Analytical Resources, Incorporated
Analytical Chemists and Consultants

07 September 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)
21H0078	N/A

Susan Dunnihoo
Digitally signed by Susan Dunnihoo
Date: 2021.09.07 13:53:13 -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

Archive

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 4123

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

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

Shipping Date: 8/4/2021
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): Archive							Comments / Instructions [Jar tag number(s)]
8/3/2021	1137	LDW21-IT703AZ	3	Sediment	X							
		LDW21-IT703BZ	3		X							
		LDW21-IT703CZ	3		X							
		LDW21-IT703DZ	3		X							
		LDW21-IT703EZ	3		X							
	1137	LDW21-IT703FZ	3		X							
	1137	LDW21-IT703GS1Z	1		X							
	1137	LDW21-IT703GZ	3		X							
	1453	LDW21-IT698AX	3		X							
		LDW21-IT698BX	3		X							
		LDW21-IT698CX	3		X							
8/3/2021	1453	LDW21-IT698DX	3	Sediment	X							
		Total Number of Containers	34	Purchase Order / Statement of Work # CLF-052021-ARI								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Brandi Quinlise	Dionne	Print name:	
Signature: Brandi Quinlise	Company: ARI	Signature:	Company:
Company: Windward		Company:	
Date/Time: 8/4/2021 11:49	Date/Time: 08/04/21 1144	Date/Time:	Date/Time:

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

To be completed by Laboratory upon sample receipt:

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

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

2 of 3

CHAIN-OF-CUSTODY/TEST REQUEST FORM

Archive

№ 4125

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

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

Shipping Date: 8/4/2021
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): Archive							Comments / Instructions [Jar tag number(s)]
8/3/2021	1453	LDW21-IT698 EX	3	Sediment	X							
		LDW21-IT698 FX	3		X							
		LDW21-IT 698 GX	3		X							
		LDW21-IT 698 HX	3		X							
	1453	LDW21-IT698 GSIX	1		X							
	1420	LDW21-IT698 AY	3		X							
		LDW21-IT698 BY	3		X							
		LDW21-IT698 CY	3		X							
		LDW21-IT698 DY	3		X							
		LDW21-IT698 EY	3		X							
		LDW21-IT698 FY	3		X							
8/3/2021	1420	LDW21-IT698 GY	3	Sediment	X							
		Total Number of Containers	34	Purchase Order / Statement of Work # CLF-052021-ARI								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Brandi Quinlisk	D. Comer	Print name:	
Signature: Brandi Quinlisk	Company: ARI	Signature:	Company:
Company: Windward		Company:	
Date/Time: 8/4/2021 11:49	Date/Time: 08/04/21 1149	Date/Time:	Date/Time:

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

To be completed by Laboratory upon sample receipt:

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

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

Archive

CHAIN-OF-CUSTODY/TEST REQUEST FORM

№ 4126

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

Ship to: ARI
Attn: Sue Dunnihoo
Shipper: (BQ) ~~Courier~~ Hand Delivered
Form filled out by: Nicolas Eckhardt
Shipping Date: 8/4/2021
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): Archive							Comments / Instructions [Jar tag number(s)]
8/3/2021	1420	LDW21-IT698GS1Y	1	Sediment	X							
	1526	LDW21-IT702AX	3		X							
		LDW21-IT702BX	3		X							
		LDW21-IT702CX	3		X							
	1526	LDW21-IT702DX	3		X							
	1650	LDW21-IT702AY	3		X							
		LDW21-IT702BY	3		X							
		LDW21-IT702CY	3		X							
		LDW21-IT702DY (HE)	3		X							
		LDW21-IT702EY	3		X							
		LDW21-IT702FY	3		X							
8/3/2021	1650	LDW21-IT702GS1Y	1	Sediment	X							
		Total Number of Containers	32	Purchase Order / Statement of Work # CLF-052021-ARI								

1) Released by:	1) Rec'd by:	2) Released by:	2) Rec'd by:
Print name: Brandi Quinlisk	D Lamie	Print name:	
Signature: Brandi Quinlisk	Company: ARI	Signature:	Company:
Company: Windward		Company:	
Date/Time: 8/4/2021 11:49	Date/Time: 08/04/21 1149	Date/Time:	Date/Time:

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

To be completed by Laboratory upon sample receipt:

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

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

AOC4 samples collected this week

Brandi Quinlisk <brandiq@windwardenv.com>

Fri 8/6/2021 12:15 PM

To: Sue Dunnihoo <limsadm@arilabs.com>
Cc: Amara Vandervort <amarav@windwardenv.com>; Cindy Fields <cfields@anchorqea.com>

2 attachments (893 KB)

AOC4_Phase2_ARI_Cores_080321.pdf; AOC4_Phase2_ARI_Cores_080221.pdf;

Hi Sue,

Samples were dropped off at ARI on 8/2 and 8/3 this week for the AOC4 project. The five samples noted below need to be pulled from archive and analyzed for PCBs and TOC/Total Solids. The COCs are attached for your reference – but please only analyze the five samples noted below.

Collection Date	Time	Sample ID	Analysis
8/3/2021	14:53	LDW21-IT698BX	PCBs TOC/Total Solids
8/2/2021	10:44	LDW21-IT699BY	PCBs TOC/Total Solids
8/3/2021	16:50	LDW21-IT702BY	PCBs TOC/Total Solids
8/3/2021	16:50	LDW21-IT702CY	PCBs TOC/Total Solids
8/3/2021	16:50	LDW21-IT702EY	PCBs TOC/Total Solids

If you have any question or would like to discuss, I can be reached on my cell phone at 206-992-3563.

Thanks,
Brandi

Brandi Quinlisk
Database Manager

200 1st Avenue W., Suite 500 | Seattle, WA 98119
Direct: 206-812-5408
brandiq@windwardenv.com | www.windwardenv.com

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchor QEA
COC No(s): 4123, 4125, 4126 NA DL
Assigned ARI Job No: 21H0078

Project Name: Lower Duwamish AOC 4
Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____
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 ~~10~~ 1149 DL — 1.1 0.8 2.4 ___ ___ ___

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: DOO 5208

Cooler Accepted by: DC Date: 08/04/21 Time: 1149

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: [signature] Date: 8/4/2021 Time: 15:10 Labels checked by: _____

***** 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:	180067-02.03	**Reported:**
Seattle, WA 98101	Project Manager:	Cindy Fields	09/07/2021 13:17

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
21H0078-01	LDW21-IT703AZ	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-02	LDW21-IT703BZ	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-03	LDW21-IT703CZ	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-04	LDW21-IT703DZ	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-05	LDW21-IT703EZ	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-06	LDW21-IT703FZ	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-07	LDW21-IT703GS1Z	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-08	LDW21-IT703GZ	Solid	08/03/21 11:37	08/04/21 11:44
21H0078-09	LDW21-IT698AX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-10	LDW21-IT698BX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-11	LDW21-IT698CX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-12	LDW21-IT698DX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-13	LDW21-IT698EX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-14	LDW21-IT698FX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-15	LDW21-IT698GX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-16	LDW21-IT698HX	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-17	LDW21-IT698GS1X	Solid	08/03/21 14:53	08/04/21 11:44
21H0078-18	LDW21-IT698AY	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-19	LDW21-IT698BY	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-20	LDW21-IT698CY	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-21	LDW21-IT698DY	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-22	LDW21-IT698EY	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-23	LDW21-IT698FY	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-24	LDW21-IT698GY	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-25	LDW21-IT698GS1Y	Solid	08/03/21 14:20	08/04/21 11:44
21H0078-26	LDW21-IT702AX	Solid	08/03/21 15:26	08/04/21 11:44
21H0078-27	LDW21-IT702BX	Solid	08/03/21 15:26	08/04/21 11:44
21H0078-28	LDW21-IT702CX	Solid	08/03/21 15:26	08/04/21 11:44
21H0078-29	LDW21-IT702DX	Solid	08/03/21 15:26	08/04/21 11:44
21H0078-30	LDW21-IT702AY	Solid	08/03/21 16:50	08/04/21 11:44
21H0078-31	LDW21-IT702BY	Solid	08/03/21 16:50	08/04/21 11:44
21H0078-32	LDW21-IT702CY	Solid	08/03/21 16:50	08/04/21 11:44
21H0078-33	LDW21-IT702DY	Solid	08/03/21 16:50	08/04/21 11:44
21H0078-34	LDW21-IT702EY	Solid	08/03/21 16:50	08/04/21 11:44
21H0078-35	LDW21-IT702FY	Solid	08/03/21 16:50	08/04/21 11:44
21H0078-36	LDW21-IT702GS1Y	Solid	08/03/21 16:50	08/04/21 11:44

Anchor QEA, LLC	Project: Lower Duwamish AOC4	
1201 3rd Ave, Suite 2600	Project Number: 180067-02.03	**Reported:**
Seattle WA, 98101	Project Manager: Cindy Fields	07-Sep-2021 13:17

Case Narrative

Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Work Order: 21H0078

Sample receipt

Samples as listed on the preceding page were received 04-Aug-2021 11:44 under ARI work order 21H0078. For details regarding sample receipt, please refer to the Cooler Receipt Form. Mercury aliquots were frozen to meet QAPP requirements.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

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

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

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

The TOC batch BJH0351 matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits, reported under work order 21F0430.

QUALIFIERS AND NOTES

Qualifier	Definition
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.
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-IT698BX

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21H0078-10 A	File ID:	08212107ECD7.D
Sampled:	08/03/21 14:53	Prepared:	08/17/21 10:02	Analyzed:	08/21/21 20:22
% Solids:	85.91	Preparation:	EPA 3546 (Microwave)	Initial/Final:	14.56 g Wet / 2.5 mL
Batch:	BJH0381	Sequence:	SJH0335	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	U
11097-69-1	Aroclor 1254	1	1	4.0	1.6	4.0	U
11096-82-5	Aroclor 1260	1	1	4.0	0.6	4.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9946*	*5.60*	*70.0*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9946*	*5.12*	*64.0*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212107ECD7.D
Data file 2: /210821.b/210821.b/08212107ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21H0078-10
Client ID:
Injection Date: 21-AUG-2021 20:22
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.000	85014	5.412	-0.001	242107	25.6	24.3	5.2	Tetrachloro-m-xylene
13.162	-0.002	121671	13.843	-0.001	654913	28.0	25.6	8.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	274644	6.1
Hexabromobiphenyl	425681	478780	12.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	774851	7.5
Hexabromobiphenyl	863111	1150338	33.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.614	-0.046	3209	32.9	1	7.064	0.009	2551	5.8
Aroclor-1016	2	7.077	0.043	1981	6.7	2	7.688	0.038	6803	6.9
Aroclor-1016	3	7.183	0.005	337	2.5	3	7.874	0.019	1306	3.4
Aroclor-1016	4	7.340	0.053	1334	15.9	4	8.103	0.000	472	2.0
Total Col1Ave (4 peaks): 14.5						Total Col2Ave (4 peaks): 4.5 RPD = 105*				
Corrected Ave (3 peaks): 8.4						Corrected Ave (3 peaks): 3.7 RPD = 77*				
Aroclor-1221	1	4.104	0.089	469	21.6	1	4.653	-0.023	613	10.5
Aroclor-1221	2	---			0.0	2	6.098	0.026	10356	77.8
Aroclor-1221	3	5.779	0.054	193	2.1	3	6.407	-0.002	2498	10.8
Col1Ave: <3 Quant Peaks						Col2Ave: 33.0				
Aroclor-1232	1	4.104	0.086	469	35.2	1	4.653	-0.026	613	17.7
Aroclor-1232	2	5.779	0.052	193	2.7	2	7.064	0.006	2551	12.6
Aroclor-1232	3	7.077	0.043	1981	17.9	3	7.688	0.037	6803	16.8
Aroclor-1232	4	---			0.0	4	---			0.0
Total Col1Ave (3 peaks): 18.6						Total Col2Ave (3 peaks): 15.7 RPD = 17				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.614	-0.045	3209	42.4	1	7.064	0.007	2551	7.2
Aroclor-1242	2	7.077	0.046	1981	8.8	2	7.688	0.039	6803	8.8
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	9.085	0.057	4350	10.6
Col1Ave: <3 Quant Peaks						Col2Ave: 8.9				
Aroclor-1248	1	---			0.0	1	8.103	-0.001	472	1.5
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	9.425	0.045	2649	5.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1254	1	---			0.0	1	9.233	-0.003	2688	4.1
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	9.704	-0.055	2938	5.8
Aroclor-1254	4	---			0.0	4	9.916	0.006	680	0.6
Aroclor-1254	5	---			0.0	5	10.150	0.003	1834	1.6
Col1Ave: <3 Quant Peaks						Col2Ave: 3.0				
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	11.676	0.000	2968	1.1
Aroclor-1260	3	---			0.0	3	12.269	0.010	1251	0.7
Aroclor-1260	4	---			0.0	4	13.043	0.074	7524	8.8
Aroclor-1260	5	---			0.0	NS	---			----
Col1Ave: <3 Quant Peaks						Col2Ave: 3.5				
Aroclor-1262	1	---			0.0	1	10.960	-0.010	560	0.4
Aroclor-1262	2	---			0.0	2	11.676	-0.010	2968	1.0
Aroclor-1262	3	---			0.0	3	12.181	-0.007	4345	3.3
Aroclor-1262	4	---			0.0	4	13.043	0.071	7524	6.1
Col1Ave: <3 Quant Peaks						Col2Ave: 2.7				
Aroclor-1268	1	---			0.0	1	12.181	-0.019	4345	1.3
Aroclor-1268	2	---			0.0	2	12.269	0.002	1251	0.3
Aroclor-1268	3	11.906	-0.094	2503	4.7	3	12.640	-0.004	988	0.3
Aroclor-1268	4	12.766	-0.006	1195	0.7	4	12.853	0.070	19636	25.5
Col1Ave: <3 Quant Peaks						Col2Ave: 6.9				

Total PCB Area Col1 (5.169 - 13.064) = 36940 Col1 Total PCB = 0.0 ppm*

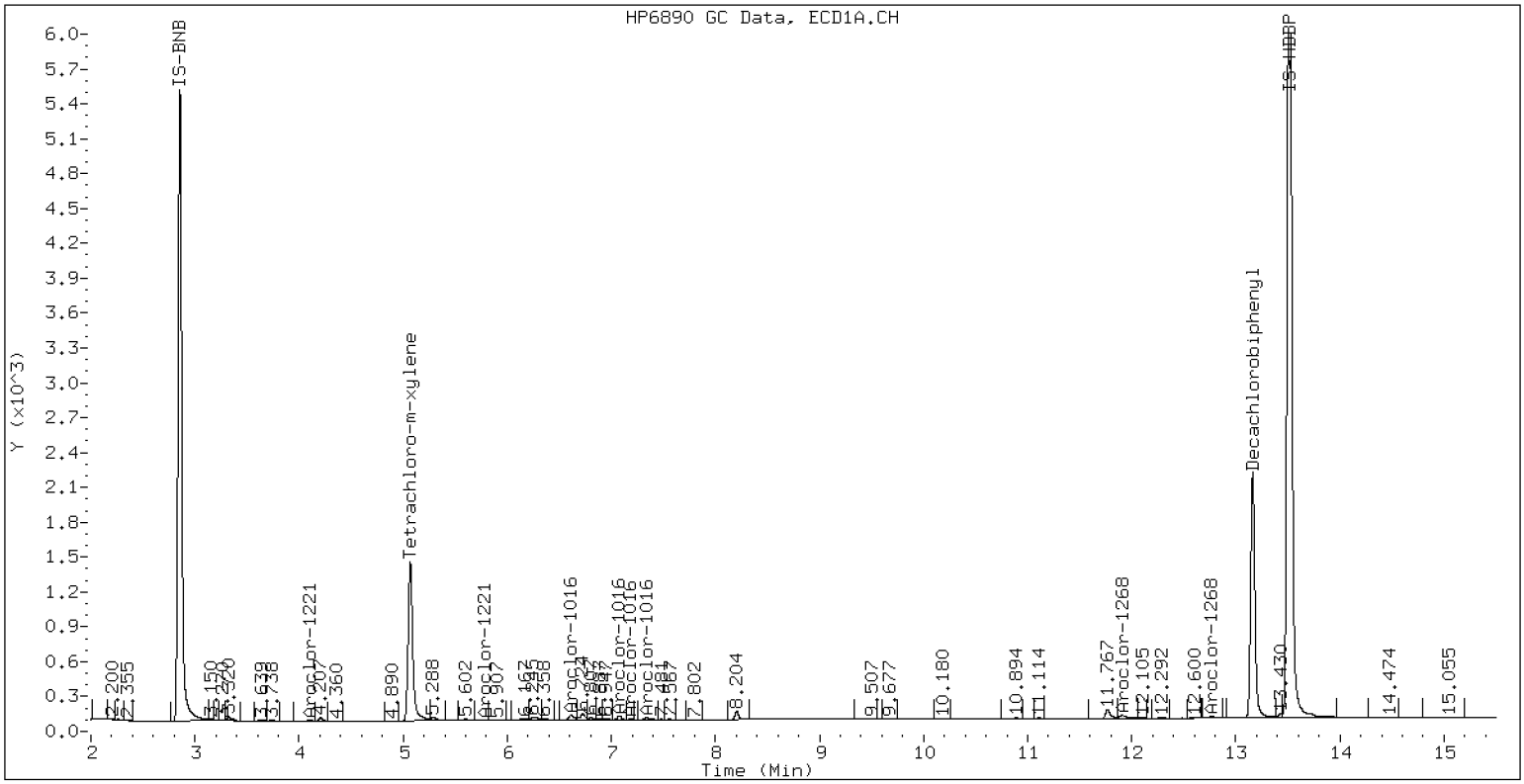
Total PCB Area Col2 (5.169 - 13.064) = 388120 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

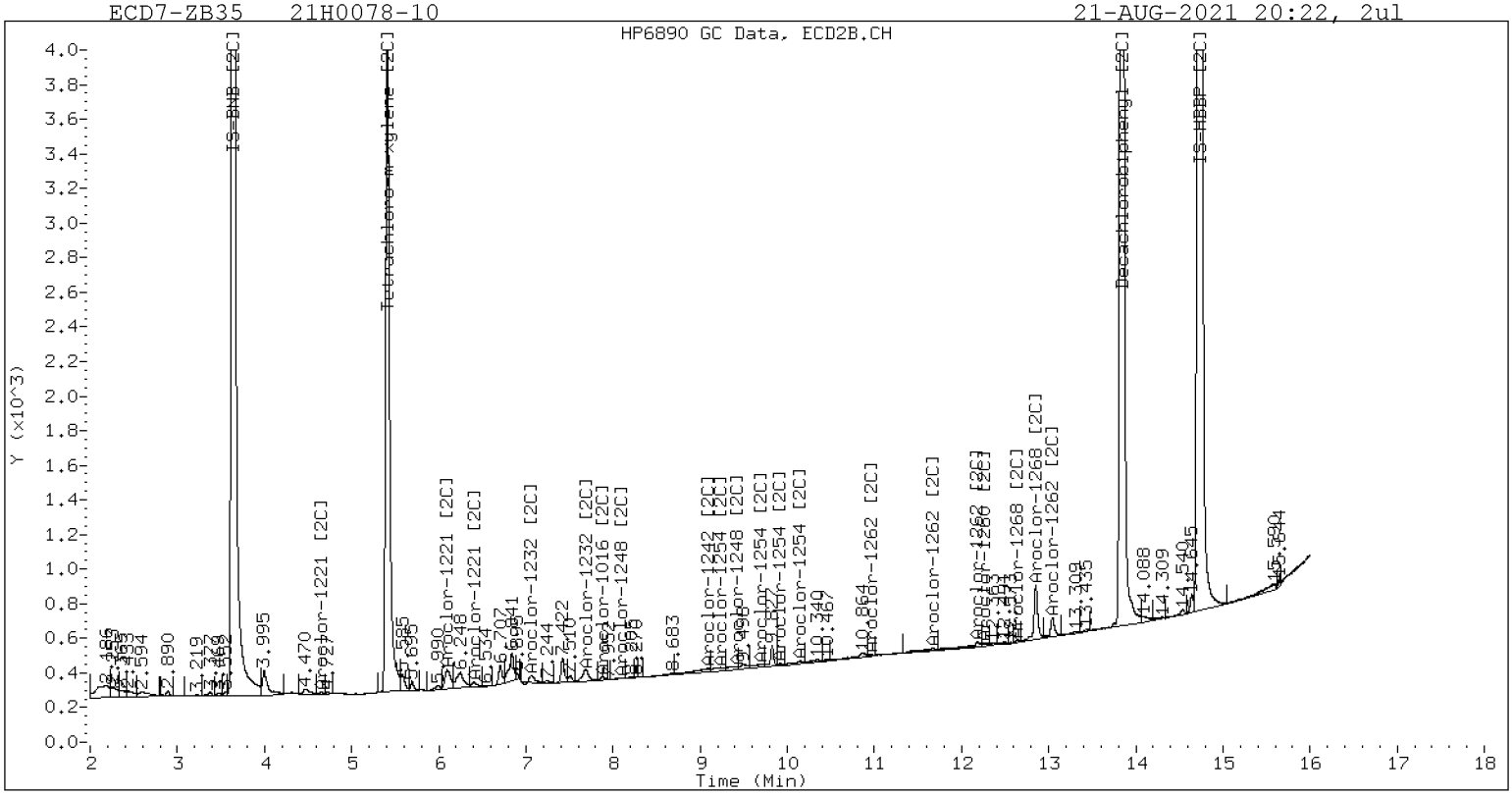
PCB Dual Column Chromatograms

ECD7-ZB5 21H0078-10 21-AUG-2021 20:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21H0078-10 21-AUG-2021 20:22, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT702BY

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21H0078-31 A	File ID:	08212110ECD7.D
Sampled:	08/03/21 16:50	Prepared:	08/17/21 10:02	Analyzed:	08/21/21 21:23
% Solids:	71.41	Preparation:	EPA 3546 (Microwave)	Initial/Final:	17.53 g Wet / 2.5 mL
Batch:	BJH0381	Sequence:	SJH0335	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	U
11097-69-1	Aroclor 1254	1	1	4.0	1.6	4.0	U
11096-82-5	Aroclor 1260	1	1	0.9	0.6	4.0	J

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9884*	*5.10*	*63.8*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9884*	*4.22*	*52.8*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212110ECD7.D
Data file 2: /210821.b/210821.b/08212110ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21H0078-31
Client ID:
Injection Date: 21-AUG-2021 21:23
Report Date: 08/25/2021 16:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.063	-0.006	67088	5.407	-0.006	169026	21.1	18.9	11.0	Tetrachloro-m-xylene
13.153	-0.011	70579	13.834	-0.010	360013	25.5	19.1	28.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	262786	1.5
Hexabromobiphenyl	425681	304764	-28.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	694926	-3.6
Hexabromobiphenyl	863111	846540	-1.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.707	0.048	5096	54.7	1	7.037	-0.018	5802	14.6
Aroclor-1016	2	7.065	0.031	4251	14.9	2	7.615	-0.034	8287	9.3
Aroclor-1016	3	7.165	-0.014	672	5.3	3	7.862	0.007	2623	7.5
Aroclor-1016	4	7.258	-0.030	1623	20.2	4	8.091	-0.012	1372	6.5
Total Col1Ave (4 peaks):				23.0		Total Col2Ave (4 peaks):			9.5	RPD = 96*
Corrected Ave (3 peaks):				13.5		Corrected Ave (3 peaks):			7.8	RPD = 53*
Aroclor-1221	1	4.023	0.008	12215	588.6	1	4.720	0.043	12860	246.5
Aroclor-1221	2	5.501	0.050	1867	57.4	2	6.092	0.020	24038	201.3
Aroclor-1221	3	5.693	-0.031	972	11.1	3	6.397	-0.012	7653	36.8
Total Col1Ave (3 peaks):				219.0		Total Col2Ave (3 peaks):			161.5	RPD = 30
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.023	0.006	12215	958.4	1	4.720	0.041	12860	414.0
Aroclor-1232	2	5.693	-0.033	972	14.0	2	7.037	-0.021	5802	32.0
Aroclor-1232	3	7.065	0.031	4251	40.2	3	7.615	-0.036	8287	22.8
Aroclor-1232	4	7.946	-0.026	924	21.2	4	8.495	-0.027	5265	55.6
Total Col1Ave (4 peaks):				258.5		Total Col2Ave (4 peaks):			131.1	RPD = 65*
Corrected Ave (3 peaks):				25.2		Corrected Ave (3 peaks):			36.8	RPD = 38
Aroclor-1242	1	6.707	0.049	5096	70.4	1	7.037	-0.021	5802	18.2
Aroclor-1242	2	7.065	0.034	4251	19.7	2	7.615	-0.033	8287	11.9
Aroclor-1242	3	8.363	-0.011	1210	9.9	3	8.928	-0.021	2746	8.5
Aroclor-1242	4	8.655	-0.019	974	19.5	4	9.010	-0.018	3627	9.9
Total Col1Ave (4 peaks):				29.9		Total Col2Ave (4 peaks):			12.1	RPD = 85*
Corrected Ave (3 peaks):				16.4		Corrected Ave (3 peaks):			10.1	RPD = 47*
Aroclor-1248	1	7.783	-0.017	1038	9.4	1	8.091	-0.013	1372	4.8
Aroclor-1248	2	7.946	-0.023	924	6.4	2	8.495	-0.023	5265	15.0
Aroclor-1248	3	8.363	-0.017	1210	5.7	3	8.928	-0.022	2746	4.9
Aroclor-1248	4	8.655	-0.020	974	8.1	4	9.352	-0.029	2201	4.6
Total Col1Ave (4 peaks):				7.4		Total Col2Ave (4 peaks):			7.3	RPD = 1
Corrected Ave (3 peaks):				6.8		Corrected Ave (3 peaks):			4.8	RPD = 34
Aroclor-1254	1	8.655	-0.021	974	4.3	1	9.224	-0.012	3172	5.4
Aroclor-1254	2	8.725	-0.023	578	5.5	2	9.309	-0.020	1719	5.0
Aroclor-1254	3	9.042	0.001	1814	12.3	3	9.746	-0.013	1868	4.1
Aroclor-1254	4	9.166	-0.014	1890	6.7	4	9.891	-0.019	2901	2.9
Aroclor-1254	5	9.896	0.025	1753	9.9	5	10.128	-0.019	6032	6.0
Total Col1Ave (5 peaks):				7.7		Total Col2Ave (5 peaks):			4.7	RPD = 49*
Corrected Ave (4 peaks):				6.6		Corrected Ave (4 peaks):			4.3	RPD = 41*
Aroclor-1260	1	10.359	-0.026	1245	9.1	1	11.409	-0.014	2719	3.9
Aroclor-1260	2	10.690	-0.012	458	3.4	2	11.687	0.011	10519	5.1
Aroclor-1260	3	11.034	-0.019	730	2.0	3	12.242	-0.016	3193	2.4
Aroclor-1260	4	11.436	-0.018	484	3.0	4	12.958	-0.011	2559	4.1
Aroclor-1260	5	11.538	-0.017	950	11.7	NS	---			----
Total Col1Ave (5 peaks):				5.8		Total Col2Ave (4 peaks):			3.9	RPD = 40*
Corrected Ave (4 peaks):				4.4		Corrected Ave (3 peaks):			3.5	RPD = 23
Aroclor-1262	1	10.359	-0.025	1245	6.7	1	10.952	-0.018	2347	2.3
Aroclor-1262	2	11.436	-0.019	484	4.0	2	11.687	0.002	10519	4.8
Aroclor-1262	3	11.613	-0.014	851	4.9	3	12.168	-0.020	4931	5.1
Aroclor-1262	4	12.261	-0.013	253	1.8	4	12.958	-0.013	2559	2.8
Total Col1Ave (4 peaks):				4.3		Total Col2Ave (4 peaks):			3.8	RPD = 15
Corrected Ave (3 peaks):				3.6		Corrected Ave (3 peaks):			3.3	RPD = 8
Aroclor-1268	1	11.538	-0.019	950	2.3	1	12.168	-0.032	4931	2.0
Aroclor-1268	2	11.613	-0.013	851	2.0	2	12.242	-0.025	3193	1.2
Aroclor-1268	3	11.987	-0.014	1239	3.7	3	12.622	-0.022	5198	2.3
Aroclor-1268	4	12.754	-0.018	2922	2.7	4	12.772	-0.011	3387	6.0
Total Col1Ave (4 peaks):				2.7		Total Col2Ave (4 peaks):			2.9	RPD = 7

Corrected Ave (3 peaks): 2.3 Corrected Ave (3 peaks): 1.8 RPD = 24

Total PCB Area Col1 (5.169 - 13.064) = 171111 Col1 Total PCB = 0.1 ppm*

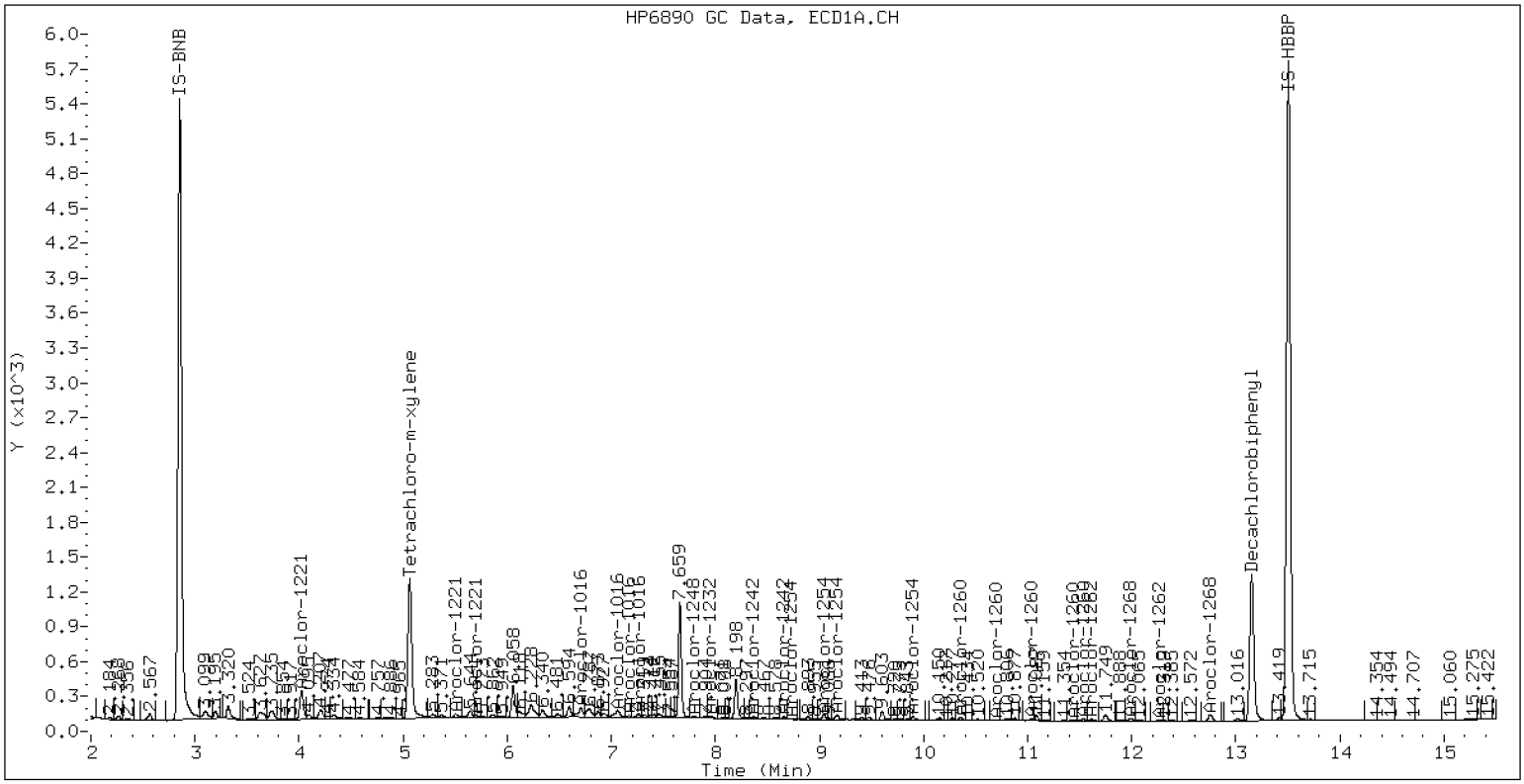
Total PCB Area Col2 (5.169 - 13.064) = 660201 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

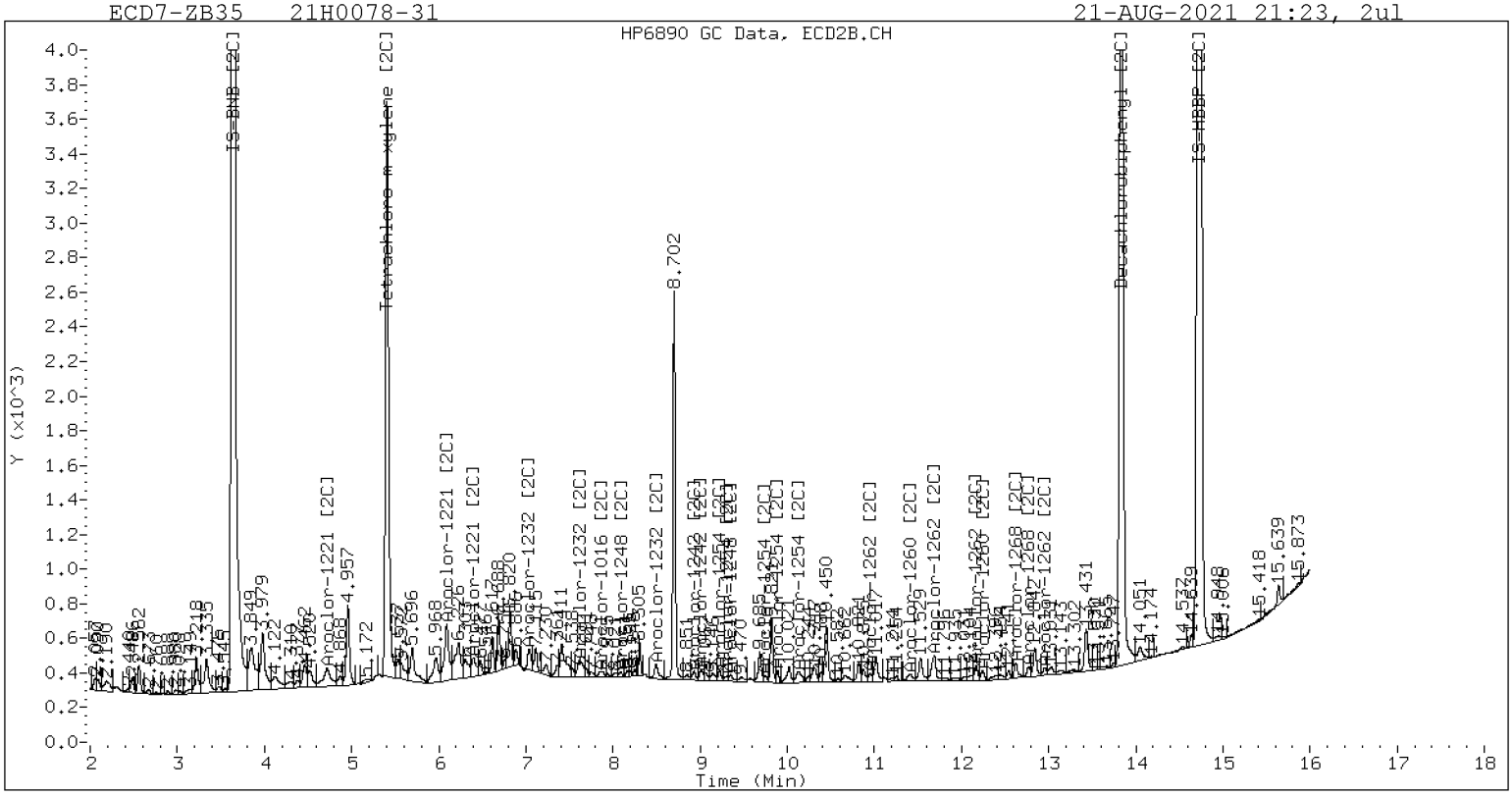
PCB Dual Column Chromatograms

ECD7-ZB5 21H0078-31 21-AUG-2021 21:23, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 21H0078-31 21-AUG-2021 21:23, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT702CY

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21H0078-32 A	File ID:	08212111ECD7.D
Sampled:	08/03/21 16:50	Prepared:	08/17/21 10:02	Analyzed:	08/21/21 21:44
% Solids:	68.70	Preparation:	EPA 3546 (Microwave)	Initial/Final:	18.2 g Wet / 2.5 mL
Batch:	BJH0381	Sequence:	SJH0335	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	U
11097-69-1	Aroclor 1254	1	1	4.0	1.6	4.0	U
11096-82-5	Aroclor 1260	1	1	4.0	0.6	4.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9978*	*5.03*	*62.9*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9978*	*4.44*	*55.5*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212111ECD7.D
Data file 2: /210821.b/210821.b/08212111ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21H0078-32
Client ID:
Injection Date: 21-AUG-2021 21:44
Report Date: 08/25/2021 16:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.065	-0.004	68109	5.407	-0.006	168524	22.2	20.0	10.3	Tetrachloro-m-xylene
13.151	-0.013	63247	13.834	-0.010	321083	25.2	18.7	29.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	253997	-1.9
Hexabromobiphenyl	425681	276720	-35.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	655281	-9.1
Hexabromobiphenyl	863111	771184	-10.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.704	0.044	3284	36.5	1	7.033	-0.022	3162	8.5
Aroclor-1016	2	7.061	0.028	3858	14.0	2	7.653	0.004	2975	3.6
Aroclor-1016	3	7.168	-0.011	437	3.5	3	7.859	0.004	2472	7.5
Aroclor-1016	4	7.316	0.028	471	6.1	4	8.088	-0.015	667	3.4
Total Col1Ave (4 peaks):					15.0	Total Col2Ave (4 peaks):				5.7 RPD = 90*
Corrected Ave (3 peaks):					7.9	Corrected Ave (3 peaks):				4.8 RPD = 48*
Aroclor-1221	1	4.026	0.011	8109	404.3	1	4.722	0.045	8911	181.2
Aroclor-1221	2	5.502	0.051	1903	60.5	2	6.087	0.015	11542	102.5
Aroclor-1221	3	5.715	-0.009	399	4.7	3	6.396	-0.013	6003	30.6
Total Col1Ave (3 peaks):					156.5	Total Col2Ave (3 peaks):				104.8 RPD = 40
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.026	0.008	8109	658.3	1	4.722	0.043	8911	304.3
Aroclor-1232	2	5.715	-0.011	399	6.0	2	7.033	-0.025	3162	18.5
Aroclor-1232	3	7.061	0.027	3858	37.8	3	7.653	0.002	2975	8.7
Aroclor-1232	4	7.950	-0.022	486	11.6	4	8.491	-0.031	5464	61.2
Total Col1Ave (4 peaks):					178.4	Total Col2Ave (4 peaks):				98.2 RPD = 58*
Corrected Ave (3 peaks):					18.4	Corrected Ave (3 peaks):				29.5 RPD = 46*
Aroclor-1242	1	6.704	0.046	3284	46.9	1	7.033	-0.024	3162	10.5
Aroclor-1242	2	7.061	0.031	3858	18.5	2	7.653	0.004	2975	4.5
Aroclor-1242	3	8.364	-0.011	334	2.8	3	8.923	-0.026	1868	6.1
Aroclor-1242	4	8.656	-0.018	448	9.3	4	9.010	-0.018	2766	8.0
Total Col1Ave (4 peaks):					19.4	Total Col2Ave (4 peaks):				7.3 RPD = 91*
Corrected Ave (3 peaks):					10.2	Corrected Ave (3 peaks):				6.2 RPD = 49*
Aroclor-1248	1	7.787	-0.012	487	4.6	1	8.088	-0.016	667	2.5
Aroclor-1248	2	7.950	-0.019	486	3.5	2	8.491	-0.028	5464	16.5
Aroclor-1248	3	8.364	-0.016	334	1.6	3	8.923	-0.027	1868	3.5
Aroclor-1248	4	8.656	-0.019	448	3.9	4	9.347	-0.033	619	1.4
Total Col1Ave (4 peaks):					3.4	Total Col2Ave (4 peaks):				6.0 RPD = 55*
Corrected Ave (3 peaks):					3.0	Corrected Ave (3 peaks):				2.5 RPD = 20
Aroclor-1254	1	8.656	-0.020	448	2.0	1	9.223	-0.013	1334	2.4
Aroclor-1254	2	8.725	-0.023	265	2.6	2	9.313	-0.016	1095	3.3
Aroclor-1254	3	9.037	-0.004	1014	7.1	3	9.741	-0.018	790	1.9
Aroclor-1254	4	9.172	-0.008	1906	7.0	4	9.885	-0.025	1352	1.4
Aroclor-1254	5	9.892	0.021	405	2.4	5	10.136	-0.012	4058	4.2
Total Col1Ave (5 peaks):					4.2	Total Col2Ave (5 peaks):				2.7 RPD = 45*
Corrected Ave (4 peaks):					3.5	Corrected Ave (4 peaks):				2.3 RPD = 43*
Aroclor-1260	1	10.354	-0.031	433	3.5	1	11.415	-0.008	1208	1.9
Aroclor-1260	2	10.707	0.005	304	2.5	2	11.685	0.010	5228	2.8
Aroclor-1260	3	11.030	-0.022	234	0.7	3	12.236	-0.023	1394	1.2
Aroclor-1260	4	11.442	-0.012	210	1.4	4	12.944	-0.025	1541	2.7
Aroclor-1260	5	11.540	-0.014	325	4.4	NS	---			----
Total Col1Ave (5 peaks):					2.5	Total Col2Ave (4 peaks):				2.1 RPD = 16
Corrected Ave (4 peaks):					2.0	Corrected Ave (3 peaks):				1.9 RPD = 6
Aroclor-1262	1	10.354	-0.030	433	2.6	1	11.012	0.042	7691	8.2
Aroclor-1262	2	11.442	-0.012	210	1.9	2	11.685	0.000	5228	2.6
Aroclor-1262	3	11.614	-0.013	494	3.1	3	12.161	-0.027	3516	4.0
Aroclor-1262	4	12.274	-0.001	283	2.2	4	12.944	-0.029	1541	1.9
Total Col1Ave (4 peaks):					2.5	Total Col2Ave (4 peaks):				4.2 RPD = 52*
Corrected Ave (3 peaks):					2.2	Corrected Ave (3 peaks):				2.8 RPD = 24
Aroclor-1268	1	11.540	-0.017	325	0.9	1	12.236	0.036	1394	0.6
Aroclor-1268	2	11.614	-0.012	494	1.3	2	---			0.0
Aroclor-1268	3	11.986	-0.015	423	1.4	3	12.659	0.015	1348	0.6
Aroclor-1268	4	12.751	0.020	1022	1.0	4	12.772	0.011	2016	3.9
Total Col1Ave (4 peaks):					1.1	Total Col2Ave (3 peaks):				1.7 RPD = 41*

Corrected Ave (3 peaks): 1.1 Corrected Ave: < 3 Peaks

Total PCB Area Col1 (5.169 - 13.064) = 98089 Col1 Total PCB = 0.0 ppm*

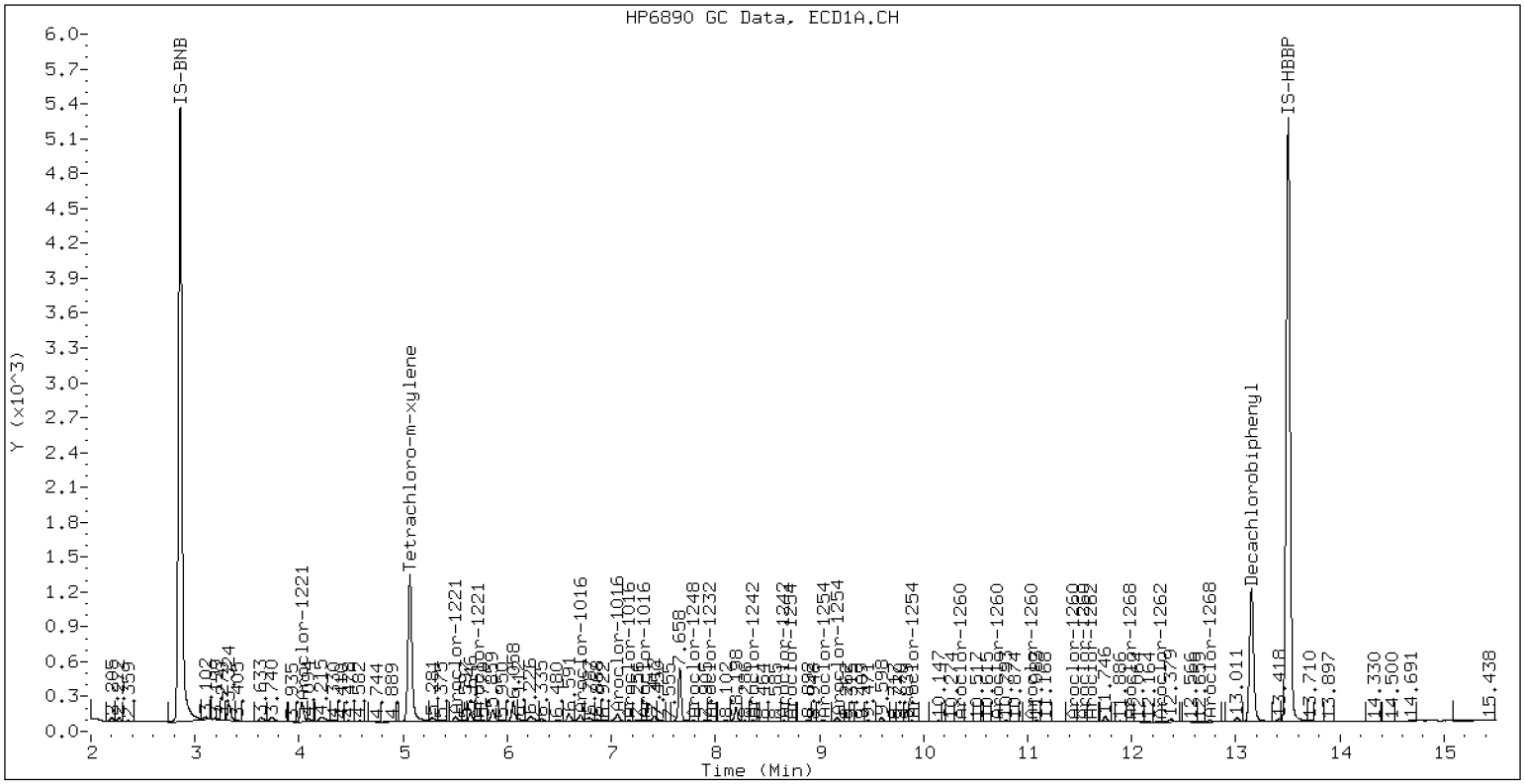
Total PCB Area Col2 (5.169 - 13.064) = 493905 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

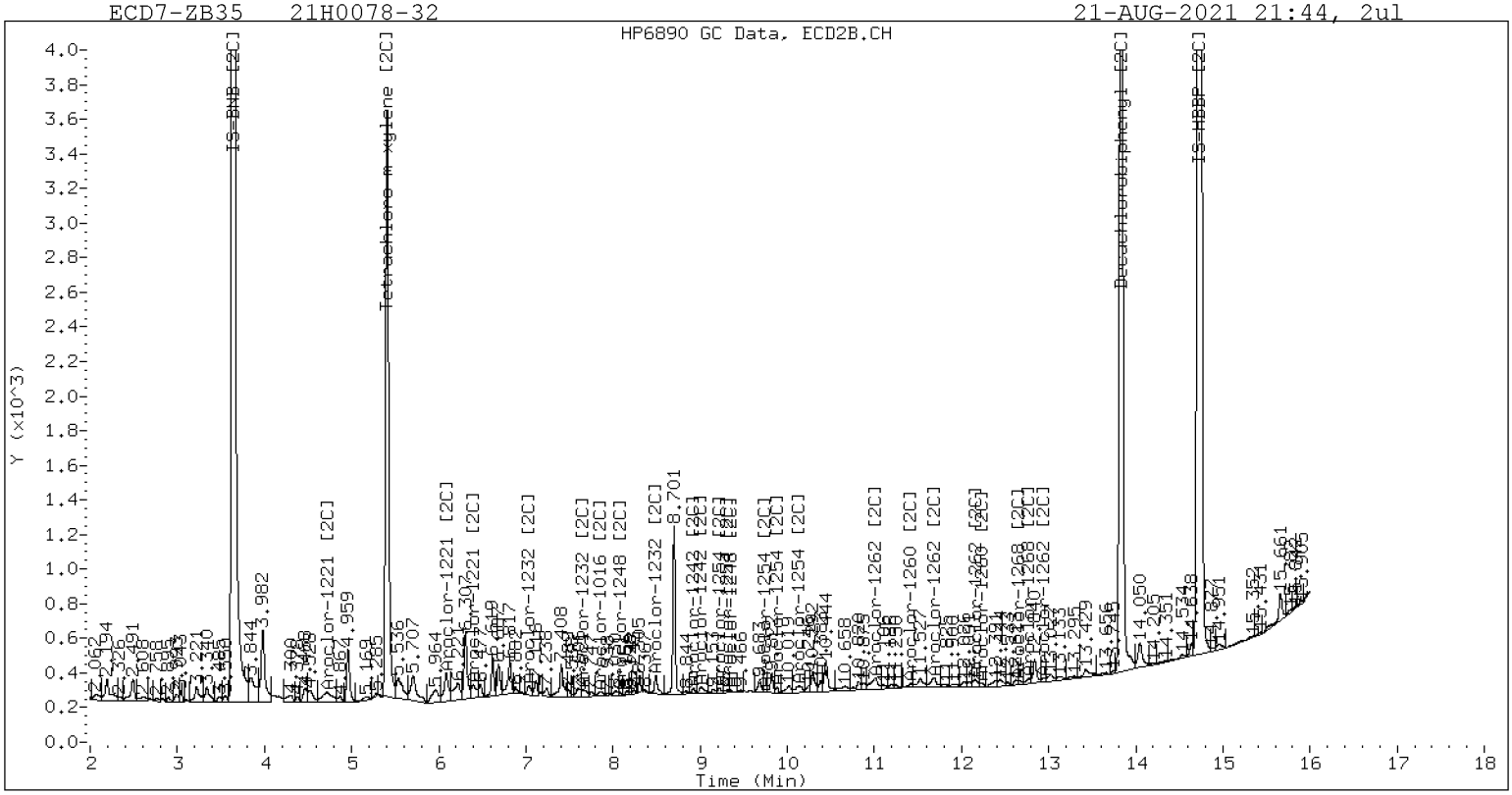
PCB Dual Column Chromatograms

ECD7-ZB5 21H0078-32 21-AUG-2021 21:44, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21H0078-32 21-AUG-2021 21:44, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT702EY

Dual Column

ORGANIC ANALYSIS DATA SHEET
EPA 8082A

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Solid	Laboratory ID:	21H0078-34 A	File ID:	08212112ECD7.D
Sampled:	08/03/21 16:50	Prepared:	08/17/21 10:02	Analyzed:	08/21/21 22:04
% Solids:	67.91	Preparation:	EPA 3546 (Microwave)	Initial/Final:	18.43 g Wet / 2.5 mL
Batch:	BJH0381	Sequence:	SJH0335	Calibration:	EH00034
Instrument:	ECD7	Column 1:	ZB5	Column 2:	ZB35

CAS NO.	COMPOUND	Col #	DILUTION	CONC. (ug/kg dry)	MDL	MRL	Q
12674-11-2	Aroclor 1016	1	1	4.0	1.6	4.0	U
11104-28-2	Aroclor 1221	1	1	4.0	1.6	4.0	U
11141-16-5	Aroclor 1232	1	1	4.0	1.6	4.0	U
53469-21-9	Aroclor 1242	1	1	4.0	1.6	4.0	U
12672-29-6	Aroclor 1248	1	1	4.0	1.6	4.0	U
11097-69-1	Aroclor 1254	1	1	4.0	1.6	4.0	U
11096-82-5	Aroclor 1260	1	1	4.0	0.6	4.0	U

SURROGATES	Col #	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	*1*	*7.9899*	*5.25*	*65.7*	*40 - 126*	
Tetrachlorometaxylene	*1*	*7.9899*	*4.43*	*55.5*	*44 - 120*	

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212112ECD7.D
Data file 2: /210821.b/210821.b/08212112ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: 21H0078-34
Client ID:
Injection Date: 21-AUG-2021 22:04
Report Date: 08/25/2021 16:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.062	-0.006	64609	5.406	-0.007	152209	22.2	18.9	16.0	Tetrachloro-m-xylene
13.153	-0.011	69851	13.835	-0.009	357493	26.3	19.3	30.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	240828	-7.0
Hexabromobiphenyl	425681	292835	-31.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	626668	-13.1
Hexabromobiphenyl	863111	835335	-3.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.709	0.050	3273	38.3	1	7.040	-0.014	2292	6.4
Aroclor-1016	2	7.065	0.031	2630	10.1	2	7.616	-0.033	5144	6.4
Aroclor-1016	3	7.166	-0.012	643	5.5	3	7.867	0.011	2374	7.6
Aroclor-1016	4	7.266	-0.022	844	11.5	4	8.092	-0.011	1446	7.6
Total Col1Ave (4 peaks):					16.3	Total Col2Ave (4 peaks):				7.0 RPD = 80*
Corrected Ave (3 peaks):					9.0	Corrected Ave (3 peaks):				6.8 RPD = 28
Aroclor-1221	1	4.024	0.008	3902	205.2	1	4.719	0.042	10202	216.9
Aroclor-1221	2	5.501	0.050	743	24.9	2	6.090	0.018	13286	123.4
Aroclor-1221	3	5.708	-0.016	593	7.4	3	6.393	-0.016	8127	43.3
Total Col1Ave (3 peaks):					79.2	Total Col2Ave (3 peaks):				127.9 RPD = 47*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.024	0.006	3902	334.1	1	4.719	0.040	10202	364.2
Aroclor-1232	2	5.708	-0.018	593	9.3	2	7.040	-0.018	2292	14.0
Aroclor-1232	3	7.065	0.031	2630	27.1	3	7.616	-0.035	5144	15.7
Aroclor-1232	4	7.995	0.023	962	24.1	4	8.548	0.026	3784	44.3
Total Col1Ave (4 peaks):					98.7	Total Col2Ave (4 peaks):				109.6 RPD = 10
Corrected Ave (3 peaks):					20.2	Corrected Ave (3 peaks):				24.7 RPD = 20
Aroclor-1242	1	6.709	0.051	3273	49.3	1	7.040	-0.017	2292	8.0
Aroclor-1242	2	7.065	0.034	2630	13.3	2	7.616	-0.032	5144	8.2
Aroclor-1242	3	8.428	0.053	1814	16.2	3	8.924	-0.025	6881	23.5
Aroclor-1242	4	8.663	-0.011	693	15.1	4	9.045	0.018	3560	10.7
Total Col1Ave (4 peaks):					23.5	Total Col2Ave (4 peaks):				12.6 RPD = 60*
Corrected Ave (3 peaks):					14.9	Corrected Ave (3 peaks):				9.0 RPD = 50*
Aroclor-1248	1	7.790	-0.010	513	5.1	1	8.092	-0.012	1446	5.6
Aroclor-1248	2	7.995	0.026	962	7.3	2	8.490	-0.029	3490	11.0
Aroclor-1248	3	8.428	0.048	1814	9.4	3	8.924	-0.025	6881	13.7
Aroclor-1248	4	8.663	-0.012	693	6.3	4	9.348	-0.033	3834	9.0
Total Col1Ave (4 peaks):					7.0	Total Col2Ave (4 peaks):				9.8 RPD = 33
Corrected Ave (3 peaks):					6.2	Corrected Ave (3 peaks):				8.5 RPD = 31
Aroclor-1254	1	8.663	-0.014	693	3.3	1	9.255	0.019	6624	12.4
Aroclor-1254	2	8.768	0.020	302	3.1	2	9.348	0.019	3834	12.3
Aroclor-1254	3	9.040	-0.001	547	4.0	3	9.718	-0.041	3288	8.1
Aroclor-1254	4	9.177	-0.003	1459	5.6	4	9.881	-0.029	1449	1.6
Aroclor-1254	5	9.850	-0.021	268	1.6	5	10.125	-0.022	8769	9.6
Total Col1Ave (5 peaks):					3.6	Total Col2Ave (5 peaks):				8.8 RPD = 85*
Corrected Ave (4 peaks):					3.0	Corrected Ave (4 peaks):				7.9 RPD = 89*
Aroclor-1260	1	10.450	0.066	138	1.0	1	11.425	0.002	257	0.4
Aroclor-1260	2	10.728	0.026	314	2.4	2	11.624	-0.052	1735	0.9
Aroclor-1260	3	11.089	0.036	288	0.8	3	---			0.0
Aroclor-1260	4	---			0.0	4	13.034	0.065	6794	10.9
Aroclor-1260	5	11.625	0.071	840	10.8	NS	---			----
Total Col1Ave (4 peaks):					3.8	Total Col2Ave (3 peaks):				4.1 RPD = 7
Corrected Ave (3 peaks):					1.4	Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.450	0.067	138	0.8	1	11.022	0.052	6172	6.0
Aroclor-1262	2	---			0.0	2	11.624	-0.061	1735	0.8
Aroclor-1262	3	11.625	-0.001	840	5.0	3	12.151	-0.037	10483	11.0
Aroclor-1262	4				0.0	4	13.034	0.061	6794	7.6
Col1Ave: <3 Quant Peaks						Col2Ave: 6.4				
Aroclor-1268	1	11.625	0.068	840	2.1	1	12.151	-0.049	10483	4.4
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	12.014	0.013	428	1.3	3	12.644	0.000	4441	2.0
Aroclor-1268	4	12.752	-0.020	591	0.6	4	12.844	0.061	16942	30.3
Total Col1Ave (3 peaks):					1.3	Total Col2Ave (3 peaks):				12.2 RPD = 160*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.169 - 13.064) = 83029 Col1 Total PCB = 0.0 ppm*

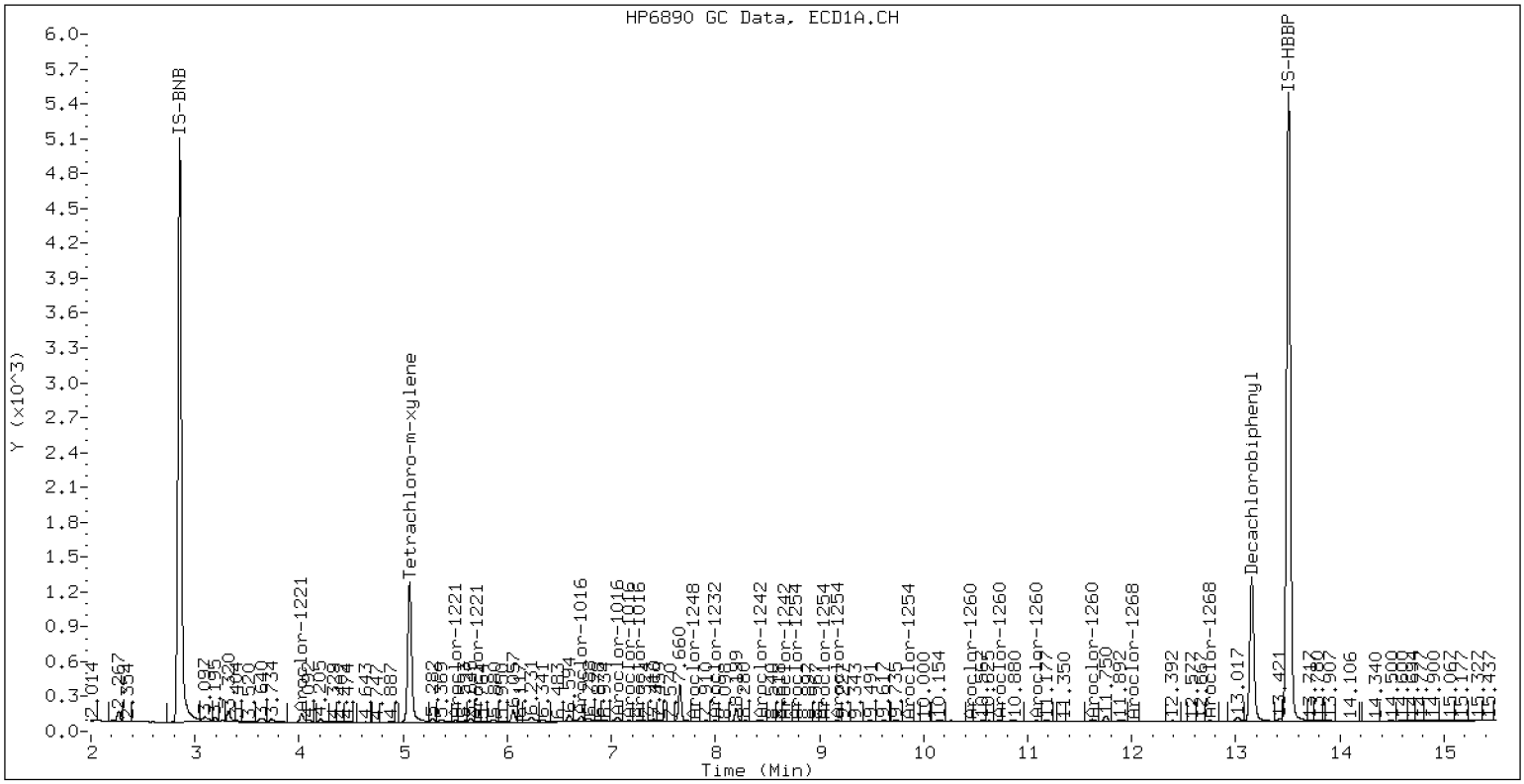
Total PCB Area Col2 (5.169 - 13.064) = 516479 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

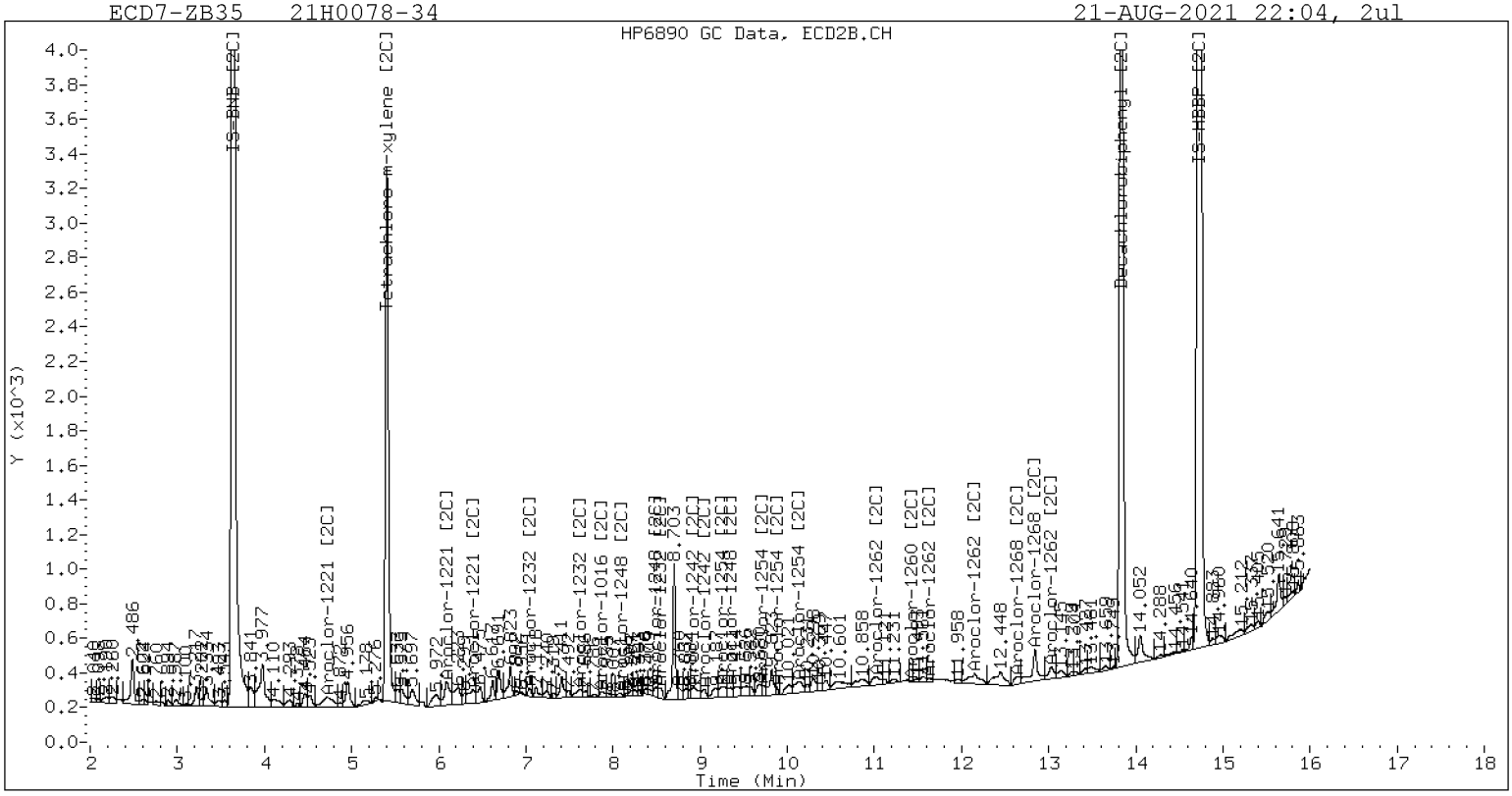
PCB Dual Column Chromatograms

ECD7-ZB5 21H0078-34 21-AUG-2021 22:04, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 21H0078-34 21-AUG-2021 22:04, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Batch:	BJH0381 Batch Matrix: Solid	Preparation:	EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT698BX	21H0078-10	08212107ECD7.D	08/17/21 10:02	
LDW21-IT702BY	21H0078-31	08212110ECD7.D	08/17/21 10:02	
LDW21-IT702CY	21H0078-32	08212111ECD7.D	08/17/21 10:02	
LDW21-IT702EY	21H0078-34	08212112ECD7.D	08/17/21 10:02	
Blank	BJH0381-BLK1	08212104ECD7.D	08/17/21 10:02	
LCS	BJH0381-BS1	08212105ECD7.D	08/17/21 10:02	
LDW21-IT698BX	BJH0381-MS1	08212108ECD7.D	08/17/21 10:02	
LDW21-IT698BX	BJH0381-MSD1	08212109ECD7.D	08/17/21 10:02	
Reference	BJH0381-SRM1	08212106ECD7.D	08/17/21 10:02	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0381

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

Matrix: Solid **Date Prepared:** 8/17/21 **Balance ID:** B139298002 **Set Up By:** CTO 8/16/21

WO Comments

21H0078: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, 7935-36, MS/MSD </E>
<H>BPR J006840-43, 7935-36 Dup </H>

The following standards may be missing from this batch!

Designator	Description
QLS 5	QLS Spike

Analysis: 8082A PCB Solid 4

Lab Number & Container	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
21H0078-10 A	85.9	(14.55) 14.56	5mL	5mL	2mL	2.5 ____	1.0 ____	
21H0078-31 A	71.4	(17.51) 17.53	5mL	5mL	2mL	2.5 ____	1.0 ____	
21H0078-32 A	68.7	(18.20) 18.20	5mL	5mL	2mL	2.5 ____	1.0 ____	
21H0078-34 A	67.9	(18.41) 18.43	5mL	5mL	2mL	2.5 ____	1.0 ____	

Batch QC

Lab Number	% Solids	Initial (g) Target Dry: 12.5 (Wet) Actual	(REQ) Acid C/U (5mL)	(REQ) Sulfur C/U (5mL) 1 2 3	(REQ) Silica Gel C/U (2:5)	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BJH0381-BLK1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5 ____	1.0 ____	(10g Actual Wt.)
BJH0381-BS1	100.0	(12.50) 12.50	5mL	5mL	2mL	2.5 ____	1.0 ____	(10g Actual Wt.)
BJH0381-MS1	85.9	(14.55) 14.56	5mL	5mL	2mL	2.5 ____	1.0 ____	Use 21H0078-10
BJH0381-MSD1	85.9	(14.55) 14.56	5mL	5mL	2mL	2.5 ____	1.0 ____	Use 21H0078-10
BJH0381-SRM1	100.0	(~~12.50~~) (2.50) 2.50 +1g DI H2O	5mL	5mL	2mL	2.5 ____	1.0 ____	Use ~~J006842~~ J006843

TW 8/17/21 Client ID verified By Date

TWC 8/20/21 Preparation Reviewed By Date

8/17/21 10:02 Extraction Date and Time

Printed: 8/16/2021 8:33:31AM

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0381

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21H0078: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, 7935-36, MS/MSD </E>
<H>BPR J006840-43, 7935-36 Dup </H>

Prep Steps

Microwave
1 2 3
TW 8/17/21
Analyst/Date

KD
100°C
Hexane Exchange
(2 X 20 mL)
1 2 3 4 5 6
AA/TEM 081821
Analyst/Date

TurboVap
Pre Cleanups
1 2 3 4 5
TWC 8/20/21
Analyst/Date

TurboVap
Post Cleanups
1 2 3 4 5
TWC 8/20/21
Analyst/Date

Vialing
TWC 8/20/21
Analyst/Date

Reagents Used

Station/Reagent	Standard ID
Microwave Analyst: TW Date: 8/17/21	
Anhydrous Sodium Sulfate	J008126
Neutral Glass Wool	J006768
1:1 Hexane/Acetone	J007652
Hexane	J005194
KD Analyst: AA/TEM Date: 081821	
Hexane	J002562
Anhydrous Sodium Sulfate	J008511
Vialing Analyst: TWC Date: 8/20/21	
Hexane	J002562
Concentrated Sulfuric Acid	J006313
Tetrabutylammonium hydrogensulfate (TBAS)	J007842
Sodium Sulfite	J001221
Silica Gel (SPE) Darts	J007869

Surrogates & Spike Standards Used

Type	Vial ID / Standard ID	Vol uL	Analyst	Witness
Surrogate 2µg/mL	N J008146 Exp: 02/07/2022 TW	50µL	TW	
Spike 20µg/mL	1 J008330 Exp: 02/12/2022 TW	63µL	TW	

(V) indicates a virtual standard combining two or more physical standards. In these cases the Standard ID refers to the virtual standard, not the parent standards.

If a Standard ID is missing, but should be present, check the standard definition in Element LIMS to be sure Standard Info 6 has the correct letter or number designator matching the vial designator inthe Standard ID column. If it is correct, check the batch and bench sheet in Element LIMS to be sure the correct standards are selected for surrogate(s) and spike(s).

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ORGANICS PREPARATION BENCH SHEET

Batch: BJH0381

Prepared using: EPA 3546 (Microwave)

8082A PCB Solid 4 in Solid (Version:7 Aroclors)

WO Comments

21H0078: <G> BPR Project batch as mcuh as possible </G> <C>BPR SRM, MS, DUP </C> <M>BPR PS, MS/MSD </M> <E>BPR 8270E RM H002055, SIM RM H010158, PCB RM J006840-43, 7935-36, MS/MSD </E>
<H>BPR J006840-43, 7935-36 Dup </H>

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Weigh soil/sed into beakers-lightly dry with sodium sulfate. 2. Transfer to microwave vessel(s). Note: (do not fill vessels more than 2/3rd full. Some samples may require two vessels). 3. Add 1:1 Hexane/Acetone until the solvent layer is 3 inches above the soil layer after homogenization. 4. Add surr/spike. 5. Microwave on appropriate power setting determined by # of samples. 6. After microwave-Re-homogenize while hot then cool vessels in R-05 15 minutes. Re-homogenize while cool. 7. Decant 1:1 Hex/Ace into Erlenmeyer flask with sodium sulfate in bottom and funnel with neutral glasswool plug. 8. Re-homogenize and rinse with 1:1 Hexane/Acetone. 9. Let cool and decant solvent then empty the soil into the funnel and rinse with Hexane. 10. KD on 100° bath. 11. Exchange (2 X with 20mL) Hexane. 12. TurboVap. 13. Clean-ups. 14. TurboVap. 15. Vial with Hexane. A. Need Total Solids Y / N B. Archive/Freeze Y / N	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

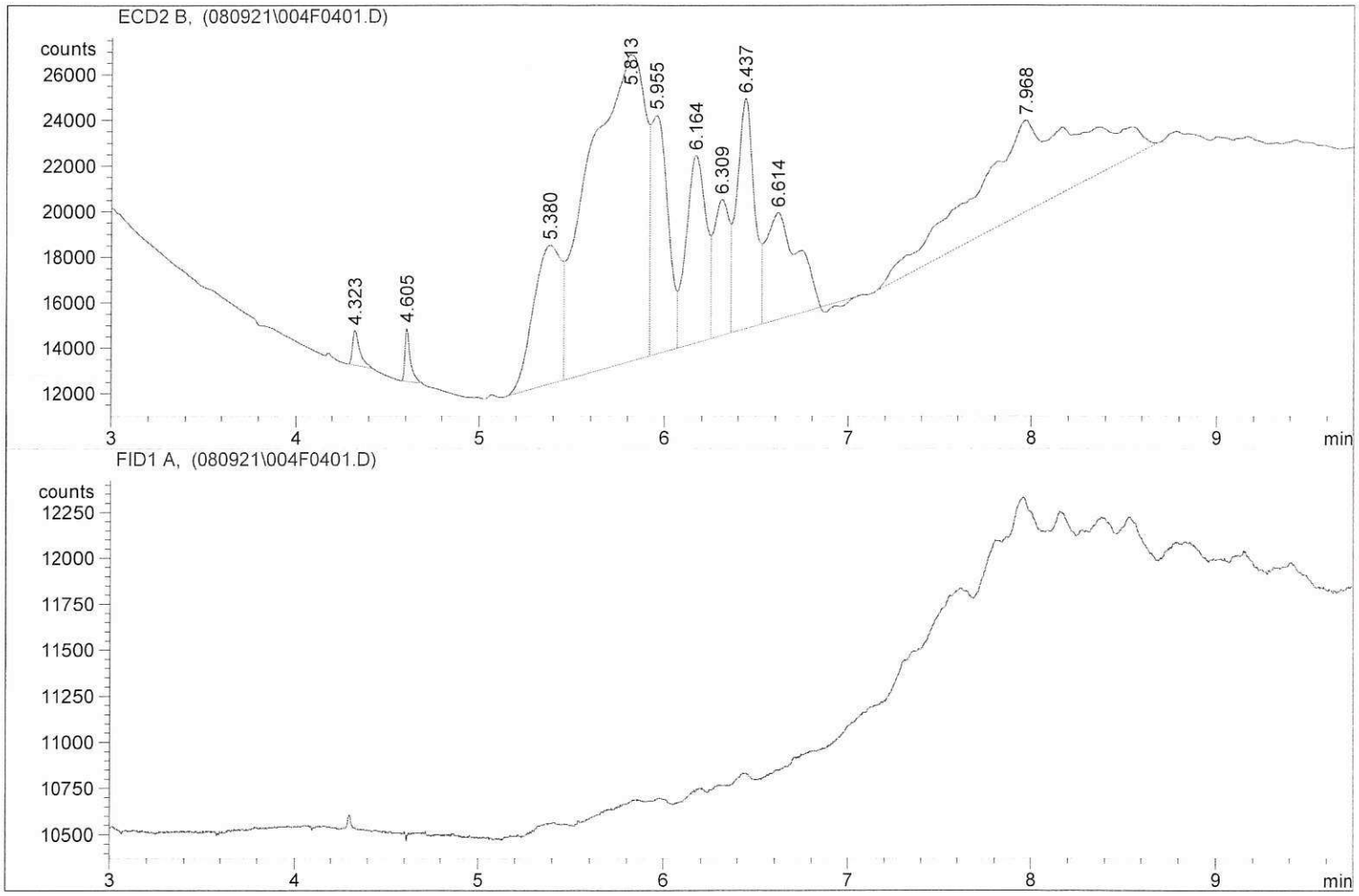
Organic Extractions Laboratory Analyst Notes

Extraction Parameter: PCB Extraction Batch BJH0381

Total Solids Batch: BJH0223 Work Order(s): 21H0078

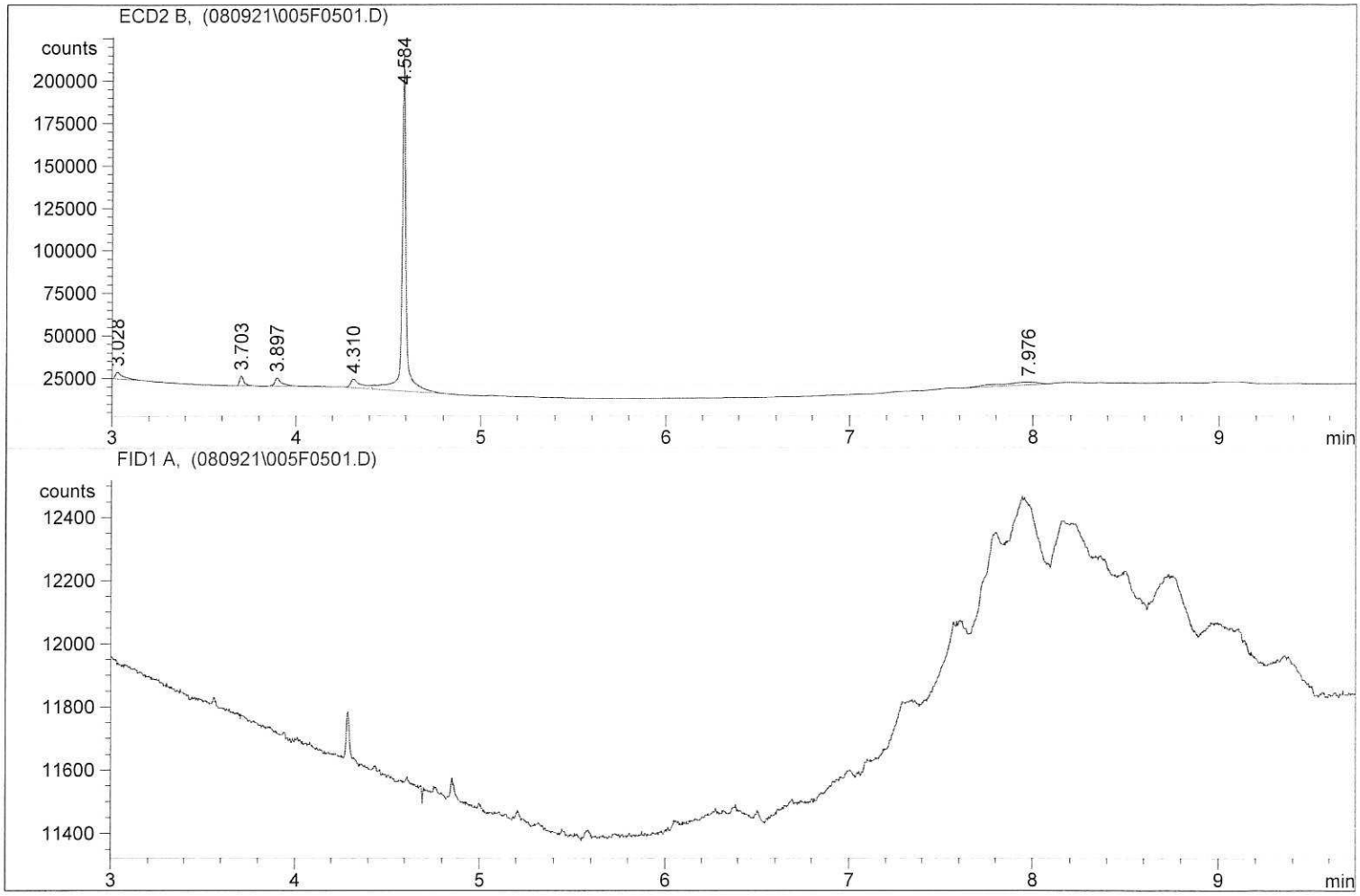
Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☑ No Anomalies (standard soil/wet sediment/sand/gravel)= 10	TW 8/9/21
☐ Standing Water Decanted (Not shared)=	
☐ Standing Water Homogenized (Shared samples)=	
☑ Clay/Clumps (Difficult to homogenize)= 31, 32, 34	TW 8/9/21
☐ Rocks (%+size)?	
☐ Organics (Leaves/sticks/grass)=	
☐ Oily, obvious fuel/sulfur odors=	
☐ Received in 32oz jar(s)=Homogenized in Pyrex dish=	
☐ Previously Frozen =	
☐ Other (Details)=	
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)	TW 8/9/21
☑ Multiple Jars Y / (N)	TW 8/9/21
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	

Injection Date	: 8/9/2021 4:37:01 PM	Seq. Line :	4
Sample Name	: 21H0078-10 A	Location :	Vial 4
Acq. Operator	: TW	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080921.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



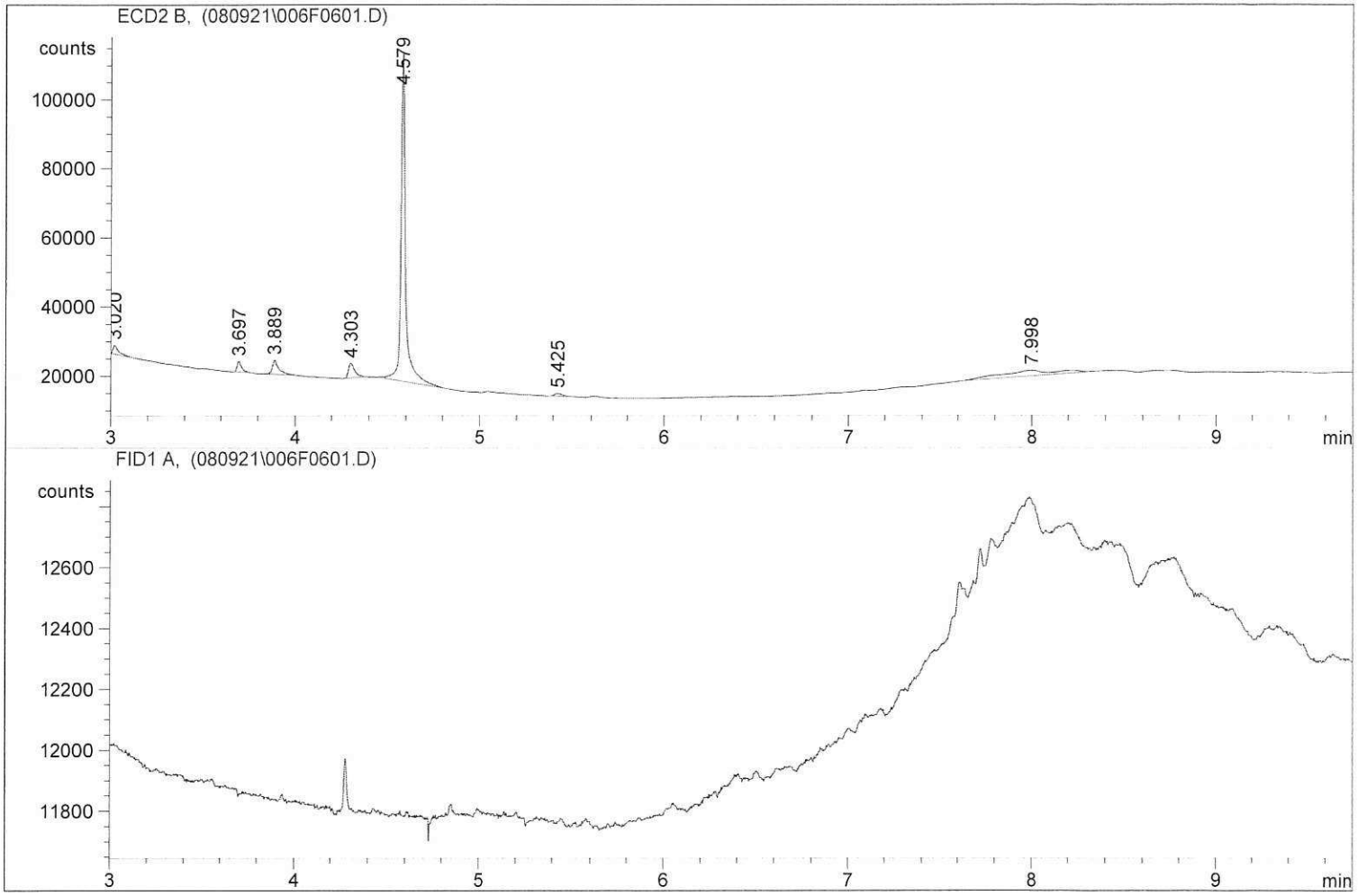
*** End of Report ***

Injection Date	: 8/9/2021 4:51:10 PM	Seq. Line :	5
Sample Name	: 21H0078-31 A	Location :	Vial 5
Acq. Operator	: TW	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080921.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



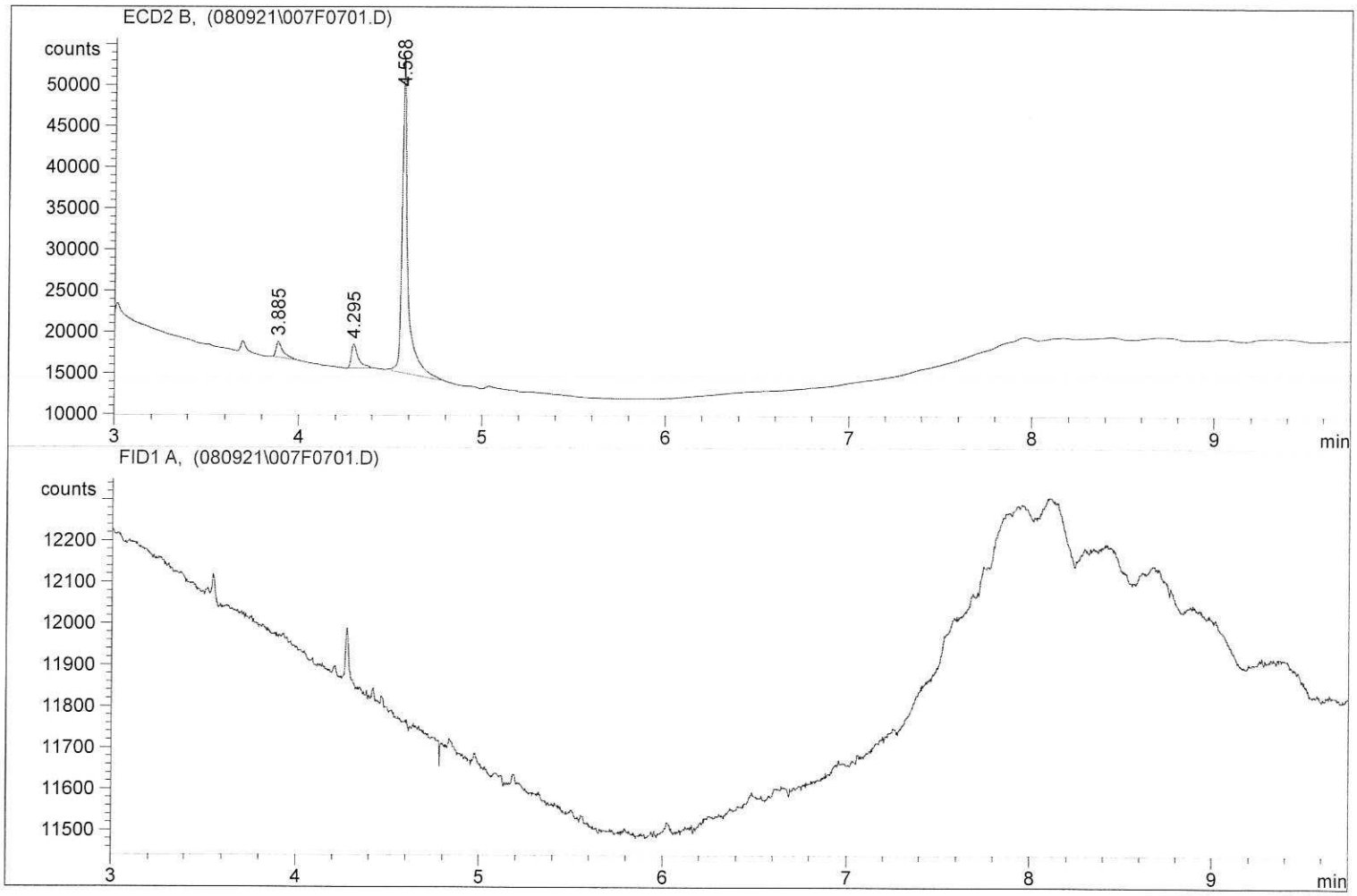
*** End of Report ***

Injection Date	: 8/9/2021 5:05:54 PM	Seq. Line :	6
Sample Name	: 21H0078-32 A	Location :	Vial 6
Acq. Operator	: TW	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080921.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Injection Date	: 8/9/2021 5:19:31 PM	Seq. Line :	7
Sample Name	: 21H0078-34 A	Location :	Vial 7
Acq. Operator	: TW	Inj :	1
		Inj Volume :	1 µl
Sequence File	: C:\HPCHEM\1\SEQUENCE\080921.S		
Method	: C:\HPCHEM\1\METHODS\SCREEN.M		
Last changed	: 7/9/2021 3:37:33 AM by TW		
SCREEN METHOD			



*** End of Report ***

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0195	Cleanup Type:	Sulfuric Acid
Cleanup Method:	EPA 3665A Sulfuric Acid Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	BJH0381-BLK1	08212104ECD7.D	08/20/2021	
Reference	BJH0381-SRM1	08212106ECD7.D	08/20/2021	
Matrix Spike Dup	BJH0381-MSD1	08212109ECD7.D	08/20/2021	
LCS	BJH0381-BS1	08212105ECD7.D	08/20/2021	
LDW21-IT698BX	21H0078-10	08212107ECD7.D	08/20/2021	
LDW21-IT702EY	21H0078-34	08212112ECD7.D	08/20/2021	
LDW21-IT702CY	21H0078-32	08212111ECD7.D	08/20/2021	
LDW21-IT702BY	21H0078-31	08212110ECD7.D	08/20/2021	
Matrix Spike	BJH0381-MS1	08212108ECD7.D	08/20/2021	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJH0195

Matrix: Solid | **Cleanup using: Organics - EPA 3665A Sulfuric Acid Cleanup** | **Printed: 8/20/2021 4:54:31PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21H0078-10	A	LDW21-IT698BX	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-31	A	LDW21-IT702BY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-32	A	LDW21-IT702CY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-34	A	LDW21-IT702EY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
BJH0381-BLK1	-	Blank	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-BS1	-	LCS	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-MS1	-	Matrix Spike	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-SRM1	-	Reference	-	2.5	2.5	-	8/20/2021	TWC	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0196	Cleanup Type:	Sulfur
Cleanup Method:	EPA 3660B Sulfur Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT702BY	21H0078-31	08212110ECD7.D	08/20/2021	
LDW21-IT702CY	21H0078-32	08212111ECD7.D	08/20/2021	
LDW21-IT702EY	21H0078-34	08212112ECD7.D	08/20/2021	
LDW21-IT698BX	21H0078-10	08212107ECD7.D	08/20/2021	
LCS	BJH0381-BS1	08212105ECD7.D	08/20/2021	
Reference	BJH0381-SRM1	08212106ECD7.D	08/20/2021	
Matrix Spike Dup	BJH0381-MSD1	08212109ECD7.D	08/20/2021	
Matrix Spike	BJH0381-MS1	08212108ECD7.D	08/20/2021	
Blank	BJH0381-BLK1	08212104ECD7.D	08/20/2021	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BENCH SHEET

CJH0196

Matrix: Solid **Cleanup using: Organics - EPA 3660B Sulfur Cleanup** **Printed: 8/20/2021 4:54:58PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21H0078-10	A	LDW21-IT698BX	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-31	A	LDW21-IT702BY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-32	A	LDW21-IT702CY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-34	A	LDW21-IT702EY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
BJH0381-BLK1	-	Blank	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-BS1	-	LCS	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-MS1	-	Matrix Spike	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-SRM1	-	Reference	-	2.5	2.5	-	8/20/2021	TWC	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CLEANUP BATCH SUMMARY

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Cleanup Batch:	CJH0197	Cleanup Type:	Silica Gel
Cleanup Method:	EPA 3630C Silica Gel Cleanup	Analysis:	EPA 8082A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT698BX	21H0078-10	08212107ECD7.D	08/20/2021	
Reference	BJH0381-SRM1	08212106ECD7.D	08/20/2021	
Blank	BJH0381-BLK1	08212104ECD7.D	08/20/2021	
LDW21-IT702EY	21H0078-34	08212112ECD7.D	08/20/2021	
LDW21-IT702BY	21H0078-31	08212110ECD7.D	08/20/2021	
LCS	BJH0381-BS1	08212105ECD7.D	08/20/2021	
Matrix Spike	BJH0381-MS1	08212108ECD7.D	08/20/2021	
Matrix Spike Dup	BJH0381-MSD1	08212109ECD7.D	08/20/2021	
LDW21-IT702CY	21H0078-32	08212111ECD7.D	08/20/2021	

Analytical Resources, Incorporated
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CLEANUP BENCH SHEET

CJH0197

Matrix: Solid | **Cleanup using: Organics - EPA 3630C Silica Gel Cleanup** | **Printed: 8/20/2021 4:55:30PM**

Lab Number	Sample Container	Sample Name	Extract Container	Initial (mL)	Final (mL)	Analysis	Clean Up Date	Cleaned By	Cleanup Comments
21H0078-10	A	LDW21-IT698BX	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-31	A	LDW21-IT702BY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-32	A	LDW21-IT702CY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
21H0078-34	A	LDW21-IT702EY	A 01	2.5	2.5	8082A PCB Solid 4	8/20/2021	TWC	
BJH0381-BLK1	-	Blank	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-BS1	-	LCS	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-MS1	-	Matrix Spike	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-MSD1	-	Matrix Spike Dup	-	2.5	2.5	-	8/20/2021	TWC	
BJH0381-SRM1	-	Reference	-	2.5	2.5	-	8/20/2021	TWC	

Analytical Resources, Incorporated
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Form I
METHOD BLANK DATA SHEET
EPA 8082A

Blank

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Solid	Laboratory ID:	BJH0381-BLK1	File ID:	08212104ECD7.D
Sampled:	N/A	Prepared:	08/17/21 10:02	Analyzed:	08/21/21 19:20
Solids:		Preparation:	EPA 3546 (Microwave)	Initial/Final:	12.5 g / 2.5 mL
Batch:	BJH0381	Sequence:	SJH0335	Calibration:	EH00034
Instrument:	ECD7	Column:	ZB5	Cleanups:	Silica Gel, Sulfur, Sulfuric Acid

CAS NO.	COMPOUND	DILUTION	CONC: (ug/kg wet)	Q	DL	RL
12674-11-2	Aroclor 1016	1	4.0	U	1.6	4.0
11104-28-2	Aroclor 1221	1	4.0	U	1.6	4.0
11141-16-5	Aroclor 1232	1	4.0	U	1.6	4.0
53469-21-9	Aroclor 1242	1	4.0	U	1.6	4.0
12672-29-6	Aroclor 1248	1	4.0	U	1.6	4.0
11097-69-1	Aroclor 1254	1	4.0	U	1.6	4.0
11096-82-5	Aroclor 1260	1	4.0	U	0.6	4.0

SURROGATES	ADDED: (ug/kg wet)	FOUND: (ug/kg wet)	% REC	QC LIMITS	Q
Decachlorobiphenyl	8.0000	6.26	78.2	40 - 126	
Tetrachlorometaxylene	8.0000	5.73	71.6	44 - 120	
Decachlorobiphenyl [2C]	8.0000	6.12	76.4	40 - 126	
Tetrachlorometaxylene [2C]	8.0000	5.38	67.3	44 - 120	

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212104ECD7.D
Data file 2: /210821.b/210821.b/08212104ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0381-BLK1
Client ID:
Injection Date: 21-AUG-2021 19:20
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.070	0.001	90639	5.412	-0.000	255210	28.6	26.9	6.2	Tetrachloro-m-xylene
13.164	0.001	131986	13.855	0.011	646676	31.3	30.6	2.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261807	1.1
Hexabromobiphenyl	425681	464745	9.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	737832	2.3
Hexabromobiphenyl	863111	951851	10.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	7.653	0.004	2350	2.5
Aroclor-1016	3	---			0.0	3	7.876	0.021	1176	3.2
Aroclor-1016	4	---			0.0	4	8.045	-0.058	71	0.3
		Col1Ave: <3 Quant Peaks					Col2Ave:		2.0	
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.089	0.016	3207	25.3
Aroclor-1221	3	---			0.0	3	6.403	-0.006	948	4.3
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	7.653	0.005	2350	3.2
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	9.083	0.055	2222	5.7
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1248	1	---			0.0	1	8.045	-0.059	71	0.2
Aroclor-1248	2	---			0.0	2	---			0.0
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	9.418	0.038	1599	3.2
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1254	1	---			0.0	1	9.244	0.008	1206	1.9
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	9.831	0.072	1847	3.9
Aroclor-1254	4	---			0.0	4	---			0.0
Aroclor-1254	5	---			0.0	5	10.153	0.005	303	0.3
		Col1Ave: <3 Quant Peaks					Col2Ave:		2.0	
Aroclor-1260	1	---			0.0	1	---			0.0
Aroclor-1260	2	---			0.0	2	11.680	0.005	580	0.3
Aroclor-1260	3	11.115	0.062	558	1.0	3	12.182	-0.077	2899	2.0
Aroclor-1260	4	11.480	0.026	258	1.0	4	13.045	0.076	11487	16.2
Aroclor-1260	5	---			0.0	NS	---			----
		Col1Ave: <3 Quant Peaks					Col2Ave:		6.2	
Aroclor-1262	1	---			0.0	1	10.970	0.000	333	0.3
Aroclor-1262	2	11.480	0.026	258	1.4	2	11.680	-0.005	580	0.2
Aroclor-1262	3	---			0.0	3	12.182	-0.007	2899	2.7
Aroclor-1262	4	12.287	0.012	315	1.4	4	13.045	0.072	11487	11.3
		Col1Ave: <3 Quant Peaks					Col2Ave:		3.6	
Aroclor-1268	1	11.480	-0.077	258	0.4	1	12.182	-0.019	2899	1.1
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.908	-0.093	3789	7.4	3	12.634	-0.010	1983	0.8
Aroclor-1268	4	12.770	-0.002	2112	1.3	4	12.784	0.001	2086	3.3

Total Col1Ave (3 peaks): 3.0 Total Col2Ave (3 peaks): 1.7 RPD = 56*

Corrected Ave: < 3 Peaks Corrected Ave: < 3 Peaks

Total PCB Area Col1 (5.169 - 13.064) = 18527 Col1 Total PCB = 0.0 ppm*

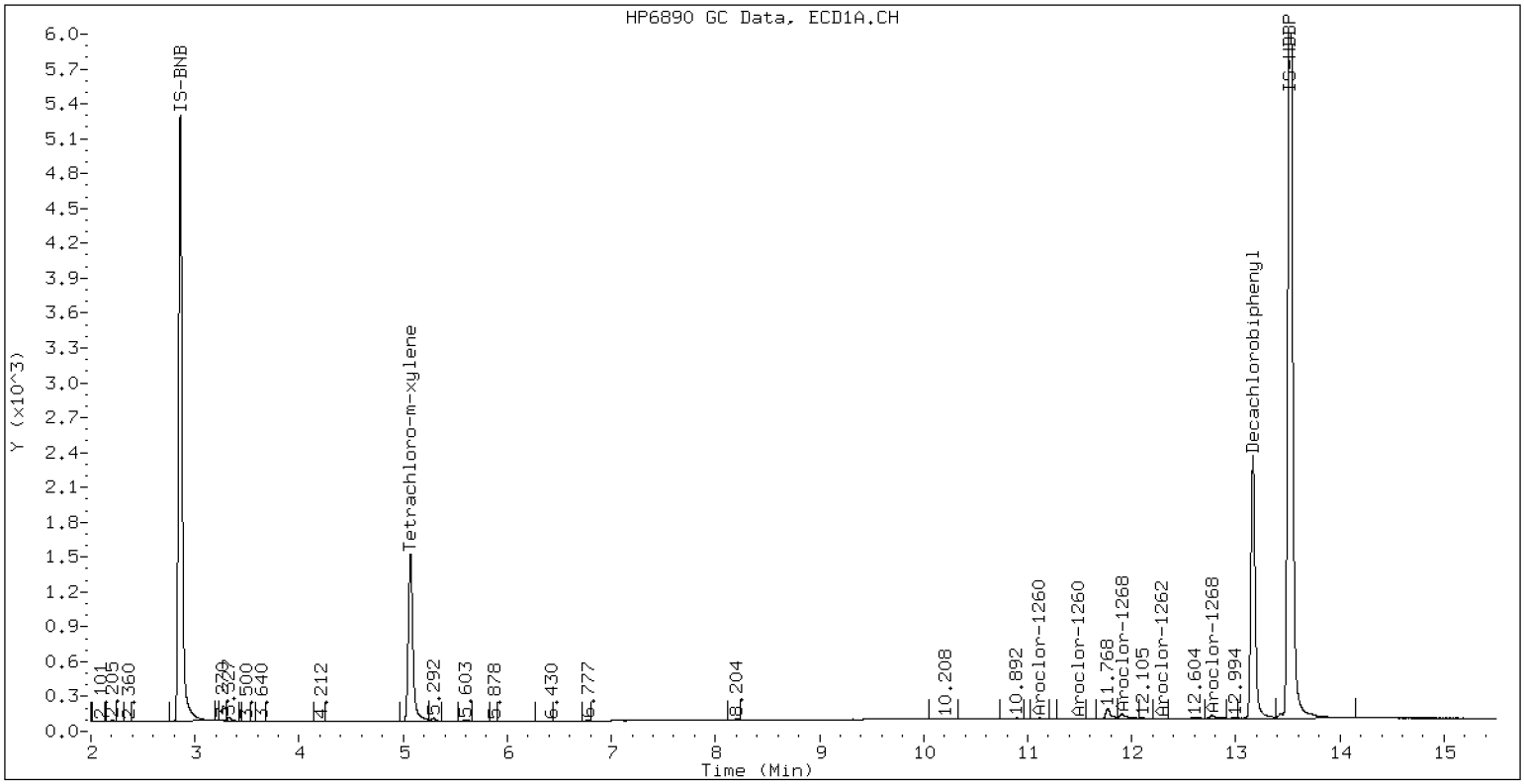
Total PCB Area Col2 (5.169 - 13.064) = 331275 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

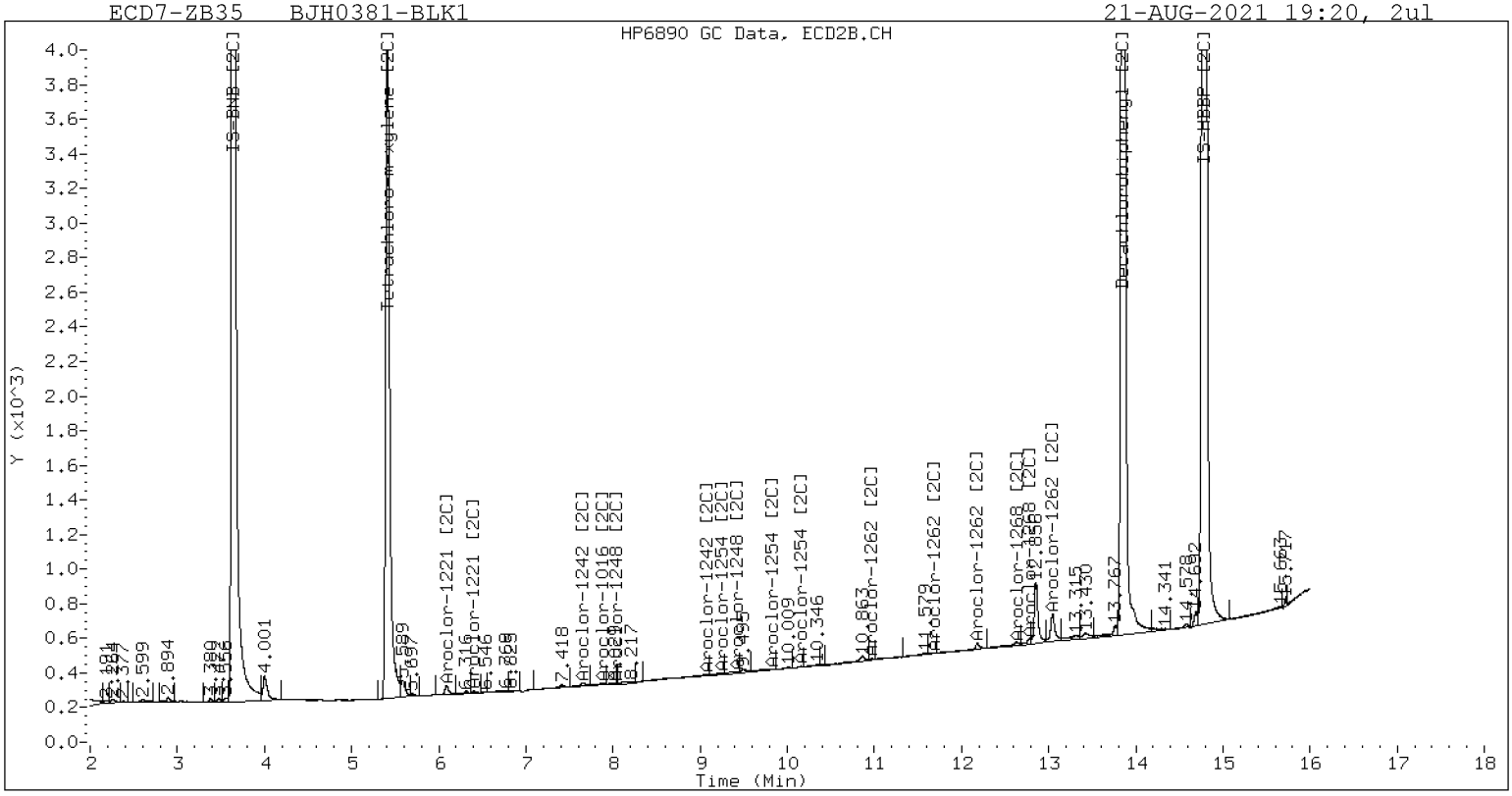
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0381-BLK1 21-AUG-2021 19:20, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0381-BLK1 21-AUG-2021 19:20, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LCS / LCS DUPLICATE RECOVERY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/21/21 19:41
Batch:	BJH0381	Laboratory ID:	BJH0381-BS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	LCS
Initial/Final:	12.5 g / 2.5 mL		

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Aroclor 1016	101	94.6		93.9	56 - 120
Aroclor 1260	101	92.9		92.1	58 - 120

* Indicates values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212105ECD7.D
Data file 2: /210821.b/210821.b/08212105ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0381-BS1
Client ID:
Injection Date: 21-AUG-2021 19:41
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.000	97961	5.411	-0.001	274679	31.2	29.4	6.1	Tetrachloro-m-xylene
13.163	-0.001	146877	13.842	-0.002	774791	35.3	32.2	9.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	259389	0.2
Hexabromobiphenyl	425681	458508	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	727292	0.9
Hexabromobiphenyl	863111	1083838	25.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.658	-0.002	42066	457.3	1	7.053	-0.001	179298	432.3
Aroclor-1016	2	7.030	-0.003	138333	491.7	2	7.646	-0.004	431226	464.9
Aroclor-1016	3	7.176	-0.003	57473	455.2	3	7.852	-0.004	172997	475.2
Aroclor-1016	4	7.284	-0.003	38625	488.0	4	8.101	-0.002	101007	458.4
Total Col1Ave (4 peaks):				473.1		Total Col2Ave (4 peaks):			457.7	RPD = 3
Corrected Ave (3 peaks):				466.8		Corrected Ave (3 peaks):			451.9	RPD = 3
Aroclor-1221	1	4.015	0.000	202	9.9	1	4.674	-0.003	975	17.9
Aroclor-1221	2	5.448	-0.003	3966	123.5	2	6.071	-0.002	15881	127.1
Aroclor-1221	3	5.723	-0.001	24842	286.4	3	6.407	-0.002	78438	360.1
Total Col1Ave (3 peaks):				139.9		Total Col2Ave (3 peaks):			168.4	RPD = 18
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.015	-0.003	202	16.1	1	4.674	-0.005	975	30.0
Aroclor-1232	2	5.723	-0.003	24842	363.3	2	7.053	-0.005	179298	944.0
Aroclor-1232	3	7.030	-0.003	138333	1325.5	3	7.646	-0.005	431226	1134.4
Aroclor-1232	4	7.967	-0.005	50967	1187.2	4	8.515	-0.007	137446	1387.9
Total Col1Ave (4 peaks):				723.0		Total Col2Ave (4 peaks):			874.1	RPD = 19
Corrected Ave (3 peaks):				522.2		Corrected Ave (3 peaks):			702.8	RPD = 29
Aroclor-1242	1	6.658	-0.001	42066	588.6	1	7.053	-0.004	179298	536.2
Aroclor-1242	2	7.030	-0.000	138333	649.3	2	7.646	-0.003	431226	593.7
Aroclor-1242	3	8.380	0.006	39922	330.8	3	8.929	-0.019	52612	155.0
Aroclor-1242	4	8.672	-0.002	38672	784.1	4	9.024	-0.004	15805	41.0
Total Col1Ave (4 peaks):				588.2		Total Col2Ave (4 peaks):			331.5	RPD = 56*
Corrected Ave (3 peaks):				522.9		Corrected Ave (3 peaks):			244.1	RPD = 73*
Aroclor-1248	1	7.798	-0.002	40800	375.3	1	8.101	-0.003	101007	335.1
Aroclor-1248	2	7.967	-0.002	50967	359.2	2	8.515	-0.003	137446	374.7
Aroclor-1248	3	8.380	0.000	39922	192.1	3	8.929	-0.020	52612	90.0
Aroclor-1248	4	8.672	-0.003	38672	326.1	4	9.374	-0.006	9256	18.7
Total Col1Ave (4 peaks):				313.2		Total Col2Ave (4 peaks):			204.6	RPD = 42*
Corrected Ave (3 peaks):				292.5		Corrected Ave (3 peaks):			147.9	RPD = 66*
Aroclor-1254	1	8.672	-0.004	38672	172.8	1	9.234	-0.002	110938	179.3
Aroclor-1254	2	---			0.0	2	9.323	-0.005	3078	8.5
Aroclor-1254	3	9.040	-0.001	6738	46.2	3	9.758	-0.001	21612	45.8
Aroclor-1254	4	9.171	-0.008	35777	128.4	4	9.922	0.012	264626	253.2
Aroclor-1254	5	9.854	-0.017	45859	262.1	5	10.152	0.005	331160	312.4
Total Col1Ave (4 peaks):				152.4		Total Col2Ave (5 peaks):			159.8	RPD = 5
Corrected Ave (3 peaks):				115.8		Corrected Ave (4 peaks):			121.7	RPD = 5
Aroclor-1260	1	10.381	-0.003	93918	455.3	1	11.421	-0.002	354580	393.5
Aroclor-1260	2	10.699	-0.003	94557	467.0	2	11.674	-0.001	1002096	382.7
Aroclor-1260	3	11.049	-0.004	251132	458.9	3	12.256	-0.003	650350	386.2
Aroclor-1260	4	11.450	-0.004	122000	500.4	4	12.967	-0.002	323087	401.3
Aroclor-1260	5	11.553	-0.002	53689	439.8	NS	---			----
Total Col1Ave (5 peaks):				464.3		Total Col2Ave (4 peaks):			390.9	RPD = 17
Corrected Ave (4 peaks):				455.3		Corrected Ave (3 peaks):			387.5	RPD = 16
Aroclor-1262	1	10.381	-0.003	93918	335.7	1	10.964	-0.007	373234	281.6
Aroclor-1262	2	11.450	-0.004	122000	673.3	2	11.674	-0.011	1002096	358.3
Aroclor-1262	3	11.625	-0.002	68578	262.5	3	12.185	-0.003	301557	242.9
Aroclor-1262	4	12.273	-0.001	65965	307.6	4	12.967	-0.006	323087	279.3
Total Col1Ave (4 peaks):				394.8		Total Col2Ave (4 peaks):			290.5	RPD = 30
Corrected Ave (3 peaks):				301.9		Corrected Ave (3 peaks):			267.9	RPD = 12
Aroclor-1268	1	11.553	-0.005	53689	87.3	1	12.185	-0.015	301557	96.8
Aroclor-1268	2	11.625	-0.001	68578	106.3	2	12.256	-0.011	650350	191.4
Aroclor-1268	3	12.026	0.026	28324	55.8	3	12.630	-0.014	13620	4.6
Aroclor-1268	4	12.767	-0.005	16671	10.2	4	12.778	-0.005	7779	10.7
Total Col1Ave (4 peaks):				64.9		Total Col2Ave (4 peaks):			75.9	RPD = 16

Corrected Ave (3 peaks): 51.1 Corrected Ave (3 peaks): 37.4 RPD = 31

Total PCB Area Col1 (5.169 - 13.064) = 2503342 Col1 Total PCB = 1.0 ppm*

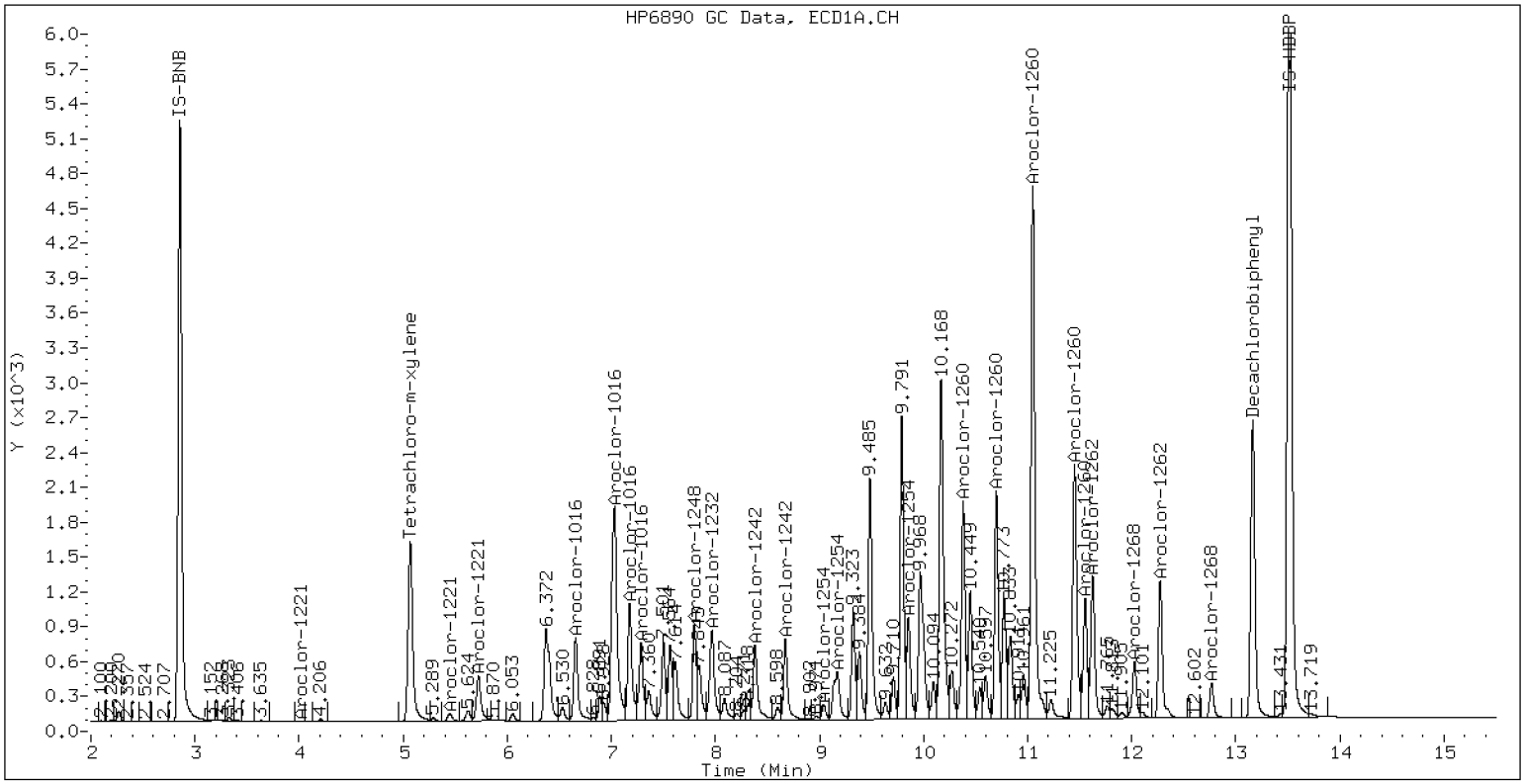
Total PCB Area Col2 (5.169 - 13.064) = 8805835 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

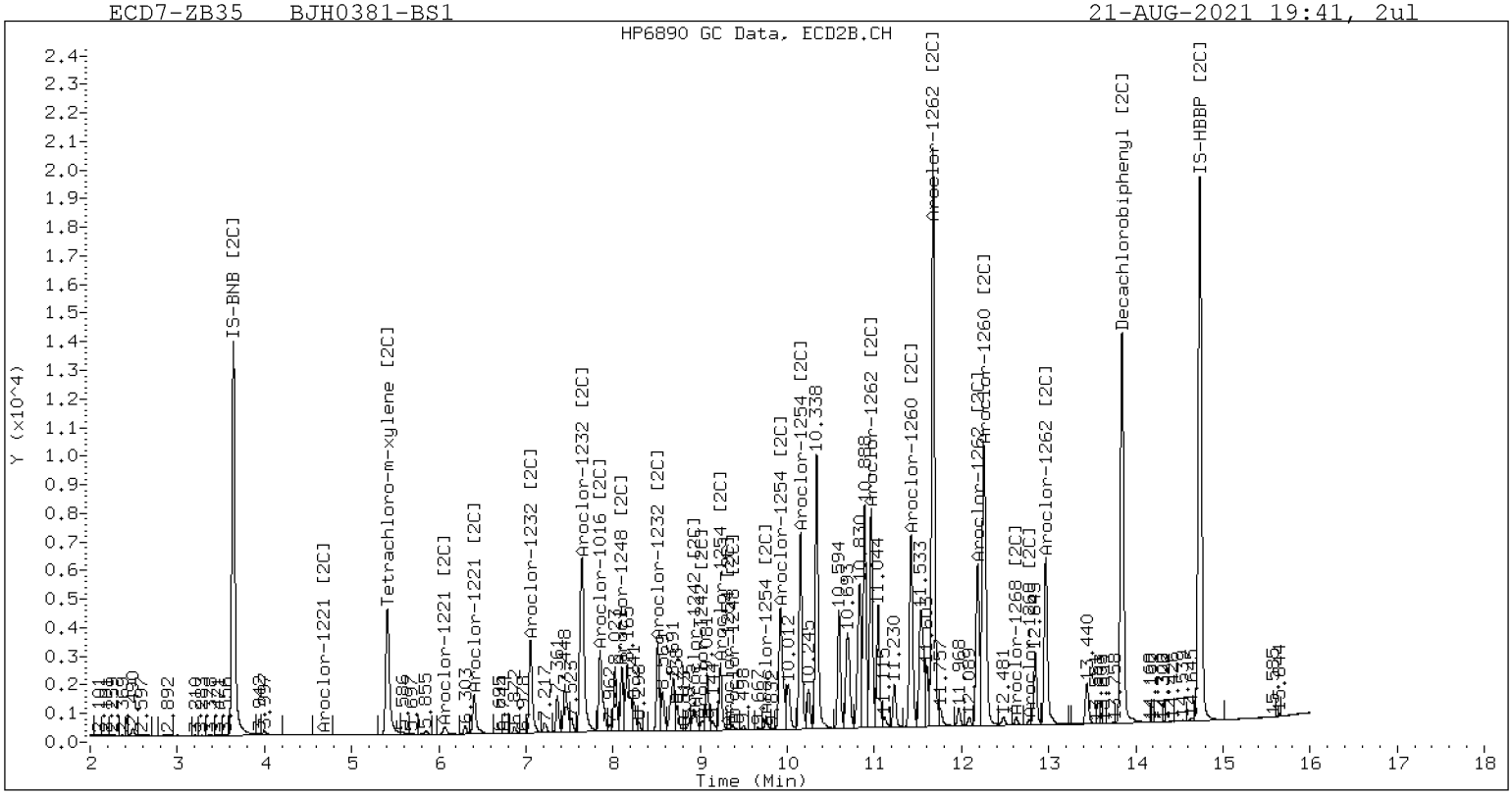
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0381-BS1 21-AUG-2021 19:41, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0381-BS1 21-AUG-2021 19:41, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT698BX

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/21/21 20:42
Batch:	BJH0381	Laboratory ID:	BJH0381-MS1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike
Initial/Final:	14.56 g / 2.5 mL	Source Sample:	LDW21-IT698BX

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	Q	MS CONCENTRATION (ug/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Aroclor 1016	101	ND	U	81.9		81.1	56 - 120
Aroclor 1260	101	ND	U	77.4		76.6	58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

LDW21-IT698BX

MS / MS DUPLICATE RECOVERY
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/21/21 21:03
Batch:	BJH0381	Laboratory ID:	BJH0381-MSD1
Preparation:	EPA 3546 (Microwave)	Sequence Name:	Matrix Spike Dup
Initial/Final:	14.56 g / 2.5 mL	Source Sample:	LDW21-IT698BX

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Aroclor 1016	101	91.8		90.9	11.4	30	56 - 120
Aroclor 1260	101	83.9		83.1	8.02	30	58 - 120

* Values outside of QC limits

[2C] indicates second-column analyte, present if quantification on any batch samples used second column data.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212108ECD7.D
Data file 2: /210821.b/210821.b/08212108ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0381-MS1
Client ID:
Injection Date: 21-AUG-2021 20:42
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.001	81820	5.411	-0.001	236962	24.8	24.0	3.3	Tetrachloro-m-xylene
13.162	-0.002	123664	13.844	-0.000	684628	28.5	26.4	7.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	273492	5.7
Hexabromobiphenyl	425681	478477	12.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	769676	6.8
Hexabromobiphenyl	863111	1167039	35.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.658	-0.002	40805	420.7	1	7.054	-0.001	162086	369.3
Aroclor-1016	2	7.029	-0.005	124262	418.9	2	7.646	-0.004	393323	400.7
Aroclor-1016	3	7.176	-0.003	51533	387.1	3	7.852	-0.004	157295	408.3
Aroclor-1016	4	7.285	-0.003	34400	412.2	4	8.102	-0.001	92648	397.3
Total Col1Ave (4 peaks):				409.7		Total Col2Ave (4 peaks):			393.9	RPD = 4
Corrected Ave (3 peaks):				406.1		Corrected Ave (3 peaks):			389.1	RPD = 4
Aroclor-1221	1	4.014	-0.001	175	8.1	1	4.662	-0.014	1354	23.4
Aroclor-1221	2	5.448	-0.003	3311	97.8	2	6.072	0.000	16736	126.5
Aroclor-1221	3	5.723	-0.001	22123	241.9	3	6.407	-0.002	70255	304.8
Total Col1Ave (3 peaks):				115.9		Total Col2Ave (3 peaks):			151.6	RPD = 27
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.014	-0.004	175	13.2	1	4.662	-0.017	1354	39.4
Aroclor-1232	2	5.723	-0.003	22123	306.8	2	7.054	-0.004	162086	806.4
Aroclor-1232	3	7.029	-0.005	124262	1129.3	3	7.646	-0.005	393323	977.7
Aroclor-1232	4	7.967	-0.006	45175	998.0	4	8.516	-0.006	124549	1188.4
Total Col1Ave (4 peaks):				611.8		Total Col2Ave (4 peaks):			753.0	RPD = 21
Corrected Ave (3 peaks):				439.4		Corrected Ave (3 peaks):			607.8	RPD = 32
Aroclor-1242	1	6.658	-0.001	40805	541.5	1	7.054	-0.004	162086	458.0
Aroclor-1242	2	7.029	-0.001	124262	553.2	2	7.646	-0.003	393323	511.7
Aroclor-1242	3	8.381	0.006	35508	279.0	3	8.931	-0.017	48529	135.1
Aroclor-1242	4	8.672	-0.002	34144	656.6	4	9.026	-0.002	14520	35.6
Total Col1Ave (4 peaks):				507.6		Total Col2Ave (4 peaks):			285.1	RPD = 56*
Corrected Ave (3 peaks):				457.9		Corrected Ave (3 peaks):			209.6	RPD = 74*
Aroclor-1248	1	7.798	-0.002	35361	308.5	1	8.102	-0.002	92648	290.5
Aroclor-1248	2	7.967	-0.003	45175	302.0	2	8.516	-0.003	124549	320.8
Aroclor-1248	3	8.381	0.001	35508	162.1	3	8.931	-0.018	48529	78.5
Aroclor-1248	4	8.672	-0.003	34144	273.0	4	9.375	-0.005	8934	17.0
Total Col1Ave (4 peaks):				261.4		Total Col2Ave (4 peaks):			176.7	RPD = 39
Corrected Ave (3 peaks):				245.7		Corrected Ave (3 peaks):			128.7	RPD = 63*
Aroclor-1254	1	8.672	-0.004	34144	144.7	1	9.235	-0.001	100604	153.6
Aroclor-1254	2	---			0.0	2	9.325	-0.003	2504	6.5
Aroclor-1254	3	9.041	-0.000	5891	38.3	3	9.759	0.000	19401	38.9
Aroclor-1254	4	9.173	-0.007	31497	107.2	4	9.923	0.012	236384	213.7
Aroclor-1254	5	9.855	-0.016	40357	218.7	5	10.153	0.005	301422	268.7
Total Col1Ave (4 peaks):				127.2		Total Col2Ave (5 peaks):			136.3	RPD = 7
Corrected Ave (3 peaks):				96.7		Corrected Ave (4 peaks):			103.2	RPD = 6
Aroclor-1260	1	10.382	-0.002	81640	379.2	1	11.420	-0.003	320867	330.7
Aroclor-1260	2	10.699	-0.003	82295	389.5	2	11.676	0.000	907207	321.7
Aroclor-1260	3	11.050	-0.003	218714	383.0	3	12.257	-0.001	590814	325.8
Aroclor-1260	4	11.451	-0.003	106114	417.1	4	12.967	-0.002	288740	333.1
Aroclor-1260	5	11.552	-0.002	46832	367.7	NS	---			----
Total Col1Ave (5 peaks):				387.3		Total Col2Ave (4 peaks):			327.9	RPD = 17
Corrected Ave (4 peaks):				379.9		Corrected Ave (3 peaks):			326.1	RPD = 15
Aroclor-1262	1	10.382	-0.002	81640	279.6	1	10.964	-0.007	336488	235.8
Aroclor-1262	2	11.451	-0.003	106114	561.2	2	11.676	-0.009	907207	301.3
Aroclor-1262	3	11.625	-0.002	59375	217.8	3	12.184	-0.004	274648	205.5
Aroclor-1262	4	12.273	-0.001	56745	253.6	4	12.967	-0.006	288740	231.8
Total Col1Ave (4 peaks):				328.1		Total Col2Ave (4 peaks):			243.6	RPD = 30
Corrected Ave (3 peaks):				250.3		Corrected Ave (3 peaks):			224.4	RPD = 11
Aroclor-1268	1	11.552	-0.005	46832	73.0	1	12.184	-0.016	274648	81.9
Aroclor-1268	2	11.625	-0.001	59375	88.2	2	12.257	-0.010	590814	161.5
Aroclor-1268	3	12.027	0.026	24296	45.9	3	12.629	-0.015	11598	3.7
Aroclor-1268	4	12.766	-0.006	14274	8.4	4	12.779	-0.004	6843	8.7
Total Col1Ave (4 peaks):				53.8		Total Col2Ave (4 peaks):			63.9	RPD = 17

Corrected Ave (3 peaks): 42.4 Corrected Ave (3 peaks): 31.4 RPD = 30

Total PCB Area Col1 (5.169 - 13.064) = 2201219 Col1 Total PCB = 0.8 ppm*

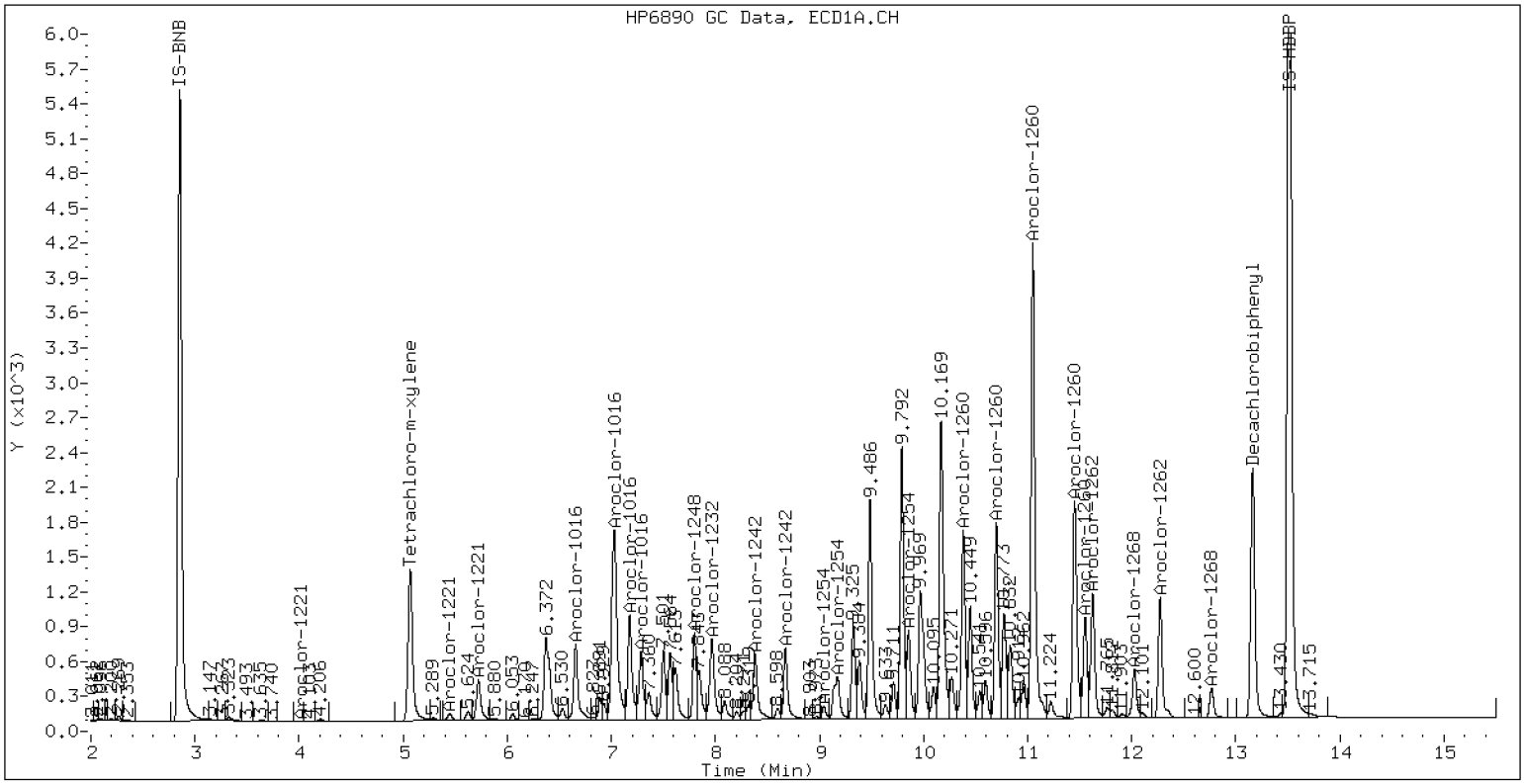
Total PCB Area Col2 (5.169 - 13.064) = 7971176 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

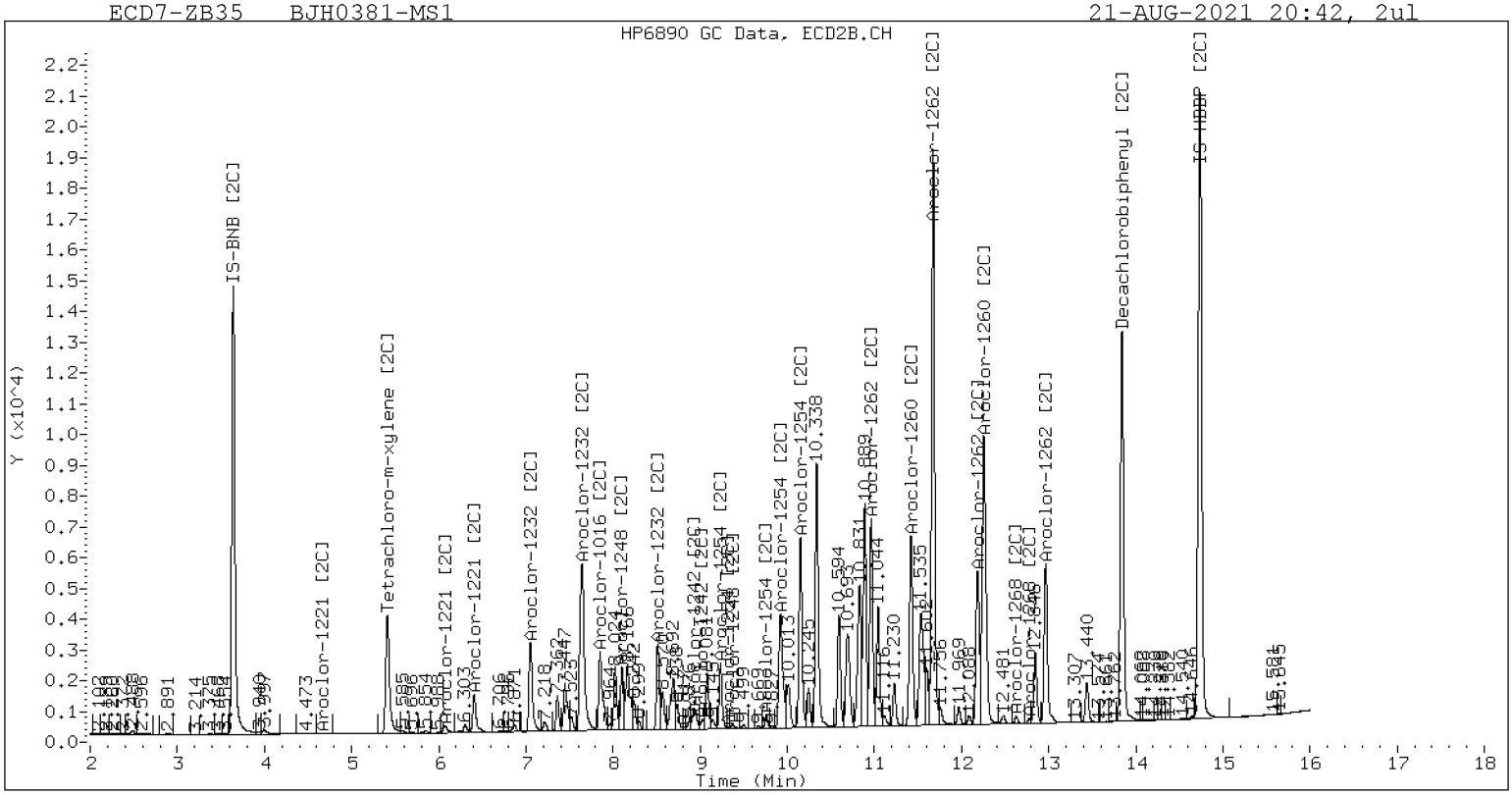
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0381-MS1 21-AUG-2021 20:42, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0381-MS1 21-AUG-2021 20:42, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212109ECD7.D
Data file 2: /210821.b/210821.b/08212109ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0381-MSD1
Client ID:
Injection Date: 21-AUG-2021 21:03
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	90123	5.411	-0.001	258590	26.9	25.8	4.2	Tetrachloro-m-xylene
13.162	-0.002	129537	13.842	-0.002	722104	29.6	27.6	7.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	276695	6.9
Hexabromobiphenyl	425681	481924	13.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	778610	8.0
Hexabromobiphenyl	863111	1178421	36.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.657	-0.003	48398	493.2	1	7.053	-0.001	180227	405.9
Aroclor-1016	2	7.029	-0.004	139454	464.7	2	7.646	-0.004	435644	438.7
Aroclor-1016	3	7.176	-0.002	57118	424.1	3	7.851	-0.004	172705	443.1
Aroclor-1016	4	7.285	-0.003	38357	454.3	4	8.101	-0.002	101405	429.9
Total Col1Ave (4 peaks):				459.1		Total Col2Ave (4 peaks):			429.4	RPD = 7
Corrected Ave (3 peaks):				447.7		Corrected Ave (3 peaks):			424.8	RPD = 5
Aroclor-1221	1	4.014	-0.001	184	8.4	1	4.664	-0.012	1246	21.3
Aroclor-1221	2	5.448	-0.003	3823	111.6	2	6.071	-0.001	21697	162.2
Aroclor-1221	3	5.723	-0.001	24717	267.1	3	6.407	-0.002	79244	339.9
Total Col1Ave (3 peaks):				129.1		Total Col2Ave (3 peaks):			174.5	RPD = 30
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.014	-0.003	184	13.7	1	4.664	-0.015	1246	35.8
Aroclor-1232	2	5.723	-0.003	24717	338.9	2	7.053	-0.005	180227	886.3
Aroclor-1232	3	7.029	-0.004	139454	1252.7	3	7.646	-0.005	435644	1070.5
Aroclor-1232	4	7.966	-0.006	49818	1087.8	4	8.515	-0.007	135716	1280.1
Total Col1Ave (4 peaks):				673.3		Total Col2Ave (4 peaks):			818.2	RPD = 19
Corrected Ave (3 peaks):				480.1		Corrected Ave (3 peaks):			664.2	RPD = 32
Aroclor-1242	1	6.657	-0.002	48398	634.9	1	7.053	-0.004	180227	503.5
Aroclor-1242	2	7.029	-0.001	139454	613.6	2	7.646	-0.003	435644	560.2
Aroclor-1242	3	8.381	0.006	39078	303.5	3	8.933	-0.016	52356	144.1
Aroclor-1242	4	8.672	-0.002	37609	714.8	4	9.024	-0.004	16085	39.0
Total Col1Ave (4 peaks):				566.7		Total Col2Ave (4 peaks):			311.7	RPD = 58*
Corrected Ave (3 peaks):				517.3		Corrected Ave (3 peaks):			228.9	RPD = 77*
Aroclor-1248	1	7.798	-0.002	39465	340.3	1	8.101	-0.003	101405	314.3
Aroclor-1248	2	7.966	-0.004	49818	329.1	2	8.515	-0.003	135716	345.6
Aroclor-1248	3	8.381	0.001	39078	176.3	3	8.933	-0.017	52356	83.7
Aroclor-1248	4	8.672	-0.003	37609	297.3	4	9.373	-0.007	9497	17.9
Total Col1Ave (4 peaks):				285.8		Total Col2Ave (4 peaks):			190.4	RPD = 40*
Corrected Ave (3 peaks):				267.6		Corrected Ave (3 peaks):			138.6	RPD = 63*
Aroclor-1254	1	8.672	-0.004	37609	157.5	1	9.234	-0.002	108477	163.8
Aroclor-1254	2	---			0.0	2	9.326	-0.002	2814	7.2
Aroclor-1254	3	9.040	-0.001	6653	42.8	3	9.759	-0.000	21346	42.3
Aroclor-1254	4	9.171	-0.009	34635	116.5	4	9.922	0.012	253946	226.9
Aroclor-1254	5	9.855	-0.016	44042	235.9	5	10.152	0.005	323773	285.3
Total Col1Ave (4 peaks):				138.2		Total Col2Ave (5 peaks):			145.1	RPD = 5
Corrected Ave (3 peaks):				105.6		Corrected Ave (4 peaks):			110.0	RPD = 4
Aroclor-1260	1	10.381	-0.003	88800	409.6	1	11.421	-0.003	343741	350.9
Aroclor-1260	2	10.698	-0.004	90011	423.0	2	11.674	-0.002	977828	343.4
Aroclor-1260	3	11.048	-0.005	239357	416.2	3	12.255	-0.004	636844	347.8
Aroclor-1260	4	11.450	-0.004	116130	453.2	4	12.966	-0.003	317755	363.0
Aroclor-1260	5	11.552	-0.003	50858	396.4	NS	---			----
Total Col1Ave (5 peaks):				419.7		Total Col2Ave (4 peaks):			351.3	RPD = 18
Corrected Ave (4 peaks):				411.3		Corrected Ave (3 peaks):			347.4	RPD = 17
Aroclor-1262	1	10.381	-0.002	88800	302.0	1	10.963	-0.007	364722	253.1
Aroclor-1262	2	11.450	-0.005	116130	609.8	2	11.674	-0.012	977828	321.6
Aroclor-1262	3	11.624	-0.003	64497	234.9	3	12.185	-0.003	301472	223.4
Aroclor-1262	4	12.273	-0.002	62288	276.4	4	12.966	-0.006	317755	252.6
Total Col1Ave (4 peaks):				355.8		Total Col2Ave (4 peaks):			262.7	RPD = 30
Corrected Ave (3 peaks):				271.1		Corrected Ave (3 peaks):			243.0	RPD = 11
Aroclor-1268	1	11.552	-0.005	50858	78.7	1	12.185	-0.015	301472	89.0
Aroclor-1268	2	11.624	-0.002	64497	95.1	2	12.255	-0.012	636844	172.4
Aroclor-1268	3	12.026	0.025	26469	49.6	3	12.629	-0.015	12718	4.0
Aroclor-1268	4	12.766	-0.006	15638	9.1	4	12.778	-0.005	7432	9.4
Total Col1Ave (4 peaks):				58.1		Total Col2Ave (4 peaks):			68.7	RPD = 17

Corrected Ave (3 peaks): 45.8 Corrected Ave (3 peaks): 34.1 RPD = 29

Total PCB Area Col1 (5.169 - 13.064) = 2424993 Col1 Total PCB = 0.9 ppm*

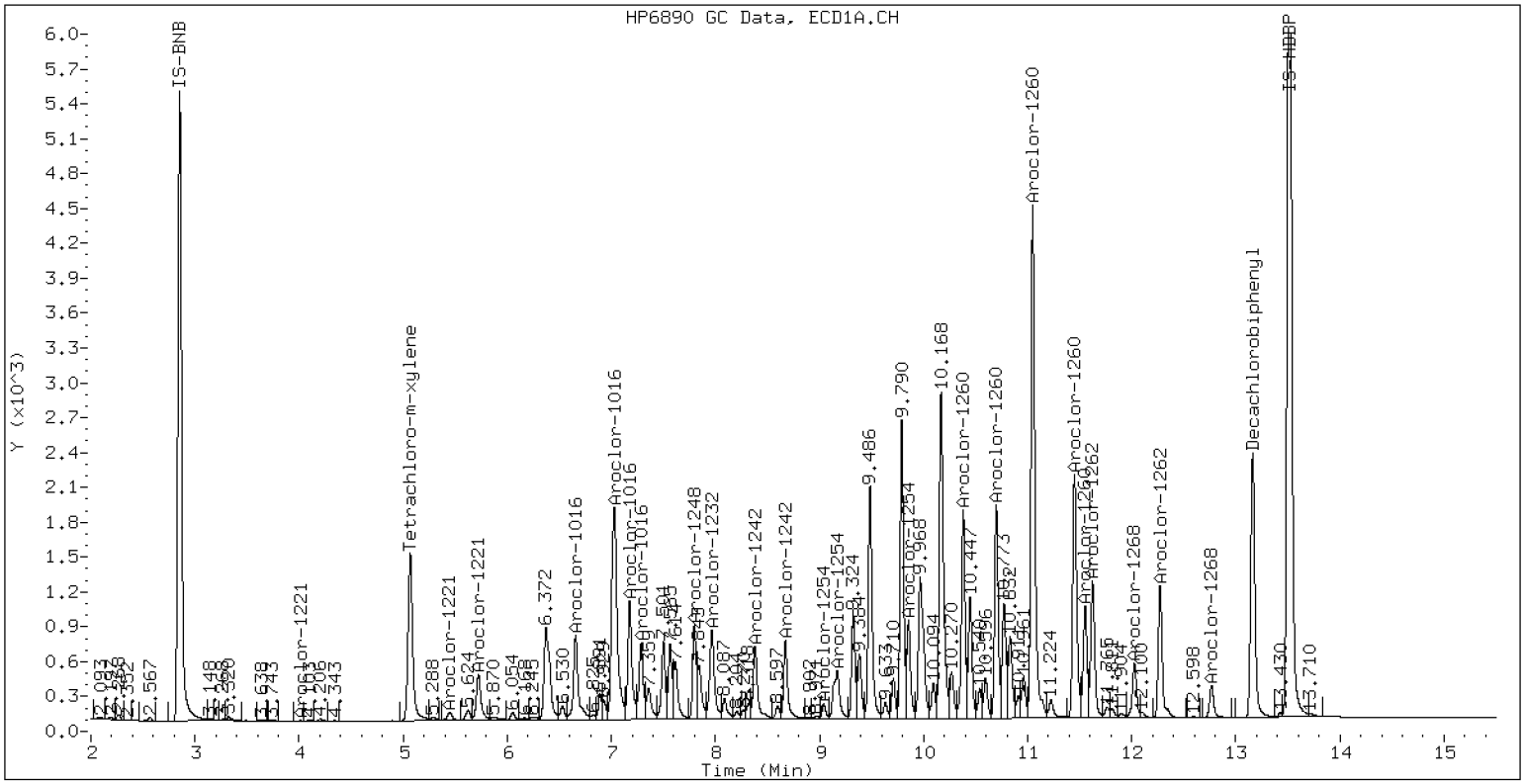
Total PCB Area Col2 (5.169 - 13.064) = 8677563 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

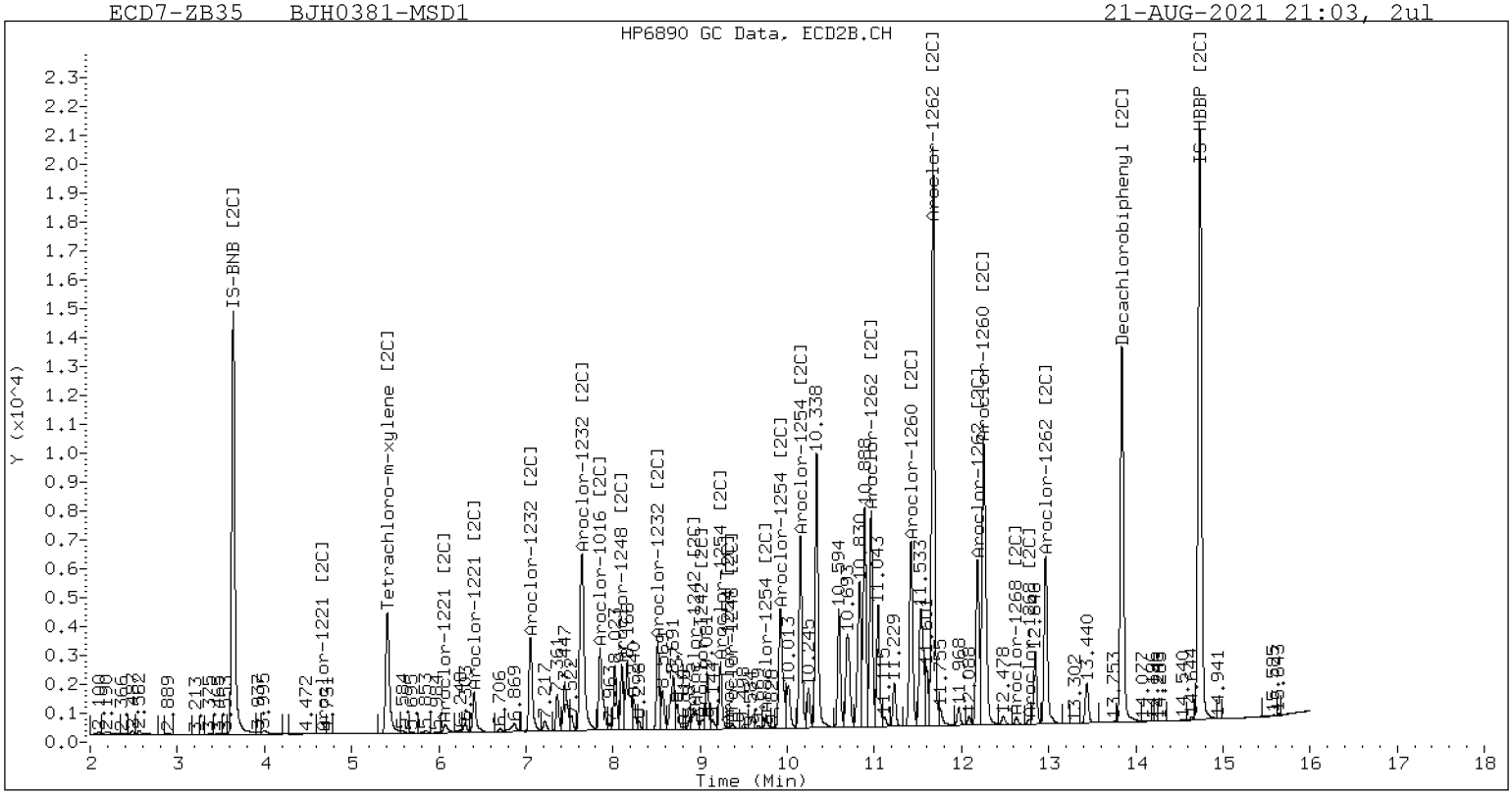
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0381-MSD1 21-AUG-2021 21:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0381-MSD1 21-AUG-2021 21:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0381-SRM1
Batch: BJH0381
Initial/Final: 2.5 g / 2.5 mL
Preparation: EPA 3546 (Microwave)
Analyzed: 08/21/2021 20:01
Standard ID: J006842
Expires: 12/28/2021
Standard Lot#: PSRM0136
Description: Puget Sound reference-SRM

ANALYTE	TRUE (ug/kg wet)	FOUND (ug/kg wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Aroclor 1260	108.00	105	2.9	20.0		97.5	38 - 167
Aroclor 1260 [2C]	108.00	75.5	2.9	20.0		69.9	38 - 167

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212106ECD7.D
Data file 2: /210821.b/210821.b/08212106ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: BJH0381-SRM1
Client ID:
Injection Date: 21-AUG-2021 20:01
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	88164	5.410	-0.002	241262	26.3	24.8	5.5	Tetrachloro-m-xylene
13.155	-0.009	96791	13.836	-0.008	515882	27.9	22.5	21.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	277815	7.3
Hexabromobiphenyl	425681	381585	-10.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	755543	4.8
Hexabromobiphenyl	863111	1031542	19.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.604	-0.055	4887	49.6	1	7.051	-0.004	9273	21.5
Aroclor-1016	2	7.030	-0.003	4146	13.8	2	7.647	-0.003	26883	27.9
Aroclor-1016	3	7.176	-0.002	2261	16.7	3	7.854	-0.001	4277	11.3
Aroclor-1016	4	7.278	-0.010	2160	25.5	4	8.100	-0.004	13085	57.2
Total Col1Ave (4 peaks):				26.4		Total Col2Ave (4 peaks):			29.5	RPD = 11
Corrected Ave (3 peaks):				18.7		Corrected Ave (3 peaks):			20.2	RPD = 8
Aroclor-1221	1	3.931	-0.084	373	17.0	1	4.636	-0.041	2262	39.9
Aroclor-1221	2	5.504	0.053	1144	33.3	2	6.104	0.032	23000	177.2
Aroclor-1221	3	5.723	-0.001	965	10.4	3	6.408	-0.001	8302	36.7
Total Col1Ave (3 peaks):				20.2		Total Col2Ave (3 peaks):			84.6	RPD = 123*
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.102	0.084	3609	267.9	1	4.636	-0.043	2262	67.0
Aroclor-1232	2	5.723	-0.003	965	13.2	2	7.051	-0.007	9273	47.0
Aroclor-1232	3	7.030	-0.003	4146	37.1	3	7.647	-0.004	26883	68.1
Aroclor-1232	4	7.959	-0.013	3004	65.3	4	8.511	-0.011	12706	123.5
Total Col1Ave (4 peaks):				95.9		Total Col2Ave (4 peaks):			76.4	RPD = 23
Corrected Ave (3 peaks):				38.5		Corrected Ave (3 peaks):			60.7	RPD = 45*
Aroclor-1242	1	6.604	-0.054	4887	63.8	1	7.051	-0.006	9273	26.7
Aroclor-1242	2	7.030	-0.000	4146	18.2	2	7.647	-0.002	26883	35.6
Aroclor-1242	3	8.375	0.001	12255	94.8	3	8.937	-0.011	17016	48.3
Aroclor-1242	4	8.666	-0.008	15693	297.1	4	9.015	-0.013	12772	31.9
Total Col1Ave (4 peaks):				118.5		Total Col2Ave (4 peaks):			35.6	RPD = 108*
Corrected Ave (3 peaks):				58.9		Corrected Ave (3 peaks):			31.4	RPD = 61*
Aroclor-1248	1	7.794	-0.006	3326	28.6	1	8.100	-0.005	13085	41.8
Aroclor-1248	2	7.959	-0.011	3004	19.8	2	8.511	-0.007	12706	33.3
Aroclor-1248	3	8.375	-0.005	12255	55.1	3	8.937	-0.012	17016	28.0
Aroclor-1248	4	8.666	-0.009	15693	123.5	4	9.362	-0.019	13433	26.1
Total Col1Ave (4 peaks):				56.7		Total Col2Ave (4 peaks):			32.3	RPD = 55*
Corrected Ave (3 peaks):				34.5		Corrected Ave (3 peaks):			29.1	RPD = 17
Aroclor-1254	1	8.666	-0.010	15693	65.5	1	9.229	-0.007	45941	71.5
Aroclor-1254	2	8.738	-0.010	5677	51.2	2	9.318	-0.011	11837	31.4
Aroclor-1254	3	9.037	-0.004	9113	58.3	3	9.752	-0.007	21395	43.7
Aroclor-1254	4	9.164	-0.015	21122	70.8	4	9.906	-0.004	84690	78.0
Aroclor-1254	5	9.849	-0.022	15809	84.3	5	10.145	-0.003	118524	107.6
Total Col1Ave (5 peaks):				66.0		Total Col2Ave (5 peaks):			66.4	RPD = 1
Corrected Ave (4 peaks):				61.4		Corrected Ave (4 peaks):			56.1	RPD = 9
Aroclor-1260	1	10.373	-0.011	18681	108.8	1	11.416	-0.007	72894	85.0
Aroclor-1260	2	10.691	-0.011	14823	88.0	2	11.666	-0.010	186629	74.9
Aroclor-1260	3	11.040	-0.013	50451	110.8	3	12.248	-0.011	114942	71.7
Aroclor-1260	4	11.441	-0.013	25536	125.9	4	12.959	-0.009	54026	70.5
Aroclor-1260	5	11.545	-0.010	9445	93.0	NS	---			----
Total Col1Ave (5 peaks):				105.3		Total Col2Ave (4 peaks):			75.5	RPD = 33
Corrected Ave (4 peaks):				100.1		Corrected Ave (3 peaks):			72.4	RPD = 32
Aroclor-1262	1	10.373	-0.010	18681	80.2	1	10.958	-0.013	74137	58.8
Aroclor-1262	2	11.441	-0.014	25536	169.4	2	11.666	-0.019	186629	70.1
Aroclor-1262	3	11.617	-0.010	12060	55.5	3	12.176	-0.012	60834	51.5
Aroclor-1262	4	12.264	-0.010	11237	63.0	4	12.959	-0.013	54026	49.1
Total Col1Ave (4 peaks):				92.0		Total Col2Ave (4 peaks):			57.4	RPD = 46*
Corrected Ave (3 peaks):				66.2		Corrected Ave (3 peaks):			53.1	RPD = 22
Aroclor-1268	1	11.545	-0.012	9445	18.4	1	12.176	-0.024	60834	20.5
Aroclor-1268	2	11.617	-0.009	12060	22.5	2	12.248	-0.019	114942	35.5
Aroclor-1268	3	12.018	0.017	5942	14.1	3	12.625	-0.019	4185	1.5
Aroclor-1268	4	12.758	-0.014	3269	2.4	4	12.774	-0.009	3812	5.5
Total Col1Ave (4 peaks):				14.3		Total Col2Ave (4 peaks):			15.8	RPD = 9

Corrected Ave (3 peaks): 11.6 Corrected Ave (3 peaks): 9.2 RPD = 24

Total PCB Area Col1 (5.169 - 13.064) = 584871 Col1 Total PCB = 0.2 ppm*

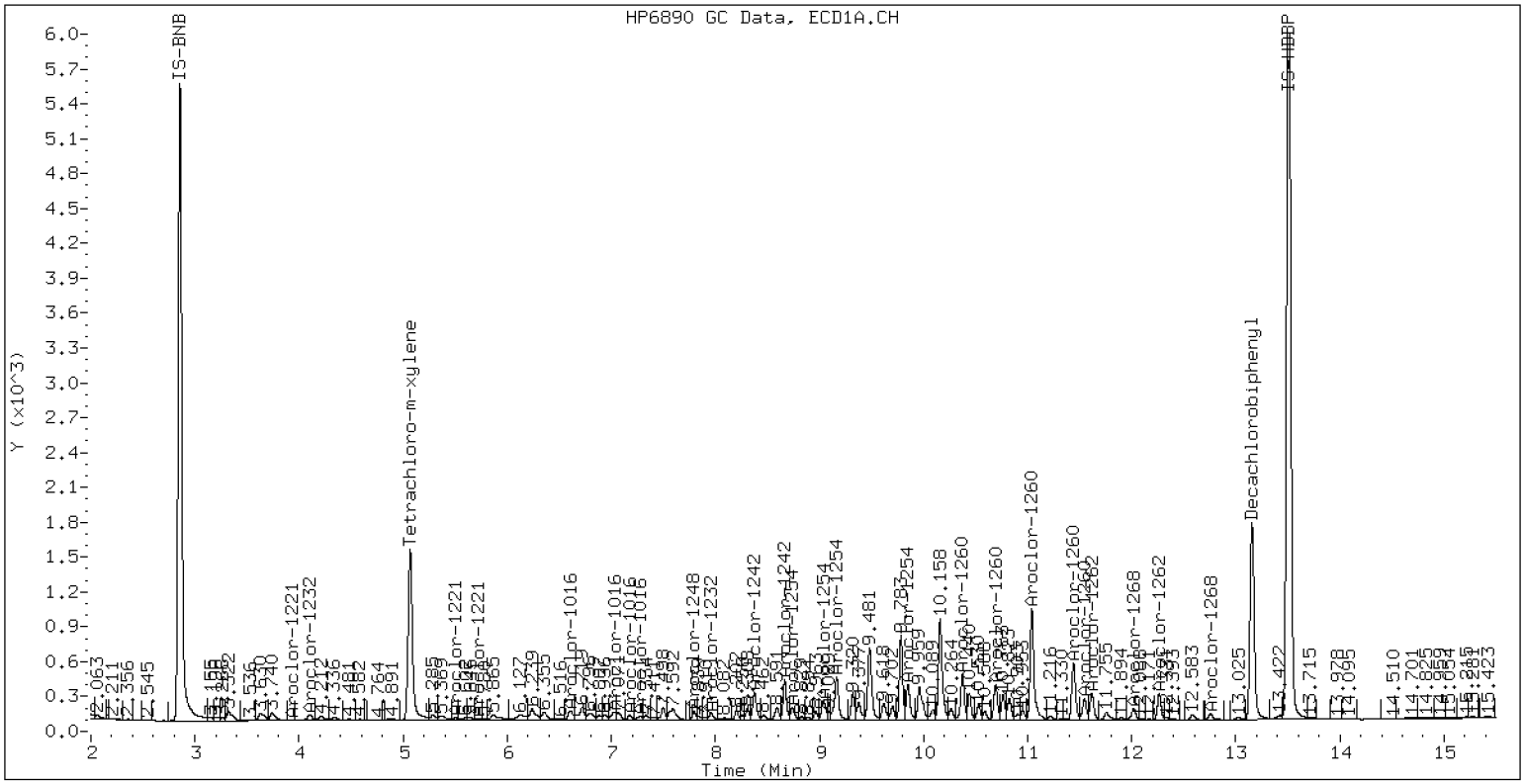
Total PCB Area Col2 (5.169 - 13.064) = 2228762 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

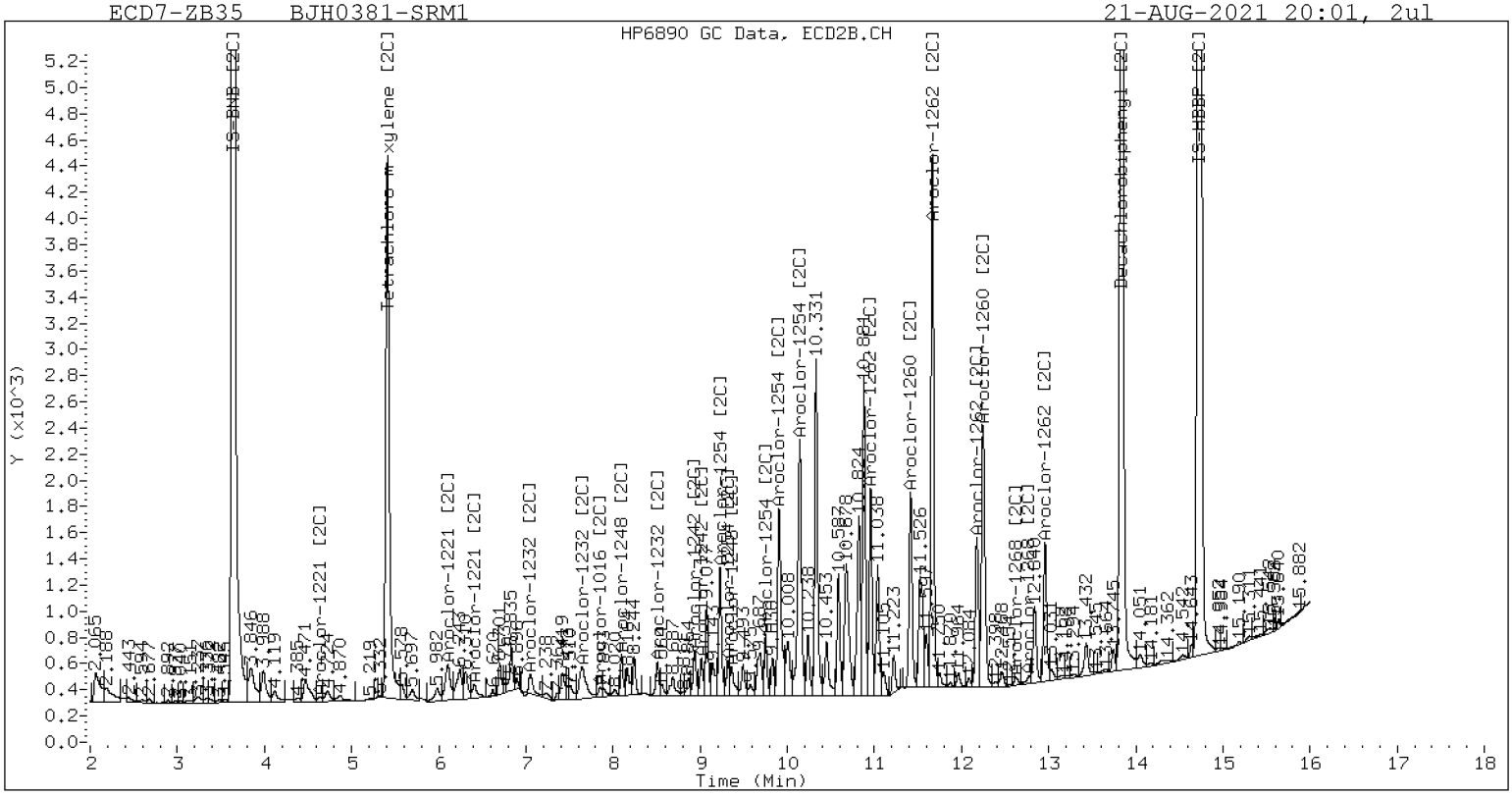
PCB Dual Column Chromatograms

ECD7-ZB5 BJH0381-SRM1 21-AUG-2021 20:01, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 BJH0381-SRM1 21-AUG-2021 20:01, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016	20	3.905933E-02	50	0.0446259	100	4.564066E-02	250	0.04709	500	4.625535E-02	1000	4.505981E-02
Aroclor-1016 (1)	20	2.649017E-02	50	2.912055E-02	100	2.939738E-02	250	2.963943E-02	500	2.849957E-02	1000	2.709274E-02
Aroclor-1016 (2)	20	7.428187E-02	50	8.423329E-02	100	8.746182E-02	250	9.203341E-02	500	9.182498E-02	1000	9.075441E-02
Aroclor-1016 (3)	20	3.555465E-02	50	4.092549E-02	100	4.058933E-02	250	4.075499E-02	500	3.888112E-02	1000	3.692439E-02
Aroclor-1016 (4)	20	1.991061E-02	50	2.422428E-02	100	2.511411E-02	250	2.593218E-02	500	2.581574E-02	1000	2.546764E-02
Aroclor 1260	20	4.610015E-02	50	4.459123E-02	100	4.539035E-02	250	4.776685E-02	500	4.820696E-02	1000	4.469533E-02
Aroclor-1260 (1)	20	3.649398E-02	50	3.599611E-02	100	3.587713E-02	250	3.720495E-02	500	3.606153E-02	1000	0.0343203
Aroclor-1260 (2)	20	3.493239E-02	50	3.435188E-02	100	3.496901E-02	250	3.686291E-02	500	3.620059E-02	1000	3.463348E-02
Aroclor-1260 (3)	20	9.843722E-02	50	9.112843E-02	100	9.295538E-02	250	9.789039E-02	500	0.1019955	1000	9.043784E-02
Aroclor-1260 (4)	20	3.984431E-02	50	4.042084E-02	100	4.181781E-02	250	4.477343E-02	500	4.502778E-02	1000	4.333459E-02
Aroclor-1260 (5)	20	2.079286E-02	50	2.105887E-02	100	2.133245E-02	250	2.210256E-02	500	2.174943E-02	1000	2.075043E-02
Decachlorobiphenyl	3.2	0.7431769	8	0.7302126	16	0.7455559	40	0.7525025	80	0.7163282	160	0.6694058
Tetrachlorometaxylene	3.2	0.9393656	8	0.9142096	16	0.9758103	40	1.013211	80	0.9925859	160	0.9666244

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221												
Aroclor-1221 (1)												
Aroclor-1221 (2)												
Aroclor-1221 (3)												
Aroclor 1232												
Aroclor-1232 (1)												
Aroclor-1232 (2)												
Aroclor-1232 (3)												
Aroclor-1232 (4)												
Aroclor 1242	20	3.476957E-02	50	3.251176E-02	100	3.574202E-02	250	3.627235E-02	500	0.0361029	1000	0.0348766
Aroclor-1242 (1)	20	1.894782E-02	50	2.152568E-02	100	2.336447E-02	250	2.359921E-02	500	2.299109E-02	1000	2.182021E-02
Aroclor-1242 (2)	20	5.663612E-02	50	5.706852E-02	100	6.610672E-02	250	7.095404E-02	500	7.201235E-02	1000	7.146865E-02
Aroclor-1242 (3)	20	4.583842E-02	50	3.531016E-02	100	3.720097E-02	250	3.521151E-02	500	3.564921E-02	1000	3.412729E-02
Aroclor-1242 (4)	20	1.765592E-02	50	1.614269E-02	100	1.629592E-02	250	1.532464E-02	500	1.375896E-02	1000	1.209024E-02
Aroclor 1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor 1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1262 (1)												
Aroclor-1262 (2)												
Aroclor-1262 (3)												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4)												
Aroclor-1268 (1)												
Aroclor-1268 (2)												
Aroclor-1268 (3)												
Aroclor-1268 (4)												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1248	20	4.277049E-02	50	4.586843E-02	100	4.478412E-02	250	4.573699E-02	500	4.502952E-02	1000	4.273277E-02
Aroclor-1248 (1)	20	3.027179E-02	50	3.457133E-02	100	0.0326326	250	3.463825E-02	500	3.494353E-02	1000	3.409812E-02
Aroclor-1248 (2)	20	3.872679E-02	50	4.418321E-02	100	4.305407E-02	250	4.595423E-02	500	4.598635E-02	1000	4.466949E-02
Aroclor-1248 (3)	20	6.153453E-02	50	6.328759E-02	100	6.556992E-02	250	0.0663208	500	6.567134E-02	1000	6.210098E-02
Aroclor-1248 (4)	20	4.054886E-02	50	4.143157E-02	100	0.0378799	250	3.603467E-02	500	3.351685E-02	1000	3.006244E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016												
Aroclor-1016 (1)												
Aroclor-1016 (2)												
Aroclor-1016 (3)												
Aroclor-1016 (4)												
Aroclor 1254	20	0.0553437	50	5.697553E-02	100	5.740632E-02	250	5.907612E-02	500	5.847785E-02	1000	5.576525E-02
Aroclor-1254 (1)	20	7.163779E-02	50	0.0694659	100	6.902673E-02	250	7.004227E-02	500	6.891729E-02	1000	6.501982E-02
Aroclor-1254 (2)	20	3.299361E-02	50	3.464937E-02	100	3.312192E-02	250	3.311742E-02	500	3.111858E-02	1000	2.670265E-02
Aroclor-1254 (3)	20	4.922704E-02	50	4.279015E-02	100	4.317994E-02	250	4.501395E-02	500	4.520795E-02	1000	4.449624E-02
Aroclor-1254 (4)	20	7.660199E-02	50	8.623033E-02	100	8.820416E-02	250	9.026987E-02	500	8.928537E-02	1000	8.506473E-02
Aroclor-1254 (5)	20	4.625809E-02	50	5.174191E-02	100	5.349887E-02	250	5.693709E-02	500	5.786004E-02	1000	5.754279E-02
Aroclor 1260												
Aroclor-1260 (1)												
Aroclor-1260 (2)												
Aroclor-1260 (3)												
Aroclor-1260 (4)												
Aroclor-1260 (5)												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221	20	1.344016E-02	50	1.362337E-02	100	1.424699E-02	250	1.556865E-02	500	1.496468E-02	1000	1.410511E-02
Aroclor-1221 (1)	20	6.102735E-03	50	6.616017E-03	100	6.915718E-03	250	6.699115E-03	500	6.032524E-03	1000	5.539604E-03
Aroclor-1221 (2)	20	8.599308E-03	50	8.383142E-03	100	9.463615E-03	250	1.119347E-02	500	1.106774E-02	1000	1.071014E-02
Aroclor-1221 (3)	20	2.561843E-02	50	2.587095E-02	100	2.636163E-02	250	2.881334E-02	500	2.779378E-02	1000	2.606558E-02
Aroclor 1232												
Aroclor-1232 (1)												
Aroclor-1232 (2)												
Aroclor-1232 (3)												
Aroclor-1232 (4)												
Aroclor 1242												
Aroclor-1242 (1)												
Aroclor-1242 (2)												
Aroclor-1242 (3)												
Aroclor-1242 (4)												
Aroclor 1248												
Aroclor-1248 (1)												
Aroclor-1248 (2)												
Aroclor-1248 (3)												
Aroclor-1248 (4)												
Aroclor 1254												
Aroclor-1254 (1)												
Aroclor-1254 (2)												
Aroclor-1254 (3)												
Aroclor-1254 (4)												
Aroclor-1254 (5)												
Aroclor-1262 (1)	20	5.134025E-02	50	4.712973E-02	100	4.785041E-02	250	4.922198E-02	500	4.998328E-02	1000	4.738766E-02
Aroclor-1262 (2)	20	3.096922E-02	50	2.863311E-02	100	0.0307571	250	3.227303E-02	500	3.368581E-02	1000	3.335815E-02
Aroclor-1262 (3)	20	0.046557	50	4.368276E-02	100	4.523577E-02	250	4.610753E-02	500	0.0468182	1000	4.504377E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4)	20	0.0383223	50	3.598523E-02	100	3.699579E-02	250	3.807082E-02	500	0.0394668	1000	3.563971E-02
Aroclor-1268 (1)												
Aroclor-1268 (2)												
Aroclor-1268 (3)												
Aroclor-1268 (4)												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1232	20	1.402512E-02	50	1.590765E-02	100	1.784916E-02	250	1.895611E-02	500	1.948861E-02	1000	1.936821E-02
Aroclor-1232 (1)	20	4.656687E-03	50	4.246942E-03	100	0.0037225	250	3.695733E-03	500	3.631422E-03	1000	3.325733E-03
Aroclor-1232 (2)	20	1.975946E-02	50	1.981906E-02	100	2.118962E-02	250	2.245563E-02	500	2.213617E-02	1000	2.117687E-02
Aroclor-1232 (3)	20	2.266989E-02	50	2.831294E-02	100	3.249878E-02	250	3.501632E-02	500	3.681569E-02	1000	3.780662E-02
Aroclor-1232 (4)	20	9.014466E-03	50	1.125164E-02	100	1.398575E-02	250	1.465674E-02	500	1.537116E-02	1000	0.0151636
Aroclor-1268 (1)	20	0.1098826	50	0.1067175	100	0.1064917	250	0.1073455	500	0.1084757	1000	0.1050728
Aroclor-1268 (2)	20	0.116822	50	0.1125651	100	0.1123015	250	0.1123775	500	0.1131765	1000	0.1082687
Aroclor-1268 (3)	20	9.346653E-02	50	8.829601E-02	100	8.761007E-02	250	8.780397E-02	500	8.875903E-02	1000	8.540146E-02
Aroclor-1268 (4)	20	0.3021591	50	0.2885466	100	0.2854368	250	0.278664	500	0.2789172	1000	0.2801083

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016	4.462184E-02	6.4			RSD (20)	
Aroclor 1016	4.462184E-02	6.4			RSD (20)	
Aroclor-1016 (1)	2.837331E-02	4.6			RSD (20)	
Aroclor-1016 (1)	2.837331E-02	4.6			RSD (20)	
Aroclor-1016 (2)	8.676496E-02	7.9			RSD (20)	
Aroclor-1016 (2)	8.676496E-02	7.9			RSD (20)	
Aroclor-1016 (3)	3.893833E-02	5.8			RSD (20)	
Aroclor-1016 (3)	3.893833E-02	5.8			RSD (20)	
Aroclor-1016 (4)	2.441076E-02	9.4			RSD (20)	
Aroclor-1016 (4)	2.441076E-02	9.4			RSD (20)	
Aroclor 1221	1.432483E-02	5.7			RSD (20)	
Aroclor 1221	1.432483E-02	5.7			RSD (20)	
Aroclor-1221 (1)	6.317619E-03	8.1			RSD (20)	
Aroclor-1221 (1)	6.317619E-03	8.1			RSD (20)	
Aroclor-1221 (2)	9.902902E-03	12.7			RSD (20)	
Aroclor-1221 (2)	9.902902E-03	12.7			RSD (20)	
Aroclor-1221 (3)	2.675395E-02	4.7			RSD (20)	
Aroclor-1221 (3)	2.675395E-02	4.7			RSD (20)	
Aroclor 1232	1.759914E-02	12.5			RSD (20)	
Aroclor 1232	1.759914E-02	12.5			RSD (20)	
Aroclor-1232 (1)	3.879836E-03	12.4			RSD (20)	
Aroclor-1232 (1)	3.879836E-03	12.4			RSD (20)	
Aroclor-1232 (2)	2.108947E-02	5.3			RSD (20)	
Aroclor-1232 (2)	2.108947E-02	5.3			RSD (20)	
Aroclor-1232 (3)	3.218671E-02	17.9			RSD (20)	
Aroclor-1232 (3)	3.218671E-02	17.9			RSD (20)	
Aroclor-1232 (4)	1.324056E-02	19.3			RSD (20)	
Aroclor-1232 (4)	1.324056E-02	19.3			RSD (20)	
Aroclor 1242	3.504587E-02	4.0			RSD (20)	
Aroclor 1242	3.504587E-02	4.0			RSD (20)	
Aroclor-1242 (1)	2.204141E-02	7.8			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1242 (1)	2.204141E-02	7.8			RSD (20)	
Aroclor-1242 (2)	6.570773E-02	10.9			RSD (20)	
Aroclor-1242 (2)	6.570773E-02	10.9			RSD (20)	
Aroclor-1242 (3)	3.722293E-02	11.6			RSD (20)	
Aroclor-1242 (3)	3.722293E-02	11.6			RSD (20)	
Aroclor-1242 (4)	1.521139E-02	13.1			RSD (20)	
Aroclor-1242 (4)	1.521139E-02	13.1			RSD (20)	
Aroclor 1248	4.448705E-02	3.2			RSD (20)	
Aroclor 1248	4.448705E-02	3.2			RSD (20)	
Aroclor-1248 (1)	3.352594E-02	5.3			RSD (20)	
Aroclor-1248 (1)	3.352594E-02	5.3			RSD (20)	
Aroclor-1248 (2)	4.376236E-02	6.2			RSD (20)	
Aroclor-1248 (2)	4.376236E-02	6.2			RSD (20)	
Aroclor-1248 (3)	6.408086E-02	3.2			RSD (20)	
Aroclor-1248 (3)	6.408086E-02	3.2			RSD (20)	
Aroclor-1248 (4)	3.657905E-02	11.8			RSD (20)	
Aroclor-1248 (4)	3.657905E-02	11.8			RSD (20)	
Aroclor 1254	5.717413E-02	2.6			RSD (20)	
Aroclor 1254	5.717413E-02	2.6			RSD (20)	
Aroclor-1254 (1)	0.0690183	3.2			RSD (20)	
Aroclor-1254 (1)	0.0690183	3.2			RSD (20)	
Aroclor-1254 (2)	3.195059E-02	8.8			RSD (20)	
Aroclor-1254 (2)	3.195059E-02	8.8			RSD (20)	
Aroclor-1254 (3)	4.498588E-02	5.1			RSD (20)	
Aroclor-1254 (3)	4.498588E-02	5.1			RSD (20)	
Aroclor-1254 (4)	8.594274E-02	5.8			RSD (20)	
Aroclor-1254 (4)	8.594274E-02	5.8			RSD (20)	
Aroclor-1254 (5)	5.397313E-02	8.3			RSD (20)	
Aroclor-1254 (5)	5.397313E-02	8.3			RSD (20)	
Aroclor 1260	4.612514E-02	3.4			RSD (20)	
Aroclor 1260	4.612514E-02	3.4			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (1):	ZB5

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1)	3.599233E-02	2.6			RSD (20)	
Aroclor-1260 (1)	3.599233E-02	2.6			RSD (20)	
Aroclor-1260 (2)	3.532504E-02	2.8			RSD (20)	
Aroclor-1260 (2)	3.532504E-02	2.8			RSD (20)	
Aroclor-1260 (3)	9.547413E-02	4.9			RSD (20)	
Aroclor-1260 (3)	9.547413E-02	4.9			RSD (20)	
Aroclor-1260 (4)	4.253646E-02	5.2			RSD (20)	
Aroclor-1260 (4)	4.253646E-02	5.2			RSD (20)	
Aroclor-1260 (5)	2.129777E-02	2.5			RSD (20)	
Aroclor-1260 (5)	2.129777E-02	2.5			RSD (20)	
Aroclor-1262 (1)	4.881889E-02	3.4			RSD (20)	
Aroclor-1262 (1)	4.881889E-02	3.4			RSD (20)	
Aroclor-1262 (2)	3.161274E-02	6.0			RSD (20)	
Aroclor-1262 (2)	3.161274E-02	6.0			RSD (20)	
Aroclor-1262 (3)	4.557417E-02	2.6			RSD (20)	
Aroclor-1262 (3)	4.557417E-02	2.6			RSD (20)	
Aroclor-1262 (4)	3.741344E-02	3.9			RSD (20)	
Aroclor-1262 (4)	3.741344E-02	3.9			RSD (20)	
Aroclor-1268 (1)	0.107331	1.6			RSD (20)	
Aroclor-1268 (1)	0.107331	1.6			RSD (20)	
Aroclor-1268 (2)	0.1125852	2.4			RSD (20)	
Aroclor-1268 (2)	0.1125852	2.4			RSD (20)	
Aroclor-1268 (3)	8.855618E-02	3.0			RSD (20)	
Aroclor-1268 (3)	8.855618E-02	3.0			RSD (20)	
Aroclor-1268 (4)	0.2856387	3.2			RSD (20)	
Aroclor-1268 (4)	0.2856387	3.2			RSD (20)	
Decachlorobiphenyl	0.726197	4.2			RSD (20)	
Tetrachlorometaxylene	0.9669678	3.7			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016 [2C]	20	5.289358E-02	50	5.145778E-02	100	5.630676E-02	250	0.0556822	500	5.249244E-02	1000	4.907115E-02
Aroclor-1016 (1) [2C]	20	4.881532E-02	50	4.733252E-02	100	4.794096E-02	250	4.698295E-02	500	4.353688E-02	1000	3.909537E-02
Aroclor-1016 (2) [2C]	20	0.1001049	50	9.891498E-02	100	0.1073098	250	0.1072367	500	0.1019062	1000	9.675428E-02
Aroclor-1016 (3) [2C]	20	3.847419E-02	50	3.675556E-02	100	4.334296E-02	250	4.291058E-02	500	4.064436E-02	1000	3.814541E-02
Aroclor-1016 (4) [2C]	20	2.417992E-02	50	2.282807E-02	100	2.663338E-02	250	2.559846E-02	500	2.388226E-02	1000	2.228951E-02
Aroclor 1260 [2C]	20	0.1172691	50	0.1129179	100	0.1134907	250	0.1125851	500	0.1058395	1000	0.1031616
Aroclor-1260 (1) [2C]	20	7.145358E-02	50	7.005835E-02	100	6.872649E-02	250	6.789764E-02	500	6.298428E-02	1000	5.789875E-02
Aroclor-1260 (2) [2C]	20	0.2035789	50	0.1973001	100	0.1959076	250	0.194694	500	0.1810824	1000	0.1871902
Aroclor-1260 (3) [2C]	20	0.135521	50	0.1275038	100	0.126307	250	0.1253256	500	0.1196637	1000	0.111429
Aroclor-1260 (4) [2C]	20	5.852306E-02	50	5.680915E-02	100	6.302172E-02	250	6.242312E-02	500	5.962761E-02	1000	5.612868E-02
Decachlorobiphenyl [2C]	3.2	1.717394	8	1.720152	16	1.802687	40	1.834638	80	1.813106		
Tetrachlorometaxylene [2C]	3.2	1.034676	8	1.014034	16	1.038575	40	1.047756	80	1.011409	160	1.021859

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221 [2C]												
Aroclor-1221 (1) [2C]												
Aroclor-1221 (2) [2C]												
Aroclor-1221 (3) [2C]												
Aroclor 1232 [2C]												
Aroclor-1232 (1) [2C]												
Aroclor-1232 (2) [2C]												
Aroclor-1232 (3) [2C]												
Aroclor-1232 (4) [2C]												
Aroclor 1242 [2C]	20	5.479372E-02	50	0.0483602	100	4.955642E-02	250	4.999233E-02	500	4.785558E-02	1000	4.398032E-02
Aroclor-1242 (1) [2C]	20	3.973442E-02	50	3.734827E-02	100	3.807644E-02	250	3.757722E-02	500	3.571596E-02	1000	3.223558E-02
Aroclor-1242 (2) [2C]	20	8.232323E-02	50	7.657779E-02	100	7.865959E-02	250	8.406963E-02	500	8.150517E-02	1000	7.624912E-02
Aroclor-1242 (3) [2C]	20	4.585178E-02	50	3.889532E-02	100	3.674847E-02	250	3.609264E-02	500	0.0342552	1000	3.211077E-02
Aroclor-1242 (4) [2C]	20	5.126546E-02	50	4.061943E-02	100	4.474117E-02	250	4.222976E-02	500	3.994598E-02	1000	0.0353258
Aroclor 1248 [2C]												
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor 1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1262 (1) [2C]												
Aroclor-1262 (2) [2C]												
Aroclor-1262 (3) [2C]												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4) [2C]												
Aroclor-1268 (1) [2C]												
Aroclor-1268 (2) [2C]												
Aroclor-1268 (3) [2C]												
Aroclor-1268 (4) [2C]												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1248 [2C]	20	5.282516E-02	50	4.853076E-02	100	4.819472E-02	250	4.798177E-02	500	4.676512E-02	1000	4.424796E-02
Aroclor-1248 (1) [2C]	20	3.759668E-02	50	0.0346058	100	3.111703E-02	250	3.339886E-02	500	0.0322471	1000	2.994466E-02
Aroclor-1248 (2) [2C]	20	3.966831E-02	50	3.935286E-02	100	4.152605E-02	250	4.204469E-02	500	0.0409495	1000	3.856972E-02
Aroclor-1248 (3) [2C]	20	0.0719664	50	6.625807E-02	100	6.680169E-02	250	6.290895E-02	500	6.103775E-02	1000	5.666339E-02
Aroclor-1248 (4) [2C]	20	6.206924E-02	50	5.390634E-02	100	5.333413E-02	250	0.0535745	500	0.0528261	1000	5.181404E-02

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1016 [2C]												
Aroclor-1016 (1) [2C]												
Aroclor-1016 (2) [2C]												
Aroclor-1016 (3) [2C]												
Aroclor-1016 (4) [2C]												
Aroclor 1254 [2C]	20	0.0907266	50	8.081978E-02	100	7.905142E-02	250	7.586303E-02	500	0.0737105	1000	6.961669E-02
Aroclor-1254 (1) [2C]	20	7.888876E-02	50	7.221584E-02	100	6.911081E-02	250	6.590108E-02	500	6.342195E-02	1000	5.885196E-02
Aroclor-1254 (2) [2C]	20	5.118135E-02	50	4.272583E-02	100	3.986894E-02	250	3.733085E-02	500	3.576026E-02	1000	3.280467E-02
Aroclor-1254 (3) [2C]	20	0.0594386	50	5.334983E-02	100	5.220844E-02	250	5.093623E-02	500	4.936532E-02	1000	0.0460384
Aroclor-1254 (4) [2C]	20	0.138452	50	0.1175468	100	0.1157566	250	0.1093424	500	0.1061771	1000	0.1026224
Aroclor-1254 (5) [2C]	20	0.1256723	50	0.1182606	100	0.1183123	250	0.1158046	500	0.1138278	1000	0.107766
Aroclor 1260 [2C]												
Aroclor-1260 (1) [2C]												
Aroclor-1260 (2) [2C]												
Aroclor-1260 (3) [2C]												
Aroclor-1260 (4) [2C]												

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1221 [2C]	20	1.523312E-02	50	1.489474E-02	100	1.520767E-02	250	1.469468E-02	500	1.419007E-02	1000	1.319573E-02
Aroclor-1221 (1) [2C]	20	6.287788E-03	50	6.851669E-03	100	6.745944E-03	250	5.928753E-03	500	5.407635E-03	1000	4.806184E-03
Aroclor-1221 (2) [2C]	20	1.435306E-02	50	1.351786E-02	100	1.387821E-02	250	1.382451E-02	500	1.376205E-02	1000	1.314042E-02
Aroclor-1221 (3) [2C]	20	2.505851E-02	50	0.0243147	100	2.499884E-02	250	2.433078E-02	500	2.340053E-02	1000	2.164058E-02
Aroclor 1232 [2C]												
Aroclor-1232 (1) [2C]												
Aroclor-1232 (2) [2C]												
Aroclor-1232 (3) [2C]												
Aroclor-1232 (4) [2C]												
Aroclor 1242 [2C]												
Aroclor-1242 (1) [2C]												
Aroclor-1242 (2) [2C]												
Aroclor-1242 (3) [2C]												
Aroclor-1242 (4) [2C]												
Aroclor 1248 [2C]												
Aroclor-1248 (1) [2C]												
Aroclor-1248 (2) [2C]												
Aroclor-1248 (3) [2C]												
Aroclor-1248 (4) [2C]												
Aroclor 1254 [2C]												
Aroclor-1254 (1) [2C]												
Aroclor-1254 (2) [2C]												
Aroclor-1254 (3) [2C]												
Aroclor-1254 (4) [2C]												
Aroclor-1254 (5) [2C]												
Aroclor-1262 (1) [2C]	20	0.1111232	50	0.1009989	100	9.894425E-02	250	9.581775E-02	500	9.184825E-02	1000	8.824609E-02
Aroclor-1262 (2) [2C]	20	0.2214786	50	0.2019168	100	0.2009354	250	0.196183	500	0.1980742	1000	0.2198905
Aroclor-1262 (3) [2C]	20	9.754009E-02	50	9.095849E-02	100	9.106464E-02	250	9.129503E-02	500	9.065447E-02	1000	8.823139E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 25		Level 26		Level 27		Level 28		Level 29		Level 30	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor-1262 (4) [2C]	20	8.699307E-02	50	8.138582E-02	100	8.705168E-02	250	8.696934E-02	500	8.658007E-02	1000	8.334053E-02
Aroclor-1268 (1) [2C]												
Aroclor-1268 (2) [2C]												
Aroclor-1268 (3) [2C]												
Aroclor-1268 (4) [2C]												

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

Compound	Level 31		Level 32		Level 33		Level 34		Level 35		Level 36	
		RRF		RRF		RRF		RRF		RRF		RRF
Aroclor 1232 [2C]	20	1.836796E-02	50	1.894627E-02	100	1.924847E-02	250	1.975315E-02	500	2.002037E-02	1000	0.019426
Aroclor-1232 (1) [2C]	20	4.045981E-03	50	3.755817E-03	100	3.942223E-03	250	3.521876E-03	500	3.234309E-03	1000	2.953095E-03
Aroclor-1232 (2) [2C]	20	2.084019E-02	50	2.101109E-02	100	2.121904E-02	250	2.149953E-02	500	2.090674E-02	1000	1.987726E-02
Aroclor-1232 (3) [2C]	20	4.103054E-02	50	4.175469E-02	100	4.038428E-02	250	4.152252E-02	500	4.364594E-02	1000	4.254588E-02
Aroclor-1232 (4) [2C]	20	7.555134E-03	50	9.263472E-03	100	1.144834E-02	250	1.246866E-02	500	1.229449E-02	1000	1.232776E-02
Aroclor-1268 (1) [2C]	20	0.2417854	50	0.2285366	100	0.2220159	250	0.2190865	500	0.237896	1000	0.2777864
Aroclor-1268 (2) [2C]	20	0.2636771	50	0.2482385	100	0.2463819	250	0.246669	500	0.2491593	1000	0.2964987
Aroclor-1268 (3) [2C]	20	0.2191666	50	0.2145831	100	0.2124203	250	0.2181113	500	0.2196614	1000	0.2621661
Aroclor-1268 (4) [2C]	20	0.0536096	50	5.183009E-02	100	5.229291E-02	250	0.0546515	500	5.573302E-02	1000	5.691635E-02

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor 1016 [2C]	5.298399E-02	5.1			RSD (20)	
Aroclor 1016 [2C]	5.298399E-02	5.1			RSD (20)	
Aroclor-1016 (1) [2C]	4.561733E-02	8.0			RSD (20)	
Aroclor-1016 (1) [2C]	4.561733E-02	8.0			RSD (20)	
Aroclor-1016 (2) [2C]	0.1020378	4.3			RSD (20)	
Aroclor-1016 (2) [2C]	0.1020378	4.3			RSD (20)	
Aroclor-1016 (3) [2C]	4.004551E-02	6.7			RSD (20)	
Aroclor-1016 (3) [2C]	4.004551E-02	6.7			RSD (20)	
Aroclor-1016 (4) [2C]	2.423527E-02	6.8			RSD (20)	
Aroclor-1016 (4) [2C]	2.423527E-02	6.8			RSD (20)	
Aroclor 1221 [2C]	1.456933E-02	5.3			RSD (20)	
Aroclor 1221 [2C]	1.456933E-02	5.3			RSD (20)	
Aroclor-1221 (1) [2C]	6.004662E-03	13.2			RSD (20)	
Aroclor-1221 (1) [2C]	6.004662E-03	13.2			RSD (20)	
Aroclor-1221 (2) [2C]	1.374602E-02	2.9			RSD (20)	
Aroclor-1221 (2) [2C]	1.374602E-02	2.9			RSD (20)	
Aroclor-1221 (3) [2C]	2.395732E-02	5.4			RSD (20)	
Aroclor-1221 (3) [2C]	2.395732E-02	5.4			RSD (20)	
Aroclor 1232 [2C]	0.0192937	3.1			RSD (20)	
Aroclor 1232 [2C]	0.0192937	3.1			RSD (20)	
Aroclor-1232 (1) [2C]	3.57555E-03	11.8			RSD (20)	
Aroclor-1232 (1) [2C]	3.57555E-03	11.8			RSD (20)	
Aroclor-1232 (2) [2C]	2.089231E-02	2.6			RSD (20)	
Aroclor-1232 (2) [2C]	2.089231E-02	2.6			RSD (20)	
Aroclor-1232 (3) [2C]	4.181398E-02	2.8			RSD (20)	
Aroclor-1232 (3) [2C]	4.181398E-02	2.8			RSD (20)	
Aroclor-1232 (4) [2C]	1.089298E-02	18.6			RSD (20)	
Aroclor-1232 (4) [2C]	1.089298E-02	18.6			RSD (20)	
Aroclor 1242 [2C]	4.908976E-02	7.2			RSD (20)	
Aroclor 1242 [2C]	4.908976E-02	7.2			RSD (20)	
Aroclor-1242 (1) [2C]	3.678132E-02	7.0			RSD (20)	

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1242 (1) [2C]	3.678132E-02	7.0			RSD (20)	
Aroclor-1242 (2) [2C]	7.989742E-02	4.0			RSD (20)	
Aroclor-1242 (2) [2C]	7.989742E-02	4.0			RSD (20)	
Aroclor-1242 (3) [2C]	0.0373257	12.8			RSD (20)	
Aroclor-1242 (3) [2C]	0.0373257	12.8			RSD (20)	
Aroclor-1242 (4) [2C]	0.0423546	12.6			RSD (20)	
Aroclor-1242 (4) [2C]	0.0423546	12.6			RSD (20)	
Aroclor 1248 [2C]	4.809091E-02	5.8			RSD (20)	
Aroclor 1248 [2C]	4.809091E-02	5.8			RSD (20)	
Aroclor-1248 (1) [2C]	3.315169E-02	8.2			RSD (20)	
Aroclor-1248 (1) [2C]	3.315169E-02	8.2			RSD (20)	
Aroclor-1248 (2) [2C]	4.035186E-02	3.4			RSD (20)	
Aroclor-1248 (2) [2C]	4.035186E-02	3.4			RSD (20)	
Aroclor-1248 (3) [2C]	6.427271E-02	8.2			RSD (20)	
Aroclor-1248 (3) [2C]	6.427271E-02	8.2			RSD (20)	
Aroclor-1248 (4) [2C]	5.458739E-02	6.8			RSD (20)	
Aroclor-1248 (4) [2C]	5.458739E-02	6.8			RSD (20)	
Aroclor 1254 [2C]	0.078298	9.3			RSD (20)	
Aroclor 1254 [2C]	0.078298	9.3			RSD (20)	
Aroclor-1254 (1) [2C]	6.806507E-02	10.3			RSD (20)	
Aroclor-1254 (1) [2C]	6.806507E-02	10.3			RSD (20)	
Aroclor-1254 (2) [2C]	3.994532E-02	16.2			RSD (20)	
Aroclor-1254 (2) [2C]	3.994532E-02	16.2			RSD (20)	
Aroclor-1254 (3) [2C]	5.188947E-02	8.7			RSD (20)	
Aroclor-1254 (3) [2C]	5.188947E-02	8.7			RSD (20)	
Aroclor-1254 (4) [2C]	0.1149829	11.1			RSD (20)	
Aroclor-1254 (4) [2C]	0.1149829	11.1			RSD (20)	
Aroclor-1254 (5) [2C]	0.1166073	5.1			RSD (20)	
Aroclor-1254 (5) [2C]	0.1166073	5.1			RSD (20)	
Aroclor 1260 [2C]	0.1108773	4.8			RSD (20)	
Aroclor 1260 [2C]	0.1108773	4.8			RSD (20)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00034	Instrument:	ECD7
Calibration Date:	08/13/2021	Column (2):	ZB35

COMPOUND	Mean RRF	RRF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Aroclor-1260 (1) [2C]	6.650318E-02	7.7			RSD (20)	
Aroclor-1260 (1) [2C]	6.650318E-02	7.7			RSD (20)	
Aroclor-1260 (2) [2C]	0.1932922	4.1			RSD (20)	
Aroclor-1260 (2) [2C]	0.1932922	4.1			RSD (20)	
Aroclor-1260 (3) [2C]	0.1242917	6.5			RSD (20)	
Aroclor-1260 (3) [2C]	0.1242917	6.5			RSD (20)	
Aroclor-1260 (4) [2C]	5.942222E-02	4.8			RSD (20)	
Aroclor-1260 (4) [2C]	5.942222E-02	4.8			RSD (20)	
Aroclor-1262 (1) [2C]	9.782974E-02	8.2			RSD (20)	
Aroclor-1262 (1) [2C]	9.782974E-02	8.2			RSD (20)	
Aroclor-1262 (2) [2C]	0.2064131	5.5			RSD (20)	
Aroclor-1262 (2) [2C]	0.2064131	5.5			RSD (20)	
Aroclor-1262 (3) [2C]	9.162402E-02	3.4			RSD (20)	
Aroclor-1262 (3) [2C]	9.162402E-02	3.4			RSD (20)	
Aroclor-1262 (4) [2C]	8.538675E-02	2.8			RSD (20)	
Aroclor-1262 (4) [2C]	8.538675E-02	2.8			RSD (20)	
Aroclor-1268 (1) [2C]	0.2378511	9.0			RSD (20)	
Aroclor-1268 (1) [2C]	0.2378511	9.0			RSD (20)	
Aroclor-1268 (2) [2C]	0.2584374	7.6			RSD (20)	
Aroclor-1268 (2) [2C]	0.2584374	7.6			RSD (20)	
Aroclor-1268 (3) [2C]	0.2243515	8.4			RSD (20)	
Aroclor-1268 (3) [2C]	0.2243515	8.4			RSD (20)	
Aroclor-1268 (4) [2C]	5.417224E-02	3.6			RSD (20)	
Aroclor-1268 (4) [2C]	5.417224E-02	3.6			RSD (20)	
Decachlorobiphenyl [2C]	1.777595	3.1			RSD (20)	
Tetrachlorometaxylene [2C]	1.028052	1.4			RSD (20)	

Analytical Resources, Incorporated
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ANALYSIS SEQUENCE

SJH0176

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0176-CAL1	0.02PPM AR1660	QC		1	J008420	J008446	
SJH0176-CAL2	0.05PPM AR1660	QC		2	J008419	J008446	
SJH0176-CAL3	0.1PPM AR1660	QC		3	J008418	J008446	
SJH0176-CAL4	0.25PPM AR1660	QC		4	J008417	J008446	
SJH0176-CAL5	0.5PPM AR1660	QC		5	J008416	J008446	
SJH0176-CAL6	1PPM AR1660	QC		6	J008134	J008446	
SJH0176-CAL7	0.02PPM AR1242	QC		7	J008425	J008446	
SJH0176-CAL8	0.05PPM AR1242	QC		8	J008424	J008446	
SJH0176-CAL9	0.1PPM AR1242	QC		9	J008423	J008446	
SJH0176-CALA	0.25PPM AR1242	QC		10	J008422	J008446	
SJH0176-CALB	0.5PPM AR1242	QC		11	J008421	J008446	
SJH0176-CALC	1PPM AR1242	QC		12	J008397	J008446	
SJH0176-CALD	0.02PPM AR1248	QC		13	J008430	J008446	
SJH0176-CALE	0.05PPM AR1248	QC		14	J008429	J008446	
SJH0176-CALF	0.1PPM AR1248	QC		15	J008428	J008446	
SJH0176-CALG	0.25PPM AR1248	QC		16	J008427	J008446	
SJH0176-CALH	0.5PPM AR1248	QC		17	J008426	J008446	
SJH0176-CALI	1PPM AR1248	QC		18	J008398	J008446	

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ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-CAL1	0.02PPM AR1254	QC		1	J008435	J008446	
SJH0177-CAL2	0.05PPM AR1254	QC		2	J008434	J008446	
SJH0177-CAL3	0.1PPM AR1254	QC		3	J008433	J008446	
SJH0177-CAL4	0.25PPM AR1254	QC		4	J008432	J008446	
SJH0177-CAL5	0.5PPM AR1254	QC		5	J008431	J008446	
SJH0177-CAL6	1PPM AR1254	QC		6	J008399	J008446	
SJH0177-CAL7	0.02PPM AR2162	QC		7	J008440	J008446	
SJH0177-CAL8	0.05PPM AR2162	QC		8	J008439	J008446	
SJH0177-CAL9	0.1PPM AR2162	QC		9	J008438	J008446	
SJH0177-CALA	0.25PPM AR2162	QC		10	J008437	J008446	
SJH0177-CALB	0.5PPM AR2162	QC		11	J008436	J008446	
SJH0177-CALC	1PPM AR2162	QC		12	J008400	J008446	
SJH0177-CALD	0.02PPM AR3268	QC		13	J008445	J008446	
SJH0177-CALE	0.05PPM AR3268	QC		14	J008444	J008446	
SJH0177-CALF	0.1PPM AR3268	QC		15	J008443	J008446	
SJH0177-CALG	0.25PPM AR3268	QC		16	J008442	J008446	
SJH0177-CALH	0.5PPM AR3268	QC		17	J008441	J008446	
SJH0177-CALI	1PPM AR3268	QC		18	J008401	J008446	
SJH0177-SCV1	AR1660SCV1	QC		19	J008139	J008446	
SJH0177-SCV2	AR1242SCV2	QC		20	J008140	J008446	
SJH0177-SCV3	AR1248SCV3	QC		21	J008141	J008446	
SJH0177-SCV4	AR1254SCV4	QC		22	J008142	J008446	

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ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-SCV5	AR2162SCV5	QC		23	J008143	J008446	
SJH0177-SCV6	AR3268SCV6	QC		24	J008144	J008446	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	13-AUG-2021 18:41	08132101.D	1	RINSE	
2	13-AUG-2021 19:02	08132102.D	1	RINSE	
3	13-AUG-2021 19:22	08132103.D	1	RINSE	
4	13-AUG-2021 19:43	08132104.D	1	SEQ-IBL1	
5	13-AUG-2021 20:03	08132105.D	1	SEQ-CAL1	
6	13-AUG-2021 20:24	08132106.D	1	SEQ-CAL2	
7	13-AUG-2021 20:44	08132107.D	1	SEQ-CAL3	
8	13-AUG-2021 21:05	08132108.D	1	SEQ-CAL4	
9	13-AUG-2021 21:25	08132109.D	1	SEQ-CAL5	
10	13-AUG-2021 21:46	08132110.D	1	SEQ-CAL6	
11	13-AUG-2021 22:06	08132111.D	1	SEQ-CAL7	
12	13-AUG-2021 22:27	08132112.D	1	SEQ-CAL8	
13	13-AUG-2021 22:47	08132113.D	1	SEQ-CAL9	
14	13-AUG-2021 23:08	08132114.D	1	SEQ-CALA	
15	13-AUG-2021 23:28	08132115.D	1	SEQ-CALB	
16	13-AUG-2021 23:49	08132116.D	1	SEQ-CALC	
17	14-AUG-2021 00:09	08132117.D	1	SEQ-CALD	
18	14-AUG-2021 00:30	08132118.D	1	SEQ-CALE	
19	14-AUG-2021 00:50	08132119.D	1	SEQ-CALF	
20	14-AUG-2021 01:11	08132120.D	1	SEQ-CALG	
21	14-AUG-2021 01:31	08132121.D	1	SEQ-CALH	
22	14-AUG-2021 01:52	08132122.D	1	SEQ-CALI	
23	14-AUG-2021 02:12	08132123.D	1	SEQ-CALJ	
24	14-AUG-2021 02:33	08132124.D	1	SEQ-CALK	
25	14-AUG-2021 02:53	08132125.D	1	SEQ-CALL	
26	14-AUG-2021 03:13	08132126.D	1	SEQ-CALM	
27	14-AUG-2021 03:34	08132127.D	1	SEQ-CALN	
28	14-AUG-2021 03:54	08132128.D	1	SEQ-CALO	
29	14-AUG-2021 04:15	08132129.D	1	SEQ-CALP	
30	14-AUG-2021 04:35	08132130.D	1	SEQ-CALQ	
31	14-AUG-2021 04:56	08132131.D	1	SEQ-CALR	
32	14-AUG-2021 05:16	08132132.D	1	SEQ-CALS	
33	14-AUG-2021 05:37	08132133.D	1	SEQ-CALT	
34	14-AUG-2021 05:57	08132134.D	1	SEQ-CALU	
35	14-AUG-2021 06:18	08132135.D	1	SEQ-CALV	
36	14-AUG-2021 06:38	08132136.D	1	SEQ-CALW	
37	14-AUG-2021 06:59	08132137.D	1	SEQ-CALX	
38	14-AUG-2021 07:19	08132138.D	1	SEQ-CALY	
39	14-AUG-2021 07:40	08132139.D	1	SEQ-CALZ	
40	14-AUG-2021 08:00	08132140.D	1	SEQ-CALAA	
41	14-AUG-2021 08:21	08132141.D	1	SEQ-SCV1	
42	14-AUG-2021 08:41	08132142.D	1	SEQ-SCV2	
43	14-AUG-2021 09:02	08132143.D	1	SEQ-SCV3	
44	14-AUG-2021 09:22	08132144.D	1	SEQ-SCV4	
45	14-AUG-2021 09:43	08132145.D	1	SEQ-SCV5	
46	14-AUG-2021 10:03	08132146.D	1	SEQ-SCV6	
47	14-AUG-2021 10:24	08132147.D	1	0.1PPMDDTS	
48	14-AUG-2021 10:44	08132148.D	1	DS	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 13-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242,
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242,
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242,
2308	08132114.D	SEQ-CALA		1	Aroclor-1242,
2328	08132115.D	SEQ-CALB		1	Aroclor-1242,
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0030	08132118.D	SEQ-CALE		1	Aroclor-1248,
0050	08132119.D	SEQ-CALF		1	Aroclor-1248,
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	NO MANUAL INTEGRATION
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION
0841	08132142.D	SEQ-SCV2		1	NO MANUAL INTEGRATION
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242 [2C],
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242 [2C],
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242 [2C],
2308	08132114.D	SEQ-CALA		1	NO MANUAL INTEGRATION
2328	08132115.D	SEQ-CALB		1	NO MANUAL INTEGRATION
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248 [2C],
0030	08132118.D	SEQ-CALE		1	Aroclor-1248 [2C],
0050	08132119.D	SEQ-CALF		1	NO MANUAL INTEGRATION
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	Aroclor-1248 [2C],
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0841	08132142.D	SEQ-SCV2		1	Aroclor-1242 [2C], Aroclor-1248 [2C],
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132102ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132103ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132104ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132105ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132106ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132107ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132110ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132112ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132113ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132114ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132132ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132148ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132102ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132103ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
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08132144ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

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|           08132145ECD7.D|               Data Locked|               jrains, 15-Aug-2021 12:44|
|           08132146ECD7.D|               Data Locked|               jrains, 15-Aug-2021 12:44|
|           08132147ECD7.D|               Data Locked|               jrains, 15-Aug-2021 12:44|
|           08132148ECD7.D|               Data Locked|               jrains, 15-Aug-2021 12:44|
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ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132105.D
Level 2: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132106.D
Level 3: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132107.D
Level 4: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132108.D
Level 5: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132109.D
Level 6: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132110.D
Level 8: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132147.D
Level 9: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132136.D
Level 10: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132137.D
Level 11: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132138.D
Level 12: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132139.D
Level 13: \\target\share\chem4\ecd7.i\210813.b\210813.b\08132140.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
1 Aroclor-1221 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00629	0.00685	0.00675	0.00593	0.00541	0.00481	0.00600	13.209
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01435	0.01352	0.01388	0.01382	0.01376	0.01314	0.01375	2.930
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02506	0.02431	0.02500	0.02433	0.02340	0.02164	0.02396	5.359
4 Aroclor-1232 [2C](1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00405	0.00376	0.00394	0.00352	0.00323	0.00295	0.00358	11.833
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02084	0.02101	0.02122	0.02150	0.02091	0.01988	0.02089	2.642
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04103	0.04175	0.04038	0.04152	0.04365	0.04255	0.04181	2.756
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00756	0.00926	0.01145	0.01247	0.01229	0.01233	0.01089	18.639

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
3 Aroclor-1242 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.03973	0.03735	0.03808	0.03758	0.03572	0.03224	0.03678	7.001
(2)	#####	#####	#####	#####	#####	#####		
	0.08232	0.07658	0.07866	0.08407	0.08151	0.07625	0.07990	4.026
(3)	#####	#####	#####	#####	#####	#####		
	0.04585	0.03890	0.03675	0.03609	0.03426	0.03211	0.03733	12.772
(4)	#####	#####	#####	#####	#####	#####		
	0.05127	0.04062	0.04474	0.04223	0.03995	0.03533	0.04235	12.641
6 Aroclor-1248 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.03760	0.03461	0.03112	0.03340	0.03225	0.02994	0.03315	8.225
(2)	#####	#####	#####	#####	#####	#####		
	0.03967	0.03935	0.04153	0.04204	0.04095	0.03857	0.04035	3.369
(3)	#####	#####	#####	#####	#####	#####		
	0.07197	0.06626	0.06680	0.06291	0.06104	0.05666	0.06427	8.226
(4)	#####	#####	#####	#####	#####	#####		
	0.06207	0.05391	0.05333	0.05357	0.05283	0.05181	0.05459	6.846
7 Aroclor-1016 [2C](1)	0.04882	0.04733	0.04794	0.04698	0.04354	0.03910		
	#####	#####	#####	#####	#####	#####	0.04562	8.042
(2)	0.10010	0.09891	0.10731	0.10724	0.10191	0.09675		
	#####	#####	#####	#####	#####	#####	0.10204	4.300
(3)	0.03847	0.03676	0.04334	0.04291	0.04064	0.03815		
	#####	#####	#####	#####	#####	#####	0.04005	6.732

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-AUG-2021 20:03
End Cal Date : 14-AUG-2021 10:24
Quant Method : ISTD
Origin : Disabled
Target Version : 4.14
Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
(4)	0.02418	0.02283	0.02663	0.02560	0.02388	0.02229		
	#####	#####	#####	#####	#####	#####	0.02424	6.781
8 Aroclor-1254 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.07889	0.07222	0.06911	0.06590	0.06342	0.05885	0.06807	10.318
(2)	#####	#####	#####	#####	#####	#####		
	0.05118	0.04273	0.03987	0.03733	0.03576	0.03280	0.03995	16.198
(3)	#####	#####	#####	#####	#####	#####		
	0.05944	0.05335	0.05221	0.05094	0.04937	0.04604	0.05189	8.650
(4)	#####	#####	#####	#####	#####	#####		
	0.13845	0.11755	0.11576	0.10934	0.10618	0.10262	0.11498	11.138
(5)	#####	#####	#####	#####	#####	#####		
	0.12567	0.11826	0.11831	0.11580	0.11383	0.10777	0.11661	5.064
10 Aroclor-1262 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.11112	0.10100	0.09894	0.09582	0.09185	0.08825	0.09783	8.173
(2)	#####	#####	#####	#####	#####	#####		
	0.22148	0.20192	0.20094	0.19618	0.19807	0.21989	0.20641	5.451
(3)	#####	#####	#####	#####	#####	#####		
	0.09754	0.09096	0.09106	0.09130	0.09065	0.08823	0.09162	3.393
(4)	#####	#####	#####	#####	#####	#####		
	0.08699	0.08139	0.08705	0.08697	0.08658	0.08334	0.08539	2.844
9 Aroclor-1260 [2C](1)	0.07145	0.07006	0.06873	0.06790	0.06298	0.05790		
	#####	#####	#####	#####	#####	#####	0.06650	7.681

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
(2)	0.20358	0.19730	0.19591	0.19469	0.18108	0.18719		
	#####	#####	#####	#####	#####	#####	0.19329	4.119
(3)	0.13552	0.12750	0.12631	0.12533	0.11966	0.11143		
	#####	#####	#####	#####	#####	#####	0.12429	6.521
(4)	0.05852	0.05681	0.06302	0.06242	0.05963	0.05613		
	#####	#####	#####	#####	#####	#####	0.05942	4.789
11 Aroclor-1268 [2C](1)	#####	#####	#####	#####	#####	#####		
	0.24179	0.22854	0.22202	0.21909	0.23790	#####	0.22986	4.274
(2)	#####	#####	#####	#####	#####	#####		
	0.26368	0.24824	0.24638	0.24667	0.24916	#####	0.25083	2.900
(3)	#####	#####	#####	#####	#####	#####		
	0.21917	0.21458	0.21242	0.21811	0.21966	#####	0.21679	1.451
(4)	#####	#####	#####	#####	#####	#####		
	0.05361	0.05183	0.05229	0.05465	0.05573	#####	0.05362	3.021
41 2,4-DDE [2C]	#####	#####	#####	#####	#####	#####		
	2479	#####	#####	#####	#####	#####	2479	0.000
42 2,4-DDD [2C]	#####	#####	#####	#####	#####	#####		
	1258	#####	#####	#####	#####	#####	1258	0.000
44 4,4-DDE [2C]	#####	#####	#####	#####	#####	#####		
	1581	#####	#####	#####	#####	#####	1581	0.000
45 4,4-DDD/2,4-DDT [2C]	#####	#####	#####	#####	#####	#####		
	1766	#####	#####	#####	#####	#####	1766	0.000

ARI Labs, Inc.

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m\PCB2.m
Last Edit : 14-Aug-2021 13:38 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
46 4,4-DDT [2C]	+++++	+++++	+++++	+++++	+++++	+++++		
	721	+++++	+++++	+++++	+++++	+++++	721	0.000
48 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
49 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 2 Tetrachloro-m-xylene [2C]	1.03468	1.01403	1.03858	1.04776	1.01141	1.02186		
	+++++	+++++	+++++	+++++	+++++	+++++	1.02805	1.413
$ 13 Decachlorobiphenyl [2C]	1.71739	1.72015	1.80269	1.83464	1.81311	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	1.77760	3.090

ARI Labs, Inc.

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 ecd7.i
Curve Type : Average

Calibration File Names:
Level 1: \\target\share\chem4\ecd7.i\210813.b\08132105.D
Level 2: \\target\share\chem4\ecd7.i\210813.b\08132106.D
Level 3: \\target\share\chem4\ecd7.i\210813.b\08132107.D
Level 4: \\target\share\chem4\ecd7.i\210813.b\08132108.D
Level 5: \\target\share\chem4\ecd7.i\210813.b\08132109.D
Level 6: \\target\share\chem4\ecd7.i\210813.b\08132110.D
Level 8: \\target\share\chem4\ecd7.i\210813.b\08132147.D
Level 9: \\target\share\chem4\ecd7.i\210813.b\08132136.D
Level 10: \\target\share\chem4\ecd7.i\210813.b\08132137.D
Level 11: \\target\share\chem4\ecd7.i\210813.b\08132138.D
Level 12: \\target\share\chem4\ecd7.i\210813.b\08132139.D
Level 13: \\target\share\chem4\ecd7.i\210813.b\08132140.D

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
2 Aroclor-1221(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00610	0.00662	0.00692	0.00670	0.00603	0.00554	0.00632	8.149
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.00860	0.00838	0.00946	0.01119	0.01107	0.01071	0.00990	12.674
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.02562	0.02587	0.02636	0.02881	0.02779	0.02607	0.02675	4.734
3 Aroclor-1242(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01895	0.02153	0.02336	0.02360	0.02299	0.02182	0.02204	7.849
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.05664	0.05707	0.06611	0.07095	0.07201	0.07147	0.06571	10.923
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04584	0.03531	0.03720	0.03521	0.03565	0.03413	0.03722	11.648
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.01766	0.01614	0.01630	0.01532	0.01376	0.01209	0.01521	13.110

ARI Labs, Inc.

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Integrator : HP Genie
Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
4 Aroclor-1232(1)	#####	#####	#####	#####	#####	#####		
	0.00466	0.00425	0.00372	0.00370	0.00363	0.00333	0.00388	12.445
(2)	#####	#####	#####	#####	#####	#####		
	0.01976	0.01982	0.02119	0.02246	0.02214	0.02118	0.02109	5.349
(3)	#####	#####	#####	#####	#####	#####		
	0.02267	0.02831	0.03250	0.03502	0.03682	0.03781	0.03219	17.939
(4)	#####	#####	#####	#####	#####	#####		
	0.00901	0.01125	0.01399	0.01466	0.01537	0.01516	0.01324	19.289
7 Aroclor-1016(1)	0.02649	0.02912	0.02940	0.02964	0.02850	0.02709		
	#####	#####	#####	#####	#####	#####	0.02837	4.572
(2)	0.07428	0.08423	0.08746	0.09203	0.09182	0.09075		
	#####	#####	#####	#####	#####	#####	0.08676	7.851
(3)	0.03555	0.04093	0.04059	0.04075	0.03888	0.03692		
	#####	#####	#####	#####	#####	#####	0.03894	5.798
(4)	0.01991	0.02422	0.02511	0.02593	0.02582	0.02547		
	#####	#####	#####	#####	#####	#####	0.02441	9.375
6 Aroclor-1248(1)	#####	#####	#####	#####	#####	#####		
	0.03027	0.03457	0.03263	0.03464	0.03494	0.03410	0.03353	5.345
(2)	#####	#####	#####	#####	#####	#####		
	0.03873	0.04418	0.04305	0.04595	0.04599	0.04467	0.04376	6.183
(3)	#####	#####	#####	#####	#####	#####		
	0.06153	0.06329	0.06557	0.06632	0.06567	0.06210	0.06408	3.183

ARI Labs, Inc.

INITIAL CALIBRATION DATA

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Method file : \\target\share\chem4\ecd7.i\210813.b\PCB.m
Last Edit : 14-Aug-2021 15:07 ecd7.i
Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04055	0.04143	0.03788	0.03603	0.03352	0.03006	0.03658	11.799
8 Aroclor-1254(1)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.07164	0.06947	0.06903	0.07004	0.06892	0.06502	0.06902	3.182
(2)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.03299	0.03465	0.03312	0.03312	0.03112	0.02670	0.03195	8.779
(3)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04923	0.04279	0.04318	0.04501	0.04521	0.04450	0.04499	5.104
(4)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.07660	0.08623	0.08820	0.09027	0.08929	0.08506	0.08594	5.774
(5)	+++++	+++++	+++++	+++++	+++++	+++++		
	0.04626	0.05174	0.05350	0.05694	0.05786	0.05754	0.05397	8.342
9 Aroclor-1260(1)	0.03649	0.03600	0.03588	0.03720	0.03606	0.03432		
	+++++	+++++	+++++	+++++	+++++	+++++	0.03599	2.646
(2)	0.03493	0.03435	0.03497	0.03686	0.03620	0.03463		
	+++++	+++++	+++++	+++++	+++++	+++++	0.03533	2.785
(3)	0.09844	0.09113	0.09296	0.09789	0.10200	0.09044		
	+++++	+++++	+++++	+++++	+++++	+++++	0.09547	4.862
(4)	0.03984	0.04042	0.04182	0.04477	0.04503	0.04333		
	+++++	+++++	+++++	+++++	+++++	+++++	0.04254	5.160
(5)	0.02079	0.02106	0.02133	0.02210	0.02175	0.02075		
	+++++	+++++	+++++	+++++	+++++	+++++	0.02130	2.541

ARI Labs, Inc.

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Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
10 Aroclor-1262(1)	#####	#####	#####	#####	#####	#####		
	0.05134	0.04713	0.04785	0.04922	0.04998	0.04739	0.04882	3.393
(2)	#####	#####	#####	#####	#####	#####		
	0.03097	0.02863	0.03076	0.03227	0.03369	0.03336	0.03161	5.969
(3)	#####	#####	#####	#####	#####	#####		
	0.04656	0.04368	0.04524	0.04611	0.04682	0.04504	0.04557	2.553
(4)	#####	#####	#####	#####	#####	#####		
	0.03832	0.03599	0.03700	0.03807	0.03947	0.03564	0.03741	3.935
11 Aroclor-1268(1)	#####	#####	#####	#####	#####	#####		
	0.10988	0.10672	0.10649	0.10735	0.10848	0.10507	0.10733	1.559
(2)	#####	#####	#####	#####	#####	#####		
	0.11682	0.11257	0.11230	0.11238	0.11318	0.10827	0.11259	2.418
(3)	#####	#####	#####	#####	#####	#####		
	0.09347	0.08830	0.08761	0.08780	0.08876	0.08540	0.08856	3.015
(4)	#####	#####	#####	#####	#####	#####		
	0.30216	0.28855	0.28544	0.27866	0.27892	0.28011	0.28564	3.154
42 2,4-DDE	#####	#####	#####	#####	#####	#####		
	1168	#####	#####	#####	#####	#####	1168	0.000
43 2,4-DDD	#####	#####	#####	#####	#####	#####		
	1454	#####	#####	#####	#####	#####	1454	0.000
44 2,4-DDT	#####	#####	#####	#####	#####	#####		
	#####	#####	#####	#####	#####	#####	#####	#####

ARI Labs, Inc.

