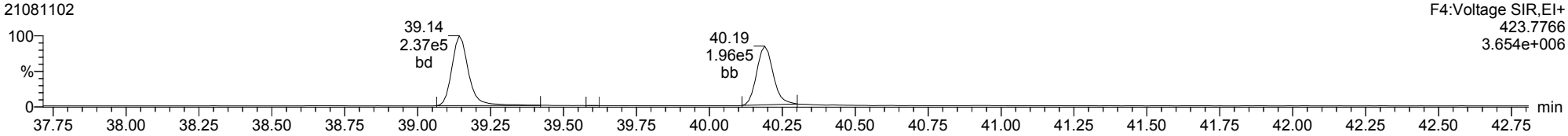


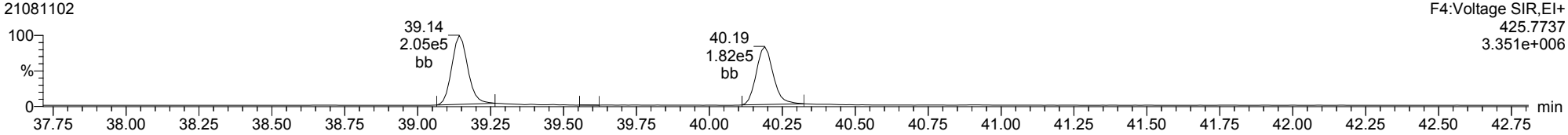
Total-hexadioxins



Total-heptadioxins



Total-heptadioxins



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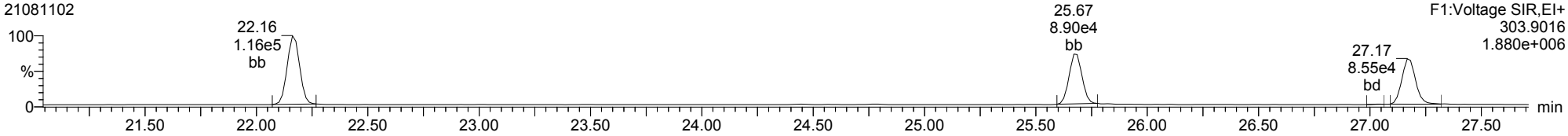
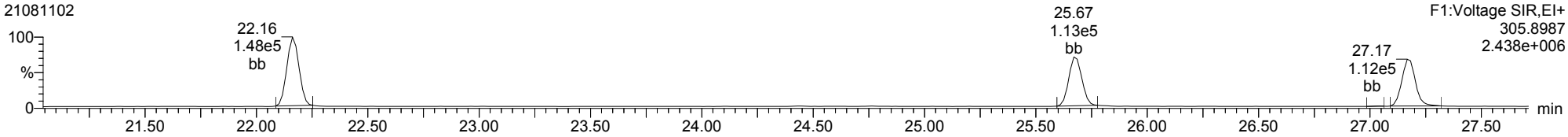
Total-tetrafurans



Total-tetrafurans



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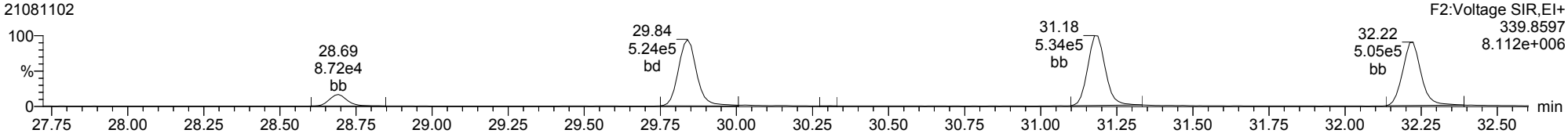
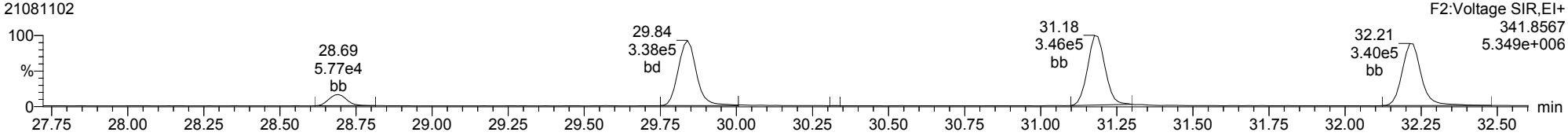
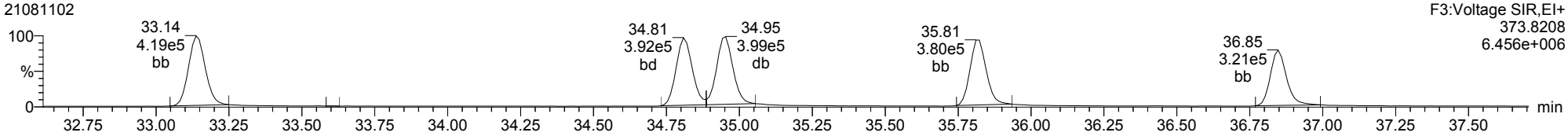


Total-pentafurans

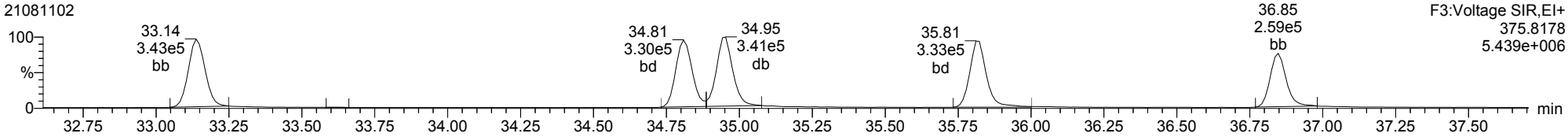


ID: CS3Z1, Name: 21081102, Date: 11-Aug-2021, Time: 15:52:29, Conditions: AUTOSPEC01, User: pk

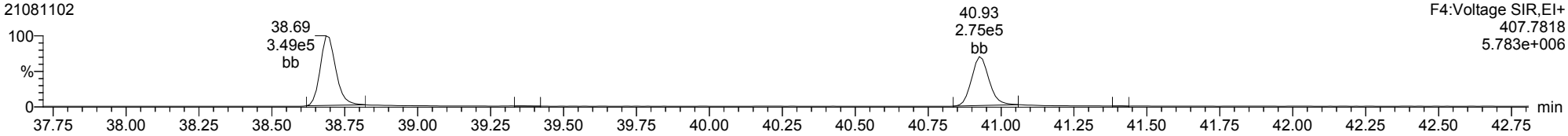
Total-hexafurans



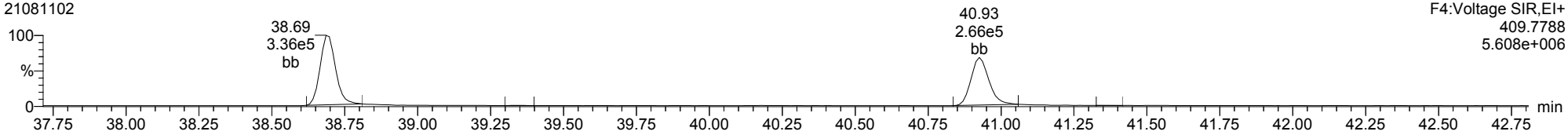
Total-hexafurans



Total-heptafurans

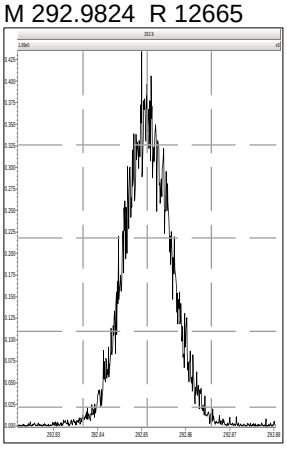


Total-heptafurans

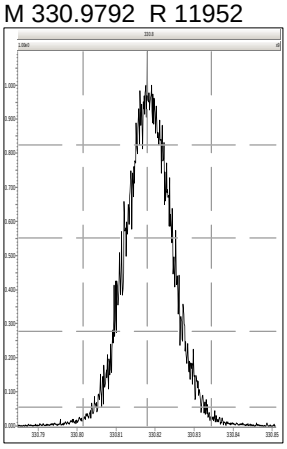


Printed: Wednesday, August 11, 2021 15:47:11 Pacific Daylight Time

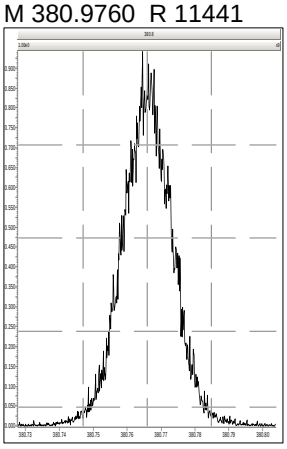
M 292.9824 R 12665



M 330.9792 R 11952



M 380.9760 R 11441



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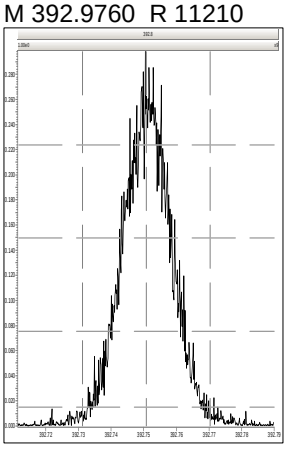
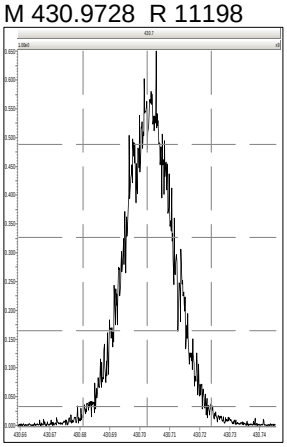
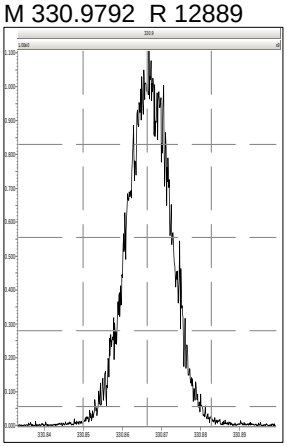


M 430.9728 R 11198



M 330.9792 R 12889



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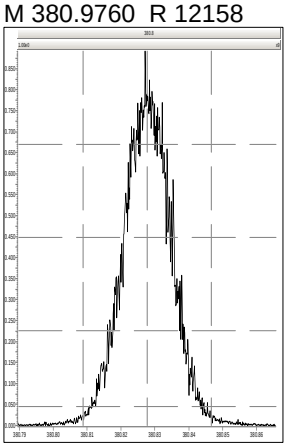
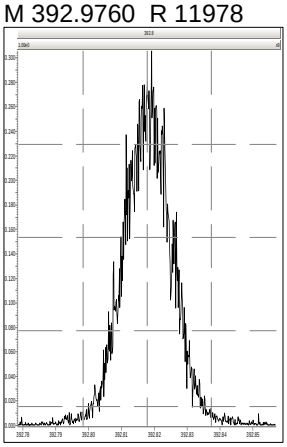
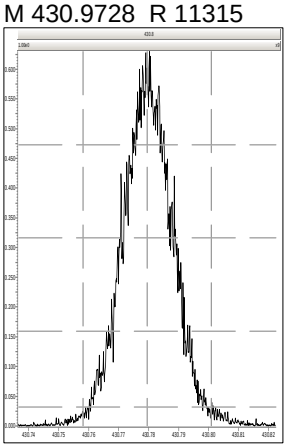


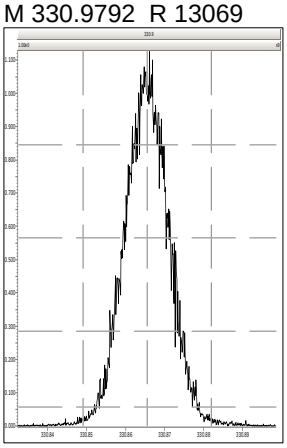
M 392.9760 R 11978



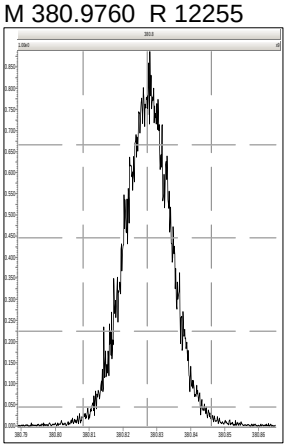
M 430.9728 R 11315



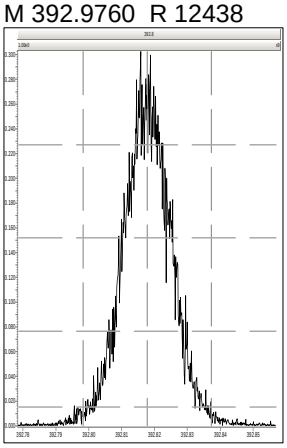
M 330.9792 R 13069



M 380.9760 R 12255



M 392.9760 R 12438



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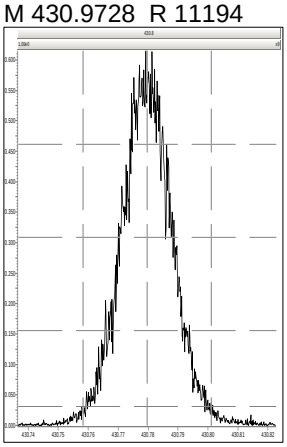
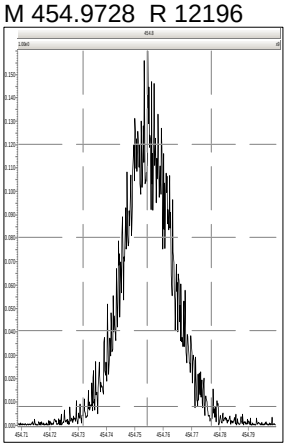
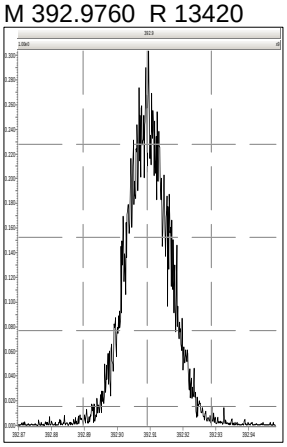


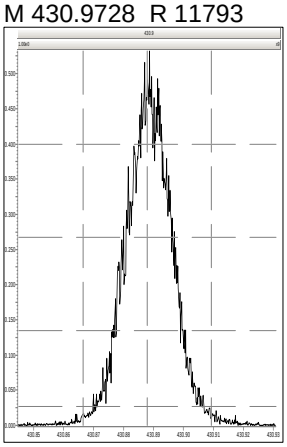
M 454.9728 R 12196



M 392.9760 R 13420



M 430.9728 R 11793



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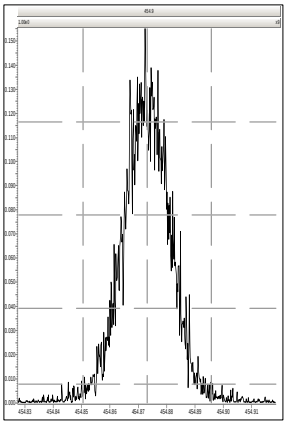
M 454.9728 R 12079



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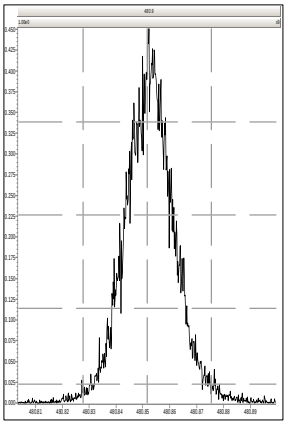
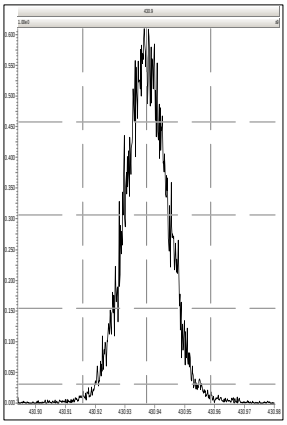
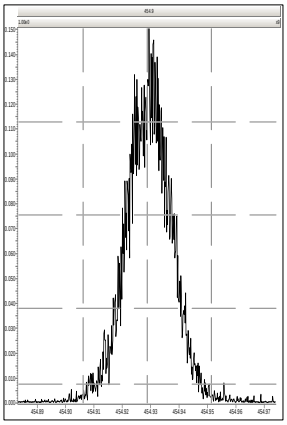


M 430.9728 R 13662



M 454.9728 R 13234



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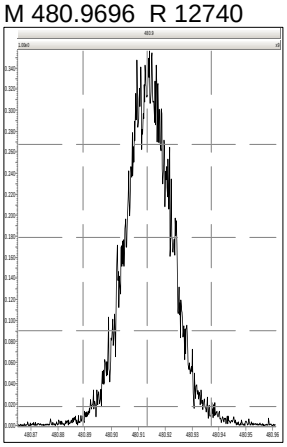
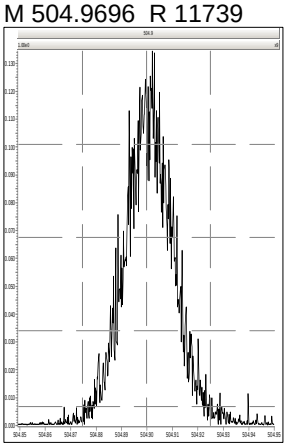


M 504.9696 R 11739



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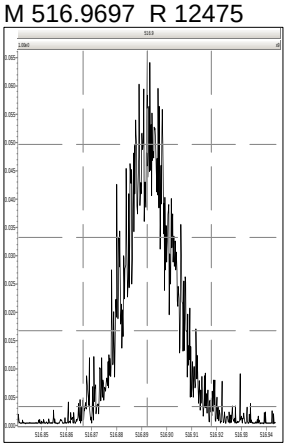
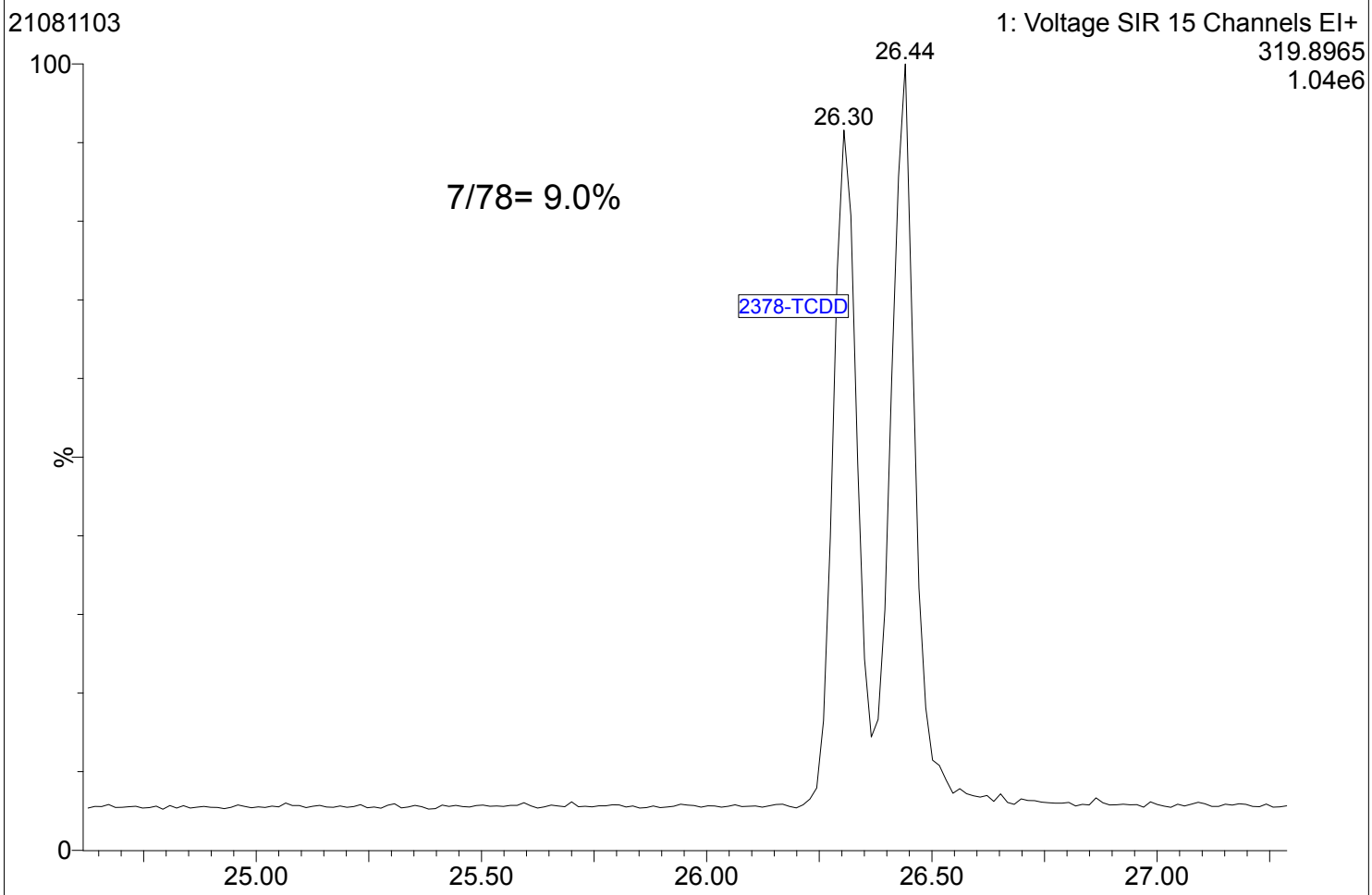
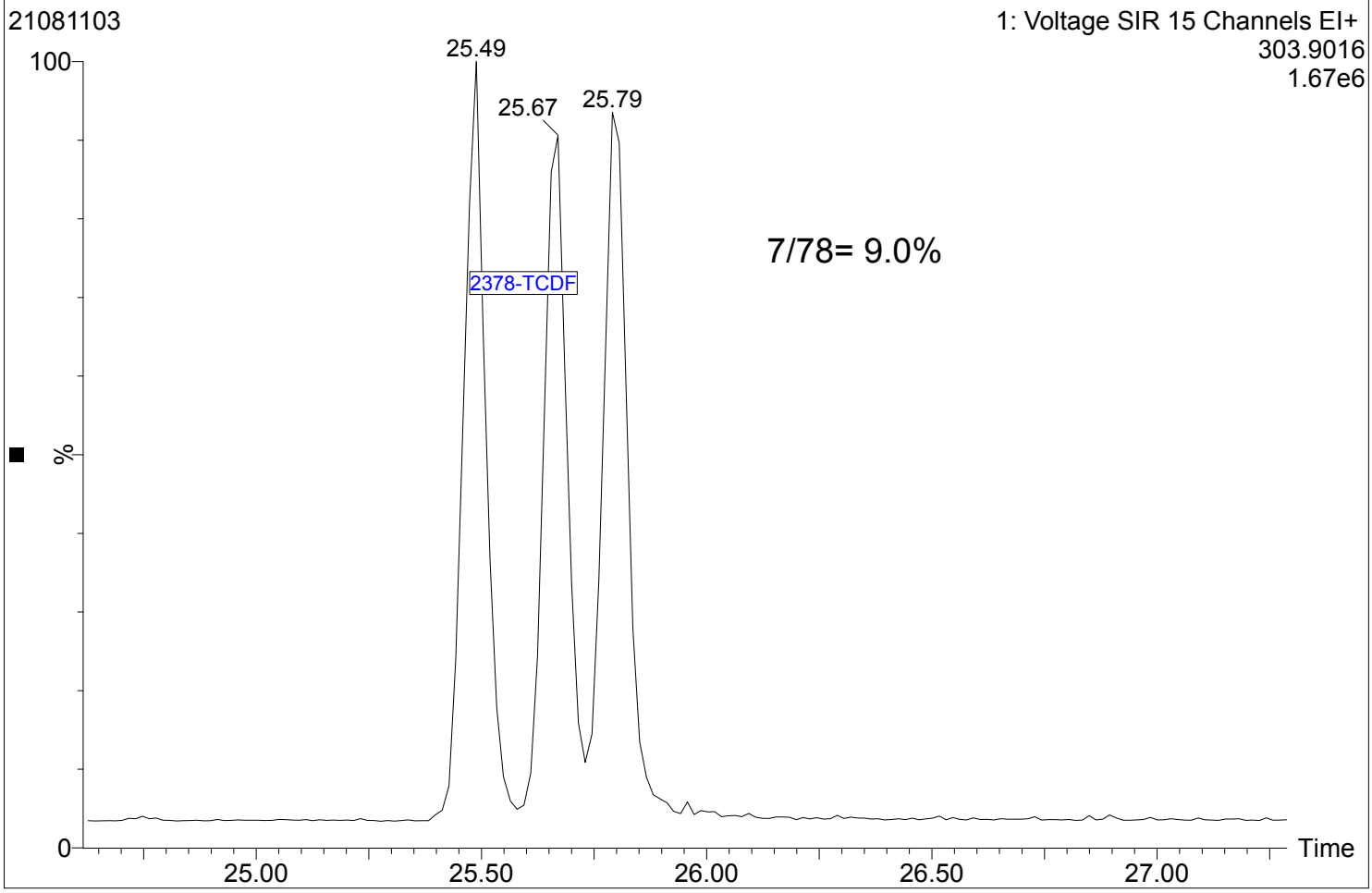



21081103
1: Voltage SIR 15 Channels EI+
319.8965
1.04e6
26.44
26.30
7/78= 9.0%
2378-TCDD
100
%
0
25.00
25.50
26.00
26.50
27.00


21081103
1: Voltage SIR 15 Channels EI+
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1.67e6
25.49
25.67
25.79
7/78= 9.0%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091102	Calibration Date:	08/11/2021
Sequence:	SJI0175	Injection Date:	09/11/21
Lab Sample ID:	SJI0175-ICV1	Injection Time:	11:21
Sequence Name:	CS3P6		

		CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	9.38	1.1075930	1.0387040		-6.2	+/-16
2,3,7,8-TCDD	A	10.000	10.9	0.9202875	1.0029910		9.0	+/-22
1,2,3,7,8-PeCDF	A	50.000	45.7	1.0148670	0.9265800		-8.7	+/-18
2,3,4,7,8-PeCDF	A	50.000	45.4	1.1255490	1.0219250		-9.2	+/-18
1,2,3,7,8-PeCDD	A	50.000	53.2	0.9953229	1.0589580		6.4	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	49.0	1.0168930	0.9960152		-2.1	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	49.3	1.0368310	1.0214400		-1.5	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.0	1.0524660	1.0306000		-2.1	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	46.5	1.0301540	0.9584422		-7.0	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	46.4	1.0273630	0.9542834		-7.1	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	48.3	1.0089800	0.9747653		-3.4	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	48.3	0.9504865	9418.1140000		-3.5	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	49.1	1.3273500	1.3031430		-1.8	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	51.1	1.2833380	1.3113530		2.2	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	53.6	1.0680880	1.1455380		7.3	+/-14
OCDF	A	100.00	94.3	1.4469010	1.3638470		-5.7	+/-37
OCDD	A	100.00	97.2	1.1808230	1.1478250		-2.8	+/-21
13C12-2,3,7,8-TCDF	A	100.00	114	1.4265830	1.6241363		13.8	+/-29
13C12-2,3,7,8-TCDD	A	100.00	103	1.1164910	1.1489703		2.9	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	111	1.2973130	1.4398172		11.0	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	110	1.2364800	1.3571986		9.8	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	102	0.7319833	0.7450172		1.8	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	93.8	1.2424560	1.1652472		-6.2	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	88.6	1.3434760	1.1896701		-11.4	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	89.9	1.2148550	1.0925551		-10.1	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	93.5	1.0076370	0.9418671		-6.5	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	97.3	0.9598233	0.9337139		-2.7	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	94.8	1.0413850	0.9874718		-5.2	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	96.2	0.9264704	0.8915195		-3.8	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	87.6	0.7579160	0.6638952		-12.4	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	88.6	0.6324476	0.5600550		-11.4	+/-28

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091102	Calibration Date:	08/11/2021
Sequence:	SJI0175	Injection Date:	09/11/21
Lab Sample ID:	SJI0175-ICV1	Injection Time:	11:21
Sequence Name:	CS3P6		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-OCDD	A	200.00	190	0.5037432	0.4788931		-4.9	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.95	1.0835930	1.0780643		-0.5	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:20:43 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3P6, Name: 21091102, Date: 11-Sep-2021, Time: 11:21:46, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	8.413e4	1.093e5	1.108	0.770	0.770	1258	1270	1.24e6	1.60e6	988.7	1258.8	NO	bb	bb	9.378
12378-PeCDF	29.898	1.000	4.587e5	3.062e5	1.015	1.498	1.550	2600	3305	6.83e6	4.56e6	2626.1	1381.2	NO	bb	bb	45.650
23478-PeCDF	31.247	1.000	4.772e5	3.180e5	1.126	1.500	1.550	2600	3305	7.18e6	4.82e6	2763.4	1457.5	NO	bb	bb	45.397
123478-HxCDF	34.867	1.001	3.402e5	2.798e5	1.017	1.216	1.240	3515	3115	5.36e6	4.36e6	1526.0	1399.0	NO	bd	bd	48.973
234678-HxCDF	35.881	1.001	3.296e5	2.719e5	1.052	1.212	1.240	3515	3115	5.19e6	4.26e6	1476.6	1367.4	NO	bb	bb	48.961
123678-HxCDF	35.001	1.000	3.565e5	2.927e5	1.037	1.218	1.240	3515	3115	5.55e6	4.57e6	1579.0	1465.8	NO	db	db	49.258
123789-HxCDF	36.906	1.000	2.630e5	2.193e5	1.030	1.199	1.240	3515	3115	4.25e6	3.56e6	1208.4	1141.6	NO	bb	bb	46.519
1234678-HpCDF	38.744	1.001	3.071e5	3.135e5	1.327	0.980	1.050	2343	2160	4.98e6	4.79e6	2124.2	2216.2	NO	bb	bb	49.088
1234789-HpCDF	40.995	1.000	2.373e5	2.278e5	1.283	1.042	1.050	2343	2160	3.37e6	3.23e6	1440.6	1493.6	NO	bb	bb	51.091
OCDF	45.215	1.006	3.395e5	3.584e5	1.447	0.947	0.890	1424	1506	3.96e6	4.37e6	2783.6	2901.0	NO	bd	bb	94.260
2378-TCDD	26.381	1.001	5.872e4	7.341e4	0.920	0.800	0.770	1571	1314	8.40e5	1.06e6	534.7	805.8	NO	bb	bd	10.899
12378-PeCDD	31.492	1.000	2.775e5	1.748e5	0.995	1.587	1.550	3209	1805	4.40e6	2.80e6	1372.2	1550.6	NO	bb	bb	53.197
123478-HxCDD	35.981	1.000	2.633e5	2.127e5	1.027	1.238	1.240	3013	2213	4.45e6	3.54e6	1476.3	1600.3	NO	bd	bd	46.443
123678-HxCDD	36.093	1.000	2.837e5	2.305e5	1.009	1.231	1.240	3013	2213	4.48e6	3.69e6	1487.1	1666.5	NO	db	db	48.305
123789-HxCDD	36.483	1.011	2.591e5	2.118e5	0.950	1.223	1.240	3013	2213	4.07e6	3.35e6	1350.6	1515.2	NO	bb	bb	48.271
1234678-HpCDD	40.237	1.000	1.770e5	1.658e5	1.068	1.067	1.050	1412	2242	2.71e6	2.56e6	1918.6	1141.8	NO	bb	bb	53.626
OCDD	44.968	1.000	2.787e5	3.087e5	1.181	0.903	0.890	5227	1785	3.54e6	3.90e6	676.7	2187.0	NO	bb	bb	97.206
13C-2378-TCDF	25.731	1.007	8.338e5	1.028e6	1.427	0.811	0.770	1893	1311	1.23e7	1.52e7	6495.2	11628.5	NO	bb	bb	113.848
13C-12378-PeCDF	29.887	1.169	1.006e6	6.445e5	1.297	1.562	1.550	2194	1843	1.54e7	9.61e6	7039.6	5213.9	NO	bb	bd	110.985
13C-23478-PeCDF	31.235	1.222	9.568e5	5.994e5	1.236	1.596	1.550	2194	1843	1.45e7	9.01e6	6589.7	4888.5	NO	bb	bb	109.763
13C-123478-HxCDF	34.845	0.955	4.241e5	8.209e5	1.242	0.517	0.510	2847	3188	6.58e6	1.27e7	2309.9	3997.9	NO	bd	bd	93.786
13C-123678-HxCDF	34.990	0.959	4.392e5	8.319e5	1.343	0.528	0.510	2847	3188	6.73e6	1.29e7	2364.7	4038.4	NO	db	db	88.552
13C-234678-HxCDF	35.859	0.983	4.008e5	7.665e5	1.215	0.523	0.510	2847	3188	6.31e6	1.21e7	2217.1	3801.7	NO	bb	bb	89.933
13C-123789-HxCDF	36.895	1.012	3.379e5	6.684e5	1.008	0.506	0.510	2847	3188	5.47e6	1.06e7	1920.5	3327.6	NO	bb	bb	93.473
13C-1234678-HpCDF	38.722	1.062	2.989e5	6.537e5	0.926	0.457	0.440	1996	3093	4.77e6	1.05e7	2390.3	3396.4	NO	bb	bb	96.228
13C-1234789-HpCDF	40.973	1.123	2.246e5	4.848e5	0.758	0.463	0.440	1996	3093	3.25e6	7.22e6	1627.7	2335.3	NO	bb	bb	87.595
13C-1234-TCDD	25.564	0.000	4.965e5	6.502e5	1.000	0.764	0.770	1812	1298	7.66e6	9.95e6	4227.8	7664.9	NO	bb	bb	100.000
13C-2378-TCDD	26.366	1.031	5.729e5	7.446e5	1.116	0.769	0.770	1812	1298	8.71e6	1.13e7	4806.5	8724.8	NO	bb	bb	102.909
13C-12378-PeCDD	31.480	1.231	5.234e5	3.309e5	0.732	1.582	1.550	1473	2177	7.87e6	5.01e6	5338.6	2299.2	NO	bb	bb	101.781
13C-123478-HxCDD	35.970	0.986	5.597e5	4.380e5	0.960	1.278	1.240	2609	2846	9.04e6	7.09e6	3464.9	2492.2	NO	bd	bd	97.280
13C-123678-HxCDD	36.082	0.989	5.814e5	4.736e5	1.041	1.228	1.240	2609	2846	9.44e6	7.65e6	3619.9	2687.5	NO	db	db	94.823
13C-1234678-HpCDD	40.226	1.103	3.073e5	2.911e5	0.632	1.055	1.050	1531	1667	4.67e6	4.43e6	3048.4	2660.2	NO	bb	bb	88.554
13C-OCDD	44.950	1.232	4.873e5	5.360e5	0.504	0.909	0.890	1465	1738	6.22e6	6.85e6	4247.9	3939.1	NO	bb	bb	190.134
13C-123789-HxCDD	36.472	0.000	5.906e5	4.779e5	1.000	1.236	1.240	2609	2846	9.08e6	7.26e6	3481.9	2550.2	NO	bb	bb	100.000
37CL-2378-TCDD	26.381	1.032	1.236e5		1.084			1185		1.77e6		1496.4			bb		9.949

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Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:20:43 Pacific Daylight Time

ID: CS3P6, Name: 21091102, Date: 11-Sep-2021, Time: 11:21:46, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	1.042e5	1.362e5	1.425	0.765	0.770	1258	1270	1.63e6	2.14e6	1295.0	1683.5	NO	bb	bb	9.057
1289-TCDF	27.273	1.060	7.834e4	1.027e5	1.043	0.763	0.770	1258	1270	1.13e6	1.49e6	902.1	1175.8	NO	bb	bb	9.320
13468-PECDF	27.091	0.906	6.408e5	4.224e5	1.376	1.517	1.550	1328	935	9.81e6	6.44e6	7384.0	6884.4	NO	bb	bb	46.794
12389-PECDF	32.294	1.081	4.450e5	2.893e5	1.000	1.538	1.550	2600	3305	6.47e6	4.27e6	2489.6	1293.4	NO	bb	bb	44.499
123468-HXCDF	33.196	0.953	3.614e5	2.924e5	1.087	1.236	1.240	3515	3115	5.45e6	4.44e6	1551.5	1426.0	NO	bb	bb	48.327
1368-TCDD	23.508	0.892	5.853e4	7.261e4	0.923	0.806	0.770	1571	1314	9.21e5	1.15e6	586.2	876.1	NO	bb	bb	10.781
1289-TCDD	27.001	1.024	4.990e4	6.272e4	0.794	0.796	0.770	1571	1314	7.46e5	9.06e5	474.6	689.3	NO	bb	bd	10.766
12479-PECDD	28.762	0.914	5.112e5	3.143e5	1.843	1.626	1.550	3209	1805	5.02e6	3.03e6	1563.6	1679.5	NO	bb	bb	52.423
12389-PECDD	31.904	1.013	3.283e5	2.060e5	1.154	1.594	1.550	3209	1805	4.99e6	3.09e6	1555.1	1711.1	NO	bb	bb	54.225
124679-HXCDD	33.965	0.944	2.940e5	2.411e5	1.125	1.219	1.240	3013	2213	4.64e6	3.77e6	1540.2	1706.1	NO	bb	bb	47.679
1234679-HPCDD	39.190	0.974	2.103e5	1.893e5	1.211	1.111	1.050	1412	2242	3.37e6	3.18e6	2388.9	1419.3	NO	bd	bb	55.147
Total-tetrafurans			2.694e5		1.192			1258		4.05e6							28.040
Total-penta1			6.408e5					1328		9.81e6							46.794
Total-pentafurans			1.461e6		1.047			2600		2.17e7							143.469
Total-hexafurans			1.651e6		1.045			3515		2.58e7							242.039
Total-heptafurans			5.444e5		1.305			2343		8.35e6							100.180
Total-Furans			4.906e6		1.158			1258		7.37e7							654.782
Total-tetradioxins			2.839e5		0.879			1571		3.82e6							54.839
Total-pentadioxins			1.117e6		1.331			3209		1.44e7							159.845
Total-hexadioxins			1.100e6		1.028			3013		1.76e7							190.698
Total-heptadioxins			3.872e5		1.140			1412		6.08e6							108.772
Total-Dioxins			3.167e6		1.092			1571		4.55e7							611.360
Total-TEQ			8.073e6					1571		1.19e8							1266.142
FUNCTION1 PFK			2.877e6					492168		1.63e7							
FUNCTION2 PFK			1.649e7					236786		1.90e8							0.000
FUNCTION3 PFK			2.005e5					276218		6.21e6							0.000
FUNCTION4 PFK			7.828e5					249330		1.85e7							
FUNCTION5 PFK			3.703e6					177224		1.55e7							
FUNCTION1 HXCD...			1.408e3					799		2.08e4							0.000
FUNCTION1 HPCD...			2.086e3					714		2.90e4							0.000
FUNCTION2 HPCD...			3.194e3					1588		5.52e4							0.000
FUNCTION3 OCDPE			8.744e3					1299		1.62e5							0.000
FUNCTION4 NCDPE			2.778e3					823		5.69e4							0.000
FUNCTION5 DCDPE			5.044e2					778		8.58e3							0.000

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.76	8.413e4	1.093e5	1.108	0.77	0.77	988.7	YES	NO	bb	bb	9.378
2	Total-tetrafurans	24.85	7.326e2	1.059e3	1.192	0.69	0.77	7.9	YES	NO	bb	bb	0.081
3	Total-tetrafurans	24.51	9.690e2	1.306e3	1.192	0.74	0.77	11.5	YES	NO	bd	bd	0.103
4	1368-TCDF	22.24	1.042e5	1.362e5	1.425	0.77	0.77	1295.0	YES	NO	bb	bb	9.057
5	1289-TCDF	27.27	7.834e4	1.027e5	1.043	0.76	0.77	902.1	YES	NO	bb	bb	9.320
6	Total-tetrafurans	27.11	9.851e2	1.285e3	1.192	0.77	0.77	12.7	YES	NO	bb	bb	0.102

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.09	6.408e5	4.224e5	1.376	1.52	1.55	7384.0	YES	NO	bb	bb	46.794

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.25	4.772e5	3.180e5	1.126	1.50	1.55	2763.4	YES	NO	bb	bb	45.397
2	12378-PeCDF	29.90	4.587e5	3.062e5	1.015	1.50	1.55	2626.1	YES	NO	bb	bb	45.650
3	Total-pentafurans	28.75	8.047e4	5.250e4	1.047	1.53	1.55	472.5	YES	NO	bb	bb	7.923
4	12389-PECDF	32.29	4.450e5	2.893e5	1.000	1.54	1.55	2489.6	YES	NO	bb	bb	44.499

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.91	2.630e5	2.193e5	1.030	1.20	1.24	1208.4	YES	NO	bb	bb	46.519
2	234678-HxCDF	35.88	3.296e5	2.719e5	1.052	1.21	1.24	1476.6	YES	NO	bb	bb	48.961
3	123678-HxCDF	35.00	3.565e5	2.927e5	1.037	1.22	1.24	1579.0	YES	NO	db	db	49.258
4	123478-HxCDF	34.87	3.402e5	2.798e5	1.017	1.22	1.24	1526.0	YES	NO	bd	bd	48.973
5	123468-HXCDF	33.20	3.614e5	2.924e5	1.087	1.24	1.24	1551.5	YES	NO	bb	bb	48.327

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.74	3.071e5	3.135e5	1.327	0.98	1.05	2124.2	YES	NO	bb	bb	49.088
2	1234789-HpCDF	41.00	2.373e5	2.278e5	1.283	1.04	1.05	1440.6	YES	NO	bb	bb	51.091

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.76	8.413e4	1.093e5	1.108	0.77	0.77	988.7	YES	NO	bb	bb	9.378
2	Total-tetrafurans	24.85	7.326e2	1.059e3	1.192	0.69	0.77	7.9	YES	NO	bb	bb	0.081
3	Total-tetrafurans	24.51	9.690e2	1.306e3	1.192	0.74	0.77	11.5	YES	NO	bd	bd	0.103
4	1368-TCDF	22.24	1.042e5	1.362e5	1.425	0.77	0.77	1295.0	YES	NO	bb	bb	9.057
5	1289-TCDF	27.27	7.834e4	1.027e5	1.043	0.76	0.77	902.1	YES	NO	bb	bb	9.320
6	Total-tetrafurans	27.11	9.851e2	1.285e3	1.192	0.77	0.77	12.7	YES	NO	bb	bb	0.102
7	23478-PeCDF	31.25	4.772e5	3.180e5	1.126	1.50	1.55	2763.4	YES	NO	bb	bb	45.397
8	12378-PeCDF	29.90	4.587e5	3.062e5	1.015	1.50	1.55	2626.1	YES	NO	bb	bb	45.650
9	Total-pentafurans	28.75	8.047e4	5.250e4	1.047	1.53	1.55	472.5	YES	NO	bb	bb	7.923
10	12389-PECDF	32.29	4.450e5	2.893e5	1.000	1.54	1.55	2489.6	YES	NO	bb	bb	44.499
11	123789-HxCDF	36.91	2.630e5	2.193e5	1.030	1.20	1.24	1208.4	YES	NO	bb	bb	46.519
12	234678-HxCDF	35.88	3.296e5	2.719e5	1.052	1.21	1.24	1476.6	YES	NO	bb	bb	48.961
13	123678-HxCDF	35.00	3.565e5	2.927e5	1.037	1.22	1.24	1579.0	YES	NO	db	db	49.258
14	123478-HxCDF	34.87	3.402e5	2.798e5	1.017	1.22	1.24	1526.0	YES	NO	bd	bd	48.973
15	123468-HXCDF	33.20	3.614e5	2.924e5	1.087	1.24	1.24	1551.5	YES	NO	bb	bb	48.327
16	1234678-HpCDF	38.74	3.071e5	3.135e5	1.327	0.98	1.05	2124.2	YES	NO	bb	bb	49.088
17	1234789-HpCDF	41.00	2.373e5	2.278e5	1.283	1.04	1.05	1440.6	YES	NO	bb	bb	51.091
18	OCDF	45.22	3.395e5	3.584e5	1.447	0.95	0.89	2783.6	YES	NO	bd	bb	94.260
19	13468-PECDF	27.09	6.408e5	4.224e5	1.376	1.52	1.55	7384.0	YES	NO	bb	bb	46.794

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	4.990e4	6.272e4	0.794	0.80	0.77	474.6	YES	NO	bb	bd	10.766
2	2378-TCDD	26.38	5.872e4	7.341e4	0.920	0.80	0.77	534.7	YES	NO	bb	bd	10.899
3	Total-tetradioxins	26.06	8.747e4	1.079e5	0.879	0.81	0.77	551.7	YES	NO	bb	bb	16.872
4	Total-tetradioxins	25.58	2.863e4	3.387e4	0.879	0.85	0.77	276.1	YES	NO	bd	bb	5.396
5	Total-tetradioxins	24.99	6.670e2	7.849e2	0.879	0.85	0.77	5.9	YES	NO	bb	bb	0.125
6	1368-TCDD	23.51	5.853e4	7.261e4	0.923	0.81	0.77	586.2	YES	NO	bb	bb	10.781

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.49	2.775e5	1.748e5	0.995	1.59	1.55	1372.2	YES	NO	bb	bb	53.197
2	12479-PECDD	28.76	5.112e5	3.143e5	1.843	1.63	1.55	1563.6	YES	NO	bb	bb	52.423
3	12389-PECDD	31.90	3.283e5	2.060e5	1.154	1.59	1.55	1555.1	YES	NO	bb	bb	54.225

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.48	2.591e5	2.118e5	0.950	1.22	1.24	1350.6	YES	NO	bb	bb	48.271
2	123678-HxCDD	36.09	2.837e5	2.305e5	1.009	1.23	1.24	1487.1	YES	NO	db	db	48.305
3	123478-HxCDD	35.98	2.633e5	2.127e5	1.027	1.24	1.24	1476.3	YES	NO	bd	bd	46.443
4	124679-HXCDD	33.97	2.940e5	2.411e5	1.125	1.22	1.24	1540.2	YES	NO	bb	bb	47.679

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.24	1.770e5	1.658e5	1.068	1.07	1.05	1918.6	YES	NO	bb	bb	53.626
2	1234679-HPCDD	39.19	2.103e5	1.893e5	1.211	1.11	1.05	2388.9	YES	NO	bd	bb	55.147

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	4.990e4	6.272e4	0.794	0.80	0.77	474.6	YES	NO	bb	bd	10.766
2	2378-TCDD	26.38	5.872e4	7.341e4	0.920	0.80	0.77	534.7	YES	NO	bb	bd	10.899
3	Total-tetradioxins	26.06	8.747e4	1.079e5	0.879	0.81	0.77	551.7	YES	NO	bb	bb	16.872
4	Total-tetradioxins	25.58	2.863e4	3.387e4	0.879	0.85	0.77	276.1	YES	NO	bd	bb	5.396
5	Total-tetradioxins	24.99	6.670e2	7.849e2	0.879	0.85	0.77	5.9	YES	NO	bb	bb	0.125
6	1368-TCDD	23.51	5.853e4	7.261e4	0.923	0.81	0.77	586.2	YES	NO	bb	bb	10.781
7	12378-PeCDD	31.49	2.775e5	1.748e5	0.995	1.59	1.55	1372.2	YES	NO	bb	bb	53.197
8	12479-PECDD	28.76	5.112e5	3.143e5	1.843	1.63	1.55	1563.6	YES	NO	bb	bb	52.423
9	12389-PECDD	31.90	3.283e5	2.060e5	1.154	1.59	1.55	1555.1	YES	NO	bb	bb	54.225
10	123789-HxCDD	36.48	2.591e5	2.118e5	0.950	1.22	1.24	1350.6	YES	NO	bb	bb	48.271
11	123678-HxCDD	36.09	2.837e5	2.305e5	1.009	1.23	1.24	1487.1	YES	NO	db	db	48.305
12	123478-HxCDD	35.98	2.633e5	2.127e5	1.027	1.24	1.24	1476.3	YES	NO	bd	bd	46.443
13	124679-HXCDD	33.97	2.940e5	2.411e5	1.125	1.22	1.24	1540.2	YES	NO	bb	bb	47.679
14	1234678-HpCDD	40.24	1.770e5	1.658e5	1.068	1.07	1.05	1918.6	YES	NO	bb	bb	53.626
15	1234679-HPCDD	39.19	2.103e5	1.893e5	1.211	1.11	1.05	2388.9	YES	NO	bd	bb	55.147
16	OCDD	44.97	2.787e5	3.087e5	1.181	0.90	0.89	676.7	YES	NO	bb	bb	97.206

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDF	25.76	8.413e4	1.093e5	1.108	0.77	0.77	988.7	YES	NO	bb	bb	9.378
2	Total-tetrafurans	24.85	7.326e2	1.059e3	1.192	0.69	0.77	7.9	YES	NO	bb	bb	0.081
3	Total-tetrafurans	24.51	9.690e2	1.306e3	1.192	0.74	0.77	11.5	YES	NO	bd	bd	0.103
4	1368-TCDF	22.24	1.042e5	1.362e5	1.425	0.77	0.77	1295.0	YES	NO	bb	bb	9.057
5	1289-TCDF	27.27	7.834e4	1.027e5	1.043	0.76	0.77	902.1	YES	NO	bb	bb	9.320
6	Total-tetrafurans	27.11	9.851e2	1.285e3	1.192	0.77	0.77	12.7	YES	NO	bb	bb	0.102
7	23478-PeCDF	31.25	4.772e5	3.180e5	1.126	1.50	1.55	2763.4	YES	NO	bb	bb	45.397
8	12378-PeCDF	29.90	4.587e5	3.062e5	1.015	1.50	1.55	2626.1	YES	NO	bb	bb	45.650
9	Total-pentafurans	28.75	8.047e4	5.250e4	1.047	1.53	1.55	472.5	YES	NO	bb	bb	7.923
10	12389-PECDF	32.29	4.450e5	2.893e5	1.000	1.54	1.55	2489.6	YES	NO	bb	bb	44.499
11	123789-HxCDF	36.91	2.630e5	2.193e5	1.030	1.20	1.24	1208.4	YES	NO	bb	bb	46.519
12	234678-HxCDF	35.88	3.296e5	2.719e5	1.052	1.21	1.24	1476.6	YES	NO	bb	bb	48.961
13	123678-HxCDF	35.00	3.565e5	2.927e5	1.037	1.22	1.24	1579.0	YES	NO	db	db	49.258
14	123478-HxCDF	34.87	3.402e5	2.798e5	1.017	1.22	1.24	1526.0	YES	NO	bd	bd	48.973
15	123468-HXCDF	33.20	3.614e5	2.924e5	1.087	1.24	1.24	1551.5	YES	NO	bb	bb	48.327
16	1234678-HpCDF	38.74	3.071e5	3.135e5	1.327	0.98	1.05	2124.2	YES	NO	bb	bb	49.088
17	1234789-HpCDF	41.00	2.373e5	2.278e5	1.283	1.04	1.05	1440.6	YES	NO	bb	bb	51.091
18	OCDF	45.22	3.395e5	3.584e5	1.447	0.95	0.89	2783.6	YES	NO	bd	bb	94.260
19	13468-PECDF	27.09	6.408e5	4.224e5	1.376	1.52	1.55	7384.0	YES	NO	bb	bb	46.794
20	1289-TCDD	27.00	4.990e4	6.272e4	0.794	0.80	0.77	474.6	YES	NO	bb	bd	10.766
21	2378-TCDD	26.38	5.872e4	7.341e4	0.920	0.80	0.77	534.7	YES	NO	bb	bd	10.899
22	Total-tetradioxins	26.06	8.747e4	1.079e5	0.879	0.81	0.77	551.7	YES	NO	bb	bb	16.872
23	Total-tetradioxins	25.58	2.863e4	3.387e4	0.879	0.85	0.77	276.1	YES	NO	bd	bb	5.396
24	Total-tetradioxins	24.99	6.670e2	7.849e2	0.879	0.85	0.77	5.9	YES	NO	bb	bb	0.125
25	1368-TCDD	23.51	5.853e4	7.261e4	0.923	0.81	0.77	586.2	YES	NO	bb	bb	10.781
26	12378-PeCDD	31.49	2.775e5	1.748e5	0.995	1.59	1.55	1372.2	YES	NO	bb	bb	53.197
27	12479-PECDD	28.76	5.112e5	3.143e5	1.843	1.63	1.55	1563.6	YES	NO	bb	bb	52.423
28	12389-PECDD	31.90	3.283e5	2.060e5	1.154	1.59	1.55	1555.1	YES	NO	bb	bb	54.225
29	123789-HxCDD	36.48	2.591e5	2.118e5	0.950	1.22	1.24	1350.6	YES	NO	bb	bb	48.271
30	123678-HxCDD	36.09	2.837e5	2.305e5	1.009	1.23	1.24	1487.1	YES	NO	db	db	48.305
31	123478-HxCDD	35.98	2.633e5	2.127e5	1.027	1.24	1.24	1476.3	YES	NO	bd	bd	46.443
32	124679-HXCDD	33.97	2.940e5	2.411e5	1.125	1.22	1.24	1540.2	YES	NO	bb	bb	47.679
33	1234678-HpCDD	40.24	1.770e5	1.658e5	1.068	1.07	1.05	1918.6	YES	NO	bb	bb	53.626
34	1234679-HPCDD	39.19	2.103e5	1.893e5	1.211	1.11	1.05	2388.9	YES	NO	bd	bb	55.147
35	OCDD	44.97	2.787e5	3.087e5	1.181	0.90	0.89	676.7	YES	NO	bb	bb	97.206

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.54	2.234e6					6.1	YES		db		
2	FUNCTION1 PFK	21.10	4.161e5					14.1	YES		bd		
3	FUNCTION1 PFK	27.77	1.577e4					1.3	NO		bb		
4	FUNCTION1 PFK	27.65	2.782e4					1.0	NO		bb		
5	FUNCTION1 PFK	27.59	3.765e3					0.5	NO		bb		
6	FUNCTION1 PFK	26.88	3.277e4					1.9	NO		bb		
7	FUNCTION1 PFK	26.61	1.084e4					0.8	NO		bb		
8	FUNCTION1 PFK	26.43	3.321e4					1.5	NO		bb		
9	FUNCTION1 PFK	24.39	2.236e4					1.2	NO		bb		
10	FUNCTION1 PFK	23.70	3.558e3					0.5	NO		bb		
11	FUNCTION1 PFK	23.51	1.171e4					0.9	NO		bb		
12	FUNCTION1 PFK	22.63	2.487e4					1.5	NO		bb		
13	FUNCTION1 PFK	22.39	4.003e4					1.9	NO		bb		

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.35	9.642e5					61.6	YES		dd		0.000
2	FUNCTION2 PFK	28.31	4.815e5					61.6	YES		dd		0.000
3	FUNCTION2 PFK	28.26	4.923e5					63.4	YES		dd		0.000
4	FUNCTION2 PFK	28.22	1.828e6					64.4	YES		bd		0.000
5	FUNCTION2 PFK	29.83	1.424e5					11.3	YES		dd		0.000
6	FUNCTION2 PFK	29.78	1.648e5					13.1	YES		dd		0.000
7	FUNCTION2 PFK	29.68	2.712e5					15.9	YES		dd		0.000
8	FUNCTION2 PFK	29.64	1.752e5					16.9	YES		dd		0.000
9	FUNCTION2 PFK	29.60	1.899e5					18.3	YES		dd		0.000
10	FUNCTION2 PFK	29.52	5.458e5					22.0	YES		dd		0.000
11	FUNCTION2 PFK	29.42	3.075e5					24.5	YES		dd		0.000
12	FUNCTION2 PFK	29.39	2.612e5					25.2	YES		dd		0.000
13	FUNCTION2 PFK	29.32	3.509e5					28.6	YES		dd		0.000
14	FUNCTION2 PFK	29.29	3.083e5					29.6	YES		dd		0.000
15	FUNCTION2 PFK	29.10	1.457e6					35.4	YES		dd		0.000
16	FUNCTION2 PFK	29.04	3.859e5					37.6	YES		dd		0.000
17	FUNCTION2 PFK	28.86	2.502e6					43.0	YES		dd		0.000
18	FUNCTION2 PFK	28.73	7.498e5					48.7	YES		dd		0.000
19	FUNCTION2 PFK	28.64	1.892e6					51.4	YES		dd		0.000
20	FUNCTION2 PFK	28.41	2.221e6					59.5	YES		dd		0.000
21	FUNCTION2 PFK	31.09	1.255e4					1.4	NO		dd		0.000
22	FUNCTION2 PFK	31.03	4.923e3					0.9	NO		bd		0.000
23	FUNCTION2 PFK	30.97	1.665e4					1.4	NO		db		0.000
24	FUNCTION2 PFK	30.90	4.677e3					0.5	NO		bd		0.000
25	FUNCTION2 PFK	30.87	7.155e2					0.3	NO		bb		0.000
26	FUNCTION2 PFK	30.81	7.509e3					1.3	NO		bb		0.000
27	FUNCTION2 PFK	30.77	4.659e3					1.0	NO		bb		0.000
28	FUNCTION2 PFK	30.71	1.542e4					1.1	NO		db		0.000
29	FUNCTION2 PFK	30.58	2.413e4					1.6	NO		dd		0.000
30	FUNCTION2 PFK	30.54	9.216e3					1.6	NO		bd		0.000
31	FUNCTION2 PFK	30.47	1.743e4					1.4	NO		db		0.000
32	FUNCTION2 PFK	30.41	8.731e3					0.9	NO		bd		0.000
33	FUNCTION2 PFK	30.34	5.589e3					1.0	NO		bb		0.000
34	FUNCTION2 PFK	30.23	8.384e3					1.0	NO		bb		0.000
35	FUNCTION2 PFK	29.91	2.350e5					8.7	YES		db		0.000
36	FUNCTION2 PFK	29.86	9.995e4					10.1	YES		dd		0.000
37	FUNCTION2 PFK	32.22	2.031e4					1.7	NO		dd		0.000

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	32.17	2.715e4					2.0	NO		bd		0.000
39	FUNCTION2 PFK	32.03	1.032e4					1.5	NO		db		0.000
40	FUNCTION2 PFK	32.00	8.277e3					1.4	NO		bd		0.000
41	FUNCTION2 PFK	31.91	1.709e4					1.0	NO		bb		0.000
42	FUNCTION2 PFK	31.81	2.409e3					0.5	NO		bb		0.000
43	FUNCTION2 PFK	31.77	2.988e3					0.6	NO		bb		0.000
44	FUNCTION2 PFK	31.63	1.201e4					2.2	NO		db		0.000
45	FUNCTION2 PFK	31.55	4.823e4					2.2	NO		dd		0.000
46	FUNCTION2 PFK	31.50	1.502e4					2.2	NO		dd		0.000
47	FUNCTION2 PFK	31.46	1.761e4					2.1	NO		dd		0.000
48	FUNCTION2 PFK	31.40	2.272e4					2.4	NO		bd		0.000
49	FUNCTION2 PFK	31.31	1.024e4					1.1	NO		bb		0.000
50	FUNCTION2 PFK	31.24	4.215e3					0.8	NO		db		0.000
51	FUNCTION2 PFK	31.20	1.496e3					0.4	NO		bd		0.000
52	FUNCTION2 PFK	31.16	1.788e4					1.6	NO		db		0.000
53	FUNCTION2 PFK	32.84	1.090e4					1.5	NO		db		0.000
54	FUNCTION2 PFK	32.79	1.110e4					1.5	NO		dd		0.000
55	FUNCTION2 PFK	32.75	3.557e3					0.6	NO		bd		0.000
56	FUNCTION2 PFK	32.58	3.507e3					0.8	NO		bb		0.000
57	FUNCTION2 PFK	32.53	6.439e3					0.9	NO		db		0.000
58	FUNCTION2 PFK	32.47	2.042e4					1.3	NO		bd		0.000
59	FUNCTION2 PFK	32.38	3.574e3					1.0	NO		db		0.000
60	FUNCTION2 PFK	32.33	2.133e4					1.8	NO		dd		0.000
61	FUNCTION2 PFK	32.28	8.820e3					1.1	NO		dd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.70	2.473e4					1.6	NO		bb		0.000
2	FUNCTION3 PFK	34.64	1.962e4					2.8	NO		db		0.000
3	FUNCTION3 PFK	34.60	2.019e4					2.6	NO		bd		0.000
4	FUNCTION3 PFK	33.42	2.498e3					0.8	NO		bb		0.000
5	FUNCTION3 PFK	33.37	2.719e3					0.9	NO		bb		0.000
6	FUNCTION3 PFK	33.14	5.478e4					2.5	NO		bb		0.000
7	FUNCTION3 PFK	37.53	7.433e3					1.4	NO		bb		0.000
8	FUNCTION3 PFK	37.40	1.530e4					1.8	NO		bb		0.000
9	FUNCTION3 PFK	37.33	2.275e4					2.4	NO		bb		0.000
10	FUNCTION3 PFK	37.08	9.460e3					1.5	NO		bb		0.000
11	FUNCTION3 PFK	36.87	2.108e3					0.7	NO		bb		0.000
12	FUNCTION3 PFK	36.30	2.327e3					0.8	NO		bb		0.000
13	FUNCTION3 PFK	35.45	6.595e3					1.2	NO		bb		0.000
14	FUNCTION3 PFK	35.39	9.967e3					1.6	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.52	8.916e2					0.3	NO		bb		
2	FUNCTION4 PFK	38.49	2.556e3					0.6	NO		bb		
3	FUNCTION4 PFK	38.33	1.265e4					1.3	NO		db		
4	FUNCTION4 PFK	38.24	3.064e4					1.7	NO		dd		
5	FUNCTION4 PFK	38.15	1.552e4					1.9	NO		bd		
6	FUNCTION4 PFK	38.03	5.023e3					1.0	NO		bb		
7	FUNCTION4 PFK	37.99	3.297e3					1.2	NO		bb		
8	FUNCTION4 PFK	39.58	1.204e4					1.9	NO		db		
9	FUNCTION4 PFK	39.52	1.096e4					1.2	NO		bd		
10	FUNCTION4 PFK	39.46	2.965e4					2.4	NO		db		
11	FUNCTION4 PFK	39.41	1.258e4					2.1	NO		dd		
12	FUNCTION4 PFK	39.37	2.510e4					1.7	NO		bd		
13	FUNCTION4 PFK	39.26	2.830e4					2.4	NO		db		
14	FUNCTION4 PFK	39.18	1.452e4					1.4	NO		bd		
15	FUNCTION4 PFK	39.12	5.823e3					0.9	NO		bb		
16	FUNCTION4 PFK	39.07	9.841e2					0.4	NO		bb		
17	FUNCTION4 PFK	38.96	1.042e3					0.4	NO		bb		
18	FUNCTION4 PFK	38.91	5.548e3					1.1	NO		bb		
19	FUNCTION4 PFK	38.77	7.364e3					1.3	NO		db		
20	FUNCTION4 PFK	38.73	1.874e4					1.4	NO		dd		
21	FUNCTION4 PFK	38.67	7.627e3					1.1	NO		bd		
22	FUNCTION4 PFK	38.61	3.138e3					0.6	NO		db		
23	FUNCTION4 PFK	38.57	6.760e3					1.2	NO		bd		
24	FUNCTION4 PFK	41.04	5.364e3					0.7	NO		bb		
25	FUNCTION4 PFK	40.96	8.841e3					1.2	NO		db		
26	FUNCTION4 PFK	40.93	9.028e3					1.1	NO		bd		
27	FUNCTION4 PFK	40.86	9.712e3					1.1	NO		bb		
28	FUNCTION4 PFK	40.79	6.640e3					1.0	NO		db		
29	FUNCTION4 PFK	40.75	5.861e3					1.1	NO		dd		
30	FUNCTION4 PFK	40.72	9.832e3					1.3	NO		bd		
31	FUNCTION4 PFK	40.64	9.083e3					1.0	NO		db		
32	FUNCTION4 PFK	40.61	2.414e3					0.6	NO		bd		
33	FUNCTION4 PFK	40.52	7.990e3					1.2	NO		db		
34	FUNCTION4 PFK	40.48	1.135e4					1.4	NO		bd		
35	FUNCTION4 PFK	40.11	4.842e3					0.7	NO		bb		
36	FUNCTION4 PFK	40.06	4.606e3					0.7	NO		bb		
37	FUNCTION4 PFK	39.97	2.623e4					1.6	NO		db		

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION4 PFK	39.87	1.349e4					1.4	NO		dd		
39	FUNCTION4 PFK	39.77	5.107e4					2.3	NO		bd		
40	FUNCTION4 PFK	42.71	2.138e4					1.8	NO		db		
41	FUNCTION4 PFK	42.63	4.220e4					1.8	NO		dd		
42	FUNCTION4 PFK	42.53	2.407e4					1.9	NO		dd		
43	FUNCTION4 PFK	42.48	9.610e3					1.3	NO		dd		
44	FUNCTION4 PFK	42.41	1.417e4					1.6	NO		dd		
45	FUNCTION4 PFK	42.37	1.726e4					2.3	NO		bd		
46	FUNCTION4 PFK	42.30	2.591e4					2.4	NO		db		
47	FUNCTION4 PFK	42.24	6.782e4					2.7	NO		dd		
48	FUNCTION4 PFK	42.12	1.000e4					1.2	NO		bd		
49	FUNCTION4 PFK	42.06	9.037e3					1.5	NO		bb		
50	FUNCTION4 PFK	41.96	6.012e2					0.2	NO		bb		
51	FUNCTION4 PFK	41.83	1.364e4					1.7	NO		bb		
52	FUNCTION4 PFK	41.69	1.920e4					1.6	NO		db		
53	FUNCTION4 PFK	41.61	6.103e3					0.9	NO		bd		
54	FUNCTION4 PFK	41.45	3.364e3					0.6	NO		bb		
55	FUNCTION4 PFK	41.24	3.995e4					2.0	NO		bb		
56	FUNCTION4 PFK	42.94	1.143e4					1.0	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.43	6.873e3					2.0	NO		bb		
2	FUNCTION5 PFK	45.18	4.785e3					1.4	NO		bb		
3	FUNCTION5 PFK	45.06	3.776e3					1.2	NO		bb		
4	FUNCTION5 PFK	43.18	2.653e6					40.2	YES		db		
5	FUNCTION5 PFK	43.11	1.034e6					42.5	YES		bd		

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.68	8.892e1					1.2	NO		bb		0.000
2	FUNCTION1 HXCD...	26.41	1.465e2					3.5	YES		bb		0.000
3	FUNCTION1 HXCD...	24.39	1.241e2					1.7	NO		bb		0.000
4	FUNCTION1 HXCD...	23.49	9.513e1					1.2	NO		bb		0.000
5	FUNCTION1 HXCD...	22.89	1.195e2					1.4	NO		bb		0.000
6	FUNCTION1 HXCD...	22.22	8.996e1					1.5	NO		bb		0.000
7	FUNCTION1 HXCD...	21.54	7.366e1					1.6	NO		bb		0.000
8	FUNCTION1 HXCD...	21.16	7.882e1					1.4	NO		bb		0.000
9	FUNCTION1 HXCD...	27.62	1.780e2					2.9	NO		db		0.000
10	FUNCTION1 HXCD...	27.51	8.985e1					2.9	NO		dd		0.000
11	FUNCTION1 HXCD...	27.48	1.653e2					3.8	YES		bd		0.000
12	FUNCTION1 HXCD...	27.09	1.586e2					3.0	NO		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	26.68	1.920e2					3.9	YES		bb		0.000
2	FUNCTION1 HPCD...	26.38	2.467e2					3.5	YES		db		0.000
3	FUNCTION1 HPCD...	26.32	1.222e2					3.1	YES		bd		0.000
4	FUNCTION1 HPCD...	26.14	1.271e2					2.4	NO		bb		0.000
5	FUNCTION1 HPCD...	25.56	1.476e2					3.4	YES		bb		0.000
6	FUNCTION1 HPCD...	25.31	8.482e1					1.7	NO		bb		0.000
7	FUNCTION1 HPCD...	24.37	8.654e1					1.5	NO		bb		0.000
8	FUNCTION1 HPCD...	22.95	1.048e2					2.2	NO		bb		0.000
9	FUNCTION1 HPCD...	22.16	8.359e1					1.9	NO		bb		0.000
10	FUNCTION1 HPCD...	21.29	9.525e1					1.7	NO		db		0.000
11	FUNCTION1 HPCD...	21.16	1.398e2					3.0	NO		bd		0.000
12	FUNCTION1 HPCD...	28.04	8.116e1					1.7	NO		bb		0.000
13	FUNCTION1 HPCD...	27.88	7.364e1					2.7	NO		bb		0.000
14	FUNCTION1 HPCD...	27.55	9.026e1					1.9	NO		db		0.000
15	FUNCTION1 HPCD...	27.47	8.503e1					2.5	NO		bd		0.000
16	FUNCTION1 HPCD...	27.14	3.256e2					3.5	YES		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.67	8.874e1					1.9	NO		db		0.000
2	FUNCTION2 HPCD...	32.59	2.884e2					4.0	YES		bd		0.000
3	FUNCTION2 HPCD...	31.66	1.665e2					2.6	NO		bb		0.000
4	FUNCTION2 HPCD...	31.18	5.522e2					5.7	YES		db		0.000
5	FUNCTION2 HPCD...	31.09	1.204e3					9.7	YES		dd		0.000
6	FUNCTION2 HPCD...	30.97	3.419e2					4.0	YES		bd		0.000
7	FUNCTION2 HPCD...	30.53	3.896e2					4.5	YES		bb		0.000
8	FUNCTION2 HPCD...	30.27	1.625e2					2.5	NO		bb		0.000

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ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	33.07	1.807e2					3.9	YES		bb		0.000
2	FUNCTION3 OCDPE	34.83	1.671e2					3.3	YES		dd		0.000
3	FUNCTION3 OCDPE	34.78	4.600e2					3.3	YES		dd		0.000
4	FUNCTION3 OCDPE	34.68	1.882e2					3.1	YES		dd		0.000
5	FUNCTION3 OCDPE	34.57	3.365e2					4.0	YES		dd		0.000
6	FUNCTION3 OCDPE	34.51	1.947e2					4.0	YES		bd		0.000
7	FUNCTION3 OCDPE	34.28	7.881e1					1.4	NO		db		0.000
8	FUNCTION3 OCDPE	34.18	1.023e2					1.5	NO		bd		0.000
9	FUNCTION3 OCDPE	33.92	9.563e1					1.4	NO		db		0.000
10	FUNCTION3 OCDPE	33.85	1.477e2					2.3	NO		dd		0.000
11	FUNCTION3 OCDPE	33.71	4.467e2					4.1	YES		dd		0.000
12	FUNCTION3 OCDPE	33.65	9.789e1					2.6	NO		dd		0.000
13	FUNCTION3 OCDPE	33.62	1.116e2					2.6	NO		dd		0.000
14	FUNCTION3 OCDPE	33.50	4.338e2					4.6	YES		dd		0.000
15	FUNCTION3 OCDPE	33.40	1.744e2					2.0	NO		dd		0.000
16	FUNCTION3 OCDPE	33.34	1.923e2					3.2	YES		dd		0.000
17	FUNCTION3 OCDPE	33.30	1.224e2					2.9	NO		bd		0.000
18	FUNCTION3 OCDPE	36.10	4.504e2					5.6	YES		dd		0.000
19	FUNCTION3 OCDPE	36.07	4.222e2					5.8	YES		dd		0.000
20	FUNCTION3 OCDPE	35.98	4.195e2					5.6	YES		dd		0.000
21	FUNCTION3 OCDPE	35.91	5.632e2					6.2	YES		dd		0.000
22	FUNCTION3 OCDPE	35.85	2.902e2					4.1	YES		dd		0.000
23	FUNCTION3 OCDPE	35.77	1.744e2					4.2	YES		dd		0.000
24	FUNCTION3 OCDPE	35.74	3.133e2					4.0	YES		bd		0.000
25	FUNCTION3 OCDPE	35.63	2.289e2					3.3	YES		db		0.000
26	FUNCTION3 OCDPE	35.54	2.630e2					4.6	YES		dd		0.000
27	FUNCTION3 OCDPE	35.50	1.277e2					3.6	YES		dd		0.000
28	FUNCTION3 OCDPE	35.45	2.266e2					4.0	YES		dd		0.000
29	FUNCTION3 OCDPE	35.37	1.786e2					2.7	NO		dd		0.000
30	FUNCTION3 OCDPE	35.28	1.234e2					1.8	NO		bd		0.000
31	FUNCTION3 OCDPE	34.98	9.995e1					2.5	NO		db		0.000
32	FUNCTION3 OCDPE	34.97	8.420e1					2.4	NO		dd		0.000
33	FUNCTION3 OCDPE	34.89	1.954e2					3.0	YES		dd		0.000
34	FUNCTION3 OCDPE	36.77	7.449e1					1.8	NO		bb		0.000
35	FUNCTION3 OCDPE	36.47	1.527e2					2.9	NO		db		0.000
36	FUNCTION3 OCDPE	36.40	1.245e2					2.1	NO		bd		0.000
37	FUNCTION3 OCDPE	36.24	7.007e2					4.6	YES		db		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.90	1.255e2					4.2	YES		bb		0.000
2	FUNCTION4 NCDPE	38.78	2.763e2					6.3	YES		db		0.000
3	FUNCTION4 NCDPE	38.73	2.124e2					6.4	YES		dd		0.000
4	FUNCTION4 NCDPE	38.70	1.964e2					6.1	YES		dd		0.000
5	FUNCTION4 NCDPE	38.64	1.710e2					5.7	YES		dd		0.000
6	FUNCTION4 NCDPE	38.60	1.146e2					4.9	YES		dd		0.000
7	FUNCTION4 NCDPE	38.54	2.740e2					5.4	YES		dd		0.000
8	FUNCTION4 NCDPE	38.50	3.229e2					5.1	YES		dd		0.000
9	FUNCTION4 NCDPE	38.39	2.555e2					5.5	YES		dd		0.000
10	FUNCTION4 NCDPE	38.34	1.388e2					4.4	YES		dd		0.000
11	FUNCTION4 NCDPE	38.20	1.990e2					2.5	NO		bd		0.000
12	FUNCTION4 NCDPE	40.47	7.380e1					2.5	NO		bb		0.000
13	FUNCTION4 NCDPE	39.20	1.105e2					2.1	NO		db		0.000
14	FUNCTION4 NCDPE	39.13	1.633e2					3.8	YES		dd		0.000
15	FUNCTION4 NCDPE	39.06	1.434e2					4.1	YES		bd		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.83	1.733e2					4.7	YES		bb		0.000
2	FUNCTION5 DCDPE	45.68	3.311e2					6.3	YES		bb		0.000

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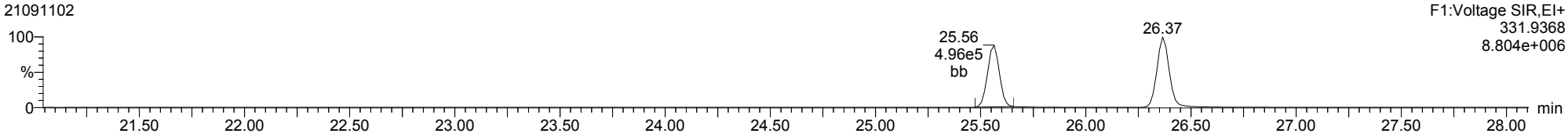

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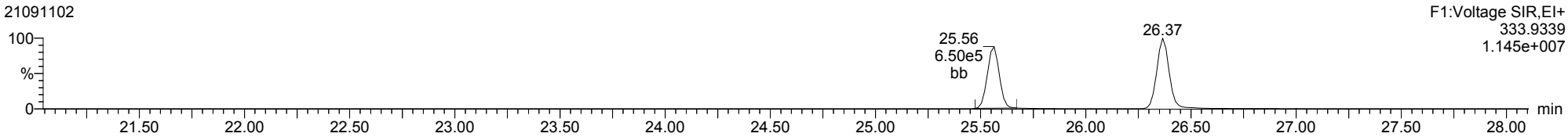

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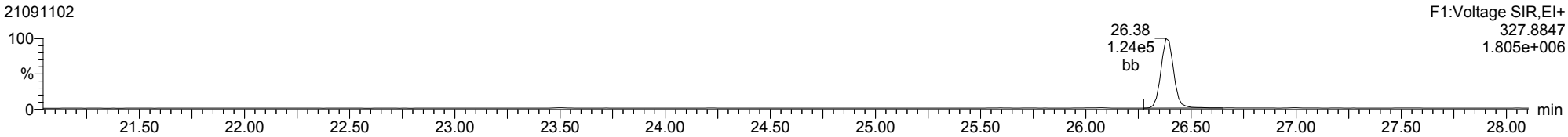

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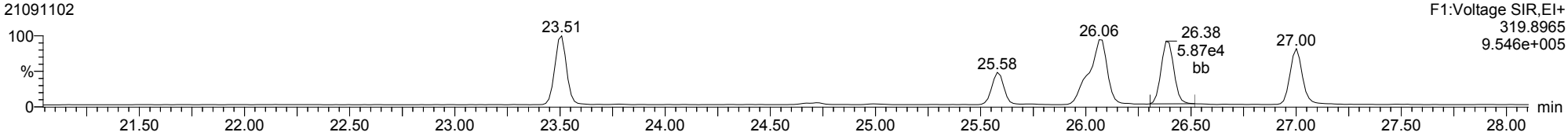

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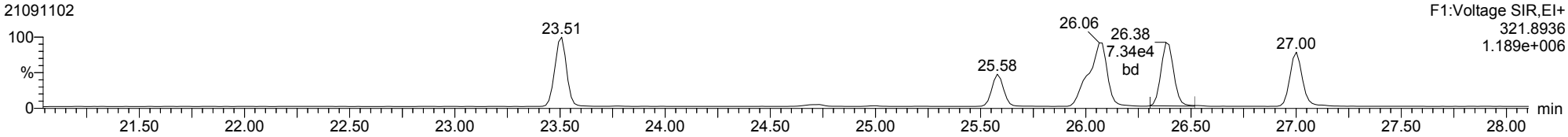

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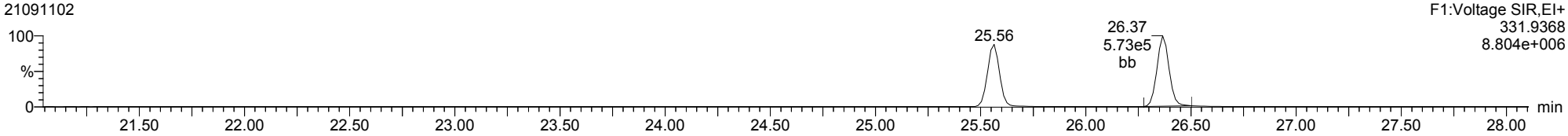

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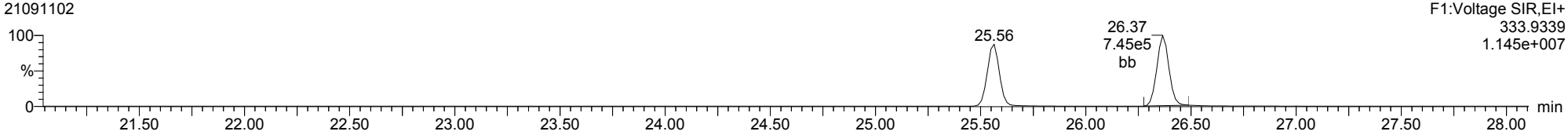

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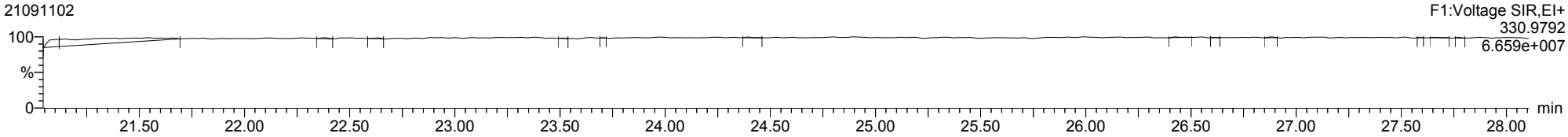

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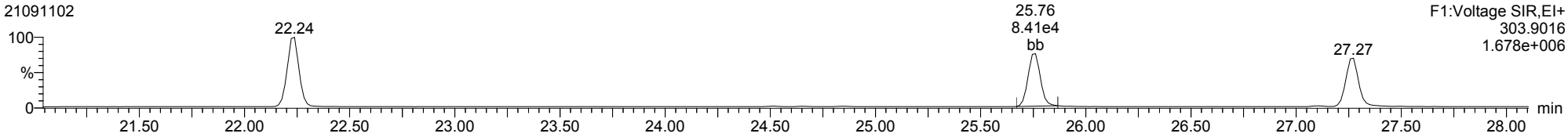

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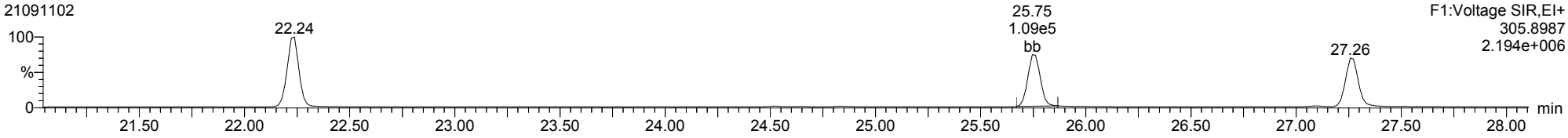

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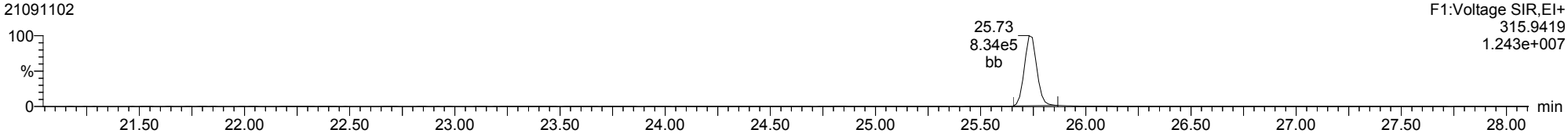

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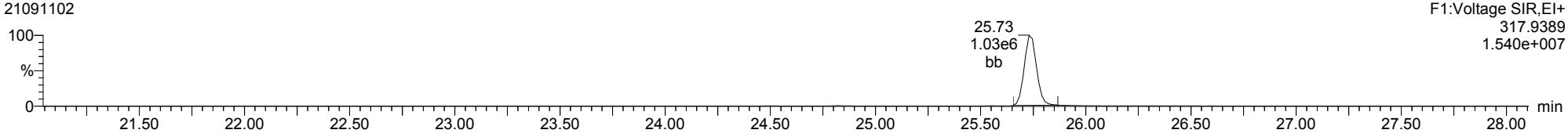

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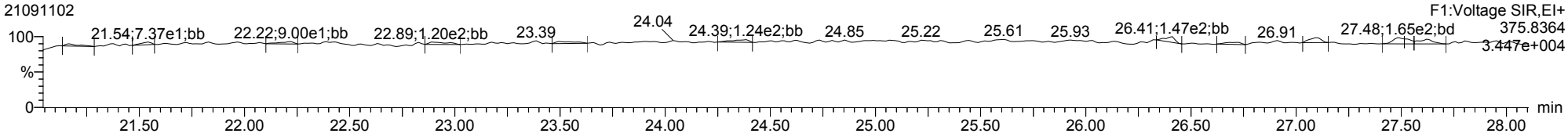

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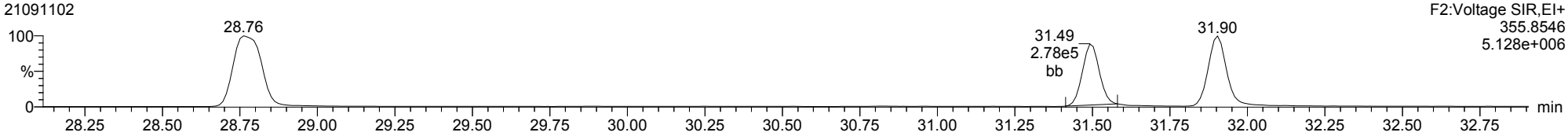

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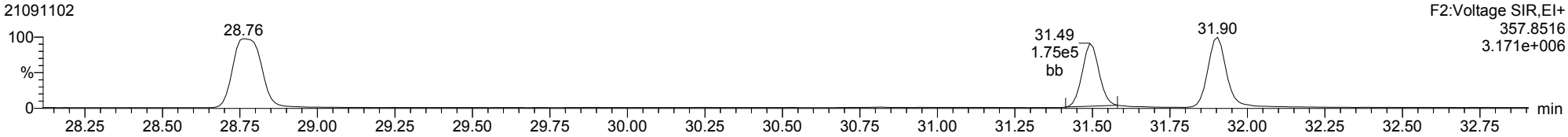

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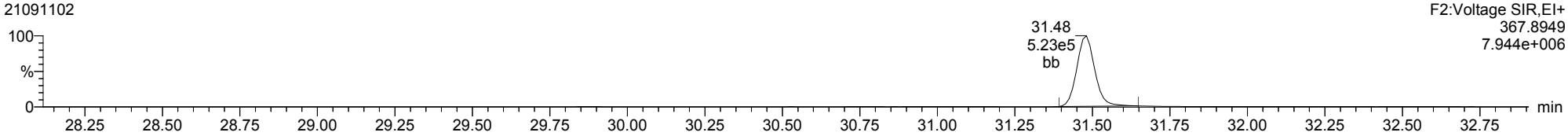

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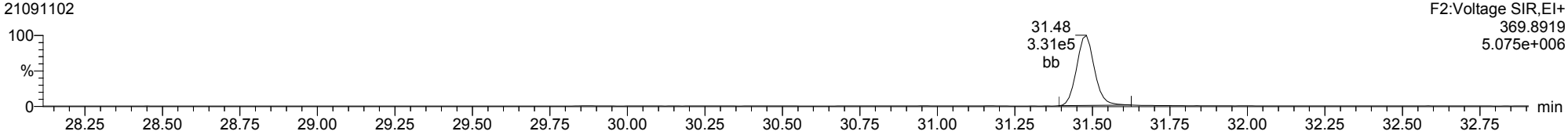

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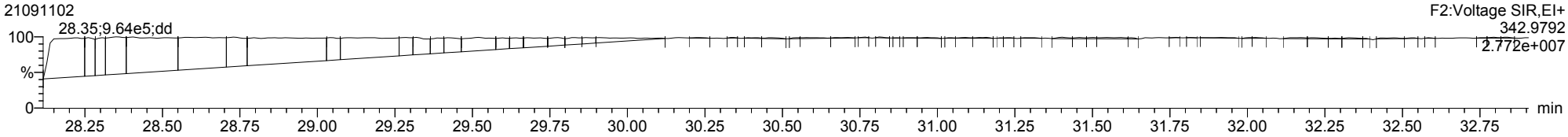

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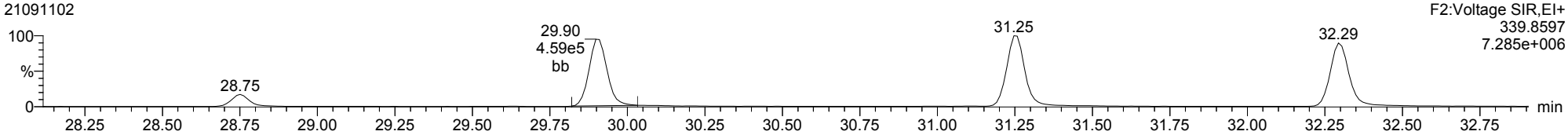

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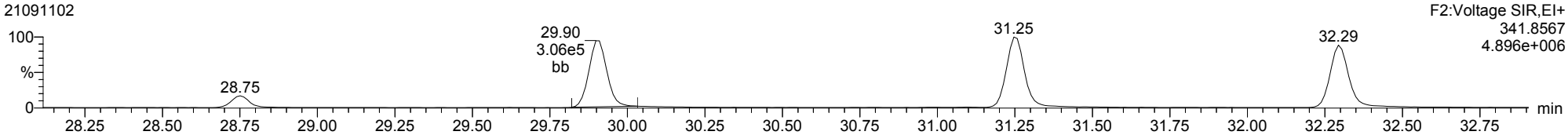

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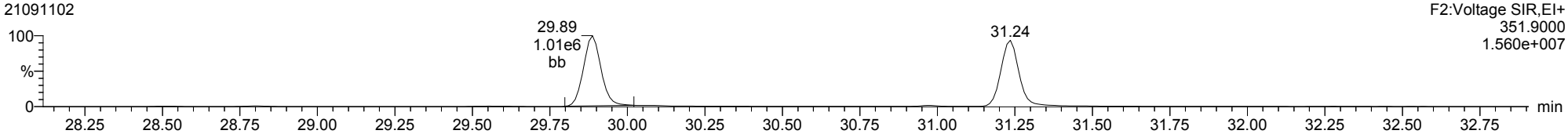

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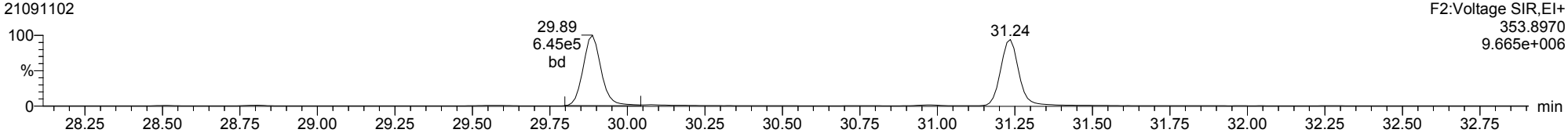

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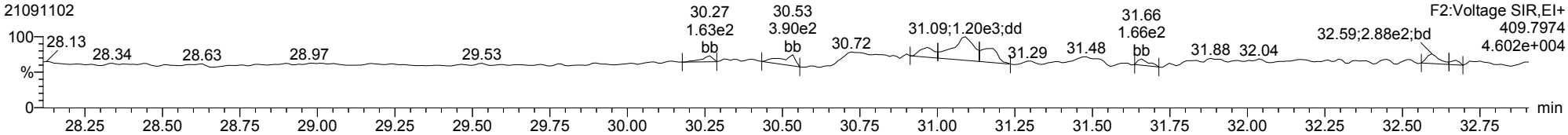

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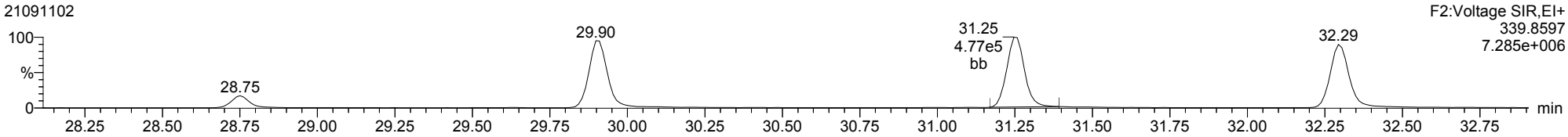
23478-PeCDF



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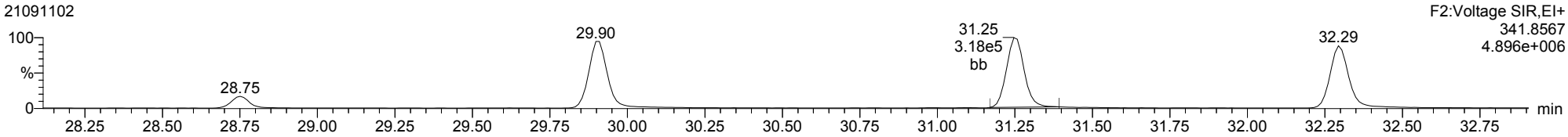

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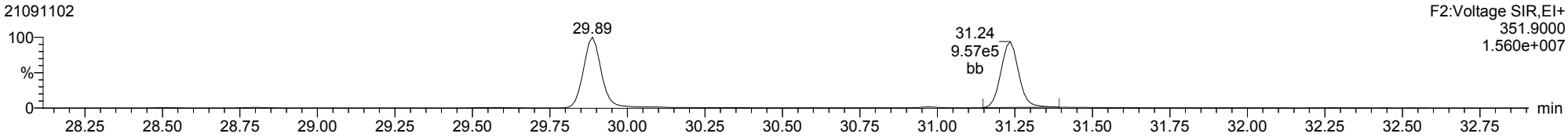

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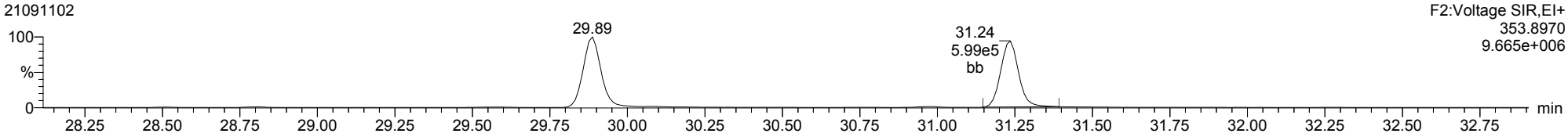

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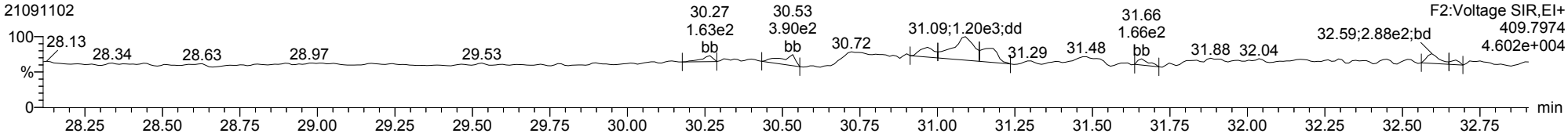

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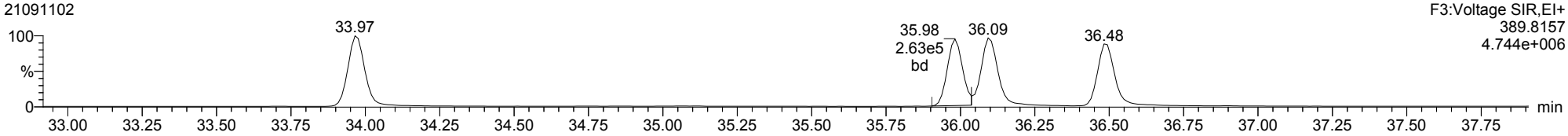
123478-HxCDD



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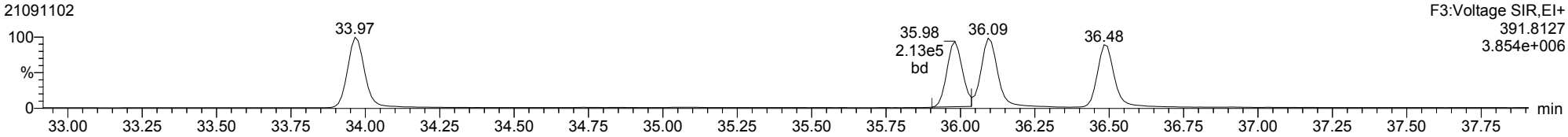

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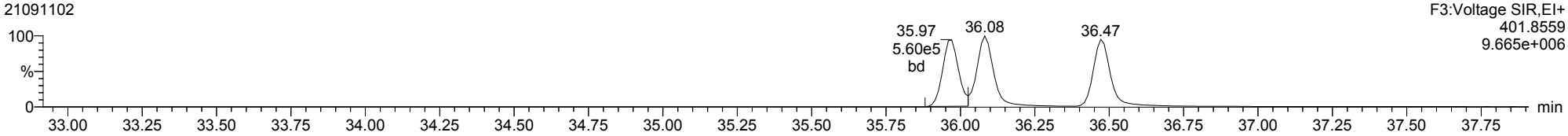

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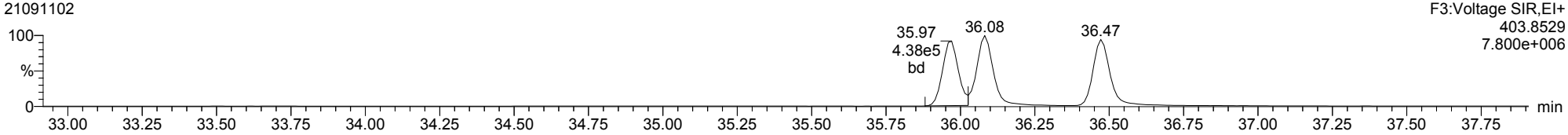

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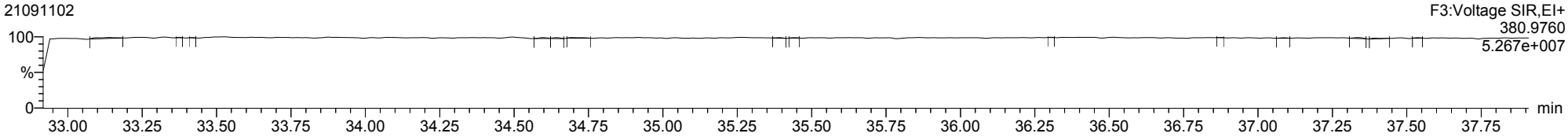

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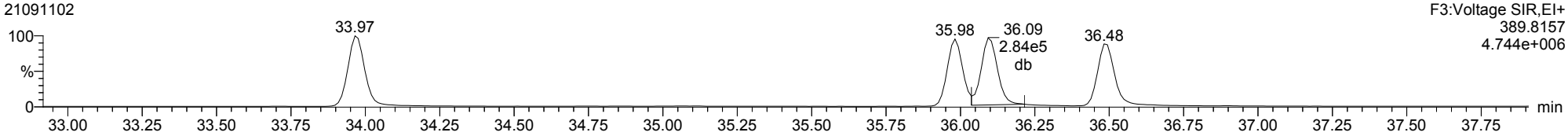

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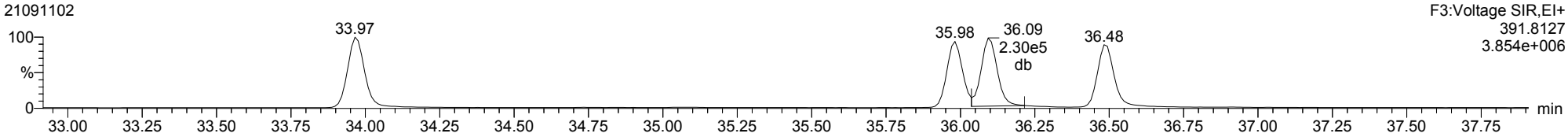

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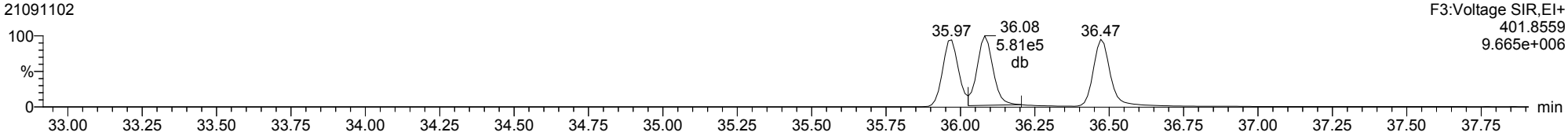

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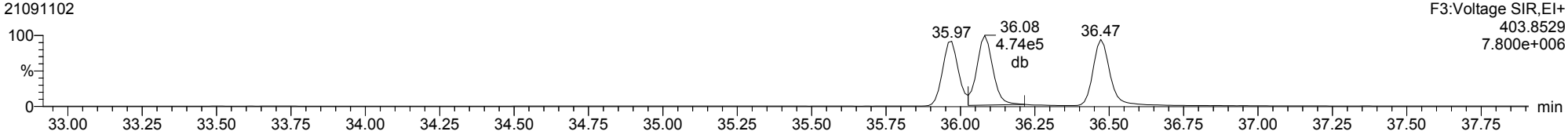

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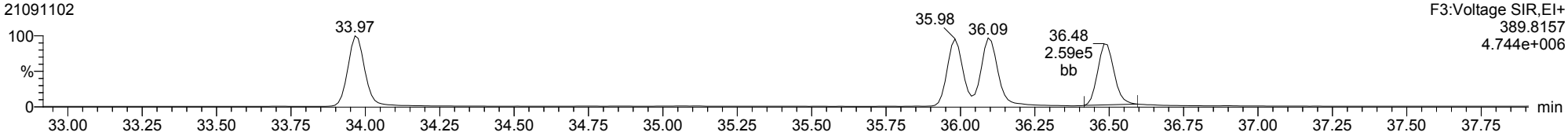

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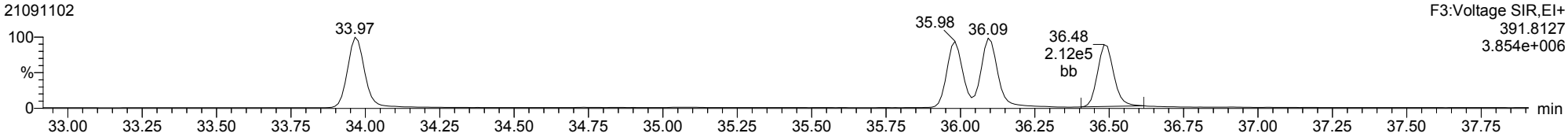

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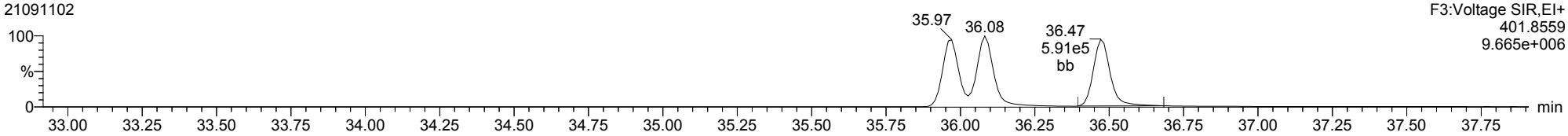

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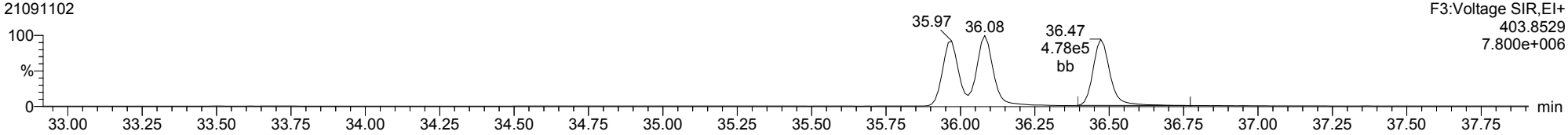

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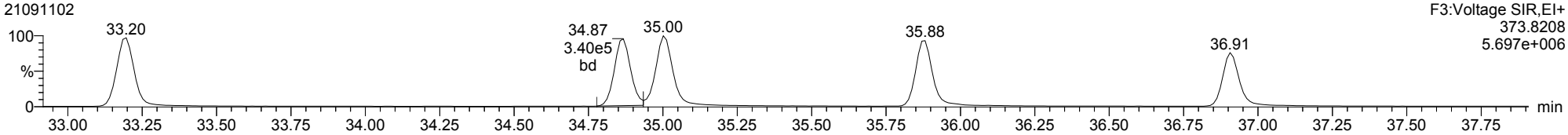

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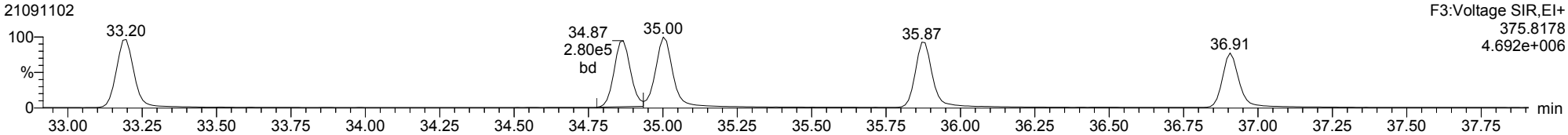

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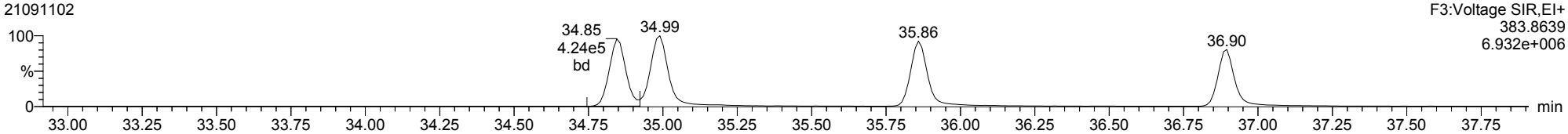

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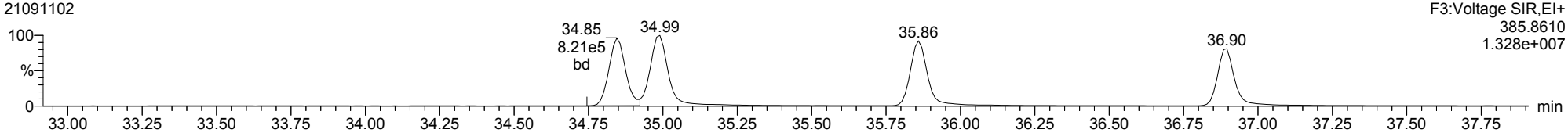

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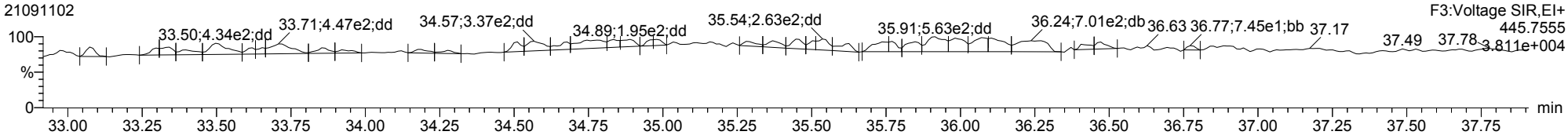

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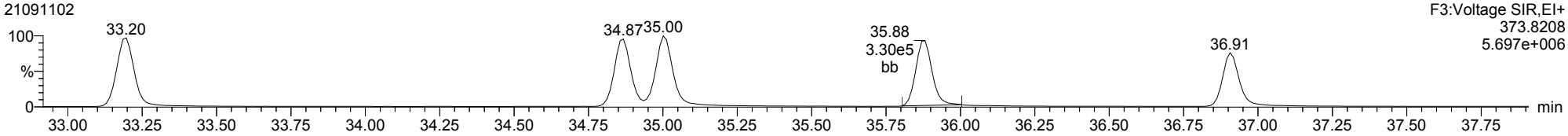

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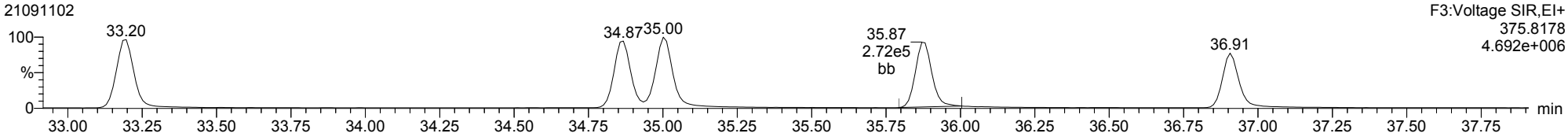

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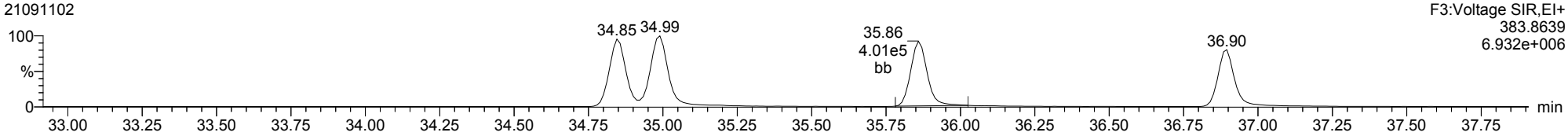

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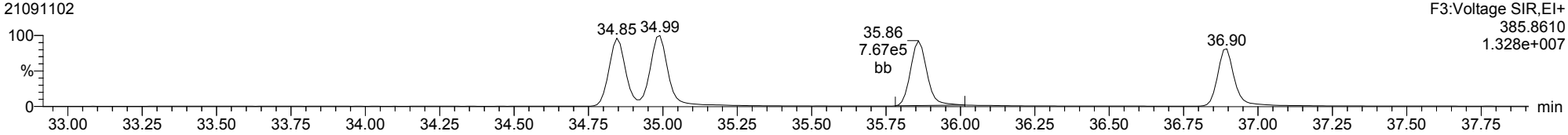

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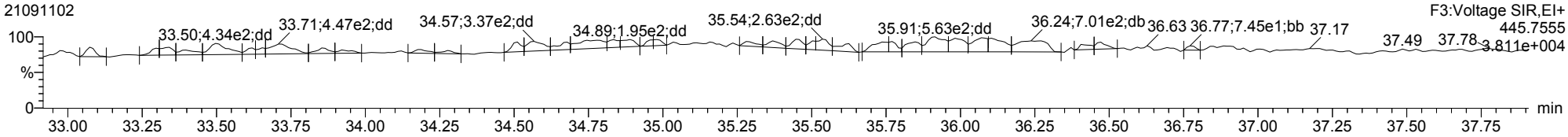

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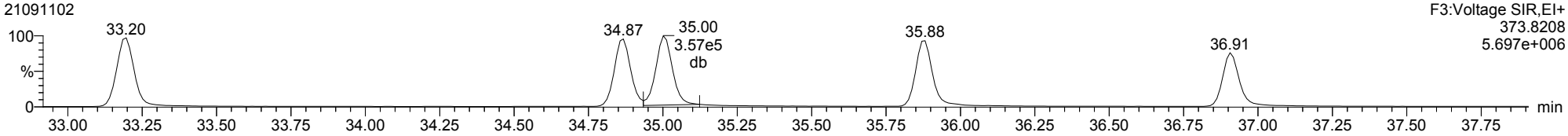

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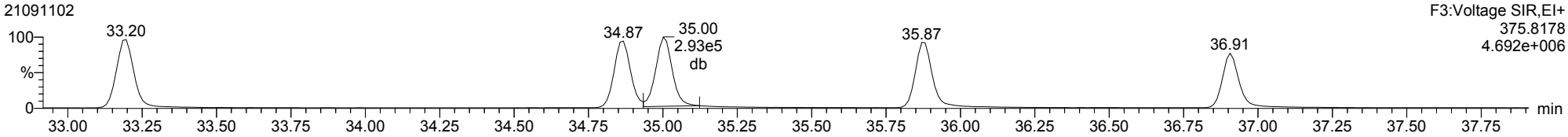

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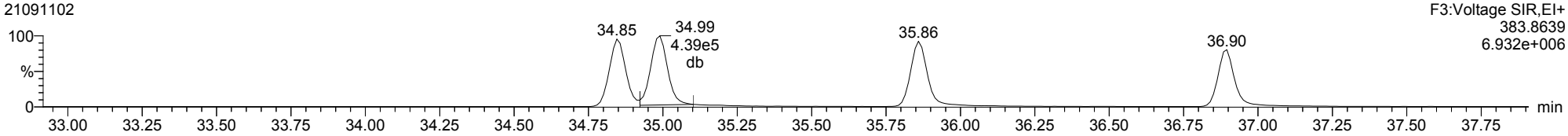

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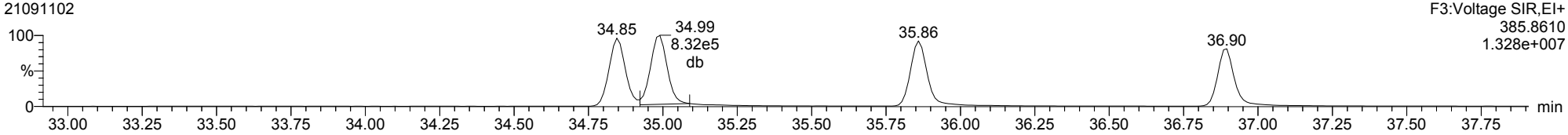

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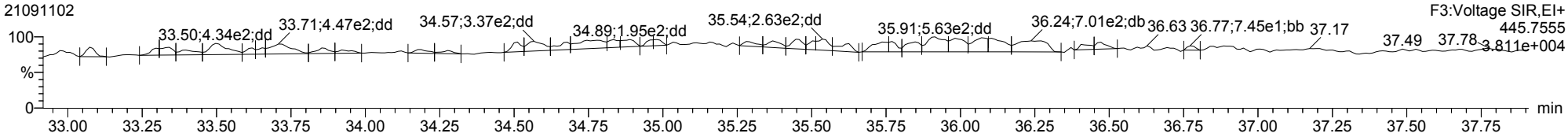

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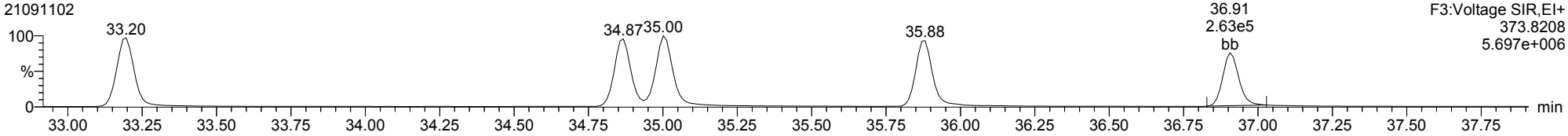

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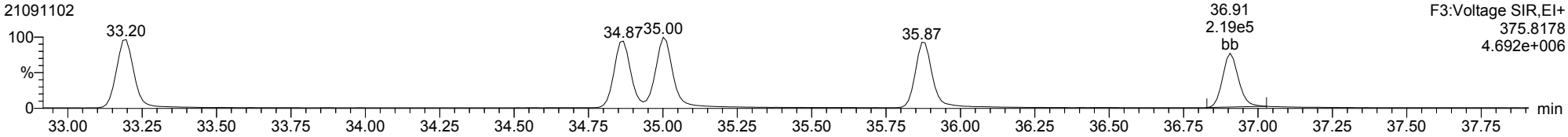

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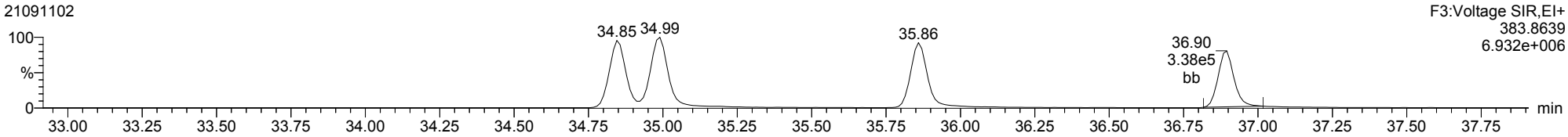

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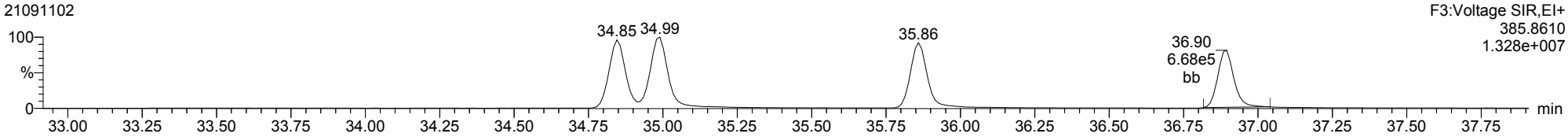
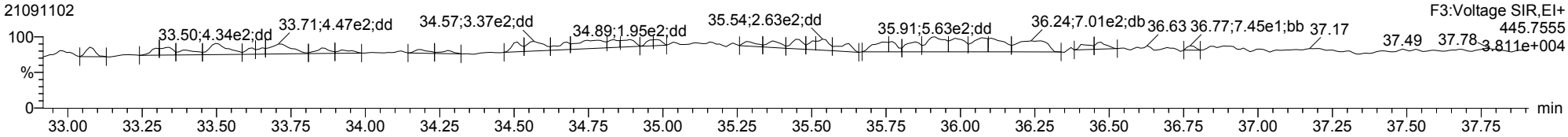


FUNCTION3 OCDPE



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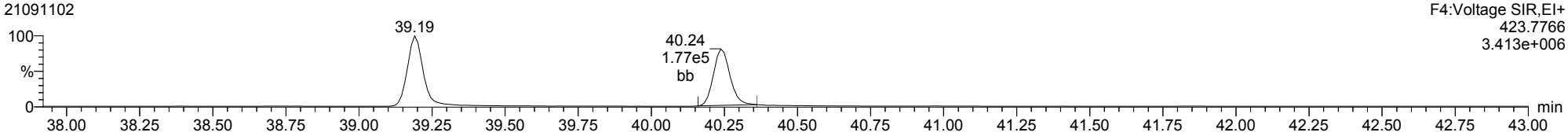

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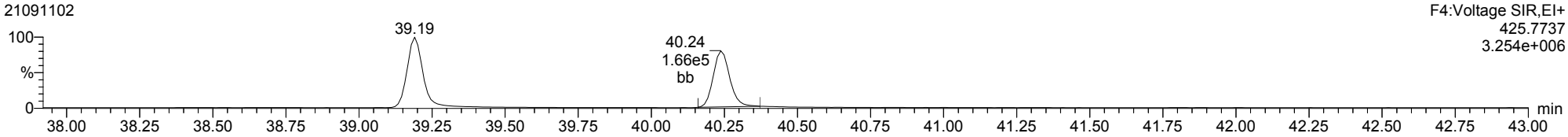

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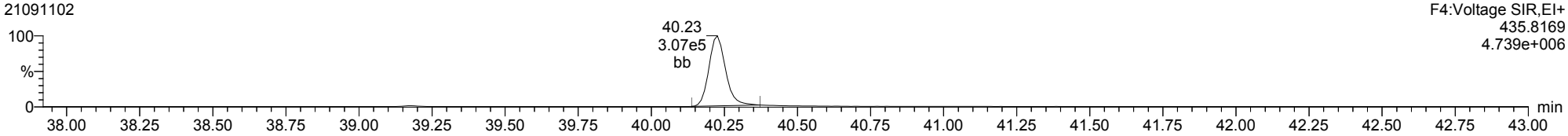

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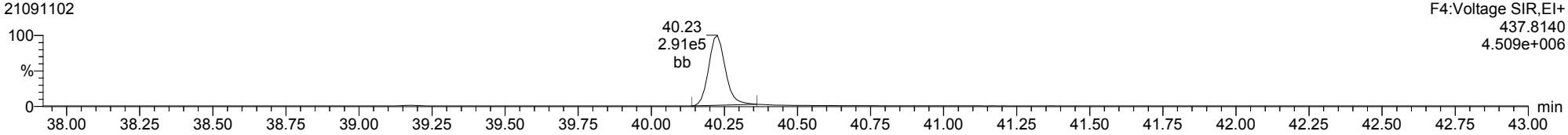
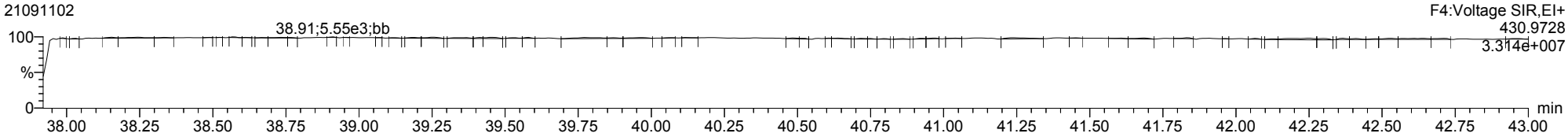


FUNCTION4 PFK



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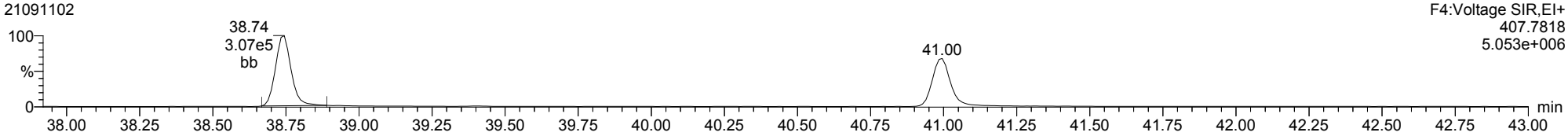

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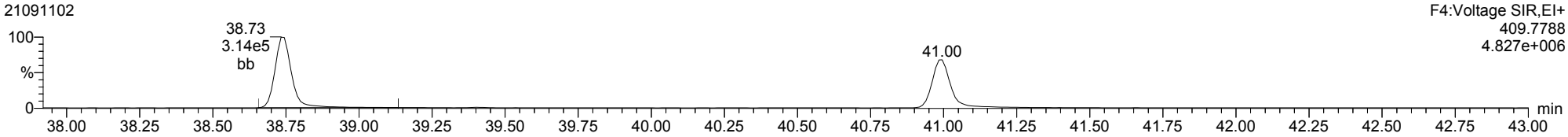

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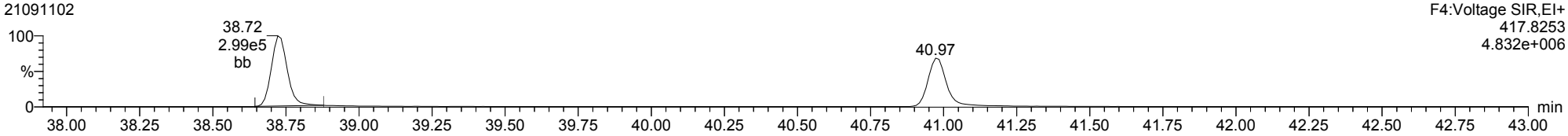

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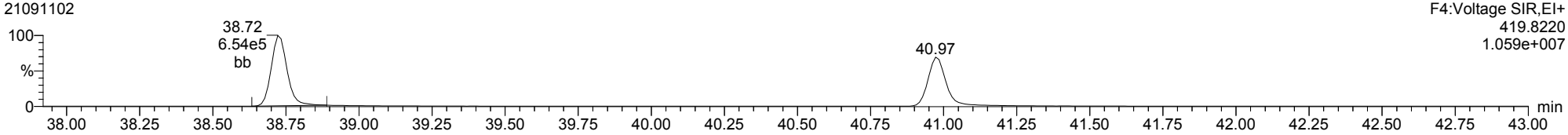
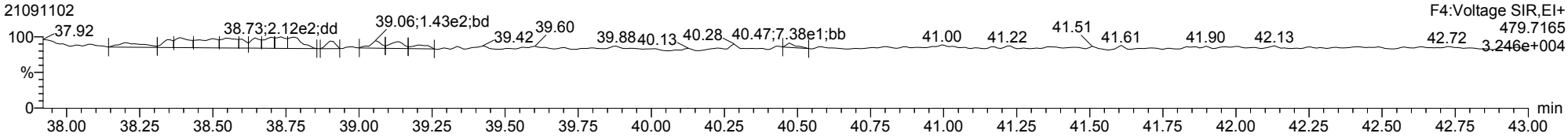


FUNCTION4 NCDPE



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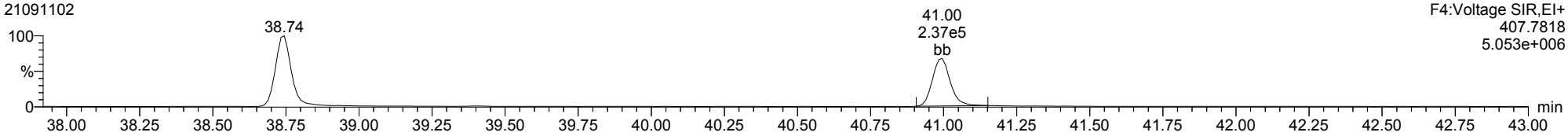

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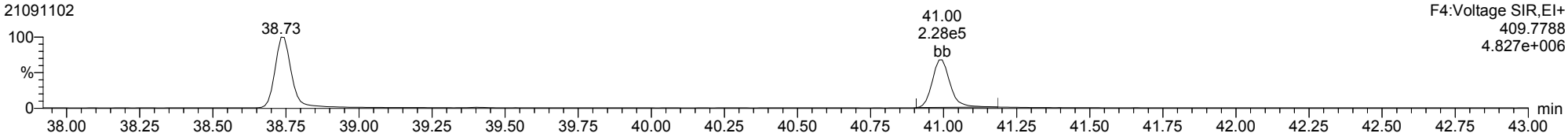

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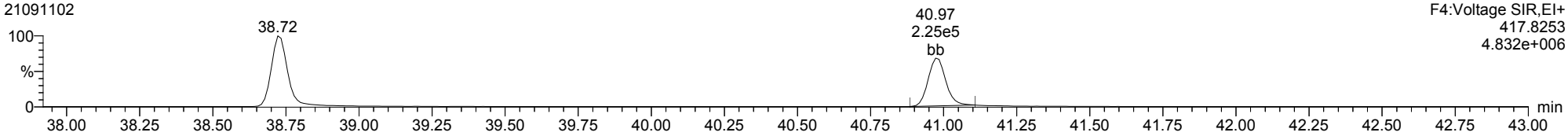

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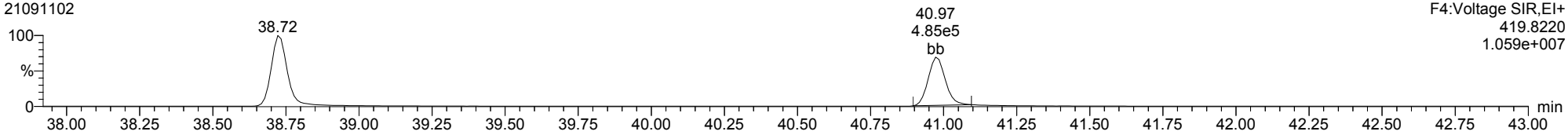
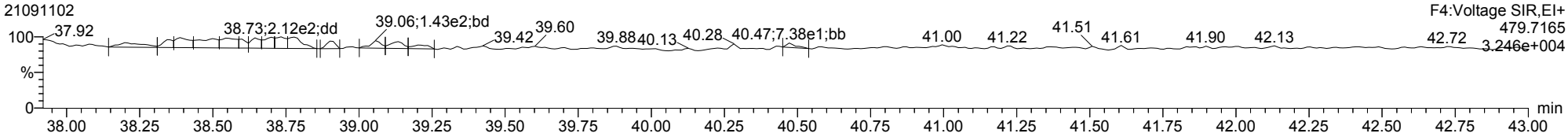


FUNCTION4 NCDPE



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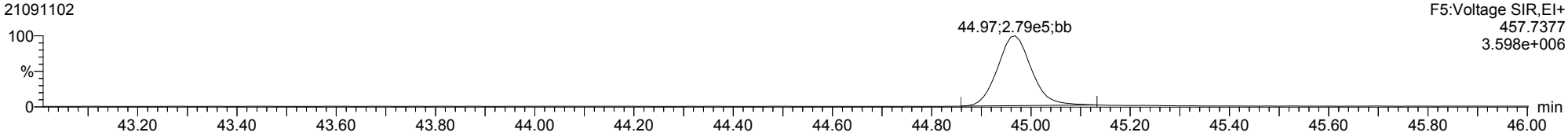

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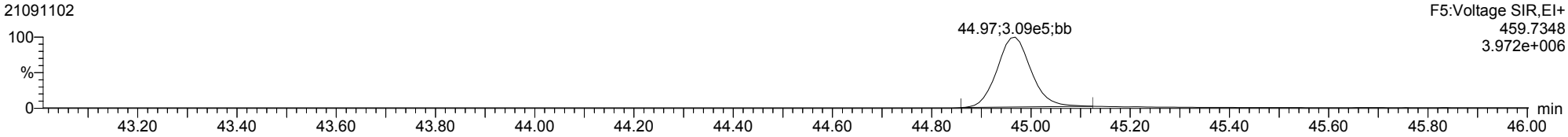

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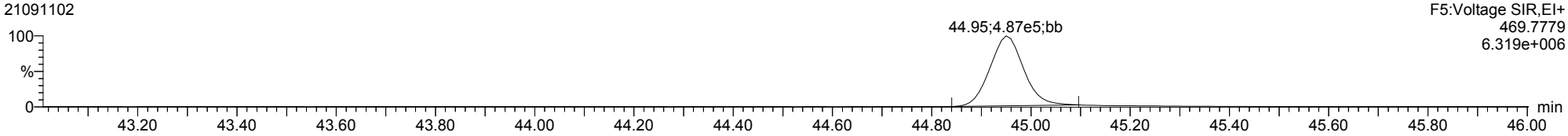

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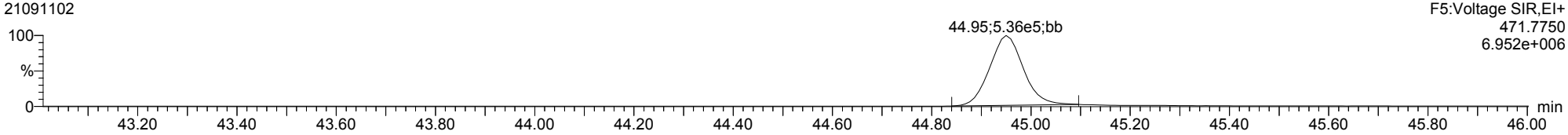

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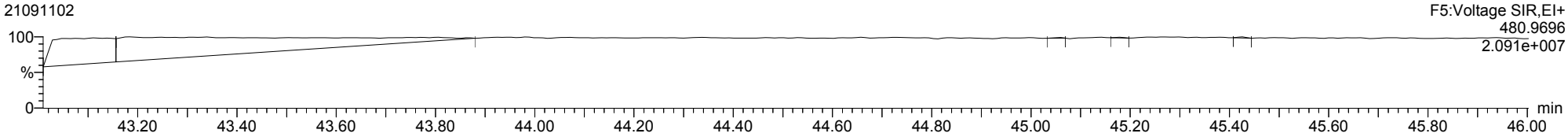

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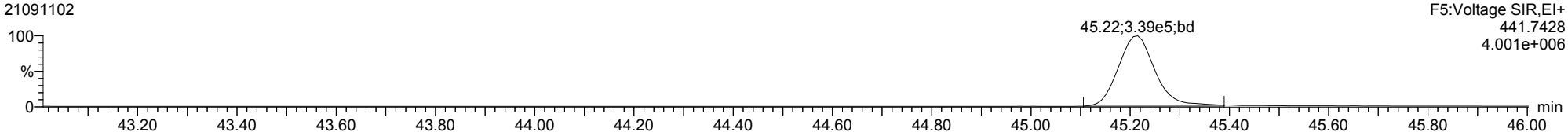

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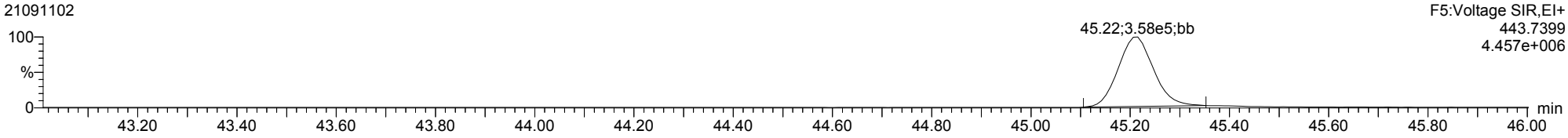

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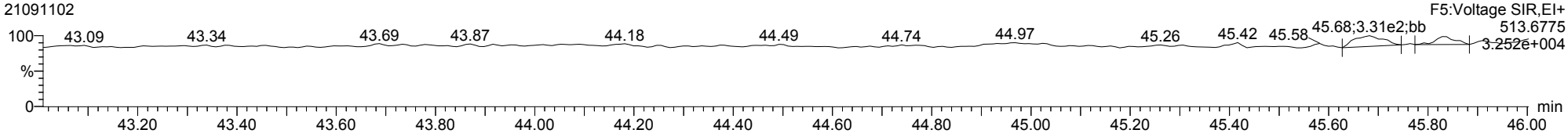

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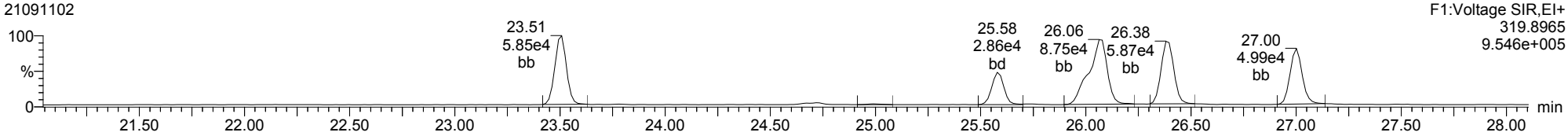

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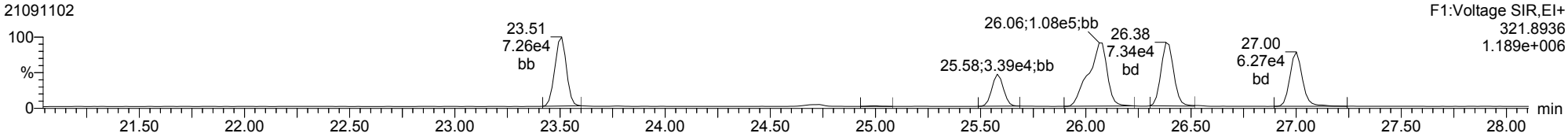

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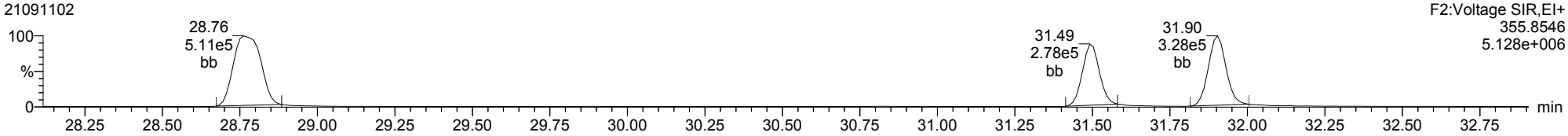

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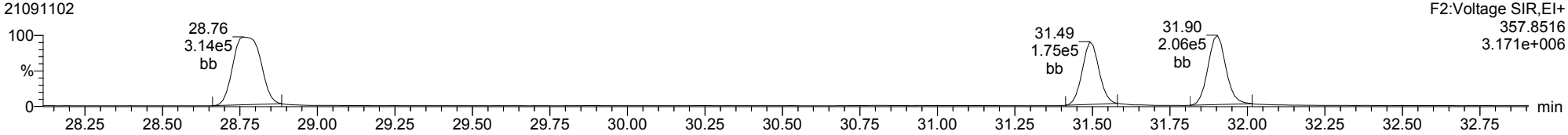

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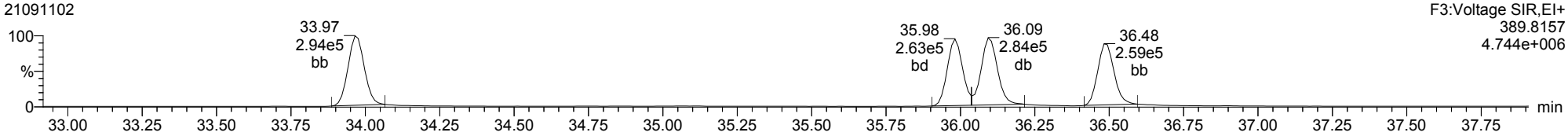

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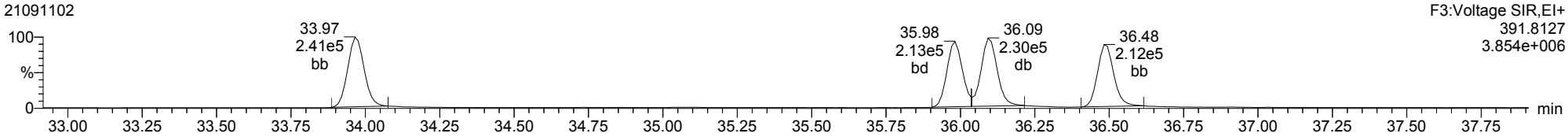

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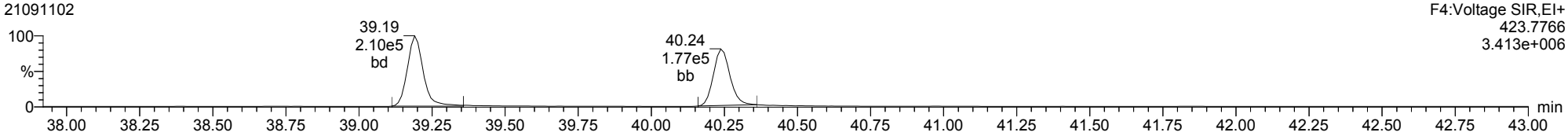

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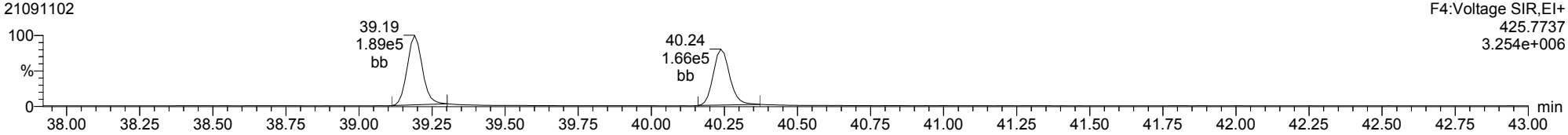

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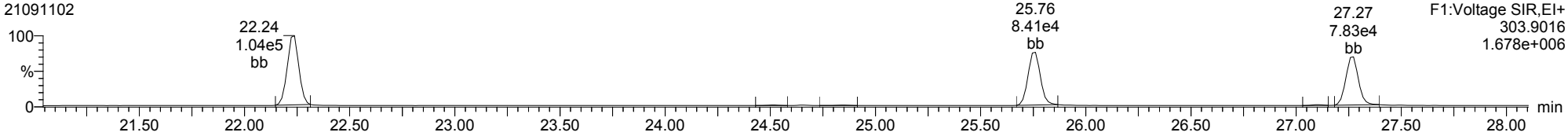
Printed: Wednesday, September 15, 2021 11:20:43 Pacific Daylight Time

ID: CS3P6, Name: 21091102, Date: 11-Sep-2021, Time: 11:21:46, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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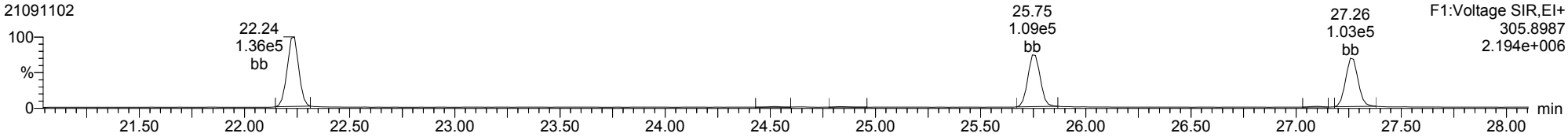

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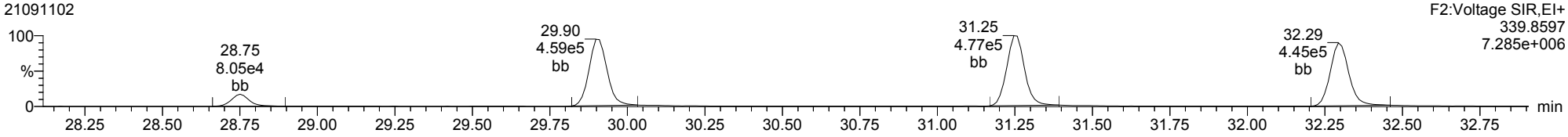

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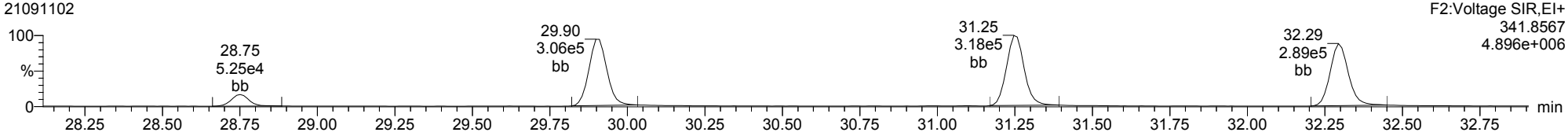

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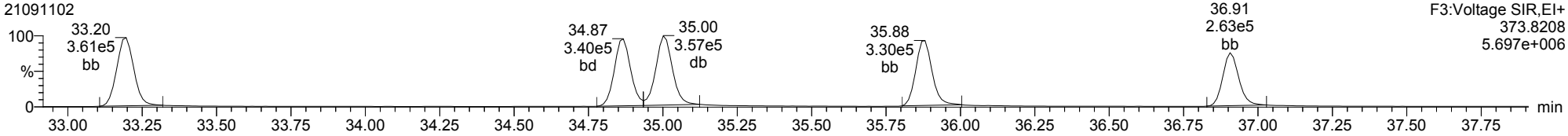
Total-hexafurans



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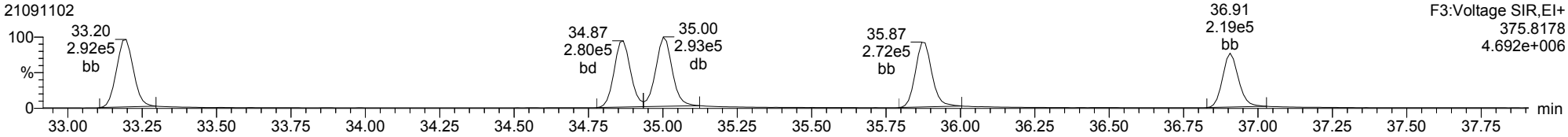

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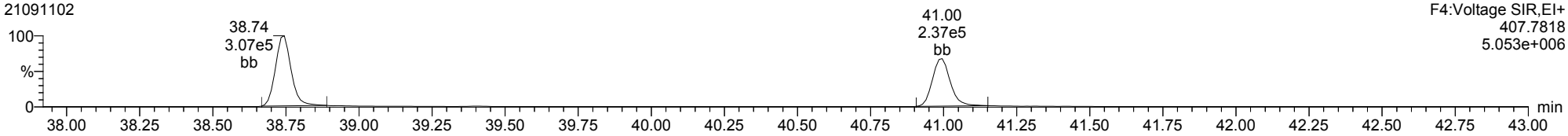

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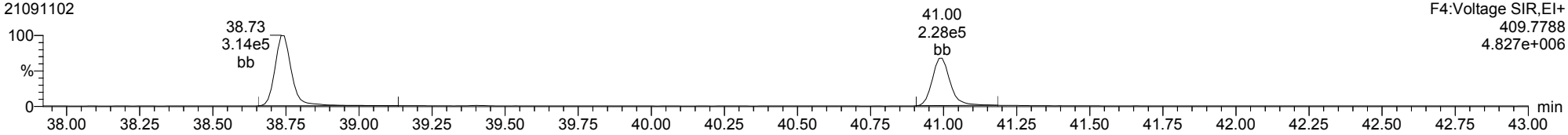

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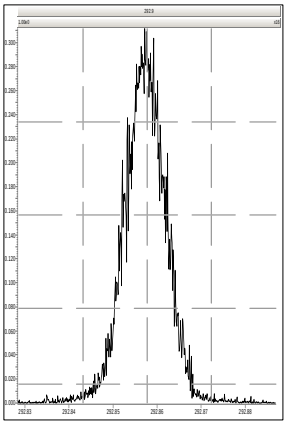

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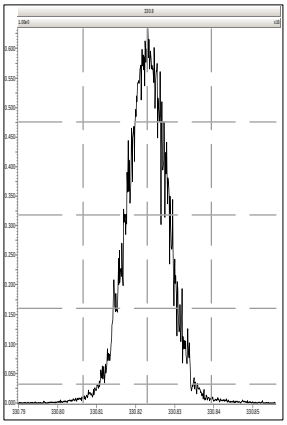

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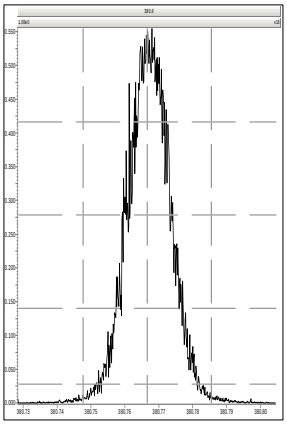

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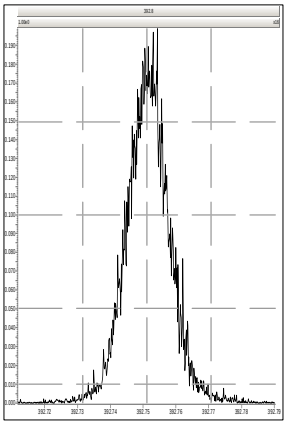

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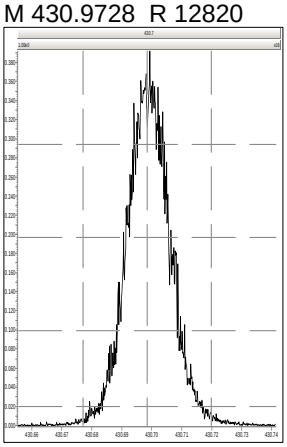

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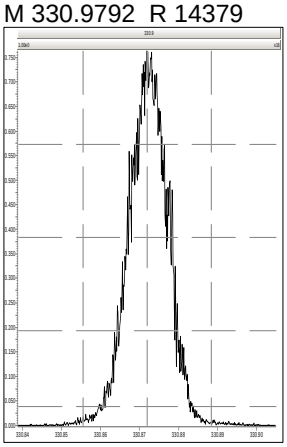

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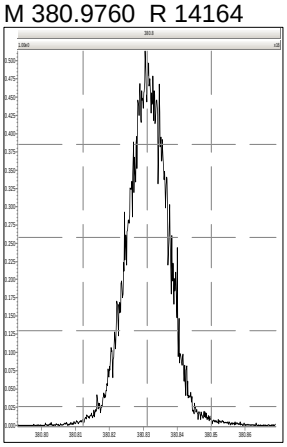

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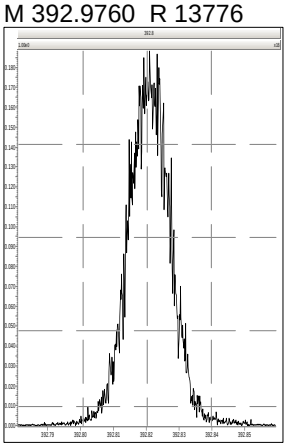

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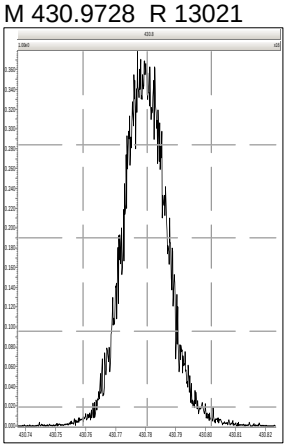

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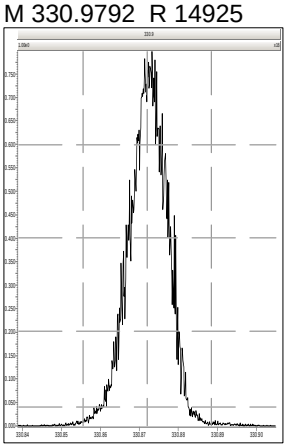

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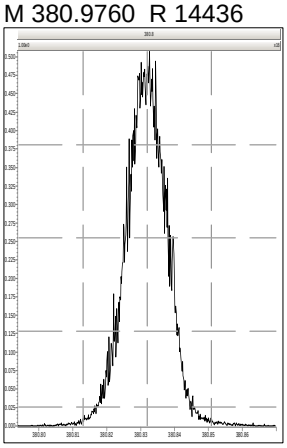

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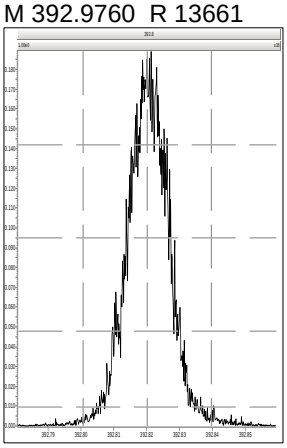

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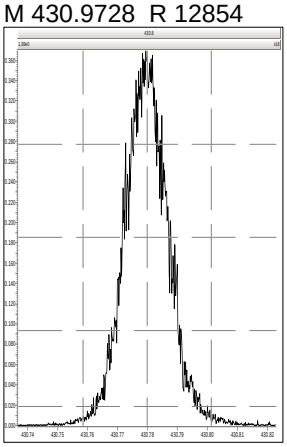

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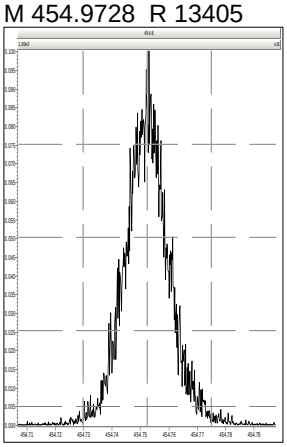

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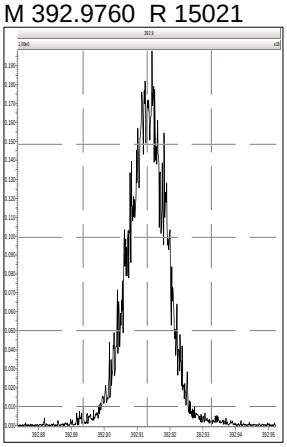

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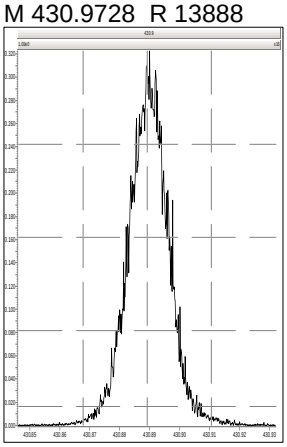

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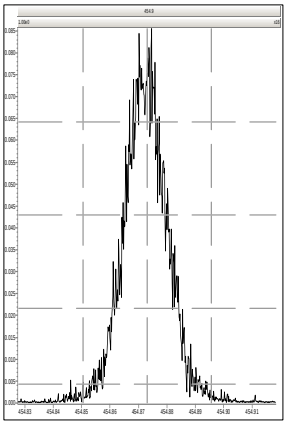

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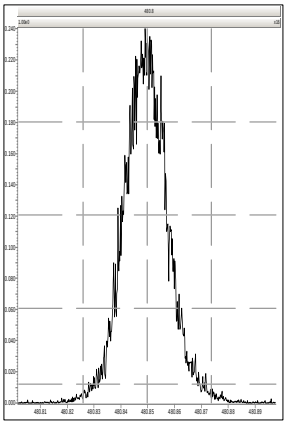

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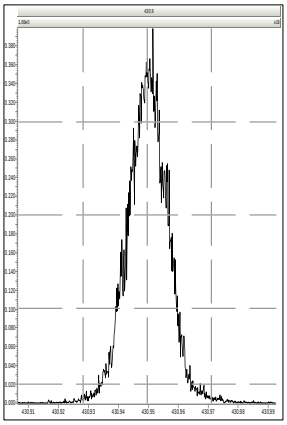

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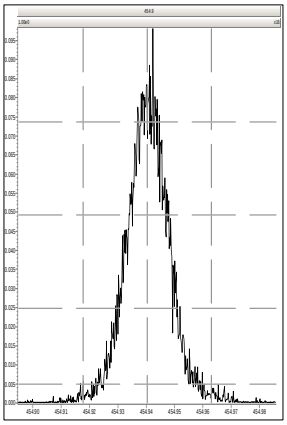

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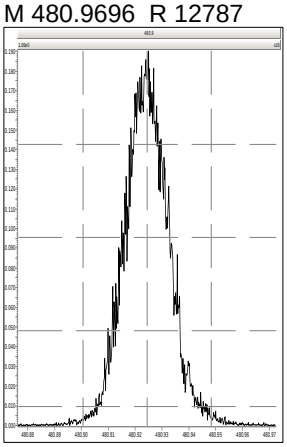

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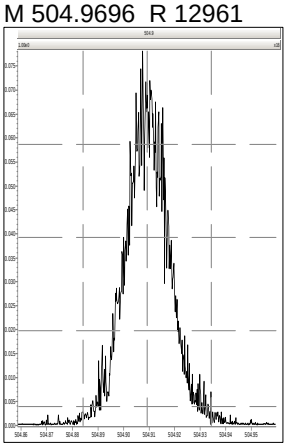

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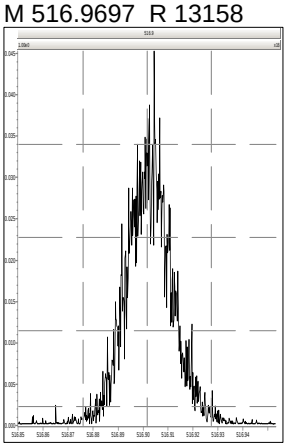

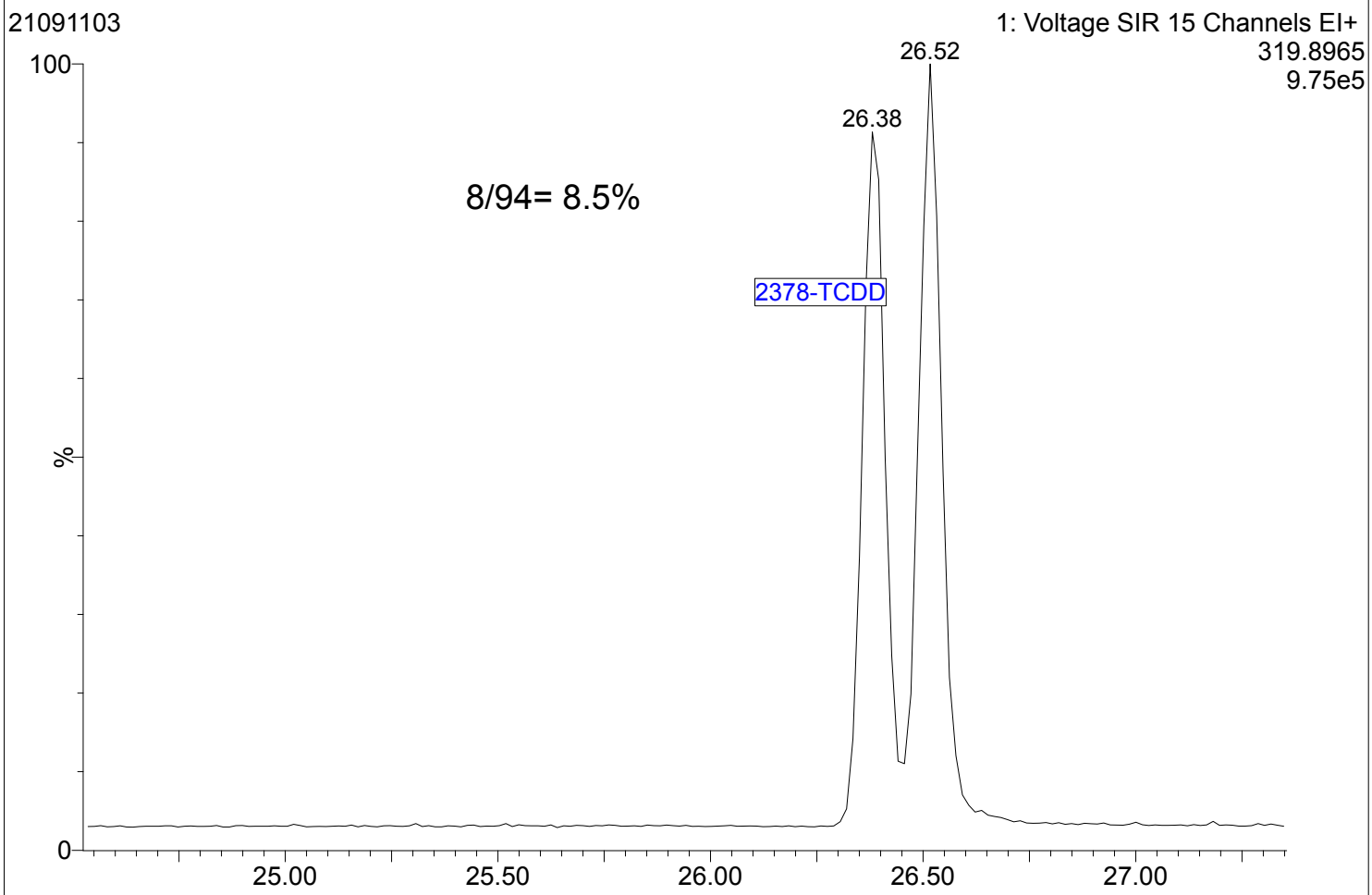
21091103
1: Voltage SIR 15 Channels EI+
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8/94= 8.5%
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%
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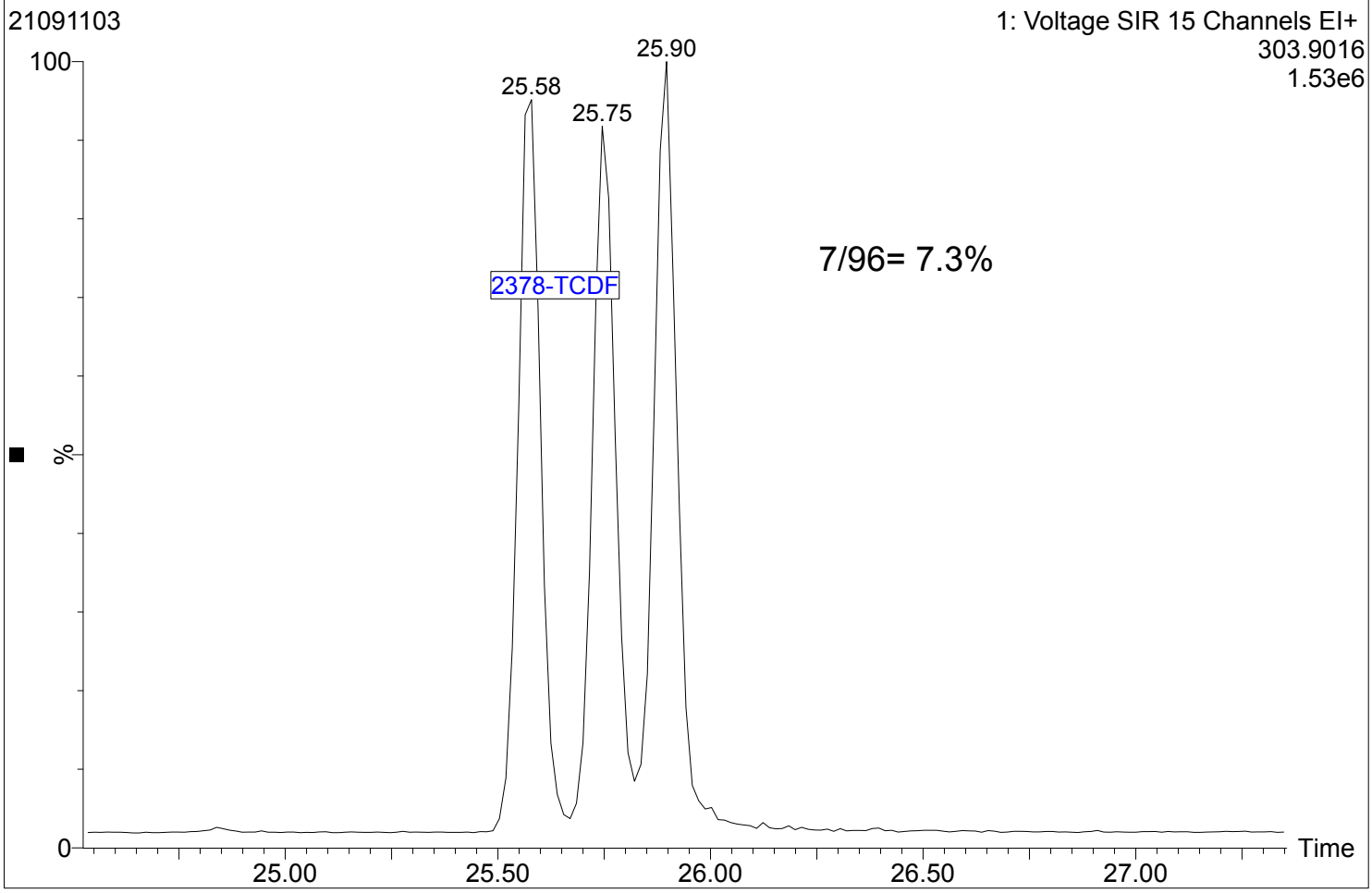
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25.75
7/96= 7.3%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091306A	Calibration Date:	08/11/2021
Sequence:	SJI0191	Injection Date:	09/13/21
Lab Sample ID:	SJI0191-ICV1	Injection Time:	15:52
Sequence Name:	CS3Q2		

		CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2,3,7,8-TCDF	A	10.000	9.27	1.1075930	1.0264200		-7.3	+/-16
2,3,7,8-TCDD	A	10.000	10.6	0.9202875	0.9745721		5.9	+/-22
1,2,3,7,8-PeCDF	A	50.000	47.7	1.0148670	0.9686948		-4.5	+/-18
2,3,4,7,8-PeCDF	A	50.000	46.6	1.1255490	1.0494090		-6.8	+/-18
1,2,3,7,8-PeCDD	A	50.000	55.4	0.9953229	1.1035200		10.9	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	47.7	1.0168930	0.9711044		-4.5	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	46.6	1.0368310	0.9661829		-6.8	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	45.8	1.0524660	0.9642035		-8.4	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	46.3	1.0301540	0.9541644		-7.4	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	47.5	1.0273630	0.9764935		-5.0	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	47.5	1.0089800	0.9577704		-5.1	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	49.2	0.9504865	0.9351520		-1.6	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	48.8	1.3273500	1.2956960		-2.4	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.6	1.2833380	1.2733630		-0.8	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	54.2	1.0680880	1.1580630		8.4	+/-14
OCDF	A	100.00	92.3	1.4469010	1.3356040		-7.7	+/-37
OCDD	A	100.00	94.1	1.1808230	1.1111570		-5.9	+/-21
13C12-2,3,7,8-TCDF	A	100.00	121	1.4265830	1.7268170		21.0	+/-29
13C12-2,3,7,8-TCDD	A	100.00	105	1.1164910	1.1731821		5.1	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	117	1.2973130	1.5120370		16.6	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	118	1.2364800	1.4601225		18.1	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	106	0.7319833	0.7790282		6.4	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	94.9	1.2424560	1.1795899		-5.1	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	89.3	1.3434760	1.1995955		-10.7	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	92.7	1.2148550	1.1265761		-7.3	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	90.4	1.0076370	0.9108591		-9.6	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	98.9	0.9598233	0.9497100		-1.1	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	96.7	1.0413850	1.0066690		-3.3	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	99.4	0.9264704	0.9207559		-0.6	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	92.2	0.7579160	0.6986827		-7.8	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	91.7	0.6324476	0.5798165		-8.3	+/-28

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091306A	Calibration Date:	08/11/2021
Sequence:	SJI0191	Injection Date:	09/13/21
Lab Sample ID:	SJI0191-ICV1	Injection Time:	15:52
Sequence Name:	CS3Q2		

COMPOUND	TYPE	CONC. (ng/mL)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
13C12-OCDD	A	200.00	209	0.5037432	0.5273770		4.7	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	10.2	1.0835930	1.1045217		1.9	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 11:15:22 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Q2, Name: 21091306, Date: 13-Sep-2021, Time: 15:52:01, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	4.744e4	6.236e4	1.108	0.761	0.770	1111	1003	7.08e5	9.18e5	636.9	916.1	NO	bb	bb	9.267
12378-PeCDF	29.909	1.001	2.735e5	1.802e5	1.015	1.518	1.550	2017	1559	4.23e6	2.73e6	2095.9	1750.0	NO	bb	bb	47.725
23478-PeCDF	31.257	1.001	2.872e5	1.874e5	1.126	1.533	1.550	2017	1559	4.32e6	2.80e6	2144.2	1796.8	NO	bb	bb	46.618
123478-HxCDF	34.867	1.000	1.941e5	1.618e5	1.017	1.200	1.240	1897	2167	3.09e6	2.62e6	1627.1	1209.4	NO	bd	bd	47.749
234678-HxCDF	35.881	1.000	1.832e5	1.543e5	1.052	1.187	1.240	1897	2167	2.99e6	2.49e6	1575.2	1148.9	NO	bb	bb	45.807
123678-HxCDF	35.012	1.001	1.996e5	1.605e5	1.037	1.244	1.240	1897	2167	3.11e6	2.51e6	1640.7	1160.2	NO	db	db	46.593
123789-HxCDF	36.917	1.001	1.467e5	1.234e5	1.030	1.189	1.240	1897	2167	2.35e6	1.98e6	1236.1	913.5	NO	bb	bb	46.312
1234678-HpCDF	38.745	1.000	1.894e5	1.813e5	1.327	1.045	1.050	1431	1801	3.06e6	2.96e6	2140.5	1643.0	NO	bb	bb	48.808
1234789-HpCDF	40.995	1.000	1.388e5	1.376e5	1.283	1.008	1.050	1431	1801	2.04e6	1.99e6	1427.2	1107.5	NO	bb	bb	49.611
OCDF	45.224	1.006	2.028e5	2.349e5	1.447	0.863	0.890	1255	1609	2.40e6	2.67e6	1915.2	1659.8	NO	bb	bd	92.308
2378-TCDD	26.381	1.001	3.179e4	3.904e4	0.920	0.814	0.770	1128	1084	4.64e5	5.86e5	411.2	541.3	NO	bb	bb	10.590
12378-PeCDD	31.492	1.000	1.670e5	9.927e4	0.995	1.683	1.550	1569	1327	2.49e6	1.53e6	1585.6	1155.9	NO	bb	bb	55.435
123478-HxCDD	35.981	1.000	1.594e5	1.287e5	1.027	1.239	1.240	1924	1620	2.55e6	2.10e6	1325.2	1295.7	NO	bd	bd	47.524
123678-HxCDD	36.104	1.001	1.664e5	1.331e5	1.009	1.250	1.240	1924	1620	2.68e6	2.11e6	1391.8	1302.4	NO	db	db	47.462
123789-HxCDD	36.494	1.011	1.574e5	1.269e5	0.950	1.240	1.240	1924	1620	2.59e6	2.05e6	1346.6	1262.4	NO	bb	bb	49.193
1234678-HpCDD	40.249	1.000	1.070e5	1.016e5	1.068	1.053	1.050	1573	1195	1.64e6	1.53e6	1043.9	1277.8	NO	bb	bb	54.212
OCDD	44.977	1.000	1.700e5	1.942e5	1.181	0.875	0.890	1859	1127	2.13e6	2.37e6	1144.1	2103.2	NO	bb	bb	94.100
13C-2378-TCDF	25.731	1.007	4.773e5	5.924e5	1.427	0.806	0.770	2349	1468	7.17e6	8.83e6	3051.0	6013.2	NO	bb	bb	121.046
13C-12378-PeCDF	29.887	1.169	5.736e5	3.631e5	1.297	1.580	1.550	2128	1767	8.80e6	5.58e6	4134.3	3158.2	NO	bb	bb	116.551
13C-23478-PeCDF	31.235	1.222	5.568e5	3.478e5	1.236	1.601	1.550	2128	1767	8.35e6	5.27e6	3925.6	2980.6	NO	bb	bb	118.087
13C-123478-HxCDF	34.856	0.955	2.487e5	4.843e5	1.242	0.513	0.510	2545	2845	3.85e6	7.49e6	1514.4	2632.3	NO	bd	bd	94.940
13C-123678-HxCDF	34.990	0.959	2.560e5	4.895e5	1.343	0.523	0.510	2545	2845	4.00e6	7.78e6	1570.3	2734.4	NO	db	db	89.290
13C-234678-HxCDF	35.870	0.983	2.391e5	4.611e5	1.215	0.518	0.510	2545	2845	3.66e6	7.06e6	1437.6	2481.4	NO	bb	bb	92.733
13C-123789-HxCDF	36.895	1.011	1.929e5	3.731e5	1.008	0.517	0.510	2545	2845	3.10e6	6.10e6	1219.7	2145.5	NO	bb	bb	90.396
13C-1234678-HpCDF	38.734	1.062	1.794e5	3.928e5	0.926	0.457	0.440	1438	2346	2.92e6	6.37e6	2030.9	2716.7	NO	bb	bb	99.383
13C-1234789-HpCDF	40.984	1.123	1.362e5	2.980e5	0.758	0.457	0.440	1438	2346	1.98e6	4.34e6	1376.2	1847.6	NO	bb	bb	92.185
13C-1234-TCDD	25.564	0.000	2.684e5	3.512e5	1.000	0.764	0.770	1900	918	4.03e6	5.26e6	2122.9	5725.2	NO	bb	bb	100.000
13C-2378-TCDD	26.366	1.031	3.121e5	4.147e5	1.116	0.753	0.770	1900	918	4.76e6	6.36e6	2507.8	6926.7	NO	bb	bb	105.078
13C-12378-PeCDD	31.480	1.231	2.955e5	1.871e5	0.732	1.580	1.550	881	779	4.48e6	2.82e6	5088.5	3626.5	NO	bb	bb	106.427
13C-123478-HxCDD	35.970	0.986	3.330e5	2.572e5	0.960	1.295	1.240	1703	1577	5.55e6	4.26e6	3257.1	2699.9	NO	bd	bd	98.946
13C-123678-HxCDD	36.082	0.989	3.470e5	2.786e5	1.041	1.245	1.240	1703	1577	5.38e6	4.29e6	3159.4	2720.2	NO	db	db	96.666
13C-1234678-HpCDD	40.237	1.103	1.848e5	1.755e5	0.632	1.053	1.050	1225	1159	2.69e6	2.57e6	2198.1	2212.9	NO	bb	bb	91.678
13C-OCDD	44.959	1.232	3.029e5	3.526e5	0.504	0.859	0.890	1877	1088	3.75e6	4.16e6	1999.4	3827.6	NO	bb	bd	209.383
13C-123789-HxCDD	36.483	0.000	3.437e5	2.778e5	1.000	1.237	1.240	1703	1577	5.54e6	4.41e6	3251.0	2798.4	NO	bb	bb	100.000
37CL-2378-TCDD	26.381	1.032	6.843e4		1.084			711		1.00e6		1411.4			bb		10.193

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
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ID: CS3Q2, Name: 21091306, Date: 13-Sep-2021, Time: 15:52:01, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.223	0.864	6.047e4	7.743e4	1.425	0.781	0.770	1111	1003	9.39e5	1.22e6	845.5	1217.9	NO	bb	bb	9.045
1289-TCDF	27.273	1.060	4.505e4	5.900e4	1.043	0.764	0.770	1111	1003	6.60e5	8.67e5	594.2	864.9	NO	bb	bb	9.326
13468-PECDF	27.091	0.906	3.655e5	2.384e5	1.376	1.533	1.550	1283	907	5.69e6	3.70e6	4436.2	4076.3	NO	bb	bb	46.844
12389-PECDF	32.305	1.081	2.646e5	1.717e5	1.000	1.541	1.550	2017	1559	3.78e6	2.45e6	1872.5	1568.7	NO	bb	bb	46.604
123468-HXCDF	33.196	0.952	2.007e5	1.650e5	1.087	1.216	1.240	1897	2167	3.14e6	2.56e6	1653.4	1182.2	NO	bb	bb	45.924
1368-TCDD	23.508	0.892	3.282e4	3.951e4	0.923	0.831	0.770	1128	1084	5.02e5	6.09e5	444.7	562.4	NO	bd	bb	10.779
1289-TCDD	27.001	1.024	2.839e4	3.568e4	0.794	0.796	0.770	1128	1084	4.17e5	5.25e5	369.4	484.7	NO	bb	bb	11.102
12479-PECDD	28.762	0.914	2.915e5	1.803e5	1.843	1.617	1.550	1569	1327	2.90e6	1.80e6	1848.2	1356.3	NO	bb	bb	53.035
12389-PECDD	31.904	1.013	1.867e5	1.178e5	1.154	1.584	1.550	1569	1327	2.87e6	1.76e6	1827.5	1324.4	NO	bb	bb	54.703
124679-HXCDD	33.976	0.945	1.761e5	1.446e5	1.125	1.217	1.240	1924	1620	2.71e6	2.19e6	1407.3	1348.7	NO	bb	bb	48.306
1234679-HPCDD	39.201	0.974	1.204e5	1.113e5	1.211	1.082	1.050	1573	1195	1.92e6	1.79e6	1217.9	1500.0	NO	bb	bb	53.099
Total-tetrafurans			1.544e5		1.192			1111		2.33e6							27.889
Total-penta1			3.655e5					1283		5.69e6							46.844
Total-pentafurans			8.722e5		1.047			2017		1.30e7							148.996
Total-hexafurans			9.244e5		1.045			1897		1.47e7							232.384
Total-heptafurans			3.282e5		1.305			1431		5.11e6							98.419
Total-Furans			2.847e6		1.158			1111		4.32e7							646.841
Total-tetradioxins			1.590e5		0.879			1128		2.13e6							55.555
Total-pentadioxins			6.459e5		1.331			1569		8.27e6							163.351
Total-hexadioxins			6.598e5		1.028			1924		1.05e7							192.614
Total-heptadioxins			2.274e5		1.140			1573		3.56e6							107.311
Total-Dioxins			1.862e6		1.092			1128		2.66e7							612.931
Total-TEQ			4.709e6					1128		6.99e7							1259.772
FUNCTION1 PFK			4.543e5					470909		9.92e6							
FUNCTION2 PFK			6.243e6					367665		3.26e7							0.000
FUNCTION3 PFK			4.501e5					372563		1.25e7							0.000
FUNCTION4 PFK			3.092e5					234437		9.89e6							
FUNCTION5 PFK			0.000e0					194766		0.00e0							
FUNCTION1 HXCD...			3.823e2					511		4.34e3							0.000
FUNCTION1 HPCD...			1.099e3					612		1.30e4							0.000
FUNCTION2 HPCD...			2.921e2					697		4.77e3							0.000
FUNCTION3 OCDPE			3.332e2					539		5.43e3							0.000
FUNCTION4 NCDPE			1.482e2					646		3.71e3							0.000
FUNCTION5 DCDPE			0.000e0					495		0.00e0							

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
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Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Q2, Name: 21091306, Date: 13-Sep-2021, Time: 15:52:01, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	4.505e4	5.900e4	1.043	0.76	0.77	594.2	YES	NO	bb	bb	9.326
2	2378-TCDF	25.76	4.744e4	6.236e4	1.108	0.76	0.77	636.9	YES	NO	bb	bb	9.267
3	Total-tetrafurans	24.84	3.876e2	5.595e2	1.192	0.69	0.77	6.2	YES	NO	bb	bb	0.074
4	Total-tetrafurans	24.66	4.015e2	4.657e2	1.192	0.86	0.77	5.3	YES	NO	db	db	0.068
5	Total-tetrafurans	24.52	6.374e2	7.447e2	1.192	0.86	0.77	9.2	YES	NO	bd	bd	0.108
6	1368-TCDF	22.22	6.047e4	7.743e4	1.425	0.78	0.77	845.5	YES	NO	bb	bb	9.045

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.09	3.655e5	2.384e5	1.376	1.53	1.55	4436.2	YES	NO	bb	bb	46.844

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDF	29.91	2.735e5	1.802e5	1.015	1.52	1.55	2095.9	YES	NO	bb	bb	47.725
2	Total-pentafurans	28.75	4.683e4	3.074e4	1.047	1.52	1.55	352.4	YES	NO	bb	bb	8.050
3	12389-PECDF	32.30	2.646e5	1.717e5	1.000	1.54	1.55	1872.5	YES	NO	bb	bb	46.604
4	23478-PeCDF	31.26	2.872e5	1.874e5	1.126	1.53	1.55	2144.2	YES	NO	bb	bb	46.618

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.92	1.467e5	1.234e5	1.030	1.19	1.24	1236.1	YES	NO	bb	bb	46.312
2	234678-HxCDF	35.88	1.832e5	1.543e5	1.052	1.19	1.24	1575.2	YES	NO	bb	bb	45.807
3	123678-HxCDF	35.01	1.996e5	1.605e5	1.037	1.24	1.24	1640.7	YES	NO	db	db	46.593
4	123478-HxCDF	34.87	1.941e5	1.618e5	1.017	1.20	1.24	1627.1	YES	NO	bd	bd	47.749
5	123468-HXCDF	33.20	2.007e5	1.650e5	1.087	1.22	1.24	1653.4	YES	NO	bb	bb	45.924

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.00	1.388e5	1.376e5	1.283	1.01	1.05	1427.2	YES	NO	bb	bb	49.611
2	1234678-HpCDF	38.74	1.894e5	1.813e5	1.327	1.04	1.05	2140.5	YES	NO	bb	bb	48.808

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	4.505e4	5.900e4	1.043	0.76	0.77	594.2	YES	NO	bb	bb	9.326
2	2378-TCDF	25.76	4.744e4	6.236e4	1.108	0.76	0.77	636.9	YES	NO	bb	bb	9.267
3	Total-tetrafurans	24.84	3.876e2	5.595e2	1.192	0.69	0.77	6.2	YES	NO	bb	bb	0.074
4	Total-tetrafurans	24.66	4.015e2	4.657e2	1.192	0.86	0.77	5.3	YES	NO	db	db	0.068
5	Total-tetrafurans	24.52	6.374e2	7.447e2	1.192	0.86	0.77	9.2	YES	NO	bd	bd	0.108
6	1368-TCDF	22.22	6.047e4	7.743e4	1.425	0.78	0.77	845.5	YES	NO	bb	bb	9.045
7	12378-PeCDF	29.91	2.735e5	1.802e5	1.015	1.52	1.55	2095.9	YES	NO	bb	bb	47.725
8	Total-pentafurans	28.75	4.683e4	3.074e4	1.047	1.52	1.55	352.4	YES	NO	bb	bb	8.050
9	12389-PECDF	32.30	2.646e5	1.717e5	1.000	1.54	1.55	1872.5	YES	NO	bb	bb	46.604
10	23478-PeCDF	31.26	2.872e5	1.874e5	1.126	1.53	1.55	2144.2	YES	NO	bb	bb	46.618
11	123789-HxCDF	36.92	1.467e5	1.234e5	1.030	1.19	1.24	1236.1	YES	NO	bb	bb	46.312
12	234678-HxCDF	35.88	1.832e5	1.543e5	1.052	1.19	1.24	1575.2	YES	NO	bb	bb	45.807
13	123678-HxCDF	35.01	1.996e5	1.605e5	1.037	1.24	1.24	1640.7	YES	NO	db	db	46.593
14	123478-HxCDF	34.87	1.941e5	1.618e5	1.017	1.20	1.24	1627.1	YES	NO	bd	bd	47.749
15	123468-HXCDF	33.20	2.007e5	1.650e5	1.087	1.22	1.24	1653.4	YES	NO	bb	bb	45.924
16	1234789-HpCDF	41.00	1.388e5	1.376e5	1.283	1.01	1.05	1427.2	YES	NO	bb	bb	49.611
17	1234678-HpCDF	38.74	1.894e5	1.813e5	1.327	1.04	1.05	2140.5	YES	NO	bb	bb	48.808
18	OCDF	45.22	2.028e5	2.349e5	1.447	0.86	0.89	1915.2	YES	NO	bb	bd	92.308
19	13468-PECDF	27.09	3.655e5	2.384e5	1.376	1.53	1.55	4436.2	YES	NO	bb	bb	46.844

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.69	1.399e3	1.845e3	0.879	0.76	0.77	12.6	YES	NO	bb	bb	0.508
2	1368-TCDD	23.51	3.282e4	3.951e4	0.923	0.83	0.77	444.7	YES	NO	bd	bb	10.779
3	1289-TCDD	27.00	2.839e4	3.568e4	0.794	0.80	0.77	369.4	YES	NO	bb	bb	11.102
4	2378-TCDD	26.38	3.179e4	3.904e4	0.920	0.81	0.77	411.2	YES	NO	bb	bb	10.590
5	Total-tetradioxins	26.06	4.907e4	6.071e4	0.879	0.81	0.77	432.3	YES	NO	bb	bb	17.181
6	Total-tetradioxins	25.58	1.554e4	1.894e4	0.879	0.82	0.77	216.0	YES	NO	bd	bb	5.396

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.90	1.867e5	1.178e5	1.154	1.58	1.55	1827.5	YES	NO	bb	bb	54.703
2	12378-PeCDD	31.49	1.670e5	9.927e4	0.995	1.68	1.55	1585.6	YES	NO	bb	bb	55.435
3	Total-pentadioxins	30.82	6.661e2	4.784e2	1.331	1.39	1.55	6.3	YES	NO	bb	bb	0.178
4	12479-PECDD	28.76	2.915e5	1.803e5	1.843	1.62	1.55	1848.2	YES	NO	bb	bb	53.035

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.49	1.574e5	1.269e5	0.950	1.24	1.24	1346.6	YES	NO	bb	bb	49.193
2	123678-HxCDD	36.10	1.664e5	1.331e5	1.009	1.25	1.24	1391.8	YES	NO	db	db	47.462
3	123478-HxCDD	35.98	1.594e5	1.287e5	1.027	1.24	1.24	1325.2	YES	NO	bd	bd	47.524
4	Total-hexadioxins	34.74	4.446e2	3.574e2	1.028	1.24	1.24	3.4	NO	NO	bd	bb	0.128
5	124679-HXCDD	33.98	1.761e5	1.446e5	1.125	1.22	1.24	1407.3	YES	NO	bb	bb	48.306

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234679-HPCDD	39.20	1.204e5	1.113e5	1.211	1.08	1.05	1217.9	YES	NO	bb	bb	53.099
2	1234678-HpCDD	40.25	1.070e5	1.016e5	1.068	1.05	1.05	1043.9	YES	NO	bb	bb	54.212

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	24.69	1.399e3	1.845e3	0.879	0.76	0.77	12.6	YES	NO	bb	bb	0.508
2	1368-TCDD	23.51	3.282e4	3.951e4	0.923	0.83	0.77	444.7	YES	NO	bd	bb	10.779
3	1289-TCDD	27.00	2.839e4	3.568e4	0.794	0.80	0.77	369.4	YES	NO	bb	bb	11.102
4	2378-TCDD	26.38	3.179e4	3.904e4	0.920	0.81	0.77	411.2	YES	NO	bb	bb	10.590
5	Total-tetradioxins	26.06	4.907e4	6.071e4	0.879	0.81	0.77	432.3	YES	NO	bb	bb	17.181
6	Total-tetradioxins	25.58	1.554e4	1.894e4	0.879	0.82	0.77	216.0	YES	NO	bd	bb	5.396
7	12389-PECDD	31.90	1.867e5	1.178e5	1.154	1.58	1.55	1827.5	YES	NO	bb	bb	54.703
8	12378-PeCDD	31.49	1.670e5	9.927e4	0.995	1.68	1.55	1585.6	YES	NO	bb	bb	55.435
9	Total-pentadioxins	30.82	6.661e2	4.784e2	1.331	1.39	1.55	6.3	YES	NO	bb	bb	0.178
10	12479-PECDD	28.76	2.915e5	1.803e5	1.843	1.62	1.55	1848.2	YES	NO	bb	bb	53.035
11	123789-HxCDD	36.49	1.574e5	1.269e5	0.950	1.24	1.24	1346.6	YES	NO	bb	bb	49.193
12	123678-HxCDD	36.10	1.664e5	1.331e5	1.009	1.25	1.24	1391.8	YES	NO	db	db	47.462
13	123478-HxCDD	35.98	1.594e5	1.287e5	1.027	1.24	1.24	1325.2	YES	NO	bd	bd	47.524
14	Total-hexadioxins	34.74	4.446e2	3.574e2	1.028	1.24	1.24	3.4	NO	NO	bd	bb	0.128
15	124679-HXCDD	33.98	1.761e5	1.446e5	1.125	1.22	1.24	1407.3	YES	NO	bb	bb	48.306
16	1234679-HPCDD	39.20	1.204e5	1.113e5	1.211	1.08	1.05	1217.9	YES	NO	bb	bb	53.099
17	1234678-HpCDD	40.25	1.070e5	1.016e5	1.068	1.05	1.05	1043.9	YES	NO	bb	bb	54.212
18	OCDD	44.98	1.700e5	1.942e5	1.181	0.88	0.89	1144.1	YES	NO	bb	bb	94.100