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Curve Type : Average

Compound	20.000 Level 1	50.000 Level 2	100.000 Level 3	250.000 Level 4	500.000 Level 5	1000.000 Level 6	___ RRF	% RSD
	0.000e+00 Level 8	0.000e+00 Level 9	0.000e+00 Level 10	0.000e+00 Level 11	0.000e+00 Level 12	0.000e+00 Level 13		
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++		
	1936	+++++	+++++	+++++	+++++	+++++	1936	0.000
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++		
	2956	+++++	+++++	+++++	+++++	+++++	2956	0.000
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++		
	709	+++++	+++++	+++++	+++++	+++++	709	0.000
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$ 1 Tetrachloro-m-xylene	0.93937	0.91421	0.97581	1.01321	0.99259	0.96662		
	+++++	+++++	+++++	+++++	+++++	+++++	0.96697	3.705
$ 13 Decachlorobiphenyl	0.74318	0.73021	0.74556	0.75250	0.71633	0.66941		
	+++++	+++++	+++++	+++++	+++++	+++++	0.72620	4.219

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132105	08132106	08132107	08132108	08132109	08132110
INJ.DATE:	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021
INJ.TIME:	20:03	20:24	20:44	21:05	21:25	21:46

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.853	2.852	2.854	2.853	2.852	2.851	2.853	2.753-2.953	2.852	0.001
$ 1 Tetrachloro-m-xylene	5.068	5.068	5.068	5.067	5.068	5.069	5.068	4.968-5.168	5.068	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.660	6.560-6.760	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	6.660	6.659	6.660	6.659	6.659	6.658	6.660	6.560-6.760	6.659	0.001
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	10.387	10.385	10.385	10.384	10.384	10.383	10.387	10.287-10.487	10.385	0.001
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.163	13.164	13.164	13.164	13.165	13.165	13.163	13.063-13.263	13.164	0.001
* 12 IS-HBBP	13.517	13.519	13.518	13.519	13.519	13.518	13.517	13.417-13.617	13.518	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132111	08132112	08132113	08132114	08132115	08132116
INJ.DATE:	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021	13-AUG-2021
INJ.TIME:	22:06	22:27	22:47	23:08	23:28	23:49

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.852	2.854	2.853	2.855	2.854	2.853	2.852	2.752-2.952	2.853	0.001
$ 1 Tetrachloro-m-xylene	5.069	5.068	5.068	5.069	5.070	5.069	5.069	4.969-5.169	5.069	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	6.661	6.662	6.661	6.660	6.660	6.659	6.661	6.561-6.761	6.660	0.001
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.165	13.165	13.165	13.165	13.165	13.166	13.165	13.065-13.265	13.165	0.000
* 12 IS-HBBP	13.520	13.519	13.520	13.521	13.520	13.520	13.520	13.420-13.620	13.520	0.000
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132117	08132118	08132119	08132120	08132121	08132122
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	00:09	00:30	00:50	01:11	01:31	01:52

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.853	2.854	2.852	2.853	2.853	2.854	2.853	2.753-2.953	2.853	0.001
$ 1 Tetrachloro-m-xylene	5.068	5.069	5.068	5.068	5.069	5.070	5.068	4.968-5.168	5.069	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.659	6.559-6.759	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	7.799	7.803	7.800	7.800	7.801	7.799	7.799	7.699-7.899	7.800	0.001
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.165	13.164	13.165	13.165	13.164	13.166	13.165	13.065-13.265	13.165	0.001
* 12 IS-HBBP	13.520	13.520	13.521	13.521	13.520	13.520	13.520	13.420-13.620	13.520	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132123	08132124	08132125	08132126	08132127	08132128
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	02:12	02:33	02:53	03:13	03:34	03:54

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.852	2.851	2.852	2.851	2.853	2.853	2.852	2.752-2.952	2.852	0.001
$ 1 Tetrachloro-m-xylene	5.069	5.068	5.068	5.067	5.069	5.069	5.069	4.969-5.169	5.068	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.659	6.559-6.759	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	8.681	8.680	8.680	8.677	8.676	8.675	8.681	8.581-8.781	8.678	0.002
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.166	13.165	13.166	13.166	13.166	13.166	13.166	13.066-13.266	13.166	0.000
* 12 IS-HBBP	13.521	13.521	13.522	13.521	13.520	13.520	13.521	13.421-13.621	13.520	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132129	08132130	08132131	08132132	08132133	08132134
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	04:15	04:35	04:56	05:16	05:37	05:57

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.854	2.852	2.852	2.854	2.855	2.855	2.854	2.754-2.954	2.853	0.001
$ 1 Tetrachloro-m-xylene	5.068	5.068	5.068	5.069	5.070	5.070	5.068	4.968-5.168	5.069	0.001
2 Aroclor-1221	4.020	4.015	4.015	4.015	4.015	4.015	4.020	3.920-4.120	4.016	0.002
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.659	6.559-6.759	+++++	+++++
4 Aroclor-1232	+++++	+++++	+++++	+++++	+++++	+++++	4.018	3.918-4.118	+++++	+++++
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	10.388	10.388	10.387	10.386	10.384	10.384	10.388	10.288-10.488	10.386	0.002
11 Aroclor-1268	+++++	+++++	+++++	+++++	+++++	+++++	11.557	11.457-11.657	+++++	+++++
$ 13 Decachlorobiphenyl	13.165	13.165	13.165	13.165	13.165	13.166	13.165	13.065-13.265	13.165	0.000
* 12 IS-HBBP	13.520	13.522	13.519	13.519	13.520	13.519	13.520	13.420-13.620	13.520	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06
FILENAME:	08132135	08132136	08132137	08132138	08132139	08132140
INJ.DATE:	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021	14-AUG-2021
INJ.TIME:	06:18	06:38	06:59	07:19	07:40	08:00

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
* 41 IS-BNB	2.853	2.854	2.856	2.856	2.854	2.855	2.853	2.753-2.953	2.855	0.001
$ 1 Tetrachloro-m-xylene	5.069	5.069	5.071	5.071	5.071	5.072	5.069	4.969-5.169	5.070	0.001
2 Aroclor-1221	+++++	+++++	+++++	+++++	+++++	+++++	4.015	3.915-4.115	+++++	+++++
3 Aroclor-1242	+++++	+++++	+++++	+++++	+++++	+++++	6.659	6.559-6.759	+++++	+++++
4 Aroclor-1232	4.020	4.014	4.017	4.018	4.016	4.018	4.020	3.920-4.120	4.017	0.002
7 Aroclor-1016	+++++	+++++	+++++	+++++	+++++	+++++	6.658	6.558-6.758	+++++	+++++
6 Aroclor-1248	+++++	+++++	+++++	+++++	+++++	+++++	7.799	7.699-7.899	+++++	+++++
8 Aroclor-1254	+++++	+++++	+++++	+++++	+++++	+++++	8.675	8.575-8.775	+++++	+++++
9 Aroclor-1260	+++++	+++++	+++++	+++++	+++++	+++++	10.383	10.283-10.483	+++++	+++++
10 Aroclor-1262	+++++	+++++	+++++	+++++	+++++	+++++	10.384	10.284-10.484	+++++	+++++
11 Aroclor-1268	11.560	11.559	11.558	11.557	11.557	11.557	11.560	11.460-11.660	11.558	0.001
$ 13 Decachlorobiphenyl	13.165	13.165	13.165	13.165	13.165	13.166	13.165	13.065-13.265	13.165	0.000
* 12 IS-HBBP	13.520	13.520	13.521	13.521	13.519	13.519	13.520	13.420-13.620	13.520	0.001
42 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	8.655	8.605-8.705	+++++	+++++
43 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.186	9.136-9.236	+++++	+++++
44 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	9.668	9.618-9.718	+++++	+++++
46 4,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++	9.066	8.966-9.166	+++++	+++++

Reviewer 1 _____ Date: _____
Reviewer 2 _____ Date: _____

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Batch File: \\target\share\chem4\ecd7.i\210813.b
Inst ID: ecd7.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
47 4,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++	9.630	9.530-9.730	+++++	+++++
48 4,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++	10.114	10.014-10.214	+++++	+++++
49 Hexachlorobutadiene	+++++	+++++	+++++	+++++	+++++	+++++	1.842	1.742-1.942	+++++	+++++
50 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	6.708	6.608-6.808	+++++	+++++

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132104ECD7.D
Data file 2: /210813.b/210813.b/08132104ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-IBL1
Client ID:
Injection Date: 13-AUG-2021 19:43
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	126172	5.412	-0.004	360712	44.0	42.2	4.2	Tetrachloro-m-xylene
13.165	-0.001	154941	13.847	-0.033	746026	43.2	42.7	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	237189	-8.4
Hexabromobiphenyl	425681	395219	-7.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	664936	-7.8
Hexabromobiphenyl	863111	787155	-8.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	---			0.0	1	---			0.0
Aroclor-1016	2	---			0.0	2	---			0.0
Aroclor-1016	3	---			0.0	3	---			0.0
Aroclor-1016	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.090	0.018	4395	38.5
Aroclor-1221	3	---			0.0	3	6.402	-0.007	1203	6.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	---			0.0
Aroclor-1232	3	---			0.0	3	---			0.0
Aroclor-1232	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1242	1	---			0.0	1	---			0.0
Aroclor-1242	2	---			0.0	2	---			0.0
Aroclor-1242	3	---			0.0	3	---			0.0
Aroclor-1242	4	---			0.0	4	---			0.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1248	1	---			0.0	1	8.108	0.002	393	1.4
Aroclor-1248	2	---			0.0	2	8.585	0.065	186	0.6
Aroclor-1248	3	---			0.0	3	---			0.0
Aroclor-1248	4	---			0.0	4	9.462	0.086	5866	12.9
		Col1Ave: <3 Quant Peaks					Col2Ave: 5.0			
Aroclor-1254	1	---			0.0	1	---			0.0
Aroclor-1254	2	---			0.0	2	---			0.0
Aroclor-1254	3	---			0.0	3	---			0.0
Aroclor-1254	4	---			0.0	4	9.834	-0.080	4733	5.0
Aroclor-1254	5	---			0.0	5	10.236	0.088	987	1.0
		Col1Ave: <3 Quant Peaks					Col2Ave: <3 Quant Peaks			
Aroclor-1260	1	---			0.0	1	11.439	0.014	341	0.5
Aroclor-1260	2	---			0.0	2	11.681	-0.000	888	0.5
Aroclor-1260	3	11.055	0.004	138	0.3	3	12.198	-0.063	704	0.6
Aroclor-1260	4	11.473	0.021	110	0.5	4	13.049	0.077	4672	8.0
Aroclor-1260	5	---			0.0	NS	---			----
		Col1Ave: <3 Quant Peaks					Col2Ave: 2.4			
Aroclor-1262	1	---			0.0	1	10.985	0.015	687	0.7
Aroclor-1262	2	---			0.0	2	11.681	-0.005	888	0.4
Aroclor-1262	3	---			0.0	3	12.198	0.010	704	0.8
Aroclor-1262	4	---			0.0	4	13.049	0.076	4672	5.6
		Col1Ave: <3 Quant Peaks					Col2Ave: 1.9			
Aroclor-1268	1	11.473	-0.084	110	0.2	1	12.198	-0.002	704	0.3
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.909	-0.092	1145	2.6	3	12.645	0.001	717	0.3
Aroclor-1268	4	12.771	-0.000	685	0.5	4	13.458	0.675	1064	2.0

Total Col1Ave (3 peaks): 1.1 Total Col2Ave (3 peaks): 0.9 RPD = 22

Corrected Ave: < 3 Peaks Corrected Ave: < 3 Peaks

Total PCB Area Col1 (5.169 - 13.066) = 10309 Col1 Total PCB = 0.0 ppm*

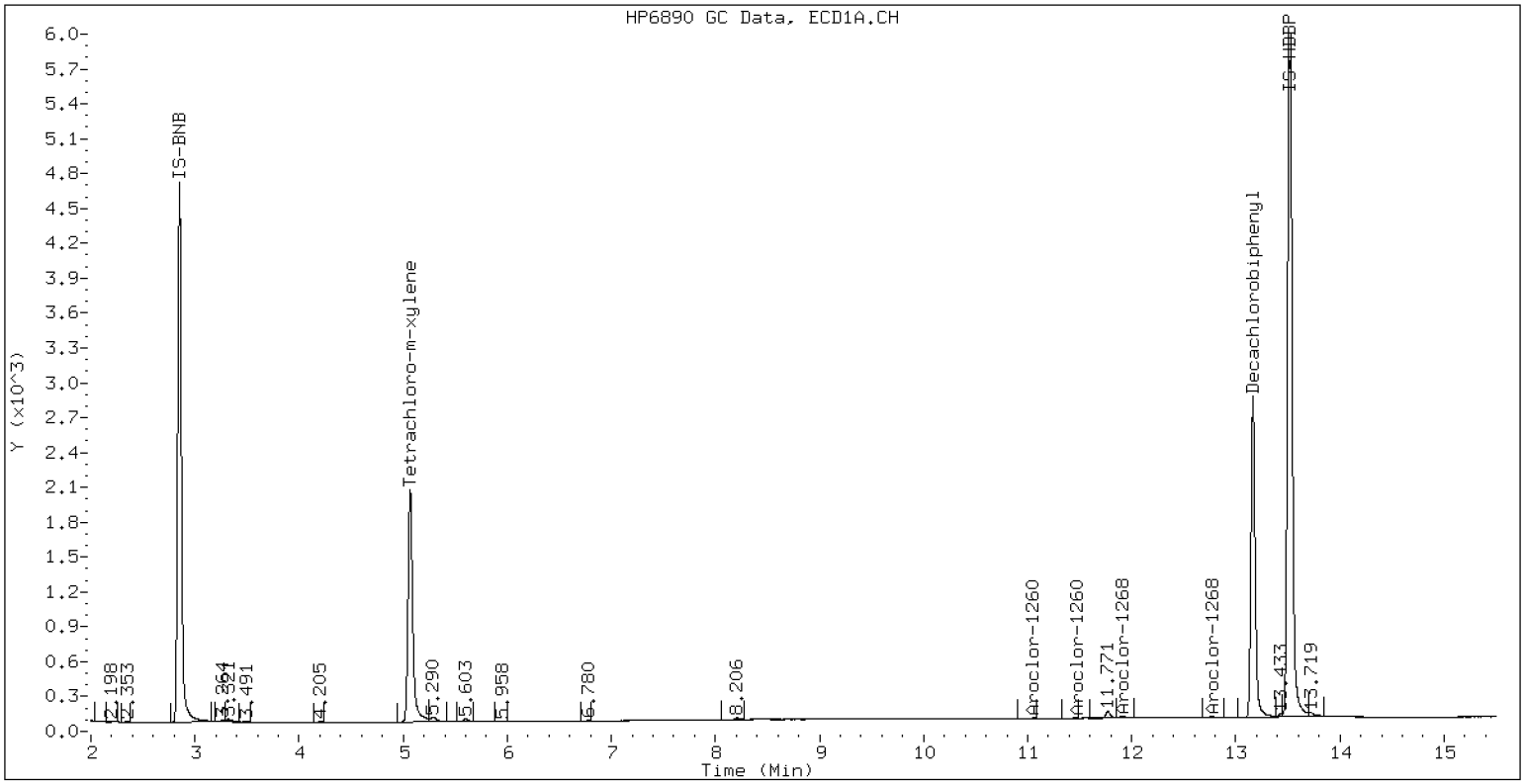
Total PCB Area Col2 (5.169 - 13.066) = 427198 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

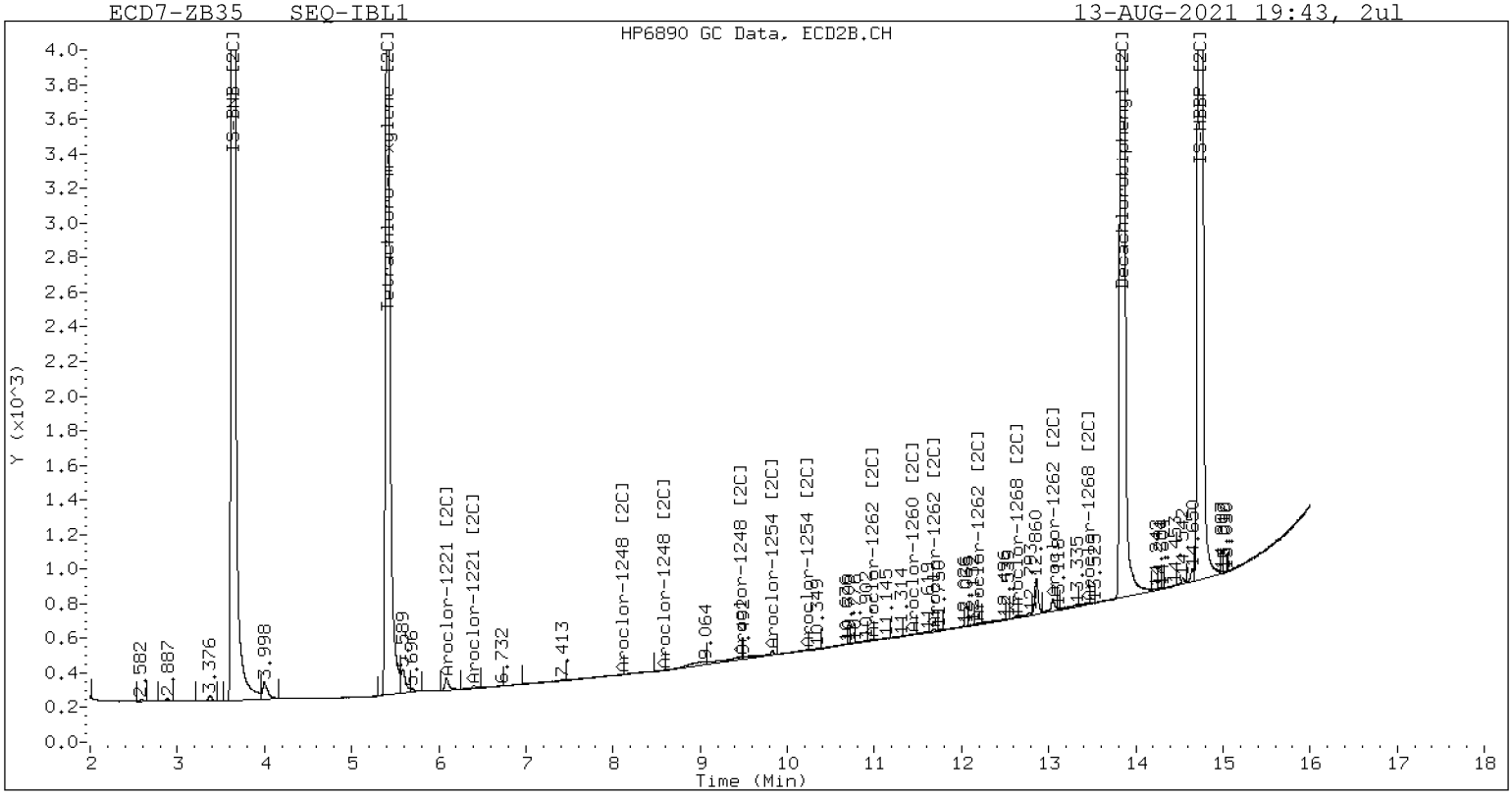
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-IBL1 13-AUG-2021 19:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-IBL1 13-AUG-2021 19:43, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132105ECD7.D
Data file 2: /210813.b/210813.b/08132105ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL1
Client ID:
Injection Date: 13-AUG-2021 20:03
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	9617	5.413	-0.004	29440	3.1	3.2	3.5	Tetrachloro-m-xylene
13.163	-0.003	12564	13.845	-0.035	57292	3.3	3.1	5.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	255944	-1.1
Hexabromobiphenyl	425681	422645	-0.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	711334	-1.3
Hexabromobiphenyl	863111	833996	-3.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	6.660	0.002	1695	18.7	1	7.056	-0.000	8681	21.4
Aroclor-1016	2	7.033	0.004	4753	17.1	2	7.654	0.007	17802	19.6
Aroclor-1016	3	7.181	0.005	2275	18.3	3	7.862	0.007	6842	19.2
Aroclor-1016	4	7.290	0.006	1274	16.3	4	8.107	0.002	4300	20.0
Total Col1Ave (4 peaks):				17.6		Total Col2Ave (4 peaks):			20.0	RPD = 13
Corrected Ave (3 peaks):				17.2		Corrected Ave (3 peaks):			19.6	RPD = 13
CalAmt %D:				-12.0		CalAmt %D:			0.2	
Aroclor-1260	1	10.387	0.004	3856	20.3	1	11.427	0.002	14898	21.5
Aroclor-1260	2	10.705	0.005	3691	19.8	2	11.682	0.000	42446	21.1
Aroclor-1260	3	11.056	0.005	10401	20.6	3	12.263	0.002	28256	21.8
Aroclor-1260	4	11.458	0.006	4210	18.7	4	12.974	0.001	12202	19.7
Aroclor-1260	5	11.557	0.003	2197	19.5	NS	---			----
Total Col1Ave (5 peaks):				19.8		Total Col2Ave (4 peaks):			21.0	RPD = 6
Corrected Ave (4 peaks):				19.6		Corrected Ave (3 peaks):			20.8	RPD = 6
CalAmt %D:				-1.1		CalAmt %D:			5.1	

Total PCB Area Col1 (5.169 - 13.066) = 102366 Col1 Total PCB = 0.0 ppm*

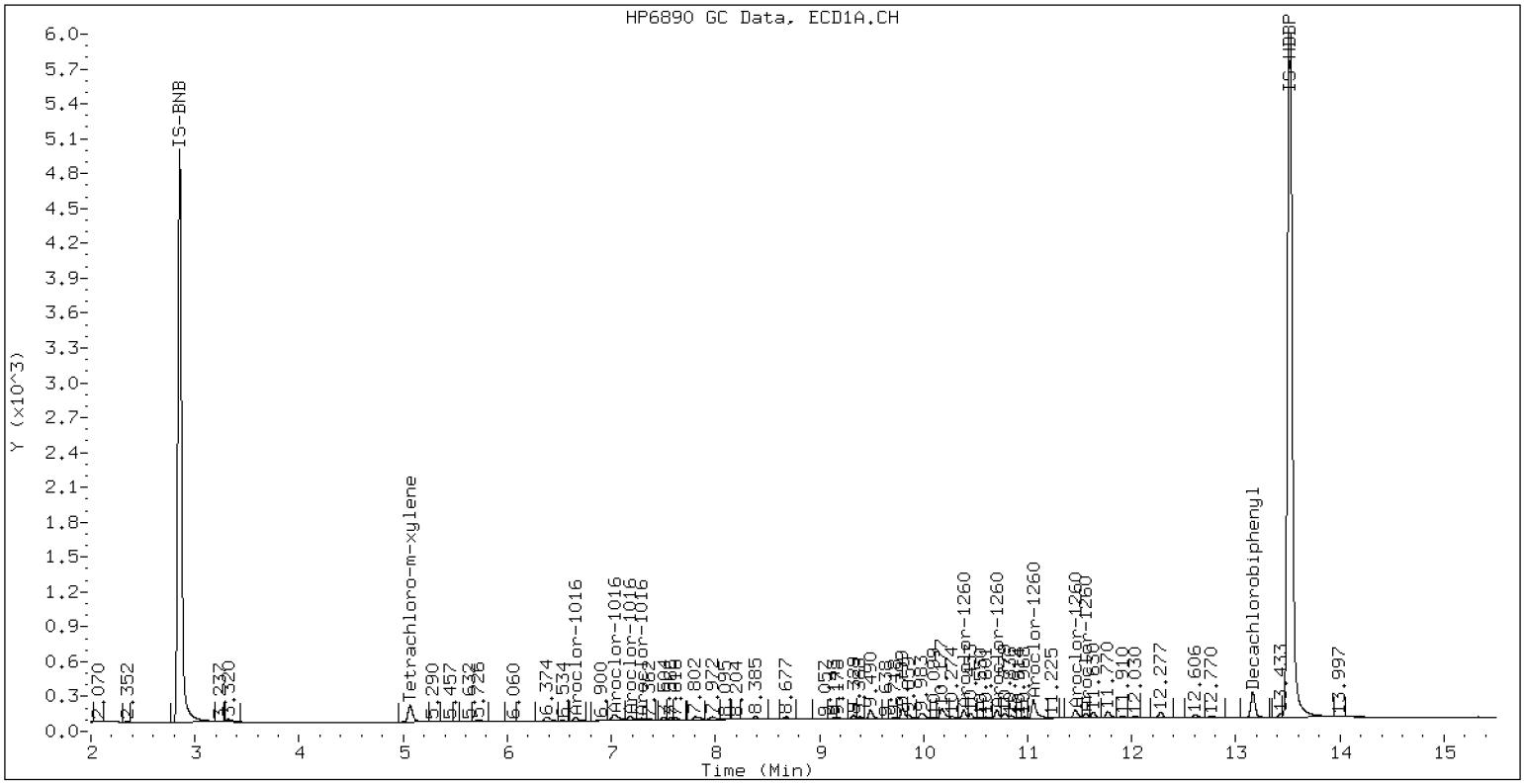
Total PCB Area Col2 (5.169 - 13.066) = 412493 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

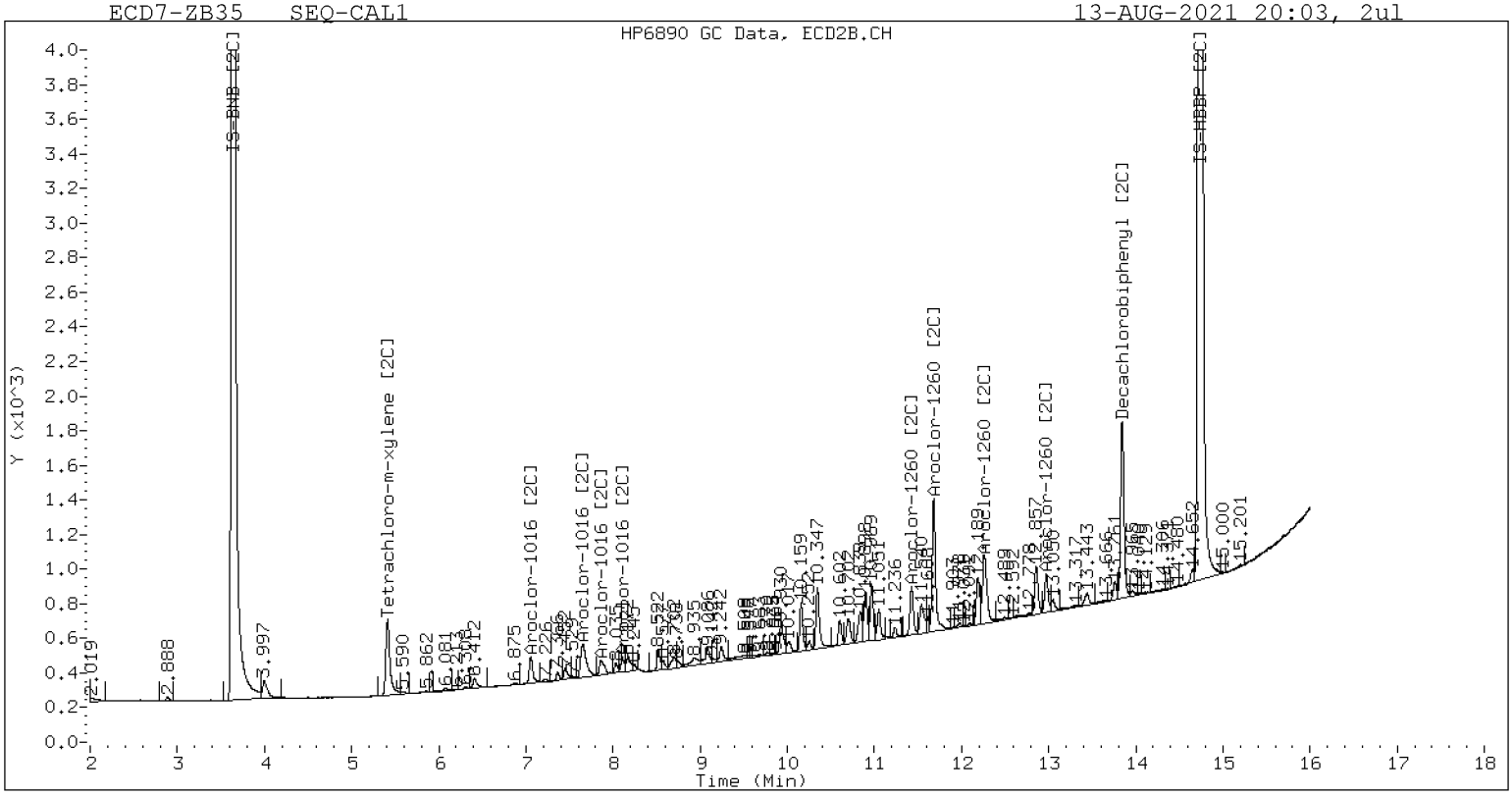
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL1 13-AUG-2021 20:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL1 13-AUG-2021 20:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132106ECD7.D
Data file 2: /210813.b/210813.b/08132106ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL2
Client ID:
Injection Date: 13-AUG-2021 20:24
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	23332	5.413	-0.004	72878	7.6	7.9	4.2	Tetrachloro-m-xylene
13.164	-0.002	31052	13.846	-0.034	144891	8.0	7.7	3.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	255215	-1.4
Hexabromobiphenyl	425681	425246	-0.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	718694	-0.3
Hexabromobiphenyl	863111	842315	-2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	6.659	0.001	4645	51.3	1	7.056	-0.000	21261	51.9
Aroclor-1016	2	7.034	0.005	13436	48.5	2	7.655	0.007	44431	48.5
Aroclor-1016	3	7.181	0.005	6528	52.6	3	7.861	0.006	16510	45.9
Aroclor-1016	4	7.291	0.006	3864	49.6	4	8.107	0.002	10254	47.1

Total Col1Ave (4 peaks): 50.5 Total Col2Ave (4 peaks): 48.3 RPD = 4
Corrected Ave (3 peaks): 49.8 Corrected Ave (3 peaks): 47.2 RPD = 6

CalAmt %D: 1.0 CalAmt %D: -3.3

Aroclor-1260	1	10.385	0.002	9567	50.0	1	11.427	0.002	36882	52.7
Aroclor-1260	2	10.703	0.003	9130	48.6	2	11.680	-0.001	103868	51.0
Aroclor-1260	3	11.054	0.004	24220	47.7	3	12.264	0.003	67124	51.3
Aroclor-1260	4	11.456	0.003	10743	47.5	4	12.972	-0.001	29907	47.8
Aroclor-1260	5	11.556	0.002	5597	49.4	NS	---			----

Total Col1Ave (5 peaks): 48.7 Total Col2Ave (4 peaks): 50.7 RPD = 4
Corrected Ave (4 peaks): 48.3 Corrected Ave (3 peaks): 50.0 RPD = 3

CalAmt %D: -2.7 CalAmt %D: 1.4

Total PCB Area Col1 (5.169 - 13.066) = 251626 Col1 Total PCB = 0.1 ppm*

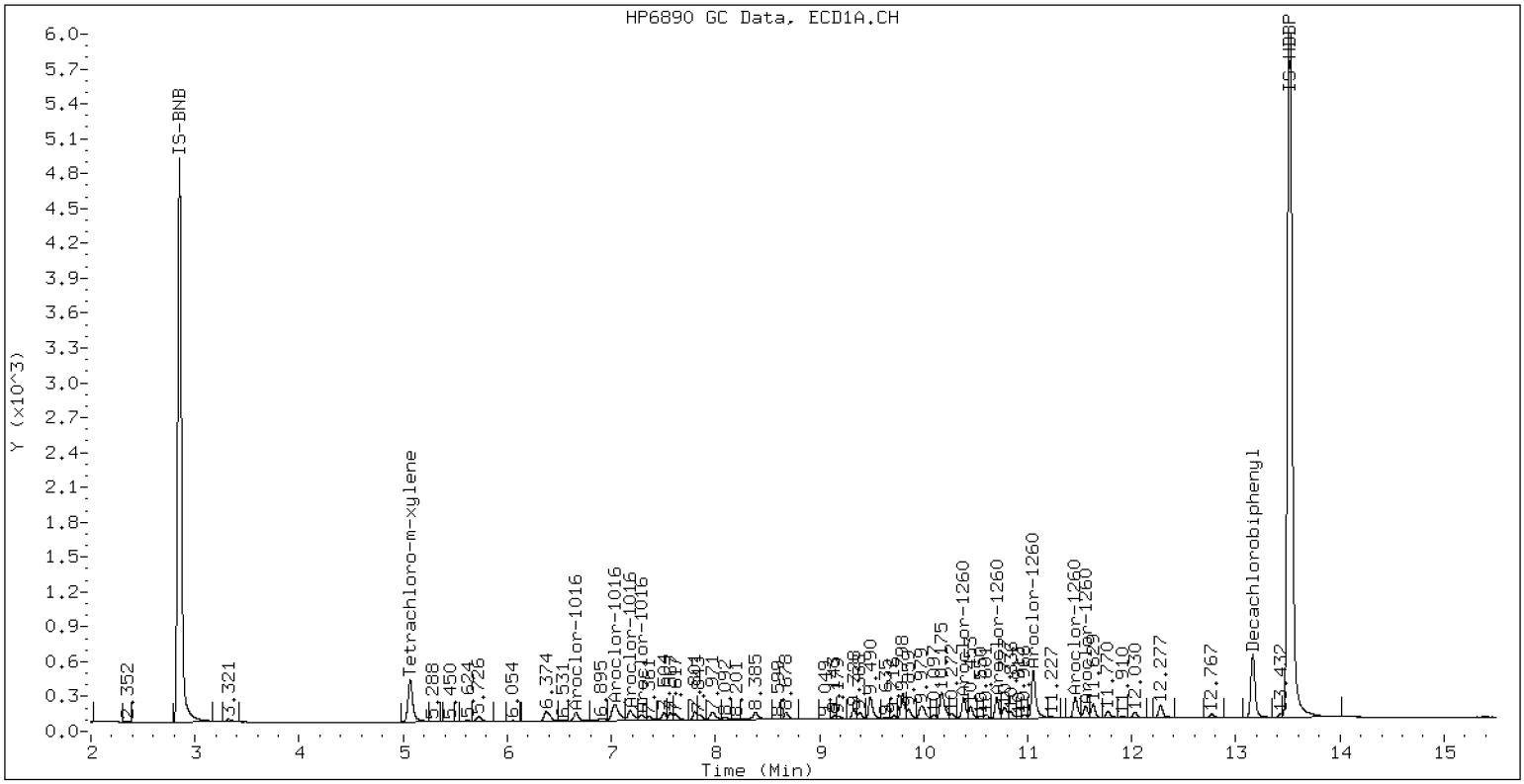
Total PCB Area Col2 (5.169 - 13.066) = 951053 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

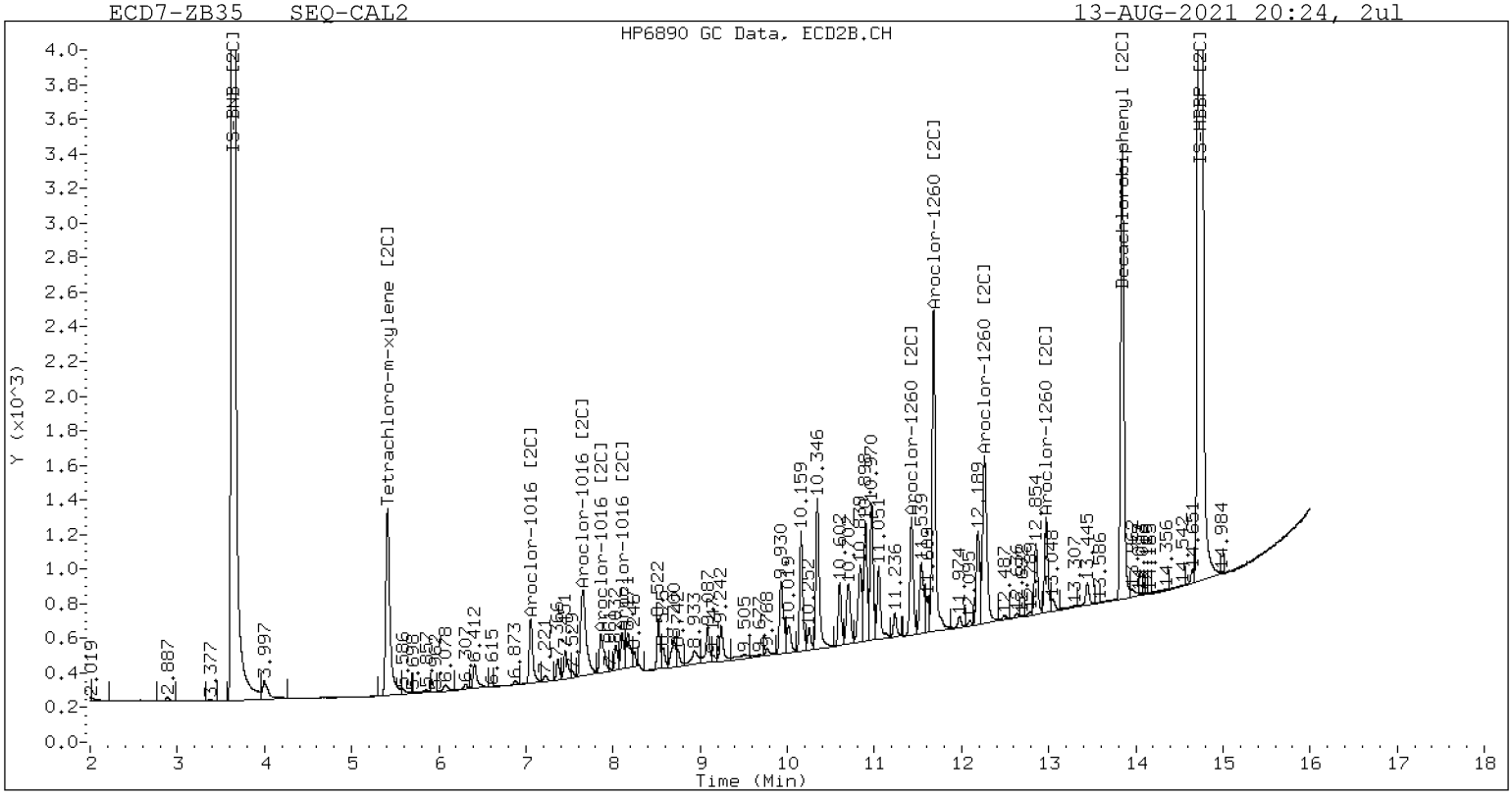
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL2 13-AUG-2021 20:24, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL2 13-AUG-2021 20:24, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132107ECD7.D
Data file 2: /210813.b/210813.b/08132107ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL3
Client ID:
Injection Date: 13-AUG-2021 20:44
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	50667	5.414	-0.003	150921	16.1	16.2	0.1	Tetrachloro-m-xylene
13.164	-0.002	64497	13.846	-0.034	311850	16.4	16.2	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	259615	0.3
Hexabromobiphenyl	425681	432543	1.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	726577	0.8
Hexabromobiphenyl	863111	864959	0.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	6.660	0.002	9540	103.6	1	7.057	0.000	43541	105.1
Aroclor-1016	2	7.033	0.003	28383	100.8	2	7.653	0.005	97461	105.2
Aroclor-1016	3	7.180	0.004	13172	104.2	3	7.860	0.005	39365	108.2
Aroclor-1016	4	7.290	0.005	8150	102.9	4	8.106	0.001	24189	109.9

Total Col1Ave (4 peaks): 102.9 Total Col2Ave (4 peaks): 107.1 RPD = 4
Corrected Ave (3 peaks): 102.4 Corrected Ave (3 peaks): 106.2 RPD = 4

CalAmt %D: 2.9 CalAmt %D: 7.1

Aroclor-1260	1	10.385	0.002	19398	99.7	1	11.426	0.001	74307	103.3
Aroclor-1260	2	10.702	0.002	18907	99.0	2	11.680	-0.001	211815	101.4
Aroclor-1260	3	11.054	0.003	50259	97.4	3	12.263	0.002	136563	101.6
Aroclor-1260	4	11.456	0.003	22610	98.3	4	12.972	-0.001	68139	106.1
Aroclor-1260	5	11.555	0.001	11534	100.2	NS	---			----

Total Col1Ave (5 peaks): 98.9 Total Col2Ave (4 peaks): 103.1 RPD = 4
Corrected Ave (4 peaks): 98.6 Corrected Ave (3 peaks): 102.1 RPD = 4

CalAmt %D: -1.1 CalAmt %D: 3.1

Total PCB Area Col1 (5.169 - 13.066) = 512158 Col1 Total PCB = 0.2 ppm*

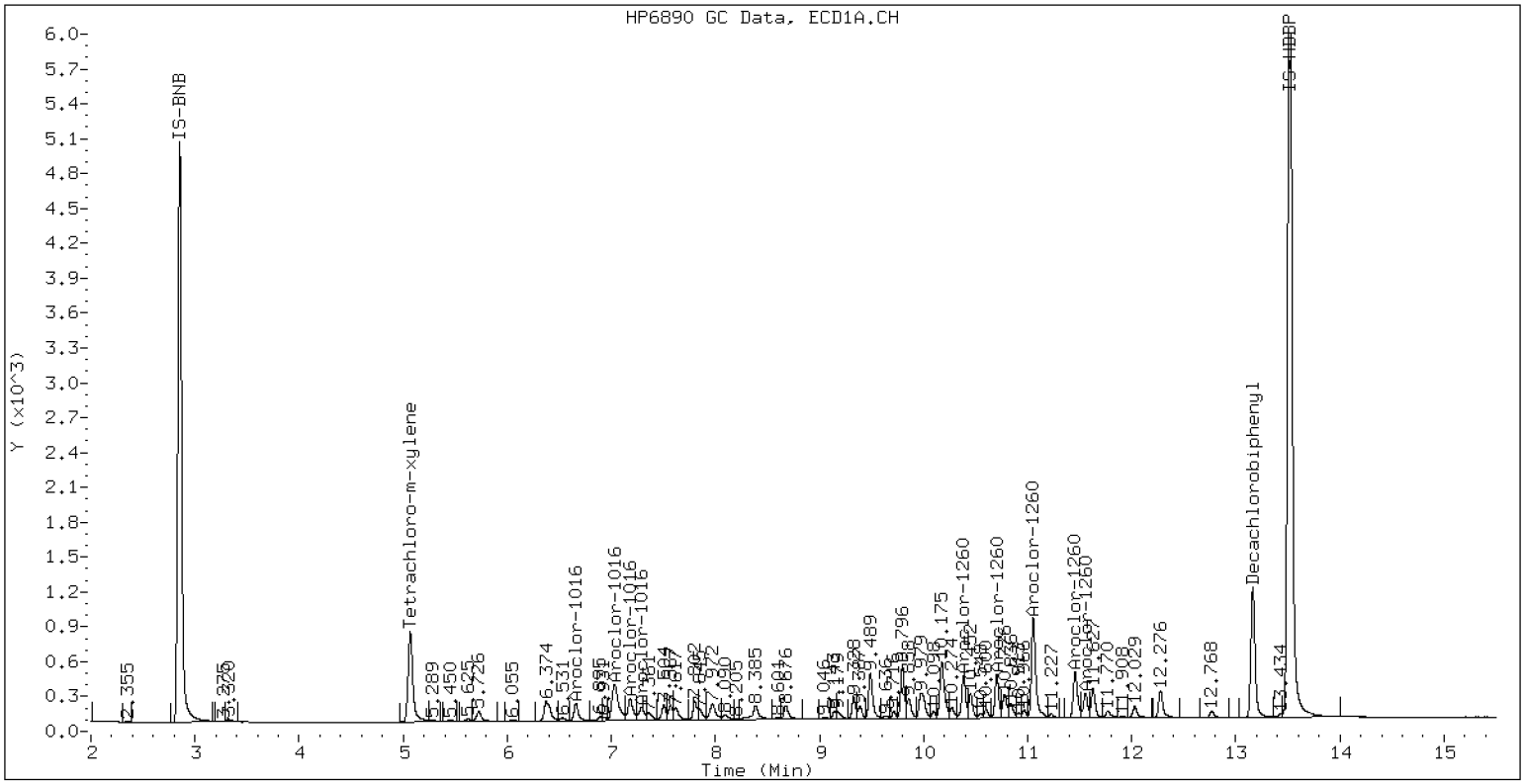
Total PCB Area Col2 (5.169 - 13.066) = 1949350 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

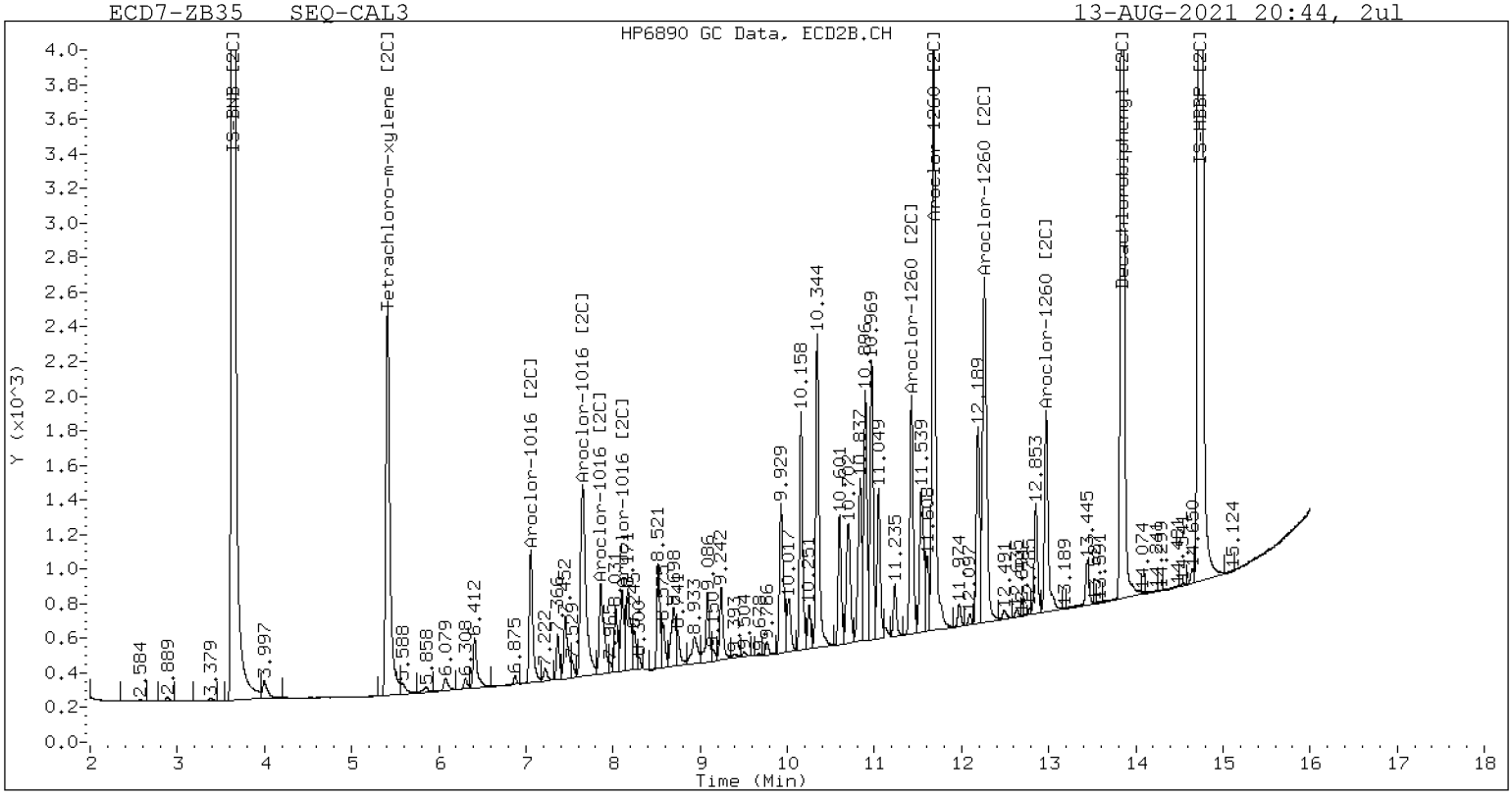
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL3 13-AUG-2021 20:44, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL3 13-AUG-2021 20:44, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132108ECD7.D
Data file 2: /210813.b/210813.b/08132108ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL4
Client ID:
Injection Date: 13-AUG-2021 21:05
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.002	131143	5.413	-0.004	377693	41.9	40.8	2.8	Tetrachloro-m-xylene
13.164	-0.002	160163	13.848	-0.032	791748	41.4	41.3	0.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258866	0.0
Hexabromobiphenyl	425681	425681	0.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	720956	0.0
Hexabromobiphenyl	863111	863111	0.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	6.659	0.001	23977	261.2	1	7.056	-0.000	105852	257.5
Aroclor-1016	2	7.032	0.002	74451	265.2	2	7.652	0.004	241603	262.7
Aroclor-1016	3	7.178	0.002	32969	261.7	3	7.857	0.002	96677	267.9
Aroclor-1016	4	7.287	0.002	20978	265.6	4	8.106	0.001	57673	264.1

Total Col1Ave (4 peaks): 263.4 Total Col2Ave (4 peaks): 263.0 RPD = 0
Corrected Ave (3 peaks): 262.7 Corrected Ave (3 peaks): 261.4 RPD = 0

CalAmt %D: 5.4 CalAmt %D: 5.2

Aroclor-1260	1	10.384	0.001	49492	258.4	1	11.426	0.000	183135	255.2
Aroclor-1260	2	10.702	0.002	49037	260.9	2	11.679	-0.002	525133	251.8
Aroclor-1260	3	11.053	0.002	130219	256.3	3	12.261	0.000	338031	252.1
Aroclor-1260	4	11.455	0.002	59560	263.1	4	12.972	-0.001	168369	262.6
Aroclor-1260	5	11.555	0.001	29402	259.4	NS	---			----

Total Col1Ave (5 peaks): 259.6 Total Col2Ave (4 peaks): 255.4 RPD = 2
Corrected Ave (4 peaks): 258.8 Corrected Ave (3 peaks): 253.0 RPD = 2

CalAmt %D: 3.9 CalAmt %D: 2.2

Total PCB Area Col1 (5.169 - 13.066) = 1310985 Col1 Total PCB = 0.5 ppm*

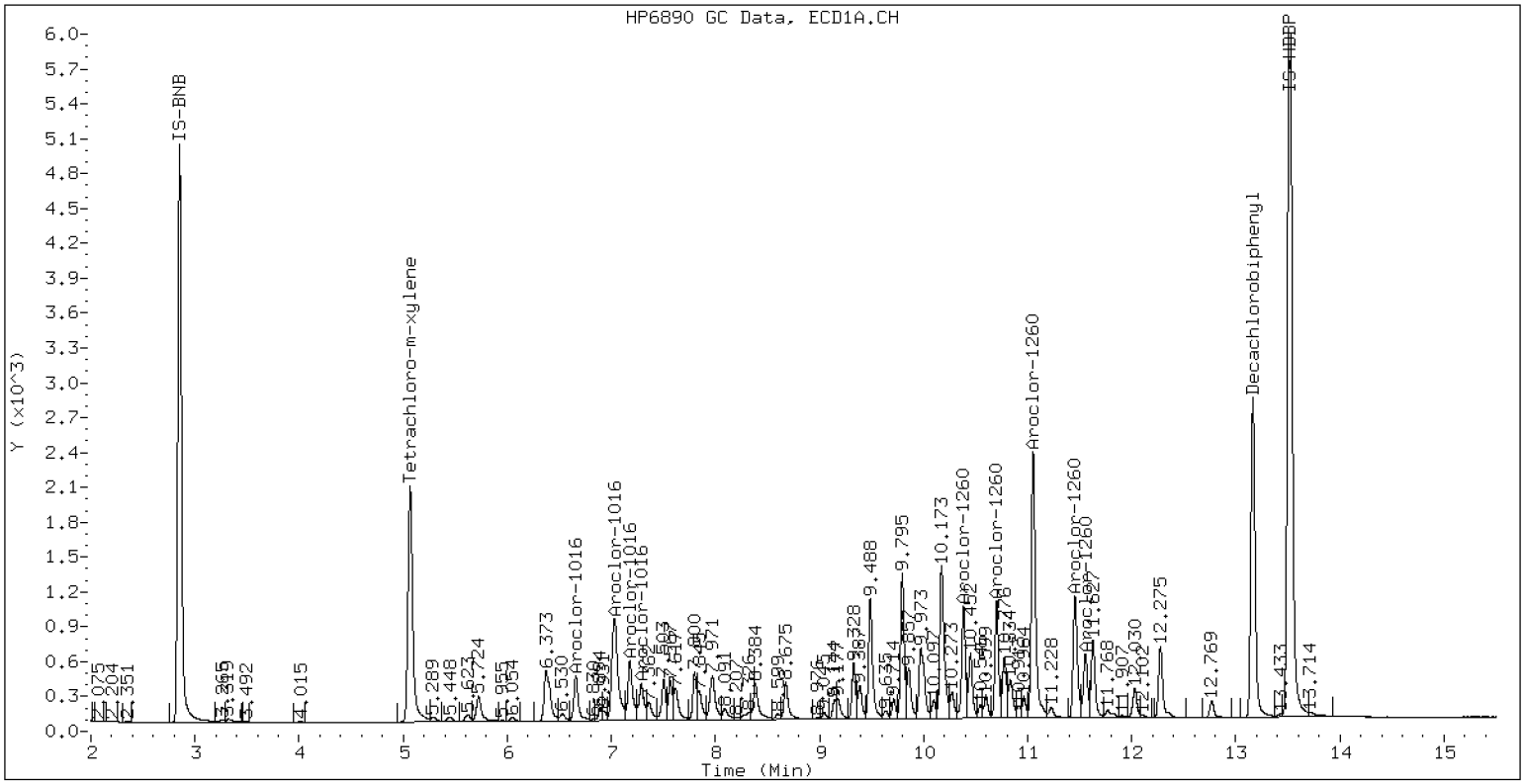
Total PCB Area Col2 (5.169 - 13.066) = 4836988 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

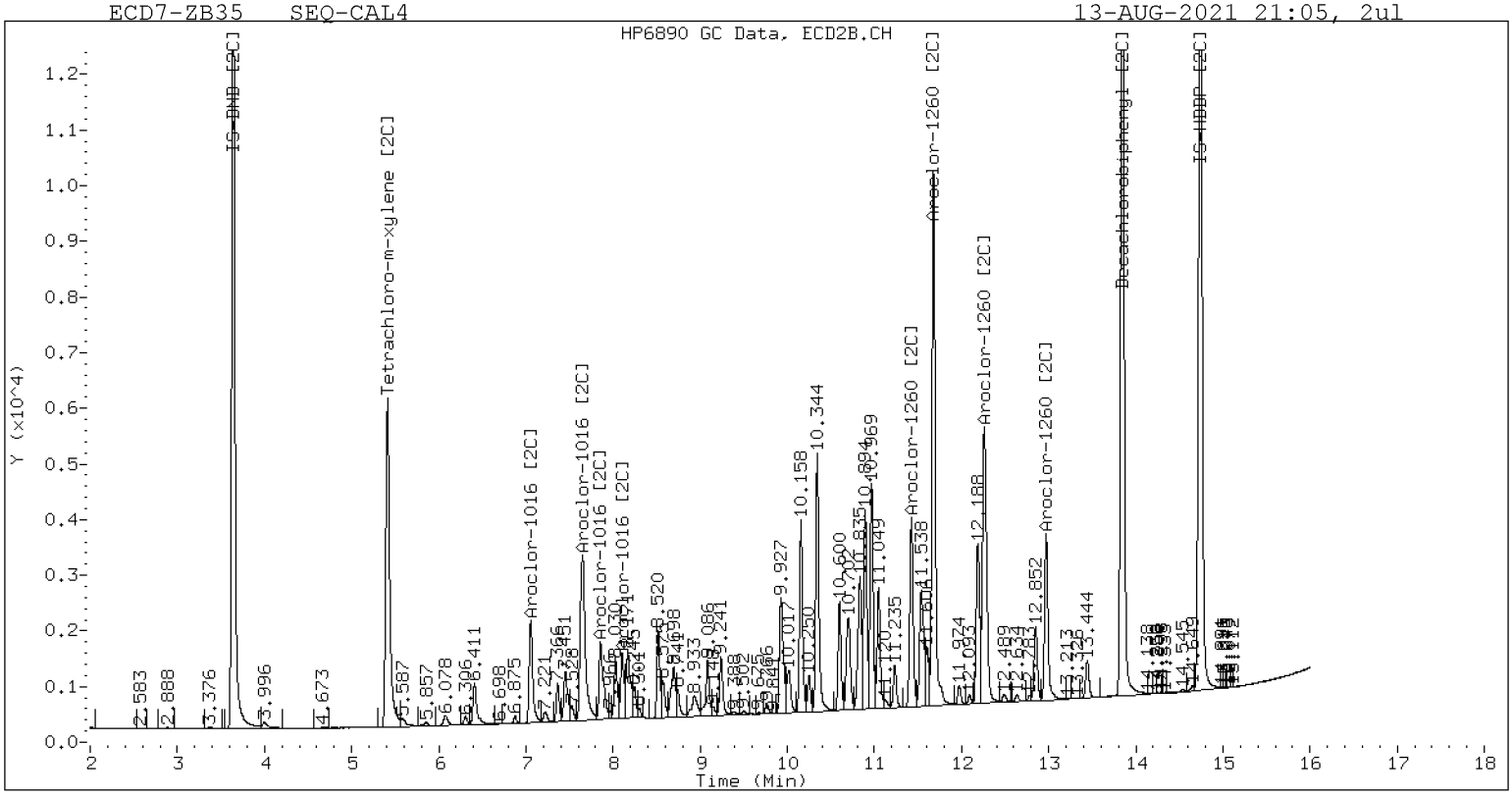
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL4 13-AUG-2021 21:05, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL4 13-AUG-2021 21:05, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132109ECD7.D
Data file 2: /210813.b/210813.b/08132109ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL5
Client ID:
Injection Date: 13-AUG-2021 21:25
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	258118	5.413	-0.004	732448	82.1	78.7	4.2	Tetrachloro-m-xylene
13.165	-0.001	309072	13.849	-0.031	1602822	78.9	81.6	3.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260046	0.5
Hexabromobiphenyl	425681	431467	1.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724186	0.4
Hexabromobiphenyl	863111	884020	2.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.659	0.000	46320	502.2	1	7.057	0.000	197055	477.2
Aroclor-1016	2	7.031	0.001	149242	529.2	2	7.650	0.002	461244	499.4
Aroclor-1016	3	7.177	0.001	63193	499.3	3	7.856	0.001	183963	507.5
Aroclor-1016	4	7.286	0.001	41958	528.8	4	8.105	0.000	108095	492.7

Total Col1Ave (4 peaks): 514.9 Total Col2Ave (4 peaks): 494.2 RPD = 4
Corrected Ave (3 peaks): 510.1 Corrected Ave (3 peaks): 489.8 RPD = 4

CalAmt %D: 3.0 CalAmt %D: -1.2

Aroclor-1260	1	10.384	0.001	97246	501.0	1	11.426	0.001	347996	473.5
Aroclor-1260	2	10.702	0.002	97621	512.4	2	11.679	-0.002	1000503	468.4
Aroclor-1260	3	11.052	0.002	275048	534.2	3	12.261	-0.000	661157	481.4
Aroclor-1260	4	11.453	0.000	121425	529.3	4	12.972	-0.001	329450	501.7
Aroclor-1260	5	11.556	0.002	58651	510.6	NS	---			----

Total Col1Ave (5 peaks): 517.5 Total Col2Ave (4 peaks): 481.3 RPD = 7
Corrected Ave (4 peaks): 513.3 Corrected Ave (3 peaks): 474.4 RPD = 8

CalAmt %D: 3.5 CalAmt %D: -3.7

Total PCB Area Col1 (5.169 - 13.066) = 2655201 Col1 Total PCB = 1.0 ppm*

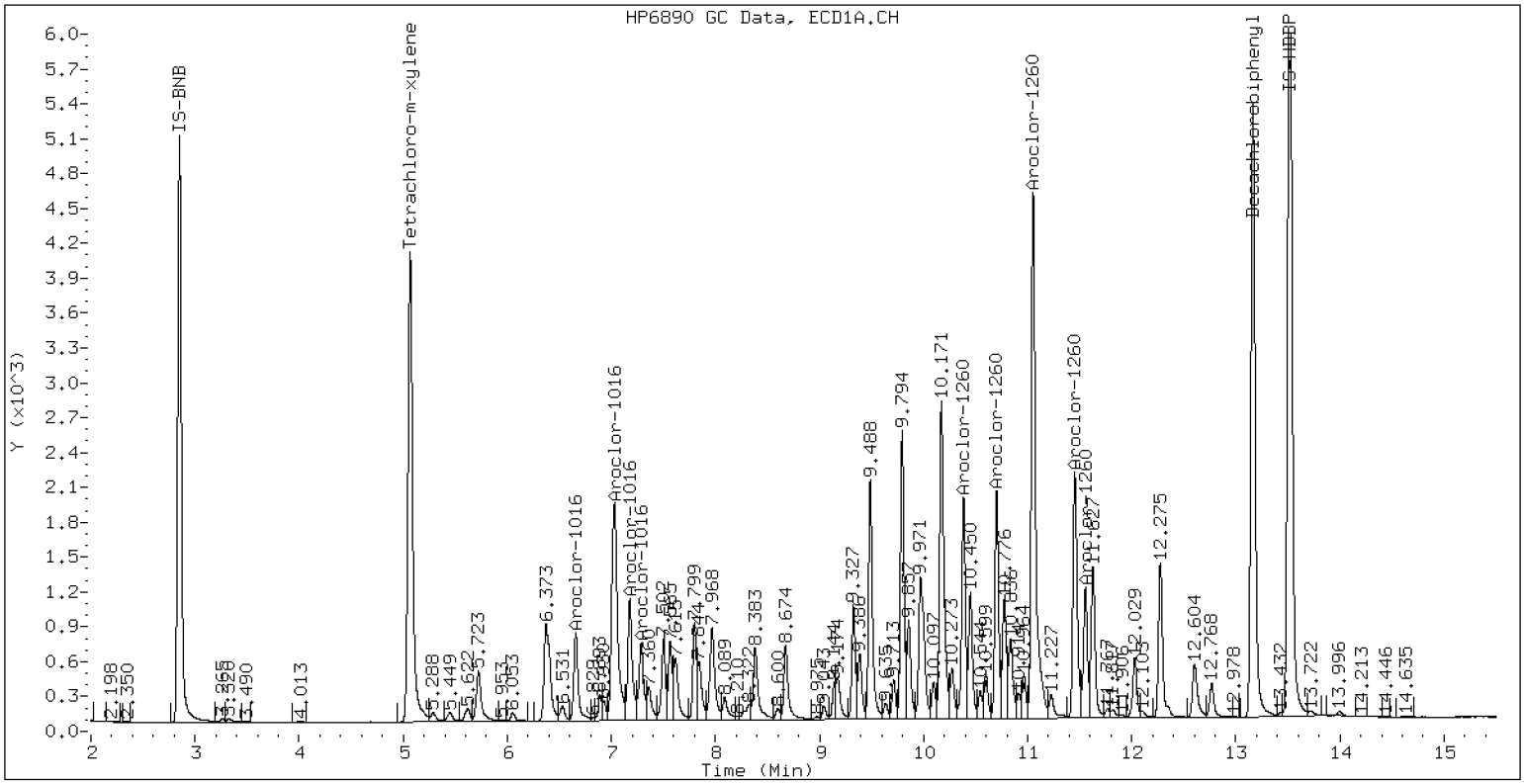
Total PCB Area Col2 (5.169 - 13.066) = 9365705 Col2 Total PCB = 1.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

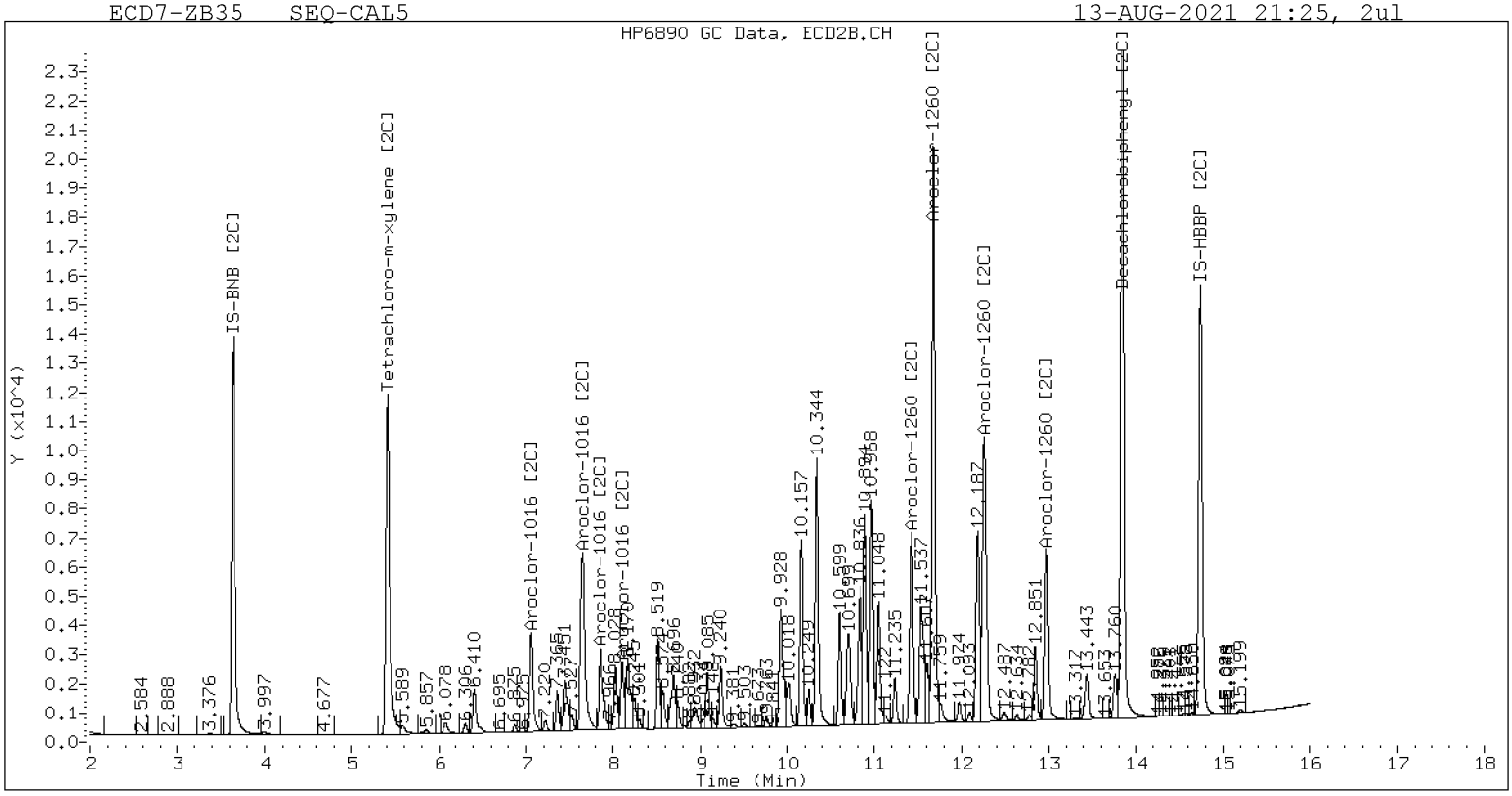
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL5 13-AUG-2021 21:25, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL5 13-AUG-2021 21:25, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132110ECD7.D
Data file 2: /210813.b/210813.b/08132110ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL6
Client ID:
Injection Date: 13-AUG-2021 21:46
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	541706	5.414	-0.003	1597689	159.9	159.0	0.6	Tetrachloro-m-xylene
13.165	-0.001	637119	13.857	-0.023	4083557	147.5	182.1	21.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	280205	8.2
Hexabromobiphenyl	425681	475884	11.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	781756	8.4
Hexabromobiphenyl	863111	1009000	16.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col			
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.658	0.000	94894	954.9	1	7.056	0.000	382038	857.0
Aroclor-1016	2	7.029	0.000	317873	1046.0	2	7.648	0.000	945478	948.2
Aroclor-1016	3	7.176	0.000	129330	948.3	3	7.855	0.000	372755	952.6
Aroclor-1016	4	7.285	0.000	89202	1043.3	4	8.105	0.000	217812	919.7

Total Col1Ave (4 peaks): 998.1 Total Col2Ave (4 peaks): 919.4 RPD = 8
Corrected Ave (3 peaks): 982.1 Corrected Ave (3 peaks): 908.3 RPD = 8

CalAmt %D: -0.2 CalAmt %D: -8.1

Aroclor-1260	1	10.383	0.000	204156	953.5	1	11.425	0.000	730248	870.6
Aroclor-1260	2	10.700	0.000	206019	980.4	2	11.681	0.000	2360936	968.4
Aroclor-1260	3	11.051	0.000	537974	947.2	3	12.261	0.000	1405398	896.5
Aroclor-1260	4	11.452	0.000	257778	1018.8	4	12.972	0.000	707923	944.6
Aroclor-1260	5	11.554	0.000	123435	974.3	NS	---			----

Total Col1Ave (5 peaks): 974.9 Total Col2Ave (4 peaks): 920.0 RPD = 6
Corrected Ave (4 peaks): 963.9 Corrected Ave (3 peaks): 903.9 RPD = 6

CalAmt %D: -2.5 CalAmt %D: -8.0

Total PCB Area Col1 (5.169 - 13.066) = 5423849 Col1 Total PCB = 1.9 ppm*

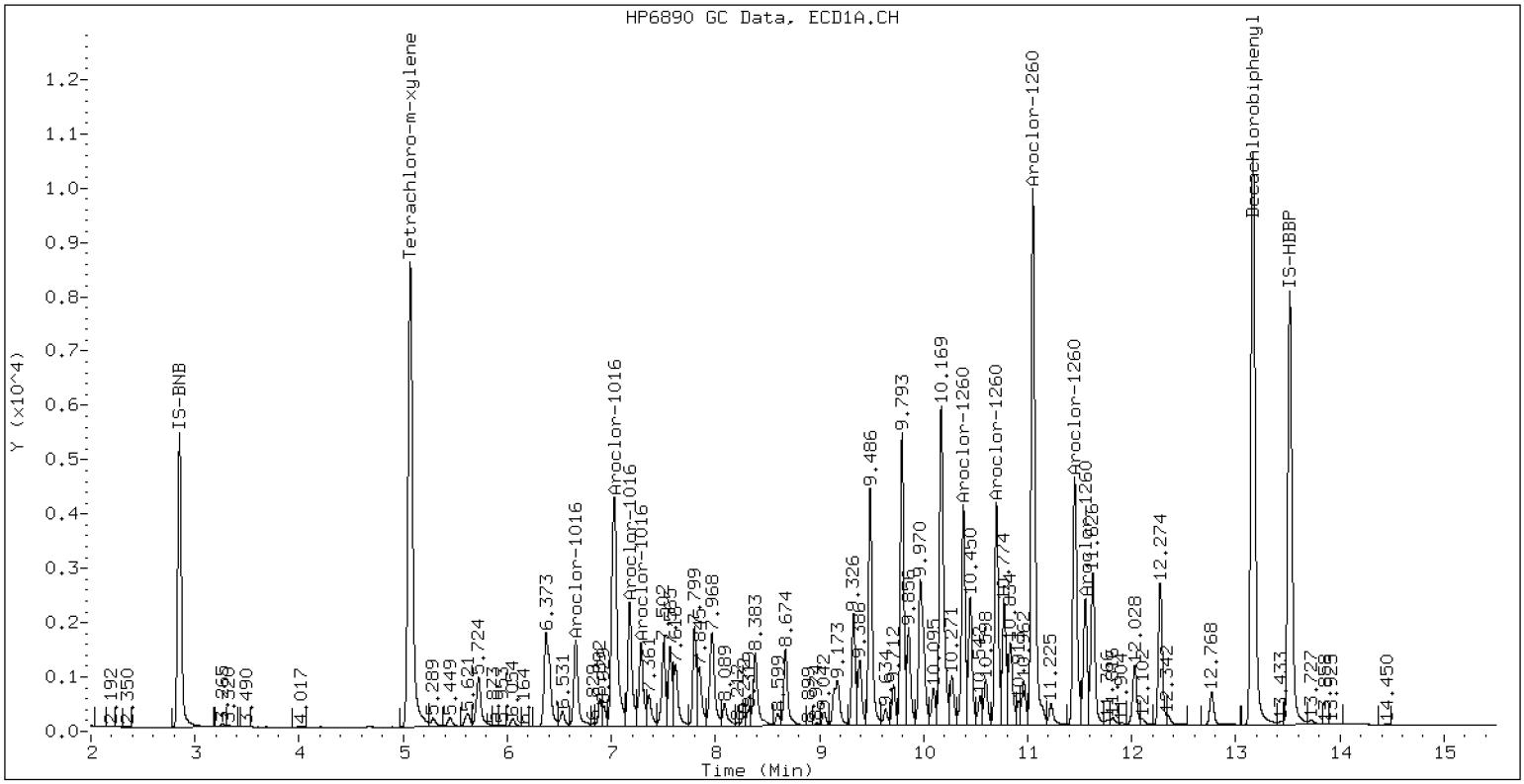
Total PCB Area Col2 (5.169 - 13.066) = 19780755 Col2 Total PCB = 1.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

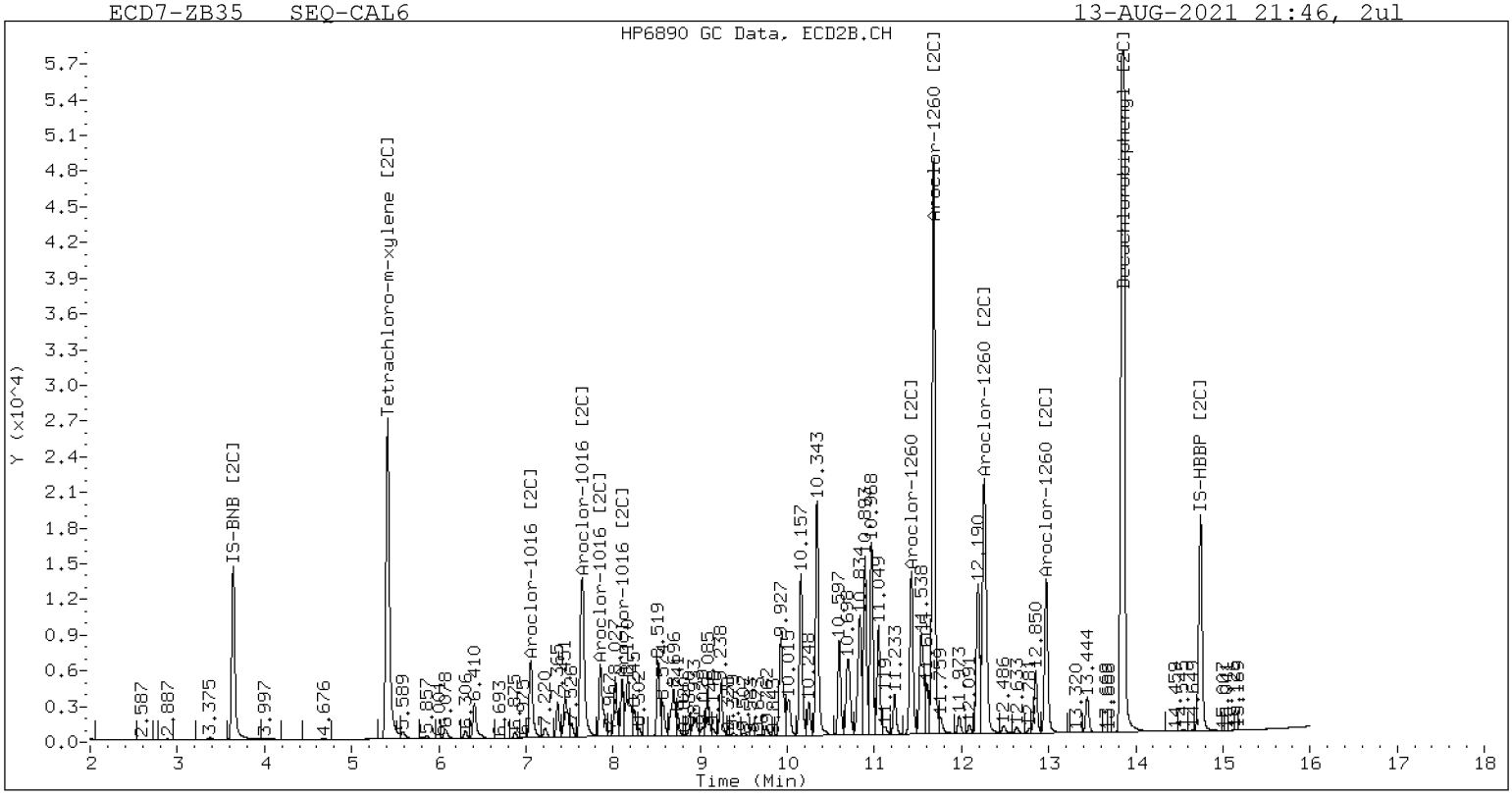
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL6 13-AUG-2021 21:46, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CAL6 13-AUG-2021 21:46, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132111ECD7.D
Data file 2: /210813.b/210813.b/08132111ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL7
Client ID:
Injection Date: 13-AUG-2021 22:06
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	8876	5.414	-0.003	30000	2.9	3.3	12.3	Tetrachloro-m-xylene
13.165	-0.001	13011	13.846	-0.034	60849	3.3	3.1	6.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	250794	-3.1
Hexabromobiphenyl	425681	428399	0.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	704880	-2.2
Hexabromobiphenyl	863111	870180	0.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1242	1	6.661	0.003	1188	17.2	1	7.057	0.000	7002	21.6
Aroclor-1242	2	7.036	0.006	3551	17.2	2	7.656	0.007	14507	20.6
Aroclor-1242	3	8.379	0.005	2874	24.6	3	8.961	0.012	8080	24.6
Aroclor-1242	4	8.669	-0.004	1107	23.2	4	9.055	0.028	9034	24.2

Total Col1Ave (4 peaks): 20.6 Total Col2Ave (4 peaks): 22.7 RPD = 10

Corrected Ave (3 peaks): 19.2 Corrected Ave (3 peaks): 22.1 RPD = 14

Total PCB Area Col1 (5.169 - 13.066) = 29886 Col1 Total PCB = 0.0 ppm*

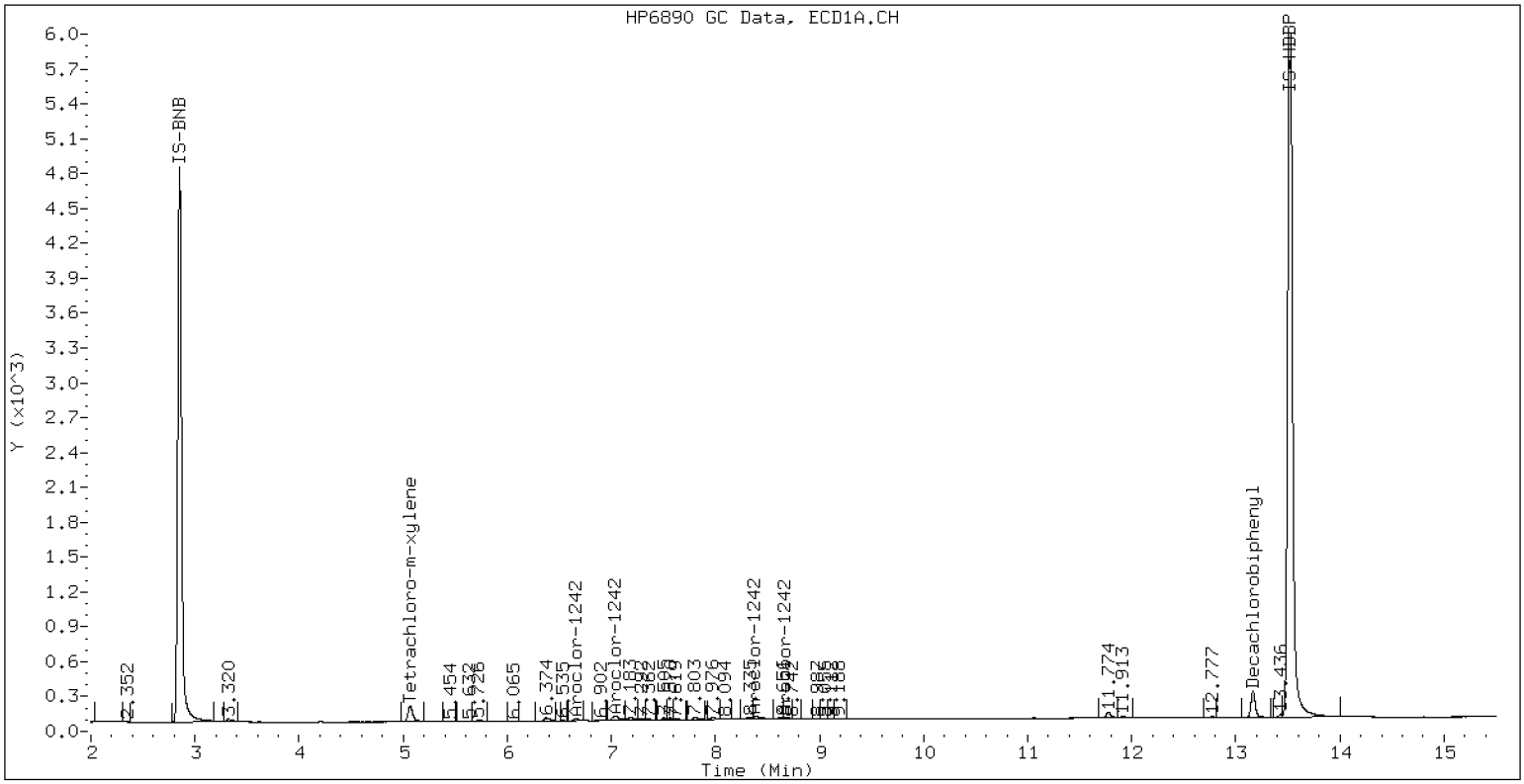
Total PCB Area Col2 (5.169 - 13.066) = 165162 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

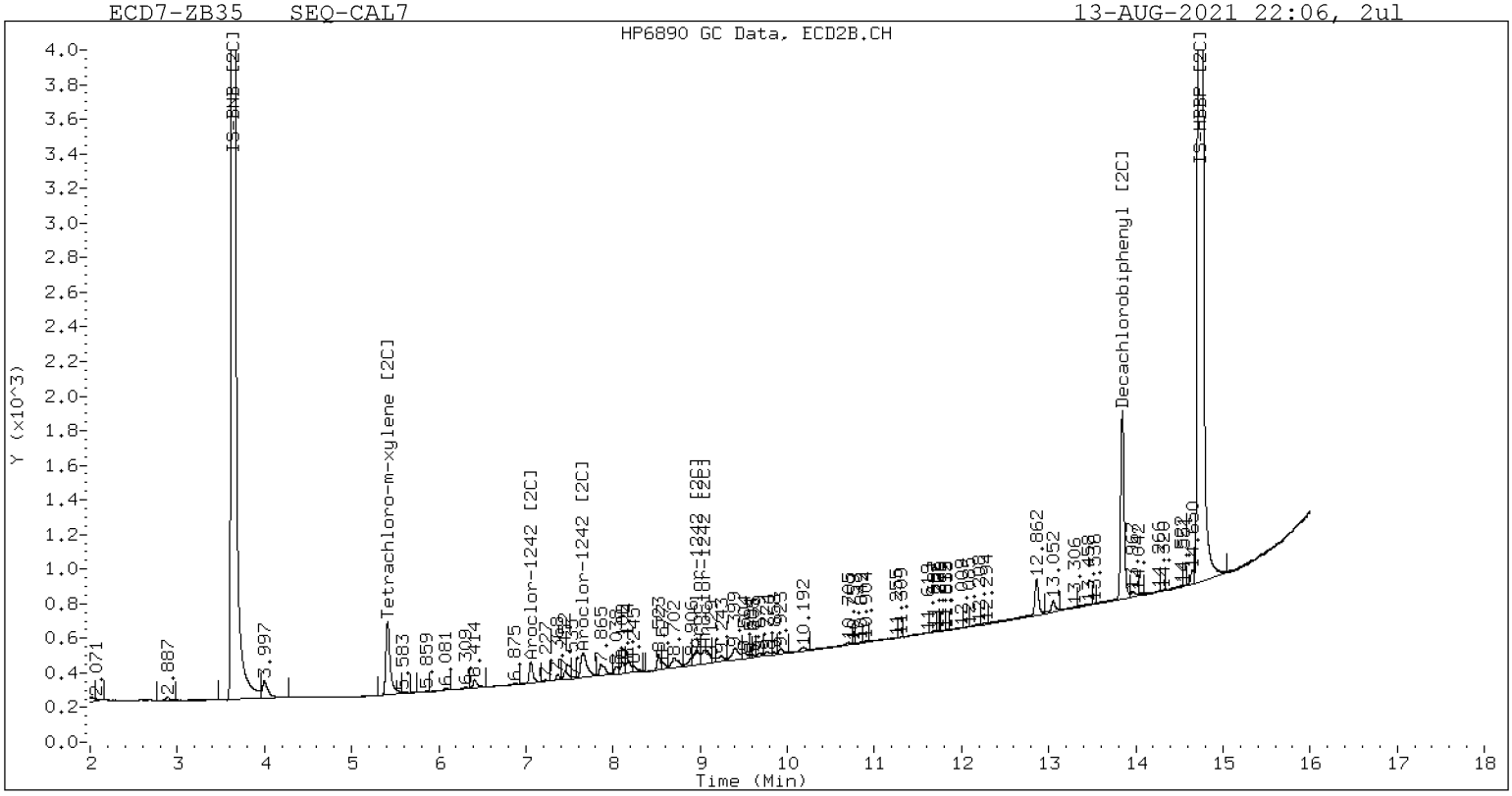
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL7 13-AUG-2021 22:06, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CAL7 13-AUG-2021 22:06, 2ul

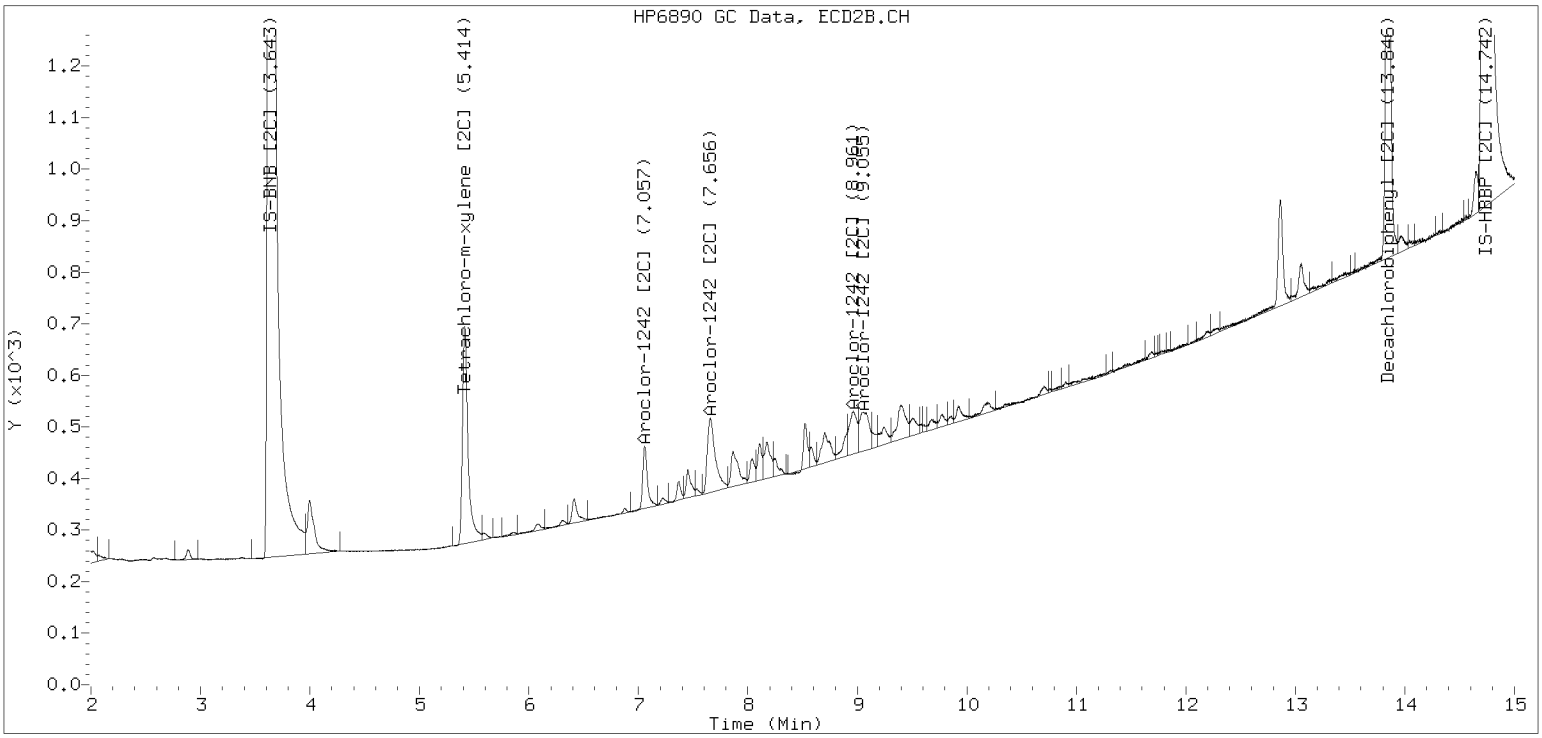


ZB-35 Manual Integration: YES

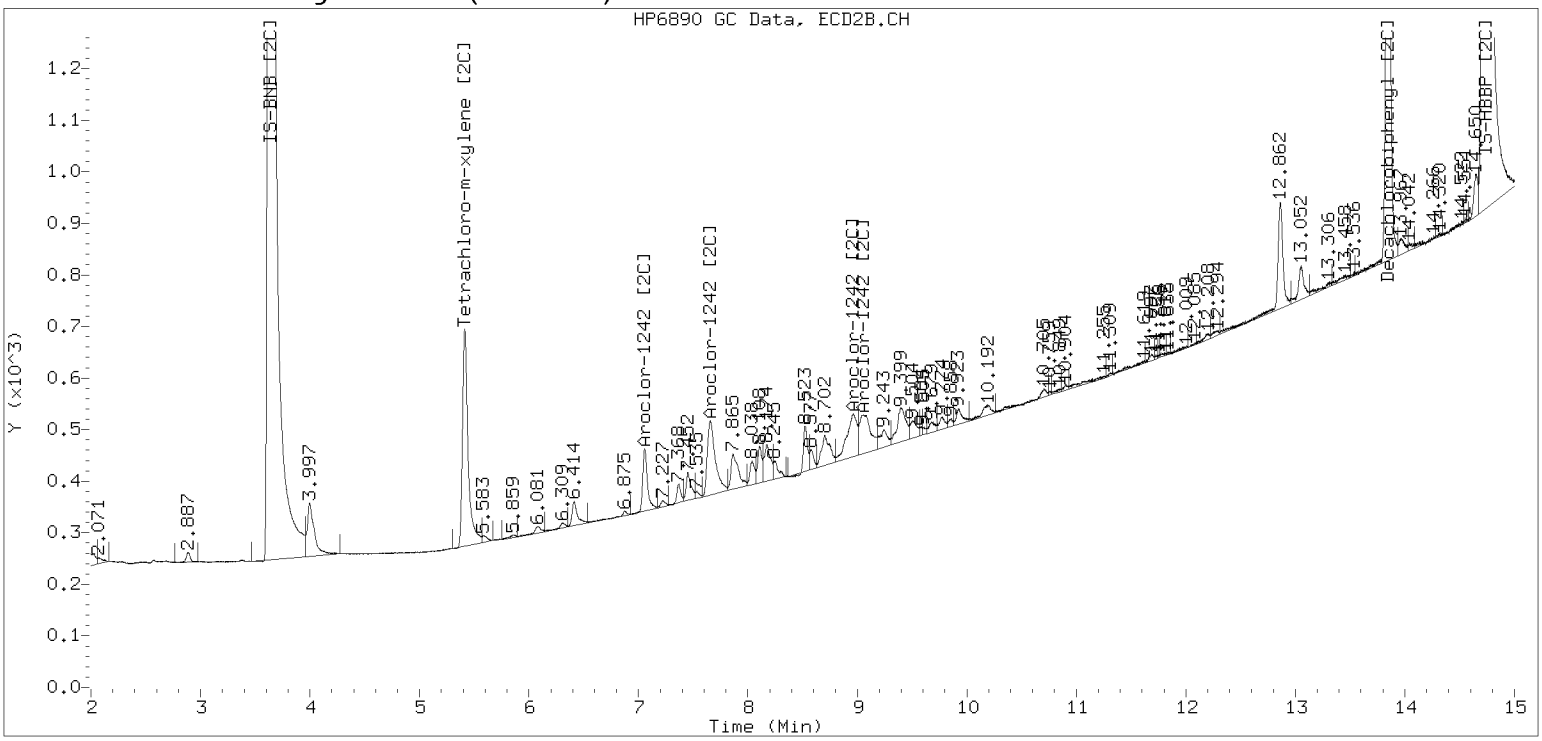
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132111.D Injection Date: 13-AUG-2021 22:0

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132112ECD7.D
Data file 2: /210813.b/210813.b/08132112ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL8
Client ID:
Injection Date: 13-AUG-2021 22:27
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	22775	5.413	-0.004	72347	7.4	7.8	5.0	Tetrachloro-m-xylene
13.165	-0.001	30955	13.846	-0.034	147761	7.9	7.6	3.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	254431	-1.7
Hexabromobiphenyl	425681	432936	1.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	722925	0.3
Hexabromobiphenyl	863111	877354	1.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1242	1	6.662	0.003	3423	48.8	1	7.058	0.001	16875	50.8
Aroclor-1242	2	7.036	0.005	9075	43.4	2	7.657	0.008	34600	47.9
Aroclor-1242	3	8.386	0.011	5615	47.4	3	8.960	0.011	17574	52.1
Aroclor-1242	4	8.677	0.003	2567	53.1	4	9.045	0.017	18353	48.0

Total Col1Ave (4 peaks): 48.2 Total Col2Ave (4 peaks): 49.7 RPD = 3

Corrected Ave (3 peaks): 46.6 Corrected Ave (3 peaks): 48.9 RPD = 5

Total PCB Area Col1 (5.169 - 13.066) = 74664 Col1 Total PCB = 0.0 ppm*

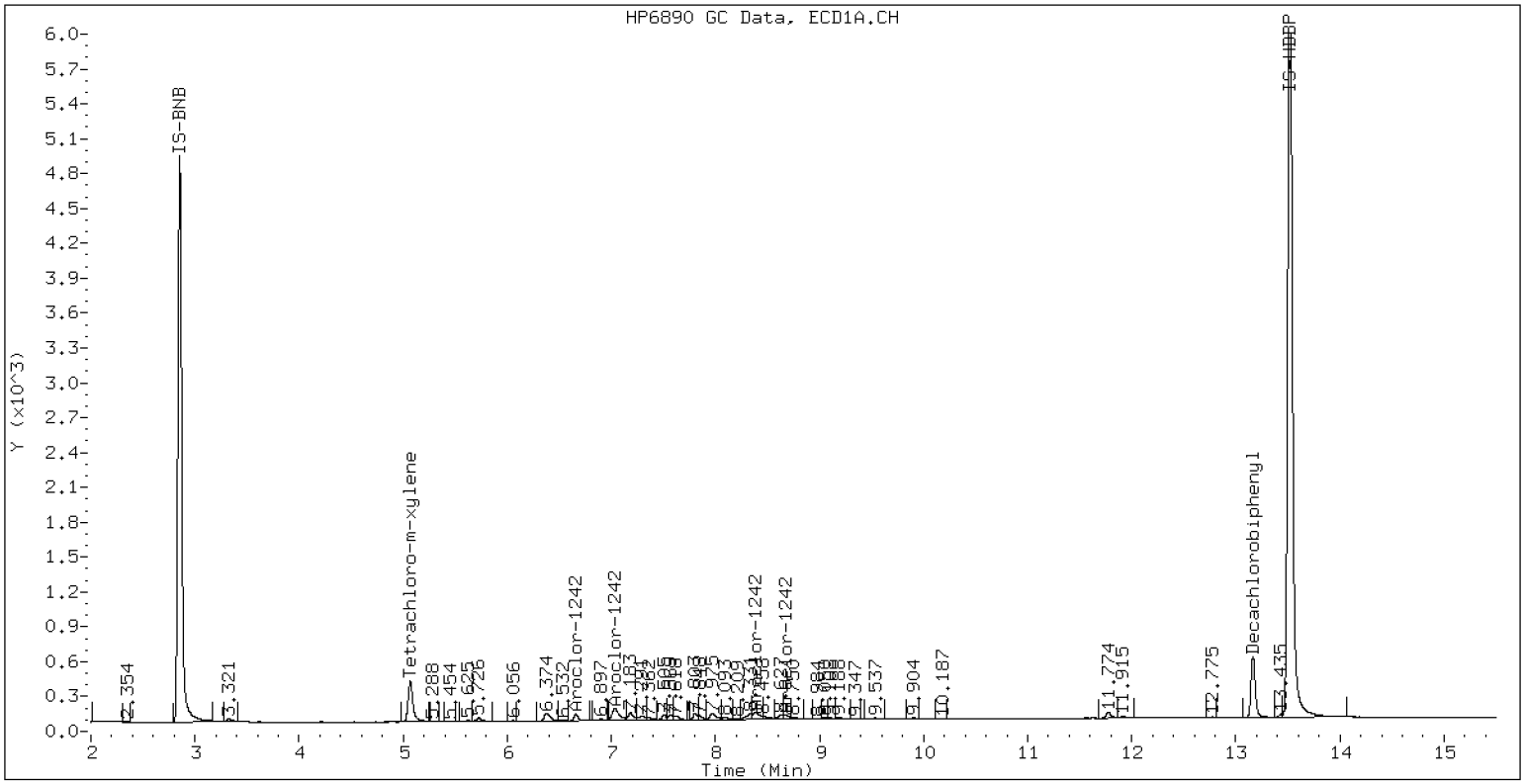
Total PCB Area Col2 (5.169 - 13.066) = 351076 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

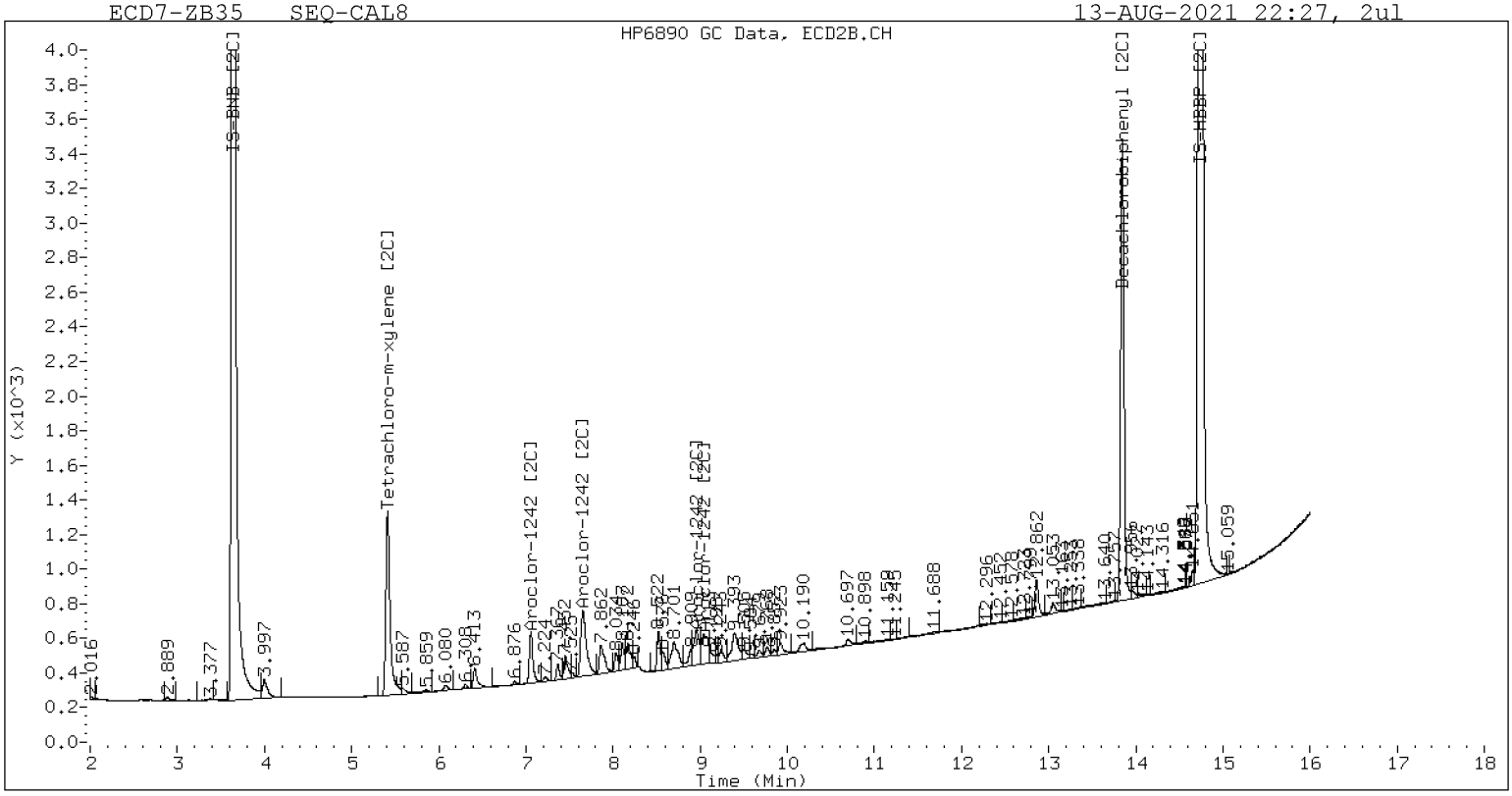
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL8 13-AUG-2021 22:27, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CAL8 13-AUG-2021 22:27, 2ul

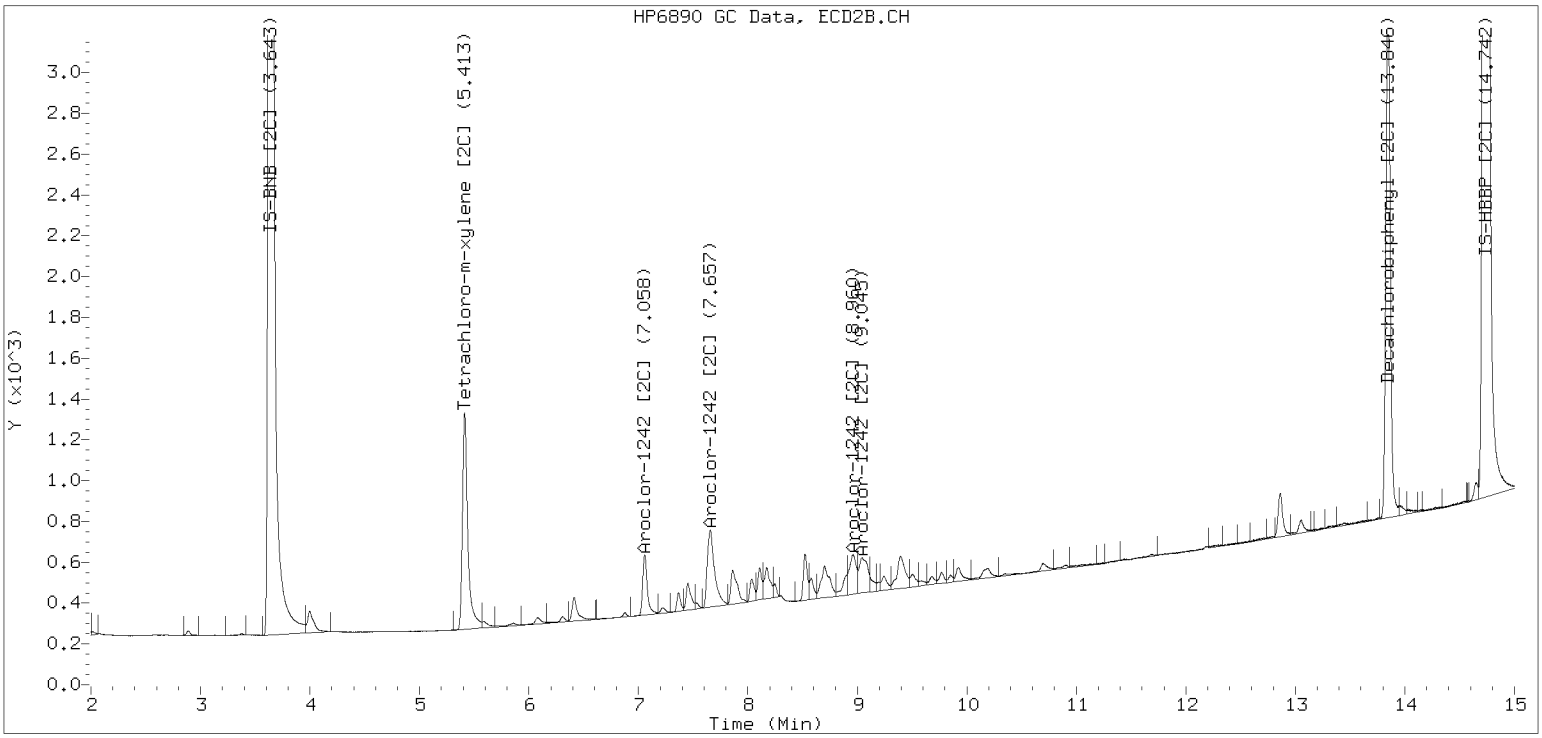


ZB-35 Manual Integration: YES

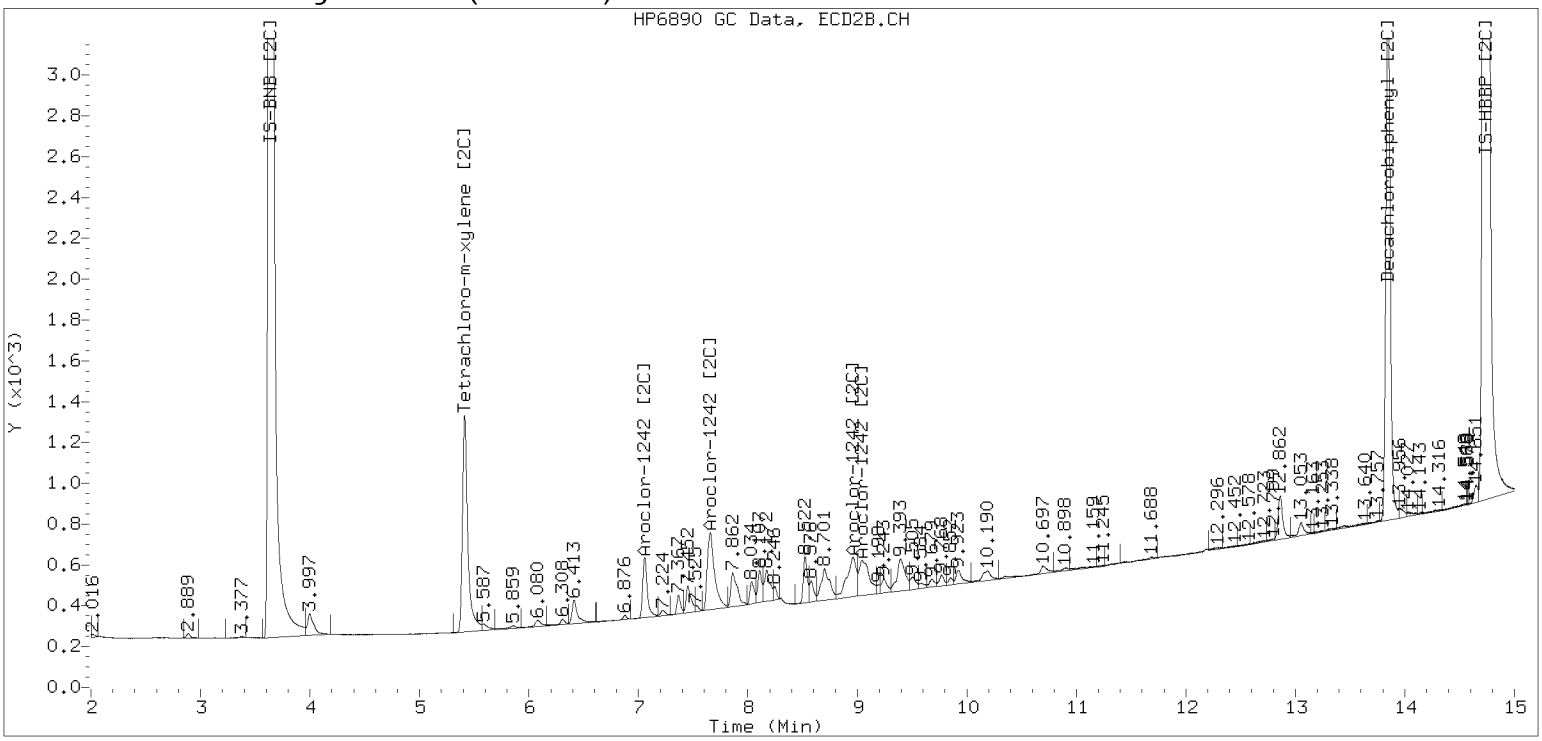
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132112.D Injection Date: 13-AUG-2021 22:2

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132113ECD7.D
Data file 2: /210813.b/210813.b/08132113ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CAL9
Client ID:
Injection Date: 13-AUG-2021 22:47
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	49575	5.413	-0.004	149310	15.6	15.7	0.9	Tetrachloro-m-xylene
13.165	-0.001	64075	13.847	-0.033	317373	15.8	15.7	0.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263477	1.8
Hexabromobiphenyl	425681	447686	5.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	739775	2.6
Hexabromobiphenyl	863111	908046	5.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1242	1	6.661	0.002	7695	106.0	1	7.057	-0.000	35210	103.5
Aroclor-1242	2	7.034	0.004	21772	100.6	2	7.654	0.006	72738	98.5
Aroclor-1242	3	8.380	0.006	12252	99.9	3	8.954	0.006	33982	98.5
Aroclor-1242	4	8.676	0.002	5367	107.1	4	9.039	0.012	41373	105.6

Total Col1Ave (4 peaks): 103.4 Total Col2Ave (4 peaks): 101.5 RPD = 2
Corrected Ave (3 peaks): 102.2 Corrected Ave (3 peaks): 100.1 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 168568 Col1 Total PCB = 0.1 ppm*

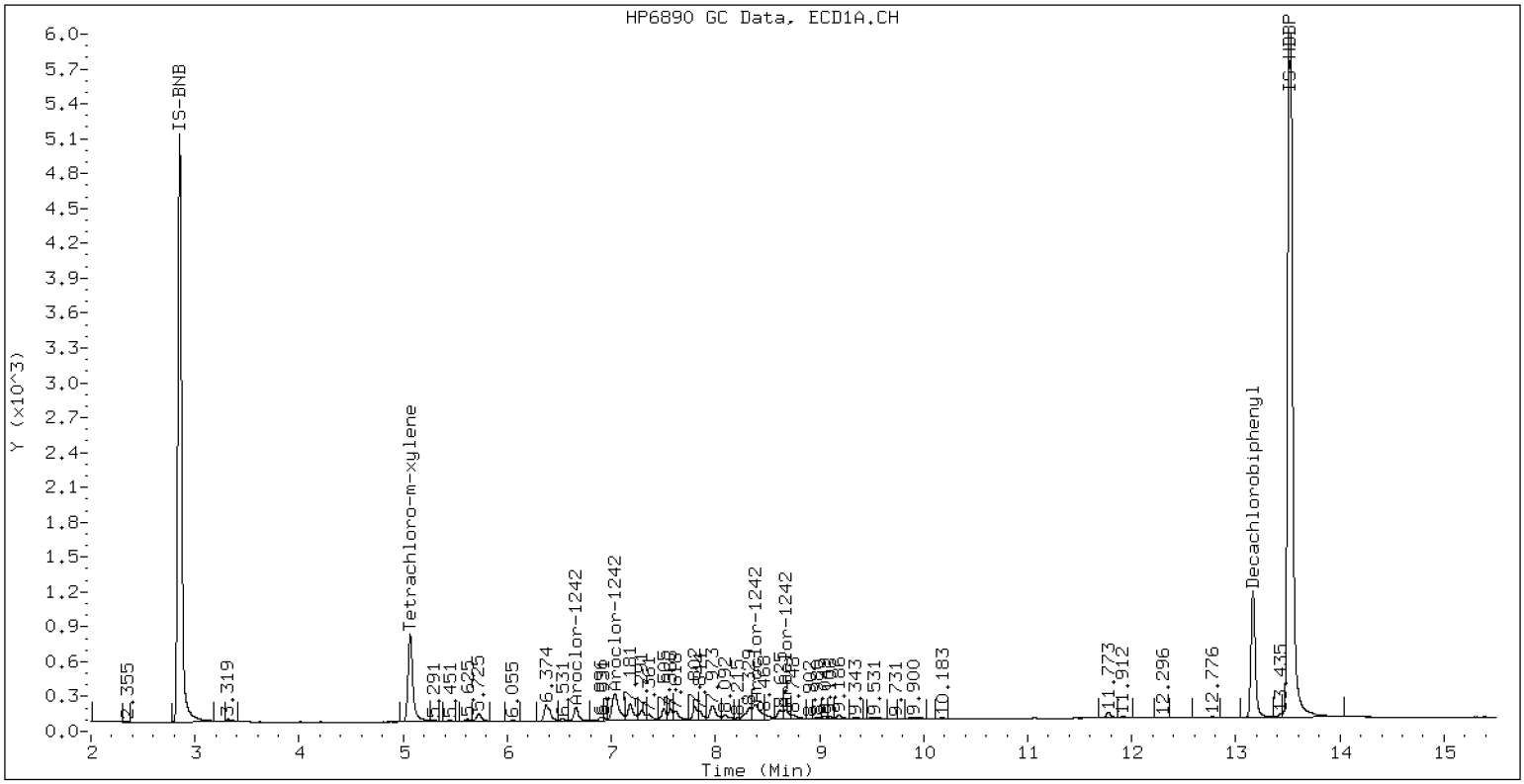
Total PCB Area Col2 (5.169 - 13.066) = 685751 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

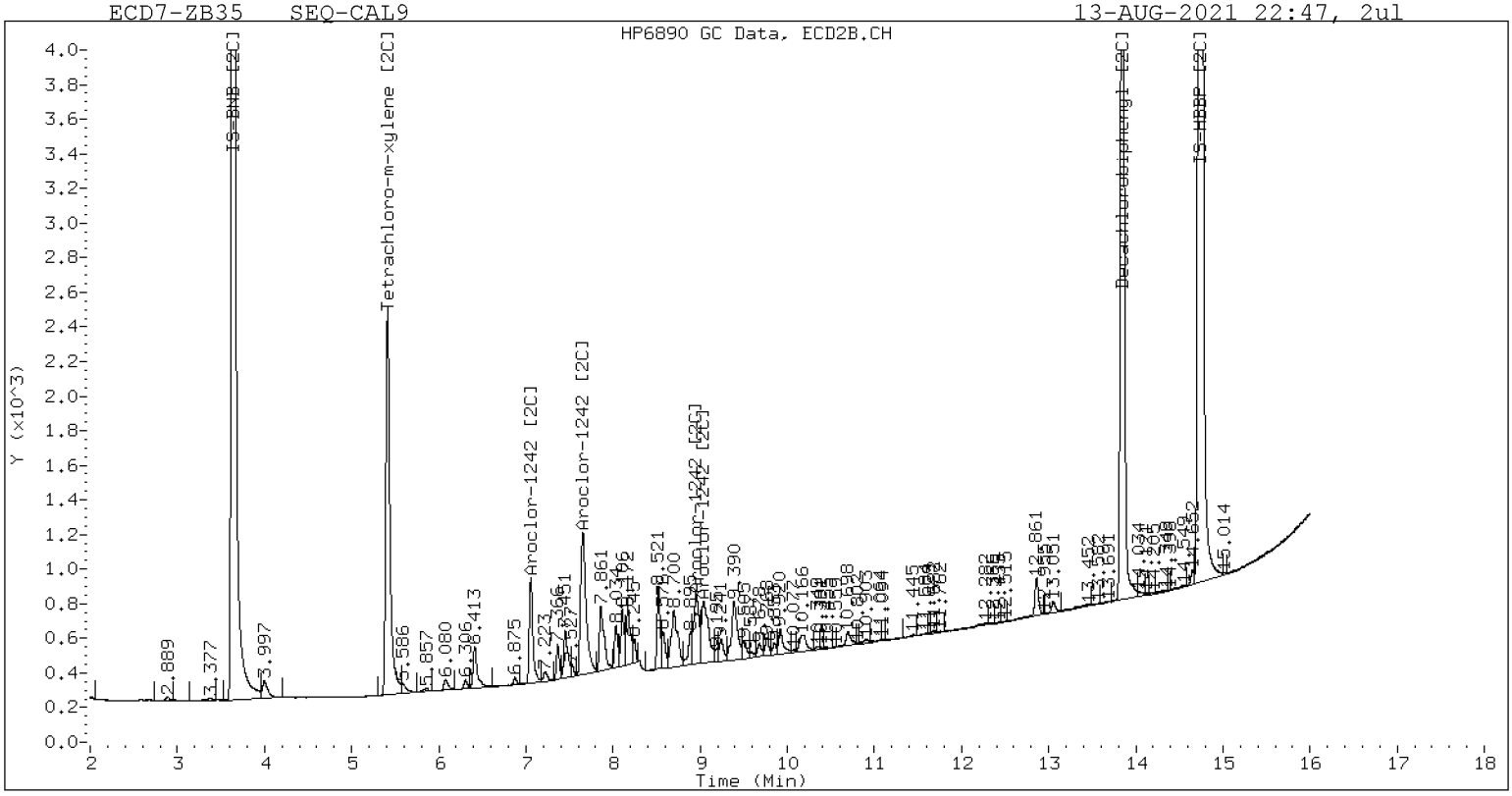
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CAL9 13-AUG-2021 22:47, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CAL9 13-AUG-2021 22:47, 2ul

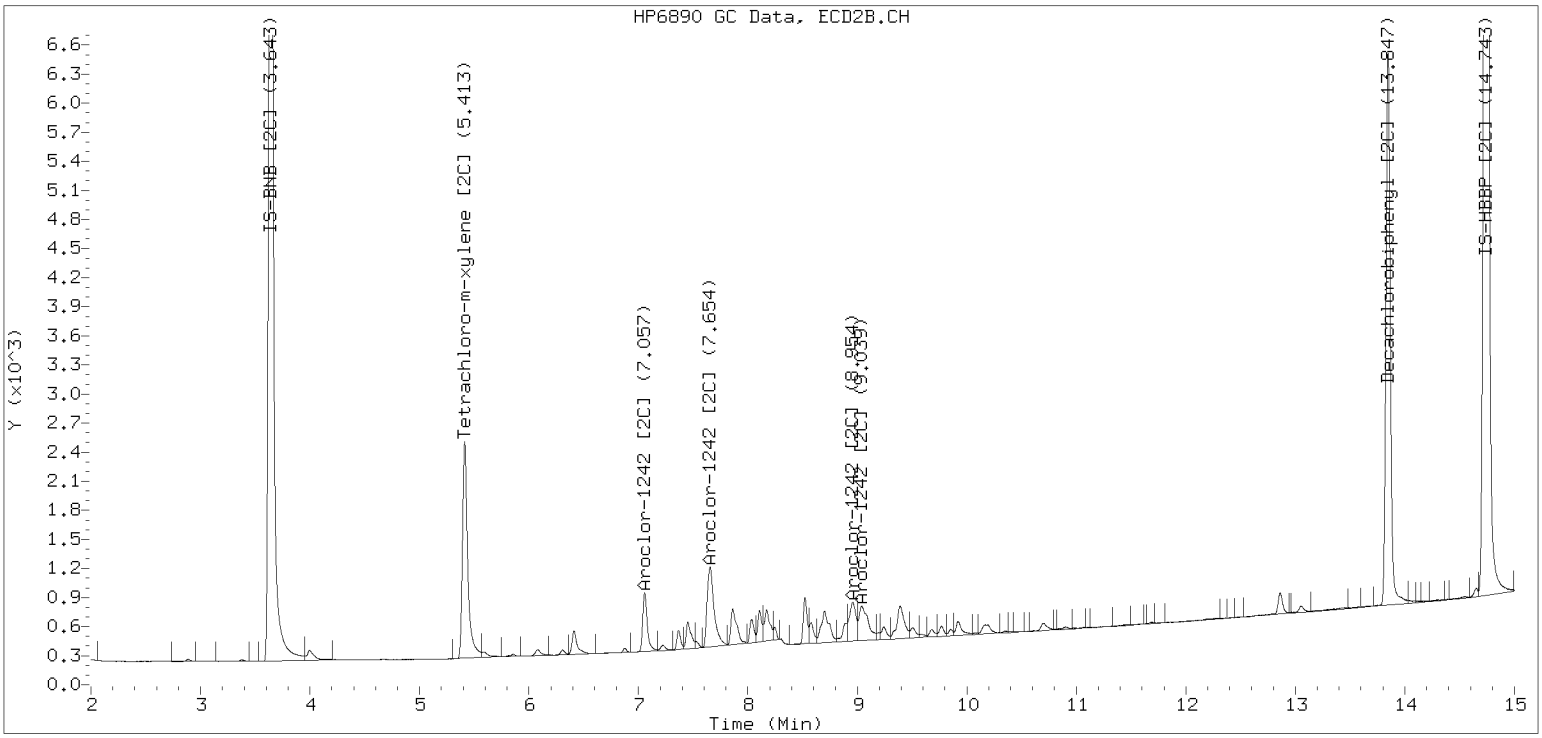


ZB-35 Manual Integration: YES

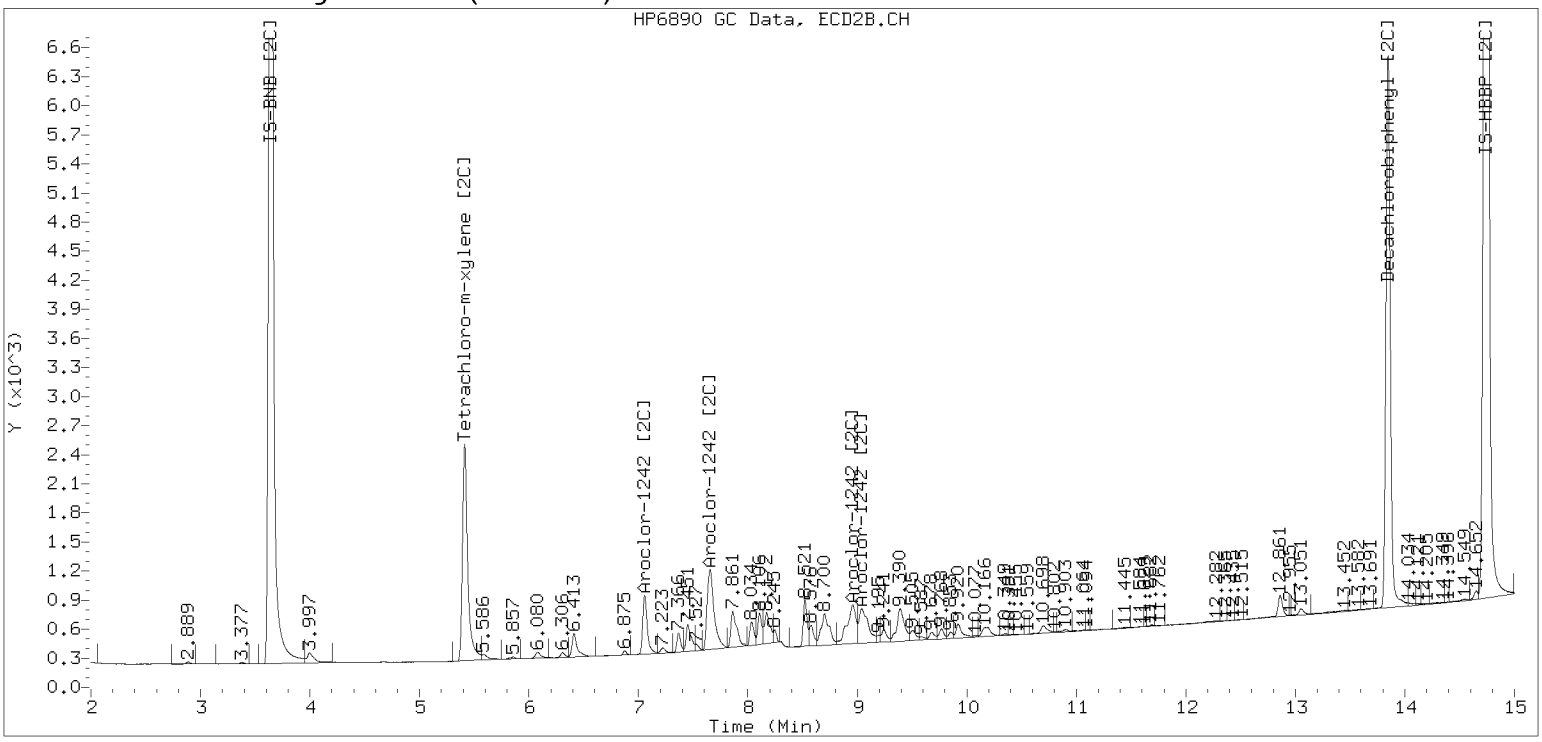
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132113.D Injection Date: 13-AUG-2021 22:4

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132114ECD7.D
Data file 2: /210813.b/210813.b/08132114ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALA
Client ID:
Injection Date: 13-AUG-2021 23:08
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	131882	5.414	-0.003	383756	41.3	40.0	3.3	Tetrachloro-m-xylene
13.165	-0.000	163389	13.847	-0.033	822599	39.5	40.3	2.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263941	2.0
Hexabromobiphenyl	425681	455818	7.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	746878	3.6
Hexabromobiphenyl	863111	917589	6.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1242	1	6.660	0.002	19465	267.7	1	7.056	-0.001	87705	255.4
Aroclor-1242	2	7.033	0.003	58524	270.0	2	7.652	0.004	196218	263.1
Aroclor-1242	3	8.379	0.004	29043	236.5	3	8.953	0.005	84240	241.7
Aroclor-1242	4	8.674	0.000	12640	251.9	4	9.034	0.006	98564	249.3

Total Col1Ave (4 peaks): 256.5 Total Col2Ave (4 peaks): 252.4 RPD = 2
Corrected Ave (3 peaks): 252.0 Corrected Ave (3 peaks): 248.8 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 436801 Col1 Total PCB = 0.2 ppm*

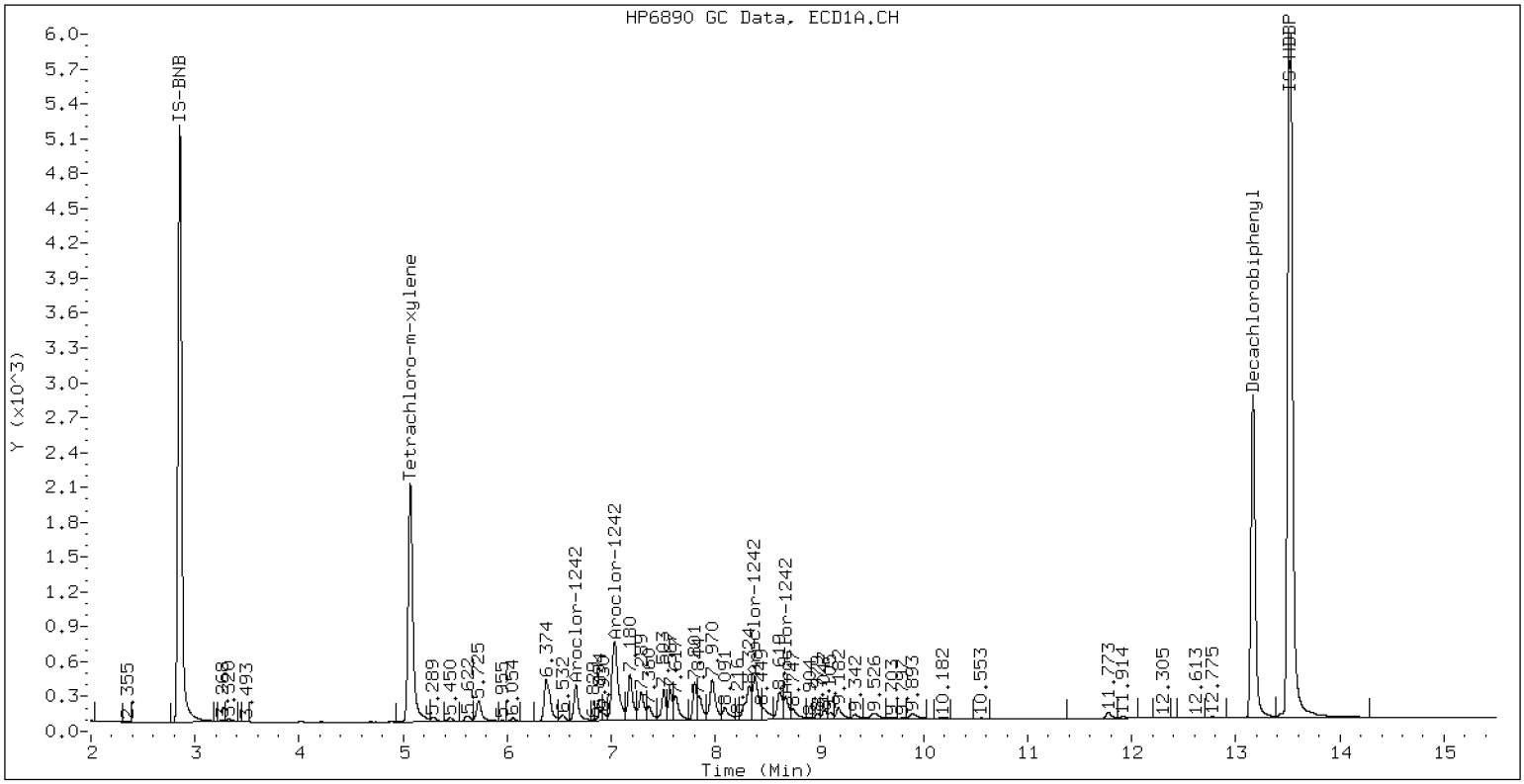
Total PCB Area Col2 (5.169 - 13.066) = 1777148 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

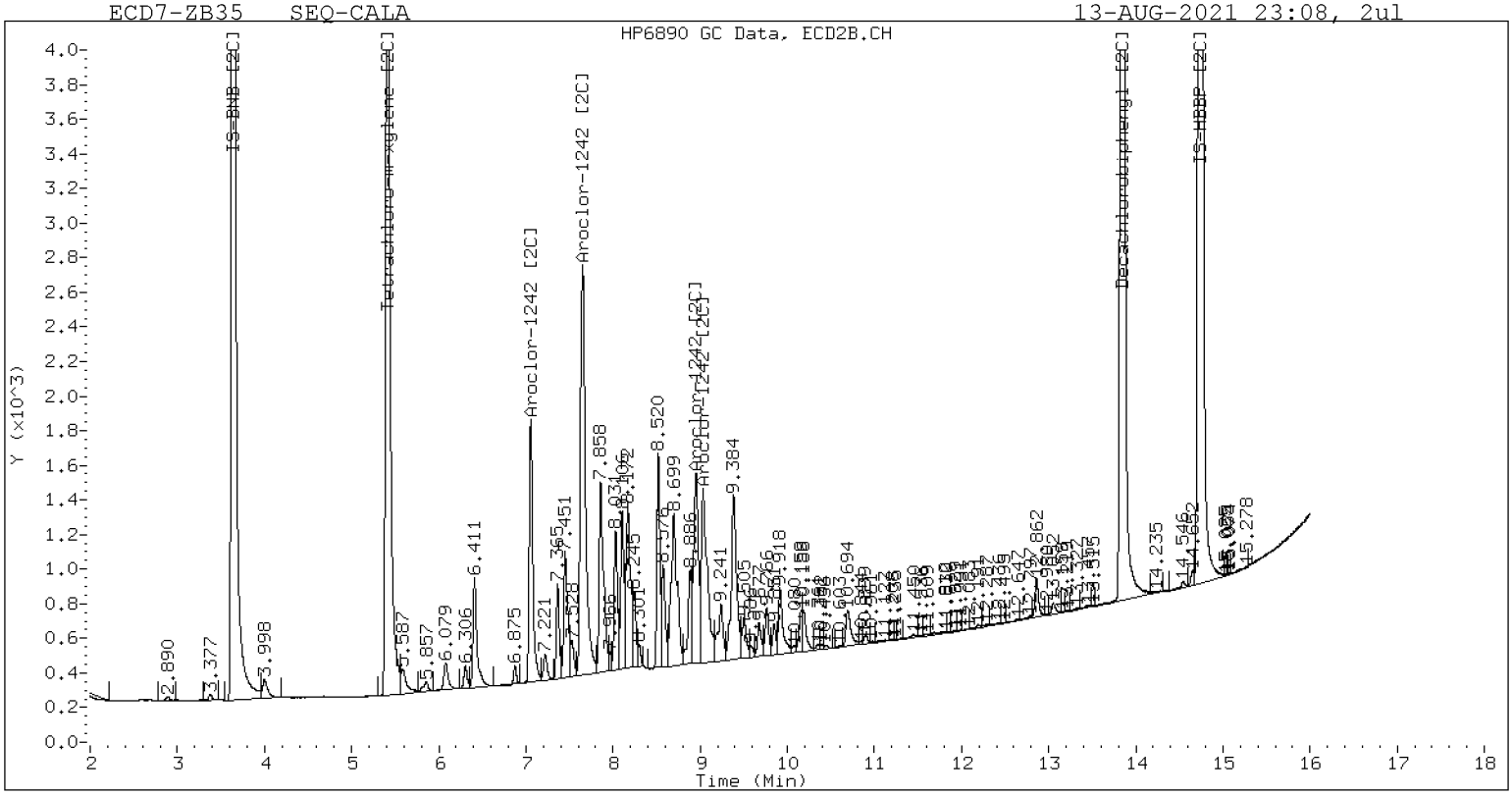
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALA 13-AUG-2021 23:08, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALA 13-AUG-2021 23:08, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132115ECD7.D
Data file 2: /210813.b/210813.b/08132115ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALB
Client ID:
Injection Date: 13-AUG-2021 23:28
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.070	0.001	258643	5.414	-0.003	740328	81.7	78.2	4.4	Tetrachloro-m-xylene
13.165	-0.001	313998	13.854	-0.026	1754204	77.8	86.3	10.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261764	1.1
Hexabromobiphenyl	425681	444869	4.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736715	2.2
Hexabromobiphenyl	863111	914686	6.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1242	1	6.660	0.001	37614	521.5	1	7.057	0.000	164453	485.5
Aroclor-1242	2	7.033	0.003	117814	548.0	2	7.651	0.002	375288	510.1
Aroclor-1242	3	8.379	0.004	58323	478.9	3	8.952	0.003	157727	458.9
Aroclor-1242	4	8.674	0.001	22510	452.3	4	9.032	0.004	183930	471.6

Total Col1Ave (4 peaks): 500.2 Total Col2Ave (4 peaks): 481.5 RPD = 4

Corrected Ave (3 peaks): 484.2 Corrected Ave (3 peaks): 472.0 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 859256 Col1 Total PCB = 0.3 ppm*

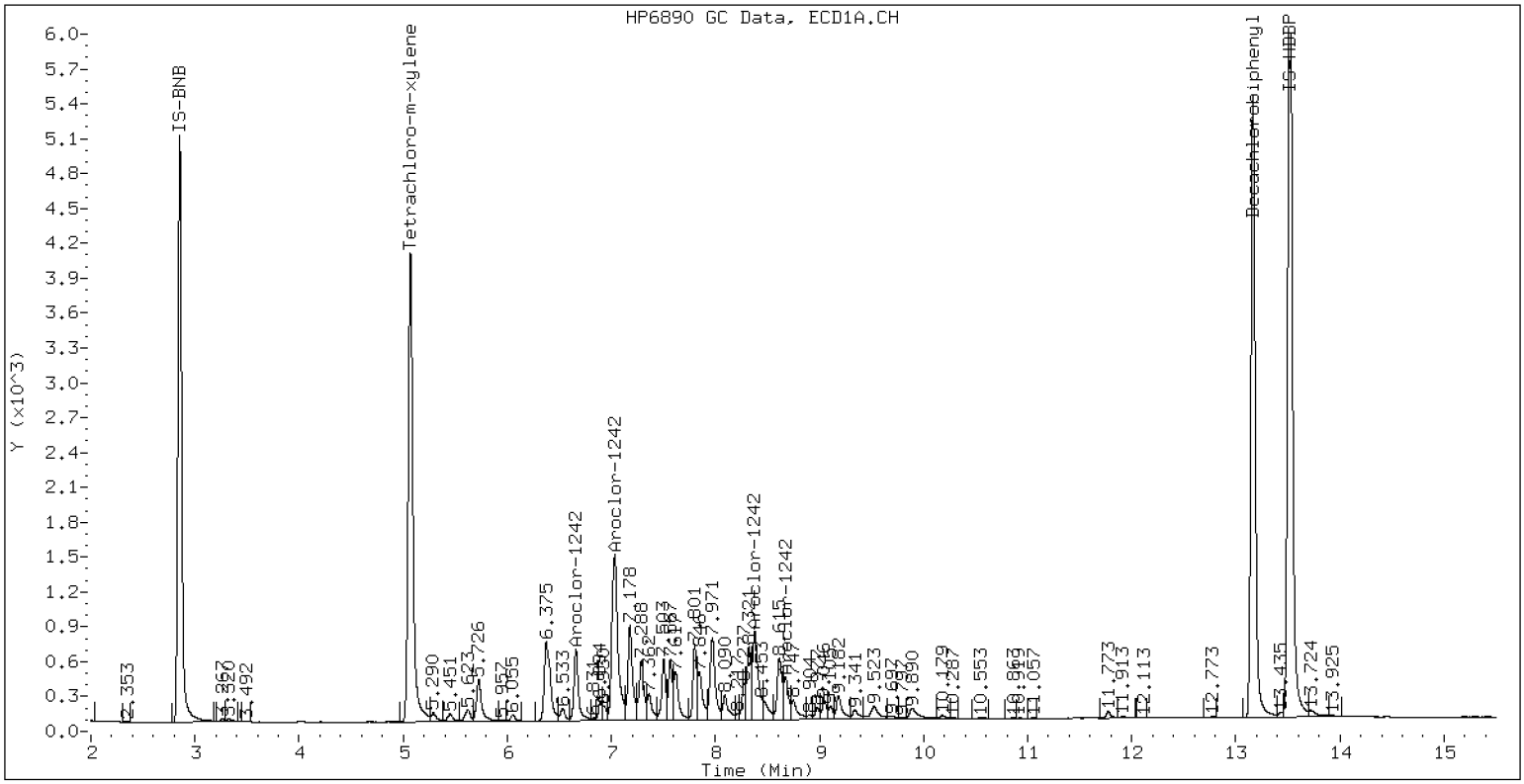
Total PCB Area Col2 (5.169 - 13.066) = 3382751 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

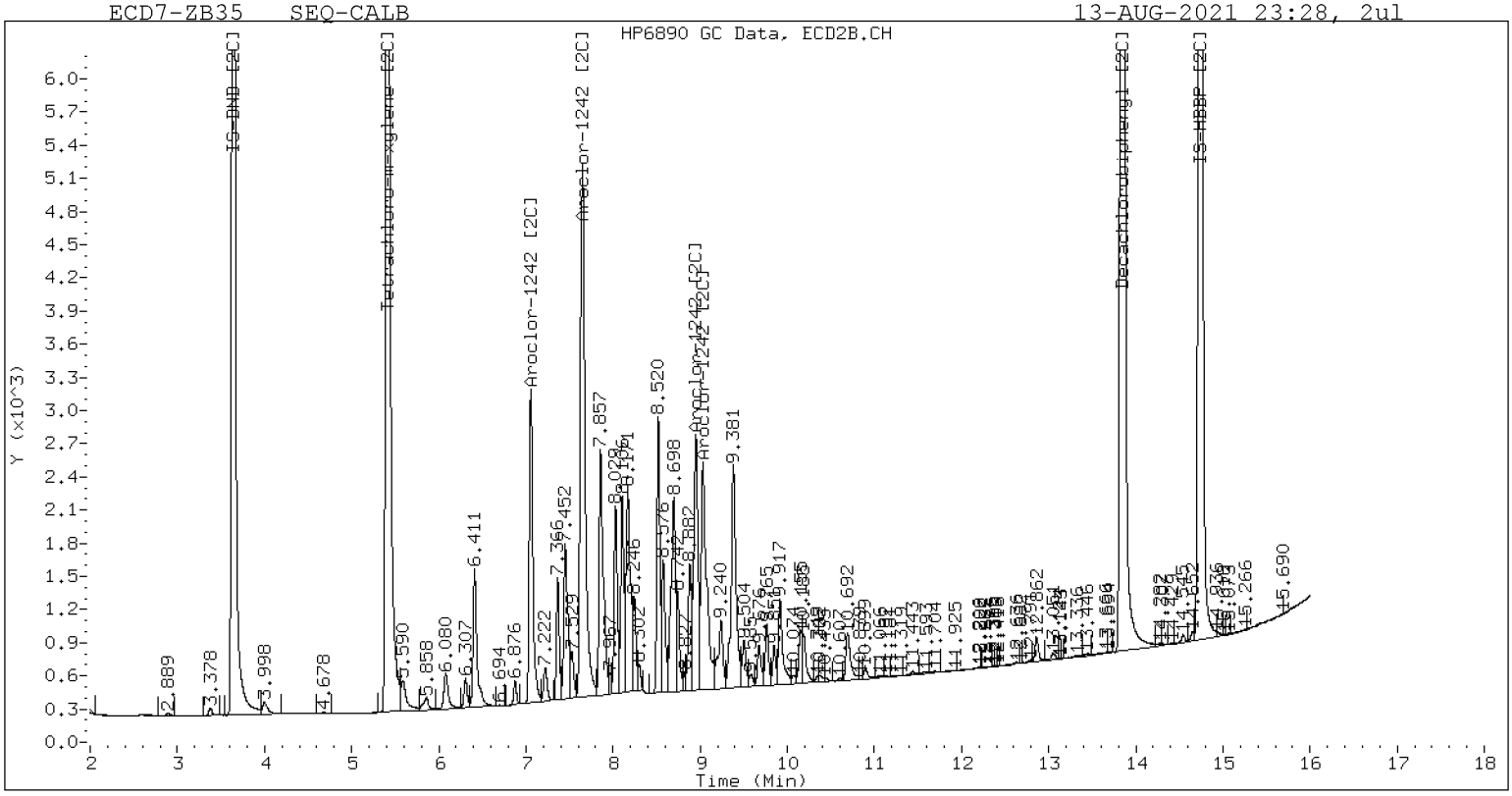
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALB 13-AUG-2021 23:28, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALB 13-AUG-2021 23:28, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132116ECD7.D
Data file 2: /210813.b/210813.b/08132116ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1242.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALC
Client ID:
Injection Date: 13-AUG-2021 23:49
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	563122	5.415	-0.001	1673143	158.2	158.3	0.1	Tetrachloro-m-xylene
13.166	0.000	671473	13.861	-0.019	4321811	147.6	182.7	21.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	294406	13.7
Hexabromobiphenyl	425681	501108	17.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	822336	14.1
Hexabromobiphenyl	863111	1064644	23.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1242	1	6.659	0.000	80300	990.0	1	7.057	0.000	331356	876.4
Aroclor-1242	2	7.030	0.000	263010	1087.7	2	7.649	0.000	783780	954.3
Aroclor-1242	3	8.374	0.000	125591	916.8	3	8.949	0.000	330073	860.3
Aroclor-1242	4	8.674	0.000	44493	794.8	4	9.028	0.000	363121	834.0

Total Col1Ave (4 peaks): 947.3 Total Col2Ave (4 peaks): 881.3 RPD = 7

Corrected Ave (3 peaks): 900.5 Corrected Ave (3 peaks): 856.9 RPD = 5

Total PCB Area Col1 (5.169 - 13.066) = 1871416 Col1 Total PCB = 0.6 ppm*

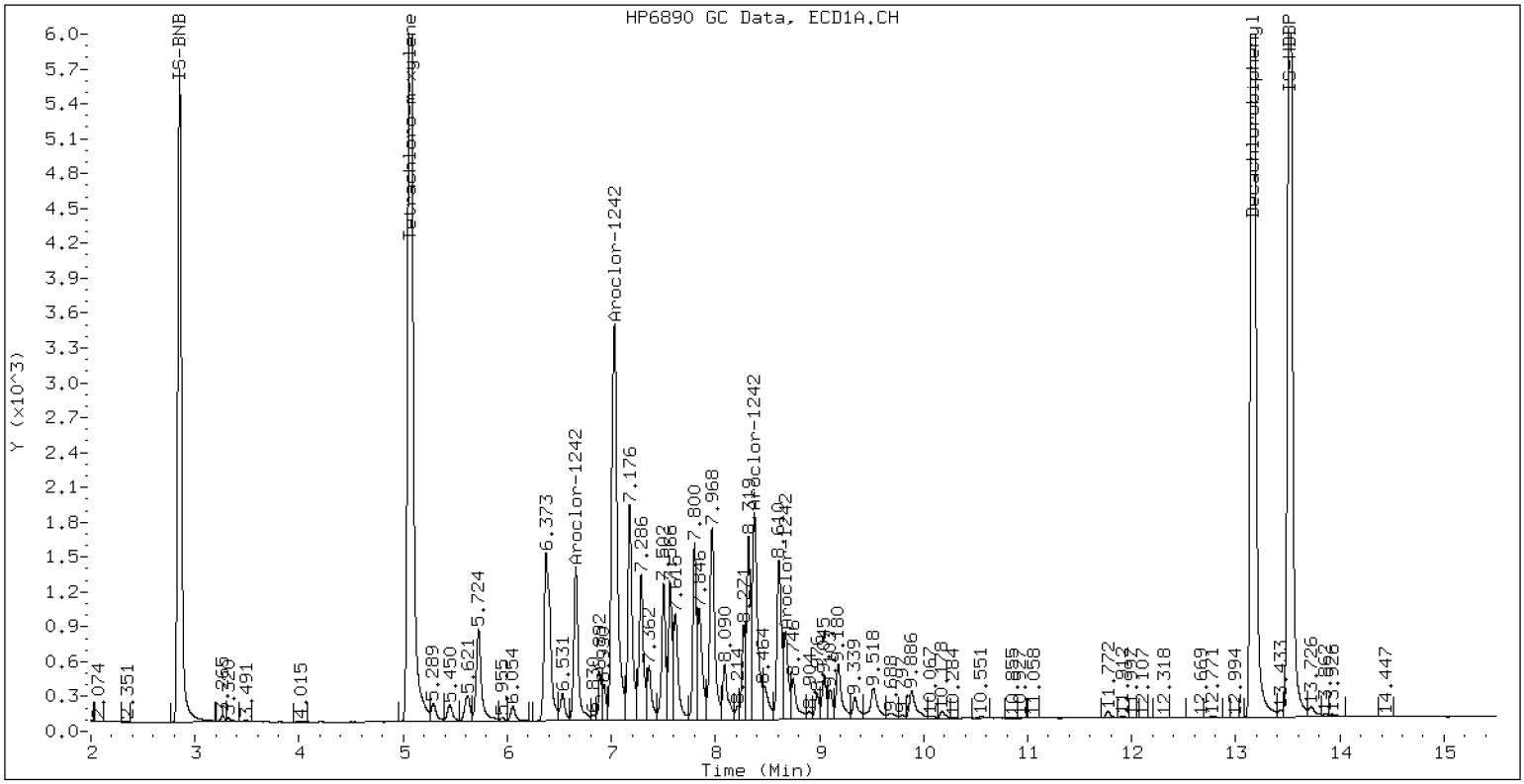
Total PCB Area Col2 (5.169 - 13.066) = 7225430 Col2 Total PCB = 0.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

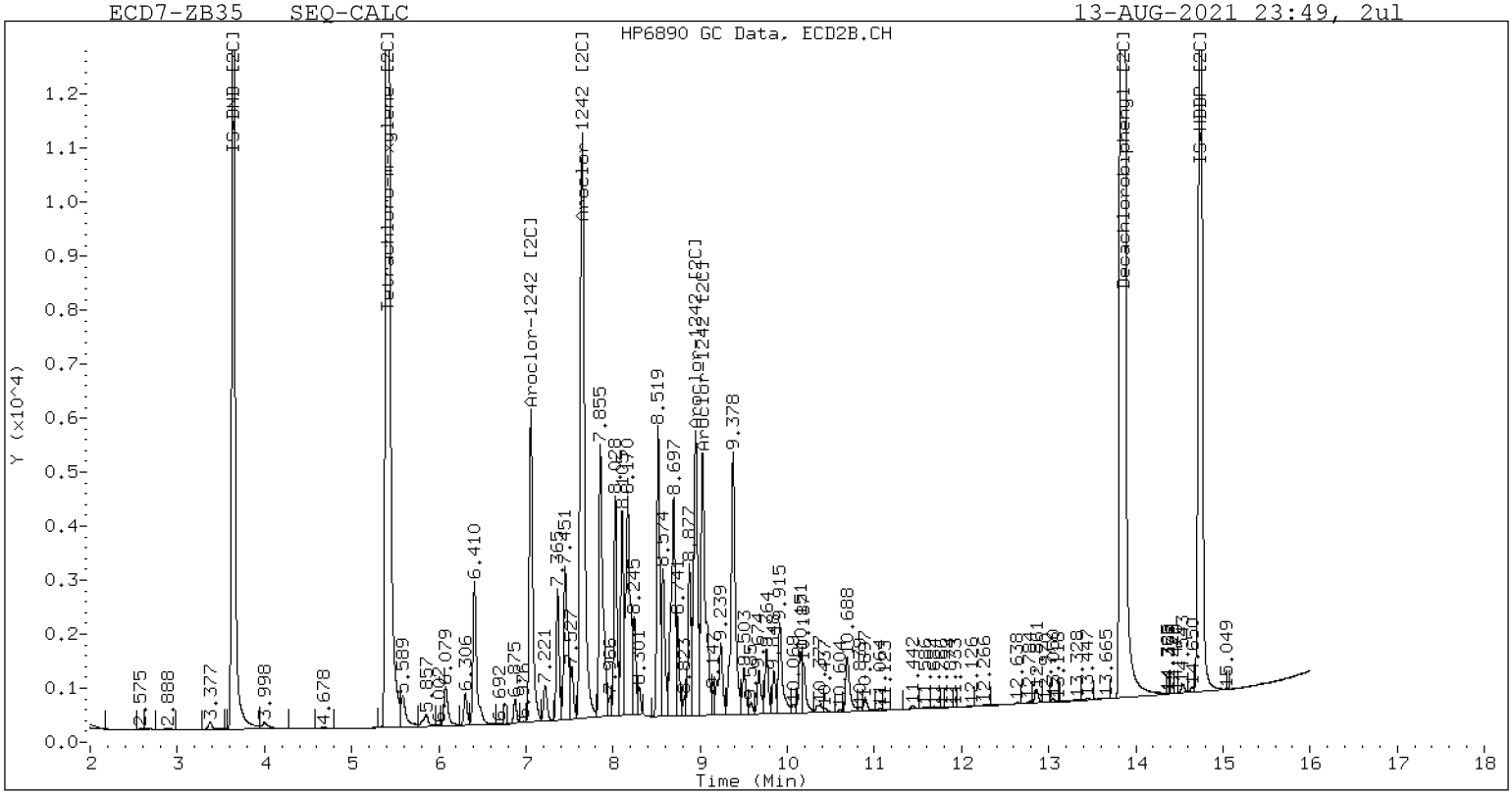
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALC 13-AUG-2021 23:49, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALC 13-AUG-2021 23:49, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132117ECD7.D
Data file 2: /210813.b/210813.b/08132117ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALD
Client ID:
Injection Date: 14-AUG-2021 00:09
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	9201	5.414	-0.003	29778	3.0	3.3	8.1	Tetrachloro-m-xylene
13.165	-0.001	13166	13.846	-0.034	62709	3.4	3.2	5.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	250266	-3.3
Hexabromobiphenyl	425681	429293	0.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	702828	-2.5
Hexabromobiphenyl	863111	880526	2.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1248	1	7.799	0.001	1894	18.1	1	8.109	0.003	6606	22.7
Aroclor-1248	2	7.974	0.006	2423	17.7	2	8.525	0.005	6970	19.7
Aroclor-1248	3	8.385	0.011	3850	19.2	3	8.964	0.018	12645	22.4
Aroclor-1248	4	8.675	0.002	2537	22.2	4	9.397	0.021	10906	22.7

Total Col1Ave (4 peaks): 19.3 Total Col2Ave (4 peaks): 21.9 RPD = 13

Corrected Ave (3 peaks): 18.3 Corrected Ave (3 peaks): 21.6 RPD = 16

Total PCB Area Col1 (5.169 - 13.066) = 41564 Col1 Total PCB = 0.0 ppm*

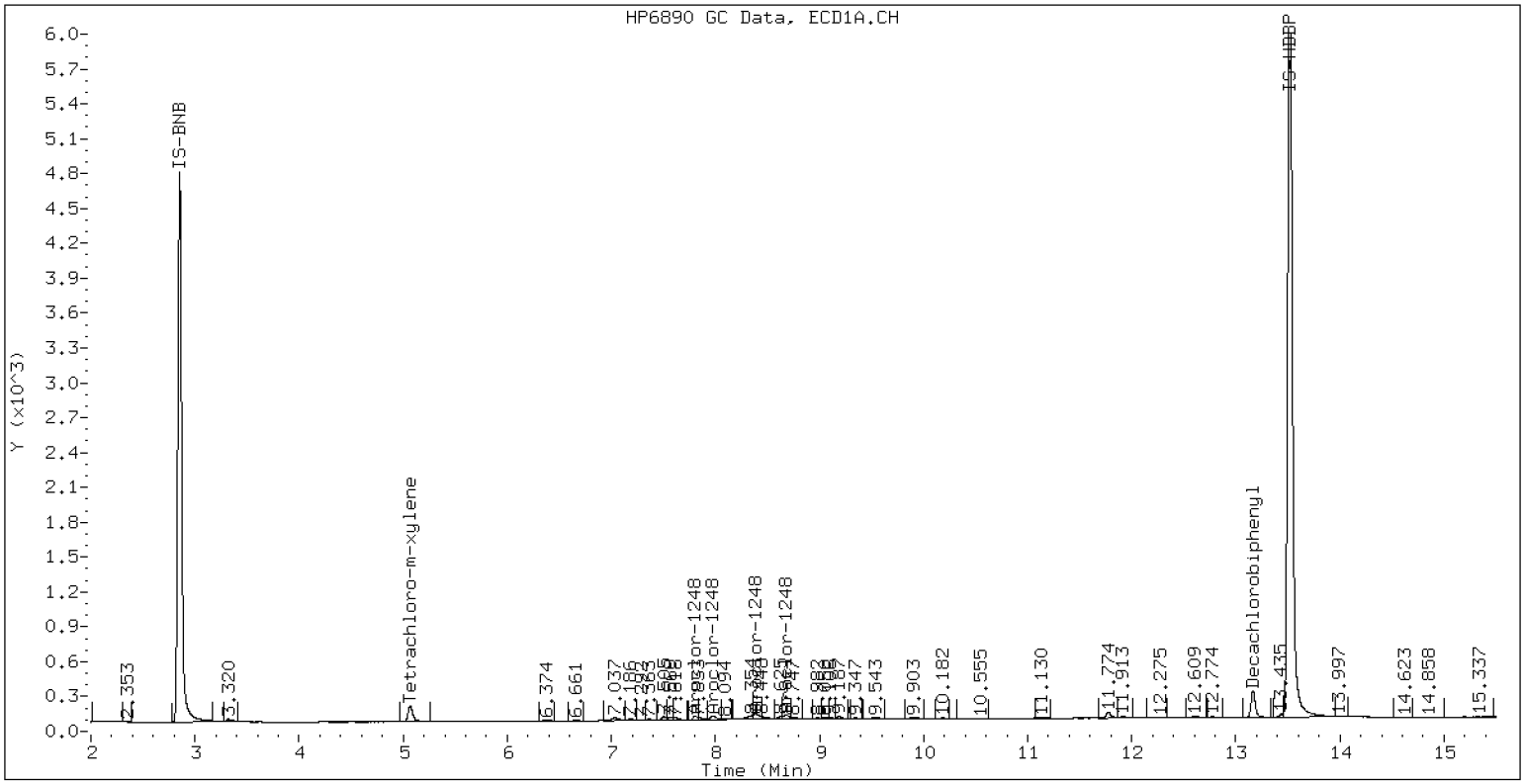
Total PCB Area Col2 (5.169 - 13.066) = 212063 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

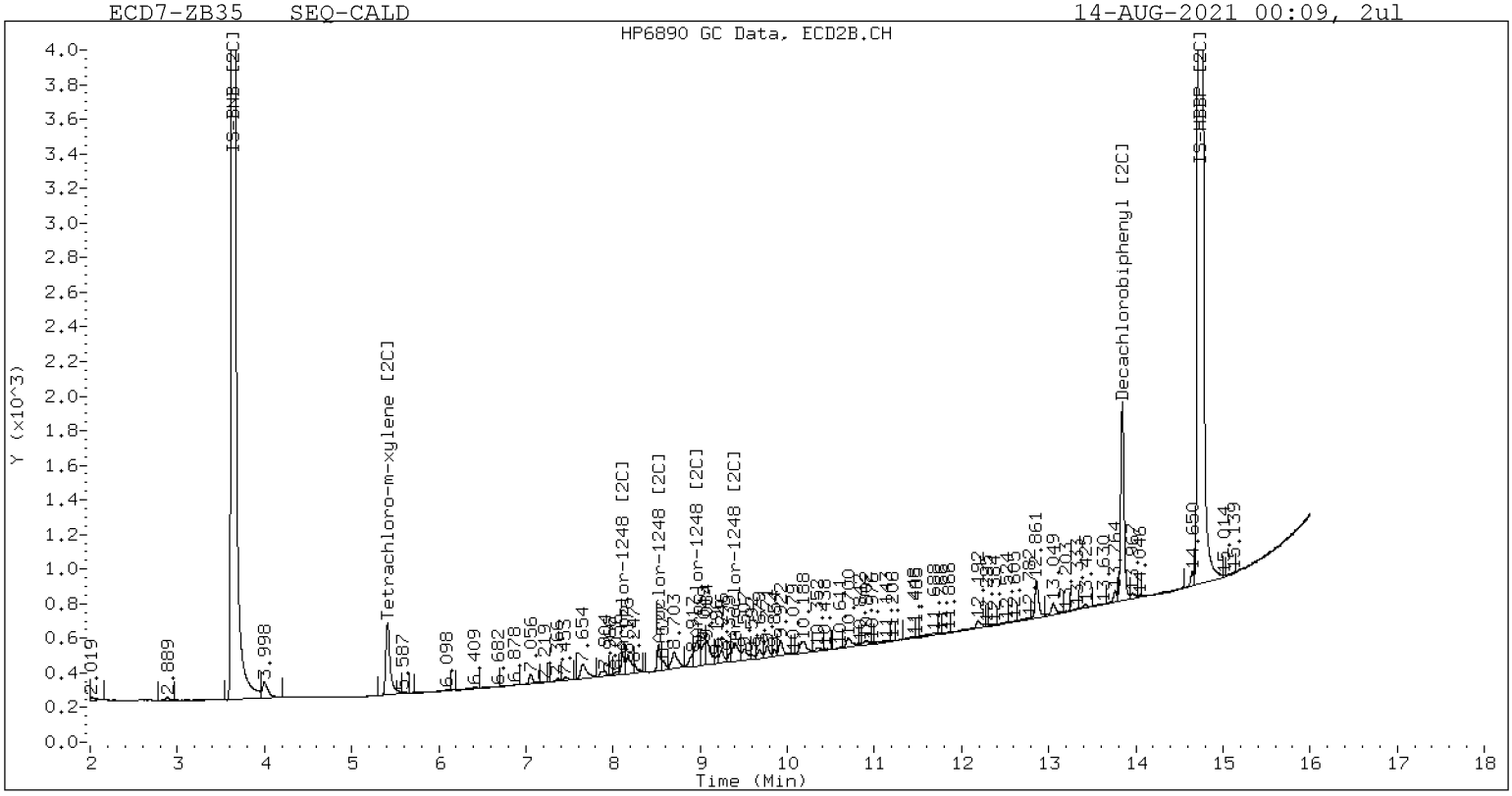
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALD 14-AUG-2021 00:09, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALD 14-AUG-2021 00:09, 2ul

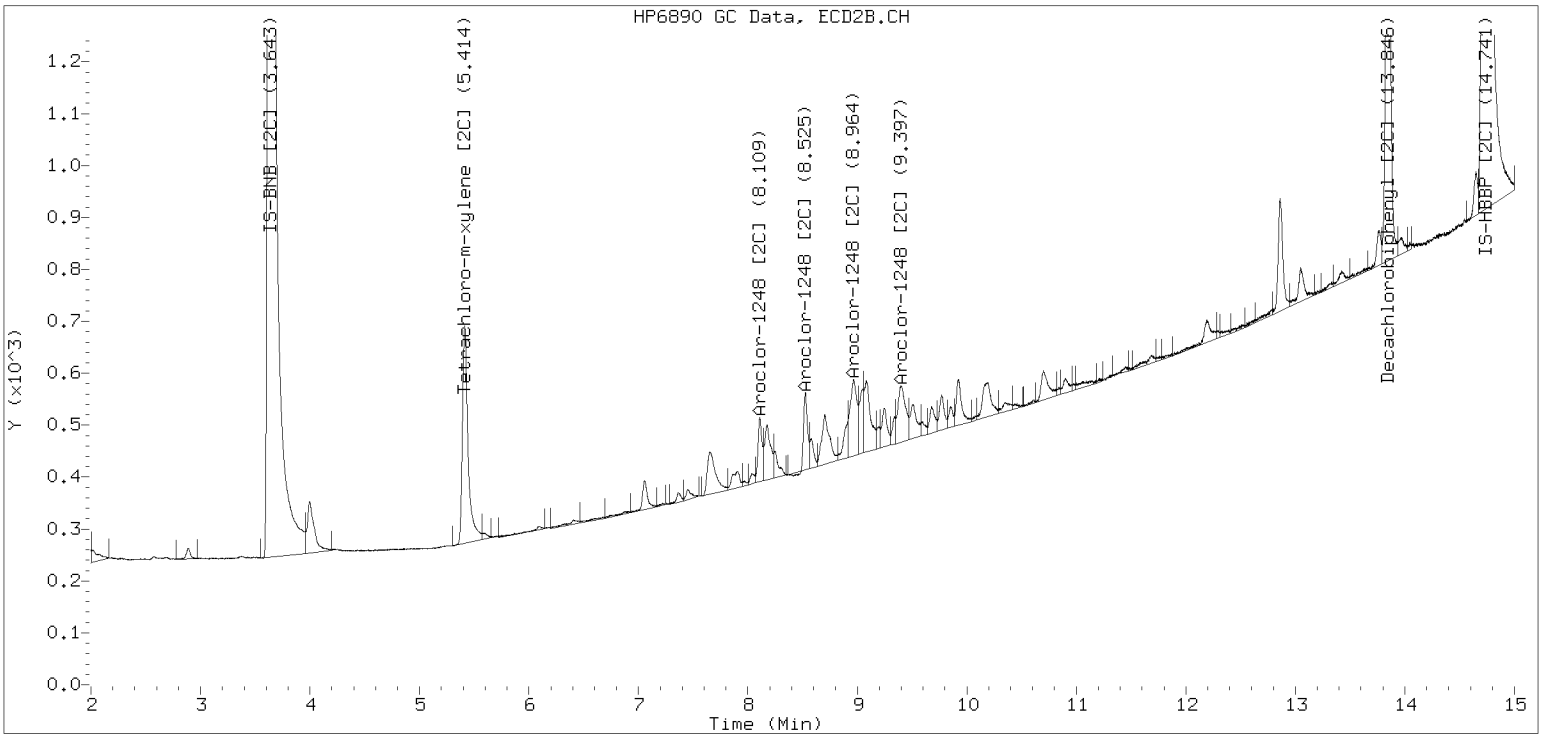


ZB-35 Manual Integration: YES

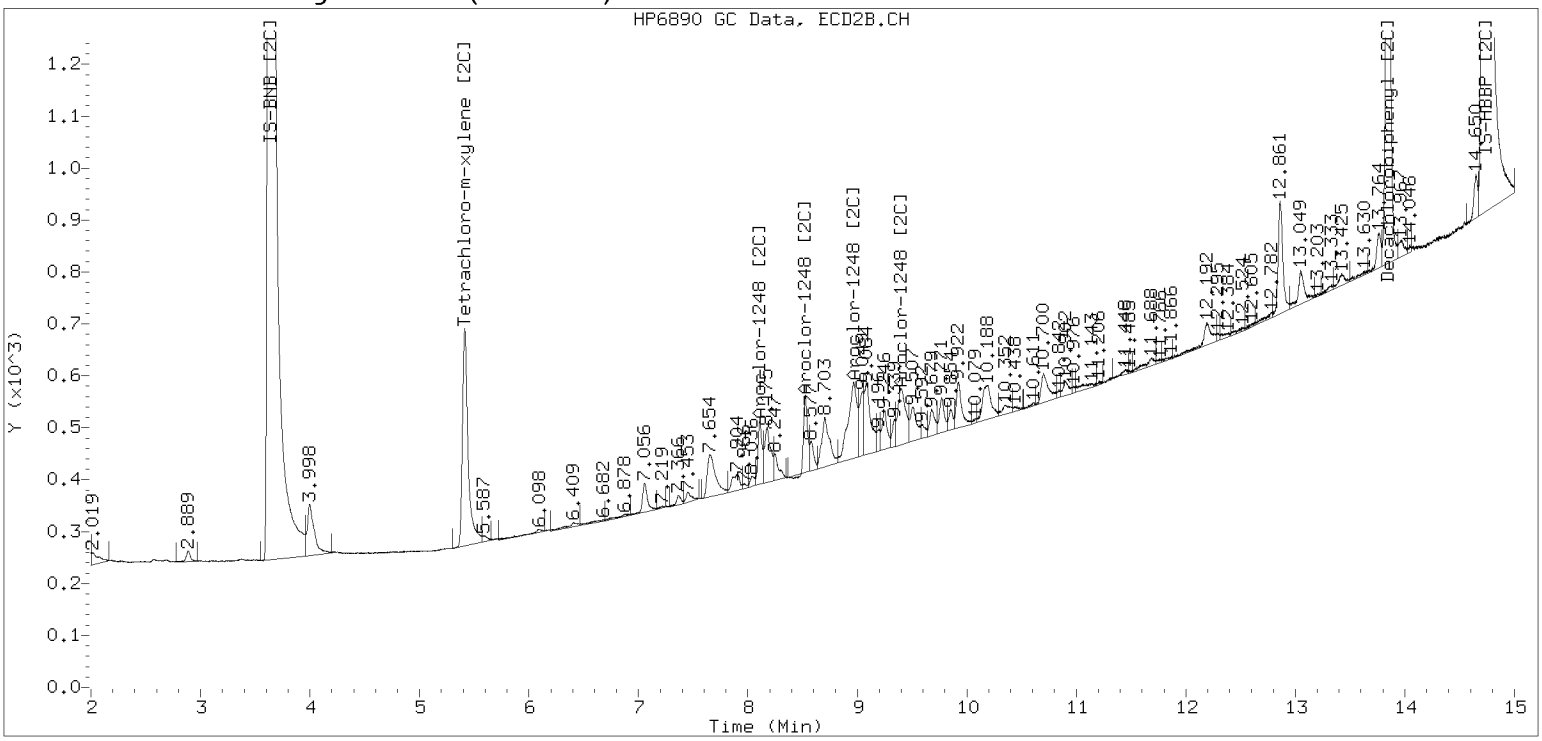
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132117.D Injection Date: 14-AUG-2021 00:0

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132118ECD7.D
Data file 2: /210813.b/210813.b/08132118ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALE
Client ID:
Injection Date: 14-AUG-2021 00:30
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	23276	5.413	-0.003	72230	7.6	7.8	3.6	Tetrachloro-m-xylene
13.164	-0.001	31855	13.847	-0.033	153320	8.0	7.7	4.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	254685	-1.6
Hexabromobiphenyl	425681	438579	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	717244	-0.5
Hexabromobiphenyl	863111	898162	4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1248	1	7.803	0.004	5503	51.6	1	8.109	0.003	15513	52.2
Aroclor-1248	2	7.975	0.007	7033	50.5	2	8.523	0.003	17641	48.8
Aroclor-1248	3	8.384	0.010	10074	49.4	3	8.963	0.016	29702	51.5
Aroclor-1248	4	8.679	0.005	6595	56.6	4	9.391	0.015	24165	49.4

Total Col1Ave (4 peaks): 52.0 Total Col2Ave (4 peaks): 50.5 RPD = 3

Corrected Ave (3 peaks): 50.5 Corrected Ave (3 peaks): 49.9 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 108961 Col1 Total PCB = 0.0 ppm*

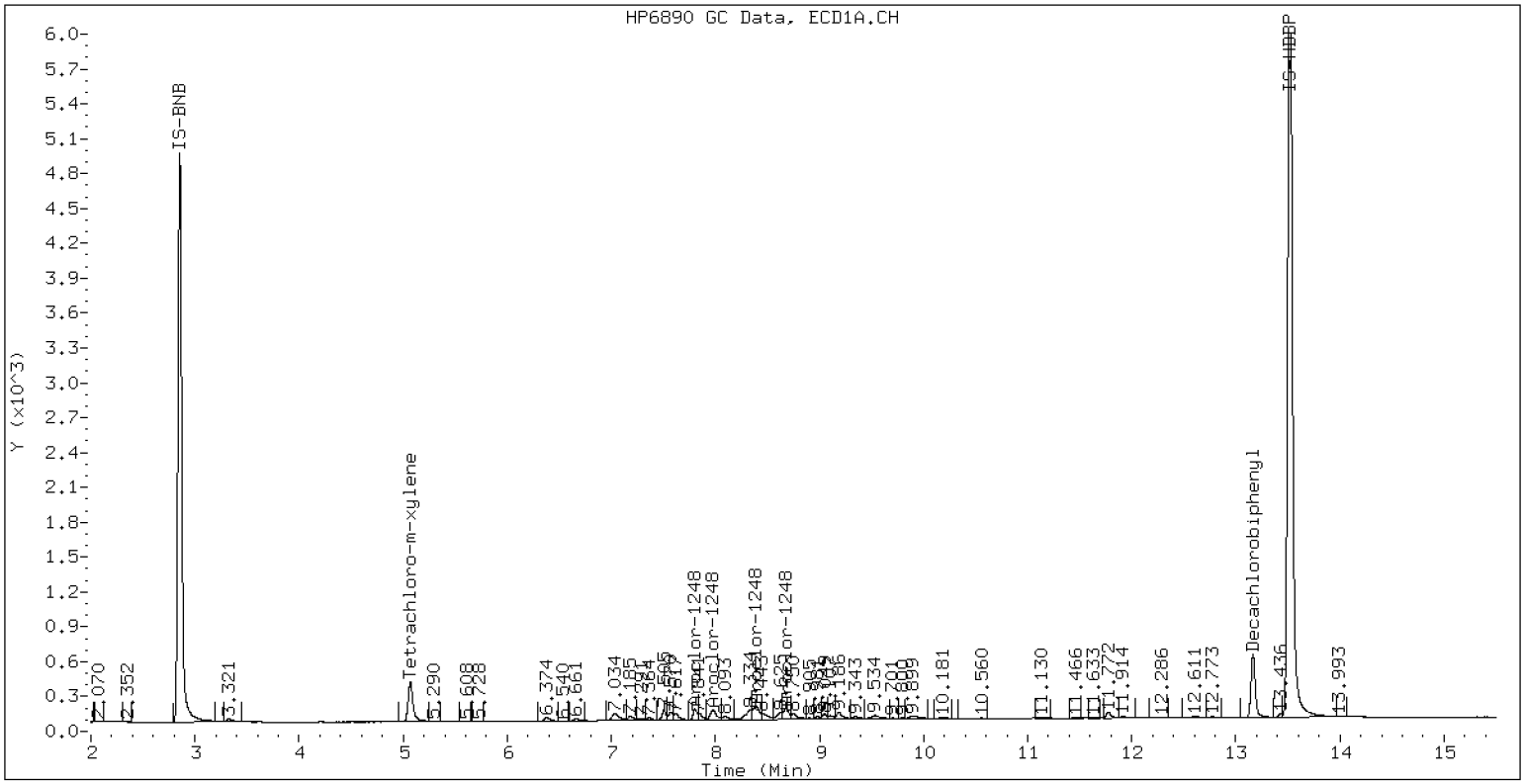
Total PCB Area Col2 (5.169 - 13.066) = 441717 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

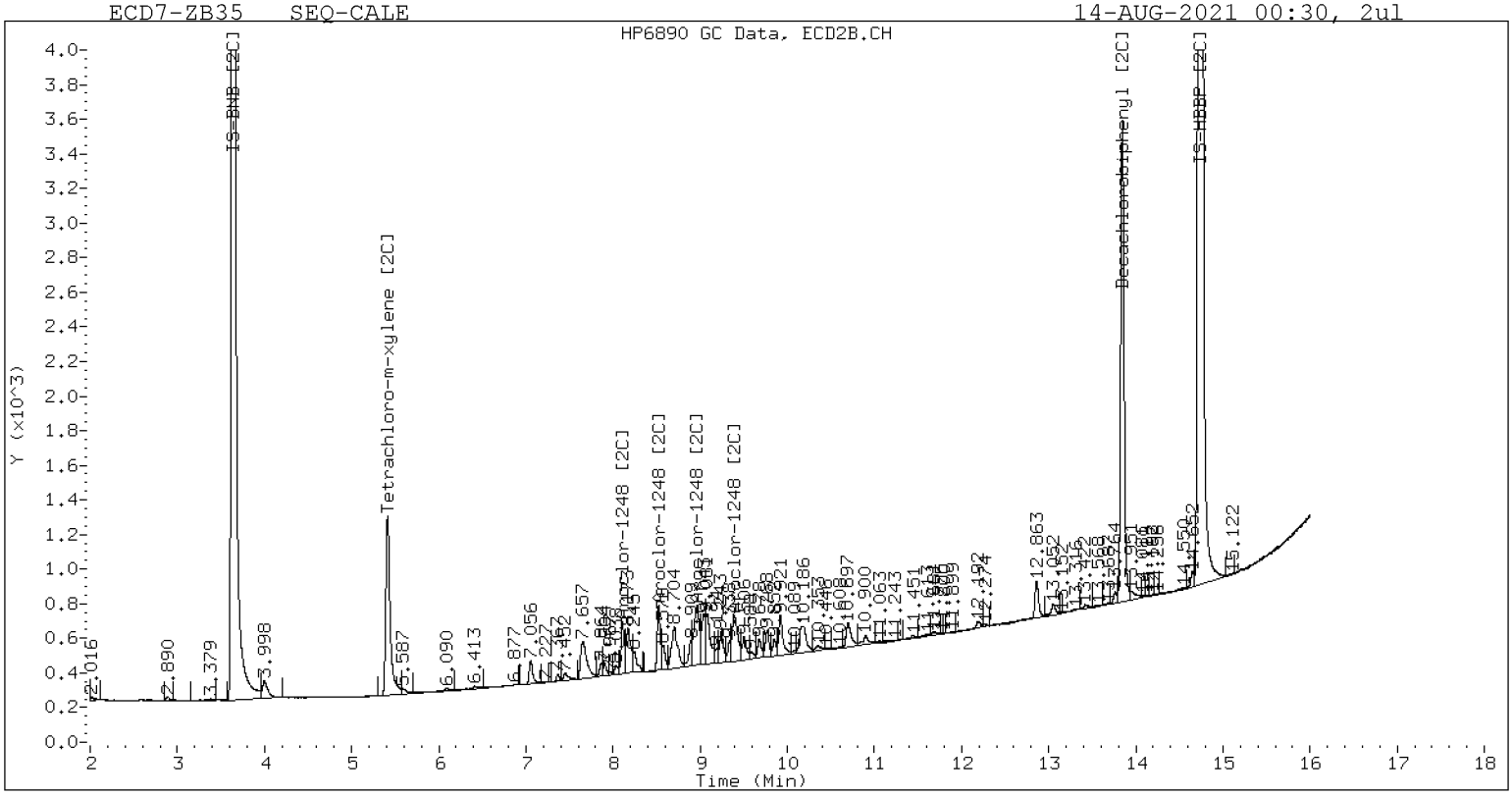
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALE 14-AUG-2021 00:30, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALE 14-AUG-2021 00:30, 2ul

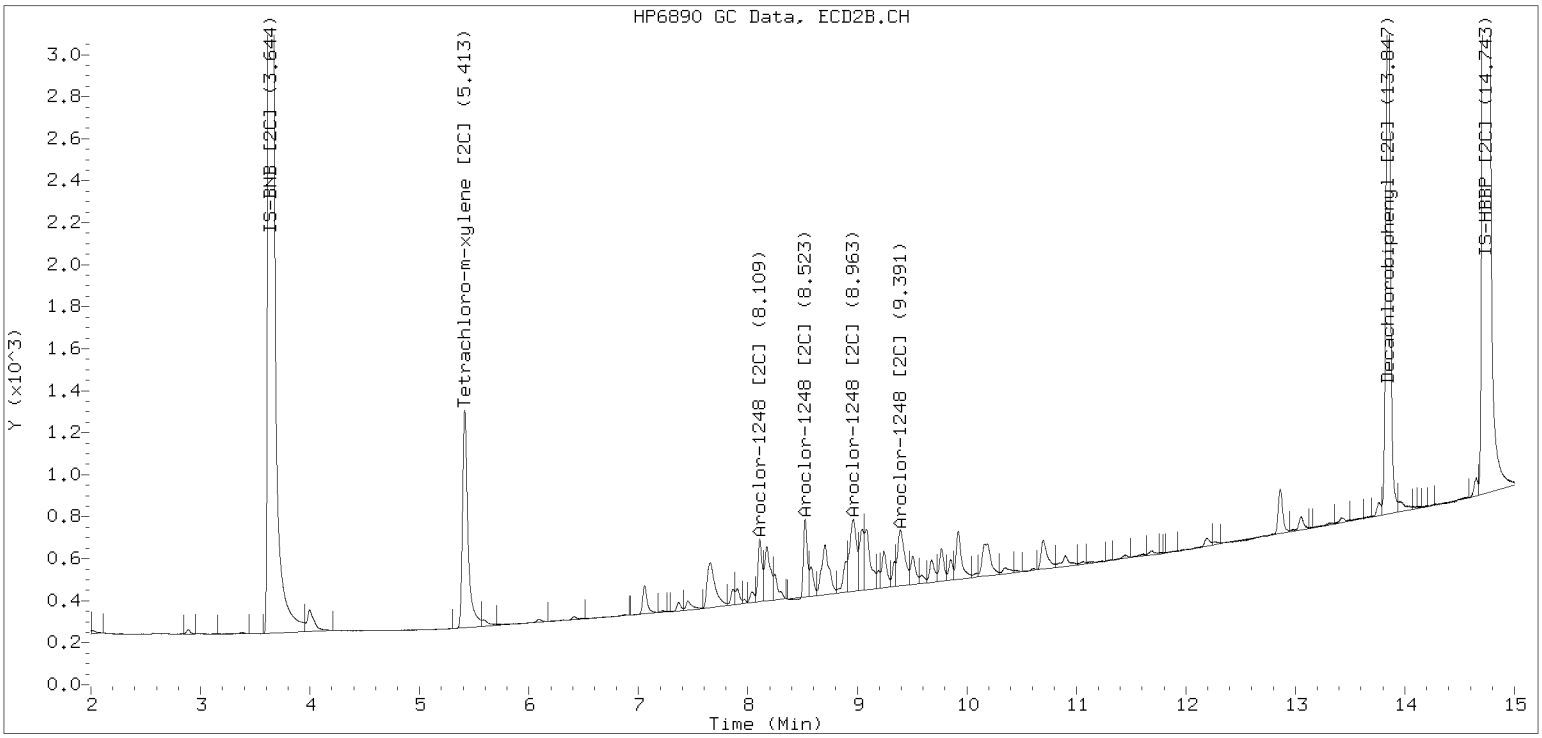


ZB-35 Manual Integration: YES

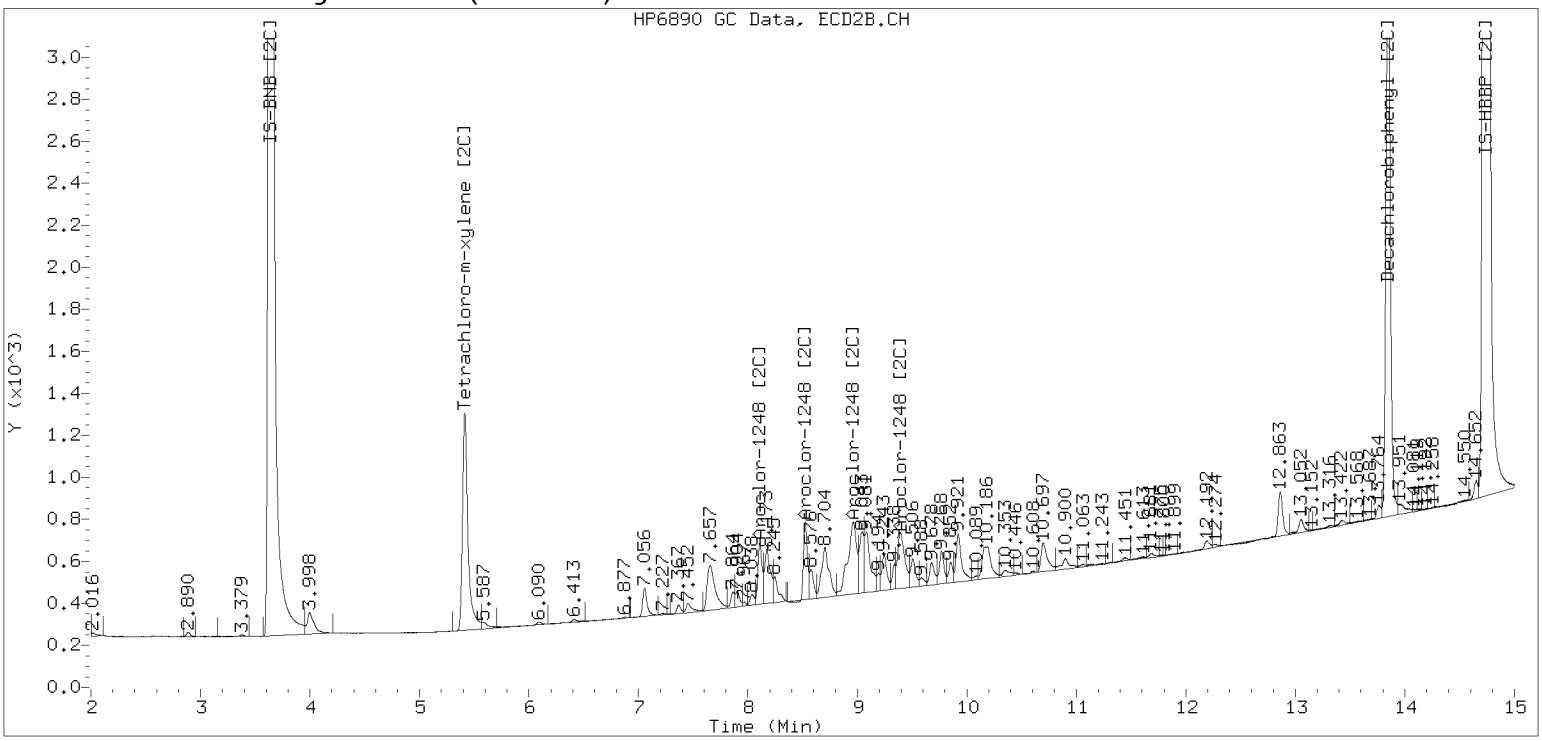
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132118.D Injection Date: 14-AUG-2021 00:3

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132119ECD7.D
Data file 2: /210813.b/210813.b/08132119ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALF
Client ID:
Injection Date: 14-AUG-2021 00:50
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.068	-0.001	49122	5.413	-0.004	147629	15.5	15.6	1.1	Tetrachloro-m-xylene
13.165	-0.001	65855	13.847	-0.033	329717	15.9	15.8	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	262535	1.4
Hexabromobiphenyl	425681	455997	7.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	734209	1.8
Hexabromobiphenyl	863111	938375	8.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1248	1	7.800	0.001	10709	97.3	1	8.107	0.001	28558	93.9
Aroclor-1248	2	7.973	0.005	14129	98.4	2	8.522	0.002	38111	102.9
Aroclor-1248	3	8.383	0.008	21518	102.3	3	8.959	0.013	61308	103.9
Aroclor-1248	4	8.677	0.003	12431	103.6	4	9.388	0.012	48948	97.7

Total Col1Ave (4 peaks): 100.4 Total Col2Ave (4 peaks): 99.6 RPD = 1

Corrected Ave (3 peaks): 99.3 Corrected Ave (3 peaks): 98.2 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 238597 Col1 Total PCB = 0.1 ppm*

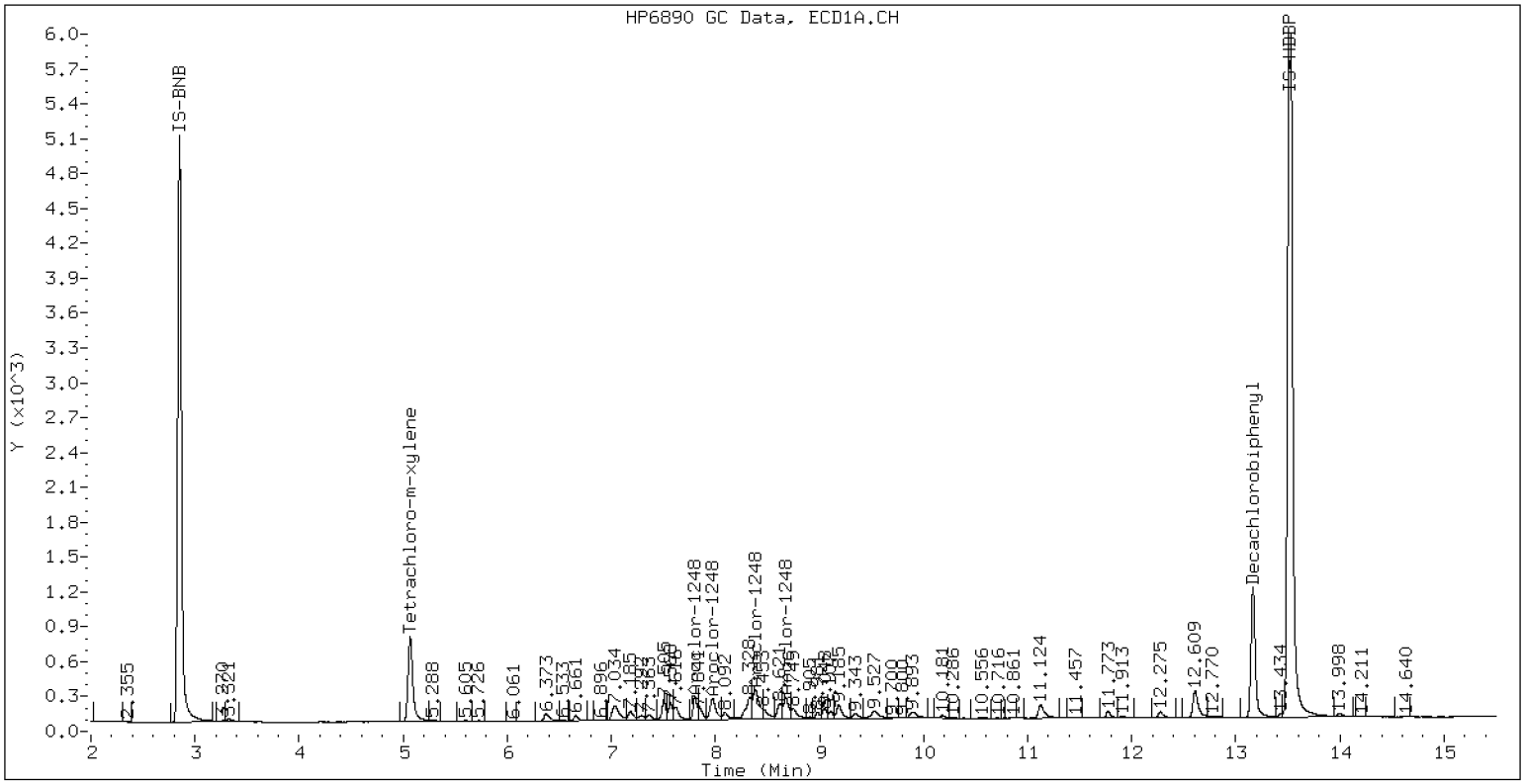
Total PCB Area Col2 (5.169 - 13.066) = 907743 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

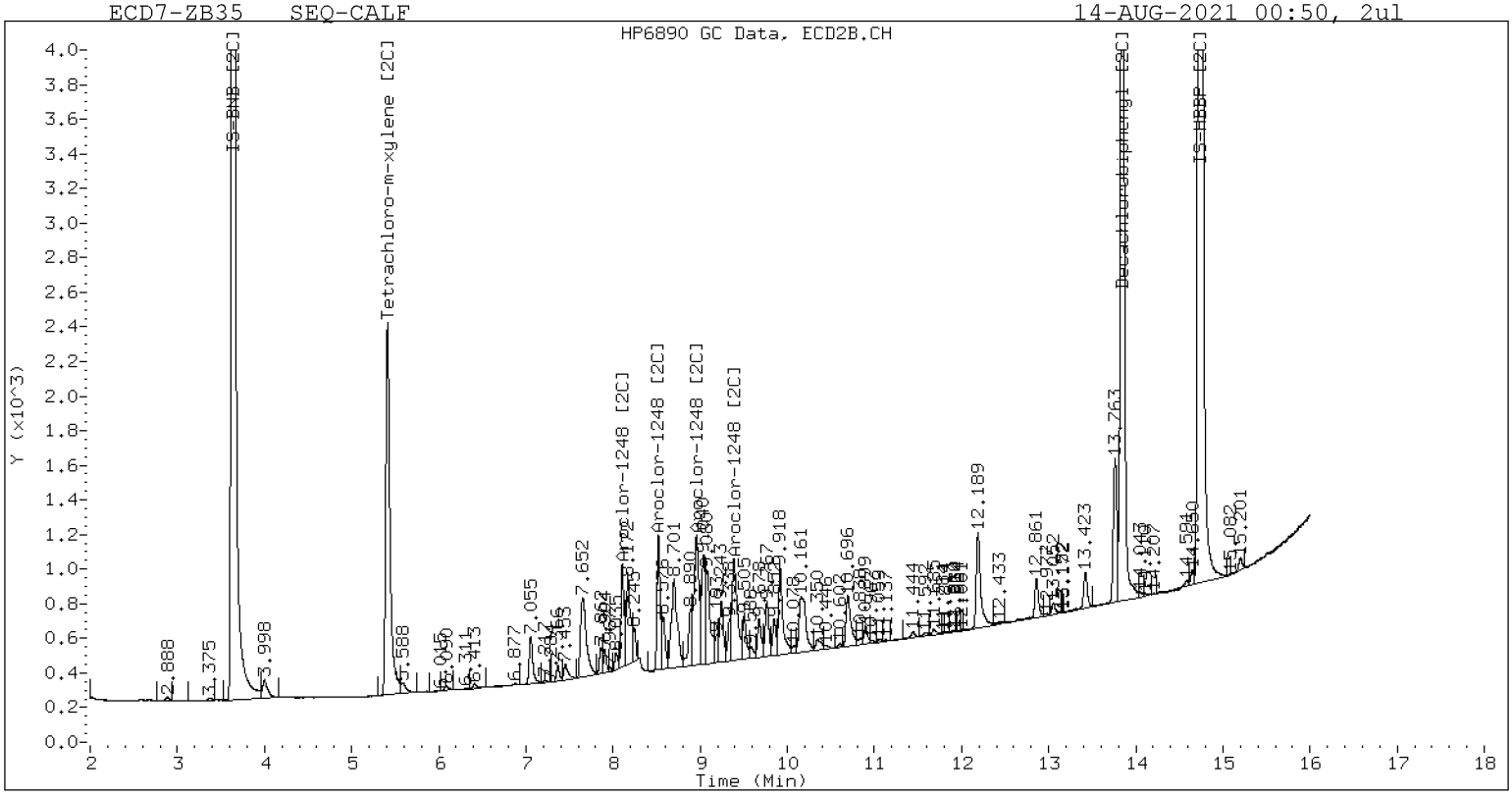
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALF 14-AUG-2021 00:50, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-CALF 14-AUG-2021 00:50, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132120ECD7.D
Data file 2: /210813.b/210813.b/08132120ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALG
Client ID:
Injection Date: 14-AUG-2021 01:11
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	129037	5.413	-0.004	373143	40.5	39.6	2.4	Tetrachloro-m-xylene
13.165	-0.000	162705	13.848	-0.032	830692	40.1	40.0	0.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263302	1.7
Hexabromobiphenyl	425681	446916	5.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	733764	1.8
Hexabromobiphenyl	863111	933874	8.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	7.800	0.002	28501	258.3	1	8.107	0.001	76584	251.9
Aroclor-1248	2	7.971	0.003	37812	262.5	2	8.521	0.001	96409	260.5
Aroclor-1248	3	8.381	0.006	54570	258.7	3	8.953	0.007	144251	244.7
Aroclor-1248	4	8.676	0.002	29650	246.3	4	9.382	0.005	122847	245.4

Total Col1Ave (4 peaks): 256.5 Total Col2Ave (4 peaks): 250.6 RPD = 2
Corrected Ave (3 peaks): 254.4 Corrected Ave (3 peaks): 247.3 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 569475 Col1 Total PCB = 0.2 ppm*

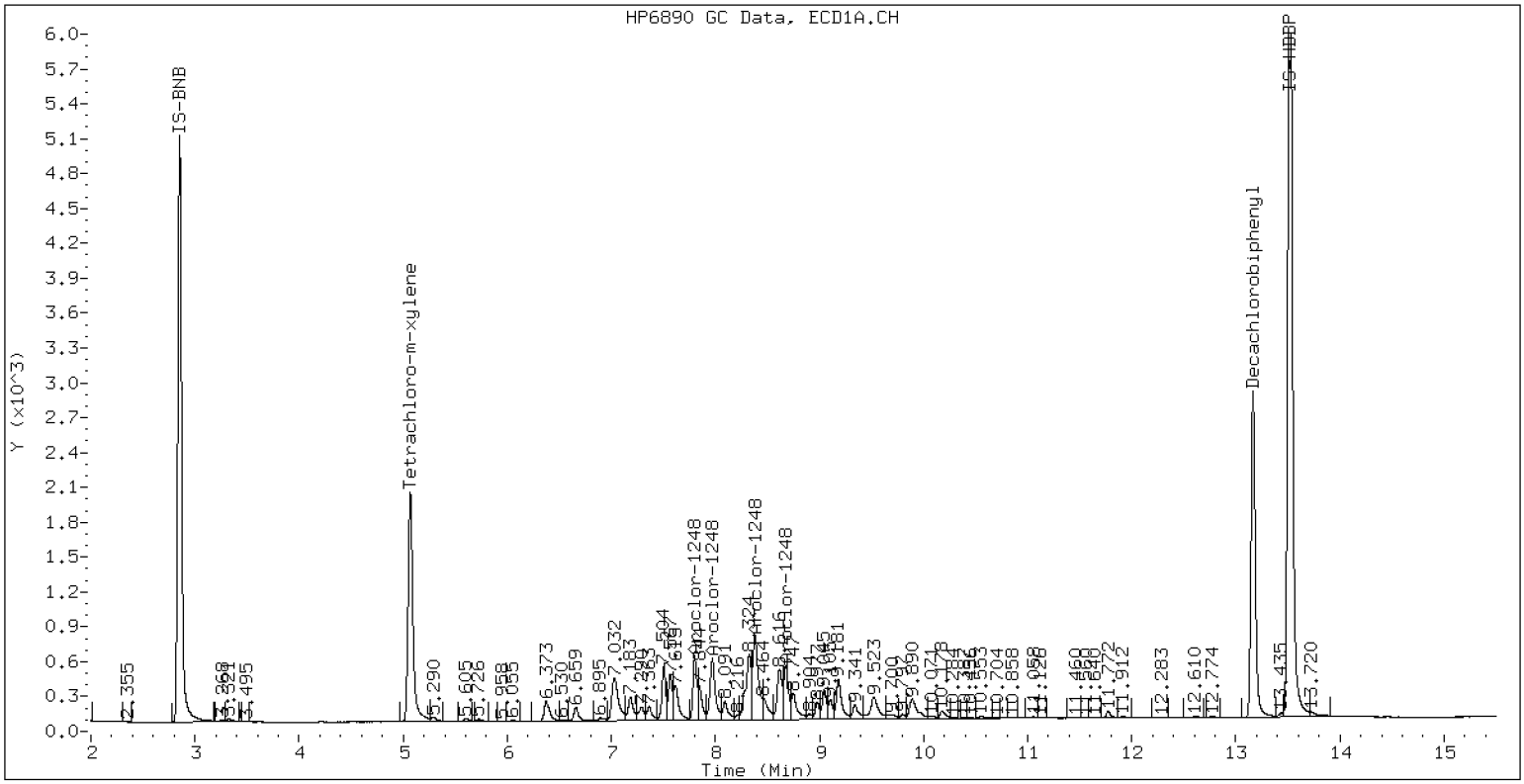
Total PCB Area Col2 (5.169 - 13.066) = 2178081 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

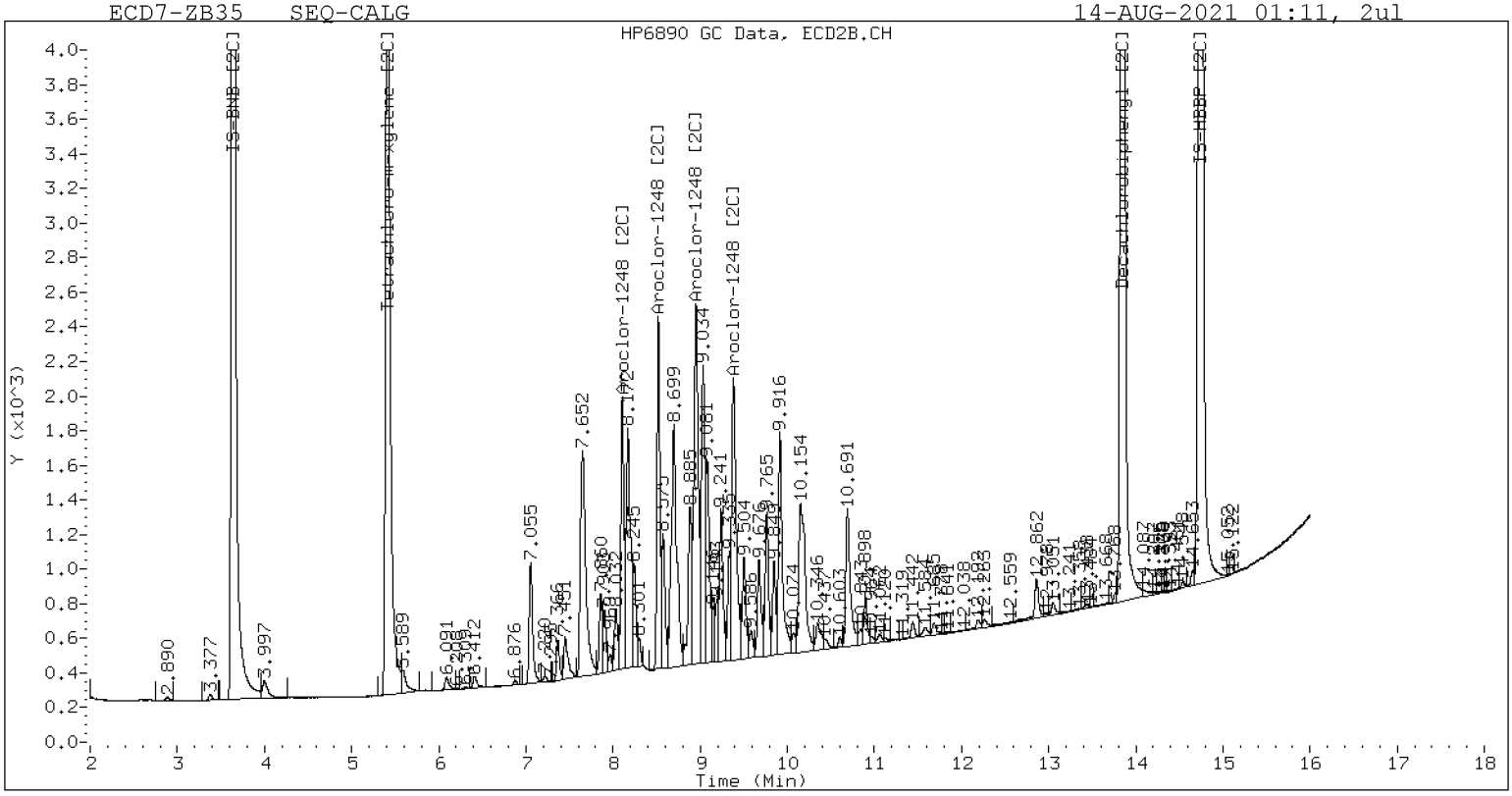
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALG 14-AUG-2021 01:11, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALG 14-AUG-2021 01:11, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132121ECD7.D
Data file 2: /210813.b/210813.b/08132121ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALH
Client ID:
Injection Date: 14-AUG-2021 01:31
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	259806	5.414	-0.003	733120	82.3	78.0	5.3	Tetrachloro-m-xylene
13.164	-0.001	317292	13.852	-0.028	1796528	78.7	86.8	9.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261194	0.9
Hexabromobiphenyl	425681	444403	4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	731293	1.4
Hexabromobiphenyl	863111	931394	7.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1248	1	7.801	0.003	57044	521.1	1	8.107	0.001	147388	486.4
Aroclor-1248	2	7.970	0.003	75071	525.4	2	8.521	0.001	187163	507.4
Aroclor-1248	3	8.380	0.005	107206	512.4	3	8.951	0.004	278978	474.8
Aroclor-1248	4	8.676	0.002	54715	458.1	4	9.379	0.003	241446	483.9

Total Col1Ave (4 peaks): 504.3 Total Col2Ave (4 peaks): 488.1 RPD = 3

Corrected Ave (3 peaks): 497.2 Corrected Ave (3 peaks): 481.7 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 1127483 Col1 Total PCB = 0.4 ppm*

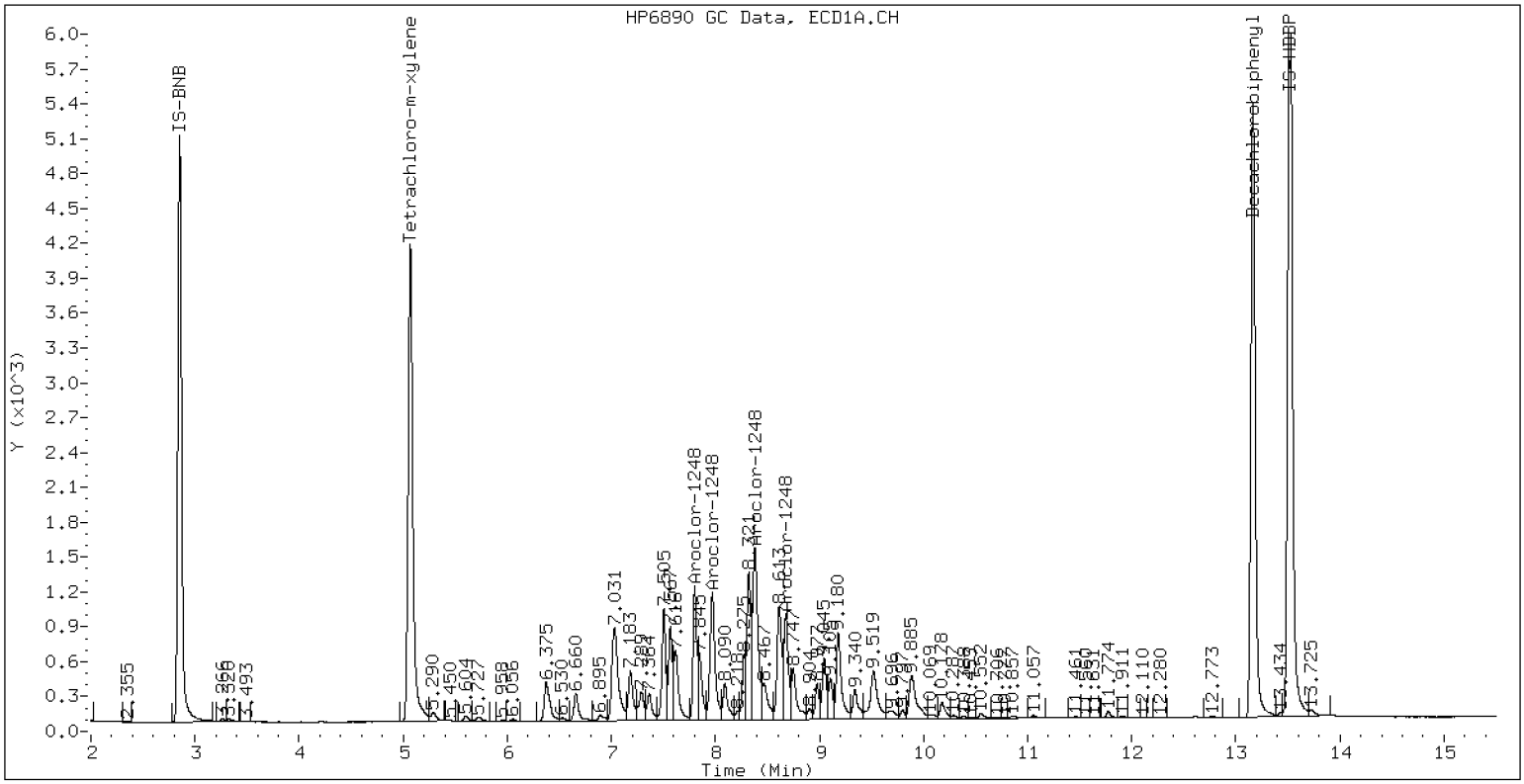
Total PCB Area Col2 (5.169 - 13.066) = 4224820 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

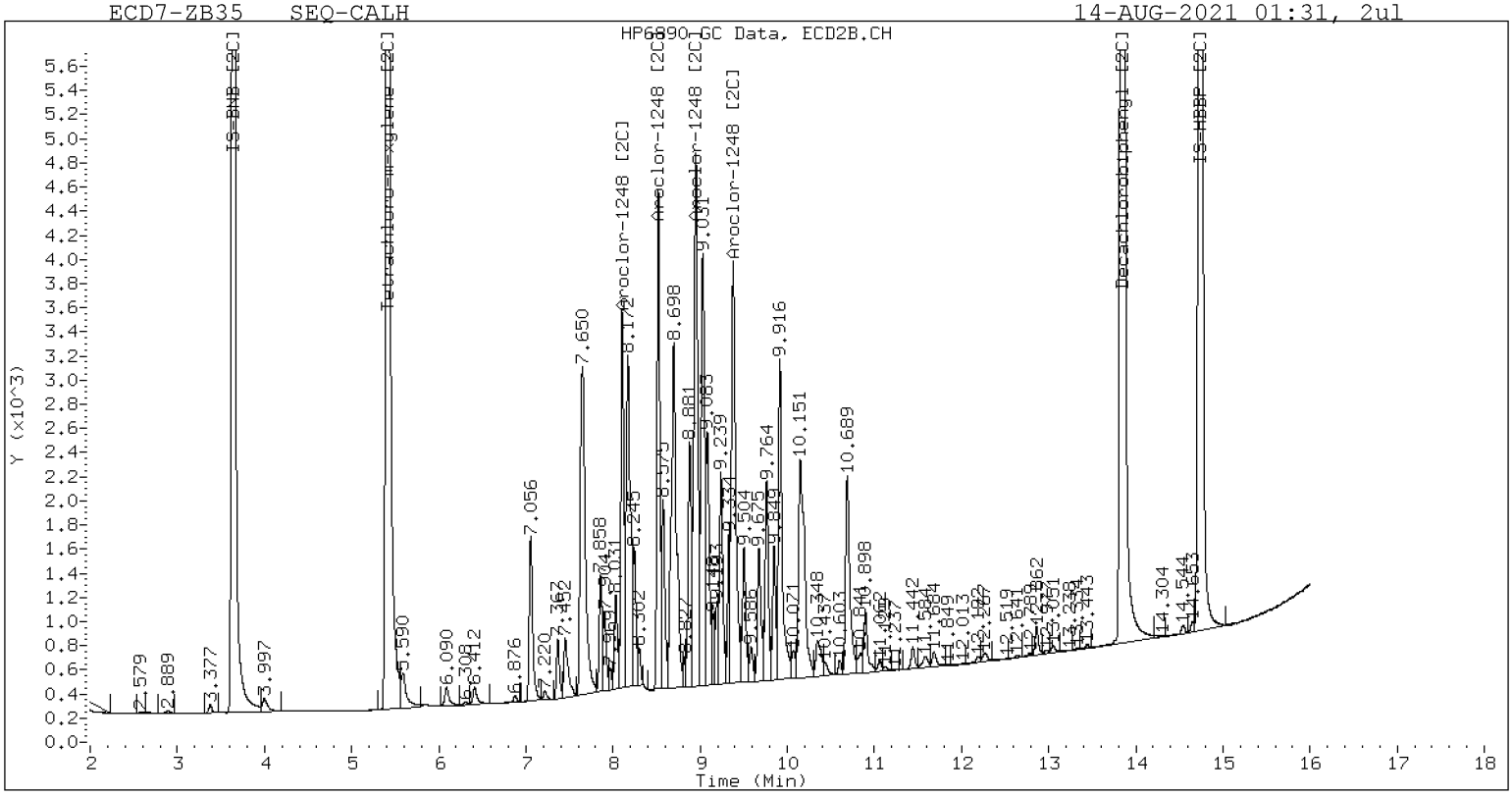
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALH 14-AUG-2021 01:31, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALH 14-AUG-2021 01:31, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132122ECD7.D
Data file 2: /210813.b/210813.b/08132122ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALI
Client ID:
Injection Date: 14-AUG-2021 01:52
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.070	0.001	582913	5.416	-0.001	1679809	163.4	158.5	3.0	Tetrachloro-m-xylene
13.166	-0.000	680323	13.864	-0.016	4446270	147.6	182.2	21.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	295167	14.0
Hexabromobiphenyl	425681	507659	19.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	824788	14.4
Hexabromobiphenyl	863111	1098014	27.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	7.799	0.000	125808	1017.1	1	8.106	0.000	308725	903.3
Aroclor-1248	2	7.968	0.000	164812	1020.7	2	8.520	0.000	397648	955.8
Aroclor-1248	3	8.375	0.000	229127	969.1	3	8.947	0.000	584191	881.6
Aroclor-1248	4	8.674	0.000	110918	821.8	4	9.377	0.000	534195	949.2

Total Col1Ave (4 peaks): 957.2 Total Col2Ave (4 peaks): 922.5 RPD = 4

Corrected Ave (3 peaks): 936.0 Corrected Ave (3 peaks): 911.4 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 2472059 Col1 Total PCB = 0.8 ppm*

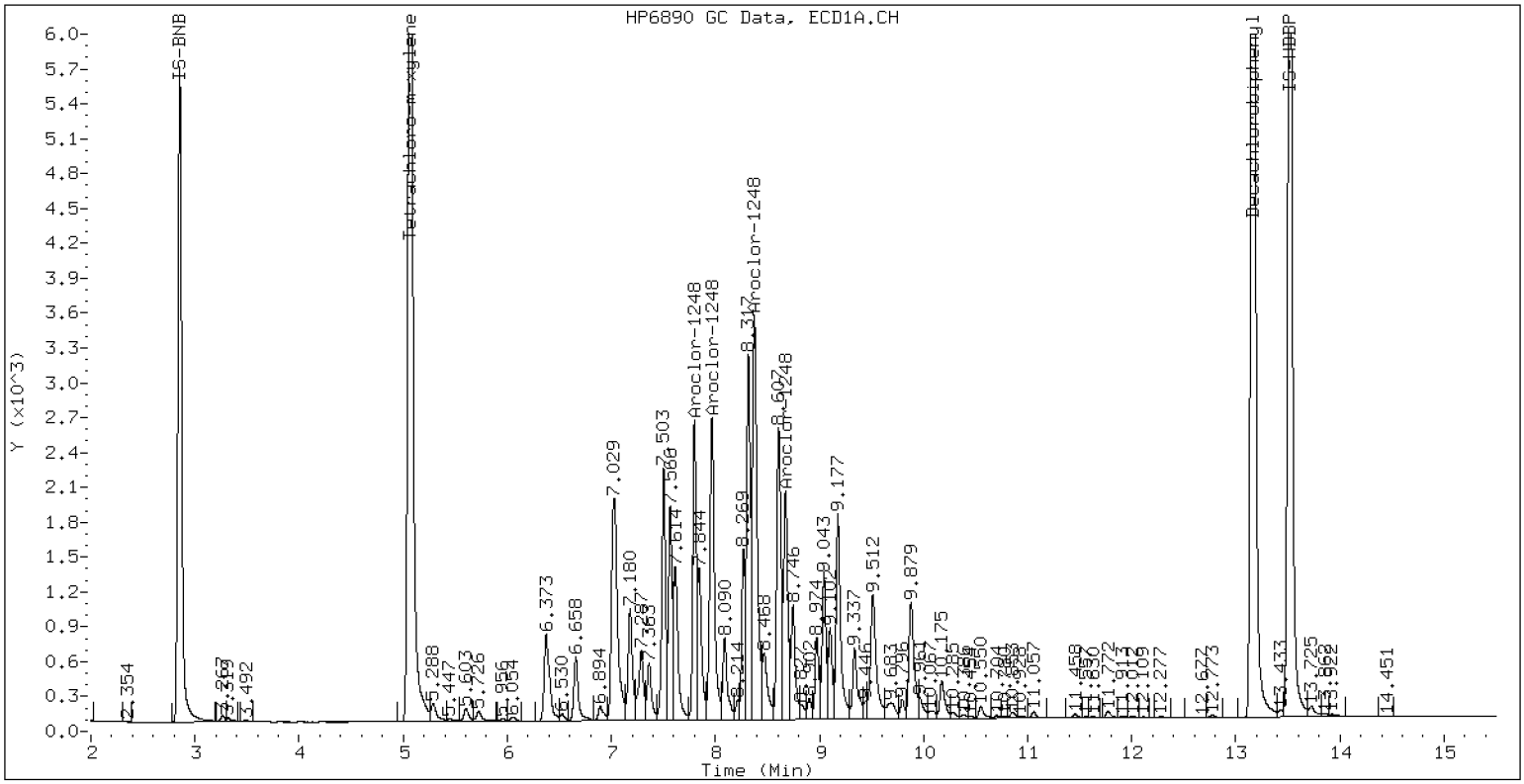
Total PCB Area Col2 (5.169 - 13.066) = 9114889 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

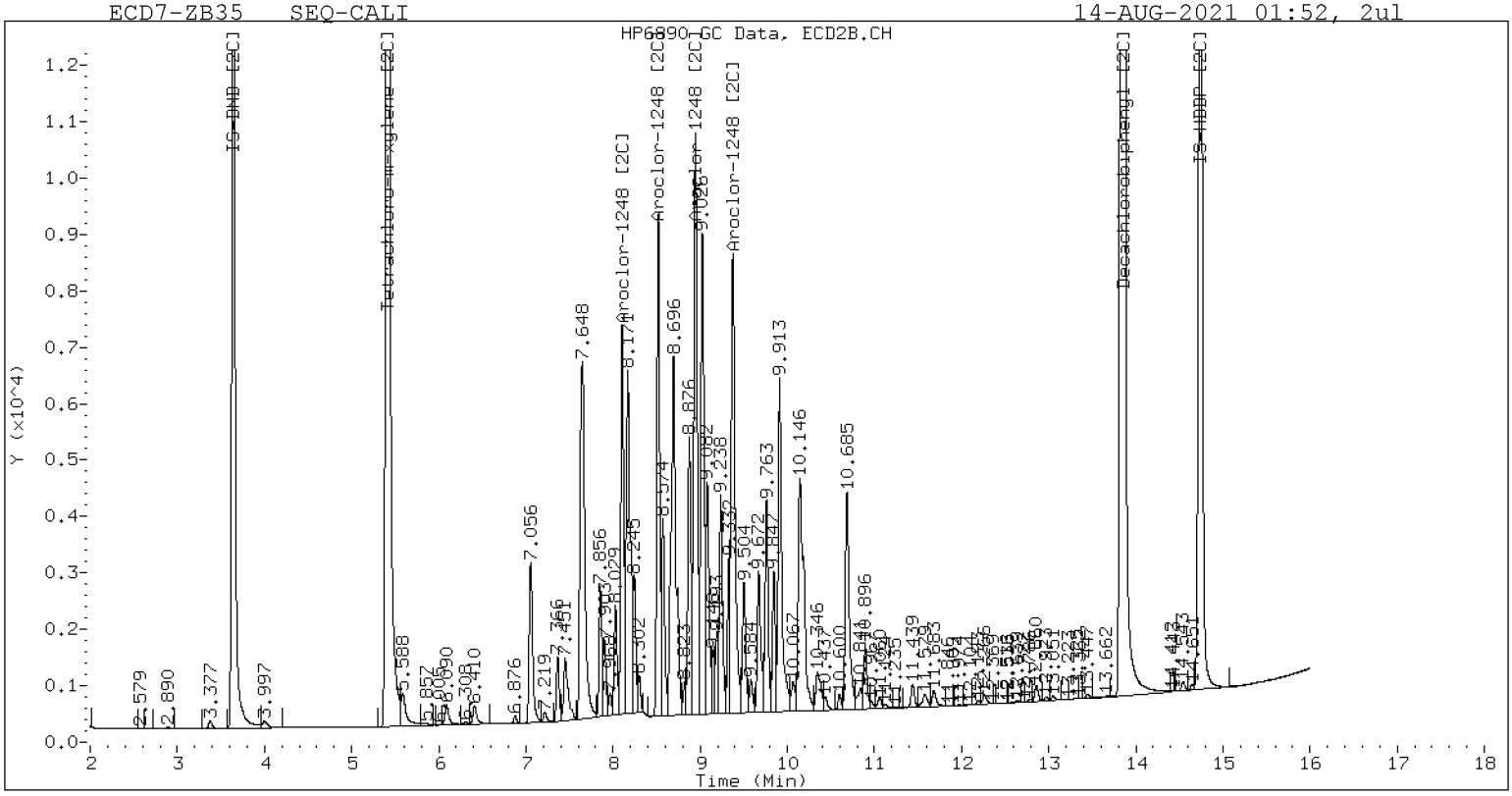
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALI 14-AUG-2021 01:52, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALI 14-AUG-2021 01:52, 2ul

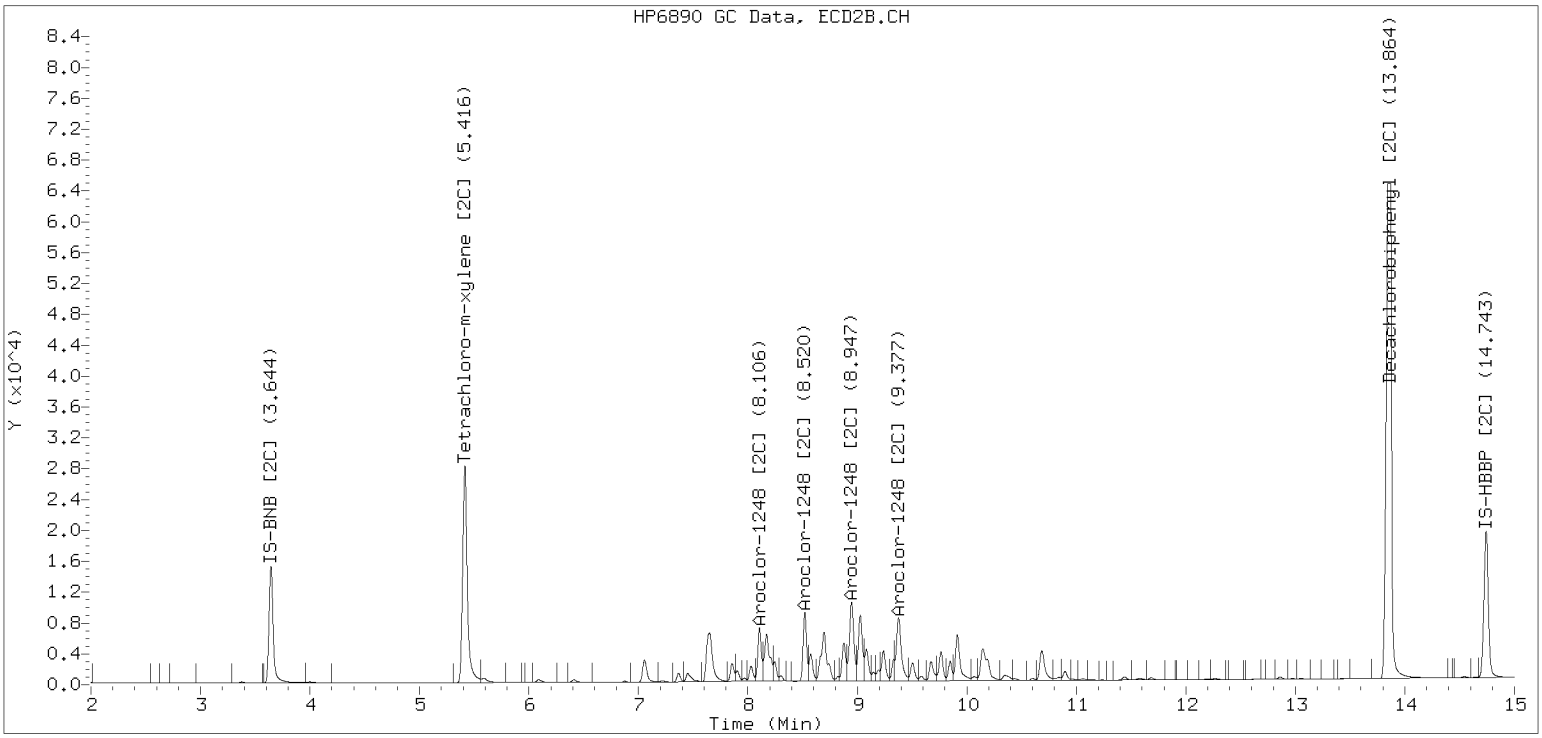


ZB-35 Manual Integration: YES

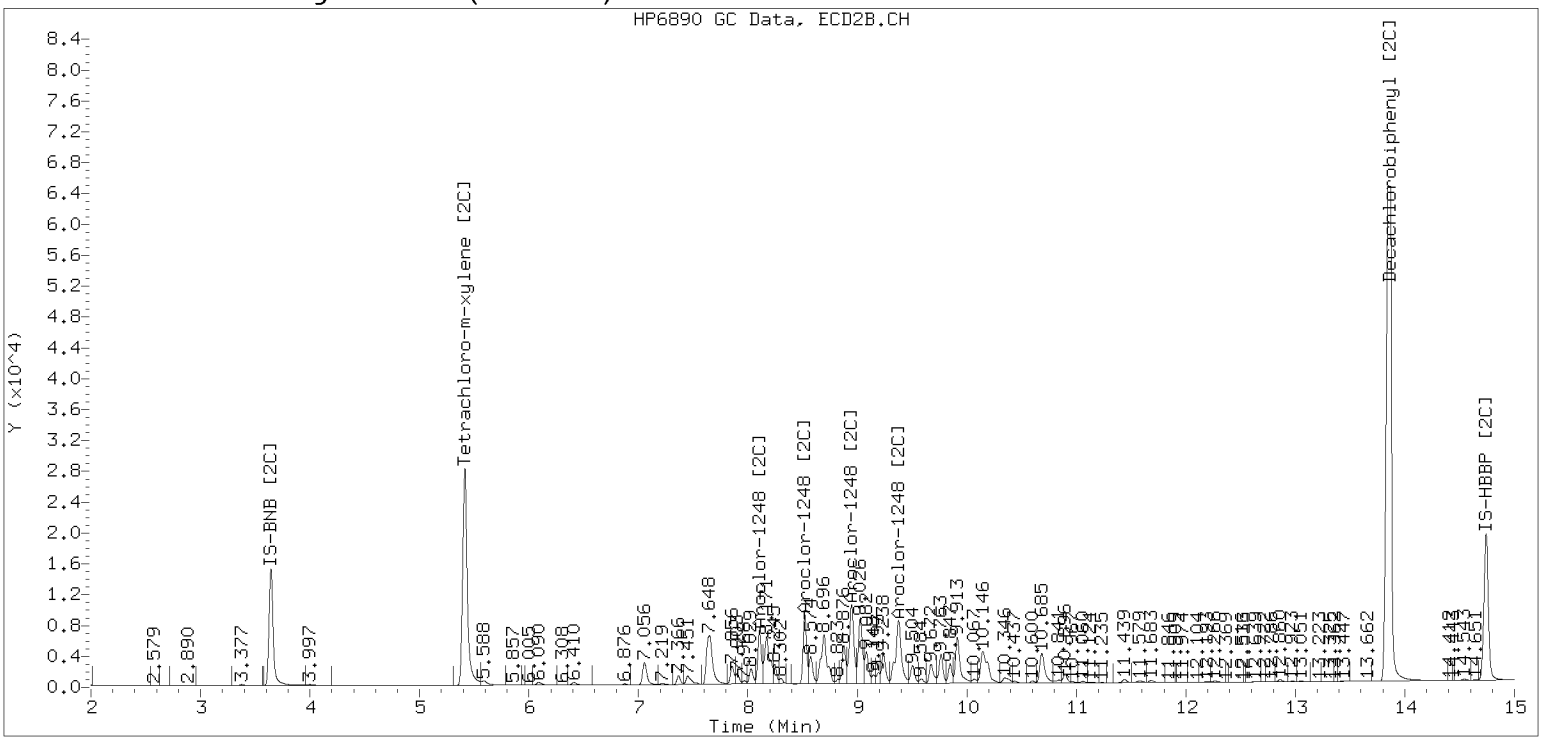
Manual Peak Adjustment, ZB-35

Datafile: ecd7.i/210813.b/210813.b/08132122.D Injection Date: 14-AUG-2021 01:5

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132123ECD7.D
Data file 2: /210813.b/210813.b/08132123ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALJ
Client ID:
Injection Date: 14-AUG-2021 02:12
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	8962	5.414	-0.003	30209	3.0	3.3	11.8	Tetrachloro-m-xylene
13.166	-0.000	13286	13.848	-0.032	64539	3.4	3.2	5.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	250594	-3.2
Hexabromobiphenyl	425681	434759	2.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705804	-2.1
Hexabromobiphenyl	863111	908740	5.3

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1254	1	8.681	0.006	4488	20.8	1	9.246	0.006	13920	23.2
Aroclor-1254	2	8.753	0.007	2067	20.7	2	9.340	0.009	9031	25.6
Aroclor-1254	3	9.050	0.008	3084	21.9	3	9.771	0.008	10488	22.9
Aroclor-1254	4	9.188	0.012	4799	17.8	4	9.923	0.009	24430	24.1
Aroclor-1254	5	9.870	0.003	2898	17.1	5	10.163	0.015	22175	21.6

Total Col1Ave (5 peaks): 19.7 Total Col2Ave (5 peaks): 23.5 RPD = 18

Corrected Ave (4 peaks): 19.1 Corrected Ave (4 peaks): 22.9 RPD = 18

Total PCB Area Col1 (5.169 - 13.066) = 50204 Col1 Total PCB = 0.0 ppm*

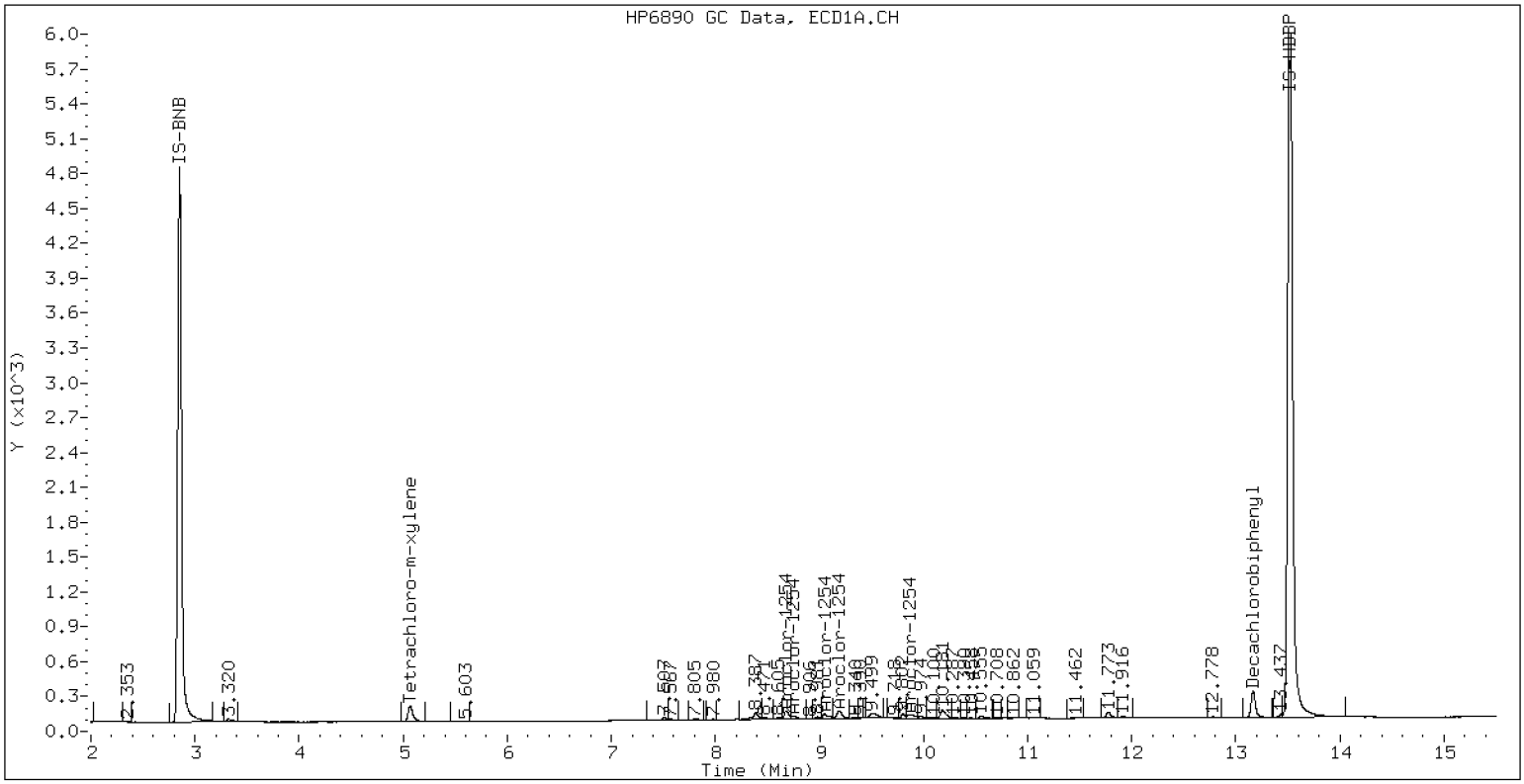
Total PCB Area Col2 (5.169 - 13.066) = 262235 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

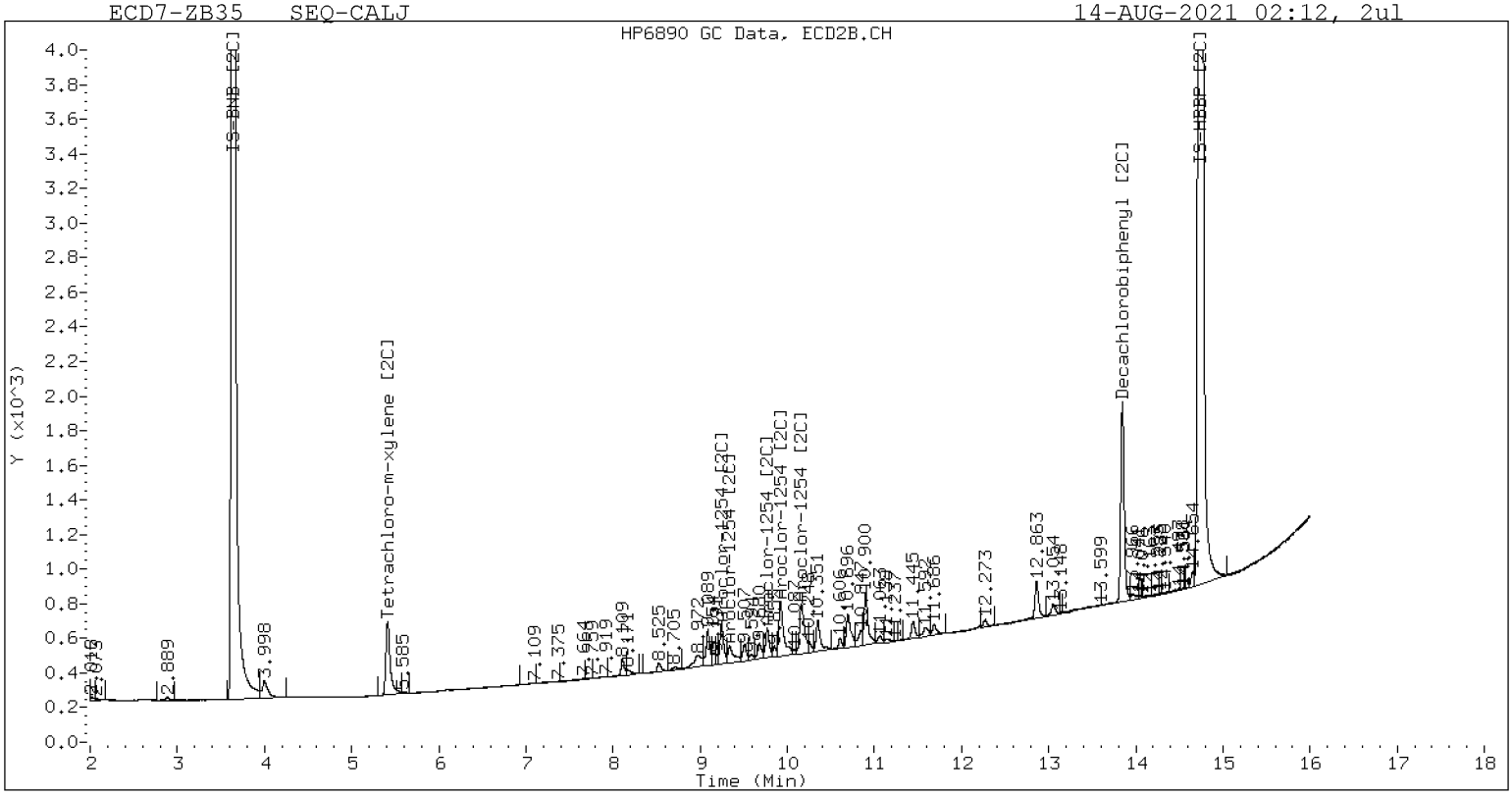
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALJ 14-AUG-2021 02:12, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALJ 14-AUG-2021 02:12, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132124ECD7.D
Data file 2: /210813.b/210813.b/08132124ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALK
Client ID:
Injection Date: 14-AUG-2021 02:33
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	23301	5.413	-0.004	73808	7.5	7.9	6.1	Tetrachloro-m-xylene
13.165	-0.001	32607	13.846	-0.034	161371	8.1	7.8	3.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258452	-0.2
Hexabromobiphenyl	425681	444493	4.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724096	0.4
Hexabromobiphenyl	863111	930444	7.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	8.680	0.004	11221	50.3	1	9.243	0.004	32682	53.0
Aroclor-1254	2	8.751	0.005	5597	54.2	2	9.338	0.006	19336	53.5
Aroclor-1254	3	9.049	0.008	6912	47.6	3	9.769	0.006	24144	51.4
Aroclor-1254	4	9.186	0.010	13929	50.2	4	9.921	0.007	53197	51.1
Aroclor-1254	5	9.868	0.000	8358	47.9	5	10.160	0.012	53520	50.7

Total Col1Ave (5 peaks): 50.0 Total Col2Ave (5 peaks): 52.0 RPD = 4

Corrected Ave (4 peaks): 49.0 Corrected Ave (4 peaks): 51.6 RPD = 5

Total PCB Area Col1 (5.169 - 13.066) = 139190 Col1 Total PCB = 0.1 ppm*

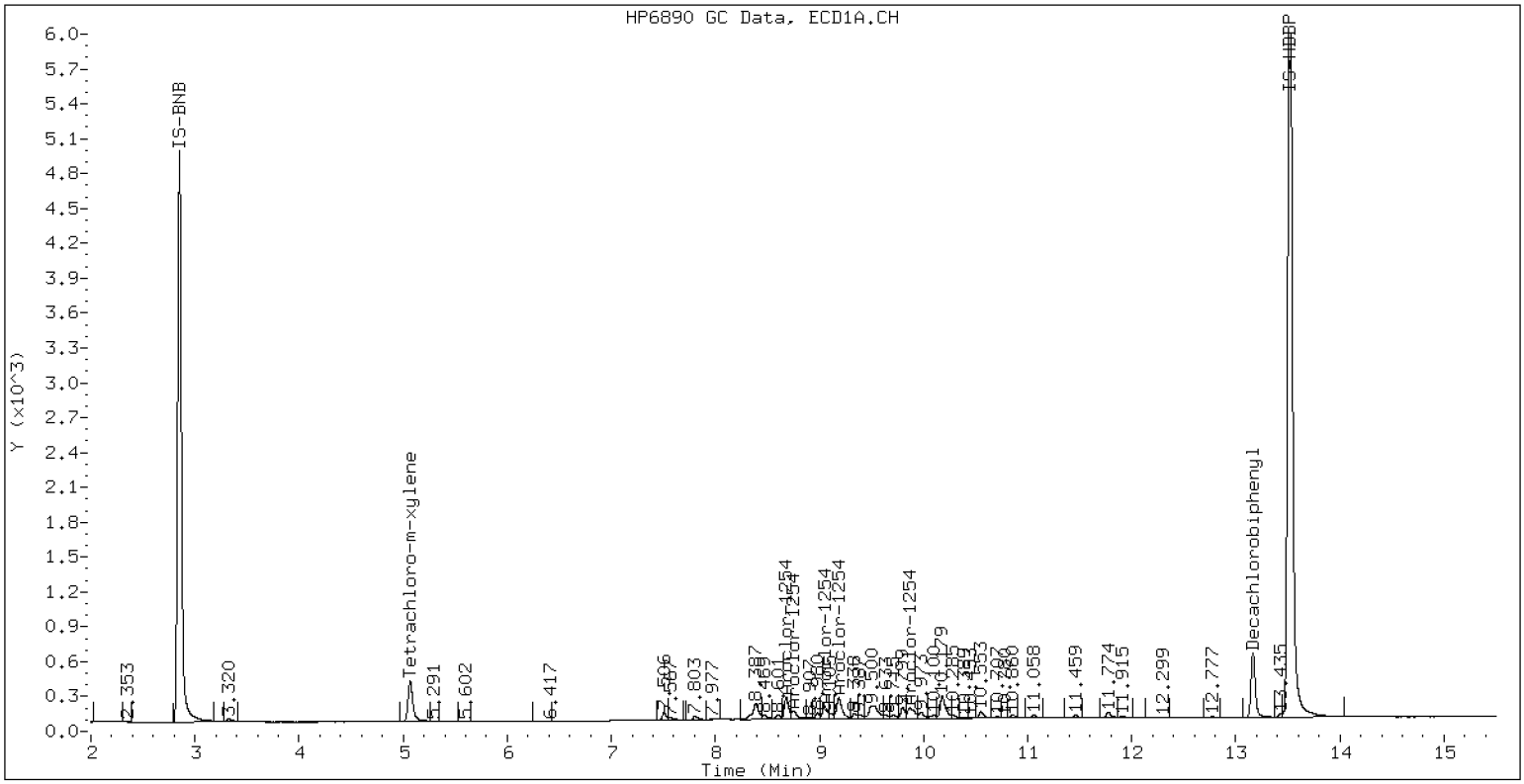
Total PCB Area Col2 (5.169 - 13.066) = 597839 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

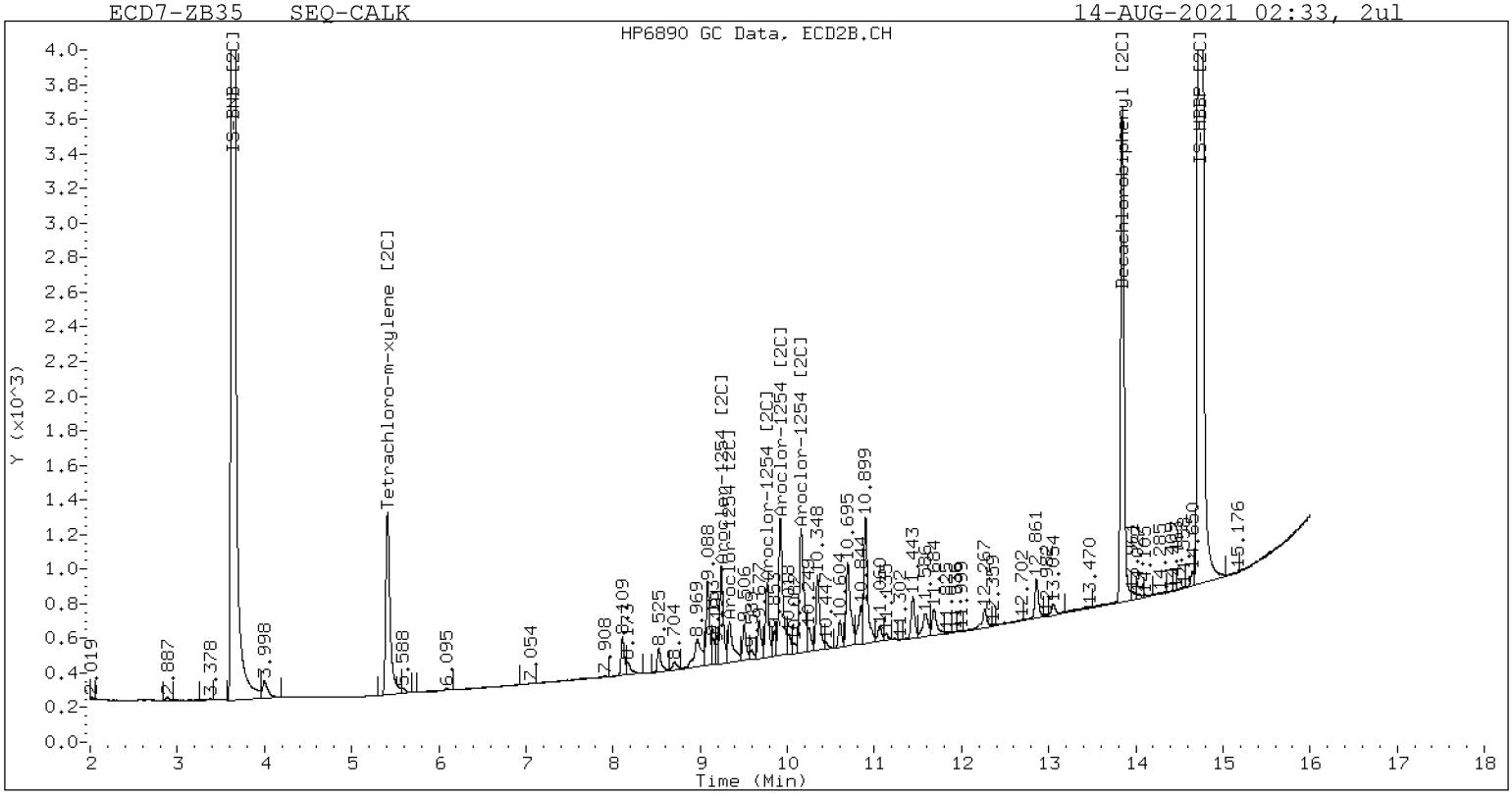
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALK 14-AUG-2021 02:33, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALK 14-AUG-2021 02:33, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132125ECD7.D
Data file 2: /210813.b/210813.b/08132125ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALL
Client ID:
Injection Date: 14-AUG-2021 02:53
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	50378	5.414	-0.003	153493	15.6	16.0	2.4	Tetrachloro-m-xylene
13.166	0.000	66760	13.847	-0.033	338703	16.0	15.8	0.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	266772	3.1
Hexabromobiphenyl	425681	460841	8.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	746546	3.5
Hexabromobiphenyl	863111	963688	11.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	8.680	0.004	23018	100.0	1	9.243	0.003	64493	101.5
Aroclor-1254	2	8.751	0.005	11045	103.7	2	9.337	0.006	37205	99.8
Aroclor-1254	3	9.049	0.008	14399	96.0	3	9.768	0.005	48720	100.6
Aroclor-1254	4	9.184	0.008	29413	102.6	4	9.919	0.006	108022	100.7
Aroclor-1254	5	9.870	0.003	17840	99.1	5	10.158	0.011	110407	101.5

Total Col1Ave (5 peaks): 100.3 Total Col2Ave (5 peaks): 100.8 RPD = 1
Corrected Ave (4 peaks): 99.4 Corrected Ave (4 peaks): 100.6 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 293494 Col1 Total PCB = 0.1 ppm*

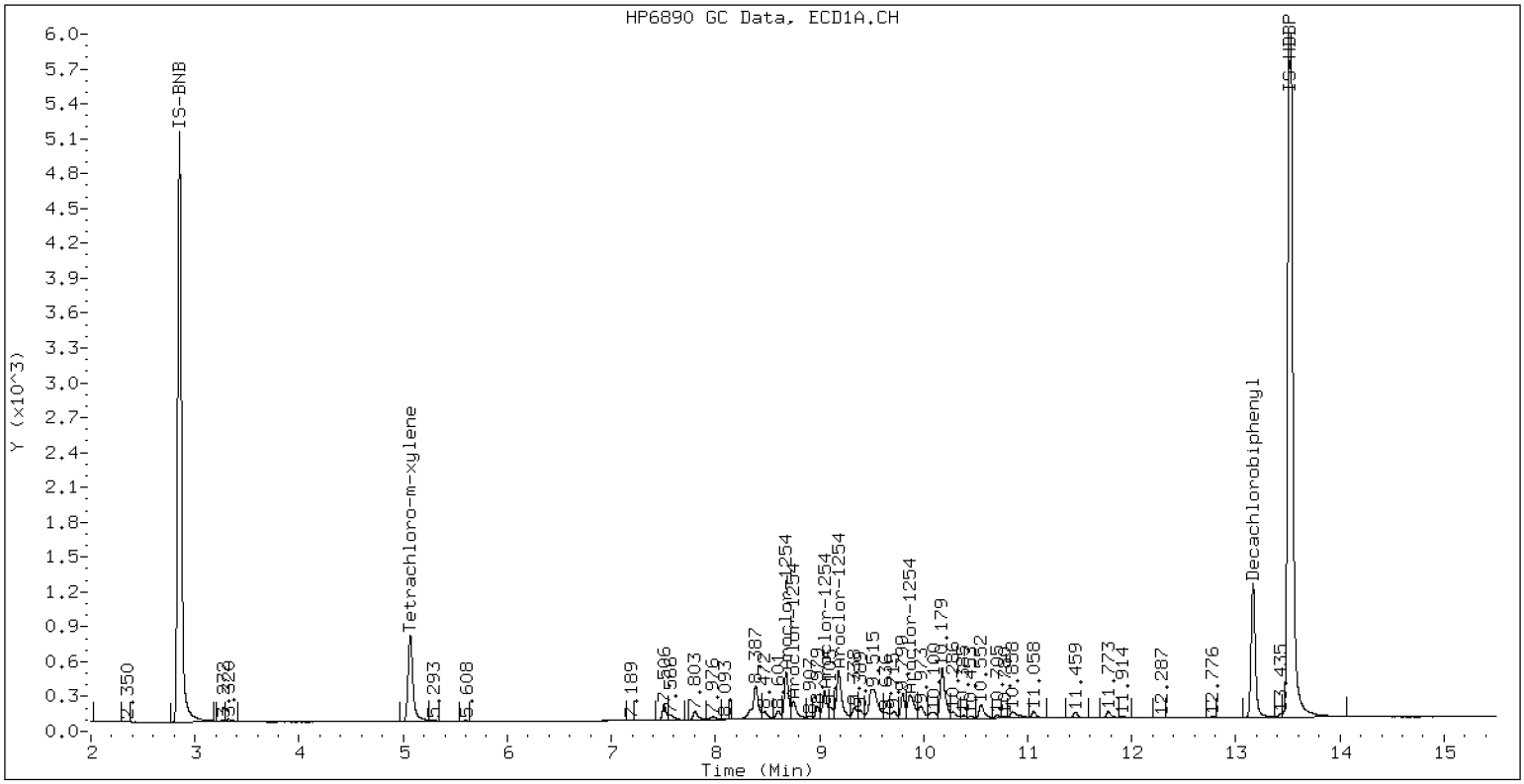
Total PCB Area Col2 (5.169 - 13.066) = 1195216 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

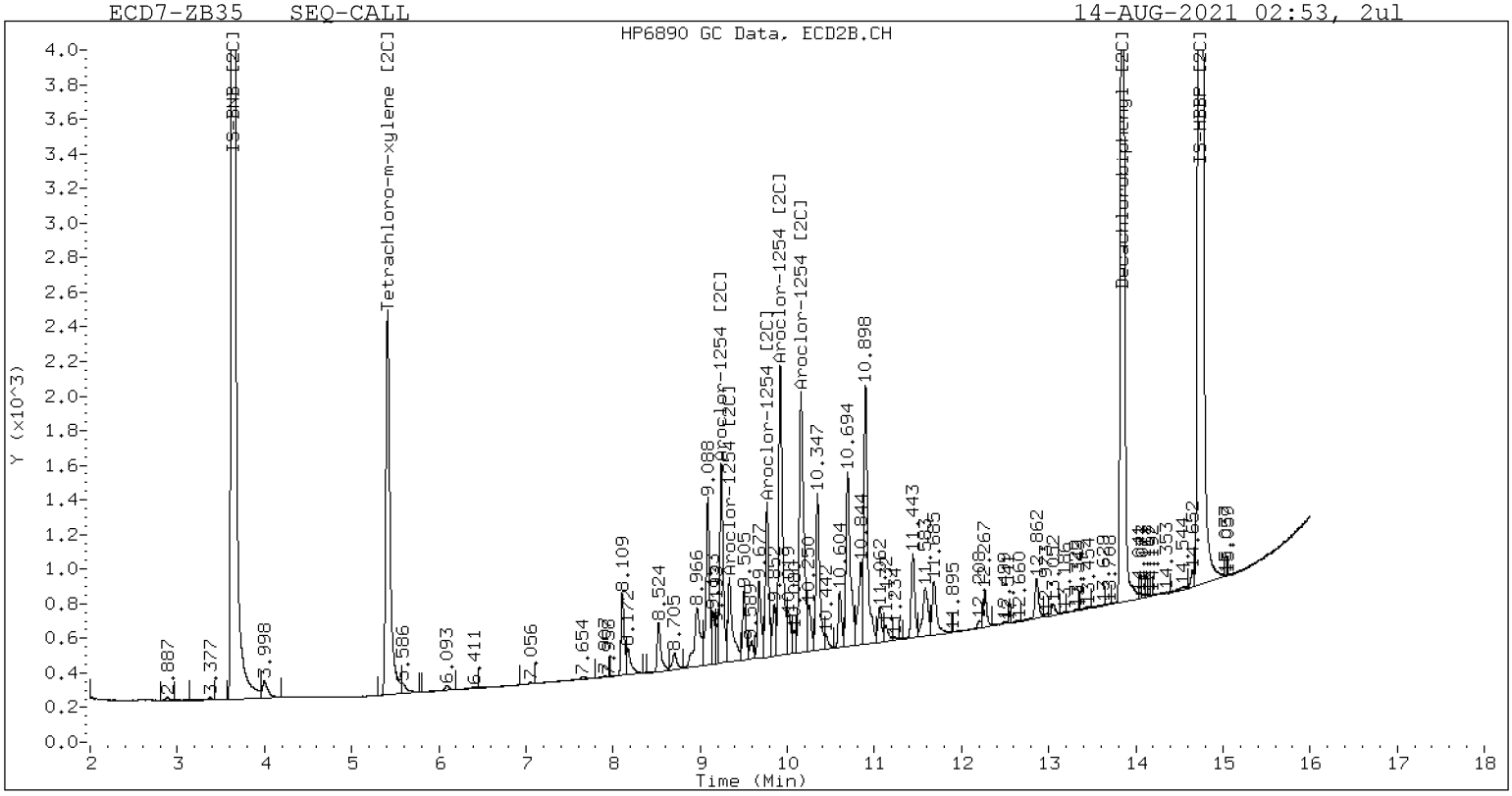
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALL 14-AUG-2021 02:53, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALL 14-AUG-2021 02:53, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132126ECD7.D
Data file 2: /210813.b/210813.b/08132126ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALM
Client ID:
Injection Date: 14-AUG-2021 03:13
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.067	-0.002	129839	5.412	-0.005	378453	40.6	39.8	2.1	Tetrachloro-m-xylene
13.166	-0.000	164488	13.847	-0.033	851014	39.5	39.7	0.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264494	2.2
Hexabromobiphenyl	425681	458580	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740295	2.7
Hexabromobiphenyl	863111	964396	11.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1254	1	8.677	0.002	57893	253.7	1	9.241	0.002	152457	242.1
Aroclor-1254	2	8.748	0.002	27373	259.1	2	9.334	0.003	86362	233.6
Aroclor-1254	3	9.045	0.004	37206	250.2	3	9.765	0.002	117837	245.4
Aroclor-1254	4	9.180	0.004	74612	262.6	4	9.917	0.003	252955	237.7
Aroclor-1254	5	9.870	0.003	47061	263.7	5	10.154	0.007	267905	248.3

Total Col1Ave (5 peaks): 257.9 Total Col2Ave (5 peaks): 241.4 RPD = 7
Corrected Ave (4 peaks): 256.4 Corrected Ave (4 peaks): 239.7 RPD = 7

Total PCB Area Col1 (5.169 - 13.066) = 753890 Col1 Total PCB = 0.3 ppm*

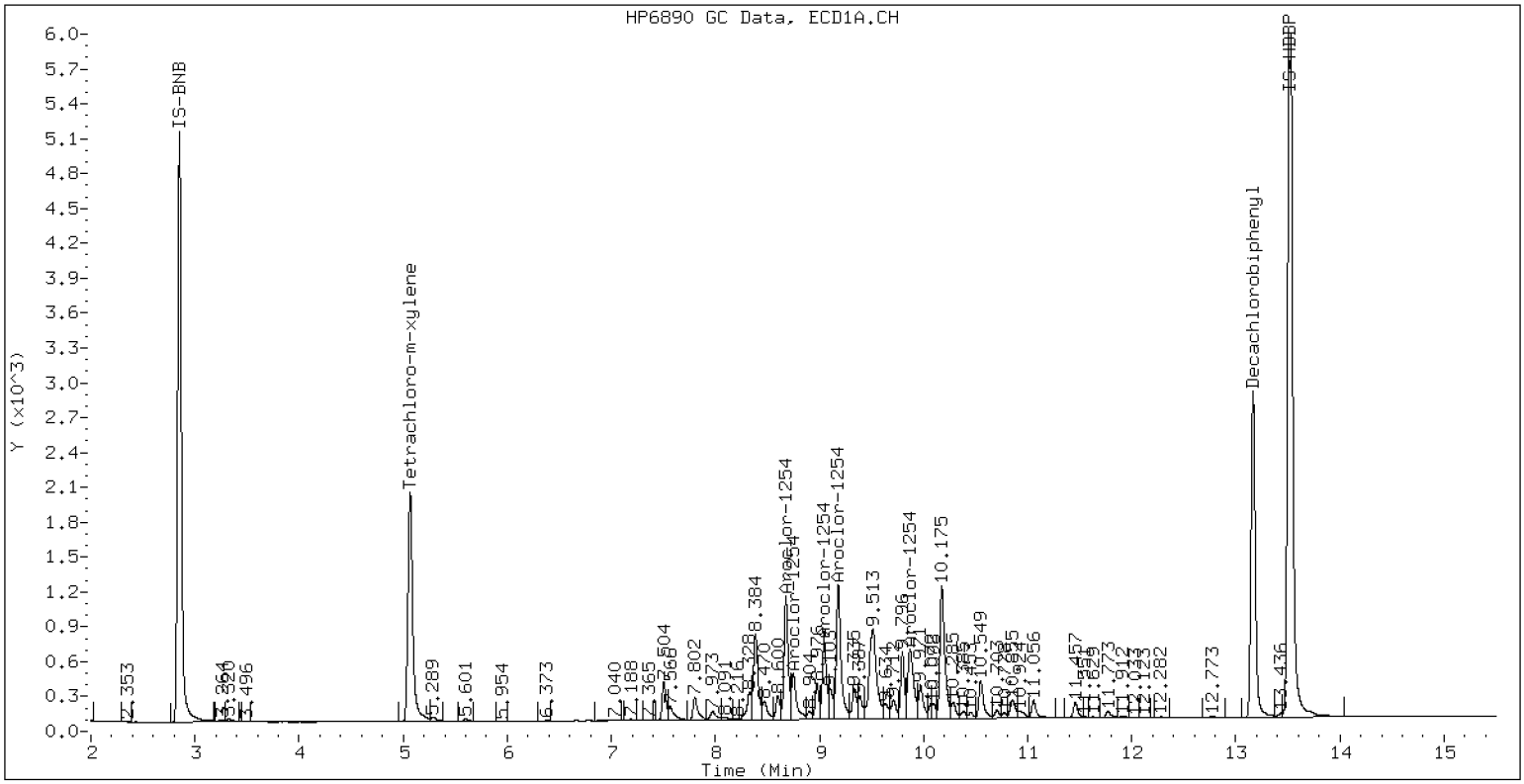
Total PCB Area Col2 (5.169 - 13.066) = 2870074 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

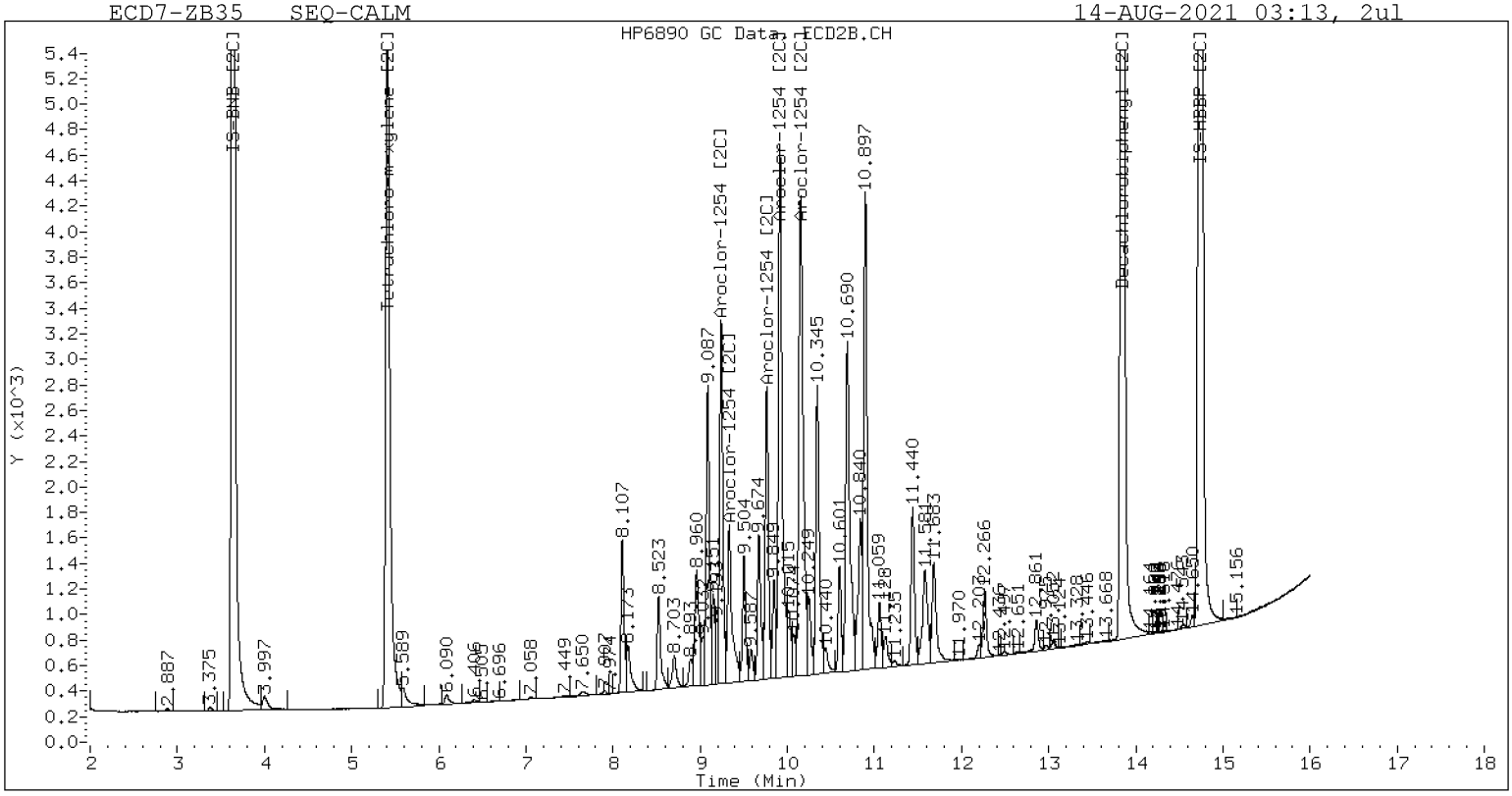
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALM 14-AUG-2021 03:13, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALM 14-AUG-2021 03:13, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132127ECD7.D
Data file 2: /210813.b/210813.b/08132127ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALN
Client ID:
Injection Date: 14-AUG-2021 03:34
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	265807	5.414	-0.003	746945	82.3	78.5	4.8	Tetrachloro-m-xylene
13.166	0.000	321408	13.852	-0.028	1865676	78.5	87.1	10.5	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	267061	3.2
Hexabromobiphenyl	425681	451316	6.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740536	2.7
Hexabromobiphenyl	863111	963913	11.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	8.676	0.001	115032	499.3	1	9.240	0.001	293539	465.9
Aroclor-1254	2	8.748	0.002	51941	487.0	2	9.332	0.001	165511	447.6
Aroclor-1254	3	9.043	0.002	75458	502.5	3	9.764	0.001	228480	475.7
Aroclor-1254	4	9.178	0.002	149029	519.4	4	9.914	0.001	491425	461.7
Aroclor-1254	5	9.869	0.002	96576	536.0	5	10.151	0.003	526835	488.1

Total Col1Ave (5 peaks): 508.8 Total Col2Ave (5 peaks): 467.8 RPD = 8
Corrected Ave (4 peaks): 502.0 Corrected Ave (4 peaks): 462.7 RPD = 8

Total PCB Area Col1 (5.169 - 13.066) = 1500587 Col1 Total PCB = 0.6 ppm*

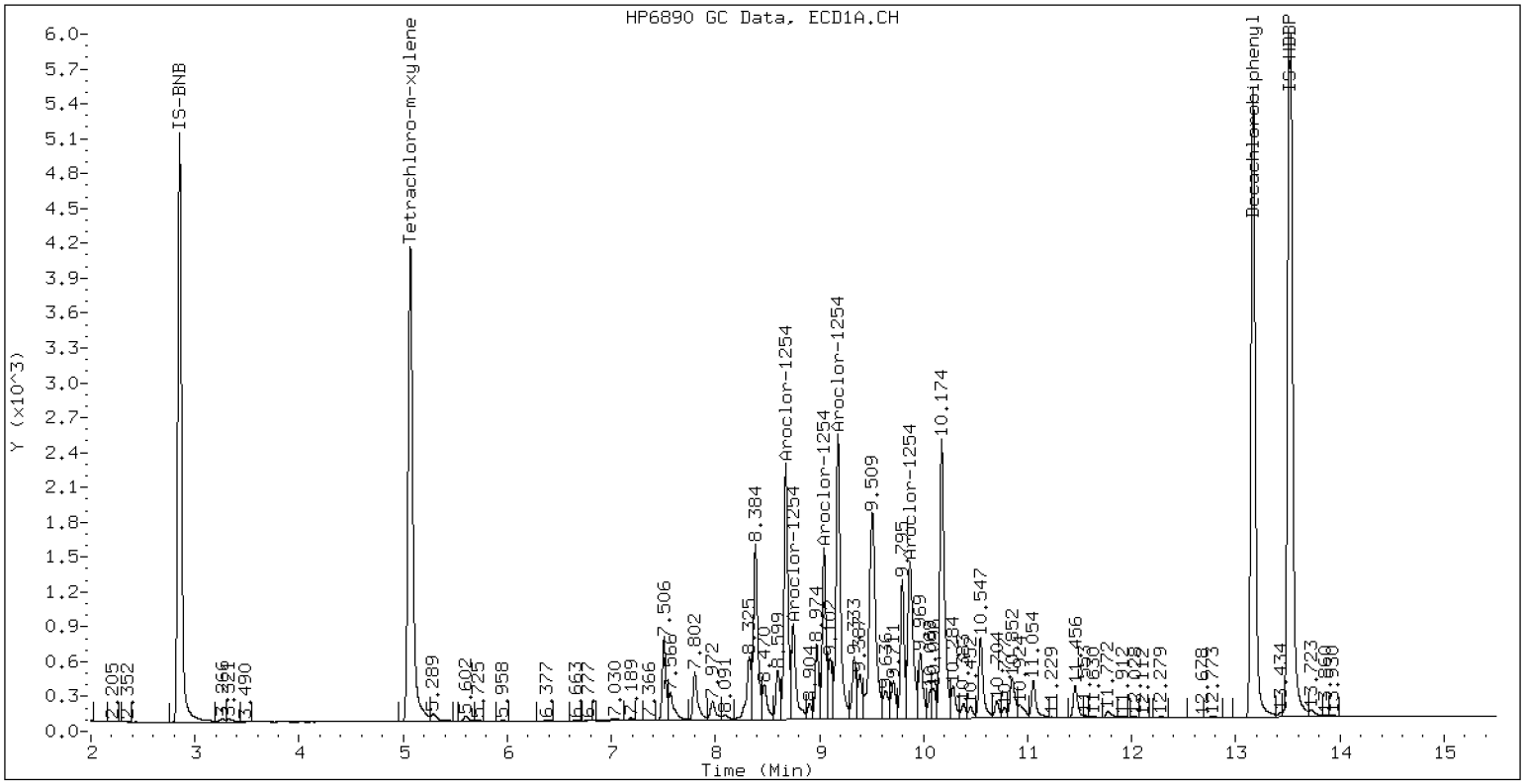
Total PCB Area Col2 (5.169 - 13.066) = 5575259 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

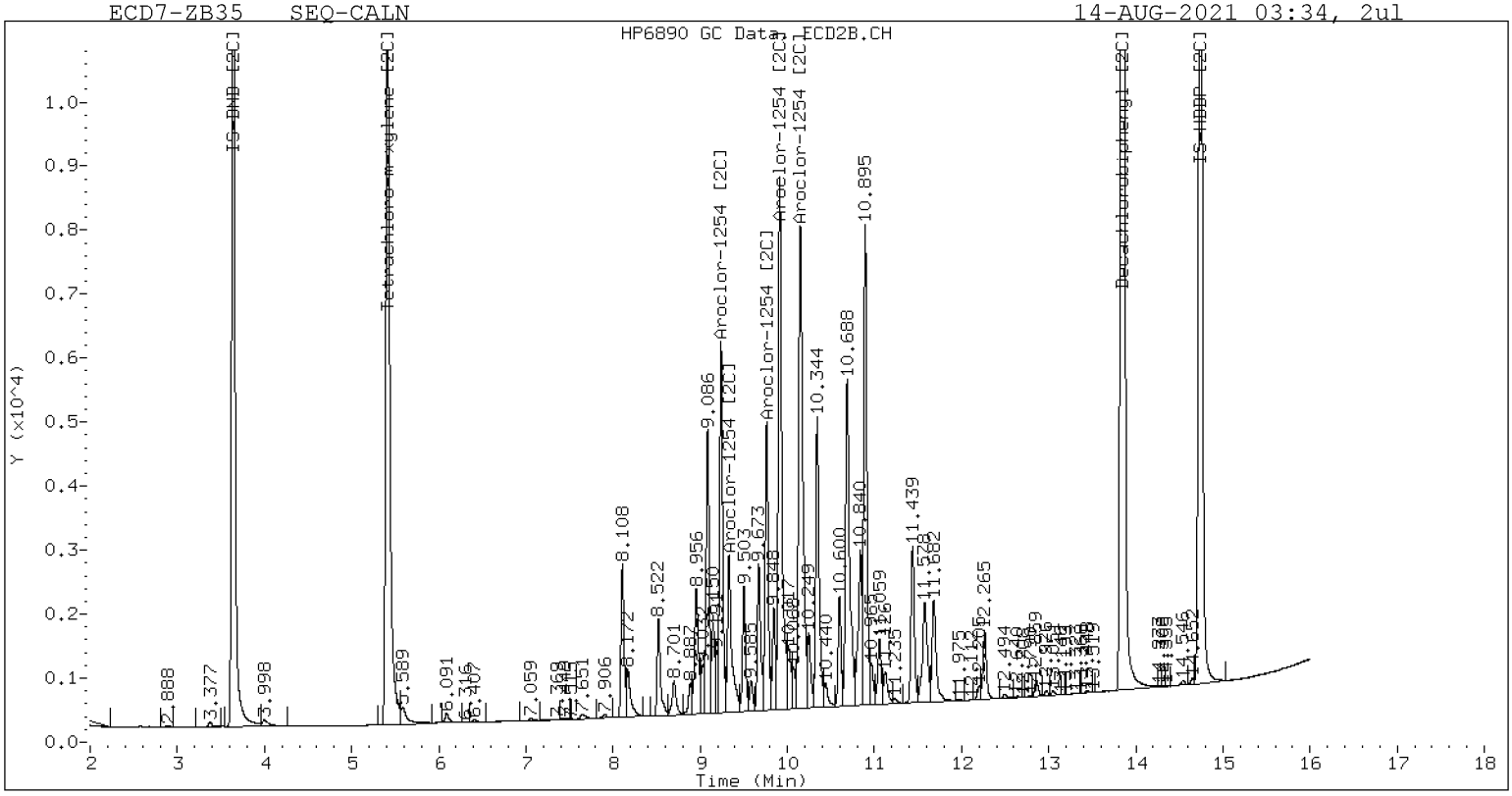
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALN 14-AUG-2021 03:34, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALN 14-AUG-2021 03:34, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132128ECD7.D
Data file 2: /210813.b/210813.b/08132128ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALO
Client ID:
Injection Date: 14-AUG-2021 03:54
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	586983	5.415	-0.002	1678624	161.8	156.5	3.4	Tetrachloro-m-xylene
13.166	0.000	682825	13.863	-0.017	4502724	146.2	180.1	20.8	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	300162	16.0
Hexabromobiphenyl	425681	514689	20.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	834903	15.8
Hexabromobiphenyl	863111	1125324	30.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1254	1	8.675	0.000	243956	942.1	1	9.239	0.000	614196	864.6
Aroclor-1254	2	8.746	0.000	100189	835.7	2	9.331	0.000	342359	821.2
Aroclor-1254	3	9.041	0.000	166951	989.1	3	9.763	0.000	480470	887.2
Aroclor-1254	4	9.176	0.000	319165	989.8	4	9.914	0.000	1070997	892.5
Aroclor-1254	5	9.867	0.000	215902	1066.1	5	10.147	0.000	1124677	924.2

Total Col1Ave (5 peaks): 964.6 Total Col2Ave (5 peaks): 878.0 RPD = 9

Corrected Ave (4 peaks): 939.2 Corrected Ave (4 peaks): 866.4 RPD = 8

Total PCB Area Col1 (5.169 - 13.066) = 3250417 Col1 Total PCB = 1.1 ppm*

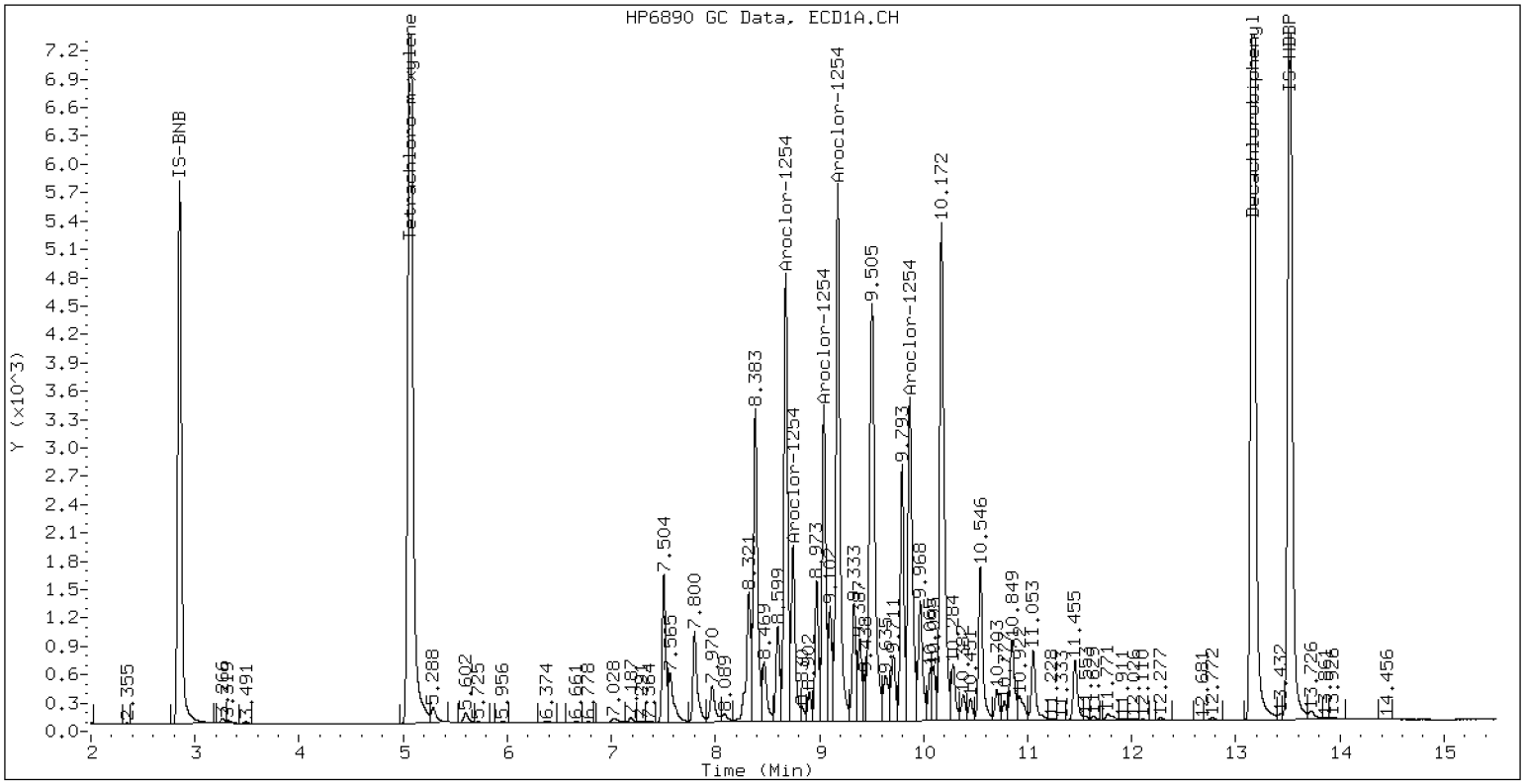
Total PCB Area Col2 (5.169 - 13.066) = 11917701 Col2 Total PCB = 1.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

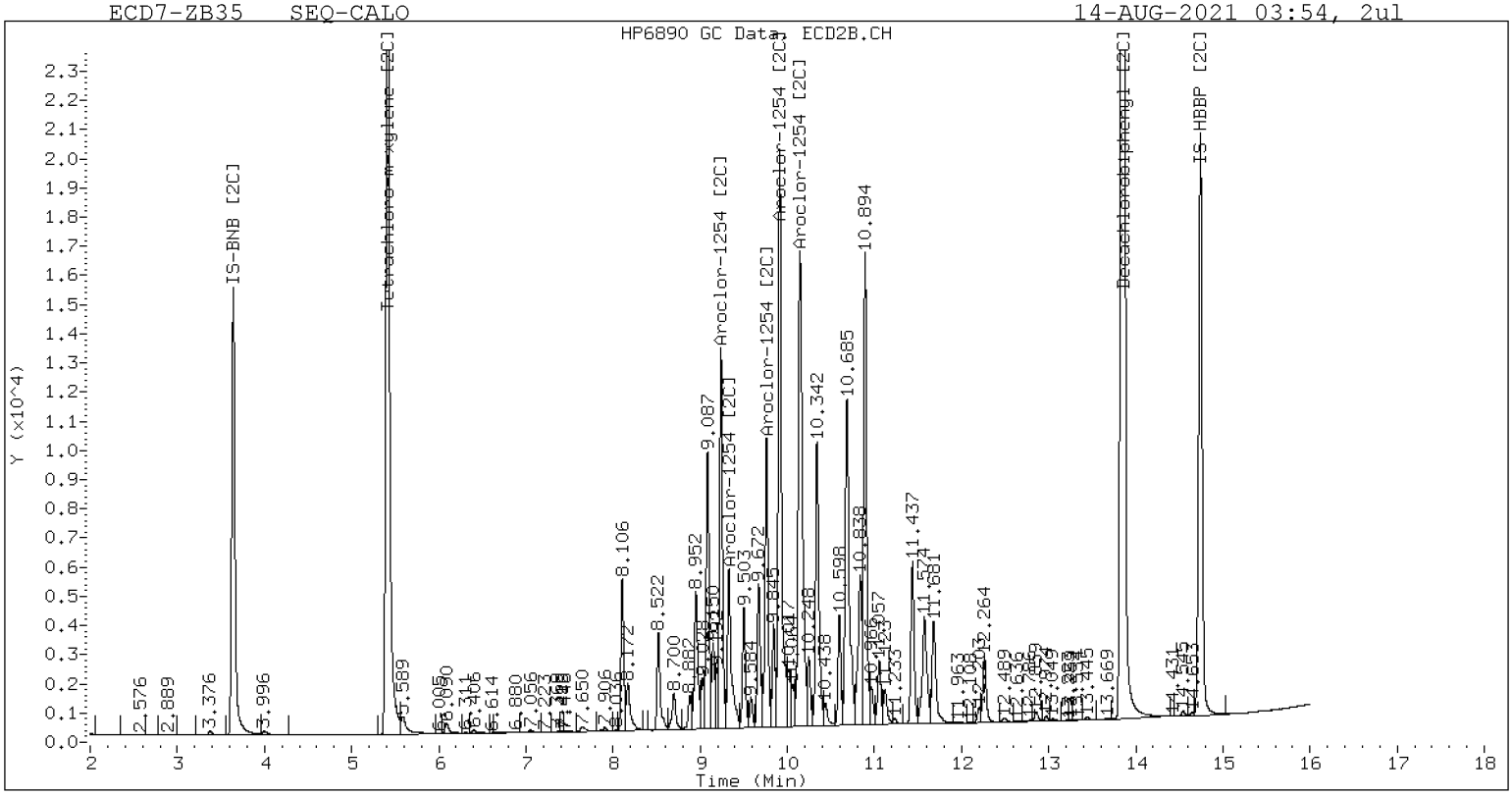
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALO 14-AUG-2021 03:54, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALO 14-AUG-2021 03:54, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132129ECD7.D
Data file 2: /210813.b/210813.b/08132129ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALP
Client ID:
Injection Date: 14-AUG-2021 04:15
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.000	8898	5.414	-0.002	31562	3.0	3.6	16.8	Tetrachloro-m-xylene
13.165	-0.001	13265	13.846	-0.034	65033	3.4	3.2	5.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	245136	-5.3
Hexabromobiphenyl	425681	426488	0.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	690863	-4.2
Hexabromobiphenyl	863111	906417	5.0

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.020	0.005	374	19.3	1	4.676	-0.000	1086	20.9
Aroclor-1221	2	5.451	0.000	527	17.4	2	6.075	0.003	2479	20.9
Aroclor-1221	3	5.727	0.003	1570	19.2	3	6.414	0.005	4328	20.9
Total Col1Ave (3 peaks):				18.6		Total Col2Ave (3 peaks):			20.9	RPD = 12
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.388	0.004	5474	21.0	1	10.971	0.001	25181	22.7
Aroclor-1262	2	11.461	0.007	3302	19.6	2	11.682	-0.003	50188	21.5
Aroclor-1262	3	11.631	0.004	4964	20.4	3	12.188	0.000	22103	21.3
Aroclor-1262	4	12.279	0.005	4086	20.5	4	12.974	0.001	19713	20.4
Total Col1Ave (4 peaks):				20.4		Total Col2Ave (4 peaks):			21.5	RPD = 5
Corrected Ave (3 peaks):				20.2		Corrected Ave (3 peaks):			21.0	RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 81438 Col1 Total PCB = 0.0 ppm*

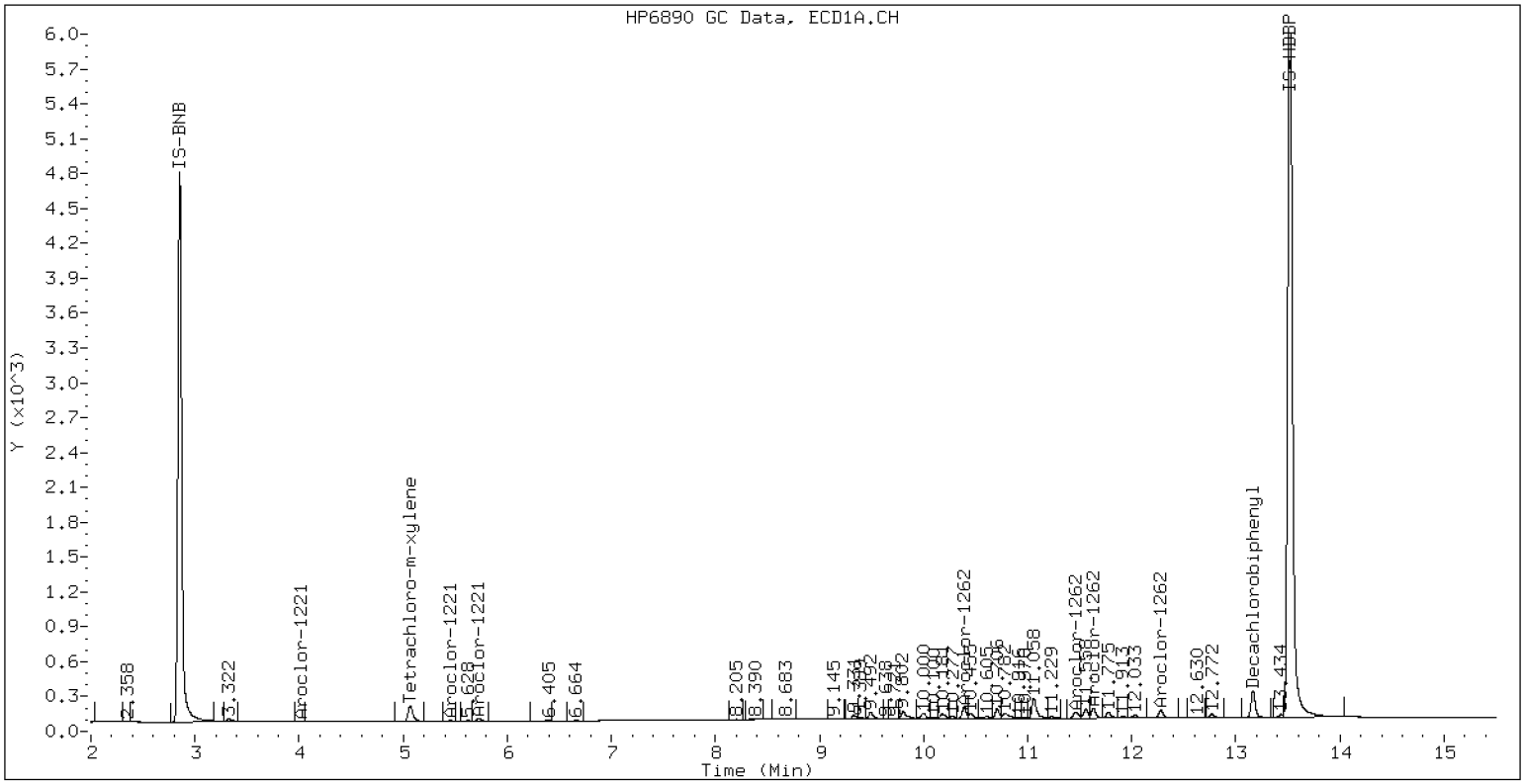
Total PCB Area Col2 (5.169 - 13.066) = 371772 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

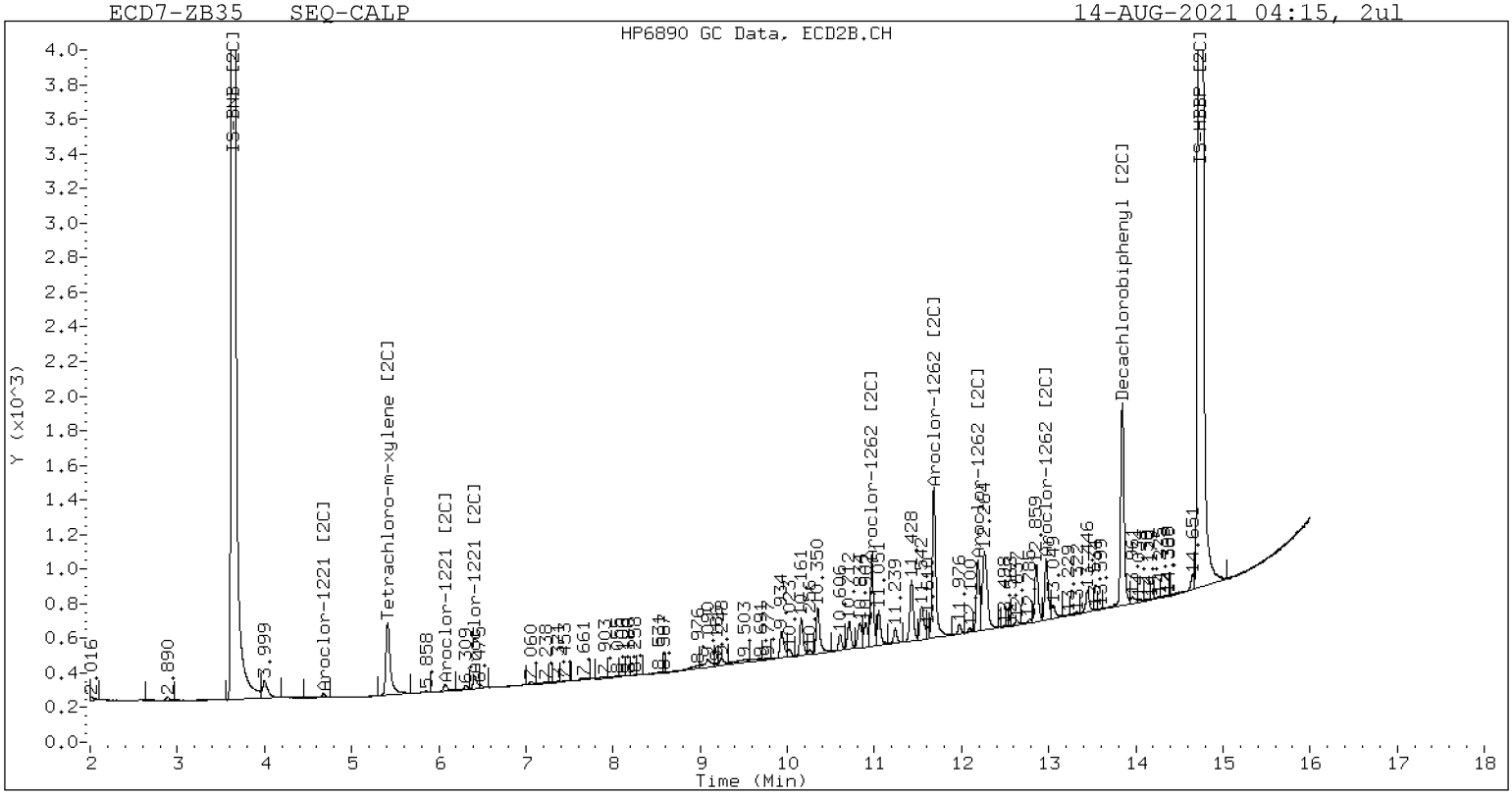
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALP 14-AUG-2021 04:15, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALP 14-AUG-2021 04:15, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132130ECD7.D
Data file 2: /210813.b/210813.b/08132130ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALQ
Client ID:
Injection Date: 14-AUG-2021 04:35
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	24022	5.414	-0.003	75627	7.6	8.0	5.5	Tetrachloro-m-xylene
13.165	-0.000	32624	13.846	-0.034	168101	7.9	7.8	1.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261668	1.1
Hexabromobiphenyl	425681	453964	6.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	733252	1.7
Hexabromobiphenyl	863111	968090	12.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.015	-0.000	1082	52.4	1	4.677	0.000	3140	57.1
Aroclor-1221	2	5.454	0.003	1371	42.3	2	6.075	0.003	6195	49.2
Aroclor-1221	3	5.727	0.002	4231	48.3	3	6.413	0.004	11143	50.7
Total Col1Ave (3 peaks):					47.7	Total Col2Ave (3 peaks):				52.3 RPD = 9
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.388	0.005	13372	48.3	1	10.971	0.001	61110	51.6
Aroclor-1262	2	11.461	0.007	8124	45.3	2	11.683	-0.003	122171	48.9
Aroclor-1262	3	11.630	0.004	12394	47.9	3	12.189	0.001	55035	49.6
Aroclor-1262	4	12.280	0.005	10210	48.1	4	12.974	0.001	49243	47.7
Total Col1Ave (4 peaks):					47.4	Total Col2Ave (4 peaks):				49.5 RPD = 4
Corrected Ave (3 peaks):					47.1	Corrected Ave (3 peaks):				48.7 RPD = 3

Total PCB Area Col1 (5.169 - 13.066) = 195251 Col1 Total PCB = 0.1 ppm*

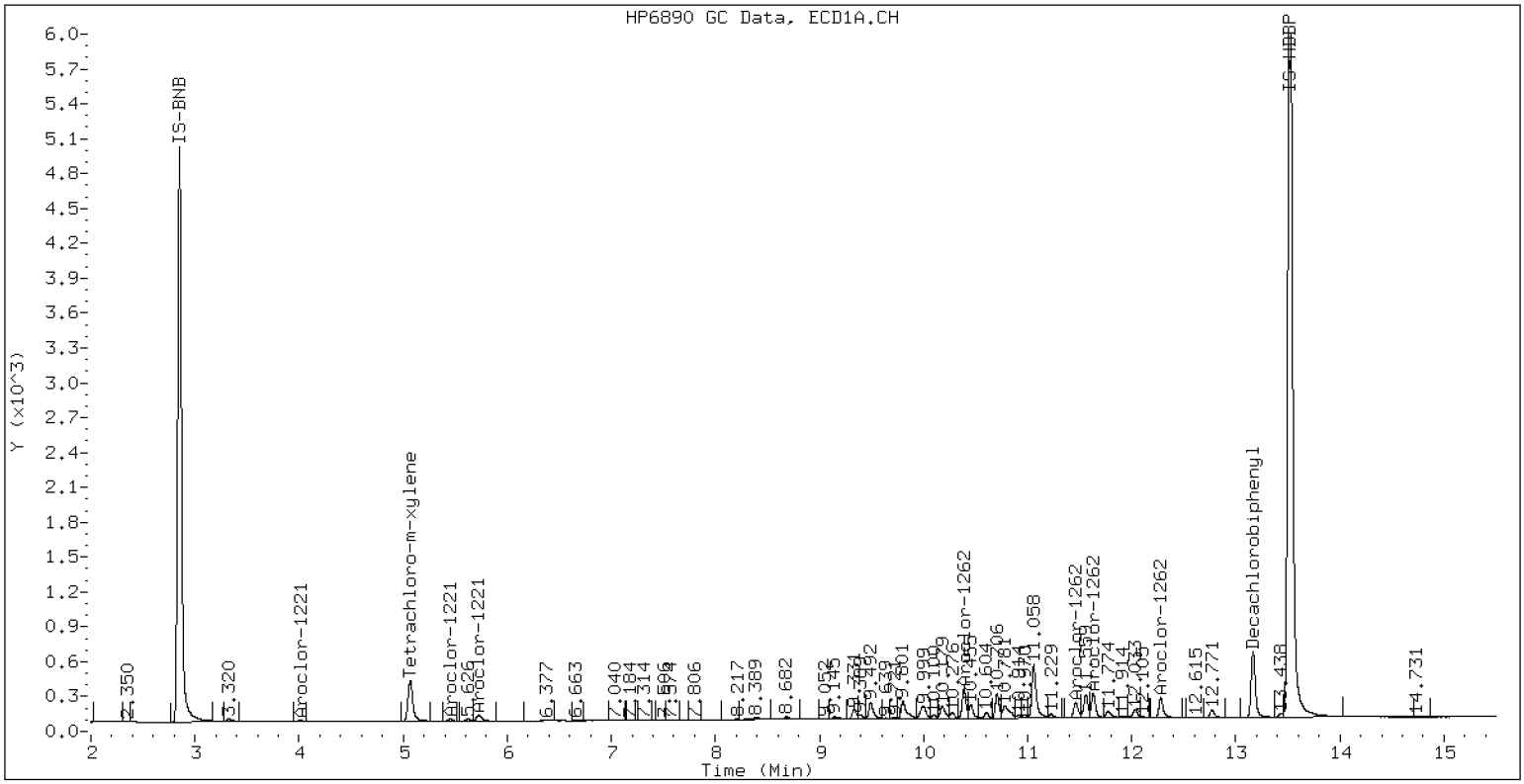
Total PCB Area Col2 (5.169 - 13.066) = 866797 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

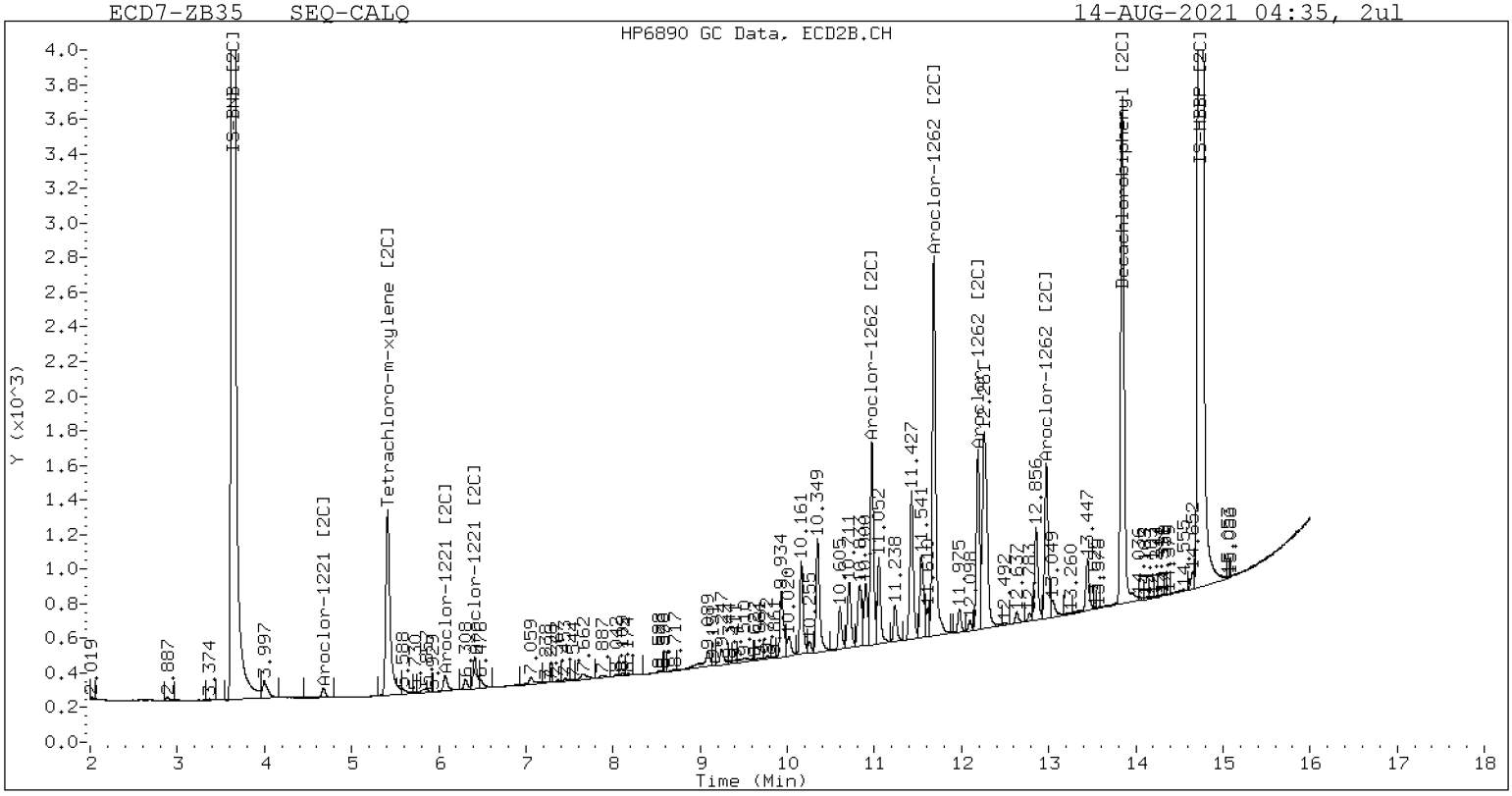
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALQ 14-AUG-2021 04:35, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALQ 14-AUG-2021 04:35, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132131ECD7.D
Data file 2: /210813.b/210813.b/08132131ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALR
Client ID:
Injection Date: 14-AUG-2021 04:56
Report Date: 08/14/2021 15:26
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.068	-0.001	50997	5.413	-0.004	151702	16.0	16.1	0.4	Tetrachloro-m-xylene
13.165	-0.001	66428	13.847	-0.033	341243	16.0	15.7	2.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263747	1.9
Hexabromobiphenyl	425681	456506	7.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	735138	2.0
Hexabromobiphenyl	863111	978830	13.4

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.015	-0.000	2280	109.5	1	4.677	0.000	6199	112.3
Aroclor-1221	2	5.452	0.001	3120	95.6	2	6.074	0.002	12753	101.0
Aroclor-1221	3	5.727	0.002	8691	98.5	3	6.411	0.002	22972	104.3
Total Col1Ave (3 peaks):					101.2	Total Col2Ave (3 peaks):				105.9 RPD = 5
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.387	0.004	27305	98.0	1	10.970	-0.000	121062	101.1
Aroclor-1262	2	11.458	0.004	17551	97.3	2	11.681	-0.005	245852	97.3
Aroclor-1262	3	11.629	0.002	25813	99.3	3	12.187	-0.001	111421	99.4
Aroclor-1262	4	12.278	0.003	21111	98.9	4	12.973	0.000	106511	101.9
Total Col1Ave (4 peaks):					98.4	Total Col2Ave (4 peaks):				100.0 RPD = 2
Corrected Ave (3 peaks):					98.1	Corrected Ave (3 peaks):				99.3 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 401239 Col1 Total PCB = 0.2 ppm*

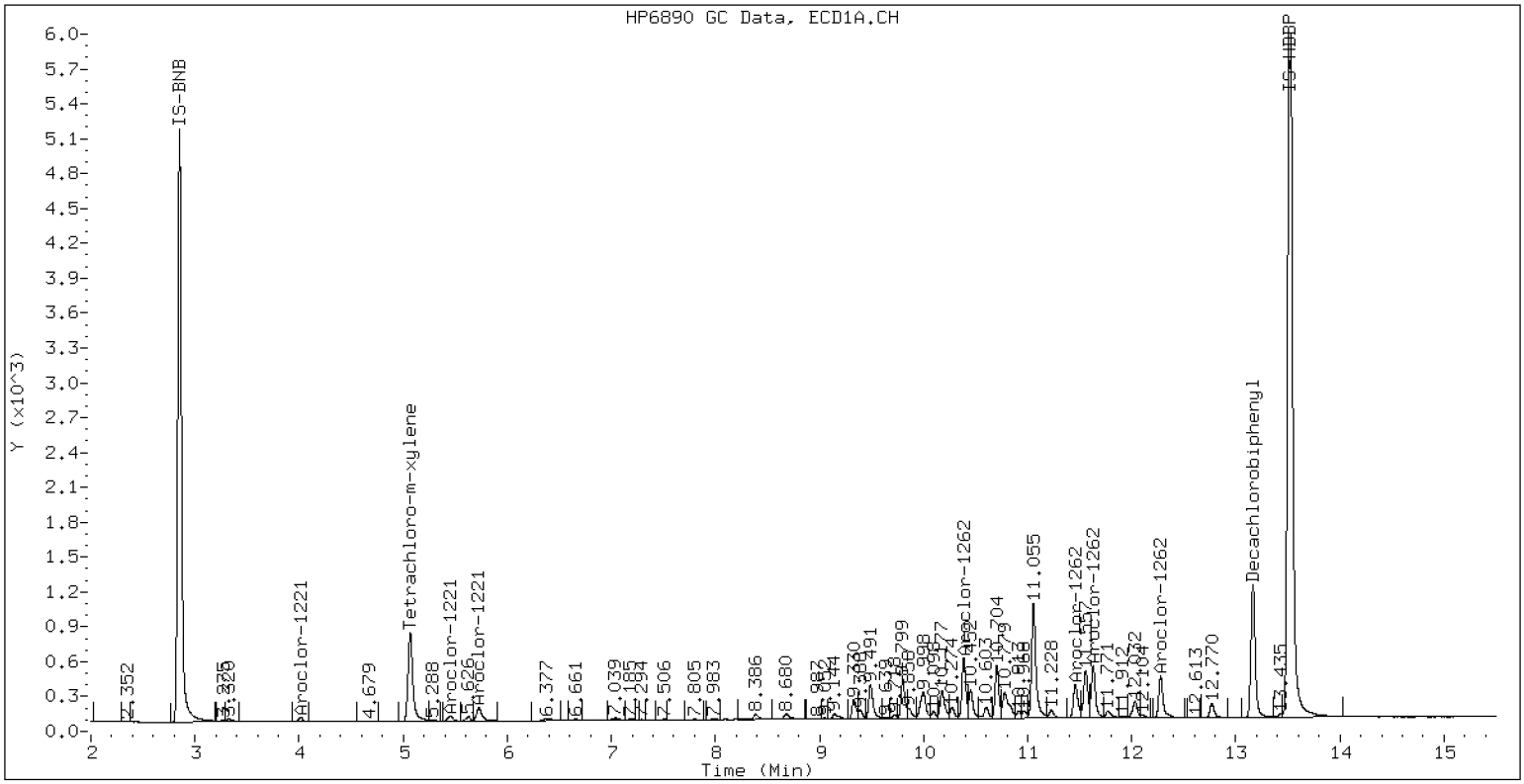
Total PCB Area Col2 (5.169 - 13.066) = 1724757 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

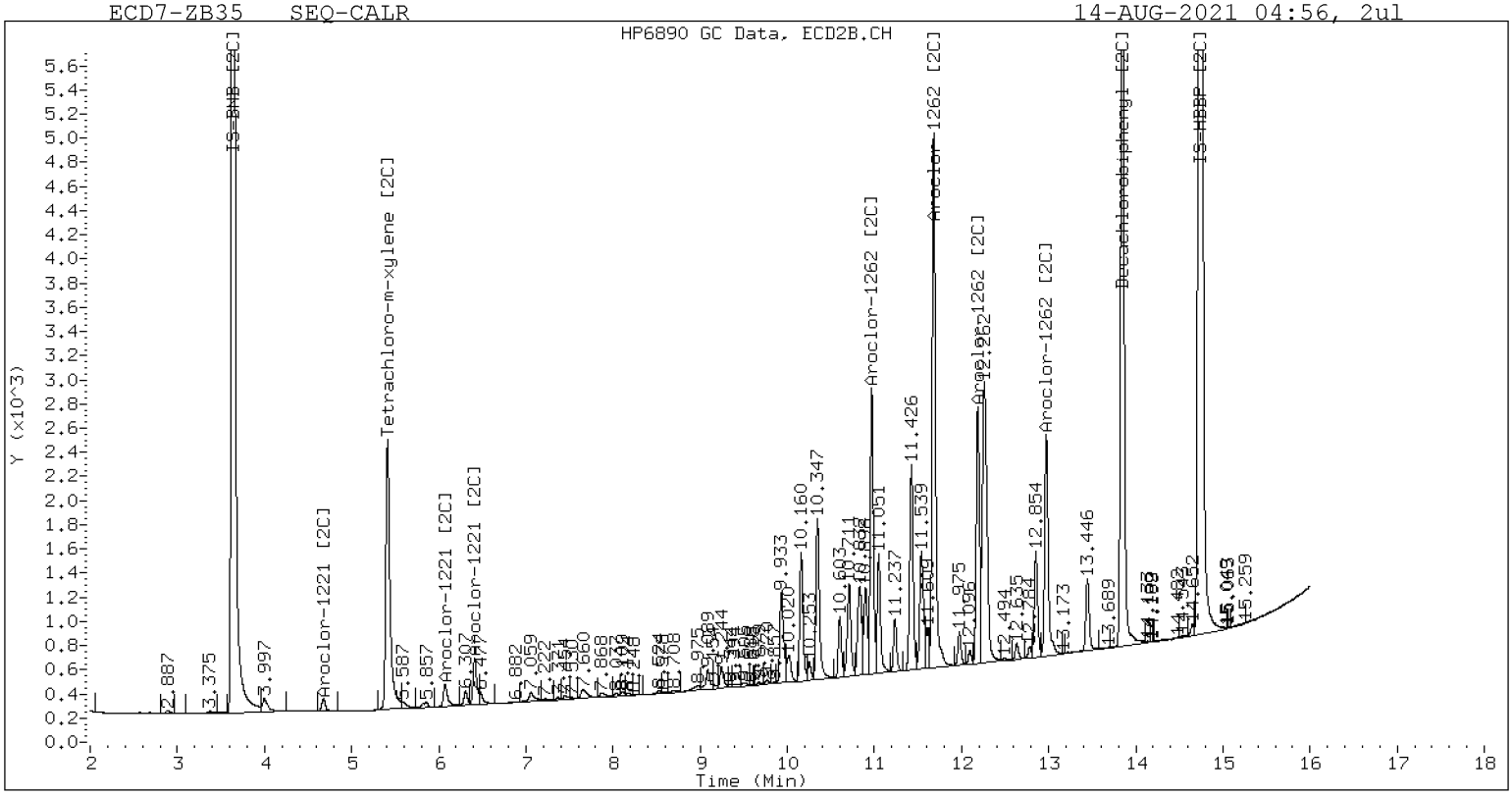
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALR 14-AUG-2021 04:56, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALR 14-AUG-2021 04:56, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132132ECD7.D
Data file 2: /210813.b/210813.b/08132132ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALS
Client ID:
Injection Date: 14-AUG-2021 05:16
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	131883	5.414	-0.003	376179	41.3	39.7	4.1	Tetrachloro-m-xylene
13.165	-0.000	165056	13.848	-0.032	866022	39.8	39.8	0.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264011	2.0
Hexabromobiphenyl	425681	456505	7.2

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	737936	2.4
Hexabromobiphenyl	863111	979376	13.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1221	1	4.015	-0.001	5527	265.1	1	4.677	0.000	13672	246.8
Aroclor-1221	2	5.452	0.001	9235	282.6	2	6.073	0.001	31880	251.4
Aroclor-1221	3	5.726	0.002	23772	269.2	3	6.411	0.002	56108	253.9
Total Col1Ave (3 peaks):				272.3		Total Col2Ave (3 peaks):			250.7	RPD = 8
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.386	0.002	70219	252.1	1	10.970	-0.001	293255	244.9
Aroclor-1262	2	11.456	0.002	46040	255.2	2	11.680	-0.005	600428	237.6
Aroclor-1262	3	11.629	0.002	65776	252.9	3	12.188	-0.000	279413	249.1
Aroclor-1262	4	12.277	0.003	54311	254.4	4	12.973	0.000	266174	254.6
Total Col1Ave (4 peaks):				253.7		Total Col2Ave (4 peaks):			246.6	RPD = 3
Corrected Ave (3 peaks):				253.1		Corrected Ave (3 peaks):			243.9	RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1026843 Col1 Total PCB = 0.4 ppm*

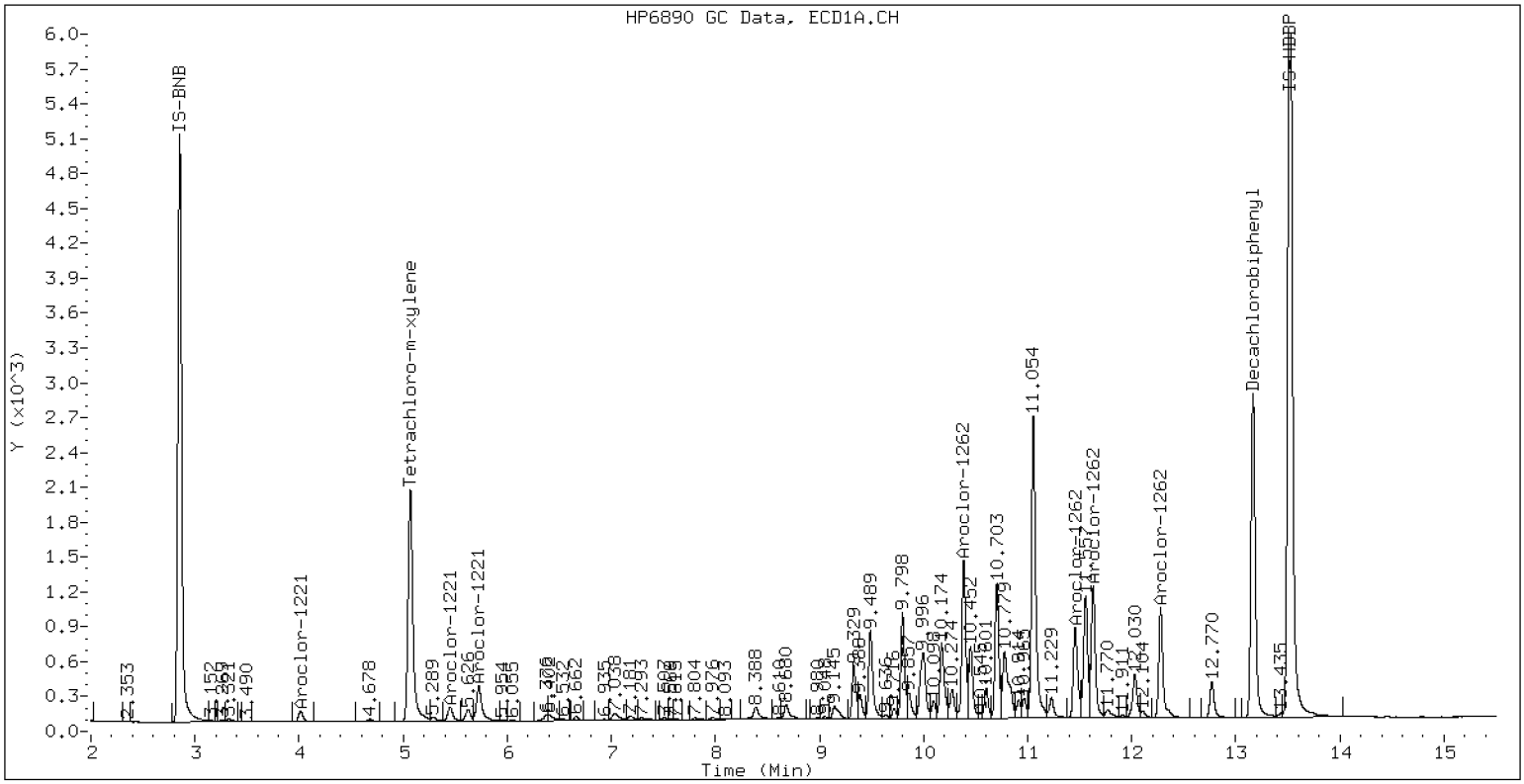
Total PCB Area Col2 (5.169 - 13.066) = 4215822 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

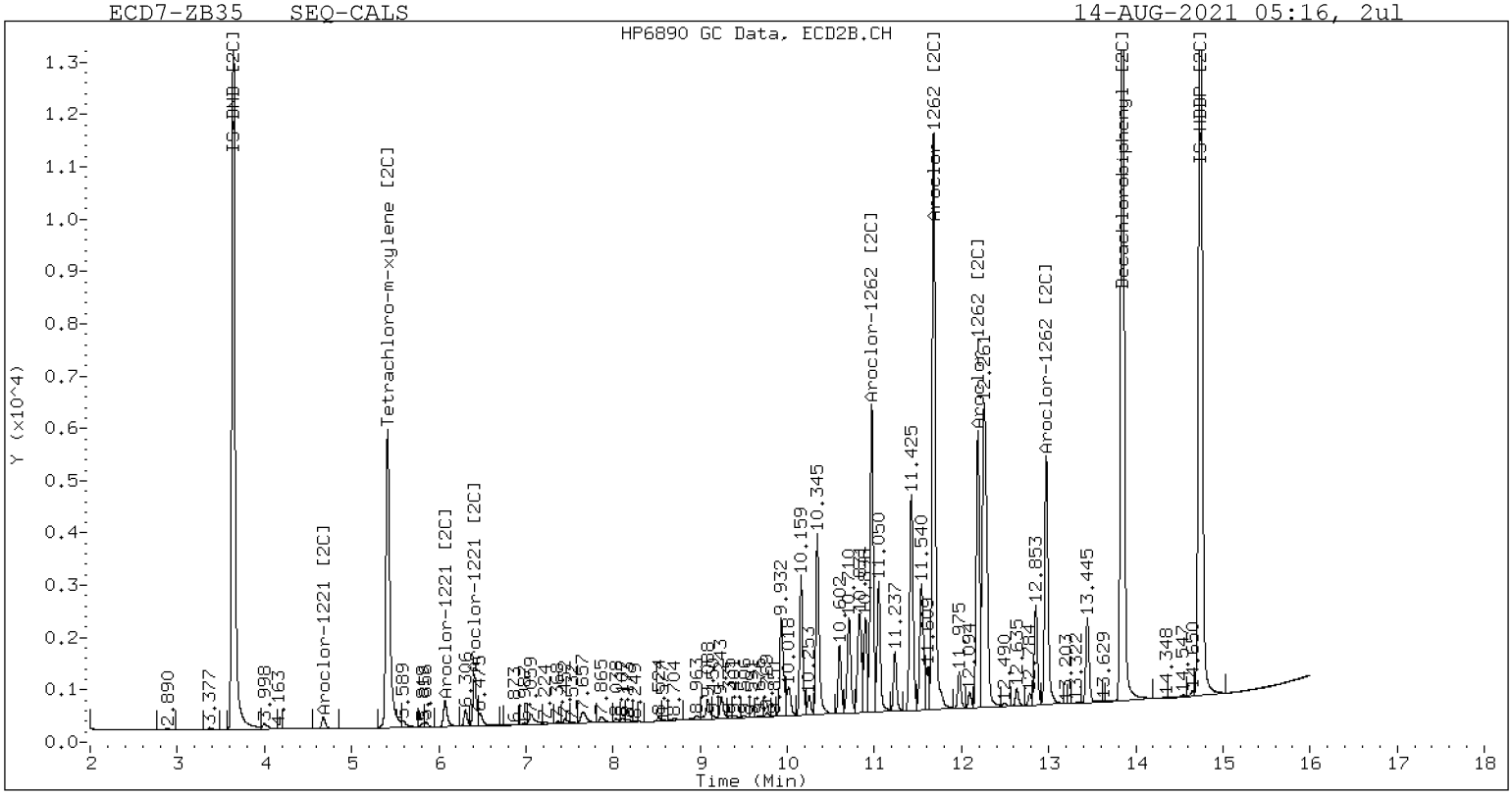
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALS 14-AUG-2021 05:16, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALS 14-AUG-2021 05:16, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132133ECD7.D
Data file 2: /210813.b/210813.b/08132133ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALT
Client ID:
Injection Date: 14-AUG-2021 05:37
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.070	0.001	261593	5.415	-0.002	728542	82.3	77.4	6.1	Tetrachloro-m-xylene
13.165	-0.001	319878	13.850	-0.030	1884507	78.6	86.8	9.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	262948	1.6
Hexabromobiphenyl	425681	448089	5.3

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	732298	1.6
Hexabromobiphenyl	863111	976792	13.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1221	1	4.015	0.000	9914	477.4	1	4.678	0.001	24750	450.3
Aroclor-1221	2	5.452	0.001	18189	558.8	2	6.073	0.001	62987	500.6
Aroclor-1221	3	5.727	0.002	45677	519.4	3	6.411	0.002	107101	488.4
Total Col1Ave (3 peaks): 518.6						Total Col2Ave (3 peaks): 479.7 RPD = 8				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.384	0.000	139981	511.9	1	10.969	-0.002	560729	469.4
Aroclor-1262	2	11.455	0.001	94339	532.8	2	11.680	-0.006	1209233	479.8
Aroclor-1262	3	11.627	0.001	131117	513.6	3	12.187	-0.001	553441	494.7
Aroclor-1262	4	12.276	0.002	110529	527.4	4	12.972	-0.000	528567	507.0
Total Col1Ave (4 peaks): 521.5						Total Col2Ave (4 peaks): 487.7 RPD = 7				
Corrected Ave (3 peaks): 517.7						Corrected Ave (3 peaks): 481.3 RPD = 7				

Total PCB Area Col1 (5.169 - 13.066) = 2051470 Col1 Total PCB = 0.8 ppm*

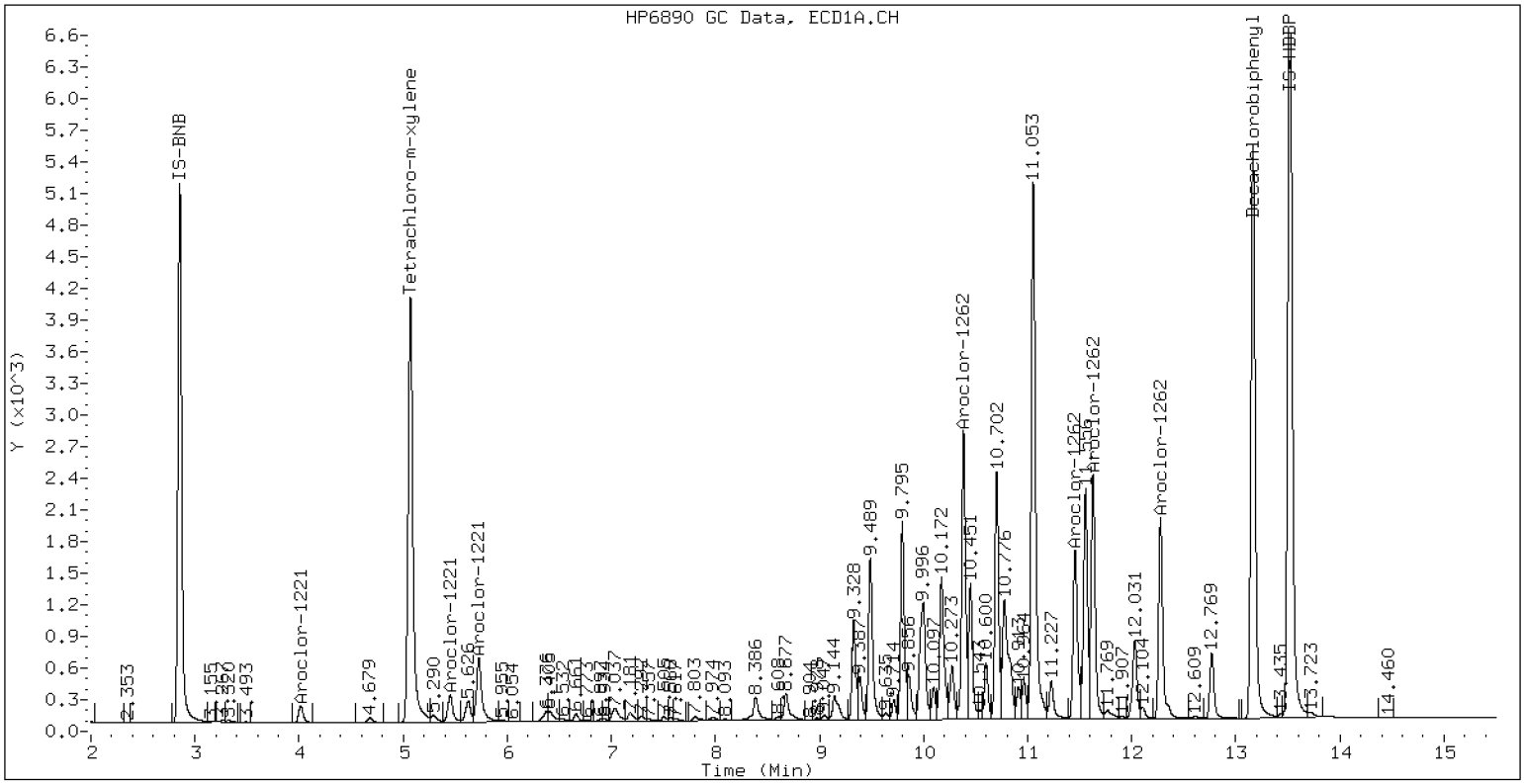
Total PCB Area Col2 (5.169 - 13.066) = 8265740 Col2 Total PCB = 0.8 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

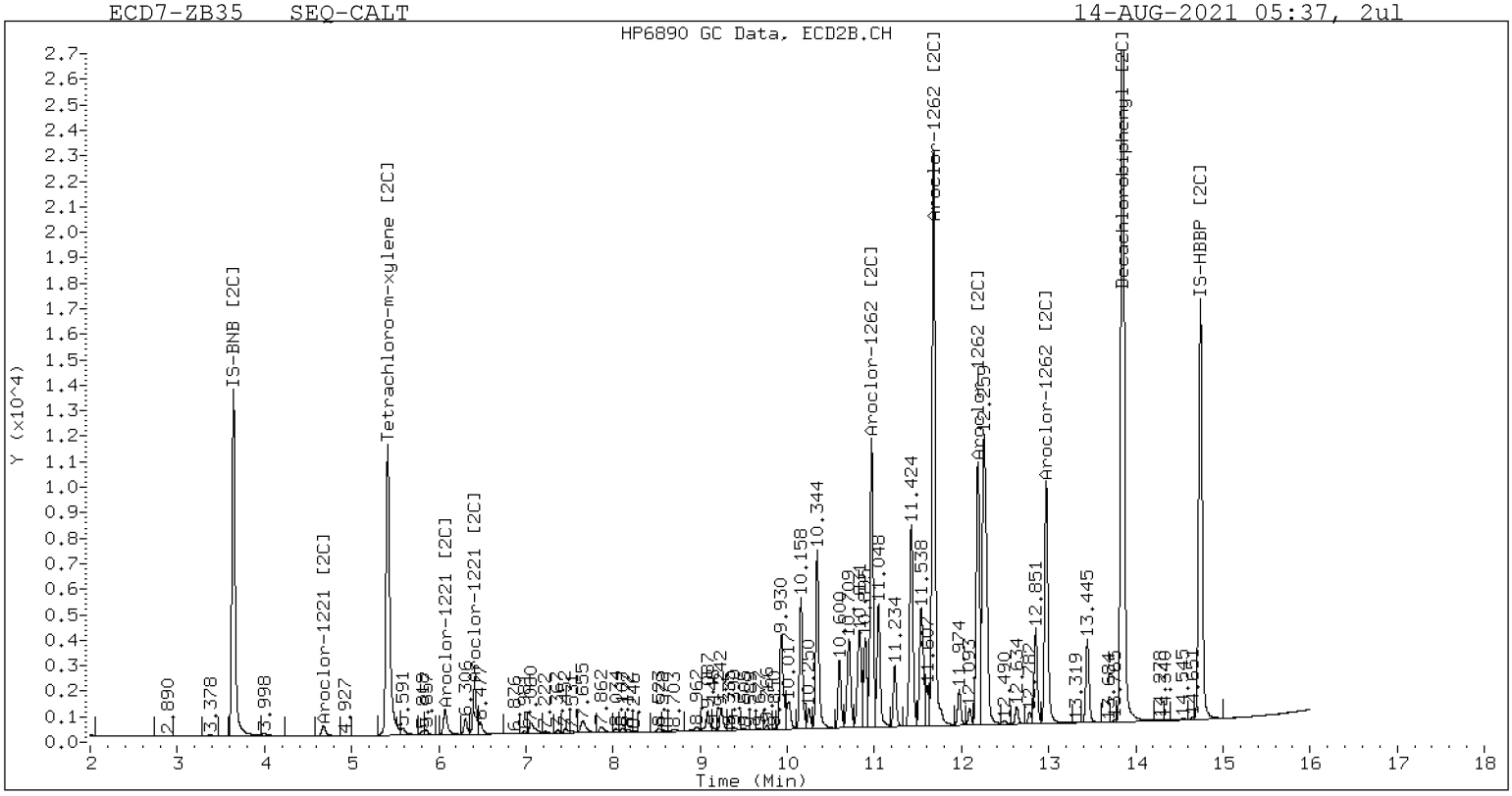
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALT 14-AUG-2021 05:37, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALT 14-AUG-2021 05:37, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132134ECD7.D
Data file 2: /210813.b/210813.b/08132134ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR2162.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALU
Client ID:
Injection Date: 14-AUG-2021 05:57
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.070	0.001	562556	5.415	-0.002	1625558	158.0	155.7	1.5	Tetrachloro-m-xylene
13.166	0.000	683202	13.866	-0.014	4564195	148.8	181.4	19.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	294577	13.8
Hexabromobiphenyl	425681	505654	18.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	812370	12.7
Hexabromobiphenyl	863111	1132299	31.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1221	1	4.015	0.000	20398	876.9	1	4.677	0.000	48805	800.4
Aroclor-1221	2	5.451	0.000	39437	1081.5	2	6.072	0.000	133436	955.9
Aroclor-1221	3	5.724	0.000	95979	974.3	3	6.409	0.000	219752	903.3
Total Col1Ave (3 peaks): 977.5						Total Col2Ave (3 peaks): 886.5 RPD = 10				
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1262	1	10.384	0.000	299522	970.7	1	10.970	0.000	1249012	902.0
Aroclor-1262	2	11.454	0.000	210846	1055.2	2	11.685	0.000	3112273	1065.3
Aroclor-1262	3	11.627	0.000	284707	988.4	3	12.188	0.000	1248804	963.0
Aroclor-1262	4	12.274	0.000	225267	952.6	4	12.973	0.000	1179580	976.0
Total Col1Ave (4 peaks): 991.7						Total Col2Ave (4 peaks): 976.6 RPD = 2				
Corrected Ave (3 peaks): 970.5						Corrected Ave (3 peaks): 947.0 RPD = 2				

Total PCB Area Col1 (5.169 - 13.066) = 4488163 Col1 Total PCB = 1.5 ppm*

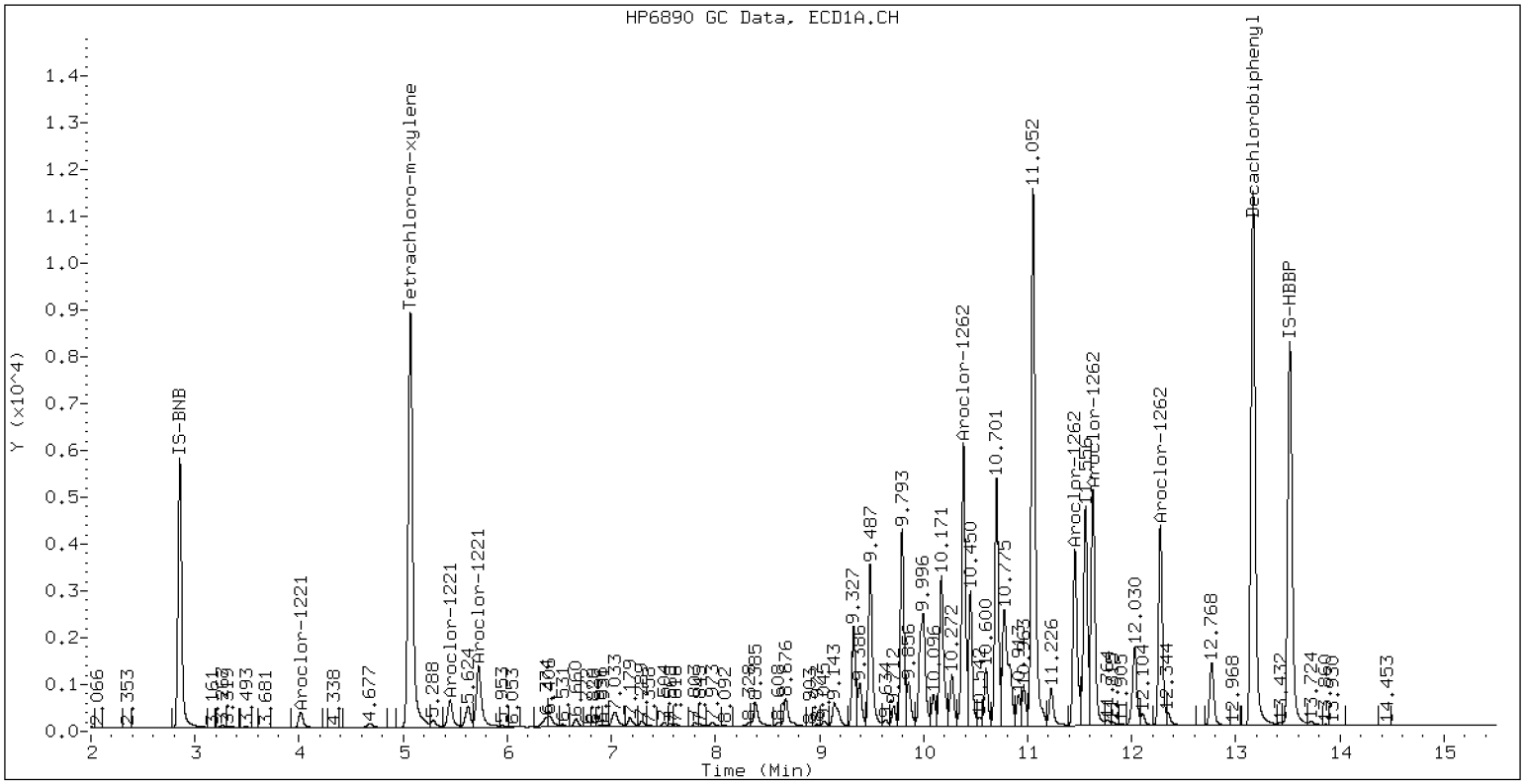
Total PCB Area Col2 (5.169 - 13.066) = 18583060 Col2 Total PCB = 1.7 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

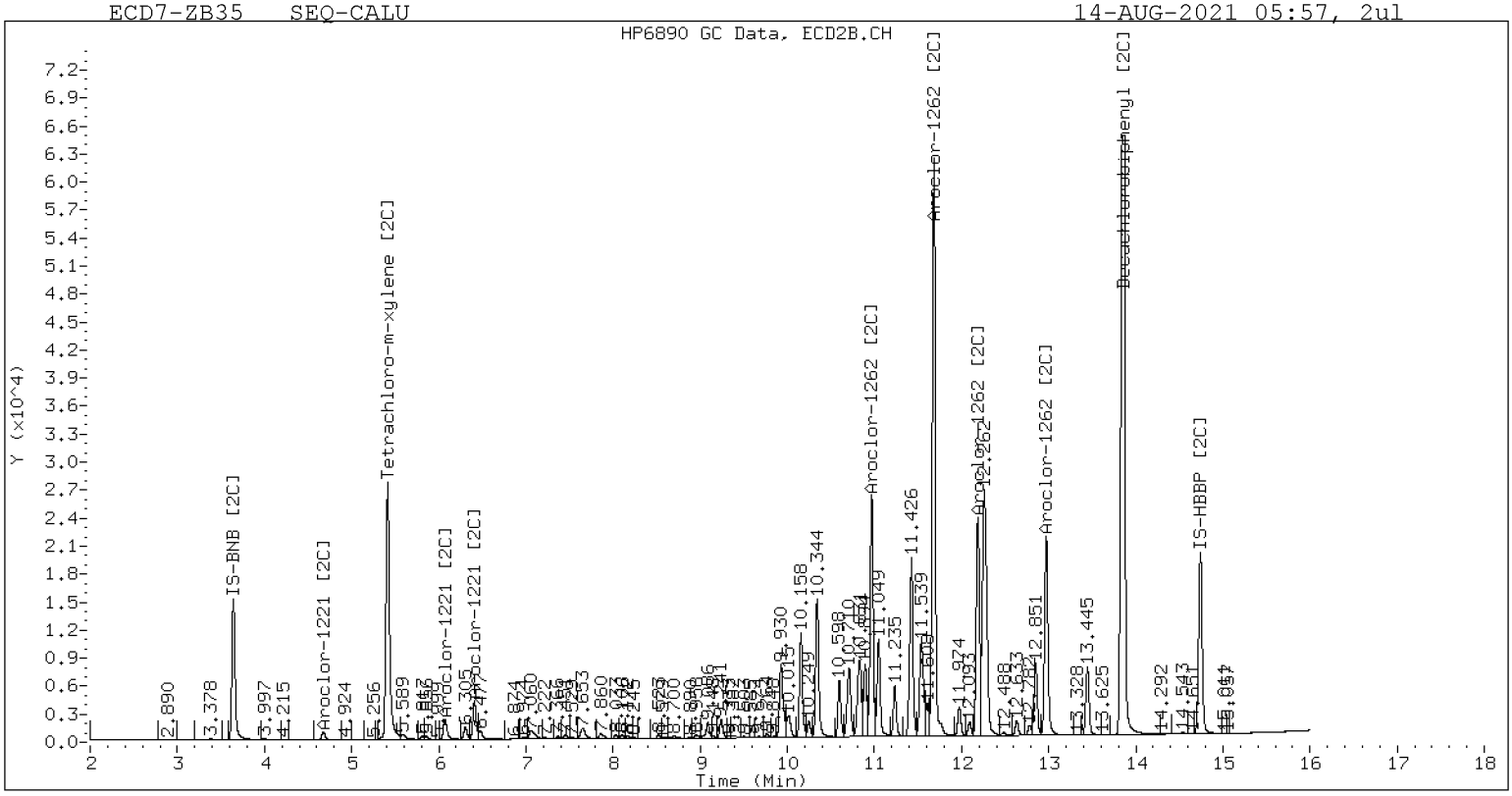
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALU 14-AUG-2021 05:57, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALU 14-AUG-2021 05:57, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132135ECD7.D
Data file 2: /210813.b/210813.b/08132135ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALV
Client ID:
Injection Date: 14-AUG-2021 06:18
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	9643	5.414	-0.003	29934	3.1	3.3	4.8	Tetrachloro-m-xylene
13.165	-0.001	19968	13.846	-0.034	99143	4.9	4.6	6.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	254258	-1.8
Hexabromobiphenyl	425681	446149	4.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	707863	-1.8
Hexabromobiphenyl	863111	962738	11.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	4.020	0.002	296	24.0	1	4.678	-0.001	716	22.6
Aroclor-1232	2	5.727	0.000	1256	18.7	2	7.057	-0.001	3688	20.0
Aroclor-1232	3	7.038	0.004	1441	14.1	3	7.661	0.010	7261	19.6
Aroclor-1232	4	7.976	0.003	573	13.6	4	8.524	0.002	1337	13.9
Total Col1Ave (4 peaks):					17.6	Total Col2Ave (4 peaks):				19.0 RPD = 8
Corrected Ave (3 peaks):					15.5	Corrected Ave (3 peaks):				17.8 RPD = 14
Aroclor-1268	1	11.560	0.003	12256	20.5	1	12.187	-0.013	58194	21.0
Aroclor-1268	2	11.629	0.003	13030	20.8	2	12.254	-0.013	63463	21.0
Aroclor-1268	3	12.001	0.001	10425	21.1	3	12.635	-0.009	52750	20.2
Aroclor-1268	4	12.771	-0.001	33702	21.2	4	12.783	0.000	12903	20.0
Total Col1Ave (4 peaks):					20.9	Total Col2Ave (4 peaks):				20.6 RPD = 1
Corrected Ave (3 peaks):					20.8	Corrected Ave (3 peaks):				20.4 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 102693 Col1 Total PCB = 0.0 ppm*

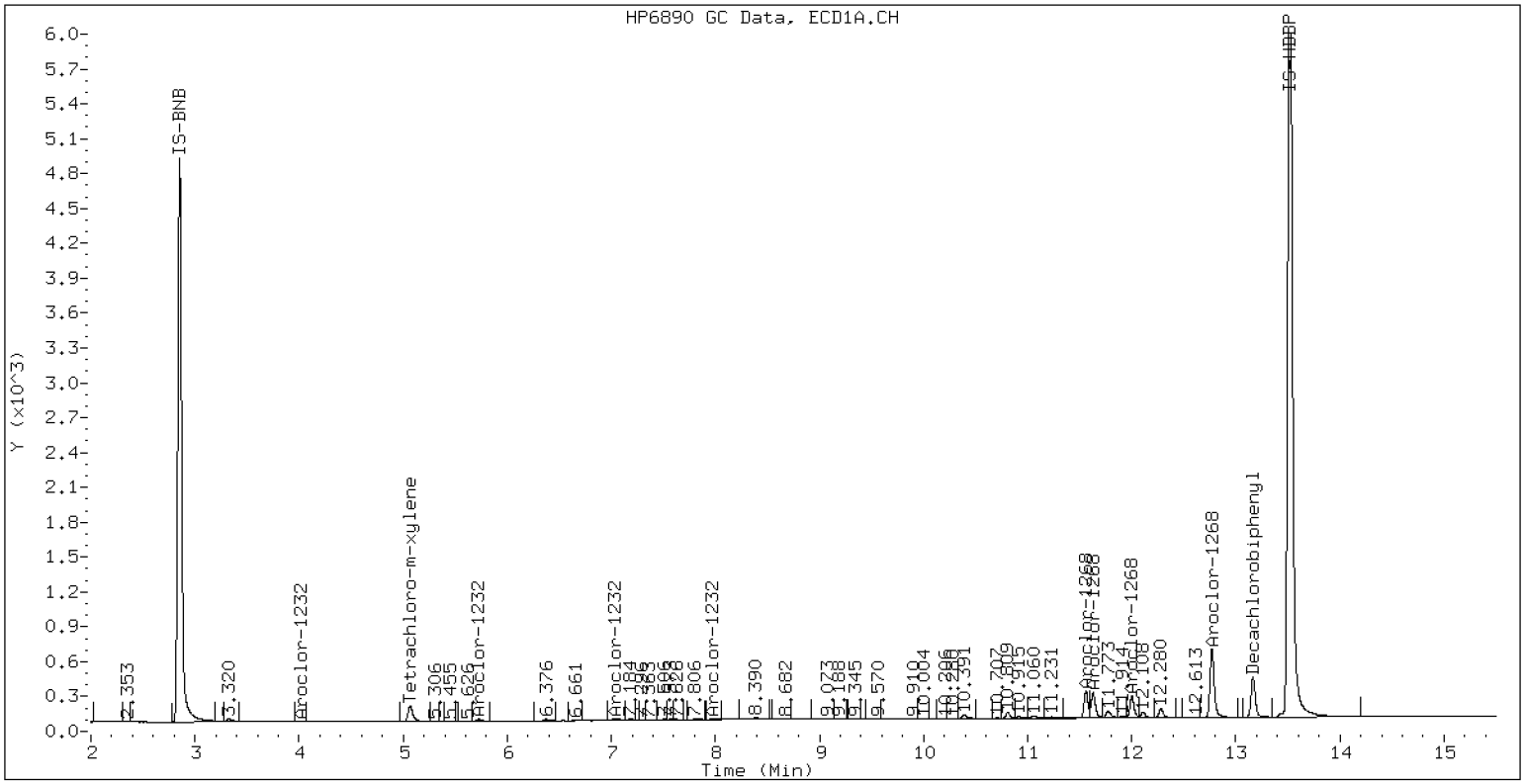
Total PCB Area Col2 (5.169 - 13.066) = 354263 Col2 Total PCB = 0.0 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

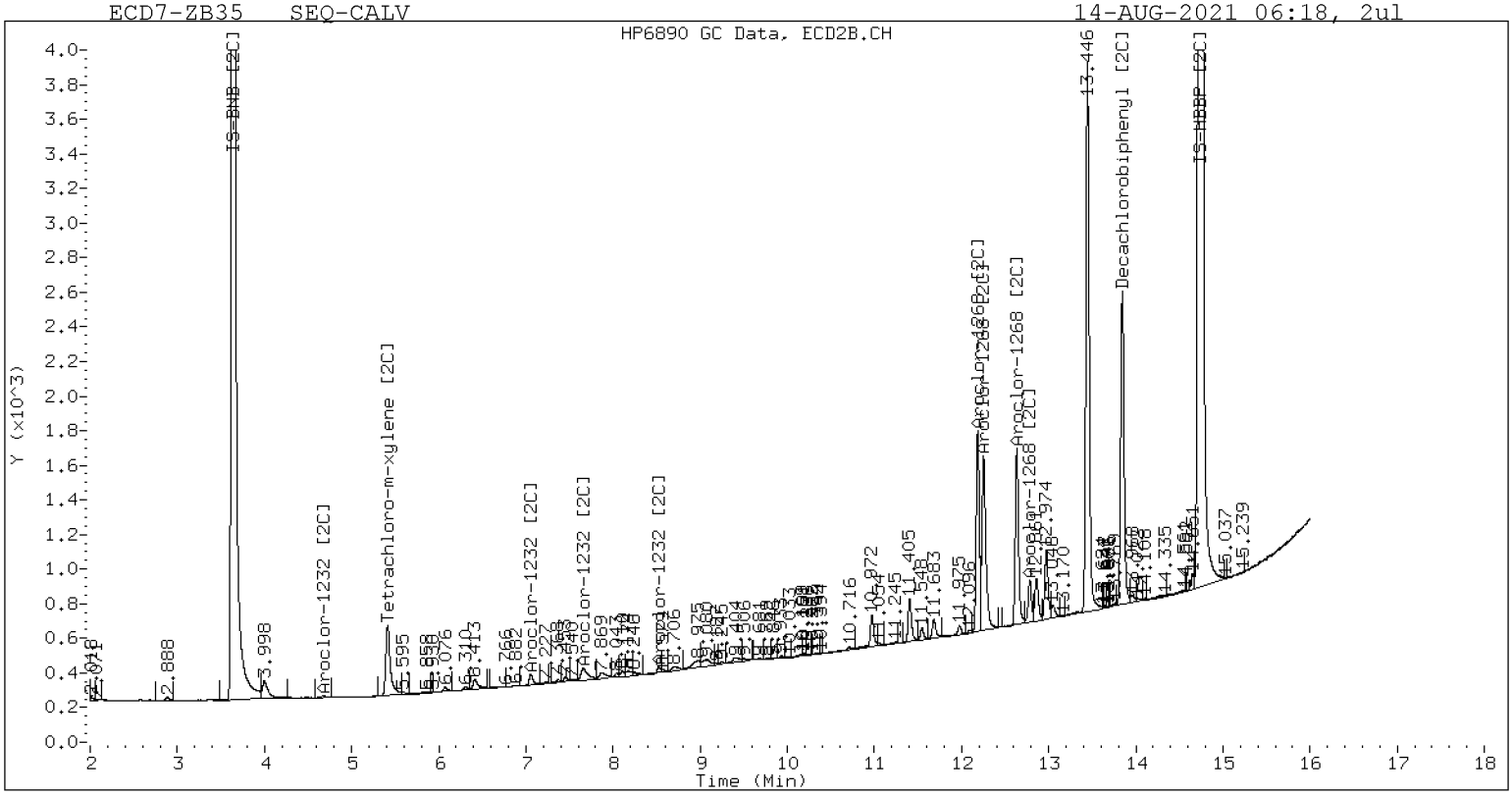
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALV 14-AUG-2021 06:18, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALV 14-AUG-2021 06:18, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132136ECD7.D
Data file 2: /210813.b/210813.b/08132136ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALW
Client ID:
Injection Date: 14-AUG-2021 06:38
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	24003	5.415	-0.002	72978	7.6	7.8	2.3	Tetrachloro-m-xylene
13.165	-0.000	48223	13.847	-0.033	249169	11.7	11.3	3.4	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	261082	0.9
Hexabromobiphenyl	425681	453384	6.5

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	729748	1.2
Hexabromobiphenyl	863111	990035	14.7

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1232	1	4.014	-0.004	693	54.7	1	4.679	-0.000	1713	52.5
Aroclor-1232	2	5.728	0.001	3234	47.0	2	7.059	0.001	9583	50.3
Aroclor-1232	3	7.038	0.005	4620	44.0	3	7.657	0.006	19044	49.9
Aroclor-1232	4	7.976	0.004	1836	42.5	4	8.525	0.003	4225	42.5
Total Col1Ave (4 peaks):				47.0		Total Col2Ave (4 peaks):			48.8	RPD = 4
Corrected Ave (3 peaks):				44.5		Corrected Ave (3 peaks):			47.6	RPD = 7
Aroclor-1268	1	11.559	0.001	30240	49.7	1	12.187	-0.013	141412	49.7
Aroclor-1268	2	11.629	0.004	31897	50.0	2	12.255	-0.012	153603	49.5
Aroclor-1268	3	12.001	-0.000	25020	49.9	3	12.636	-0.008	132778	49.5
Aroclor-1268	4	12.771	-0.001	81764	50.5	4	12.783	0.000	32071	48.3
Total Col1Ave (4 peaks):				50.0		Total Col2Ave (4 peaks):			49.3	RPD = 2
Corrected Ave (3 peaks):				49.9		Corrected Ave (3 peaks):			49.1	RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 250584 Col1 Total PCB = 0.1 ppm*

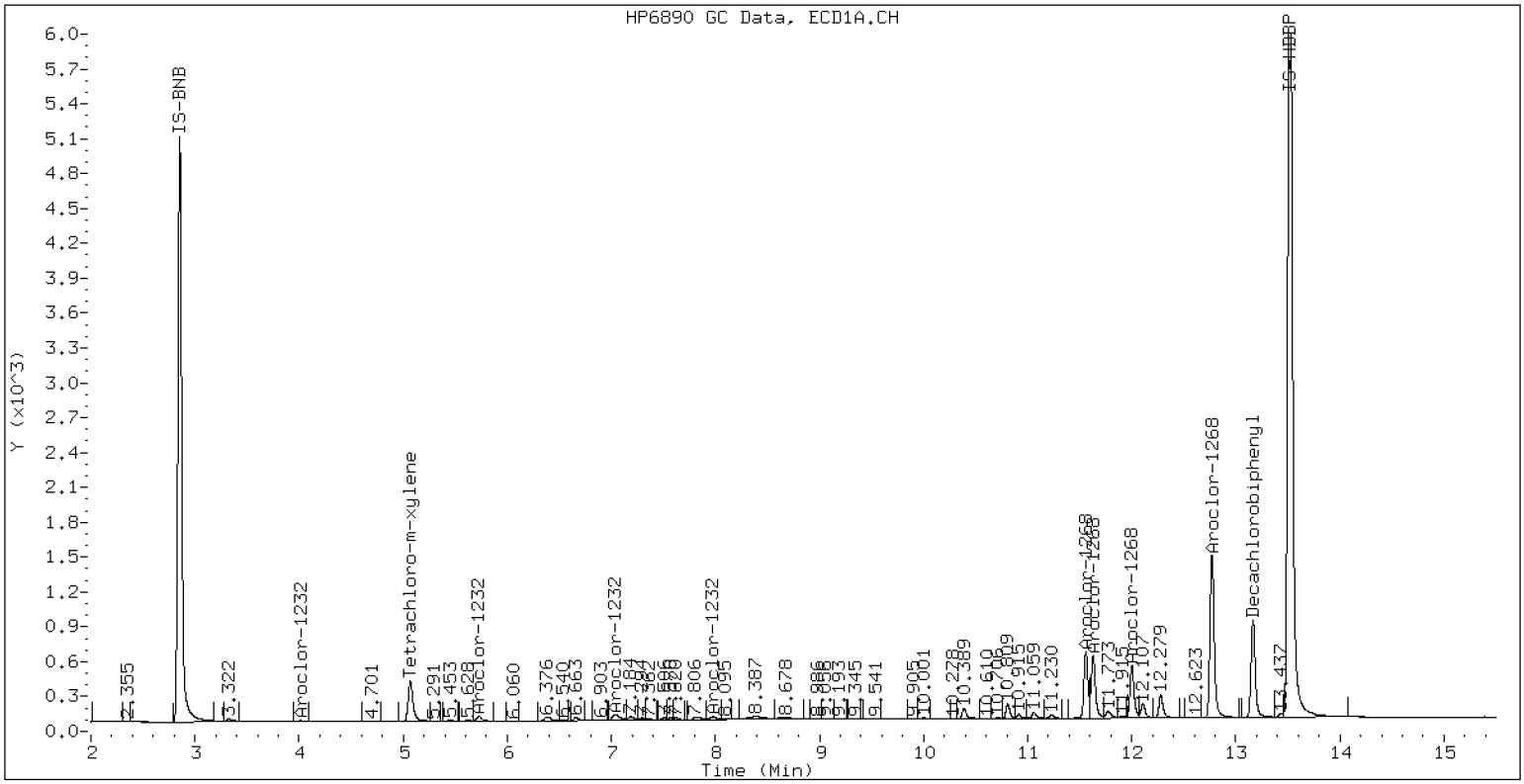
Total PCB Area Col2 (5.169 - 13.066) = 853194 Col2 Total PCB = 0.1 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

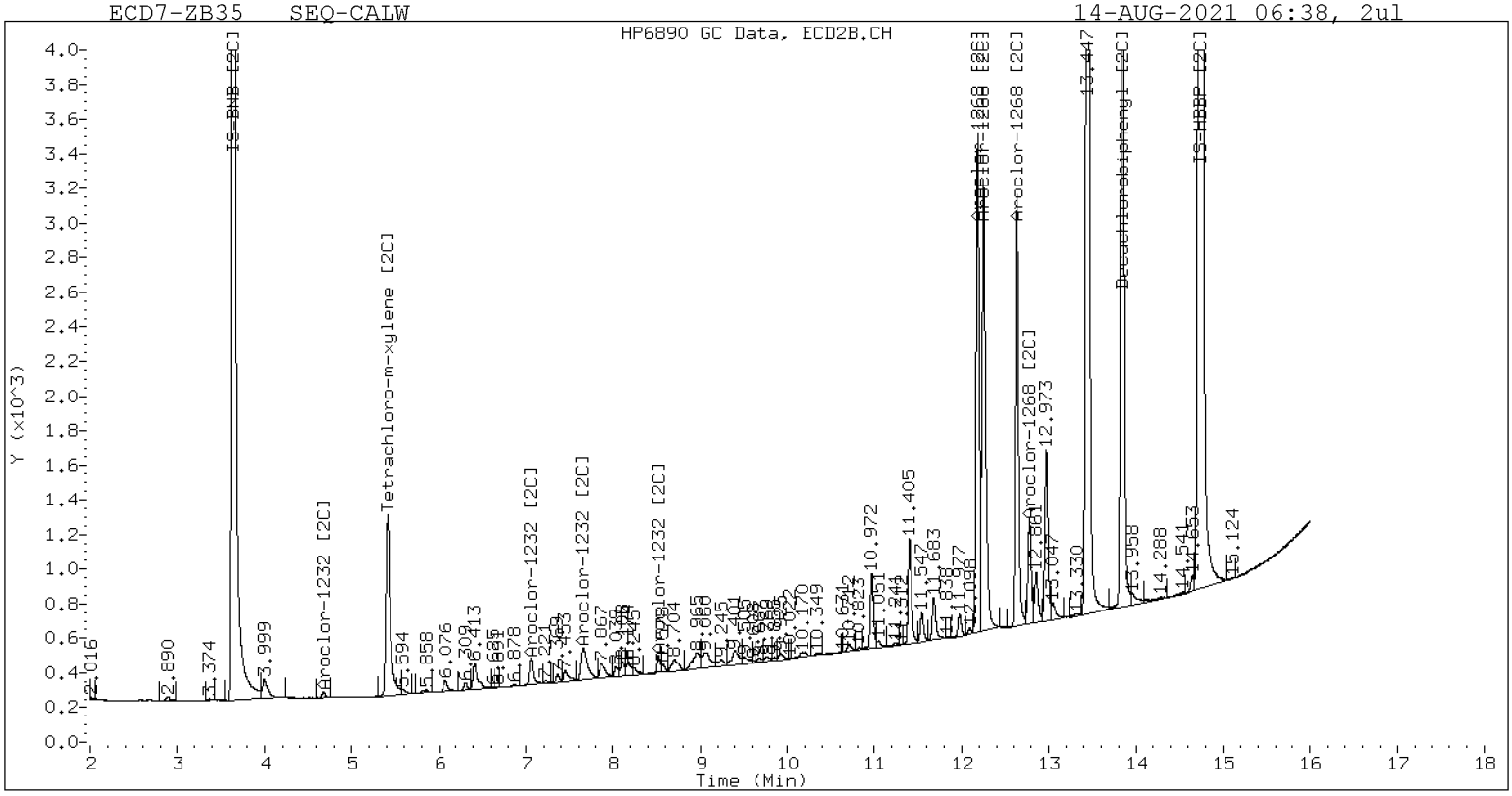
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALW 14-AUG-2021 06:38, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALW 14-AUG-2021 06:38, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132137ECD7.D
Data file 2: /210813.b/210813.b/08132137ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALX
Client ID:
Injection Date: 14-AUG-2021 06:59
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	49889	5.416	-0.001	148390	15.6	15.6	0.3	Tetrachloro-m-xylene
13.165	-0.001	98406	13.848	-0.032	525364	23.4	22.9	2.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	265413	2.5
Hexabromobiphenyl	425681	463901	9.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740090	2.7
Hexabromobiphenyl	863111	1032553	19.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	4.017	-0.001	1235	95.9	1	4.680	0.001	3647	110.3
Aroclor-1232	2	5.728	0.001	7030	100.5	2	7.058	0.000	19630	101.6
Aroclor-1232	3	7.038	0.004	10782	101.0	3	7.657	0.006	37360	96.6
Aroclor-1232	4	7.976	0.003	4640	105.6	4	8.524	0.002	10591	105.1

Total Col1Ave (4 peaks): 100.8 Total Col2Ave (4 peaks): 103.4 RPD = 3
Corrected Ave (3 peaks): 99.1 Corrected Ave (3 peaks): 101.1 RPD = 2

Aroclor-1268	1	11.558	0.001	61752	99.2	1	12.187	-0.013	286554	96.6
Aroclor-1268	2	11.627	0.001	65121	99.7	2	12.254	-0.013	318003	98.2
Aroclor-1268	3	12.000	-0.001	50803	98.9	3	12.635	-0.009	274169	98.0
Aroclor-1268	4	12.771	-0.001	165518	99.9	4	12.784	0.001	67494	97.5

Total Col1Ave (4 peaks): 99.5 Total Col2Ave (4 peaks): 97.6 RPD = 2
Corrected Ave (3 peaks): 99.3 Corrected Ave (3 peaks): 97.4 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 513695 Col1 Total PCB = 0.2 ppm*

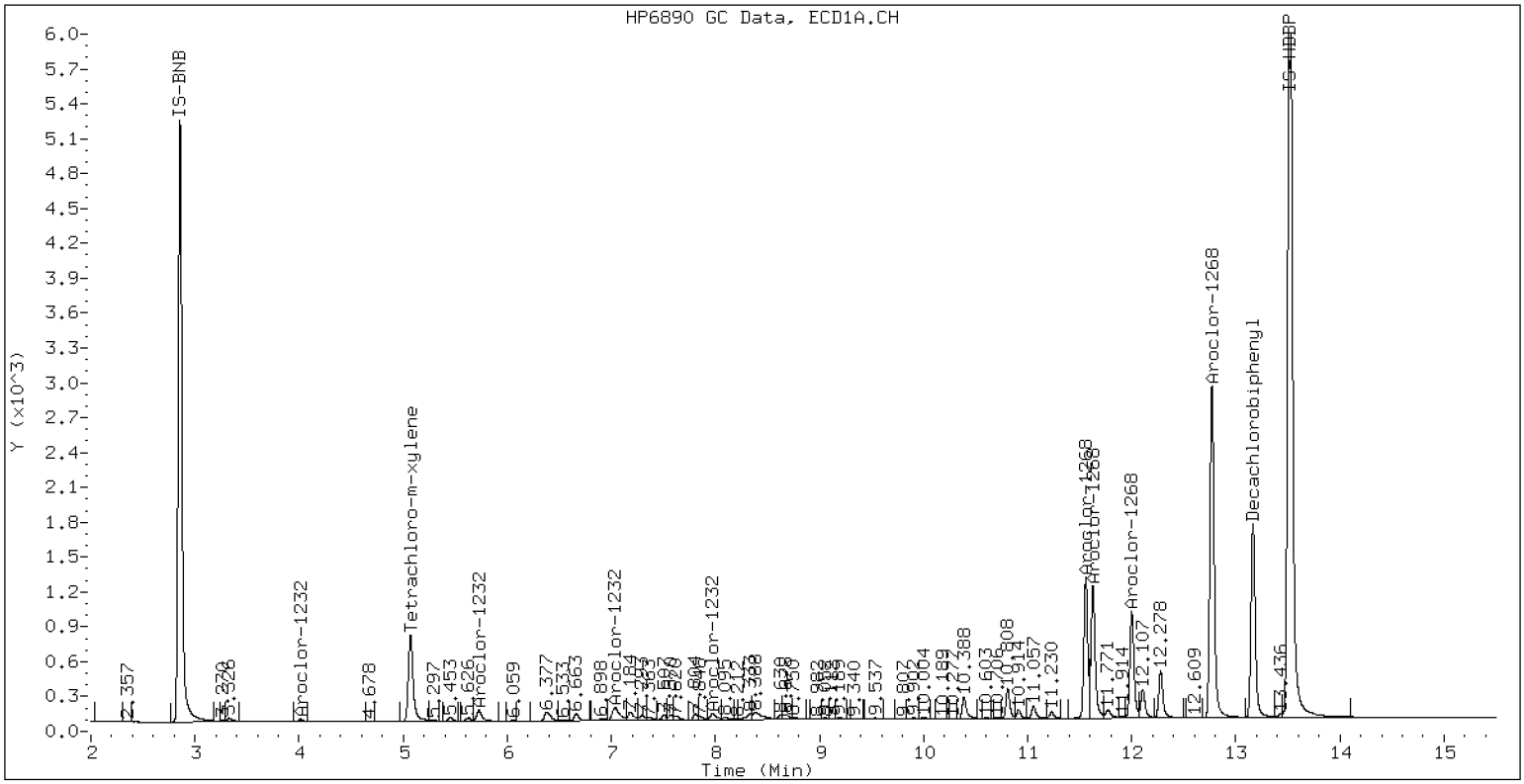
Total PCB Area Col2 (5.169 - 13.066) = 1706857 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

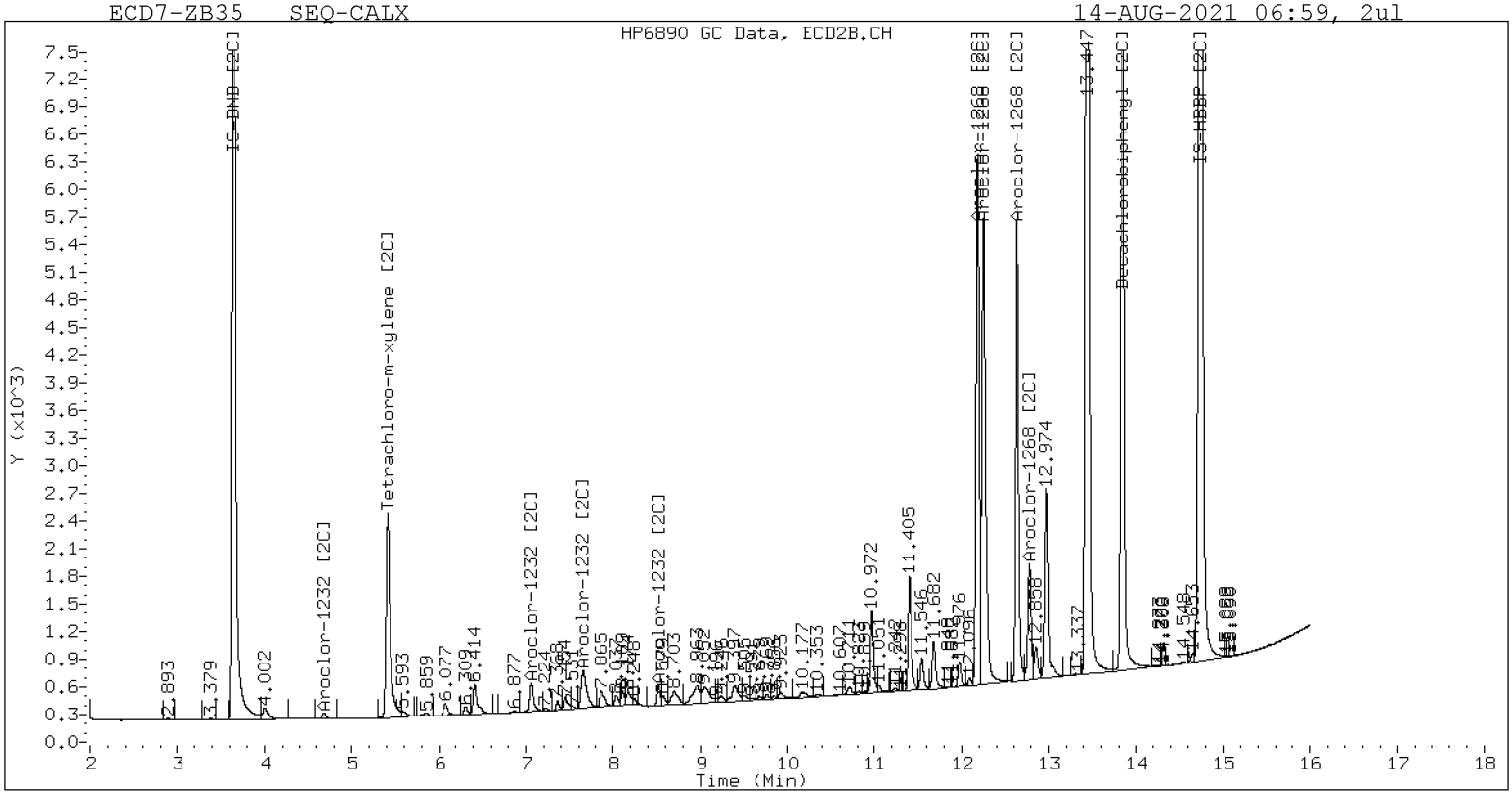
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALX 14-AUG-2021 06:59, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALX 14-AUG-2021 06:59, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132138ECD7.D
Data file 2: /210813.b/210813.b/08132138ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALY
Client ID:
Injection Date: 14-AUG-2021 07:19
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	129369	5.416	-0.001	369707	40.2	38.8	3.6	Tetrachloro-m-xylene
13.165	-0.000	244475	13.848	-0.032	1336972	57.7	58.2	0.9	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	266253	2.9
Hexabromobiphenyl	425681	467157	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	742059	2.9
Hexabromobiphenyl	863111	1034201	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1232	1	4.018	0.000	3075	238.1	1	4.679	-0.000	8167	246.2
Aroclor-1232	2	5.727	0.001	18684	266.2	2	7.059	0.001	49856	257.3
Aroclor-1232	3	7.036	0.002	29135	272.0	3	7.656	0.005	96288	248.3
Aroclor-1232	4	7.975	0.003	12195	276.7	4	8.523	0.001	28914	286.2
Total Col1Ave (4 peaks):					263.3	Total Col2Ave (4 peaks):				259.5 RPD = 1
Corrected Ave (3 peaks):					258.8	Corrected Ave (3 peaks):				250.6 RPD = 3
Aroclor-1268	1	11.557	-0.000	156710	250.0	1	12.186	-0.014	708061	238.3
Aroclor-1268	2	11.625	-0.000	164056	249.5	2	12.255	-0.012	797204	245.9
Aroclor-1268	3	12.000	-0.001	128182	247.9	3	12.636	-0.008	704909	251.5
Aroclor-1268	4	12.770	-0.002	406812	243.9	4	12.784	0.001	176627	254.8
Total Col1Ave (4 peaks):					247.8	Total Col2Ave (4 peaks):				247.6 RPD = 0
Corrected Ave (3 peaks):					247.1	Corrected Ave (3 peaks):				245.2 RPD = 1

Total PCB Area Col1 (5.169 - 13.066) = 1301292 Col1 Total PCB = 0.5 ppm*

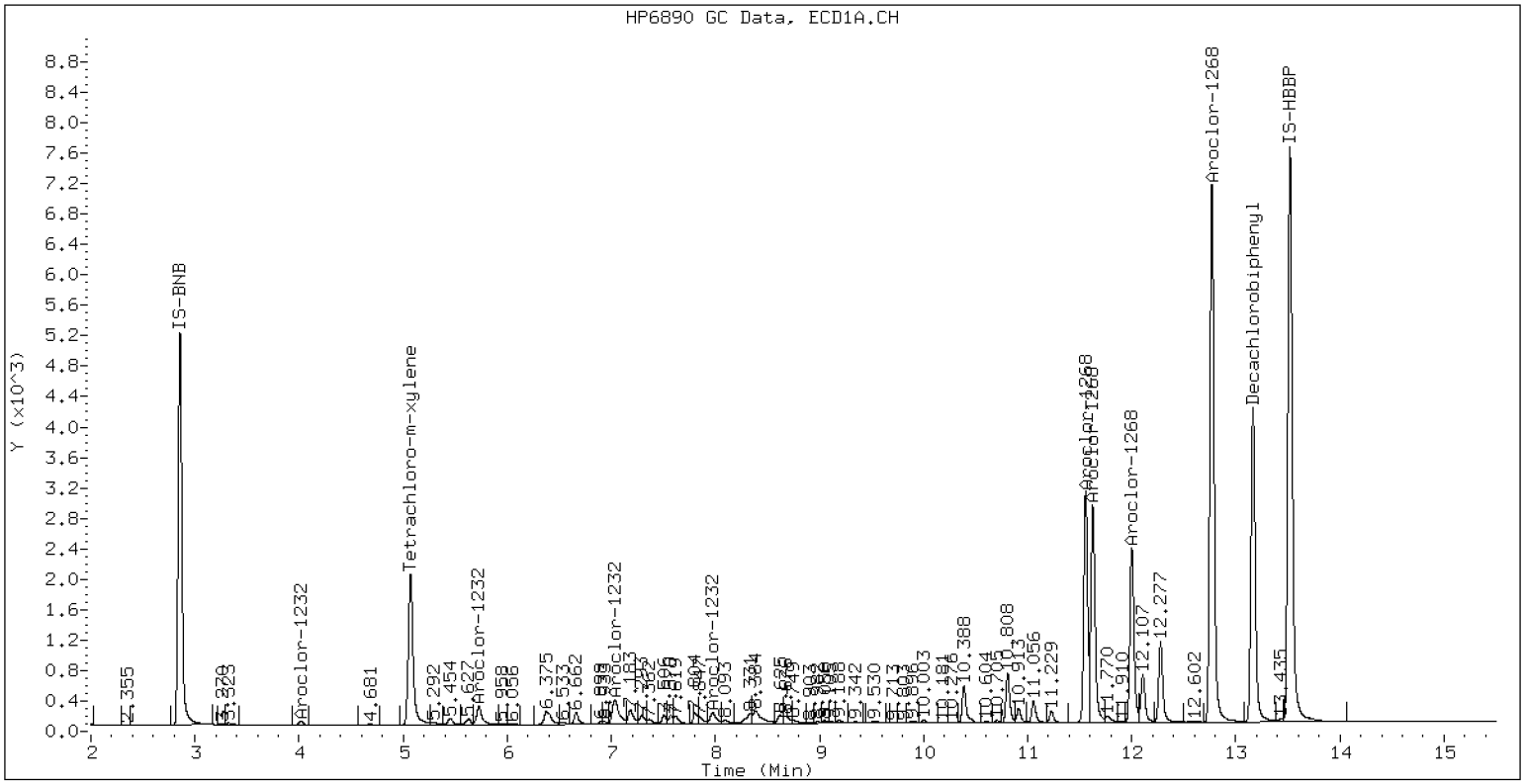
Total PCB Area Col2 (5.169 - 13.066) = 4281499 Col2 Total PCB = 0.4 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

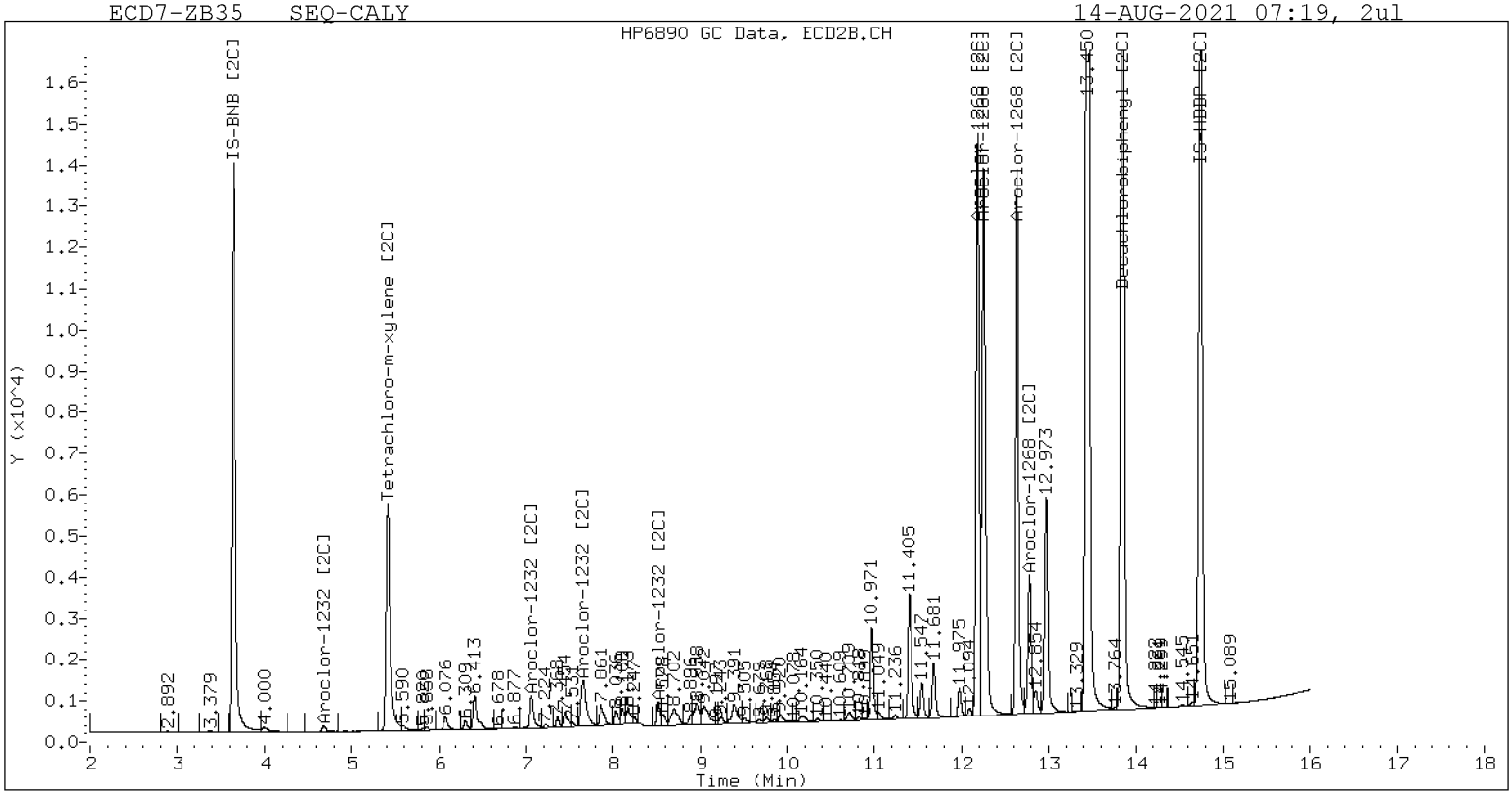
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALY 14-AUG-2021 07:19, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALY 14-AUG-2021 07:19, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132139ECD7.D
Data file 2: /210813.b/210813.b/08132139ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALZ
Client ID:
Injection Date: 14-AUG-2021 07:40
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	257867	5.415	-0.001	723234	80.8	76.2	5.8	Tetrachloro-m-xylene
13.165	-0.001	471498	13.853	-0.027	2944011	114.3	128.5	11.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264183	2.1
Hexabromobiphenyl	425681	454251	6.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	738334	2.4
Hexabromobiphenyl	863111	1031400	19.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1232	1	4.016	-0.002	5996	468.0	1	4.679	-0.000	14925	452.3
Aroclor-1232	2	5.728	0.001	36550	524.8	2	7.059	0.000	96476	500.3
Aroclor-1232	3	7.036	0.002	60788	571.9	3	7.654	0.003	201408	521.9
Aroclor-1232	4	7.973	0.001	25380	580.5	4	8.523	0.001	56734	564.3
Total Col1Ave (4 peaks):					536.3	Total Col2Ave (4 peaks):				509.7 RPD = 5
Corrected Ave (3 peaks):					521.6	Corrected Ave (3 peaks):				491.5 RPD = 6
Aroclor-1268	1	11.557	-0.000	307970	505.3	1	12.192	-0.008	1533537	517.5
Aroclor-1268	2	11.626	0.001	321316	502.6	2	12.256	-0.011	1606143	496.7
Aroclor-1268	3	12.001	0.000	251993	501.1	3	12.638	-0.006	1415992	506.6
Aroclor-1268	4	12.770	-0.002	791865	488.2	4	12.783	-0.000	359269	519.7
Total Col1Ave (4 peaks):					499.3	Total Col2Ave (4 peaks):				510.1 RPD = 2
Corrected Ave (3 peaks):					497.3	Corrected Ave (3 peaks):				506.9 RPD = 2

Total PCB Area Col1 (5.169 - 13.066) = 2578632 Col1 Total PCB = 1.0 ppm*

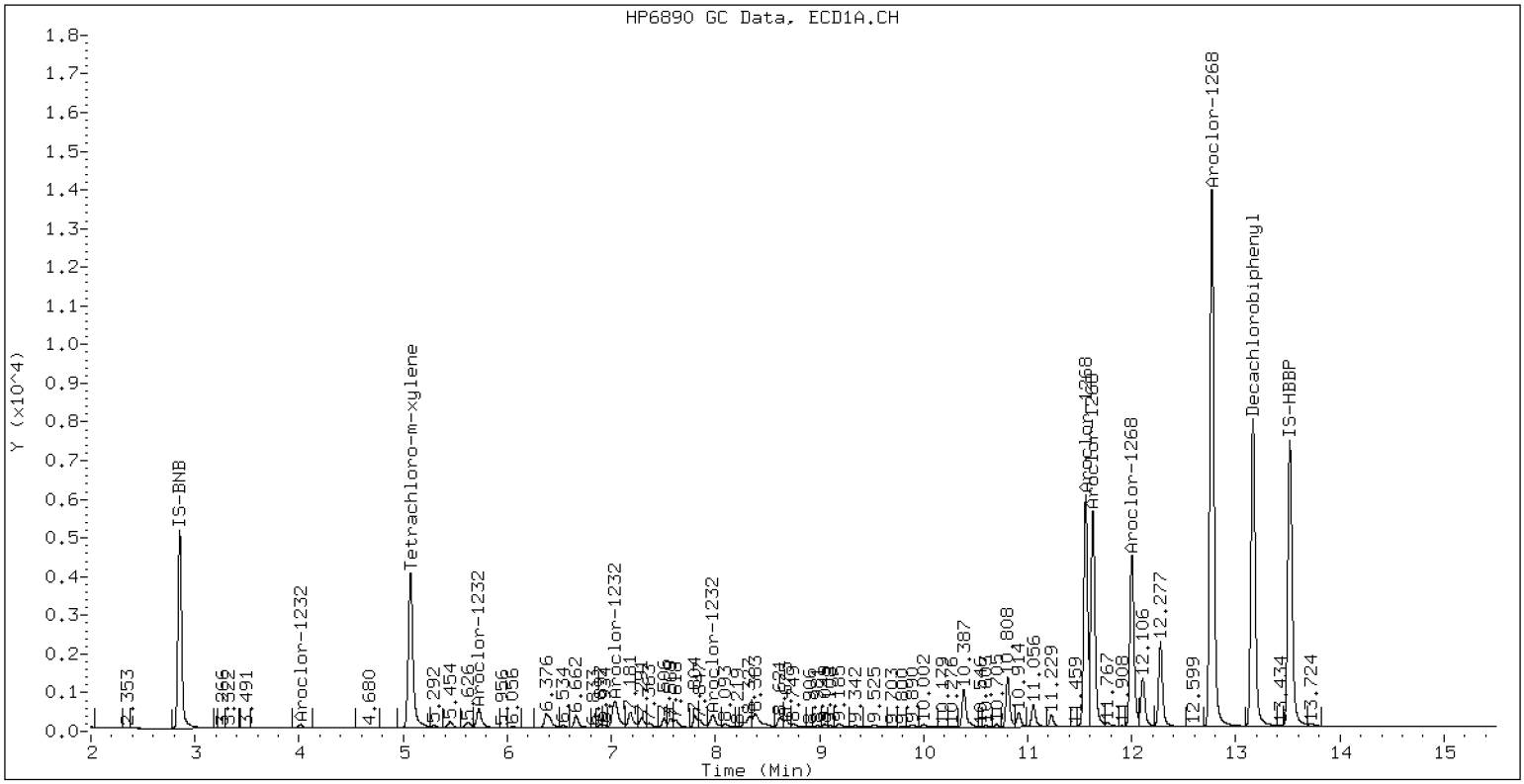
Total PCB Area Col2 (5.169 - 13.066) = 8685361 Col2 Total PCB = 0.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

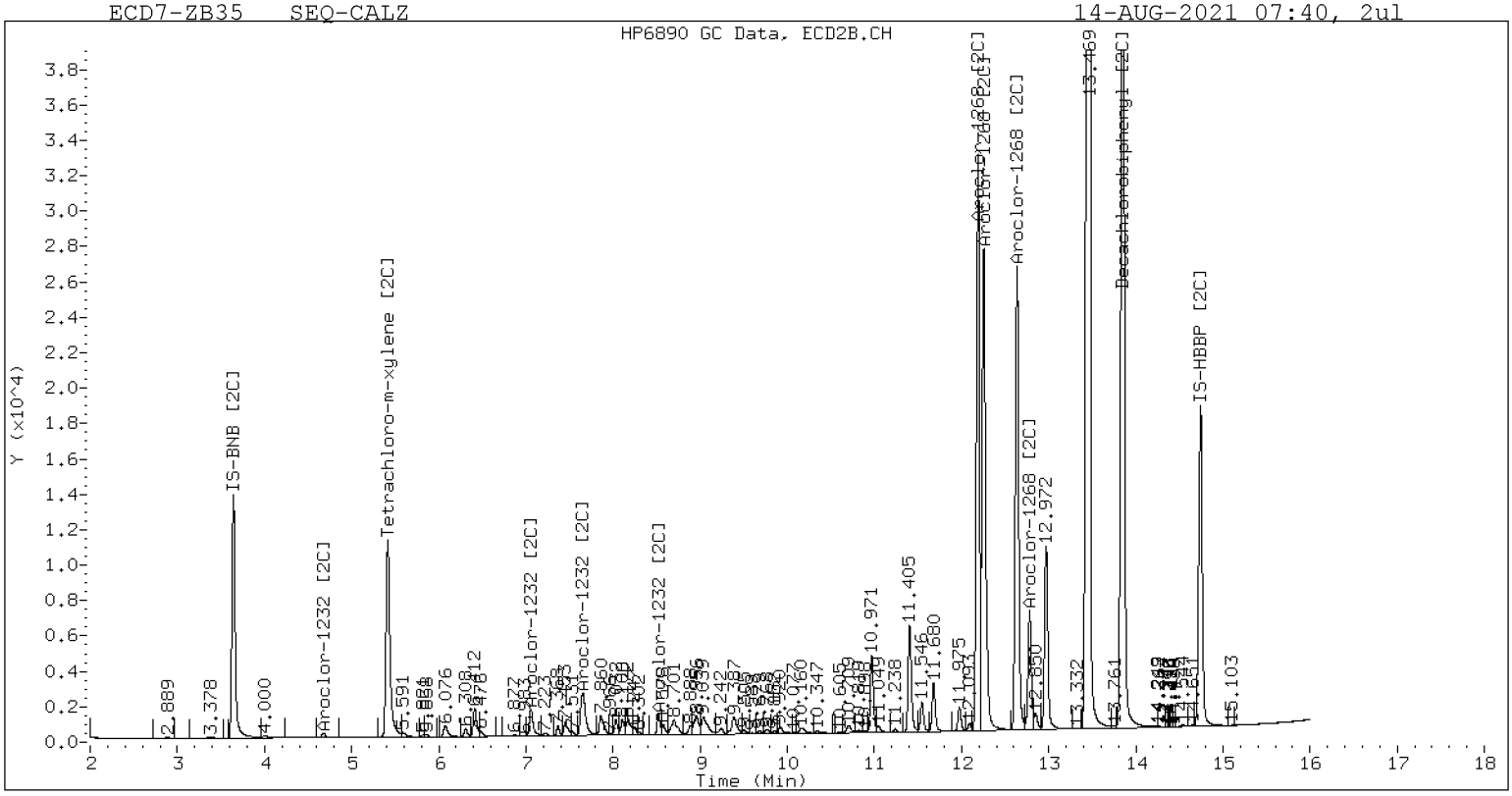
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALZ 14-AUG-2021 07:40, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALZ 14-AUG-2021 07:40, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

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Data file 2: /210813.b/210813.b/08132140ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: AR3268.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-CALAA
Client ID:
Injection Date: 14-AUG-2021 08:00
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	559035	5.417	0.000	1626007	157.4	154.5	1.9	Tetrachloro-m-xylene
13.166	-0.000	1024984	13.880	-0.000	6105079	220.9	239.7	8.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	293830	13.5
Hexabromobiphenyl	425681	511240	20.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	819127	13.6
Hexabromobiphenyl	863111	1146408	32.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1232	1	4.018	0.000	12215	857.2	1	4.679	-0.000	30237	825.9
Aroclor-1232	2	5.726	0.000	77780	1004.1	2	7.058	0.000	203525	951.4
Aroclor-1232	3	7.034	0.000	138859	1174.6	3	7.651	0.000	435631	1017.5
Aroclor-1232	4	7.972	0.000	55694	1145.2	4	8.522	-0.000	126225	1131.7
Total Col1Ave (4 peaks): 1045.3						Total Col2Ave (4 peaks): 981.6				RPD = 6
Corrected Ave (3 peaks): 1002.2						Corrected Ave (3 peaks): 931.6				RPD = 7
Aroclor-1268	1	11.557	0.000	671468	979.0	1	12.200	-0.000	3980707	1208.5
Aroclor-1268	2	11.626	0.000	691891	961.7	2	12.267	-0.000	4248856	1182.1
Aroclor-1268	3	12.001	0.000	545758	964.4	3	12.644	0.000	3756866	1209.3
Aroclor-1268	4	12.772	0.000	1790032	980.6	4	12.783	0.000	815617	1061.4
Total Col1Ave (4 peaks): 971.4						Total Col2Ave (4 peaks): 1165.3				RPD = 18
Corrected Ave (3 peaks): 968.3						Corrected Ave (3 peaks): 1150.7				RPD = 17

Total PCB Area Col1 (5.169 - 13.066) = 5695380 Col1 Total PCB = 1.9 ppm*

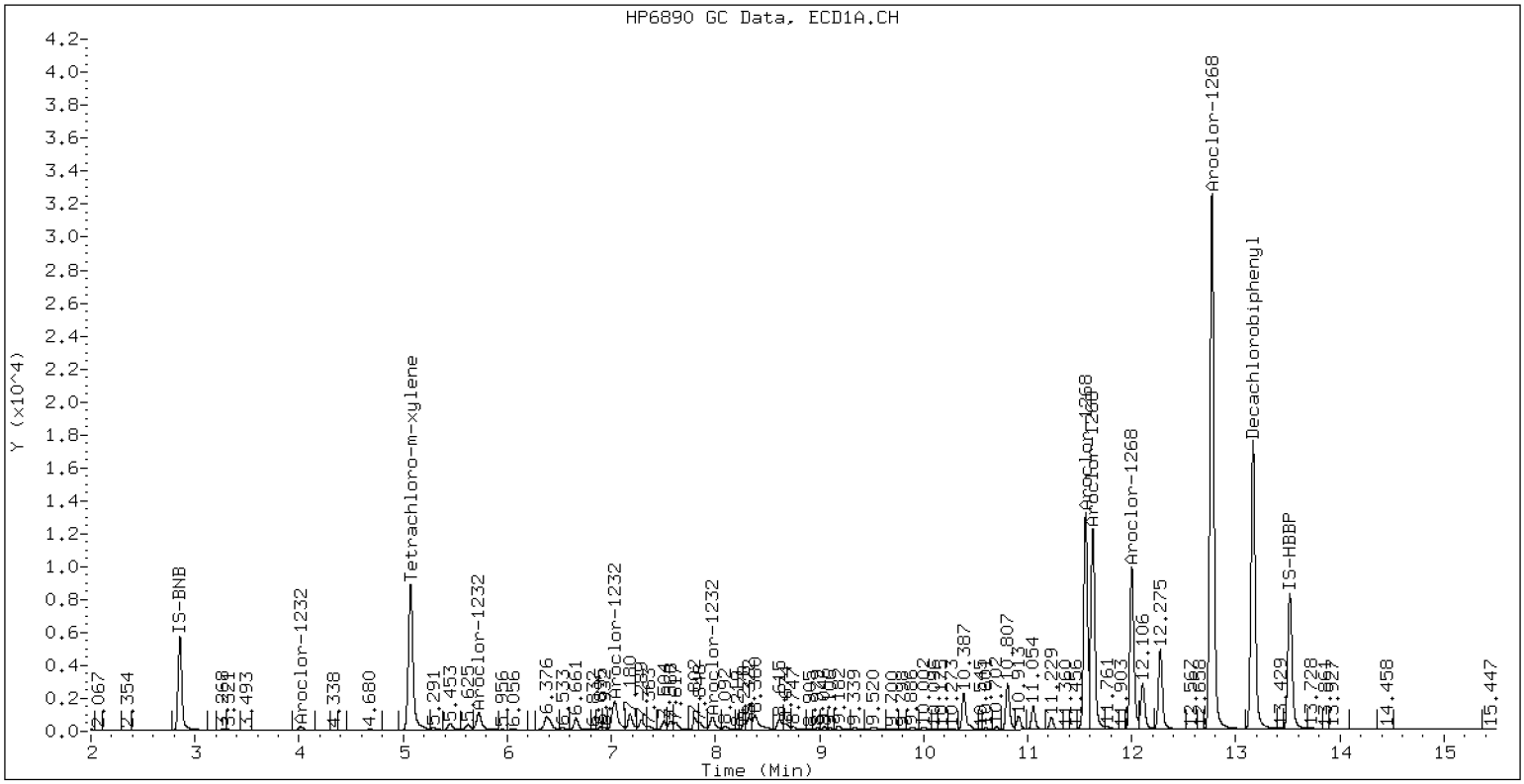
Total PCB Area Col2 (5.169 - 13.066) = 21104177 Col2 Total PCB = 1.9 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

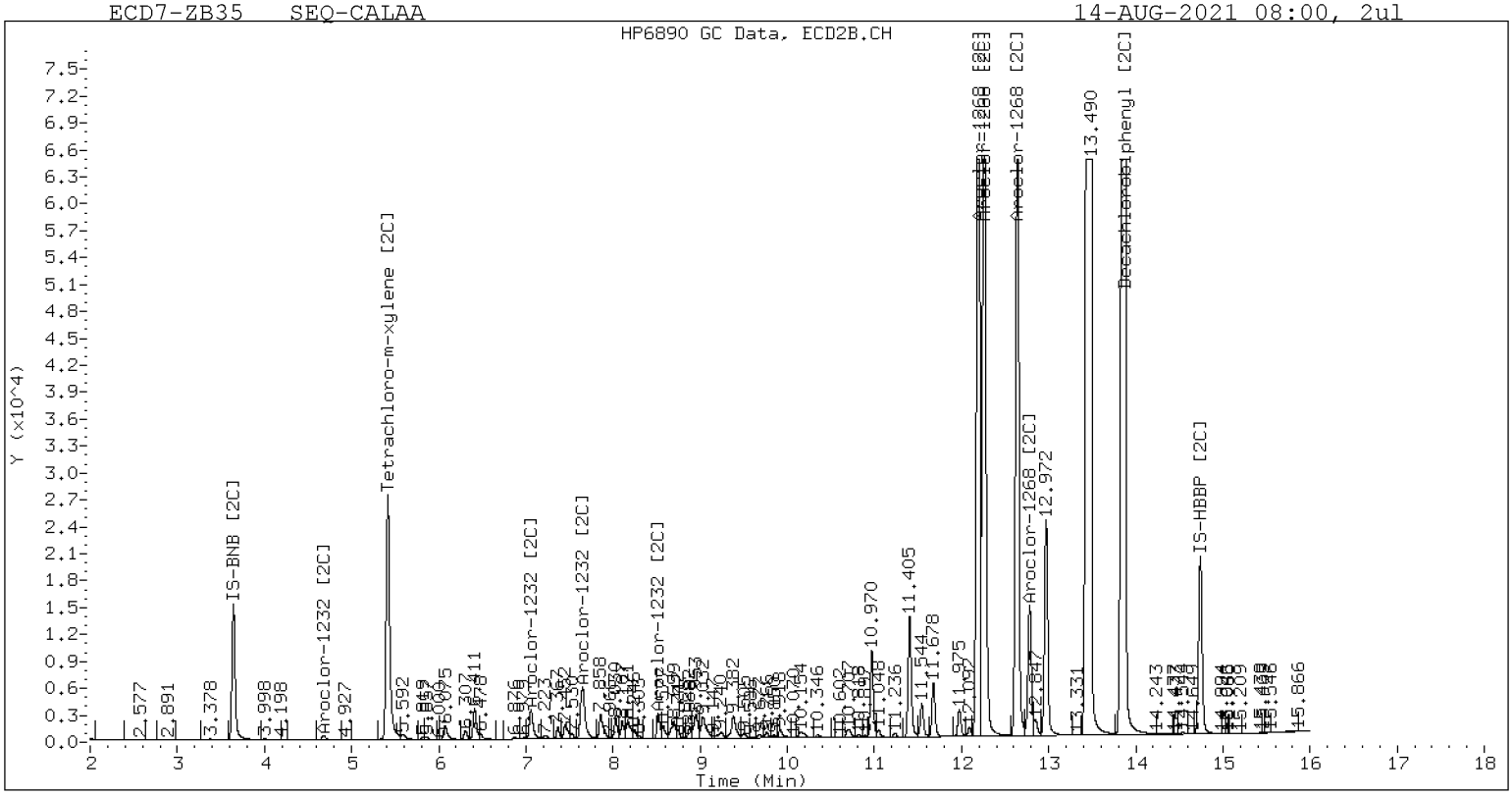
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-CALAA 14-AUG-2021 08:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-CALAA 14-AUG-2021 08:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132141ECD7.D
Data file 2: /210813.b/210813.b/08132141ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV1
Client ID:
Injection Date: 14-AUG-2021 08:21
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	130620	5.416	-0.001	380301	43.6	41.9	4.0	Tetrachloro-m-xylene
13.166	0.000	166891	13.848	-0.032	891664	41.9	41.2	1.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	247644	-4.3
Hexabromobiphenyl	425681	438534	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705551	-2.1
Hexabromobiphenyl	863111	973863	12.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.662	0.004	25008	284.7	1	7.059	0.002	110603	274.9
Aroclor-1016	2	7.036	0.006	75849	282.4	2	7.653	0.006	251287	279.2
Aroclor-1016	3	7.182	0.006	34421	285.6	3	7.860	0.005	101098	286.3
Aroclor-1016	4	7.291	0.006	21611	286.0	4	8.108	0.003	60866	284.8
Total Col1Ave (4 peaks):					284.7	Total Col2Ave (4 peaks):				281.3 RPD = 1
Corrected Ave (3 peaks):					284.2	Corrected Ave (3 peaks):				279.6 RPD = 2
Aroclor-1221	1	4.024	0.008	183	9.4	1	4.683	0.006	532	10.0
Aroclor-1221	2	5.453	0.002	3388	110.5	2	6.080	0.008	14283	117.8
Aroclor-1221	3	5.728	0.004	17440	210.6	3	6.414	0.005	53146	251.5
Total Col1Ave (3 peaks):					110.2	Total Col2Ave (3 peaks):				126.5 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.024	0.006	183	15.2	1	4.683	0.004	532	16.9
Aroclor-1232	2	5.728	0.002	17440	267.1	2	7.059	0.001	110603	600.3
Aroclor-1232	3	7.036	0.002	75849	761.3	3	7.653	0.002	251287	681.4
Aroclor-1232	4	7.973	0.001	32123	783.7	4	8.522	0.000	77885	810.7
Total Col1Ave (4 peaks):					456.8	Total Col2Ave (4 peaks):				527.3 RPD = 14
Corrected Ave (3 peaks):					347.9	Corrected Ave (3 peaks):				432.8 RPD = 22
Aroclor-1242	1	6.662	0.003	25008	366.5	1	7.059	0.002	110603	341.0
Aroclor-1242	2	7.036	0.006	75849	372.9	2	7.653	0.005	251287	356.6
Aroclor-1242	3	8.386	0.011	23127	200.7	3	8.934	-0.015	43631	132.5
Aroclor-1242	4	8.601	-0.072	2264	48.1	4	9.087	0.060	61086	163.5
Total Col1Ave (4 peaks):					247.1	Total Col2Ave (4 peaks):				248.4 RPD = 1
Corrected Ave (3 peaks):					205.1	Corrected Ave (3 peaks):				212.3 RPD = 3
Aroclor-1248	1	7.803	0.005	21981	211.8	1	8.108	0.002	60866	208.2
Aroclor-1248	2	7.973	0.005	32123	237.1	2	8.522	0.002	77885	218.9
Aroclor-1248	3	8.386	0.011	23127	116.6	3	8.934	-0.013	43631	77.0
Aroclor-1248	4	8.678	0.004	18050	159.4	4	9.393	0.016	3902	8.1
Total Col1Ave (4 peaks):					181.2	Total Col2Ave (4 peaks):				128.0 RPD = 34
Corrected Ave (3 peaks):					162.6	Corrected Ave (3 peaks):				97.8 RPD = 50*
Aroclor-1254	1	8.678	0.003	18050	84.5	1	9.242	0.003	55374	92.2
Aroclor-1254	2	---			0.0	2	9.393	0.062	3902	11.1
Aroclor-1254	3	9.048	0.006	1874	13.5	3	9.768	0.005	7503	16.4
Aroclor-1254	4	9.179	0.003	8064	30.3	4	9.930	0.017	138725	136.8
Aroclor-1254	5	9.859	-0.008	24786	148.4	5	10.160	0.012	181859	176.8
Total Col1Ave (4 peaks):					69.2	Total Col2Ave (5 peaks):				86.7 RPD = 22
Corrected Ave (3 peaks):					42.8	Corrected Ave (4 peaks):				64.1 RPD = 40*
Aroclor-1260	1	10.386	0.003	52476	266.0	1	11.427	0.002	206923	255.6
Aroclor-1260	2	10.705	0.005	54460	281.2	2	11.681	-0.000	606031	257.6
Aroclor-1260	3	11.055	0.005	146267	279.5	3	12.264	0.003	390976	258.4
Aroclor-1260	4	11.458	0.005	67567	289.8	4	12.974	0.002	190042	262.7
Aroclor-1260	5	11.557	0.003	30592	262.0	NS	---			----
Total Col1Ave (5 peaks):					275.7	Total Col2Ave (4 peaks):				258.6 RPD = 6
Corrected Ave (4 peaks):					272.2	Corrected Ave (3 peaks):				257.2 RPD = 6
Aroclor-1262	1	10.386	0.002	52476	196.1	1	10.970	-0.000	227139	190.7
Aroclor-1262	2	11.458	0.003	67567	389.9	2	11.681	-0.004	606031	241.2
Aroclor-1262	3	11.630	0.003	39662	158.8	3	12.190	0.002	176119	157.9
Aroclor-1262	4	12.278	0.004	37281	181.8	4	12.974	0.001	190042	182.8
Total Col1Ave (4 peaks):					231.6	Total Col2Ave (4 peaks):				193.2 RPD = 18
Corrected Ave (3 peaks):					178.9	Corrected Ave (3 peaks):				177.2 RPD = 1
Aroclor-1268	1	11.557	-0.000	30592	52.0	1	12.190	-0.010	176119	62.9
Aroclor-1268	2	11.630	0.004	39662	64.3	2	12.264	-0.003	390976	128.0
Aroclor-1268	3	12.031	0.031	15649	32.2	3	12.637	-0.007	5866	2.2
Aroclor-1268	4	12.771	-0.001	7371	4.7	4	12.784	0.001	4262	6.5
Total Col1Ave (4 peaks):					38.3	Total Col2Ave (4 peaks):				49.9 RPD = 26

Corrected Ave (3 peaks): 29.6 Corrected Ave (3 peaks): 23.9 RPD = 21

Total PCB Area Col1 (5.169 - 13.066) = 1398917 Col1 Total PCB = 0.6 ppm*

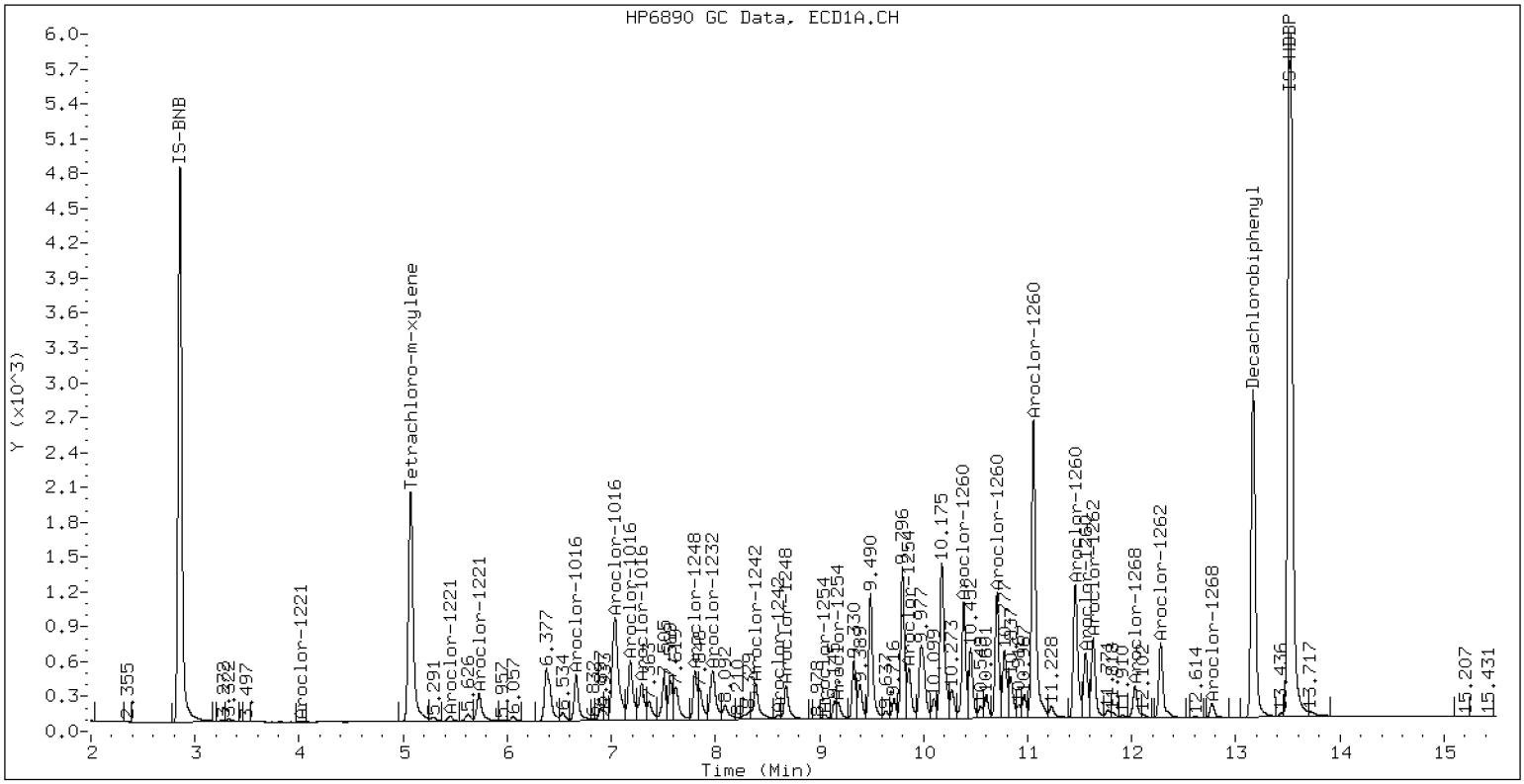
Total PCB Area Col2 (5.169 - 13.066) = 5304779 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

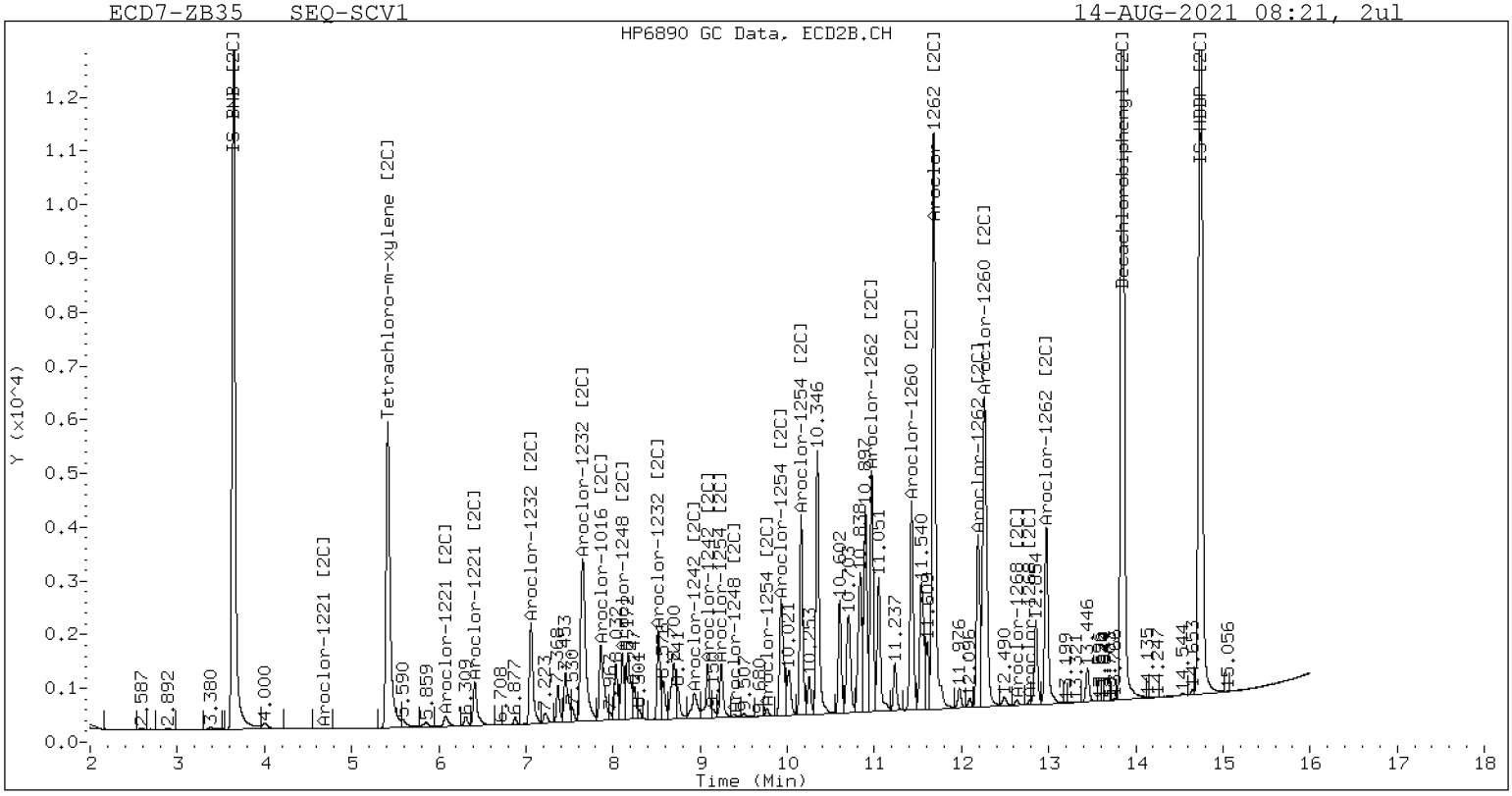
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132142ECD7.D
Data file 2: /210813.b/210813.b/08132142ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV2
Client ID:
Injection Date: 14-AUG-2021 08:41
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	132285	5.416	-0.001	383386	42.4	41.2	2.9	Tetrachloro-m-xylene
13.167	0.001	167664	13.849	-0.031	892912	40.6	40.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258029	-0.3
Hexabromobiphenyl	425681	455205	6.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724238	0.5
Hexabromobiphenyl	863111	1002202	16.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.662	0.004	19016	207.8	1	7.058	0.002	84149	203.8
Aroclor-1016	2	7.036	0.007	56530	202.0	2	7.655	0.007	190019	205.7
Aroclor-1016	3	7.182	0.006	26016	207.1	3	7.861	0.006	75921	209.4
Aroclor-1016	4	7.291	0.006	16388	208.1	4	8.108	0.003	48471	220.9
Total Col1Ave (4 peaks):				206.3		Total Col2Ave (4 peaks):			210.0	RPD = 2
Corrected Ave (3 peaks):				205.6		Corrected Ave (3 peaks):			206.3	RPD = 0
Aroclor-1221	1	4.028	0.013	116	5.7	1	---			0.0
Aroclor-1221	2	5.452	0.001	2495	78.1	2	6.082	0.010	11569	93.0
Aroclor-1221	3	5.727	0.003	12904	149.5	3	6.414	0.005	39789	183.5
Total Col1Ave (3 peaks):				77.8		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.028	0.010	116	9.3	1	---			0.0
Aroclor-1232	2	5.727	0.001	12904	189.7	2	7.058	0.000	84149	444.9
Aroclor-1232	3	7.036	0.003	56530	544.5	3	7.655	0.004	190019	502.0
Aroclor-1232	4	7.974	0.001	26547	621.6	4	8.522	0.000	61015	618.7
Total Col1Ave (4 peaks):				341.3		Total Col2Ave (3 peaks):			521.9	RPD = 42*
Corrected Ave (3 peaks):				247.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.662	0.003	19016	267.5	1	7.058	0.001	84149	252.7
Aroclor-1242	2	7.036	0.006	56530	266.7	2	7.655	0.006	190019	262.7
Aroclor-1242	3	8.383	0.009	29618	246.7	3	8.960	0.011	88042	260.5
Aroclor-1242	4	8.677	0.003	16945	345.4	4	9.035	0.007	96759	252.3
Total Col1Ave (4 peaks):				281.6		Total Col2Ave (4 peaks):			257.1	RPD = 9
Corrected Ave (3 peaks):				260.3		Corrected Ave (3 peaks):			255.2	RPD = 2
Aroclor-1248	1	7.804	0.005	17658	163.3	1	8.108	0.002	48471	161.5
Aroclor-1248	2	7.974	0.006	26547	188.1	2	8.522	0.002	61015	167.0
Aroclor-1248	3	8.383	0.009	29618	143.3	3	8.960	0.014	88042	151.3
Aroclor-1248	4	8.677	0.004	16945	143.6	4	9.387	0.011	85570	173.2
Total Col1Ave (4 peaks):				159.6		Total Col2Ave (4 peaks):			163.2	RPD = 2
Corrected Ave (3 peaks):				150.1		Corrected Ave (3 peaks):			159.9	RPD = 6
Aroclor-1254	1	8.677	0.002	16945	76.1	1	9.243	0.003	29242	47.5
Aroclor-1254	2	8.749	0.003	9630	93.4	2	9.387	0.056	85570	236.6
Aroclor-1254	3	9.048	0.007	7009	48.3	3	9.768	0.005	22605	48.1
Aroclor-1254	4	9.185	0.010	12002	43.3	4	9.920	0.006	43258	41.6
Aroclor-1254	5	9.892	0.025	8818	50.7	5	10.159	0.012	45764	43.4
Total Col1Ave (5 peaks):				62.4		Total Col2Ave (5 peaks):			83.4	RPD = 29
Corrected Ave (4 peaks):				54.6		Corrected Ave (4 peaks):			45.1	RPD = 19
Aroclor-1260	1	10.393	0.010	159	0.8	1	11.445	0.020	5299	6.4
Aroclor-1260	2	10.708	0.008	221	1.1	2	11.687	0.006	3878	1.6
Aroclor-1260	3	11.059	0.009	267	0.5	3	12.271	0.010	3933	2.5
Aroclor-1260	4	11.460	0.007	376	1.6	4	13.053	0.081	5398	7.3
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.0		Total Col2Ave (4 peaks):			4.4	RPD = 128*
Corrected Ave (3 peaks):				0.8		Corrected Ave (3 peaks):			3.5	RPD = 126*
Aroclor-1262	1	10.393	0.009	159	0.6	1	10.901	-0.069	17524	14.3
Aroclor-1262	2	11.460	0.005	376	2.1	2	11.687	0.001	3878	1.5
Aroclor-1262	3	---			0.0	3	12.271	0.083	3933	3.4
Aroclor-1262	4	---			0.0	4	13.053	0.081	5398	5.0
Col1Ave: <3 Quant Peaks						Col2Ave:			6.1	
Aroclor-1268	1	11.460	-0.097	376	0.6	1	12.271	0.071	3933	1.4
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.914	-0.086	1770	3.5	3	12.639	-0.005	1023	0.4
Aroclor-1268	4	12.775	0.003	794	0.5	4	12.790	0.006	1260	1.9
Total Col1Ave (3 peaks):				1.5		Total Col2Ave (3 peaks):			1.2	RPD = 24
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.169 - 13.066) = 482960 Col1 Total PCB = 0.2 ppm*

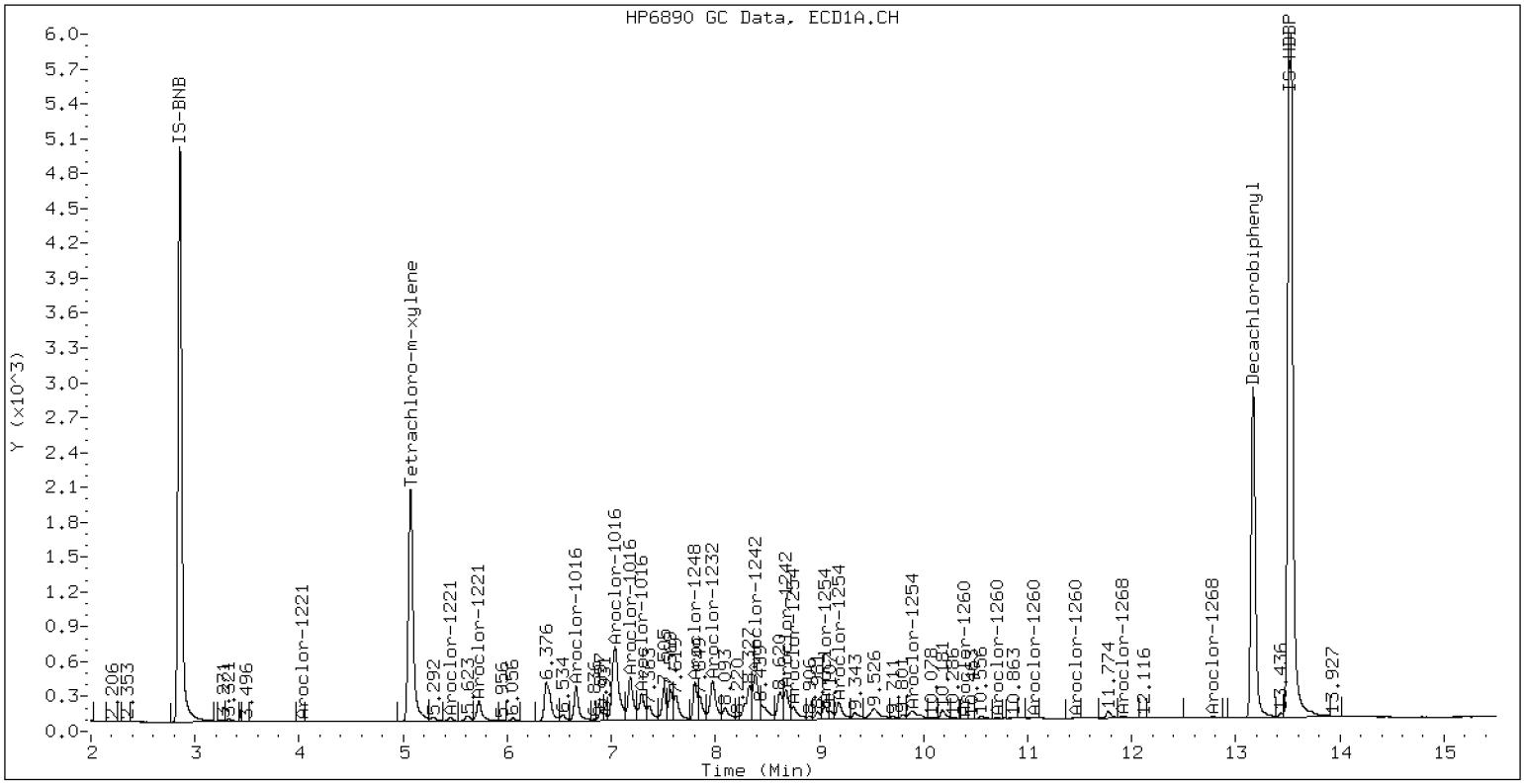
Total PCB Area Col2 (5.169 - 13.066) = 1884416 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

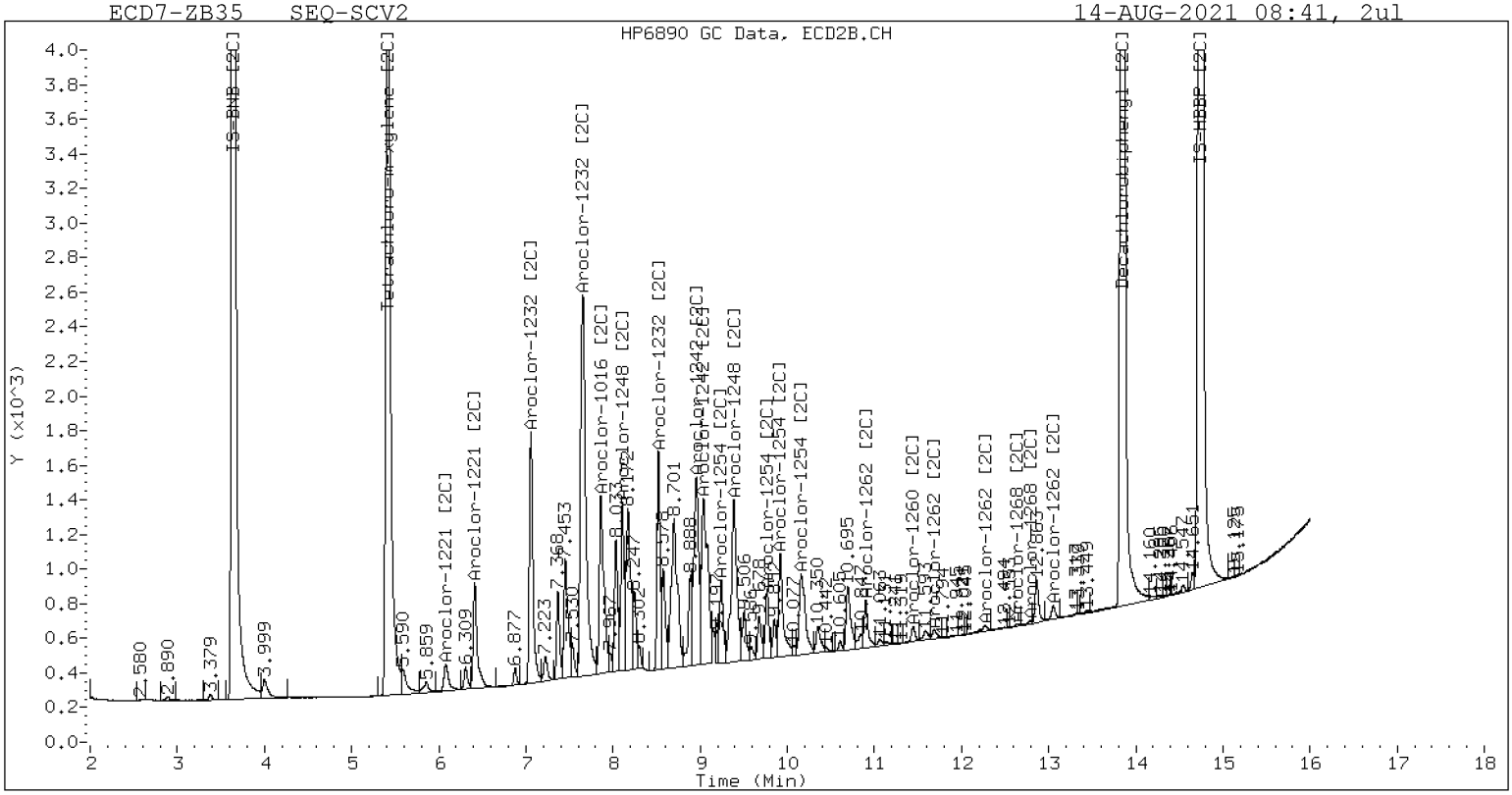
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV2 14-AUG-2021 08:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV2 14-AUG-2021 08:41, 2ul

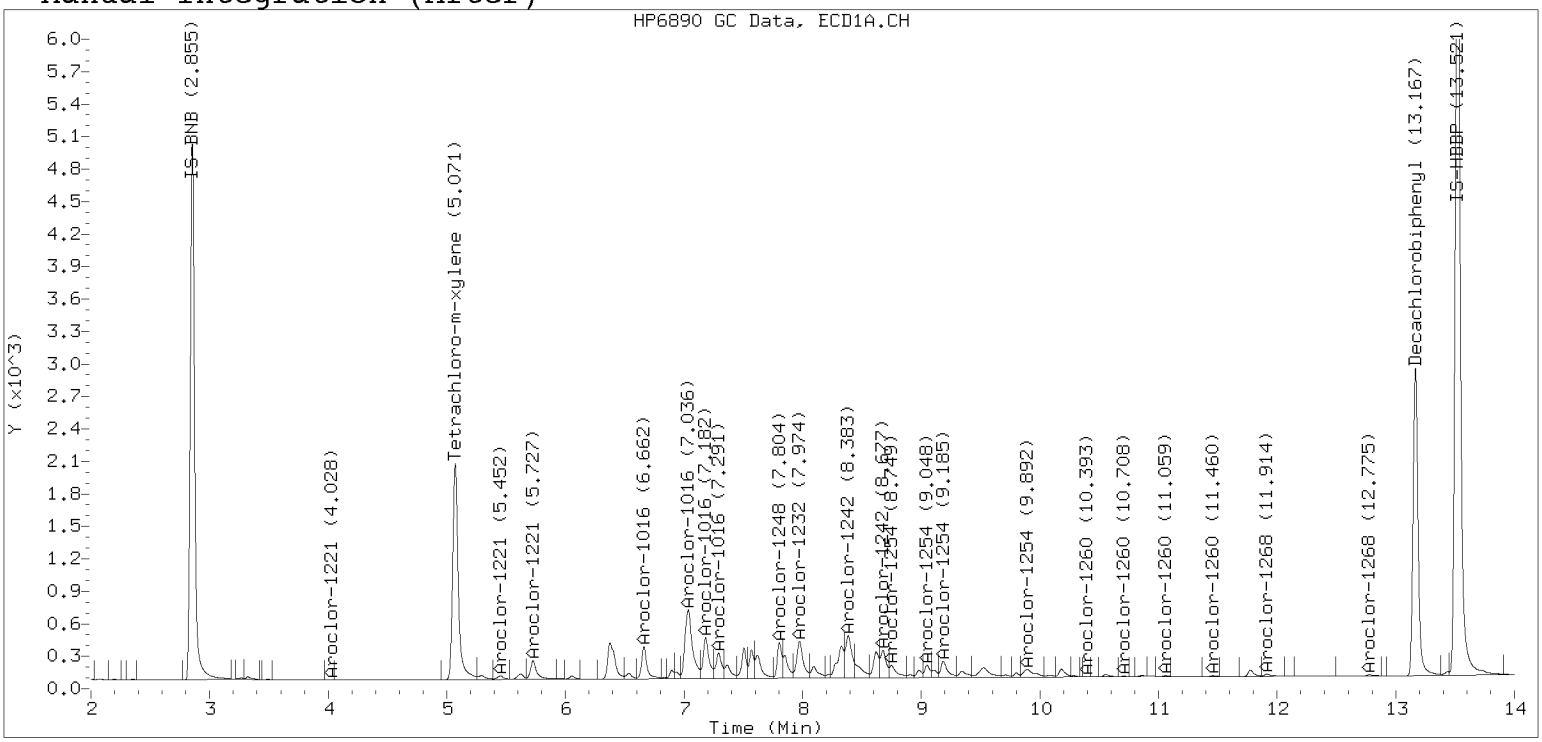


ZB-35 Manual Integration: YES

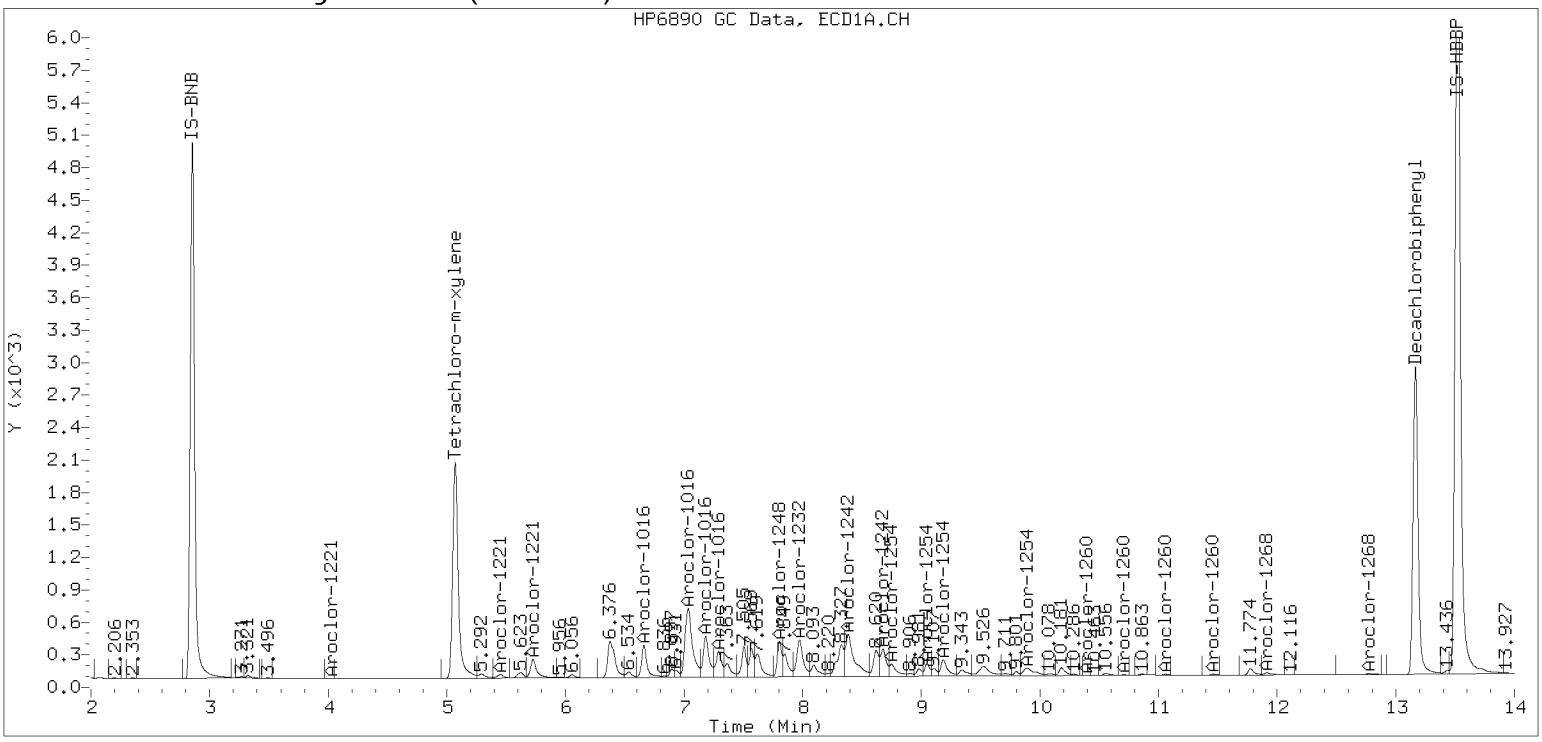
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132142ECD7.D Injection Date: 14-AUG-2021 08:41

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132143ECD7.D
Data file 2: /210813.b/210813.b/08132143ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV3
Client ID:
Injection Date: 14-AUG-2021 09:02
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	133217	5.416	-0.001	384693	41.7	40.4	3.0	Tetrachloro-m-xylene
13.165	-0.001	166922	13.848	-0.032	892438	39.5	38.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264526	2.2
Hexabromobiphenyl	425681	465895	9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740726	2.7
Hexabromobiphenyl	863111	1045189	21.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	9682	103.2	1	7.058	0.001	46276	109.6
Aroclor-1016	2	7.035	0.006	37972	132.4	2	7.654	0.006	128803	136.3
Aroclor-1016	3	7.185	0.009	16001	124.3	3	7.862	0.007	26557	71.6
Aroclor-1016	4	7.292	0.007	10150	125.7	4	8.107	0.002	83644	372.8
Total Col1Ave (4 peaks): 121.4						Total Col2Ave (4 peaks): 172.6				RPD = 35
Corrected Ave (3 peaks): 117.7						Corrected Ave (3 peaks): 105.8				RPD = 11
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.455	0.004	449	13.7	2	6.091	0.019	6638	52.2
Aroclor-1221	3	5.728	0.004	2260	25.5	3	6.414	0.005	8501	38.3
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	5.728	0.002	2260	32.4	2	7.058	-0.000	46276	239.2
Aroclor-1232	3	7.035	0.002	37972	356.8	3	7.654	0.003	128803	332.7
Aroclor-1232	4	7.972	-0.000	39250	896.5	4	8.523	0.001	102298	1014.3
Total Col1Ave (3 peaks): 428.6						Total Col2Ave (3 peaks): 528.7				RPD = 21
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.663	0.004	9682	132.8	1	7.058	0.000	46276	135.9
Aroclor-1242	2	7.035	0.005	37972	174.8	2	7.654	0.005	128803	174.1
Aroclor-1242	3	8.381	0.007	54555	443.2	3	8.956	0.007	151640	438.8
Aroclor-1242	4	8.678	0.004	31259	621.5	4	9.034	0.006	104178	265.6
Total Col1Ave (4 peaks): 343.1						Total Col2Ave (4 peaks): 253.6				RPD = 30
Corrected Ave (3 peaks): 250.3						Corrected Ave (3 peaks): 191.9				RPD = 26
Aroclor-1248	1	7.802	0.004	28742	259.3	1	8.107	0.002	83644	272.5
Aroclor-1248	2	7.972	0.004	39250	271.2	2	8.523	0.003	102298	273.8
Aroclor-1248	3	8.381	0.007	54555	257.5	3	8.956	0.009	151640	254.8
Aroclor-1248	4	8.678	0.004	31259	258.4	4	9.383	0.006	151004	298.8
Total Col1Ave (4 peaks): 261.6						Total Col2Ave (4 peaks): 275.0				RPD = 5
Corrected Ave (3 peaks): 258.4						Corrected Ave (3 peaks): 267.0				RPD = 3
Aroclor-1254	1	8.678	0.002	31259	137.0	1	9.242	0.003	54333	86.2
Aroclor-1254	2	8.749	0.003	18396	174.1	2	9.383	0.052	151004	408.3
Aroclor-1254	3	9.047	0.006	14863	99.9	3	9.767	0.004	47940	99.8
Aroclor-1254	4	9.184	0.008	25850	91.0	4	9.918	0.004	90159	84.7
Aroclor-1254	5	9.891	0.024	17966	100.7	5	10.157	0.010	92605	85.8
Total Col1Ave (5 peaks): 120.5						Total Col2Ave (5 peaks): 152.9				RPD = 24
Corrected Ave (4 peaks): 107.1						Corrected Ave (4 peaks): 89.1				RPD = 18
Aroclor-1260	1	10.390	0.007	578	2.8	1	11.440	0.015	6820	7.8
Aroclor-1260	2	10.706	0.006	437	2.1	2	11.683	0.002	7655	3.0
Aroclor-1260	3	11.059	0.008	1267	2.3	3	12.263	0.002	5159	3.2
Aroclor-1260	4	11.460	0.007	540	2.2	4	12.973	0.001	2451	3.2
Aroclor-1260	5	11.559	0.005	490	4.0	NS	---			----
Total Col1Ave (5 peaks): 2.7						Total Col2Ave (4 peaks): 4.3				RPD = 47*
Corrected Ave (4 peaks): 2.3						Corrected Ave (3 peaks): 3.1				RPD = 29
Aroclor-1262	1	10.390	0.006	578	2.0	1	10.972	0.001	4108	3.2
Aroclor-1262	2	11.460	0.005	540	2.9	2	11.683	-0.002	7655	2.8
Aroclor-1262	3	11.632	0.005	592	2.2	3	12.188	-0.000	3699	3.1
Aroclor-1262	4	12.278	0.004	571	2.6	4	12.973	0.001	2451	2.2
Total Col1Ave (4 peaks): 2.5						Total Col2Ave (4 peaks): 2.8				RPD = 14
Corrected Ave (3 peaks): 2.3						Corrected Ave (3 peaks): 2.7				RPD = 17
Aroclor-1268	1	11.559	0.002	490	0.8	1	12.188	-0.012	3699	1.2
Aroclor-1268	2	11.632	0.006	592	0.9	2	12.263	-0.004	5159	1.6
Aroclor-1268	3	11.915	-0.086	879	1.7	3	12.643	-0.001	909	0.3
Aroclor-1268	4	12.775	0.003	932	0.6	4	12.788	0.005	972	1.4
Total Col1Ave (4 peaks): 1.0						Total Col2Ave (4 peaks): 1.1				RPD = 13
Corrected Ave (3 peaks): 0.7						Corrected Ave (3 peaks): 1.0				RPD = 27

Total PCB Area Col1 (5.169 - 13.066) = 608290 Col1 Total PCB = 0.2 ppm*

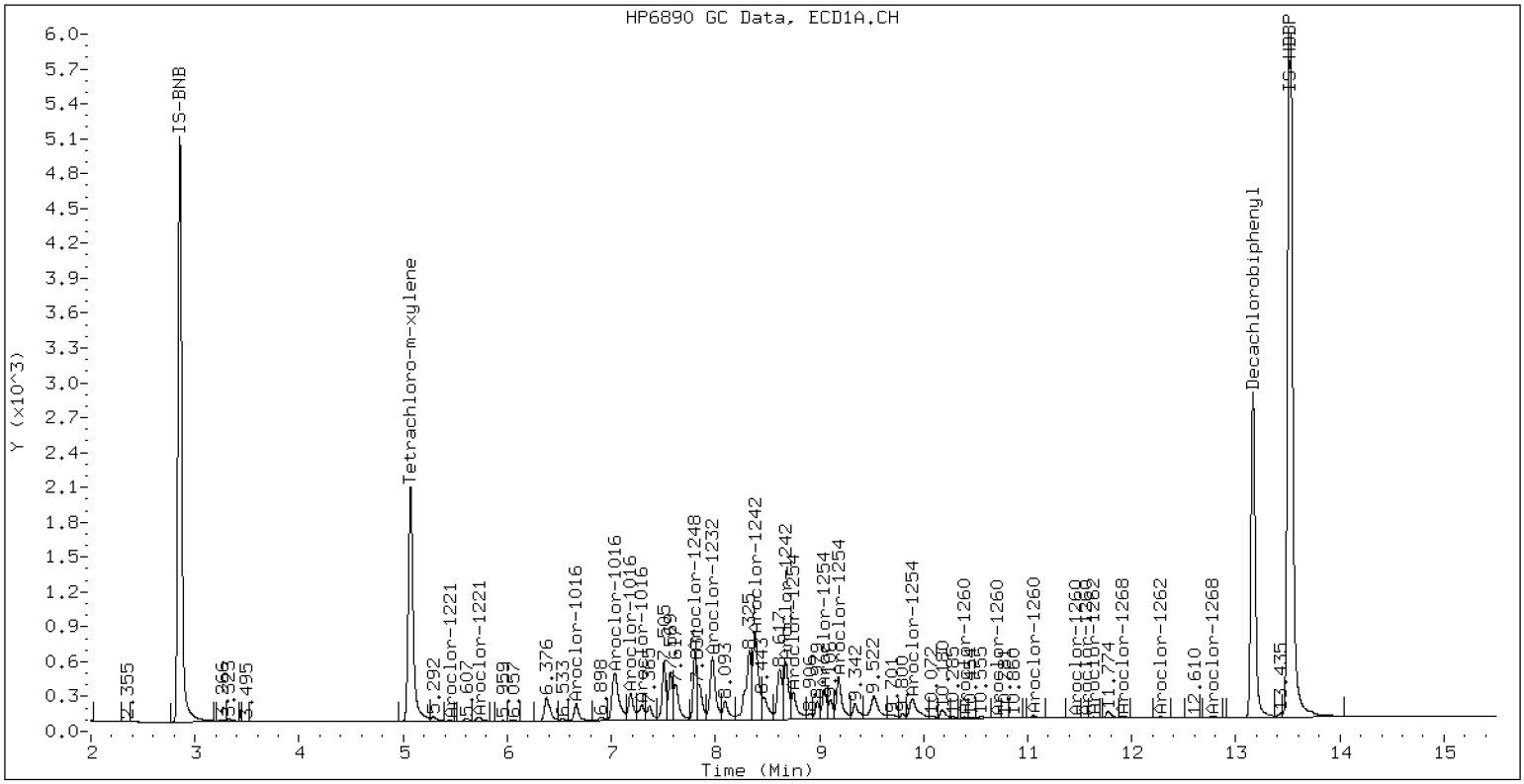
Total PCB Area Col2 (5.169 - 13.066) = 2317749 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

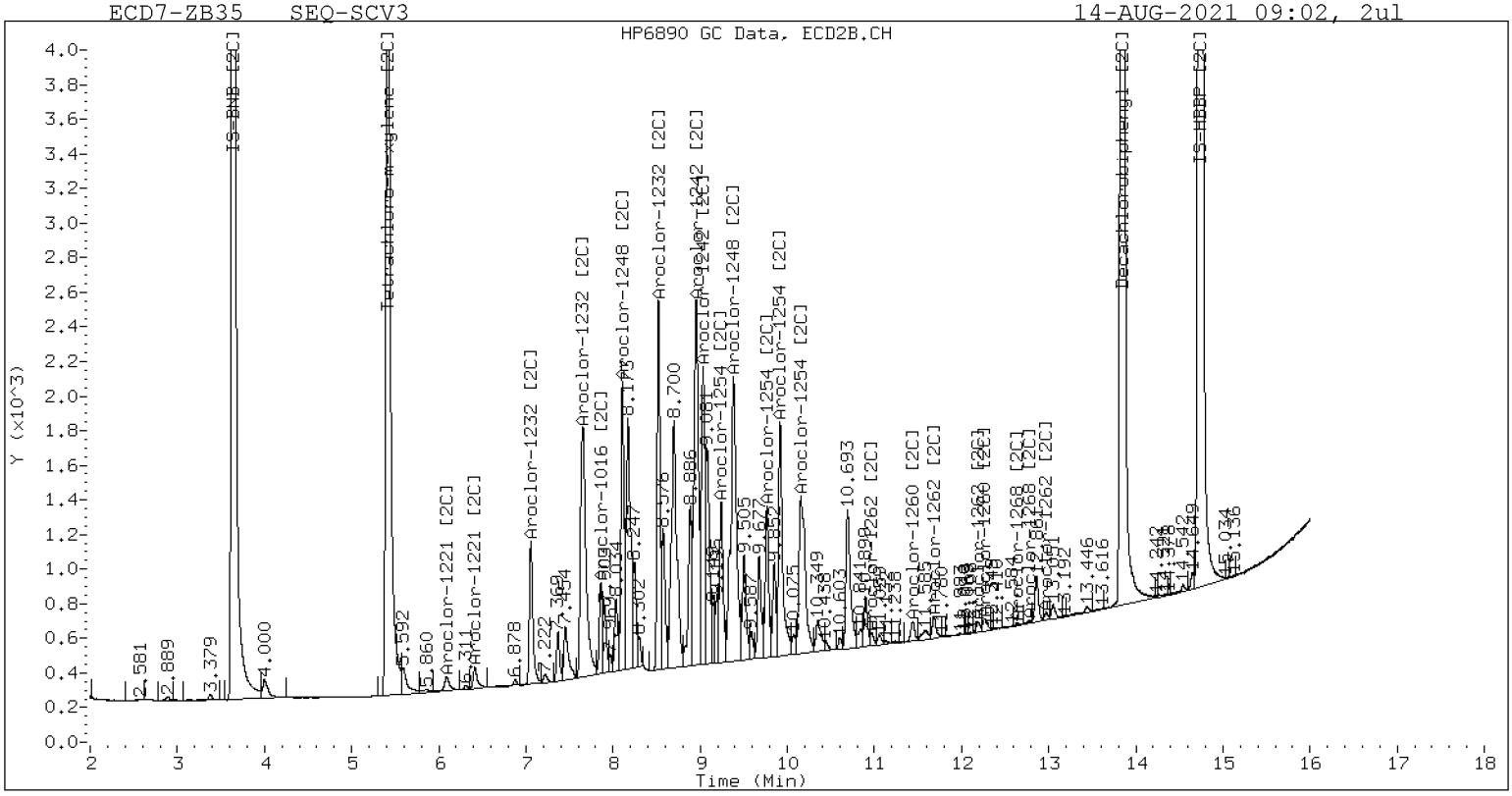
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV3 14-AUG-2021 09:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV3 14-AUG-2021 09:02, 2ul

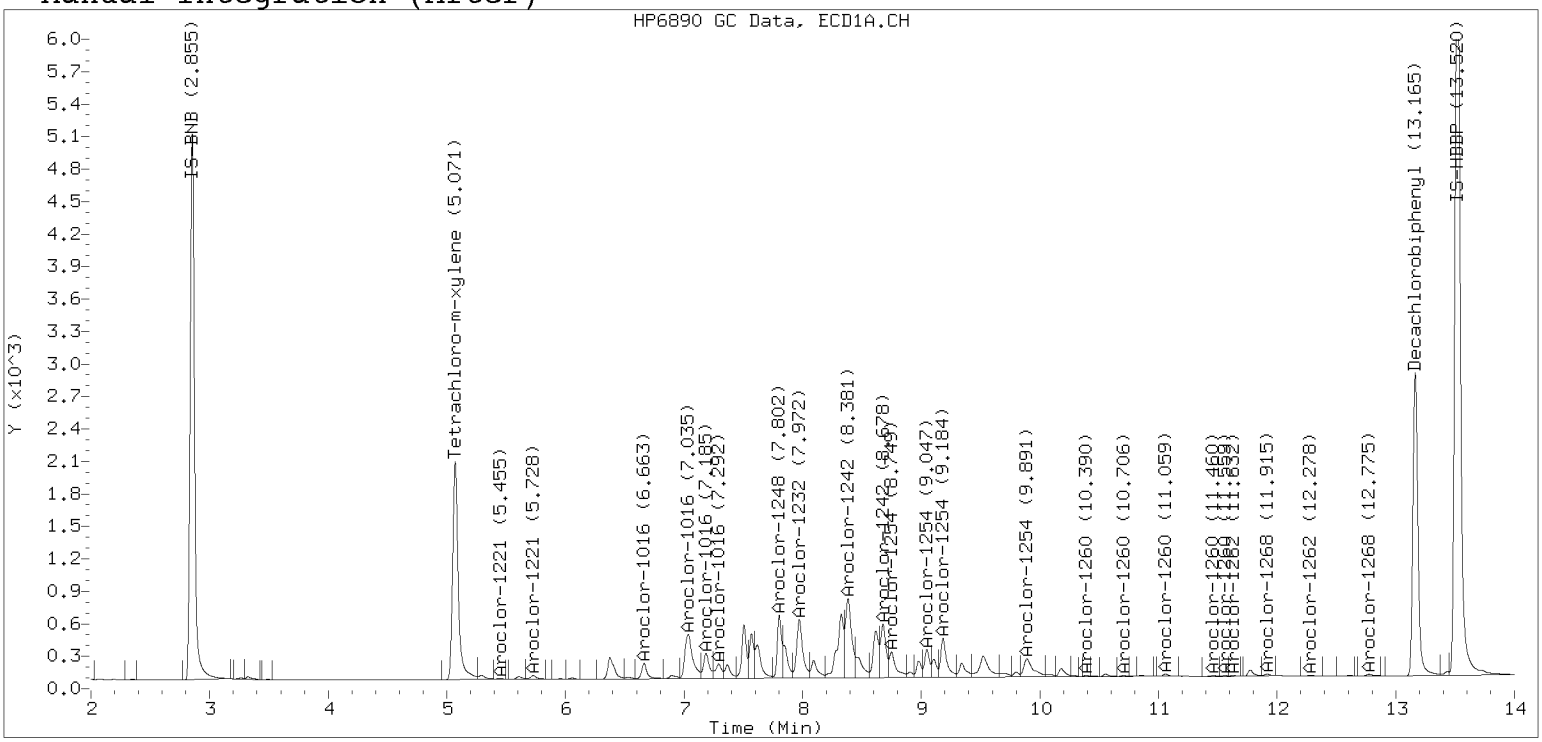


ZB-35 Manual Integration: NO

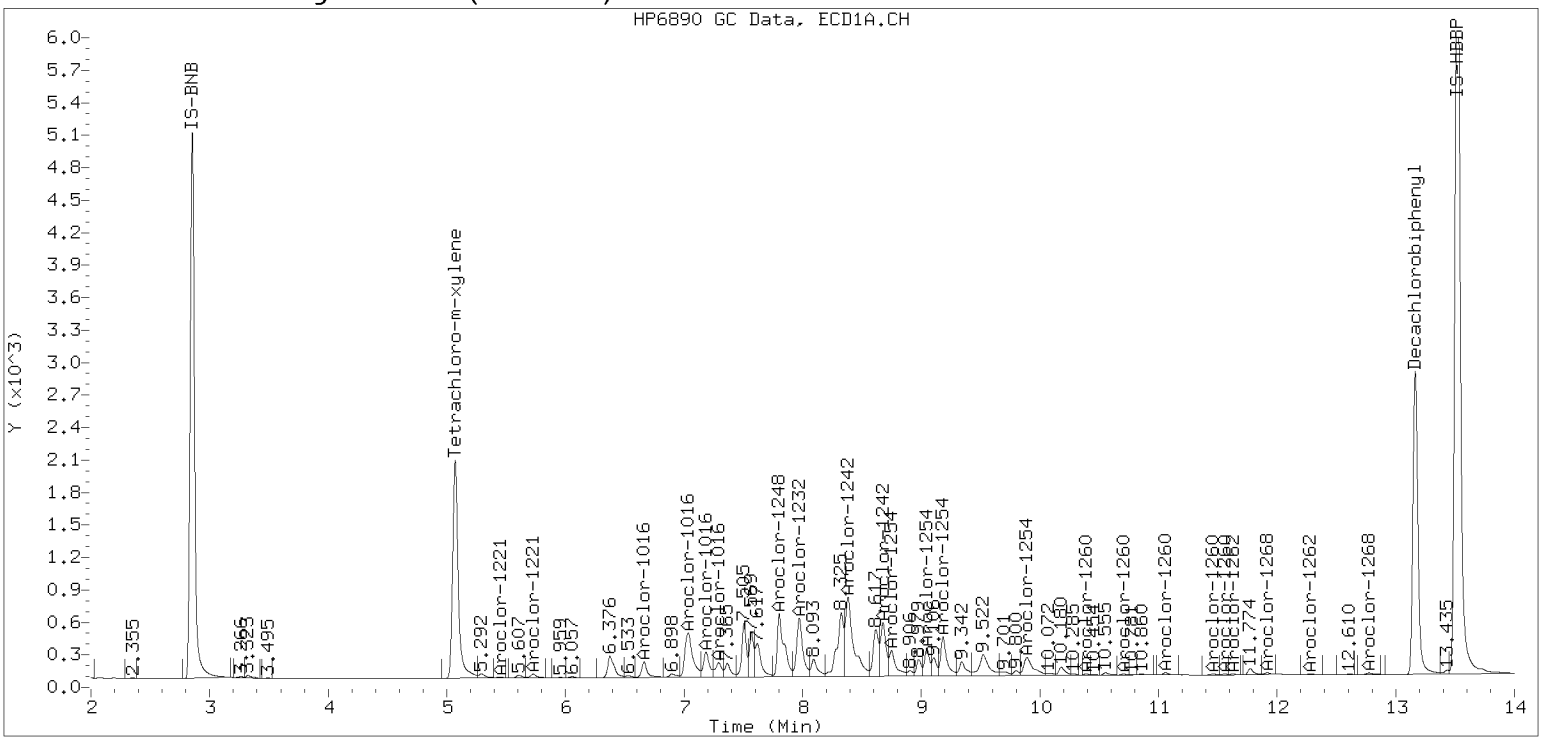
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132143ECD7.D Injection Date: 14-AUG-2021 09:02

Manual Integration (After)



Processed Integration (Before)



Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132144ECD7.D
Data file 2: /210813.b/210813.b/08132144ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV4
Client ID:
Injection Date: 14-AUG-2021 09:22
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	134141	5.416	-0.001	389116	42.6	41.4	2.8	Tetrachloro-m-xylene
13.166	0.000	166634	13.848	-0.032	887620	40.1	38.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260417	0.6
Hexabromobiphenyl	425681	458139	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	730797	1.4
Hexabromobiphenyl	863111	1034233	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	131	1.4	1	7.062	0.005	1136	2.7
Aroclor-1016	2	7.039	0.009	605	2.1	2	7.659	0.011	3270	3.5
Aroclor-1016	3	7.189	0.014	416	3.3	3	7.909	0.054	1836	5.0
Aroclor-1016	4	---			0.0	4	8.109	0.004	59728	269.8
Total Col1Ave (3 peaks): 2.3						Total Col2Ave (4 peaks): 70.3 RPD = 187*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 3.8				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.094	0.021	4462	35.5
Aroclor-1221	3	---			0.0	3	6.411	0.002	1085	5.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.062	0.004	1136	6.0
Aroclor-1232	3	7.039	0.005	605	5.8	3	7.659	0.008	3270	8.6
Aroclor-1232	4	7.975	0.003	5517	128.0	4	8.524	0.002	40317	405.2
Col1Ave: <3 Quant Peaks						Col2Ave: 139.9				
Aroclor-1242	1	6.663	0.004	131	1.8	1	7.062	0.005	1136	3.4
Aroclor-1242	2	7.039	0.008	605	2.8	2	7.659	0.010	3270	4.5
Aroclor-1242	3	8.385	0.011	48414	399.6	3	8.960	0.012	63036	184.9
Aroclor-1242	4	8.679	0.005	62054	1253.2	4	9.035	0.007	12438	32.1
Total Col1Ave (4 peaks): 414.4						Total Col2Ave (4 peaks): 56.2 RPD = 152*				
Corrected Ave (3 peaks): 134.7						Corrected Ave (3 peaks): 13.3 RPD = 164*				
Aroclor-1248	1	7.804	0.005	12376	113.4	1	8.109	0.003	59728	197.2
Aroclor-1248	2	7.975	0.007	5517	38.7	2	8.524	0.004	40317	109.4
Aroclor-1248	3	8.385	0.011	48414	232.1	3	8.960	0.014	63036	107.4
Aroclor-1248	4	8.679	0.005	62054	521.1	4	9.335	-0.041	91889	184.3
Total Col1Ave (4 peaks): 226.3						Total Col2Ave (4 peaks): 149.6 RPD = 41*				
Corrected Ave (3 peaks): 128.1						Corrected Ave (3 peaks): 133.7 RPD = 4				
Aroclor-1254	1	8.679	0.003	62054	276.2	1	9.242	0.003	166697	268.1
Aroclor-1254	2	8.751	0.005	29615	284.7	2	9.335	0.004	91889	251.8
Aroclor-1254	3	9.046	0.005	40463	276.3	3	9.766	0.003	128036	270.1
Aroclor-1254	4	9.181	0.005	78989	282.3	4	9.918	0.004	270040	257.1
Aroclor-1254	5	9.873	0.006	50845	289.4	5	10.155	0.008	293166	275.2
Total Col1Ave (5 peaks): 281.8						Total Col2Ave (5 peaks): 264.5 RPD = 6				
Corrected Ave (4 peaks): 279.9						Corrected Ave (4 peaks): 261.8 RPD = 7				
Aroclor-1260	1	10.386	0.003	4281	20.8	1	11.441	0.015	77320	89.9
Aroclor-1260	2	10.706	0.006	4756	23.5	2	11.684	0.003	61993	24.8
Aroclor-1260	3	11.057	0.007	11820	21.6	3	12.266	0.005	35733	22.2
Aroclor-1260	4	11.458	0.005	9286	38.1	4	12.973	0.001	1994	2.6
Aroclor-1260	5	11.627	0.073	440	3.6	NS	---			----
Total Col1Ave (5 peaks): 21.5						Total Col2Ave (4 peaks): 34.9 RPD = 47*				
Corrected Ave (4 peaks): 17.4						Corrected Ave (3 peaks): 16.5 RPD = 5				
Aroclor-1262	1	10.386	0.002	4281	15.3	1	10.897	-0.073	251611	198.9
Aroclor-1262	2	11.458	0.003	9286	51.3	2	11.684	-0.001	61993	23.2
Aroclor-1262	3	11.627	0.000	440	1.7	3	12.205	0.017	9780	8.3
Aroclor-1262	4	12.279	0.005	629	2.9	4	12.973	0.000	1994	1.8
Total Col1Ave (4 peaks): 17.8						Total Col2Ave (4 peaks): 58.1 RPD = 106*				
Corrected Ave (3 peaks): 6.6						Corrected Ave (3 peaks): 11.1 RPD = 50*				
Aroclor-1268	1	11.627	0.070	440	0.7	1	12.205	0.005	9780	3.3
Aroclor-1268	2	---			0.0	2	12.266	-0.001	35733	11.0
Aroclor-1268	3	11.912	-0.088	968	1.9	3	12.633	-0.011	400	0.1
Aroclor-1268	4	12.774	0.002	1001	0.6	4	12.861	0.078	15819	22.8
Total Col1Ave (3 peaks): 1.1						Total Col2Ave (4 peaks): 9.3 RPD = 158*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 4.8				

Total PCB Area Col1 (5.169 - 13.066) = 819275 Col1 Total PCB = 0.3 ppm*

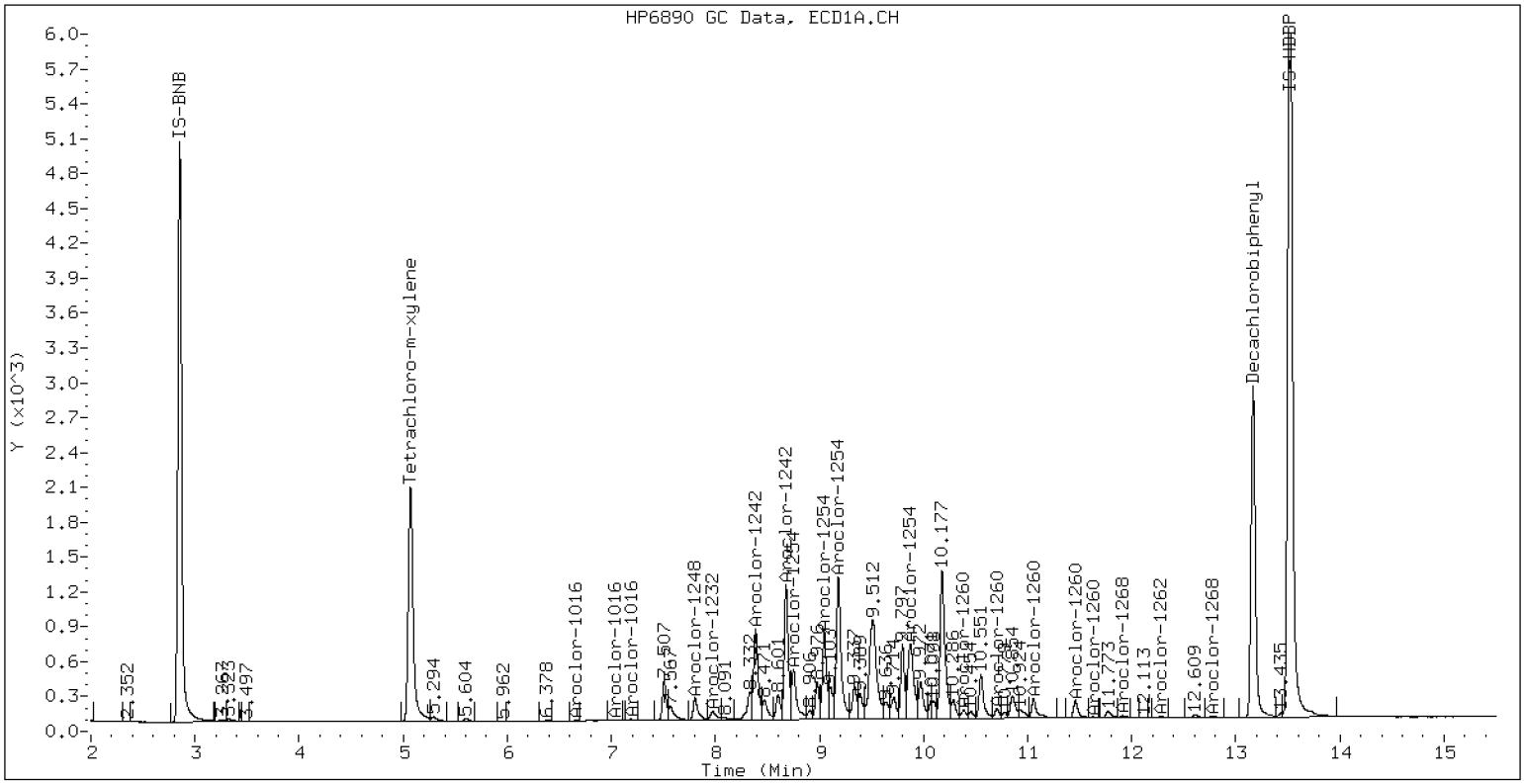
Total PCB Area Col2 (5.169 - 13.066) = 3111878 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

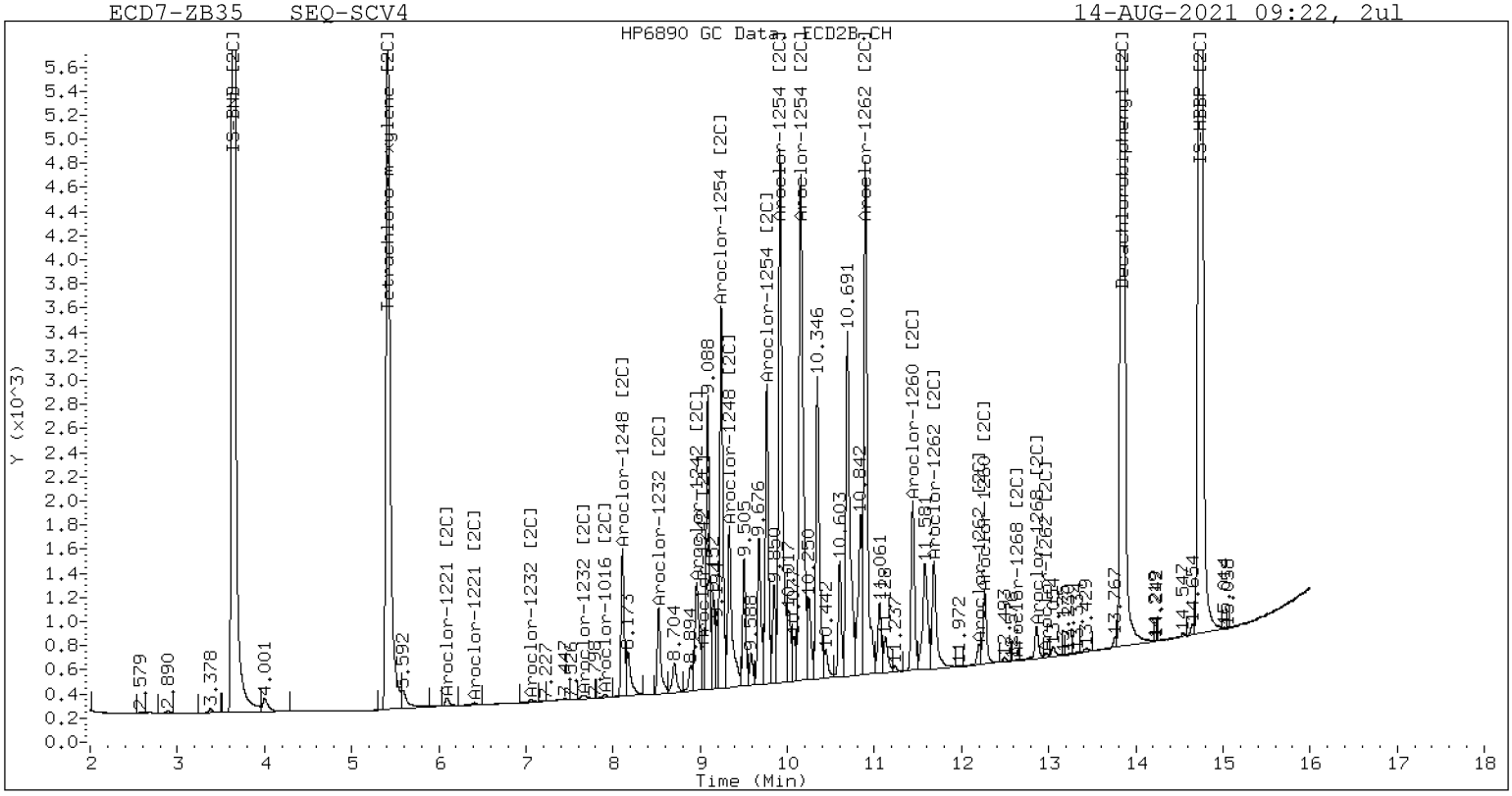
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132145ECD7.D
Data file 2: /210813.b/210813.b/08132145ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV5
Client ID:
Injection Date: 14-AUG-2021 09:43
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	131998	5.417	-0.000	375118	40.6	39.1	3.6	Tetrachloro-m-xylene
13.166	-0.000	164634	13.848	-0.032	881936	38.8	37.6	3.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	269058	3.9
Hexabromobiphenyl	425681	467004	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	745766	3.4
Hexabromobiphenyl	863111	1054321	22.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	1551	16.3	1	7.061	0.004	17081	40.2
Aroclor-1016	2	7.039	0.009	4280	14.7	2	7.658	0.011	15832	16.6
Aroclor-1016	3	7.184	0.008	2282	17.4	3	7.865	0.010	6703	18.0
Aroclor-1016	4	7.294	0.009	1564	19.1	4	8.109	0.004	3939	17.4
Total Col1Ave (4 peaks):				16.8		Total Col2Ave (4 peaks):			23.1	RPD = 31
Corrected Ave (3 peaks):				16.1		Corrected Ave (3 peaks):			17.3	RPD = 7
Aroclor-1221	1	4.018	0.002	6262	294.7	1	4.680	0.004	15071	269.2
Aroclor-1221	2	5.454	0.003	9982	299.7	2	6.075	0.003	33472	261.2
Aroclor-1221	3	5.728	0.004	25492	283.3	3	6.413	0.004	59675	267.2
Total Col1Ave (3 peaks):				292.6		Total Col2Ave (3 peaks):			265.9	RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.018	-0.000	6262	479.9	1	4.680	0.001	15071	452.2
Aroclor-1232	2	5.728	0.002	25492	359.4	2	7.061	0.003	17081	87.7
Aroclor-1232	3	7.039	0.005	4280	39.5	3	7.658	0.007	15832	40.6
Aroclor-1232	4	7.978	0.006	798	17.9	4	8.525	0.003	2523	24.8
Total Col1Ave (4 peaks):				224.2		Total Col2Ave (4 peaks):			151.3	RPD = 39
Corrected Ave (3 peaks):				139.0		Corrected Ave (3 peaks):			51.1	RPD = 93*
Aroclor-1242	1	6.663	0.004	1551	20.9	1	7.061	0.004	17081	49.8
Aroclor-1242	2	7.039	0.009	4280	19.4	2	7.658	0.010	15832	21.3
Aroclor-1242	3	8.388	0.013	9148	73.1	3	8.966	0.018	6505	18.7
Aroclor-1242	4	8.680	0.006	9619	188.0	4	9.089	0.061	25267	64.0
Total Col1Ave (4 peaks):				75.3		Total Col2Ave (4 peaks):			38.4	RPD = 65*
Corrected Ave (3 peaks):				37.8		Corrected Ave (3 peaks):			29.9	RPD = 23
Aroclor-1248	1	7.805	0.007	1067	9.5	1	8.109	0.003	3939	12.7
Aroclor-1248	2	7.978	0.010	798	5.4	2	8.525	0.005	2523	6.7
Aroclor-1248	3	8.388	0.013	9148	42.4	3	8.966	0.020	6505	10.9
Aroclor-1248	4	8.680	0.007	9619	78.2	4	9.396	0.019	4022	7.9
Total Col1Ave (4 peaks):				33.9		Total Col2Ave (4 peaks):			9.6	RPD = 112*
Corrected Ave (3 peaks):				19.1		Corrected Ave (3 peaks):			8.5	RPD = 77*
Aroclor-1254	1	8.680	0.005	9619	41.4	1	9.245	0.005	26890	42.4
Aroclor-1254	2	---			0.0	2	9.336	0.005	2650	7.1
Aroclor-1254	3	9.050	0.008	1343	8.9	3	9.769	0.007	4242	8.8
Aroclor-1254	4	9.145	-0.031	9990	34.6	4	9.932	0.019	121430	113.3
Aroclor-1254	5	9.858	-0.010	13751	75.8	5	10.160	0.013	143957	132.4
Total Col1Ave (4 peaks):				40.2		Total Col2Ave (5 peaks):			60.8	RPD = 41*
Corrected Ave (3 peaks):				28.3		Corrected Ave (4 peaks):			42.9	RPD = 41*
Aroclor-1260	1	10.387	0.004	74432	354.3	1	11.427	0.001	248521	283.6
Aroclor-1260	2	10.705	0.005	63581	308.3	2	11.682	0.001	656259	257.6
Aroclor-1260	3	11.056	0.005	158724	284.8	3	12.261	0.000	468343	285.9
Aroclor-1260	4	11.457	0.004	49425	199.0	4	12.974	0.001	287502	367.1
Aroclor-1260	5	11.557	0.003	61640	495.8	NS	---			----
Total Col1Ave (5 peaks):				328.4		Total Col2Ave (4 peaks):			298.6	RPD = 10
Corrected Ave (4 peaks):				286.6		Corrected Ave (3 peaks):			275.7	RPD = 4
Aroclor-1262	1	10.387	0.003	74432	261.2	1	10.970	-0.000	313779	243.4
Aroclor-1262	2	11.457	0.002	49425	267.8	2	11.682	-0.003	656259	241.2
Aroclor-1262	3	11.628	0.001	70335	264.4	3	12.188	0.000	303167	251.1
Aroclor-1262	4	12.278	0.003	58296	266.9	4	12.974	0.001	287502	255.5
Total Col1Ave (4 peaks):				265.1		Total Col2Ave (4 peaks):			247.8	RPD = 7
Corrected Ave (3 peaks):				264.2		Corrected Ave (3 peaks):			245.2	RPD = 7
Aroclor-1268	1	11.557	0.000	61640	98.4	1	12.188	-0.012	303167	100.1
Aroclor-1268	2	11.628	0.002	70335	107.0	2	12.261	-0.006	468343	141.7
Aroclor-1268	3	12.031	0.030	24251	46.9	3	12.635	-0.009	18559	6.5
Aroclor-1268	4	12.770	-0.001	19100	11.5	4	12.783	0.000	11203	15.9
Total Col1Ave (4 peaks):				65.9		Total Col2Ave (4 peaks):			66.0	RPD = 0

Corrected Ave (3 peaks): 52.2 Corrected Ave (3 peaks): 40.8 RPD = 25

Total PCB Area Col1 (5.169 - 13.066) = 1098701 Col1 Total PCB = 0.4 ppm*

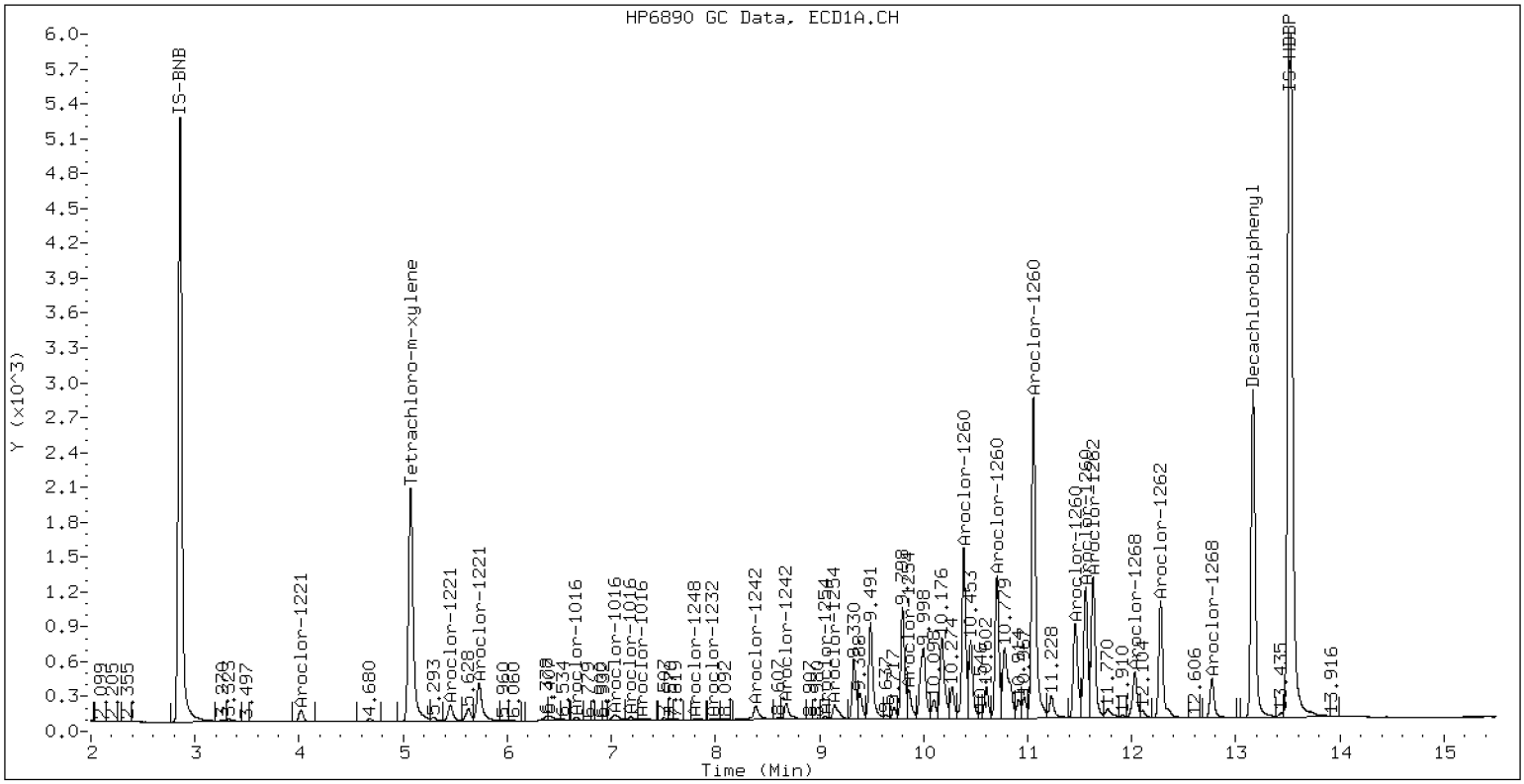
Total PCB Area Col2 (5.169 - 13.066) = 4504756 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

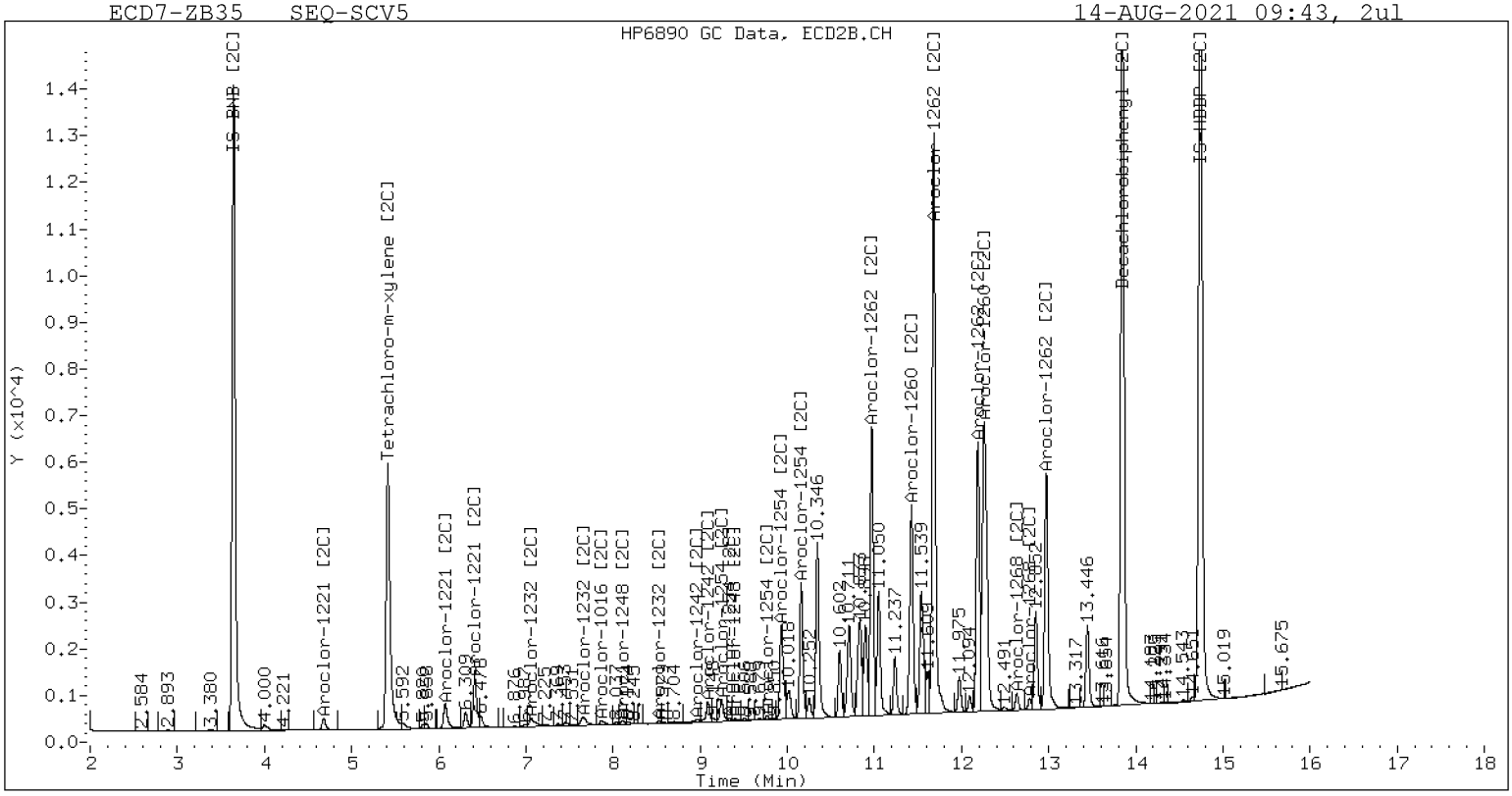
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132146ECD7.D
Data file 2: /210813.b/210813.b/08132146ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV6
Client ID:
Injection Date: 14-AUG-2021 10:03
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	131287	5.416	-0.000	375338	41.2	39.7	3.8	Tetrachloro-m-xylene
13.165	-0.001	248059	13.848	-0.032	1383308	59.6	59.3	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263445	1.8
Hexabromobiphenyl	425681	458283	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736133	2.1
Hexabromobiphenyl	863111	1049914	21.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	11471	122.8	1	7.059	0.002	54454	129.7
Aroclor-1016	2	7.037	0.008	32172	112.6	2	7.656	0.009	111127	118.4
Aroclor-1016	3	7.183	0.007	15436	120.4	3	7.862	0.007	47184	128.0
Aroclor-1016	4	7.292	0.007	9103	113.2	4	8.108	0.003	26255	117.7
Total Col1Ave (4 peaks):				117.2		Total Col2Ave (4 peaks):			123.5	RPD = 5
Corrected Ave (3 peaks):				115.4		Corrected Ave (3 peaks):			121.4	RPD = 5
Aroclor-1221	1	4.017	0.002	3341	160.6	1	4.679	0.002	8452	153.0
Aroclor-1221	2	5.453	0.002	5429	166.5	2	6.077	0.004	21053	166.4
Aroclor-1221	3	5.727	0.003	17948	203.7	3	6.414	0.005	55556	252.0
Total Col1Ave (3 peaks):				176.9		Total Col2Ave (3 peaks):			190.5	RPD = 7
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	3341	261.5	1	4.679	-0.000	8452	256.9
Aroclor-1232	2	5.727	0.001	17948	258.4	2	7.059	0.001	54454	283.3
Aroclor-1232	3	7.037	0.003	32172	303.5	3	7.656	0.005	111127	288.8
Aroclor-1232	4	7.974	0.002	13693	314.0	4	8.524	0.002	31722	316.5
Total Col1Ave (4 peaks):				284.4		Total Col2Ave (4 peaks):			286.4	RPD = 1
Corrected Ave (3 peaks):				274.5		Corrected Ave (3 peaks):			276.3	RPD = 1
Aroclor-1242	1	6.663	0.004	11471	158.0	1	7.059	0.002	54454	160.9
Aroclor-1242	2	7.037	0.007	32172	148.7	2	7.656	0.008	111127	151.2
Aroclor-1242	3	8.385	0.010	20544	167.6	3	8.959	0.010	61163	178.1
Aroclor-1242	4	8.676	0.002	6934	138.4	4	9.041	0.013	55525	142.5
Total Col1Ave (4 peaks):				153.2		Total Col2Ave (4 peaks):			158.1	RPD = 3
Corrected Ave (3 peaks):				148.4		Corrected Ave (3 peaks):			151.5	RPD = 2
Aroclor-1248	1	7.804	0.005	9056	82.0	1	8.108	0.002	26255	86.1
Aroclor-1248	2	7.974	0.006	13693	95.0	2	8.524	0.003	31722	85.4
Aroclor-1248	3	8.385	0.010	20544	97.4	3	8.959	0.012	61163	103.4
Aroclor-1248	4	8.676	0.002	6934	57.6	4	9.391	0.015	44441	88.5
Total Col1Ave (4 peaks):				83.0		Total Col2Ave (4 peaks):			90.8	RPD = 9
Corrected Ave (3 peaks):				78.2		Corrected Ave (3 peaks):			86.7	RPD = 10
Aroclor-1254	1	8.676	0.000	6934	30.5	1	9.243	0.003	10554	16.9
Aroclor-1254	2	8.748	0.002	3715	35.3	2	9.391	0.060	44441	120.9
Aroclor-1254	3	9.050	0.008	2122	14.3	3	9.769	0.007	7619	16.0
Aroclor-1254	4	9.187	0.011	3159	11.2	4	9.922	0.009	13052	12.3
Aroclor-1254	5	9.896	0.029	1953	11.0	5	10.167	0.020	14279	13.3
Total Col1Ave (5 peaks):				20.5		Total Col2Ave (5 peaks):			35.9	RPD = 55*
Corrected Ave (4 peaks):				16.7		Corrected Ave (4 peaks):			14.6	RPD = 14
Aroclor-1260	1	10.388	0.005	30028	145.6	1	11.405	-0.020	170014	194.8
Aroclor-1260	2	10.704	0.004	2256	11.1	2	11.680	-0.001	78239	30.8
Aroclor-1260	3	11.056	0.005	17997	32.9	3	12.254	-0.007	838267	513.9
Aroclor-1260	4	11.458	0.006	301	1.2	4	12.972	0.000	307546	394.4
Aroclor-1260	5	11.557	0.003	165147	1353.6	NS	---			----
Total Col1Ave (5 peaks):				308.9		Total Col2Ave (4 peaks):			283.5	RPD = 9
Corrected Ave (4 peaks):				47.7		Corrected Ave (3 peaks):			206.7	RPD = 125*
Aroclor-1262	1	10.388	0.004	30028	107.4	1	10.971	0.001	118268	92.1
Aroclor-1262	2	11.458	0.004	301	1.7	2	11.680	-0.005	78239	28.9
Aroclor-1262	3	11.626	-0.000	172148	659.4	3	12.187	-0.001	744741	619.3
Aroclor-1262	4	12.276	0.002	62869	293.3	4	12.972	-0.000	307546	274.4
Total Col1Ave (4 peaks):				265.4		Total Col2Ave (4 peaks):			253.7	RPD = 5
Corrected Ave (3 peaks):				134.1		Corrected Ave (3 peaks):			131.8	RPD = 2
Aroclor-1268	1	11.557	-0.000	165147	268.6	1	12.187	-0.013	744741	246.9
Aroclor-1268	2	11.626	0.001	172148	266.9	2	12.254	-0.013	838267	254.7
Aroclor-1268	3	12.000	-0.000	135416	266.9	3	12.635	-0.009	744001	261.5
Aroclor-1268	4	12.770	-0.002	428256	261.7	4	12.782	-0.001	187584	266.5
Total Col1Ave (4 peaks):				266.0		Total Col2Ave (4 peaks):			257.4	RPD = 3

Corrected Ave (3 peaks): 265.2 Corrected Ave (3 peaks): 254.3 RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1378298 Col1 Total PCB = 0.5 ppm*

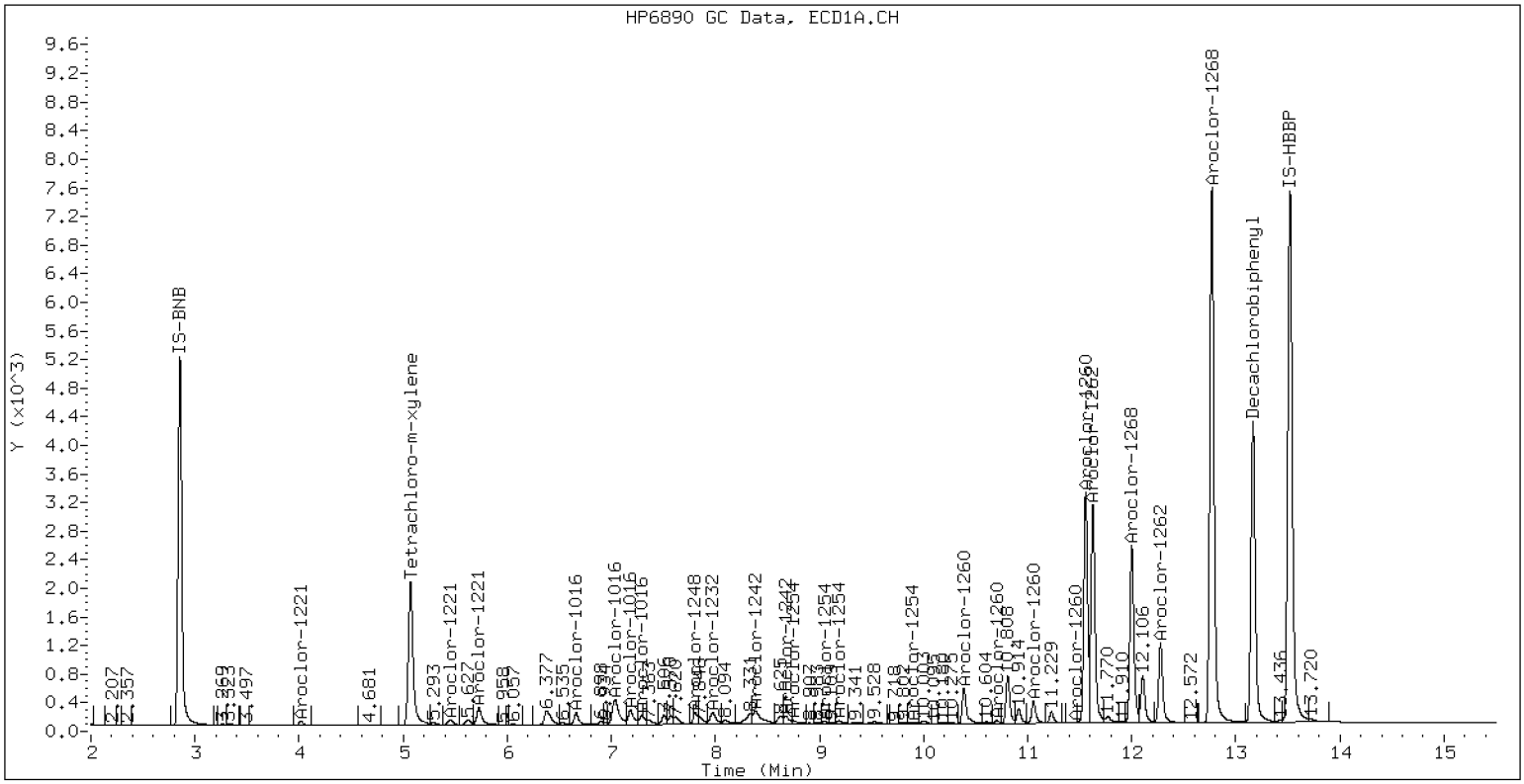
Total PCB Area Col2 (5.169 - 13.066) = 4537494 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

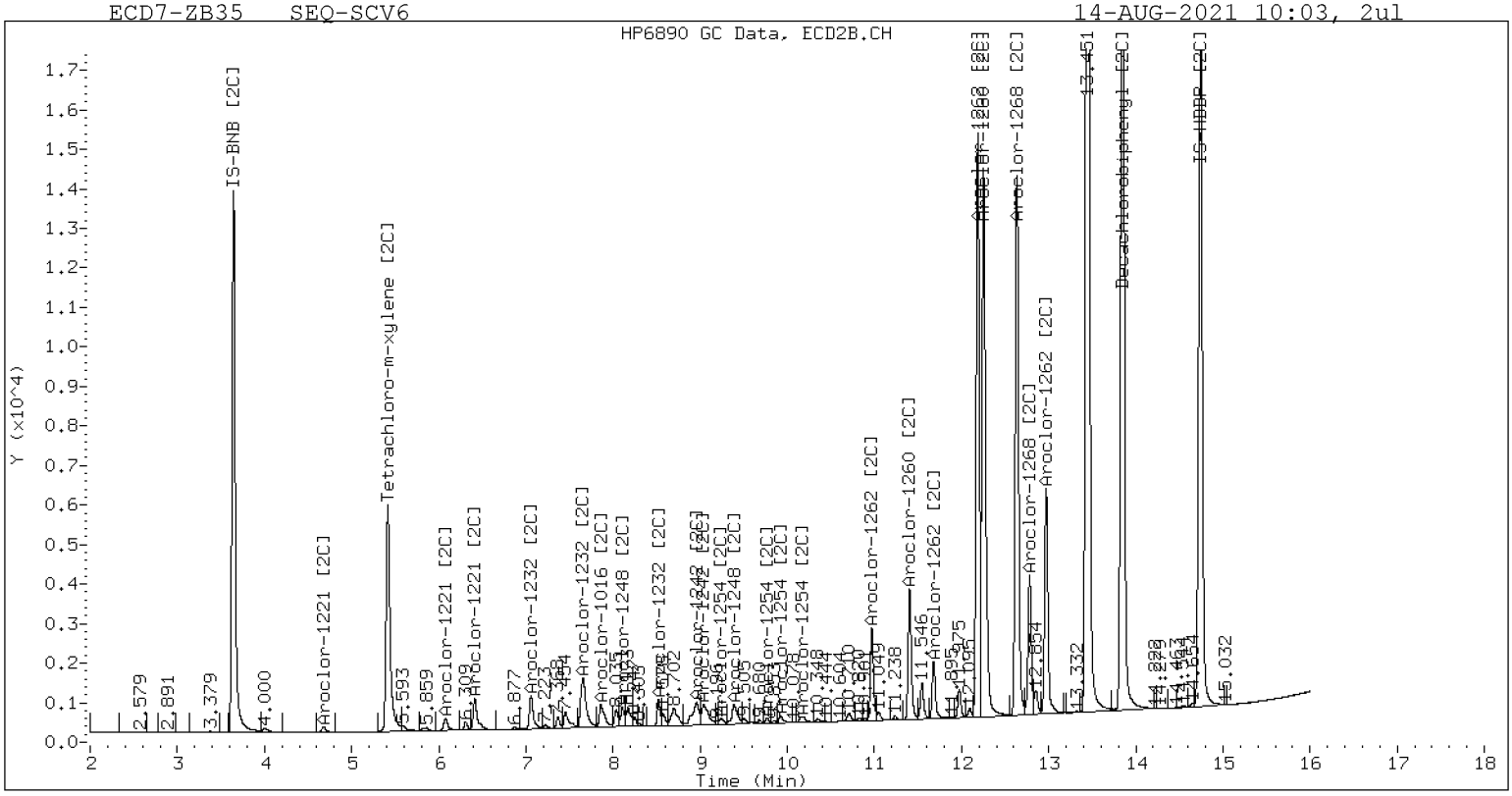
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /210813.b/08132147ECD7.D ARI ID: 0.1PPMDDTS

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
8.655	0.000	378282	9.708	0.000	2247303	0.100	0.100	0.0	2,4-DDE
0.000	-9.668	0	10.472	0.000	3202027	0.000	0.200#	----	2,4-DDT
9.066	0.000	627072	10.014	0.000	1432754	0.100	0.100	0.0	4,4-DDE
9.630	0.000	957342	10.472	0.000	3202027	0.100	0.200#	66.7*	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources Inc.
8082 DDT SCREEN REPORT

Data file 1: /210813.b/08132148ECD7.D ARI ID: DS

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
0.000	-8.655	0	9.713	0.005	45188	0.000	0.002	----	2,4-DDE
0.000	-9.668	0	10.469	-0.002	386231	0.000	0.024#	----	2,4-DDT
9.074	0.008	8164	10.015	0.001	1431	0.001	0.000	171.3*	4,4-DDE
9.633	0.003	99838	10.469	-0.002	386231	0.010	0.024#	79.8*	4,4-DDD

# Indicates value is from co-eluting peaks
* Indicates RPD > 40%

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21H0078
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV1
Sequence Name: AR1660SCV1
Standard ID: J008139

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1016	250.00	285	13.9	20.00
Aroclor 1016 [2C]	250.00	281	12.5	20.00
Aroclor 1260	250.00	276	10.3	20.00
Aroclor 1260 [2C]	250.00	259	3.4	20.00
Decachlorobiphenyl	40.000	41.9	4.8	20.00
Tetrachlorometaxylene	40.000	43.6	9.1	20.00
Decachlorobiphenyl [2C]	40.000	41.2	3.0	20.00
Tetrachlorometaxylene [2C]	40.000	41.9	4.9	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132141ECD7.D
Data file 2: /210813.b/210813.b/08132141ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV1
Client ID:
Injection Date: 14-AUG-2021 08:21
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	130620	5.416	-0.001	380301	43.6	41.9	4.0	Tetrachloro-m-xylene
13.166	0.000	166891	13.848	-0.032	891664	41.9	41.2	1.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	247644	-4.3
Hexabromobiphenyl	425681	438534	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705551	-2.1
Hexabromobiphenyl	863111	973863	12.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.662	0.004	25008	284.7	1	7.059	0.002	110603	274.9
Aroclor-1016	2	7.036	0.006	75849	282.4	2	7.653	0.006	251287	279.2
Aroclor-1016	3	7.182	0.006	34421	285.6	3	7.860	0.005	101098	286.3
Aroclor-1016	4	7.291	0.006	21611	286.0	4	8.108	0.003	60866	284.8
Total Col1Ave (4 peaks):					284.7	Total Col2Ave (4 peaks):				281.3 RPD = 1
Corrected Ave (3 peaks):					284.2	Corrected Ave (3 peaks):				279.6 RPD = 2
Aroclor-1221	1	4.024	0.008	183	9.4	1	4.683	0.006	532	10.0
Aroclor-1221	2	5.453	0.002	3388	110.5	2	6.080	0.008	14283	117.8
Aroclor-1221	3	5.728	0.004	17440	210.6	3	6.414	0.005	53146	251.5
Total Col1Ave (3 peaks):					110.2	Total Col2Ave (3 peaks):				126.5 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.024	0.006	183	15.2	1	4.683	0.004	532	16.9
Aroclor-1232	2	5.728	0.002	17440	267.1	2	7.059	0.001	110603	600.3
Aroclor-1232	3	7.036	0.002	75849	761.3	3	7.653	0.002	251287	681.4
Aroclor-1232	4	7.973	0.001	32123	783.7	4	8.522	0.000	77885	810.7
Total Col1Ave (4 peaks):					456.8	Total Col2Ave (4 peaks):				527.3 RPD = 14
Corrected Ave (3 peaks):					347.9	Corrected Ave (3 peaks):				432.8 RPD = 22
Aroclor-1242	1	6.662	0.003	25008	366.5	1	7.059	0.002	110603	341.0
Aroclor-1242	2	7.036	0.006	75849	372.9	2	7.653	0.005	251287	356.6
Aroclor-1242	3	8.386	0.011	23127	200.7	3	8.934	-0.015	43631	132.5
Aroclor-1242	4	8.601	-0.072	2264	48.1	4	9.087	0.060	61086	163.5
Total Col1Ave (4 peaks):					247.1	Total Col2Ave (4 peaks):				248.4 RPD = 1
Corrected Ave (3 peaks):					205.1	Corrected Ave (3 peaks):				212.3 RPD = 3
Aroclor-1248	1	7.803	0.005	21981	211.8	1	8.108	0.002	60866	208.2
Aroclor-1248	2	7.973	0.005	32123	237.1	2	8.522	0.002	77885	218.9
Aroclor-1248	3	8.386	0.011	23127	116.6	3	8.934	-0.013	43631	77.0
Aroclor-1248	4	8.678	0.004	18050	159.4	4	9.393	0.016	3902	8.1
Total Col1Ave (4 peaks):					181.2	Total Col2Ave (4 peaks):				128.0 RPD = 34
Corrected Ave (3 peaks):					162.6	Corrected Ave (3 peaks):				97.8 RPD = 50*
Aroclor-1254	1	8.678	0.003	18050	84.5	1	9.242	0.003	55374	92.2
Aroclor-1254	2	---			0.0	2	9.393	0.062	3902	11.1
Aroclor-1254	3	9.048	0.006	1874	13.5	3	9.768	0.005	7503	16.4
Aroclor-1254	4	9.179	0.003	8064	30.3	4	9.930	0.017	138725	136.8
Aroclor-1254	5	9.859	-0.008	24786	148.4	5	10.160	0.012	181859	176.8
Total Col1Ave (4 peaks):					69.2	Total Col2Ave (5 peaks):				86.7 RPD = 22
Corrected Ave (3 peaks):					42.8	Corrected Ave (4 peaks):				64.1 RPD = 40*
Aroclor-1260	1	10.386	0.003	52476	266.0	1	11.427	0.002	206923	255.6
Aroclor-1260	2	10.705	0.005	54460	281.2	2	11.681	-0.000	606031	257.6
Aroclor-1260	3	11.055	0.005	146267	279.5	3	12.264	0.003	390976	258.4
Aroclor-1260	4	11.458	0.005	67567	289.8	4	12.974	0.002	190042	262.7
Aroclor-1260	5	11.557	0.003	30592	262.0	NS	---			----
Total Col1Ave (5 peaks):					275.7	Total Col2Ave (4 peaks):				258.6 RPD = 6
Corrected Ave (4 peaks):					272.2	Corrected Ave (3 peaks):				257.2 RPD = 6
Aroclor-1262	1	10.386	0.002	52476	196.1	1	10.970	-0.000	227139	190.7
Aroclor-1262	2	11.458	0.003	67567	389.9	2	11.681	-0.004	606031	241.2
Aroclor-1262	3	11.630	0.003	39662	158.8	3	12.190	0.002	176119	157.9
Aroclor-1262	4	12.278	0.004	37281	181.8	4	12.974	0.001	190042	182.8
Total Col1Ave (4 peaks):					231.6	Total Col2Ave (4 peaks):				193.2 RPD = 18
Corrected Ave (3 peaks):					178.9	Corrected Ave (3 peaks):				177.2 RPD = 1
Aroclor-1268	1	11.557	-0.000	30592	52.0	1	12.190	-0.010	176119	62.9
Aroclor-1268	2	11.630	0.004	39662	64.3	2	12.264	-0.003	390976	128.0
Aroclor-1268	3	12.031	0.031	15649	32.2	3	12.637	-0.007	5866	2.2
Aroclor-1268	4	12.771	-0.001	7371	4.7	4	12.784	0.001	4262	6.5
Total Col1Ave (4 peaks):					38.3	Total Col2Ave (4 peaks):				49.9 RPD = 26

Corrected Ave (3 peaks): 29.6 Corrected Ave (3 peaks): 23.9 RPD = 21

Total PCB Area Col1 (5.169 - 13.066) = 1398917 Col1 Total PCB = 0.6 ppm*

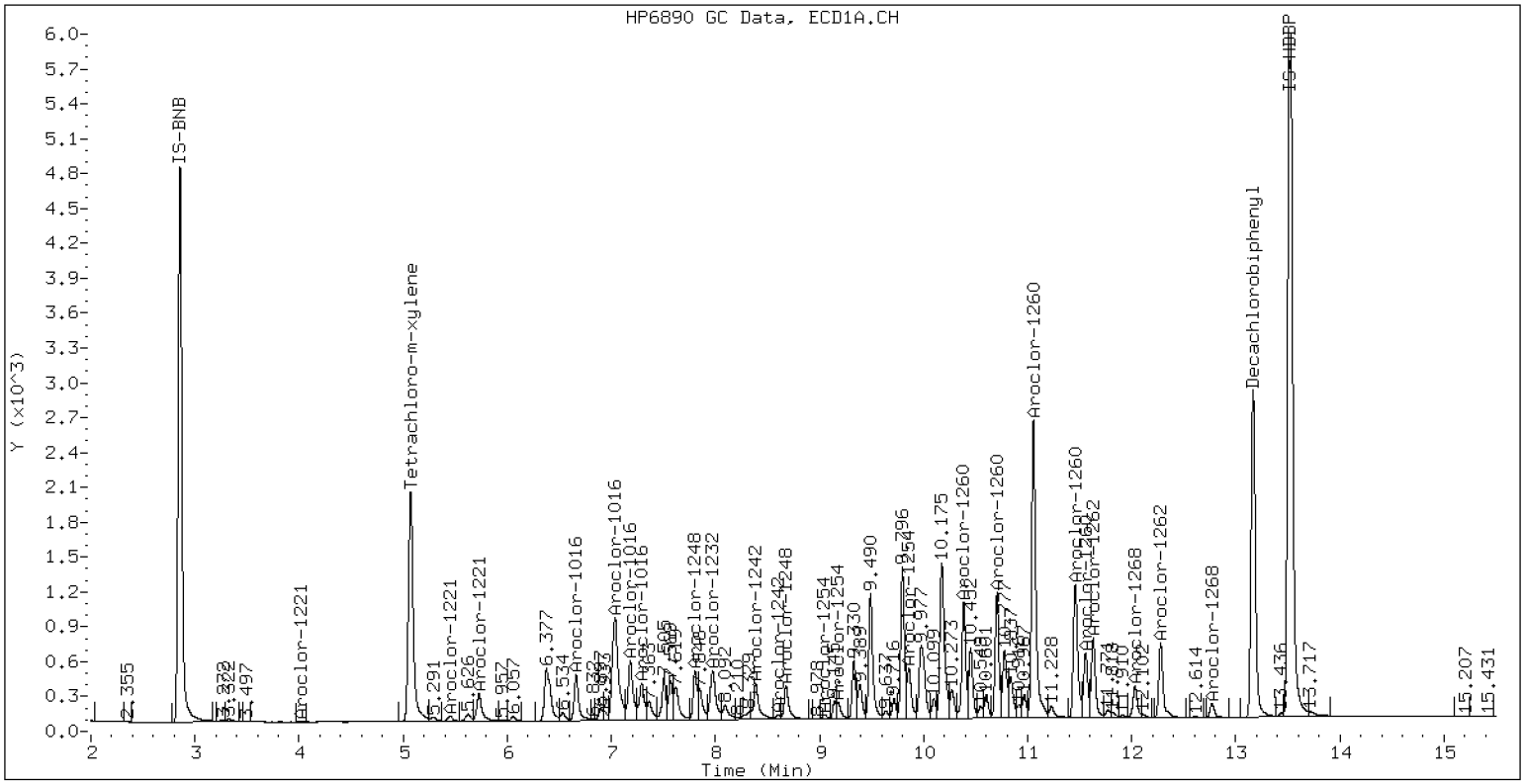
Total PCB Area Col2 (5.169 - 13.066) = 5304779 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

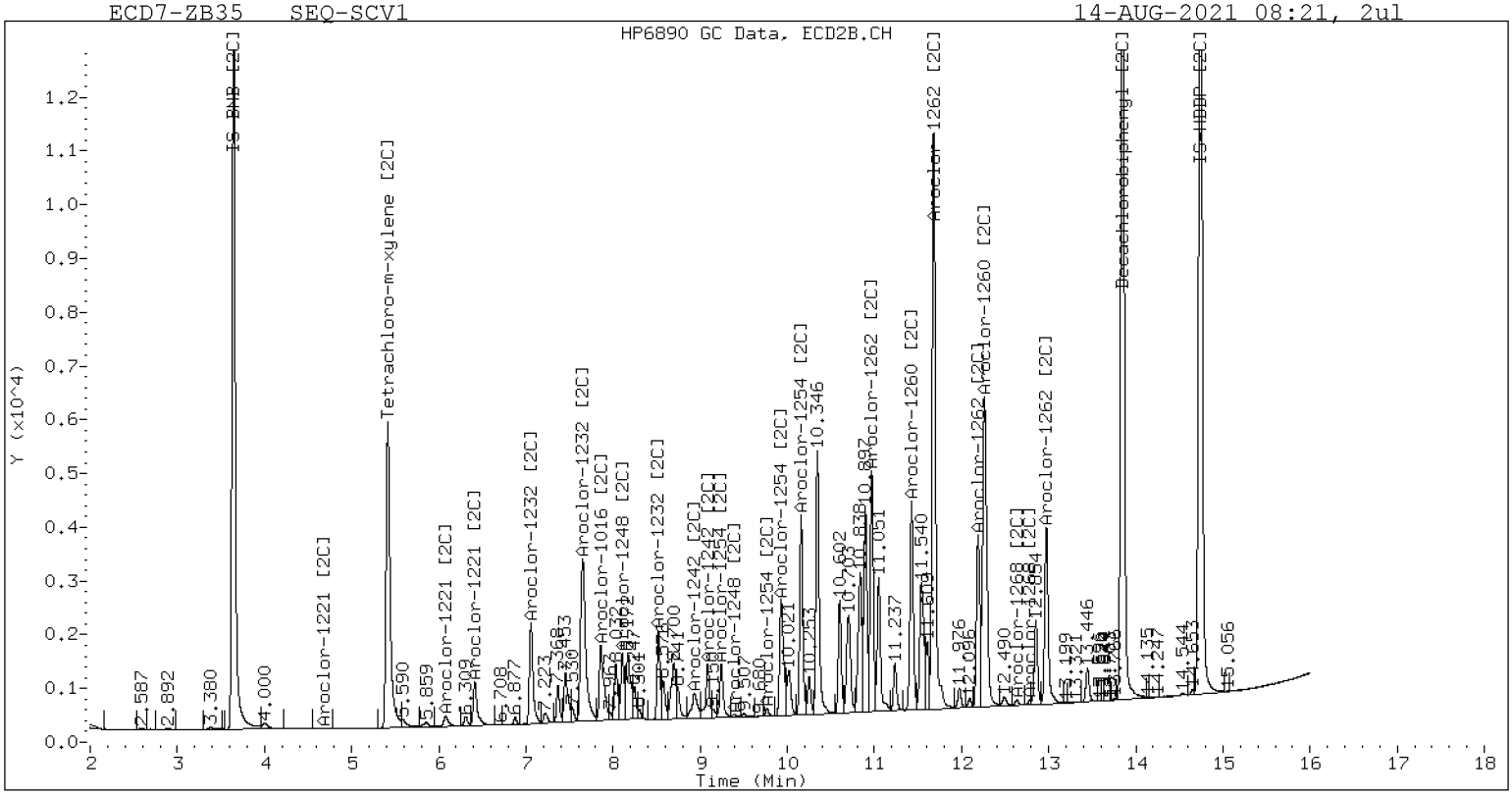
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21H0078
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV2
Sequence Name: AR1242SCV2
Standard ID: J008140

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1242	250.00	282	12.6	20.00
Aroclor 1242 [2C]	250.00	257	2.8	20.00
Decachlorobiphenyl	40.000	40.6	1.4	20.00
Tetrachlorometaxylene	40.000	42.4	6.0	20.00
Decachlorobiphenyl [2C]	40.000	40.1	0.2	20.00
Tetrachlorometaxylene [2C]	40.000	41.2	3.0	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132142ECD7.D
Data file 2: /210813.b/210813.b/08132142ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV2
Client ID:
Injection Date: 14-AUG-2021 08:41
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	132285	5.416	-0.001	383386	42.4	41.2	2.9	Tetrachloro-m-xylene
13.167	0.001	167664	13.849	-0.031	892912	40.6	40.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258029	-0.3
Hexabromobiphenyl	425681	455205	6.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724238	0.5
Hexabromobiphenyl	863111	1002202	16.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.662	0.004	19016	207.8	1	7.058	0.002	84149	203.8
Aroclor-1016	2	7.036	0.007	56530	202.0	2	7.655	0.007	190019	205.7
Aroclor-1016	3	7.182	0.006	26016	207.1	3	7.861	0.006	75921	209.4
Aroclor-1016	4	7.291	0.006	16388	208.1	4	8.108	0.003	48471	220.9
Total Col1Ave (4 peaks):				206.3		Total Col2Ave (4 peaks):			210.0	RPD = 2
Corrected Ave (3 peaks):				205.6		Corrected Ave (3 peaks):			206.3	RPD = 0
Aroclor-1221	1	4.028	0.013	116	5.7	1	---			0.0
Aroclor-1221	2	5.452	0.001	2495	78.1	2	6.082	0.010	11569	93.0
Aroclor-1221	3	5.727	0.003	12904	149.5	3	6.414	0.005	39789	183.5
Total Col1Ave (3 peaks):				77.8		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.028	0.010	116	9.3	1	---			0.0
Aroclor-1232	2	5.727	0.001	12904	189.7	2	7.058	0.000	84149	444.9
Aroclor-1232	3	7.036	0.003	56530	544.5	3	7.655	0.004	190019	502.0
Aroclor-1232	4	7.974	0.001	26547	621.6	4	8.522	0.000	61015	618.7
Total Col1Ave (4 peaks):				341.3		Total Col2Ave (3 peaks):			521.9	RPD = 42*
Corrected Ave (3 peaks):				247.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.662	0.003	19016	267.5	1	7.058	0.001	84149	252.7
Aroclor-1242	2	7.036	0.006	56530	266.7	2	7.655	0.006	190019	262.7
Aroclor-1242	3	8.383	0.009	29618	246.7	3	8.960	0.011	88042	260.5
Aroclor-1242	4	8.677	0.003	16945	345.4	4	9.035	0.007	96759	252.3
Total Col1Ave (4 peaks):				281.6		Total Col2Ave (4 peaks):			257.1	RPD = 9
Corrected Ave (3 peaks):				260.3		Corrected Ave (3 peaks):			255.2	RPD = 2
Aroclor-1248	1	7.804	0.005	17658	163.3	1	8.108	0.002	48471	161.5
Aroclor-1248	2	7.974	0.006	26547	188.1	2	8.522	0.002	61015	167.0
Aroclor-1248	3	8.383	0.009	29618	143.3	3	8.960	0.014	88042	151.3
Aroclor-1248	4	8.677	0.004	16945	143.6	4	9.387	0.011	85570	173.2
Total Col1Ave (4 peaks):				159.6		Total Col2Ave (4 peaks):			163.2	RPD = 2
Corrected Ave (3 peaks):				150.1		Corrected Ave (3 peaks):			159.9	RPD = 6
Aroclor-1254	1	8.677	0.002	16945	76.1	1	9.243	0.003	29242	47.5
Aroclor-1254	2	8.749	0.003	9630	93.4	2	9.387	0.056	85570	236.6
Aroclor-1254	3	9.048	0.007	7009	48.3	3	9.768	0.005	22605	48.1
Aroclor-1254	4	9.185	0.010	12002	43.3	4	9.920	0.006	43258	41.6
Aroclor-1254	5	9.892	0.025	8818	50.7	5	10.159	0.012	45764	43.4
Total Col1Ave (5 peaks):				62.4		Total Col2Ave (5 peaks):			83.4	RPD = 29
Corrected Ave (4 peaks):				54.6		Corrected Ave (4 peaks):			45.1	RPD = 19
Aroclor-1260	1	10.393	0.010	159	0.8	1	11.445	0.020	5299	6.4
Aroclor-1260	2	10.708	0.008	221	1.1	2	11.687	0.006	3878	1.6
Aroclor-1260	3	11.059	0.009	267	0.5	3	12.271	0.010	3933	2.5
Aroclor-1260	4	11.460	0.007	376	1.6	4	13.053	0.081	5398	7.3
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.0		Total Col2Ave (4 peaks):			4.4	RPD = 128*
Corrected Ave (3 peaks):				0.8		Corrected Ave (3 peaks):			3.5	RPD = 126*
Aroclor-1262	1	10.393	0.009	159	0.6	1	10.901	-0.069	17524	14.3
Aroclor-1262	2	11.460	0.005	376	2.1	2	11.687	0.001	3878	1.5
Aroclor-1262	3	---			0.0	3	12.271	0.083	3933	3.4
Aroclor-1262	4	---			0.0	4	13.053	0.081	5398	5.0
Col1Ave: <3 Quant Peaks						Col2Ave:			6.1	
Aroclor-1268	1	11.460	-0.097	376	0.6	1	12.271	0.071	3933	1.4
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.914	-0.086	1770	3.5	3	12.639	-0.005	1023	0.4
Aroclor-1268	4	12.775	0.003	794	0.5	4	12.790	0.006	1260	1.9
Total Col1Ave (3 peaks):				1.5		Total Col2Ave (3 peaks):			1.2	RPD = 24
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.169 - 13.066) = 482960 Col1 Total PCB = 0.2 ppm*

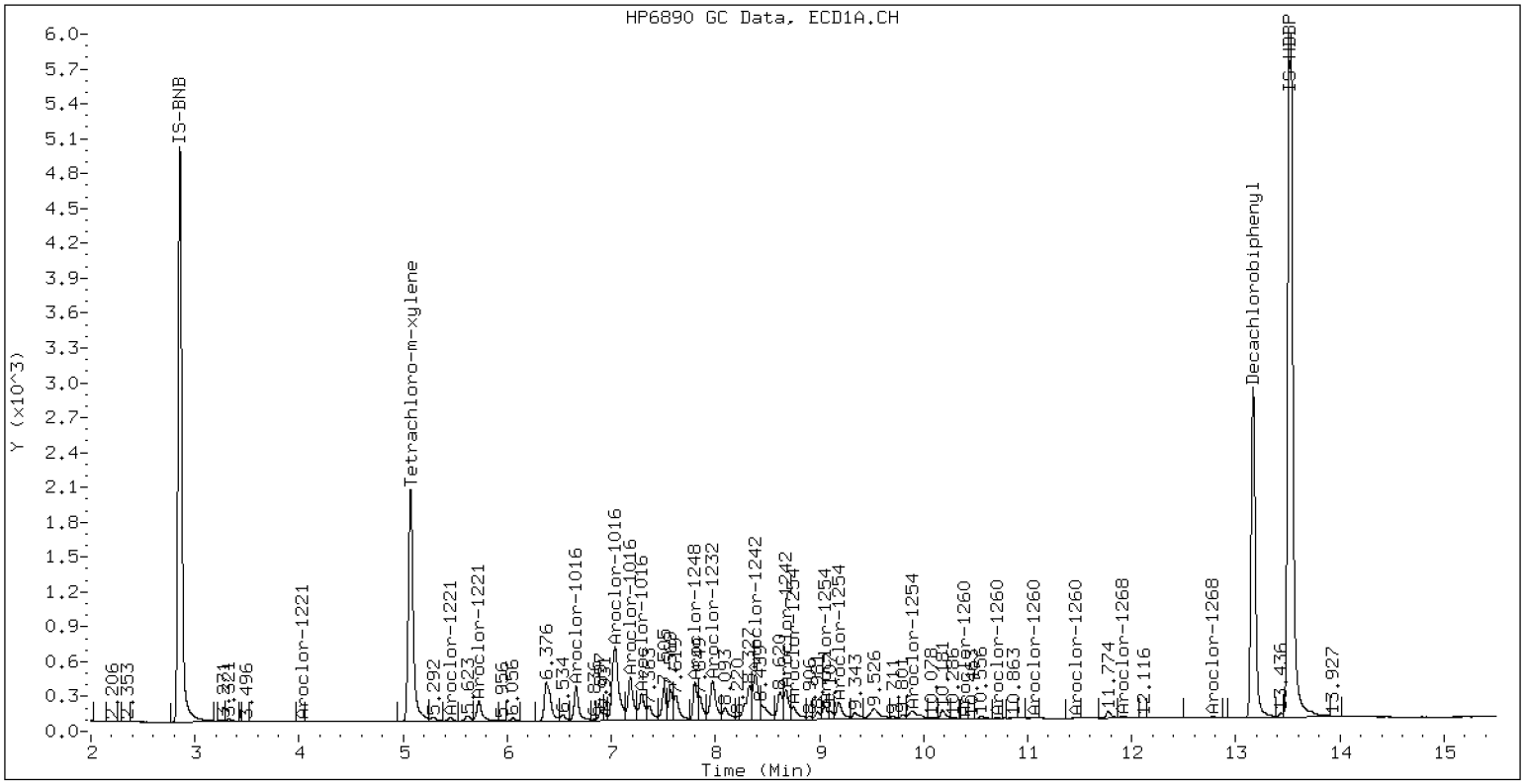
Total PCB Area Col2 (5.169 - 13.066) = 1884416 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

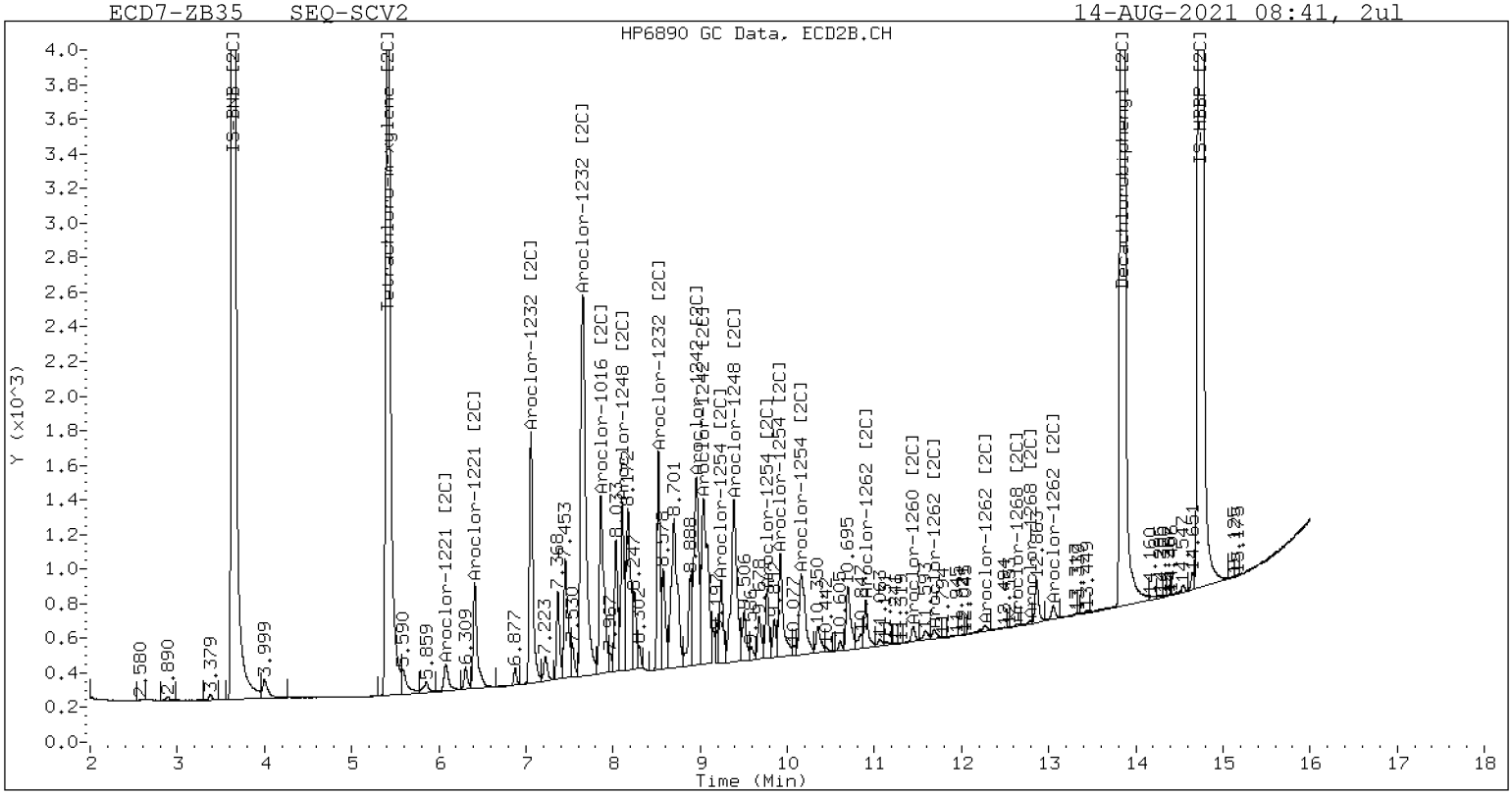
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV2 14-AUG-2021 08:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV2 14-AUG-2021 08:41, 2ul