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	4.505e4	5.900e4	1.043	0.76	0.77	594.2	YES	NO	bb	bb	9.326
2	2378-TCDF	25.76	4.744e4	6.236e4	1.108	0.76	0.77	636.9	YES	NO	bb	bb	9.267
3	Total-tetrafurans	24.84	3.876e2	5.595e2	1.192	0.69	0.77	6.2	YES	NO	bb	bb	0.074
4	Total-tetrafurans	24.66	4.015e2	4.657e2	1.192	0.86	0.77	5.3	YES	NO	db	db	0.068
5	Total-tetrafurans	24.52	6.374e2	7.447e2	1.192	0.86	0.77	9.2	YES	NO	bd	bd	0.108
6	1368-TCDF	22.22	6.047e4	7.743e4	1.425	0.78	0.77	845.5	YES	NO	bb	bb	9.045
7	12378-PeCDF	29.91	2.735e5	1.802e5	1.015	1.52	1.55	2095.9	YES	NO	bb	bb	47.725
8	Total-pentafurans	28.75	4.683e4	3.074e4	1.047	1.52	1.55	352.4	YES	NO	bb	bb	8.050
9	12389-PECDF	32.30	2.646e5	1.717e5	1.000	1.54	1.55	1872.5	YES	NO	bb	bb	46.604
10	23478-PeCDF	31.26	2.872e5	1.874e5	1.126	1.53	1.55	2144.2	YES	NO	bb	bb	46.618
11	123789-HxCDF	36.92	1.467e5	1.234e5	1.030	1.19	1.24	1236.1	YES	NO	bb	bb	46.312
12	234678-HxCDF	35.88	1.832e5	1.543e5	1.052	1.19	1.24	1575.2	YES	NO	bb	bb	45.807
13	123678-HxCDF	35.01	1.996e5	1.605e5	1.037	1.24	1.24	1640.7	YES	NO	db	db	46.593
14	123478-HxCDF	34.87	1.941e5	1.618e5	1.017	1.20	1.24	1627.1	YES	NO	bd	bd	47.749
15	123468-HXCDF	33.20	2.007e5	1.650e5	1.087	1.22	1.24	1653.4	YES	NO	bb	bb	45.924
16	1234789-HpCDF	41.00	1.388e5	1.376e5	1.283	1.01	1.05	1427.2	YES	NO	bb	bb	49.611
17	1234678-HpCDF	38.74	1.894e5	1.813e5	1.327	1.04	1.05	2140.5	YES	NO	bb	bb	48.808
18	OCDF	45.22	2.028e5	2.349e5	1.447	0.86	0.89	1915.2	YES	NO	bb	bd	92.308
19	13468-PECDF	27.09	3.655e5	2.384e5	1.376	1.53	1.55	4436.2	YES	NO	bb	bb	46.844
20	Total-tetradioxins	24.69	1.399e3	1.845e3	0.879	0.76	0.77	12.6	YES	NO	bb	bb	0.508
21	1368-TCDD	23.51	3.282e4	3.951e4	0.923	0.83	0.77	444.7	YES	NO	bd	bb	10.779
22	1289-TCDD	27.00	2.839e4	3.568e4	0.794	0.80	0.77	369.4	YES	NO	bb	bb	11.102
23	2378-TCDD	26.38	3.179e4	3.904e4	0.920	0.81	0.77	411.2	YES	NO	bb	bb	10.590
24	Total-tetradioxins	26.06	4.907e4	6.071e4	0.879	0.81	0.77	432.3	YES	NO	bb	bb	17.181
25	Total-tetradioxins	25.58	1.554e4	1.894e4	0.879	0.82	0.77	216.0	YES	NO	bd	bb	5.396
26	12389-PECDD	31.90	1.867e5	1.178e5	1.154	1.58	1.55	1827.5	YES	NO	bb	bb	54.703
27	12378-PeCDD	31.49	1.670e5	9.927e4	0.995	1.68	1.55	1585.6	YES	NO	bb	bb	55.435
28	Total-pentadioxins	30.82	6.661e2	4.784e2	1.331	1.39	1.55	6.3	YES	NO	bb	bb	0.178
29	12479-PECDD	28.76	2.915e5	1.803e5	1.843	1.62	1.55	1848.2	YES	NO	bb	bb	53.035
30	123789-HxCDD	36.49	1.574e5	1.269e5	0.950	1.24	1.24	1346.6	YES	NO	bb	bb	49.193
31	123678-HxCDD	36.10	1.664e5	1.331e5	1.009	1.25	1.24	1391.8	YES	NO	db	db	47.462
32	123478-HxCDD	35.98	1.594e5	1.287e5	1.027	1.24	1.24	1325.2	YES	NO	bd	bd	47.524
33	Total-hexadioxins	34.74	4.446e2	3.574e2	1.028	1.24	1.24	3.4	NO	NO	bd	bb	0.128
34	124679-HXCDD	33.98	1.761e5	1.446e5	1.125	1.22	1.24	1407.3	YES	NO	bb	bb	48.306
35	1234679-HPCDD	39.20	1.204e5	1.113e5	1.211	1.08	1.05	1217.9	YES	NO	bb	bb	53.099
36	1234678-HpCDD	40.25	1.070e5	1.016e5	1.068	1.05	1.05	1043.9	YES	NO	bb	bb	54.212
37	OCDD	44.98	1.700e5	1.942e5	1.181	0.88	0.89	1144.1	YES	NO	bb	bb	94.100

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	25.78	7.651e3					0.7	NO		bb		
2	FUNCTION1 PFK	24.46	7.081e4					2.0	NO		bb		
3	FUNCTION1 PFK	23.83	1.523e4					1.0	NO		bb		
4	FUNCTION1 PFK	23.72	4.088e3					0.6	NO		bb		
5	FUNCTION1 PFK	23.43	4.680e3					0.7	NO		bb		
6	FUNCTION1 PFK	23.02	1.076e4					1.0	NO		bb		
7	FUNCTION1 PFK	22.53	8.462e3					0.8	NO		db		
8	FUNCTION1 PFK	22.45	5.601e4					2.3	NO		bd		
9	FUNCTION1 PFK	22.06	8.473e3					0.8	NO		bb		
10	FUNCTION1 PFK	21.59	1.444e4					1.1	NO		bb		
11	FUNCTION1 PFK	21.33	2.773e4					1.3	NO		bb		
12	FUNCTION1 PFK	28.06	2.043e4					0.8	NO		bb		
13	FUNCTION1 PFK	27.97	9.973e3					0.8	NO		bb		
14	FUNCTION1 PFK	27.58	3.338e4					1.4	NO		bb		
15	FUNCTION1 PFK	26.49	3.842e3					0.5	NO		bb		
16	FUNCTION1 PFK	26.29	2.076e4					1.3	NO		bb		
17	FUNCTION1 PFK	26.21	1.440e4					0.9	NO		bb		
18	FUNCTION1 PFK	26.15	1.196e4					1.1	NO		bb		
19	FUNCTION1 PFK	26.09	1.112e5					1.9	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.58	4.359e6					20.6	YES		db		0.000
2	FUNCTION2 PFK	28.26	5.398e5					33.8	YES		dd		0.000
3	FUNCTION2 PFK	28.23	1.344e6					34.3	YES		bd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	33.52	5.118e3					0.7	NO		bb		0.000
2	FUNCTION3 PFK	33.24	2.010e4					1.3	NO		bb		0.000
3	FUNCTION3 PFK	33.07	1.868e4					1.8	NO		bb		0.000
4	FUNCTION3 PFK	36.95	2.789e3					0.5	NO		bb		0.000
5	FUNCTION3 PFK	36.91	2.907e4					1.9	NO		bb		0.000
6	FUNCTION3 PFK	36.72	8.923e3					0.9	NO		bb		0.000
7	FUNCTION3 PFK	36.61	2.973e4					1.8	NO		bb		0.000
8	FUNCTION3 PFK	35.93	1.528e4					0.7	NO		bb		0.000
9	FUNCTION3 PFK	35.88	1.618e3					0.4	NO		bb		0.000
10	FUNCTION3 PFK	35.59	9.239e3					1.0	NO		db		0.000
11	FUNCTION3 PFK	35.55	2.459e4					2.5	NO		bd		0.000
12	FUNCTION3 PFK	34.69	7.074e3					0.8	NO		db		0.000
13	FUNCTION3 PFK	34.64	2.223e4					1.8	NO		bd		0.000
14	FUNCTION3 PFK	34.59	3.121e3					0.8	NO		bb		0.000
15	FUNCTION3 PFK	34.35	6.310e3					1.0	NO		bb		0.000
16	FUNCTION3 PFK	34.30	3.307e3					0.6	NO		bb		0.000
17	FUNCTION3 PFK	34.15	1.119e4					1.0	NO		bb		0.000
18	FUNCTION3 PFK	33.64	5.190e4					2.1	NO		bb		0.000
19	FUNCTION3 PFK	33.60	1.973e3					0.5	NO		bb		0.000
20	FUNCTION3 PFK	37.88	2.217e3					0.5	NO		bb		0.000
21	FUNCTION3 PFK	37.83	4.606e3					0.7	NO		bb		0.000
22	FUNCTION3 PFK	37.70	1.670e4					1.5	NO		bb		0.000
23	FUNCTION3 PFK	37.65	8.739e3					0.9	NO		bb		0.000
24	FUNCTION3 PFK	37.47	4.781e4					2.6	NO		db		0.000
25	FUNCTION3 PFK	37.42	2.231e4					1.9	NO		bd		0.000
26	FUNCTION3 PFK	37.20	5.714e3					0.8	NO		bb		0.000
27	FUNCTION3 PFK	37.07	6.758e4					1.9	NO		bb		0.000
28	FUNCTION3 PFK	37.00	2.155e3					0.5	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.44	5.093e3					1.0	NO		bb		
2	FUNCTION4 PFK	38.30	6.726e3					1.1	NO		bb		
3	FUNCTION4 PFK	38.21	2.398e4					2.3	NO		db		
4	FUNCTION4 PFK	38.14	1.839e4					2.3	NO		bd		
5	FUNCTION4 PFK	38.09	1.448e4					1.5	NO		db		
6	FUNCTION4 PFK	38.00	4.324e3					0.9	NO		bd		
7	FUNCTION4 PFK	40.86	4.079e3					0.9	NO		bd		
8	FUNCTION4 PFK	40.71	8.724e3					1.2	NO		bb		
9	FUNCTION4 PFK	40.43	3.783e3					0.8	NO		bb		
10	FUNCTION4 PFK	40.36	8.400e3					1.3	NO		bb		
11	FUNCTION4 PFK	40.20	3.929e3					0.7	NO		bb		
12	FUNCTION4 PFK	39.68	9.539e3					1.2	NO		bb		
13	FUNCTION4 PFK	39.61	7.171e3					1.3	NO		bb		
14	FUNCTION4 PFK	39.50	1.783e4					1.4	NO		db		
15	FUNCTION4 PFK	39.45	4.762e3					0.9	NO		bd		
16	FUNCTION4 PFK	39.40	7.509e3					1.2	NO		db		
17	FUNCTION4 PFK	39.36	1.097e4					1.4	NO		bd		
18	FUNCTION4 PFK	39.15	2.156e4					2.3	NO		bb		
19	FUNCTION4 PFK	38.89	4.934e3					0.8	NO		bb		
20	FUNCTION4 PFK	38.82	1.042e3					0.4	NO		bb		
21	FUNCTION4 PFK	38.76	8.601e3					0.9	NO		bb		
22	FUNCTION4 PFK	38.51	2.175e3					0.5	NO		bb		
23	FUNCTION4 PFK	42.77	8.815e3					1.1	NO		db		
24	FUNCTION4 PFK	42.73	1.509e3					0.5	NO		bd		
25	FUNCTION4 PFK	42.69	3.786e3					0.9	NO		bb		
26	FUNCTION4 PFK	42.55	1.259e3					0.5	NO		bb		
27	FUNCTION4 PFK	42.45	1.097e4					1.3	NO		bb		
28	FUNCTION4 PFK	42.35	2.574e3					0.6	NO		bb		
29	FUNCTION4 PFK	42.23	4.759e3					0.9	NO		bb		
30	FUNCTION4 PFK	42.14	1.282e4					1.1	NO		bb		
31	FUNCTION4 PFK	41.94	1.637e4					1.8	NO		bb		
32	FUNCTION4 PFK	41.71	2.436e3					0.6	NO		db		
33	FUNCTION4 PFK	41.67	6.524e3					1.0	NO		dd		
34	FUNCTION4 PFK	41.63	1.698e4					1.5	NO		bd		
35	FUNCTION4 PFK	41.52	8.645e3					1.1	NO		db		
36	FUNCTION4 PFK	41.46	3.478e3					0.8	NO		bd		
37	FUNCTION4 PFK	41.32	4.932e3					1.0	NO		bb		

ID: CS3Q2, Name: 21091306, Date: 13-Sep-2021, Time: 15:52:01, Conditions: AUTOSPEC01, User: pk

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION4 PFK	40.91	5.336e3					0.9	NO		db		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.08	2.429e2					3.8	YES		bb		0.000
2	FUNCTION1 HXCD...	21.27	1.394e2					4.7	YES		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	26.65	8.503e1					1.2	NO		bb		0.000
2	FUNCTION1 HPCD...	26.03	1.059e2					1.6	NO		bb		0.000
3	FUNCTION1 HPCD...	23.25	1.128e2					2.3	NO		bb		0.000
4	FUNCTION1 HPCD...	23.07	7.544e1					1.8	NO		bb		0.000
5	FUNCTION1 HPCD...	21.51	1.408e2					2.6	NO		db		0.000
6	FUNCTION1 HPCD...	21.25	3.851e2					5.2	YES		dd		0.000
7	FUNCTION1 HPCD...	21.19	8.665e1					3.7	YES		dd		0.000
8	FUNCTION1 HPCD...	21.13	1.072e2					2.9	NO		bd		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.08	2.921e2					6.8	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.52	7.246e1					3.1	YES		db		0.000
2	FUNCTION3 OCDPE	36.48	1.270e2					4.5	YES		bd		0.000
3	FUNCTION3 OCDPE	34.24	1.337e2					2.5	NO		bb		0.000

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ID: CS3Q2, Name: 21091306, Date: 13-Sep-2021, Time: 15:52:01, Conditions: AUTOSPEC01, User: pk

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.20	7.503e1					2.2	NO		db		0.000
2	FUNCTION4 NCDPE	40.17	7.315e1					3.5	YES		bd		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
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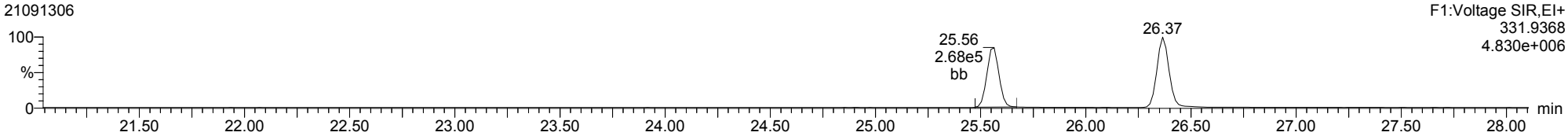
13C-1234-TCDD



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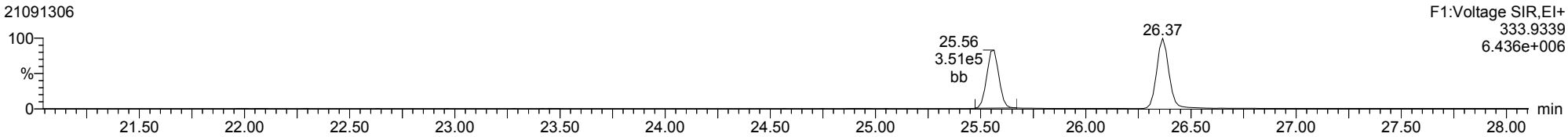
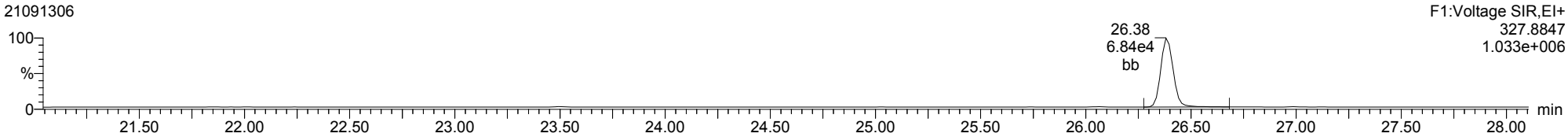


37CL-2378-TCDD



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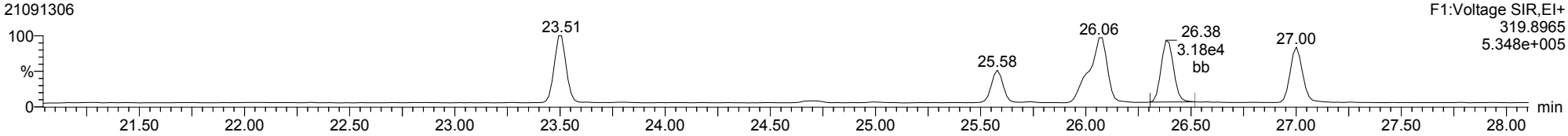

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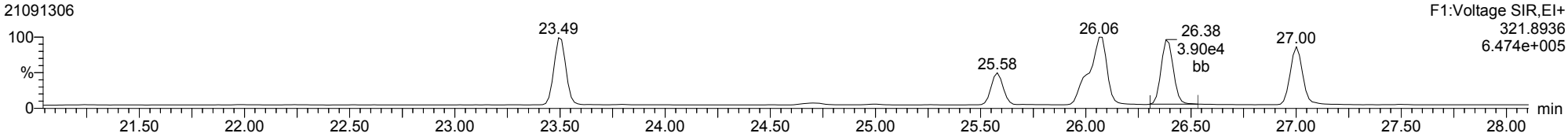

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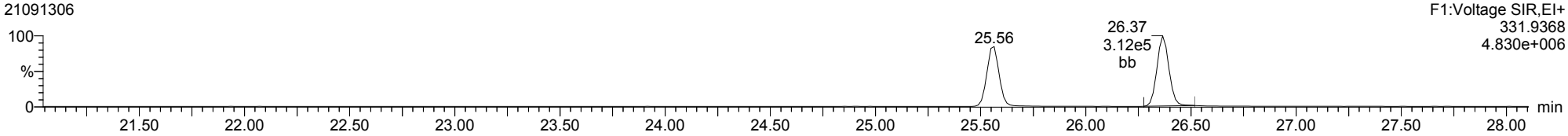

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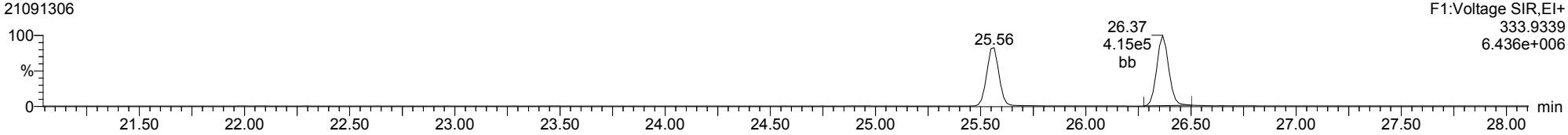

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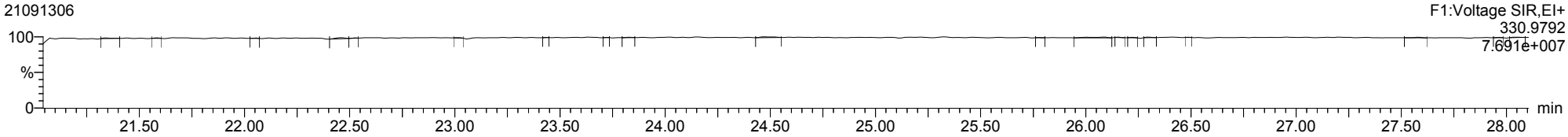

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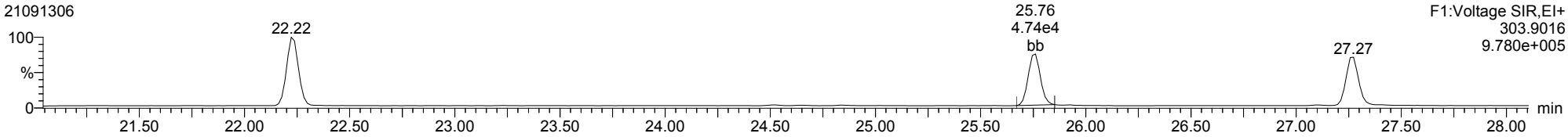

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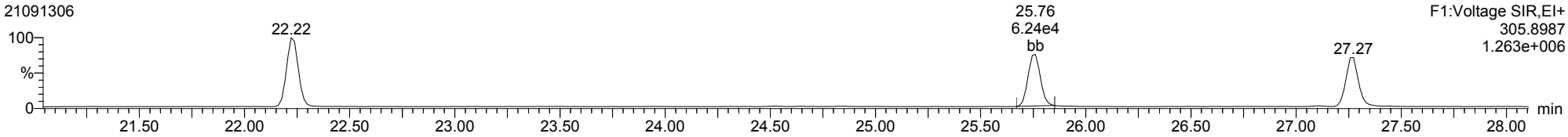

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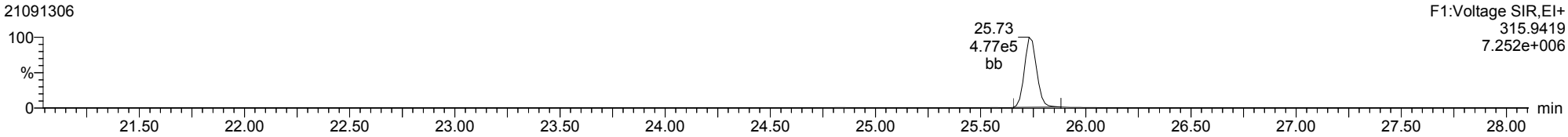

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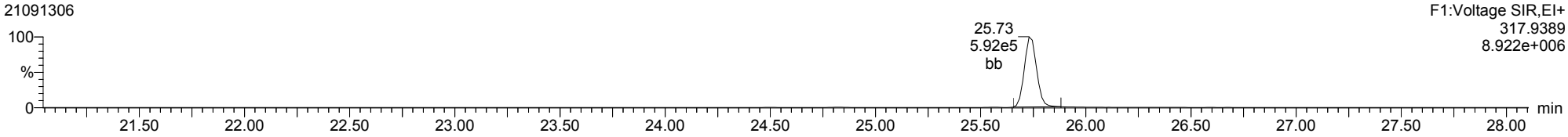
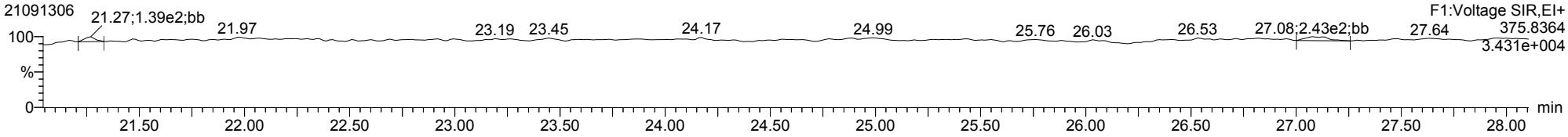


FUNCTION1 HXCDPE



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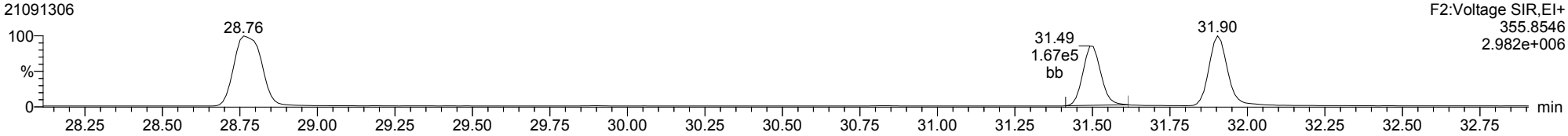
12378-PeCDD



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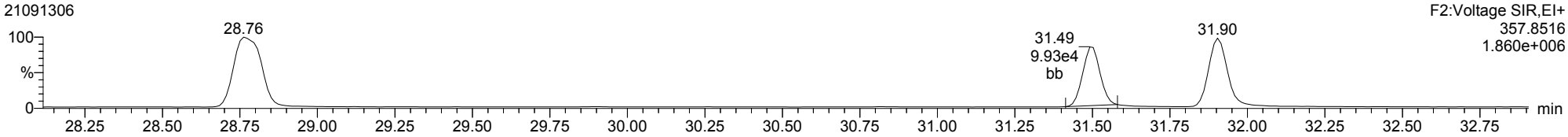

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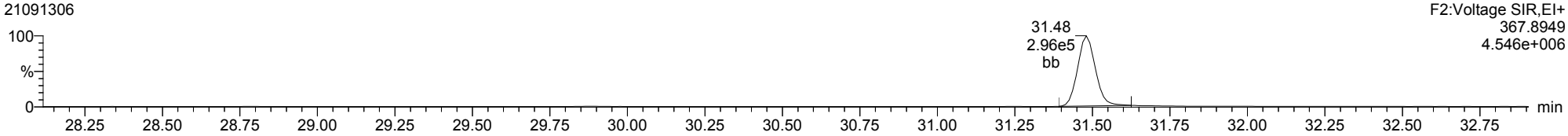

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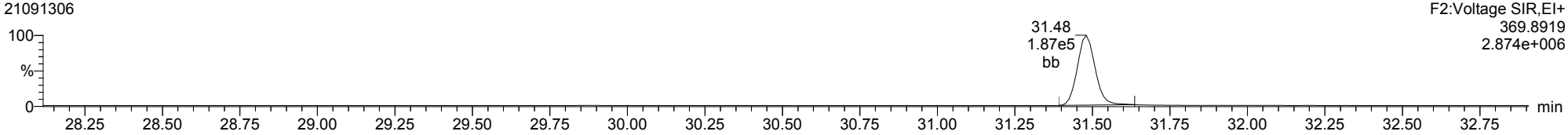

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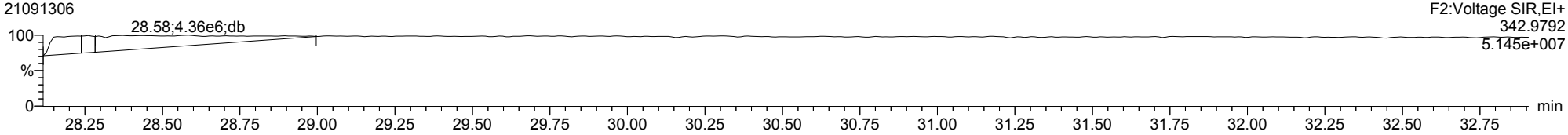

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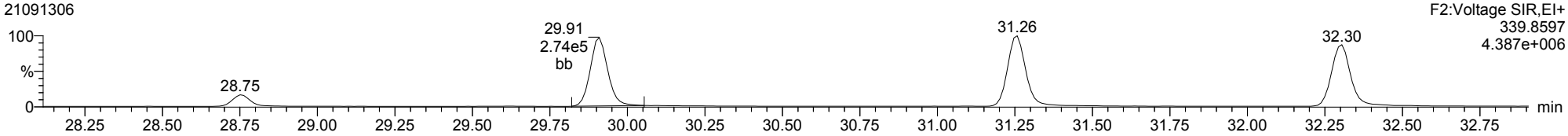

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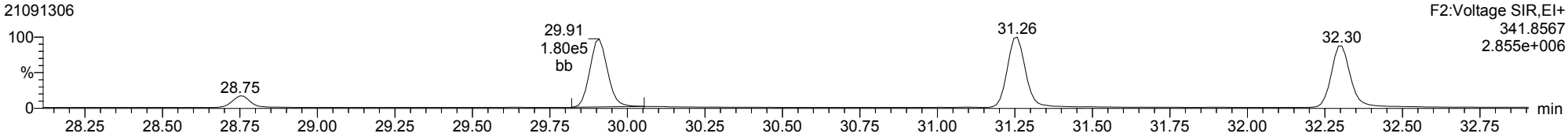

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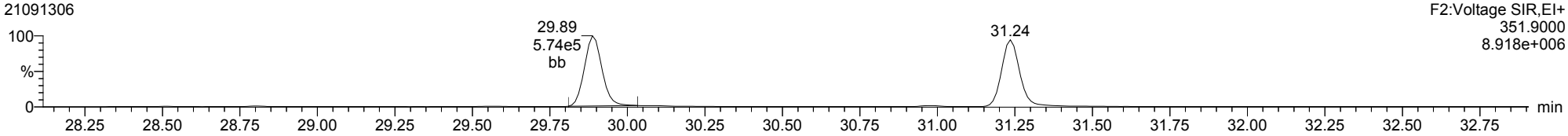

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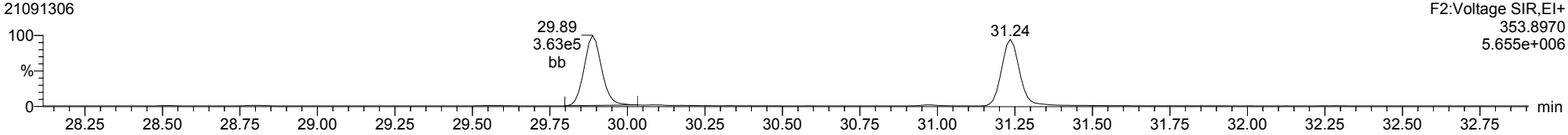
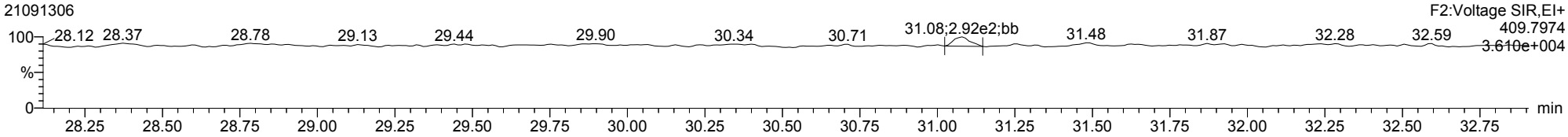


FUNCTION2 HPCDPE



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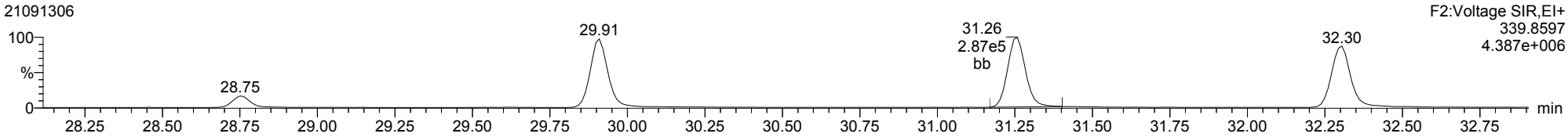
23478-PeCDF



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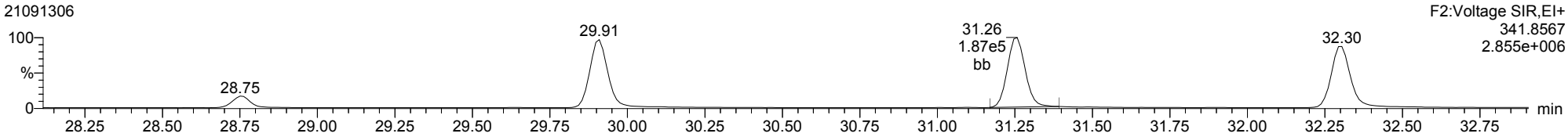

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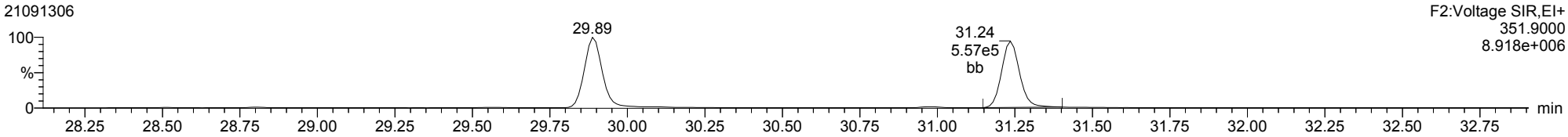

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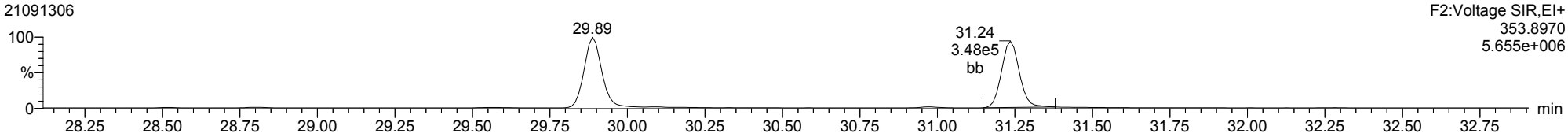

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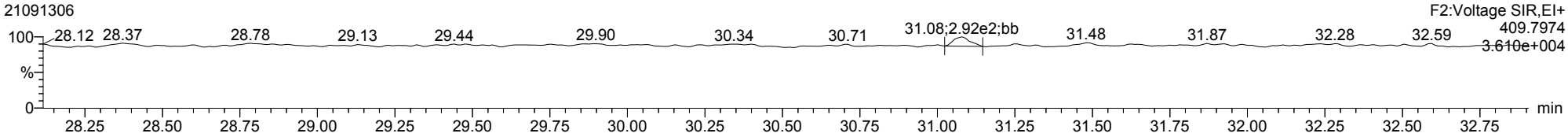

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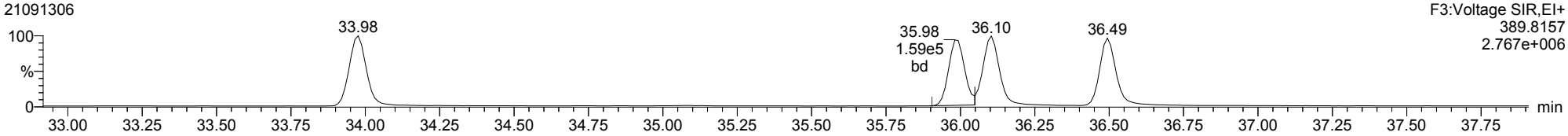
123478-HxCDD



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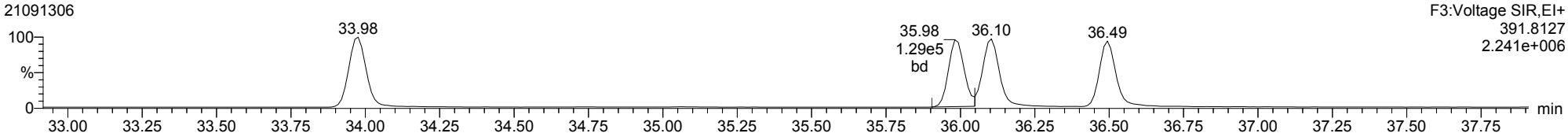

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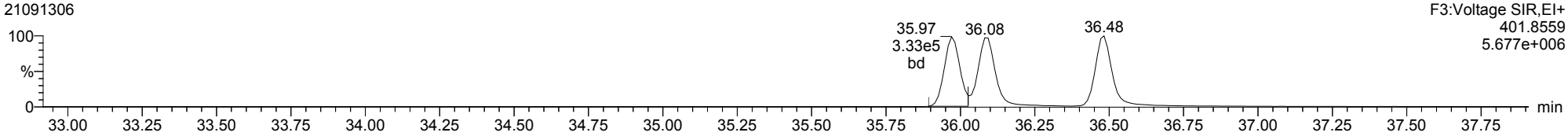

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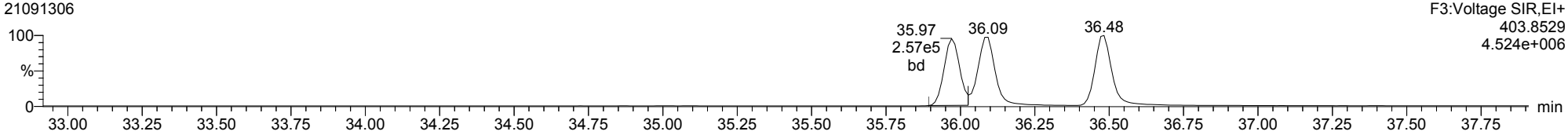

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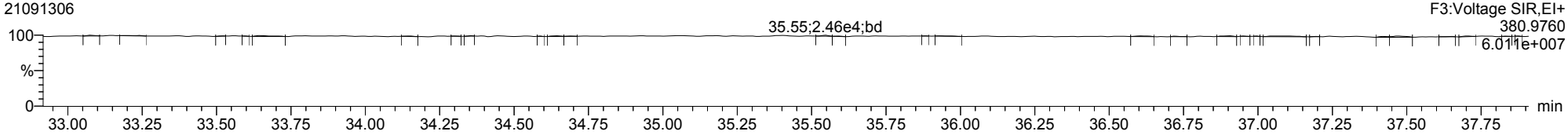

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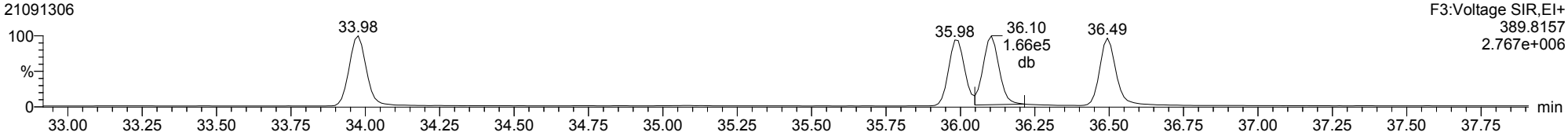

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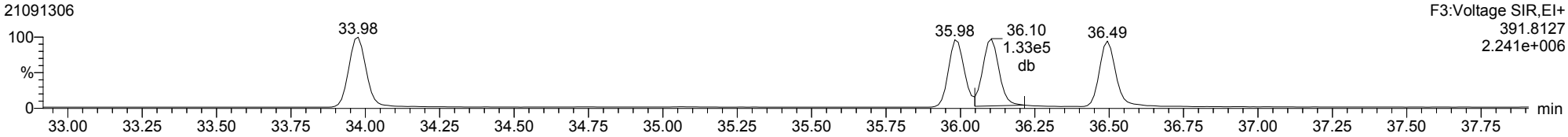

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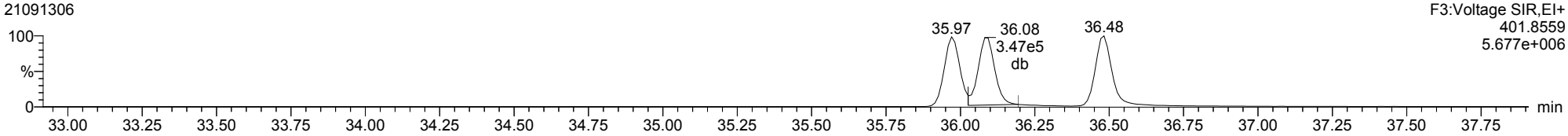

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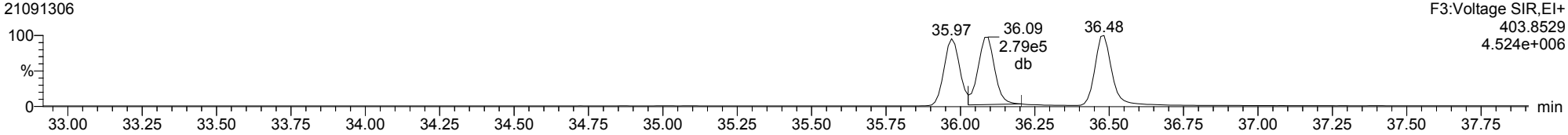

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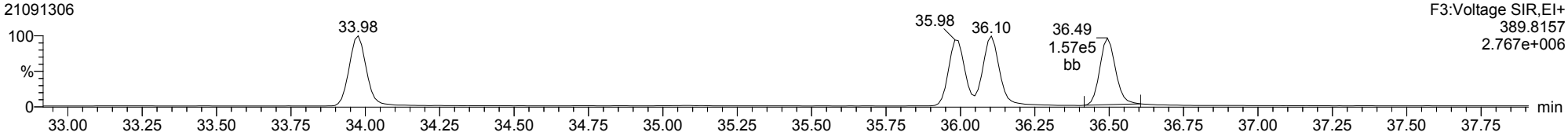

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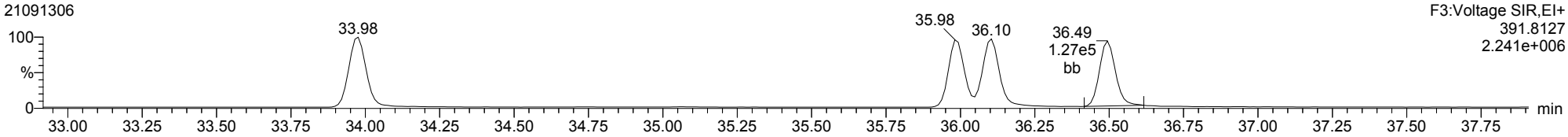

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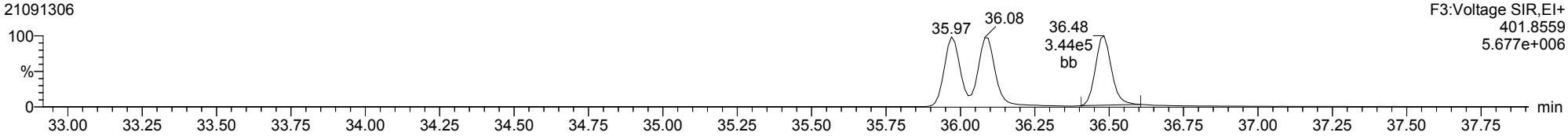

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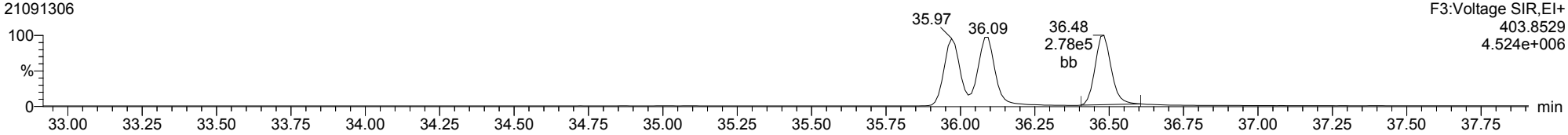

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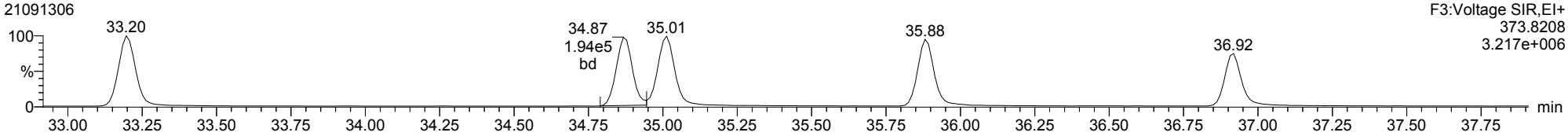

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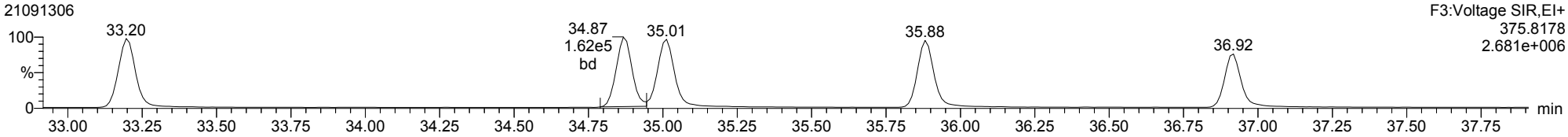

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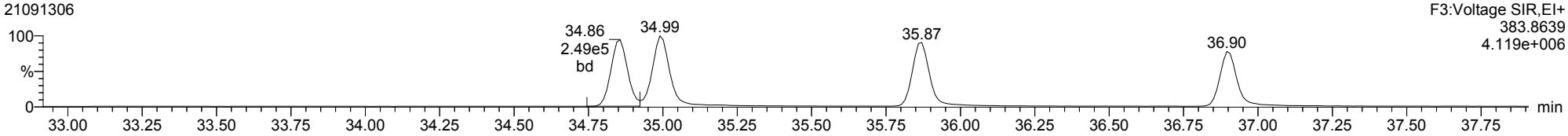

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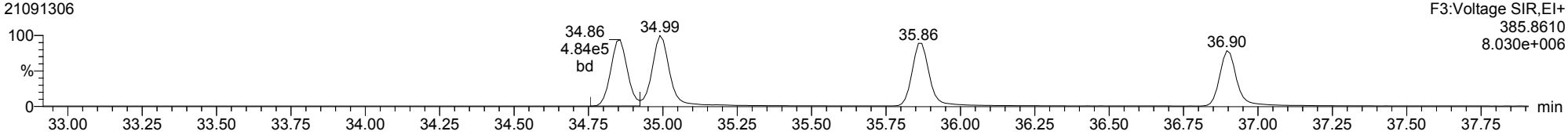

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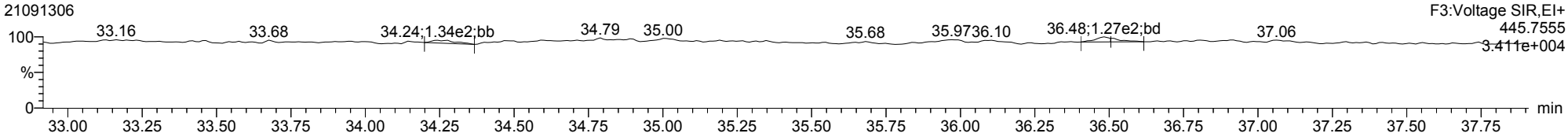

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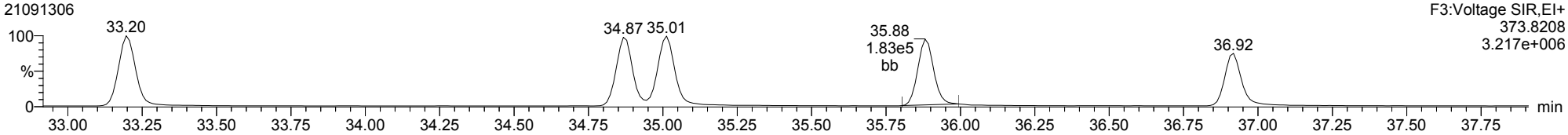

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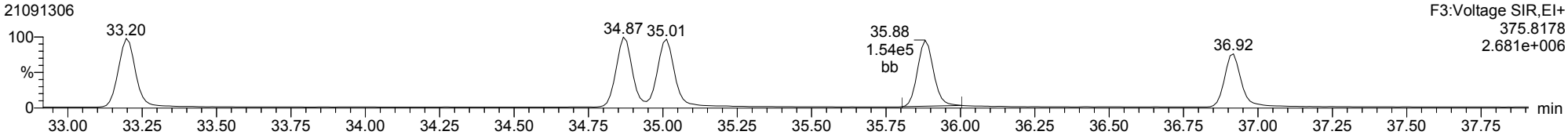

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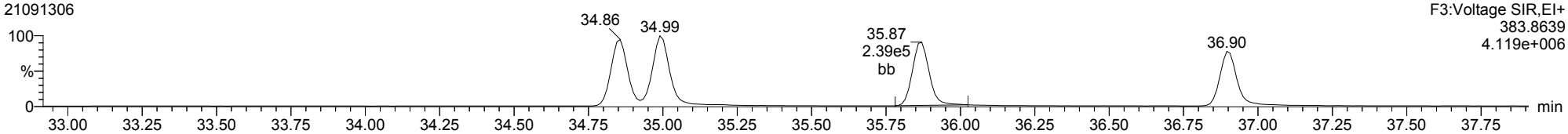

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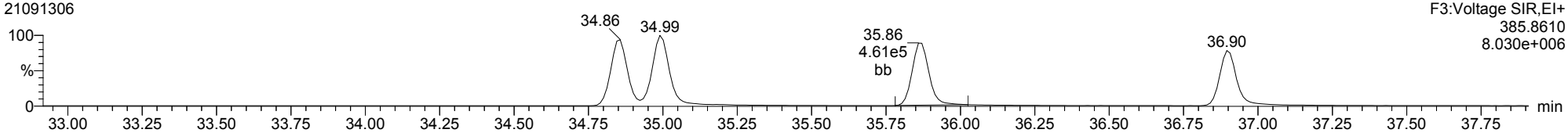

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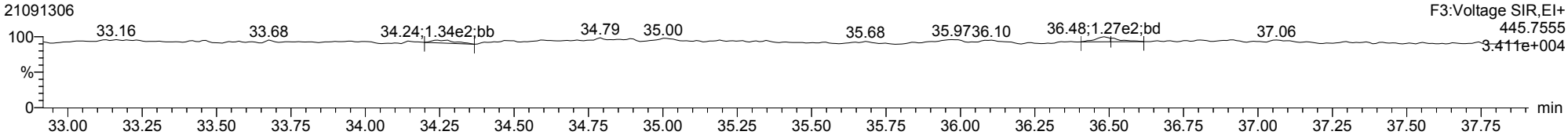

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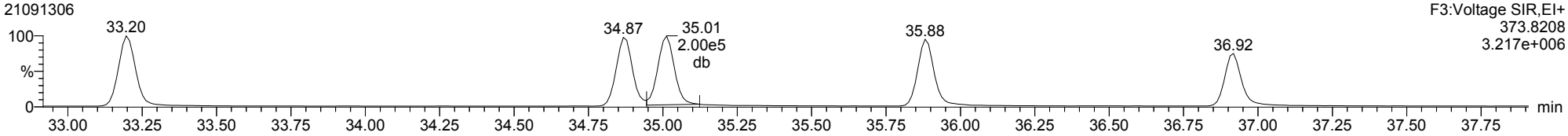

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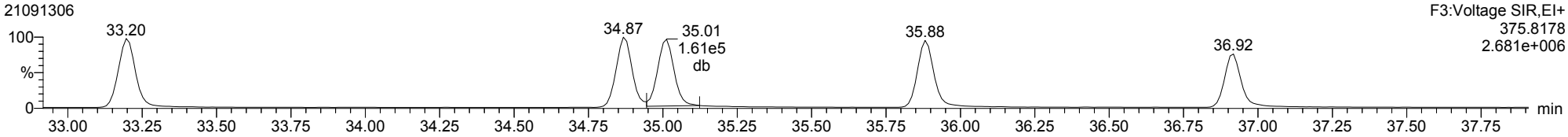

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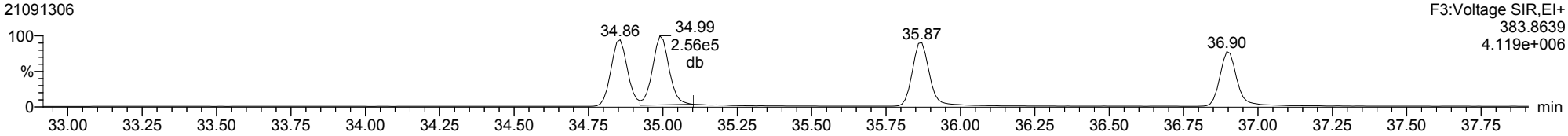

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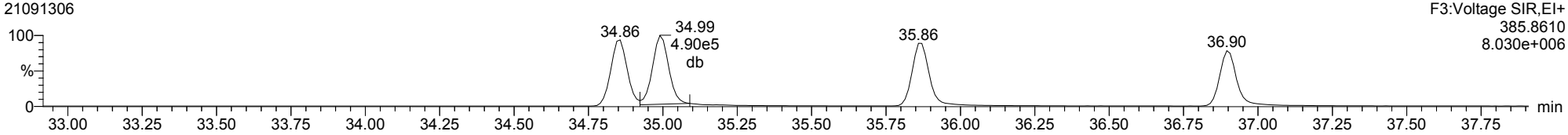

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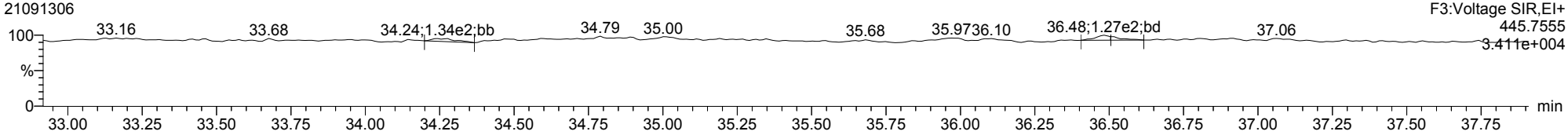

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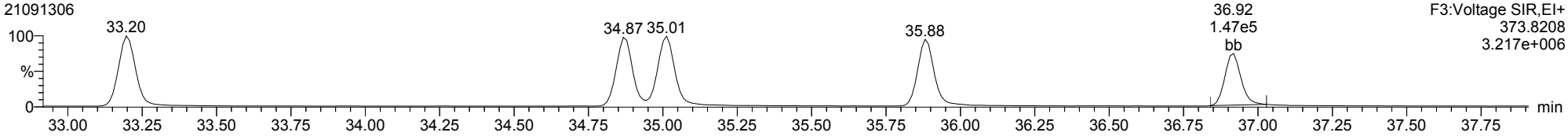

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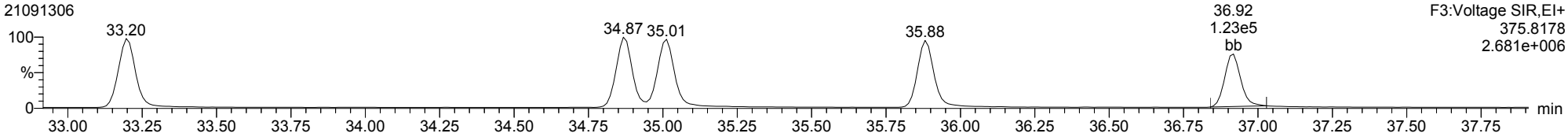

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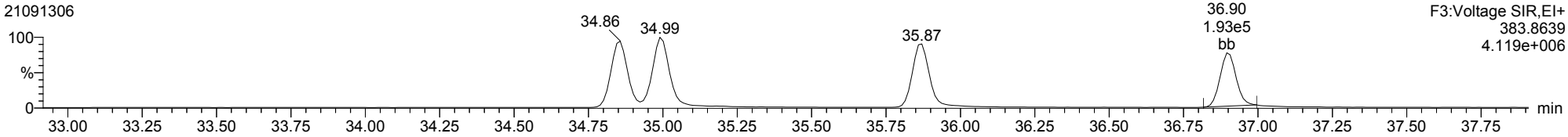

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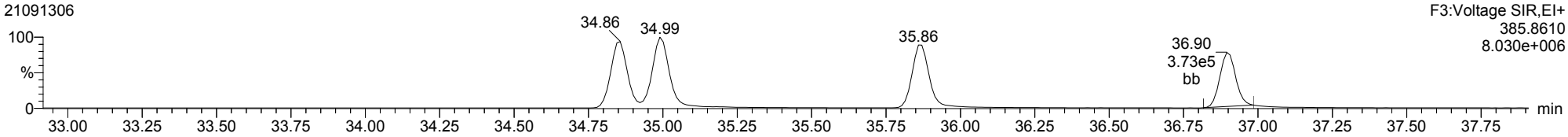

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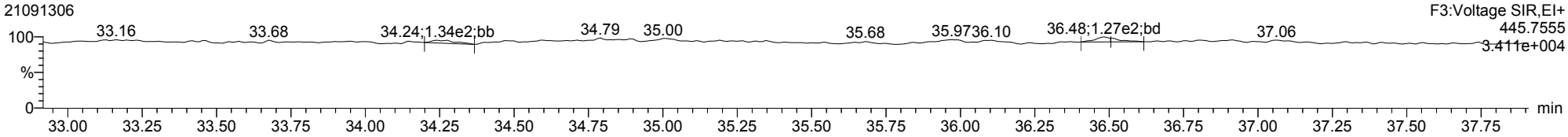

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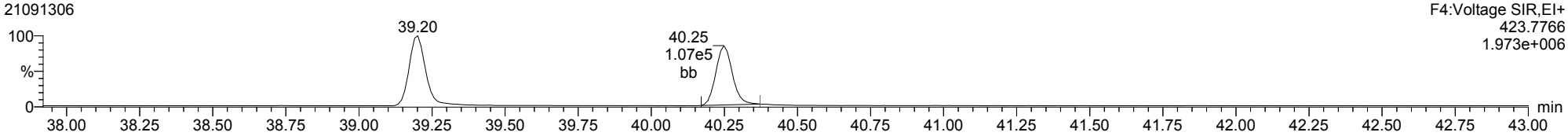

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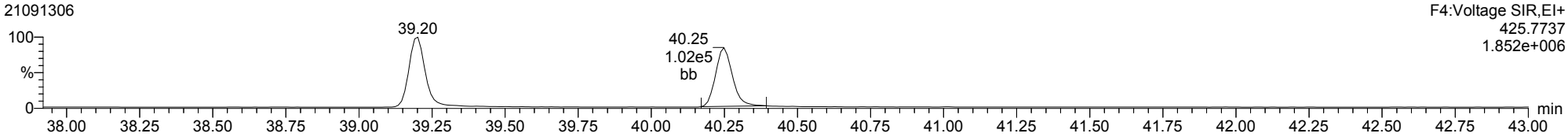

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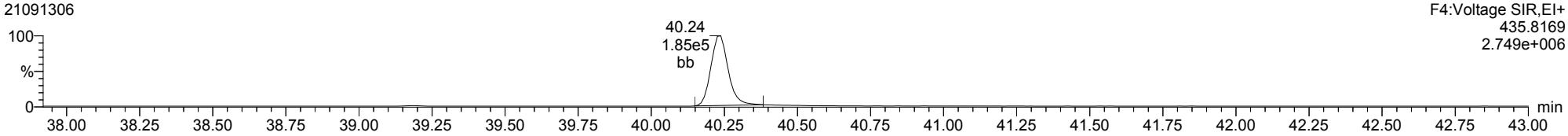

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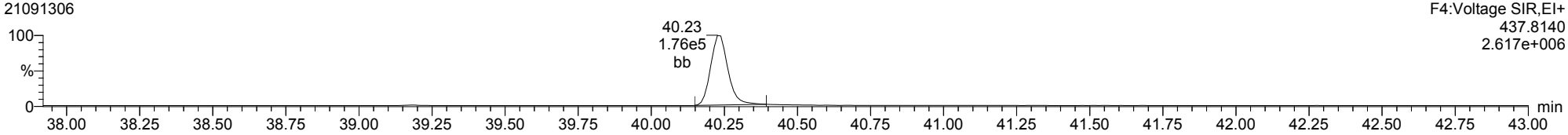

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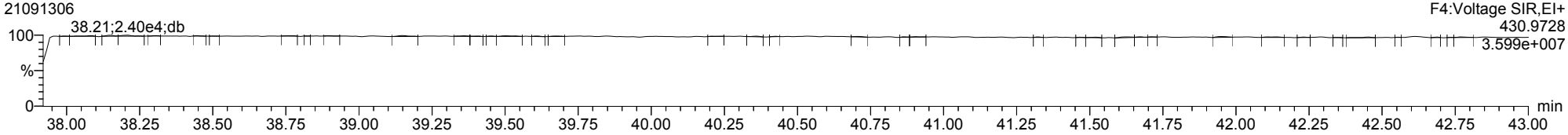

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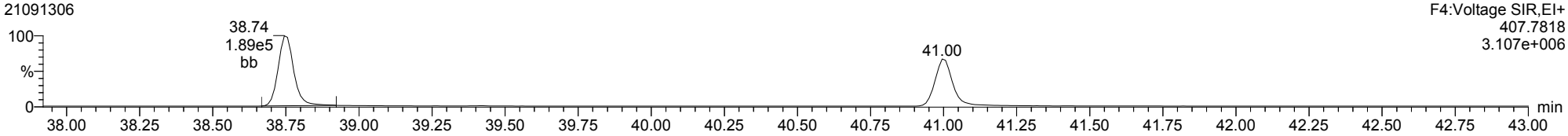

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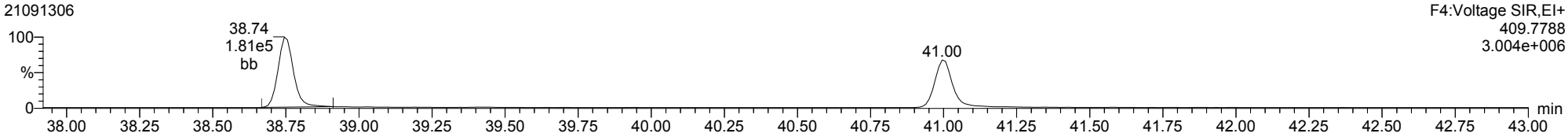

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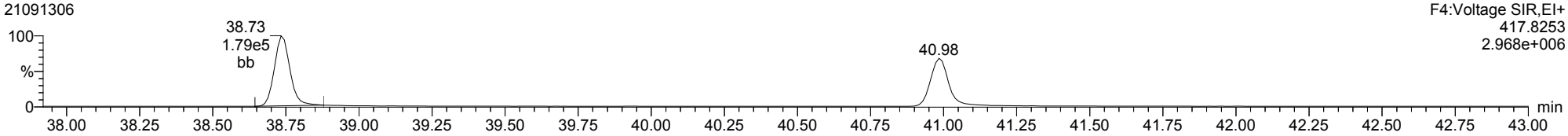

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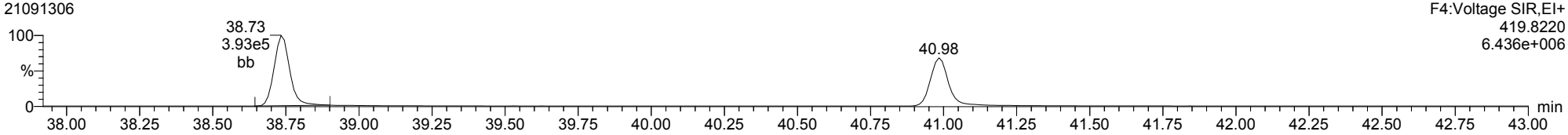

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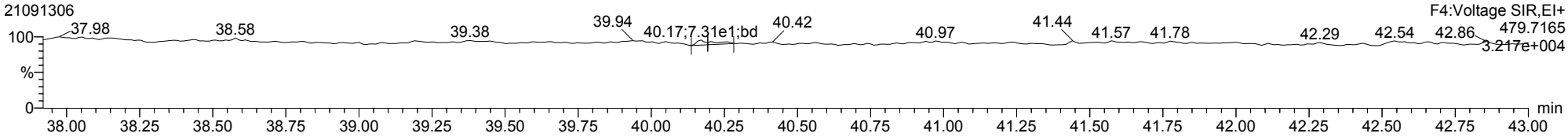

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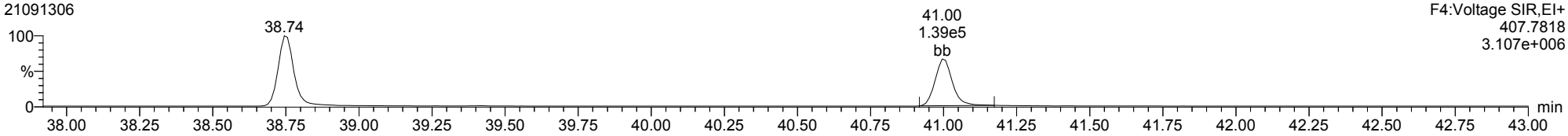

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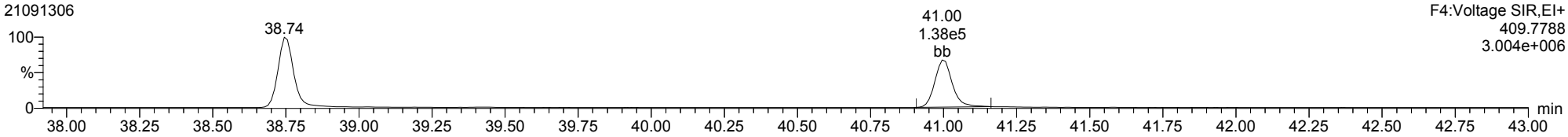

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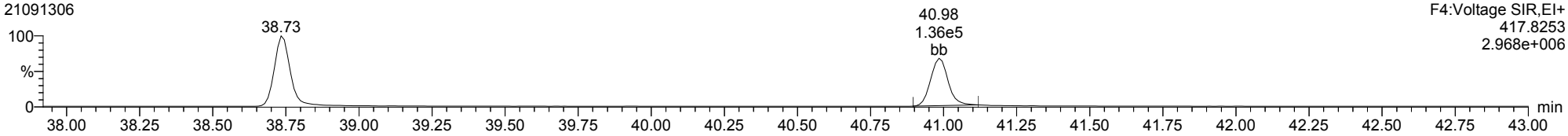

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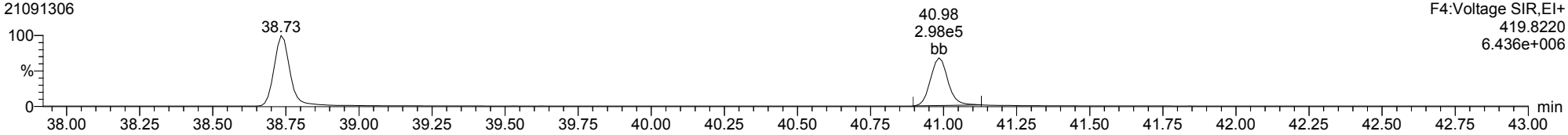

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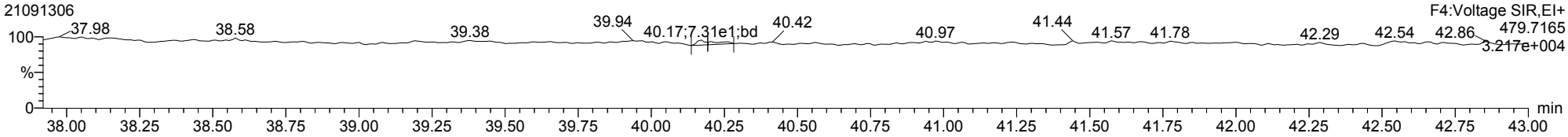

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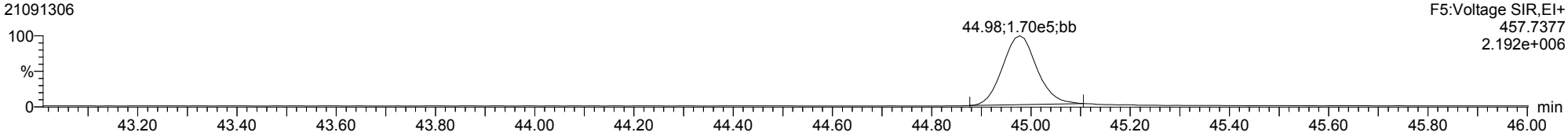

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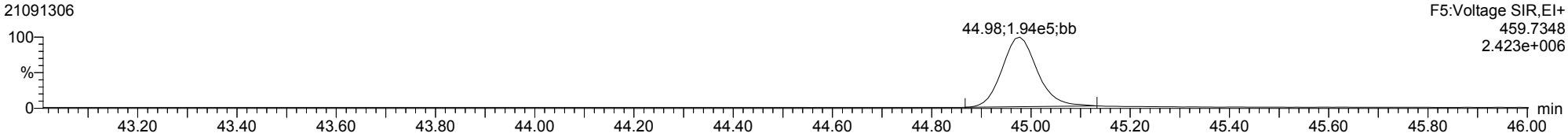

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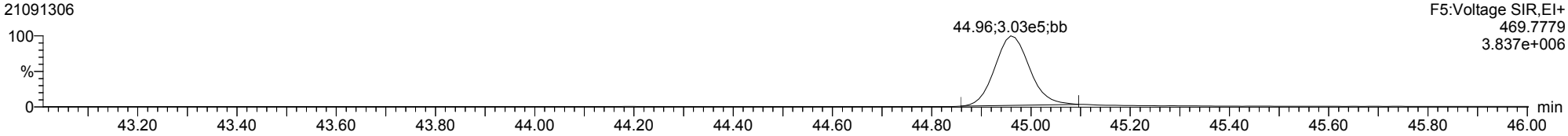

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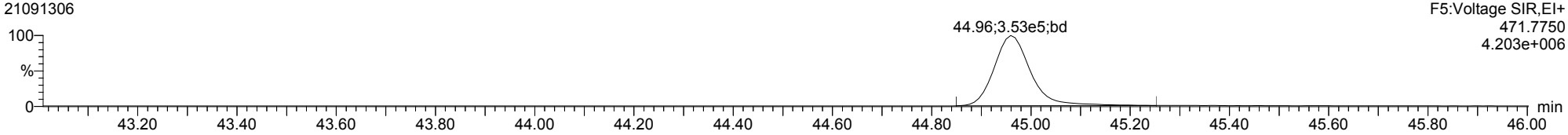

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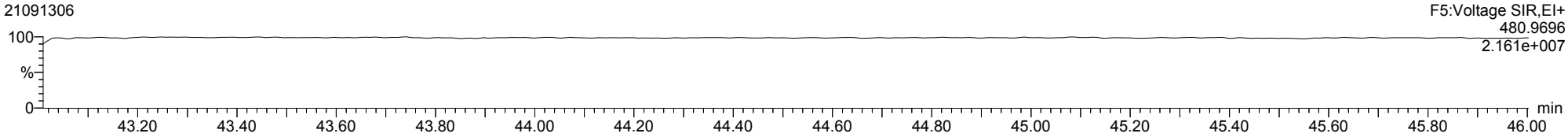

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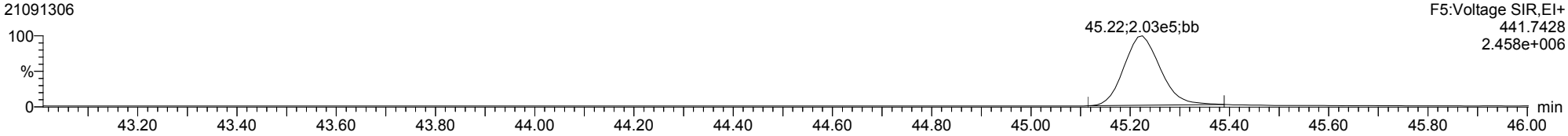

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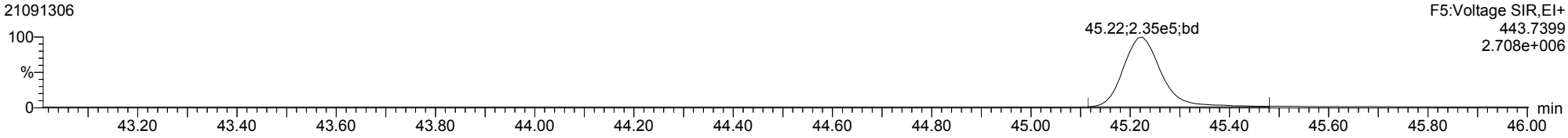

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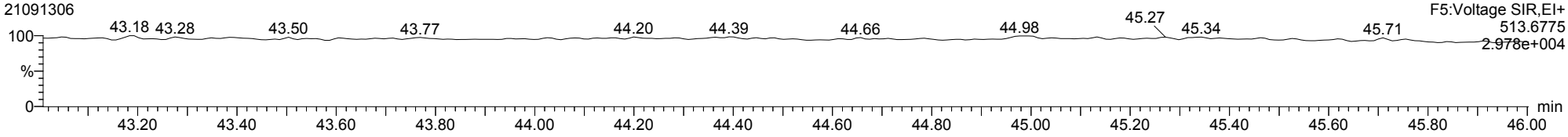

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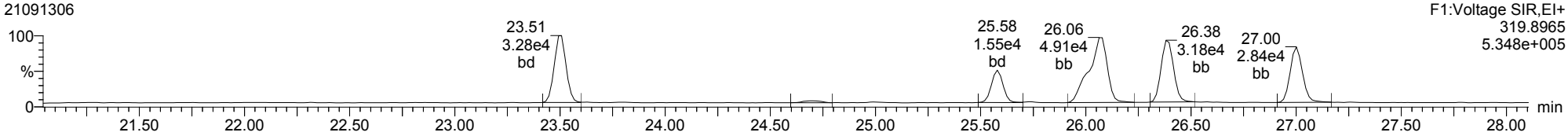

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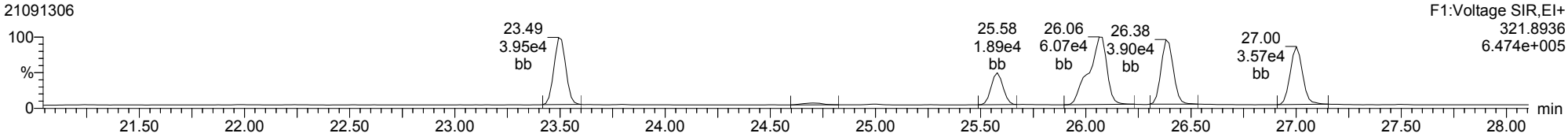

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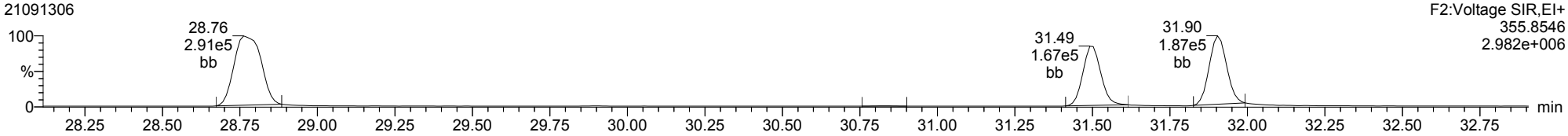

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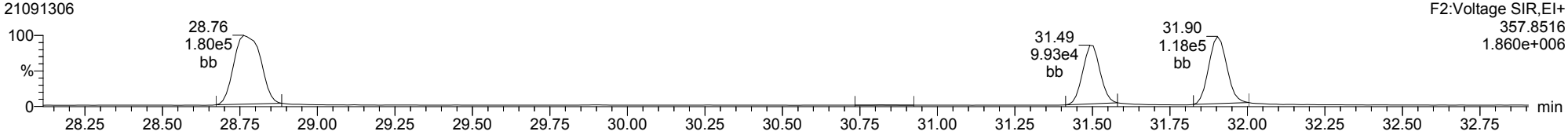

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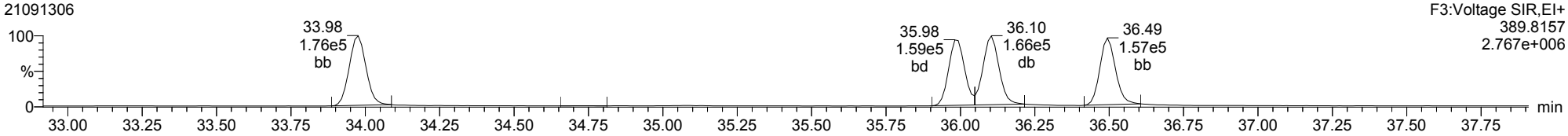
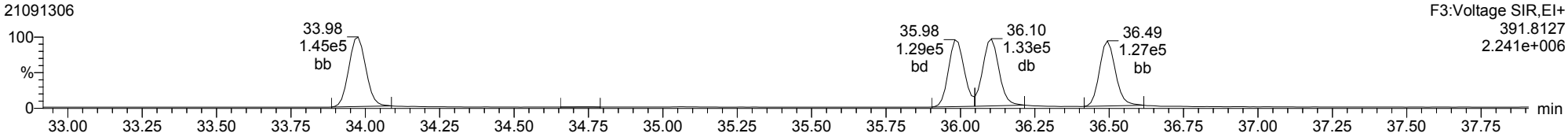
Total-hexadioxins



Total-hexadioxins



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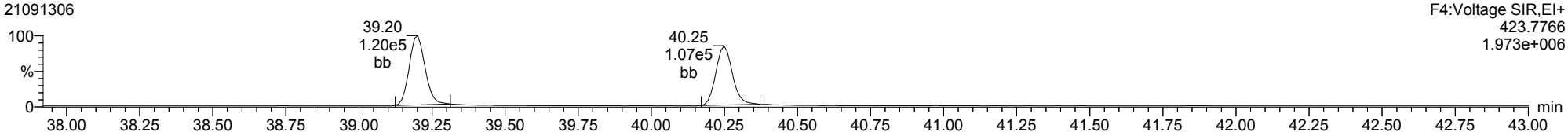
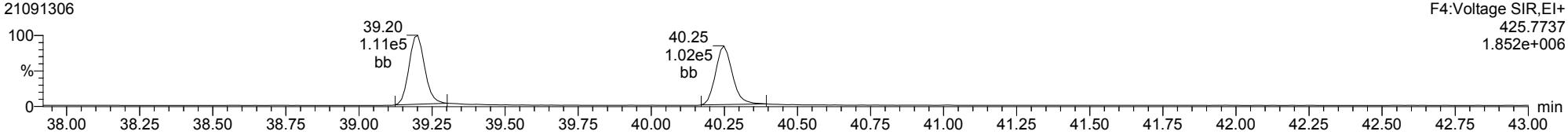


Total-heptadioxins



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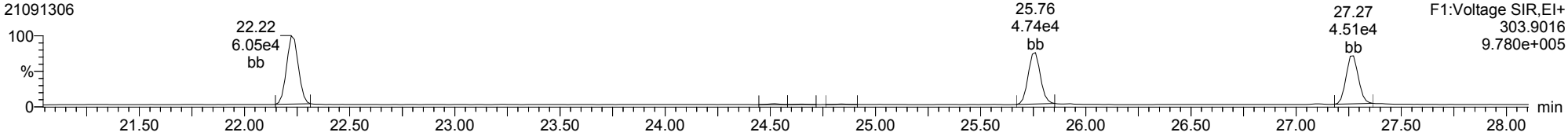
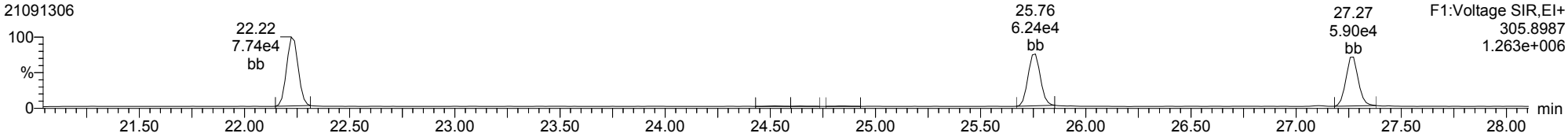
Printed: Tuesday, September 14, 2021 11:15:22 Pacific Daylight Time

ID: CS3Q2, Name: 21091306, Date: 13-Sep-2021, Time: 15:52:01, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



Total-tetrafurans



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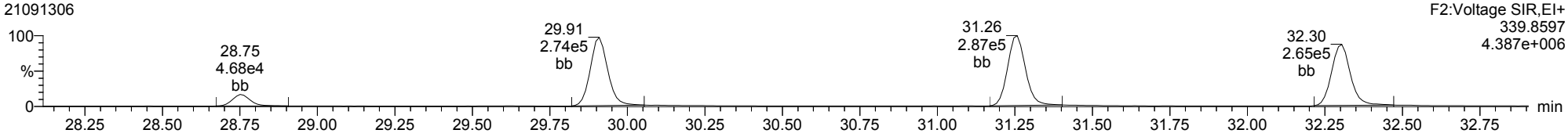
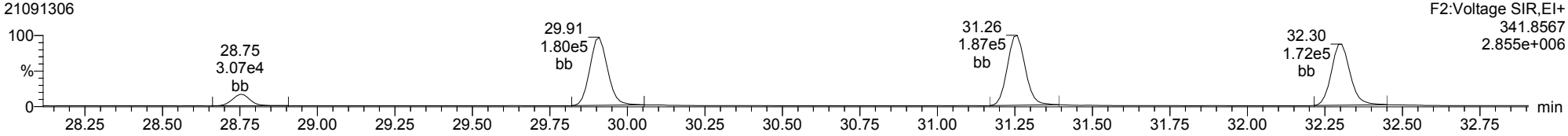


Total-pentafurans



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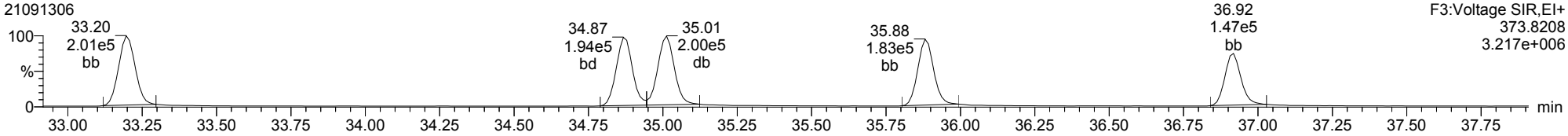
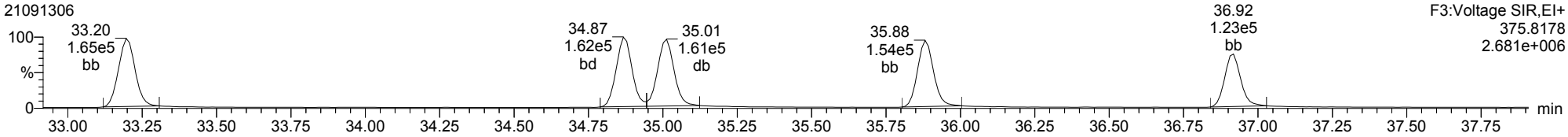
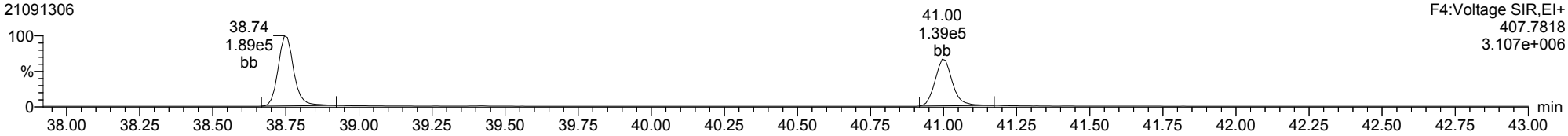
Total-hexafurans



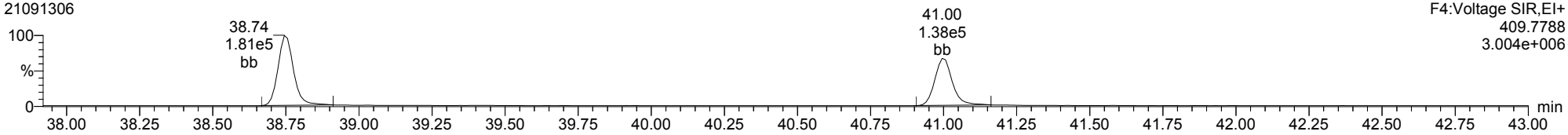
Total-hexafurans



Total-heptafurans



Total-heptafurans



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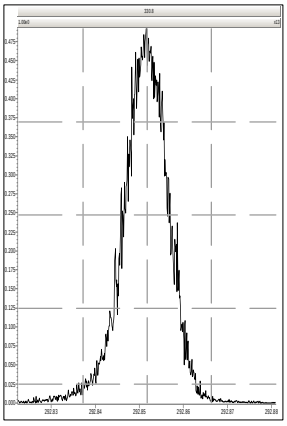
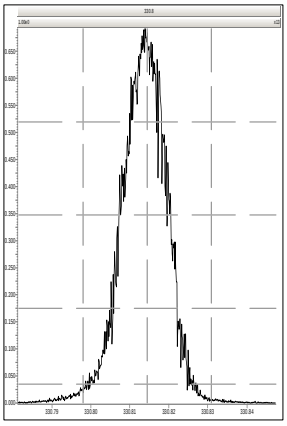
M 292.9824 R 12288



M 330.9792 R 12961



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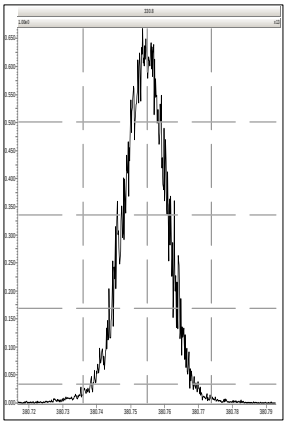

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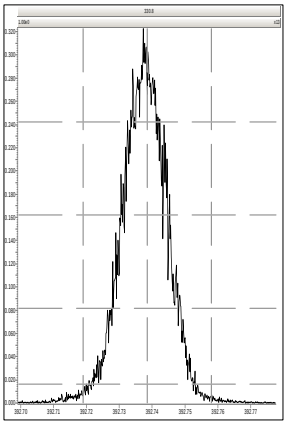
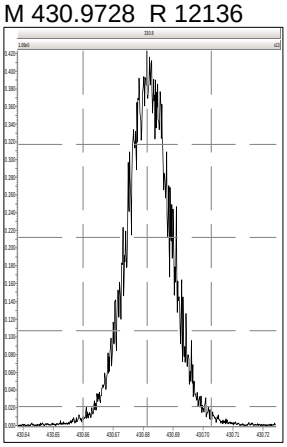


M 430.9728 R 12136



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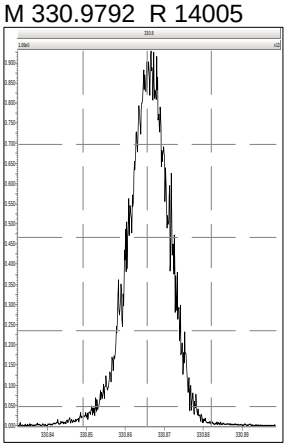

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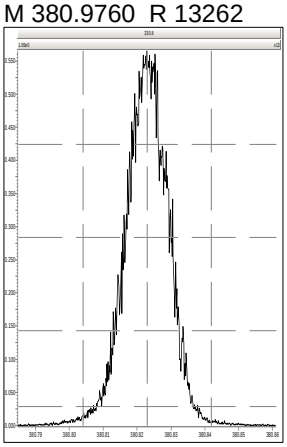

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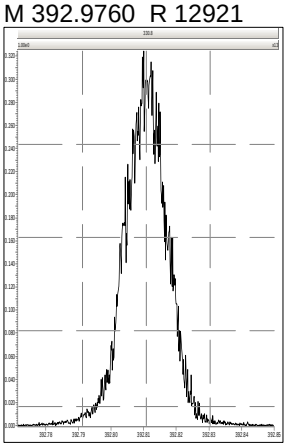

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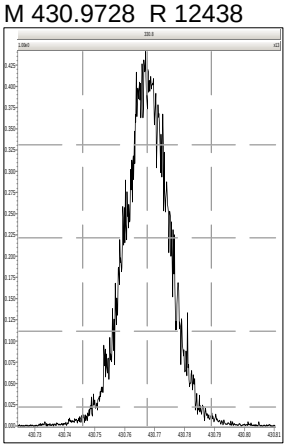
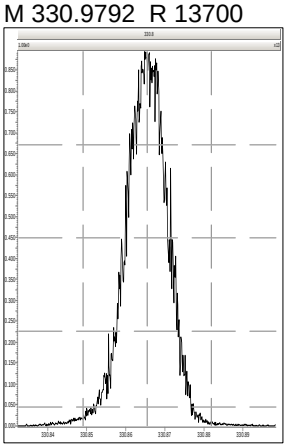


M 330.9792 R 13700



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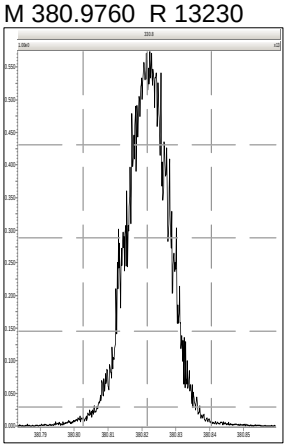

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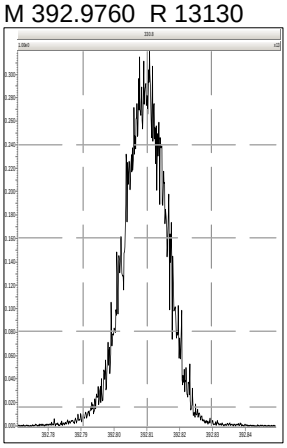

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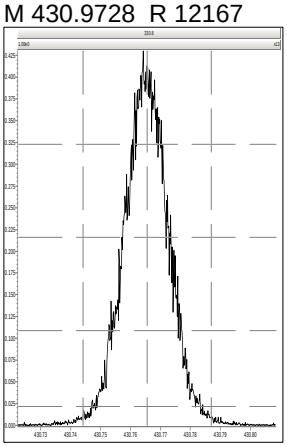

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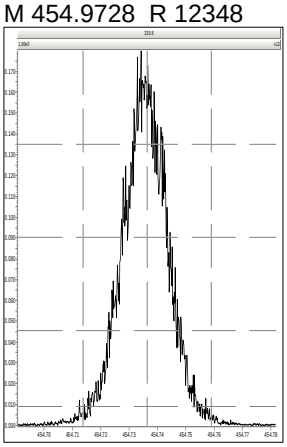

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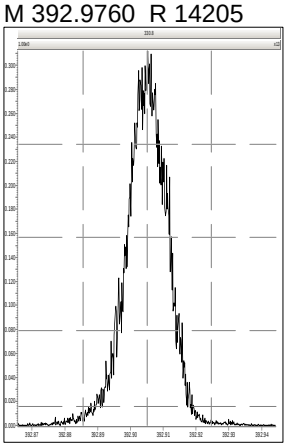
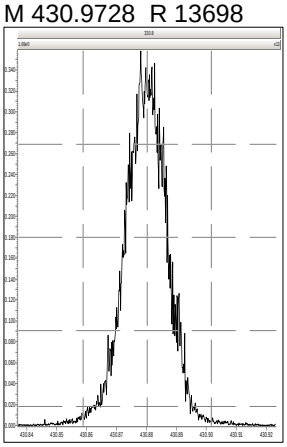


M 430.9728 R 13698



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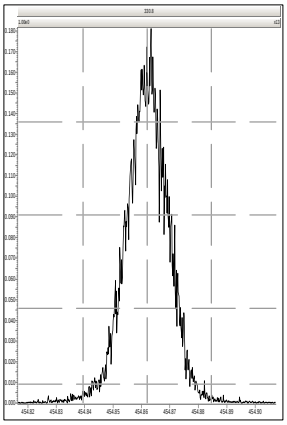
M 454.9728 R 13406



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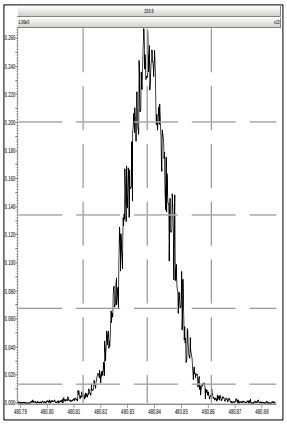
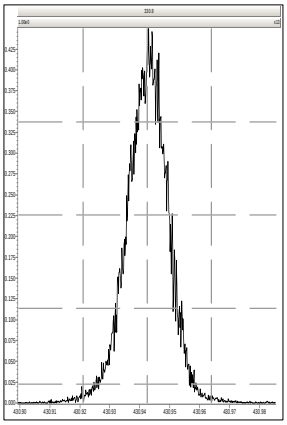


M 430.9728 R 13966



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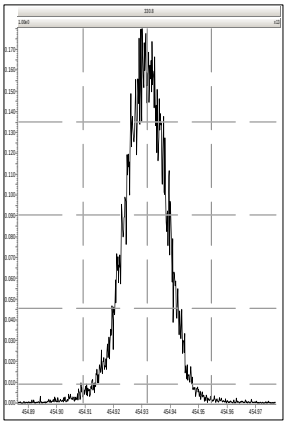
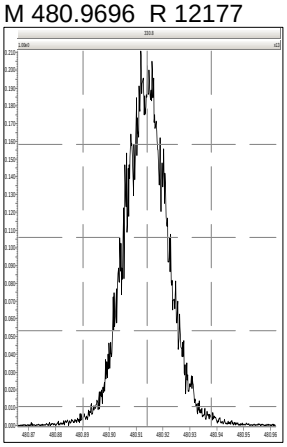


M 480.9696 R 12177



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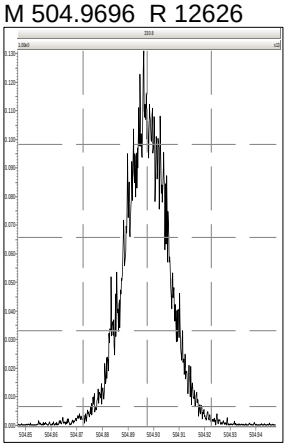

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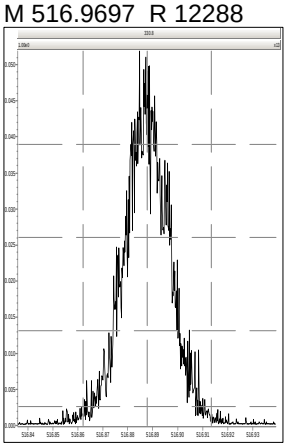
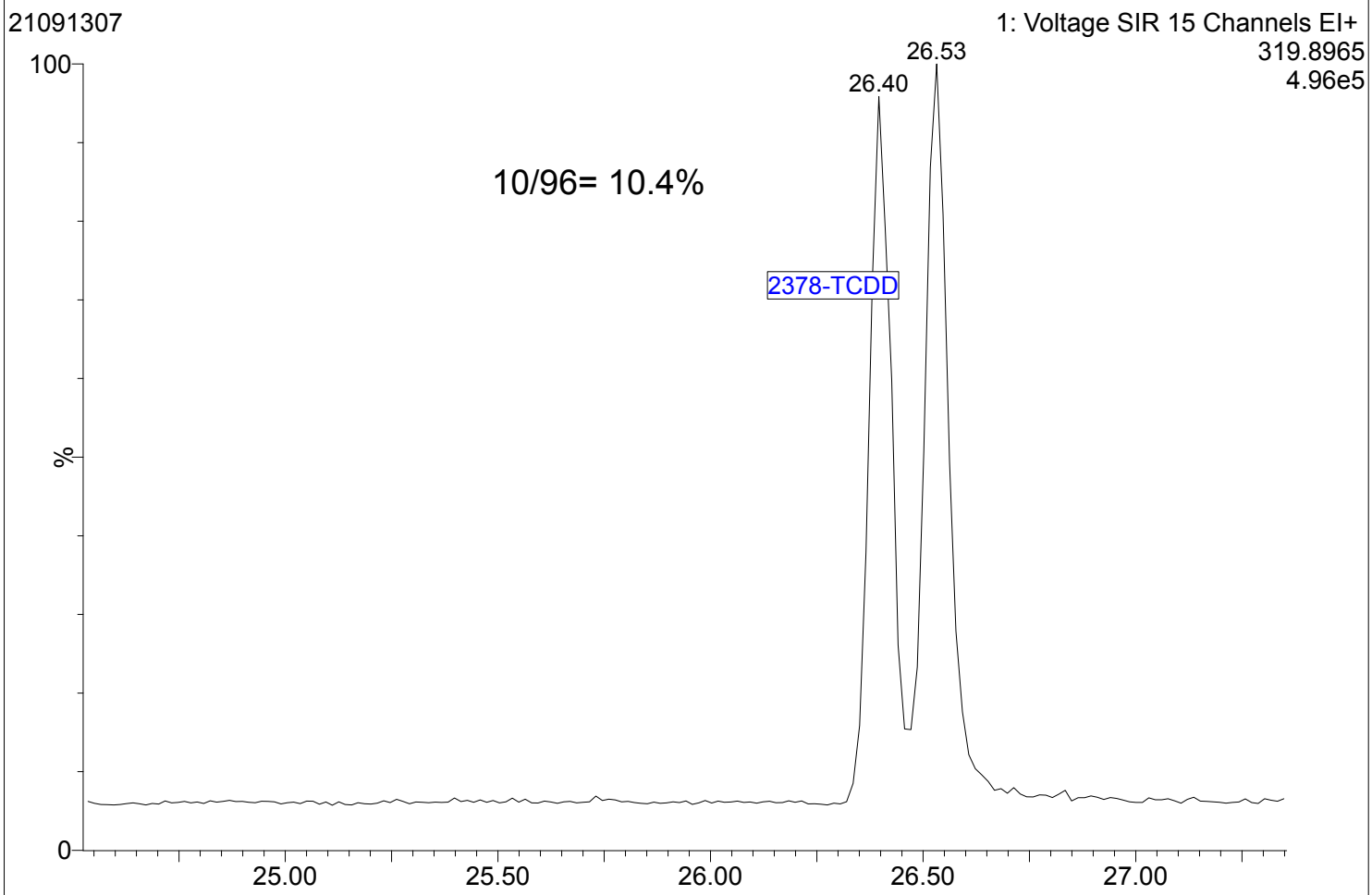
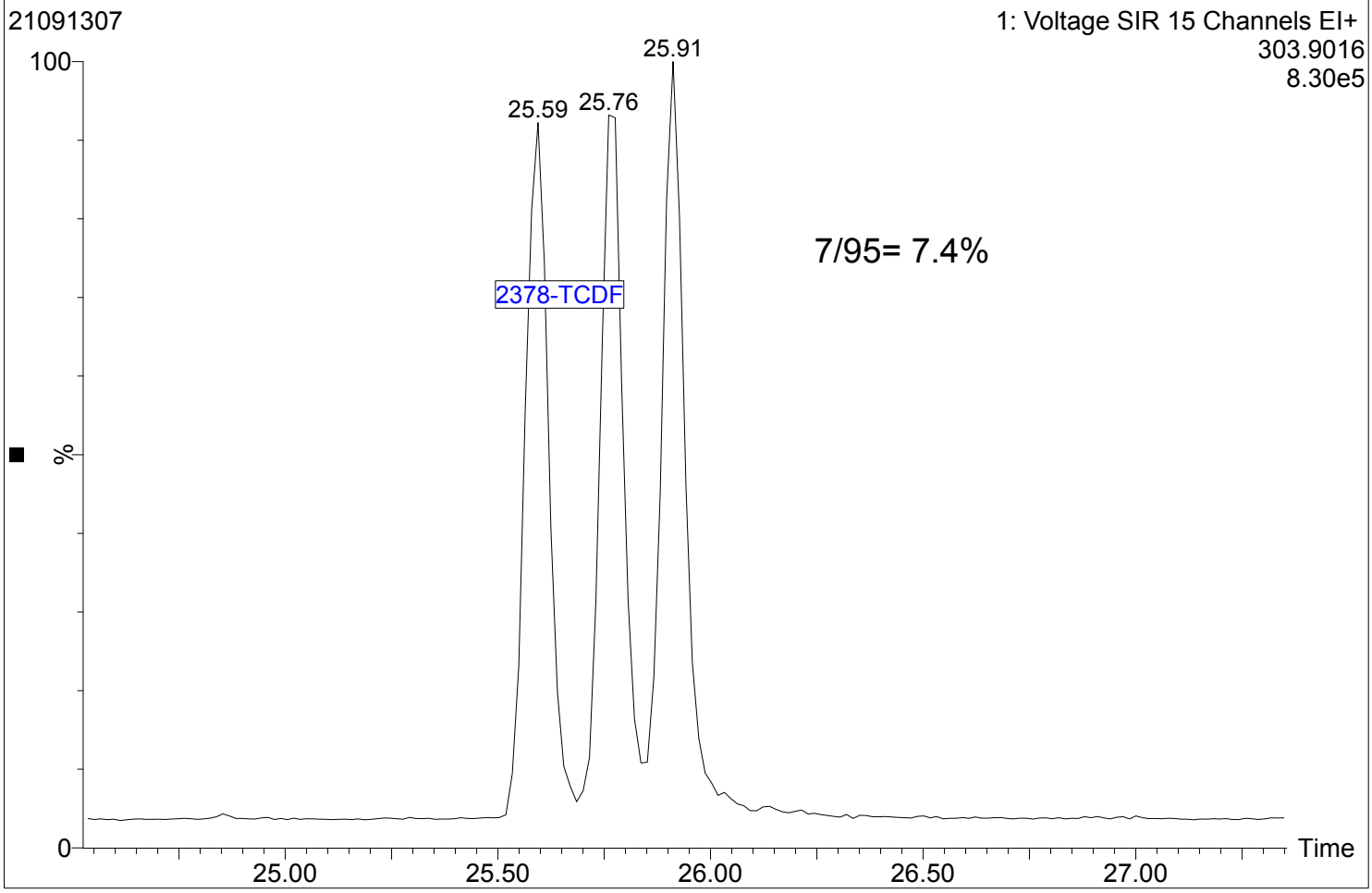



21091307
1: Voltage SIR 15 Channels EI+
319.8965
4.96e5
26.40
26.53
10/96= 10.4%
2378-TCDD
100
%
0
25.00
25.50
26.00
26.50
27.00


21091307
1: Voltage SIR 15 Channels EI+
303.9016
8.30e5
25.59
25.76
25.91
7/95= 7.4%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21081113B	Calibration Date:	08/11/2021
Sequence:	SJH0117	Injection Date:	08/12/21
Lab Sample ID:	SJH0117-CCV1	Injection Time:	00:48
Sequence Name:	CS3Z2		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	10.1	1.1075930	1.1191730		1.0	+/-16
2,3,7,8-TCDD	A	10.000	9.75	0.9202875	0.8973066		-2.5	+/-22
1,2,3,7,8-PeCDF	A	50.000	50.7	1.0148670	1.0281610		1.3	+/-18
2,3,4,7,8-PeCDF	A	50.000	50.4	1.1255490	1.1349300		0.8	+/-18
1,2,3,7,8-PeCDD	A	50.000	49.1	0.9953229	0.9769075		-1.9	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	51.8	1.0168930	1.0538730		3.6	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	51.8	1.0368310	1.0732520		3.5	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.7	1.0524660	1.0469350		-0.5	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	49.7	1.0301540	1.0235190		-0.6	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	48.5	1.0273630	0.9967018		-3.0	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	51.5	1.0089800	1.0398750		3.1	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	50.7	0.9504865	0.9630587		1.3	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	48.9	1.3273500	1.2991490		-2.1	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	51.5	1.2833380	1.3216770		3.0	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	48.0	1.0680880	1.0247400		-4.1	+/-14
OCDF	A	100.00	107	1.4469010	1.5539920		7.4	+/-37
OCDD	A	100.00	107	1.1808230	1.2619610		6.9	+/-21
13C12-2,3,7,8-TCDF	A	100.00	98.0	1.4265830	1.3974584		-2.0	+/-29
13C12-2,3,7,8-TCDD	A	100.00	97.1	1.1164910	1.0836404		-2.9	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	97.5	1.2973130	1.2648460		-2.5	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	97.1	1.2364800	1.2008975		-2.9	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	98.0	0.7319833	0.7176249		-2.0	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	101	1.2424560	1.2494697		0.6	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	102	1.3434760	1.3642310		1.5	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	101	1.2148550	1.2212500		0.5	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	102	1.0076370	1.0247334		1.7	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	100	0.9598233	0.9598120		-0.001	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	99.6	1.0413850	1.0375413		-0.4	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	105	0.9264704	0.9757178		5.3	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	102	0.7579160	0.7727519		2.0	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	106	0.6324476	0.6702170		6.0	+/-18
13C12-OCDD	A	200.00	201	0.5037432	0.5068327		0.6	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.13	1.0835930	0.9890047		-8.7	+/-21

* Values outside of QC limits

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
Last Altered: Friday, August 13, 2021 13:47:27 Pacific Daylight Time
Printed: Friday, August 13, 2021 13:52:07 Pacific Daylight Time

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Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Z2, Name: 21081113, Date: 12-Aug-2021, Time: 00:48:45, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.655	1.001	1.143e5	1.396e5	1.108	0.819	0.770	2209	2380	1.71e6	2.07e6	776.0	867.8	NO	bb	bb	10.105
12378-PeCDF	29.817	1.000	6.180e5	4.376e5	1.015	1.413	1.550	6418	4382	8.92e6	5.95e6	1389.5	1358.9	NO	bb	bb	50.655
23478-PeCDF	31.165	1.001	6.708e5	4.355e5	1.126	1.540	1.550	6418	4382	9.69e6	6.27e6	1509.6	1430.5	NO	bd	bd	50.417
123478-HxCDF	34.797	1.000	4.932e5	3.999e5	1.017	1.233	1.240	5850	4867	7.49e6	6.12e6	1280.5	1258.5	NO	bd	bd	51.818
234678-HxCDF	35.811	1.001	4.741e5	3.931e5	1.052	1.206	1.240	5850	4867	7.32e6	5.96e6	1251.7	1223.7	NO	bb	bb	49.737
123678-HxCDF	34.942	1.001	5.746e5	4.185e5	1.037	1.373	1.240	5850	4867	7.73e6	6.23e6	1320.9	1280.9	NO	dd	db	51.756
123789-HxCDF	36.835	1.000	3.899e5	3.214e5	1.030	1.213	1.240	5850	4867	5.82e6	4.79e6	994.6	984.8	NO	bb	bb	49.678
1234678-HpCDF	38.685	1.000	4.539e5	4.058e5	1.327	1.118	1.050	5381	5066	6.60e6	6.39e6	1226.2	1261.9	NO	bd	bb	48.938
1234789-HpCDF	40.924	1.000	3.429e5	3.497e5	1.283	0.981	1.050	5381	5066	4.67e6	4.55e6	867.9	898.7	NO	bb	bd	51.494
OCDF	45.140	1.006	5.034e5	5.649e5	1.447	0.891	0.890	4470	4598	5.39e6	5.90e6	1206.0	1283.8	NO	bd	bd	107.401
2378-TCDD	26.305	1.001	6.930e4	8.856e4	0.920	0.783	0.770	2202	2331	1.00e6	1.30e6	455.2	559.0	NO	bb	bb	9.750
12378-PeCDD	31.421	1.001	3.542e5	2.148e5	0.995	1.649	1.550	4399	2303	5.26e6	3.29e6	1196.1	1426.7	NO	bb	bb	49.075
123478-HxCDD	35.922	1.000	3.564e5	2.924e5	1.027	1.219	1.240	6435	4536	5.90e6	4.75e6	916.5	1047.8	NO	bd	bd	48.508
123678-HxCDD	36.044	1.001	4.055e5	3.262e5	1.009	1.243	1.240	6435	4536	5.93e6	4.74e6	922.2	1045.0	NO	db	db	51.531
123789-HxCDD	36.423	1.011	3.629e5	2.894e5	0.950	1.254	1.240	6435	4536	5.40e6	4.41e6	838.4	972.5	NO	bb	bb	50.661
1234678-HpCDD	40.178	1.000	2.336e5	2.322e5	1.068	1.006	1.050	3232	2806	3.31e6	3.23e6	1025.7	1152.0	NO	bb	bb	47.971
OCDD	44.902	1.000	4.051e5	4.625e5	1.181	0.876	0.890	3821	3323	4.65e6	5.25e6	1217.2	1581.4	NO	bd	bd	106.871
13C-2378-TCDF	25.640	1.007	1.023e6	1.246e6	1.427	0.821	0.770	4222	3419	1.50e7	1.84e7	3559.1	5386.6	NO	bb	bb	97.958
13C-12378-PeCDF	29.806	1.171	1.249e6	8.041e5	1.297	1.554	1.550	5206	4735	1.83e7	1.13e7	3520.2	2396.2	NO	bb	bd	97.497
13C-23478-PeCDF	31.142	1.223	1.204e6	7.457e5	1.236	1.614	1.550	5206	4735	1.76e7	1.10e7	3379.0	2313.4	NO	bb	bb	97.122
13C-123478-HxCDF	34.786	0.955	5.756e5	1.119e6	1.242	0.514	0.510	4837	7694	8.67e6	1.70e7	1792.8	2206.6	NO	bd	bd	100.564
13C-123678-HxCDF	34.919	0.959	6.397e5	1.211e6	1.343	0.528	0.510	4837	7694	9.26e6	1.76e7	1914.7	2293.8	NO	db	db	101.545
13C-234678-HxCDF	35.788	0.983	5.662e5	1.090e6	1.215	0.519	0.510	4837	7694	8.44e6	1.64e7	1744.6	2133.4	NO	bb	bb	100.526
13C-123789-HxCDF	36.824	1.011	4.764e5	9.136e5	1.008	0.521	0.510	4837	7694	7.17e6	1.38e7	1481.6	1789.5	NO	bb	bb	101.697
13C-1234678-HpCDF	38.674	1.062	4.025e5	9.210e5	0.926	0.437	0.440	4919	5787	6.00e6	1.33e7	1219.4	2291.3	NO	bb	bb	105.316
13C-1234789-HpCDF	40.902	1.123	3.390e5	7.092e5	0.758	0.478	0.440	4919	5787	4.33e6	9.36e6	880.8	1618.0	NO	bd	bb	101.957
13C-1234-TCDD	25.458	0.000	7.107e5	9.127e5	1.000	0.779	0.770	4322	2655	1.07e7	1.38e7	2477.2	5211.8	NO	bb	bb	100.000
13C-2378-TCDD	26.275	1.032	7.572e5	1.002e6	1.116	0.756	0.770	4322	2655	1.10e7	1.47e7	2555.0	5537.6	NO	bb	bb	97.058
13C-12378-PeCDD	31.399	1.233	7.083e5	4.567e5	0.732	1.551	1.550	2197	2256	1.02e7	6.60e6	4656.5	2924.7	NO	bb	bb	98.038
13C-123478-HxCDD	35.911	0.986	7.278e5	5.741e5	0.960	1.268	1.240	5339	3457	1.18e7	9.21e6	2205.2	2664.1	NO	bd	bd	99.999
13C-123678-HxCDD	36.022	0.989	7.868e5	6.206e5	1.041	1.268	1.240	5339	3457	1.16e7	9.23e6	2175.2	2669.6	NO	db	db	99.631
13C-1234678-HpCDD	40.167	1.103	4.698e5	4.393e5	0.632	1.069	1.050	3318	4839	6.24e6	5.99e6	1881.1	1238.3	NO	bb	bd	105.972
13C-OCDD	44.884	1.233	6.557e5	7.193e5	0.504	0.912	0.890	3766	2994	7.78e6	8.50e6	2067.0	2839.7	NO	bb	bb	201.227
13C-123789-HxCDD	36.412	0.000	7.565e5	5.999e5	1.000	1.261	1.240	5339	3457	1.16e7	9.02e6	2168.1	2609.1	NO	bb	bb	100.000
37CL-2378-TCDD	26.305	1.033	1.606e5		1.084			2435		2.31e6		947.5			bb		9.127

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ID: CS3Z2, Name: 21081113, Date: 12-Aug-2021, Time: 00:48:45, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.147	0.864	1.386e5	1.842e5	1.425	0.753	0.770	2209	2380	2.22e6	2.90e6	1005.2	1218.6	NO	bb	bb	9.983
1289-TCDF	27.152	1.059	1.091e5	1.321e5	1.043	0.826	0.770	2209	2380	1.55e6	1.91e6	700.5	802.7	NO	bb	bb	10.192
13468-PECDF	27.015	0.906	8.873e5	5.695e5	1.376	1.558	1.550	1007	1724	1.34e7	8.46e6	13289.5	4908.8	NO	bb	bb	51.550
12389-PECDF	32.201	1.080	6.289e5	4.043e5	1.000	1.555	1.550	6418	4382	8.60e6	5.59e6	1339.2	1276.7	NO	bb	bb	50.341
123468-HXCDF	33.125	0.952	5.139e5	4.526e5	1.087	1.135	1.240	5850	4867	7.68e6	6.45e6	1313.5	1325.0	NO	bb	bb	52.485
1368-TCDD	23.417	0.891	7.327e4	9.470e4	0.923	0.774	0.770	2202	2331	1.11e6	1.48e6	505.2	634.7	NO	bb	bb	10.342
1289-TCDD	26.895	1.024	6.177e4	8.189e4	0.794	0.754	0.770	2202	2331	9.09e5	1.13e6	412.8	484.6	NO	bb	bd	10.285
12479-PECDD	28.703	0.914	6.697e5	3.948e5	1.843	1.696	1.550	4399	2303	6.19e6	3.79e6	1407.8	1645.8	NO	bb	bb	49.573
12389-PECDD	31.822	1.013	4.131e5	2.464e5	1.154	1.676	1.550	4399	2303	5.91e6	3.60e6	1344.5	1564.4	NO	bb	bb	49.074
124679-HXCDD	33.905	0.944	4.106e5	3.389e5	1.125	1.212	1.240	6435	4536	6.29e6	5.14e6	976.7	1133.8	NO	bb	bb	51.172
1234679-HPCDD	39.131	0.974	2.687e5	2.465e5	1.211	1.090	1.050	3232	2806	4.00e6	3.69e6	1238.7	1316.6	NO	bb	bb	46.792
Total-tetrafurans			3.644e5		1.192			2209		5.52e6							30.479
Total-penta1			8.873e5					1007		1.34e7							51.550
Total-pentafurans			2.025e6		1.047			6418		2.88e7							159.979
Total-hexafurans			2.446e6		1.045			5850		3.60e7							255.475
Total-heptafurans			7.968e5		1.305			5381		1.13e7							100.431
Total-Furans			7.022e6		1.158			2209		1.00e8							705.315
Total-tetradioxins			3.479e5		0.879			2202		4.65e6							51.451
Total-pentadioxins			1.437e6		1.331			4399		1.74e7							147.722
Total-hexadioxins			1.535e6		1.028			6435		2.35e7							201.873
Total-heptadioxins			5.022e5		1.140			3232		7.32e6							94.763
Total-Dioxins			4.228e6		1.092			2202		5.75e7							602.679
Total-TEQ			1.125e7					2202		1.58e8							1307.995
FUNCTION1 PFK			0.000e0					865360		0.00e0							
FUNCTION2 PFK			1.459e7					431624		6.40e7							0.000
FUNCTION3 PFK			6.237e3					742709		5.59e5							0.000
FUNCTION4 PFK			2.072e7					486680		6.95e7							
FUNCTION5 PFK			1.478e5					389285		5.03e6							
FUNCTION1 HXCD...			2.806e3					1089		4.50e4							0.000
FUNCTION1 HPCD...			2.562e3					1259		3.84e4							0.000
FUNCTION2 HPCD...			7.358e2					1046		1.36e4							0.000
FUNCTION3 OCDPE			1.483e3					1595		2.46e4							0.000
FUNCTION4 NCDPE			2.553e3					2345		6.96e4							0.000
FUNCTION5 DCDPE			2.445e2					1300		9.17e3							0.000

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Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

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TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	1.091e5	1.321e5	1.043	0.83	0.77	700.5	YES	NO	bb	bb	10.192
2	2378-TCDF	25.65	1.143e5	1.396e5	1.108	0.82	0.77	776.0	YES	NO	bb	bb	10.105
3	Total-tetrafurans	24.75	9.308e2	1.284e3	1.192	0.72	0.77	6.1	YES	NO	bb	bb	0.082
4	Total-tetrafurans	24.42	1.425e3	1.742e3	1.192	0.82	0.77	10.8	YES	NO	bd	bd	0.117
5	1368-TCDF	22.15	1.386e5	1.842e5	1.425	0.75	0.77	1005.2	YES	NO	bb	bb	9.983

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.02	8.873e5	5.695e5	1.376	1.56	1.55	13289.5	YES	NO	bb	bb	51.550

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.16	6.708e5	4.355e5	1.126	1.54	1.55	1509.6	YES	NO	bd	bd	50.417
2	12378-PeCDF	29.82	6.180e5	4.376e5	1.015	1.41	1.55	1389.5	YES	NO	bb	bb	50.655
3	Total-pentafurans	28.67	1.069e5	7.257e4	1.047	1.47	1.55	243.1	YES	NO	bb	bb	8.567
4	12389-PECDF	32.20	6.289e5	4.043e5	1.000	1.56	1.55	1339.2	YES	NO	bb	bb	50.341

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123678-HxCDF	34.94	5.746e5	4.185e5	1.037	1.37	1.24	1320.9	YES	NO	dd	db	51.756
2	123478-HxCDF	34.80	4.932e5	3.999e5	1.017	1.23	1.24	1280.5	YES	NO	bd	bd	51.818
3	123468-HXCDF	33.13	5.139e5	4.526e5	1.087	1.14	1.24	1313.5	YES	NO	bb	bb	52.485
4	123789-HxCDF	36.84	3.899e5	3.214e5	1.030	1.21	1.24	994.6	YES	NO	bb	bb	49.678
5	234678-HxCDF	35.81	4.741e5	3.931e5	1.052	1.21	1.24	1251.7	YES	NO	bb	bb	49.737

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.68	4.539e5	4.058e5	1.327	1.12	1.05	1226.2	YES	NO	bd	bb	48.938
2	1234789-HpCDF	40.92	3.429e5	3.497e5	1.283	0.98	1.05	867.9	YES	NO	bb	bd	51.494

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	1.091e5	1.321e5	1.043	0.83	0.77	700.5	YES	NO	bb	bb	10.192
2	2378-TCDF	25.65	1.143e5	1.396e5	1.108	0.82	0.77	776.0	YES	NO	bb	bb	10.105
3	Total-tetrafurans	24.75	9.308e2	1.284e3	1.192	0.72	0.77	6.1	YES	NO	bb	bb	0.082
4	Total-tetrafurans	24.42	1.425e3	1.742e3	1.192	0.82	0.77	10.8	YES	NO	bd	bd	0.117
5	1368-TCDF	22.15	1.386e5	1.842e5	1.425	0.75	0.77	1005.2	YES	NO	bb	bb	9.983
6	23478-PeCDF	31.16	6.708e5	4.355e5	1.126	1.54	1.55	1509.6	YES	NO	bd	bd	50.417
7	12378-PeCDF	29.82	6.180e5	4.376e5	1.015	1.41	1.55	1389.5	YES	NO	bb	bb	50.655
8	Total-pentafurans	28.67	1.069e5	7.257e4	1.047	1.47	1.55	243.1	YES	NO	bb	bb	8.567
9	123678-HxCDF	34.94	5.746e5	4.185e5	1.037	1.37	1.24	1320.9	YES	NO	dd	db	51.756
10	123478-HxCDF	34.80	4.932e5	3.999e5	1.017	1.23	1.24	1280.5	YES	NO	bd	bd	51.818
11	123468-HXCDF	33.13	5.139e5	4.526e5	1.087	1.14	1.24	1313.5	YES	NO	bb	bb	52.485
12	12389-PECDF	32.20	6.289e5	4.043e5	1.000	1.56	1.55	1339.2	YES	NO	bb	bb	50.341
13	123789-HxCDF	36.84	3.899e5	3.214e5	1.030	1.21	1.24	994.6	YES	NO	bb	bb	49.678
14	234678-HxCDF	35.81	4.741e5	3.931e5	1.052	1.21	1.24	1251.7	YES	NO	bb	bb	49.737
15	1234678-HpCDF	38.68	4.539e5	4.058e5	1.327	1.12	1.05	1226.2	YES	NO	bd	bb	48.938
16	1234789-HpCDF	40.92	3.429e5	3.497e5	1.283	0.98	1.05	867.9	YES	NO	bb	bd	51.494
17	OCDF	45.14	5.034e5	5.649e5	1.447	0.89	0.89	1206.0	YES	NO	bd	bd	107.401
18	13468-PECDF	27.02	8.873e5	5.695e5	1.376	1.56	1.55	13289.5	YES	NO	bb	bb	51.550

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.31	6.930e4	8.856e4	0.920	0.78	0.77	455.2	YES	NO	bb	bb	9.750
2	Total-tetradioxins	25.97	1.082e5	1.379e5	0.879	0.78	0.77	507.6	YES	NO	bb	bb	15.916
3	Total-tetradioxins	25.49	3.533e4	4.445e4	0.879	0.79	0.77	232.0	YES	NO	bd	bb	5.158
4	1368-TCDD	23.42	7.327e4	9.470e4	0.923	0.77	0.77	505.2	YES	NO	bb	bb	10.342
5	1289-TCDD	26.89	6.177e4	8.189e4	0.794	0.75	0.77	412.8	YES	NO	bb	bd	10.285

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.82	4.131e5	2.464e5	1.154	1.68	1.55	1344.5	YES	NO	bb	bb	49.074
2	12378-PeCDD	31.42	3.542e5	2.148e5	0.995	1.65	1.55	1196.1	YES	NO	bb	bb	49.075
3	12479-PECDD	28.70	6.697e5	3.948e5	1.843	1.70	1.55	1407.8	YES	NO	bb	bb	49.573

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HXCDD	33.91	4.106e5	3.389e5	1.125	1.21	1.24	976.7	YES	NO	bb	bb	51.172
2	123789-HxCDD	36.42	3.629e5	2.894e5	0.950	1.25	1.24	838.4	YES	NO	bb	bb	50.661
3	123678-HxCDD	36.04	4.055e5	3.262e5	1.009	1.24	1.24	922.2	YES	NO	db	db	51.531
4	123478-HxCDD	35.92	3.564e5	2.924e5	1.027	1.22	1.24	916.5	YES	NO	bd	bd	48.508

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234679-HPCDD	39.13	2.687e5	2.465e5	1.211	1.09	1.05	1238.7	YES	NO	bb	bb	46.792
2	1234678-HpCDD	40.18	2.336e5	2.322e5	1.068	1.01	1.05	1025.7	YES	NO	bb	bb	47.971

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	2378-TCDD	26.31	6.930e4	8.856e4	0.920	0.78	0.77	455.2	YES	NO	bb	bb	9.750
2	Total-tetradioxins	25.97	1.082e5	1.379e5	0.879	0.78	0.77	507.6	YES	NO	bb	bb	15.916
3	Total-tetradioxins	25.49	3.533e4	4.445e4	0.879	0.79	0.77	232.0	YES	NO	bd	bb	5.158
4	1368-TCDD	23.42	7.327e4	9.470e4	0.923	0.77	0.77	505.2	YES	NO	bb	bb	10.342
5	1289-TCDD	26.89	6.177e4	8.189e4	0.794	0.75	0.77	412.8	YES	NO	bb	bd	10.285
6	12389-PECDD	31.82	4.131e5	2.464e5	1.154	1.68	1.55	1344.5	YES	NO	bb	bb	49.074
7	12378-PeCDD	31.42	3.542e5	2.148e5	0.995	1.65	1.55	1196.1	YES	NO	bb	bb	49.075
8	12479-PECDD	28.70	6.697e5	3.948e5	1.843	1.70	1.55	1407.8	YES	NO	bb	bb	49.573
9	124679-HXCDD	33.91	4.106e5	3.389e5	1.125	1.21	1.24	976.7	YES	NO	bb	bb	51.172
10	123789-HxCDD	36.42	3.629e5	2.894e5	0.950	1.25	1.24	838.4	YES	NO	bb	bb	50.661
11	123678-HxCDD	36.04	4.055e5	3.262e5	1.009	1.24	1.24	922.2	YES	NO	db	db	51.531
12	123478-HxCDD	35.92	3.564e5	2.924e5	1.027	1.22	1.24	916.5	YES	NO	bd	bd	48.508
13	1234679-HPCDD	39.13	2.687e5	2.465e5	1.211	1.09	1.05	1238.7	YES	NO	bb	bb	46.792
14	1234678-HpCDD	40.18	2.336e5	2.322e5	1.068	1.01	1.05	1025.7	YES	NO	bb	bb	47.971
15	OCDD	44.90	4.051e5	4.625e5	1.181	0.88	0.89	1217.2	YES	NO	bd	bd	106.871

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	1.091e5	1.321e5	1.043	0.83	0.77	700.5	YES	NO	bb	bb	10.192
2	2378-TCDF	25.65	1.143e5	1.396e5	1.108	0.82	0.77	776.0	YES	NO	bb	bb	10.105
3	Total-tetrafurans	24.75	9.308e2	1.284e3	1.192	0.72	0.77	6.1	YES	NO	bb	bb	0.082
4	Total-tetrafurans	24.42	1.425e3	1.742e3	1.192	0.82	0.77	10.8	YES	NO	bd	bd	0.117
5	1368-TCDF	22.15	1.386e5	1.842e5	1.425	0.75	0.77	1005.2	YES	NO	bb	bb	9.983
6	23478-PeCDF	31.16	6.708e5	4.355e5	1.126	1.54	1.55	1509.6	YES	NO	bd	bd	50.417
7	12378-PeCDF	29.82	6.180e5	4.376e5	1.015	1.41	1.55	1389.5	YES	NO	bb	bb	50.655
8	Total-pentafurans	28.67	1.069e5	7.257e4	1.047	1.47	1.55	243.1	YES	NO	bb	bb	8.567
9	123678-HxCDF	34.94	5.746e5	4.185e5	1.037	1.37	1.24	1320.9	YES	NO	dd	db	51.756
10	123478-HxCDF	34.80	4.932e5	3.999e5	1.017	1.23	1.24	1280.5	YES	NO	bd	bd	51.818
11	123468-HXCDF	33.13	5.139e5	4.526e5	1.087	1.14	1.24	1313.5	YES	NO	bb	bb	52.485
12	12389-PECDF	32.20	6.289e5	4.043e5	1.000	1.56	1.55	1339.2	YES	NO	bb	bb	50.341
13	123789-HxCDF	36.84	3.899e5	3.214e5	1.030	1.21	1.24	994.6	YES	NO	bb	bb	49.678
14	234678-HxCDF	35.81	4.741e5	3.931e5	1.052	1.21	1.24	1251.7	YES	NO	bb	bb	49.737
15	1234678-HpCDF	38.68	4.539e5	4.058e5	1.327	1.12	1.05	1226.2	YES	NO	bd	bb	48.938
16	1234789-HpCDF	40.92	3.429e5	3.497e5	1.283	0.98	1.05	867.9	YES	NO	bb	bd	51.494
17	OCDF	45.14	5.034e5	5.649e5	1.447	0.89	0.89	1206.0	YES	NO	bd	bd	107.401
18	13468-PECDF	27.02	8.873e5	5.695e5	1.376	1.56	1.55	13289.5	YES	NO	bb	bb	51.550
19	2378-TCDD	26.31	6.930e4	8.856e4	0.920	0.78	0.77	455.2	YES	NO	bb	bb	9.750
20	Total-tetradioxins	25.97	1.082e5	1.379e5	0.879	0.78	0.77	507.6	YES	NO	bb	bb	15.916
21	Total-tetradioxins	25.49	3.533e4	4.445e4	0.879	0.79	0.77	232.0	YES	NO	bd	bb	5.158
22	1368-TCDD	23.42	7.327e4	9.470e4	0.923	0.77	0.77	505.2	YES	NO	bb	bb	10.342
23	1289-TCDD	26.89	6.177e4	8.189e4	0.794	0.75	0.77	412.8	YES	NO	bb	bd	10.285
24	12389-PECDD	31.82	4.131e5	2.464e5	1.154	1.68	1.55	1344.5	YES	NO	bb	bb	49.074
25	12378-PeCDD	31.42	3.542e5	2.148e5	0.995	1.65	1.55	1196.1	YES	NO	bb	bb	49.075
26	12479-PECDD	28.70	6.697e5	3.948e5	1.843	1.70	1.55	1407.8	YES	NO	bb	bb	49.573
27	124679-HXCDD	33.91	4.106e5	3.389e5	1.125	1.21	1.24	976.7	YES	NO	bb	bb	51.172
28	123789-HxCDD	36.42	3.629e5	2.894e5	0.950	1.25	1.24	838.4	YES	NO	bb	bb	50.661
29	123678-HxCDD	36.04	4.055e5	3.262e5	1.009	1.24	1.24	922.2	YES	NO	db	db	51.531
30	123478-HxCDD	35.92	3.564e5	2.924e5	1.027	1.22	1.24	916.5	YES	NO	bd	bd	48.508
31	1234679-HPCDD	39.13	2.687e5	2.465e5	1.211	1.09	1.05	1238.7	YES	NO	bb	bb	46.792
32	1234678-HpCDD	40.18	2.336e5	2.322e5	1.068	1.01	1.05	1025.7	YES	NO	bb	bb	47.971
33	OCDD	44.90	4.051e5	4.625e5	1.181	0.88	0.89	1217.2	YES	NO	bd	bd	106.871

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.39	2.895e3					0.6	NO		bb		0.000
2	FUNCTION2 PFK	28.85	2.487e4					2.5	NO		db		0.000
3	FUNCTION2 PFK	28.58	1.343e6					16.6	YES		dd		0.000
4	FUNCTION2 PFK	28.33	2.274e6					29.0	YES		dd		0.000
5	FUNCTION2 PFK	28.13	6.635e6					39.5	YES		dd		0.000
6	FUNCTION2 PFK	27.79	4.279e6					55.8	YES		bd		0.000
7	FUNCTION2 PFK	31.74	1.004e4					1.2	NO		bb		0.000
8	FUNCTION2 PFK	30.63	2.885e3					0.6	NO		bb		0.000
9	FUNCTION2 PFK	30.23	2.949e3					0.6	NO		bb		0.000
10	FUNCTION2 PFK	30.08	2.943e3					0.6	NO		bb		0.000
11	FUNCTION2 PFK	29.83	1.536e4					1.4	NO		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	35.28	6.237e3					0.8	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.82	2.033e4					1.1	NO		bb		
2	FUNCTION4 PFK	39.62	4.056e4					1.5	NO		bb		
3	FUNCTION4 PFK	39.35	1.980e4					1.5	NO		bb		
4	FUNCTION4 PFK	39.21	2.037e4					1.4	NO		bb		
5	FUNCTION4 PFK	39.03	4.794e4					2.6	NO		db		
6	FUNCTION4 PFK	38.75	8.537e6					16.0	YES		dd		
7	FUNCTION4 PFK	37.97	5.778e6					52.0	YES		dd		
8	FUNCTION4 PFK	37.92	6.084e6					53.6	YES		bd		
9	FUNCTION4 PFK	42.65	2.056e4					1.3	NO		bb		
10	FUNCTION4 PFK	42.58	1.133e4					1.1	NO		bb		
11	FUNCTION4 PFK	42.14	7.557e3					0.8	NO		bb		
12	FUNCTION4 PFK	42.07	1.006e4					0.8	NO		bb		
13	FUNCTION4 PFK	41.76	7.549e3					0.7	NO		db		
14	FUNCTION4 PFK	41.72	1.871e4					1.6	NO		bd		
15	FUNCTION4 PFK	40.49	2.445e4					1.7	NO		bb		
16	FUNCTION4 PFK	40.42	1.433e4					1.3	NO		bb		
17	FUNCTION4 PFK	40.23	2.637e4					1.6	NO		db		
18	FUNCTION4 PFK	40.19	2.658e4					1.7	NO		bd		
19	FUNCTION4 PFK	39.89	2.148e3					0.4	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.17	1.193e4					1.2	NO		db		
2	FUNCTION5 PFK	43.10	3.092e4					1.8	NO		dd		
3	FUNCTION5 PFK	43.05	2.764e4					2.4	NO		dd		
4	FUNCTION5 PFK	43.00	3.445e4					2.2	NO		bd		
5	FUNCTION5 PFK	45.83	1.434e3					0.4	NO		bb		
6	FUNCTION5 PFK	45.09	1.567e4					1.3	NO		bb		
7	FUNCTION5 PFK	44.85	5.916e3					0.9	NO		bb		
8	FUNCTION5 PFK	44.62	9.368e3					1.0	NO		bb		
9	FUNCTION5 PFK	44.26	3.829e3					0.6	NO		bb		
10	FUNCTION5 PFK	43.60	6.655e3					1.1	NO		bb		

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ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	23.11	8.152e1					1.6	NO		bb		0.000
2	FUNCTION1 HXCD...	22.49	8.369e1					1.6	NO		db		0.000
3	FUNCTION1 HXCD...	22.42	1.074e2					1.6	NO		dd		0.000
4	FUNCTION1 HXCD...	22.36	7.314e1					1.6	NO		bd		0.000
5	FUNCTION1 HXCD...	21.86	1.206e2					2.7	NO		db		0.000
6	FUNCTION1 HXCD...	21.78	2.833e2					2.3	NO		dd		0.000
7	FUNCTION1 HXCD...	21.63	1.903e2					2.2	NO		dd		0.000
8	FUNCTION1 HXCD...	21.53	3.613e2					3.4	YES		dd		0.000
9	FUNCTION1 HXCD...	21.42	1.668e2					2.0	NO		bd		0.000
10	FUNCTION1 HXCD...	27.54	1.572e2					3.6	YES		bb		0.000
11	FUNCTION1 HXCD...	27.00	2.520e2					4.0	YES		bb		0.000
12	FUNCTION1 HXCD...	26.56	7.654e1					1.7	NO		bb		0.000
13	FUNCTION1 HXCD...	26.18	9.145e1					1.9	NO		bb		0.000
14	FUNCTION1 HXCD...	26.00	7.975e1					1.5	NO		bb		0.000
15	FUNCTION1 HXCD...	25.85	2.987e2					3.3	YES		db		0.000
16	FUNCTION1 HXCD...	25.65	1.079e2					1.8	NO		bd		0.000
17	FUNCTION1 HXCD...	23.99	1.000e2					1.3	NO		db		0.000
18	FUNCTION1 HXCD...	23.93	8.334e1					1.5	NO		dd		0.000
19	FUNCTION1 HXCD...	23.89	9.074e1					1.5	NO		bd		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.92	2.932e2					2.3	NO		bb		0.000
2	FUNCTION1 HPCD...	22.48	2.115e2					1.5	NO		bb		0.000
3	FUNCTION1 HPCD...	21.71	9.450e1					1.5	NO		bb		0.000
4	FUNCTION1 HPCD...	21.51	1.451e2					2.0	NO		bb		0.000
5	FUNCTION1 HPCD...	21.35	1.250e2					2.2	NO		bb		0.000
6	FUNCTION1 HPCD...	27.11	1.107e2					1.7	NO		db		0.000
7	FUNCTION1 HPCD...	27.02	4.708e2					4.5	YES		bd		0.000
8	FUNCTION1 HPCD...	26.77	8.229e1					1.8	NO		bb		0.000
9	FUNCTION1 HPCD...	26.49	9.232e1					2.4	NO		db		0.000
10	FUNCTION1 HPCD...	26.40	1.770e2					1.9	NO		dd		0.000
11	FUNCTION1 HPCD...	26.23	2.956e2					2.1	NO		bd		0.000
12	FUNCTION1 HPCD...	26.09	1.643e2					1.3	NO		bb		0.000
13	FUNCTION1 HPCD...	25.38	9.651e1					1.8	NO		bb		0.000
14	FUNCTION1 HPCD...	24.73	8.972e1					2.1	NO		bb		0.000
15	FUNCTION1 HPCD...	23.18	1.136e2					1.5	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.84	1.576e2					3.2	YES		bb		0.000
2	FUNCTION2 HPCD...	31.04	5.782e2					9.8	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	34.77	1.414e2					1.2	NO		bb		0.000
2	FUNCTION3 OCDPE	33.14	7.121e1					1.0	NO		bb		0.000
3	FUNCTION3 OCDPE	37.24	1.535e2					4.2	YES		bb		0.000
4	FUNCTION3 OCDPE	36.41	3.713e2					3.0	NO		bb		0.000
5	FUNCTION3 OCDPE	36.02	3.616e2					3.0	YES		db		0.000
6	FUNCTION3 OCDPE	35.92	3.839e2					3.0	YES		bd		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	41.37	8.051e1					1.2	NO		bb		0.000
2	FUNCTION4 NCDPE	41.21	1.795e2					2.8	NO		bb		0.000
3	FUNCTION4 NCDPE	41.09	9.960e1					0.9	NO		bb		0.000
4	FUNCTION4 NCDPE	40.60	9.690e1					1.7	NO		bb		0.000
5	FUNCTION4 NCDPE	39.97	7.551e1					1.0	NO		bb		0.000
6	FUNCTION4 NCDPE	39.90	8.451e1					1.4	NO		bb		0.000
7	FUNCTION4 NCDPE	39.20	3.095e2					1.9	NO		bb		0.000
8	FUNCTION4 NCDPE	38.53	7.115e1					1.2	NO		bb		0.000
9	FUNCTION4 NCDPE	38.12	3.682e2					5.5	YES		db		0.000
10	FUNCTION4 NCDPE	38.07	4.730e2					4.2	YES		dd		0.000
11	FUNCTION4 NCDPE	37.93	1.789e2					1.3	NO		bd		0.000
12	FUNCTION4 NCDPE	42.55	9.015e1					1.0	NO		db		0.000
13	FUNCTION4 NCDPE	42.49	1.336e2					1.7	NO		bd		0.000
14	FUNCTION4 NCDPE	42.35	1.573e2					1.7	NO		bb		0.000
15	FUNCTION4 NCDPE	42.19	8.291e1					1.5	NO		bb		0.000
16	FUNCTION4 NCDPE	41.48	7.166e1					0.7	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.88	7.929e1					1.8	NO		db		0.000
2	FUNCTION5 DCDPE	45.81	8.579e1					2.8	NO		bd		0.000
3	FUNCTION5 DCDPE	44.54	7.945e1					2.4	NO		bb		0.000

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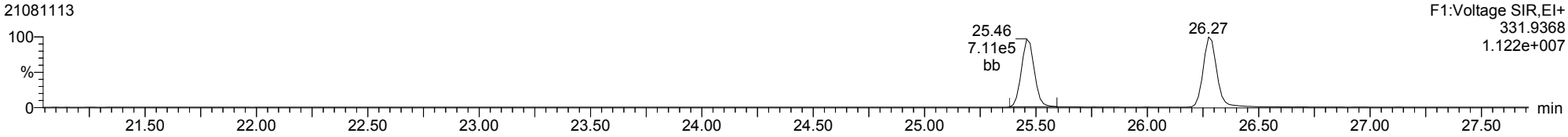

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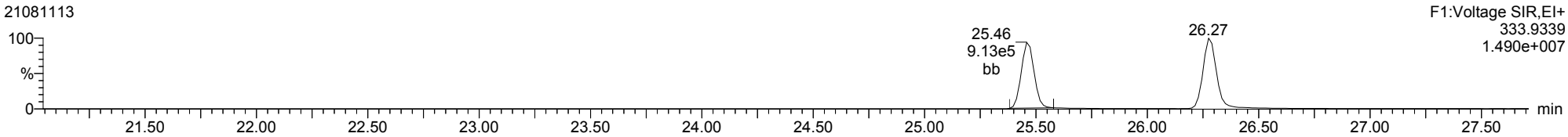

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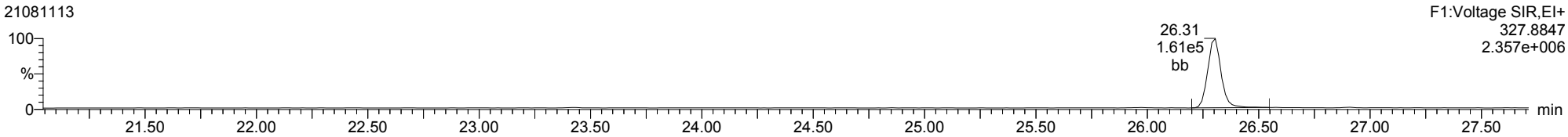

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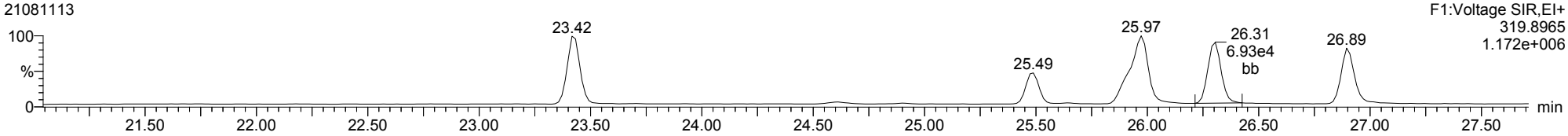
2378-TCDD



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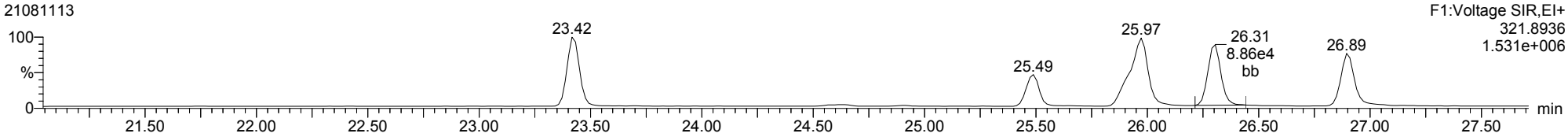
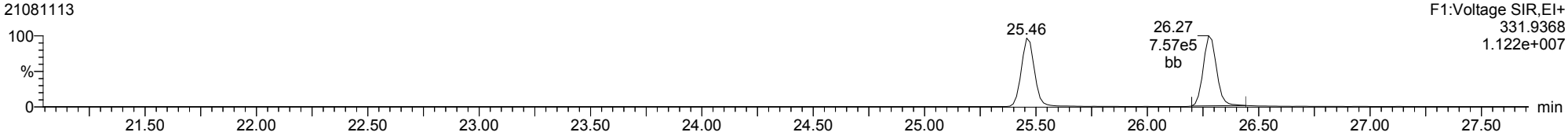
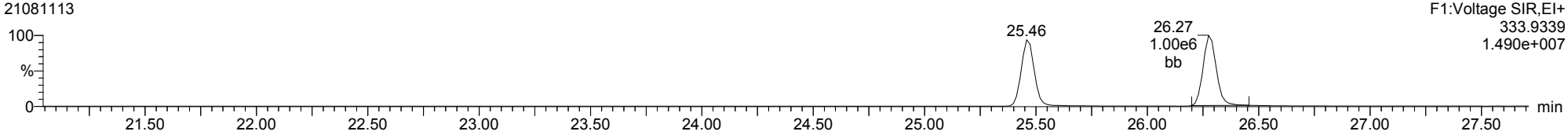


13C-2378-TCDD



13C-2378-TCDD



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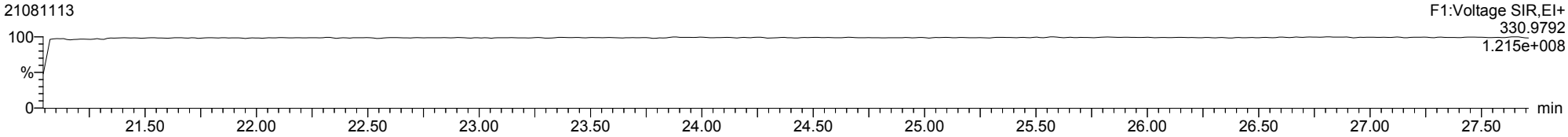

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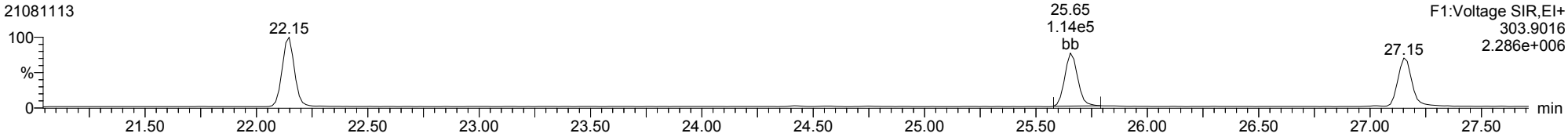
2378-TCDF



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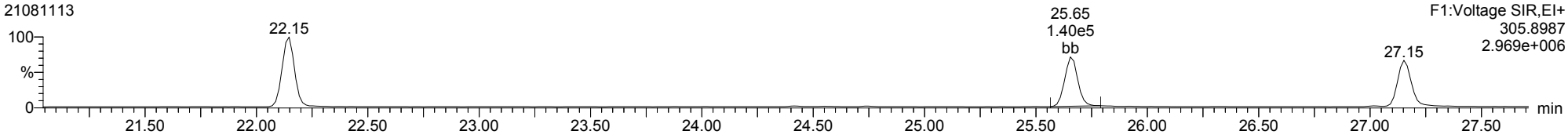

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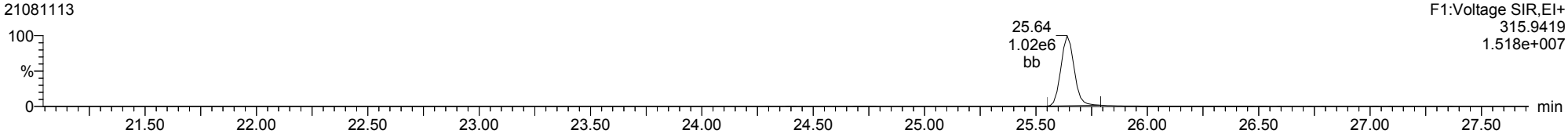

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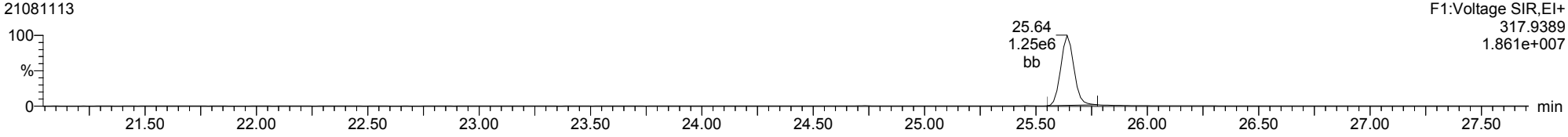

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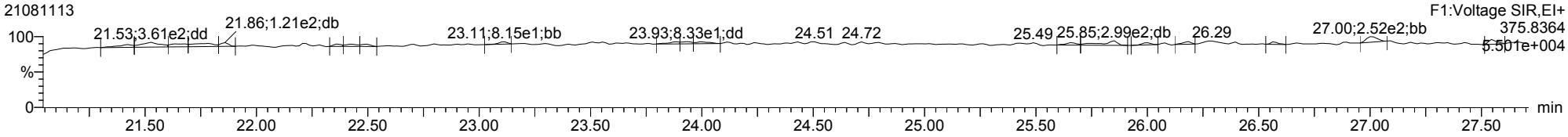

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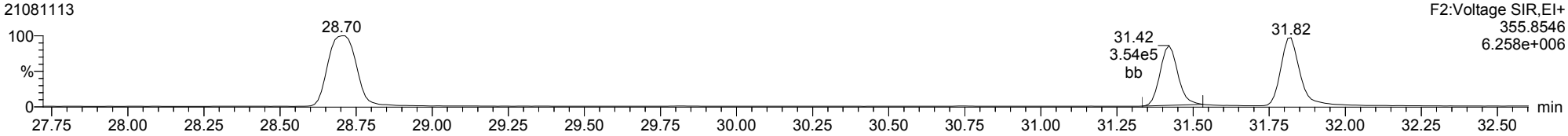
12378-PeCDD



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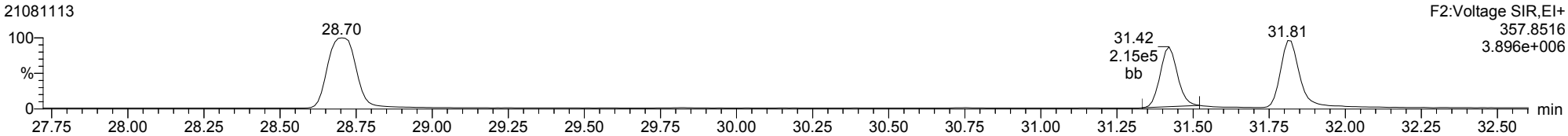

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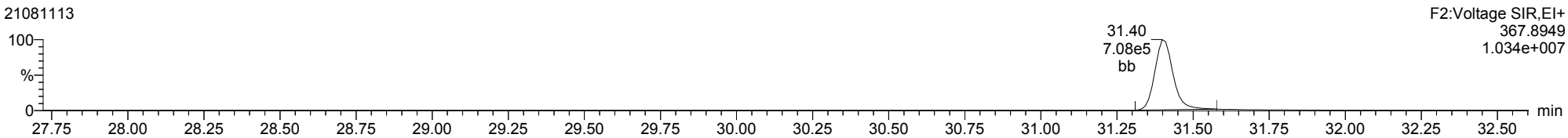

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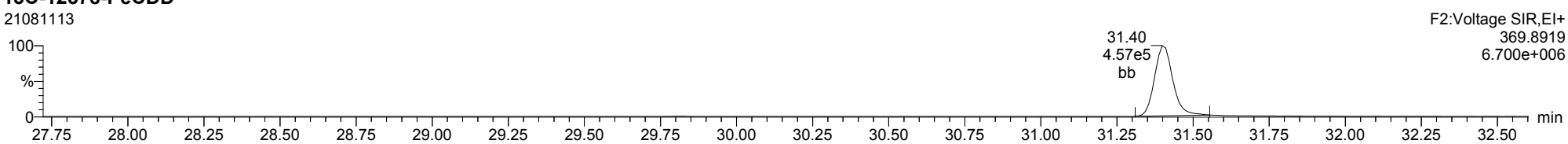
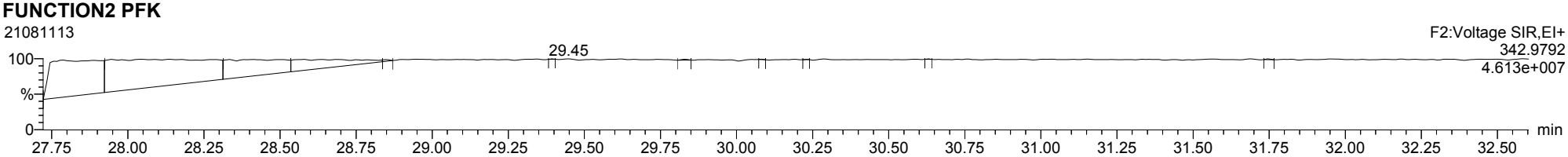


FUNCTION2 PFK



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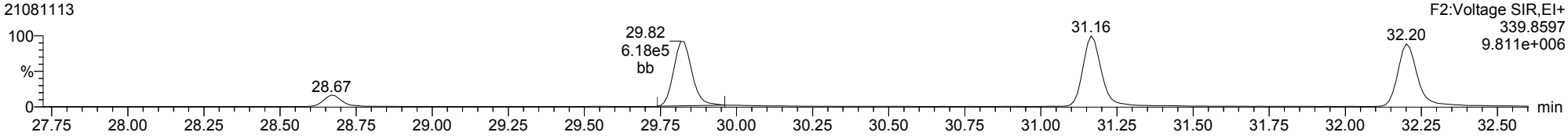

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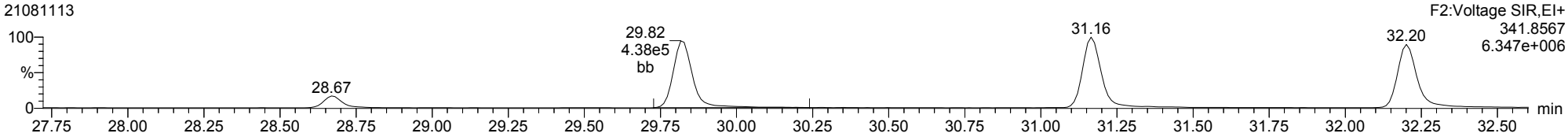

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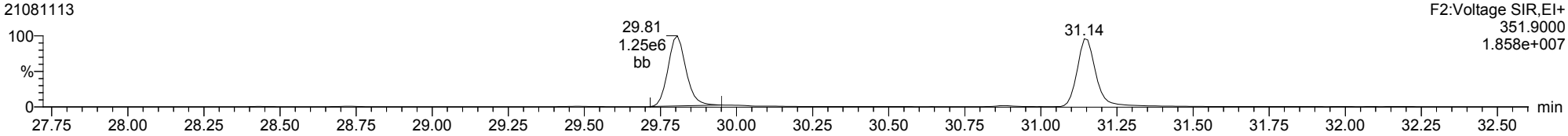

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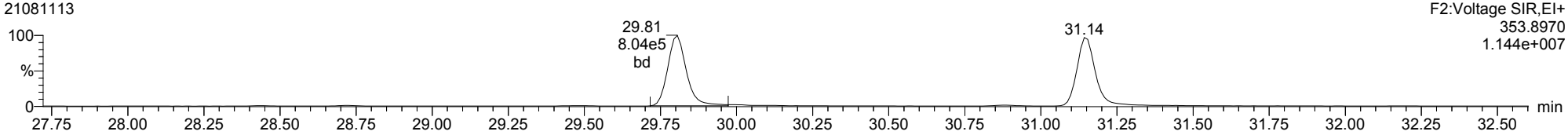
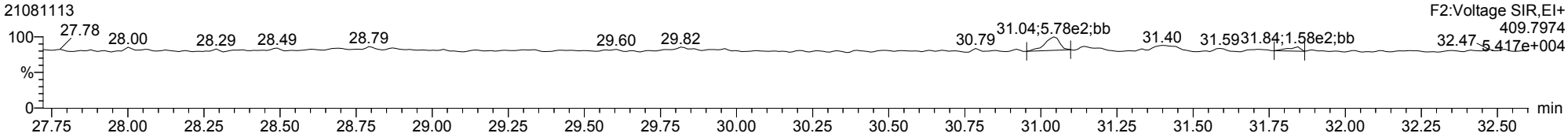


FUNCTION2 HPCDPE



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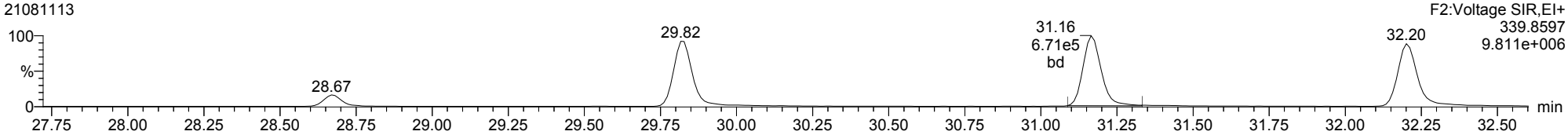
23478-PeCDF



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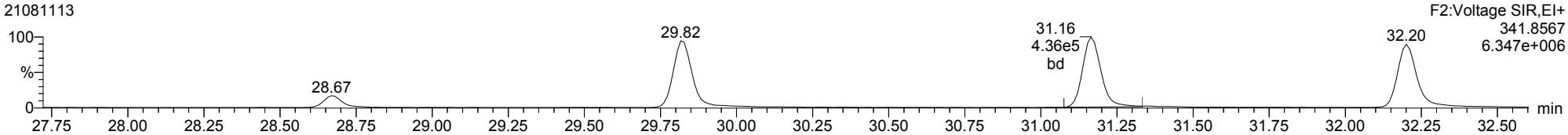

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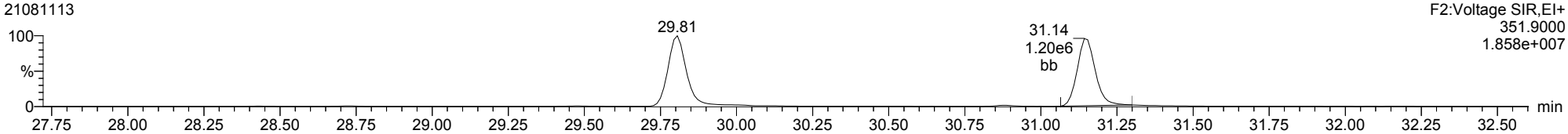

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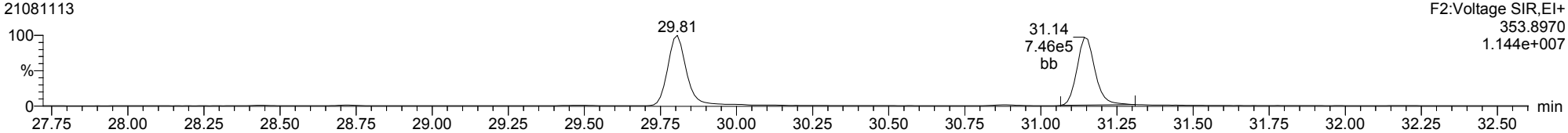

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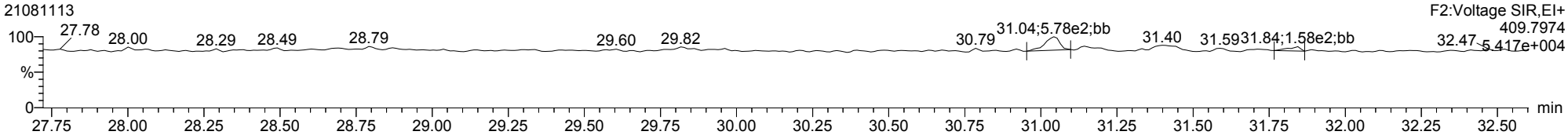

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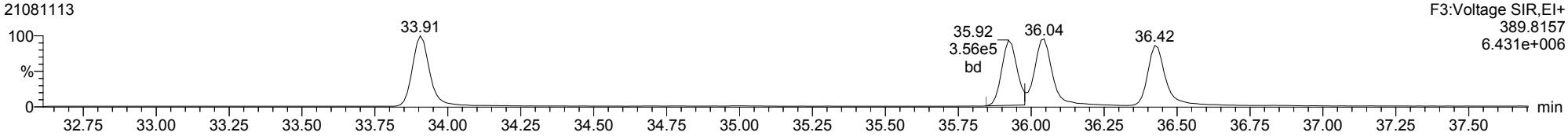
123478-HxCDD



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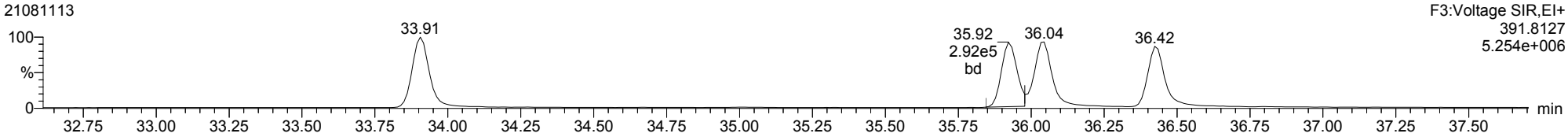

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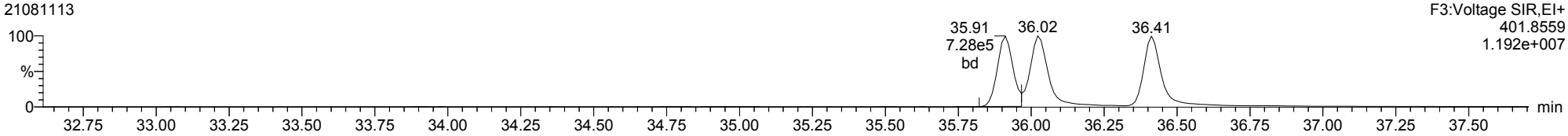

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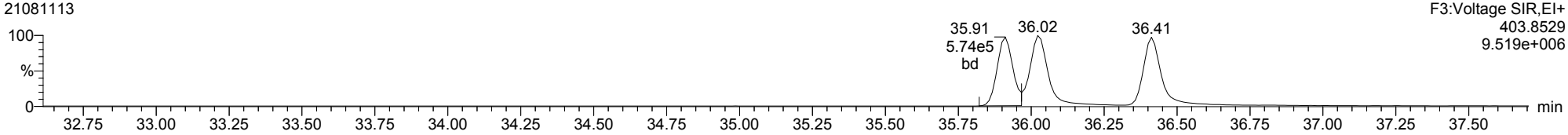
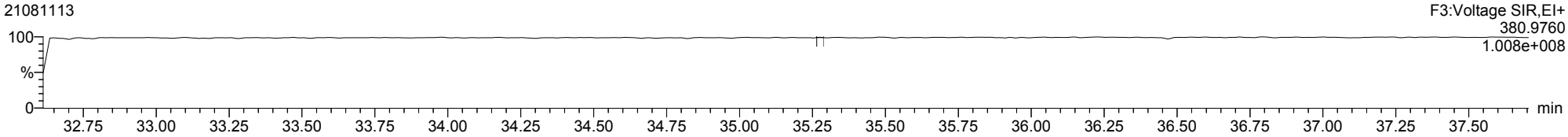


FUNCTION3 PFK



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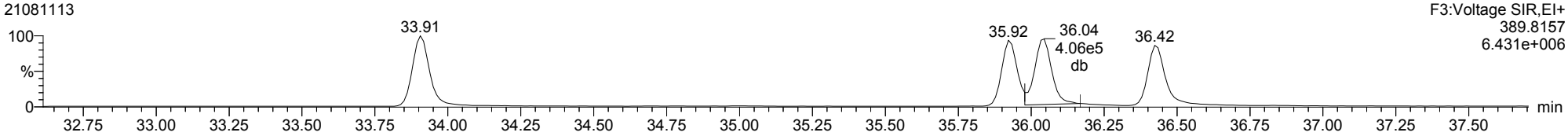
123678-HxCDD



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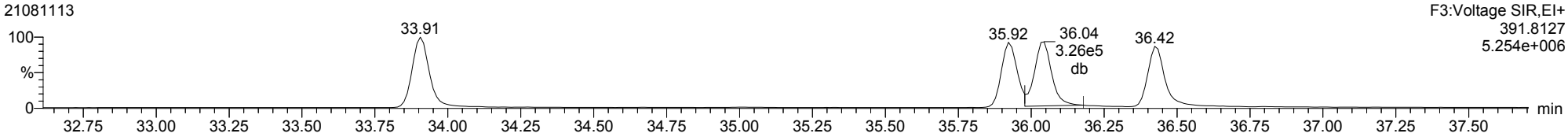

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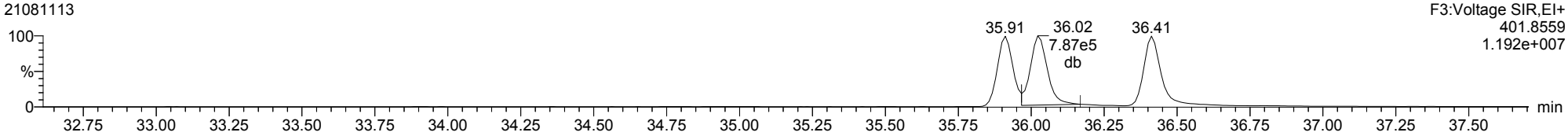

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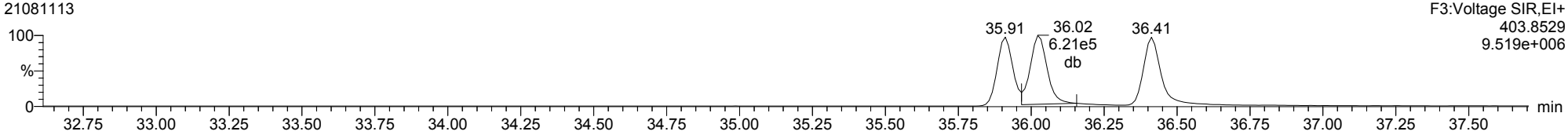

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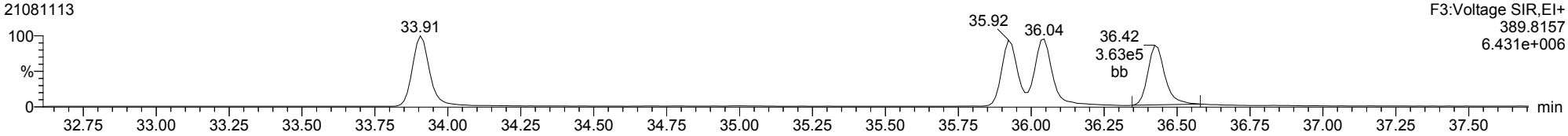

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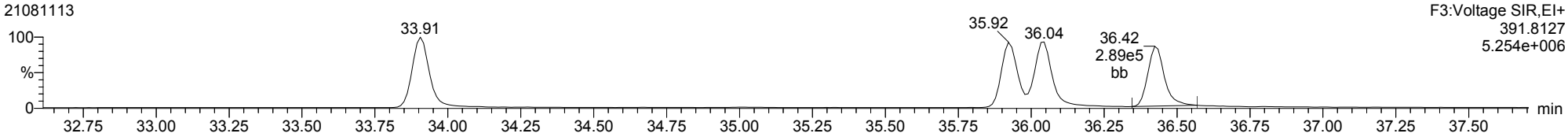

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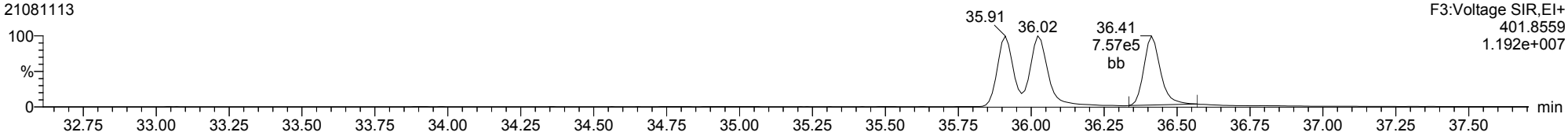

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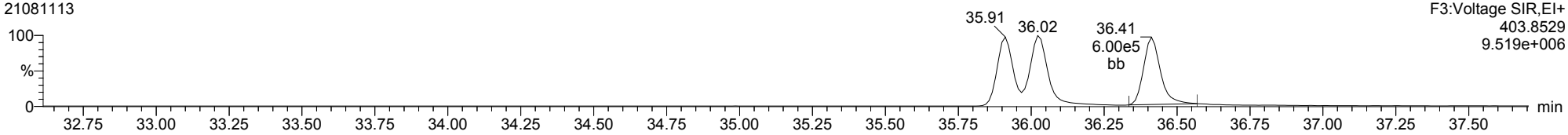

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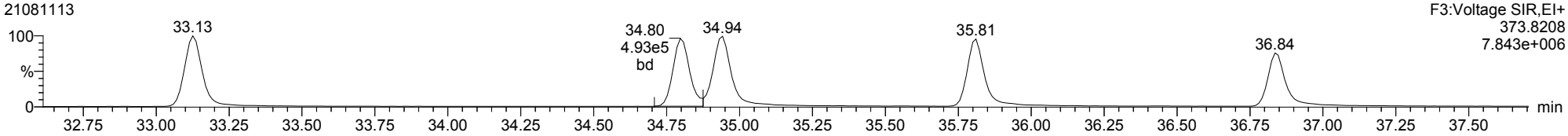

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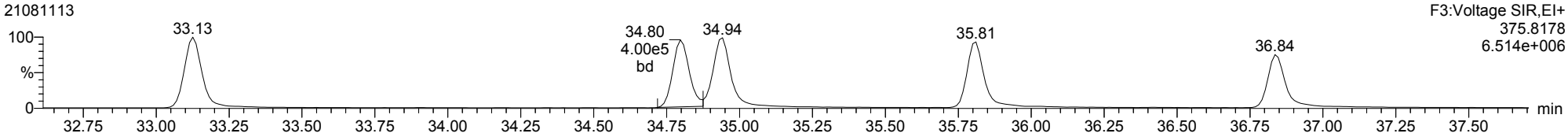

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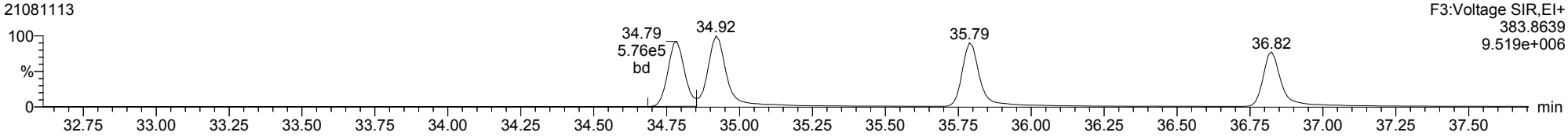

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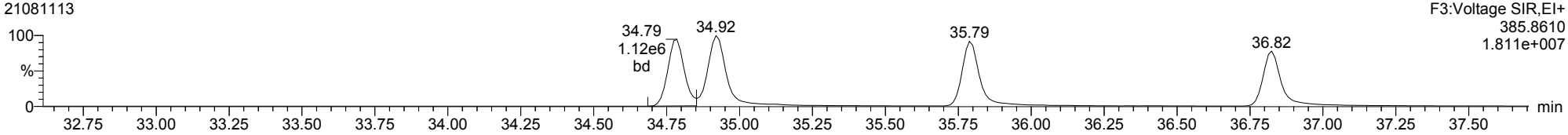
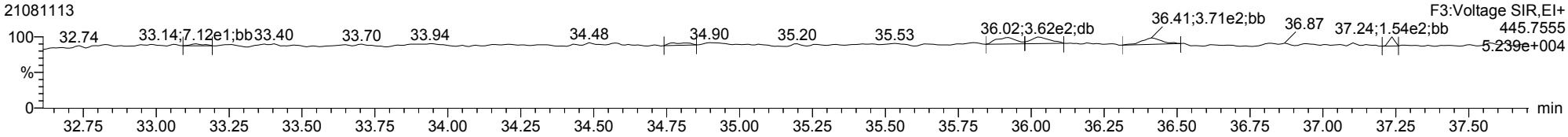


FUNCTION3 OCDPE



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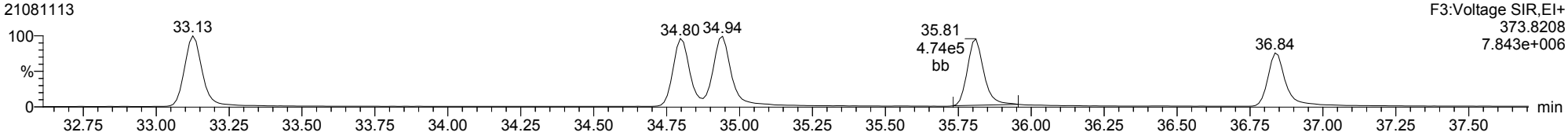
234678-HxCDF



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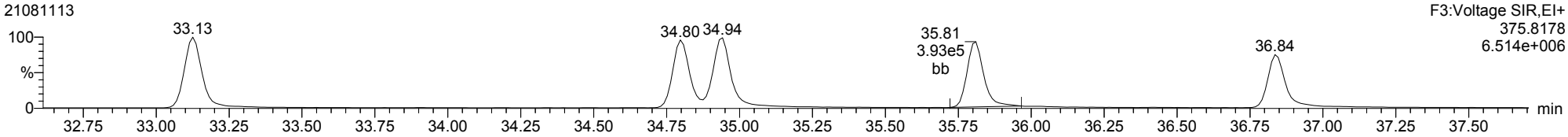

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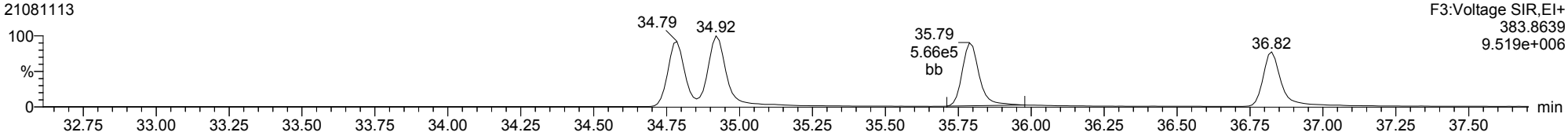

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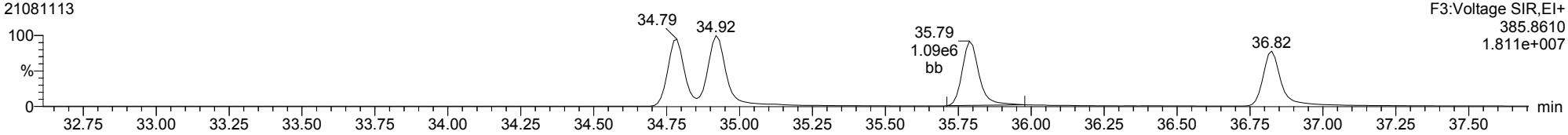
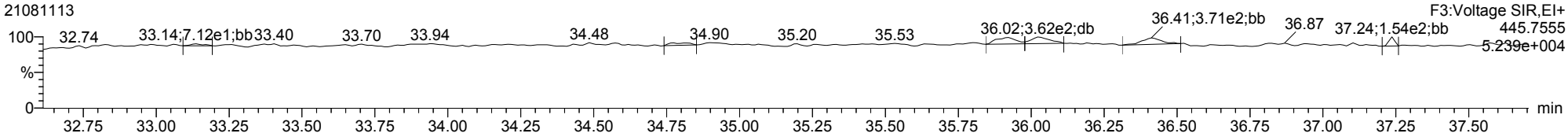


FUNCTION3 OCDPE



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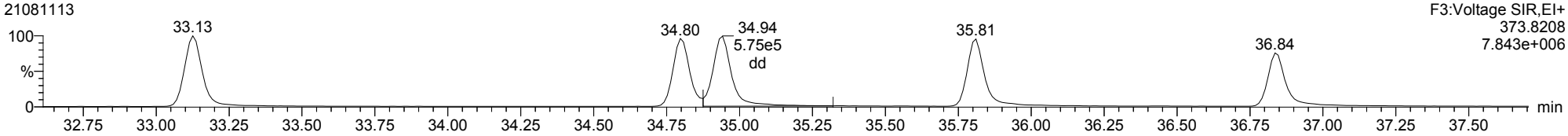

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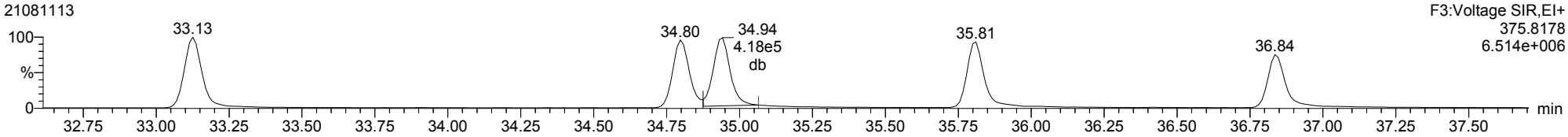

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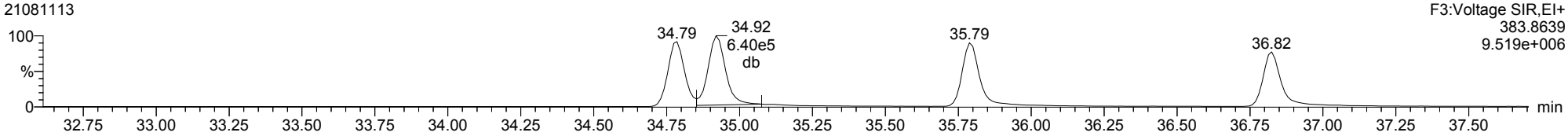

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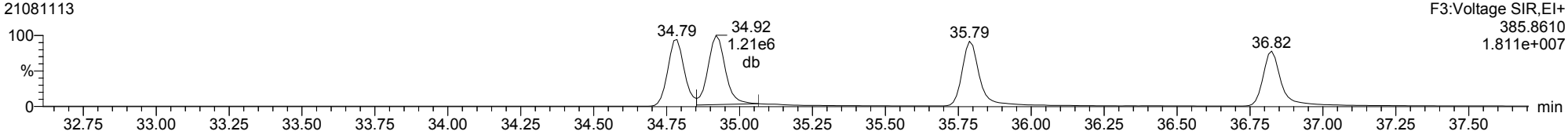
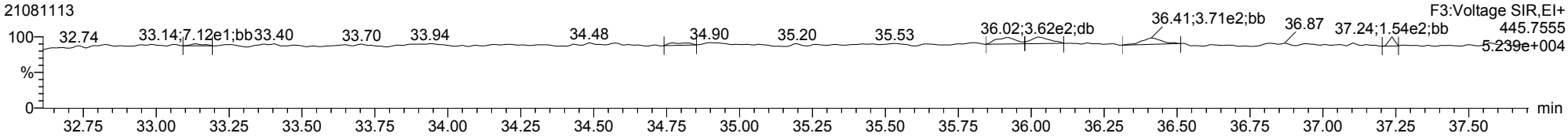


FUNCTION3 OCDPE



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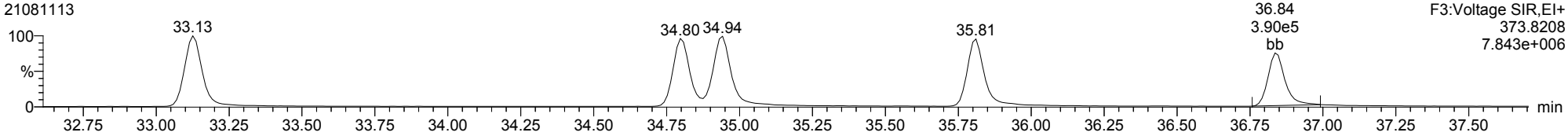

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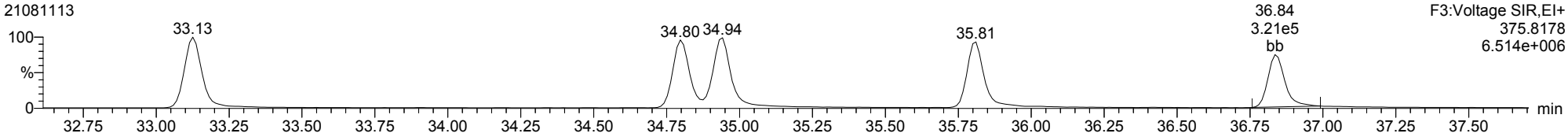

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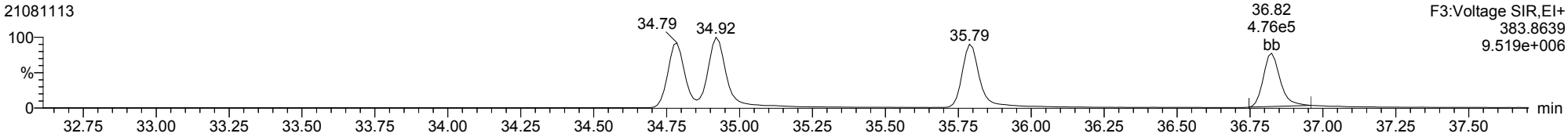

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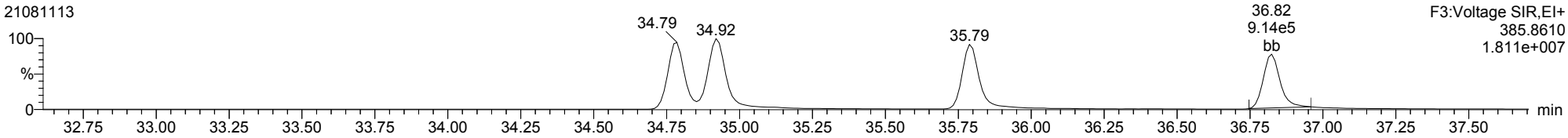

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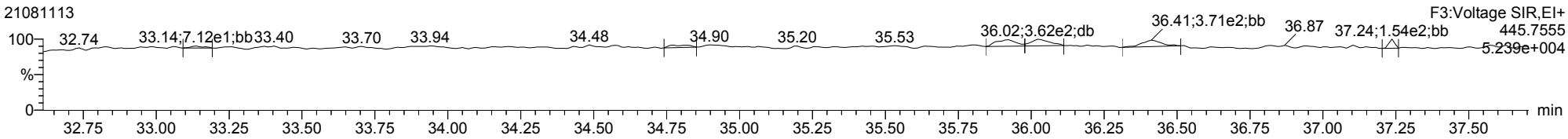

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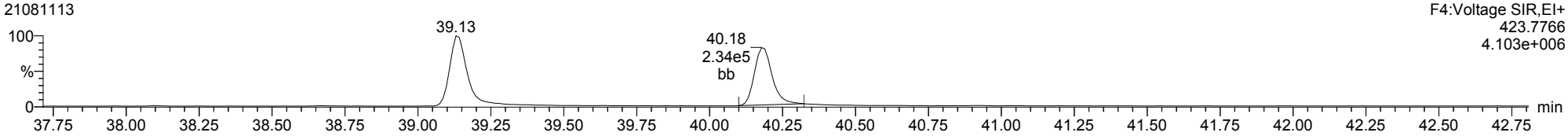

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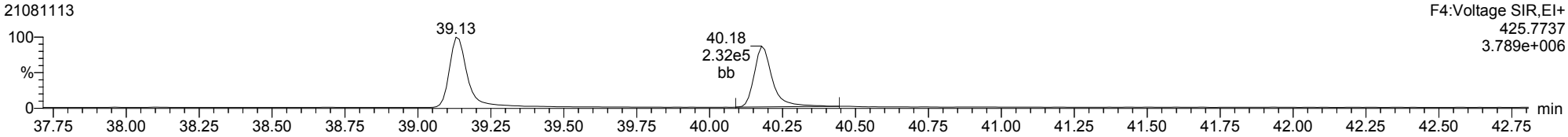

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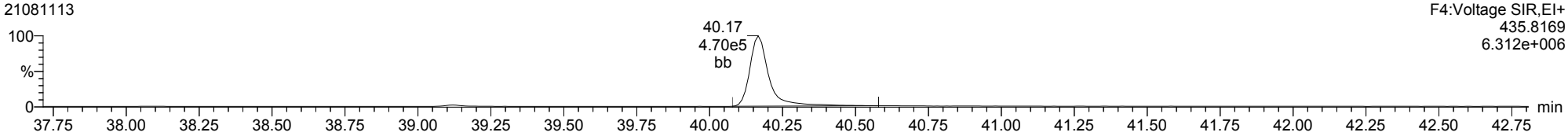

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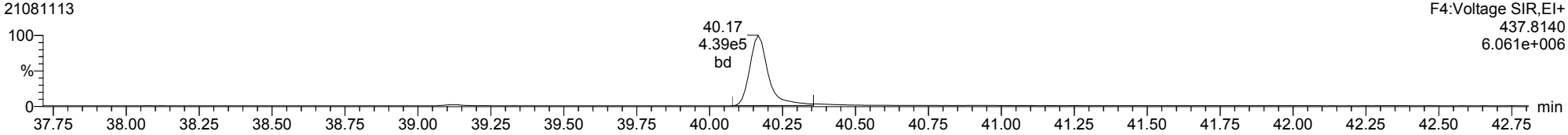

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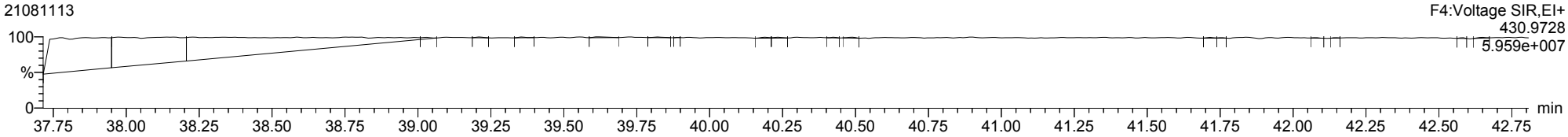

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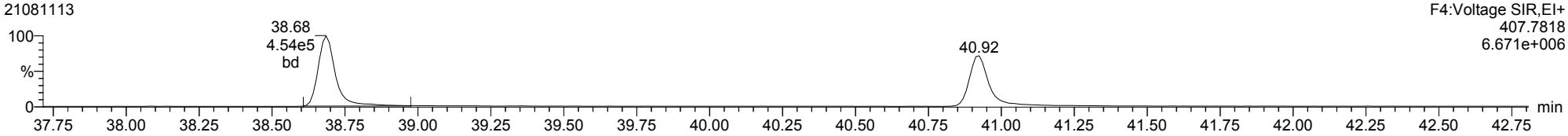

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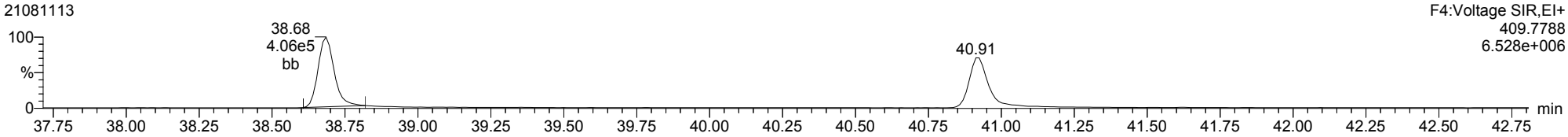

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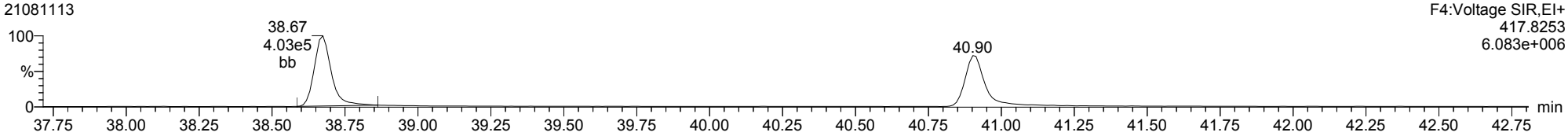

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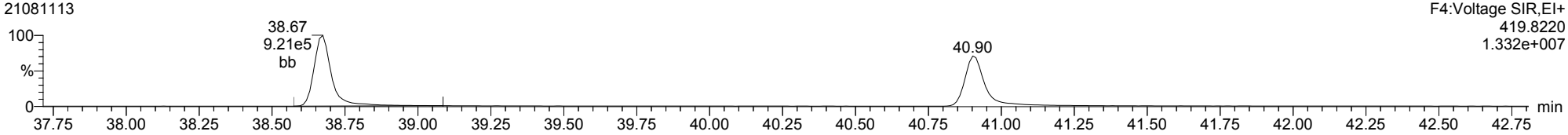