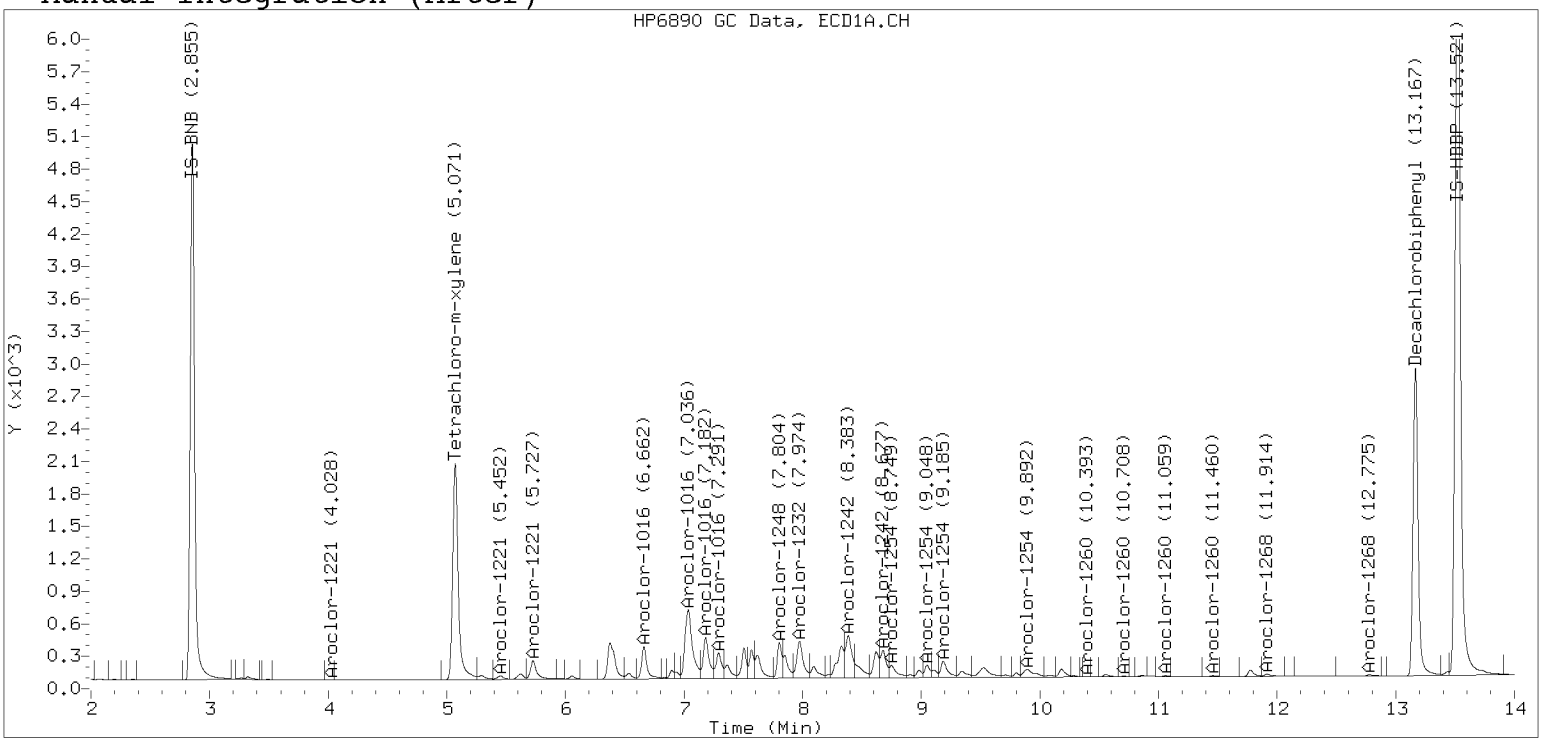


ZB-35 Manual Integration: YES

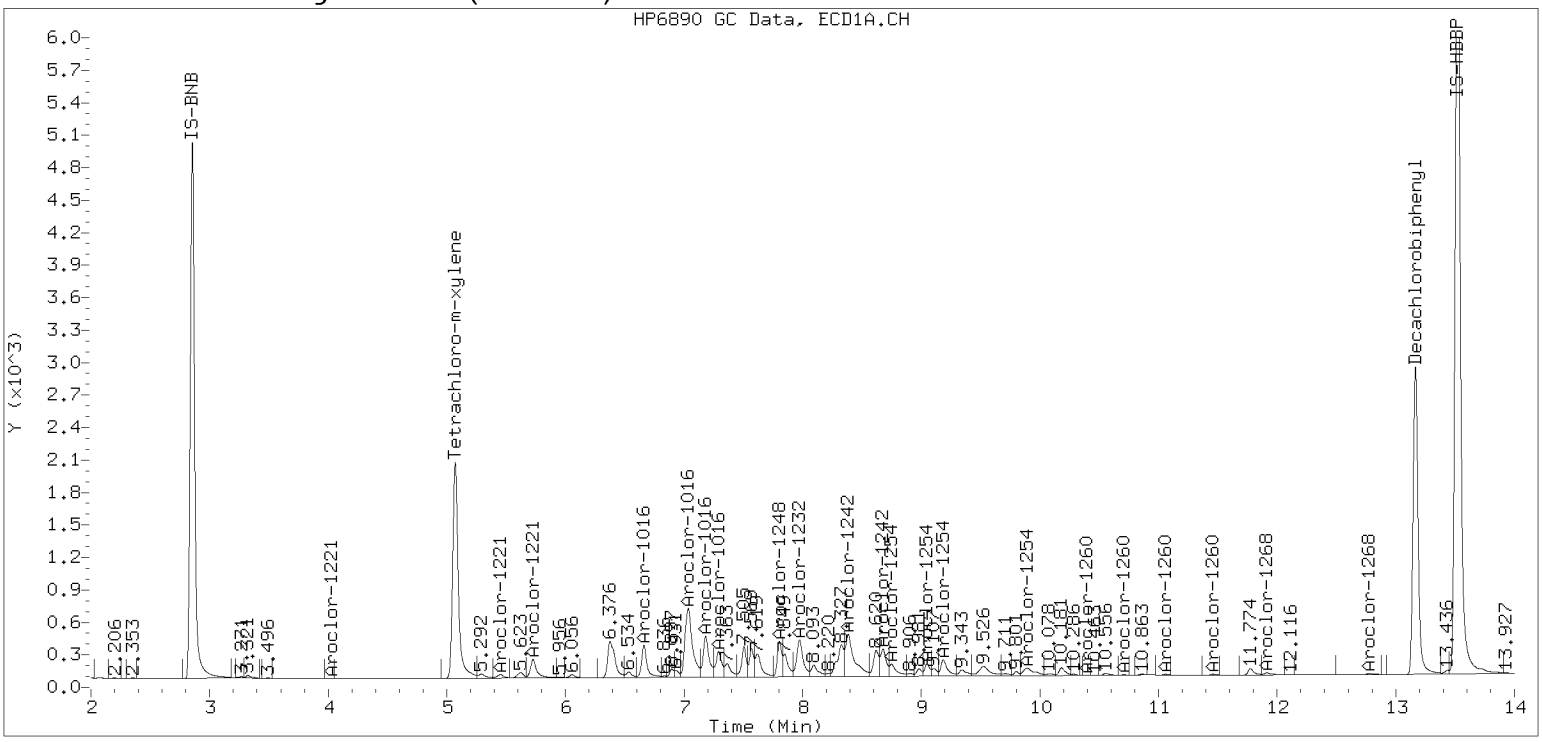
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132142ECD7.D Injection Date: 14-AUG-2021 08:41

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21H0078
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV3
Sequence Name: AR1248SCV3
Standard ID: J008141

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1248	250.00	262	4.6	20.00
Aroclor 1248 [2C]	250.00	275	10.0	20.00
Decachlorobiphenyl	40.000	39.5	-1.3	20.00
Tetrachlorometaxylene	40.000	41.7	4.2	20.00
Decachlorobiphenyl [2C]	40.000	38.4	-3.9	20.00
Tetrachlorometaxylene [2C]	40.000	40.4	1.0	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132143ECD7.D
Data file 2: /210813.b/210813.b/08132143ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV3
Client ID:
Injection Date: 14-AUG-2021 09:02
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	133217	5.416	-0.001	384693	41.7	40.4	3.0	Tetrachloro-m-xylene
13.165	-0.001	166922	13.848	-0.032	892438	39.5	38.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264526	2.2
Hexabromobiphenyl	425681	465895	9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740726	2.7
Hexabromobiphenyl	863111	1045189	21.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	9682	103.2	1	7.058	0.001	46276	109.6
Aroclor-1016	2	7.035	0.006	37972	132.4	2	7.654	0.006	128803	136.3
Aroclor-1016	3	7.185	0.009	16001	124.3	3	7.862	0.007	26557	71.6
Aroclor-1016	4	7.292	0.007	10150	125.7	4	8.107	0.002	83644	372.8
Total Col1Ave (4 peaks):					121.4	Total Col2Ave (4 peaks):				172.6 RPD = 35
Corrected Ave (3 peaks):					117.7	Corrected Ave (3 peaks):				105.8 RPD = 11
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.455	0.004	449	13.7	2	6.091	0.019	6638	52.2
Aroclor-1221	3	5.728	0.004	2260	25.5	3	6.414	0.005	8501	38.3
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	5.728	0.002	2260	32.4	2	7.058	-0.000	46276	239.2
Aroclor-1232	3	7.035	0.002	37972	356.8	3	7.654	0.003	128803	332.7
Aroclor-1232	4	7.972	-0.000	39250	896.5	4	8.523	0.001	102298	1014.3
Total Col1Ave (3 peaks):					428.6	Total Col2Ave (3 peaks):				528.7 RPD = 21
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.663	0.004	9682	132.8	1	7.058	0.000	46276	135.9
Aroclor-1242	2	7.035	0.005	37972	174.8	2	7.654	0.005	128803	174.1
Aroclor-1242	3	8.381	0.007	54555	443.2	3	8.956	0.007	151640	438.8
Aroclor-1242	4	8.678	0.004	31259	621.5	4	9.034	0.006	104178	265.6
Total Col1Ave (4 peaks):					343.1	Total Col2Ave (4 peaks):				253.6 RPD = 30
Corrected Ave (3 peaks):					250.3	Corrected Ave (3 peaks):				191.9 RPD = 26
Aroclor-1248	1	7.802	0.004	28742	259.3	1	8.107	0.002	83644	272.5
Aroclor-1248	2	7.972	0.004	39250	271.2	2	8.523	0.003	102298	273.8
Aroclor-1248	3	8.381	0.007	54555	257.5	3	8.956	0.009	151640	254.8
Aroclor-1248	4	8.678	0.004	31259	258.4	4	9.383	0.006	151004	298.8
Total Col1Ave (4 peaks):					261.6	Total Col2Ave (4 peaks):				275.0 RPD = 5
Corrected Ave (3 peaks):					258.4	Corrected Ave (3 peaks):				267.0 RPD = 3
Aroclor-1254	1	8.678	0.002	31259	137.0	1	9.242	0.003	54333	86.2
Aroclor-1254	2	8.749	0.003	18396	174.1	2	9.383	0.052	151004	408.3
Aroclor-1254	3	9.047	0.006	14863	99.9	3	9.767	0.004	47940	99.8
Aroclor-1254	4	9.184	0.008	25850	91.0	4	9.918	0.004	90159	84.7
Aroclor-1254	5	9.891	0.024	17966	100.7	5	10.157	0.010	92605	85.8
Total Col1Ave (5 peaks):					120.5	Total Col2Ave (5 peaks):				152.9 RPD = 24
Corrected Ave (4 peaks):					107.1	Corrected Ave (4 peaks):				89.1 RPD = 18
Aroclor-1260	1	10.390	0.007	578	2.8	1	11.440	0.015	6820	7.8
Aroclor-1260	2	10.706	0.006	437	2.1	2	11.683	0.002	7655	3.0
Aroclor-1260	3	11.059	0.008	1267	2.3	3	12.263	0.002	5159	3.2
Aroclor-1260	4	11.460	0.007	540	2.2	4	12.973	0.001	2451	3.2
Aroclor-1260	5	11.559	0.005	490	4.0	NS	---			----
Total Col1Ave (5 peaks):					2.7	Total Col2Ave (4 peaks):				4.3 RPD = 47*
Corrected Ave (4 peaks):					2.3	Corrected Ave (3 peaks):				3.1 RPD = 29
Aroclor-1262	1	10.390	0.006	578	2.0	1	10.972	0.001	4108	3.2
Aroclor-1262	2	11.460	0.005	540	2.9	2	11.683	-0.002	7655	2.8
Aroclor-1262	3	11.632	0.005	592	2.2	3	12.188	-0.000	3699	3.1
Aroclor-1262	4	12.278	0.004	571	2.6	4	12.973	0.001	2451	2.2
Total Col1Ave (4 peaks):					2.5	Total Col2Ave (4 peaks):				2.8 RPD = 14
Corrected Ave (3 peaks):					2.3	Corrected Ave (3 peaks):				2.7 RPD = 17
Aroclor-1268	1	11.559	0.002	490	0.8	1	12.188	-0.012	3699	1.2
Aroclor-1268	2	11.632	0.006	592	0.9	2	12.263	-0.004	5159	1.6
Aroclor-1268	3	11.915	-0.086	879	1.7	3	12.643	-0.001	909	0.3
Aroclor-1268	4	12.775	0.003	932	0.6	4	12.788	0.005	972	1.4
Total Col1Ave (4 peaks):					1.0	Total Col2Ave (4 peaks):				1.1 RPD = 13
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				1.0 RPD = 27

Total PCB Area Col1 (5.169 - 13.066) = 608290 Col1 Total PCB = 0.2 ppm*

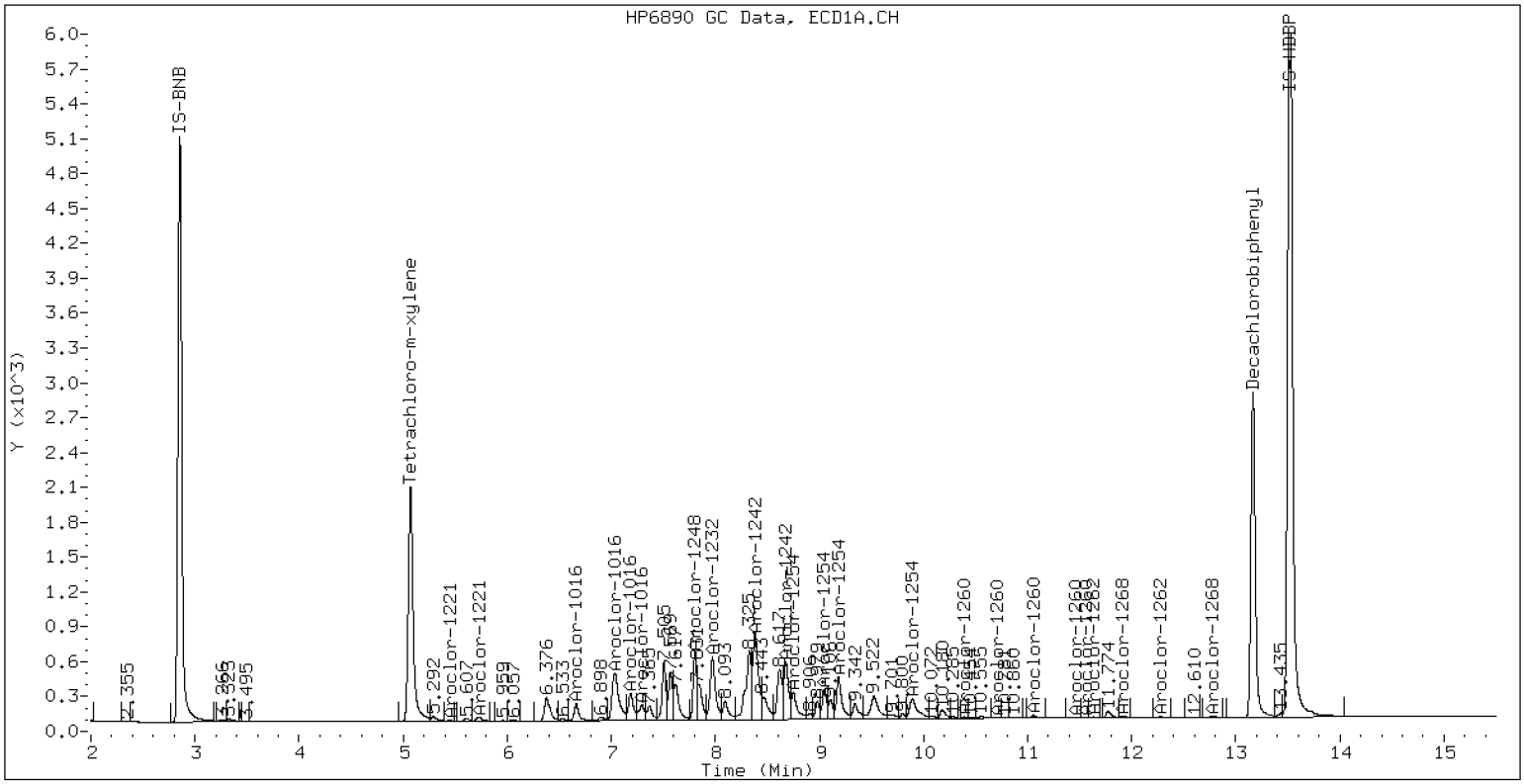
Total PCB Area Col2 (5.169 - 13.066) = 2317749 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

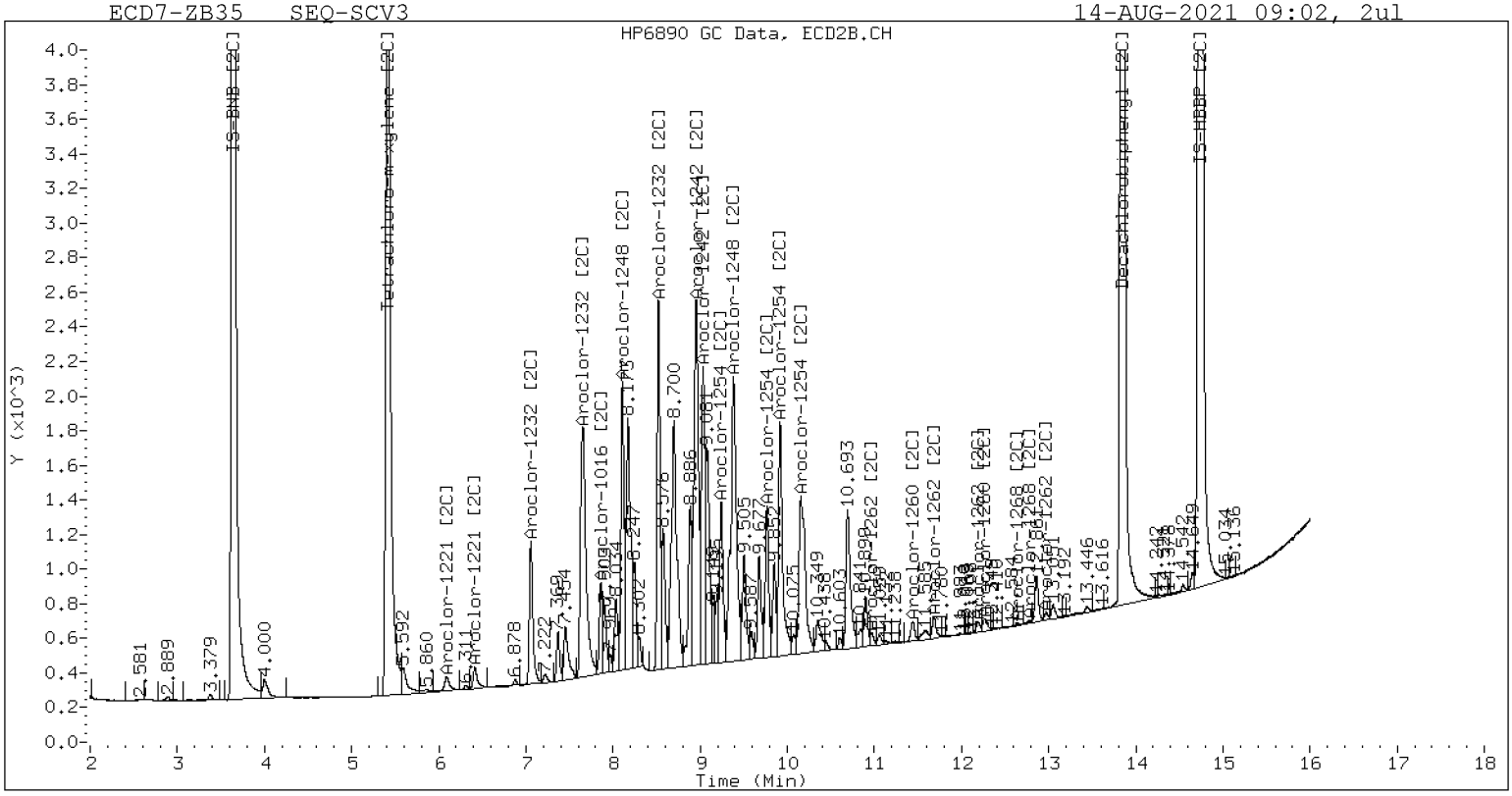
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV3 14-AUG-2021 09:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV3 14-AUG-2021 09:02, 2ul

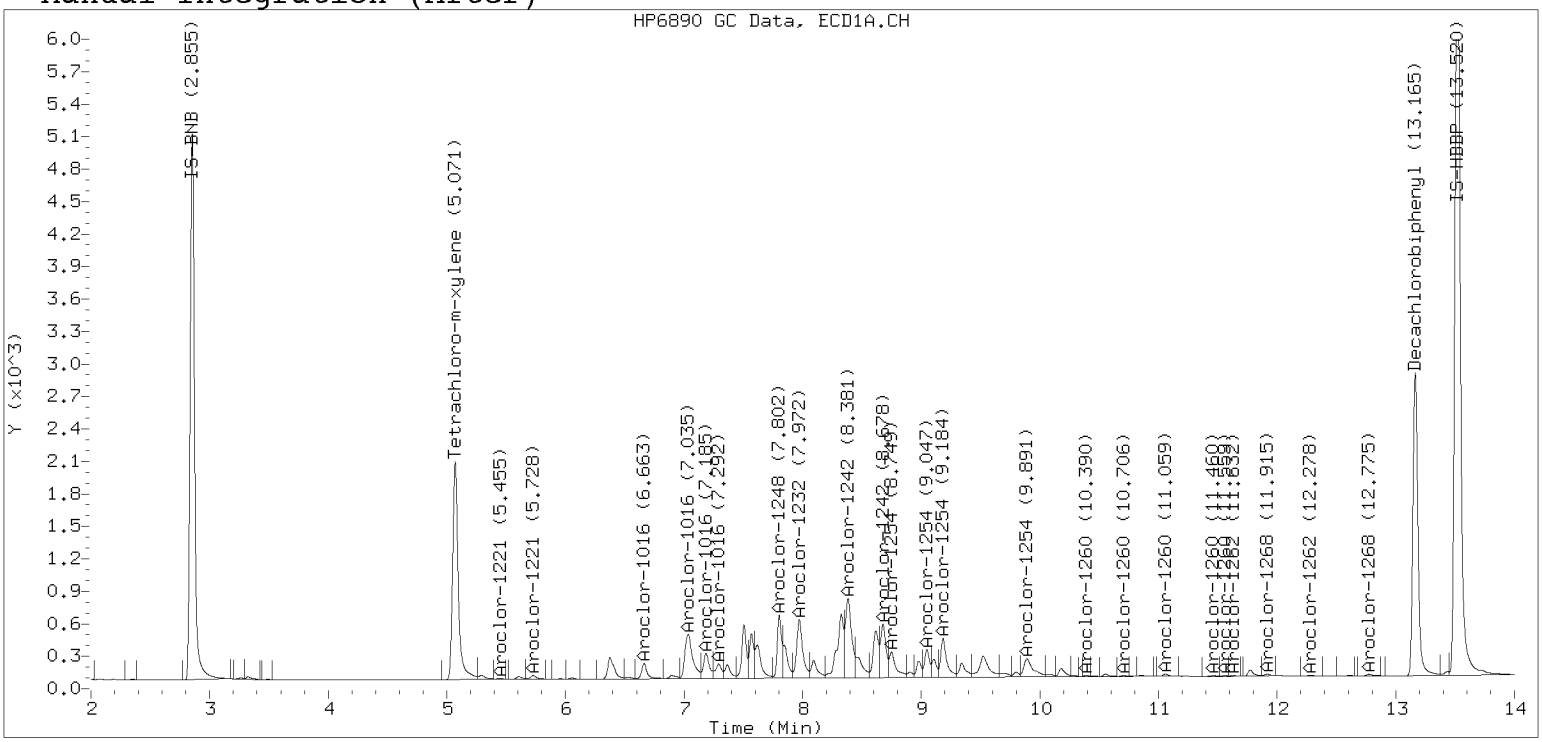


ZB-35 Manual Integration: NO

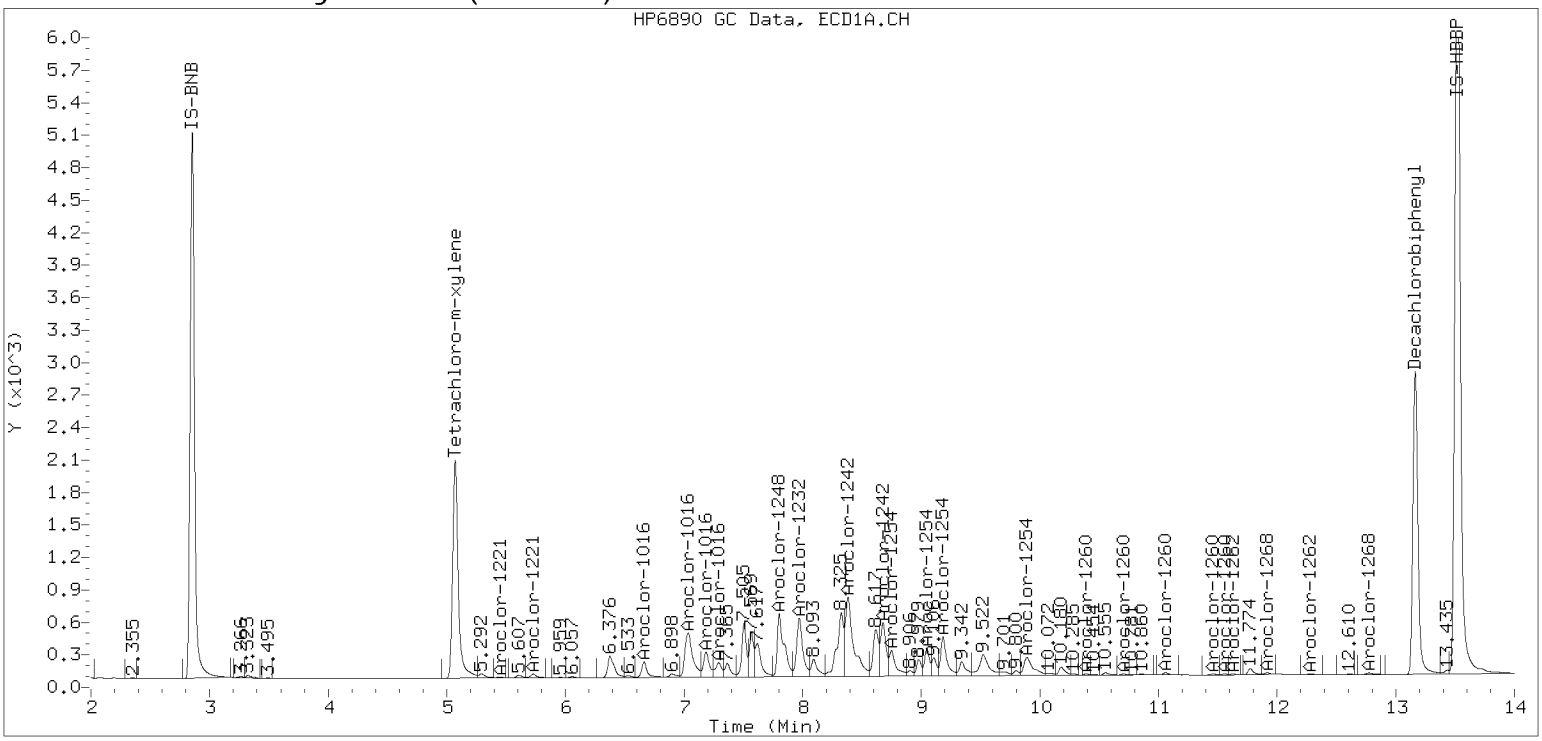
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132143ECD7.D Injection Date: 14-AUG-2021 09:02

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21H0078
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV4
Sequence Name: AR1254SCV4
Standard ID: J008142

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1254	250.00	282	12.7	20.00
Aroclor 1254 [2C]	250.00	264	5.8	20.00
Decachlorobiphenyl	40.000	40.1	0.2	20.00
Tetrachlorometaxylene	40.000	42.6	6.5	20.00
Decachlorobiphenyl [2C]	40.000	38.6	-3.4	20.00
Tetrachlorometaxylene [2C]	40.000	41.4	3.6	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132144ECD7.D
Data file 2: /210813.b/210813.b/08132144ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV4
Client ID:
Injection Date: 14-AUG-2021 09:22
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	134141	5.416	-0.001	389116	42.6	41.4	2.8	Tetrachloro-m-xylene
13.166	0.000	166634	13.848	-0.032	887620	40.1	38.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260417	0.6
Hexabromobiphenyl	425681	458139	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	730797	1.4
Hexabromobiphenyl	863111	1034233	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	131	1.4	1	7.062	0.005	1136	2.7
Aroclor-1016	2	7.039	0.009	605	2.1	2	7.659	0.011	3270	3.5
Aroclor-1016	3	7.189	0.014	416	3.3	3	7.909	0.054	1836	5.0
Aroclor-1016	4	---			0.0	4	8.109	0.004	59728	269.8
Total Col1Ave (3 peaks): 2.3						Total Col2Ave (4 peaks): 70.3 RPD = 187*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 3.8				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.094	0.021	4462	35.5
Aroclor-1221	3	---			0.0	3	6.411	0.002	1085	5.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.062	0.004	1136	6.0
Aroclor-1232	3	7.039	0.005	605	5.8	3	7.659	0.008	3270	8.6
Aroclor-1232	4	7.975	0.003	5517	128.0	4	8.524	0.002	40317	405.2
Col1Ave: <3 Quant Peaks						Col2Ave: 139.9				
Aroclor-1242	1	6.663	0.004	131	1.8	1	7.062	0.005	1136	3.4
Aroclor-1242	2	7.039	0.008	605	2.8	2	7.659	0.010	3270	4.5
Aroclor-1242	3	8.385	0.011	48414	399.6	3	8.960	0.012	63036	184.9
Aroclor-1242	4	8.679	0.005	62054	1253.2	4	9.035	0.007	12438	32.1
Total Col1Ave (4 peaks): 414.4						Total Col2Ave (4 peaks): 56.2 RPD = 152*				
Corrected Ave (3 peaks): 134.7						Corrected Ave (3 peaks): 13.3 RPD = 164*				
Aroclor-1248	1	7.804	0.005	12376	113.4	1	8.109	0.003	59728	197.2
Aroclor-1248	2	7.975	0.007	5517	38.7	2	8.524	0.004	40317	109.4
Aroclor-1248	3	8.385	0.011	48414	232.1	3	8.960	0.014	63036	107.4
Aroclor-1248	4	8.679	0.005	62054	521.1	4	9.335	-0.041	91889	184.3
Total Col1Ave (4 peaks): 226.3						Total Col2Ave (4 peaks): 149.6 RPD = 41*				
Corrected Ave (3 peaks): 128.1						Corrected Ave (3 peaks): 133.7 RPD = 4				
Aroclor-1254	1	8.679	0.003	62054	276.2	1	9.242	0.003	166697	268.1
Aroclor-1254	2	8.751	0.005	29615	284.7	2	9.335	0.004	91889	251.8
Aroclor-1254	3	9.046	0.005	40463	276.3	3	9.766	0.003	128036	270.1
Aroclor-1254	4	9.181	0.005	78989	282.3	4	9.918	0.004	270040	257.1
Aroclor-1254	5	9.873	0.006	50845	289.4	5	10.155	0.008	293166	275.2
Total Col1Ave (5 peaks): 281.8						Total Col2Ave (5 peaks): 264.5 RPD = 6				
Corrected Ave (4 peaks): 279.9						Corrected Ave (4 peaks): 261.8 RPD = 7				
Aroclor-1260	1	10.386	0.003	4281	20.8	1	11.441	0.015	77320	89.9
Aroclor-1260	2	10.706	0.006	4756	23.5	2	11.684	0.003	61993	24.8
Aroclor-1260	3	11.057	0.007	11820	21.6	3	12.266	0.005	35733	22.2
Aroclor-1260	4	11.458	0.005	9286	38.1	4	12.973	0.001	1994	2.6
Aroclor-1260	5	11.627	0.073	440	3.6	NS	---			----
Total Col1Ave (5 peaks): 21.5						Total Col2Ave (4 peaks): 34.9 RPD = 47*				
Corrected Ave (4 peaks): 17.4						Corrected Ave (3 peaks): 16.5 RPD = 5				
Aroclor-1262	1	10.386	0.002	4281	15.3	1	10.897	-0.073	251611	198.9
Aroclor-1262	2	11.458	0.003	9286	51.3	2	11.684	-0.001	61993	23.2
Aroclor-1262	3	11.627	0.000	440	1.7	3	12.205	0.017	9780	8.3
Aroclor-1262	4	12.279	0.005	629	2.9	4	12.973	0.000	1994	1.8
Total Col1Ave (4 peaks): 17.8						Total Col2Ave (4 peaks): 58.1 RPD = 106*				
Corrected Ave (3 peaks): 6.6						Corrected Ave (3 peaks): 11.1 RPD = 50*				
Aroclor-1268	1	11.627	0.070	440	0.7	1	12.205	0.005	9780	3.3
Aroclor-1268	2	---			0.0	2	12.266	-0.001	35733	11.0
Aroclor-1268	3	11.912	-0.088	968	1.9	3	12.633	-0.011	400	0.1
Aroclor-1268	4	12.774	0.002	1001	0.6	4	12.861	0.078	15819	22.8
Total Col1Ave (3 peaks): 1.1						Total Col2Ave (4 peaks): 9.3 RPD = 158*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 4.8				

Total PCB Area Col1 (5.169 - 13.066) = 819275 Col1 Total PCB = 0.3 ppm*

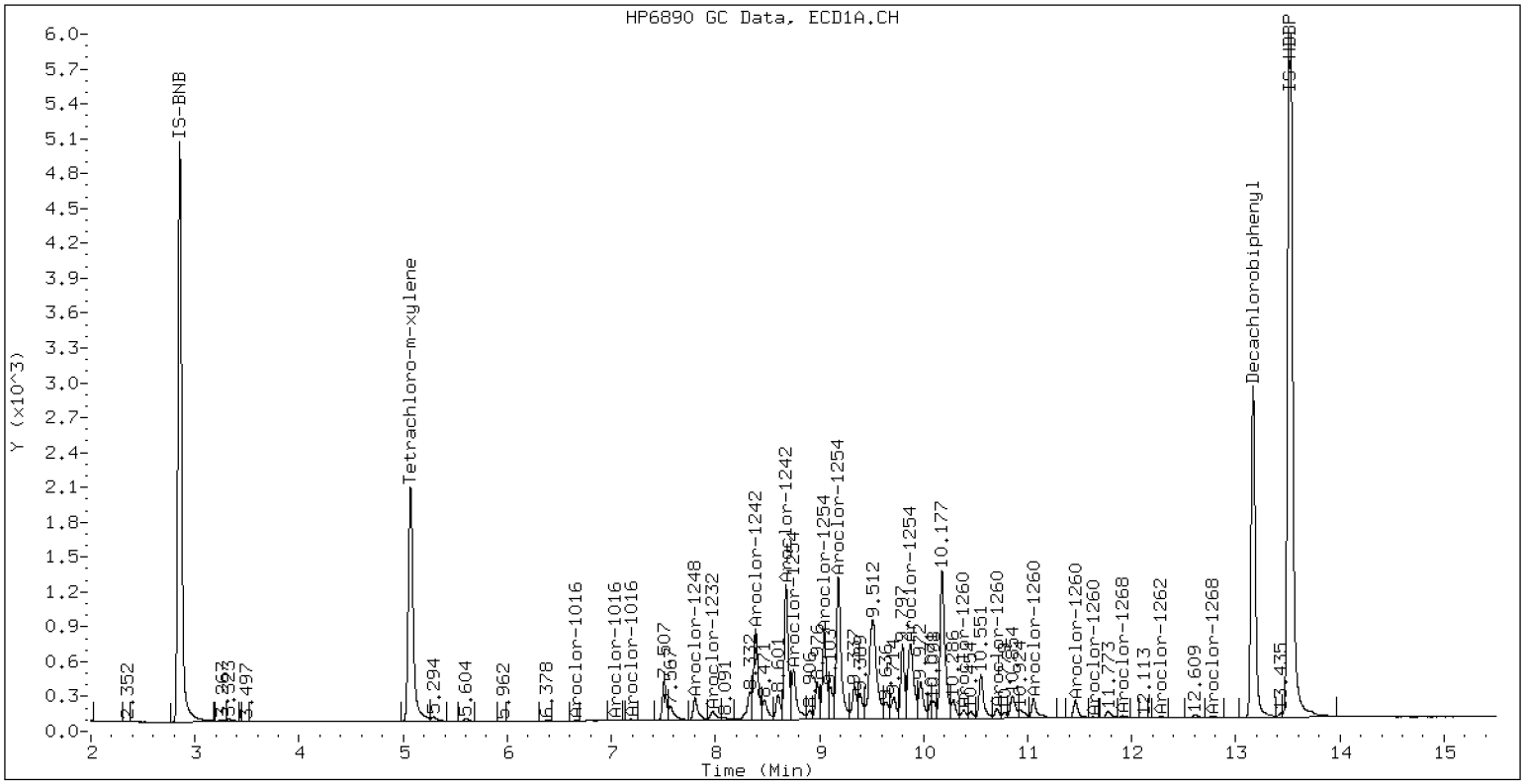
Total PCB Area Col2 (5.169 - 13.066) = 3111878 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

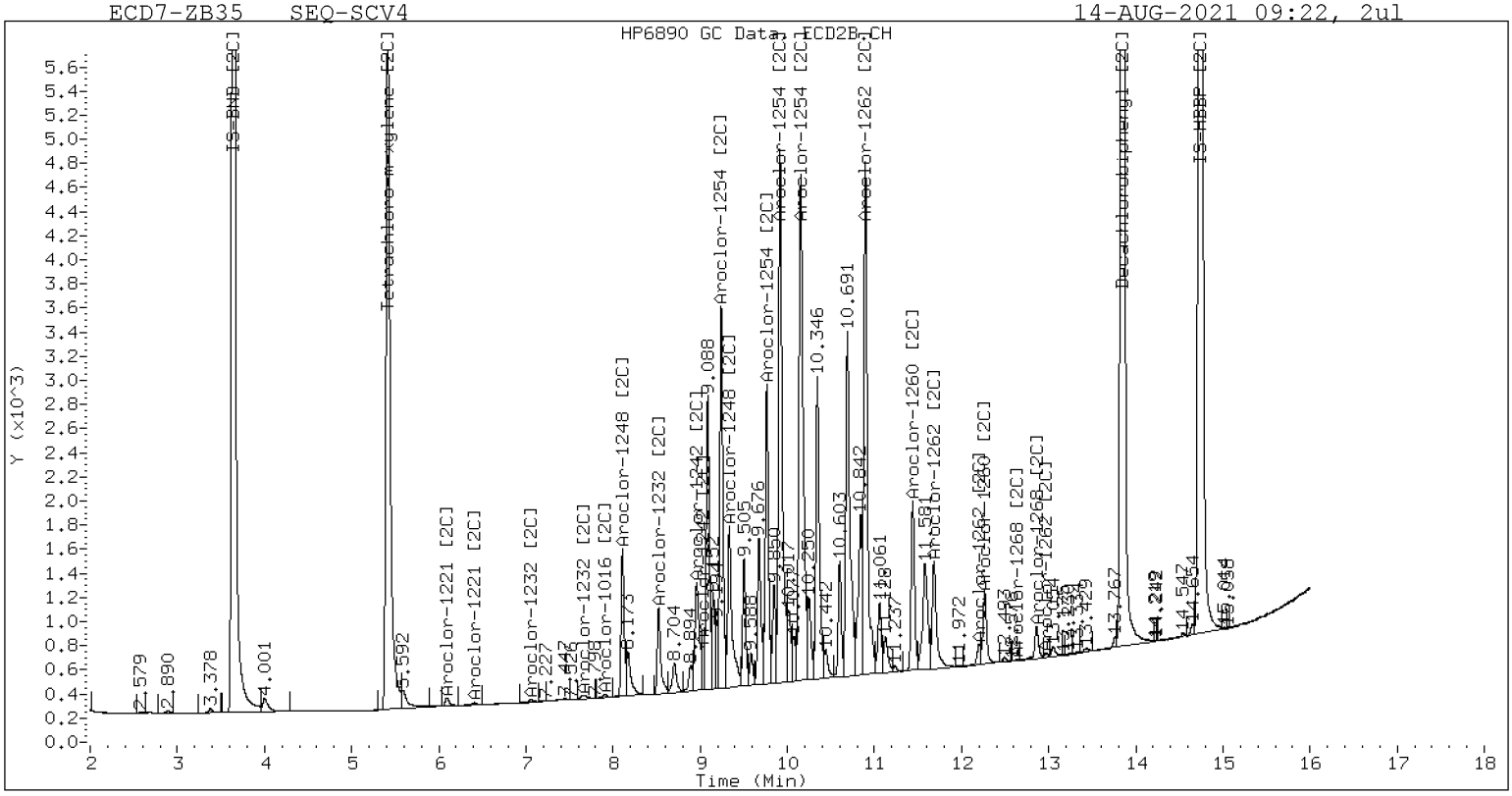
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21H0078
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV5
Sequence Name: AR2162SCV5
Standard ID: J008143

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1221	250.00	293	17.0	20.00
Aroclor 1221 [2C]	250.00	266	6.4	20.00
Decachlorobiphenyl	40.000	38.8	-2.9	20.00
Tetrachlorometaxylene	40.000	40.6	1.5	20.00
Decachlorobiphenyl [2C]	40.000	37.6	-5.9	20.00
Tetrachlorometaxylene [2C]	40.000	39.1	-2.1	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132145ECD7.D
Data file 2: /210813.b/210813.b/08132145ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV5
Client ID:
Injection Date: 14-AUG-2021 09:43
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	131998	5.417	-0.000	375118	40.6	39.1	3.6	Tetrachloro-m-xylene
13.166	-0.000	164634	13.848	-0.032	881936	38.8	37.6	3.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	269058	3.9
Hexabromobiphenyl	425681	467004	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	745766	3.4
Hexabromobiphenyl	863111	1054321	22.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	1551	16.3	1	7.061	0.004	17081	40.2
Aroclor-1016	2	7.039	0.009	4280	14.7	2	7.658	0.011	15832	16.6
Aroclor-1016	3	7.184	0.008	2282	17.4	3	7.865	0.010	6703	18.0
Aroclor-1016	4	7.294	0.009	1564	19.1	4	8.109	0.004	3939	17.4
Total Col1Ave (4 peaks):				16.8		Total Col2Ave (4 peaks):			23.1	RPD = 31
Corrected Ave (3 peaks):				16.1		Corrected Ave (3 peaks):			17.3	RPD = 7
Aroclor-1221	1	4.018	0.002	6262	294.7	1	4.680	0.004	15071	269.2
Aroclor-1221	2	5.454	0.003	9982	299.7	2	6.075	0.003	33472	261.2
Aroclor-1221	3	5.728	0.004	25492	283.3	3	6.413	0.004	59675	267.2
Total Col1Ave (3 peaks):				292.6		Total Col2Ave (3 peaks):			265.9	RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.018	-0.000	6262	479.9	1	4.680	0.001	15071	452.2
Aroclor-1232	2	5.728	0.002	25492	359.4	2	7.061	0.003	17081	87.7
Aroclor-1232	3	7.039	0.005	4280	39.5	3	7.658	0.007	15832	40.6
Aroclor-1232	4	7.978	0.006	798	17.9	4	8.525	0.003	2523	24.8
Total Col1Ave (4 peaks):				224.2		Total Col2Ave (4 peaks):			151.3	RPD = 39
Corrected Ave (3 peaks):				139.0		Corrected Ave (3 peaks):			51.1	RPD = 93*
Aroclor-1242	1	6.663	0.004	1551	20.9	1	7.061	0.004	17081	49.8
Aroclor-1242	2	7.039	0.009	4280	19.4	2	7.658	0.010	15832	21.3
Aroclor-1242	3	8.388	0.013	9148	73.1	3	8.966	0.018	6505	18.7
Aroclor-1242	4	8.680	0.006	9619	188.0	4	9.089	0.061	25267	64.0
Total Col1Ave (4 peaks):				75.3		Total Col2Ave (4 peaks):			38.4	RPD = 65*
Corrected Ave (3 peaks):				37.8		Corrected Ave (3 peaks):			29.9	RPD = 23
Aroclor-1248	1	7.805	0.007	1067	9.5	1	8.109	0.003	3939	12.7
Aroclor-1248	2	7.978	0.010	798	5.4	2	8.525	0.005	2523	6.7
Aroclor-1248	3	8.388	0.013	9148	42.4	3	8.966	0.020	6505	10.9
Aroclor-1248	4	8.680	0.007	9619	78.2	4	9.396	0.019	4022	7.9
Total Col1Ave (4 peaks):				33.9		Total Col2Ave (4 peaks):			9.6	RPD = 112*
Corrected Ave (3 peaks):				19.1		Corrected Ave (3 peaks):			8.5	RPD = 77*
Aroclor-1254	1	8.680	0.005	9619	41.4	1	9.245	0.005	26890	42.4
Aroclor-1254	2	---			0.0	2	9.336	0.005	2650	7.1
Aroclor-1254	3	9.050	0.008	1343	8.9	3	9.769	0.007	4242	8.8
Aroclor-1254	4	9.145	-0.031	9990	34.6	4	9.932	0.019	121430	113.3
Aroclor-1254	5	9.858	-0.010	13751	75.8	5	10.160	0.013	143957	132.4
Total Col1Ave (4 peaks):				40.2		Total Col2Ave (5 peaks):			60.8	RPD = 41*
Corrected Ave (3 peaks):				28.3		Corrected Ave (4 peaks):			42.9	RPD = 41*
Aroclor-1260	1	10.387	0.004	74432	354.3	1	11.427	0.001	248521	283.6
Aroclor-1260	2	10.705	0.005	63581	308.3	2	11.682	0.001	656259	257.6
Aroclor-1260	3	11.056	0.005	158724	284.8	3	12.261	0.000	468343	285.9
Aroclor-1260	4	11.457	0.004	49425	199.0	4	12.974	0.001	287502	367.1
Aroclor-1260	5	11.557	0.003	61640	495.8	NS	---			----
Total Col1Ave (5 peaks):				328.4		Total Col2Ave (4 peaks):			298.6	RPD = 10
Corrected Ave (4 peaks):				286.6		Corrected Ave (3 peaks):			275.7	RPD = 4
Aroclor-1262	1	10.387	0.003	74432	261.2	1	10.970	-0.000	313779	243.4
Aroclor-1262	2	11.457	0.002	49425	267.8	2	11.682	-0.003	656259	241.2
Aroclor-1262	3	11.628	0.001	70335	264.4	3	12.188	0.000	303167	251.1
Aroclor-1262	4	12.278	0.003	58296	266.9	4	12.974	0.001	287502	255.5
Total Col1Ave (4 peaks):				265.1		Total Col2Ave (4 peaks):			247.8	RPD = 7
Corrected Ave (3 peaks):				264.2		Corrected Ave (3 peaks):			245.2	RPD = 7
Aroclor-1268	1	11.557	0.000	61640	98.4	1	12.188	-0.012	303167	100.1
Aroclor-1268	2	11.628	0.002	70335	107.0	2	12.261	-0.006	468343	141.7
Aroclor-1268	3	12.031	0.030	24251	46.9	3	12.635	-0.009	18559	6.5
Aroclor-1268	4	12.770	-0.001	19100	11.5	4	12.783	0.000	11203	15.9
Total Col1Ave (4 peaks):				65.9		Total Col2Ave (4 peaks):			66.0	RPD = 0

Corrected Ave (3 peaks): 52.2 Corrected Ave (3 peaks): 40.8 RPD = 25

Total PCB Area Col1 (5.169 - 13.066) = 1098701 Col1 Total PCB = 0.4 ppm*

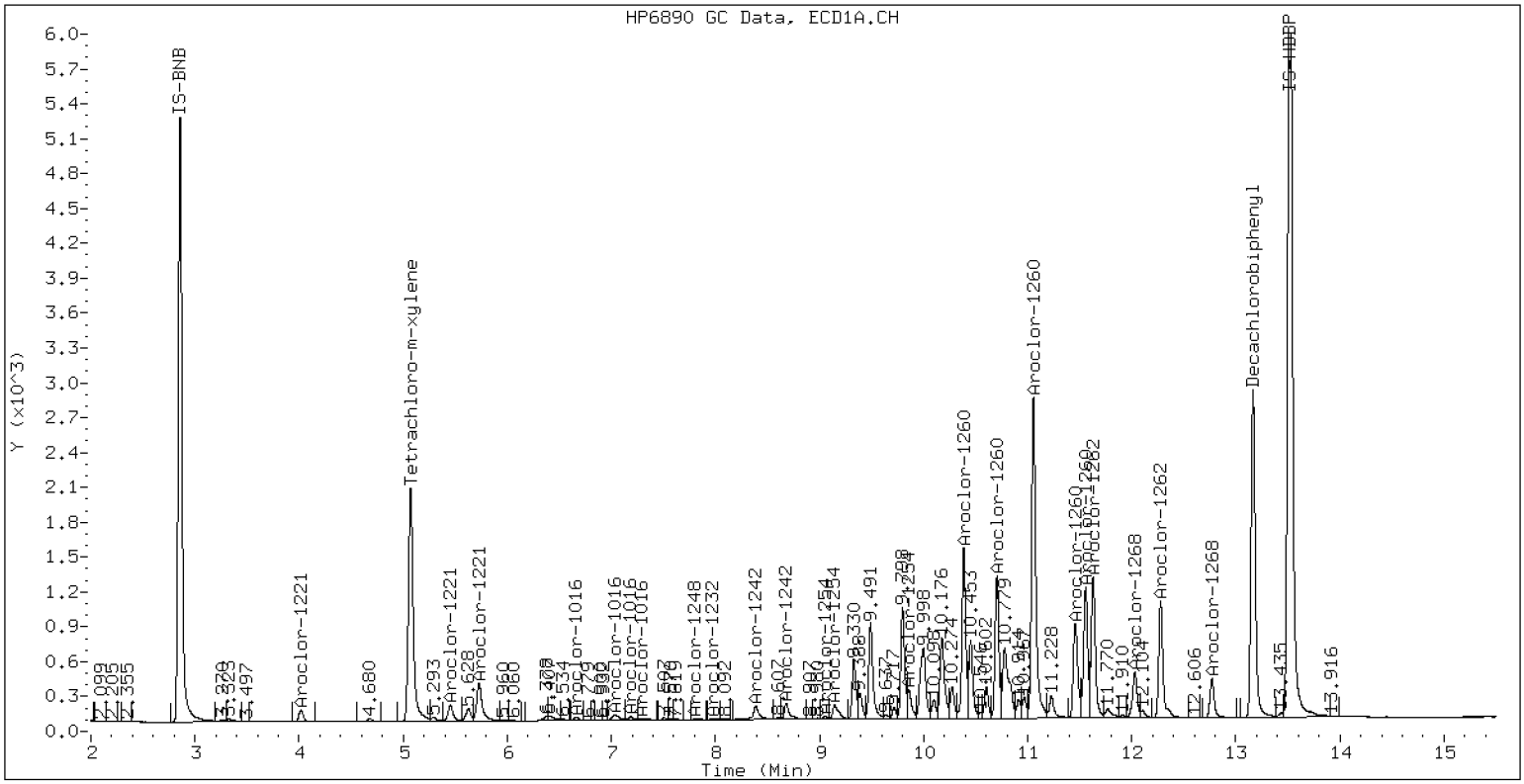
Total PCB Area Col2 (5.169 - 13.066) = 4504756 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

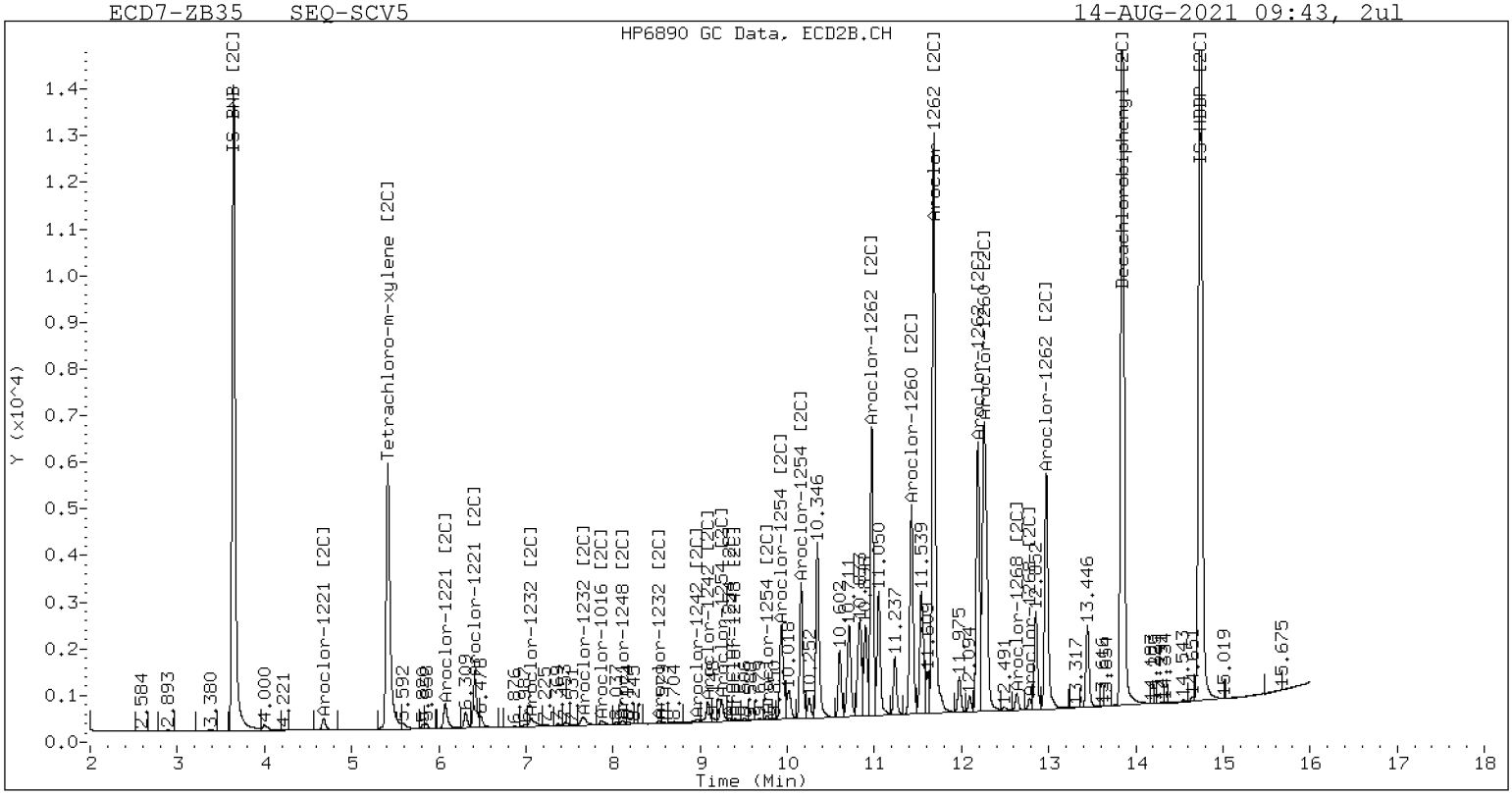
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8082A

Laboratory: Analytical Resources, Inc.
Client: Anchor QEA, LLC
Calibration: EH00034
Sequence: SJH0177

SDG: 21H0078
Project: Lower Duwamish AOC4
Laboratory ID: SJH0177-SCV6
Sequence Name: AR3268SCV6
Standard ID: J008144

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Aroclor 1232	250.00	284	13.8	20.00
Aroclor 1232 [2C]	250.00	286	14.5	20.00
Decachlorobiphenyl	40.000	59.6	49.1	20.00
Tetrachlorometaxylene	40.000	41.2	3.1	20.00
Decachlorobiphenyl [2C]	40.000	59.3	48.2	20.00
Tetrachlorometaxylene [2C]	40.000	39.7	-0.8	20.00

* Indicates values outside of QC limits
[2C] indicates second-column analyte.

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132146ECD7.D
Data file 2: /210813.b/210813.b/08132146ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV6
Client ID:
Injection Date: 14-AUG-2021 10:03
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	131287	5.416	-0.000	375338	41.2	39.7	3.8	Tetrachloro-m-xylene
13.165	-0.001	248059	13.848	-0.032	1383308	59.6	59.3	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263445	1.8
Hexabromobiphenyl	425681	458283	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736133	2.1
Hexabromobiphenyl	863111	1049914	21.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	11471	122.8	1	7.059	0.002	54454	129.7
Aroclor-1016	2	7.037	0.008	32172	112.6	2	7.656	0.009	111127	118.4
Aroclor-1016	3	7.183	0.007	15436	120.4	3	7.862	0.007	47184	128.0
Aroclor-1016	4	7.292	0.007	9103	113.2	4	8.108	0.003	26255	117.7
Total Col1Ave (4 peaks):				117.2		Total Col2Ave (4 peaks):			123.5	RPD = 5
Corrected Ave (3 peaks):				115.4		Corrected Ave (3 peaks):			121.4	RPD = 5
Aroclor-1221	1	4.017	0.002	3341	160.6	1	4.679	0.002	8452	153.0
Aroclor-1221	2	5.453	0.002	5429	166.5	2	6.077	0.004	21053	166.4
Aroclor-1221	3	5.727	0.003	17948	203.7	3	6.414	0.005	55556	252.0
Total Col1Ave (3 peaks):				176.9		Total Col2Ave (3 peaks):			190.5	RPD = 7
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	3341	261.5	1	4.679	-0.000	8452	256.9
Aroclor-1232	2	5.727	0.001	17948	258.4	2	7.059	0.001	54454	283.3
Aroclor-1232	3	7.037	0.003	32172	303.5	3	7.656	0.005	111127	288.8
Aroclor-1232	4	7.974	0.002	13693	314.0	4	8.524	0.002	31722	316.5
Total Col1Ave (4 peaks):				284.4		Total Col2Ave (4 peaks):			286.4	RPD = 1
Corrected Ave (3 peaks):				274.5		Corrected Ave (3 peaks):			276.3	RPD = 1
Aroclor-1242	1	6.663	0.004	11471	158.0	1	7.059	0.002	54454	160.9
Aroclor-1242	2	7.037	0.007	32172	148.7	2	7.656	0.008	111127	151.2
Aroclor-1242	3	8.385	0.010	20544	167.6	3	8.959	0.010	61163	178.1
Aroclor-1242	4	8.676	0.002	6934	138.4	4	9.041	0.013	55525	142.5
Total Col1Ave (4 peaks):				153.2		Total Col2Ave (4 peaks):			158.1	RPD = 3
Corrected Ave (3 peaks):				148.4		Corrected Ave (3 peaks):			151.5	RPD = 2
Aroclor-1248	1	7.804	0.005	9056	82.0	1	8.108	0.002	26255	86.1
Aroclor-1248	2	7.974	0.006	13693	95.0	2	8.524	0.003	31722	85.4
Aroclor-1248	3	8.385	0.010	20544	97.4	3	8.959	0.012	61163	103.4
Aroclor-1248	4	8.676	0.002	6934	57.6	4	9.391	0.015	44441	88.5
Total Col1Ave (4 peaks):				83.0		Total Col2Ave (4 peaks):			90.8	RPD = 9
Corrected Ave (3 peaks):				78.2		Corrected Ave (3 peaks):			86.7	RPD = 10
Aroclor-1254	1	8.676	0.000	6934	30.5	1	9.243	0.003	10554	16.9
Aroclor-1254	2	8.748	0.002	3715	35.3	2	9.391	0.060	44441	120.9
Aroclor-1254	3	9.050	0.008	2122	14.3	3	9.769	0.007	7619	16.0
Aroclor-1254	4	9.187	0.011	3159	11.2	4	9.922	0.009	13052	12.3
Aroclor-1254	5	9.896	0.029	1953	11.0	5	10.167	0.020	14279	13.3
Total Col1Ave (5 peaks):				20.5		Total Col2Ave (5 peaks):			35.9	RPD = 55*
Corrected Ave (4 peaks):				16.7		Corrected Ave (4 peaks):			14.6	RPD = 14
Aroclor-1260	1	10.388	0.005	30028	145.6	1	11.405	-0.020	170014	194.8
Aroclor-1260	2	10.704	0.004	2256	11.1	2	11.680	-0.001	78239	30.8
Aroclor-1260	3	11.056	0.005	17997	32.9	3	12.254	-0.007	838267	513.9
Aroclor-1260	4	11.458	0.006	301	1.2	4	12.972	0.000	307546	394.4
Aroclor-1260	5	11.557	0.003	165147	1353.6	NS	---			----
Total Col1Ave (5 peaks):				308.9		Total Col2Ave (4 peaks):			283.5	RPD = 9
Corrected Ave (4 peaks):				47.7		Corrected Ave (3 peaks):			206.7	RPD = 125*
Aroclor-1262	1	10.388	0.004	30028	107.4	1	10.971	0.001	118268	92.1
Aroclor-1262	2	11.458	0.004	301	1.7	2	11.680	-0.005	78239	28.9
Aroclor-1262	3	11.626	-0.000	172148	659.4	3	12.187	-0.001	744741	619.3
Aroclor-1262	4	12.276	0.002	62869	293.3	4	12.972	-0.000	307546	274.4
Total Col1Ave (4 peaks):				265.4		Total Col2Ave (4 peaks):			253.7	RPD = 5
Corrected Ave (3 peaks):				134.1		Corrected Ave (3 peaks):			131.8	RPD = 2
Aroclor-1268	1	11.557	-0.000	165147	268.6	1	12.187	-0.013	744741	246.9
Aroclor-1268	2	11.626	0.001	172148	266.9	2	12.254	-0.013	838267	254.7
Aroclor-1268	3	12.000	-0.000	135416	266.9	3	12.635	-0.009	744001	261.5
Aroclor-1268	4	12.770	-0.002	428256	261.7	4	12.782	-0.001	187584	266.5
Total Col1Ave (4 peaks):				266.0		Total Col2Ave (4 peaks):			257.4	RPD = 3

Corrected Ave (3 peaks): 265.2 Corrected Ave (3 peaks): 254.3 RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1378298 Col1 Total PCB = 0.5 ppm*

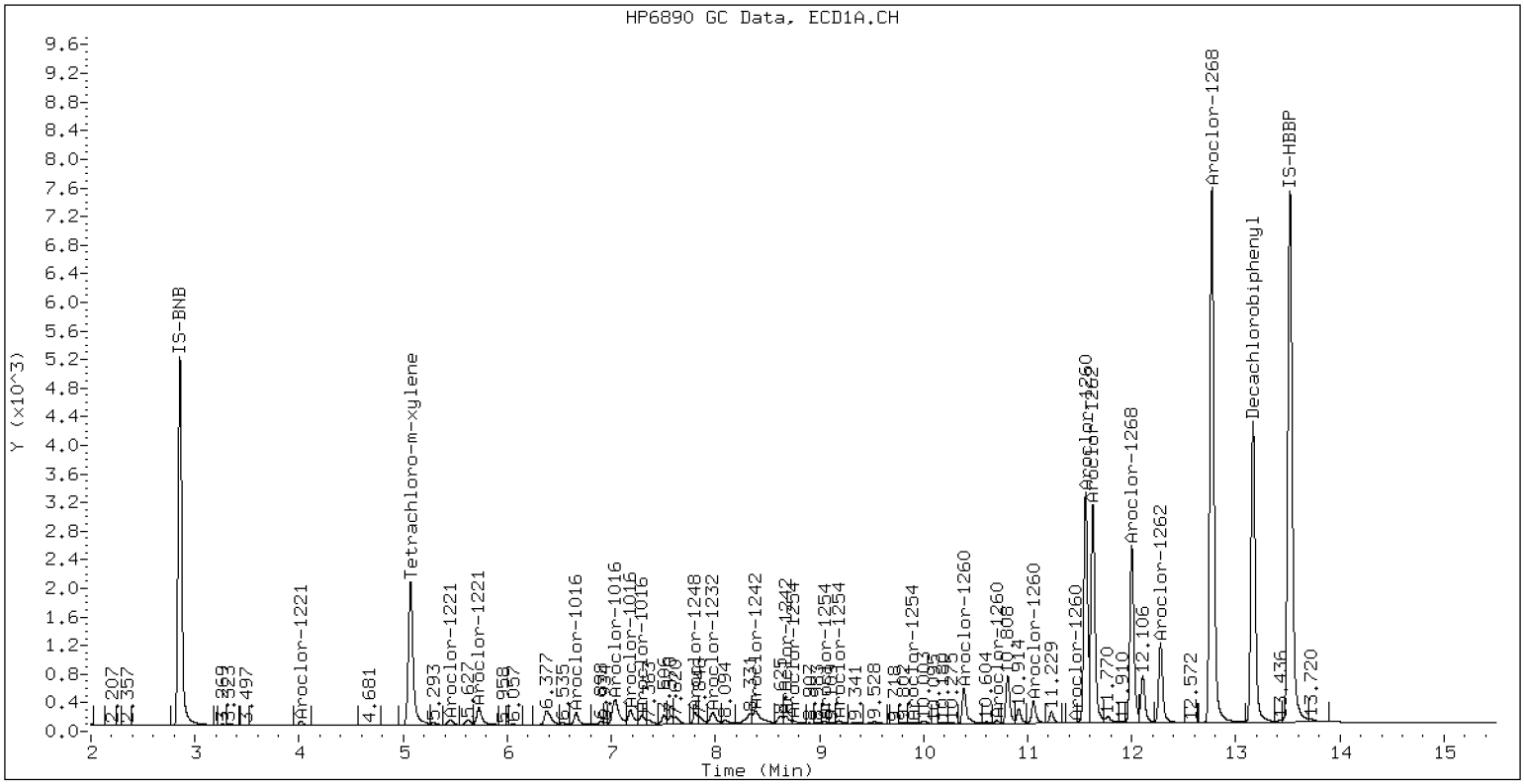
Total PCB Area Col2 (5.169 - 13.066) = 4537494 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-5 Manual Integration: NO

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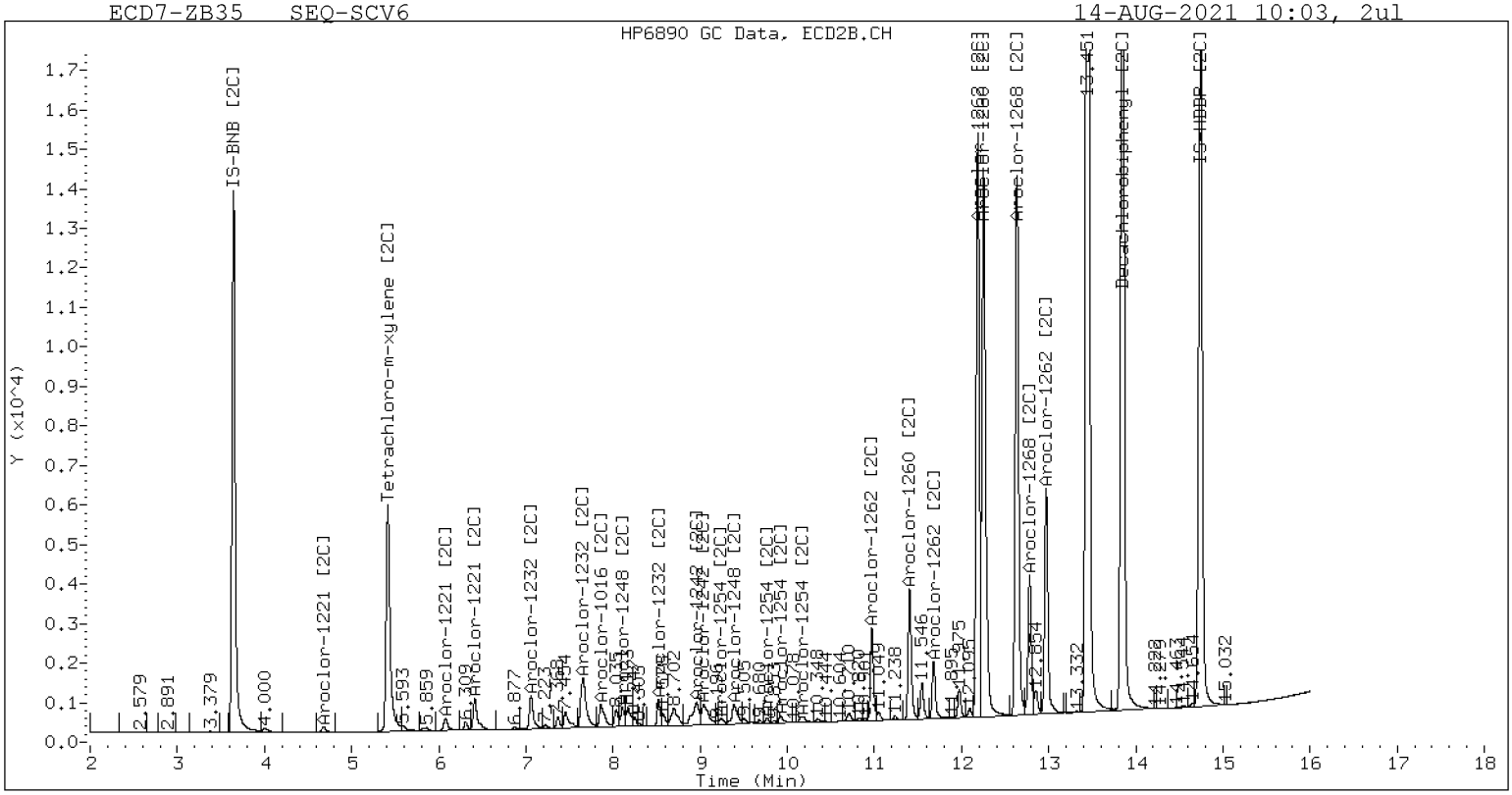


ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08212102ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0335	Injection Date:	08/21/21
Lab Sample ID:	SJH0335-ICV1	Injection Time:	18:40
Sequence Name:	AR1254ICV1		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1254	A	250.00	250	0.0571741	0.0578220		-0.2	+/-20
Aroclor-1254 (1)	A	250.00	262	0.0690183	0.0723389		4.8	
Aroclor-1254 (2)	A	250.00	262	0.0319506	0.0335261		4.8	
Aroclor-1254 (3)	A	250.00	181	0.0449859	0.0326549		-27.6	
Aroclor-1254 (4)	A	250.00	262	0.0859427	0.0900071		4.8	
Aroclor-1254 (5)	A	250.00	281	0.0539731	0.0605831		12.4	
Aroclor 1254 [2C]	A	250.00	238	0.0782980	0.0740581		-4.9	+/-20
Aroclor-1254 (1) [2C]	A	250.00	237	0.0680651	0.0645638		-5.2	
Aroclor-1254 (2) [2C]	A	250.00	240	0.0399453	0.0383974		-4.0	
Aroclor-1254 (3) [2C]	A	250.00	244	0.0518895	0.0507617		-2.4	
Aroclor-1254 (4) [2C]	A	250.00	220	0.1149829	0.1009720		-12.0	
Aroclor-1254 (5) [2C]	A	250.00	248	0.1166073	0.1155955		-0.8	
Decachlorobiphenyl	A	40.000	42.0	0.7261970	0.7634588		5.0	+/-20
Tetrachlorometaxylene	A	40.000	42.6	0.9669678	1.0306300		6.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.1	1.7775950	1.6499150		-7.3	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.3	1.0280520	1.0610410		3.3	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212102ECD7.D
Data file 2: /210821.b/210821.b/08212102ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: AR1254.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1254ICV1
Client ID:
Injection Date: 21-AUG-2021 18:40
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	137804	5.412	-0.000	398055	42.6	41.3	3.2	Tetrachloro-m-xylene
13.215	0.052	153025	13.934	0.090	646690	42.1	8567.6	198.0*	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	267417	3.3
Hexabromobiphenyl	425681	400873	-5.8

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	750310	4.1
Hexabromobiphenyl	863111	3397	-99.6 <-

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
	ZB5 Col					ZB35 Col				
Aroclor-1254	1	8.676	0.000	60452	262.0	1	9.236	0.000	151384	237.1
Aroclor-1254	2	8.748	0.000	28017	262.3	2	9.329	0.000	90031	240.3
Aroclor-1254	3	9.041	0.000	27289	181.5	3	9.759	0.000	119022	244.6
Aroclor-1254	4	9.180	0.000	75217	261.8	4	9.910	0.000	236751	219.5
Aroclor-1254	5	9.871	0.000	50628	280.6	5	10.147	0.000	271039	247.8

Total Col1Ave (5 peaks): 249.7 Total Col2Ave (5 peaks): 237.9 RPD = 5

Corrected Ave (4 peaks): 241.9 Corrected Ave (4 peaks): 235.4 RPD = 3

CalAmt %D: -0.1 CalAmt %D: -4.8

Total PCB Area Col1 (5.169 - 13.064) = 779477 Col1 Total PCB = 0.3 ppm*

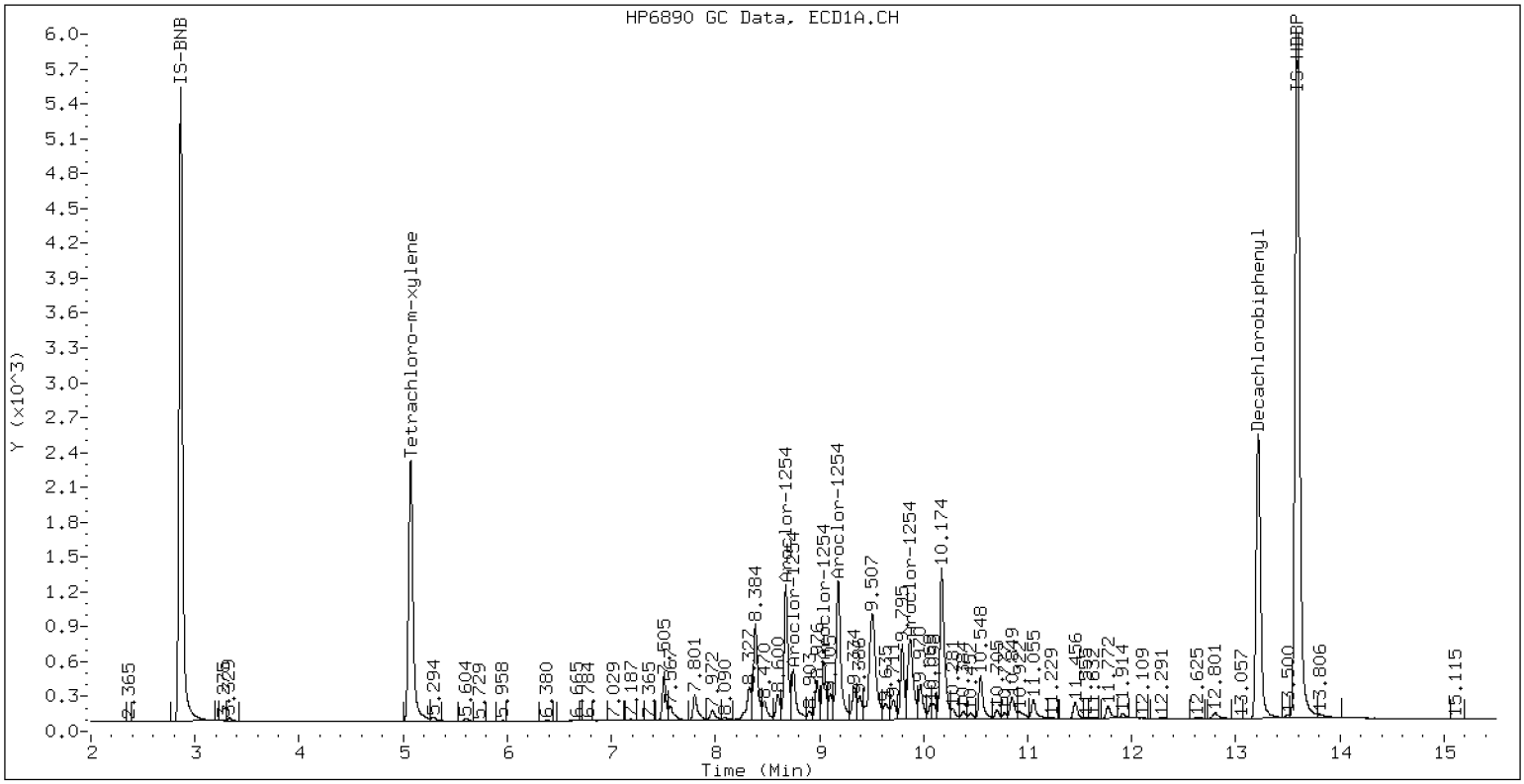
Total PCB Area Col2 (5.169 - 13.064) = 2889175 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

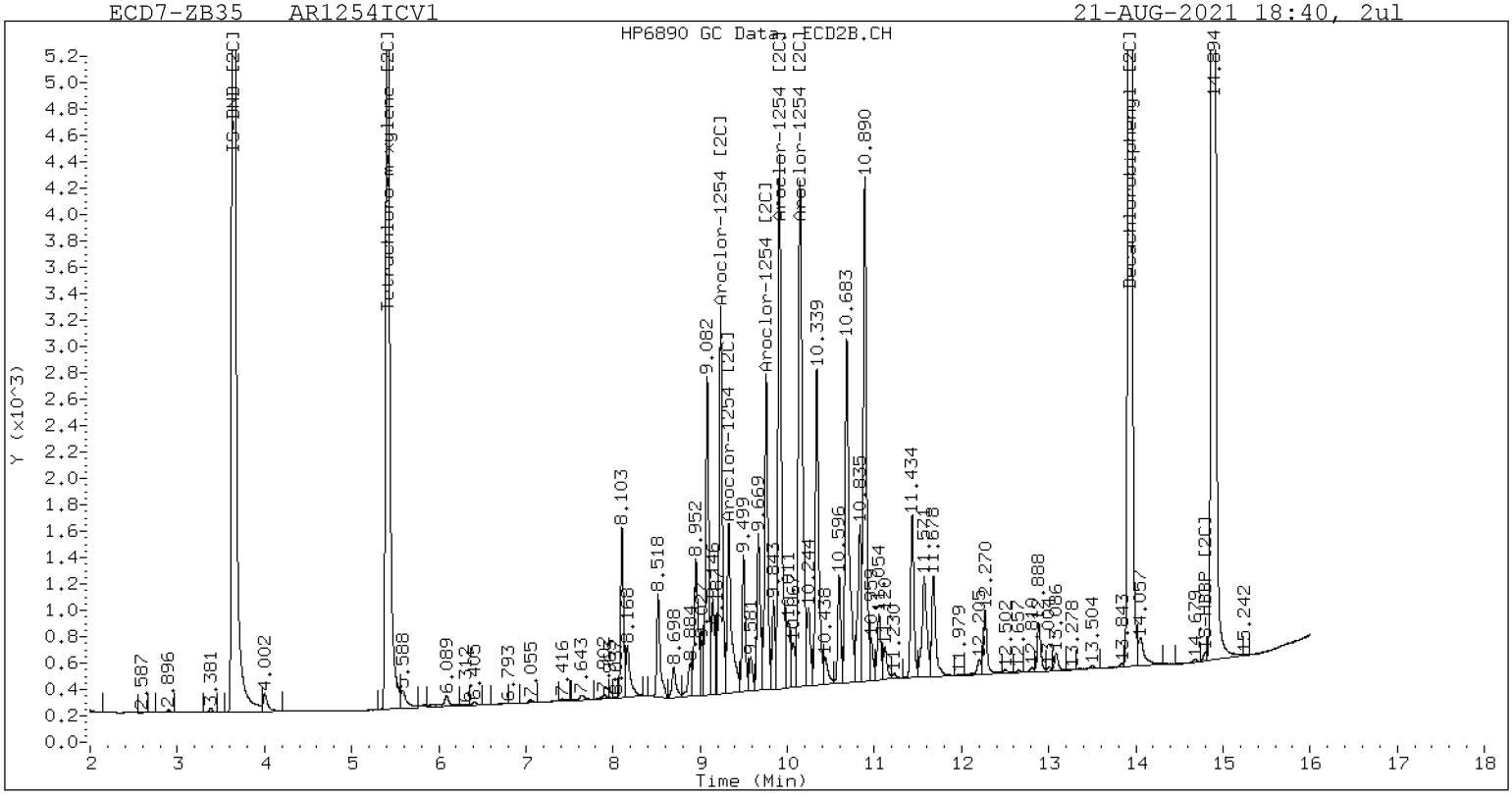
PCB Dual Column Chromatograms

ECD7-ZB5 AR1254ICV1 21-AUG-2021 18:40, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1254ICV1 21-AUG-2021 18:40, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION CHECK

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08212103ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0335	Injection Date:	08/21/21
Lab Sample ID:	SJH0335-ICV2	Injection Time:	19:00
Sequence Name:	AR1660ICV2		

		CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Aroclor 1016	A	250.00	264	0.0446218	0.0473487		5.7	+/-20
Aroclor-1016 (1)	A	250.00	261	0.0283733	0.0296765		4.4	
Aroclor-1016 (2)	A	250.00	268	0.0867650	0.0929776		7.2	
Aroclor-1016 (3)	A	250.00	262	0.0389383	0.0407791		4.8	
Aroclor-1016 (4)	A	250.00	266	0.0244108	0.0259615		6.4	
Aroclor 1016 [2C]	A	250.00	272	0.0529840	0.0573479		8.7	+/-20
Aroclor-1016 (1) [2C]	A	250.00	266	0.0456173	0.0485038		6.4	
Aroclor-1016 (2) [2C]	A	250.00	269	0.1020378	0.1098694		7.6	
Aroclor-1016 (3) [2C]	A	250.00	276	0.0400455	0.0442391		10.4	
Aroclor-1016 (4) [2C]	A	250.00	276	0.0242353	0.0267794		10.4	
Aroclor 1260	A	250.00	269	0.0461251	0.0497845		7.7	+/-20
Aroclor-1260 (1)	A	250.00	256	0.0359923	0.0368507		2.4	
Aroclor-1260 (2)	A	250.00	275	0.0353250	0.0388163		10.0	
Aroclor-1260 (3)	A	250.00	271	0.0954741	0.1034193		8.4	
Aroclor-1260 (4)	A	250.00	276	0.0425365	0.0470288		10.4	
Aroclor-1260 (5)	A	250.00	268	0.0212978	0.0228072		7.2	
Aroclor 1260 [2C]	A	250.00	240	0.1108773	0.1065705		-3.9	+/-20
Aroclor-1260 (1) [2C]	A	250.00	244	0.0665032	0.0649578		-2.4	
Aroclor-1260 (2) [2C]	A	250.00	241	0.1932922	0.1862947		-3.6	
Aroclor-1260 (3) [2C]	A	250.00	238	0.1242917	0.1184357		-4.8	
Aroclor-1260 (4) [2C]	A	250.00	238	0.0594222	0.0565937		-4.8	
Decachlorobiphenyl	A	40.000	42.8	0.7261970	0.7779763		7.0	+/-20
Tetrachlorometaxylene	A	40.000	43.2	0.9669678	1.0446140		8.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	39.6	1.7775950	1.7582540		-1.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.9	1.0280520	1.0778490		4.8	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212103ECD7.D
Data file 2: /210821.b/210821.b/08212103ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660ICV2
Client ID:
Injection Date: 21-AUG-2021 19:00
Report Date: 08/25/2021 16:45
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	-0.000	133439	5.411	-0.001	389297	43.2	41.9	3.0	Tetrachloro-m-xylene
13.165	0.001	161299	13.843	-0.001	790206	42.9	39.6	8.0	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	255480	-1.3
Hexabromobiphenyl	425681	414663	-2.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	722359	0.2
Hexabromobiphenyl	863111	898853	4.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	6.660	-0.000	23693	261.5	1	7.054	-0.001	109491	265.8
Aroclor-1016	2	7.032	-0.002	74231	267.9	2	7.650	0.000	248016	269.2
Aroclor-1016	3	7.179	0.000	32557	261.8	3	7.855	-0.000	99864	276.2
Aroclor-1016	4	7.288	0.001	20727	265.9	4	8.103	0.000	60451	276.2

Total Col1Ave (4 peaks): 264.3 Total Col2Ave (4 peaks): 271.9 RPD = 3
Corrected Ave (3 peaks): 263.1 Corrected Ave (3 peaks): 270.4 RPD = 3

CalAmt %D: 5.7 CalAmt %D: 8.7

Aroclor-1260	1	10.385	0.001	47752	256.0	1	11.423	-0.001	182461	244.2
Aroclor-1260	2	10.702	-0.000	50299	274.7	2	11.676	0.000	523286	240.9
Aroclor-1260	3	11.053	0.001	134013	270.8	3	12.257	-0.002	332676	238.2
Aroclor-1260	4	11.454	0.000	60941	276.4	4	12.969	0.000	158967	238.1
Aroclor-1260	5	11.556	0.001	29554	267.7	NS	---			----

Total Col1Ave (5 peaks): 269.1 Total Col2Ave (4 peaks): 240.4 RPD = 11
Corrected Ave (4 peaks): 267.3 Corrected Ave (3 peaks): 239.1 RPD = 11

CalAmt %D: 7.6 CalAmt %D: -3.9

Total PCB Area Col1 (5.169 - 13.064) = 1313549 Col1 Total PCB = 0.5 ppm*

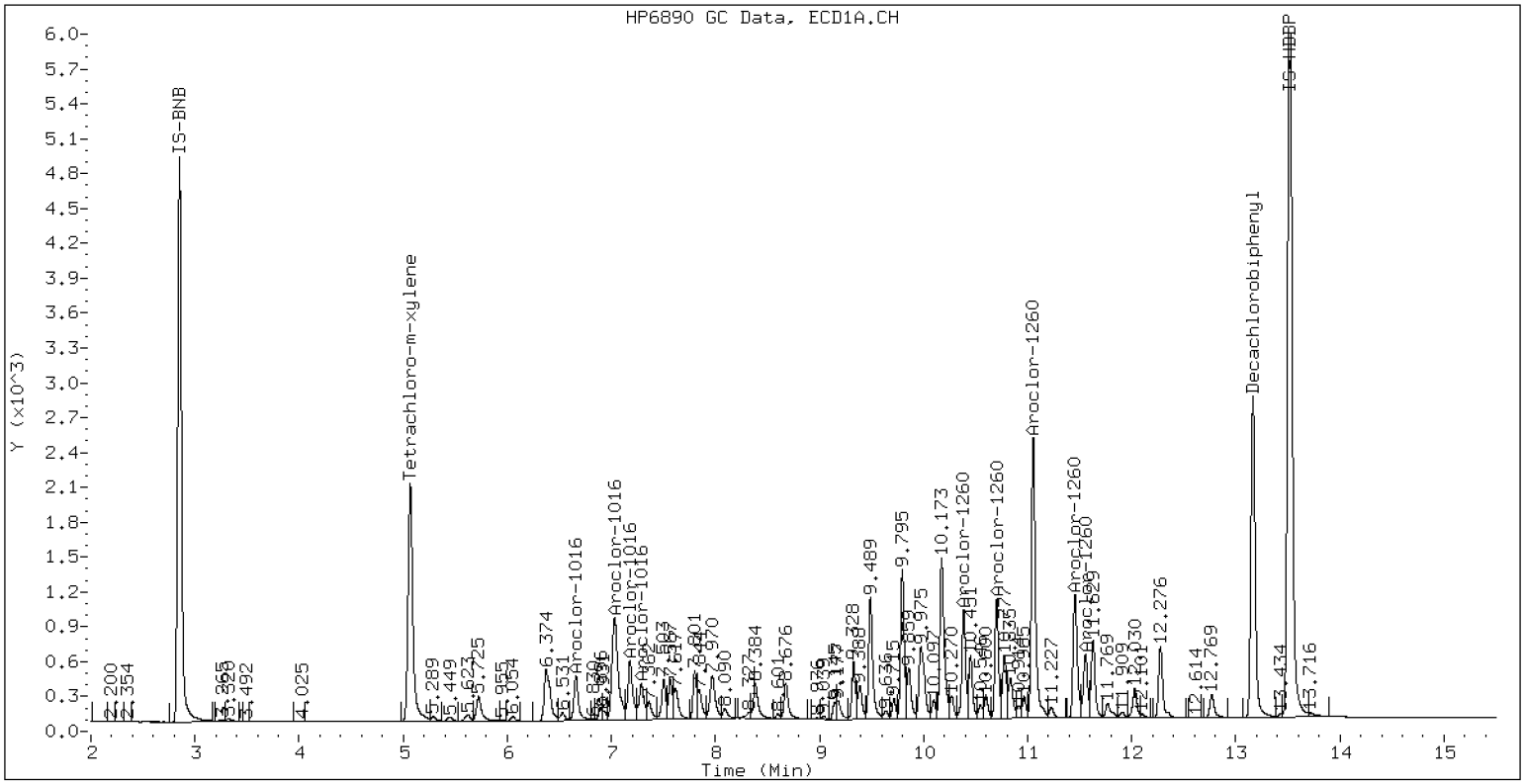
Total PCB Area Col2 (5.169 - 13.064) = 4904448 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

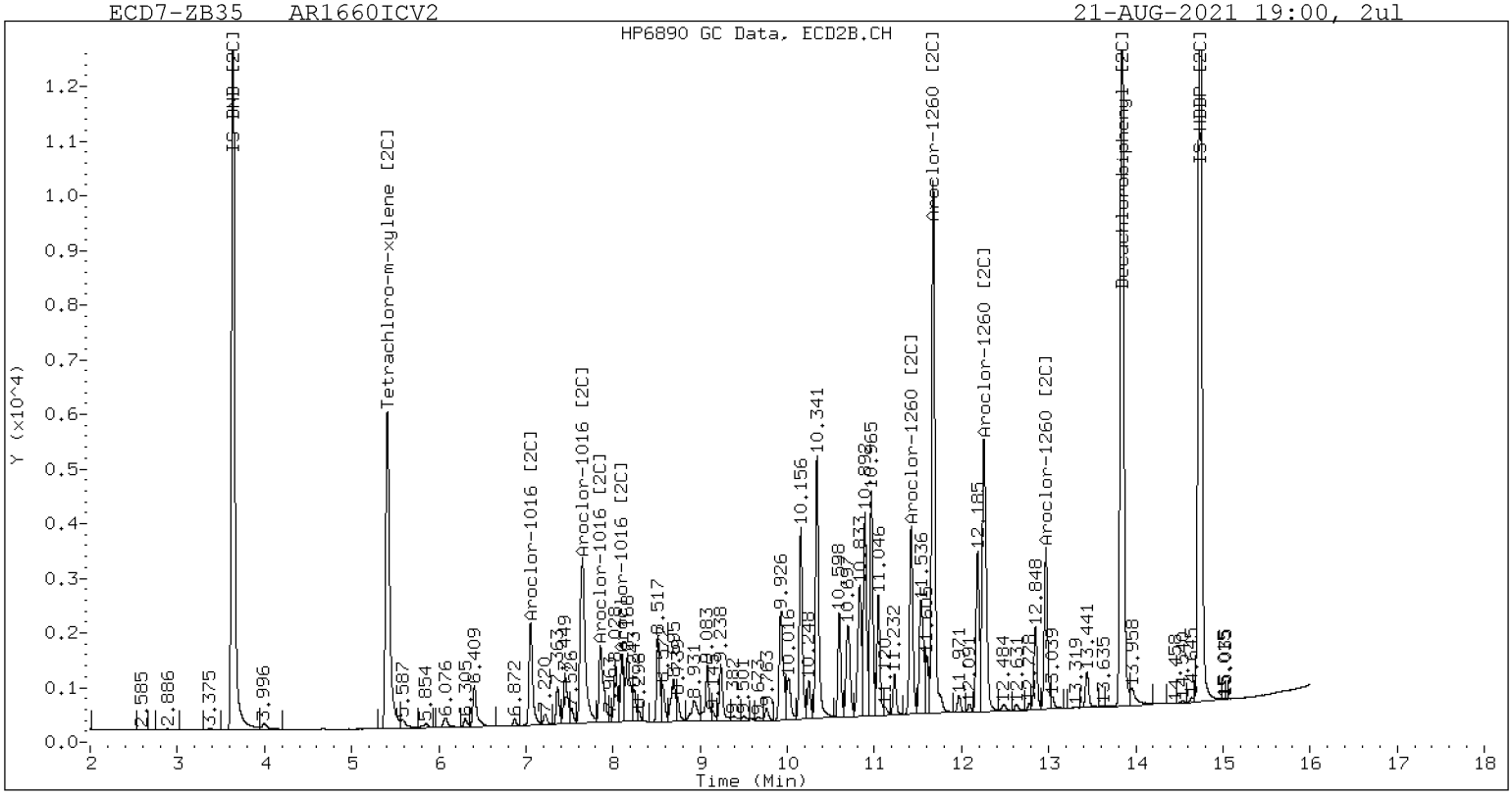
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660ICV2 21-AUG-2021 19:00, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660ICV2 21-AUG-2021 19:00, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132141ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV1	Injection Time:	08:21
Sequence Name:	AR1660SCV1		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	285	0.0446218	0.0506821		13.9	+/-20
Aroclor 1016 [2C]	A	250.00	281	0.0529840	0.0593980		12.5	+/-20
Aroclor 1260	A	250.00	276	0.0461251	0.0512781		10.3	+/-20
Aroclor 1260 [2C]	A	250.00	259	0.1108773	0.1145107		3.4	+/-20
Decachlorobiphenyl	A	40.000	41.9	0.7261970	0.7611314		4.8	+/-20
Tetrachlorometaxylene	A	40.000	43.6	0.9669678	1.0549010		9.1	+/-20
Decachlorobiphenyl [2C]	A	40.000	41.2	1.7775950	1.8311900		3.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.9	1.0280520	1.0780260		4.9	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132141ECD7.D
Data file 2: /210813.b/210813.b/08132141ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV1
Client ID:
Injection Date: 14-AUG-2021 08:21
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	130620	5.416	-0.001	380301	43.6	41.9	4.0	Tetrachloro-m-xylene
13.166	0.000	166891	13.848	-0.032	891664	41.9	41.2	1.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	247644	-4.3
Hexabromobiphenyl	425681	438534	3.0

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	705551	-2.1
Hexabromobiphenyl	863111	973863	12.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	ZB5 Col Peak#	RT	Shift	Area	Amount	ZB35 Col Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.662	0.004	25008	284.7	1	7.059	0.002	110603	274.9
Aroclor-1016	2	7.036	0.006	75849	282.4	2	7.653	0.006	251287	279.2
Aroclor-1016	3	7.182	0.006	34421	285.6	3	7.860	0.005	101098	286.3
Aroclor-1016	4	7.291	0.006	21611	286.0	4	8.108	0.003	60866	284.8
Total Col1Ave (4 peaks):					284.7	Total Col2Ave (4 peaks):				281.3 RPD = 1
Corrected Ave (3 peaks):					284.2	Corrected Ave (3 peaks):				279.6 RPD = 2
Aroclor-1221	1	4.024	0.008	183	9.4	1	4.683	0.006	532	10.0
Aroclor-1221	2	5.453	0.002	3388	110.5	2	6.080	0.008	14283	117.8
Aroclor-1221	3	5.728	0.004	17440	210.6	3	6.414	0.005	53146	251.5
Total Col1Ave (3 peaks):					110.2	Total Col2Ave (3 peaks):				126.5 RPD = 14
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.024	0.006	183	15.2	1	4.683	0.004	532	16.9
Aroclor-1232	2	5.728	0.002	17440	267.1	2	7.059	0.001	110603	600.3
Aroclor-1232	3	7.036	0.002	75849	761.3	3	7.653	0.002	251287	681.4
Aroclor-1232	4	7.973	0.001	32123	783.7	4	8.522	0.000	77885	810.7
Total Col1Ave (4 peaks):					456.8	Total Col2Ave (4 peaks):				527.3 RPD = 14
Corrected Ave (3 peaks):					347.9	Corrected Ave (3 peaks):				432.8 RPD = 22
Aroclor-1242	1	6.662	0.003	25008	366.5	1	7.059	0.002	110603	341.0
Aroclor-1242	2	7.036	0.006	75849	372.9	2	7.653	0.005	251287	356.6
Aroclor-1242	3	8.386	0.011	23127	200.7	3	8.934	-0.015	43631	132.5
Aroclor-1242	4	8.601	-0.072	2264	48.1	4	9.087	0.060	61086	163.5
Total Col1Ave (4 peaks):					247.1	Total Col2Ave (4 peaks):				248.4 RPD = 1
Corrected Ave (3 peaks):					205.1	Corrected Ave (3 peaks):				212.3 RPD = 3
Aroclor-1248	1	7.803	0.005	21981	211.8	1	8.108	0.002	60866	208.2
Aroclor-1248	2	7.973	0.005	32123	237.1	2	8.522	0.002	77885	218.9
Aroclor-1248	3	8.386	0.011	23127	116.6	3	8.934	-0.013	43631	77.0
Aroclor-1248	4	8.678	0.004	18050	159.4	4	9.393	0.016	3902	8.1
Total Col1Ave (4 peaks):					181.2	Total Col2Ave (4 peaks):				128.0 RPD = 34
Corrected Ave (3 peaks):					162.6	Corrected Ave (3 peaks):				97.8 RPD = 50*
Aroclor-1254	1	8.678	0.003	18050	84.5	1	9.242	0.003	55374	92.2
Aroclor-1254	2	---			0.0	2	9.393	0.062	3902	11.1
Aroclor-1254	3	9.048	0.006	1874	13.5	3	9.768	0.005	7503	16.4
Aroclor-1254	4	9.179	0.003	8064	30.3	4	9.930	0.017	138725	136.8
Aroclor-1254	5	9.859	-0.008	24786	148.4	5	10.160	0.012	181859	176.8
Total Col1Ave (4 peaks):					69.2	Total Col2Ave (5 peaks):				86.7 RPD = 22
Corrected Ave (3 peaks):					42.8	Corrected Ave (4 peaks):				64.1 RPD = 40*
Aroclor-1260	1	10.386	0.003	52476	266.0	1	11.427	0.002	206923	255.6
Aroclor-1260	2	10.705	0.005	54460	281.2	2	11.681	-0.000	606031	257.6
Aroclor-1260	3	11.055	0.005	146267	279.5	3	12.264	0.003	390976	258.4
Aroclor-1260	4	11.458	0.005	67567	289.8	4	12.974	0.002	190042	262.7
Aroclor-1260	5	11.557	0.003	30592	262.0	NS	---			----
Total Col1Ave (5 peaks):					275.7	Total Col2Ave (4 peaks):				258.6 RPD = 6
Corrected Ave (4 peaks):					272.2	Corrected Ave (3 peaks):				257.2 RPD = 6
Aroclor-1262	1	10.386	0.002	52476	196.1	1	10.970	-0.000	227139	190.7
Aroclor-1262	2	11.458	0.003	67567	389.9	2	11.681	-0.004	606031	241.2
Aroclor-1262	3	11.630	0.003	39662	158.8	3	12.190	0.002	176119	157.9
Aroclor-1262	4	12.278	0.004	37281	181.8	4	12.974	0.001	190042	182.8
Total Col1Ave (4 peaks):					231.6	Total Col2Ave (4 peaks):				193.2 RPD = 18
Corrected Ave (3 peaks):					178.9	Corrected Ave (3 peaks):				177.2 RPD = 1
Aroclor-1268	1	11.557	-0.000	30592	52.0	1	12.190	-0.010	176119	62.9
Aroclor-1268	2	11.630	0.004	39662	64.3	2	12.264	-0.003	390976	128.0
Aroclor-1268	3	12.031	0.031	15649	32.2	3	12.637	-0.007	5866	2.2
Aroclor-1268	4	12.771	-0.001	7371	4.7	4	12.784	0.001	4262	6.5
Total Col1Ave (4 peaks):					38.3	Total Col2Ave (4 peaks):				49.9 RPD = 26

Corrected Ave (3 peaks): 29.6 Corrected Ave (3 peaks): 23.9 RPD = 21

Total PCB Area Col1 (5.169 - 13.066) = 1398917 Col1 Total PCB = 0.6 ppm*

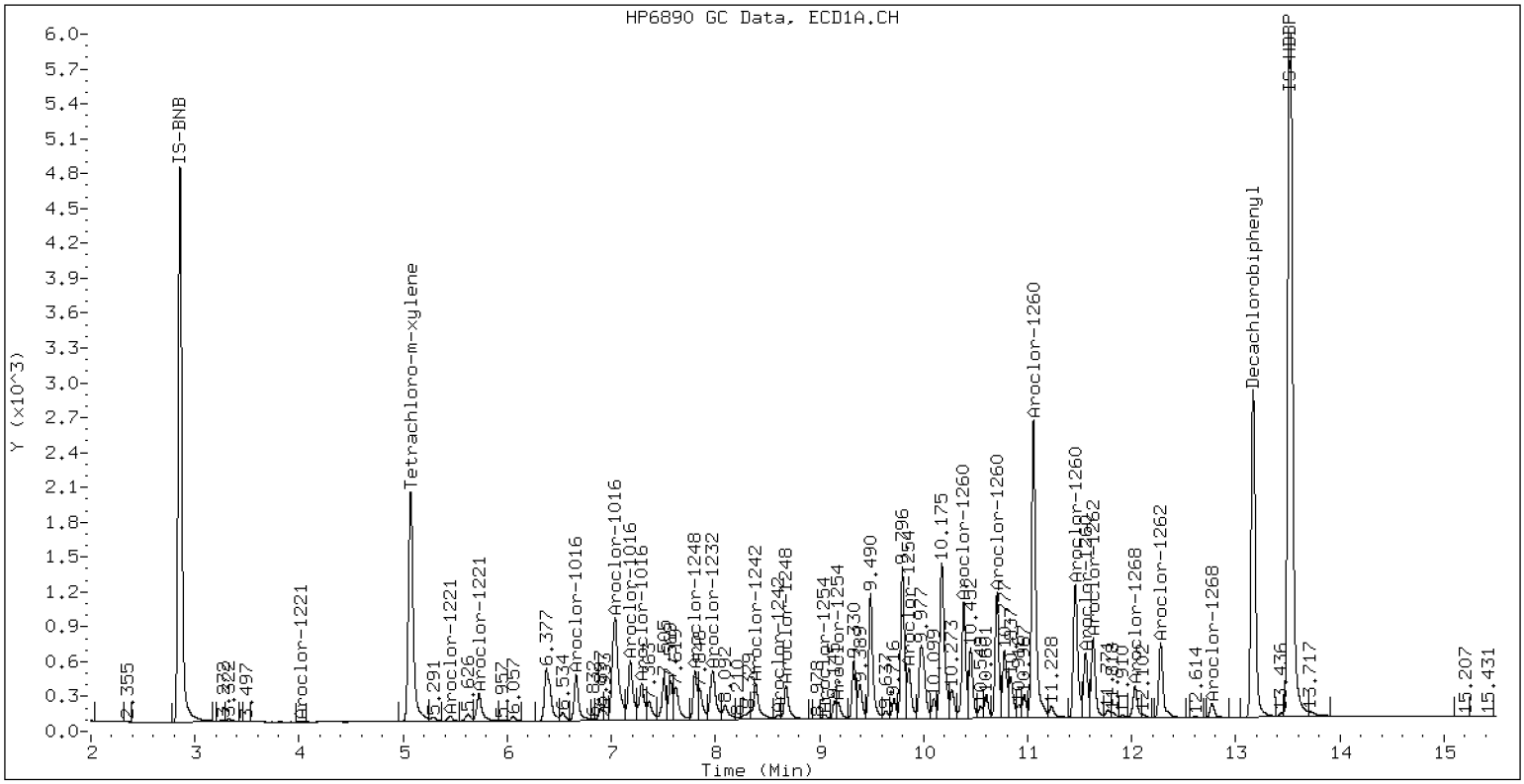
Total PCB Area Col2 (5.169 - 13.066) = 5304779 Col2 Total PCB = 0.6 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

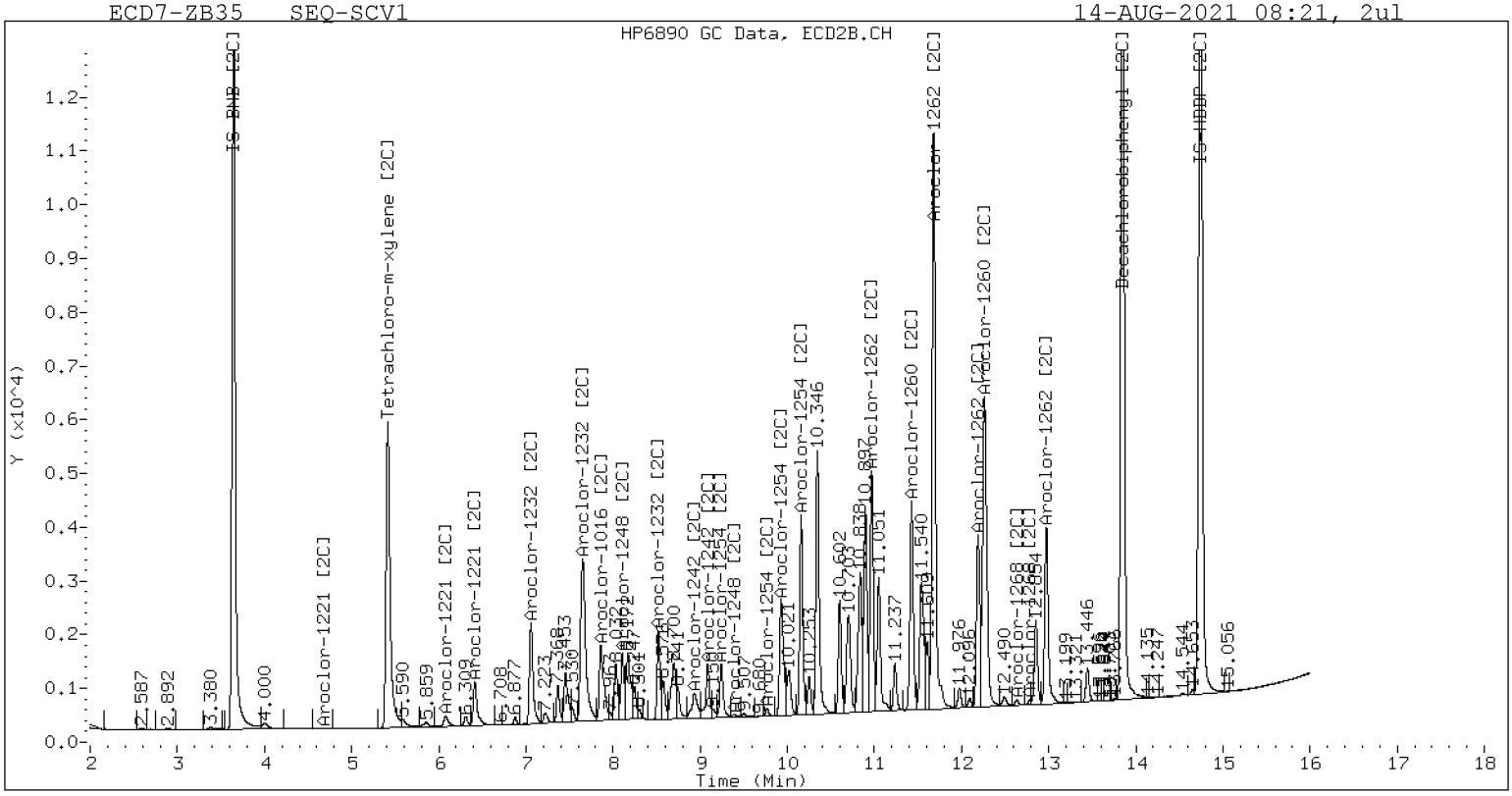
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV1 14-AUG-2021 08:21, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132142ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV2	Injection Time:	08:41
Sequence Name:	AR1242SCV2		

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1242	A	250.00	282	0.0350459	0.0378590		12.6	+/-20
Aroclor 1242 [2C]	A	250.00	257	0.0490898	0.0506982		2.8	+/-20
Decachlorobiphenyl	A	40.000	40.6	0.7261970	0.7366527		1.4	+/-20
Tetrachlorometaxylene	A	40.000	42.4	0.9669678	1.0253500		6.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	40.1	1.7775950	1.7819000		0.2	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.2	1.0280520	1.0587290		3.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132142ECD7.D
Data file 2: /210813.b/210813.b/08132142ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV2
Client ID:
Injection Date: 14-AUG-2021 08:41
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col			ZB35 Col			ZB5	ZB35		
RT	Shift	Response	RT	Shift	Response	on col	on col	RPD	Compound/Flag
5.071	0.002	132285	5.416	-0.001	383386	42.4	41.2	2.9	Tetrachloro-m-xylene
13.167	0.001	167664	13.849	-0.031	892912	40.6	40.1	1.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258029	-0.3
Hexabromobiphenyl	425681	455205	6.9

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	724238	0.5
Hexabromobiphenyl	863111	1002202	16.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col				ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.662	0.004	19016	207.8	1	7.058	0.002	84149	203.8
Aroclor-1016	2	7.036	0.007	56530	202.0	2	7.655	0.007	190019	205.7
Aroclor-1016	3	7.182	0.006	26016	207.1	3	7.861	0.006	75921	209.4
Aroclor-1016	4	7.291	0.006	16388	208.1	4	8.108	0.003	48471	220.9
Total Col1Ave (4 peaks):				206.3		Total Col2Ave (4 peaks):			210.0	RPD = 2
Corrected Ave (3 peaks):				205.6		Corrected Ave (3 peaks):			206.3	RPD = 0
Aroclor-1221	1	4.028	0.013	116	5.7	1	---			0.0
Aroclor-1221	2	5.452	0.001	2495	78.1	2	6.082	0.010	11569	93.0
Aroclor-1221	3	5.727	0.003	12904	149.5	3	6.414	0.005	39789	183.5
Total Col1Ave (3 peaks):				77.8		Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	4.028	0.010	116	9.3	1	---			0.0
Aroclor-1232	2	5.727	0.001	12904	189.7	2	7.058	0.000	84149	444.9
Aroclor-1232	3	7.036	0.003	56530	544.5	3	7.655	0.004	190019	502.0
Aroclor-1232	4	7.974	0.001	26547	621.6	4	8.522	0.000	61015	618.7
Total Col1Ave (4 peaks):				341.3		Total Col2Ave (3 peaks):			521.9	RPD = 42*
Corrected Ave (3 peaks):				247.8		Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.662	0.003	19016	267.5	1	7.058	0.001	84149	252.7
Aroclor-1242	2	7.036	0.006	56530	266.7	2	7.655	0.006	190019	262.7
Aroclor-1242	3	8.383	0.009	29618	246.7	3	8.960	0.011	88042	260.5
Aroclor-1242	4	8.677	0.003	16945	345.4	4	9.035	0.007	96759	252.3
Total Col1Ave (4 peaks):				281.6		Total Col2Ave (4 peaks):			257.1	RPD = 9
Corrected Ave (3 peaks):				260.3		Corrected Ave (3 peaks):			255.2	RPD = 2
Aroclor-1248	1	7.804	0.005	17658	163.3	1	8.108	0.002	48471	161.5
Aroclor-1248	2	7.974	0.006	26547	188.1	2	8.522	0.002	61015	167.0
Aroclor-1248	3	8.383	0.009	29618	143.3	3	8.960	0.014	88042	151.3
Aroclor-1248	4	8.677	0.004	16945	143.6	4	9.387	0.011	85570	173.2
Total Col1Ave (4 peaks):				159.6		Total Col2Ave (4 peaks):			163.2	RPD = 2
Corrected Ave (3 peaks):				150.1		Corrected Ave (3 peaks):			159.9	RPD = 6
Aroclor-1254	1	8.677	0.002	16945	76.1	1	9.243	0.003	29242	47.5
Aroclor-1254	2	8.749	0.003	9630	93.4	2	9.387	0.056	85570	236.6
Aroclor-1254	3	9.048	0.007	7009	48.3	3	9.768	0.005	22605	48.1
Aroclor-1254	4	9.185	0.010	12002	43.3	4	9.920	0.006	43258	41.6
Aroclor-1254	5	9.892	0.025	8818	50.7	5	10.159	0.012	45764	43.4
Total Col1Ave (5 peaks):				62.4		Total Col2Ave (5 peaks):			83.4	RPD = 29
Corrected Ave (4 peaks):				54.6		Corrected Ave (4 peaks):			45.1	RPD = 19
Aroclor-1260	1	10.393	0.010	159	0.8	1	11.445	0.020	5299	6.4
Aroclor-1260	2	10.708	0.008	221	1.1	2	11.687	0.006	3878	1.6
Aroclor-1260	3	11.059	0.009	267	0.5	3	12.271	0.010	3933	2.5
Aroclor-1260	4	11.460	0.007	376	1.6	4	13.053	0.081	5398	7.3
Aroclor-1260	5	---			0.0	NS	---			----
Total Col1Ave (4 peaks):				1.0		Total Col2Ave (4 peaks):			4.4	RPD = 128*
Corrected Ave (3 peaks):				0.8		Corrected Ave (3 peaks):			3.5	RPD = 126*
Aroclor-1262	1	10.393	0.009	159	0.6	1	10.901	-0.069	17524	14.3
Aroclor-1262	2	11.460	0.005	376	2.1	2	11.687	0.001	3878	1.5
Aroclor-1262	3	---			0.0	3	12.271	0.083	3933	3.4
Aroclor-1262	4	---			0.0	4	13.053	0.081	5398	5.0
Col1Ave: <3 Quant Peaks						Col2Ave:			6.1	
Aroclor-1268	1	11.460	-0.097	376	0.6	1	12.271	0.071	3933	1.4
Aroclor-1268	2	---			0.0	2	---			0.0
Aroclor-1268	3	11.914	-0.086	1770	3.5	3	12.639	-0.005	1023	0.4
Aroclor-1268	4	12.775	0.003	794	0.5	4	12.790	0.006	1260	1.9
Total Col1Ave (3 peaks):				1.5		Total Col2Ave (3 peaks):			1.2	RPD = 24
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				

Total PCB Area Col1 (5.169 - 13.066) = 482960 Col1 Total PCB = 0.2 ppm*

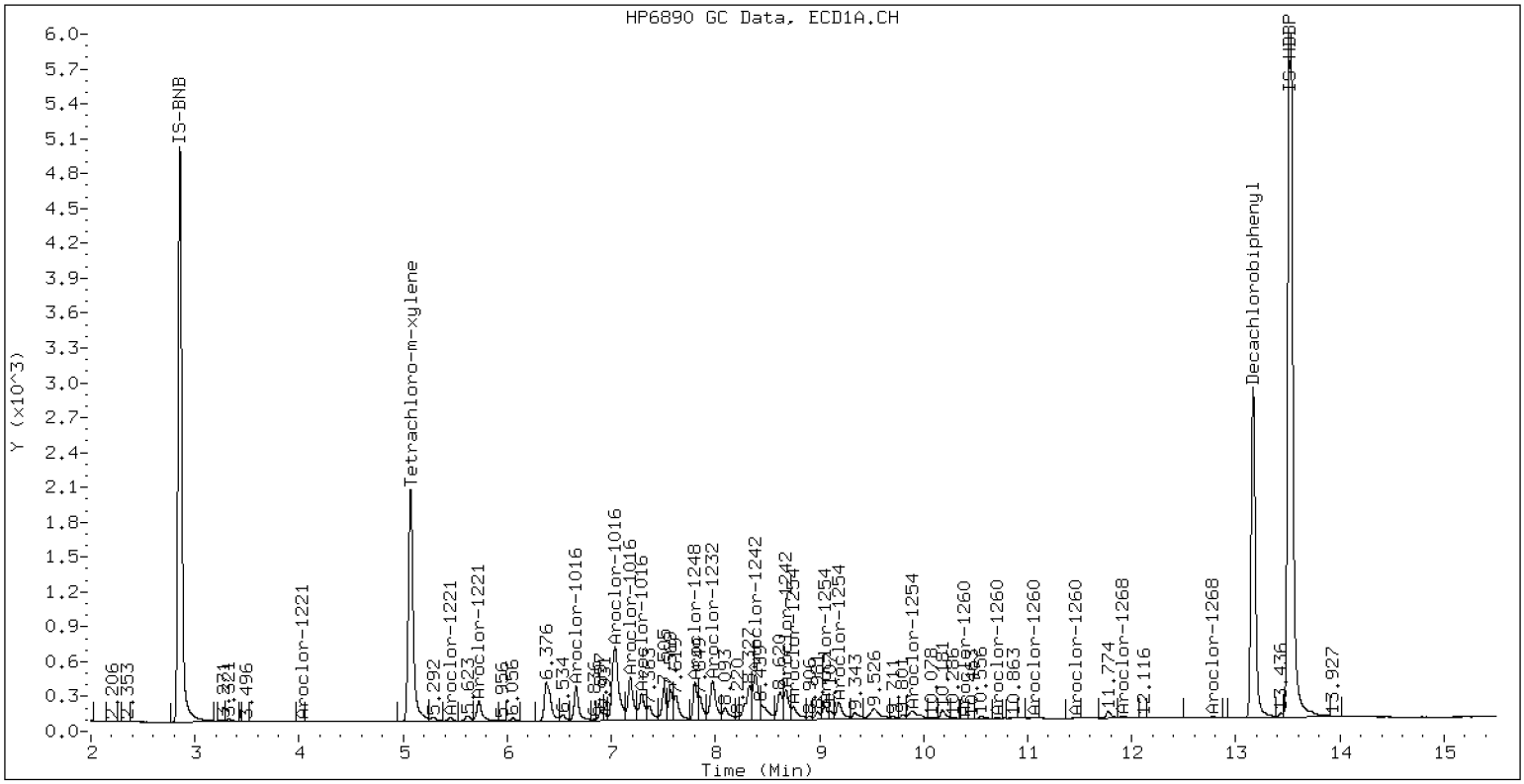
Total PCB Area Col2 (5.169 - 13.066) = 1884416 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

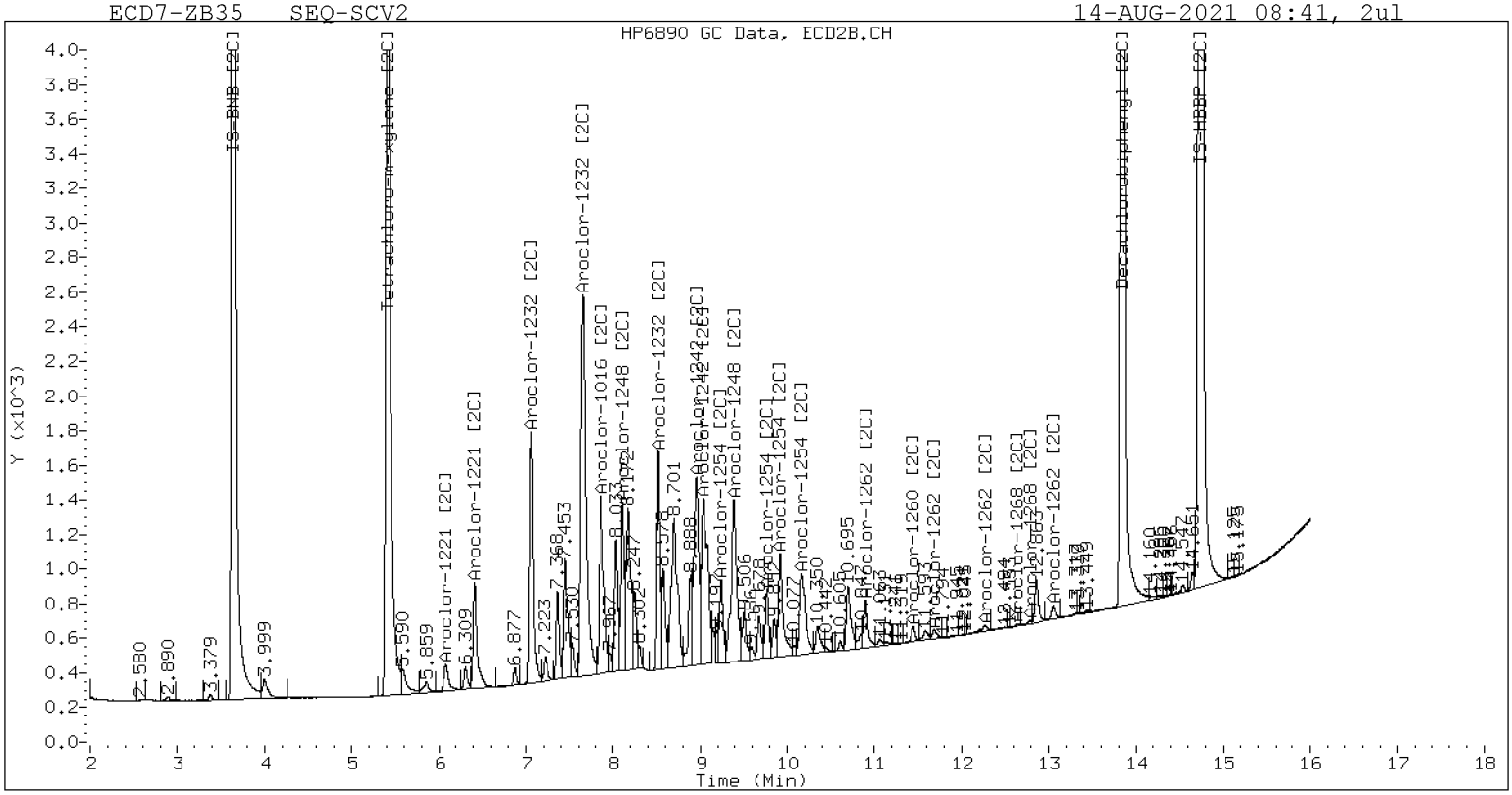
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV2 14-AUG-2021 08:41, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV2 14-AUG-2021 08:41, 2ul

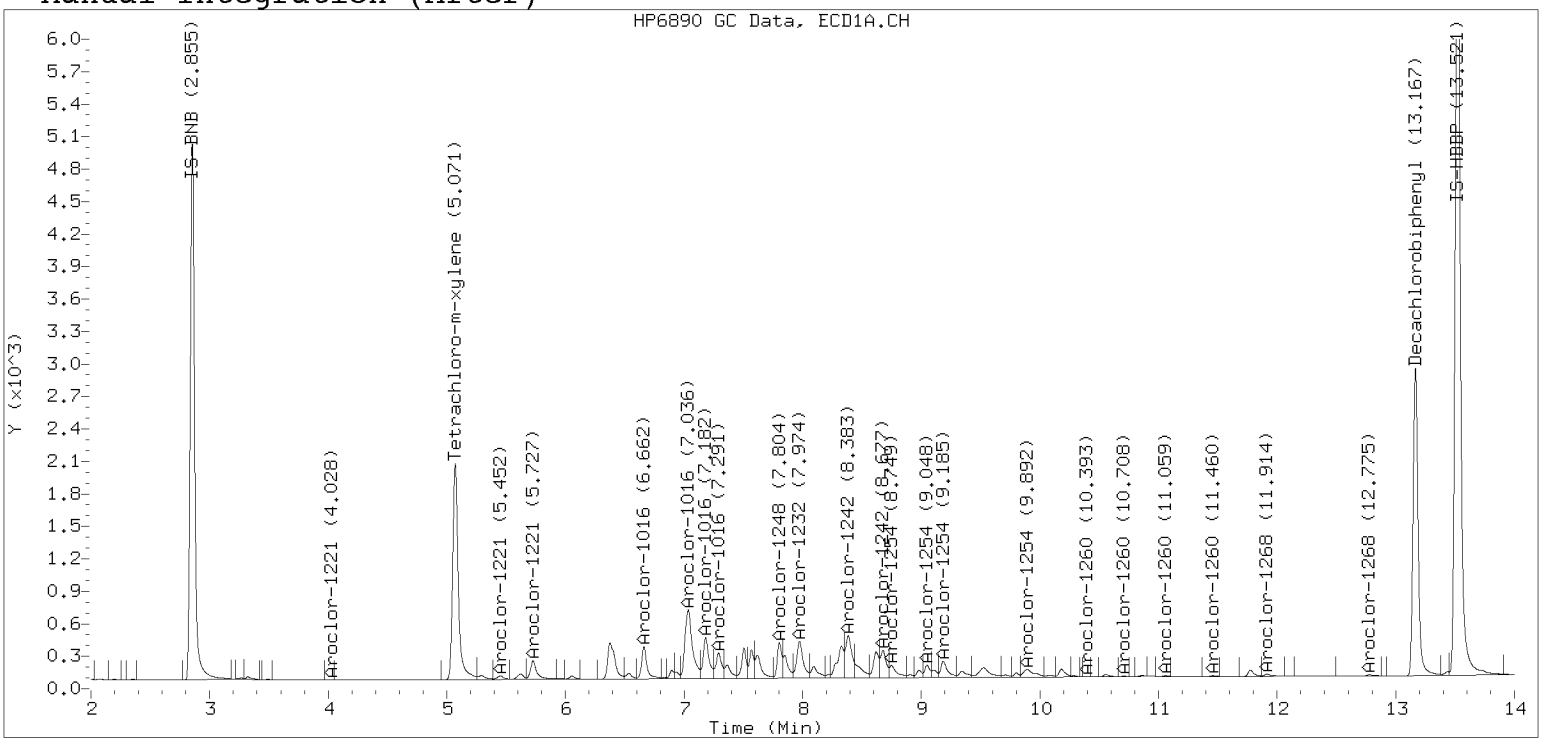


ZB-35 Manual Integration: YES

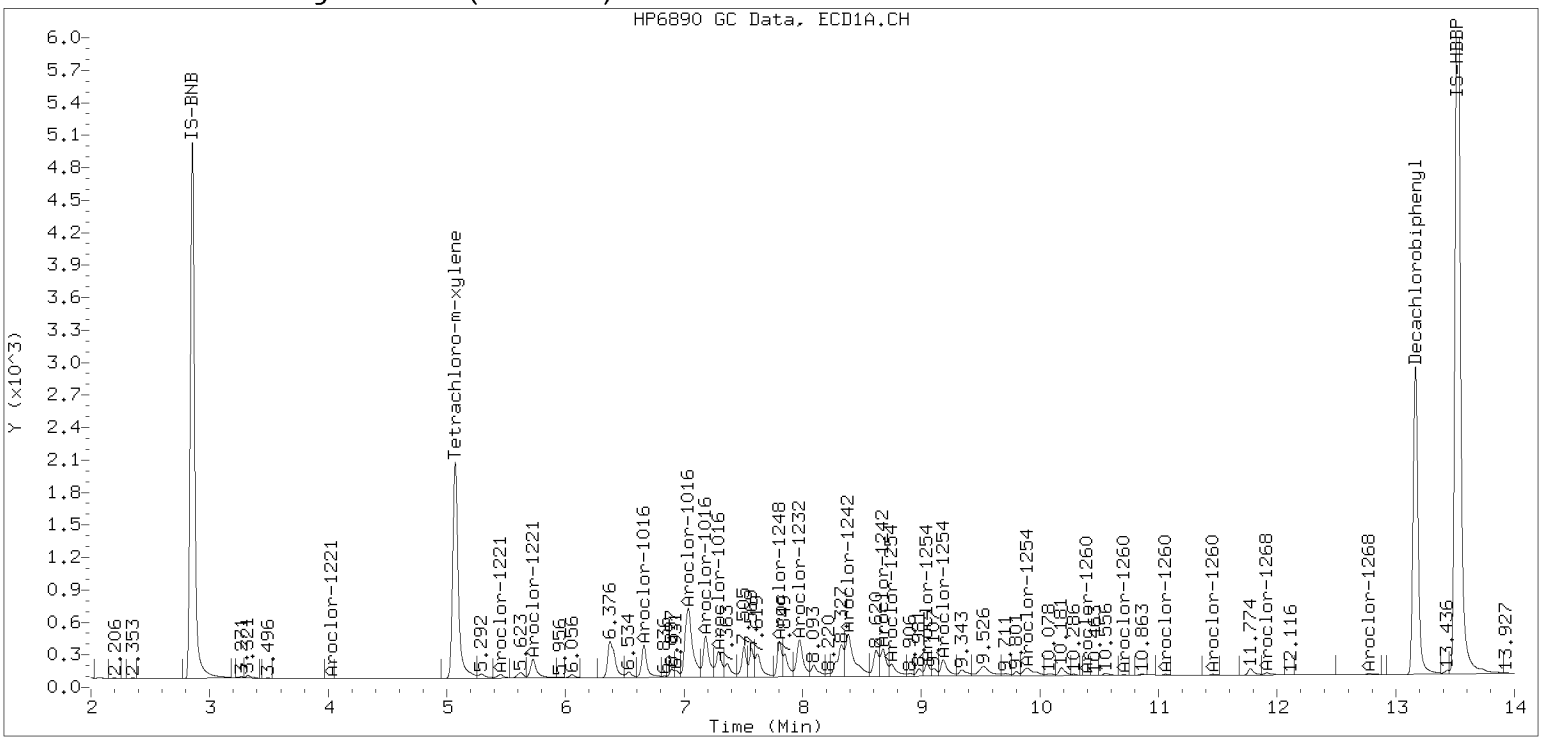
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132142ECD7.D Injection Date: 14-AUG-2021 08:41

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132143ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV3	Injection Time:	09:02
Sequence Name:	AR1248SCV3		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	262	0.0444871	0.0465152		4.6	+/-20
Aroclor 1248 [2C]	A	250.00	275	0.0480909	0.0527683		10.0	+/-20
Decachlorobiphenyl	A	40.000	39.5	0.7261970	0.7165649		-1.3	+/-20
Tetrachlorometaxylene	A	40.000	41.7	0.9669678	1.0072130		4.2	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.4	1.7775950	1.7077060		-3.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.4	1.0280520	1.0386920		1.0	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132143ECD7.D
Data file 2: /210813.b/210813.b/08132143ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV3
Client ID:
Injection Date: 14-AUG-2021 09:02
Report Date: 08/16/2021 17:58
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	133217	5.416	-0.001	384693	41.7	40.4	3.0	Tetrachloro-m-xylene
13.165	-0.001	166922	13.848	-0.032	892438	39.5	38.4	2.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	264526	2.2
Hexabromobiphenyl	425681	465895	9.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	740726	2.7
Hexabromobiphenyl	863111	1045189	21.1

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	9682	103.2	1	7.058	0.001	46276	109.6
Aroclor-1016	2	7.035	0.006	37972	132.4	2	7.654	0.006	128803	136.3
Aroclor-1016	3	7.185	0.009	16001	124.3	3	7.862	0.007	26557	71.6
Aroclor-1016	4	7.292	0.007	10150	125.7	4	8.107	0.002	83644	372.8
Total Col1Ave (4 peaks):					121.4	Total Col2Ave (4 peaks):				172.6 RPD = 35
Corrected Ave (3 peaks):					117.7	Corrected Ave (3 peaks):				105.8 RPD = 11
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	5.455	0.004	449	13.7	2	6.091	0.019	6638	52.2
Aroclor-1221	3	5.728	0.004	2260	25.5	3	6.414	0.005	8501	38.3
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	5.728	0.002	2260	32.4	2	7.058	-0.000	46276	239.2
Aroclor-1232	3	7.035	0.002	37972	356.8	3	7.654	0.003	128803	332.7
Aroclor-1232	4	7.972	-0.000	39250	896.5	4	8.523	0.001	102298	1014.3
Total Col1Ave (3 peaks):					428.6	Total Col2Ave (3 peaks):				528.7 RPD = 21
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1242	1	6.663	0.004	9682	132.8	1	7.058	0.000	46276	135.9
Aroclor-1242	2	7.035	0.005	37972	174.8	2	7.654	0.005	128803	174.1
Aroclor-1242	3	8.381	0.007	54555	443.2	3	8.956	0.007	151640	438.8
Aroclor-1242	4	8.678	0.004	31259	621.5	4	9.034	0.006	104178	265.6
Total Col1Ave (4 peaks):					343.1	Total Col2Ave (4 peaks):				253.6 RPD = 30
Corrected Ave (3 peaks):					250.3	Corrected Ave (3 peaks):				191.9 RPD = 26
Aroclor-1248	1	7.802	0.004	28742	259.3	1	8.107	0.002	83644	272.5
Aroclor-1248	2	7.972	0.004	39250	271.2	2	8.523	0.003	102298	273.8
Aroclor-1248	3	8.381	0.007	54555	257.5	3	8.956	0.009	151640	254.8
Aroclor-1248	4	8.678	0.004	31259	258.4	4	9.383	0.006	151004	298.8
Total Col1Ave (4 peaks):					261.6	Total Col2Ave (4 peaks):				275.0 RPD = 5
Corrected Ave (3 peaks):					258.4	Corrected Ave (3 peaks):				267.0 RPD = 3
Aroclor-1254	1	8.678	0.002	31259	137.0	1	9.242	0.003	54333	86.2
Aroclor-1254	2	8.749	0.003	18396	174.1	2	9.383	0.052	151004	408.3
Aroclor-1254	3	9.047	0.006	14863	99.9	3	9.767	0.004	47940	99.8
Aroclor-1254	4	9.184	0.008	25850	91.0	4	9.918	0.004	90159	84.7
Aroclor-1254	5	9.891	0.024	17966	100.7	5	10.157	0.010	92605	85.8
Total Col1Ave (5 peaks):					120.5	Total Col2Ave (5 peaks):				152.9 RPD = 24
Corrected Ave (4 peaks):					107.1	Corrected Ave (4 peaks):				89.1 RPD = 18
Aroclor-1260	1	10.390	0.007	578	2.8	1	11.440	0.015	6820	7.8
Aroclor-1260	2	10.706	0.006	437	2.1	2	11.683	0.002	7655	3.0
Aroclor-1260	3	11.059	0.008	1267	2.3	3	12.263	0.002	5159	3.2
Aroclor-1260	4	11.460	0.007	540	2.2	4	12.973	0.001	2451	3.2
Aroclor-1260	5	11.559	0.005	490	4.0	NS	---			----
Total Col1Ave (5 peaks):					2.7	Total Col2Ave (4 peaks):				4.3 RPD = 47*
Corrected Ave (4 peaks):					2.3	Corrected Ave (3 peaks):				3.1 RPD = 29
Aroclor-1262	1	10.390	0.006	578	2.0	1	10.972	0.001	4108	3.2
Aroclor-1262	2	11.460	0.005	540	2.9	2	11.683	-0.002	7655	2.8
Aroclor-1262	3	11.632	0.005	592	2.2	3	12.188	-0.000	3699	3.1
Aroclor-1262	4	12.278	0.004	571	2.6	4	12.973	0.001	2451	2.2
Total Col1Ave (4 peaks):					2.5	Total Col2Ave (4 peaks):				2.8 RPD = 14
Corrected Ave (3 peaks):					2.3	Corrected Ave (3 peaks):				2.7 RPD = 17
Aroclor-1268	1	11.559	0.002	490	0.8	1	12.188	-0.012	3699	1.2
Aroclor-1268	2	11.632	0.006	592	0.9	2	12.263	-0.004	5159	1.6
Aroclor-1268	3	11.915	-0.086	879	1.7	3	12.643	-0.001	909	0.3
Aroclor-1268	4	12.775	0.003	932	0.6	4	12.788	0.005	972	1.4
Total Col1Ave (4 peaks):					1.0	Total Col2Ave (4 peaks):				1.1 RPD = 13
Corrected Ave (3 peaks):					0.7	Corrected Ave (3 peaks):				1.0 RPD = 27

Total PCB Area Col1 (5.169 - 13.066) = 608290 Col1 Total PCB = 0.2 ppm*

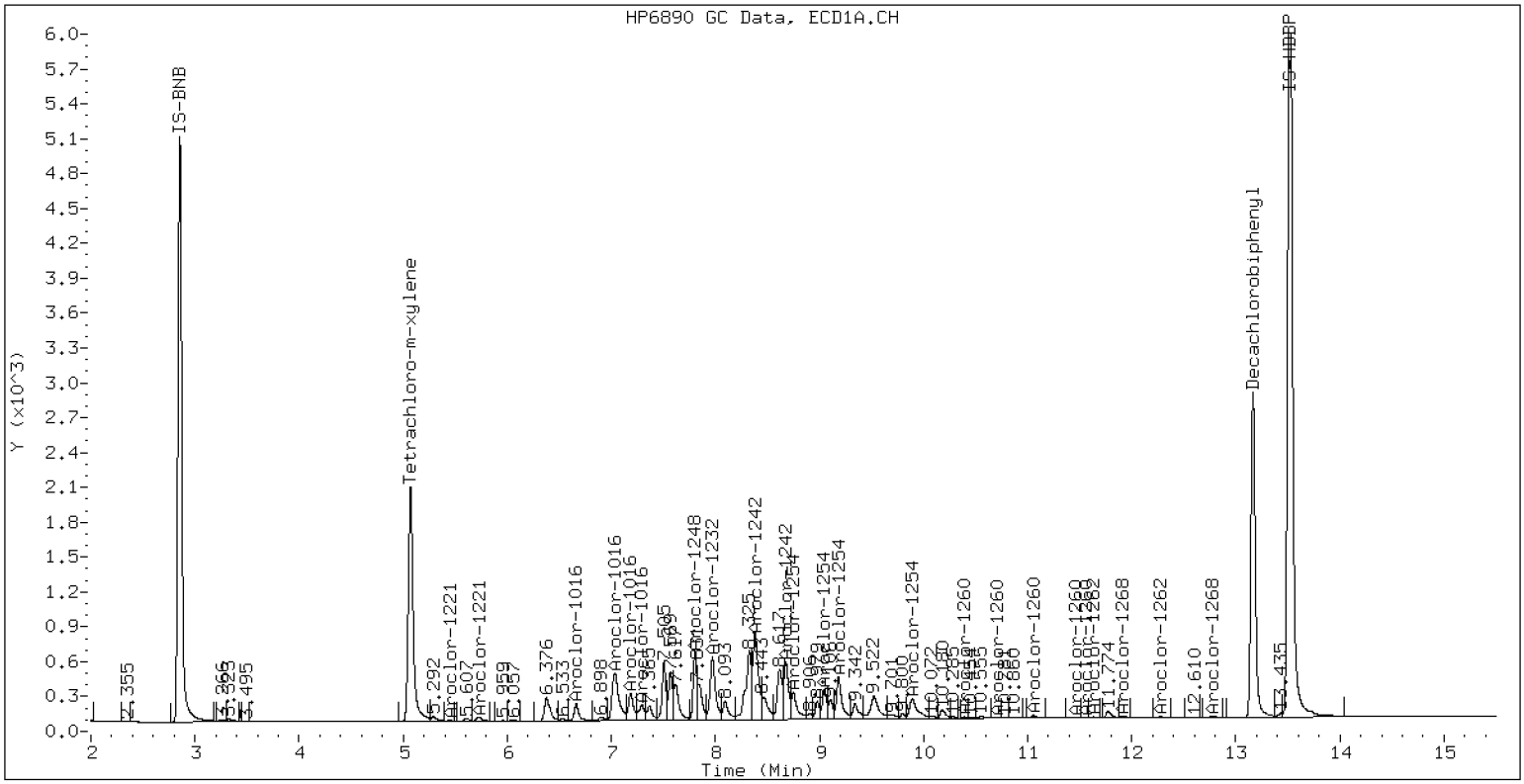
Total PCB Area Col2 (5.169 - 13.066) = 2317749 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

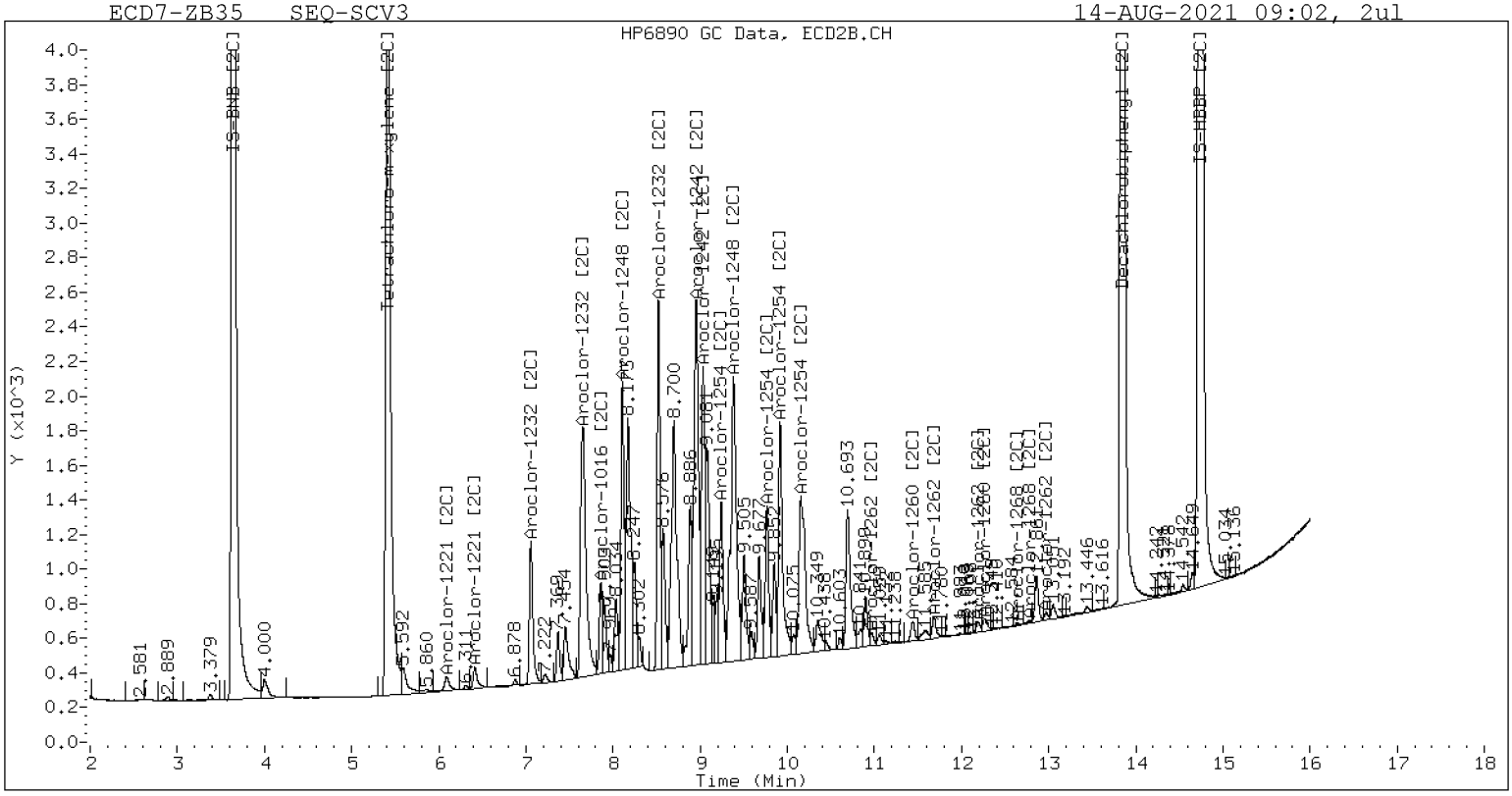
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV3 14-AUG-2021 09:02, 2ul



ZB-5 Manual Integration: YES

ECD7-ZB35 SEQ-SCV3 14-AUG-2021 09:02, 2ul

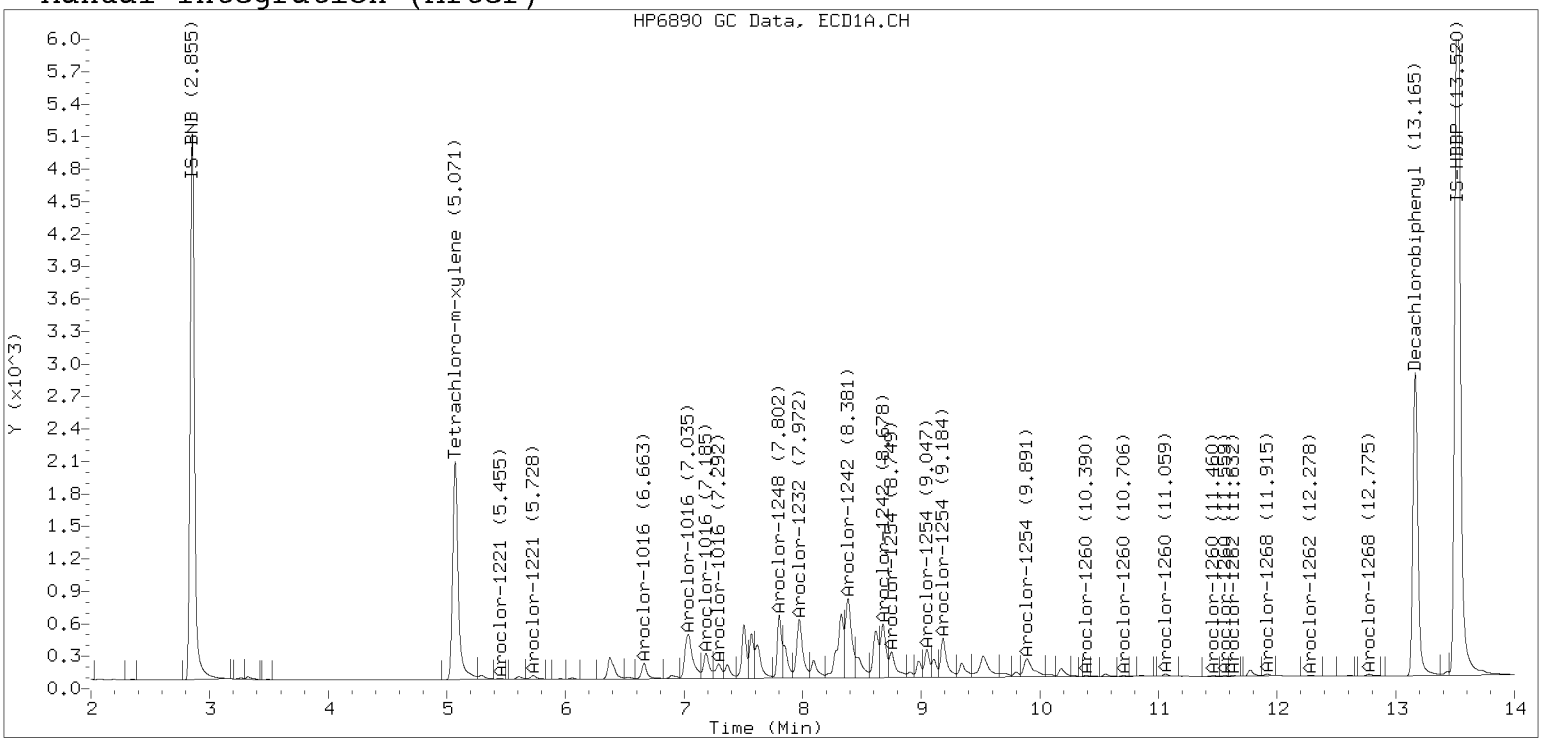


ZB-35 Manual Integration: NO

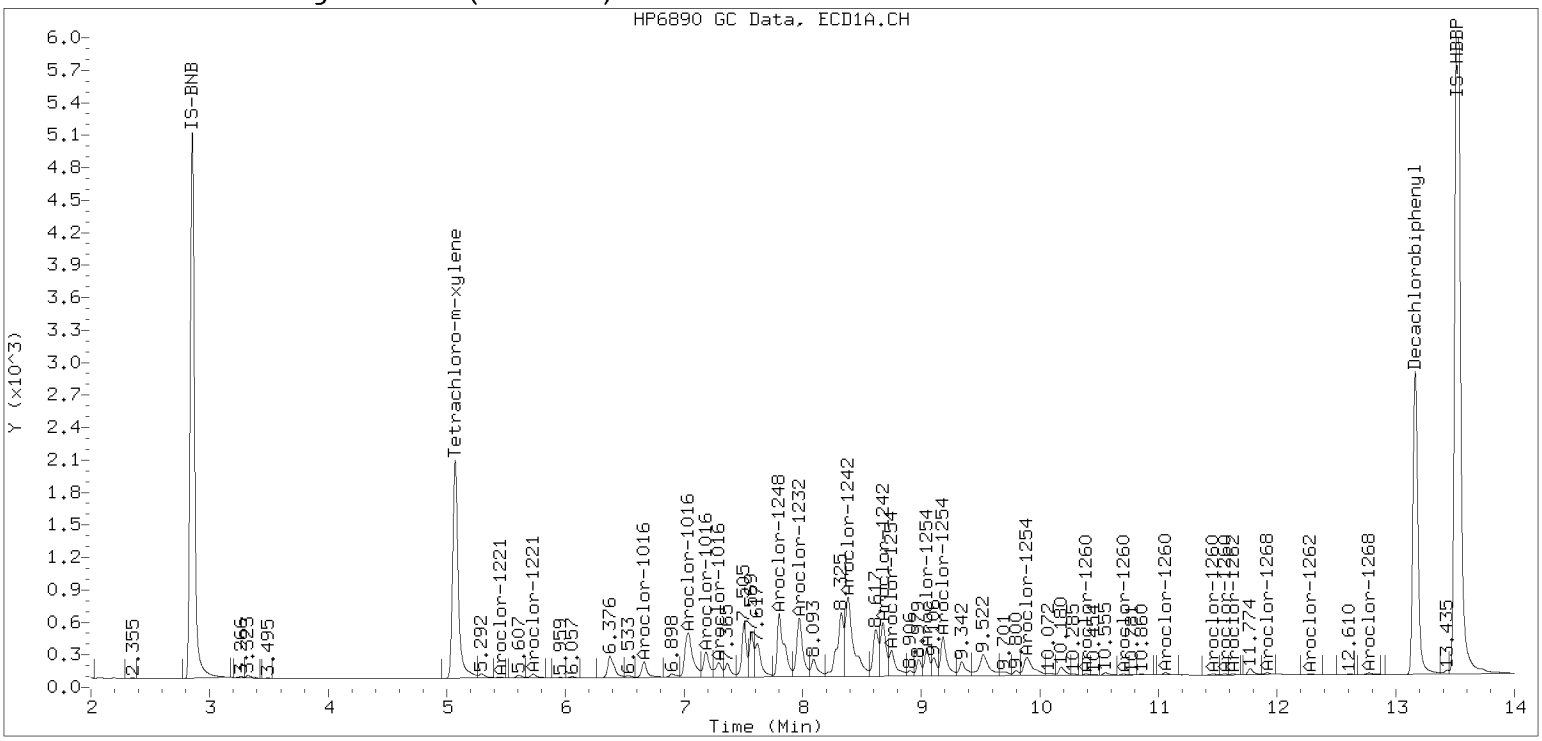
Manual Peak Adjustment, ZB-5

Datafile: ecd7.i/210813.b/08132143ECD7.D Injection Date: 14-AUG-2021 09:02

Manual Integration (After)



Processed Integration (Before)



Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132144ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV4	Injection Time:	09:22
Sequence Name:	AR1254SCV4		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1254	A	250.00	282	0.0571741	0.0643807		12.7	+/-20
Aroclor 1254 [2C]	A	250.00	264	0.0782980	0.0831818		5.8	+/-20
Decachlorobiphenyl	A	40.000	40.1	0.7261970	0.7274386		0.2	+/-20
Tetrachlorometaxylene	A	40.000	42.6	0.9669678	1.0302020		6.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.6	1.7775950	1.7164800		-3.4	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.4	1.0280520	1.0649090		3.6	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132144ECD7.D
Data file 2: /210813.b/210813.b/08132144ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV4
Client ID:
Injection Date: 14-AUG-2021 09:22
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	134141	5.416	-0.001	389116	42.6	41.4	2.8	Tetrachloro-m-xylene
13.166	0.000	166634	13.848	-0.032	887620	40.1	38.6	3.7	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	260417	0.6
Hexabromobiphenyl	425681	458139	7.6

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	730797	1.4
Hexabromobiphenyl	863111	1034233	19.8

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT (ZB5 Col)	Shift	Area	Amount	Peak#	RT (ZB35 Col)	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	131	1.4	1	7.062	0.005	1136	2.7
Aroclor-1016	2	7.039	0.009	605	2.1	2	7.659	0.011	3270	3.5
Aroclor-1016	3	7.189	0.014	416	3.3	3	7.909	0.054	1836	5.0
Aroclor-1016	4	---			0.0	4	8.109	0.004	59728	269.8
Total Col1Ave (3 peaks): 2.3						Total Col2Ave (4 peaks): 70.3 RPD = 187*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 3.8				
Aroclor-1221	1	---			0.0	1	---			0.0
Aroclor-1221	2	---			0.0	2	6.094	0.021	4462	35.5
Aroclor-1221	3	---			0.0	3	6.411	0.002	1085	5.0
Col1Ave: <3 Quant Peaks						Col2Ave: <3 Quant Peaks				
Aroclor-1232	1	---			0.0	1	---			0.0
Aroclor-1232	2	---			0.0	2	7.062	0.004	1136	6.0
Aroclor-1232	3	7.039	0.005	605	5.8	3	7.659	0.008	3270	8.6
Aroclor-1232	4	7.975	0.003	5517	128.0	4	8.524	0.002	40317	405.2
Col1Ave: <3 Quant Peaks						Col2Ave: 139.9				
Aroclor-1242	1	6.663	0.004	131	1.8	1	7.062	0.005	1136	3.4
Aroclor-1242	2	7.039	0.008	605	2.8	2	7.659	0.010	3270	4.5
Aroclor-1242	3	8.385	0.011	48414	399.6	3	8.960	0.012	63036	184.9
Aroclor-1242	4	8.679	0.005	62054	1253.2	4	9.035	0.007	12438	32.1
Total Col1Ave (4 peaks): 414.4						Total Col2Ave (4 peaks): 56.2 RPD = 152*				
Corrected Ave (3 peaks): 134.7						Corrected Ave (3 peaks): 13.3 RPD = 164*				
Aroclor-1248	1	7.804	0.005	12376	113.4	1	8.109	0.003	59728	197.2
Aroclor-1248	2	7.975	0.007	5517	38.7	2	8.524	0.004	40317	109.4
Aroclor-1248	3	8.385	0.011	48414	232.1	3	8.960	0.014	63036	107.4
Aroclor-1248	4	8.679	0.005	62054	521.1	4	9.335	-0.041	91889	184.3
Total Col1Ave (4 peaks): 226.3						Total Col2Ave (4 peaks): 149.6 RPD = 41*				
Corrected Ave (3 peaks): 128.1						Corrected Ave (3 peaks): 133.7 RPD = 4				
Aroclor-1254	1	8.679	0.003	62054	276.2	1	9.242	0.003	166697	268.1
Aroclor-1254	2	8.751	0.005	29615	284.7	2	9.335	0.004	91889	251.8
Aroclor-1254	3	9.046	0.005	40463	276.3	3	9.766	0.003	128036	270.1
Aroclor-1254	4	9.181	0.005	78989	282.3	4	9.918	0.004	270040	257.1
Aroclor-1254	5	9.873	0.006	50845	289.4	5	10.155	0.008	293166	275.2
Total Col1Ave (5 peaks): 281.8						Total Col2Ave (5 peaks): 264.5 RPD = 6				
Corrected Ave (4 peaks): 279.9						Corrected Ave (4 peaks): 261.8 RPD = 7				
Aroclor-1260	1	10.386	0.003	4281	20.8	1	11.441	0.015	77320	89.9
Aroclor-1260	2	10.706	0.006	4756	23.5	2	11.684	0.003	61993	24.8
Aroclor-1260	3	11.057	0.007	11820	21.6	3	12.266	0.005	35733	22.2
Aroclor-1260	4	11.458	0.005	9286	38.1	4	12.973	0.001	1994	2.6
Aroclor-1260	5	11.627	0.073	440	3.6	NS	---			----
Total Col1Ave (5 peaks): 21.5						Total Col2Ave (4 peaks): 34.9 RPD = 47*				
Corrected Ave (4 peaks): 17.4						Corrected Ave (3 peaks): 16.5 RPD = 5				
Aroclor-1262	1	10.386	0.002	4281	15.3	1	10.897	-0.073	251611	198.9
Aroclor-1262	2	11.458	0.003	9286	51.3	2	11.684	-0.001	61993	23.2
Aroclor-1262	3	11.627	0.000	440	1.7	3	12.205	0.017	9780	8.3
Aroclor-1262	4	12.279	0.005	629	2.9	4	12.973	0.000	1994	1.8
Total Col1Ave (4 peaks): 17.8						Total Col2Ave (4 peaks): 58.1 RPD = 106*				
Corrected Ave (3 peaks): 6.6						Corrected Ave (3 peaks): 11.1 RPD = 50*				
Aroclor-1268	1	11.627	0.070	440	0.7	1	12.205	0.005	9780	3.3
Aroclor-1268	2	---			0.0	2	12.266	-0.001	35733	11.0
Aroclor-1268	3	11.912	-0.088	968	1.9	3	12.633	-0.011	400	0.1
Aroclor-1268	4	12.774	0.002	1001	0.6	4	12.861	0.078	15819	22.8
Total Col1Ave (3 peaks): 1.1						Total Col2Ave (4 peaks): 9.3 RPD = 158*				
Corrected Ave: < 3 Peaks						Corrected Ave (3 peaks): 4.8				

Total PCB Area Col1 (5.169 - 13.066) = 819275 Col1 Total PCB = 0.3 ppm*

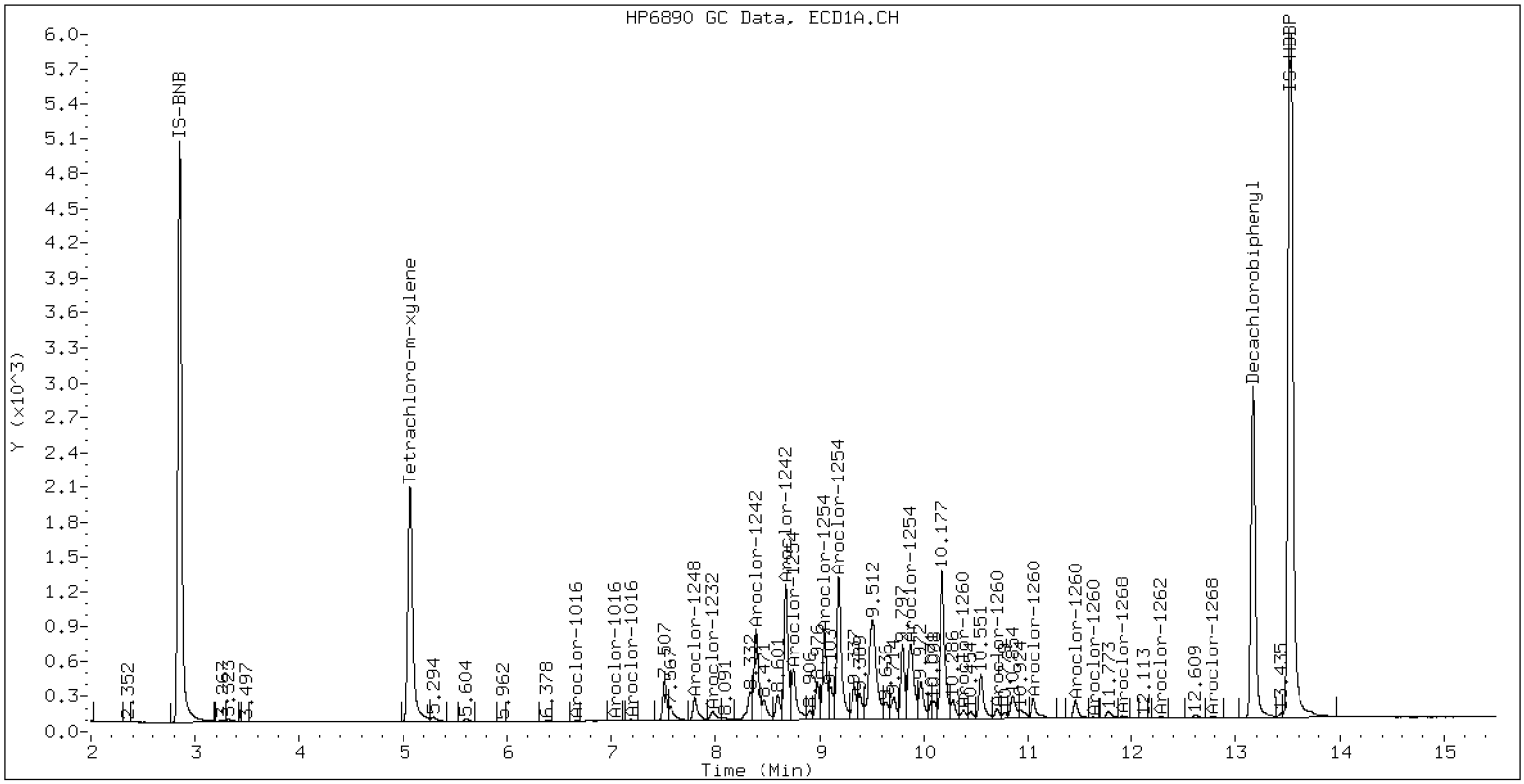
Total PCB Area Col2 (5.169 - 13.066) = 3111878 Col2 Total PCB = 0.3 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

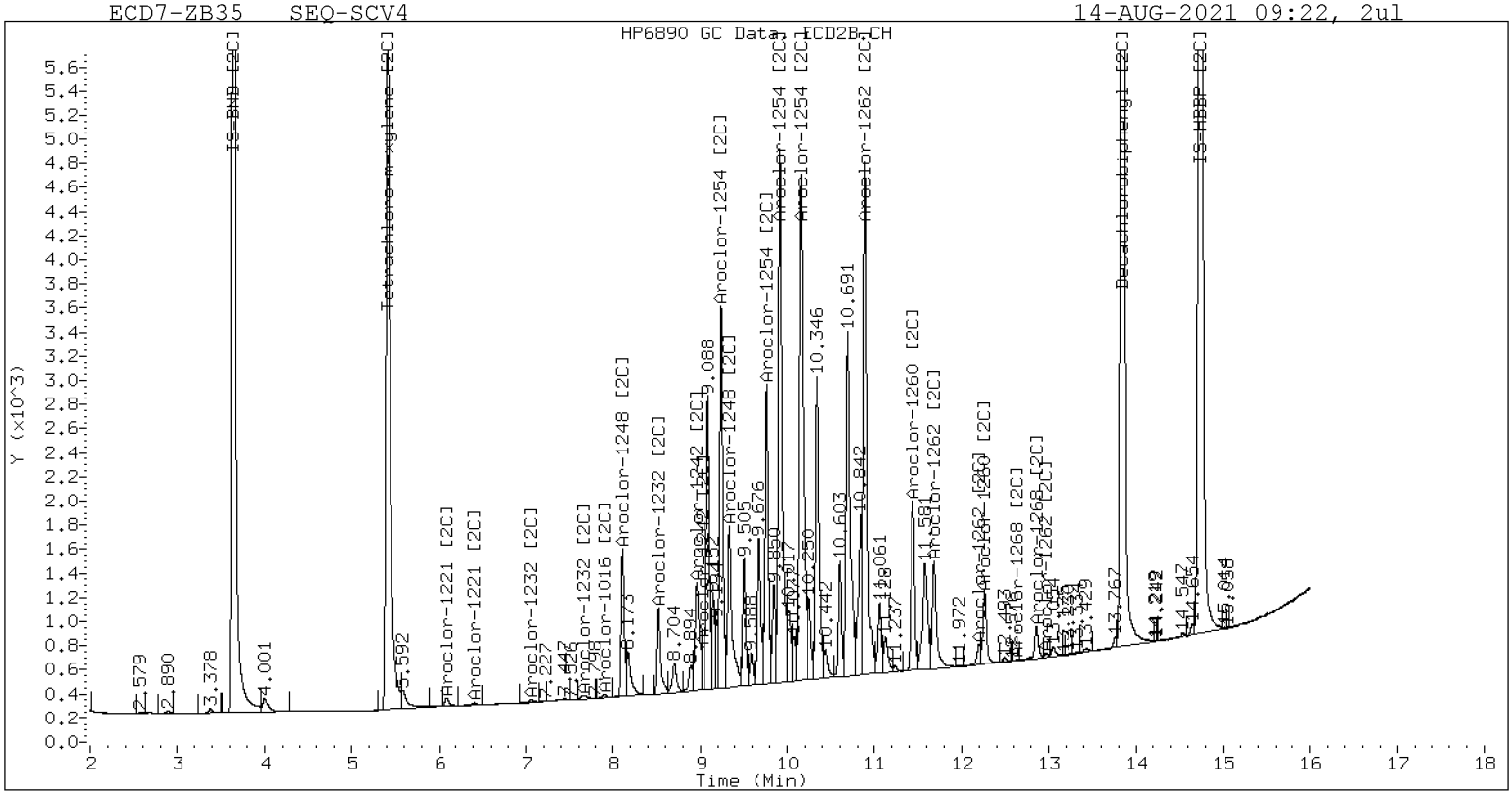
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV4 14-AUG-2021 09:22, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132145ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV5	Injection Time:	09:43
Sequence Name:	AR2162SCV5		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1221	A	250.00	293	0.0143248	0.0165460		17.0	+/-20
Aroclor 1221 [2C]	A	250.00	266	0.0145693	0.0154784		6.4	+/-20
Decachlorobiphenyl	A	40.000	38.8	0.7261970	0.7050646		-2.9	+/-20
Tetrachlorometaxylene	A	40.000	40.6	0.9669678	0.9811862		1.5	+/-20
Decachlorobiphenyl [2C]	A	40.000	37.6	1.7775950	1.6729930		-5.9	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.1	1.0280520	1.0059940		-2.1	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132145ECD7.D
Data file 2: /210813.b/210813.b/08132145ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV5
Client ID:
Injection Date: 14-AUG-2021 09:43
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	ZB5 Col Shift	ZB5 Col Response	ZB35 Col RT	ZB35 Col Shift	ZB35 Col Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.072	0.003	131998	5.417	-0.000	375118	40.6	39.1	3.6	Tetrachloro-m-xylene
13.166	-0.000	164634	13.848	-0.032	881936	38.8	37.6	3.1	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	269058	3.9
Hexabromobiphenyl	425681	467004	9.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	745766	3.4
Hexabromobiphenyl	863111	1054321	22.2

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	1551	16.3	1	7.061	0.004	17081	40.2
Aroclor-1016	2	7.039	0.009	4280	14.7	2	7.658	0.011	15832	16.6
Aroclor-1016	3	7.184	0.008	2282	17.4	3	7.865	0.010	6703	18.0
Aroclor-1016	4	7.294	0.009	1564	19.1	4	8.109	0.004	3939	17.4
Total Col1Ave (4 peaks):				16.8		Total Col2Ave (4 peaks):			23.1	RPD = 31
Corrected Ave (3 peaks):				16.1		Corrected Ave (3 peaks):			17.3	RPD = 7
Aroclor-1221	1	4.018	0.002	6262	294.7	1	4.680	0.004	15071	269.2
Aroclor-1221	2	5.454	0.003	9982	299.7	2	6.075	0.003	33472	261.2
Aroclor-1221	3	5.728	0.004	25492	283.3	3	6.413	0.004	59675	267.2
Total Col1Ave (3 peaks):				292.6		Total Col2Ave (3 peaks):			265.9	RPD = 10
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.018	-0.000	6262	479.9	1	4.680	0.001	15071	452.2
Aroclor-1232	2	5.728	0.002	25492	359.4	2	7.061	0.003	17081	87.7
Aroclor-1232	3	7.039	0.005	4280	39.5	3	7.658	0.007	15832	40.6
Aroclor-1232	4	7.978	0.006	798	17.9	4	8.525	0.003	2523	24.8
Total Col1Ave (4 peaks):				224.2		Total Col2Ave (4 peaks):			151.3	RPD = 39
Corrected Ave (3 peaks):				139.0		Corrected Ave (3 peaks):			51.1	RPD = 93*
Aroclor-1242	1	6.663	0.004	1551	20.9	1	7.061	0.004	17081	49.8
Aroclor-1242	2	7.039	0.009	4280	19.4	2	7.658	0.010	15832	21.3
Aroclor-1242	3	8.388	0.013	9148	73.1	3	8.966	0.018	6505	18.7
Aroclor-1242	4	8.680	0.006	9619	188.0	4	9.089	0.061	25267	64.0
Total Col1Ave (4 peaks):				75.3		Total Col2Ave (4 peaks):			38.4	RPD = 65*
Corrected Ave (3 peaks):				37.8		Corrected Ave (3 peaks):			29.9	RPD = 23
Aroclor-1248	1	7.805	0.007	1067	9.5	1	8.109	0.003	3939	12.7
Aroclor-1248	2	7.978	0.010	798	5.4	2	8.525	0.005	2523	6.7
Aroclor-1248	3	8.388	0.013	9148	42.4	3	8.966	0.020	6505	10.9
Aroclor-1248	4	8.680	0.007	9619	78.2	4	9.396	0.019	4022	7.9
Total Col1Ave (4 peaks):				33.9		Total Col2Ave (4 peaks):			9.6	RPD = 112*
Corrected Ave (3 peaks):				19.1		Corrected Ave (3 peaks):			8.5	RPD = 77*
Aroclor-1254	1	8.680	0.005	9619	41.4	1	9.245	0.005	26890	42.4
Aroclor-1254	2	---			0.0	2	9.336	0.005	2650	7.1
Aroclor-1254	3	9.050	0.008	1343	8.9	3	9.769	0.007	4242	8.8
Aroclor-1254	4	9.145	-0.031	9990	34.6	4	9.932	0.019	121430	113.3
Aroclor-1254	5	9.858	-0.010	13751	75.8	5	10.160	0.013	143957	132.4
Total Col1Ave (4 peaks):				40.2		Total Col2Ave (5 peaks):			60.8	RPD = 41*
Corrected Ave (3 peaks):				28.3		Corrected Ave (4 peaks):			42.9	RPD = 41*
Aroclor-1260	1	10.387	0.004	74432	354.3	1	11.427	0.001	248521	283.6
Aroclor-1260	2	10.705	0.005	63581	308.3	2	11.682	0.001	656259	257.6
Aroclor-1260	3	11.056	0.005	158724	284.8	3	12.261	0.000	468343	285.9
Aroclor-1260	4	11.457	0.004	49425	199.0	4	12.974	0.001	287502	367.1
Aroclor-1260	5	11.557	0.003	61640	495.8	NS	---			----
Total Col1Ave (5 peaks):				328.4		Total Col2Ave (4 peaks):			298.6	RPD = 10
Corrected Ave (4 peaks):				286.6		Corrected Ave (3 peaks):			275.7	RPD = 4
Aroclor-1262	1	10.387	0.003	74432	261.2	1	10.970	-0.000	313779	243.4
Aroclor-1262	2	11.457	0.002	49425	267.8	2	11.682	-0.003	656259	241.2
Aroclor-1262	3	11.628	0.001	70335	264.4	3	12.188	0.000	303167	251.1
Aroclor-1262	4	12.278	0.003	58296	266.9	4	12.974	0.001	287502	255.5
Total Col1Ave (4 peaks):				265.1		Total Col2Ave (4 peaks):			247.8	RPD = 7
Corrected Ave (3 peaks):				264.2		Corrected Ave (3 peaks):			245.2	RPD = 7
Aroclor-1268	1	11.557	0.000	61640	98.4	1	12.188	-0.012	303167	100.1
Aroclor-1268	2	11.628	0.002	70335	107.0	2	12.261	-0.006	468343	141.7
Aroclor-1268	3	12.031	0.030	24251	46.9	3	12.635	-0.009	18559	6.5
Aroclor-1268	4	12.770	-0.001	19100	11.5	4	12.783	0.000	11203	15.9
Total Col1Ave (4 peaks):				65.9		Total Col2Ave (4 peaks):			66.0	RPD = 0

Corrected Ave (3 peaks): 52.2 Corrected Ave (3 peaks): 40.8 RPD = 25

Total PCB Area Col1 (5.169 - 13.066) = 1098701 Col1 Total PCB = 0.4 ppm*

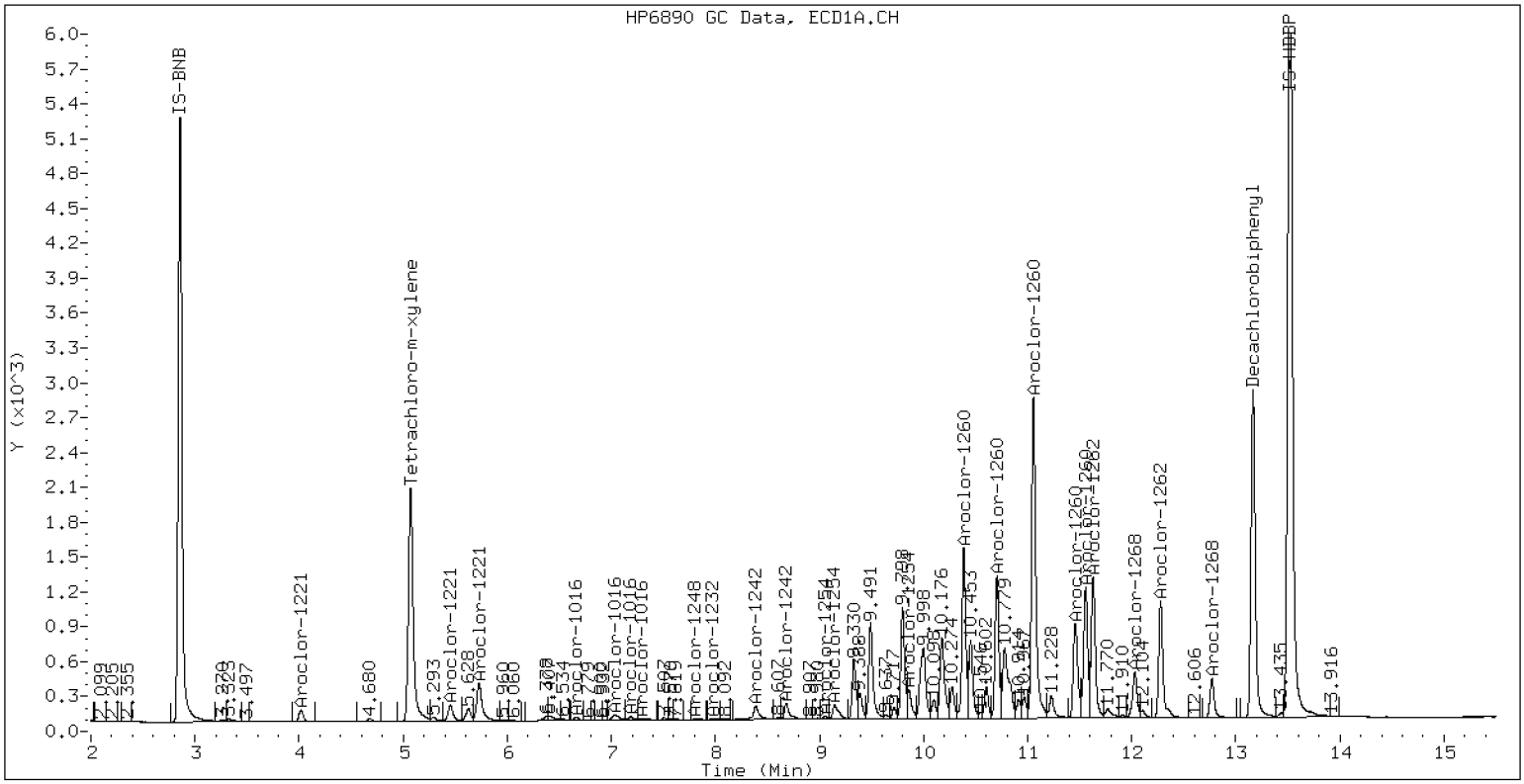
Total PCB Area Col2 (5.169 - 13.066) = 4504756 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

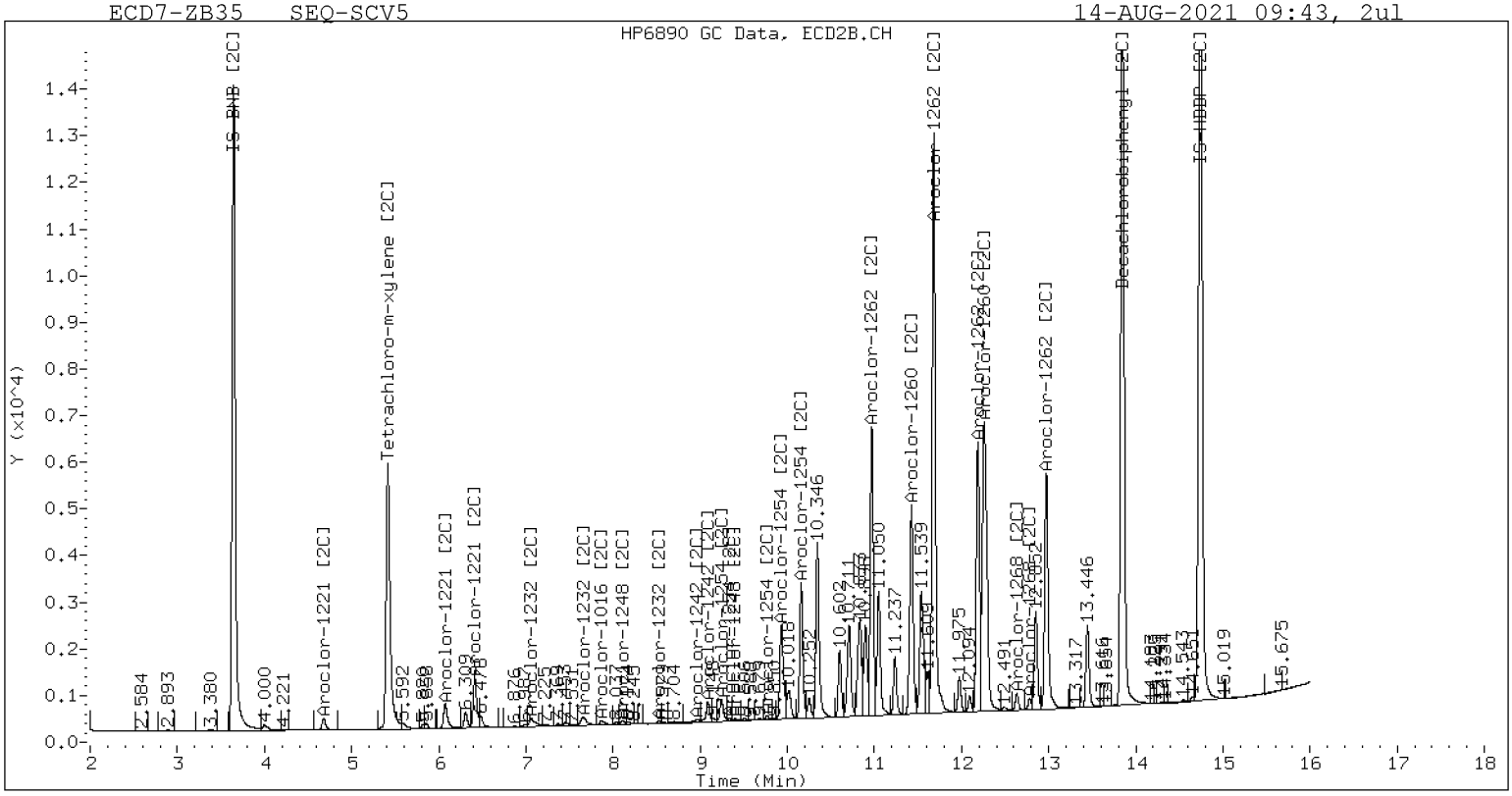
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV5 14-AUG-2021 09:43, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SECOND-SOURCE
CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08132146ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0177	Injection Date:	08/14/21
Lab Sample ID:	SJH0177-SCV6	Injection Time:	10:03
Sequence Name:	AR3268SCV6		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1232	A	250.00	284	0.0175991	0.0203926		13.8	+/-20
Aroclor 1232 [2C]	A	250.00	286	0.0192937	0.0223606		14.5	+/-20
Decachlorobiphenyl	A	40.000	59.6	0.7261970	1.0825580		49.1	+/-20
Tetrachlorometaxylene	A	40.000	41.2	0.9669678	0.9966938		3.1	+/-20
Decachlorobiphenyl [2C]	A	40.000	59.3	1.7775950	2.6350880		48.2	+/-20
Tetrachlorometaxylene [2C]	A	40.000	39.7	1.0280520	1.0197560		-0.8	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210813.b/08132146ECD7.D
Data file 2: /210813.b/210813.b/08132146ECD7.D
Method: \\target\share\chem4\ecd7.i\210813.b\PCB.m
Compound Sublist: PCB.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: SEQ-SCV6
Client ID:
Injection Date: 14-AUG-2021 10:03
Report Date: 08/14/2021 15:27
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.071	0.002	131287	5.416	-0.000	375338	41.2	39.7	3.8	Tetrachloro-m-xylene
13.165	-0.001	248059	13.848	-0.032	1383308	59.6	59.3	0.6	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	263445	1.8
Hexabromobiphenyl	425681	458283	7.7

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	736133	2.1
Hexabromobiphenyl	863111	1049914	21.6

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

	ZB5 Col					ZB35 Col				
Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
Aroclor-1016	1	6.663	0.005	11471	122.8	1	7.059	0.002	54454	129.7
Aroclor-1016	2	7.037	0.008	32172	112.6	2	7.656	0.009	111127	118.4
Aroclor-1016	3	7.183	0.007	15436	120.4	3	7.862	0.007	47184	128.0
Aroclor-1016	4	7.292	0.007	9103	113.2	4	8.108	0.003	26255	117.7
Total Col1Ave (4 peaks):				117.2		Total Col2Ave (4 peaks):			123.5	RPD = 5
Corrected Ave (3 peaks):				115.4		Corrected Ave (3 peaks):			121.4	RPD = 5
Aroclor-1221	1	4.017	0.002	3341	160.6	1	4.679	0.002	8452	153.0
Aroclor-1221	2	5.453	0.002	5429	166.5	2	6.077	0.004	21053	166.4
Aroclor-1221	3	5.727	0.003	17948	203.7	3	6.414	0.005	55556	252.0
Total Col1Ave (3 peaks):				176.9		Total Col2Ave (3 peaks):			190.5	RPD = 7
Corrected Ave: < 3 Peaks						Corrected Ave: < 3 Peaks				
Aroclor-1232	1	4.017	-0.001	3341	261.5	1	4.679	-0.000	8452	256.9
Aroclor-1232	2	5.727	0.001	17948	258.4	2	7.059	0.001	54454	283.3
Aroclor-1232	3	7.037	0.003	32172	303.5	3	7.656	0.005	111127	288.8
Aroclor-1232	4	7.974	0.002	13693	314.0	4	8.524	0.002	31722	316.5
Total Col1Ave (4 peaks):				284.4		Total Col2Ave (4 peaks):			286.4	RPD = 1
Corrected Ave (3 peaks):				274.5		Corrected Ave (3 peaks):			276.3	RPD = 1
Aroclor-1242	1	6.663	0.004	11471	158.0	1	7.059	0.002	54454	160.9
Aroclor-1242	2	7.037	0.007	32172	148.7	2	7.656	0.008	111127	151.2
Aroclor-1242	3	8.385	0.010	20544	167.6	3	8.959	0.010	61163	178.1
Aroclor-1242	4	8.676	0.002	6934	138.4	4	9.041	0.013	55525	142.5
Total Col1Ave (4 peaks):				153.2		Total Col2Ave (4 peaks):			158.1	RPD = 3
Corrected Ave (3 peaks):				148.4		Corrected Ave (3 peaks):			151.5	RPD = 2
Aroclor-1248	1	7.804	0.005	9056	82.0	1	8.108	0.002	26255	86.1
Aroclor-1248	2	7.974	0.006	13693	95.0	2	8.524	0.003	31722	85.4
Aroclor-1248	3	8.385	0.010	20544	97.4	3	8.959	0.012	61163	103.4
Aroclor-1248	4	8.676	0.002	6934	57.6	4	9.391	0.015	44441	88.5
Total Col1Ave (4 peaks):				83.0		Total Col2Ave (4 peaks):			90.8	RPD = 9
Corrected Ave (3 peaks):				78.2		Corrected Ave (3 peaks):			86.7	RPD = 10
Aroclor-1254	1	8.676	0.000	6934	30.5	1	9.243	0.003	10554	16.9
Aroclor-1254	2	8.748	0.002	3715	35.3	2	9.391	0.060	44441	120.9
Aroclor-1254	3	9.050	0.008	2122	14.3	3	9.769	0.007	7619	16.0
Aroclor-1254	4	9.187	0.011	3159	11.2	4	9.922	0.009	13052	12.3
Aroclor-1254	5	9.896	0.029	1953	11.0	5	10.167	0.020	14279	13.3
Total Col1Ave (5 peaks):				20.5		Total Col2Ave (5 peaks):			35.9	RPD = 55*
Corrected Ave (4 peaks):				16.7		Corrected Ave (4 peaks):			14.6	RPD = 14
Aroclor-1260	1	10.388	0.005	30028	145.6	1	11.405	-0.020	170014	194.8
Aroclor-1260	2	10.704	0.004	2256	11.1	2	11.680	-0.001	78239	30.8
Aroclor-1260	3	11.056	0.005	17997	32.9	3	12.254	-0.007	838267	513.9
Aroclor-1260	4	11.458	0.006	301	1.2	4	12.972	0.000	307546	394.4
Aroclor-1260	5	11.557	0.003	165147	1353.6	NS	---			----
Total Col1Ave (5 peaks):				308.9		Total Col2Ave (4 peaks):			283.5	RPD = 9
Corrected Ave (4 peaks):				47.7		Corrected Ave (3 peaks):			206.7	RPD = 125*
Aroclor-1262	1	10.388	0.004	30028	107.4	1	10.971	0.001	118268	92.1
Aroclor-1262	2	11.458	0.004	301	1.7	2	11.680	-0.005	78239	28.9
Aroclor-1262	3	11.626	-0.000	172148	659.4	3	12.187	-0.001	744741	619.3
Aroclor-1262	4	12.276	0.002	62869	293.3	4	12.972	-0.000	307546	274.4
Total Col1Ave (4 peaks):				265.4		Total Col2Ave (4 peaks):			253.7	RPD = 5
Corrected Ave (3 peaks):				134.1		Corrected Ave (3 peaks):			131.8	RPD = 2
Aroclor-1268	1	11.557	-0.000	165147	268.6	1	12.187	-0.013	744741	246.9
Aroclor-1268	2	11.626	0.001	172148	266.9	2	12.254	-0.013	838267	254.7
Aroclor-1268	3	12.000	-0.000	135416	266.9	3	12.635	-0.009	744001	261.5
Aroclor-1268	4	12.770	-0.002	428256	261.7	4	12.782	-0.001	187584	266.5
Total Col1Ave (4 peaks):				266.0		Total Col2Ave (4 peaks):			257.4	RPD = 3

Corrected Ave (3 peaks): 265.2 Corrected Ave (3 peaks): 254.3 RPD = 4

Total PCB Area Col1 (5.169 - 13.066) = 1378298 Col1 Total PCB = 0.5 ppm*

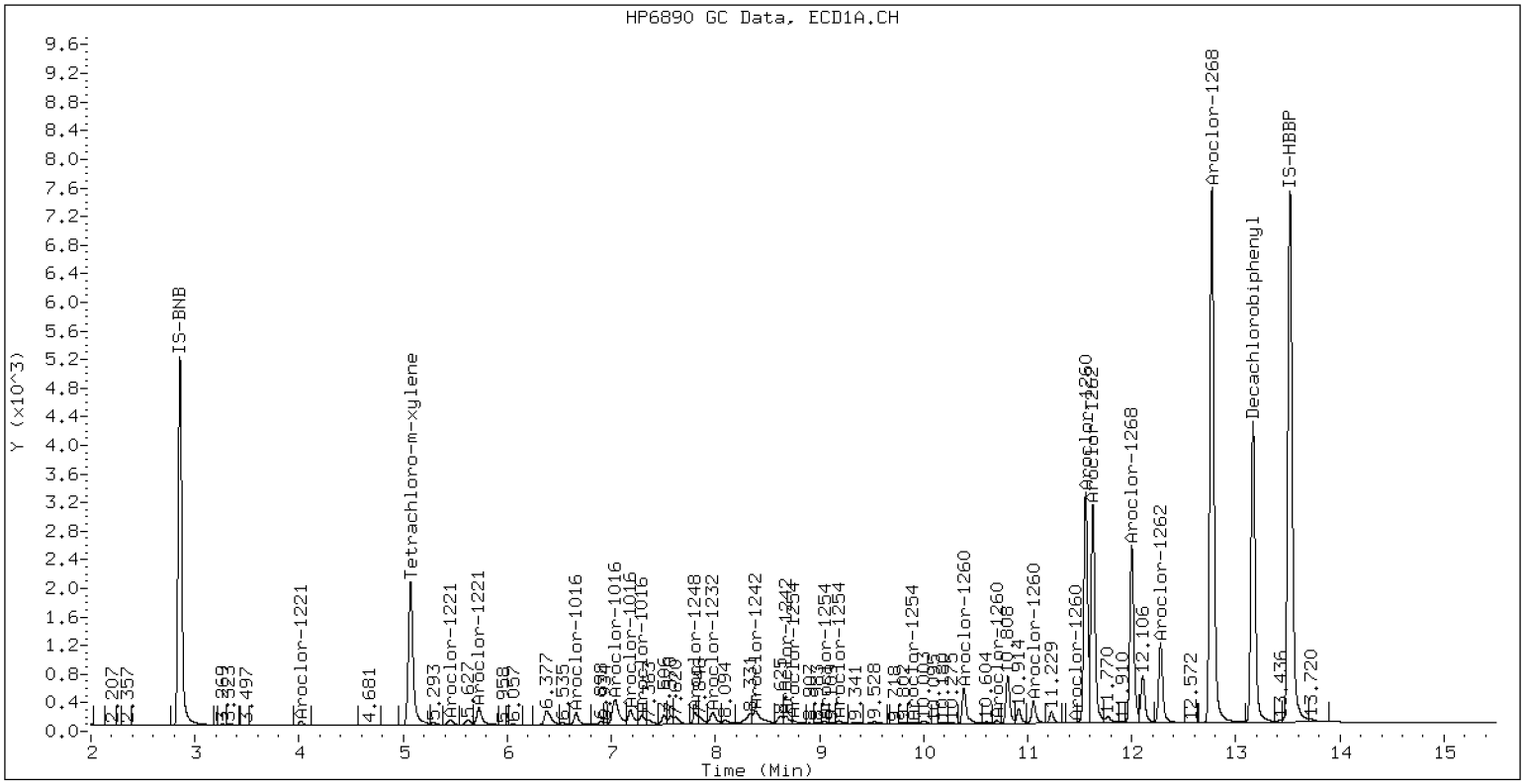
Total PCB Area Col2 (5.169 - 13.066) = 4537494 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

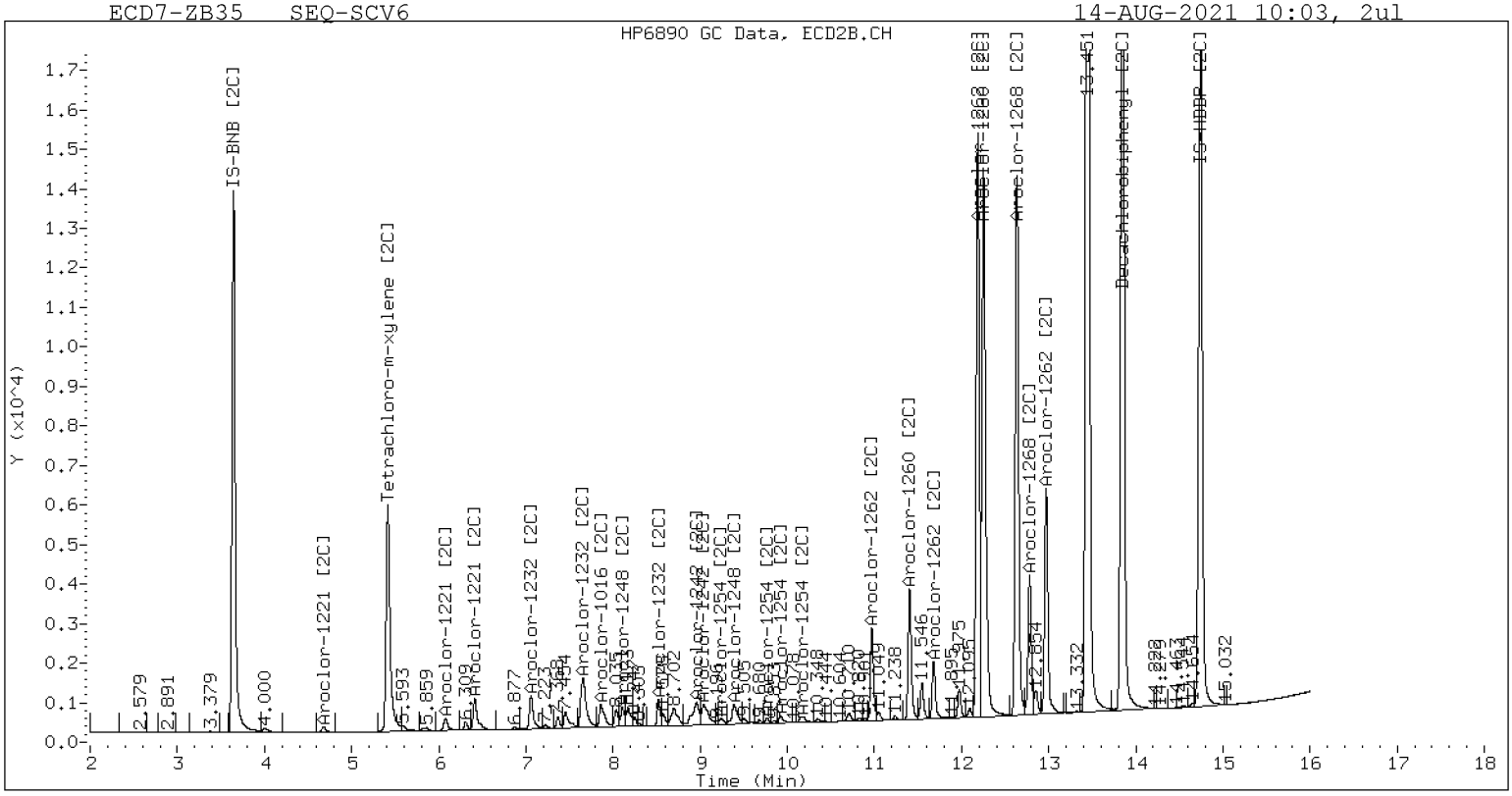
PCB Dual Column Chromatograms

ECD7-ZB5 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 SEQ-SCV6 14-AUG-2021 10:03, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08212113ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0335	Injection Date:	08/21/21
Lab Sample ID:	SJH0335-CCV1	Injection Time:	22:25
Sequence Name:	AR1248CCV1		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1248	A	250.00	262	0.0444871	0.0467282		4.6	+/-20
Aroclor-1248 (1)	A	250.00	266	0.0335259	0.0357493		6.4	
Aroclor-1248 (2)	A	250.00	272	0.0437624	0.0476339		8.8	
Aroclor-1248 (3)	A	250.00	264	0.0640809	0.0677767		5.6	
Aroclor-1248 (4)	A	250.00	244	0.0365791	0.0357530		-2.4	
Aroclor 1248 [2C]	A	250.00	252	0.0480909	0.0482503		0.8	+/-20
Aroclor-1248 (1) [2C]	A	250.00	260	0.0331517	0.0344933		4.0	
Aroclor-1248 (2) [2C]	A	250.00	253	0.0403519	0.0408363		1.2	
Aroclor-1248 (3) [2C]	A	250.00	252	0.0642727	0.0646717		0.8	
Aroclor-1248 (4) [2C]	A	250.00	243	0.0545874	0.0530000		-2.8	
Decachlorobiphenyl	A	40.000	41.3	0.7261970	0.7500214		3.3	+/-20
Tetrachlorometaxylene	A	40.000	41.7	0.9669678	1.0079160		4.3	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.8	1.7775950	1.7243770		-3.0	+/-20
Tetrachlorometaxylene [2C]	A	40.000	40.5	1.0280520	1.0412380		1.3	+/-20

* Values outside of QC limits

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212113ECD7.D
Data file 2: /210821.b/210821.b/08212113ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: AR1248.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1248CCV1
Client ID:
Injection Date: 21-AUG-2021 22:25
Report Date: 08/25/2021 16:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	130252	5.412	-0.000	390456	41.7	40.5	2.9	Tetrachloro-m-xylene
13.162	-0.001	157410	13.844	-0.001	822139	41.3	38.8	6.3	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	258458	-0.2
Hexabromobiphenyl	425681	419748	-1.4

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	749984	4.0
Hexabromobiphenyl	863111	953549	10.5

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	RT	Shift	Area	Amount	Peak#	RT	Shift	Area	Amount
		ZB5 Col					ZB35 Col			
Aroclor-1248	1	7.800	0.000	28874	266.6	1	8.104	0.000	80842	260.1
Aroclor-1248	2	7.970	0.000	38473	272.1	2	8.518	0.000	95708	253.0
Aroclor-1248	3	8.380	0.000	54742	264.4	3	8.949	0.000	151571	251.6
Aroclor-1248	4	8.675	0.000	28877	244.4	4	9.380	0.000	124216	242.7

Total Col1Ave (4 peaks): 261.9 Total Col2Ave (4 peaks): 251.9 RPD = 4

Corrected Ave (3 peaks): 258.5 Corrected Ave (3 peaks): 249.1 RPD = 4

CalAmt %D: 4.7 CalAmt %D: 0.7

Total PCB Area Col1 (5.169 - 13.064) = 595828 Col1 Total PCB = 0.2 ppm*

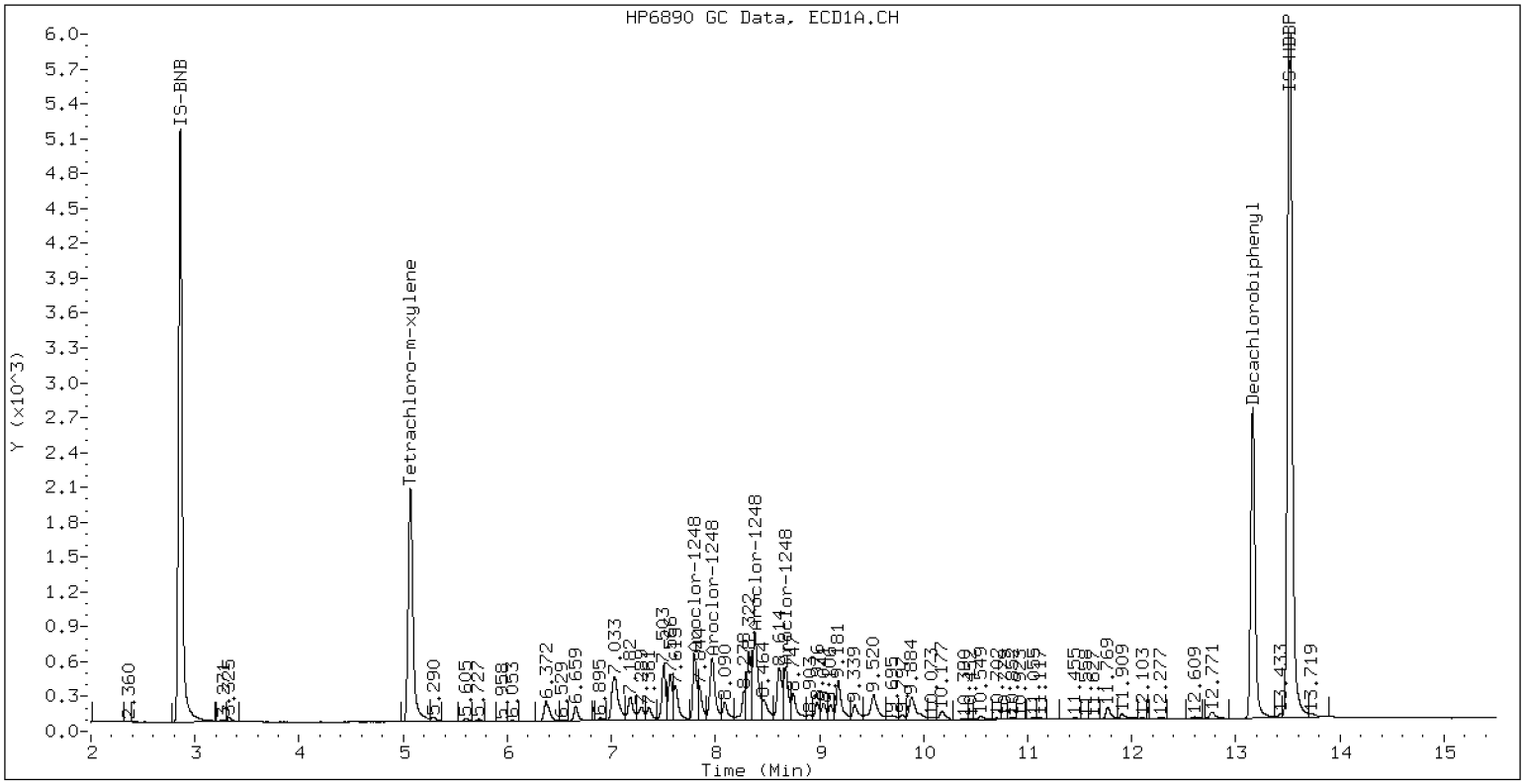
Total PCB Area Col2 (5.169 - 13.064) = 2206224 Col2 Total PCB = 0.2 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

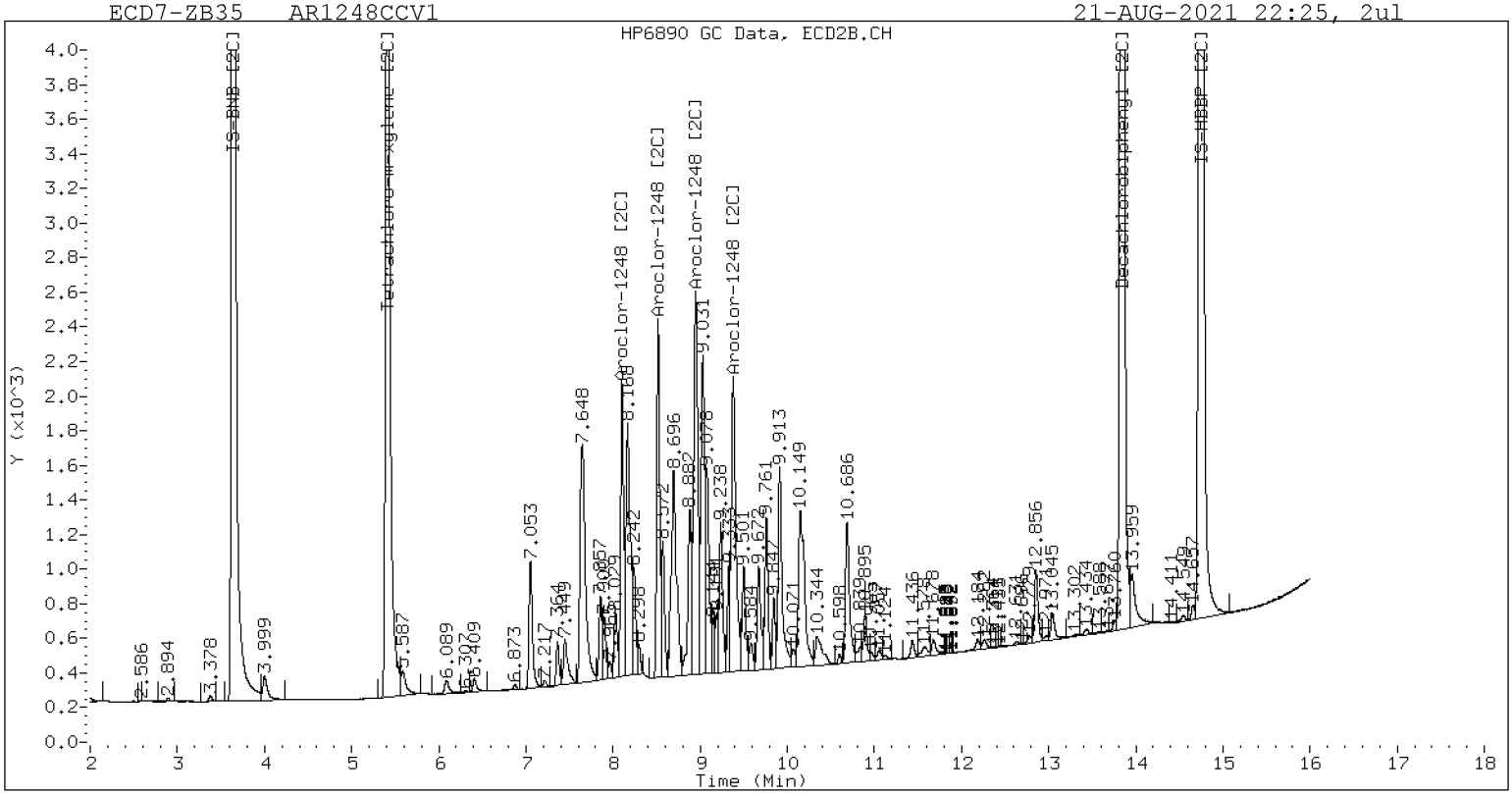
PCB Dual Column Chromatograms

ECD7-ZB5 AR1248CCV1 21-AUG-2021 22:25, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1248CCV1 21-AUG-2021 22:25, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

CONTINUING CALIBRATION CHECK
EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Instrument ID:	ECD7	Calibration:	EH00034
Lab File ID:	08212114ECD7.D	Calibration Date:	08/13/2021
Sequence:	SJH0335	Injection Date:	08/21/21
Lab Sample ID:	SJH0335-CCV2	Injection Time:	22:45
Sequence Name:	AR1660CCV2		

		CONC. (ug/L)		RESPONSE FACTOR (RRF)			% DRIFT/DIFF	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Aroclor 1016	A	250.00	270	0.0446218	0.0483070		8.0	+/-20
Aroclor-1016 (1)	A	250.00	269	0.0283733	0.0305400		7.6	
Aroclor-1016 (2)	A	250.00	271	0.0867650	0.0941584		8.4	
Aroclor-1016 (3)	A	250.00	270	0.0389383	0.0421368		8.0	
Aroclor-1016 (4)	A	250.00	270	0.0244108	0.0263930		8.0	
Aroclor 1016 [2C]	A	250.00	273	0.0529840	0.0575734		9.1	+/-20
Aroclor-1016 (1) [2C]	A	250.00	265	0.0456173	0.0482895		6.0	
Aroclor-1016 (2) [2C]	A	250.00	271	0.1020378	0.1107421		8.4	
Aroclor-1016 (3) [2C]	A	250.00	275	0.0400455	0.0440765		10.0	
Aroclor-1016 (4) [2C]	A	250.00	280	0.0242353	0.0271852		12.0	
Aroclor 1260	A	250.00	265	0.0461251	0.0490612		6.0	+/-20
Aroclor-1260 (1)	A	250.00	249	0.0359923	0.0358738		-0.4	
Aroclor-1260 (2)	A	250.00	269	0.0353250	0.0380768		7.6	
Aroclor-1260 (3)	A	250.00	267	0.0954741	0.1021355		6.8	
Aroclor-1260 (4)	A	250.00	273	0.0425365	0.0464386		9.2	
Aroclor-1260 (5)	A	250.00	267	0.0212978	0.0227811		6.8	
Aroclor 1260 [2C]	A	250.00	239	0.1108773	0.1047203		-4.6	+/-20
Aroclor-1260 (1) [2C]	A	250.00	232	0.0665032	0.0616686		-7.2	
Aroclor-1260 (2) [2C]	A	250.00	232	0.1932922	0.1797233		-7.2	
Aroclor-1260 (3) [2C]	A	250.00	236	0.1242917	0.1171042		-5.6	
Aroclor-1260 (4) [2C]	A	250.00	254	0.0594222	0.0603850		1.6	
Decachlorobiphenyl	A	40.000	42.2	0.7261970	0.7658702		5.5	+/-20
Tetrachlorometaxylene	A	40.000	43.2	0.9669678	1.0447340		8.0	+/-20
Decachlorobiphenyl [2C]	A	40.000	38.9	1.7775950	1.7272300		-2.8	+/-20
Tetrachlorometaxylene [2C]	A	40.000	41.7	1.0280520	1.0721500		4.3	+/-20

* Values outside of QC limits

Analytical Resources Inc.
Dual Column 608/8082 PCB Quantitation Report

Data file 1: /210821.b/08212114ECD7.D
Data file 2: /210821.b/210821.b/08212114ECD7.D
Method: \\target\share\chem4\ecd7.i\210821.b\PCB.m
Compound Sublist: AR1660.sub
Instrument, Inj. Vol.: ecd7.i, 2ul
Quant Method: Internal Std

ARI ID: AR1660CCV2
Client ID:
Injection Date: 21-AUG-2021 22:45
Report Date: 08/25/2021 16:46
Matrix: NONE
Dilution Factor: 1.0

SURROGATES

ZB5 Col RT	Shift	Response	ZB35 Col RT	Shift	Response	ZB5 on col	ZB35 on col	RPD	Compound/Flag
5.069	0.000	132292	5.412	0.000	391049	43.2	41.7	3.5	Tetrachloro-m-xylene
13.164	0.000	159530	13.844	0.000	848942	42.2	38.9	8.2	Decachlorobiphenyl

* Indicates RPD > 40%

INTERNAL STANDARD SUMMARY

Column 1

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	258866	253255	-2.2
Hexabromobiphenyl	425681	416598	-2.1

Column 2

Standard Cpnd	Standard Area*	Sample Area	%D
Bromo-Nitrobenzene	720956	729467	1.2
Hexabromobiphenyl	863111	983010	13.9

* Standard Areas taken from Initial Cal Level 3
Initial Calibration Date: 13-AUG-2021
<- Indicates standard response outside Limits (-50 to +100%)

Aroclor	Peak#	ZB5 Col RT	Shift	Area	Amount	Peak#	ZB35 Col RT	Shift	Area	Amount
Aroclor-1016	1	6.660	0.000	24170	269.1	1	7.054	0.000	110080	264.6
Aroclor-1016	2	7.033	0.000	74519	271.3	2	7.649	0.000	252446	271.3
Aroclor-1016	3	7.178	0.000	33348	270.5	3	7.856	0.000	100476	275.2
Aroclor-1016	4	7.288	0.000	20888	270.3	4	8.103	0.000	61971	280.4

Total Col1Ave (4 peaks): 270.3 Total Col2Ave (4 peaks): 272.9 RPD = 1
Corrected Ave (3 peaks): 270.0 Corrected Ave (3 peaks): 270.4 RPD = 0

CalAmt %D: 8.1 CalAmt %D: 9.2

Aroclor-1260	1	10.384	0.000	46703	249.2	1	11.423	0.000	189440	231.8
Aroclor-1260	2	10.702	0.000	49571	269.5	2	11.676	0.000	552093	232.5
Aroclor-1260	3	11.053	0.000	132967	267.4	3	12.259	0.000	359733	235.5
Aroclor-1260	4	11.454	0.000	60457	272.9	4	12.969	0.000	185497	254.1
Aroclor-1260	5	11.555	0.000	29658	267.4	NS	---			----

Total Col1Ave (5 peaks): 265.3 Total Col2Ave (4 peaks): 238.5 RPD = 11
Corrected Ave (4 peaks): 263.4 Corrected Ave (3 peaks): 233.3 RPD = 12

CalAmt %D: 6.1 CalAmt %D: -4.6

Total PCB Area Col1 (5.169 - 13.064) = 1327431 Col1 Total PCB = 0.5 ppm*

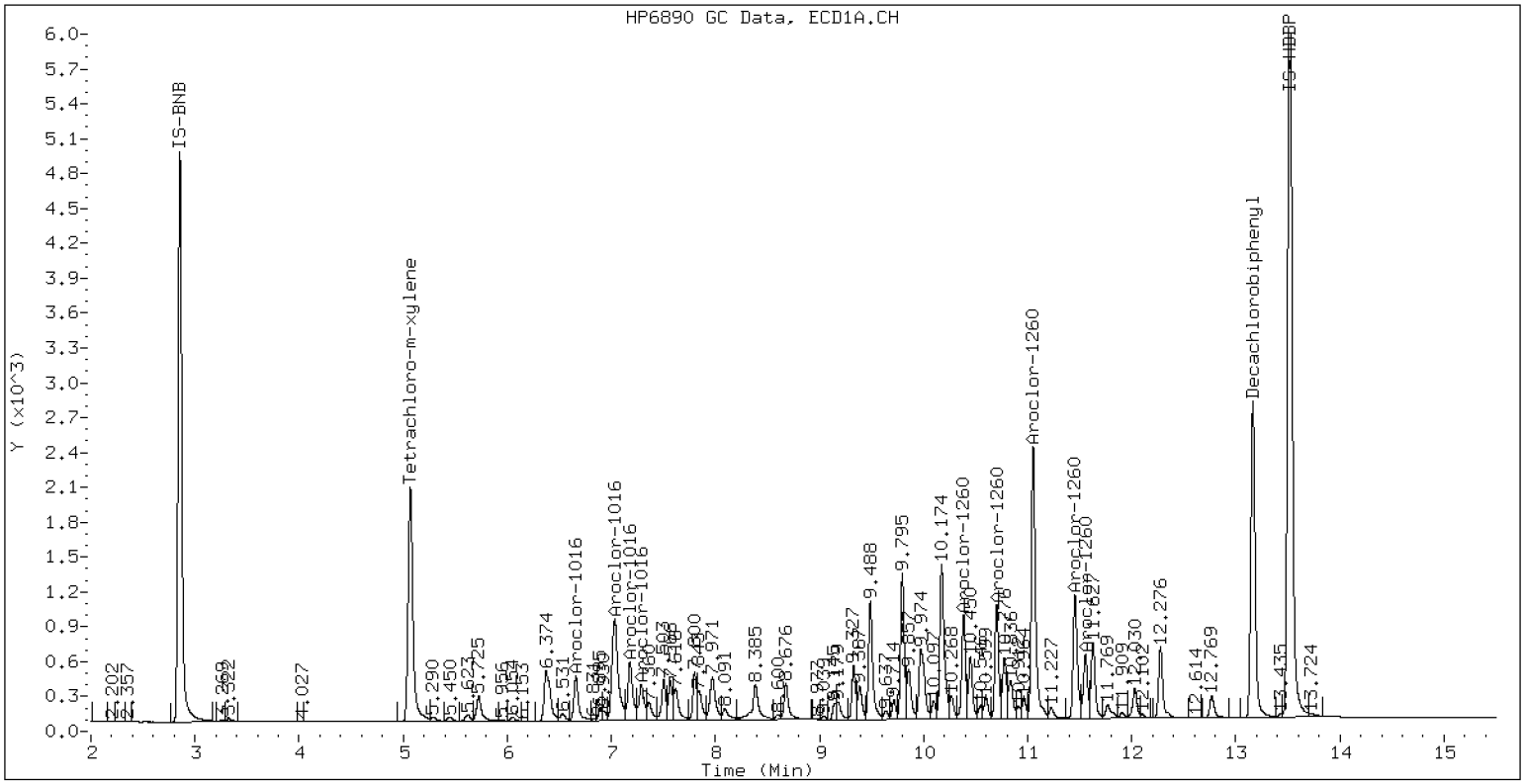
Total PCB Area Col2 (5.169 - 13.064) = 5076046 Col2 Total PCB = 0.5 ppm*

* Quantitated against AR1660 0.25ppm in Ical

PCB-Form 10 Mod.

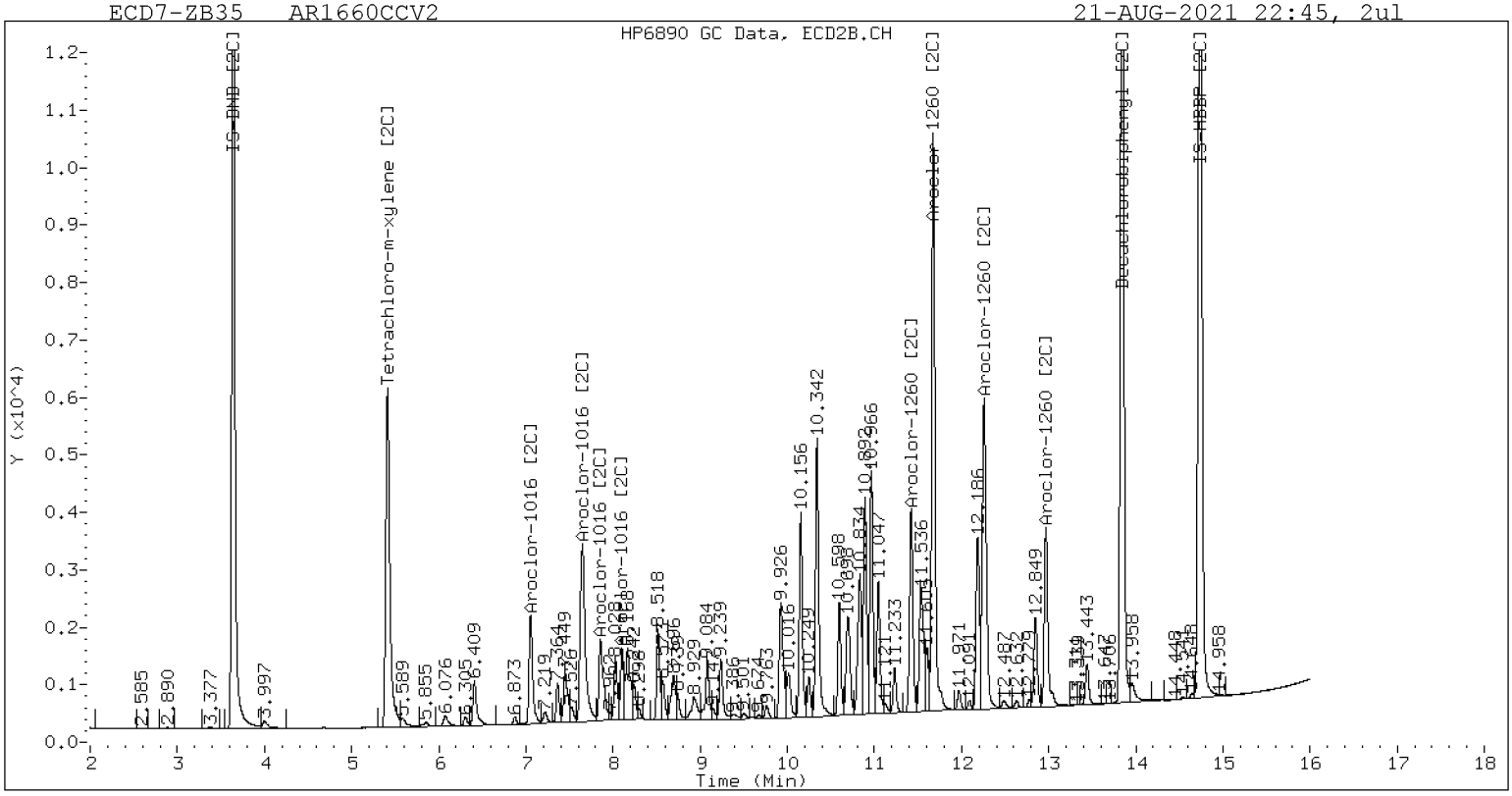
PCB Dual Column Chromatograms

ECD7-ZB5 AR1660CCV2 21-AUG-2021 22:45, 2ul



ZB-5 Manual Integration: NO

ECD7-ZB35 AR1660CCV2 21-AUG-2021 22:45, 2ul



ZB-35 Manual Integration: NO

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0176	Instrument:	ECD7
		Calibration:	EH00034

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SJH0176-CAL1	08132105ECD7.D	08132105ECD7.D	NA	08/13/21 20:03
Cal Standard	SJH0176-CAL2	08132106ECD7.D	08132106ECD7.D	NA	08/13/21 20:24
Cal Standard	SJH0176-CAL3	08132107ECD7.D	08132107ECD7.D	NA	08/13/21 20:44
Cal Standard	SJH0176-CAL4	08132108ECD7.D	08132108ECD7.D	NA	08/13/21 21:05
Cal Standard	SJH0176-CAL5	08132109ECD7.D	08132109ECD7.D	NA	08/13/21 21:25
Cal Standard	SJH0176-CAL6	08132110ECD7.D	08132110ECD7.D	NA	08/13/21 21:46
Cal Standard	SJH0176-CAL7	08132111ECD7.D	08132111ECD7.D	NA	08/13/21 22:06
Cal Standard	SJH0176-CAL8	08132112ECD7.D	08132112ECD7.D	NA	08/13/21 22:27
Cal Standard	SJH0176-CAL9	08132113ECD7.D	08132113ECD7.D	NA	08/13/21 22:47
Cal Standard	SJH0176-CALA	08132114ECD7.D	08132114ECD7.D	NA	08/13/21 23:08
Cal Standard	SJH0176-CALB	08132115ECD7.D	08132115ECD7.D	NA	08/13/21 23:28
Cal Standard	SJH0176-CALC	08132116ECD7.D	08132116ECD7.D	NA	08/13/21 23:49
Cal Standard	SJH0176-CALD	08132117ECD7.D	08132117ECD7.D	NA	08/14/21 00:09
Cal Standard	SJH0176-CALE	08132118ECD7.D	08132118ECD7.D	NA	08/14/21 00:30
Cal Standard	SJH0176-CALF	08132119ECD7.D	08132119ECD7.D	NA	08/14/21 00:50
Cal Standard	SJH0176-CALG	08132120ECD7.D	08132120ECD7.D	NA	08/14/21 01:11
Cal Standard	SJH0176-CALH	08132121ECD7.D	08132121ECD7.D	NA	08/14/21 01:31
Cal Standard	SJH0176-CALI	08132122ECD7.D	08132122ECD7.D	NA	08/14/21 01:52

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 8/16/2021 5:13:05PM

ANALYSIS SEQUENCE

SJH0176

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0176-CAL1	0.02PPM AR1660	QC		1	J008420	J008446	
SJH0176-CAL2	0.05PPM AR1660	QC		2	J008419	J008446	
SJH0176-CAL3	0.1PPM AR1660	QC		3	J008418	J008446	
SJH0176-CAL4	0.25PPM AR1660	QC		4	J008417	J008446	
SJH0176-CAL5	0.5PPM AR1660	QC		5	J008416	J008446	
SJH0176-CAL6	1PPM AR1660	QC		6	J008134	J008446	
SJH0176-CAL7	0.02PPM AR1242	QC		7	J008425	J008446	
SJH0176-CAL8	0.05PPM AR1242	QC		8	J008424	J008446	
SJH0176-CAL9	0.1PPM AR1242	QC		9	J008423	J008446	
SJH0176-CALA	0.25PPM AR1242	QC		10	J008422	J008446	
SJH0176-CALB	0.5PPM AR1242	QC		11	J008421	J008446	
SJH0176-CALC	1PPM AR1242	QC		12	J008397	J008446	
SJH0176-CALD	0.02PPM AR1248	QC		13	J008430	J008446	
SJH0176-CALE	0.05PPM AR1248	QC		14	J008429	J008446	
SJH0176-CALF	0.1PPM AR1248	QC		15	J008428	J008446	
SJH0176-CALG	0.25PPM AR1248	QC		16	J008427	J008446	
SJH0176-CALH	0.5PPM AR1248	QC		17	J008426	J008446	
SJH0176-CALI	1PPM AR1248	QC		18	J008398	J008446	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 13-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242,
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242,
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242,
2308	08132114.D	SEQ-CALA		1	Aroclor-1242,
2328	08132115.D	SEQ-CALB		1	Aroclor-1242,
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0030	08132118.D	SEQ-CALE		1	Aroclor-1248,
0050	08132119.D	SEQ-CALF		1	Aroclor-1248,
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	NO MANUAL INTEGRATION
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION
0841	08132142.D	SEQ-SCV2		1	NO MANUAL INTEGRATION
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242 [2C],
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242 [2C],
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242 [2C],
2308	08132114.D	SEQ-CALA		1	NO MANUAL INTEGRATION
2328	08132115.D	SEQ-CALB		1	NO MANUAL INTEGRATION
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248 [2C],
0030	08132118.D	SEQ-CALE		1	Aroclor-1248 [2C],
0050	08132119.D	SEQ-CALF		1	NO MANUAL INTEGRATION
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	Aroclor-1248 [2C],
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0841	08132142.D	SEQ-SCV2		1	Aroclor-1242 [2C], Aroclor-1248 [2C],
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	13-AUG-2021 18:41	08132101.D	1	RINSE	
2	13-AUG-2021 19:02	08132102.D	1	RINSE	
3	13-AUG-2021 19:22	08132103.D	1	RINSE	
4	13-AUG-2021 19:43	08132104.D	1	SEQ-IBL1	
5	13-AUG-2021 20:03	08132105.D	1	SEQ-CAL1	
6	13-AUG-2021 20:24	08132106.D	1	SEQ-CAL2	
7	13-AUG-2021 20:44	08132107.D	1	SEQ-CAL3	
8	13-AUG-2021 21:05	08132108.D	1	SEQ-CAL4	
9	13-AUG-2021 21:25	08132109.D	1	SEQ-CAL5	
10	13-AUG-2021 21:46	08132110.D	1	SEQ-CAL6	
11	13-AUG-2021 22:06	08132111.D	1	SEQ-CAL7	
12	13-AUG-2021 22:27	08132112.D	1	SEQ-CAL8	
13	13-AUG-2021 22:47	08132113.D	1	SEQ-CAL9	
14	13-AUG-2021 23:08	08132114.D	1	SEQ-CALA	
15	13-AUG-2021 23:28	08132115.D	1	SEQ-CALB	
16	13-AUG-2021 23:49	08132116.D	1	SEQ-CALC	
17	14-AUG-2021 00:09	08132117.D	1	SEQ-CALD	
18	14-AUG-2021 00:30	08132118.D	1	SEQ-CALE	
19	14-AUG-2021 00:50	08132119.D	1	SEQ-CALF	
20	14-AUG-2021 01:11	08132120.D	1	SEQ-CALG	
21	14-AUG-2021 01:31	08132121.D	1	SEQ-CALH	
22	14-AUG-2021 01:52	08132122.D	1	SEQ-CALI	
23	14-AUG-2021 02:12	08132123.D	1	SEQ-CALJ	
24	14-AUG-2021 02:33	08132124.D	1	SEQ-CALK	
25	14-AUG-2021 02:53	08132125.D	1	SEQ-CALL	
26	14-AUG-2021 03:13	08132126.D	1	SEQ-CALM	
27	14-AUG-2021 03:34	08132127.D	1	SEQ-CALN	
28	14-AUG-2021 03:54	08132128.D	1	SEQ-CALO	
29	14-AUG-2021 04:15	08132129.D	1	SEQ-CALP	
30	14-AUG-2021 04:35	08132130.D	1	SEQ-CALQ	
31	14-AUG-2021 04:56	08132131.D	1	SEQ-CALR	
32	14-AUG-2021 05:16	08132132.D	1	SEQ-CALS	
33	14-AUG-2021 05:37	08132133.D	1	SEQ-CALT	
34	14-AUG-2021 05:57	08132134.D	1	SEQ-CALU	
35	14-AUG-2021 06:18	08132135.D	1	SEQ-CALV	
36	14-AUG-2021 06:38	08132136.D	1	SEQ-CALW	
37	14-AUG-2021 06:59	08132137.D	1	SEQ-CALX	
38	14-AUG-2021 07:19	08132138.D	1	SEQ-CALY	
39	14-AUG-2021 07:40	08132139.D	1	SEQ-CALZ	
40	14-AUG-2021 08:00	08132140.D	1	SEQ-CALAA	
41	14-AUG-2021 08:21	08132141.D	1	SEQ-SCV1	
42	14-AUG-2021 08:41	08132142.D	1	SEQ-SCV2	
43	14-AUG-2021 09:02	08132143.D	1	SEQ-SCV3	
44	14-AUG-2021 09:22	08132144.D	1	SEQ-SCV4	
45	14-AUG-2021 09:43	08132145.D	1	SEQ-SCV5	
46	14-AUG-2021 10:03	08132146.D	1	SEQ-SCV6	
47	14-AUG-2021 10:24	08132147.D	1	0.1PPMDDTS	
48	14-AUG-2021 10:44	08132148.D	1	DS	

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132102ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132103ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132104ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132105ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132106ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132107ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132108ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132109ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132110ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132111ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132112ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132113ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132114ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132115ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132116ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132117ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132118ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132119ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132120ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132121ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132122ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132123ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132124ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132125ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132126ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132127ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132128ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132129ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132130ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132131ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132132ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132133ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132134ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132135ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132136ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132137ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132138ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132139ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132140ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132141ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132142ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132143ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132144ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

08132145ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132146ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132147ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132148ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0177	Instrument:	ECD7
		Calibration:	EH00034

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Cal Standard	SJH0177-CAL1	08132123ECD7.D	08132123ECD7.D	NA	08/14/21 02:12
Cal Standard	SJH0177-CAL2	08132124ECD7.D	08132124ECD7.D	NA	08/14/21 02:33
Cal Standard	SJH0177-CAL3	08132125ECD7.D	08132125ECD7.D	NA	08/14/21 02:53
Cal Standard	SJH0177-CAL4	08132126ECD7.D	08132126ECD7.D	NA	08/14/21 03:13
Cal Standard	SJH0177-CAL5	08132127ECD7.D	08132127ECD7.D	NA	08/14/21 03:34
Cal Standard	SJH0177-CAL6	08132128ECD7.D	08132128ECD7.D	NA	08/14/21 03:54
Cal Standard	SJH0177-CAL7	08132129ECD7.D	08132129ECD7.D	NA	08/14/21 04:15
Cal Standard	SJH0177-CAL8	08132130ECD7.D	08132130ECD7.D	NA	08/14/21 04:35
Cal Standard	SJH0177-CAL9	08132131ECD7.D	08132131ECD7.D	NA	08/14/21 04:56
Cal Standard	SJH0177-CALA	08132132ECD7.D	08132132ECD7.D	NA	08/14/21 05:16
Cal Standard	SJH0177-CALB	08132133ECD7.D	08132133ECD7.D	NA	08/14/21 05:37
Cal Standard	SJH0177-CALC	08132134ECD7.D	08132134ECD7.D	NA	08/14/21 05:57
Cal Standard	SJH0177-CALD	08132135ECD7.D	08132135ECD7.D	NA	08/14/21 06:18
Cal Standard	SJH0177-CALE	08132136ECD7.D	08132136ECD7.D	NA	08/14/21 06:38
Cal Standard	SJH0177-CALF	08132137ECD7.D	08132137ECD7.D	NA	08/14/21 06:59
Cal Standard	SJH0177-CALG	08132138ECD7.D	08132138ECD7.D	NA	08/14/21 07:19
Cal Standard	SJH0177-CALH	08132139ECD7.D	08132139ECD7.D	NA	08/14/21 07:40
Cal Standard	SJH0177-CALI	08132140ECD7.D	08132140ECD7.D	NA	08/14/21 08:00
Secondary Cal Check	SJH0177-SCV1	08132141ECD7.D	08132141ECD7.D	NA	08/14/21 08:21
Secondary Cal Check	SJH0177-SCV2	08132142ECD7.D	08132142ECD7.D	NA	08/14/21 08:41
Secondary Cal Check	SJH0177-SCV3	08132143ECD7.D	08132143ECD7.D	NA	08/14/21 09:02
Secondary Cal Check	SJH0177-SCV4	08132144ECD7.D	08132144ECD7.D	NA	08/14/21 09:22
Secondary Cal Check	SJH0177-SCV5	08132145ECD7.D	08132145ECD7.D	NA	08/14/21 09:43
Secondary Cal Check	SJH0177-SCV6	08132146ECD7.D	08132146ECD7.D	NA	08/14/21 10:03

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Printed: 8/16/2021 5:27:01PM

ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-CAL1	0.02PPM AR1254	QC		1	J008435	J008446	
SJH0177-CAL2	0.05PPM AR1254	QC		2	J008434	J008446	
SJH0177-CAL3	0.1PPM AR1254	QC		3	J008433	J008446	
SJH0177-CAL4	0.25PPM AR1254	QC		4	J008432	J008446	
SJH0177-CAL5	0.5PPM AR1254	QC		5	J008431	J008446	
SJH0177-CAL6	1PPM AR1254	QC		6	J008399	J008446	
SJH0177-CAL7	0.02PPM AR2162	QC		7	J008440	J008446	
SJH0177-CAL8	0.05PPM AR2162	QC		8	J008439	J008446	
SJH0177-CAL9	0.1PPM AR2162	QC		9	J008438	J008446	
SJH0177-CALA	0.25PPM AR2162	QC		10	J008437	J008446	
SJH0177-CALB	0.5PPM AR2162	QC		11	J008436	J008446	
SJH0177-CALC	1PPM AR2162	QC		12	J008400	J008446	
SJH0177-CALD	0.02PPM AR3268	QC		13	J008445	J008446	
SJH0177-CALE	0.05PPM AR3268	QC		14	J008444	J008446	
SJH0177-CALF	0.1PPM AR3268	QC		15	J008443	J008446	
SJH0177-CALG	0.25PPM AR3268	QC		16	J008442	J008446	
SJH0177-CALH	0.5PPM AR3268	QC		17	J008441	J008446	
SJH0177-CALI	1PPM AR3268	QC		18	J008401	J008446	
SJH0177-SCV1	AR1660SCV1	QC		19	J008139	J008446	
SJH0177-SCV2	AR1242SCV2	QC		20	J008140	J008446	
SJH0177-SCV3	AR1248SCV3	QC		21	J008141	J008446	
SJH0177-SCV4	AR1254SCV4	QC		22	J008142	J008446	

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Printed: 8/16/2021 5:27:01PM

ANALYSIS SEQUENCE

SJH0177

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0177-SCV5	AR2162SCV5	QC		23	J008143	J008446	
SJH0177-SCV6	AR3268SCV6	QC		24	J008144	J008446	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

ARI Job No.: RINS Method: PCB.m Instrument: ecd7.i Date: 13-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242,
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242,
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242,
2308	08132114.D	SEQ-CALA		1	Aroclor-1242,
2328	08132115.D	SEQ-CALB		1	Aroclor-1242,
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0030	08132118.D	SEQ-CALE		1	Aroclor-1248,
0050	08132119.D	SEQ-CALF		1	Aroclor-1248,
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	NO MANUAL INTEGRATION
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION
0841	08132142.D	SEQ-SCV2		1	NO MANUAL INTEGRATION
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION
1841	08132101.D	RINSE		1	NO MANUAL INTEGRATION
1902	08132102.D	RINSE		1	NO MANUAL INTEGRATION
1922	08132103.D	RINSE		1	NO MANUAL INTEGRATION
1943	08132104.D	SEQ-IBL1		1	NO MANUAL INTEGRATION
2003	08132105.D	SEQ-CAL1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
2024	08132106.D	SEQ-CAL2		1	NO MANUAL INTEGRATION
2044	08132107.D	SEQ-CAL3		1	NO MANUAL INTEGRATION
2105	08132108.D	SEQ-CAL4		1	NO MANUAL INTEGRATION
2125	08132109.D	SEQ-CAL5		1	NO MANUAL INTEGRATION
2146	08132110.D	SEQ-CAL6		1	NO MANUAL INTEGRATION
2206	08132111.D	SEQ-CAL7		1	Aroclor-1242 [2C],
2227	08132112.D	SEQ-CAL8		1	Aroclor-1242 [2C],
2247	08132113.D	SEQ-CAL9		1	Aroclor-1242 [2C],
2308	08132114.D	SEQ-CALA		1	NO MANUAL INTEGRATION
2328	08132115.D	SEQ-CALB		1	NO MANUAL INTEGRATION
2349	08132116.D	SEQ-CALC		1	NO MANUAL INTEGRATION
0009	08132117.D	SEQ-CALD		1	Aroclor-1248 [2C],
0030	08132118.D	SEQ-CALE		1	Aroclor-1248 [2C],
0050	08132119.D	SEQ-CALF		1	NO MANUAL INTEGRATION
0111	08132120.D	SEQ-CALG		1	NO MANUAL INTEGRATION
0131	08132121.D	SEQ-CALH		1	NO MANUAL INTEGRATION
0152	08132122.D	SEQ-CALI		1	Aroclor-1248 [2C],
0212	08132123.D	SEQ-CALJ		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0233	08132124.D	SEQ-CALK		1	NO MANUAL INTEGRATION
0253	08132125.D	SEQ-CALL		1	NO MANUAL INTEGRATION
0313	08132126.D	SEQ-CALM		1	NO MANUAL INTEGRATION
0334	08132127.D	SEQ-CALN		1	NO MANUAL INTEGRATION
0354	08132128.D	SEQ-CALO		1	NO MANUAL INTEGRATION
0415	08132129.D	SEQ-CALP		1	NO MANUAL INTEGRATION
0435	08132130.D	SEQ-CALQ		1	NO MANUAL INTEGRATION
0456	08132131.D	SEQ-CALR		1	NO MANUAL INTEGRATION
0516	08132132.D	SEQ-CALS		1	NO MANUAL INTEGRATION
0537	08132133.D	SEQ-CALT		1	NO MANUAL INTEGRATION
0557	08132134.D	SEQ-CALU		1	NO MANUAL INTEGRATION
0618	08132135.D	SEQ-CALV		1	NO MANUAL INTEGRATION
0638	08132136.D	SEQ-CALW		1	NO MANUAL INTEGRATION
0659	08132137.D	SEQ-CALX		1	NO MANUAL INTEGRATION
0719	08132138.D	SEQ-CALY		1	NO MANUAL INTEGRATION
0740	08132139.D	SEQ-CALZ		1	NO MANUAL INTEGRATION
0800	08132140.D	SEQ-CALAA		1	NO MANUAL INTEGRATION
0821	08132141.D	SEQ-SCV1		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b\210813.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
0841	08132142.D	SEQ-SCV2		1	Aroclor-1242 [2C], Aroclor-1248 [2C],
0902	08132143.D	SEQ-SCV3		1	NO MANUAL INTEGRATION
0922	08132144.D	SEQ-SCV4		1	NO MANUAL INTEGRATION
0943	08132145.D	SEQ-SCV5		1	NO MANUAL INTEGRATION
1003	08132146.D	SEQ-SCV6		1	NO MANUAL INTEGRATION
1024	08132147.D	0.1PPMDDTS		1	NO MANUAL INTEGRATION
1044	08132148.D	DS		1	NO MANUAL INTEGRATION

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210813.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	13-AUG-2021 18:41	08132101.D	1	RINSE	
2	13-AUG-2021 19:02	08132102.D	1	RINSE	
3	13-AUG-2021 19:22	08132103.D	1	RINSE	
4	13-AUG-2021 19:43	08132104.D	1	SEQ-IBL1	
5	13-AUG-2021 20:03	08132105.D	1	SEQ-CAL1	
6	13-AUG-2021 20:24	08132106.D	1	SEQ-CAL2	
7	13-AUG-2021 20:44	08132107.D	1	SEQ-CAL3	
8	13-AUG-2021 21:05	08132108.D	1	SEQ-CAL4	
9	13-AUG-2021 21:25	08132109.D	1	SEQ-CAL5	
10	13-AUG-2021 21:46	08132110.D	1	SEQ-CAL6	
11	13-AUG-2021 22:06	08132111.D	1	SEQ-CAL7	
12	13-AUG-2021 22:27	08132112.D	1	SEQ-CAL8	
13	13-AUG-2021 22:47	08132113.D	1	SEQ-CAL9	
14	13-AUG-2021 23:08	08132114.D	1	SEQ-CALA	
15	13-AUG-2021 23:28	08132115.D	1	SEQ-CALB	
16	13-AUG-2021 23:49	08132116.D	1	SEQ-CALC	
17	14-AUG-2021 00:09	08132117.D	1	SEQ-CALD	
18	14-AUG-2021 00:30	08132118.D	1	SEQ-CALE	
19	14-AUG-2021 00:50	08132119.D	1	SEQ-CALF	
20	14-AUG-2021 01:11	08132120.D	1	SEQ-CALG	
21	14-AUG-2021 01:31	08132121.D	1	SEQ-CALH	
22	14-AUG-2021 01:52	08132122.D	1	SEQ-CALI	
23	14-AUG-2021 02:12	08132123.D	1	SEQ-CALJ	
24	14-AUG-2021 02:33	08132124.D	1	SEQ-CALK	
25	14-AUG-2021 02:53	08132125.D	1	SEQ-CALL	
26	14-AUG-2021 03:13	08132126.D	1	SEQ-CALM	
27	14-AUG-2021 03:34	08132127.D	1	SEQ-CALN	
28	14-AUG-2021 03:54	08132128.D	1	SEQ-CALO	
29	14-AUG-2021 04:15	08132129.D	1	SEQ-CALP	
30	14-AUG-2021 04:35	08132130.D	1	SEQ-CALQ	
31	14-AUG-2021 04:56	08132131.D	1	SEQ-CALR	
32	14-AUG-2021 05:16	08132132.D	1	SEQ-CALS	
33	14-AUG-2021 05:37	08132133.D	1	SEQ-CALT	
34	14-AUG-2021 05:57	08132134.D	1	SEQ-CALU	
35	14-AUG-2021 06:18	08132135.D	1	SEQ-CALV	
36	14-AUG-2021 06:38	08132136.D	1	SEQ-CALW	
37	14-AUG-2021 06:59	08132137.D	1	SEQ-CALX	
38	14-AUG-2021 07:19	08132138.D	1	SEQ-CALY	
39	14-AUG-2021 07:40	08132139.D	1	SEQ-CALZ	
40	14-AUG-2021 08:00	08132140.D	1	SEQ-CALAA	
41	14-AUG-2021 08:21	08132141.D	1	SEQ-SCV1	
42	14-AUG-2021 08:41	08132142.D	1	SEQ-SCV2	
43	14-AUG-2021 09:02	08132143.D	1	SEQ-SCV3	
44	14-AUG-2021 09:22	08132144.D	1	SEQ-SCV4	
45	14-AUG-2021 09:43	08132145.D	1	SEQ-SCV5	
46	14-AUG-2021 10:03	08132146.D	1	SEQ-SCV6	
47	14-AUG-2021 10:24	08132147.D	1	0.1PPMDDTS	
48	14-AUG-2021 10:44	08132148.D	1	DS	

Security Status Report

Date: 16-Aug-2021 17:20

08132101ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132102ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132103ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132104ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132105ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132106ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132107ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132108ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132109ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132110ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132111ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132112ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132113ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132114ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132115ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132116ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132117ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132118ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132119ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132120ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132121ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132122ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132123ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132124ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132125ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132126ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132127ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132128ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132129ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132130ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132131ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132132ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132133ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132134ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132135ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132136ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132137ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132138ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132139ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132140ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132141ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132142ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132143ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132144ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

08132145ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132146ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132147ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44
08132148ECD7.D	Data Locked	jrains, 15-Aug-2021 12:44

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Dual Column

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0335	Instrument:	ECD7
		Calibration:	EH00034

Sample Name	Lab Sample ID	Column 1 File ID	Column 2 File ID	Matrix	Analysis Date/Time
Initial Cal Check	SJH0335-ICV1	08212102ECD7.D	08212102ECD7.D	NA	08/21/21 18:40
Initial Cal Check	SJH0335-ICV2	08212103ECD7.D	08212103ECD7.D	NA	08/21/21 19:00
Blank	BJH0381-BLK1	08212104ECD7.D	08212104ECD7.D	Solid	08/21/21 19:20
LCS	BJH0381-BS1	08212105ECD7.D	08212105ECD7.D	Solid	08/21/21 19:41
Reference	BJH0381-SRM1	08212106ECD7.D	08212106ECD7.D	Solid	08/21/21 20:01
LDW21-IT698BX	21H0078-10	08212107ECD7.D	08212107ECD7.D	Solid	08/21/21 20:22
LDW21-IT698BX	BJH0381-MS1	08212108ECD7.D	08212108ECD7.D	Solid	08/21/21 20:42
LDW21-IT698BX	BJH0381-MSD1	08212109ECD7.D	08212109ECD7.D	Solid	08/21/21 21:03
LDW21-IT702BY	21H0078-31	08212110ECD7.D	08212110ECD7.D	Solid	08/21/21 21:23
LDW21-IT702CY	21H0078-32	08212111ECD7.D	08212111ECD7.D	Solid	08/21/21 21:44
LDW21-IT702EY	21H0078-34	08212112ECD7.D	08212112ECD7.D	Solid	08/21/21 22:04
Calibration Check	SJH0335-CCV1	08212113ECD7.D	08212113ECD7.D	NA	08/21/21 22:25
Calibration Check	SJH0335-CCV2	08212114ECD7.D	08212114ECD7.D	NA	08/21/21 22:45

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Printed: 8/25/2021 4:50:31PM

ANALYSIS SEQUENCE

SJH0335

Instrument: ECD7 Element Column ID: i10655i10656
Calibration ID: EH00034

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SJH0335-ICV1	AR1254ICV1	QC		1	J008432	J008446	
SJH0335-ICV2	AR1660ICV2	QC		2	J008417	J008446	
BJH0381-BLK1	Blank	QC		3		J008446	
BJH0381-BS1	LCS	QC		4		J008446	
BJH0381-SRM1	Reference	QC		5		J008446	
21H0078-10	LDW21-IT698BX	8082A PCB Solid 4	A 01	6		J008446	
BJH0381-MS1	Matrix Spike	QC		7		J008446	
BJH0381-MSD1	Matrix Spike Dup	QC		8		J008446	
21H0078-31	LDW21-IT702BY	8082A PCB Solid 4	A 01	9		J008446	
21H0078-32	LDW21-IT702CY	8082A PCB Solid 4	A 01	10		J008446	
21H0078-34	LDW21-IT702EY	8082A PCB Solid 4	A 01	11		J008446	
SJH0335-CCV1	AR1248CCV1	QC		12	J008427	J008446	
SJH0335-CCV2	AR1660CCV2	QC		13	J008417	J008446	

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210821.b

	Inject Date/Time	Filename	DF	LabID	ClientID
1	21-AUG-2021 18:19	08212101ECD7.D	1	DDT	
2	21-AUG-2021 18:40	08212102ECD7.D	1	AR1254ICV1	
3	21-AUG-2021 19:00	08212103ECD7.D	1	AR1660ICV2	
4	21-AUG-2021 19:20	08212104ECD7.D	1	BJH0381-BLK1	
5	21-AUG-2021 19:41	08212105ECD7.D	1	BJH0381-BS1	
6	21-AUG-2021 20:01	08212106ECD7.D	1	BJH0381-SRM1	
7	21-AUG-2021 20:22	08212107ECD7.D	1	21H0078-10	
8	21-AUG-2021 20:42	08212108ECD7.D	1	BJH0381-MS1	
9	21-AUG-2021 21:03	08212109ECD7.D	1	BJH0381-MSD1	
10	21-AUG-2021 21:23	08212110ECD7.D	1	21H0078-31	
11	21-AUG-2021 21:44	08212111ECD7.D	1	21H0078-32	
12	21-AUG-2021 22:04	08212112ECD7.D	1	21H0078-34	
13	21-AUG-2021 22:25	08212113ECD7.D	1	AR1248CCV1	
14	21-AUG-2021 22:45	08212114ECD7.D	1	AR1660CCV2	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210821.b

ARI Job No.: DDT Method: PCB.m Instrument: ecd7.i Date: 21-AUG-2021

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1819	08212101ECD7.D	DDT		1	NO MANUAL INTEGRATION
1840	08212102ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1900	08212103ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION
1920	08212104ECD7.D	BJH0381-BLK1		1	NO MANUAL INTEGRATION
1941	08212105ECD7.D	BJH0381-BS1		1	NO MANUAL INTEGRATION
2001	08212106ECD7.D	BJH0381-SRM1		1	NO MANUAL INTEGRATION
2022	08212107ECD7.D	21H0078-10		1	NO MANUAL INTEGRATION
2042	08212108ECD7.D	BJH0381-MS1		1	NO MANUAL INTEGRATION
2103	08212109ECD7.D	BJH0381-MSD1		1	NO MANUAL INTEGRATION
2123	08212110ECD7.D	21H0078-31		1	Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Tetrachloro-m-xylene,
2144	08212111ECD7.D	21H0078-32		1	NO MANUAL INTEGRATION
2204	08212112ECD7.D	21H0078-34		1	NO MANUAL INTEGRATION
2225	08212113ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
2245	08212114ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION
1819	08212101ECD7.D	DDT		1	NO MANUAL INTEGRATION
1840	08212102ECD7.D	AR1254ICV1		1	NO MANUAL INTEGRATION
1900	08212103ECD7.D	AR1660ICV2		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem4\ecd7.i\210821.b\210821.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1920	08212104ECD7.D	BJH0381-BLK1		1	NO MANUAL INTEGRATION
1941	08212105ECD7.D	BJH0381-BS1		1	NO MANUAL INTEGRATION
2001	08212106ECD7.D	BJH0381-SRM1		1	NO MANUAL INTEGRATION
2022	08212107ECD7.D	21H0078-10		1	NO MANUAL INTEGRATION
2042	08212108ECD7.D	BJH0381-MS1		1	NO MANUAL INTEGRATION
2103	08212109ECD7.D	BJH0381-MSD1		1	NO MANUAL INTEGRATION
2123	08212110ECD7.D	21H0078-31		1	NO MANUAL INTEGRATION
2144	08212111ECD7.D	21H0078-32		1	NO MANUAL INTEGRATION
2204	08212112ECD7.D	21H0078-34		1	NO MANUAL INTEGRATION
2225	08212113ECD7.D	AR1248CCV1		1	NO MANUAL INTEGRATION
2245	08212114ECD7.D	AR1660CCV2		1	NO MANUAL INTEGRATION

Security Status Report

Date: 25-Aug-2021 16:59

08212101ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212102ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212103ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212104ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212105ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212106ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212107ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212108ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212109ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
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08212111ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212112ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212113ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59
08212114ECD7.D	Data Locked	jrains, 25-Aug-2021 16:59

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0177	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0177-SCV1 (Solid)			Lab File ID: 08132141ECD7.D				Analyzed: 08/14/21 08:21	
Decachlorobiphenyl	40.000	105	80 - 120	13.166	13.16367	0.0023	N/A	
Tetrachlorometaxylene	40.000	109	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	103	80 - 120	13.847	13.846	0.0010	N/A	
Tetrachlorometaxylene [2C]	40.000	105	80 - 120	5.416	5.412667	0.0033	N/A	
SJH0177-SCV2 (Solid)			Lab File ID: 08132142ECD7.D				Analyzed: 08/14/21 08:41	
Decachlorobiphenyl	40.000	101	80 - 120	13.166	13.16367	0.0023	N/A	
Tetrachlorometaxylene	40.000	106	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	100	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	103	80 - 120	5.415	5.412667	0.0023	N/A	
SJH0177-SCV3 (Solid)			Lab File ID: 08132143ECD7.D				Analyzed: 08/14/21 09:02	
Decachlorobiphenyl	40.000	98.7	80 - 120	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	40.000	104	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	96.1	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.415	5.412667	0.0023	N/A	
SJH0177-SCV4 (Solid)			Lab File ID: 08132144ECD7.D				Analyzed: 08/14/21 09:22	
Decachlorobiphenyl	40.000	100	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	107	80 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	40.000	96.6	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	104	80 - 120	5.415	5.412667	0.0023	N/A	
SJH0177-SCV5 (Solid)			Lab File ID: 08132145ECD7.D				Analyzed: 08/14/21 09:43	
Decachlorobiphenyl	40.000	97.1	80 - 120	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	101	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	94.1	80 - 120	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	97.9	80 - 120	5.416	5.412667	0.0033	N/A	
SJH0177-SCV6 (Solid)			Lab File ID: 08132146ECD7.D				Analyzed: 08/14/21 10:03	
Decachlorobiphenyl	40.000	149	80 - 200	13.165	13.16367	0.0013	N/A	
Tetrachlorometaxylene	40.000	103	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	148	80 - 200	13.848	13.846	0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	99.2	80 - 120	5.416	5.412667	0.0033	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0335	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0335-ICV1 (Solid)			Lab File ID: 08212102ECD7.D				Analyzed: 08/21/21 18:40	
Decachlorobiphenyl	40.000	105	80 - 120	13.215	13.16367	0.0513	N/A	
Tetrachlorometaxylene	40.000	107	80 - 120	5.071	5.0675	0.0035	N/A	
Decachlorobiphenyl [2C]	40.000	92.8	80 - 120	13.933	13.846	0.0870	N/A	
Tetrachlorometaxylene [2C]	40.000	103	80 - 120	5.412	5.412667	-0.0007	N/A	
SJH0335-ICV2 (Solid)			Lab File ID: 08212103ECD7.D				Analyzed: 08/21/21 19:00	
Decachlorobiphenyl	40.000	107	80 - 120	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	40.000	108	80 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	99.0	80 - 120	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	40.000	105	80 - 120	5.411	5.412667	-0.0017	N/A	
BJH0381-BLK1 (Solid)			Lab File ID: 08212104ECD7.D				Analyzed: 08/21/21 19:20	
Decachlorobiphenyl	8.0000	78.2	40 - 126	13.164	13.16367	0.0003	N/A	
Tetrachlorometaxylene	8.0000	71.6	44 - 120	5.07	5.0675	0.0025	N/A	
Decachlorobiphenyl [2C]	8.0000	76.4	40 - 126	13.855	13.846	0.0090	N/A	
Tetrachlorometaxylene [2C]	8.0000	67.3	44 - 120	5.411	5.412667	-0.0017	N/A	
BJH0381-BS1 (Solid)			Lab File ID: 08212105ECD7.D				Analyzed: 08/21/21 19:41	
Decachlorobiphenyl	8.0000	88.2	40 - 126	13.162	13.16367	-0.0017	N/A	
Tetrachlorometaxylene	8.0000	78.1	44 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	8.0000	80.4	40 - 126	13.841	13.846	-0.0050	N/A	
Tetrachlorometaxylene [2C]	8.0000	73.5	44 - 120	5.411	5.412667	-0.0017	N/A	
BJH0381-SRM1 (Solid)			Lab File ID: 08212106ECD7.D				Analyzed: 08/21/21 20:01	
Decachlorobiphenyl	40.000	69.9	40 - 126	13.155	13.16367	-0.0087	N/A	
Tetrachlorometaxylene	40.000	65.6	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	56.3	40 - 126	13.836	13.846	-0.0100	N/A	
Tetrachlorometaxylene [2C]	40.000	62.1	44 - 120	5.41	5.412667	-0.0027	N/A	
21H0078-10 (Solid)			Lab File ID: 08212107ECD7.D				Analyzed: 08/21/21 20:22	
Decachlorobiphenyl	7.9946	70.0	40 - 126	13.161	13.16367	-0.0027	N/A	
Tetrachlorometaxylene	7.9946	64.0	44 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	7.9946	64.1	40 - 126	13.842	13.846	-0.0040	N/A	
Tetrachlorometaxylene [2C]	7.9946	60.8	44 - 120	5.411	5.412667	-0.0017	N/A	

Analytical Resources, Incorporated
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SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0335	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/14/2021

Surrogate Compound	Spike Level ug/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
BJH0381-MS1 (Solid)			Lab File ID: 08212108ECD7.D				Analyzed: 08/21/21 20:42	
Decachlorobiphenyl	7.9946	71.2	40 - 126	13.161	13.16367	-0.0027	N/A	
Tetrachlorometaxylene	7.9946	61.9	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	7.9946	66.0	40 - 126	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	7.9946	59.9	44 - 120	5.411	5.412667	-0.0017	N/A	
BJH0381-MSD1 (Solid)			Lab File ID: 08212109ECD7.D				Analyzed: 08/21/21 21:03	
Decachlorobiphenyl	7.9946	74.0	40 - 126	13.162	13.16367	-0.0017	N/A	
Tetrachlorometaxylene	7.9946	67.4	44 - 120	5.067	5.0675	-0.0005	N/A	
Decachlorobiphenyl [2C]	7.9946	68.9	40 - 126	13.841	13.846	-0.0050	N/A	
Tetrachlorometaxylene [2C]	7.9946	64.6	44 - 120	5.41	5.412667	-0.0027	N/A	
21H0078-31 (Solid)			Lab File ID: 08212110ECD7.D				Analyzed: 08/21/21 21:23	
Decachlorobiphenyl	7.9884	63.8	40 - 126	13.152	13.16367	-0.0117	N/A	
Tetrachlorometaxylene	7.9884	52.8	44 - 120	5.063	5.0675	-0.0045	N/A	
Decachlorobiphenyl [2C]	7.9884	47.8	40 - 126	13.834	13.846	-0.0120	N/A	
Tetrachlorometaxylene [2C]	7.9884	47.3	44 - 120	5.406	5.412667	-0.0067	N/A	
21H0078-32 (Solid)			Lab File ID: 08212111ECD7.D				Analyzed: 08/21/21 21:44	
Decachlorobiphenyl	7.9978	62.9	40 - 126	13.15	13.16367	-0.0137	N/A	
Tetrachlorometaxylene	7.9978	55.5	44 - 120	5.064	5.0675	-0.0035	N/A	
Decachlorobiphenyl [2C]	7.9978	46.8	40 - 126	13.833	13.846	-0.0130	N/A	
Tetrachlorometaxylene [2C]	7.9978	50.0	44 - 120	5.406	5.412667	-0.0067	N/A	
21H0078-34 (Solid)			Lab File ID: 08212112ECD7.D				Analyzed: 08/21/21 22:04	
Decachlorobiphenyl	7.9899	65.7	40 - 126	13.152	13.16367	-0.0117	N/A	
Tetrachlorometaxylene	7.9899	55.5	44 - 120	5.062	5.0675	-0.0055	N/A	
Decachlorobiphenyl [2C]	7.9899	48.2	40 - 126	13.834	13.846	-0.0120	N/A	
Tetrachlorometaxylene [2C]	7.9899	47.3	44 - 120	5.405	5.412667	-0.0077	N/A	
SJH0335-CCV1 (Solid)			Lab File ID: 08212113ECD7.D				Analyzed: 08/21/21 22:25	
Decachlorobiphenyl	40.000	103	80 - 120	13.162	13.16367	-0.0017	N/A	
Tetrachlorometaxylene	40.000	104	80 - 120	5.069	5.0675	0.0015	N/A	
Decachlorobiphenyl [2C]	40.000	97.0	80 - 120	13.843	13.846	-0.0030	N/A	
Tetrachlorometaxylene [2C]	40.000	101	80 - 120	5.412	5.412667	-0.0007	N/A	

Analytical Resources, Incorporated
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SURROGATE RECOVERY AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG/WO:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0335	Instrument:	ECD7
Calibration:	EH00034	Calibration Date:	08/13/2021

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SJH0335-CCV2 (Solid)			Lab File ID: 08212114ECD7.D				Analyzed: 08/21/21 22:45	
Decachlorobiphenyl	40.000	106	80 - 120	13.163	13.16367	-0.0007	N/A	
Tetrachlorometaxylene	40.000	108	80 - 120	5.068	5.0675	0.0005	N/A	
Decachlorobiphenyl [2C]	40.000	97.3	80 - 120	13.844	13.846	-0.0020	N/A	
Tetrachlorometaxylene [2C]	40.000	104	80 - 120	5.412	5.412667	-0.0007	N/A	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0177	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SJH0177-SCV1)		(Solid)		Lab File ID: 08132141ECD7.D				Analyzed: 08/14/21 08:21	
1-Bromo-2-Nitrobenzene	247644	2.856				50 - 200		+/-0.50	
Hexabromobiphenyl	438534	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	705551	3.645				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	973863	14.744				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV2)		(Solid)		Lab File ID: 08132142ECD7.D				Analyzed: 08/14/21 08:41	
1-Bromo-2-Nitrobenzene	258029	2.855				50 - 200		+/-0.50	
Hexabromobiphenyl	455205	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	724238	3.645				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1002202	14.745				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV3)		(Solid)		Lab File ID: 08132143ECD7.D				Analyzed: 08/14/21 09:02	
1-Bromo-2-Nitrobenzene	264526	2.854				50 - 200		+/-0.50	
Hexabromobiphenyl	465895	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	740726	3.644				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1045189	14.744				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV4)		(Solid)		Lab File ID: 08132144ECD7.D				Analyzed: 08/14/21 09:22	
1-Bromo-2-Nitrobenzene	260417	2.853				50 - 200		+/-0.50	
Hexabromobiphenyl	458139	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	730797	3.644				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1034233	14.745				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV5)		(Solid)		Lab File ID: 08132145ECD7.D				Analyzed: 08/14/21 09:43	
1-Bromo-2-Nitrobenzene	269058	2.856				50 - 200		+/-0.50	
Hexabromobiphenyl	467004	13.521				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	745766	3.646				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1054321	14.744				50 - 200		+/-0.50	
Secondary Cal Check (SJH0177-SCV6)		(Solid)		Lab File ID: 08132146ECD7.D				Analyzed: 08/14/21 10:03	
1-Bromo-2-Nitrobenzene	263445	2.855				50 - 200		+/-0.50	
Hexabromobiphenyl	458283	13.52				50 - 200		+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	736133	3.645				50 - 200		+/-0.50	
Hexabromobiphenyl [2C]	1049914	14.745				50 - 200		+/-0.50	

Analytical Resources, Incorporated
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INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0335	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (SJH0335-ICV1)		(Solid)		Lab File ID: 08212102ECD7.D				Analyzed: 08/21/21 18:40	
1-Bromo-2-Nitrobenzene	267417	2.862	267417	2.862	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl	400873	13.59	400873	13.59	100	50 - 200	0.000	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	750310	3.646	750310	3.646	100	50 - 200	0.000	+/-0.50	
Hexabromobiphenyl [2C]	783907	14.894	783907	14.894	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SJH0335-ICV2)		(Solid)		Lab File ID: 08212103ECD7.D				Analyzed: 08/21/21 19:00	
1-Bromo-2-Nitrobenzene	255480	2.852	267417	2.862	96	50 - 200	-0.010	+/-0.50	
Hexabromobiphenyl	414663	13.518	400873	13.59	103	50 - 200	-0.072	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	722359	3.639	750310	3.646	96	50 - 200	-0.007	+/-0.50	
Hexabromobiphenyl [2C]	898853	14.738	783907	14.894	115	50 - 200	-0.156	+/-0.50	
Blank (BJH0381-BLK1)		(Solid)		Lab File ID: 08212104ECD7.D				Analyzed: 08/21/21 19:20	
1-Bromo-2-Nitrobenzene	261807	2.858	267417	2.862	98	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl	464745	13.522	400873	13.59	116	50 - 200	-0.068	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	737832	3.645	750310	3.646	98	50 - 200	-0.001	+/-0.50	
Hexabromobiphenyl [2C]	951851	14.785	783907	14.894	121	50 - 200	-0.109	+/-0.50	
LCS (BJH0381-BS1)		(Solid)		Lab File ID: 08212105ECD7.D				Analyzed: 08/21/21 19:41	
1-Bromo-2-Nitrobenzene	259389	2.855	267417	2.862	97	50 - 200	-0.007	+/-0.50	
Hexabromobiphenyl	458508	13.515	400873	13.59	114	50 - 200	-0.075	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	727292	3.643	750310	3.646	97	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	1083838	14.737	783907	14.894	138	50 - 200	-0.157	+/-0.50	
Reference (BJH0381-SRM1)		(Solid)		Lab File ID: 08212106ECD7.D				Analyzed: 08/21/21 20:01	
1-Bromo-2-Nitrobenzene	277815	2.855	267417	2.862	104	50 - 200	-0.007	+/-0.50	
Hexabromobiphenyl	381585	13.508	400873	13.59	95	50 - 200	-0.082	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	755543	3.642	750310	3.646	101	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl [2C]	1031542	14.733	783907	14.894	132	50 - 200	-0.161	+/-0.50	
LDW21-IT698BX (21H0078-10)		(Solid)		Lab File ID: 08212107ECD7.D				Analyzed: 08/21/21 20:22	
1-Bromo-2-Nitrobenzene	274644	2.854	255480	2.852	108	50 - 200	0.002	+/-0.50	
Hexabromobiphenyl	478780	13.515	414663	13.518	115	50 - 200	-0.003	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	774851	3.641	750310	3.646	103	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl [2C]	1150338	14.736	898853	14.738	128	50 - 200	-0.002	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8082A

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0335	Instrument:	ECD7
		Calibration:	EH00034

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (BJH0381-MS1)		(Solid)		Lab File ID: 08212108ECD7.D				Analyzed: 08/21/21 20:42	
1-Bromo-2-Nitrobenzene	273492	2.854	267417	2.862	102	50 - 200	-0.008	+/-0.50	
Hexabromobiphenyl	478477	13.514	400873	13.59	119	50 - 200	-0.076	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	769676	3.642	750310	3.646	103	50 - 200	-0.004	+/-0.50	
Hexabromobiphenyl [2C]	1167039	14.736	783907	14.894	149	50 - 200	-0.158	+/-0.50	
Matrix Spike Dup (BJH0381-MSD1)		(Solid)		Lab File ID: 08212109ECD7.D				Analyzed: 08/21/21 21:03	
1-Bromo-2-Nitrobenzene	276695	2.853	267417	2.862	103	50 - 200	-0.009	+/-0.50	
Hexabromobiphenyl	481924	13.514	400873	13.59	120	50 - 200	-0.076	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	778610	3.641	750310	3.646	104	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl [2C]	1178421	14.735	783907	14.894	150	50 - 200	-0.159	+/-0.50	
LDW21-IT702BY (21H0078-31)		(Solid)		Lab File ID: 08212110ECD7.D				Analyzed: 08/21/21 21:23	
1-Bromo-2-Nitrobenzene	262786	2.853	255480	2.852	103	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	304764	13.505	414663	13.518	73	50 - 200	-0.013	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	694926	3.64	750310	3.646	93	50 - 200	-0.006	+/-0.50	
Hexabromobiphenyl [2C]	846540	14.731	898853	14.738	94	50 - 200	-0.007	+/-0.50	
LDW21-IT702CY (21H0078-32)		(Solid)		Lab File ID: 08212111ECD7.D				Analyzed: 08/21/21 21:44	
1-Bromo-2-Nitrobenzene	253997	2.857	255480	2.852	99	50 - 200	0.005	+/-0.50	
Hexabromobiphenyl	276720	13.503	414663	13.518	67	50 - 200	-0.015	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	655281	3.643	750310	3.646	87	50 - 200	-0.003	+/-0.50	
Hexabromobiphenyl [2C]	771184	14.731	898853	14.738	86	50 - 200	-0.007	+/-0.50	
LDW21-IT702EY (21H0078-34)		(Solid)		Lab File ID: 08212112ECD7.D				Analyzed: 08/21/21 22:04	
1-Bromo-2-Nitrobenzene	240828	2.853	255480	2.852	94	50 - 200	0.001	+/-0.50	
Hexabromobiphenyl	292835	13.506	414663	13.518	71	50 - 200	-0.012	+/-0.50	
1-Bromo-2-Nitrobenzene [2C]	626668	3.641	750310	3.646	84	50 - 200	-0.005	+/-0.50	
Hexabromobiphenyl [2C]	835335	14.73	898853	14.738	93	50 - 200	-0.008	+/-0.50	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

DUAL COLUMN CONFIRMATION SUMMARY

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Matrix:	Sediment	Laboratory ID:	21H0078-31	File ID:	08212110ECD7.D
Sampled:	08/03/21 16:50	Prepared:	08/17/21 10:02	Analyzed:	08/21/21 21:23
Solids:	71.41	Preparation:	EPA 3546 (Microwave)	Instrument:	ECD7
Batch:	BJH0381	Sequence:	SJH0335		
GC Column(1):	ZB5			GC Column(2):	ZB35

COMPOUND	COL	RT	EXP RT	RT DIFF	AREA	CONC	RPD
Aroclor 1260	* 1	11.537	11.55517	0.0182	773.4	0.9	11.8
	2	12.957	12.9715	0.0145	4747.5	0.8	

* Column used for quantitation

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HOLDING TIME SUMMARY

Analysis: EPA 8082A

Laboratory: Analytical Resources, Inc. SDG: 21H0078

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-IT698BX 21H0078-10	08/03/21 14:53	08/04/21 11:44	08/17/21 10:02	13	14	08/21/21 20:22	4	40	
LDW21-IT702BY 21H0078-31	08/03/21 16:50	08/04/21 11:44	08/17/21 10:02	13	14	08/21/21 21:23	4	40	
LDW21-IT702CY 21H0078-32	08/03/21 16:50	08/04/21 11:44	08/17/21 10:02	13	14	08/21/21 21:44	4	40	
LDW21-IT702EY 21H0078-34	08/03/21 16:50	08/04/21 11:44	08/17/21 10:02	13	14	08/21/21 22:04	5	40	
Matrix Spike BJH0381-MS1	08/03/21 14:53	08/04/21 11:44	08/17/21 10:02	13	14	08/21/21 20:42	4	40	
Matrix Spike Dup BJH0381-MSD1	08/03/21 14:53	08/04/21 11:44	08/17/21 10:02	13	14	08/21/21 21:03	4	40	

* Indicates hold time exceedance.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 8082A

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: ECD7

Analyte	MDL	RL	Units
Aroclor 1016	1.6	4.0	ug/kg
Aroclor 1016 [2C]	1.6	4.0	ug/kg
Aroclor 1221	1.6	4.0	ug/kg
Aroclor 1221 [2C]	1.6	4.0	ug/kg
Aroclor 1232	1.6	4.0	ug/kg
Aroclor 1232 [2C]	1.6	4.0	ug/kg
Aroclor 1242	1.6	4.0	ug/kg
Aroclor 1242 [2C]	1.6	4.0	ug/kg
Aroclor 1248	1.6	4.0	ug/kg
Aroclor 1248 [2C]	1.6	4.0	ug/kg
Aroclor 1254	1.6	4.0	ug/kg
Aroclor 1254 [2C]	1.6	4.0	ug/kg
Aroclor 1260	0.6	4.0	ug/kg
Aroclor 1260 [2C]	0.6	4.0	ug/kg

AccuStandard
125 Market Street
New Haven, CT 06513
(203) 786-5290

CERTIFICATE OF PRODUCT DATA

PRODUCT: S-279N
DESCRIPTION: Volatile Organic Compound (TCMx)
LOT #: 0052481B-1
SOLVENT: N/A

EXPIRATION: July 28, 2015

This product is guaranteed accurate to ±0.5% of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/FID)	Prepared Concentration[1]	Certified Analyte Concentration[2]
Tetrachloro-meta-xylene (TCMX)	877-09-8	96.0	N/A	N/A

Te

* I1769A

Certified by: R. Cooper

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is ±4% which is the Combined Uncertainty uc(y). It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is U which is Uc(y) *K where K is the coverage factor at the 95% confidence level (K=2).
3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

* Recertified ~ 4-6-09 (8)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record
Standard ID: C000147

Printed: 4/23/2015 11:52:09AM

Description:	tetrachlormetaxylene	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	n/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:01 by JGR
Vendor:	Accustandard	Lot #:	0052481b-1
Vendor Catalog #:			

Comments

see I1769a
updated for calibration TCX DCBP 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Tetrachlorometaxylene [2C]	877-09-8	1000000	ug/mL
Tetrachlorometaxylene	877-09-8	1000000	ug/mL
TCX 1660 [2C]	877-09-8	1000000	ug/mL
TCX 1660	877-09-8	1000000	ug/mL
TCX [2C]	877-09-8	1000000	ug/mL
TCX (A) [2C]	877-09-8	1000000	ug/mL
TCX (A)	877-09-8	1000000	ug/mL
TCX	877-09-8	1000000	ug/mL

Reviewed By Date

AccuStandard
125 Market Street
New Haven, CT 06513
(203) 786-5290

CERTIFICATE OF PRODUCT DATA

PRODUCT: C-209N
EXPIRATION: Jul 28, 2015
DESCRIPTION: 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl
LOT #: 990521LB-AC
SOLVENT: N/A

This product is guaranteed accurate to ±0.5% of the Certified Analyte concentration through the Expiration Date on the Label.