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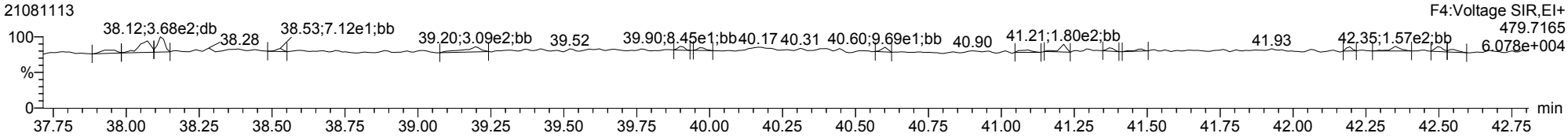

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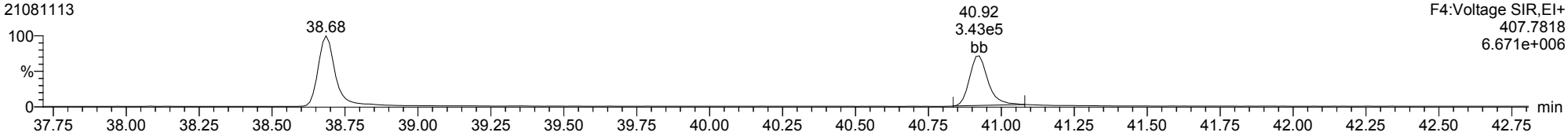

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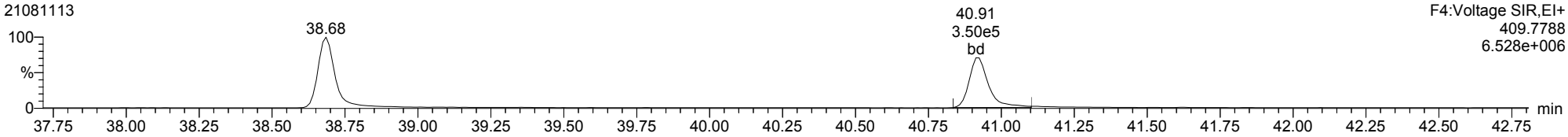

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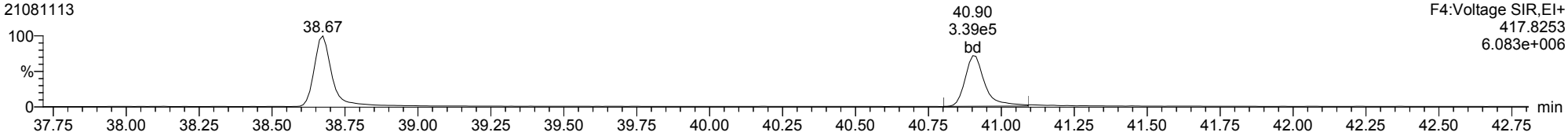

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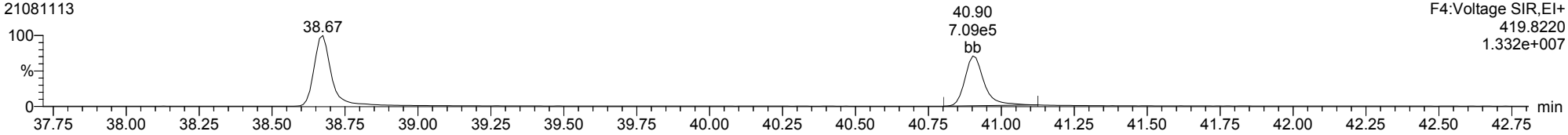

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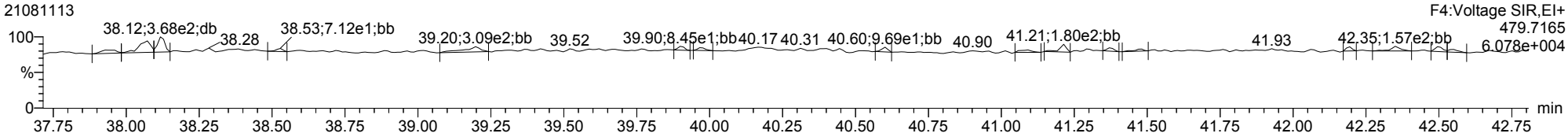

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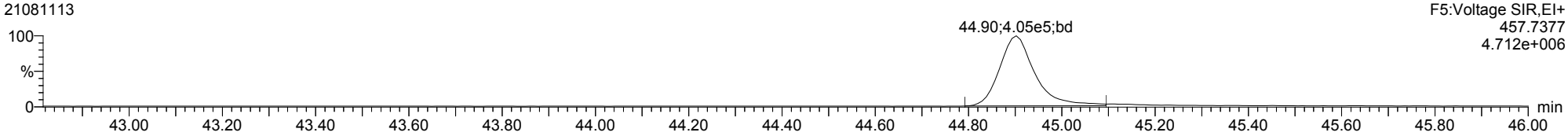

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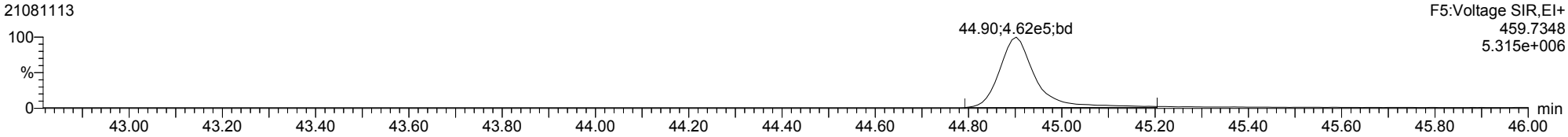

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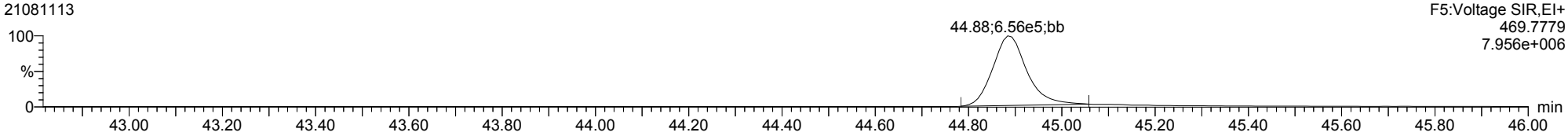

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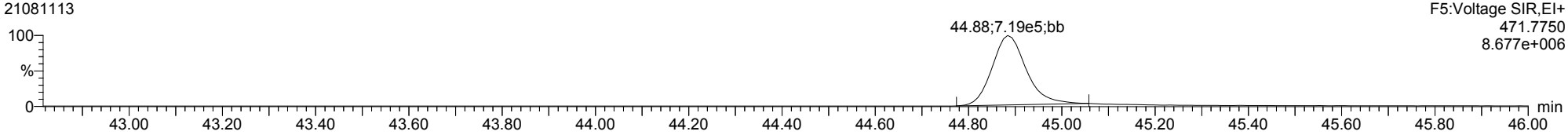

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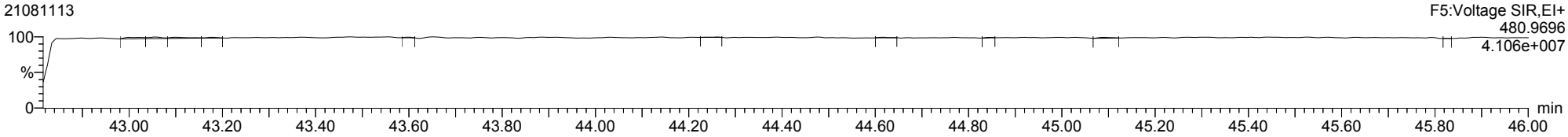

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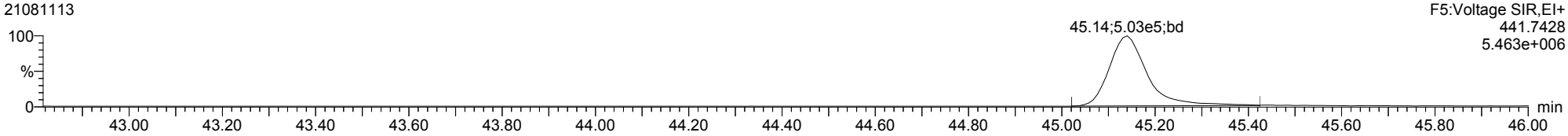

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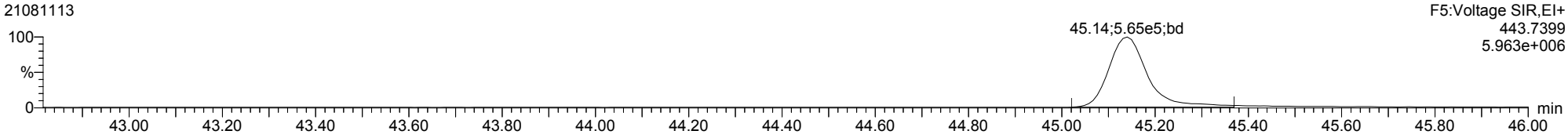

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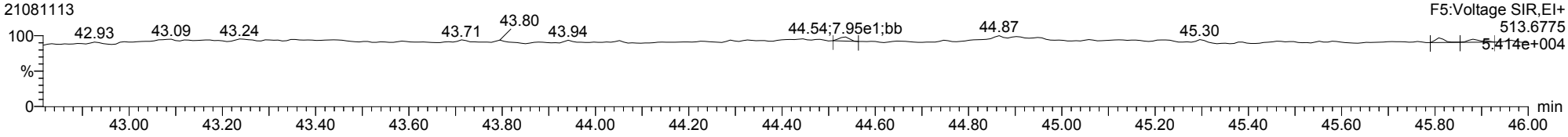

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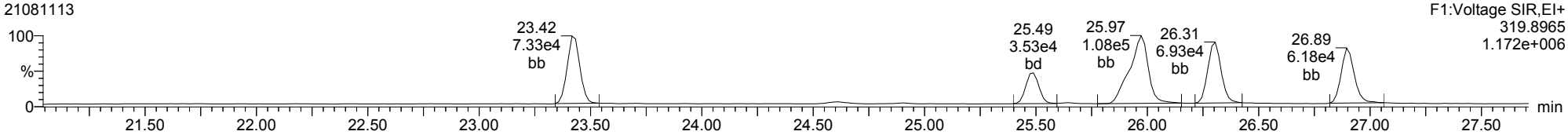

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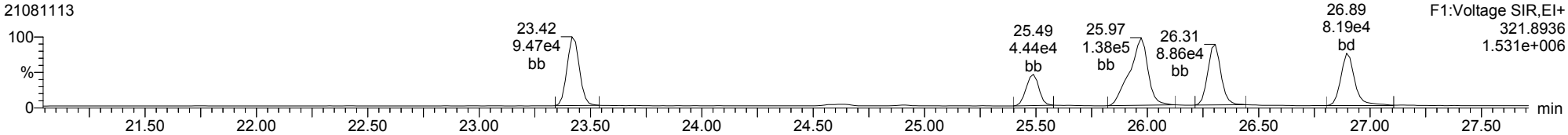

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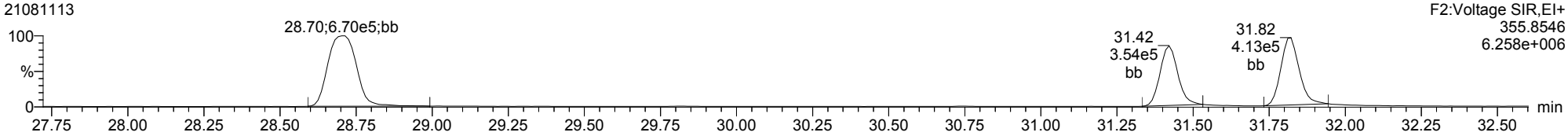

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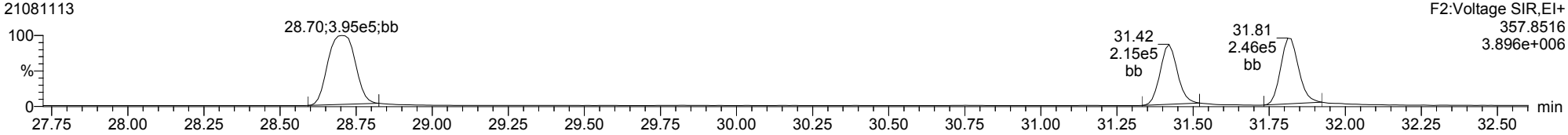

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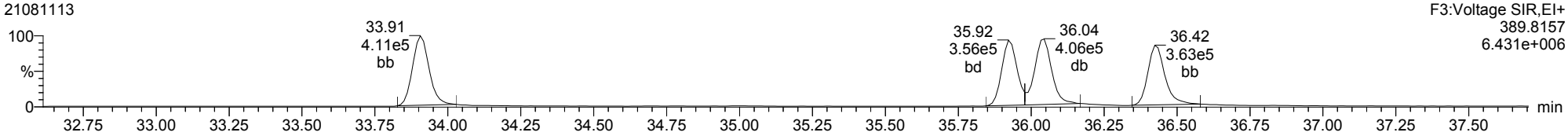

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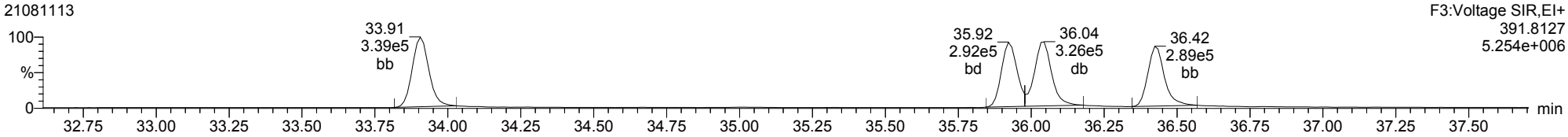

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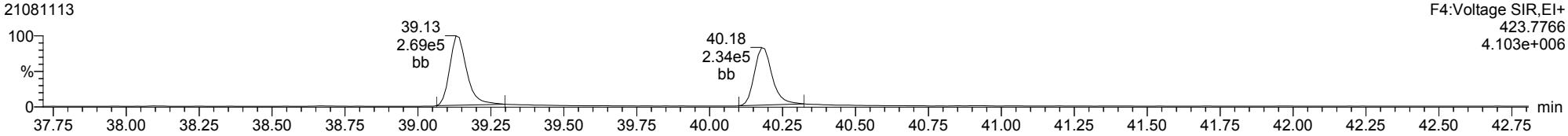

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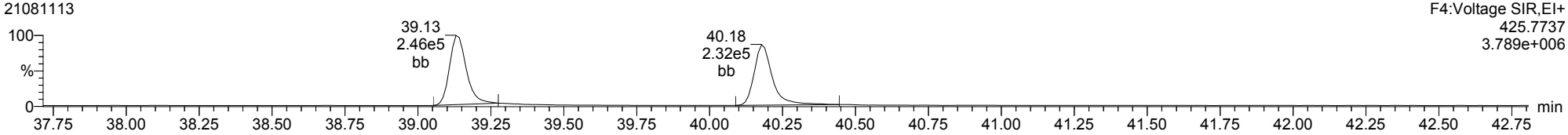

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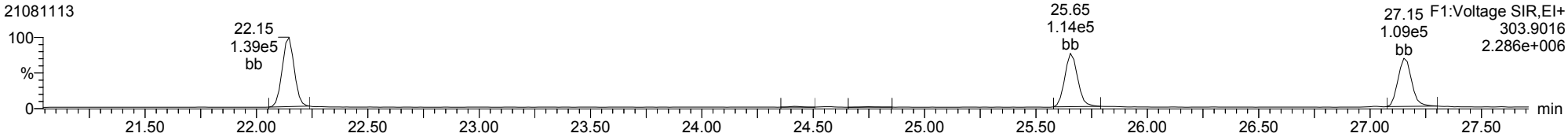

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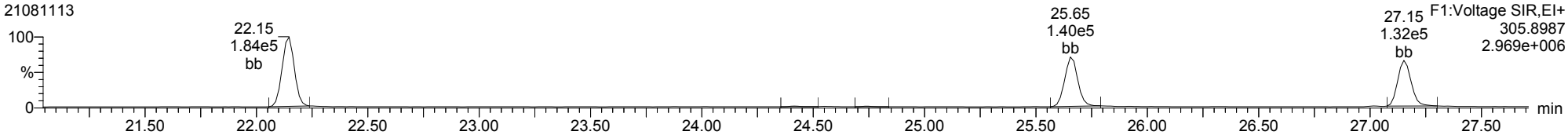

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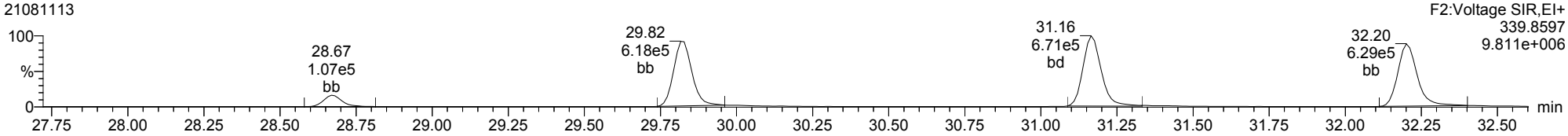

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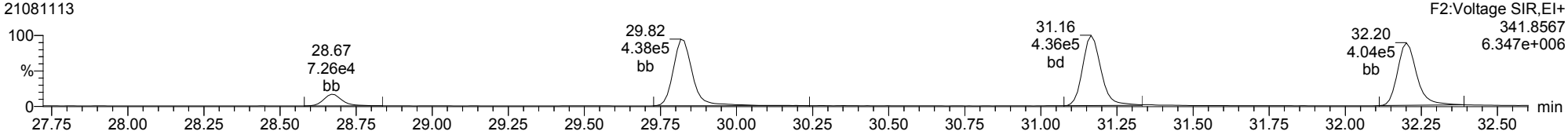

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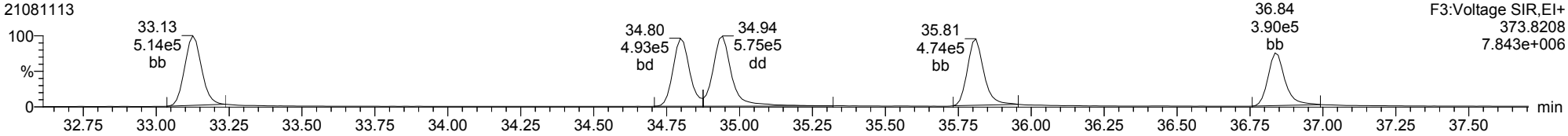

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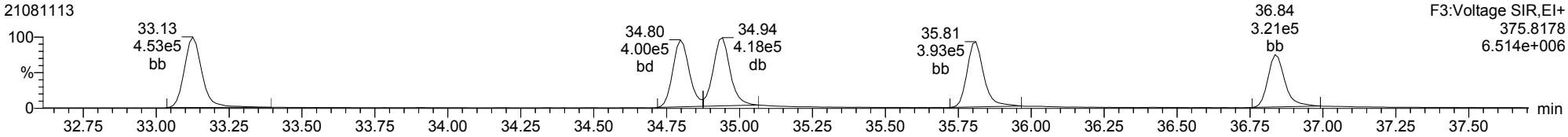

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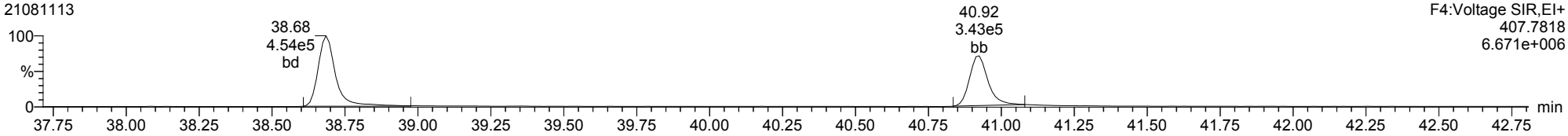

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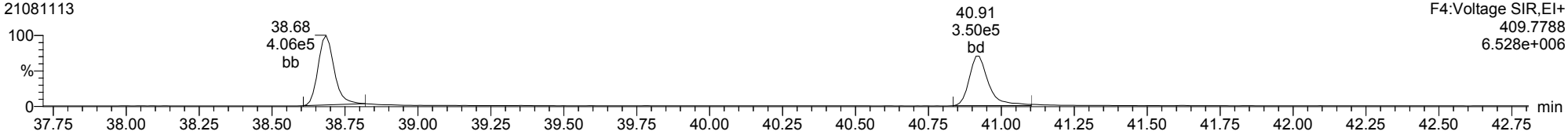

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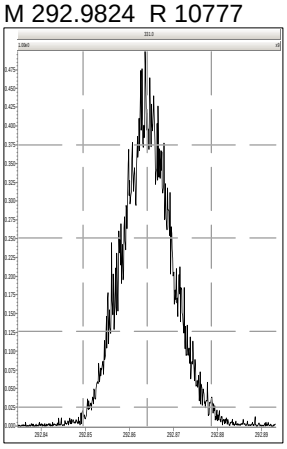

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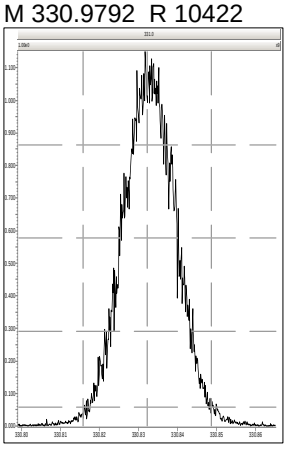

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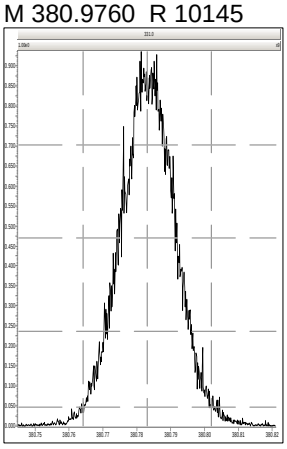

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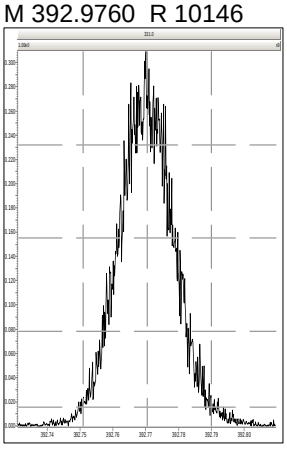

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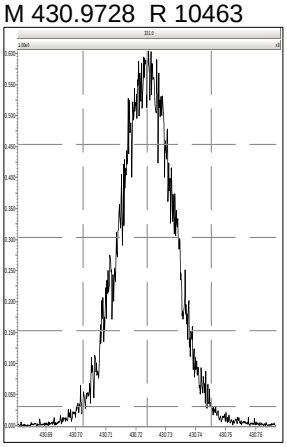

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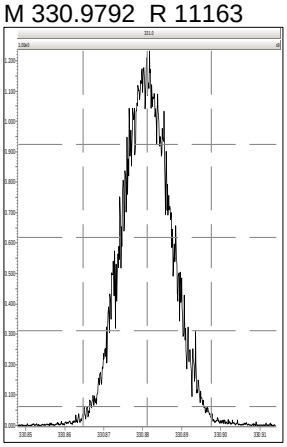
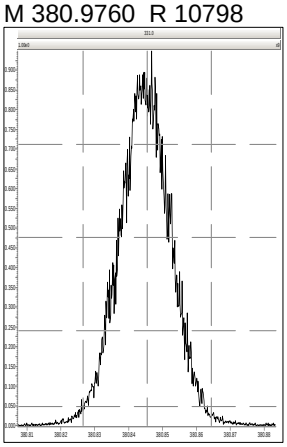
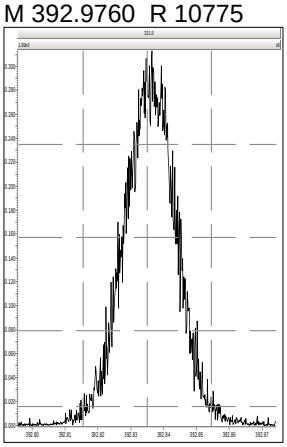


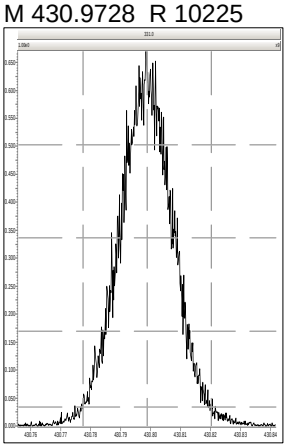
M 380.9760 R 10798



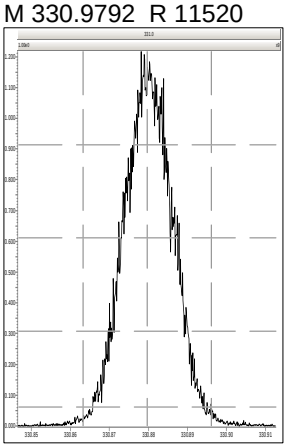
M 392.9760 R 10775



M 430.9728 R 10225



M 330.9792 R 11520



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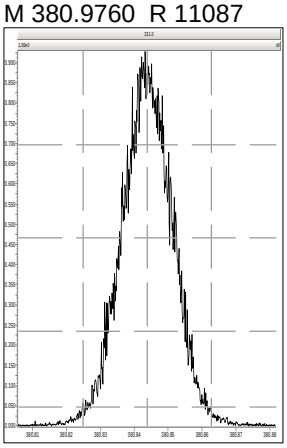
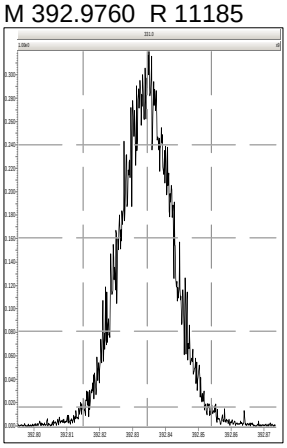
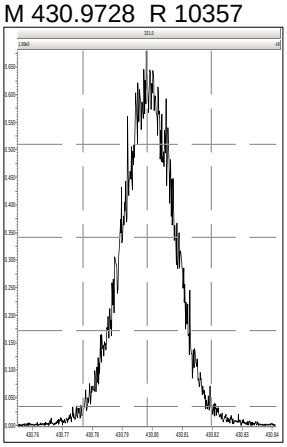


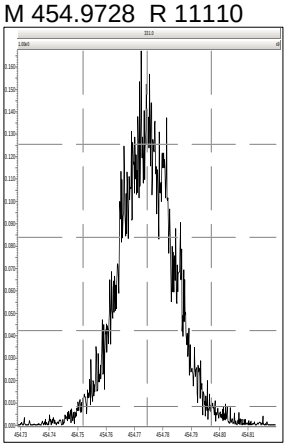
M 392.9760 R 11185



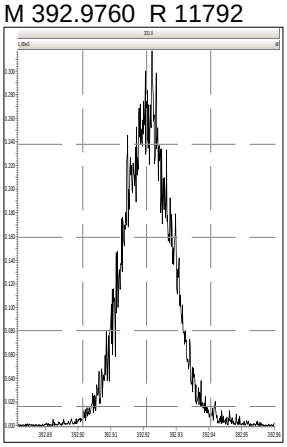
M 430.9728 R 10357



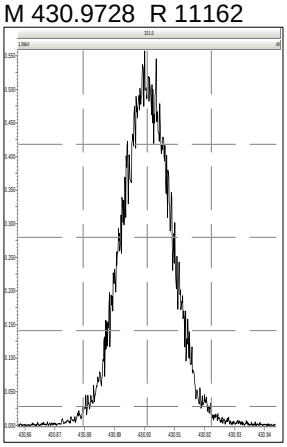
M 454.9728 R 11110



M 392.9760 R 11792



M 430.9728 R 11162



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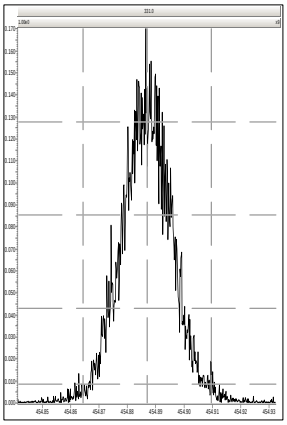
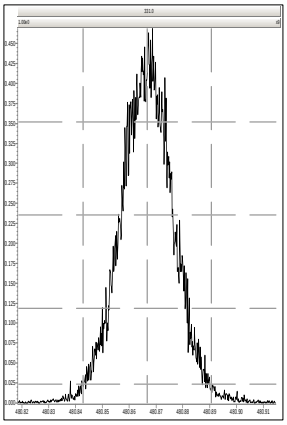
M 454.9728 R 11214



M 480.9696 R 10729



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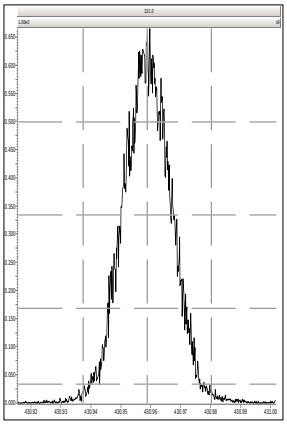
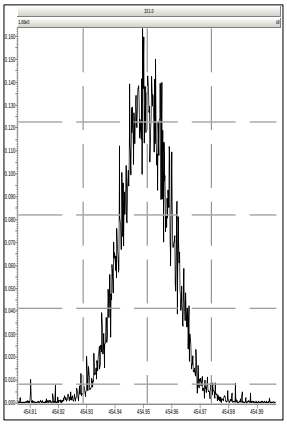
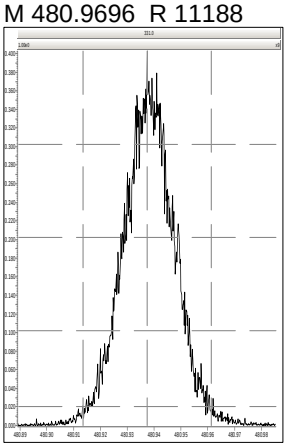


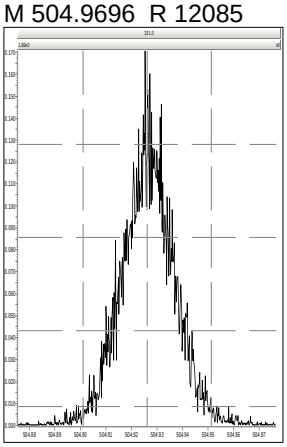
M 454.9728 R 11631



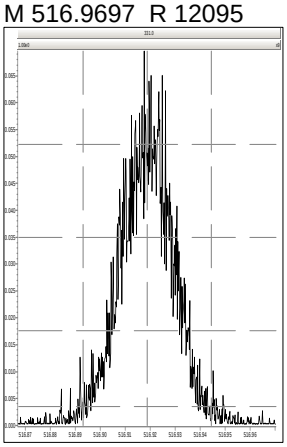
M 480.9696 R 11188

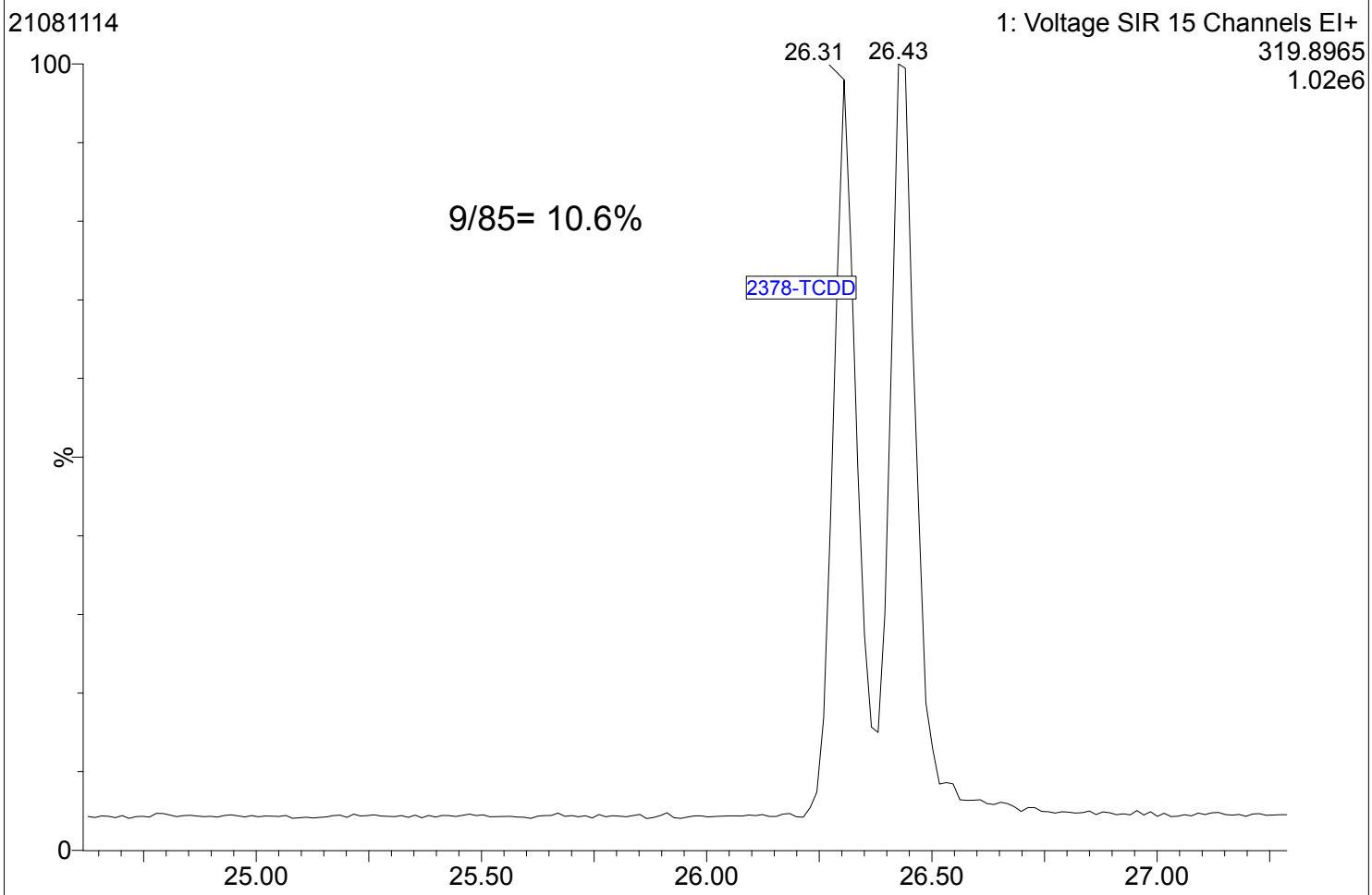


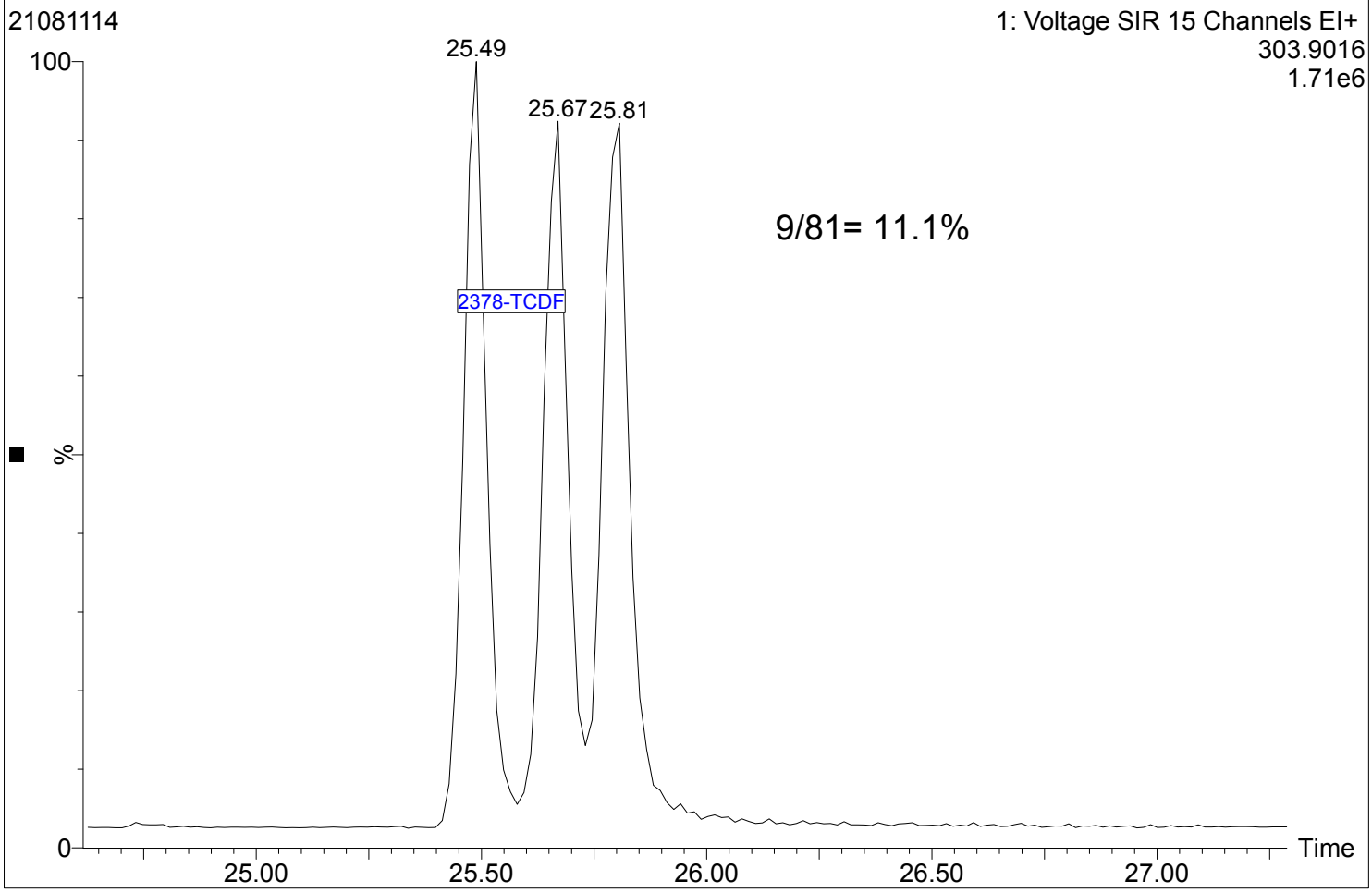
M 504.9696 R 12085



M 516.9697 R 12095




21081114
1: Voltage SIR 15 Channels EI+
319.8965
1.02e6
26.31
26.43
9/85= 10.6%
2378-TCDD
100
%
0
25.00
25.50
26.00
26.50
27.00


21081114
1: Voltage SIR 15 Channels EI+
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25.49
25.67
25.81
9/81= 11.1%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21081112A	Calibration Date:	08/11/2021
Sequence:	SJH0117	Injection Date:	08/12/21
Lab Sample ID:	SJH0117-SCV1	Injection Time:	00:00
Sequence Name:	ICVCV		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	10.1	1.1075930	1.1198230		1.1	+/-20
2,3,7,8-TCDD	A	10.000	11.1	0.9202875	1.0175630		10.6	+/-20
1,2,3,7,8-PeCDF	A	50.000	52.8	1.0148670	1.0723200		5.7	+/-20
2,3,4,7,8-PeCDF	A	50.000	50.7	1.1255490	1.1415120		1.4	+/-20
1,2,3,7,8-PeCDD	A	50.000	52.2	0.9953229	1.0393270		4.4	+/-20
1,2,3,4,7,8-HxCDF	A	50.000	54.0	1.0168930	1.0983010		8.0	+/-20
1,2,3,6,7,8-HxCDF	A	50.000	51.5	1.0368310	1.0674180		3.0	+/-20
2,3,4,6,7,8-HxCDF	A	50.000	55.5	1.0524660	1.1685470		11.0	+/-20
1,2,3,7,8,9-HxCDF	A	50.000	53.6	1.0301540	1.1039620		7.2	+/-20
1,2,3,4,7,8-HxCDD	A	50.000	54.6	1.0273630	1.1224820		9.3	+/-20
1,2,3,6,7,8-HxCDD	A	50.000	50.6	1.0089800	1.0201760		1.1	+/-20
1,2,3,7,8,9-HxCDD	A	50.000	52.3	0.9504865	10170.72		4.7	+/-20
1,2,3,4,6,7,8-HpCDF	A	50.000	54.8	1.3273500	1.4543500		9.6	+/-20
1,2,3,4,7,8,9-HpCDF	A	50.000	59.1	1.2833380	1.5180640		18.3	+/-20
1,2,3,4,6,7,8-HpCDD	A	50.000	51.9	1.0680880	1.1079280		3.7	+/-20
OCDF	A	100.00	105	1.4469010	1.5252490		5.4	+/-20
OCDD	A	100.00	105	1.1808230	1.2398230		5.0	+/-20
13C12-2,3,7,8-TCDF	A	100.00	102	1.4265830	1.4506733		1.7	+/-20
13C12-2,3,7,8-TCDD	A	100.00	81.6	1.1164910	0.9114735		-18.4	+/-20
13C12-1,2,3,7,8-PeCDF	A	100.00	105	1.2973130	1.3593960		4.8	+/-20
13C12-2,3,4,7,8-PeCDF	A	100.00	104	1.2364800	1.2899065		4.3	+/-20
13C12-1,2,3,7,8-PeCDD	A	100.00	98.4	0.7319833	0.7206311		-1.6	+/-20
13C12-1,2,3,4,7,8-HxCDF	A	100.00	116	1.2424560	1.4398252		15.9	+/-20
13C12-1,2,3,6,7,8-HxCDF	A	100.00	119	1.3434760	1.6046805		19.4	+/-20
13C12-2,3,4,6,7,8-HxCDF	A	100.00	109	1.2148550	1.3223469		8.8	+/-20
13C12-1,2,3,7,8,9-HxCDF	A	100.00	113	1.0076370	1.1409347		13.2	+/-20
13C12-1,2,3,4,7,8-HxCDD	A	100.00	114	0.9598233	1.0953859		14.1	+/-20
13C12-1,2,3,6,7,8-HxCDD	A	100.00	119	1.0413850	1.2444404		19.5	+/-20
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	114	0.9264704	1.0538048		13.7	+/-20
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	110	0.7579160	0.8319903		9.8	+/-20
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	110	0.6324476	0.6986661		10.5	+/-20
13C12-OCDD	A	200.00	212	0.5037432	0.5335530		5.9	+/-20
37Cl4-2,3,7,8-TCDD	A	10.000	10.4	1.0835930	1.1266521		4.0	+/-20

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
Last Altered: Friday, August 13, 2021 13:47:27 Pacific Daylight Time
Printed: Friday, August 13, 2021 13:51:56 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.655	1.001	8.598e4	1.128e5	1.108	0.762	0.770	1727	2357	1.26e6	1.68e6	728.4	713.0	NO	bb	bb	10.110
12378-PeCDF	29.816	1.000	5.436e5	3.483e5	1.015	1.561	1.550	6428	5298	7.67e6	4.88e6	1193.2	921.9	NO	bd	bd	52.831
23478-PeCDF	31.165	1.001	5.567e5	3.442e5	1.126	1.617	1.550	6428	5298	7.71e6	5.06e6	1200.0	955.7	NO	dd	bb	50.709
123478-HxCDF	34.797	1.000	3.790e5	3.119e5	1.017	1.215	1.240	6025	4489	5.81e6	4.80e6	963.5	1070.0	NO	bd	bd	54.003
234678-HxCDF	35.810	1.001	3.741e5	3.010e5	1.052	1.243	1.240	6025	4489	5.56e6	4.51e6	922.2	1004.3	NO	bb	bb	55.515
123678-HxCDF	34.941	1.001	4.107e5	3.376e5	1.037	1.217	1.240	6025	4489	5.99e6	4.89e6	994.0	1090.0	NO	db	db	51.475
123789-HxCDF	36.835	1.000	3.029e5	2.474e5	1.030	1.224	1.240	6025	4489	4.62e6	3.69e6	767.5	821.7	NO	bb	bb	53.582
1234678-HpCDF	38.685	1.000	3.428e5	3.268e5	1.327	1.049	1.050	5528	5142	5.22e6	4.97e6	945.1	966.6	NO	bb	bb	54.784
1234789-HpCDF	40.924	1.000	2.799e5	2.719e5	1.283	1.029	1.050	5528	5142	3.60e6	3.43e6	650.7	667.0	NO	bd	bd	59.145
OCDF	45.140	1.006	3.368e5	3.743e5	1.447	0.900	0.890	5198	2808	3.79e6	4.27e6	729.8	1522.4	NO	bb	bb	105.415
2378-TCDD	26.305	1.001	4.924e4	6.425e4	0.920	0.766	0.770	2440	1603	7.12e5	9.28e5	291.6	579.2	NO	bb	db	11.057
12378-PeCDD	31.421	1.001	2.834e5	1.748e5	0.995	1.621	1.550	4032	3115	4.22e6	2.62e6	1046.5	841.2	NO	bb	bb	52.211
123478-HxCDD	35.922	1.000	2.965e5	2.407e5	1.027	1.232	1.240	4241	3010	4.65e6	3.73e6	1096.7	1237.9	NO	bd	bd	54.629
123678-HxCDD	36.044	1.001	3.082e5	2.464e5	1.009	1.251	1.240	4241	3010	4.61e6	3.72e6	1085.9	1237.1	NO	db	db	50.555
123789-HxCDD	36.423	1.011	2.887e5	2.199e5	0.950	1.313	1.240	4241	3010	4.19e6	3.34e6	989.1	1108.9	NO	bd	bb	52.339
1234678-HpCDD	40.178	1.000	1.757e5	1.625e5	1.068	1.081	1.050	3111	3083	2.53e6	2.35e6	814.6	763.1	NO	bb	bb	51.865
OCDD	44.903	1.000	2.642e5	3.138e5	1.181	0.842	0.890	2972	3108	3.12e6	3.44e6	1050.3	1105.9	NO	bb	bd	104.997
13C-2378-TCDF	25.640	1.007	7.798e5	9.953e5	1.427	0.784	0.770	3469	3089	1.16e7	1.43e7	3339.4	4613.3	NO	bb	bb	101.689
13C-12378-PeCDF	29.806	1.171	1.051e6	6.125e5	1.297	1.716	1.550	4922	3645	1.42e7	8.62e6	2881.8	2364.6	NO	bd	bb	104.785
13C-23478-PeCDF	31.142	1.223	9.754e5	6.030e5	1.236	1.617	1.550	4922	3645	1.41e7	8.69e6	2860.8	2384.9	NO	bb	bb	104.321
13C-123478-HxCDF	34.785	0.955	4.274e5	8.307e5	1.242	0.514	0.510	5265	6298	6.41e6	1.24e7	1218.4	1973.2	NO	bd	bd	115.885
13C-123678-HxCDF	34.919	0.959	4.860e5	9.161e5	1.343	0.530	0.510	5265	6298	7.00e6	1.35e7	1330.1	2144.5	NO	db	db	119.442
13C-234678-HxCDF	35.788	0.983	3.967e5	7.587e5	1.215	0.523	0.510	5265	6298	5.75e6	1.13e7	1091.4	1799.0	NO	bb	bb	108.848
13C-123789-HxCDF	36.824	1.011	3.447e5	6.522e5	1.008	0.529	0.510	5265	6298	5.11e6	9.81e6	969.9	1558.1	NO	bb	bb	113.229
13C-1234678-HpCDF	38.674	1.062	3.005e5	6.203e5	0.926	0.484	0.440	3480	6125	4.35e6	9.34e6	1249.4	1525.5	NO	bd	bb	113.744
13C-1234789-HpCDF	40.902	1.123	2.223e5	5.047e5	0.758	0.440	0.440	3480	6125	2.90e6	6.30e6	833.4	1029.2	NO	bb	bb	109.773
13C-1234-TCDD	25.458	0.000	5.298e5	6.938e5	1.000	0.764	0.770	5513	2305	7.87e6	1.03e7	1428.2	4481.1	NO	bb	bb	100.000
13C-2378-TCDD	26.275	1.032	4.826e5	6.328e5	1.116	0.763	0.770	5513	2305	7.09e6	9.32e6	1285.5	4044.7	NO	bb	bb	81.637
13C-12378-PeCDD	31.399	1.233	5.423e5	3.395e5	0.732	1.598	1.550	2388	2135	7.53e6	4.95e6	3154.4	2319.5	NO	bb	bb	98.449
13C-123478-HxCDD	35.911	0.986	5.361e5	4.211e5	0.960	1.273	1.240	3574	5521	8.65e6	6.70e6	2421.3	1213.6	NO	bd	bd	114.124
13C-123678-HxCDD	36.022	0.989	6.017e5	4.857e5	1.041	1.239	1.240	3574	5521	9.06e6	7.24e6	2535.4	1311.0	NO	db	db	119.499
13C-1234678-HpCDD	40.167	1.103	3.074e5	3.031e5	0.632	1.014	1.050	3260	2760	4.30e6	4.19e6	1318.4	1519.0	NO	bb	bb	110.470
13C-OCDD	44.884	1.233	4.208e5	5.116e5	0.504	0.822	0.890	2744	3477	4.92e6	5.55e6	1792.3	1596.9	NO	bb	bd	211.835
13C-123789-HxCDD	36.412	0.000	4.843e5	3.895e5	1.000	1.243	1.240	3574	5521	7.18e6	5.79e6	2010.2	1047.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.305	1.033	1.379e5		1.084			1849		1.90e6		1029.2			bd		10.397

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
Last Altered: Friday, August 13, 2021 13:47:27 Pacific Daylight Time
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ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.147	0.864	1.063e5	1.324e5	1.425	0.802	0.770	1727	2357	1.66e6	2.09e6	959.0	886.5	NO	bb	bb	9.436
1289-TCDF	27.152	1.059	5.661e4	7.137e4	1.043	0.793	0.770	1727	2357	8.15e5	1.06e6	472.0	447.8	NO	bb	bb	6.913
13468-PECDF	27.015	0.906	5.743e5	3.714e5	1.376	1.546	1.550	1557	1759	8.45e6	5.45e6	5425.9	3099.7	NO	bb	bb	41.310
12389-PECDF	32.201	1.080	4.075e5	2.638e5	1.000	1.544	1.550	6428	5298	5.63e6	3.72e6	875.5	702.7	NO	bb	bb	40.376
123468-HXCDF	33.125	0.952	4.315e5	3.546e5	1.087	1.217	1.240	6025	4489	6.40e6	5.20e6	1061.8	1158.1	NO	bb	bb	57.507
1368-TCDD	23.417	0.891	5.716e4	7.362e4	0.923	0.776	0.770	2440	1603	8.73e5	1.13e6	357.6	706.6	NO	bb	bb	12.700
1289-TCDD	26.895	1.024	4.776e4	6.026e4	0.794	0.793	0.770	2440	1603	6.91e5	8.63e5	283.1	538.1	NO	bb	bb	12.197
12479-PECDD	28.691	0.914	4.186e5	2.632e5	1.843	1.590	1.550	4032	3115	3.99e6	2.51e6	988.7	804.5	NO	bb	bb	41.945
12389-PECDD	31.822	1.013	2.780e5	1.664e5	1.154	1.671	1.550	4032	3115	4.00e6	2.46e6	992.1	791.3	NO	bb	bb	43.683
124679-HXCDD	33.905	0.944	3.632e5	2.896e5	1.125	1.254	1.240	4241	3010	5.57e6	4.44e6	1314.1	1475.1	NO	bb	bb	60.629
1234679-HPCDD	39.141	0.975	2.129e5	1.840e5	1.211	1.157	1.050	3111	3083	2.93e6	2.75e6	941.5	893.1	NO	bd	bb	53.689
Total-tetrafurans			2.574e5		1.192			1727		3.86e6							27.363
Total-penta1			5.743e5					1557		8.45e6							41.310
Total-pentafurans			1.602e6		1.047			6428		2.23e7							153.079
Total-hexafurans			1.898e6		1.045			6025		2.84e7							272.082
Total-heptafurans			6.227e5		1.305			5528		8.82e6							113.929
Total-Furans			5.291e6		1.158			1727		7.56e7							713.177
Total-tetradioxins			2.709e5		0.879			2440		3.41e6							62.800
Total-pentadioxins			9.817e5		1.331			4032		1.22e7							138.087
Total-hexadioxins			1.266e6		1.028			4241		1.92e7							219.741
Total-heptadioxins			3.886e5		1.140			3111		5.46e6							105.554
Total-Dioxins			3.171e6		1.092			2440		4.34e7							631.178
Total-TEQ			8.462e6					2440		1.19e8							1344.355
FUNCTION1 PFK			6.450e7					839971		2.37e8							
FUNCTION2 PFK			0.000e0					483349		0.00e0							
FUNCTION3 PFK			5.184e7					675979		4.54e8							0.000
FUNCTION4 PFK			3.964e5					425264		1.39e7							
FUNCTION5 PFK			3.414e4					345829		1.67e6							
FUNCTION1 HXCD...			2.903e3					1258		5.64e4							0.000
FUNCTION1 HPCD...			2.863e3					1421		5.44e4							0.000
FUNCTION2 HPCD...			2.720e3					1471		5.70e4							0.000
FUNCTION3 OCDPE			1.392e3					890		2.72e4							0.000
FUNCTION4 NCDPE			1.187e3					1520		2.23e4							0.000
FUNCTION5 DCDPE			1.665e2					1065		6.42e3							0.000

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Method: T:\Autospec\Methods\Dioxin210720.mdb 11 Aug 2021 14:23:13
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
2	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
3	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
4	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
5	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
2	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
3	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
4	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
5	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
2	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020
7	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
8	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
9	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
10	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
11	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831
12	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
13	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
14	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
15	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
16	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003
17	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
18	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145
19	OCDF	45.14	3.368e5	3.743e5	1.447	0.90	0.89	729.8	YES	NO	bb	bb	105.415
20	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
2	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
3	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
4	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
5	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
6	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
2	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
3	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
4	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
2	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
3	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
4	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
5	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
6	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865
2	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
2	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
3	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
4	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
5	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
6	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057
7	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
8	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
9	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
10	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945
11	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
12	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
13	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
14	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
15	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
16	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325
17	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865
18	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689
19	OCDD	44.90	2.642e5	3.138e5	1.181	0.84	0.89	1050.3	YES	NO	bb	bd	104.997

ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.15	5.661e4	7.137e4	1.043	0.79	0.77	472.0	YES	NO	bb	bb	6.913
2	2378-TCDF	25.65	8.598e4	1.128e5	1.108	0.76	0.77	728.4	YES	NO	bb	bb	10.110
3	Total-tetrafurans	24.75	7.210e3	8.958e3	1.192	0.80	0.77	60.0	YES	NO	bb	bb	0.764
4	Total-tetrafurans	24.42	1.138e3	1.365e3	1.192	0.83	0.77	9.8	YES	NO	bb	bb	0.118
5	1368-TCDF	22.15	1.063e5	1.324e5	1.425	0.80	0.77	959.0	YES	NO	bb	bb	9.436
6	Total-tetrafurans	27.47	1.965e2	2.354e2	1.192	0.83	0.77	3.7	YES	NO	db	bb	0.020
7	Total-pentafurans	28.67	7.393e4	4.763e4	1.047	1.55	1.55	167.4	YES	NO	bb	bb	7.165
8	12389-PECDF	32.20	4.075e5	2.638e5	1.000	1.54	1.55	875.5	YES	NO	bb	bb	40.376
9	23478-PeCDF	31.16	5.567e5	3.442e5	1.126	1.62	1.55	1200.0	YES	NO	dd	bb	50.709
10	Total-pentafurans	30.02	2.035e4	1.353e4	1.047	1.50	1.55	37.7	YES	NO	dd	dd	1.997
11	12378-PeCDF	29.82	5.436e5	3.483e5	1.015	1.56	1.55	1193.2	YES	NO	bd	bd	52.831
12	123468-HXCDF	33.13	4.315e5	3.546e5	1.087	1.22	1.24	1061.8	YES	NO	bb	bb	57.507
13	123789-HxCDF	36.84	3.029e5	2.474e5	1.030	1.22	1.24	767.5	YES	NO	bb	bb	53.582
14	234678-HxCDF	35.81	3.741e5	3.010e5	1.052	1.24	1.24	922.2	YES	NO	bb	bb	55.515
15	123678-HxCDF	34.94	4.107e5	3.376e5	1.037	1.22	1.24	994.0	YES	NO	db	db	51.475
16	123478-HxCDF	34.80	3.790e5	3.119e5	1.017	1.22	1.24	963.5	YES	NO	bd	bd	54.003
17	1234678-HpCDF	38.68	3.428e5	3.268e5	1.327	1.05	1.05	945.1	YES	NO	bb	bb	54.784
18	1234789-HpCDF	40.92	2.799e5	2.719e5	1.283	1.03	1.05	650.7	YES	NO	bd	bd	59.145
19	OCDF	45.14	3.368e5	3.743e5	1.447	0.90	0.89	729.8	YES	NO	bb	bb	105.415
20	13468-PECDF	27.02	5.743e5	3.714e5	1.376	1.55	1.55	5425.9	YES	NO	bb	bb	41.310
21	Total-tetradioxins	25.97	8.932e4	1.141e5	0.879	0.78	0.77	303.9	YES	NO	bd	bd	20.744
22	Total-tetradioxins	25.49	2.543e4	2.972e4	0.879	0.86	0.77	154.2	YES	NO	bd	bb	5.625
23	Total-tetradioxins	24.63	2.020e3	2.647e3	0.879	0.76	0.77	8.0	YES	NO	bd	bb	0.476
24	1368-TCDD	23.42	5.716e4	7.362e4	0.923	0.78	0.77	357.6	YES	NO	bb	bb	12.700
25	1289-TCDD	26.89	4.776e4	6.026e4	0.794	0.79	0.77	283.1	YES	NO	bb	bb	12.197
26	2378-TCDD	26.30	4.924e4	6.425e4	0.920	0.77	0.77	291.6	YES	NO	bb	db	11.057
27	12389-PECDD	31.82	2.780e5	1.664e5	1.154	1.67	1.55	992.1	YES	NO	bb	bb	43.683
28	12378-PeCDD	31.42	2.834e5	1.748e5	0.995	1.62	1.55	1046.5	YES	NO	bb	bb	52.211
29	Total-pentadioxins	30.75	1.739e3	1.177e3	1.331	1.48	1.55	6.0	YES	NO	bb	bb	0.249
30	12479-PECDD	28.69	4.186e5	2.632e5	1.843	1.59	1.55	988.7	YES	NO	bb	bb	41.945
31	124679-HXCDD	33.91	3.632e5	2.896e5	1.125	1.25	1.24	1314.1	YES	NO	bb	bb	60.629
32	123789-HxCDD	36.42	2.887e5	2.199e5	0.950	1.31	1.24	989.1	YES	NO	bd	bb	52.339
33	123678-HxCDD	36.04	3.082e5	2.464e5	1.009	1.25	1.24	1085.9	YES	NO	db	db	50.555
34	123478-HxCDD	35.92	2.965e5	2.407e5	1.027	1.23	1.24	1096.7	YES	NO	bd	bd	54.629
35	Total-hexadioxins	35.04	7.156e3	6.136e3	1.028	1.17	1.24	26.9	YES	NO	db	db	1.265
36	Total-hexadioxins	34.67	1.781e3	1.631e3	1.028	1.09	1.24	7.7	YES	NO	bb	bb	0.325
37	1234678-HpCDD	40.18	1.757e5	1.625e5	1.068	1.08	1.05	814.6	YES	NO	bb	bb	51.865

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1234679-HPCDD	39.14	2.129e5	1.840e5	1.211	1.16	1.05	941.5	YES	NO	bd	bb	53.689
39	OCDD	44.90	2.642e5	3.138e5	1.181	0.84	0.89	1050.3	YES	NO	bb	bd	104.997

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.34	1.094e7					29.2	YES		db		
2	FUNCTION1 PFK	22.07	1.938e7					38.3	YES		dd		
3	FUNCTION1 PFK	21.38	2.077e7					61.6	YES		dd		
4	FUNCTION1 PFK	21.25	7.452e6					64.7	YES		dd		
5	FUNCTION1 PFK	21.10	5.199e6					69.3	YES		bd		
6	FUNCTION1 PFK	27.62	5.202e4					1.5	NO		bb		
7	FUNCTION1 PFK	26.61	3.088e4					1.4	NO		bb		
8	FUNCTION1 PFK	26.53	3.772e4					1.3	NO		bb		
9	FUNCTION1 PFK	26.21	4.215e4					1.3	NO		bb		
10	FUNCTION1 PFK	26.14	2.091e4					0.7	NO		bb		
11	FUNCTION1 PFK	25.90	2.782e4					1.0	NO		bb		
12	FUNCTION1 PFK	25.64	2.244e4					0.9	NO		bb		
13	FUNCTION1 PFK	25.38	4.475e4					1.3	NO		bb		
14	FUNCTION1 PFK	25.32	8.085e4					1.5	NO		bb		
15	FUNCTION1 PFK	25.10	6.333e4					1.7	NO		db		
16	FUNCTION1 PFK	24.94	2.192e5					2.0	NO		dd		
17	FUNCTION1 PFK	24.82	2.857e4					1.1	NO		bd		
18	FUNCTION1 PFK	24.63	2.787e4					1.0	NO		bb		
19	FUNCTION1 PFK	24.35	1.463e4					0.7	NO		bb		
20	FUNCTION1 PFK	23.43	4.951e4					1.7	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.47	2.892e5					8.3	YES		dd		0.000
2	FUNCTION3 PFK	34.42	3.441e5					9.9	YES		dd		0.000
3	FUNCTION3 PFK	34.30	9.123e5					14.6	YES		dd		0.000
4	FUNCTION3 PFK	33.96	4.870e6					27.1	YES		dd		0.000
5	FUNCTION3 PFK	33.92	6.208e5					27.9	YES		dd		0.000
6	FUNCTION3 PFK	33.75	6.775e6					34.2	YES		dd		0.000
7	FUNCTION3 PFK	33.58	8.843e5					39.8	YES		dd		0.000
8	FUNCTION3 PFK	33.52	4.828e6					42.2	YES		dd		0.000
9	FUNCTION3 PFK	33.37	2.844e6					47.3	YES		dd		0.000
10	FUNCTION3 PFK	33.18	5.432e6					54.3	YES		dd		0.000
11	FUNCTION3 PFK	33.04	5.575e6					59.2	YES		dd		0.000
12	FUNCTION3 PFK	32.95	3.680e6					62.9	YES		dd		0.000
13	FUNCTION3 PFK	32.86	7.904e6					65.6	YES		dd		0.000
14	FUNCTION3 PFK	32.74	1.549e6					69.1	YES		dd		0.000
15	FUNCTION3 PFK	32.67	4.268e6					72.4	YES		bd		0.000
16	FUNCTION3 PFK	36.86	8.449e3					0.3	NO		bb		0.000
17	FUNCTION3 PFK	36.72	6.925e4					2.0	NO		bb		0.000
18	FUNCTION3 PFK	36.59	5.799e4					1.2	NO		bb		0.000
19	FUNCTION3 PFK	36.30	7.563e3					0.7	NO		bb		0.000
20	FUNCTION3 PFK	36.04	6.922e3					0.5	NO		bb		0.000
21	FUNCTION3 PFK	35.83	2.532e4					1.1	NO		bb		0.000
22	FUNCTION3 PFK	35.75	1.516e4					0.9	NO		bb		0.000
23	FUNCTION3 PFK	35.63	1.004e4					0.7	NO		bb		0.000
24	FUNCTION3 PFK	35.33	1.433e4					0.8	NO		bb		0.000
25	FUNCTION3 PFK	35.04	1.089e4					0.6	NO		bb		0.000
26	FUNCTION3 PFK	34.97	5.517e3					0.7	NO		bb		0.000
27	FUNCTION3 PFK	34.89	3.001e4					1.0	NO		bb		0.000
28	FUNCTION3 PFK	34.81	1.594e4					1.0	NO		db		0.000
29	FUNCTION3 PFK	34.76	3.092e4					1.3	NO		bd		0.000
30	FUNCTION3 PFK	34.60	1.659e5					4.5	YES		db		0.000
31	FUNCTION3 PFK	34.53	2.985e5					6.7	YES		dd		0.000
32	FUNCTION3 PFK	37.64	2.742e4					1.1	NO		bb		0.000
33	FUNCTION3 PFK	37.58	2.711e4					1.4	NO		db		0.000
34	FUNCTION3 PFK	37.54	1.758e4					0.9	NO		dd		0.000
35	FUNCTION3 PFK	37.49	3.447e4					1.6	NO		dd		0.000
36	FUNCTION3 PFK	37.45	2.646e4					1.5	NO		dd		0.000
37	FUNCTION3 PFK	37.38	4.745e4					1.5	NO		dd		0.000

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION3 PFK	37.34	2.452e4					1.6	NO		bd		0.000
39	FUNCTION3 PFK	37.29	9.653e3					0.8	NO		bb		0.000
40	FUNCTION3 PFK	37.08	5.064e3					0.5	NO		bb		0.000
41	FUNCTION3 PFK	36.98	6.612e4					1.7	NO		bb		0.000

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PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.42	2.469e3					0.5	NO		bb		
2	FUNCTION4 PFK	38.08	2.954e4					1.7	NO		bb		
3	FUNCTION4 PFK	37.98	4.856e4					2.3	NO		db		
4	FUNCTION4 PFK	37.94	3.614e4					2.6	NO		bd		
5	FUNCTION4 PFK	37.85	8.390e3					1.0	NO		bb		
6	FUNCTION4 PFK	40.91	1.035e4					1.0	NO		bb		
7	FUNCTION4 PFK	40.71	1.742e3					0.4	NO		bb		
8	FUNCTION4 PFK	40.68	3.176e3					0.5	NO		bb		
9	FUNCTION4 PFK	40.61	6.362e3					0.7	NO		bb		
10	FUNCTION4 PFK	40.38	7.075e3					0.8	NO		bb		
11	FUNCTION4 PFK	40.32	3.115e4					1.2	NO		bb		
12	FUNCTION4 PFK	39.94	4.461e3					0.6	NO		bb		
13	FUNCTION4 PFK	39.80	5.746e3					0.6	NO		bb		
14	FUNCTION4 PFK	39.51	2.799e3					0.4	NO		bb		
15	FUNCTION4 PFK	39.43	1.949e3					0.4	NO		bb		
16	FUNCTION4 PFK	39.36	2.879e3					0.6	NO		bb		
17	FUNCTION4 PFK	39.32	5.365e3					1.1	NO		bb		
18	FUNCTION4 PFK	39.28	3.621e3					0.8	NO		bb		
19	FUNCTION4 PFK	39.21	1.666e4					1.0	NO		bb		
20	FUNCTION4 PFK	39.07	6.512e3					0.8	NO		bb		
21	FUNCTION4 PFK	38.46	1.263e4					1.2	NO		bb		
22	FUNCTION4 PFK	42.68	1.445e4					0.9	NO		bb		
23	FUNCTION4 PFK	42.62	2.052e4					1.7	NO		bb		
24	FUNCTION4 PFK	42.51	2.321e3					0.5	NO		bb		
25	FUNCTION4 PFK	42.43	3.121e4					1.9	NO		bb		
26	FUNCTION4 PFK	42.18	7.742e3					0.8	NO		bb		
27	FUNCTION4 PFK	42.05	1.748e4					1.2	NO		db		
28	FUNCTION4 PFK	41.97	1.470e4					1.2	NO		bd		
29	FUNCTION4 PFK	41.63	2.487e3					0.5	NO		bb		
30	FUNCTION4 PFK	41.48	1.442e4					1.2	NO		bb		
31	FUNCTION4 PFK	41.24	1.211e4					1.0	NO		bb		
32	FUNCTION4 PFK	41.17	1.136e4					1.2	NO		bb		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.97	5.710e3					1.0	NO		bb		
2	FUNCTION5 PFK	45.74	1.859e3					0.6	NO		bb		
3	FUNCTION5 PFK	43.26	1.526e4					1.8	NO		bb		
4	FUNCTION5 PFK	42.93	1.131e4					1.5	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	25.35	1.892e2					4.2	YES		db		0.000
2	FUNCTION1 HXCD...	25.23	1.187e2					1.3	NO		bd		0.000
3	FUNCTION1 HXCD...	24.87	7.961e1					1.9	NO		db		0.000
4	FUNCTION1 HXCD...	24.81	1.259e2					2.7	NO		bd		0.000
5	FUNCTION1 HXCD...	24.72	1.584e2					1.4	NO		bb		0.000
6	FUNCTION1 HXCD...	24.40	9.113e1					1.6	NO		bb		0.000
7	FUNCTION1 HXCD...	23.72	7.480e1					1.5	NO		bb		0.000
8	FUNCTION1 HXCD...	23.61	1.381e2					2.9	NO		bb		0.000
9	FUNCTION1 HXCD...	23.11	9.740e1					2.5	NO		bb		0.000
10	FUNCTION1 HXCD...	22.43	1.791e2					2.1	NO		db		0.000
11	FUNCTION1 HXCD...	22.30	7.125e1					1.5	NO		bd		0.000
12	FUNCTION1 HXCD...	22.19	7.195e1					1.3	NO		bb		0.000
13	FUNCTION1 HXCD...	21.98	1.102e2					1.5	NO		db		0.000
14	FUNCTION1 HXCD...	21.89	2.251e2					4.2	YES		bd		0.000
15	FUNCTION1 HXCD...	21.80	1.414e2					2.0	NO		bb		0.000
16	FUNCTION1 HXCD...	27.03	2.453e2					2.4	NO		bb		0.000
17	FUNCTION1 HXCD...	26.29	2.686e2					2.1	NO		db		0.000
18	FUNCTION1 HXCD...	26.12	1.763e2					2.9	NO		dd		0.000
19	FUNCTION1 HXCD...	26.03	9.387e1					1.2	NO		bd		0.000
20	FUNCTION1 HXCD...	25.82	1.399e2					2.0	NO		bb		0.000
21	FUNCTION1 HXCD...	25.46	1.064e2					1.7	NO		bb		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.51	7.992e1					1.4	NO		bb		0.000
2	FUNCTION1 HPCD...	22.07	1.029e2					2.1	NO		bb		0.000
3	FUNCTION1 HPCD...	21.98	1.510e2					1.6	NO		db		0.000
4	FUNCTION1 HPCD...	21.88	1.949e2					3.5	YES		bd		0.000
5	FUNCTION1 HPCD...	21.75	2.528e2					1.8	NO		bb		0.000
6	FUNCTION1 HPCD...	21.47	1.508e2					2.1	NO		bb		0.000
7	FUNCTION1 HPCD...	21.25	1.018e2					1.3	NO		db		0.000
8	FUNCTION1 HPCD...	21.16	1.149e2					1.6	NO		dd		0.000
9	FUNCTION1 HPCD...	21.09	2.200e2					3.0	NO		bd		0.000
10	FUNCTION1 HPCD...	27.00	1.586e2					1.8	NO		bb		0.000
11	FUNCTION1 HPCD...	26.83	9.159e1					0.8	NO		bb		0.000
12	FUNCTION1 HPCD...	26.59	1.663e2					2.5	NO		bb		0.000
13	FUNCTION1 HPCD...	26.32	1.753e2					1.6	NO		db		0.000
14	FUNCTION1 HPCD...	26.14	2.616e2					2.2	NO		bd		0.000
15	FUNCTION1 HPCD...	25.59	8.230e1					1.9	NO		bb		0.000
16	FUNCTION1 HPCD...	25.44	8.713e1					1.0	NO		bb		0.000
17	FUNCTION1 HPCD...	25.16	7.125e1					1.1	NO		db		0.000
18	FUNCTION1 HPCD...	25.05	1.030e2					1.1	NO		bd		0.000
19	FUNCTION1 HPCD...	24.07	1.494e2					2.5	NO		bb		0.000
20	FUNCTION1 HPCD...	23.83	1.478e2					3.3	YES		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	28.48	1.146e2					2.7	NO		bb		0.000
2	FUNCTION2 HPCD...	28.07	8.040e1					1.2	NO		db		0.000
3	FUNCTION2 HPCD...	27.98	1.117e2					1.5	NO		bd		0.000
4	FUNCTION2 HPCD...	27.82	9.308e1					2.0	NO		bb		0.000
5	FUNCTION2 HPCD...	31.82	1.073e2					1.6	NO		bb		0.000
6	FUNCTION2 HPCD...	31.41	3.440e2					4.0	YES		bb		0.000
7	FUNCTION2 HPCD...	31.18	9.044e1					1.2	NO		db		0.000
8	FUNCTION2 HPCD...	31.11	9.781e1					2.1	NO		dd		0.000
9	FUNCTION2 HPCD...	31.03	7.279e2					8.6	YES		bd		0.000
10	FUNCTION2 HPCD...	30.26	7.257e1					1.3	NO		bb		0.000
11	FUNCTION2 HPCD...	30.21	7.122e1					1.7	NO		db		0.000
12	FUNCTION2 HPCD...	30.14	1.157e2					1.5	NO		dd		0.000
13	FUNCTION2 HPCD...	30.06	7.412e1					1.1	NO		dd		0.000
14	FUNCTION2 HPCD...	29.98	7.219e1					1.2	NO		dd		0.000
15	FUNCTION2 HPCD...	29.91	9.212e1					2.0	NO		bd		0.000
16	FUNCTION2 HPCD...	29.69	7.977e1					1.3	NO		bb		0.000
17	FUNCTION2 HPCD...	29.08	1.408e2					1.5	NO		db		0.000
18	FUNCTION2 HPCD...	28.96	1.497e2					1.4	NO		bd		0.000
19	FUNCTION2 HPCD...	28.71	8.490e1					1.0	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	37.65	1.580e2					2.6	NO		db		0.000
2	FUNCTION3 OCDPE	37.55	1.150e2					2.8	NO		bd		0.000
3	FUNCTION3 OCDPE	36.42	1.835e2					2.9	NO		bb		0.000
4	FUNCTION3 OCDPE	36.04	2.520e2					4.7	YES		db		0.000
5	FUNCTION3 OCDPE	35.93	1.106e2					3.8	YES		dd		0.000
6	FUNCTION3 OCDPE	35.90	1.018e2					3.4	YES		bd		0.000
7	FUNCTION3 OCDPE	34.40	1.321e2					5.0	YES		bb		0.000
8	FUNCTION3 OCDPE	33.58	1.010e2					2.3	NO		bb		0.000
9	FUNCTION3 OCDPE	32.70	2.382e2					3.1	YES		bb		0.000

Dataset: T:\Autospec\Processed Data Batch\210811ICVIH.qld
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ID: ICVCZ, Name: 21081112, Date: 12-Aug-2021, Time: 00:00:03, Conditions: AUTOSPEC01, User: pk

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.42	7.136e1					0.9	NO		bb		0.000
2	FUNCTION4 NCDPE	40.16	1.641e2					1.6	NO		bb		0.000
3	FUNCTION4 NCDPE	39.69	1.182e2					1.5	NO		bb		0.000
4	FUNCTION4 NCDPE	38.52	1.487e2					1.6	NO		db		0.000
5	FUNCTION4 NCDPE	38.34	2.790e2					2.3	NO		dd		0.000
6	FUNCTION4 NCDPE	38.26	1.556e2					2.2	NO		bd		0.000
7	FUNCTION4 NCDPE	41.34	1.448e2					1.6	NO		bb		0.000
8	FUNCTION4 NCDPE	40.81	1.056e2					2.8	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	44.58	7.112e1					3.0	NO		bb		0.000
2	FUNCTION5 DCDPE	43.59	9.542e1					3.1	YES		bb		0.000

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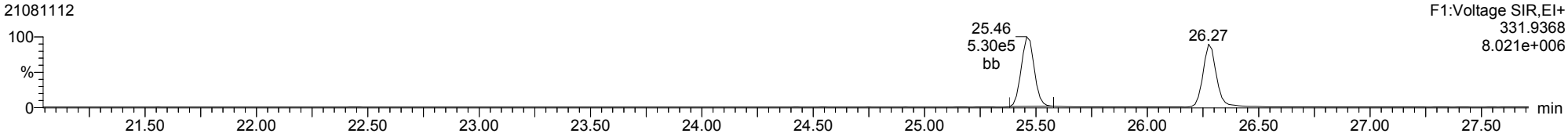
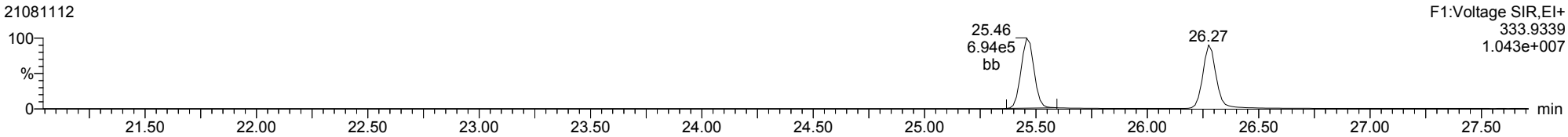
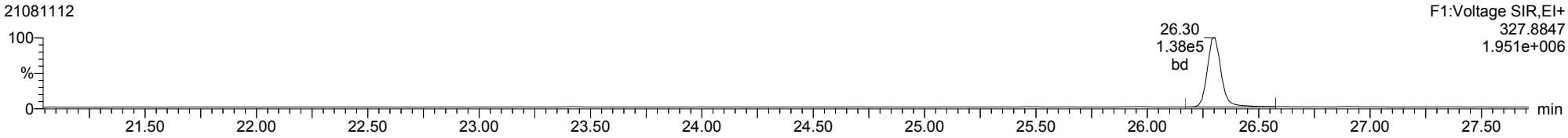
13C-1234-TCDD



13C-1234-TCDD



37CL-2378-TCDD



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Printed: Friday, August 13, 2021 13:51:56 Pacific Daylight Time

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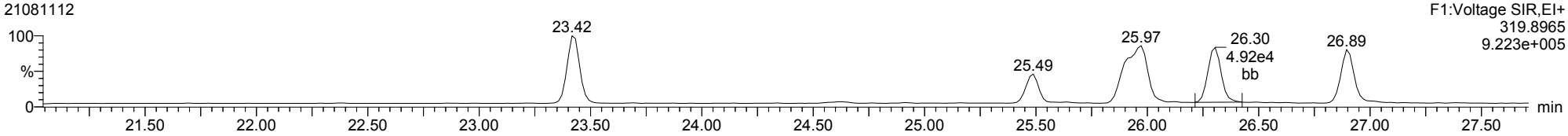

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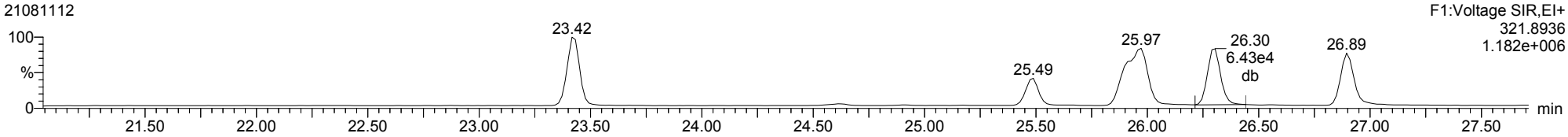

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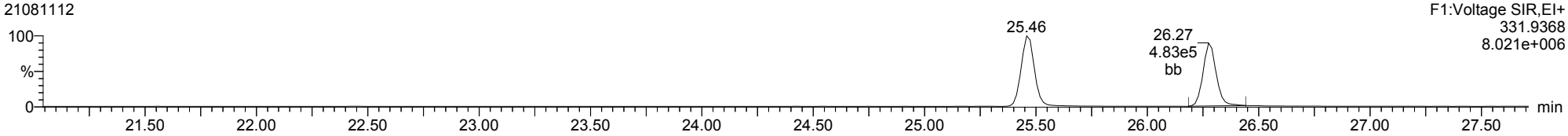

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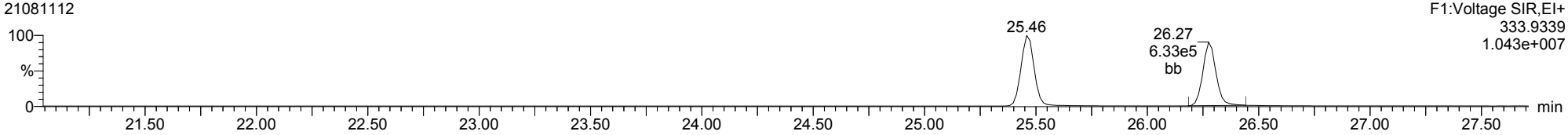

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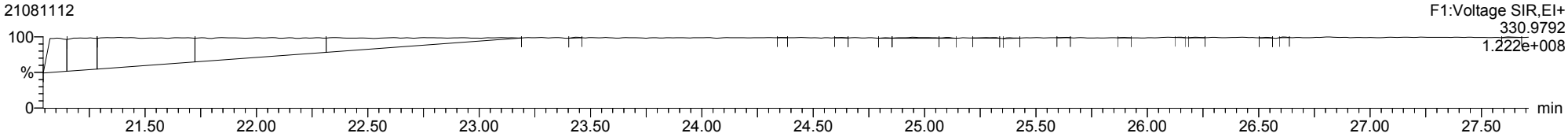

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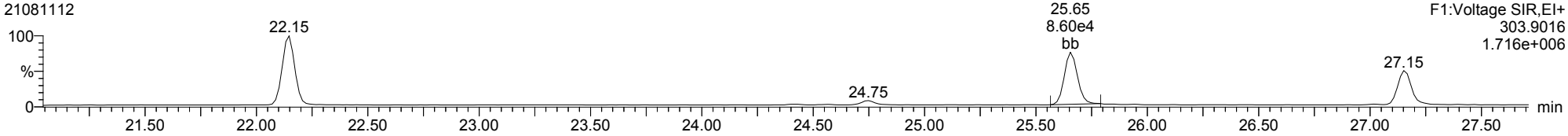

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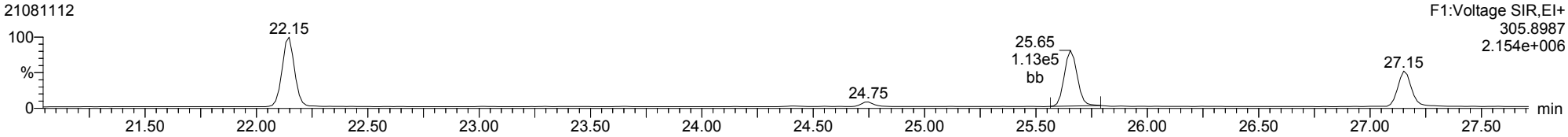

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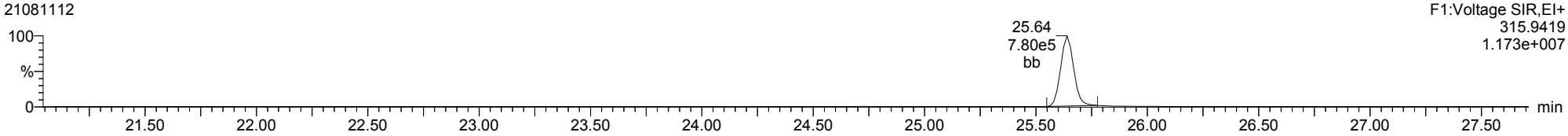

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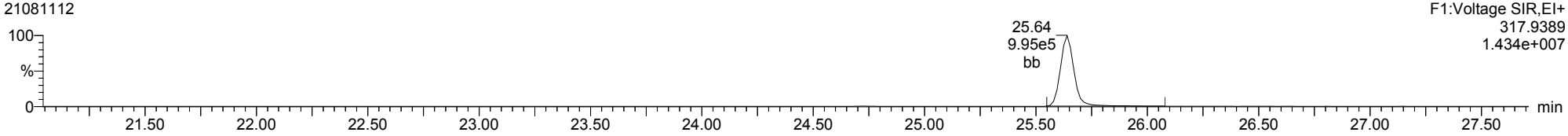

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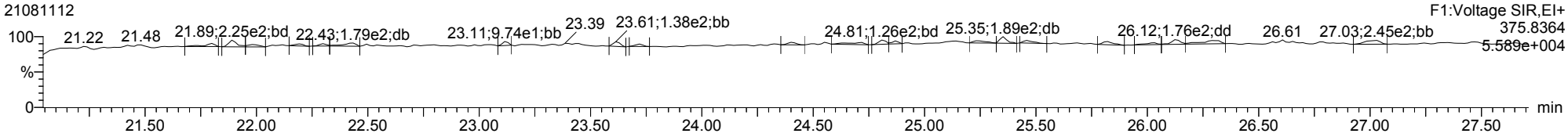

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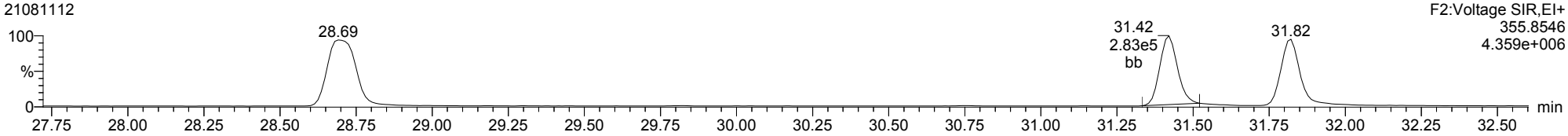

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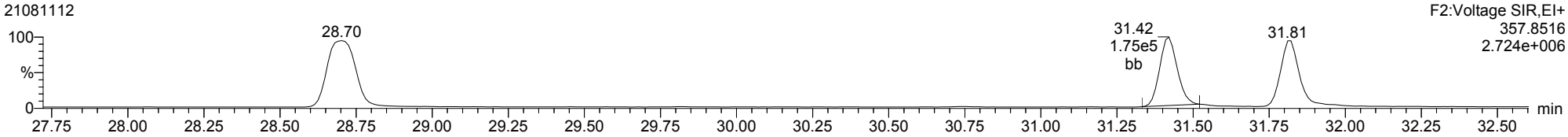

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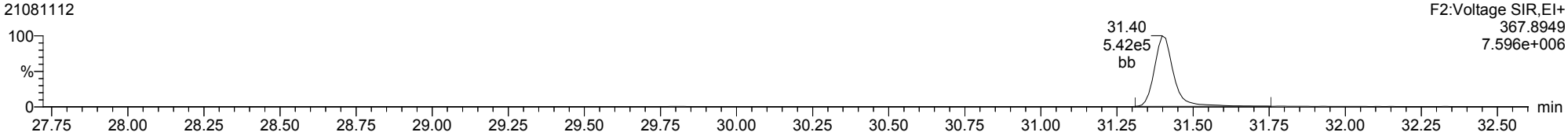

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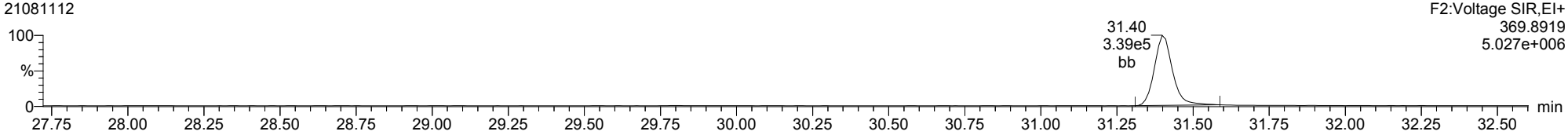

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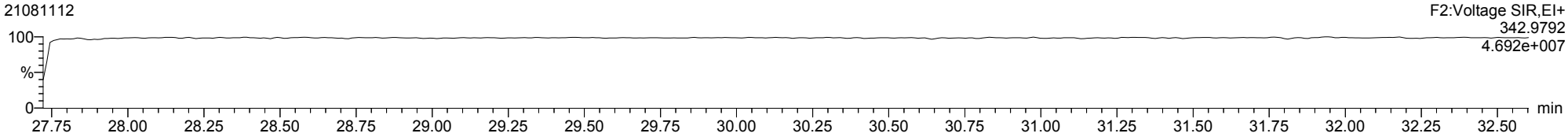

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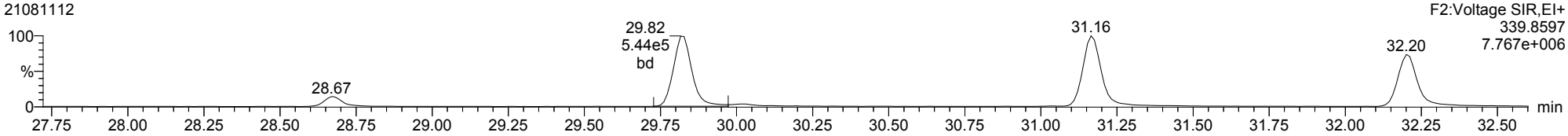

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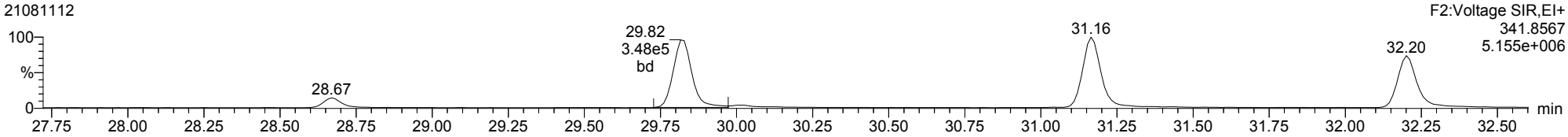

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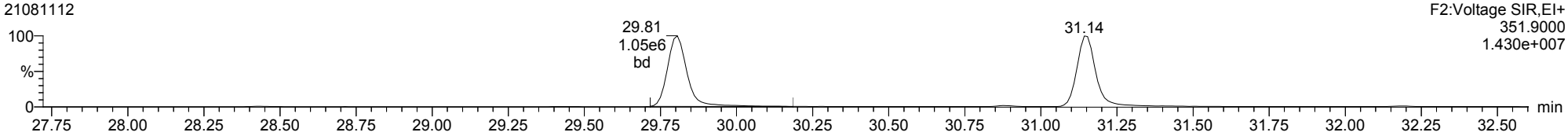

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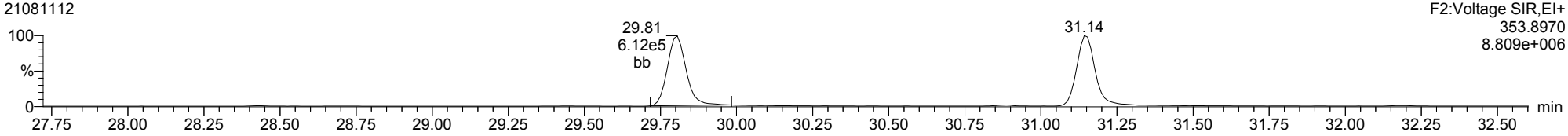
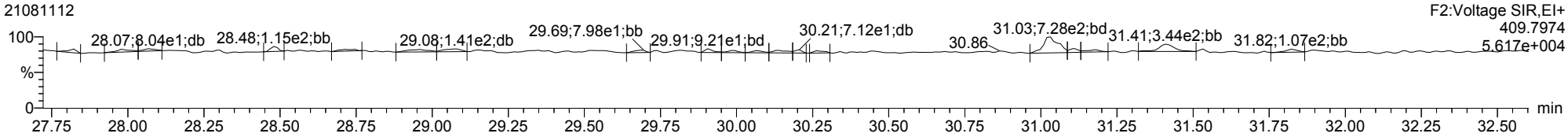


FUNCTION2 HPCDPE



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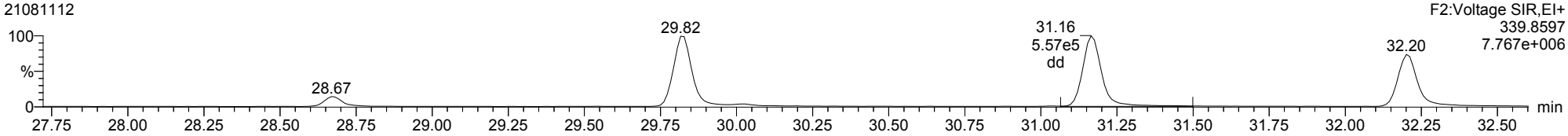

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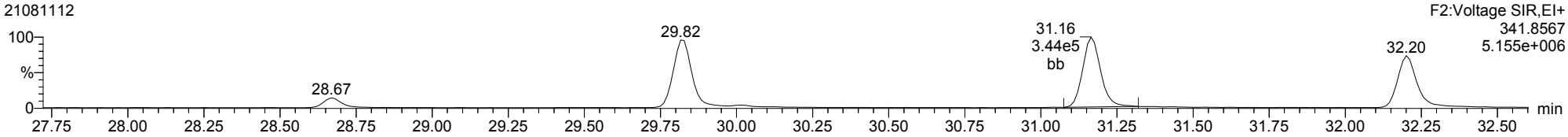

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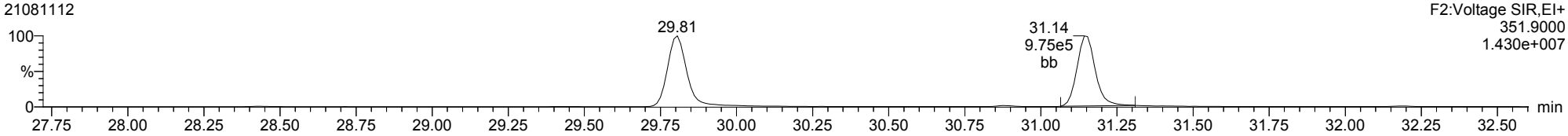

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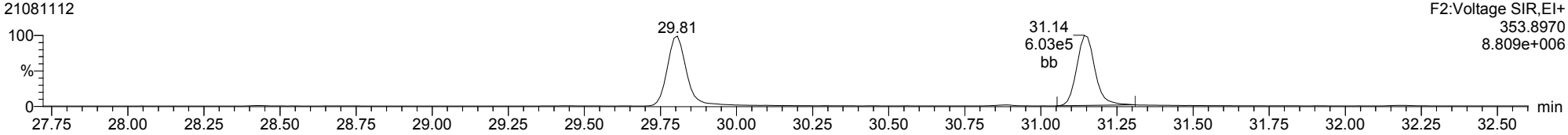

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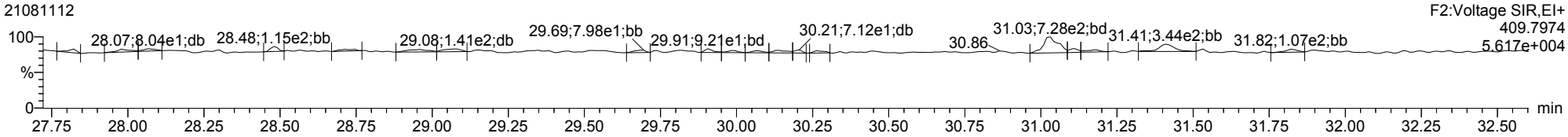

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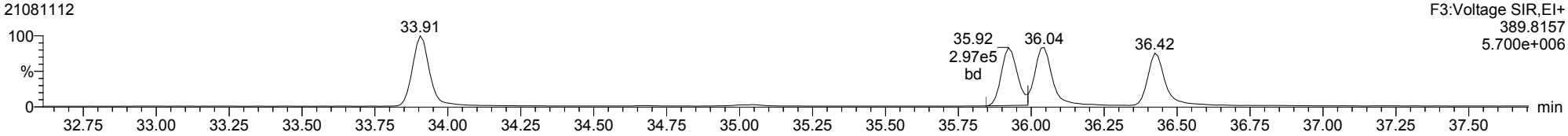

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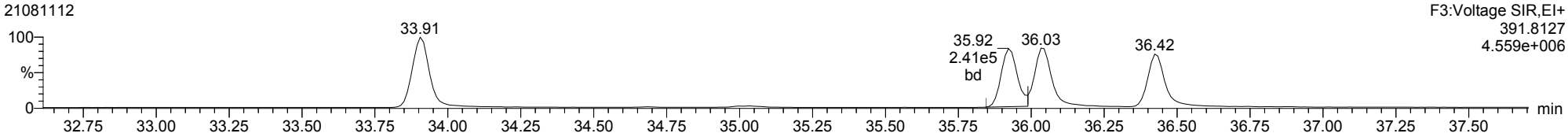

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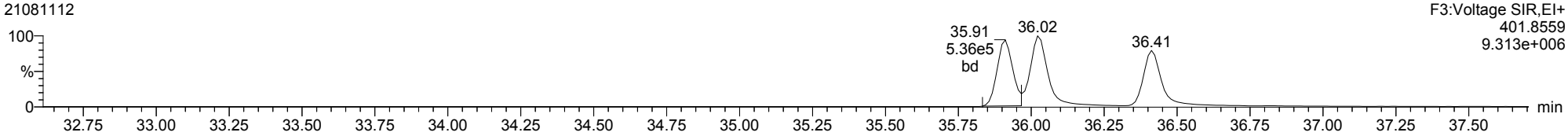

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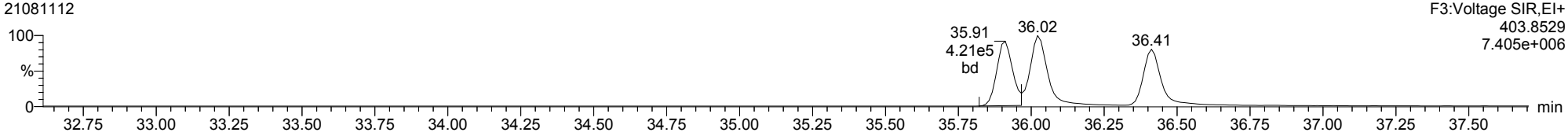

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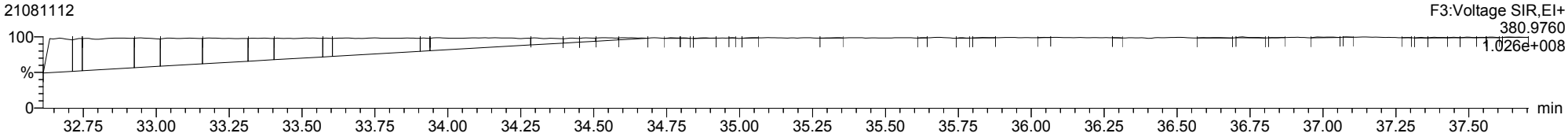

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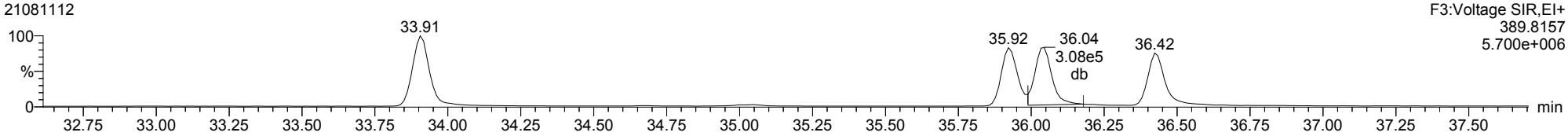

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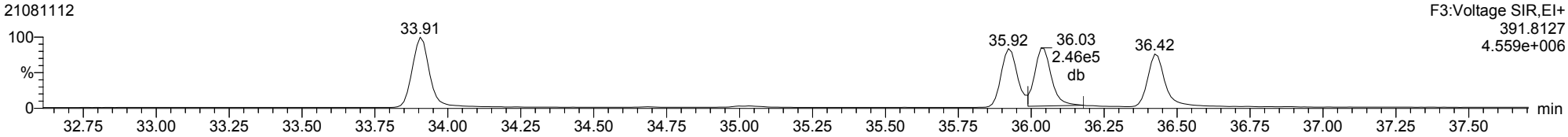

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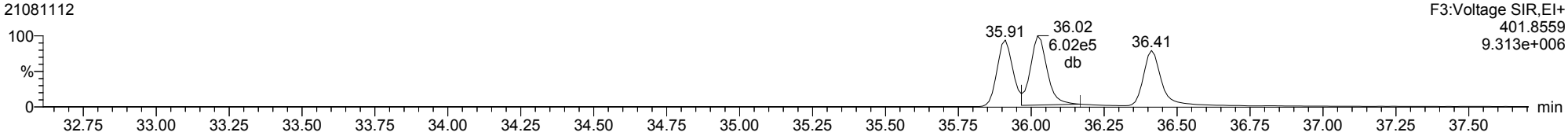

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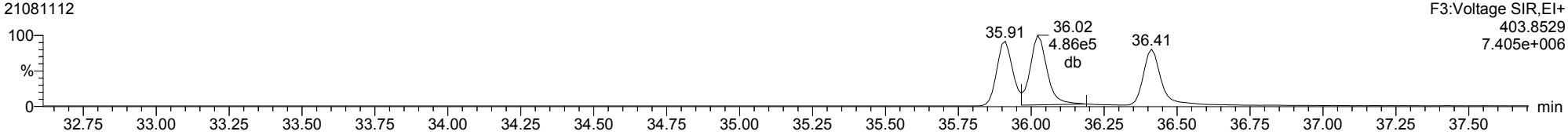

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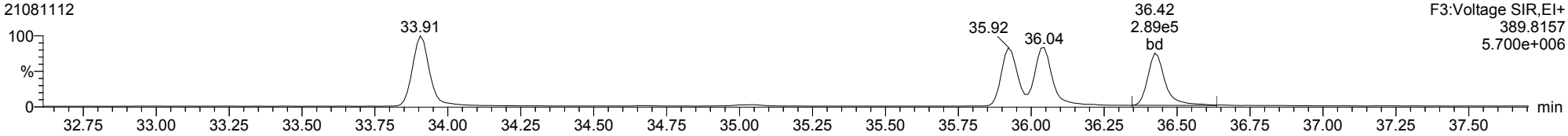

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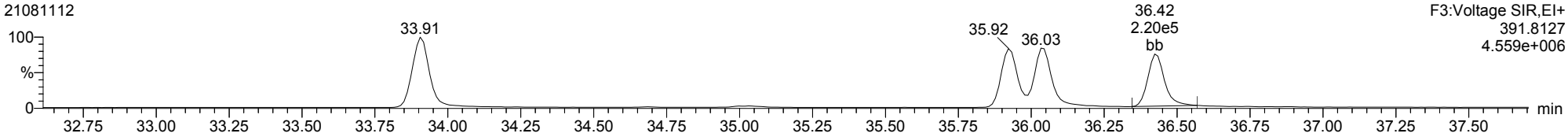

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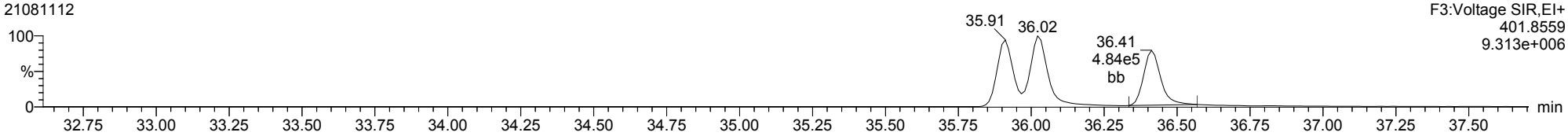

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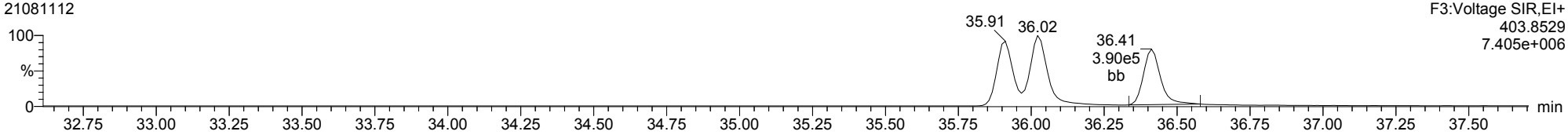

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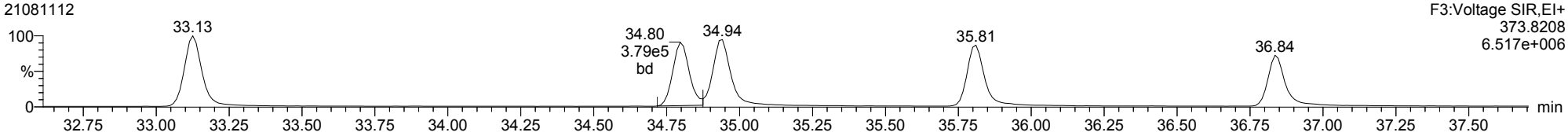

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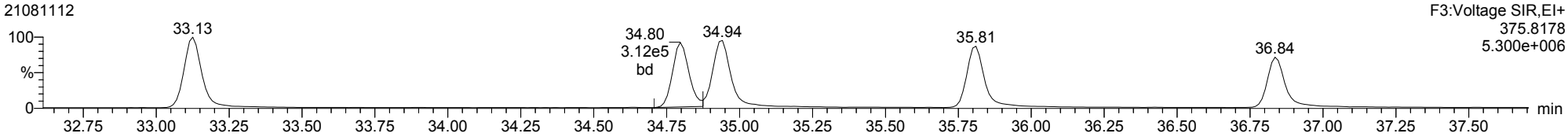

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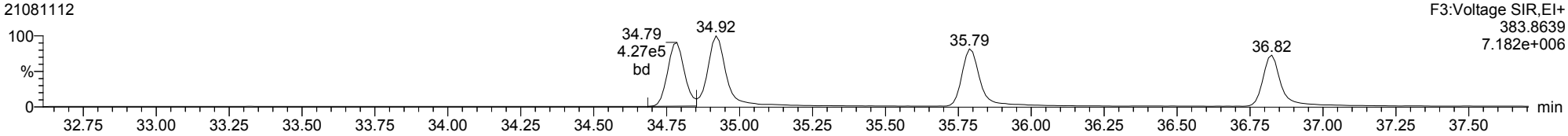

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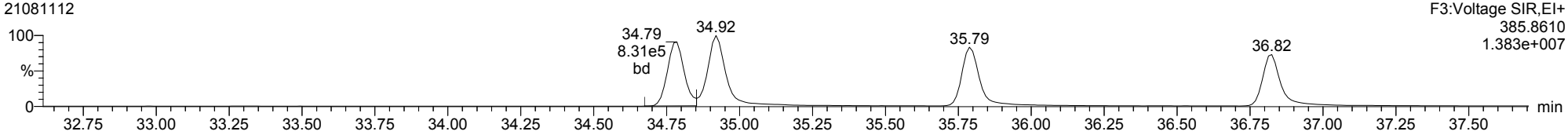
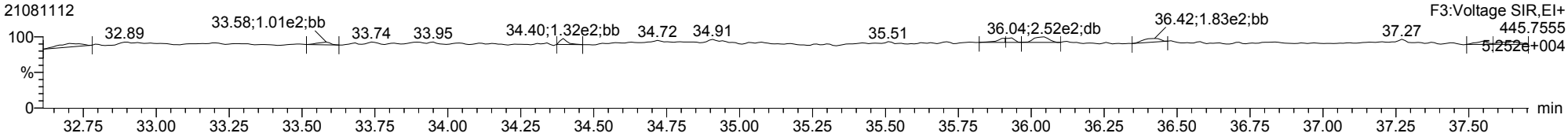


FUNCTION3 OCDPE



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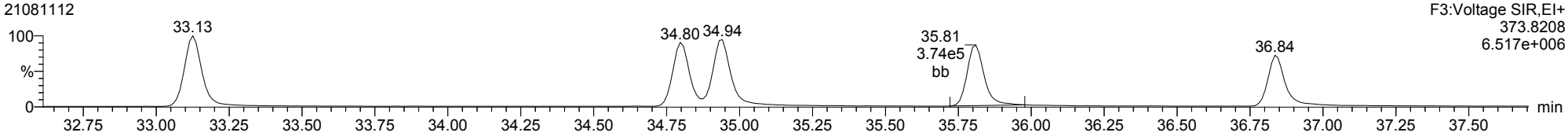

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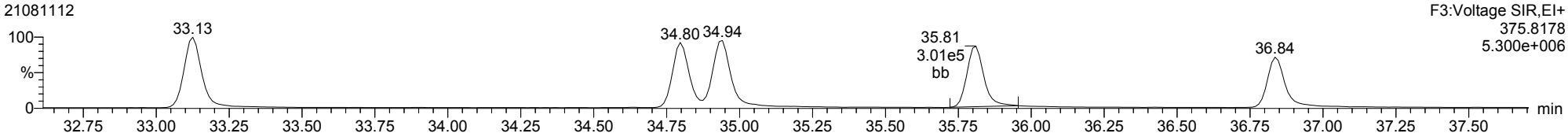

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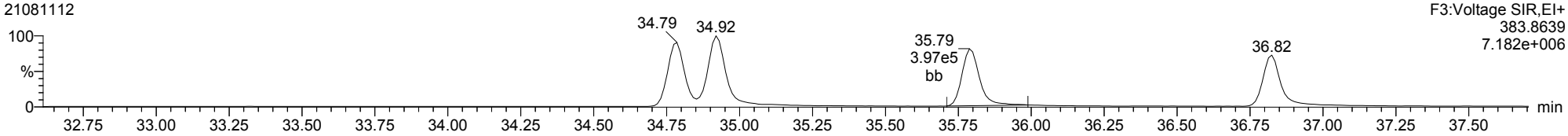

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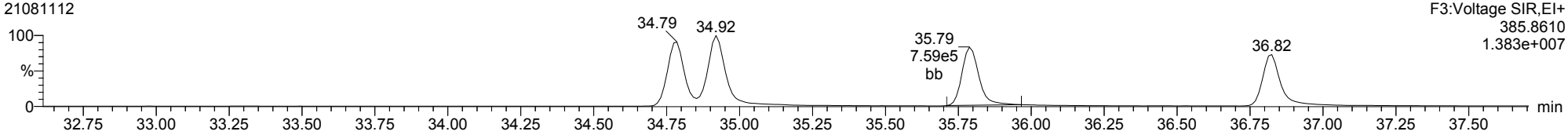
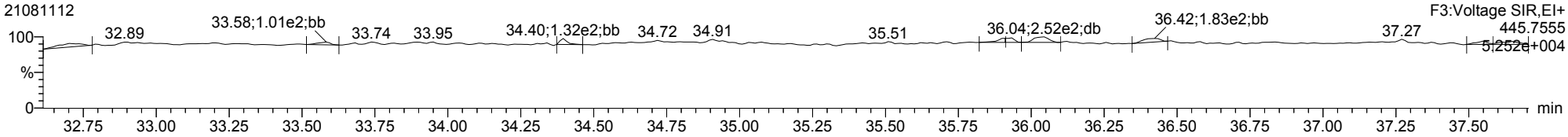


FUNCTION3 OCDPE



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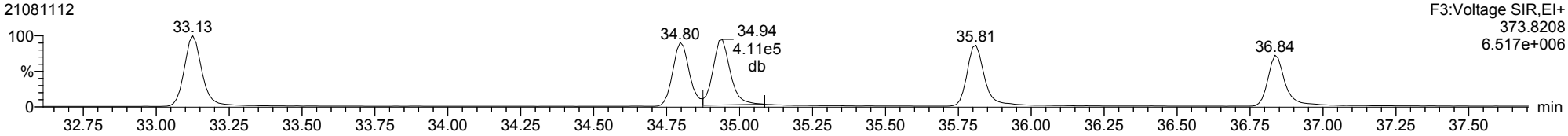

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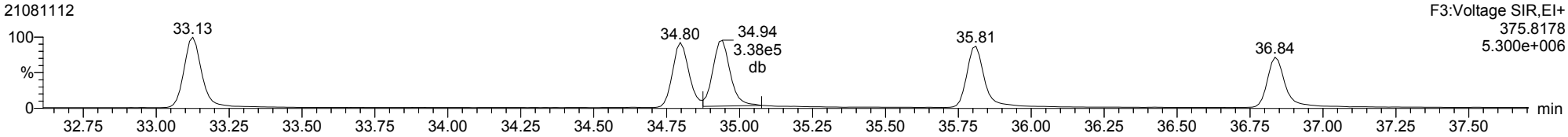

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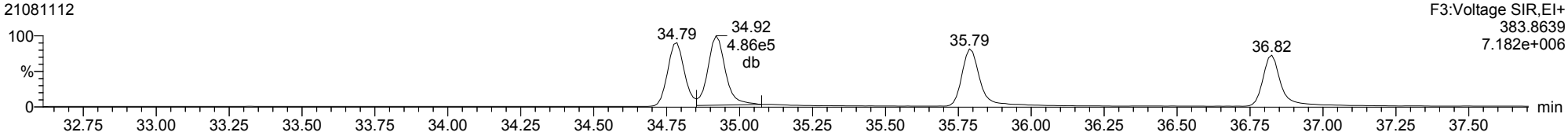

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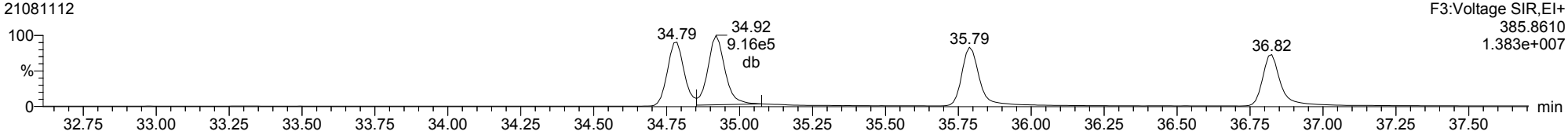

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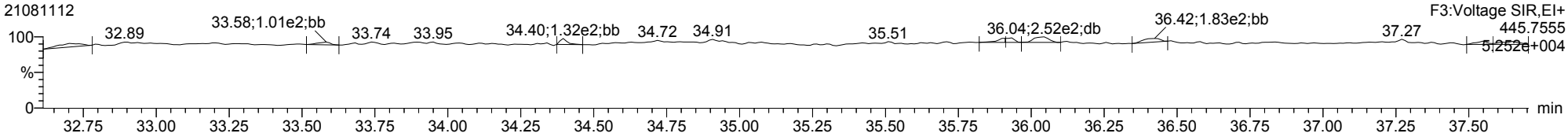

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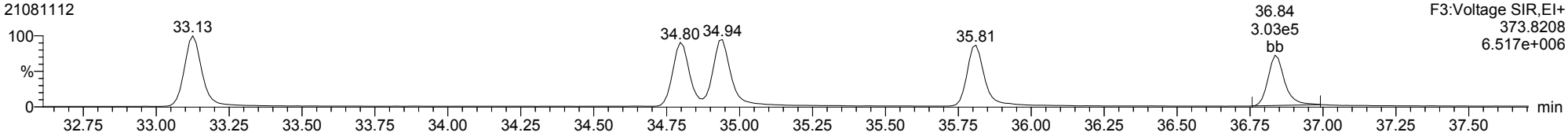

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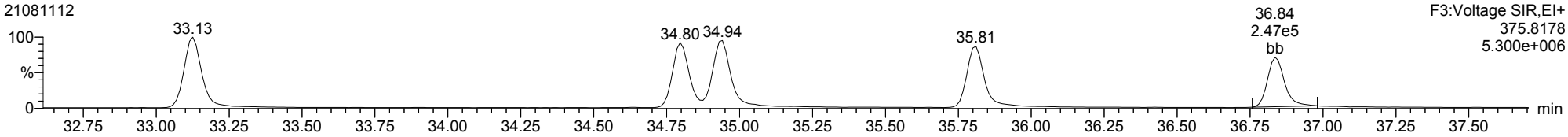

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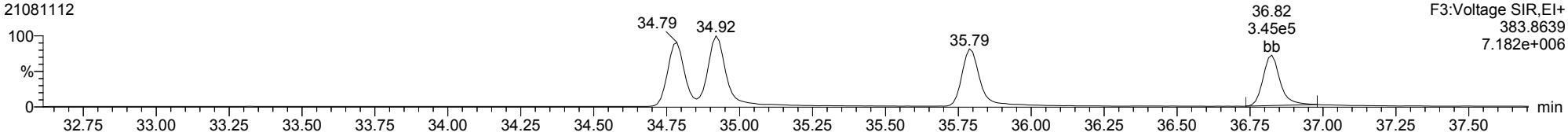

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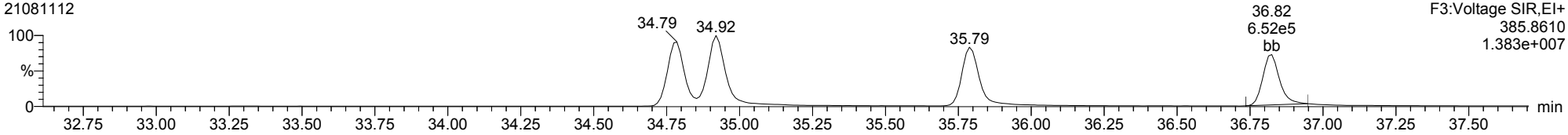

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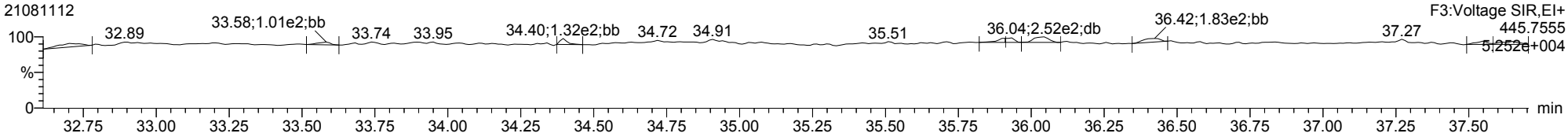

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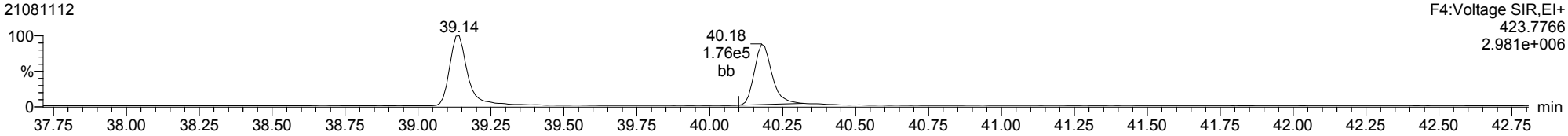

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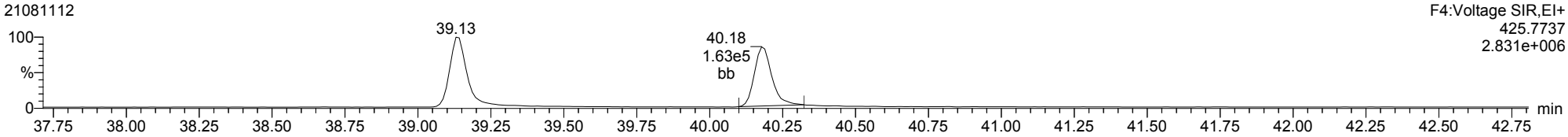

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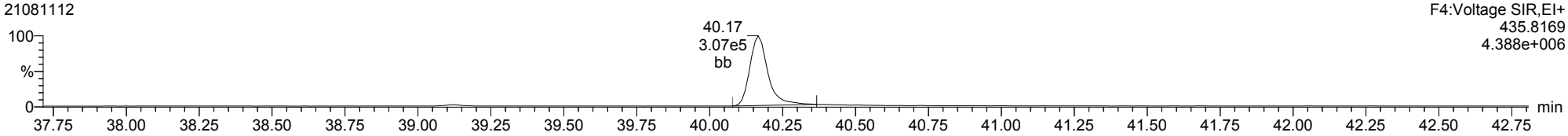

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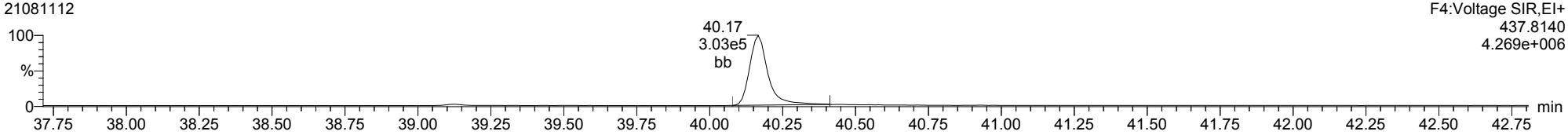

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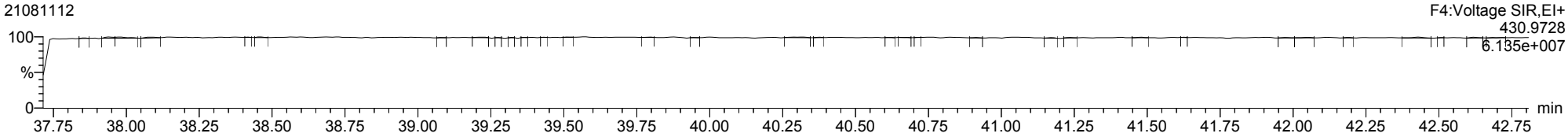

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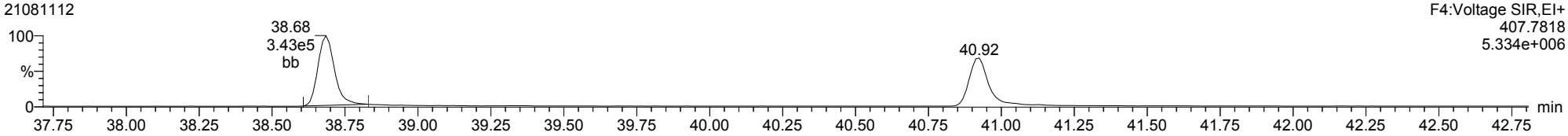

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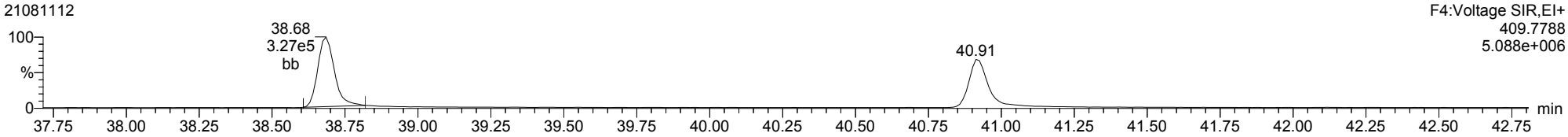

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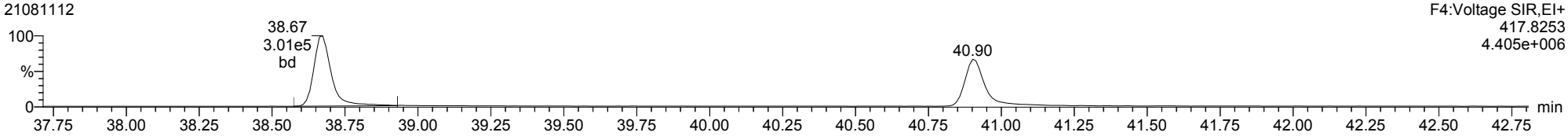

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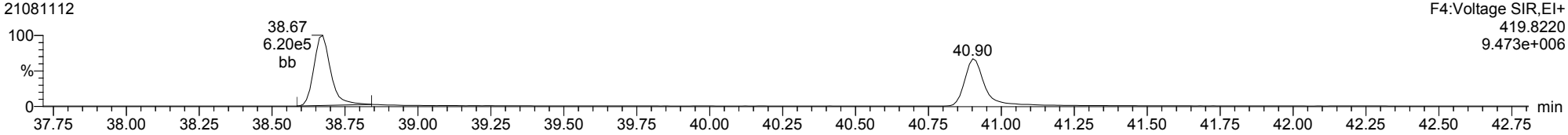

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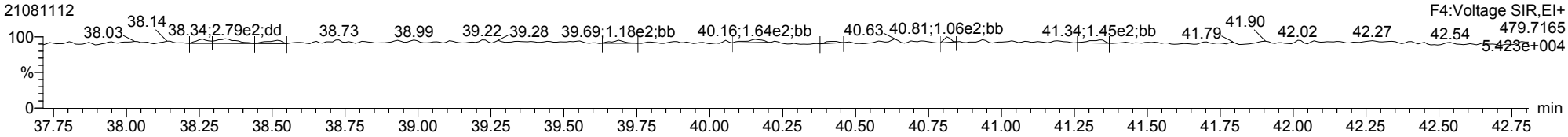

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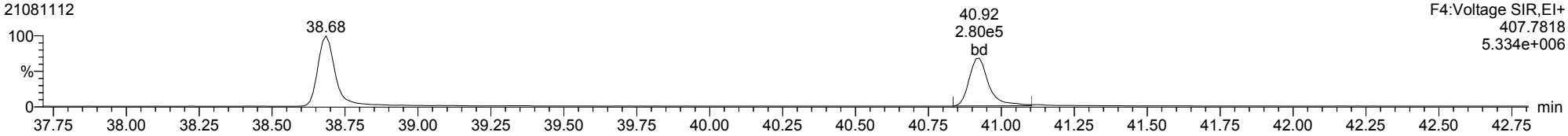

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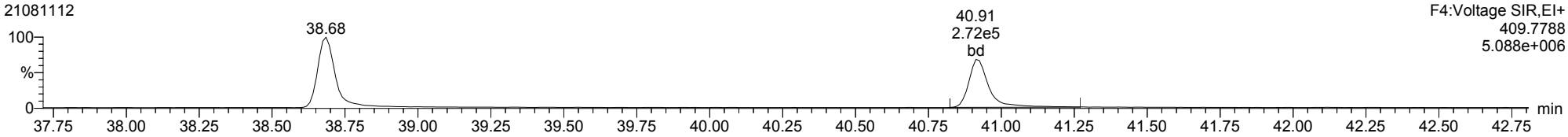

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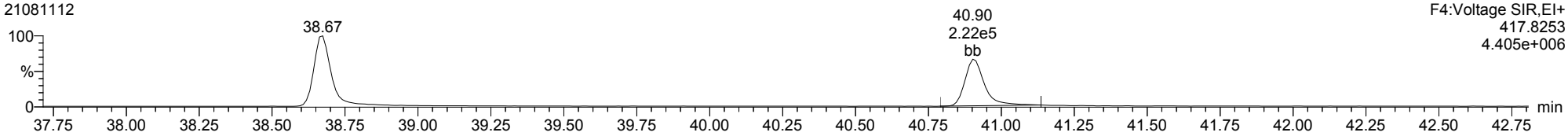

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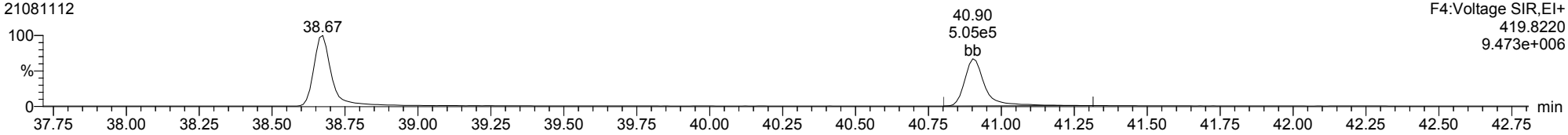

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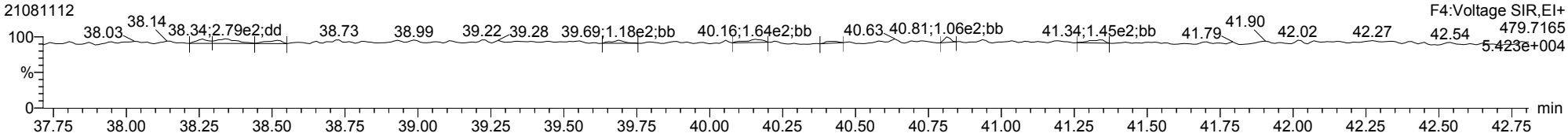

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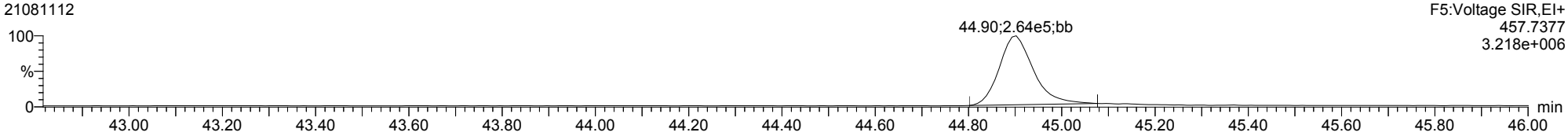

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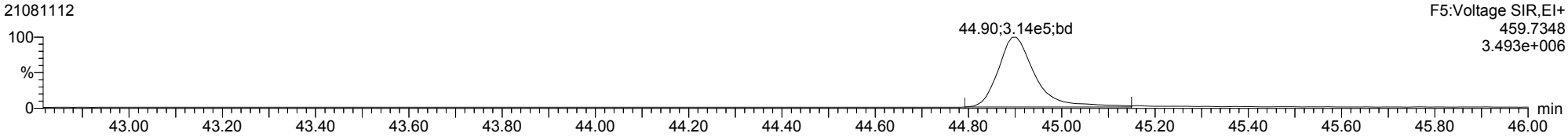

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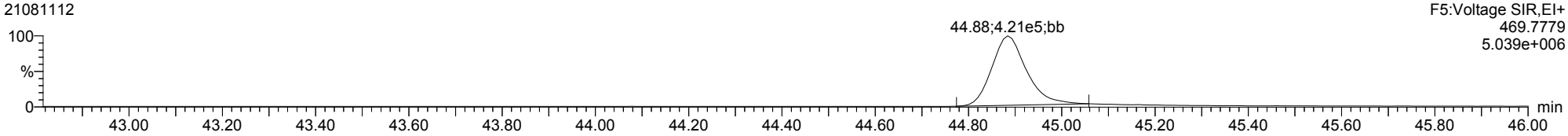

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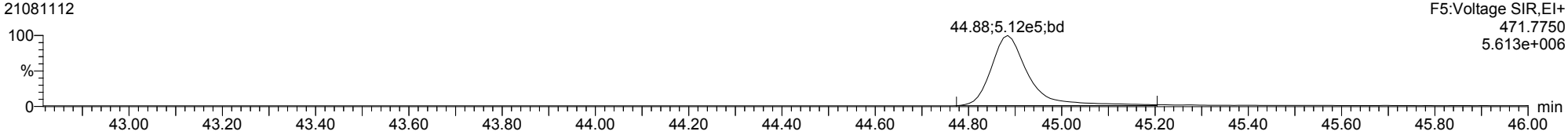

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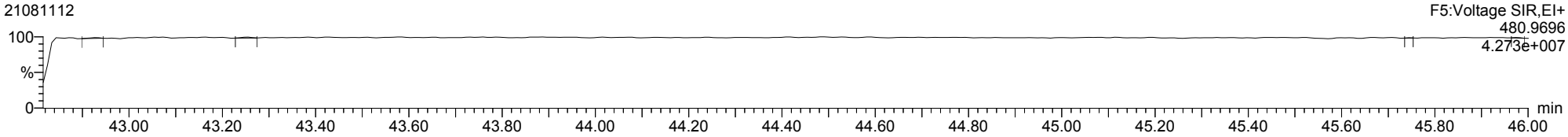

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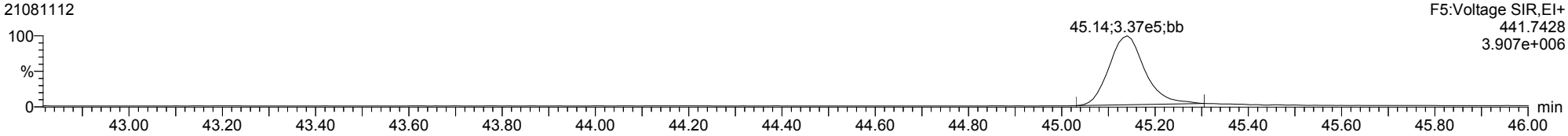

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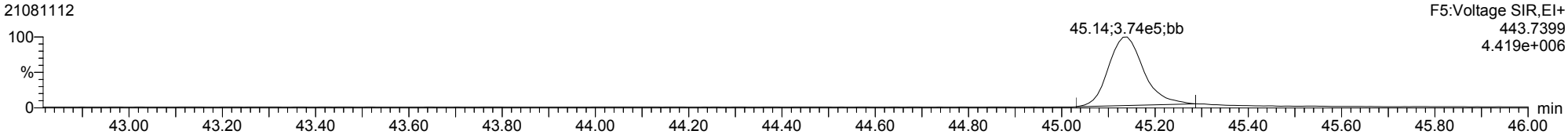

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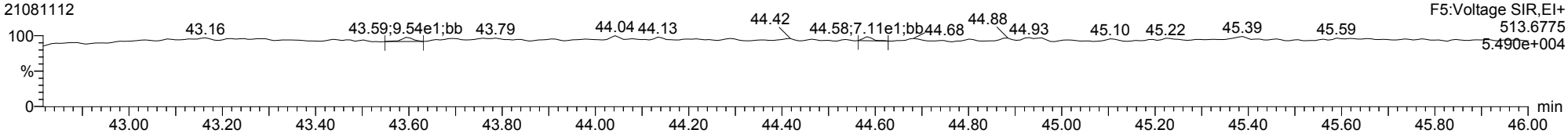

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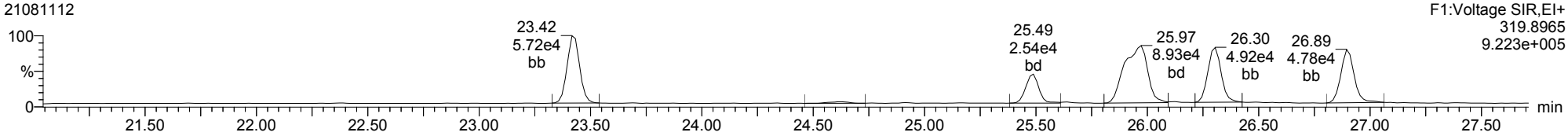

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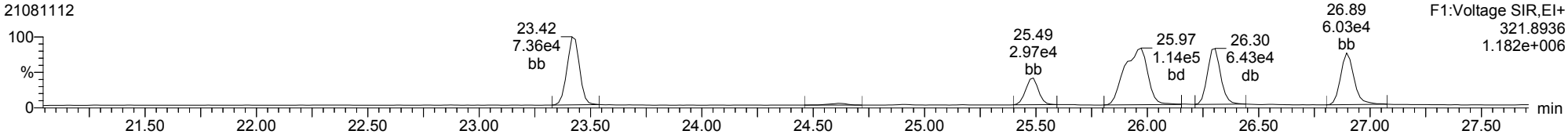

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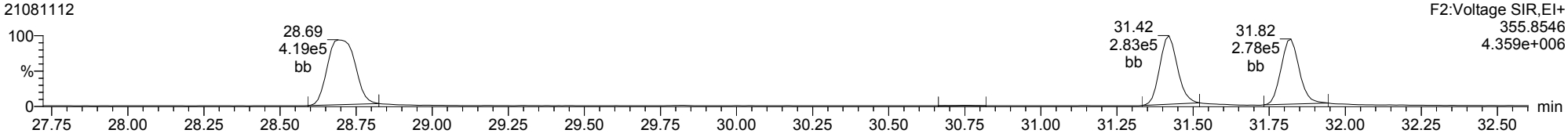

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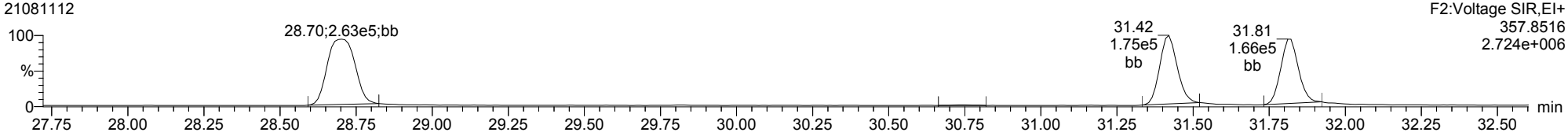

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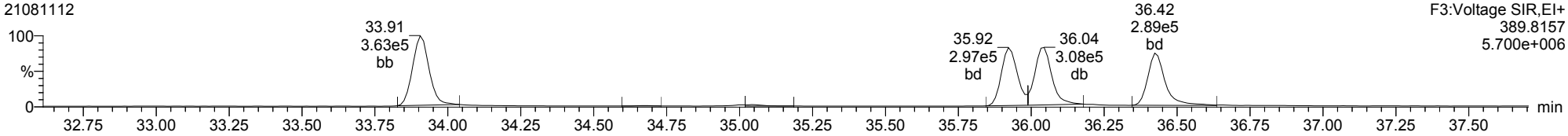

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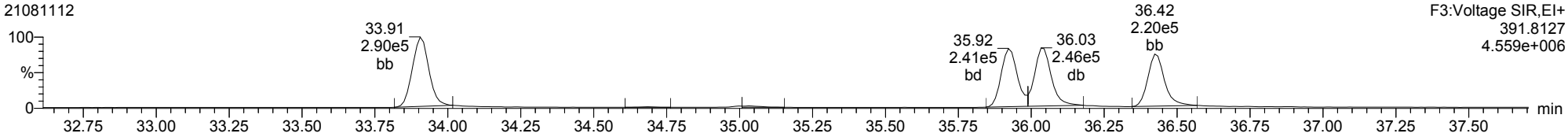

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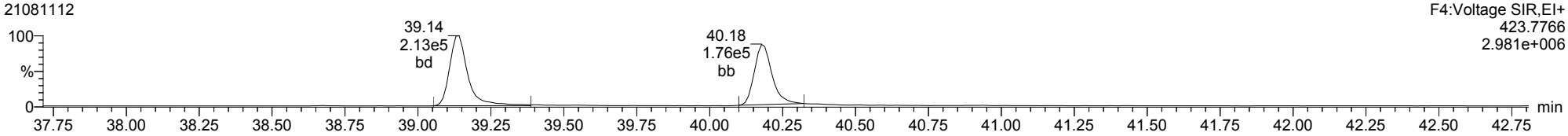

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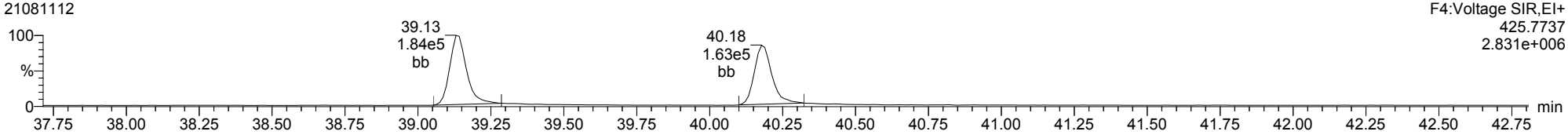

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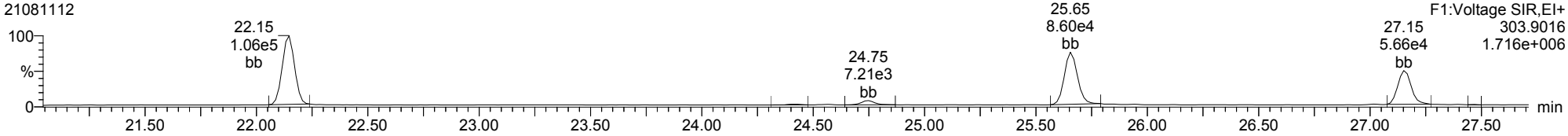

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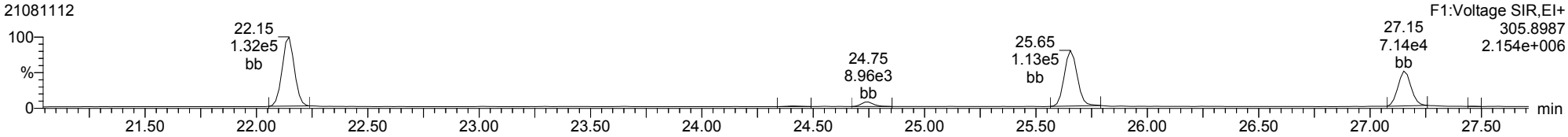

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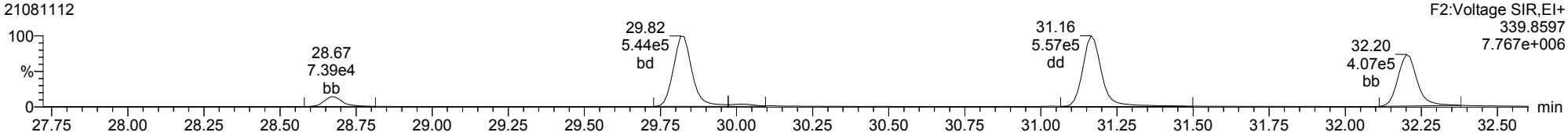

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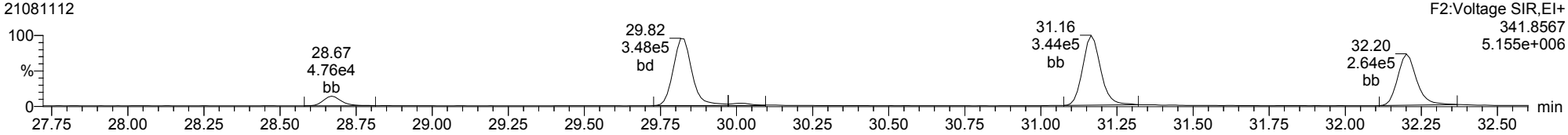

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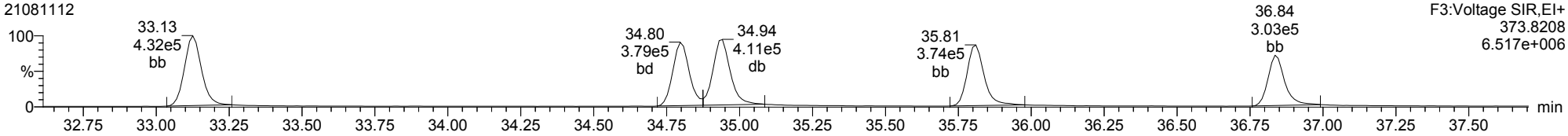

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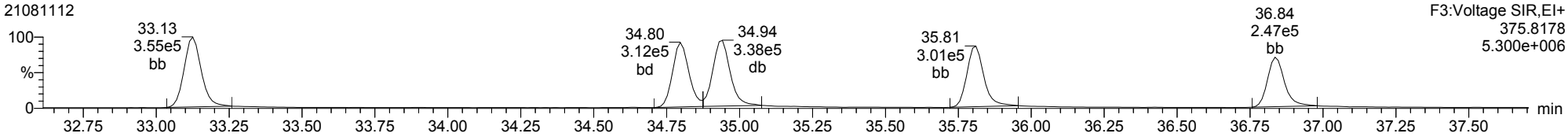

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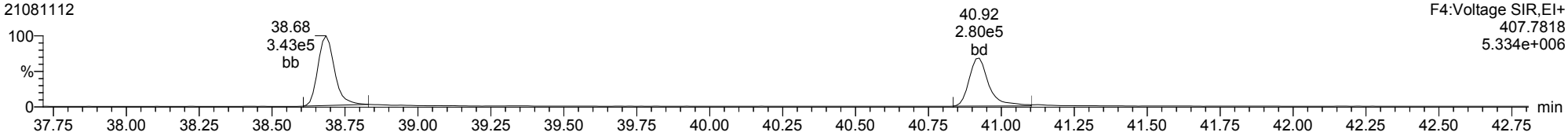

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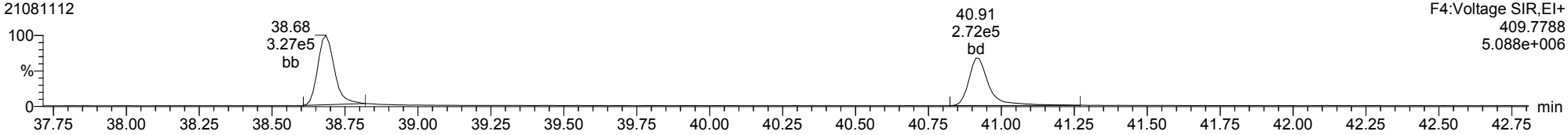

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091113	Calibration Date:	08/11/2021
Sequence:	SJI0175	Injection Date:	09/11/21
Lab Sample ID:	SJI0175-CCV1	Injection Time:	20:19
Sequence Name:	CS3P7		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	8.98	1.1075930	0.9945423		-10.2	+/-16
2,3,7,8-TCDD	A	10.000	10.7	0.9202875	0.9806681		6.6	+/-22
1,2,3,7,8-PeCDF	A	50.000	47.8	1.0148670	0.9692827		-4.5	+/-18
2,3,4,7,8-PeCDF	A	50.000	47.4	1.1255490	1.0675900		-5.1	+/-18
1,2,3,7,8-PeCDD	A	50.000	58.0	0.9953229	1.1554380		16.1	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	49.6	1.0168930	1.0093330		-0.7	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	48.8	1.0368310	1.0116470		-2.4	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	49.5	1.0524660	1.0419120		-1.0	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	47.2	1.0301540	0.9719667		-5.6	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	48.5	1.0273630	0.9958709		-3.1	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	49.7	1.0089800	1.0022000		-0.7	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	51.1	0.9504865	9441.208		2.2	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	47.8	1.3273500	1.2693260		-4.4	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.9	1.2833380	1.2796340		-0.3	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	54.0	1.0680880	1.1526340		7.9	+/-14
OCDF	A	100.00	90.4	1.4469010	1.3084910		-9.6	+/-37
OCDD	A	100.00	96.3	1.1808230	1.1373990		-3.7	+/-21
13C12-2,3,7,8-TCDF	A	100.00	102	1.4265830	1.4565093		2.1	+/-29
13C12-2,3,7,8-TCDD	A	100.00	103	1.1164910	1.1453669		2.6	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	102	1.2973130	1.3293309		2.5	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	102	1.2364800	1.2609530		2.0	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	92.0	0.7319833	0.6732607		-8.0	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	93.9	1.2424560	1.1663916		-6.1	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	87.6	1.3434760	1.1765989		-12.4	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	88.6	1.2148550	1.0767819		-11.4	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	95.3	1.0076370	0.9601718		-4.7	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	97.1	0.9598233	0.9323311		-2.9	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	90.9	1.0413850	0.9464172		-9.1	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	98.0	0.9264704	0.9081978		-2.0	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	95.1	0.7579160	0.7206948		-4.9	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	95.2	0.6324476	0.6018364		-4.8	+/-28
13C12-OCDD	A	200.00	207	0.5037432	0.5218195		3.6	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.99	1.0835930	1.0828512		-0.07	

* Values outside of QC limits

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:22:49 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3P7, Name: 21091113, Date: 11-Sep-2021, Time: 20:19:30, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	7.519e4	9.375e4	1.108	0.802	0.770	1051	1357	1.17e6	1.47e6	1110.3	1079.9	NO	bb	bb	8.979
12378-PeCDF	29.909	1.000	4.510e5	3.003e5	1.015	1.502	1.550	2608	2001	7.15e6	4.71e6	2741.9	2352.3	NO	bb	bb	47.754
23478-PeCDF	31.257	1.001	4.717e5	3.133e5	1.126	1.505	1.550	2608	2001	7.35e6	4.93e6	2820.3	2463.1	NO	bb	bb	47.425
123478-HxCDF	34.867	1.000	3.307e5	2.782e5	1.017	1.188	1.240	2029	2072	5.21e6	4.40e6	2566.3	2124.8	NO	bd	bd	49.628
234678-HxCDF	35.881	1.000	3.191e5	2.611e5	1.052	1.222	1.240	2029	2072	5.27e6	4.33e6	2599.8	2092.0	NO	bb	bb	49.499
123678-HxCDF	35.012	1.001	3.330e5	2.827e5	1.037	1.178	1.240	2029	2072	5.45e6	4.47e6	2684.8	2159.5	NO	db	db	48.786
123789-HxCDF	36.917	1.001	2.657e5	2.170e5	1.030	1.224	1.240	2029	2072	4.38e6	3.58e6	2161.1	1728.8	NO	bb	bb	47.176
1234678-HpCDF	38.744	1.000	3.028e5	2.935e5	1.327	1.032	1.050	2140	1855	5.07e6	4.98e6	2371.1	2683.8	NO	bb	bb	47.814
1234789-HpCDF	40.995	1.000	2.459e5	2.311e5	1.283	1.064	1.050	2140	1855	3.63e6	3.45e6	1698.0	1862.9	NO	bb	bb	49.856
OCDF	45.224	1.006	3.357e5	3.706e5	1.447	0.906	0.890	1435	2114	4.09e6	4.48e6	2848.8	2121.3	NO	bb	bb	90.434
2378-TCDD	26.396	1.001	5.911e4	7.189e4	0.920	0.822	0.770	1354	1044	8.81e5	1.09e6	651.0	1047.6	NO	bb	bb	10.656
12378-PeCDD	31.503	1.001	2.803e5	1.734e5	0.995	1.616	1.550	2214	1499	4.47e6	2.74e6	2017.4	1829.7	NO	bb	bb	58.043
123478-HxCDD	35.992	1.001	2.670e5	2.132e5	1.027	1.252	1.240	1753	2349	4.45e6	3.54e6	2540.5	1506.0	NO	bd	bd	48.467
123678-HxCDD	36.104	1.000	2.717e5	2.188e5	1.009	1.242	1.240	1753	2349	4.50e6	3.65e6	2567.4	1552.6	NO	db	db	49.664
123789-HxCDD	36.494	1.011	2.600e5	2.121e5	0.950	1.226	1.240	1753	2349	4.36e6	3.54e6	2483.8	1504.8	NO	bb	bb	51.109
1234678-HpCDD	40.248	1.000	1.852e5	1.736e5	1.068	1.067	1.050	1056	1641	3.01e6	2.81e6	2850.3	1715.4	NO	bb	bb	53.958
OCDD	44.977	1.000	2.923e5	3.217e5	1.181	0.908	0.890	1407	1190	3.70e6	4.07e6	2626.8	3421.4	NO	bb	bb	96.323
13C-2378-TCDF	25.746	1.007	7.479e5	9.508e5	1.427	0.787	0.770	2813	1708	1.17e7	1.47e7	4142.0	8596.5	NO	bb	bb	102.098
13C-12378-PeCDF	29.898	1.169	9.568e5	5.936e5	1.297	1.612	1.550	2140	1464	1.45e7	9.17e6	6786.1	6264.9	NO	bb	bb	102.468
13C-23478-PeCDF	31.235	1.222	9.039e5	5.667e5	1.236	1.595	1.550	2140	1464	1.38e7	8.68e6	6428.4	5927.3	NO	bb	bb	101.979
13C-123478-HxCDF	34.856	0.955	4.133e5	7.933e5	1.242	0.521	0.510	3014	2529	6.63e6	1.27e7	2198.9	5016.5	NO	bd	bd	93.878
13C-123678-HxCDF	34.990	0.959	4.115e5	8.056e5	1.343	0.511	0.510	3014	2529	6.54e6	1.29e7	2170.7	5081.9	NO	db	db	87.579
13C-234678-HxCDF	35.870	0.983	3.802e5	7.336e5	1.215	0.518	0.510	3014	2529	6.25e6	1.19e7	2074.1	4721.6	NO	bb	bb	88.635
13C-123789-HxCDF	36.895	1.011	3.362e5	6.571e5	1.008	0.512	0.510	3014	2529	5.44e6	1.07e7	1803.6	4215.7	NO	bb	bb	95.289
13C-1234678-HpCDF	38.733	1.062	2.970e5	6.425e5	0.926	0.462	0.440	1708	1823	5.02e6	1.09e7	2938.8	5990.1	NO	bb	bb	98.028
13C-1234789-HpCDF	40.984	1.123	2.352e5	5.103e5	0.758	0.461	0.440	1708	1823	3.52e6	7.71e6	2060.0	4226.2	NO	bb	bb	95.089
13C-1234-TCDD	25.564	0.000	5.094e5	6.569e5	1.000	0.775	0.770	2515	1343	7.90e6	1.02e7	3142.6	7623.2	NO	bb	bb	100.000
13C-2378-TCDD	26.365	1.031	5.790e5	7.568e5	1.116	0.765	0.770	2515	1343	8.78e6	1.16e7	3490.3	8615.8	NO	bb	bb	102.586
13C-12378-PeCDD	31.480	1.231	4.850e5	3.002e5	0.732	1.616	1.550	1197	1285	7.52e6	4.59e6	6282.4	3572.4	NO	bb	bb	91.978
13C-123478-HxCDD	35.970	0.986	5.381e5	4.263e5	0.960	1.262	1.240	1929	1892	8.75e6	7.01e6	4537.0	3704.6	NO	bd	bd	97.136
13C-123678-HxCDD	36.093	0.989	5.439e5	4.351e5	1.041	1.250	1.240	1929	1892	9.03e6	7.23e6	4680.8	3824.6	NO	db	db	90.881
13C-1234678-HpCDD	40.237	1.103	3.178e5	3.047e5	0.632	1.043	1.050	1184	1054	4.94e6	4.68e6	4168.0	4443.2	NO	bb	bb	95.160
13C-OCDD	44.959	1.232	5.166e5	5.630e5	0.504	0.918	0.890	1106	1013	6.60e6	7.18e6	5967.5	7085.7	NO	bb	bb	207.177
13C-123789-HxCDD	36.483	0.000	5.748e5	4.597e5	1.000	1.250	1.240	1929	1892	9.38e6	7.38e6	4865.2	3901.3	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	1.263e5		1.084			1461		1.85e6		1267.0			bb		9.993

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ID: CS3P7, Name: 21091113, Date: 11-Sep-2021, Time: 20:19:30, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	9.686e4	1.212e5	1.425	0.799	0.770	1051	1357	1.48e6	1.95e6	1410.5	1436.4	NO	bb	bb	9.007
1289-TCDF	27.273	1.059	7.349e4	8.918e4	1.043	0.824	0.770	1051	1357	1.12e6	1.38e6	1065.1	1016.7	NO	bb	bb	9.182
13468-PECDF	27.091	0.906	6.345e5	4.183e5	1.376	1.517	1.550	920	1300	9.98e6	6.57e6	10850.1	5050.1	NO	bb	bb	49.340
12389-PECDF	32.305	1.081	4.560e5	2.889e5	1.000	1.579	1.550	2608	2001	6.68e6	4.35e6	2562.0	2172.8	NO	bb	bb	48.069
123468-HXCDF	33.196	0.952	3.466e5	2.852e5	1.087	1.215	1.240	2029	2072	5.41e6	4.46e6	2666.1	2154.3	NO	bb	bb	48.189
1368-TCDD	23.508	0.892	5.594e4	7.063e4	0.923	0.792	0.770	1354	1044	8.83e5	1.12e6	652.5	1073.8	NO	bb	bb	10.263
1289-TCDD	27.000	1.024	5.085e4	6.313e4	0.794	0.805	0.770	1354	1044	7.62e5	9.40e5	562.9	900.6	NO	bb	bb	10.747
12479-PECDD	28.762	0.914	5.108e5	3.150e5	1.843	1.622	1.550	2214	1499	5.00e6	3.10e6	2259.9	2069.1	NO	bb	bb	57.055
12389-PECDD	31.904	1.013	3.303e5	2.023e5	1.154	1.633	1.550	2214	1499	5.25e6	3.19e6	2369.5	2128.9	NO	bb	bb	58.794
124679-HXCDD	33.976	0.945	2.972e5	2.372e5	1.125	1.253	1.240	1753	2349	4.78e6	3.73e6	2728.4	1589.0	NO	bb	bb	49.250
1234679-HPCDD	39.201	0.974	2.069e5	1.918e5	1.211	1.079	1.050	1056	1641	3.55e6	3.21e6	3366.8	1957.6	NO	bb	bb	52.892
Total-tetrafurans			2.470e5		1.192			1051		3.80e6							27.320
Total-penta1			6.345e5					920		9.98e6							49.340
Total-pentafurans			1.459e6		1.047			2608		2.24e7							151.662
Total-hexafurans			1.595e6		1.045			2029		2.57e7							243.277
Total-heptafurans			5.487e5		1.305			2140		8.71e6							97.670
Total-Furans			4.820e6		1.158			1051		7.47e7							659.703
Total-tetradioxins			2.812e5		0.879			1354		3.86e6							53.873
Total-pentadioxins			1.123e6		1.331			2214		1.47e7							174.107
Total-hexadioxins			1.096e6		1.028			1753		1.81e7							198.608
Total-heptadioxins			3.922e5		1.140			1056		6.56e6							106.850
Total-Dioxins			3.185e6		1.092			1354		4.70e7							629.760
Total-TEQ			8.005e6					1354		1.22e8							1289.463
FUNCTION1 PFK			1.112e8					795566		3.79e8							
FUNCTION2 PFK			5.398e7					470058		3.20e8							0.000
FUNCTION3 PFK			3.651e7					529226		2.70e8							0.000
FUNCTION4 PFK			5.642e5					324734		1.54e7							
FUNCTION5 PFK			1.741e5					257026		5.89e6							
FUNCTION1 HXCD...			9.702e2					656		1.30e4							0.000
FUNCTION1 HPCD...			1.446e3					1150		2.65e4							0.000
FUNCTION2 HPCD...			1.515e3					1052		3.34e4							0.000
FUNCTION3 OCDPE			8.728e2					576		1.30e4							0.000
FUNCTION4 NCDPE			2.977e2					561		7.16e3							0.000
FUNCTION5 DCDPE			7.638e1					733		1.57e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3P7, Name: 21091113, Date: 11-Sep-2021, Time: 20:19:30, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	7.349e4	8.918e4	1.043	0.82	0.77	1065.1	YES	NO	bb	bb	9.182
2	Total-tetrafurans	27.11	1.408e3	1.659e3	1.192	0.85	0.77	26.0	YES	NO	bb	bb	0.151
3	2378-TCDF	25.76	7.519e4	9.375e4	1.108	0.80	0.77	1110.3	YES	NO	bb	bb	8.979
4	1368-TCDF	22.24	9.686e4	1.212e5	1.425	0.80	0.77	1410.5	YES	NO	bb	bb	9.007

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.09	6.345e5	4.183e5	1.376	1.52	1.55	10850.1	YES	NO	bb	bb	49.340

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDF	32.30	4.560e5	2.889e5	1.000	1.58	1.55	2562.0	YES	NO	bb	bb	48.069
2	23478-PeCDF	31.26	4.717e5	3.133e5	1.126	1.51	1.55	2820.3	YES	NO	bb	bb	47.425
3	Total-pentafurans	31.10	9.368e2	6.349e2	1.047	1.48	1.55	6.4	YES	NO	db	bb	0.099
4	12378-PeCDF	29.91	4.510e5	3.003e5	1.015	1.50	1.55	2741.9	YES	NO	bb	bb	47.754
5	Total-pentafurans	28.75	7.973e4	5.170e4	1.047	1.54	1.55	471.7	YES	NO	bb	bb	8.313

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.87	3.307e5	2.782e5	1.017	1.19	1.24	2566.3	YES	NO	bd	bd	49.628
2	123468-HXCDF	33.20	3.466e5	2.852e5	1.087	1.22	1.24	2666.1	YES	NO	bb	bb	48.189
3	123789-HxCDF	36.92	2.657e5	2.170e5	1.030	1.22	1.24	2161.1	YES	NO	bb	bb	47.176
4	234678-HxCDF	35.88	3.191e5	2.611e5	1.052	1.22	1.24	2599.8	YES	NO	bb	bb	49.499
5	123678-HxCDF	35.01	3.330e5	2.827e5	1.037	1.18	1.24	2684.8	YES	NO	db	db	48.786

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.99	2.459e5	2.311e5	1.283	1.06	1.05	1698.0	YES	NO	bb	bb	49.856
2	1234678-HpCDF	38.74	3.028e5	2.935e5	1.327	1.03	1.05	2371.1	YES	NO	bb	bb	47.814

ID: CS3P7, Name: 21091113, Date: 11-Sep-2021, Time: 20:19:30, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	7.349e4	8.918e4	1.043	0.82	0.77	1065.1	YES	NO	bb	bb	9.182
2	Total-tetrafurans	27.11	1.408e3	1.659e3	1.192	0.85	0.77	26.0	YES	NO	bb	bb	0.151
3	2378-TCDF	25.76	7.519e4	9.375e4	1.108	0.80	0.77	1110.3	YES	NO	bb	bb	8.979
4	1368-TCDF	22.24	9.686e4	1.212e5	1.425	0.80	0.77	1410.5	YES	NO	bb	bb	9.007
5	12389-PECDF	32.30	4.560e5	2.889e5	1.000	1.58	1.55	2562.0	YES	NO	bb	bb	48.069
6	23478-PeCDF	31.26	4.717e5	3.133e5	1.126	1.51	1.55	2820.3	YES	NO	bb	bb	47.425
7	Total-pentafurans	31.10	9.368e2	6.349e2	1.047	1.48	1.55	6.4	YES	NO	db	bb	0.099
8	12378-PeCDF	29.91	4.510e5	3.003e5	1.015	1.50	1.55	2741.9	YES	NO	bb	bb	47.754
9	Total-pentafurans	28.75	7.973e4	5.170e4	1.047	1.54	1.55	471.7	YES	NO	bb	bb	8.313
10	123478-HxCDF	34.87	3.307e5	2.782e5	1.017	1.19	1.24	2566.3	YES	NO	bd	bd	49.628
11	123468-HXCDF	33.20	3.466e5	2.852e5	1.087	1.22	1.24	2666.1	YES	NO	bb	bb	48.189
12	123789-HxCDF	36.92	2.657e5	2.170e5	1.030	1.22	1.24	2161.1	YES	NO	bb	bb	47.176
13	234678-HxCDF	35.88	3.191e5	2.611e5	1.052	1.22	1.24	2599.8	YES	NO	bb	bb	49.499
14	123678-HxCDF	35.01	3.330e5	2.827e5	1.037	1.18	1.24	2684.8	YES	NO	db	db	48.786
15	1234789-HpCDF	40.99	2.459e5	2.311e5	1.283	1.06	1.05	1698.0	YES	NO	bb	bb	49.856
16	1234678-HpCDF	38.74	3.028e5	2.935e5	1.327	1.03	1.05	2371.1	YES	NO	bb	bb	47.814
17	OCDF	45.22	3.357e5	3.706e5	1.447	0.91	0.89	2848.8	YES	NO	bb	bb	90.434
18	13468-PECDF	27.09	6.345e5	4.183e5	1.376	1.52	1.55	10850.1	YES	NO	bb	bb	49.340

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	5.085e4	6.313e4	0.794	0.81	0.77	562.9	YES	NO	bb	bb	10.747
2	2378-TCDD	26.40	5.911e4	7.189e4	0.920	0.82	0.77	651.0	YES	NO	bb	bb	10.656
3	Total-tetradioxins	26.08	8.649e4	1.094e5	0.879	0.79	0.77	661.8	YES	NO	bb	bb	16.676
4	Total-tetradioxins	25.58	2.779e4	3.485e4	0.879	0.80	0.77	314.3	YES	NO	bb	bb	5.334
5	Total-tetradioxins	24.99	6.339e2	9.154e2	0.879	0.69	0.77	7.4	YES	NO	bb	bb	0.132
6	Total-tetradioxins	23.78	3.376e2	4.246e2	0.879	0.80	0.77	4.1	YES	NO	bb	bb	0.065
7	1368-TCDD	23.51	5.594e4	7.063e4	0.923	0.79	0.77	652.5	YES	NO	bb	bb	10.263

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.50	2.803e5	1.734e5	0.995	1.62	1.55	2017.4	YES	NO	bb	bb	58.043
2	Total-pentadioxins	30.83	1.326e3	9.211e2	1.331	1.44	1.55	10.1	YES	NO	bb	bb	0.215
3	12479-PECDD	28.76	5.108e5	3.150e5	1.843	1.62	1.55	2259.9	YES	NO	bb	bb	57.055
4	12389-PECDD	31.90	3.303e5	2.023e5	1.154	1.63	1.55	2369.5	YES	NO	bb	bb	58.794

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	36.91	3.757e2	3.441e2	1.028	1.09	1.24	5.7	NO	NO	bb	bb	0.072
2	123789-HxCDD	36.49	2.600e5	2.121e5	0.950	1.23	1.24	2483.8	YES	NO	bb	bb	51.109
3	123678-HxCDD	36.10	2.717e5	2.188e5	1.009	1.24	1.24	2567.4	YES	NO	db	db	49.664
4	123478-HxCDD	35.99	2.670e5	2.132e5	1.027	1.25	1.24	2540.5	YES	NO	bd	bd	48.467
5	Total-hexadioxins	34.84	2.378e2	2.082e2	1.028	1.14	1.24	3.1	NO	NO	bb	bb	0.045
6	124679-HXCDD	33.98	2.972e5	2.372e5	1.125	1.25	1.24	2728.4	YES	NO	bb	bb	49.250

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.25	1.852e5	1.736e5	1.068	1.07	1.05	2850.3	YES	NO	bb	bb	53.958
2	1234679-HPCDD	39.20	2.069e5	1.918e5	1.211	1.08	1.05	3366.8	YES	NO	bb	bb	52.892

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	5.085e4	6.313e4	0.794	0.81	0.77	562.9	YES	NO	bb	bb	10.747
2	2378-TCDD	26.40	5.911e4	7.189e4	0.920	0.82	0.77	651.0	YES	NO	bb	bb	10.656
3	Total-tetradioxins	26.08	8.649e4	1.094e5	0.879	0.79	0.77	661.8	YES	NO	bb	bb	16.676
4	Total-tetradioxins	25.58	2.779e4	3.485e4	0.879	0.80	0.77	314.3	YES	NO	bb	bb	5.334
5	Total-tetradioxins	24.99	6.339e2	9.154e2	0.879	0.69	0.77	7.4	YES	NO	bb	bb	0.132
6	Total-tetradioxins	23.78	3.376e2	4.246e2	0.879	0.80	0.77	4.1	YES	NO	bb	bb	0.065
7	1368-TCDD	23.51	5.594e4	7.063e4	0.923	0.79	0.77	652.5	YES	NO	bb	bb	10.263
8	12378-PeCDD	31.50	2.803e5	1.734e5	0.995	1.62	1.55	2017.4	YES	NO	bb	bb	58.043
9	Total-pentadioxins	30.83	1.326e3	9.211e2	1.331	1.44	1.55	10.1	YES	NO	bb	bb	0.215
10	12479-PECDD	28.76	5.108e5	3.150e5	1.843	1.62	1.55	2259.9	YES	NO	bb	bb	57.055
11	12389-PECDD	31.90	3.303e5	2.023e5	1.154	1.63	1.55	2369.5	YES	NO	bb	bb	58.794
12	Total-hexadioxins	36.91	3.757e2	3.441e2	1.028	1.09	1.24	5.7	NO	NO	bb	bb	0.072
13	123789-HxCDD	36.49	2.600e5	2.121e5	0.950	1.23	1.24	2483.8	YES	NO	bb	bb	51.109
14	123678-HxCDD	36.10	2.717e5	2.188e5	1.009	1.24	1.24	2567.4	YES	NO	db	db	49.664
15	123478-HxCDD	35.99	2.670e5	2.132e5	1.027	1.25	1.24	2540.5	YES	NO	bd	bd	48.467
16	Total-hexadioxins	34.84	2.378e2	2.082e2	1.028	1.14	1.24	3.1	NO	NO	bb	bb	0.045
17	124679-HXCDD	33.98	2.972e5	2.372e5	1.125	1.25	1.24	2728.4	YES	NO	bb	bb	49.250
18	1234678-HpCDD	40.25	1.852e5	1.736e5	1.068	1.07	1.05	2850.3	YES	NO	bb	bb	53.958
19	1234679-HPCDD	39.20	2.069e5	1.918e5	1.211	1.08	1.05	3366.8	YES	NO	bb	bb	52.892
20	OCDD	44.98	2.923e5	3.217e5	1.181	0.91	0.89	2626.8	YES	NO	bb	bb	96.323

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	7.349e4	8.918e4	1.043	0.82	0.77	1065.1	YES	NO	bb	bb	9.182
2	Total-tetrafurans	27.11	1.408e3	1.659e3	1.192	0.85	0.77	26.0	YES	NO	bb	bb	0.151
3	2378-TCDF	25.76	7.519e4	9.375e4	1.108	0.80	0.77	1110.3	YES	NO	bb	bb	8.979
4	1368-TCDF	22.24	9.686e4	1.212e5	1.425	0.80	0.77	1410.5	YES	NO	bb	bb	9.007
5	12389-PECDF	32.30	4.560e5	2.889e5	1.000	1.58	1.55	2562.0	YES	NO	bb	bb	48.069
6	23478-PeCDF	31.26	4.717e5	3.133e5	1.126	1.51	1.55	2820.3	YES	NO	bb	bb	47.425
7	Total-pentafurans	31.10	9.368e2	6.349e2	1.047	1.48	1.55	6.4	YES	NO	db	bb	0.099
8	12378-PeCDF	29.91	4.510e5	3.003e5	1.015	1.50	1.55	2741.9	YES	NO	bb	bb	47.754
9	Total-pentafurans	28.75	7.973e4	5.170e4	1.047	1.54	1.55	471.7	YES	NO	bb	bb	8.313
10	123478-HxCDF	34.87	3.307e5	2.782e5	1.017	1.19	1.24	2566.3	YES	NO	bd	bd	49.628
11	123468-HXCDF	33.20	3.466e5	2.852e5	1.087	1.22	1.24	2666.1	YES	NO	bb	bb	48.189
12	123789-HxCDF	36.92	2.657e5	2.170e5	1.030	1.22	1.24	2161.1	YES	NO	bb	bb	47.176
13	234678-HxCDF	35.88	3.191e5	2.611e5	1.052	1.22	1.24	2599.8	YES	NO	bb	bb	49.499
14	123678-HxCDF	35.01	3.330e5	2.827e5	1.037	1.18	1.24	2684.8	YES	NO	db	db	48.786
15	1234789-HpCDF	40.99	2.459e5	2.311e5	1.283	1.06	1.05	1698.0	YES	NO	bb	bb	49.856
16	1234678-HpCDF	38.74	3.028e5	2.935e5	1.327	1.03	1.05	2371.1	YES	NO	bb	bb	47.814
17	OCDF	45.22	3.357e5	3.706e5	1.447	0.91	0.89	2848.8	YES	NO	bb	bb	90.434
18	13468-PECDF	27.09	6.345e5	4.183e5	1.376	1.52	1.55	10850.1	YES	NO	bb	bb	49.340
19	1289-TCDD	27.00	5.085e4	6.313e4	0.794	0.81	0.77	562.9	YES	NO	bb	bb	10.747
20	2378-TCDD	26.40	5.911e4	7.189e4	0.920	0.82	0.77	651.0	YES	NO	bb	bb	10.656
21	Total-tetradioxins	26.08	8.649e4	1.094e5	0.879	0.79	0.77	661.8	YES	NO	bb	bb	16.676
22	Total-tetradioxins	25.58	2.779e4	3.485e4	0.879	0.80	0.77	314.3	YES	NO	bb	bb	5.334
23	Total-tetradioxins	24.99	6.339e2	9.154e2	0.879	0.69	0.77	7.4	YES	NO	bb	bb	0.132
24	Total-tetradioxins	23.78	3.376e2	4.246e2	0.879	0.80	0.77	4.1	YES	NO	bb	bb	0.065
25	1368-TCDD	23.51	5.594e4	7.063e4	0.923	0.79	0.77	652.5	YES	NO	bb	bb	10.263
26	12378-PeCDD	31.50	2.803e5	1.734e5	0.995	1.62	1.55	2017.4	YES	NO	bb	bb	58.043
27	Total-pentadioxins	30.83	1.326e3	9.211e2	1.331	1.44	1.55	10.1	YES	NO	bb	bb	0.215
28	12479-PECDD	28.76	5.108e5	3.150e5	1.843	1.62	1.55	2259.9	YES	NO	bb	bb	57.055
29	12389-PECDD	31.90	3.303e5	2.023e5	1.154	1.63	1.55	2369.5	YES	NO	bb	bb	58.794
30	Total-hexadioxins	36.91	3.757e2	3.441e2	1.028	1.09	1.24	5.7	NO	NO	bb	bb	0.072
31	123789-HxCDD	36.49	2.600e5	2.121e5	0.950	1.23	1.24	2483.8	YES	NO	bb	bb	51.109
32	123678-HxCDD	36.10	2.717e5	2.188e5	1.009	1.24	1.24	2567.4	YES	NO	db	db	49.664
33	123478-HxCDD	35.99	2.670e5	2.132e5	1.027	1.25	1.24	2540.5	YES	NO	bd	bd	48.467
34	Total-hexadioxins	34.84	2.378e2	2.082e2	1.028	1.14	1.24	3.1	NO	NO	bb	bb	0.045
35	124679-HXCDD	33.98	2.972e5	2.372e5	1.125	1.25	1.24	2728.4	YES	NO	bb	bb	49.250
36	1234678-HpCDD	40.25	1.852e5	1.736e5	1.068	1.07	1.05	2850.3	YES	NO	bb	bb	53.958
37	1234679-HPCDD	39.20	2.069e5	1.918e5	1.211	1.08	1.05	3366.8	YES	NO	bb	bb	52.892

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDD	44.98	2.923e5	3.217e5	1.181	0.91	0.89	2626.8	YES	NO	bb	bb	96.323

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	24.82	8.903e4					1.6	NO		db		
2	FUNCTION1 PFK	24.73	1.001e5					2.5	NO		bd		
3	FUNCTION1 PFK	24.64	5.742e4					1.5	NO		db		
4	FUNCTION1 PFK	24.54	1.022e5					2.0	NO		bd		
5	FUNCTION1 PFK	23.83	1.608e6					10.4	YES		db		
6	FUNCTION1 PFK	23.18	1.706e7					29.6	YES		dd		
7	FUNCTION1 PFK	22.86	1.329e6					37.8	YES		dd		
8	FUNCTION1 PFK	22.22	2.461e7					56.7	YES		dd		
9	FUNCTION1 PFK	22.00	3.339e7					63.4	YES		dd		
10	FUNCTION1 PFK	21.35	1.703e7					82.0	YES		dd		
11	FUNCTION1 PFK	21.19	7.990e6					85.3	YES		dd		
12	FUNCTION1 PFK	21.12	7.134e6					85.8	YES		bd		
13	FUNCTION1 PFK	28.00	7.262e3					0.6	NO		bb		
14	FUNCTION1 PFK	27.95	7.373e3					0.6	NO		bb		
15	FUNCTION1 PFK	27.48	6.502e4					1.9	NO		bb		
16	FUNCTION1 PFK	27.21	2.554e4					1.0	NO		bb		
17	FUNCTION1 PFK	27.12	2.701e4					1.0	NO		bb		
18	FUNCTION1 PFK	27.03	5.549e4					1.2	NO		bb		
19	FUNCTION1 PFK	26.83	9.191e4					1.7	NO		bb		
20	FUNCTION1 PFK	26.71	6.822e4					2.0	NO		db		
21	FUNCTION1 PFK	26.61	1.163e5					1.7	NO		dd		
22	FUNCTION1 PFK	26.53	9.199e4					2.1	NO		bd		
23	FUNCTION1 PFK	26.29	7.707e4					1.6	NO		bb		
24	FUNCTION1 PFK	26.05	5.677e3					0.5	NO		bb		
25	FUNCTION1 PFK	25.64	1.569e4					0.7	NO		bb		
26	FUNCTION1 PFK	25.43	2.155e4					0.9	NO		bb		

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.17	3.436e6					112.6	YES		bd		0.000
2	FUNCTION2 PFK	32.65	1.458e4					1.3	NO		bb		0.000
3	FUNCTION2 PFK	32.37	1.020e4					1.0	NO		bb		0.000
4	FUNCTION2 PFK	31.88	5.202e4					1.0	NO		bb		0.000
5	FUNCTION2 PFK	31.76	2.573e4					1.8	NO		bb		0.000
6	FUNCTION2 PFK	30.91	1.784e4					1.5	NO		bb		0.000
7	FUNCTION2 PFK	30.02	3.379e5					4.6	YES		db		0.000
8	FUNCTION2 PFK	29.60	4.419e6					30.5	YES		dd		0.000
9	FUNCTION2 PFK	29.49	7.579e5					36.9	YES		dd		0.000
10	FUNCTION2 PFK	29.41	1.445e6					41.4	YES		dd		0.000
11	FUNCTION2 PFK	29.16	1.154e7					56.1	YES		dd		0.000
12	FUNCTION2 PFK	28.78	1.526e7					79.3	YES		dd		0.000
13	FUNCTION2 PFK	28.51	4.005e6					95.9	YES		dd		0.000
14	FUNCTION2 PFK	28.37	4.779e6					104.0	YES		dd		0.000
15	FUNCTION2 PFK	28.22	7.881e6					112.0	YES		dd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	32.96	3.279e6					93.6	YES		bd		0.000
2	FUNCTION3 PFK	36.01	2.035e4					1.5	NO		bb		0.000
3	FUNCTION3 PFK	35.85	5.907e3					0.6	NO		bb		0.000
4	FUNCTION3 PFK	35.45	3.294e4					1.5	NO		bb		0.000
5	FUNCTION3 PFK	35.15	4.791e4					1.7	NO		bb		0.000
6	FUNCTION3 PFK	34.82	1.068e4					0.9	NO		bb		0.000
7	FUNCTION3 PFK	34.78	1.253e4					1.1	NO		bb		0.000
8	FUNCTION3 PFK	34.73	4.188e4					2.3	NO		bb		0.000
9	FUNCTION3 PFK	34.53	3.805e4					1.9	NO		bb		0.000
10	FUNCTION3 PFK	34.44	2.580e4					1.4	NO		bb		0.000
11	FUNCTION3 PFK	34.11	2.496e6					17.7	YES		db		0.000
12	FUNCTION3 PFK	33.86	2.144e6					33.8	YES		dd		0.000
13	FUNCTION3 PFK	33.73	3.542e6					42.8	YES		dd		0.000
14	FUNCTION3 PFK	33.49	7.384e6					59.3	YES		dd		0.000
15	FUNCTION3 PFK	33.40	1.123e6					64.5	YES		dd		0.000
16	FUNCTION3 PFK	33.13	1.145e7					83.2	YES		dd		0.000
17	FUNCTION3 PFK	33.02	4.615e6					90.3	YES		dd		0.000
18	FUNCTION3 PFK	37.75	2.672e4					1.5	NO		bb		0.000
19	FUNCTION3 PFK	37.57	4.061e4					2.1	NO		bb		0.000
20	FUNCTION3 PFK	37.42	3.025e3					0.5	NO		bb		0.000
21	FUNCTION3 PFK	37.18	3.211e4					1.3	NO		bb		0.000
22	FUNCTION3 PFK	37.10	1.072e4					1.1	NO		bb		0.000
23	FUNCTION3 PFK	36.72	5.816e4					2.1	NO		bb		0.000
24	FUNCTION3 PFK	36.20	3.882e3					0.5	NO		bb		0.000
25	FUNCTION3 PFK	36.16	3.771e4					1.8	NO		bb		0.000
26	FUNCTION3 PFK	36.07	2.226e4					1.8	NO		bb		0.000

ID: CS3P7, Name: 21091113, Date: 11-Sep-2021, Time: 20:19:30, Conditions: AUTOSPEC01, User: pk

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	38.72	5.122e4					2.4	NO		dd		
2	FUNCTION4 PFK	38.63	1.331e4					2.0	NO		bd		
3	FUNCTION4 PFK	38.24	6.144e3					0.6	NO		bb		
4	FUNCTION4 PFK	38.20	8.637e3					1.2	NO		db		
5	FUNCTION4 PFK	38.17	1.142e4					1.1	NO		bd		
6	FUNCTION4 PFK	38.03	9.800e3					1.2	NO		bb		
7	FUNCTION4 PFK	41.26	6.900e3					0.9	NO		bb		
8	FUNCTION4 PFK	40.49	1.541e4					1.7	NO		db		
9	FUNCTION4 PFK	40.44	2.258e4					1.8	NO		dd		
10	FUNCTION4 PFK	40.37	4.678e4					2.0	NO		bd		
11	FUNCTION4 PFK	40.24	1.846e4					1.1	NO		bb		
12	FUNCTION4 PFK	39.99	2.817e4					1.8	NO		bb		
13	FUNCTION4 PFK	39.93	9.124e3					1.3	NO		bb		
14	FUNCTION4 PFK	39.88	7.563e3					0.9	NO		bb		
15	FUNCTION4 PFK	39.77	1.205e4					1.6	NO		bb		
16	FUNCTION4 PFK	39.65	2.589e4					1.3	NO		bb		
17	FUNCTION4 PFK	39.56	1.244e4					1.3	NO		bb		
18	FUNCTION4 PFK	39.42	9.608e3					1.3	NO		bb		
19	FUNCTION4 PFK	39.22	7.299e3					0.9	NO		db		
20	FUNCTION4 PFK	39.16	1.296e4					1.6	NO		bd		
21	FUNCTION4 PFK	38.83	1.801e4					2.3	NO		bb		
22	FUNCTION4 PFK	38.78	3.580e4					3.2	YES		db		
23	FUNCTION4 PFK	42.93	1.625e4					2.1	NO		db		
24	FUNCTION4 PFK	42.87	3.940e4					2.5	NO		dd		
25	FUNCTION4 PFK	42.78	2.310e4					1.8	NO		bd		
26	FUNCTION4 PFK	42.60	1.365e4					1.0	NO		bb		
27	FUNCTION4 PFK	42.50	2.799e4					1.9	NO		bb		
28	FUNCTION4 PFK	42.28	1.400e4					1.1	NO		bb		
29	FUNCTION4 PFK	41.89	1.693e4					1.4	NO		bb		
30	FUNCTION4 PFK	41.53	1.925e4					1.4	NO		bb		
31	FUNCTION4 PFK	41.45	4.025e3					0.6	NO		bb		

ID: CS3P7, Name: 21091113, Date: 11-Sep-2021, Time: 20:19:30, Conditions: AUTOSPEC01, User: pk

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	43.70	1.114e4					1.2	NO		bb		
2	FUNCTION5 PFK	43.60	4.292e3					1.0	NO		bb		
3	FUNCTION5 PFK	43.57	1.676e3					0.7	NO		bb		
4	FUNCTION5 PFK	43.33	2.796e3					0.6	NO		bb		
5	FUNCTION5 PFK	43.15	6.981e3					1.1	NO		db		
6	FUNCTION5 PFK	43.09	1.159e4					1.4	NO		bd		
7	FUNCTION5 PFK	45.97	1.234e4					1.7	NO		db		
8	FUNCTION5 PFK	45.94	1.146e4					2.4	NO		bd		
9	FUNCTION5 PFK	45.89	5.237e3					1.0	NO		db		
10	FUNCTION5 PFK	45.87	2.266e3					0.9	NO		bd		
11	FUNCTION5 PFK	45.77	2.679e3					0.7	NO		db		
12	FUNCTION5 PFK	45.75	2.315e4					1.6	NO		bd		
13	FUNCTION5 PFK	45.66	1.723e4					2.0	NO		bb		
14	FUNCTION5 PFK	45.60	3.524e3					0.7	NO		db		
15	FUNCTION5 PFK	45.56	1.211e4					1.5	NO		bd		
16	FUNCTION5 PFK	44.84	1.333e4					1.6	NO		bb		
17	FUNCTION5 PFK	44.25	1.967e4					1.3	NO		bb		
18	FUNCTION5 PFK	44.18	1.266e4					1.6	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	22.40	1.569e2					2.7	NO		bb		0.000
2	FUNCTION1 HXCD...	21.47	8.347e1					3.5	YES		bb		0.000
3	FUNCTION1 HXCD...	21.21	8.815e1					1.5	NO		bb		0.000
4	FUNCTION1 HXCD...	27.09	1.659e2					3.4	YES		bb		0.000
5	FUNCTION1 HXCD...	25.75	1.926e2					3.3	YES		bb		0.000
6	FUNCTION1 HXCD...	25.55	7.392e1					1.9	NO		bb		0.000
7	FUNCTION1 HXCD...	25.10	7.544e1					1.8	NO		db		0.000
8	FUNCTION1 HXCD...	24.97	1.338e2					1.7	NO		bd		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.09	1.441e2					2.1	NO		bb		0.000
2	FUNCTION1 HPCD...	26.68	1.114e2					2.8	NO		bb		0.000
3	FUNCTION1 HPCD...	26.29	8.997e1					1.4	NO		db		0.000
4	FUNCTION1 HPCD...	26.17	1.005e2					2.0	NO		bd		0.000
5	FUNCTION1 HPCD...	23.33	1.563e2					4.2	YES		bb		0.000
6	FUNCTION1 HPCD...	22.46	2.147e2					2.7	NO		bb		0.000
7	FUNCTION1 HPCD...	22.24	1.093e2					3.2	YES		bb		0.000
8	FUNCTION1 HPCD...	21.66	1.114e2					1.5	NO		bb		0.000
9	FUNCTION1 HPCD...	21.15	4.078e2					3.2	YES		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	32.86	7.461e1					1.1	NO		bb		0.000
2	FUNCTION2 HPCD...	32.47	7.017e1					1.8	NO		bb		0.000
3	FUNCTION2 HPCD...	31.63	7.288e1					2.9	NO		db		0.000
4	FUNCTION2 HPCD...	31.50	1.611e2					2.2	NO		dd		0.000
5	FUNCTION2 HPCD...	31.47	1.027e2					2.7	NO		bd		0.000
6	FUNCTION2 HPCD...	31.25	1.826e2					3.1	YES		bb		0.000
7	FUNCTION2 HPCD...	31.10	3.976e2					6.6	YES		bb		0.000
8	FUNCTION2 HPCD...	30.59	8.659e1					2.5	NO		bb		0.000
9	FUNCTION2 HPCD...	29.90	1.163e2					3.0	NO		bb		0.000
10	FUNCTION2 HPCD...	29.55	1.017e2					2.1	NO		bb		0.000
11	FUNCTION2 HPCD...	29.01	7.534e1					1.9	NO		bb		0.000
12	FUNCTION2 HPCD...	28.57	7.306e1					1.8	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	35.98	2.394e2					5.8	YES		bd		0.000
2	FUNCTION3 OCDPE	33.57	7.690e1					1.4	NO		bb		0.000
3	FUNCTION3 OCDPE	33.13	7.067e1					2.6	NO		bb		0.000
4	FUNCTION3 OCDPE	36.48	3.036e2					7.6	YES		bb		0.000
5	FUNCTION3 OCDPE	36.09	1.822e2					5.2	YES		db		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	42.59	9.981e1					5.8	YES		bb		0.000
2	FUNCTION4 NCDPE	41.49	9.132e1					4.6	YES		bb		0.000
3	FUNCTION4 NCDPE	40.22	1.065e2					2.4	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.43	7.638e1					2.1	NO		bb		0.000