Component	CAS #	Purity % (GC/MS)	Prepared Concentration[1]	Certified Analyte Concentration[2]
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	2051-24-3	100	N/A	N/A

2,

* I1768A

Certified by: R. Cooper

1. All weights are traceable through National Institute of Standards & Technology, Test No. 822/254480
2. Certified Analyte Concentration = Purity x Prepared Concentration. The Uncertainty calculated for this product is ±4% which is the Combined Uncertainty uc(y). It represents an estimated standard deviation equal to the positive square root of the total variance of the uncertainty of components. The Expanded Uncertainty is U which is Uc(y) *K where K is the coverage factor at the 95% confidence level (K=2).
3. A product with a suffix (-1A, -2B, etc.) on its lot# has had its expiration date extended and is identical to the same lot# without the suffix.

Please note: AccuStandard follows the U.S. conventions in reporting numerical values, on both certificates and labels.

A comma (,) is used to separate units of one-thousand or greater.
A period (.) is used as a decimal place marker.

This product was manufactured in accordance to quality system requirements of ISO 9001:2000 and ISO 17025

* Recertified 2 4-6-09 (JS)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Analytical Standard Record

Standard ID: C000148 **Printed: 4/23/2015 11:54:44AM**

Description:	decachlorbiphenyl	Expires:	15-Jan-2020
Standard Type:	Other	Prepared:	15-Jan-2014
Solvent:	na/a	Prepared By:	Joshua Rains
Final Volume (mls):	1	Department:	Organics
Vials:	1	Last Edit:	27-Feb-2015 13:03 by JGR
Vendor:	Accustandard	Lot #:	990521lb-ac
Vendor Catalog #:			

Comments

see i1768a
SOM calibrations added 06/12/14 sdrd

Analyte	CAS Number	Concentration	Units
Decachlorobiphenyl [2C]	2051-24-3	1000000	ug/mL
Decachlorobiphenyl	2051-24-3	1000000	ug/mL
DCB 1660 [2C]	2051-24-3	1000000	ug/mL
DCB 1660	2051-24-3	1000000	ug/mL
DCB [2C]	2051-24-3	1000000	ug/mL
DCB (A) [2C]	2051-24-3	1000000	ug/mL
DCB (A)	2051-24-3	1000000	ug/mL
DCB	2051-24-3	1000000	ug/mL

Reviewed By Date

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Certificate of Analysis

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Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101467
Description: Aroclor 1016
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Isooctane

Lot Number: CL12908
Certification Date: November 19, 2018
Expiration Date: October 31, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1016	12674-11-2	1000	± 0.553%

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ACCREDITED
Reference Material Producer
Certificate No. 2427.02

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Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

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Certificate of Analysis

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6390 Joyce Drive STE 100, Golden, CO 80403 USA ▪ Tel: 303-940-0033 ▪ Fax: 303-940-0043 ▪ info@phenova.com
Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

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Certified Reference Material

This product is included in Phenova's ISO/IEC 17025 and ISO Guide 34 Scopes of Accreditation

Catalog No.: AL0-101462
Description: Aroclor 1260
Storage: 4 °C
Provided As: 1 mL in 2 mL Ampoule in Hexane

Lot Number: CL13054
Certification Date: November 29, 2018
Expiration Date: November 30, 2026

Andrea L Gill

Andrea Gill, Certified Reference Materials Manager

Component	CAS #	Certified Value µg/mL	Expanded Uncertainty
Aroclor 1260	11096-82-5	1000	± 0.520%

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09/22/20

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Certified Reference Materials

Manufactured by Phenova, Inc.
Phenova's testing and calibration results are internationally recognized through the ILAC MRA. Phenova is an accredited ISO Guide 34 Reference Material Provider and ISO/IEC 17025 accredited Chemical Testing Laboratory.

ACCREDITED
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Certificate of Analysis

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Access your Safety Data Sheets and digital Certificates at **www.phenova.com/documents.**

1. Quality Document: This Certificate of Analysis has been created in accordance with ISO Guide 31[1] and ISO Guide 35.[2]

2. Quality Standards: Phenova is accredited by A2LA to ISO 17034[3] and ISO/IEC 17025[4] as a producer of Certified Reference Materials and Reference Materials. This ensures that our manufacturing processes have been accredited to and meet strict international standards.

3. Intended Use: The product is manufactured for use in calibration, calibration verification, quantification, identification and other appropriate analytical control applications. The product is intended for routine laboratory analysis and research purposes only. Only trained personnel should handle this product.

4. Handling and Usage Notes: Store according to recommended conditions listed and avoid prolonged exposure to light. Visually inspect the solution inside the ampoule for any un-dissolved material. If particulate is visible, sonicate the unopened ampoule until material is fully dissolved. Dilute as required, use only class A glassware and diluents compatible with all analytes in the mixture. Considerations should be made related to repeated use of the opened product. Once opened, exposure to light, air, heat, objects, and additional transfer vessels may cause evaporation, degradation or contamination resulting in changes in concentration, uncertainty and stability duration. Store opened standards in a clean, tightly capped vessel under the recommended temperature. Appropriate controls, such as the use of additional verification standards should be used to confirm the opened product is fit for purpose under repeated use conditions.

5. Hazardous Situation: The product is intended for use by experienced professional personnel. A Safety Data Sheet (SDS) is available at www.phenova.com/documents.

6. Level of Homogeneity: The product has been certified to guarantee the certified values and their uncertainties at a volume of 2 µL.

7. Certified Value: Certified Value is based upon gravimetric and volumetric preparation using calibrated balances and Class A glassware.

8. Raw Materials and Purity: Phenova reference standard products are prepared from the highest quality starting materials. The purity of this material was verified using an ISO/IEC 17025 methodology.

9. Expanded Uncertainty: The expanded uncertainty (uCRM) as stated is determined in accordance with ISO/IEC Guide 98[5] and ISO Guide 35 incorporating Type A standard uncertainty at a 95% confidence level. The uncertainty contains elements of manufacturing (uM), homogeneity analysis (uH) and long-term stability testing (uLTS). The uncertainty is calculated based on the root-sum-of-squares equation times a coverage factor (k=2).

$$uCRM = k\sqrt{uM^2 + uH^2 + uLTS^2}$$

   Transport conditions (short-term stability) have been tested such that there is no contribution to the uncertainty reported. The expanded uncertainty applies to the product as received.

10. Metrological Traceability: The property value (certified value and its uncertainty) are traceable through an unbroken chain of calibration to the SI base unit kg through a NIST traceable weight in accordance with ISO 17034. This is achieved through calibration of balances, verification of weights, use of national methodology for glassware calibration and product homogeneity and stability testing utilizing an ISO/IEC 17025 methodology.

11. Values Obtained During Product Testing: This product is subjected to verification, homogeneity and stability testing using an ISO/IEC 17025 chromatographic methodology. All values obtained during testing meet criteria in accordance with ISO 17034.

12. Period of Validity: The Certified Values, Uncertainties and Expiration Date are based on the unopened product being stored according to the recommended storage condition listed and are guaranteed until the expiration date. This product will be monitored during the period of validity and customers notified of any significant changes in stability.

References:

[1] ISO Guide 31 – Reference Materials – Contents of Certificates and Labels.
[2] ISO Guide 35 – Reference Material – General and Statistical Principles for Certification.
[3] ISO 17034 – General Requirements for the Competence of Reference Material Producers.
[4] ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories.
[5] ISO/IEC Guide 98-3:2008(E) – Uncertainty of Measurement – Part 3: Guide to Expression of Uncertainty in Measurement (GUM: 1995)

Agilent

Certificate of Analysis

Aroclor 1016 Solution

Product Number: PP-282 **Page:** 1 of 1

Lot Number: CR-0761 **Lot Issue Date:** 28-Feb-2017 **Expiration Date:** 31-Mar-2025

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1016	012674-11-2	NT01016	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

J000580

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 9001 Registered TUV USA, Inc.

John Russo
President

Monica Bourgeois
Director of QA/RA

250 Smith Street North Kingstown, Rhode Island 02852 www.agilent.com/quality

Agilent

Certificate of Analysis

Product Name: Aroclor 1221 Standard

Product Number: PP-292-1 **Lot Issue Date:** 28-Apr-2020

Lot Number: 0006535333 **Expiration Date:** 31-May-2024

Description:

This analytical reference material (RM) was manufactured and verified in accordance with an ISO 9001 registered quality system, and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	Concentration ± Uncertainty
Aroclor 1221	011104-28-2	RM04278	100.2 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage Conditions: Store at Room Temperature (15° to 30°C).

J000581

Traceability:

The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:

This RM was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:

This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Instructions for Use:

Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Hazards:

Refer to the Safety Data Sheet on www.agilent.com for information regarding this RM.

Expiration of Certification:

The certification of this RM is valid until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

Maintenance of Certification:

If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

ISO 17034 Cert No. AR-1936

RM was produced in accordance with TUV USA Inc registered ISO 9001 Quality Management System. Cert # 56 100 18560026

www.agilent.com/quality/
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ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO 17025 Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 **www.agilent.com/quality**

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Certificate of Analysis
ISO 17034

Aroclor 1232 Standard

Product Number: PP-302-1 **Page:** 1 of 1

Lot Number: CF-2197A **Lot Issue Date:** 05-Jul-2016 **Expiration Date:** 31-Aug-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1232	011141-16-5	NT01717	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

2021/15/21
J000582

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No. AT-1937

Agilent

Certificate of Analysis
ISO Guide 34

Aroclor 1242 Solution

Product Number: PP-312 **Page:** 1 of 1

Lot Number: CS-6293 **Lot Issue Date:** 04-Jan-2019 **Expiration Date:** 31-Jan-2023

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1242	053469-21-9	NT01020	100.4 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

J 000583

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER

ISO Guide 34 Cert No.
AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026
registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY

ISO17025 Cert No.
AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 **www.agilent.com/quality**

Agilent

Certificate of Analysis
ISO Guide 34

Aroclor 1248 Standard

Product Number: PP-342 **Page:** 1 of 1

Lot Number: CT-0774 **Lot Issue Date:** 08-Mar-2019 **Expiration Date:** 31-Mar-2023

This ISO Guide 34 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1248	012672-29-6	NT01718	100.3 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

J000584
01/15/21

ANAB ACCREDITED ISO GUIDE 34 REFERENCE MATERIAL PRODUCER
ISO Guide 34 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO17025 Cert No. AT-1937

Certificate of Analysis

Aroclor 1254 Solution

Product Number:	PP-352			**Page:**	1 of 1
Lot Number:	CK-4250	**Lot Issue Date:**	31-Dec-2013	**Expiration Date:**	31-Jan-2022

This certified Reference Material (RM) was manufactured and verified in accordance with ULTRA's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1254	011097-69-1	RM00922	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15-30°C).

J000585

ULTRA uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

ACCREDITED

ISO 17025:2005 Accredited A2LA Cert. No. 0851-01

ISO 9001:2008 Registered TUV USA, Inc. Cert. No. 09-1009

250 Smith Street, North Kingstown, RI 02852 USA
401-294-9400 Fax: 295-2330
wwww.ultrasci.com

William J. Leary
Quality Assurance Manager

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1262 Standard

Product Number: PP-372-1 **Page:** 1 of 1

Lot Number: 0006499800 **Lot Issue Date:** 04-Nov-2019 **Expiration Date:** 30-Nov-2023

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent Technologies ISO 9001 registered quality system. A review of the gravimetric preparation data by our ISO 17025 accredited laboratory serves to verify the concentration of each analyte. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1262	037324-23-5	RM14263	100.0 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

Monica Bourgeois
QMS Representative

J000 587

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 www.agilent.com/quality

Agilent

Certificate of Analysis
ISO 17034

Aroclor 1268 Standard

Product Number: PP-382-1 **Page:** 1 of 1

Lot Number: 0006478417 **Lot Issue Date:** 24-Jul-2019 **Expiration Date:** 31-Aug-2027

This ISO 17034 Reference Material (RM) was manufactured and verified in accordance with Agilent's ISO 9001 registered quality system, and the analyte concentrations were verified by our ISO 17025 accredited laboratory. The true value and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed below.

Analyte	CAS#	Analyte Lot	True Value
Aroclor 1268	011100-14-4	RM00937	100.3 ± 0.5 µg/mL

Matrix: isooctane (2,2,4-trimethylpentane)

Storage: Store at Room Temperature (15° to 30°C).

Agilent uses balances calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1 and ISO 9001, and calibrated Class A glassware in the manufacturing of these standards.

M Bourgeois

Monica Bourgeois
QMS Representative

J000588

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER
ISO 17034 Cert No. AR-1936

Produced in accordance with TUV USA Inc 56 100 18560026 registered ISO 9001 Quality Management System

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
ISO 17025 Cert No. AT-1937

250 Smith Street North Kingstown, Rhode Island 02852 www.agilent.com/quality

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
		DUWAMISH AOC4	

6/30/2021

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: (Signature)	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

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

LDW21-IT698BX

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-10 C	SDG:	21H0078
Sampled:	08/03/21 14:53	Prepared:	08/13/21 13:07	File ID:	CubeData_08232021@1356-168
% Solids:	82.20	Preparation:	PSEP 1986 (modified)	Analyzed:	08/19/21 19:39
Batch:	BJH0351	Sequence:	SJH0183	Initial/Final:	0.5038 g Wet / 0.5038 mL
Instrument:	TOC Cube			Calibration:	EH00021

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	<0.02	1	0.02	0.02	U

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

LDW21-IT702BY

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-31 C	SDG:	21H0078
Sampled:	08/03/21 16:50	Prepared:	08/13/21 13:07	File ID:	CubeData_08232021@1356-174
% Solids:	70.72	Preparation:	PSEP 1986 (modified)	Analyzed:	08/19/21 20:10
Batch:	BJH0351	Sequence:	SJH0183	Initial/Final:	0.6666 g Wet / 0.6666 mL
Instrument:	TOC Cube			Calibration:	EH00021

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	1.00	1	0.02	0.02	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

LDW21-IT702CY

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-32 C	SDG:	21H0078
Sampled:	08/03/21 16:50	Prepared:	08/13/21 13:07	File ID:	CubeData_09062021@0807-108
% Solids:	67.06	Preparation:	PSEP 1986 (modified)	Analyzed:	09/03/21 17:29
Batch:	BJH0351	Sequence:	SJH0417	Initial/Final:	0.5052 g Wet / 0.5052 mL
Instrument:	TOC Cube			Calibration:	EH00065

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	2.10	1	0.02	0.02	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

LDW21-IT702EY

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-34 C	SDG:	21H0078
Sampled:	08/03/21 16:50	Prepared:	08/13/21 13:07	File ID:	CubeData_09062021@0807-114
% Solids:	62.10	Preparation:	PSEP 1986 (modified)	Analyzed:	09/03/21 18:00
Batch:	BJH0351	Sequence:	SJH0417	Initial/Final:	0.5033 g Wet / 0.5033 mL
Instrument:	TOC Cube			Calibration:	EH00065

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	1.85	1	0.02	0.02	

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Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

EPA 9060A m

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Batch:	BJH0351	Batch Matrix:	Solid	Preparation:	PSEP 1986 (modified)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT698BX	21H0078-10	eData_08232021@1356-	08/13/21 13:07	
LDW21-IT702BY	21H0078-31	eData_08232021@1356-	08/13/21 13:07	
LDW21-IT702CY	21H0078-32	eData_09062021@0807-	08/13/21 13:07	
LDW21-IT702EY	21H0078-34	eData_09062021@0807-	08/13/21 13:07	
Blank	BJH0351-BLK1	eData_08232021@1356-	08/13/21 13:07	
LCS	BJH0351-BS1	eData_08232021@1356-	08/13/21 13:07	
MRL Check	BJH0351-MRL1	eData_08232021@1356-	08/13/21 13:07	
Reference	BJH0351-SRM1	eData_08232021@1356-	08/13/21 13:07	

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Analytical Chemists and Consultants

Form I

METHOD BLANK DATA SHEET

EPA 9060A m

TotalAnalytes

Blank

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Batch:	BJH0351	Laboratory ID:	BJH0351-BLK1	Prepared:	08/13/21 13:07
Matrix:	Solid	Preparation:	PSEP 1986 (modified)	Analyzed:	08/19/21 04:56
Sequence:	SJH0183	Calibration:	EH00021	Instrument:	TOC Cube

CAS NO.	Analyte	Concentration (% wet)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	ND	1	0.02	0.02	U

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LCS / LCS DUPLICATE RECOVERY

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Matrix:	Solid	Analyzed:	08/19/21 05:27
Batch:	BJH0351	Laboratory ID:	BJH0351-BS1
Preparation:	PSEP 1986 (modified)	Sequence Name:	LCS
Initial/Final:	0.0245 g / 0.0245 mL		

COMPOUND	SPIKE ADDED (% wet)	LCS CONCENTRATION (% wet)	Q	LCS % REC. #	QC LIMITS REC.
Total Organic Carbon	44.4	44.2		99.5	80 - 120

* Indicates values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

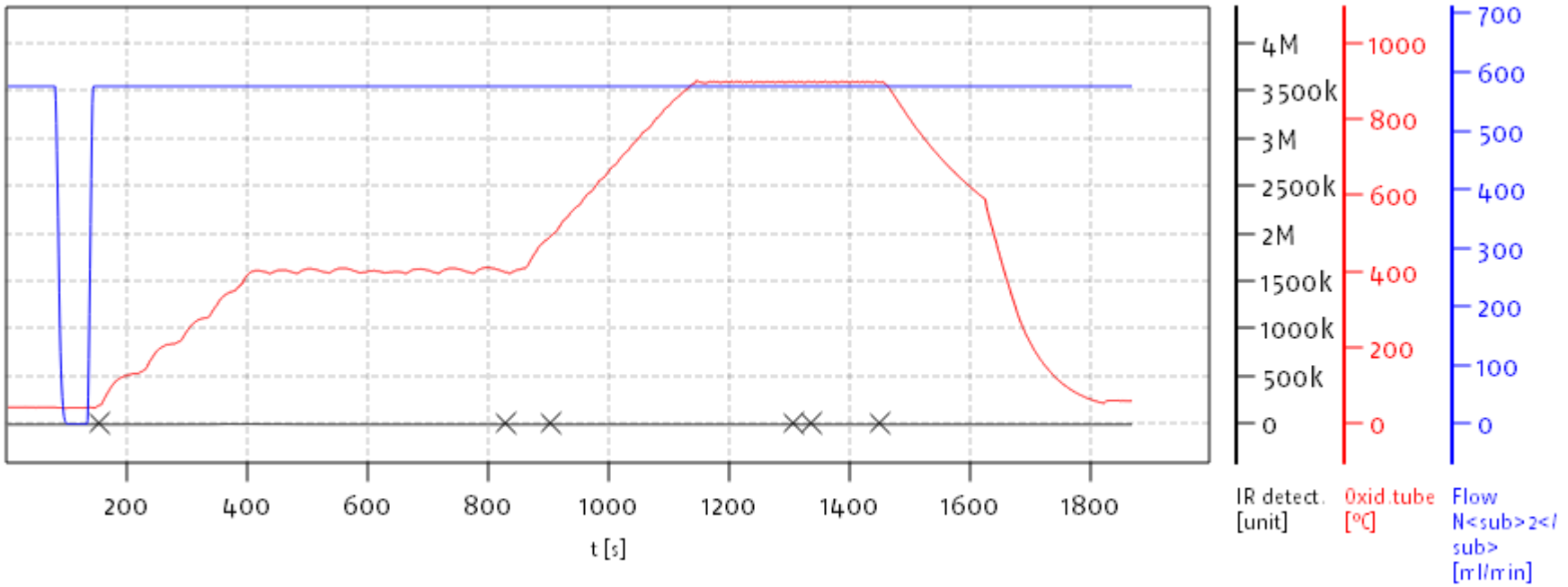
Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0113	Instrument:	TOC Cube
		Calibration:	EH00021

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SJH0113-CAL1	peData_08112021@1352-(	NA	08/10/21 14:19
Cal Standard	SJH0113-CAL2	peData_08112021@1352-(	NA	08/10/21 14:51
Cal Standard	SJH0113-CAL3	peData_08112021@1352-(	NA	08/10/21 15:22
Cal Standard	SJH0113-CAL4	peData_08112021@1352-(	NA	08/10/21 15:54
Cal Standard	SJH0113-CAL5	peData_08112021@1352-(	NA	08/10/21 16:25
Cal Standard	SJH0113-CAL6	peData_08112021@1352-(	NA	08/10/21 16:57
Cal Standard	SJH0113-CAL7	peData_08112021@1352-(	NA	08/10/21 17:28
Cal Standard	SJH0113-CAL8	peData_08112021@1352-(	NA	08/10/21 18:00
Cal Standard	SJH0113-CAL9	peData_08112021@1352-(	NA	08/10/21 18:32
Cal Standard	SJH0113-CALA	peData_08112021@1352-(	NA	08/10/21 19:03
Cal Standard	SJH0113-CALB	peData_08112021@1352-(	NA	08/10/21 19:34
Cal Standard	SJH0113-CALC	peData_08112021@1352-(	NA	08/10/21 20:06
Cal Standard	SJH0113-CALD	peData_08112021@1352-(	NA	08/10/21 20:37
Cal Standard	SJH0113-CALE	peData_08112021@1352-(	NA	08/10/21 21:08
Cal Standard	SJH0113-CALF	peData_08112021@1352-(	NA	08/10/21 21:40
Cal Standard	SJH0113-CALG	peData_08112021@1352-(	NA	08/10/21 22:11
Cal Standard	SJH0113-CALH	peData_08112021@1352-(	NA	08/10/21 22:42
Cal Standard	SJH0113-CALI	peData_08112021@1352-(	NA	08/10/21 23:14
Cal Standard	SJH0113-CALJ	peData_08112021@1352-(	NA	08/10/21 23:45
Cal Standard	SJH0113-CALK	peData_08112021@1352-(	NA	08/11/21 00:16
Cal Standard	SJH0113-CALL	peData_08112021@1352-(	NA	08/11/21 00:48
Cal Standard	SJH0113-CALM	peData_08112021@1352-(	NA	08/11/21 01:19
Cal Standard	SJH0113-CALN	peData_08112021@1352-(	NA	08/11/21 01:50
Cal Standard	SJH0113-CALO	peData_08112021@1352-(	NA	08/11/21 02:22
Initial Cal Check	SJH0113-ICV1	peData_08112021@1352-(	NA	08/11/21 04:27
Initial Cal Blank	SJH0113-ICB1	peData_08112021@1352-(	NA	08/11/21 04:59

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
1	1	BLANK	1.00		1.00	CARBON	8/10/2021 1:17 PM	0.000	0.000	0.000	bl	22 805	4 168	1 160	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

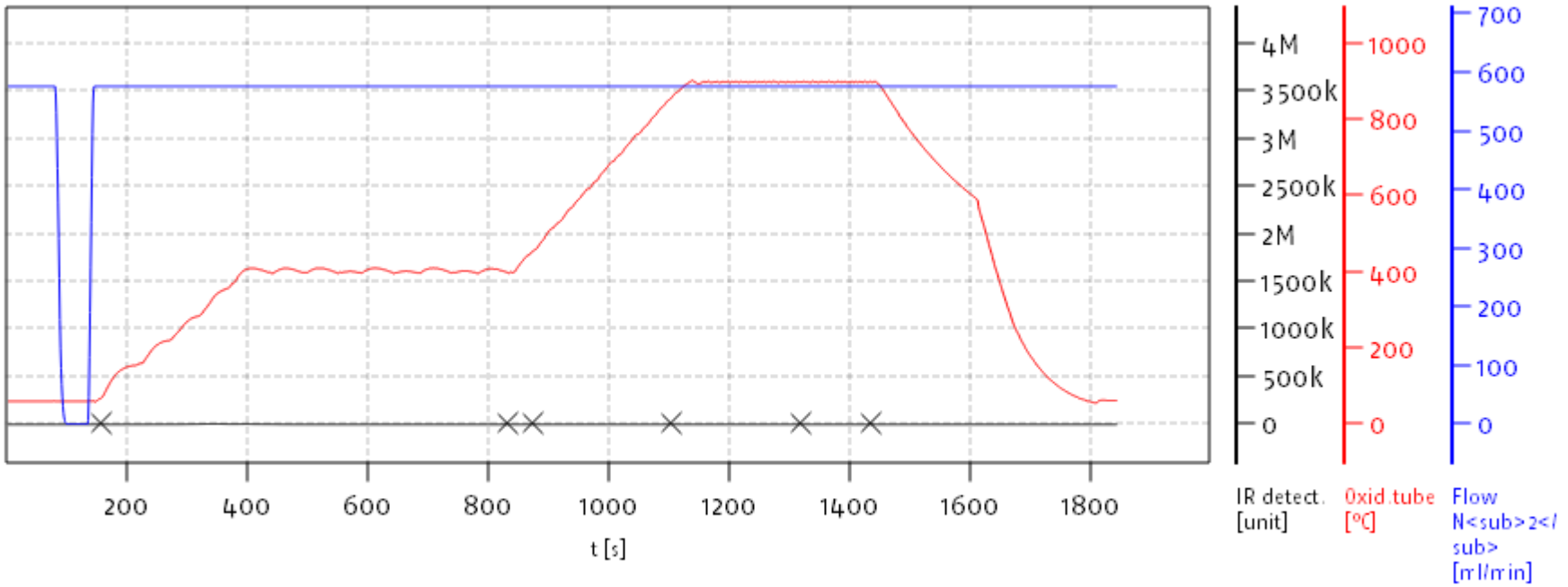
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
2	2	BLANK	1.00		1.00	CARBON	8/10/2021 1:48 PM	0.000	0.000	0.000	bl	25 029	584	417	1.0000	1.0000



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Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
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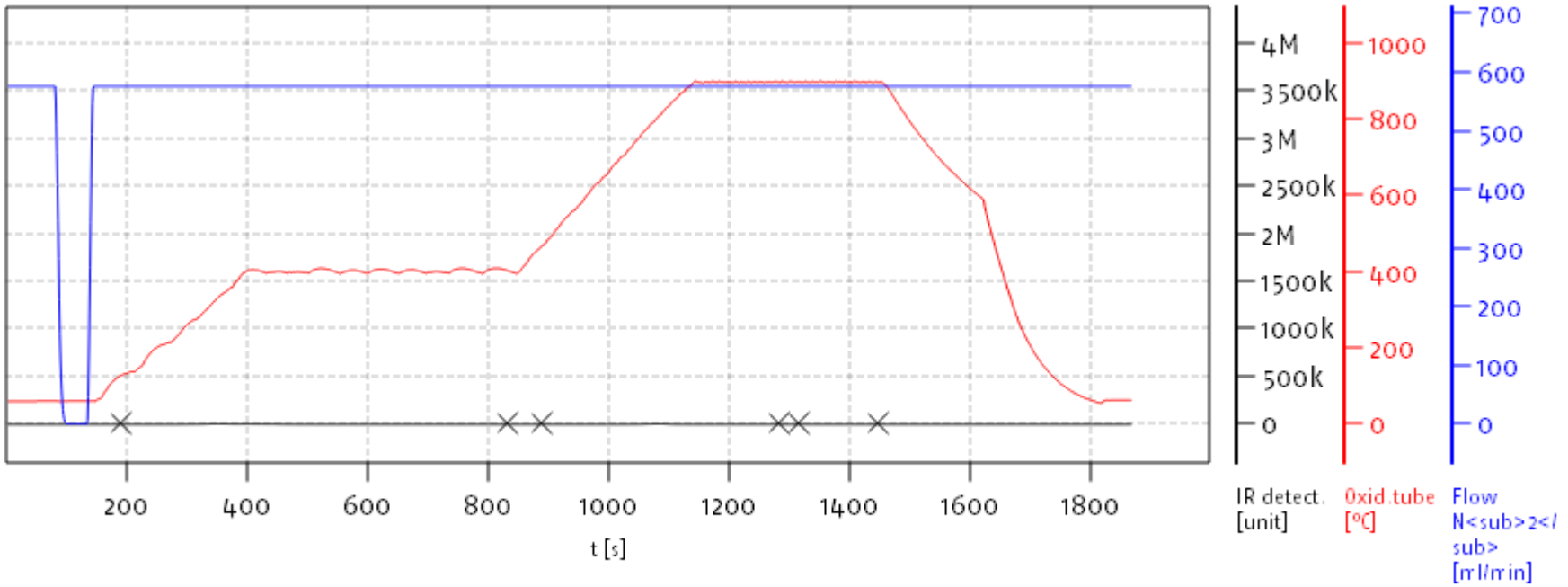
Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
3	3	SJH0113-CAL1	200.00	0.0028	1.00	CARBON	8/10/2021 2:19 PM	0.022	0.010	0.032	bl,C2u	22 693	9 521	406	1.0000	1.0000



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Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

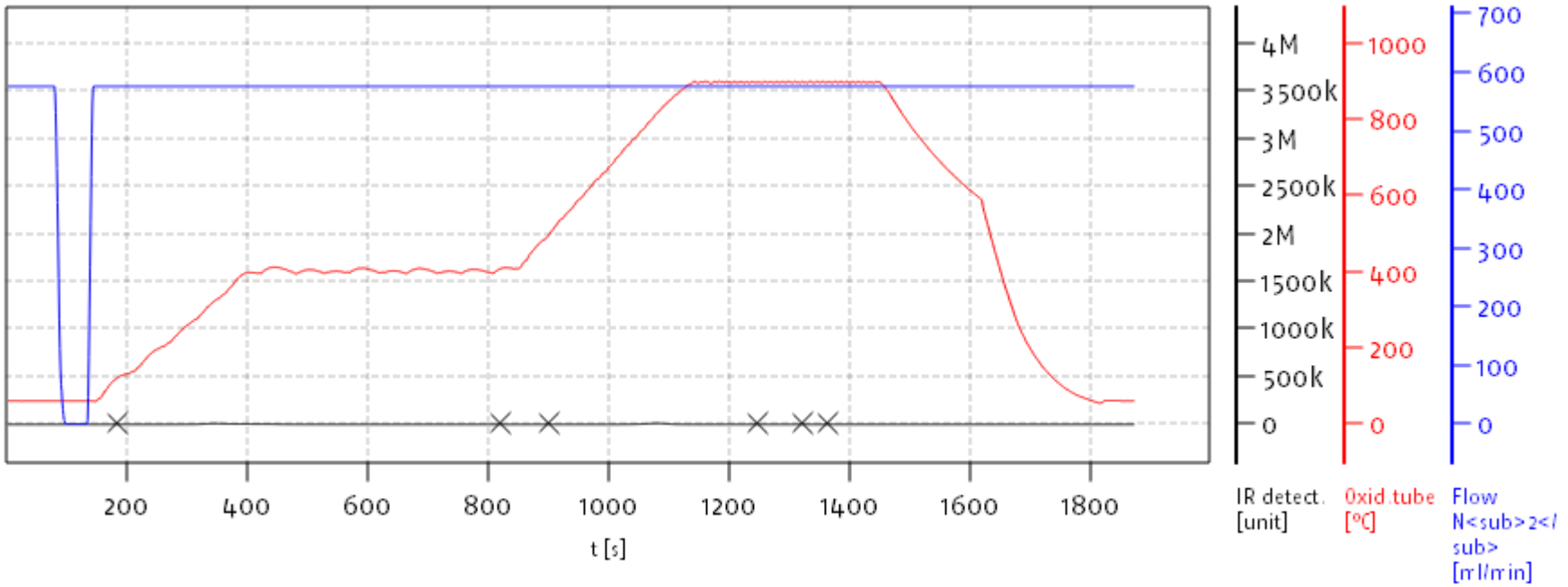
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
4	4	SJH0113-CAL2	200.00	0.0053	1.00	CARBON	8/10/2021 2:51 PM	0.029	0.018	0.046	bl,C2u	30 832	20 112	139	1.0000	1.0000



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Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

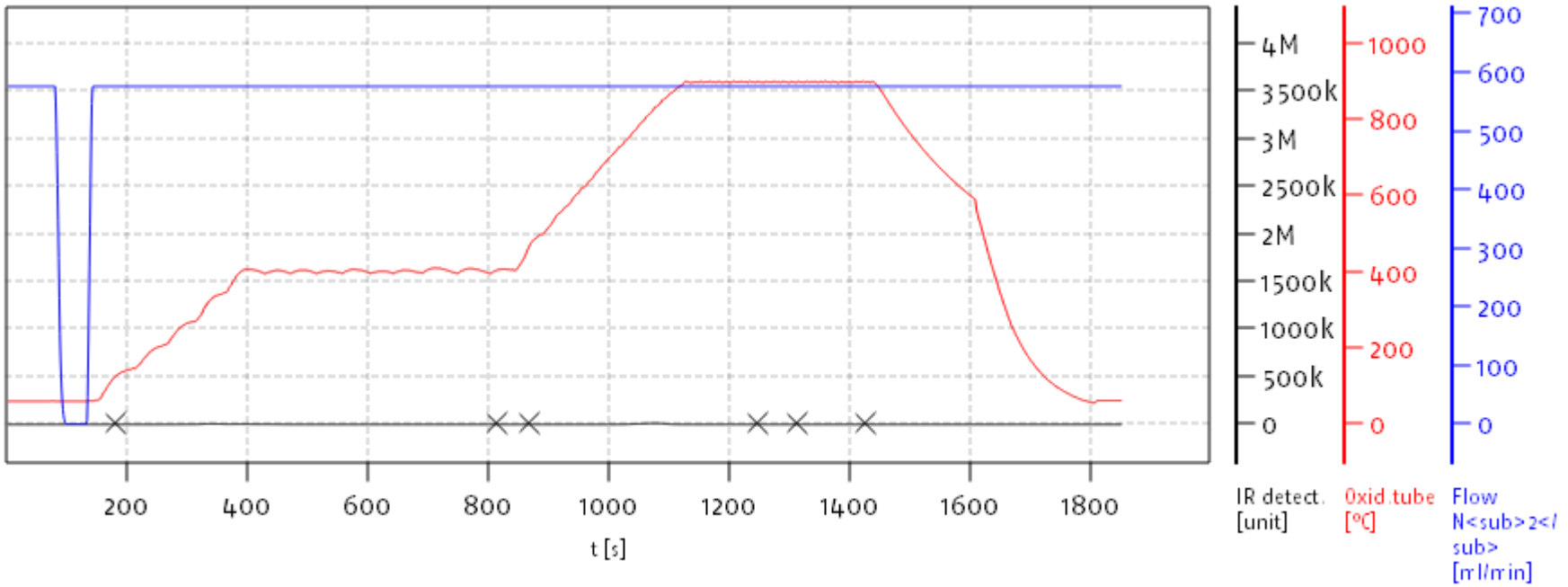
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
5	5	SJH0113-CAL3	200.00	0.0070	1.00	CARBON	8/10/2021 3:22 PM	0.022	0.021	0.043	bl,C2u	22 146	23 616	314	1.0000	1.0000



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Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

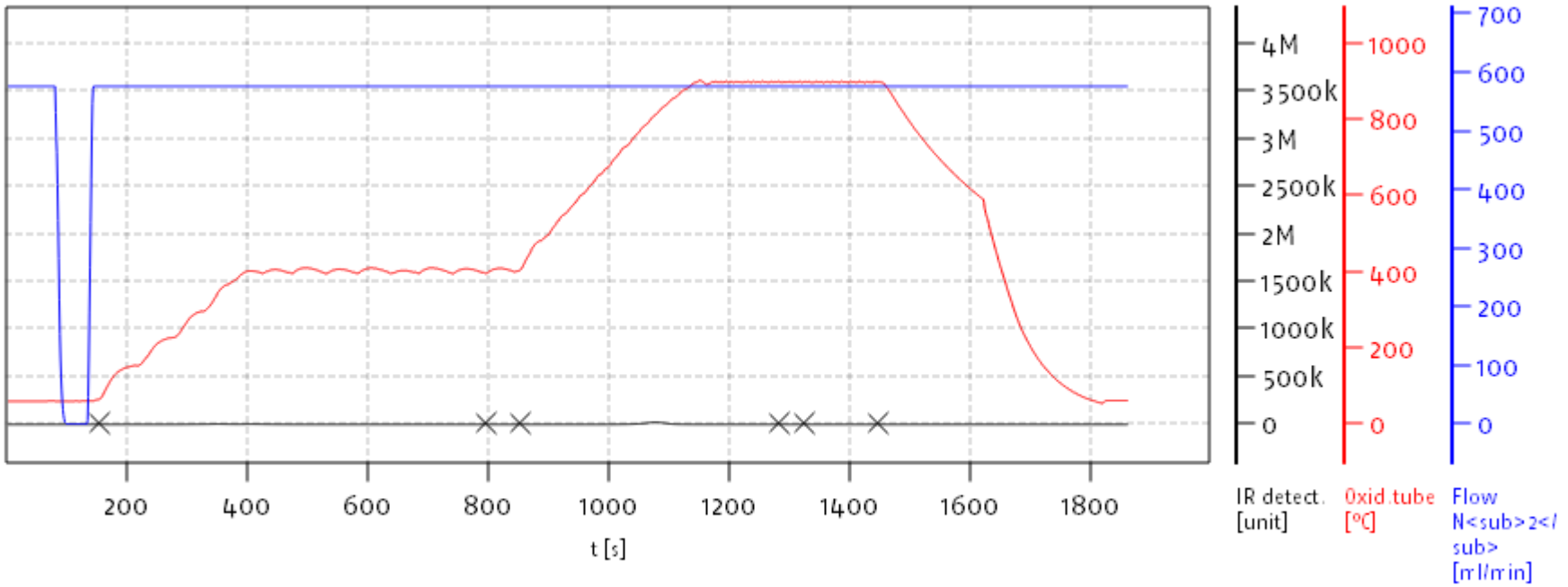
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
6	6	SJH0113-CAL4	200.00	0.0103	1.00	CARBON	8/10/2021 3:54 PM	0.018	0.032	0.050	bl,C2u	17 342	38 128	280	1.0000	1.0000



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Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

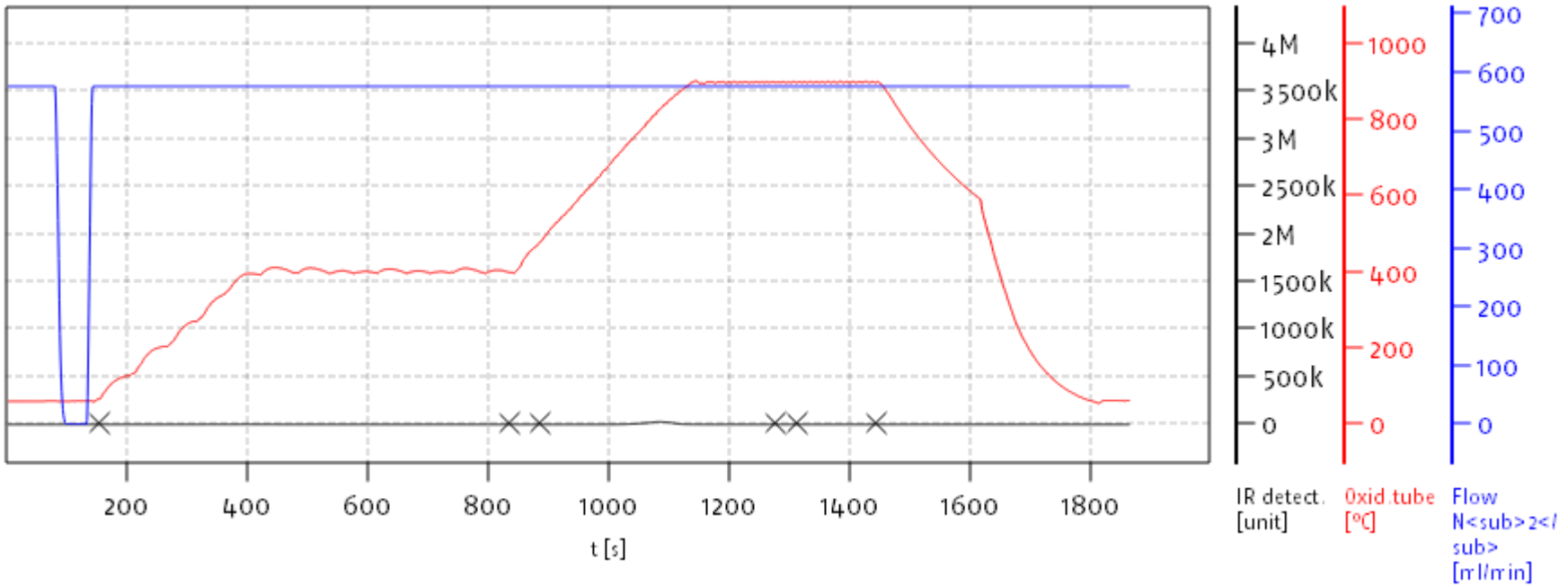
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
7	7	SJH0113-CAL5	200.00	0.0150	1.00	CARBON	8/10/2021 4:25 PM	0.009	0.046	0.055	bl,C1u,C2u	6 405	55 349	275	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

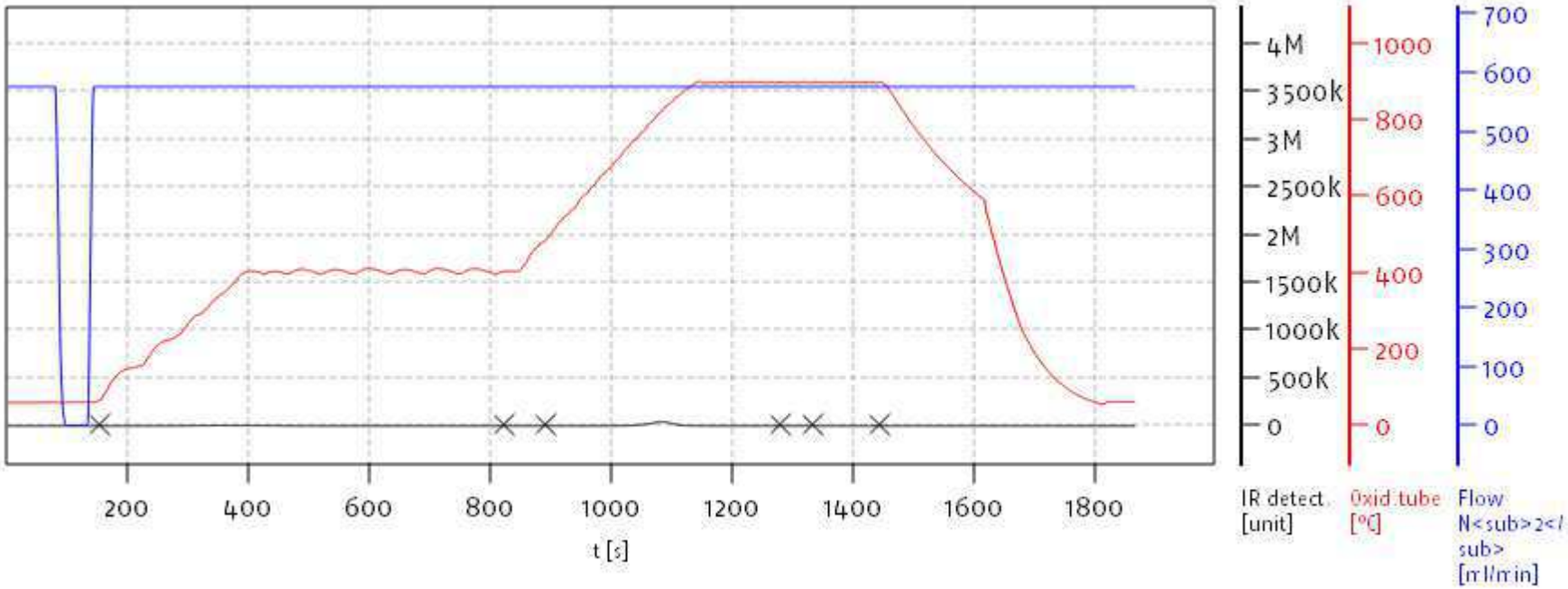
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
8	8	SJH0113-CAL6	200.00	0.0199	1.00	CARBON	8/10/2021 4:57 PM	0.024	0.063	0.087	bl,C2u	25 078	76 805	308	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

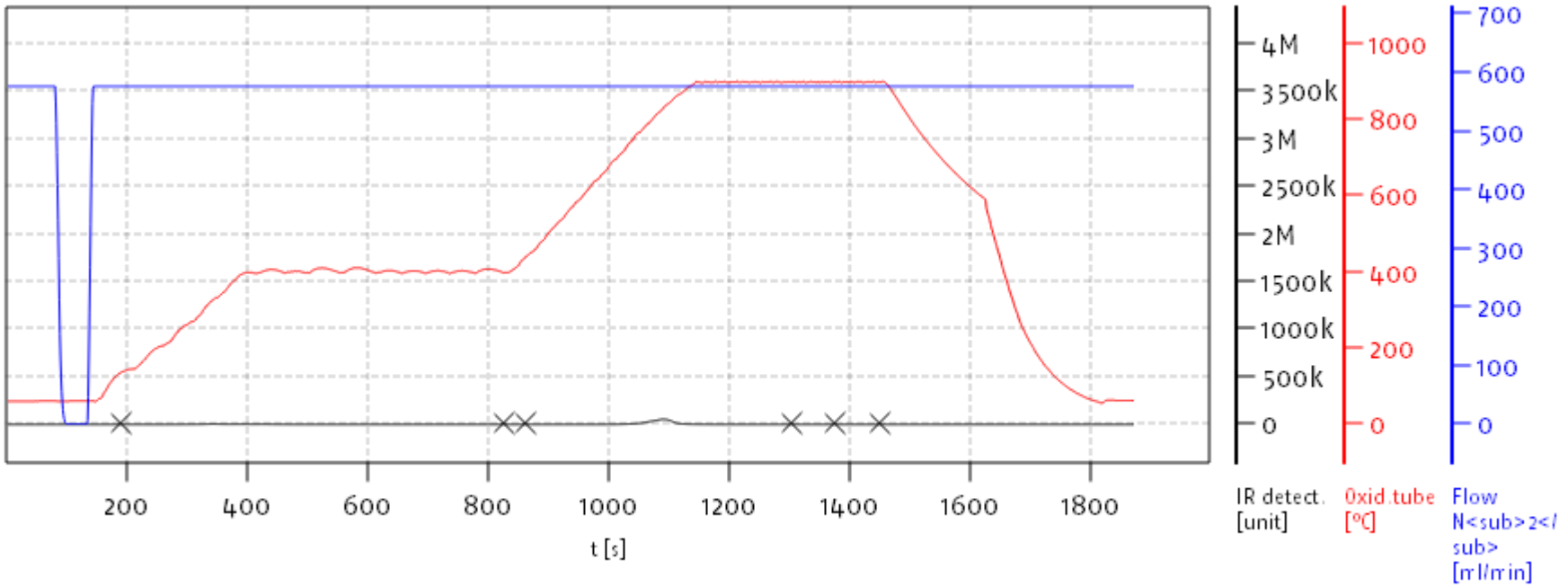
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
9	9	SJH0113-CAL7	200.00	0.0248	1.00	CARBON	8/10/2021 5:28 PM	0.017	0.079	0.096	bl,C2u	16 608	97 209	190	1.0000	1.0000



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Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
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Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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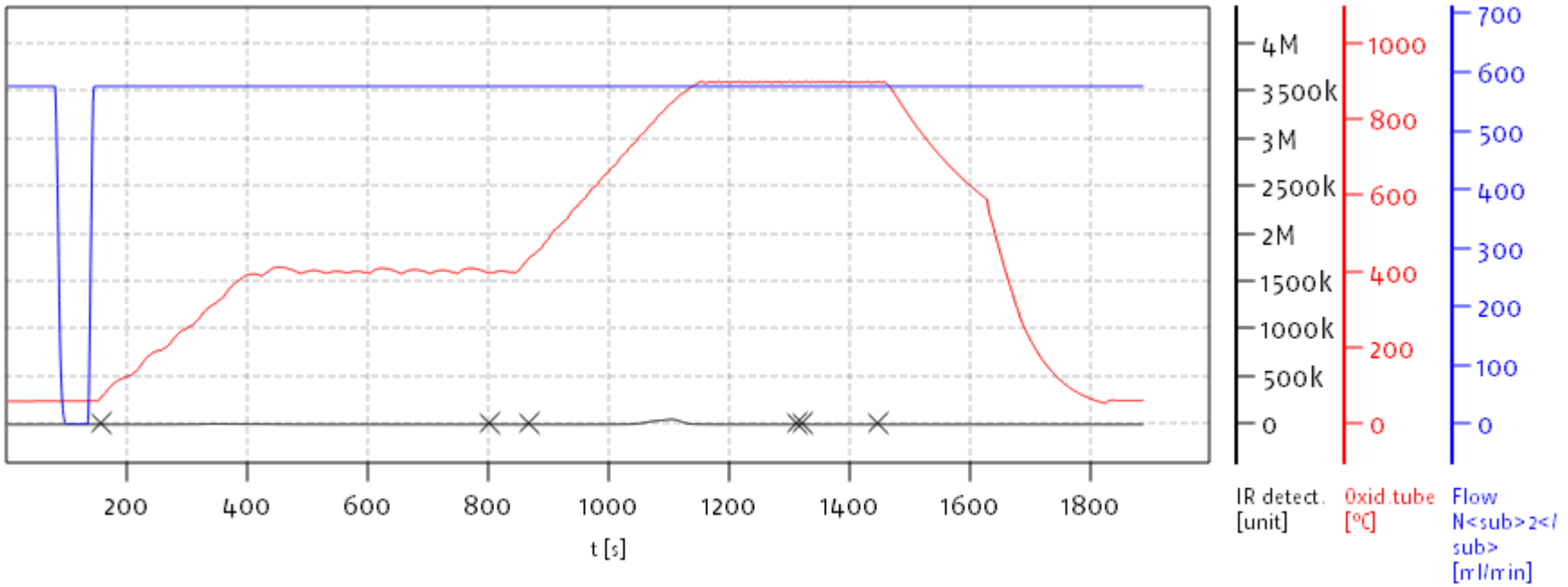
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
10	10	SJH0113-CAL8	200.00	0.0302	1.00	CARBON	8/10/2021 6:00 PM	0.024	0.092	0.116	bl,C2u	24 582	114 459	270	1.0000	1.0000



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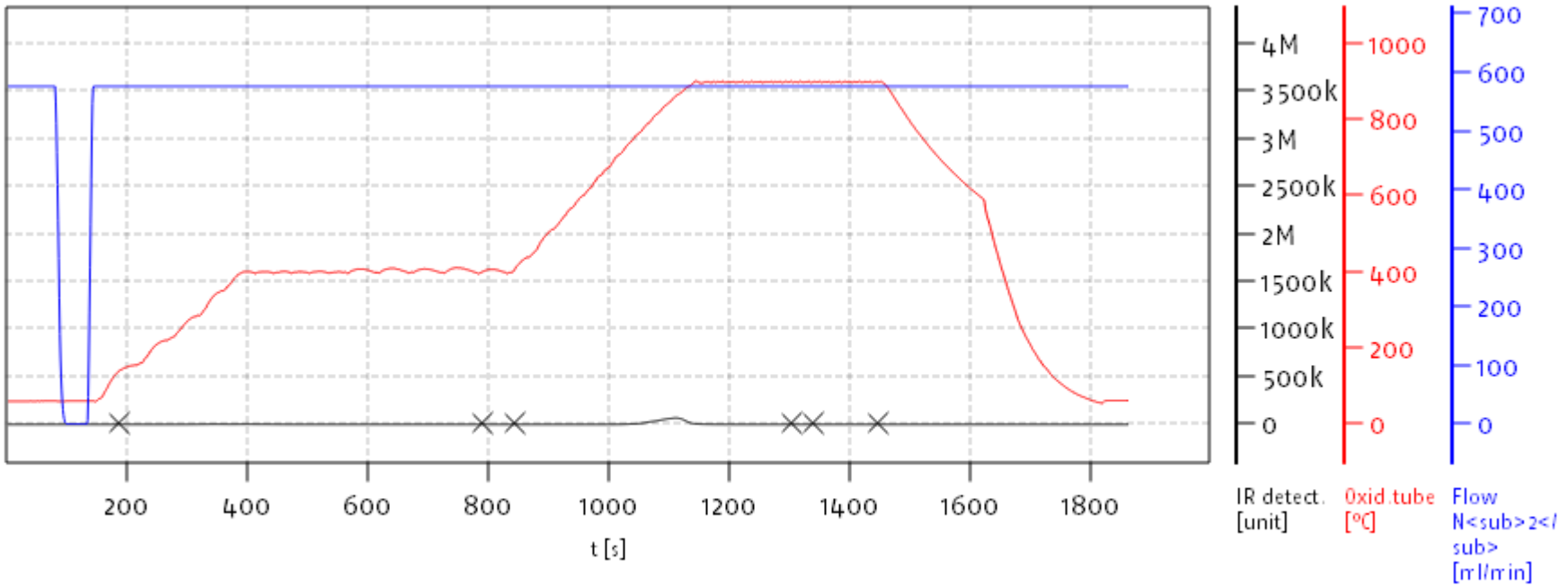
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
11	11	SJH0113-CAL9	200.00	0.0397	1.00	CARBON	8/10/2021 6:32 PM	0.014	0.118	0.132	bl,C2u	12 556	147 448	246	1.0000	1.0000



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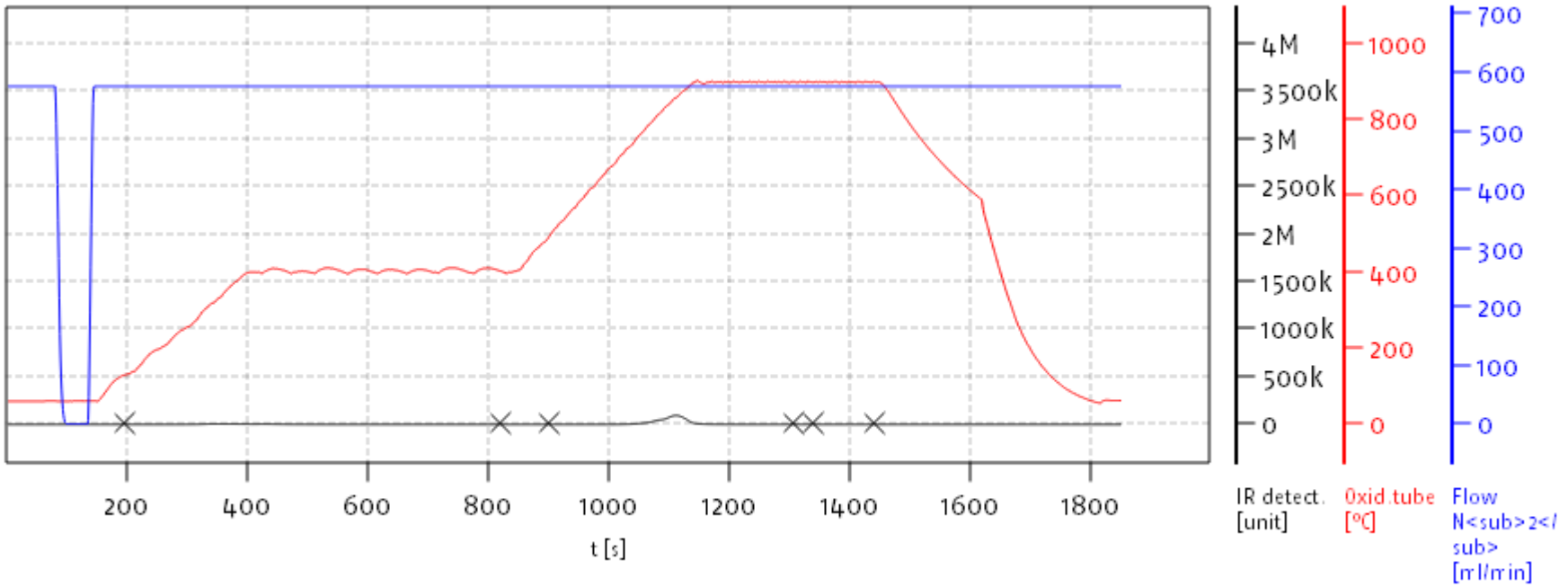
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
12	12	SJH0113-CALA	200.00	0.0497	1.00	CARBON	8/10/2021 7:03 PM	0.024	0.145	0.168	bl,C2u	24 575	180 758	227	1.0000	1.0000



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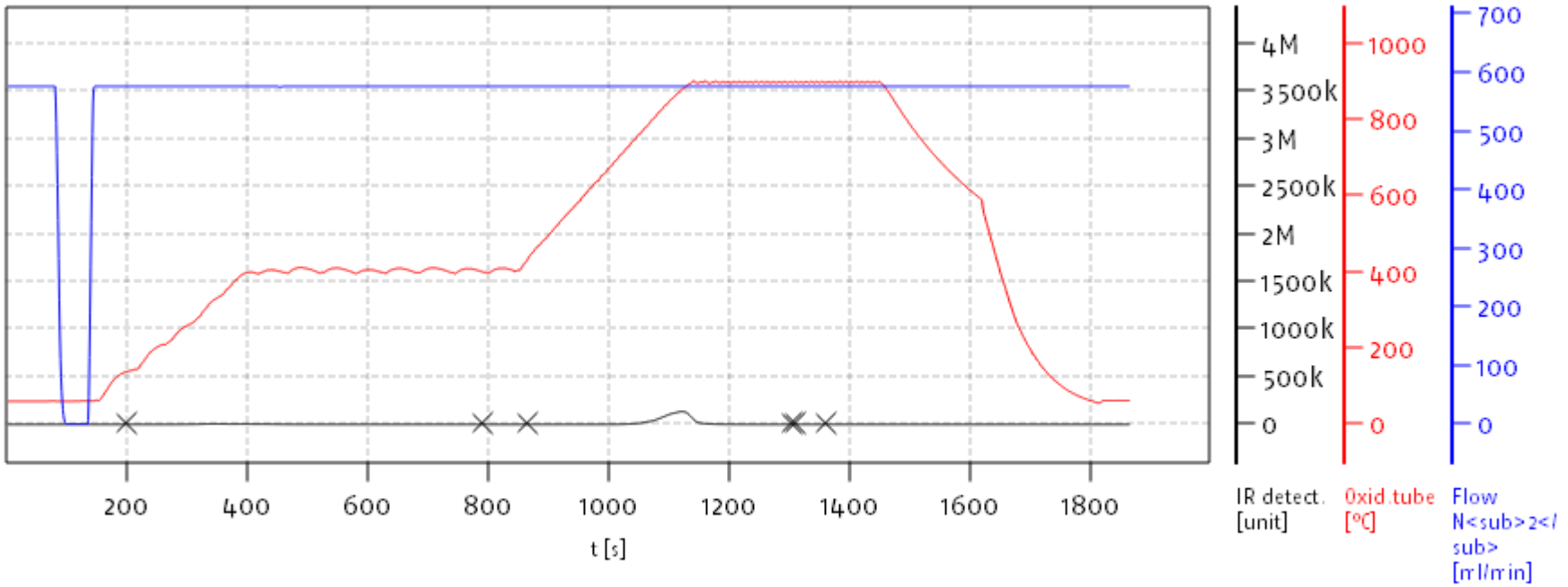
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
13	13	SJH0113-CALB	200.00	0.0039	1.00	CARBON	8/10/2021 7:34 PM	0.023	0.236	0.260	bl,C2u	24 401	297 056	121	1.0000	1.0000



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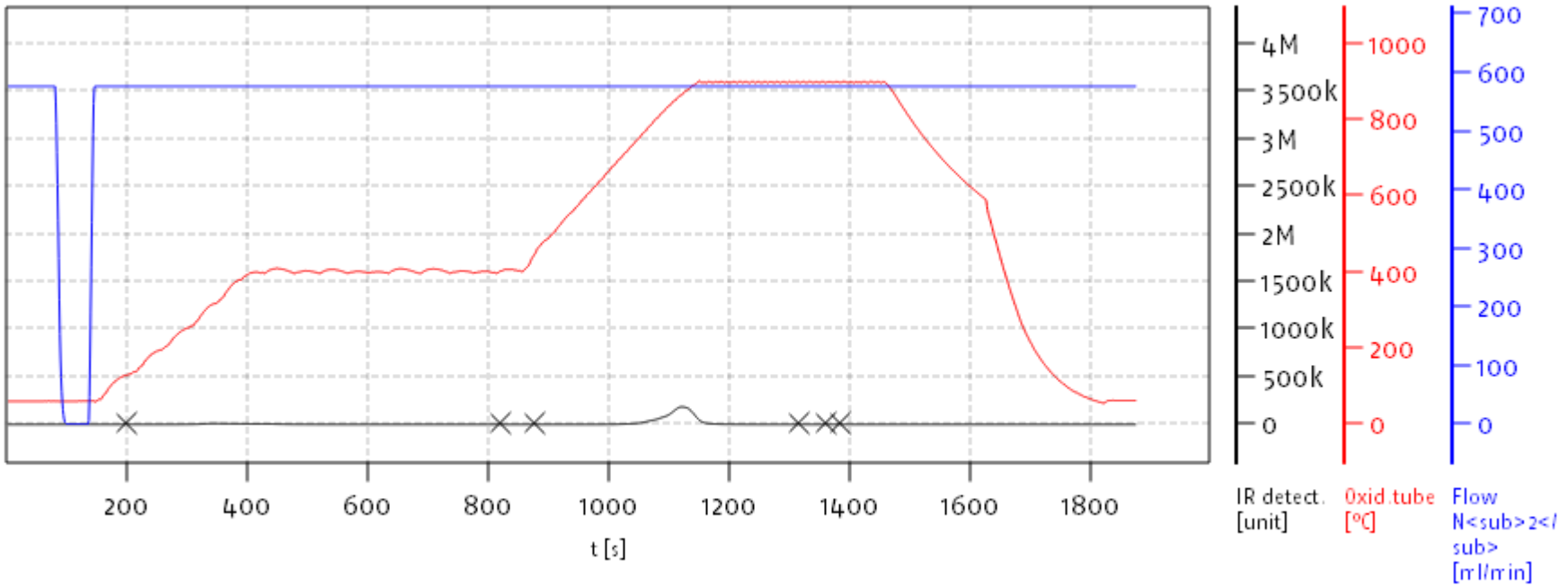
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
14	14	SJH0113-CALC	200.00	0.0052	1.00	CARBON	8/10/2021 8:06 PM	0.036	0.311	0.347	bl,C2u	40 501	391 829	67	1.0000	1.0000



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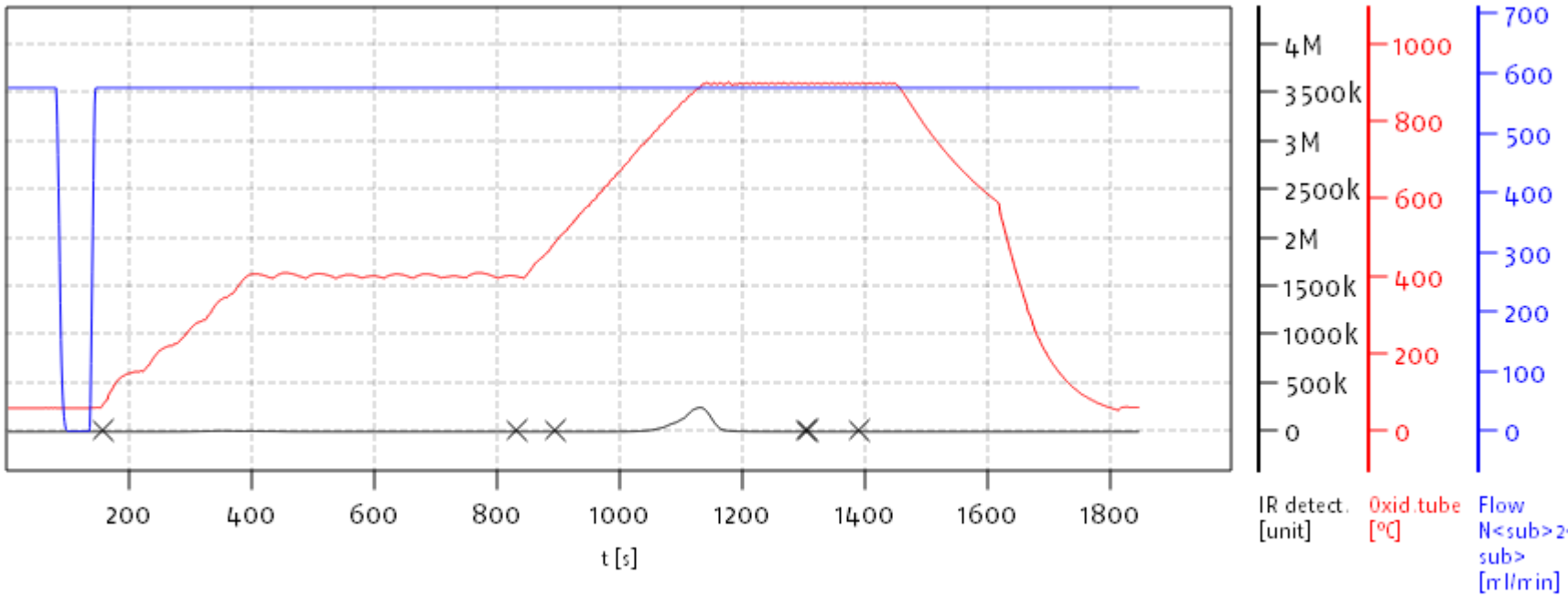
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
15	15	SJH0113-CALD	200.00	0.0072	1.00	CARBON	8/10/2021 8:37 PM	0.032	0.439	0.470	bl,C2u	34 638	553 926	294	1.0000	1.0000



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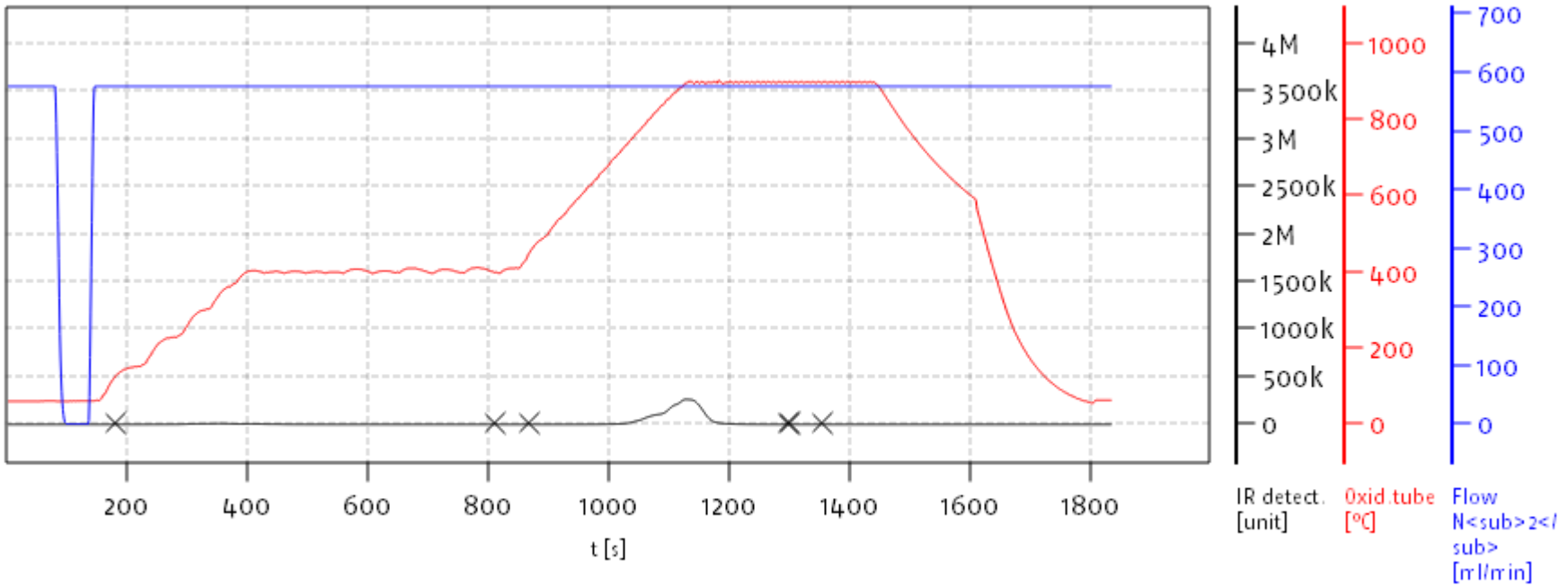
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
16	16	SJH0113-CALE	200.00	0.0098	1.00	CARBON	8/10/2021 9:08 PM	0.037	0.592	0.630	bl,C2u	42 067	748 510	251	1.0000	1.0000



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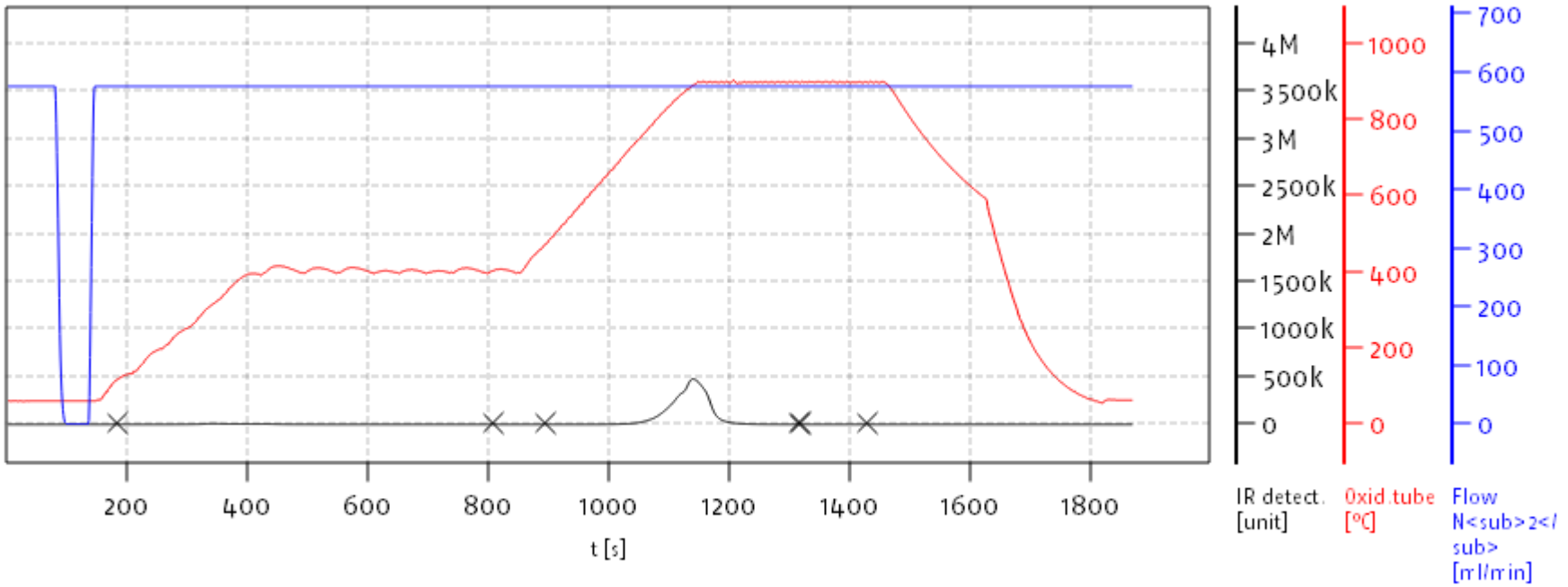
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
17	17	SJH0113-CALF	200.00	0.0150	1.00	CARBON	8/10/2021 9:40 PM	0.030	0.934	0.964	bl,C2u	32 751	1 182 576	479	1.0000	1.0000



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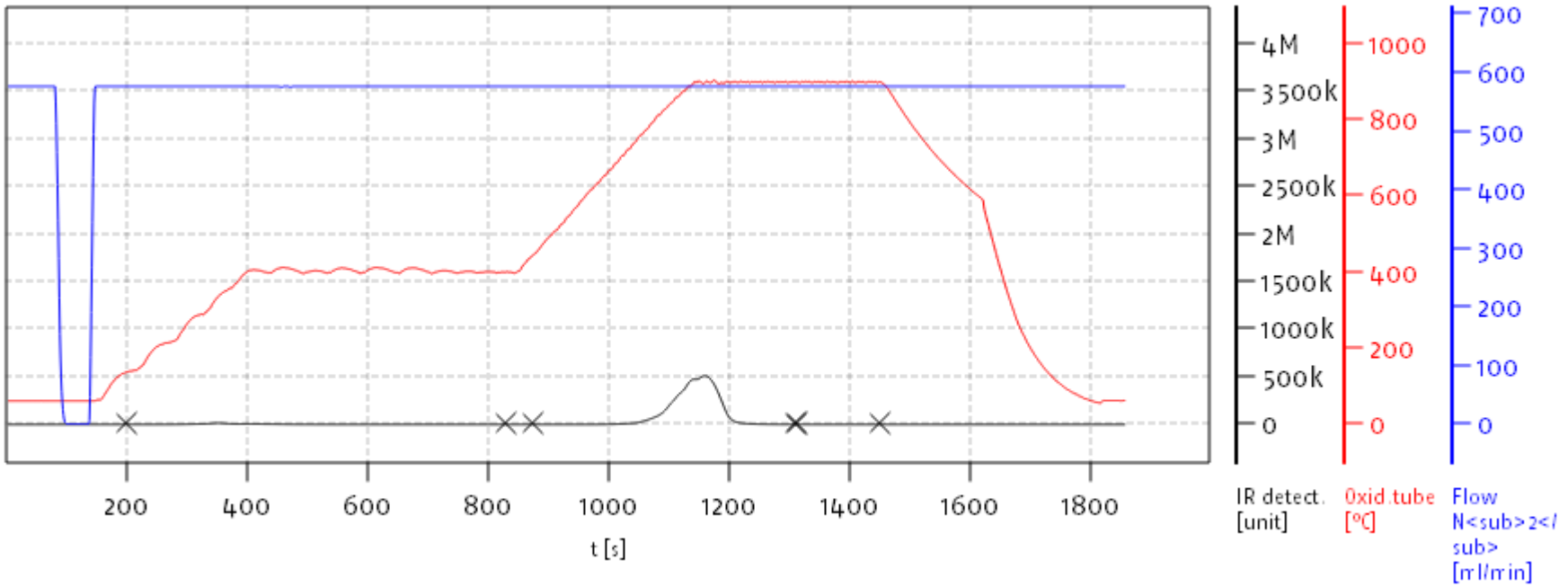
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
18	18	SJH0113-CALG	200.00	0.0203	1.00	CARBON	8/10/2021 10:11 PM	0.039	1.249	1.287	bl,C2u	42 932	1 581 667	955	1.0000	1.0000



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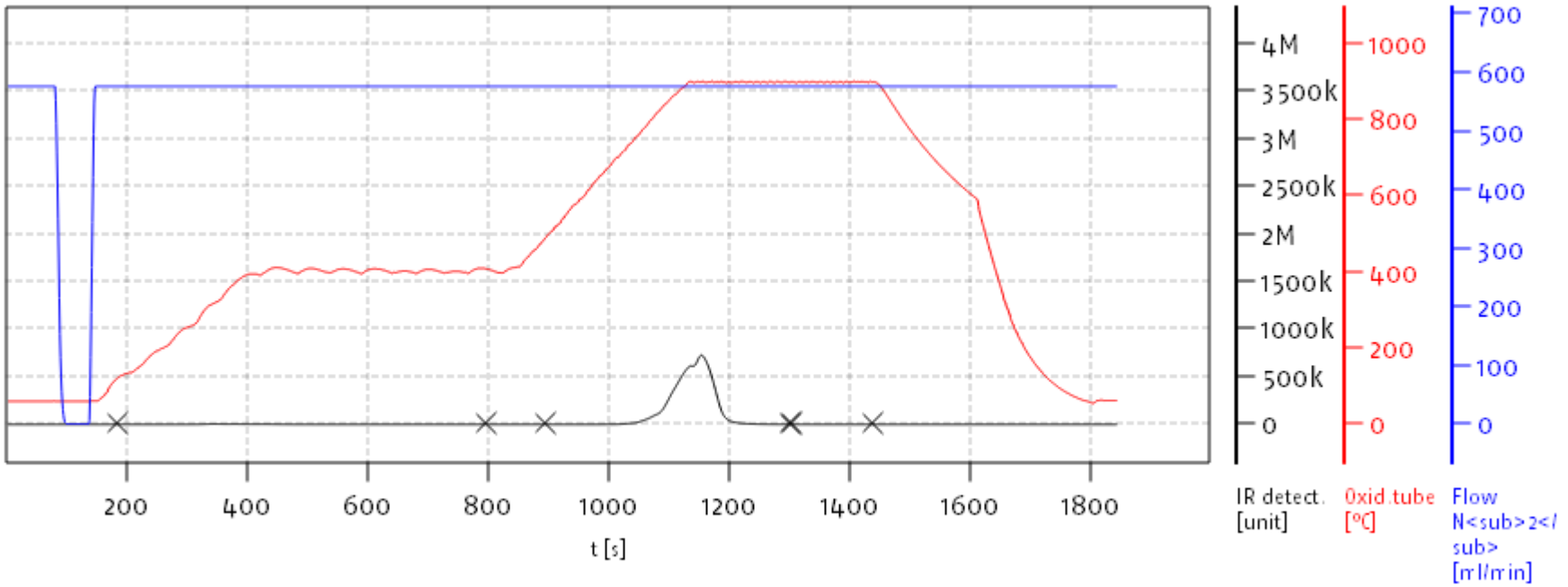
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
19	19	SJH0113-CALH	200.00	0.0251	1.00	CARBON	8/10/2021 10:42 PM	0.019	1.538	1.557	bl,C2u	17 895	1 948 888	1 191	1.0000	1.0000



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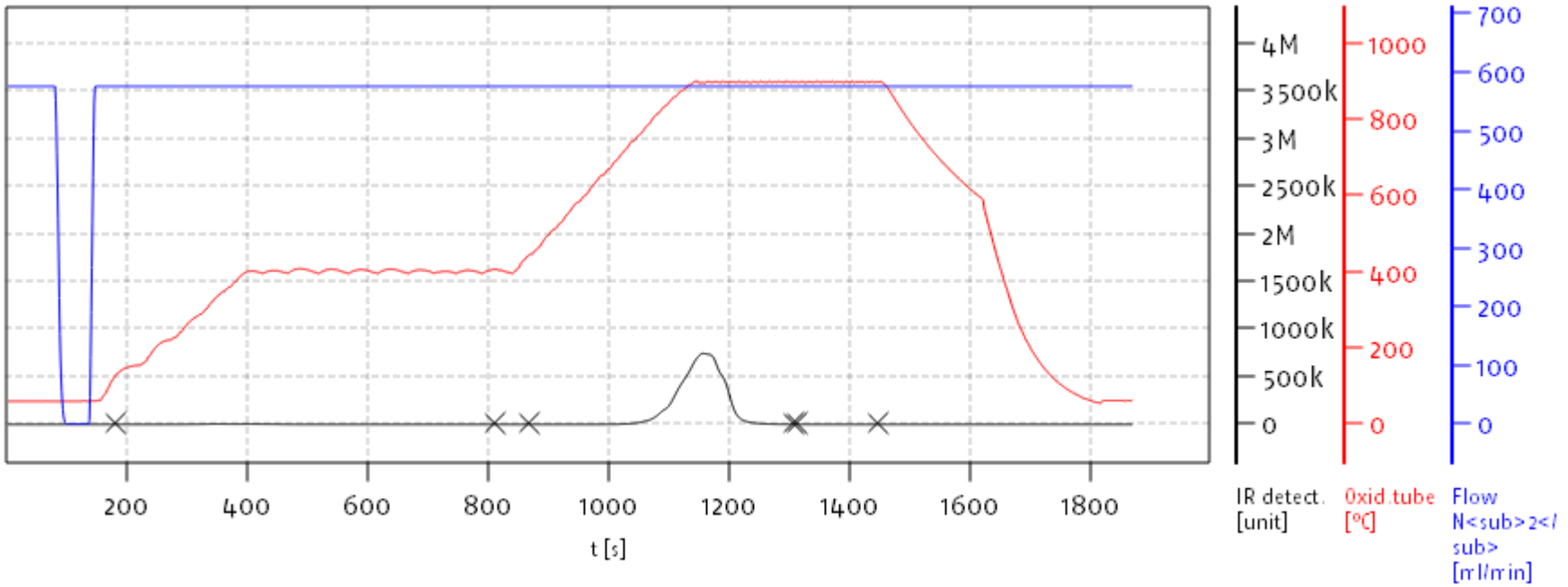
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
20	20	SJH0113-CALI	200.00	0.0304	1.00	CARBON	8/10/2021 11:14 PM	0.024	1.868	1.892	bl,C2u	23 738	2 367 098	1 836	1.0000	1.0000



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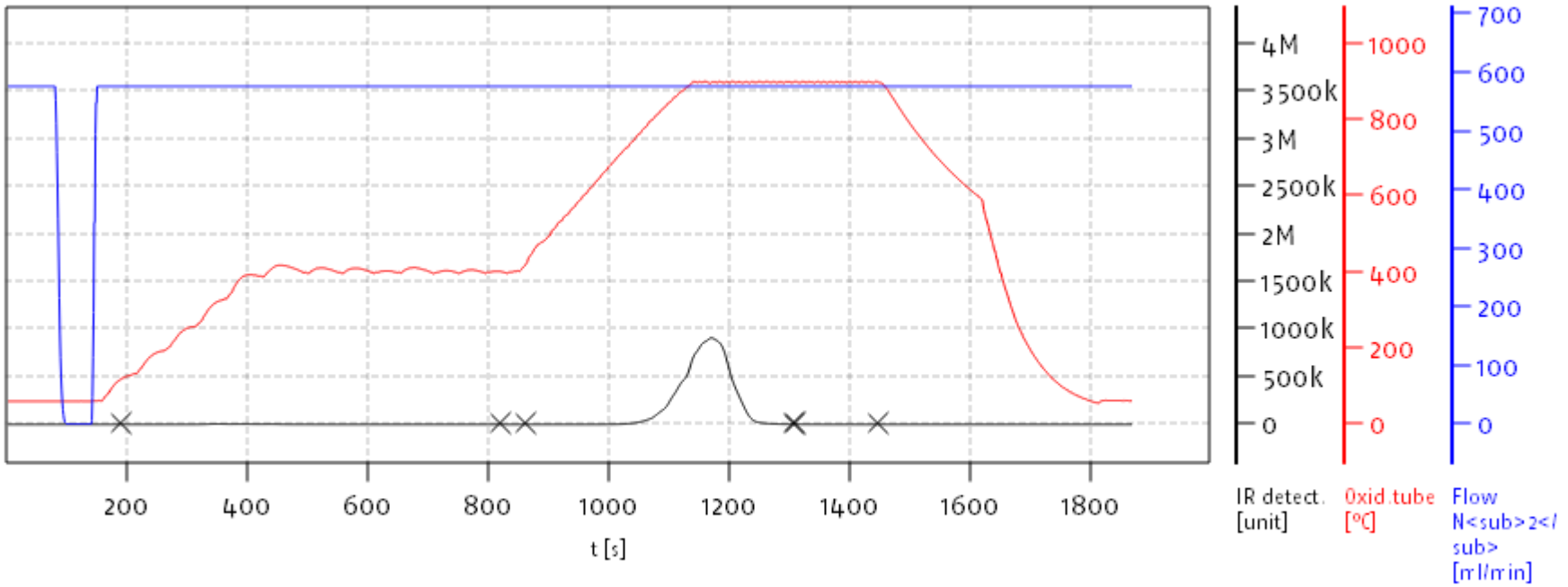
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
21	21	SJH0113-CALJ	200.00	0.0399	1.00	CARBON	8/10/2021 11:45 PM	0.023	2.454	2.477	bl,C2u	21 349	3 110 916	2 579	1.0000	1.0000



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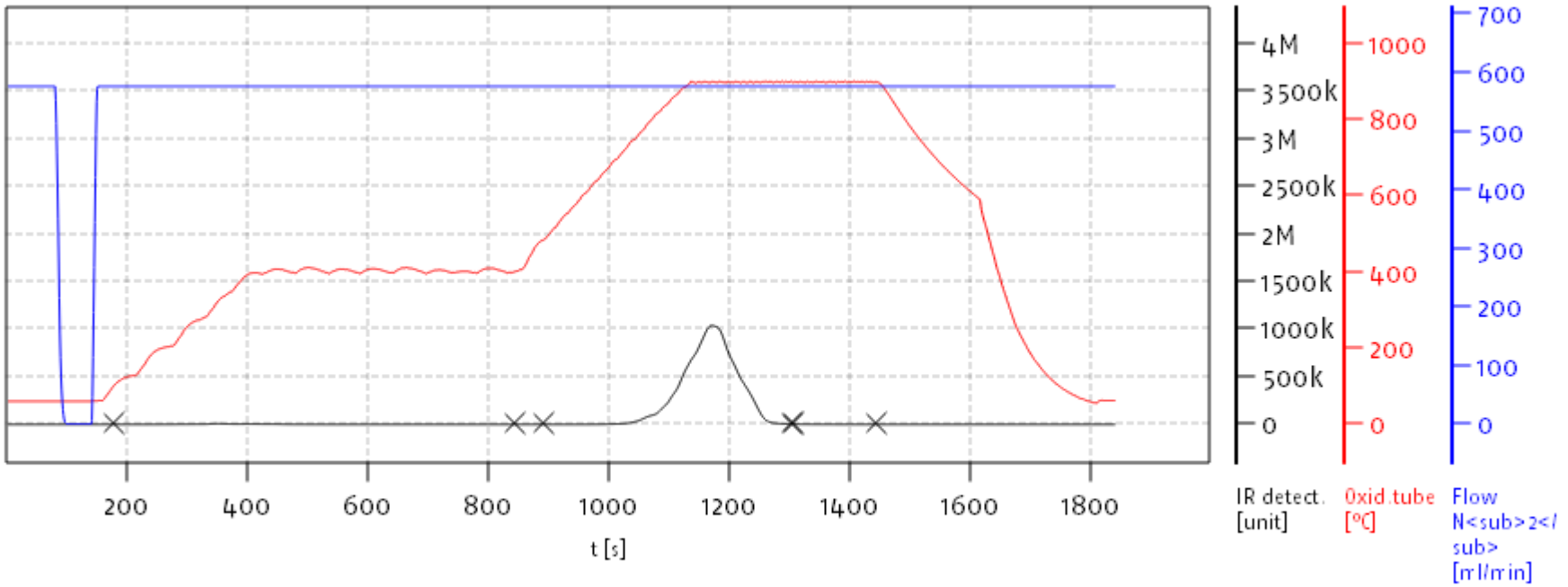
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
22	22	SJH0113-CALK	200.00	0.0500	1.00	CARBON	8/11/2021 12:16 AM	0.030	3.054	3.084	bl,C2u	29 231	3 872 043	4 133	1.0000	1.0000



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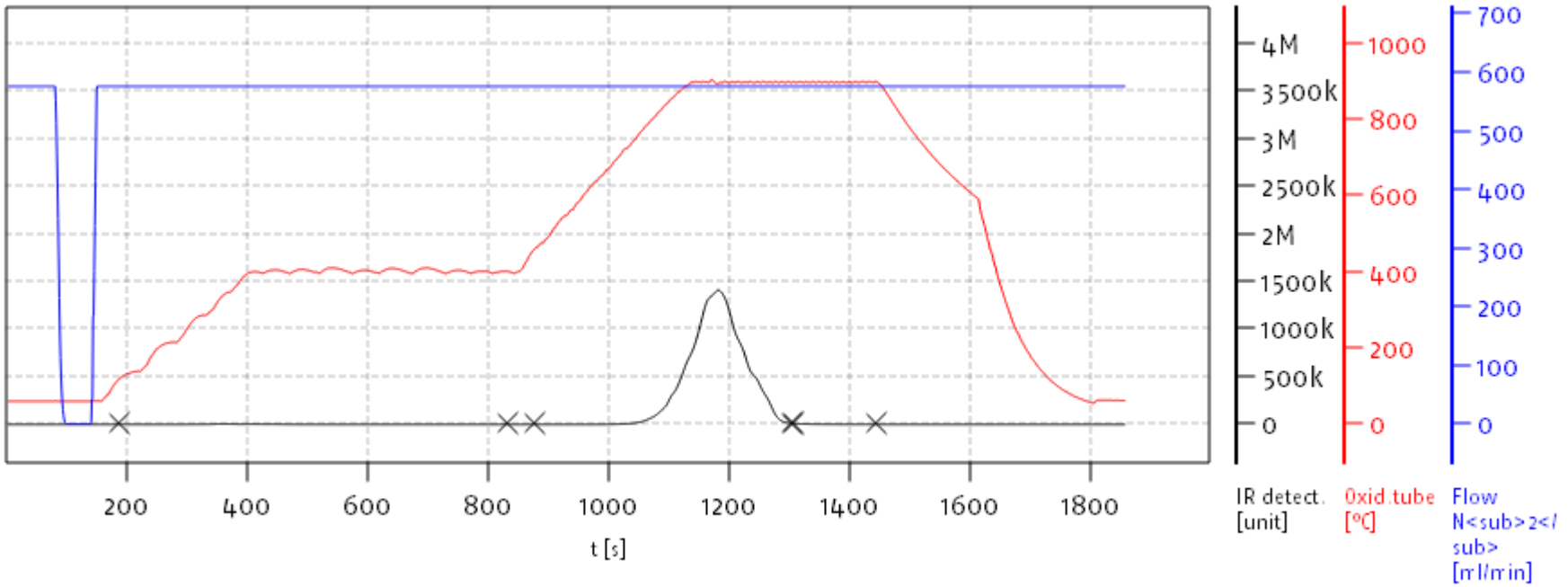
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
23	23	SJH0113-CALL	200.00	0.0699	1.00	CARBON	8/11/2021 12:48 AM	0.028	4.289	4.317	bl	19 838	5 438 583	10 830	1.0000	1.0000



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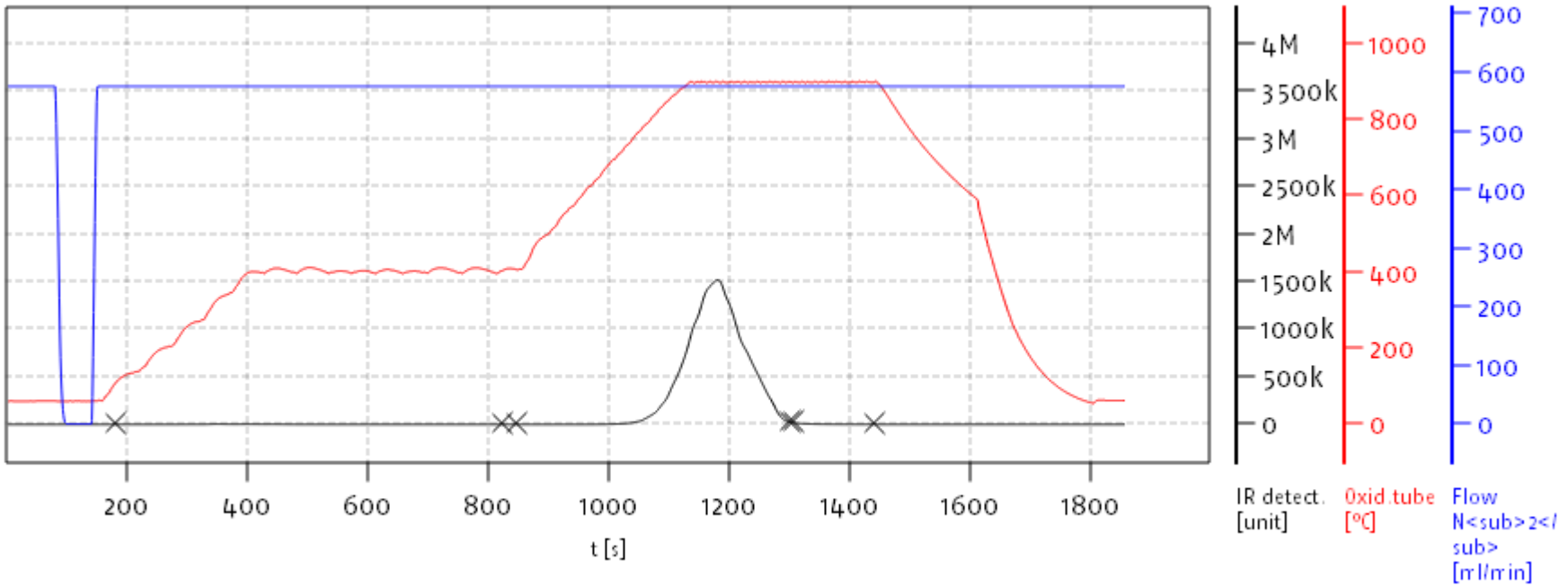
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
24	24	SJH0113-CALM	200.00	0.0801	1.00	CARBON	8/11/2021 1:19 AM	0.030	4.919	4.949	bl	16 438	6 238 324	16 703	1.0000	1.0000



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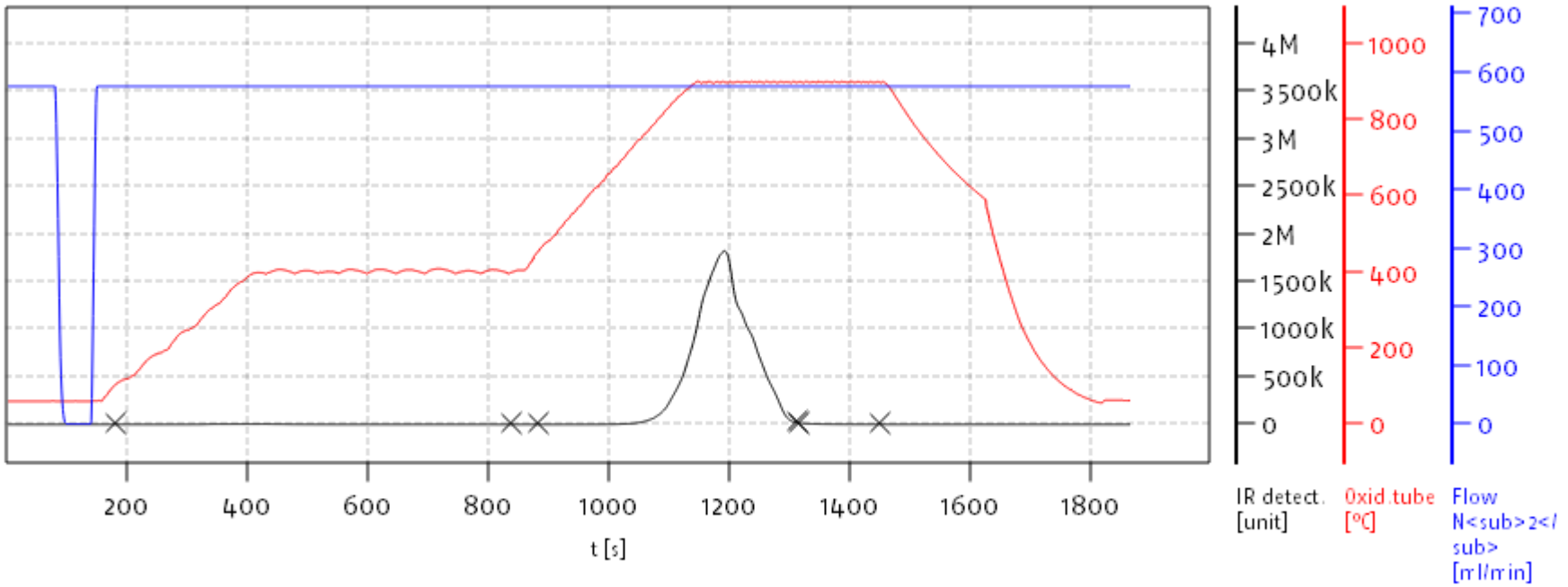
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
25	25	SJH0113-CALN	200.00	0.0903	1.00	CARBON	8/11/2021 1:50 AM	0.035	5.550	5.585	bl	23 597	7 038 842	15 761	1.0000	1.0000



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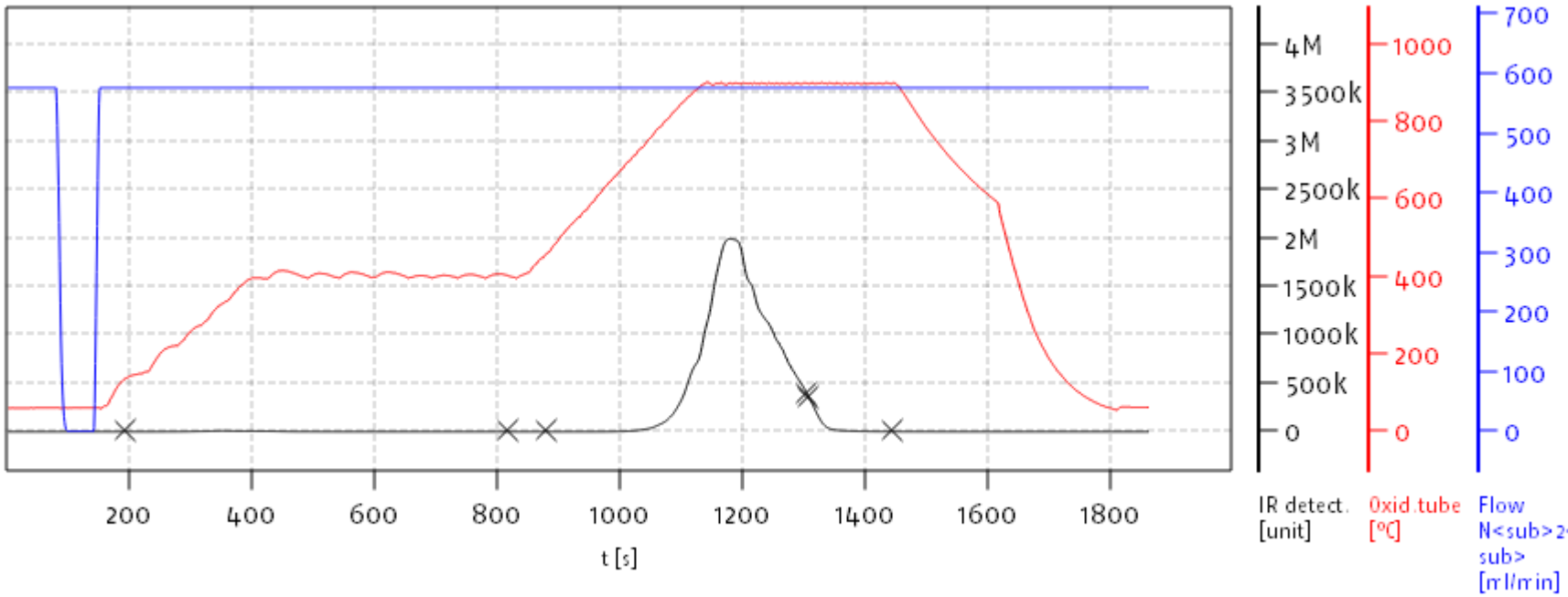
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
26	26	SJH0113-CALO	200.00	0.1198	1.00	CARBON	8/11/2021 2:22 AM	0.206	7.202	7.408	bl,C3o	38 020	9 134 974	218 134	1.0000	1.0000



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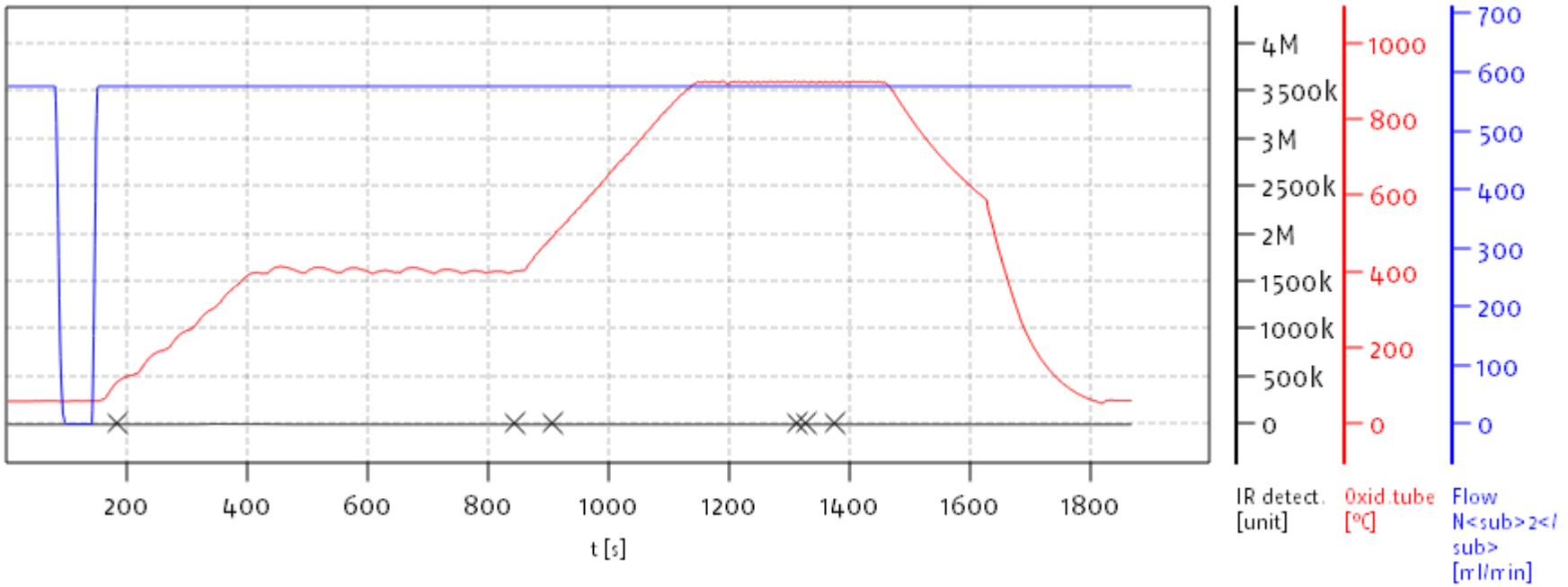
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
27	27	BLANK	1.00		1.00	CARBON	8/11/2021 2:53 AM	0.000	0.000	0.000	bl	19 335	23	0	1.0000	1.0000



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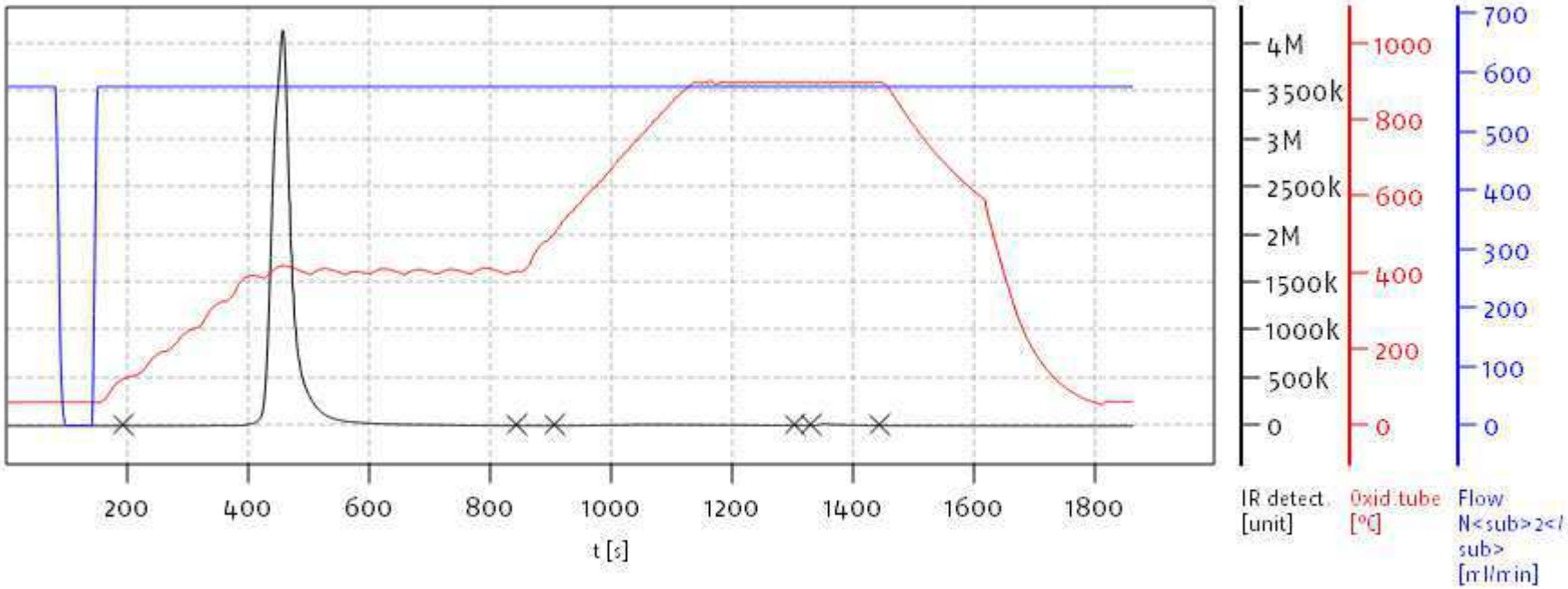
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
28	28	Dfactor	20.90		1.00	CARBON	8/11/2021 3:25 AM	44.744	0.921	45.666	bl	5 800 620	119 521	37 001	1.0154	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

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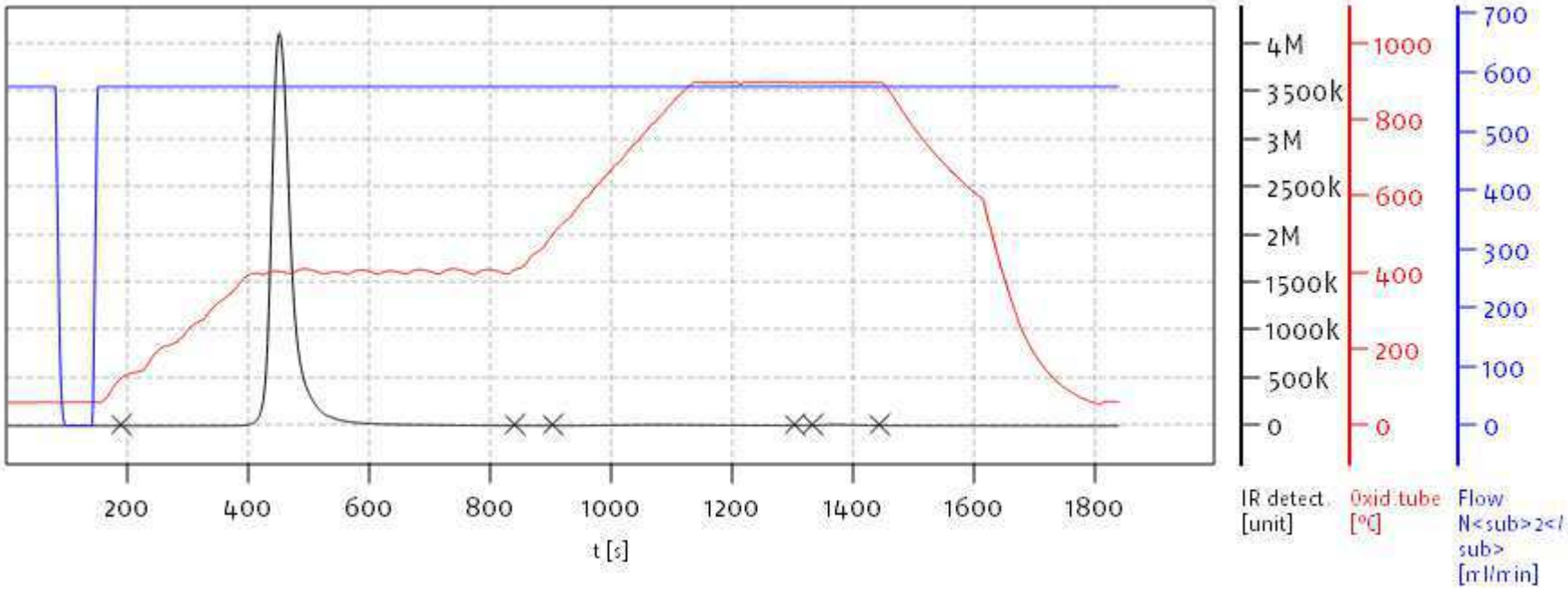
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
29	29	Dfactor	21.50		1.00	CARBON	8/11/2021 3:56 AM	44.697	0.738	45.435	bl	5 956 386	98 039	31 649	1.0173	1.0000



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Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

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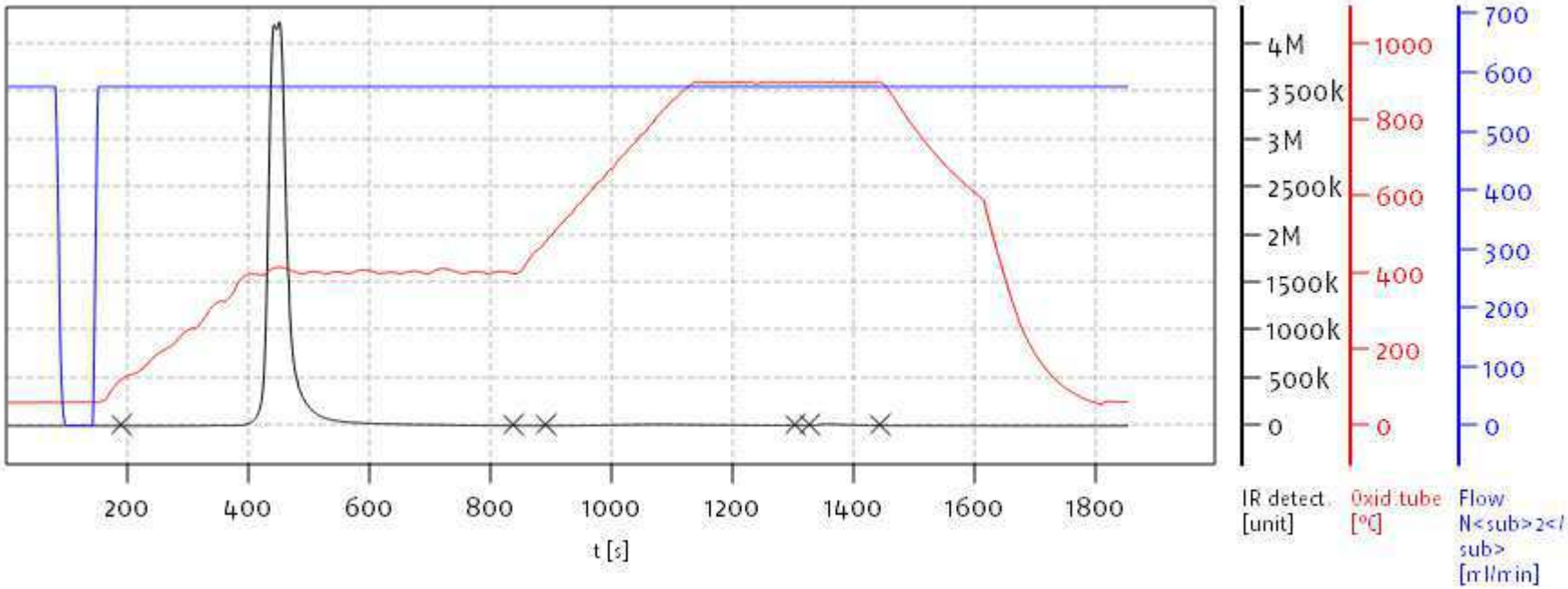
Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
30	30	SJH0113-ICV1	21.40		1.00	CARBON	8/11/2021 4:27 AM	44.407	0.930	45.337	bl	5 886 637	123 684	40 335	1.0163	1.0000



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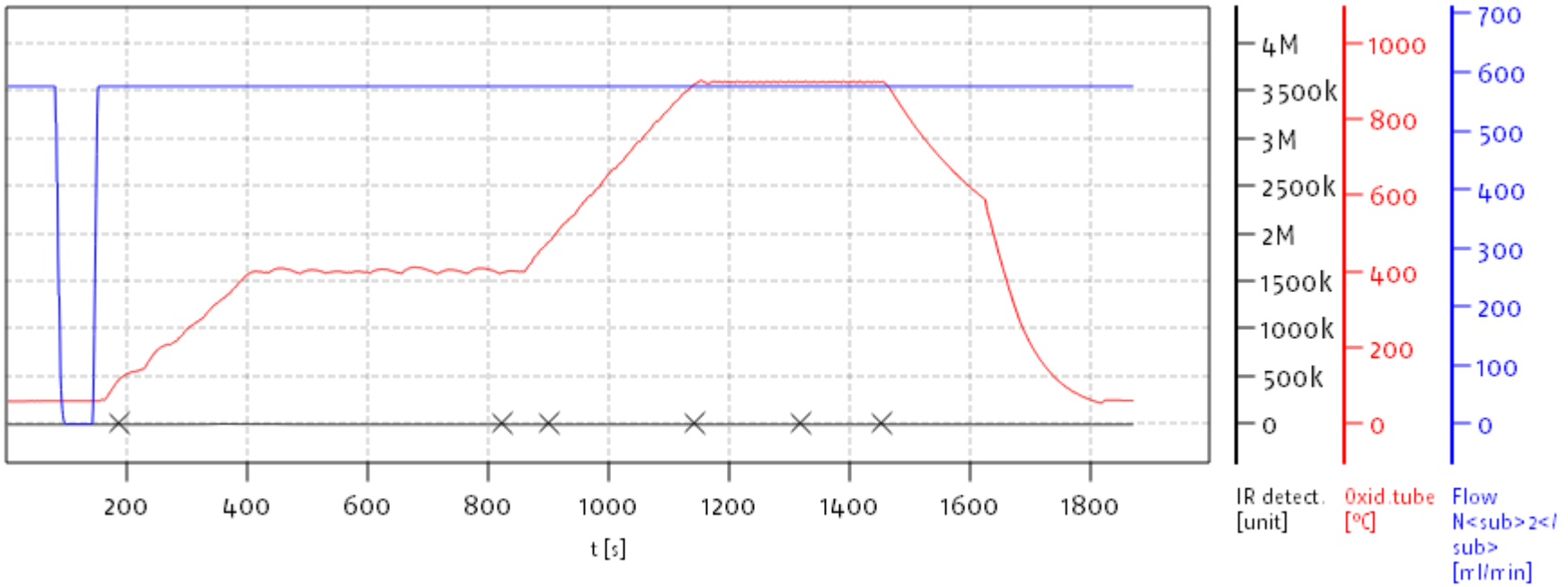
Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
31	31	SJH0113-ICB1	613.30		1.00	CARBON	8/11/2021 4:59 AM	0.007	0.001	0.008	bl,C3u,C2u	20 520	1 826	970	1.0163	1.0000



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Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0183	Instrument:	TOC Cube
		Calibration:	EH00021

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Initial Cal Check	SJH0183-ICV1	peData_08232021@1356-2	NA	08/16/21 17:06
Initial Cal Blank	SJH0183-ICB1	peData_08232021@1356-2	NA	08/16/21 17:38
Calibration Check	SJH0183-CCV1	peData_08232021@1356-3	NA	08/16/21 23:26
Calibration Blank	SJH0183-CCB1	peData_08232021@1356-3	NA	08/16/21 23:58
Calibration Check	SJH0183-CCV2	peData_08232021@1356-3	NA	08/17/21 05:43
Calibration Blank	SJH0183-CCB2	peData_08232021@1356-3	NA	08/17/21 06:14
Calibration Check	SJH0183-CCV3	peData_08232021@1356-(	NA	08/17/21 11:59
Calibration Blank	SJH0183-CCB3	peData_08232021@1356-(	NA	08/17/21 12:31
Calibration Check	SJH0183-CCV4	peData_08232021@1356-1	NA	08/17/21 18:16
Calibration Blank	SJH0183-CCB4	peData_08232021@1356-1	NA	08/17/21 18:48
Calibration Check	SJH0183-CCV5	peData_08232021@1356-1	NA	08/18/21 00:35
Calibration Blank	SJH0183-CCB5	peData_08232021@1356-1	NA	08/18/21 01:06
Calibration Check	SJH0183-CCV6	peData_08232021@1356-2	NA	08/18/21 06:52
Calibration Blank	SJH0183-CCB6	peData_08232021@1356-2	NA	08/18/21 07:24
Calibration Check	SJH0183-CCV7	peData_08232021@1356-2	NA	08/18/21 13:10
Calibration Blank	SJH0183-CCB7	peData_08232021@1356-2	NA	08/18/21 13:41
Calibration Check	SJH0183-CCV8	peData_08232021@1356-2	NA	08/18/21 19:28
Calibration Blank	SJH0183-CCB8	peData_08232021@1356-2	NA	08/18/21 20:00
Calibration Check	SJH0183-CCV9	peData_08232021@1356-3	NA	08/19/21 01:48
Calibration Blank	SJH0183-CCB9	peData_08232021@1356-3	NA	08/19/21 02:19
MRL Check	BJH0351-MRL1	peData_08232021@1356-3	Solid	08/19/21 04:25
Blank	BJH0351-BLK1	peData_08232021@1356-3	Solid	08/19/21 04:56
LCS	BJH0351-BS1	peData_08232021@1356-(	Solid	08/19/21 05:27
Reference	BJH0351-SRM1	peData_08232021@1356-(	Solid	08/19/21 05:59
Calibration Check	SJH0183-CCVA	peData_08232021@1356-(	NA	08/19/21 08:05
Calibration Blank	SJH0183-CCBA	peData_08232021@1356-(	NA	08/19/21 08:36
Calibration Check	SJH0183-CCVB	peData_08232021@1356-1	NA	08/19/21 14:22
Calibration Blank	SJH0183-CCBB	peData_08232021@1356-1	NA	08/19/21 14:54
LDW21-IT698BX	21H0078-10	peData_08232021@1356-1	Solid	08/19/21 19:39
LDW21-IT702BY	21H0078-31	peData_08232021@1356-1	Solid	08/19/21 20:10

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

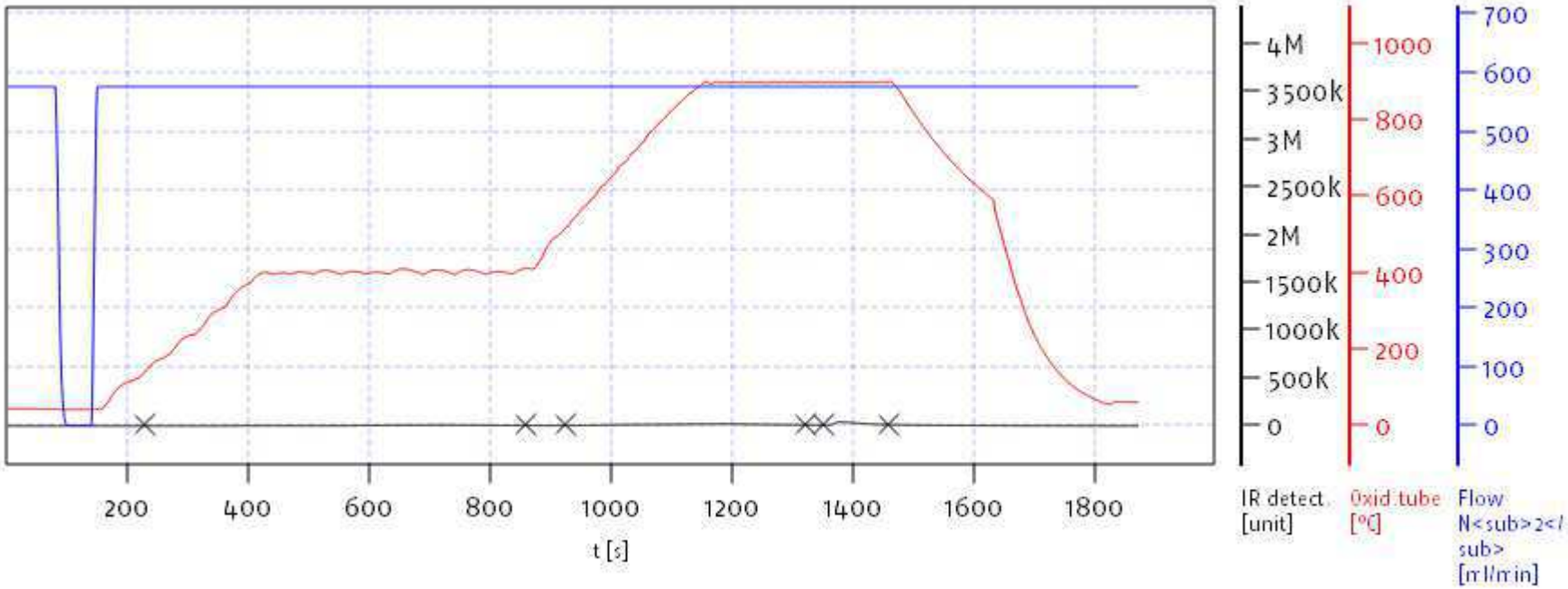
Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0183	Instrument:	TOC Cube
		Calibration:	EH00021

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Check	SJH0183-CCVC	beData_08232021@1356-1	NA	08/19/21 20:42
Calibration Blank	SJH0183-CCBC	beData_08232021@1356-1	NA	08/19/21 21:13

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
1	61	BLANK	1.00		1.00	CARBON	8/16/2021 3:32 PM	0.000	0.000	0.000	bl	90 231	198 327	96 062	1.0000	1.0000



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Access: soliTOC superuser

Date: Mon Aug 23 13:43:13 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

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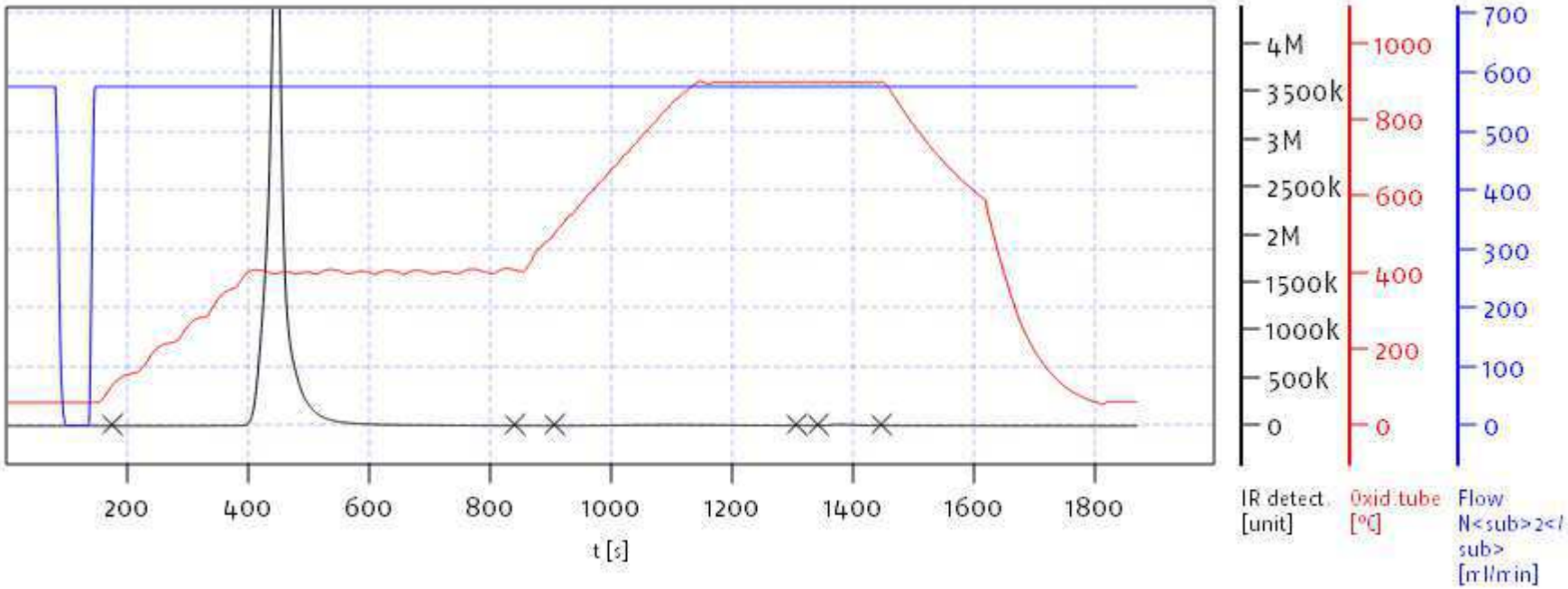
Document: 081621BF from: 8/20/2021 10:36 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
2	62	Dfactor	22.00		1.00	CARBON	8/16/2021 4:03 PM	44.586	0.578	45.165	bl	6 221 932	92 467	30 558	1.0116	1.0000



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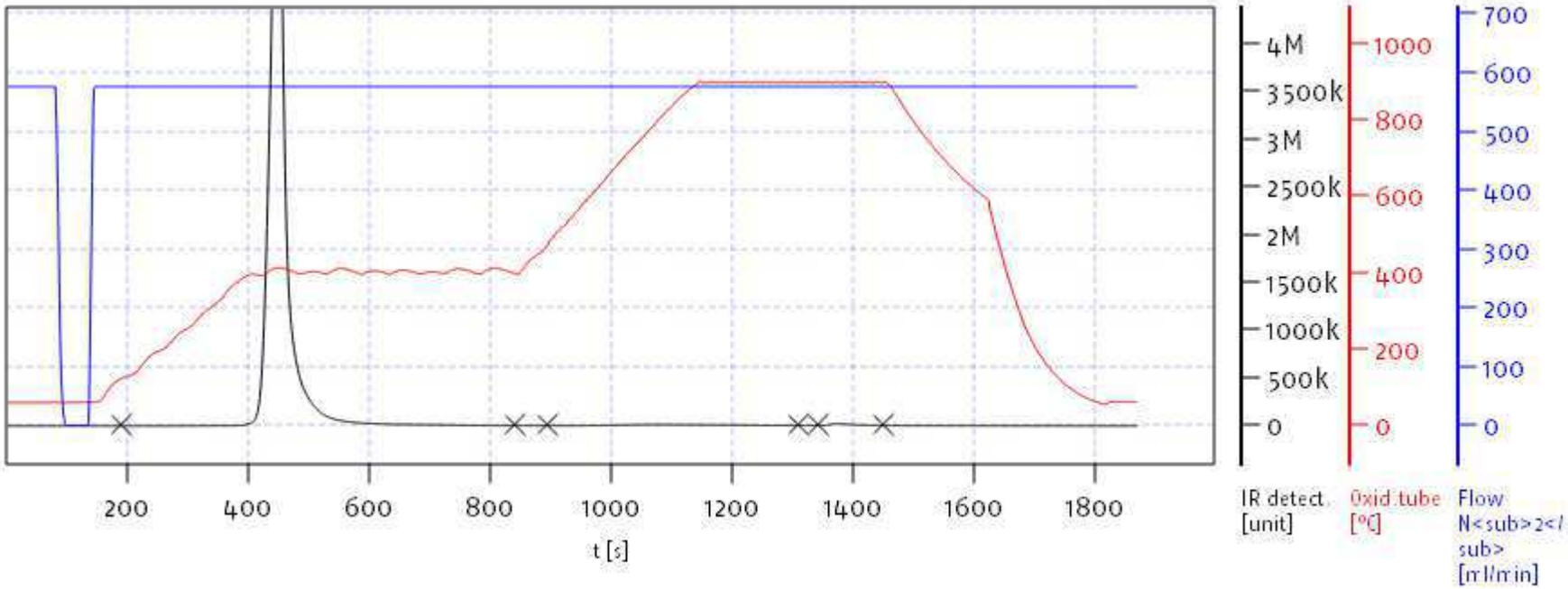
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
3	63	Dfactor	27.20		1.00	CARBON	8/16/2021 4:35 PM	44.626	0.617	45.243	bl	7 677 574	118 542	42 213	1.0132	1.0000



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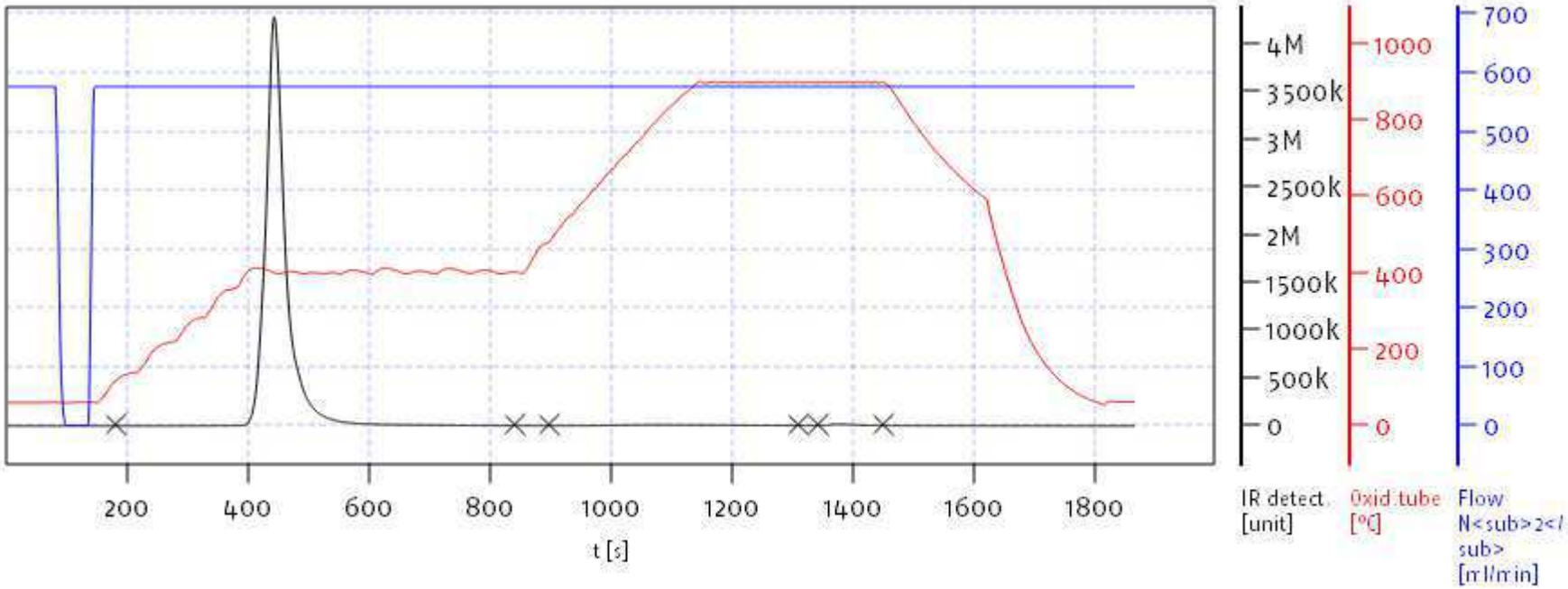
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
4	64	SJH0183-ICV1	21.90		1.00	CARBON	8/16/2021 5:06 PM	44.613	0.604	45.217	bl	6 186 899	95 728	36 077	1.0124	1.0000



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Soli TOC Cube, Carbon
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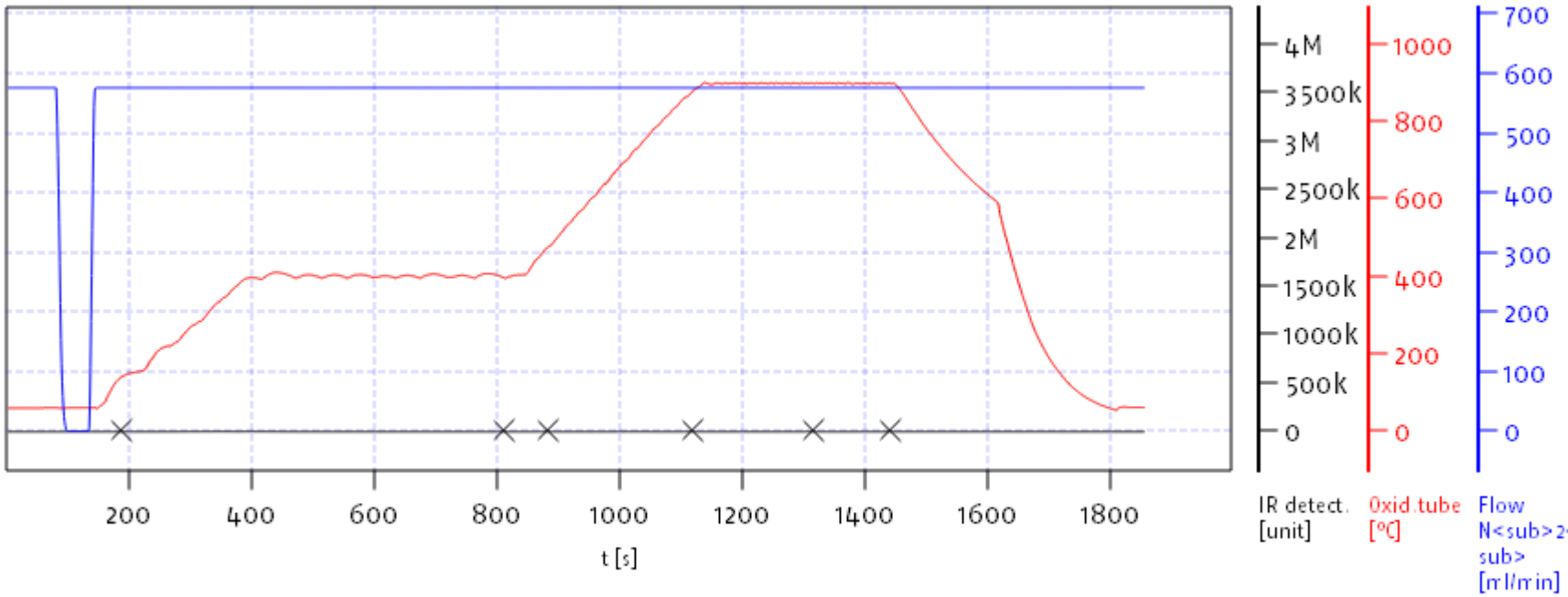
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
5	65	SJH0183-ICB1	521.20		1.00	CARBON	8/16/2021 5:38 PM	0.000	0.000	0.000	bl,C3u,C2u	11 160	1 978	1 055	1.0124	1.0000



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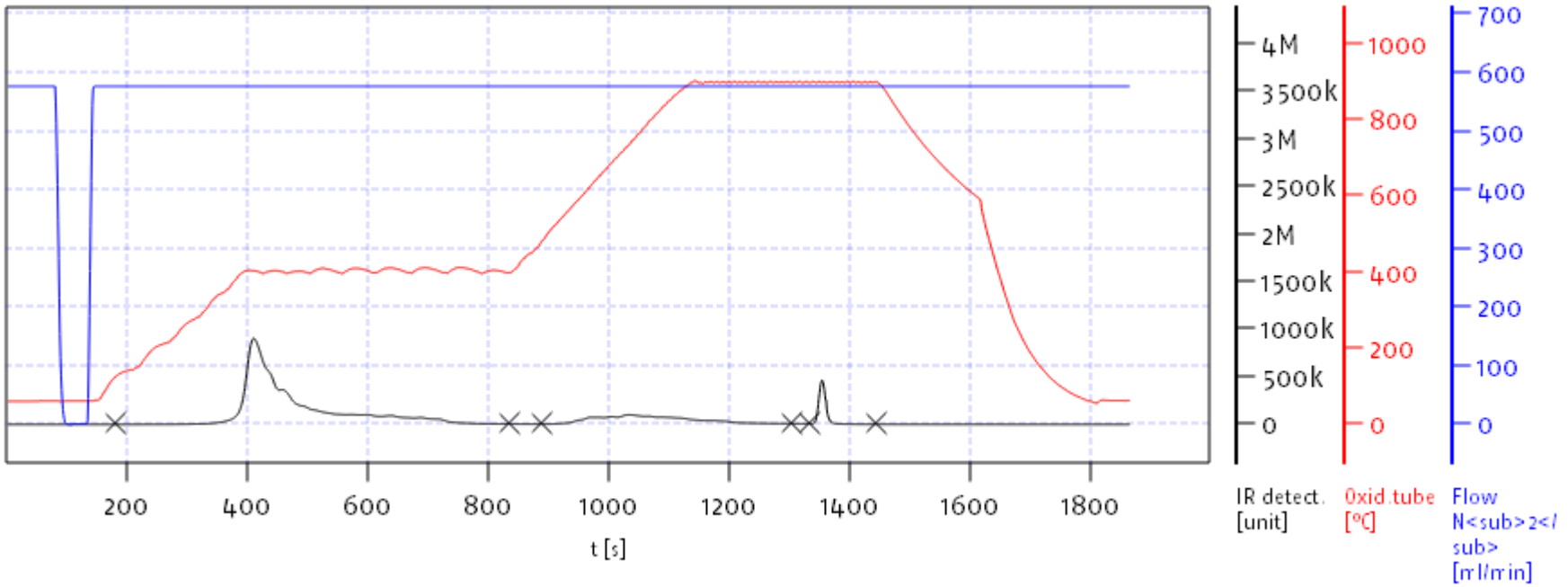
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
6	66	21G0305-04	551.60		1.00	CARBON	8/16/2021 6:09 PM	0.876	0.198	1.074	bl	2 848 123	714 129	242 706	1.0124	1.0000



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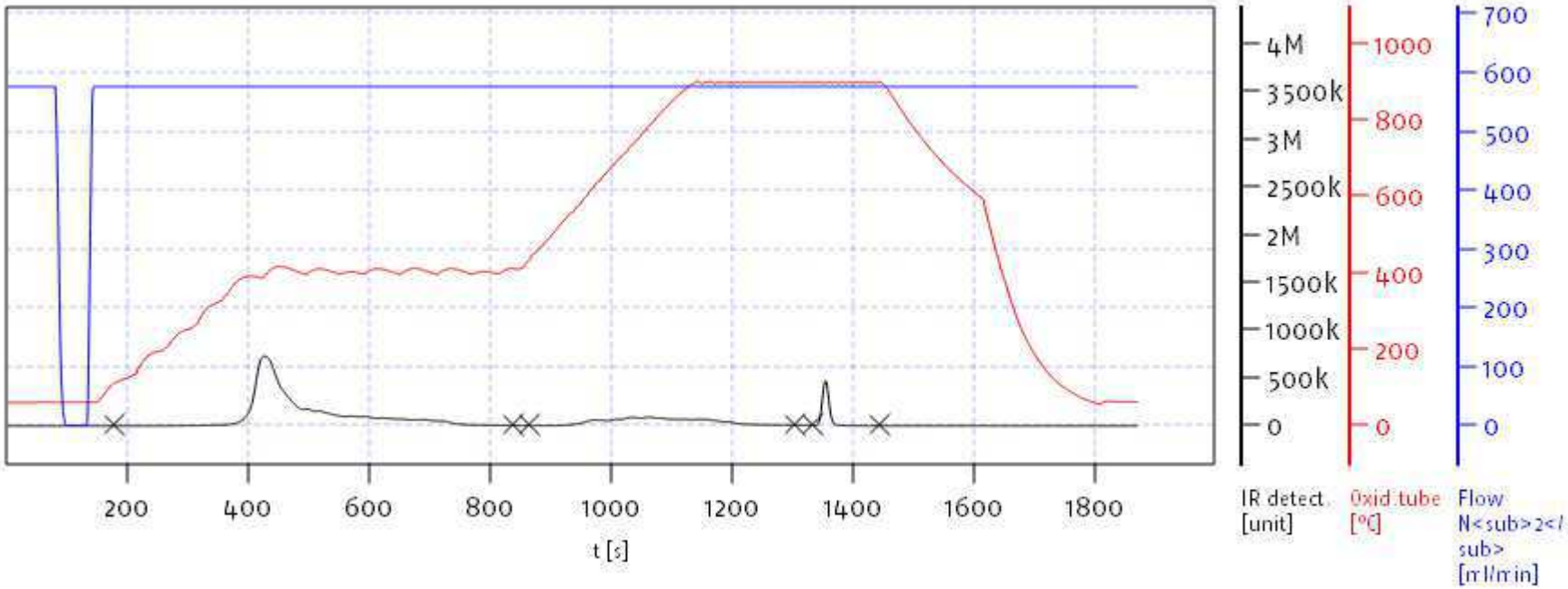
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
7	67	BJH0301-DUP1	534.80		1.00	CARBON	8/16/2021 6:41 PM	0.770	0.200	0.971	bl	2 400 388	699 686	238 267	1.0124	1.0000



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Balance: BAL3
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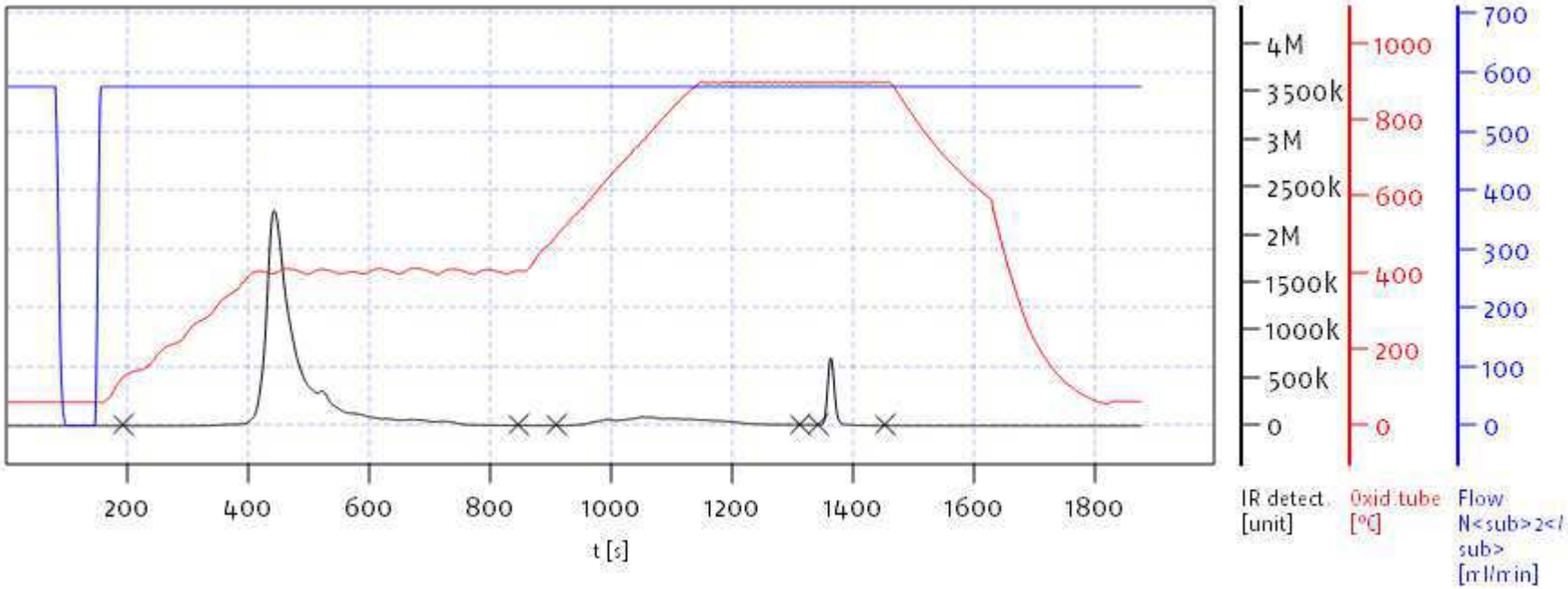
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
8	68	BJH0301-MS1	544.60	0.0100	1.00	CARBON	8/16/2021 7:12 PM	1.523	0.192	1.715	bl	4 919 000	682 181	370 534	1.0124	1.0000



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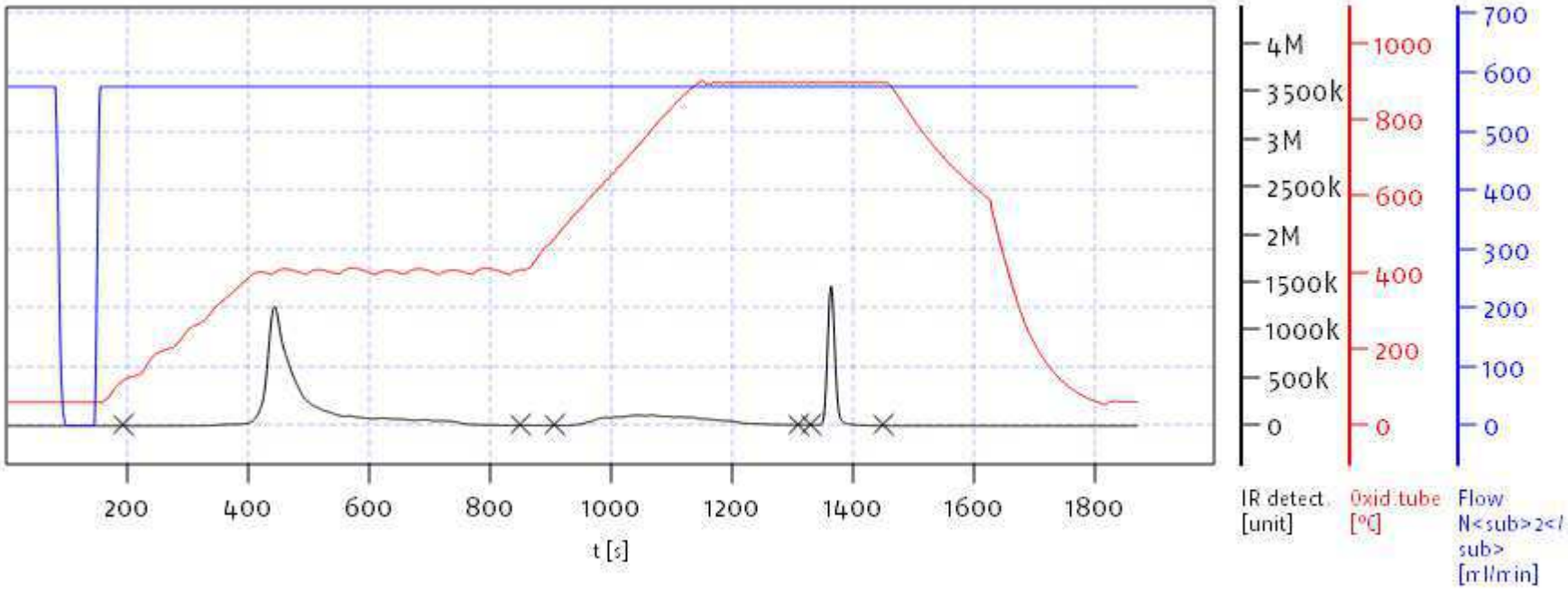
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
9	69	21G0305-05	581.90		1.00	CARBON	8/16/2021 7:44 PM	0.999	0.232	1.231	bl	2 917 608	878 233	801 890	1.0124	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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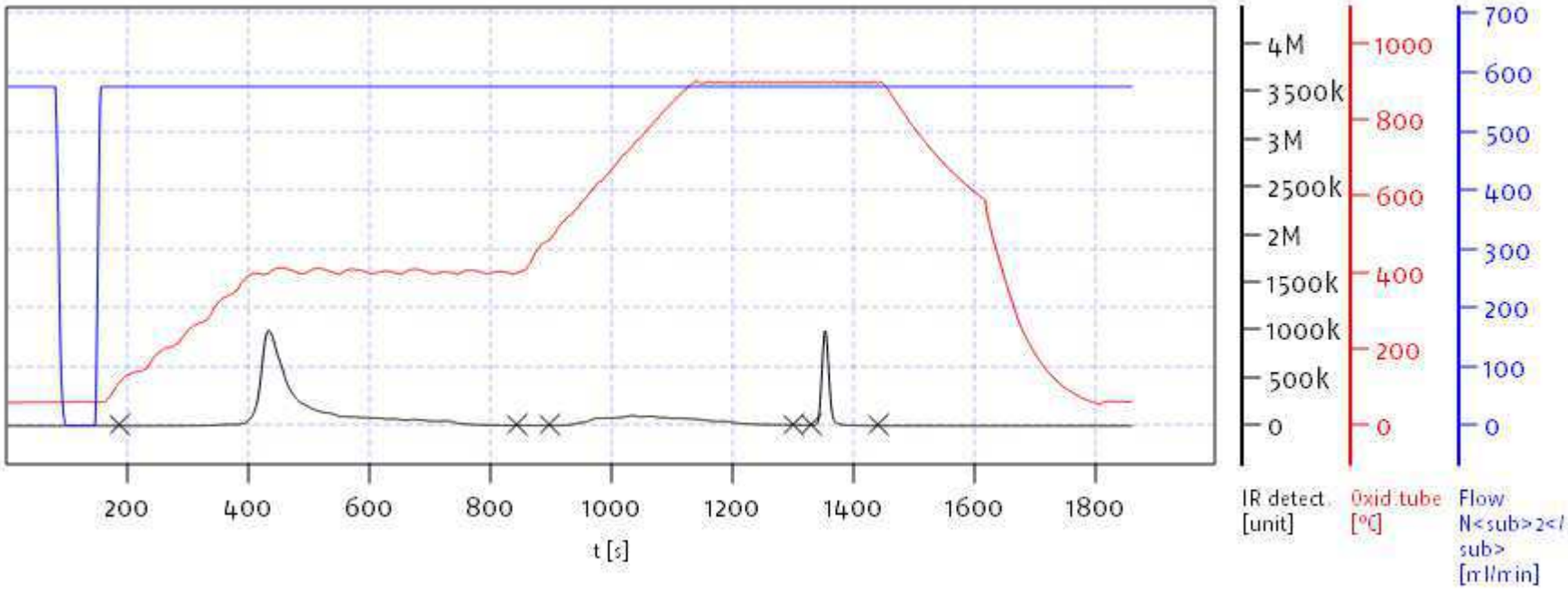
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
10	70	21G0305-06	582.10		1.00	CARBON	8/16/2021 8:15 PM	0.852	0.210	1.062	bl	2 654 497	795 924	520 221	1.0124	1.0000



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Analyst: BF

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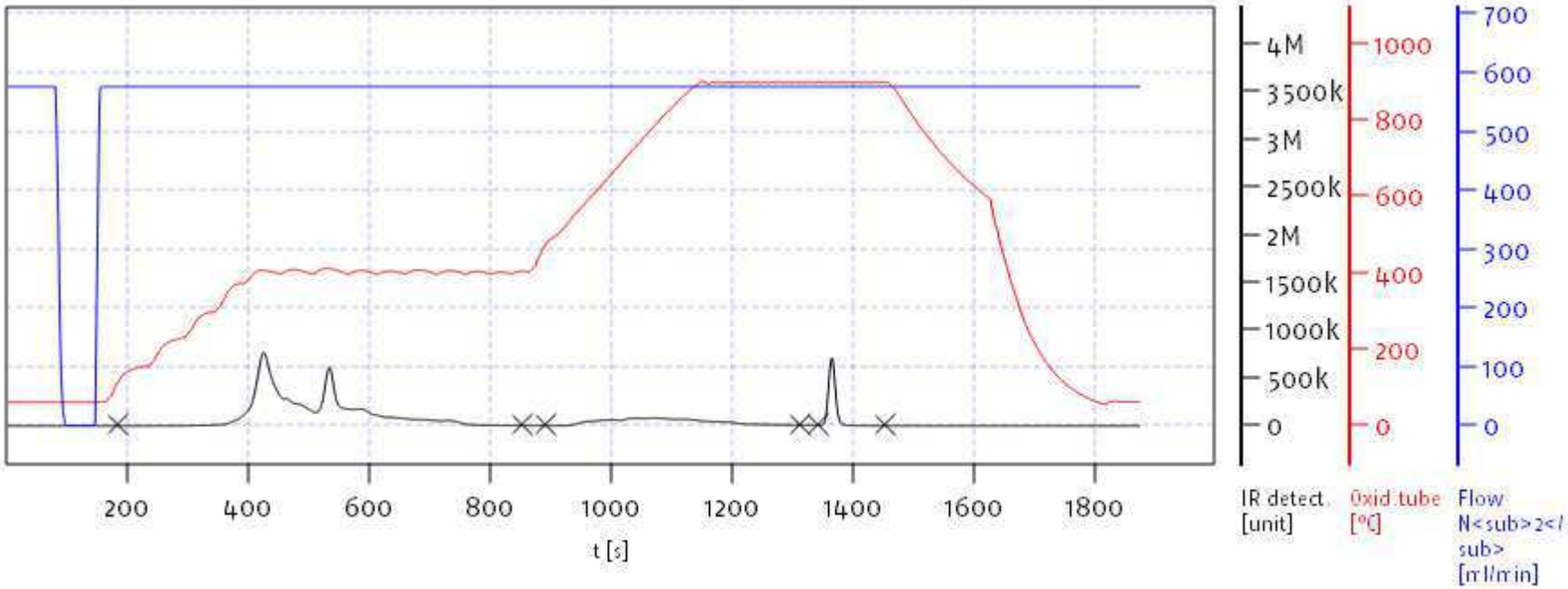
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
11	71	21G0305-07	524.60		1.00	CARBON	8/16/2021 8:47 PM	0.955	0.192	1.147	bl	2 843 062	658 710	362 644	1.0124	1.0000



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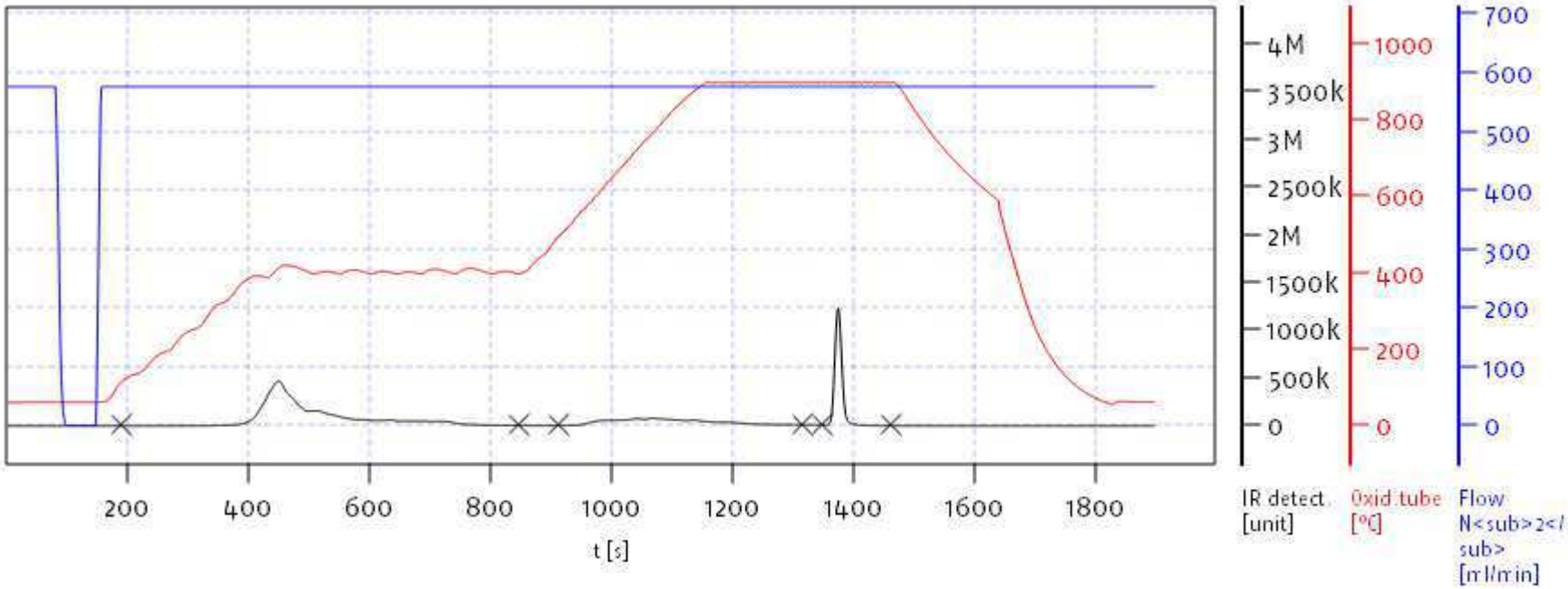
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
12	72	21G0305-08	574.10		1.00	CARBON	8/16/2021 9:19 PM	0.641	0.162	0.803	bl	1 722 431	607 614	642 566	1.0124	1.0000



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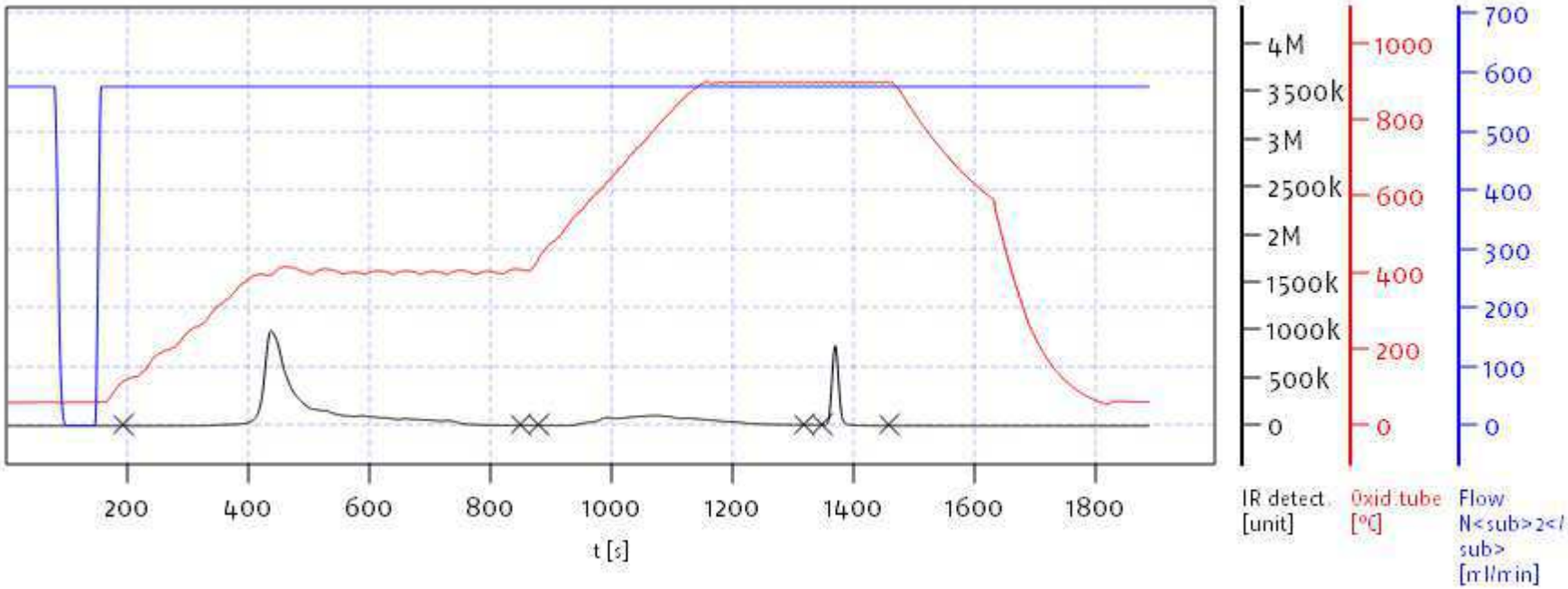
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
13	73	21G0305-09	562.60		1.00	CARBON	8/16/2021 9:51 PM	0.844	0.222	1.066	bl	2 618 814	814 928	419 651	1.0124	1.0000



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Date: Mon Aug 23 13:43:13 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

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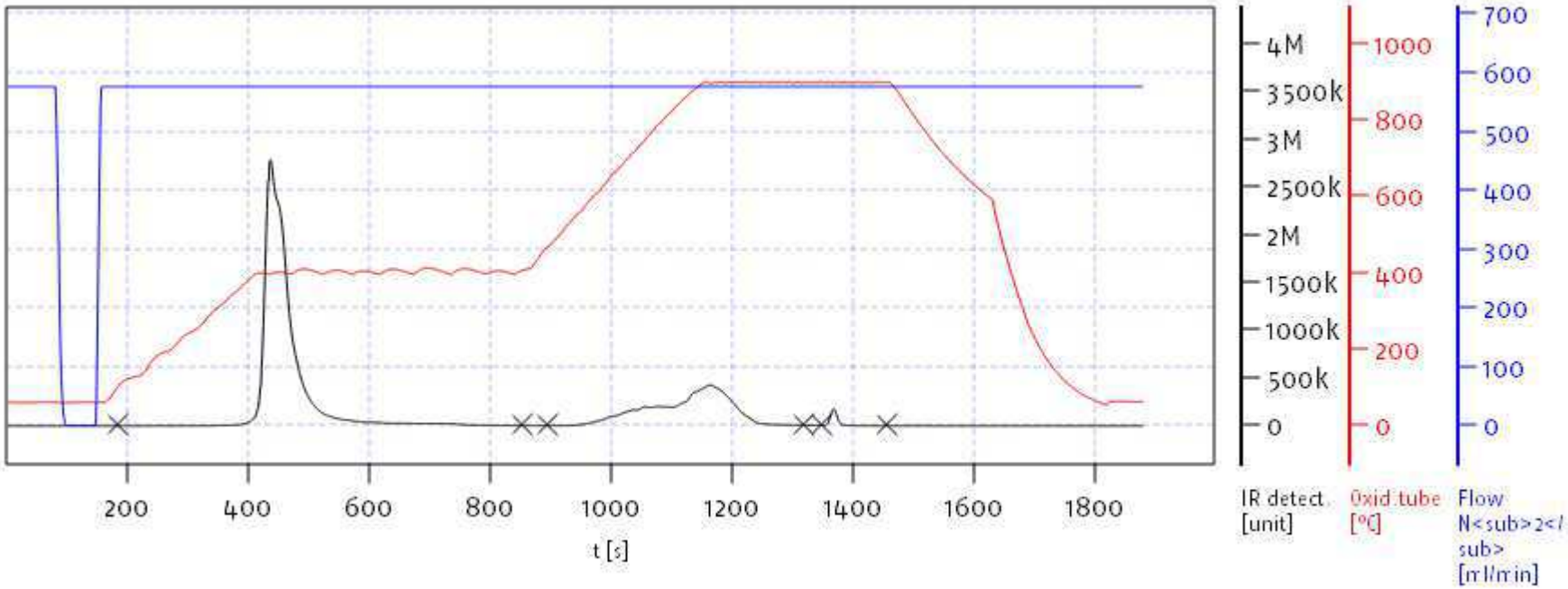
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
14	74	21G0305-10	674.00		1.00	CARBON	8/16/2021 10:23 PM	1.174	0.504	1.679	bl	4 950 761	2 194 213	95 498	1.0124	1.0000



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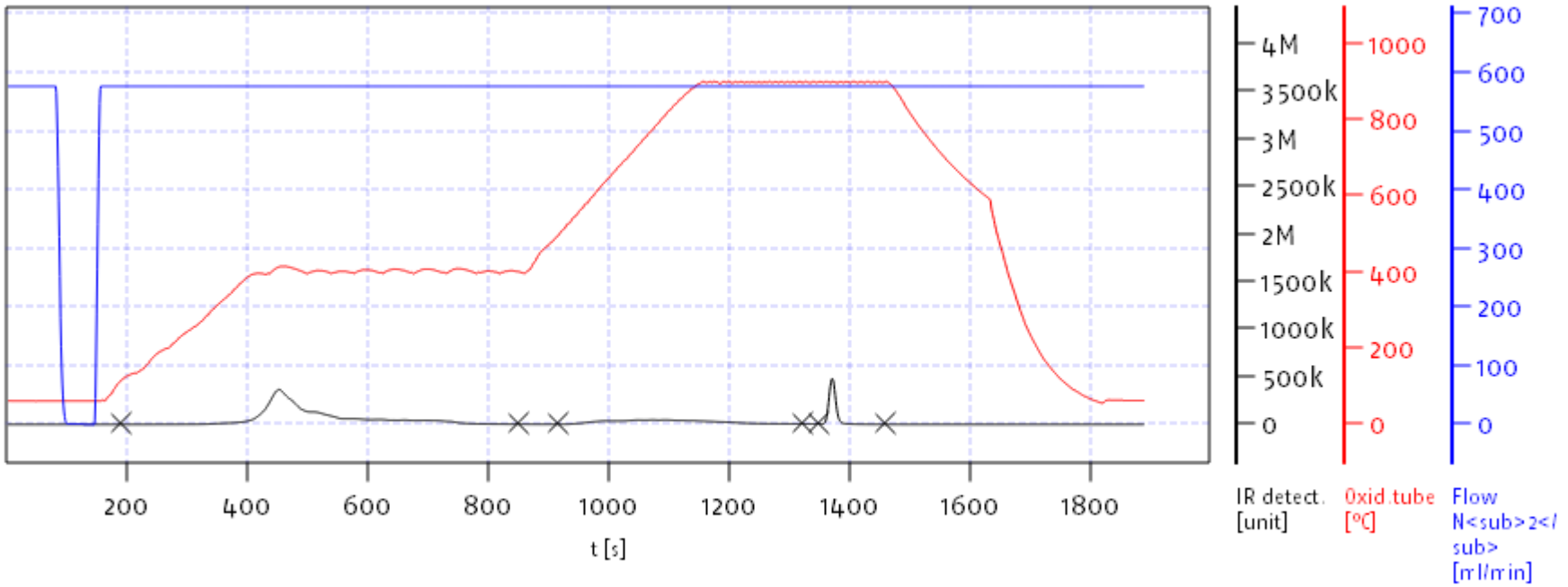
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
15	75	21G0306-01	656.40		1.00	CARBON	8/16/2021 10:55 PM	0.381	0.091	0.472	bl	1 368 734	395 052	242 321	1.0124	1.0000



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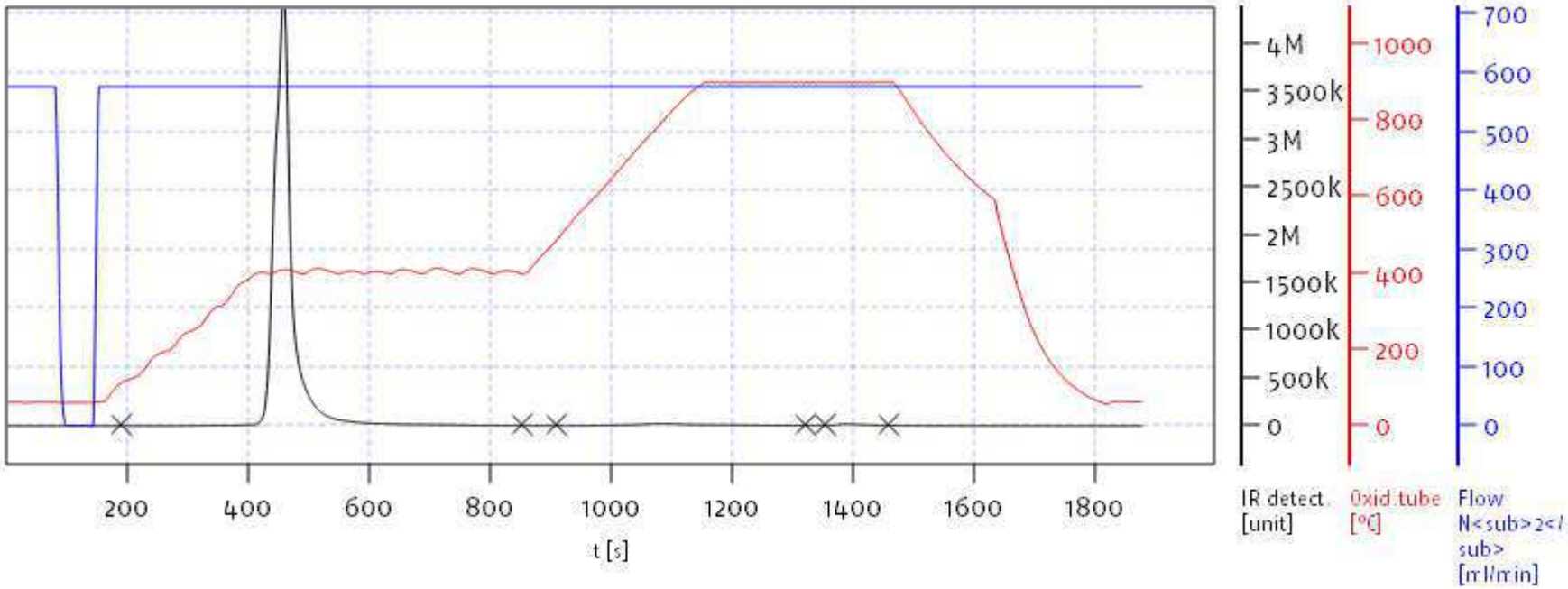
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
16	76	SJH0183-CCV1	20.30		1.00	CARBON	8/16/2021 11:26 PM	43.141	1.059	44.200	bl	5 538 675	148 845	41 646	1.0124	1.0000



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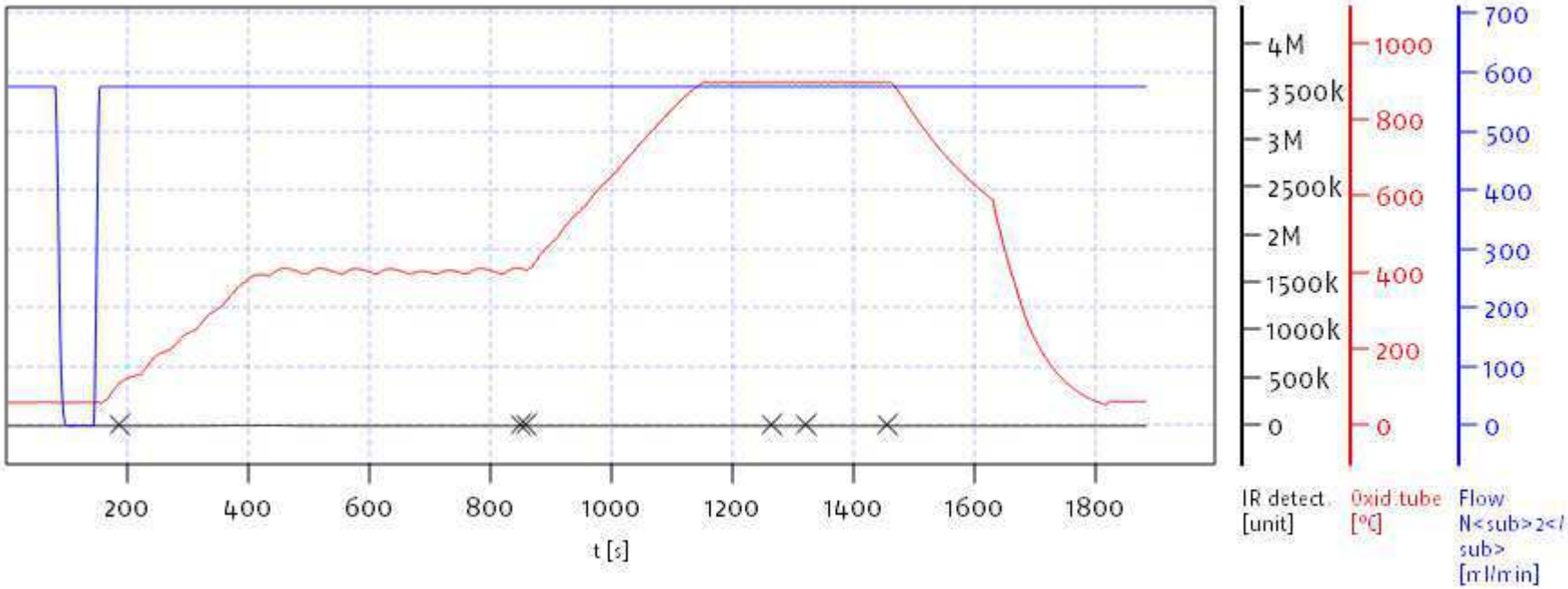
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
17	77	SJH0183-CCB1	524.00		1.00	CARBON	8/16/2021 11:58 PM	0.003	0.000	0.003	bl,C3u,C2u	22 179	907	569	1.0124	1.0000



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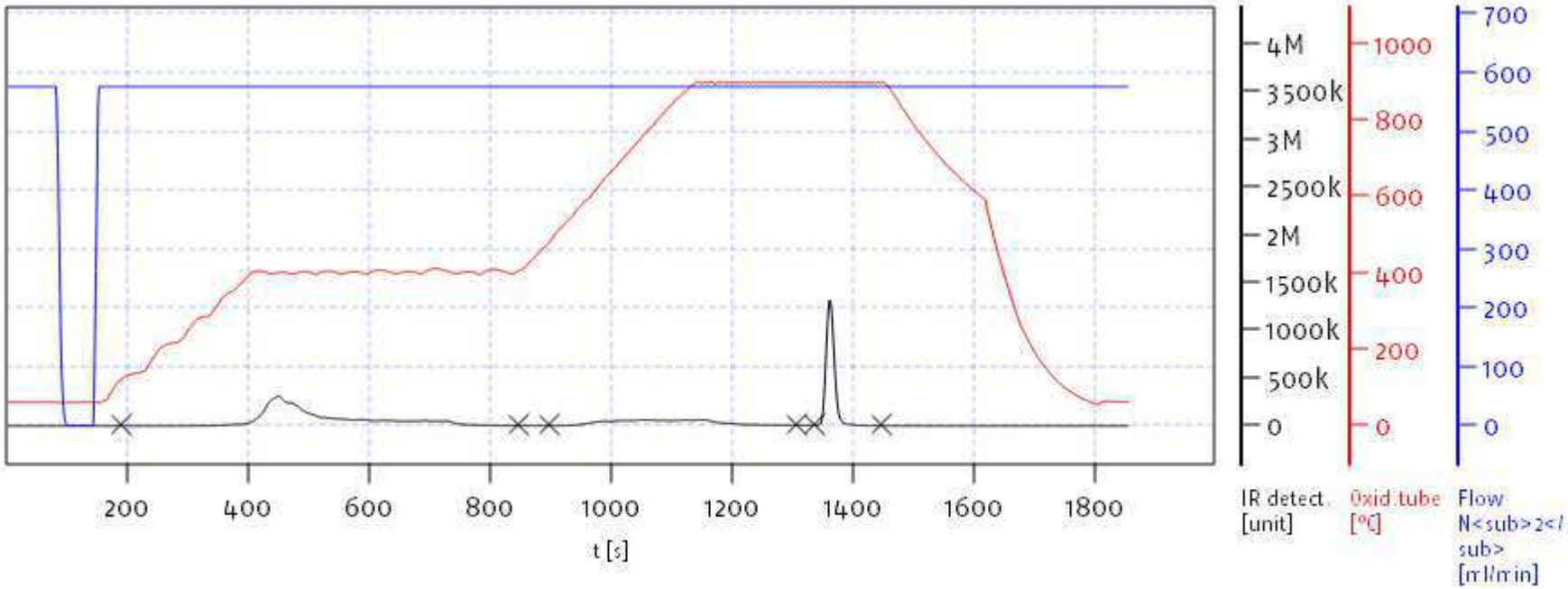
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
18	78	21G0306-02	641.00		1.00	CARBON	8/17/2021 12:29 AM	0.517	0.124	0.641	bl	1 345 422	520 299	789 842	1.0124	1.0000



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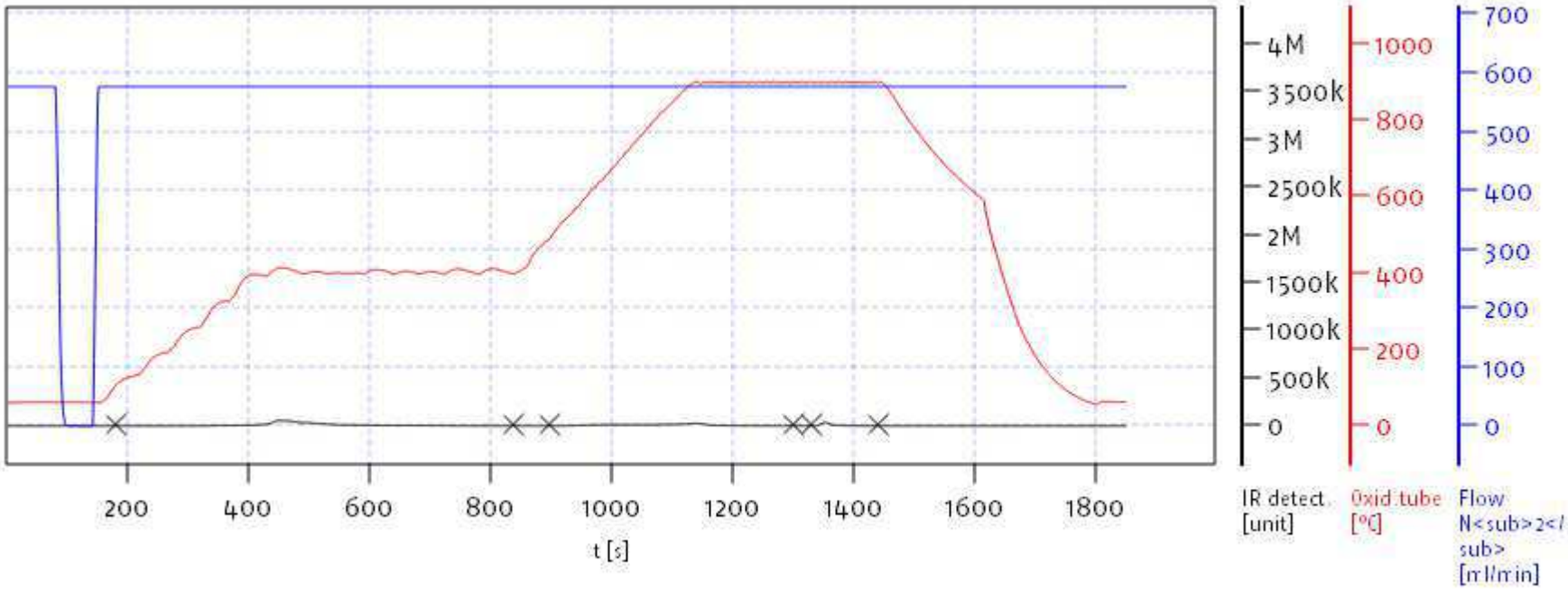
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
19	79	21G0310-01	504.80		1.00	CARBON	8/17/2021 1:01 AM	0.069	0.035	0.103	bl	214 215	123 240	27 655	1.0124	1.0000



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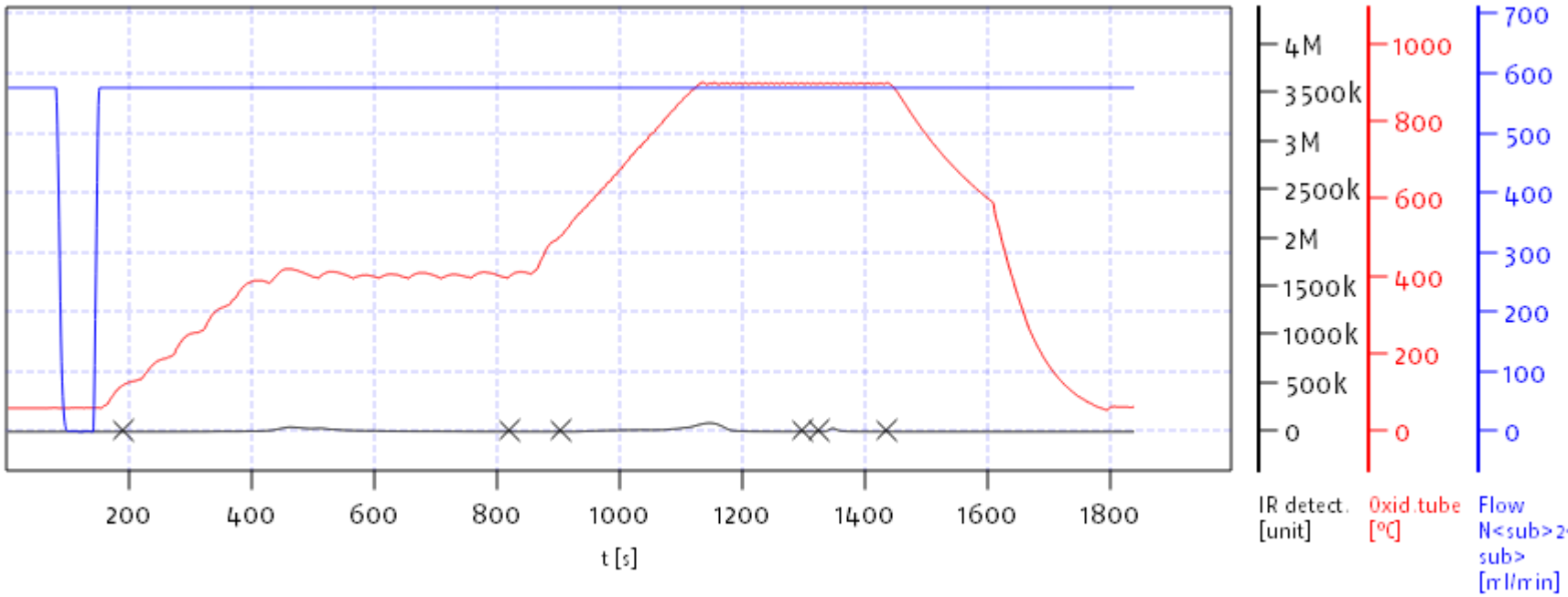
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
20	80	BJH0301-DUP2	507.30		1.00	CARBON	8/17/2021 1:32 AM	0.065	0.087	0.153	bl	206 863	295 556	24 366	1.0124	1.0000



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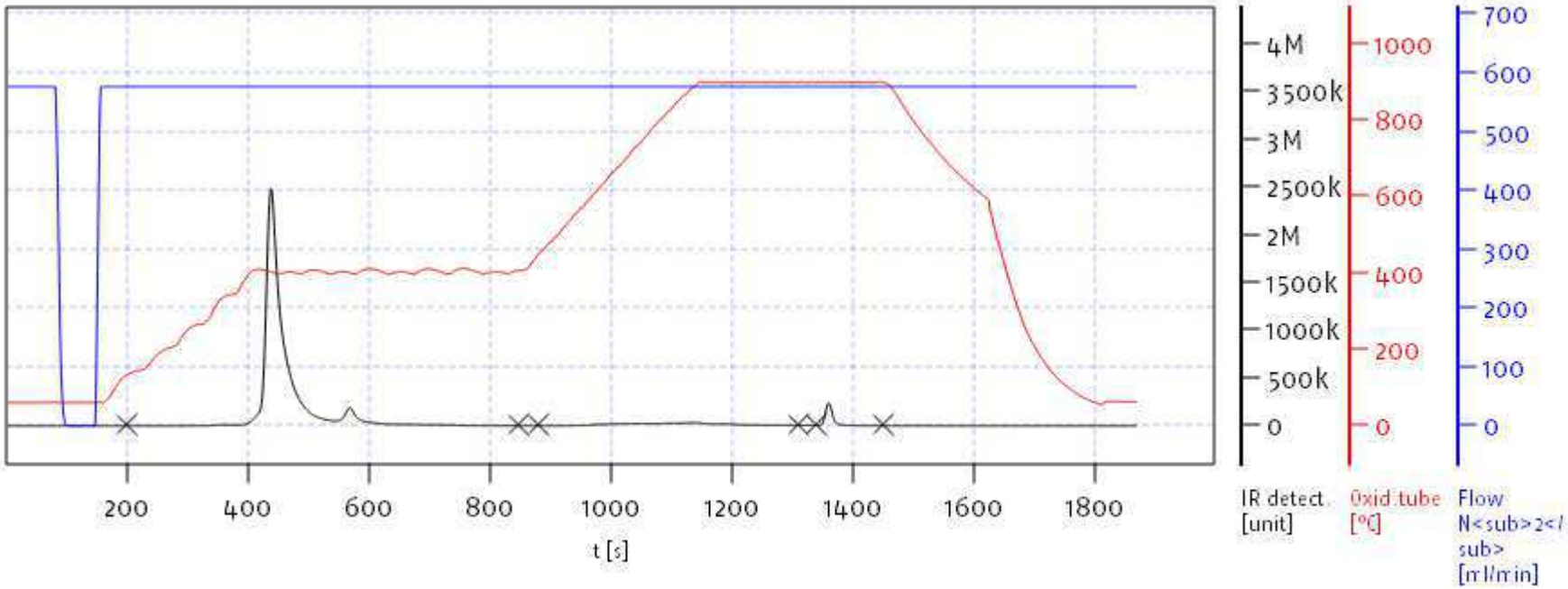
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
21	81	BJH0301-MS2	591.20	0.0105	1.00	CARBON	8/17/2021 2:03 AM	0.884	0.060	0.944	bl	3 211 412	238 750	129 003	1.0124	1.0000



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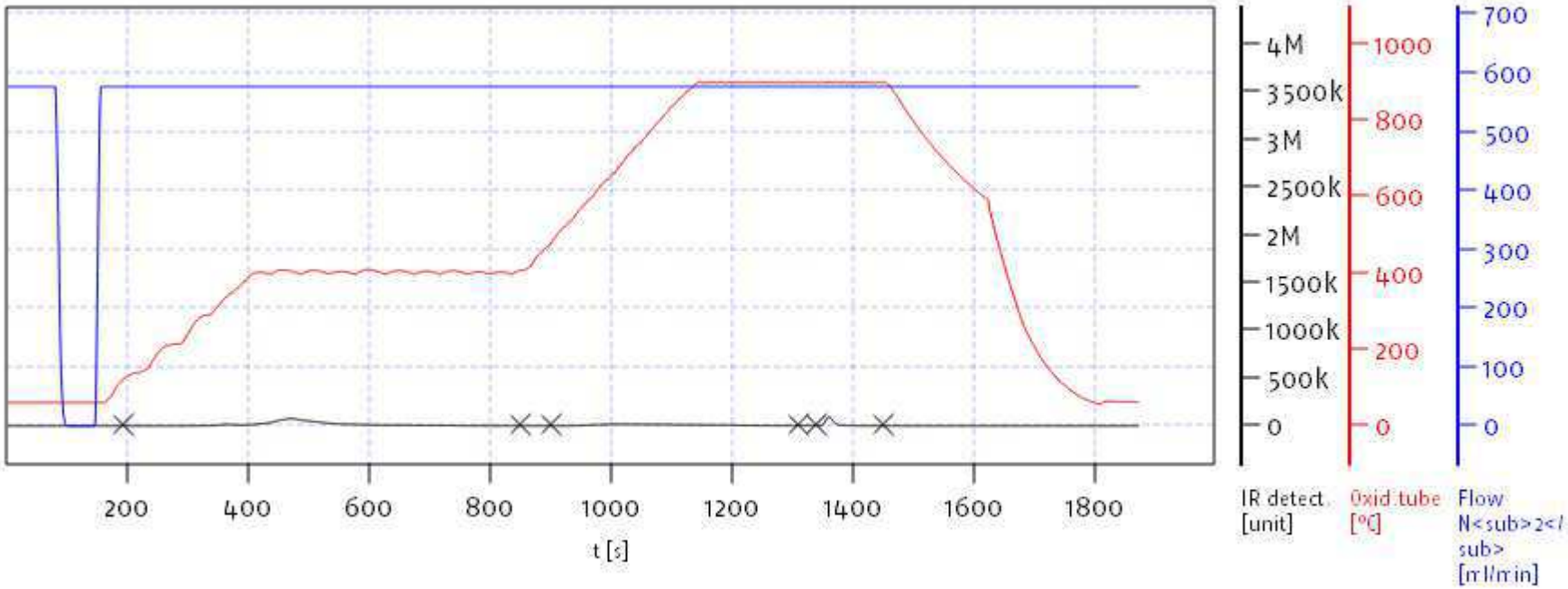
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
22	82	21G0310-02	690.40		1.00	CARBON	8/17/2021 2:35 AM	0.085	0.028	0.113	bl	336 087	134 641	57 652	1.0124	1.0000



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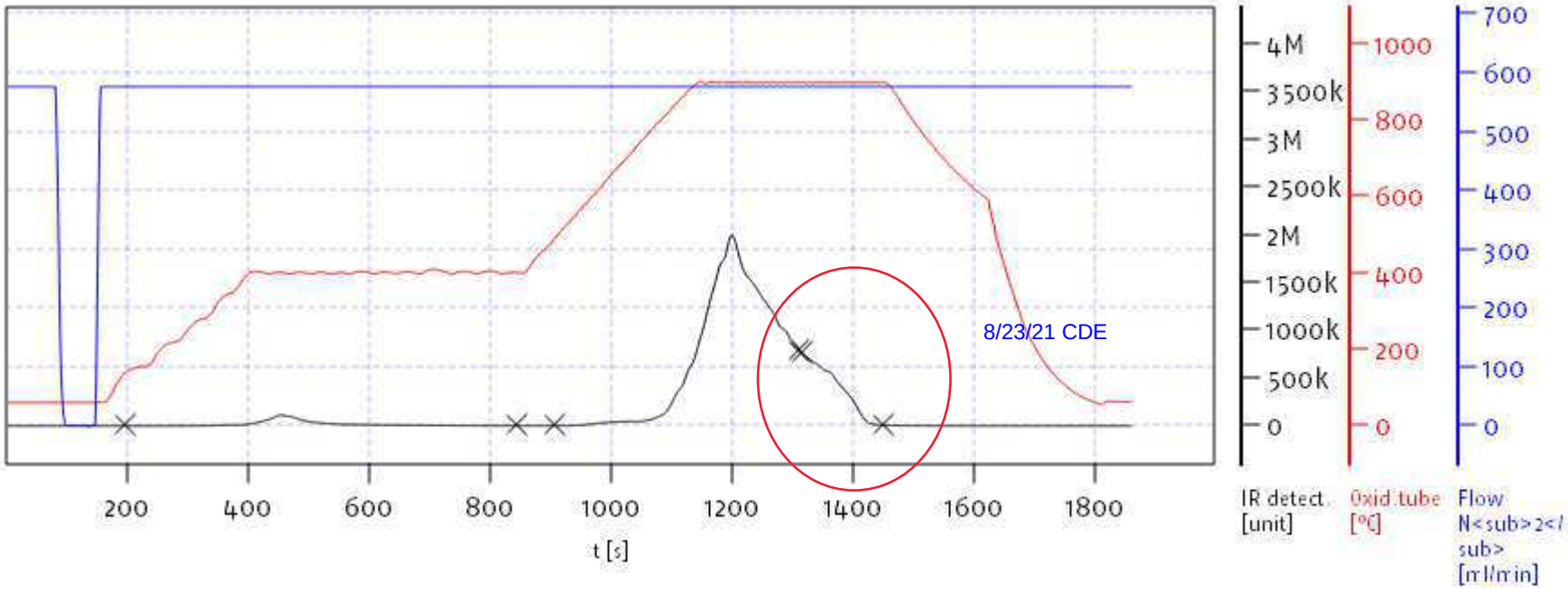
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
23	83	21G0310-03	439.10		1.00	CARBON	8/17/2021 3:06 AM	0.792	3.444	4.236	bl,C3o	410 028	9 726 879	1 841 979	1.0124	1.0000



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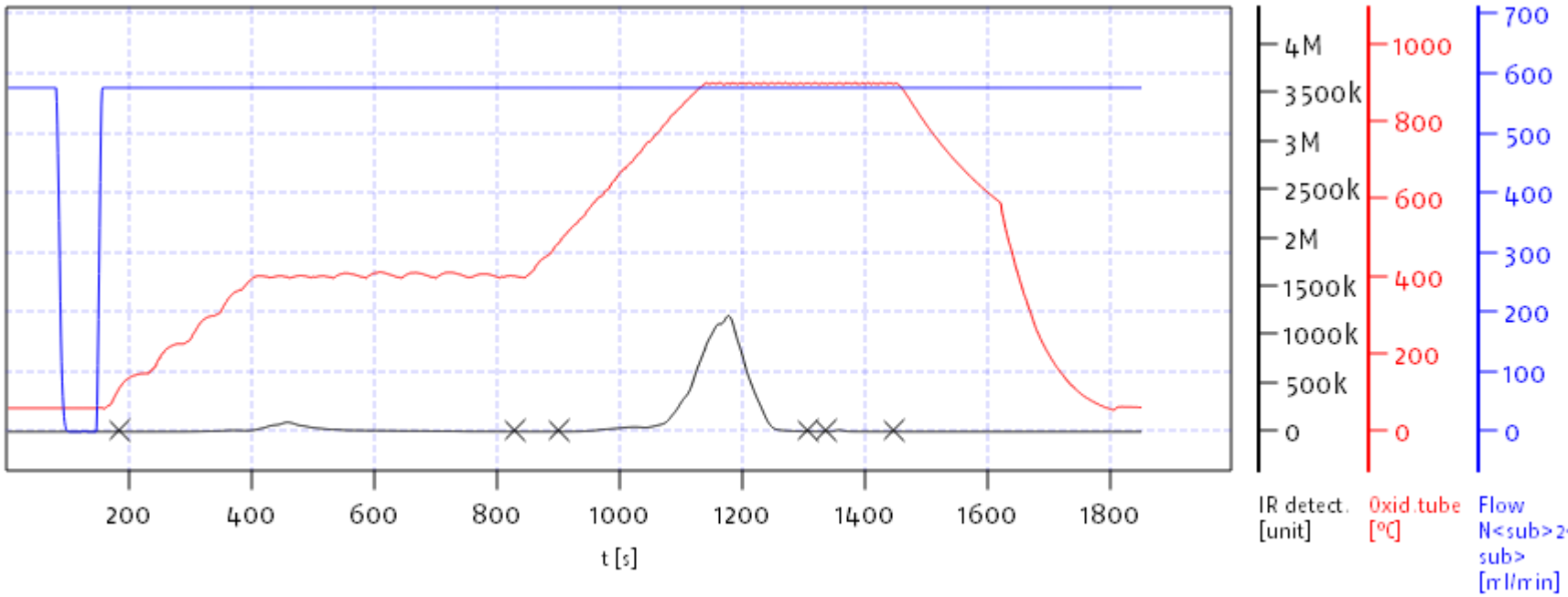
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
24	84	21G0310-04	371.50		1.00	CARBON	8/17/2021 3:37 AM	0.155	1.769	1.924	bl	374 234	4 234 139	13 077	1.0124	1.0000



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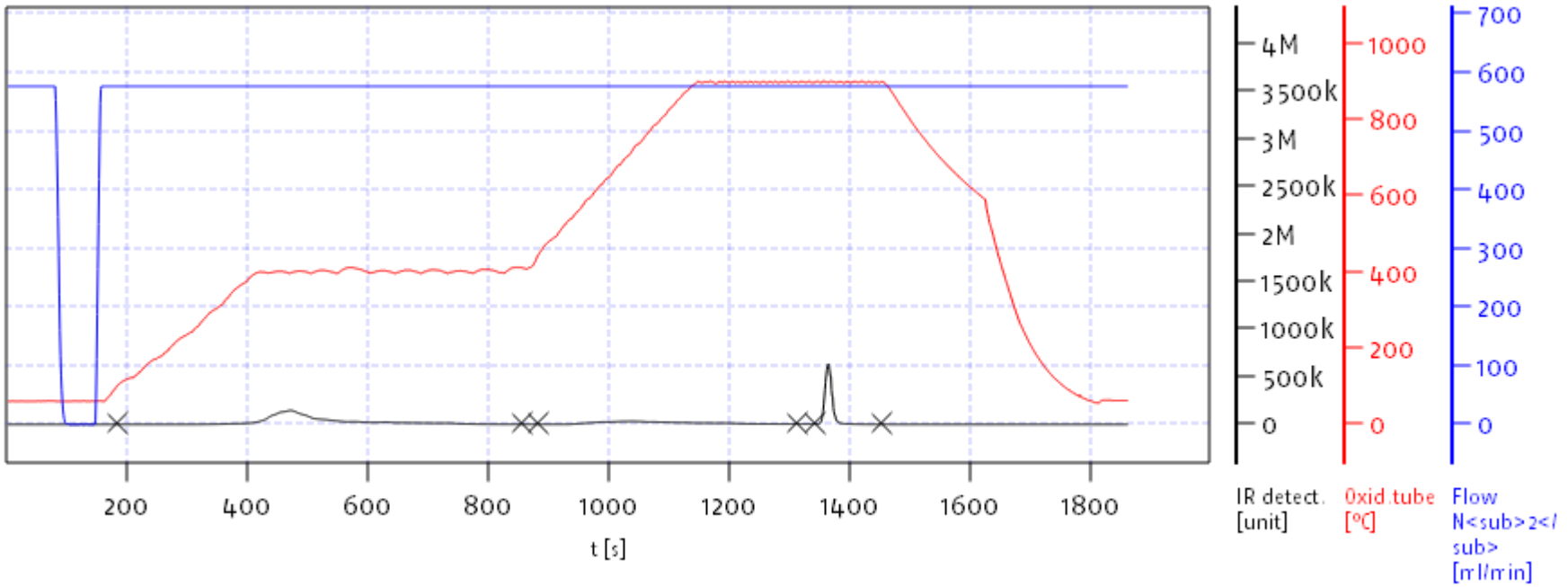
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
25	85	21G0310-05	578.20		1.00	CARBON	8/17/2021 4:09 AM	0.248	0.060	0.308	bl	607 254	233 636	327 459	1.0124	1.0000



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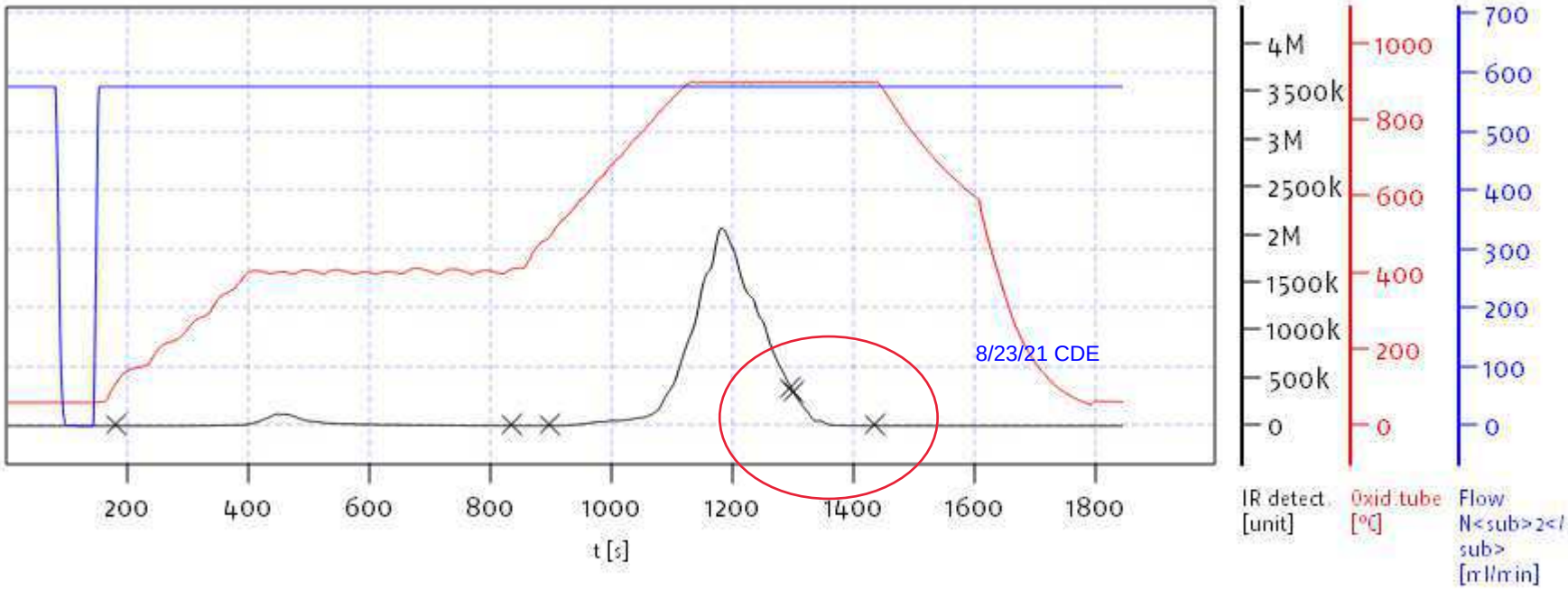
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
26	86	21G0310-06	430.10		1.00	CARBON	8/17/2021 4:40 AM	0.273	3.458	3.732	bl,C3o	481 966	9 567 986	289 296	1.0124	1.0000



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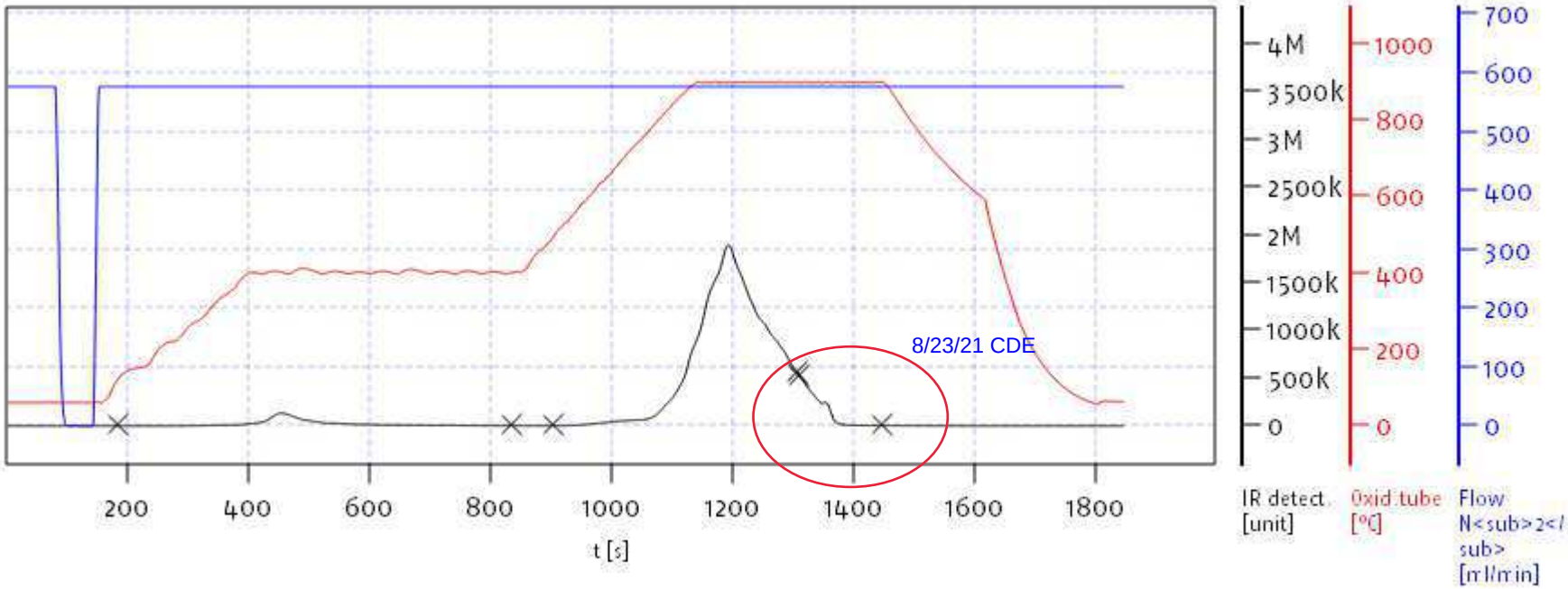
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
27	87	21G0310-07	378.50		1.00	CARBON	8/17/2021 5:11 AM	0.453	3.697	4.151	bl	470 320	9 003 073	648 112	1.0124	1.0000



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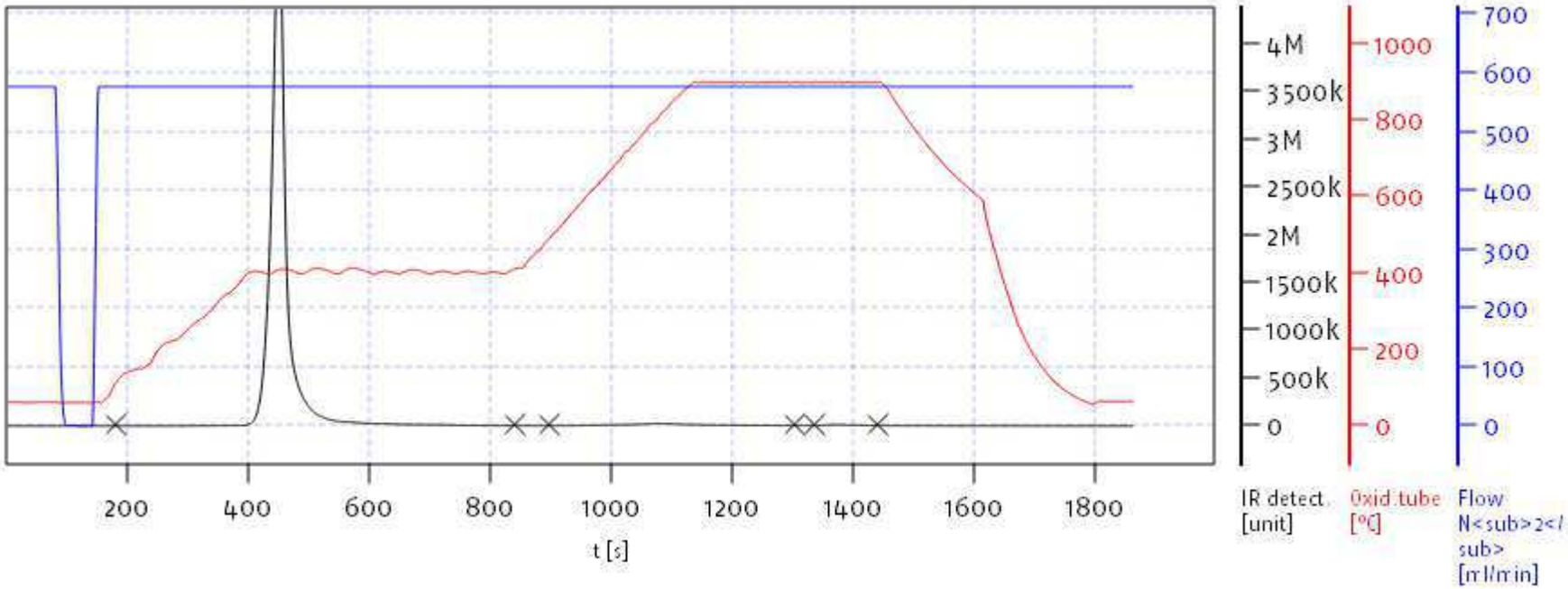
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
28	88	SJH0183-CCV2	20.80		1.00	CARBON	8/17/2021 5:43 AM	42.969	0.996	43.965	bl	5 665 476	143 837	28 865	1.0124	1.0000



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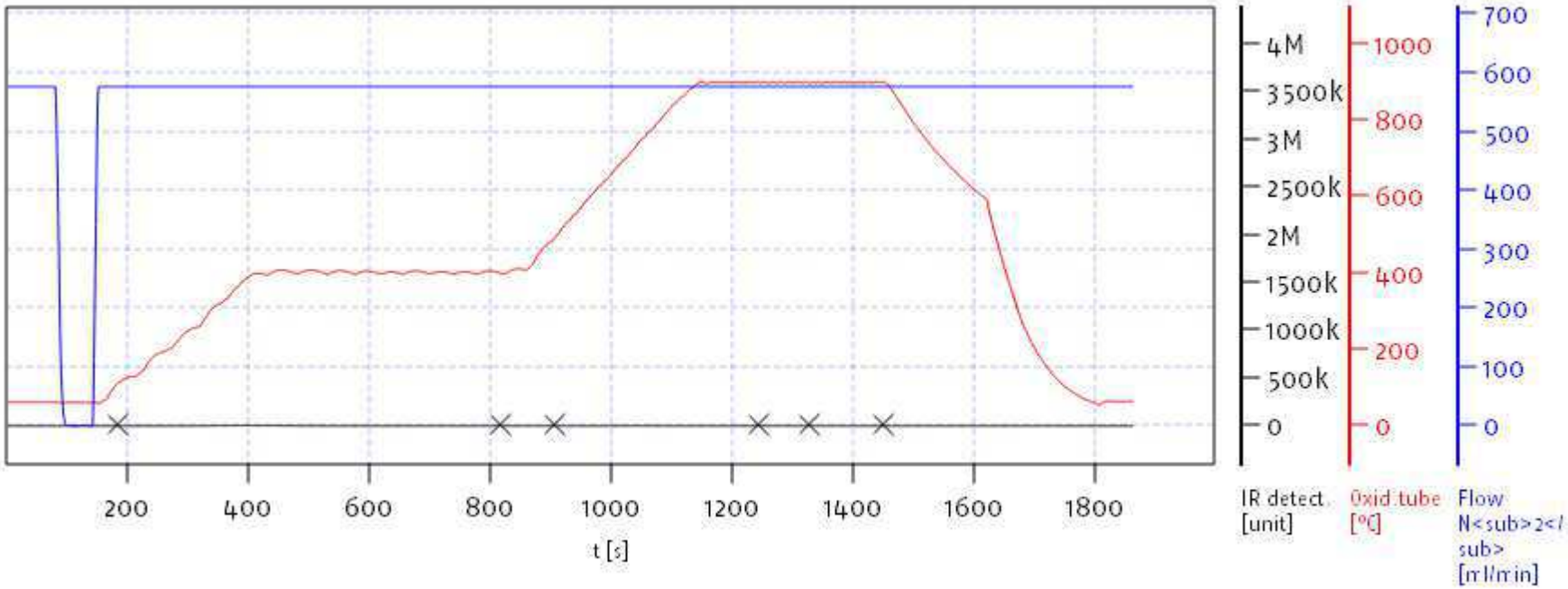
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
29	89	SJH0183-CCB2	612.90		1.00	CARBON	8/17/2021 6:14 AM	0.003	0.000	0.003	bl,C3u,C2u	21 283	3 385	586	1.0124	1.0000



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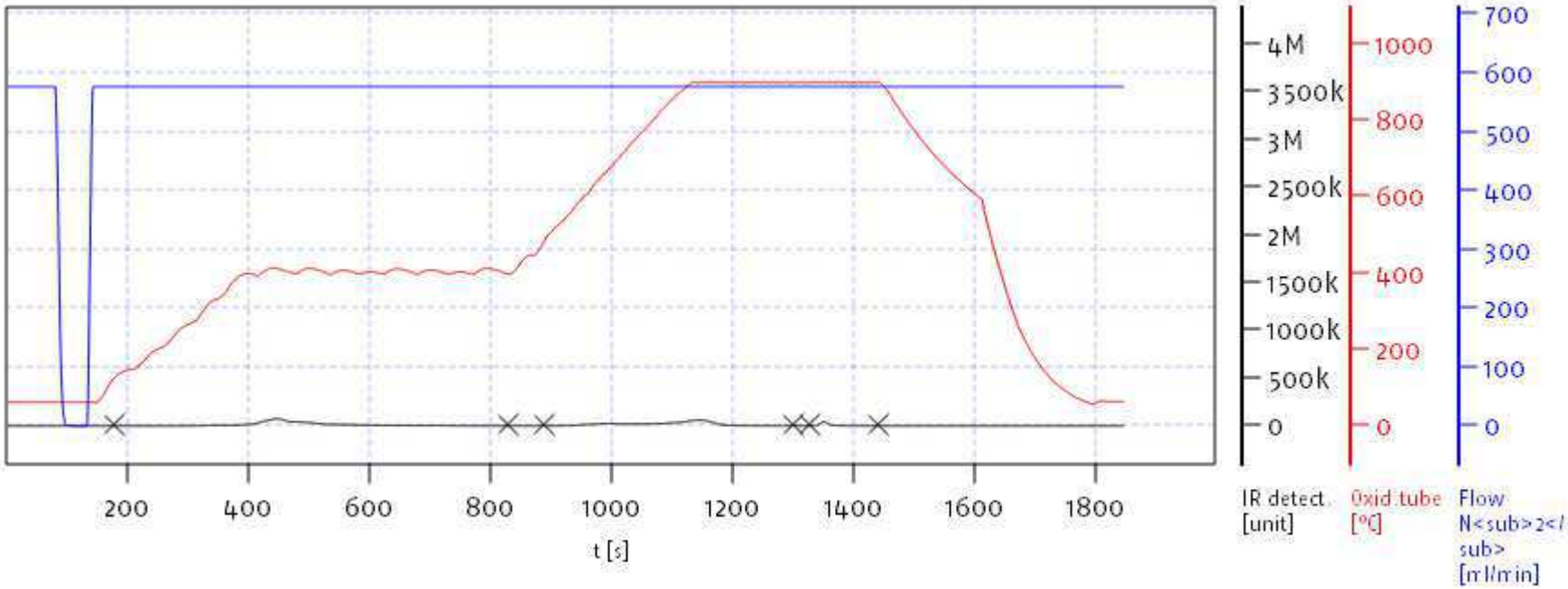
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
30	1	21G0310-08	532.40		1.00	CARBON	8/17/2021 6:45 AM	0.086	0.075	0.161	bl	282 439	268 569	28 112	1.0124	1.0000



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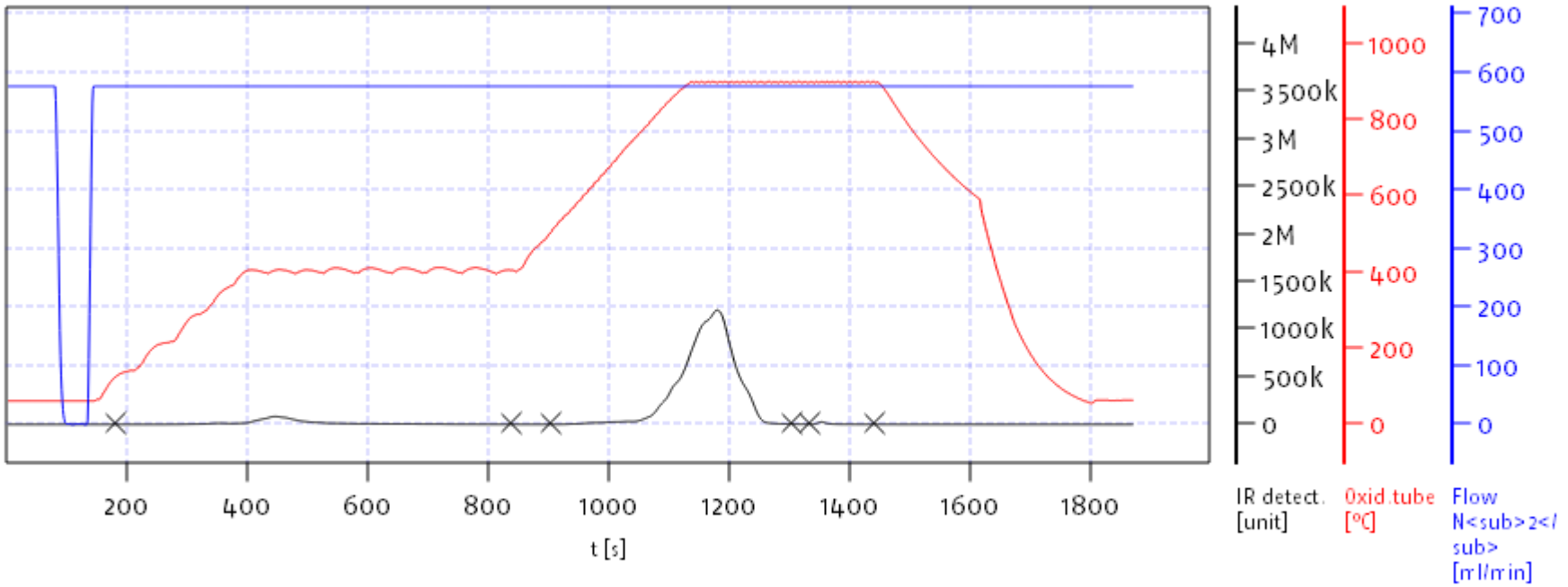
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
31	2	21G0310-09	350.80		1.00	CARBON	8/17/2021 7:17 AM	0.142	1.934	2.076	bl	318 650	4 370 180	19 965	1.0124	1.0000



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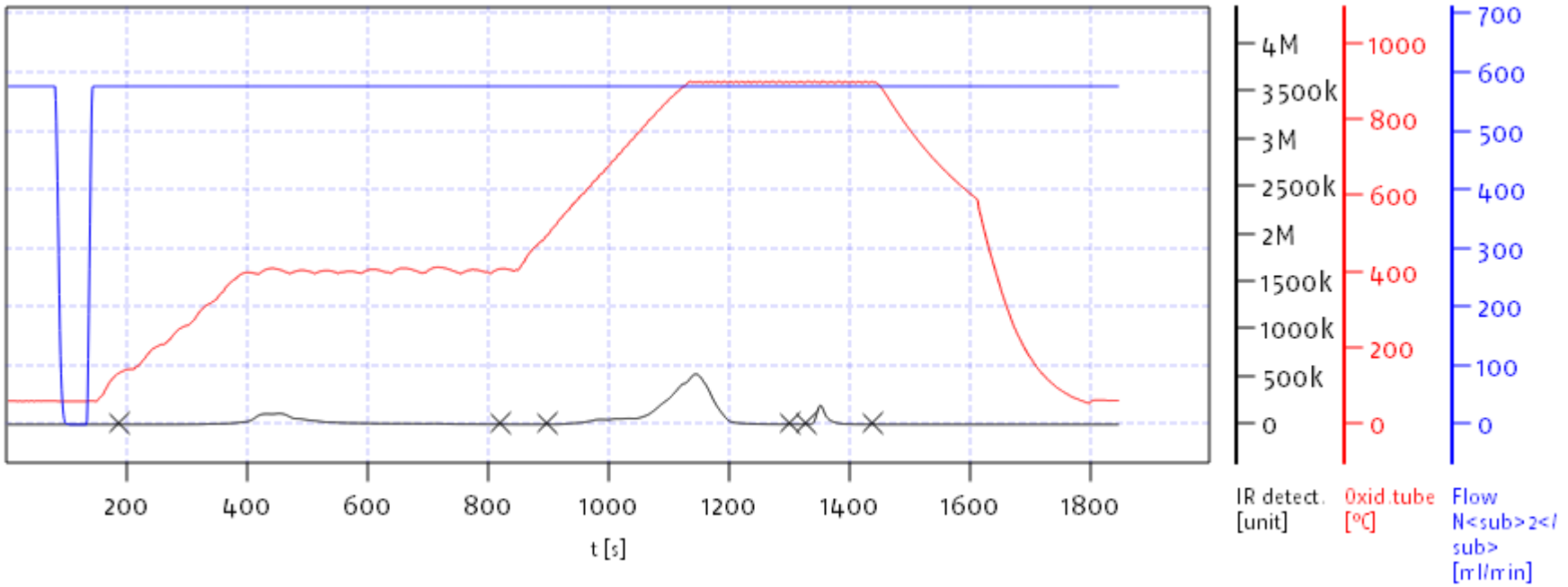
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
32	3	21G0310-10	511.30		1.00	CARBON	8/17/2021 7:48 AM	0.185	0.543	0.728	bl	483 967	1 793 367	140 047	1.0124	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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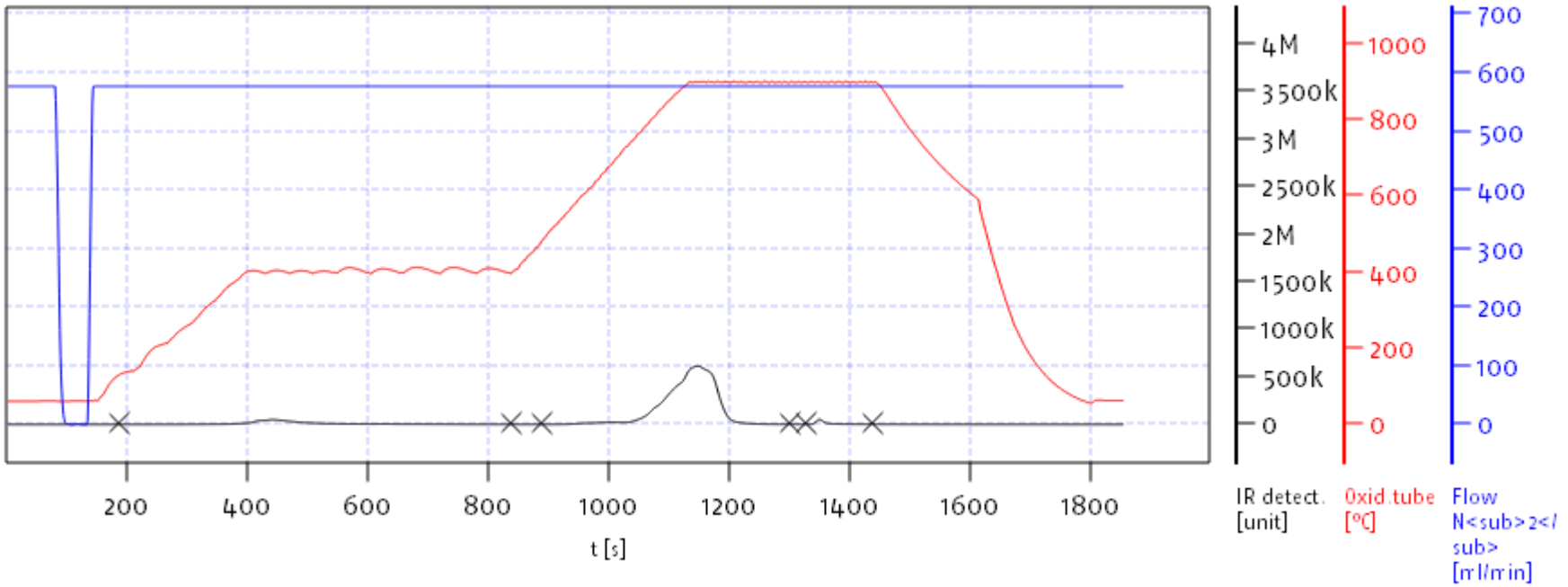
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
33	4	21G0310-11	308.40		1.00	CARBON	8/17/2021 8:20 AM	0.109	1.056	1.165	bl	196 588	2 103 974	38 739	1.0124	1.0000



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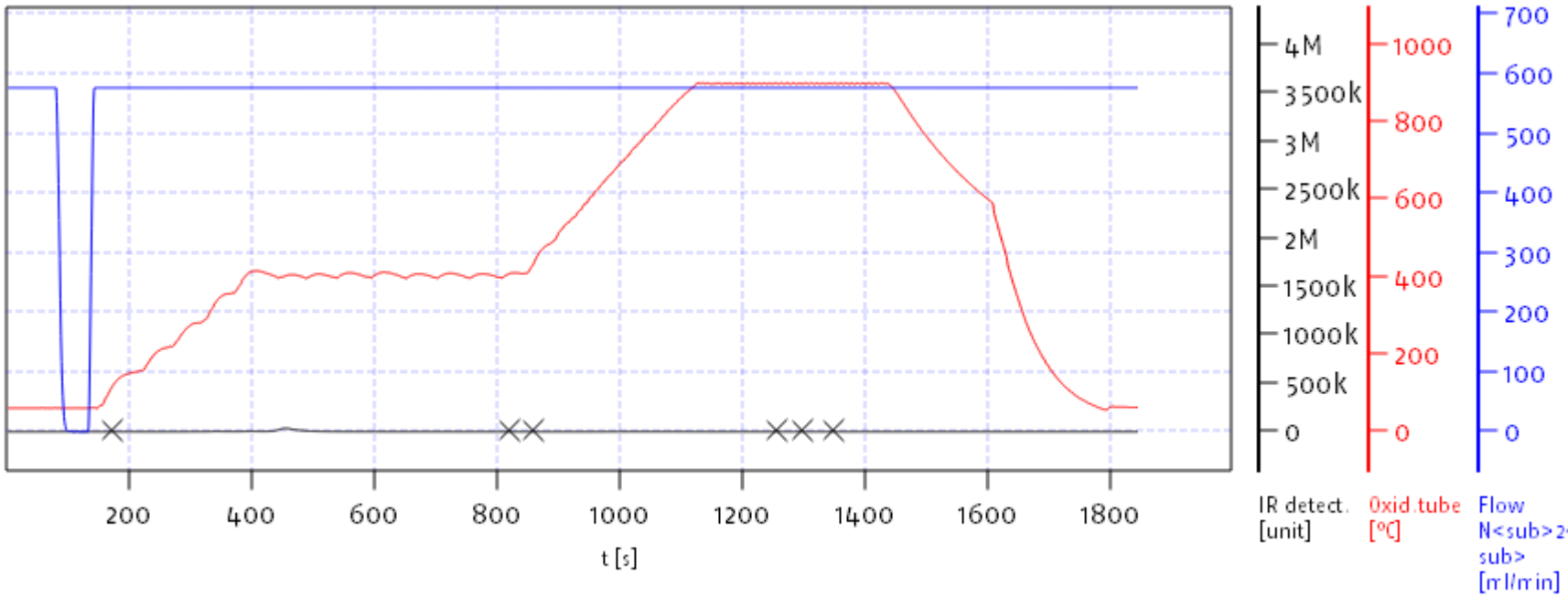
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
34	5	BJH0302-MRL1	501.30		1.00	CARBON	8/17/2021 8:51 AM	0.018	0.000	0.018	bl,C3u,C2u	67 971	6 321	83	1.0124	1.0000



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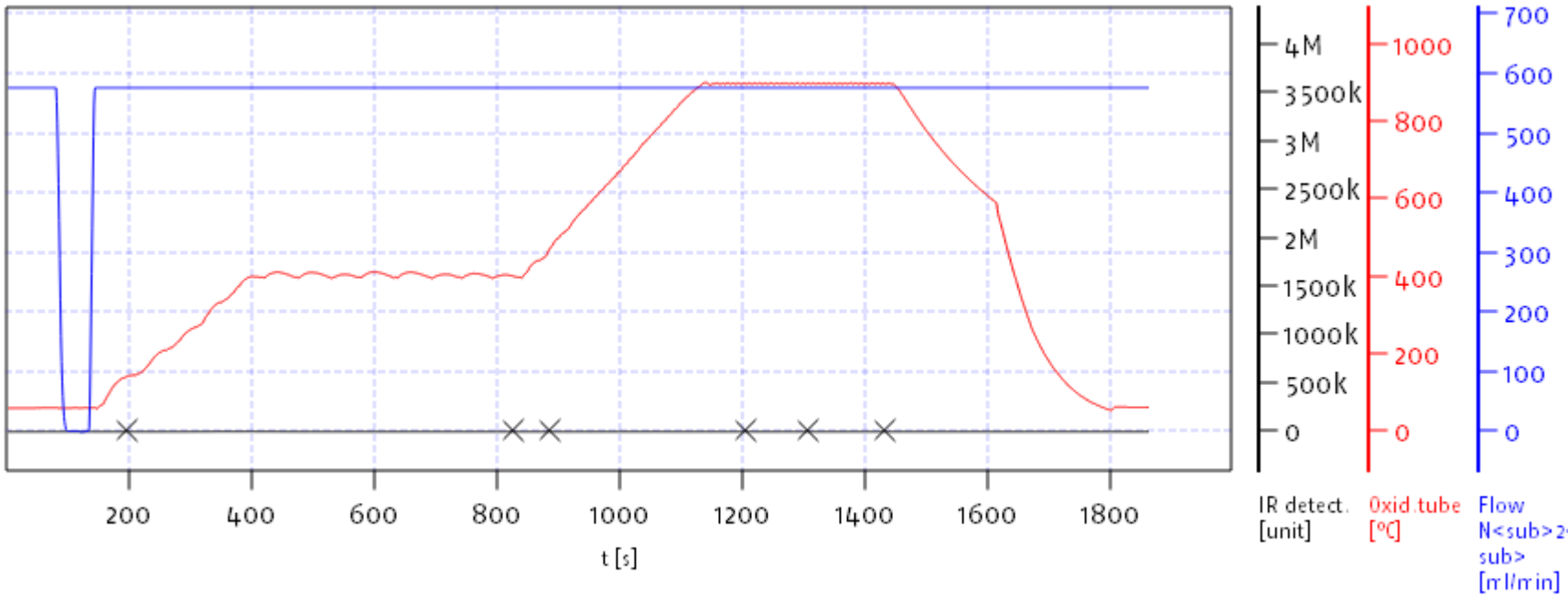
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
35	6	BJH0302-BLK1	551.80		1.00	CARBON	8/17/2021 9:22 AM	0.000	0.000	0.000	bl,C3u,C2u	9 188	1 888	252	1.0124	1.0000



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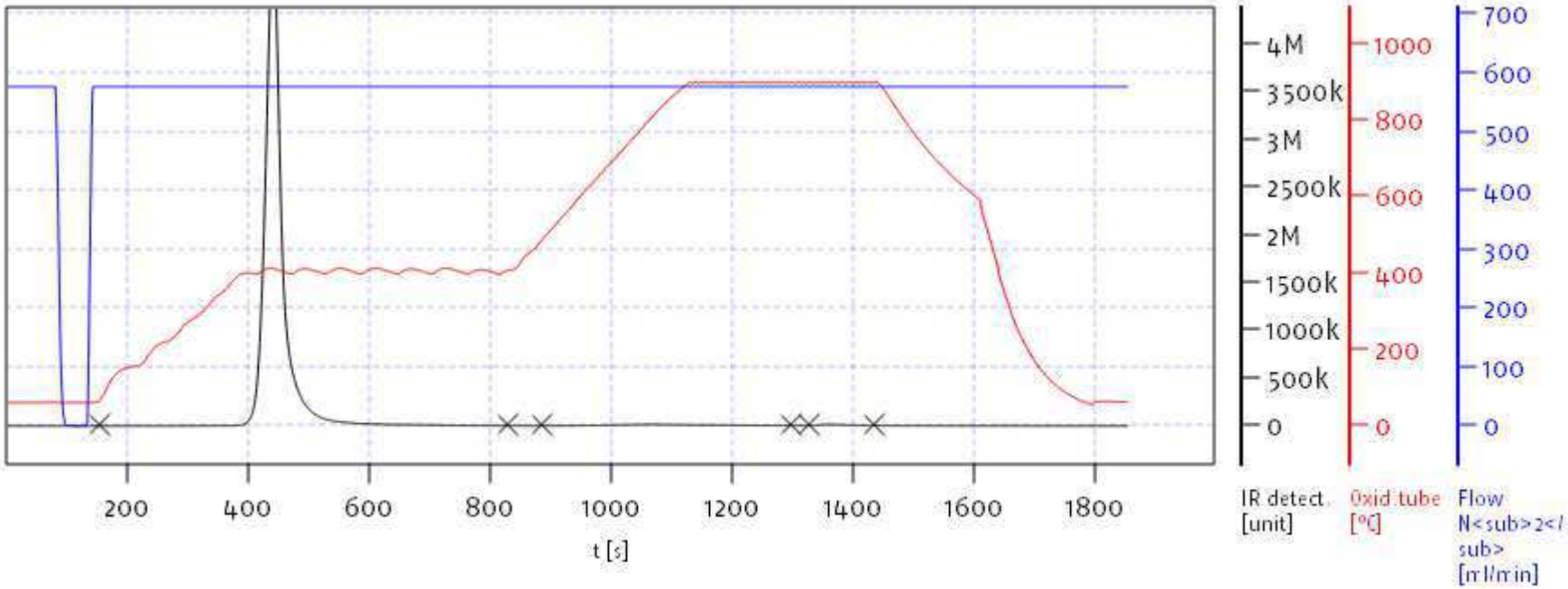
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
36	7	BJH0302-BS1	22.40		1.00	CARBON	8/17/2021 9:53 AM	42.894	0.718	43.612	bl	6 088 364	113 999	31 763	1.0124	1.0000



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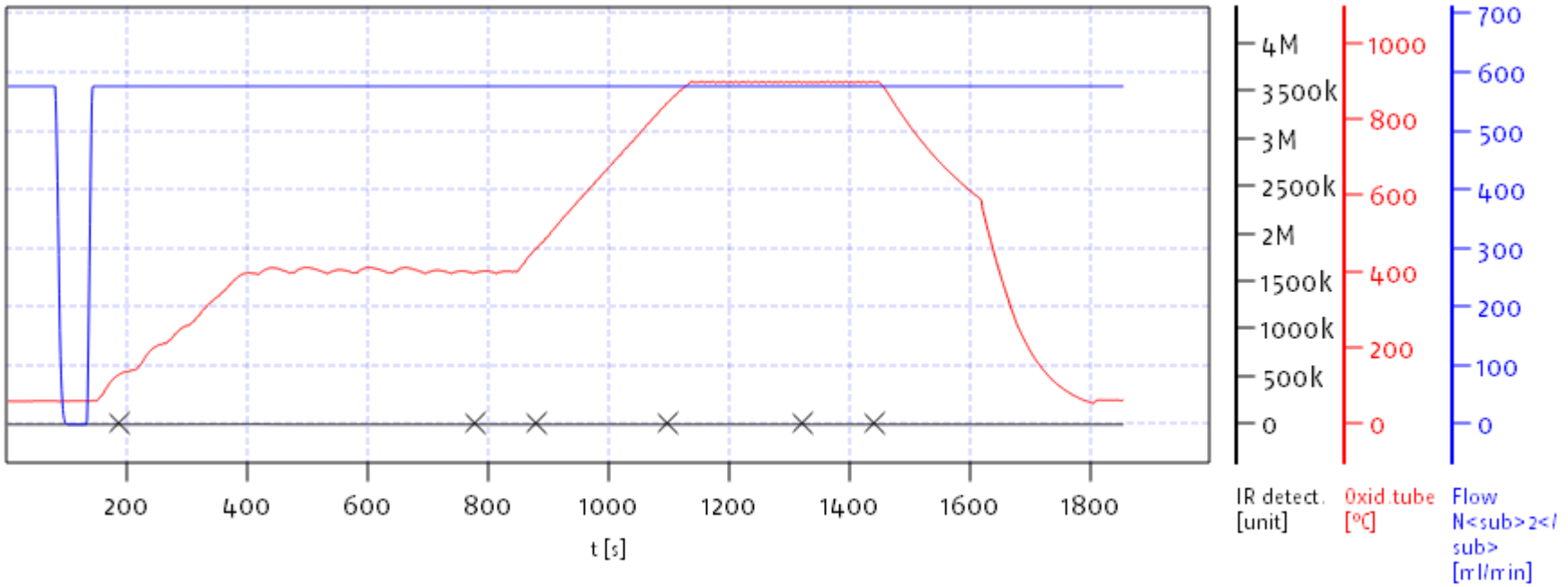
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
37	8	BLANK	1.00		1.00	CARBON	8/17/2021 10:25 AM	0.000	0.000	0.000	bl	10 937	454	514	1.0124	1.0000



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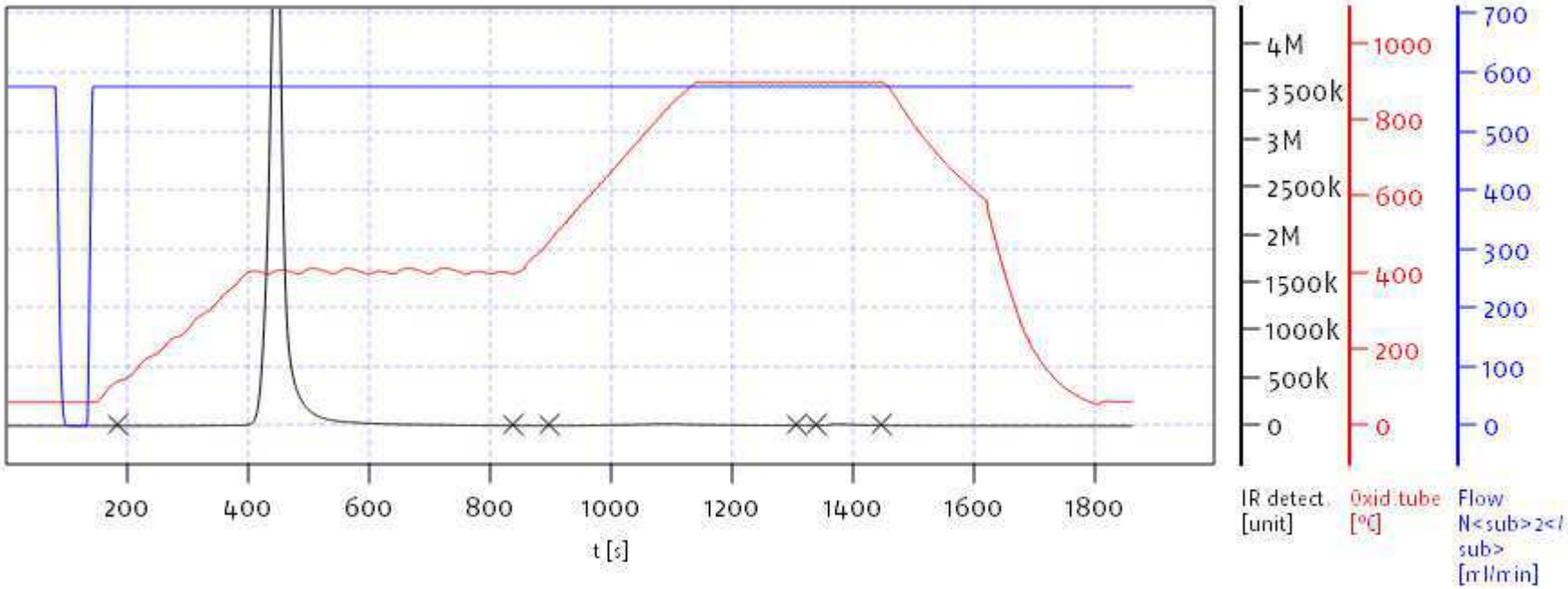
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
38	9	Dfactor	21.80		1.00	CARBON	8/17/2021 10:56 AM	44.631	0.881	45.512	bl	5 972 534	134 168	36 604	1.0443	1.0000



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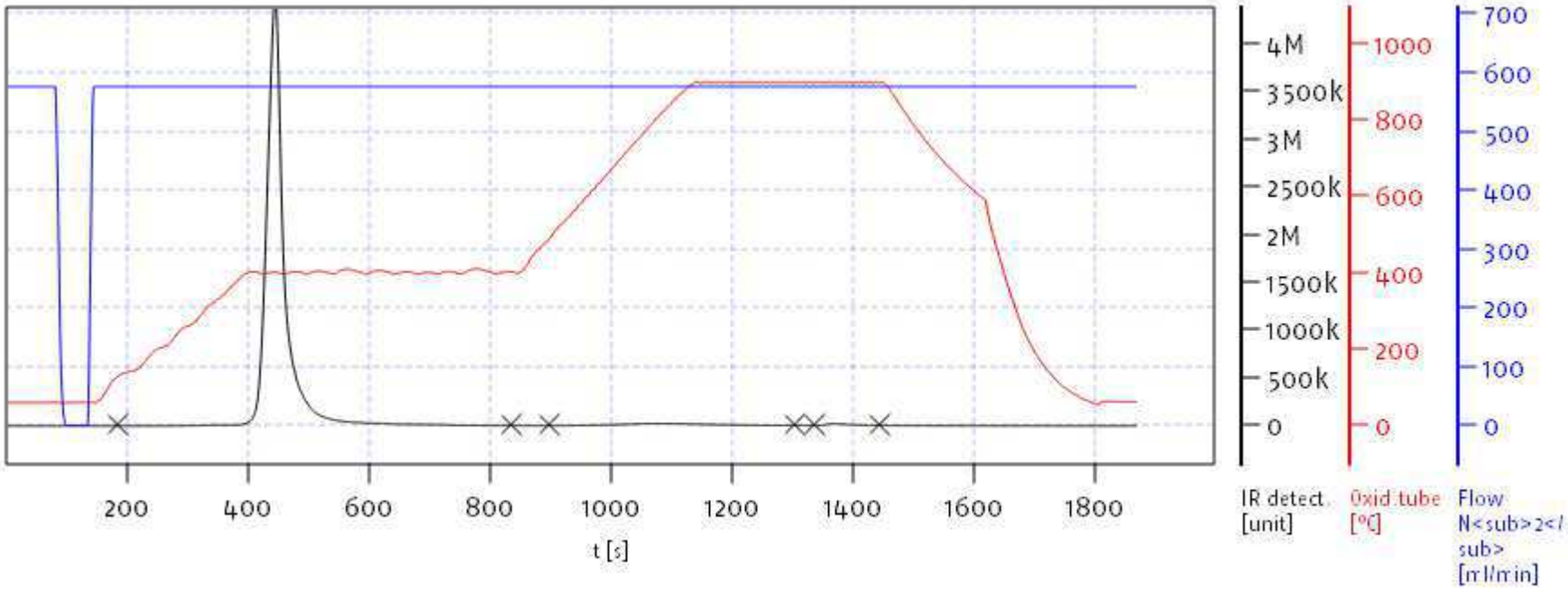
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
39	10	Dfactor	20.70		1.00	CARBON	8/17/2021 11:28 AM	44.703	1.286	45.989	bl	5 632 141	181 778	44 878	1.0517	1.0000



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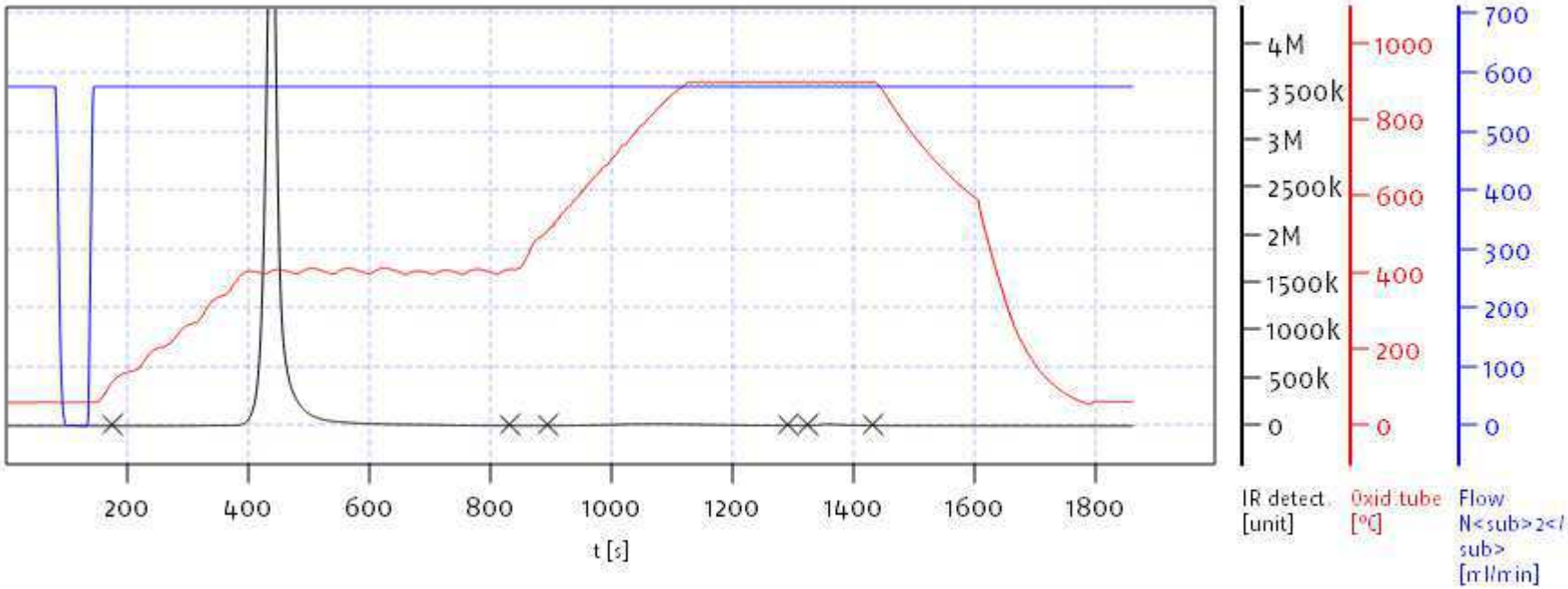
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
40	11	SJH0183-CCV3	20.80		1.00	CARBON	8/17/2021 11:59 AM	44.675	1.040	45.715	bl	5 686 565	149 677	33 599	1.0480	1.0000



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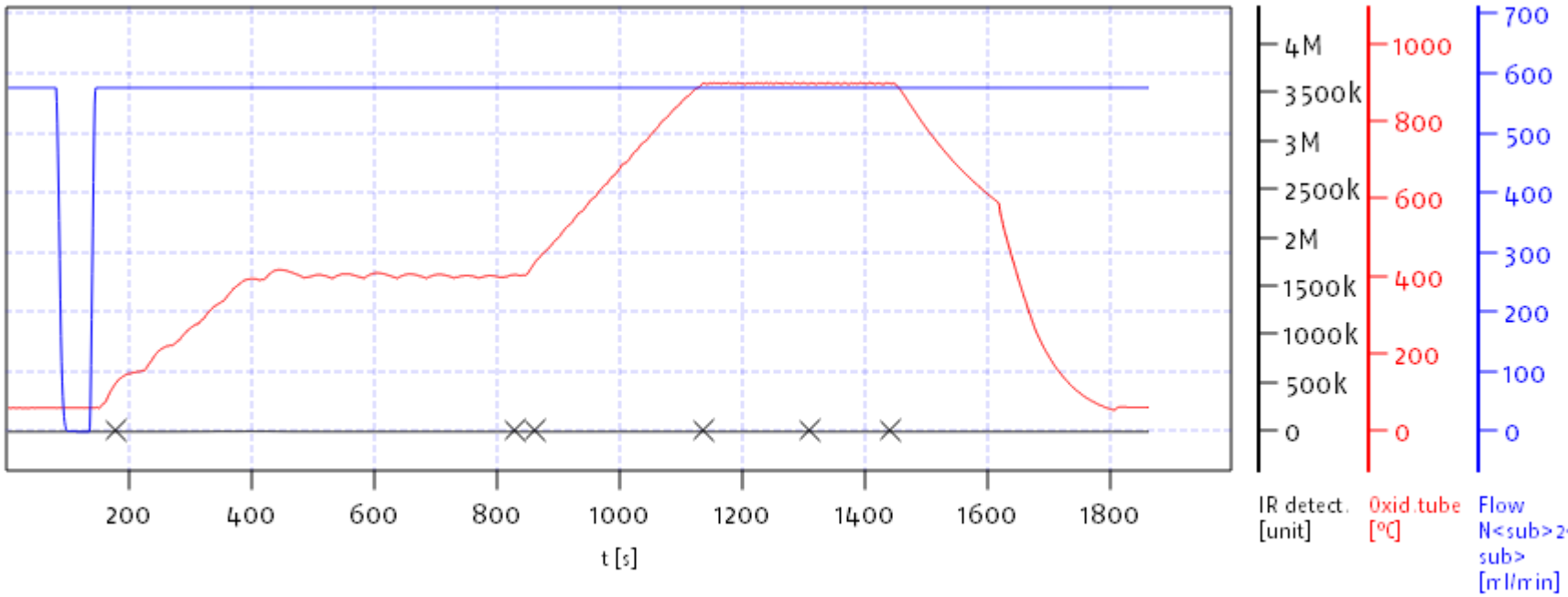
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
41	12	SJH0183-CCB3	510.30		1.00	CARBON	8/17/2021 12:31 PM	0.002	0.000	0.002	bl,C3u,C2u	18 049	1 516	915	1.0480	1.0000



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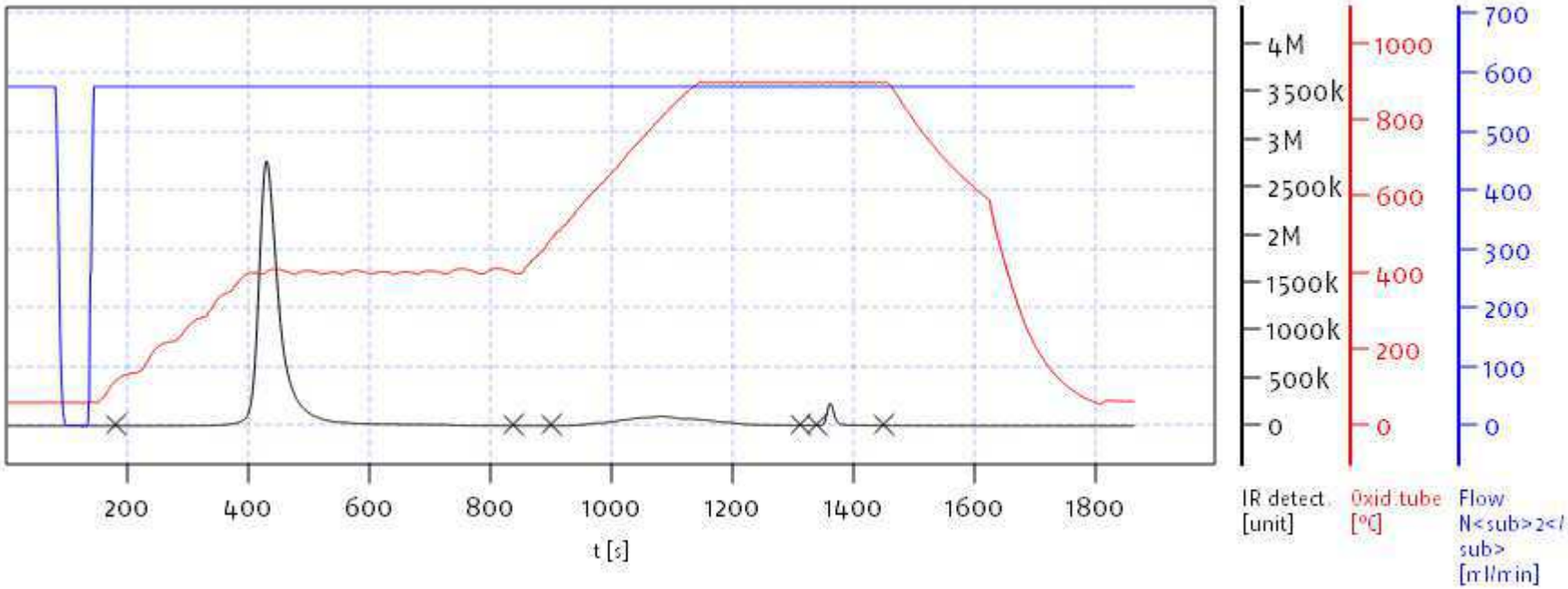
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
42	13	21H0004-05	635.10		1.00	CARBON	8/17/2021 1:02 PM	1.131	0.152	1.282	bl	4 290 460	630 187	139 614	1.0480	1.0000



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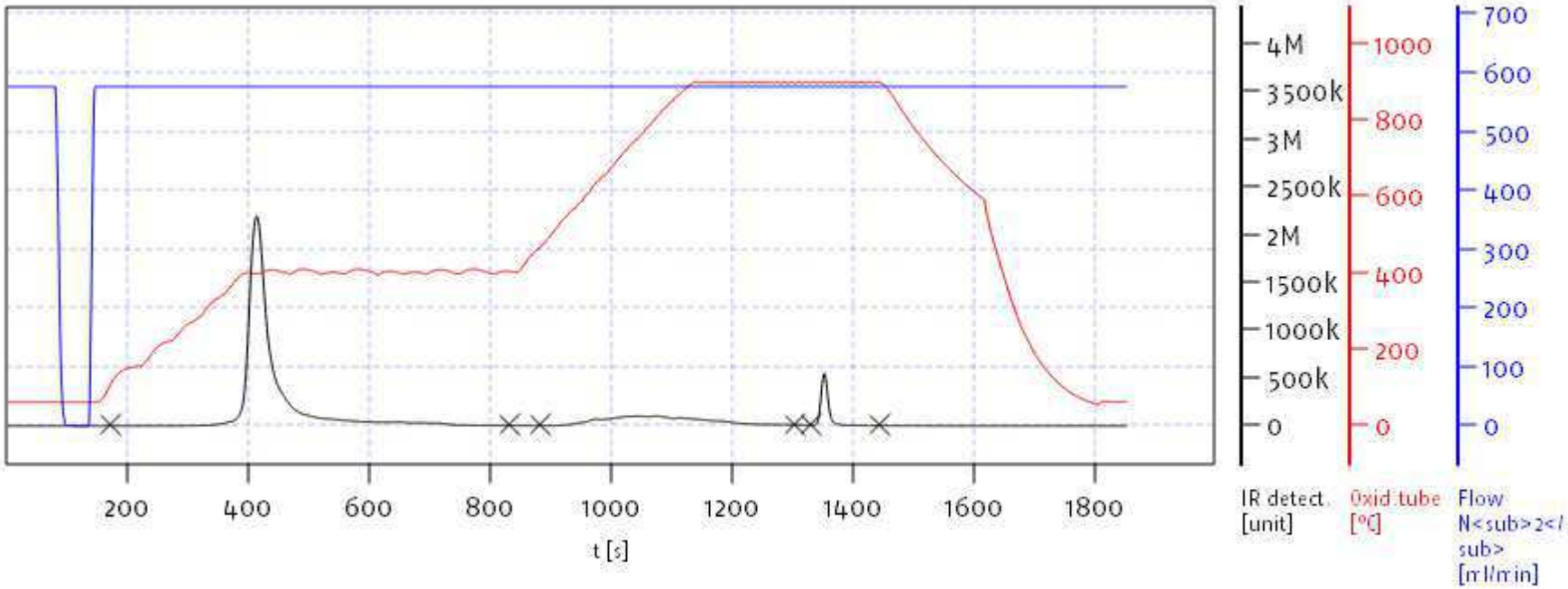
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
43	14	BJH0302-DUP1	588.50		1.00	CARBON	8/17/2021 1:33 PM	1.065	0.209	1.274	bl	3 582 620	799 768	296 567	1.0480	1.0000



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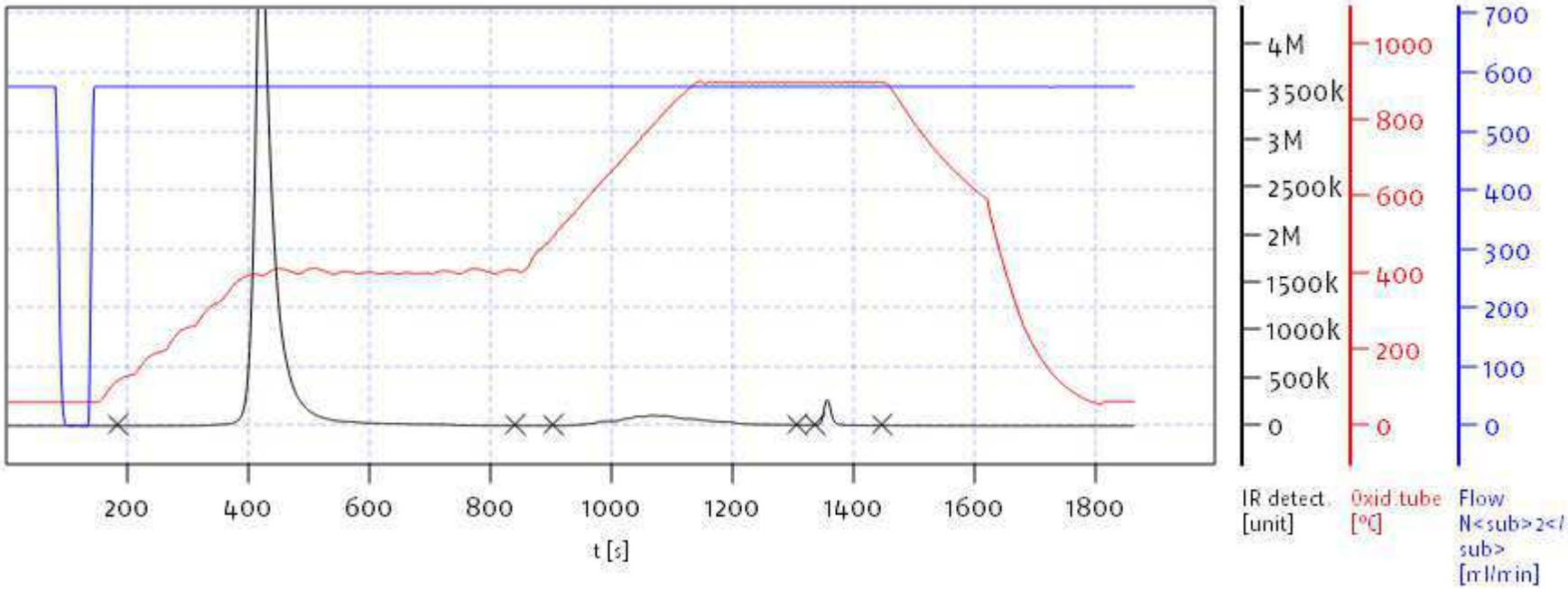
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
44	15	BJH0302-MS1	526.60	0.0132	1.00	CARBON	8/17/2021 2:05 PM	2.231	0.203	2.434	bl	7 069 026	697 304	161 833	1.0480	1.0000



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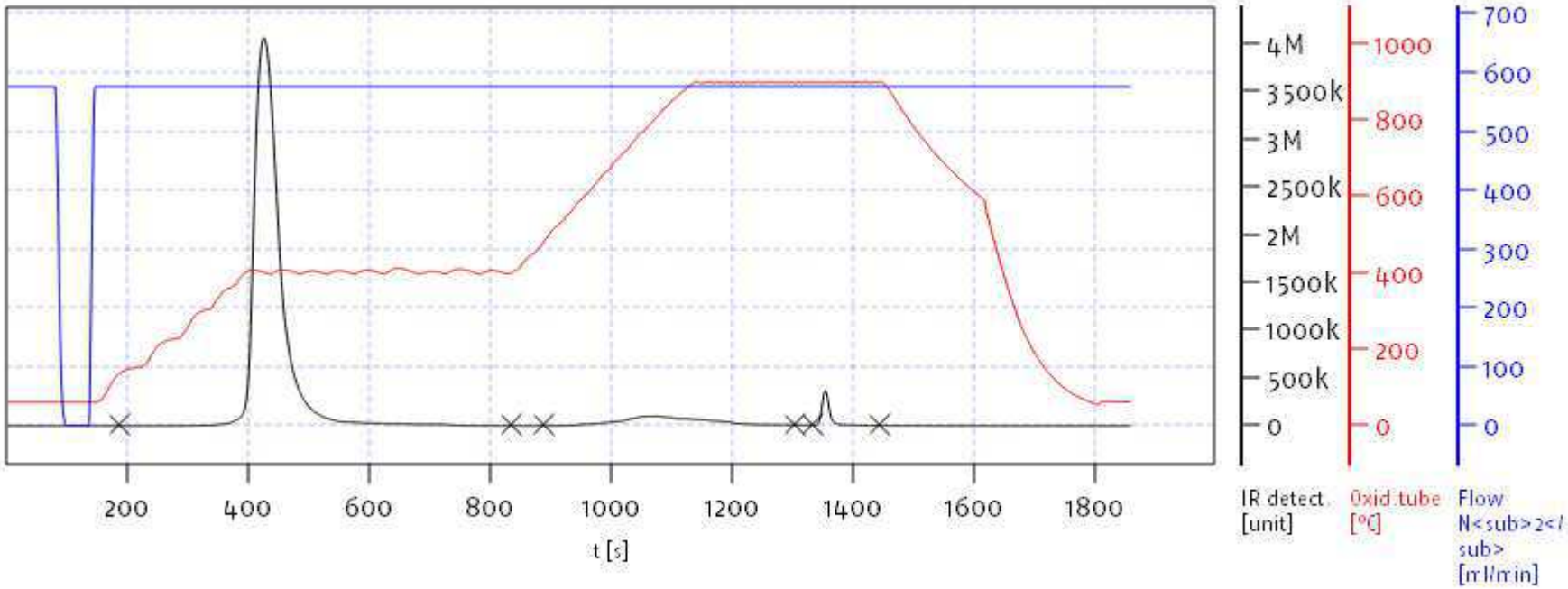
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
45	16	BJH0302-MSD1	632.30	0.0111	1.00	CARBON	8/17/2021 2:36 PM	1.972	0.157	2.129	bl	7 466 014	649 687	210 795	1.0480	1.0000



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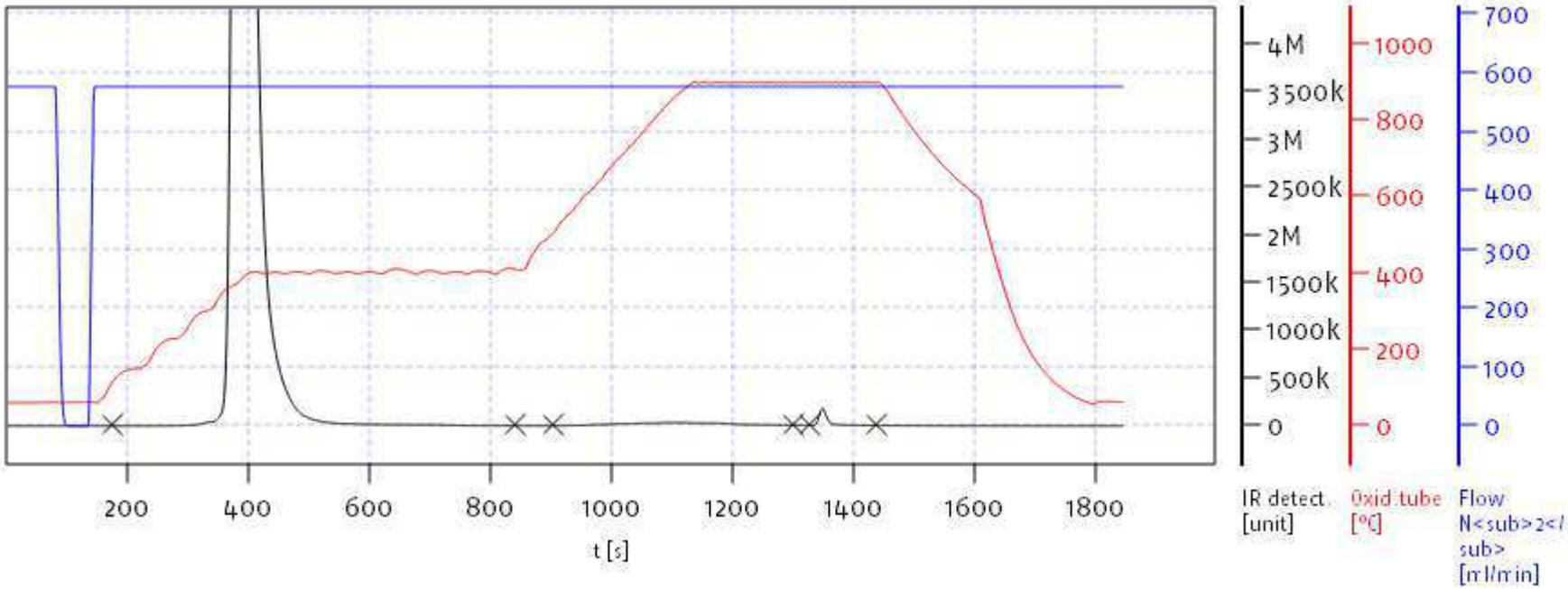
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
46	17	21H0061-01	623.90		1.00	CARBON	8/17/2021 3:07 PM	4.804	0.067	4.870	bl,C1o	18 280418	277 879	121 921	1.0480	1.0000



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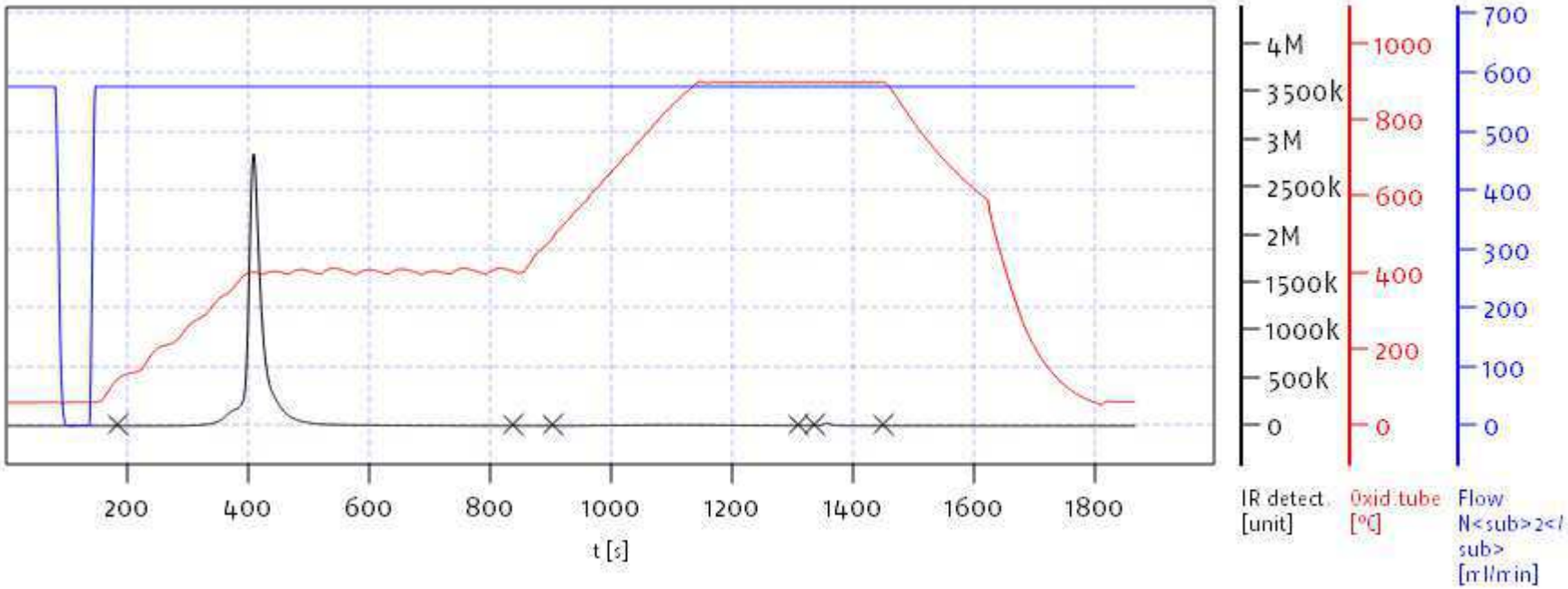
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
47	18	21H0061-02	166.70		1.00	CARBON	8/17/2021 3:39 PM	2.914	0.065	2.979	bl	2 979 477	80 275	20 379	1.0480	1.0000



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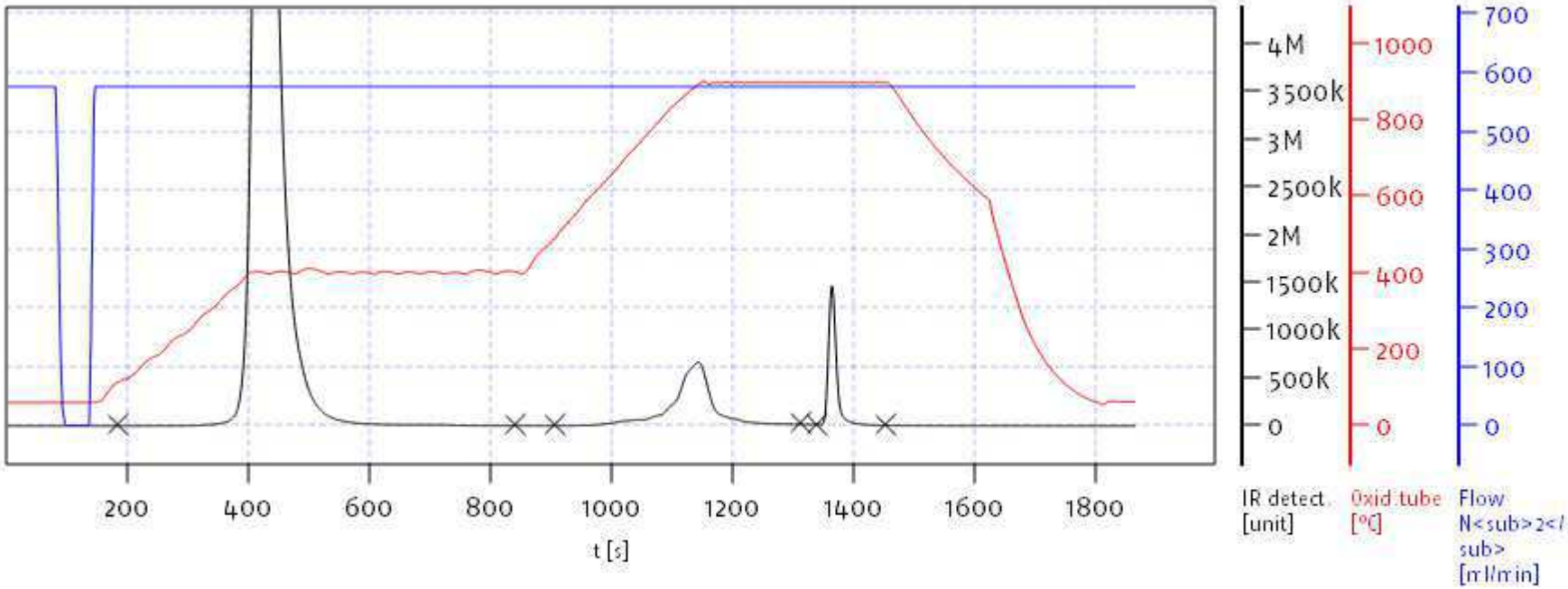
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
48	19	21H0061-03	512.10		1.00	CARBON	8/17/2021 4:10 PM	5.506	0.546	6.052	bl,C1o	16 490 222	1 807 184	858 401	1.0480	1.0000



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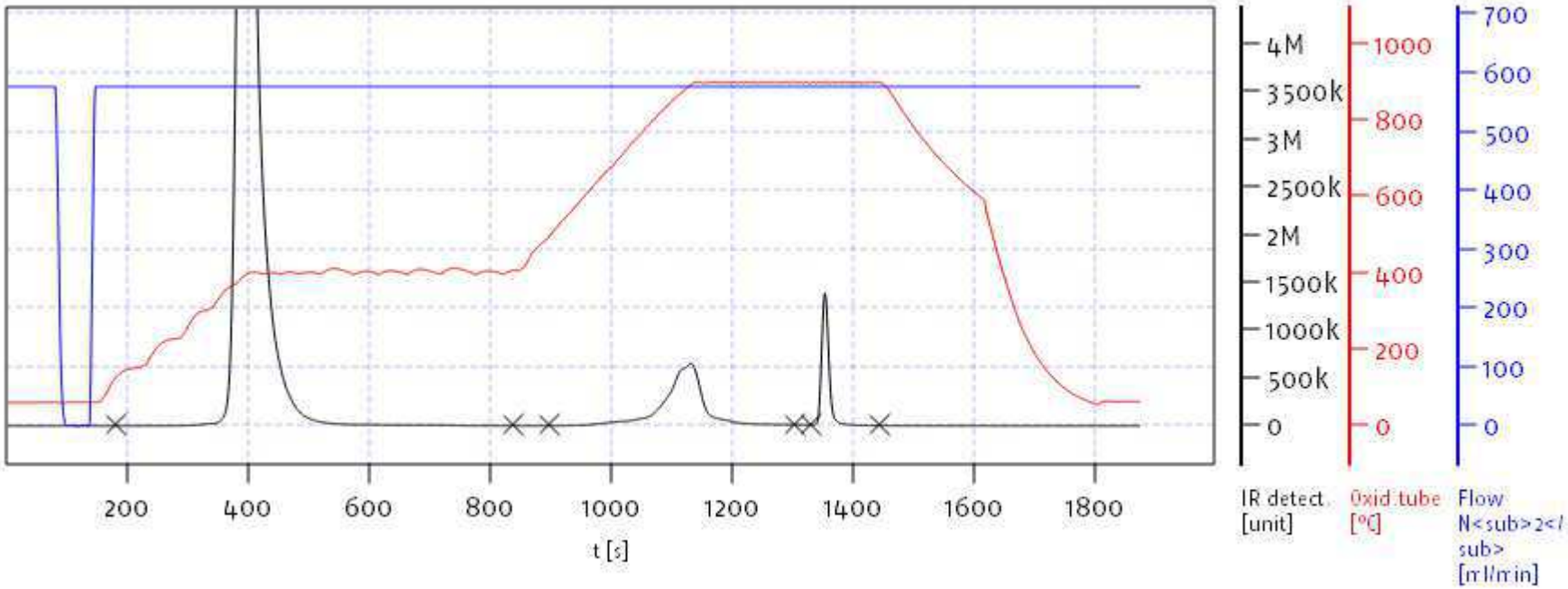
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
49	20	21H0061-04	309.50		1.00	CARBON	8/17/2021 4:42 PM	7.680	0.881	8.561	bl,C1o	13 893921	1 762 876	734 906	1.0480	1.0000



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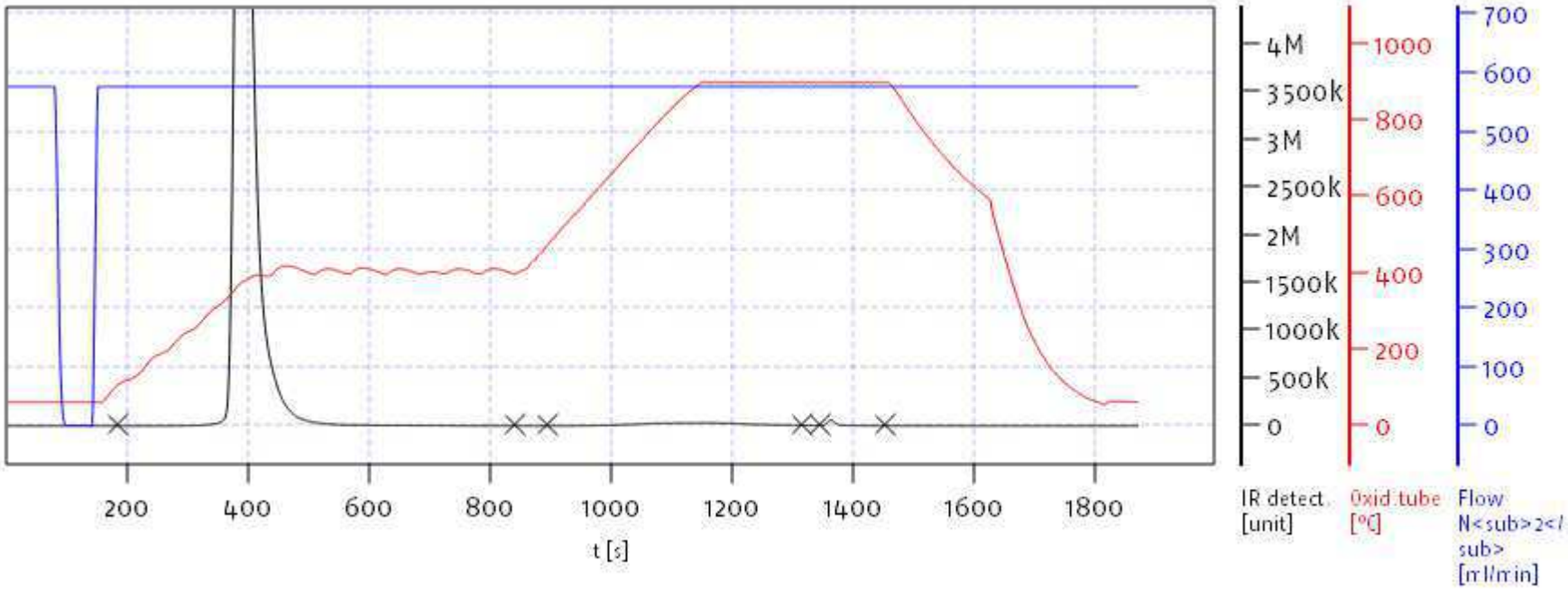
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
50	21	21H0061-05	253.90		1.00	CARBON	8/17/2021 5:13 PM	7.569	0.147	7.716	bl,C1o	11 765688	250 027	41 006	1.0480	1.0000



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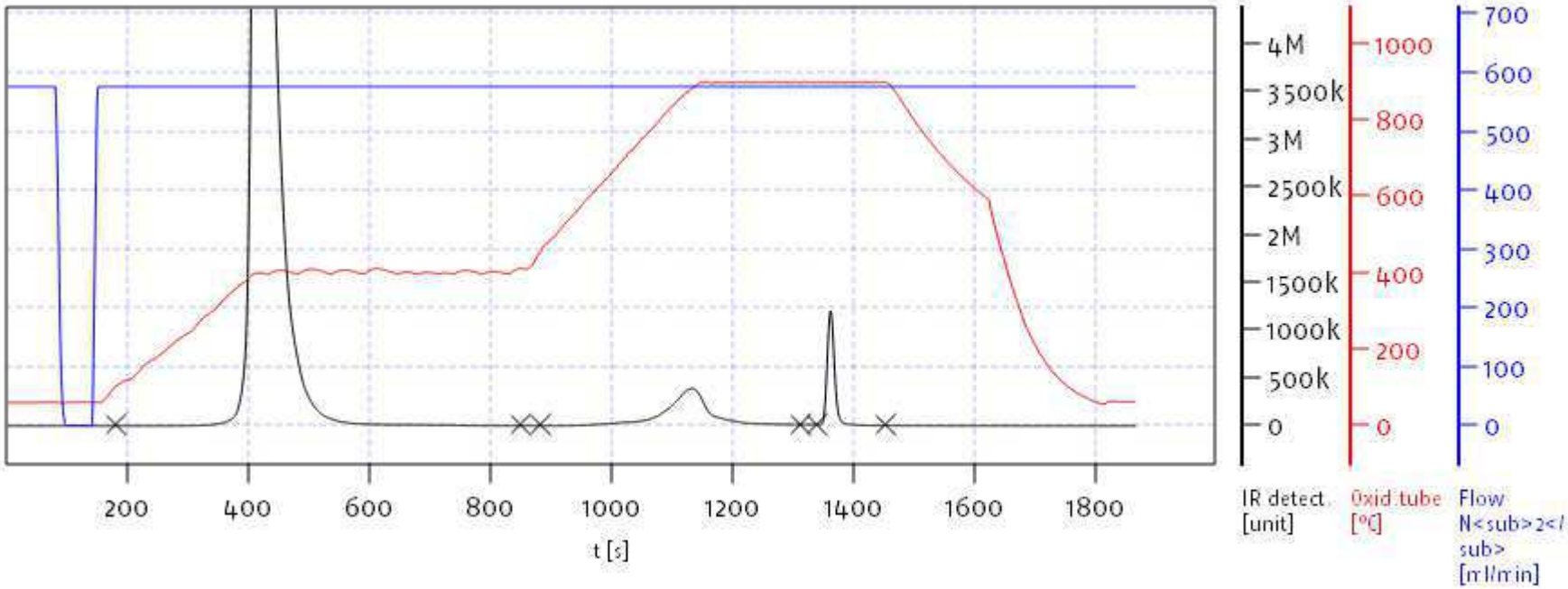
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
51	22	21H0061-06	301.40		1.00	CARBON	8/17/2021 5:45 PM	8.926	0.630	9.556	bl,C1o	15 897 634	1 230 538	648 247	1.0480	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
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Balance: BAL3
Analyst: BF

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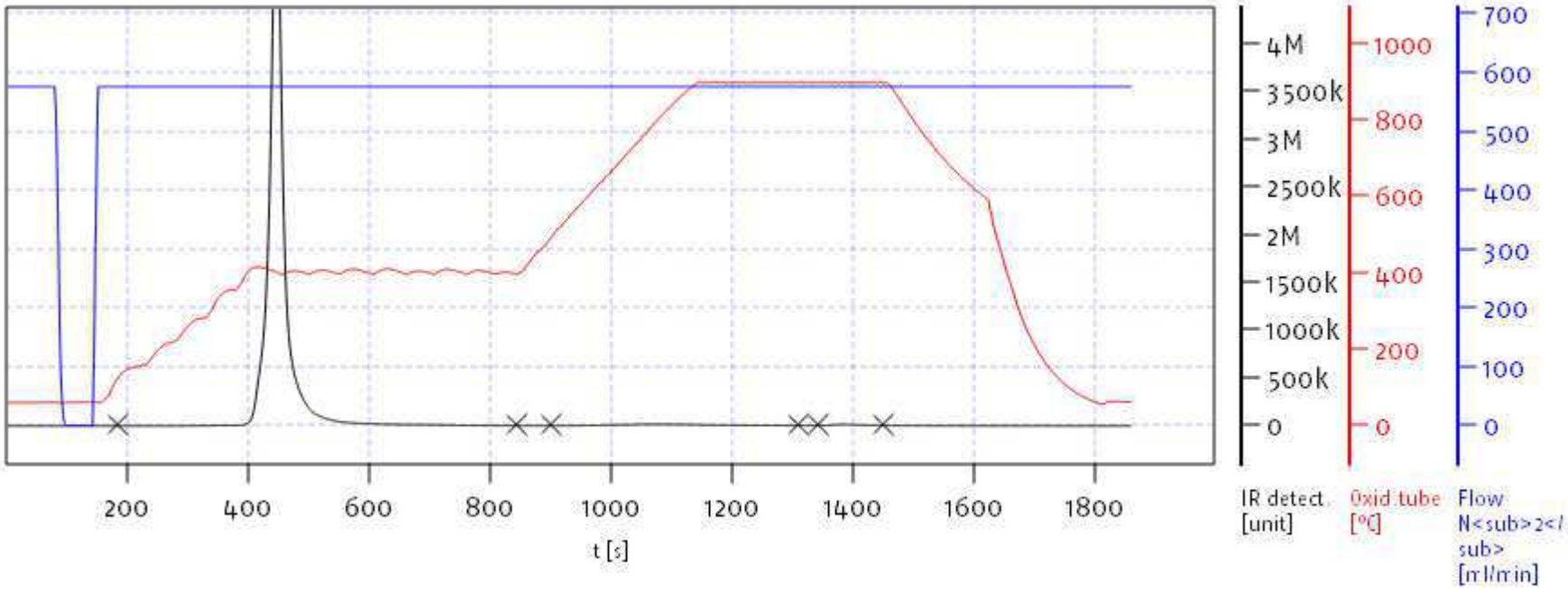
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
52	23	SJH0183-CCV4	21.70		1.00	CARBON	8/17/2021 6:16 PM	45.113	0.838	45.952	bl	5 991 391	127 584	33 568	1.0480	1.0000



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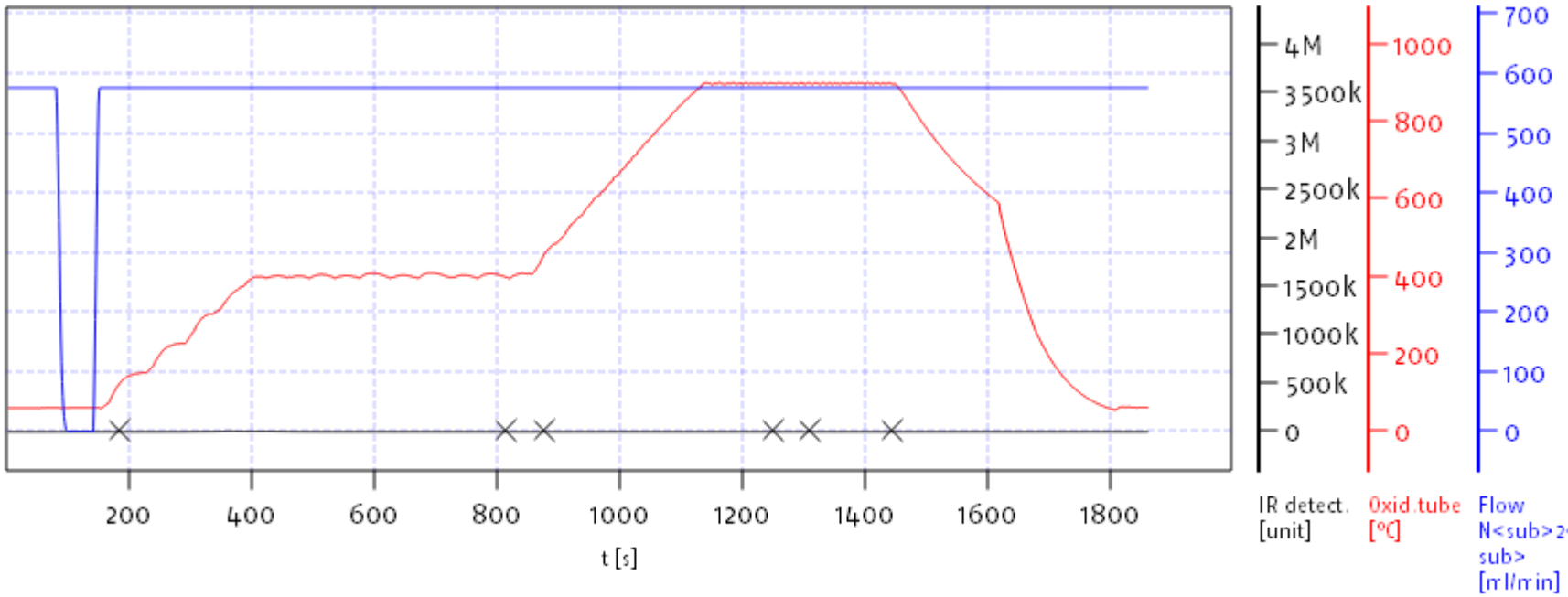
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
53	24	SJH0183-CCB4	558.70		1.00	CARBON	8/17/2021 6:48 PM	0.005	0.000	0.005	bl,C3u,C2u	27 873	2 573	928	1.0480	1.0000



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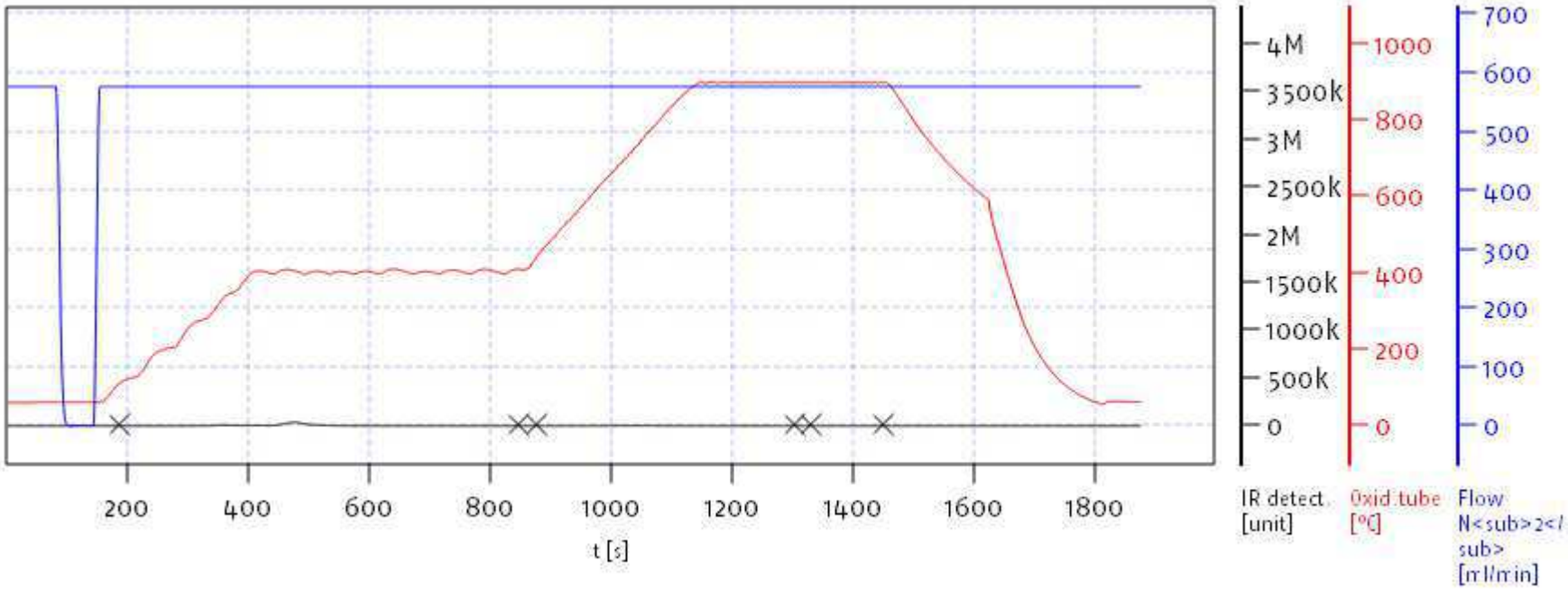
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
54	25	BJH0349-MRL1	509.80		1.00	CARBON	8/17/2021 7:19 PM	0.025	0.000	0.025	bl,C2u	89 277	10 446	770	1.0480	1.0000



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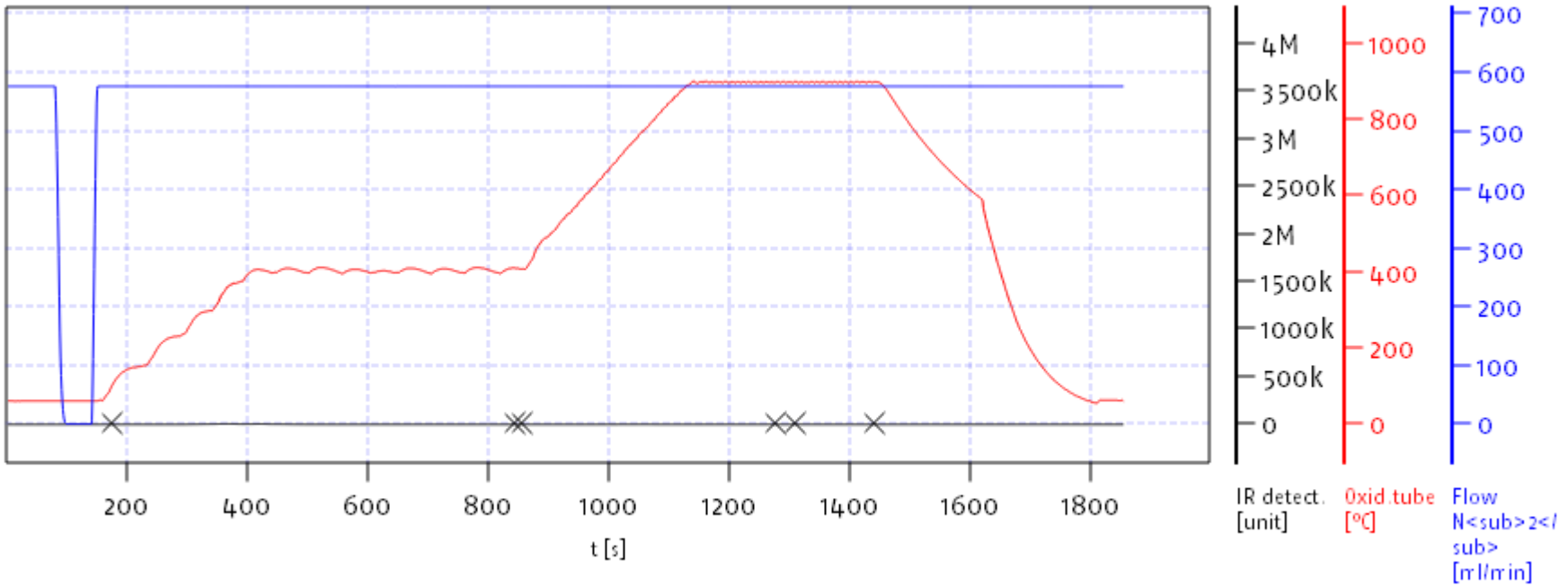
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
55	26	BJH0349-BLK1	523.30		1.00	CARBON	8/17/2021 7:51 PM	0.005	0.000	0.005	bl,C3u,C2u	25 750	3 706	617	1.0480	1.0000



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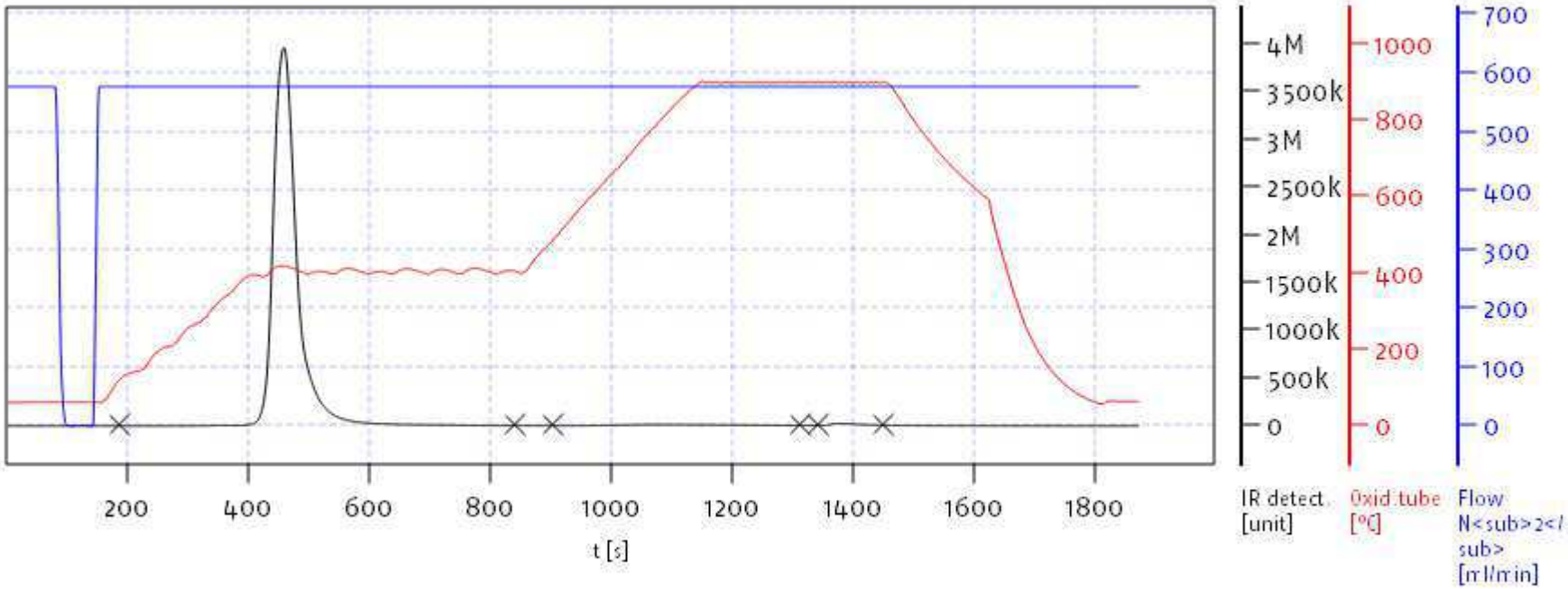
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
56	27	BJH0349-BS1	24.30		1.00	CARBON	8/17/2021 8:22 PM	45.199	0.711	45.910	bl	6 700 820	121 742	57 121	1.0480	1.0000



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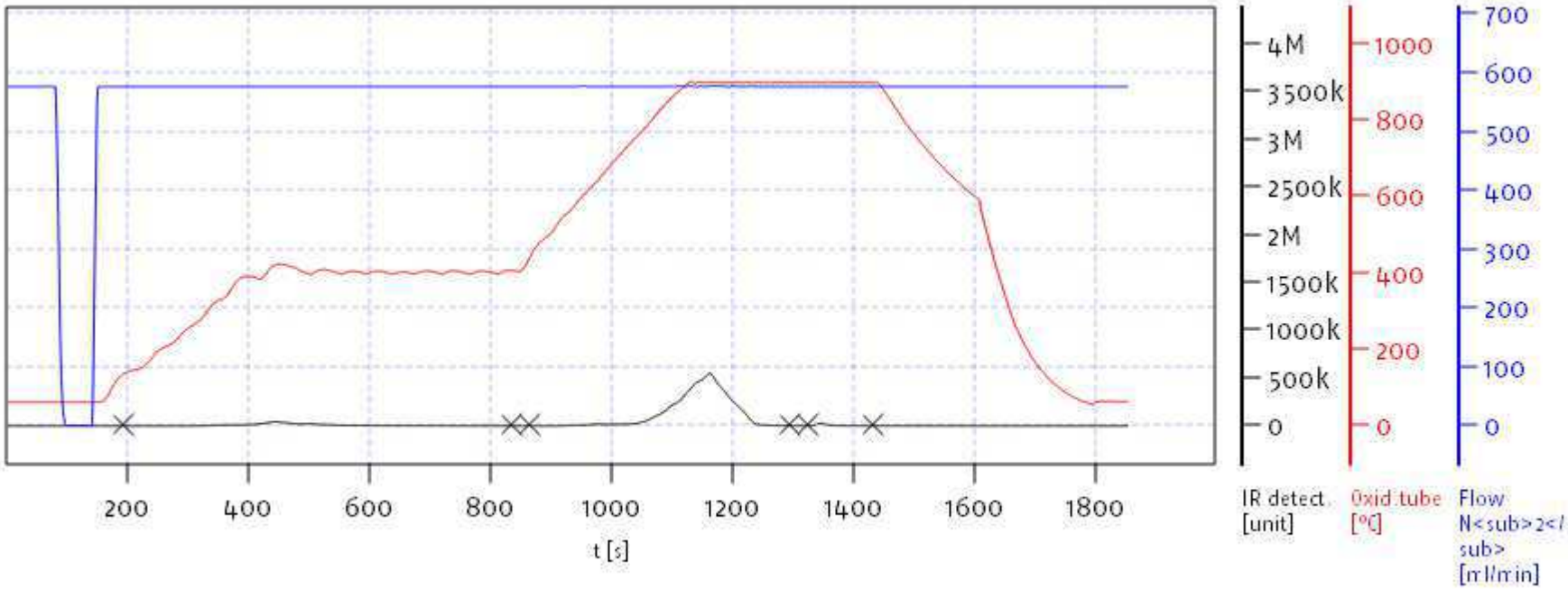
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
57	28	21G0310-12	334.70		1.00	CARBON	8/17/2021 8:54 PM	0.084	0.908	0.992	bl	170 977	1 963 591	23 654	1.0480	1.0000



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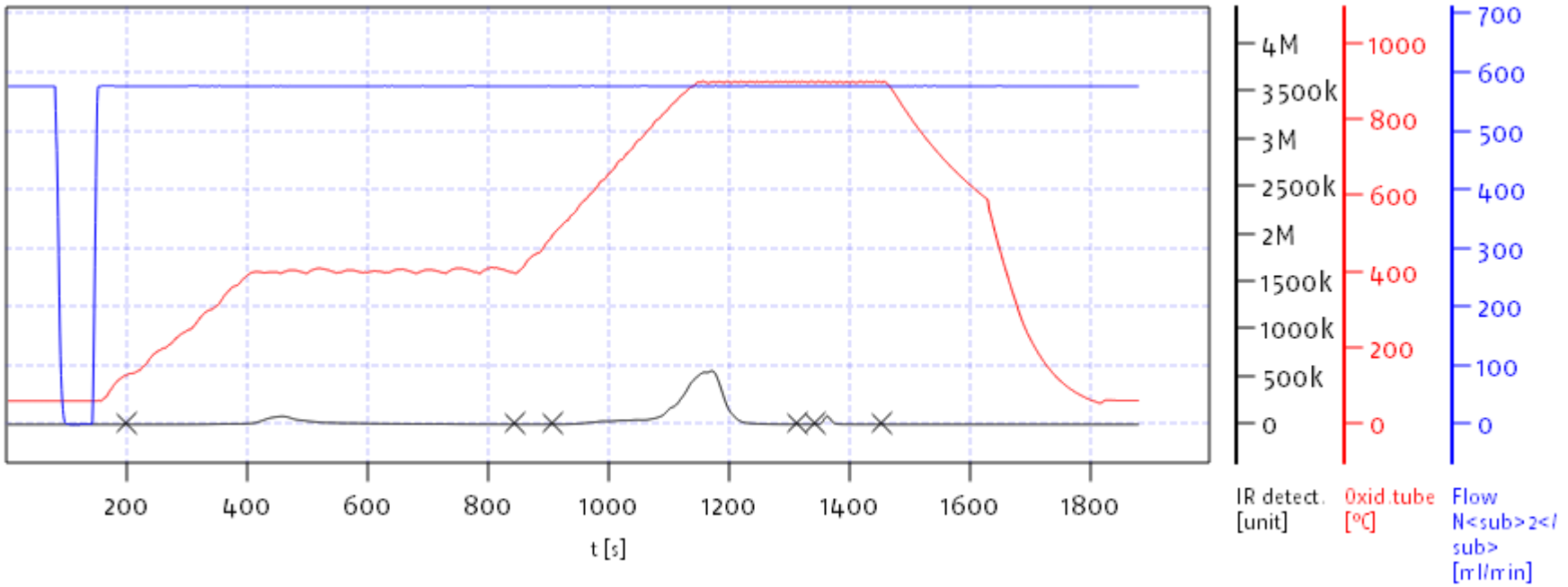
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
58	29	21G0310-13	311.40		1.00	CARBON	8/17/2021 9:25 PM	0.178	0.894	1.072	bl	314 260	1 799 139	48 235	1.0480	1.0000



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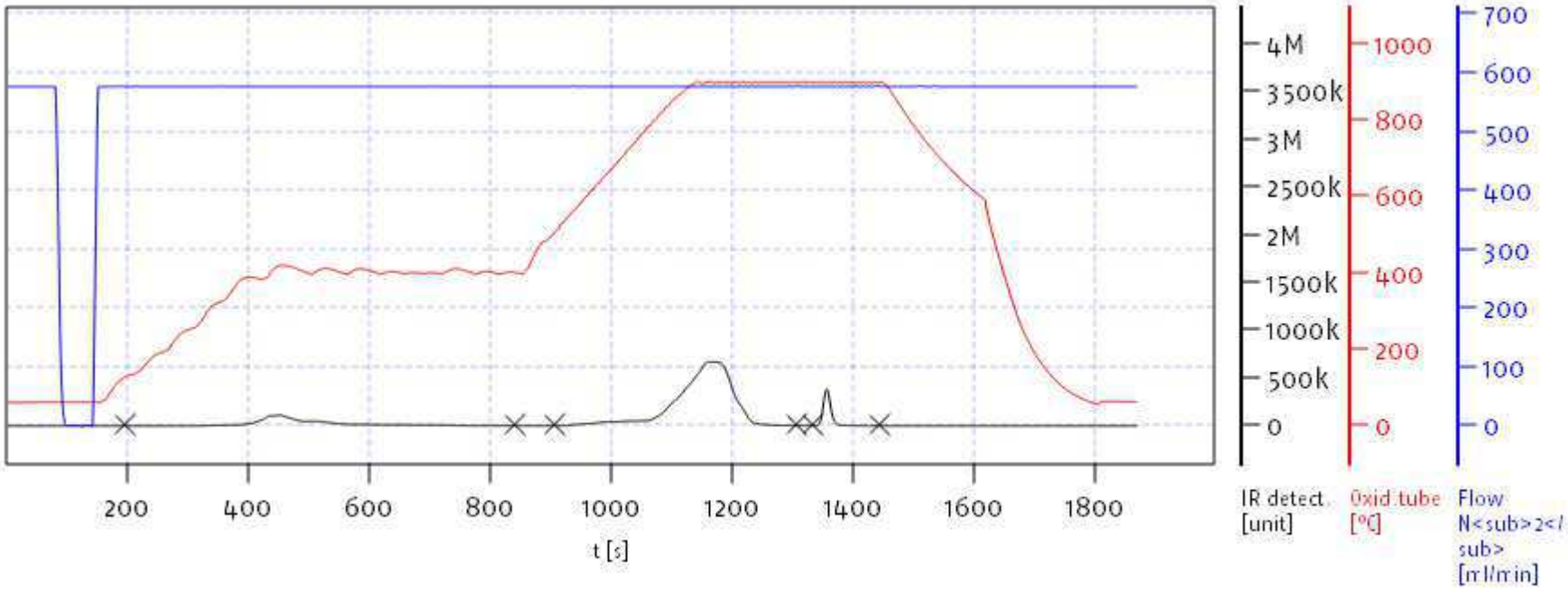
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
59	30	21G0310-14	335.80		1.00	CARBON	8/17/2021 9:57 PM	0.311	1.178	1.489	bl	460 600	2 552 192	209 614	1.0480	1.0000



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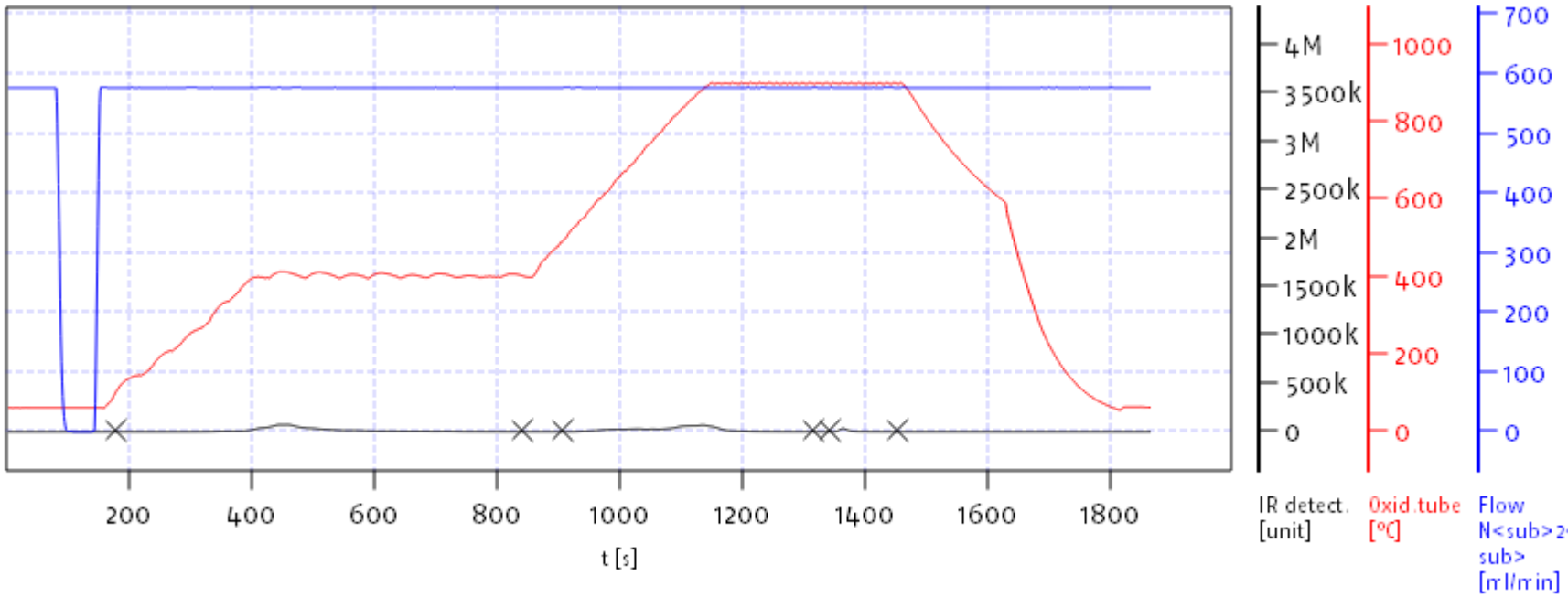
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
60	31	21G0310-15	405.80		1.00	CARBON	8/17/2021 10:28 PM	0.120	0.114	0.234	bl	297 605	307 817	22 094	1.0480	1.0000



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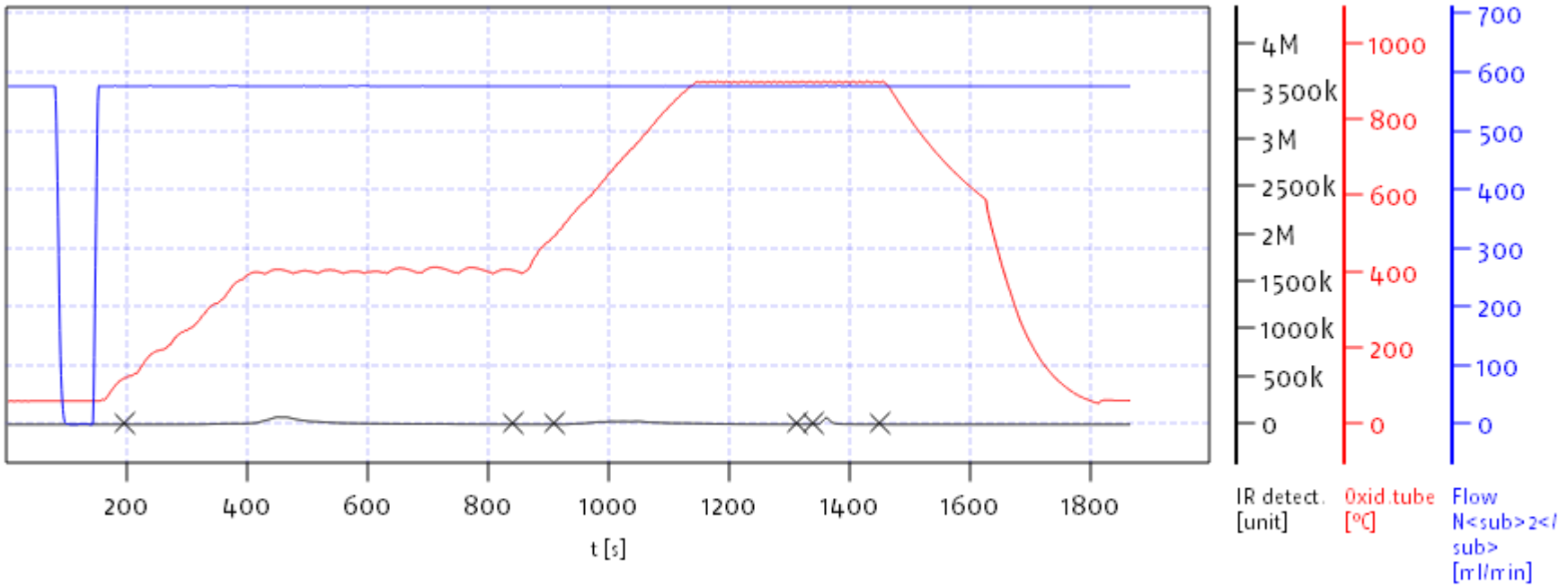
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
61	32	21G0310-16	596.30		1.00	CARBON	8/17/2021 11:00 PM	0.090	0.044	0.135	bl	310 702	180 805	42 778	1.0480	1.0000



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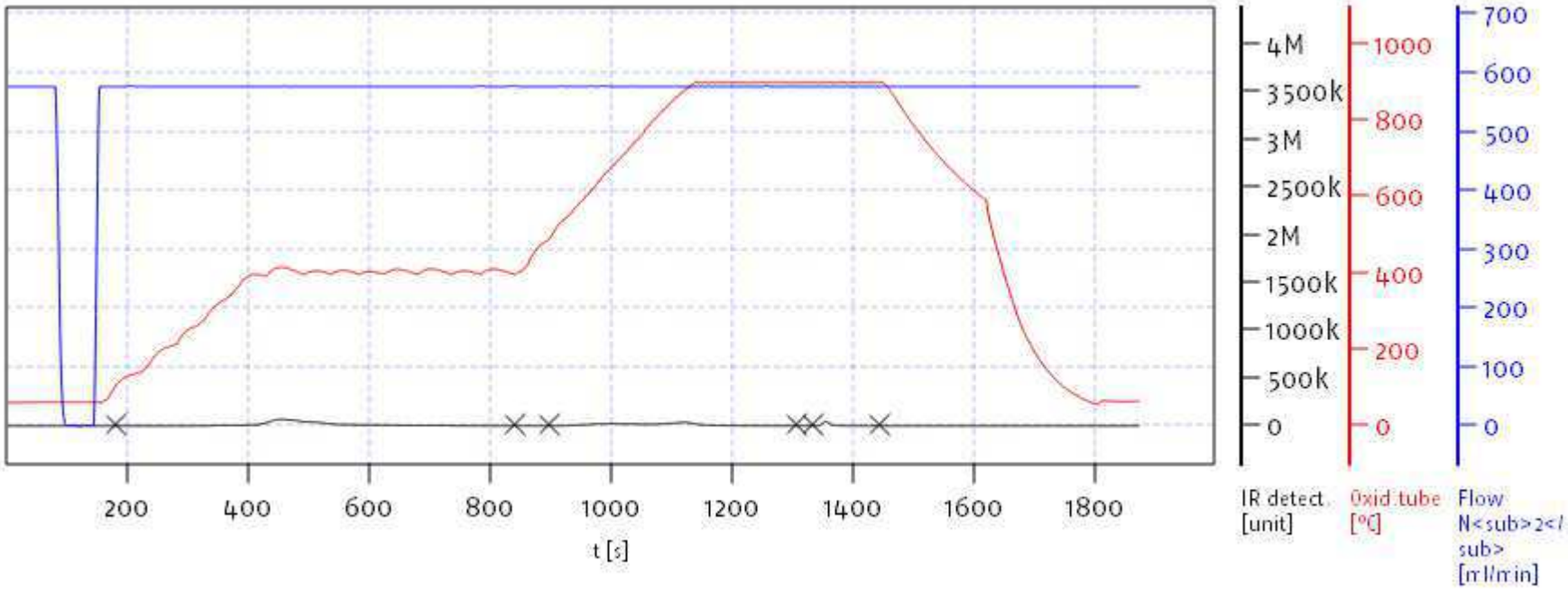
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
62	33	21G0310-17	509.10		1.00	CARBON	8/17/2021 11:31 PM	0.094	0.053	0.147	bl	289 129	183 621	27 482	1.0480	1.0000



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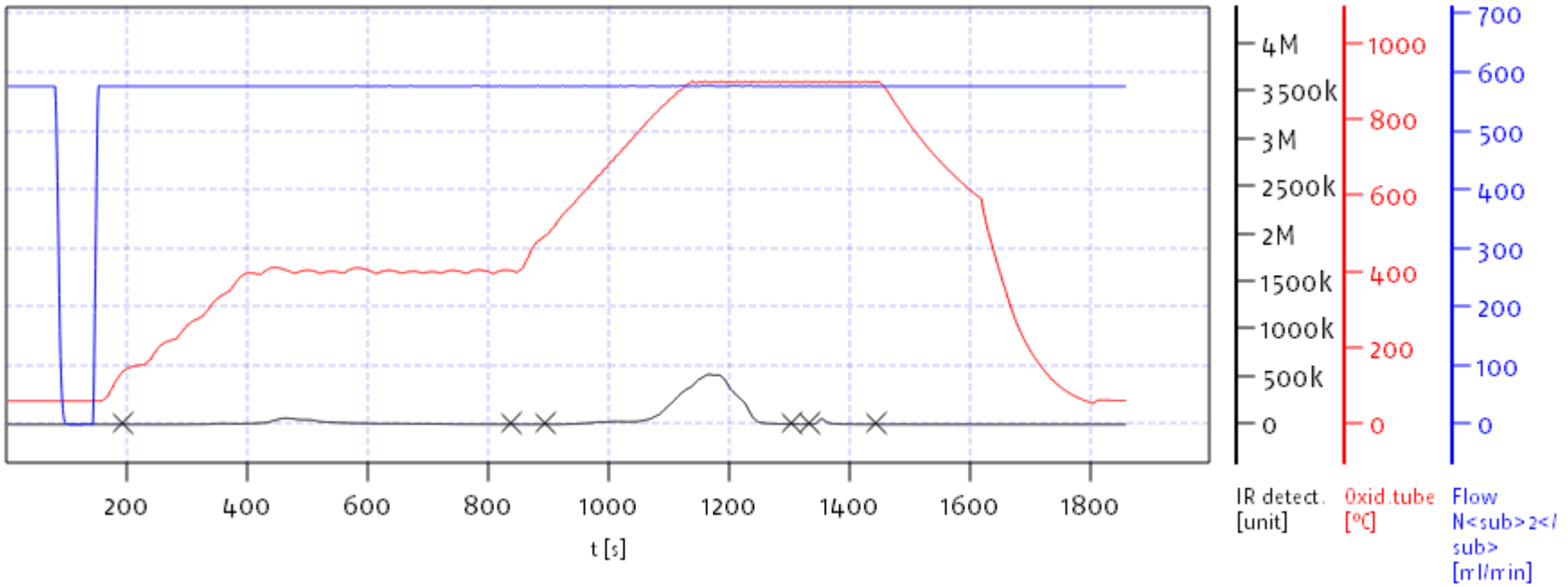
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
63	34	21G0310-18	592.80		1.00	CARBON	8/18/2021 12:03 AM	0.085	0.586	0.672	bl	293 090	2 244 752	40 237	1.0480	1.0000



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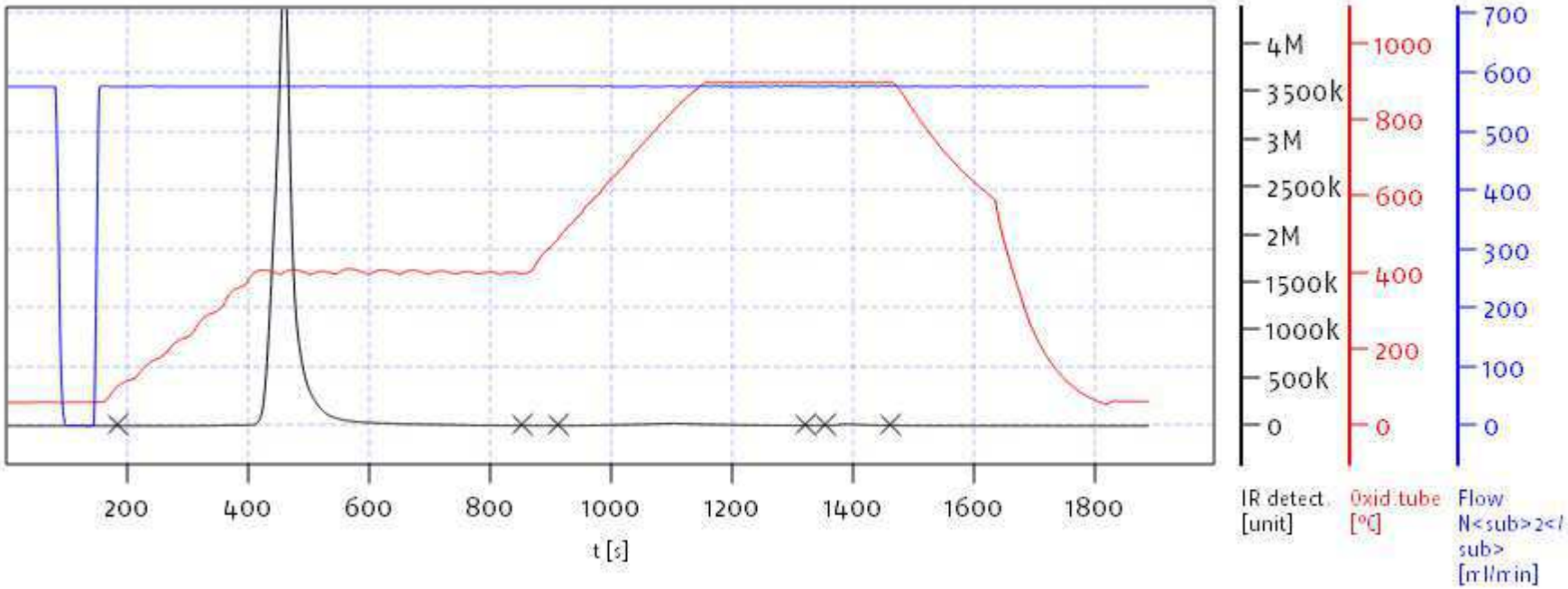
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
64	35	SJH0183-CCV5	22.70		1.00	CARBON	8/18/2021 12:35 AM	44.394	1.079	45.473	bl	6 164 699	168 022	36 955	1.0480	1.0000



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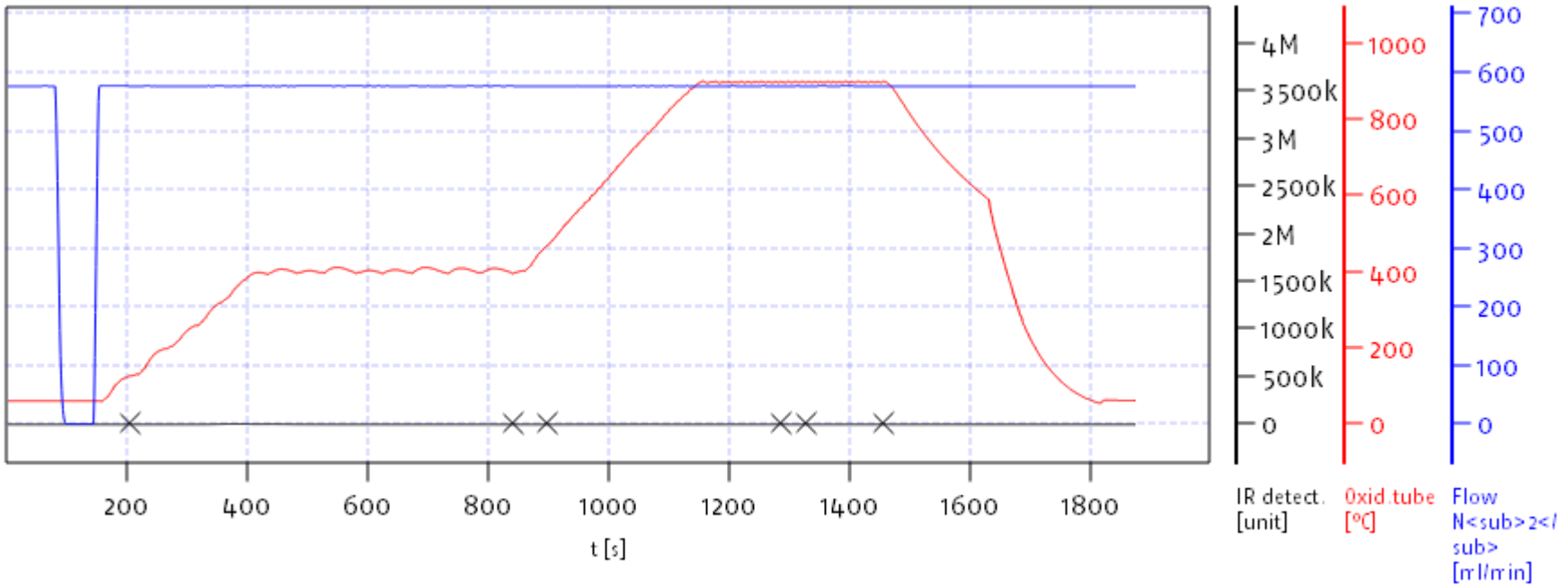
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
65	36	SJH0183-CCB5	574.40		1.00	CARBON	8/18/2021 1:06 AM	0.003	0.000	0.003	bl,C3u,C2u	22 253	2 985	583	1.0480	1.0000



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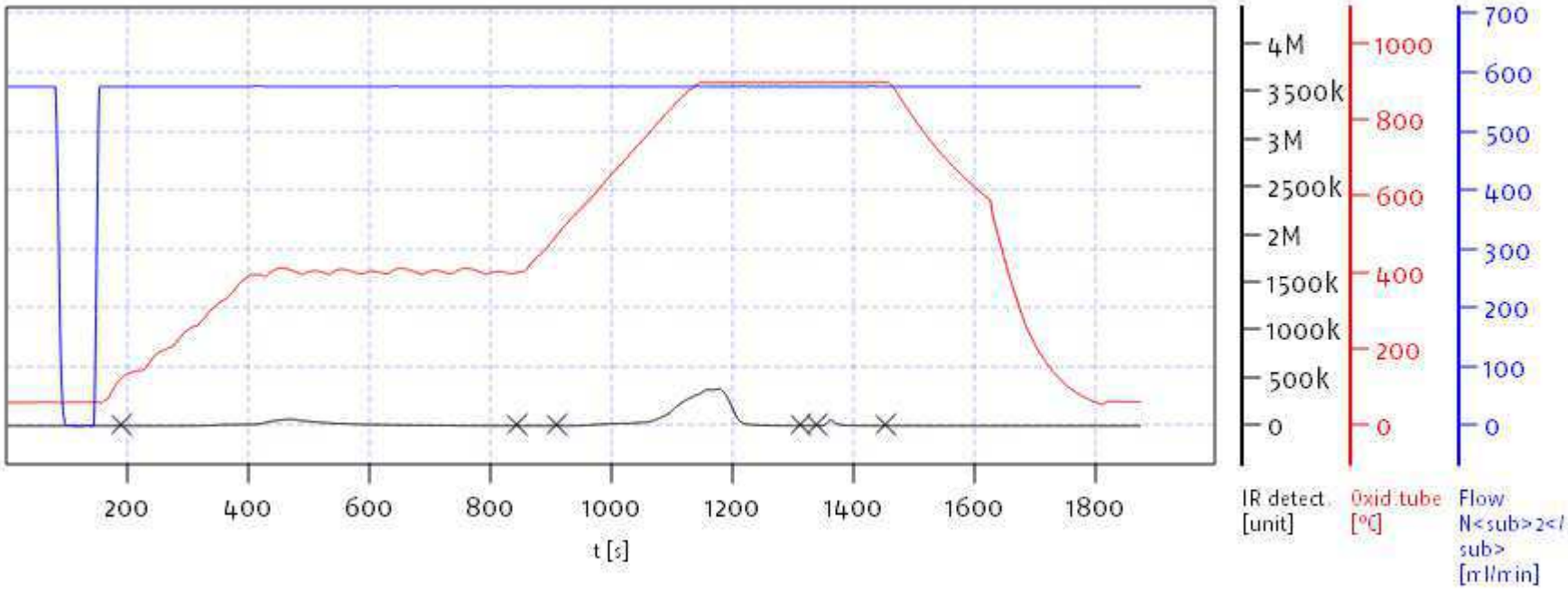
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
66	37	BJH0349-DUP1	638.90		1.00	CARBON	8/18/2021 1:38 AM	0.095	0.353	0.448	bl	353 746	1 459 001	42 127	1.0480	1.0000



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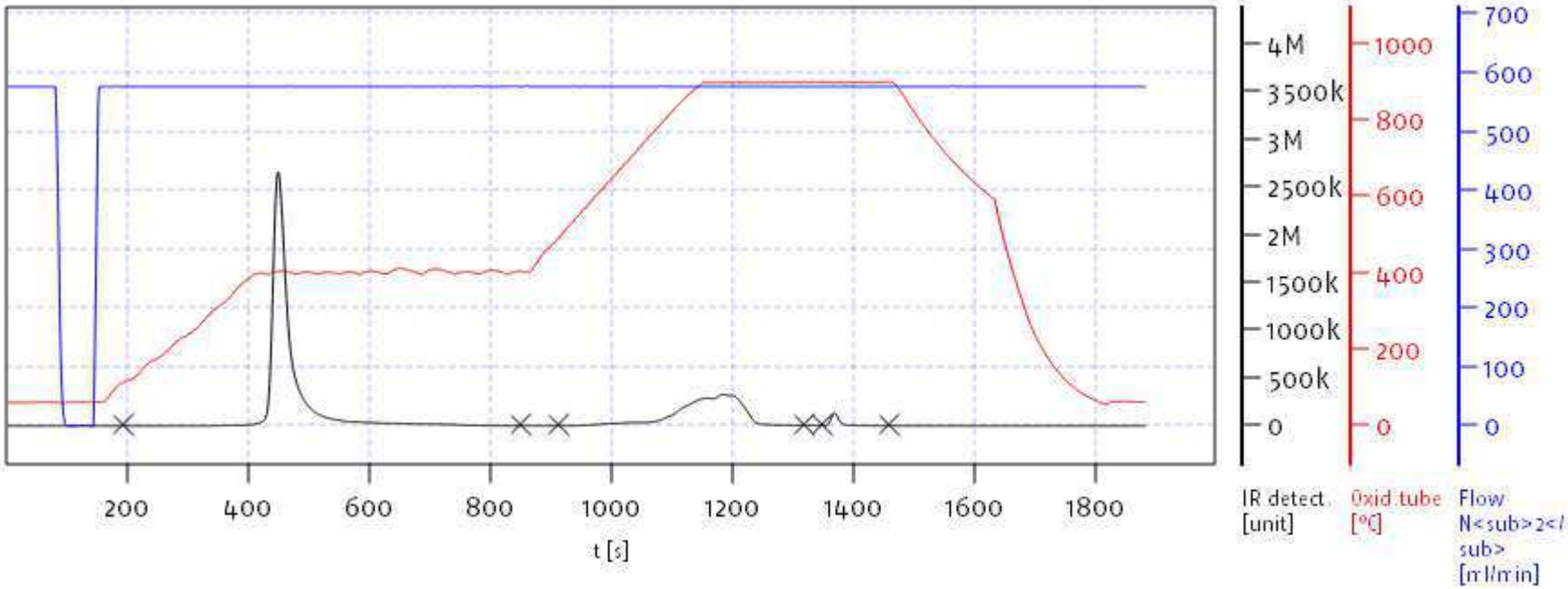
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
67	38	BJH0349-MS1	504.70	0.0111	1.00	CARBON	8/18/2021 2:10 AM	1.060	0.449	1.509	bl	3 221 872	1 465 782	82 696	1.0480	1.0000



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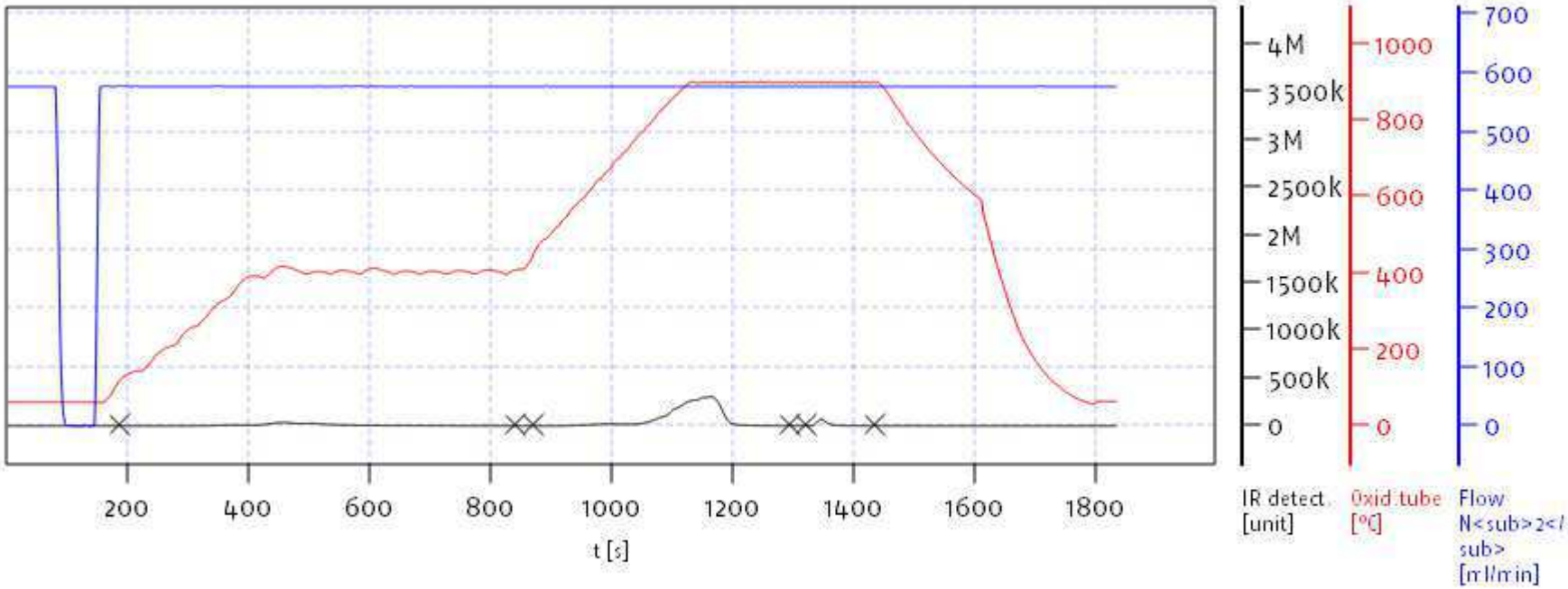
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
68	39	21G0312-01	502.90		1.00	CARBON	8/18/2021 2:41 AM	0.065	0.323	0.388	bl	170 436	1 053 650	53 189	1.0480	1.0000



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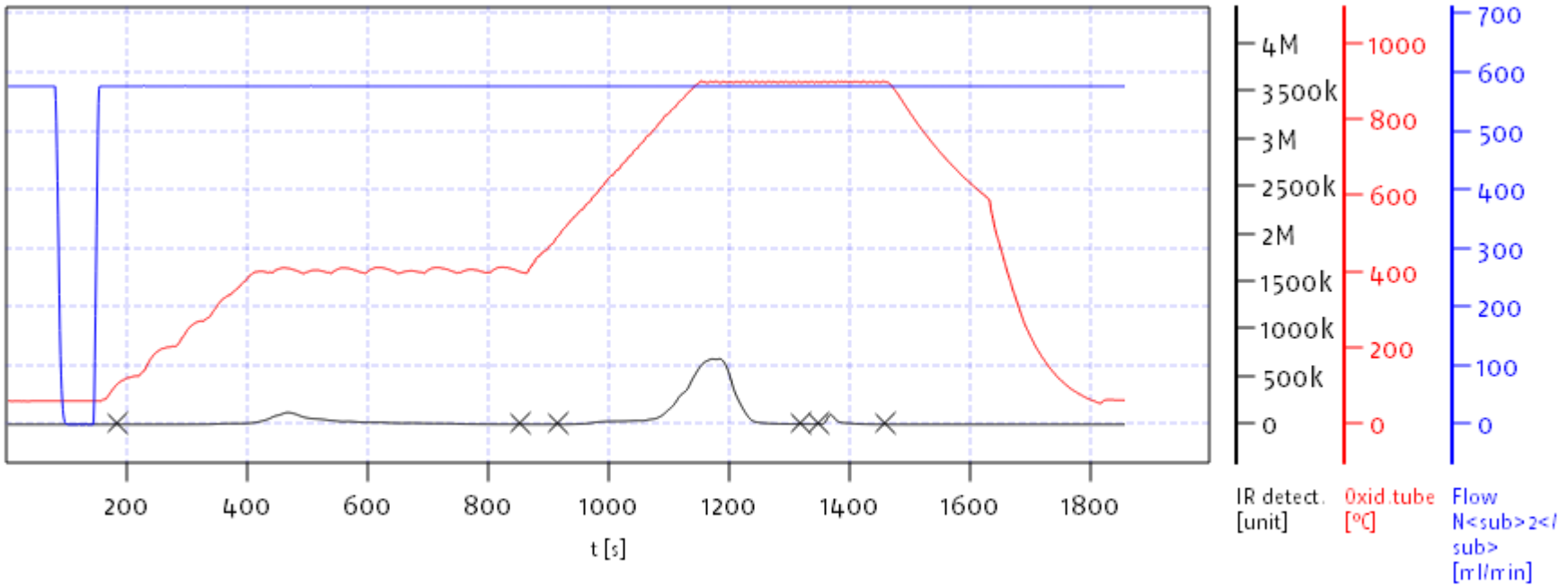
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
69	40	21G0312-02	519.30		1.00	CARBON	8/18/2021 3:12 AM	0.184	0.743	0.927	bl	531 506	2 489 415	79 177	1.0480	1.0000



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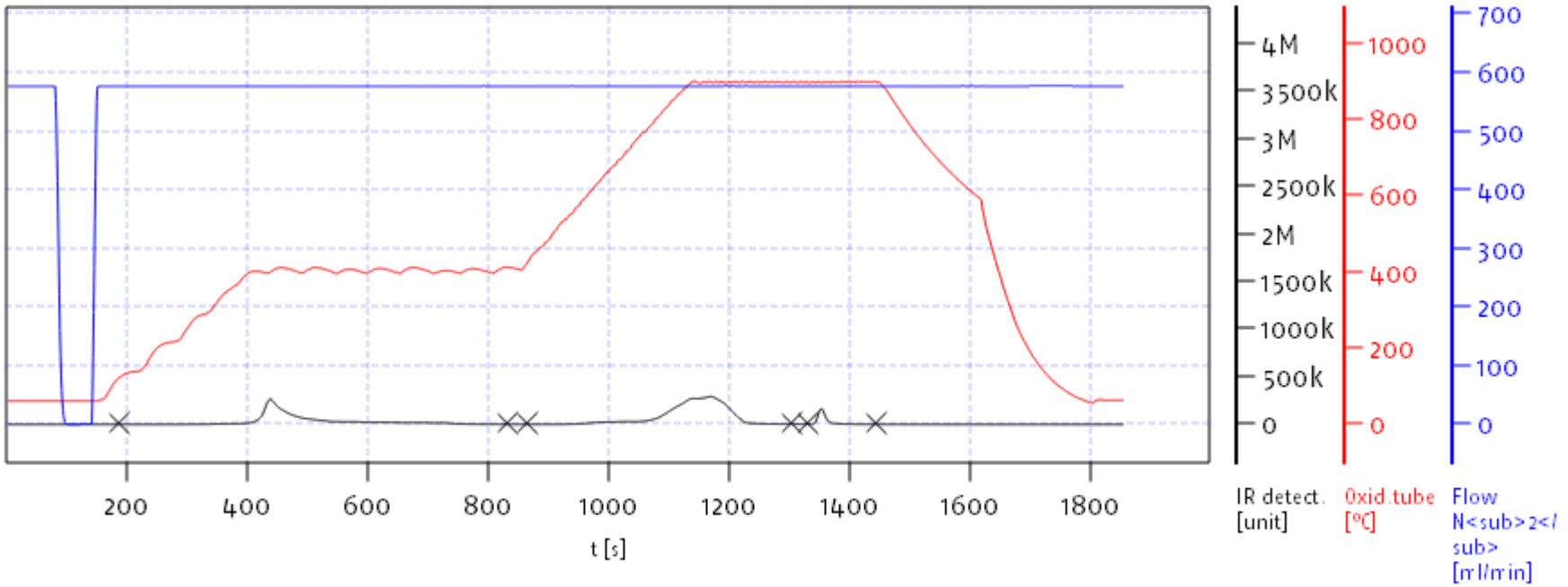
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
70	41	21G0312-03	425.80		1.00	CARBON	8/18/2021 3:43 AM	0.295	0.444	0.739	bl	695 464	1 226 351	99 056	1.0480	1.0000



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Date: Mon Aug 23 13:43:13 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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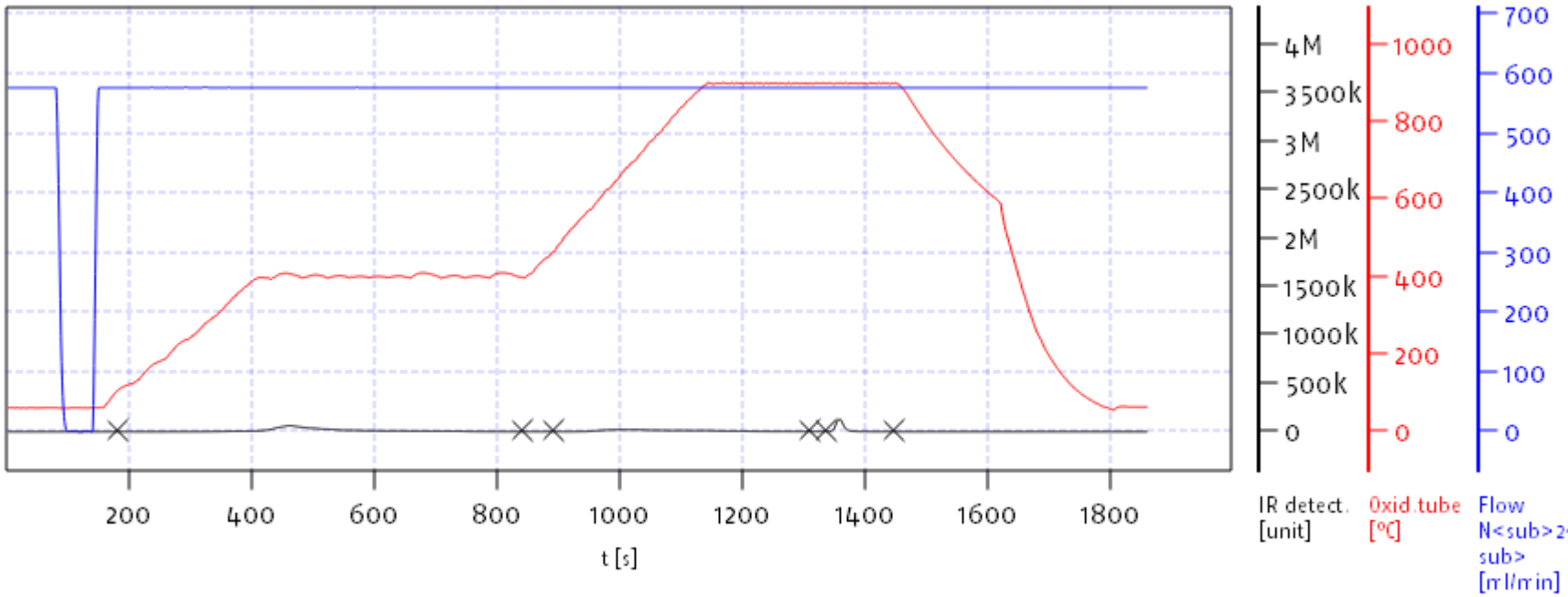
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
71	42	21G0312-04	508.30		1.00	CARBON	8/18/2021 4:15 AM	0.099	0.039	0.138	bl	258 419	137 940	75 195	1.0480	1.0000



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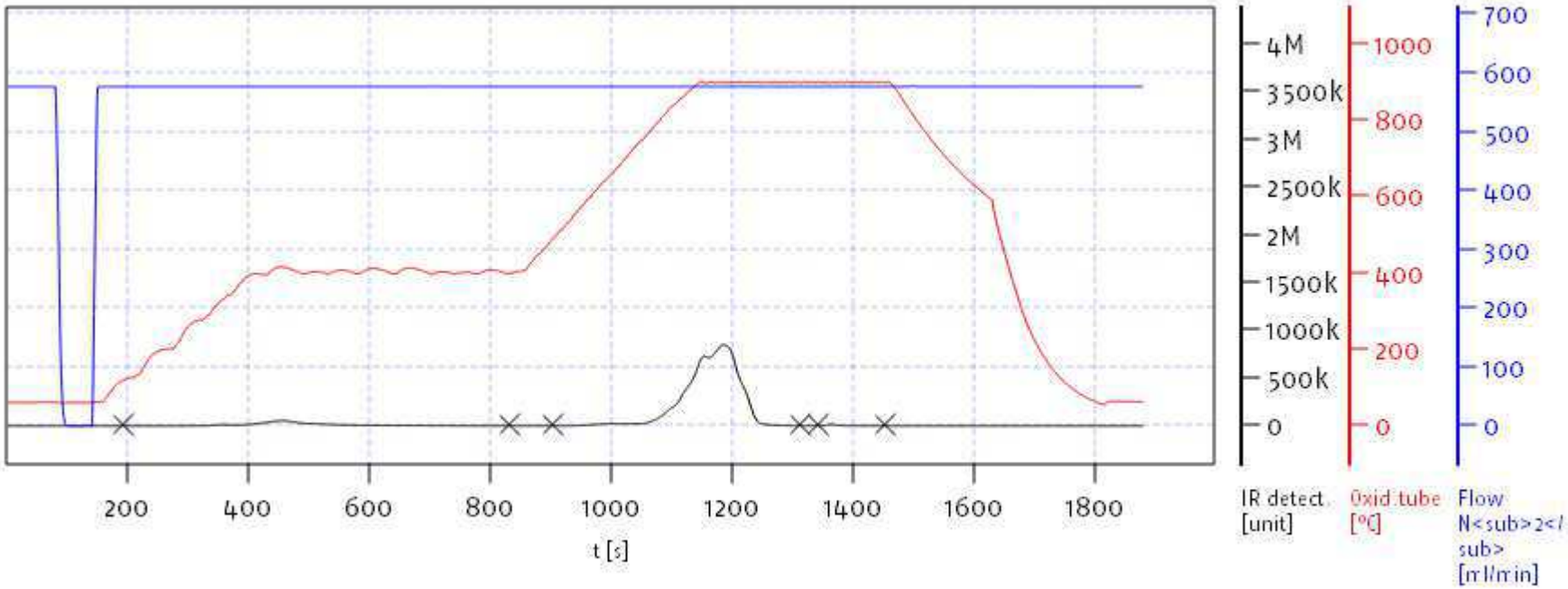
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
72	43	21G0312-05	324.60		1.00	CARBON	8/18/2021 4:47 AM	0.114	1.462	1.576	bl	235 143	3 059 184	13 399	1.0480	1.0000



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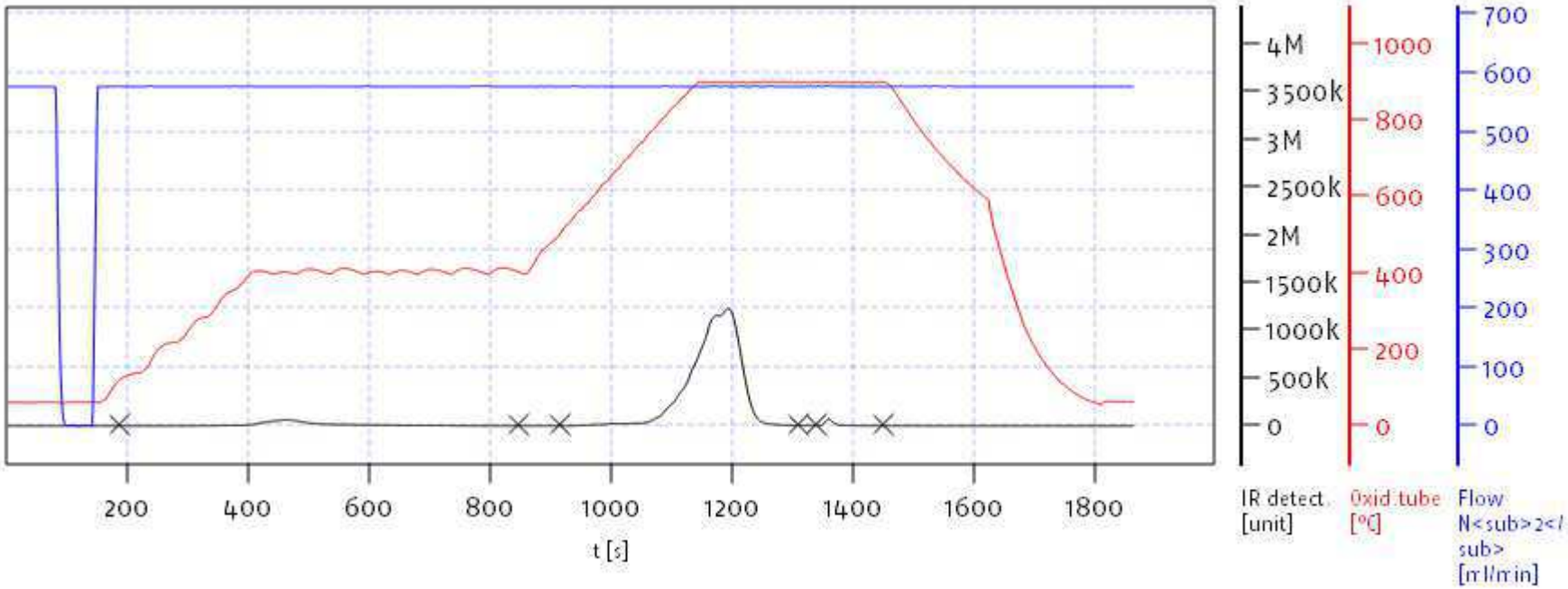
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
73	44	21G0312-06	332.70		1.00	CARBON	8/18/2021 5:18 AM	0.143	1.939	2.082	bl	267 281	4 157 064	47 447	1.0480	1.0000



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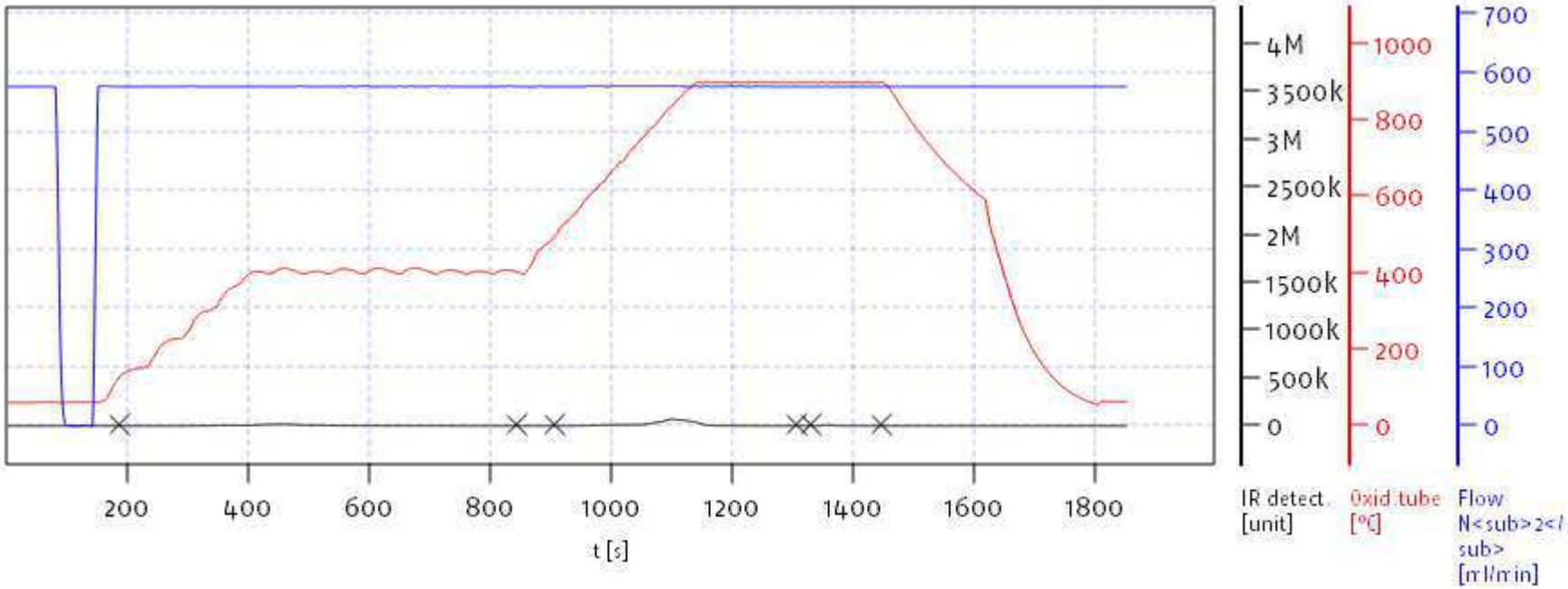
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
74	45	21G0312-07	312.00		1.00	CARBON	8/18/2021 5:49 AM	0.041	0.100	0.141	bl	89 204	210 805	8 226	1.0480	1.0000



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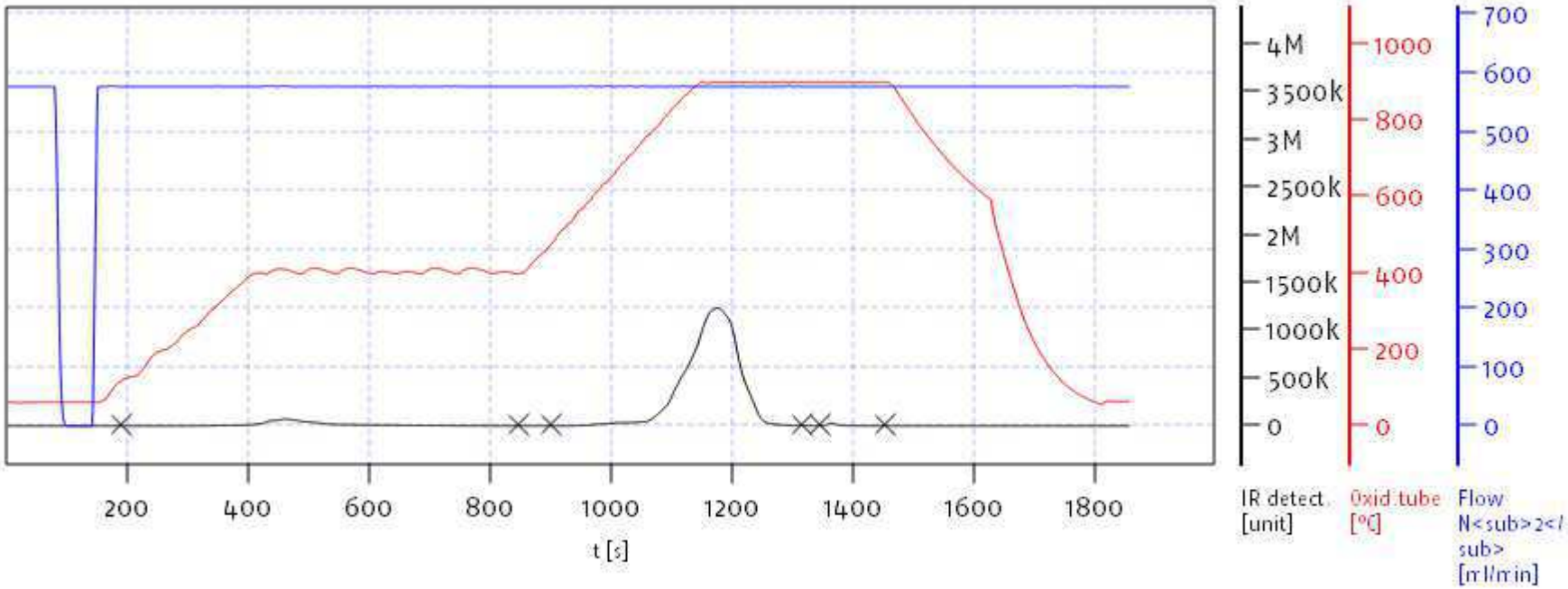
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
75	46	21G0312-08	300.20		1.00	CARBON	8/18/2021 6:21 AM	0.161	2.348	2.509	bl	296 211	4 539 690	21 730	1.0480	1.0000



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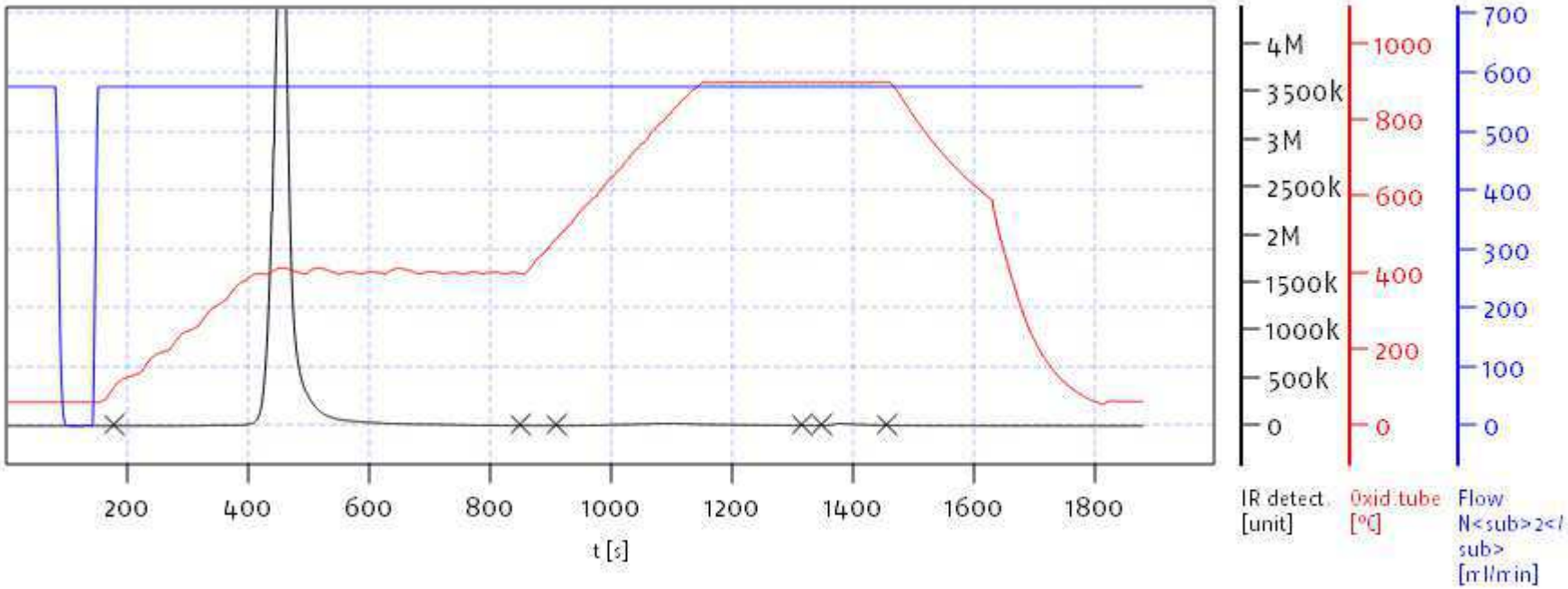
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
76	47	SJH0183-CCV6	25.50		1.00	CARBON	8/18/2021 6:52 AM	44.368	1.044	45.413	bl	6 909 863	181 825	50 503	1.0480	1.0000



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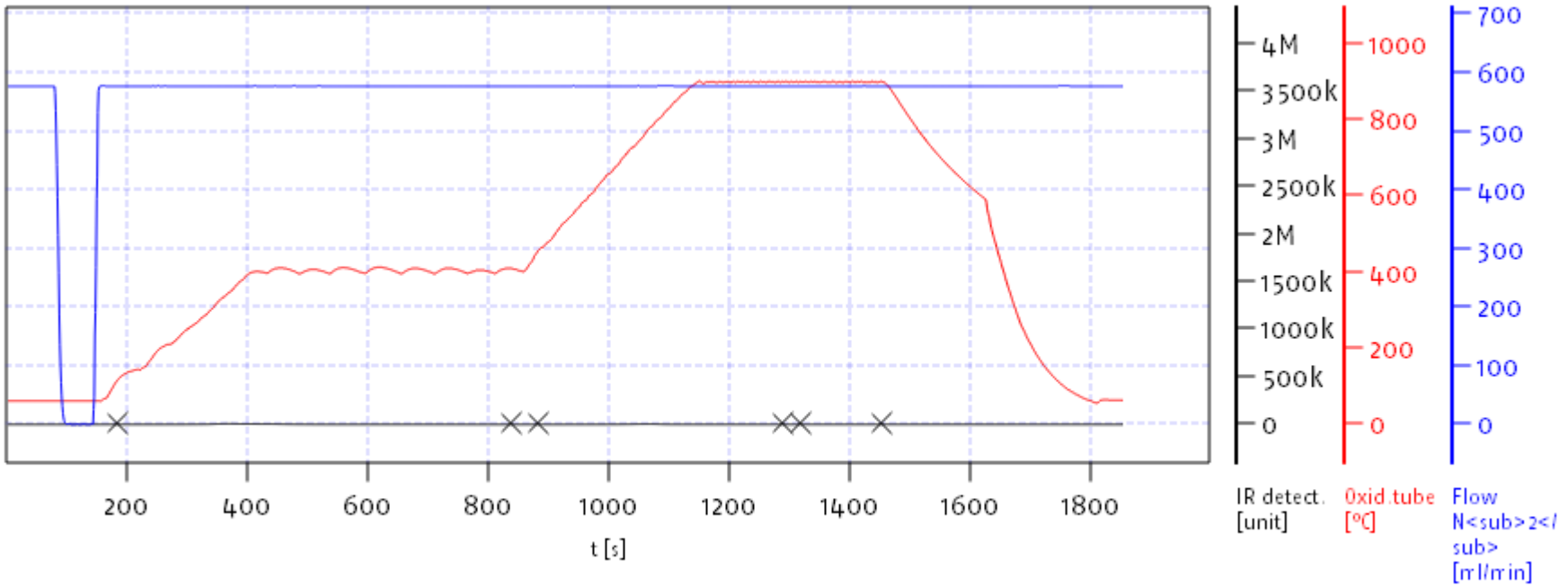
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
77	48	SJH0183-CCB6	542.40		1.00	CARBON	8/18/2021 7:24 AM	0.005	0.000	0.005	bl,C2u	28 130	9 495	707	1.0480	1.0000



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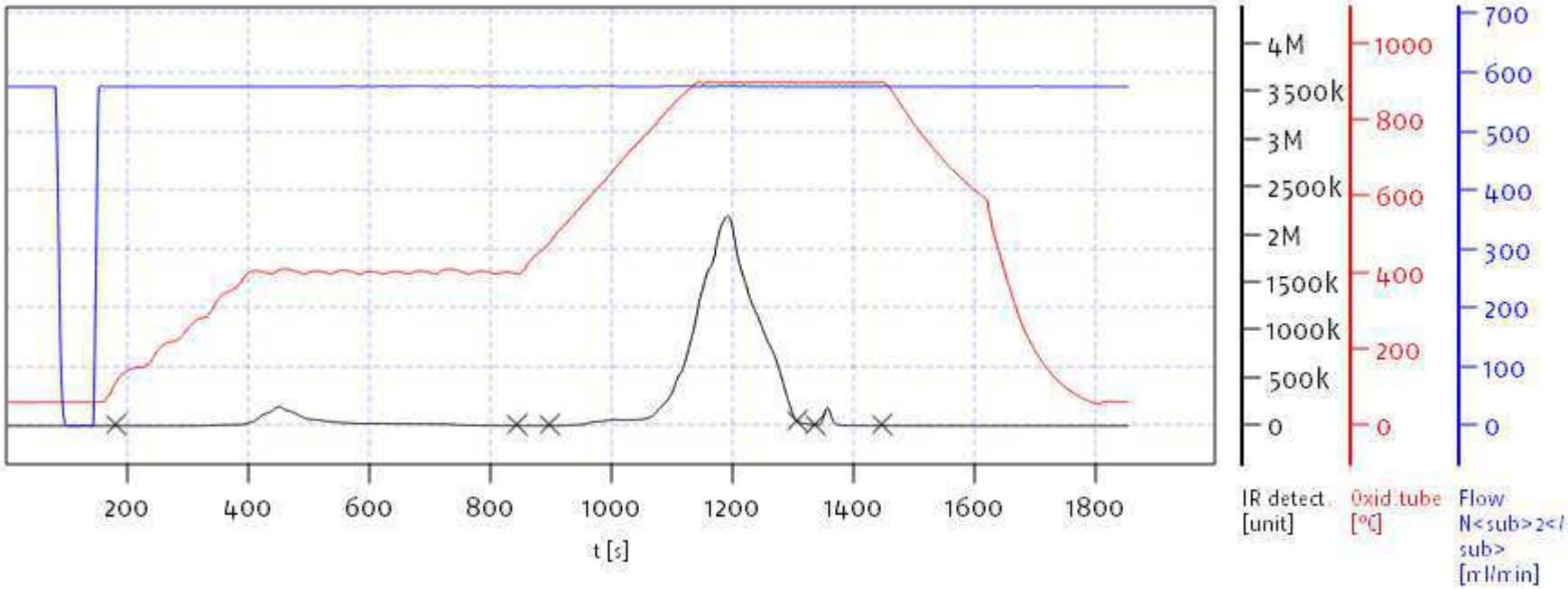
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
78	49	21G0312-09	351.10		1.00	CARBON	8/18/2021 7:55 AM	0.399	4.179	4.577	bl,C3o	772 255	9 438 193	111 984	1.0480	1.0000



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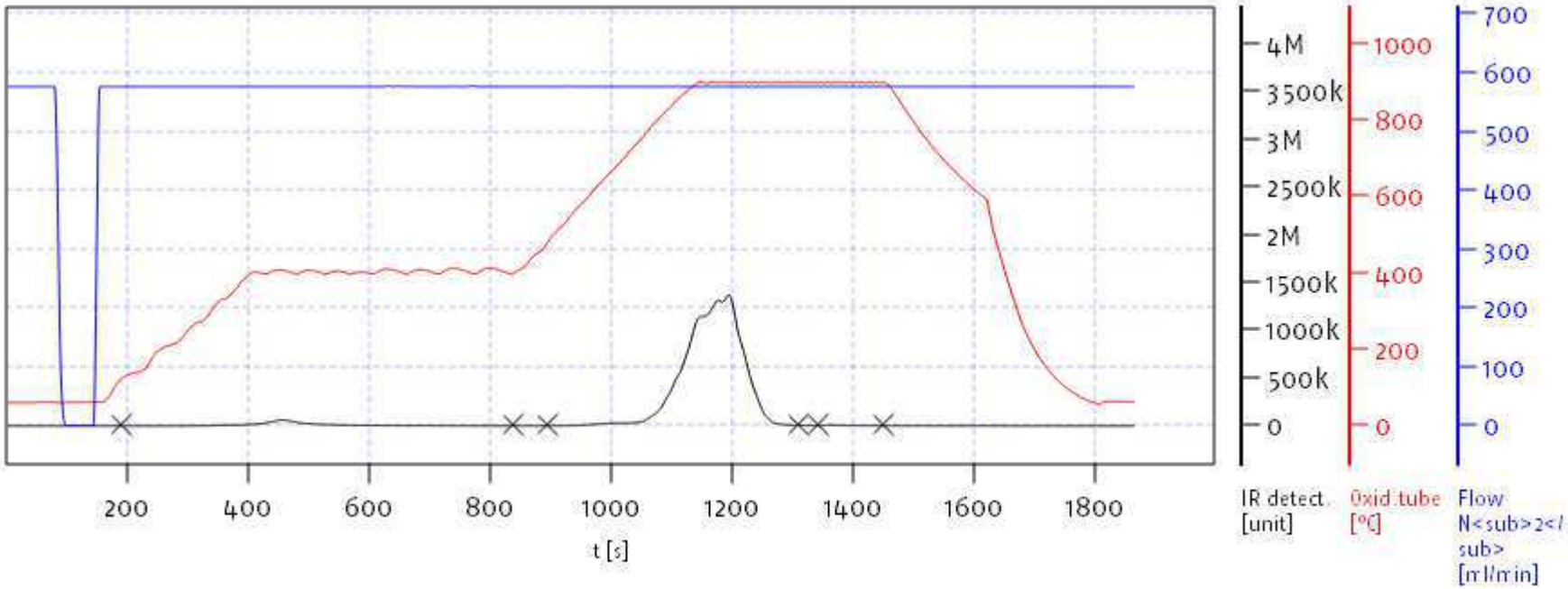
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
79	50	21G0312-10	310.20		1.00	CARBON	8/18/2021 8:26 AM	0.112	2.775	2.888	bl	218 904	5 542 920	16 063	1.0480	1.0000



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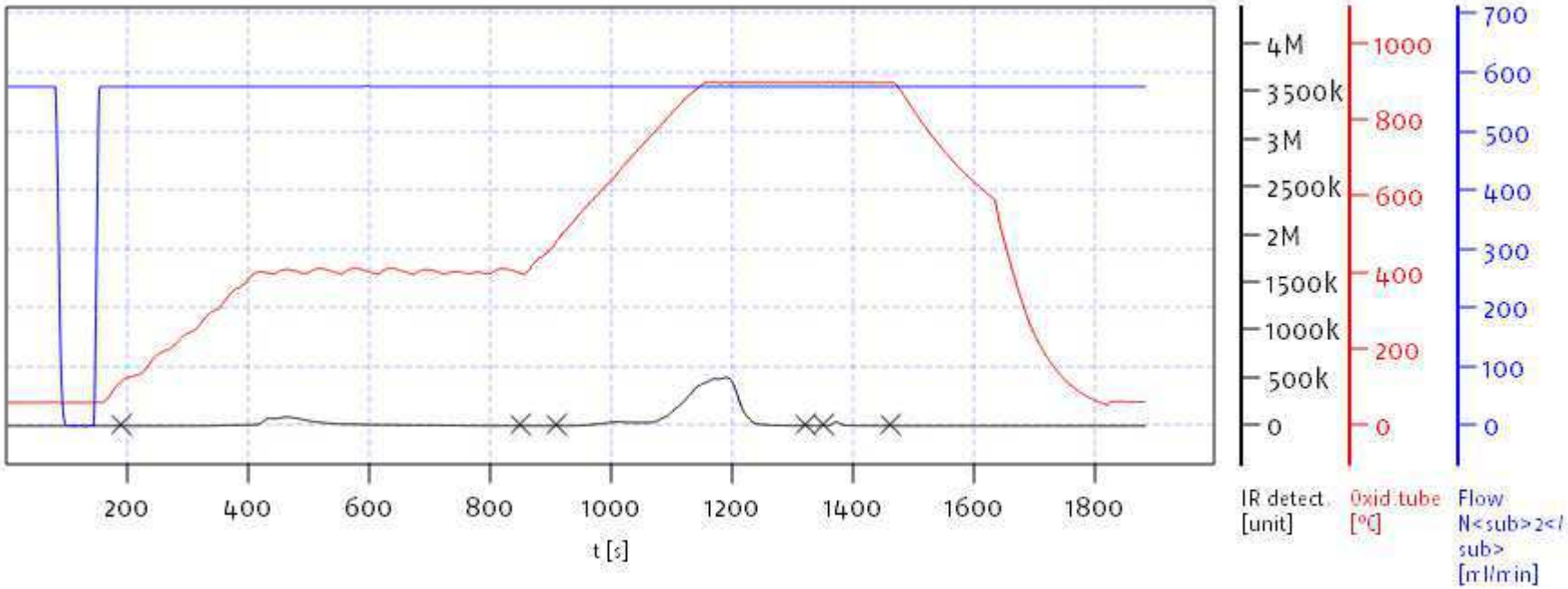
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
80	51	21G0312-11	531.40		1.00	CARBON	8/18/2021 8:58 AM	0.124	0.576	0.700	bl	397 082	1 978 847	29 241	1.0480	1.0000



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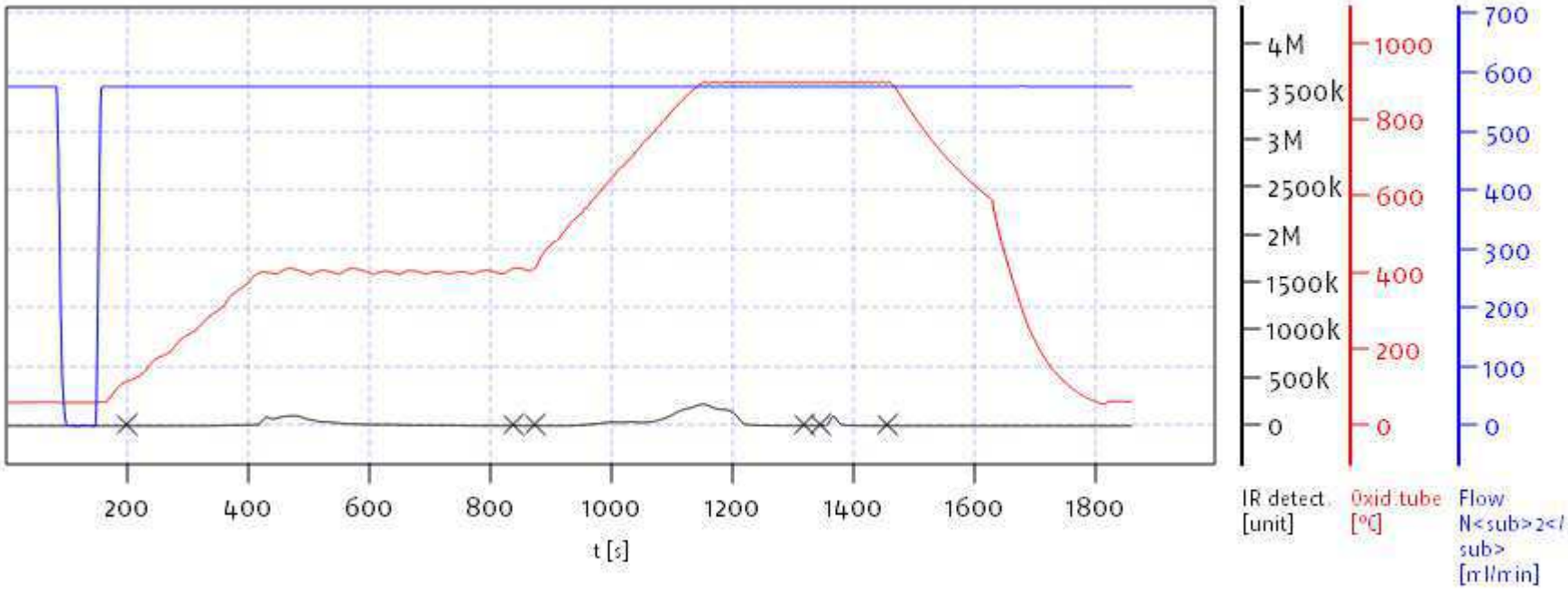
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
81	52	21G0312-12	569.50		1.00	CARBON	8/18/2021 9:30 AM	0.144	0.268	0.412	bl	468 201	991 721	59 635	1.0480	1.0000



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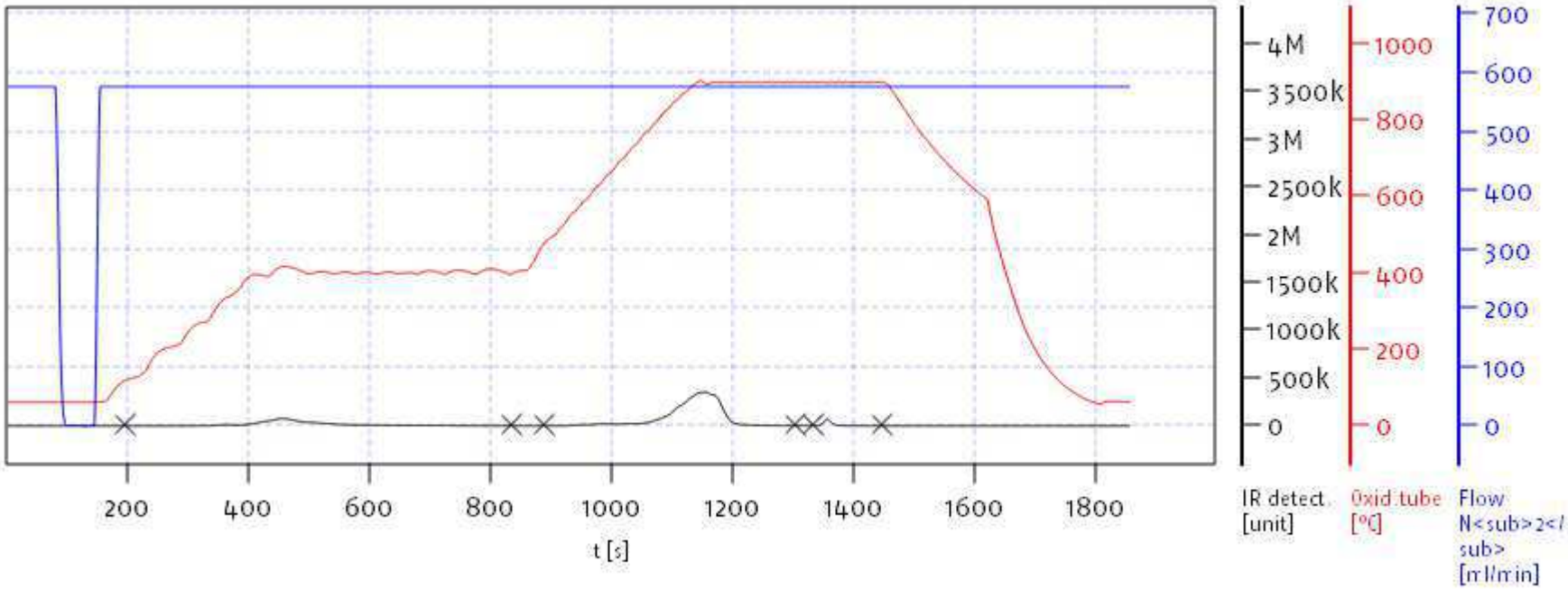
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
82	53	21G0312-13	346.50		1.00	CARBON	8/18/2021 10:01 AM	0.159	0.524	0.683	bl	317 310	1 177 289	42 391	1.0480	1.0000



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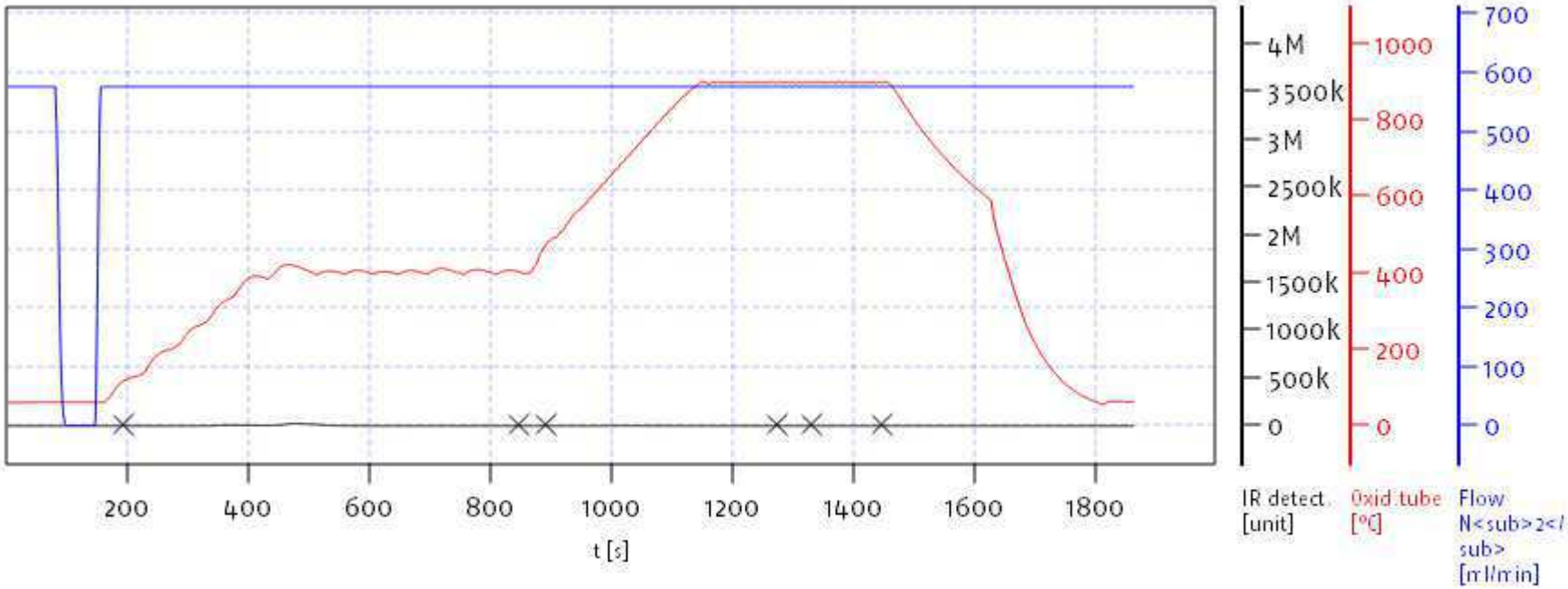
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
83	54	BJH0350-MRL1	523.80		1.00	CARBON	8/18/2021 10:32 AM	0.024	0.000	0.024	bl,C3u,C2u	87 202	7 459	283	1.0480	1.0000



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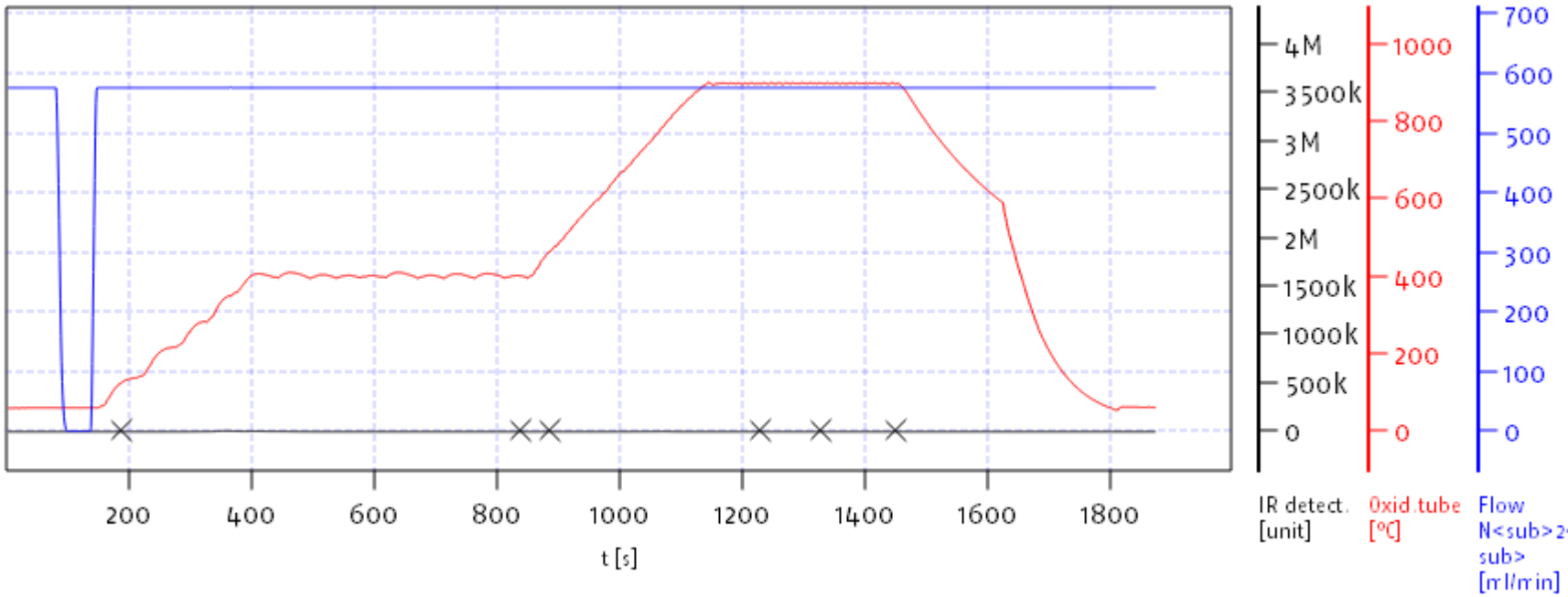
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
84	55	BJH0350-BLK1	583.90		1.00	CARBON	8/18/2021 11:04 AM	0.004	0.000	0.004	bl,C3u,C2u	26 433	5 284	275	1.0480	1.0000



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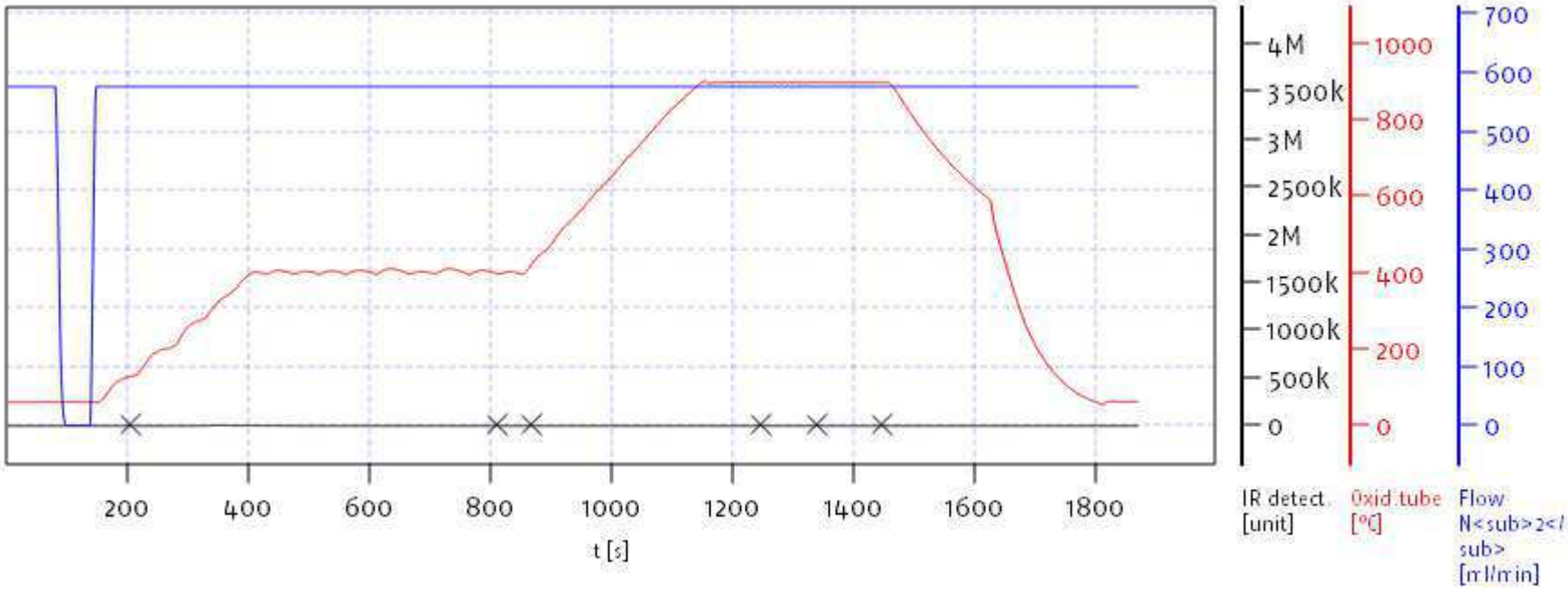
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
85	56	BLANK	1.00		1.00	CARBON	8/18/2021 11:36 AM	0.000	0.000	0.000	bl	20 348	874	233	1.0480	1.0000



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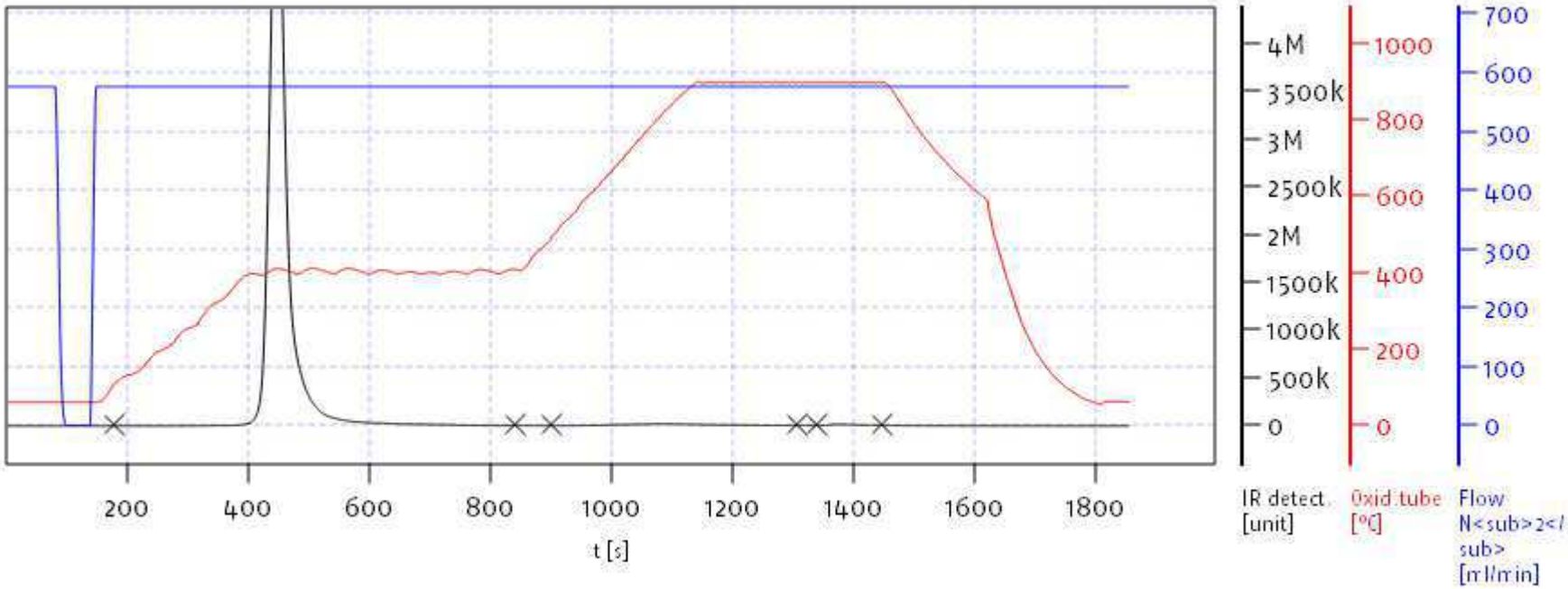
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
86	57	Dfactor	27.80		1.00	CARBON	8/18/2021 12:07 PM	44.590	0.794	45.384	bl	7 720 043	152 495	36 533	1.0299	1.0000



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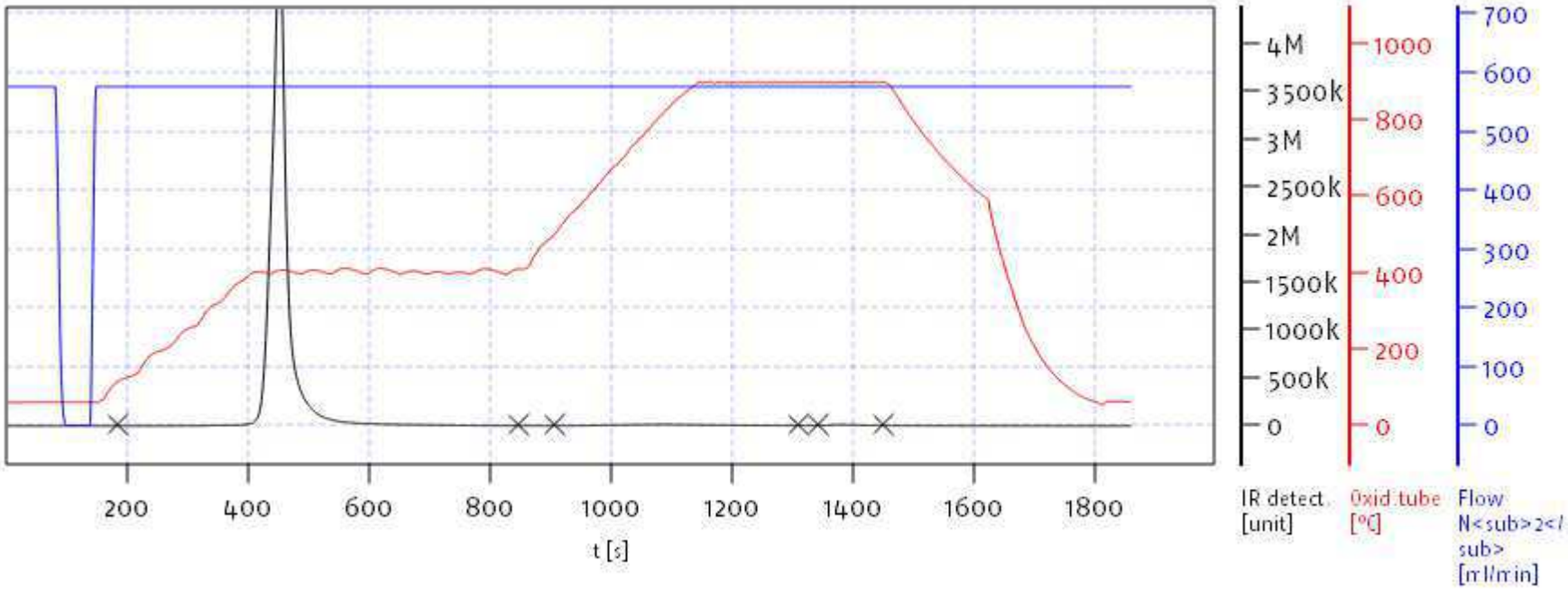
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
87	58	Dfactor	20.50		1.00	CARBON	8/18/2021 12:38 PM	44.586	0.775	45.361	bl	5 640 390	112 764	29 146	1.0400	1.0000



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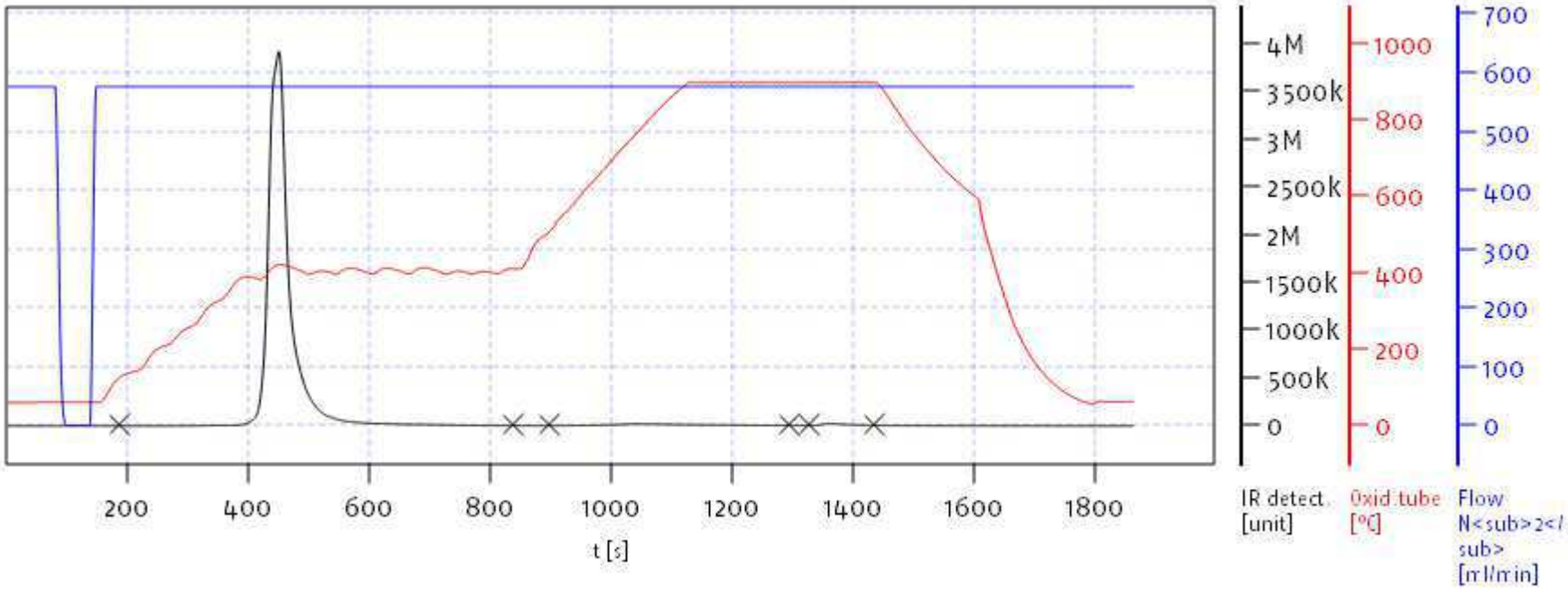
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
88	59	SJH0183-CCV7	21.70		1.00	CARBON	8/18/2021 1:10 PM	43.793	0.969	44.763	bl	5 872 735	145 853	50 470	1.0349	1.0000



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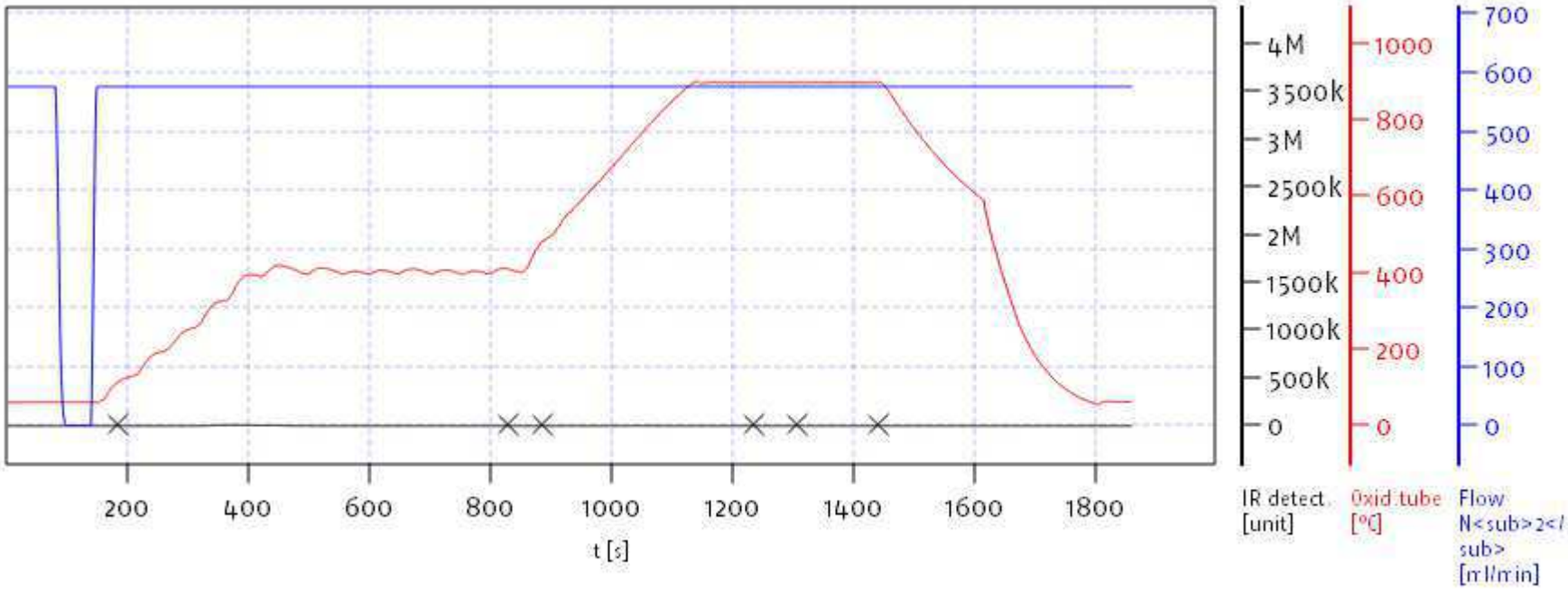
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
89	60	SJH0183-CCB7	526.80		1.00	CARBON	8/18/2021 1:41 PM	0.008	0.000	0.008	bl,C3u,C2u	37 608	3 200	1 026	1.0349	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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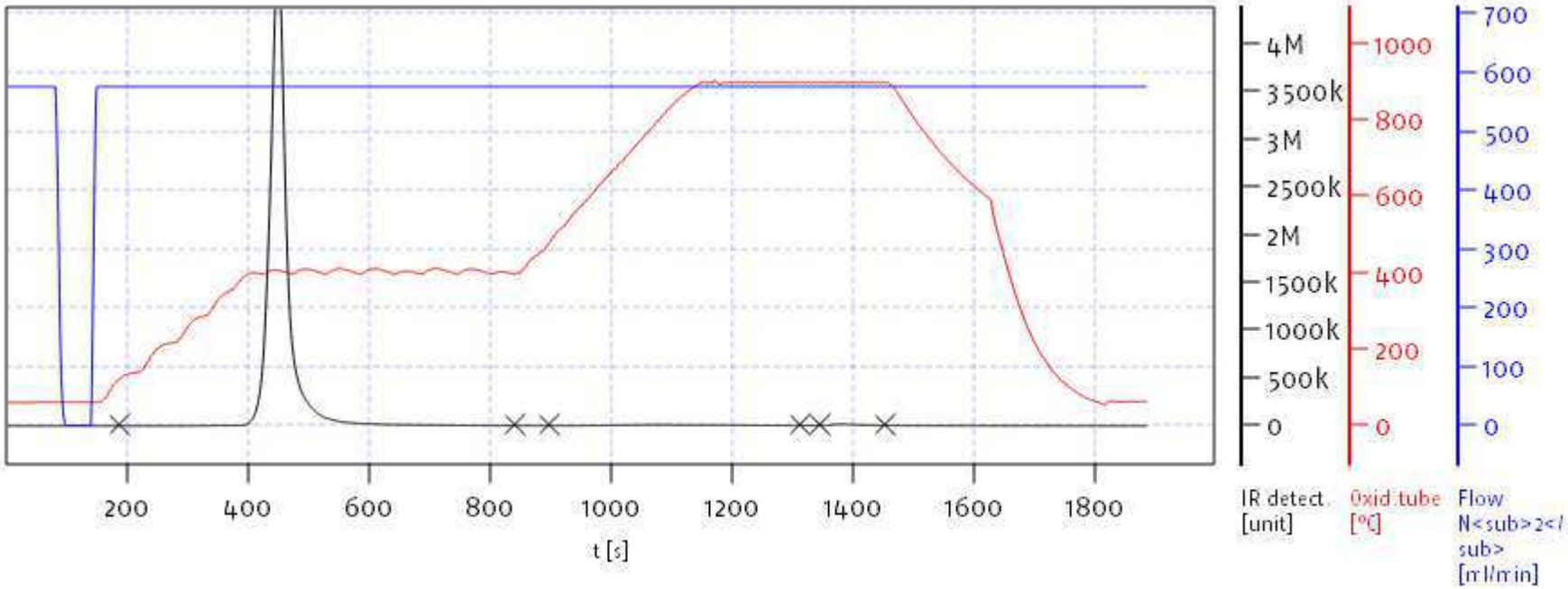
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
90	61	BJH0350-BS1	21.70		1.00	CARBON	8/18/2021 2:13 PM	44.473	0.675	45.147	bl	5 974 354	104 757	39 992	1.0349	1.0000



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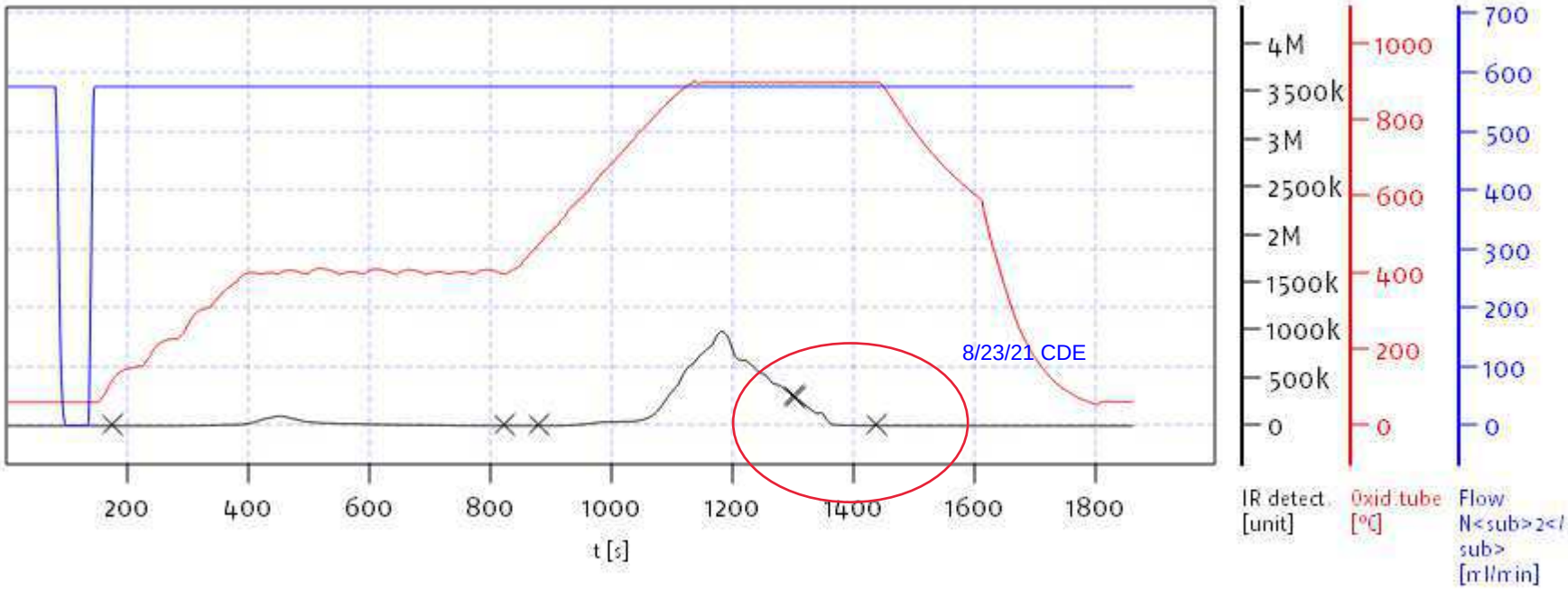
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
91	62	21G0312-14	355.00		1.00	CARBON	8/18/2021 2:45 PM	0.353	2.303	2.656	bl	447 059	5 264 976	363 281	1.0349	1.0000



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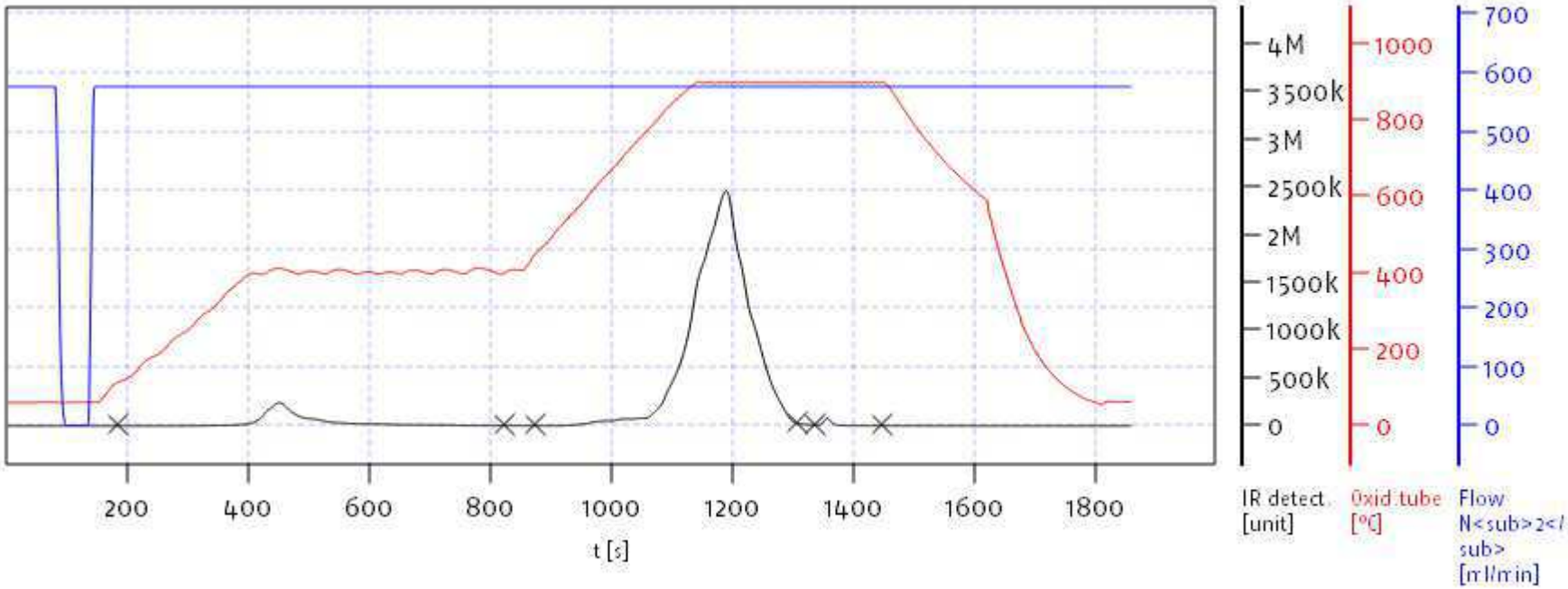
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
92	63	21G0312-15	392.60		1.00	CARBON	8/18/2021 3:16 PM	0.315	3.819	4.134	bl,C3o	736 207	9 646 036	54 031	1.0349	1.0000



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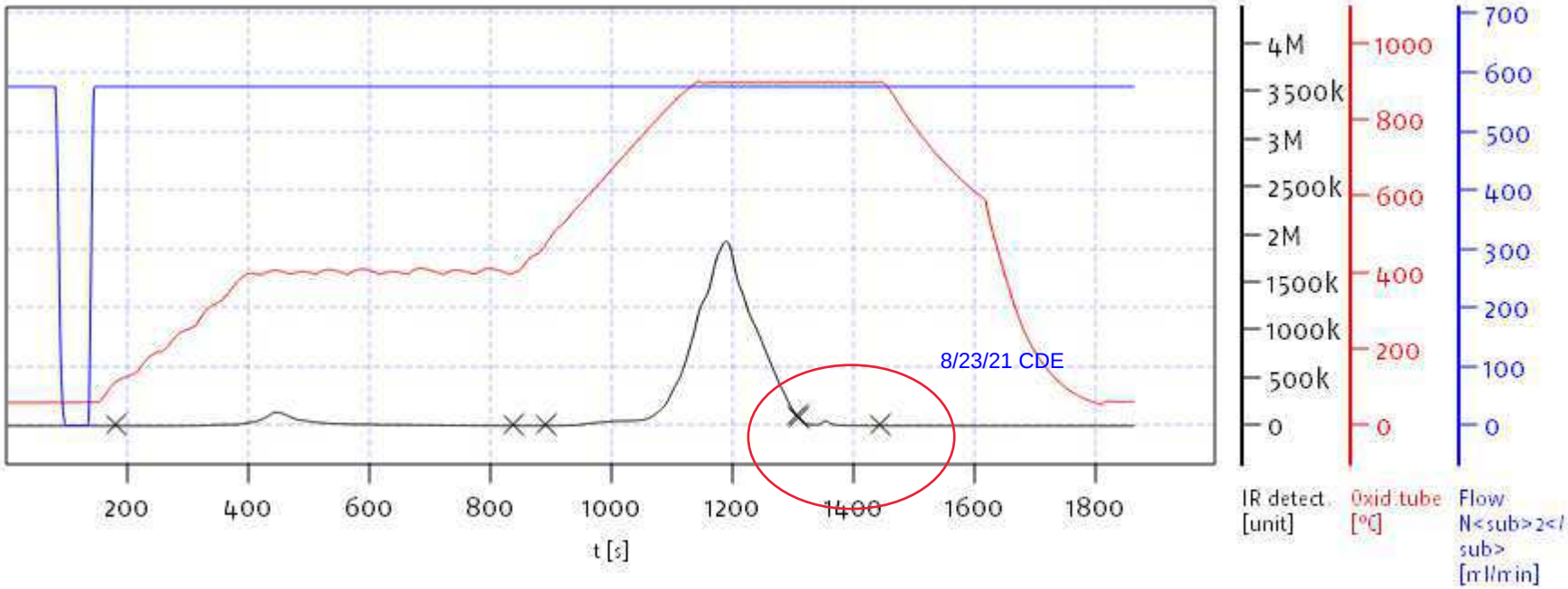
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
93	64	21G0312-16	449.00		1.00	CARBON	8/18/2021 3:47 PM	0.200	2.892	3.092	bl	510 950	8 354 396	69 514	1.0349	1.0000



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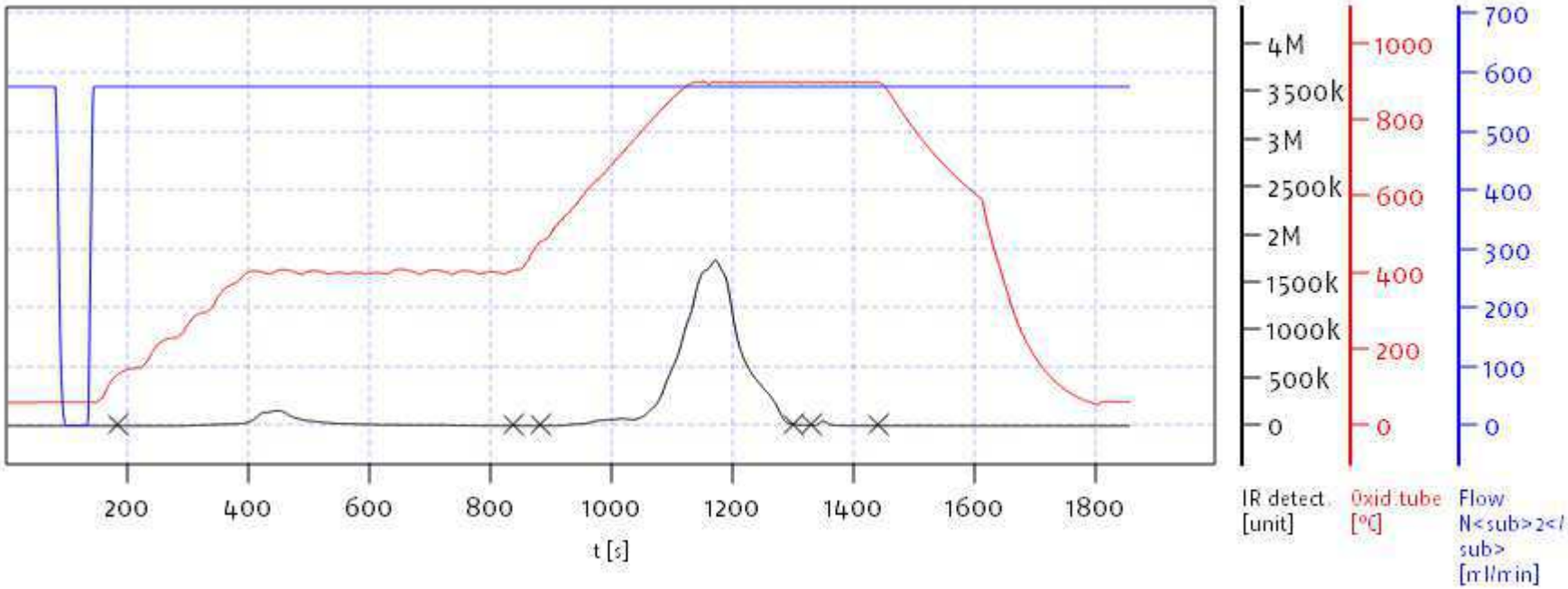
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
94	65	21G0312-17	350.50		1.00	CARBON	8/18/2021 4:19 PM	0.296	3.276	3.572	bl	627 933	7 389 428	37 650	1.0349	1.0000



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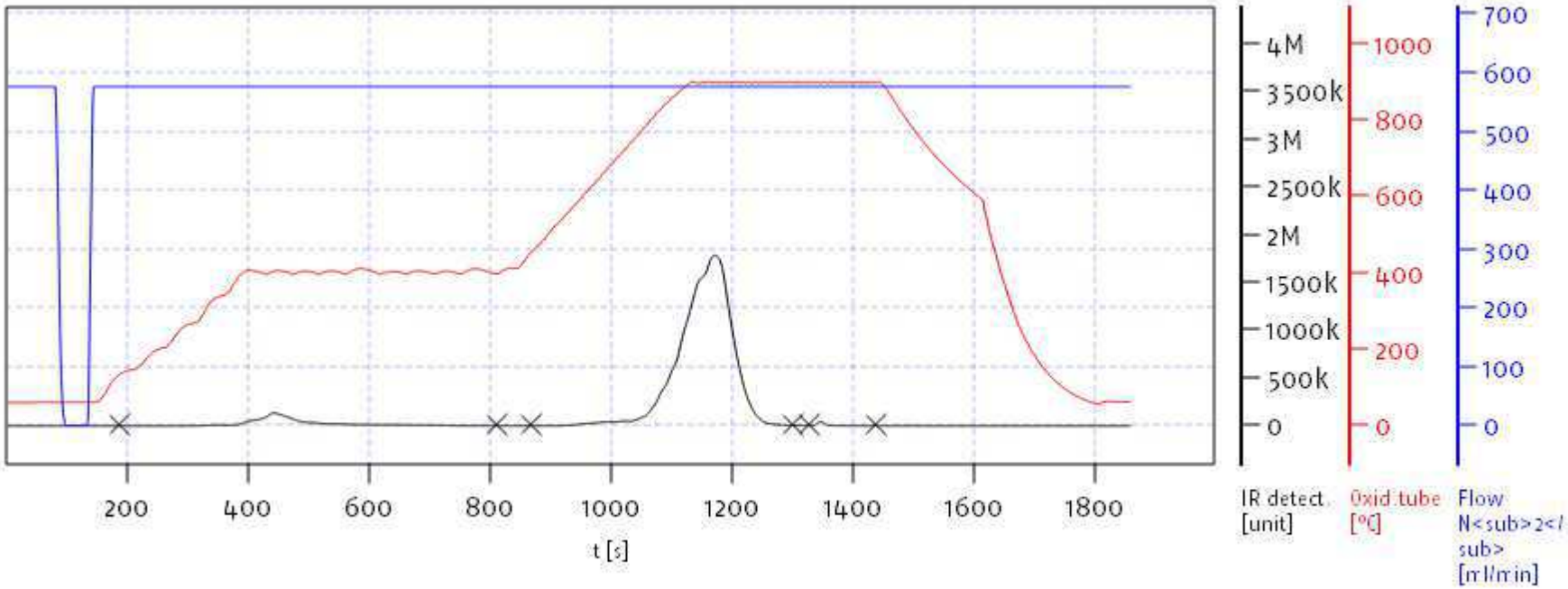
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
95	66	21G0312-18	326.50		1.00	CARBON	8/18/2021 4:50 PM	0.233	3.057	3.290	bl	465 426	6 423 892	29 519	1.0349	1.0000



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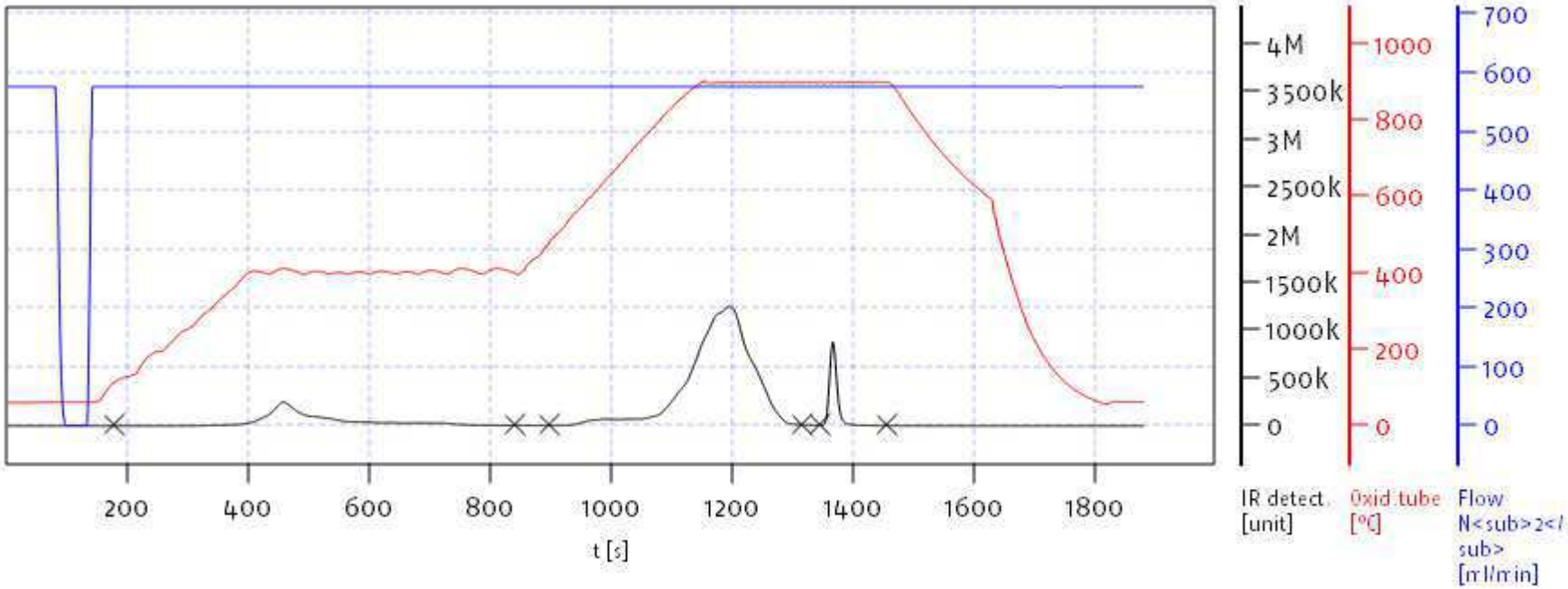
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
96	67	21G0312-19	470.80		1.00	CARBON	8/18/2021 5:22 PM	0.486	1.781	2.267	bl	976 399	5 398 316	482 077	1.0349	1.0000



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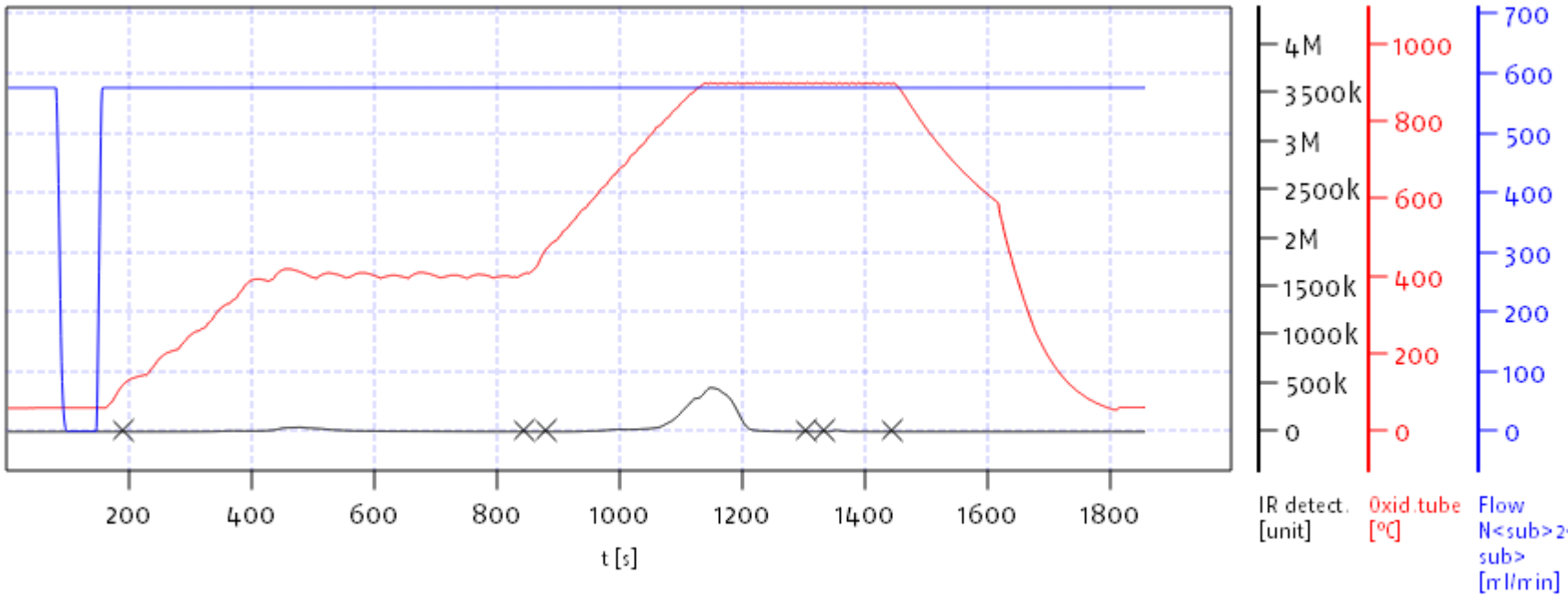
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
97	68	21G0313-01	422.50		1.00	CARBON	8/18/2021 5:53 PM	0.073	0.571	0.644	bl	203 090	1 559 632	10 770	1.0349	1.0000



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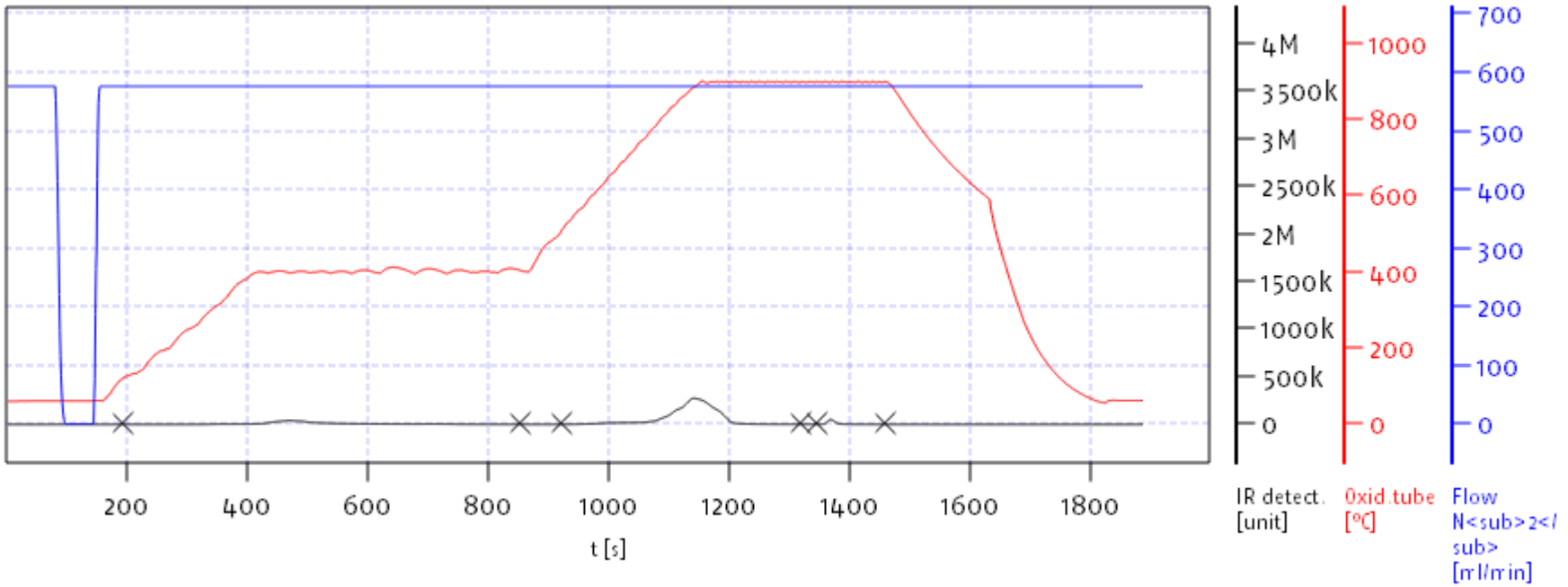
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
98	69	21G0313-02	317.60		1.00	CARBON	8/18/2021 6:25 PM	0.091	0.409	0.500	bl	170 787	844 690	31 601	1.0349	1.0000



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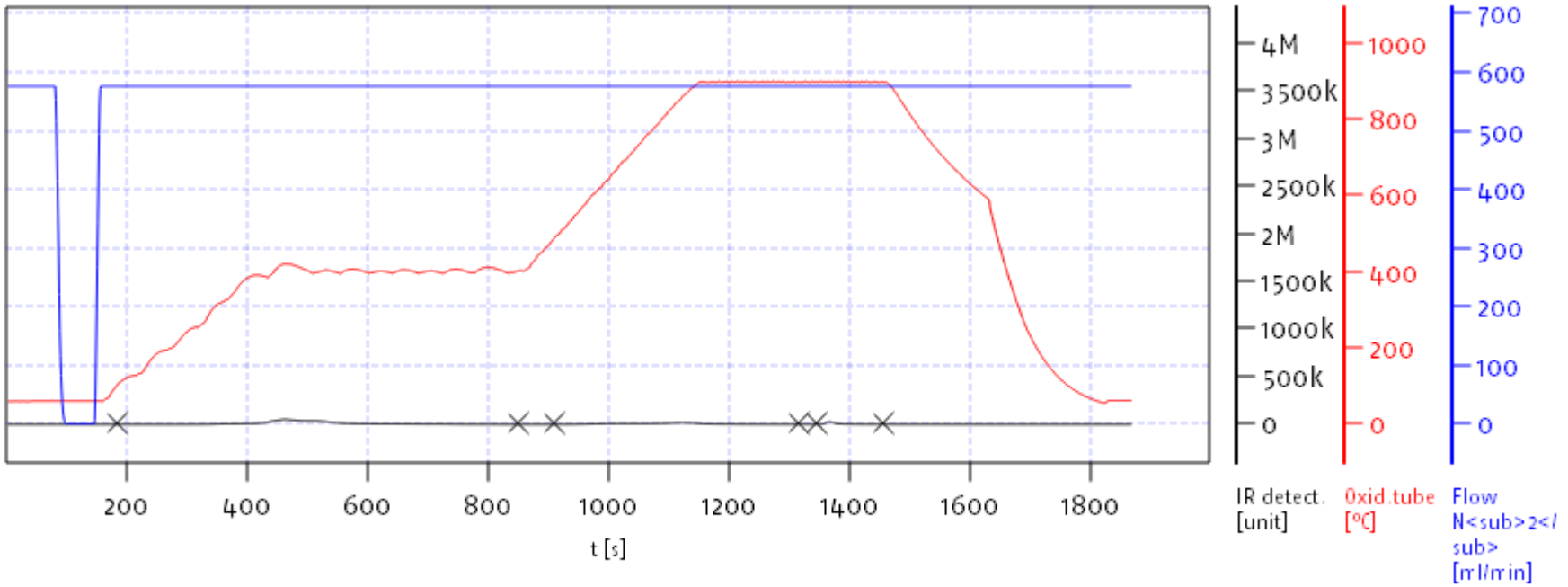
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
99	70	21G0313-03	574.00		1.00	CARBON	8/18/2021 6:57 PM	0.067	0.023	0.090	bl	238 947	93 896	22 398	1.0349	1.0000



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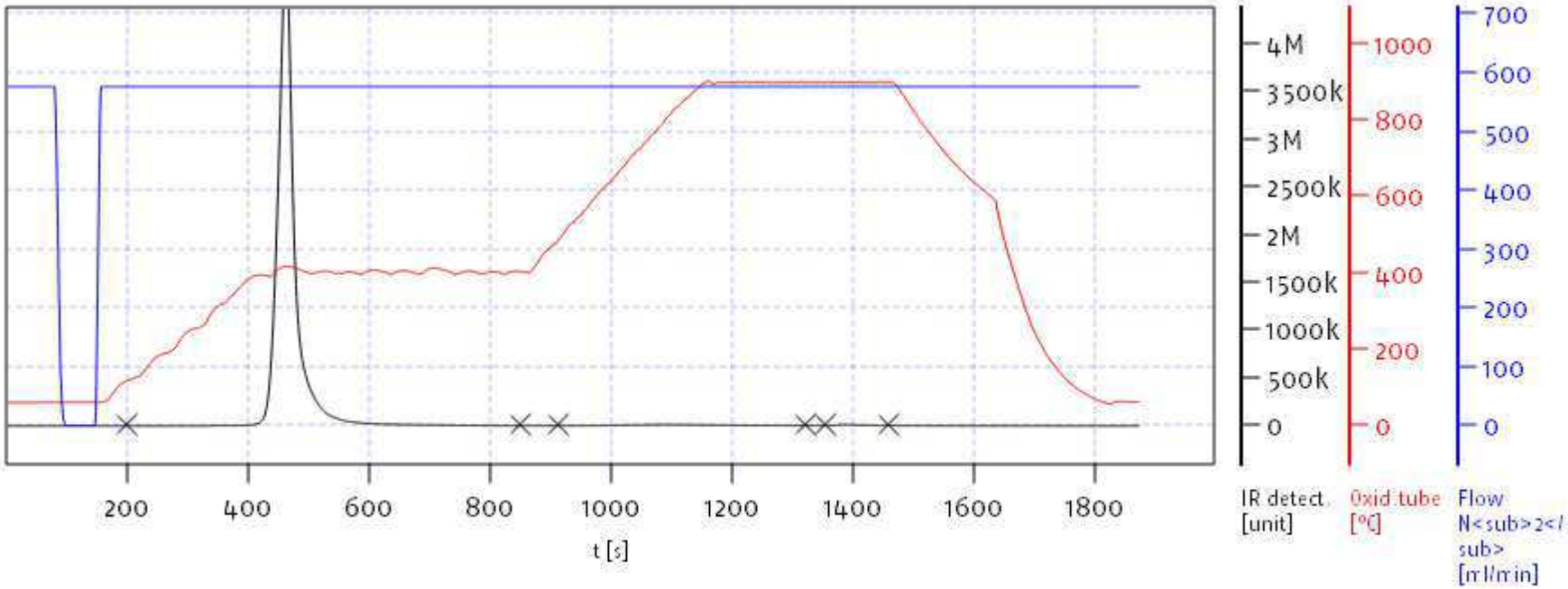
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
100	71	SJH0183-CCV8	21.30		1.00	CARBON	8/18/2021 7:28 PM	44.600	0.671	45.271	bl	5 890 926	102 559	29 443	1.0349	1.0000



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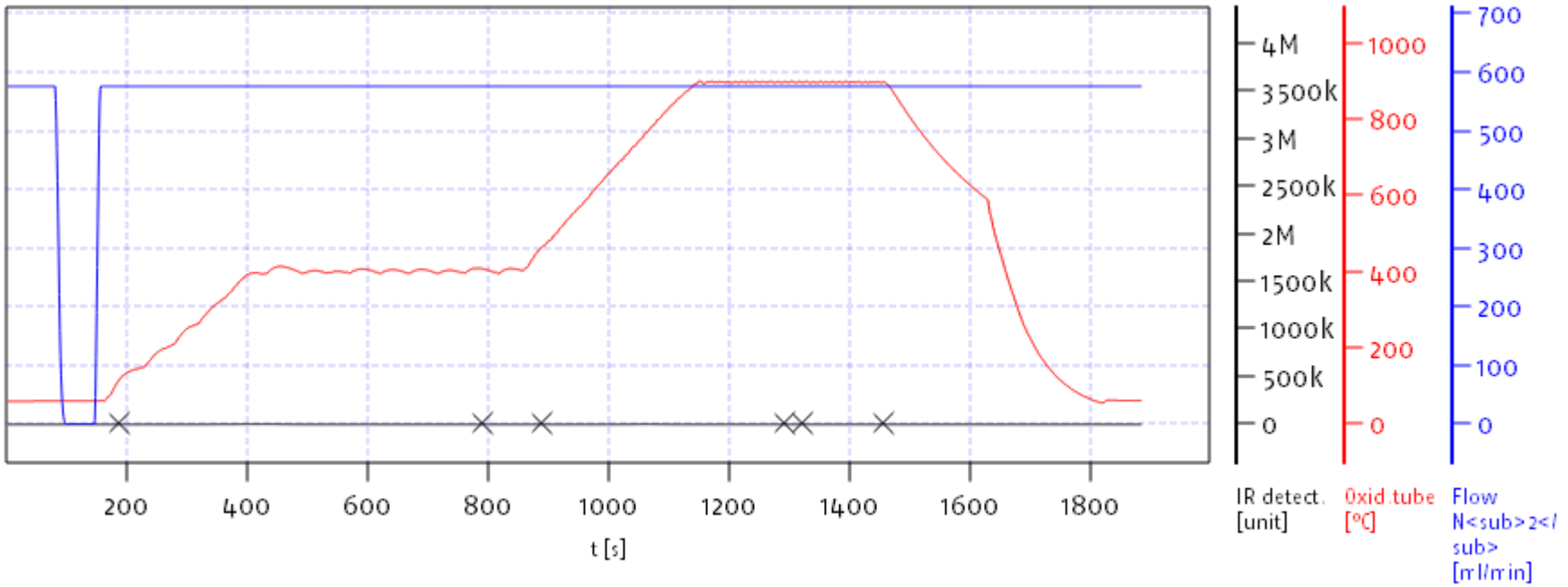
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
101	72	SJH0183-CCB8	553.60		1.00	CARBON	8/18/2021 8:00 PM	0.001	0.000	0.001	bl,C3u,C2u	12 520	5 527	521	1.0349	1.0000



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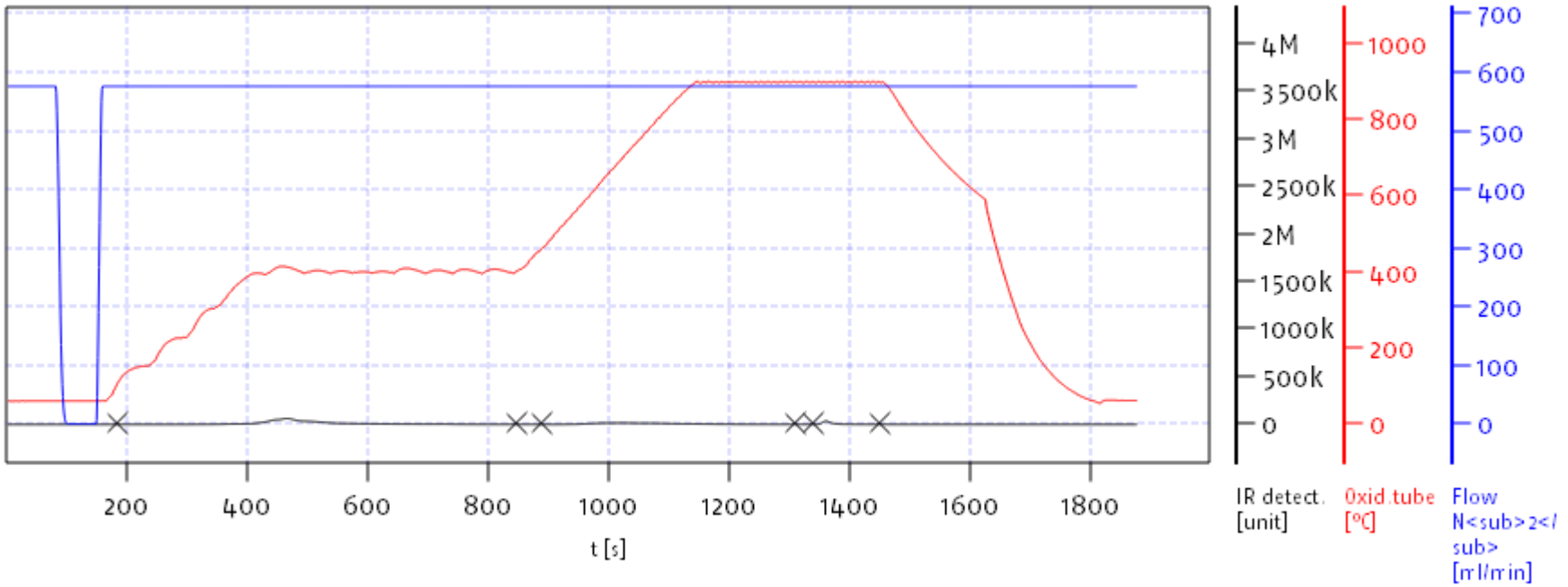
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
102	73	21G0313-04	564.00		1.00	CARBON	8/18/2021 8:32 PM	0.067	0.023	0.090	bl	232 413	93 924	25 298	1.0349	1.0000



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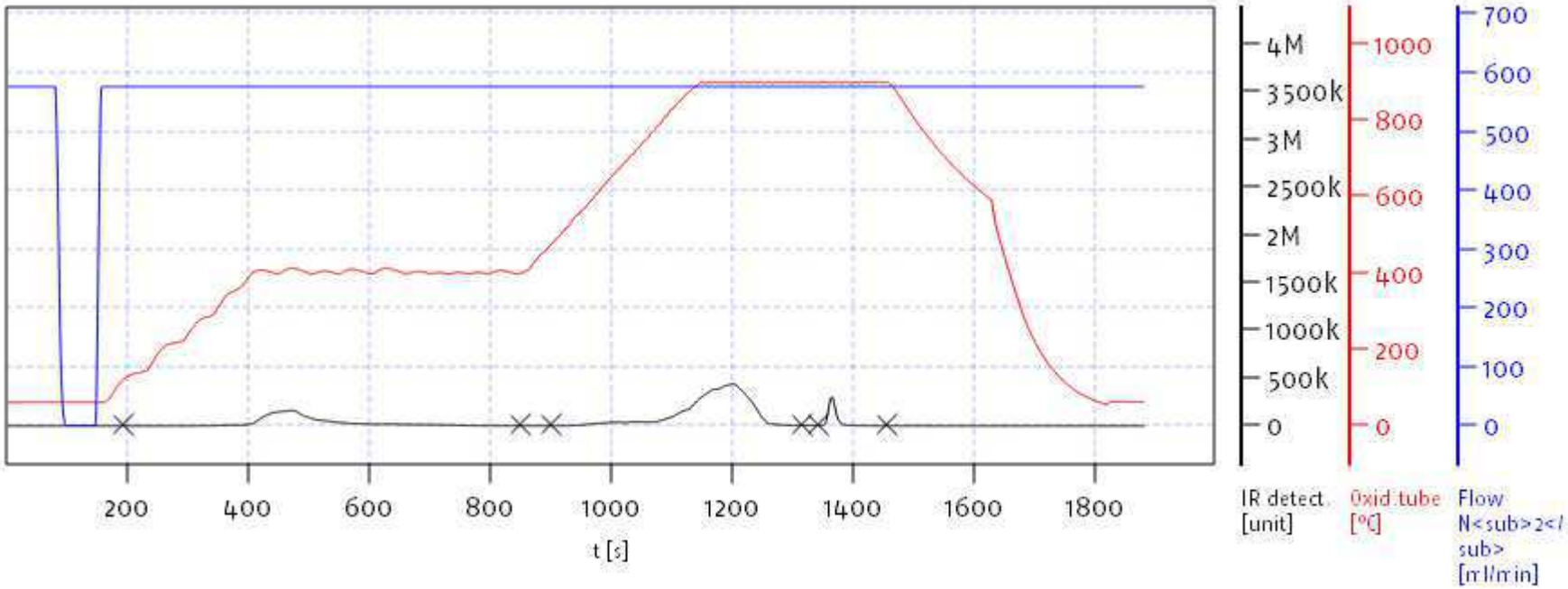
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
103	74	21G0313-05	526.70		1.00	CARBON	8/18/2021 9:04 PM	0.252	0.551	0.802	bl	681 610	1 875 378	167 607	1.0349	1.0000



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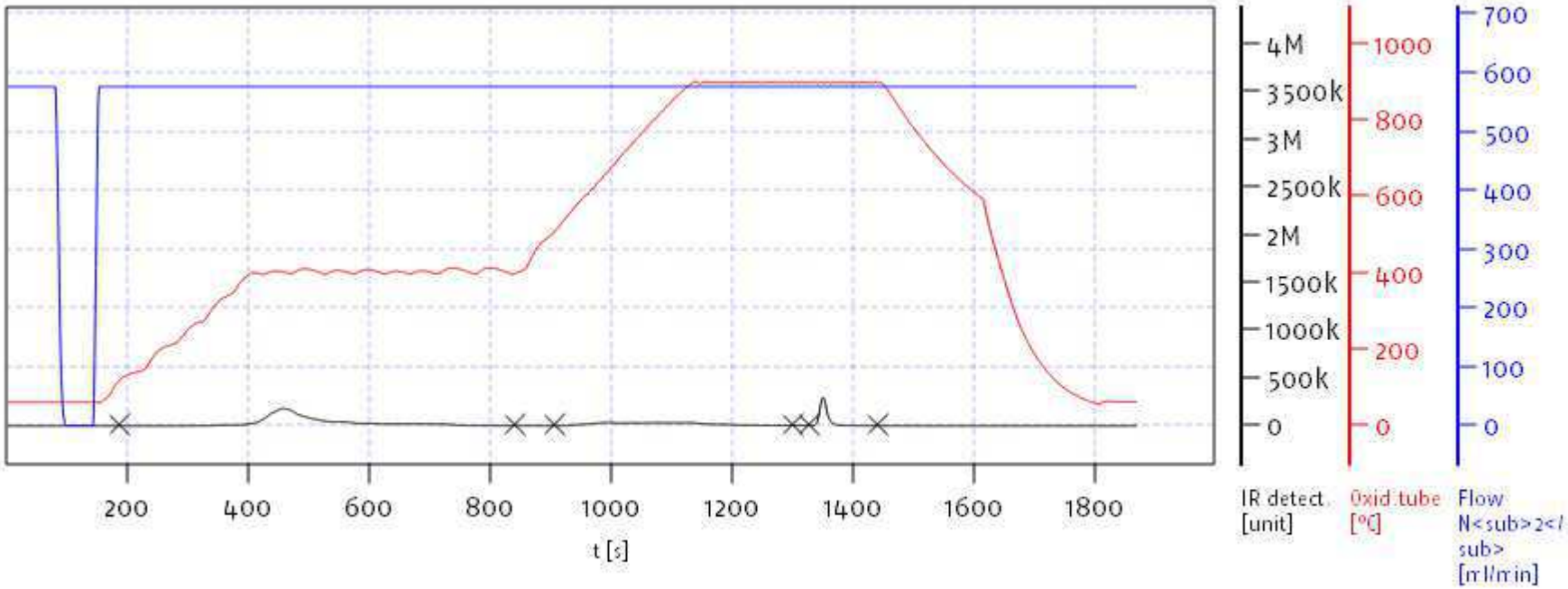
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
104	75	BJH0350-DUP1	538.60		1.00	CARBON	8/18/2021 9:35 PM	0.259	0.079	0.338	bl	722 716	284 698	168 635	1.0349	1.0000



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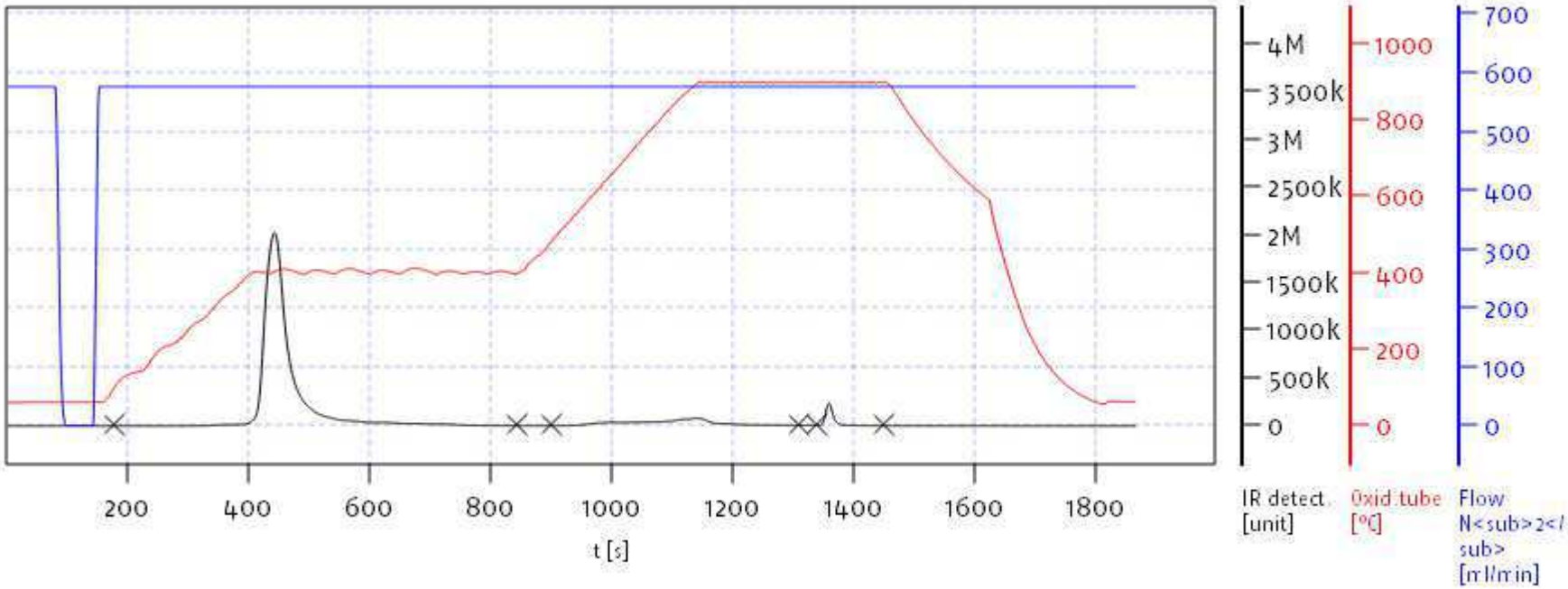
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
105	76	BJH0350-MS1	564.20	0.0106	1.00	CARBON	8/18/2021 10:07 PM	1.050	0.117	1.167	bl	3 565 444	434 649	137 506	1.0349	1.0000



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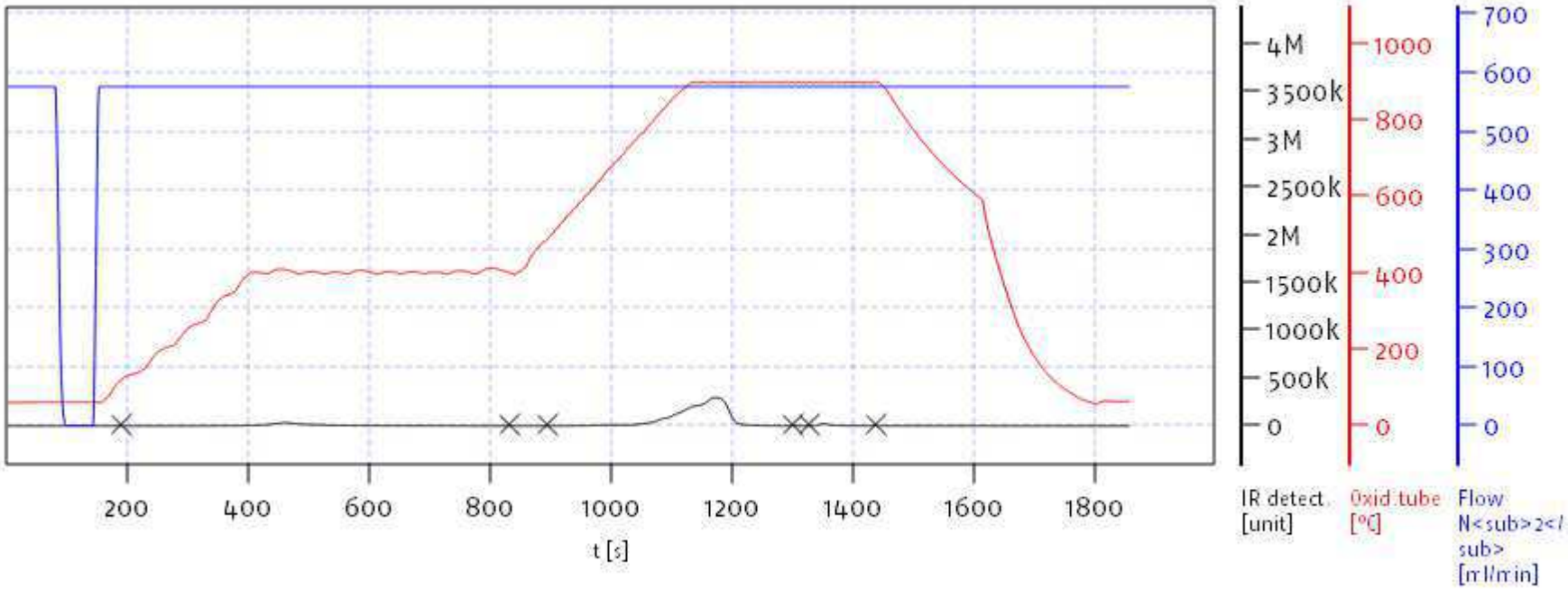
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
106	77	21G0313-06	550.20		1.00	CARBON	8/18/2021 10:38 PM	0.034	0.267	0.301	bl	114 523	954 733	21 937	1.0349	1.0000



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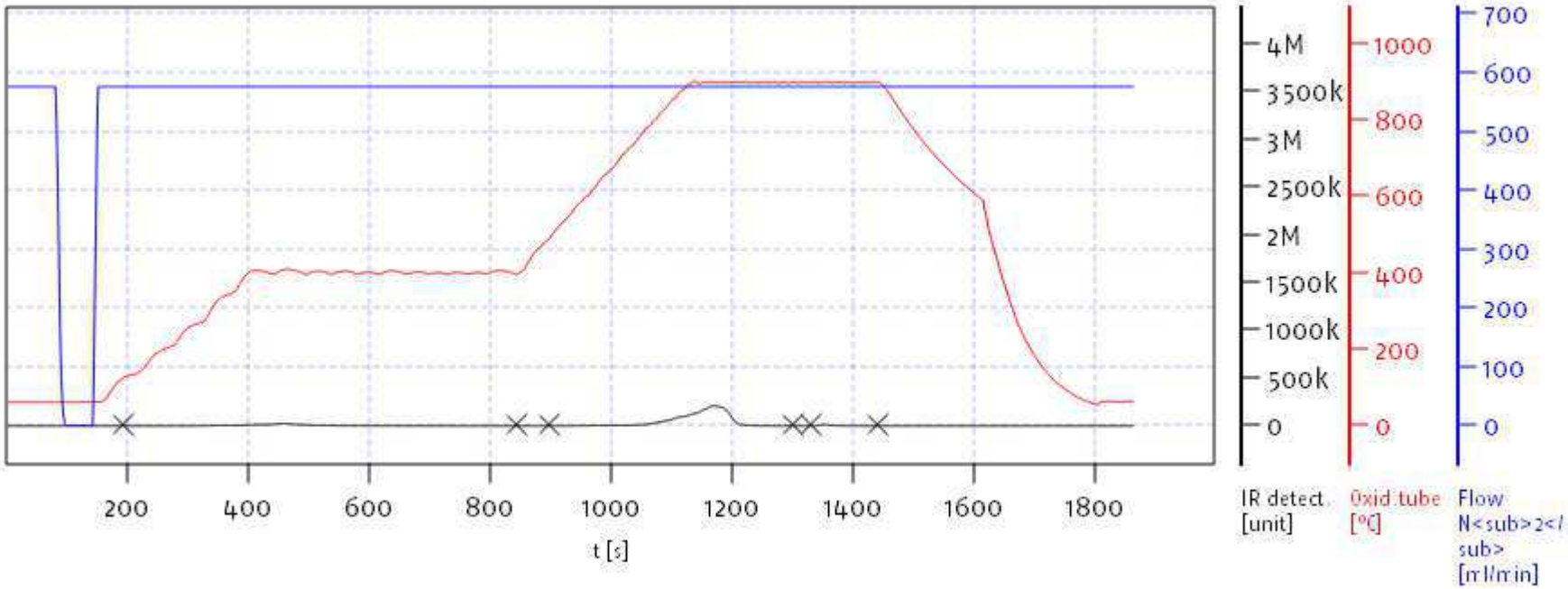
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
107	78	21G0313-07	366.80		1.00	CARBON	8/18/2021 11:09 PM	0.038	0.275	0.313	bl	94 838	659 778	12 004	1.0349	1.0000



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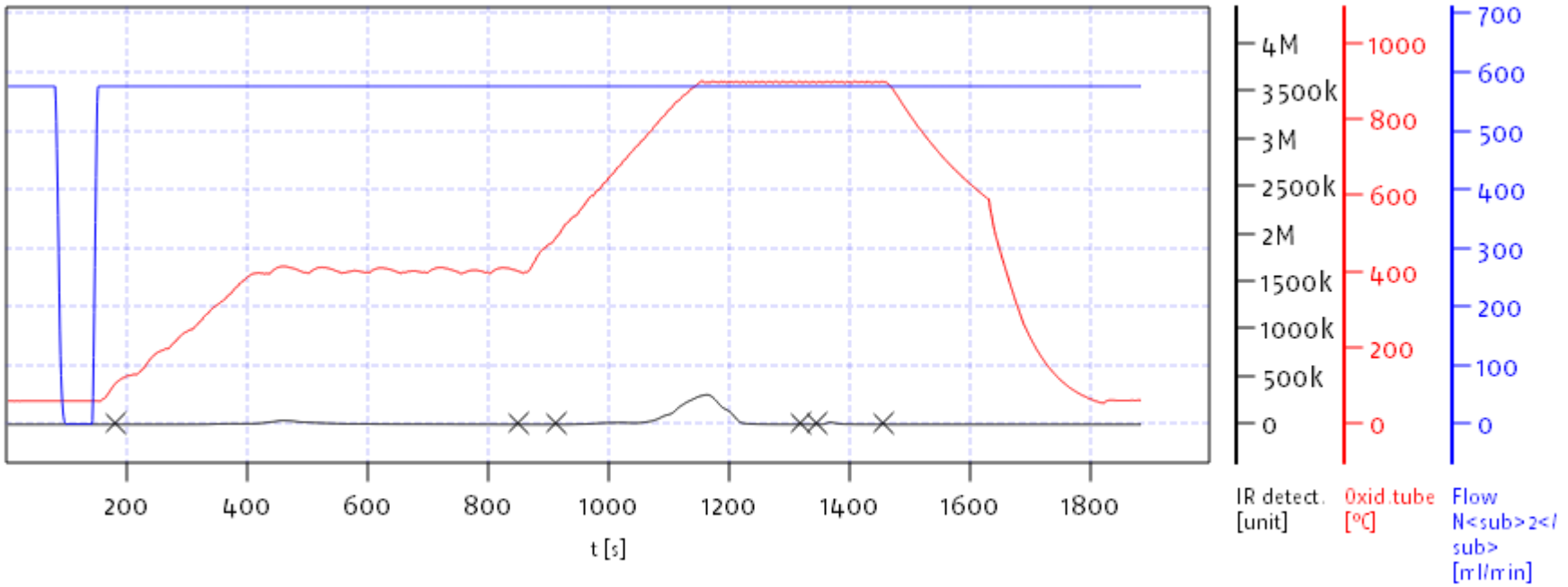
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
108	79	21G0313-08	480.00		1.00	CARBON	8/18/2021 11:41 PM	0.056	0.343	0.399	bl	169 422	1 067 918	18 601	1.0349	1.0000



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Date: Mon Aug 23 13:43:13 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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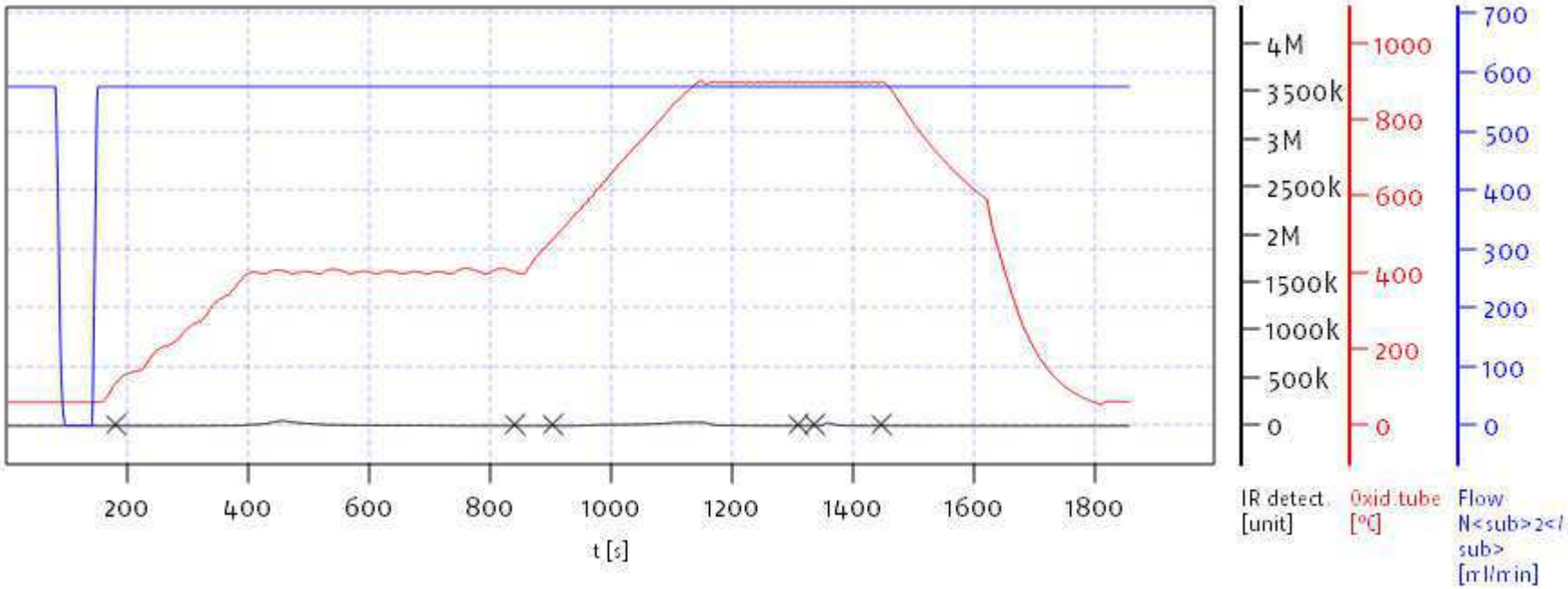
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
109	80	21G0313-09	506.80		1.00	CARBON	8/19/2021 12:13 AM	0.063	0.053	0.116	bl	195 903	182 544	25 633	1.0349	1.0000



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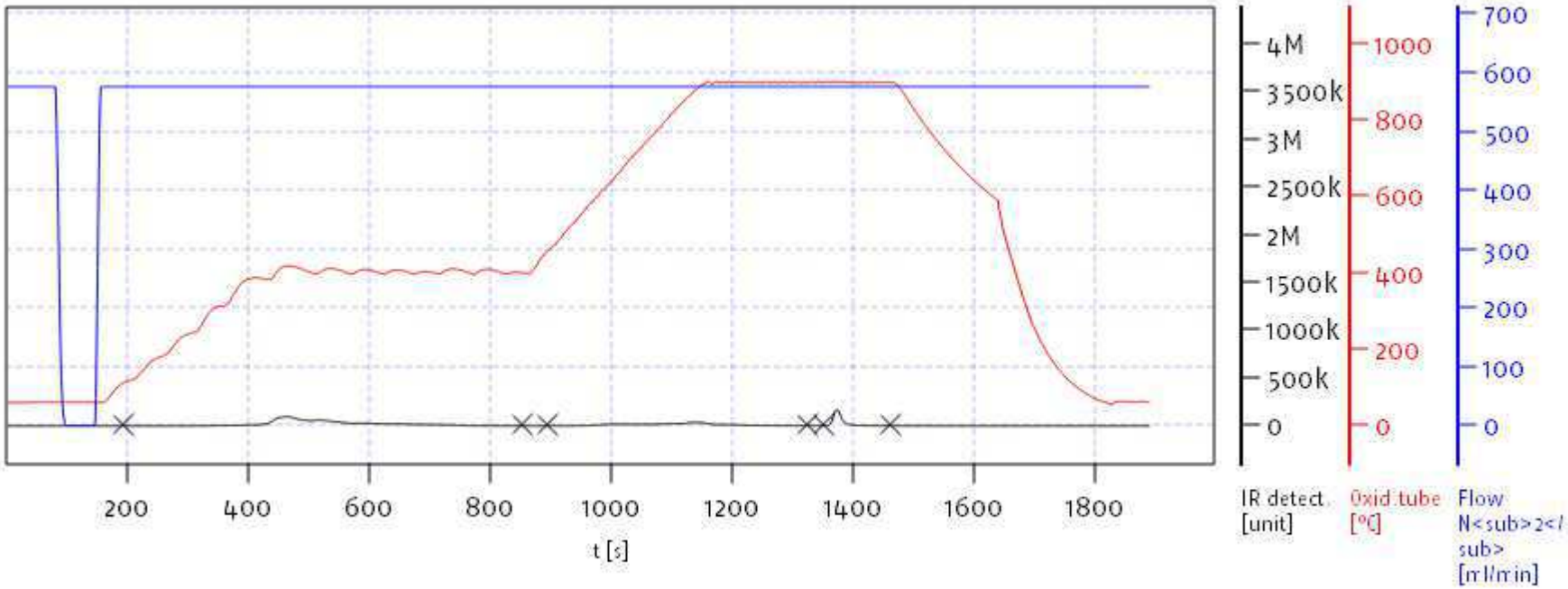
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
110	81	21G0313-10	661.10		1.00	CARBON	8/19/2021 12:45 AM	0.135	0.042	0.177	bl	467 181	190 227	110 008	1.0349	1.0000



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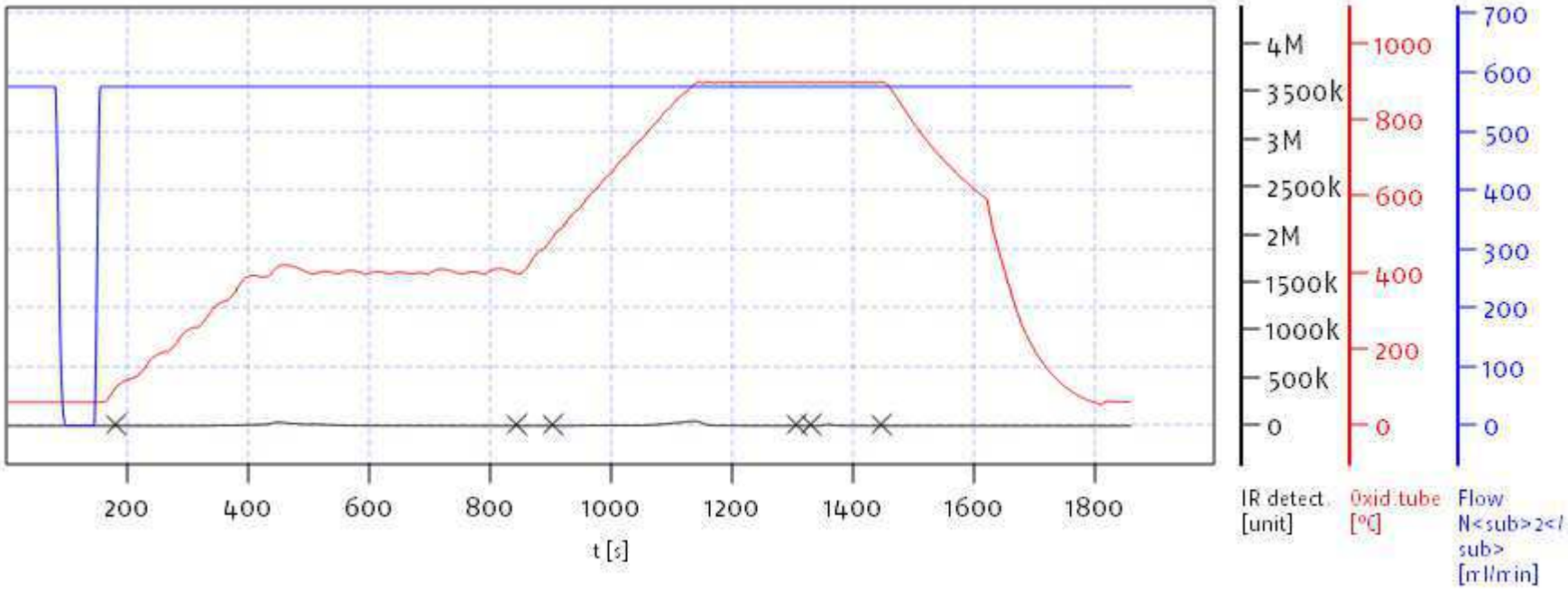
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
111	82	21G0313-11	413.70		1.00	CARBON	8/19/2021 1:16 AM	0.049	0.048	0.097	bl	136 079	137 781	11 999	1.0349	1.0000