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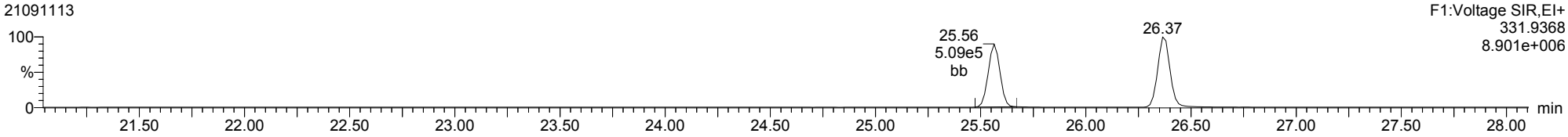

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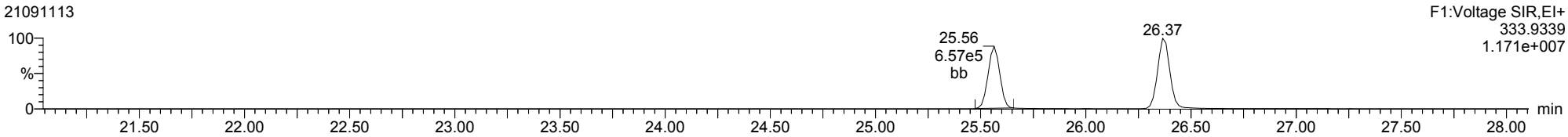

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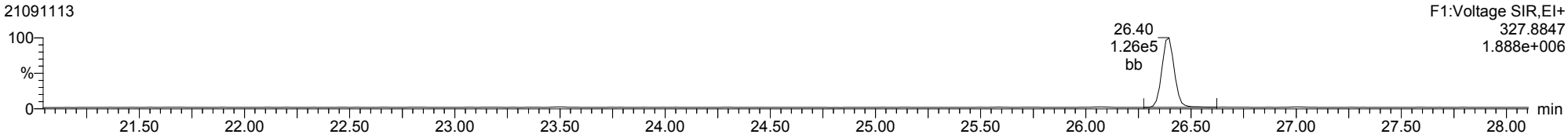

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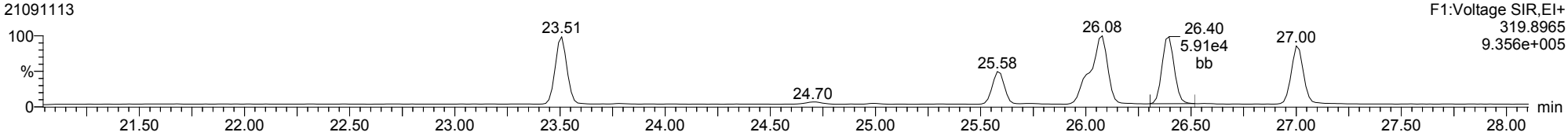

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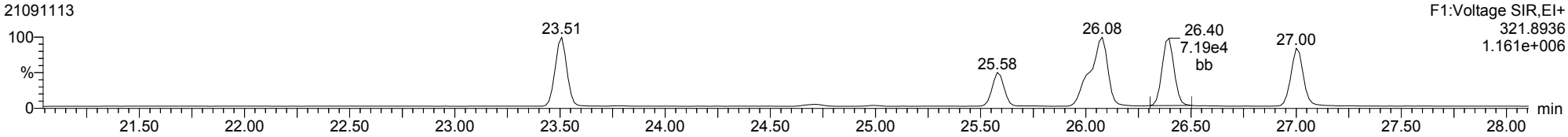

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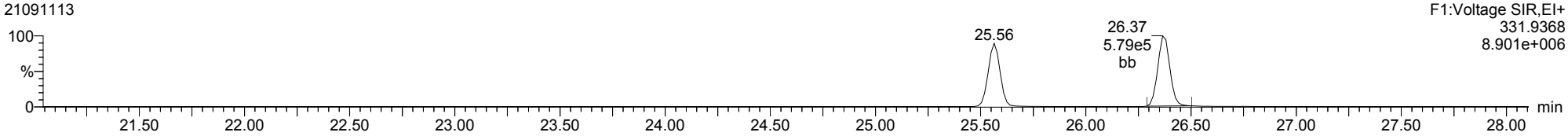

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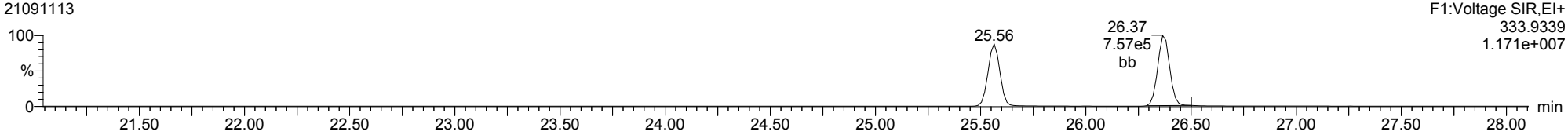

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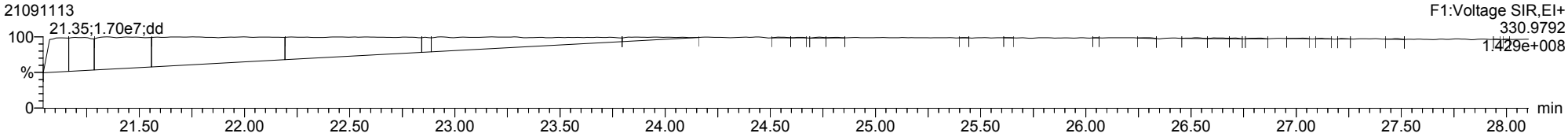

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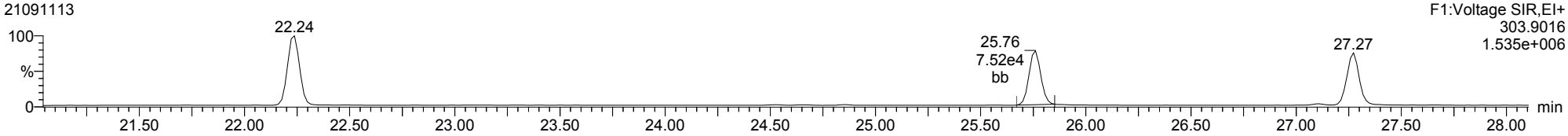

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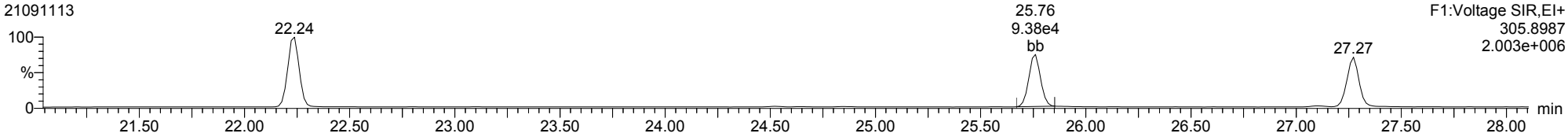

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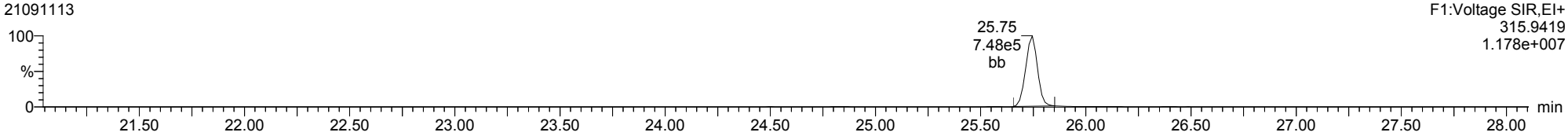

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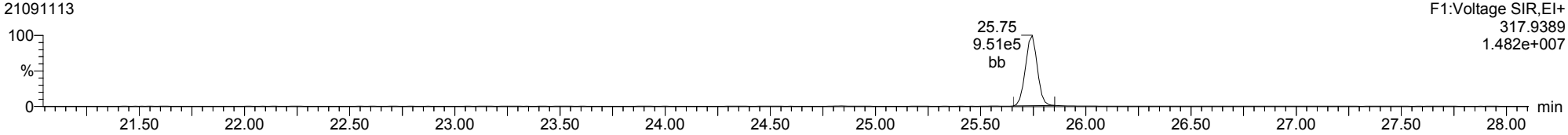

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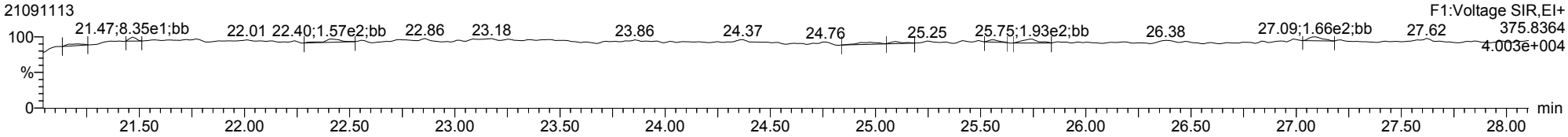

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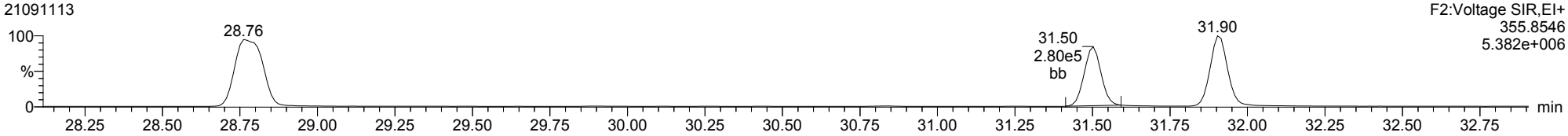

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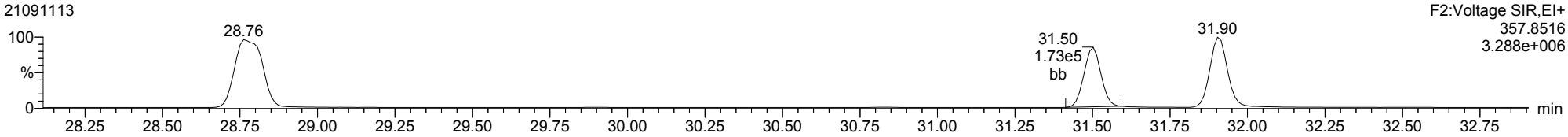

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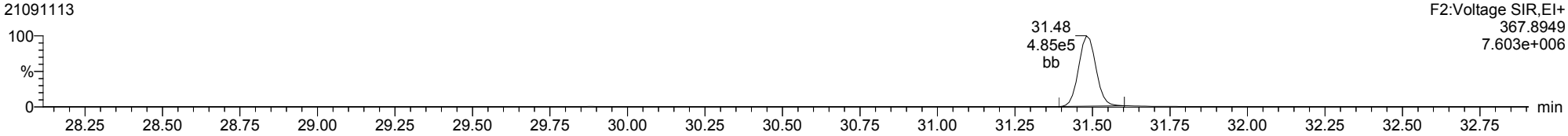

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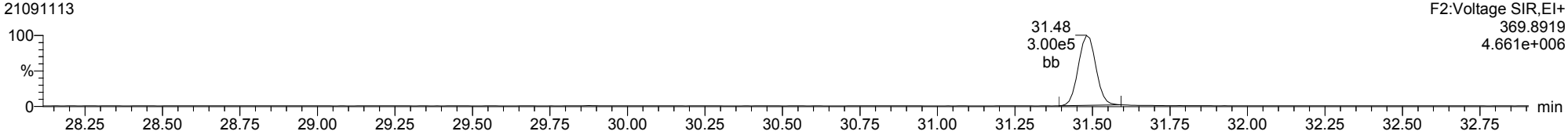
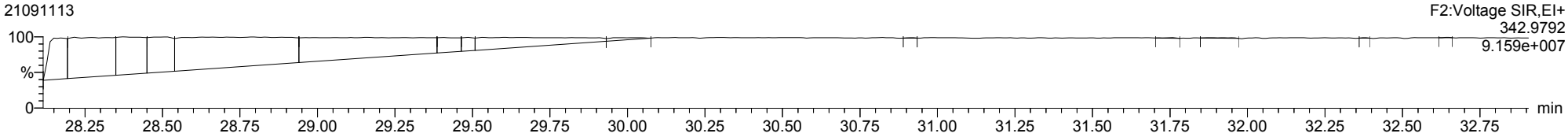


FUNCTION2 PFK



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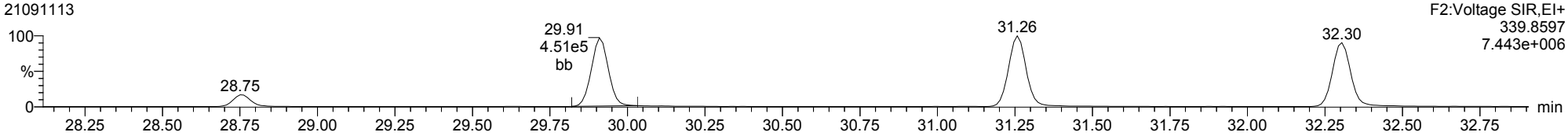

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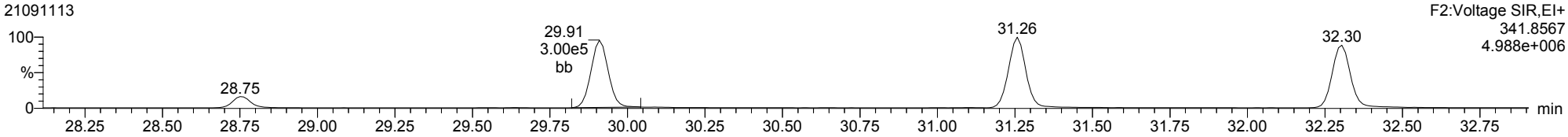

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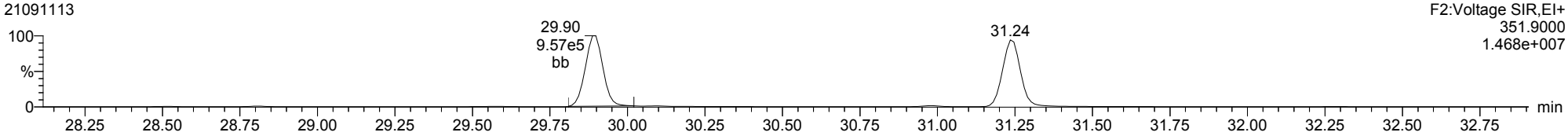

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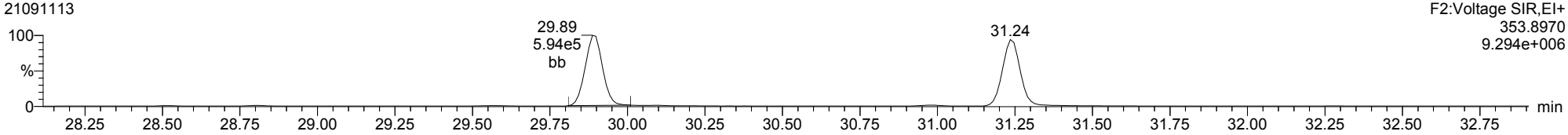
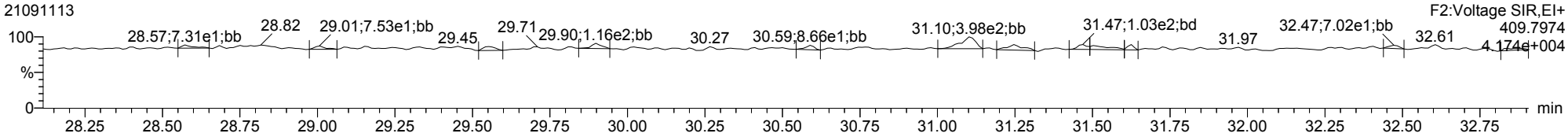


FUNCTION2 HPCDPE



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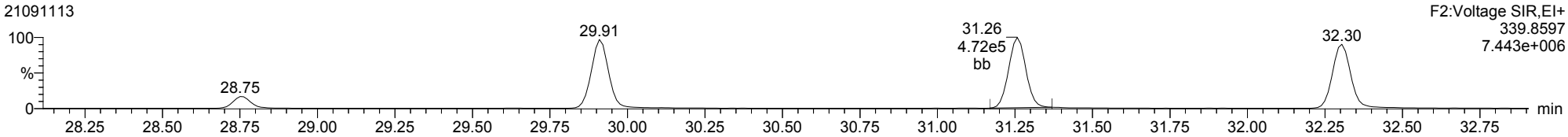

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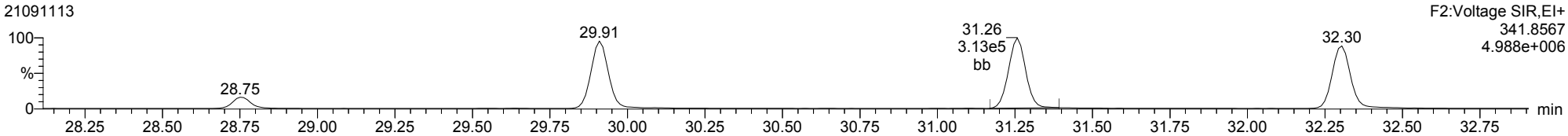

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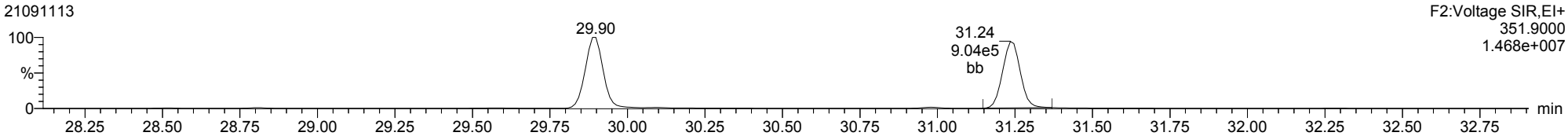

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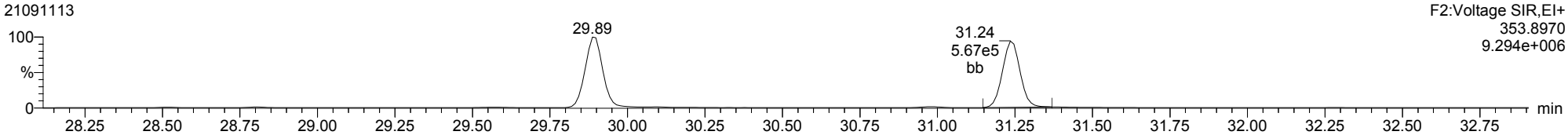

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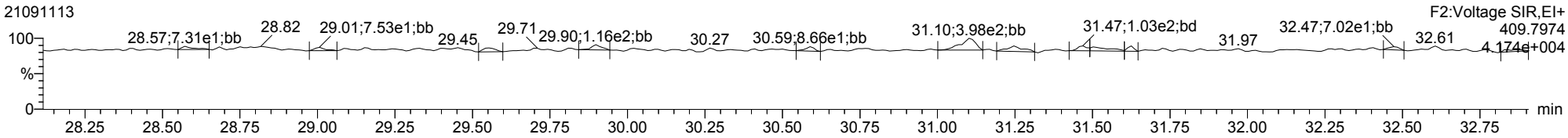

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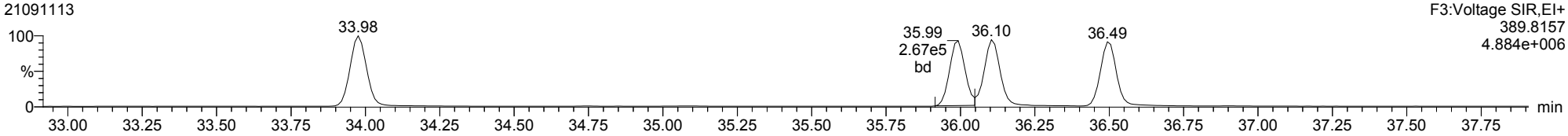

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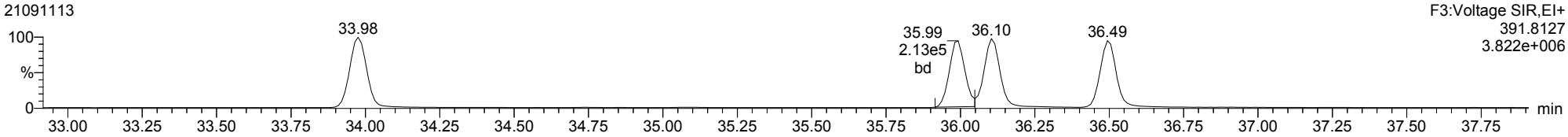

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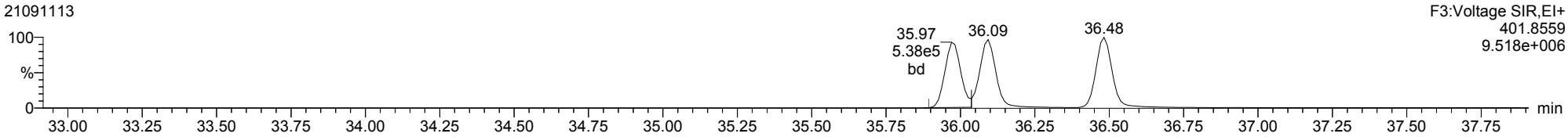

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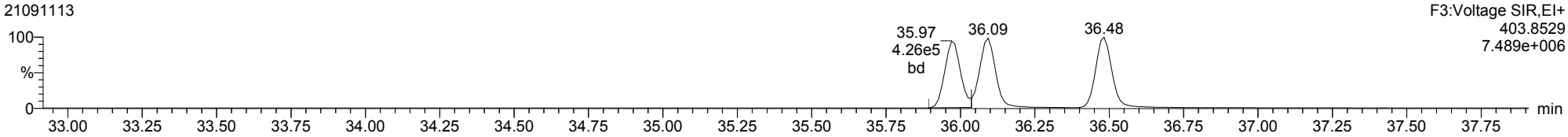

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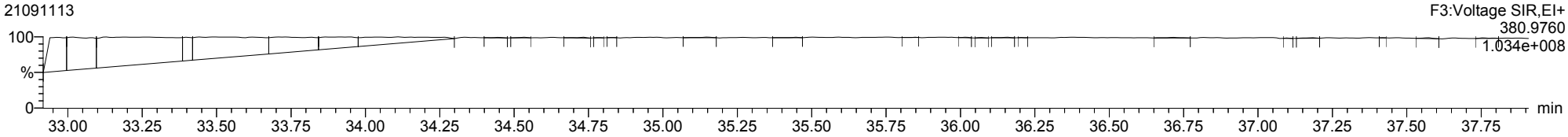

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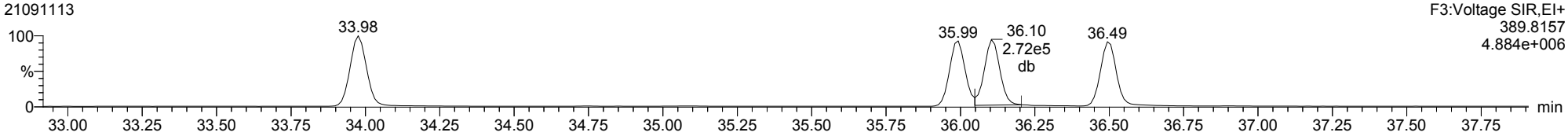

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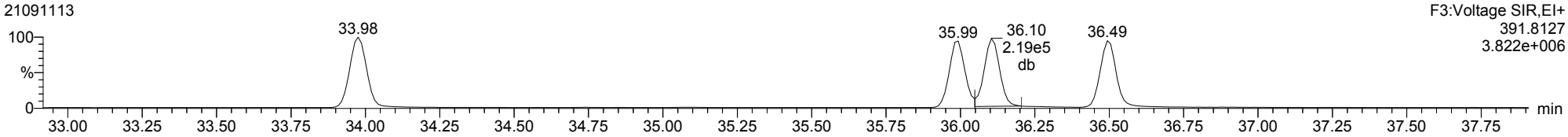

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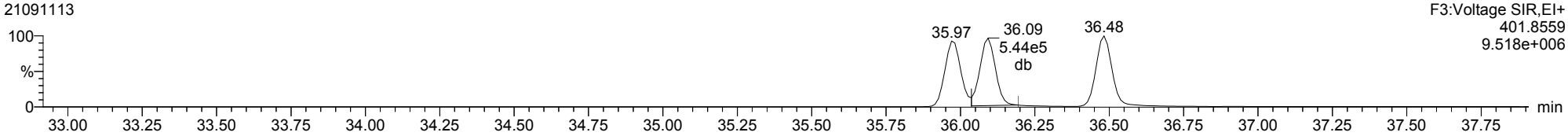

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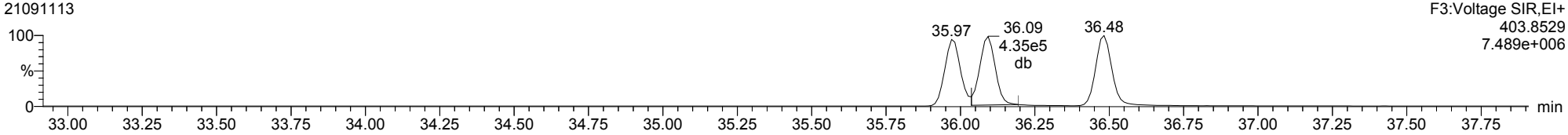

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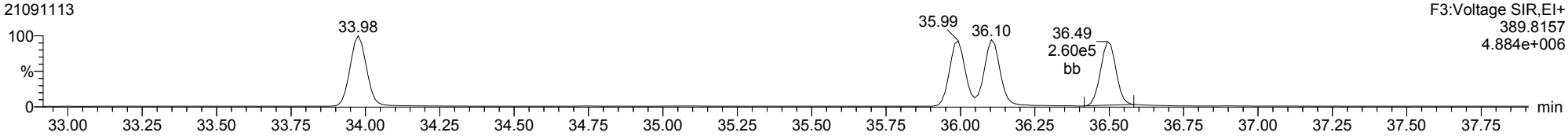

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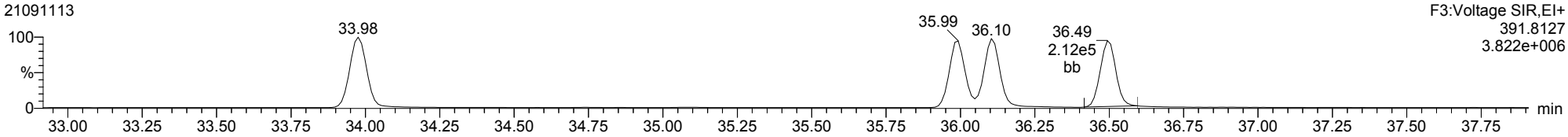

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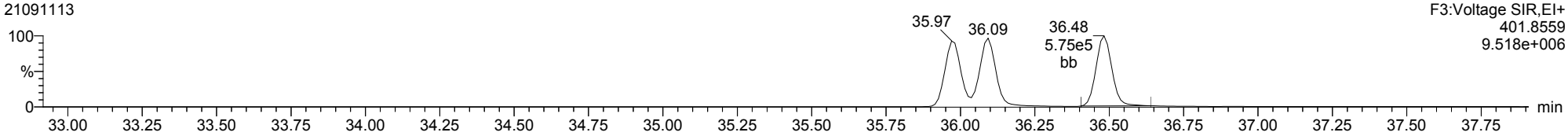

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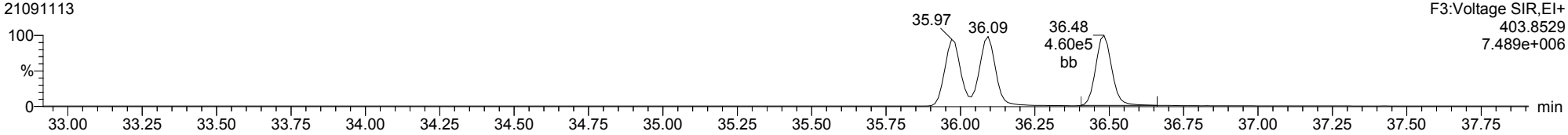

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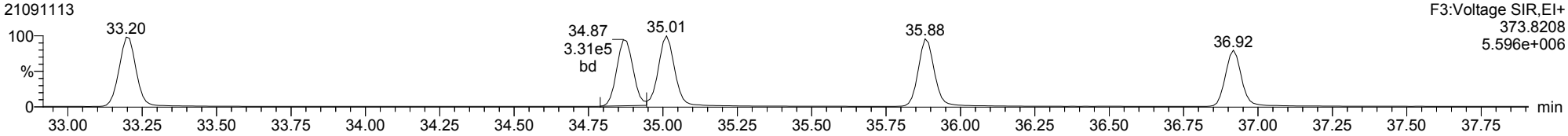

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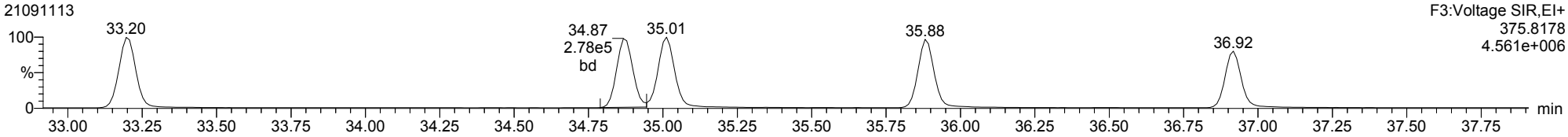

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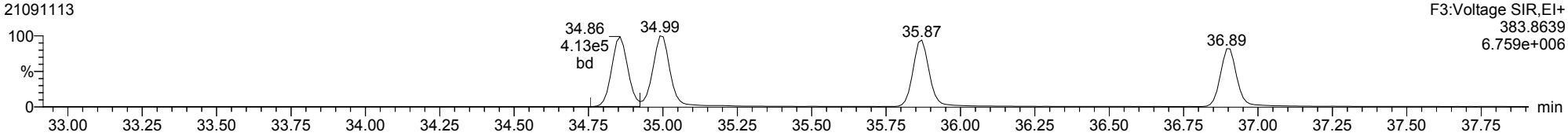

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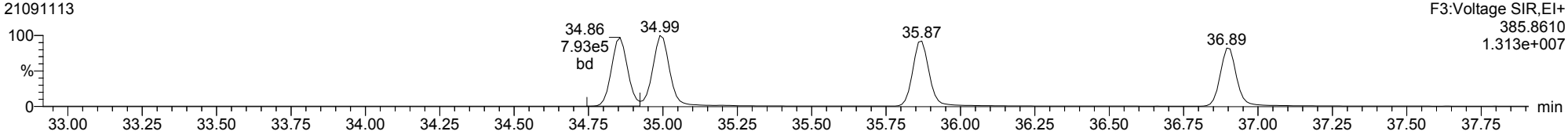

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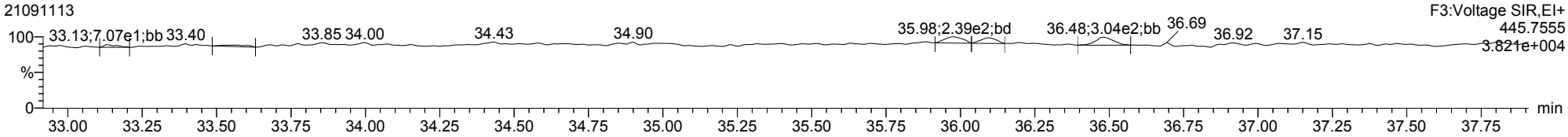

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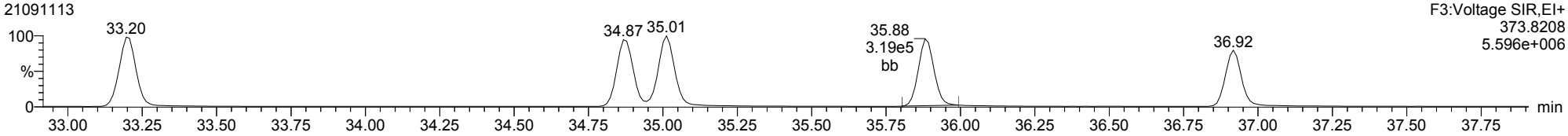

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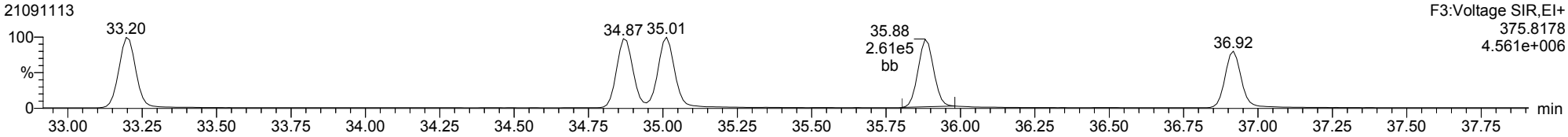

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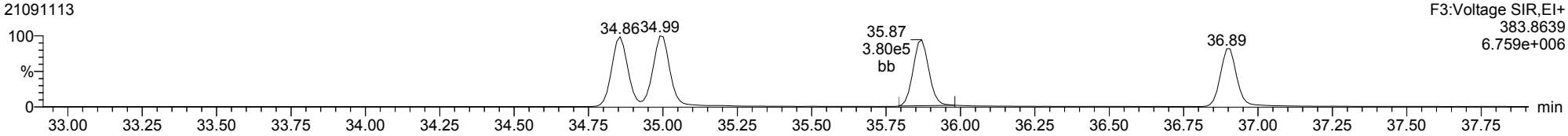

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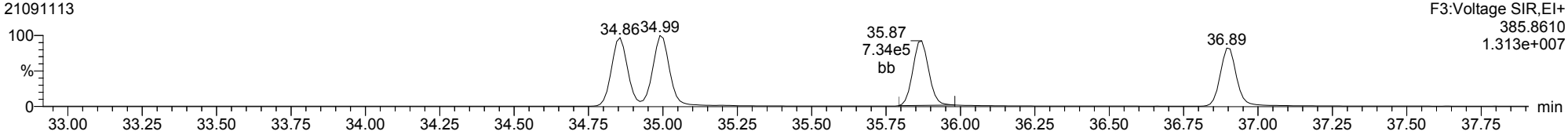

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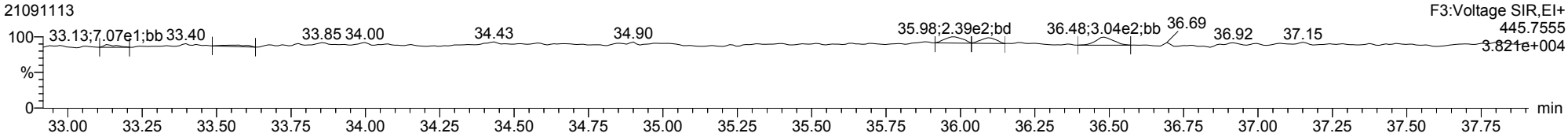

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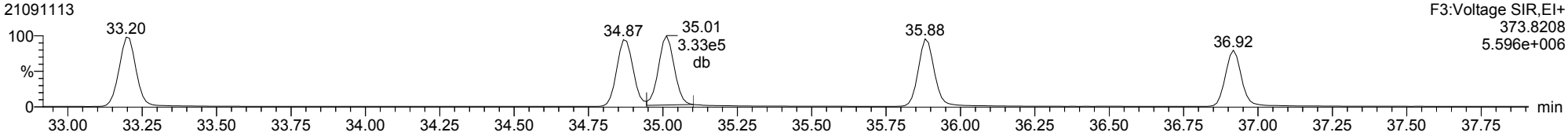

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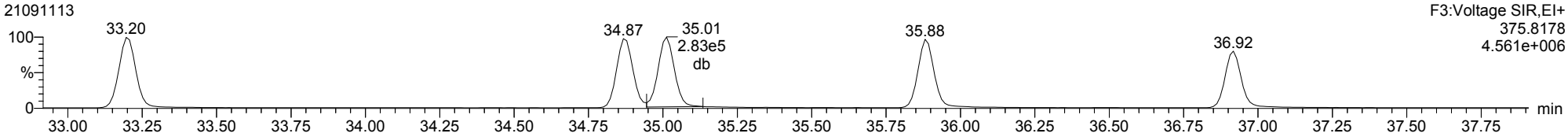

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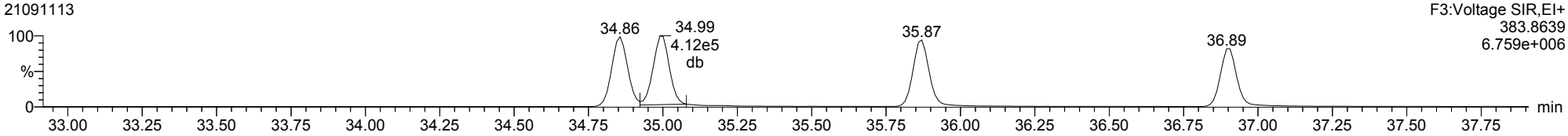

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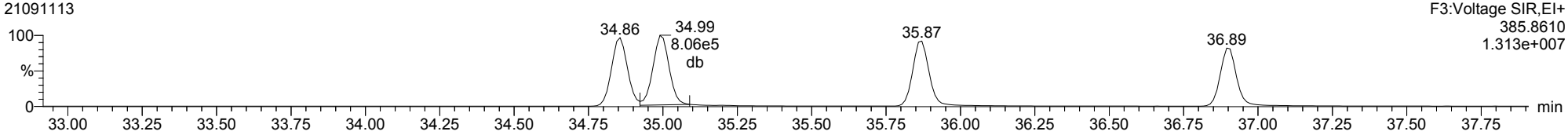

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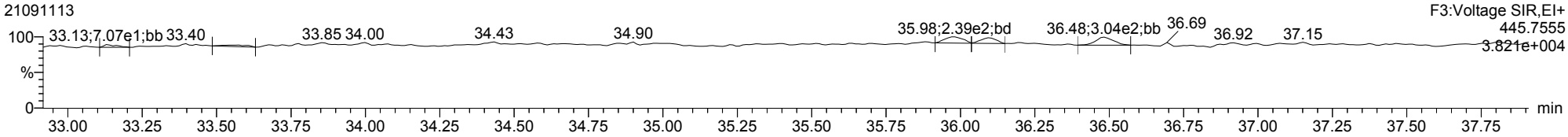

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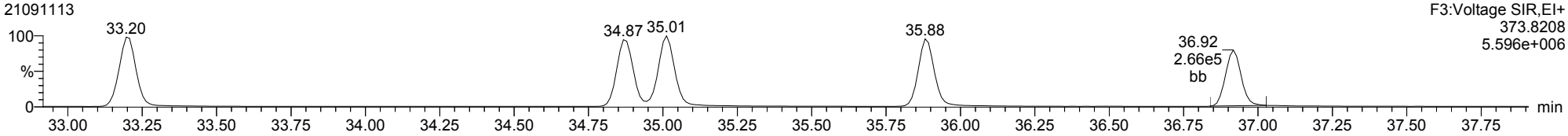

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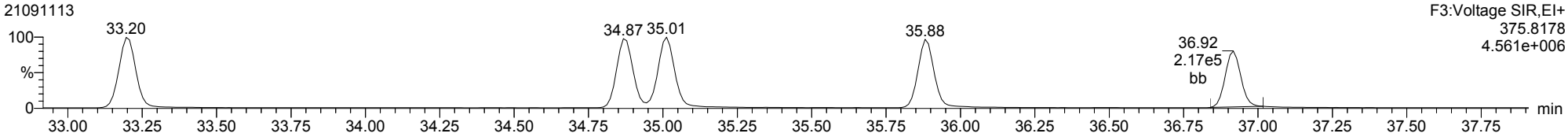

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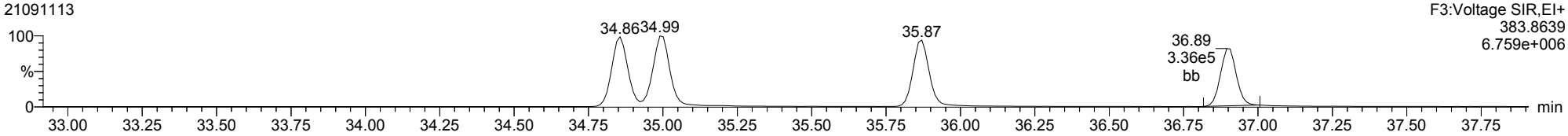

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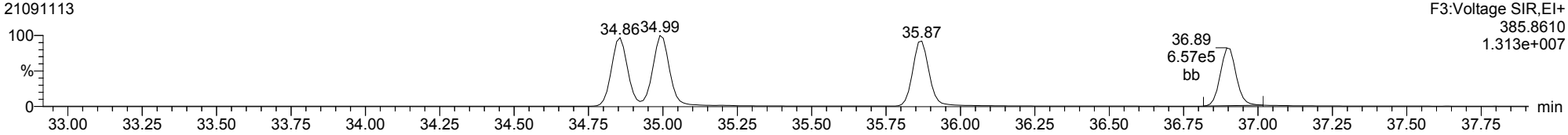

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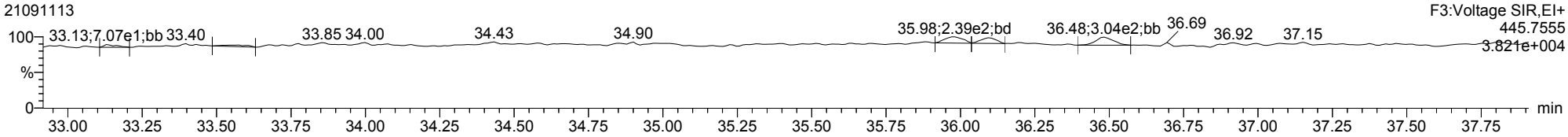

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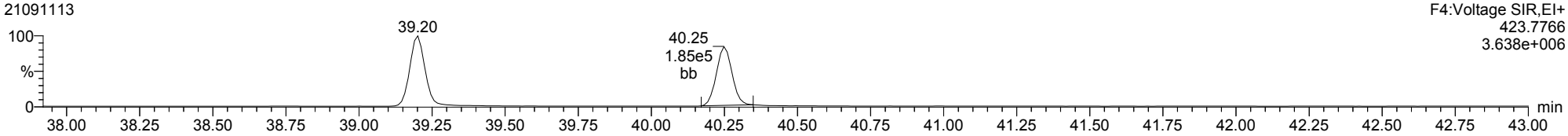

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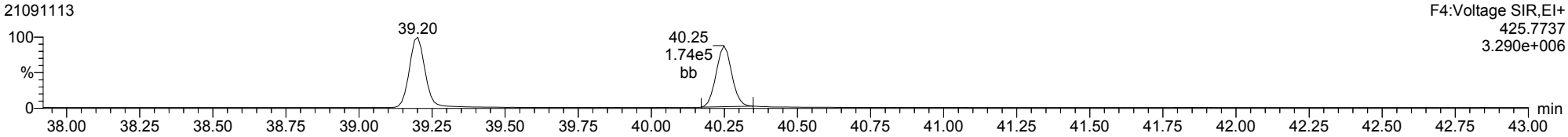

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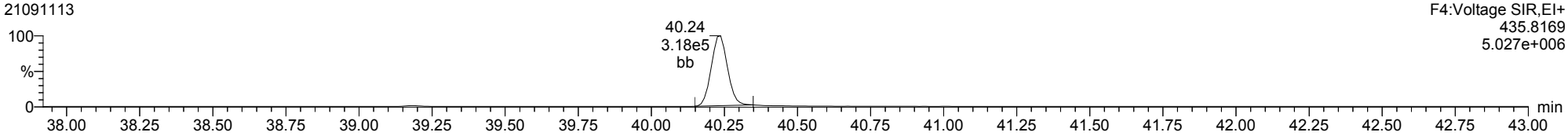

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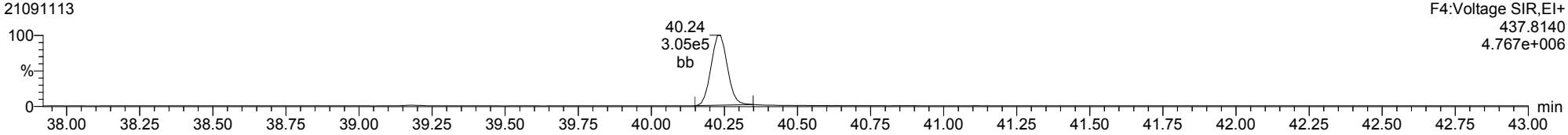

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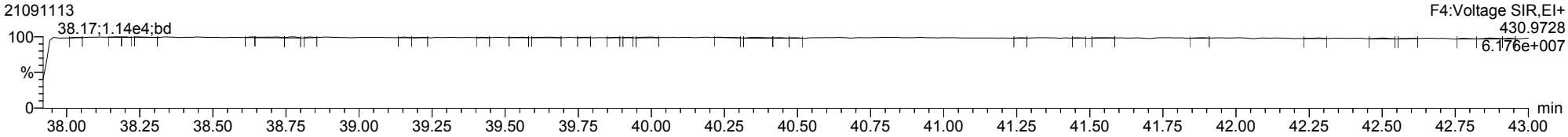

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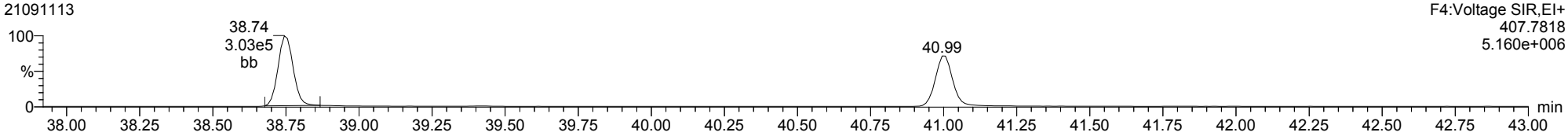

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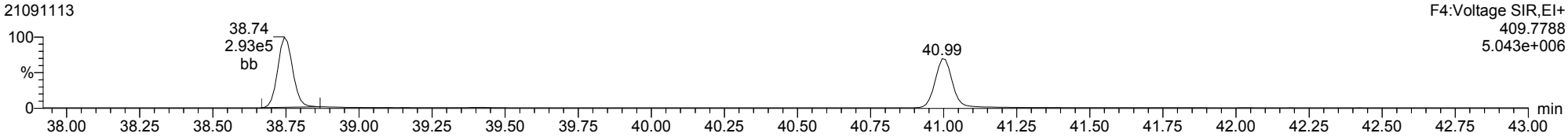

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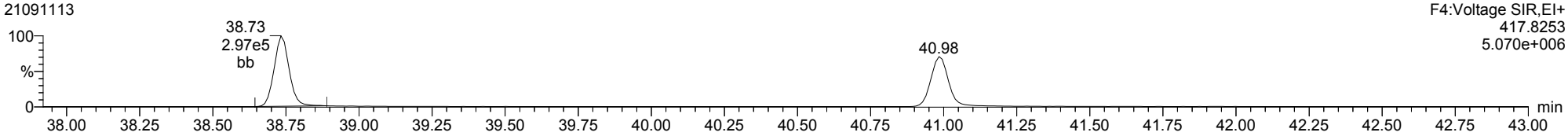

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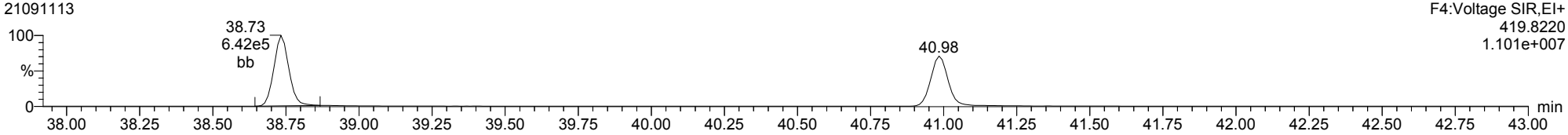

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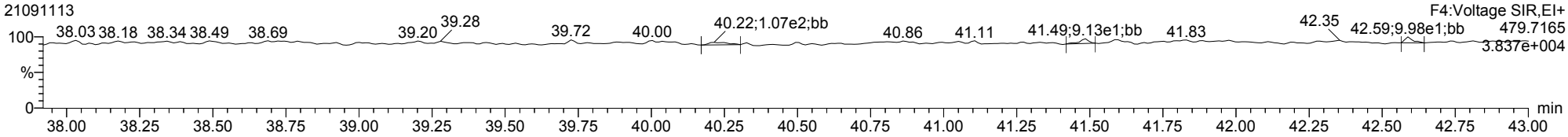

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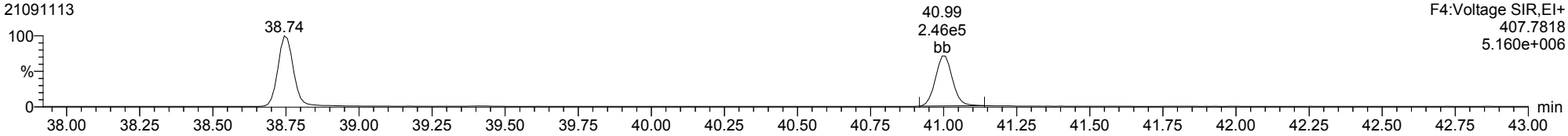

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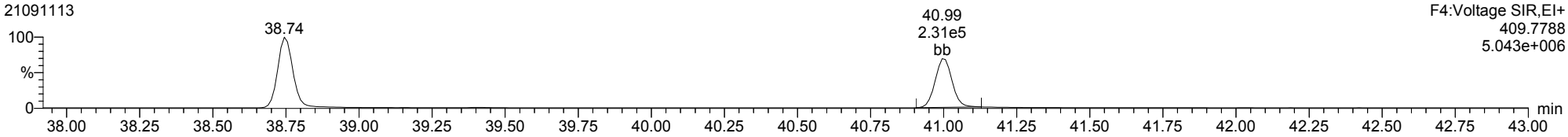

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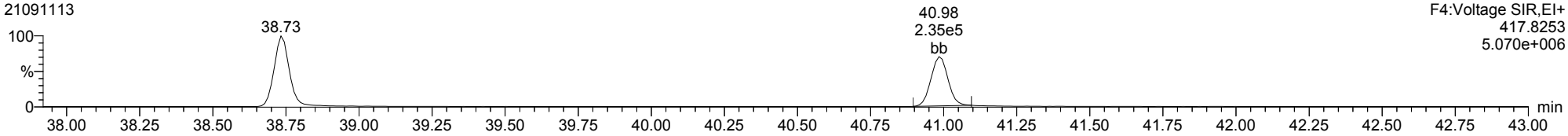

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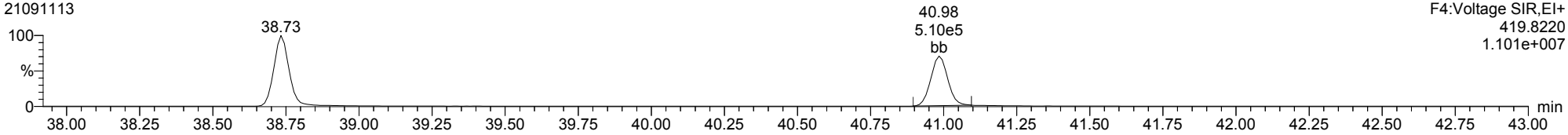

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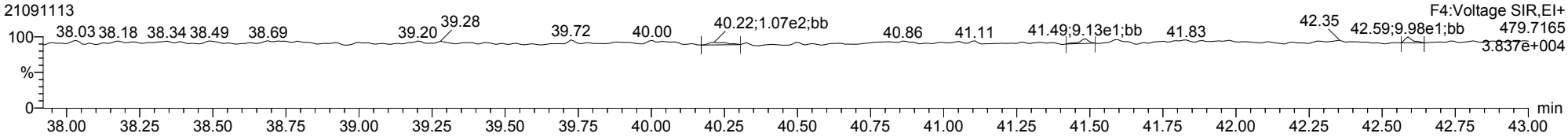

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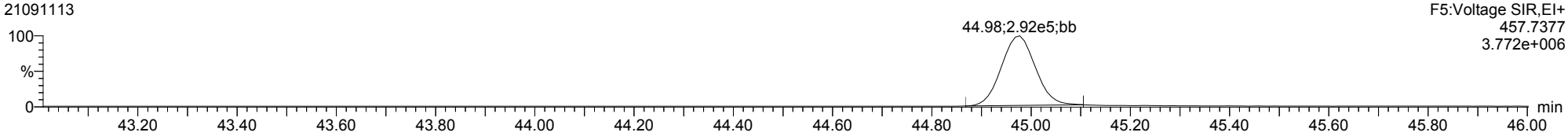

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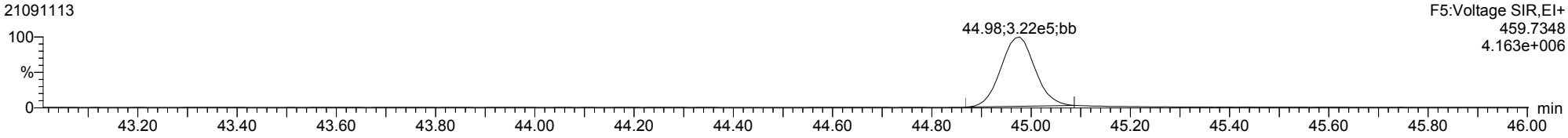

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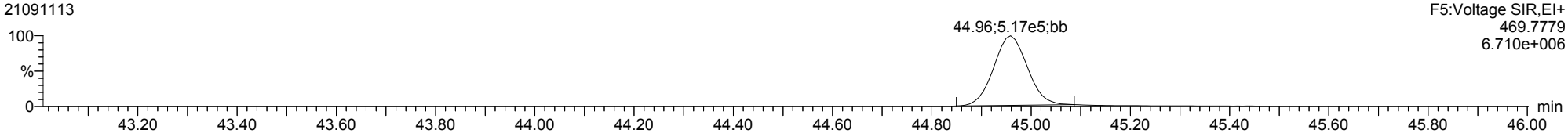

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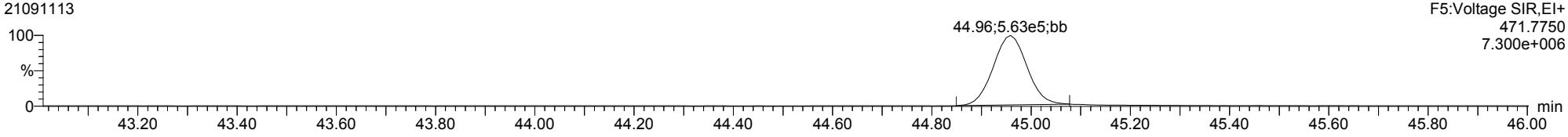

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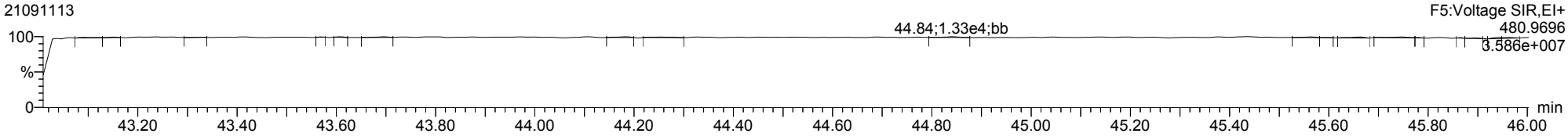

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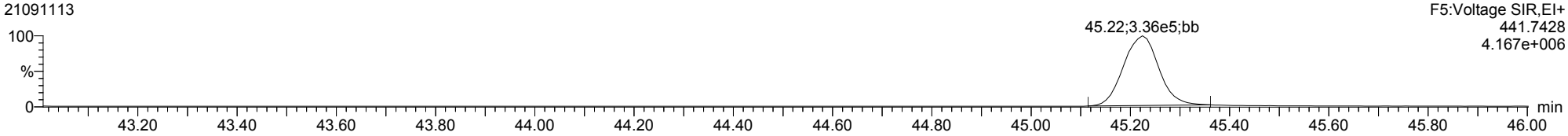
OCDF



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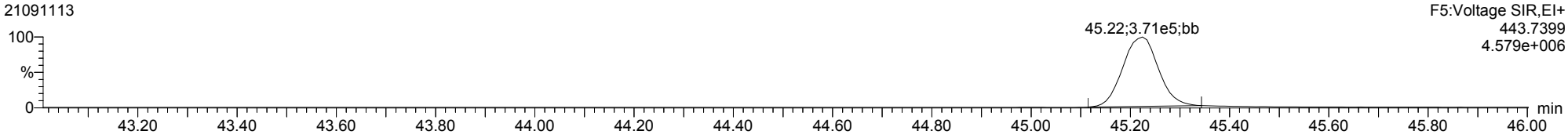

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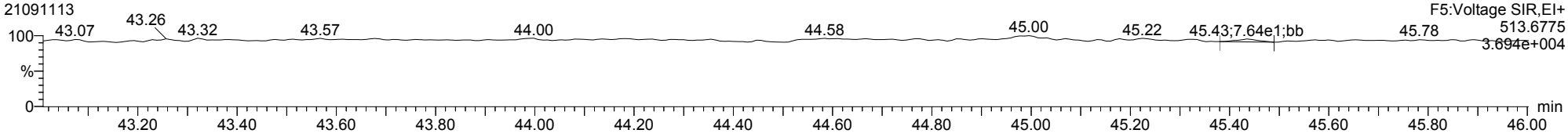

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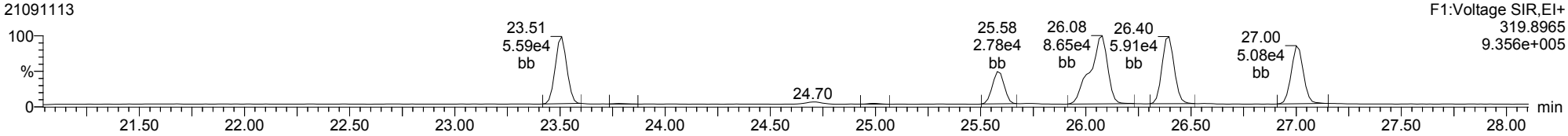

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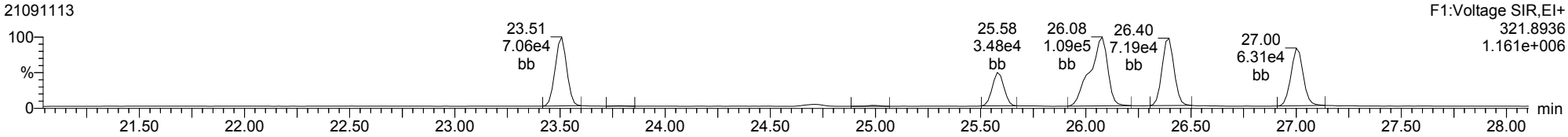

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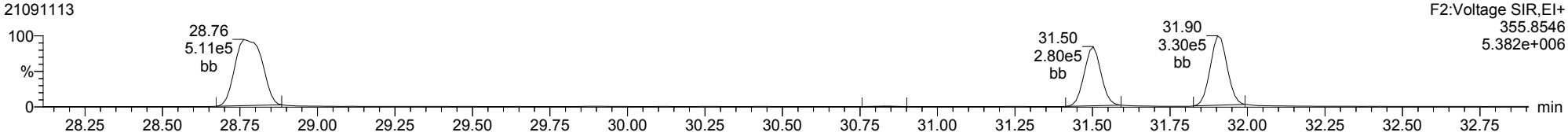

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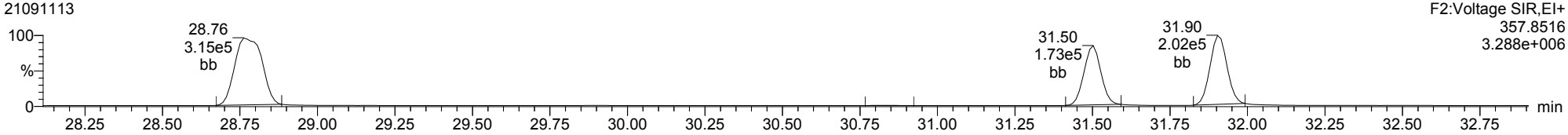

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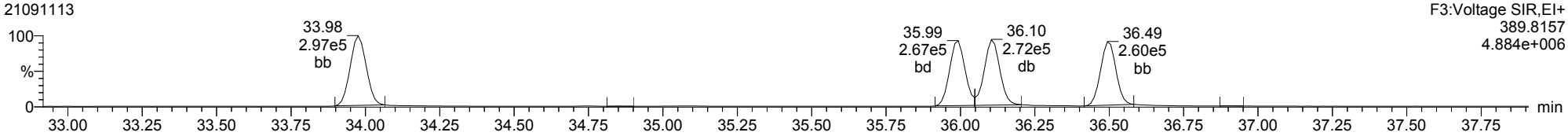

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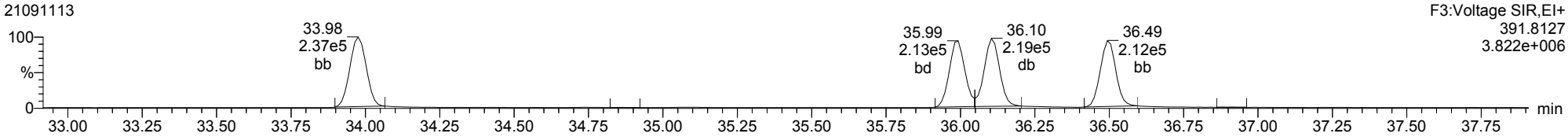

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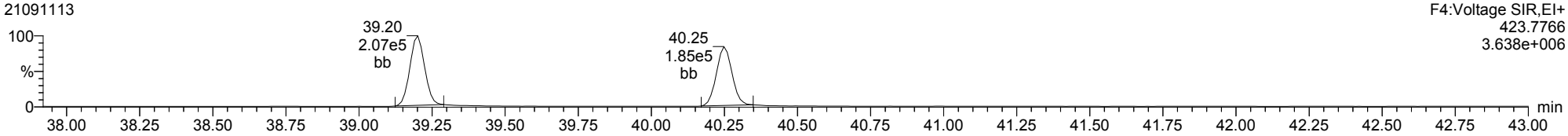

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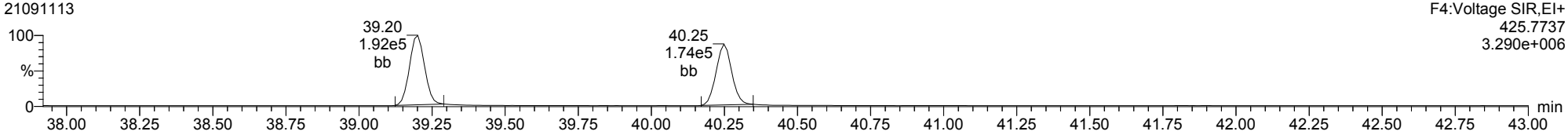

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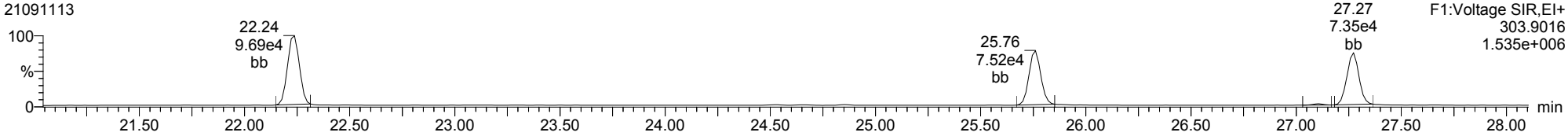
Total-tetrafurans



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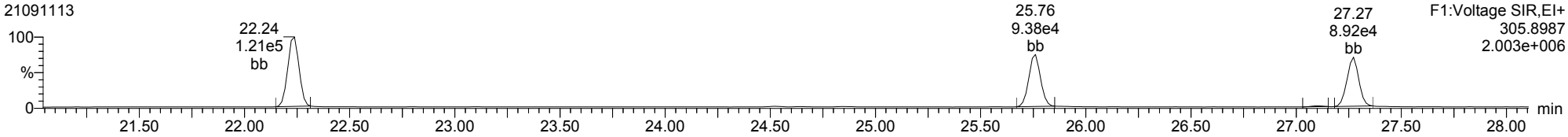

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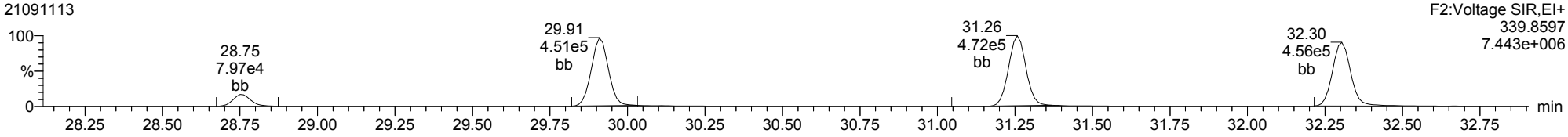
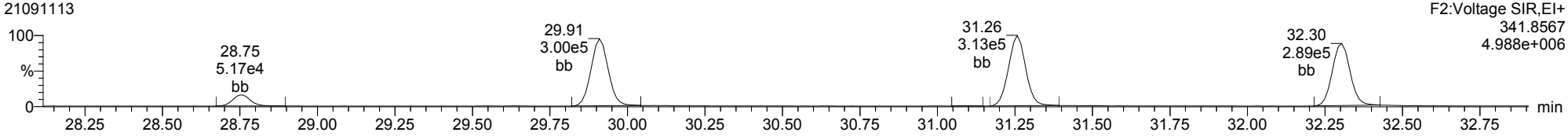


Total-pentafurans



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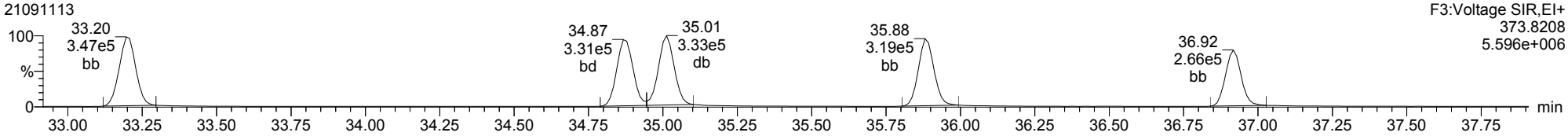
Total-hexafurans



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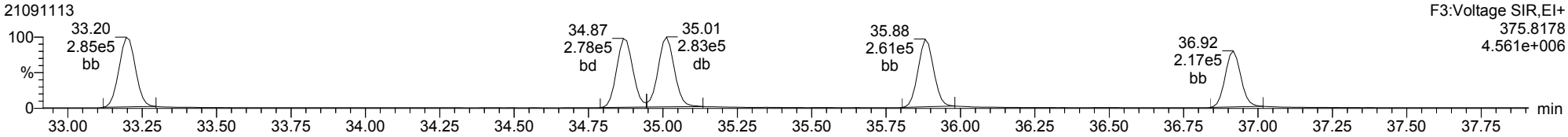

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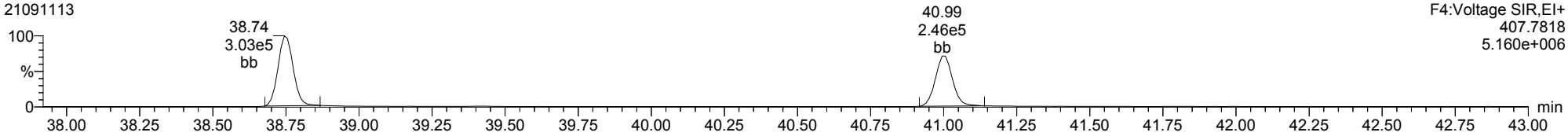

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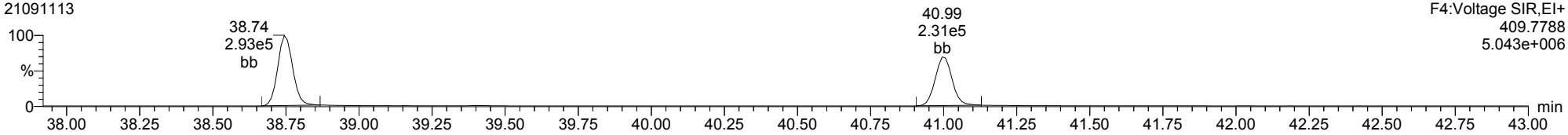

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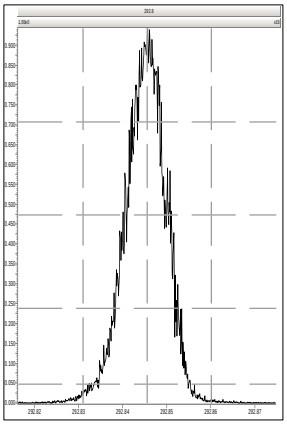

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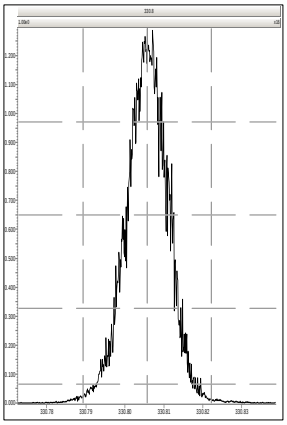

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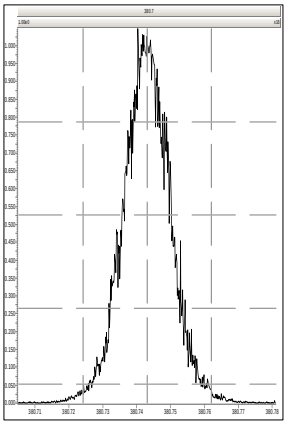

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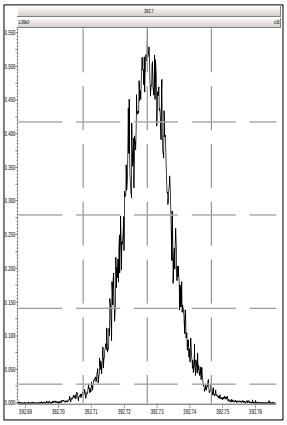
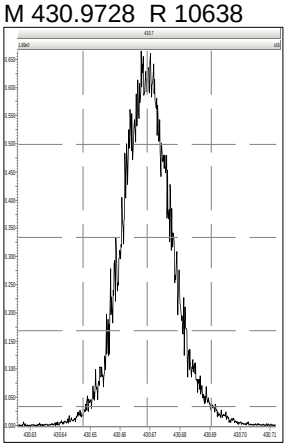


M 430.9728 R 10638



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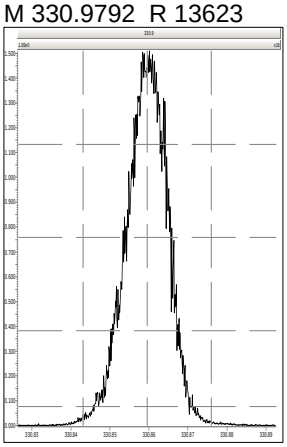

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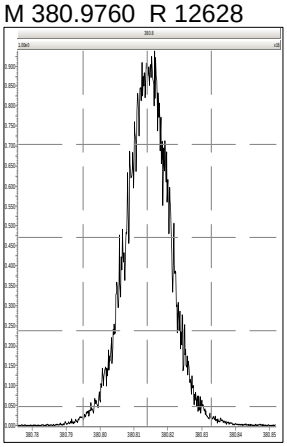

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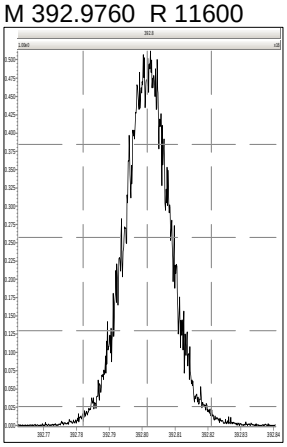

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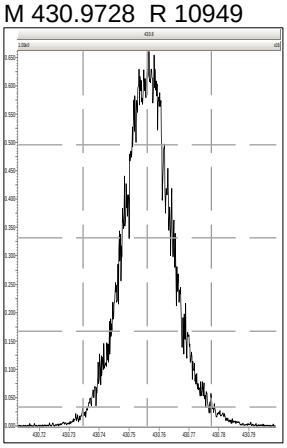

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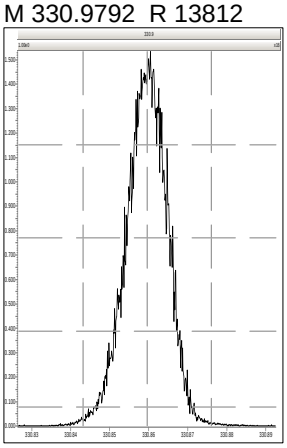

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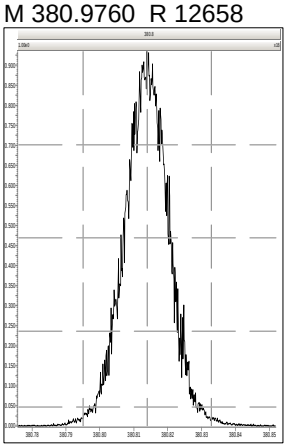

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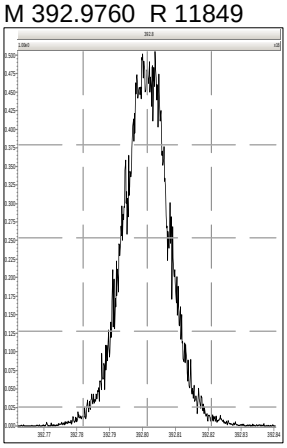

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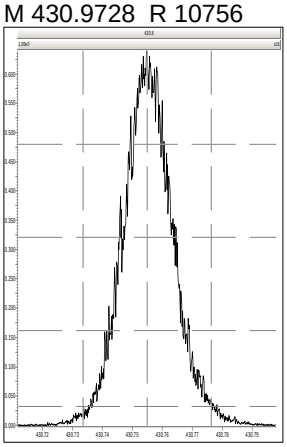

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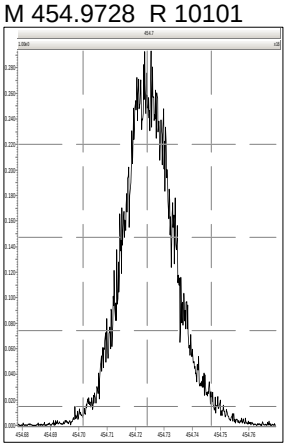

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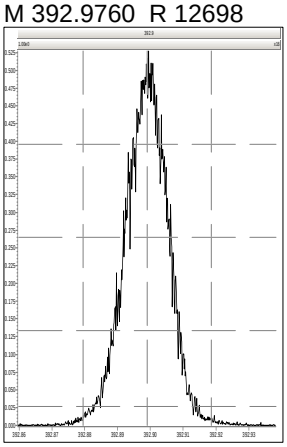

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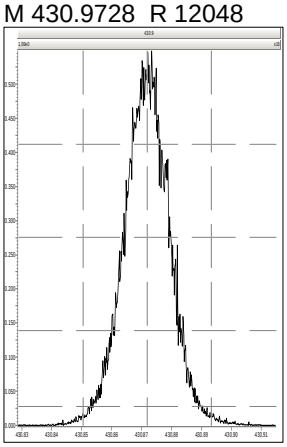

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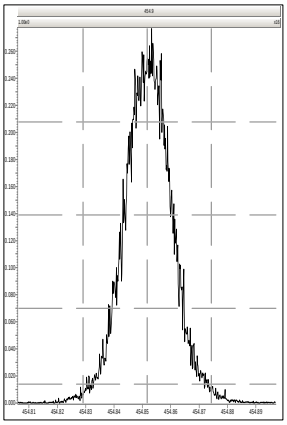

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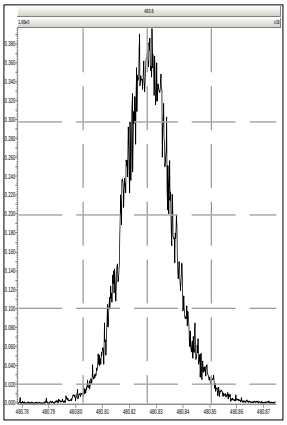

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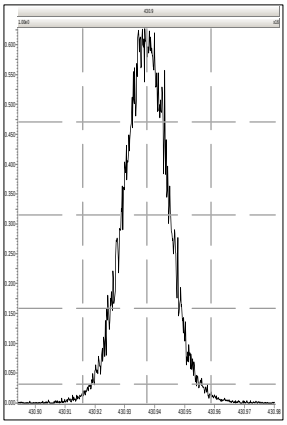

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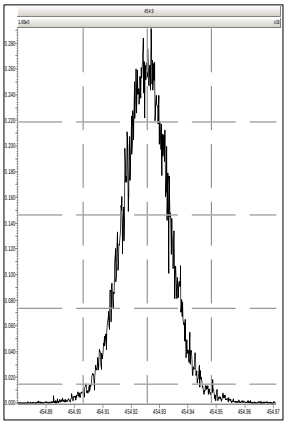

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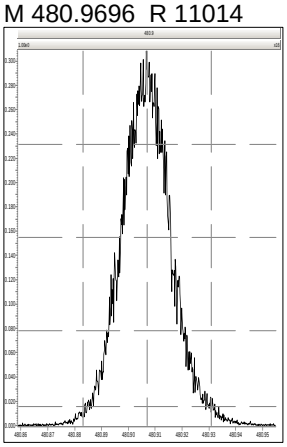

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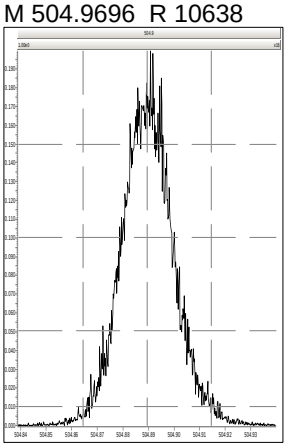

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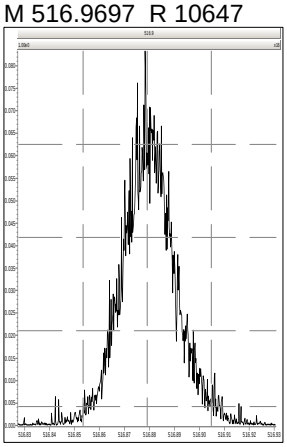
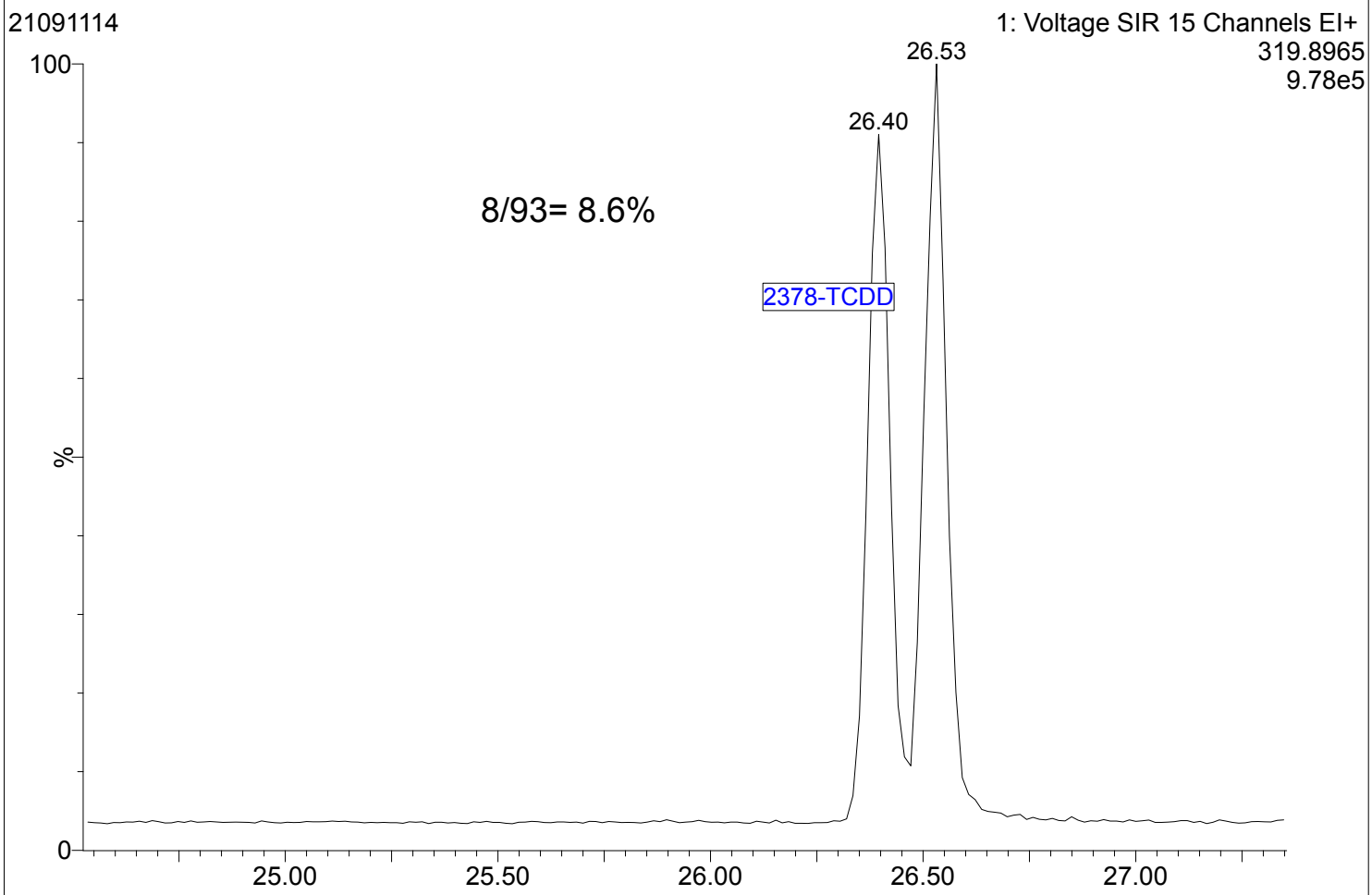
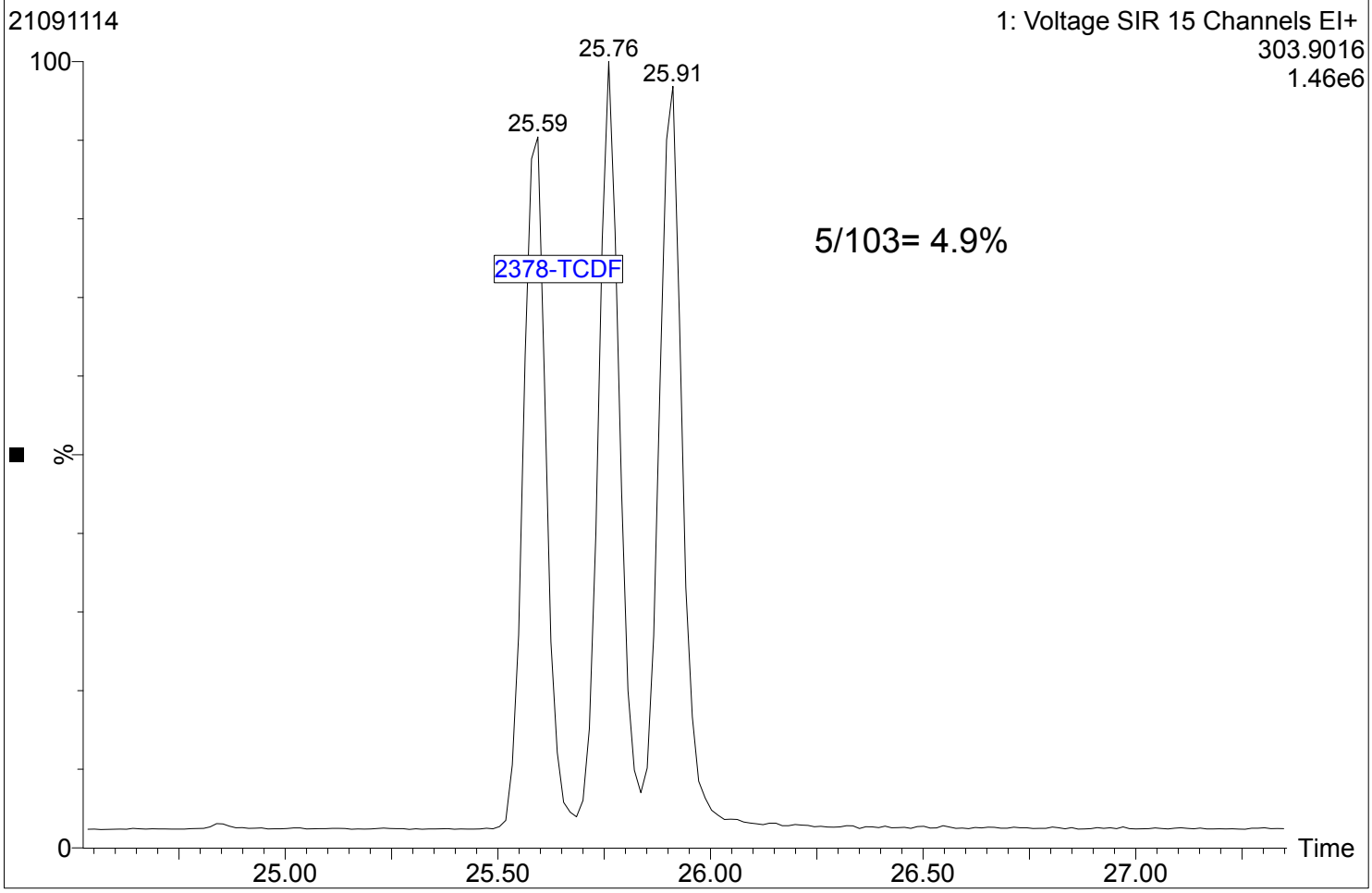



21091114
1: Voltage SIR 15 Channels EI+
319.8965
9.78e5
26.53
26.40
8/93= 8.6%
2378-TCDD
100
%
0
25.00
25.50
26.00
26.50
27.00


21091114
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303.9016
1.46e6
25.76
25.91
25.59
5/103= 4.9%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091123	Calibration Date:	08/11/2021
Sequence:	SJI0175	Injection Date:	09/12/21
Lab Sample ID:	SJI0175-CCV2	Injection Time:	04:36
Sequence Name:	CS3P8		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	9.18	1.1075930	1.0171930		-8.2	+/-16
2,3,7,8-TCDD	A	10.000	10.3	0.9202875	0.9490668		3.1	+/-22
1,2,3,7,8-PeCDF	A	50.000	48.2	1.0148670	0.9785003		-3.6	+/-18
2,3,4,7,8-PeCDF	A	50.000	47.4	1.1255490	1.0659490		-5.3	+/-18
1,2,3,7,8-PeCDD	A	50.000	58.1	0.9953229	1.1571310		16.3	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	49.6	1.0168930	1.0092160		-0.8	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	48.3	1.0368310	1.0005680		-3.5	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	47.6	1.0524660	1.0023970		-4.8	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	46.3	1.0301540	0.9533905		-7.5	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	49.0	1.0273630	1.0071130		-2.0	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	49.6	1.0089800	1.0008820		-0.8	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	51.7	0.9504865	11129.28		3.5	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	49.1	1.3273500	1.3033340		-1.8	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.0	1.2833380	1.2587340		-1.9	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	53.8	1.0680880	1.1490000		7.6	+/-14
OCDF	A	100.00	85.3	1.4469010	1.2340690		-14.7	+/-37
OCDD	A	100.00	95.4	1.1808230	1.1268520		-4.6	+/-21
13C12-2,3,7,8-TCDF	A	100.00	102	1.4265830	1.4593574		2.3	+/-29
13C12-2,3,7,8-TCDD	A	100.00	104	1.1164910	1.1614896		4.0	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	104	1.2973130	1.3427645		3.5	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	105	1.2364800	1.2968522		4.9	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	94.2	0.7319833	0.6893721		-5.8	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	93.1	1.2424560	1.1570571		-6.9	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	86.7	1.3434760	1.1646835		-13.3	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	92.1	1.2148550	1.1183478		-7.9	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	95.8	1.0076370	0.9650003		-4.2	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	96.7	0.9598233	0.9277565		-3.3	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	90.5	1.0413850	0.9427275		-9.5	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	95.5	0.9264704	0.8848633		-4.5	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	93.8	0.7579160	0.7108612		-6.2	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	96.6	0.6324476	0.6107918		-3.4	+/-28
13C12-OCDD	A	200.00	209	0.5037432	0.5255318		4.3	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.78	1.0835930	1.0602400		-2.2	

* Values outside of QC limits

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:30:36 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	8.783e4	1.077e5	1.108	0.815	0.770	1105	1557	1.34e6	1.67e6	1214.2	1071.6	NO	bb	bb	9.184
12378-PeCDF	29.909	1.001	5.211e5	3.444e5	1.015	1.513	1.550	2901	3023	8.37e6	5.47e6	2884.1	1808.6	NO	bb	bb	48.208
23478-PeCDF	31.257	1.001	5.490e5	3.616e5	1.126	1.518	1.550	2901	3023	8.60e6	5.52e6	2963.3	1825.0	NO	bb	bb	47.352
123478-HxCDF	34.867	1.000	3.866e5	3.198e5	1.017	1.209	1.240	2023	2027	6.39e6	5.32e6	3157.9	2626.0	NO	bd	bd	49.622
234678-HxCDF	35.881	1.000	3.734e5	3.047e5	1.052	1.226	1.240	2023	2027	6.27e6	5.15e6	3098.7	2541.2	NO	bb	bb	47.621
123678-HxCDF	35.012	1.001	3.900e5	3.150e5	1.037	1.238	1.240	2023	2027	6.32e6	5.12e6	3122.5	2527.0	NO	db	db	48.251
123789-HxCDF	36.917	1.001	3.052e5	2.514e5	1.030	1.214	1.240	2023	2027	5.19e6	4.24e6	2564.3	2090.1	NO	bb	bb	46.274
1234678-HpCDF	38.745	1.000	3.577e5	3.399e5	1.327	1.052	1.050	1864	1668	5.99e6	5.72e6	3212.6	3430.7	NO	bb	bb	49.095
1234789-HpCDF	40.995	1.000	2.784e5	2.629e5	1.283	1.059	1.050	1864	1668	4.20e6	3.97e6	2251.0	2377.9	NO	bb	bb	49.041
OCDF	45.225	1.006	3.731e5	4.115e5	1.447	0.907	0.890	1680	1137	4.72e6	5.16e6	2810.9	4537.9	NO	bb	bb	85.291
2378-TCDD	26.396	1.001	6.320e4	8.203e4	0.920	0.771	0.770	1115	788	9.51e5	1.23e6	852.5	1565.3	NO	bb	bb	10.313
12378-PeCDD	31.492	1.000	3.255e5	2.000e5	0.995	1.628	1.550	2210	1214	5.14e6	3.18e6	2328.0	2618.6	NO	bb	bb	58.128
123478-HxCDD	35.981	1.000	3.095e5	2.557e5	1.027	1.211	1.240	2287	1697	5.10e6	4.19e6	2228.1	2468.9	NO	bd	bd	49.015
123678-HxCDD	36.104	1.000	3.170e5	2.538e5	1.009	1.249	1.240	2287	1697	5.37e6	4.30e6	2349.8	2531.4	NO	db	db	49.599
123789-HxCDD	36.494	1.011	3.092e5	2.473e5	0.950	1.250	1.240	2287	1697	5.26e6	4.26e6	2299.0	2509.9	NO	bb	bb	51.740
1234678-HpCDD	40.249	1.001	2.213e5	2.032e5	1.068	1.089	1.050	1868	1375	3.47e6	3.22e6	1857.9	2342.3	NO	bb	bb	53.788
OCDD	44.978	1.000	3.357e5	3.808e5	1.181	0.882	0.890	1786	1202	4.34e6	4.88e6	2431.5	4057.9	NO	bb	bb	95.429
13C-2378-TCDF	25.730	1.007	8.467e5	1.076e6	1.427	0.787	0.770	1785	1314	1.27e7	1.62e7	7104.2	12350.7	NO	bb	bb	102.297
13C-12378-PeCDF	29.887	1.169	1.090e6	6.792e5	1.297	1.604	1.550	2800	2065	1.74e7	1.10e7	6208.3	5303.9	NO	bb	bb	103.503
13C-23478-PeCDF	31.235	1.222	1.055e6	6.536e5	1.236	1.614	1.550	2800	2065	1.66e7	1.02e7	5916.5	4954.8	NO	bb	bb	104.883
13C-123478-HxCDF	34.856	0.955	4.739e5	9.260e5	1.242	0.512	0.510	1863	3654	7.63e6	1.48e7	4094.9	4048.4	NO	bd	bd	93.127
13C-123678-HxCDF	34.990	0.959	4.800e5	9.291e5	1.343	0.517	0.510	1863	3654	7.78e6	1.52e7	4178.7	4154.1	NO	db	db	86.692
13C-234678-HxCDF	35.870	0.983	4.519e5	9.012e5	1.215	0.501	0.510	1863	3654	7.31e6	1.40e7	3925.3	3844.8	NO	bb	bd	92.056
13C-123789-HxCDF	36.895	1.011	3.994e5	7.682e5	1.008	0.520	0.510	1863	3654	6.69e6	1.30e7	3590.4	3550.5	NO	bb	bb	95.769
13C-1234678-HpCDF	38.734	1.062	3.392e5	7.314e5	0.926	0.464	0.440	1605	2121	5.78e6	1.25e7	3601.0	5889.9	NO	bb	bb	95.509
13C-1234789-HpCDF	40.984	1.123	2.738e5	5.863e5	0.758	0.467	0.440	1605	2121	4.22e6	9.02e6	2630.5	4251.1	NO	bb	bb	93.792
13C-1234-TCDD	25.564	0.000	5.732e5	7.442e5	1.000	0.770	0.770	2084	1676	8.93e6	1.14e7	4286.4	6808.4	NO	bb	bb	100.000
13C-2378-TCDD	26.366	1.031	6.625e5	8.677e5	1.116	0.764	0.770	2084	1676	1.04e7	1.36e7	4976.7	8096.9	NO	bb	bb	104.030
13C-12378-PeCDD	31.480	1.231	5.549e5	3.533e5	0.732	1.571	1.550	1254	2015	8.76e6	5.66e6	6986.2	2808.1	NO	bb	bb	94.179
13C-123478-HxCDD	35.970	0.986	6.283e5	4.941e5	0.960	1.272	1.240	1556	1407	1.08e7	8.54e6	6939.3	6069.7	NO	bd	bd	96.659
13C-123678-HxCDD	36.093	0.989	6.329e5	5.077e5	1.041	1.247	1.240	1556	1407	1.03e7	8.26e6	6642.7	5870.2	NO	db	db	90.526
13C-1234678-HpCDD	40.226	1.103	3.780e5	3.610e5	0.632	1.047	1.050	1388	1642	6.01e6	5.74e6	4326.8	3492.8	NO	bb	bb	96.576
13C-OCDD	44.959	1.232	6.044e5	6.672e5	0.504	0.906	0.890	1607	1422	7.65e6	8.57e6	4757.6	6024.6	NO	bb	bb	208.651
13C-123789-HxCDD	36.483	0.000	6.714e5	5.385e5	1.000	1.247	1.240	1556	1407	1.11e7	8.80e6	7136.3	6253.7	NO	bb	bb	100.000
37CL-2378-TCDD	26.381	1.032	1.397e5		1.084			1387		2.08e6		1497.3			bb		9.784

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
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ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.223	0.864	1.141e5	1.368e5	1.425	0.834	0.770	1105	1557	1.83e6	2.20e6	1660.0	1414.9	NO	bb	bb	9.157
1289-TCDF	27.273	1.060	8.304e4	1.057e5	1.043	0.786	0.770	1105	1557	1.25e6	1.63e6	1129.7	1045.6	NO	bb	bb	9.411
13468-PECDF	27.091	0.906	6.999e5	4.606e5	1.376	1.520	1.550	1058	1742	1.10e7	7.21e6	10412.1	4138.2	NO	bb	bb	47.669
12389-PECDF	32.305	1.081	5.113e5	3.373e5	1.000	1.516	1.550	2901	3023	7.76e6	5.07e6	2675.1	1677.7	NO	bb	bb	47.993
123468-HXCDF	33.196	0.952	4.007e5	3.279e5	1.087	1.222	1.240	2023	2027	6.33e6	5.19e6	3129.5	2560.5	NO	bb	bb	47.901
1368-TCDD	23.493	0.891	6.284e4	8.118e4	0.923	0.774	0.770	1115	788	9.83e5	1.28e6	881.2	1630.5	NO	bb	bb	10.194
1289-TCDD	27.001	1.024	5.627e4	7.265e4	0.794	0.774	0.770	1115	788	8.88e5	1.10e6	796.2	1399.5	NO	bb	bd	10.611
12479-PECDD	28.762	0.914	5.659e5	3.513e5	1.843	1.611	1.550	2210	1214	5.49e6	3.40e6	2483.7	2796.5	NO	bb	bb	54.786
12389-PECDD	31.904	1.013	3.825e5	2.344e5	1.154	1.632	1.550	2210	1214	5.96e6	3.67e6	2698.3	3022.5	NO	bb	bb	58.878
124679-HXCDD	33.976	0.945	3.455e5	2.794e5	1.125	1.236	1.240	2287	1697	5.54e6	4.45e6	2422.5	2624.1	NO	bb	bb	49.493
1234679-HPCDD	39.201	0.975	2.391e5	2.273e5	1.211	1.052	1.050	1868	1375	4.10e6	3.81e6	2193.7	2773.0	NO	bb	bb	52.121
Total-tetrafurans			2.875e5		1.192			1105		4.46e6							28.016
Total-penta1			6.999e5					1058		1.10e7							47.669
Total-pentafurans			1.671e6		1.047			2901		2.62e7							151.676
Total-hexafurans			1.856e6		1.045			2023		3.05e7							239.670
Total-heptafurans			6.362e5		1.305			1864		1.02e7							98.149
Total-Furans			5.523e6		1.158			1105		8.71e7							650.471
Total-tetradioxins			3.157e5		0.879			1115		4.37e6							53.442
Total-pentadioxins			1.277e6		1.331			2210		1.66e7							172.160
Total-hexadioxins			1.281e6		1.028			2287		2.13e7							199.846
Total-heptadioxins			4.604e5		1.140			1868		7.57e6							105.908
Total-Dioxins			3.670e6		1.092			1115		5.42e7							626.786
Total-TEQ			9.193e6					1115		1.41e8							1277.256
FUNCTION1 PFK			1.778e6					625266		3.08e7							
FUNCTION2 PFK			3.114e7					363072		2.74e8							0.000
FUNCTION3 PFK			1.084e5					410319		2.77e6							0.000
FUNCTION4 PFK			7.003e5					280570		1.52e7							
FUNCTION5 PFK			6.451e4					164474		2.78e6							
FUNCTION1 HXCD...			7.751e2					650		1.30e4							0.000
FUNCTION1 HPCD...			1.446e3					1289		2.67e4							0.000
FUNCTION2 HPCD...			3.338e3					1724		7.84e4							0.000
FUNCTION3 OCDPE			8.972e2					669		1.54e4							0.000
FUNCTION4 NCDPE			2.651e2					750		5.50e3							0.000
FUNCTION5 DCDPE			1.510e2					678		3.09e3							0.000

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	8.304e4	1.057e5	1.043	0.79	0.77	1129.7	YES	NO	bb	bb	9.411
2	Total-tetrafurans	27.11	1.640e3	2.423e3	1.192	0.68	0.77	25.4	YES	NO	bb	bb	0.177
3	2378-TCDF	25.76	8.783e4	1.077e5	1.108	0.82	0.77	1214.2	YES	NO	bb	bb	9.184
4	Total-tetrafurans	24.52	9.034e2	1.073e3	1.192	0.84	0.77	12.5	YES	NO	bd	bb	0.086
5	1368-TCDF	22.22	1.141e5	1.368e5	1.425	0.83	0.77	1660.0	YES	NO	bb	bb	9.157

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.09	6.999e5	4.606e5	1.376	1.52	1.55	10412.1	YES	NO	bb	bb	47.669

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.26	5.490e5	3.616e5	1.126	1.52	1.55	2963.3	YES	NO	bb	bb	47.352
2	Total-pentafurans	31.09	1.204e3	7.411e2	1.047	1.62	1.55	8.3	YES	NO	bb	bb	0.107
3	12378-PeCDF	29.91	5.211e5	3.444e5	1.015	1.51	1.55	2884.1	YES	NO	bb	bb	48.208
4	Total-pentafurans	28.75	8.799e4	5.789e4	1.047	1.52	1.55	489.8	YES	NO	bb	bb	8.016
5	12389-PECDF	32.30	5.113e5	3.373e5	1.000	1.52	1.55	2675.1	YES	NO	bb	bb	47.993

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.92	3.052e5	2.514e5	1.030	1.21	1.24	2564.3	YES	NO	bb	bb	46.274
2	234678-HxCDF	35.88	3.734e5	3.047e5	1.052	1.23	1.24	3098.7	YES	NO	bb	bb	47.621
3	123678-HxCDF	35.01	3.900e5	3.150e5	1.037	1.24	1.24	3122.5	YES	NO	db	db	48.251
4	123478-HxCDF	34.87	3.866e5	3.198e5	1.017	1.21	1.24	3157.9	YES	NO	bd	bd	49.622
5	123468-HXCDF	33.20	4.007e5	3.279e5	1.087	1.22	1.24	3129.5	YES	NO	bb	bb	47.901

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.00	2.784e5	2.629e5	1.283	1.06	1.05	2251.0	YES	NO	bb	bb	49.041
2	Total-heptafurans	39.02	8.509e1	7.562e1	1.305	1.13	1.05	2.2	NO	NO	bb	bb	0.013
3	1234678-HpCDF	38.74	3.577e5	3.399e5	1.327	1.05	1.05	3212.6	YES	NO	bb	bb	49.095

ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	8.304e4	1.057e5	1.043	0.79	0.77	1129.7	YES	NO	bb	bb	9.411
2	Total-tetrafurans	27.11	1.640e3	2.423e3	1.192	0.68	0.77	25.4	YES	NO	bb	bb	0.177
3	2378-TCDF	25.76	8.783e4	1.077e5	1.108	0.82	0.77	1214.2	YES	NO	bb	bb	9.184
4	Total-tetrafurans	24.52	9.034e2	1.073e3	1.192	0.84	0.77	12.5	YES	NO	bd	bb	0.086
5	1368-TCDF	22.22	1.141e5	1.368e5	1.425	0.83	0.77	1660.0	YES	NO	bb	bb	9.157
6	23478-PeCDF	31.26	5.490e5	3.616e5	1.126	1.52	1.55	2963.3	YES	NO	bb	bb	47.352
7	Total-pentafurans	31.09	1.204e3	7.411e2	1.047	1.62	1.55	8.3	YES	NO	bb	bb	0.107
8	12378-PeCDF	29.91	5.211e5	3.444e5	1.015	1.51	1.55	2884.1	YES	NO	bb	bb	48.208
9	Total-pentafurans	28.75	8.799e4	5.789e4	1.047	1.52	1.55	489.8	YES	NO	bb	bb	8.016
10	12389-PECDF	32.30	5.113e5	3.373e5	1.000	1.52	1.55	2675.1	YES	NO	bb	bb	47.993
11	123789-HxCDF	36.92	3.052e5	2.514e5	1.030	1.21	1.24	2564.3	YES	NO	bb	bb	46.274
12	234678-HxCDF	35.88	3.734e5	3.047e5	1.052	1.23	1.24	3098.7	YES	NO	bb	bb	47.621
13	123678-HxCDF	35.01	3.900e5	3.150e5	1.037	1.24	1.24	3122.5	YES	NO	db	db	48.251
14	123478-HxCDF	34.87	3.866e5	3.198e5	1.017	1.21	1.24	3157.9	YES	NO	bd	bd	49.622
15	123468-HXCDF	33.20	4.007e5	3.279e5	1.087	1.22	1.24	3129.5	YES	NO	bb	bb	47.901
16	1234789-HpCDF	41.00	2.784e5	2.629e5	1.283	1.06	1.05	2251.0	YES	NO	bb	bb	49.041
17	Total-heptafurans	39.02	8.509e1	7.562e1	1.305	1.13	1.05	2.2	NO	NO	bb	bb	0.013
18	1234678-HpCDF	38.74	3.577e5	3.399e5	1.327	1.05	1.05	3212.6	YES	NO	bb	bb	49.095
19	OCDF	45.22	3.731e5	4.115e5	1.447	0.91	0.89	2810.9	YES	NO	bb	bb	85.291
20	13468-PECDF	27.09	6.999e5	4.606e5	1.376	1.52	1.55	10412.1	YES	NO	bb	bb	47.669

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	5.627e4	7.265e4	0.794	0.77	0.77	796.2	YES	NO	bb	bd	10.611
2	2378-TCDD	26.40	6.320e4	8.203e4	0.920	0.77	0.77	852.5	YES	NO	bb	bb	10.313
3	Total-tetradioxins	26.08	9.907e4	1.236e5	0.879	0.80	0.77	904.7	YES	NO	bb	bb	16.549
4	Total-tetradioxins	25.58	3.144e4	3.961e4	0.879	0.79	0.77	455.5	YES	NO	bd	bb	5.282
5	Total-tetradioxins	24.70	2.921e3	3.709e3	0.879	0.79	0.77	24.9	YES	NO	bb	bb	0.493
6	1368-TCDD	23.49	6.284e4	8.118e4	0.923	0.77	0.77	881.2	YES	NO	bb	bb	10.194

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PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12479-PECDD	28.76	5.659e5	3.513e5	1.843	1.61	1.55	2483.7	YES	NO	bb	bb	54.786
2	12389-PECDD	31.90	3.825e5	2.344e5	1.154	1.63	1.55	2698.3	YES	NO	bb	bb	58.878
3	12378-PeCDD	31.49	3.255e5	2.000e5	0.995	1.63	1.55	2328.0	YES	NO	bb	bb	58.128
4	Total-pentadioxins	30.83	1.357e3	8.892e2	1.331	1.53	1.55	10.3	YES	NO	bb	bb	0.186
5	Total-pentadioxins	30.11	2.298e2	1.550e2	1.331	1.48	1.55	3.1	YES	NO	bb	bb	0.032
6	Total-pentadioxins	29.89	1.090e3	7.187e2	1.331	1.52	1.55	7.7	YES	NO	bb	db	0.150

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.49	3.092e5	2.473e5	0.950	1.25	1.24	2299.0	YES	NO	bb	bb	51.740
2	123678-HxCDD	36.10	3.170e5	2.538e5	1.009	1.25	1.24	2349.8	YES	NO	db	db	49.599
3	123478-HxCDD	35.98	3.095e5	2.557e5	1.027	1.21	1.24	2228.1	YES	NO	bd	bd	49.015
4	124679-HXCDD	33.98	3.455e5	2.794e5	1.125	1.24	1.24	2422.5	YES	NO	bb	bb	49.493

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.25	2.213e5	2.032e5	1.068	1.09	1.05	1857.9	YES	NO	bb	bb	53.788
2	1234679-HPCDD	39.20	2.391e5	2.273e5	1.211	1.05	1.05	2193.7	YES	NO	bb	bb	52.121

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	5.627e4	7.265e4	0.794	0.77	0.77	796.2	YES	NO	bb	bd	10.611
2	2378-TCDD	26.40	6.320e4	8.203e4	0.920	0.77	0.77	852.5	YES	NO	bb	bb	10.313
3	Total-tetradioxins	26.08	9.907e4	1.236e5	0.879	0.80	0.77	904.7	YES	NO	bb	bb	16.549
4	Total-tetradioxins	25.58	3.144e4	3.961e4	0.879	0.79	0.77	455.5	YES	NO	bd	bb	5.282
5	Total-tetradioxins	24.70	2.921e3	3.709e3	0.879	0.79	0.77	24.9	YES	NO	bb	bb	0.493
6	1368-TCDD	23.49	6.284e4	8.118e4	0.923	0.77	0.77	881.2	YES	NO	bb	bb	10.194
7	12479-PECDD	28.76	5.659e5	3.513e5	1.843	1.61	1.55	2483.7	YES	NO	bb	bb	54.786
8	12389-PECDD	31.90	3.825e5	2.344e5	1.154	1.63	1.55	2698.3	YES	NO	bb	bb	58.878
9	12378-PeCDD	31.49	3.255e5	2.000e5	0.995	1.63	1.55	2328.0	YES	NO	bb	bb	58.128
10	Total-pentadioxins	30.83	1.357e3	8.892e2	1.331	1.53	1.55	10.3	YES	NO	bb	bb	0.186
11	Total-pentadioxins	30.11	2.298e2	1.550e2	1.331	1.48	1.55	3.1	YES	NO	bb	bb	0.032
12	Total-pentadioxins	29.89	1.090e3	7.187e2	1.331	1.52	1.55	7.7	YES	NO	bb	db	0.150
13	123789-HxCDD	36.49	3.092e5	2.473e5	0.950	1.25	1.24	2299.0	YES	NO	bb	bb	51.740
14	123678-HxCDD	36.10	3.170e5	2.538e5	1.009	1.25	1.24	2349.8	YES	NO	db	db	49.599
15	123478-HxCDD	35.98	3.095e5	2.557e5	1.027	1.21	1.24	2228.1	YES	NO	bd	bd	49.015
16	124679-HXCDD	33.98	3.455e5	2.794e5	1.125	1.24	1.24	2422.5	YES	NO	bb	bb	49.493
17	OCDD	44.98	3.357e5	3.808e5	1.181	0.88	0.89	2431.5	YES	NO	bb	bb	95.429
18	1234678-HpCDD	40.25	2.213e5	2.032e5	1.068	1.09	1.05	1857.9	YES	NO	bb	bb	53.788
19	1234679-HPCDD	39.20	2.391e5	2.273e5	1.211	1.05	1.05	2193.7	YES	NO	bb	bb	52.121

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	8.304e4	1.057e5	1.043	0.79	0.77	1129.7	YES	NO	bb	bb	9.411
2	Total-tetrafurans	27.11	1.640e3	2.423e3	1.192	0.68	0.77	25.4	YES	NO	bb	bb	0.177
3	2378-TCDF	25.76	8.783e4	1.077e5	1.108	0.82	0.77	1214.2	YES	NO	bb	bb	9.184
4	Total-tetrafurans	24.52	9.034e2	1.073e3	1.192	0.84	0.77	12.5	YES	NO	bd	bb	0.086
5	1368-TCDF	22.22	1.141e5	1.368e5	1.425	0.83	0.77	1660.0	YES	NO	bb	bb	9.157
6	23478-PeCDF	31.26	5.490e5	3.616e5	1.126	1.52	1.55	2963.3	YES	NO	bb	bb	47.352
7	Total-pentafurans	31.09	1.204e3	7.411e2	1.047	1.62	1.55	8.3	YES	NO	bb	bb	0.107
8	12378-PeCDF	29.91	5.211e5	3.444e5	1.015	1.51	1.55	2884.1	YES	NO	bb	bb	48.208
9	Total-pentafurans	28.75	8.799e4	5.789e4	1.047	1.52	1.55	489.8	YES	NO	bb	bb	8.016
10	12389-PECDF	32.30	5.113e5	3.373e5	1.000	1.52	1.55	2675.1	YES	NO	bb	bb	47.993
11	123789-HxCDF	36.92	3.052e5	2.514e5	1.030	1.21	1.24	2564.3	YES	NO	bb	bb	46.274
12	234678-HxCDF	35.88	3.734e5	3.047e5	1.052	1.23	1.24	3098.7	YES	NO	bb	bb	47.621
13	123678-HxCDF	35.01	3.900e5	3.150e5	1.037	1.24	1.24	3122.5	YES	NO	db	db	48.251
14	123478-HxCDF	34.87	3.866e5	3.198e5	1.017	1.21	1.24	3157.9	YES	NO	bd	bd	49.622
15	123468-HXCDF	33.20	4.007e5	3.279e5	1.087	1.22	1.24	3129.5	YES	NO	bb	bb	47.901
16	1234789-HpCDF	41.00	2.784e5	2.629e5	1.283	1.06	1.05	2251.0	YES	NO	bb	bb	49.041
17	Total-heptafurans	39.02	8.509e1	7.562e1	1.305	1.13	1.05	2.2	NO	NO	bb	bb	0.013
18	1234678-HpCDF	38.74	3.577e5	3.399e5	1.327	1.05	1.05	3212.6	YES	NO	bb	bb	49.095
19	OCDF	45.22	3.731e5	4.115e5	1.447	0.91	0.89	2810.9	YES	NO	bb	bb	85.291
20	13468-PECDF	27.09	6.999e5	4.606e5	1.376	1.52	1.55	10412.1	YES	NO	bb	bb	47.669
21	1289-TCDD	27.00	5.627e4	7.265e4	0.794	0.77	0.77	796.2	YES	NO	bb	bd	10.611
22	2378-TCDD	26.40	6.320e4	8.203e4	0.920	0.77	0.77	852.5	YES	NO	bb	bb	10.313
23	Total-tetradioxins	26.08	9.907e4	1.236e5	0.879	0.80	0.77	904.7	YES	NO	bb	bb	16.549
24	Total-tetradioxins	25.58	3.144e4	3.961e4	0.879	0.79	0.77	455.5	YES	NO	bd	bb	5.282
25	Total-tetradioxins	24.70	2.921e3	3.709e3	0.879	0.79	0.77	24.9	YES	NO	bb	bb	0.493
26	1368-TCDD	23.49	6.284e4	8.118e4	0.923	0.77	0.77	881.2	YES	NO	bb	bb	10.194
27	12479-PECDD	28.76	5.659e5	3.513e5	1.843	1.61	1.55	2483.7	YES	NO	bb	bb	54.786
28	12389-PECDD	31.90	3.825e5	2.344e5	1.154	1.63	1.55	2698.3	YES	NO	bb	bb	58.878
29	12378-PeCDD	31.49	3.255e5	2.000e5	0.995	1.63	1.55	2328.0	YES	NO	bb	bb	58.128
30	Total-pentadioxins	30.83	1.357e3	8.892e2	1.331	1.53	1.55	10.3	YES	NO	bb	bb	0.186
31	Total-pentadioxins	30.11	2.298e2	1.550e2	1.331	1.48	1.55	3.1	YES	NO	bb	bb	0.032
32	Total-pentadioxins	29.89	1.090e3	7.187e2	1.331	1.52	1.55	7.7	YES	NO	bb	db	0.150
33	123789-HxCDD	36.49	3.092e5	2.473e5	0.950	1.25	1.24	2299.0	YES	NO	bb	bb	51.740
34	123678-HxCDD	36.10	3.170e5	2.538e5	1.009	1.25	1.24	2349.8	YES	NO	db	db	49.599
35	123478-HxCDD	35.98	3.095e5	2.557e5	1.027	1.21	1.24	2228.1	YES	NO	bd	bd	49.015
36	124679-HXCDD	33.98	3.455e5	2.794e5	1.125	1.24	1.24	2422.5	YES	NO	bb	bb	49.493
37	OCDD	44.98	3.357e5	3.808e5	1.181	0.88	0.89	2431.5	YES	NO	bb	bb	95.429

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1234678-HpCDD	40.25	2.213e5	2.032e5	1.068	1.09	1.05	1857.9	YES	NO	bb	bb	53.788
39	1234679-HPCDD	39.20	2.391e5	2.273e5	1.211	1.05	1.05	2193.7	YES	NO	bb	bb	52.121

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.22	2.149e4					1.3	NO		dd		
2	FUNCTION1 PFK	21.13	8.196e4					2.5	NO		bd		
3	FUNCTION1 PFK	24.40	1.630e5					2.5	NO		bb		
4	FUNCTION1 PFK	24.22	6.616e4					1.7	NO		bb		
5	FUNCTION1 PFK	24.14	3.290e4					1.6	NO		bb		
6	FUNCTION1 PFK	23.60	3.297e4					1.7	NO		db		
7	FUNCTION1 PFK	23.55	5.281e4					1.5	NO		bd		
8	FUNCTION1 PFK	23.43	6.799e4					1.2	NO		bb		
9	FUNCTION1 PFK	23.33	4.491e3					0.5	NO		bb		
10	FUNCTION1 PFK	23.08	4.785e4					1.5	NO		db		
11	FUNCTION1 PFK	23.02	2.176e4					1.1	NO		bd		
12	FUNCTION1 PFK	22.95	4.937e3					0.5	NO		bb		
13	FUNCTION1 PFK	22.50	4.424e3					0.5	NO		bb		
14	FUNCTION1 PFK	22.40	6.609e4					1.2	NO		bb		
15	FUNCTION1 PFK	22.30	3.140e3					0.3	NO		bb		
16	FUNCTION1 PFK	22.16	3.932e3					0.4	NO		bb		
17	FUNCTION1 PFK	21.45	7.511e4					1.7	NO		db		
18	FUNCTION1 PFK	21.39	1.542e5					1.8	NO		dd		
19	FUNCTION1 PFK	26.92	1.014e5					2.0	NO		bb		
20	FUNCTION1 PFK	26.67	2.120e4					1.0	NO		bb		
21	FUNCTION1 PFK	26.55	5.198e4					0.8	NO		bb		
22	FUNCTION1 PFK	25.90	3.338e3					0.4	NO		bb		
23	FUNCTION1 PFK	25.82	5.162e4					1.0	NO		bb		
24	FUNCTION1 PFK	25.70	5.960e4					1.8	NO		db		
25	FUNCTION1 PFK	25.59	5.049e4					1.2	NO		bd		
26	FUNCTION1 PFK	25.25	5.154e3					0.5	NO		db		
27	FUNCTION1 PFK	25.17	1.000e5					2.3	NO		dd		
28	FUNCTION1 PFK	25.11	7.195e4					2.4	NO		dd		
29	FUNCTION1 PFK	25.05	3.667e4					1.7	NO		bd		
30	FUNCTION1 PFK	24.96	9.617e4					2.2	NO		db		
31	FUNCTION1 PFK	24.87	3.404e4					1.7	NO		dd		
32	FUNCTION1 PFK	24.79	7.282e4					1.6	NO		bd		
33	FUNCTION1 PFK	24.60	7.313e3					0.5	NO		bb		
34	FUNCTION1 PFK	24.54	5.193e4					1.2	NO		bb		
35	FUNCTION1 PFK	27.98	1.955e4					1.1	NO		bb		
36	FUNCTION1 PFK	27.89	2.180e4					1.0	NO		bb		
37	FUNCTION1 PFK	27.68	3.131e3					0.3	NO		bb		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	27.62	5.808e3					0.6	NO		bb		
39	FUNCTION1 PFK	27.00	7.316e3					0.5	NO		bb		

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PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	29.17	6.495e5					40.9	YES		dd		0.000
2	FUNCTION2 PFK	29.13	1.565e6					42.7	YES		dd		0.000
3	FUNCTION2 PFK	28.90	4.347e6					51.3	YES		dd		0.000
4	FUNCTION2 PFK	28.78	8.774e5					55.0	YES		dd		0.000
5	FUNCTION2 PFK	28.73	9.131e5					57.5	YES		dd		0.000
6	FUNCTION2 PFK	28.68	2.149e6					58.9	YES		dd		0.000
7	FUNCTION2 PFK	28.48	3.610e6					66.4	YES		dd		0.000
8	FUNCTION2 PFK	28.36	5.109e6					71.0	YES		dd		0.000
9	FUNCTION2 PFK	28.24	1.192e6					74.4	YES		dd		0.000
10	FUNCTION2 PFK	28.19	2.402e6					75.9	YES		bd		0.000
11	FUNCTION2 PFK	30.90	2.908e4					1.6	NO		dd		0.000
12	FUNCTION2 PFK	30.87	8.752e3					1.1	NO		bd		0.000
13	FUNCTION2 PFK	30.80	8.379e3					0.8	NO		bb		0.000
14	FUNCTION2 PFK	30.76	2.698e4					2.3	NO		db		0.000
15	FUNCTION2 PFK	30.68	3.789e4					2.1	NO		dd		0.000
16	FUNCTION2 PFK	30.61	1.493e4					1.0	NO		bd		0.000
17	FUNCTION2 PFK	30.53	4.650e3					0.7	NO		bb		0.000
18	FUNCTION2 PFK	30.42	3.046e3					0.5	NO		bb		0.000
19	FUNCTION2 PFK	30.38	2.902e3					0.5	NO		bb		0.000
20	FUNCTION2 PFK	30.32	3.117e3					0.5	NO		bb		0.000
21	FUNCTION2 PFK	30.19	1.740e5					3.6	YES		db		0.000
22	FUNCTION2 PFK	29.91	1.042e6					13.7	YES		dd		0.000
23	FUNCTION2 PFK	29.81	2.687e5					17.5	YES		dd		0.000
24	FUNCTION2 PFK	29.69	2.301e6					22.2	YES		dd		0.000
25	FUNCTION2 PFK	29.44	1.593e6					30.9	YES		dd		0.000
26	FUNCTION2 PFK	29.30	2.335e6					36.6	YES		dd		0.000
27	FUNCTION2 PFK	32.62	3.485e4					1.7	NO		db		0.000
28	FUNCTION2 PFK	32.54	4.603e4					2.7	NO		bd		0.000
29	FUNCTION2 PFK	32.47	2.612e4					2.4	NO		db		0.000
30	FUNCTION2 PFK	32.43	8.045e4					2.4	NO		dd		0.000
31	FUNCTION2 PFK	32.28	5.994e3					0.8	NO		bd		0.000
32	FUNCTION2 PFK	32.15	2.108e4					1.5	NO		bb		0.000
33	FUNCTION2 PFK	32.04	3.492e4					1.6	NO		bb		0.000
34	FUNCTION2 PFK	31.87	1.066e4					1.2	NO		bb		0.000
35	FUNCTION2 PFK	31.75	2.494e4					1.5	NO		db		0.000
36	FUNCTION2 PFK	31.68	2.517e4					1.1	NO		bd		0.000
37	FUNCTION2 PFK	31.37	3.133e4					1.7	NO		db		0.000

ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION2 PFK	31.32	9.413e3					1.0	NO		bd		0.000
39	FUNCTION2 PFK	31.28	4.208e4					2.1	NO		db		0.000
40	FUNCTION2 PFK	31.21	1.204e4					1.3	NO		dd		0.000
41	FUNCTION2 PFK	31.08	5.459e4					1.6	NO		bd		0.000
42	FUNCTION2 PFK	30.97	1.054e4					1.1	NO		db		0.000
43	FUNCTION2 PFK	32.75	1.331e3					0.3	NO		bb		0.000

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.20	2.367e4					2.1	NO		bb		0.000
2	FUNCTION3 PFK	35.61	4.253e3					0.9	NO		bb		0.000
3	FUNCTION3 PFK	33.43	8.049e4					3.7	YES		bb		0.000

ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.08	9.806e3					1.4	NO		bb		
2	FUNCTION4 PFK	38.91	1.185e4					1.2	NO		db		
3	FUNCTION4 PFK	38.86	5.333e3					0.7	NO		bd		
4	FUNCTION4 PFK	38.74	1.245e4					1.7	NO		bb		
5	FUNCTION4 PFK	38.69	2.191e4					1.9	NO		db		
6	FUNCTION4 PFK	38.61	6.236e3					0.8	NO		bd		
7	FUNCTION4 PFK	38.28	2.095e4					2.0	NO		db		
8	FUNCTION4 PFK	38.22	2.647e4					2.5	NO		dd		
9	FUNCTION4 PFK	38.14	7.979e4					3.4	YES		dd		
10	FUNCTION4 PFK	38.06	5.702e4					2.5	NO		bd		
11	FUNCTION4 PFK	40.43	9.177e3					1.1	NO		dd		
12	FUNCTION4 PFK	40.37	1.108e4					1.3	NO		dd		
13	FUNCTION4 PFK	40.34	1.137e4					1.2	NO		dd		
14	FUNCTION4 PFK	40.28	7.973e4					2.1	NO		bd		
15	FUNCTION4 PFK	40.10	3.717e4					2.3	NO		db		
16	FUNCTION4 PFK	40.05	1.116e4					1.3	NO		bd		
17	FUNCTION4 PFK	39.93	1.491e4					1.5	NO		bb		
18	FUNCTION4 PFK	39.75	3.186e3					0.5	NO		bb		
19	FUNCTION4 PFK	39.67	3.770e3					0.7	NO		bb		
20	FUNCTION4 PFK	39.52	2.060e3					0.4	NO		bb		
21	FUNCTION4 PFK	39.42	1.205e3					0.4	NO		bb		
22	FUNCTION4 PFK	39.37	9.124e3					1.0	NO		db		
23	FUNCTION4 PFK	39.32	4.979e3					0.7	NO		bd		
24	FUNCTION4 PFK	39.28	1.624e3					0.5	NO		bb		
25	FUNCTION4 PFK	39.22	2.145e4					1.1	NO		bb		
26	FUNCTION4 PFK	39.12	5.102e3					0.8	NO		bb		
27	FUNCTION4 PFK	42.58	2.038e4					1.6	NO		bd		
28	FUNCTION4 PFK	42.40	5.763e3					0.9	NO		bb		
29	FUNCTION4 PFK	42.30	8.247e3					0.9	NO		bb		
30	FUNCTION4 PFK	42.20	1.221e4					1.0	NO		db		
31	FUNCTION4 PFK	42.08	2.313e4					1.4	NO		bd		
32	FUNCTION4 PFK	42.00	4.776e3					0.8	NO		bb		
33	FUNCTION4 PFK	41.74	2.479e4					1.6	NO		bb		
34	FUNCTION4 PFK	41.64	1.856e4					1.5	NO		bb		
35	FUNCTION4 PFK	41.53	4.678e3					0.6	NO		bb		
36	FUNCTION4 PFK	41.35	9.914e3					1.1	NO		db		
37	FUNCTION4 PFK	41.22	2.725e4					1.2	NO		bd		

ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION4 PFK	40.98	1.357e4					1.2	NO		db		
39	FUNCTION4 PFK	40.93	2.974e3					0.5	NO		bd		
40	FUNCTION4 PFK	40.71	4.980e3					0.7	NO		db		
41	FUNCTION4 PFK	40.61	2.179e4					1.3	NO		bd		
42	FUNCTION4 PFK	40.47	4.551e3					0.7	NO		db		
43	FUNCTION4 PFK	42.93	1.828e3					0.6	NO		bb		
44	FUNCTION4 PFK	42.90	5.035e3					0.5	NO		bb		
45	FUNCTION4 PFK	42.61	6.975e3					1.2	NO		db		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.66	1.214e4					1.9	NO		bb		
2	FUNCTION5 PFK	45.22	6.081e3					1.6	NO		bb		
3	FUNCTION5 PFK	45.01	5.960e3					1.8	NO		bb		
4	FUNCTION5 PFK	44.70	9.070e3					2.2	NO		bb		
5	FUNCTION5 PFK	44.52	1.962e3					0.8	NO		bb		
6	FUNCTION5 PFK	43.36	1.796e3					0.8	NO		bb		
7	FUNCTION5 PFK	43.22	1.412e4					2.9	NO		db		
8	FUNCTION5 PFK	43.19	7.876e3					2.5	NO		bd		
9	FUNCTION5 PFK	43.16	3.285e3					1.2	NO		db		
10	FUNCTION5 PFK	43.13	2.211e3					1.2	NO		bd		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	22.57	1.316e2					4.4	YES		bb		0.000
2	FUNCTION1 HXCD...	26.73	7.636e1					2.4	NO		bb		0.000
3	FUNCTION1 HXCD...	26.35	1.316e2					3.2	YES		bb		0.000
4	FUNCTION1 HXCD...	25.76	8.061e1					2.1	NO		bb		0.000
5	FUNCTION1 HXCD...	24.64	1.145e2					2.4	NO		bb		0.000
6	FUNCTION1 HXCD...	23.40	2.404e2					5.5	YES		bb		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	26.85	1.035e2					1.7	NO		bb		0.000
2	FUNCTION1 HPCD...	26.73	1.171e2					1.7	NO		bb		0.000
3	FUNCTION1 HPCD...	25.82	1.040e2					1.7	NO		bb		0.000
4	FUNCTION1 HPCD...	24.64	7.626e1					1.0	NO		bb		0.000
5	FUNCTION1 HPCD...	24.48	7.647e1					1.4	NO		bb		0.000
6	FUNCTION1 HPCD...	23.40	1.125e2					2.2	NO		bb		0.000
7	FUNCTION1 HPCD...	22.59	1.191e2					1.9	NO		bb		0.000
8	FUNCTION1 HPCD...	22.19	7.983e1					1.1	NO		bb		0.000
9	FUNCTION1 HPCD...	21.51	7.265e1					1.8	NO		bb		0.000
10	FUNCTION1 HPCD...	21.15	2.470e2					3.2	YES		bb		0.000
11	FUNCTION1 HPCD...	27.27	2.387e2					1.8	NO		bb		0.000
12	FUNCTION1 HPCD...	27.11	9.925e1					1.3	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.31	7.055e1					1.2	NO		db		0.000
2	FUNCTION2 HPCD...	31.22	1.547e2					1.8	NO		bd		0.000
3	FUNCTION2 HPCD...	31.09	4.244e2					3.8	YES		bb		0.000
4	FUNCTION2 HPCD...	30.85	1.658e2					3.8	YES		bb		0.000
5	FUNCTION2 HPCD...	30.50	1.661e2					2.8	NO		bb		0.000
6	FUNCTION2 HPCD...	30.34	1.196e2					1.5	NO		bb		0.000
7	FUNCTION2 HPCD...	30.11	1.453e2					2.8	NO		bb		0.000
8	FUNCTION2 HPCD...	29.97	1.133e2					1.8	NO		db		0.000
9	FUNCTION2 HPCD...	29.91	2.098e2					1.8	NO		dd		0.000
10	FUNCTION2 HPCD...	29.83	2.284e2					4.1	YES		bd		0.000
11	FUNCTION2 HPCD...	29.66	1.120e2					2.5	NO		bb		0.000
12	FUNCTION2 HPCD...	29.15	8.403e1					1.7	NO		bb		0.000
13	FUNCTION2 HPCD...	28.82	1.229e2					1.7	NO		bb		0.000
14	FUNCTION2 HPCD...	32.48	7.753e1					0.8	NO		db		0.000
15	FUNCTION2 HPCD...	32.38	1.603e2					2.0	NO		dd		0.000
16	FUNCTION2 HPCD...	32.29	9.283e1					1.2	NO		bd		0.000
17	FUNCTION2 HPCD...	32.14	2.250e2					2.4	NO		bb		0.000
18	FUNCTION2 HPCD...	31.93	1.556e2					2.1	NO		db		0.000
19	FUNCTION2 HPCD...	31.87	1.122e2					1.2	NO		bd		0.000
20	FUNCTION2 HPCD...	31.50	2.206e2					2.1	NO		db		0.000
21	FUNCTION2 HPCD...	31.40	1.774e2					2.3	NO		bd		0.000

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ID: CS3P8, Name: 21091123, Date: 12-Sep-2021, Time: 04:36:01, Conditions: AUTOSPEC01, User: pk

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.48	2.954e2					6.1	YES		bb		0.000
2	FUNCTION3 OCDPE	36.09	2.192e2					5.3	YES		db		0.000
3	FUNCTION3 OCDPE	35.97	2.307e2					5.4	YES		bd		0.000
4	FUNCTION3 OCDPE	33.95	7.747e1					1.8	NO		bb		0.000
5	FUNCTION3 OCDPE	33.04	7.452e1					4.4	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.81	7.042e1					2.1	NO		bb		0.000
2	FUNCTION4 NCDPE	42.87	8.347e1					2.1	NO		bb		0.000
3	FUNCTION4 NCDPE	39.31	1.112e2					3.1	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.80	7.149e1					2.3	NO		bb		0.000
2	FUNCTION5 DCDPE	44.30	7.951e1					2.2	NO		bb		0.000

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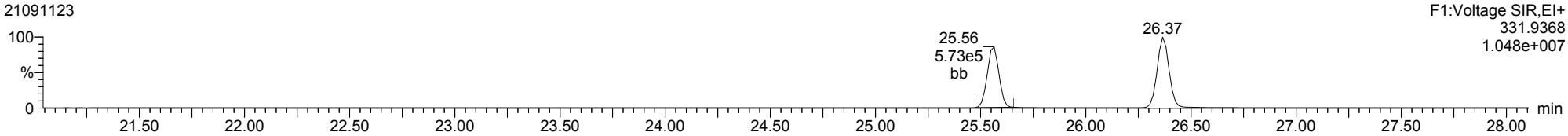

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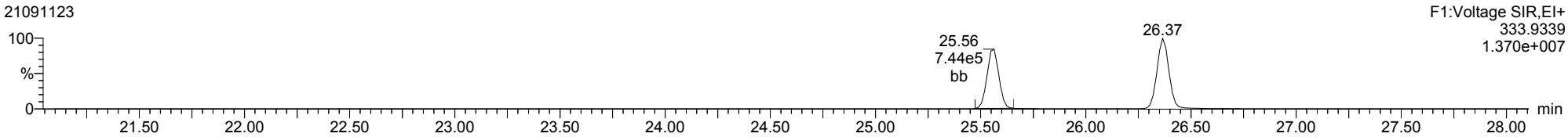

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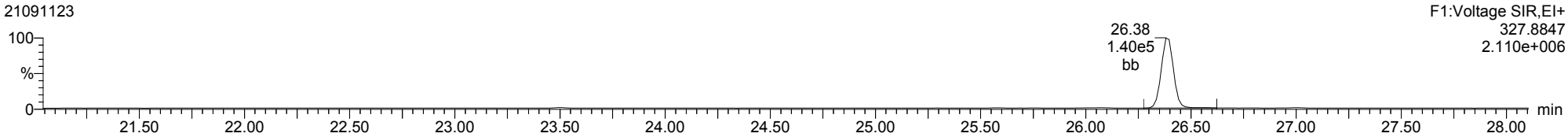

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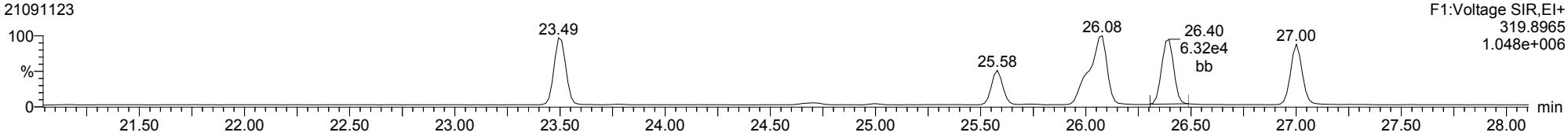

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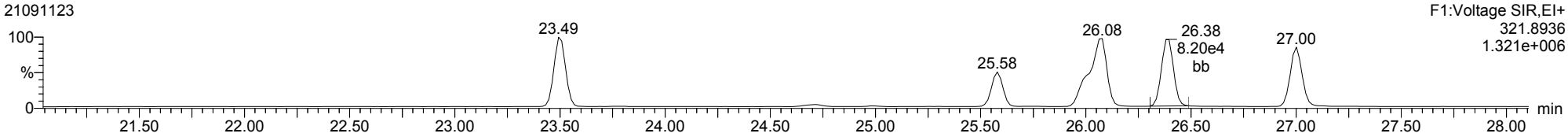

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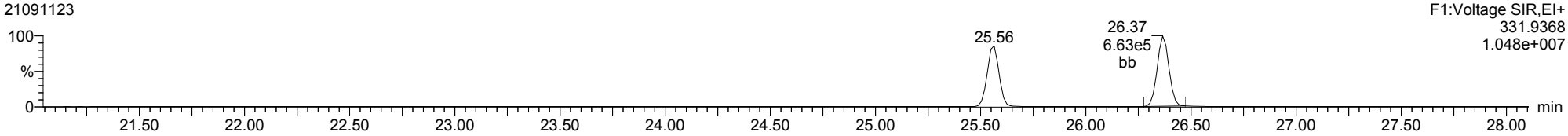

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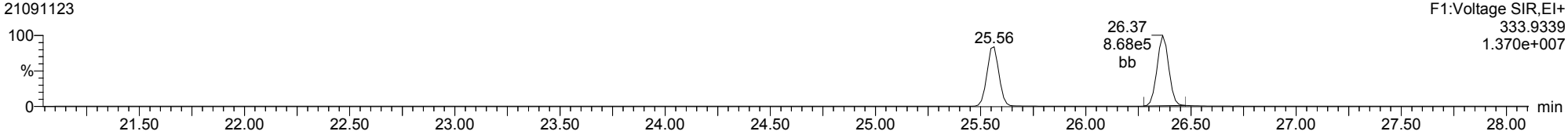

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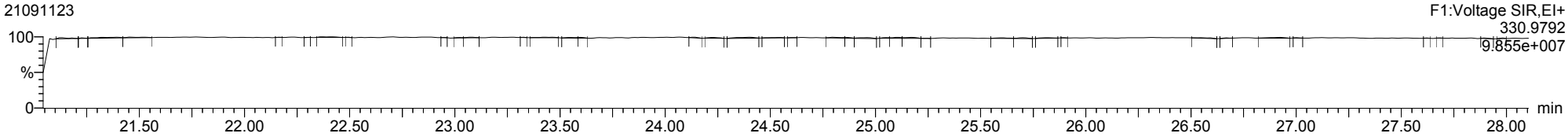

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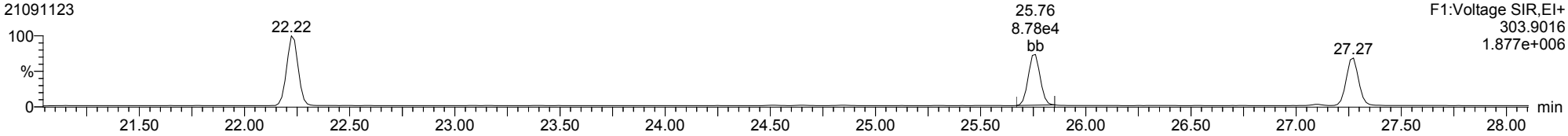

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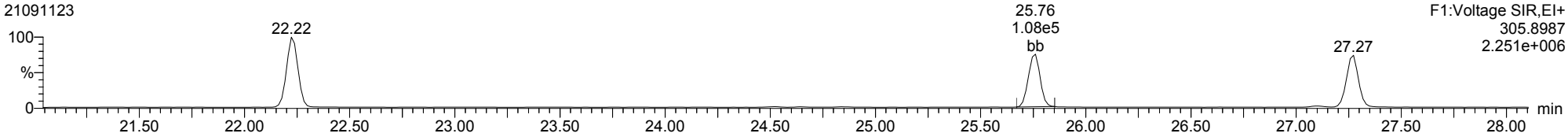

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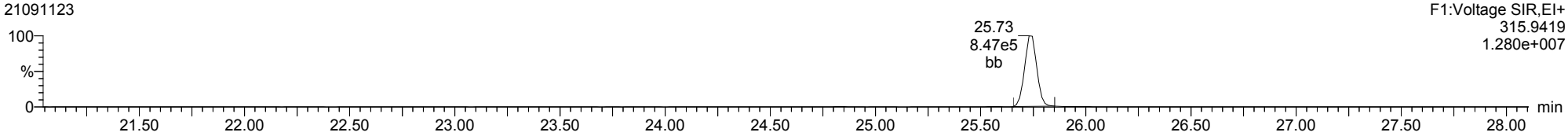

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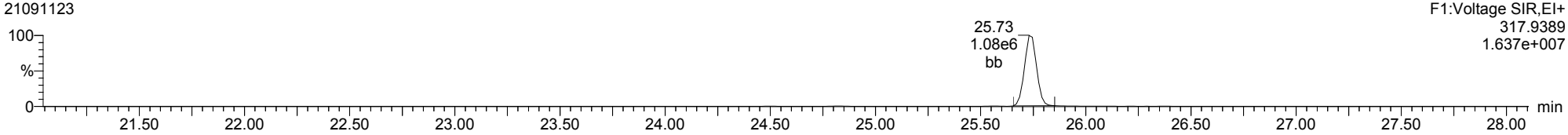

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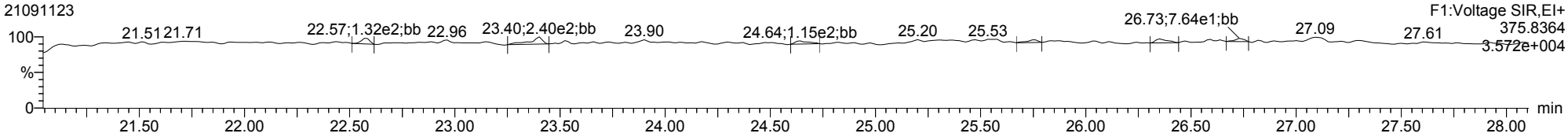

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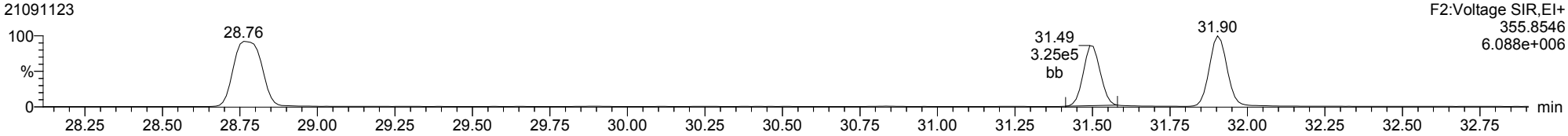

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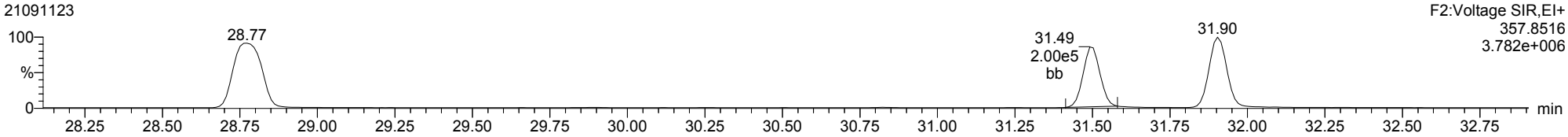

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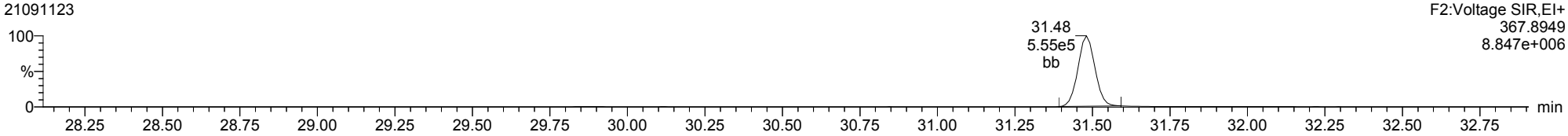

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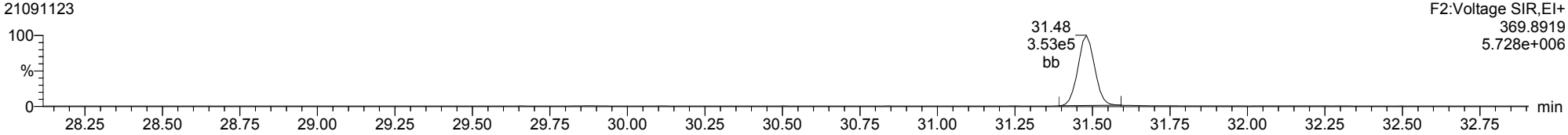

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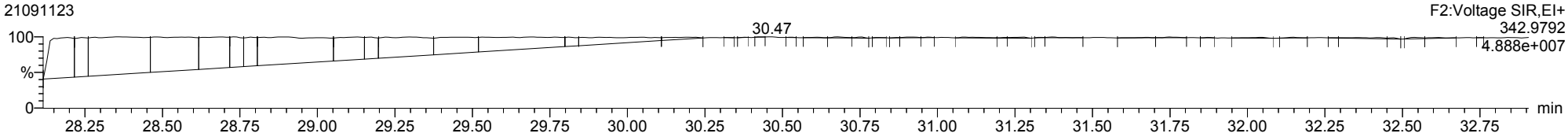

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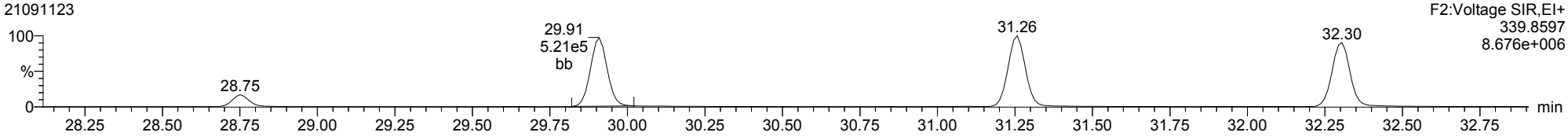
12378-PeCDF



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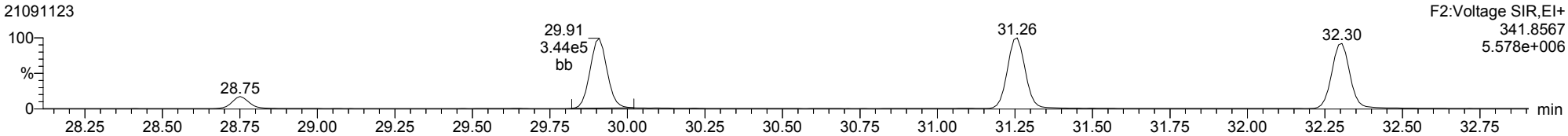

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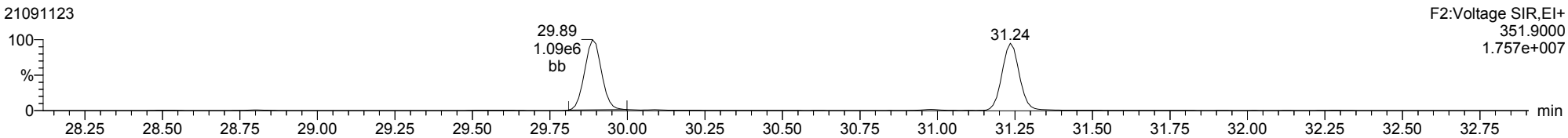

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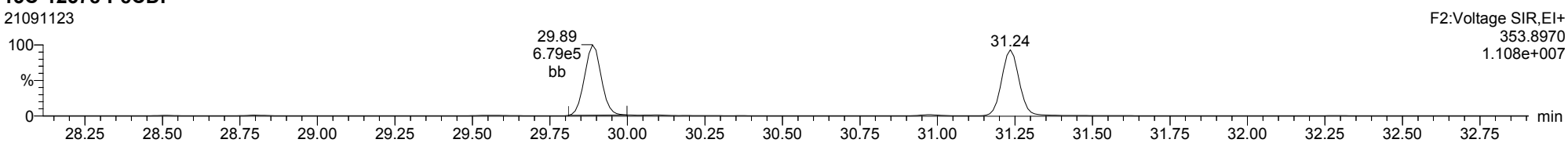

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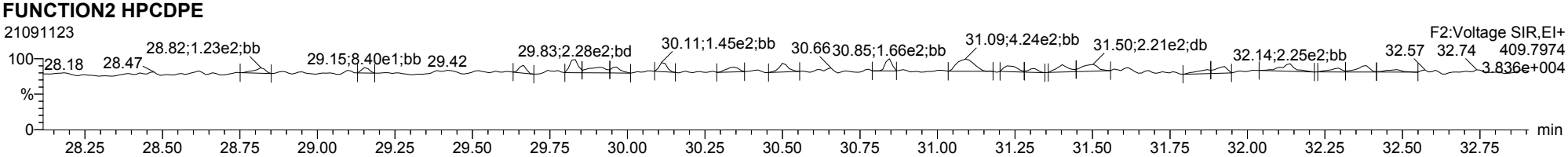

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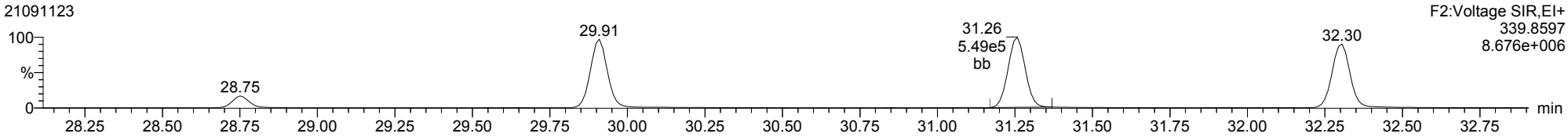

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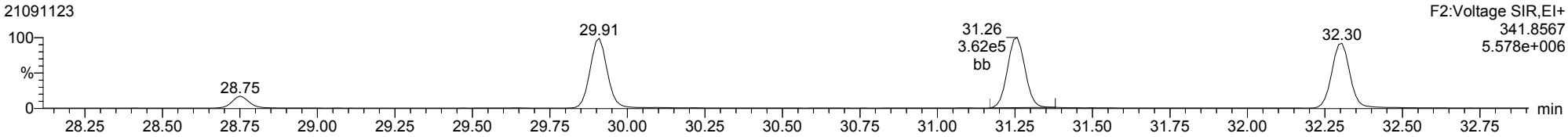

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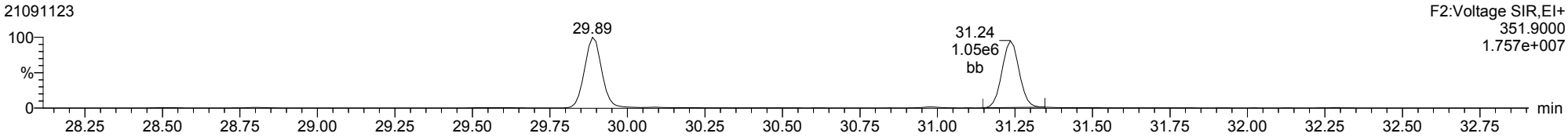

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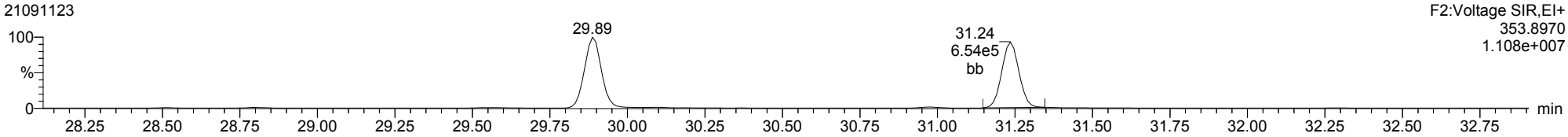

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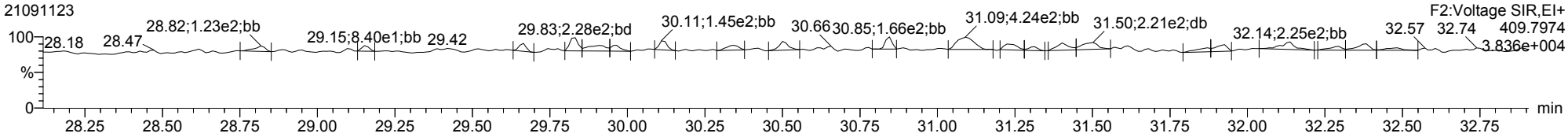

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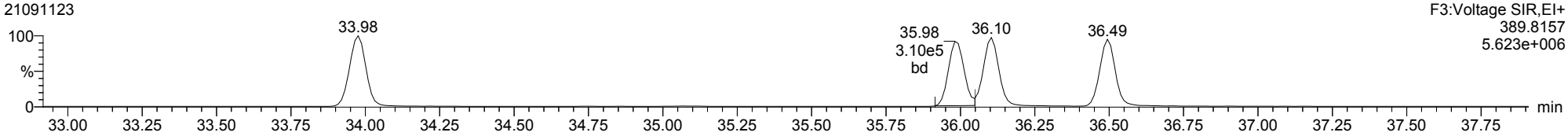

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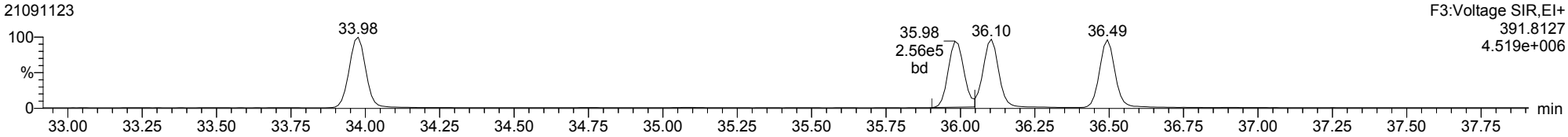

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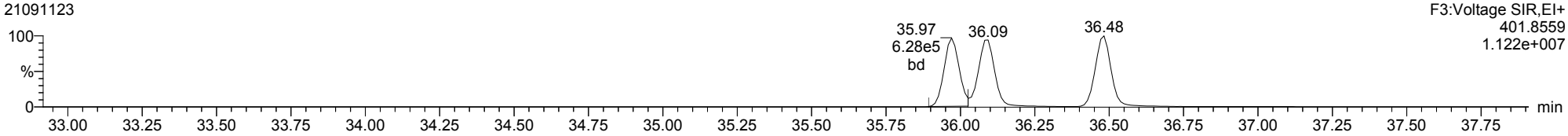

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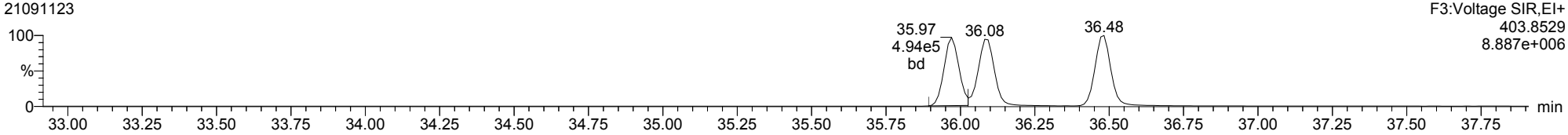

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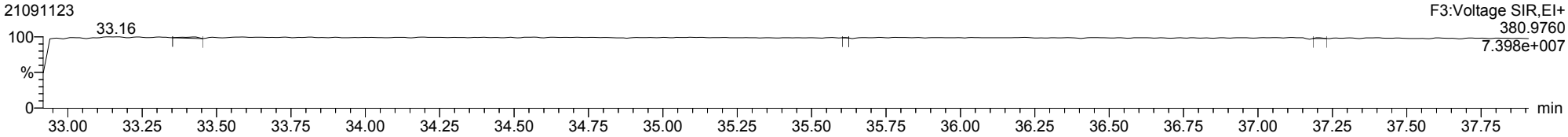

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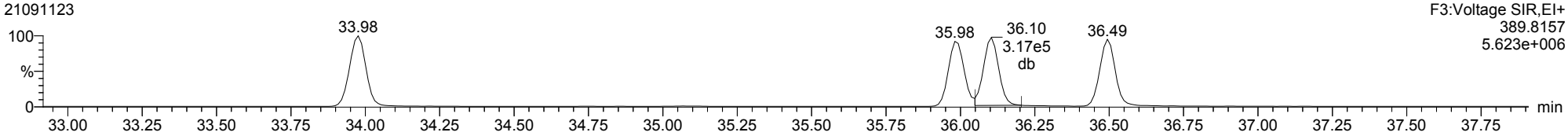

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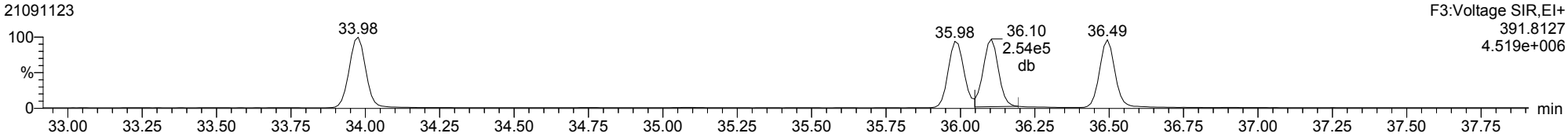

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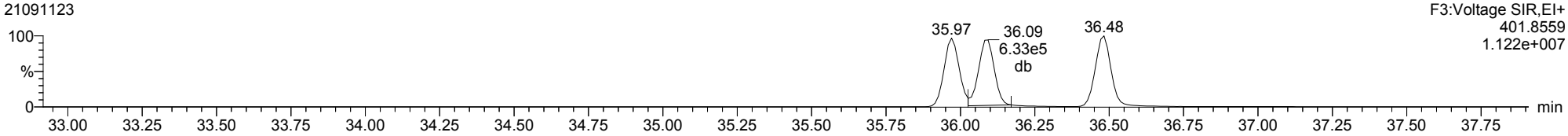

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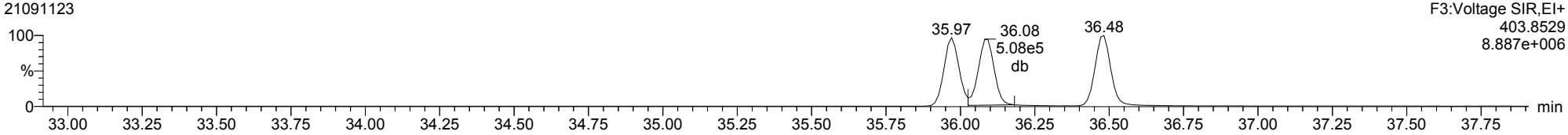

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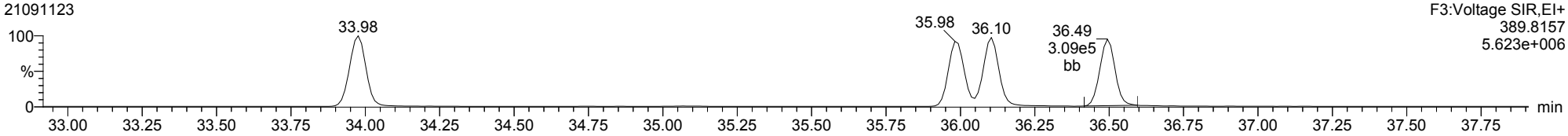

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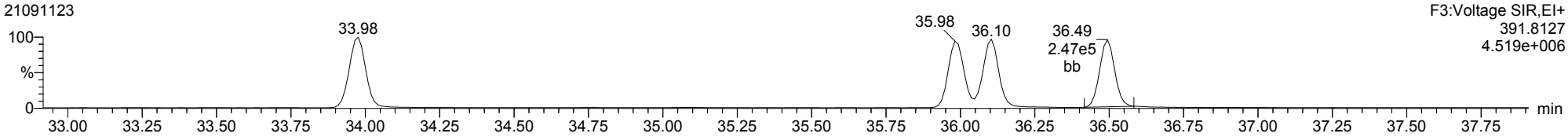

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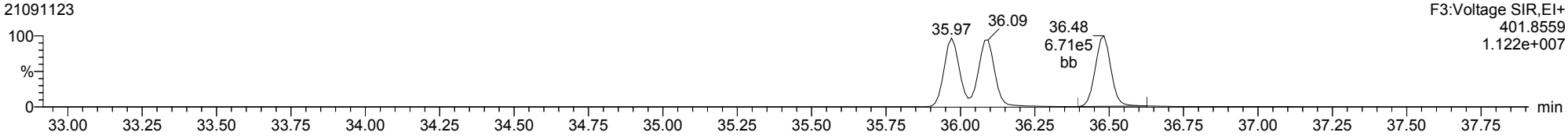

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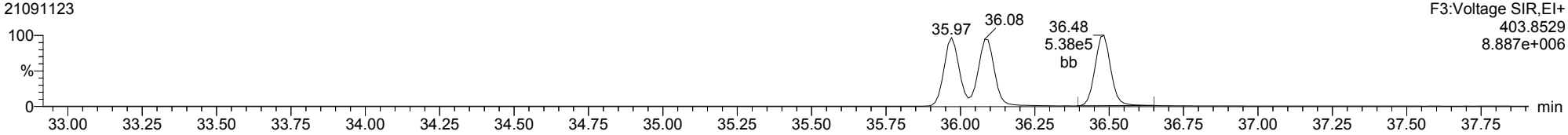

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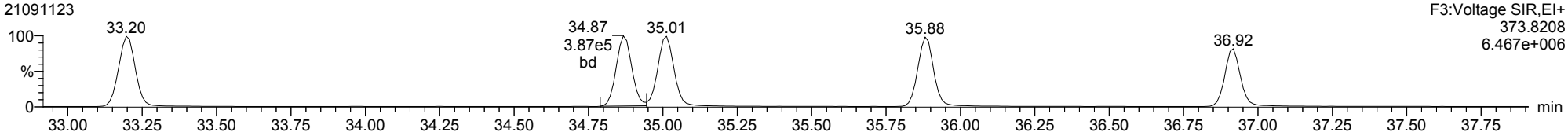

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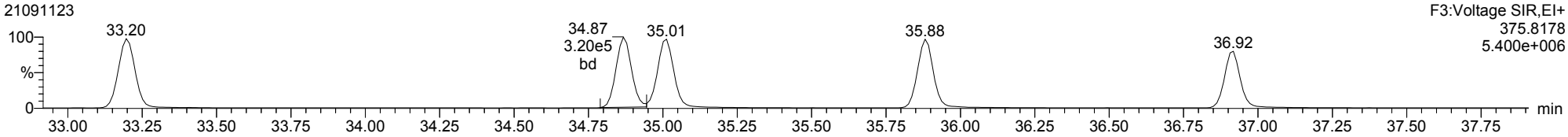

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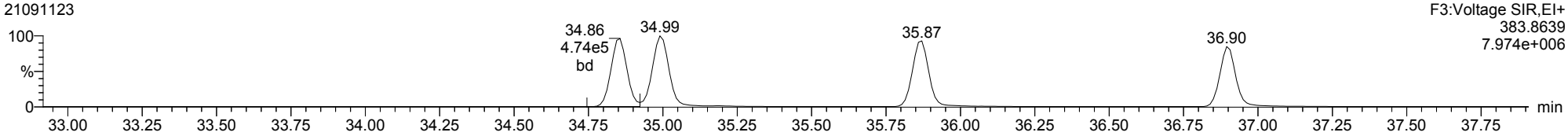

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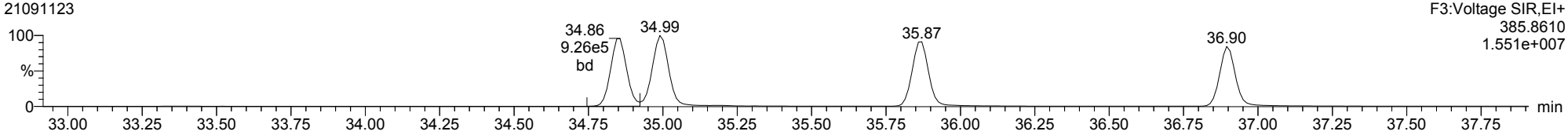

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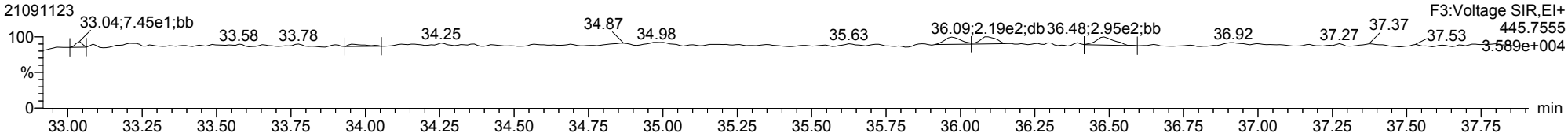

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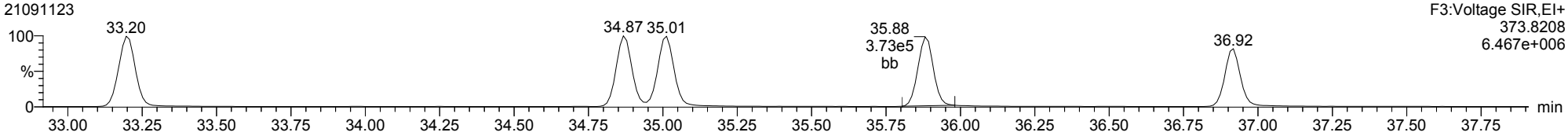

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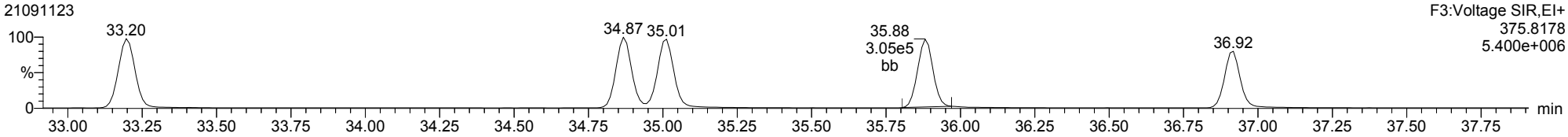

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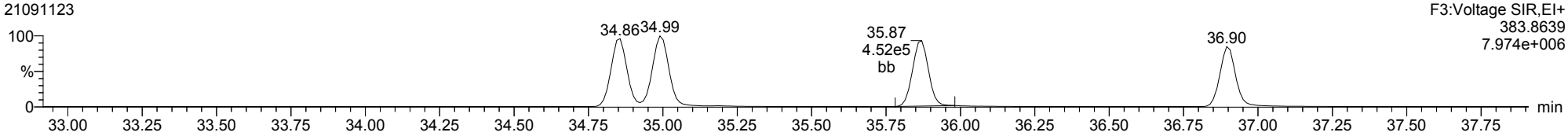

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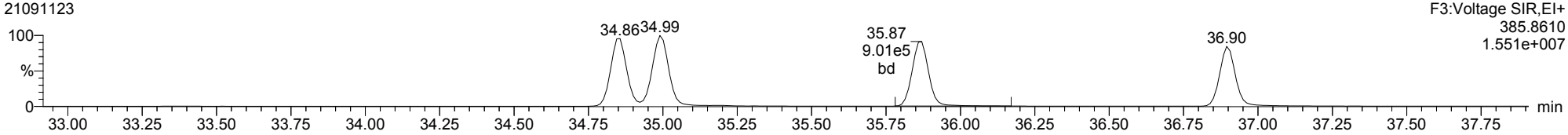

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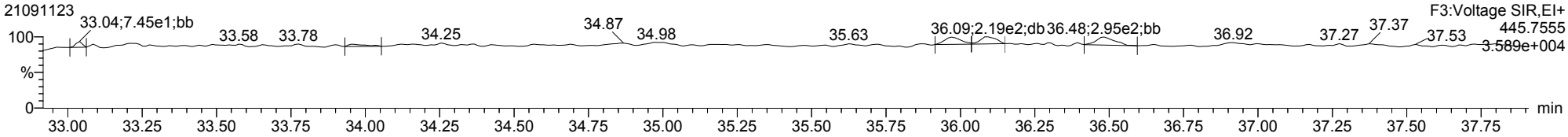

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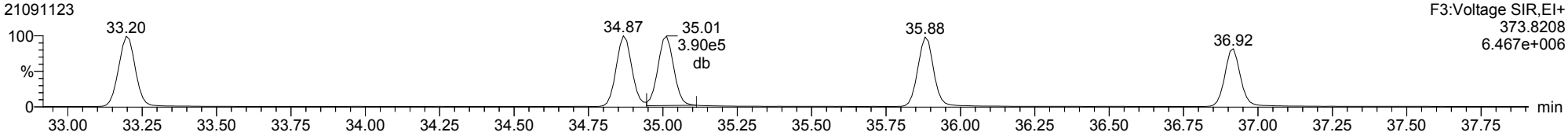

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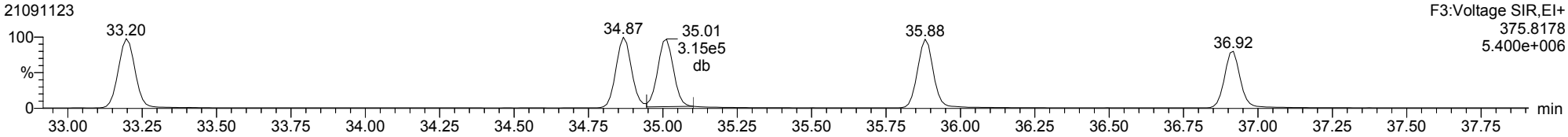

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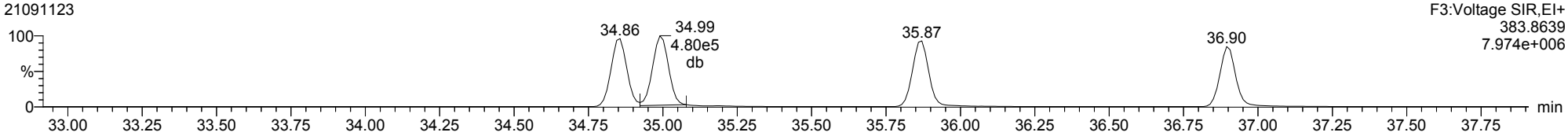

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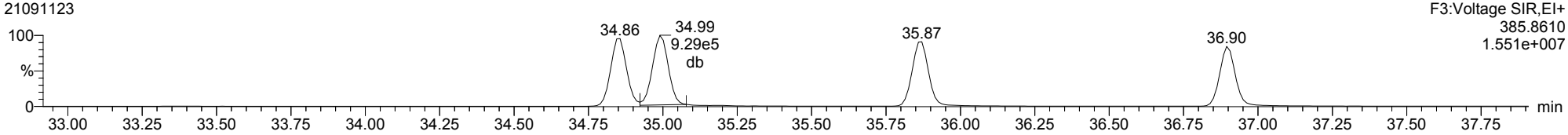

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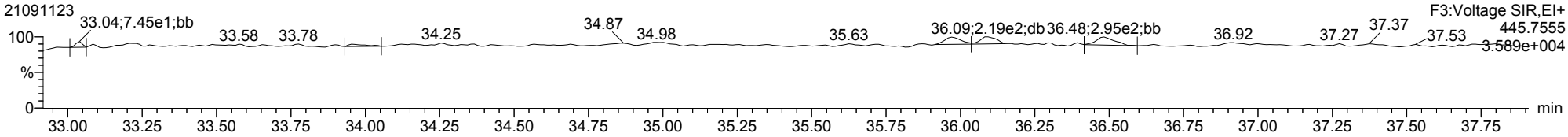

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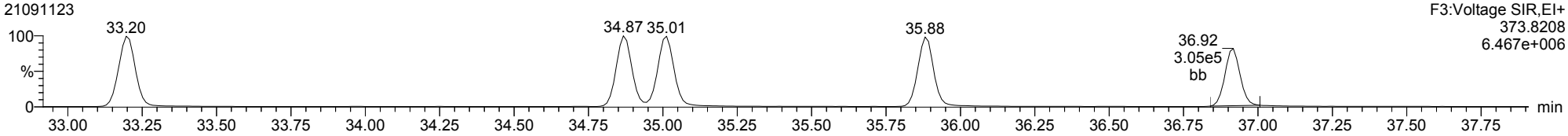

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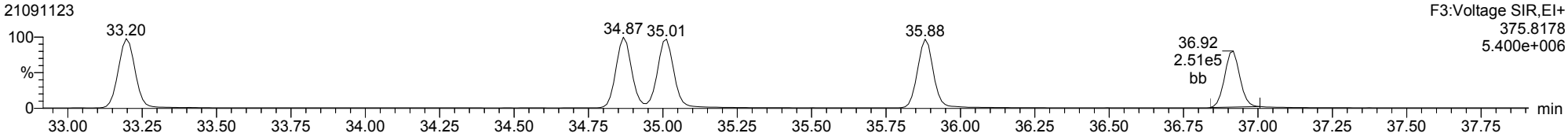

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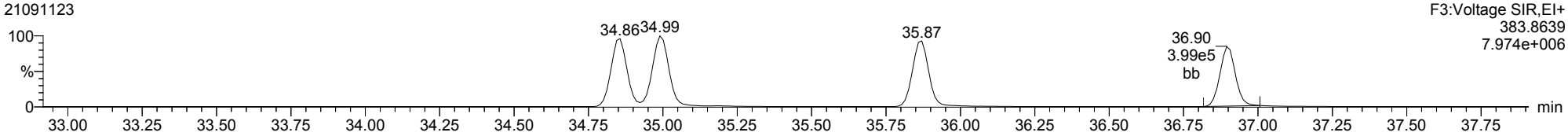

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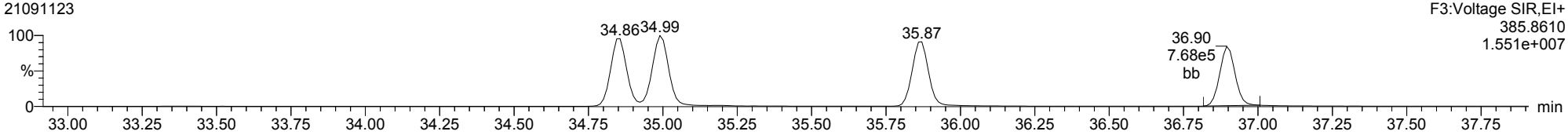

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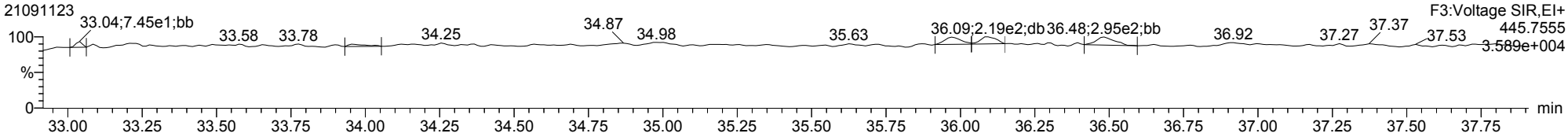

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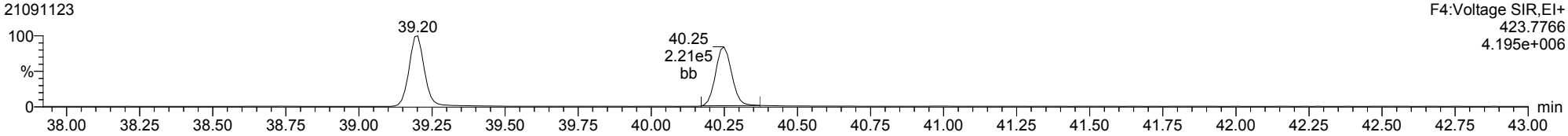

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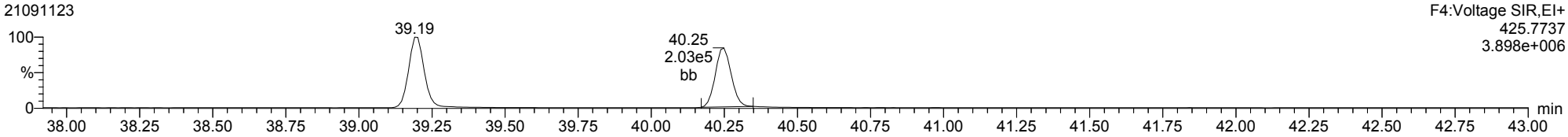

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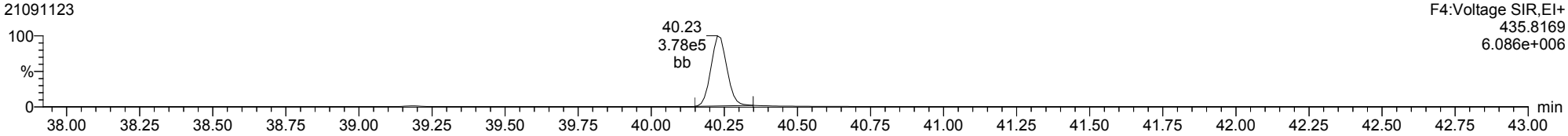

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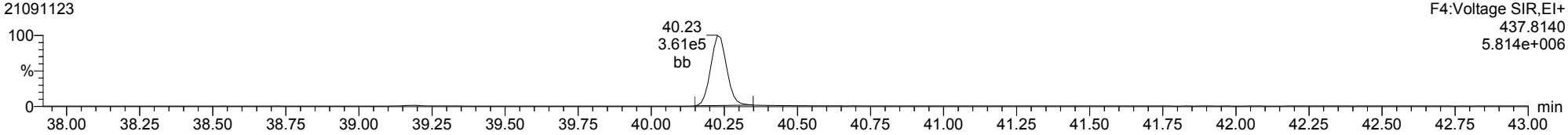

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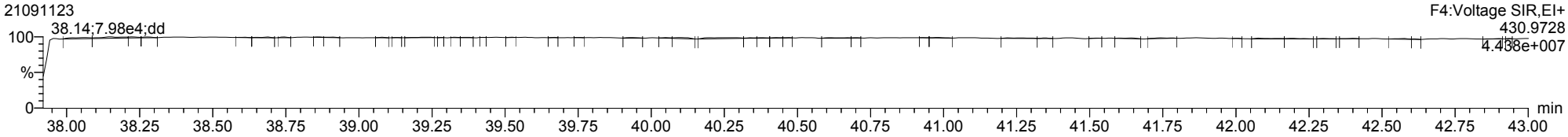

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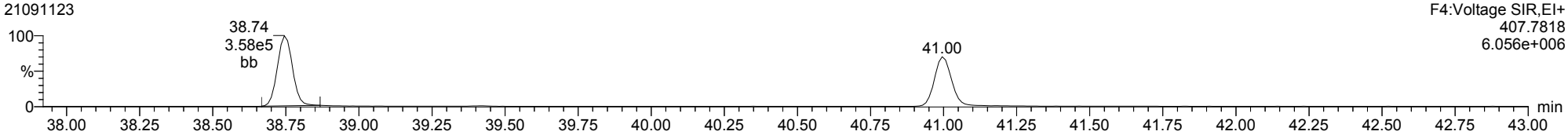

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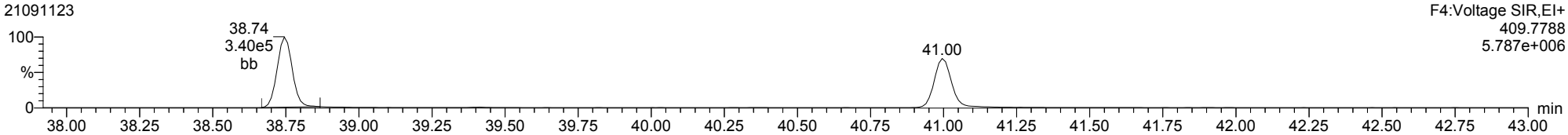

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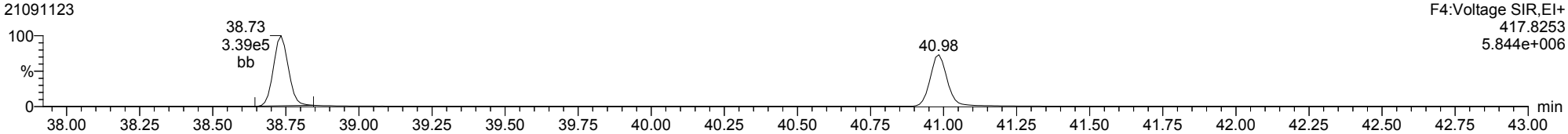

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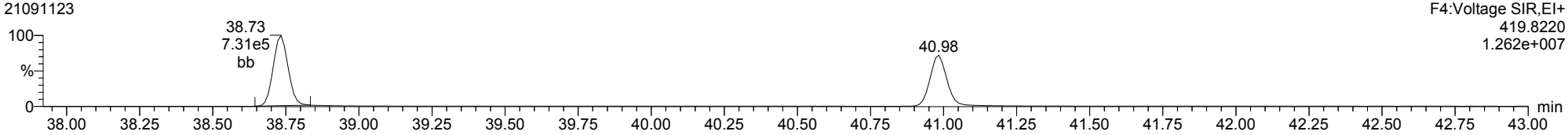

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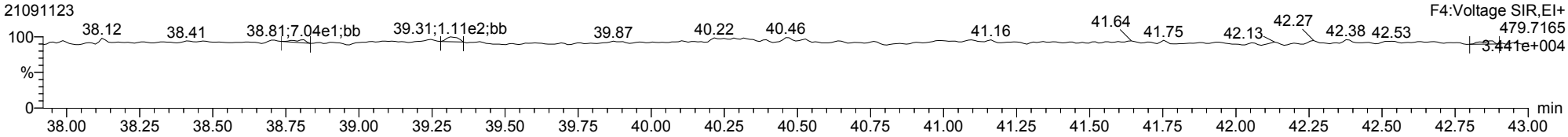

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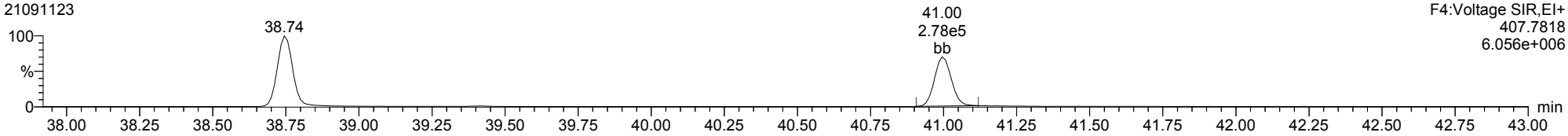

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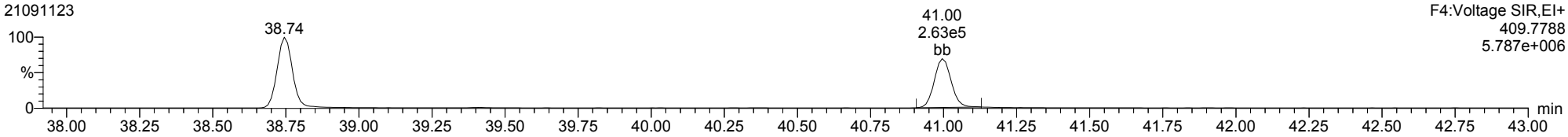

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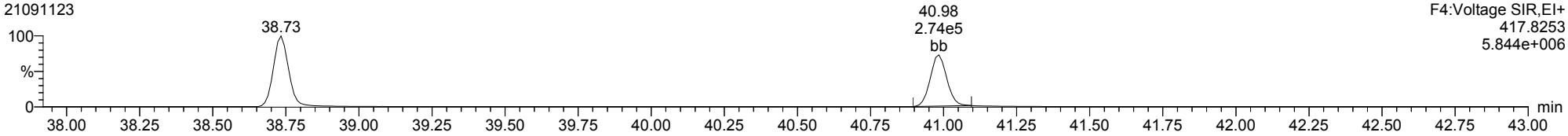