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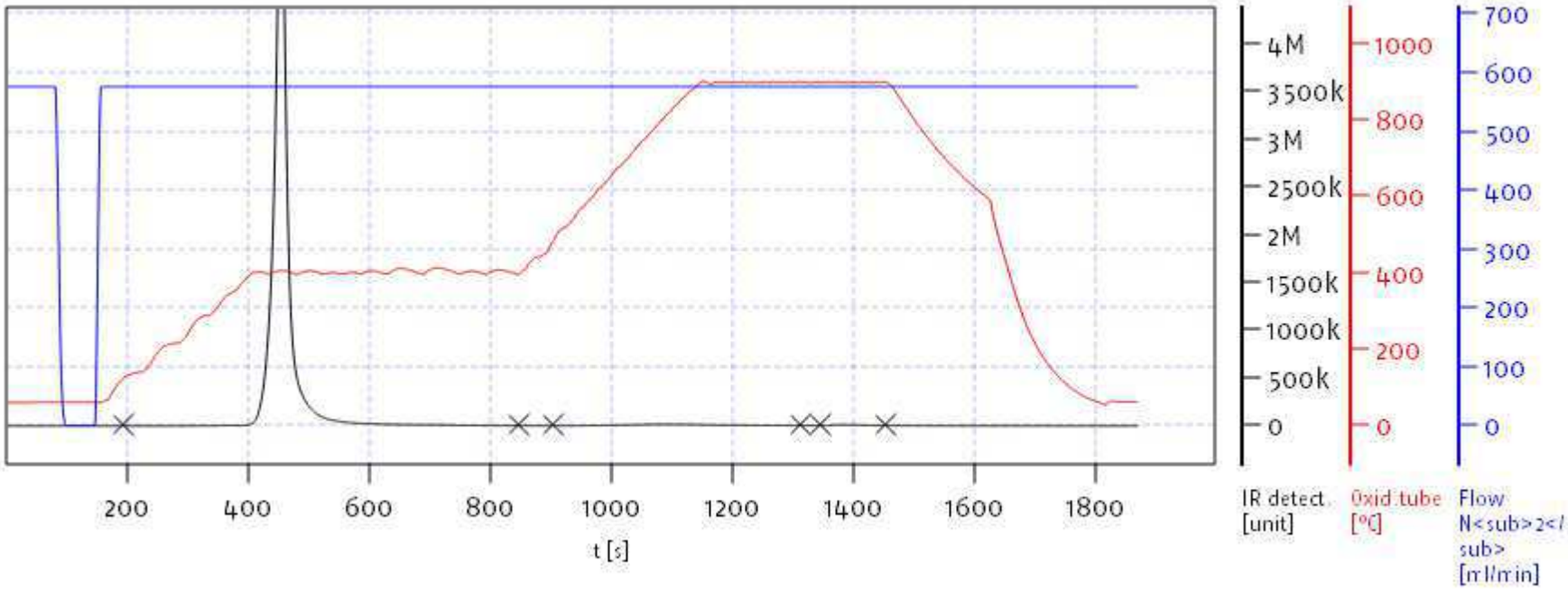
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
112	83	SJH0183-CCV9	21.00		1.00	CARBON	8/19/2021 1:48 AM	43.795	0.824	44.619	bl	5 703 444	121 943	28 841	1.0349	1.0000



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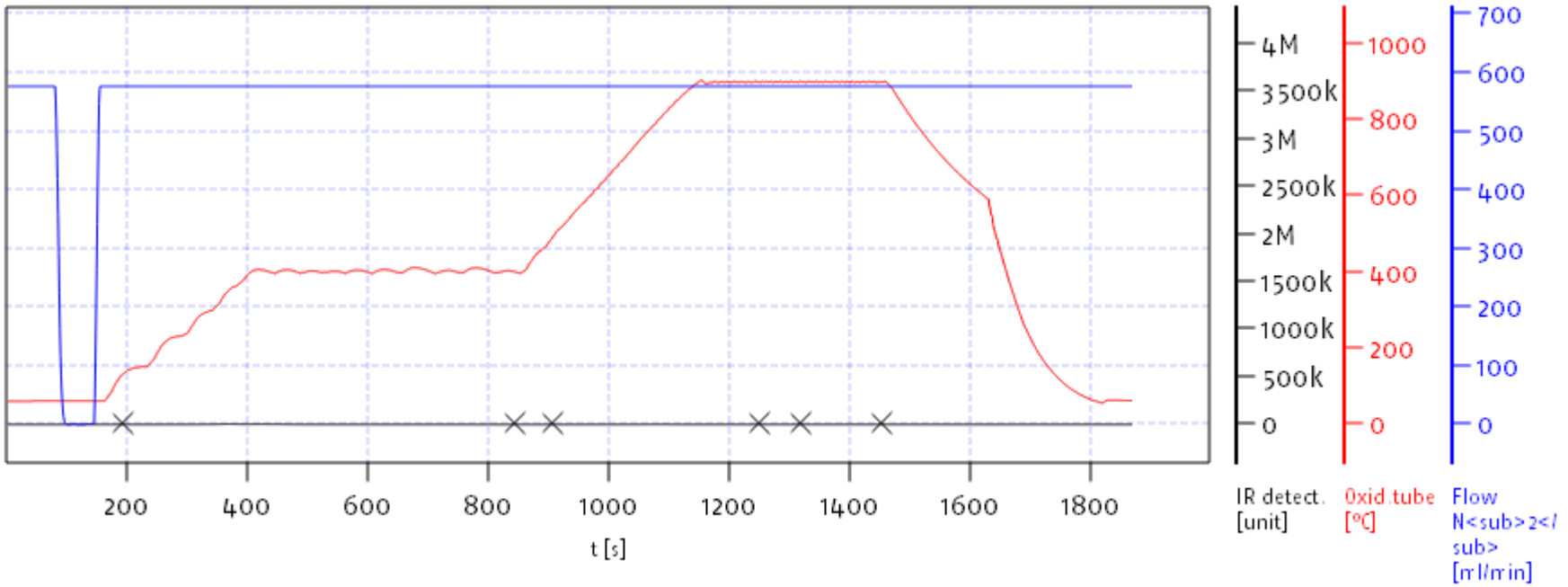
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
113	84	SJH0183-CCB9	577.60		1.00	CARBON	8/19/2021 2:19 AM	0.002	0.000	0.002	bl,C3u,C2u	16 859	3 328	540	1.0349	1.0000



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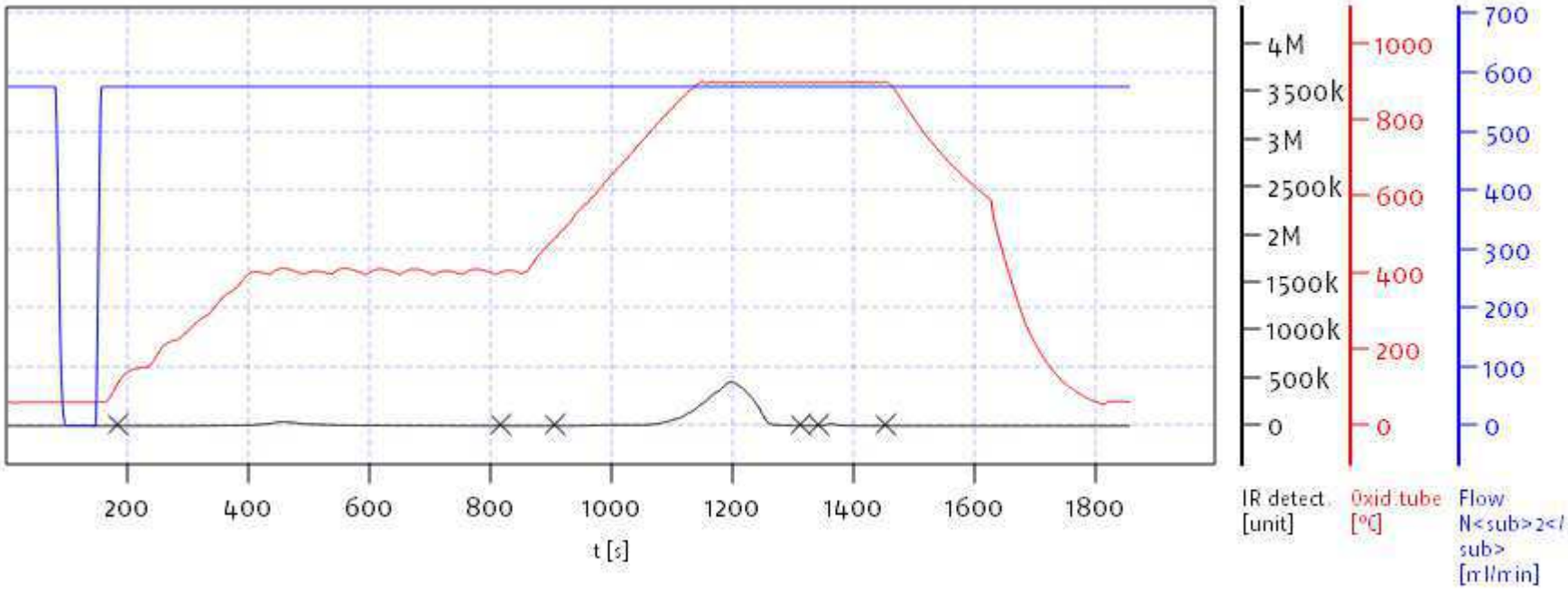
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
114	85	21G0313-12	398.30		1.00	CARBON	8/19/2021 2:50 AM	0.065	0.637	0.702	bl	161 642	1 640 989	19 775	1.0349	1.0000



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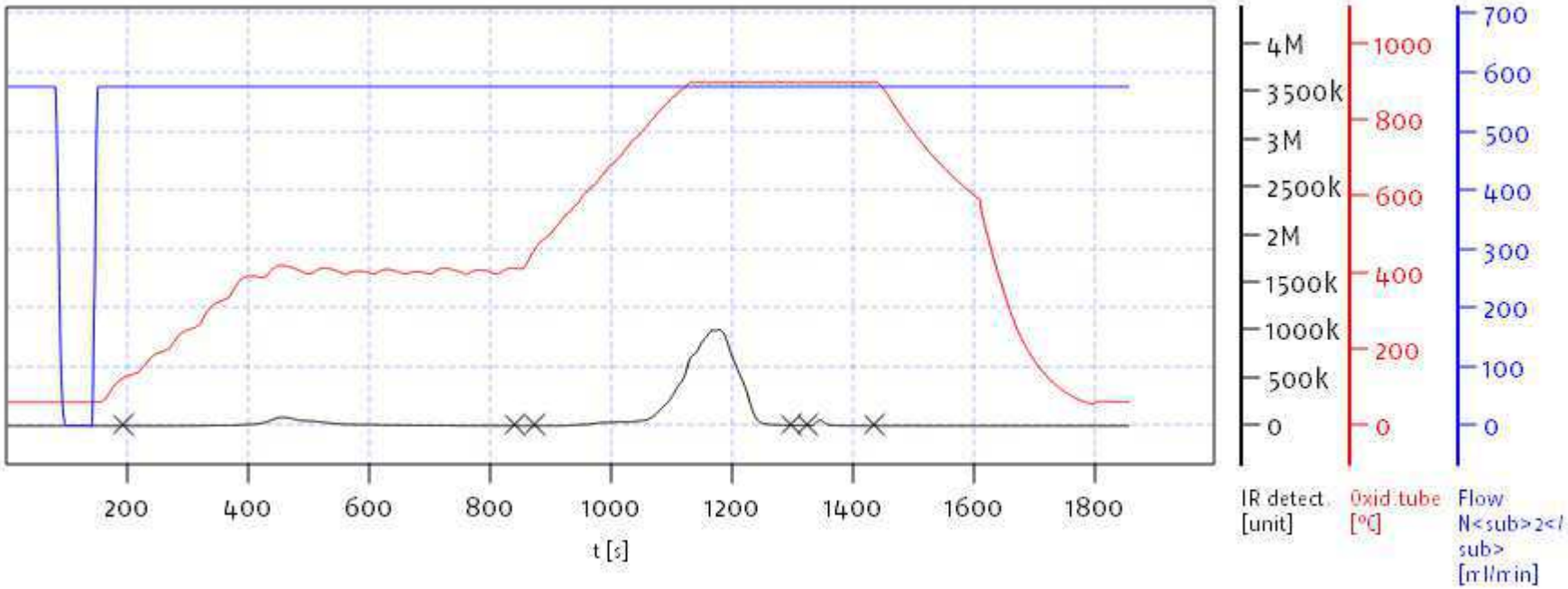
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
115	86	21G0313-13	499.70		1.00	CARBON	8/19/2021 3:22 AM	0.125	1.222	1.347	bl	367 575	3 934 820	42 778	1.0349	1.0000



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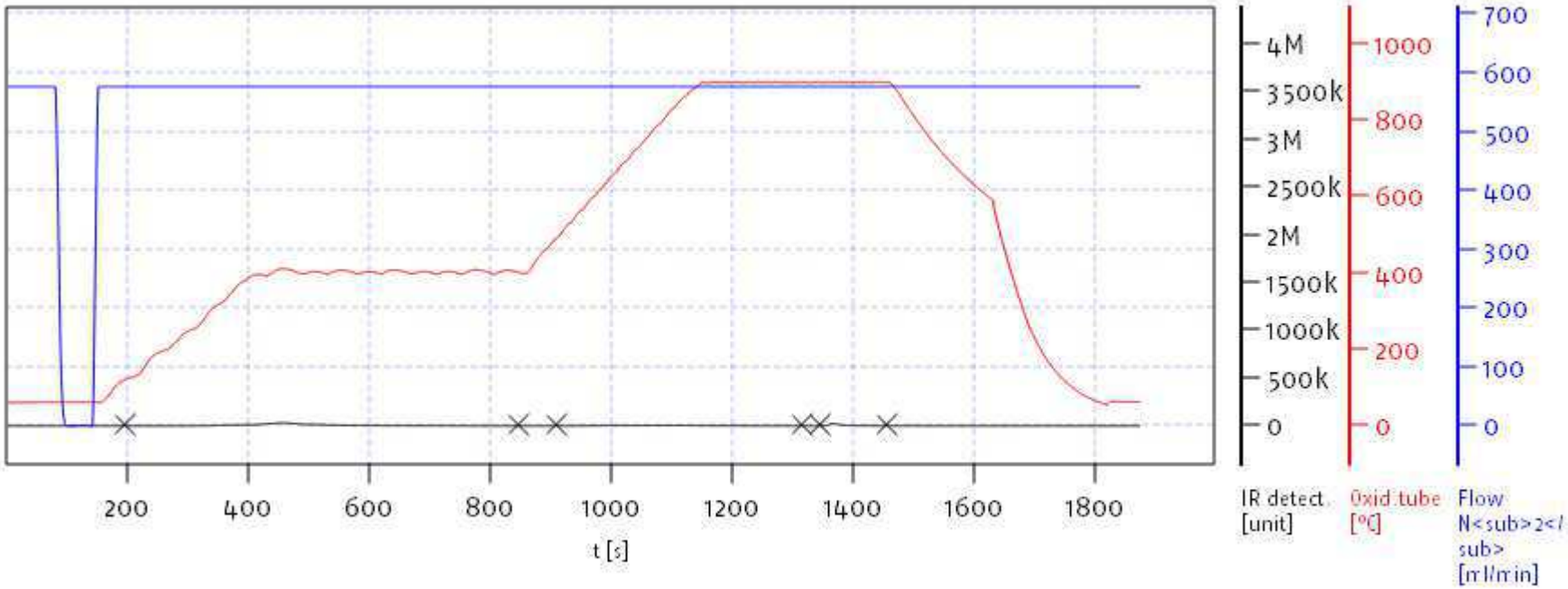
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
116	87	21G0313-14	598.10		1.00	CARBON	8/19/2021 3:53 AM	0.039	0.007	0.046	bl	143 051	38 100	23 003	1.0349	1.0000



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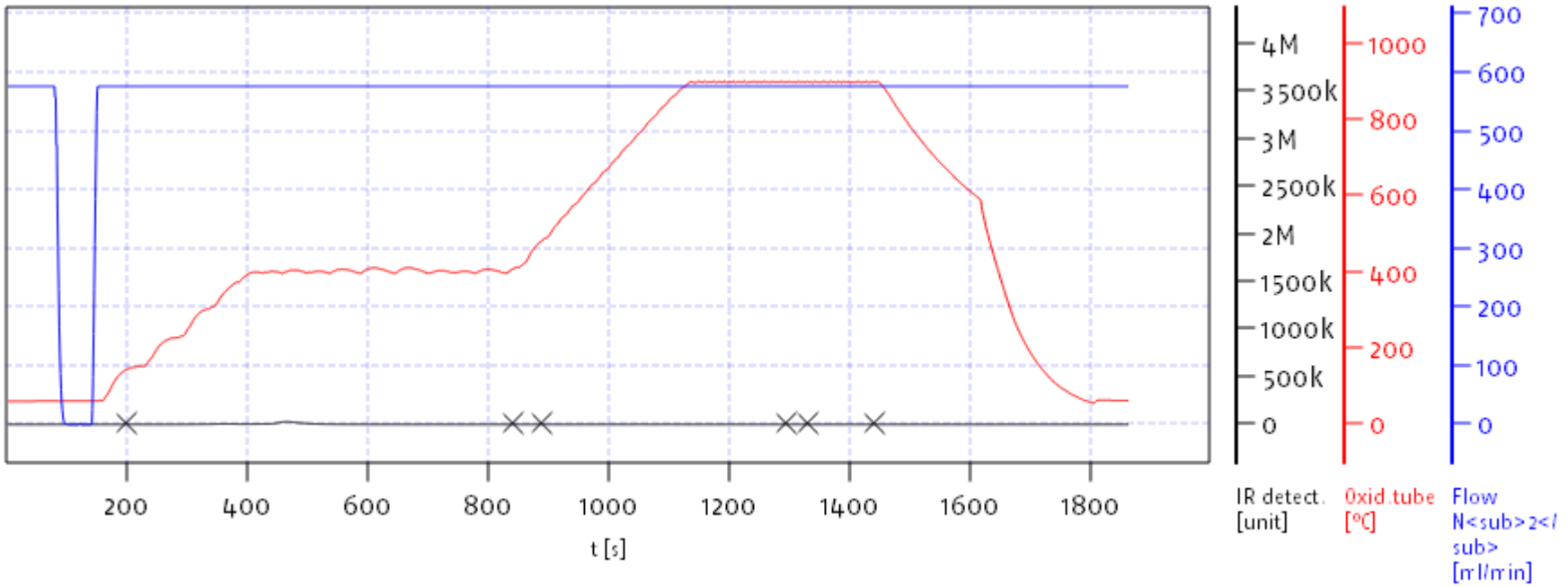
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
117	88	BJH0351-MRL1	500.40		1.00	CARBON	8/19/2021 4:25 AM	0.020	0.000	0.020	bl,C3u,C2u	73 720	4 477	265	1.0349	1.0000



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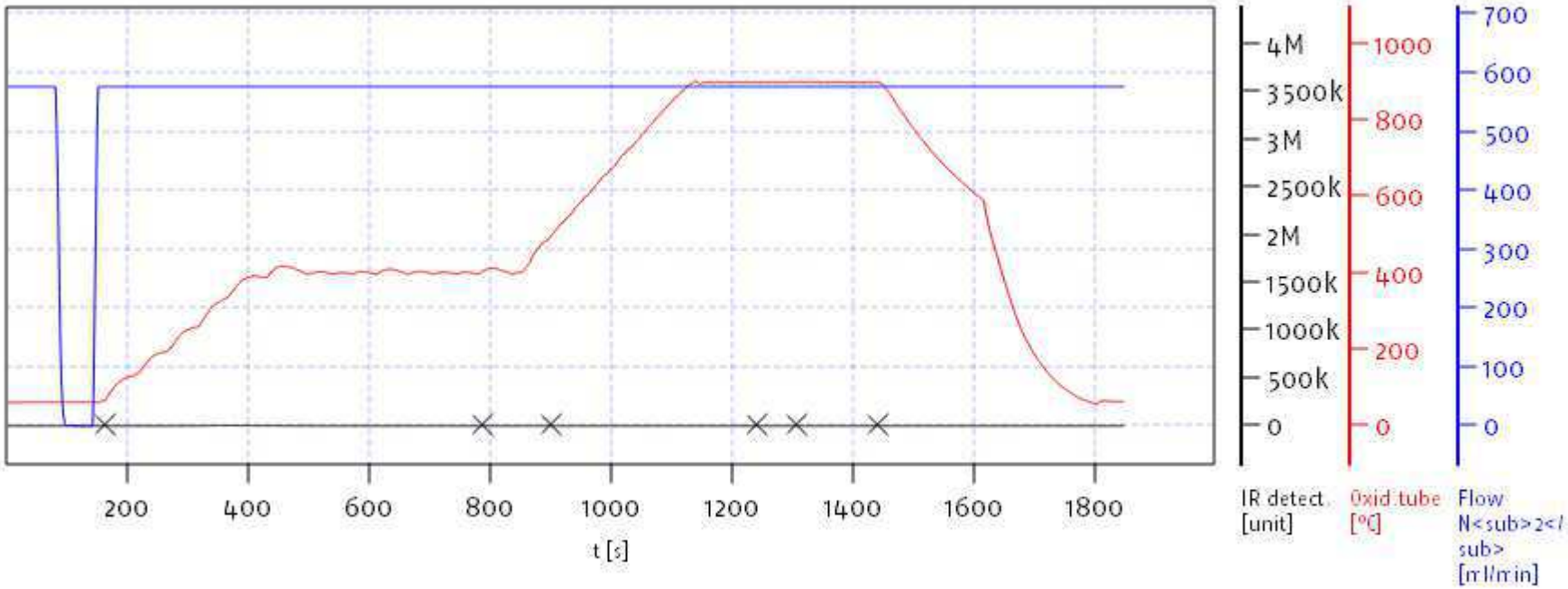
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
118	89	BJH0351-BLK1	509.30		1.00	CARBON	8/19/2021 4:56 AM	0.003	0.000	0.003	bl,C3u,C2u	20 329	1 400	315	1.0349	1.0000



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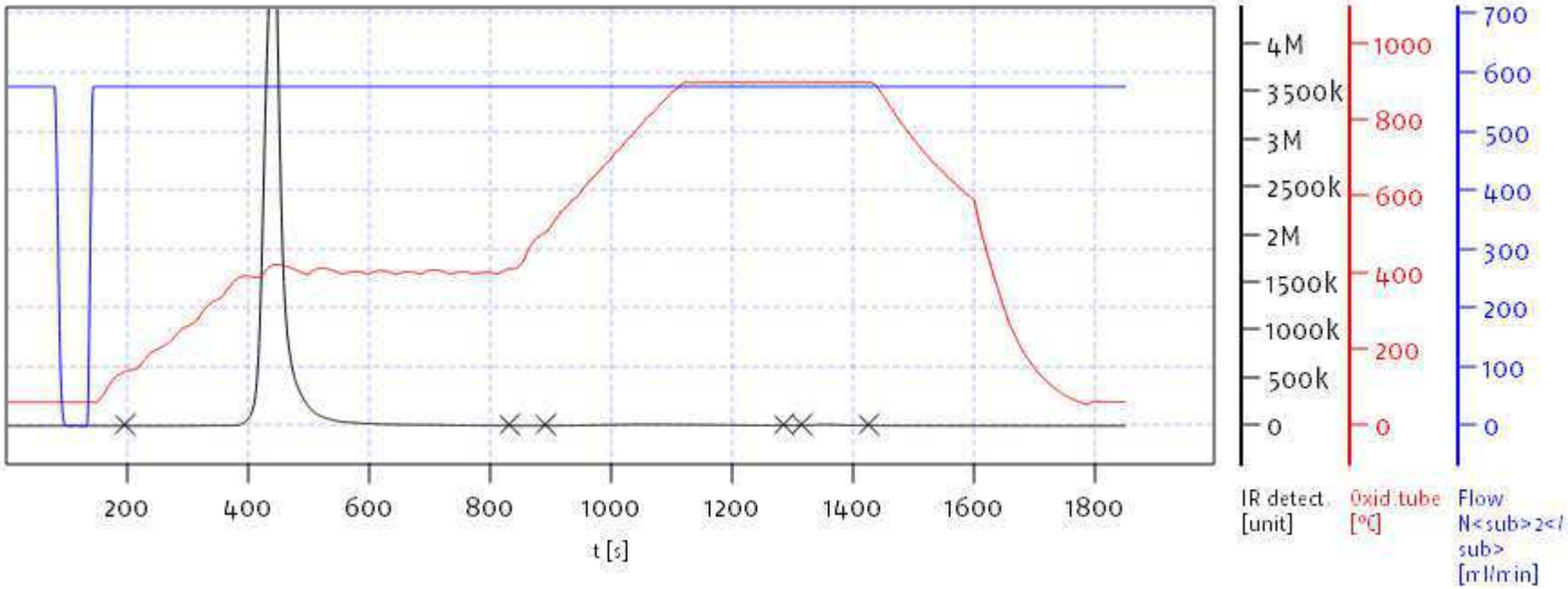
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
119	1	BJH0351-BS1	24.50		1.00	CARBON	8/19/2021 5:27 AM	44.233	0.774	45.007	bl	6 718 330	132 586	32 441	1.0349	1.0000



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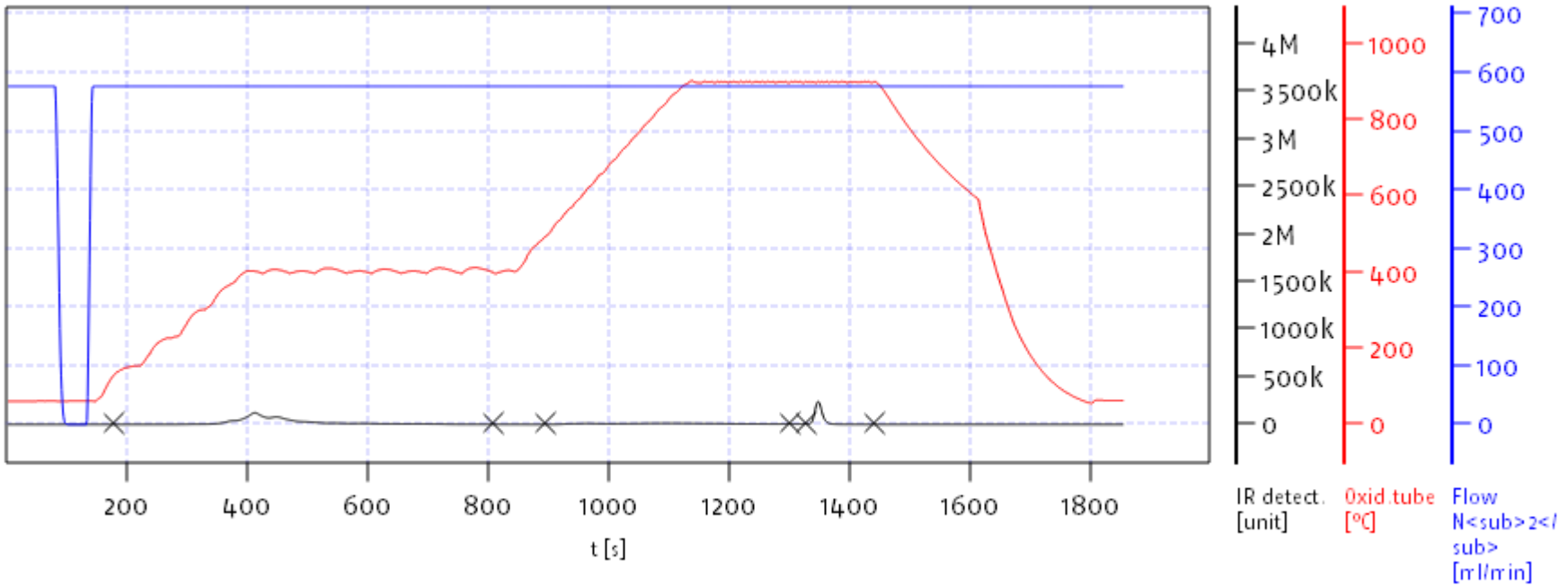
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
120	2	BJH0351-SRM1	35.00		1.00	CARBON	8/19/2021 5:59 AM	2.403	0.452	2.855	bl	415 962	112 375	131 765	1.0349	1.0000



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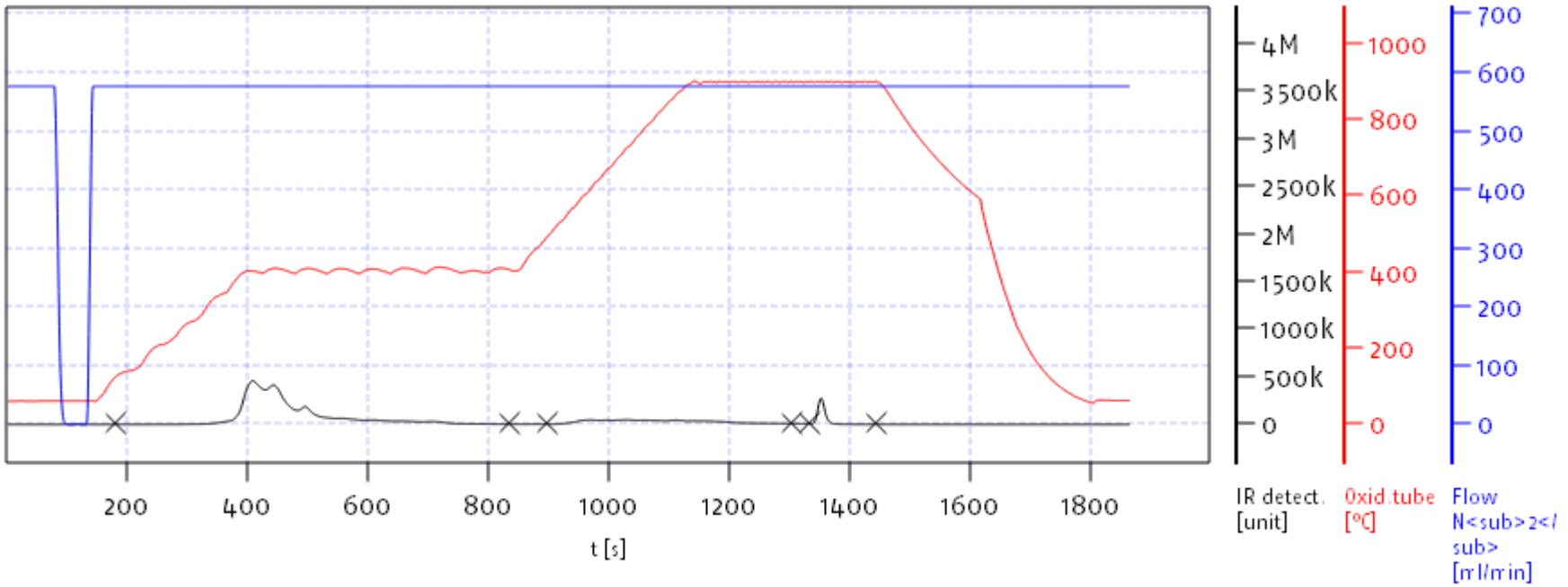
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
121	3	21F0430-01	535.60		1.00	CARBON	8/19/2021 6:30 AM	0.582	0.128	0.710	bl	1 810 866	452 110	149 077	1.0349	1.0000



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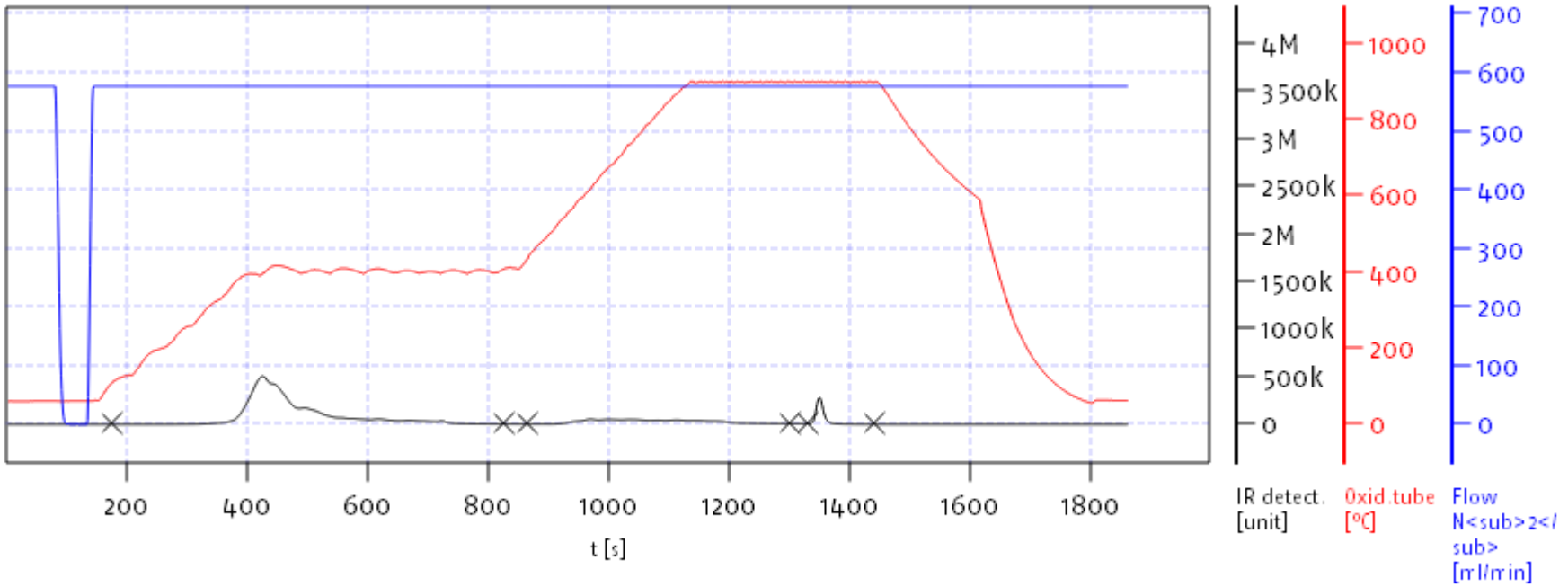
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
122	4	BJH0351-DUP1	545.00		1.00	CARBON	8/19/2021 7:02 AM	0.608	0.135	0.742	bl	1 924 383	482 020	158 594	1.0349	1.0000



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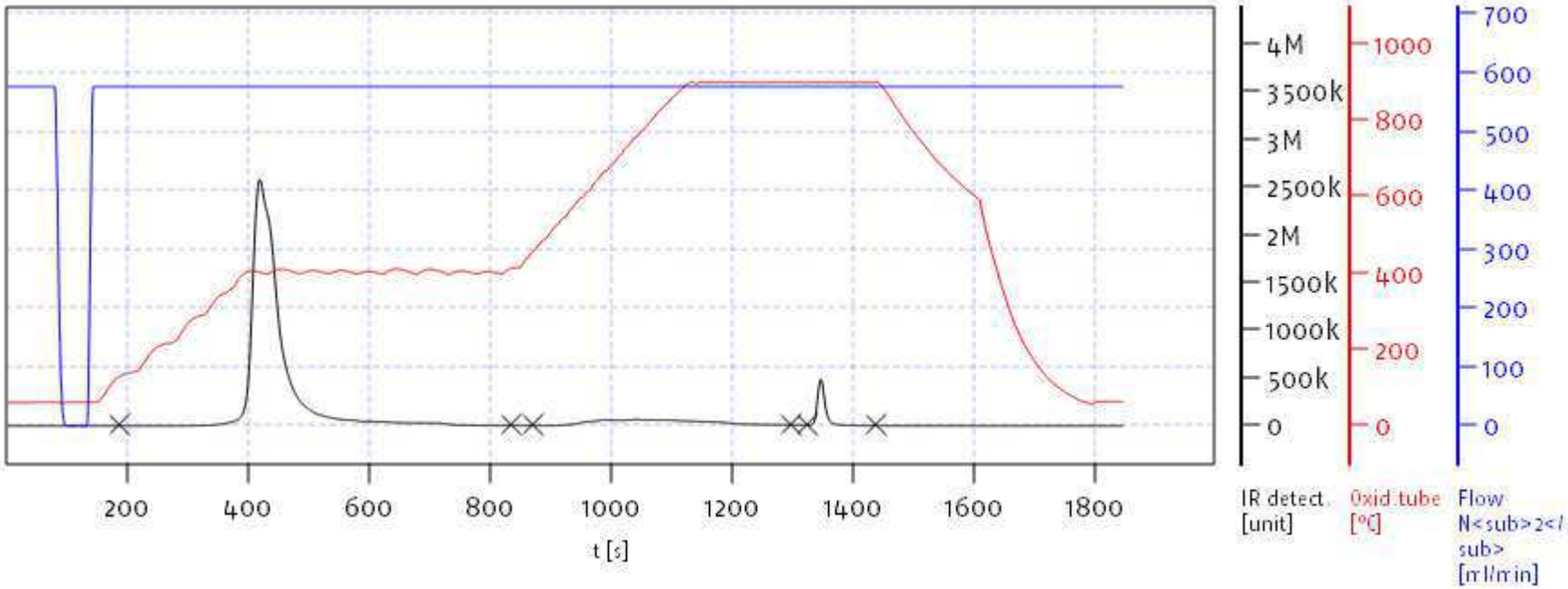
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
123	5	BJH0351-MS1	534.40	0.0114	1.00	CARBON	8/19/2021 7:33 AM	1.601	0.164	1.765	bl	5 062 521	574 524	279 787	1.0349	1.0000



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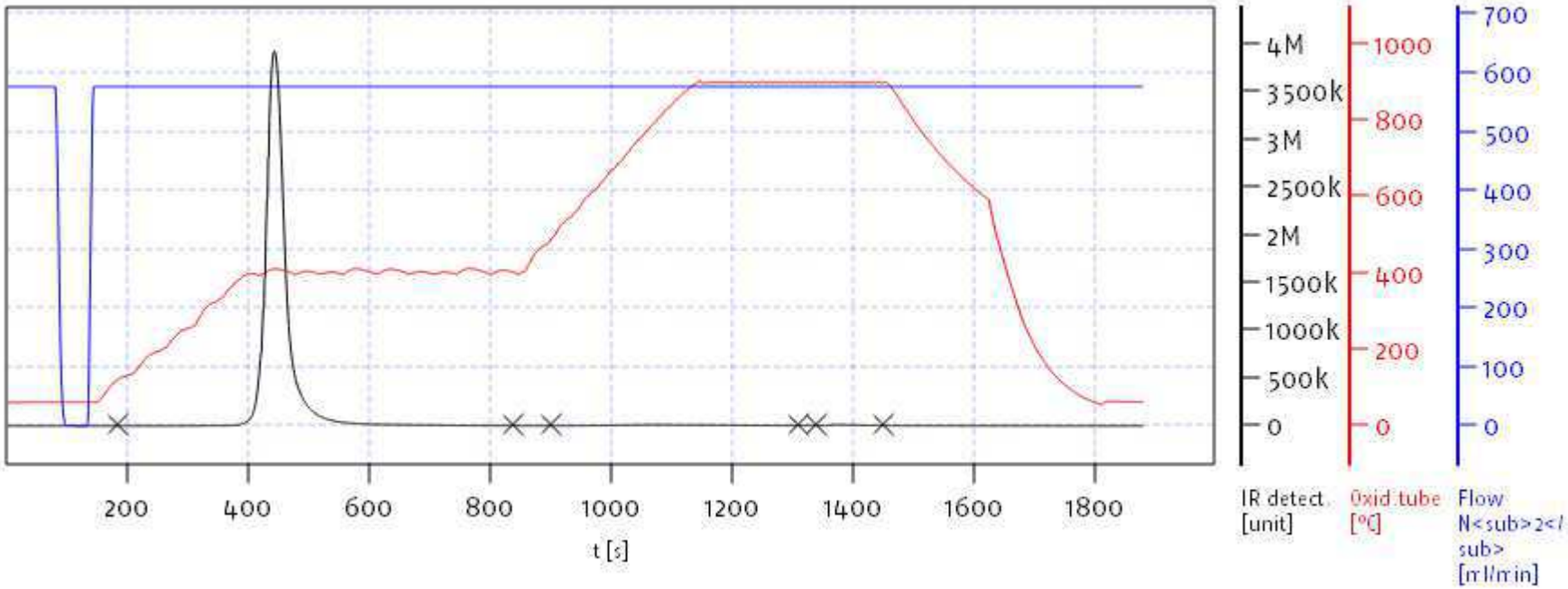
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
124	6	SJH0183-CCVA	20.70		1.00	CARBON	8/19/2021 8:05 AM	43.171	0.656	43.827	bl	5 541 704	97 942	28 920	1.0349	1.0000



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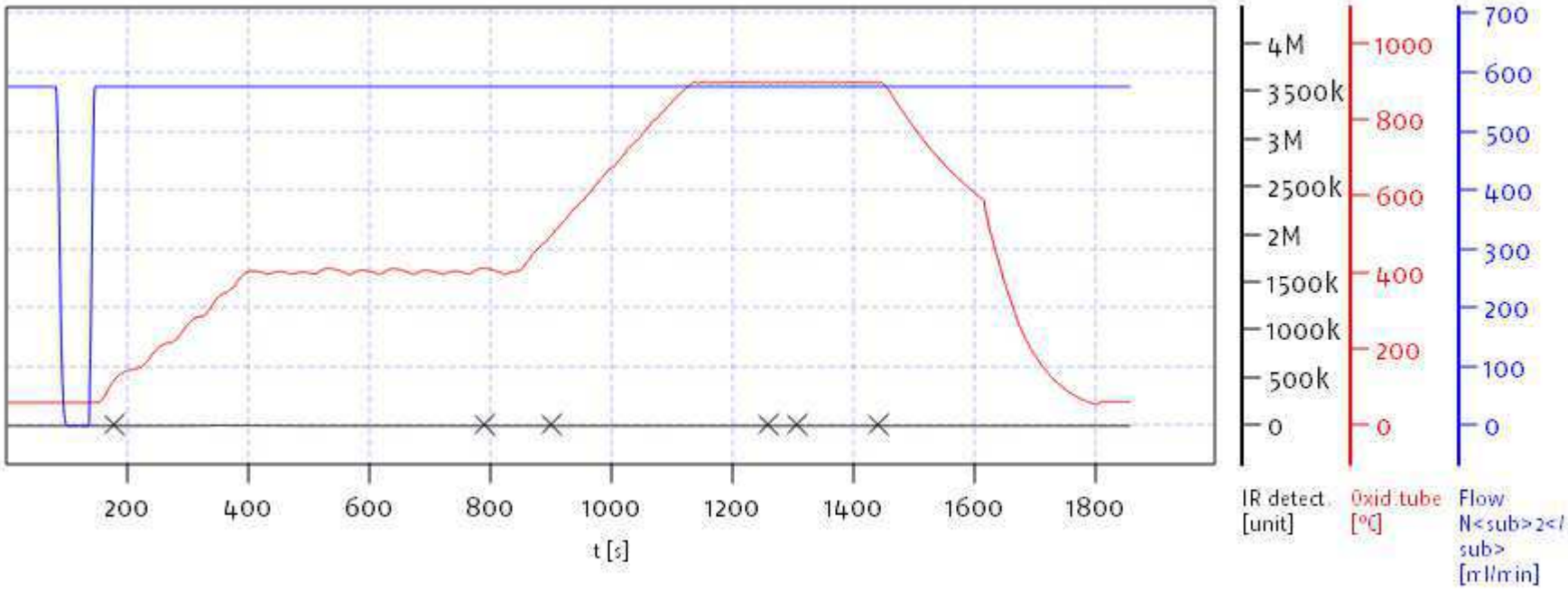
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
125	7	SJH0183-CCBA	573.20		1.00	CARBON	8/19/2021 8:36 AM	0.002	0.000	0.002	bl,C3u,C2u	19 420	1 257	685	1.0349	1.0000



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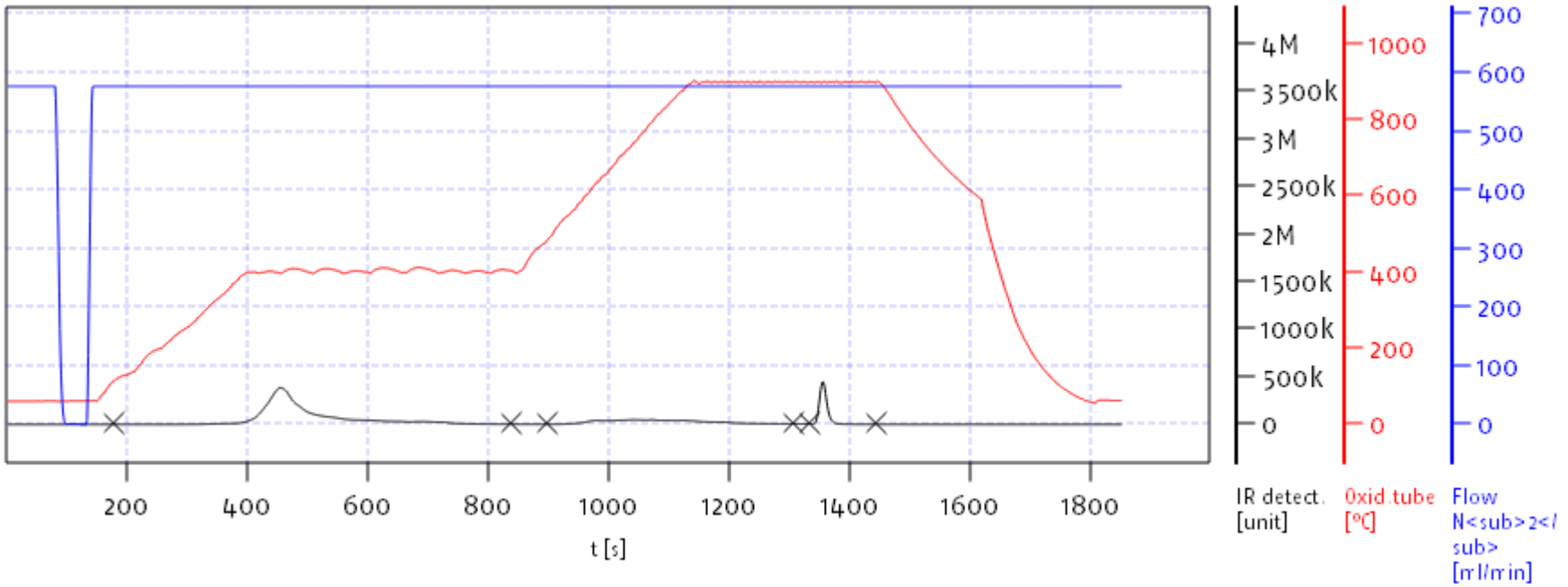
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
126	8	21F0430-02	637.70		1.00	CARBON	8/19/2021 9:07 AM	0.379	0.095	0.474	bl	1 284 559	399 497	246 331	1.0349	1.0000



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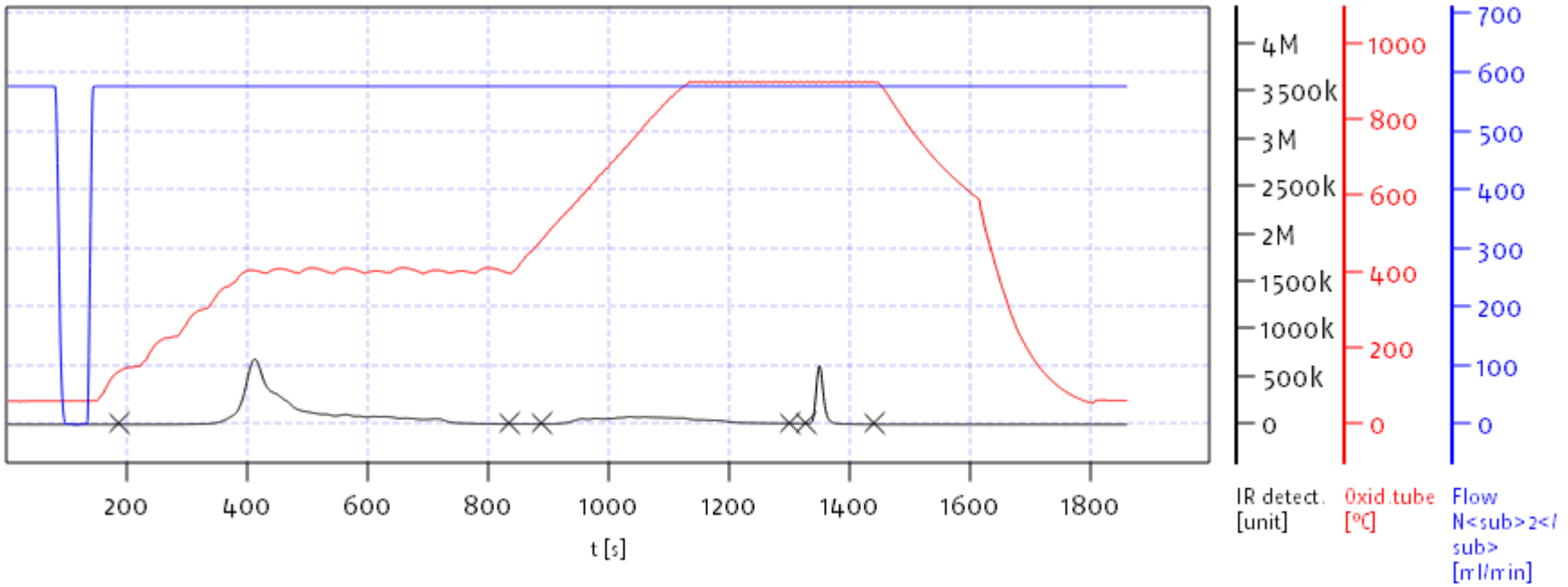
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
127	9	21F0430-03	652.80		1.00	CARBON	8/19/2021 9:39 AM	0.644	0.157	0.800	bl	2 302 624	667 743	339 257	1.0349	1.0000



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Date: Mon Aug 23 13:43:13 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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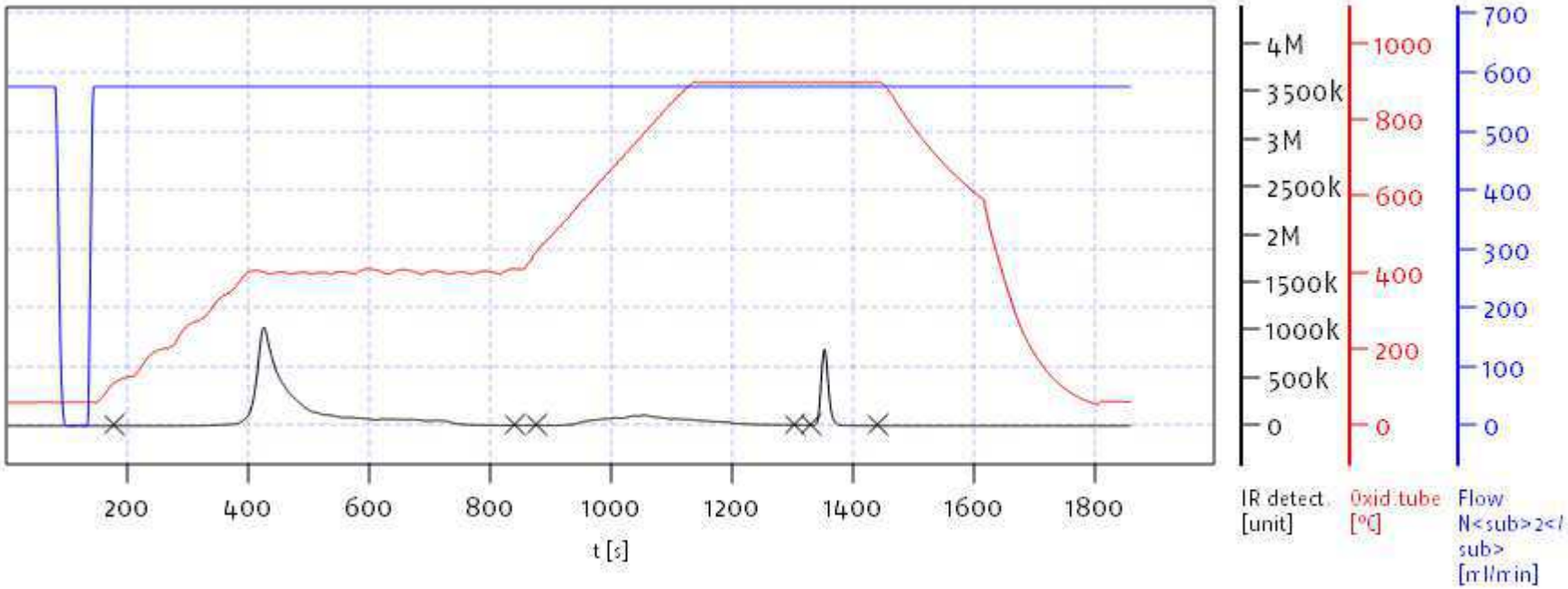
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
128	10	21F0430-04	590.00		1.00	CARBON	8/19/2021 10:10 AM	0.813	0.195	1.008	bl	2 583 930	751 394	430 239	1.0349	1.0000



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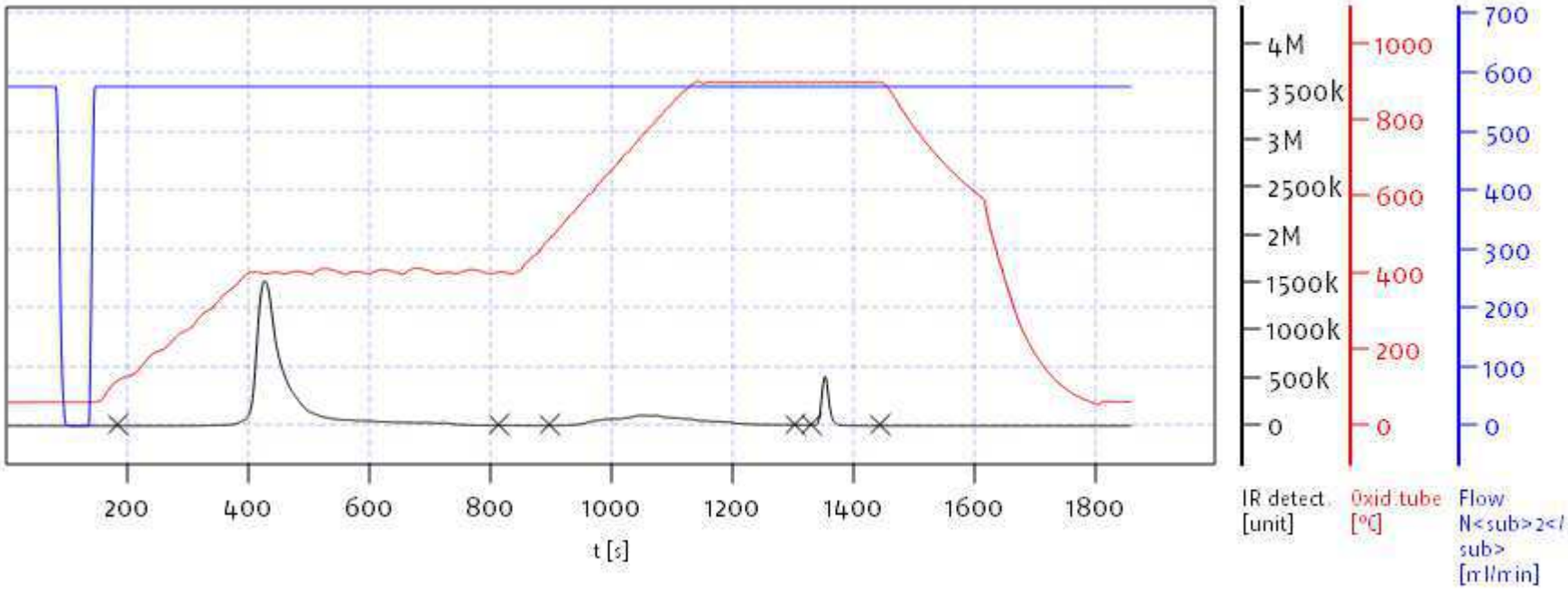
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
129	11	21F0430-05	526.60		1.00	CARBON	8/19/2021 10:41 AM	1.017	0.216	1.233	bl	3 076 505	740 719	278 625	1.0349	1.0000



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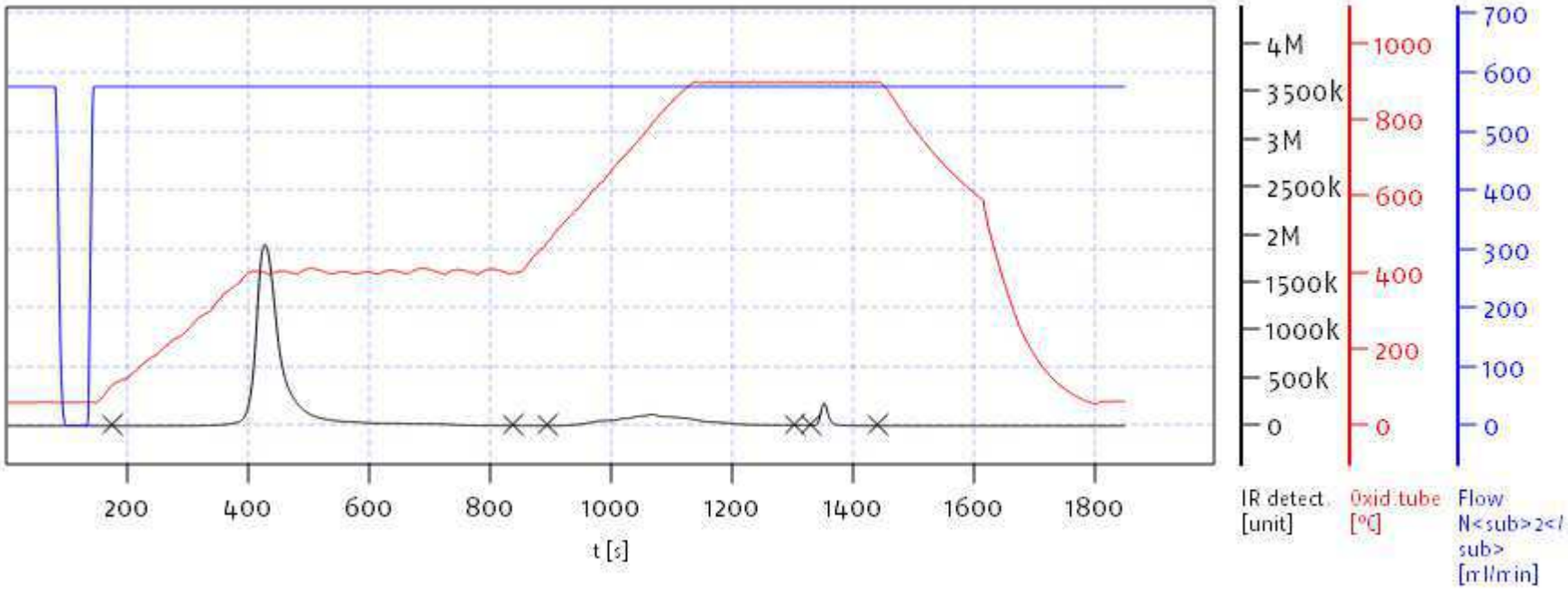
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
130	12	21F0430-06	531.10		1.00	CARBON	8/19/2021 11:13 AM	1.084	0.200	1.284	bl	3 463 173	692 714	136 242	1.0349	1.0000



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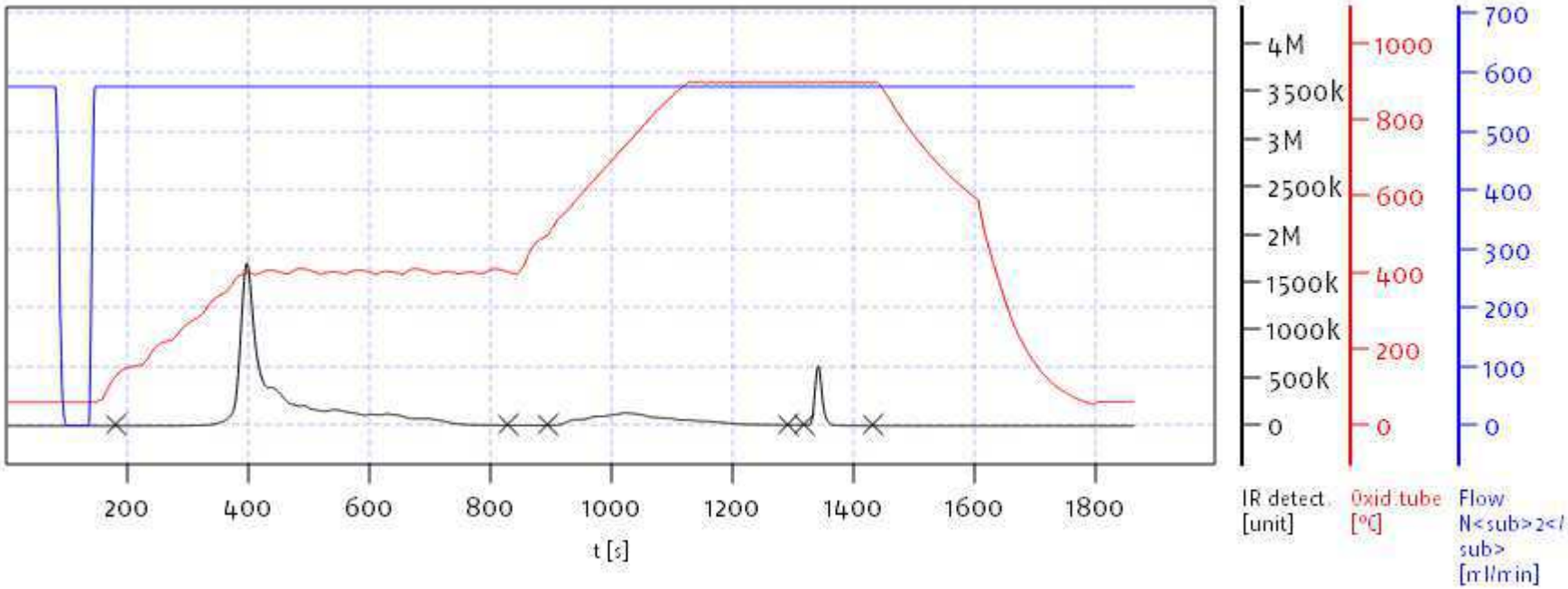
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
131	13	21F0430-07	569.10		1.00	CARBON	8/19/2021 11:44 AM	1.139	0.238	1.378	bl	3 721 144	882 364	337 350	1.0349	1.0000



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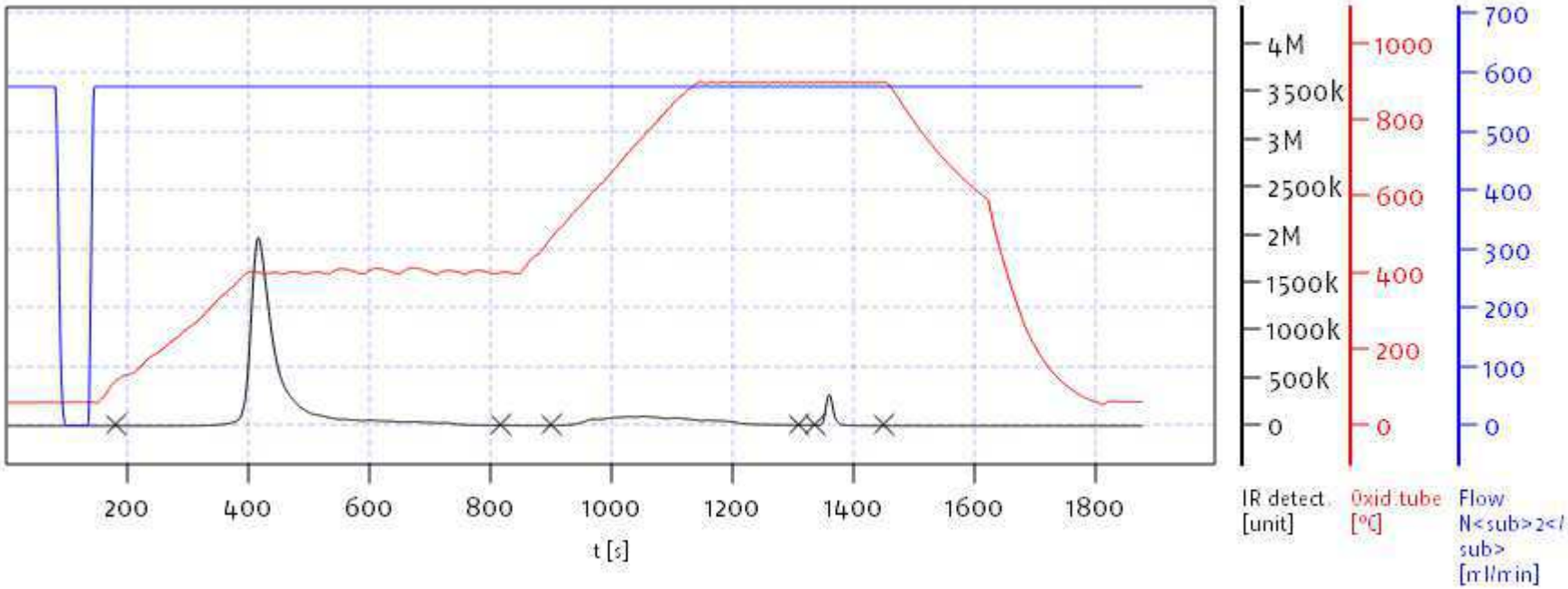
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
132	14	21F0430-08	562.00		1.00	CARBON	8/19/2021 12:16 PM	1.124	0.213	1.337	bl	3 763 356	778 725	186 166	1.0349	1.0000



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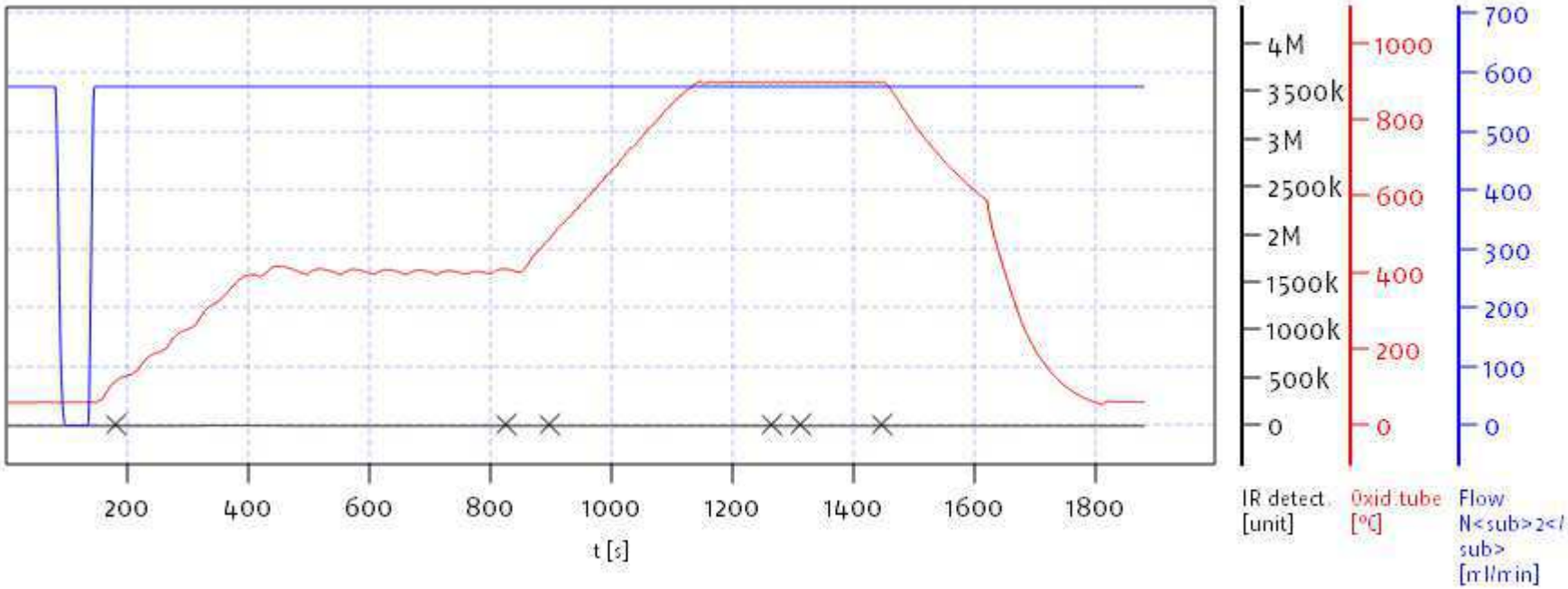
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
133	15	BLANK	1.00		1.00	CARBON	8/19/2021 12:48 PM	0.000	0.000	0.000	bl	19 326	995	362	1.0349	1.0000



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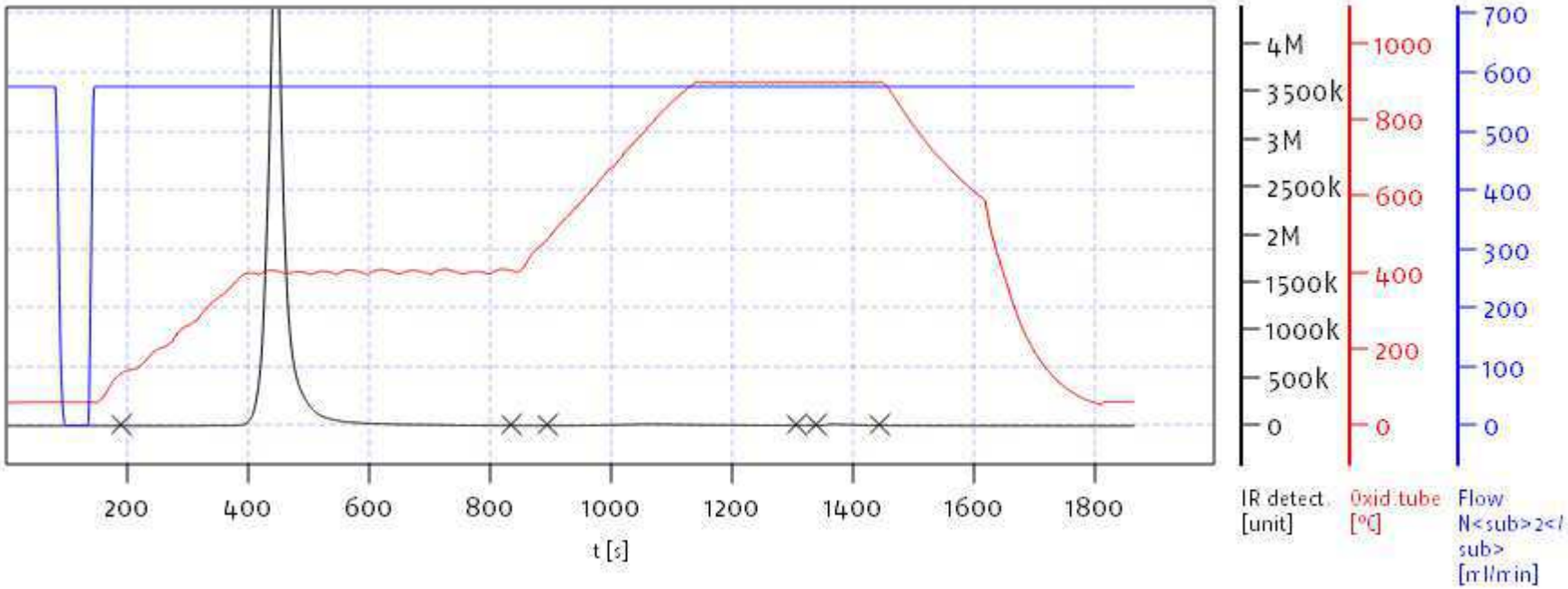
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
134	16	Dfactor	23.10		1.00	CARBON	8/19/2021 1:19 PM	44.623	0.823	45.447	bl	6 261 286	132 929	37 050	1.0555	1.0000



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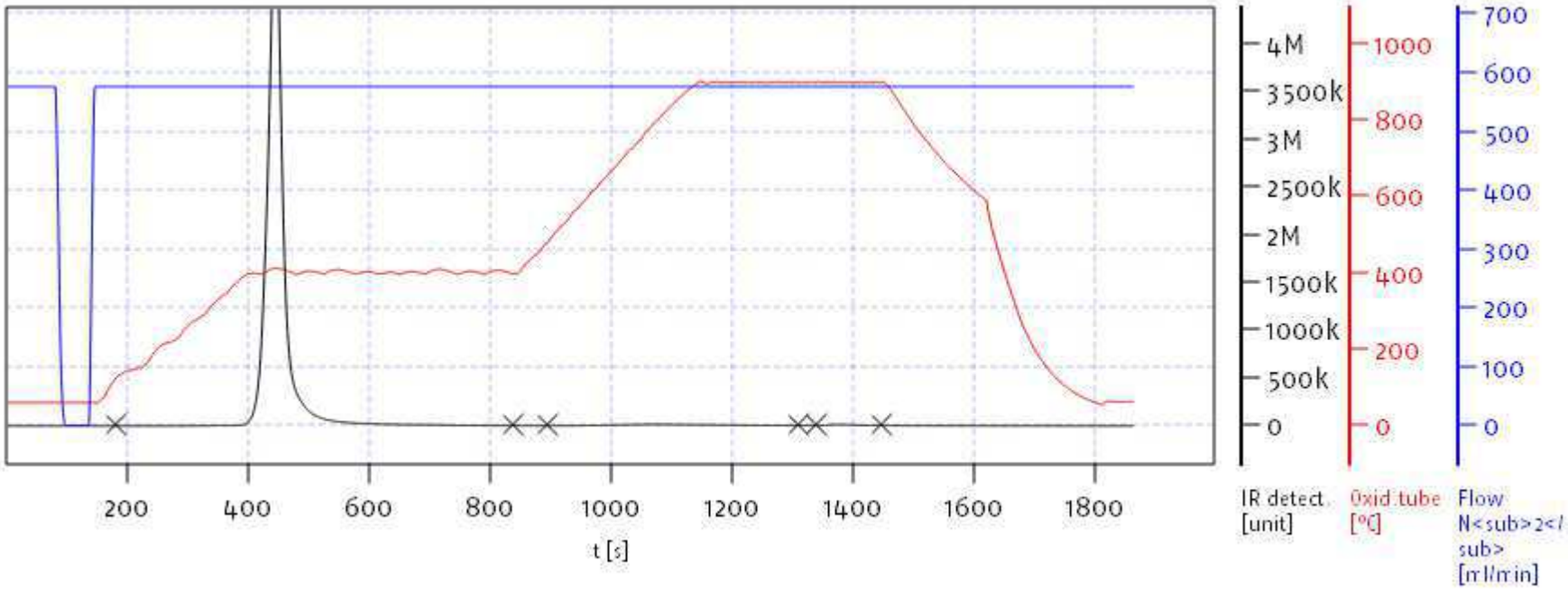
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
135	17	Dfactor	22.20		1.00	CARBON	8/19/2021 1:51 PM	44.604	0.811	45.415	bl	6 068 629	126 385	33 332	1.0466	1.0000



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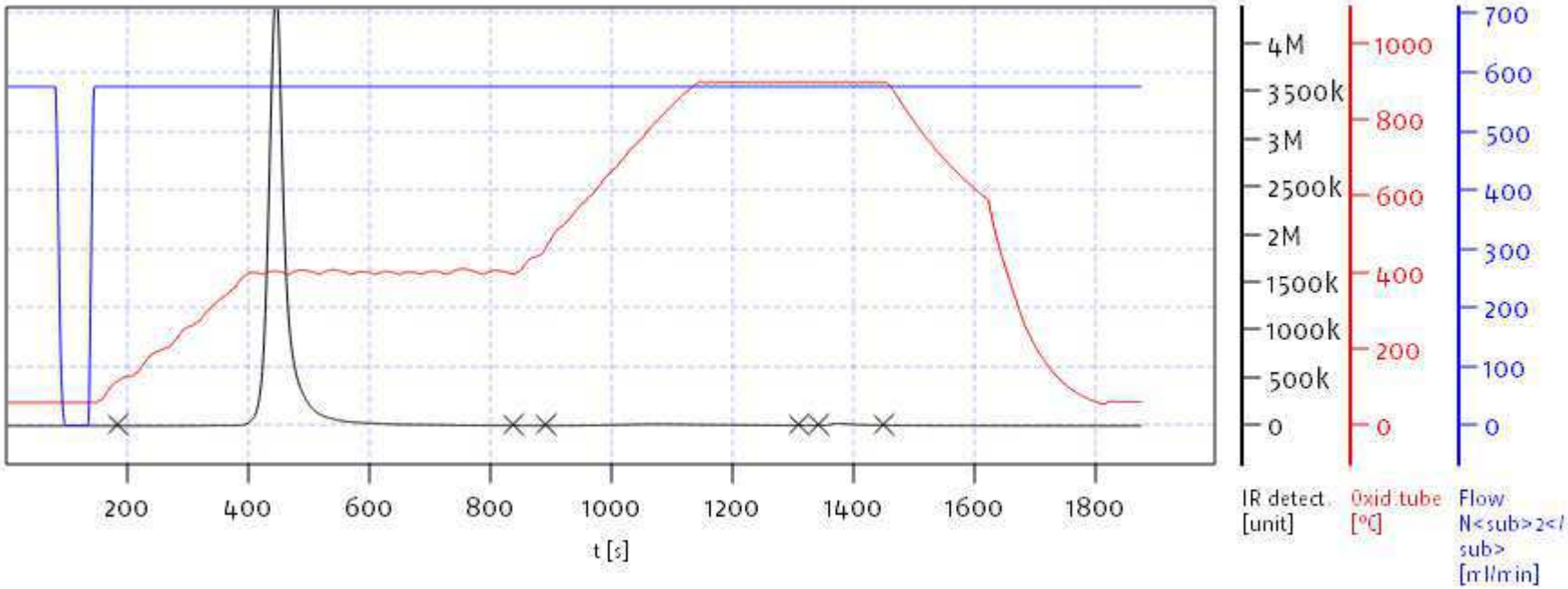
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
136	18	SJH0183-CCVB	21.00		1.00	CARBON	8/19/2021 2:22 PM	43.985	1.002	44.988	bl	5 620 094	145 939	50 462	1.0510	1.0000



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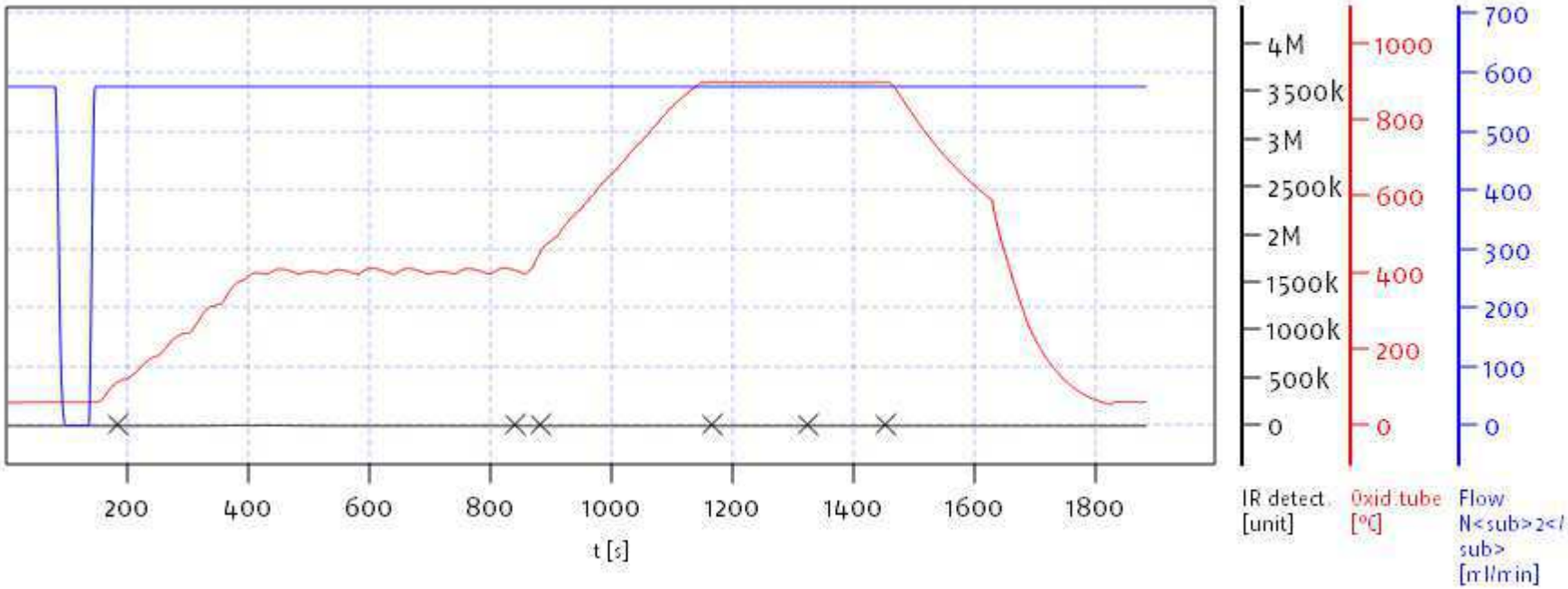
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
137	19	SJH0183-CCBB	515.10		1.00	CARBON	8/19/2021 2:54 PM	0.006	0.000	0.006	bl,C3u,C2u	29 088	1 250	1 029	1.0510	1.0000



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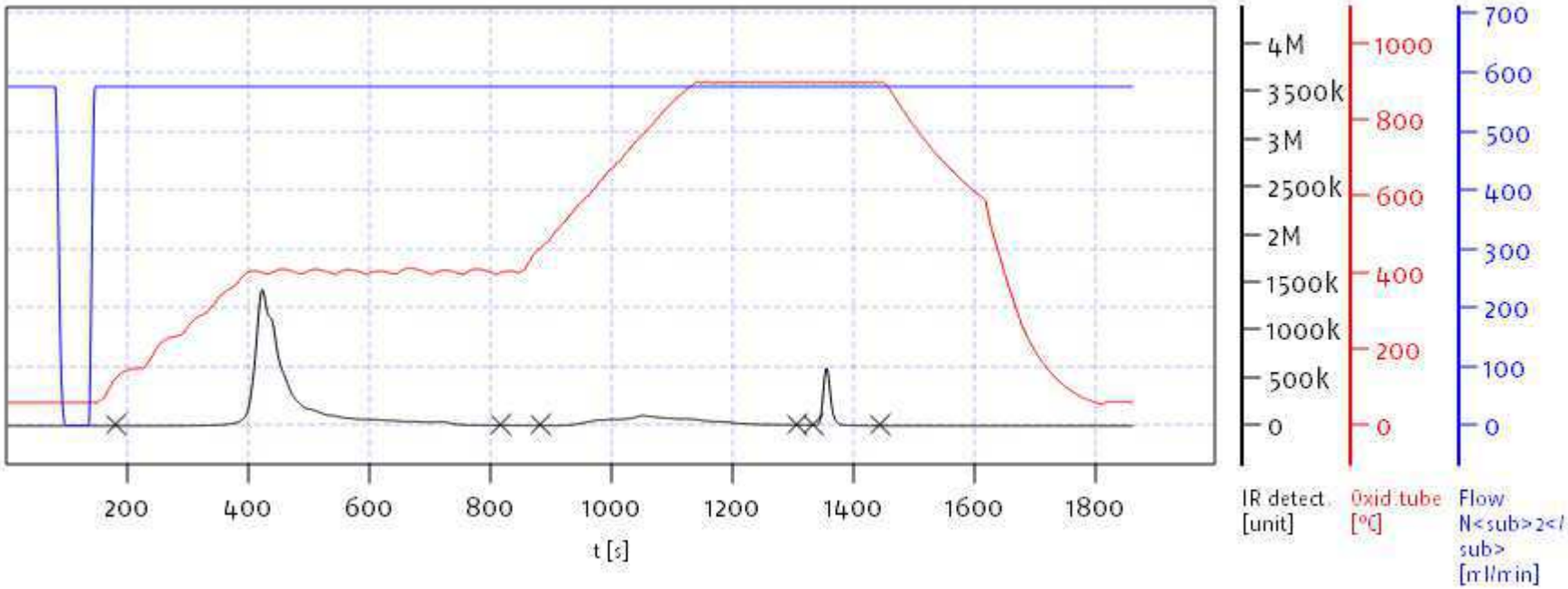
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
138	20	21F0430-09	588.20		1.00	CARBON	8/19/2021 3:25 PM	0.974	0.187	1.161	bl	3 205 536	717 323	333 530	1.0510	1.0000



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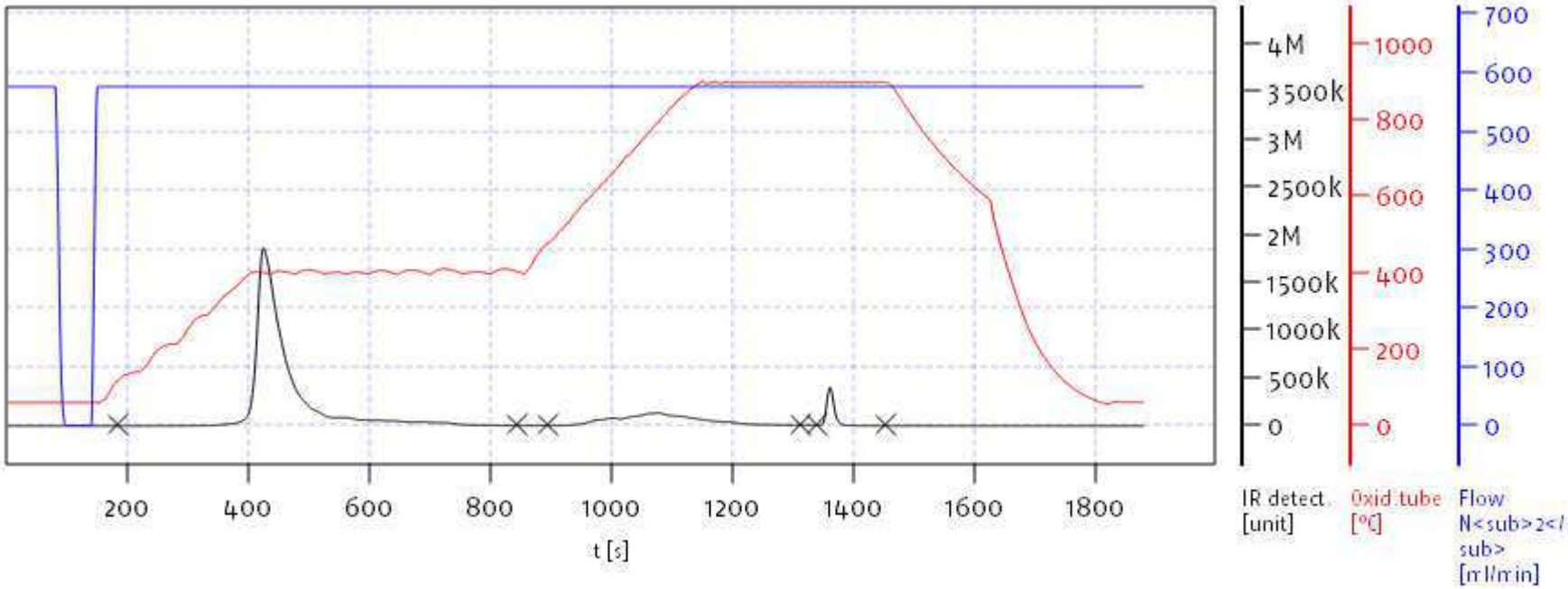
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
139	21	21F0430-10	638.40		1.00	CARBON	8/19/2021 3:57 PM	1.038	0.201	1.239	bl	3 860 690	833 852	222 293	1.0510	1.0000



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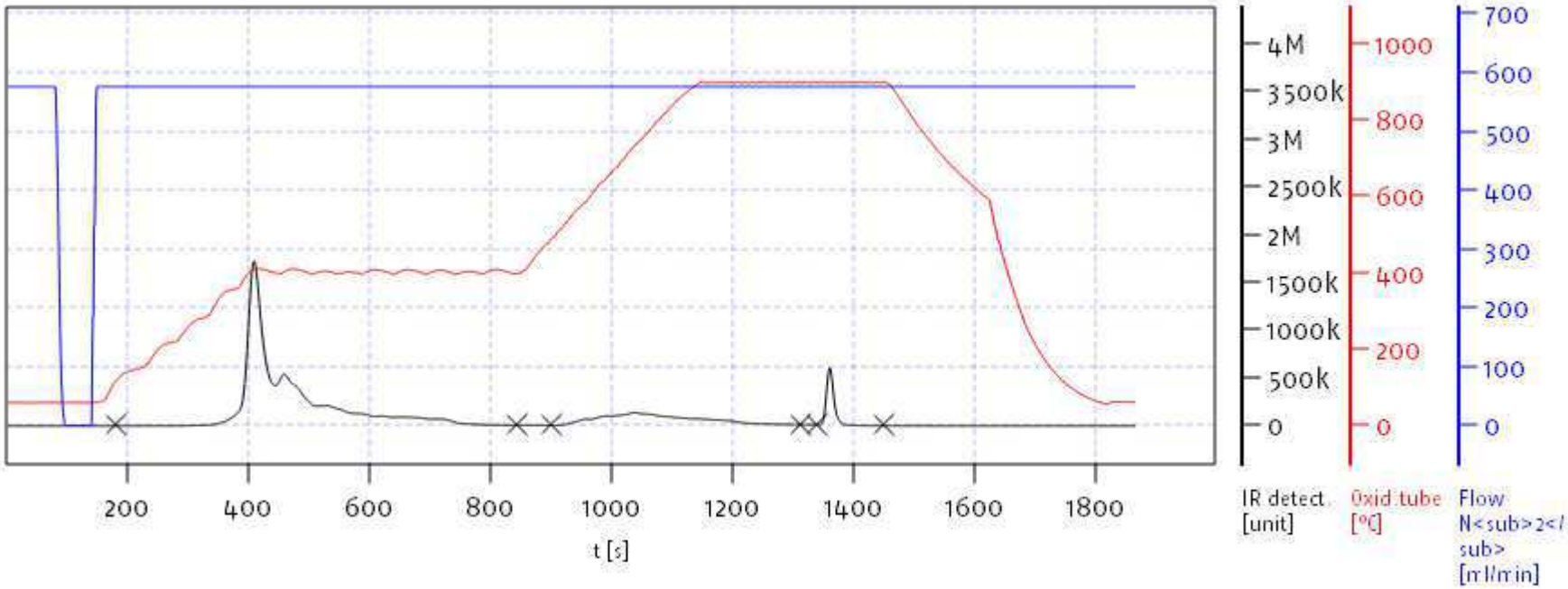
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
140	22	21F0430-11	625.90		1.00	CARBON	8/19/2021 4:29 PM	1.146	0.245	1.391	bl	4 083 292	997 718	337 399	1.0510	1.0000



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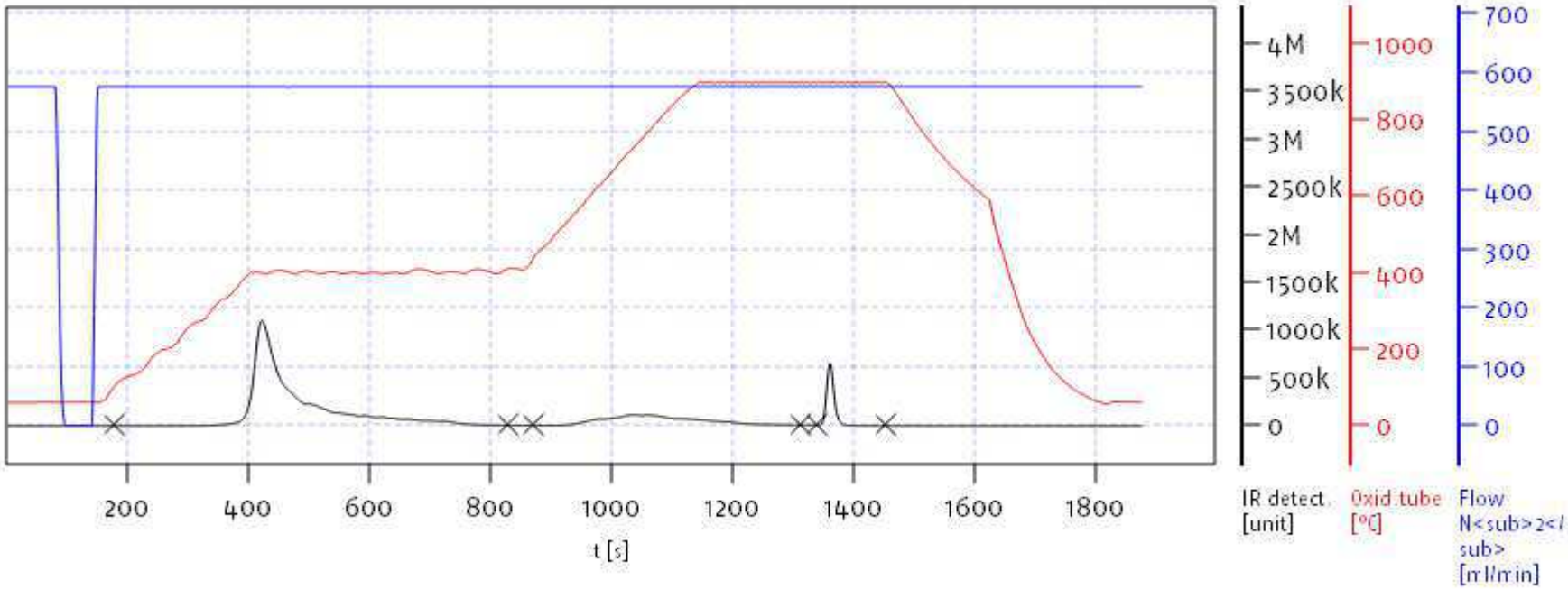
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
141	23	21F0430-12	626.50		1.00	CARBON	8/19/2021 5:00 PM	0.885	0.203	1.088	bl	3 068 690	828 052	359 419	1.0510	1.0000



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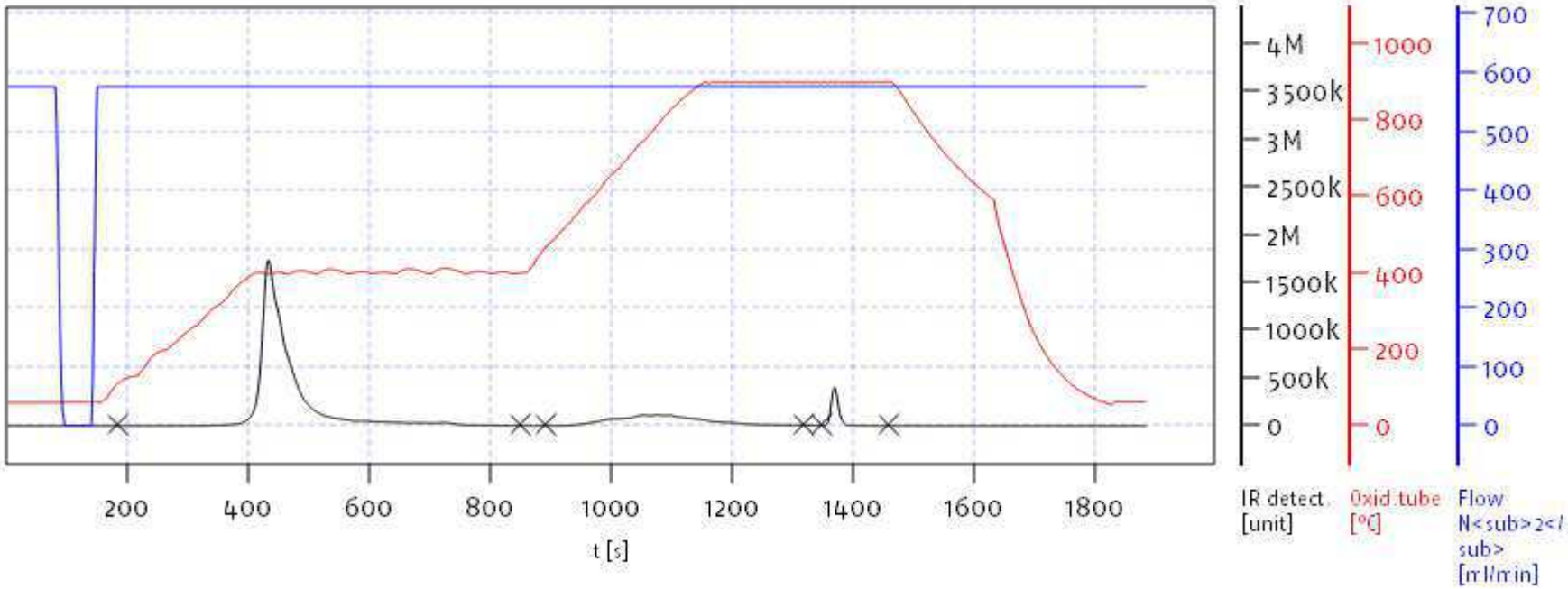
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
142	24	21F0430-13	577.30		1.00	CARBON	8/19/2021 5:32 PM	1.016	0.203	1.219	bl	3 398 809	763 833	218 649	1.0510	1.0000



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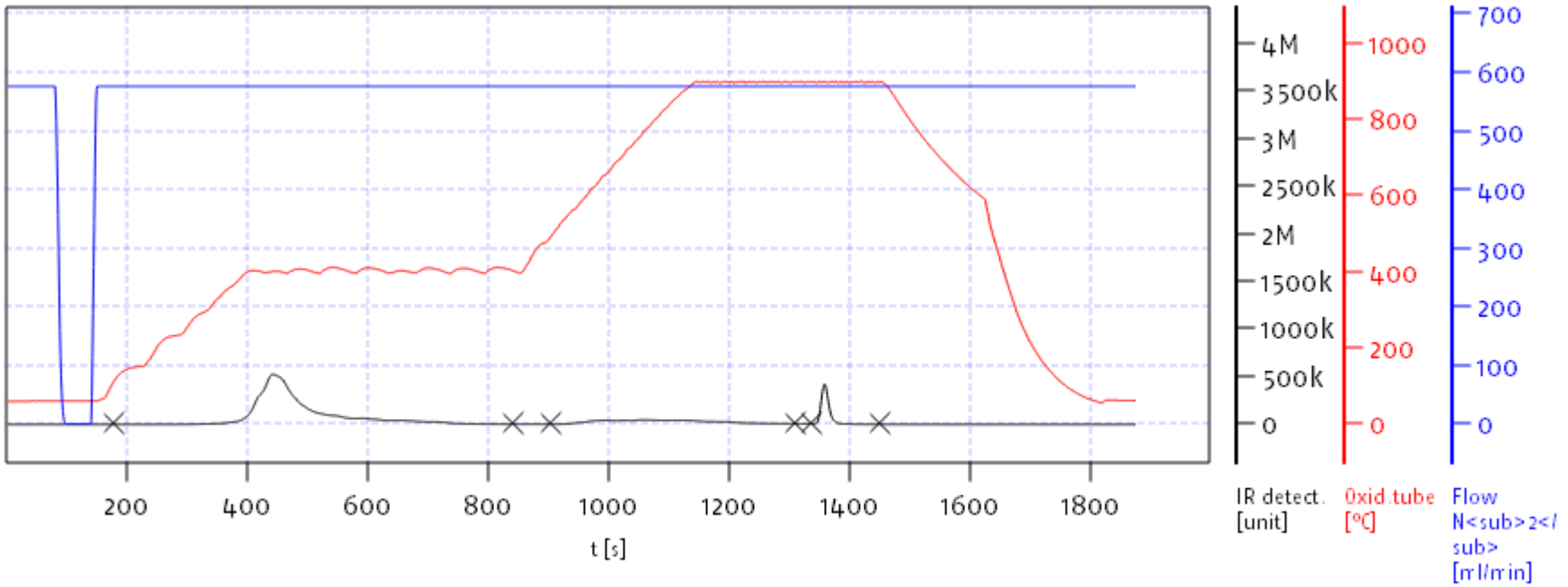
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
143	25	21F0430-14	597.60		1.00	CARBON	8/19/2021 6:04 PM	0.568	0.107	0.675	bl	1 867 329	420 184	240 264	1.0510	1.0000



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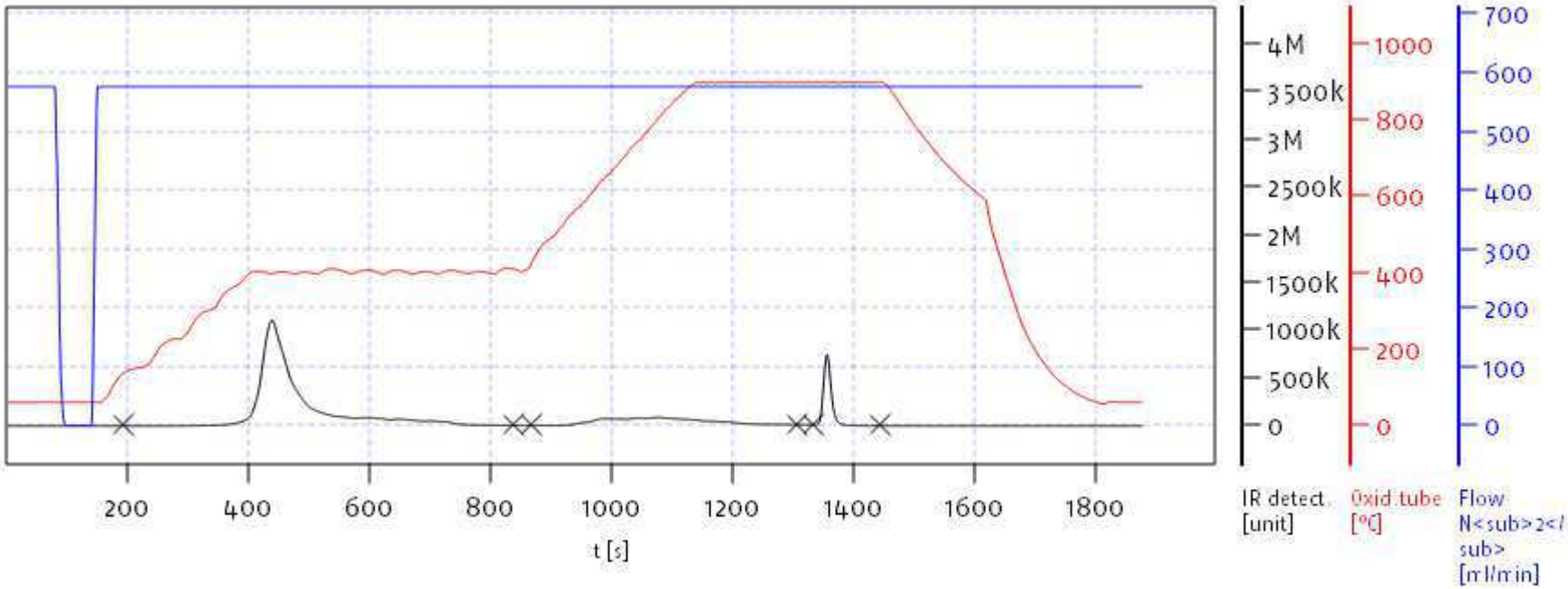
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
144	26	21F0430-15	530.70		1.00	CARBON	8/19/2021 6:36 PM	1.016	0.206	1.222	bl	2 914 891	712 725	423 046	1.0510	1.0000



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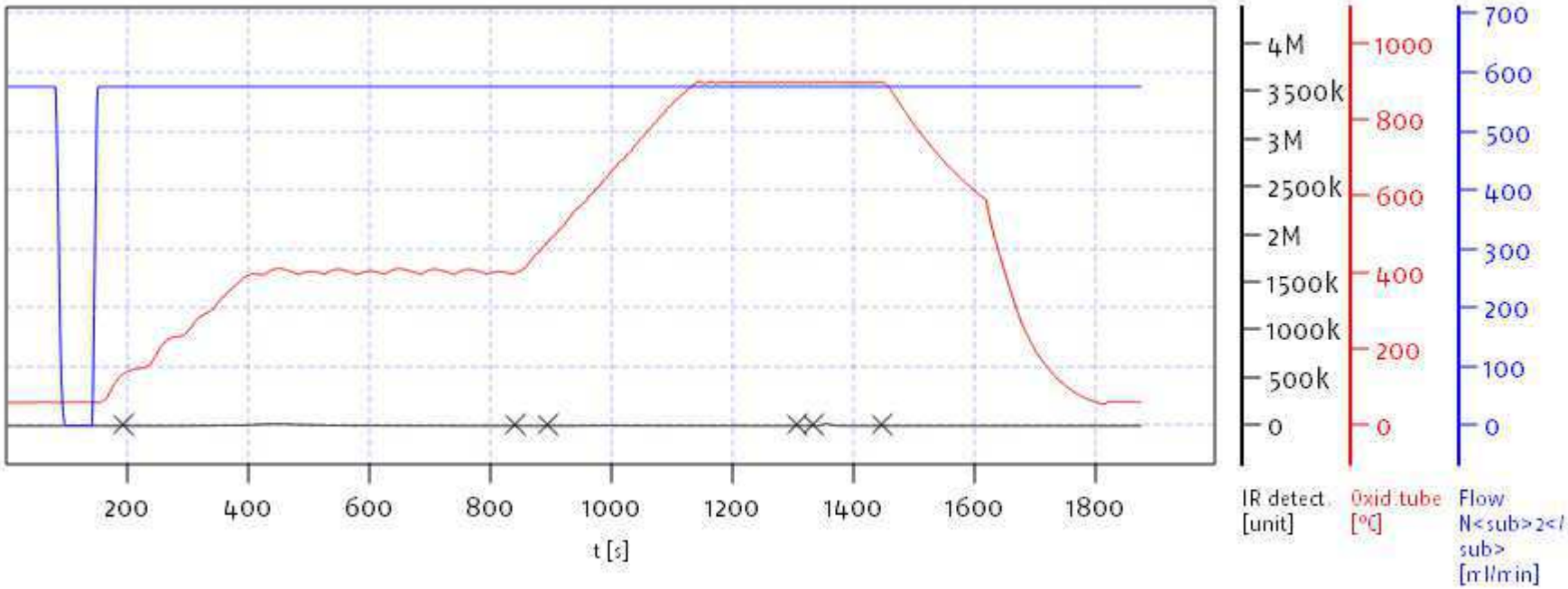
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
145	27	21H0033-04	647.10		1.00	CARBON	8/19/2021 7:07 PM	0.024	0.003	0.026	bl	102 084	21 260	13 243	1.0510	1.0000



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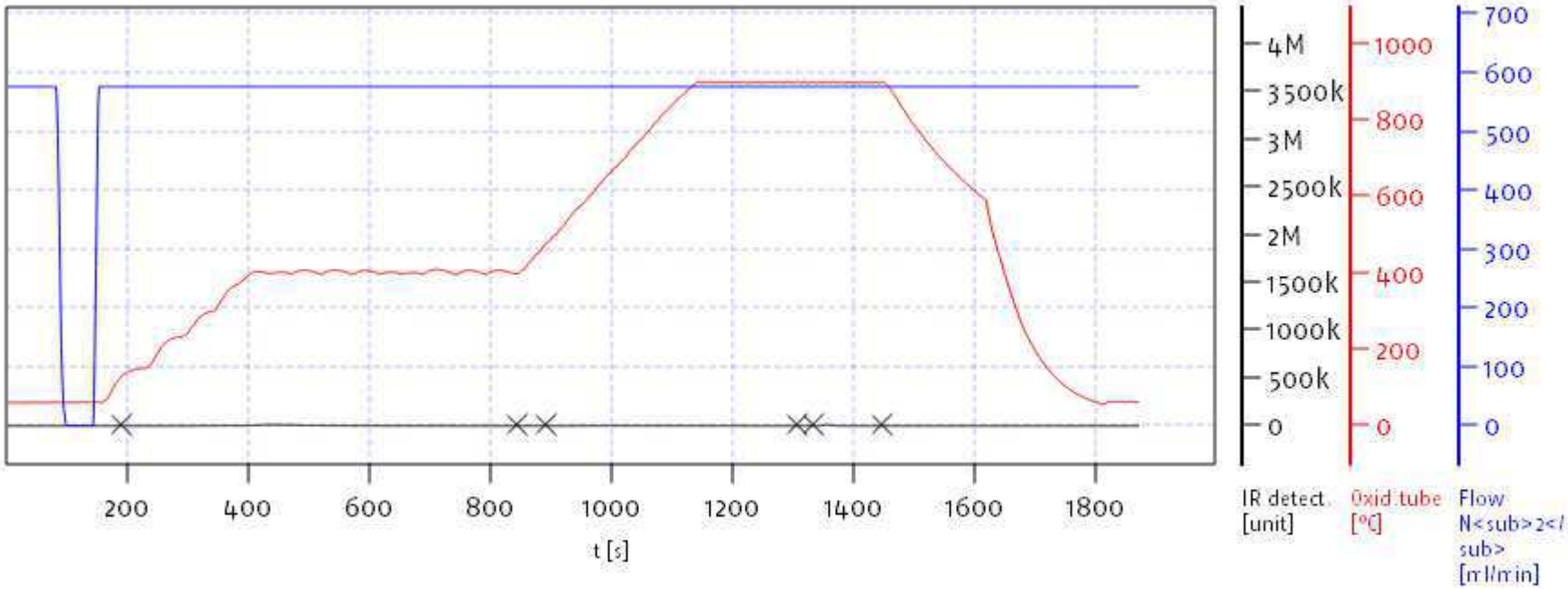
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
146	28	21H0078-10	503.80		1.00	CARBON	8/19/2021 7:39 PM	0.016	0.002	0.017	bl	58 920	16 233	8 715	1.0510	1.0000



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Access: soliTOC superuser

Date: Mon Aug 23 13:43:13 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

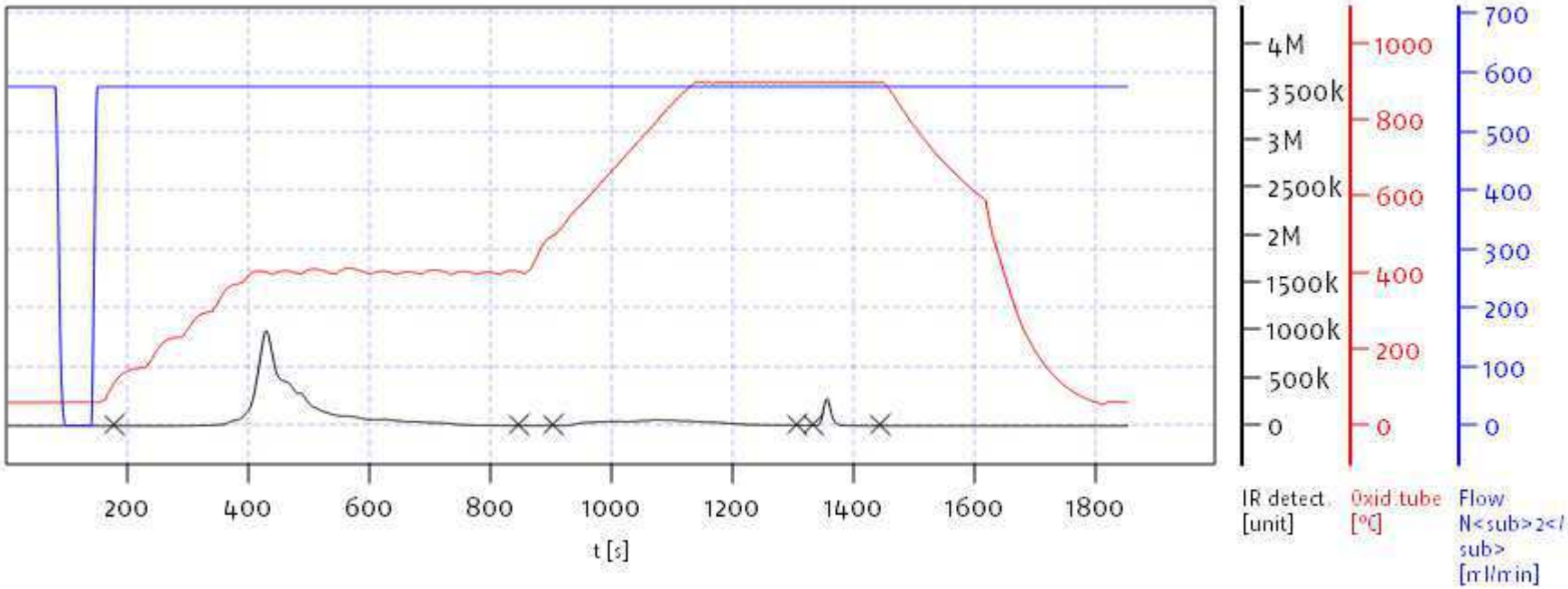
elementar
EXCELLENCE IN ELEMENTS

Document: 081621BF from: 8/20/2021 10:36 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
147	29	21H0078-31	666.60		1.00	CARBON	8/19/2021 8:10 PM	0.708	0.111	0.819	bl	2 750 217	486 358	163 668	1.0510	1.0000



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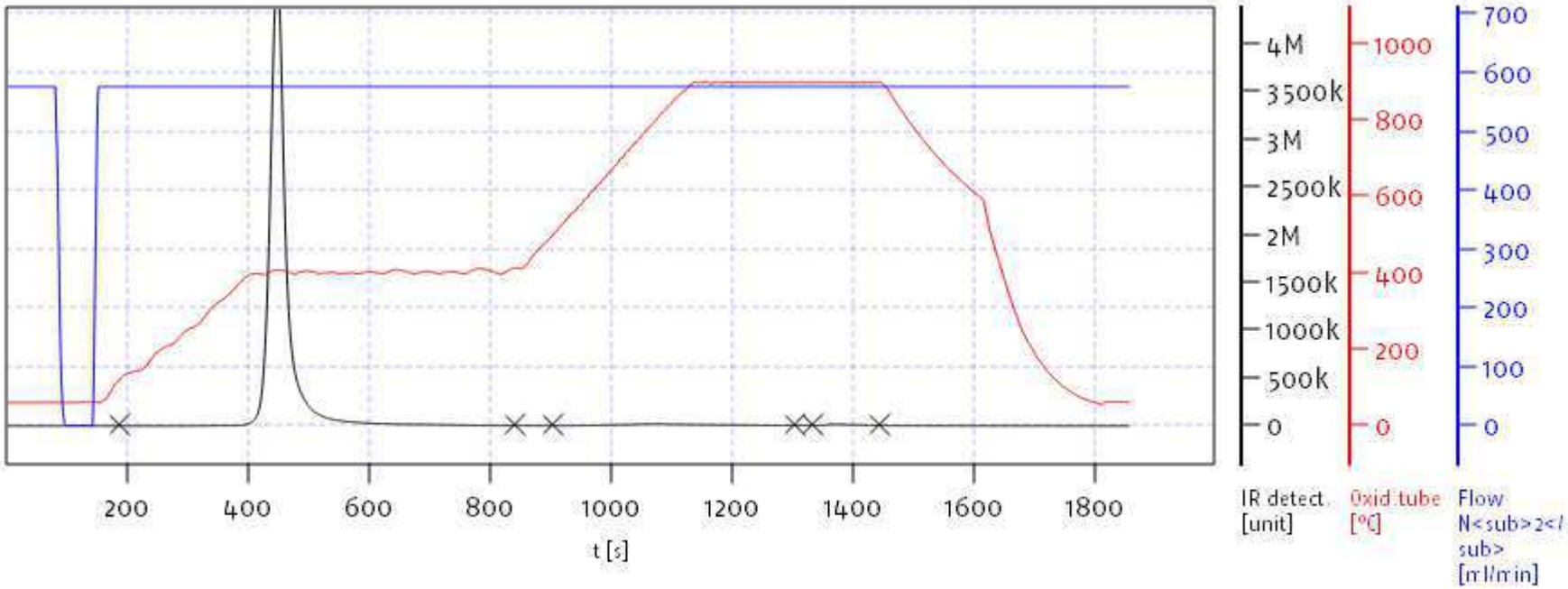
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
148	30	SJH0183-CCVC	20.40		1.00	CARBON	8/19/2021 8:42 PM	44.553	0.996	45.550	bl	5 540 794	141 291	38 677	1.0510	1.0000



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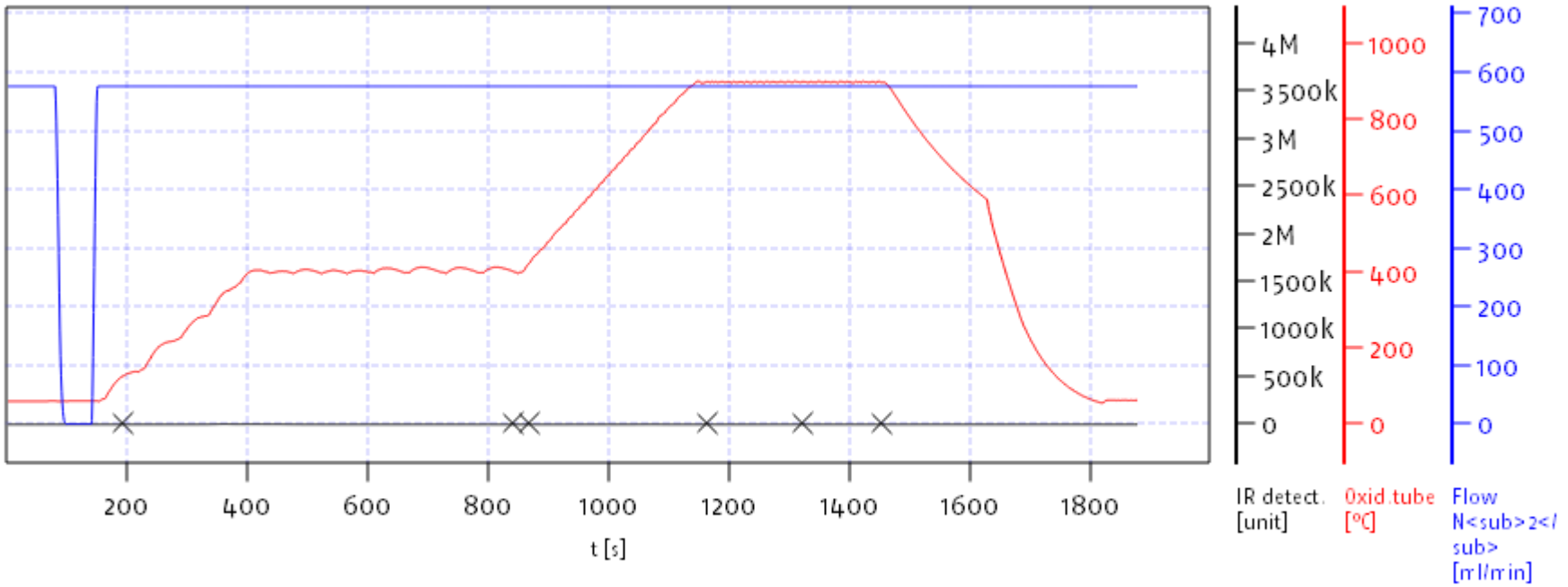
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
149	31	SJH0183-CCBC	535.50		1.00	CARBON	8/19/2021 9:13 PM	0.001	0.000	0.001	bl,C3u,C2u	14 164	2 315	561	1.0510	1.0000



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ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

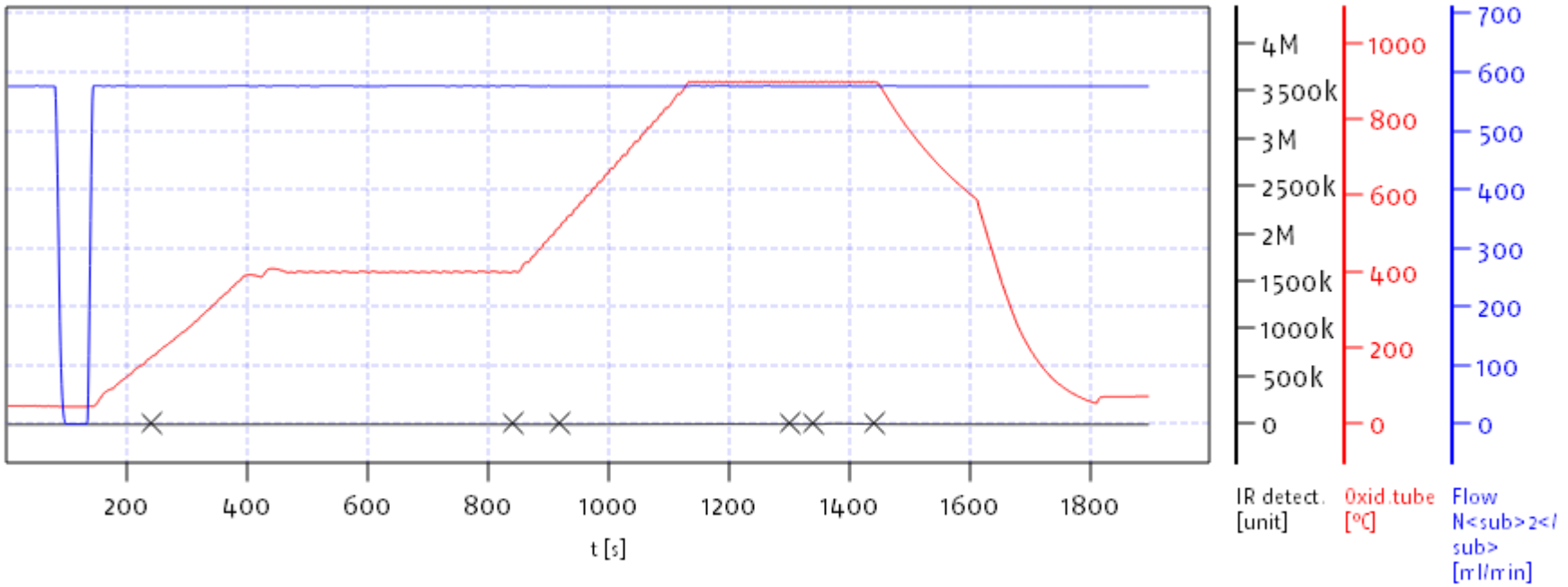
Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0323	Instrument:	TOC Cube
		Calibration:	EH00065

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SJH0323-CAL1	peData_08252021@1209-(	NA	08/24/21 19:03
Cal Standard	SJH0323-CAL2	peData_08252021@1209-(	NA	08/24/21 19:34
Cal Standard	SJH0323-CAL3	peData_08252021@1209-(	NA	08/24/21 20:06
Cal Standard	SJH0323-CAL4	peData_08252021@1209-(	NA	08/24/21 20:38
Cal Standard	SJH0323-CAL5	peData_08252021@1209-(	NA	08/24/21 21:10
Cal Standard	SJH0323-CAL6	peData_08252021@1209-(	NA	08/24/21 21:41
Cal Standard	SJH0323-CAL7	peData_08252021@1209-(	NA	08/24/21 22:13
Cal Standard	SJH0323-CAL8	peData_08252021@1209-(	NA	08/24/21 22:44
Cal Standard	SJH0323-CAL9	peData_08252021@1209-(	NA	08/24/21 23:16
Cal Standard	SJH0323-CALA	peData_08252021@1209-(	NA	08/24/21 23:48
Cal Standard	SJH0323-CALB	peData_08252021@1209-(	NA	08/25/21 00:19
Cal Standard	SJH0323-CALC	peData_08252021@1209-(	NA	08/25/21 00:51
Cal Standard	SJH0323-CALD	peData_08252021@1209-(	NA	08/25/21 01:22
Cal Standard	SJH0323-CALE	peData_08252021@1209-(	NA	08/25/21 01:54
Cal Standard	SJH0323-CALF	peData_08252021@1209-(	NA	08/25/21 02:26
Cal Standard	SJH0323-CALG	peData_08252021@1209-(	NA	08/25/21 02:58
Cal Standard	SJH0323-CALH	peData_08252021@1209-(	NA	08/25/21 03:29
Cal Standard	SJH0323-CALI	peData_08252021@1209-(	NA	08/25/21 04:01
Cal Standard	SJH0323-CALJ	peData_08252021@1209-(	NA	08/25/21 04:33
Initial Cal Check	SJH0323-ICV1	peData_08252021@1209-(	NA	08/25/21 09:19
Initial Cal Blank	SJH0323-ICB1	peData_08252021@1209-(	NA	08/25/21 09:51
Cal Standard	SJH0323-CALK	peData_08252021@1209-(	NA	08/25/21 11:41
Cal Standard	SJH0323-CALL	peData_08252021@1209-(	NA	08/25/21 11:42
Cal Standard	SJH0323-CALM	peData_08252021@1209-(	NA	08/25/21 11:43
Cal Standard	SJH0323-CALN	peData_08252021@1209-(	NA	08/25/21 11:45
Cal Standard	SJH0323-CALO	peData_08252021@1209-(	NA	08/25/21 11:46

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
1	9	BLANK	1.00		1.00	CARBON	8/24/2021 6:00 PM	0.000	0.000	0.000	bl	13 861	33 454	21 567	1.0000	1.0000



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Access: soliTOC superuser

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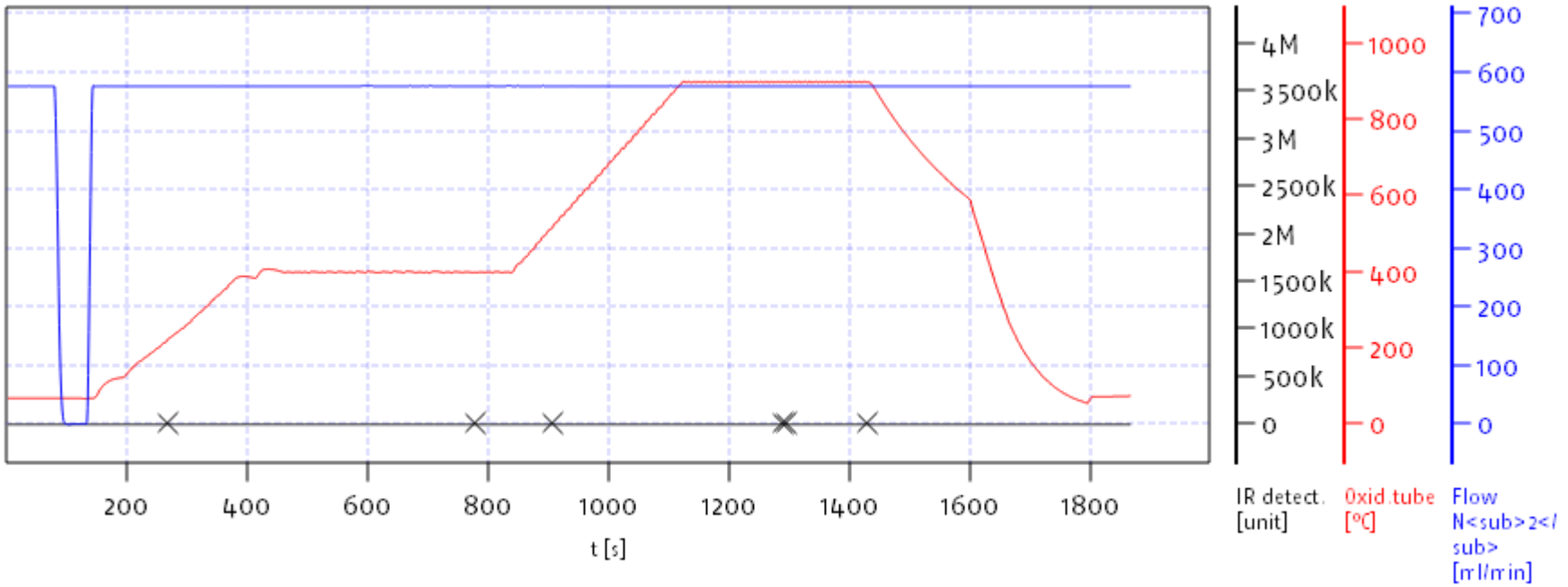
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
2	10	BLANK	1.00		1.00	CARBON	8/24/2021 6:31 PM	0.000	0.000	0.000	bl	1 643	8	245	1.0000	1.0000



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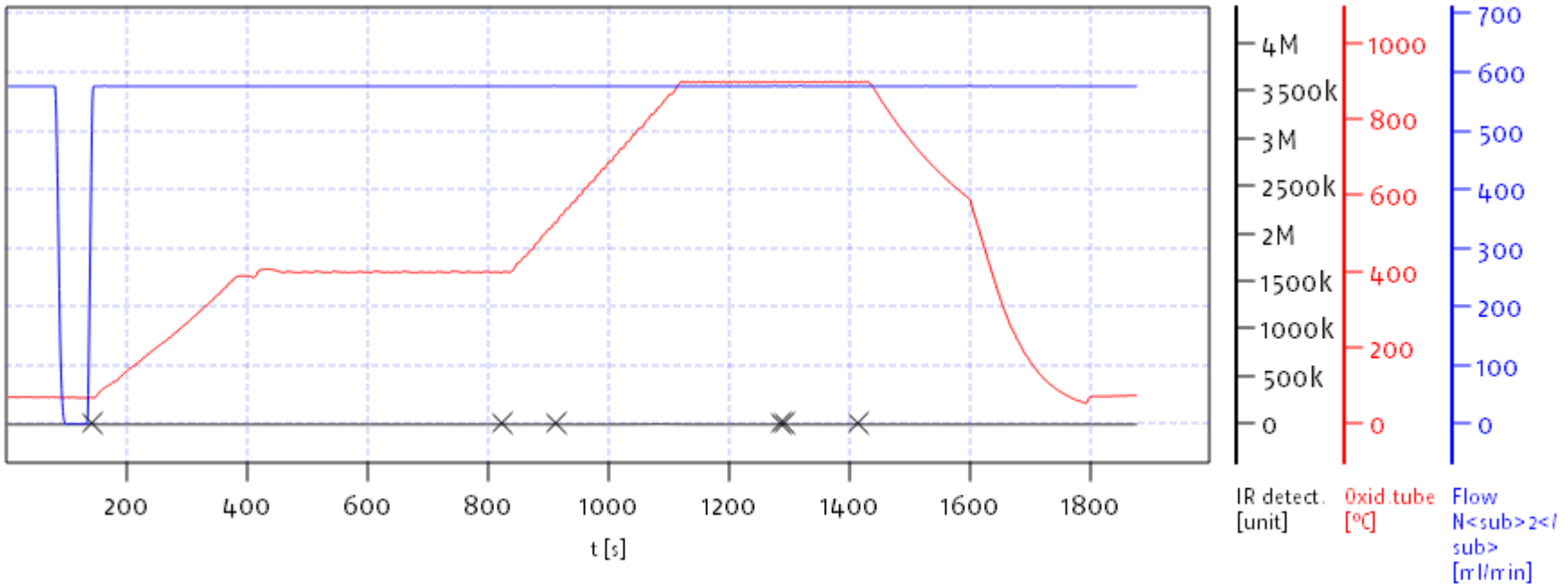
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
3	11	SEQ-CAL1	200.00	0.0017	1.00	CARBON	8/24/2021 7:03 PM	0.000	0.008	0.008	bl,C1u,C3u,C2u	1 070	6 478	141	1.0000	1.1719



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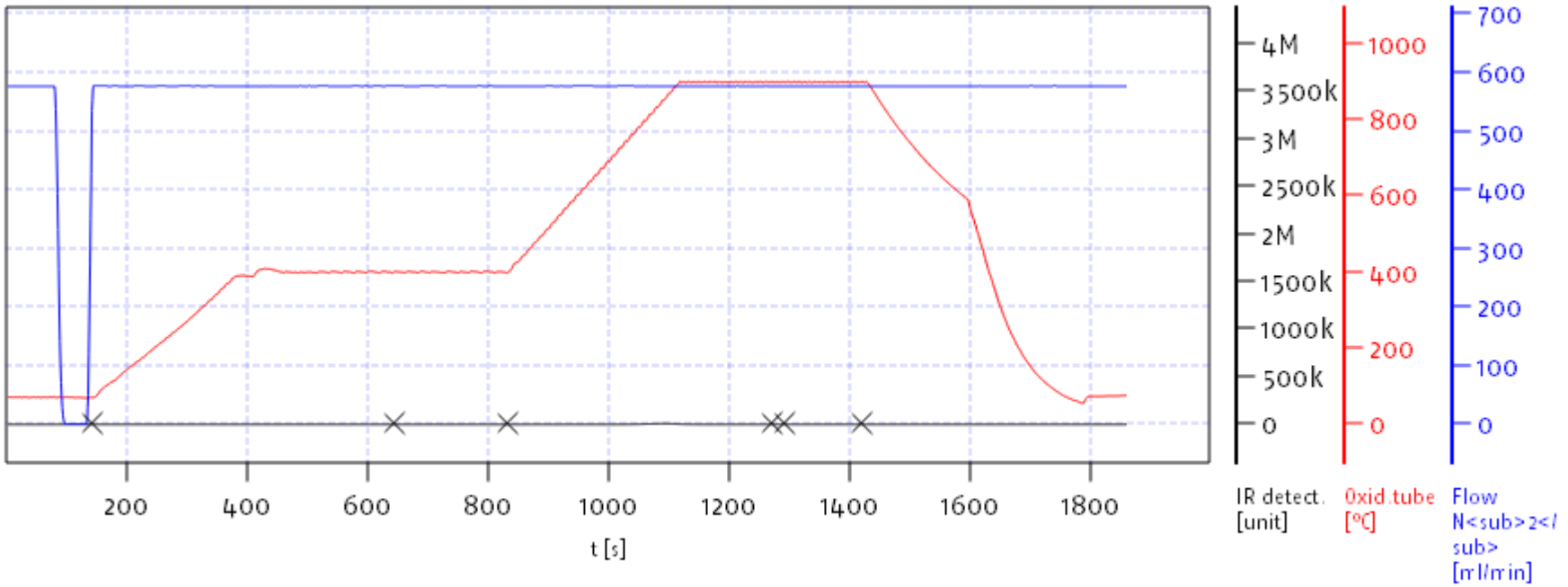
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
4	12	SEQ-CAL2	200.00	0.0054	1.00	CARBON	8/24/2021 7:34 PM	0.000	0.015	0.015	bl,C1u,C2u	660	18 783	85	1.0000	0.9072



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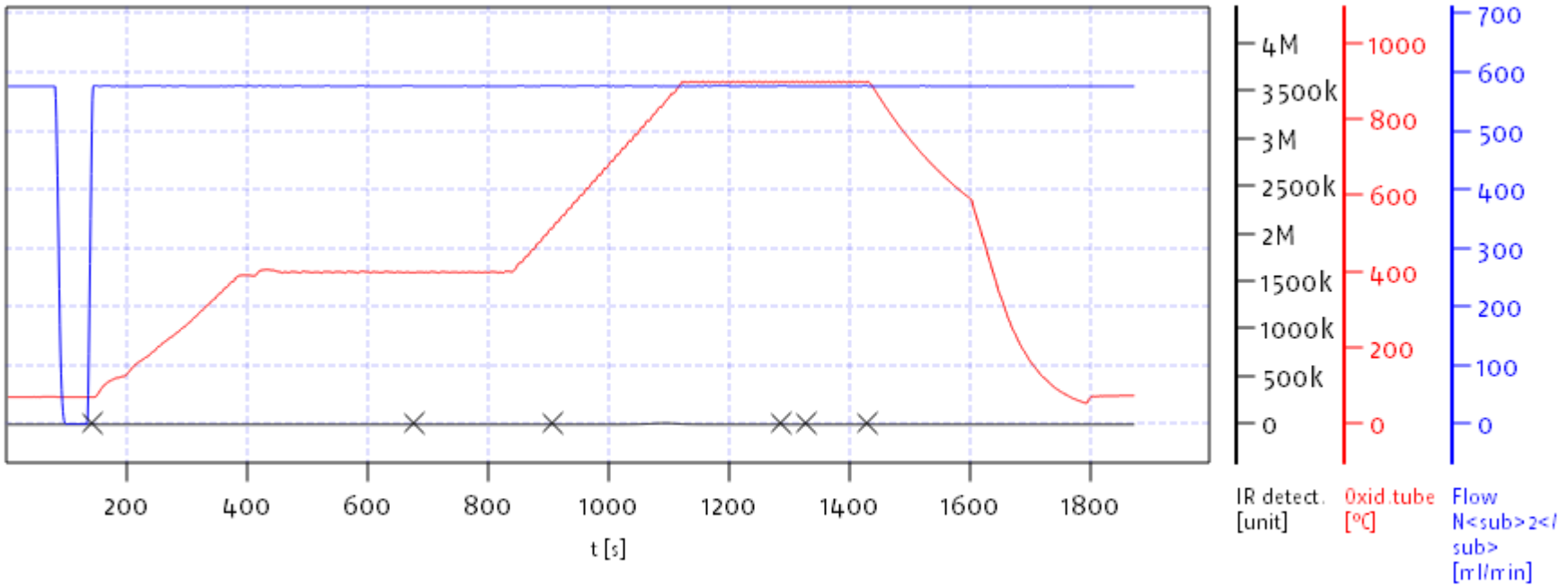
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
5	13	SEQ-CAL3	200.00	0.0068	1.00	CARBON	8/24/2021 8:06 PM	0.000	0.022	0.022	bl,C1u,C2u	889	24 712	60	1.0000	1.0307



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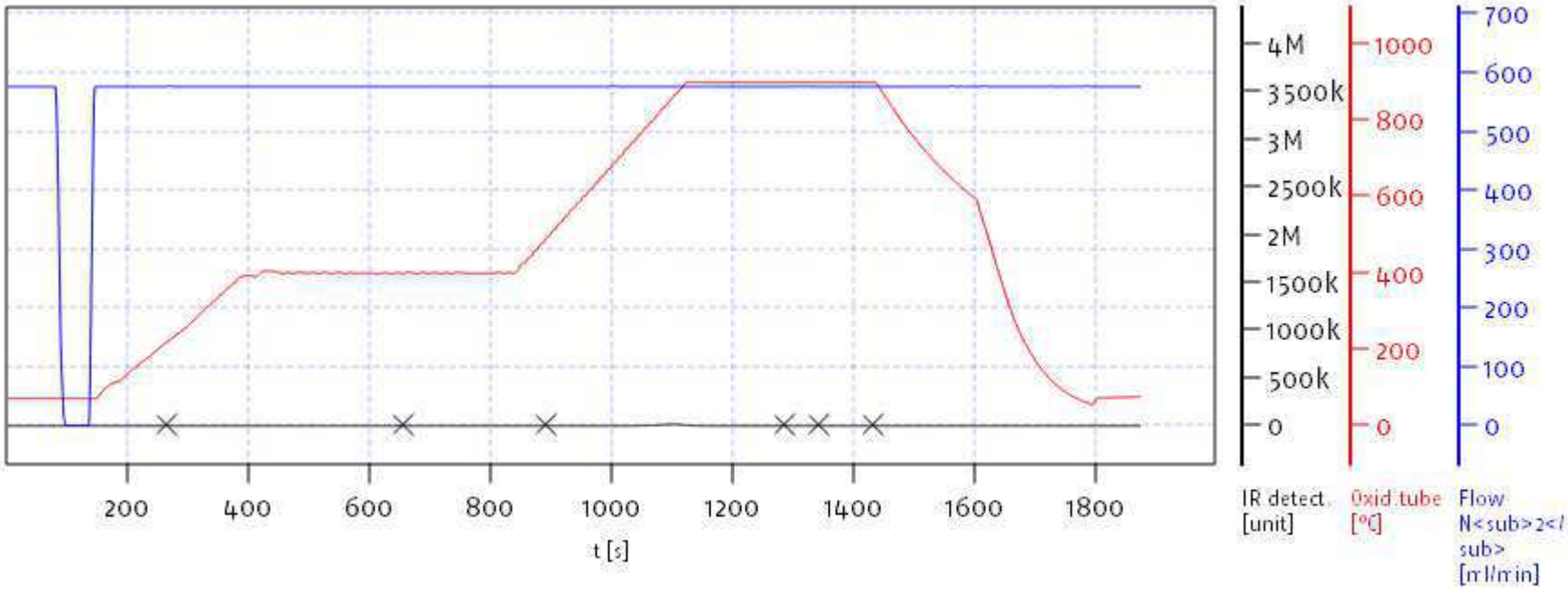
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
6	14	SEQ-CAL4	200.00	0.0101	1.00	CARBON	8/24/2021 8:38 PM	0.000	0.030	0.030	bl,C1u,C2u	1 503	31 221	84	1.0000	1.1361



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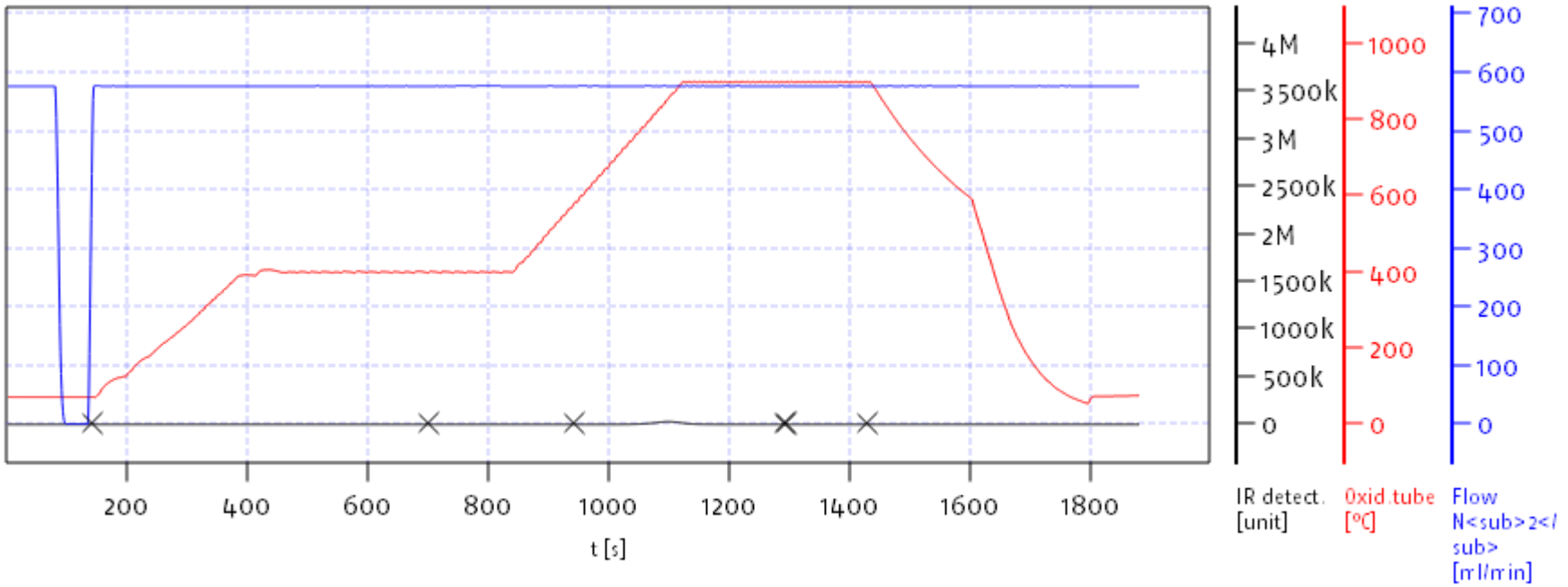
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
7	15	SEQ-CAL5	200.00	0.0151	1.00	CARBON	8/24/2021 9:10 PM	0.000	0.045	0.045	bl,C1u,C2u	776	61 535	62	1.0000	0.8900



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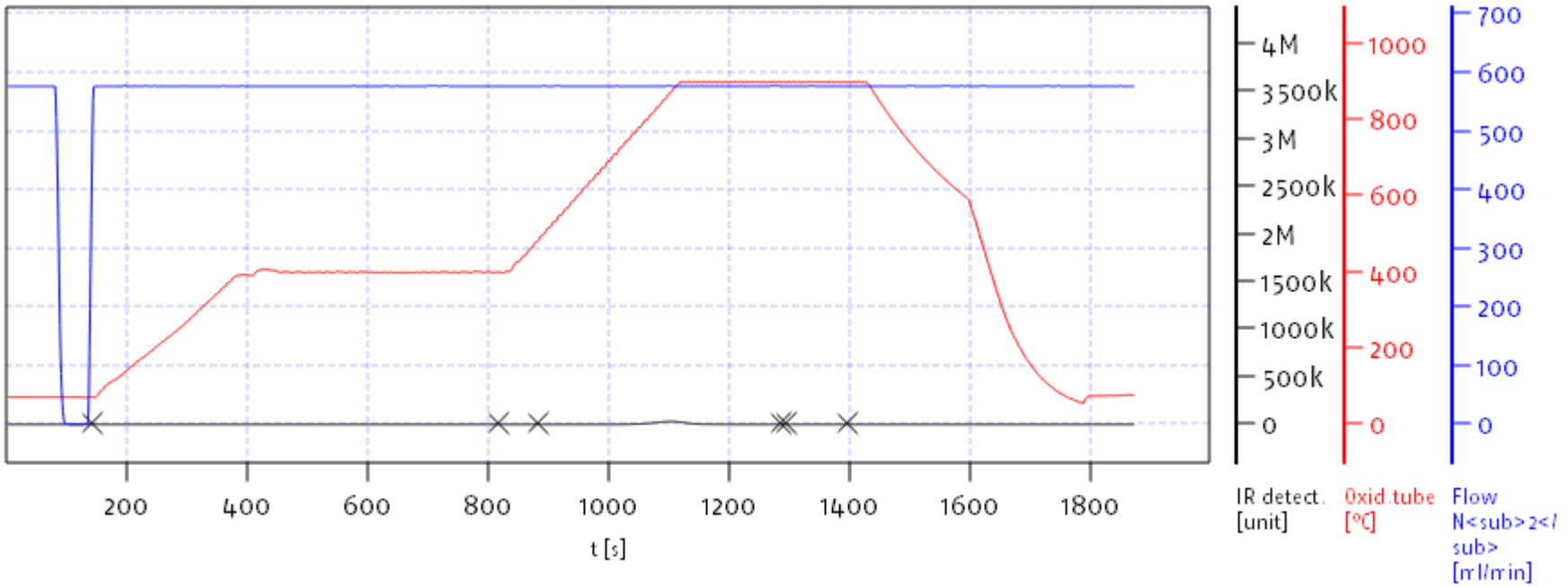
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
8	16	SEQ-CAL6	200.00	0.0200	1.00	CARBON	8/24/2021 9:41 PM	0.000	0.061	0.061	bl,C1u,C2u	1 086	73 745	55	1.0000	1.0168



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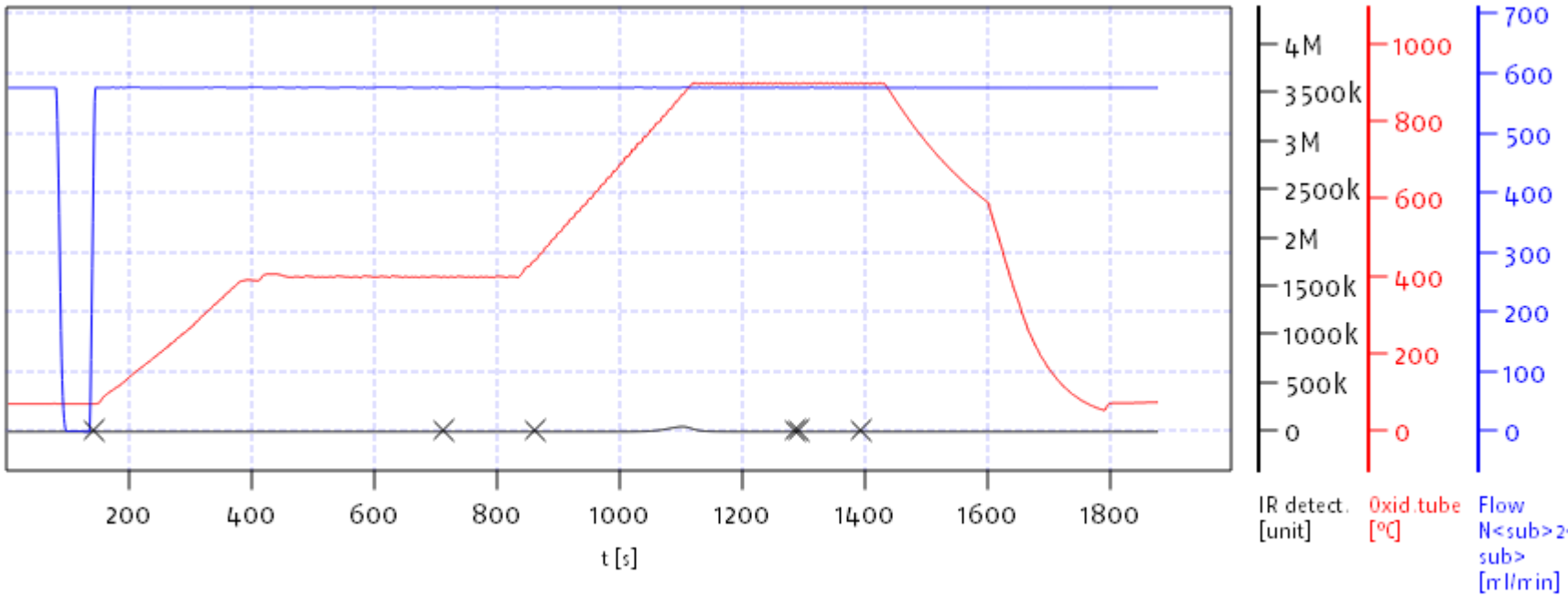
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
9	17	SEQ-CAL7	200.00	0.0256	1.00	CARBON	8/24/2021 10:13 PM	0.000	0.075	0.075	bl,C1u,C2u	1 149	100 193	99	1.0000	0.9293



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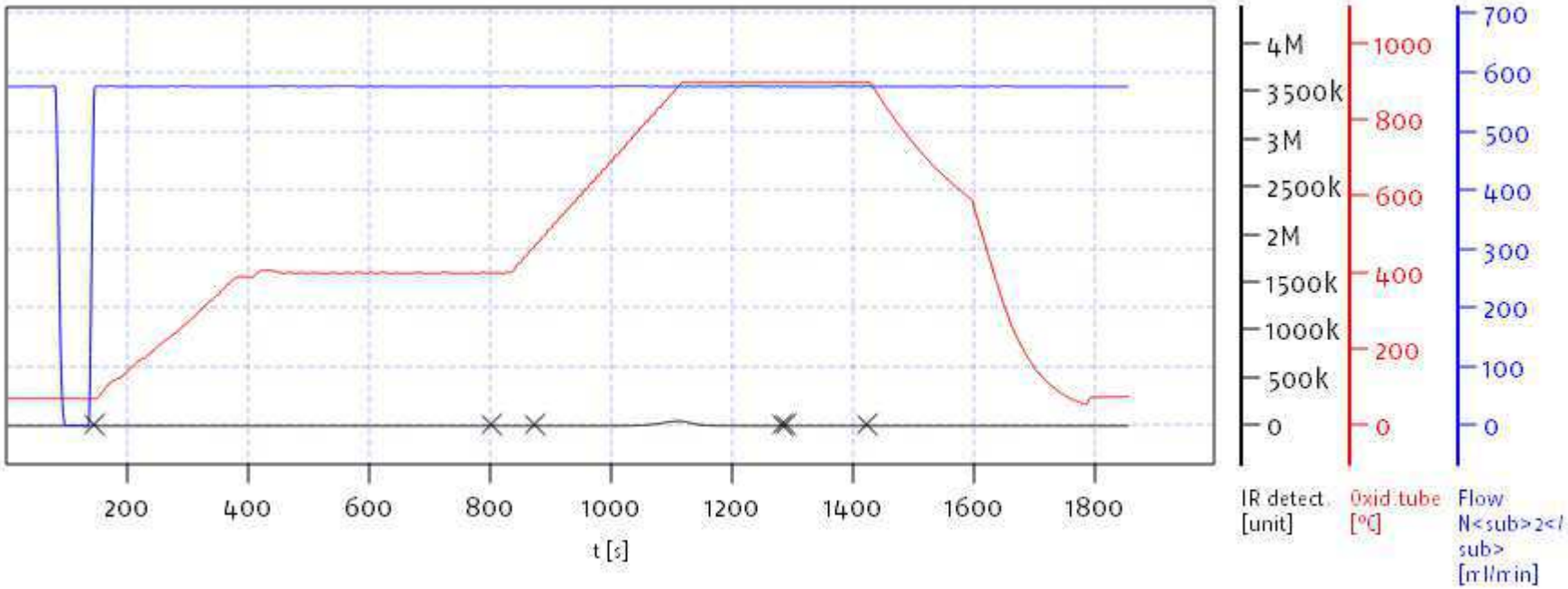
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
10	18	SEQ-CAL8	200.00	0.0303	1.00	CARBON	8/24/2021 10:44 PM	0.000	0.091	0.091	bl,C1u,C2u	779	118 482	109	1.0000	0.9492



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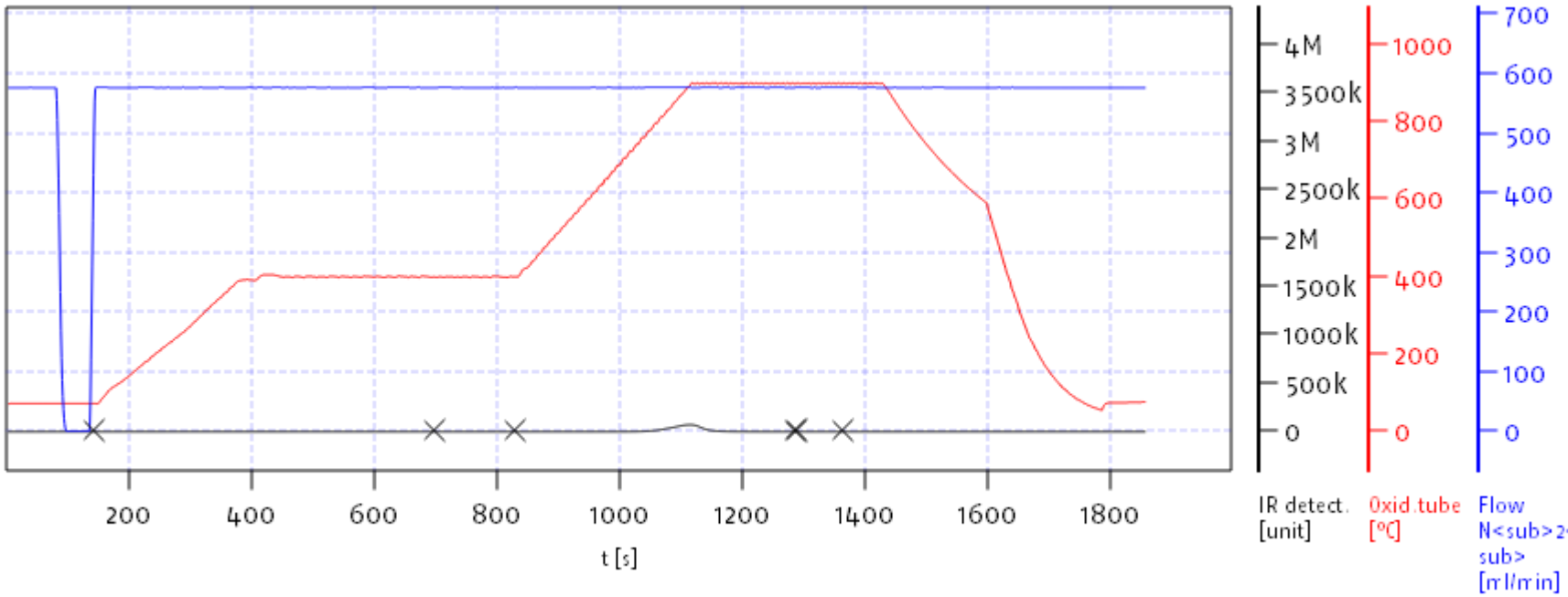
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
11	19	SEQ-CAL9	200.00	0.0396	1.00	CARBON	8/24/2021 11:16 PM	0.000	0.120	0.120	bl,C1u,C2u	848	163 267	93	1.0000	0.9178



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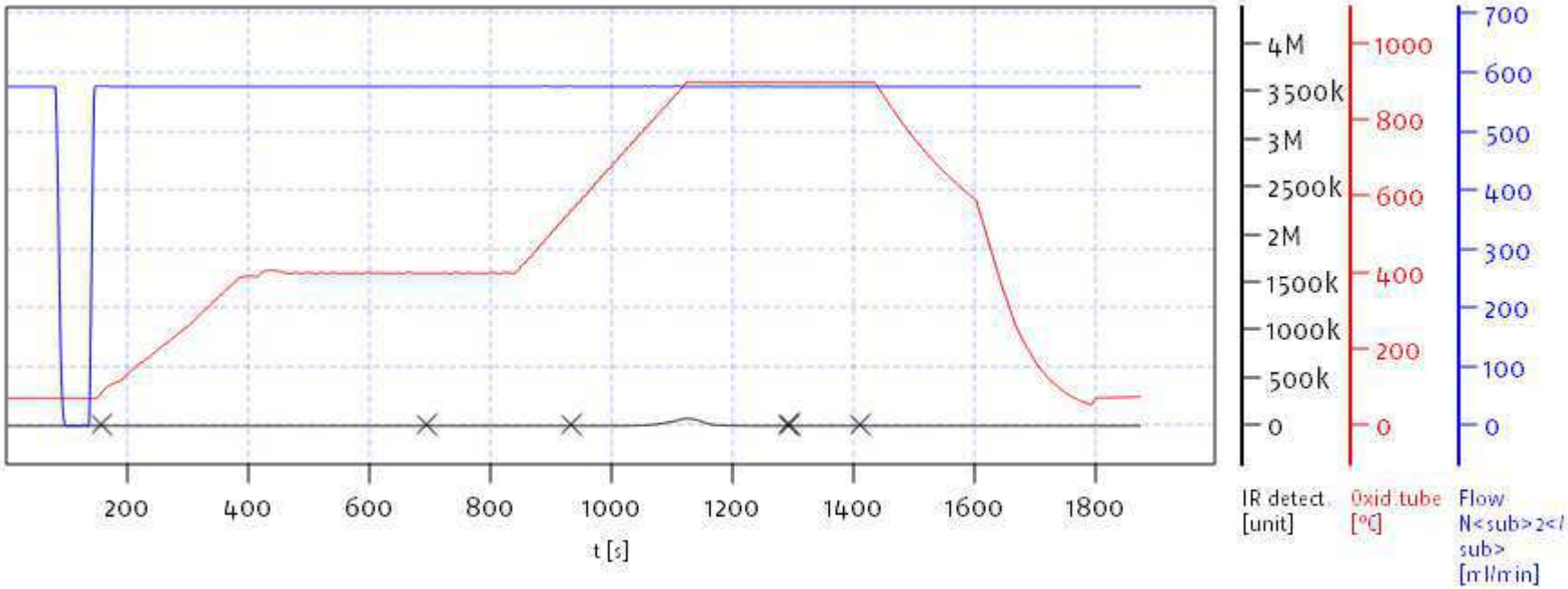
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
12	20	SEQ-CALA	200.00	0.0498	1.00	CARBON	8/24/2021 11:48 PM	0.000	0.151	0.151	bl,C1u,C2u	1 818	184 410	146	1.0000	1.0237



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Balance: BAL3
Analyst: BF

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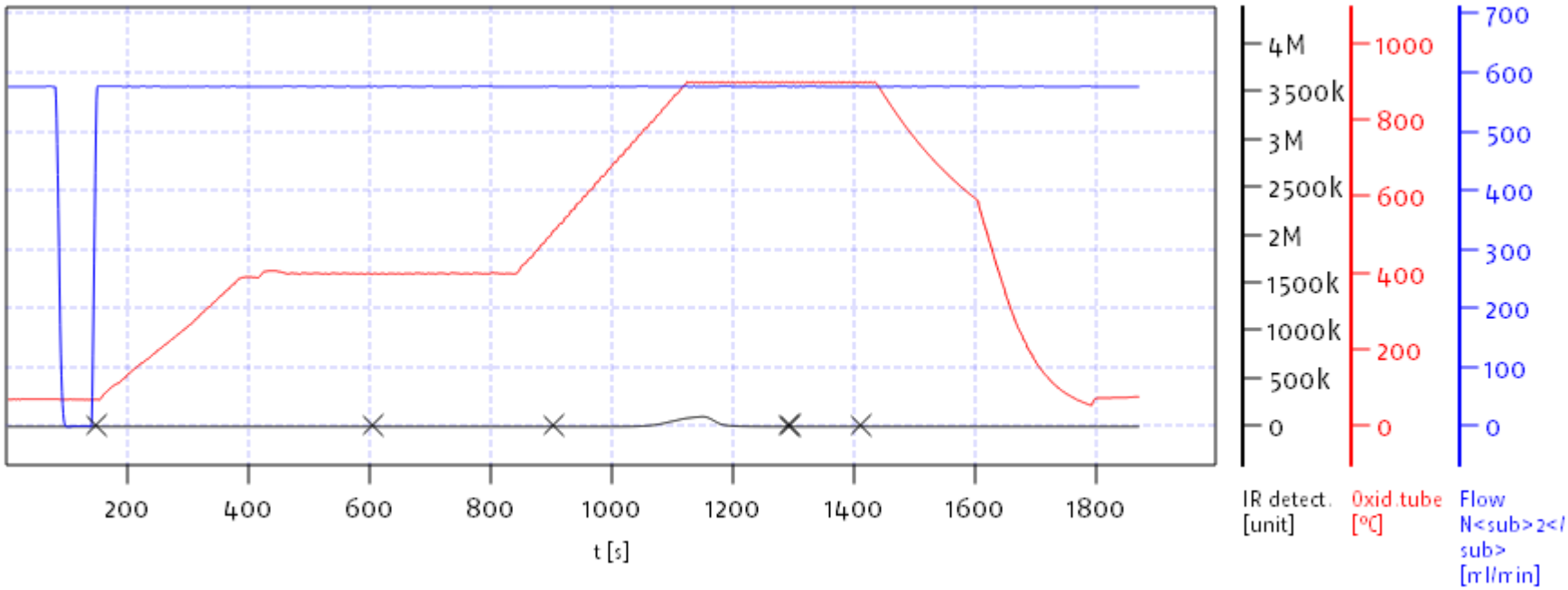
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
13	21	SEQ-CALB	200.00	0.0042	1.00	CARBON	8/25/2021 12:19 AM	0.000	0.258	0.258	bl,C1u,C2u	972	305 136	284	1.0000	1.0636



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Soli TOC Cube, Carbon
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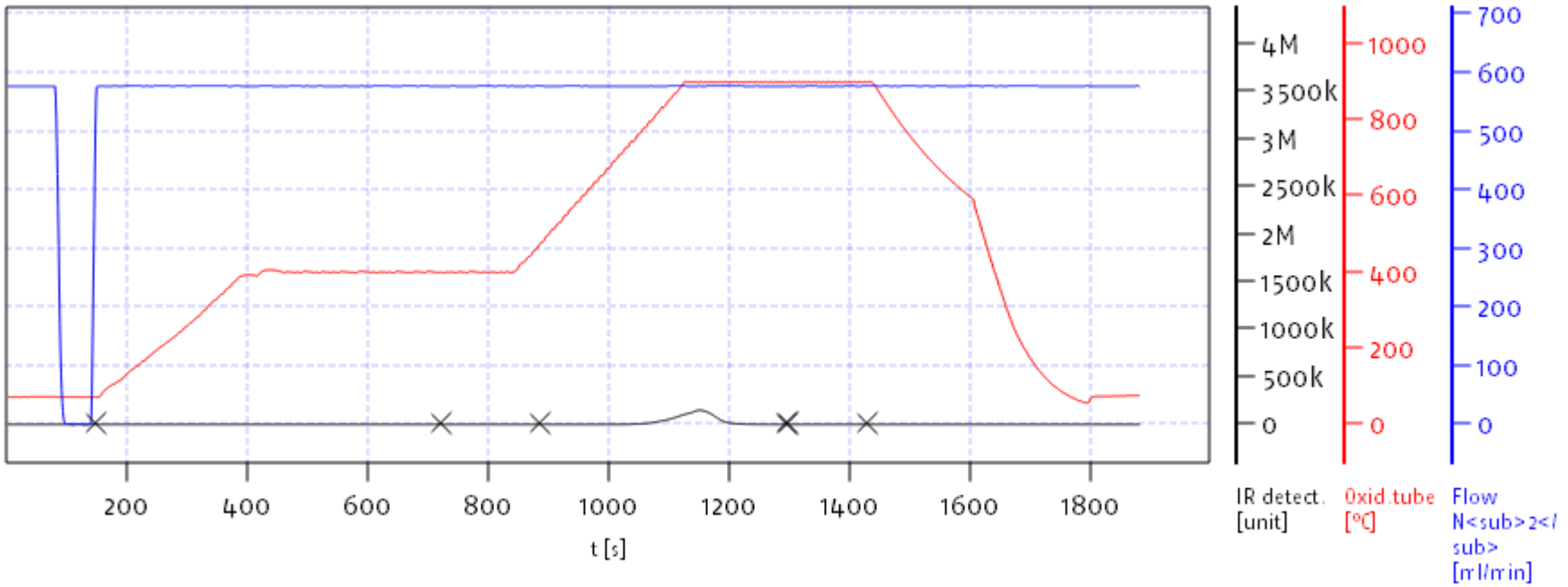
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
14	22	SEQ-CALC	200.00	0.0056	1.00	CARBON	8/25/2021 12:51 AM	0.000	0.324	0.324	bl,C1u,C2u	925	413 926	393	1.0000	0.9869



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Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

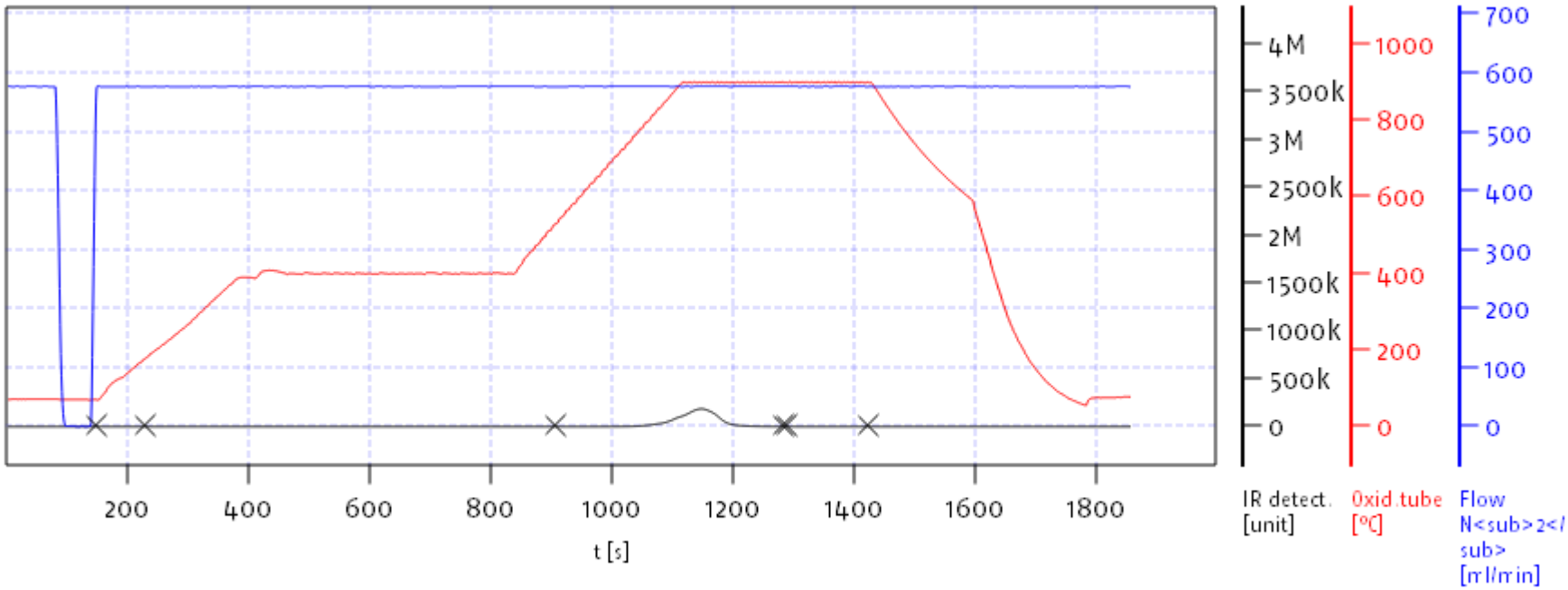
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00065 082421BFb from: 8/25/2021 11:47 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
15	23	SEQ-CALD	200.00	0.0069	1.00	CARBON	8/25/2021 1:22 AM	0.000	0.444	0.444	bl,C1u,C2u	172	525 080	677	1.0000	1.0675



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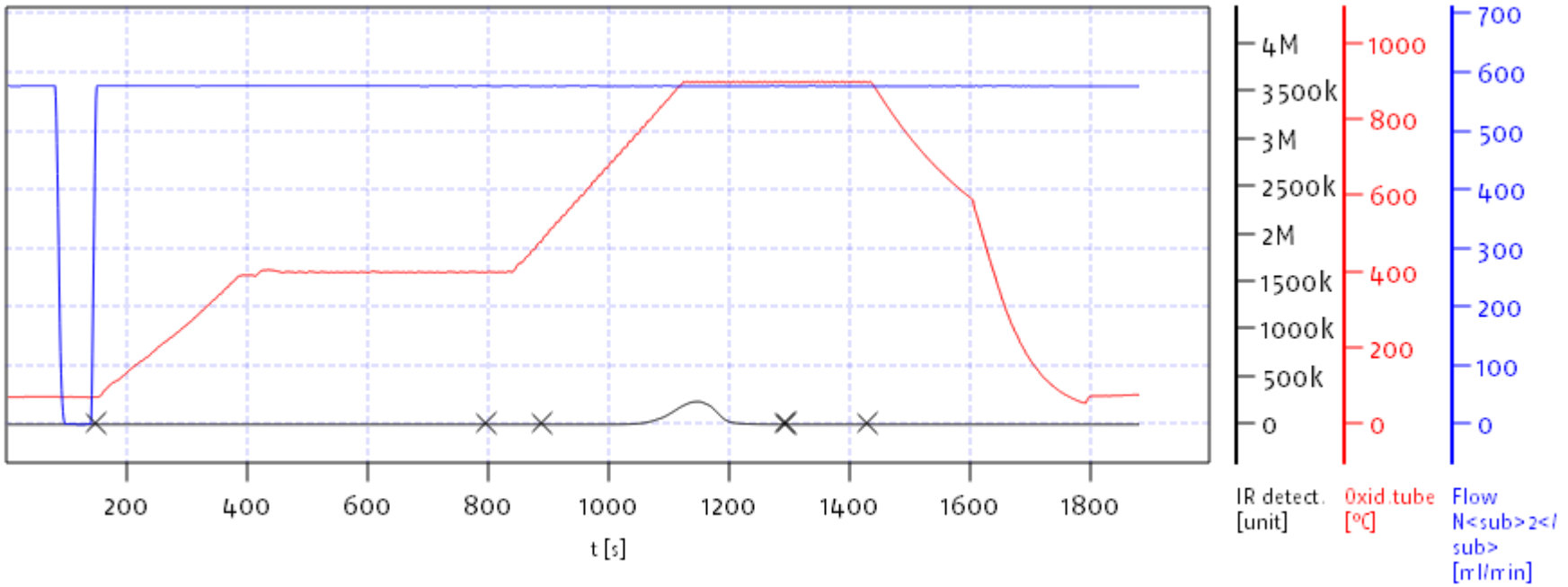
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
16	24	SEQ-CALE	200.00	0.0097	1.00	CARBON	8/25/2021 1:54 AM	0.000	0.600	0.600	bl,C1u,C2u	989	743 966	687	1.0000	1.0196



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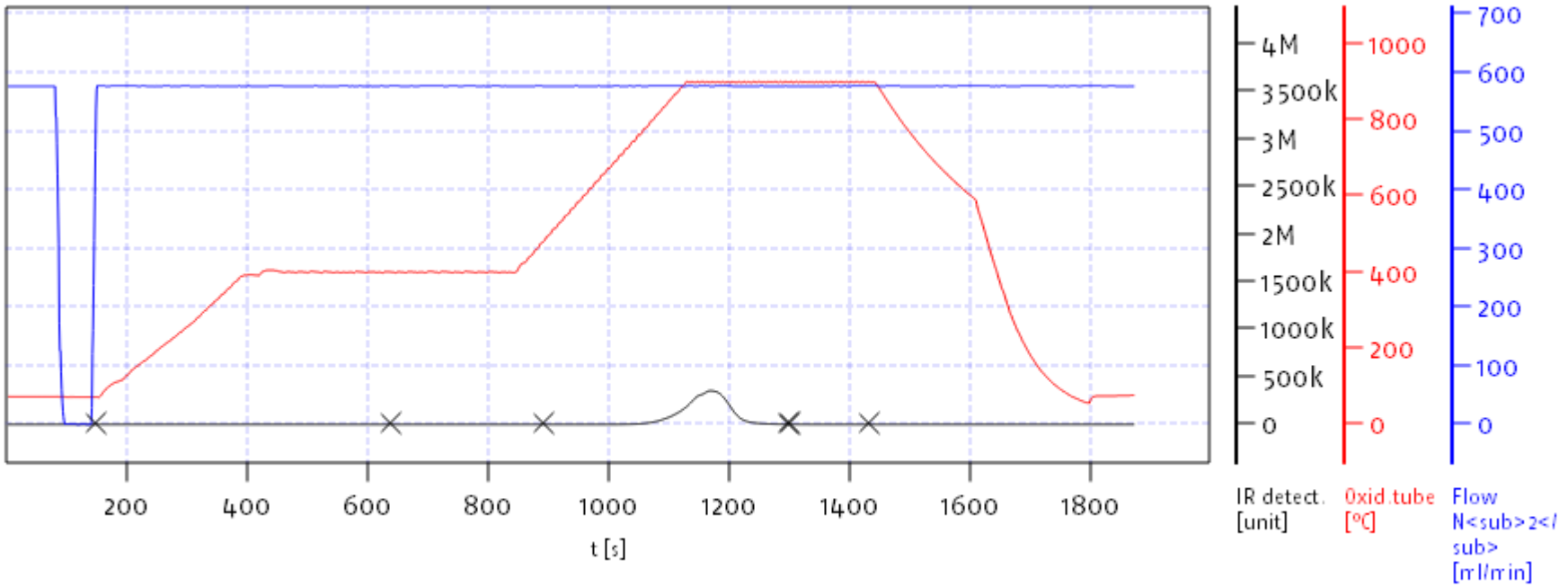
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
17	25	SEQ-CALF	200.00	0.0147	1.00	CARBON	8/25/2021 2:26 AM	0.000	0.906	0.906	bl,C1u,C2u	925	1 115 840	1 898	1.0000	1.0277



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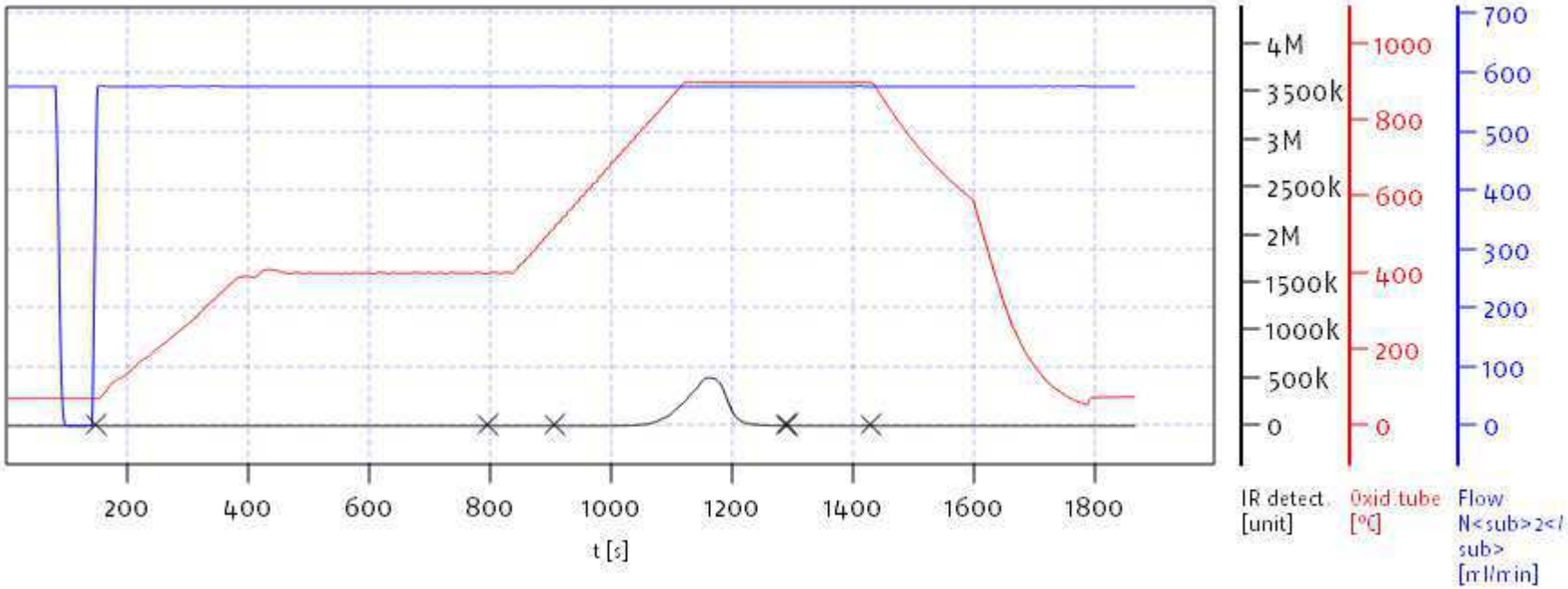
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
18	26	SEQ-CALG	200.00	0.0199	1.00	CARBON	8/25/2021 2:58 AM	0.000	1.206	1.206	bl,C1u,C2u	1 253	1 509 240	2 258	1.0000	1.0121



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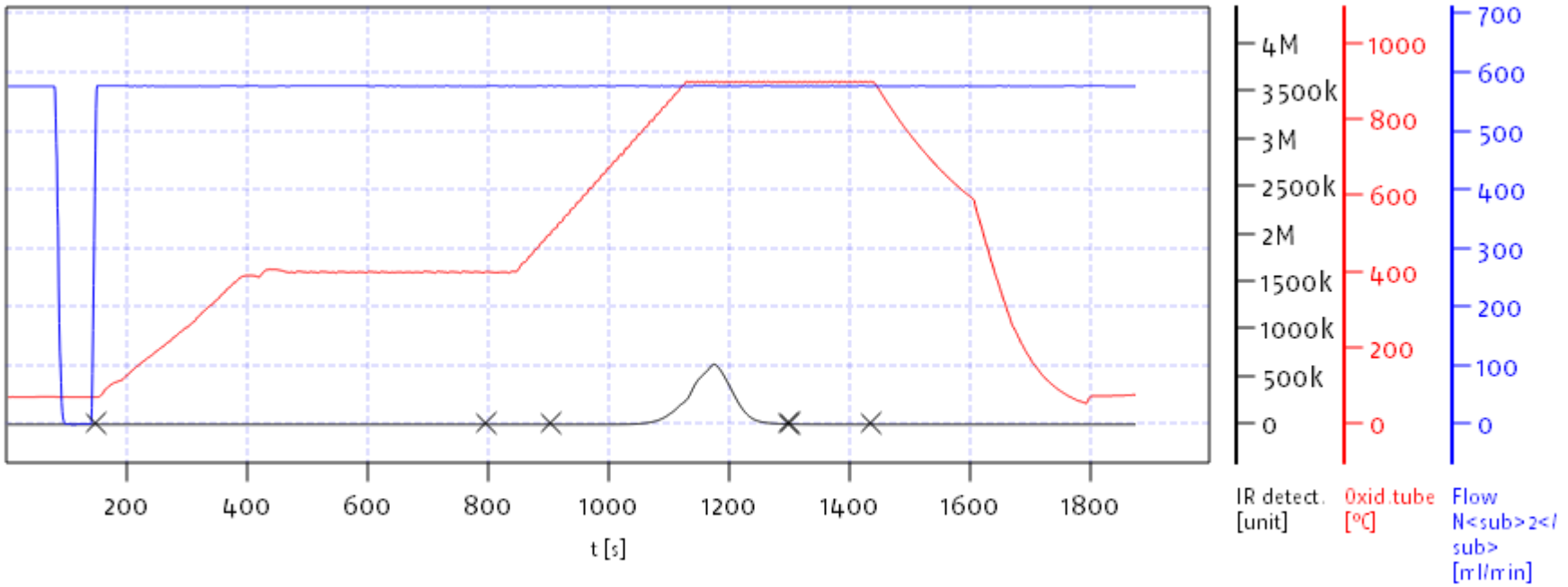
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
19	27	SEQ-CALH	200.00	0.0253	1.00	CARBON	8/25/2021 3:29 AM	0.000	1.524	1.524	bl,C1u,C2u	1 233	1 930 390	4 311	1.0000	1.0003



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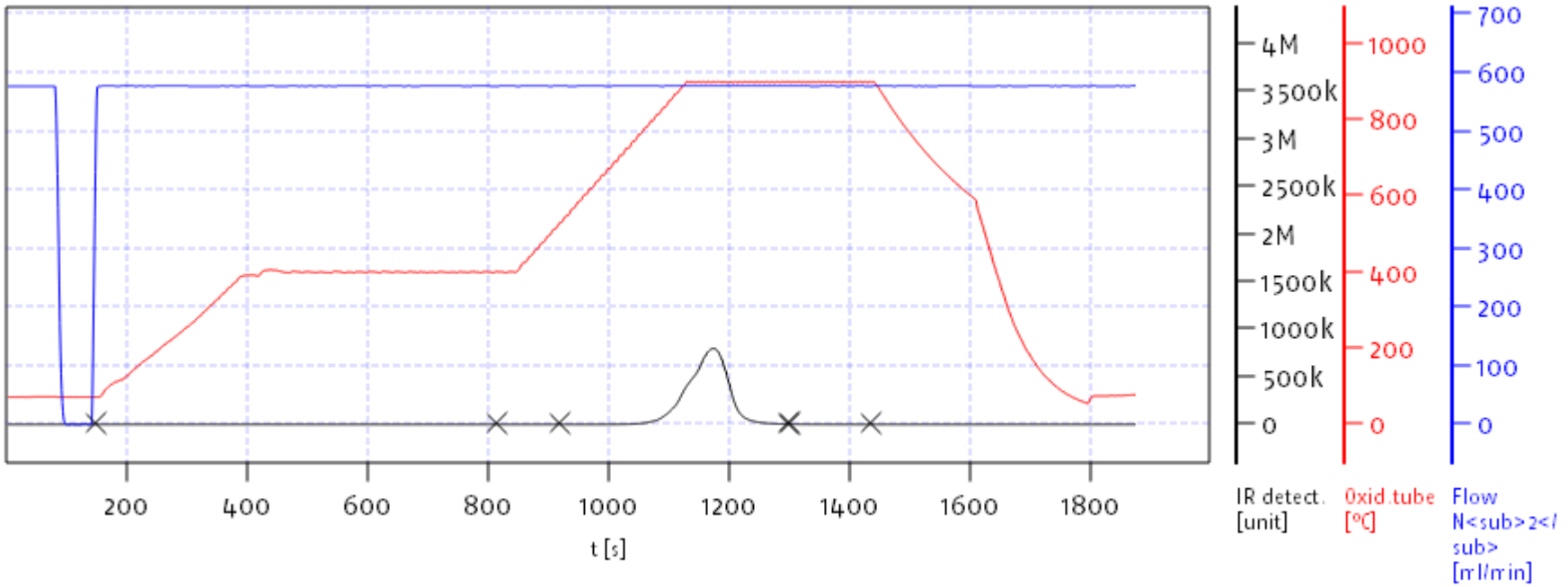
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
20	28	SEQ-CALI	200.00	0.0302	1.00	CARBON	8/25/2021 4:01 AM	0.000	1.800	1.800	bl,C1u,C2u	1 600	2 286 540	3 907	1.0000	0.9976



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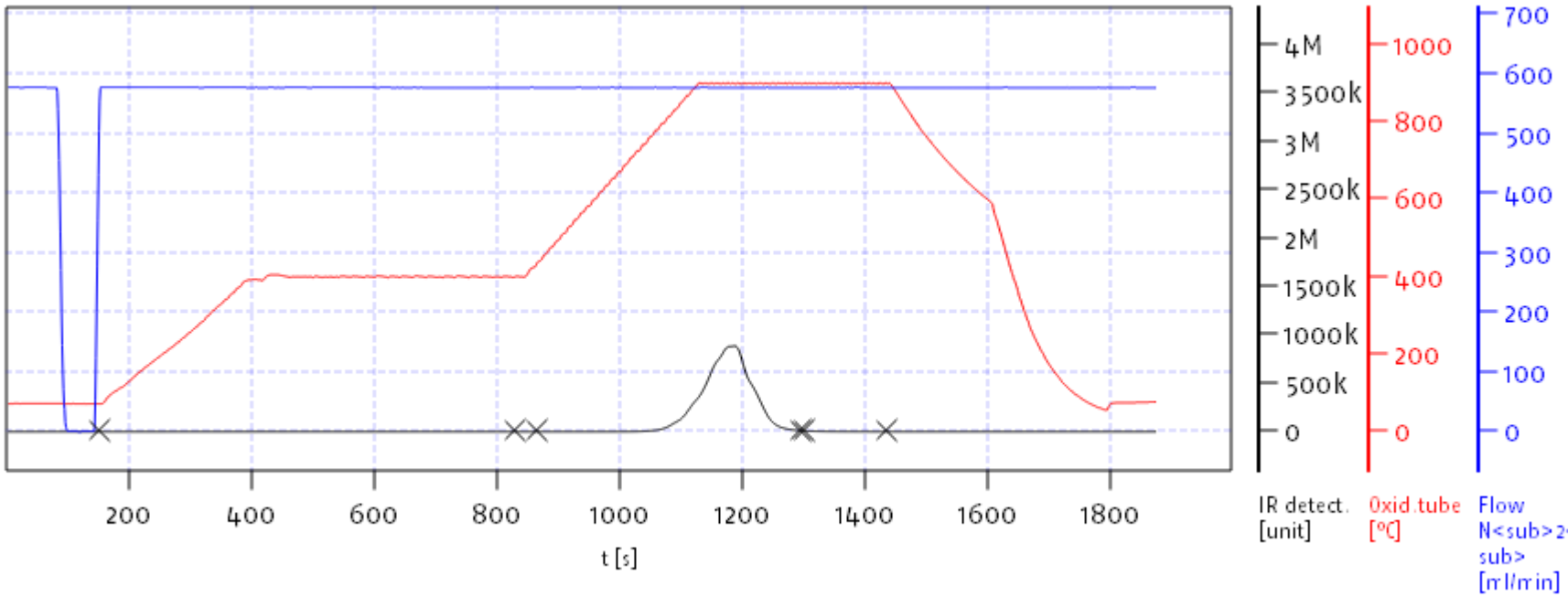
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
21	29	SEQ-CALJ	200.00	0.0400	1.00	CARBON	8/25/2021 4:33 AM	0.000	2.400	2.400	bl,C1u	1 589	**3 013 270**	**9 826**	1.0000	1.0096



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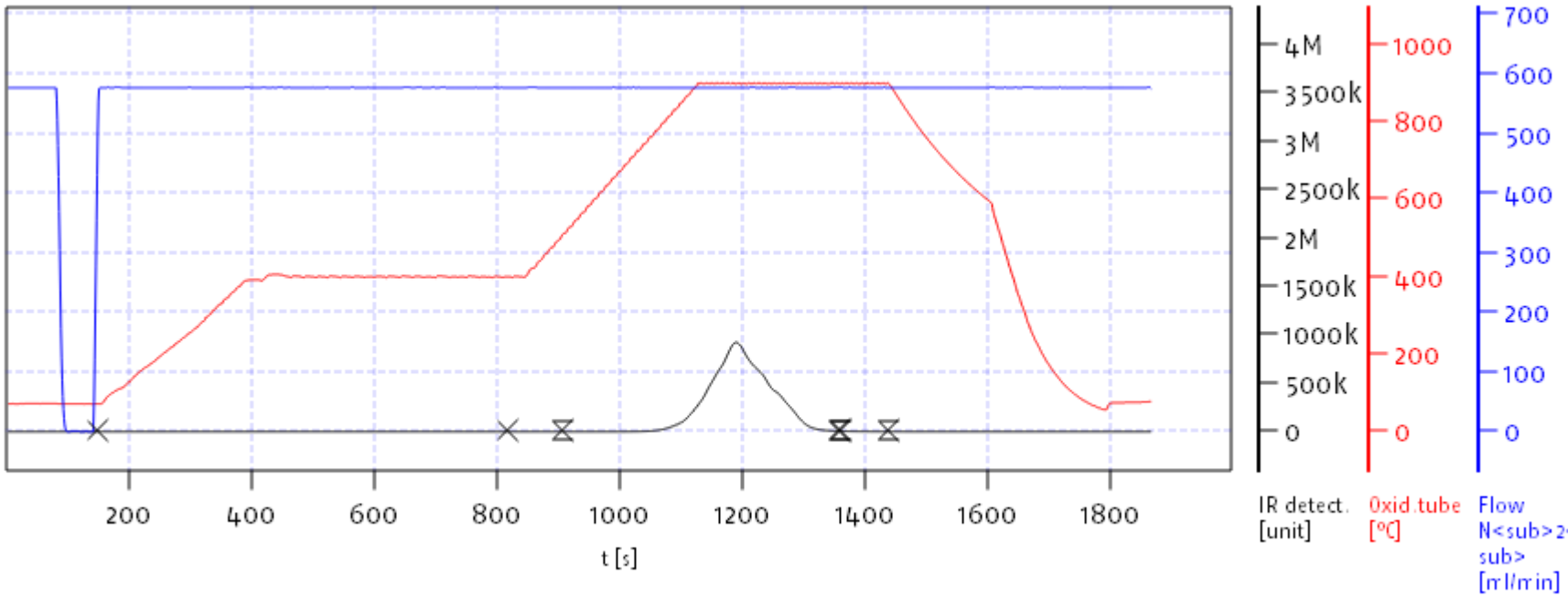
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
22	30	SEQ-CALK	200.00	0.0498	1.00	CARBON	8/25/2021 11:41 AM	0.000	3.012	3.012	bl,C1u	2 117	**3 411 713**	**0**	1.0000	1.0310



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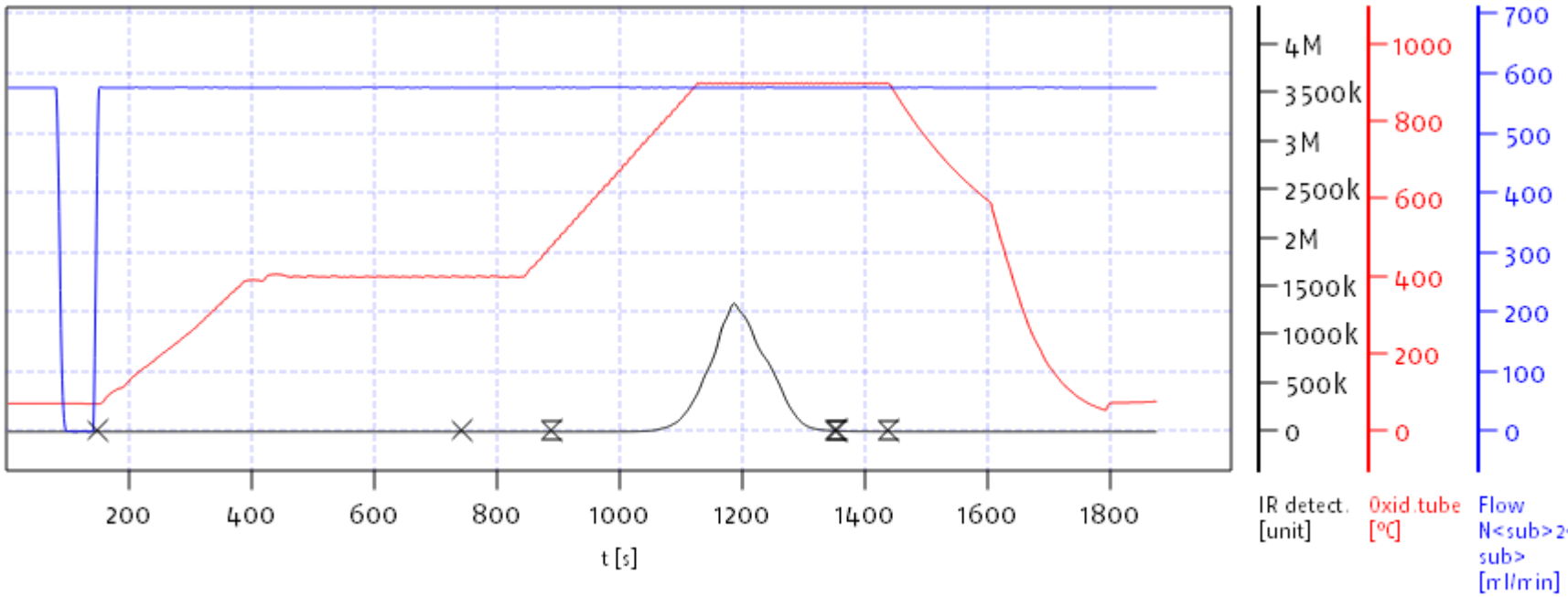
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
23	31	SEQ-CALL	200.00	0.0699	1.00	CARBON	8/25/2021 11:42 AM	0.000	4.206	4.206	bl,C1u	1 285	**4 920 073**	**0**	1.0000	1.0206



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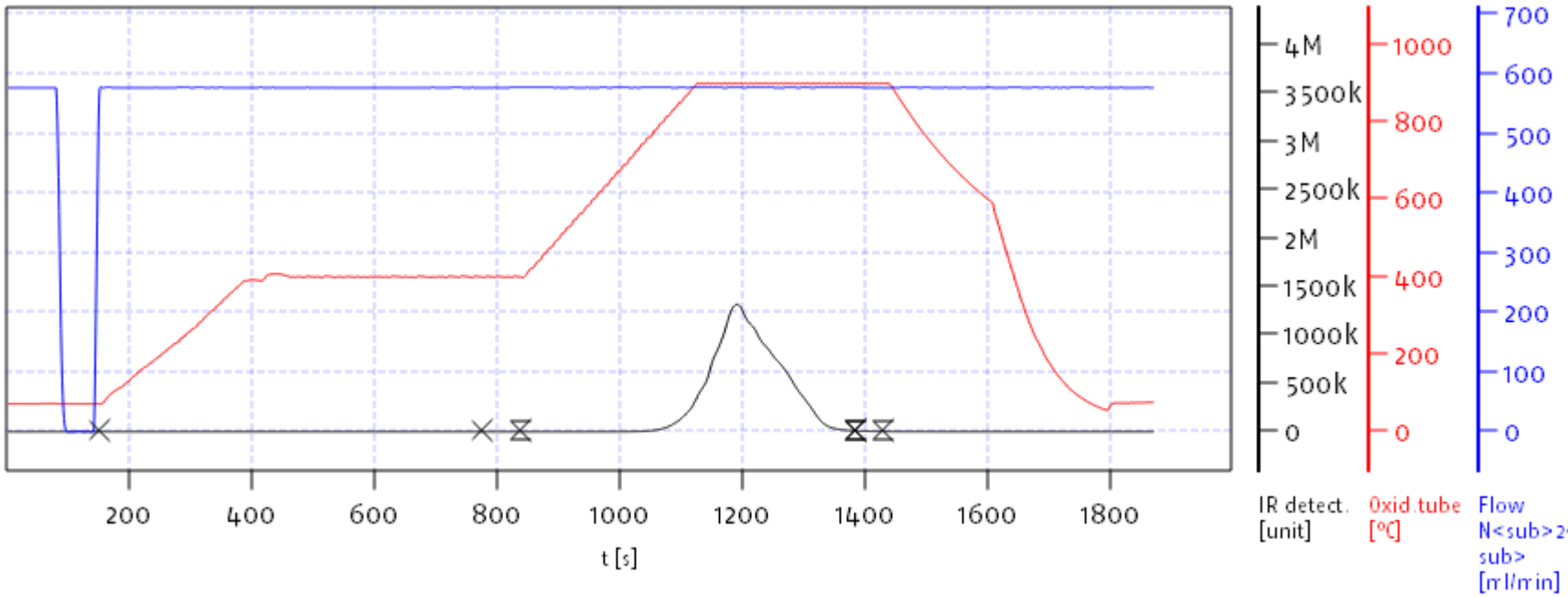
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
24	32	SEQ-CALM	200.00	0.0803	1.00	CARBON	8/25/2021 11:43 AM	0.000	4.812	4.812	bl,C1u	1 537	**5 655 573**	**0**	1.0000	1.0683



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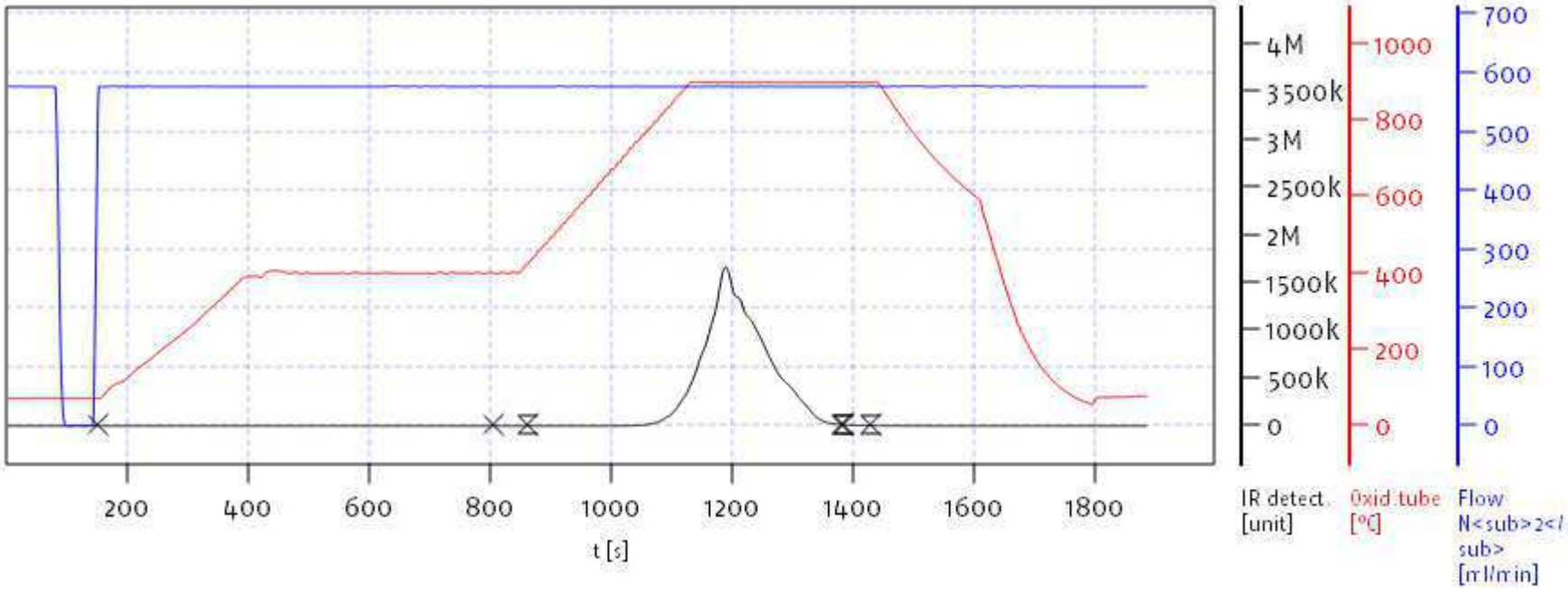
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
25	33	SEQ-CALN	200.00	0.0902	1.00	CARBON	8/25/2021 11:45 AM	0.000	5.406	5.406	bl,C1u	1 694	**6 449 031**	**0**	1.0000	1.0610



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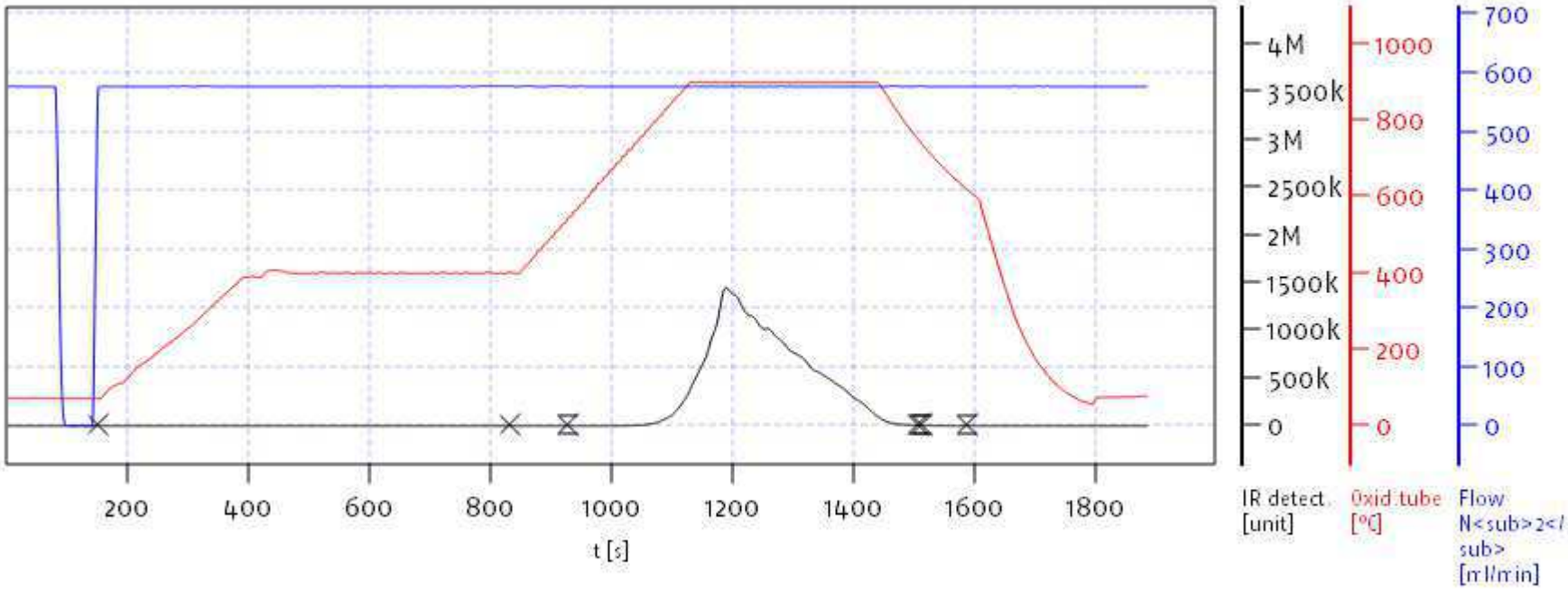
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
26	34	SEQ-CALO	200.00	0.1204	1.00	CARBON	8/25/2021 11:46 AM	0.000	7.218	7.218	bl,C1u,C3o	1 658	8 593 324	0	1.0000	1.3657



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	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
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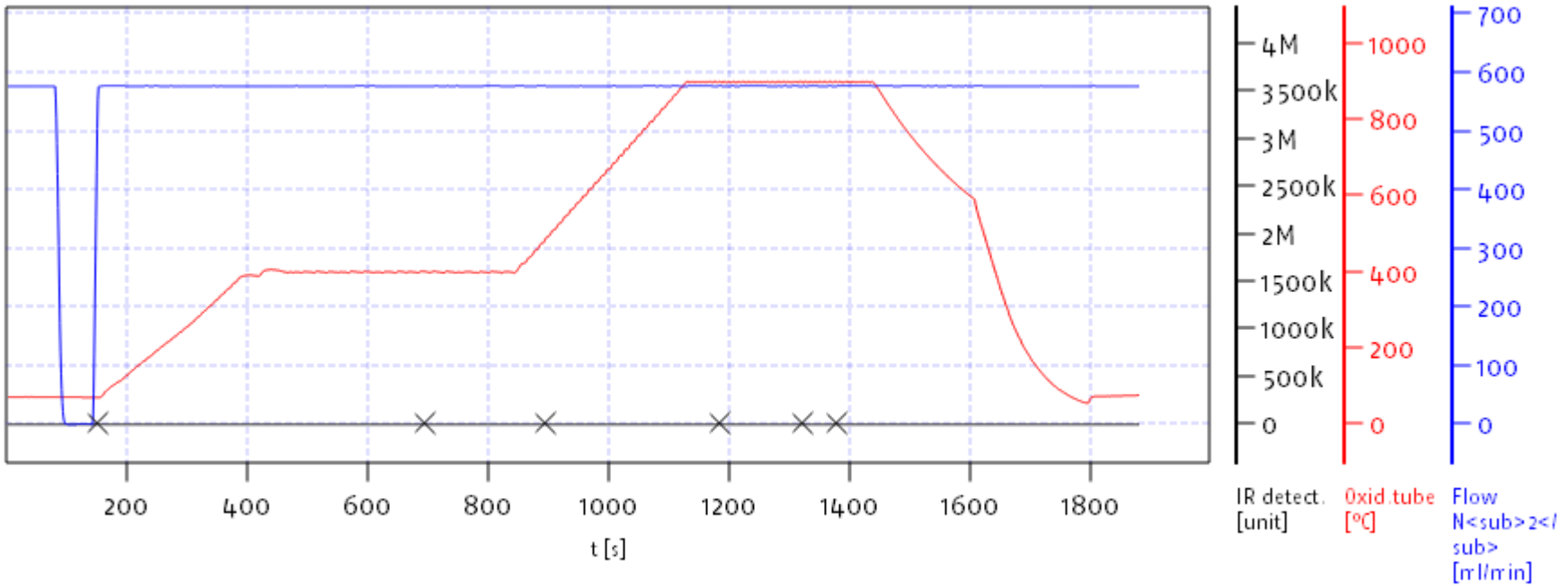

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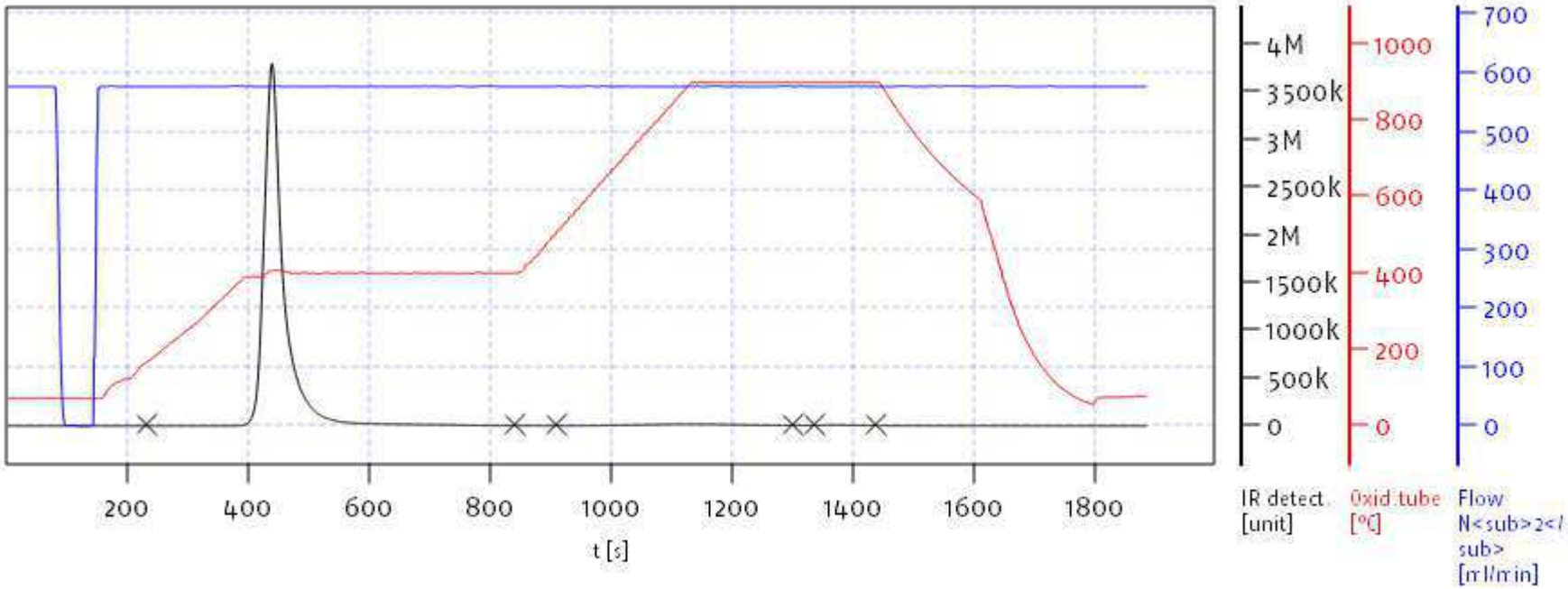
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
28	36	Dfactor	20.30		1.00	CARBON	8/25/2021 8:15 AM	44.446	0.000	44.446	bl	5 319 150	136 410	24 452	1.0755	1.0000



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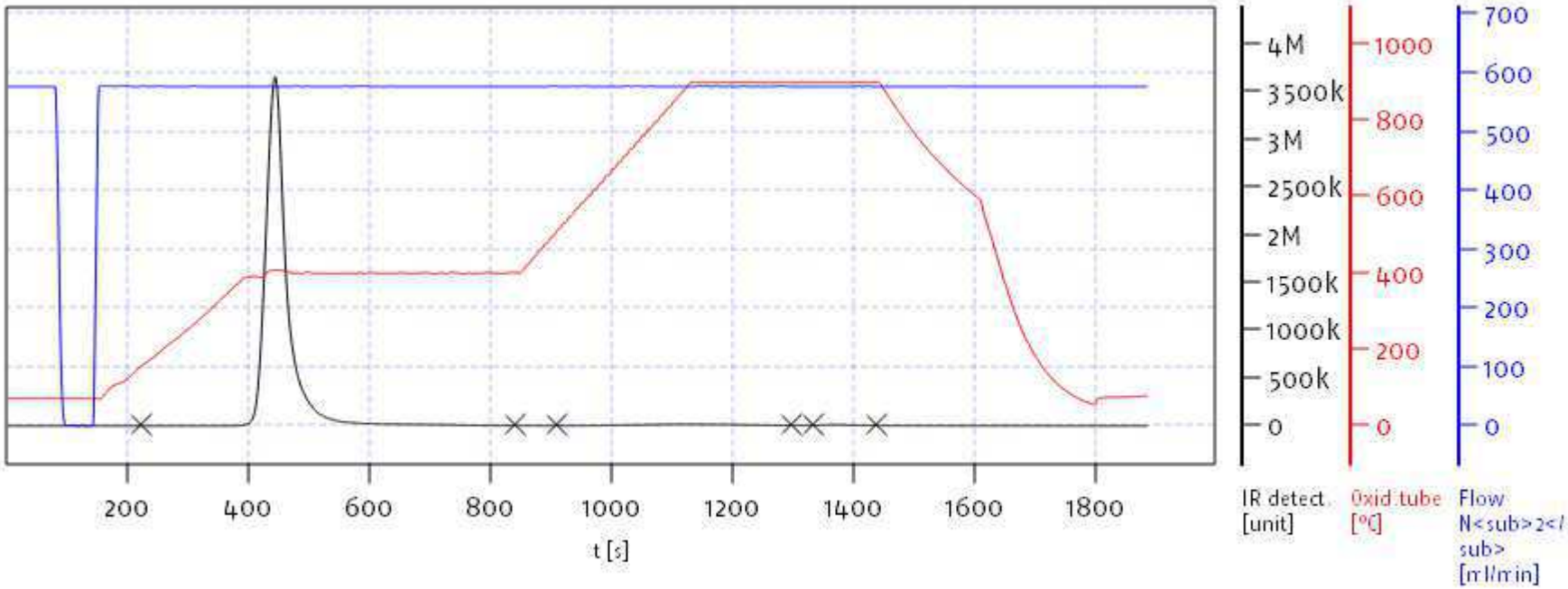
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
29	37	Dfactor	21.00		1.00	CARBON	8/25/2021 8:47 AM	44.446	0.000	44.446	bl	5 524 800	134 598	27 280	1.0712	1.0000



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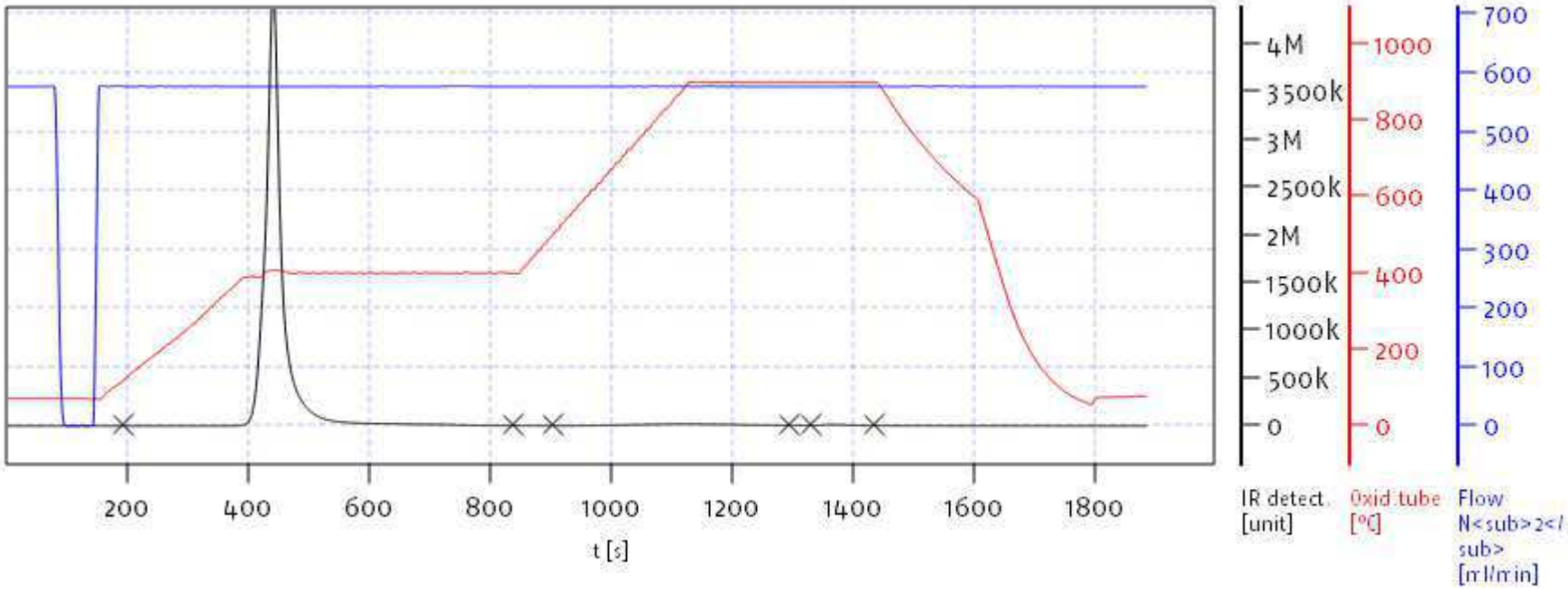
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
30	38	SEQ-ICV1	20.50		1.00	CARBON	8/25/2021 9:19 AM	47.154	1.091	48.245	bl	5 328 380	151 538	28 760	1.0733	1.0293



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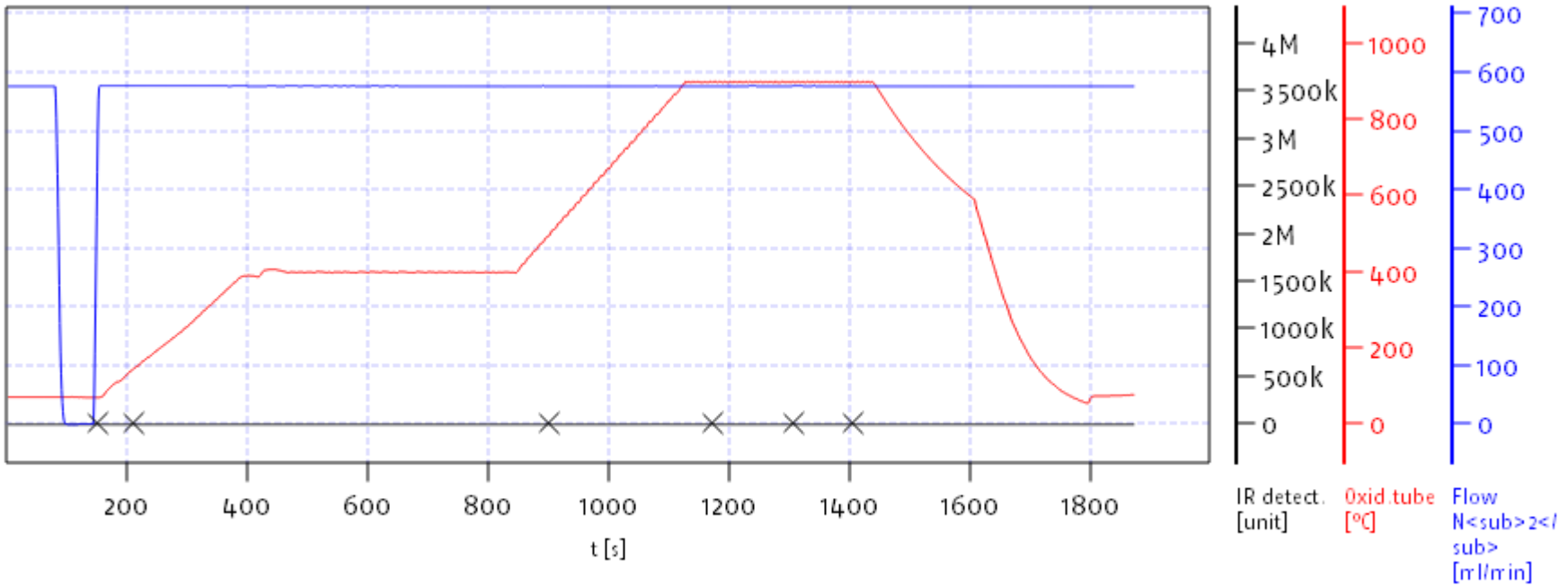
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
31	39	SEQ-ICB1	599.20		1.00	CARBON	8/25/2021 9:51 AM	0.000	0.000	0.000	bl,C1u,C3u,C2u	172	1 307	338	1.0733	1.0293



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ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0417	Instrument:	TOC Cube
		Calibration:	EH00065

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Initial Cal Check	SJH0417-ICV1	peData_09062021@0807-(	NA	09/01/21 12:46
Initial Cal Blank	SJH0417-ICB1	peData_09062021@0807-(	NA	09/01/21 13:17
Calibration Check	SJH0417-CCV1	peData_09062021@0807-(	NA	09/01/21 18:57
Calibration Blank	SJH0417-CCB1	peData_09062021@0807-1	NA	09/01/21 19:28
Calibration Check	SJH0417-CCV2	peData_09062021@0807-1	NA	09/02/21 01:07
Calibration Blank	SJH0417-CCB2	peData_09062021@0807-1	NA	09/02/21 01:37
Calibration Check	SJH0417-CCV3	peData_09062021@0807-2	NA	09/02/21 07:16
Calibration Blank	SJH0417-CCB3	peData_09062021@0807-2	NA	09/02/21 07:47
Calibration Check	SJH0417-CCV4	peData_09062021@0807-3	NA	09/02/21 13:25
Calibration Blank	SJH0417-CCB4	peData_09062021@0807-3	NA	09/02/21 13:56
Calibration Check	SJH0417-CCV5	peData_09062021@0807-4	NA	09/02/21 19:35
Calibration Blank	SJH0417-CCB5	peData_09062021@0807-4	NA	09/02/21 20:06
Calibration Check	SJH0417-CCV6	peData_09062021@0807-4	NA	09/03/21 01:42
Calibration Blank	SJH0417-CCB6	peData_09062021@0807-4	NA	09/03/21 02:13
Calibration Check	SJH0417-CCV7	peData_09062021@0807-5	NA	09/03/21 07:48
Calibration Blank	SJH0417-CCB7	peData_09062021@0807-5	NA	09/03/21 08:19
Calibration Check	SJH0417-CCV8	peData_09062021@0807-(	NA	09/03/21 13:55
Calibration Blank	SJH0417-CCB8	peData_09062021@0807-(	NA	09/03/21 14:25
LDW21-IT702CY	21H0078-32	peData_09062021@0807-1	Solid	09/03/21 17:29
LDW21-IT702EY	21H0078-34	peData_09062021@0807-1	Solid	09/03/21 18:00
Calibration Check	SJH0417-CCV9	peData_09062021@0807-1	NA	09/03/21 20:03
Calibration Blank	SJH0417-CCB9	peData_09062021@0807-1	NA	09/03/21 20:33
Calibration Check	SJH0417-CCVA	peData_09062021@0807-2	NA	09/04/21 02:09
Calibration Blank	SJH0417-CCBA	peData_09062021@0807-2	NA	09/04/21 02:39
Calibration Check	SJH0417-CCVB	peData_09062021@0807-3	NA	09/04/21 08:14
Calibration Blank	SJH0417-CCBB	peData_09062021@0807-3	NA	09/04/21 08:45
Calibration Check	SJH0417-CCVC	peData_09062021@0807-3	NA	09/04/21 14:21
Calibration Blank	SJH0417-CCBC	peData_09062021@0807-3	NA	09/04/21 14:52
Calibration Check	SJH0417-CCVD	peData_09062021@0807-4	NA	09/04/21 20:28
Calibration Blank	SJH0417-CCBD	peData_09062021@0807-4	NA	09/04/21 20:59

Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

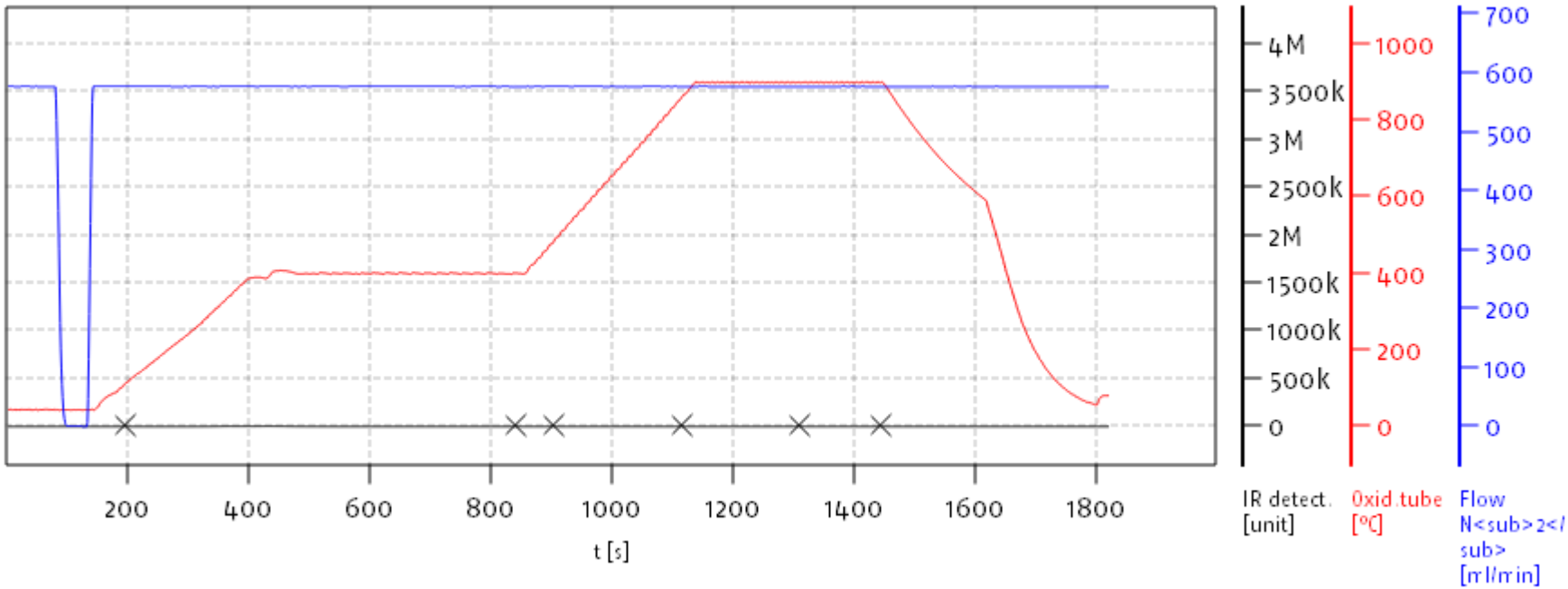
Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Sequence:	SJH0417	Instrument:	TOC Cube
		Calibration:	EH00065

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Calibration Check	SJH0417-CCVE	beData_09062021@0807-5	NA	09/05/21 02:04
Calibration Blank	SJH0417-CCBE	beData_09062021@0807-5	NA	09/05/21 02:35

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
1	1	BLANK	1.00		1.00	CARBON	9/1/2021 11:14 AM	0.000	0.000	0.000	bl	19 392	2 288	1 495	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Mon Sep 6 07:32:29 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

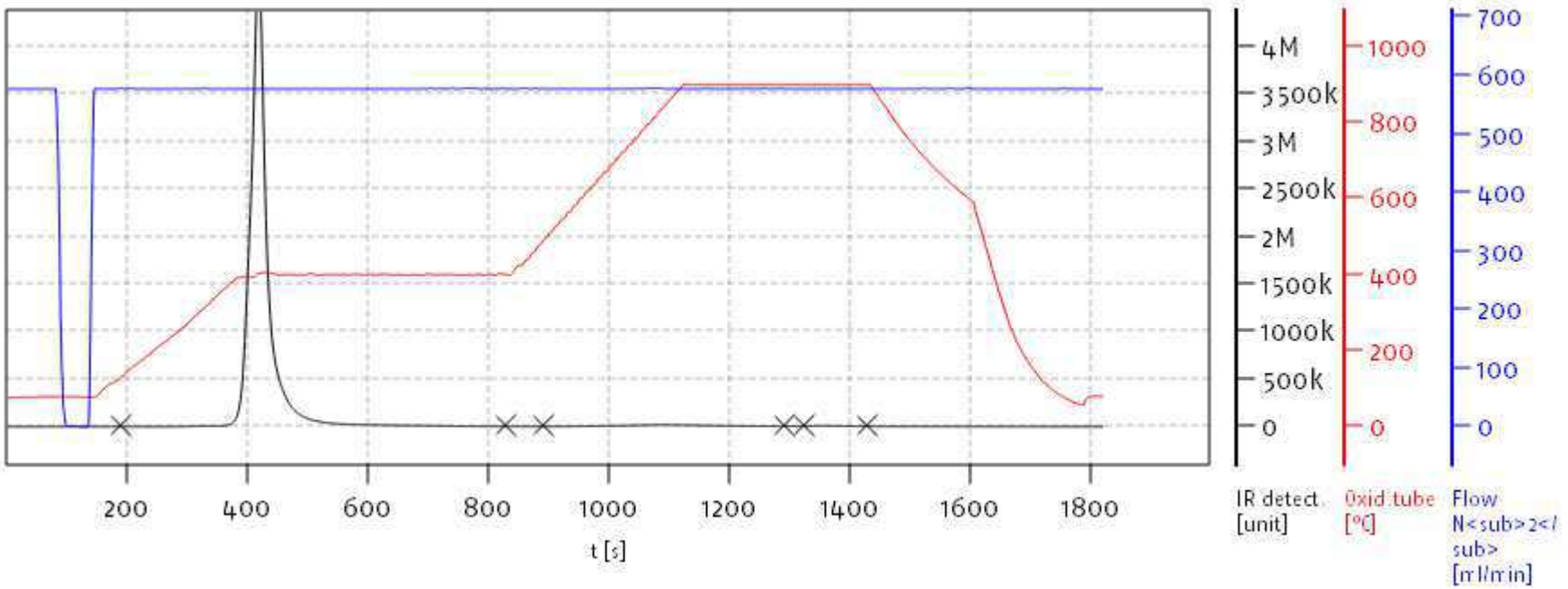
elementar
EXCELLENCE IN ELEMENTS

Document: from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
2	2	Dfactor	21.40		1.00	CARBON	9/1/2021 11:45 AM	44.526	0.984	45.510	bl	5 774 930	136 398	21 855	0.9772	1.0000



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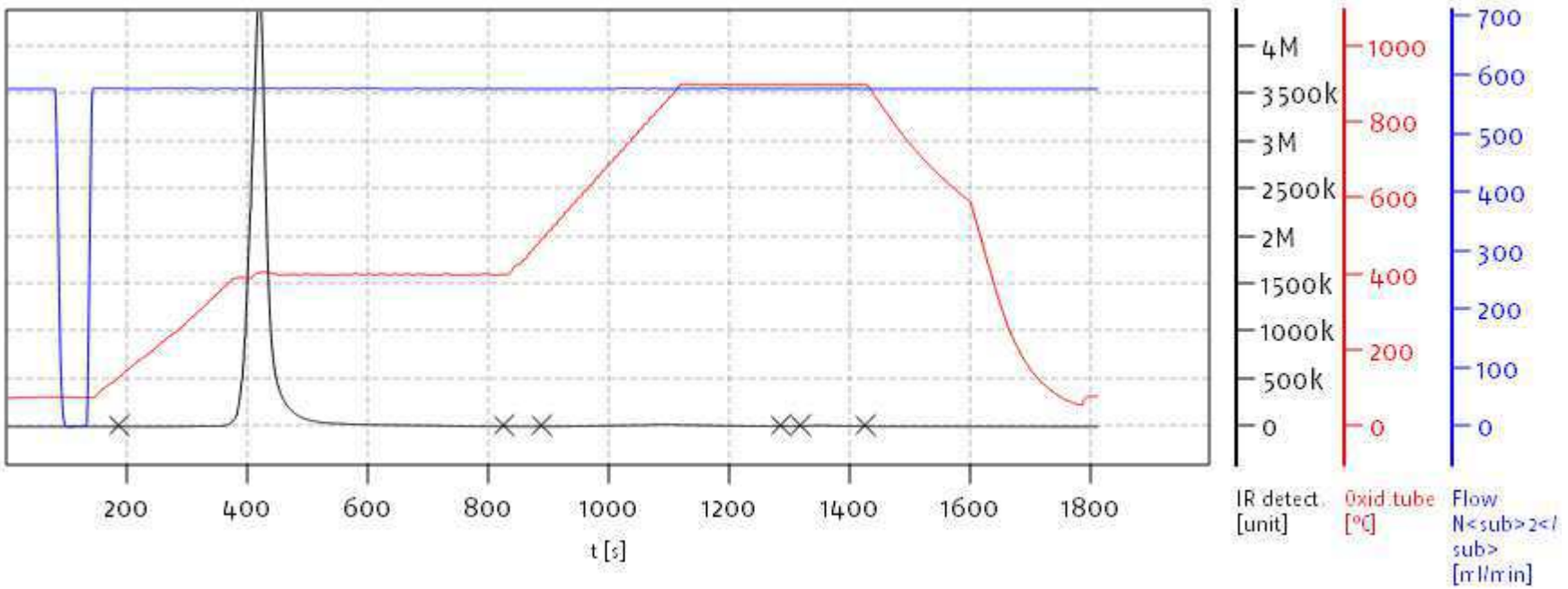
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
3	3	Dfactor	21.30		1.00	CARBON	9/1/2021 12:16 PM	44.552	1.070	45.622	bl	5 673 250	146 630	25 106	0.9901	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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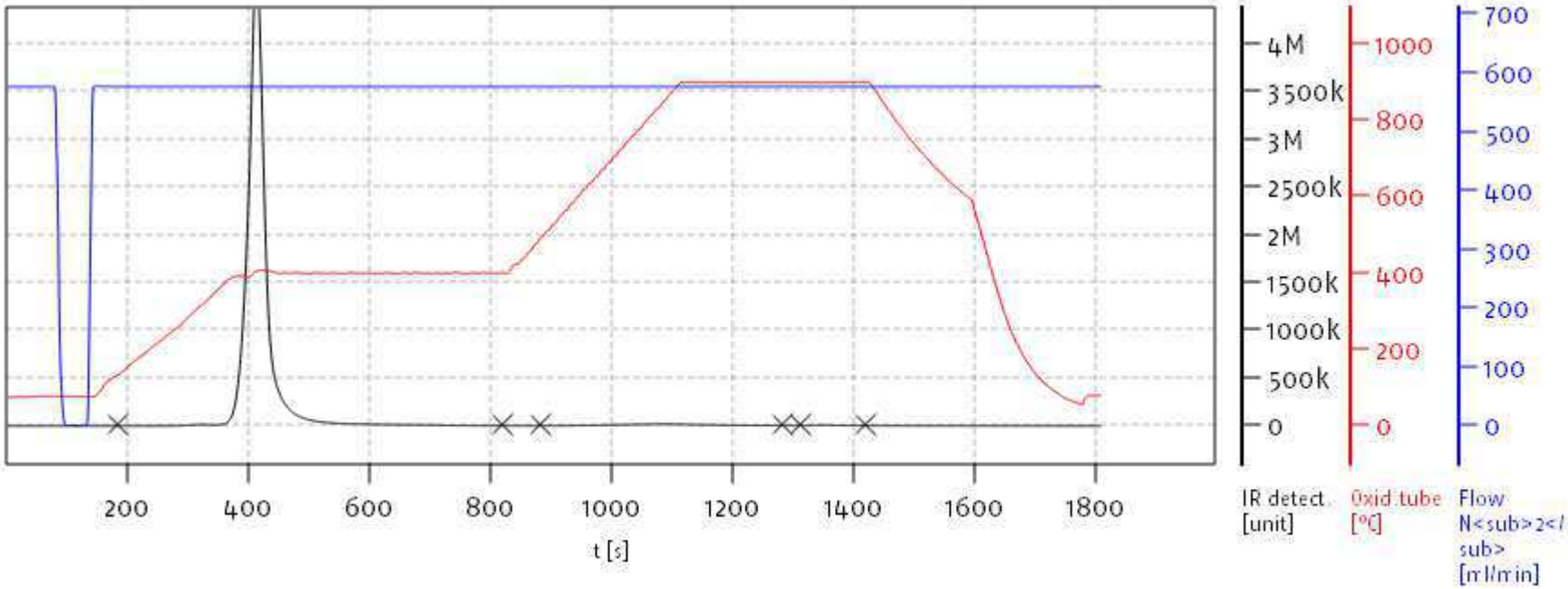
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
4	4	SJH0417-ICV1	22.10		1.00	CARBON	9/1/2021 12:46 PM	44.958	0.922	45.880	bl	5 983 630	132 286	20 538	0.9836	1.0000



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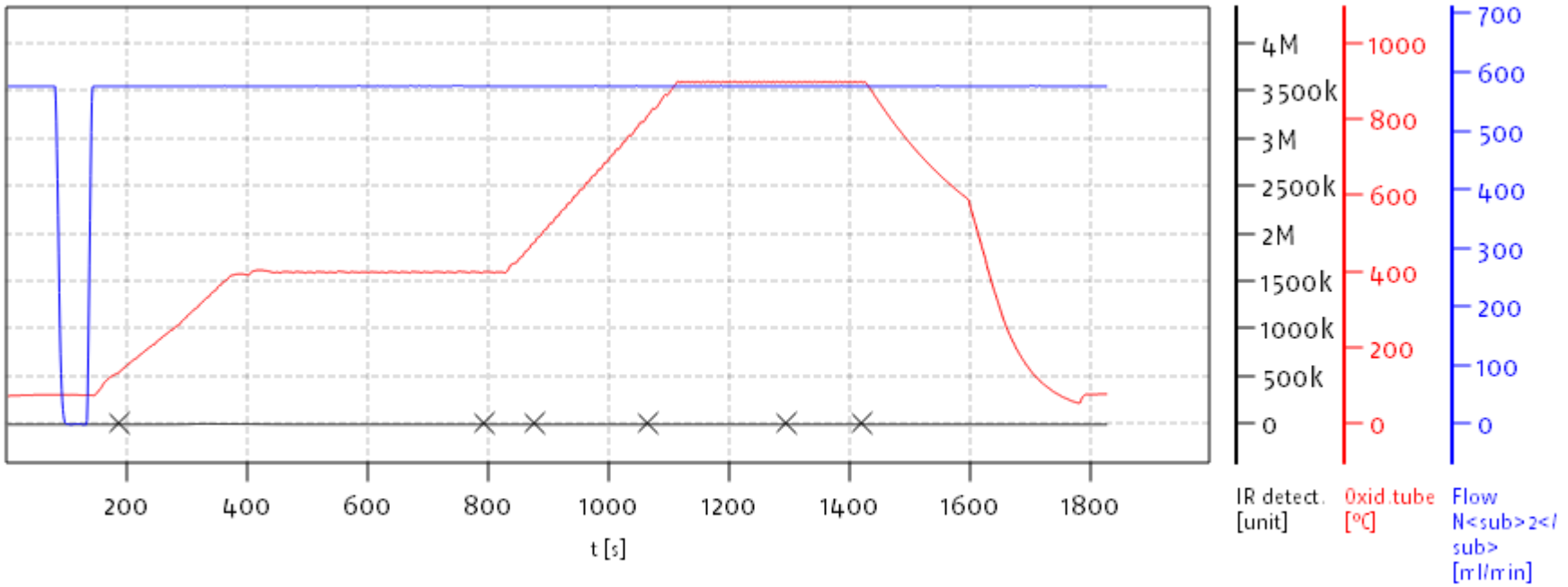
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
5	5	SJH0417-ICB1	516.10		1.00	CARBON	9/1/2021 1:17 PM	0.005	0.000	0.005	bl,C3u,C2u	25 651	148	694	0.9836	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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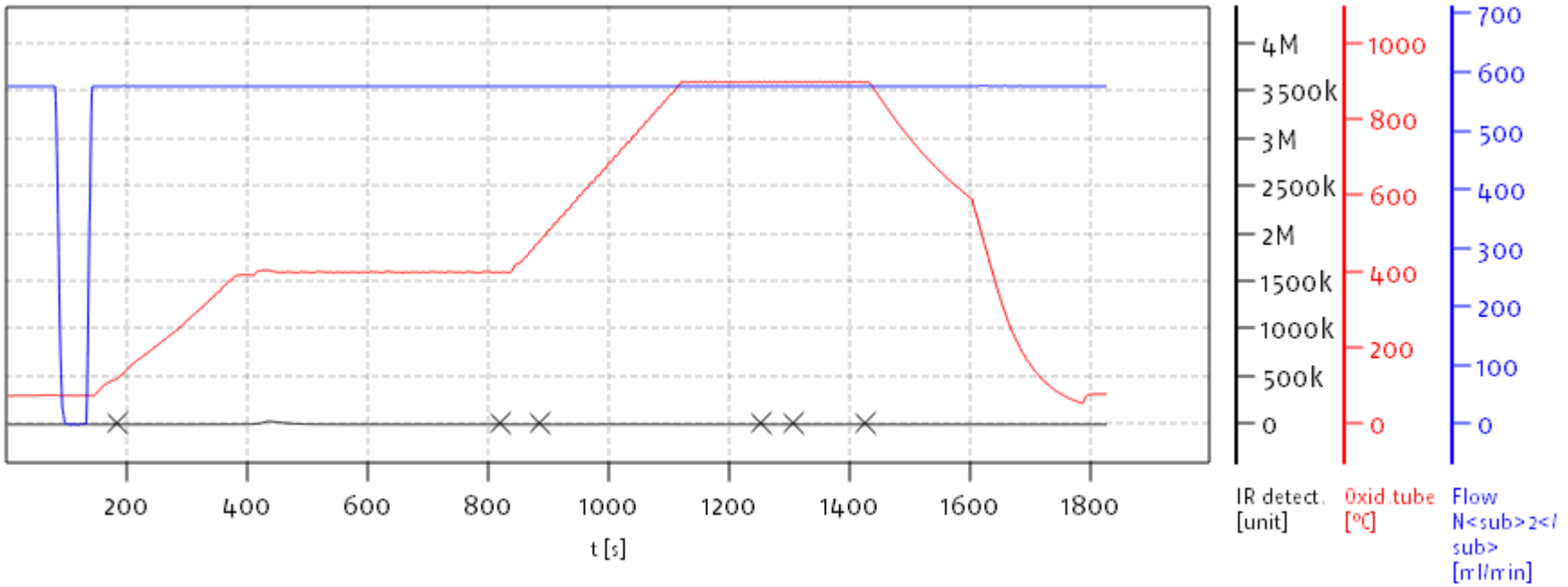
Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
6	6	BJH0805-MRL1	561.40		1.00	CARBON	9/1/2021 1:48 PM	0.015	0.000	0.015	bl,C3u,C2u	61 766	6 003	757	0.9836	1.0000



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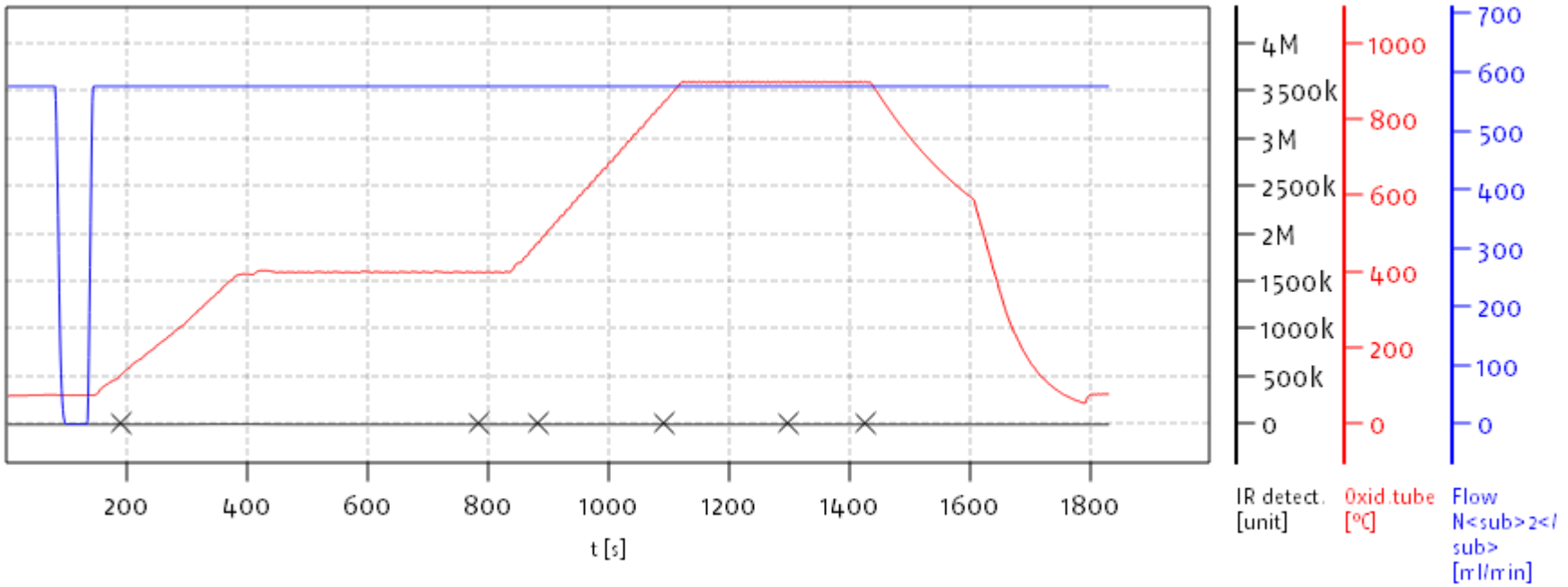
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
7	7	BJH0805-BLK1	547.50		1.00	CARBON	9/1/2021 2:19 PM	0.001	0.000	0.001	bl,C3u,C2u	13 848	794	598	0.9836	1.0000