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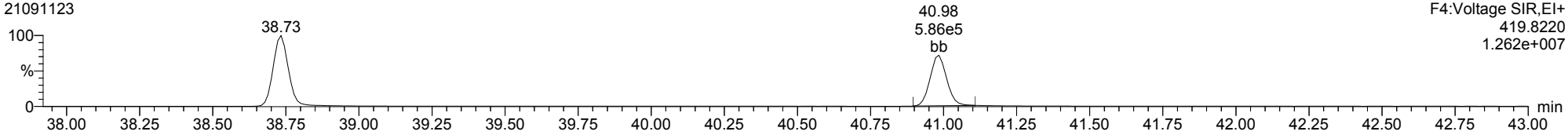
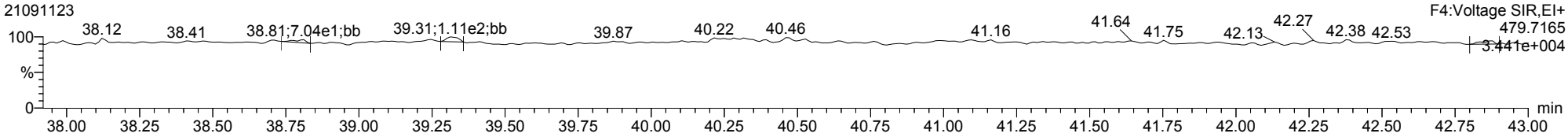


FUNCTION4 NCDPE



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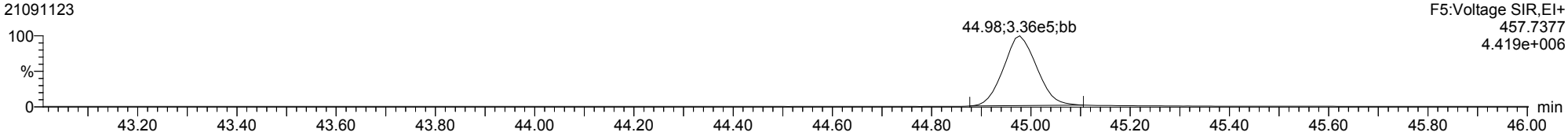

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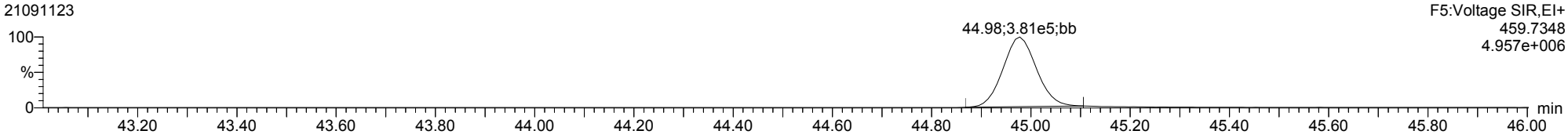

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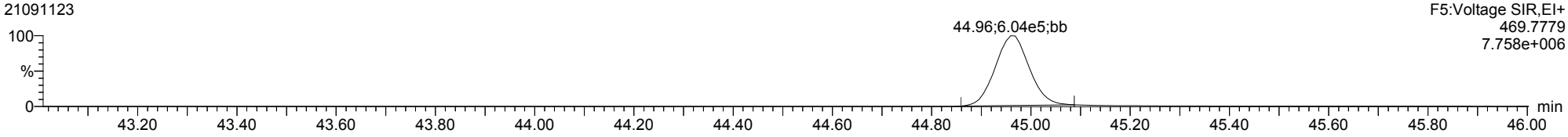

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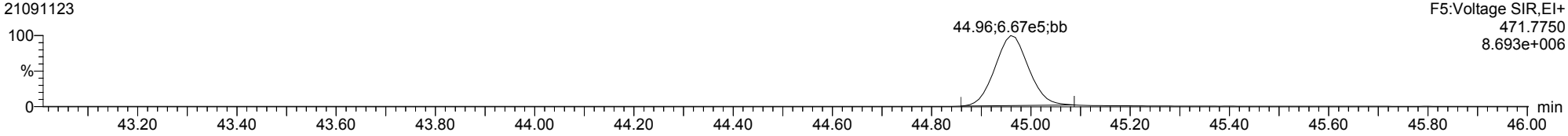

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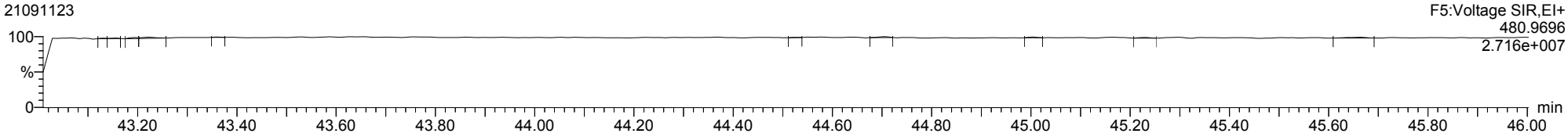

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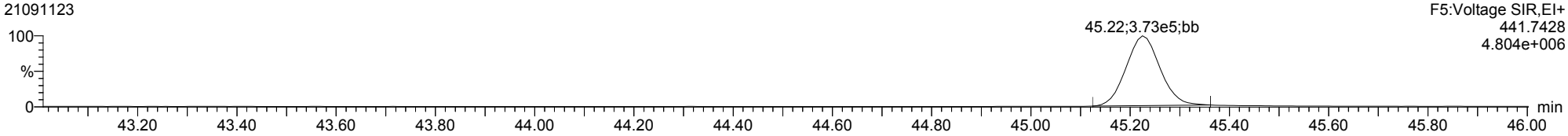

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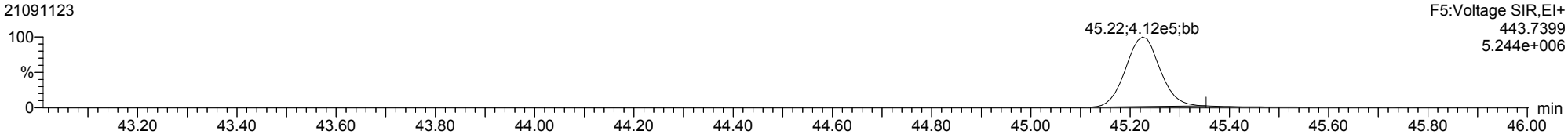

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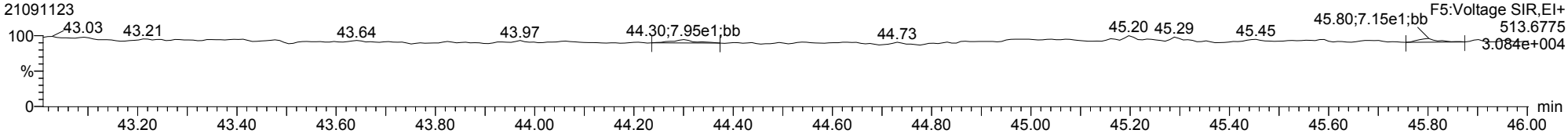

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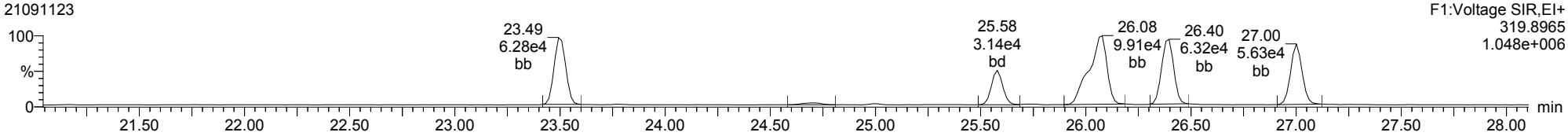

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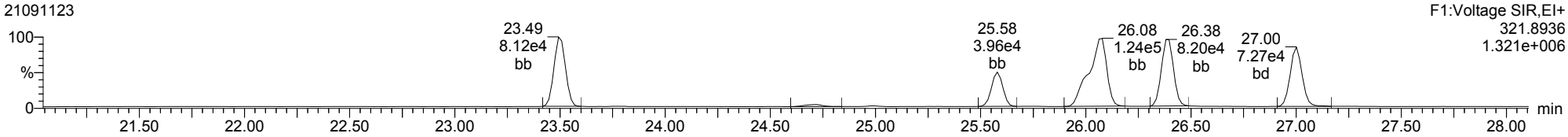

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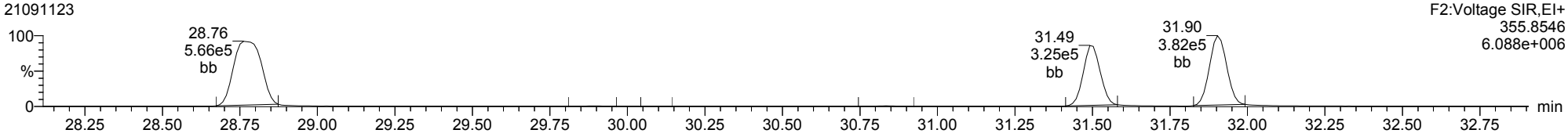

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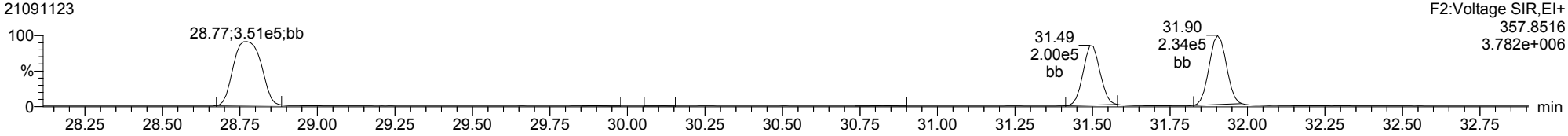

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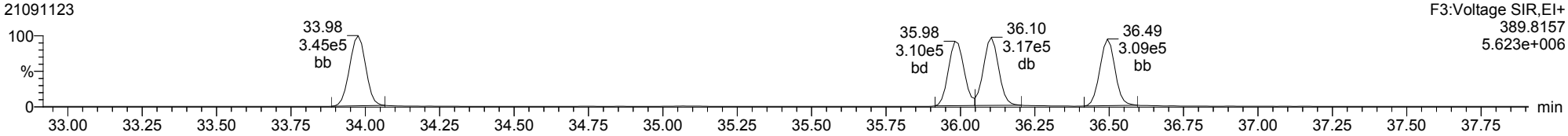

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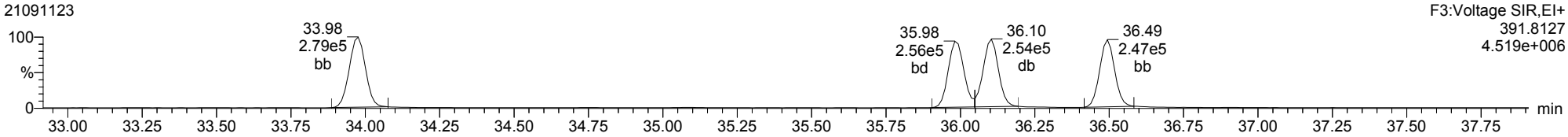

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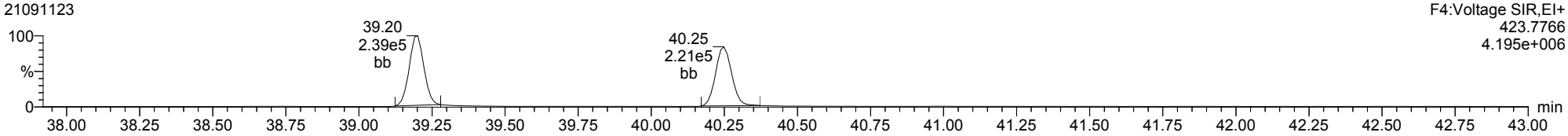

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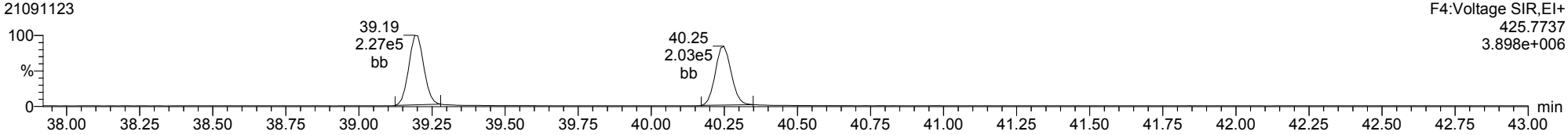

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Printed: Wednesday, September 15, 2021 11:30:36 Pacific Daylight Time

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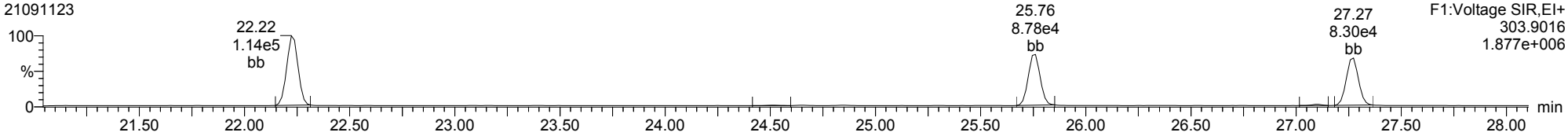

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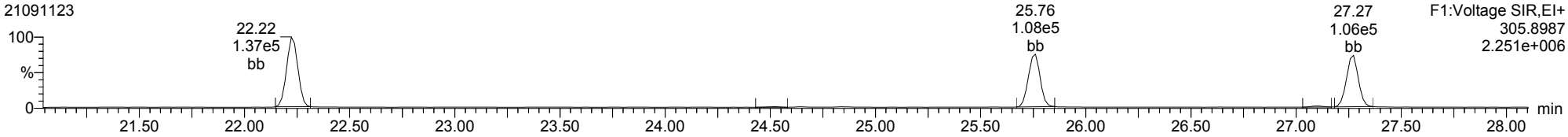

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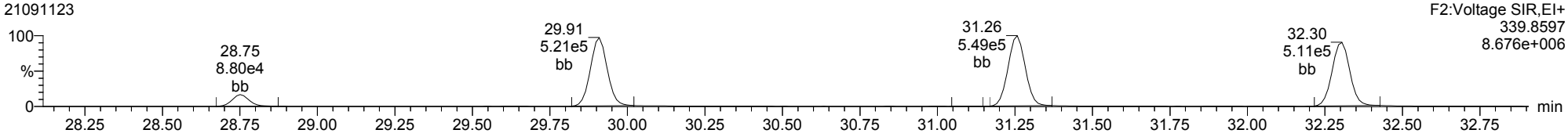

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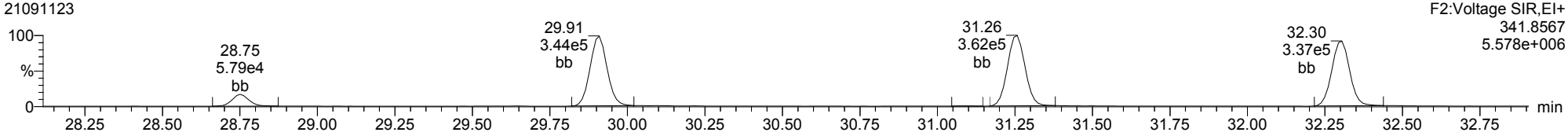

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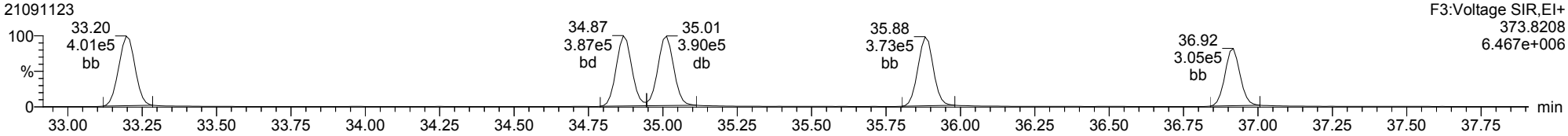

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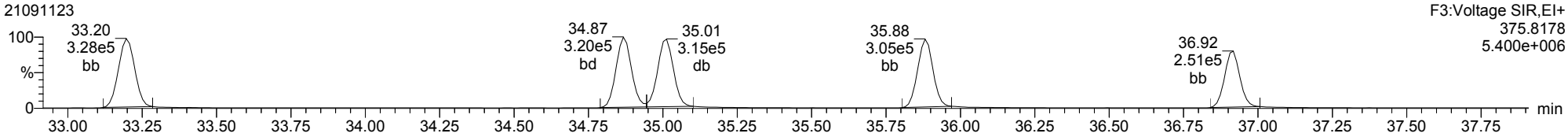

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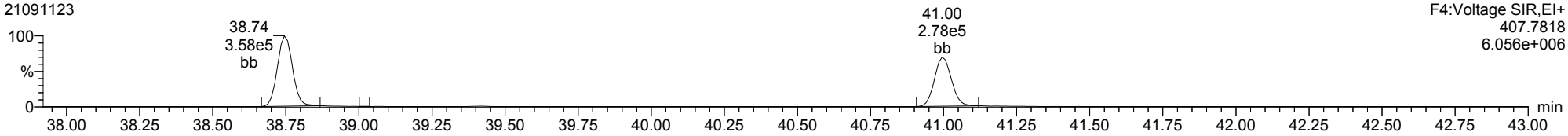

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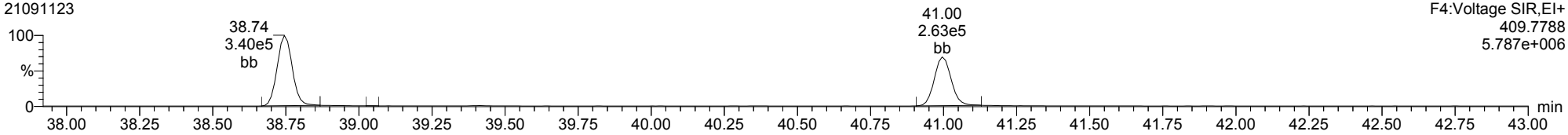

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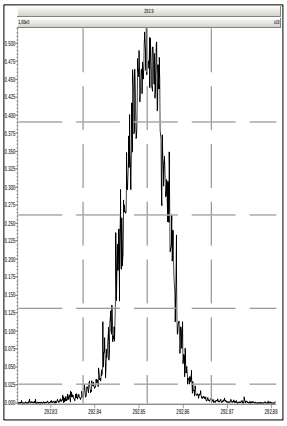

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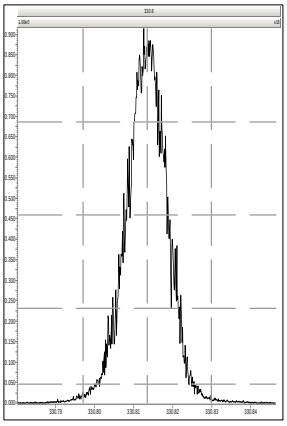

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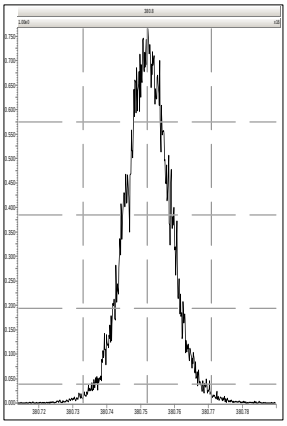

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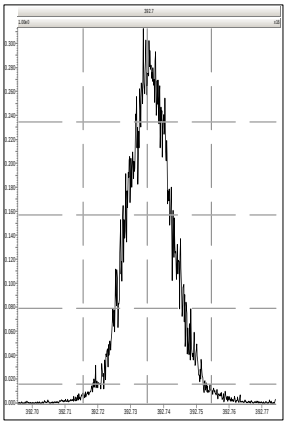

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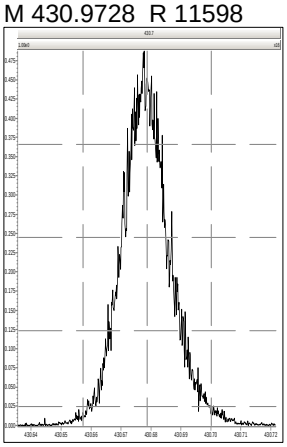

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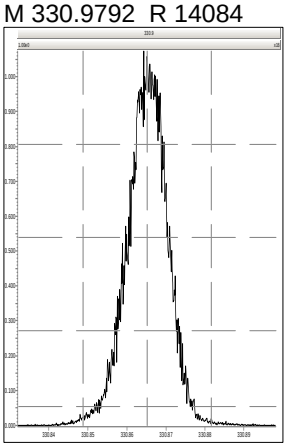

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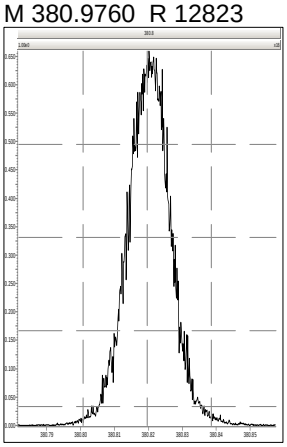

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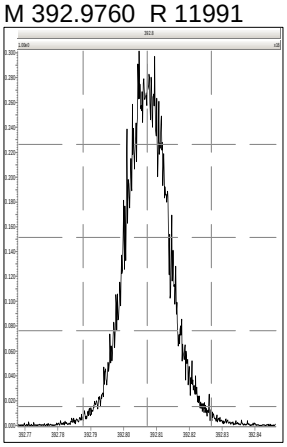

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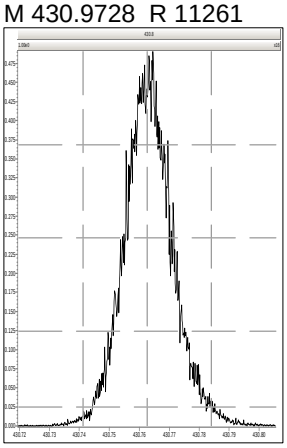

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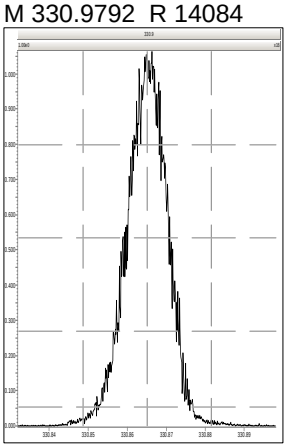

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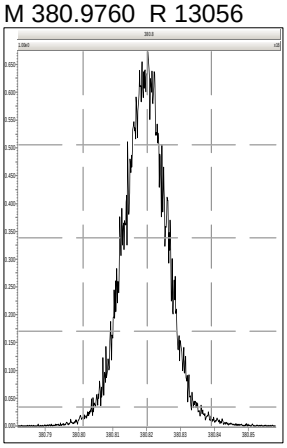

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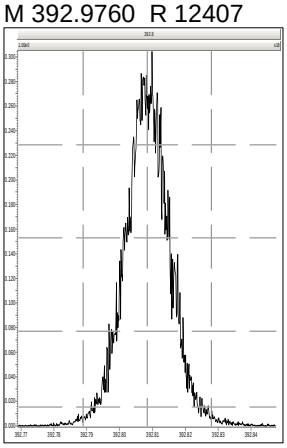
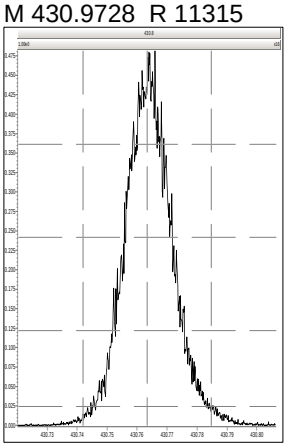
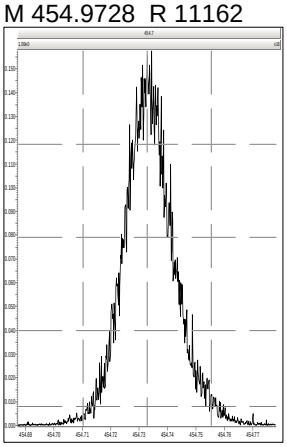


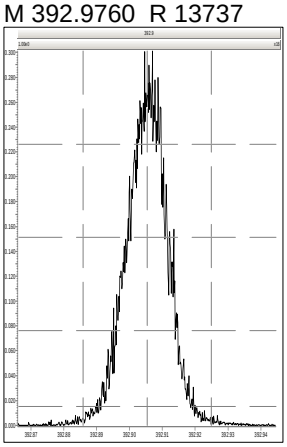
M 430.9728 R 11315



M 454.9728 R 11162



M 392.9760 R 13737



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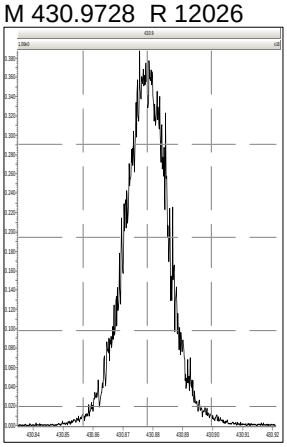

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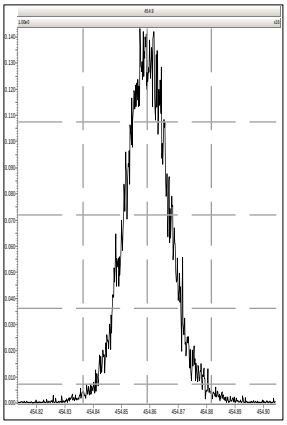

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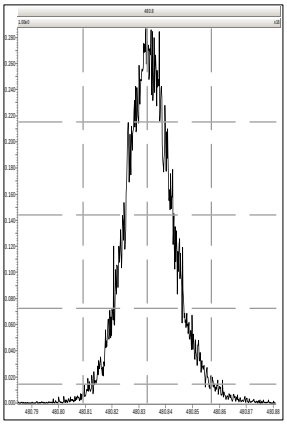
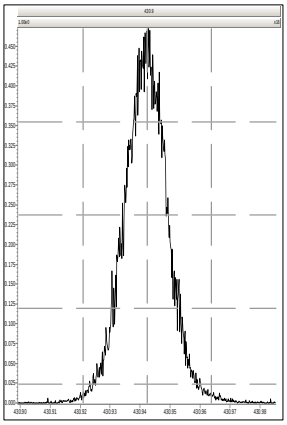
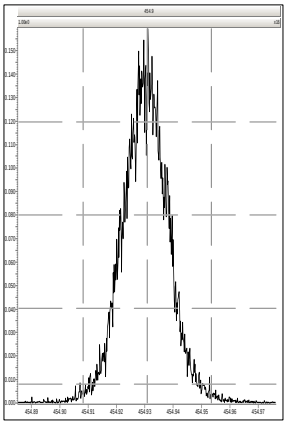


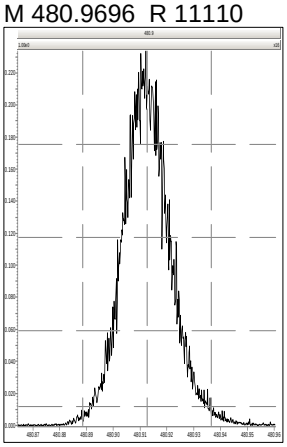
M 430.9728 R 12766



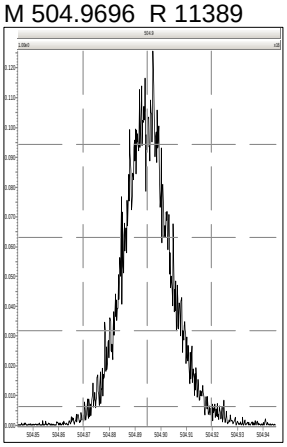
M 454.9728 R 12261



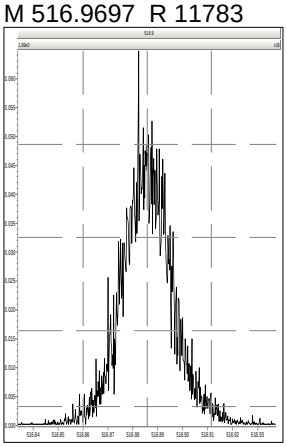
M 480.9696 R 11110

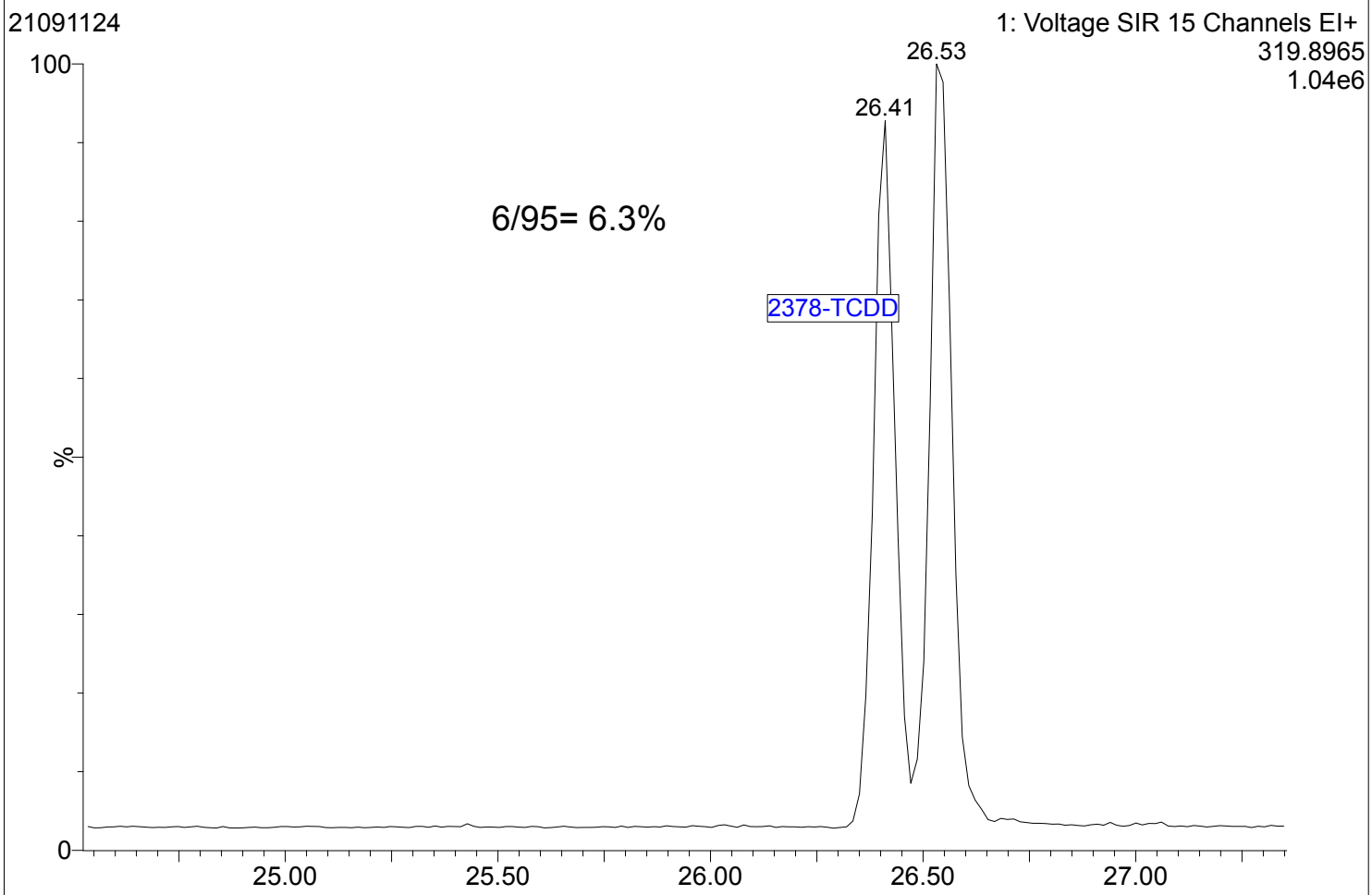


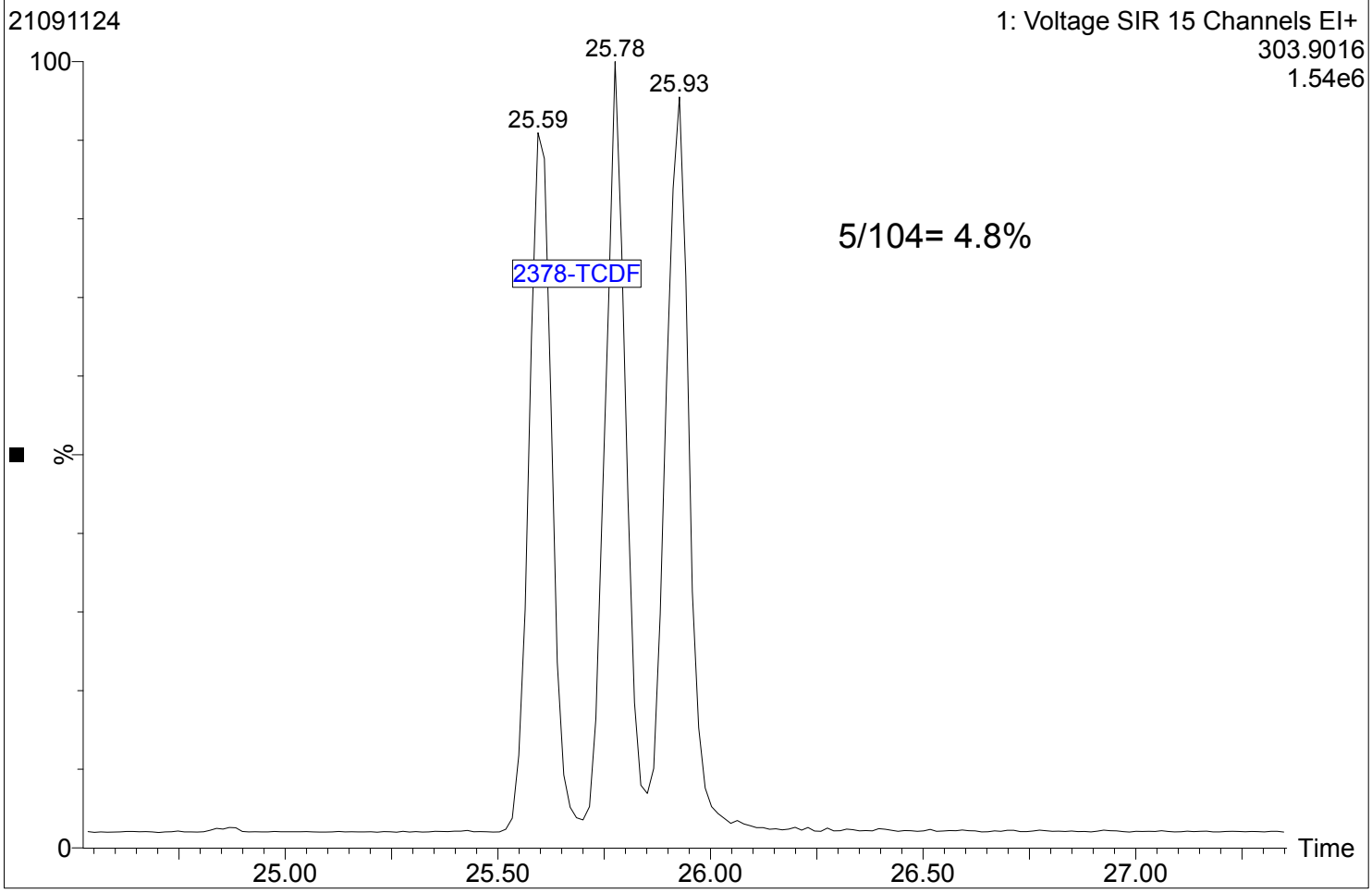
M 504.9696 R 11389



M 516.9697 R 11783




21091124
1: Voltage SIR 15 Channels EI+
319.8965
1.04e6
26.53
26.41
6/95= 6.3%
2378-TCDD
100
%
0
25.00
25.50
26.00
26.50
27.00


21091124
1: Voltage SIR 15 Channels EI+
303.9016
1.54e6
25.78
25.93
25.59
5/104= 4.8%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091131	Calibration Date:	08/11/2021
Sequence:	SJI0175	Injection Date:	09/12/21
Lab Sample ID:	SJI0175-CCV3	Injection Time:	11:14
Sequence Name:	CS3P9		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	8.86	1.1075930	0.9818579		-11.4	+/-16
2,3,7,8-TCDD	A	10.000	10.6	0.9202875	0.9791003		6.4	+/-22
1,2,3,7,8-PeCDF	A	50.000	47.1	1.0148670	0.9552197		-5.9	+/-18
2,3,4,7,8-PeCDF	A	50.000	46.8	1.1255490	1.0540160		-6.4	+/-18
1,2,3,7,8-PeCDD	A	50.000	56.5	0.9953229	1.1256590		13.1	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	48.9	1.0168930	0.9946509		-2.2	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	48.7	1.0368310	1.0090630		-2.7	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	48.5	1.0524660	1.0198970		-3.1	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	45.9	1.0301540	0.9446618		-8.3	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	47.3	1.0273630	0.9713250		-5.5	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	49.4	1.0089800	0.9975595		-1.1	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	51.5	0.9504865	10331.85		3.0	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	48.3	1.3273500	1.2816930		-3.4	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	50.3	1.2833380	1.2901440		0.5	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	54.3	1.0680880	1.1596690		8.6	+/-14
OCDF	A	100.00	85.9	1.4469010	1.2435400		-14.1	+/-37
OCDD	A	100.00	96.9	1.1808230	1.1442840		-3.1	+/-21
13C12-2,3,7,8-TCDF	A	100.00	104	1.4265830	1.4789763		3.7	+/-29
13C12-2,3,7,8-TCDD	A	100.00	103	1.1164910	1.1541054		3.4	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	104	1.2973130	1.3438581		3.6	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	103	1.2364800	1.2726820		2.9	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	93.3	0.7319833	0.6828129		-6.7	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	91.6	1.2424560	1.1377879		-8.4	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	84.9	1.3434760	1.1403783		-15.1	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	88.7	1.2148550	1.0774870		-11.3	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	95.0	1.0076370	0.9569809		-5.0	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	96.8	0.9598233	0.9295683		-3.2	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	90.1	1.0413850	0.9387911		-9.9	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	93.0	0.9264704	0.8615544		-7.0	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	89.6	0.7579160	0.6790541		-10.4	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	92.1	0.6324476	0.5827887		-7.9	+/-28
13C12-OCDD	A	200.00	198	0.5037432	0.4975042		-1.2	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.87	1.0835930	1.0695437		-1.3	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:37:05 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3P9, Name: 21091131, Date: 12-Sep-2021, Time: 11:14:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.746	1.001	7.828e4	9.938e4	1.108	0.788	0.770	983	1116	1.20e6	1.54e6	1219.5	1377.1	NO	bb	bb	8.865
12378-PeCDF	29.909	1.001	4.739e5	3.113e5	1.015	1.522	1.550	1934	2036	7.26e6	4.83e6	3754.8	2370.9	NO	bb	bb	47.061
23478-PeCDF	31.246	1.000	4.945e5	3.261e5	1.126	1.516	1.550	1934	2036	7.78e6	5.11e6	4022.8	2510.2	NO	bb	bb	46.822
123478-HxCDF	34.867	1.001	3.501e5	2.892e5	1.017	1.211	1.240	1704	1447	5.64e6	4.62e6	3308.9	3194.6	NO	bd	bd	48.906
234678-HxCDF	35.881	1.001	3.399e5	2.810e5	1.052	1.210	1.240	1704	1447	5.71e6	4.78e6	3352.6	3302.8	NO	bb	bb	48.453
123678-HxCDF	35.001	1.000	3.532e5	2.969e5	1.037	1.190	1.240	1704	1447	5.70e6	4.83e6	3345.9	3339.2	NO	db	db	48.661
123789-HxCDF	36.906	1.000	2.786e5	2.321e5	1.030	1.200	1.240	1704	1447	4.66e6	3.88e6	2736.5	2681.6	NO	bb	bb	45.851
1234678-HpCDF	38.744	1.000	3.203e5	3.035e5	1.327	1.056	1.050	1631	1683	5.55e6	5.27e6	3402.1	3129.4	NO	bb	bb	48.280
1234789-HpCDF	40.995	1.000	2.516e5	2.434e5	1.283	1.033	1.050	1631	1683	3.81e6	3.69e6	2334.7	2193.3	NO	bb	bb	50.265
OCDF	45.215	1.006	3.316e5	3.675e5	1.447	0.902	0.890	792	1021	4.10e6	4.61e6	5177.3	4515.1	NO	bb	bb	85.945
2378-TCDD	26.381	1.001	6.091e4	7.734e4	0.920	0.788	0.770	1072	780	9.15e5	1.20e6	853.5	1533.5	NO	bb	bb	10.639
12378-PeCDD	31.492	1.000	2.894e5	1.808e5	0.995	1.600	1.550	1970	1155	4.62e6	2.92e6	2345.0	2527.8	NO	bb	bb	56.547
123478-HxCDD	35.981	1.000	2.847e5	2.254e5	1.027	1.263	1.240	1991	1611	4.94e6	3.89e6	2479.8	2413.6	NO	bd	bd	47.273
123678-HxCDD	36.104	1.001	2.938e5	2.353e5	1.009	1.249	1.240	1991	1611	4.78e6	3.84e6	2399.8	2385.4	NO	db	db	49.434
123789-HxCDD	36.494	1.011	2.868e5	2.298e5	0.950	1.248	1.240	1991	1611	4.82e6	3.87e6	2420.8	2404.2	NO	bb	bb	51.490
1234678-HpCDD	40.249	1.001	1.986e5	1.832e5	1.068	1.084	1.050	1655	1223	3.27e6	3.02e6	1975.3	2469.8	NO	bb	bb	54.287
OCDD	44.977	1.000	3.043e5	3.390e5	1.181	0.898	0.890	1479	1236	3.91e6	4.27e6	2645.8	3456.6	NO	bb	bb	96.906
13C-2378-TCDF	25.730	1.007	7.979e5	1.011e6	1.427	0.789	0.770	1656	1121	1.22e7	1.55e7	7372.5	13874.2	NO	bb	bb	103.673
13C-12378-PeCDF	29.887	1.170	1.018e6	6.263e5	1.297	1.625	1.550	1608	2140	1.57e7	9.75e6	9791.7	4557.0	NO	bb	bb	103.588
13C-23478-PeCDF	31.235	1.223	9.626e5	5.944e5	1.236	1.620	1.550	1608	2140	1.50e7	9.21e6	9322.2	4302.3	NO	bb	bb	102.928
13C-123478-HxCDF	34.845	0.955	4.395e5	8.461e5	1.242	0.519	0.510	2970	2678	6.95e6	1.34e7	2339.9	5018.9	NO	bd	bd	91.576
13C-123678-HxCDF	34.990	0.959	4.392e5	8.494e5	1.343	0.517	0.510	2970	2678	7.24e6	1.39e7	2436.7	5194.9	NO	db	db	84.883
13C-234678-HxCDF	35.859	0.983	4.151e5	8.023e5	1.215	0.517	0.510	2970	2678	6.95e6	1.35e7	2339.2	5044.4	NO	bb	bb	88.693
13C-123789-HxCDF	36.895	1.012	3.689e5	7.125e5	1.008	0.518	0.510	2970	2678	6.23e6	1.21e7	2097.8	4508.0	NO	bb	bb	94.973
13C-1234678-HpCDF	38.733	1.062	3.072e5	6.663e5	0.926	0.461	0.440	1488	2198	5.30e6	1.14e7	3562.0	5207.8	NO	bb	bb	92.993
13C-1234789-HpCDF	40.984	1.124	2.445e5	5.228e5	0.758	0.468	0.440	1488	2198	3.79e6	8.04e6	2546.3	3655.6	NO	bb	bb	89.595
13C-1234-TCDD	25.549	0.000	5.319e5	6.915e5	1.000	0.769	0.770	1948	1445	8.09e6	1.06e7	4151.7	7316.1	NO	bb	bb	100.000
13C-2378-TCDD	26.366	1.032	6.077e5	8.042e5	1.116	0.756	0.770	1948	1445	9.46e6	1.25e7	4852.6	8626.1	NO	bb	bb	103.369
13C-12378-PeCDD	31.480	1.232	5.097e5	3.256e5	0.732	1.566	1.550	1046	1196	7.67e6	4.92e6	7327.1	4113.1	NO	bb	bb	93.283
13C-123478-HxCDD	35.970	0.986	5.866e5	4.637e5	0.960	1.265	1.240	1199	988	1.01e7	7.93e6	8412.7	8031.7	NO	bd	bd	96.848
13C-123678-HxCDD	36.082	0.989	5.902e5	4.706e5	1.041	1.254	1.240	1199	988	1.01e7	8.06e6	8438.1	8157.9	NO	db	db	90.148
13C-1234678-HpCDD	40.226	1.103	3.405e5	3.180e5	0.632	1.071	1.050	1182	1125	5.42e6	5.17e6	4584.1	4593.3	NO	bb	bb	92.148
13C-OCDD	44.959	1.233	5.336e5	5.907e5	0.504	0.903	0.890	1572	1199	6.77e6	7.54e6	4306.3	6282.3	NO	bb	bb	197.523
13C-123789-HxCDD	36.472	0.000	6.313e5	4.986e5	1.000	1.266	1.240	1199	988	1.04e7	8.28e6	8694.6	8380.8	NO	bb	bb	100.000
37CL-2378-TCDD	26.381	1.033	1.308e5		1.084			1305		1.98e6		1515.6			bd		9.870

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 11:37:05 Pacific Daylight Time

ID: CS3P9, Name: 21091131, Date: 12-Sep-2021, Time: 11:14:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.223	0.864	1.025e5	1.301e5	1.425	0.788	0.770	983	1116	1.63e6	2.15e6	1655.3	1925.2	NO	bb	bb	9.022
1289-TCDF	27.258	1.059	7.817e4	9.349e4	1.043	0.836	0.770	983	1116	1.20e6	1.41e6	1216.2	1265.1	NO	bb	bb	9.097
13468-PECDF	27.091	0.906	6.594e5	4.344e5	1.376	1.518	1.550	677	856	1.02e7	6.70e6	15070.3	7820.2	NO	bb	bb	48.341
12389-PECDF	32.294	1.081	4.679e5	3.075e5	1.000	1.521	1.550	1934	2036	7.22e6	4.77e6	3733.8	2341.0	NO	bb	bb	47.185
123468-HXCDF	33.196	0.953	3.691e5	3.065e5	1.087	1.204	1.240	1704	1447	5.76e6	4.80e6	3378.0	3320.1	NO	bb	bb	48.365
1368-TCDD	23.493	0.891	5.833e4	7.596e4	0.923	0.768	0.770	1072	780	9.14e5	1.22e6	852.1	1562.3	NO	bb	bb	10.301
1289-TCDD	27.001	1.024	5.339e4	6.674e4	0.794	0.800	0.770	1072	780	8.12e5	1.01e6	757.0	1297.5	NO	bb	bb	10.716
12479-PECDD	28.762	0.914	5.227e5	3.216e5	1.843	1.625	1.550	1970	1155	5.28e6	3.29e6	2678.3	2852.9	NO	bb	bb	54.827
12389-PECDD	31.904	1.013	3.503e5	2.152e5	1.154	1.628	1.550	1970	1155	5.62e6	3.42e6	2851.4	2964.7	NO	bb	bb	58.690
124679-HXCDD	33.965	0.944	3.138e5	2.552e5	1.125	1.230	1.240	1991	1611	5.04e6	4.11e6	2532.0	2553.9	NO	bb	bb	48.155
1234679-HPCDD	39.190	0.974	2.214e5	2.045e5	1.211	1.083	1.050	1655	1223	3.71e6	3.41e6	2238.8	2790.8	NO	bb	bb	53.411
Total-tetrafurans			2.596e5		1.192			983		4.03e6							27.051
Total-penta1			6.594e5					677		1.02e7							48.341
Total-pentafurans			1.518e6		1.047			1934		2.35e7							149.195
Total-hexafurans			1.691e6		1.045			1704		2.75e7							240.253
Total-heptafurans			5.736e5		1.305			1631		9.38e6							98.825
Total-Furans			5.033e6		1.158			983		7.87e7							649.611
Total-tetradioxins			2.954e5		0.879			1072		4.07e6							53.953
Total-pentadioxins			1.164e6		1.331			1970		1.55e7							170.244
Total-hexadioxins			1.180e6		1.028			1991		1.96e7							196.503
Total-heptadioxins			4.201e5		1.140			1655		6.98e6							107.731
Total-Dioxins			3.364e6		1.092			1072		5.01e7							625.337
Total-TEQ			8.396e6					1072		1.29e8							1274.948
FUNCTION1 PFK			2.074e6					546461		3.70e7							
FUNCTION2 PFK			2.822e4					292122		8.28e5							0.000
FUNCTION3 PFK			6.541e5					447522		1.53e7							0.000
FUNCTION4 PFK			2.835e4					282826		1.07e6							
FUNCTION5 PFK			7.876e4					190601		1.53e6							
FUNCTION1 HXCD...			1.919e3					702		2.74e4							0.000
FUNCTION1 HPCD...			1.746e3					1071		3.07e4							0.000
FUNCTION2 HPCD...			7.348e2					918		1.06e4							0.000
FUNCTION3 OCDPE			1.109e3					757		1.60e4							0.000
FUNCTION4 NCDPE			1.200e2					634		2.06e3							0.000
FUNCTION5 DCDPE			0.000e0					767		0.00e0							

Method: T:\Autospec\Methods\Dioxin210908.mdb 09 Sep 2021 14:40:59
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3P9, Name: 21091131, Date: 12-Sep-2021, Time: 11:14:28, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.26	7.817e4	9.349e4	1.043	0.84	0.77	1216.2	YES	NO	bb	bb	9.097
2	2378-TCDF	25.75	7.828e4	9.938e4	1.108	0.79	0.77	1219.5	YES	NO	bb	bb	8.865
3	Total-tetrafurans	24.84	5.986e2	8.511e2	1.192	0.70	0.77	9.6	YES	NO	bb	bb	0.067
4	1368-TCDF	22.22	1.025e5	1.301e5	1.425	0.79	0.77	1655.3	YES	NO	bb	bb	9.022

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.09	6.594e5	4.344e5	1.376	1.52	1.55	15070.3	YES	NO	bb	bb	48.341

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.25	4.945e5	3.261e5	1.126	1.52	1.55	4022.8	YES	NO	bb	bb	46.822
2	Total-pentafurans	31.09	7.687e2	4.996e2	1.047	1.54	1.55	7.1	YES	NO	bb	bb	0.076
3	12378-PeCDF	29.91	4.739e5	3.113e5	1.015	1.52	1.55	3754.8	YES	NO	bb	bb	47.061
4	Total-pentafurans	29.63	7.684e2	5.012e2	1.047	1.53	1.55	5.9	YES	NO	db	bb	0.076
5	Total-pentafurans	28.75	7.982e4	5.378e4	1.047	1.48	1.55	638.1	YES	NO	bb	bb	7.975
6	12389-PECDF	32.29	4.679e5	3.075e5	1.000	1.52	1.55	3733.8	YES	NO	bb	bb	47.185

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123478-HxCDF	34.87	3.501e5	2.892e5	1.017	1.21	1.24	3308.9	YES	NO	bd	bd	48.906
2	123468-HXCDF	33.20	3.691e5	3.065e5	1.087	1.20	1.24	3378.0	YES	NO	bb	bb	48.365
3	123789-HxCDF	36.91	2.786e5	2.321e5	1.030	1.20	1.24	2736.5	YES	NO	bb	bb	45.851
4	Total-hexafurans	36.09	1.248e2	9.973e1	1.045	1.25	1.24	2.6	NO	NO	bb	bb	0.018
5	234678-HxCDF	35.88	3.399e5	2.810e5	1.052	1.21	1.24	3352.6	YES	NO	bb	bb	48.453
6	123678-HxCDF	35.00	3.532e5	2.969e5	1.037	1.19	1.24	3345.9	YES	NO	db	db	48.661

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HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	40.99	2.516e5	2.434e5	1.283	1.03	1.05	2334.7	YES	NO	bb	bb	50.265
2	Total-heptafurans	39.41	1.695e3	1.487e3	1.305	1.14	1.05	16.2	YES	NO	bb	bb	0.280
3	1234678-HpCDF	38.74	3.203e5	3.035e5	1.327	1.06	1.05	3402.1	YES	NO	bb	bb	48.280

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.26	7.817e4	9.349e4	1.043	0.84	0.77	1216.2	YES	NO	bb	bb	9.097
2	2378-TCDF	25.75	7.828e4	9.938e4	1.108	0.79	0.77	1219.5	YES	NO	bb	bb	8.865
3	Total-tetrafurans	24.84	5.986e2	8.511e2	1.192	0.70	0.77	9.6	YES	NO	bb	bb	0.067
4	1368-TCDF	22.22	1.025e5	1.301e5	1.425	0.79	0.77	1655.3	YES	NO	bb	bb	9.022
5	23478-PeCDF	31.25	4.945e5	3.261e5	1.126	1.52	1.55	4022.8	YES	NO	bb	bb	46.822
6	Total-pentafurans	31.09	7.687e2	4.996e2	1.047	1.54	1.55	7.1	YES	NO	bb	bb	0.076
7	12378-PeCDF	29.91	4.739e5	3.113e5	1.015	1.52	1.55	3754.8	YES	NO	bb	bb	47.061
8	Total-pentafurans	29.63	7.684e2	5.012e2	1.047	1.53	1.55	5.9	YES	NO	db	bb	0.076
9	Total-pentafurans	28.75	7.982e4	5.378e4	1.047	1.48	1.55	638.1	YES	NO	bb	bb	7.975
10	123478-HxCDF	34.87	3.501e5	2.892e5	1.017	1.21	1.24	3308.9	YES	NO	bd	bd	48.906
11	123468-HXCDF	33.20	3.691e5	3.065e5	1.087	1.20	1.24	3378.0	YES	NO	bb	bb	48.365
12	12389-PECDF	32.29	4.679e5	3.075e5	1.000	1.52	1.55	3733.8	YES	NO	bb	bb	47.185
13	123789-HxCDF	36.91	2.786e5	2.321e5	1.030	1.20	1.24	2736.5	YES	NO	bb	bb	45.851
14	Total-hexafurans	36.09	1.248e2	9.973e1	1.045	1.25	1.24	2.6	NO	NO	bb	bb	0.018
15	234678-HxCDF	35.88	3.399e5	2.810e5	1.052	1.21	1.24	3352.6	YES	NO	bb	bb	48.453
16	123678-HxCDF	35.00	3.532e5	2.969e5	1.037	1.19	1.24	3345.9	YES	NO	db	db	48.661
17	1234789-HpCDF	40.99	2.516e5	2.434e5	1.283	1.03	1.05	2334.7	YES	NO	bb	bb	50.265
18	Total-heptafurans	39.41	1.695e3	1.487e3	1.305	1.14	1.05	16.2	YES	NO	bb	bb	0.280
19	1234678-HpCDF	38.74	3.203e5	3.035e5	1.327	1.06	1.05	3402.1	YES	NO	bb	bb	48.280
20	OCDF	45.22	3.316e5	3.675e5	1.447	0.90	0.89	5177.3	YES	NO	bb	bb	85.945
21	13468-PECDF	27.09	6.594e5	4.344e5	1.376	1.52	1.55	15070.3	YES	NO	bb	bb	48.341

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TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	5.339e4	6.674e4	0.794	0.80	0.77	757.0	YES	NO	bb	bb	10.716
2	2378-TCDD	26.38	6.091e4	7.734e4	0.920	0.79	0.77	853.5	YES	NO	bb	bb	10.639
3	Total-tetradioxins	26.06	9.144e4	1.144e5	0.879	0.80	0.77	876.8	YES	NO	bb	bb	16.581
4	Total-tetradioxins	25.58	2.851e4	3.612e4	0.879	0.79	0.77	427.6	YES	NO	bb	bb	5.206
5	Total-tetradioxins	24.70	2.519e3	3.044e3	0.879	0.83	0.77	23.2	YES	NO	bb	bb	0.448
6	Total-tetradioxins	23.78	3.343e2	4.287e2	0.879	0.78	0.77	5.4	YES	NO	bb	bb	0.061
7	1368-TCDD	23.49	5.833e4	7.596e4	0.923	0.77	0.77	852.1	YES	NO	bb	bb	10.301

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDD	31.49	2.894e5	1.808e5	0.995	1.60	1.55	2345.0	YES	NO	bb	bb	56.547
2	Total-pentadioxins	30.82	1.261e3	7.397e2	1.331	1.70	1.55	11.5	YES	NO	bb	bb	0.180
3	12479-PECDD	28.76	5.227e5	3.216e5	1.843	1.63	1.55	2678.3	YES	NO	bb	bb	54.827
4	12389-PECDD	31.90	3.503e5	2.152e5	1.154	1.63	1.55	2851.4	YES	NO	bb	bb	58.690

HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-hexadioxins	34.74	9.512e2	6.855e2	1.028	1.39	1.24	9.2	YES	NO	bd	bb	0.151
2	124679-HXCDD	33.97	3.138e5	2.552e5	1.125	1.23	1.24	2532.0	YES	NO	bb	bb	48.155
3	123789-HxCDD	36.49	2.868e5	2.298e5	0.950	1.25	1.24	2420.8	YES	NO	bb	bb	51.490
4	123678-HxCDD	36.10	2.938e5	2.353e5	1.009	1.25	1.24	2399.8	YES	NO	db	db	49.434
5	123478-HxCDD	35.98	2.847e5	2.254e5	1.027	1.26	1.24	2479.8	YES	NO	bd	bd	47.273

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.25	1.986e5	1.832e5	1.068	1.08	1.05	1975.3	YES	NO	bb	bb	54.287
2	Total-heptadioxins	39.32	1.227e2	1.291e2	1.140	0.95	1.05	4.1	NO	NO	bb	bb	0.034
3	1234679-HPCDD	39.19	2.214e5	2.045e5	1.211	1.08	1.05	2238.8	YES	NO	bb	bb	53.411

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Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	5.339e4	6.674e4	0.794	0.80	0.77	757.0	YES	NO	bb	bb	10.716
2	2378-TCDD	26.38	6.091e4	7.734e4	0.920	0.79	0.77	853.5	YES	NO	bb	bb	10.639
3	Total-tetradioxins	26.06	9.144e4	1.144e5	0.879	0.80	0.77	876.8	YES	NO	bb	bb	16.581
4	Total-tetradioxins	25.58	2.851e4	3.612e4	0.879	0.79	0.77	427.6	YES	NO	bb	bb	5.206
5	Total-tetradioxins	24.70	2.519e3	3.044e3	0.879	0.83	0.77	23.2	YES	NO	bb	bb	0.448
6	Total-tetradioxins	23.78	3.343e2	4.287e2	0.879	0.78	0.77	5.4	YES	NO	bb	bb	0.061
7	1368-TCDD	23.49	5.833e4	7.596e4	0.923	0.77	0.77	852.1	YES	NO	bb	bb	10.301
8	12378-PeCDD	31.49	2.894e5	1.808e5	0.995	1.60	1.55	2345.0	YES	NO	bb	bb	56.547
9	Total-pentadioxins	30.82	1.261e3	7.397e2	1.331	1.70	1.55	11.5	YES	NO	bb	bb	0.180
10	12479-PECDD	28.76	5.227e5	3.216e5	1.843	1.63	1.55	2678.3	YES	NO	bb	bb	54.827
11	Total-hexadioxins	34.74	9.512e2	6.855e2	1.028	1.39	1.24	9.2	YES	NO	bd	bb	0.151
12	124679-HXCDD	33.97	3.138e5	2.552e5	1.125	1.23	1.24	2532.0	YES	NO	bb	bb	48.155
13	12389-PECDD	31.90	3.503e5	2.152e5	1.154	1.63	1.55	2851.4	YES	NO	bb	bb	58.690
14	123789-HxCDD	36.49	2.868e5	2.298e5	0.950	1.25	1.24	2420.8	YES	NO	bb	bb	51.490
15	123678-HxCDD	36.10	2.938e5	2.353e5	1.009	1.25	1.24	2399.8	YES	NO	db	db	49.434
16	123478-HxCDD	35.98	2.847e5	2.254e5	1.027	1.26	1.24	2479.8	YES	NO	bd	bd	47.273
17	1234678-HpCDD	40.25	1.986e5	1.832e5	1.068	1.08	1.05	1975.3	YES	NO	bb	bb	54.287
18	Total-heptadioxins	39.32	1.227e2	1.291e2	1.140	0.95	1.05	4.1	NO	NO	bb	bb	0.034
19	1234679-HPCDD	39.19	2.214e5	2.045e5	1.211	1.08	1.05	2238.8	YES	NO	bb	bb	53.411
20	OCDD	44.98	3.043e5	3.390e5	1.181	0.90	0.89	2645.8	YES	NO	bb	bb	96.906

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.26	7.817e4	9.349e4	1.043	0.84	0.77	1216.2	YES	NO	bb	bb	9.097
2	2378-TCDF	25.75	7.828e4	9.938e4	1.108	0.79	0.77	1219.5	YES	NO	bb	bb	8.865
3	Total-tetrafurans	24.84	5.986e2	8.511e2	1.192	0.70	0.77	9.6	YES	NO	bb	bb	0.067
4	1368-TCDF	22.22	1.025e5	1.301e5	1.425	0.79	0.77	1655.3	YES	NO	bb	bb	9.022
5	23478-PeCDF	31.25	4.945e5	3.261e5	1.126	1.52	1.55	4022.8	YES	NO	bb	bb	46.822
6	Total-pentafurans	31.09	7.687e2	4.996e2	1.047	1.54	1.55	7.1	YES	NO	bb	bb	0.076
7	12378-PeCDF	29.91	4.739e5	3.113e5	1.015	1.52	1.55	3754.8	YES	NO	bb	bb	47.061
8	Total-pentafurans	29.63	7.684e2	5.012e2	1.047	1.53	1.55	5.9	YES	NO	db	bb	0.076
9	Total-pentafurans	28.75	7.982e4	5.378e4	1.047	1.48	1.55	638.1	YES	NO	bb	bb	7.975
10	123478-HxCDF	34.87	3.501e5	2.892e5	1.017	1.21	1.24	3308.9	YES	NO	bd	bd	48.906
11	123468-HXCDF	33.20	3.691e5	3.065e5	1.087	1.20	1.24	3378.0	YES	NO	bb	bb	48.365
12	12389-PECDF	32.29	4.679e5	3.075e5	1.000	1.52	1.55	3733.8	YES	NO	bb	bb	47.185
13	123789-HxCDF	36.91	2.786e5	2.321e5	1.030	1.20	1.24	2736.5	YES	NO	bb	bb	45.851
14	Total-hexafurans	36.09	1.248e2	9.973e1	1.045	1.25	1.24	2.6	NO	NO	bb	bb	0.018
15	234678-HxCDF	35.88	3.399e5	2.810e5	1.052	1.21	1.24	3352.6	YES	NO	bb	bb	48.453
16	123678-HxCDF	35.00	3.532e5	2.969e5	1.037	1.19	1.24	3345.9	YES	NO	db	db	48.661
17	1234789-HpCDF	40.99	2.516e5	2.434e5	1.283	1.03	1.05	2334.7	YES	NO	bb	bb	50.265
18	Total-heptafurans	39.41	1.695e3	1.487e3	1.305	1.14	1.05	16.2	YES	NO	bb	bb	0.280
19	1234678-HpCDF	38.74	3.203e5	3.035e5	1.327	1.06	1.05	3402.1	YES	NO	bb	bb	48.280
20	OCDF	45.22	3.316e5	3.675e5	1.447	0.90	0.89	5177.3	YES	NO	bb	bb	85.945
21	13468-PECDF	27.09	6.594e5	4.344e5	1.376	1.52	1.55	15070.3	YES	NO	bb	bb	48.341
22	1289-TCDD	27.00	5.339e4	6.674e4	0.794	0.80	0.77	757.0	YES	NO	bb	bb	10.716
23	2378-TCDD	26.38	6.091e4	7.734e4	0.920	0.79	0.77	853.5	YES	NO	bb	bb	10.639
24	Total-tetradioxins	26.06	9.144e4	1.144e5	0.879	0.80	0.77	876.8	YES	NO	bb	bb	16.581
25	Total-tetradioxins	25.58	2.851e4	3.612e4	0.879	0.79	0.77	427.6	YES	NO	bb	bb	5.206
26	Total-tetradioxins	24.70	2.519e3	3.044e3	0.879	0.83	0.77	23.2	YES	NO	bb	bb	0.448
27	Total-tetradioxins	23.78	3.343e2	4.287e2	0.879	0.78	0.77	5.4	YES	NO	bb	bb	0.061
28	1368-TCDD	23.49	5.833e4	7.596e4	0.923	0.77	0.77	852.1	YES	NO	bb	bb	10.301
29	12378-PeCDD	31.49	2.894e5	1.808e5	0.995	1.60	1.55	2345.0	YES	NO	bb	bb	56.547
30	Total-pentadioxins	30.82	1.261e3	7.397e2	1.331	1.70	1.55	11.5	YES	NO	bb	bb	0.180
31	12479-PECDD	28.76	5.227e5	3.216e5	1.843	1.63	1.55	2678.3	YES	NO	bb	bb	54.827
32	Total-hexadioxins	34.74	9.512e2	6.855e2	1.028	1.39	1.24	9.2	YES	NO	bd	bb	0.151
33	124679-HXCDD	33.97	3.138e5	2.552e5	1.125	1.23	1.24	2532.0	YES	NO	bb	bb	48.155
34	12389-PECDD	31.90	3.503e5	2.152e5	1.154	1.63	1.55	2851.4	YES	NO	bb	bb	58.690
35	123789-HxCDD	36.49	2.868e5	2.298e5	0.950	1.25	1.24	2420.8	YES	NO	bb	bb	51.490
36	123678-HxCDD	36.10	2.938e5	2.353e5	1.009	1.25	1.24	2399.8	YES	NO	db	db	49.434
37	123478-HxCDD	35.98	2.847e5	2.254e5	1.027	1.26	1.24	2479.8	YES	NO	bd	bd	47.273

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	1234678-HpCDD	40.25	1.986e5	1.832e5	1.068	1.08	1.05	1975.3	YES	NO	bb	bb	54.287
39	Total-heptadioxins	39.32	1.227e2	1.291e2	1.140	0.95	1.05	4.1	NO	NO	bb	bb	0.034
40	1234679-HPCDD	39.19	2.214e5	2.045e5	1.211	1.08	1.05	2238.8	YES	NO	bb	bb	53.411
41	OCDD	44.98	3.043e5	3.390e5	1.181	0.90	0.89	2645.8	YES	NO	bb	bb	96.906

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	22.87	2.905e4					1.2	NO		bd		
2	FUNCTION1 PFK	22.72	8.877e3					0.6	NO		bb		
3	FUNCTION1 PFK	22.62	2.727e3					0.3	NO		bb		
4	FUNCTION1 PFK	22.56	1.565e4					0.9	NO		db		
5	FUNCTION1 PFK	22.37	1.051e5					1.8	NO		bd		
6	FUNCTION1 PFK	22.16	1.098e5					1.2	NO		bb		
7	FUNCTION1 PFK	22.04	1.630e4					0.8	NO		bb		
8	FUNCTION1 PFK	21.94	1.114e4					0.6	NO		bb		
9	FUNCTION1 PFK	21.63	8.182e4					2.0	NO		db		
10	FUNCTION1 PFK	21.57	4.184e4					1.8	NO		dd		
11	FUNCTION1 PFK	21.48	9.913e4					2.2	NO		dd		
12	FUNCTION1 PFK	21.38	9.927e4					2.7	NO		dd		
13	FUNCTION1 PFK	21.32	3.365e4					2.0	NO		bd		
14	FUNCTION1 PFK	21.24	2.898e4					1.2	NO		bb		
15	FUNCTION1 PFK	21.16	1.095e4					0.7	NO		db		
16	FUNCTION1 PFK	21.12	5.017e3					0.6	NO		bd		
17	FUNCTION1 PFK	24.82	6.523e4					2.0	NO		dd		
18	FUNCTION1 PFK	24.69	7.244e4					1.6	NO		dd		
19	FUNCTION1 PFK	24.57	9.498e4					2.2	NO		bd		
20	FUNCTION1 PFK	24.46	4.841e4					1.7	NO		db		
21	FUNCTION1 PFK	24.42	3.013e4					1.5	NO		dd		
22	FUNCTION1 PFK	24.32	7.502e4					1.6	NO		dd		
23	FUNCTION1 PFK	24.22	2.274e4					1.1	NO		bd		
24	FUNCTION1 PFK	24.02	5.811e4					1.7	NO		db		
25	FUNCTION1 PFK	23.90	5.086e4					1.7	NO		dd		
26	FUNCTION1 PFK	23.86	1.534e4					1.1	NO		dd		
27	FUNCTION1 PFK	23.81	2.835e4					1.3	NO		bd		
28	FUNCTION1 PFK	23.58	1.568e4					0.8	NO		bb		
29	FUNCTION1 PFK	23.31	4.460e4					1.3	NO		bb		
30	FUNCTION1 PFK	23.19	3.346e4					1.5	NO		db		
31	FUNCTION1 PFK	23.07	6.574e4					1.4	NO		bd		
32	FUNCTION1 PFK	22.96	4.028e4					1.1	NO		db		
33	FUNCTION1 PFK	27.26	7.842e3					0.6	NO		db		
34	FUNCTION1 PFK	27.18	1.229e4					0.7	NO		bd		
35	FUNCTION1 PFK	27.12	1.906e4					1.1	NO		bb		
36	FUNCTION1 PFK	26.68	3.386e4					1.3	NO		bb		
37	FUNCTION1 PFK	26.55	9.816e3					0.4	NO		bb		

ID: CS3P9, Name: 21091131, Date: 12-Sep-2021, Time: 11:14:28, Conditions: AUTOSPEC01, User: pk

PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	26.38	3.122e3					0.4	NO		bb		
39	FUNCTION1 PFK	26.23	4.896e3					0.5	NO		bb		
40	FUNCTION1 PFK	26.11	2.335e4					0.8	NO		bb		
41	FUNCTION1 PFK	26.03	4.055e4					1.4	NO		bb		
42	FUNCTION1 PFK	25.79	7.741e4					1.9	NO		bb		
43	FUNCTION1 PFK	25.55	2.356e4					0.8	NO		bb		
44	FUNCTION1 PFK	25.49	2.822e4					1.4	NO		db		
45	FUNCTION1 PFK	25.43	2.186e4					1.1	NO		bd		
46	FUNCTION1 PFK	25.34	2.981e4					1.3	NO		bb		
47	FUNCTION1 PFK	25.00	2.696e4					1.1	NO		bb		
48	FUNCTION1 PFK	24.91	4.162e4					1.7	NO		db		
49	FUNCTION1 PFK	27.98	3.940e4					1.1	NO		bb		
50	FUNCTION1 PFK	27.71	7.069e4					1.7	NO		bb		
51	FUNCTION1 PFK	27.58	7.407e4					2.0	NO		bb		
52	FUNCTION1 PFK	27.50	7.076e3					0.5	NO		db		
53	FUNCTION1 PFK	27.48	7.390e3					0.6	NO		bd		
54	FUNCTION1 PFK	27.42	4.339e3					0.5	NO		bb		
55	FUNCTION1 PFK	27.36	6.112e3					0.6	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.25	2.822e4					2.8	NO		bb		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	34.61	1.783e4					1.6	NO		bb		0.000
2	FUNCTION3 PFK	34.31	9.392e3					1.0	NO		bb		0.000
3	FUNCTION3 PFK	34.27	2.251e3					0.5	NO		bb		0.000
4	FUNCTION3 PFK	33.33	2.002e3					0.4	NO		bb		0.000
5	FUNCTION3 PFK	33.14	1.414e5					3.4	YES		db		0.000
6	FUNCTION3 PFK	33.03	9.929e4					4.6	YES		bd		0.000
7	FUNCTION3 PFK	37.81	1.646e4					1.6	NO		bb		0.000
8	FUNCTION3 PFK	37.50	1.087e4					1.0	NO		bb		0.000
9	FUNCTION3 PFK	37.37	2.306e4					1.9	NO		bb		0.000
10	FUNCTION3 PFK	37.27	1.239e4					1.1	NO		bb		0.000
11	FUNCTION3 PFK	37.04	1.555e4					1.2	NO		bb		0.000
12	FUNCTION3 PFK	36.98	6.837e3					0.6	NO		bb		0.000
13	FUNCTION3 PFK	36.39	1.992e4					1.3	NO		bb		0.000
14	FUNCTION3 PFK	35.94	1.117e4					1.1	NO		bb		0.000
15	FUNCTION3 PFK	35.88	1.615e4					1.6	NO		db		0.000
16	FUNCTION3 PFK	35.80	6.455e4					1.9	NO		bd		0.000
17	FUNCTION3 PFK	35.38	1.458e4					1.3	NO		bb		0.000
18	FUNCTION3 PFK	35.19	1.784e4					1.5	NO		bb		0.000
19	FUNCTION3 PFK	35.06	6.143e3					0.7	NO		bb		0.000
20	FUNCTION3 PFK	34.91	7.143e4					2.7	NO		bb		0.000
21	FUNCTION3 PFK	34.83	3.330e4					2.0	NO		bb		0.000
22	FUNCTION3 PFK	34.70	4.168e4					1.2	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	39.69	1.465e4					1.8	NO		bb		
2	FUNCTION4 PFK	38.11	1.370e4					1.9	NO		bb		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.33	9.662e3					1.4	NO		bb		
2	FUNCTION5 PFK	45.22	3.738e3					1.1	NO		bb		
3	FUNCTION5 PFK	44.14	1.517e4					1.2	NO		bb		
4	FUNCTION5 PFK	43.50	2.893e3					0.9	NO		bb		
5	FUNCTION5 PFK	43.28	7.236e3					1.6	NO		bb		
6	FUNCTION5 PFK	43.19	4.007e4					1.9	NO		bb		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	24.82	1.052e2					2.3	NO		bd		0.000
2	FUNCTION1 HXCD...	23.21	7.172e1					1.4	NO		bb		0.000
3	FUNCTION1 HXCD...	21.59	1.093e2					2.8	NO		bb		0.000
4	FUNCTION1 HXCD...	21.36	8.354e1					1.6	NO		db		0.000
5	FUNCTION1 HXCD...	21.12	1.226e2					1.8	NO		bd		0.000
6	FUNCTION1 HXCD...	27.09	2.027e2					3.5	YES		bb		0.000
7	FUNCTION1 HXCD...	26.37	1.432e2					2.7	NO		db		0.000
8	FUNCTION1 HXCD...	26.24	9.444e1					1.7	NO		dd		0.000
9	FUNCTION1 HXCD...	26.12	8.666e1					2.1	NO		bd		0.000
10	FUNCTION1 HXCD...	25.75	1.237e2					4.6	YES		bb		0.000
11	FUNCTION1 HXCD...	25.55	1.348e2					2.8	NO		db		0.000
12	FUNCTION1 HXCD...	25.41	1.692e2					2.6	NO		dd		0.000
13	FUNCTION1 HXCD...	25.32	1.656e2					2.6	NO		dd		0.000
14	FUNCTION1 HXCD...	25.17	8.241e1					1.8	NO		bd		0.000
15	FUNCTION1 HXCD...	25.03	8.697e1					2.5	NO		db		0.000
16	FUNCTION1 HXCD...	24.91	1.374e2					2.2	NO		dd		0.000

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ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	22.77	1.298e2					2.5	NO		bb		0.000
2	FUNCTION1 HPCD...	22.49	1.787e2					1.8	NO		bb		0.000
3	FUNCTION1 HPCD...	21.78	1.150e2					1.5	NO		bb		0.000
4	FUNCTION1 HPCD...	21.35	1.171e2					1.7	NO		bb		0.000
5	FUNCTION1 HPCD...	27.71	9.341e1					1.9	NO		bb		0.000
6	FUNCTION1 HPCD...	27.51	9.510e1					1.4	NO		bb		0.000
7	FUNCTION1 HPCD...	27.24	7.100e1					1.3	NO		db		0.000
8	FUNCTION1 HPCD...	27.08	1.946e2					2.2	NO		bd		0.000
9	FUNCTION1 HPCD...	26.37	1.456e2					2.1	NO		db		0.000
10	FUNCTION1 HPCD...	26.27	1.044e2					2.6	NO		dd		0.000
11	FUNCTION1 HPCD...	26.20	8.212e1					1.8	NO		bd		0.000
12	FUNCTION1 HPCD...	25.94	7.362e1					1.9	NO		bb		0.000
13	FUNCTION1 HPCD...	25.55	7.494e1					1.5	NO		bb		0.000
14	FUNCTION1 HPCD...	25.34	1.029e2					1.7	NO		bb		0.000
15	FUNCTION1 HPCD...	24.40	8.325e1					1.3	NO		bb		0.000
16	FUNCTION1 HPCD...	23.92	8.421e1					1.5	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.09	3.750e2					6.3	YES		bb		0.000
2	FUNCTION2 HPCD...	29.92	2.231e2					3.4	YES		bb		0.000
3	FUNCTION2 HPCD...	29.45	1.367e2					1.7	NO		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.48	2.730e2					4.9	YES		bb		0.000
2	FUNCTION3 OCDPE	36.08	2.937e2					4.9	YES		db		0.000
3	FUNCTION3 OCDPE	35.98	2.276e2					4.9	YES		bd		0.000
4	FUNCTION3 OCDPE	34.99	8.272e1					1.6	NO		db		0.000
5	FUNCTION3 OCDPE	34.88	1.530e2					2.7	NO		bd		0.000
6	FUNCTION3 OCDPE	34.39	7.922e1					2.1	NO		bb		0.000

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ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	38.74	1.200e2					3.3	YES		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

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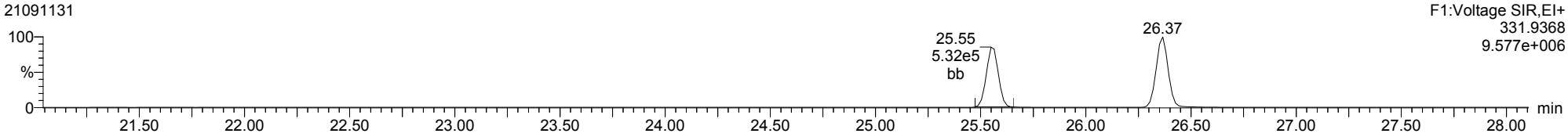

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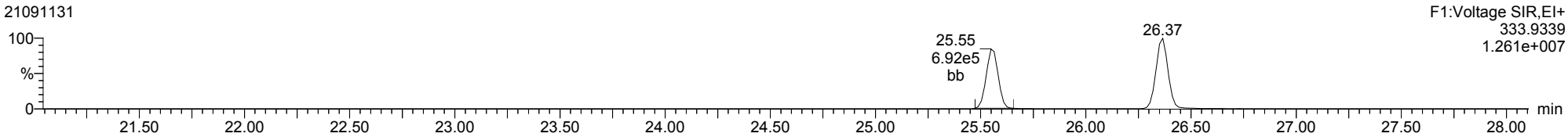

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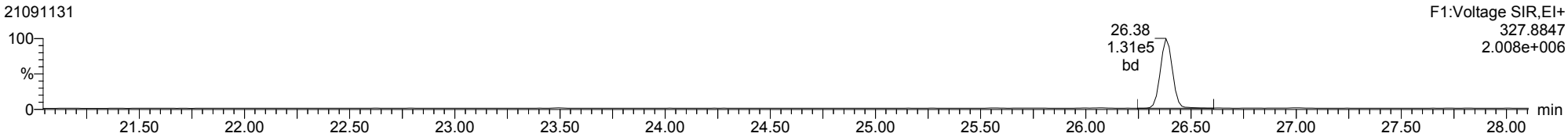

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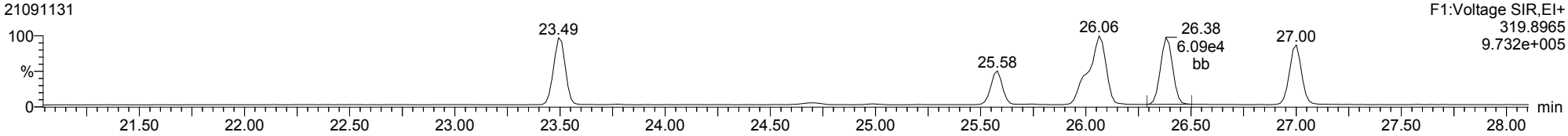

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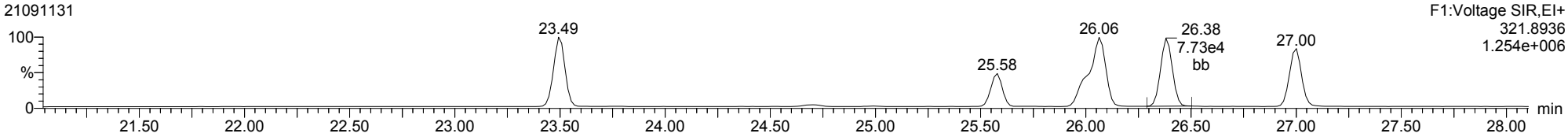

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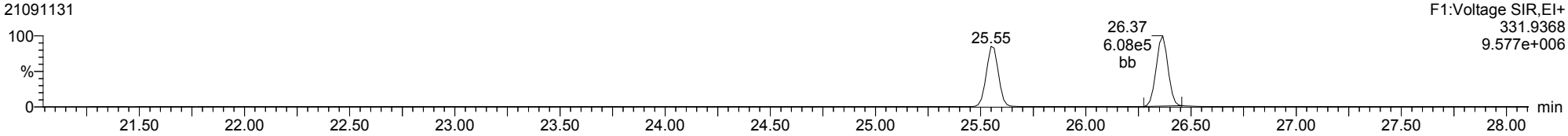

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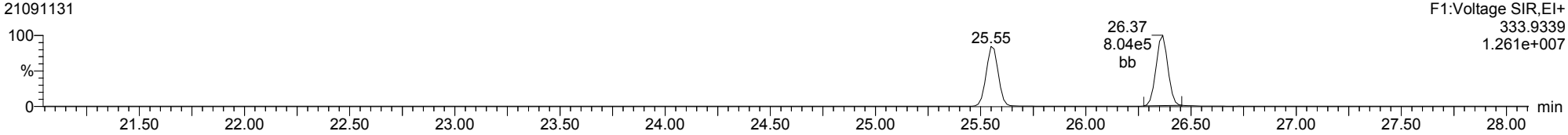

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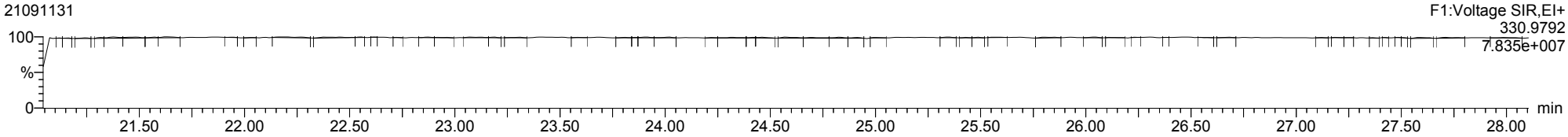

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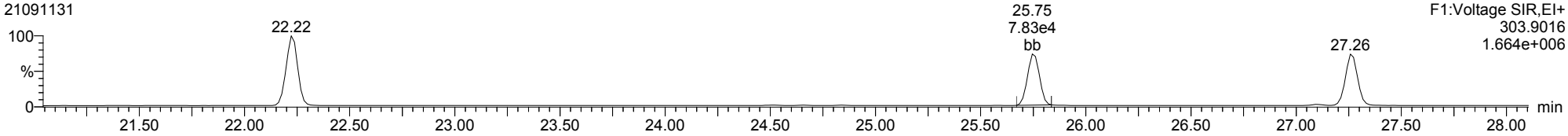
2378-TCDF



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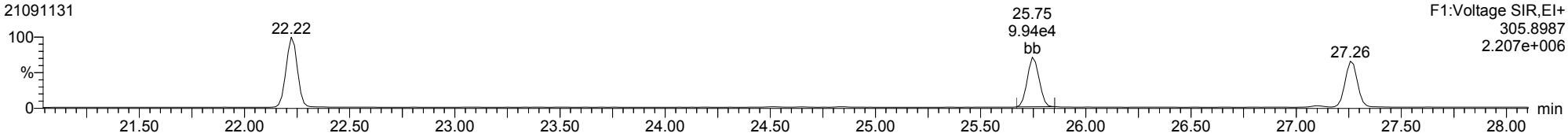

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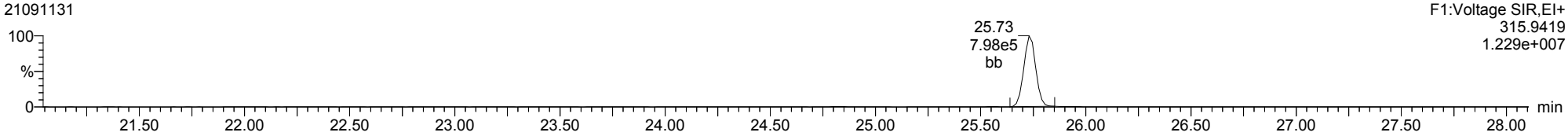

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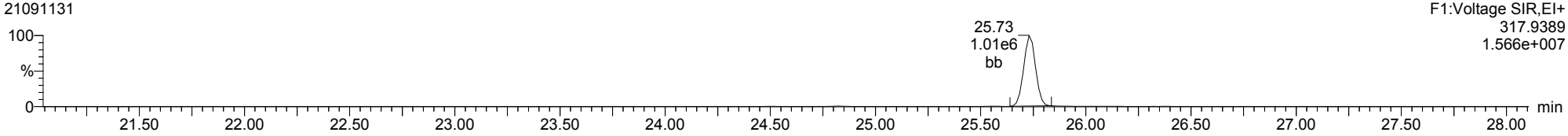

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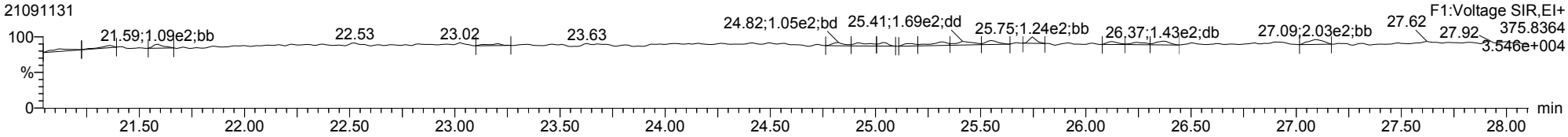

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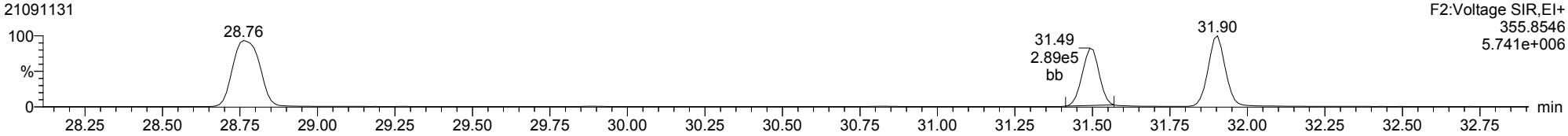

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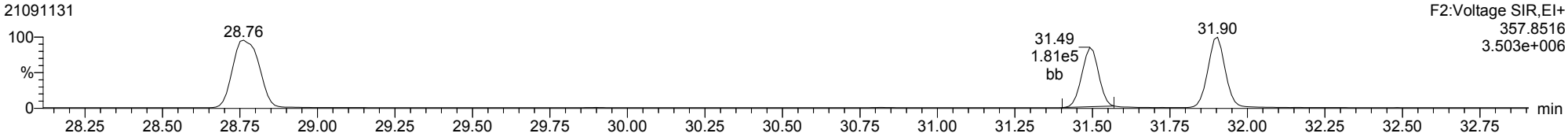

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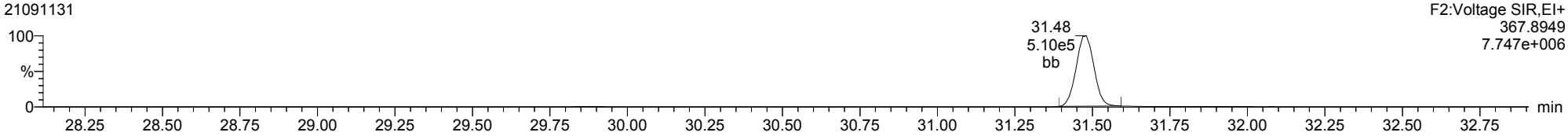

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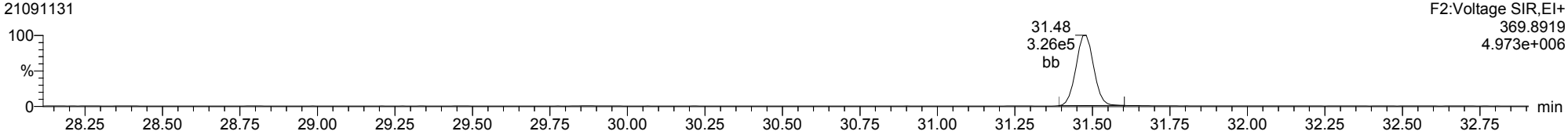

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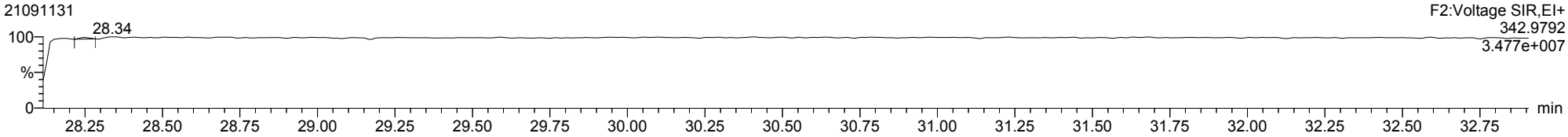

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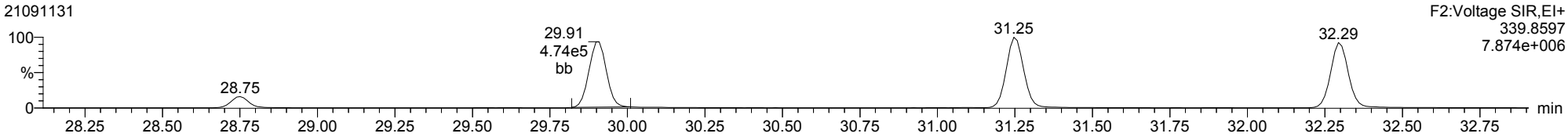

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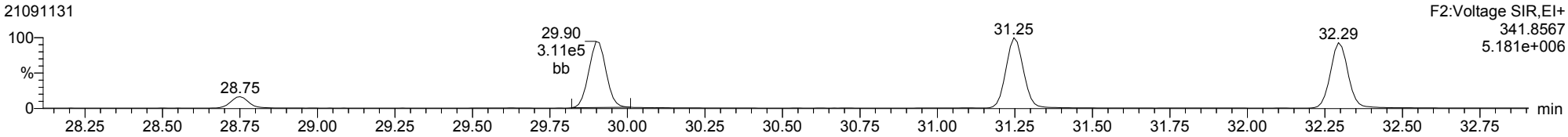

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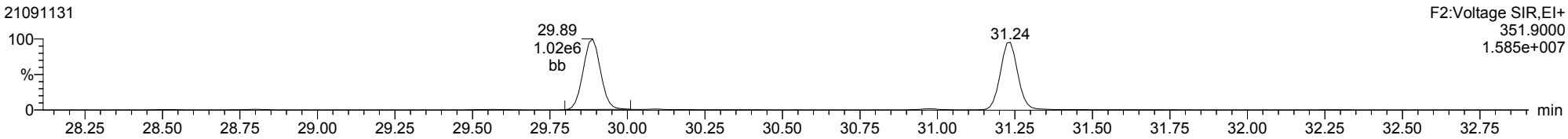

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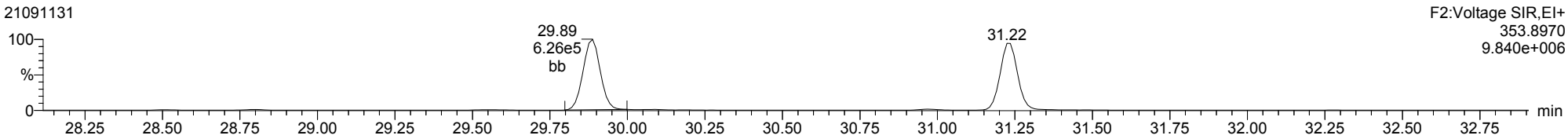

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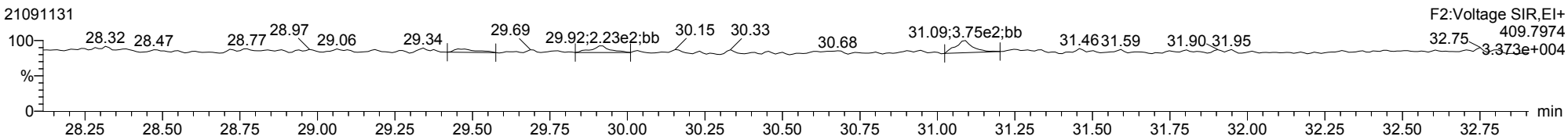

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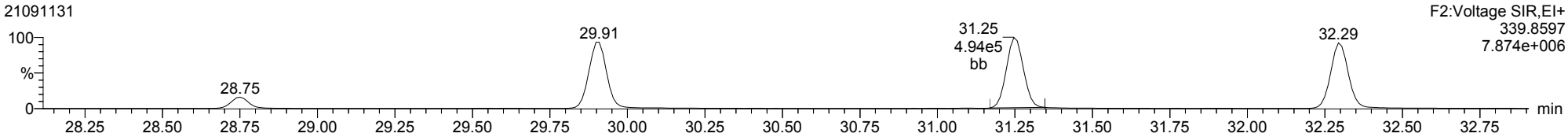
23478-PeCDF



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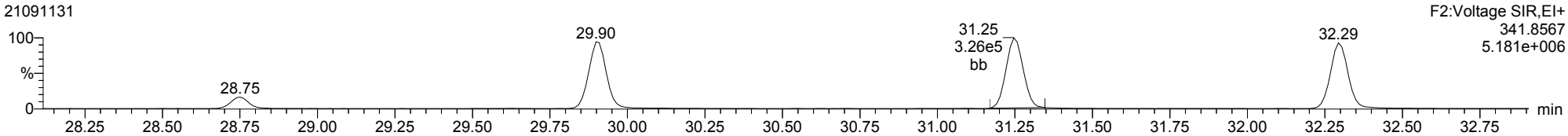

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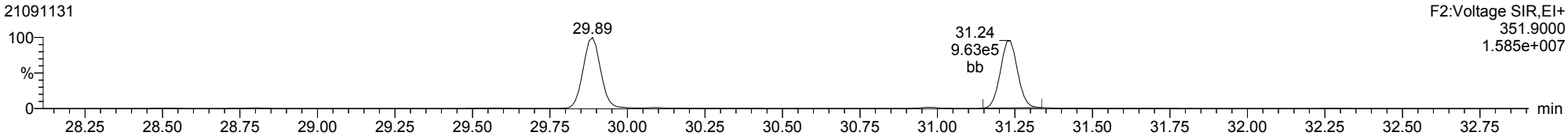

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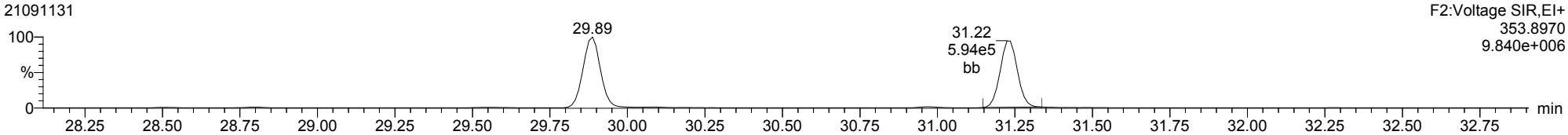

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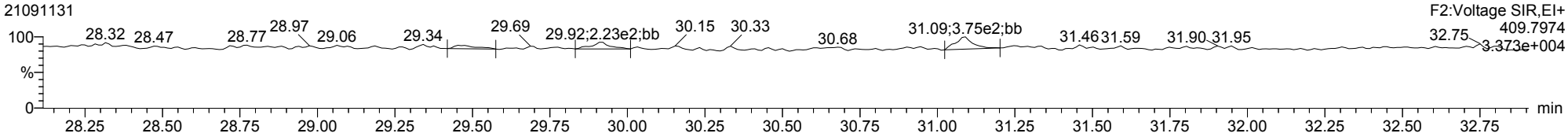

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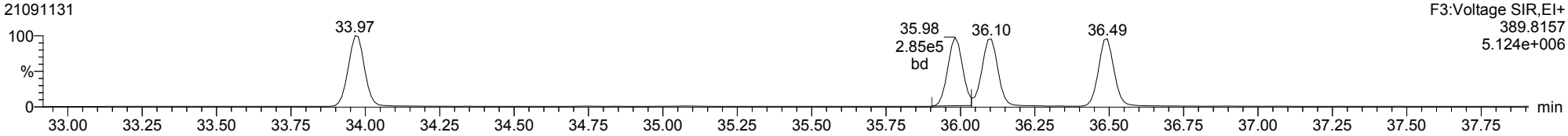

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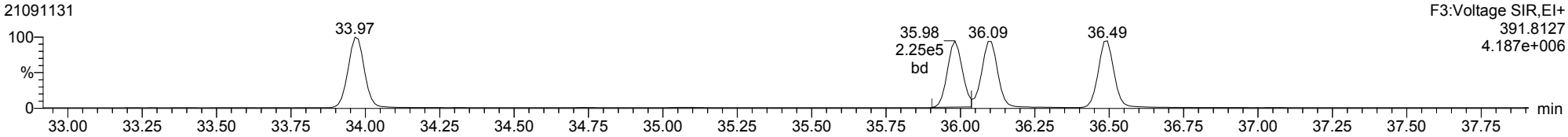

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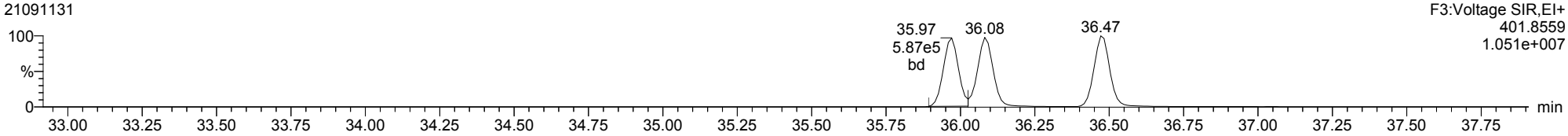

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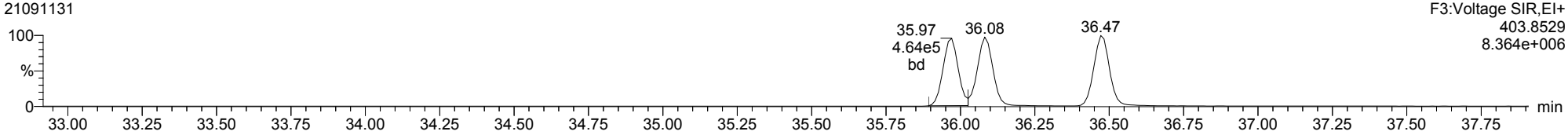

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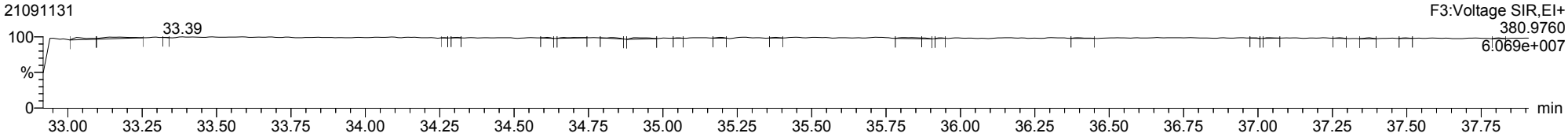

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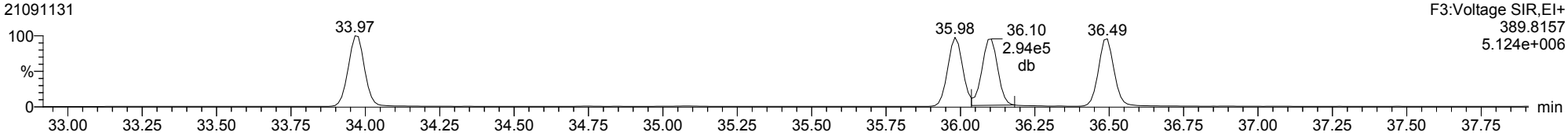

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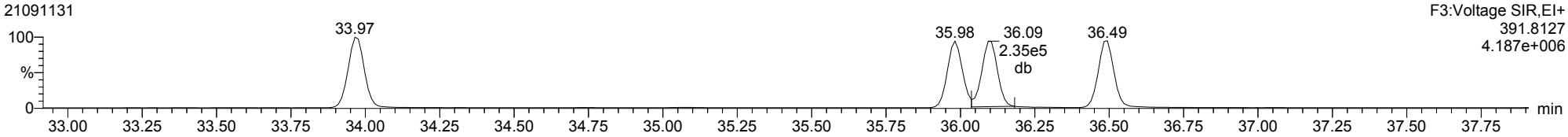

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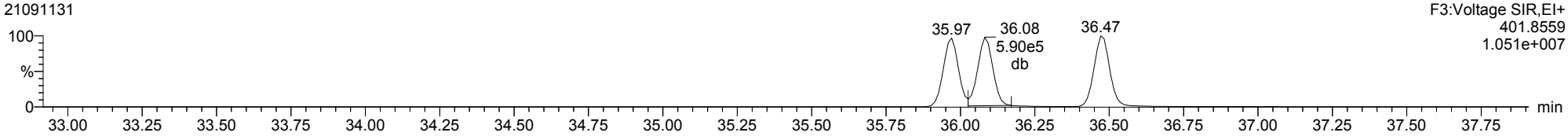

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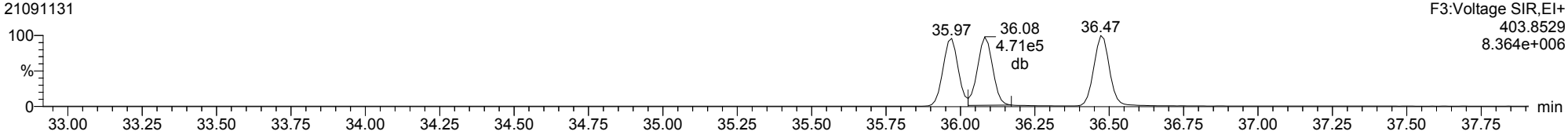

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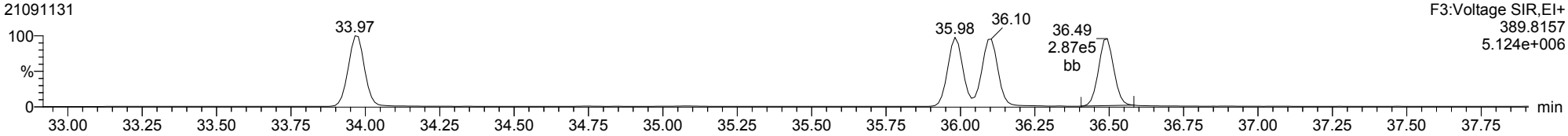

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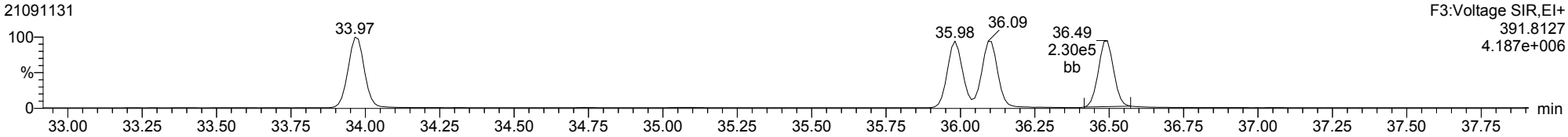

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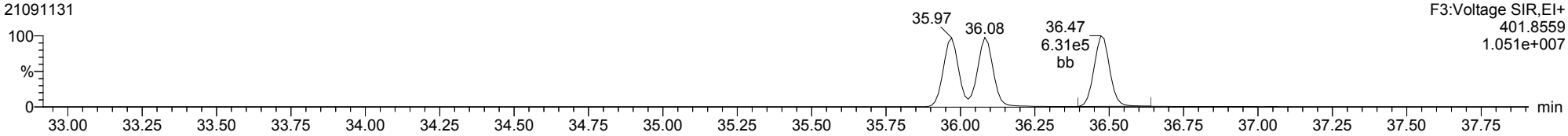

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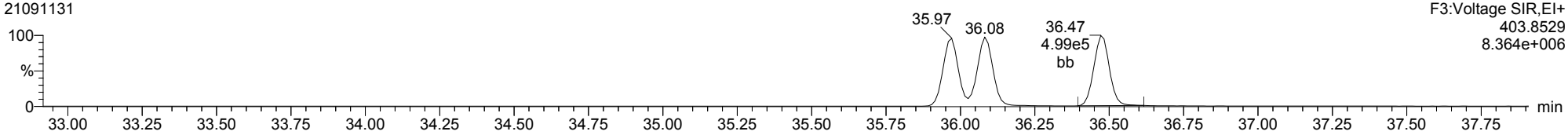

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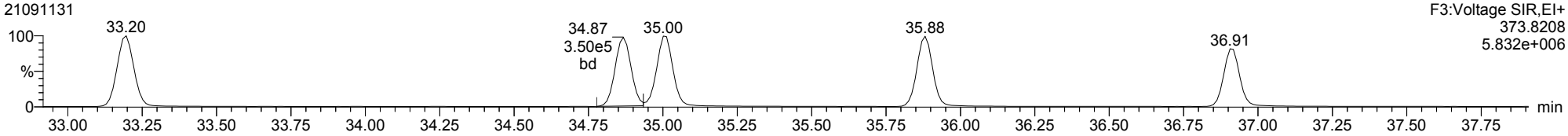

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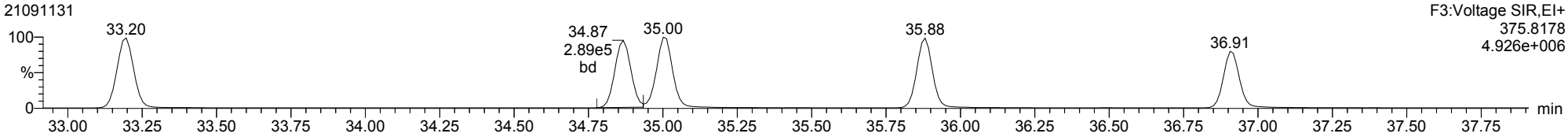

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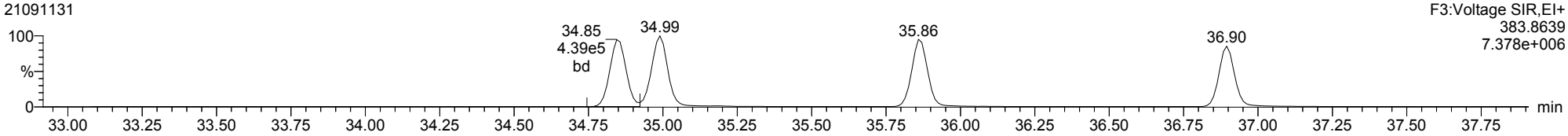

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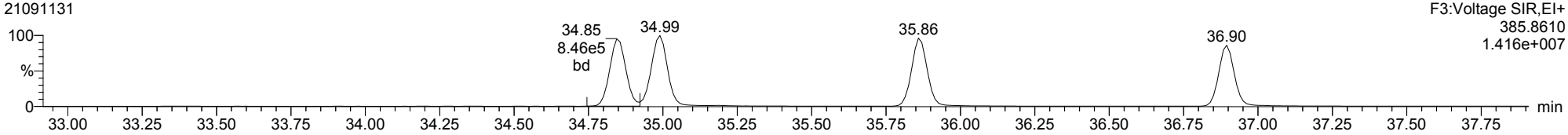

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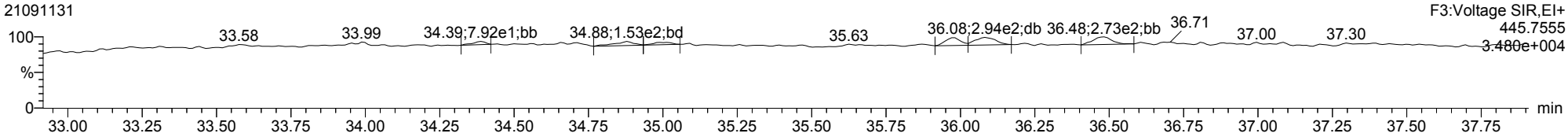

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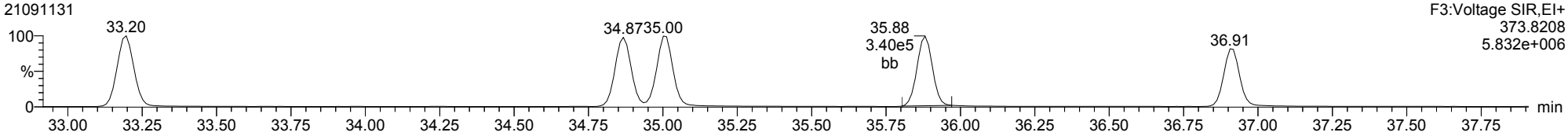
234678-HxCDF



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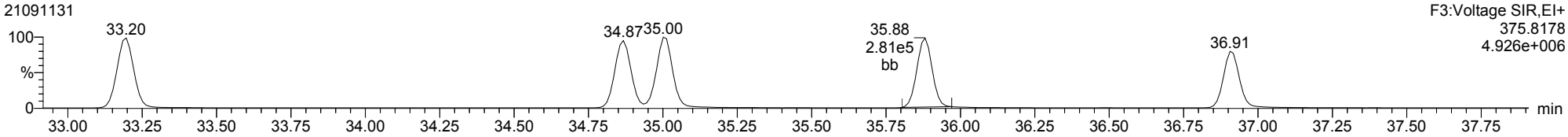

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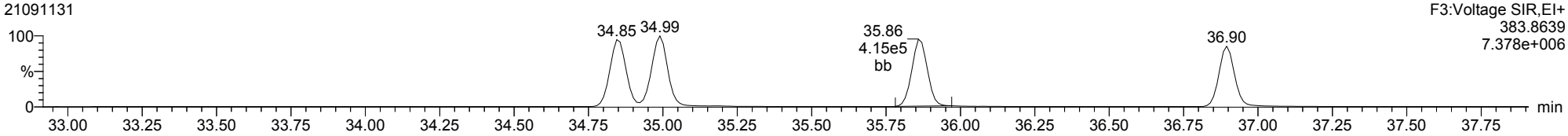

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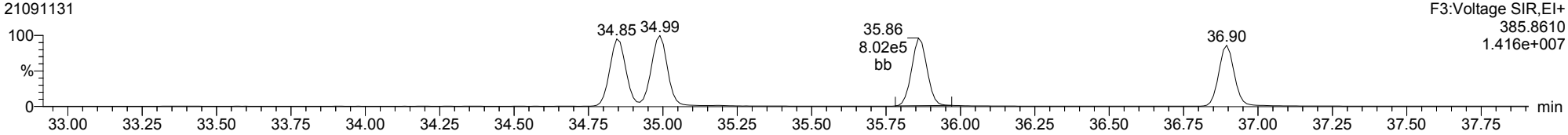

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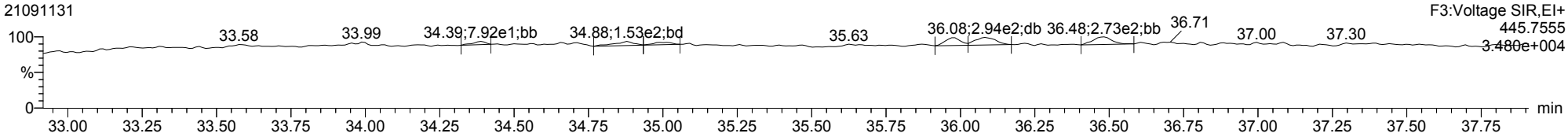

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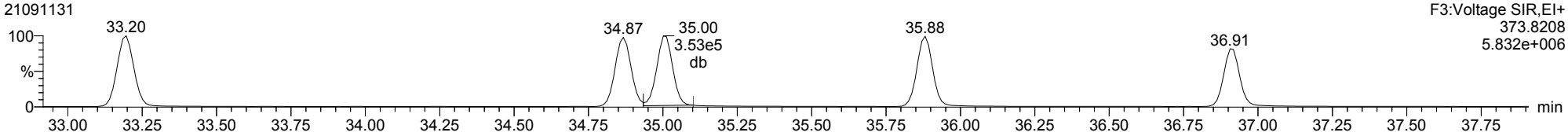

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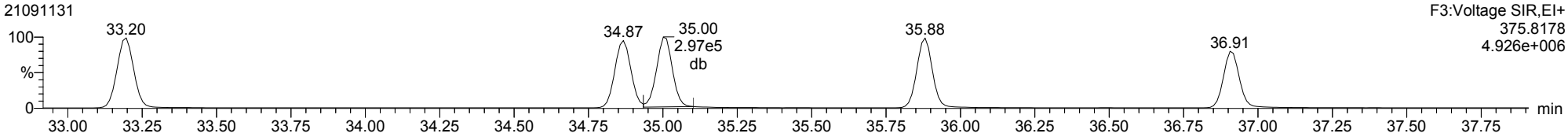

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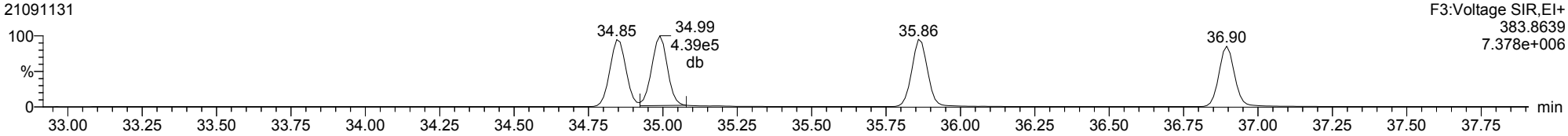

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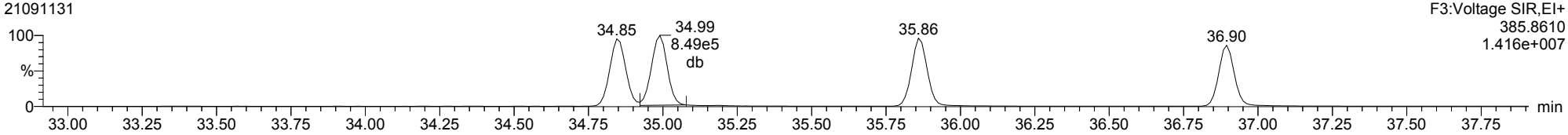

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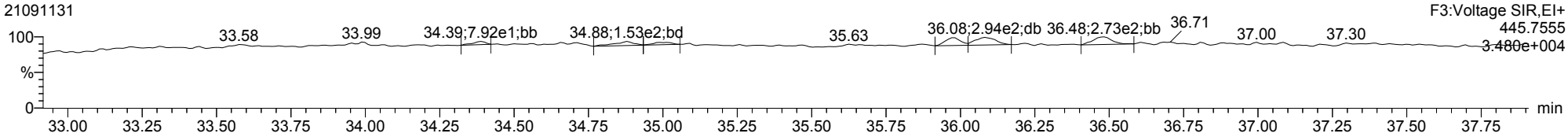

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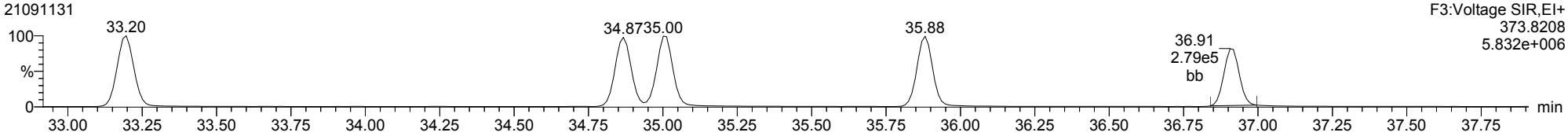

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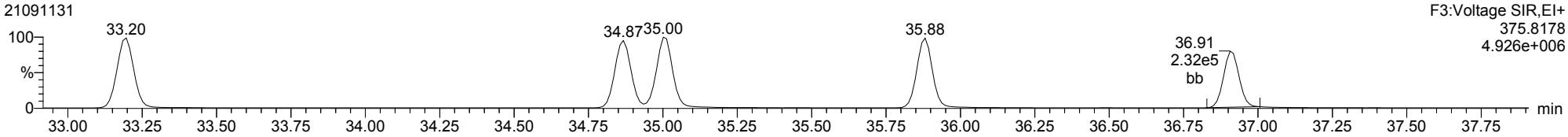

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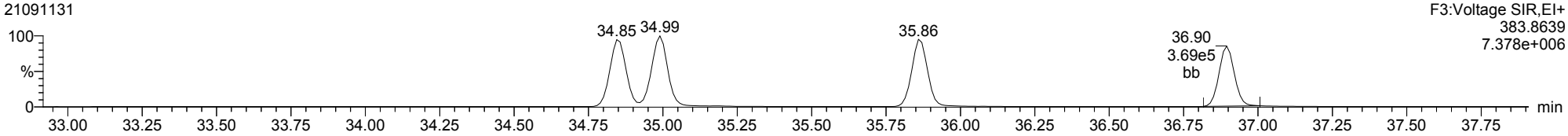

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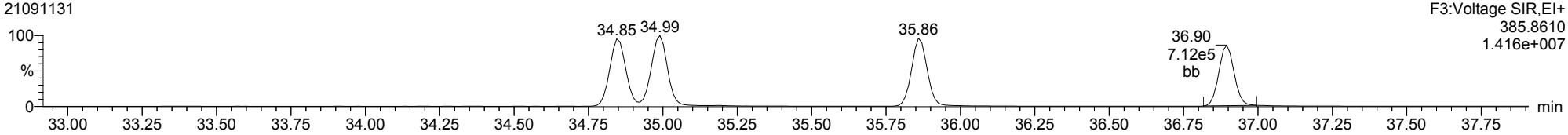
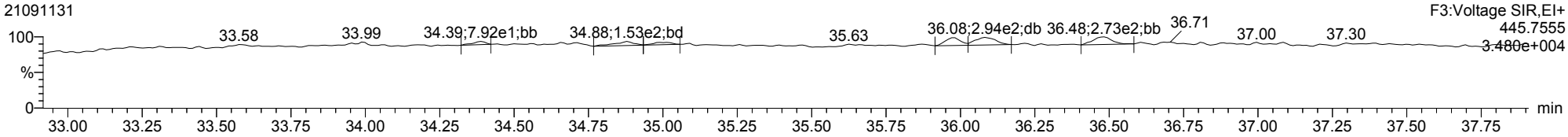


FUNCTION3 OCDPE



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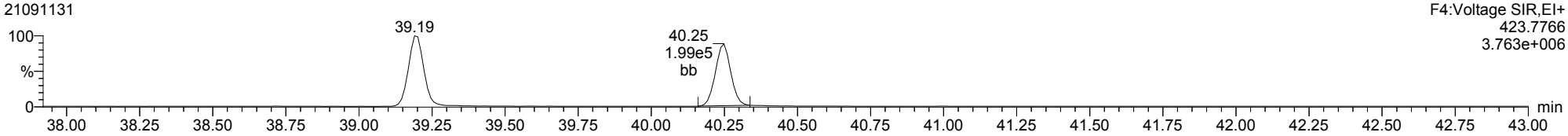

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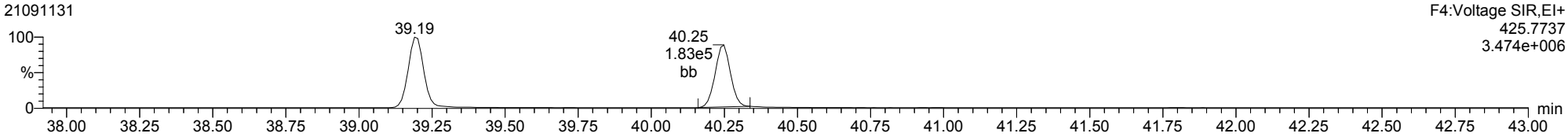

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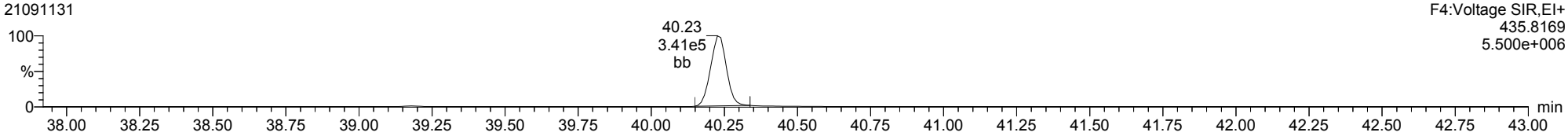

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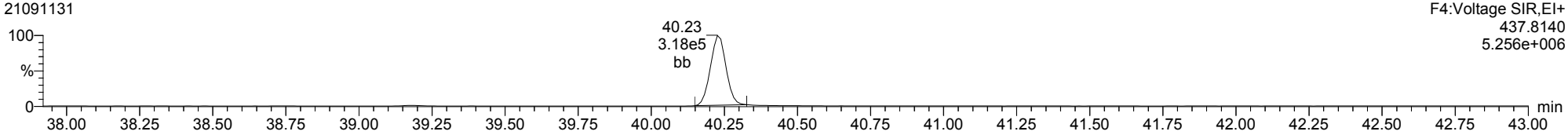
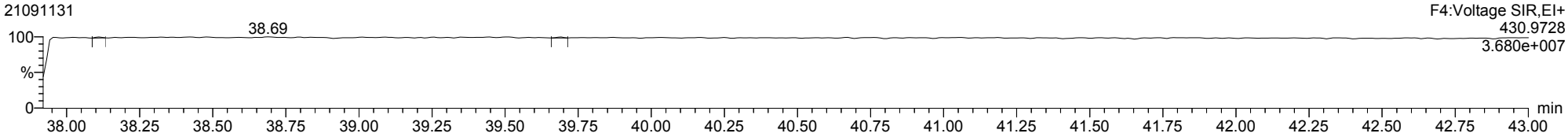


FUNCTION4 PFK



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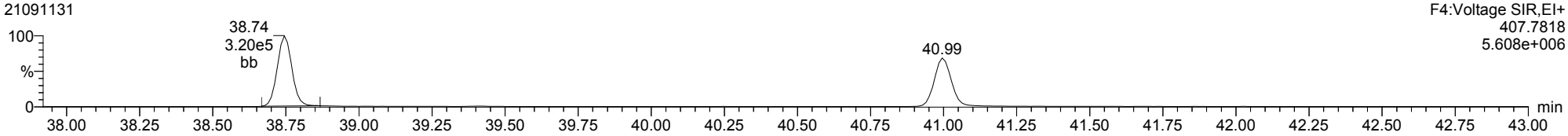

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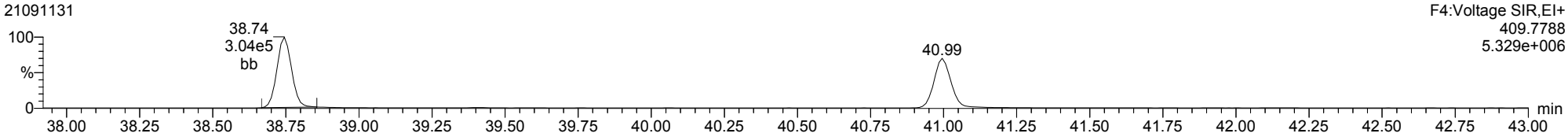

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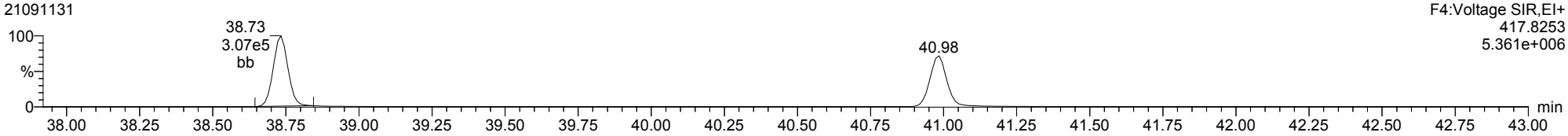

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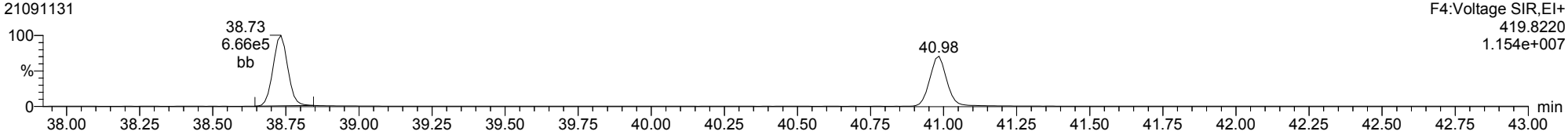
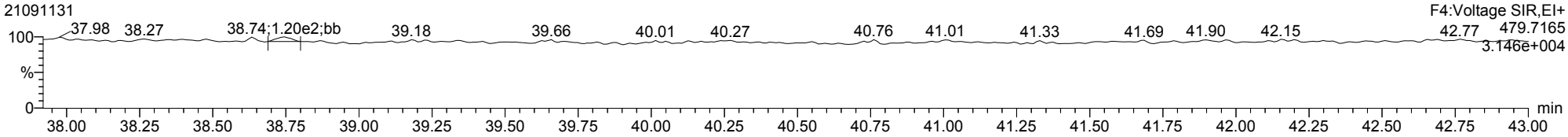


FUNCTION4 NCDPE



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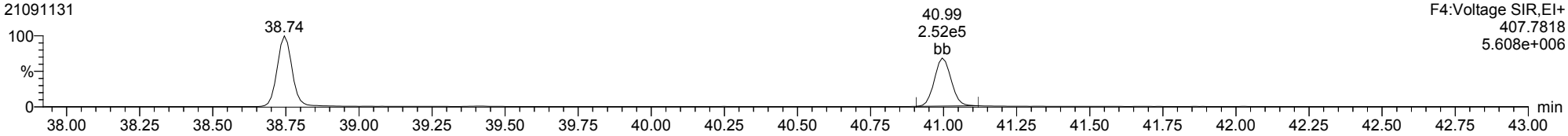

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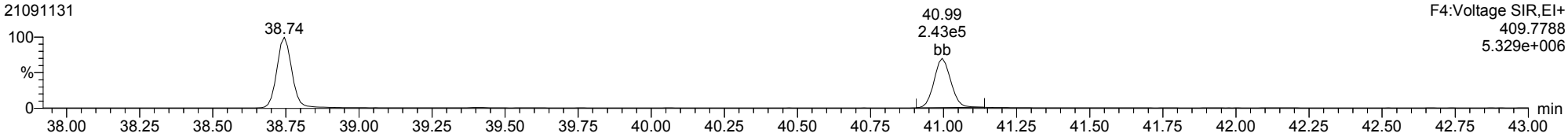

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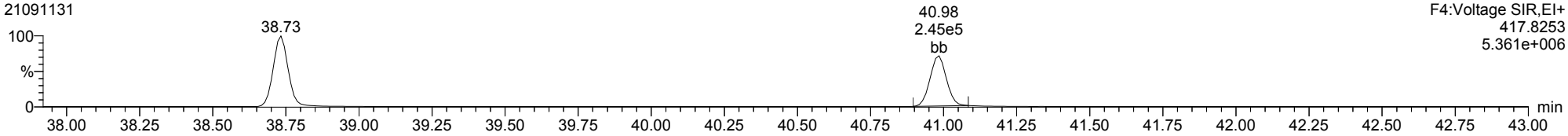

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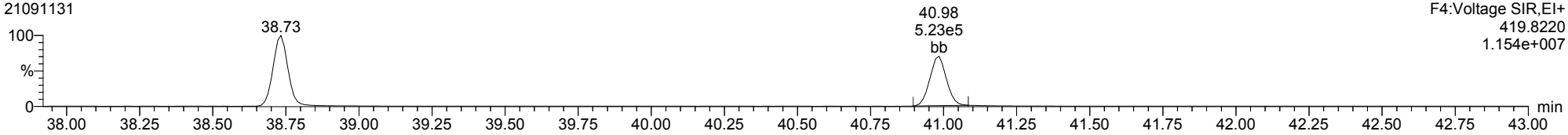
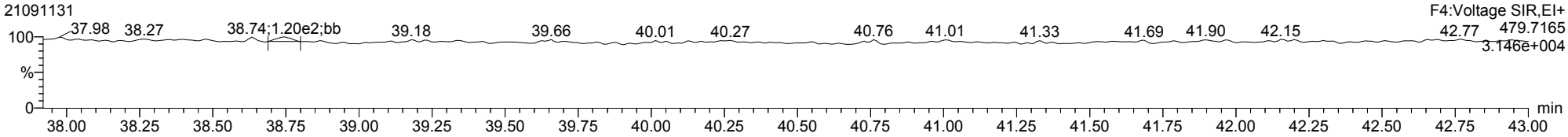


FUNCTION4 NCDPE



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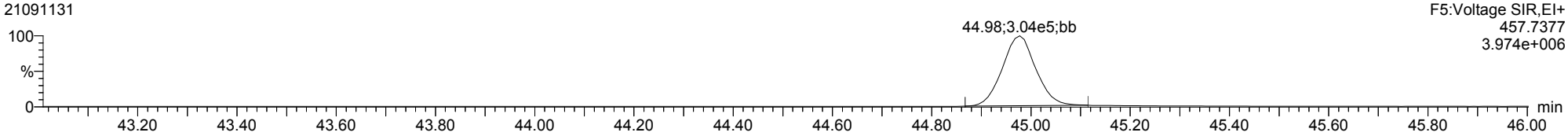

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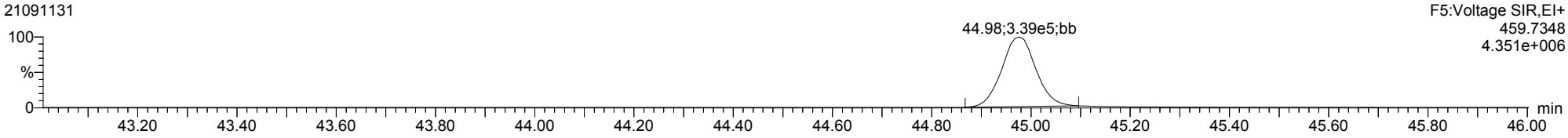

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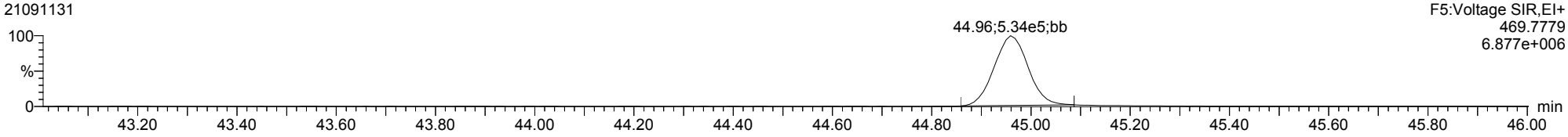

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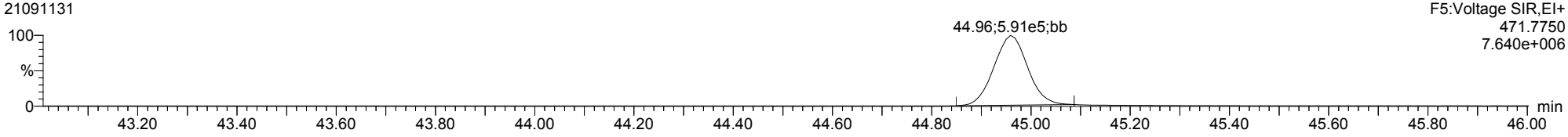

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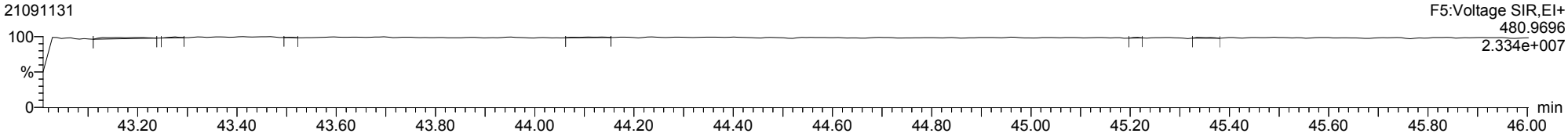

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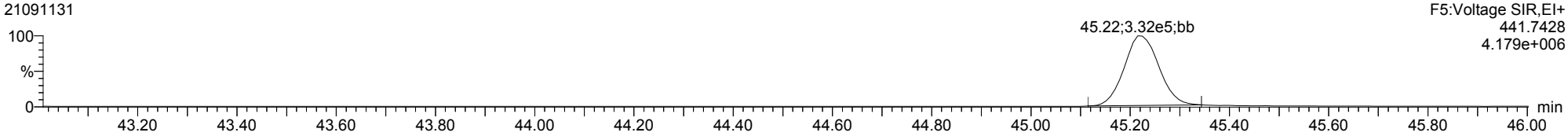

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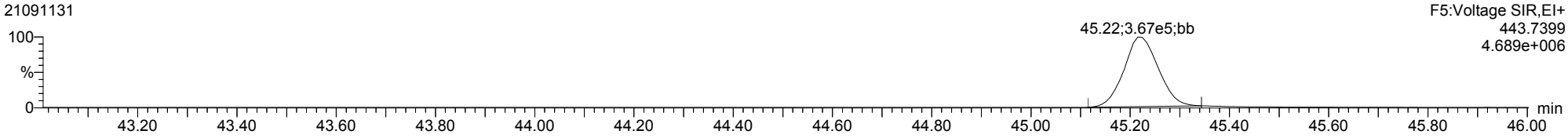
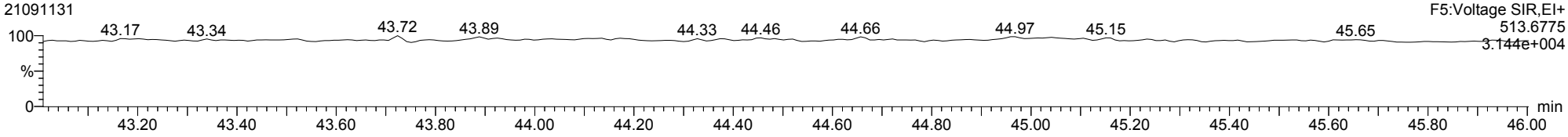


FUNCTION5 DCDPE



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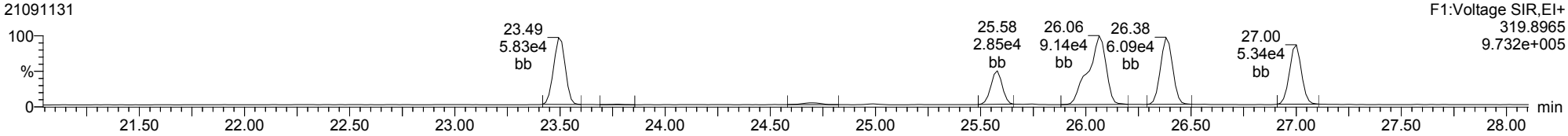

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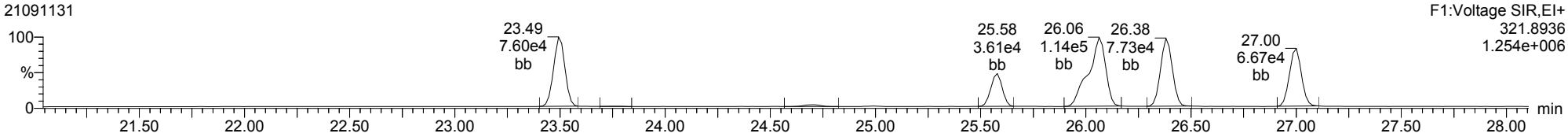

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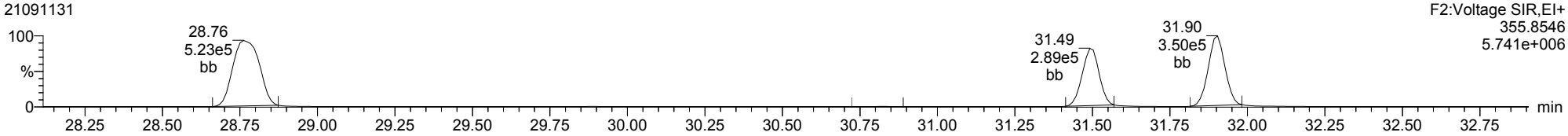

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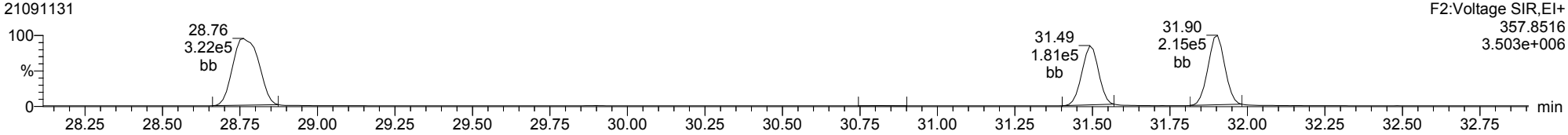

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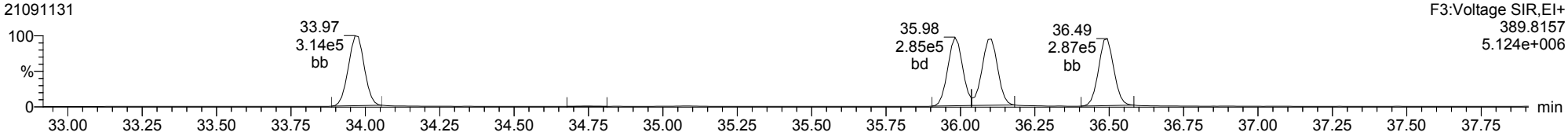

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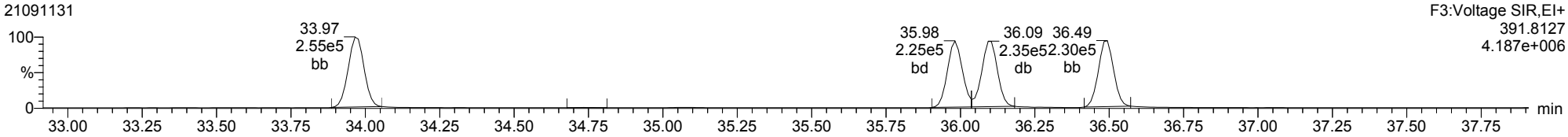

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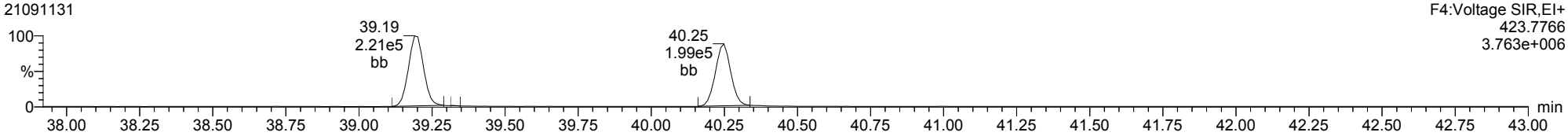

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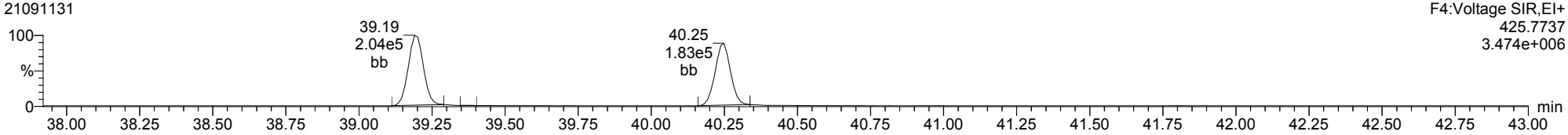

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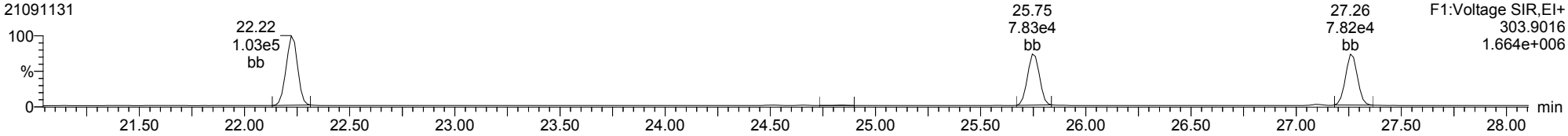

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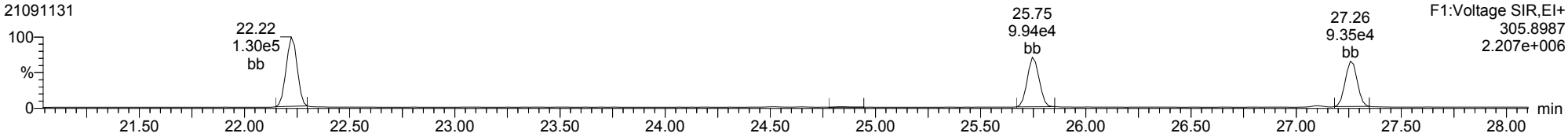

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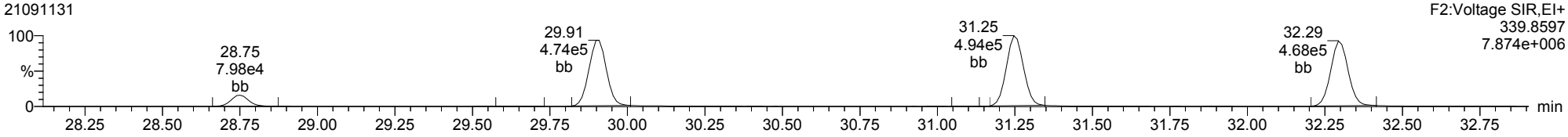

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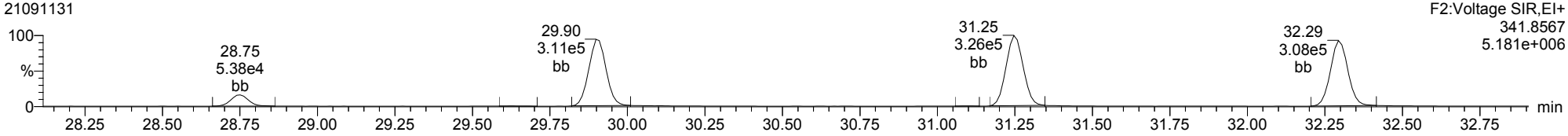

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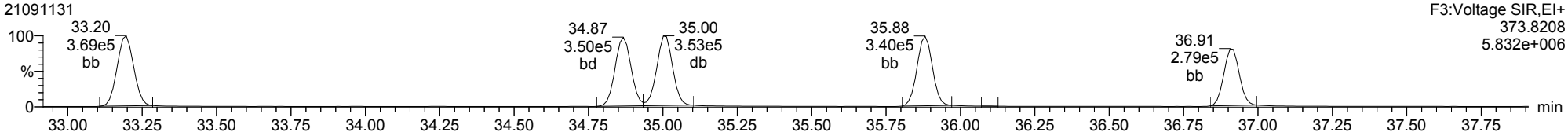

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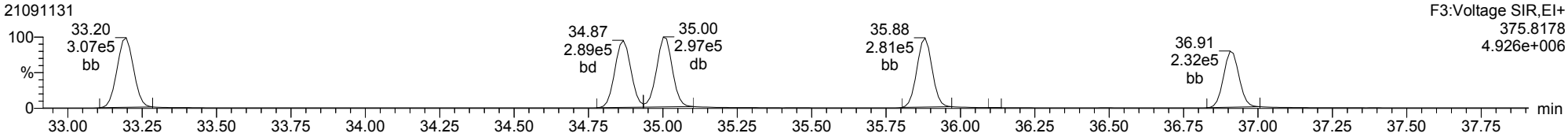

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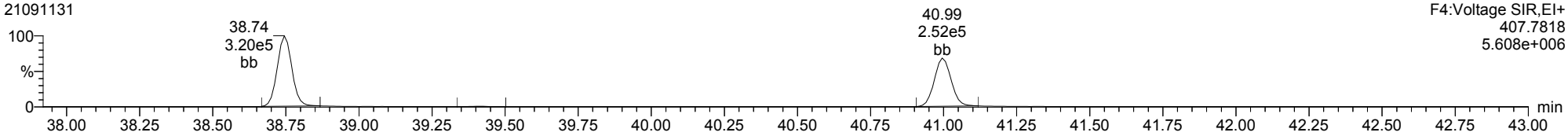

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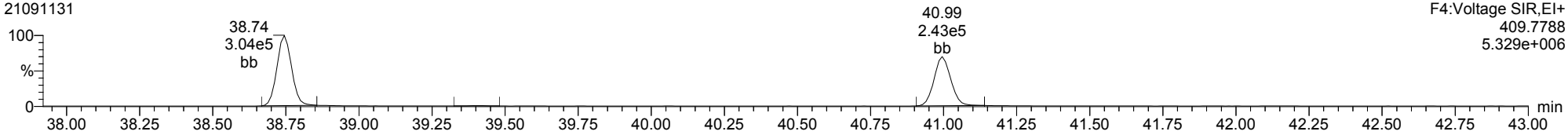

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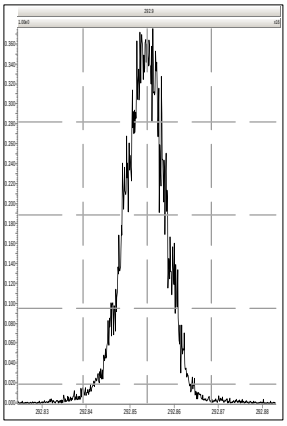

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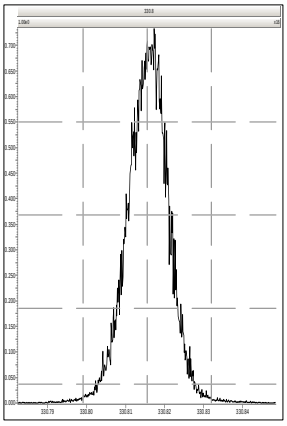

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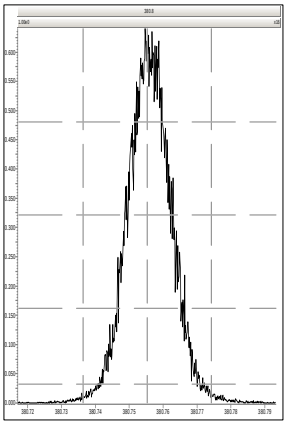

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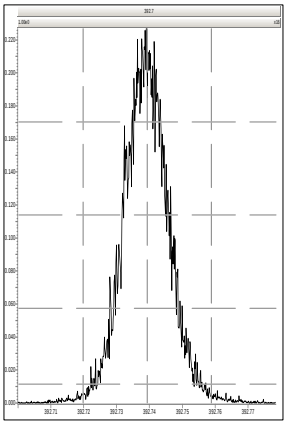

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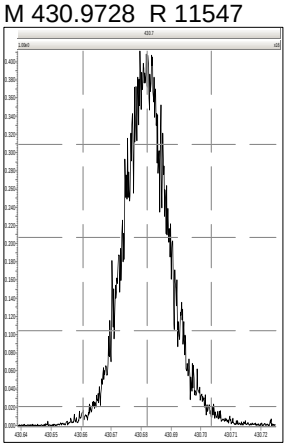

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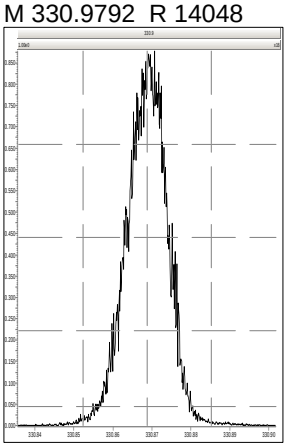

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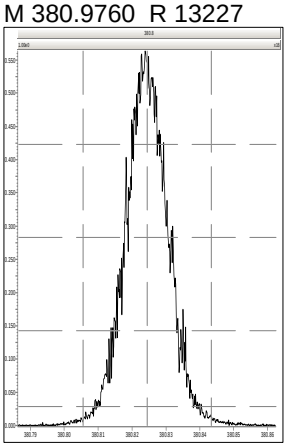

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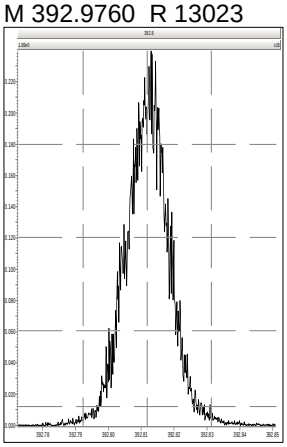

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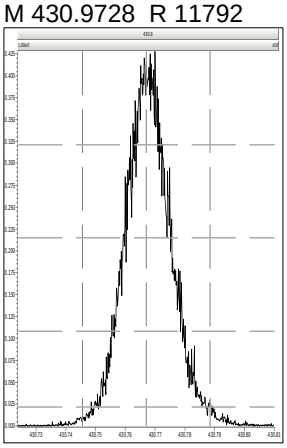

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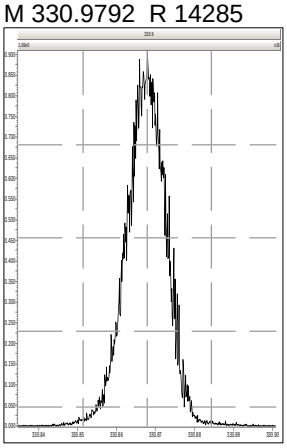

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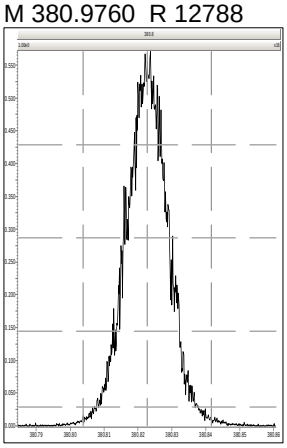

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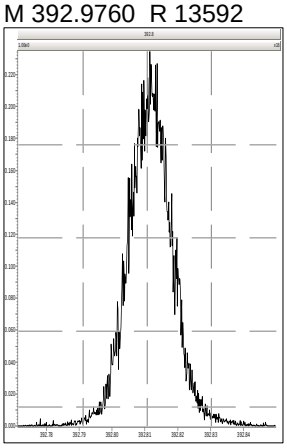

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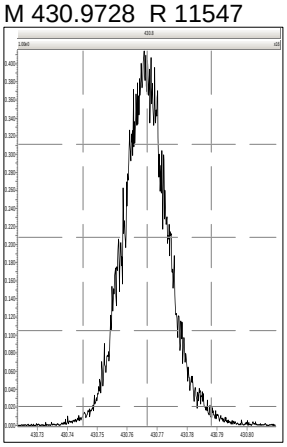

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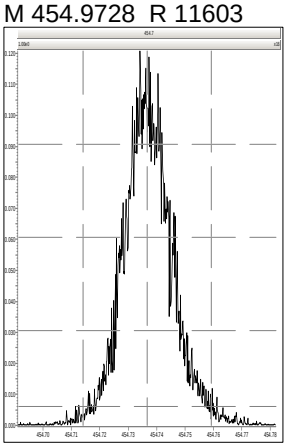

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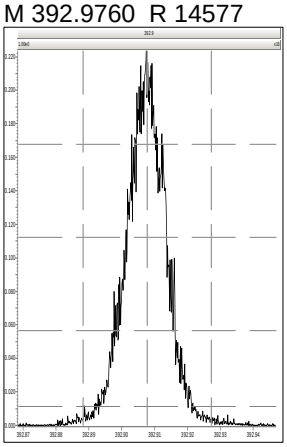
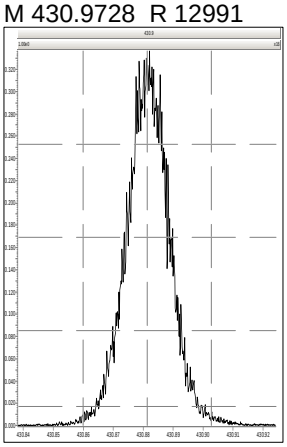


M 430.9728 R 12991



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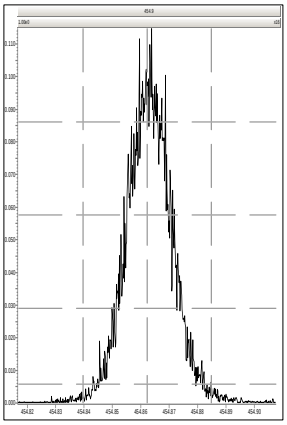
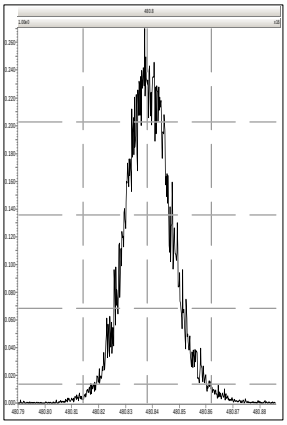
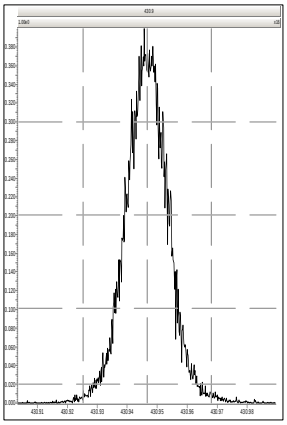


M 480.9696 R 11573



M 430.9728 R 13545



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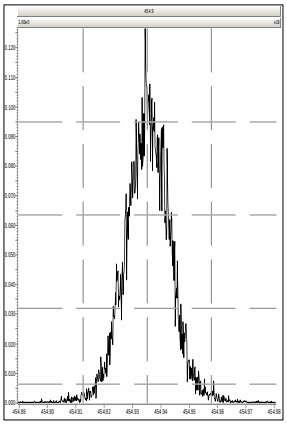

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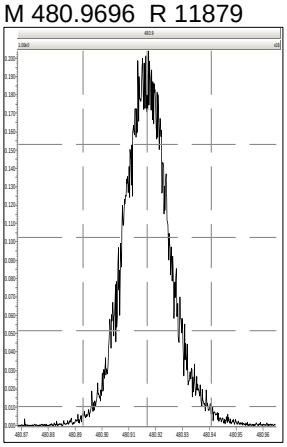

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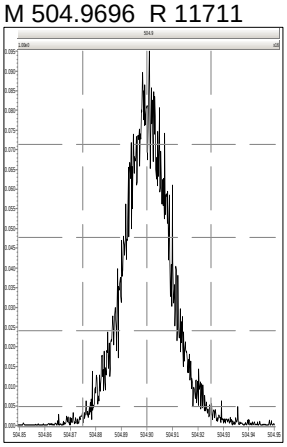
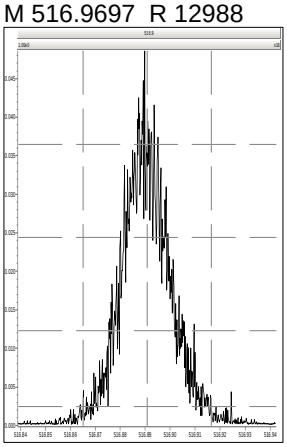
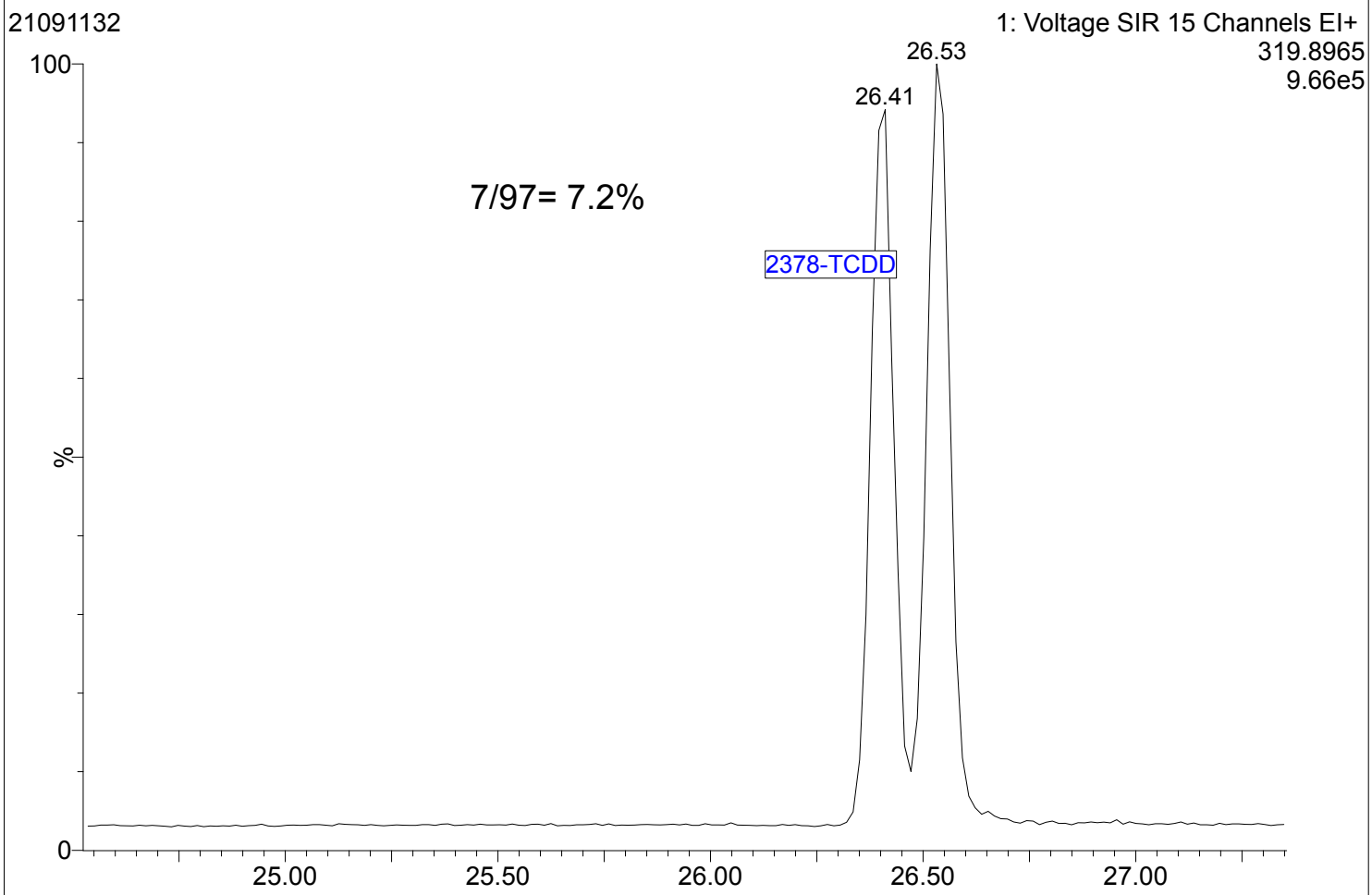
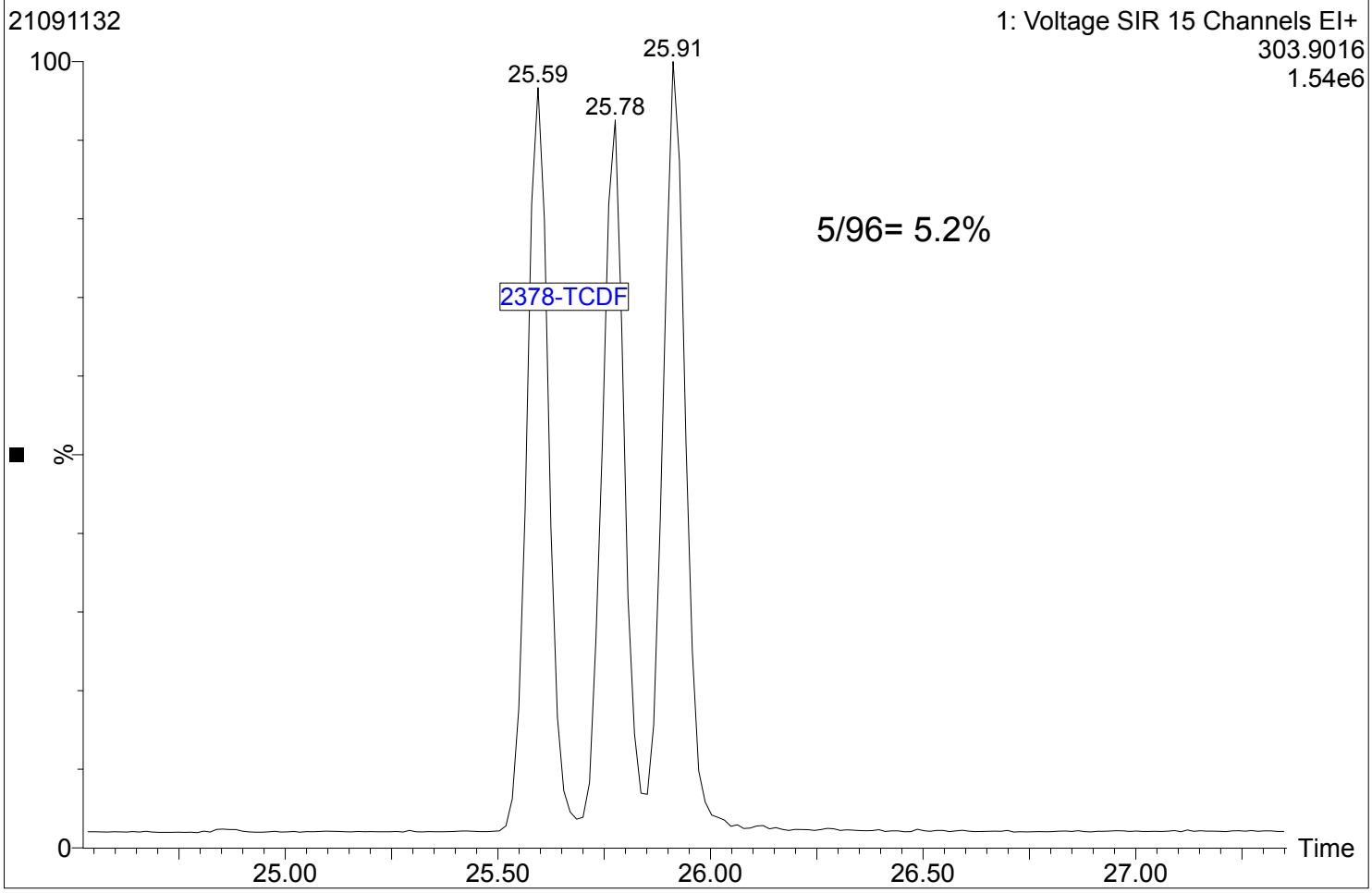


M 516.9697 R 12988




21091132
1: Voltage SIR 15 Channels EI+
319.8965
9.66e5
26.53
26.41
7/97= 7.2%
2378-TCDD
100
%
0
25.00
25.50
26.00
26.50
27.00


21091132
1: Voltage SIR 15 Channels EI+
303.9016
1.54e6
25.91
25.59
25.78
5/96= 5.2%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091317	Calibration Date:	08/11/2021
Sequence:	SJI0191	Injection Date:	09/14/21
Lab Sample ID:	SJI0191-CCV1	Injection Time:	00:57
Sequence Name:	CS3Q3		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	9.31	1.1075930	1.0306810		-6.9	+/-16
2,3,7,8-TCDD	A	10.000	10.6	0.9202875	0.9754769		6.0	+/-22
1,2,3,7,8-PeCDF	A	50.000	46.4	1.0148670	0.9412404		-7.3	+/-18
2,3,4,7,8-PeCDF	A	50.000	46.2	1.1255490	1.0393880		-7.7	+/-18
1,2,3,7,8-PeCDD	A	50.000	54.7	0.9953229	1.0884080		9.4	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	46.9	1.0168930	0.9543428		-6.2	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	46.3	1.0368310	0.9600850		-7.4	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	46.7	1.0524660	0.9825994		-6.6	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	46.0	1.0301540	0.9479519		-8.0	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	46.3	1.0273630	0.9503951		-7.5	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	48.5	1.0089800	0.9795780		-2.9	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	50.8	0.9504865	0.9650283		1.5	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	47.9	1.3273500	1.2707020		-4.3	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.6	1.2833380	1.2735400		-0.8	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	54.4	1.0680880	1.1611420		8.7	+/-14
OCDF	A	100.00	85.0	1.4469010	1.2305840		-15.0	+/-37
OCDD	A	100.00	97.3	1.1808230	1.1494340		-2.7	+/-21
13C12-2,3,7,8-TCDF	A	100.00	111	1.4265830	1.5888794		11.4	+/-29
13C12-2,3,7,8-TCDD	A	100.00	104	1.1164910	1.1575014		3.7	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	107	1.2973130	1.3838161		6.7	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	106	1.2364800	1.3083957		5.8	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	99.0	0.7319833	0.7246477		-1.0	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	89.6	1.2424560	1.1131256		-10.4	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	83.1	1.3434760	1.1169882		-16.9	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	86.5	1.2148550	1.0505022		-13.5	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	89.0	1.0076370	0.8972682		-11.0	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	97.7	0.9598233	0.9380793		-2.3	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	89.8	1.0413850	0.9349851		-10.2	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	88.8	0.9264704	0.8223239		-11.2	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	83.5	0.7579160	0.6331233		-16.5	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	87.3	0.6324476	0.5518974		-12.7	+/-28
13C12-OCDD	A	200.00	184	0.5037432	0.4636274		-8.0	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	9.86	1.0835930	1.0687280		-1.4	

* Values outside of QC limits

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 11:17:32 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Q3, Name: 21091317, Date: 14-Sep-2021, Time: 00:57:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	5.450e4	7.081e4	1.108	0.770	0.770	787	909	8.55e5	1.11e6	1086.9	1221.1	NO	bb	bb	9.306
12378-PeCDF	29.909	1.000	3.024e5	1.959e5	1.015	1.544	1.550	1326	1398	4.74e6	3.02e6	3576.9	2163.2	NO	bb	bb	46.373
23478-PeCDF	31.257	1.000	3.124e5	2.078e5	1.126	1.503	1.550	1326	1398	4.78e6	3.22e6	3607.3	2300.3	NO	bb	bb	46.173
123478-HxCDF	34.879	1.001	2.056e5	1.693e5	1.017	1.214	1.240	1401	1565	3.42e6	2.82e6	2439.4	1800.4	NO	bd	bd	46.924
234678-HxCDF	35.892	1.001	1.971e5	1.671e5	1.052	1.179	1.240	1401	1565	3.39e6	2.86e6	2418.1	1825.4	NO	bb	bb	46.681
123678-HxCDF	35.023	1.001	2.077e5	1.707e5	1.037	1.217	1.240	1401	1565	3.32e6	2.76e6	2372.2	1765.6	NO	db	db	46.299
123789-HxCDF	36.917	1.000	1.640e5	1.362e5	1.030	1.204	1.240	1401	1565	2.73e6	2.27e6	1946.4	1449.9	NO	bb	bb	46.010
1234678-HpCDF	38.756	1.000	1.880e5	1.808e5	1.327	1.040	1.050	1003	1184	3.23e6	3.09e6	3223.7	2611.5	NO	bb	bb	47.866
1234789-HpCDF	41.006	1.000	1.452e5	1.393e5	1.283	1.043	1.050	1003	1184	2.26e6	2.20e6	2254.7	1861.4	NO	bb	bb	49.618
OCDF	45.234	1.006	1.894e5	2.133e5	1.447	0.888	0.890	916	848	2.41e6	2.69e6	2627.1	3169.2	NO	bb	bb	85.050
2378-TCDD	26.396	1.001	3.837e4	4.802e4	0.920	0.799	0.770	1069	673	6.08e5	7.48e5	568.2	1112.0	NO	bb	bb	10.600
12378-PeCDD	31.503	1.000	1.858e5	1.160e5	0.995	1.601	1.550	1831	1477	2.98e6	1.87e6	1629.3	1266.4	NO	bb	bb	54.676
123478-HxCDD	35.993	1.000	1.751e5	1.396e5	1.027	1.254	1.240	1420	1258	3.06e6	2.39e6	2153.4	1901.7	NO	bd	bd	46.254
123678-HxCDD	36.115	1.001	1.780e5	1.452e5	1.009	1.225	1.240	1420	1258	2.95e6	2.42e6	2077.8	1923.6	NO	db	db	48.543
123789-HxCDD	36.505	1.011	1.765e5	1.424e5	0.950	1.240	1.240	1420	1258	2.97e6	2.42e6	2093.6	1926.0	NO	bb	bb	50.765
1234678-HpCDD	40.260	1.001	1.173e5	1.089e5	1.068	1.078	1.050	1222	941	1.90e6	1.72e6	1558.9	1829.9	NO	bb	bb	54.356
OCDD	44.996	1.000	1.779e5	1.982e5	1.181	0.898	0.890	911	1160	2.26e6	2.46e6	2482.9	2121.8	NO	bb	bb	97.342
13C-2378-TCDF	25.746	1.007	5.458e5	6.699e5	1.427	0.815	0.770	1811	1096	8.59e6	1.05e7	4743.1	9536.1	NO	bb	bb	111.377
13C-12378-PeCDF	29.898	1.169	6.508e5	4.081e5	1.297	1.595	1.550	1443	1544	1.02e7	6.37e6	7069.9	4126.1	NO	bb	bb	106.668
13C-23478-PeCDF	31.246	1.222	6.164e5	3.847e5	1.236	1.602	1.550	1443	1544	9.59e6	5.95e6	6651.1	3853.8	NO	bb	bb	105.816
13C-123478-HxCDF	34.856	0.955	2.644e5	5.213e5	1.242	0.507	0.510	1287	2255	4.22e6	8.45e6	3281.3	3749.6	NO	bd	bd	89.591
13C-123678-HxCDF	35.001	0.959	2.657e5	5.227e5	1.343	0.508	0.510	1287	2255	4.41e6	8.65e6	3428.6	3834.2	NO	db	db	83.142
13C-234678-HxCDF	35.870	0.983	2.509e5	4.905e5	1.215	0.512	0.510	1287	2255	4.20e6	8.22e6	3265.2	3645.5	NO	bb	bb	86.471
13C-123789-HxCDF	36.906	1.012	2.130e5	4.203e5	1.008	0.507	0.510	1287	2255	3.67e6	7.27e6	2852.5	3224.6	NO	bb	bb	89.047
13C-1234678-HpCDF	38.744	1.062	1.845e5	3.959e5	0.926	0.466	0.440	984	1837	3.09e6	6.78e6	3142.3	3687.8	NO	bd	bb	88.759
13C-1234789-HpCDF	40.995	1.124	1.422e5	3.047e5	0.758	0.467	0.440	984	1837	2.23e6	4.74e6	2263.0	2581.9	NO	bb	bb	83.535
13C-1234-TCDD	25.564	0.000	3.311e5	4.341e5	1.000	0.763	0.770	1640	1281	5.18e6	6.84e6	3158.2	5335.8	NO	bb	bb	100.000
13C-2378-TCDD	26.365	1.031	3.816e5	5.041e5	1.116	0.757	0.770	1640	1281	5.68e6	7.59e6	3462.6	5925.2	NO	bb	bb	103.673
13C-12378-PeCDD	31.492	1.232	3.391e5	2.154e5	0.732	1.574	1.550	883	678	5.20e6	3.31e6	5887.0	4888.2	NO	bb	bb	98.998
13C-123478-HxCDD	35.981	0.986	3.712e5	2.909e5	0.960	1.276	1.240	1218	1401	6.35e6	4.88e6	5216.9	3481.6	NO	bd	bd	97.735
13C-123678-HxCDD	36.093	0.989	3.676e5	2.924e5	1.041	1.257	1.240	1218	1401	6.10e6	4.82e6	5008.1	3436.1	NO	db	db	89.783
13C-1234678-HpCDD	40.237	1.103	2.009e5	1.887e5	0.632	1.065	1.050	901	835	3.26e6	3.04e6	3614.9	3643.9	NO	bb	bb	87.264
13C-OCDD	44.977	1.233	3.140e5	3.405e5	0.504	0.922	0.890	1562	759	3.94e6	4.23e6	2519.7	5576.8	NO	bb	bb	184.073
13C-123789-HxCDD	36.483	0.000	3.939e5	3.119e5	1.000	1.263	1.240	1218	1401	6.67e6	5.25e6	5480.1	3746.2	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	8.178e4		1.084			1426		1.27e6		890.5			bb		9.863

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 11:17:32 Pacific Daylight Time

ID: CS3Q3, Name: 21091317, Date: 14-Sep-2021, Time: 00:57:28, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	6.940e4	8.907e4	1.425	0.779	0.770	787	909	1.14e6	1.44e6	1453.8	1579.3	NO	bb	bb	9.147
1289-TCDF	27.273	1.059	5.325e4	6.867e4	1.043	0.775	0.770	787	909	8.02e5	1.06e6	1020.0	1168.1	NO	bb	bb	9.615
13468-PECDF	27.091	0.906	4.072e5	2.693e5	1.376	1.512	1.550	619	835	6.10e6	4.04e6	9852.8	4836.0	NO	bb	bb	46.428
12389-PECDF	32.305	1.081	2.976e5	1.948e5	1.000	1.528	1.550	1326	1398	4.63e6	3.06e6	3495.3	2192.1	NO	bb	bb	46.529
123468-HXCDF	33.207	0.953	2.158e5	1.790e5	1.087	1.206	1.240	1401	1565	3.44e6	2.90e6	2458.5	1851.3	NO	bb	bb	46.248
1368-TCDD	23.508	0.892	3.905e4	4.892e4	0.923	0.798	0.770	1069	673	6.30e5	7.79e5	588.8	1157.1	NO	bb	bb	10.758
1289-TCDD	27.001	1.024	3.433e4	4.340e4	0.794	0.791	0.770	1069	673	5.14e5	6.38e5	480.3	948.3	NO	bb	bb	11.053
12479-PECDD	28.762	0.913	3.415e5	2.109e5	1.843	1.619	1.550	1831	1477	3.35e6	2.06e6	1832.6	1392.1	NO	bb	bb	54.047
12389-PECDD	31.915	1.013	2.335e5	1.407e5	1.154	1.660	1.550	1831	1477	3.69e6	2.21e6	2018.0	1495.6	NO	bb	bb	58.495
124679-HXCDD	33.987	0.945	1.946e5	1.601e5	1.125	1.215	1.240	1420	1258	3.14e6	2.56e6	2210.4	2039.1	NO	bb	bb	47.628
1234679-HPCDD	39.201	0.974	1.304e5	1.217e5	1.211	1.072	1.050	1222	941	2.27e6	2.09e6	1856.6	2224.1	NO	bb	bb	53.430
Total-tetrafurans			1.779e5		1.192			787		2.81e6							28.194
Total-penta1			4.072e5					619		6.10e6							46.428
Total-pentafurans			9.637e5		1.047			1326		1.50e7							147.063
Total-hexafurans			9.902e5		1.045			1401		1.63e7							232.162
Total-heptafurans			3.333e5		1.305			1003		5.49e6							97.484
Total-Furans			3.062e6		1.158			787		4.81e7							636.381
Total-tetradioxins			1.898e5		0.879			1069		2.66e6							55.117
Total-pentadioxins			7.614e5		1.331			1831		1.00e7							167.370
Total-hexadioxins			7.256e5		1.028			1420		1.21e7							193.570
Total-heptadioxins			2.477e5		1.140			1222		4.17e6							107.786
Total-Dioxins			2.102e6		1.092			1069		3.13e7							621.185
Total-TEQ			5.164e6					1069		7.94e7							1257.566
FUNCTION1 PFK			1.112e6					401504		2.07e7							
FUNCTION2 PFK			1.773e5					195968		5.32e6							0.000
FUNCTION3 PFK			1.597e6					311563		1.96e7							0.000
FUNCTION4 PFK			2.603e4					200811		9.81e5							
FUNCTION5 PFK			1.928e4					137396		9.92e5							
FUNCTION1 HXCD...			6.294e2					528		8.31e3							0.000
FUNCTION1 HPCD...			2.440e2					751		4.07e3							0.000
FUNCTION2 HPCD...			6.460e2					729		1.45e4							0.000
FUNCTION3 OCDPE			1.726e2					619		2.42e3							0.000
FUNCTION4 NCDPE			9.088e1					528		1.12e3							0.000
FUNCTION5 DCDPE			8.157e1					641		3.37e3							0.000

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Q3, Name: 21091317, Date: 14-Sep-2021, Time: 00:57:28, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	5.325e4	6.867e4	1.043	0.78	0.77	1020.0	YES	NO	bb	bb	9.615
2	2378-TCDF	25.76	5.450e4	7.081e4	1.108	0.77	0.77	1086.9	YES	NO	bb	bb	9.306
3	Total-tetrafurans	24.85	4.667e2	6.530e2	1.192	0.71	0.77	9.9	YES	NO	bb	bb	0.077
4	Total-tetrafurans	24.67	3.196e2	3.880e2	1.192	0.82	0.77	6.7	YES	NO	db	db	0.049
5	1368-TCDF	22.24	6.940e4	8.907e4	1.425	0.78	0.77	1453.8	YES	NO	bb	bb	9.147

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.09	4.072e5	2.693e5	1.376	1.51	1.55	9852.8	YES	NO	bb	bb	46.428

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	23478-PeCDF	31.26	3.124e5	2.078e5	1.126	1.50	1.55	3607.3	YES	NO	bb	bb	46.173
2	Total-pentafurans	31.10	7.015e2	4.773e2	1.047	1.47	1.55	9.8	YES	NO	db	bb	0.109
3	12378-PeCDF	29.91	3.024e5	1.959e5	1.015	1.54	1.55	3576.9	YES	NO	bb	bb	46.373
4	Total-pentafurans	28.76	5.049e4	3.445e4	1.047	1.47	1.55	603.2	YES	NO	bb	bb	7.879
5	12389-PECDF	32.30	2.976e5	1.948e5	1.000	1.53	1.55	3495.3	YES	NO	bb	bb	46.529

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.92	1.640e5	1.362e5	1.030	1.20	1.24	1946.4	YES	NO	bb	bb	46.010
2	234678-HxCDF	35.89	1.971e5	1.671e5	1.052	1.18	1.24	2418.1	YES	NO	bb	bb	46.681
3	123678-HxCDF	35.02	2.077e5	1.707e5	1.037	1.22	1.24	2372.2	YES	NO	db	db	46.299
4	123478-HxCDF	34.88	2.056e5	1.693e5	1.017	1.21	1.24	2439.4	YES	NO	bd	bd	46.924
5	123468-HXCDF	33.21	2.158e5	1.790e5	1.087	1.21	1.24	2458.5	YES	NO	bb	bb	46.248

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDF	38.76	1.880e5	1.808e5	1.327	1.04	1.05	3223.7	YES	NO	bb	bb	47.866
2	1234789-HpCDF	41.01	1.452e5	1.393e5	1.283	1.04	1.05	2254.7	YES	NO	bb	bb	49.618

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Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	5.325e4	6.867e4	1.043	0.78	0.77	1020.0	YES	NO	bb	bb	9.615
2	2378-TCDF	25.76	5.450e4	7.081e4	1.108	0.77	0.77	1086.9	YES	NO	bb	bb	9.306
3	Total-tetrafurans	24.85	4.667e2	6.530e2	1.192	0.71	0.77	9.9	YES	NO	bb	bb	0.077
4	Total-tetrafurans	24.67	3.196e2	3.880e2	1.192	0.82	0.77	6.7	YES	NO	db	db	0.049
5	1368-TCDF	22.24	6.940e4	8.907e4	1.425	0.78	0.77	1453.8	YES	NO	bb	bb	9.147
6	23478-PeCDF	31.26	3.124e5	2.078e5	1.126	1.50	1.55	3607.3	YES	NO	bb	bb	46.173
7	Total-pentafurans	31.10	7.015e2	4.773e2	1.047	1.47	1.55	9.8	YES	NO	db	bb	0.109
8	12378-PeCDF	29.91	3.024e5	1.959e5	1.015	1.54	1.55	3576.9	YES	NO	bb	bb	46.373
9	Total-pentafurans	28.76	5.049e4	3.445e4	1.047	1.47	1.55	603.2	YES	NO	bb	bb	7.879
10	12389-PECDF	32.30	2.976e5	1.948e5	1.000	1.53	1.55	3495.3	YES	NO	bb	bb	46.529
11	123789-HxCDF	36.92	1.640e5	1.362e5	1.030	1.20	1.24	1946.4	YES	NO	bb	bb	46.010
12	234678-HxCDF	35.89	1.971e5	1.671e5	1.052	1.18	1.24	2418.1	YES	NO	bb	bb	46.681
13	123678-HxCDF	35.02	2.077e5	1.707e5	1.037	1.22	1.24	2372.2	YES	NO	db	db	46.299
14	123478-HxCDF	34.88	2.056e5	1.693e5	1.017	1.21	1.24	2439.4	YES	NO	bd	bd	46.924
15	123468-HXCDF	33.21	2.158e5	1.790e5	1.087	1.21	1.24	2458.5	YES	NO	bb	bb	46.248
16	1234678-HpCDF	38.76	1.880e5	1.808e5	1.327	1.04	1.05	3223.7	YES	NO	bb	bb	47.866
17	OCDF	45.23	1.894e5	2.133e5	1.447	0.89	0.89	2627.1	YES	NO	bb	bb	85.050
18	1234789-HpCDF	41.01	1.452e5	1.393e5	1.283	1.04	1.05	2254.7	YES	NO	bb	bb	49.618
19	13468-PECDF	27.09	4.072e5	2.693e5	1.376	1.51	1.55	9852.8	YES	NO	bb	bb	46.428

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	3.433e4	4.340e4	0.794	0.79	0.77	480.3	YES	NO	bb	bb	11.053
2	2378-TCDD	26.40	3.837e4	4.802e4	0.920	0.80	0.77	568.2	YES	NO	bb	bb	10.600
3	Total-tetradioxins	26.08	5.847e4	7.351e4	0.879	0.80	0.77	567.6	YES	NO	bb	bb	16.949
4	Total-tetradioxins	25.58	1.863e4	2.382e4	0.879	0.78	0.77	268.4	YES	NO	bd	bd	5.451
5	Total-tetradioxins	24.73	9.876e2	1.387e3	0.879	0.71	0.77	15.8	YES	NO	db	db	0.305
6	1368-TCDD	23.51	3.905e4	4.892e4	0.923	0.80	0.77	588.8	YES	NO	bb	bb	10.758

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-pentadioxins	29.89	6.987e2	4.243e2	1.331	1.65	1.55	5.1	YES	NO	bb	bb	0.152
2	12479-PECDD	28.76	3.415e5	2.109e5	1.843	1.62	1.55	1832.6	YES	NO	bb	bb	54.047
3	12389-PECDD	31.91	2.335e5	1.407e5	1.154	1.66	1.55	2018.0	YES	NO	bb	bb	58.495
4	12378-PeCDD	31.50	1.858e5	1.160e5	0.995	1.60	1.55	1629.3	YES	NO	bb	bb	54.676

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	124679-HXCDD	33.99	1.946e5	1.601e5	1.125	1.22	1.24	2210.4	YES	NO	bb	bb	47.628
2	123789-HxCDD	36.51	1.765e5	1.424e5	0.950	1.24	1.24	2093.6	YES	NO	bb	bb	50.765
3	Total-hexadioxins	36.30	9.859e1	7.393e1	1.028	1.33	1.24	2.6	NO	NO	bb	bd	0.025
4	123678-HxCDD	36.12	1.780e5	1.452e5	1.009	1.23	1.24	2077.8	YES	NO	db	db	48.543
5	123478-HxCDD	35.99	1.751e5	1.396e5	1.027	1.25	1.24	2153.4	YES	NO	bd	bd	46.254
6	Total-hexadioxins	35.07	1.296e3	1.111e3	1.028	1.17	1.24	9.2	YES	NO	db	bb	0.354

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	1.173e5	1.089e5	1.068	1.08	1.05	1558.9	YES	NO	bb	bb	54.356
2	1234679-HPCDD	39.20	1.304e5	1.217e5	1.211	1.07	1.05	1856.6	YES	NO	bb	bb	53.430

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDD	27.00	3.433e4	4.340e4	0.794	0.79	0.77	480.3	YES	NO	bb	bb	11.053
2	2378-TCDD	26.40	3.837e4	4.802e4	0.920	0.80	0.77	568.2	YES	NO	bb	bb	10.600
3	Total-tetradioxins	26.08	5.847e4	7.351e4	0.879	0.80	0.77	567.6	YES	NO	bb	bb	16.949
4	Total-tetradioxins	25.58	1.863e4	2.382e4	0.879	0.78	0.77	268.4	YES	NO	bd	bd	5.451
5	Total-tetradioxins	24.73	9.876e2	1.387e3	0.879	0.71	0.77	15.8	YES	NO	db	db	0.305
6	1368-TCDD	23.51	3.905e4	4.892e4	0.923	0.80	0.77	588.8	YES	NO	bb	bb	10.758
7	Total-pentadioxins	29.89	6.987e2	4.243e2	1.331	1.65	1.55	5.1	YES	NO	bb	bb	0.152
8	12479-PECDD	28.76	3.415e5	2.109e5	1.843	1.62	1.55	1832.6	YES	NO	bb	bb	54.047
9	124679-HXCDD	33.99	1.946e5	1.601e5	1.125	1.22	1.24	2210.4	YES	NO	bb	bb	47.628
10	12389-PECDD	31.91	2.335e5	1.407e5	1.154	1.66	1.55	2018.0	YES	NO	bb	bb	58.495
11	12378-PeCDD	31.50	1.858e5	1.160e5	0.995	1.60	1.55	1629.3	YES	NO	bb	bb	54.676
12	123789-HxCDD	36.51	1.765e5	1.424e5	0.950	1.24	1.24	2093.6	YES	NO	bb	bb	50.765
13	Total-hexadioxins	36.30	9.859e1	7.393e1	1.028	1.33	1.24	2.6	NO	NO	bb	bd	0.025
14	123678-HxCDD	36.12	1.780e5	1.452e5	1.009	1.23	1.24	2077.8	YES	NO	db	db	48.543
15	123478-HxCDD	35.99	1.751e5	1.396e5	1.027	1.25	1.24	2153.4	YES	NO	bd	bd	46.254
16	Total-hexadioxins	35.07	1.296e3	1.111e3	1.028	1.17	1.24	9.2	YES	NO	db	bb	0.354
17	1234678-HpCDD	40.26	1.173e5	1.089e5	1.068	1.08	1.05	1558.9	YES	NO	bb	bb	54.356
18	1234679-HPCDD	39.20	1.304e5	1.217e5	1.211	1.07	1.05	1856.6	YES	NO	bb	bb	53.430
19	OCDD	45.00	1.779e5	1.982e5	1.181	0.90	0.89	2482.9	YES	NO	bb	bb	97.342

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	5.325e4	6.867e4	1.043	0.78	0.77	1020.0	YES	NO	bb	bb	9.615
2	2378-TCDF	25.76	5.450e4	7.081e4	1.108	0.77	0.77	1086.9	YES	NO	bb	bb	9.306
3	Total-tetrafurans	24.85	4.667e2	6.530e2	1.192	0.71	0.77	9.9	YES	NO	bb	bb	0.077
4	Total-tetrafurans	24.67	3.196e2	3.880e2	1.192	0.82	0.77	6.7	YES	NO	db	db	0.049
5	1368-TCDF	22.24	6.940e4	8.907e4	1.425	0.78	0.77	1453.8	YES	NO	bb	bb	9.147
6	23478-PeCDF	31.26	3.124e5	2.078e5	1.126	1.50	1.55	3607.3	YES	NO	bb	bb	46.173
7	Total-pentafurans	31.10	7.015e2	4.773e2	1.047	1.47	1.55	9.8	YES	NO	db	bb	0.109
8	12378-PeCDF	29.91	3.024e5	1.959e5	1.015	1.54	1.55	3576.9	YES	NO	bb	bb	46.373
9	Total-pentafurans	28.76	5.049e4	3.445e4	1.047	1.47	1.55	603.2	YES	NO	bb	bb	7.879
10	12389-PECDF	32.30	2.976e5	1.948e5	1.000	1.53	1.55	3495.3	YES	NO	bb	bb	46.529
11	123789-HxCDF	36.92	1.640e5	1.362e5	1.030	1.20	1.24	1946.4	YES	NO	bb	bb	46.010
12	234678-HxCDF	35.89	1.971e5	1.671e5	1.052	1.18	1.24	2418.1	YES	NO	bb	bb	46.681
13	123678-HxCDF	35.02	2.077e5	1.707e5	1.037	1.22	1.24	2372.2	YES	NO	db	db	46.299
14	123478-HxCDF	34.88	2.056e5	1.693e5	1.017	1.21	1.24	2439.4	YES	NO	bd	bd	46.924
15	123468-HXCDF	33.21	2.158e5	1.790e5	1.087	1.21	1.24	2458.5	YES	NO	bb	bb	46.248
16	1234678-HpCDF	38.76	1.880e5	1.808e5	1.327	1.04	1.05	3223.7	YES	NO	bb	bb	47.866
17	OCDF	45.23	1.894e5	2.133e5	1.447	0.89	0.89	2627.1	YES	NO	bb	bb	85.050
18	1234789-HpCDF	41.01	1.452e5	1.393e5	1.283	1.04	1.05	2254.7	YES	NO	bb	bb	49.618
19	13468-PECDF	27.09	4.072e5	2.693e5	1.376	1.51	1.55	9852.8	YES	NO	bb	bb	46.428
20	1289-TCDD	27.00	3.433e4	4.340e4	0.794	0.79	0.77	480.3	YES	NO	bb	bb	11.053
21	2378-TCDD	26.40	3.837e4	4.802e4	0.920	0.80	0.77	568.2	YES	NO	bb	bb	10.600
22	Total-tetradioxins	26.08	5.847e4	7.351e4	0.879	0.80	0.77	567.6	YES	NO	bb	bb	16.949
23	Total-tetradioxins	25.58	1.863e4	2.382e4	0.879	0.78	0.77	268.4	YES	NO	bd	bd	5.451
24	Total-tetradioxins	24.73	9.876e2	1.387e3	0.879	0.71	0.77	15.8	YES	NO	db	db	0.305
25	1368-TCDD	23.51	3.905e4	4.892e4	0.923	0.80	0.77	588.8	YES	NO	bb	bb	10.758
26	Total-pentadioxins	29.89	6.987e2	4.243e2	1.331	1.65	1.55	5.1	YES	NO	bb	bb	0.152
27	12479-PECDD	28.76	3.415e5	2.109e5	1.843	1.62	1.55	1832.6	YES	NO	bb	bb	54.047
28	124679-HXCDD	33.99	1.946e5	1.601e5	1.125	1.22	1.24	2210.4	YES	NO	bb	bb	47.628
29	12389-PECDD	31.91	2.335e5	1.407e5	1.154	1.66	1.55	2018.0	YES	NO	bb	bb	58.495
30	12378-PeCDD	31.50	1.858e5	1.160e5	0.995	1.60	1.55	1629.3	YES	NO	bb	bb	54.676
31	123789-HxCDD	36.51	1.765e5	1.424e5	0.950	1.24	1.24	2093.6	YES	NO	bb	bb	50.765
32	Total-hexadioxins	36.30	9.859e1	7.393e1	1.028	1.33	1.24	2.6	NO	NO	bb	bd	0.025
33	123678-HxCDD	36.12	1.780e5	1.452e5	1.009	1.23	1.24	2077.8	YES	NO	db	db	48.543
34	123478-HxCDD	35.99	1.751e5	1.396e5	1.027	1.25	1.24	2153.4	YES	NO	bd	bd	46.254
35	Total-hexadioxins	35.07	1.296e3	1.111e3	1.028	1.17	1.24	9.2	YES	NO	db	bb	0.354
36	1234678-HpCDD	40.26	1.173e5	1.089e5	1.068	1.08	1.05	1558.9	YES	NO	bb	bb	54.356
37	1234679-HPCDD	39.20	1.304e5	1.217e5	1.211	1.07	1.05	1856.6	YES	NO	bb	bb	53.430

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 11:17:32 Pacific Daylight Time

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	OCDD	45.00	1.779e5	1.982e5	1.181	0.90	0.89	2482.9	YES	NO	bb	bb	97.342

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 11:17:32 Pacific Daylight Time

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.41	1.579e3					0.3	NO		bb		
2	FUNCTION1 PFK	21.24	1.915e4					1.1	NO		bb		
3	FUNCTION1 PFK	21.18	1.381e4					1.3	NO		bb		
4	FUNCTION1 PFK	21.09	6.437e3					0.4	NO		bb		
5	FUNCTION1 PFK	23.42	1.311e4					1.0	NO		bb		
6	FUNCTION1 PFK	23.31	5.607e3					0.5	NO		db		
7	FUNCTION1 PFK	23.25	1.904e4					1.1	NO		dd		
8	FUNCTION1 PFK	23.21	1.427e4					1.1	NO		bd		
9	FUNCTION1 PFK	23.13	2.921e4					1.4	NO		bb		
10	FUNCTION1 PFK	22.89	2.346e4					1.1	NO		bb		
11	FUNCTION1 PFK	22.66	2.176e3					0.4	NO		bb		
12	FUNCTION1 PFK	22.54	1.315e4					0.8	NO		db		
13	FUNCTION1 PFK	22.45	3.129e4					1.1	NO		bd		
14	FUNCTION1 PFK	22.27	2.763e4					1.3	NO		db		
15	FUNCTION1 PFK	22.18	8.663e3					0.7	NO		bd		
16	FUNCTION1 PFK	22.04	3.770e4					1.2	NO		bb		
17	FUNCTION1 PFK	21.88	7.115e4					1.8	NO		bb		
18	FUNCTION1 PFK	21.60	1.294e4					1.1	NO		db		
19	FUNCTION1 PFK	21.54	2.366e4					1.2	NO		bd		
20	FUNCTION1 PFK	21.47	1.309e4					0.9	NO		bb		
21	FUNCTION1 PFK	26.15	1.887e4					1.2	NO		dd		
22	FUNCTION1 PFK	26.08	1.968e4					1.3	NO		dd		
23	FUNCTION1 PFK	26.02	2.390e4					1.2	NO		bd		
24	FUNCTION1 PFK	25.66	1.220e4					1.0	NO		db		
25	FUNCTION1 PFK	25.59	2.633e4					1.4	NO		bd		
26	FUNCTION1 PFK	25.49	3.359e4					1.5	NO		bb		
27	FUNCTION1 PFK	25.34	2.059e3					0.3	NO		bb		
28	FUNCTION1 PFK	25.22	2.055e4					1.2	NO		db		
29	FUNCTION1 PFK	25.17	6.423e4					1.4	NO		bd		
30	FUNCTION1 PFK	24.76	1.145e5					1.8	NO		bb		
31	FUNCTION1 PFK	24.58	7.542e3					0.7	NO		bb		
32	FUNCTION1 PFK	24.51	6.997e3					0.6	NO		bb		
33	FUNCTION1 PFK	24.23	2.945e4					1.4	NO		bb		
34	FUNCTION1 PFK	23.83	2.547e4					1.5	NO		bb		
35	FUNCTION1 PFK	23.69	3.464e4					1.3	NO		bb		
36	FUNCTION1 PFK	23.55	5.967e3					0.6	NO		bb		
37	FUNCTION1 PFK	28.03	2.179e4					1.6	NO		db		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	27.95	3.827e4					1.7	NO		bd		
39	FUNCTION1 PFK	27.56	2.195e4					1.2	NO		bb		
40	FUNCTION1 PFK	27.15	2.972e4					1.1	NO		db		
41	FUNCTION1 PFK	27.06	1.705e4					1.0	NO		bd		
42	FUNCTION1 PFK	26.64	8.475e4					2.1	NO		db		
43	FUNCTION1 PFK	26.59	2.017e4					1.7	NO		bd		
44	FUNCTION1 PFK	26.38	3.045e3					0.5	NO		bb		
45	FUNCTION1 PFK	26.32	2.973e3					0.5	NO		bb		
46	FUNCTION1 PFK	26.24	1.721e4					1.0	NO		db		
47	FUNCTION1 PFK	26.20	2.184e4					1.2	NO		dd		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	28.59	3.483e3					1.0	NO		bb		0.000
2	FUNCTION2 PFK	28.35	1.404e4					2.2	NO		bb		0.000
3	FUNCTION2 PFK	28.24	1.981e3					0.9	NO		bb		0.000
4	FUNCTION2 PFK	28.19	1.974e3					0.9	NO		bb		0.000
5	FUNCTION2 PFK	32.78	1.181e4					1.9	NO		bb		0.000
6	FUNCTION2 PFK	32.58	1.236e3					0.6	NO		bb		0.000
7	FUNCTION2 PFK	31.56	1.473e4					1.6	NO		bb		0.000
8	FUNCTION2 PFK	31.47	9.011e3					1.7	NO		bb		0.000
9	FUNCTION2 PFK	31.39	9.359e3					1.8	NO		bb		0.000
10	FUNCTION2 PFK	31.02	2.245e4					2.1	NO		db		0.000
11	FUNCTION2 PFK	30.88	3.215e4					2.3	NO		bd		0.000
12	FUNCTION2 PFK	30.68	8.707e3					1.5	NO		bb		0.000
13	FUNCTION2 PFK	30.28	1.247e3					0.6	NO		bb		0.000
14	FUNCTION2 PFK	30.01	1.495e4					2.4	NO		bb		0.000
15	FUNCTION2 PFK	29.69	5.308e3					1.2	NO		bb		0.000
16	FUNCTION2 PFK	29.53	8.725e3					1.4	NO		bb		0.000
17	FUNCTION2 PFK	29.35	8.532e3					1.0	NO		bb		0.000
18	FUNCTION2 PFK	29.16	3.988e3					1.3	NO		bb		0.000
19	FUNCTION2 PFK	28.67	3.638e3					1.0	NO		bb		0.000

ID: CS3Q3, Name: 21091317, Date: 14-Sep-2021, Time: 00:57:28, Conditions: AUTOSPEC01, User: pk

PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	36.83	4.096e3					0.7	NO		bb		0.000
2	FUNCTION3 PFK	36.19	1.991e4					1.7	NO		bb		0.000
3	FUNCTION3 PFK	35.97	8.888e3					1.0	NO		bb		0.000
4	FUNCTION3 PFK	35.22	1.787e4					1.2	NO		bb		0.000
5	FUNCTION3 PFK	35.13	4.555e4					2.3	NO		db		0.000
6	FUNCTION3 PFK	35.07	3.472e4					2.0	NO		bd		0.000
7	FUNCTION3 PFK	34.98	4.010e3					0.7	NO		bb		0.000
8	FUNCTION3 PFK	34.62	3.037e3					0.5	NO		bb		0.000
9	FUNCTION3 PFK	34.34	2.151e4					1.6	NO		bb		0.000
10	FUNCTION3 PFK	34.23	4.614e4					3.0	NO		db		0.000
11	FUNCTION3 PFK	34.13	3.105e4					1.6	NO		bd		0.000
12	FUNCTION3 PFK	33.99	6.156e3					0.9	NO		bb		0.000
13	FUNCTION3 PFK	33.29	2.637e5					7.1	YES		db		0.000
14	FUNCTION3 PFK	33.22	9.298e4					7.7	YES		dd		0.000
15	FUNCTION3 PFK	33.12	3.685e5					10.8	YES		dd		0.000
16	FUNCTION3 PFK	32.96	5.812e5					15.0	YES		bd		0.000
17	FUNCTION3 PFK	37.71	1.221e4					1.2	NO		bb		0.000
18	FUNCTION3 PFK	37.50	8.416e3					1.1	NO		bb		0.000
19	FUNCTION3 PFK	37.05	1.055e4					1.4	NO		bb		0.000
20	FUNCTION3 PFK	36.97	1.650e4					1.7	NO		bb		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	42.81	1.888e4					2.5	NO		bb		
2	FUNCTION4 PFK	38.05	1.840e3					0.8	NO		bb		
3	FUNCTION4 PFK	38.01	5.314e3					1.5	NO		bb		

PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	45.67	1.251e3					0.7	NO		bb		
2	FUNCTION5 PFK	44.98	1.915e3					0.9	NO		bb		
3	FUNCTION5 PFK	44.03	5.333e3					1.6	NO		db		
4	FUNCTION5 PFK	43.99	4.449e3					1.4	NO		bd		
5	FUNCTION5 PFK	43.11	2.331e3					0.8	NO		bb		
6	FUNCTION5 PFK	43.07	4.002e3					1.8	NO		bb		

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ID: CS3Q3, Name: 21091317, Date: 14-Sep-2021, Time: 00:57:28, Conditions: AUTOSPEC01, User: pk

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	27.88	1.617e2					3.2	YES		bb		0.000
2	FUNCTION1 HXCD...	27.62	1.172e2					2.8	NO		bb		0.000
3	FUNCTION1 HXCD...	27.33	1.910e2					4.4	YES		bb		0.000
4	FUNCTION1 HXCD...	25.58	7.694e1					2.4	NO		bb		0.000
5	FUNCTION1 HXCD...	21.45	8.260e1					2.9	NO		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	27.33	1.511e2					3.0	NO		bb		0.000
2	FUNCTION1 HPCD...	25.41	9.293e1					2.5	NO		bb		0.000

ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.08	3.075e2					8.1	YES		bb		0.000
2	FUNCTION2 HPCD...	30.90	7.122e1					1.3	NO		bb		0.000
3	FUNCTION2 HPCD...	29.94	7.940e1					2.9	NO		bb		0.000
4	FUNCTION2 HPCD...	29.04	7.332e1					2.2	NO		bb		0.000
5	FUNCTION2 HPCD...	28.47	1.145e2					5.4	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 OCDPE	36.51	1.726e2					3.9	YES		bb		0.000

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 NCDPE	40.33	9.088e1					2.1	NO		bb		0.000

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.11	8.157e1					5.3	YES		bb		0.000

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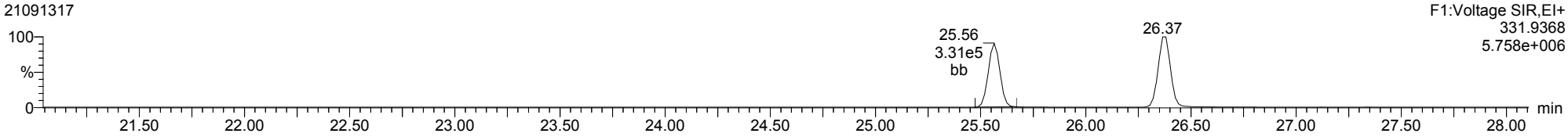
ID: CS3Q3, Name: 21091317, Date: 14-Sep-2021, Time: 00:57:28, Conditions: AUTOSPEC01, User: pk

13C-1234-TCDD



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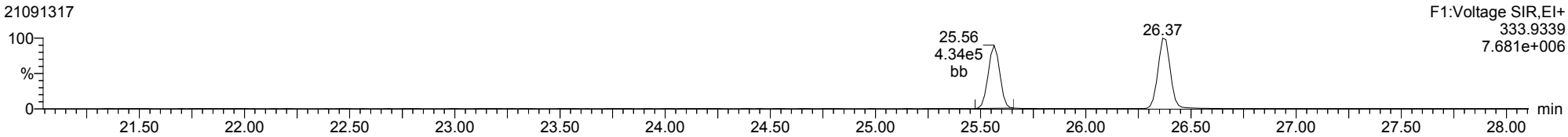

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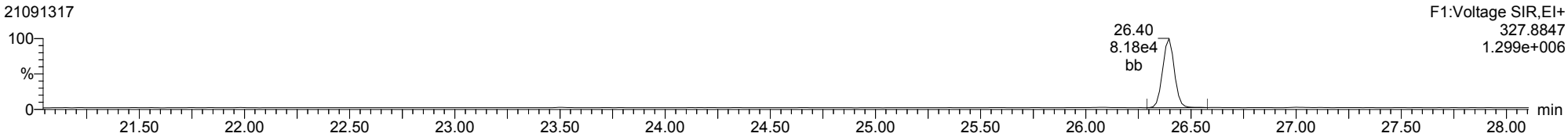

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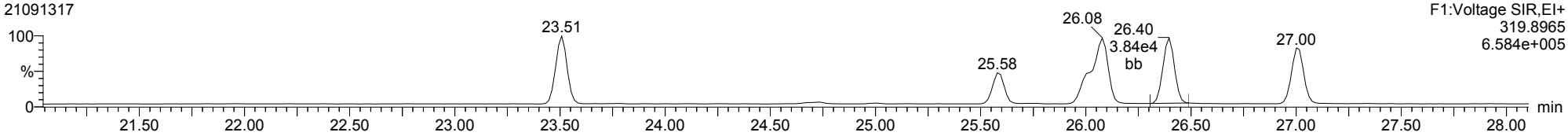

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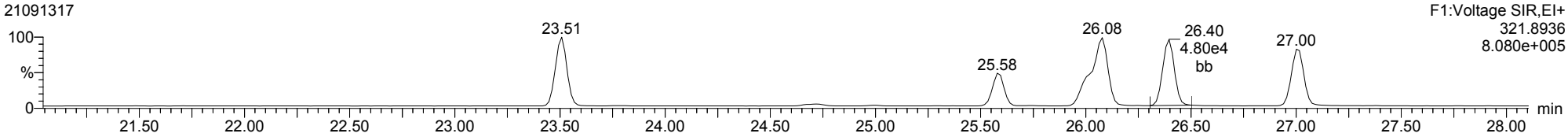

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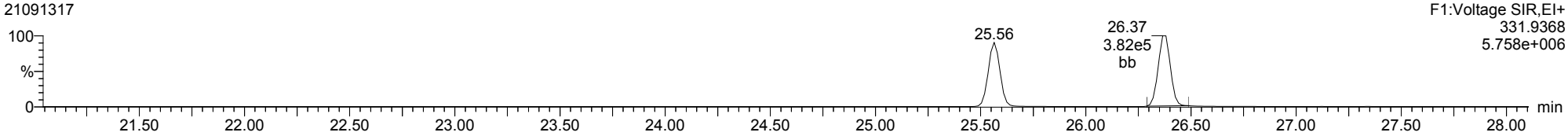

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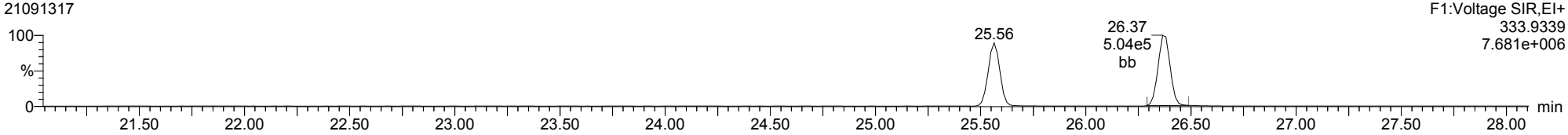

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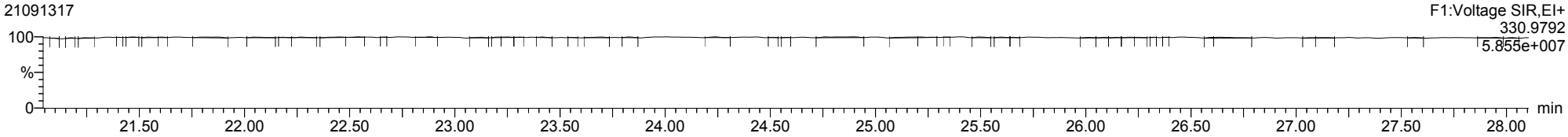

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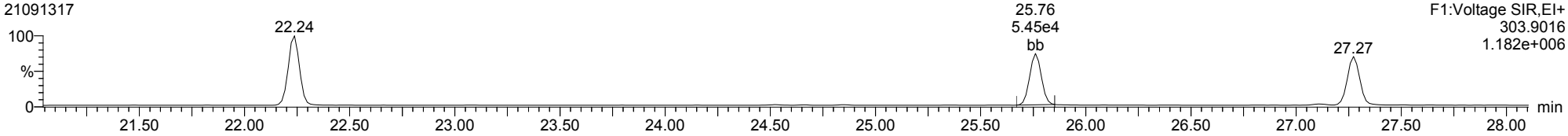

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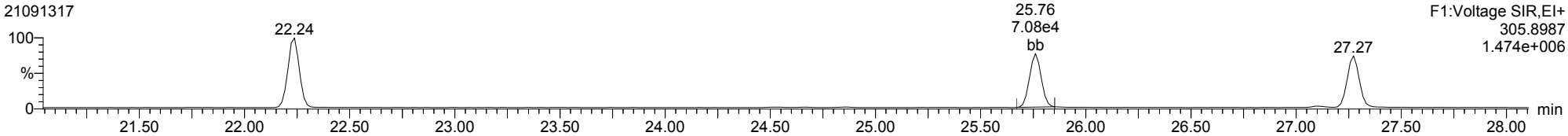

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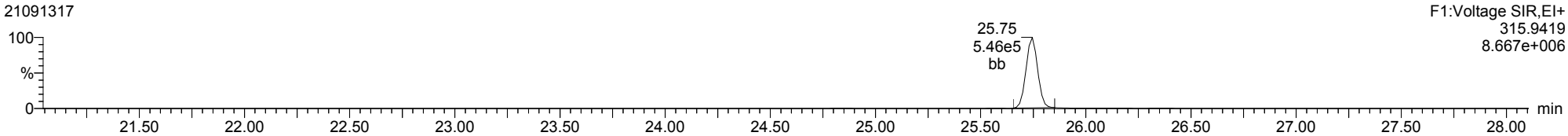

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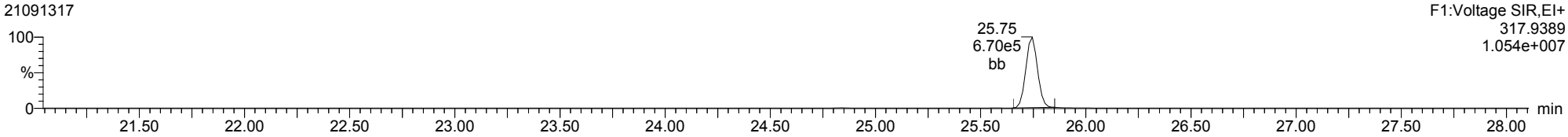

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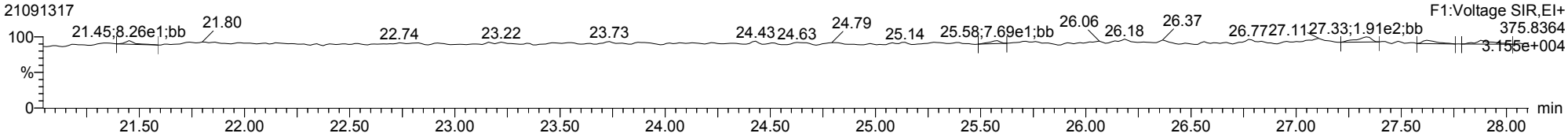

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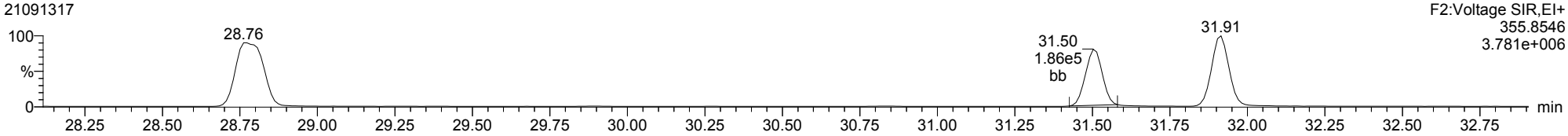
12378-PeCDD



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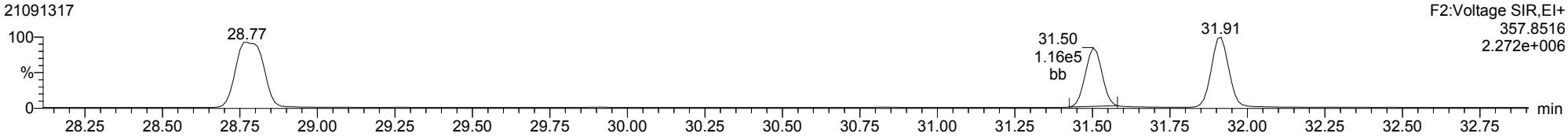

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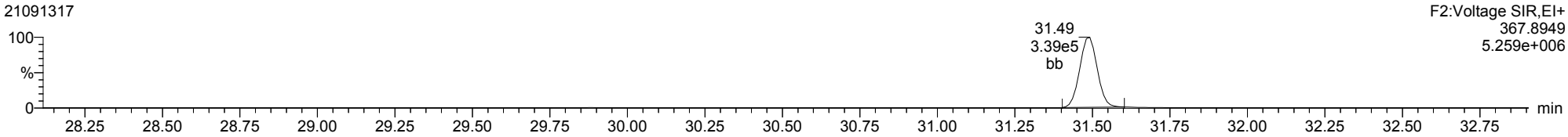

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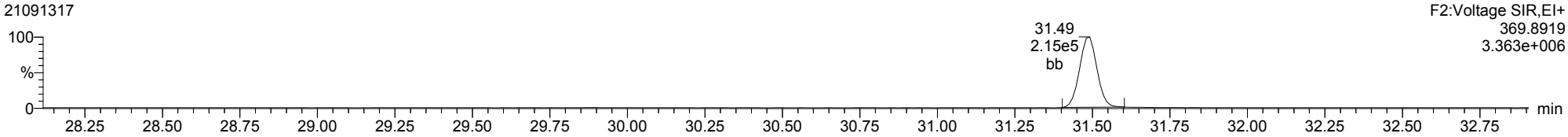

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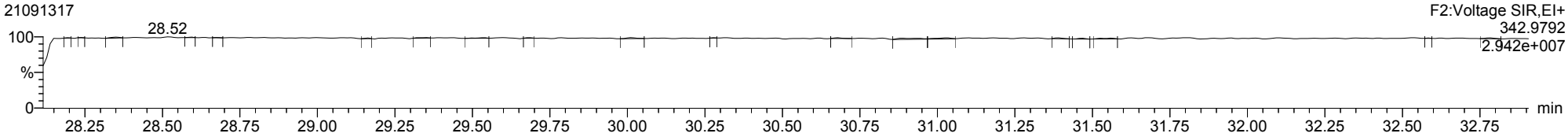

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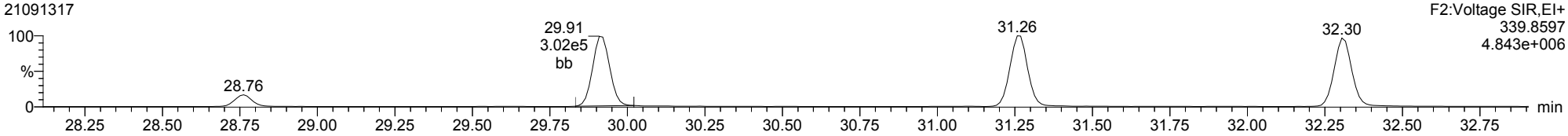

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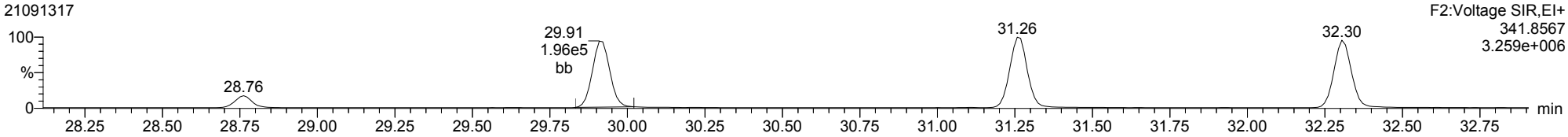

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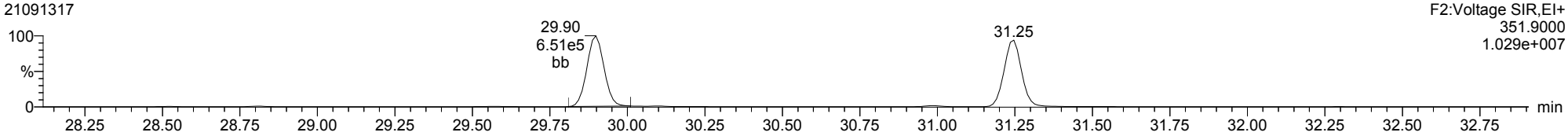

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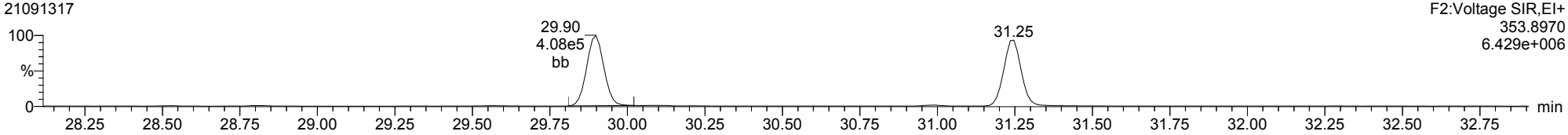
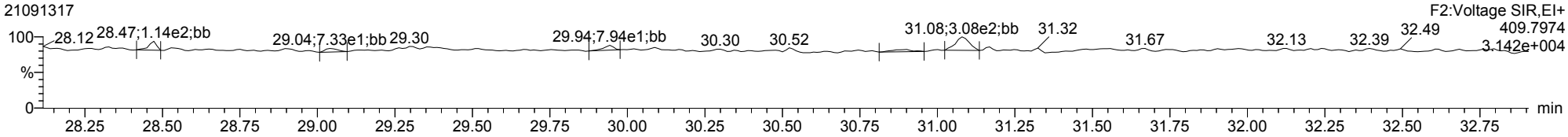


FUNCTION2 HPCDPE



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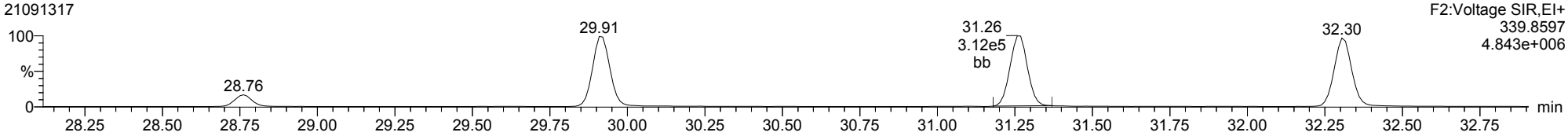

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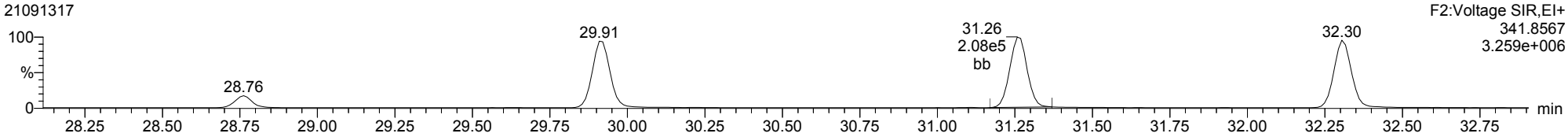

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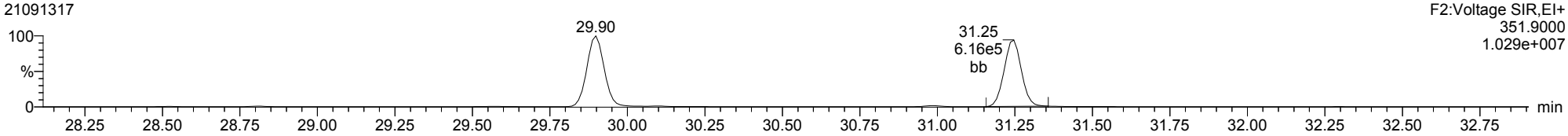

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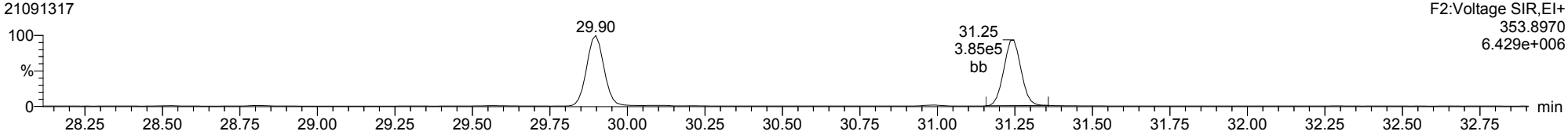

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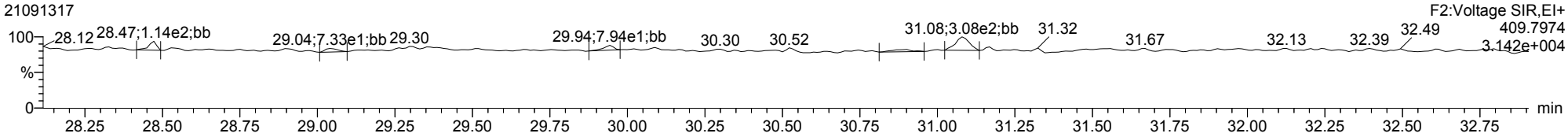

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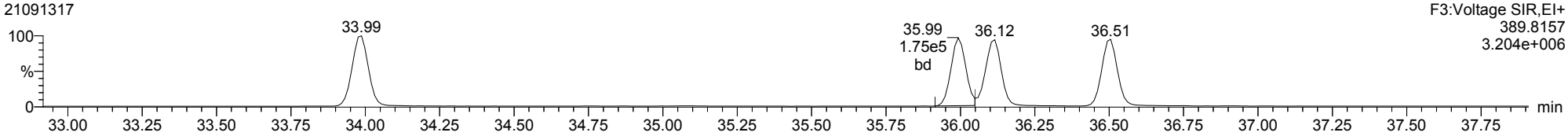
123478-HxCDD



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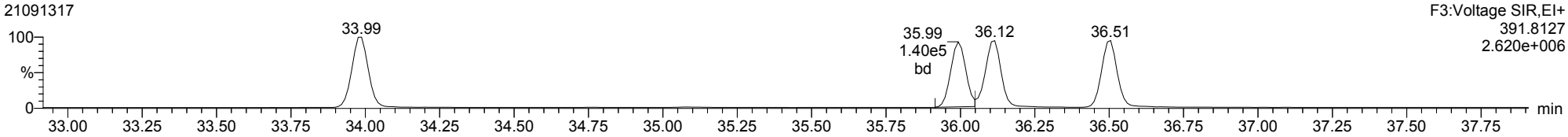

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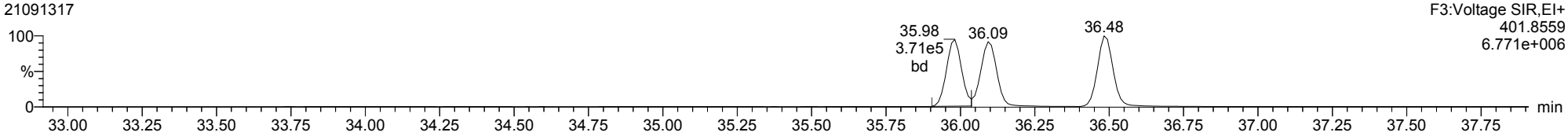

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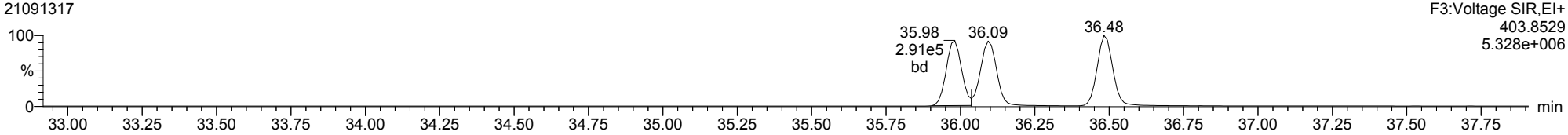

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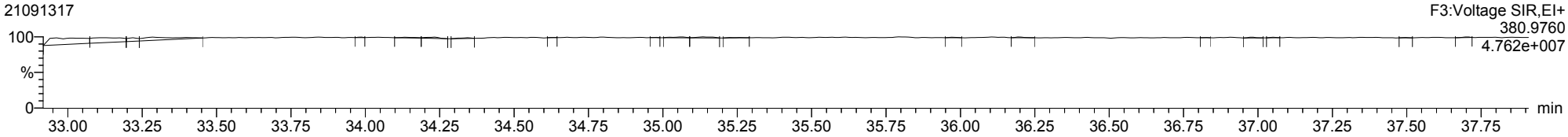

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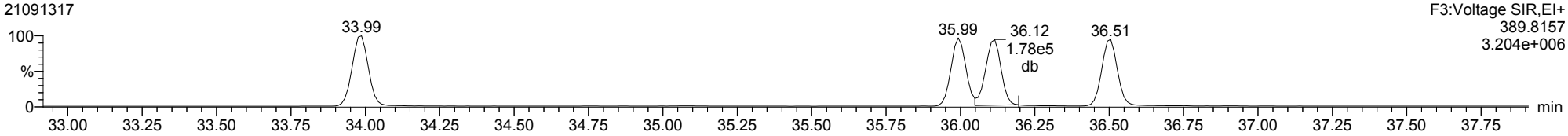

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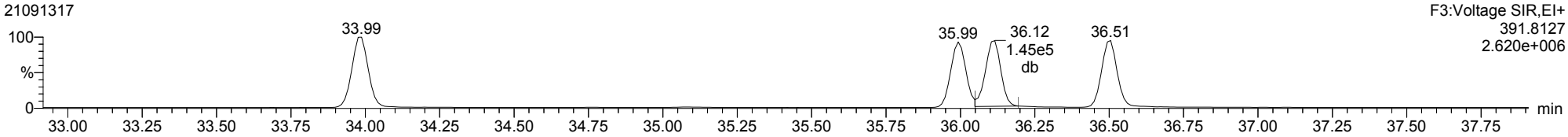

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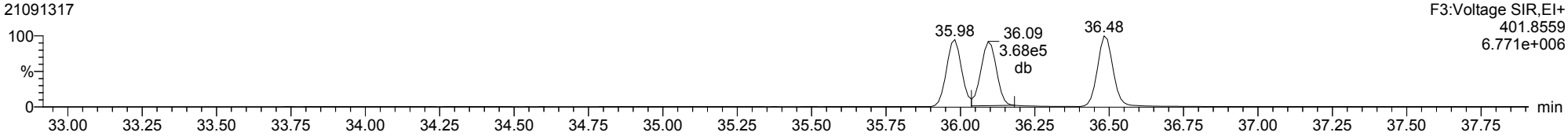

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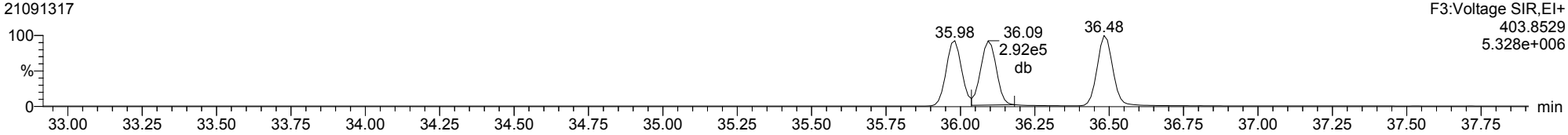

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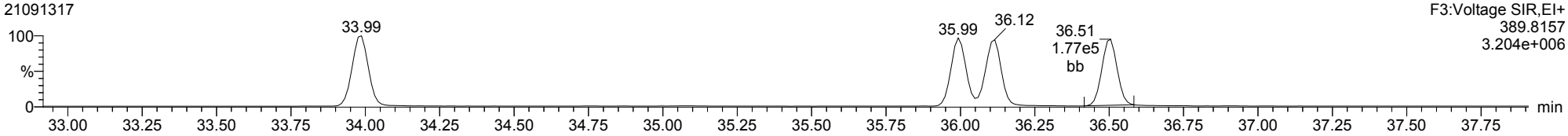

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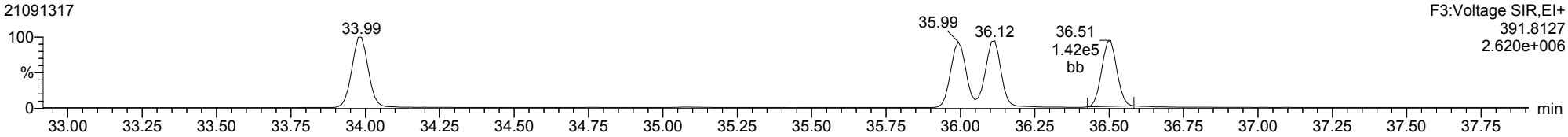

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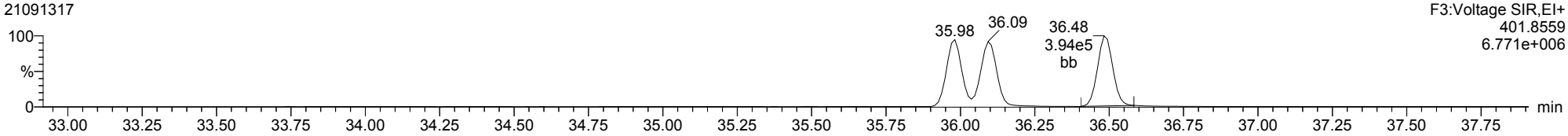

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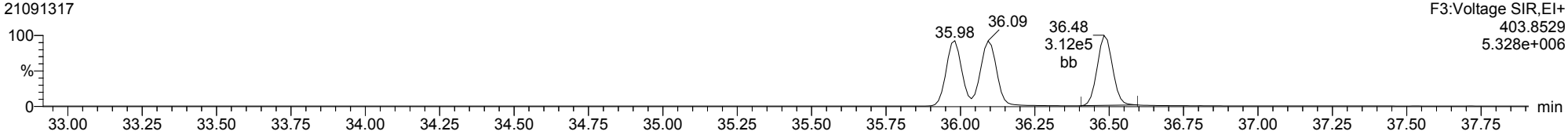

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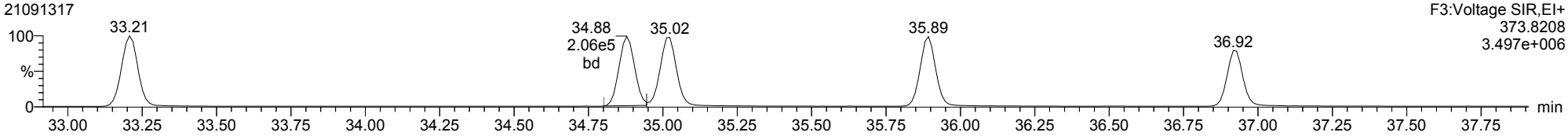

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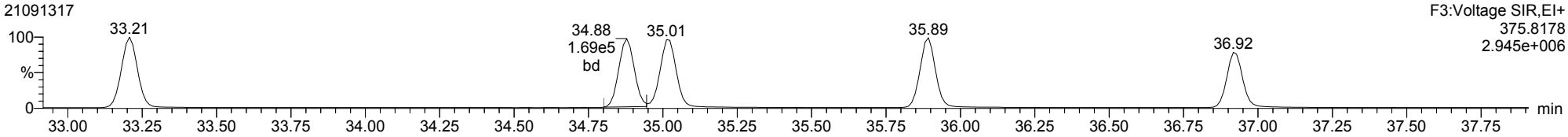

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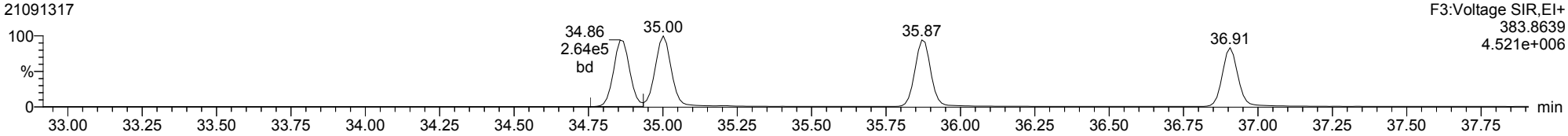

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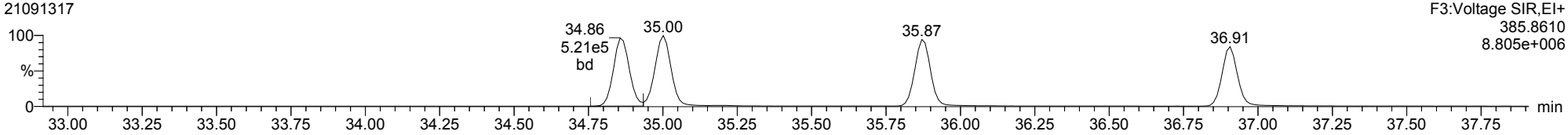

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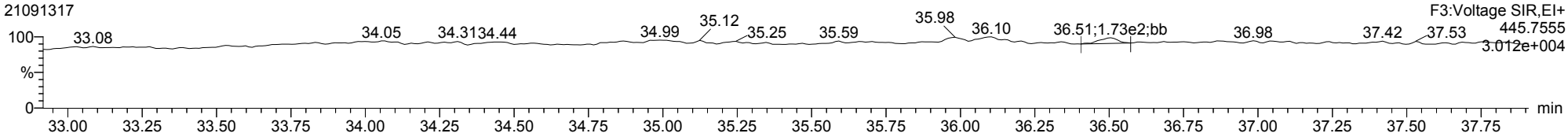

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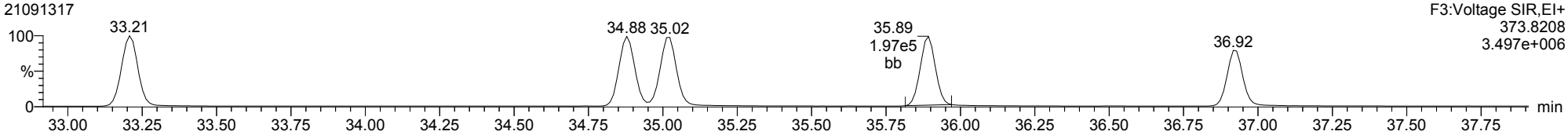

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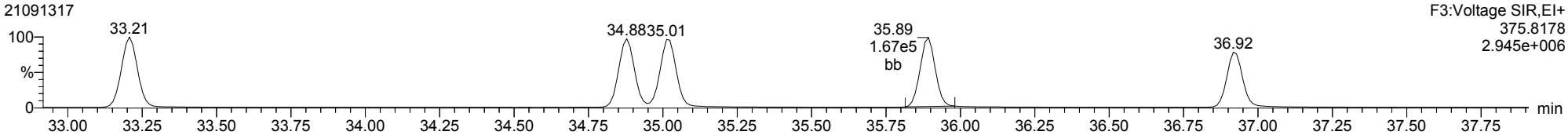

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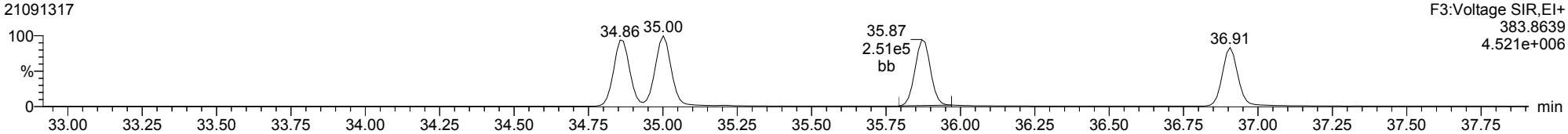

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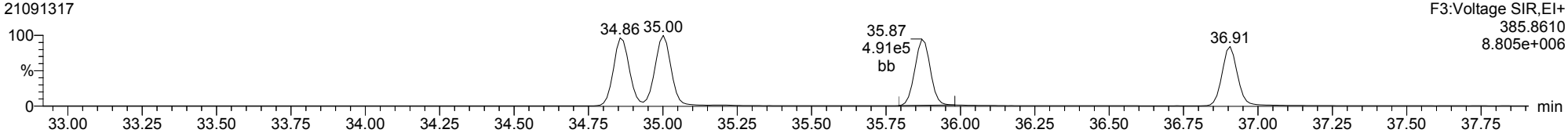

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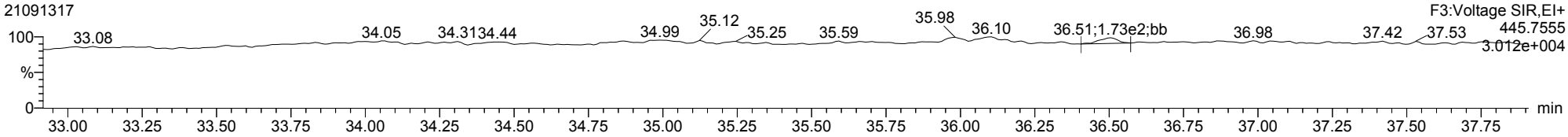

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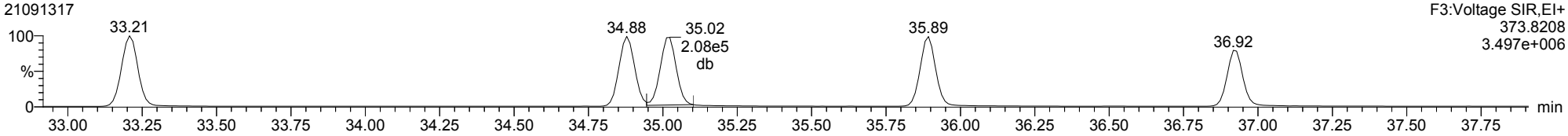

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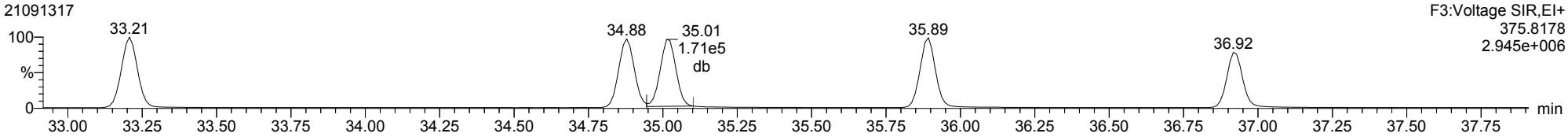

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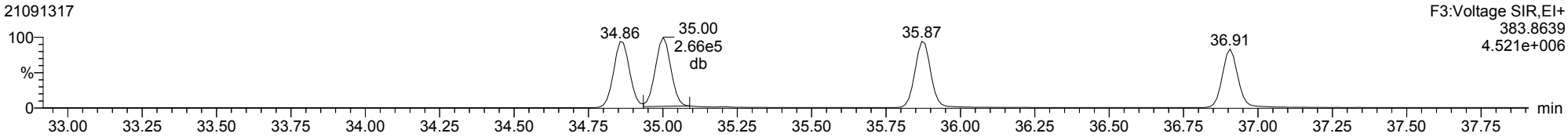

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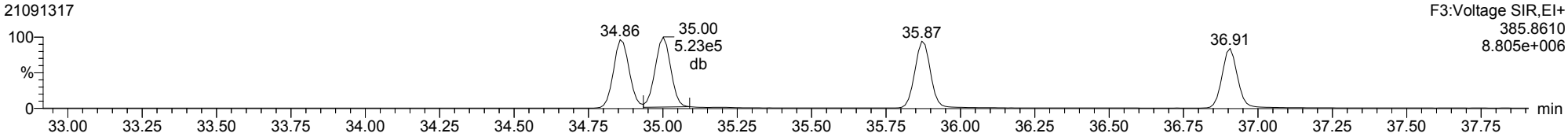

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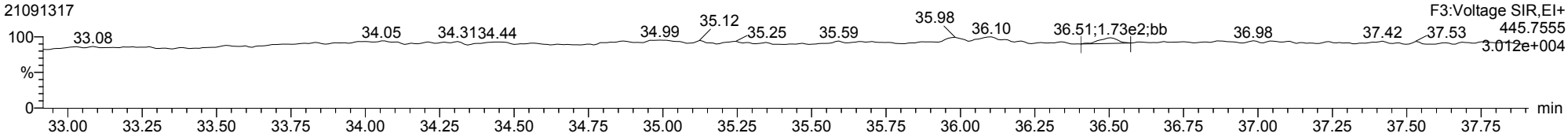

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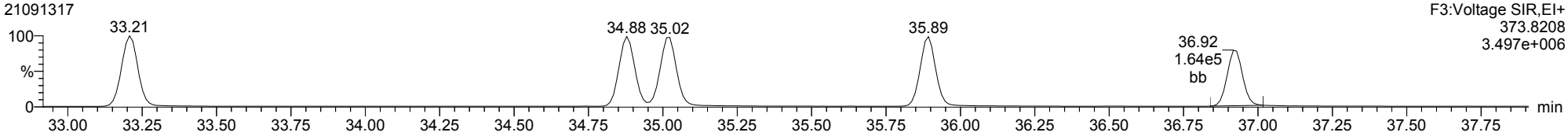

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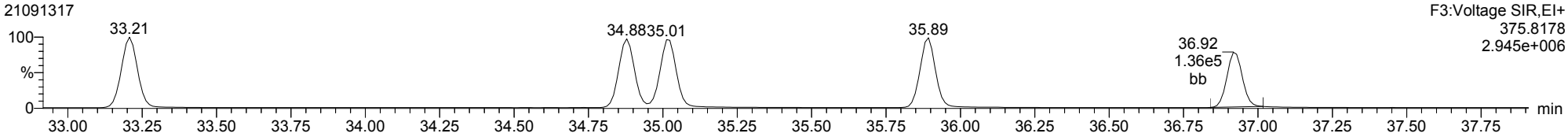

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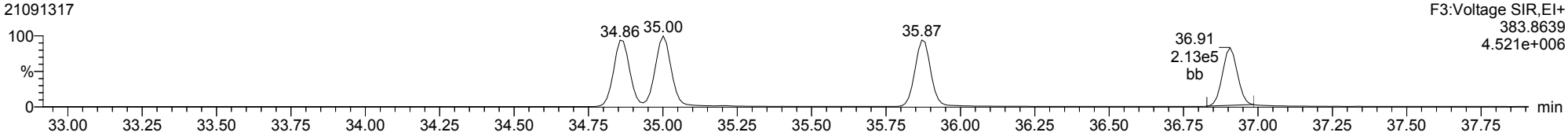

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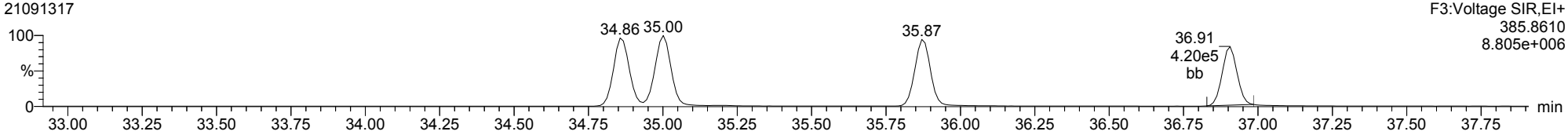

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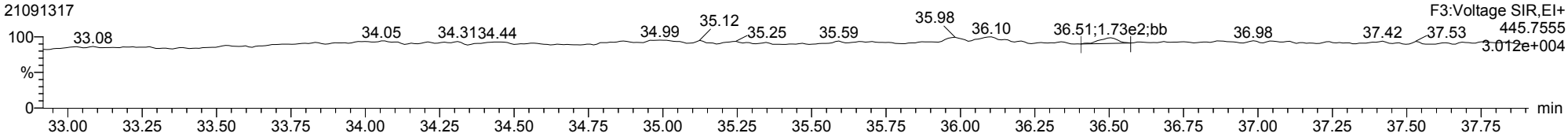

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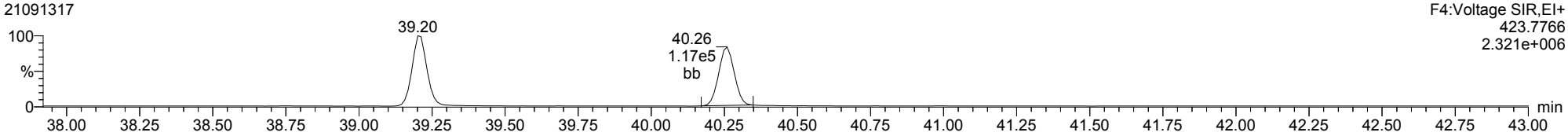

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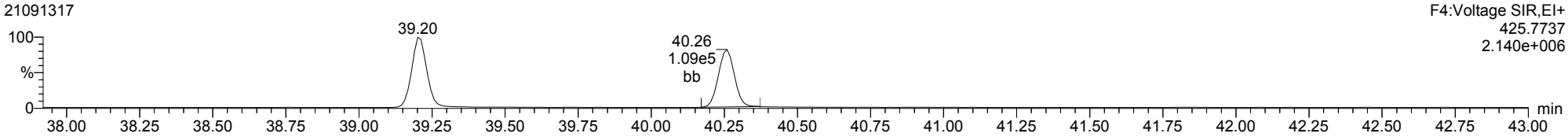

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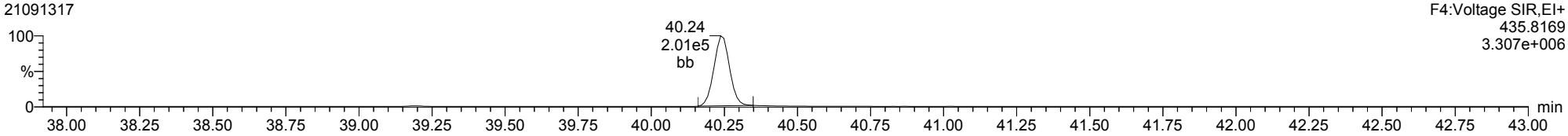

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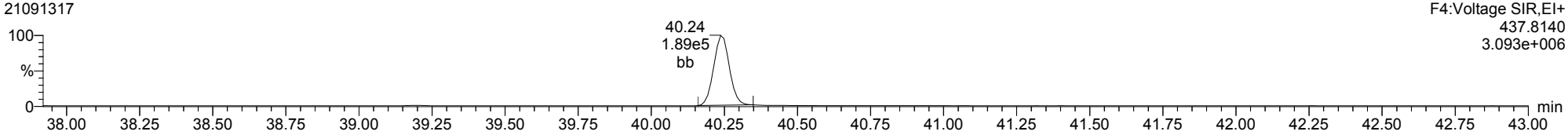

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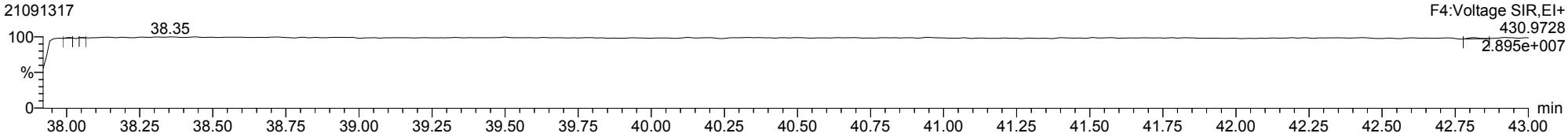

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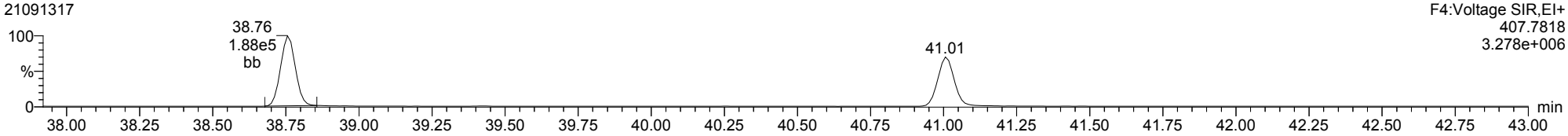

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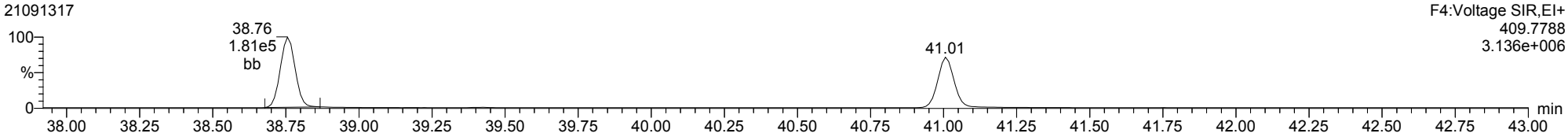

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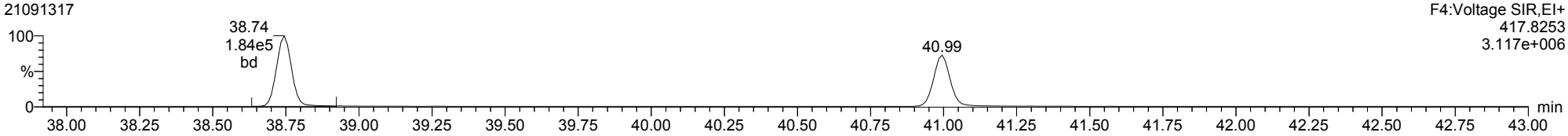

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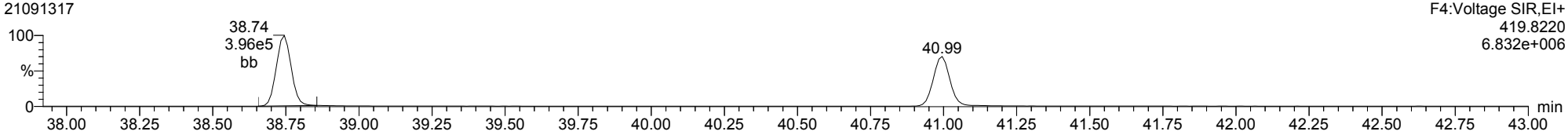

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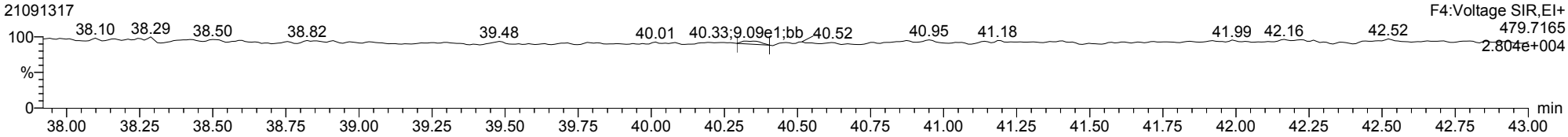

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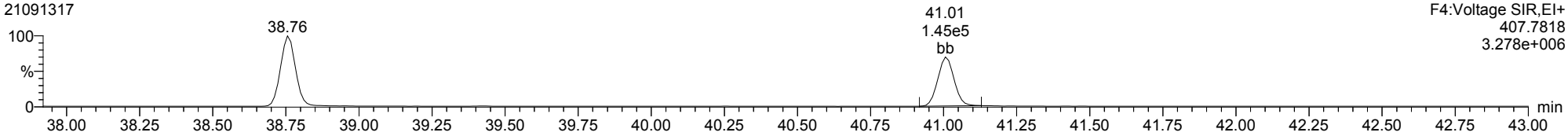

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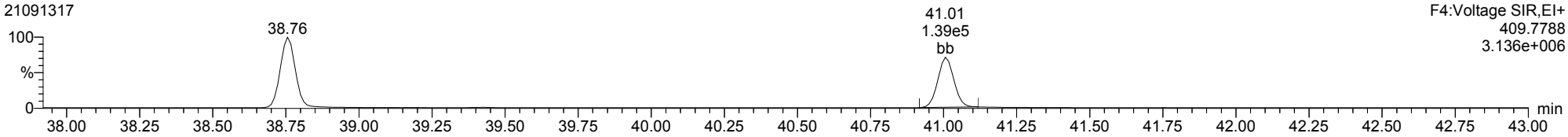

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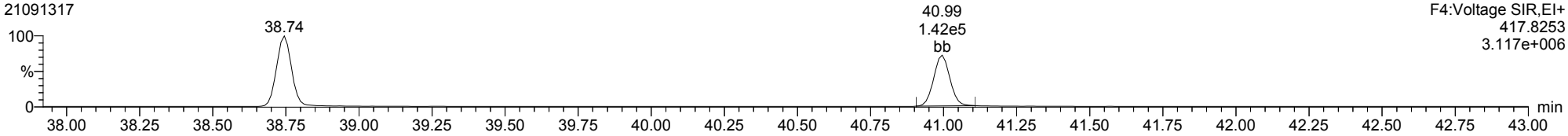

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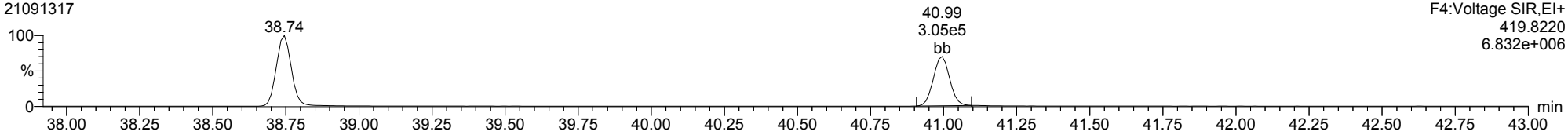

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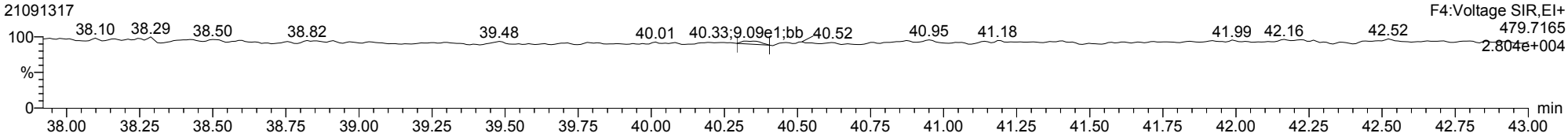

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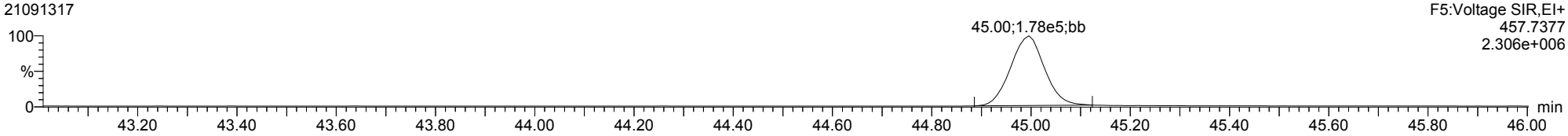

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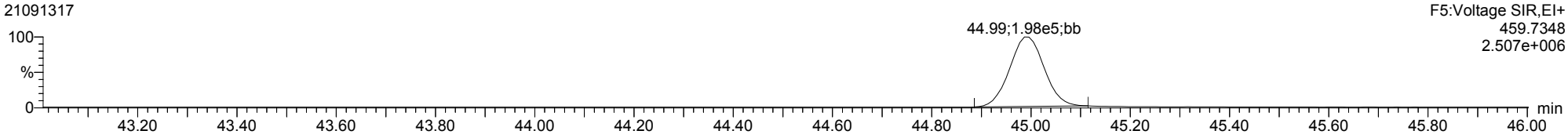

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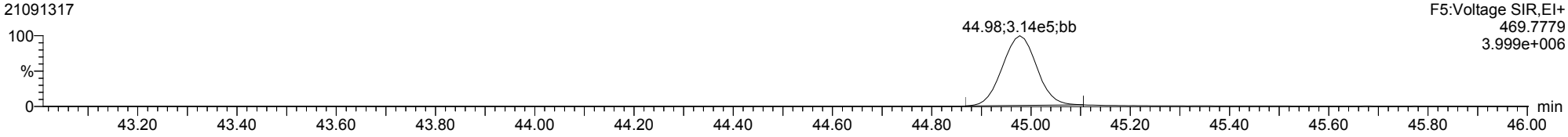

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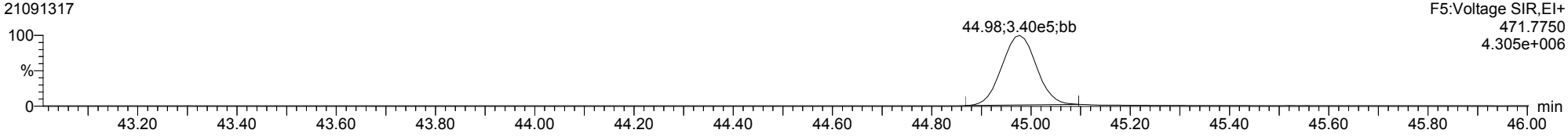

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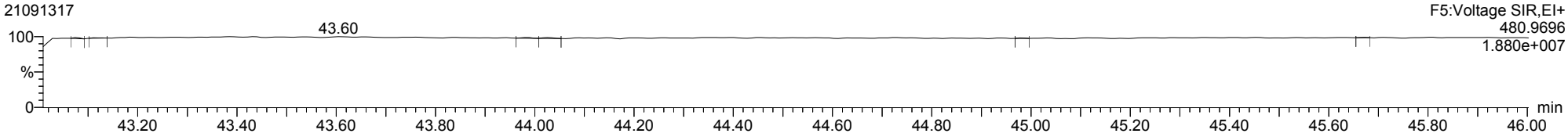

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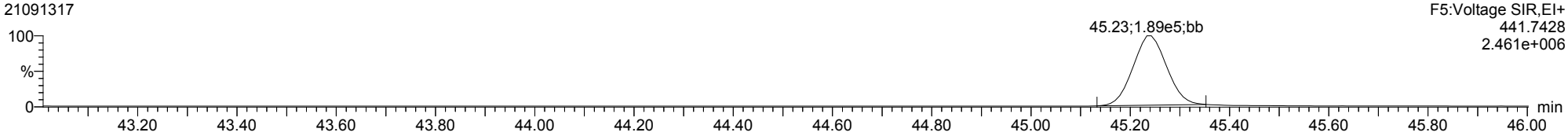

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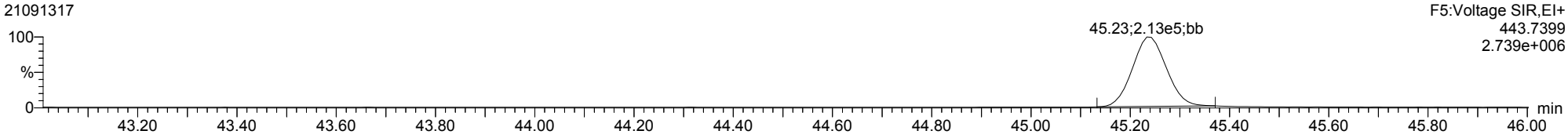
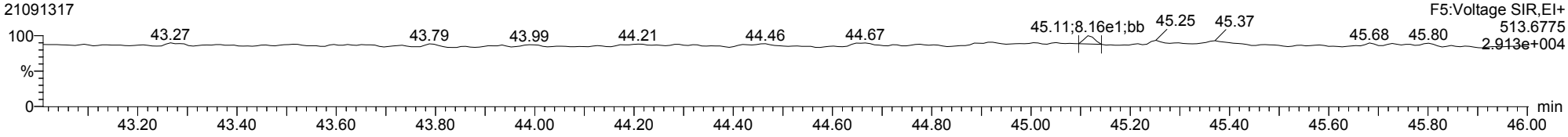


FUNCTION5 DCDPE



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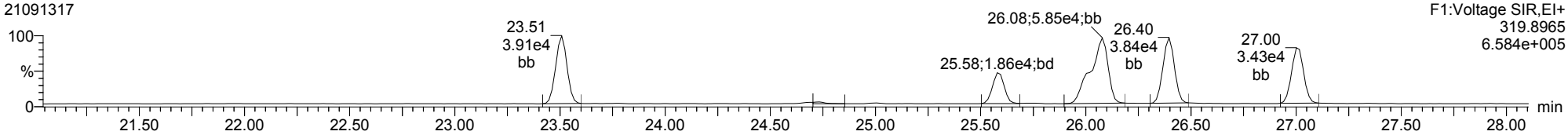

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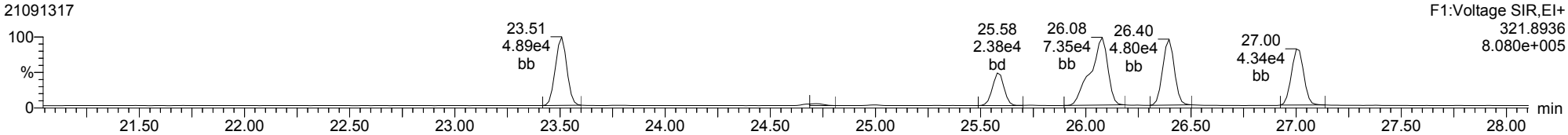

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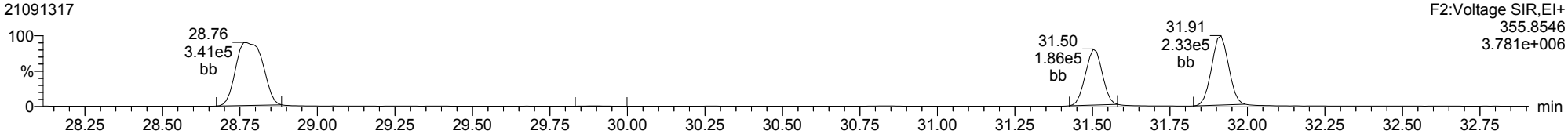

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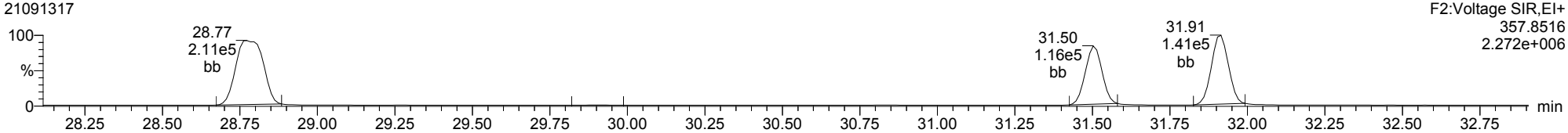

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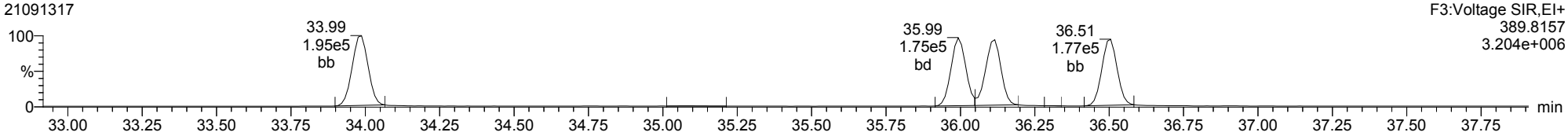

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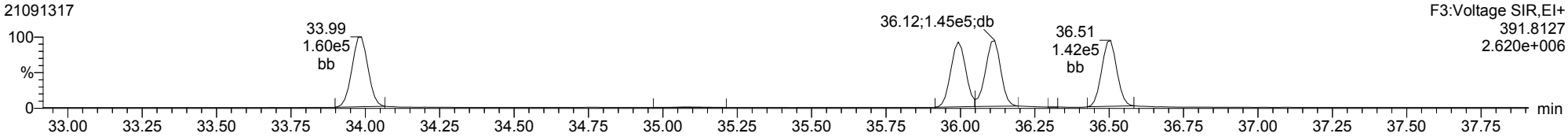

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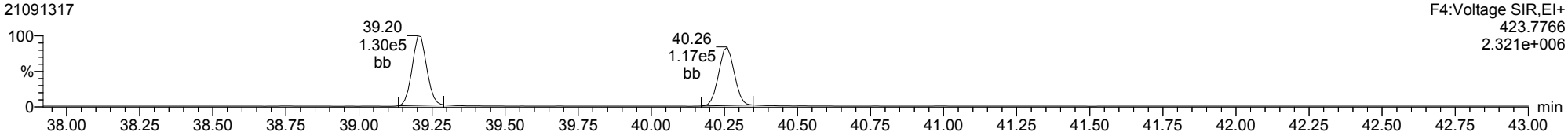

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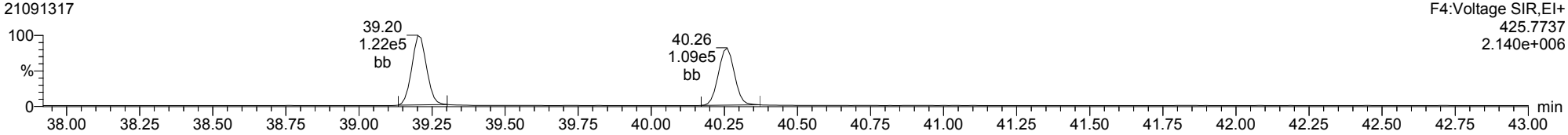

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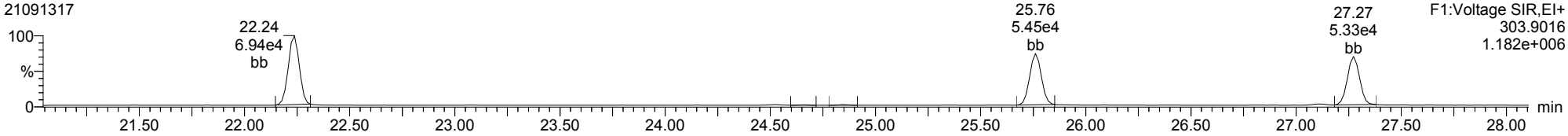
Printed: Tuesday, September 14, 2021 11:17:32 Pacific Daylight Time

ID: CS3Q3, Name: 21091317, Date: 14-Sep-2021, Time: 00:57:28, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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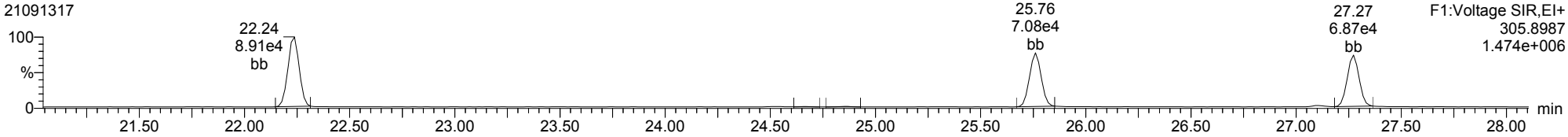

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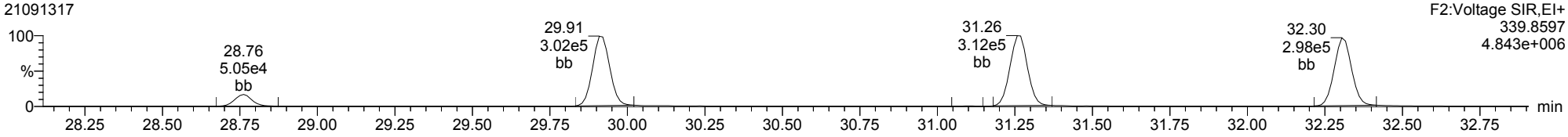

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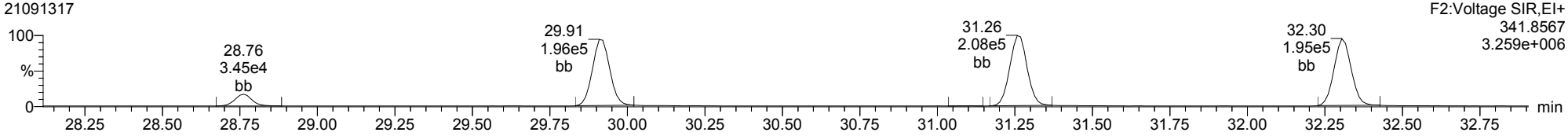

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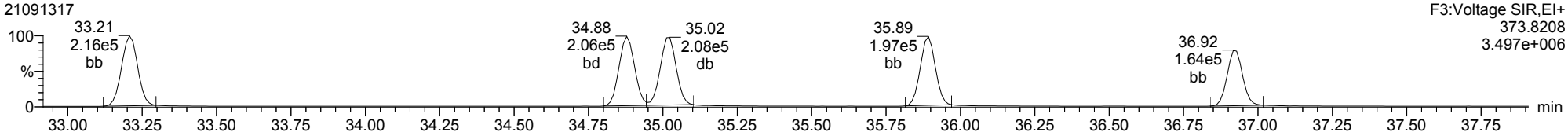
Total-hexafurans



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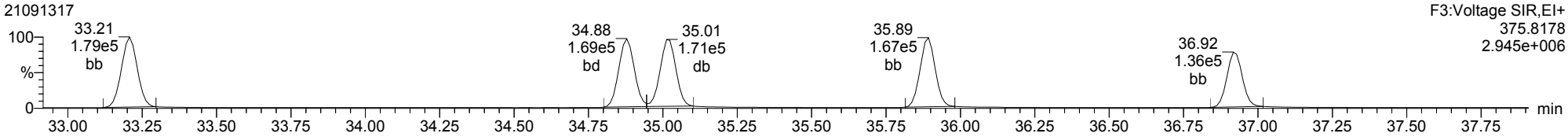

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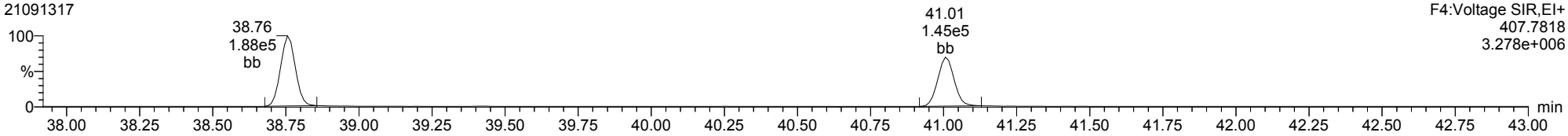

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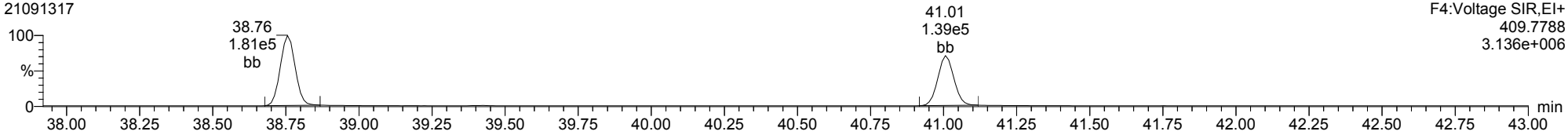

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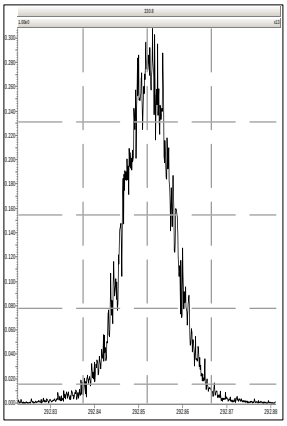

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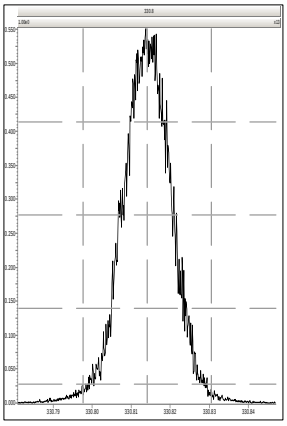

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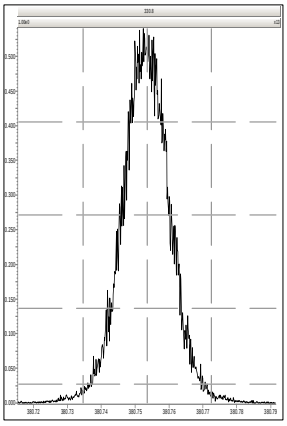
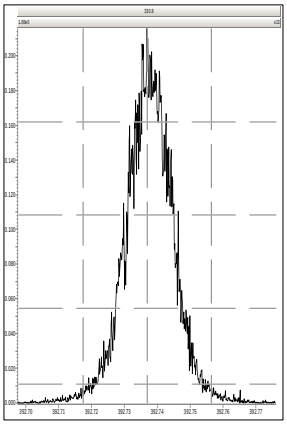


M 392.9760 R 12237



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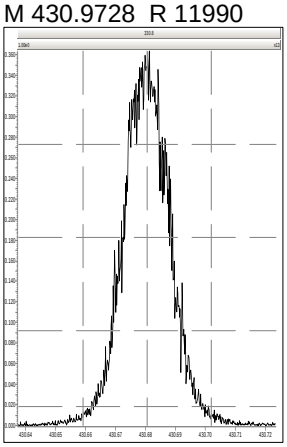

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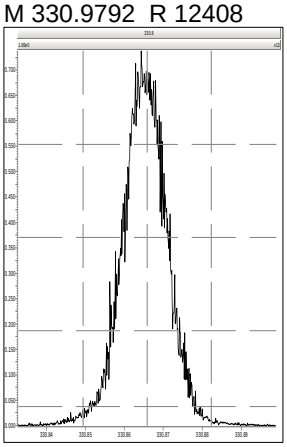

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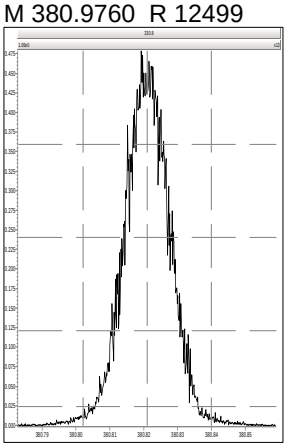

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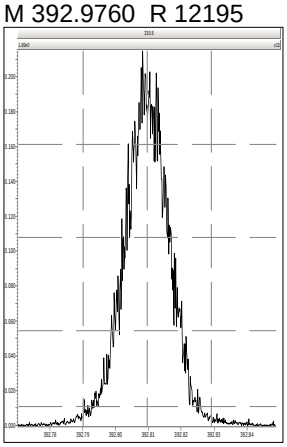

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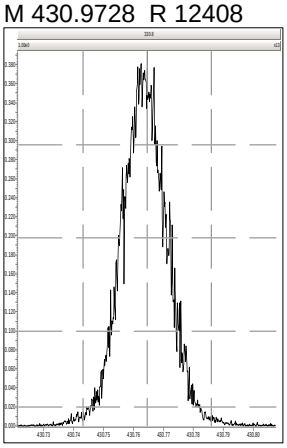

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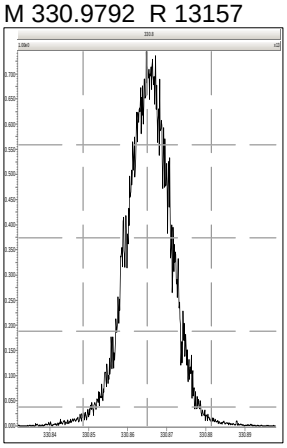

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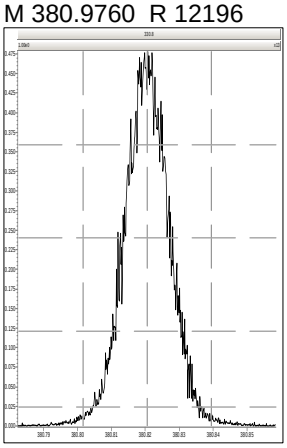

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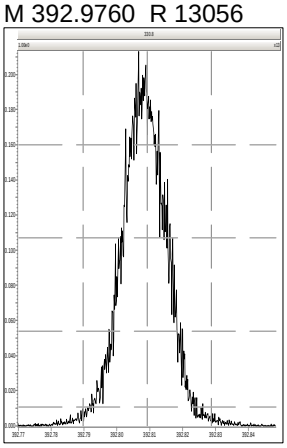

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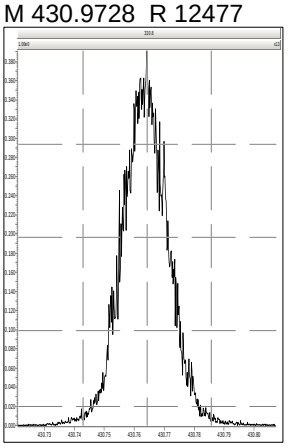

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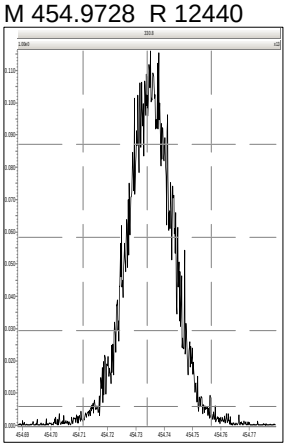

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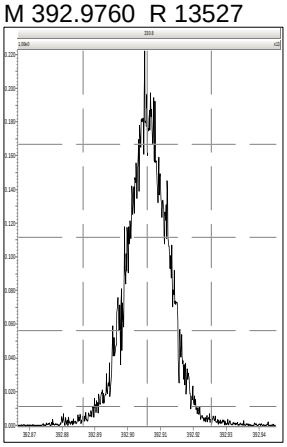

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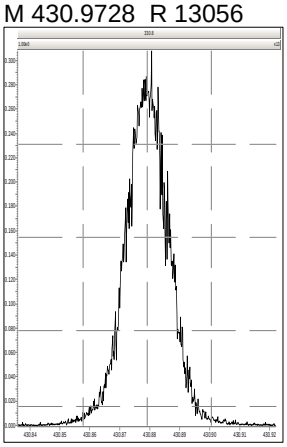

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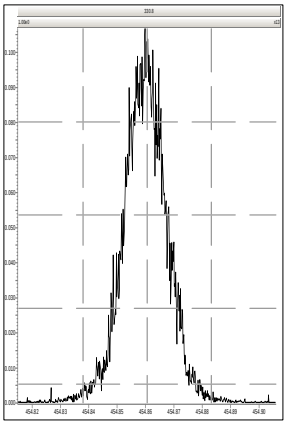

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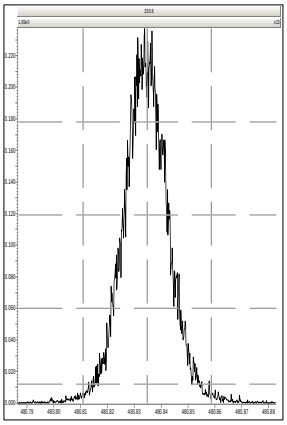

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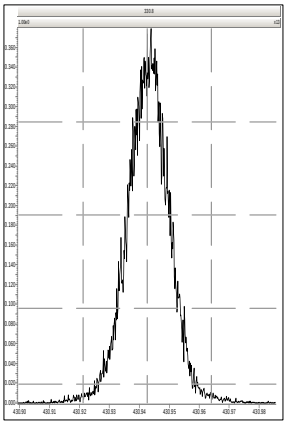

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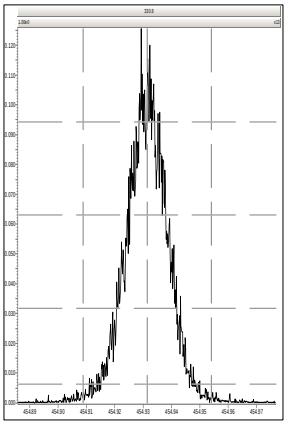

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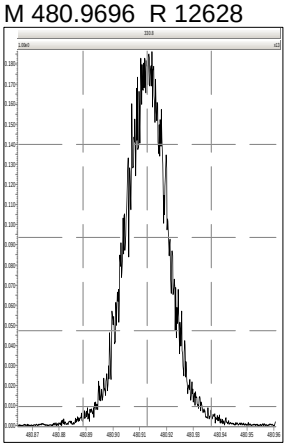

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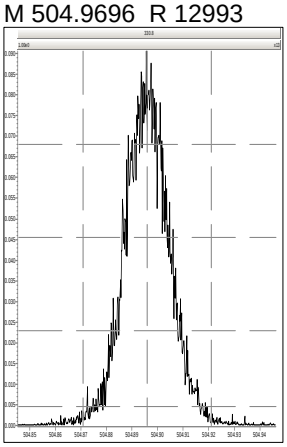

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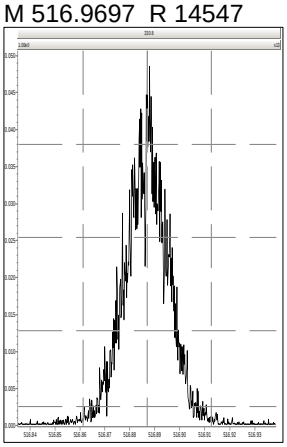
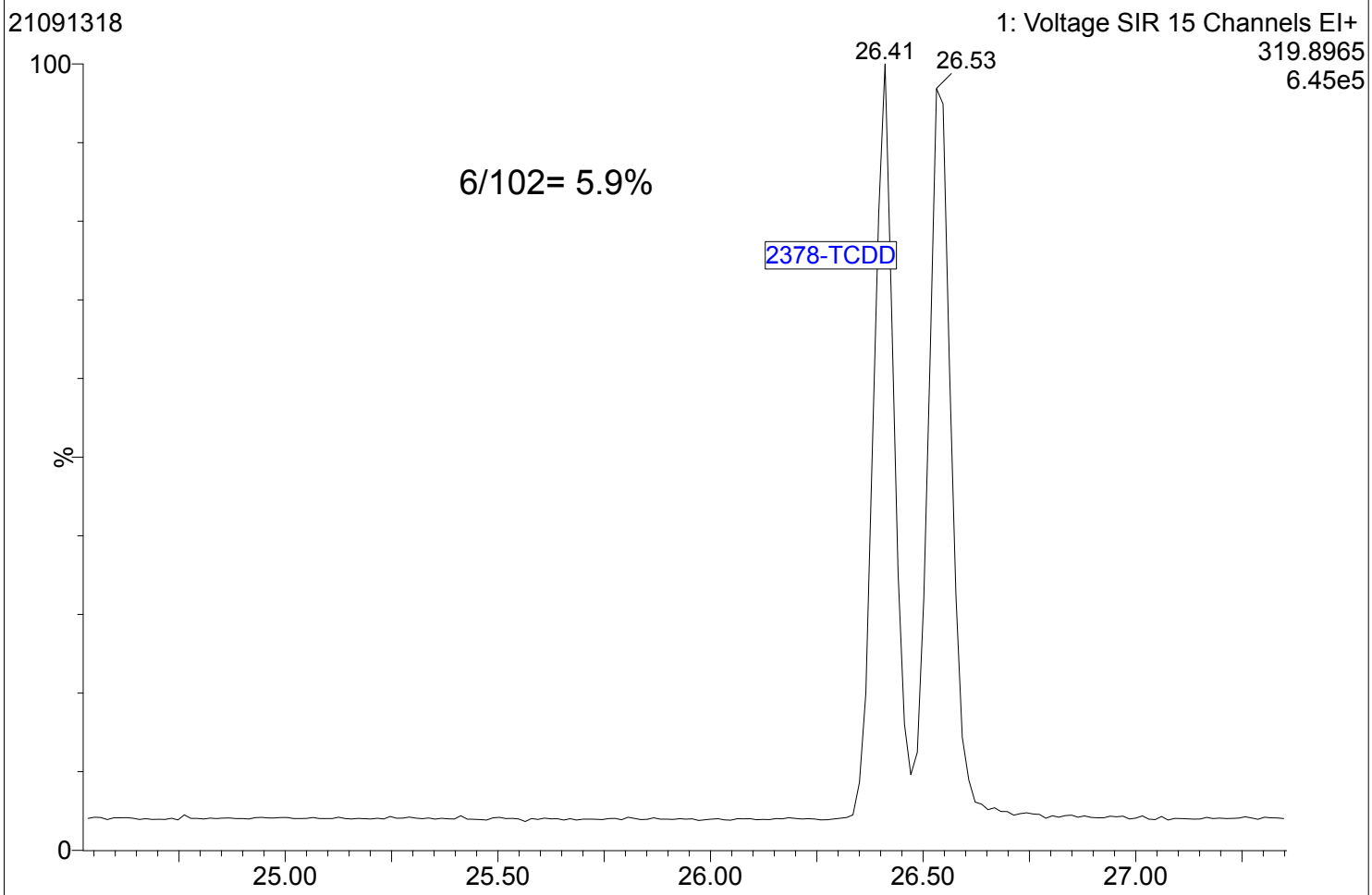
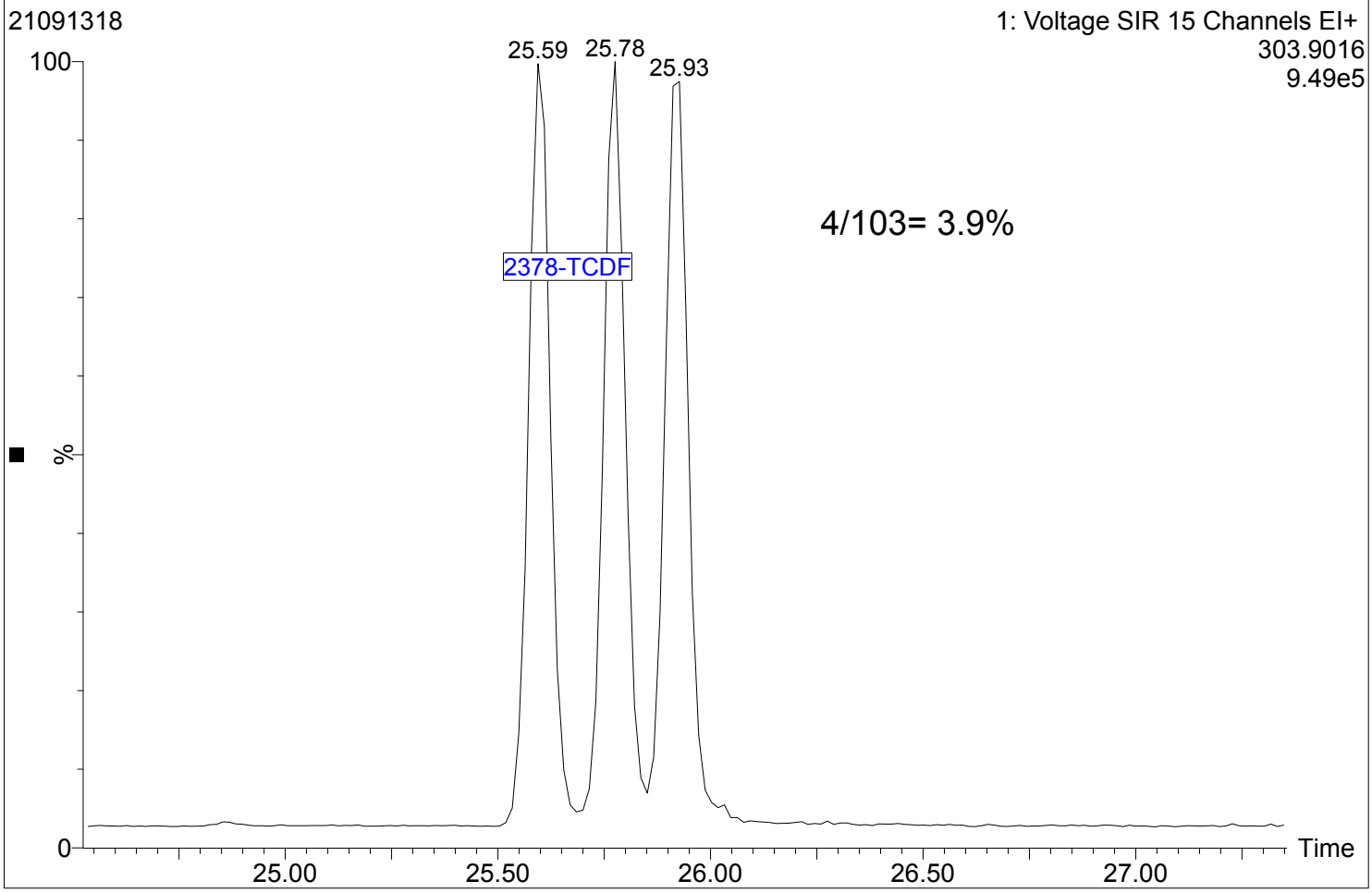



21091318
1: Voltage SIR 15 Channels EI+
319.8965
6.45e5
26.41
26.53
6/102= 5.9%
2378-TCDD
100
%
0
25.00
25.50
26.00
26.50
27.00


21091318
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9.49e5
25.59
25.78
25.93
4/103= 3.9%
2378-TCDF
100
%
0
Time
25.00
25.50
26.00
26.50
27.00

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	AUTOSPEC01	Calibration:	EH00030
Lab File ID:	21091328A	Calibration Date:	08/11/2021
Sequence:	SJI0191	Injection Date:	09/14/21
Lab Sample ID:	SJI0191-CCV2	Injection Time:	10:03
Sequence Name:	CS3Q4		

		CONC. (ng/mL)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
2,3,7,8-TCDF	A	10.000	9.58	1.1075930	1.0614050		-4.2	+/-16
2,3,7,8-TCDD	A	10.000	10.7	0.9202875	0.9840905		6.9	+/-22
1,2,3,7,8-PeCDF	A	50.000	47.7	1.0148670	0.9689803		-4.5	+/-18
2,3,4,7,8-PeCDF	A	50.000	46.6	1.1255490	1.0499760		-6.7	+/-18
1,2,3,7,8-PeCDD	A	50.000	54.0	0.9953229	1.0758960		8.1	+/-22
1,2,3,4,7,8-HxCDF	A	50.000	47.3	1.0168930	0.9628050		-5.3	+/-10
1,2,3,6,7,8-HxCDF	A	50.000	46.9	1.0368310	0.9721603		-6.2	+/-12
2,3,4,6,7,8-HxCDF	A	50.000	45.9	1.0524660	0.9668221		-8.1	+/-12
1,2,3,7,8,9-HxCDF	A	50.000	45.6	1.0301540	0.9392397		-8.8	+/-10
1,2,3,4,7,8-HxCDD	A	50.000	47.2	1.0273630	0.9704404		-5.5	+/-22
1,2,3,6,7,8-HxCDD	A	50.000	49.7	1.0089800	1.0034200		-0.6	+/-22
1,2,3,7,8,9-HxCDD	A	50.000	48.3	0.9504865	0.9183810		-3.4	+/-18
1,2,3,4,6,7,8-HpCDF	A	50.000	49.0	1.3273500	1.3007570		-2.0	+/-10
1,2,3,4,7,8,9-HpCDF	A	50.000	49.7	1.2833380	1.2754410		-0.6	+/-14
1,2,3,4,6,7,8-HpCDD	A	50.000	53.5	1.0680880	1.1436030		7.1	+/-14
OCDF	A	100.00	87.3	1.4469010	1.2629180		-12.7	+/-37
OCDD	A	100.00	96.0	1.1808230	1.1336790		-4.0	+/-21
13C12-2,3,7,8-TCDF	A	100.00	119	1.4265830	1.6997416		19.1	+/-29
13C12-2,3,7,8-TCDD	A	100.00	106	1.1164910	1.1801444		5.7	+/-18
13C12-1,2,3,7,8-PeCDF	A	100.00	114	1.2973130	1.4732288		13.6	+/-24
13C12-2,3,4,7,8-PeCDF	A	100.00	113	1.2364800	1.3984402		13.1	+/-23
13C12-1,2,3,7,8-PeCDD	A	100.00	104	0.7319833	0.7645939		4.5	+/-38
13C12-1,2,3,4,7,8-HxCDF	A	100.00	93.4	1.2424560	1.1606991		-6.6	+/-24
13C12-1,2,3,6,7,8-HxCDF	A	100.00	87.5	1.3434760	1.1749436		-12.5	+/-30
13C12-2,3,4,6,7,8-HxCDF	A	100.00	90.6	1.2148550	1.1011596		-9.4	+/-27
13C12-1,2,3,7,8,9-HxCDF	A	100.00	88.2	1.0076370	0.8886858		-11.8	+/-26
13C12-1,2,3,4,7,8-HxCDD	A	100.00	98.2	0.9598233	0.9423883		-1.8	+/-15
13C12-1,2,3,6,7,8-HxCDD	A	100.00	93.7	1.0413850	0.9760866		-6.3	+/-15
13C12-1,2,3,4,6,7,8-HpCDF	A	100.00	88.7	0.9264704	0.8219847		-11.3	+/-22
13C12-1,2,3,4,7,8,9-HpCDF	A	100.00	83.0	0.7579160	0.6291364		-17.0	+/-23
13C12-1,2,3,4,6,7,8-HpCDD	A	100.00	83.1	0.6324476	0.5254225		-16.9	+/-28
13C12-OCDD	A	200.00	174	0.5037432	0.4377135		-13.1	+/-52
37Cl4-2,3,7,8-TCDD	A	10.000	10.2	1.0835930	1.1005919		1.6	

* Values outside of QC limits

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:44:29 Pacific Daylight Time

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
2378-TCDF	25.761	1.001	3.830e4	4.977e4	1.108	0.770	0.770	537	977	5.88e5	7.84e5	1095.5	802.5	NO	bb	bb	9.583
12378-PeCDF	29.920	1.001	2.135e5	1.349e5	1.015	1.583	1.550	1924	1316	3.27e6	2.08e6	1697.6	1577.8	NO	bd	bb	47.739
23478-PeCDF	31.258	1.000	2.163e5	1.421e5	1.126	1.522	1.550	1924	1316	3.38e6	2.21e6	1756.6	1681.5	NO	bb	bb	46.643
123478-HxCDF	34.879	1.000	1.434e5	1.164e5	1.017	1.232	1.240	1342	1093	2.31e6	1.90e6	1723.8	1737.9	NO	bd	bd	47.341
234678-HxCDF	35.892	1.001	1.361e5	1.115e5	1.052	1.220	1.240	1342	1093	2.29e6	1.85e6	1703.3	1692.5	NO	bb	bb	45.931
123678-HxCDF	35.023	1.001	1.472e5	1.184e5	1.037	1.242	1.240	1342	1093	2.28e6	1.88e6	1700.6	1723.1	NO	db	db	46.881
123789-HxCDF	36.929	1.001	1.052e5	8.891e4	1.030	1.183	1.240	1342	1093	1.72e6	1.47e6	1279.5	1347.0	NO	bb	bb	45.587
1234678-HpCDF	38.756	1.000	1.267e5	1.219e5	1.327	1.039	1.050	1090	1078	2.07e6	2.00e6	1898.5	1854.9	NO	bb	bb	48.998
1234789-HpCDF	41.006	1.000	9.274e4	9.384e4	1.283	0.988	1.050	1090	1078	1.38e6	1.34e6	1266.2	1247.2	NO	bb	bd	49.692
OCDF	45.243	1.006	1.212e5	1.359e5	1.447	0.892	0.890	1085	682	1.50e6	1.70e6	1382.5	2499.0	NO	bb	bb	87.284
2378-TCDD	26.396	1.001	2.473e4	3.196e4	0.920	0.774	0.770	869	660	3.78e5	4.98e5	435.7	754.7	NO	bb	bb	10.693
12378-PeCDD	31.503	1.000	1.254e5	7.534e4	0.995	1.665	1.550	1019	1055	2.00e6	1.21e6	1960.0	1151.4	NO	bb	bb	54.048
123478-HxCDD	35.993	1.000	1.175e5	9.517e4	1.027	1.234	1.240	1316	1615	1.99e6	1.60e6	1513.3	990.9	NO	bd	bd	47.230
123678-HxCDD	36.115	1.001	1.228e5	1.049e5	1.009	1.171	1.240	1316	1615	1.94e6	1.61e6	1471.9	999.3	NO	db	dd	49.724
123789-HxCDD	36.505	1.011	1.128e5	9.204e4	0.950	1.225	1.240	1316	1615	1.88e6	1.54e6	1429.5	955.6	NO	bb	bb	48.311
1234678-HpCDD	40.260	1.001	7.153e4	6.819e4	1.068	1.049	1.050	957	966	1.17e6	1.10e6	1219.8	1135.5	NO	bb	bb	53.535
OCDD	44.996	1.000	1.108e5	1.200e5	1.181	0.923	0.890	1043	1190	1.40e6	1.51e6	1339.3	1265.4	NO	bb	bb	96.007
13C-2378-TCDF	25.746	1.007	3.734e5	4.564e5	1.427	0.818	0.770	1435	1183	5.72e6	7.00e6	3986.7	5914.5	NO	bb	bb	119.148
13C-12378-PeCDF	29.898	1.170	4.419e5	2.772e5	1.297	1.594	1.550	1680	1634	6.86e6	4.26e6	4081.4	2607.2	NO	bb	bb	113.560
13C-23478-PeCDF	31.247	1.222	4.213e5	2.614e5	1.236	1.612	1.550	1680	1634	6.50e6	4.06e6	3866.2	2482.7	NO	bb	bb	113.098
13C-123478-HxCDF	34.868	0.955	1.819e5	3.579e5	1.242	0.508	0.510	1225	1840	2.81e6	5.53e6	2292.0	3003.0	NO	bd	bd	93.420
13C-123678-HxCDF	35.001	0.959	1.845e5	3.619e5	1.343	0.510	0.510	1225	1840	2.92e6	5.73e6	2381.3	3114.1	NO	db	db	87.455
13C-234678-HxCDF	35.870	0.983	1.741e5	3.380e5	1.215	0.515	0.510	1225	1840	2.80e6	5.46e6	2284.1	2969.0	NO	bb	bb	90.641
13C-123789-HxCDF	36.906	1.011	1.396e5	2.737e5	1.008	0.510	0.510	1225	1840	2.41e6	4.76e6	1966.9	2587.8	NO	bb	bb	88.195
13C-1234678-HpCDF	38.745	1.062	1.204e5	2.619e5	0.926	0.460	0.440	1048	1622	2.00e6	4.36e6	1910.7	2685.6	NO	bb	bb	88.722
13C-1234789-HpCDF	40.995	1.123	8.866e4	2.039e5	0.758	0.435	0.440	1048	1622	1.31e6	2.90e6	1246.7	1789.2	NO	bb	bd	83.009
13C-1234-TCDD	25.564	0.000	2.120e5	2.762e5	1.000	0.768	0.770	1343	947	3.34e6	4.32e6	2486.9	4564.3	NO	bb	bb	100.000
13C-2378-TCDD	26.366	1.031	2.491e5	3.270e5	1.116	0.762	0.770	1343	947	3.73e6	4.88e6	2776.3	5156.9	NO	bb	bb	105.701
13C-12378-PeCDD	31.492	1.232	2.281e5	1.451e5	0.732	1.572	1.550	878	787	3.49e6	2.24e6	3974.0	2848.8	NO	bb	bb	104.455
13C-123478-HxCDD	35.981	0.986	2.441e5	1.941e5	0.960	1.258	1.240	1614	1553	4.10e6	3.25e6	2541.8	2093.3	NO	bd	bd	98.184
13C-123678-HxCDD	36.093	0.989	2.514e5	2.026e5	1.041	1.241	1.240	1614	1553	4.13e6	3.35e6	2557.9	2156.7	NO	db	db	93.730
13C-1234678-HpCDD	40.238	1.103	1.253e5	1.191e5	0.632	1.052	1.050	757	901	1.96e6	1.84e6	2590.1	2047.7	NO	bb	bb	83.078
13C-OCDD	44.978	1.232	1.951e5	2.120e5	0.504	0.920	0.890	962	747	2.44e6	2.64e6	2530.5	3539.6	NO	bb	bb	173.784
13C-123789-HxCDD	36.494	0.000	2.568e5	2.083e5	1.000	1.233	1.240	1614	1553	4.14e6	3.36e6	2565.6	2161.9	NO	bb	bb	100.000
37CL-2378-TCDD	26.396	1.033	5.373e4		1.084			792		8.06e5		1018.2			bb		10.157

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:44:29 Pacific Daylight Time

ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

Compound	RT	RRT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	Noise 1	Noise 2	Height 1	Height 2	S/N 1	S/N 2	EMPC	Int.1	Int.2	pg
1368-TCDF	22.238	0.864	4.667e4	6.141e4	1.425	0.760	0.770	537	977	7.20e5	9.57e5	1341.1	979.3	NO	bb	bb	9.140
1289-TCDF	27.273	1.059	3.610e4	4.517e4	1.043	0.799	0.770	537	977	5.59e5	6.97e5	1041.7	713.3	NO	bb	bb	9.391
13468-PECDF	27.091	0.906	2.745e5	1.811e5	1.376	1.515	1.550	606	589	4.17e6	2.77e6	6879.1	4703.7	NO	bb	bb	46.034
12389-PECDF	32.305	1.080	1.978e5	1.336e5	1.000	1.480	1.550	1924	1316	2.99e6	1.95e6	1554.7	1482.5	NO	bb	bd	46.099
123468-HXCDF	33.208	0.952	1.450e5	1.234e5	1.087	1.175	1.240	1342	1093	2.27e6	1.92e6	1691.6	1757.0	NO	bb	bb	45.758
1368-TCDD	23.508	0.892	2.485e4	3.108e4	0.923	0.799	0.770	869	660	4.01e5	4.95e5	461.8	750.1	NO	bb	bb	10.516
1289-TCDD	27.001	1.024	2.167e4	2.663e4	0.794	0.814	0.770	869	660	3.14e5	4.00e5	361.8	606.0	NO	bb	bb	10.559
12479-PECDD	28.773	0.914	2.247e5	1.377e5	1.843	1.631	1.550	1019	1055	2.19e6	1.34e6	2153.6	1268.4	NO	bb	bb	52.679
12389-PECDD	31.915	1.013	1.451e5	9.042e4	1.154	1.605	1.550	1019	1055	2.27e6	1.41e6	2224.5	1333.6	NO	bb	bb	54.700
124679-HXCDD	33.987	0.945	1.302e5	1.059e5	1.125	1.230	1.240	1316	1615	2.10e6	1.69e6	1595.4	1046.5	NO	bb	bb	47.891
1234679-HPCDD	39.213	0.975	8.122e4	7.767e4	1.211	1.046	1.050	957	966	1.37e6	1.28e6	1426.8	1328.5	NO	bb	bb	53.701
Total-tetrafurans			1.220e5		1.192			537		1.88e6							28.331
Total-penta1			2.745e5					606		4.17e6							46.034
Total-pentafurans			6.633e5		1.047			1924		1.02e7							148.527
Total-hexafurans			6.768e5		1.045			1342		1.09e7							231.498
Total-heptafurans			2.194e5		1.305			1090		3.45e6							98.691
Total-Furans			2.077e6		1.158			537		3.21e7							640.365
Total-tetradioxins			1.216e5		0.879			869		1.68e6							53.878
Total-pentadioxins			4.952e5		1.331			1019		6.46e6							161.427
Total-hexadioxins			4.836e5		1.028			1316		7.91e6							193.257
Total-heptadioxins			1.527e5		1.140			957		2.53e6							107.236
Total-Dioxins			1.364e6		1.092			869		2.00e7							611.805
Total-TEQ			3.441e6					869		5.21e7							1252.170
FUNCTION1 PFK			6.640e5					227146		1.25e7							
FUNCTION2 PFK			4.195e5					114560		6.15e6							0.000
FUNCTION3 PFK			9.144e4					187537		2.83e6							0.000
FUNCTION4 PFK			3.724e4					135842		1.36e6							
FUNCTION5 PFK			5.878e4					101246		2.09e6							
FUNCTION1 HXCD...			2.371e2					550		4.02e3							0.000
FUNCTION1 HPCD...			3.054e2					426		3.69e3							0.000
FUNCTION2 HPCD...			2.012e2					539		3.35e3							0.000
FUNCTION3 OCDPE			0.000e0					437		0.00e0							
FUNCTION4 NCDPE			0.000e0					506		0.00e0							
FUNCTION5 DCDPE			8.731e1					521		1.21e3							0.000

Method: T:\Autospec\Methods\Dioxin210913.mdb 13 Sep 2021 15:49:19
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

TF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	3.610e4	4.517e4	1.043	0.80	0.77	1041.7	YES	NO	bb	bb	9.391
2	Total-tetrafurans	27.11	4.767e2	6.261e2	1.192	0.76	0.77	15.5	YES	NO	bb	bb	0.112
3	2378-TCDF	25.76	3.830e4	4.977e4	1.108	0.77	0.77	1095.5	YES	NO	bb	bb	9.583
4	Total-tetrafurans	24.52	4.874e2	5.558e2	1.192	0.88	0.77	13.9	YES	NO	bd	bd	0.105
5	1368-TCDF	22.24	4.667e4	6.141e4	1.425	0.76	0.77	1341.1	YES	NO	bb	bb	9.140

PP

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	13468-PECDF	27.09	2.745e5	1.811e5	1.376	1.52	1.55	6879.1	YES	NO	bb	bb	46.034

PF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12378-PeCDF	29.92	2.135e5	1.349e5	1.015	1.58	1.55	1697.6	YES	NO	bd	bb	47.739
2	Total-pentafurans	28.76	3.571e4	2.332e4	1.047	1.53	1.55	291.9	YES	NO	bb	bb	8.046
3	12389-PECDF	32.30	1.978e5	1.336e5	1.000	1.48	1.55	1554.7	YES	NO	bb	bd	46.099
4	23478-PeCDF	31.26	2.163e5	1.421e5	1.126	1.52	1.55	1756.6	YES	NO	bb	bb	46.643

HF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDF	36.93	1.052e5	8.891e4	1.030	1.18	1.24	1279.5	YES	NO	bb	bb	45.587
2	234678-HxCDF	35.89	1.361e5	1.115e5	1.052	1.22	1.24	1703.3	YES	NO	bb	bb	45.931
3	123678-HxCDF	35.02	1.472e5	1.184e5	1.037	1.24	1.24	1700.6	YES	NO	db	db	46.881
4	123478-HxCDF	34.88	1.434e5	1.164e5	1.017	1.23	1.24	1723.8	YES	NO	bd	bd	47.341
5	123468-HXCDF	33.21	1.450e5	1.234e5	1.087	1.18	1.24	1691.6	YES	NO	bb	bb	45.758

HPF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234789-HpCDF	41.01	9.274e4	9.384e4	1.283	0.99	1.05	1266.2	YES	NO	bb	bd	49.692
2	1234678-HpCDF	38.76	1.267e5	1.219e5	1.327	1.04	1.05	1898.5	YES	NO	bb	bb	48.998

ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

Furans,TF,PP,PF,HF,HPF,OF

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	3.610e4	4.517e4	1.043	0.80	0.77	1041.7	YES	NO	bb	bb	9.391
2	Total-tetrafurans	27.11	4.767e2	6.261e2	1.192	0.76	0.77	15.5	YES	NO	bb	bb	0.112
3	2378-TCDF	25.76	3.830e4	4.977e4	1.108	0.77	0.77	1095.5	YES	NO	bb	bb	9.583
4	Total-tetrafurans	24.52	4.874e2	5.558e2	1.192	0.88	0.77	13.9	YES	NO	bd	bd	0.105
5	1368-TCDF	22.24	4.667e4	6.141e4	1.425	0.76	0.77	1341.1	YES	NO	bb	bb	9.140
6	12378-PeCDF	29.92	2.135e5	1.349e5	1.015	1.58	1.55	1697.6	YES	NO	bd	bb	47.739
7	Total-pentafurans	28.76	3.571e4	2.332e4	1.047	1.53	1.55	291.9	YES	NO	bb	bb	8.046
8	12389-PECDF	32.30	1.978e5	1.336e5	1.000	1.48	1.55	1554.7	YES	NO	bb	bd	46.099
9	23478-PeCDF	31.26	2.163e5	1.421e5	1.126	1.52	1.55	1756.6	YES	NO	bb	bb	46.643
10	123789-HxCDF	36.93	1.052e5	8.891e4	1.030	1.18	1.24	1279.5	YES	NO	bb	bb	45.587
11	234678-HxCDF	35.89	1.361e5	1.115e5	1.052	1.22	1.24	1703.3	YES	NO	bb	bb	45.931
12	123678-HxCDF	35.02	1.472e5	1.184e5	1.037	1.24	1.24	1700.6	YES	NO	db	db	46.881
13	123478-HxCDF	34.88	1.434e5	1.164e5	1.017	1.23	1.24	1723.8	YES	NO	bd	bd	47.341
14	123468-HXCDF	33.21	1.450e5	1.234e5	1.087	1.18	1.24	1691.6	YES	NO	bb	bb	45.758
15	1234789-HpCDF	41.01	9.274e4	9.384e4	1.283	0.99	1.05	1266.2	YES	NO	bb	bd	49.692
16	1234678-HpCDF	38.76	1.267e5	1.219e5	1.327	1.04	1.05	1898.5	YES	NO	bb	bb	48.998
17	OCDF	45.24	1.212e5	1.359e5	1.447	0.89	0.89	1382.5	YES	NO	bb	bb	87.284
18	13468-PECDF	27.09	2.745e5	1.811e5	1.376	1.52	1.55	6879.1	YES	NO	bb	bb	46.034

TD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.58	1.175e4	1.474e4	0.879	0.80	0.77	206.7	YES	NO	bb	bb	5.230
2	1368-TCDD	23.51	2.485e4	3.108e4	0.923	0.80	0.77	461.8	YES	NO	bb	bb	10.516
3	1289-TCDD	27.00	2.167e4	2.663e4	0.794	0.81	0.77	361.8	YES	NO	bb	bb	10.559
4	2378-TCDD	26.40	2.473e4	3.196e4	0.920	0.77	0.77	435.7	YES	NO	bb	bb	10.693
5	Total-tetradioxins	26.08	3.856e4	4.693e4	0.879	0.82	0.77	472.4	YES	NO	bb	bb	16.879

PD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	12389-PECDD	31.91	1.451e5	9.042e4	1.154	1.60	1.55	2224.5	YES	NO	bb	bb	54.700
2	12378-PeCDD	31.50	1.254e5	7.534e4	0.995	1.66	1.55	1960.0	YES	NO	bb	bb	54.048
3	12479-PECDD	28.77	2.247e5	1.377e5	1.843	1.63	1.55	2153.6	YES	NO	bb	bb	52.679

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HD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	123789-HxCDD	36.51	1.128e5	9.204e4	0.950	1.23	1.24	1429.5	YES	NO	bb	bb	48.311
2	123678-HxCDD	36.12	1.228e5	1.049e5	1.009	1.17	1.24	1471.9	YES	NO	db	dd	49.724
3	123478-HxCDD	35.99	1.175e5	9.517e4	1.027	1.23	1.24	1513.3	YES	NO	bd	bd	47.230
4	Total-hexadioxins	34.77	2.541e2	2.069e2	1.028	1.23	1.24	2.7	NO	NO	bd	bb	0.101
5	124679-HXCDD	33.99	1.302e5	1.059e5	1.125	1.23	1.24	1595.4	YES	NO	bb	bb	47.891

HPD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1234678-HpCDD	40.26	7.153e4	6.819e4	1.068	1.05	1.05	1219.8	YES	NO	bb	bb	53.535
2	1234679-HPCDD	39.21	8.122e4	7.767e4	1.211	1.05	1.05	1426.8	YES	NO	bb	bb	53.701

Dioxins,TD,PD,HD,HPD,OD

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	Total-tetradioxins	25.58	1.175e4	1.474e4	0.879	0.80	0.77	206.7	YES	NO	bb	bb	5.230
2	1368-TCDD	23.51	2.485e4	3.108e4	0.923	0.80	0.77	461.8	YES	NO	bb	bb	10.516
3	1289-TCDD	27.00	2.167e4	2.663e4	0.794	0.81	0.77	361.8	YES	NO	bb	bb	10.559
4	2378-TCDD	26.40	2.473e4	3.196e4	0.920	0.77	0.77	435.7	YES	NO	bb	bb	10.693
5	Total-tetradioxins	26.08	3.856e4	4.693e4	0.879	0.82	0.77	472.4	YES	NO	bb	bb	16.879
6	12389-PECDD	31.91	1.451e5	9.042e4	1.154	1.60	1.55	2224.5	YES	NO	bb	bb	54.700
7	12378-PeCDD	31.50	1.254e5	7.534e4	0.995	1.66	1.55	1960.0	YES	NO	bb	bb	54.048
8	12479-PECDD	28.77	2.247e5	1.377e5	1.843	1.63	1.55	2153.6	YES	NO	bb	bb	52.679
9	123789-HxCDD	36.51	1.128e5	9.204e4	0.950	1.23	1.24	1429.5	YES	NO	bb	bb	48.311
10	123678-HxCDD	36.12	1.228e5	1.049e5	1.009	1.17	1.24	1471.9	YES	NO	db	dd	49.724
11	123478-HxCDD	35.99	1.175e5	9.517e4	1.027	1.23	1.24	1513.3	YES	NO	bd	bd	47.230
12	Total-hexadioxins	34.77	2.541e2	2.069e2	1.028	1.23	1.24	2.7	NO	NO	bd	bb	0.101
13	124679-HXCDD	33.99	1.302e5	1.059e5	1.125	1.23	1.24	1595.4	YES	NO	bb	bb	47.891
14	1234678-HpCDD	40.26	7.153e4	6.819e4	1.068	1.05	1.05	1219.8	YES	NO	bb	bb	53.535
15	1234679-HPCDD	39.21	8.122e4	7.767e4	1.211	1.05	1.05	1426.8	YES	NO	bb	bb	53.701
16	OCDD	45.00	1.108e5	1.200e5	1.181	0.92	0.89	1339.3	YES	NO	bb	bb	96.007

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TotalTEQ,Furans,Dioxins

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	1289-TCDF	27.27	3.610e4	4.517e4	1.043	0.80	0.77	1041.7	YES	NO	bb	bb	9.391
2	Total-tetrafurans	27.11	4.767e2	6.261e2	1.192	0.76	0.77	15.5	YES	NO	bb	bb	0.112
3	2378-TCDF	25.76	3.830e4	4.977e4	1.108	0.77	0.77	1095.5	YES	NO	bb	bb	9.583
4	Total-tetrafurans	24.52	4.874e2	5.558e2	1.192	0.88	0.77	13.9	YES	NO	bd	bd	0.105
5	1368-TCDF	22.24	4.667e4	6.141e4	1.425	0.76	0.77	1341.1	YES	NO	bb	bb	9.140
6	12378-PeCDF	29.92	2.135e5	1.349e5	1.015	1.58	1.55	1697.6	YES	NO	bd	bb	47.739
7	Total-pentafurans	28.76	3.571e4	2.332e4	1.047	1.53	1.55	291.9	YES	NO	bb	bb	8.046
8	12389-PECDF	32.30	1.978e5	1.336e5	1.000	1.48	1.55	1554.7	YES	NO	bb	bd	46.099
9	23478-PeCDF	31.26	2.163e5	1.421e5	1.126	1.52	1.55	1756.6	YES	NO	bb	bb	46.643
10	123789-HxCDF	36.93	1.052e5	8.891e4	1.030	1.18	1.24	1279.5	YES	NO	bb	bb	45.587
11	234678-HxCDF	35.89	1.361e5	1.115e5	1.052	1.22	1.24	1703.3	YES	NO	bb	bb	45.931
12	123678-HxCDF	35.02	1.472e5	1.184e5	1.037	1.24	1.24	1700.6	YES	NO	db	db	46.881
13	123478-HxCDF	34.88	1.434e5	1.164e5	1.017	1.23	1.24	1723.8	YES	NO	bd	bd	47.341
14	123468-HXCDF	33.21	1.450e5	1.234e5	1.087	1.18	1.24	1691.6	YES	NO	bb	bb	45.758
15	1234789-HpCDF	41.01	9.274e4	9.384e4	1.283	0.99	1.05	1266.2	YES	NO	bb	bd	49.692
16	1234678-HpCDF	38.76	1.267e5	1.219e5	1.327	1.04	1.05	1898.5	YES	NO	bb	bb	48.998
17	OCDF	45.24	1.212e5	1.359e5	1.447	0.89	0.89	1382.5	YES	NO	bb	bb	87.284
18	13468-PECDF	27.09	2.745e5	1.811e5	1.376	1.52	1.55	6879.1	YES	NO	bb	bb	46.034
19	Total-tetradioxins	25.58	1.175e4	1.474e4	0.879	0.80	0.77	206.7	YES	NO	bb	bb	5.230
20	1368-TCDD	23.51	2.485e4	3.108e4	0.923	0.80	0.77	461.8	YES	NO	bb	bb	10.516
21	1289-TCDD	27.00	2.167e4	2.663e4	0.794	0.81	0.77	361.8	YES	NO	bb	bb	10.559
22	2378-TCDD	26.40	2.473e4	3.196e4	0.920	0.77	0.77	435.7	YES	NO	bb	bb	10.693
23	Total-tetradioxins	26.08	3.856e4	4.693e4	0.879	0.82	0.77	472.4	YES	NO	bb	bb	16.879
24	12389-PECDD	31.91	1.451e5	9.042e4	1.154	1.60	1.55	2224.5	YES	NO	bb	bb	54.700
25	12378-PeCDD	31.50	1.254e5	7.534e4	0.995	1.66	1.55	1960.0	YES	NO	bb	bb	54.048
26	12479-PECDD	28.77	2.247e5	1.377e5	1.843	1.63	1.55	2153.6	YES	NO	bb	bb	52.679
27	123789-HxCDD	36.51	1.128e5	9.204e4	0.950	1.23	1.24	1429.5	YES	NO	bb	bb	48.311
28	123678-HxCDD	36.12	1.228e5	1.049e5	1.009	1.17	1.24	1471.9	YES	NO	db	dd	49.724
29	123478-HxCDD	35.99	1.175e5	9.517e4	1.027	1.23	1.24	1513.3	YES	NO	bd	bd	47.230
30	Total-hexadioxins	34.77	2.541e2	2.069e2	1.028	1.23	1.24	2.7	NO	NO	bd	bb	0.101
31	124679-HXCDD	33.99	1.302e5	1.059e5	1.125	1.23	1.24	1595.4	YES	NO	bb	bb	47.891
32	1234678-HpCDD	40.26	7.153e4	6.819e4	1.068	1.05	1.05	1219.8	YES	NO	bb	bb	53.535
33	1234679-HPCDD	39.21	8.122e4	7.767e4	1.211	1.05	1.05	1426.8	YES	NO	bb	bb	53.701
34	OCDD	45.00	1.108e5	1.200e5	1.181	0.92	0.89	1339.3	YES	NO	bb	bb	96.007

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 PFK	21.24	1.410e4					2.0	NO		db		
2	FUNCTION1 PFK	21.15	4.211e4					2.1	NO		bd		
3	FUNCTION1 PFK	23.54	2.318e3					0.5	NO		bd		
4	FUNCTION1 PFK	23.19	7.140e3					0.8	NO		bb		
5	FUNCTION1 PFK	22.98	7.670e3					0.8	NO		bb		
6	FUNCTION1 PFK	22.89	1.423e3					0.4	NO		db		
7	FUNCTION1 PFK	22.84	4.614e3					0.6	NO		dd		
8	FUNCTION1 PFK	22.78	4.043e3					0.6	NO		bd		
9	FUNCTION1 PFK	22.60	1.081e4					0.9	NO		db		
10	FUNCTION1 PFK	22.51	2.448e4					1.9	NO		bd		
11	FUNCTION1 PFK	22.42	1.063e3					0.3	NO		bb		
12	FUNCTION1 PFK	22.15	7.457e3					1.0	NO		bb		
13	FUNCTION1 PFK	22.09	6.735e3					0.9	NO		db		
14	FUNCTION1 PFK	22.04	9.774e3					1.1	NO		bd		
15	FUNCTION1 PFK	21.88	1.322e4					1.2	NO		bb		
16	FUNCTION1 PFK	21.56	1.142e3					0.3	NO		bb		
17	FUNCTION1 PFK	21.42	1.876e4					1.6	NO		db		
18	FUNCTION1 PFK	21.38	3.628e4					1.9	NO		bd		
19	FUNCTION1 PFK	25.31	3.876e3					0.5	NO		bb		
20	FUNCTION1 PFK	25.02	1.543e4					1.6	NO		bb		
21	FUNCTION1 PFK	24.88	3.275e3					0.6	NO		bb		
22	FUNCTION1 PFK	24.70	2.704e4					1.2	NO		db		
23	FUNCTION1 PFK	24.54	5.649e3					0.7	NO		bd		
24	FUNCTION1 PFK	24.46	2.022e3					0.5	NO		bb		
25	FUNCTION1 PFK	24.32	7.822e3					1.1	NO		bb		
26	FUNCTION1 PFK	24.26	9.081e3					0.7	NO		db		
27	FUNCTION1 PFK	24.17	7.520e3					0.9	NO		dd		
28	FUNCTION1 PFK	24.13	3.158e3					0.5	NO		dd		
29	FUNCTION1 PFK	24.08	1.682e3					0.4	NO		bd		
30	FUNCTION1 PFK	23.96	5.656e3					0.6	NO		bb		
31	FUNCTION1 PFK	23.89	1.119e4					1.6	NO		db		
32	FUNCTION1 PFK	23.83	2.735e4					2.1	NO		dd		
33	FUNCTION1 PFK	23.75	2.211e4					1.7	NO		bd		
34	FUNCTION1 PFK	23.60	1.613e4					1.3	NO		db		
35	FUNCTION1 PFK	27.53	1.363e4					1.0	NO		bb		
36	FUNCTION1 PFK	27.36	2.837e3					0.4	NO		bb		
37	FUNCTION1 PFK	27.27	1.647e4					1.2	NO		bb		

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PFK1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
38	FUNCTION1 PFK	27.11	5.361e4					1.7	NO		db		
39	FUNCTION1 PFK	26.96	1.400e4					1.3	NO		dd		
40	FUNCTION1 PFK	26.89	9.041e3					1.0	NO		dd		
41	FUNCTION1 PFK	26.82	2.569e4					1.9	NO		dd		
42	FUNCTION1 PFK	26.76	1.026e4					1.4	NO		dd		
43	FUNCTION1 PFK	26.56	4.643e4					1.7	NO		dd		
44	FUNCTION1 PFK	26.52	1.477e4					1.4	NO		bd		
45	FUNCTION1 PFK	26.38	2.370e4					1.2	NO		bb		
46	FUNCTION1 PFK	26.15	8.828e3					0.7	NO		bb		
47	FUNCTION1 PFK	25.87	1.070e4					0.8	NO		bb		
48	FUNCTION1 PFK	25.70	2.241e3					0.5	NO		bb		
49	FUNCTION1 PFK	25.64	6.240e3					0.8	NO		bb		
50	FUNCTION1 PFK	25.55	1.741e4					1.6	NO		bb		
51	FUNCTION1 PFK	27.91	1.848e3					0.4	NO		bb		
52	FUNCTION1 PFK	27.83	2.185e3					0.4	NO		bb		
53	FUNCTION1 PFK	27.77	1.933e3					0.6	NO		bb		

PFK2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 PFK	32.09	1.113e4					3.1	YES		db		0.000
2	FUNCTION2 PFK	32.02	1.608e4					2.4	NO		bd		0.000
3	FUNCTION2 PFK	31.06	1.028e3					0.8	NO		bb		0.000
4	FUNCTION2 PFK	30.79	1.607e4					2.4	NO		bb		0.000
5	FUNCTION2 PFK	30.75	2.883e3					1.3	NO		bb		0.000
6	FUNCTION2 PFK	30.00	8.770e2					0.7	NO		bb		0.000
7	FUNCTION2 PFK	29.21	5.234e3					1.9	NO		bb		0.000
8	FUNCTION2 PFK	29.16	1.272e3					1.0	NO		bb		0.000
9	FUNCTION2 PFK	28.34	9.602e4					9.4	YES		db		0.000
10	FUNCTION2 PFK	28.23	1.435e5					13.8	YES		dd		0.000
11	FUNCTION2 PFK	28.15	1.255e5					16.9	YES		bd		0.000

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PFK3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION3 PFK	37.63	4.245e3					1.2	NO		bb		0.000
2	FUNCTION3 PFK	37.39	1.127e3					0.5	NO		bb		0.000
3	FUNCTION3 PFK	37.27	2.621e4					2.8	NO		bb		0.000
4	FUNCTION3 PFK	36.09	8.495e3					1.4	NO		bb		0.000
5	FUNCTION3 PFK	35.81	1.234e3					0.6	NO		bb		0.000
6	FUNCTION3 PFK	35.77	6.334e3					1.4	NO		bb		0.000
7	FUNCTION3 PFK	34.80	3.305e3					0.9	NO		bb		0.000
8	FUNCTION3 PFK	34.62	2.212e4					2.2	NO		bb		0.000
9	FUNCTION3 PFK	34.40	1.157e3					0.6	NO		bb		0.000
10	FUNCTION3 PFK	34.35	6.965e3					1.5	NO		bb		0.000
11	FUNCTION3 PFK	33.06	1.224e3					0.6	NO		db		0.000
12	FUNCTION3 PFK	33.03	9.023e3					1.4	NO		bd		0.000

PFK4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION4 PFK	40.33	5.105e3					1.3	NO		bb		
2	FUNCTION4 PFK	39.81	8.834e2					0.6	NO		bb		
3	FUNCTION4 PFK	39.69	3.592e3					1.0	NO		bb		
4	FUNCTION4 PFK	42.49	7.319e2					0.5	NO		bb		
5	FUNCTION4 PFK	42.30	4.763e3					1.3	NO		bb		
6	FUNCTION4 PFK	42.20	7.878e2					0.5	NO		bb		
7	FUNCTION4 PFK	42.01	3.222e3					1.1	NO		bb		
8	FUNCTION4 PFK	41.51	1.667e3					0.8	NO		bb		
9	FUNCTION4 PFK	41.25	1.142e4					1.7	NO		bb		
10	FUNCTION4 PFK	40.67	5.072e3					1.3	NO		bb		

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PFK5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 PFK	44.26	2.225e3					1.1	NO		dd		
2	FUNCTION5 PFK	44.24	7.052e2					0.6	NO		bd		
3	FUNCTION5 PFK	44.09	4.224e2					0.5	NO		bb		
4	FUNCTION5 PFK	43.93	2.713e3					1.4	NO		db		
5	FUNCTION5 PFK	43.90	6.091e3					1.8	NO		bd		
6	FUNCTION5 PFK	43.53	2.190e3					1.0	NO		bb		
7	FUNCTION5 PFK	43.32	4.396e3					1.4	NO		bb		
8	FUNCTION5 PFK	43.13	4.058e2					0.4	NO		bb		
9	FUNCTION5 PFK	45.76	5.221e2					0.6	NO		bb		
10	FUNCTION5 PFK	45.73	2.189e3					1.1	NO		bb		
11	FUNCTION5 PFK	45.64	1.668e3					0.9	NO		bb		
12	FUNCTION5 PFK	45.39	5.115e2					0.5	NO		db		
13	FUNCTION5 PFK	45.36	7.356e2					0.5	NO		bd		
14	FUNCTION5 PFK	45.23	1.693e3					1.0	NO		bb		
15	FUNCTION5 PFK	45.02	6.146e3					1.2	NO		db		
16	FUNCTION5 PFK	44.95	5.183e3					1.2	NO		bd		
17	FUNCTION5 PFK	44.82	1.099e4					2.1	NO		db		
18	FUNCTION5 PFK	44.72	4.458e3					1.2	NO		dd		
19	FUNCTION5 PFK	44.69	2.974e3					1.0	NO		bd		
20	FUNCTION5 PFK	44.32	2.569e3					1.2	NO		db		

ETHERS1

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HXCD...	26.43	7.643e1					4.7	YES		bb		0.000
2	FUNCTION1 HXCD...	23.33	1.607e2					2.6	NO		bb		0.000

ETHERS2

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION1 HPCD...	24.60	7.376e1					2.4	NO		bb		0.000
2	FUNCTION1 HPCD...	23.33	1.070e2					3.1	YES		bb		0.000
3	FUNCTION1 HPCD...	21.09	1.246e2					3.2	YES		bb		0.000

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ETHERS3

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION2 HPCD...	31.10	2.012e2					6.2	YES		bb		0.000

ETHERS4

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS5

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1													

ETHERS6

	Compound	RT	Ion1Area	Ion2Area	RRF	Ratio	Pred R	S/N 1	SNFlag	EMPC	Int.1	Int.2	pg
1	FUNCTION5 DCDPE	45.39	8.731e1					2.3	NO		bb		0.000

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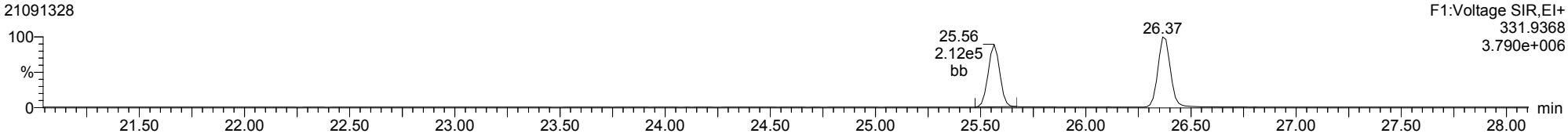
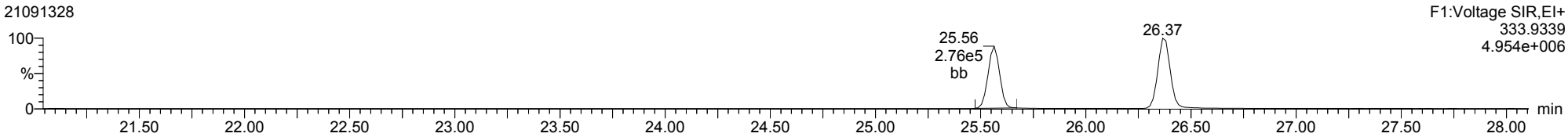
Calibration: T:\Autospec\Curves\210811ICIH.cdb 13 Aug 2021 13:44:39

ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

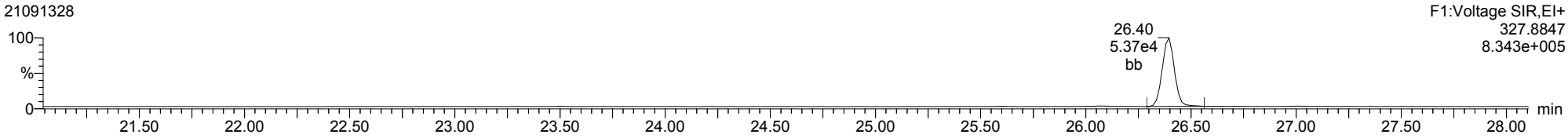
13C-1234-TCDD



13C-1234-TCDD



37CL-2378-TCDD



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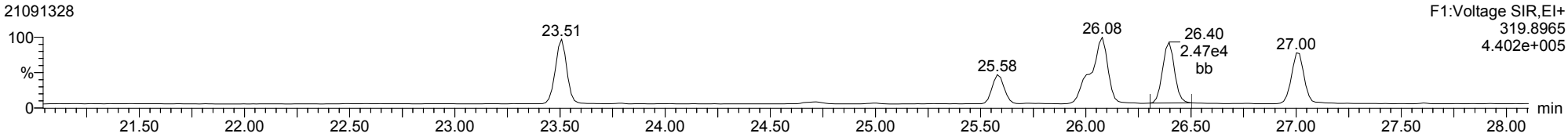
Printed: Wednesday, September 15, 2021 14:44:29 Pacific Daylight Time

ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

2378-TCDD



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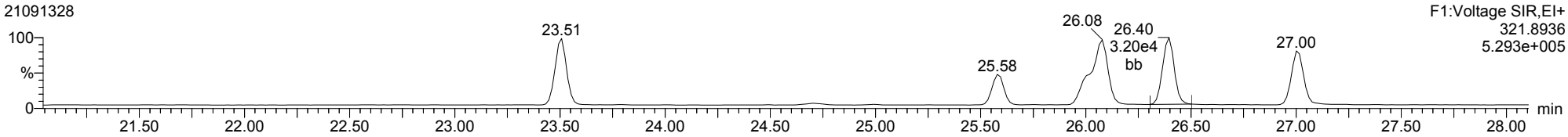

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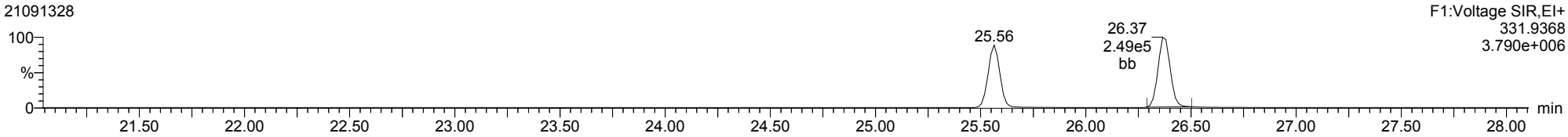

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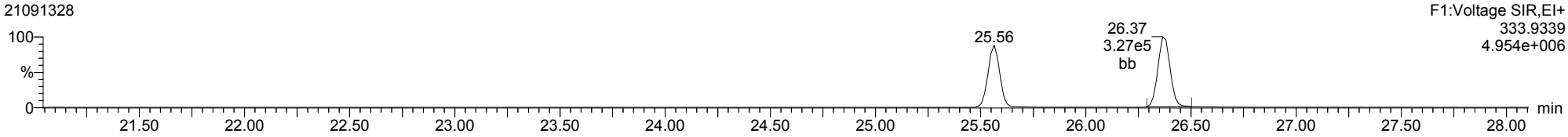
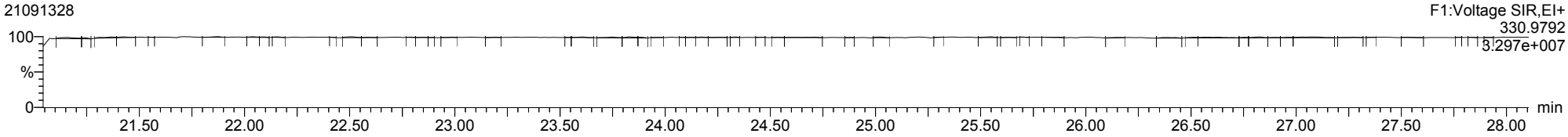


FUNCTION1 PFK



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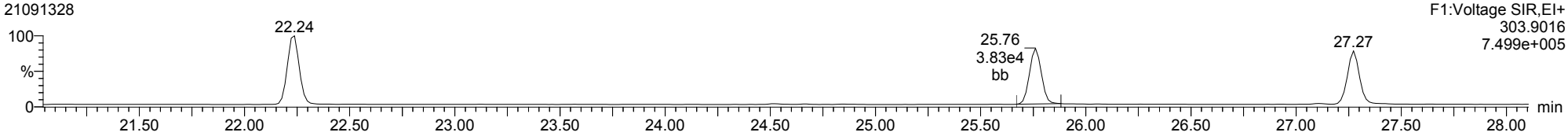
ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

2378-TCDF



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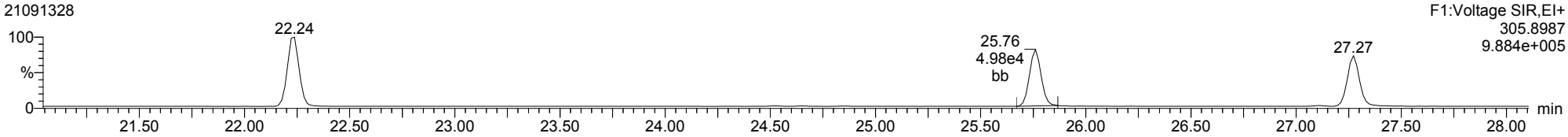

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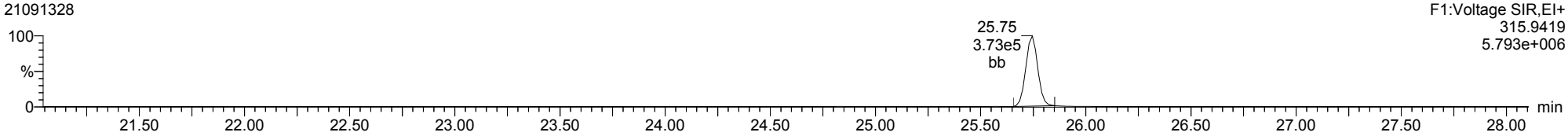

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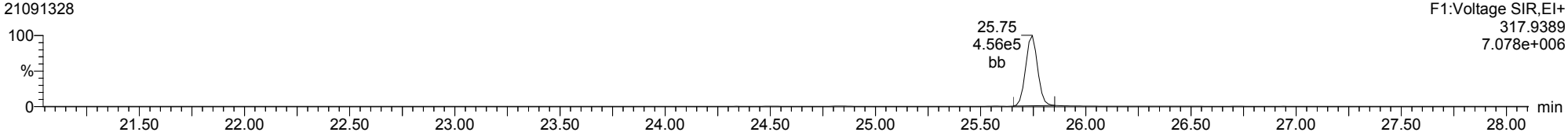
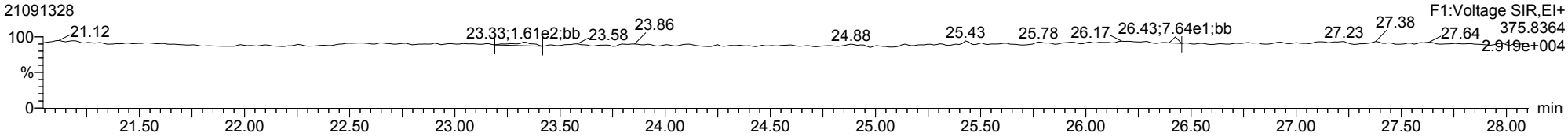
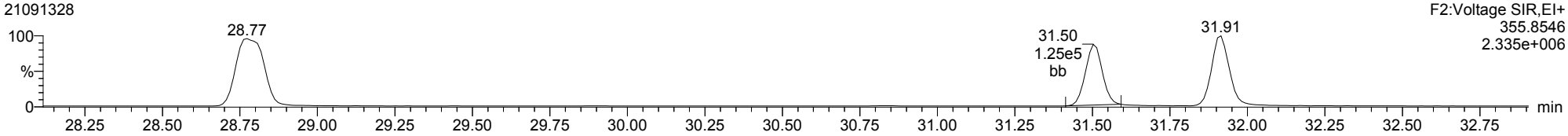


FUNCTION1 HXCDPE



ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

12378-PeCDD



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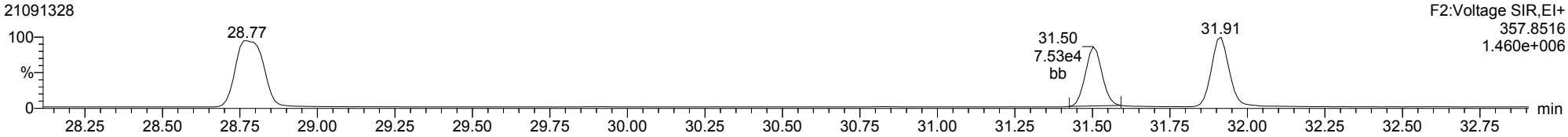

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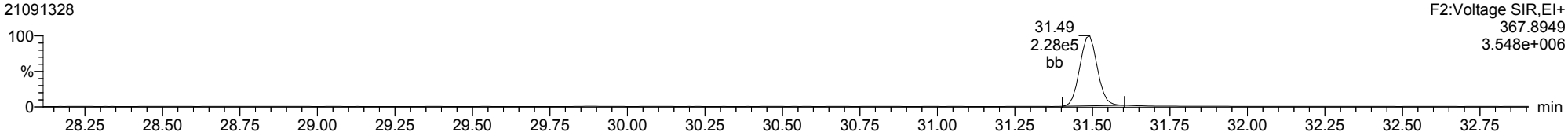

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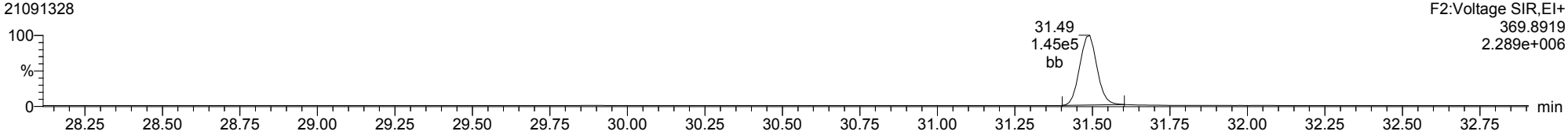
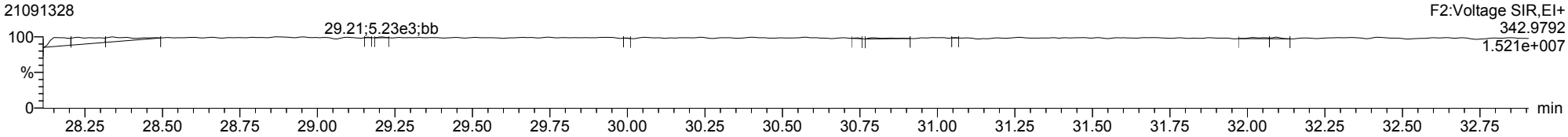


FUNCTION2 PFK



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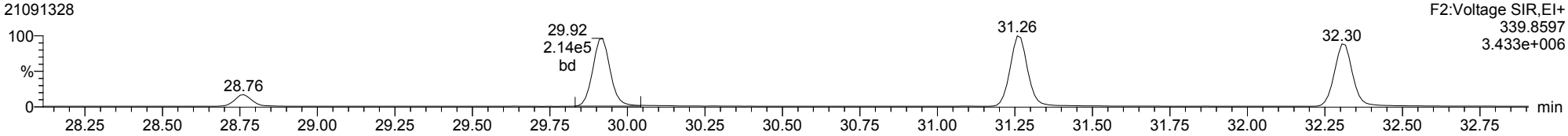
12378-PeCDF



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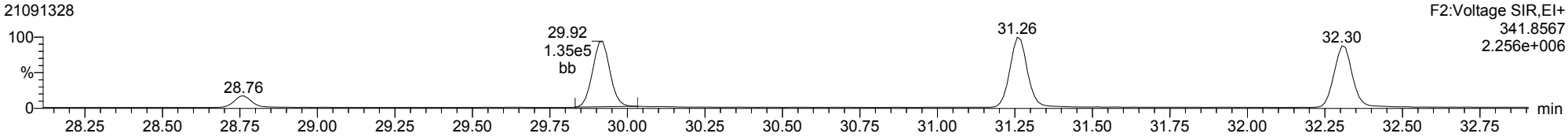

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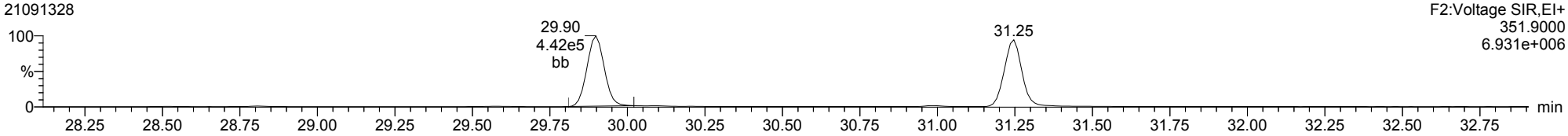

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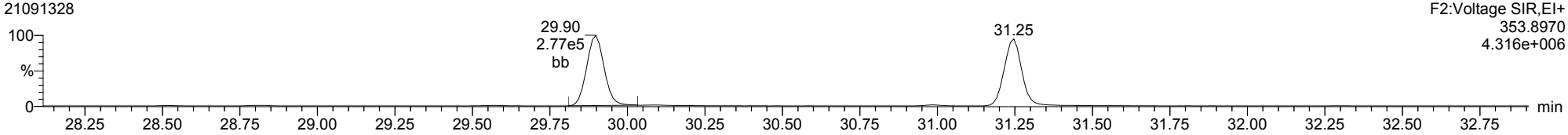
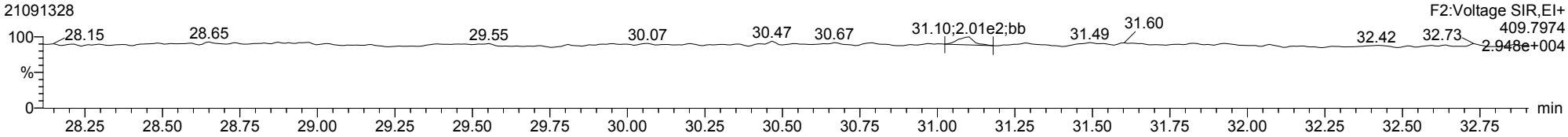


FUNCTION2 HPCDPE



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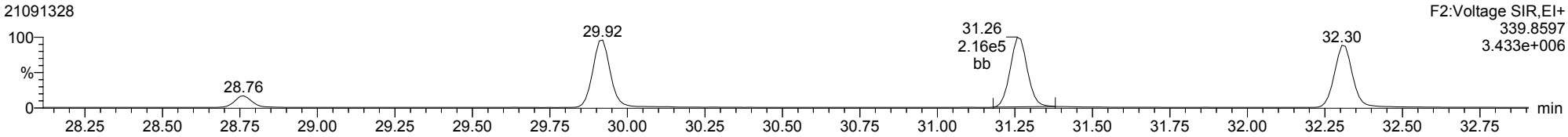

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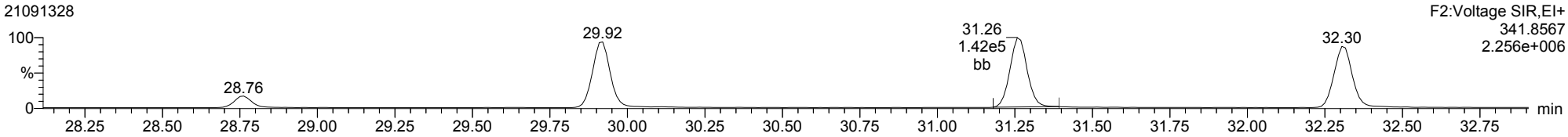

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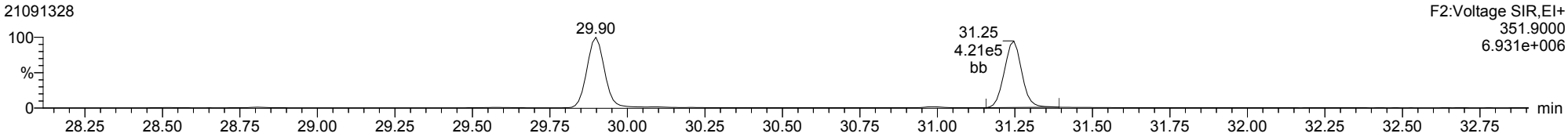

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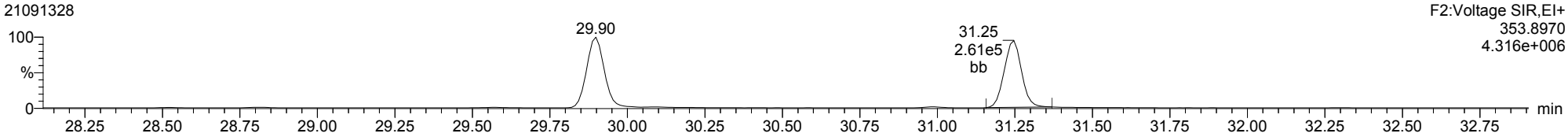

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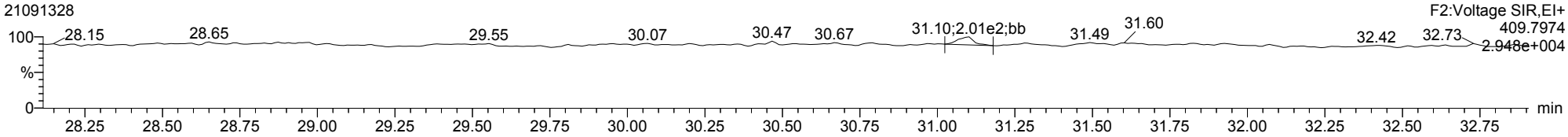

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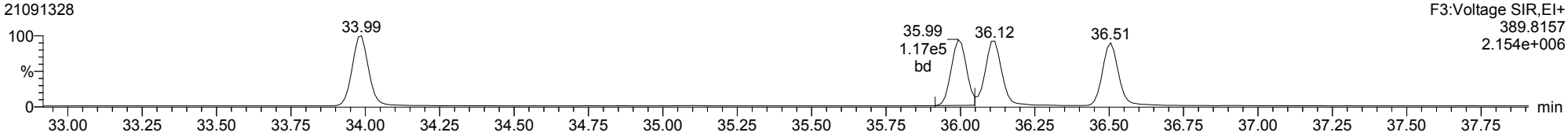

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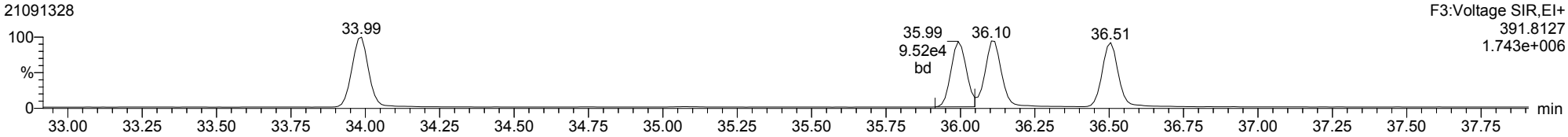

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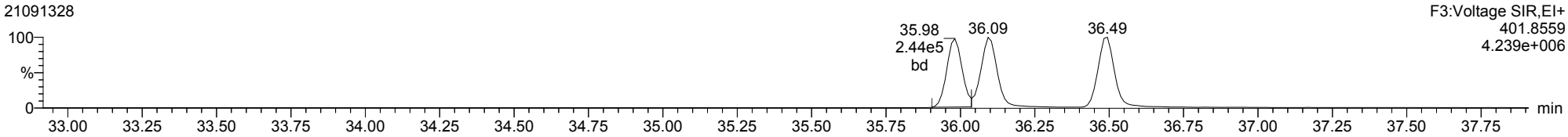

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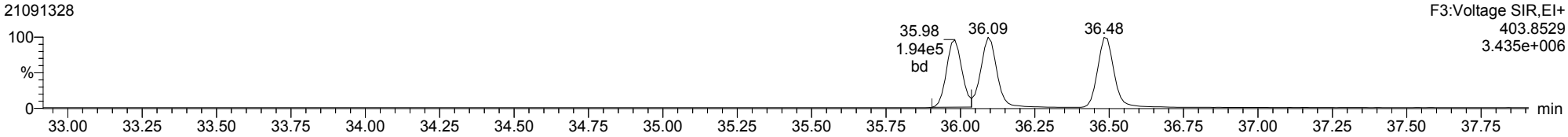
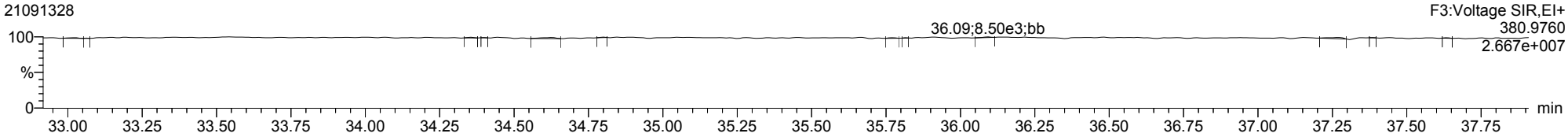


FUNCTION3 PFK



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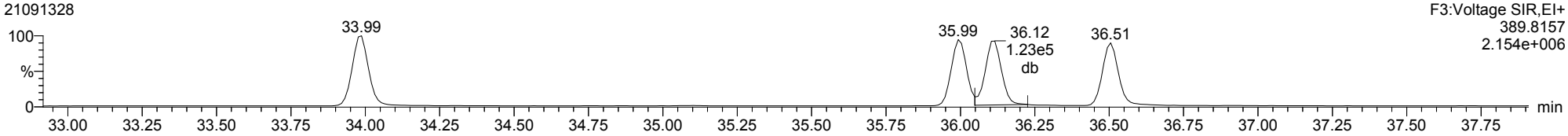

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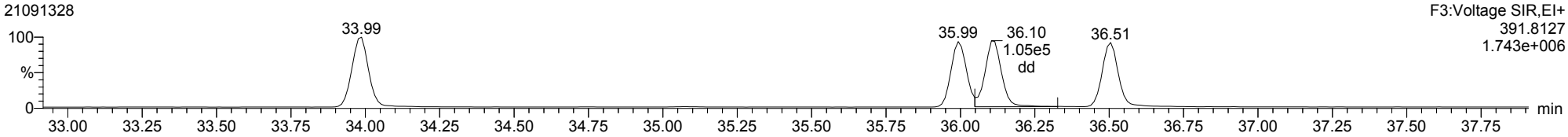

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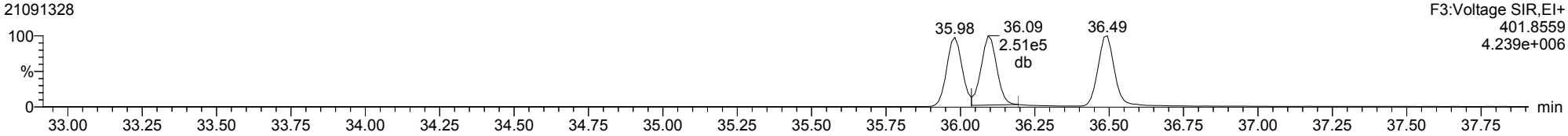

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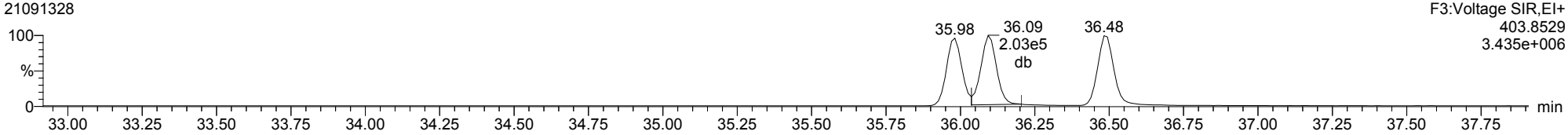

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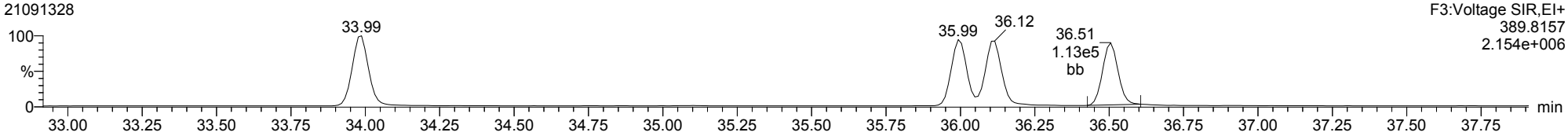

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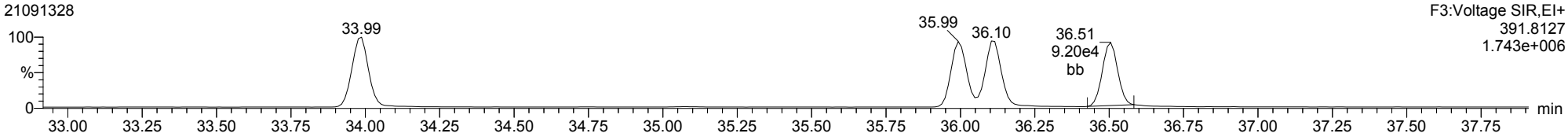

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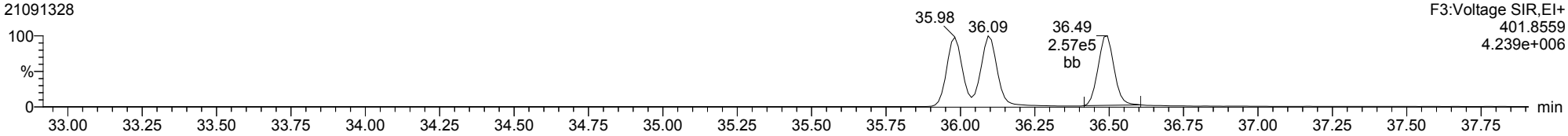

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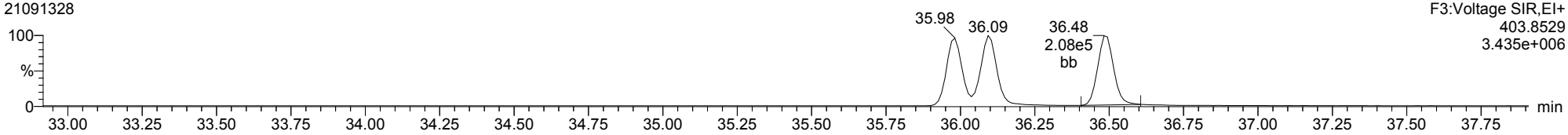

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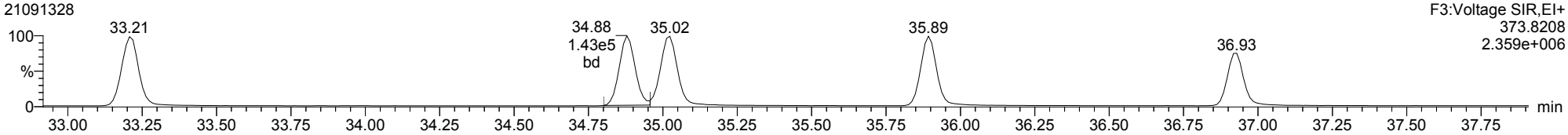

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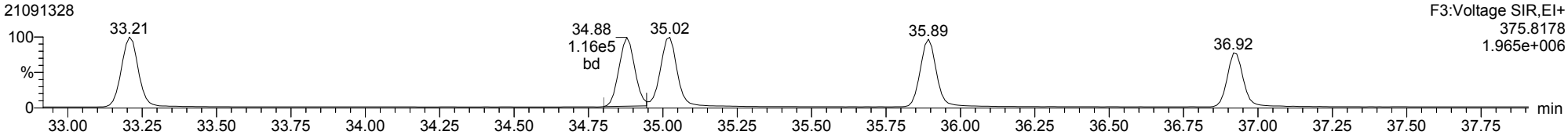

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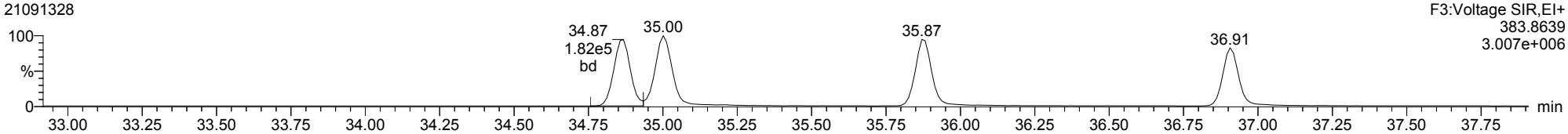

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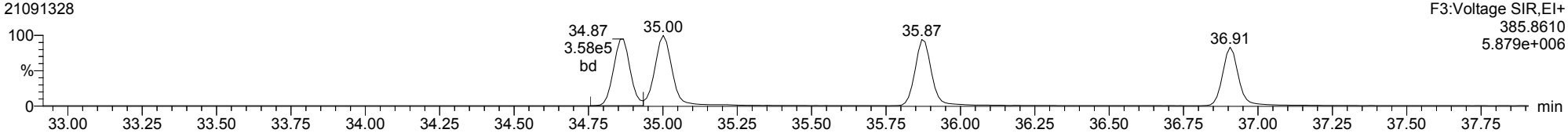
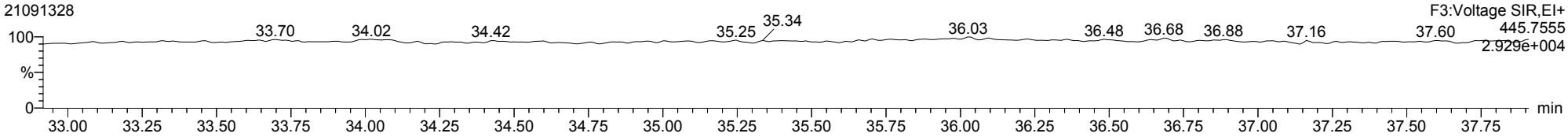
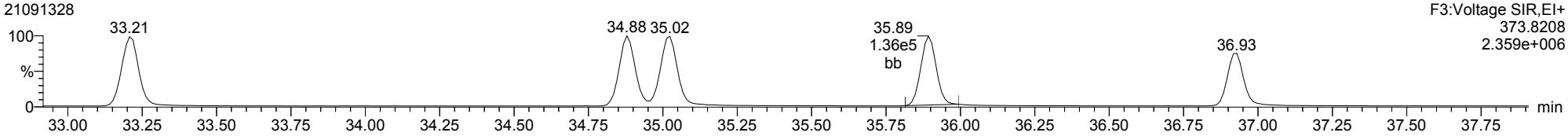


FUNCTION3 OCDPE



ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

234678-HxCDF



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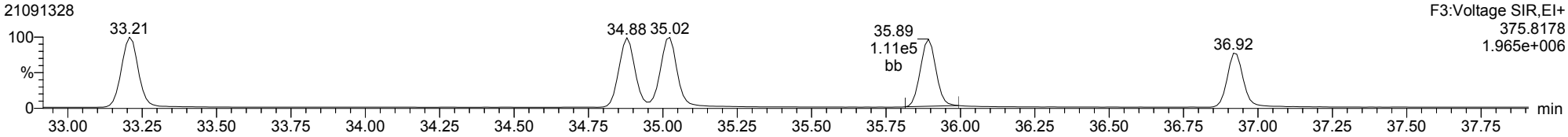

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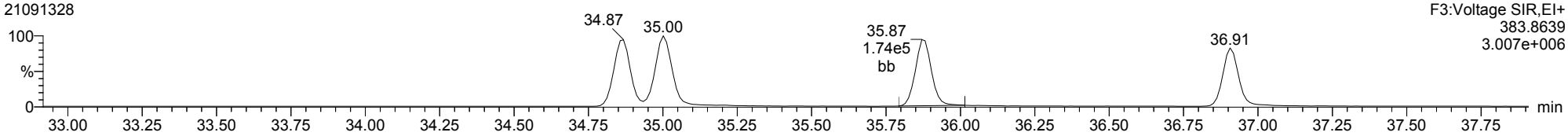

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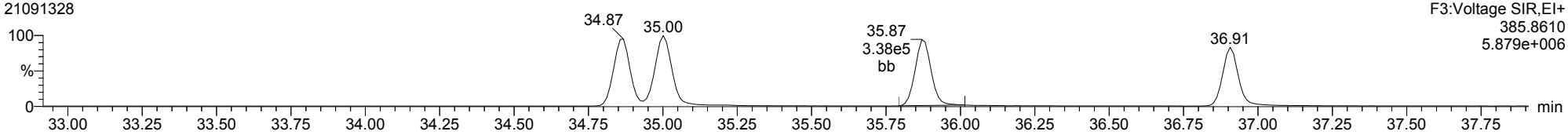

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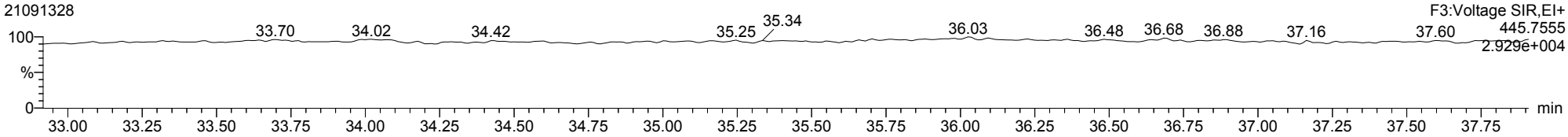

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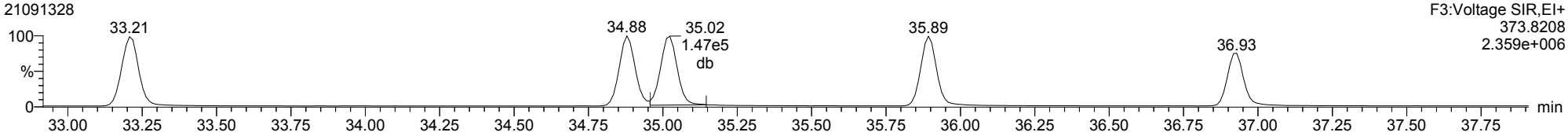

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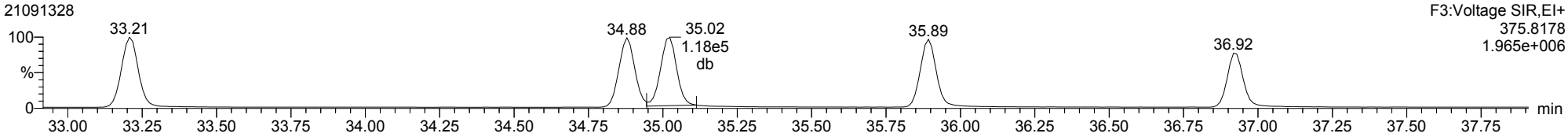

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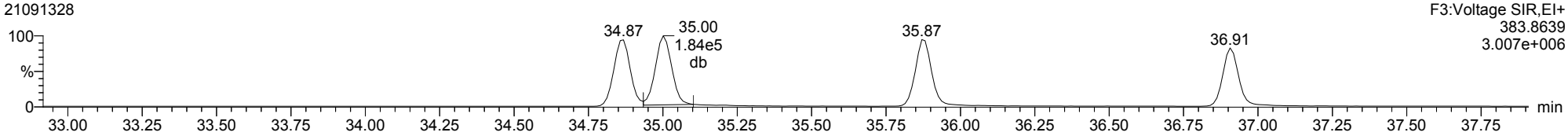

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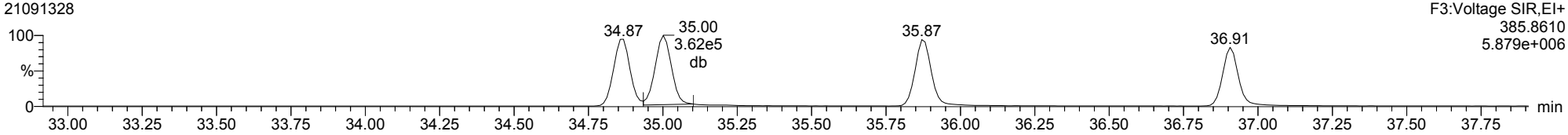

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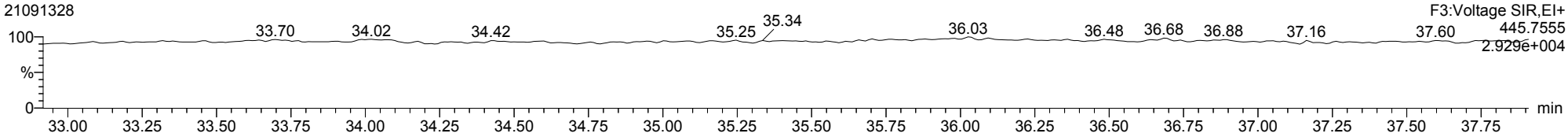

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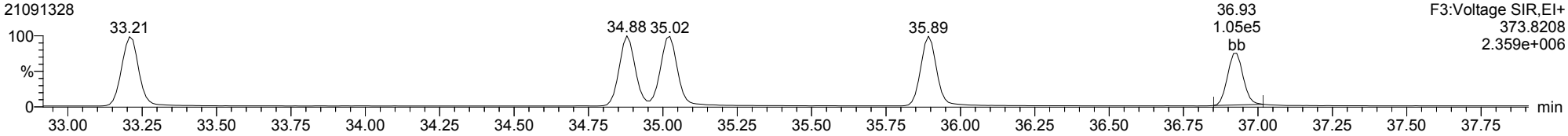

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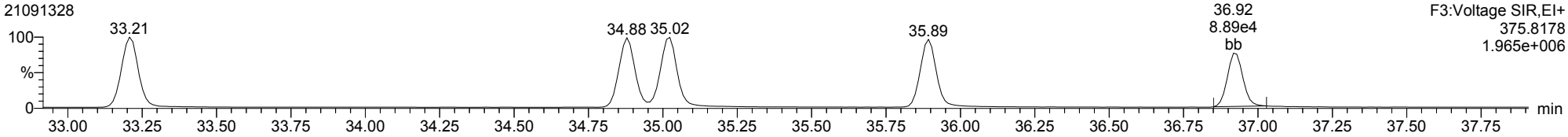

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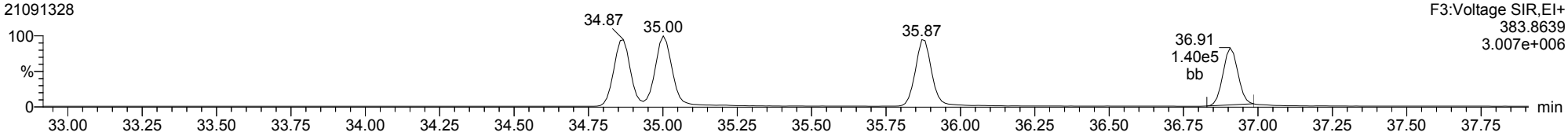

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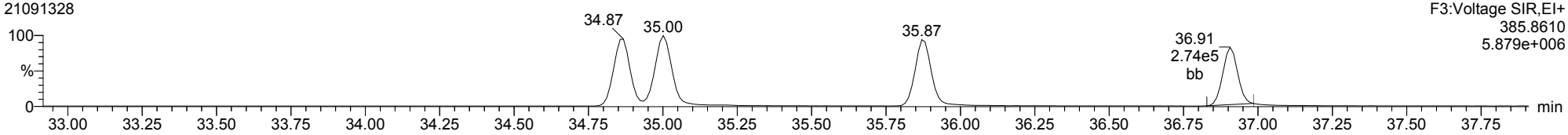

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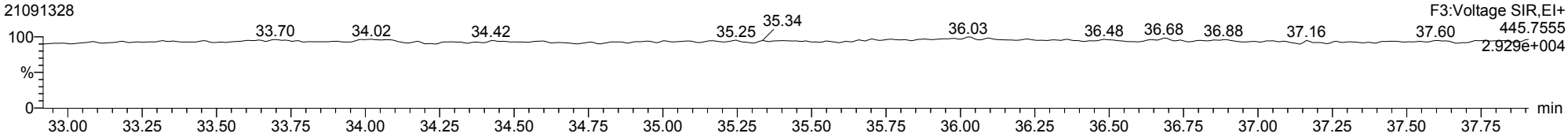

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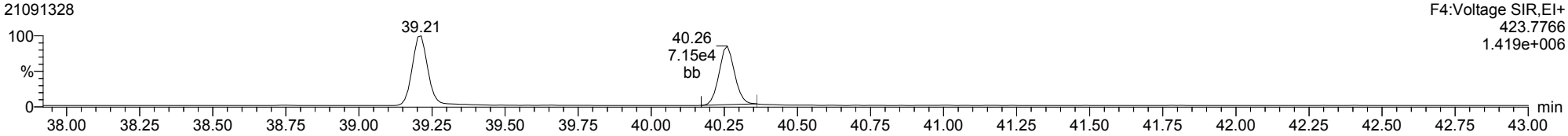

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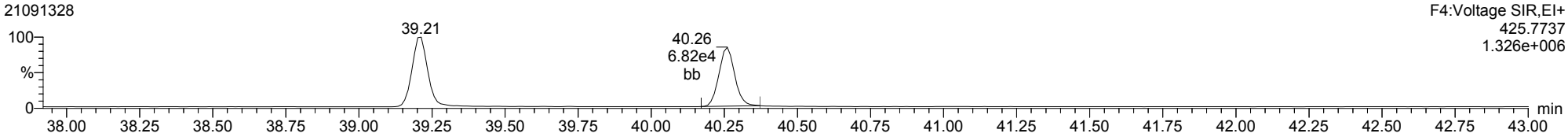

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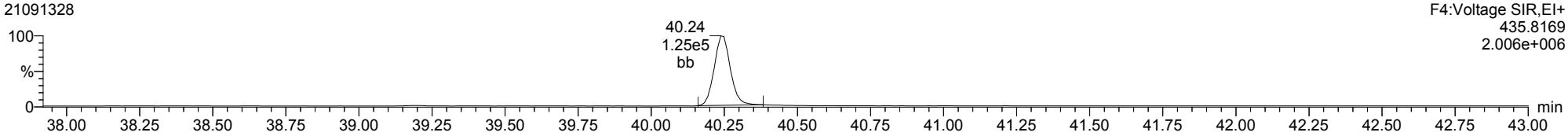

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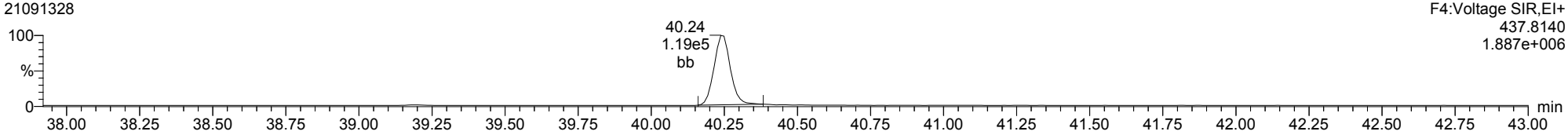

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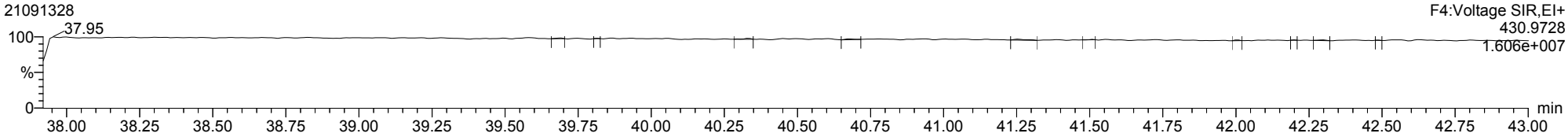

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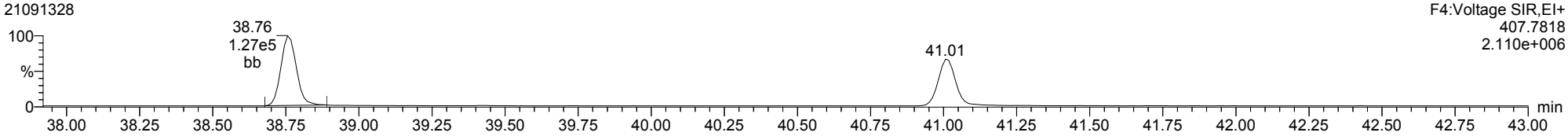

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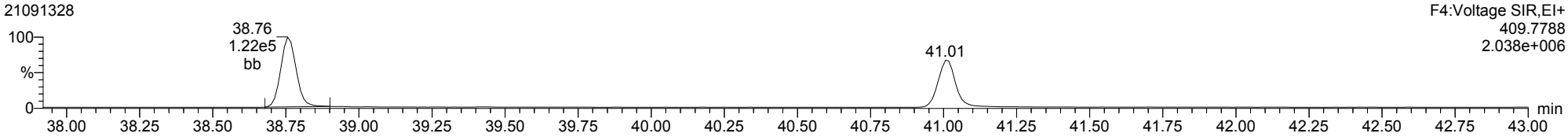

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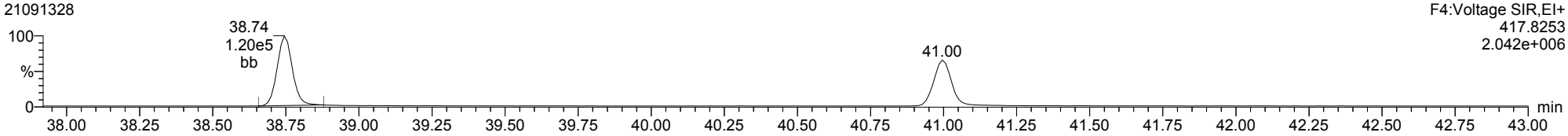

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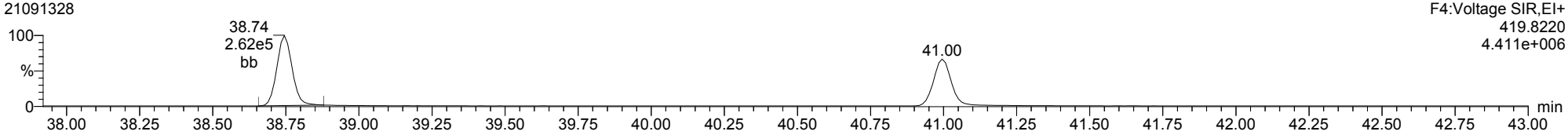
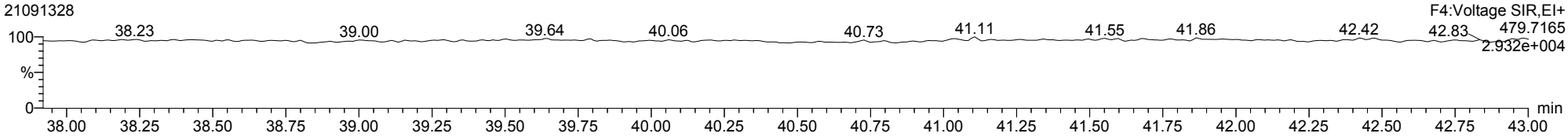


FUNCTION4 NCDPE



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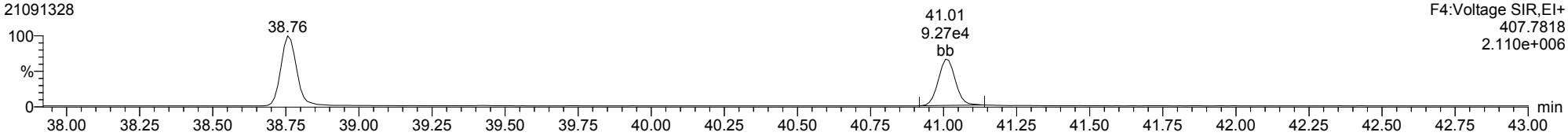

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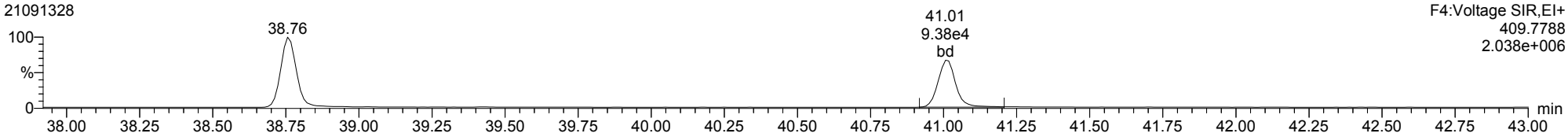

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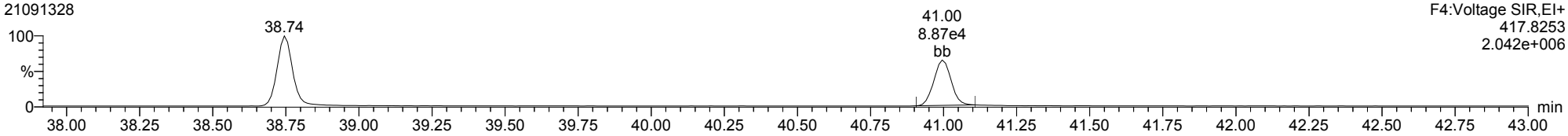

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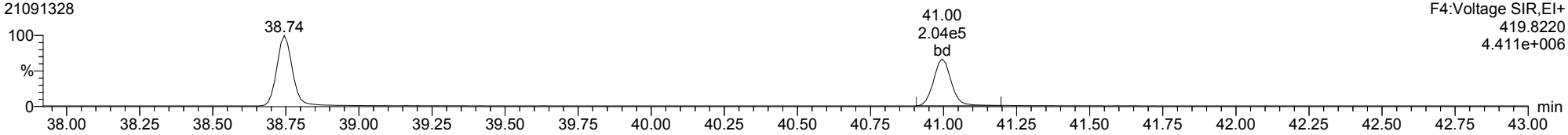

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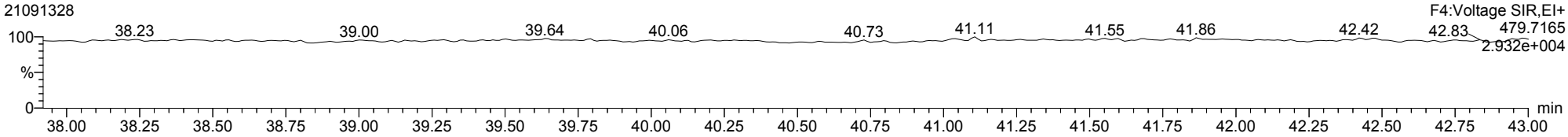

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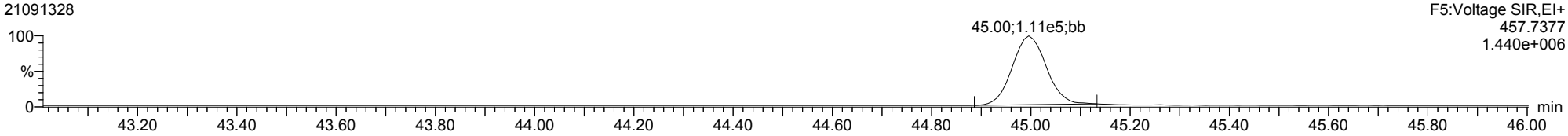

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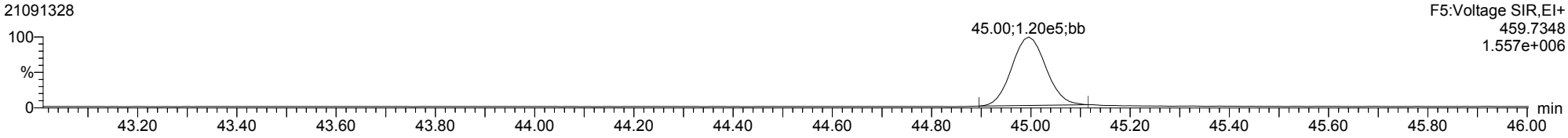

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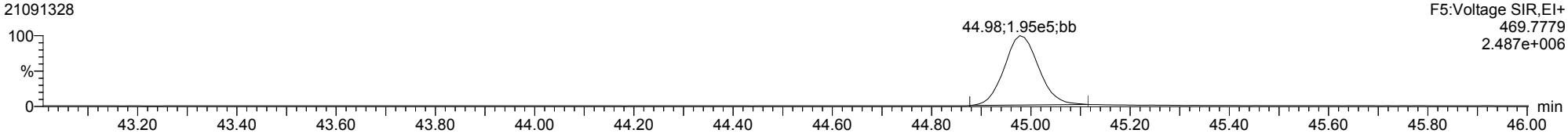

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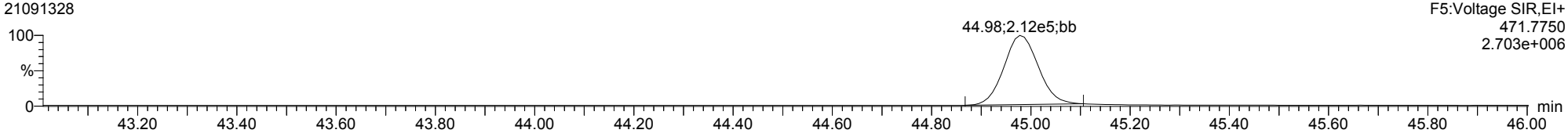

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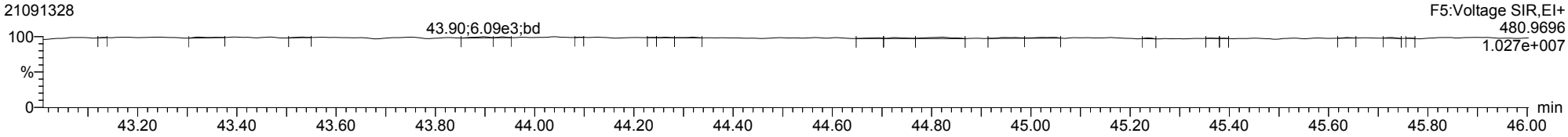

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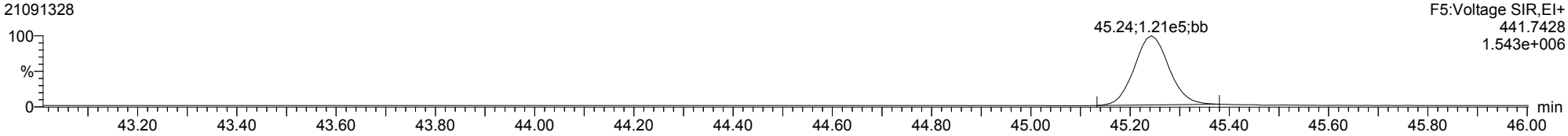

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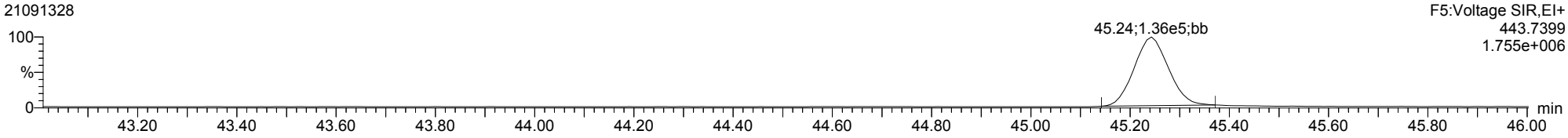

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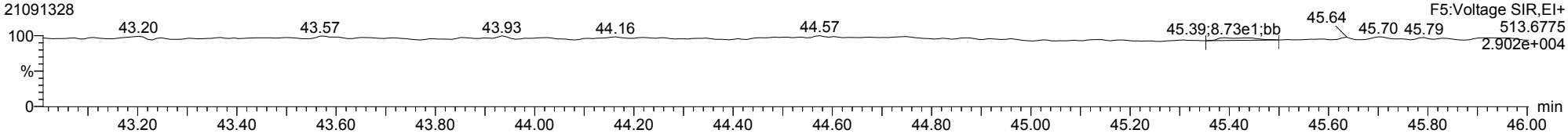

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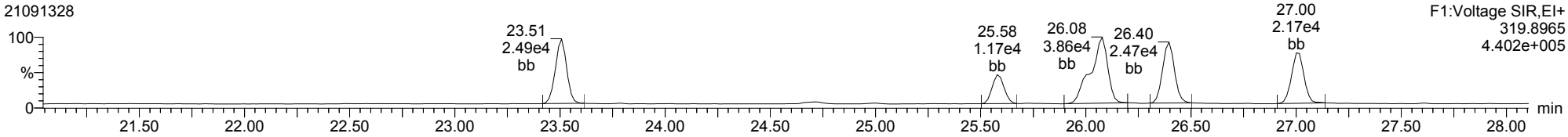

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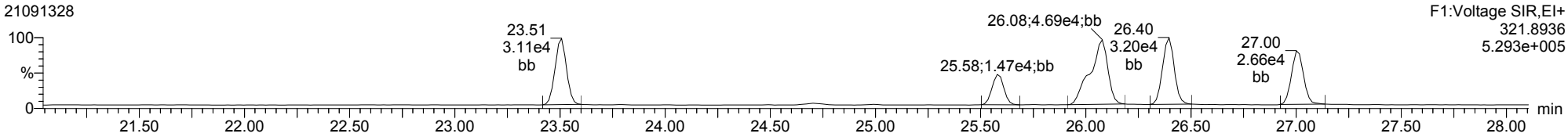

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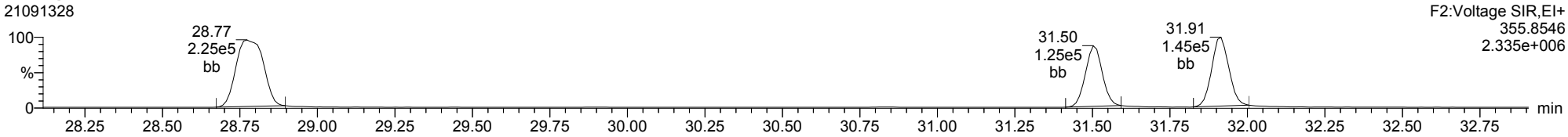

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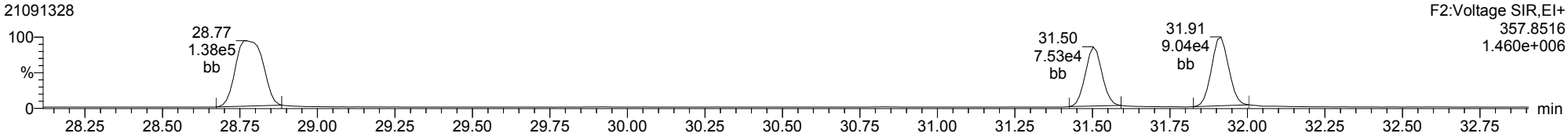

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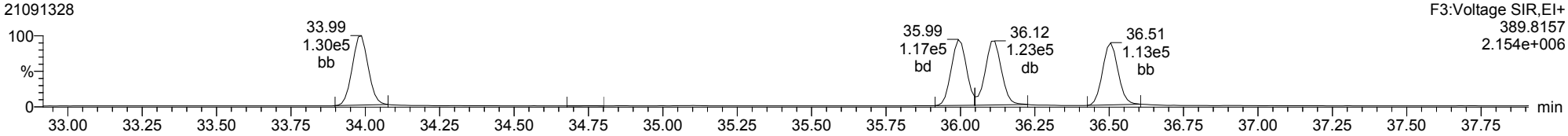

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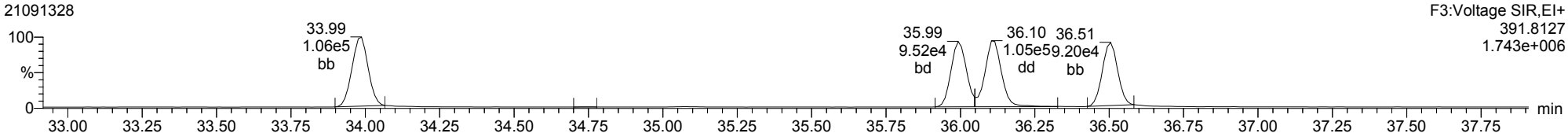

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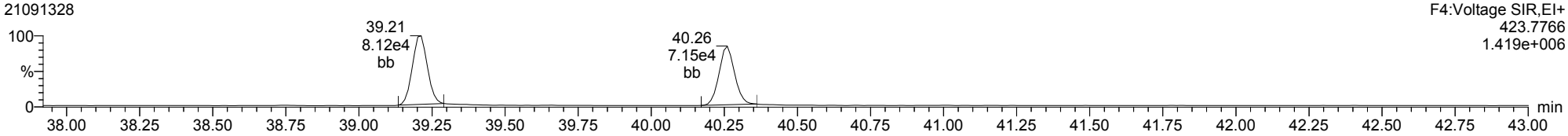

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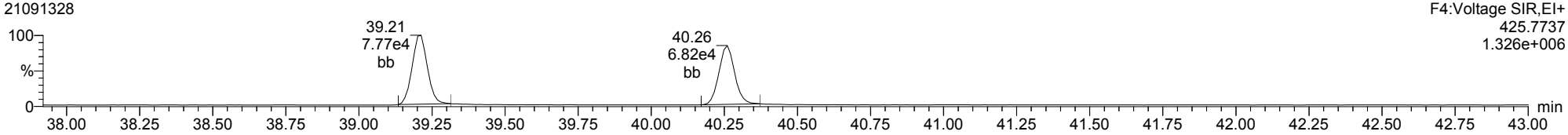

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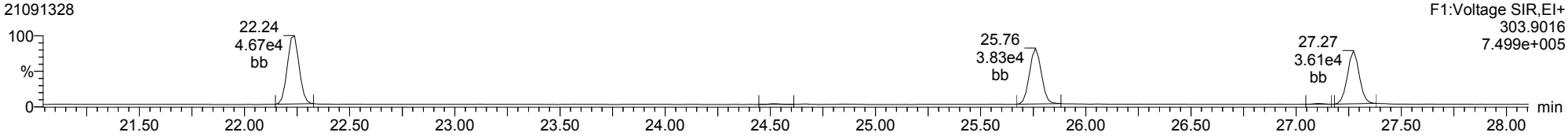
ID: CS3Q4, Name: 21091328, Date: 14-Sep-2021, Time: 10:03:06, Conditions: AUTOSPEC01, User: pk

Total-tetrafurans



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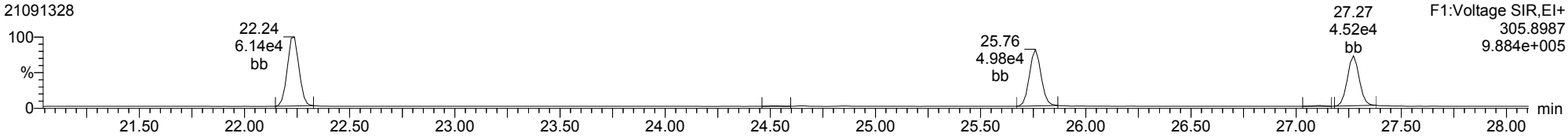

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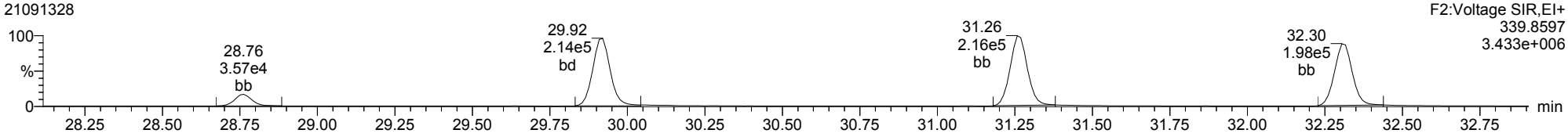

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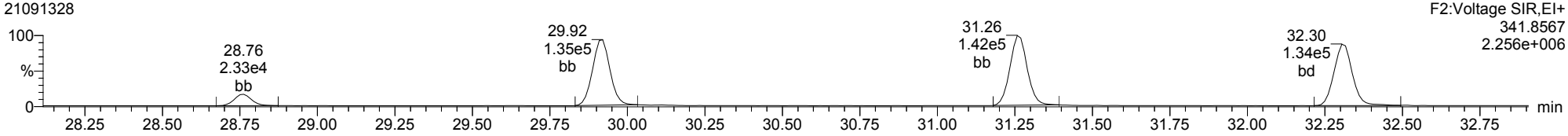

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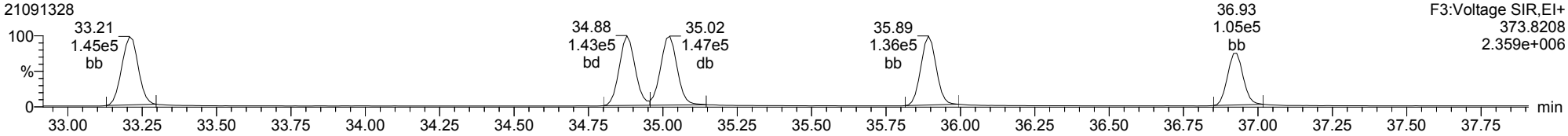
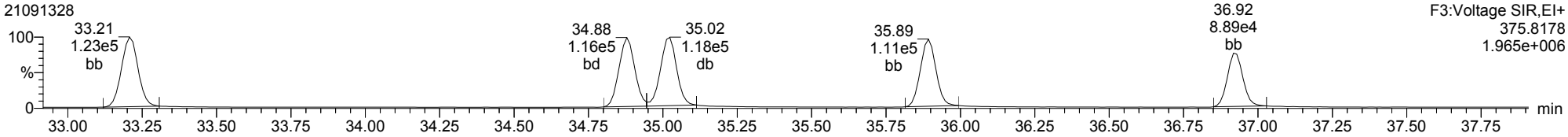
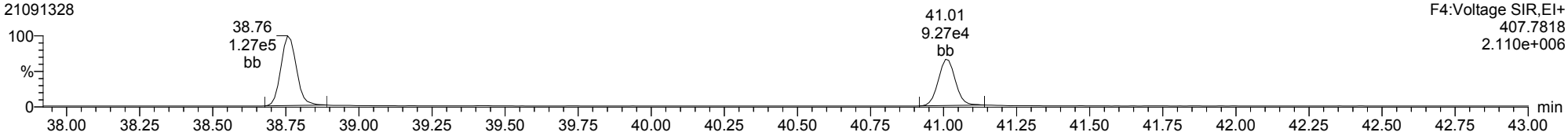
Total-hexafurans



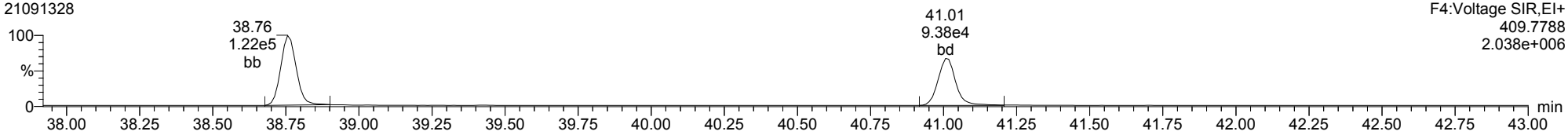
Total-hexafurans



Total-heptafurans

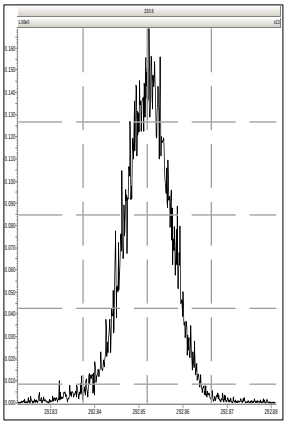


Total-heptafurans

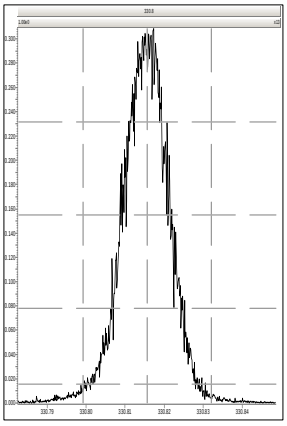


Printed: Tuesday, September 14, 2021 10:56:21 Pacific Daylight Time

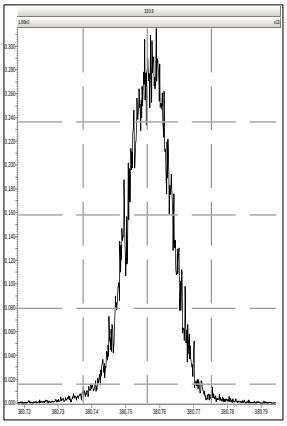
M 292.9824 R 11879



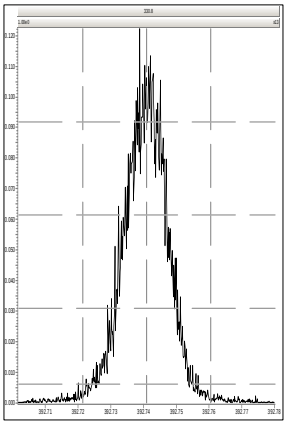
M 330.9792 R 12138



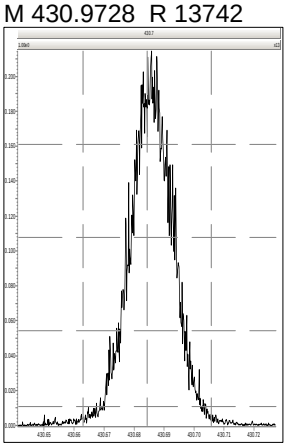
M 380.9760 R 12775



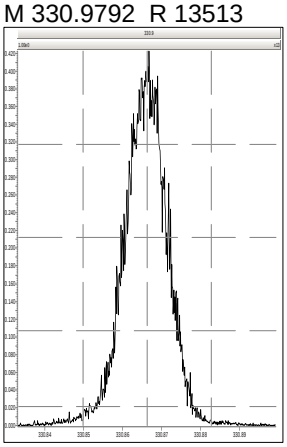
M 392.9760 R 13074



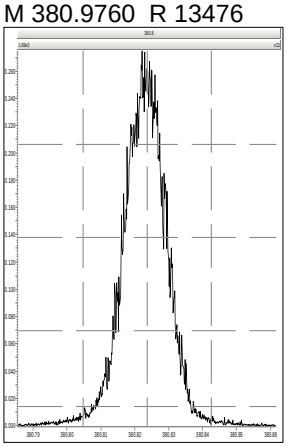
M 430.9728 R 13742



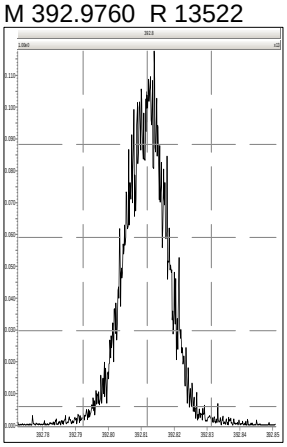
M 330.9792 R 13513



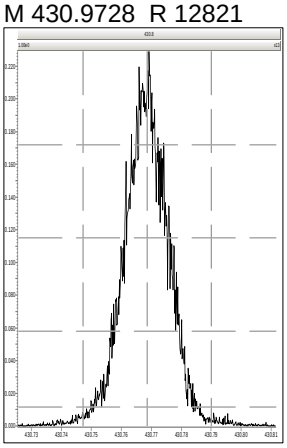
M 380.9760 R 13476



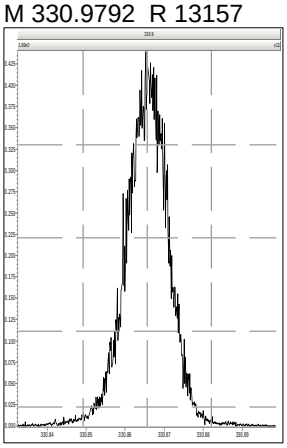
M 392.9760 R 13522



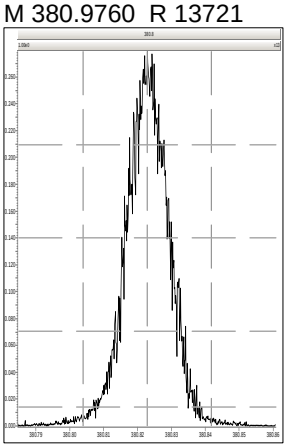
M 430.9728 R 12821



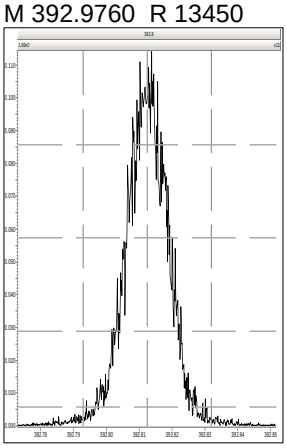
M 330.9792 R 13157



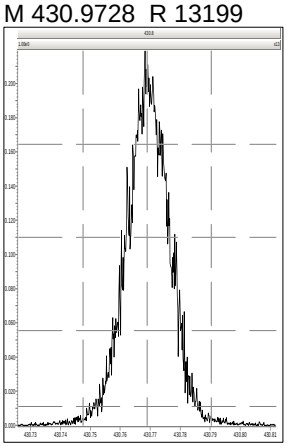
M 380.9760 R 13721



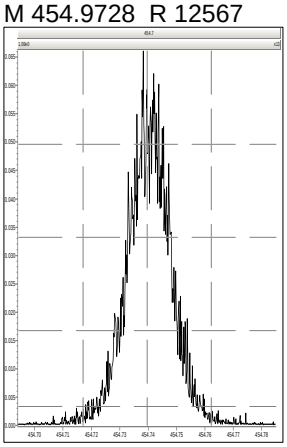
M 392.9760 R 13450



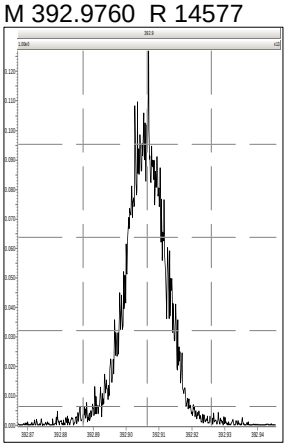
M 430.9728 R 13199



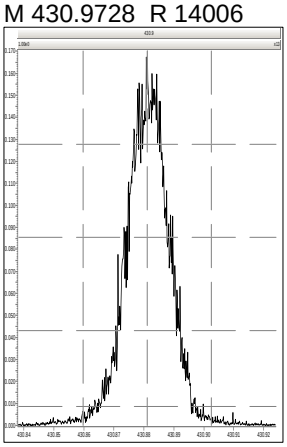
M 454.9728 R 12567



M 392.9760 R 14577

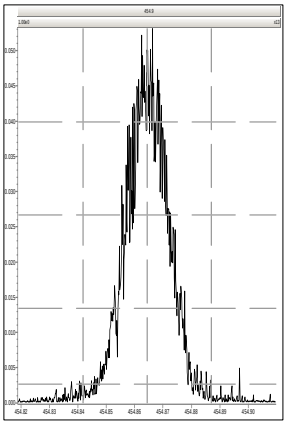


M 430.9728 R 14006

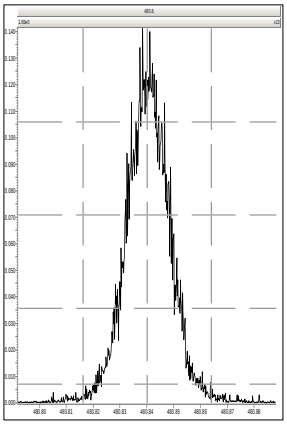


Printed: Tuesday, September 14, 2021 10:56:21 Pacific Daylight Time

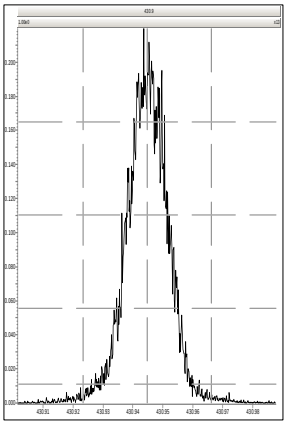
M 454.9728 R 14140



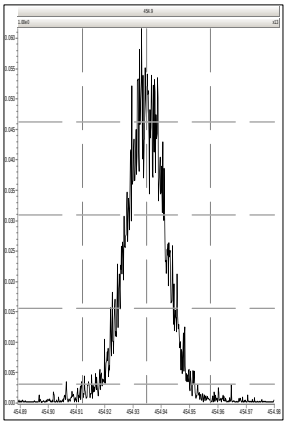
M 480.9696 R 13056



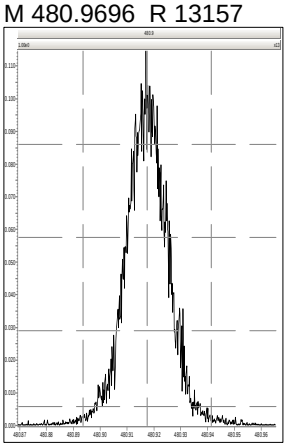
M 430.9728 R 14329



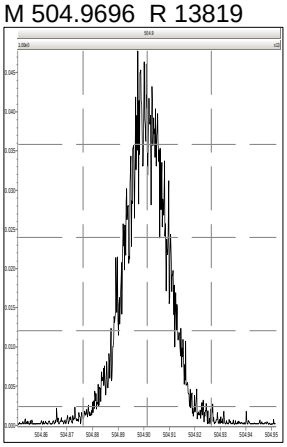
M 454.9728 R 14285



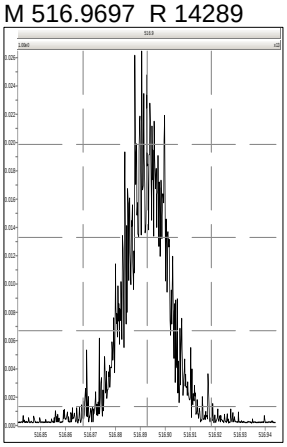
M 480.9696 R 13157

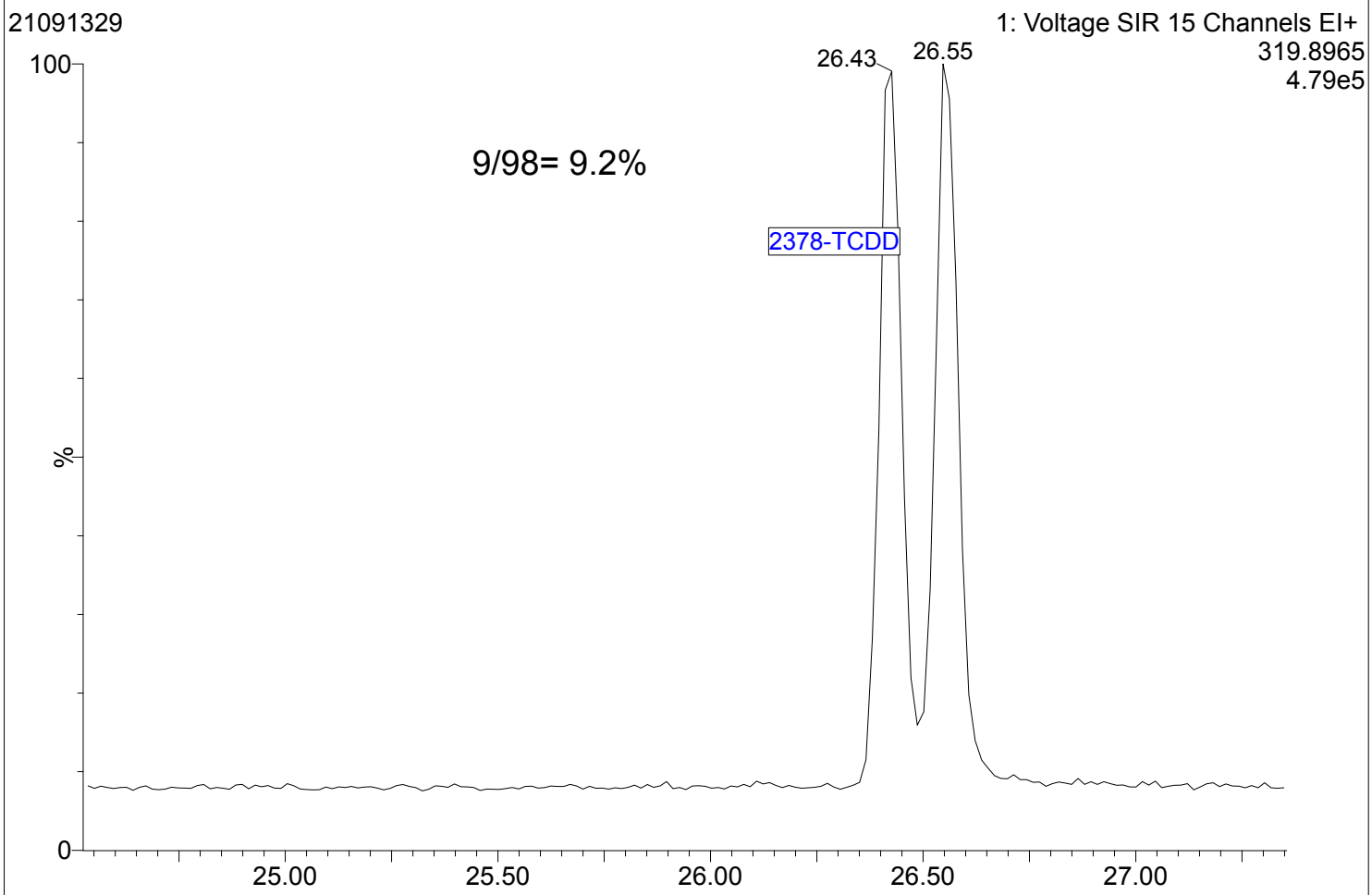


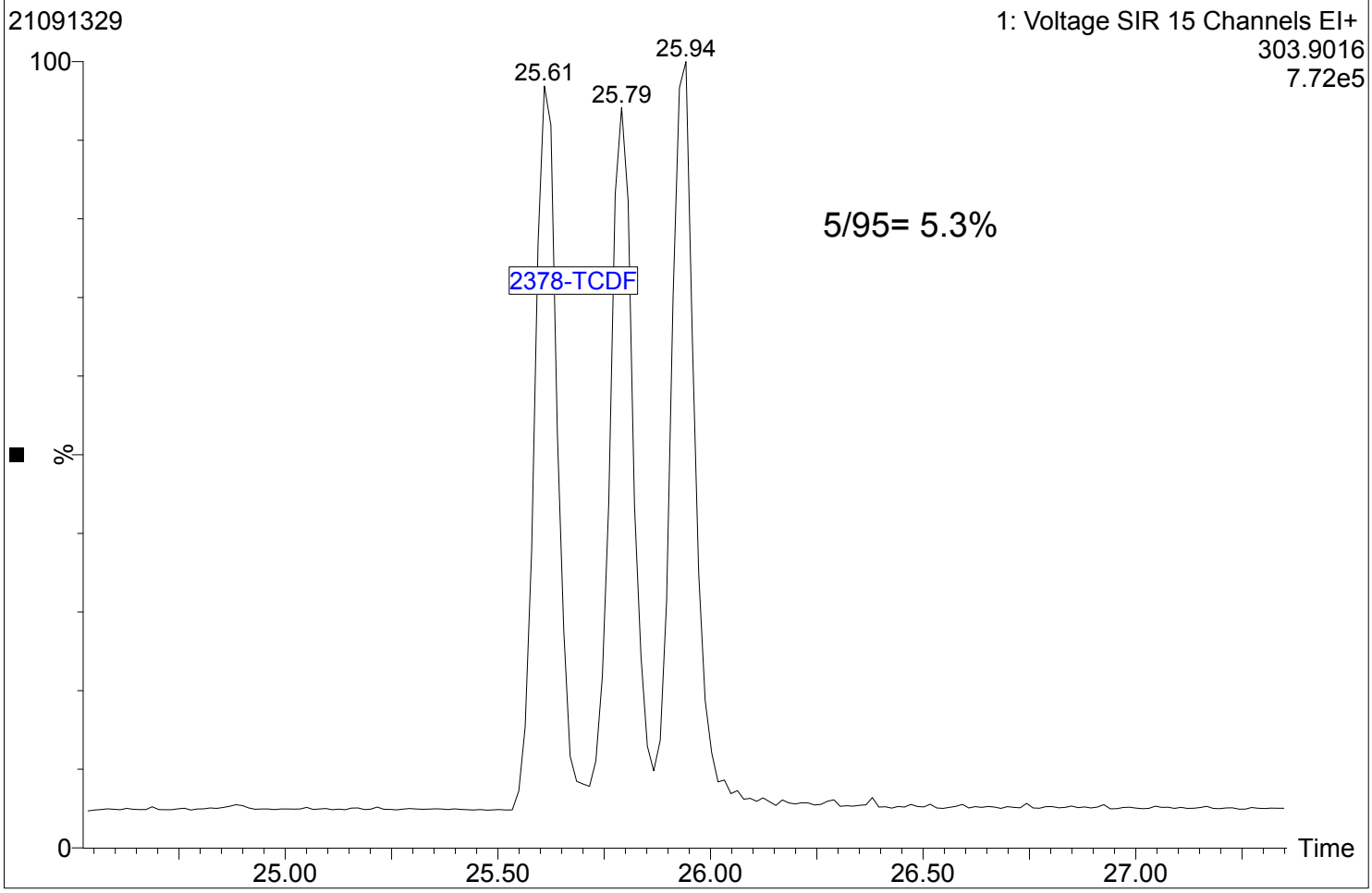
M 504.9696 R 13819



M 516.9697 R 14289




21091329
1: Voltage SIR 15 Channels EI+
319.8965
4.79e5
100
%
0
26.43
26.55
9/98= 9.2%
2378-TCDD
25.00
25.50
26.00
26.50
27.00


21091329
1: Voltage SIR 15 Channels EI+
303.9016
7.72e5
100
%
0
25.61
25.79
25.94
5/95= 5.3%
2378-TCDF
Time
25.00
25.50
26.00
26.50
27.00

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CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21081103
Date Analyzed: 08/11/21
Time Analyzed: 16:41
Lab Sample ID: SJH0117-RES1
Sequence: SJH0117

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 9

3467-TCDF/2378-TCDF: 9

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJH0117-ICV1	CS3Z1	21081102A	08/11/2021	15:52
SJH0117-RES1	ISCZ1	21081103	08/11/2021	16:41
SJH0117-CAL1	CSLCV	21081104A	08/11/2021	17:30
SJH0117-CAL2	CS1CV	21081107A	08/11/2021	19:56
SJH0117-CAL3	CS2CV	21081108A	08/11/2021	20:45
SJH0117-CAL4	CS3CV	21081109A	08/11/2021	21:34
SJH0117-CAL5	CS4CV	21081110A	08/11/2021	22:22
SJH0117-CAL6	CS5CV	21081111A	08/11/2021	23:11
SJH0117-SCV1	ICVCV	21081112A	08/12/2021	00:00
SJH0117-CCV1	CS3Z2	21081113B	08/12/2021	00:48
SJH0117-RES2	ISCZ2	21081114	08/12/2021	01:42

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21081114
Date Analyzed: 08/12/21
Time Analyzed: 01:42
Lab Sample ID: SJH0117-RES2
Sequence: SJH0117

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 10.6

3467-TCDF/2378-TCDF: 11.1

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJH0117-ICV1	CS3Z1	21081102A	08/11/2021	15:52
SJH0117-RES1	ISCZ1	21081103	08/11/2021	16:41
SJH0117-CAL1	CSLCV	21081104A	08/11/2021	17:30
SJH0117-CAL2	CS1CV	21081107A	08/11/2021	19:56
SJH0117-CAL3	CS2CV	21081108A	08/11/2021	20:45
SJH0117-CAL4	CS3CV	21081109A	08/11/2021	21:34
SJH0117-CAL5	CS4CV	21081110A	08/11/2021	22:22
SJH0117-CAL6	CS5CV	21081111A	08/11/2021	23:11
SJH0117-SCV1	ICVCV	21081112A	08/12/2021	00:00
SJH0117-CCV1	CS3Z2	21081113B	08/12/2021	00:48
SJH0117-RES2	ISCZ2	21081114	08/12/2021	01:42

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21091103
Date Analyzed: 09/11/21
Time Analyzed: 12:09
Lab Sample ID: SJI0175-RES1
Sequence: SJI0175

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 8.5

3467-TCDF/2378-TCDF: 7.3

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJI0175-ICV1	CS3P6	21091102	09/11/2021	11:21
SJI0175-RES1	ISCP6	21091103	09/11/2021	12:09
BJH0150-BLK1	Blank	21091104	09/11/2021	12:58
BJH0150-BS1	LCS	21091105	09/11/2021	13:47
BJH0150-SRM1	Reference	21091106	09/11/2021	14:36
SJI0175-CCV1	CS3P7	21091113	09/11/2021	20:19
SJI0175-RES2	ISCP7	21091114	09/11/2021	21:12
21G0138-02	LDW21-IT662B	21091115	09/11/2021	22:03
BJH0150-DUP2	Duplicate	21091116	09/11/2021	22:52
21G0138-03	LDW21-IT662C	21091117	09/11/2021	23:42
21G0138-04	LDW21-IT662E	21091118	09/12/2021	00:31
21G0138-05	LDW21-IT659B	21091119	09/12/2021	01:20
21G0138-06	LDW21-IT659C	21091120	09/12/2021	02:09
21G0138-07	LDW21-IT659E	21091121	09/12/2021	02:58
21G0138-08	LDW21-IT658B	21091122	09/12/2021	03:46
SJI0175-CCV2	CS3P8	21091123	09/12/2021	04:36
SJI0175-RES3	ISCP8	21091124	09/12/2021	05:29
21G0138-09	LDW21-IT658C	21091125	09/12/2021	06:20
21G0138-10	LDW21-IT658E	21091126	09/12/2021	07:09
21G0138-11	LDW21-IT657B	21091127	09/12/2021	07:58
21G0138-12	LDW21-IT657C	21091128	09/12/2021	08:47
21G0138-13	LDW21-IT648B	21091129	09/12/2021	09:36
21G0138-14	LDW21-IT648C	21091130	09/12/2021	10:25
SJI0175-CCV3	CS3P9	21091131	09/12/2021	11:14
SJI0175-RES4	ISCP9	21091132	09/12/2021	12:07

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CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21091114
Date Analyzed: 09/11/21
Time Analyzed: 21:12
Lab Sample ID: SJI0175-RES2
Sequence: SJI0175

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 8.6

3467-TCDF/2378-TCDF: 4.9

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJI0175-ICV1	CS3P6	21091102	09/11/2021	11:21
SJI0175-RES1	ISCP6	21091103	09/11/2021	12:09
BJH0150-BLK1	Blank	21091104	09/11/2021	12:58
BJH0150-BS1	LCS	21091105	09/11/2021	13:47
BJH0150-SRM1	Reference	21091106	09/11/2021	14:36
SJI0175-CCV1	CS3P7	21091113	09/11/2021	20:19
SJI0175-RES2	ISCP7	21091114	09/11/2021	21:12
21G0138-02	LDW21-IT662B	21091115	09/11/2021	22:03
BJH0150-DUP2	Duplicate	21091116	09/11/2021	22:52
21G0138-03	LDW21-IT662C	21091117	09/11/2021	23:42
21G0138-04	LDW21-IT662E	21091118	09/12/2021	00:31
21G0138-05	LDW21-IT659B	21091119	09/12/2021	01:20
21G0138-06	LDW21-IT659C	21091120	09/12/2021	02:09
21G0138-07	LDW21-IT659E	21091121	09/12/2021	02:58
21G0138-08	LDW21-IT658B	21091122	09/12/2021	03:46
SJI0175-CCV2	CS3P8	21091123	09/12/2021	04:36
SJI0175-RES3	ISCP8	21091124	09/12/2021	05:29
21G0138-09	LDW21-IT658C	21091125	09/12/2021	06:20
21G0138-10	LDW21-IT658E	21091126	09/12/2021	07:09
21G0138-11	LDW21-IT657B	21091127	09/12/2021	07:58
21G0138-12	LDW21-IT657C	21091128	09/12/2021	08:47
21G0138-13	LDW21-IT648B	21091129	09/12/2021	09:36
21G0138-14	LDW21-IT648C	21091130	09/12/2021	10:25
SJI0175-CCV3	CS3P9	21091131	09/12/2021	11:14
SJI0175-RES4	ISCP9	21091132	09/12/2021	12:07

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CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21091124
Date Analyzed: 09/12/21
Time Analyzed: 05:29
Lab Sample ID: SJI0175-RES3
Sequence: SJI0175

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 6.3

3467-TCDF/2378-TCDF: 4.8

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJI0175-ICV1	CS3P6	21091102	09/11/2021	11:21
SJI0175-RES1	ISCP6	21091103	09/11/2021	12:09
BJH0150-BLK1	Blank	21091104	09/11/2021	12:58
BJH0150-BS1	LCS	21091105	09/11/2021	13:47
BJH0150-SRM1	Reference	21091106	09/11/2021	14:36
SJI0175-CCV1	CS3P7	21091113	09/11/2021	20:19
SJI0175-RES2	ISCP7	21091114	09/11/2021	21:12
21G0138-02	LDW21-IT662B	21091115	09/11/2021	22:03
BJH0150-DUP2	Duplicate	21091116	09/11/2021	22:52
21G0138-03	LDW21-IT662C	21091117	09/11/2021	23:42
21G0138-04	LDW21-IT662E	21091118	09/12/2021	00:31
21G0138-05	LDW21-IT659B	21091119	09/12/2021	01:20
21G0138-06	LDW21-IT659C	21091120	09/12/2021	02:09
21G0138-07	LDW21-IT659E	21091121	09/12/2021	02:58
21G0138-08	LDW21-IT658B	21091122	09/12/2021	03:46
SJI0175-CCV2	CS3P8	21091123	09/12/2021	04:36
SJI0175-RES3	ISCP8	21091124	09/12/2021	05:29
21G0138-09	LDW21-IT658C	21091125	09/12/2021	06:20
21G0138-10	LDW21-IT658E	21091126	09/12/2021	07:09
21G0138-11	LDW21-IT657B	21091127	09/12/2021	07:58
21G0138-12	LDW21-IT657C	21091128	09/12/2021	08:47
21G0138-13	LDW21-IT648B	21091129	09/12/2021	09:36
21G0138-14	LDW21-IT648C	21091130	09/12/2021	10:25
SJI0175-CCV3	CS3P9	21091131	09/12/2021	11:14
SJI0175-RES4	ISCP9	21091132	09/12/2021	12:07

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21091132
Date Analyzed: 09/12/21
Time Analyzed: 12:07
Lab Sample ID: SJI0175-RES4
Sequence: SJI0175

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 7.2

3467-TCDF/2378-TCDF: 5.2

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJI0175-ICV1	CS3P6	21091102	09/11/2021	11:21
SJI0175-RES1	ISCP6	21091103	09/11/2021	12:09
BJH0150-BLK1	Blank	21091104	09/11/2021	12:58
BJH0150-BS1	LCS	21091105	09/11/2021	13:47
BJH0150-SRM1	Reference	21091106	09/11/2021	14:36
SJI0175-CCV1	CS3P7	21091113	09/11/2021	20:19
SJI0175-RES2	ISCP7	21091114	09/11/2021	21:12
21G0138-02	LDW21-IT662B	21091115	09/11/2021	22:03
BJH0150-DUP2	Duplicate	21091116	09/11/2021	22:52
21G0138-03	LDW21-IT662C	21091117	09/11/2021	23:42
21G0138-04	LDW21-IT662E	21091118	09/12/2021	00:31
21G0138-05	LDW21-IT659B	21091119	09/12/2021	01:20
21G0138-06	LDW21-IT659C	21091120	09/12/2021	02:09
21G0138-07	LDW21-IT659E	21091121	09/12/2021	02:58
21G0138-08	LDW21-IT658B	21091122	09/12/2021	03:46
SJI0175-CCV2	CS3P8	21091123	09/12/2021	04:36
SJI0175-RES3	ISCP8	21091124	09/12/2021	05:29
21G0138-09	LDW21-IT658C	21091125	09/12/2021	06:20
21G0138-10	LDW21-IT658E	21091126	09/12/2021	07:09
21G0138-11	LDW21-IT657B	21091127	09/12/2021	07:58
21G0138-12	LDW21-IT657C	21091128	09/12/2021	08:47
21G0138-13	LDW21-IT648B	21091129	09/12/2021	09:36
21G0138-14	LDW21-IT648C	21091130	09/12/2021	10:25
SJI0175-CCV3	CS3P9	21091131	09/12/2021	11:14
SJI0175-RES4	ISCP9	21091132	09/12/2021	12:07

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21091307
Date Analyzed: 09/13/21
Time Analyzed: 16:45
Lab Sample ID: SJI0191-RES1
Sequence: SJI0191

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 10.4

3467-TCDF/2378-TCDF: 7.4

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJI0191-ICV1	CS3Q2	21091306A	09/13/2021	15:52
SJI0191-RES1	ISCQ2	21091307	09/13/2021	16:45
SJI0191-CCV1	CS3Q3	21091317	09/14/2021	00:57
SJI0191-RES2	ISCQ3	21091318	09/14/2021	01:50
21G0138-02RE1	LDW21-IT662B DL	21091326	09/14/2021	08:25
BJH0150-DUP3	DUP DL	21091327	09/14/2021	09:14
SJI0191-CCV2	CS3Q4	21091328A	09/14/2021	10:03
SJI0191-RES3	ISCQ4	21091329	09/14/2021	10:56

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CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21091318
Date Analyzed: 09/14/21
Time Analyzed: 01:50
Lab Sample ID: SJI0191-RES2
Sequence: SJI0191

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 5.9

3467-TCDF/2378-TCDF: 3.9

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJI0191-ICV1	CS3Q2	21091306A	09/13/2021	15:52
SJI0191-RES1	ISCQ2	21091307	09/13/2021	16:45
SJI0191-CCV1	CS3Q3	21091317	09/14/2021	00:57
SJI0191-RES2	ISCQ3	21091318	09/14/2021	01:50
21G0138-02RE1	LDW21-IT662B DL	21091326	09/14/2021	08:25
BJH0150-DUP3	DUP DL	21091327	09/14/2021	09:14
SJI0191-CCV2	CS3Q4	21091328A	09/14/2021	10:03
SJI0191-RES3	ISCQ4	21091329	09/14/2021	10:56

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CDD/CDF CHROMATOGRAPHIC RESOLUTION SUMMARY
EPA 1613B

Lab Name: Analytical Resources, Inc.
SDG: 21G0138
Instrument .ID: AUTOSPEC01
Lab File ID: 21091329
Date Analyzed: 09/14/21
Time Analyzed: 10:56
Lab Sample ID: SJI0191-RES3
Sequence: SJI0191

Percent Valley Determination for Column: RTX-Dioxin2 ID: 0.25 (mm)

1278-TCDD/2378-TCDD: 9.2

3467-TCDF/2378-TCDF: 5.3

Quality Control (QC) Limits: ≤ 25%

Lab Sample ID	Sample Name	Lab File ID	Data Analyzed	Time Analyzed
SJI0191-ICV1	CS3Q2	21091306A	09/13/2021	15:52
SJI0191-RES1	ISCQ2	21091307	09/13/2021	16:45
SJI0191-CCV1	CS3Q3	21091317	09/14/2021	00:57
SJI0191-RES2	ISCQ3	21091318	09/14/2021	01:50
21G0138-02RE1	LDW21-IT662B DL	21091326	09/14/2021	08:25
BJH0150-DUP3	DUP DL	21091327	09/14/2021	09:14
SJI0191-CCV2	CS3Q4	21091328A	09/14/2021	10:03
SJI0191-RES3	ISCQ4	21091329	09/14/2021	10:56

Analytical Resources, Incorporated
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ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0117	Instrument:	AUTOSPEC01
		Calibration:	EH00030

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CS3Z1	SJH0117-ICV1	21081102A	NA	08/11/21 15:52
ISCZ1	SJH0117-RES1	21081103	NA	08/11/21 16:41
CSLCV	SJH0117-CAL1	21081104A	NA	08/11/21 17:30
CS1CV	SJH0117-CAL2	21081107A	NA	08/11/21 19:56
CS2CV	SJH0117-CAL3	21081108A	NA	08/11/21 20:45
CS3CV	SJH0117-CAL4	21081109A	NA	08/11/21 21:34
CS4CV	SJH0117-CAL5	21081110A	NA	08/11/21 22:22
CS5CV	SJH0117-CAL6	21081111A	NA	08/11/21 23:11
ICVCV	SJH0117-SCV1	21081112A	NA	08/12/21 00:00
CS3Z2	SJH0117-CCV1	21081113B	NA	08/12/21 00:48
ISCZ2	SJH0117-RES2	21081114	NA	08/12/21 01:42

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ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
		Calibration:	EH00030

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CS3P6	SJI0175-ICV1	21091102	NA	09/11/21 11:21
ISCP6	SJI0175-RES1	21091103	NA	09/11/21 12:09
Blank	BJH0150-BLK1	21091104	Solid	09/11/21 12:58
LCS	BJH0150-BS1	21091105	Solid	09/11/21 13:47
Reference	BJH0150-SRM1	21091106	Solid	09/11/21 14:36
CS3P7	SJI0175-CCV1	21091113	NA	09/11/21 20:19
ISCP7	SJI0175-RES2	21091114	NA	09/11/21 21:12
LDW21-IT662B	21G0138-02	21091115	Solid	09/11/21 22:03
LDW21-IT662B	BJH0150-DUP2	21091116	Solid	09/11/21 22:52
LDW21-IT662C	21G0138-03	21091117	Solid	09/11/21 23:42
LDW21-IT662E	21G0138-04	21091118	Solid	09/12/21 00:31
LDW21-IT659B	21G0138-05	21091119	Solid	09/12/21 01:20
LDW21-IT659C	21G0138-06	21091120	Solid	09/12/21 02:09
LDW21-IT659E	21G0138-07	21091121	Solid	09/12/21 02:58
LDW21-IT658B	21G0138-08	21091122	Solid	09/12/21 03:46
CS3P8	SJI0175-CCV2	21091123	NA	09/12/21 04:36
ISCP8	SJI0175-RES3	21091124	NA	09/12/21 05:29
LDW21-IT658C	21G0138-09	21091125	Solid	09/12/21 06:20
LDW21-IT658E	21G0138-10	21091126	Solid	09/12/21 07:09
LDW21-IT657B	21G0138-11	21091127	Solid	09/12/21 07:58
LDW21-IT657C	21G0138-12	21091128	Solid	09/12/21 08:47
LDW21-IT648B	21G0138-13	21091129	Solid	09/12/21 09:36
LDW21-IT648C	21G0138-14	21091130	Solid	09/12/21 10:25
CS3P9	SJI0175-CCV3	21091131	NA	09/12/21 11:14
ISCP9	SJI0175-RES4	21091132	NA	09/12/21 12:07

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Printed: 9/15/2021 2:13:33PM

ANALYSIS SEQUENCE

SJI0175

Instrument: AUTOSPEC01 Element Column ID: J6460
Calibration ID: EH00030 Tune File: SEP0321_1-5
EM Voltage: 350 Resolution check times : 11:16, 21:12, 05:29, 12:07

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SJI0175-ICV1	CS3P6	QC		1	J001522		09/11/2021 11:21	21091102	PK	
SJI0175-RES1	ISCP6	QC		2	J005595		09/11/2021 12:09	21091103	PK	
BJH0150-BLK1	Blank	QC		3		J005741	09/11/2021 12:58	21091104	PK	
BJH0150-BS1	LCS	QC		4		J005741	09/11/2021 13:47	21091105	PK	
BJH0150-SRM1	Reference	QC		5		J005741	09/11/2021 14:36	21091106	PK	
21G0132-19	M10W-G-SD21-210711-0_25c	8290 Dioxin	A 01	6		J005741	09/11/2021 15:25	21091107	PK	
BJH0150-DUP1	Duplicate	QC		7		J005741	09/11/2021 16:14	21091108	PK	
21G0132-20	M10W-G-SD24-210711-0_27c	8290 Dioxin	A 01	8		J005741	09/11/2021 17:03	21091109	PK	
21G0132-21	M10W-G-SD27-210711-0_25c	8290 Dioxin	A 01	9		J005741	09/11/2021 17:52	21091110	PK	
21G0132-22	M10W-G-SD30-210711-0_25c	8290 Dioxin	A 01	10		J005741	09/11/2021 18:41	21091111	PK	
21G0132-23	RM10W-FD02	8290 Dioxin	A 01	11		J005741	09/11/2021 19:30	21091112	PK	
SJI0175-CCV1	CS3P7	QC		12	J001522		09/11/2021 20:19	21091113	PK	
SJI0175-RES2	ISCP7	QC		13	J005595		09/11/2021 21:12	21091114	PK	
21G0138-02	LDW21-IT662B	1613B Dioxin	C 01	14		J005741	09/11/2021 22:03	21091115	PK	
BJH0150-DUP2	Duplicate	QC		15		J005741	09/11/2021 22:52	21091116	PK	
21G0138-03	LDW21-IT662C	1613B Dioxin	C 01	16		J005741	09/11/2021 23:42	21091117	PK	
21G0138-04	LDW21-IT662E	1613B Dioxin	C 01	17		J005741	09/12/2021 00:31	21091118	PK	
21G0138-05	LDW21-IT659B	1613B Dioxin	C 01	18		J005741	09/12/2021 01:20	21091119	PK	
21G0138-06	LDW21-IT659C	1613B Dioxin	C 01	19		J005741	09/12/2021 02:09	21091120	PK	
21G0138-07	LDW21-IT659E	1613B Dioxin	C 01	20		J005741	09/12/2021 02:58	21091121	PK	
21G0138-08	LDW21-IT658B	1613B Dioxin	C 01	21		J005741	09/12/2021 03:46	21091122	PK	
SJI0175-CCV2	CS3P8	QC		22	J001522		09/12/2021 04:36	21091123	PK	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 9/15/2021 2:13:33PM

ANALYSIS SEQUENCE

SJI0175

Instrument: AUTOSPEC01 Element Column ID: J6460
Calibration ID: EH00030 Tune File: SEP0321_1-5
EM Voltage: 350 Resolution check times : 11:16, 21:12, 05:29, 12:07

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SJI0175-RES3	ISCP8	QC		23	J005595		09/12/2021 05:29	21091124	PK	
21G0138-09	LDW21-IT658C	1613B Dioxin	C 01	24		J005741	09/12/2021 06:20	21091125	PK	
21G0138-10	LDW21-IT658E	1613B Dioxin	C 01	25		J005741	09/12/2021 07:09	21091126	PK	
21G0138-11	LDW21-IT657B	1613B Dioxin	C 01	26		J005741	09/12/2021 07:58	21091127	PK	
21G0138-12	LDW21-IT657C	1613B Dioxin	C 01	27		J005741	09/12/2021 08:47	21091128	PK	
21G0138-13	LDW21-IT648B	1613B Dioxin	C 01	28		J005741	09/12/2021 09:36	21091129	PK	
21G0138-14	LDW21-IT648C	1613B Dioxin	C 01	29		J005741	09/12/2021 10:25	21091130	PK	
SJI0175-CCV3	CS3P9	QC		30	J001522		09/12/2021 11:14	21091131	PK	
SJI0175-RES4	ISCP9	QC		31	J005595		09/12/2021 12:07	21091132	PK	

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 14:27:49 Pacific Daylight Time 9/14/21 pk

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Quantify		
Dataset Created		
Peak deleted	Sample:21091103, Compound:13C-1234-TCDD, RT:25.564	2
Peak deleted	Sample:21091103, Compound:13C-123789-HxCDD, RT:36.472	2
Peak deleted	Sample:21091104, Compound:TF, RT:22.888	3
Peak deleted	Sample:21091106, Compound:HD, RT:36.951	5
Peak added	Sample:21091106, Compound:PF, RT:30.121	5
Peak added	Sample:21091106, Compound:PF, RT:30.132	5
Peak deleted	Sample:21091106, Compound:TD, RT:24.007	5
Peak added	Sample:21091106, Compound:TF, RT:24.506	5
Peak added	Sample:21091106, Compound:TF, RT:24.506	5
Pre modification peak	Sample:21091107, Compound:HF, RT:36.906	6
Peak modified	Sample:21091107, Compound:HF, RT:36.906	6
Peak deleted	Sample:21091107, Compound:HPD, RT:40.784	6
Peak deleted	Sample:21091107, Compound:TD, RT:24.718	6
Peak deleted	Sample:21091107, Compound:TD, RT:25.579	6
Peak deleted	Sample:21091108, Compound:HD, RT:36.951	7
Pre modification peak	Sample:21091108, Compound:HF, RT:36.884	7
Peak modified	Sample:21091108, Compound:HF, RT:36.884	7
Peak deleted	Sample:21091108, Compound:HPD, RT:40.549	7
Pre modification peak	Sample:21091108, Compound:TD, RT:26.396	7
Peak modified	Sample:21091108, Compound:TD, RT:26.396	7
Pre modification peak	Sample:21091108, Compound:TF, RT:25.746	7
Peak modified	Sample:21091108, Compound:TF, RT:25.746	7
Peak deleted	Sample:21091108, Compound:TF, RT:27.636	7
Peak deleted	Sample:21091109, Compound:HF, RT:36.360	8
Pre modification peak	Sample:21091109, Compound:HF, RT:36.895	8
Peak modified	Sample:21091109, Compound:HF, RT:36.895	8
Peak deleted	Sample:21091109, Compound:PF, RT:30.990	8
Peak deleted	Sample:21091109, Compound:PF, RT:32.215	8
Peak deleted	Sample:21091109, Compound:PP, RT:27.379	8
Pre modification peak	Sample:21091109, Compound:TD, RT:26.396	8
Peak modified	Sample:21091109, Compound:TD, RT:26.396	8
Peak deleted	Sample:21091110, Compound:HD, RT:36.940	9
Pre modification peak	Sample:21091110, Compound:HF, RT:34.867	9
Peak modified	Sample:21091110, Compound:HF, RT:34.867	9
Pre modification peak	Sample:21091110, Compound:HF, RT:36.895	9
Peak modified	Sample:21091110, Compound:HF, RT:36.895	9
Pre modification peak	Sample:21091110, Compound:PD, RT:31.480	9
Peak modified	Sample:21091110, Compound:PD, RT:31.480	9
Peak added	Sample:21091110, Compound:PF, RT:29.909	9
Peak added	Sample:21091110, Compound:PF, RT:29.920	9
Peak deleted	Sample:21091110, Compound:TD, RT:25.262	9
Peak deleted	Sample:21091111, Compound:HF, RT:33.085	10
Pre modification peak	Sample:21091111, Compound:HF, RT:35.881	10
Peak modified	Sample:21091111, Compound:HF, RT:35.881	10
Pre modification peak	Sample:21091111, Compound:PF, RT:28.840	10
Peak modified	Sample:21091111, Compound:PF, RT:28.840	10
Pre modification peak	Sample:21091111, Compound:PF, RT:28.840	10
Peak modified	Sample:21091111, Compound:PF, RT:28.840	10
Pre modification peak	Sample:21091111, Compound:PF, RT:29.909	10
Peak modified	Sample:21091111, Compound:PF, RT:29.909	10
Peak deleted	Sample:21091111, Compound:TF, RT:22.752	10

Dataset: T:\Autospec\Processed Data Batch\210911D1.qld
Last Altered: Tuesday, September 14, 2021 14:27:00 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 14:27:49 Pacific Daylight Time

Event	Details	Sample ID
Peak deleted	Sample:21091111, Compound:TF, RT:23.402	10
Peak deleted	Sample:21091111, Compound:TF, RT:27.651	10
Peak deleted	Sample:21091112, Compound:HD, RT:36.939	11
Pre modification peak	Sample:21091112, Compound:HF, RT:35.870	11
Peak modified	Sample:21091112, Compound:HF, RT:35.870	11
Pre modification peak	Sample:21091112, Compound:HF, RT:36.884	11
Peak modified	Sample:21091112, Compound:HF, RT:36.884	11
Pre modification peak	Sample:21091112, Compound:HF, RT:36.906	11
Peak modified	Sample:21091112, Compound:HF, RT:36.906	11
Peak deleted	Sample:21091112, Compound:HPD, RT:40.783	11
Pre modification peak	Sample:21091112, Compound:PD, RT:28.795	11
Peak modified	Sample:21091112, Compound:PD, RT:28.795	11
Pre modification peak	Sample:21091112, Compound:PD, RT:28.795	11
Peak modified	Sample:21091112, Compound:PD, RT:28.795	11
Pre modification peak	Sample:21091112, Compound:PF, RT:28.817	11
Peak modified	Sample:21091112, Compound:PF, RT:28.817	11
Pre modification peak	Sample:21091112, Compound:PF, RT:28.817	11
Peak modified	Sample:21091112, Compound:PF, RT:28.817	11
Peak deleted	Sample:21091112, Compound:TF, RT:23.583	11
Peak deleted	Sample:21091114, Compound:13C-1234-TCDD, RT:25.564	13
Peak deleted	Sample:21091114, Compound:13C-123789-HxCDD, RT:36.471	13
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\210911D1.qld'	
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\210911D1.qld'	

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 15:42:31 Pacific Daylight Time 9/14/21 pk

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Quantify		
Dataset Created		
Peak deleted	Sample:21091115, Compound:HD, RT:36.929	1
Peak deleted	Sample:21091115, Compound:HF, RT:33.096	1
Peak deleted	Sample:21091115, Compound:TF, RT:27.394	1
Peak deleted	Sample:21091116, Compound:TF, RT:27.394	2
Peak deleted	Sample:21091116, Compound:TF, RT:27.666	2
Pre modification peak	Sample:21091117, Compound:HF, RT:35.859	3
Peak modified	Sample:21091117, Compound:HF, RT:35.859	3
Peak deleted	Sample:21091117, Compound:TF, RT:27.273	3
Peak deleted	Sample:21091117, Compound:TF, RT:27.560	3
Peak deleted	Sample:21091118, Compound:HD, RT:35.981	4
Peak deleted	Sample:21091118, Compound:HD, RT:36.148	4
Pre modification peak	Sample:21091118, Compound:HD, RT:36.482	4
Peak modified	Sample:21091118, Compound:HD, RT:36.482	4
Pre modification peak	Sample:21091118, Compound:HF, RT:35.870	4
Peak modified	Sample:21091118, Compound:HF, RT:35.870	4
Pre modification peak	Sample:21091118, Compound:HF, RT:35.881	4
Peak modified	Sample:21091118, Compound:HF, RT:35.881	4
Peak added	Sample:21091118, Compound:HPF, RT:39.412	4
Peak added	Sample:21091118, Compound:HPF, RT:39.412	4
Pre modification peak	Sample:21091118, Compound:OF, RT:45.206	4
Peak modified	Sample:21091118, Compound:OF, RT:45.206	4
Pre modification peak	Sample:21091118, Compound:OF, RT:45.233	4
Peak modified	Sample:21091118, Compound:OF, RT:45.233	4
Pre modification peak	Sample:21091118, Compound:PF, RT:28.829	4
Peak modified	Sample:21091118, Compound:PF, RT:28.829	4
Pre modification peak	Sample:21091118, Compound:PF, RT:28.829	4
Peak modified	Sample:21091118, Compound:PF, RT:28.829	4
Peak added	Sample:21091118, Compound:TF, RT:24.657	4
Peak added	Sample:21091118, Compound:TF, RT:24.657	4
Peak deleted	Sample:21091118, Compound:TF, RT:27.651	4
Peak deleted	Sample:21091119, Compound:PF, RT:30.767	5
Peak added	Sample:21091119, Compound:TF, RT:23.115	5
Peak added	Sample:21091119, Compound:TF, RT:23.115	5
Peak added	Sample:21091119, Compound:TF, RT:23.523	5
Peak added	Sample:21091119, Compound:TF, RT:23.523	5
Peak added	Sample:21091119, Compound:TF, RT:24.007	5
Peak added	Sample:21091119, Compound:TF, RT:24.022	5
Peak deleted	Sample:21091119, Compound:TF, RT:26.305	5
Pre modification peak	Sample:21091120, Compound:HF, RT:36.906	6
Peak modified	Sample:21091120, Compound:HF, RT:36.906	6
Peak deleted	Sample:21091120, Compound:HPD, RT:40.583	6
Peak added	Sample:21091120, Compound:PD, RT:28.817	6
Peak added	Sample:21091120, Compound:PD, RT:28.829	6
Pre modification peak	Sample:21091120, Compound:PF, RT:28.851	6
Peak modified	Sample:21091120, Compound:PF, RT:28.851	6
Pre modification peak	Sample:21091120, Compound:PF, RT:28.851	6
Peak modified	Sample:21091120, Compound:PF, RT:28.851	6
Peak deleted	Sample:21091120, Compound:TF, RT:22.737	6
Peak deleted	Sample:21091120, Compound:TF, RT:27.288	6
Peak deleted	Sample:21091120, Compound:TF, RT:27.394	6
Peak deleted	Sample:21091120, Compound:TF, RT:27.666	6

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 15:42:31 Pacific Daylight Time

Event	Details	Sample ID
Pre modification peak	Sample:21091121, Compound:13C-123678-HxCDF, RT:34.989	7
Peak modified	Sample:21091121, Compound:13C-123678-HxCDF, RT:34.989	7
Peak modified	Sample:21091121, Compound:13C-123678-HxCDF, RT:34.989	7
Pre modification peak	Sample:21091121, Compound:HD, RT:36.493	7
Peak modified	Sample:21091121, Compound:HD, RT:36.493	7
Peak deleted	Sample:21091121, Compound:HF, RT:36.616	7
Peak deleted	Sample:21091121, Compound:HPF, RT:38.644	7
Peak deleted	Sample:21091121, Compound:HPF, RT:38.700	7
Peak deleted	Sample:21091121, Compound:HPF, RT:38.755	7
Peak deleted	Sample:21091121, Compound:HPF, RT:41.128	7
Pre modification peak	Sample:21091121, Compound:OF, RT:45.206	7
Peak modified	Sample:21091121, Compound:OF, RT:45.206	7
Peak deleted	Sample:21091121, Compound:TF, RT:24.007	7
Peak deleted	Sample:21091121, Compound:TF, RT:25.746	7
Peak deleted	Sample:21091122, Compound:PF, RT:32.316	8
Peak deleted	Sample:21091122, Compound:TF, RT:22.752	8
Peak deleted	Sample:21091122, Compound:TF, RT:26.305	8
Peak deleted	Sample:21091124, Compound:13C-1234-TCDD, RT:25.579	10
Pre modification peak	Sample:21091125, Compound:HF, RT:35.903	11
Peak modified	Sample:21091125, Compound:HF, RT:35.903	11
Pre modification peak	Sample:21091125, Compound:HF, RT:36.906	11
Peak modified	Sample:21091125, Compound:HF, RT:36.906	11
Peak added	Sample:21091125, Compound:PD, RT:28.806	11
Peak added	Sample:21091125, Compound:PD, RT:28.817	11
Pre modification peak	Sample:21091125, Compound:PF, RT:28.840	11
Peak modified	Sample:21091125, Compound:PF, RT:28.840	11
Pre modification peak	Sample:21091125, Compound:PF, RT:28.840	11
Peak modified	Sample:21091125, Compound:PF, RT:28.840	11
Peak deleted	Sample:21091125, Compound:TF, RT:22.752	11
Peak added	Sample:21091126, Compound:HF, RT:35.870	12
Peak added	Sample:21091126, Compound:HF, RT:35.892	12
Pre modification peak	Sample:21091126, Compound:HF, RT:35.892	12
Peak modified	Sample:21091126, Compound:HF, RT:35.892	12
Peak added	Sample:21091126, Compound:PD, RT:29.898	12
Peak added	Sample:21091126, Compound:PD, RT:29.909	12
Peak added	Sample:21091126, Compound:PD, RT:30.121	12
Peak added	Sample:21091126, Compound:PD, RT:30.121	12
Pre modification peak	Sample:21091126, Compound:PF, RT:28.840	12
Peak modified	Sample:21091126, Compound:PF, RT:28.840	12
Pre modification peak	Sample:21091126, Compound:PF, RT:28.840	12
Peak modified	Sample:21091126, Compound:PF, RT:28.840	12
Pre modification peak	Sample:21091126, Compound:TD, RT:26.396	12
Peak modified	Sample:21091126, Compound:TD, RT:26.396	12
Pre modification peak	Sample:21091127, Compound:HF, RT:36.906	13
Peak modified	Sample:21091127, Compound:HF, RT:36.906	13
Pre modification peak	Sample:21091127, Compound:TD, RT:26.396	13
Peak modified	Sample:21091127, Compound:TD, RT:26.396	13
Peak added	Sample:21091127, Compound:TF, RT:24.657	13
Peak added	Sample:21091127, Compound:TF, RT:24.672	13
Peak deleted	Sample:21091128, Compound:TD, RT:27.001	14
Peak added	Sample:21091128, Compound:TF, RT:24.854	14
Peak added	Sample:21091128, Compound:TF, RT:24.869	14
Peak added	Sample:21091128, Compound:TF, RT:25.096	14
Peak added	Sample:21091128, Compound:TF, RT:25.096	14
Peak added	Sample:21091129, Compound:HF, RT:35.859	15

Dataset: T:\Autospec\Processed Data Batch\210911D2.qld
Last Altered: Tuesday, September 14, 2021 15:41:37 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 15:42:31 Pacific Daylight Time

Event	Details	Sample ID
Peak added	Sample:21091129, Compound:HF, RT:35.859	15
Pre modification peak	Sample:21091129, Compound:HF, RT:35.870	15
Peak modified	Sample:21091129, Compound:HF, RT:35.870	15
Peak added	Sample:21091129, Compound:PD, RT:29.296	15
Peak added	Sample:21091129, Compound:PD, RT:29.296	15
Peak added	Sample:21091129, Compound:PD, RT:29.898	15
Peak added	Sample:21091129, Compound:PD, RT:29.898	15
Peak added	Sample:21091129, Compound:PF, RT:28.840	15
Peak added	Sample:21091129, Compound:PF, RT:28.840	15
Pre modification peak	Sample:21091129, Compound:TF, RT:25.519	15
Peak modified	Sample:21091129, Compound:TF, RT:25.519	15
Pre modification peak	Sample:21091129, Compound:TF, RT:25.534	15
Peak modified	Sample:21091129, Compound:TF, RT:25.534	15
Peak deleted	Sample:21091130, Compound:HD, RT:36.939	16
Peak added	Sample:21091130, Compound:PF, RT:28.851	16
Peak added	Sample:21091130, Compound:PF, RT:28.862	16
Peak added	Sample:21091130, Compound:TF, RT:23.523	16
Peak added	Sample:21091130, Compound:TF, RT:23.523	16
Peak added	Sample:21091130, Compound:TF, RT:24.672	16
Peak added	Sample:21091130, Compound:TF, RT:24.672	16
Peak deleted	Sample:21091132, Compound:13C-1234-TCDD, RT:25.564	18
Peak deleted	Sample:21091132, Compound:13C-123789-HxCDD, RT:36.482	18
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\210911D2.qld'	
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\210911D2.qld'	

Analytical Resources, Incorporated
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ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0191	Instrument:	AUTOSPEC01
		Calibration:	EH00030

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CS3Q2	SJI0191-ICV1	21091306A	NA	09/13/21 15:52
ISCQ2	SJI0191-RES1	21091307	NA	09/13/21 16:45
CS3Q3	SJI0191-CCV1	21091317	NA	09/14/21 00:57
ISCQ3	SJI0191-RES2	21091318	NA	09/14/21 01:50
LDW21-IT662B	21G0138-02RE1	21091326	Solid	09/14/21 08:25
LDW21-IT662B	BJH0150-DUP3	21091327	Solid	09/14/21 09:14
CS3Q4	SJI0191-CCV2	21091328A	NA	09/14/21 10:03
ISCQ4	SJI0191-RES3	21091329	NA	09/14/21 10:56

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Printed: 9/15/2021 3:39:45PM

ANALYSIS SEQUENCE

SJI0191

Instrument: AUTOSPEC01 Element Column ID: J6460
Calibration ID: EH00030 Tune File: SEP0321_1-5
EM Voltage: 350 Resolution check times : 16:45, 01:50, 10:56

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SJI0191-ICV1	CS3Q2	QC		1	J001522		09/13/2021 15:52	21091306A	PK	
SJI0191-RES1	ISCQ2	QC		2	J005595		09/13/2021 16:45	21091307	PK	
BJH0773-BLK1	Blank	QC		3		J005741	09/13/2021 17:36	21091308	PK	
BJH0773-BS1	LCS	QC		4		J005741	09/13/2021 18:25	21091309	PK	
BJH0773-BSD1	LCS Dup	QC		5		J005741	09/13/2021 19:14	21091310	PK	
BJH0773-SRM1	Reference	QC		6		J005741	09/13/2021 20:03	21091311	PK	
21H0004-01	W-1-210729	1613B Dioxin	A 01	7		J005741	09/13/2021 20:52	21091312	PK	
21H0004-02	W-2-210729	1613B Dioxin	A 01	8		J005741	09/13/2021 21:41	21091313	PK	
21H0004-03	W-3-210729	1613B Dioxin	A 01	9		J005741	09/13/2021 22:30	21091314	PK	
21H0004-04	W-4-210729	1613B Dioxin	A 01	10		J005741	09/13/2021 23:19	21091315	PK	
21H0004-05	LAI-SS-1-210729	1613B Dioxin	A 01	11		J005741	09/14/2021 00:08	21091316	PK	
SJI0191-CCV1	CS3Q3	QC		12	J001522		09/14/2021 00:57	21091317	PK	
SJI0191-RES2	ISCQ3	QC		13	J005595		09/14/2021 01:50	21091318	PK	
21G0296-13	RM10W-EB11	8290 Dioxin	A 01	14		J005741	09/14/2021 02:42	21091319	PK	
21G0296-14	RM10W-EB12	8290 Dioxin	A 01	15		J005741	09/14/2021 03:31	21091320	PK	
21G0354-36	RM10W-EB13	8290 Dioxin	A 01	16		J005741	09/14/2021 04:20	21091321	PK	
21G0354-37	RM10W-EB14	8290 Dioxin	A 01	17		J005741	09/14/2021 05:09	21091322	PK	
21G0354-38	RM10W-EB15	8290 Dioxin	A	18		J005741	09/14/2021 05:58	21091323	PK	
21G0354-39	RM10W-EB16	8290 Dioxin	A	19		J005741	09/14/2021 06:47	21091324	PK	
21H0016-03	45-334 August Sample	1613B Dioxin	A 01	20		J005741	09/14/2021 07:36	21091325	PK	
21G0138-02RE1	LDW21-IT662B DL	1613B Dioxin	C 01	21		J005741	09/14/2021 08:25	21091326	PK	Added 9/13/2021 by PK
BJH0150-DUP3	DUP DL	QC		22		J005741	09/14/2021 09:14	21091327	PK	

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Printed: 9/15/2021 3:39:45PM

ANALYSIS SEQUENCE

SJI0191

Instrument:	AUTOSPEC01	Element Column ID:	J6460
Calibration ID:	EH00030	Tune File:	SEP0321_1-5
EM Voltage:	350	Resolution check times :	16:45, 01:50, 10:56

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Analyzed	File ID	Analyst	Comments
SJI0191-CCV2	CS3Q4	QC		23	J001522		09/14/2021 10:03	21091328A	PK	
SJI0191-RES3	ISCQ4	QC		24	J005595		09/14/2021 10:56	21091329	PK	

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 11:01:37 Pacific Daylight Time 9/14/21 pk

Event	Details	Sample ID
Process Extract		
Process Integrate		
Process Quantify		
Dataset Created		
Pre modification peak	Sample:21091308, Compound:13C-123789-HxCDF, RT:36.906	3
Peak modified	Sample:21091308, Compound:13C-123789-HxCDF, RT:36.906	3
Pre modification peak	Sample:21091308, Compound:13C-123789-HxCDF, RT:36.906	3
Peak modified	Sample:21091308, Compound:13C-123789-HxCDF, RT:36.906	3
Peak deleted	Sample:21091308, Compound:PF, RT:29.920	3
Pre modification peak	Sample:21091309, Compound:HD, RT:36.505	4
Peak modified	Sample:21091309, Compound:HD, RT:36.505	4
Peak deleted	Sample:21091309, Compound:HD, RT:36.895	4
Peak deleted	Sample:21091310, Compound:HF, RT:36.761	5
Peak deleted	Sample:21091310, Compound:PD, RT:30.823	5
Pre modification peak	Sample:21091311, Compound:PF, RT:28.662	6
Peak modified	Sample:21091311, Compound:PF, RT:28.662	6
Pre modification peak	Sample:21091311, Compound:PF, RT:28.662	6
Peak modified	Sample:21091311, Compound:PF, RT:28.662	6
Pre modification peak	Sample:21091311, Compound:PF, RT:28.840	6
Peak modified	Sample:21091311, Compound:PF, RT:28.840	6
Pre modification peak	Sample:21091311, Compound:PF, RT:28.840	6
Peak modified	Sample:21091311, Compound:PF, RT:28.840	6
Pre modification peak	Sample:21091311, Compound:PF, RT:31.268	6
Peak modified	Sample:21091311, Compound:PF, RT:31.268	6
Peak deleted	Sample:21091311, Compound:TD, RT:23.992	6
Peak deleted	Sample:21091312, Compound:HD, RT:36.951	7
Pre modification peak	Sample:21091312, Compound:HF, RT:35.892	7
Peak modified	Sample:21091312, Compound:HF, RT:35.892	7
Peak deleted	Sample:21091312, Compound:HPD, RT:40.794	7
Peak added	Sample:21091312, Compound:HPF, RT:38.767	7
Peak added	Sample:21091312, Compound:HPF, RT:38.778	7
Peak added	Sample:21091312, Compound:PD, RT:30.266	7
Peak added	Sample:21091312, Compound:PD, RT:30.277	7
Peak deleted	Sample:21091312, Compound:TF, RT:27.212	7
Peak deleted	Sample:21091313, Compound:HD, RT:36.939	8
Peak deleted	Sample:21091313, Compound:HPD, RT:40.560	8
Peak deleted	Sample:21091313, Compound:HPD, RT:40.783	8
Peak added	Sample:21091313, Compound:PD, RT:29.898	8
Peak added	Sample:21091313, Compound:PD, RT:29.909	8
Peak added	Sample:21091313, Compound:PF, RT:28.851	8
Peak added	Sample:21091313, Compound:PF, RT:28.851	8
Peak added	Sample:21091313, Compound:TD, RT:24.007	8
Peak added	Sample:21091313, Compound:TD, RT:24.007	8
Peak added	Sample:21091313, Compound:TD, RT:24.521	8
Peak added	Sample:21091313, Compound:TD, RT:24.536	8
Pre modification peak	Sample:21091313, Compound:TD, RT:26.411	8
Peak modified	Sample:21091313, Compound:TD, RT:26.411	8
Peak added	Sample:21091313, Compound:TF, RT:23.856	8
Peak added	Sample:21091313, Compound:TF, RT:23.856	8
Peak added	Sample:21091313, Compound:TF, RT:24.007	8
Peak added	Sample:21091313, Compound:TF, RT:24.022	8
Peak deleted	Sample:21091313, Compound:TF, RT:24.264	8
Peak added	Sample:21091314, Compound:PD, RT:28.829	9
Peak added	Sample:21091314, Compound:PD, RT:28.840	9
Peak added	Sample:21091314, Compound:PD, RT:30.132	9

Dataset: T:\Autospec\Processed Data Batch\210913IH1.qld
Last Altered: Tuesday, September 14, 2021 10:50:52 Pacific Daylight Time
Printed: Tuesday, September 14, 2021 11:01:37 Pacific Daylight Time

Event	Details	Sample ID
Peak added	Sample:21091314, Compound:PD, RT:30.143	9
Peak added	Sample:21091314, Compound:PD, RT:30.288	9
Peak added	Sample:21091314, Compound:PD, RT:30.288	9
Peak added	Sample:21091314, Compound:PD, RT:30.455	9
Peak added	Sample:21091314, Compound:PD, RT:30.466	9
Peak added	Sample:21091314, Compound:TD, RT:25.005	9
Peak added	Sample:21091314, Compound:TD, RT:25.020	9
Peak added	Sample:21091314, Compound:TF, RT:23.765	9
Peak added	Sample:21091314, Compound:TF, RT:23.765	9
Peak deleted	Sample:21091314, Compound:TF, RT:26.910	9
Peak deleted	Sample:21091314, Compound:TF, RT:27.696	9
Peak deleted	Sample:21091315, Compound:HD, RT:36.973	10
Pre modification peak	Sample:21091315, Compound:HPF, RT:41.051	10
Peak modified	Sample:21091315, Compound:HPF, RT:41.051	10
Peak added	Sample:21091315, Compound:PD, RT:30.299	10
Peak added	Sample:21091315, Compound:PD, RT:30.311	10
Peak added	Sample:21091315, Compound:PD, RT:30.489	10
Peak added	Sample:21091315, Compound:PD, RT:30.489	10
Peak added	Sample:21091315, Compound:PF, RT:28.907	10
Peak added	Sample:21091315, Compound:PF, RT:28.907	10
Pre modification peak	Sample:21091315, Compound:PF, RT:31.291	10
Peak modified	Sample:21091315, Compound:PF, RT:31.291	10
Peak added	Sample:21091315, Compound:TD, RT:24.022	10
Peak added	Sample:21091315, Compound:TD, RT:24.037	10
Peak added	Sample:21091315, Compound:TD, RT:24.551	10
Peak added	Sample:21091315, Compound:TD, RT:24.551	10
Peak deleted	Sample:21091315, Compound:TF, RT:26.940	10
Peak added	Sample:21091316, Compound:PD, RT:30.277	11
Peak added	Sample:21091316, Compound:PD, RT:30.277	11
Peak deleted	Sample:21091316, Compound:PD, RT:31.625	11
Pre modification peak	Sample:21091316, Compound:PF, RT:28.851	11
Peak modified	Sample:21091316, Compound:PF, RT:28.851	11
Pre modification peak	Sample:21091316, Compound:PF, RT:28.851	11
Peak modified	Sample:21091316, Compound:PF, RT:28.851	11
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\210913IH1.qld'	
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\210913IH1.qld'	

Quantify Audit Report MassLynx MassLynx V4.1 SCN909

Dataset: T:\Autospec\Processed Data Batch\210913IH2.qld
Last Altered: Wednesday, September 15, 2021 14:31:28 Pacific Daylight Time
Printed: Wednesday, September 15, 2021 14:32:32 Pacific Daylight Time 9/15/21 pk

Event	Details	Sample ID
Dataset Created		
Dataset Saved	Saved to 'T:\Autospec\Processed Data Batch\210913IH2.qld'	
Peak added	Sample:21091326, Compound:PD, RT:28.806	8
Peak added	Sample:21091326, Compound:PD, RT:28.806	8
Peak added	Sample:21091327, Compound:TD, RT:23.795	9
Peak added	Sample:21091327, Compound:TD, RT:23.795	9
Peak deleted	Sample:21091319, Compound:TD, RT:26.396	1
Peak deleted	Sample:21091321, Compound:HPF, RT:38.744	3
Peak deleted	Sample:21091321, Compound:OF, RT:45.079	3
Peak deleted	Sample:21091322, Compound:PF, RT:29.954	4
Peak deleted	Sample:21091323, Compound:HF, RT:35.881	5
Peak deleted	Sample:21091319, Compound:TF, RT:26.124	1
Peak deleted	Sample:21091319, Compound:TF, RT:25.882	1
Peak deleted	Sample:21091319, Compound:Furans,TF,PP,PF,HF,HPF,OF, RT:22.011	1
Peak deleted	Sample:21091319, Compound:PD, RT:30.667	1
Peak deleted	Sample:21091321, Compound:PF, RT:32.360	3
Peak deleted	Sample:21091323, Compound:HPD, RT:39.213	5
Peak deleted	Sample:21091325, Compound:HPF, RT:40.092	7
Peak deleted	Sample:21091325, Compound:HPF, RT:39.012	7
Peak deleted	Sample:21091327, Compound:TF, RT:24.279	9
Peak modified	Sample:21091327, Compound:PD, RT:31.503	9
Peak modified	Sample:21091327, Compound:PD, RT:31.503	9
Peak modified	Sample:21091327, Compound:PD, RT:31.503	9
Pre modification peak	Sample:21091327, Compound:PD, RT:31.503	9
Pre modification peak	Sample:21091327, Compound:PD, RT:31.503	9
Process Extract		
Process Integrate		
Process Quantify		

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0117	Instrument:	AUTOSPEC01
Sample ID:	SJH0117-ICV1	Calibration:	EH00030
File ID:	21081102A	Analyzed:	08/11/21 15:52

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	97.0	71 - 129	25.6548	25.63973	0.0151	N/A	
13C12-2,3,7,8-TCDD	100.00	98.2	82 - 118	26.305	26.27478	0.0302	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	101	76 - 124	29.817	29.80383	0.0132	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	98.5	77 - 123	31.1652	31.14815	0.0170	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	97.6	62 - 138	31.4215	31.40067	0.0208	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	100	76 - 124	34.7862	34.782	0.0042	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	97.8	70 - 130	34.931	34.91943	0.0116	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	97.5	73 - 127	35.8	35.7884	0.0116	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	101	74 - 126	36.825	36.8227	0.0023	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	102	85 - 115	35.9225	35.90912	0.0134	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	98.4	85 - 115	36.0338	36.0242	0.0096	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	104	78 - 122	38.6745	38.67025	0.0042	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	98.3	77 - 123	40.914	40.90587	0.0081	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	100	72 - 128	40.1675	40.16678	0.0007	N/A	
13C12-OCDD	200.00	96.1	48 - 152	44.8948	44.88763	0.0072	N/A	
37Cl4-2,3,7,8-TCDD	10.000	91.0	0 - 200	26.3202	26.30253	0.0177	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0117	Instrument:	AUTOSPEC01
Sample ID:	SJH0117-SCV1	Calibration:	EH00030
File ID:	21081112A	Analyzed:	08/12/21 00:00

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	102	0 - 200	25.6397	25.63973	0.0000	N/A	
13C12-2,3,7,8-TCDD	100.00	81.6	0 - 200	26.2747	26.27478	-0.0001	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	105	0 - 200	29.8055	29.80383	0.0017	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	104	0 - 200	31.1423	31.14815	-0.0059	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	98.4	0 - 200	31.3985	31.40067	-0.0022	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	116	0 - 200	34.7853	34.782	0.0033	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	119	0 - 200	34.9192	34.91943	-0.0002	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	109	0 - 200	35.7882	35.7884	-0.0002	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	113	0 - 200	36.8243	36.8227	0.0016	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	114	0 - 200	35.9107	35.90912	0.0016	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	119	0 - 200	36.022	36.0242	-0.0022	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	114	0 - 200	38.6735	38.67025	0.0032	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	110	0 - 200	40.9018	40.90587	-0.0041	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	110	0 - 200	40.1665	40.16678	-0.0003	N/A	
13C12-OCDD	200.00	106	0 - 200	44.8842	44.88763	-0.0034	N/A	
37Cl4-2,3,7,8-TCDD	10.000	104	0 - 200	26.3048	26.30253	0.0023	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0117	Instrument:	AUTOSPEC01
Sample ID:	SJH0117-CCV1	Calibration:	EH00030
File ID:	21081113B	Analyzed:	08/12/21 00:48

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	98.0	71 - 129	25.6397	25.63973	0.0000	N/A	
13C12-2,3,7,8-TCDD	100.00	97.1	82 - 118	26.2747	26.27478	-0.0001	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	97.5	76 - 124	29.8055	29.80383	0.0017	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	97.1	77 - 123	31.1425	31.14815	-0.0057	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	98.0	62 - 138	31.3987	31.40067	-0.0020	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	101	76 - 124	34.7857	34.782	0.0037	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	102	70 - 130	34.9193	34.91943	-0.0001	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	101	73 - 127	35.7883	35.7884	-0.0001	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	102	74 - 126	36.8243	36.8227	0.0016	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	100	85 - 115	35.9108	35.90912	0.0017	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	99.6	85 - 115	36.0223	36.0242	-0.0019	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	105	78 - 122	38.6738	38.67025	0.0035	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	102	77 - 123	40.9018	40.90587	-0.0041	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	106	72 - 128	40.1667	40.16678	-0.0001	N/A	
13C12-OCDD	200.00	101	48 - 152	44.884	44.88763	-0.0036	N/A	
37Cl4-2,3,7,8-TCDD	10.000	91.3	0 - 200	26.305	26.30253	0.0025	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	SJI0175-ICV1	Calibration:	EH00030
File ID:	21091102	Analyzed:	09/11/21 11:21

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	114	71 - 129	25.7307	25.63973	0.0910	N/A	
13C12-2,3,7,8-TCDD	100.00	103	82 - 118	26.3657	26.27478	0.0909	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	111	76 - 124	29.8872	29.80383	0.0834	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	110	77 - 123	31.2353	31.14815	0.0871	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	102	62 - 138	31.4805	31.40067	0.0798	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	93.8	76 - 124	34.8452	34.782	0.0632	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	88.6	70 - 130	34.99	34.91943	0.0706	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	89.9	73 - 127	35.859	35.7884	0.0706	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	93.5	74 - 126	36.8952	36.8227	0.0725	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	97.3	85 - 115	35.9703	35.90912	0.0612	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	94.8	85 - 115	36.0818	36.0242	0.0576	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	96.2	78 - 122	38.7222	38.67025	0.0519	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	87.6	77 - 123	40.9728	40.90587	0.0669	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	88.6	72 - 128	40.2263	40.16678	0.0595	N/A	
13C12-OCDD	200.00	95.1	48 - 152	44.95	44.88763	0.0624	N/A	
37Cl4-2,3,7,8-TCDD	10.000	99.5	0 - 200	26.3808	26.30253	0.0783	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	BJH0150-BLK1	Calibration:	EH00030
File ID:	21091104	Analyzed:	09/11/21 12:58

Surrogate Compound	Spike Level ng/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.00	91.1	24 - 169	25.7305	25.63973	0.0908	N/A	
13C12-2,3,7,8-TCDD	200.00	88.0	25 - 164	26.3505	26.27478	0.0757	N/A	
13C12-1,2,3,7,8-PeCDF	200.00	93.0	24 - 185	29.8758	29.80383	0.0720	N/A	
13C12-2,3,4,7,8-PeCDF	200.00	90.8	21 - 178	31.224	31.14815	0.0758	N/A	
13C12-1,2,3,7,8-PeCDD	200.00	84.6	25 - 181	31.4692	31.40067	0.0685	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.00	81.2	26 - 152	34.8338	34.782	0.0518	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.00	77.2	26 - 123	34.9787	34.91943	0.0593	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.00	77.8	28 - 136	35.8477	35.7884	0.0593	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.00	78.5	29 - 147	36.8838	36.8227	0.0611	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.00	83.3	32 - 141	35.959	35.90912	0.0499	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.00	82.4	28 - 130	36.0815	36.0242	0.0573	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.00	79.7	28 - 143	38.7222	38.67025	0.0519	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.00	73.8	26 - 138	40.9727	40.90587	0.0668	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.00	74.5	23 - 140	40.215	40.16678	0.0482	N/A	
13C12-OCDD	400.00	77.7	17 - 157	44.9407	44.88763	0.0531	N/A	
37Cl4-2,3,7,8-TCDD	80.000	85.2	35 - 197	26.3807	26.30253	0.0782	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	BJH0150-BS1	Calibration:	EH00030
File ID:	21091105	Analyzed:	09/11/21 13:47

Surrogate Compound	Spike Level ng/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.00	77.8	24 - 169	25.7305	25.63973	0.0908	N/A	
13C12-2,3,7,8-TCDD	200.00	78.5	25 - 164	26.3655	26.27478	0.0907	N/A	
13C12-1,2,3,7,8-PeCDF	200.00	88.7	24 - 185	29.8872	29.80383	0.0834	N/A	
13C12-2,3,4,7,8-PeCDF	200.00	87.3	21 - 178	31.2352	31.14815	0.0870	N/A	
13C12-1,2,3,7,8-PeCDD	200.00	82.1	25 - 181	31.4692	31.40067	0.0685	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.00	79.0	26 - 152	34.845	34.782	0.0630	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.00	75.2	26 - 123	34.9898	34.91943	0.0704	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.00	76.8	28 - 136	35.8588	35.7884	0.0704	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.00	75.0	29 - 147	36.895	36.8227	0.0723	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.00	83.5	32 - 141	35.9703	35.90912	0.0612	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.00	81.0	28 - 130	36.0817	36.0242	0.0575	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.00	76.3	28 - 143	38.7333	38.67025	0.0630	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.00	69.1	26 - 138	40.9727	40.90587	0.0668	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.00	73.2	23 - 140	40.2263	40.16678	0.0595	N/A	
13C12-OCDD	400.00	75.0	17 - 157	44.9498	44.88763	0.0622	N/A	
37Cl4-2,3,7,8-TCDD	80.000	77.6	35 - 197	26.3807	26.30253	0.0782	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	BJH0150-SRM1	Calibration:	EH00030
File ID:	21091106	Analyzed:	09/11/21 14:36

Surrogate Compound	Spike Level ng/kg wet	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.20	79.9	24 - 169	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	200.20	80.6	25 - 164	26.3655	26.27478	0.0907	N/A	
13C12-1,2,3,7,8-PeCDF	200.20	85.5	24 - 185	29.8982	29.80383	0.0944	N/A	
13C12-2,3,4,7,8-PeCDF	200.20	86.3	21 - 178	31.2352	31.14815	0.0870	N/A	
13C12-1,2,3,7,8-PeCDD	200.20	81.2	25 - 181	31.4803	31.40067	0.0796	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.20	70.5	26 - 152	34.8562	34.782	0.0742	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.20	65.9	26 - 123	35.001	34.91943	0.0816	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.20	69.6	28 - 136	35.881	35.7884	0.0926	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.20	74.2	29 - 147	36.906	36.8227	0.0833	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.20	75.7	32 - 141	35.9925	35.90912	0.0834	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.20	71.0	28 - 130	36.1038	36.0242	0.0796	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.20	68.5	28 - 143	38.7332	38.67025	0.0629	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.20	68.9	26 - 138	40.9837	40.90587	0.0778	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.20	71.4	23 - 140	40.2372	40.16678	0.0704	N/A	
13C12-OCDD	400.40	71.8	17 - 157	44.9588	44.88763	0.0712	N/A	
37Cl4-2,3,7,8-TCDD	80.080	87.3	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	SJI0175-CCV1	Calibration:	EH00030
File ID:	21091113	Analyzed:	09/11/21 20:19

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	102	71 - 129	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	100.00	103	82 - 118	26.3655	26.27478	0.0907	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	102	76 - 124	29.8982	29.80383	0.0944	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	102	77 - 123	31.2352	31.14815	0.0870	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	92.0	62 - 138	31.4803	31.40067	0.0796	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	93.9	76 - 124	34.856	34.782	0.0740	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	87.6	70 - 130	34.9898	34.91943	0.0704	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	88.6	73 - 127	35.8698	35.7884	0.0814	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	95.3	74 - 126	36.8948	36.8227	0.0721	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	97.1	85 - 115	35.9702	35.90912	0.0611	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	90.9	85 - 115	36.0927	36.0242	0.0685	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	98.0	78 - 122	38.7332	38.67025	0.0629	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	95.1	77 - 123	40.9838	40.90587	0.0779	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	95.2	72 - 128	40.2372	40.16678	0.0704	N/A	
13C12-OCDD	200.00	104	48 - 152	44.9588	44.88763	0.0712	N/A	
37Cl4-2,3,7,8-TCDD	10.000	99.9	0 - 200	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-02	Calibration:	EH00030
File ID:	21091115	Analyzed:	09/11/21 22:03

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.85	77.6	24 - 169	25.7608	25.63973	0.1211	N/A	
13C12-2,3,7,8-TCDD	199.85	85.3	25 - 164	26.3808	26.27478	0.1060	N/A	
13C12-1,2,3,7,8-PeCDF	199.85	85.9	24 - 185	29.8983	29.80383	0.0945	N/A	
13C12-2,3,4,7,8-PeCDF	199.85	87.5	21 - 178	31.2465	31.14815	0.0983	N/A	
13C12-1,2,3,7,8-PeCDD	199.85	80.7	25 - 181	31.4917	31.40067	0.0910	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.85	74.9	26 - 152	34.8562	34.782	0.0742	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.85	69.3	26 - 123	35.0012	34.91943	0.0818	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.85	72.7	28 - 136	35.8702	35.7884	0.0818	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.85	80.7	29 - 147	36.9062	36.8227	0.0835	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.85	78.1	32 - 141	35.9815	35.90912	0.0724	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.85	73.8	28 - 130	36.0928	36.0242	0.0686	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.85	76.7	28 - 143	38.7335	38.67025	0.0632	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.85	76.9	26 - 138	40.984	40.90587	0.0781	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.85	80.7	23 - 140	40.2375	40.16678	0.0707	N/A	
13C12-OCDD	399.70	92.6	17 - 157	44.9865	44.88763	0.0989	N/A	
37Cl4-2,3,7,8-TCDD	79.941	83.2	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	BJH0150-DUP2	Calibration:	EH00030
File ID:	21091116	Analyzed:	09/11/21 22:52

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.98	85.9	24 - 169	25.7758	25.63973	0.1361	N/A	
13C12-2,3,7,8-TCDD	199.98	94.9	25 - 164	26.3957	26.27478	0.1209	N/A	
13C12-1,2,3,7,8-PeCDF	199.98	94.5	24 - 185	29.9092	29.80383	0.1054	N/A	
13C12-2,3,4,7,8-PeCDF	199.98	93.8	21 - 178	31.2573	31.14815	0.1092	N/A	
13C12-1,2,3,7,8-PeCDD	199.98	85.7	25 - 181	31.5025	31.40067	0.1018	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.98	79.4	26 - 152	34.8672	34.782	0.0852	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.98	72.7	26 - 123	35.0008	34.91943	0.0814	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.98	76.9	28 - 136	35.8808	35.7884	0.0924	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.98	87.4	29 - 147	36.906	36.8227	0.0833	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.98	85.6	32 - 141	35.9812	35.90912	0.0721	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.98	77.5	28 - 130	36.1038	36.0242	0.0796	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.98	72.3	28 - 143	38.7443	38.67025	0.0740	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.98	78.8	26 - 138	40.9948	40.90587	0.0889	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.98	79.4	23 - 140	40.2483	40.16678	0.0815	N/A	
13C12-OCDD	399.95	71.3	17 - 157	45.0687	44.88763	0.1811	N/A	
37Cl4-2,3,7,8-TCDD	79.990	93.0	35 - 197	26.4108	26.30253	0.1083	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-03	Calibration:	EH00030
File ID:	21091117	Analyzed:	09/11/21 23:42

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.21	72.7	24 - 169	25.7608	25.63973	0.1211	N/A	
13C12-2,3,7,8-TCDD	200.21	82.4	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	200.21	87.2	24 - 185	29.9092	29.80383	0.1054	N/A	
13C12-2,3,4,7,8-PeCDF	200.21	87.5	21 - 178	31.2573	31.14815	0.1092	N/A	
13C12-1,2,3,7,8-PeCDD	200.21	79.3	25 - 181	31.5025	31.40067	0.1018	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.21	74.8	26 - 152	34.867	34.782	0.0850	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.21	68.9	26 - 123	35.0118	34.91943	0.0924	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.21	73.0	28 - 136	35.8808	35.7884	0.0924	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.21	81.1	29 - 147	36.917	36.8227	0.0943	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.21	78.7	32 - 141	35.9922	35.90912	0.0831	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.21	74.0	28 - 130	36.1037	36.0242	0.0795	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.21	72.8	28 - 143	38.7553	38.67025	0.0850	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.21	75.0	26 - 138	41.0058	40.90587	0.0999	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.21	76.9	23 - 140	40.2482	40.16678	0.0814	N/A	
13C12-OCDD	400.42	81.6	17 - 157	44.9862	44.88763	0.0986	N/A	
37Cl4-2,3,7,8-TCDD	80.084	80.2	35 - 197	26.4108	26.30253	0.1083	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-04	Calibration:	EH00030
File ID:	21091118	Analyzed:	09/12/21 00:31

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.37	68.6	24 - 169	25.7455	25.63973	0.1058	N/A	
13C12-2,3,7,8-TCDD	199.37	75.0	25 - 164	26.3655	26.27478	0.0907	N/A	
13C12-1,2,3,7,8-PeCDF	199.37	85.9	24 - 185	29.8868	29.80383	0.0830	N/A	
13C12-2,3,4,7,8-PeCDF	199.37	85.3	21 - 178	31.2348	31.14815	0.0866	N/A	
13C12-1,2,3,7,8-PeCDD	199.37	77.9	25 - 181	31.48	31.40067	0.0793	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.37	75.6	26 - 152	34.8558	34.782	0.0738	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.37	68.8	26 - 123	34.9895	34.91943	0.0701	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.37	73.9	28 - 136	35.8697	35.7884	0.0813	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.37	80.4	29 - 147	36.8947	36.8227	0.0720	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.37	80.0	32 - 141	35.97	35.90912	0.0609	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.37	75.0	28 - 130	36.0925	36.0242	0.0683	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.37	71.9	28 - 143	38.7328	38.67025	0.0625	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.37	75.6	26 - 138	40.9833	40.90587	0.0774	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.37	76.6	23 - 140	40.237	40.16678	0.0702	N/A	
13C12-OCDD	398.74	75.1	17 - 157	44.9585	44.88763	0.0709	N/A	
37Cl4-2,3,7,8-TCDD	79.747	72.1	35 - 197	26.3957	26.30253	0.0932	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-05	Calibration:	EH00030
File ID:	21091119	Analyzed:	09/12/21 01:20

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.07	56.5	24 - 169	25.806	25.63973	0.1663	N/A	
13C12-2,3,7,8-TCDD	200.07	61.7	25 - 164	26.3957	26.27478	0.1209	N/A	
13C12-1,2,3,7,8-PeCDF	200.07	74.1	24 - 185	29.898	29.80383	0.0942	N/A	
13C12-2,3,4,7,8-PeCDF	200.07	79.8	21 - 178	31.2462	31.14815	0.0981	N/A	
13C12-1,2,3,7,8-PeCDD	200.07	72.7	25 - 181	31.4802	31.40067	0.0795	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.07	59.5	26 - 152	34.867	34.782	0.0850	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.07	55.2	26 - 123	35.0008	34.91943	0.0814	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.07	58.3	28 - 136	35.8808	35.7884	0.0924	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.07	63.8	29 - 147	36.917	36.8227	0.0943	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.07	63.9	32 - 141	35.9923	35.90912	0.0832	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.07	59.0	28 - 130	36.1037	36.0242	0.0795	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.07	62.4	28 - 143	38.733	38.67025	0.0627	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.07	62.8	26 - 138	40.9835	40.90587	0.0776	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.07	66.5	23 - 140	40.237	40.16678	0.0702	N/A	
13C12-OCDD	400.14	76.0	17 - 157	44.9678	44.88763	0.0802	N/A	
37Cl4-2,3,7,8-TCDD	80.028	79.8	35 - 197	26.4108	26.30253	0.1083	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-06	Calibration:	EH00030
File ID:	21091120	Analyzed:	09/12/21 02:09

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.06	81.5	24 - 169	25.7608	25.63973	0.1211	N/A	
13C12-2,3,7,8-TCDD	200.06	86.4	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	200.06	91.9	24 - 185	29.9093	29.80383	0.1055	N/A	
13C12-2,3,4,7,8-PeCDF	200.06	91.1	21 - 178	31.2575	31.14815	0.1093	N/A	
13C12-1,2,3,7,8-PeCDD	200.06	84.5	25 - 181	31.5027	31.40067	0.1020	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.06	72.1	26 - 152	34.8672	34.782	0.0852	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.06	66.8	26 - 123	35.012	34.91943	0.0926	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.06	71.6	28 - 136	35.8812	35.7884	0.0928	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.06	80.9	29 - 147	36.9172	36.8227	0.0945	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.06	78.4	32 - 141	35.9925	35.90912	0.0834	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.06	74.1	28 - 130	36.104	36.0242	0.0798	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.06	73.6	28 - 143	38.7557	38.67025	0.0854	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.06	74.7	26 - 138	41.0062	40.90587	0.1003	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.06	75.4	23 - 140	40.2487	40.16678	0.0819	N/A	
13C12-OCDD	400.11	77.2	17 - 157	44.9773	44.88763	0.0897	N/A	
37Cl4-2,3,7,8-TCDD	80.023	83.3	35 - 197	26.411	26.30253	0.1085	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-07	Calibration:	EH00030
File ID:	21091121	Analyzed:	09/12/21 02:58

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.02	75.1	24 - 169	25.7455	25.63973	0.1058	N/A	
13C12-2,3,7,8-TCDD	200.02	79.8	25 - 164	26.3655	26.27478	0.0907	N/A	
13C12-1,2,3,7,8-PeCDF	200.02	84.5	24 - 185	29.8868	29.80383	0.0830	N/A	
13C12-2,3,4,7,8-PeCDF	200.02	80.5	21 - 178	31.235	31.14815	0.0868	N/A	
13C12-1,2,3,7,8-PeCDD	200.02	74.2	25 - 181	31.4802	31.40067	0.0795	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.02	75.1	26 - 152	34.8558	34.782	0.0738	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.02	72.1	26 - 123	34.9895	34.91943	0.0701	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.02	71.2	28 - 136	35.8697	35.7884	0.0813	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.02	75.5	29 - 147	36.8945	36.8227	0.0718	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.02	78.6	32 - 141	35.9698	35.90912	0.0607	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.02	75.0	28 - 130	36.0923	36.0242	0.0681	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.02	71.4	28 - 143	38.733	38.67025	0.0627	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.02	69.7	26 - 138	40.9835	40.90587	0.0776	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.02	74.5	23 - 140	40.2258	40.16678	0.0590	N/A	
13C12-OCDD	400.05	76.4	17 - 157	44.9585	44.88763	0.0709	N/A	
37Cl4-2,3,7,8-TCDD	80.009	83.1	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-08	Calibration:	EH00030
File ID:	21091122	Analyzed:	09/12/21 03:46

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.33	75.9	24 - 169	25.7608	25.63973	0.1211	N/A	
13C12-2,3,7,8-TCDD	200.33	81.8	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	200.33	82.9	24 - 185	29.9093	29.80383	0.1055	N/A	
13C12-2,3,4,7,8-PeCDF	200.33	82.3	21 - 178	31.2575	31.14815	0.1093	N/A	
13C12-1,2,3,7,8-PeCDD	200.33	75.8	25 - 181	31.4915	31.40067	0.0908	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.33	72.1	26 - 152	34.8672	34.782	0.0852	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.33	66.8	26 - 123	35.012	34.91943	0.0926	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.33	69.6	28 - 136	35.881	35.7884	0.0926	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.33	76.7	29 - 147	36.906	36.8227	0.0833	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.33	77.3	32 - 141	35.9923	35.90912	0.0832	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.33	70.3	28 - 130	36.1038	36.0242	0.0796	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.33	71.7	28 - 143	38.7442	38.67025	0.0739	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.33	70.6	26 - 138	40.9948	40.90587	0.0889	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.33	74.2	23 - 140	40.2483	40.16678	0.0815	N/A	
13C12-OCDD	400.66	81.5	17 - 157	44.9772	44.88763	0.0896	N/A	
37Cl4-2,3,7,8-TCDD	80.132	83.6	35 - 197	26.4108	26.30253	0.1083	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	SJI0175-CCV2	Calibration:	EH00030
File ID:	21091123	Analyzed:	09/12/21 04:36

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	102	71 - 129	25.7305	25.63973	0.0908	N/A	
13C12-2,3,7,8-TCDD	100.00	104	82 - 118	26.3657	26.27478	0.0909	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	104	76 - 124	29.8872	29.80383	0.0834	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	105	77 - 123	31.2353	31.14815	0.0871	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	94.2	62 - 138	31.4805	31.40067	0.0798	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	93.1	76 - 124	34.8562	34.782	0.0742	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	86.7	70 - 130	34.9898	34.91943	0.0704	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	92.1	73 - 127	35.8702	35.7884	0.0818	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	95.8	74 - 126	36.895	36.8227	0.0723	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	96.7	85 - 115	35.9703	35.90912	0.0612	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	90.5	85 - 115	36.0928	36.0242	0.0686	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	95.5	78 - 122	38.7335	38.67025	0.0632	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	93.8	77 - 123	40.984	40.90587	0.0781	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	96.6	72 - 128	40.2263	40.16678	0.0595	N/A	
13C12-OCDD	200.00	104	48 - 152	44.9593	44.88763	0.0717	N/A	
37Cl4-2,3,7,8-TCDD	10.000	97.8	0 - 200	26.3807	26.30253	0.0782	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-09	Calibration:	EH00030
File ID:	21091125	Analyzed:	09/12/21 06:20

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.92	70.8	24 - 169	25.7608	25.63973	0.1211	N/A	
13C12-2,3,7,8-TCDD	199.92	76.5	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	199.92	81.7	24 - 185	29.9092	29.80383	0.1054	N/A	
13C12-2,3,4,7,8-PeCDF	199.92	79.9	21 - 178	31.2573	31.14815	0.1092	N/A	
13C12-1,2,3,7,8-PeCDD	199.92	74.0	25 - 181	31.4913	31.40067	0.0906	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.92	75.2	26 - 152	34.867	34.782	0.0850	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.92	69.5	26 - 123	35.0118	34.91943	0.0924	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.92	72.3	28 - 136	35.881	35.7884	0.0926	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.92	78.2	29 - 147	36.917	36.8227	0.0943	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.92	80.4	32 - 141	35.9923	35.90912	0.0832	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.92	74.7	28 - 130	36.1037	36.0242	0.0795	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.92	72.0	28 - 143	38.7442	38.67025	0.0739	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.92	68.4	26 - 138	40.9947	40.90587	0.0888	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.92	73.5	23 - 140	40.2483	40.16678	0.0815	N/A	
13C12-OCDD	399.85	74.3	17 - 157	44.977	44.88763	0.0894	N/A	
37Cl4-2,3,7,8-TCDD	79.970	77.6	35 - 197	26.4108	26.30253	0.1083	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-10	Calibration:	EH00030
File ID:	21091126	Analyzed:	09/12/21 07:09

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.98	82.9	24 - 169	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	199.98	88.1	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	199.98	90.6	24 - 185	29.898	29.80383	0.0942	N/A	
13C12-2,3,4,7,8-PeCDF	199.98	90.7	21 - 178	31.2463	31.14815	0.0982	N/A	
13C12-1,2,3,7,8-PeCDD	199.98	81.4	25 - 181	31.4913	31.40067	0.0906	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.98	77.0	26 - 152	34.856	34.782	0.0740	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.98	72.2	26 - 123	35.0008	34.91943	0.0814	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.98	76.0	28 - 136	35.8698	35.7884	0.0814	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.98	84.2	29 - 147	36.9058	36.8227	0.0831	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.98	81.5	32 - 141	35.9812	35.90912	0.0721	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.98	75.6	28 - 130	36.1037	36.0242	0.0795	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.98	76.5	28 - 143	38.7442	38.67025	0.0739	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.98	77.0	26 - 138	40.9948	40.90587	0.0889	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.98	78.0	23 - 140	40.2372	40.16678	0.0704	N/A	
13C12-OCDD	399.96	85.1	17 - 157	44.977	44.88763	0.0894	N/A	
37Cl4-2,3,7,8-TCDD	79.992	88.2	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-11	Calibration:	EH00030
File ID:	21091127	Analyzed:	09/12/21 07:58

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.72	62.4	24 - 169	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	199.72	68.2	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	199.72	83.0	24 - 185	29.8982	29.80383	0.0944	N/A	
13C12-2,3,4,7,8-PeCDF	199.72	83.2	21 - 178	31.2463	31.14815	0.0982	N/A	
13C12-1,2,3,7,8-PeCDD	199.72	76.3	25 - 181	31.4915	31.40067	0.0908	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.72	76.2	26 - 152	34.8783	34.782	0.0963	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.72	70.1	26 - 123	35.012	34.91943	0.0926	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.72	74.6	28 - 136	35.9033	35.7884	0.1149	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.72	68.7	29 - 147	36.9172	36.8227	0.0945	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.72	80.3	32 - 141	36.0147	35.90912	0.1056	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.72	75.6	28 - 130	36.1262	36.0242	0.1020	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.72	77.0	28 - 143	38.7555	38.67025	0.0852	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.72	75.0	26 - 138	40.9948	40.90587	0.0889	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.72	78.0	23 - 140	40.2485	40.16678	0.0817	N/A	
13C12-OCDD	399.43	83.3	17 - 157	44.9863	44.88763	0.0987	N/A	
37Cl4-2,3,7,8-TCDD	79.886	66.8	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-12	Calibration:	EH00030
File ID:	21091128	Analyzed:	09/12/21 08:47

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	203.40	80.4	24 - 169	25.7458	25.63973	0.1061	N/A	
13C12-2,3,7,8-TCDD	203.40	85.0	25 - 164	26.3808	26.27478	0.1060	N/A	
13C12-1,2,3,7,8-PeCDF	203.40	85.4	24 - 185	29.8985	29.80383	0.0947	N/A	
13C12-2,3,4,7,8-PeCDF	203.40	83.8	21 - 178	31.2465	31.14815	0.0983	N/A	
13C12-1,2,3,7,8-PeCDD	203.40	77.8	25 - 181	31.4917	31.40067	0.0910	N/A	
13C12-1,2,3,4,7,8-HxCDF	203.40	75.7	26 - 152	34.8675	34.782	0.0855	N/A	
13C12-1,2,3,6,7,8-HxCDF	203.40	71.1	26 - 123	35.0123	34.91943	0.0929	N/A	
13C12-2,3,4,6,7,8-HxCDF	203.40	73.1	28 - 136	35.8813	35.7884	0.0929	N/A	
13C12-1,2,3,7,8,9-HxCDF	203.40	79.8	29 - 147	36.9175	36.8227	0.0948	N/A	
13C12-1,2,3,4,7,8-HxCDD	203.40	80.9	32 - 141	35.9928	35.90912	0.0837	N/A	
13C12-1,2,3,6,7,8-HxCDD	203.40	74.7	28 - 130	36.1042	36.0242	0.0800	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	203.40	71.4	28 - 143	38.7447	38.67025	0.0744	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	203.40	69.0	26 - 138	40.9953	40.90587	0.0894	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	203.40	73.1	23 - 140	40.2488	40.16678	0.0820	N/A	
13C12-OCDD	406.79	74.5	17 - 157	44.9775	44.88763	0.0899	N/A	
37Cl4-2,3,7,8-TCDD	81.359	85.8	35 - 197	26.396	26.30253	0.0935	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-13	Calibration:	EH00030
File ID:	21091129	Analyzed:	09/12/21 09:36

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.86	66.4	24 - 169	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	199.86	74.7	25 - 164	26.3655	26.27478	0.0907	N/A	
13C12-1,2,3,7,8-PeCDF	199.86	81.8	24 - 185	29.898	29.80383	0.0942	N/A	
13C12-2,3,4,7,8-PeCDF	199.86	81.1	21 - 178	31.2463	31.14815	0.0982	N/A	
13C12-1,2,3,7,8-PeCDD	199.86	73.7	25 - 181	31.4913	31.40067	0.0906	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.86	75.5	26 - 152	34.8672	34.782	0.0852	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.86	70.0	26 - 123	35.001	34.91943	0.0816	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.86	73.3	28 - 136	35.8922	35.7884	0.1038	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.86	76.9	29 - 147	36.906	36.8227	0.0833	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.86	78.1	32 - 141	35.9925	35.90912	0.0834	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.86	72.0	28 - 130	36.115	36.0242	0.0908	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.86	71.4	28 - 143	38.7445	38.67025	0.0742	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.86	68.1	26 - 138	40.995	40.90587	0.0891	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.86	71.5	23 - 140	40.2373	40.16678	0.0705	N/A	
13C12-OCDD	399.72	77.1	17 - 157	44.9773	44.88763	0.0897	N/A	
37Cl4-2,3,7,8-TCDD	79.943	74.7	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	21G0138-14	Calibration:	EH00030
File ID:	21091130	Analyzed:	09/12/21 10:25

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	200.30	77.8	24 - 169	25.7608	25.63973	0.1211	N/A	
13C12-2,3,7,8-TCDD	200.30	81.8	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	200.30	84.7	24 - 185	29.9093	29.80383	0.1055	N/A	
13C12-2,3,4,7,8-PeCDF	200.30	82.2	21 - 178	31.2573	31.14815	0.1092	N/A	
13C12-1,2,3,7,8-PeCDD	200.30	76.0	25 - 181	31.5025	31.40067	0.1018	N/A	
13C12-1,2,3,4,7,8-HxCDF	200.30	73.9	26 - 152	34.8672	34.782	0.0852	N/A	
13C12-1,2,3,6,7,8-HxCDF	200.30	69.1	26 - 123	35.0118	34.91943	0.0924	N/A	
13C12-2,3,4,6,7,8-HxCDF	200.30	71.2	28 - 136	35.8922	35.7884	0.1038	N/A	
13C12-1,2,3,7,8,9-HxCDF	200.30	71.5	29 - 147	36.917	36.8227	0.0943	N/A	
13C12-1,2,3,4,7,8-HxCDD	200.30	78.0	32 - 141	36.0035	35.90912	0.0944	N/A	
13C12-1,2,3,6,7,8-HxCDD	200.30	72.3	28 - 130	36.115	36.0242	0.0908	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	200.30	71.9	28 - 143	38.7553	38.67025	0.0850	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	200.30	71.9	26 - 138	41.0058	40.90587	0.0999	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	200.30	75.7	23 - 140	40.2482	40.16678	0.0814	N/A	
13C12-OCDD	400.59	82.2	17 - 157	44.9862	44.88763	0.0986	N/A	
37Cl4-2,3,7,8-TCDD	80.118	81.9	35 - 197	26.411	26.30253	0.1085	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0175	Instrument:	AUTOSPEC01
Sample ID:	SJI0175-CCV3	Calibration:	EH00030
File ID:	21091131	Analyzed:	09/12/21 11:14

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	104	71 - 129	25.7305	25.63973	0.0908	N/A	
13C12-2,3,7,8-TCDD	100.00	103	82 - 118	26.3657	26.27478	0.0909	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	104	76 - 124	29.8872	29.80383	0.0834	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	103	77 - 123	31.2352	31.14815	0.0870	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	93.3	62 - 138	31.4803	31.40067	0.0796	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	91.6	76 - 124	34.845	34.782	0.0630	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	84.9	70 - 130	34.99	34.91943	0.0706	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	88.7	73 - 127	35.859	35.7884	0.0706	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	95.0	74 - 126	36.895	36.8227	0.0723	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	96.8	85 - 115	35.9703	35.90912	0.0612	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	90.1	85 - 115	36.0818	36.0242	0.0576	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	93.0	78 - 122	38.7333	38.67025	0.0630	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	89.6	77 - 123	40.984	40.90587	0.0781	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	92.1	72 - 128	40.2263	40.16678	0.0595	N/A	
13C12-OCDD	200.00	98.8	48 - 152	44.959	44.88763	0.0714	N/A	
37Cl4-2,3,7,8-TCDD	10.000	98.7	0 - 200	26.3807	26.30253	0.0782	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0191	Instrument:	AUTOSPEC01
Sample ID:	SJI0191-ICV1	Calibration:	EH00030
File ID:	21091306A	Analyzed:	09/13/21 15:52

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	121	71 - 129	25.7307	25.63973	0.0910	N/A	
13C12-2,3,7,8-TCDD	100.00	105	82 - 118	26.3657	26.27478	0.0909	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	117	76 - 124	29.887	29.80383	0.0832	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	118	77 - 123	31.2352	31.14815	0.0870	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	106	62 - 138	31.4803	31.40067	0.0796	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	94.9	76 - 124	34.8563	34.782	0.0743	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	89.3	70 - 130	34.99	34.91943	0.0706	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	92.7	73 - 127	35.8702	35.7884	0.0818	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	90.4	74 - 126	36.8952	36.8227	0.0725	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	98.9	85 - 115	35.9703	35.90912	0.0612	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	96.7	85 - 115	36.0817	36.0242	0.0575	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	99.4	78 - 122	38.7335	38.67025	0.0632	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	92.2	77 - 123	40.984	40.90587	0.0781	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	91.7	72 - 128	40.2375	40.16678	0.0707	N/A	
13C12-OCDD	200.00	105	48 - 152	44.9592	44.88763	0.0716	N/A	
37Cl4-2,3,7,8-TCDD	10.000	102	0 - 200	26.3808	26.30253	0.0783	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0191	Instrument:	AUTOSPEC01
Sample ID:	SJI0191-CCV1	Calibration:	EH00030
File ID:	21091317	Analyzed:	09/14/21 00:57

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	111	71 - 129	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	100.00	104	82 - 118	26.3655	26.27478	0.0907	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	107	76 - 124	29.8983	29.80383	0.0945	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	106	77 - 123	31.2463	31.14815	0.0982	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	99.0	62 - 138	31.4915	31.40067	0.0908	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	89.6	76 - 124	34.8562	34.782	0.0742	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	83.1	70 - 130	35.001	34.91943	0.0816	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	86.5	73 - 127	35.8702	35.7884	0.0818	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	89.0	74 - 126	36.9062	36.8227	0.0835	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	97.7	85 - 115	35.9815	35.90912	0.0724	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	89.8	85 - 115	36.0928	36.0242	0.0686	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	88.8	78 - 122	38.7445	38.67025	0.0742	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	83.5	77 - 123	40.995	40.90587	0.0891	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	87.3	72 - 128	40.2373	40.16678	0.0705	N/A	
13C12-OCDD	200.00	92.0	48 - 152	44.9773	44.88763	0.0897	N/A	
37Cl4-2,3,7,8-TCDD	10.000	98.6	0 - 200	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0191	Instrument:	AUTOSPEC01
Sample ID:	21G0138-02RE1	Calibration:	EH00030
File ID:	21091326	Analyzed:	09/14/21 08:25

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.85	124	24 - 169	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	199.85	124	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	199.85	128	24 - 185	29.8982	29.80383	0.0944	N/A	
13C12-2,3,4,7,8-PeCDF	199.85	130	21 - 178	31.2463	31.14815	0.0982	N/A	
13C12-1,2,3,7,8-PeCDD	199.85	127	25 - 181	31.4913	31.40067	0.0906	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.85	109	26 - 152	34.8673	34.782	0.0853	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.85	104	26 - 123	35.001	34.91943	0.0816	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.85	106	28 - 136	35.881	35.7884	0.0926	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.85	109	29 - 147	36.906	36.8227	0.0833	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.85	119	32 - 141	35.9813	35.90912	0.0722	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.85	111	28 - 130	36.0927	36.0242	0.0685	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.85	105	28 - 143	38.7443	38.67025	0.0740	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.85	102	26 - 138	40.9948	40.90587	0.0889	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.85	108	23 - 140	40.2483	40.16678	0.0815	N/A	
13C12-OCDD	399.70	123	17 - 157	44.9863	44.88763	0.0987	N/A	
37Cl4-2,3,7,8-TCDD	79.941	117	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0191	Instrument:	AUTOSPEC01
Sample ID:	BJH0150-DUP3	Calibration:	EH00030
File ID:	21091327	Analyzed:	09/14/21 09:14

Surrogate Compound	Spike Level ng/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	199.98	102	24 - 169	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	199.98	96.8	25 - 164	26.3807	26.27478	0.1059	N/A	
13C12-1,2,3,7,8-PeCDF	199.98	102	24 - 185	29.9093	29.80383	0.1055	N/A	
13C12-2,3,4,7,8-PeCDF	199.98	100	21 - 178	31.2575	31.14815	0.1093	N/A	
13C12-1,2,3,7,8-PeCDD	199.98	90.2	25 - 181	31.4915	31.40067	0.0908	N/A	
13C12-1,2,3,4,7,8-HxCDF	199.98	82.0	26 - 152	34.8672	34.782	0.0852	N/A	
13C12-1,2,3,6,7,8-HxCDF	199.98	79.6	26 - 123	35.012	34.91943	0.0926	N/A	
13C12-2,3,4,6,7,8-HxCDF	199.98	77.8	28 - 136	35.8812	35.7884	0.0928	N/A	
13C12-1,2,3,7,8,9-HxCDF	199.98	88.5	29 - 147	36.917	36.8227	0.0943	N/A	
13C12-1,2,3,4,7,8-HxCDD	199.98	73.7	32 - 141	35.9925	35.90912	0.0834	N/A	
13C12-1,2,3,6,7,8-HxCDD	199.98	73.5	28 - 130	36.104	36.0242	0.0798	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	199.98	66.3	28 - 143	38.7553	38.67025	0.0850	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	199.98	71.0	26 - 138	41.006	40.90587	0.1001	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	199.98	48.8	23 - 140	40.2485	40.16678	0.0817	N/A	
13C12-OCDD	399.95	42.5	17 - 157	45.0045	44.88763	0.1169	N/A	
37Cl4-2,3,7,8-TCDD	79.990	94.7	35 - 197	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 1613B

Laboratory:	Analytical Resources, Inc.	SDG:	21G0138
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJI0191	Instrument:	AUTOSPEC01
Sample ID:	SJI0191-CCV2	Calibration:	EH00030
File ID:	21091328A	Analyzed:	09/14/21 10:03

Surrogate Compound	Spike Level ng/mL	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
13C12-2,3,7,8-TCDF	100.00	119	71 - 129	25.7457	25.63973	0.1060	N/A	
13C12-2,3,7,8-TCDD	100.00	106	82 - 118	26.3657	26.27478	0.0909	N/A	
13C12-1,2,3,7,8-PeCDF	100.00	114	76 - 124	29.8982	29.80383	0.0944	N/A	
13C12-2,3,4,7,8-PeCDF	100.00	113	77 - 123	31.2465	31.14815	0.0983	N/A	
13C12-1,2,3,7,8-PeCDD	100.00	104	62 - 138	31.4917	31.40067	0.0910	N/A	
13C12-1,2,3,4,7,8-HxCDF	100.00	93.4	76 - 124	34.8675	34.782	0.0855	N/A	
13C12-1,2,3,6,7,8-HxCDF	100.00	87.5	70 - 130	35.0012	34.91943	0.0818	N/A	
13C12-2,3,4,6,7,8-HxCDF	100.00	90.6	73 - 127	35.8702	35.7884	0.0818	N/A	
13C12-1,2,3,7,8,9-HxCDF	100.00	88.2	74 - 126	36.9063	36.8227	0.0836	N/A	
13C12-1,2,3,4,7,8-HxCDD	100.00	98.2	85 - 115	35.9815	35.90912	0.0724	N/A	
13C12-1,2,3,6,7,8-HxCDD	100.00	93.7	85 - 115	36.093	36.0242	0.0688	N/A	
13C12-1,2,3,4,6,7,8-HpCDF	100.00	88.7	78 - 122	38.7447	38.67025	0.0744	N/A	
13C12-1,2,3,4,7,8,9-HpCDF	100.00	83.0	77 - 123	40.9952	40.90587	0.0893	N/A	
13C12-1,2,3,4,6,7,8-HpCDD	100.00	83.1	72 - 128	40.2377	40.16678	0.0709	N/A	
13C12-OCDD	200.00	86.9	48 - 152	44.9775	44.88763	0.0899	N/A	
37Cl4-2,3,7,8-TCDD	10.000	102	0 - 200	26.3958	26.30253	0.0933	N/A	

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HOLDING TIME SUMMARY

Analysis: EPA 1613B

Laboratory: Analytical Resources, Inc. SDG: 21G0138

Client: Anchor QEA, LLC Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW21-IT662B 21G0138-02	07/13/21 07:42	07/13/21 17:25	08/24/21 14:05	42	14	09/11/21 22:03	18	365	*
LDW21-IT662B 21G0138-02RE1	07/13/21 07:42	07/13/21 17:25	08/24/21 14:05	42	14	09/14/21 08:25	21	365	*
LDW21-IT662C 21G0138-03	07/13/21 07:42	07/13/21 17:25	08/24/21 14:05	42	14	09/11/21 23:42	18	365	*
LDW21-IT662E 21G0138-04	07/13/21 07:42	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 00:31	18	365	*
LDW21-IT659B 21G0138-05	07/13/21 08:17	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 01:20	18	365	*
LDW21-IT659C 21G0138-06	07/13/21 08:17	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 02:09	19	365	*
LDW21-IT659E 21G0138-07	07/13/21 08:17	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 02:58	19	365	*
LDW21-IT658B 21G0138-08	07/13/21 09:01	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 03:46	19	365	*
LDW21-IT658C 21G0138-09	07/13/21 09:01	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 06:20	19	365	*
LDW21-IT658E 21G0138-10	07/13/21 09:01	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 07:09	19	365	*
LDW21-IT657B 21G0138-11	07/13/21 10:20	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 07:58	19	365	*
LDW21-IT657C 21G0138-12	07/13/21 10:20	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 08:47	19	365	*
LDW21-IT648B 21G0138-13	07/13/21 11:32	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 09:36	19	365	*
LDW21-IT648C 21G0138-14	07/13/21 11:32	07/13/21 17:25	08/24/21 14:05	42	14	09/12/21 10:25	19	365	*
Duplicate BJH0150-DUP2	07/13/21 07:42	07/13/21 17:25	08/24/21 14:05	42	14	09/11/21 22:52	18	365	*
Duplicate BJH0150-DUP3	07/13/21 07:42	07/13/21 17:25	08/24/21 14:05	42	14	09/14/21 09:14	21	365	*

* Indicates hold time exceedance.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: AUTOSPEC01

Analyte	MDL	RL	Units
2,3,7,8-TCDF	0.058	1.00	ng/kg
2,3,7,8-TCDD	0.150	1.00	ng/kg
1,2,3,7,8-PeCDF	0.240	1.00	ng/kg
2,3,4,7,8-PeCDF	0.220	1.00	ng/kg
1,2,3,7,8-PeCDD	0.170	1.00	ng/kg
1,2,3,4,7,8-HxCDF	0.280	1.00	ng/kg
1,2,3,6,7,8-HxCDF	0.200	1.00	ng/kg
2,3,4,6,7,8-HxCDF	0.170	1.00	ng/kg
1,2,3,7,8,9-HxCDF	0.190	1.00	ng/kg
1,2,3,4,7,8-HxCDD	0.170	1.00	ng/kg
1,2,3,6,7,8-HxCDD	0.180	1.00	ng/kg
1,2,3,7,8,9-HxCDD	0.220	1.00	ng/kg
1,2,3,4,6,7,8-HpCDF	0.210	1.00	ng/kg
1,2,3,4,7,8,9-HpCDF	0.240	1.00	ng/kg
1,2,3,4,6,7,8-HpCDD	0.560	2.50	ng/kg
OCDF	1.10	2.50	ng/kg
OCDD	4.60	10.0	ng/kg
Total TCDF		1.00	ng/kg
Total TCDD		1.00	ng/kg
Total PeCDF		1.00	ng/kg
Total PeCDD		1.00	ng/kg
Total HxCDF		1.00	ng/kg
Total HxCDD		1.00	ng/kg
Total HpCDF		1.00	ng/kg
Total HpCDD		1.00	ng/kg

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 1613B

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Water
Instrument: AUTOSPEC01

Analyte	MDL	RL	Units
2,3,7,8-TCDF	1.20	10.0	pg/L
2,3,7,8-TCDD	1.30	10.0	pg/L
1,2,3,7,8-PeCDF	4.20	10.0	pg/L
2,3,4,7,8-PeCDF	4.00	10.0	pg/L
1,2,3,7,8-PeCDD	4.00	10.0	pg/L
1,2,3,4,7,8-HxCDF	3.80	10.0	pg/L
1,2,3,6,7,8-HxCDF	3.90	10.0	pg/L
2,3,4,6,7,8-HxCDF	3.50	10.0	pg/L
1,2,3,7,8,9-HxCDF	3.60	10.0	pg/L
1,2,3,4,7,8-HxCDD	4.10	10.0	pg/L
1,2,3,6,7,8-HxCDD	3.80	10.0	pg/L
1,2,3,7,8,9-HxCDD	3.40	10.0	pg/L
1,2,3,4,6,7,8-HpCDF	11.0	20.0	pg/L
1,2,3,4,7,8,9-HpCDF	3.60	10.0	pg/L
1,2,3,4,6,7,8-HpCDD	6.00	10.0	pg/L
OCDF	16.0	20.0	pg/L
OCDD	39.0	50.0	pg/L

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

CS3WT

Calibration and Verification Solution (EPA-1613CS3) combined with Window Defining and 2,3,7,8-TCDD Resolution Testing Congeners

PRODUCT CODE:	CS3WT
LOT NUMBER:	CS3WT0617
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	06/27/2017
LAST TESTED: (mm/dd/yyyy)	06/27/2017
EXPIRY DATE: (mm/dd/yyyy)	06/27/2024
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

G001361
1613 CS3WT CCAL STD
Expires 6/27/2024
Prepared By Joshua Rains 2/13/2018

DESCRIPTION:

CS3WT is a solution/mixture of native and $^{13}C_{12}$-labelled chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

CS3WT was designed and prepared to be used as a HRMS calibration standard according to U.S. EPA Method 1613B.

It is to be used for calibration verification in place of EPA-1613CS3 (Lot: 13CS30617). It also contains the PCDD and PCDF window defining congeners for a DB-5 (or equivalent) capillary column as well as the TCDD isomers required to test and confirm the resolution of 2,3,7,8-TCDD.

The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-$^{37}Cl_4$-tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%. The individual native 2,3,7,8-substituted PCDD and PCDF congeners all have chemical purities of >98%; the other congeners (window defining and resolution testing) should only be considered semi-quantitative.

This current lot of CS3WT (CS3WT0617) is to be used with the 1613 calibration solutions having the following lot numbers:

PRODUCT CODE	LOT NUMBER
EPA-1613CS1	13CS10617
EPA-1613CS2	13CS20617
EPA-1613CS3	13CS30617
EPA-1613CS4	13CS40617
EPA-1613CS5	13CS50617
EPA-1613CSL	13CSL0617
EPA-1613CS0.5	13CS0.50617

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 3 for further details.
- Only the 2,3,7,8-substituted PCDDs and PCDFs should be used for quantitation. The other congeners (window defining and 2378-TCDD resolution testing) should be considered semi-quantitative (within ±20% of their design value). Impurities have been identified where possible.

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HAZARDS:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) has been assigned to the quantitative analytes in this mixture. Conversely, semi-quantitative analytes have been assigned an uncertainty of ±20%.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **CS3WT; Components and Concentrations (ng/ml, in nonane/4.5% toluene)**

QUANTITATIVE ANALYTES (ng/ml, ±5%)

Native PCDDs & PCDFs:

2,3,7,8-TCDD	10
2,3,7,8-TCDF	10
1,2,3,7,8-PeCDD	50
1,2,3,7,8-PeCDF	50
2,3,4,7,8-PeCDF	50
1,2,3,4,7,8-HxCDD	50
1,2,3,6,7,8-HxCDD	50
1,2,3,7,8,9-HxCDD	50
1,2,3,4,7,8-HxCDF	50
1,2,3,6,7,8-HxCDF	50
1,2,3,7,8,9-HxCDF	50
2,3,4,6,7,8-HxCDF	50
1,2,3,4,6,7,8-HpCDD *(WD)*	50
1,2,3,4,6,7,8-HpCDF *(WD)*	50
1,2,3,4,7,8,9-HpCDF *(WD)*	50
OCDD	100
OCDF	100

Labelled PCDDs & PCDFs:

$^{13}C_{12}$-2,3,7,8-TCDD	100
$^{13}C_{12}$-2,3,7,8-TCDF	100
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100
$^{13}C_{12}$-OCDD	200

Cleanup Standard:

$^{37}Cl_4$-2,3,7,8-TCDD	10

Internal Standards:

$^{13}C_{12}$-1,2,3,4-TCDD	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100

WD – Window Definer

SEMI-QUANTITATIVE ANALYTES (ng/ml, ±20%)

Window Definers:*

1,3,6,8-TCDD	10
1,2,8,9-TCDD	10
1,3,6,8-TCDF	10
1,2,8,9-TCDF	10
1,2,4,6,8/1,2,4,7,9-PeCDD	50
1,2,3,8,9-PeCDD	50
1,3,4,6,8-PeCDF	50
1,2,3,8,9-PeCDF	50
1,2,4,6,7,9-HxCDD	50
1,2,3,4,6,8-HxCDF	50
1,2,3,4,6,7,9-HpCDD	50

2378-TCDD Resolution Testing Isomers:

1,2,3,4-TCDD	5
1,2,3,7/1,2,3,8-TCDD	5
1,2,3,9-TCDD	10

** 1,2,3,4,6,7-HxCDD (last eluting HxCDD) not included; coelutes with 1,2,3,7,8,9-HxCDD. Use 1,2,3,4,6,7,9-HpCDD to set window.*

** 1,2,3,4,8,9-HxCDF (last eluting HxCDF) not included; can interfere with 1,2,3,7,8,9-HxCDF. Use 1,2,3,4,6,7,8-HpCDF to set window.*

Certified By: _____ **Date:** 07/19/2017 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

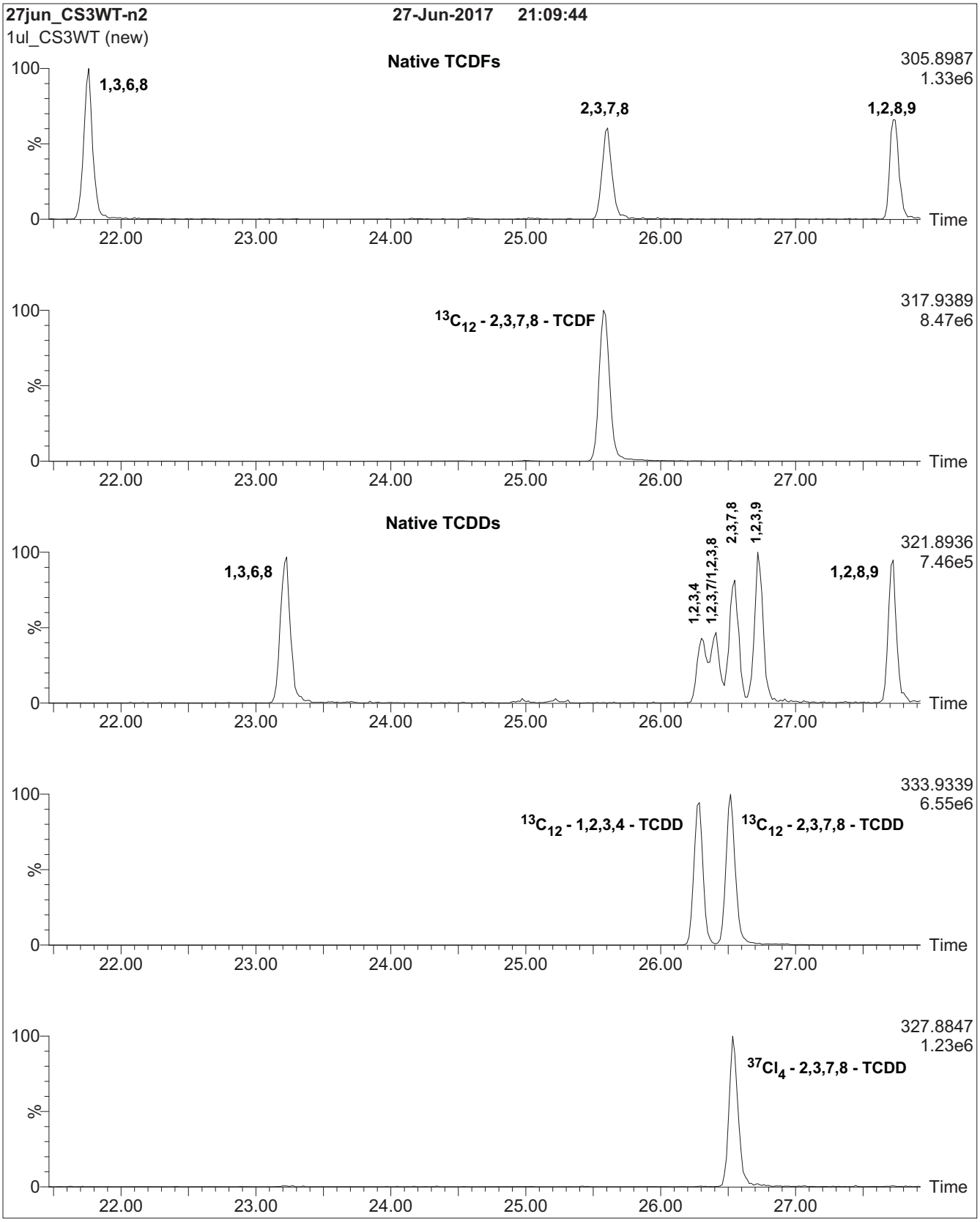


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

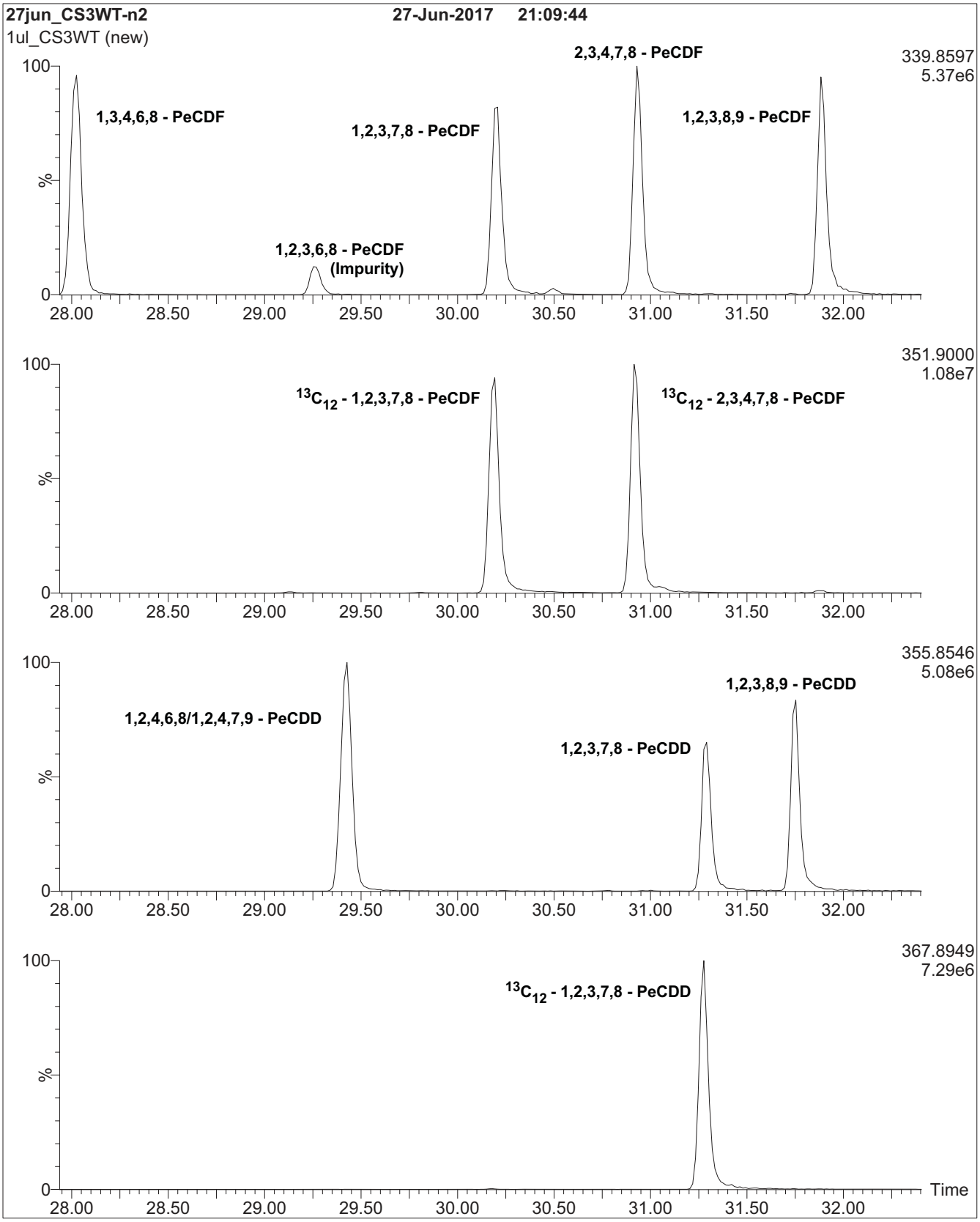


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

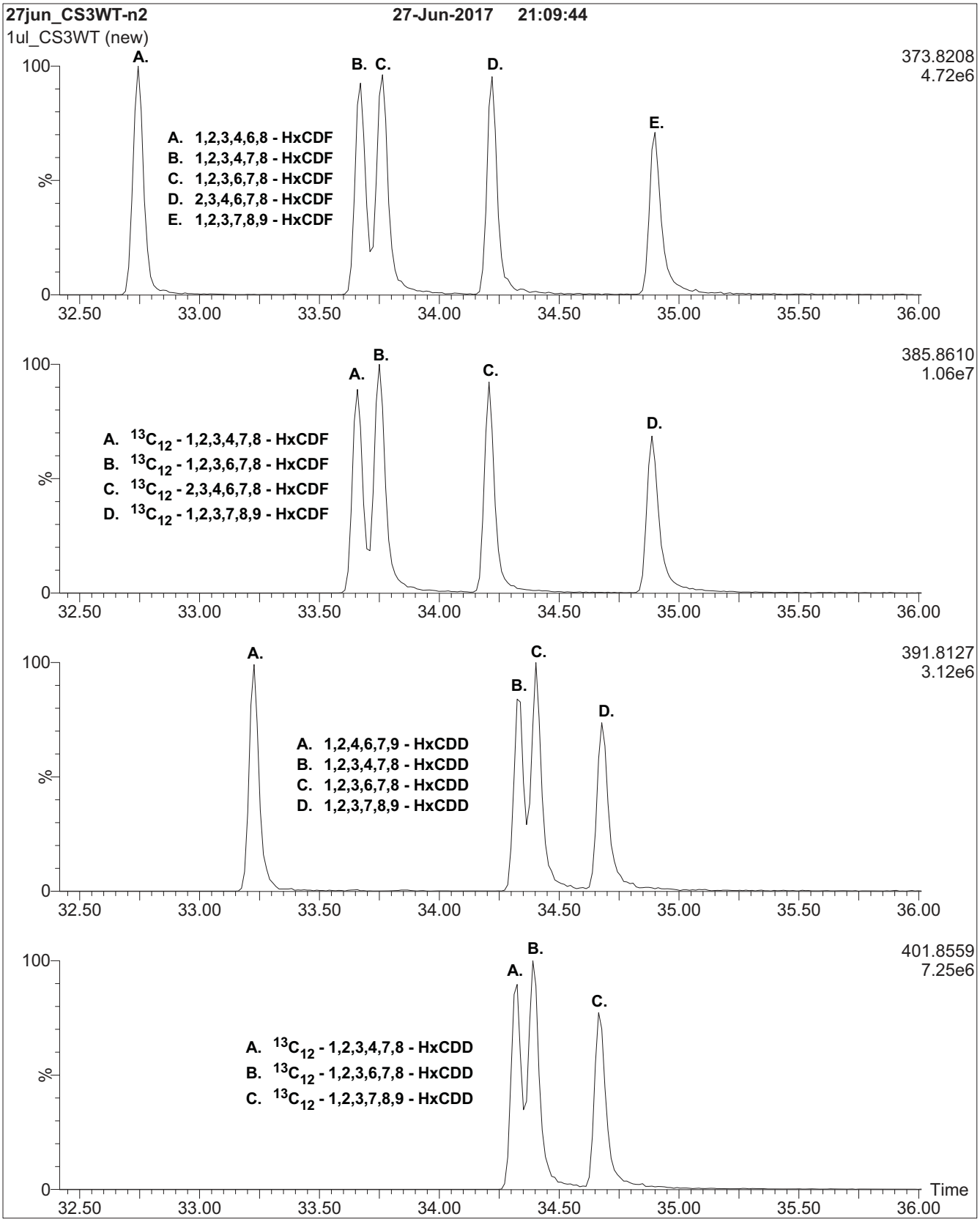


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

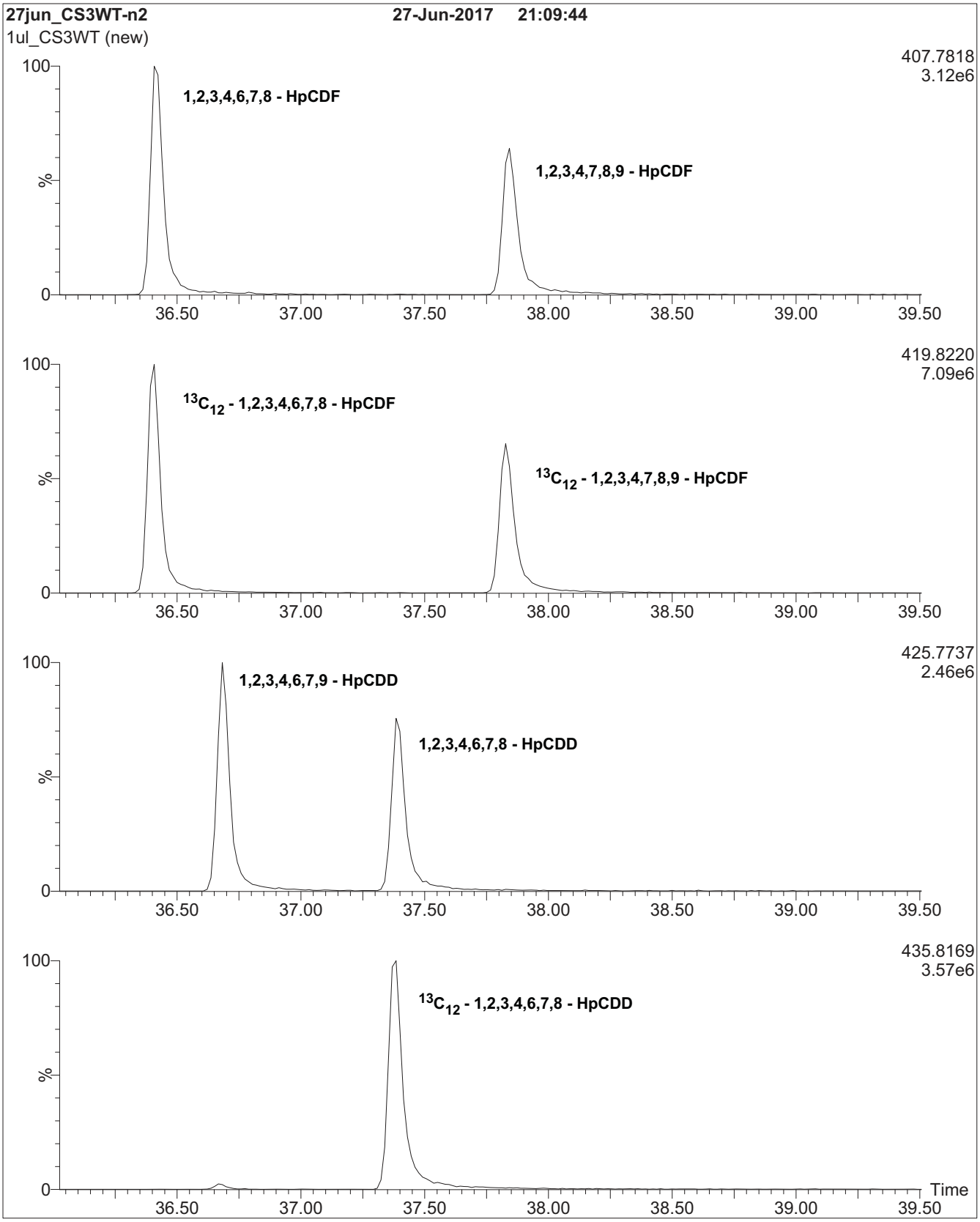
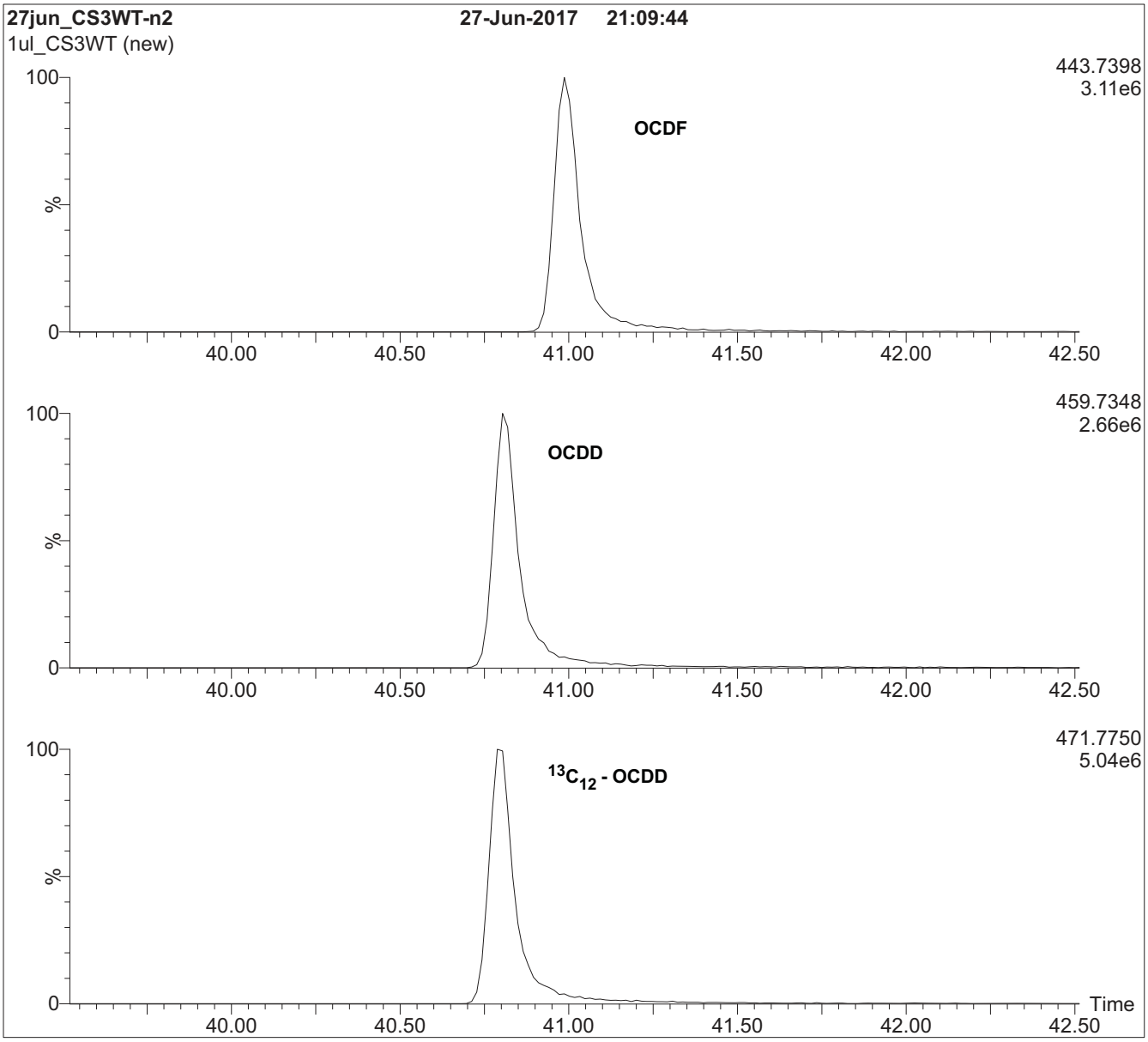


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613PAR

U.S. EPA Method 1613 Native PCDD/PCDF
Precision and Recovery Stock Solution

PRODUCT CODE:	EPA-1613PAR
LOT NUMBER:	13PAR1019
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/16/2019
LAST TESTED: (mm/dd/yyyy)	10/17/2019
EXPIRY DATE: (mm/dd/yyyy)	10/17/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

I000197
1613B Stock OPR Std-40/200/400ng/mL
Expires 10/17/2026
Prepared By Joshua Rains 1/8/2020

DESCRIPTION:

EPA-1613PAR is a solution/mixture of all the 2,3,7,8-substituted chlorinated dibenzo-p-dioxins (PCDDs) and 2,3,7,8-substituted dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613PAR was designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B).

The individual PCDDs and PCDFs all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

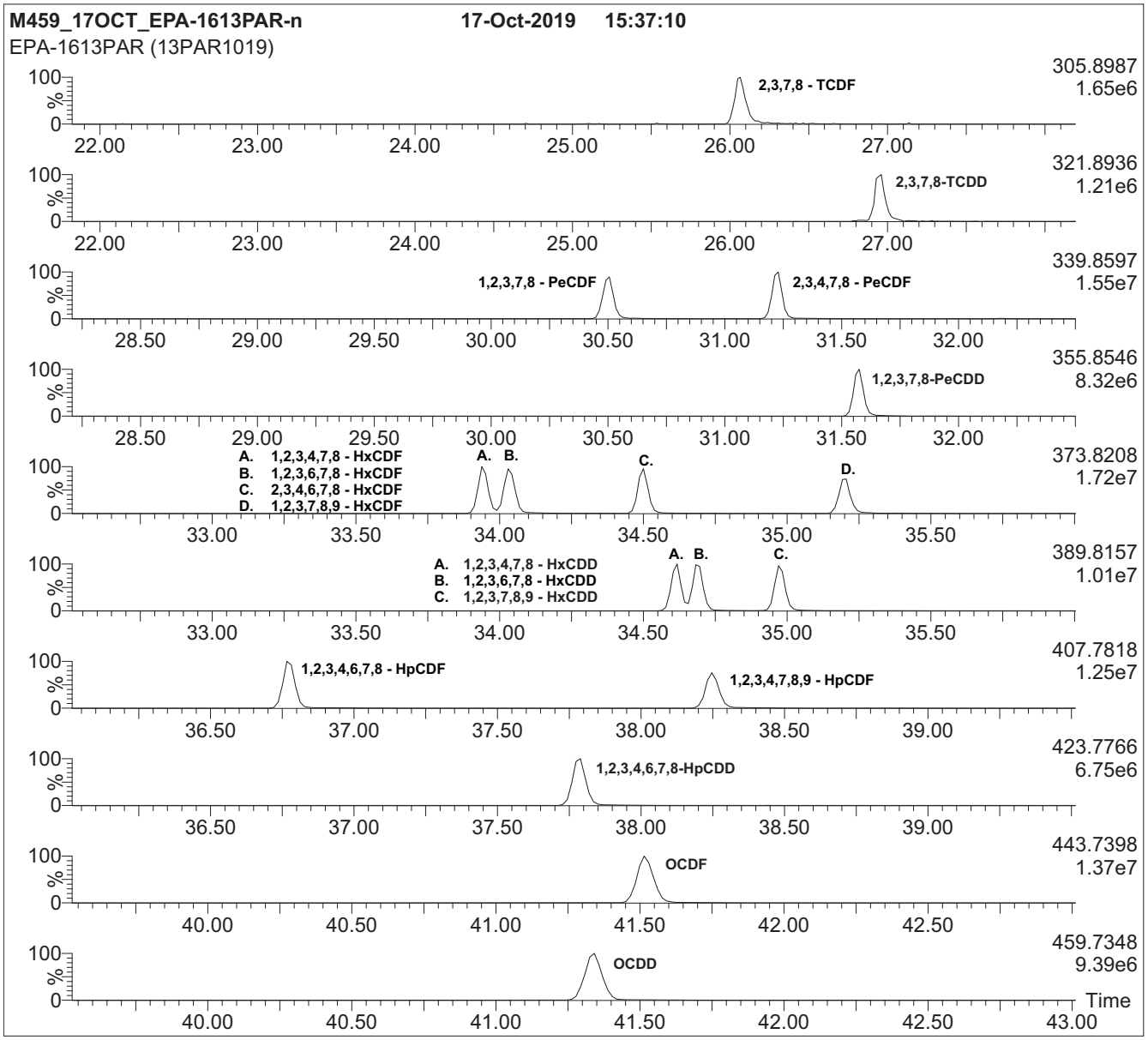
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613PAR; Components and Concentrations (ng/ml, ± 5% in nonane/ 2.4% toluene)**

Component	Concentration (ng/ml)
PCDDs:	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	200
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	200
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	200
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	200
Octachlorodibenzo-p-dioxin	400
PCDFs:	
2,3,7,8-Tetrachlorodibenzofuran	40
1,2,3,7,8-Pentachlorodibenzofuran	200
2,3,4,7,8-Pentachlorodibenzofuran	200
1,2,3,4,7,8-Hexachlorodibenzofuran	200
1,2,3,6,7,8-Hexachlorodibenzofuran	200
1,2,3,7,8,9-Hexachlorodibenzofuran	200
2,3,4,6,7,8-Hexachlorodibenzofuran	200
1,2,3,4,6,7,8-Heptachlorodibenzofuran	200
1,2,3,4,7,8,9-Heptachlorodibenzofuran	200
Octachlorodibenzofuran	400

Certified By: _____ **Date:** 11/07/2019
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **EPA-1613PAR; HRGC/HRMS Data (60 m DB-5 Column)**



HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613CVS
U.S. EPA Method 1613 Calibration and Verification Solutions
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5

PRODUCT CODES:	EPA-1613CVS	**LOT NUMBERS:**	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/22/2019
LAST TESTED: (mm/dd/yyyy)	10/24/2019
EXPIRY DATE: (mm/dd/yyyy)	10/24/2026
RECOMMENDED STORAGE:	Store ampoules in a cool, dark place

I005456
1613 CS1 CAL STD
Expires 10/24/2026
Prepared By Joshua Rains 6/23/2020

DESCRIPTION:

EPA-1613CVS is a series of 5 calibration solutions containing native ($^{12}C_{12}$) and mass-labelled ($^{13}C_{12}$ and $^{37}Cl_4$) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-$^{37}Cl_4$-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations
Table B: 5-point HRGC/HRMS Calibration and RRF Summary
Table C: 7-point HRGC/HRMS Calibration and RRF Summary
Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 3 for further details.

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
Native PCDDs and PCDFs:	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CSL**	**CS0.5**
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
Labelled PCDDs and PCDFs:							
$^{13}C_{12}$-2,3,7,8-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,7,8-TCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-OCDD	200	200	200	200	200	200	200
Cleanup Standard:							
$^{37}Cl_4$-2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
Internal Standards:							
$^{13}C_{12}$-1,2,3,4-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By: _____ **Date:** 10/25/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

Table B: **EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

Table C: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); 7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

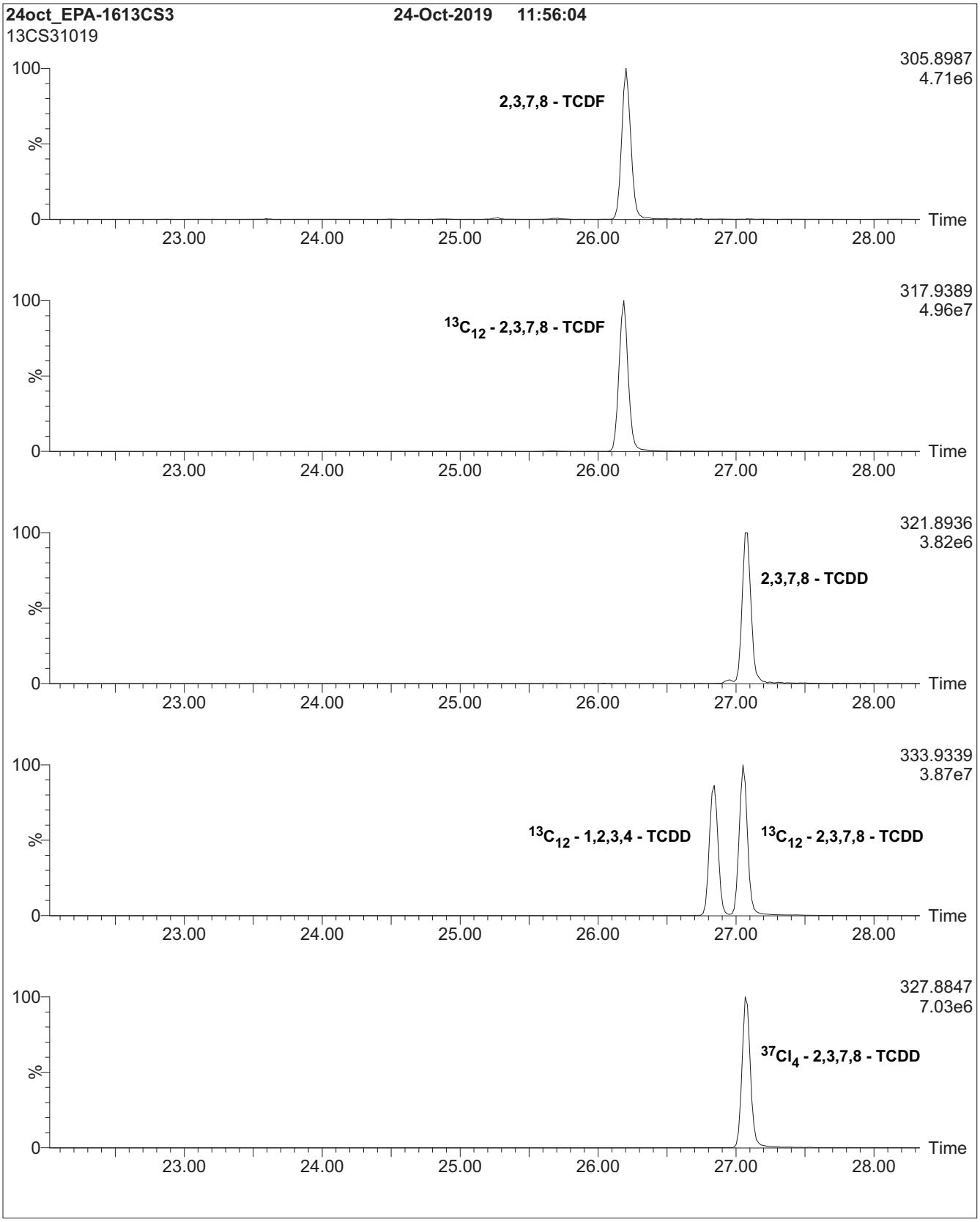


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

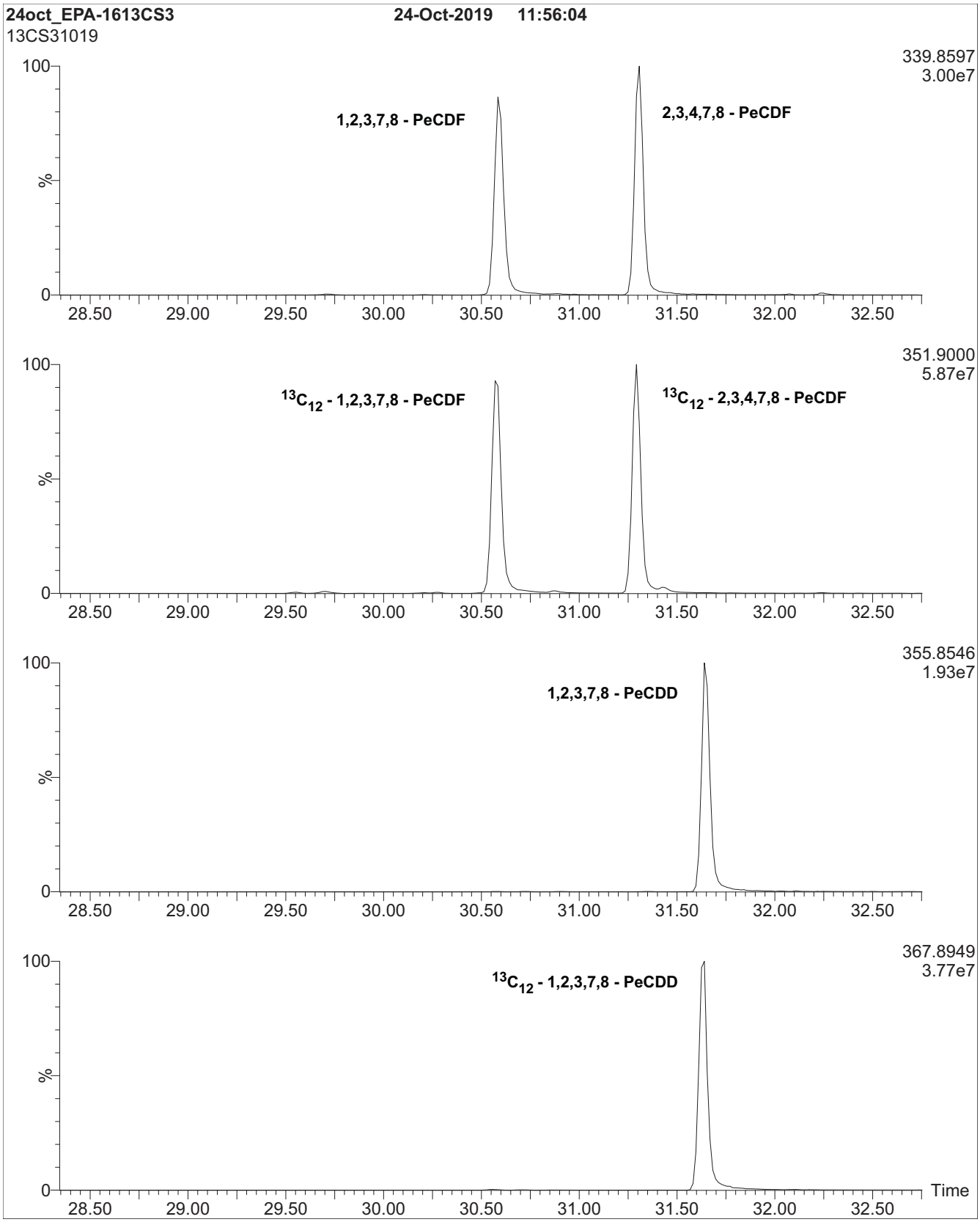


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

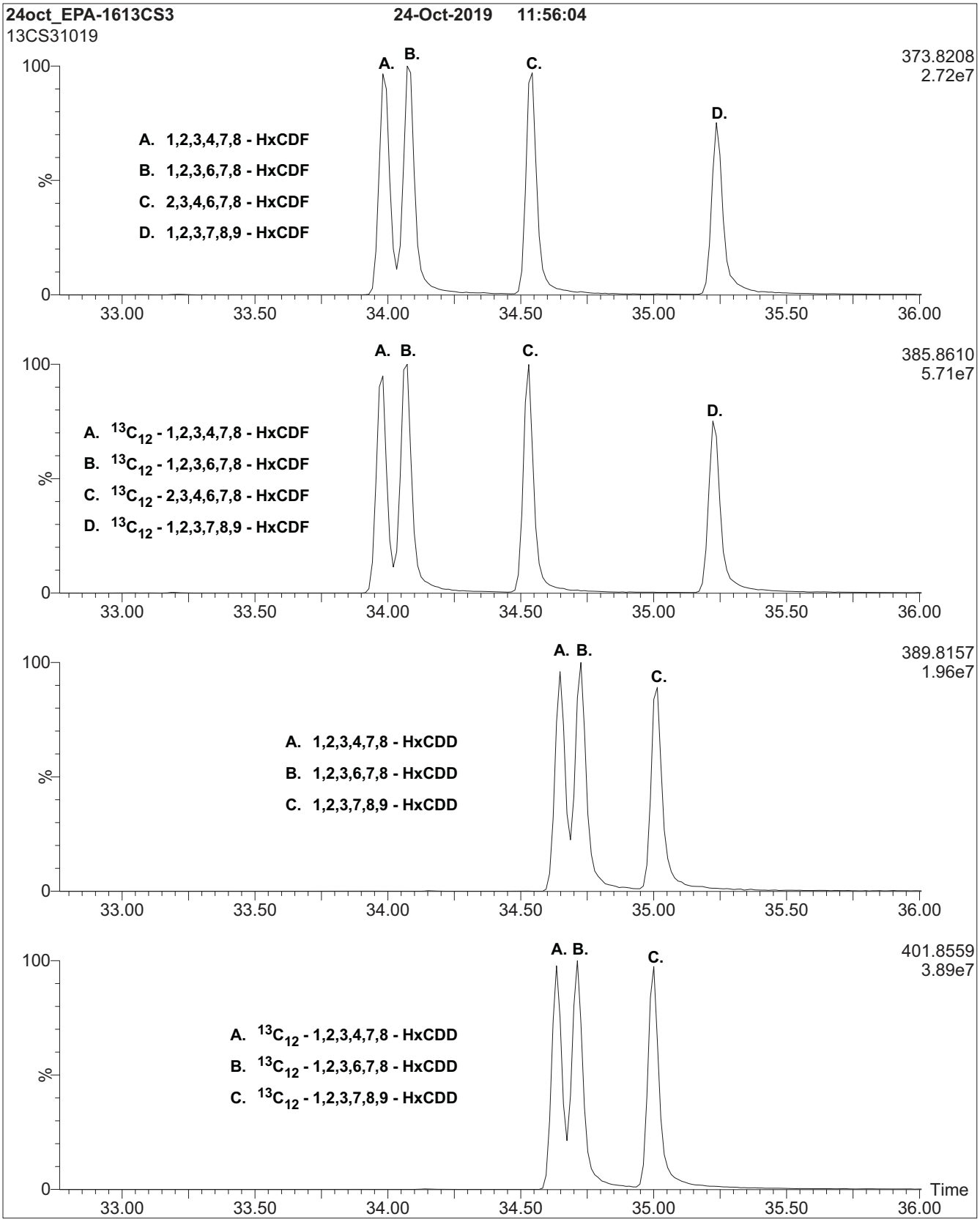


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

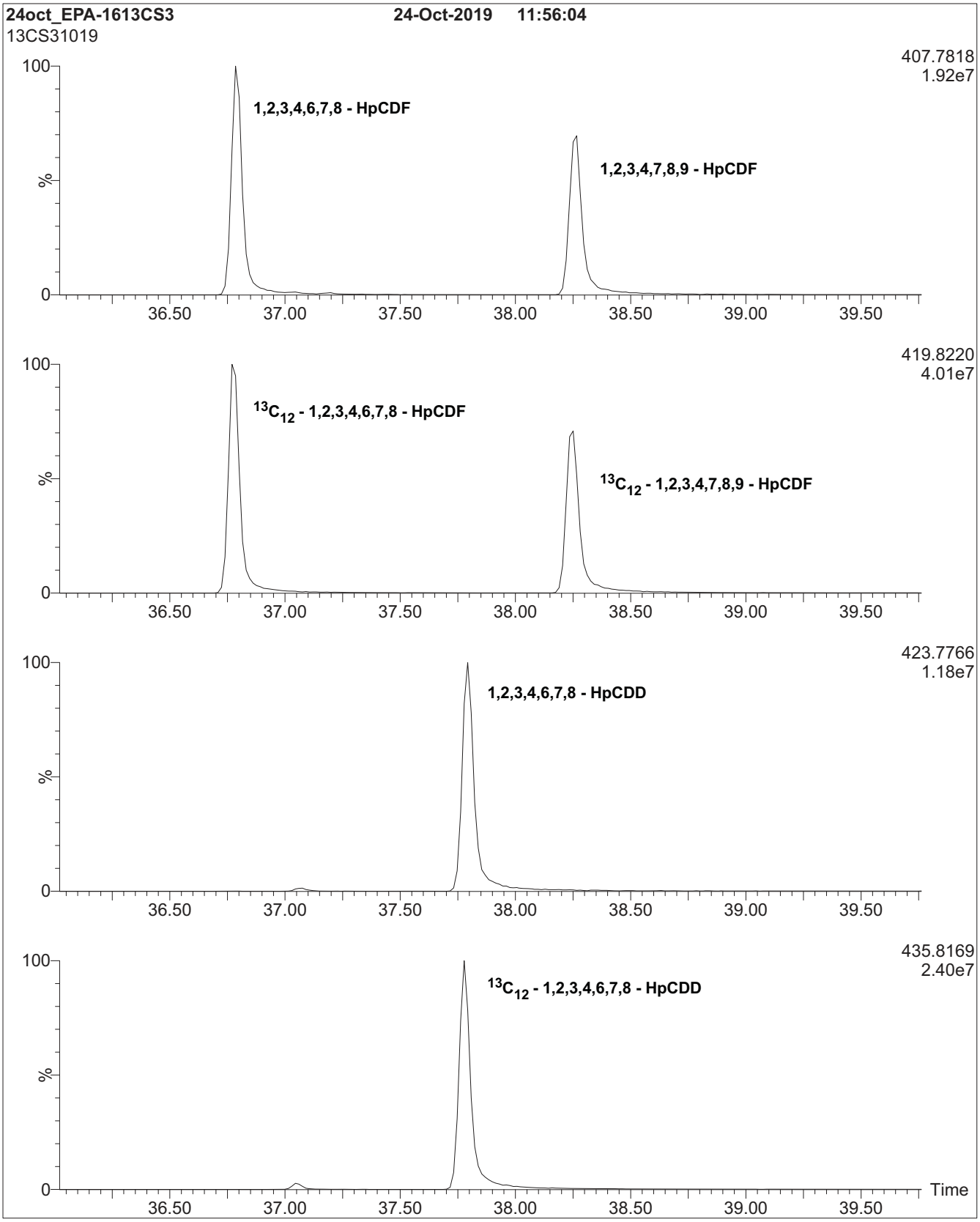
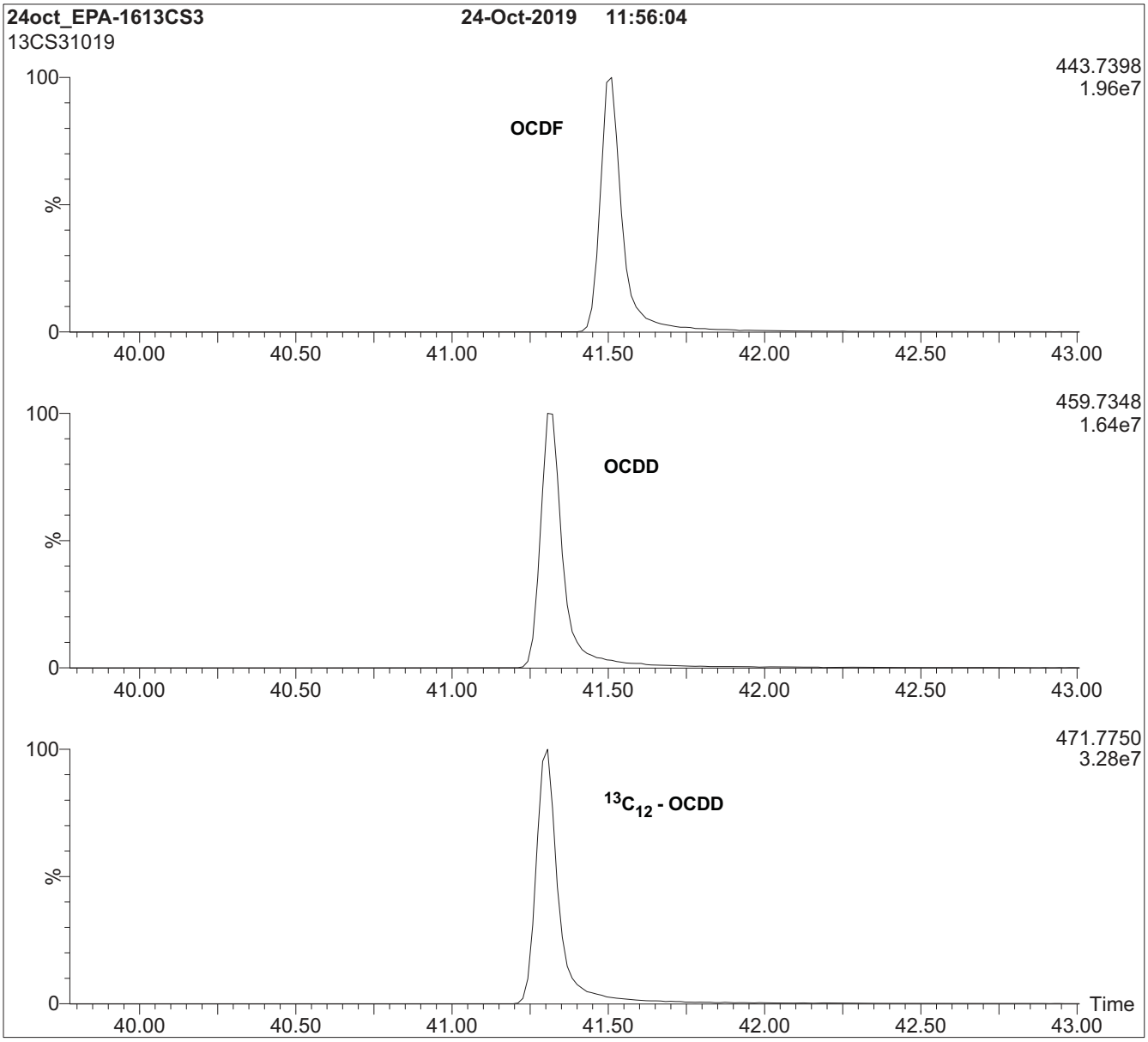


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613CVS
U.S. EPA Method 1613 Calibration and Verification Solutions
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5

PRODUCT CODES:	EPA-1613CVS	**LOT NUMBERS:**	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/22/2019
LAST TESTED: (mm/dd/yyyy)	10/24/2019
EXPIRY DATE: (mm/dd/yyyy)	10/24/2026
RECOMMENDED STORAGE:	Store ampoules in a cool, dark place

I005457
1613 CS2 CAL STD
Expires 10/24/2026
Prepared By Joshua Rains 6/23/2020

DESCRIPTION:

EPA-1613CVS is a series of 5 calibration solutions containing native ($^{12}C_{12}$) and mass-labelled ($^{13}C_{12}$ and $^{37}Cl_4$) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-$^{37}Cl_4$-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations
Table B: 5-point HRGC/HRMS Calibration and RRF Summary
Table C: 7-point HRGC/HRMS Calibration and RRF Summary
Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 3 for further details.

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
Native PCDDs and PCDFs:	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CSL**	**CS0.5**
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
Labelled PCDDs and PCDFs:							
$^{13}C_{12}$-2,3,7,8-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,7,8-TCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-OCDD	200	200	200	200	200	200	200
Cleanup Standard:							
$^{37}Cl_4$-2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
Internal Standards:							
$^{13}C_{12}$-1,2,3,4-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By: _____ **Date:** 10/25/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

Table B: **EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

Table C: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); 7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

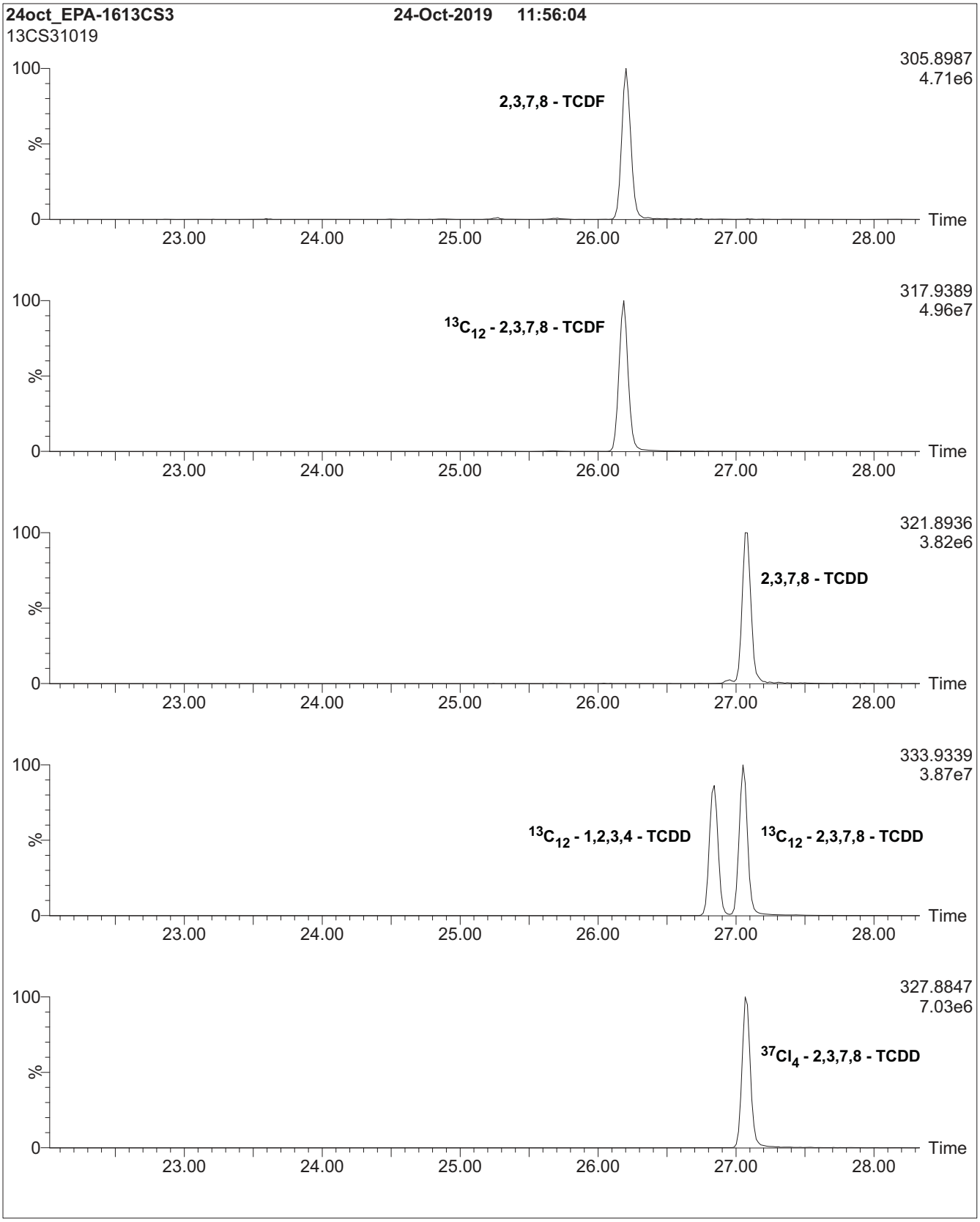


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

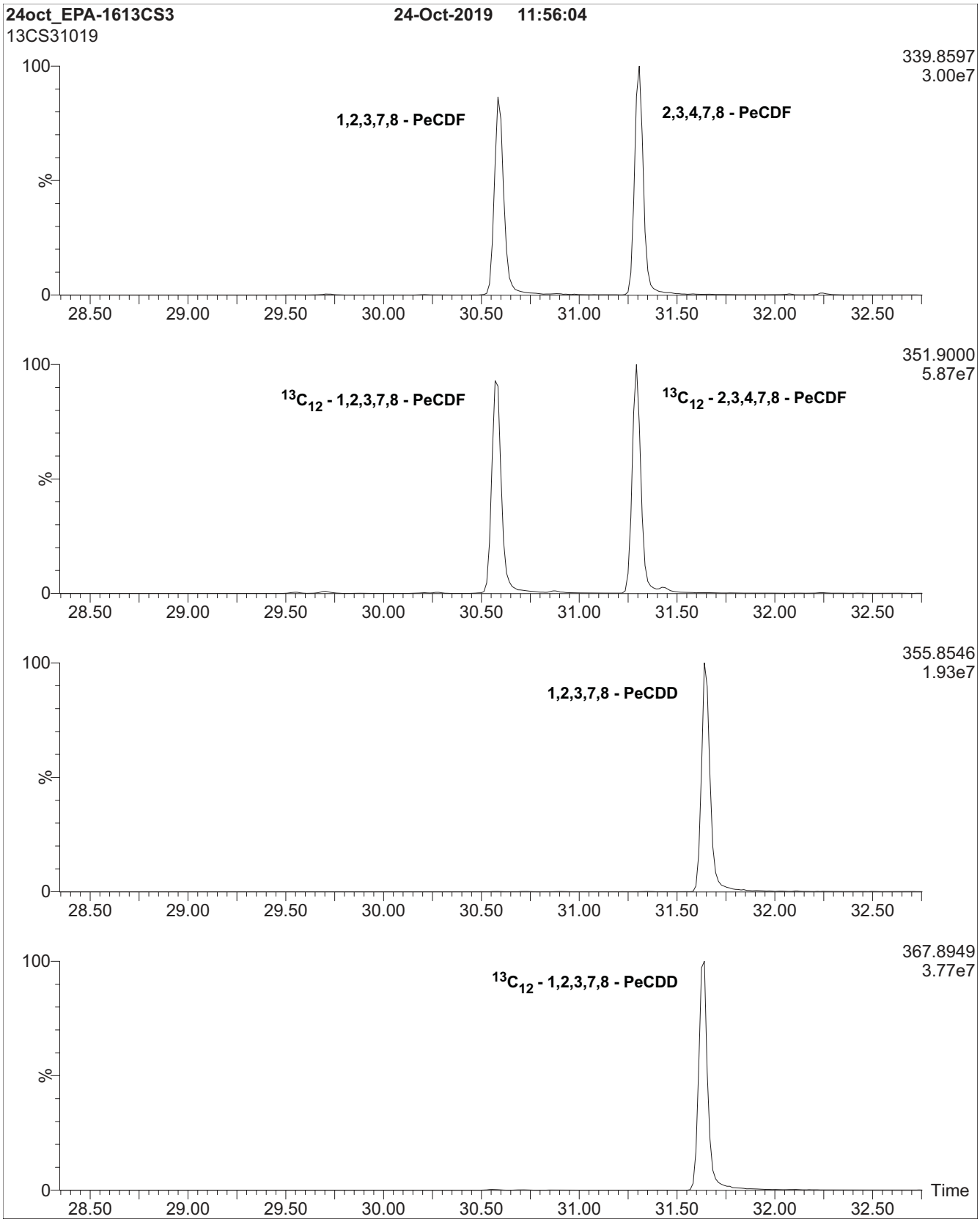


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

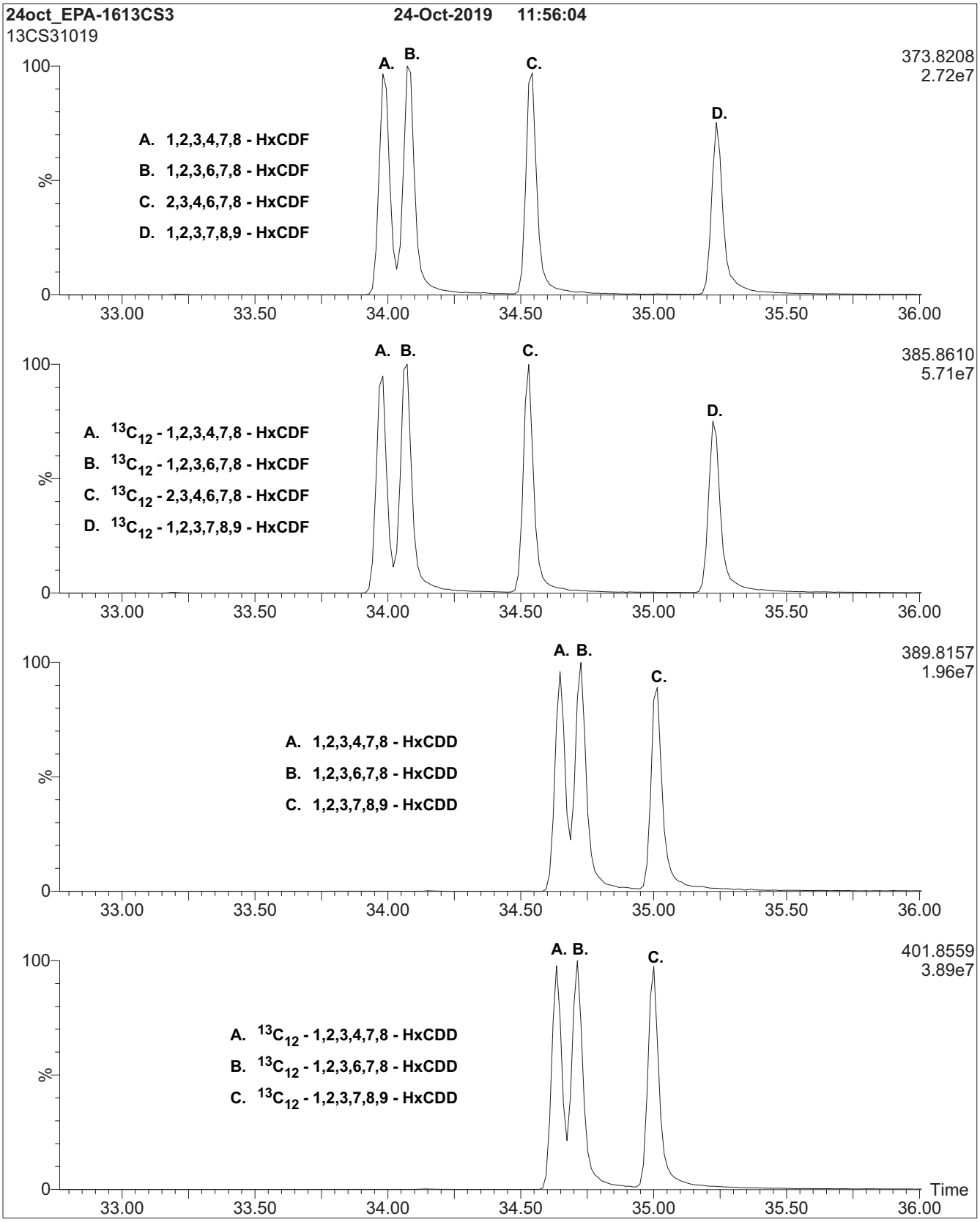


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

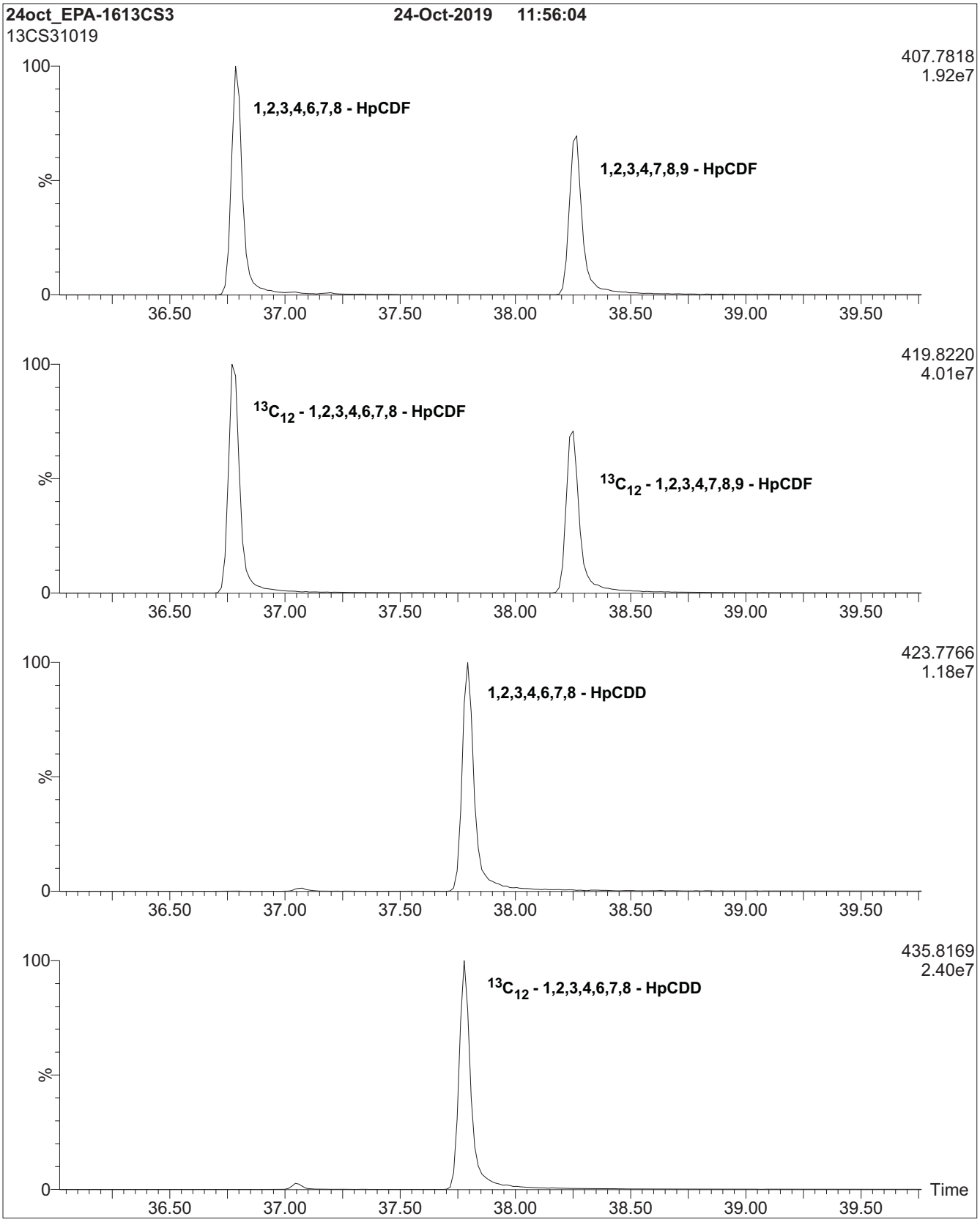
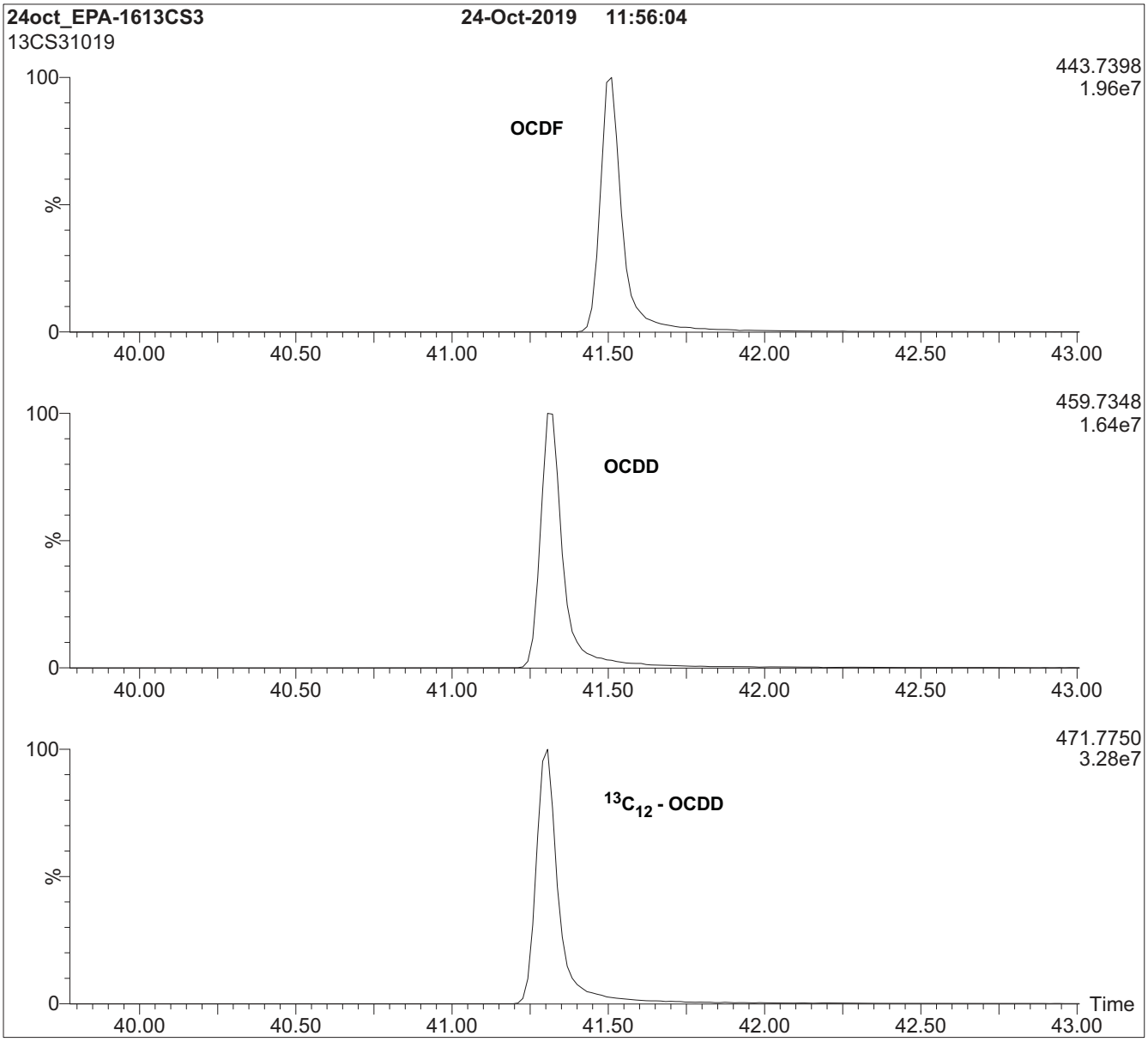


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613CVS
U.S. EPA Method 1613 Calibration and Verification Solutions
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5

PRODUCT CODES:	EPA-1613CVS	**LOT NUMBERS:**	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/22/2019
LAST TESTED: (mm/dd/yyyy)	10/24/2019
EXPIRY DATE: (mm/dd/yyyy)	10/24/2026
RECOMMENDED STORAGE:	Store ampoules in a cool, dark place

I005458
1613 CS4 CAL STD
Expires 10/24/2026
Prepared By Joshua Rains 6/23/2020

DESCRIPTION:

EPA-1613CVS is a series of 5 calibration solutions containing native ($^{12}C_{12}$) and mass-labelled ($^{13}C_{12}$ and $^{37}Cl_4$) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-$^{37}Cl_4$-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations
Table B: 5-point HRGC/HRMS Calibration and RRF Summary
Table C: 7-point HRGC/HRMS Calibration and RRF Summary
Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 3 for further details.

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
Native PCDDs and PCDFs:	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CSL**	**CS0.5**
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
Labelled PCDDs and PCDFs:							
$^{13}C_{12}$-2,3,7,8-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,7,8-TCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-OCDD	200	200	200	200	200	200	200
Cleanup Standard:							
$^{37}Cl_4$-2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
Internal Standards:							
$^{13}C_{12}$-1,2,3,4-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By: _____ **Date:** 10/25/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

Table B: **EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

Table C: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); 7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

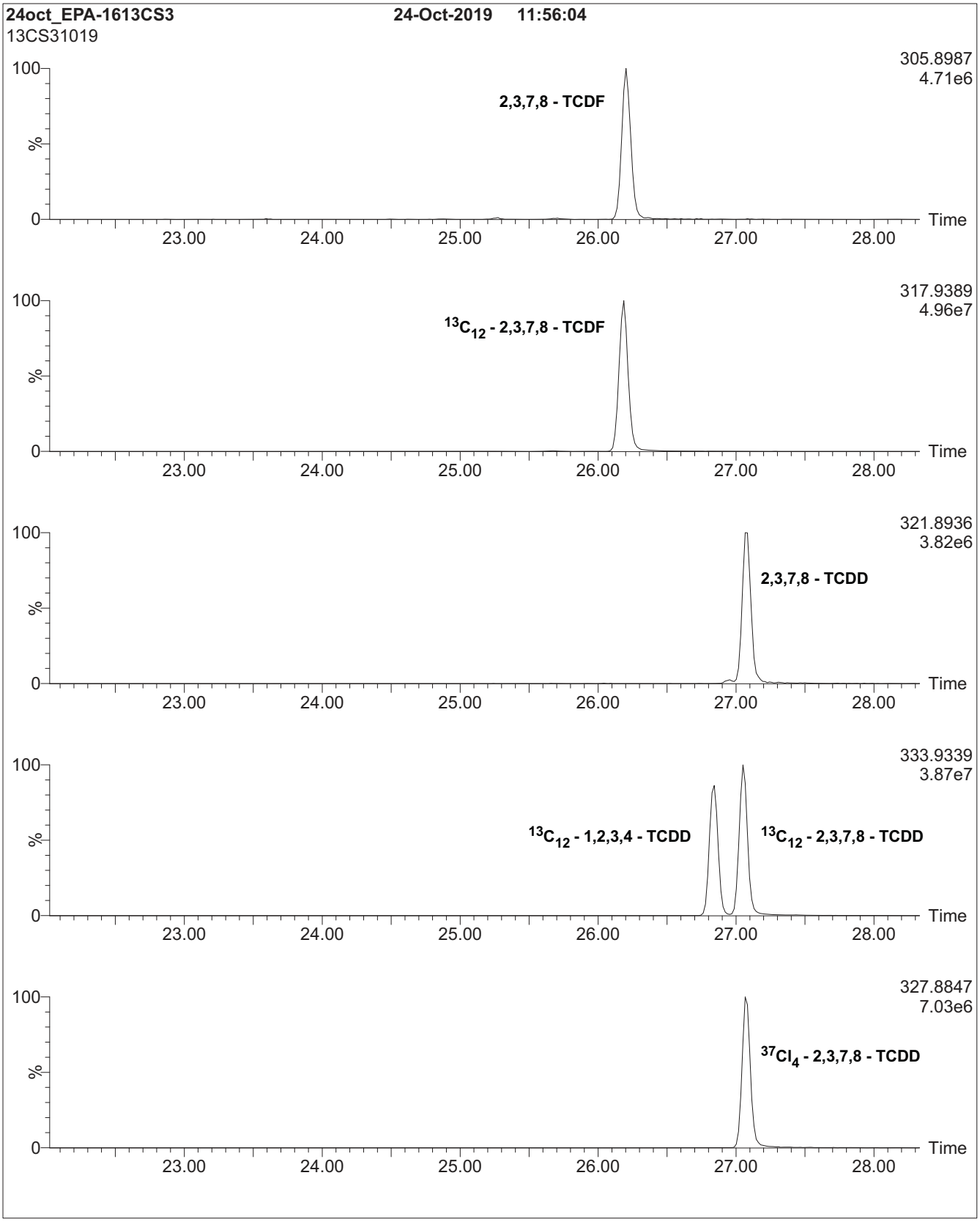


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

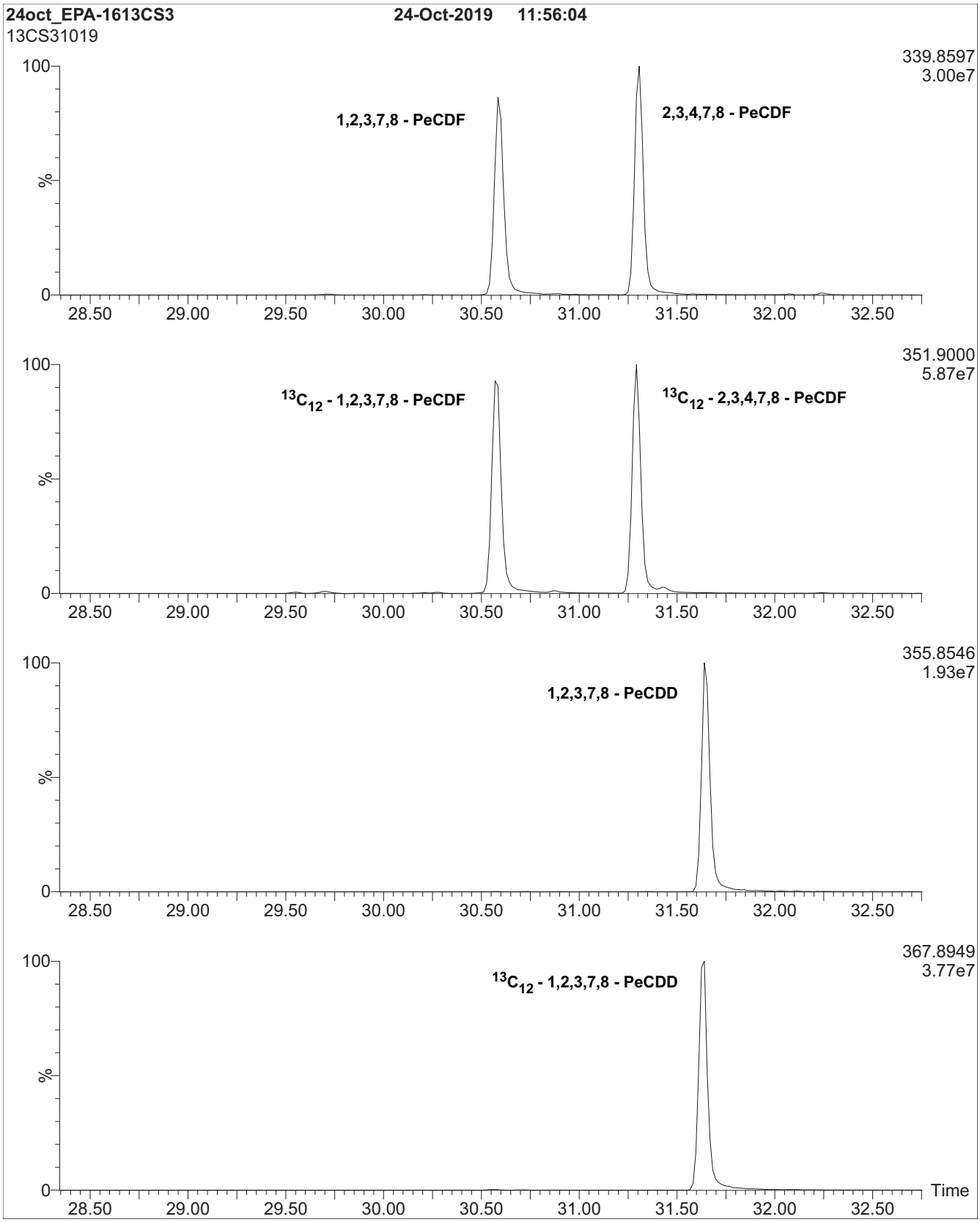


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

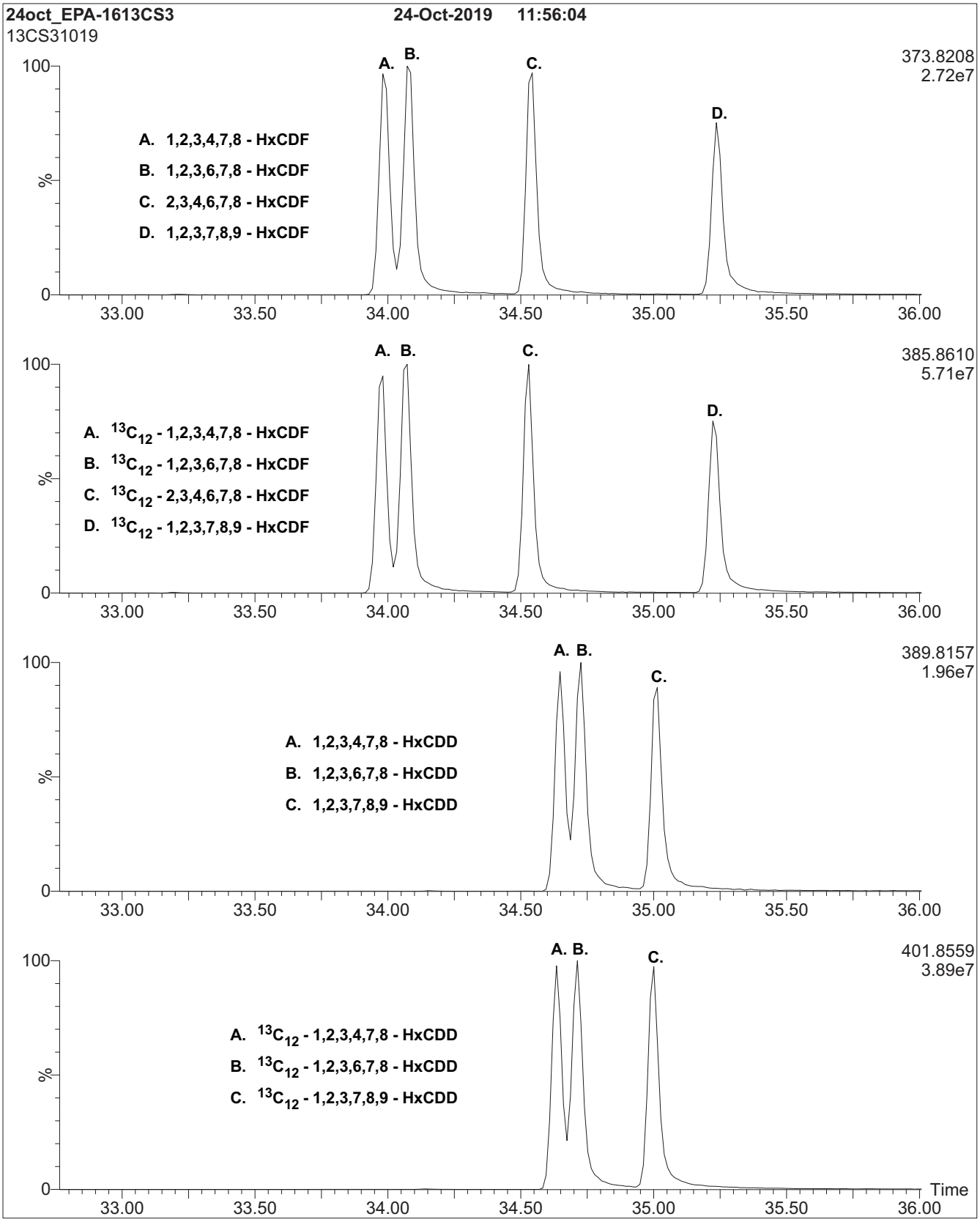


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

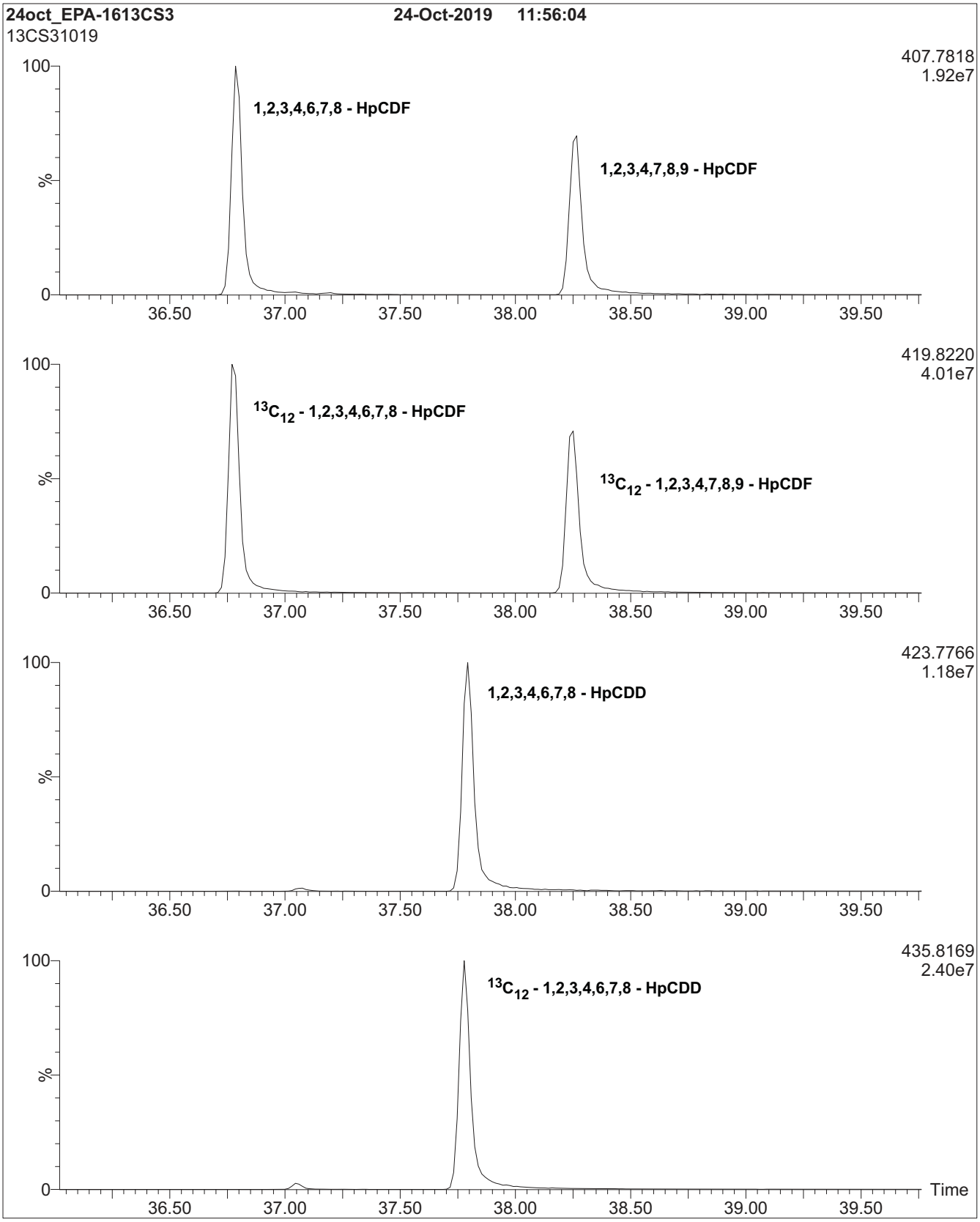
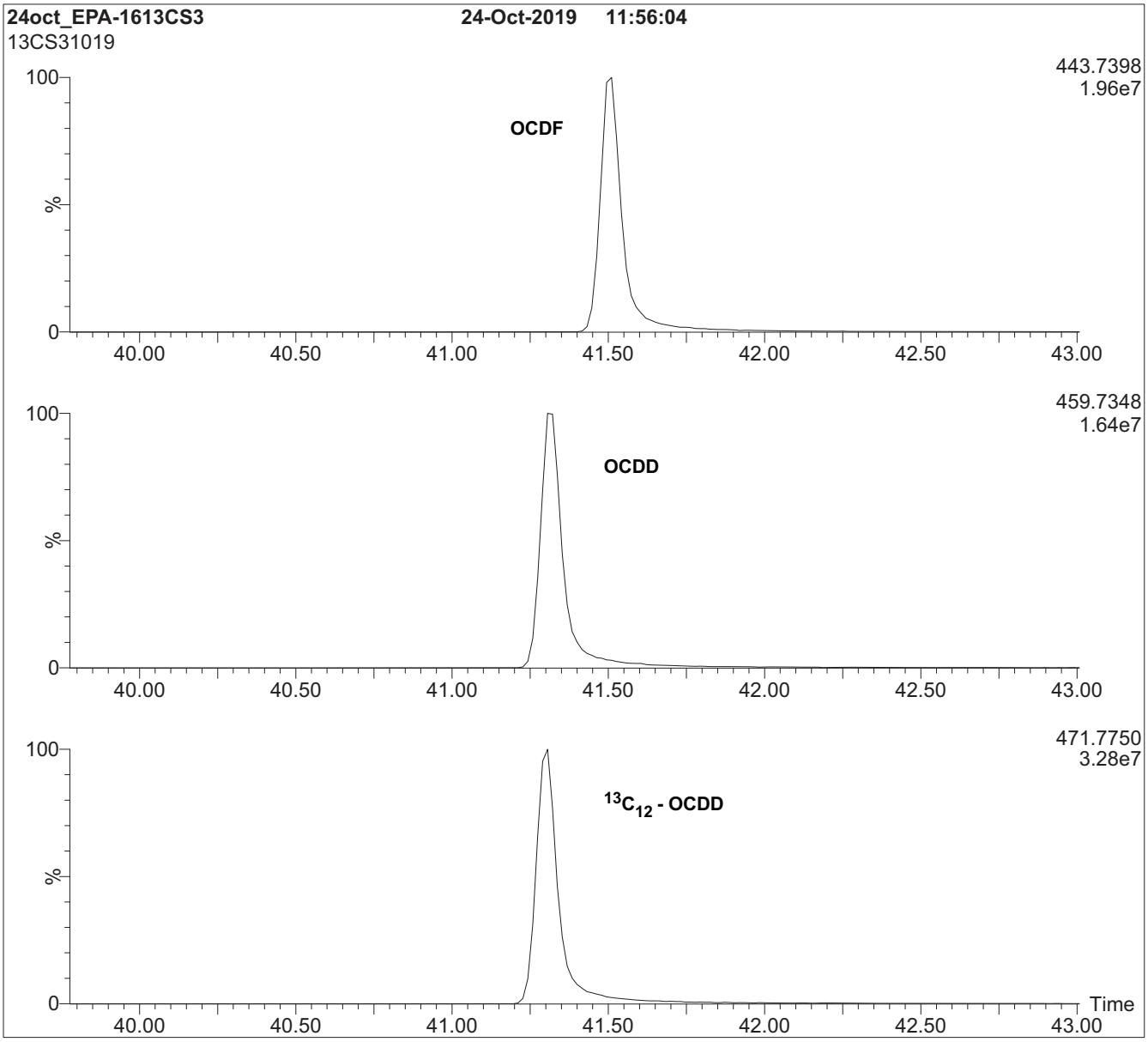


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613CVS
U.S. EPA Method 1613 Calibration and Verification Solutions
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5

PRODUCT CODES:	EPA-1613CVS	**LOT NUMBERS:**	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/22/2019
LAST TESTED: (mm/dd/yyyy)	10/24/2019
EXPIRY DATE: (mm/dd/yyyy)	10/24/2026
RECOMMENDED STORAGE:	Store ampoules in a cool, dark place

I005459
1613 CS5 CAL STD
Expires 10/24/2026
Prepared By Joshua Rains 6/23/2020

DESCRIPTION:

EPA-1613CVS is a series of 5 calibration solutions containing native ($^{12}C_{12}$) and mass-labelled ($^{13}C_{12}$ and $^{37}Cl_4$) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-$^{37}Cl_4$-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations
Table B: 5-point HRGC/HRMS Calibration and RRF Summary
Table C: 7-point HRGC/HRMS Calibration and RRF Summary
Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 3 for further details.

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
Native PCDDs and PCDFs:	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CSL**	**CS0.5**
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
Labelled PCDDs and PCDFs:							
$^{13}C_{12}$-2,3,7,8-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,7,8-TCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-OCDD	200	200	200	200	200	200	200
Cleanup Standard:							
$^{37}Cl_4$-2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
Internal Standards:							
$^{13}C_{12}$-1,2,3,4-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By: _____ **Date:** 10/25/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

Table B: **EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

Table C: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); 7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

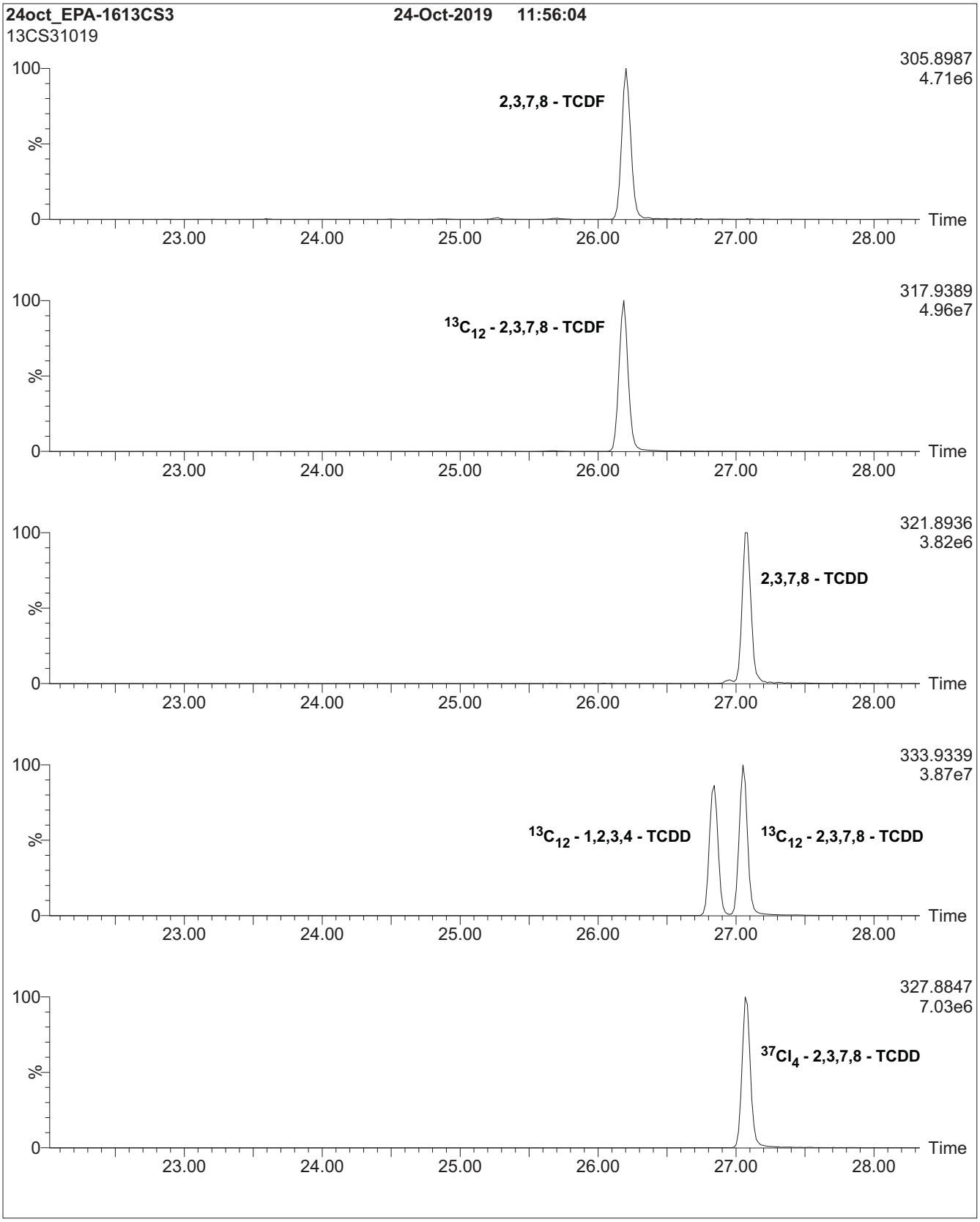


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

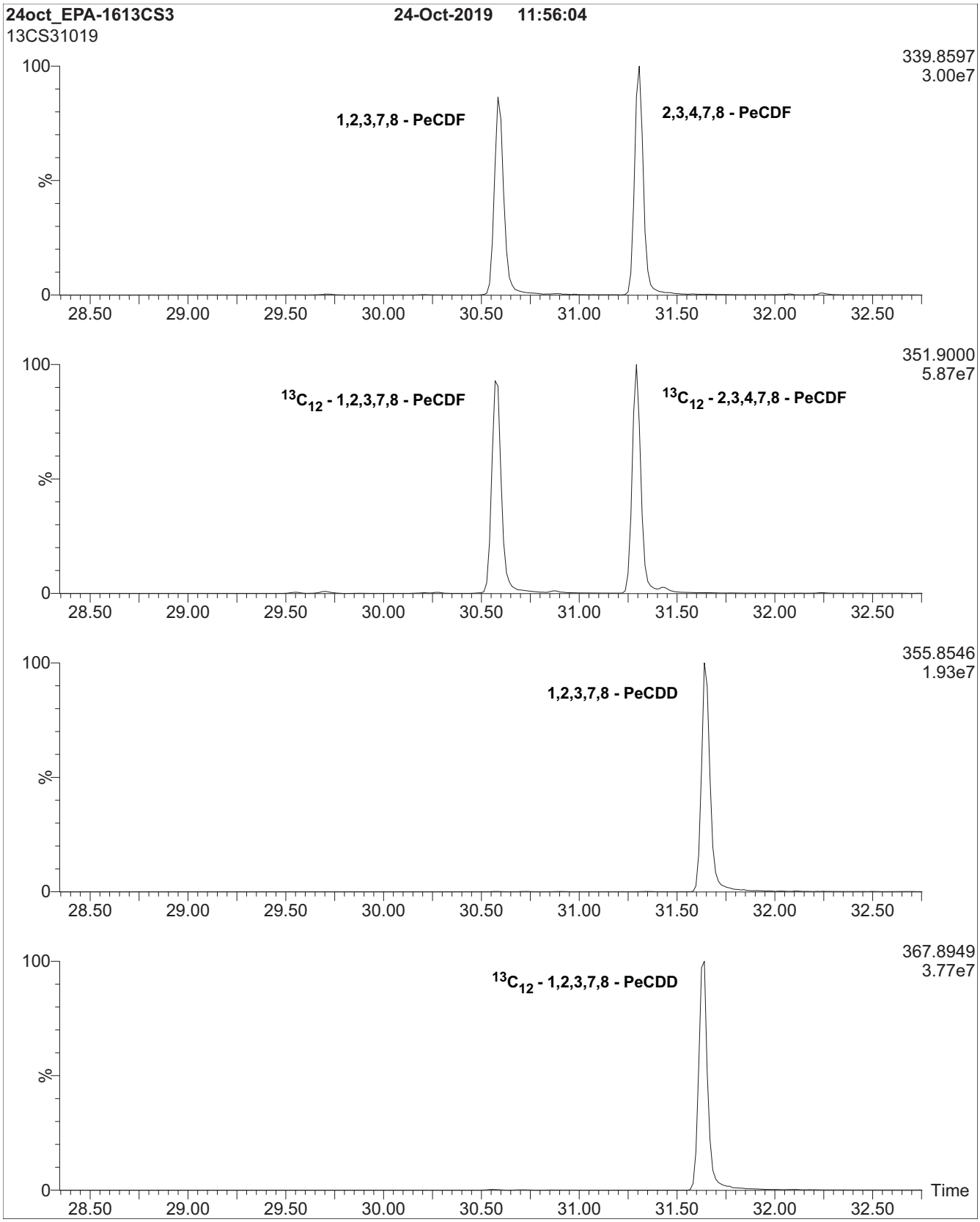


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

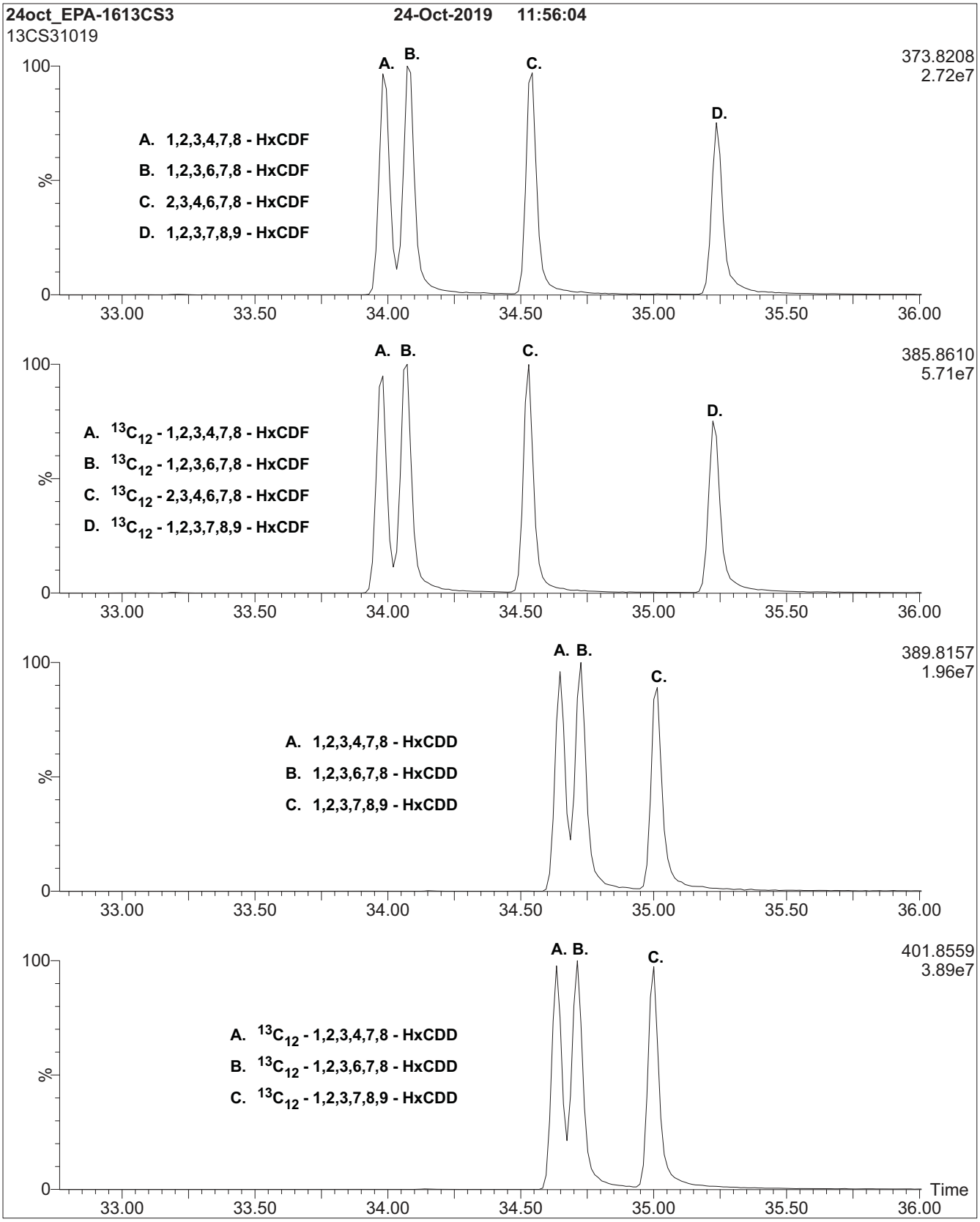


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

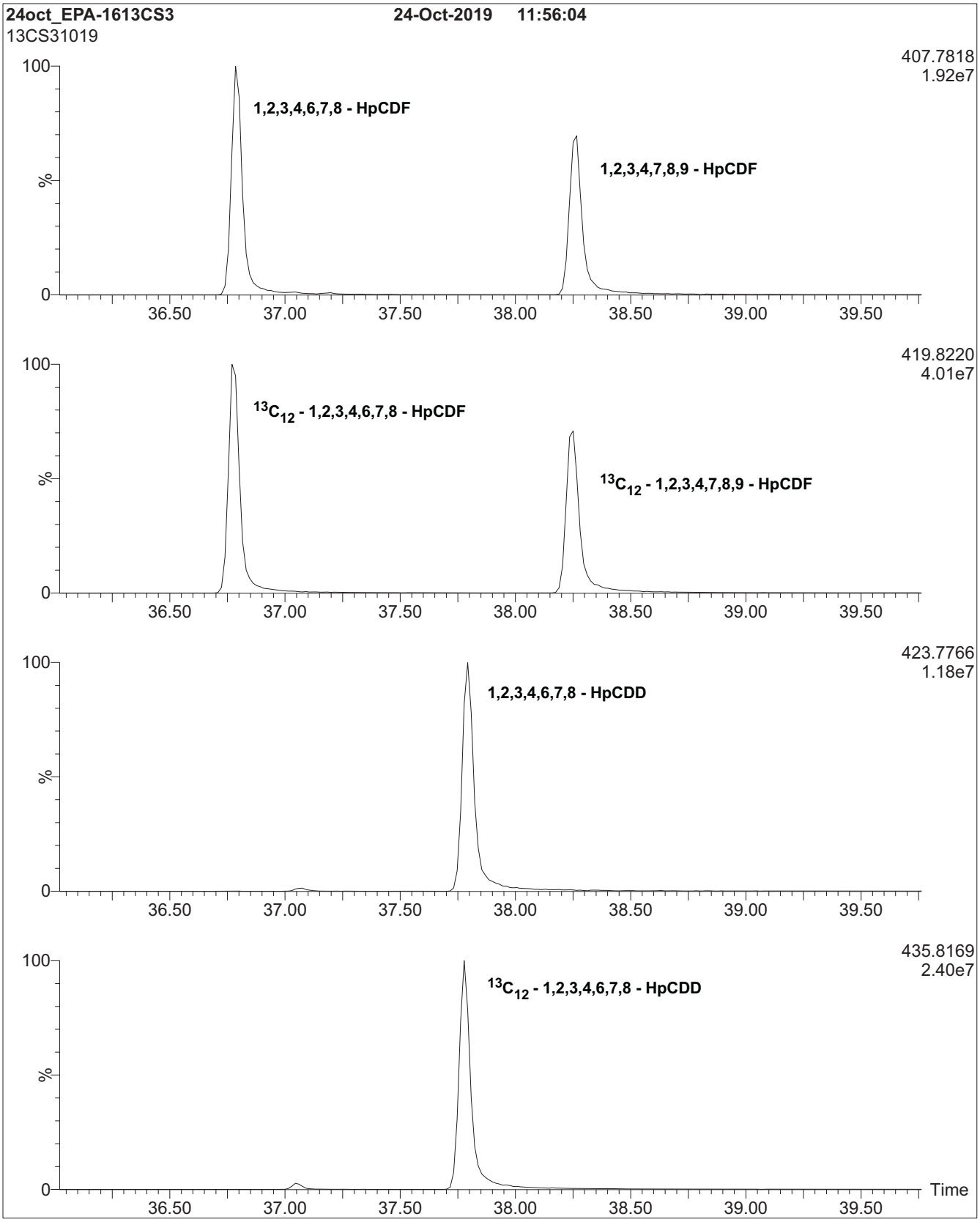
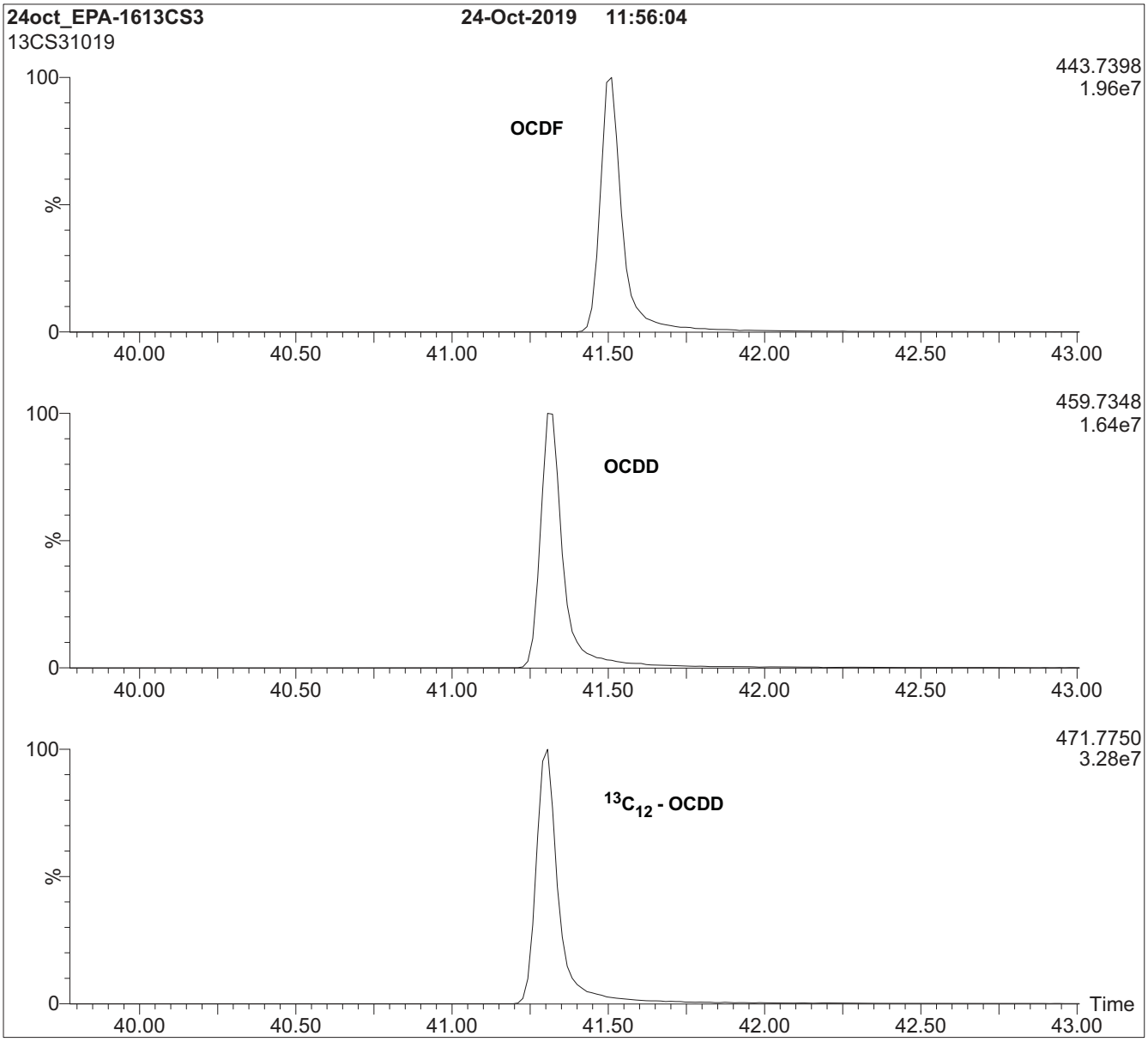


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613CVS
U.S. EPA Method 1613 Calibration and Verification Solutions
plus Supplemental Calibration Solutions EPA-1613CSL & EPA-1613CS0.5

PRODUCT CODES:	EPA-1613CVS	**LOT NUMBERS:**	(see below)
	EPA-1613CS1		13CS11019
	EPA-1613CS2		13CS21019
	EPA-1613CS3		13CS31019
	EPA-1613CS4		13CS41019
	EPA-1613CS5		13CS51019

Note: EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to this calibration set that must be ordered separately.

EPA-1613CS0.5	13CS0.51019
EPA-1613CSL	13CSL1019

SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/22/2019
LAST TESTED: (mm/dd/yyyy)	10/24/2019
EXPIRY DATE: (mm/dd/yyyy)	10/24/2026
RECOMMENDED STORAGE:	Store ampoules in a cool, dark place

I005460
1613 CSL CAL STD
Expires 10/24/2026
Prepared By Joshua Rains 6/23/2020

DESCRIPTION:

EPA-1613CVS is a series of 5 calibration solutions containing native ($^{12}C_{12}$) and mass-labelled ($^{13}C_{12}$ and $^{37}Cl_4$) chlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs). The components of each solution, and their concentrations, are given in Table A.

They were designed for, and prepared to be used according to, U.S. EPA Method 1613 (Revision B). They are to be used as received.

EPA-1613CSL and EPA-1613CS0.5 are lower level extensions to EPA-1613CVS. Neither is required by the method, but either or both can be used to extend the calibration to lower levels.

The individual native PCDDs and PCDFs all have chemical purities of >98%. The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-$^{37}Cl_4$-Tetrachlorodibenzo-p-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations
Table B: 5-point HRGC/HRMS Calibration and RRF Summary
Table C: 7-point HRGC/HRMS Calibration and RRF Summary
Figure 1: HRGC/HRMS Data for EPA-1613CS3 (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 3 for further details.

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a series of standards for the identification and quantification of specific chemical compounds.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned values, and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analytes is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); Components and Concentrations (ng/ml, ± 5% in nonane/toluene)**

Compound	Concentration (ng/ml)						
Native PCDDs and PCDFs:	**CS1**	**CS2**	**CS3**	**CS4**	**CS5**	**CSL**	**CS0.5**
2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
2,3,7,8-TCDF	0.5	2	10	40	200	0.1	0.25
1,2,3,7,8-PeCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,7,8-PeCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,7,8,9-HxCDF	2.5	10	50	200	1000	0.5	1.25
2,3,4,6,7,8-HxCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDD	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,6,7,8-HpCDF	2.5	10	50	200	1000	0.5	1.25
1,2,3,4,7,8,9-HpCDF	2.5	10	50	200	1000	0.5	1.25
OCDD	5.0	20	100	400	2000	1.0	2.5
OCDF	5.0	20	100	400	2000	1.0	2.5
Labelled PCDDs and PCDFs:							
$^{13}C_{12}$-2,3,7,8-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,7,8-TCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,7,8-PeCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	100	100	100	100	100	100	100
$^{13}C_{12}$-OCDD	200	200	200	200	200	200	200
Cleanup Standard:							
$^{37}Cl_4$-2,3,7,8-TCDD	0.5	2	10	40	200	0.1	0.25
Internal Standards:							
$^{13}C_{12}$-1,2,3,4-TCDD	100	100	100	100	100	100	100
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	100	100	100	100	100	100	100
Percent toluene (v/v)	3.6%	3.7%	4.2%	6.1%	16.2%	3.6%	3.6%

Certified By: _____ **Date:** 10/25/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

Table B: **EPA-1613CVS; 5-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard				
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5
2,3,7,8-TCDF	0.93	0.013	1.4	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.015	1.6	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.04	0.019	1.8	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.035	3.7	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.93	0.013	1.4	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.96	0.022	2.3	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.89	0.021	2.4	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.91	0.011	1.2	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.010	1.1	0.90	0.90	0.92	0.91	0.92
OCDF	1.19	0.056	4.7	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.05	0.023	2.2	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.97	0.018	1.9	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	1.00	0.019	1.9	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.98	0.032	3.2	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.97	0.016	1.6	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.025	2.5	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.013	1.3	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.57	0.047	3.0	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.21	0.078	6.5	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.17	0.081	6.9	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.020	1.5	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.51	0.034	2.2	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.38	0.012	0.9	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.014	1.2	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.033	2.5	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.08	0.046	4.3	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.13	0.036	3.2	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.79	0.047	5.9	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.027	3.1	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.04	0.010	1.0	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.017	2.1	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.74	0.055	7.4	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.026	2.6	0.95	0.94	0.99	0.99	0.99

Table C: **EPA-1613CVS (with EPA-1613CSL and EPA-1613CS0.5); 7-point HRGC/HRMS Calibration and RRF Summary**

Calibration RRF Summary				Calibration Standard						
Calibration Filename: 24oct_EPA1613CVS-CAL.QLD				CSL	CS0.5	CS1	CS2	CS3	CS4	CS5
Name	Mean	S. D.	%RSD	RRF#1	RRF#2	RRF#3	RRF#4	RRF#5	RRF#6	RRF#7
2,3,7,8-TCDF	0.92	0.045	4.8	0.96	0.83	0.92	0.95	0.93	0.92	0.95
1,2,3,7,8-PeCDF	0.93	0.013	1.4	0.94	0.92	0.92	0.92	0.93	0.93	0.95
2,3,4,7,8-PeCDF	1.02	0.058	5.7	0.90	1.00	1.03	1.02	1.05	1.05	1.07
1,2,3,4,7,8-HxCDF	0.96	0.029	3.0	0.96	0.97	0.94	0.92	0.98	0.99	1.00
1,2,3,6,7,8-HxCDF	0.92	0.030	3.3	0.90	0.86	0.92	0.94	0.94	0.91	0.94
2,3,4,6,7,8-HxCDF	0.94	0.047	5.0	0.87	0.89	0.95	0.94	0.97	0.97	0.99
1,2,3,7,8,9-HxCDF	0.88	0.029	3.3	0.83	0.88	0.87	0.88	0.90	0.90	0.92
1,2,3,4,6,7,8-HpCDF	0.90	0.033	3.7	0.83	0.93	0.90	0.90	0.90	0.92	0.92
1,2,3,4,7,8,9-HpCDF	0.91	0.018	1.9	0.89	0.94	0.90	0.90	0.92	0.91	0.92
OCDF	1.18	0.052	4.4	1.15	1.14	1.11	1.17	1.19	1.23	1.26
2,3,7,8-TCDD	1.03	0.051	5.0	1.03	0.92	1.01	1.06	1.05	1.05	1.07
1,2,3,7,8-PeCDD	0.95	0.042	4.4	0.87	0.98	0.95	0.95	0.98	0.97	0.99
1,2,3,4,7,8-HxCDD	0.97	0.066	6.8	0.83	0.98	1.01	1.00	1.00	0.96	1.01
1,2,3,6,7,8-HxCDD	0.96	0.044	4.5	0.90	0.92	0.93	0.98	0.99	1.01	1.01
1,2,3,7,8,9-HxCDD	0.94	0.054	5.7	0.83	0.92	0.95	0.96	0.98	0.99	0.98
1,2,3,4,6,7,8-HpCDD	1.01	0.033	3.3	0.95	1.03	1.01	0.97	1.02	1.03	1.04
OCDD	1.00	0.023	2.3	0.95	1.00	1.00	0.99	1.02	1.02	1.00
$^{13}C_{12}$-2,3,7,8-TCDF	1.56	0.042	2.7	1.52	1.54	1.52	1.55	1.55	1.57	1.65
$^{13}C_{12}$-1,2,3,7,8-PeCDF	1.20	0.066	5.5	1.18	1.17	1.13	1.20	1.17	1.20	1.34
$^{13}C_{12}$-2,3,4,7,8-PeCDF	1.16	0.071	6.1	1.12	1.13	1.09	1.15	1.13	1.17	1.31
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	1.33	0.018	1.4	1.32	1.35	1.35	1.33	1.33	1.32	1.30
$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	1.53	0.045	3.0	1.60	1.56	1.47	1.48	1.53	1.53	1.54
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	1.39	0.019	1.4	1.39	1.42	1.38	1.38	1.40	1.37	1.36
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	1.19	0.012	1.0	1.19	1.19	1.18	1.16	1.20	1.19	1.20
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	1.31	0.028	2.2	1.30	1.33	1.31	1.26	1.33	1.31	1.35
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	1.07	0.045	4.2	1.02	1.08	1.06	1.03	1.09	1.08	1.15
$^{13}C_{12}$-2,3,7,8-TCDD	1.12	0.033	3.0	1.09	1.11	1.10	1.11	1.11	1.13	1.19
$^{13}C_{12}$-1,2,3,7,8-PeCDD	0.78	0.040	5.1	0.75	0.78	0.74	0.78	0.75	0.79	0.86
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	0.87	0.025	2.9	0.86	0.90	0.85	0.83	0.89	0.88	0.89
$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	1.05	0.015	1.5	1.08	1.06	1.05	1.05	1.04	1.05	1.03
$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	0.81	0.016	2.0	0.79	0.81	0.81	0.80	0.80	0.81	0.84
$^{13}C_{12}$-OCDD	0.73	0.046	6.3	0.71	0.72	0.70	0.70	0.73	0.72	0.83
$^{13}C_{12}$-1,2,3,4-TCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.00	0.000	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
$^{37}Cl_4$-2,3,7,8-TCDD	0.97	0.053	5.4	0.90	1.07	0.95	0.94	0.99	0.99	0.99

Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

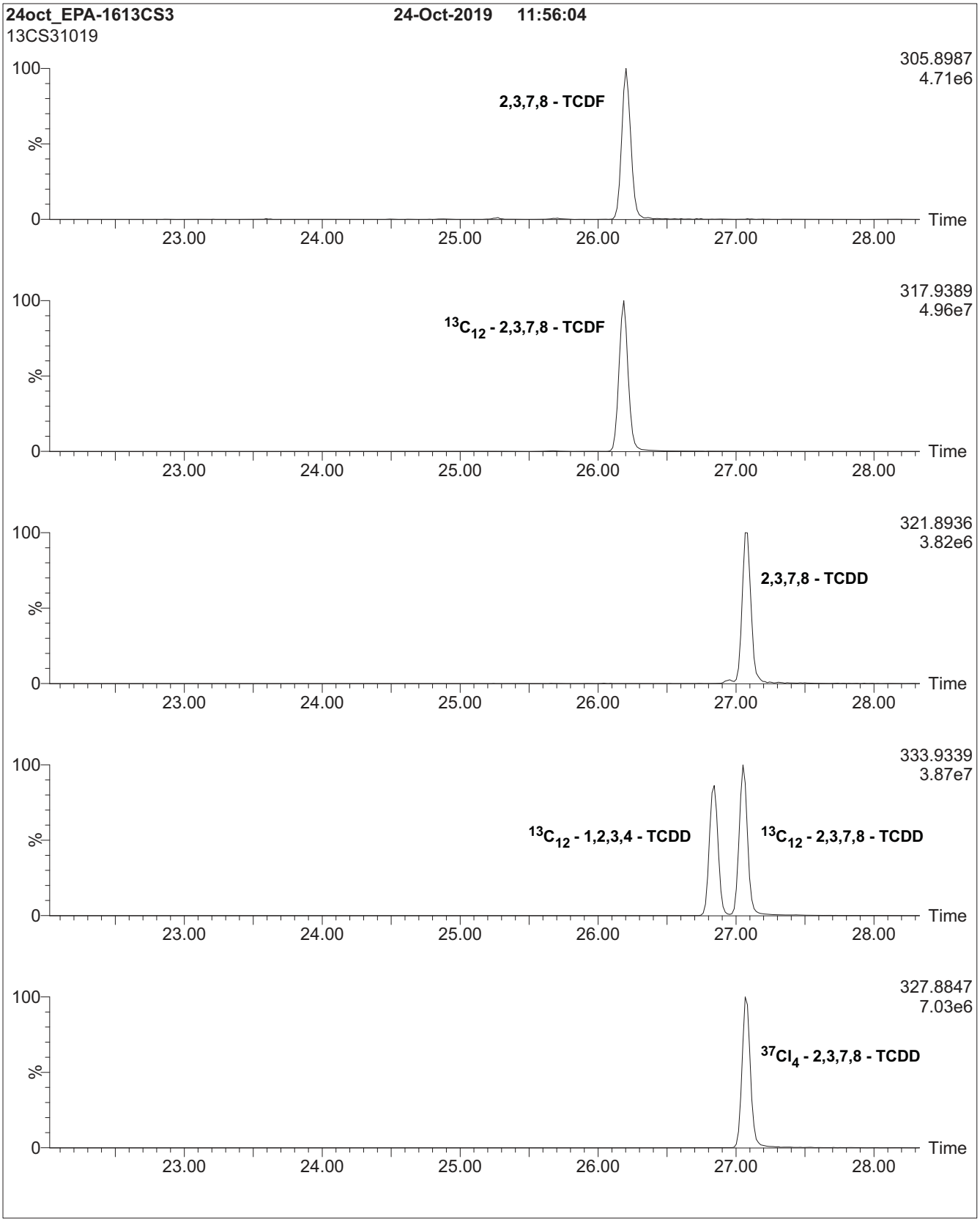


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

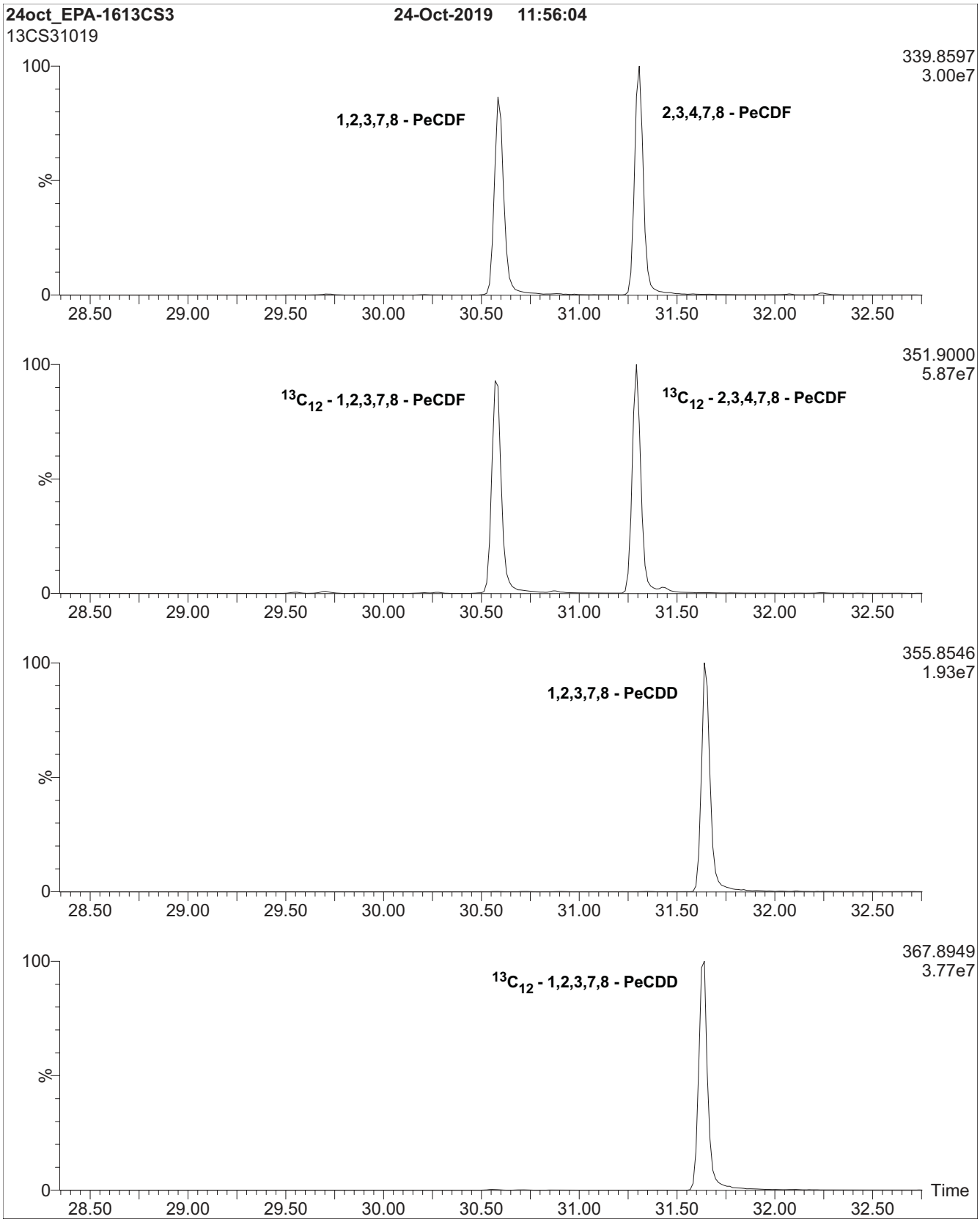


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

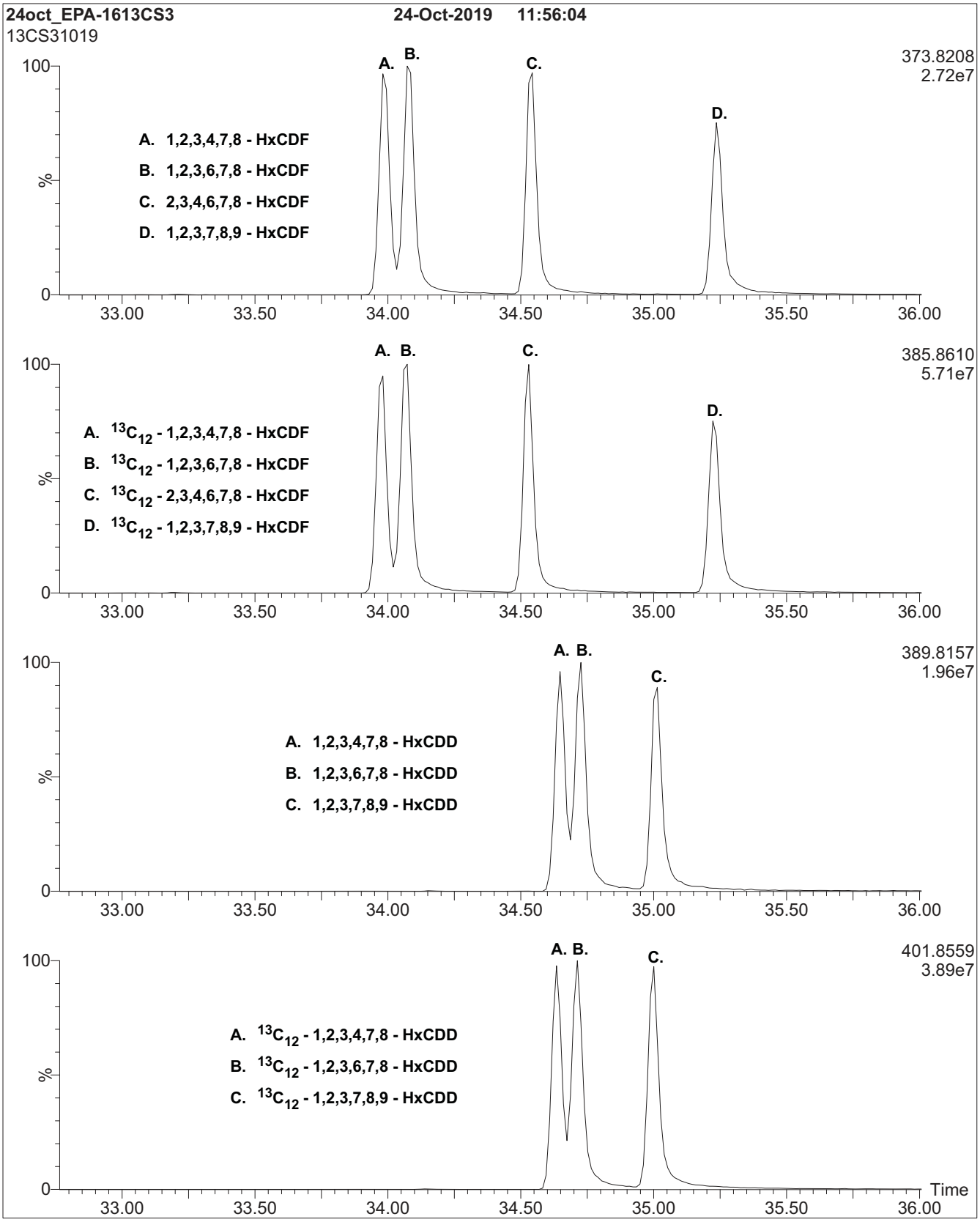


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**

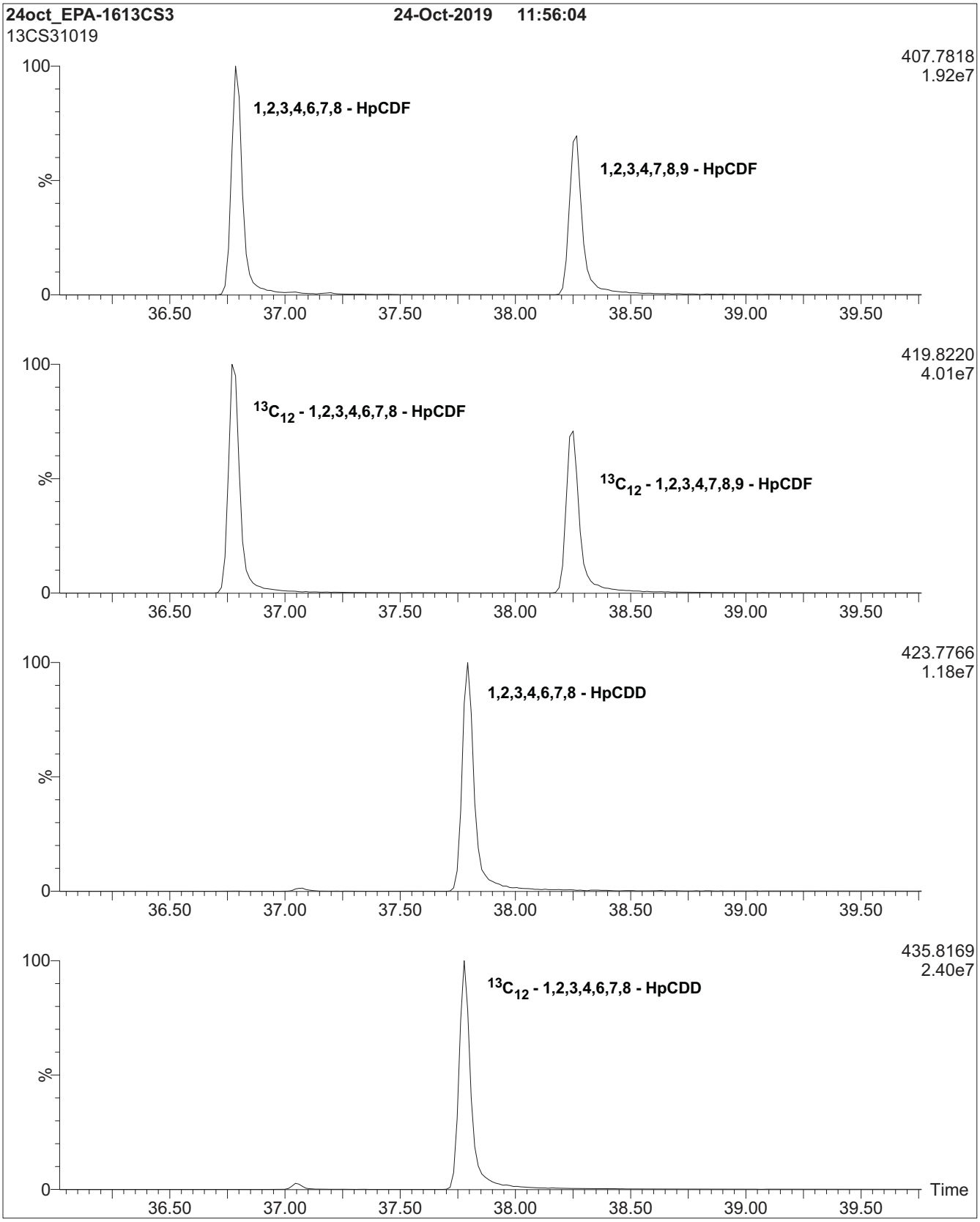
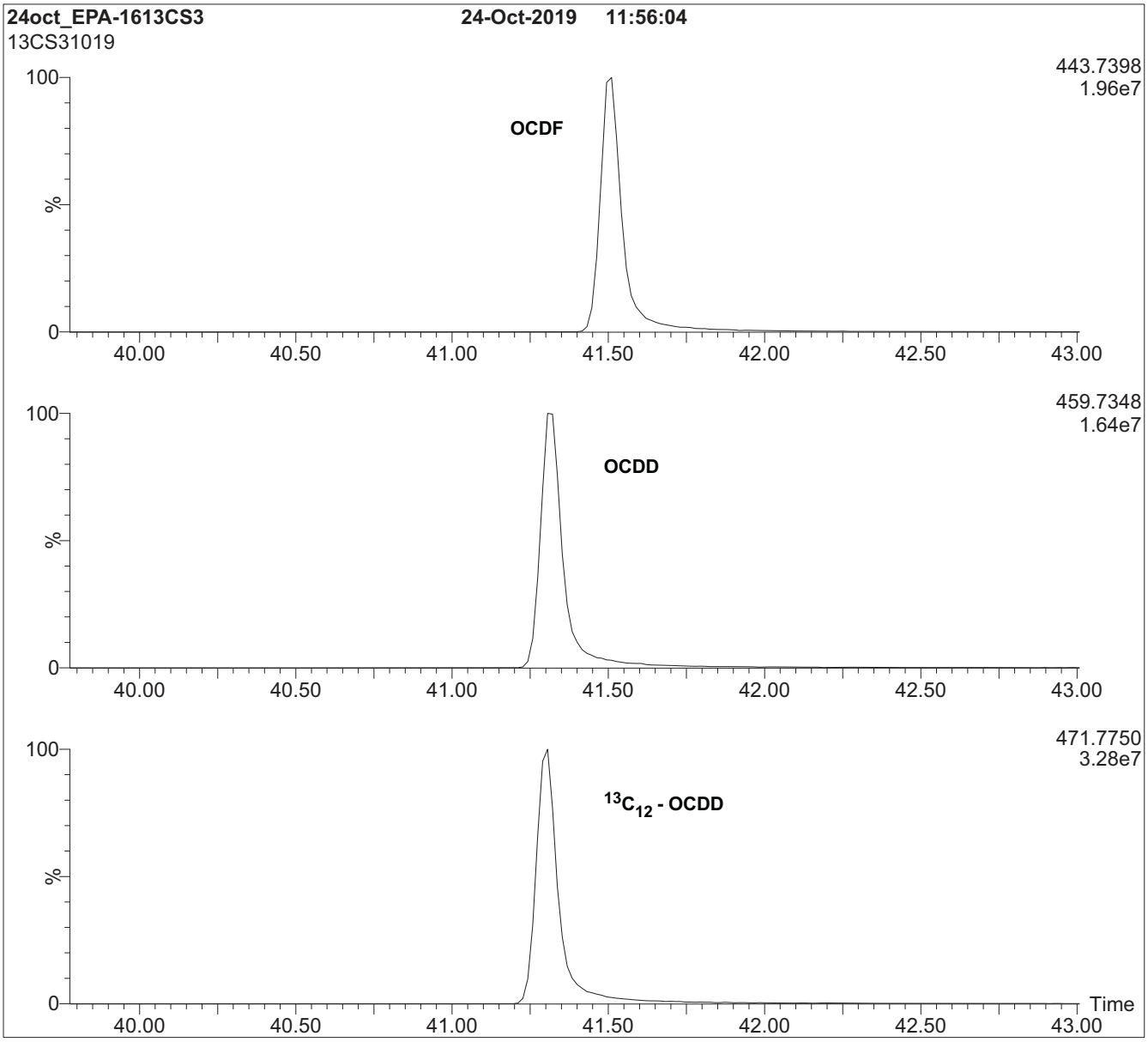


Figure 1: **EPA-1613CS3; HRGC/HRMS Data (60 m DB-5 Column)**



HRGC/HRMS:

Agilent 6890N (HRGC)
Autospec Ultima (HRMS)

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 ml/min	Oven:	150 °C (1 min)
Injector:	280 °C (Splitless Injection)		12 °C/min to 200 °C
Ionization:	EI+		3 °C/min to 235 °C
Detector:	280 °C		235 °C (8 min)
	SIR at 10,000 mass resolving power		8 °C/min to 310 °C
			310 °C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

EPA-1613CSS

U.S. EPA Method 1613 Cleanup Standard Spiking Solution

PRODUCT CODE:	EPA-1613CSS
LOT NUMBER:	13CSS1020
SOLVENT(S):	Nonane
DATE PREPARED: (mm/dd/yyyy)	11/12/2020
LAST TESTED: (mm/dd/yyyy)	01/30/2021
EXPIRY DATE: (mm/dd/yyyy)	11/19/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

I011575

1613B Stock Cleanup Std
Expires 11/19/2027
Prepared By Joshua Rains 12/15/2020

DESCRIPTION:

EPA-1613CSS contains 2,3,7,8-($^{37}Cl_4$)tetrachlorodibenzo-*p*-dioxin at the concentration given in Table A.

EPA-1613CSS was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

2,3,7,8-($^{37}Cl_4$)Tetrachlorodibenzo-*p*-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

Table A: **EPA-1613CSS; Components and Concentrations (ng/mL, ± 5% in nonane)**

Compound	Acronym	CAS #	Concentration (ng/mL)
2,3,7,8-($^{37}Cl_4$)Tetrachlorodibenzo-*p*-dioxin	$^{37}Cl_4$-2,3,7,8-TCDD	85508-50-5	40.0

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

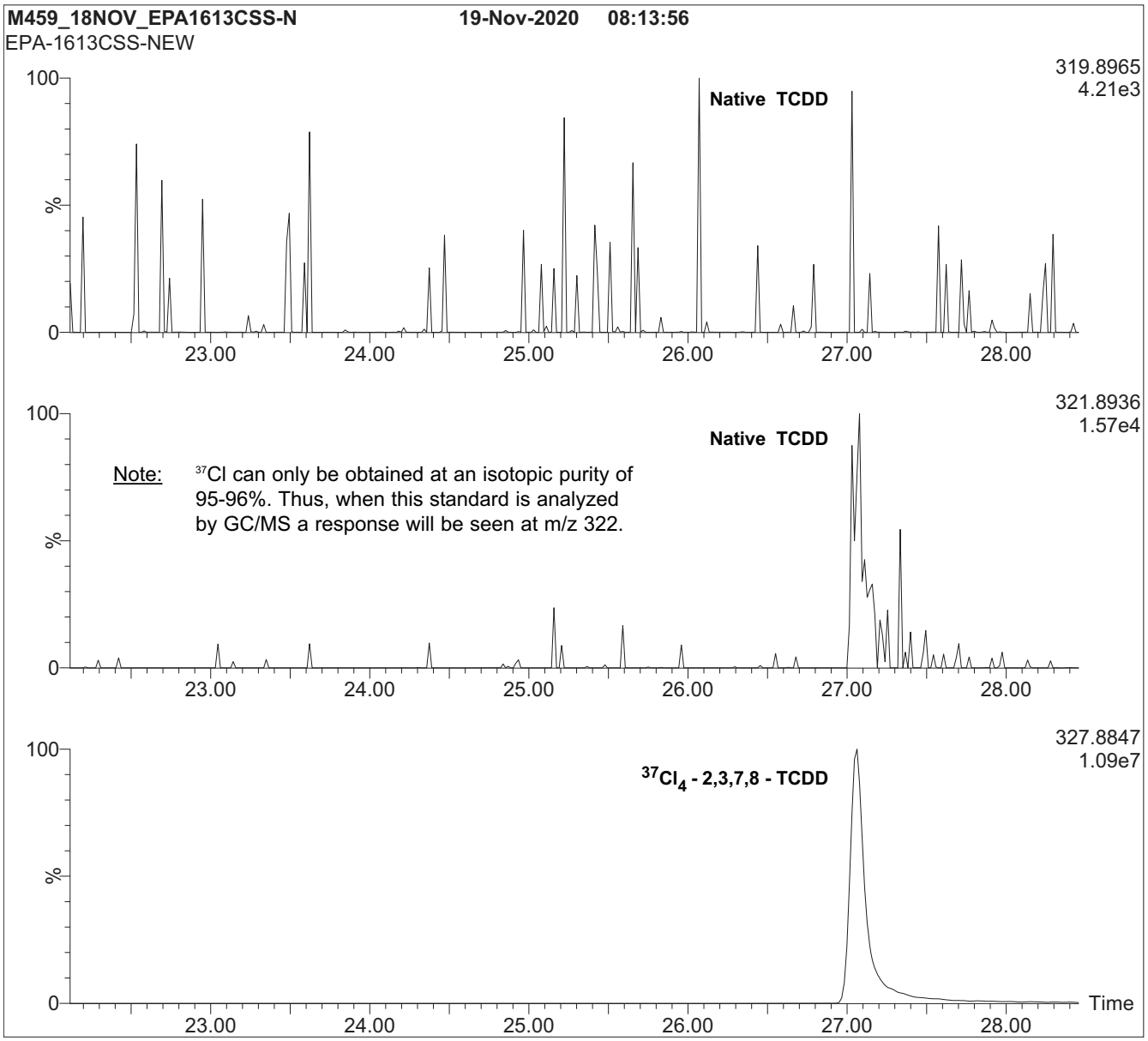
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **EPA-1613CSS; HRGC/HRMS Data (60 m DB-5 Column)**



Conditions for Figure 1:

Agilent 6890N HRGC
Autospec Ultima HRMS

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 mL/min	Oven:	150°C (1 min)
Injector:	280°C (Splitless Injection)		12°C/min to 200°C
Ionization:	EI+		3°C/min to 235°C
Detector:	280°C		235°C (8 min)
	SIR at 10,000 mass resolving power		8°C/min to 310°C
			310°C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613LCS

U.S. EPA Method 1613
Labelled Compound Stock Solution

PRODUCT CODE:	EPA-1613LCS
LOT NUMBER:	13LCS1020
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/16/2020
LAST TESTED: (mm/dd/yyyy)	10/21/2020
EXPIRY DATE: (mm/dd/yyyy)	10/21/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

I011576
1613B Stock Surr Std
Expires 10/21/2027
Prepared By Joshua Rains 12/15/2020

DESCRIPTION:

EPA-1613LCS is a solution/mixture of mass-labelled ($^{13}C_{12}$) chlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613LCS was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613LCS; Components and Concentrations (ng/mL, ± 5% in nonane/3.2% toluene)**

Compound	Acronym	CAS #	Concentration (ng/mL)
Mass-Labelled PCDDs:			
2,3,7,8-Tetrachloro[$^{13}C_{12}$]dibenzo-*p*-dioxin	$^{13}C_{12}$-2,3,7,8-TCDD	76523-40-5	100
1,2,3,7,8-Pentachloro[$^{13}C_{12}$]dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,7,8-PeCDD	109719-79-1	100
1,2,3,4,7,8-Hexachloro[$^{13}C_{12}$]dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	109719-80-4	100
1,2,3,6,7,8-Hexachloro[$^{13}C_{12}$]dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	109719-81-5	100
1,2,3,4,6,7,8-Heptachloro[$^{13}C_{12}$]dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	109719-83-7	100
Octachloro[$^{13}C_{12}$]dibenzo-*p*-dioxin	$^{13}C_{12}$-OCDD	114423-97-1	200
Mass-Labelled PCDFs:			
2,3,7,8-Tetrachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-2,3,7,8-TCDF	89059-46-1	100
1,2,3,7,8-Pentachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-1,2,3,7,8-PeCDF	109719-77-9	100
2,3,4,7,8-Pentachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-2,3,4,7,8-PeCDF	116843-02-8	100
1,2,3,4,7,8-Hexachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	114423-98-2	100
1,2,3,6,7,8-Hexachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	116843-03-9	100
1,2,3,7,8,9-Hexachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	116843-04-0	100
2,3,4,6,7,8-Hexachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	116843-05-1	100
1,2,3,4,6,7,8-Heptachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	109719-84-8	100
1,2,3,4,7,8,9-Heptachloro[$^{13}C_{12}$]dibenzofuran	$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	109719-94-0	100

Certified By: _____ **Date:** 11/09/2020
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

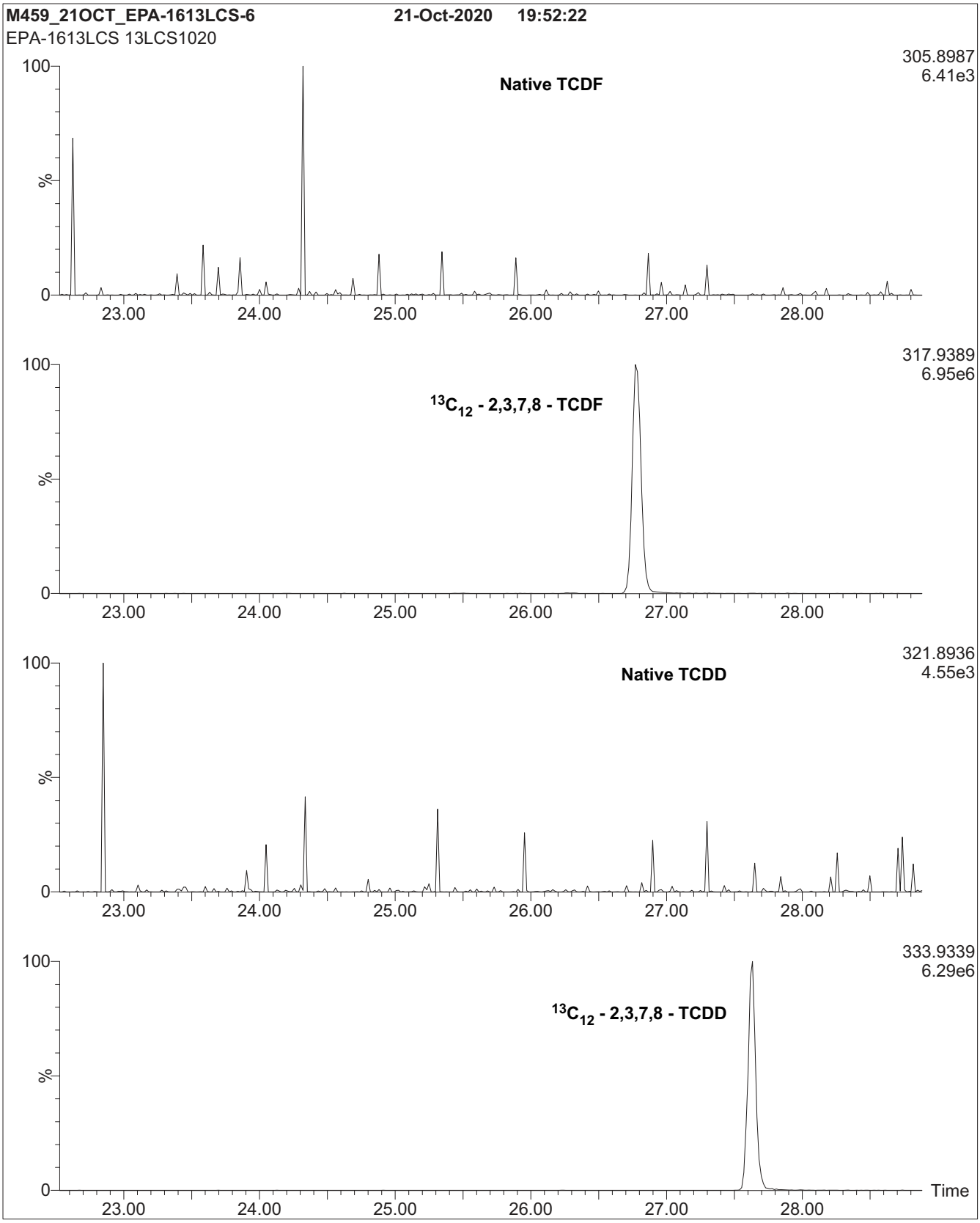


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

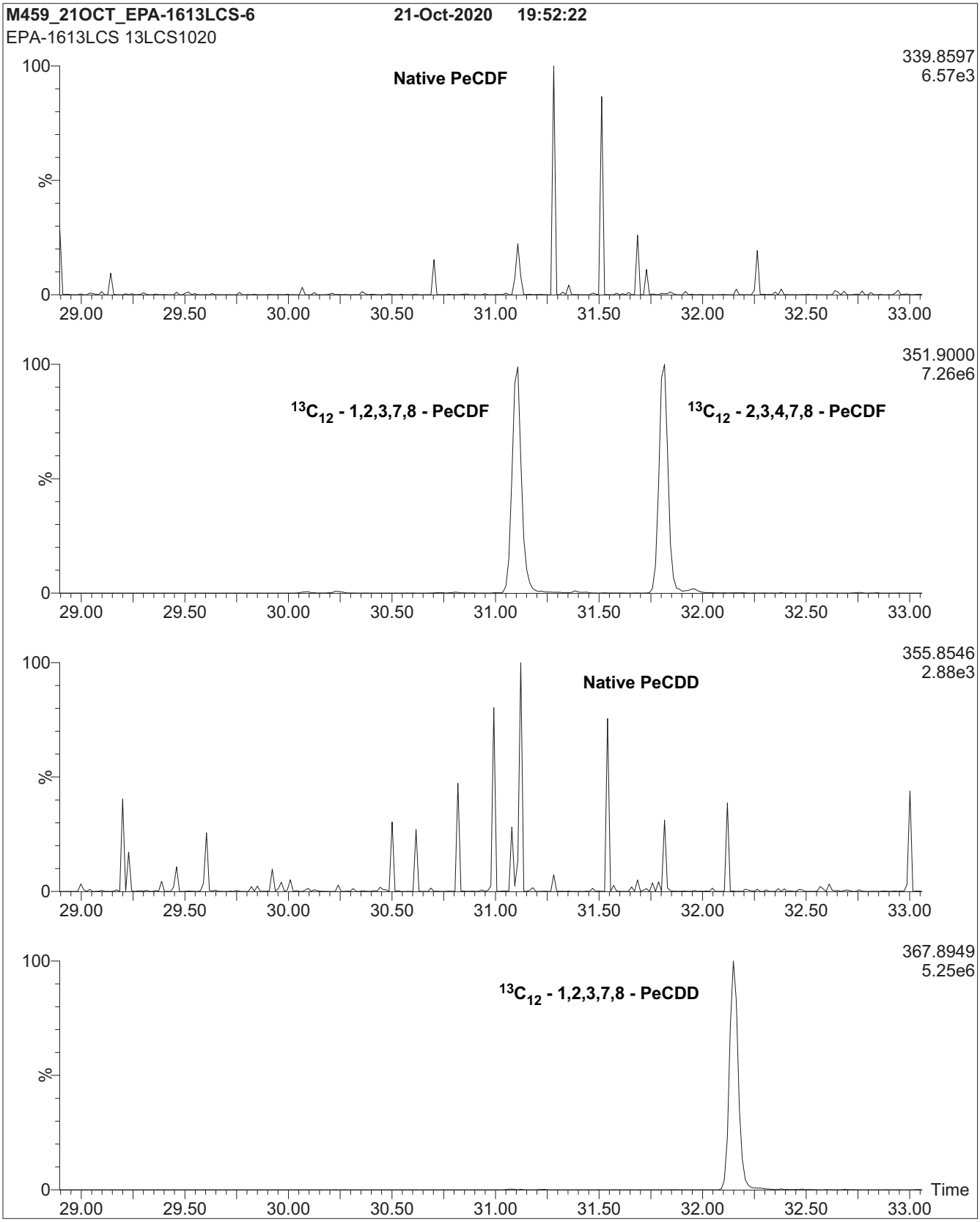


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

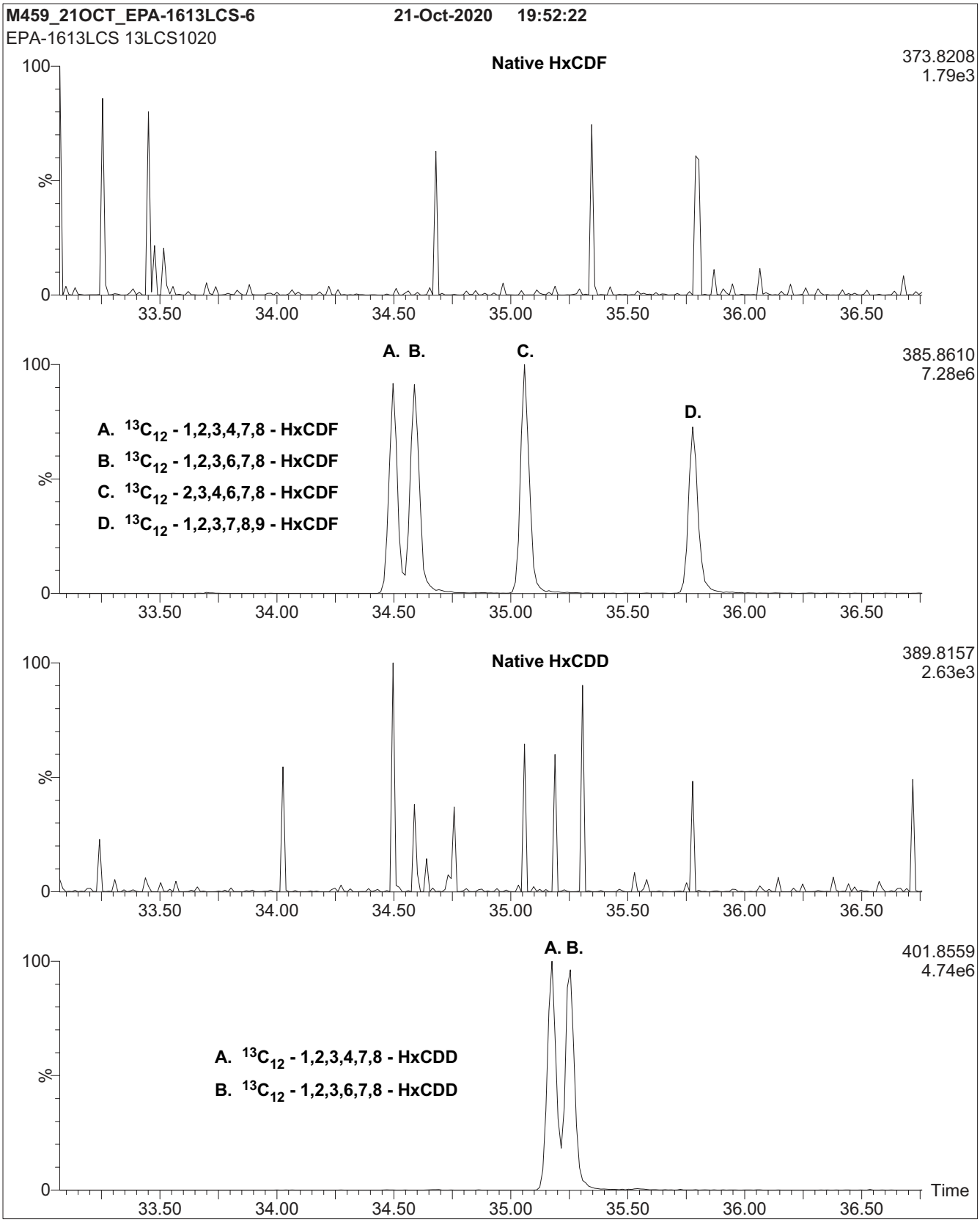


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

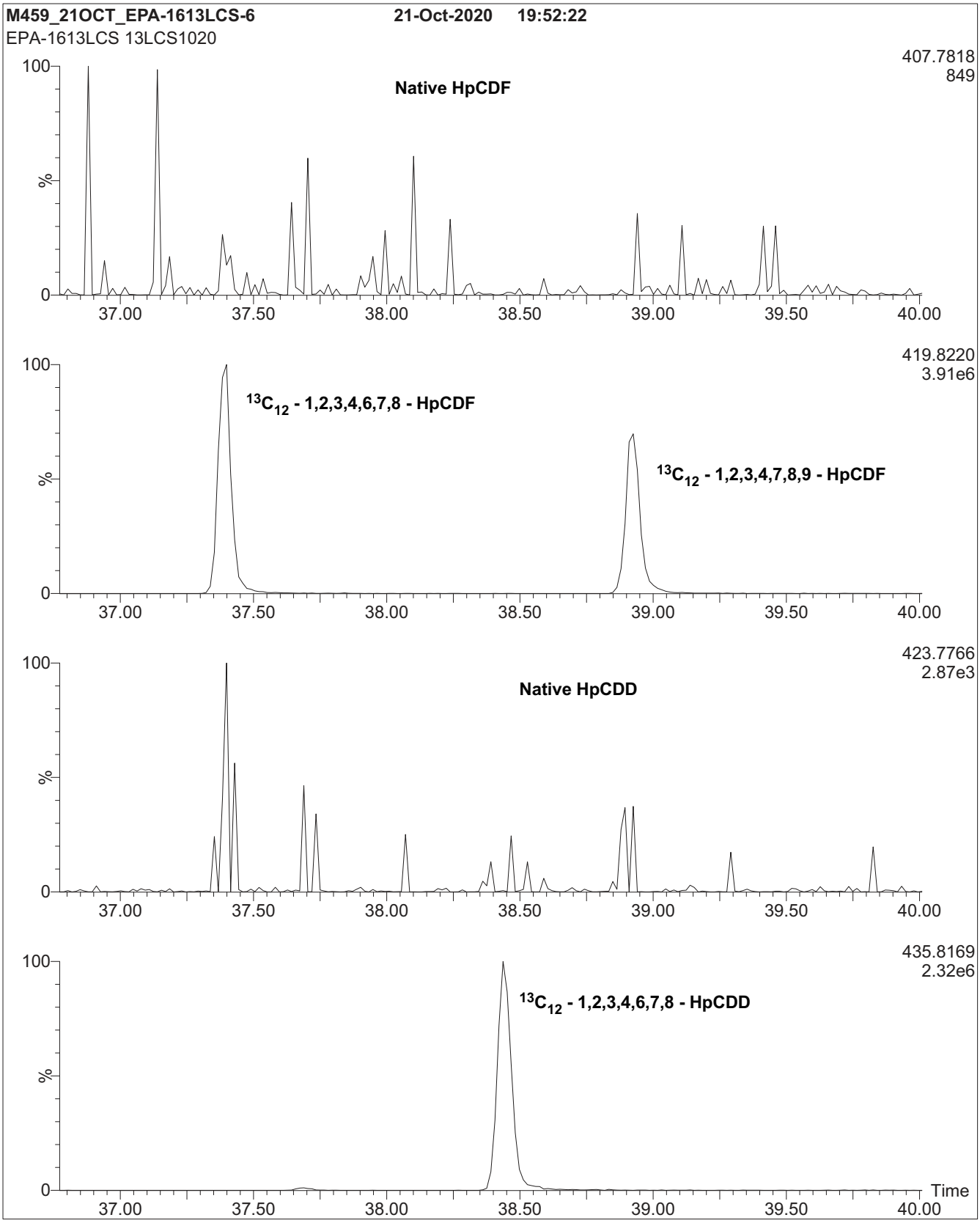
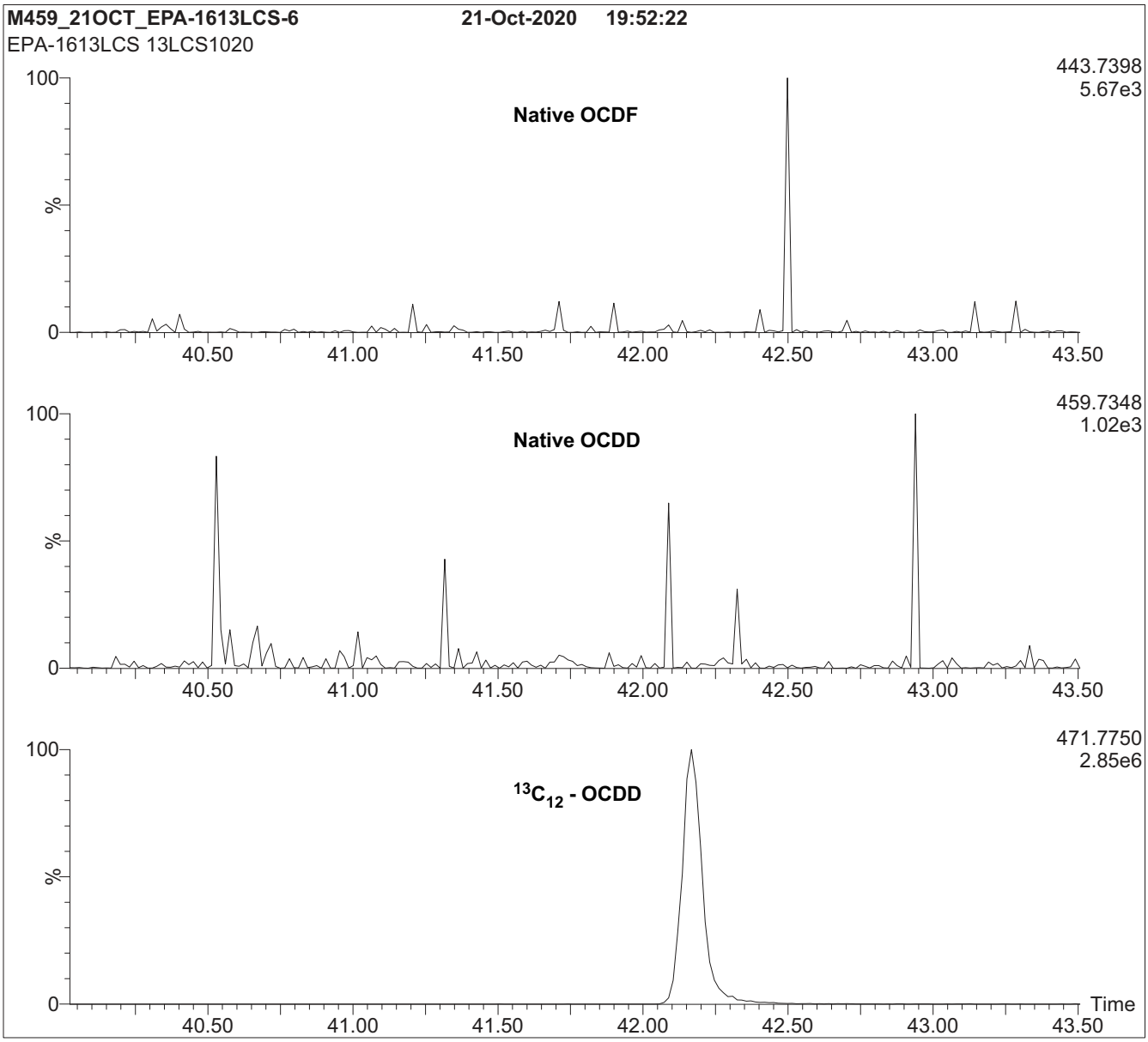


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



Conditions for Figure 1:

Agilent 6890N HRGC
Autospec Ultima HRMS

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 mL/min	Oven:	150°C (1 min)
Injector:	280°C (Splitless Injection)		12°C/min to 200°C
Ionization:	EI+		3°C/min to 235°C
Detector:	300°C		235°C (8 min)
	SIR at 10,000 mass resolving power		8°C/min to 310°C
			310°C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

CS3WT

Calibration and Verification Solution (EPA-1613CS3) combined with Window Defining and 2,3,7,8-TCDD Resolution Testing Congeners

PRODUCT CODE:	CS3WT
LOT NUMBER:	CS3WT1020
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	12/02/2020
LAST TESTED: (mm/dd/yyyy)	12/10/2020
EXPIRY DATE: (mm/dd/yyyy)	12/10/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

J001522
1613 CS3WT CCAL STD
Expires 12/10/2027
Prepared By Joshua Rains 2/10/2021

DESCRIPTION:

CS3WT is a solution/mixture of native ($^{12}C_{12}$) and mass-labelled ($^{13}C_{12}$) polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Tables A and B.

CS3WT is an HRGC/HRMS calibration solution that was designed and prepared to be used according to U.S. EPA Method 1613, Revision B, in place of EPA-1613CS3 (lot: 13CS31020). Additionally, it contains the PCDD and PCDF isomers required to set retention time windows as well as test and establish isomer specificity for 2,3,7,8-TCDD on a DB-5 (or equivalent) capillary column.

The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%. The 2,3,7,8-($^{37}Cl_4$)tetrachlorodibenzo-*p*-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%. The individual native 2,3,7,8-substituted PCDD and PCDF congeners all have chemical purities of >98%; the other congeners (window defining and resolution testing) should only be considered semi-quantitative.

This current lot of CS3WT is to be used with the 1613 calibration solutions having the following lot numbers:

PRODUCT CODE	LOT NUMBER
EPA-1613CS1	13CS11020
EPA-1613CS2	13CS21020
EPA-1613CS3	13CS31020
EPA-1613CS4	13CS41020
EPA-1613CS5	13CS51020
EPA-1613CSL	13CSL1020
EPA-1613CS0.5	13CS0.51020

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

DOCUMENTATION/ DATA ATTACHED:

Table A: Quantitative Components and Concentrations of the Solution/Mixture
Table B: Semi-Quantitative Components and Concentrations of the Solution/Mixture
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 3 for further details.
- Only the 2,3,7,8-substituted PCDDs and PCDFs should be used for quantitation. The other congeners (window defining and 2,3,7,8-TCDD resolution testing) should be considered semi-quantitative (within ±20% of their design value). Impurities have been identified where possible.

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) has been assigned to the quantitative components in this product. A maximum combined percent relative uncertainty of ±20% has been assigned to the semi-quantitative components in this product.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **CS3WT; Quantitative Components and Concentrations (ng/mL, ± 5%, in nonane/4.5% toluene)**

Compound		Acronym	CAS #	Concentration (ng/mL)
Native PCDDs:	**Designation[a]**			
2,3,7,8-Tetrachlorodibenzo-*p*-dioxin		2,3,7,8-TCDD	1746-01-6	10.0
1,2,3,7,8-Pentachlorodibenzo-*p*-dioxin		1,2,3,7,8-PeCDD	40321-76-4	50.0
1,2,3,4,7,8-Hexachlorodibenzo-*p*-dioxin		1,2,3,4,7,8-HxCDD	39227-28-6	50.0
1,2,3,6,7,8-Hexachlorodibenzo-*p*-dioxin		1,2,3,6,7,8-HxCDD	57653-85-7	50.0
1,2,3,7,8,9-Hexachlorodibenzo-*p*-dioxin	Last HxCDD[b]	1,2,3,7,8,9-HxCDD	19408-74-3	50.0
1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin	Last HpCDD	1,2,3,4,6,7,8-HpCDD	35822-46-9	50.0
Octachlorodibenzo-*p*-dioxin		OCDD	3268-87-9	100
Native PCDFs:	**Designation[a]**			
2,3,7,8-Tetrachlorodibenzofuran		2,3,7,8-TCDF	51207-31-9	10.0
1,2,3,7,8-Pentachlorodibenzofuran		1,2,3,7,8-PeCDF	57117-41-6	50.0
2,3,4,7,8-Pentachlorodibenzofuran		2,3,4,7,8-PeCDF	57117-31-4	50.0
1,2,3,4,7,8-Hexachlorodibenzofuran		1,2,3,4,7,8-HxCDF	70648-26-9	50.0
1,2,3,6,7,8-Hexachlorodibenzofuran		1,2,3,6,7,8-HxCDF	57117-44-9	50.0
1,2,3,7,8,9-Hexachlorodibenzofuran		1,2,3,7,8,9-HxCDF	72918-21-9	50.0
2,3,4,6,7,8-Hexachlorodibenzofuran		2,3,4,6,7,8-HxCDF	60851-34-5	50.0
1,2,3,4,6,7,8-Heptachlorodibenzofuran	First HpCDF[c]	1,2,3,4,6,7,8-HpCDF	67562-39-4	50.0
1,2,3,4,7,8,9-Heptachlorodibenzofuran	Last HpCDF	1,2,3,4,7,8,9-HpCDF	55673-89-7	50.0
Octachlorodibenzofuran		OCDF	39001-02-0	100
Mass-Labelled PCDDs:				
2,3,7,8-Tetrachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-2,3,7,8-TCDD	76523-40-5	100
1,2,3,7,8-Pentachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-1,2,3,7,8-PeCDD	109719-79-1	100
1,2,3,4,7,8-Hexachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	109719-80-4	100
1,2,3,6,7,8-Hexachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	109719-81-5	100
1,2,3,4,6,7,8-Heptachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	109719-83-7	100
Octachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-OCDD	114423-97-1	200
Mass-Labelled PCDFs:				
2,3,7,8-Tetrachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-2,3,7,8-TCDF	89059-46-1	100
1,2,3,7,8-Pentachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-1,2,3,7,8-PeCDF	109719-77-9	100
2,3,4,7,8-Pentachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-2,3,4,7,8-PeCDF	116843-02-8	100
1,2,3,4,7,8-Hexachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	114423-98-2	100
1,2,3,6,7,8-Hexachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	116843-03-9	100
1,2,3,7,8,9-Hexachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	116843-04-0	100
2,3,4,6,7,8-Hexachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	116843-05-1	100
1,2,3,4,6,7,8-Heptachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	109719-84-8	100
1,2,3,4,7,8,9-Heptachloro($^{13}C_{12}$)dibenzofuran		$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	109719-94-0	100
Cleanup Standard:				
2,3,7,8-($^{37}Cl_4$)Tetrachlorodibenzo-*p*-dioxin		$^{37}Cl_4$-2,3,7,8-TCDD	85508-50-5	10.0
Internal Standards:				
1,2,3,4-Tetrachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-1,2,3,4-TCDD	114423-99-3	100
1,2,3,7,8,9-Hexachloro($^{13}C_{12}$)dibenzo-*p*-dioxin		$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	109719-82-6	100

[a] First/Last eluting isomer for the specified homologue group (see Table B for additional Window Definers).
[b, c] – see Table B for footnote.

Table B: **CS3WT; Semi-Quantitative Components and Concentrations (ng/mL, ± 20%, in nonane/4.5% toluene)**

Compound		Acronym	CAS #	Concentration (ng/mL)
PCDD Window Definers:	**Designation[a]**			
1,3,6,8-Tetrachlorodibenzo-*p*-dioxin	First TCDD	1,3,6,8-TCDD	33423-92-6	10.0
1,2,8,9-Tetrachlorodibenzo-*p*-dioxin	Last TCDD	1,2,8,9-TCDD	62470-54-6	10.0
1,2,4,6,8-/1,2,4,7,9-Pentachlorodibenzo-*p*-dioxin	First PeCDD	1,2,4,6,8-PeCDD 1,2,4,7,9-PeCDD	71998-76-0 82291-37-0	50.0[d]
1,2,3,8,9-Pentachlorodibenzo-*p*-dioxin	Last PeCDD	1,2,3,8,9-PeCDD	71925-18-3	50.0
1,2,4,6,7,9-Hexachlorodibenzo-*p*-dioxin	First HxCDD	1,2,4,6,7,9-HxCDD	39227-62-8	50.0
1,2,3,4,6,7,9-Heptachlorodibenzo-*p*-dioxin	First HpCDD	1,2,3,4,6,7,9-HpCDD	58200-70-7	50.0
PCDF Window Definers:	**Designation[a]**			
1,3,6,8-Tetrachlorodibenzofuran	First TCDF	1,3,6,8-TCDF	71998-72-6	10.0
1,2,8,9-Tetrachlorodibenzofuran	Last TCDF	1,2,8,9-TCDF	70648-22-5	10.0
1,3,4,6,8-Pentachlorodibenzofuran	First PeCDF	1,3,4,6,8-PeCDF	83704-55-6	50.0
1,2,3,8,9-Pentachlorodibenzofuran	Last PeCDF	1,2,3,8,9-PeCDF	83704-54-5	50.0
1,2,3,4,6,8-Hexachlorodibenzofuran	First HxCDF	1,2,3,4,6,8-HxCDF	69698-60-8	50.0
2,3,7,8-TCDD Resolution Testing Isomers:				
1,2,3,4-Tetrachlorodibenzo-*p*-dioxin		1,2,3,4-TCDD	30746-58-8	5.00
1,2,3,7-/1,2,3,8-Tetrachlorodibenzo-*p*-dioxin		1,2,3,7-TCDD 1,2,3,8-TCDD	67028-18-6 53555-02-5	5.00[d]
1,2,3,9-Tetrachlorodibenzo-*p*-dioxin		1,2,3,9-TCDD	71669-26-6	10.0

[a] First/Last eluting isomer for the specified homologue group (see Table A for additional Window Definers).

[b] 1,2,3,4,6,7-HxCDD (last eluting HxCDD) not included; coelutes with 1,2,3,7,8,9-HxCDD on a 60 m DB-5 column. Use 1,2,3,7,8,9-HxCDD (see Table A) and 1,2,3,4,6,7,9-HpCDD to approximate the end of the HxCDD window.

[c] 1,2,3,4,8,9-HxCDF (last eluting HxCDF) not included; can interfere with 1,2,3,7,8,9-HxCDF on a 60 m DB-5 column. Use 1,2,3,4,6,7,8-HpCDF (see Table A) to approximate the end of the HxCDF window.

[d] Total concentration of isomers.

Certified By: _____ **Date:** 09/17/2021 (mm/dd/yyyy)

B.G. Chittim, General Manager

Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

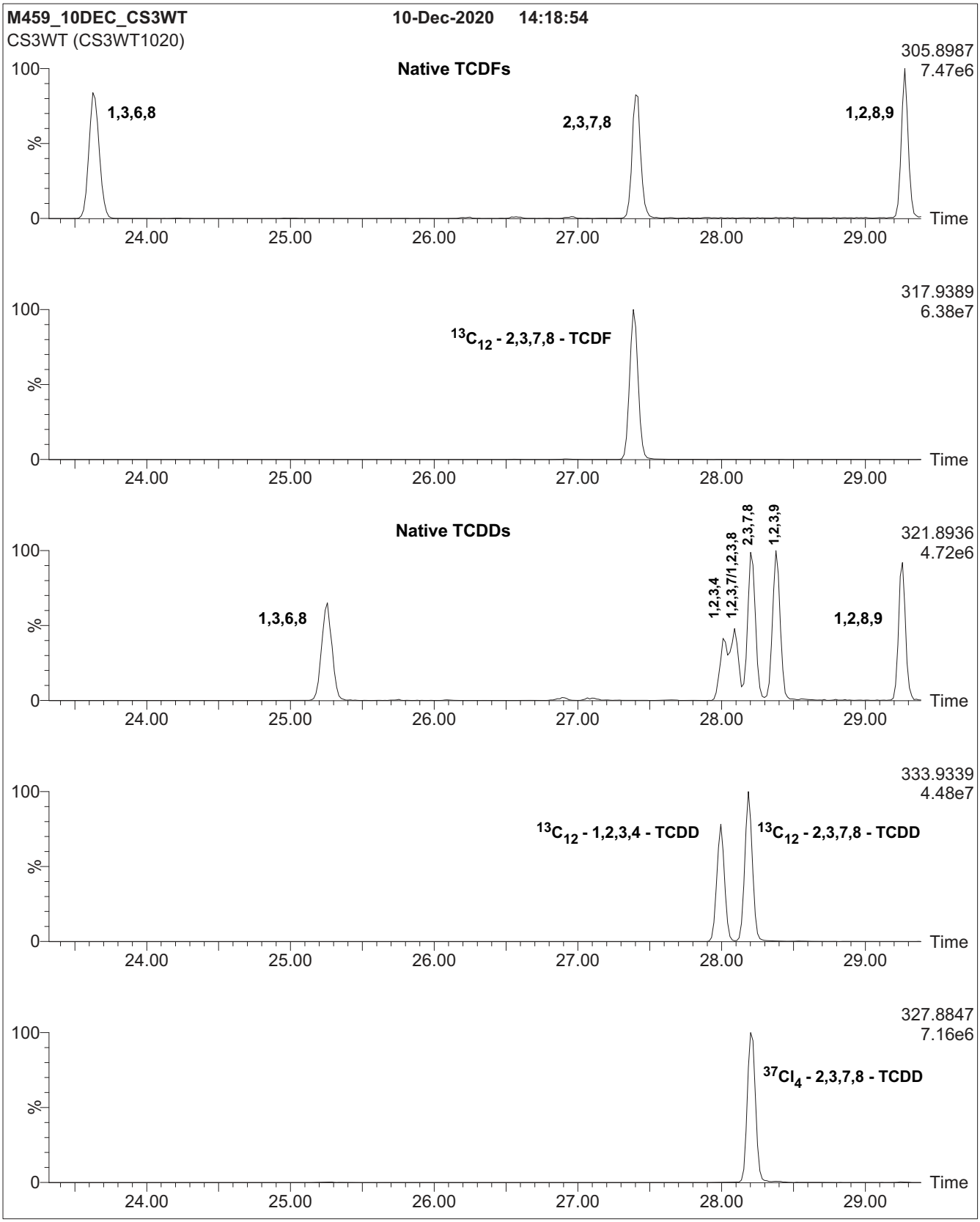


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

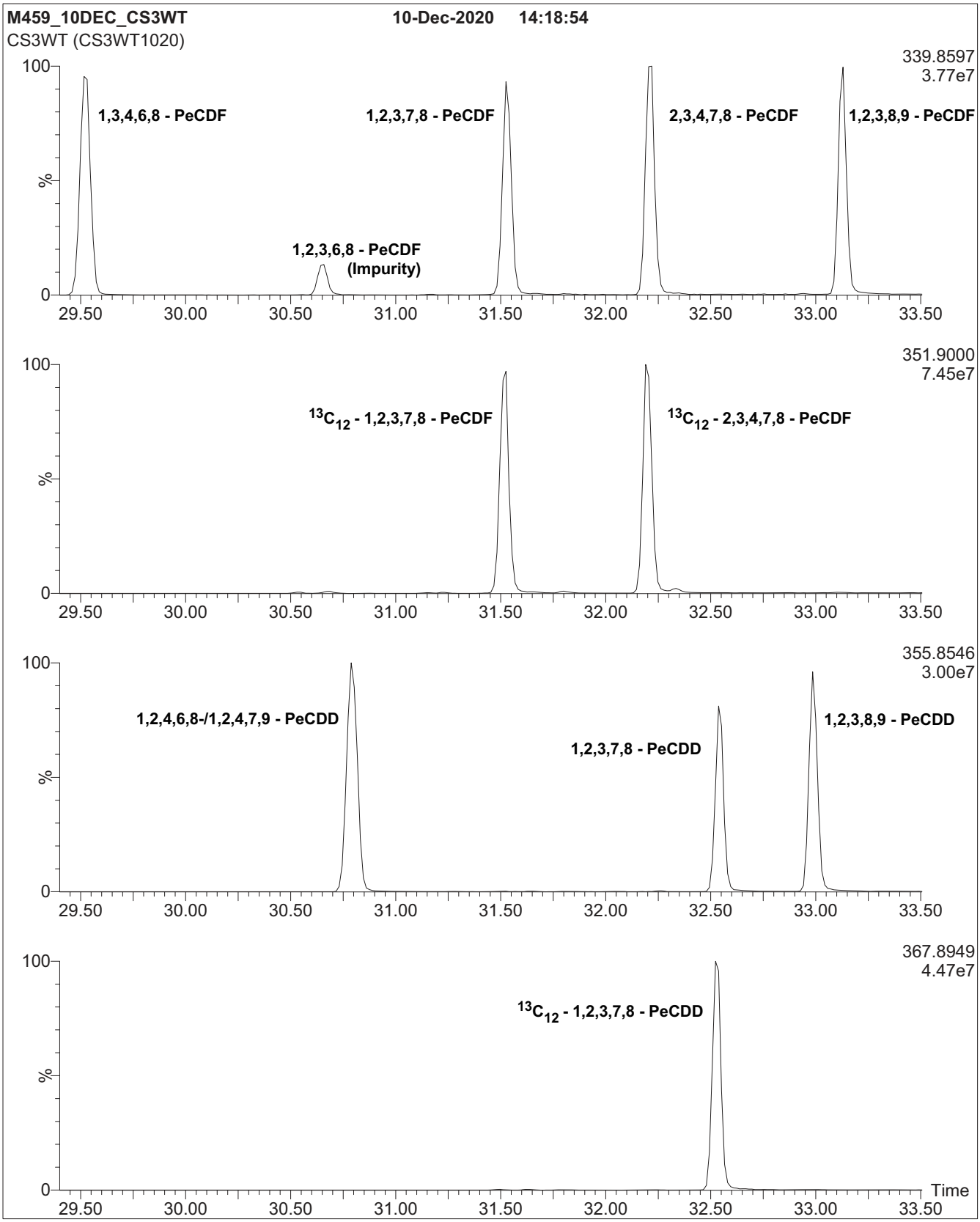


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

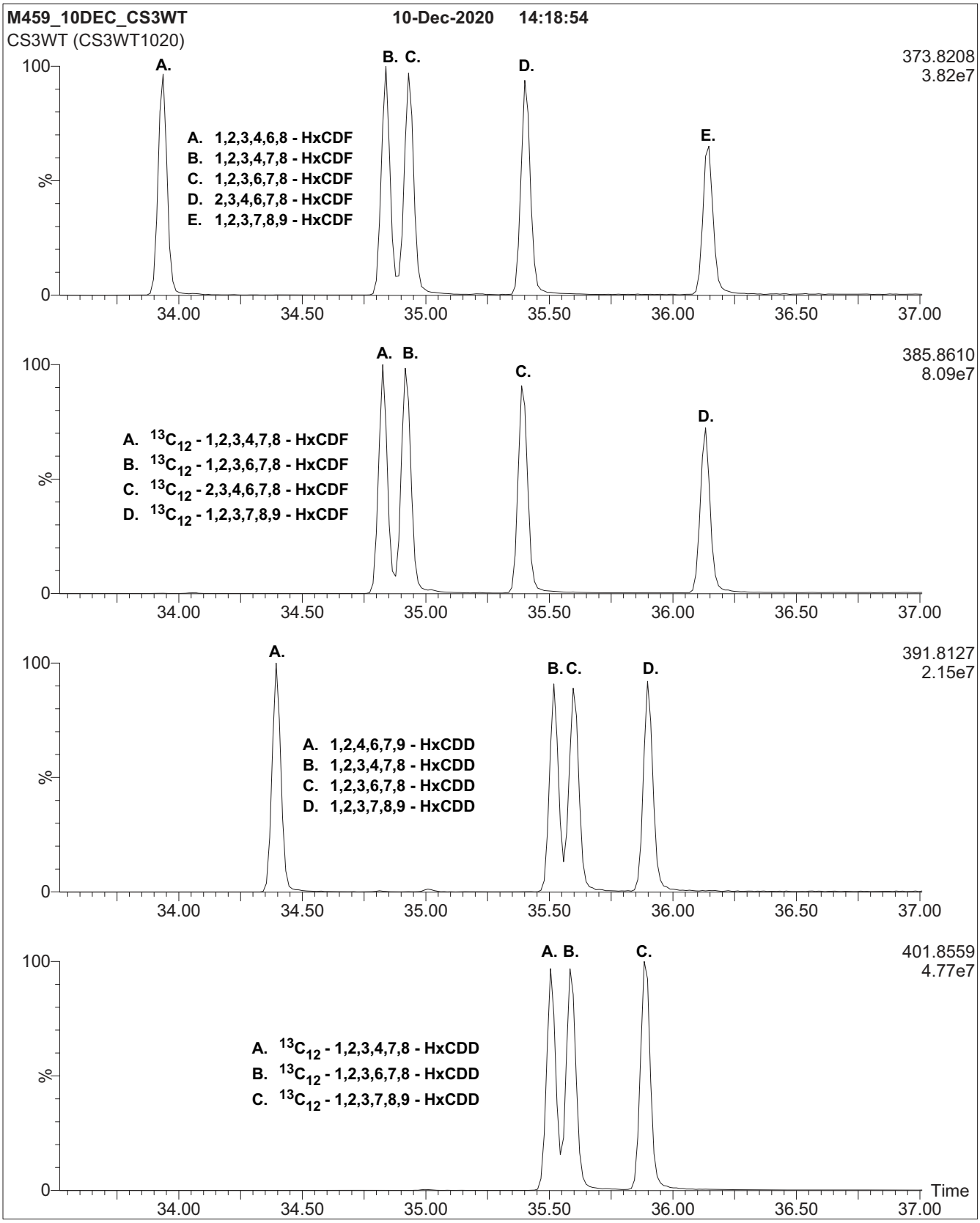


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**

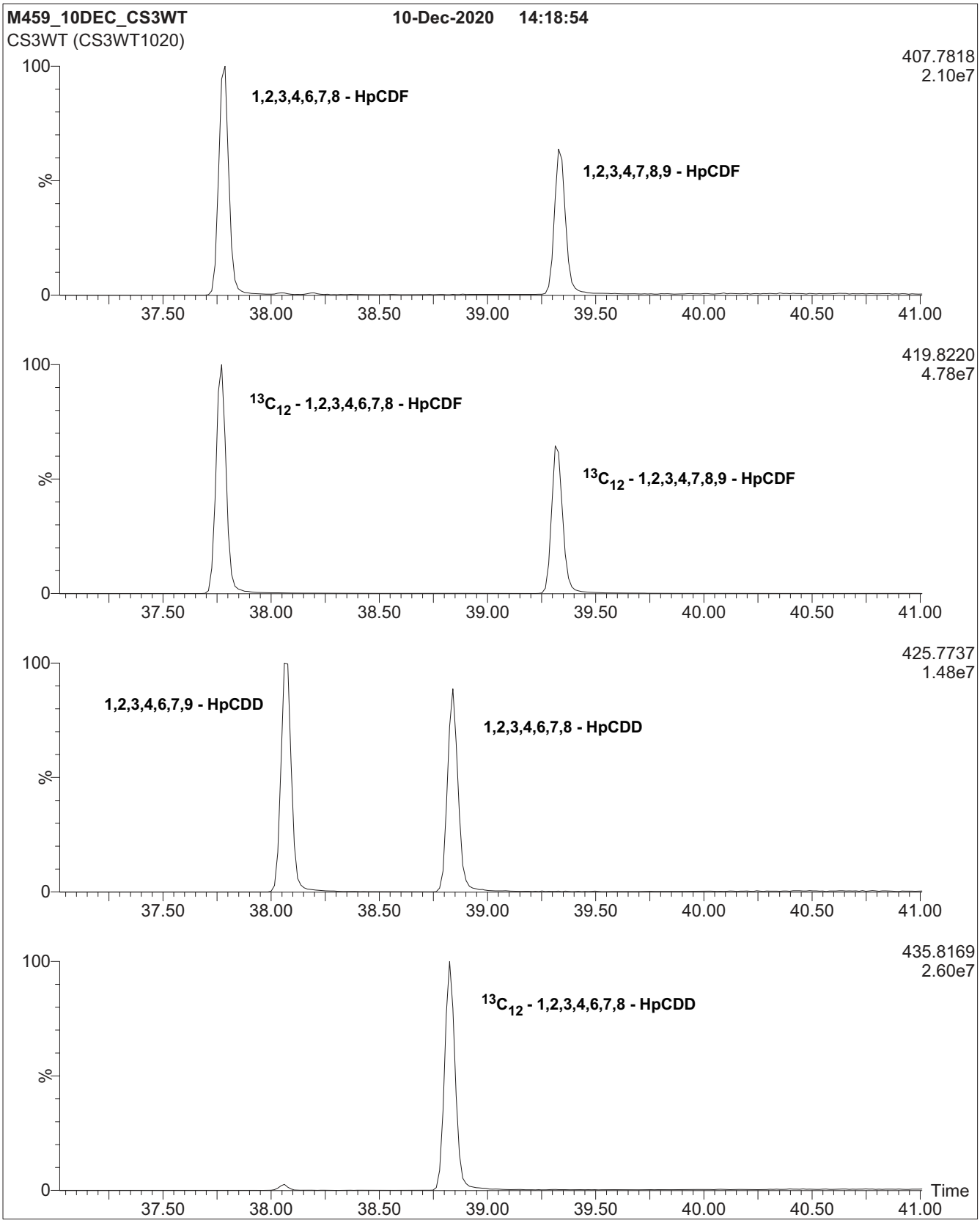
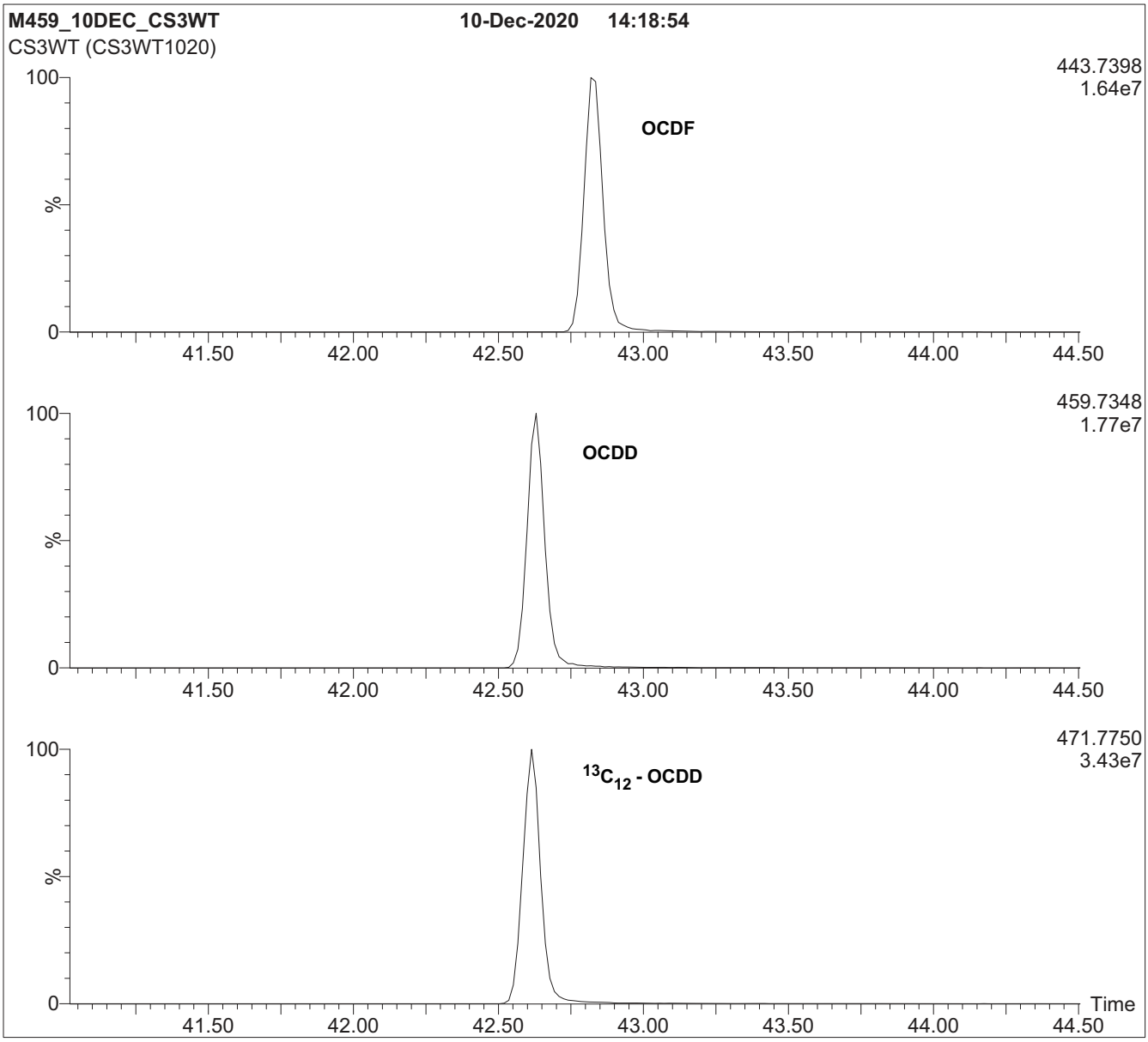


Figure 1: **CS3WT; HRGC/HRMS Data (60 m DB-5 Column)**



Conditions for Figure 1:

Agilent 6890N HRGC
Autospec Ultima HRMS

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 mL/min	Oven:	150°C (1 min)
Injector:	280°C (Splitless Injection)		12°C/min to 200°C
Ionization:	EI+		3°C/min to 235°C
Detector:	280°C		235°C (8 min)
	SIR at 10,000 mass resolving power		8°C/min to 310°C
			310°C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613CSS

U.S. EPA Method 1613 Cleanup Standard Spiking Solution

PRODUCT CODE:	EPA-1613CSS
LOT NUMBER:	13CSS1020
SOLVENT(S):	Nonane
DATE PREPARED: (mm/dd/yyyy)	11/12/2020
LAST TESTED: (mm/dd/yyyy)	01/30/2021
EXPIRY DATE: (mm/dd/yyyy)	11/19/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

J004693
1613B Stock Cleanup Std
Expires 11/19/2027
Prepared By Joshua Rains 4/30/2021

DESCRIPTION:

EPA-1613CSS contains 2,3,7,8-($^{37}Cl_4$)tetrachlorodibenzo-*p*-dioxin at the concentration given in Table A.

EPA-1613CSS was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

2,3,7,8-($^{37}Cl_4$)Tetrachlorodibenzo-*p*-dioxin has a chemical purity of >98% and an isotopic (^{37}Cl) purity of ≥95%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

Table A: **EPA-1613CSS; Components and Concentrations (ng/mL, ± 5% in nonane)**

Compound	Acronym	CAS #	Concentration (ng/mL)
2,3,7,8-($^{37}Cl_4$)Tetrachlorodibenzo-*p*-dioxin	$^{37}Cl_4$-2,3,7,8-TCDD	85508-50-5	40.0

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/20/2021 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

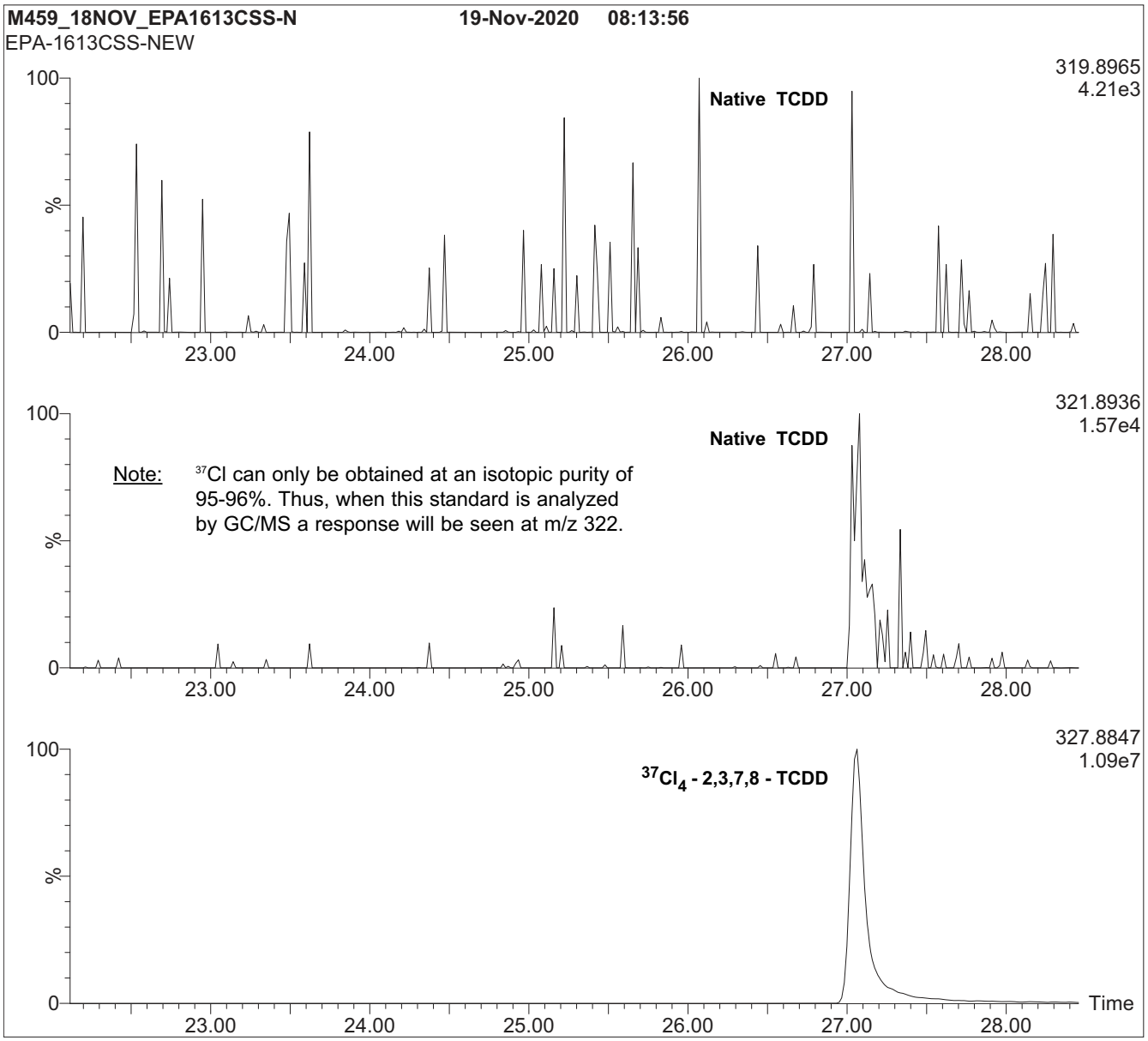
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Figure 1: **EPA-1613CSS; HRGC/HRMS Data (60 m DB-5 Column)**



Conditions for Figure 1:

Agilent 6890N HRGC
Autospec Ultima HRMS

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 mL/min	Oven:	150°C (1 min)
Injector:	280°C (Splitless Injection)		12°C/min to 200°C
Ionization:	EI+		3°C/min to 235°C
Detector:	280°C		235°C (8 min)
	SIR at 10,000 mass resolving power		8°C/min to 310°C
			310°C (8 min)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

EPA-1613LCS

U.S. EPA Method 1613
Labelled Compound Stock Solution

PRODUCT CODE:	EPA-1613LCS
LOT NUMBER:	13LCS1020
SOLVENT(S):	Nonane/Toluene
DATE PREPARED: (mm/dd/yyyy)	10/16/2020
LAST TESTED: (mm/dd/yyyy)	01/30/2021
EXPIRY DATE: (mm/dd/yyyy)	10/21/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

J004694
1613B Stock Surr Std
Expires 10/21/2027
Prepared By Joshua Rains 4/30/2021

DESCRIPTION:

EPA-1613LCS is a solution/mixture of mass-labelled ($^{13}C_{12}$) polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs). The components and their concentrations are given in Table A.

EPA-1613LCS was designed and prepared to be used according to U.S. EPA Method 1613, Revision B.

The individual ^{13}C-labelled PCDDs and PCDFs all have chemical purities of >98% and isotopic purities of ≥99%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations
Figure 1: HRGC/HRMS Data (SIR; 10,000 mass resolving power)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ on which it depends is:

$$u_c(y(x_1, x_2, \ldots x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ANSI National Accreditation Board ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: **EPA-1613LCS; Components and Concentrations (ng/mL, ± 5% in nonane/3.2% toluene)**

Compound	Acronym	CAS #	Concentration (ng/mL)
Mass-Labelled PCDDs:			
2,3,7,8-Tetrachloro($^{13}C_{12}$)dibenzo-*p*-dioxin	$^{13}C_{12}$-2,3,7,8-TCDD	76523-40-5	100
1,2,3,7,8-Pentachloro($^{13}C_{12}$)dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,7,8-PeCDD	109719-79-1	100
1,2,3,4,7,8-Hexachloro($^{13}C_{12}$)dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	109719-80-4	100
1,2,3,6,7,8-Hexachloro($^{13}C_{12}$)dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,6,7,8-HxCDD	109719-81-5	100
1,2,3,4,6,7,8-Heptachloro($^{13}C_{12}$)dibenzo-*p*-dioxin	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDD	109719-83-7	100
Octachloro($^{13}C_{12}$)dibenzo-*p*-dioxin	$^{13}C_{12}$-OCDD	114423-97-1	200
Mass-Labelled PCDFs:			
2,3,7,8-Tetrachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-2,3,7,8-TCDF	89059-46-1	100
1,2,3,7,8-Pentachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-1,2,3,7,8-PeCDF	109719-77-9	100
2,3,4,7,8-Pentachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-2,3,4,7,8-PeCDF	116843-02-8	100
1,2,3,4,7,8-Hexachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	114423-98-2	100
1,2,3,6,7,8-Hexachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-1,2,3,6,7,8-HxCDF	116843-03-9	100
1,2,3,7,8,9-Hexachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	116843-04-0	100
2,3,4,6,7,8-Hexachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	116843-05-1	100
1,2,3,4,6,7,8-Heptachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-1,2,3,4,6,7,8-HpCDF	109719-84-8	100
1,2,3,4,7,8,9-Heptachloro($^{13}C_{12}$)dibenzofuran	$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	109719-94-0	100

Certified By: _____ **Date:** 04/19/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

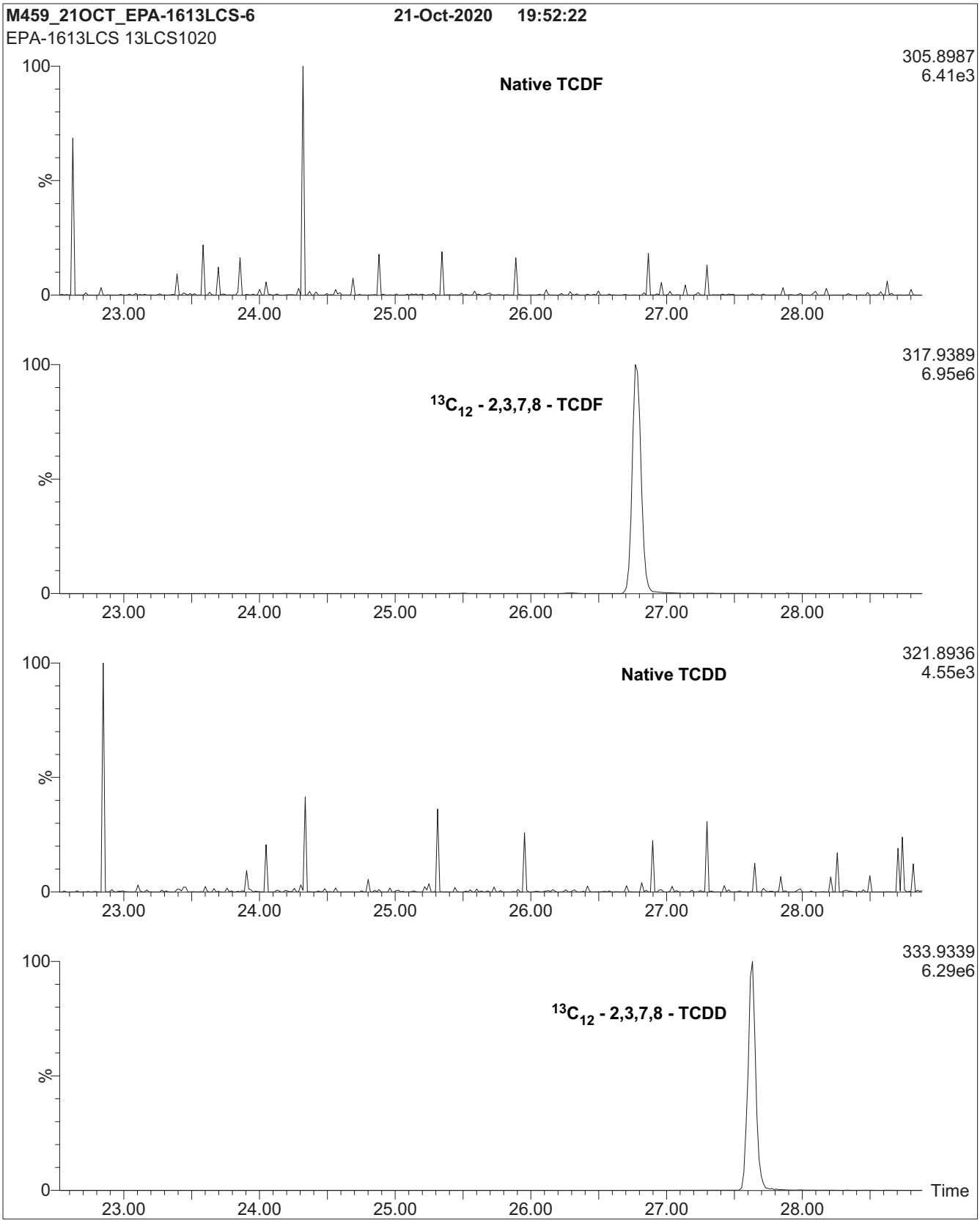


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

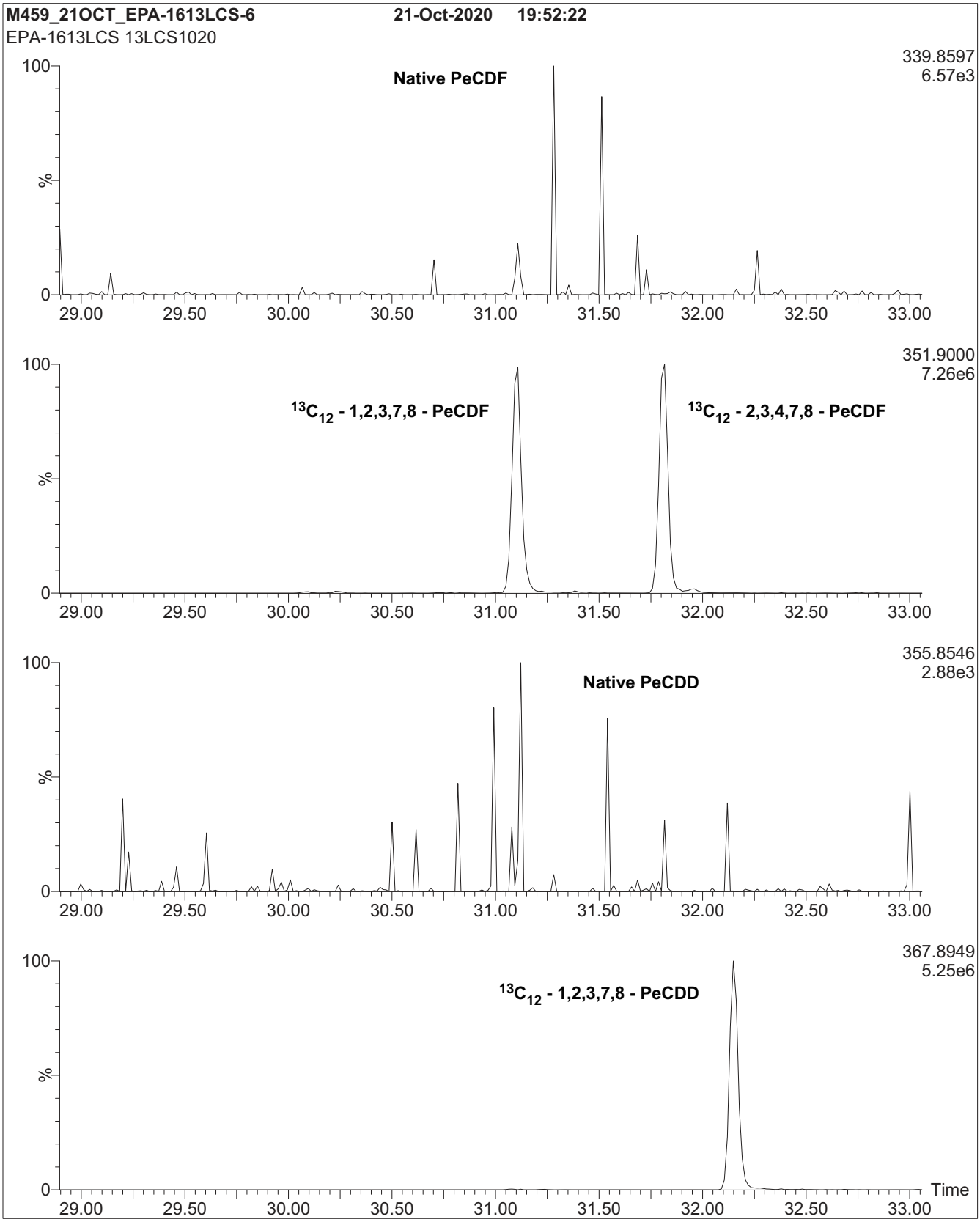


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

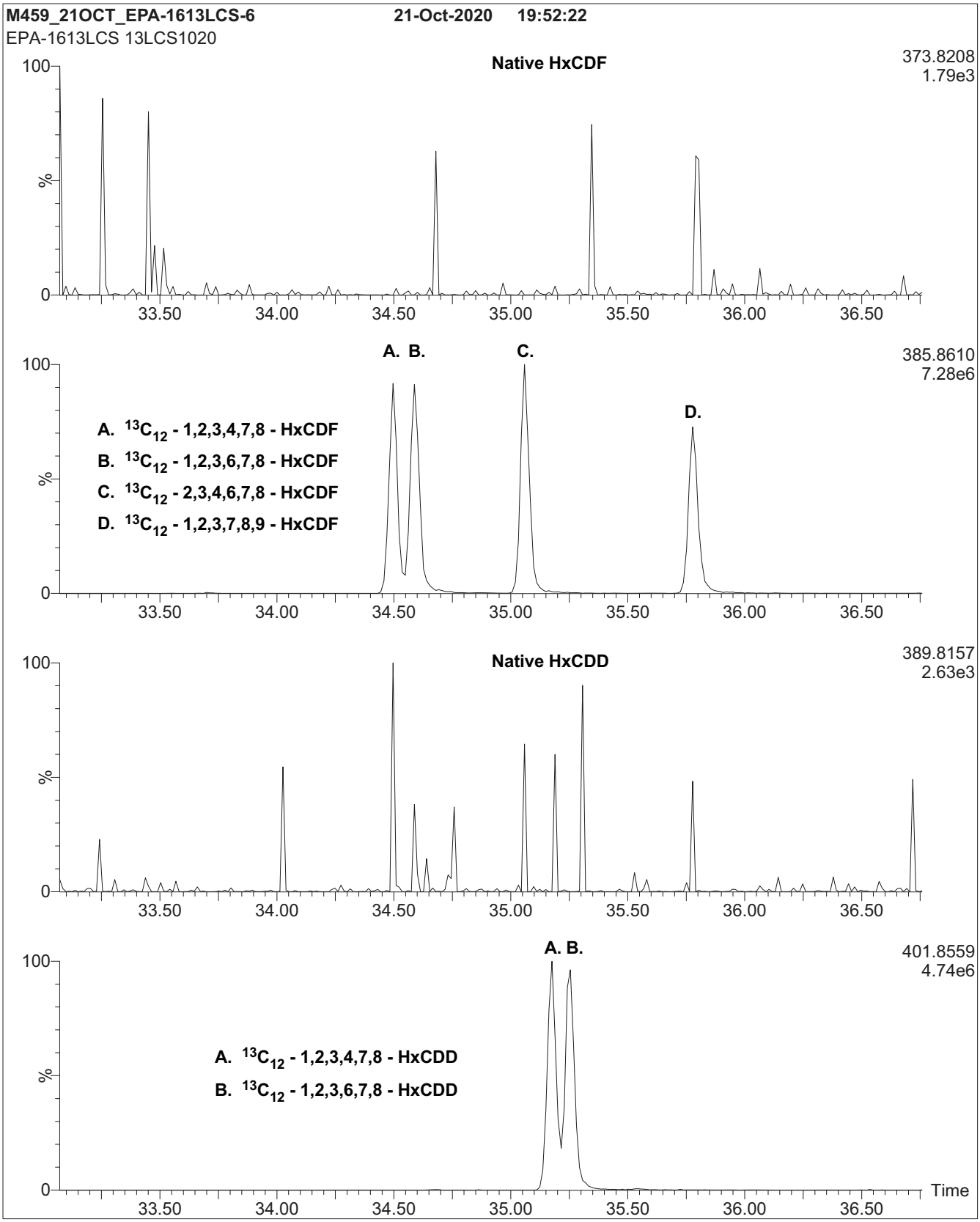


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**

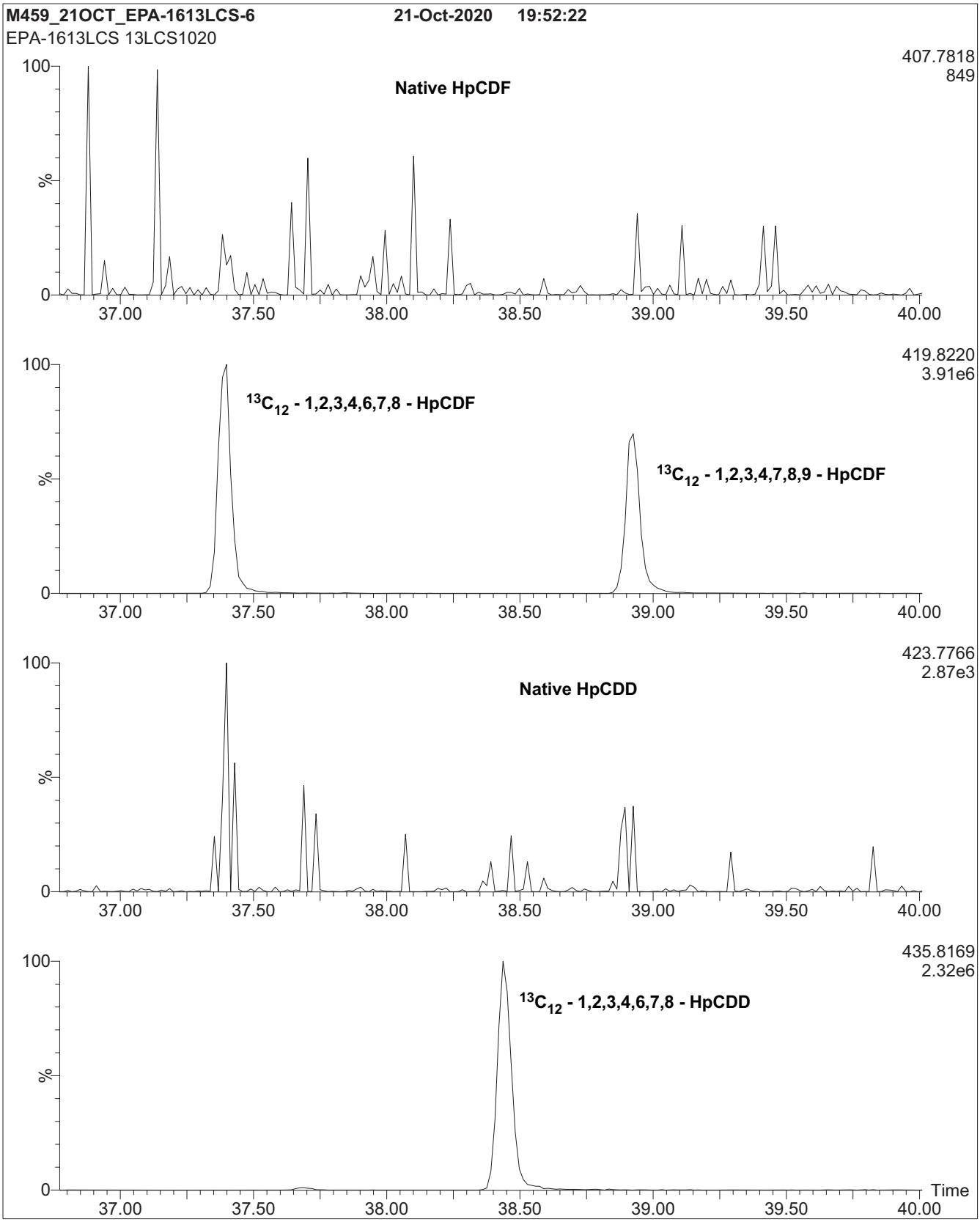
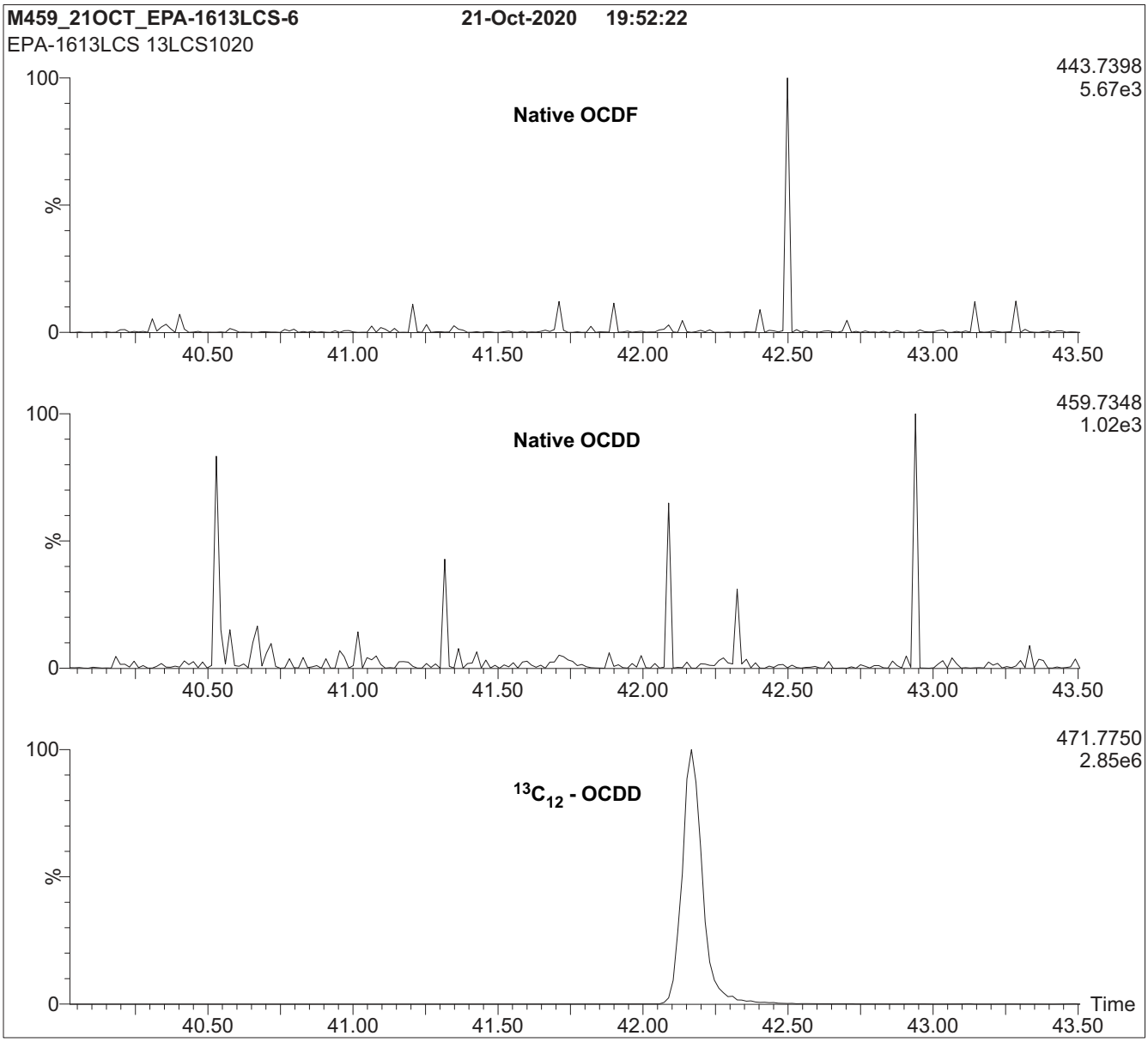


Figure 1: **EPA-1613LCS; HRGC/HRMS Data (60 m DB-5 Column)**



Conditions for Figure 1:

Agilent 6890N HRGC
Autospec Ultima HRMS

Chromatographic Conditions:

Column: 60 m DB-5 (0.25 mm id, 0.25 µm film thickness) Agilent J&W

Flow:	Constant at 1 mL/min	Oven:	150°C (1 min)
Injector:	280°C (Splitless Injection)		12°C/min to 200°C
Ionization:	EI+		3°C/min to 235°C
Detector:	300°C		235°C (8 min)
	SIR at 10,000 mass resolving power		8°C/min to 310°C
			310°C (8 min)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record

Standard ID: J005595 **Printed: 5/26/2021 2:15:33PM**

Description:	Dioxin ISC Mix	Expires:	26-May-2022
Standard Type:	Other	Prepared:	26-May-2021
Solvent:	Nonane	Prepared By:	Peter Kepler
Final Volume (mls):	1	Department:	HRGCMS
Vials:	1	Last Edit:	26-May-2021 14:05 by PK
Vendor:		Lot #:	1234
Vendor Catalog #:			

Comments

Stock: H9902: 2378-TCDF, 3467-TCDF, 2348-TCDF, 1278-TCDD, 2378-TCDD. each @ 1000 ng/mL

10 ul to 1 mL FV in Nonane. Final Conc = 10 ng/mL. Analytes and units not available in Element.

Reviewed By Date

Recipient Copy

CHAIN-OF-CUSTODY RECORD

COC No. 15130

Order Number: CB014550

Date Shipped: 6/30/2021

AirBill No(s): 460843969796

From: QATS LABORATORY
2700 CHANDLER AVENUE, BLDG. C
LAS VEGAS, NV 89120
PHONE: 1-702-895-8712
FAX: 1-702-795-8210

To: SUE DUNNIHOO
ANALYTICAL RESOURCES INC.
4611 S. 134TH PLACE SUITE 100
TUKWILA WA 98168
250-695-6207

Sample ID	Qty	Description/Remarks	→ Catalogue Number
PSRM0134 - J006840	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0135 - J006841	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0136 - J006842	1	PUGET SOUND SEDIMENT RM	PS-SRM
PSRM0137 - J006843	1	PUGET SOUND SEDIMENT RM	PS-SRM
		6/30/2021	
		DUWAMISH AOC4	

Please use the enclosed Sample Preparation Instructions. If catalogue number(s) are listed at the top of the Sample Preparation Instructions use the Sample Preparation Instructions with catalogue number(s) matching the catalogue number(s) of each of the samples listed above.

Relinquished by: (Signature)	Date/Time 1400 6/30/2021	Received by: Jacob Lyalite (Signature) AM	Date/Time 07/01/2021 1042
Custody Seal(s): Present/Absent	Remarks:		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

Report No. 00, 9/11/2014

SMP Version 3.3

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

ASTM D2216

Laboratory: Analytical Resources, Inc. SDG: 21G0138

Client: Anchor QEA, LLC Project: Lower Duwamish AOC4

Batch: BJG0627 Batch Matrix: Solid Preparation: No Prep-Organics

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT662B	21G0138-02		07/28/21 13:00	
LDW21-IT662C	21G0138-03		07/28/21 13:00	
LDW21-IT662E	21G0138-04		07/28/21 13:00	
LDW21-IT659B	21G0138-05		07/28/21 13:00	
LDW21-IT659C	21G0138-06		07/28/21 13:00	
LDW21-IT659E	21G0138-07		07/28/21 13:00	
LDW21-IT658B	21G0138-08		07/28/21 13:00	
LDW21-IT658C	21G0138-09		07/28/21 13:00	
LDW21-IT658E	21G0138-10		07/28/21 13:00	
LDW21-IT657B	21G0138-11		07/28/21 13:00	
LDW21-IT657C	21G0138-12		07/28/21 13:00	
LDW21-IT648B	21G0138-13		07/28/21 13:00	
LDW21-IT648C	21G0138-14		07/28/21 13:00	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HOLDING TIME SUMMARY

Analysis: ASTM D2216

Laboratory: Analytical Resources, Inc. SDG: 21G0138

Client: Anchor QEA, LLC Project: Lower Duwamish AOC4

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
LDW21-IT662B 21G0138-02	07/13/21 07:42	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT662C 21G0138-03	07/13/21 07:42	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT662E 21G0138-04	07/13/21 07:42	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT659B 21G0138-05	07/13/21 08:17	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT659C 21G0138-06	07/13/21 08:17	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT659E 21G0138-07	07/13/21 08:17	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT658B 21G0138-08	07/13/21 09:01	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT658C 21G0138-09	07/13/21 09:01	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT658E 21G0138-10	07/13/21 09:01	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT657B 21G0138-11	07/13/21 10:20	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT657C 21G0138-12	07/13/21 10:20	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT648B 21G0138-13	07/13/21 11:32	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	
LDW21-IT648C 21G0138-14	07/13/21 11:32	07/13/21 17:25	07/28/21 13:00	15	28	07/29/21 05:25	16	28	

* Indicates hold time exceedance.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

ASTM D2216

Laboratory: Analytical Resources, Inc.
SDG: 21G0138
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument:

Analyte	MDL	RL	Units
Total Solids		0.01	%