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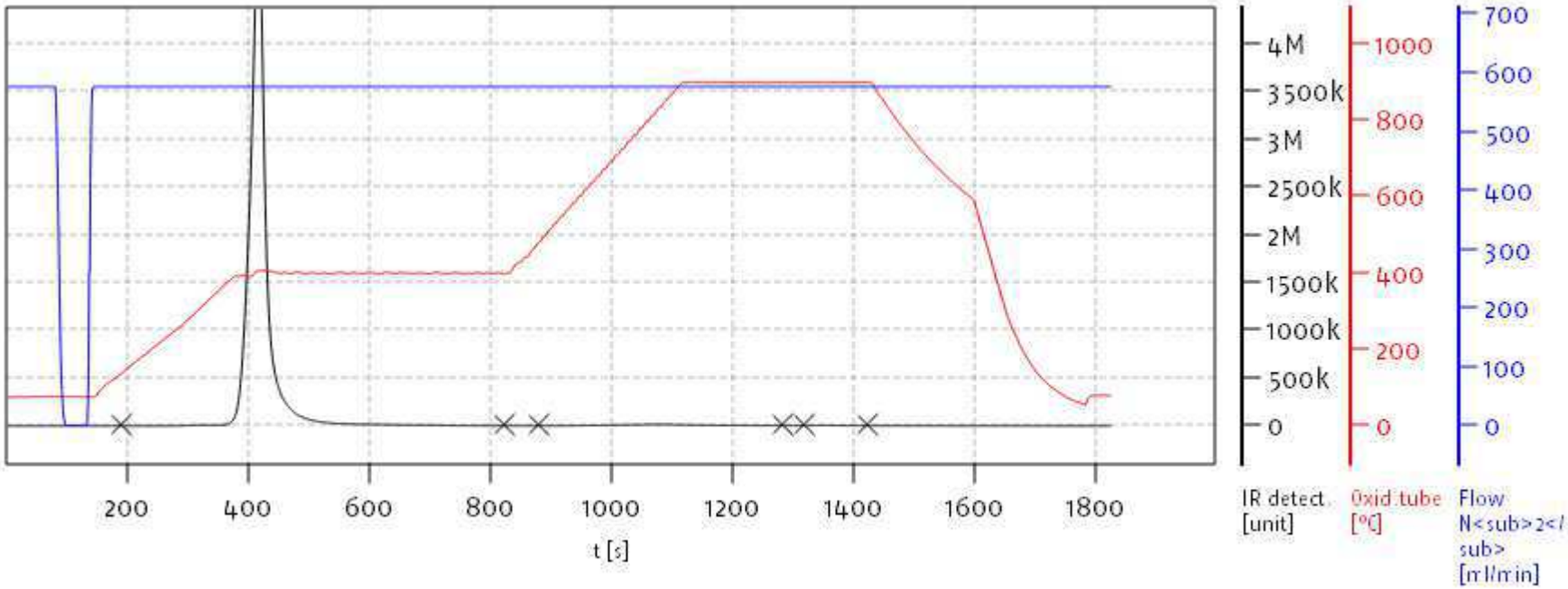
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
8	8	BJH0805-BS1	21.70		1.00	CARBON	9/1/2021 2:50 PM	45.666	0.716	46.382	bl	5 972 750	103 721	15 665	0.9836	1.0000



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Balance: BAL3
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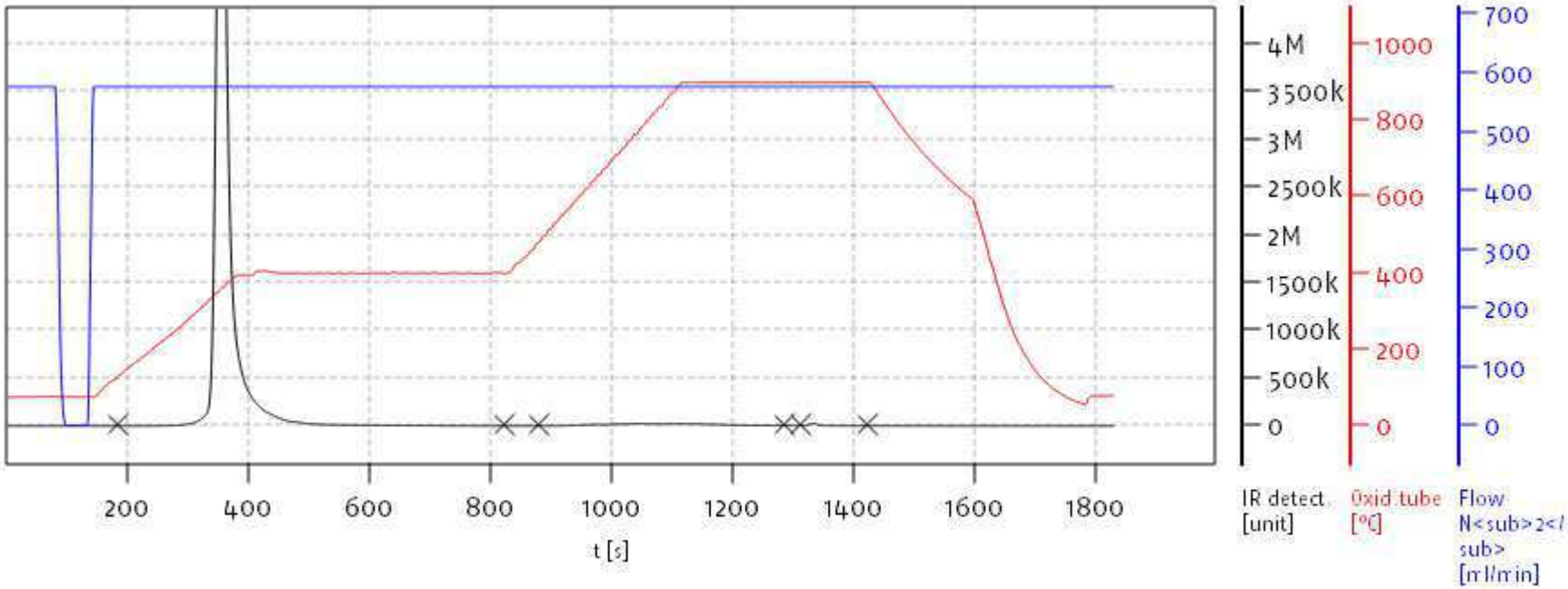
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
9	9	21H0301-01	509.10		1.00	CARBON	9/1/2021 3:21 PM	2.246	0.057	2.303	bl	6 886 360	184 572	19 916	0.9836	1.0000



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Soli TOC Cube, Carbon
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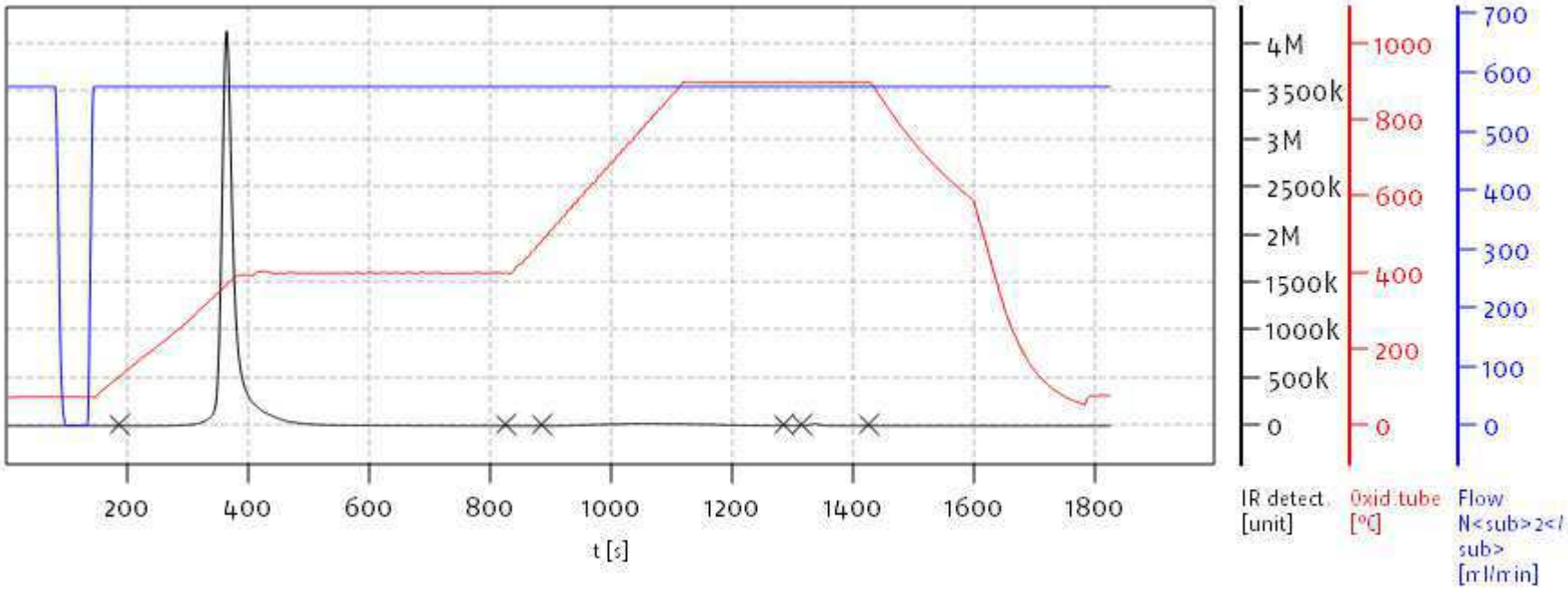
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
10	10	21H0301-02	506.70		1.00	CARBON	9/1/2021 3:52 PM	1.264	0.055	1.318	bl	3 860 660	175 546	17 091	0.9836	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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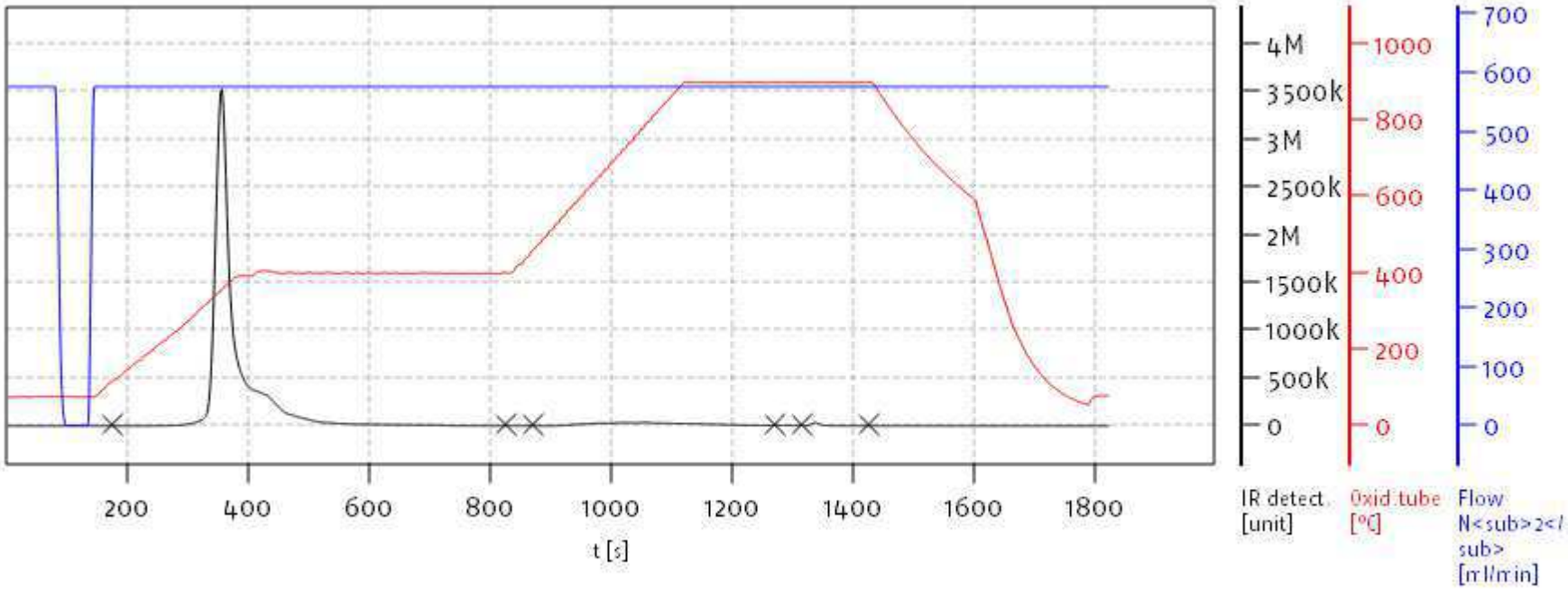
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
11	11	21H0301-03	511.10		1.00	CARBON	9/1/2021 4:22 PM	1.531	0.083	1.615	bl	4 709 730	264 254	24 597	0.9836	1.0000



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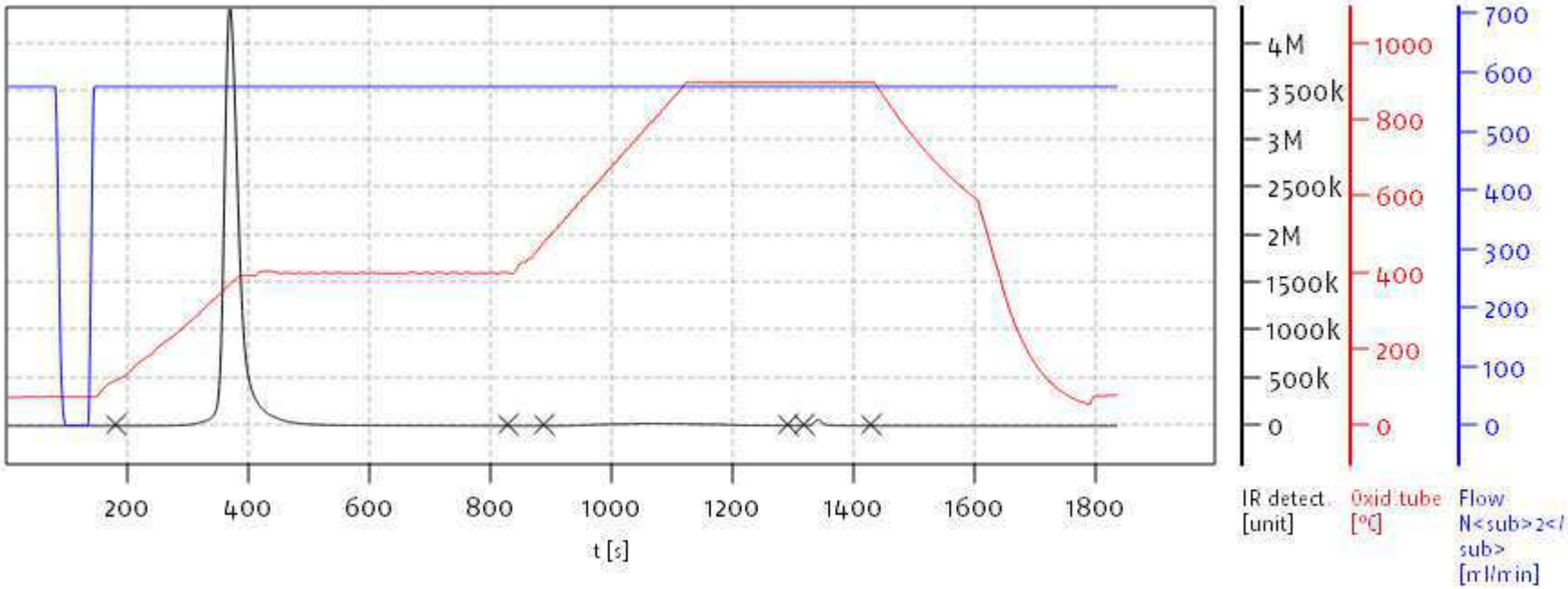
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
12	12	21H0301-04	517.90		1.00	CARBON	9/1/2021 4:54 PM	1.564	0.057	1.621	bl	4 853 460	187 521	44 238	0.9836	1.0000



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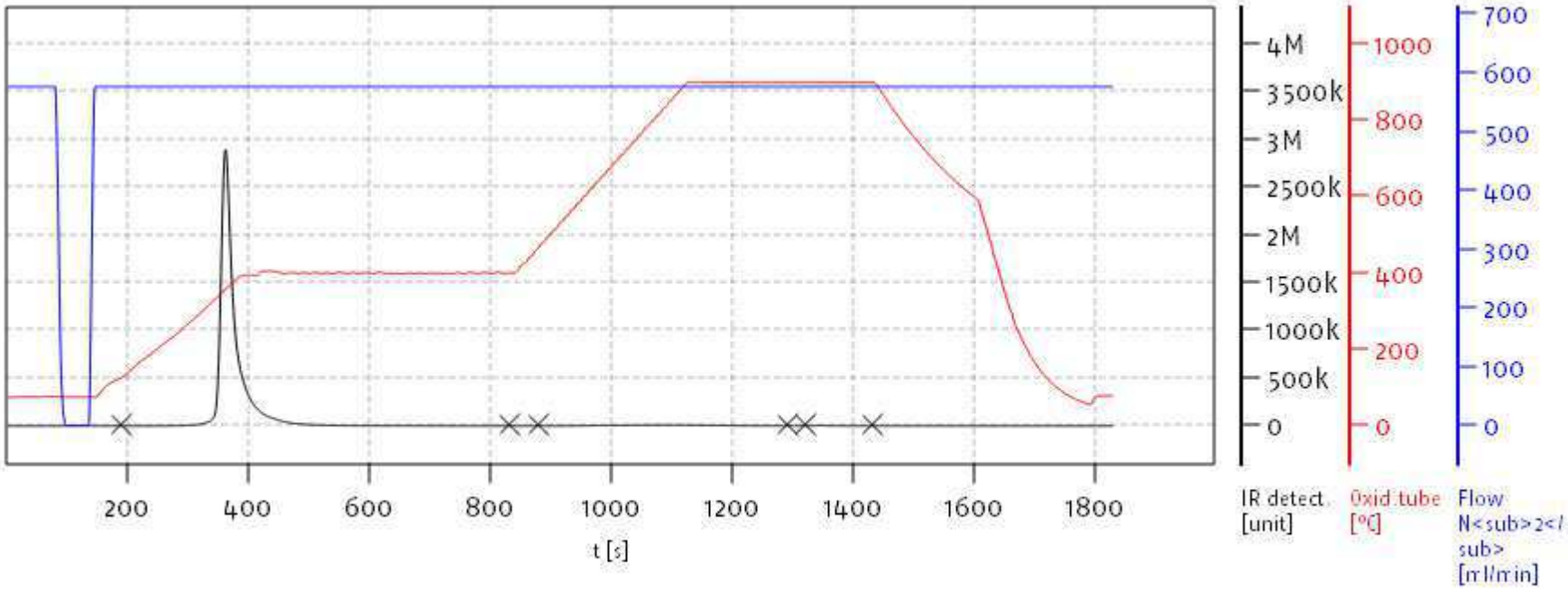
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
13	13	21H0301-08	361.70		1.00	CARBON	9/1/2021 5:24 PM	1.347	0.027	1.374	bl,C2u	2 945 180	69 832	6 388	0.9836	1.0000



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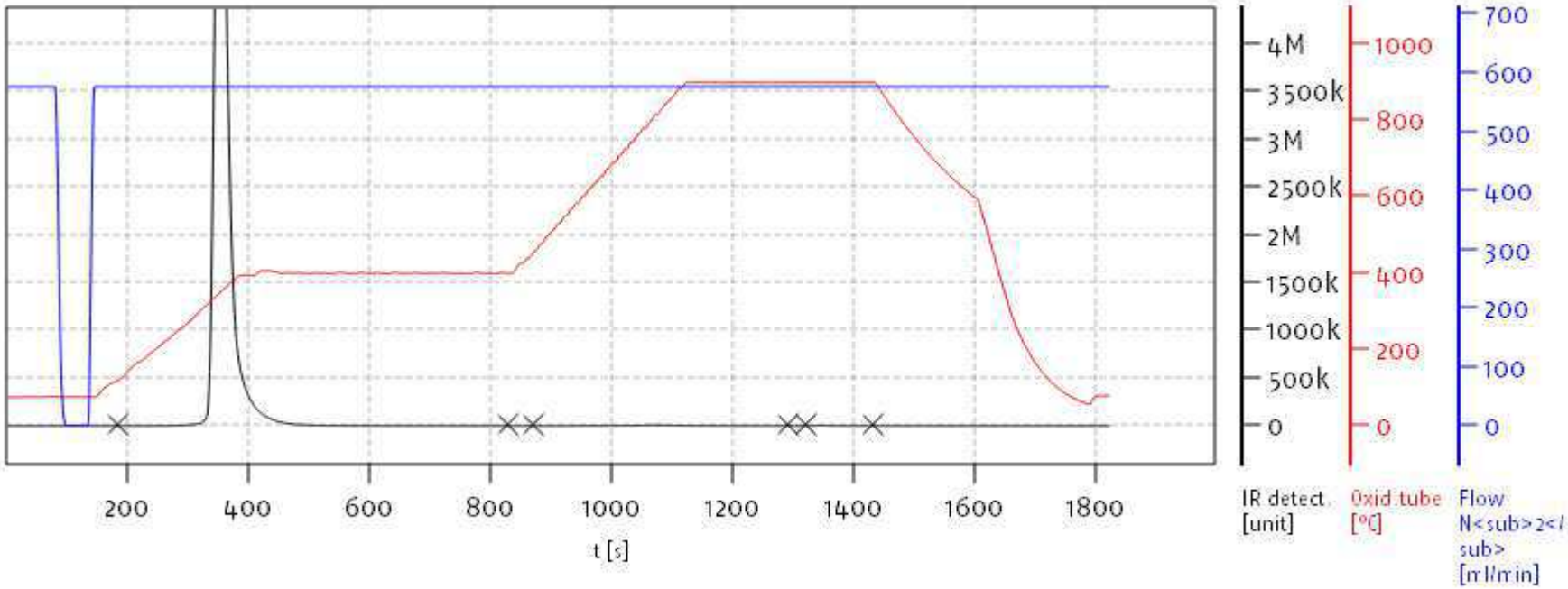
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
14	14	21H0301-09	246.90		1.00	CARBON	9/1/2021 5:55 PM	4.890	0.018	4.908	bl,C2u	7 279 390	37 651	7 027	0.9836	1.0000



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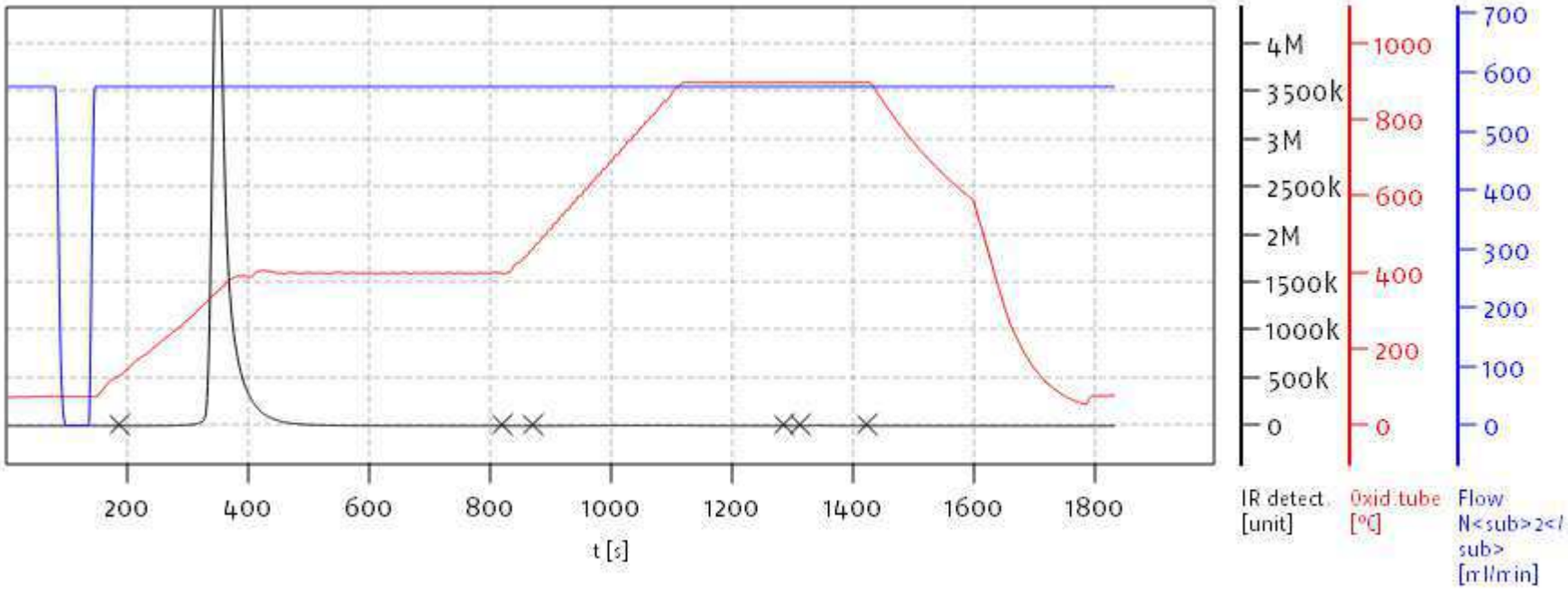
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
15	15	21H0301-10	243.80		1.00	CARBON	9/1/2021 6:26 PM	3.837	0.013	3.850	bl,C2u	5 643 060	30 755	5 245	0.9836	1.0000



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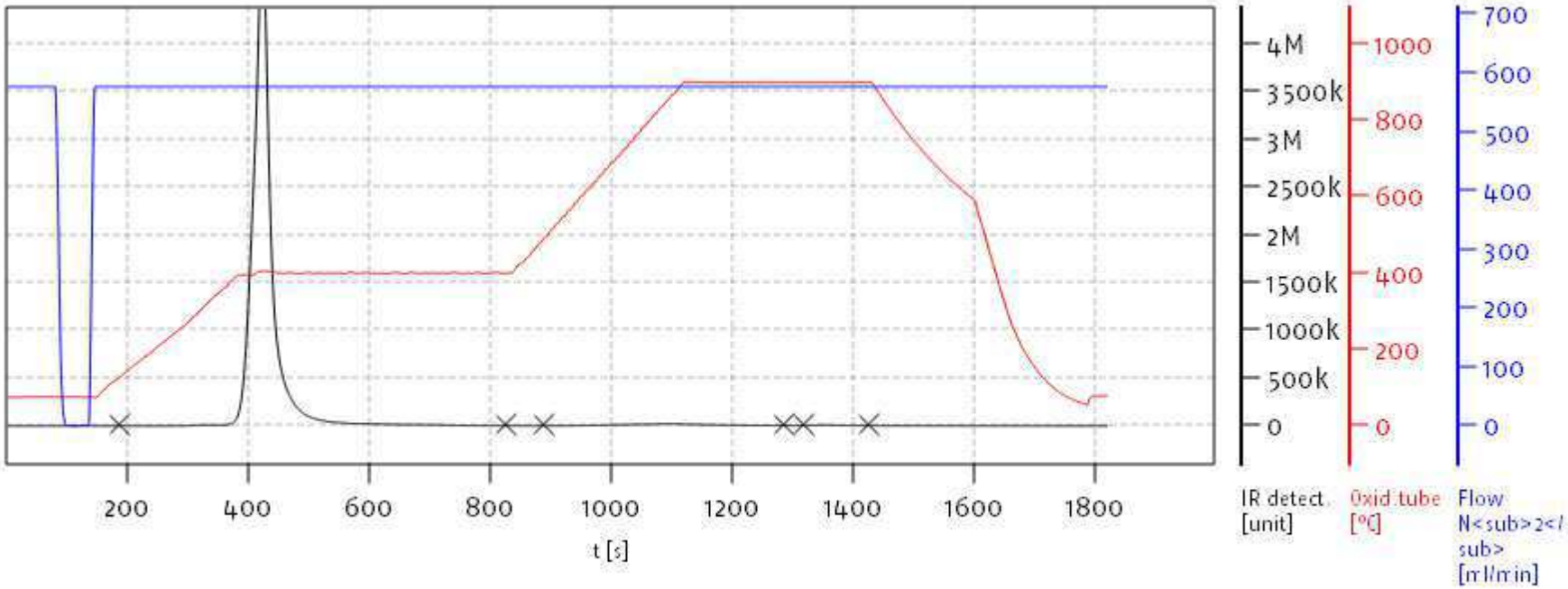
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
16	16	SJH0417-CCV1	23.90		1.00	CARBON	9/1/2021 6:57 PM	44.993	0.899	45.892	bl	6 474 380	138 898	21 876	0.9836	1.0000



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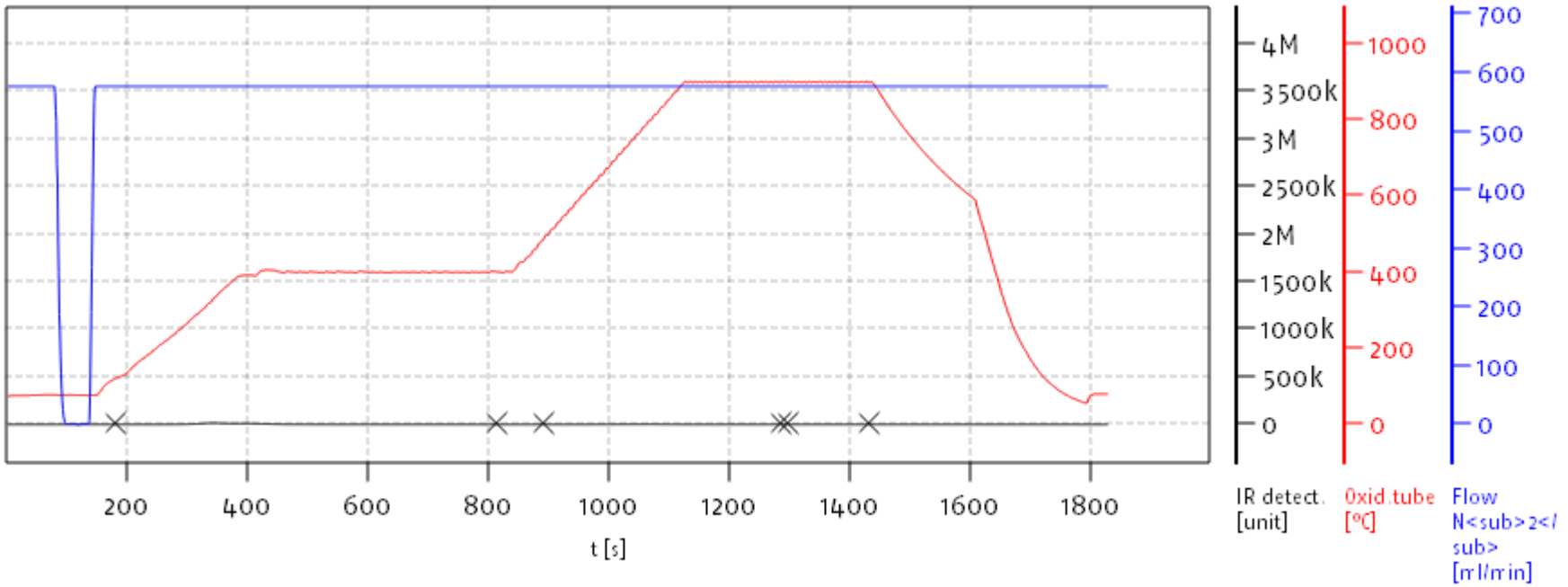
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
17	17	SJH0417-CCB1	522.80		1.00	CARBON	9/1/2021 7:28 PM	0.013	0.000	0.013	bl,C2u	53 522	7 948	433	0.9836	1.0000



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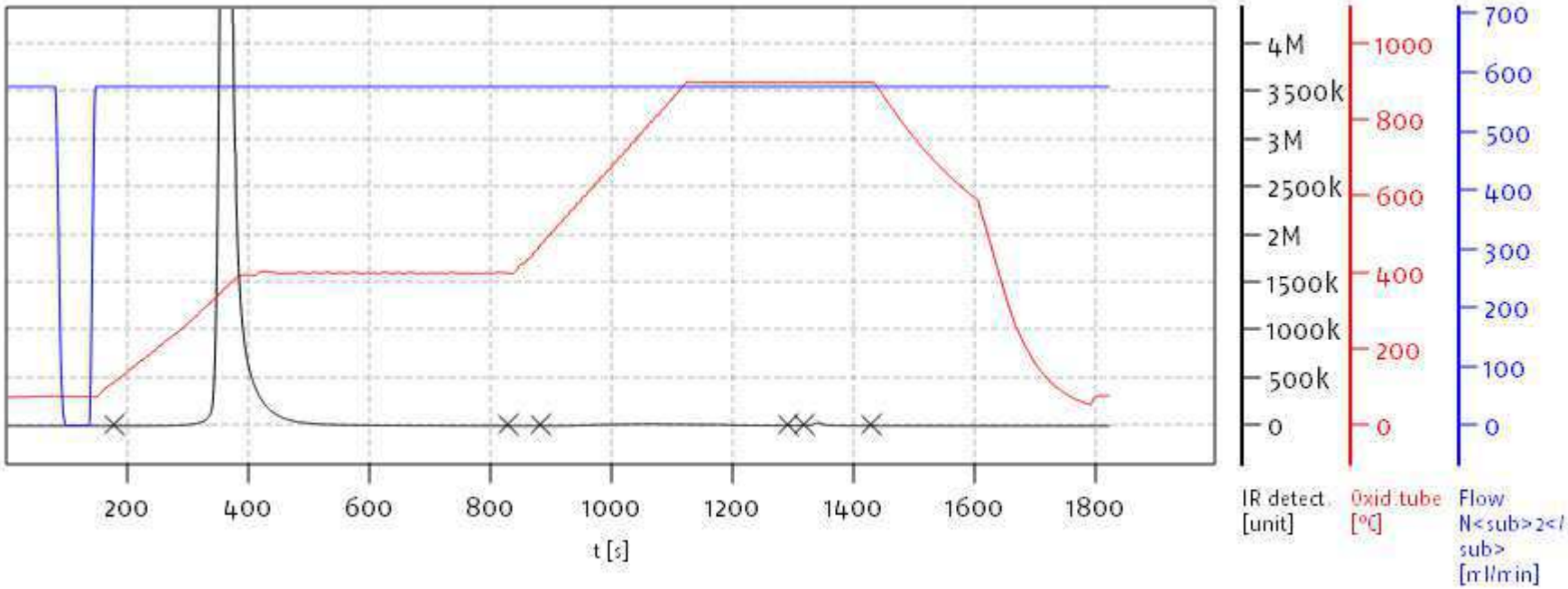
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
18	18	21H0301-11	522.80		1.00	CARBON	9/1/2021 7:59 PM	2.697	0.045	2.741	bl	8 481 430	150 326	28 066	0.9836	1.0000



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Access: soliTOC superuser

Date: Mon Sep 6 07:32:29 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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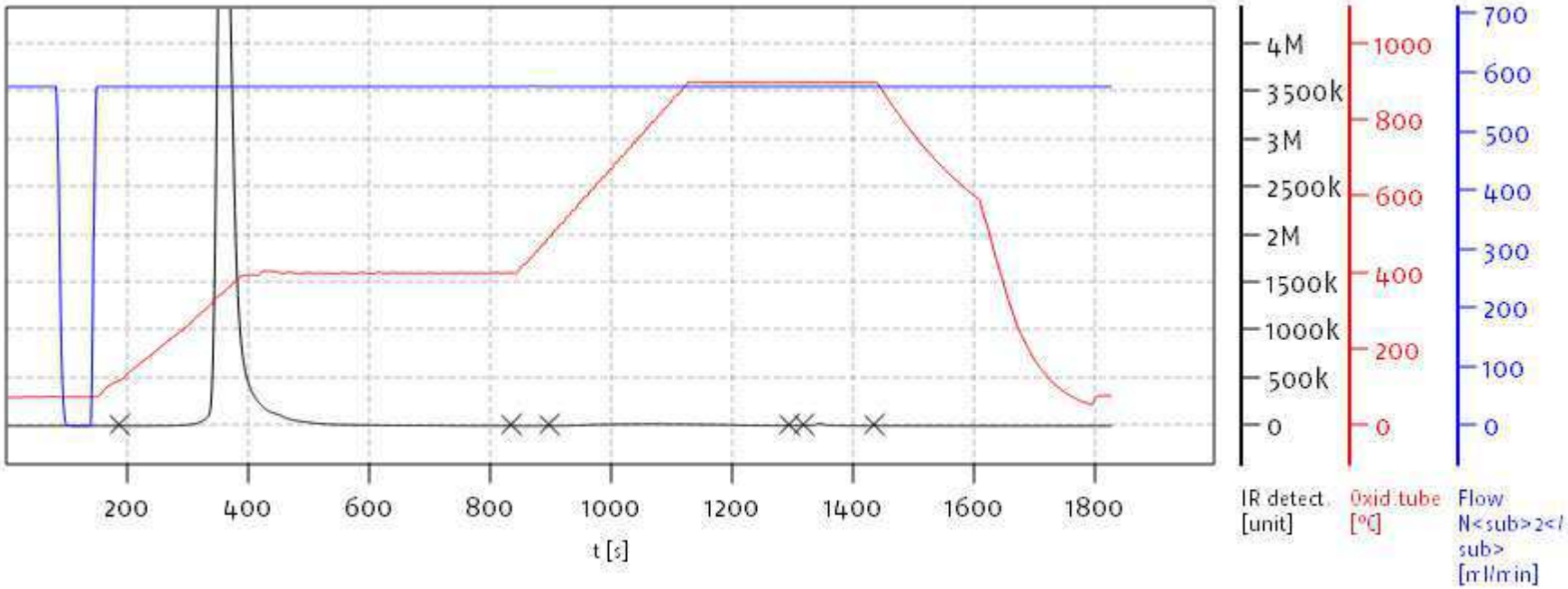
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
19	19	21H0301-12	521.60		1.00	CARBON	9/1/2021 8:30 PM	2.496	0.046	2.543	bl	7 840 130	155 027	21 532	0.9836	1.0000



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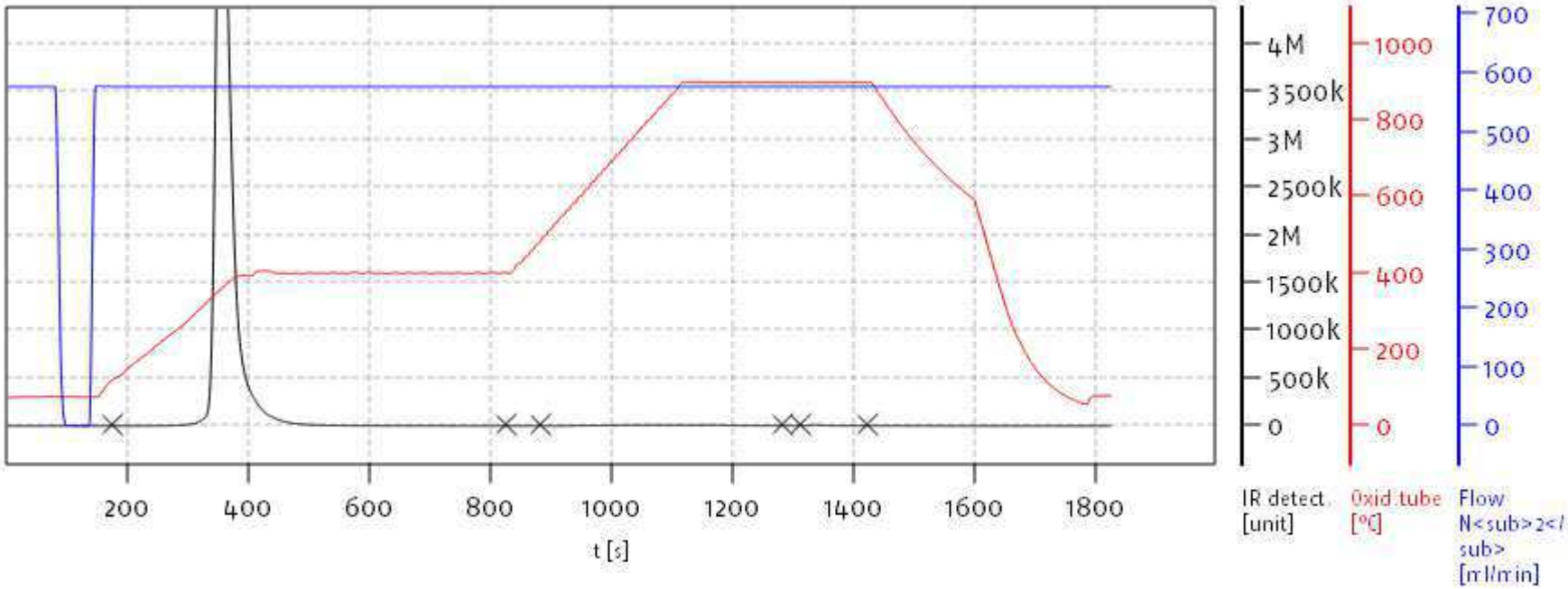
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
20	20	BJH0805-DUP1	585.20		1.00	CARBON	9/1/2021 9:00 PM	2.126	0.020	2.146	bl	7 496 130	80 357	15 307	0.9836	1.0000



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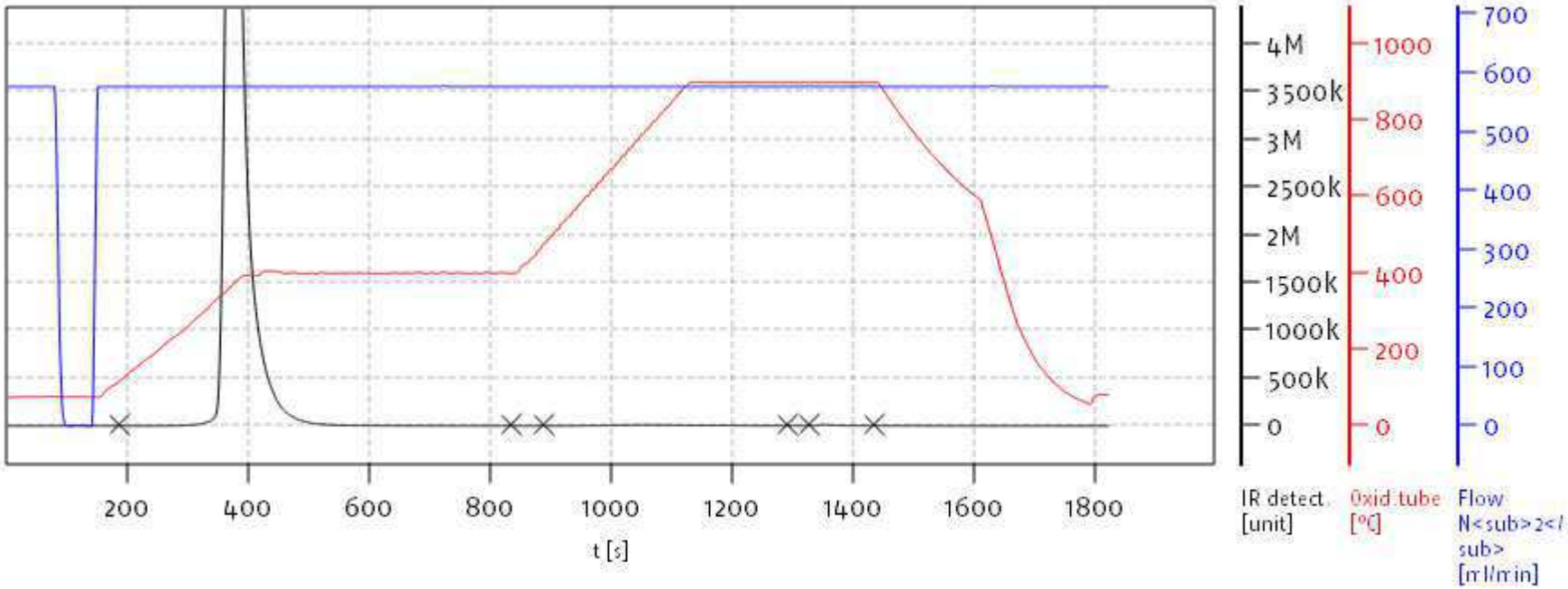
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
21	21	BJH0805-MS1	538.90	0.0104	1.00	CARBON	9/1/2021 9:31 PM	3.469	0.018	3.486	bl,C1o	11 258700	67 954	17 225	0.9836	1.0000



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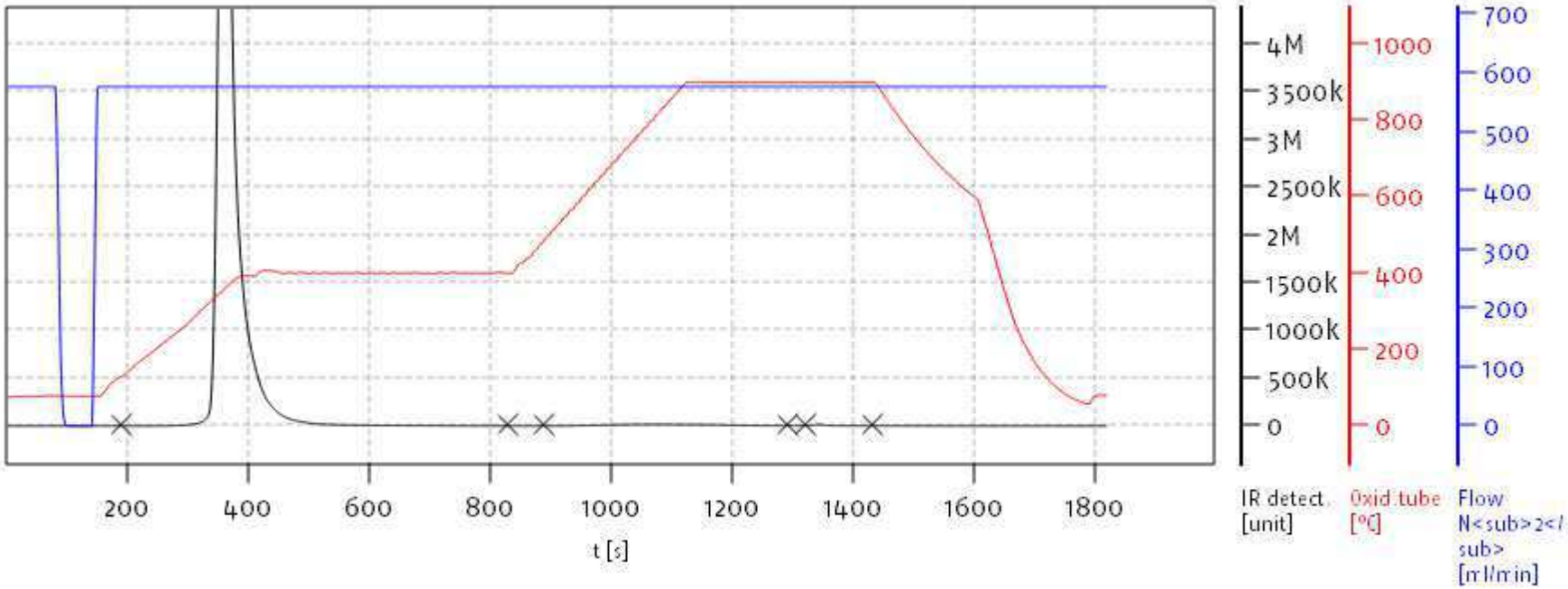
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
22	22	BJH0805-MSD1	544.10	0.0116	1.00	CARBON	9/1/2021 10:02 PM	2.993	0.035	3.028	bl,C1o	9 808 310	124 456	16 672	0.9836	1.0000



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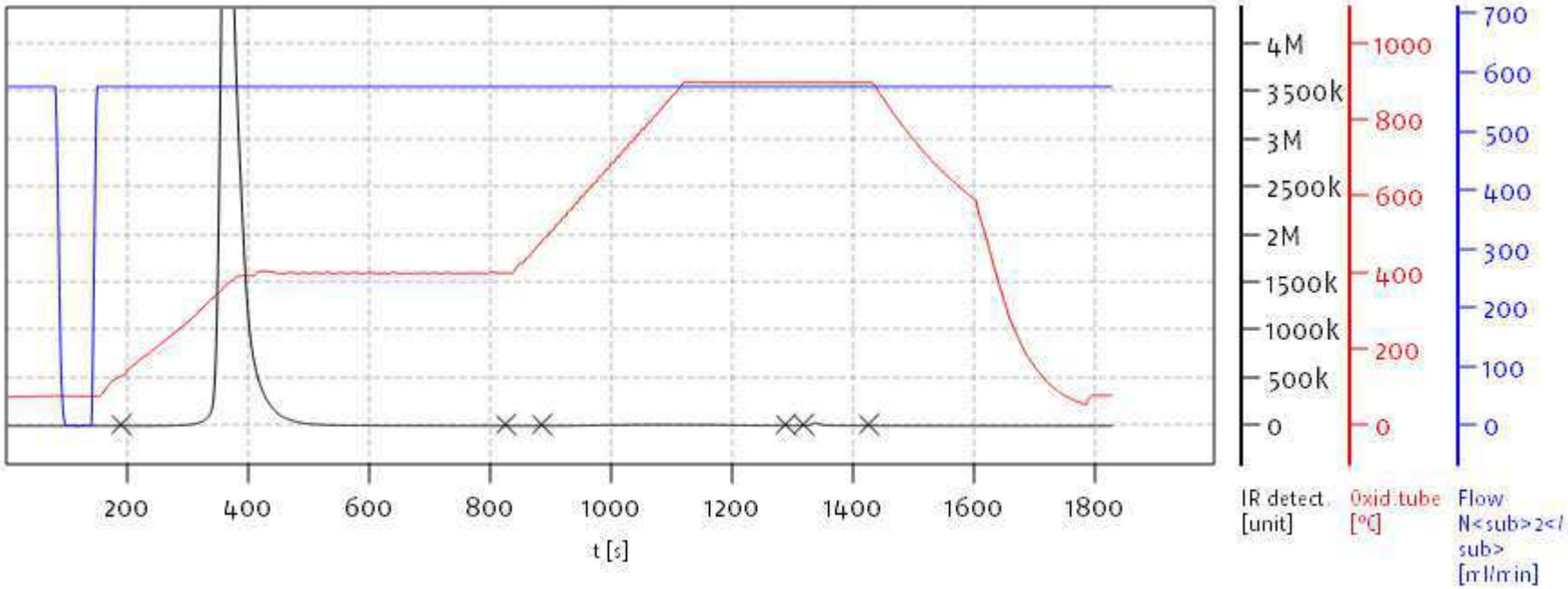
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
23	23	21H0301-17	540.20		1.00	CARBON	9/1/2021 10:33 PM	2.760	0.029	2.790	bl,Cl o	8 972 190	105 943	26 602	0.9836	1.0000



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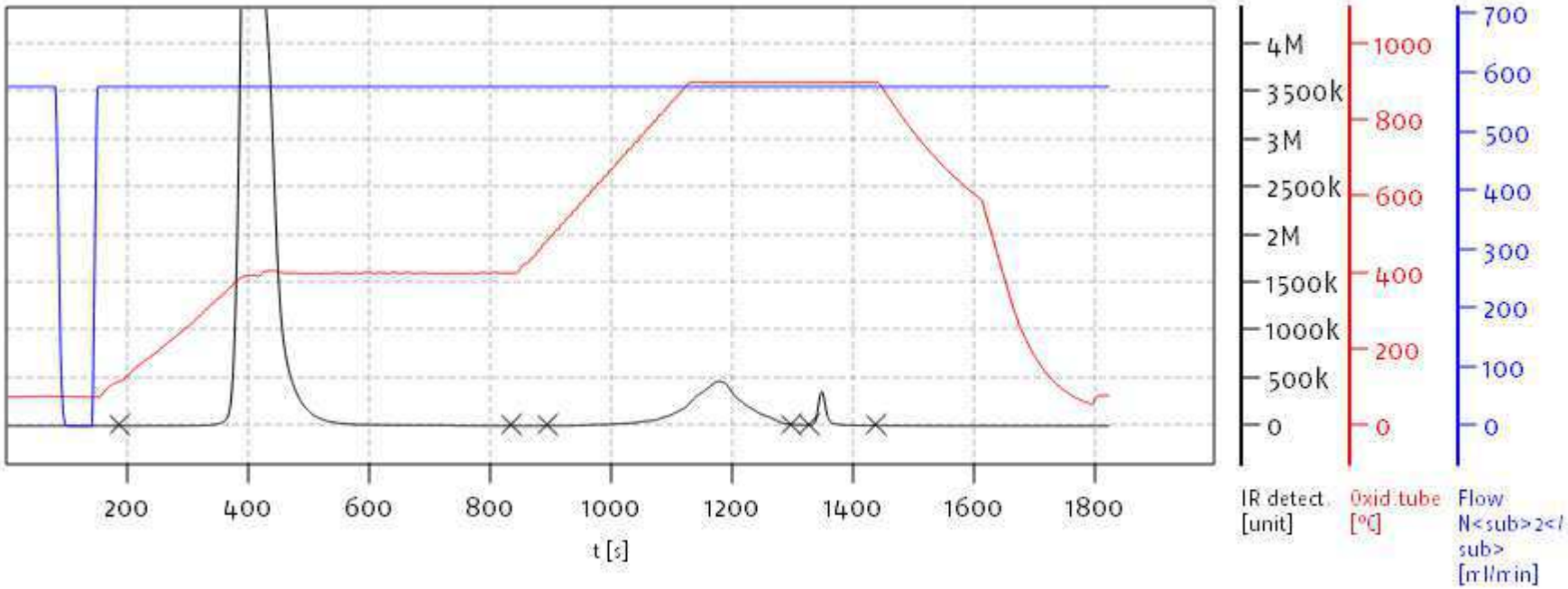
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
24	24	21H0321-01	523.00		1.00	CARBON	9/1/2021 11:04 PM	4.606	0.618	5.224	bl,C1o	14 301500	1 926 710	218 618	0.9836	1.0000



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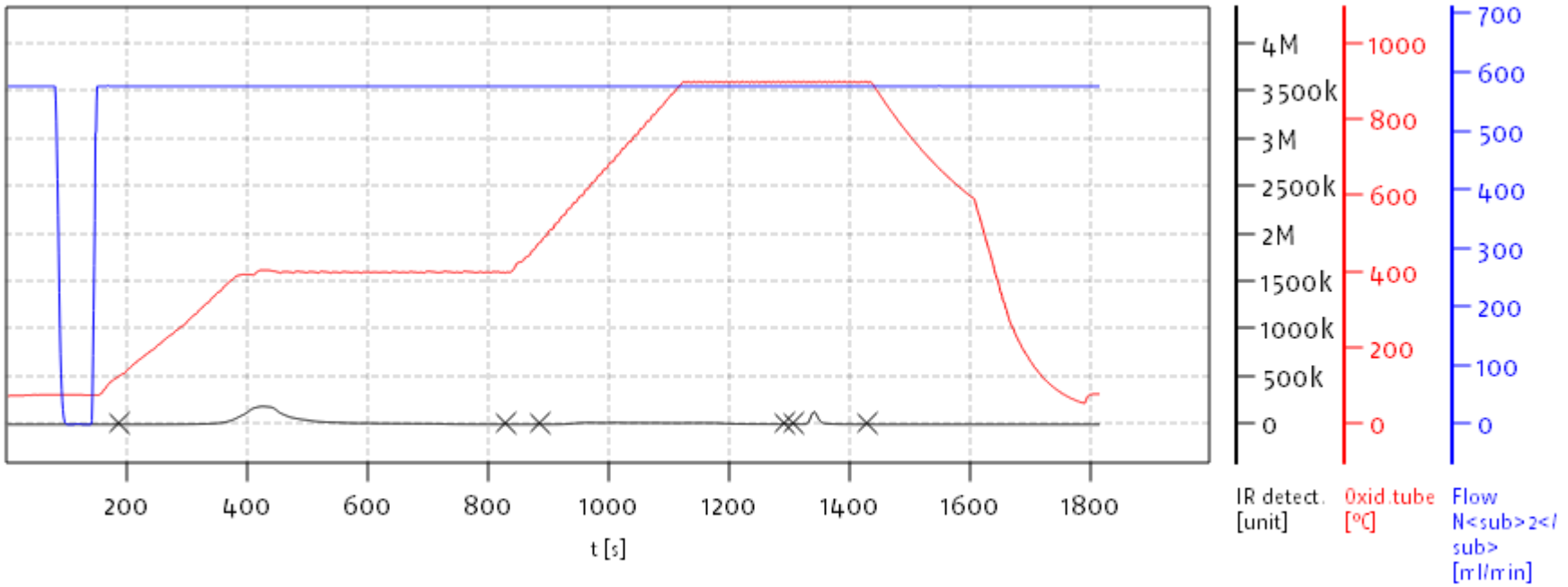
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
25	25	21H0321-03	517.60		1.00	CARBON	9/1/2021 11:34 PM	0.248	0.052	0.300	bl	714 743	170 381	79 981	0.9836	1.0000



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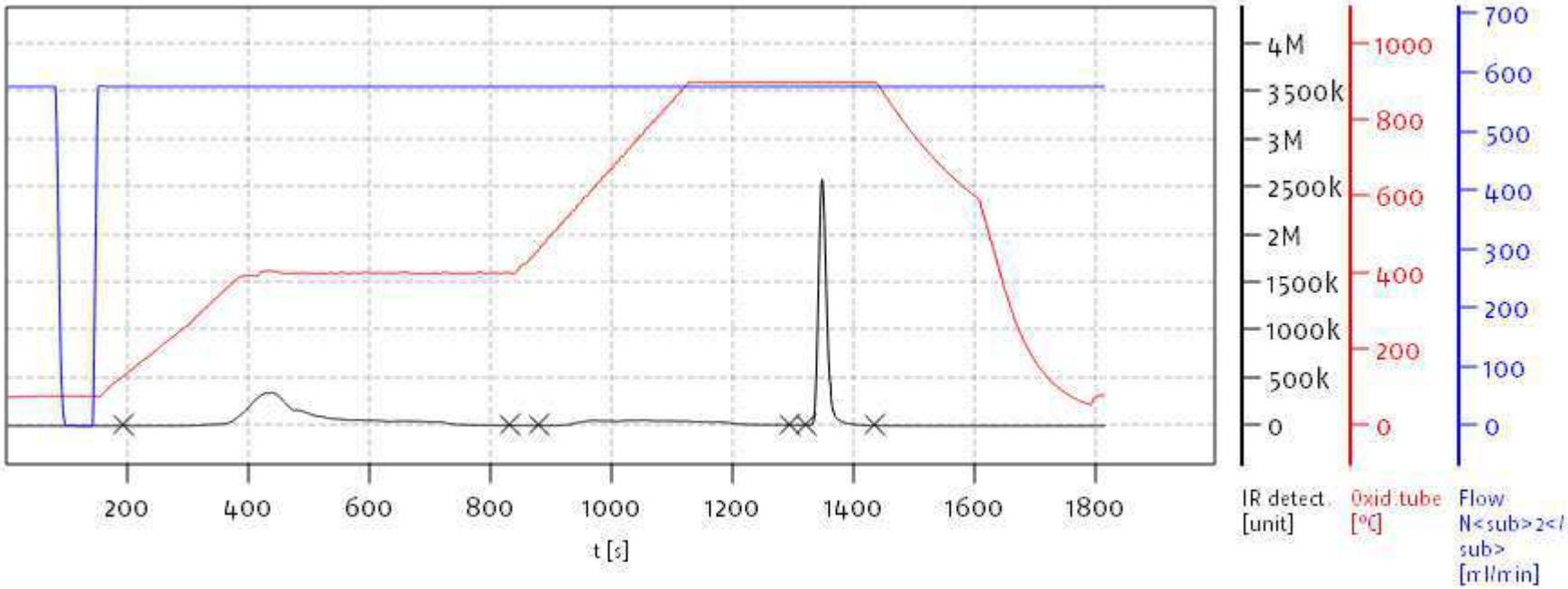
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
26	26	21H0321-05	609.40		1.00	CARBON	9/2/2021 12:05 AM	0.869	0.145	1.014	bl	1 637 500	534 090	1 549 410	0.9836	1.0000



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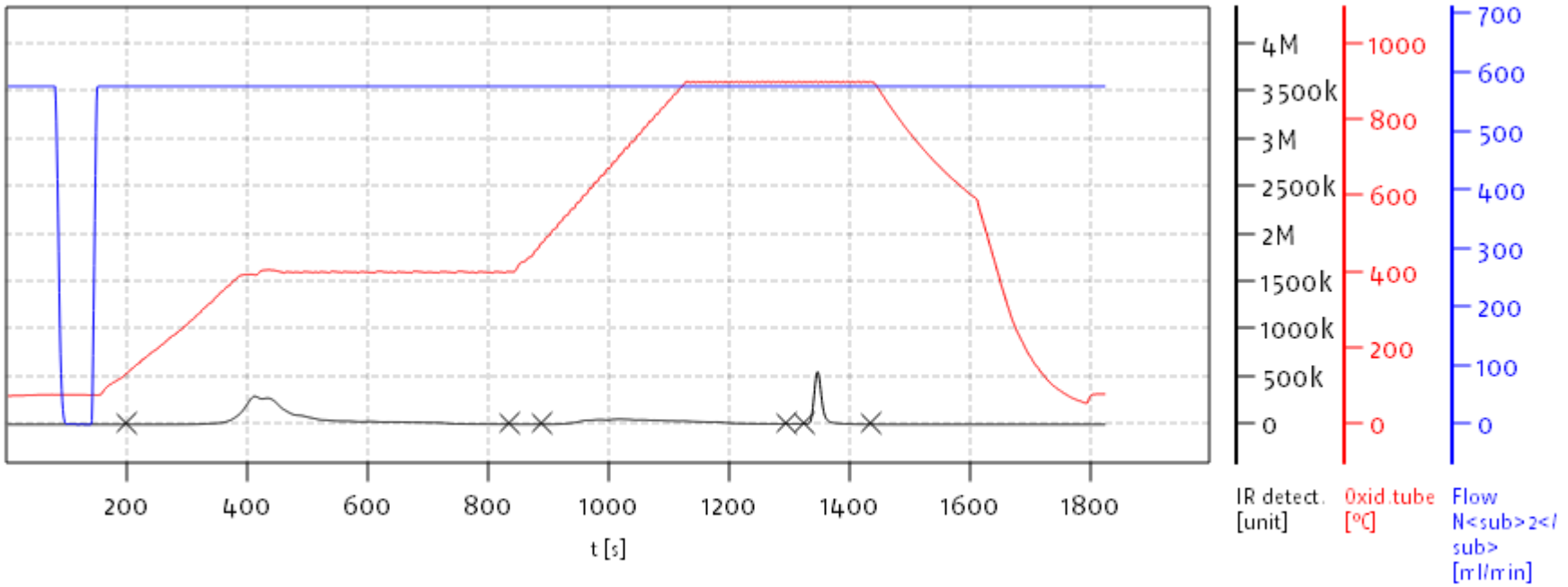
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
27	27	21H0321-07	525.20		1.00	CARBON	9/2/2021 12:36 AM	0.461	0.129	0.590	bl	1 162 470	412 583	313 081	0.9836	1.0000



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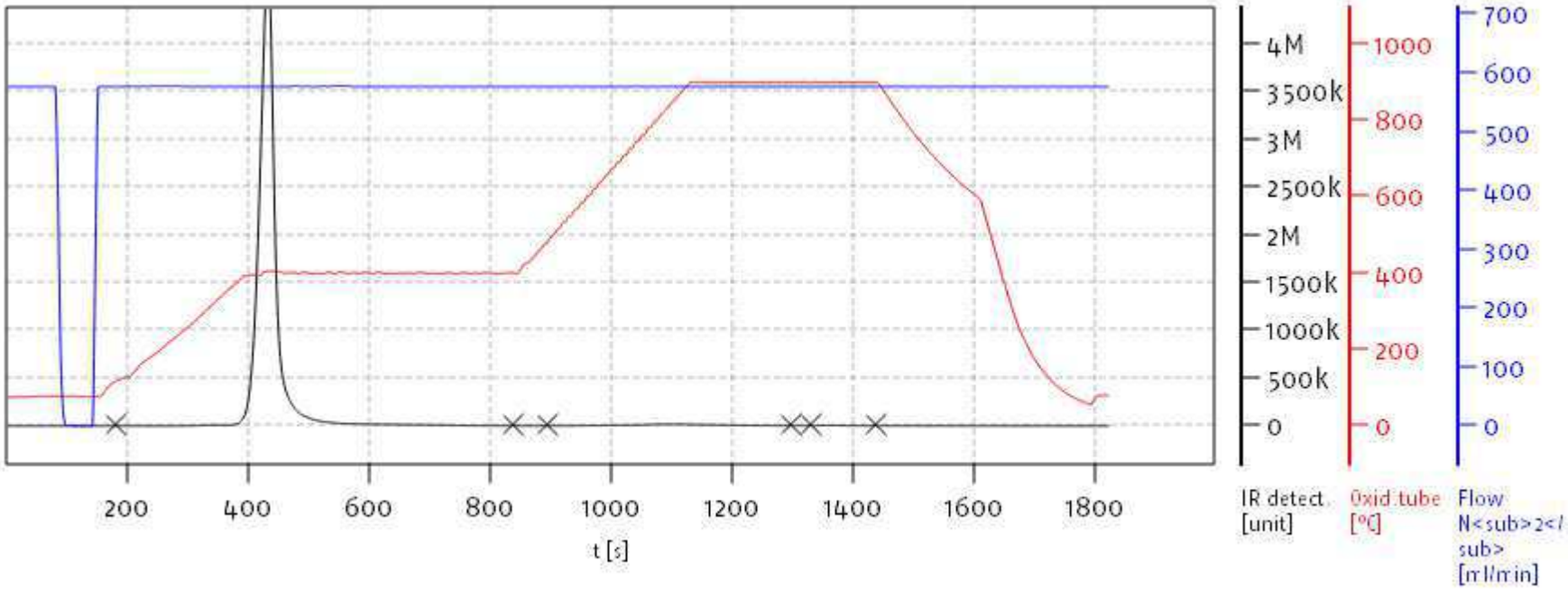
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
28	28	SJH0417-CCV2	20.40		1.00	CARBON	9/2/2021 1:07 AM	44.998	0.852	45.850	bl	5 535 420	114 604	13 625	0.9836	1.0000



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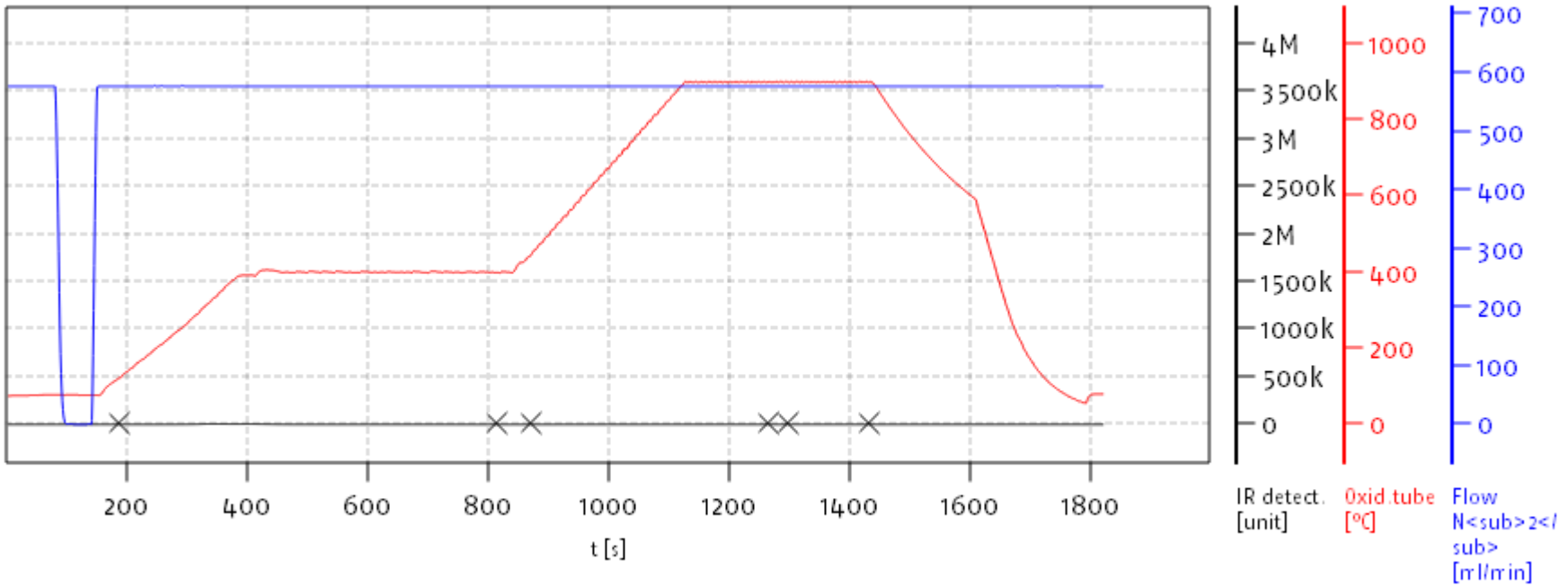
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
29	29	SJH0417-CCB2	512.80		1.00	CARBON	9/2/2021 1:37 AM	0.004	0.000	0.004	bl,C3u,C2u	24 219	1 399	345	0.9836	1.0000



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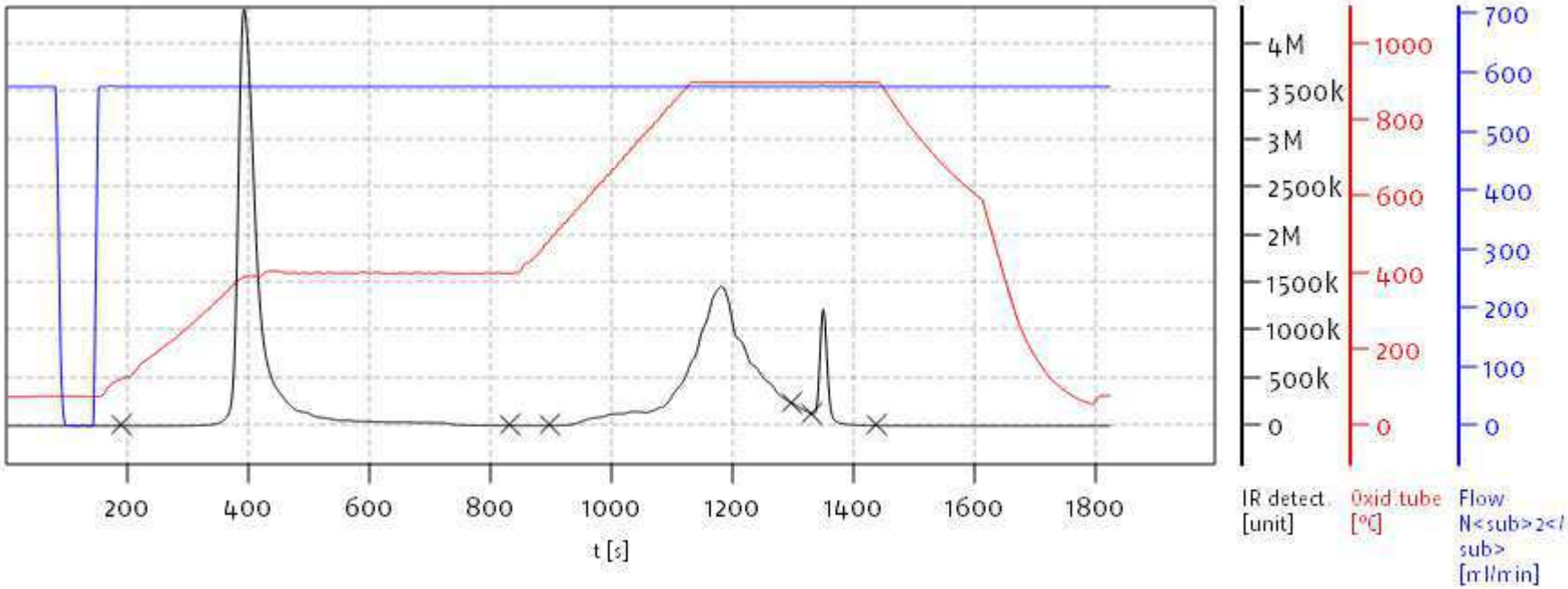
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
30	30	21H0321-09	524.90		1.00	CARBON	9/2/2021 2:08 AM	2.237	2.048	4.286	bl	6 364 930	6 378 240	715 512	0.9836	1.0000



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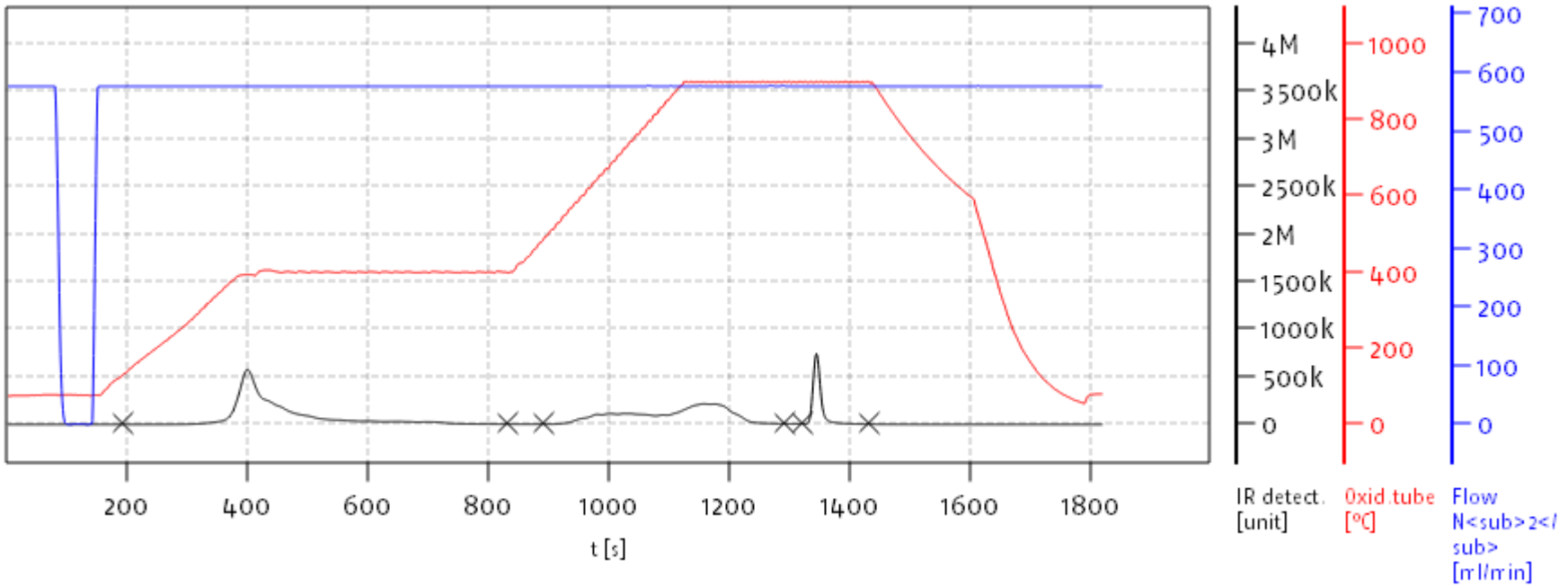
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
31	31	21H0321-11	377.50		1.00	CARBON	9/2/2021 2:39 AM	0.891	0.623	1.513	bl	1 619 210	1 403 380	421 601	0.9836	1.0000



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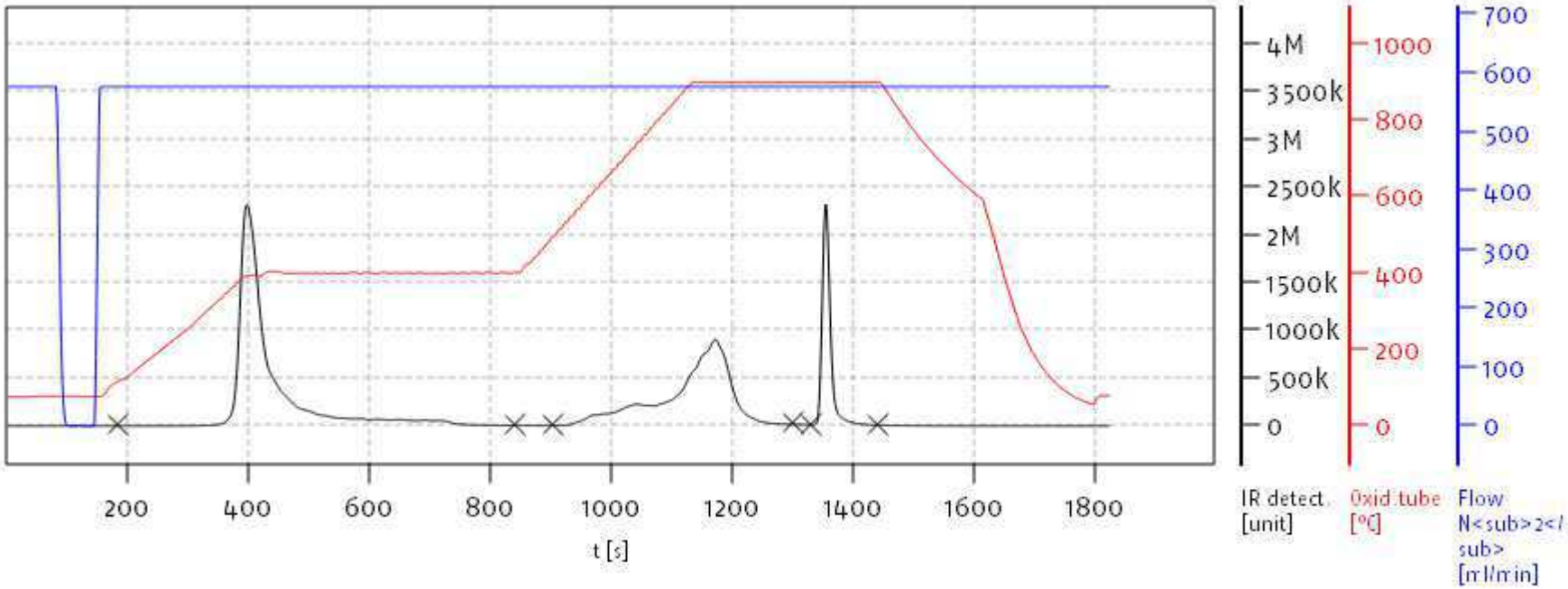
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
32	32	21H0321-13	513.10		1.00	CARBON	9/2/2021 3:10 AM	1.929	1.188	3.117	bl	4 568 090	3 619 720	1 390 500	0.9836	1.0000



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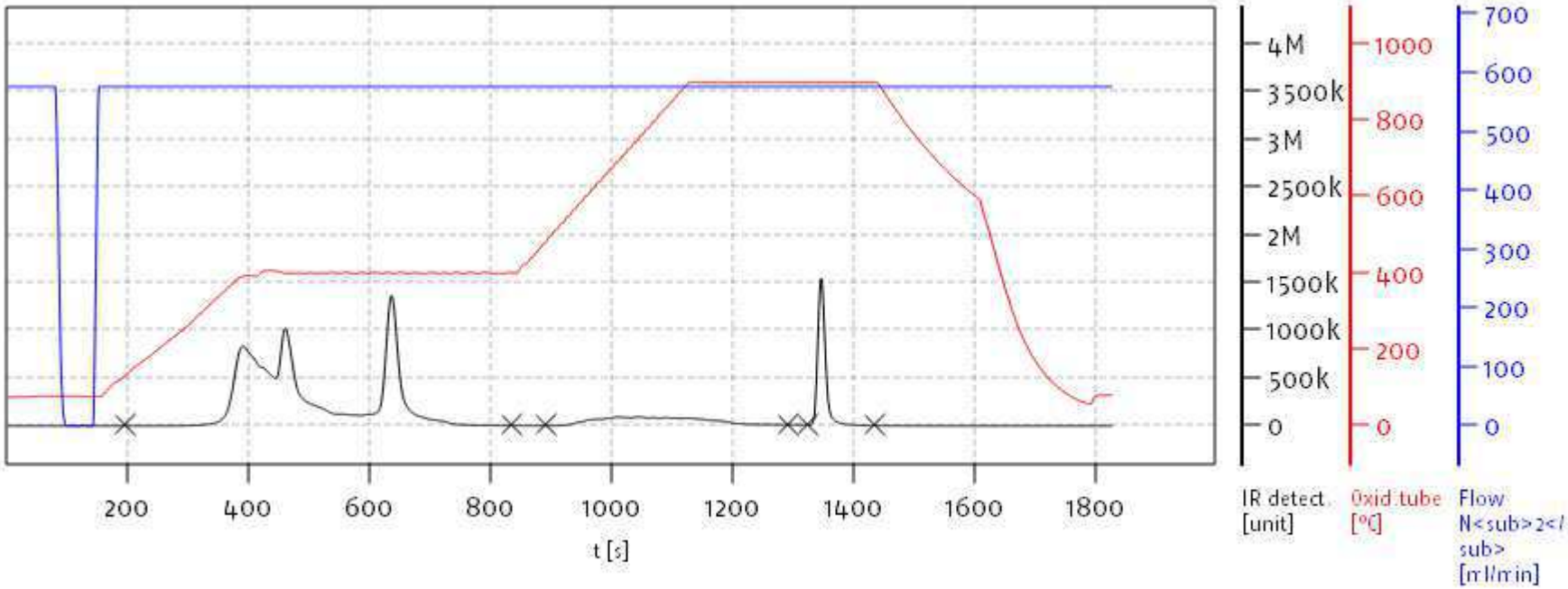
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
33	33	21H0321-15	554.90		1.00	CARBON	9/2/2021 3:41 AM	1.811	0.233	2.044	bl	5 190 940	776 799	867 539	0.9836	1.0000



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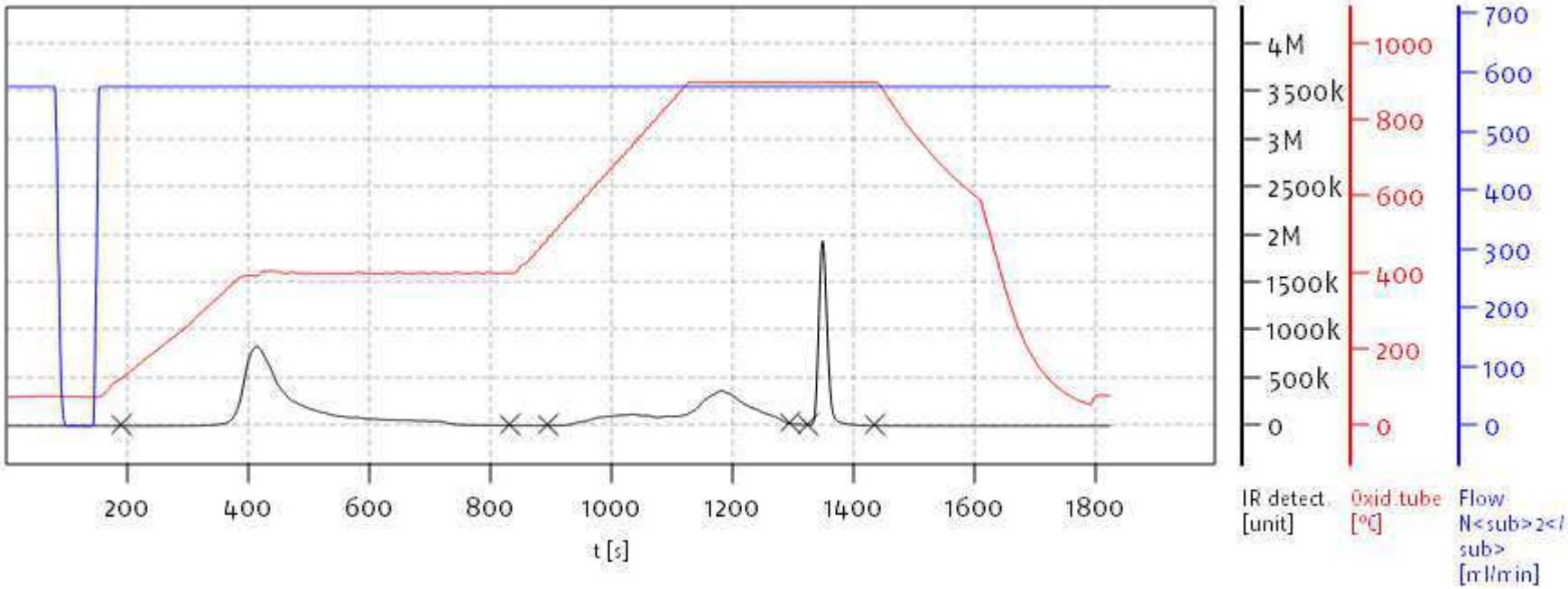
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
34	34	BJH0805-DUP2	533.60		1.00	CARBON	9/2/2021 4:11 AM	1.269	0.628	1.898	bl	2 884 130	1 997 060	1 196 010	0.9836	1.0000



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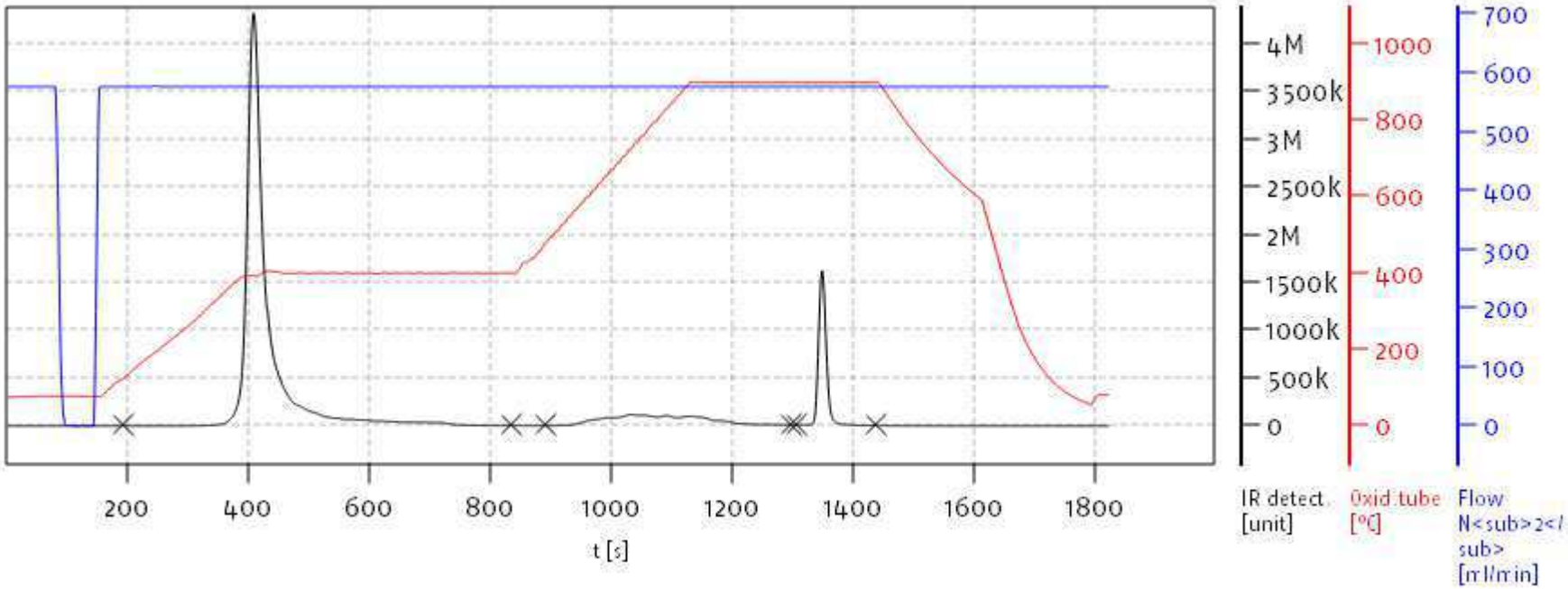
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
35	35	BJH0805-MS2	353.70	0.0111	1.00	CARBON	9/2/2021 4:42 AM	3.202	0.412	3.614	bl	5 911 260	874 764	915 204	0.9836	1.0000



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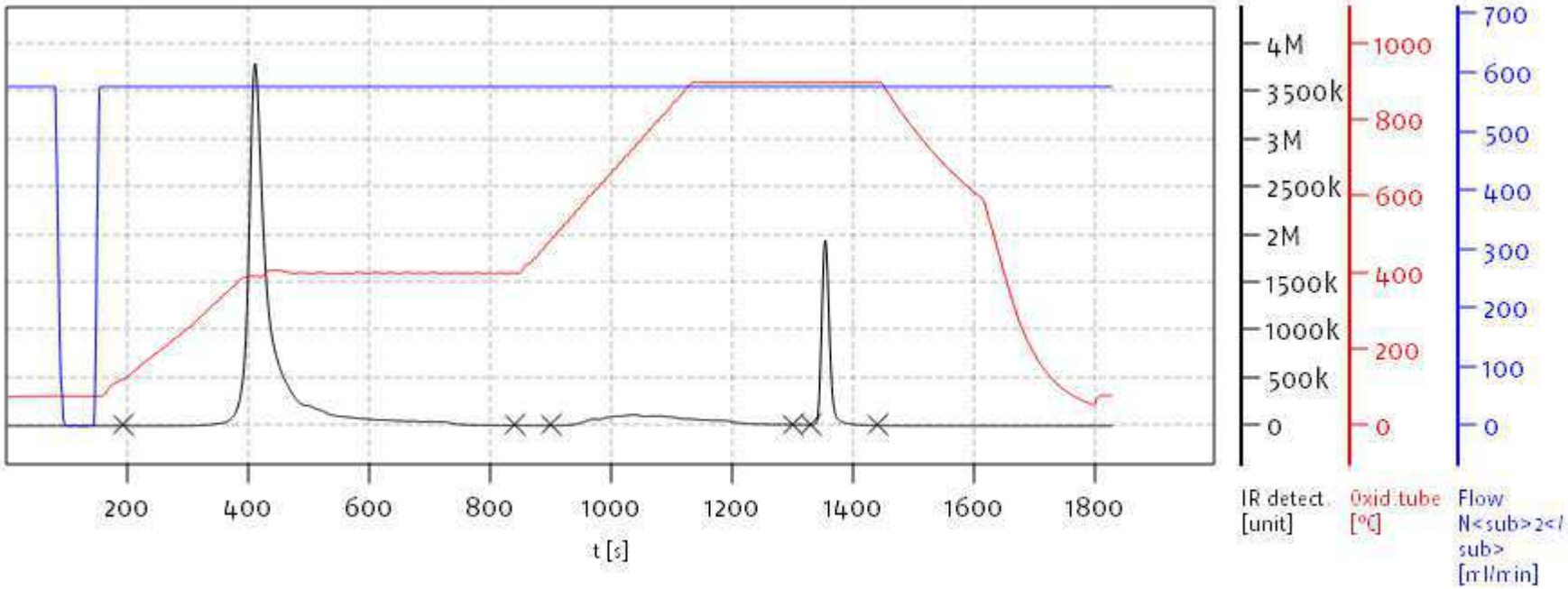
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
36	36	BJH0805-MSD2	535.10	0.0097	1.00	CARBON	9/2/2021 5:13 AM	2.133	0.267	2.401	bl	5 768 650	858 105	1 108 370	0.9836	1.0000



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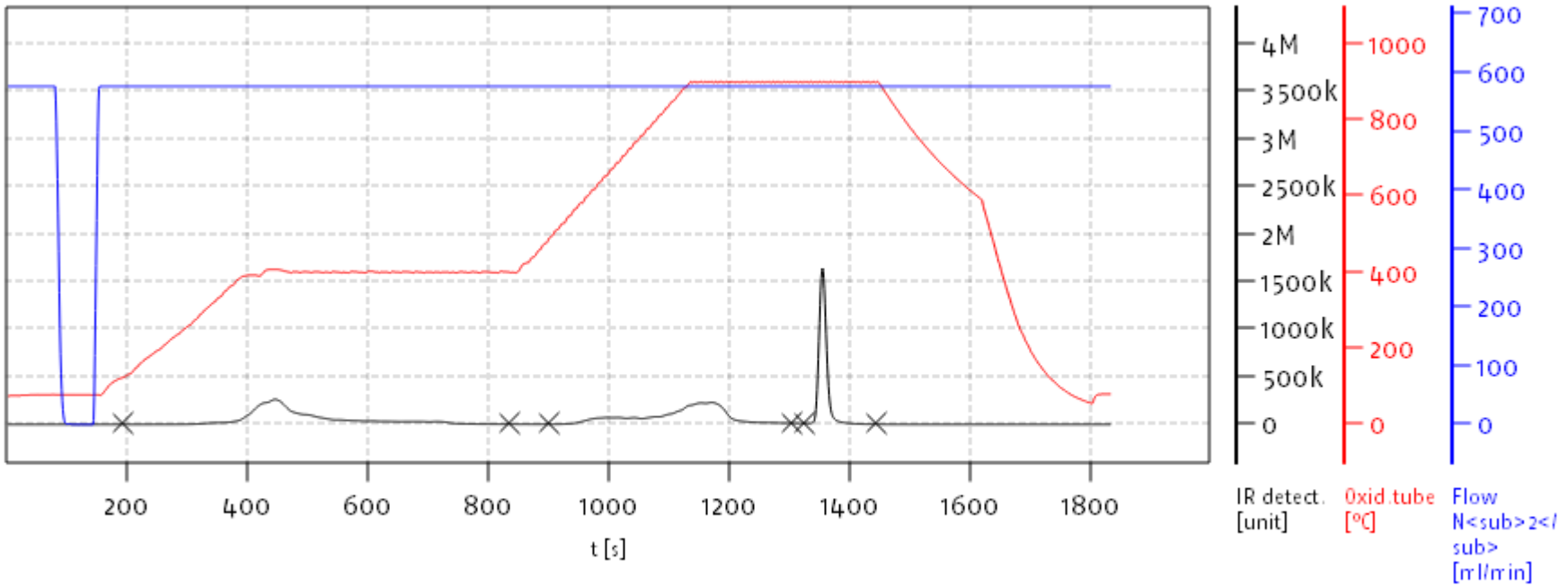
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
37	37	21H0321-17	526.40		1.00	CARBON	9/2/2021 5:44 AM	0.641	0.375	1.016	bl	1 130 960	1 180 020	907 704	0.9836	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

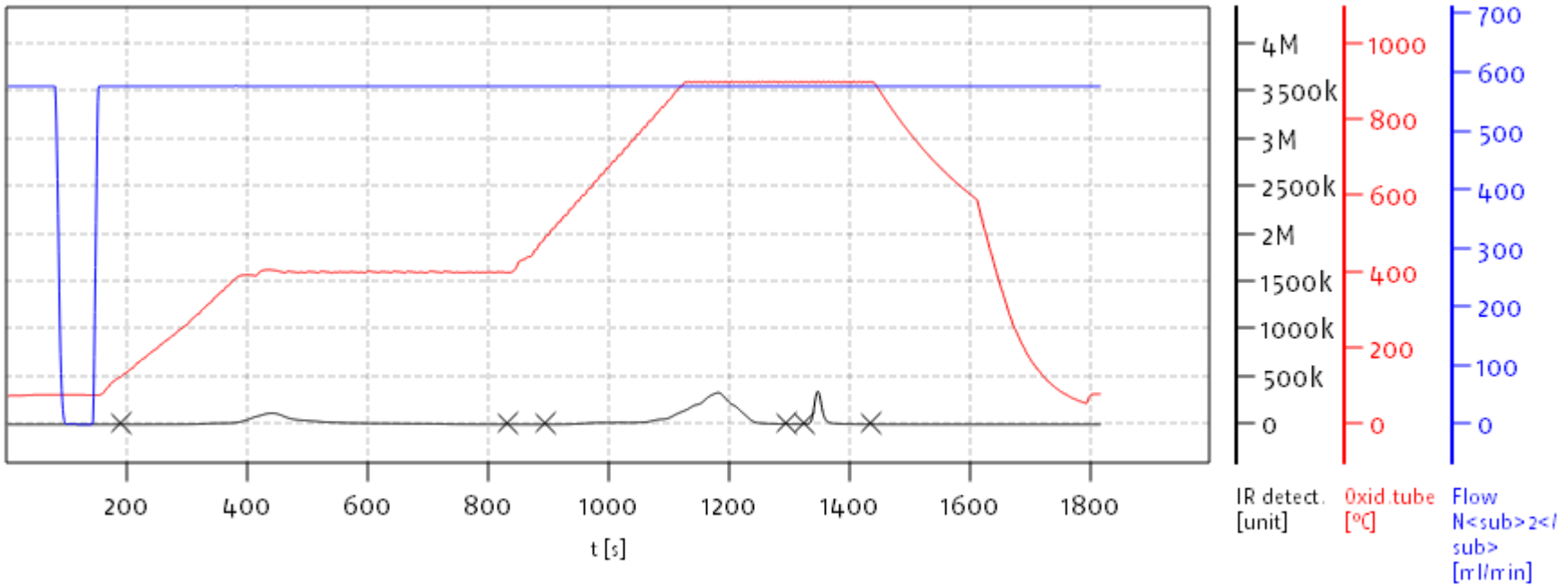
elementar
EXCELLENCE IN ELEMENTS

Document: from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
38	38	21H0321-19	587.10		1.00	CARBON	9/2/2021 6:15 AM	0.188	0.333	0.521	bl	480 507	1 170 590	202 698	0.9836	1.0000



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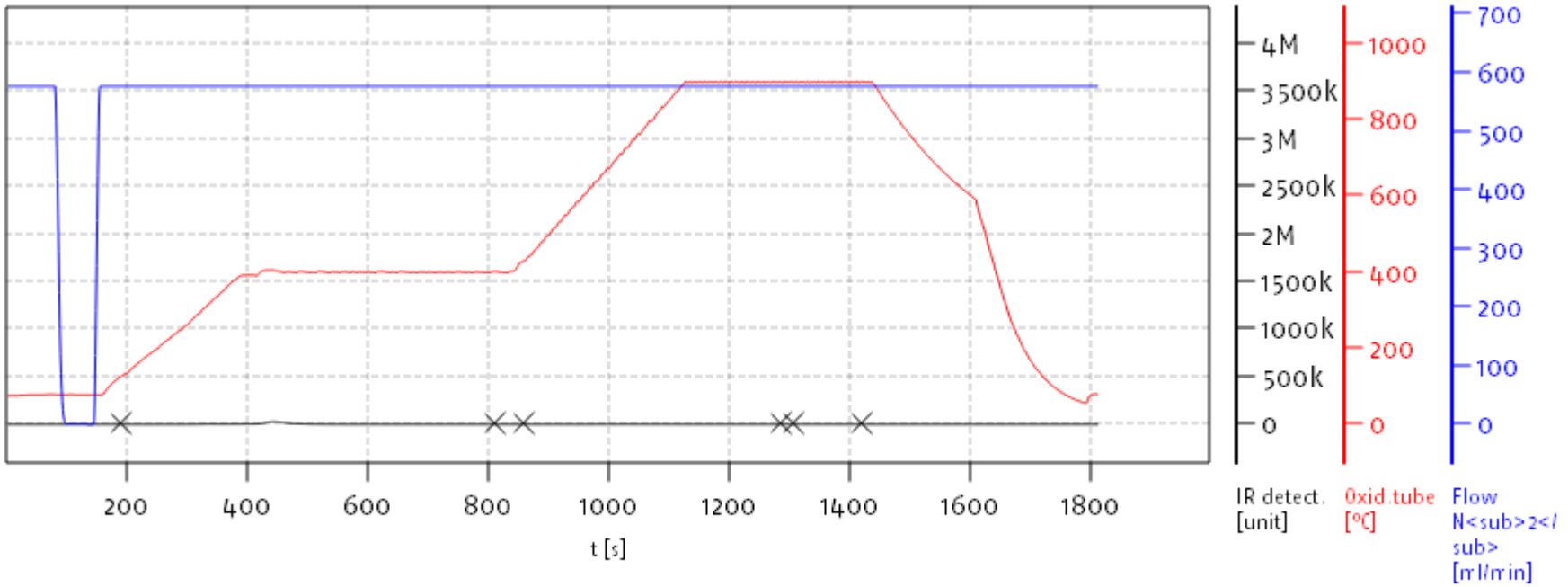
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
39	39	BJH0806-MRL1	522.50		1.00	CARBON	9/2/2021 6:45 AM	0.016	0.000	0.016	bl,C3u,C2u	63 361	6 237	430	0.9836	1.0000



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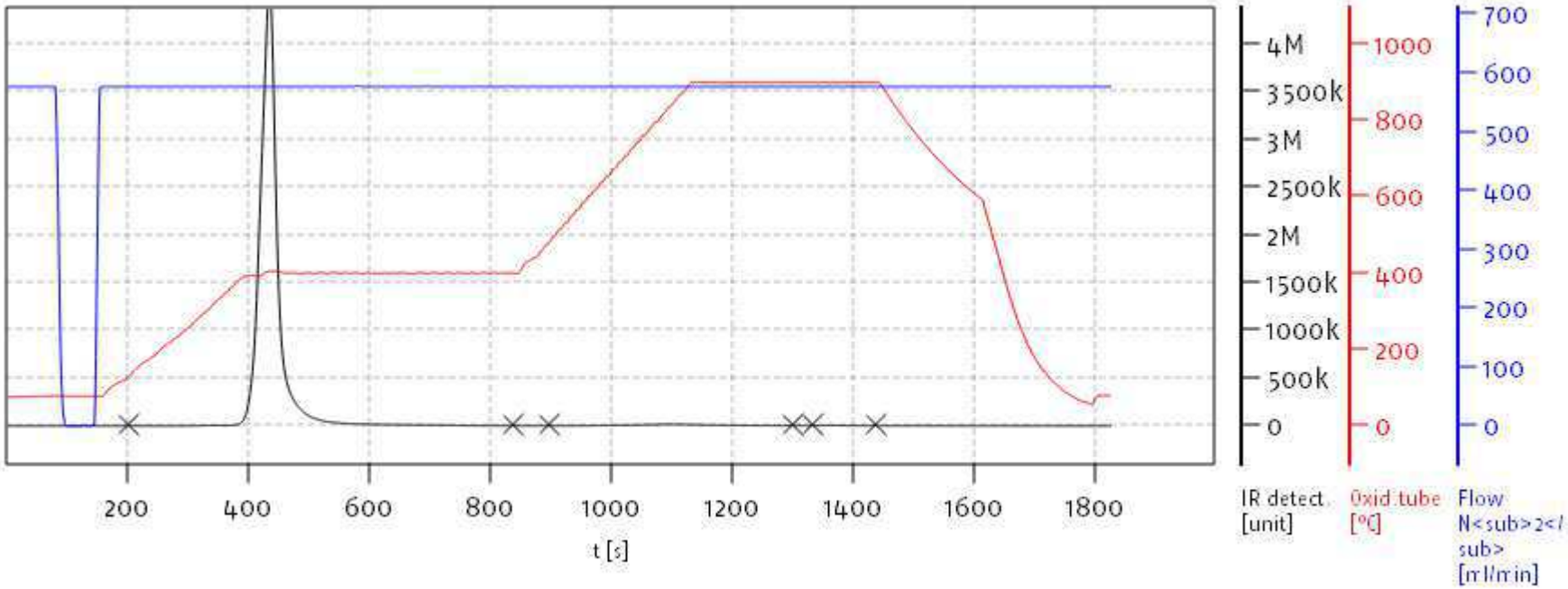
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
40	40	SJH0417-CCV3	20.70		1.00	CARBON	9/2/2021 7:16 AM	45.042	0.758	45.800	bl	5 621 860	104 600	13 930	0.9836	1.0000



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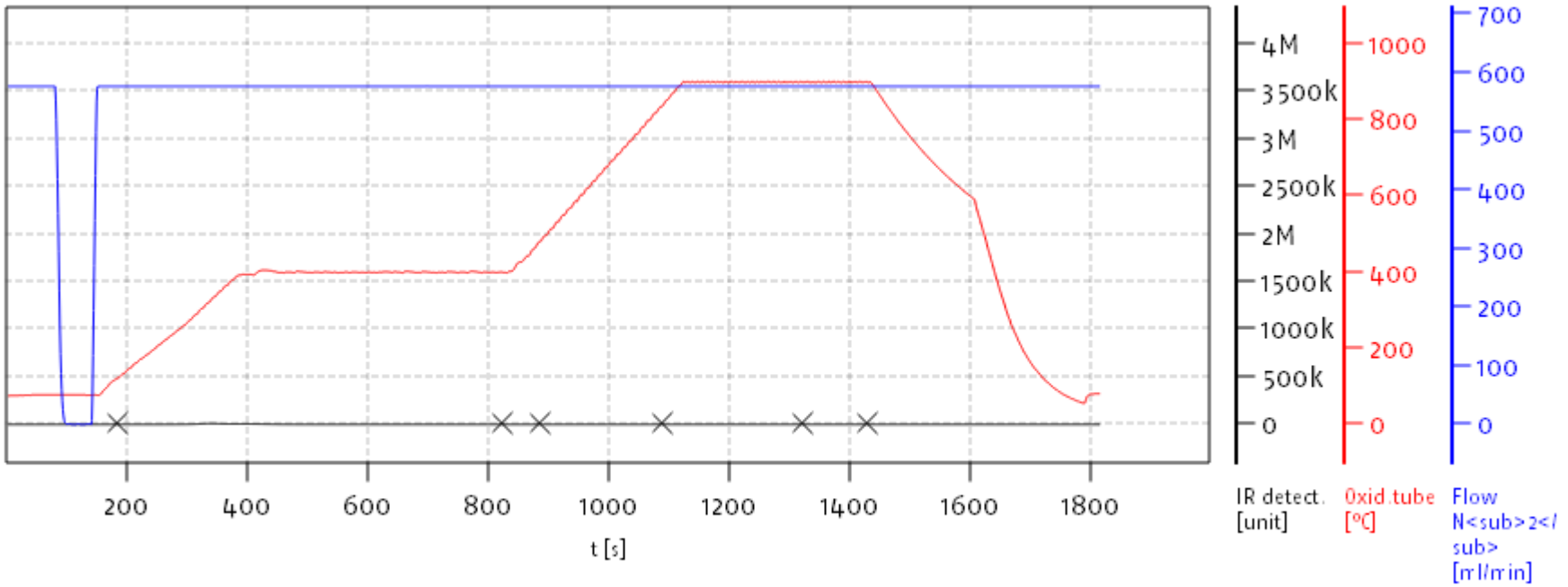
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
41	41	SJH0417-CCB3	525.90		1.00	CARBON	9/2/2021 7:47 AM	0.007	0.000	0.007	bl,C3u,C2u	32 311	986	414	0.9836	1.0000



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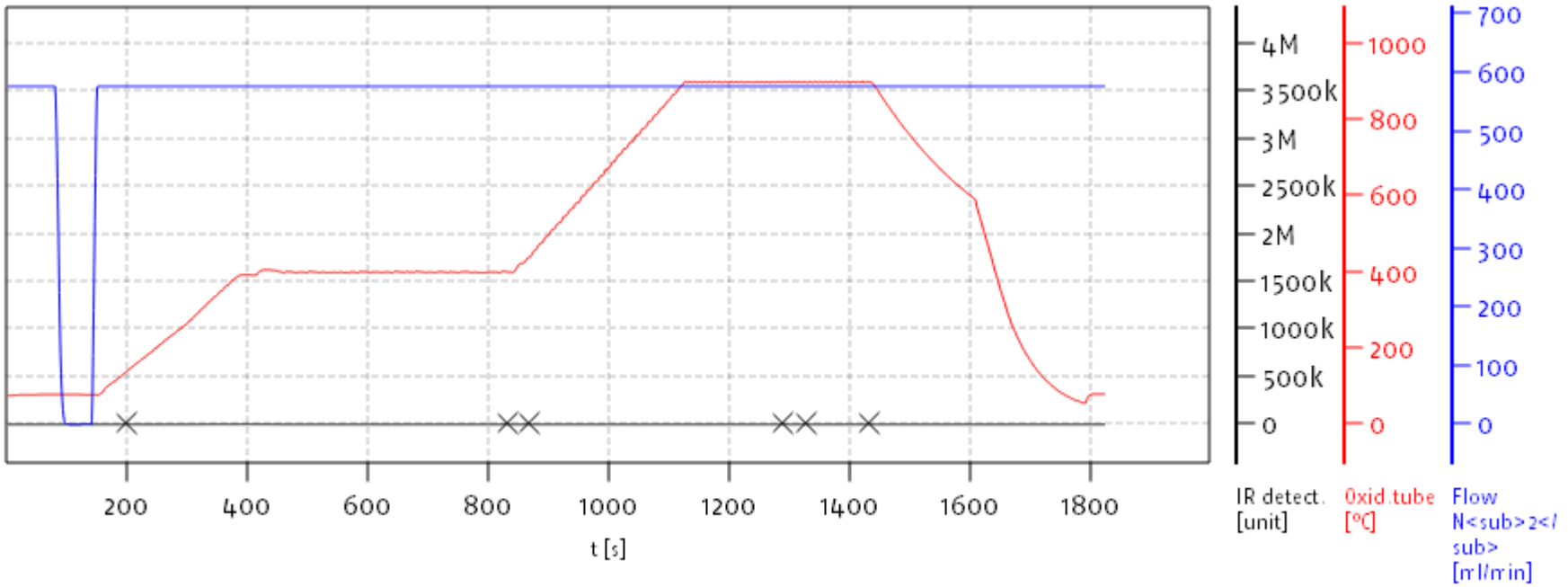
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
42	42	BJH0806-BLK1	549.90		1.00	CARBON	9/2/2021 8:18 AM	0.000	0.000	0.000	bl,C3u,C2u	9 719	1 723	472	0.9836	1.0000



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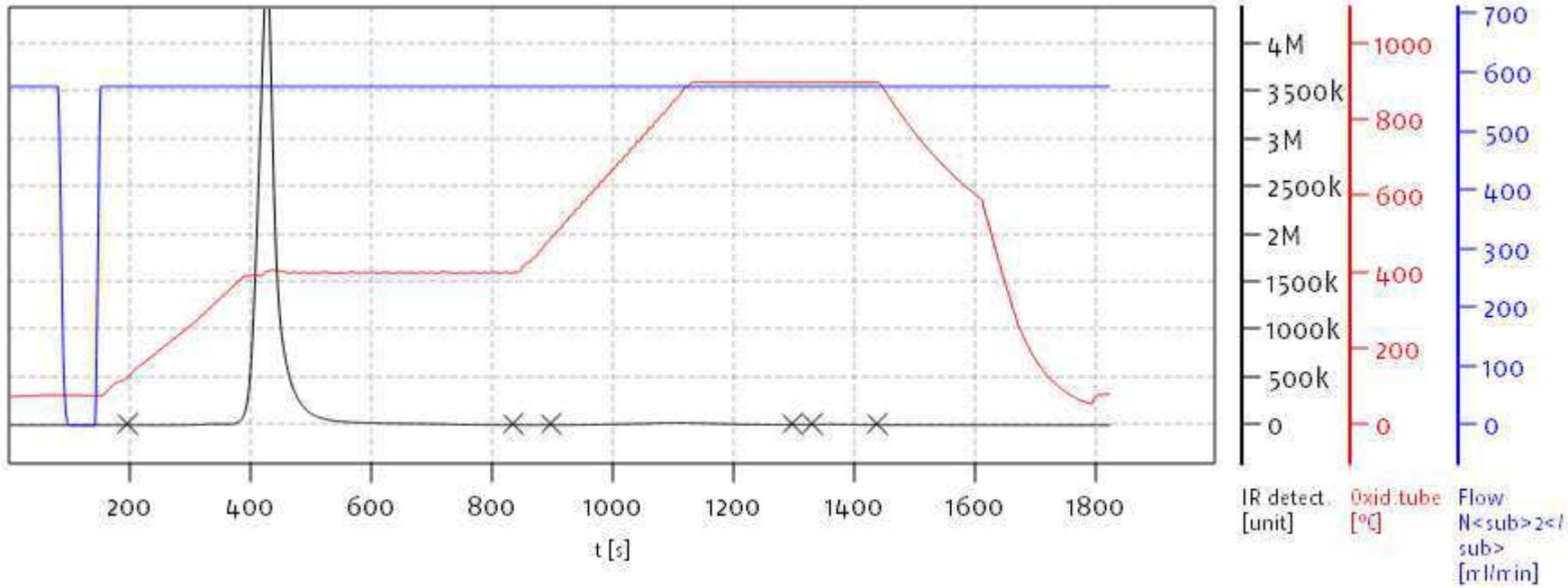
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
43	43	BJH0806-BS1	23.10		1.00	CARBON	9/2/2021 8:49 AM	44.876	1.142	46.018	bl	6 243 940	167 834	19 475	0.9836	1.0000



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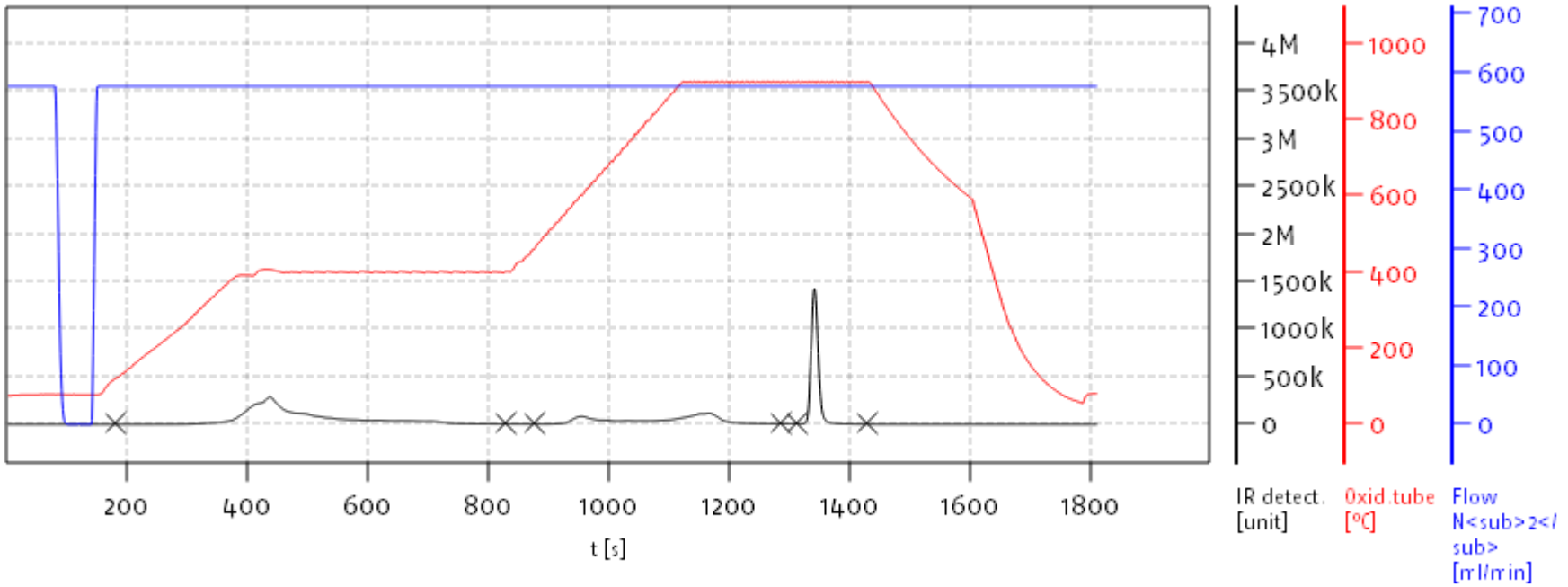
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
44	44	21H0321-21	534.10		1.00	CARBON	9/2/2021 9:19 AM	0.619	0.197	0.817	bl	1 255 020	636 223	747 033	0.9836	1.0000



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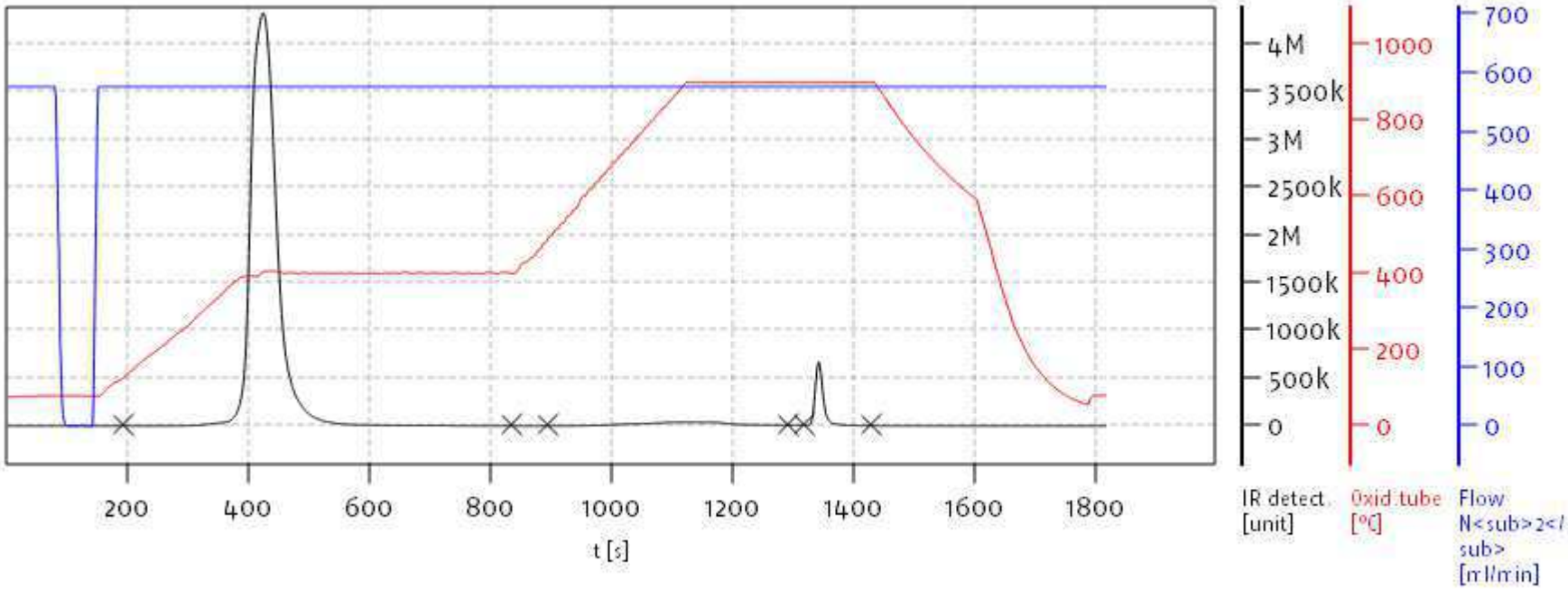
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
45	45	21H0321-23	525.50		1.00	CARBON	9/2/2021 9:50 AM	2.656	0.081	2.737	bl	8 028 750	263 291	391 546	0.9836	1.0000



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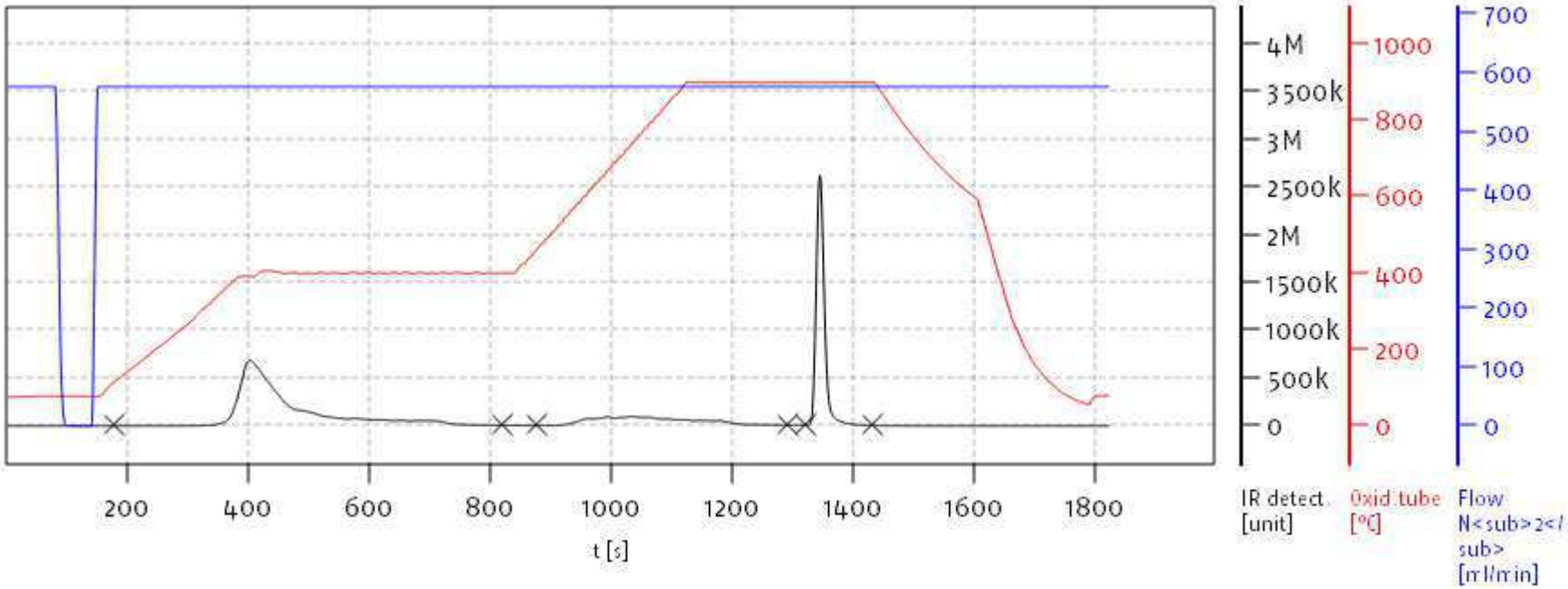
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
46	46	21H0321-25	511.80		1.00	CARBON	9/2/2021 10:21 AM	1.308	0.246	1.553	bl	2 463 410	755 802	1 563 360	0.9836	1.0000



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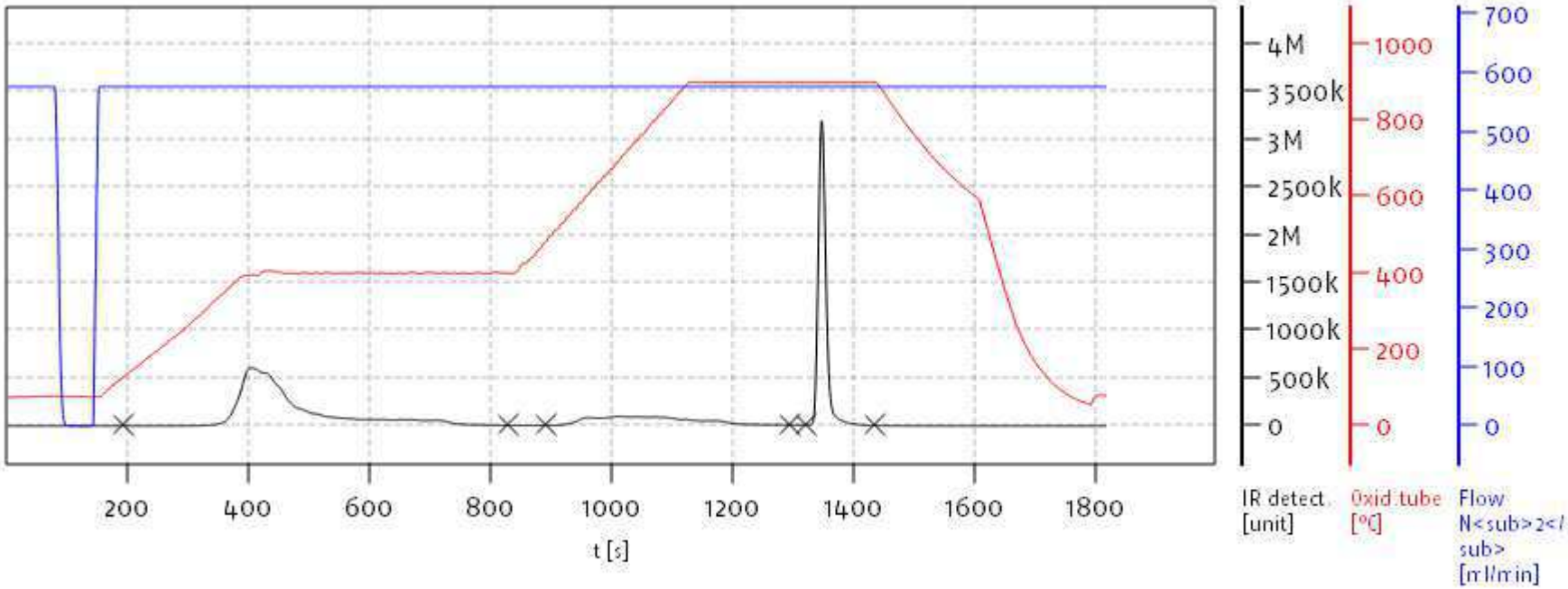
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
47	47	21H0321-27	560.20		1.00	CARBON	9/2/2021 10:51 AM	1.299	0.239	1.538	bl	2 574 550	805 359	1 799 210	0.9836	1.0000



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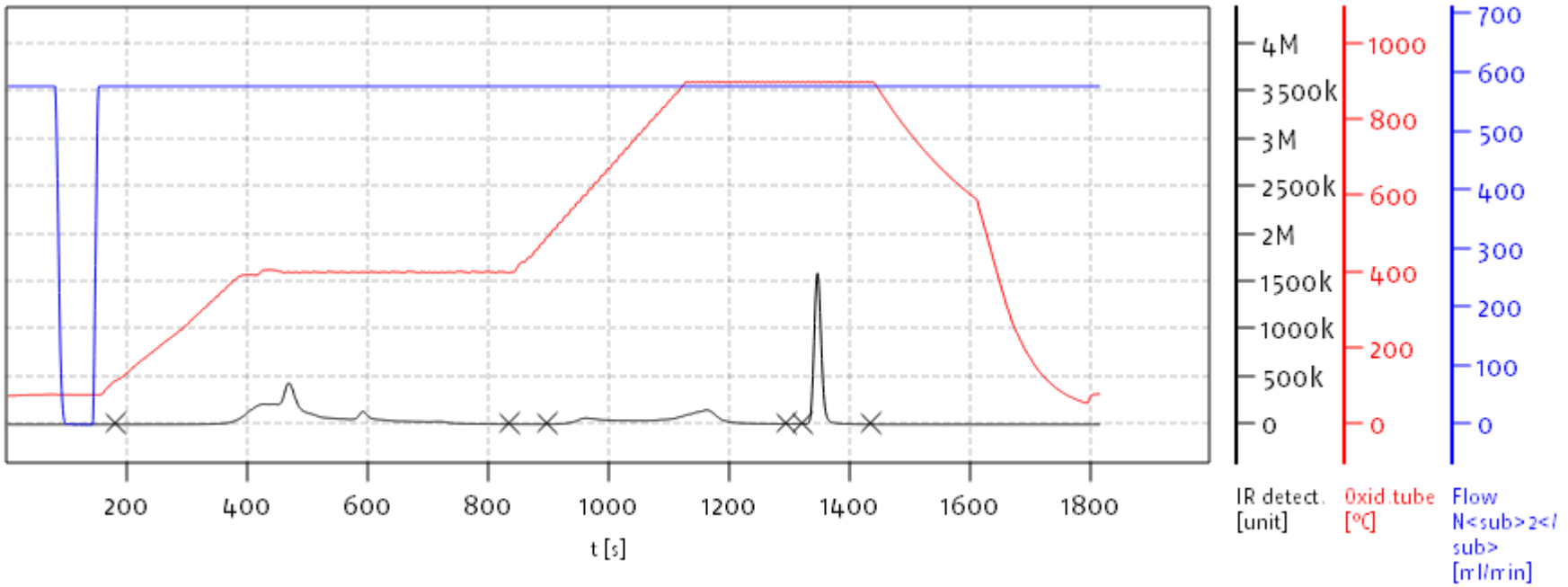
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
48	48	21H0321-29	536.10		1.00	CARBON	9/2/2021 11:22 AM	0.702	0.211	0.912	bl	1 440 650	680 090	833 032	0.9836	1.0000



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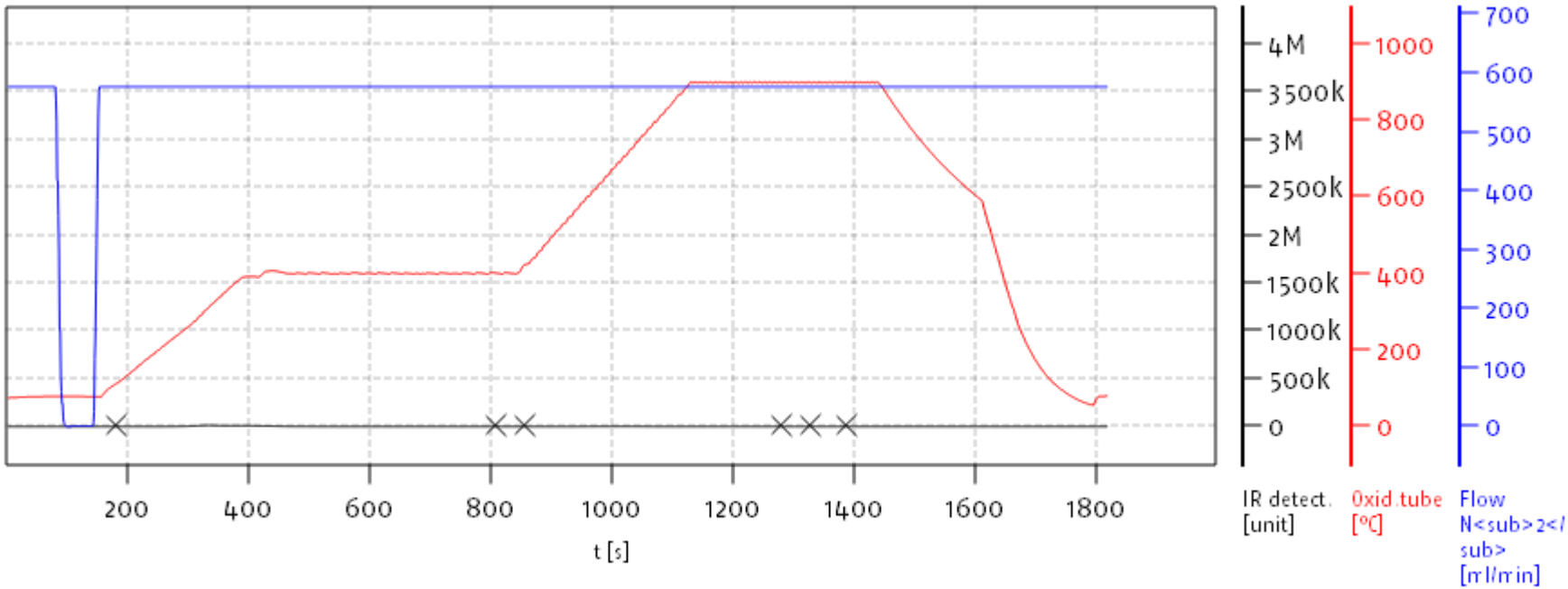
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
49	49	BLANK	1.00		1.00	CARBON	9/2/2021 11:53 AM	0.000	0.000	0.000	bl	52 548	7 479	173	0.9836	1.0000



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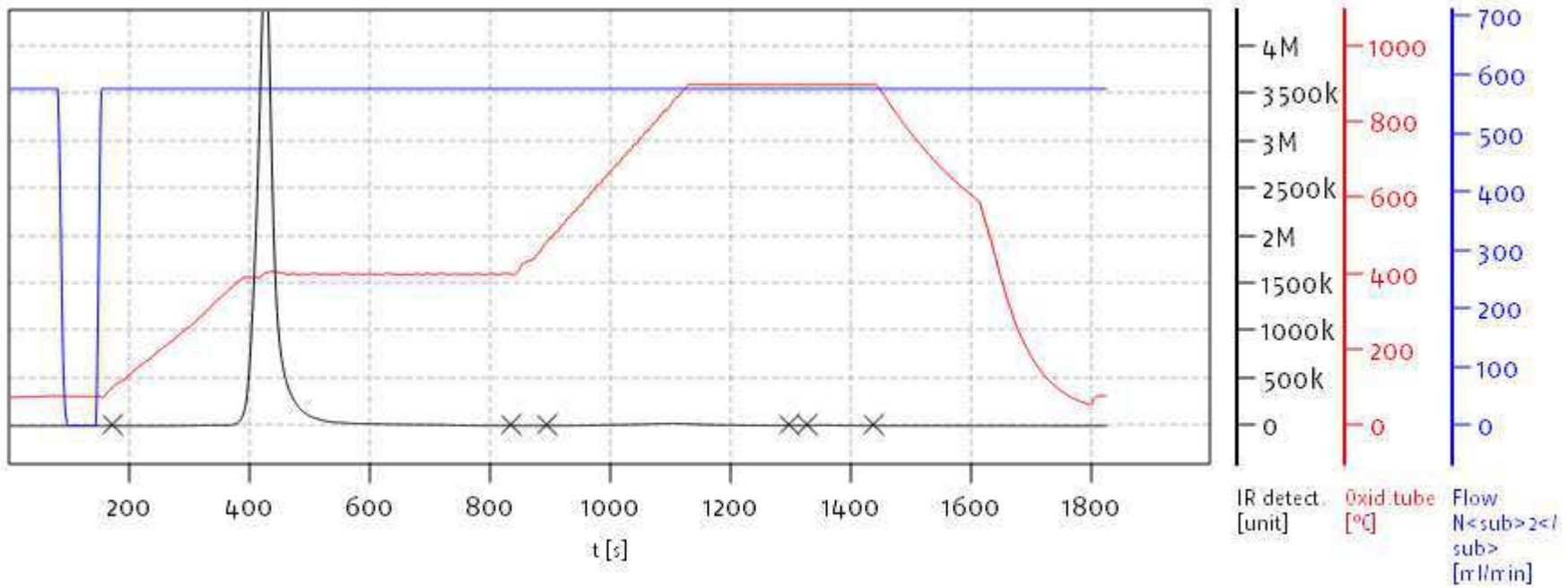
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
50	50	Dfactor	22.30		1.00	CARBON	9/2/2021 12:24 PM	44.476	1.093	45.568	bl	6 088 960	155 949	15 641	0.9657	1.0000



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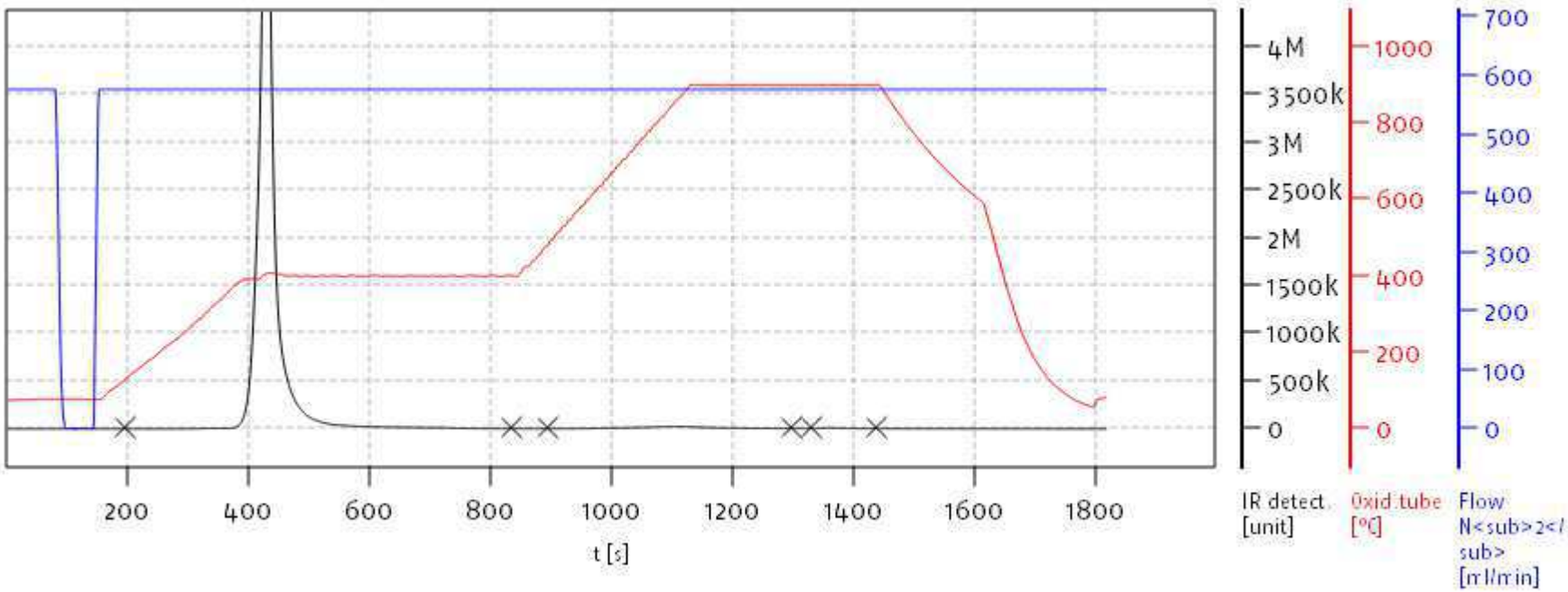
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
51	51	Dfactor	25.50		1.00	CARBON	9/2/2021 12:54 PM	44.491	0.880	45.372	bl	6 906 920	144 593	18 588	0.9733	1.0000



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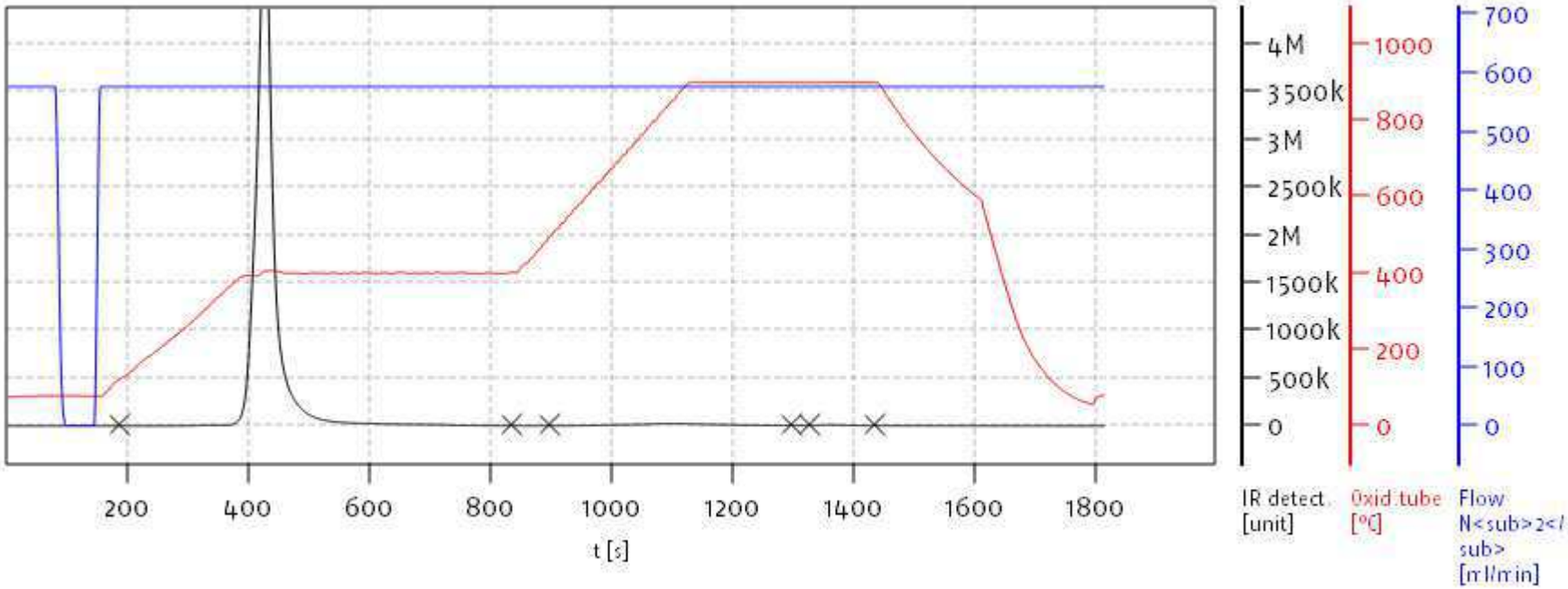
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
52	52	SJH0417-CCV4	24.90		1.00	CARBON	9/2/2021 1:25 PM	44.121	1.025	45.146	bl	6 709 400	162 761	23 546	0.9695	1.0000



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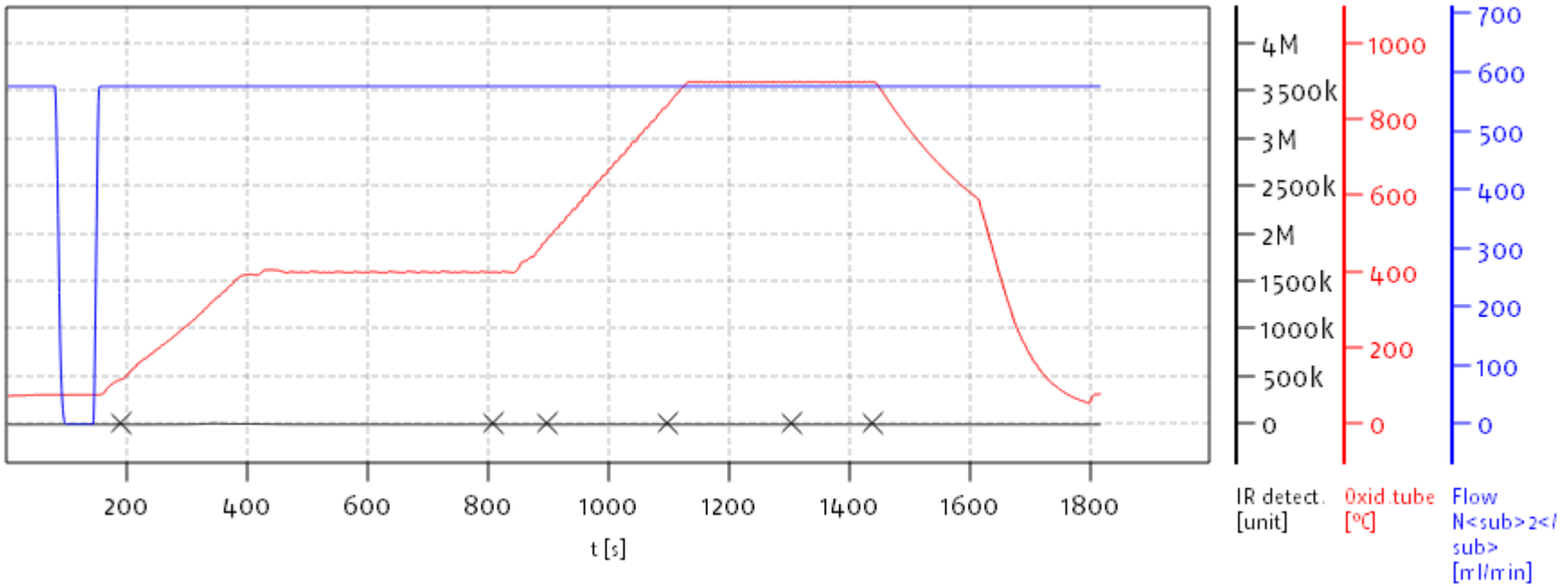
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
53	53	SJH0417-CCB4	535.50		1.00	CARBON	9/2/2021 1:56 PM	0.007	0.000	0.007	bl,C3u,C2u	33 017	1 669	575	0.9695	1.0000



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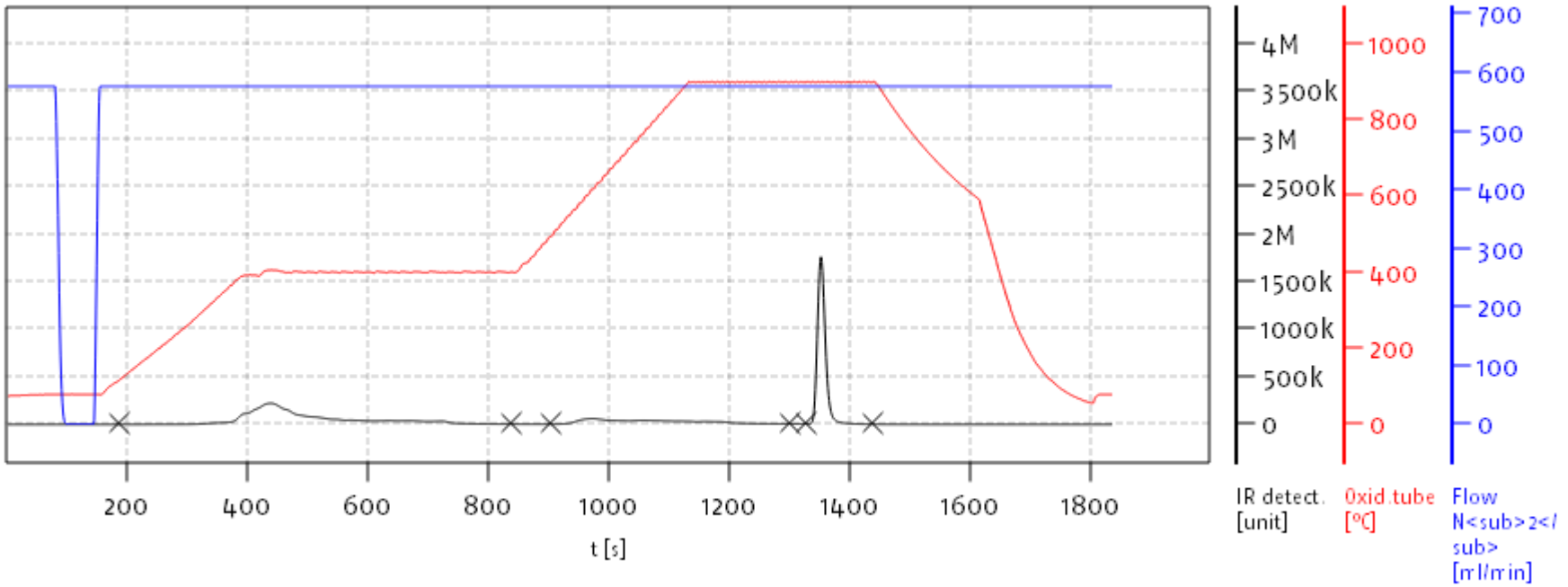
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
54	54	BJH0806-DUP1	563.60		1.00	CARBON	9/2/2021 2:27 PM	0.622	0.122	0.744	bl	1 111 790	418 885	1 021 670	0.9695	1.0000



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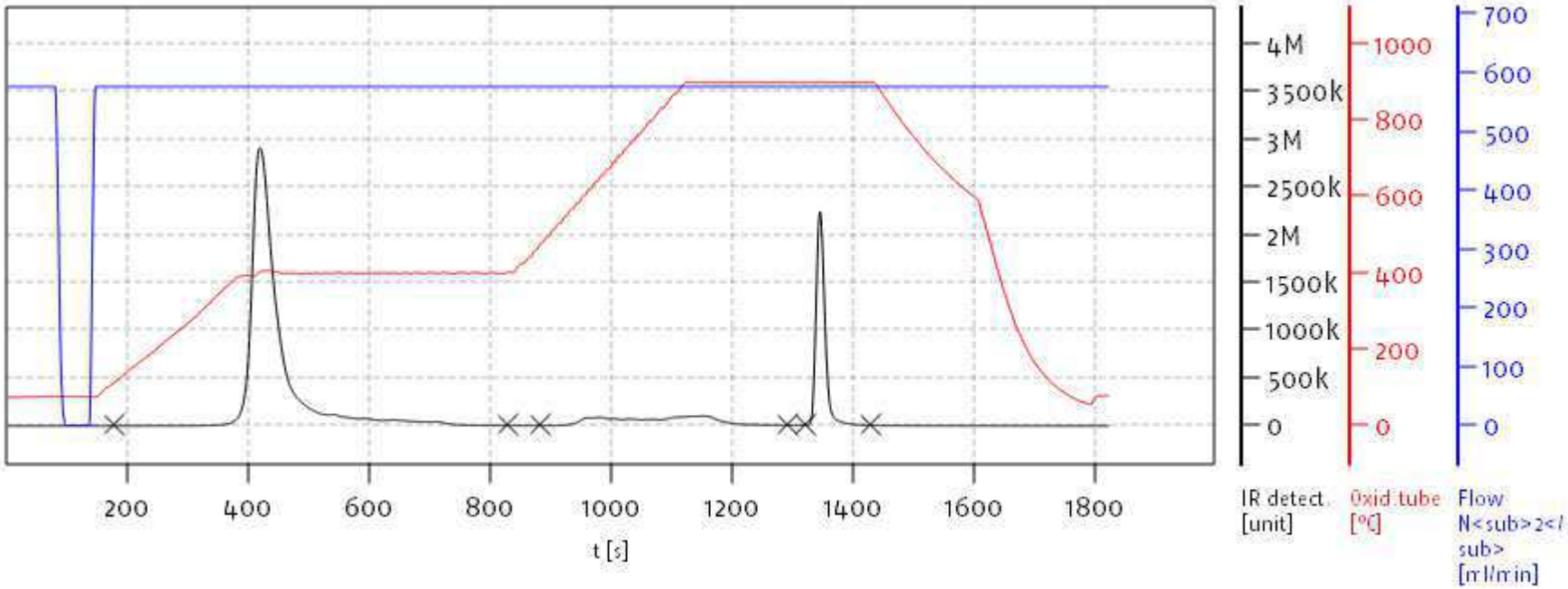
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
55	55	BJH0806-MS1	582.20	0.0152	1.00	CARBON	9/2/2021 2:58 PM	1.959	0.225	2.184	bl	5 506 470	787 495	1 439 440	0.9695	1.0000



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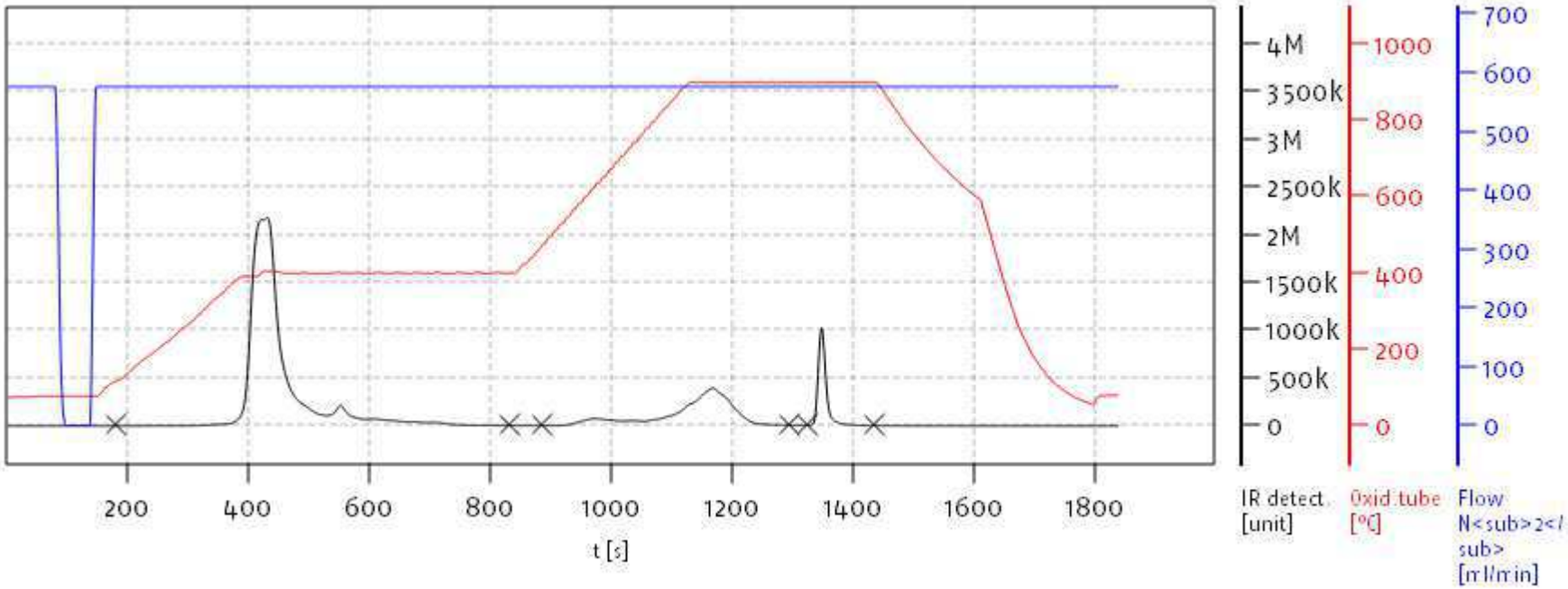
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
56	56	BJH0806-MSD1	647.00	0.0136	1.00	CARBON	9/2/2021 3:29 PM	1.412	0.407	1.818	bl	4 998 770	1 568 990	586 039	0.9695	1.0000



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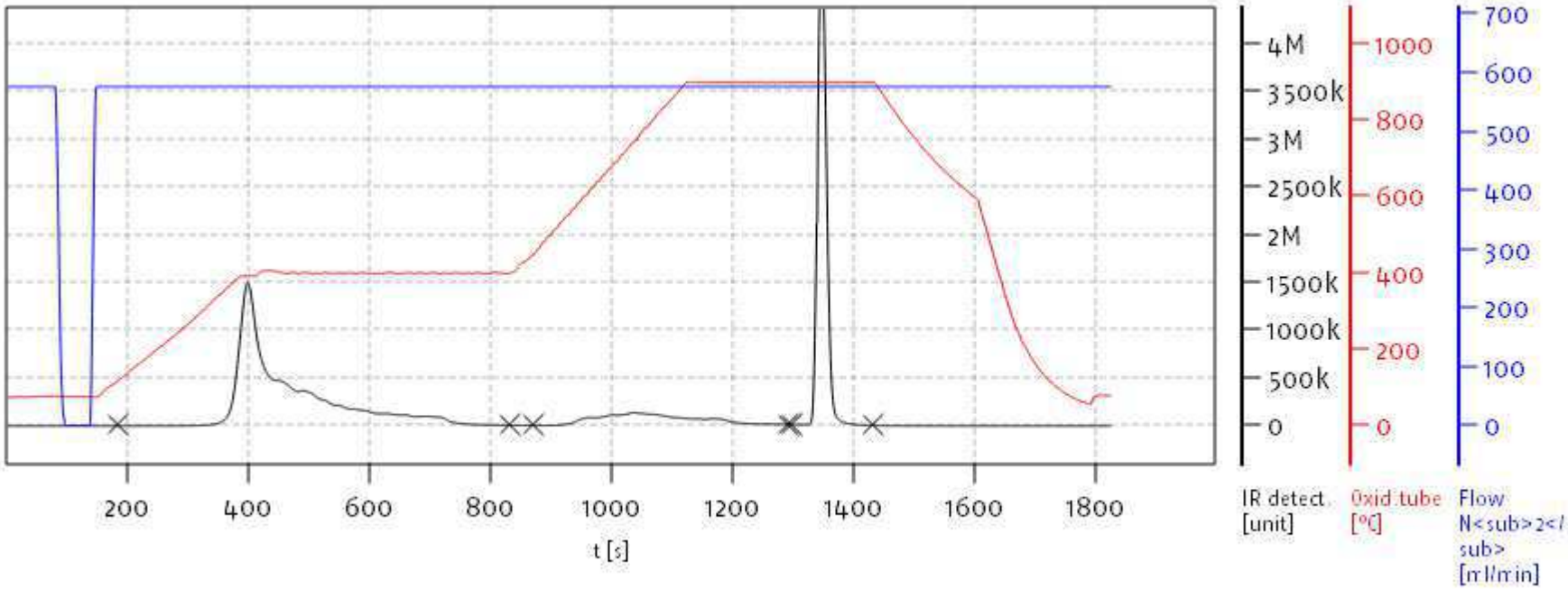
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
57	57	21H0340-01	543.10		1.00	CARBON	9/2/2021 4:00 PM	2.419	0.310	2.729	bl	4 648 150	1 009 120	3 294 230	0.9695	1.0000



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Access: soliTOC superuser

Date: Mon Sep 6 07:32:29 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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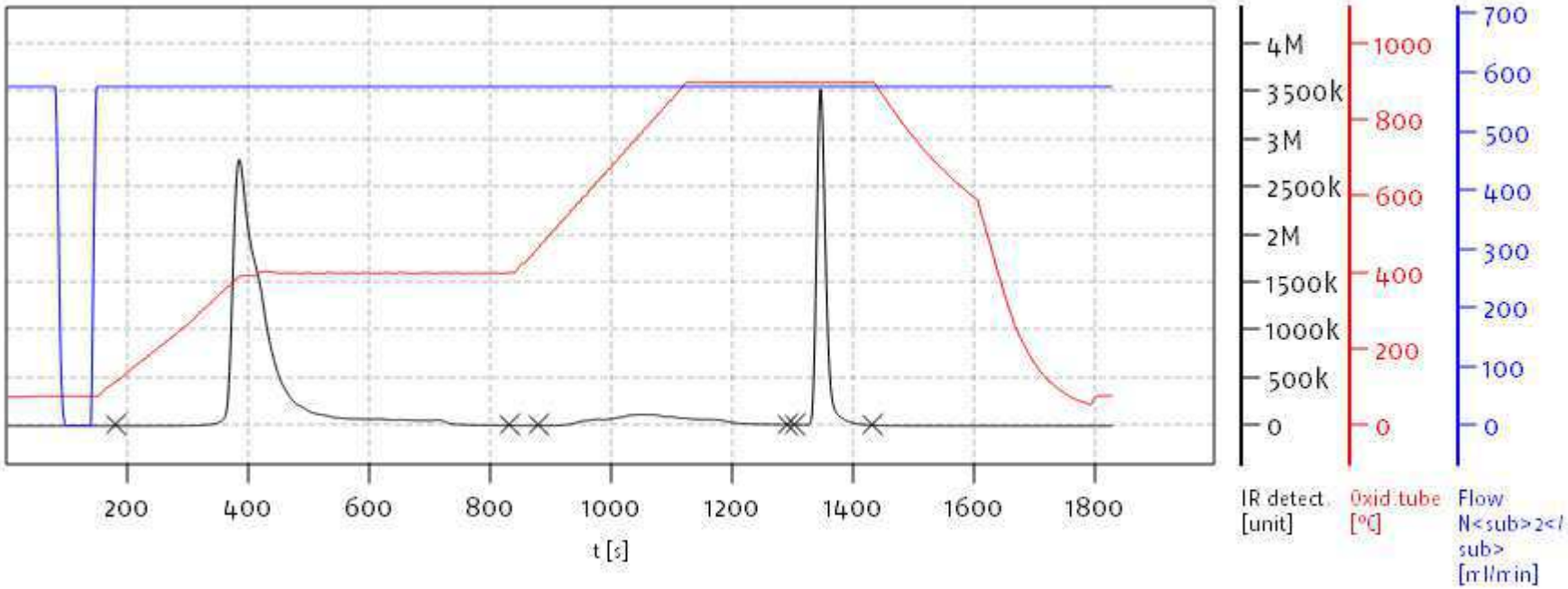
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
58	58	BJH0806-DUP2	524.60		1.00	CARBON	9/2/2021 4:30 PM	2.696	0.275	2.971	bl	6 233 690	865 158	2 354 140	0.9695	1.0000



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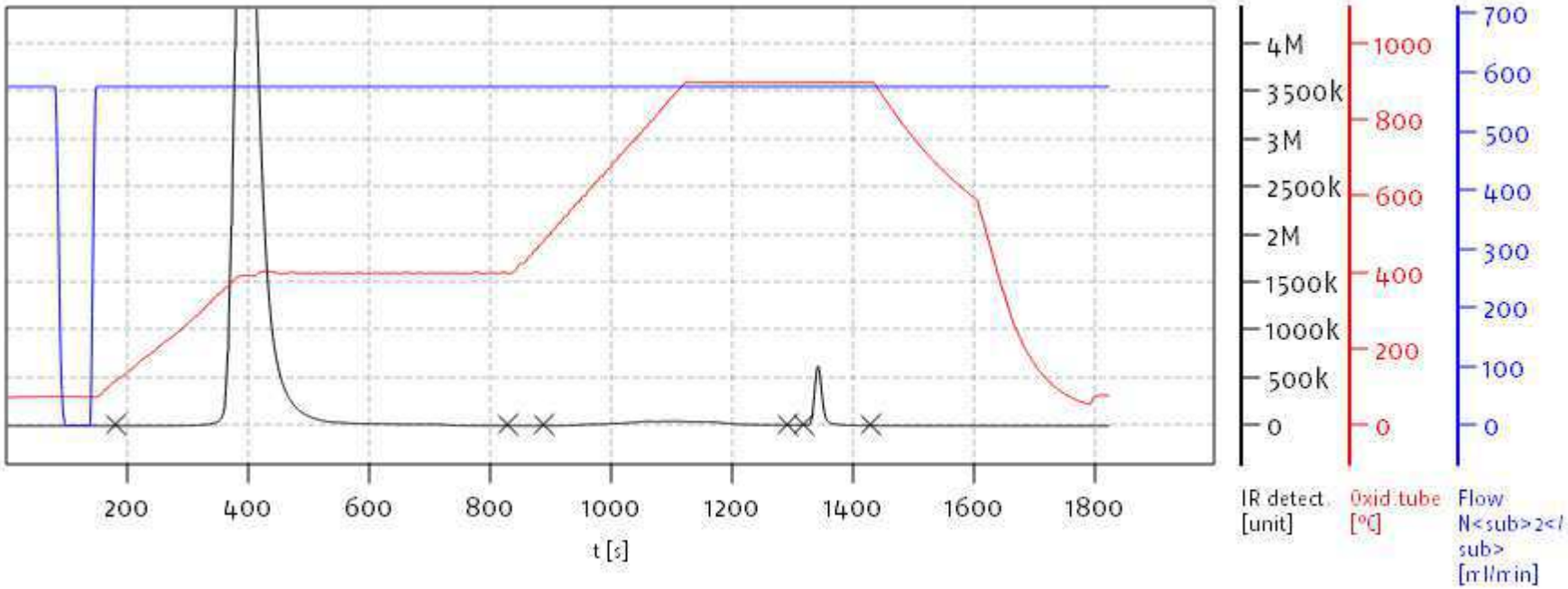
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
59	59	BJH0806-MS2	504.50	0.0113	1.00	CARBON	9/2/2021 5:01 PM	4.147	0.122	4.268	bl,C1o	12 428400	375 475	360 884	0.9695	1.0000



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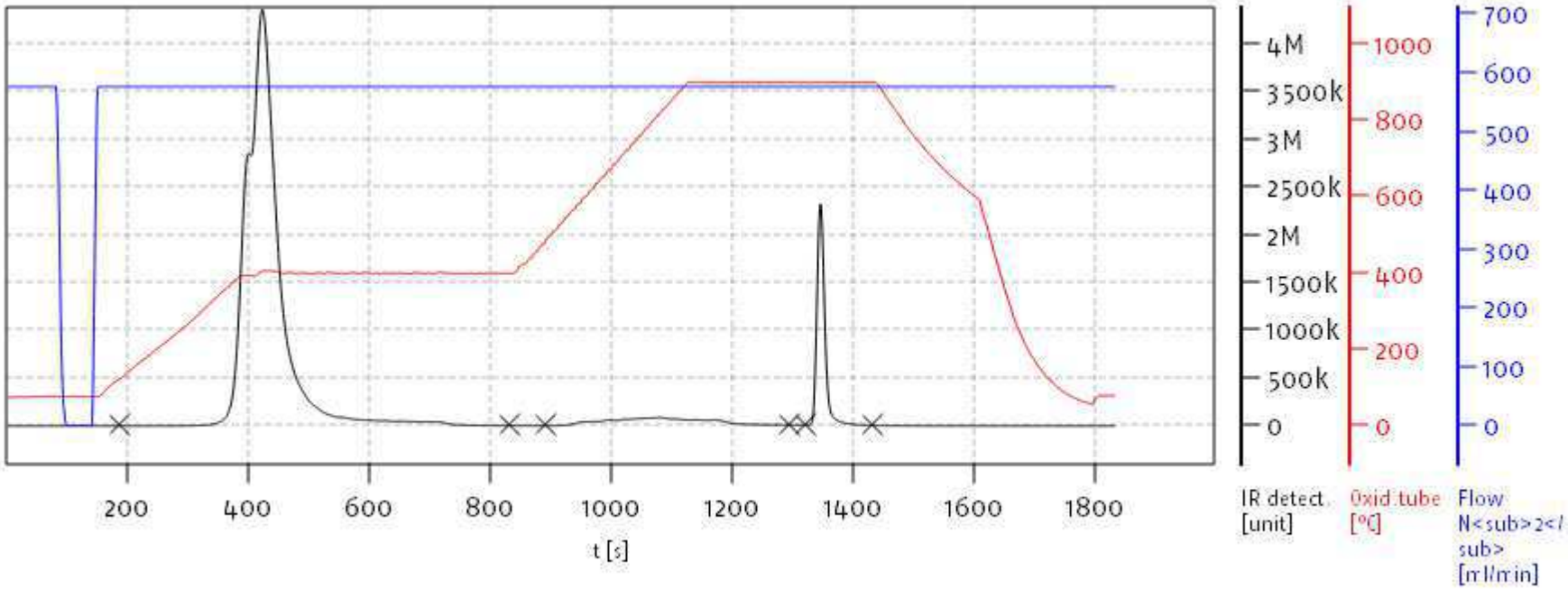
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
60	60	BJH0806-MSD2	504.50	0.0114	1.00	CARBON	9/2/2021 5:32 PM	3.648	0.218	3.866	bl,C1o	9 900 300	663 513	1 322 580	0.9695	1.0000



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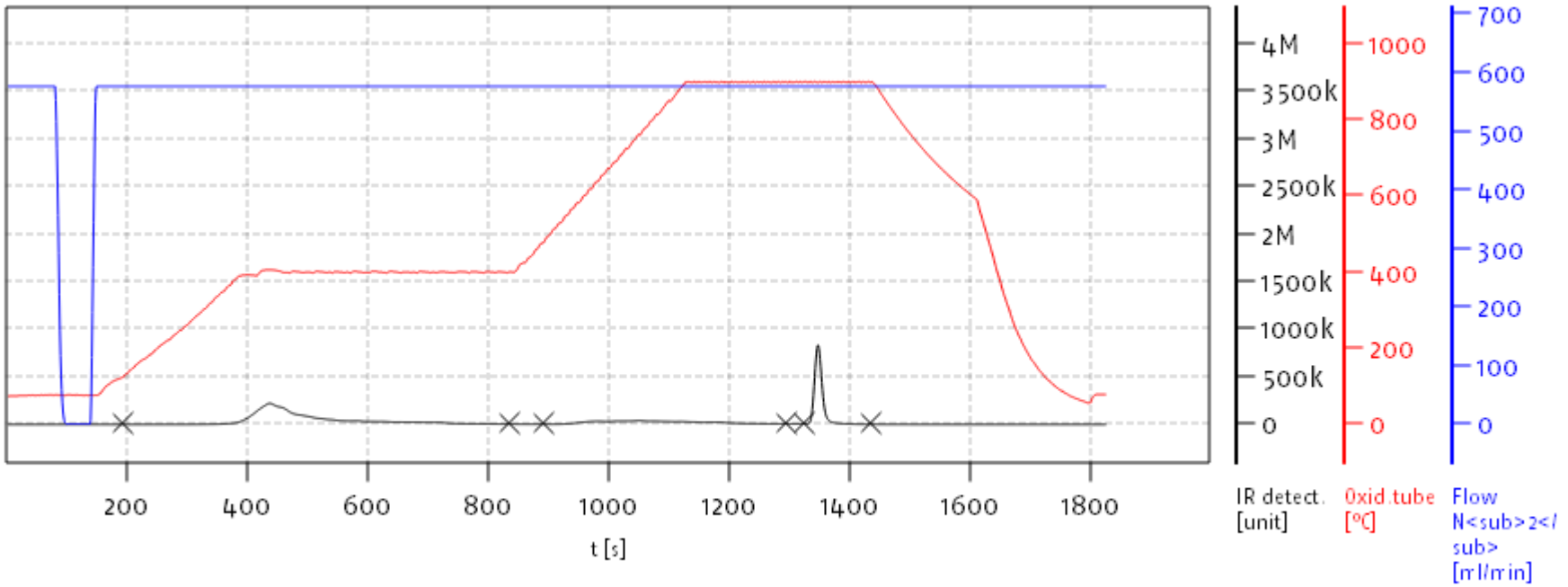
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
61	61	21H0340-03	633.90		1.00	CARBON	9/2/2021 6:03 PM	0.354	0.082	0.436	bl	915 800	319 228	462 975	0.9695	1.0000



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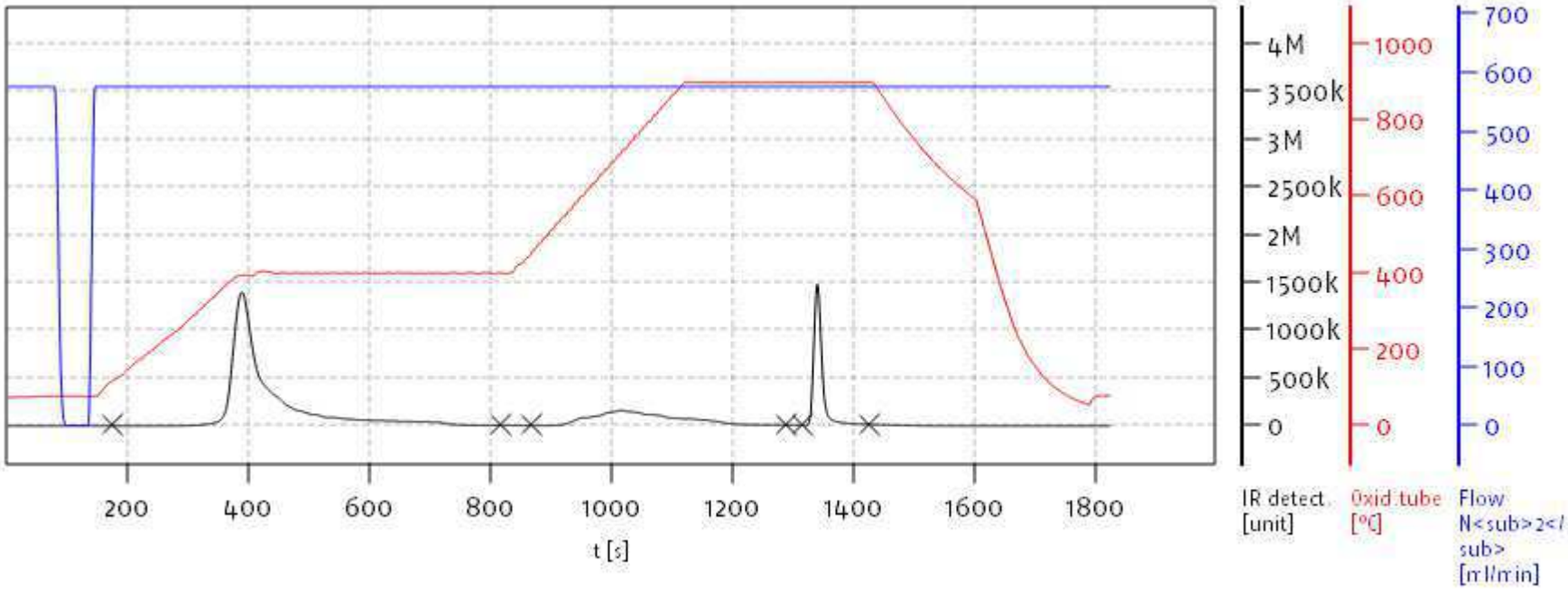
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
62	62	21H0340-05	573.70		1.00	CARBON	9/2/2021 6:34 PM	1.200	0.292	1.491	bl	3 304 260	1 002 180	895 014	0.9695	1.0000



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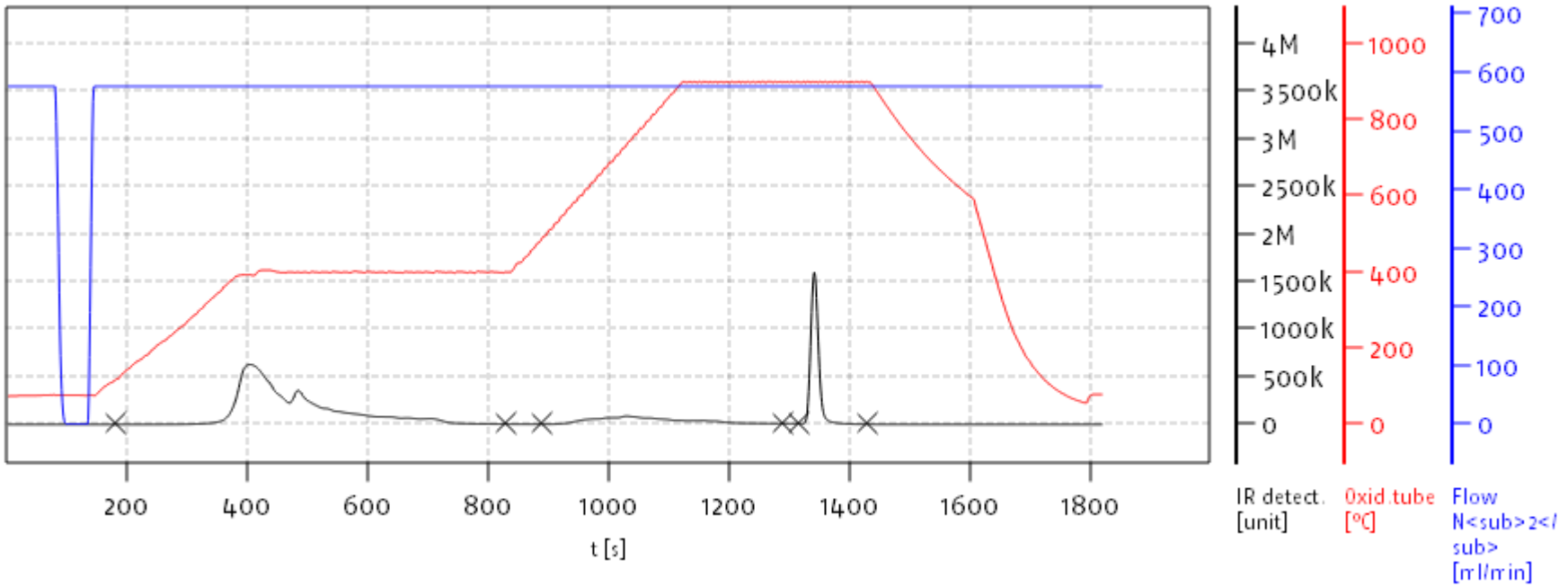
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
63	63	21H0340-07	561.20		1.00	CARBON	9/2/2021 7:05 PM	1.107	0.168	1.275	bl	2 881 690	569 035	908 510	0.9695	1.0000



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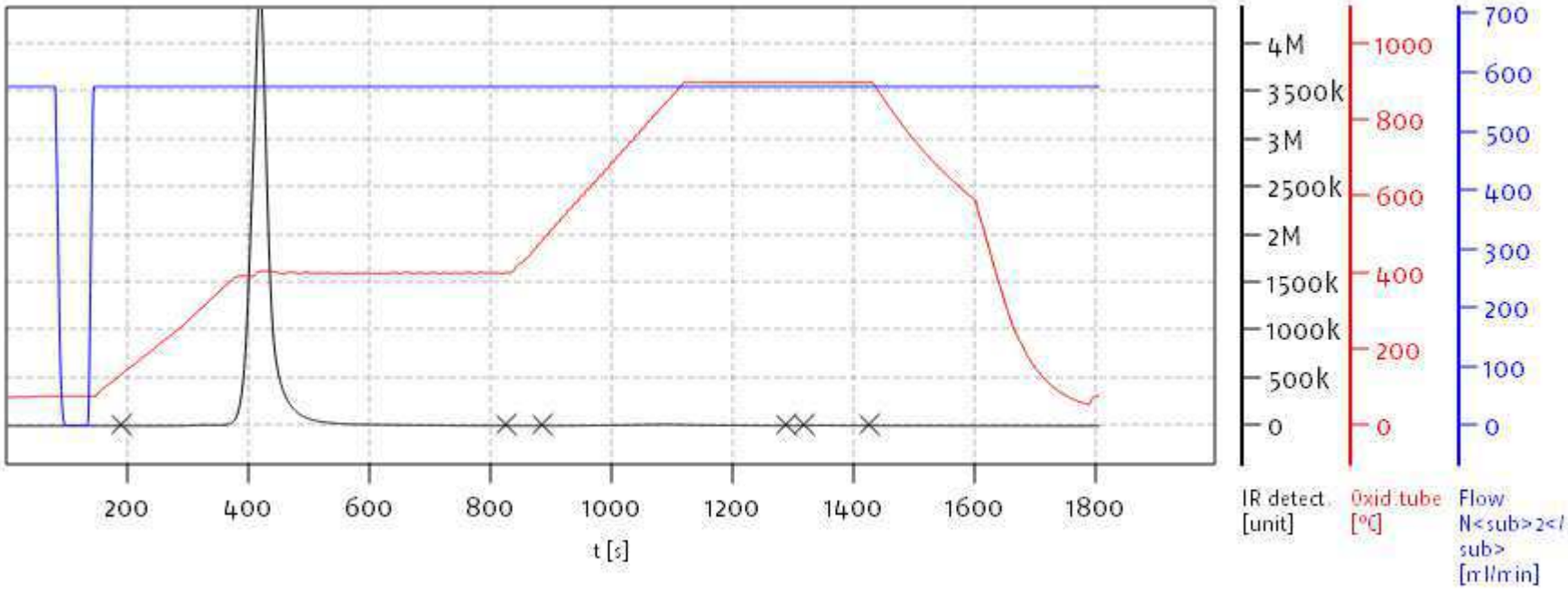
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
64	64	SJH0417-CCV5	20.90		1.00	CARBON	9/2/2021 7:35 PM	44.804	0.689	45.493	bl	5 728 880	96 951	13 637	0.9695	1.0000



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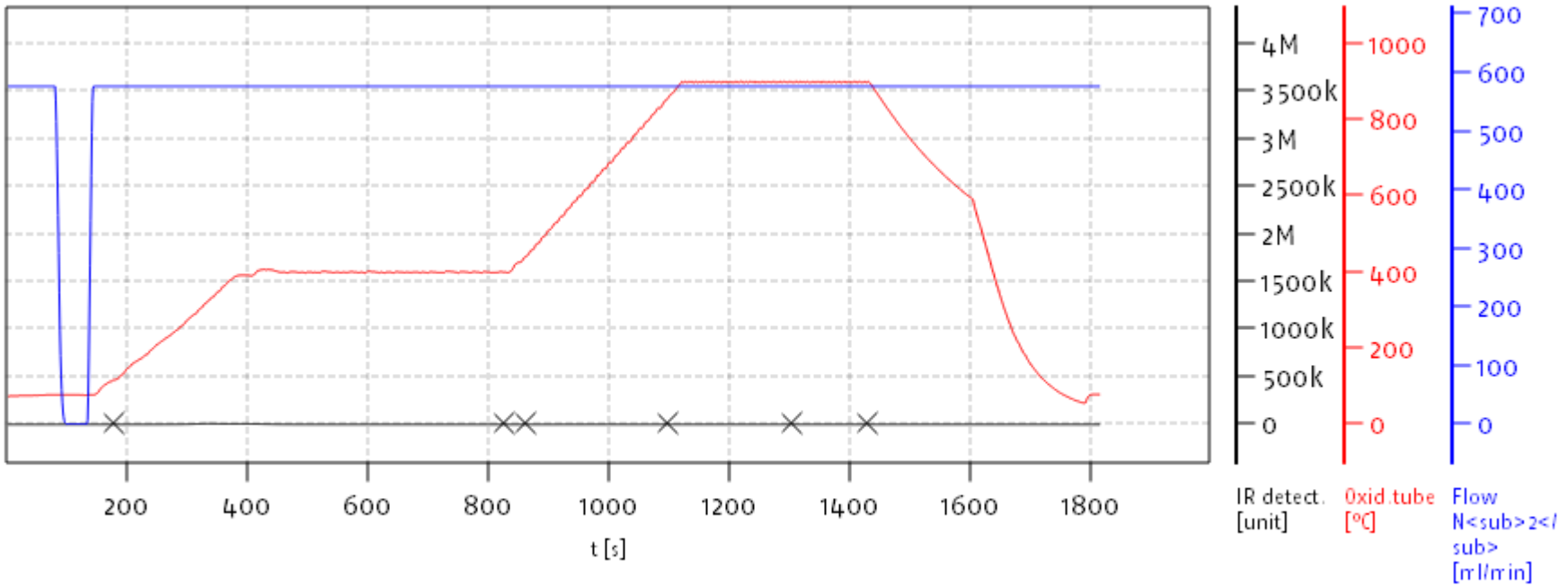
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
65	65	SJH0417-CCB5	567.60		1.00	CARBON	9/2/2021 8:06 PM	0.007	0.000	0.007	bl,C3u,C2u	34 359	1 295	395	0.9695	1.0000



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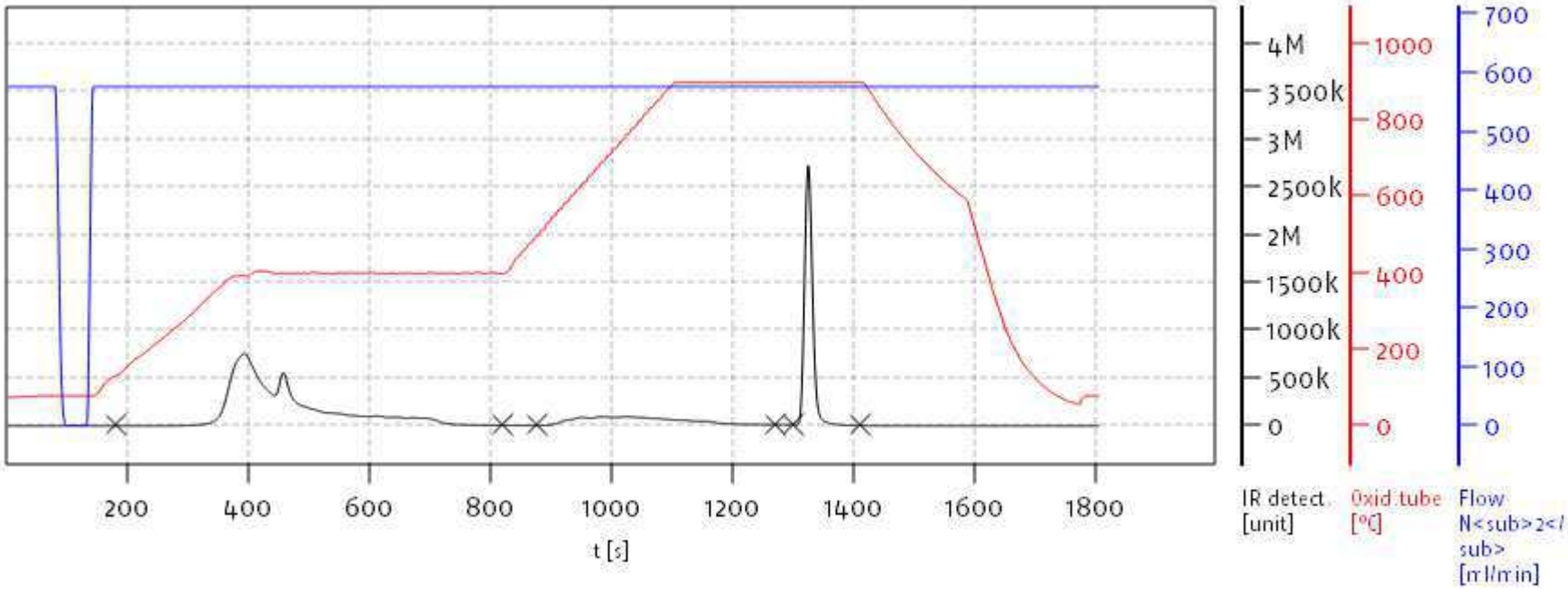
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
66	66	21H0340-09	506.00		1.00	CARBON	9/2/2021 8:36 PM	1.606	0.260	1.866	bl	3 346 540	789 910	1 590 190	0.9695	1.0000



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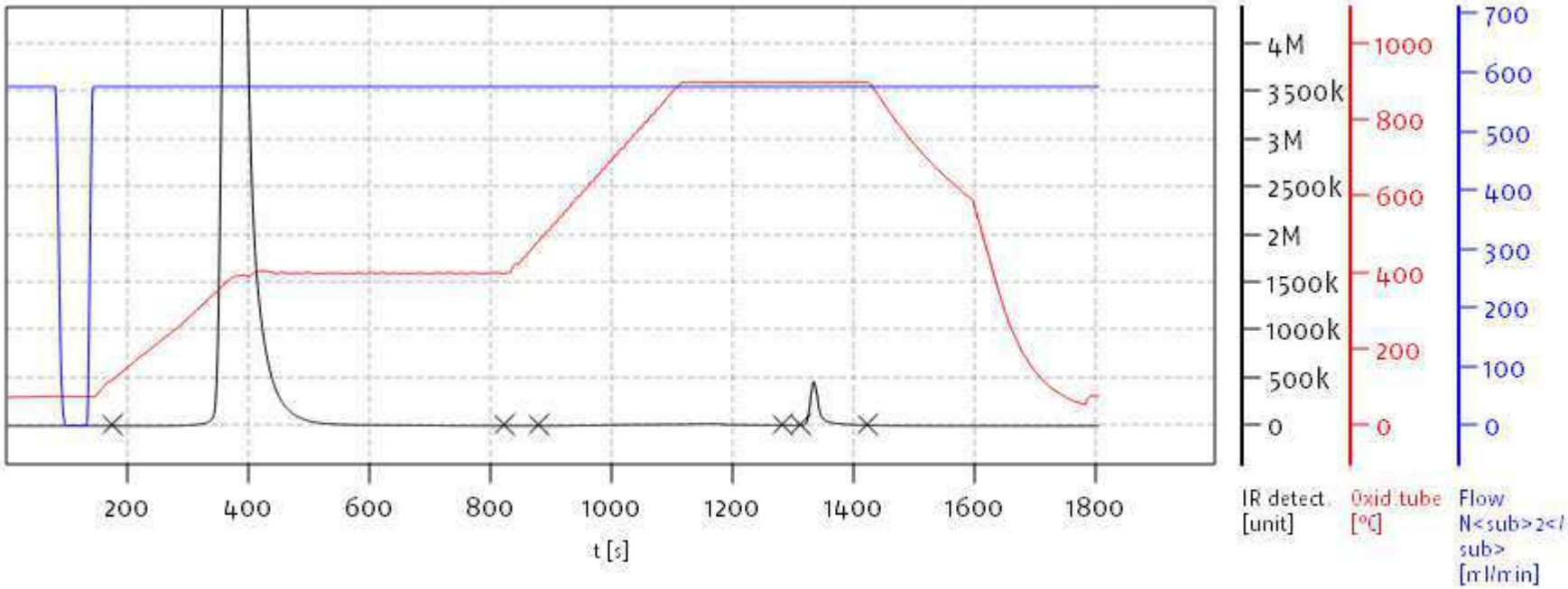
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
67	67	21H0340-11	373.90		1.00	CARBON	9/2/2021 9:07 PM	6.768	0.063	6.832	bl,C1o	15 152 400	151 900	317 720	0.9695	1.0000



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Soli TOC Cube, Carbon
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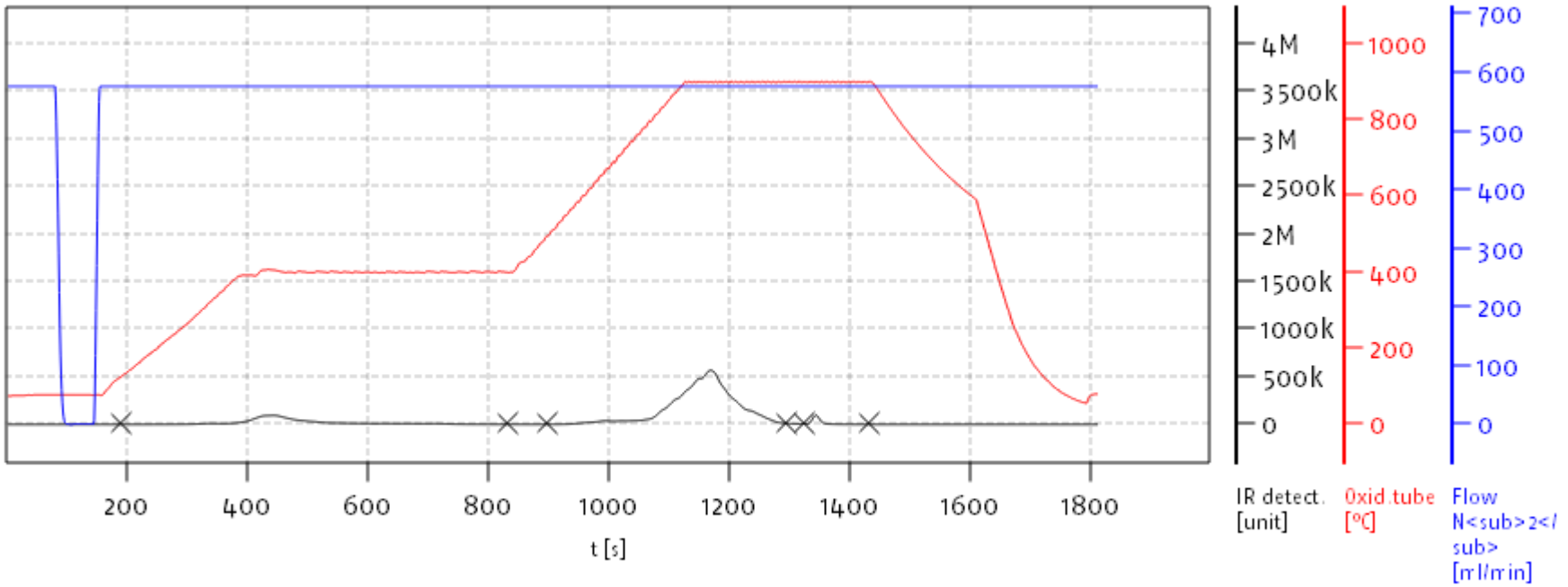
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
68	68	21H0340-13	358.50		1.00	CARBON	9/2/2021 9:38 PM	0.205	1.054	1.259	bl	412 280	2 249 620	58 443	0.9695	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
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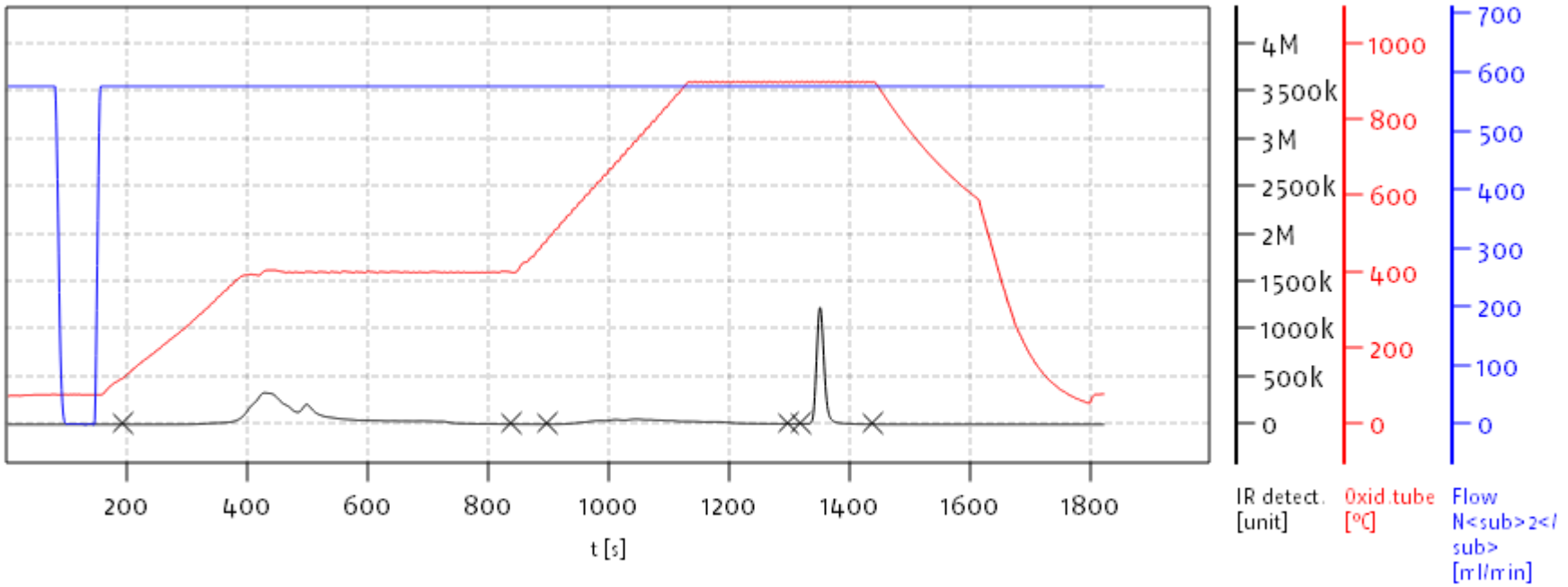
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
69	69	21H0340-15	607.80		1.00	CARBON	9/2/2021 10:08 PM	0.578	0.106	0.684	bl	1 459 570	392 693	687 016	0.9695	1.0000



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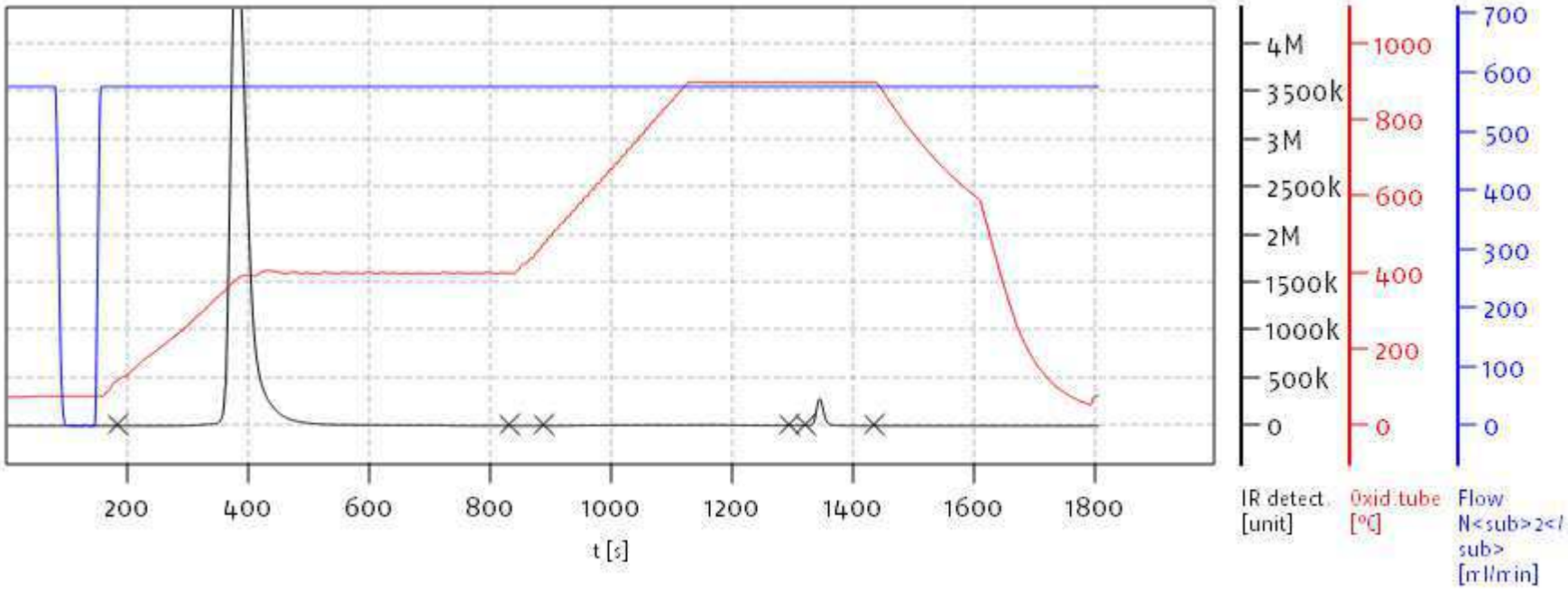
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
70	70	21H0340-17	152.10		1.00	CARBON	9/2/2021 10:39 PM	7.034	0.085	7.120	bl	6 401 440	88 482	152 338	0.9695	1.0000



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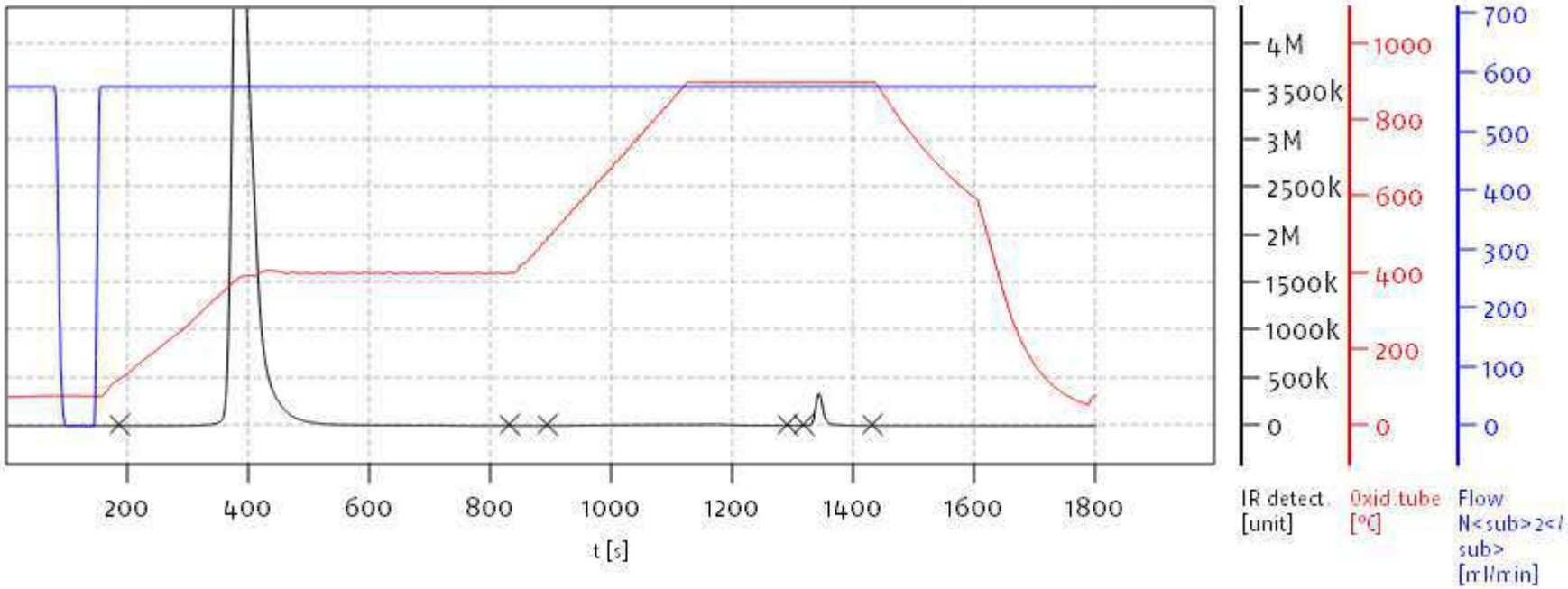
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
71	71	21H0340-19	239.80		1.00	CARBON	9/2/2021 11:09 PM	5.927	0.078	6.006	bl	8 502 160	122 768	196 781	0.9695	1.0000



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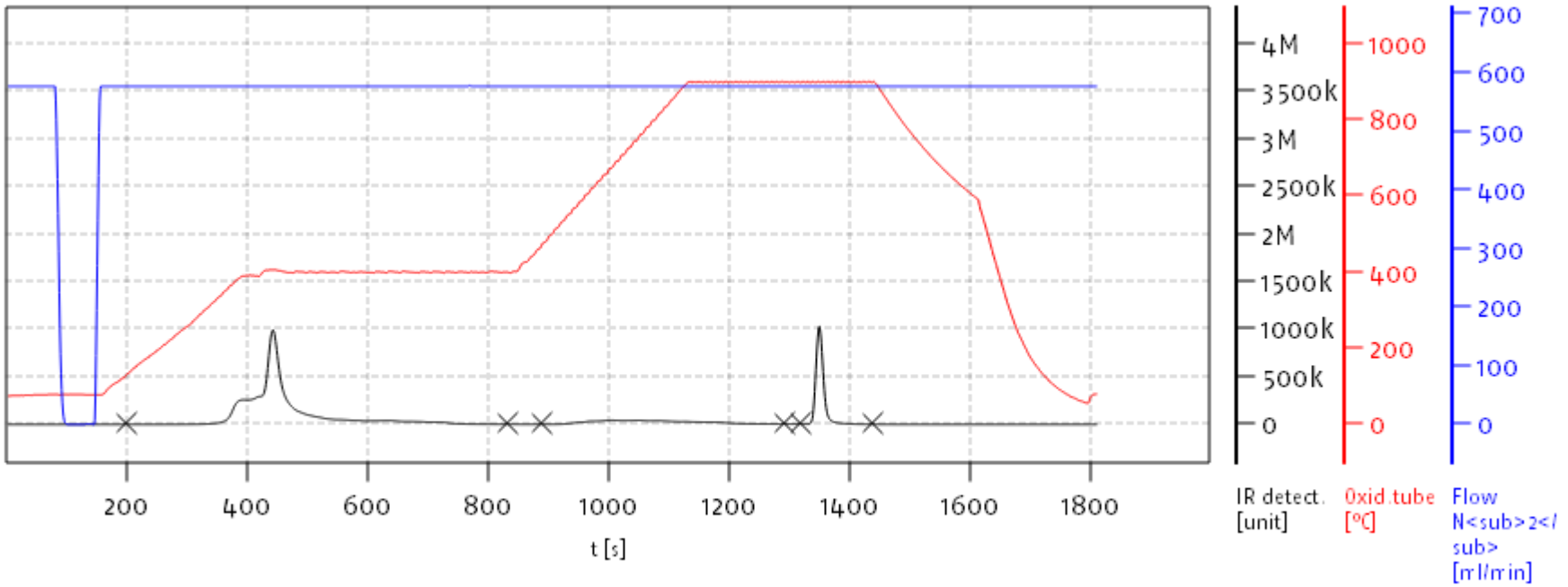
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
72	72	21H0340-21	317.60		1.00	CARBON	9/2/2021 11:40 PM	1.328	0.177	1.504	bl	2 018 730	343 690	562 736	0.9695	1.0000



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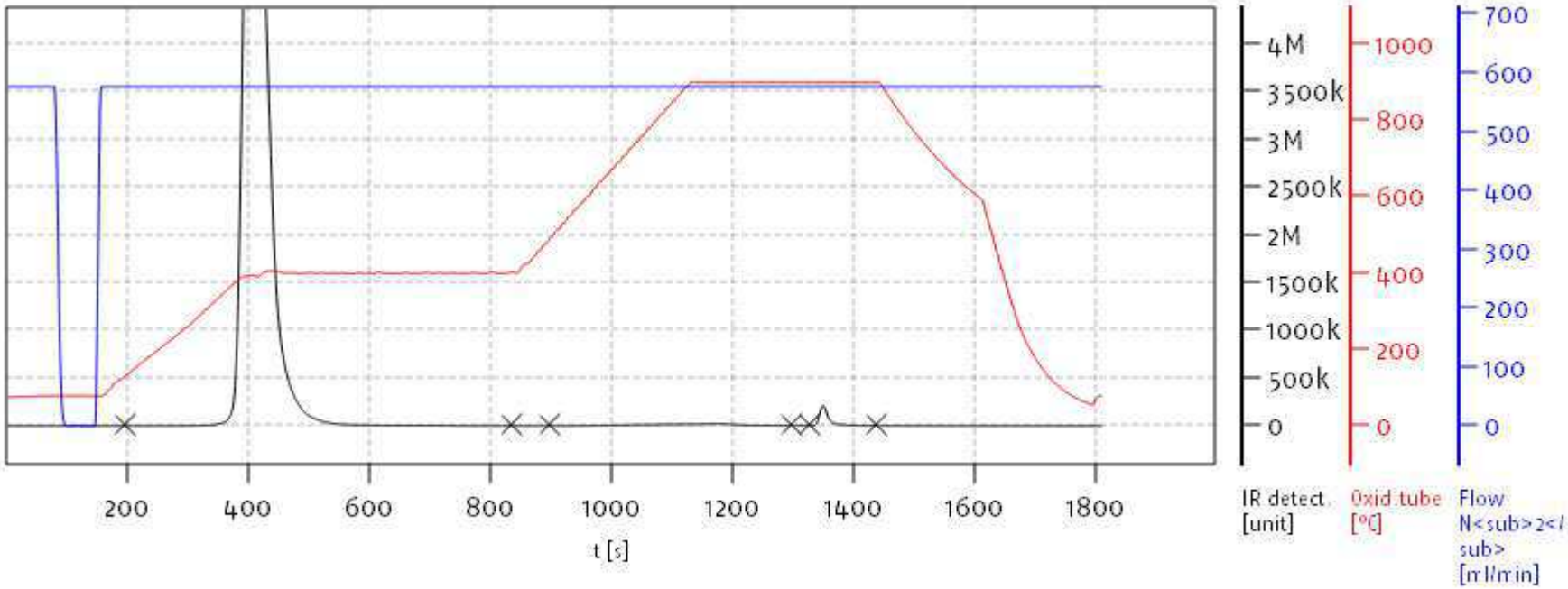
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
73	73	21H0340-23	533.50		1.00	CARBON	9/3/2021 12:11 AM	4.292	0.041	4.333	bl,C1o	13 859 600	140 789	145 060	0.9695	1.0000



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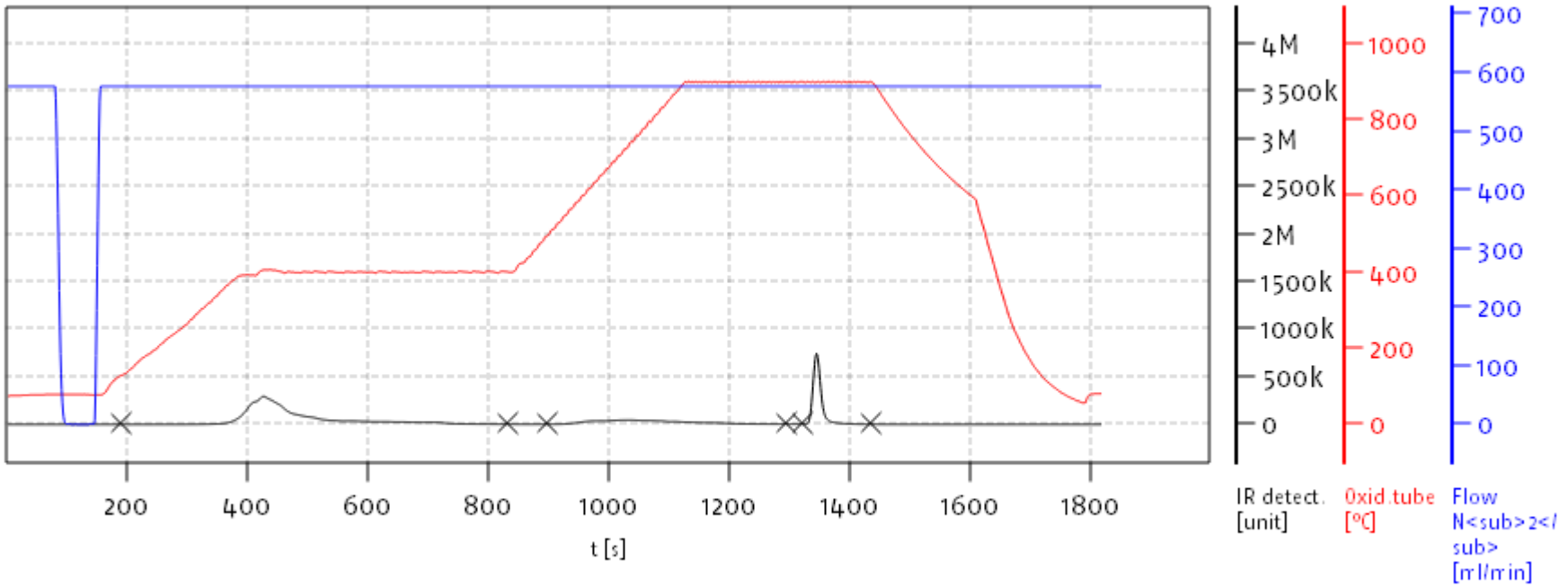
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
74	74	21H0340-25	557.00		1.00	CARBON	9/3/2021 12:41 AM	0.452	0.094	0.546	bl	1 110 300	322 102	436 273	0.9695	1.0000



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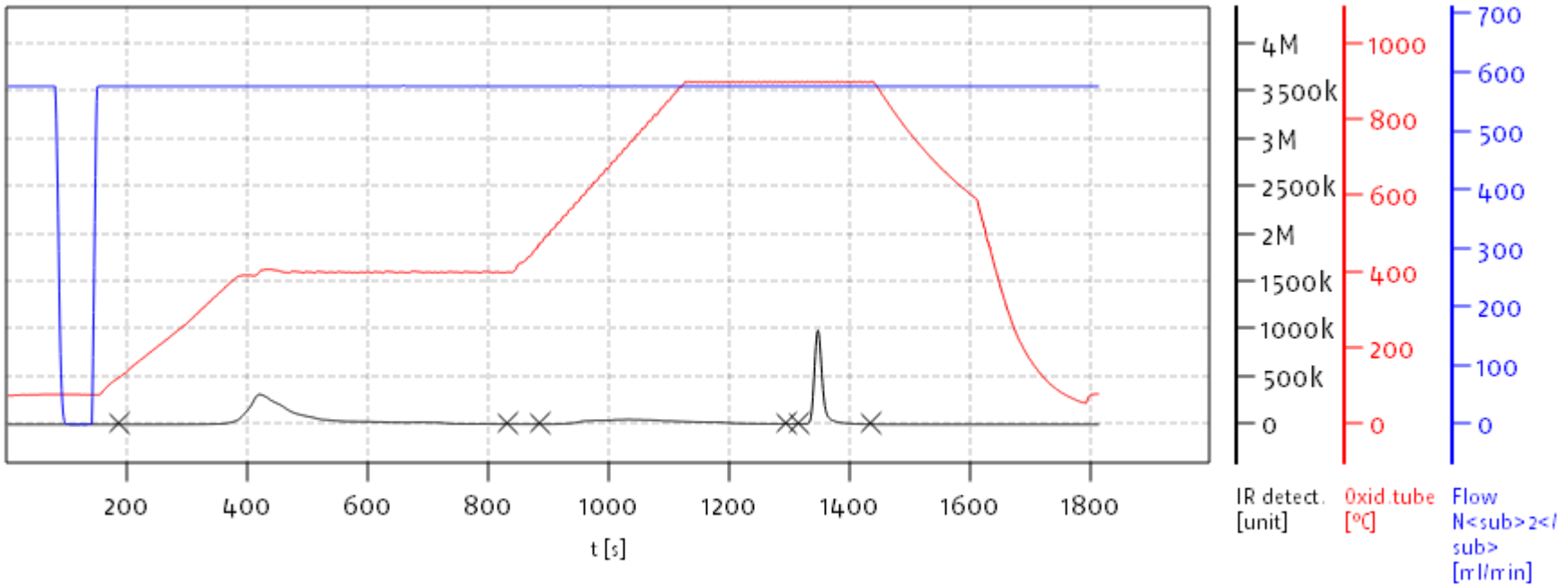
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
75	75	21H0340-27	510.00		1.00	CARBON	9/3/2021 1:12 AM	0.544	0.125	0.669	bl	1 116 780	387 741	584 104	0.9695	1.0000



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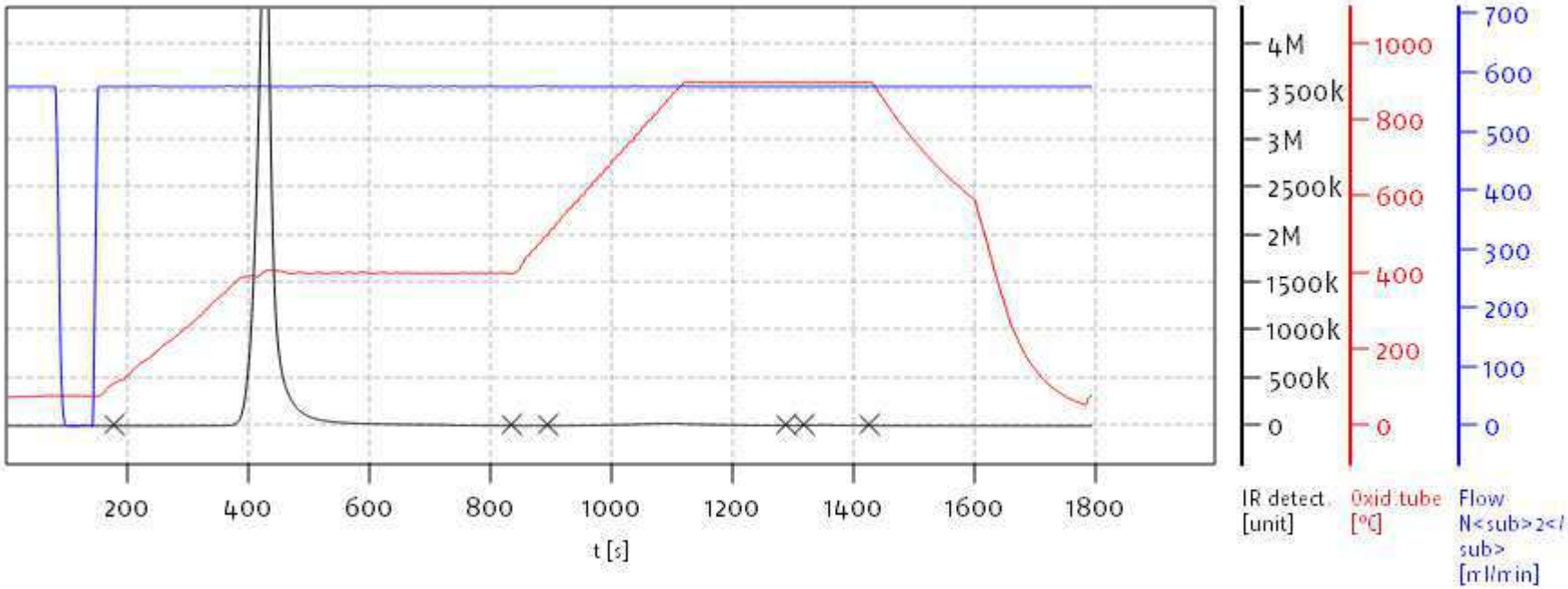
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
76	76	SJH0417-CCV6	23.30		1.00	CARBON	9/3/2021 1:42 AM	43.705	1.095	44.800	bl	6 221 630	162 760	21 043	0.9695	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

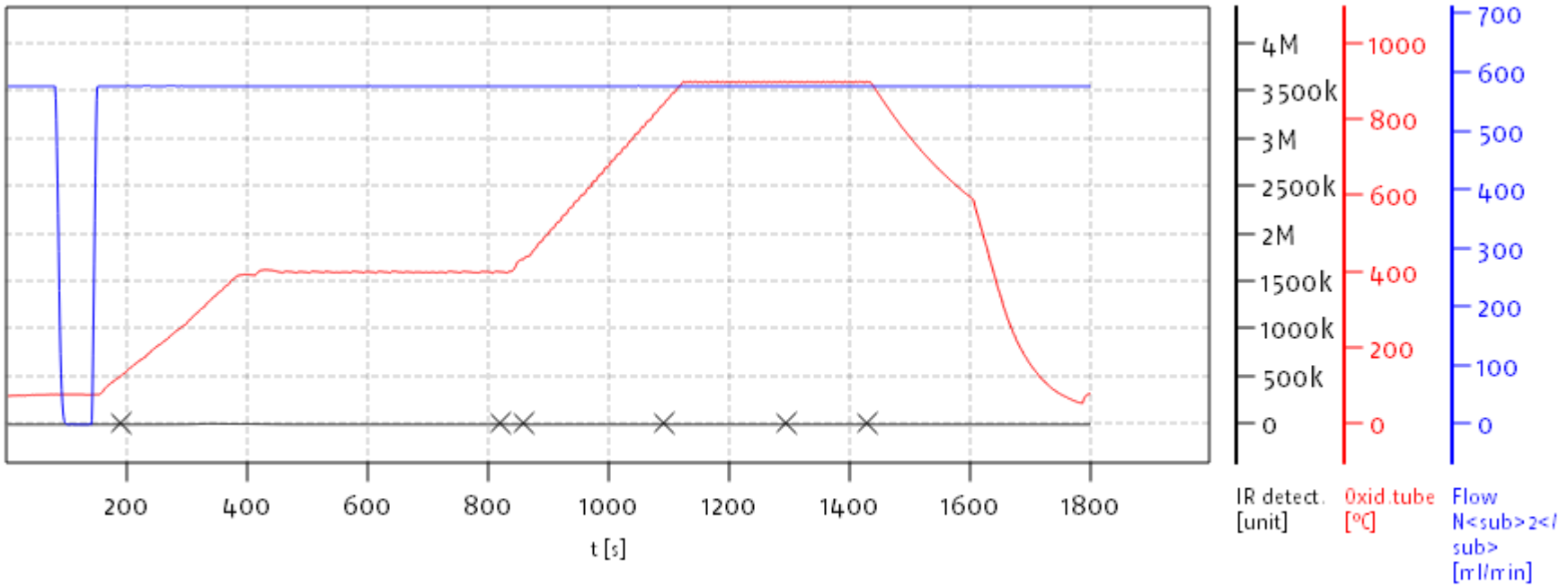
elementar
EXCELLENCE IN ELEMENTS

Document: from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
77	77	SJH0417-CCB6	524.50		1.00	CARBON	9/3/2021 2:13 AM	0.005	0.000	0.005	bl,C3u,C2u	27 480	516	346	0.9695	1.0000



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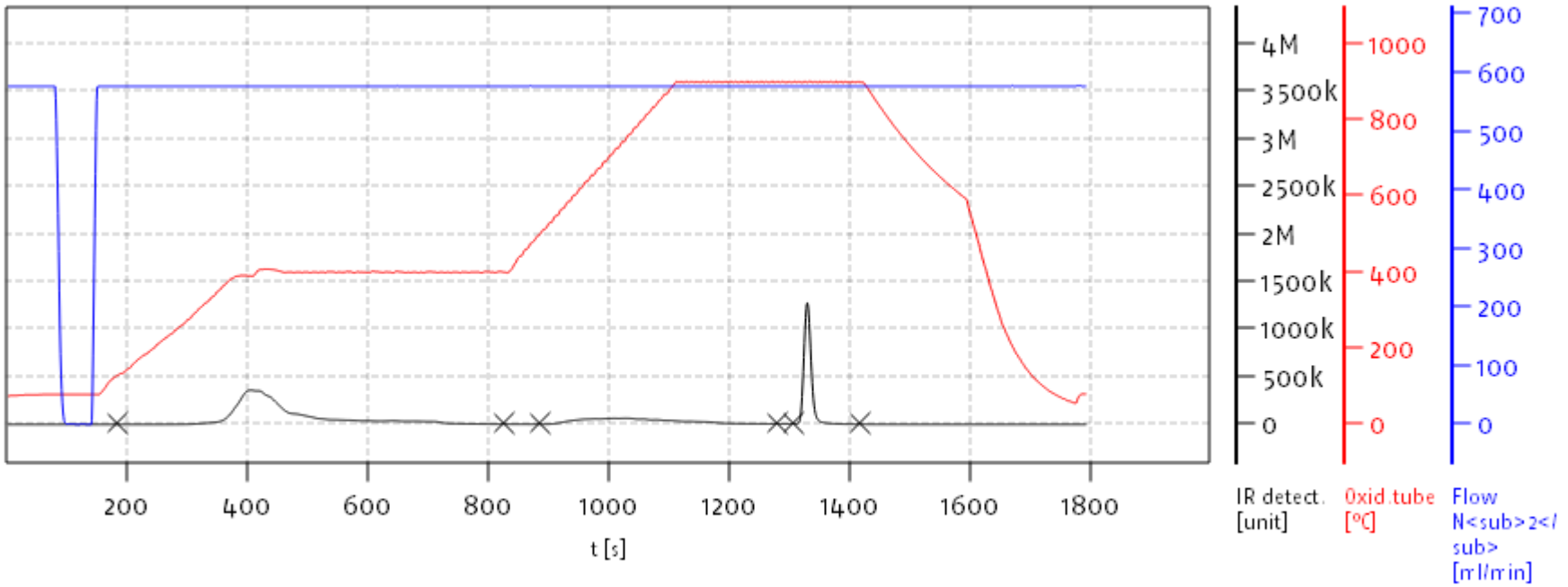
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
78	78	21H0340-29	508.10		1.00	CARBON	9/3/2021 2:43 AM	0.708	0.158	0.865	bl	1 522 420	485 549	676 412	0.9695	1.0000



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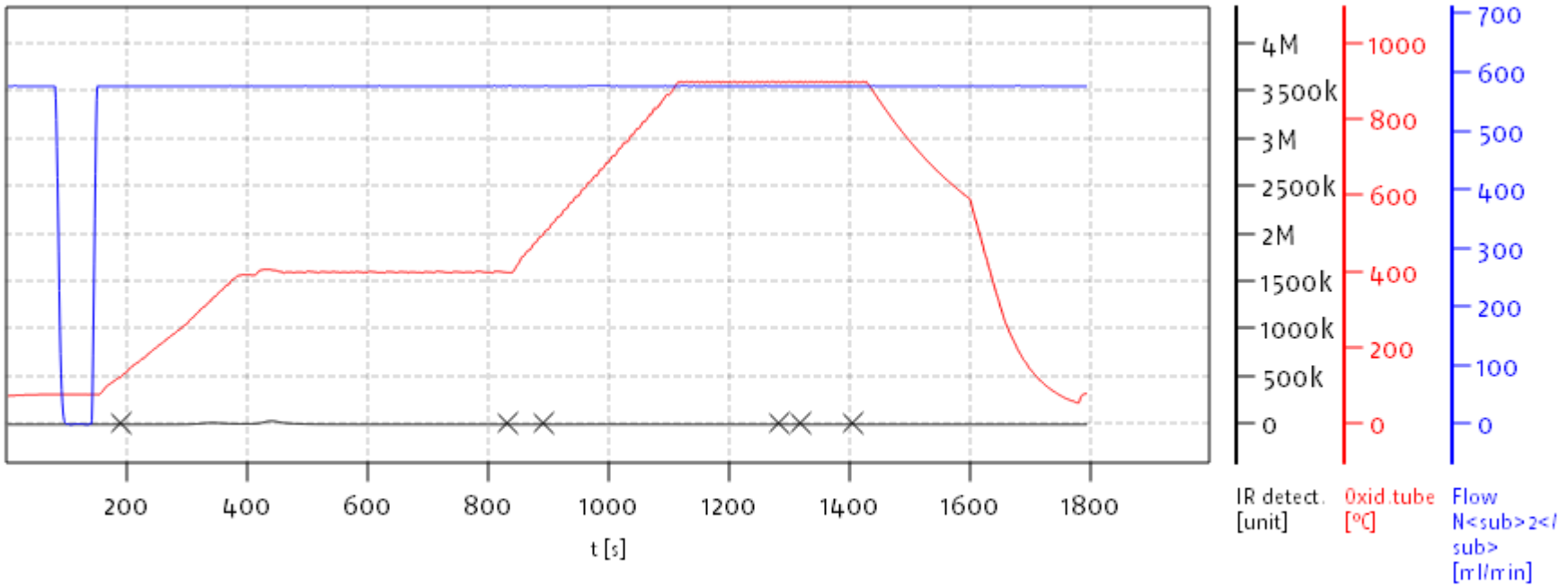
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
79	79	BJH0807-MRL1	515.10		1.00	CARBON	9/3/2021 3:13 AM	0.028	0.000	0.028	bl,C3u,C2u	100 052	6 913	344	0.9695	1.0000



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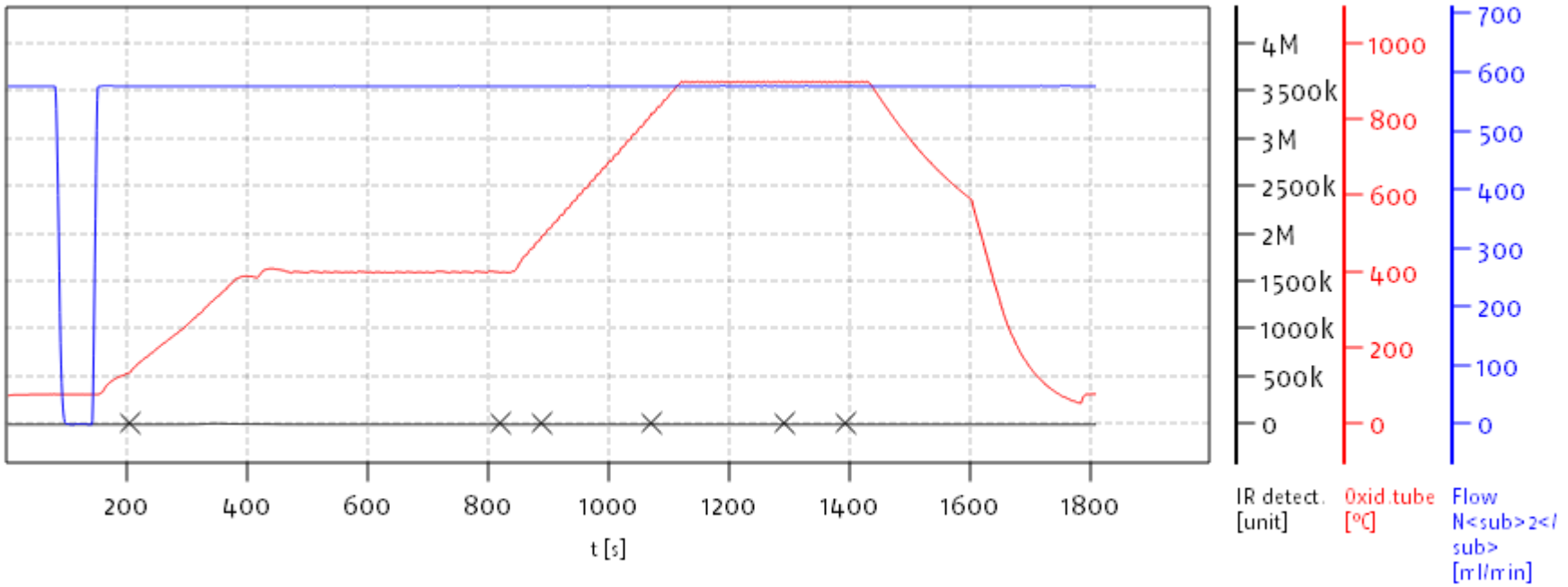
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
80	80	BJH0807-BLK1	643.50		1.00	CARBON	9/3/2021 3:44 AM	0.004	0.000	0.004	bl,C3u,C2u	27 276	797	357	0.9695	1.0000



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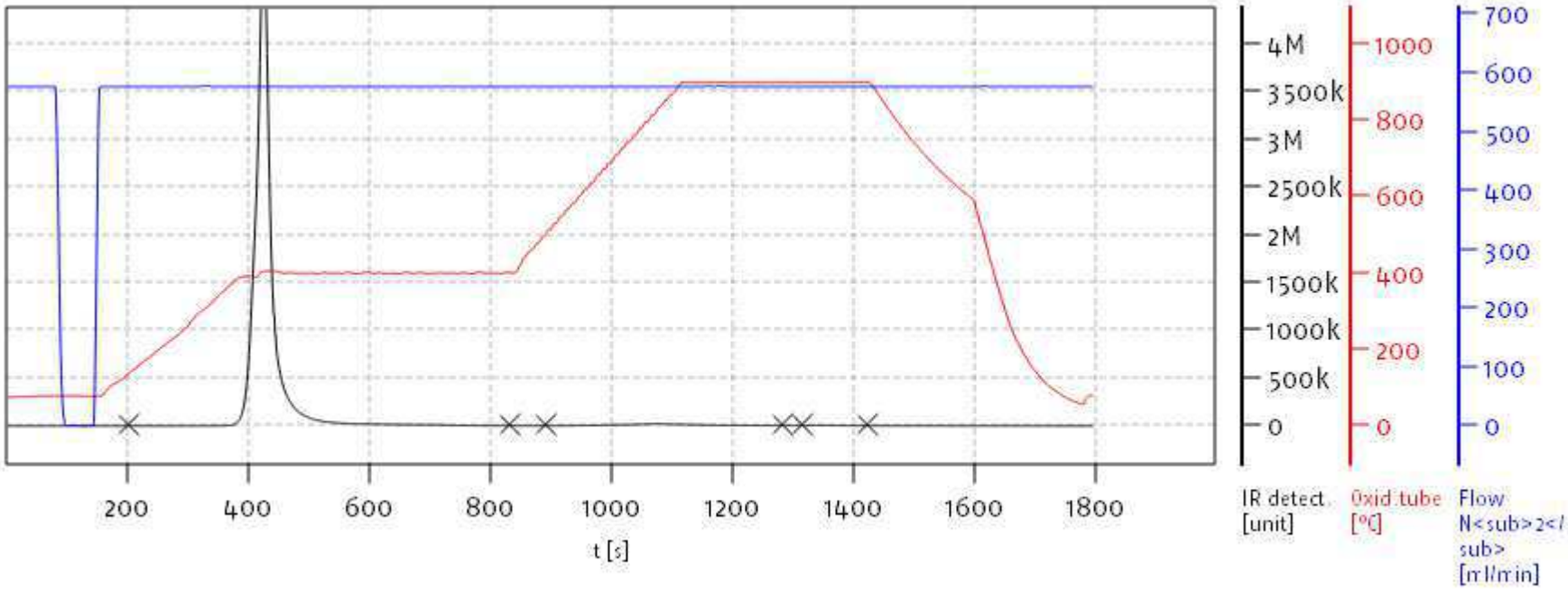
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
81	81	BJH0807-BS1	20.40		1.00	CARBON	9/3/2021 4:14 AM	44.064	0.980	45.044	bl	5 496 470	129 990	16 947	0.9695	1.0000



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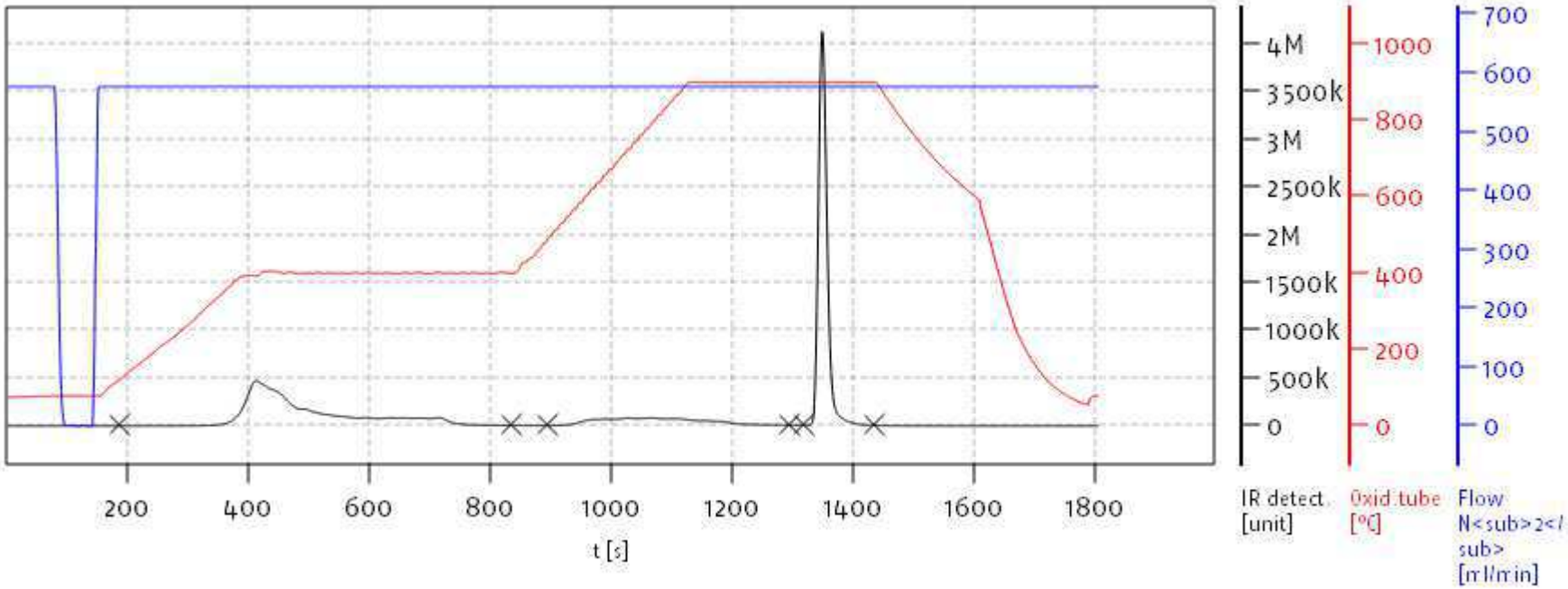
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
82	82	21H0340-31	530.50		1.00	CARBON	9/3/2021 4:45 AM	1.511	0.216	1.727	bl	2 233 330	690 590	2 603 960	0.9695	1.0000



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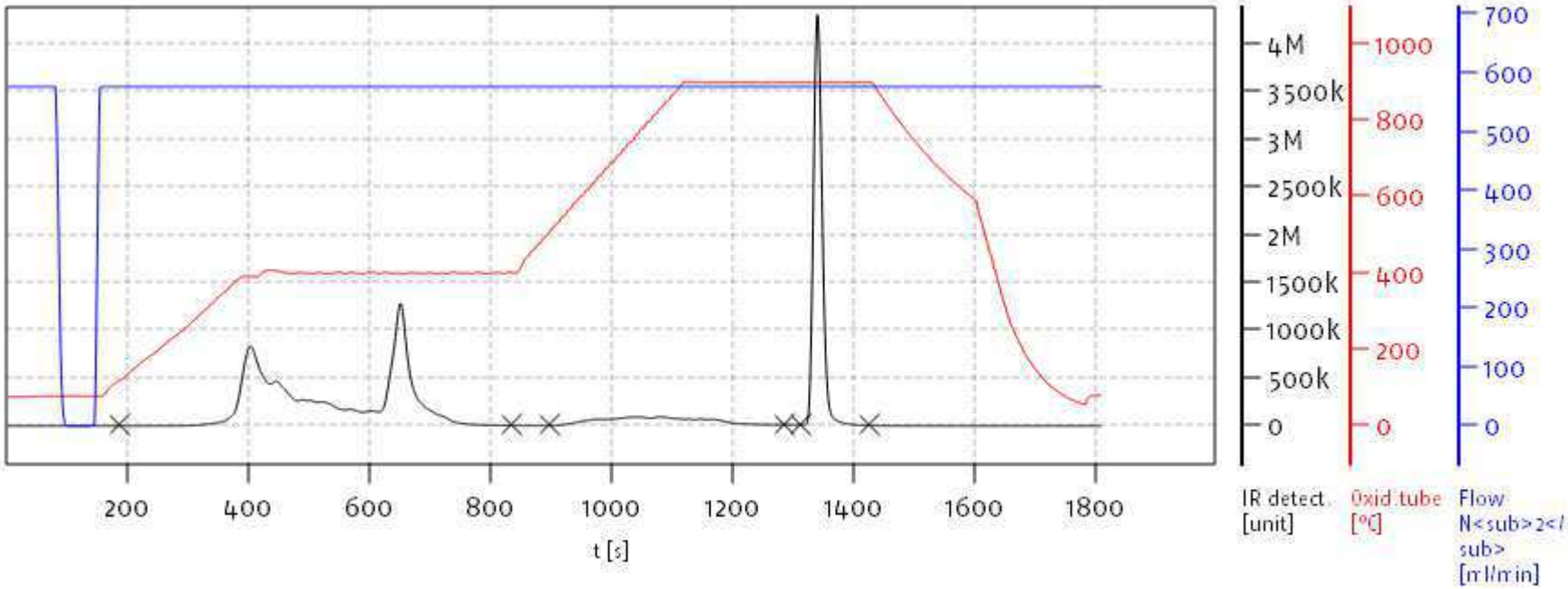
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
83	83	21H0340-33	529.60		1.00	CARBON	9/3/2021 5:15 AM	2.376	0.242	2.618	bl	4 879 440	770 403	2 743 010	0.9695	1.0000



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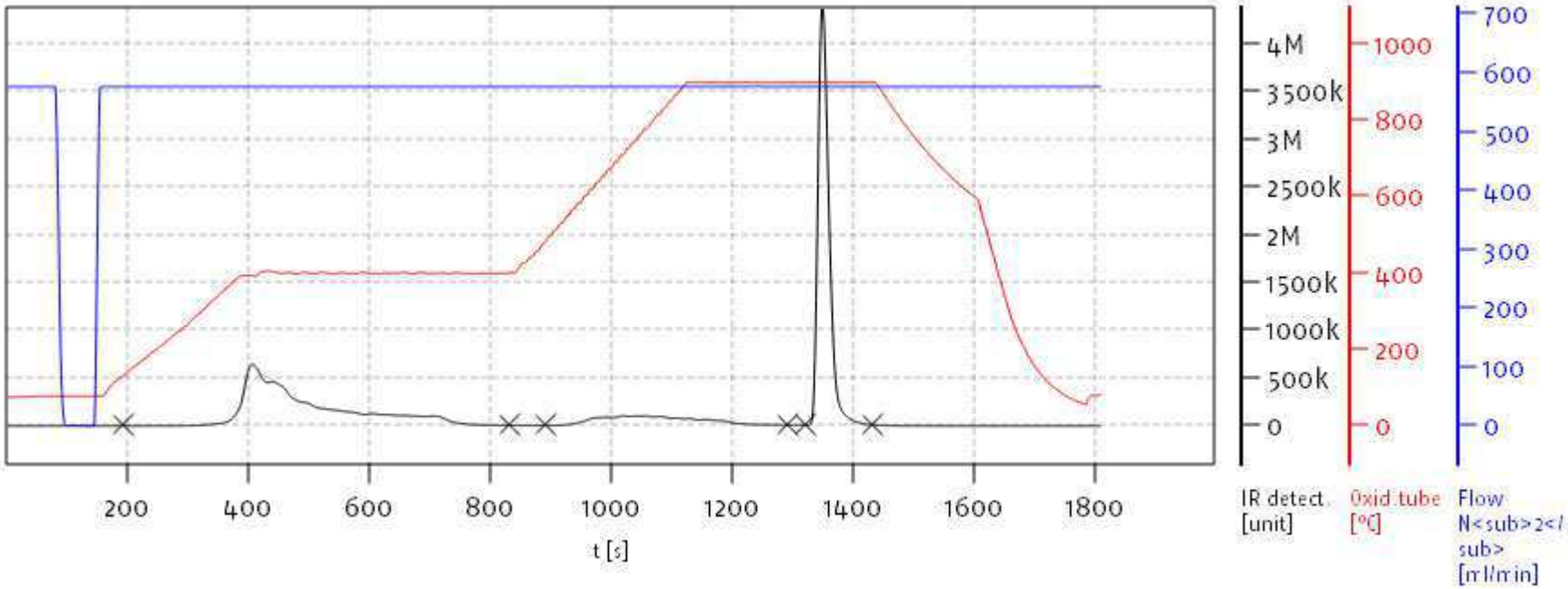
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
84	84	BJH0807-DUP1	504.90		1.00	CARBON	9/3/2021 5:46 AM	2.171	0.274	2.445	bl	3 064 720	829 732	3 542 080	0.9695	1.0000



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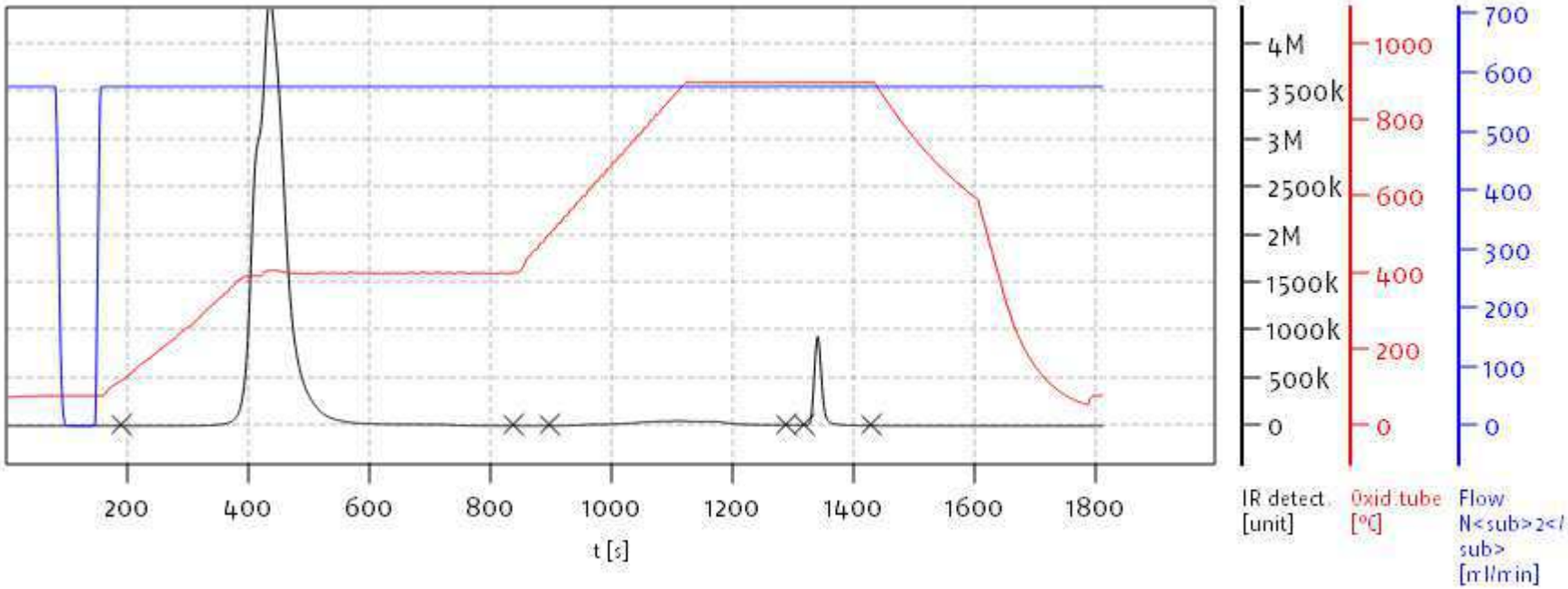
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
85	85	BJH0807-MS1	532.30	0.0093	1.00	CARBON	9/3/2021 6:16 AM	3.077	0.114	3.191	bl,C1o	9 495 300	369 591	516 757	0.9695	1.0000



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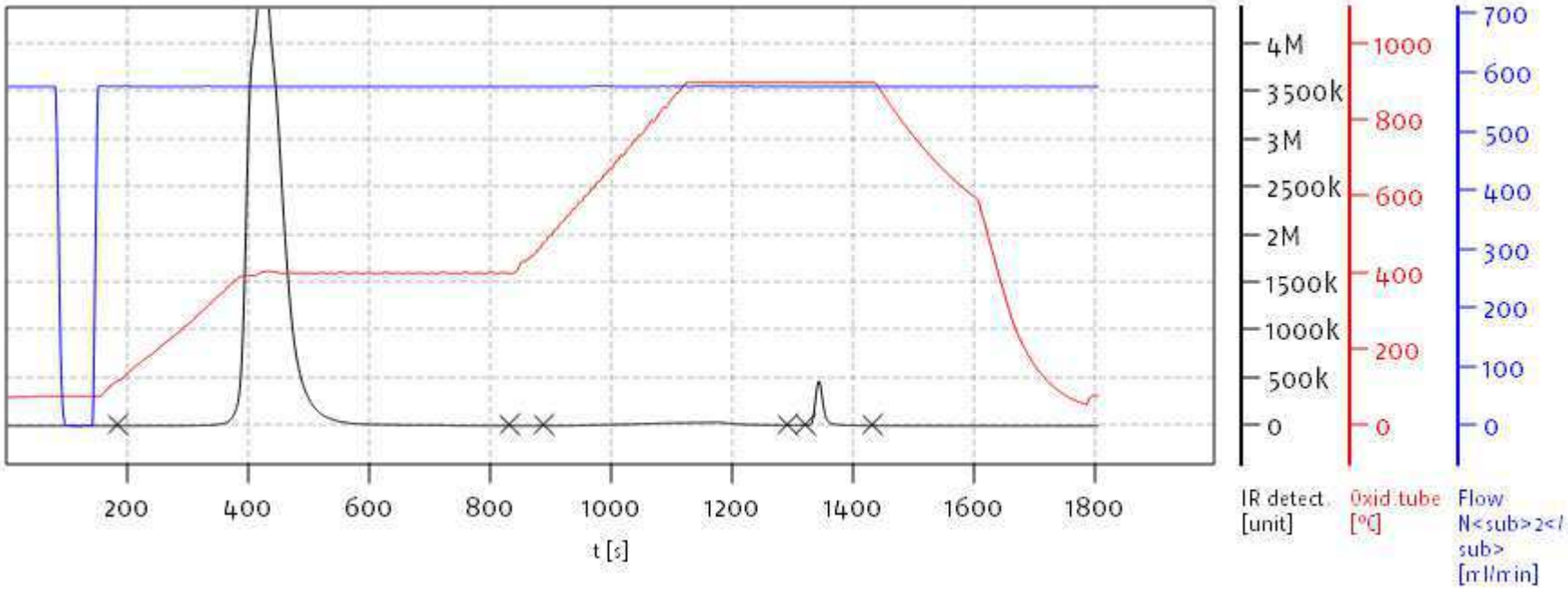
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
86	86	BJH0807-MSD1	536.60	0.0122	1.00	CARBON	9/3/2021 6:47 AM	3.533	0.077	3.610	bl,C1o	11 317 400	257 339	275 317	0.9695	1.0000



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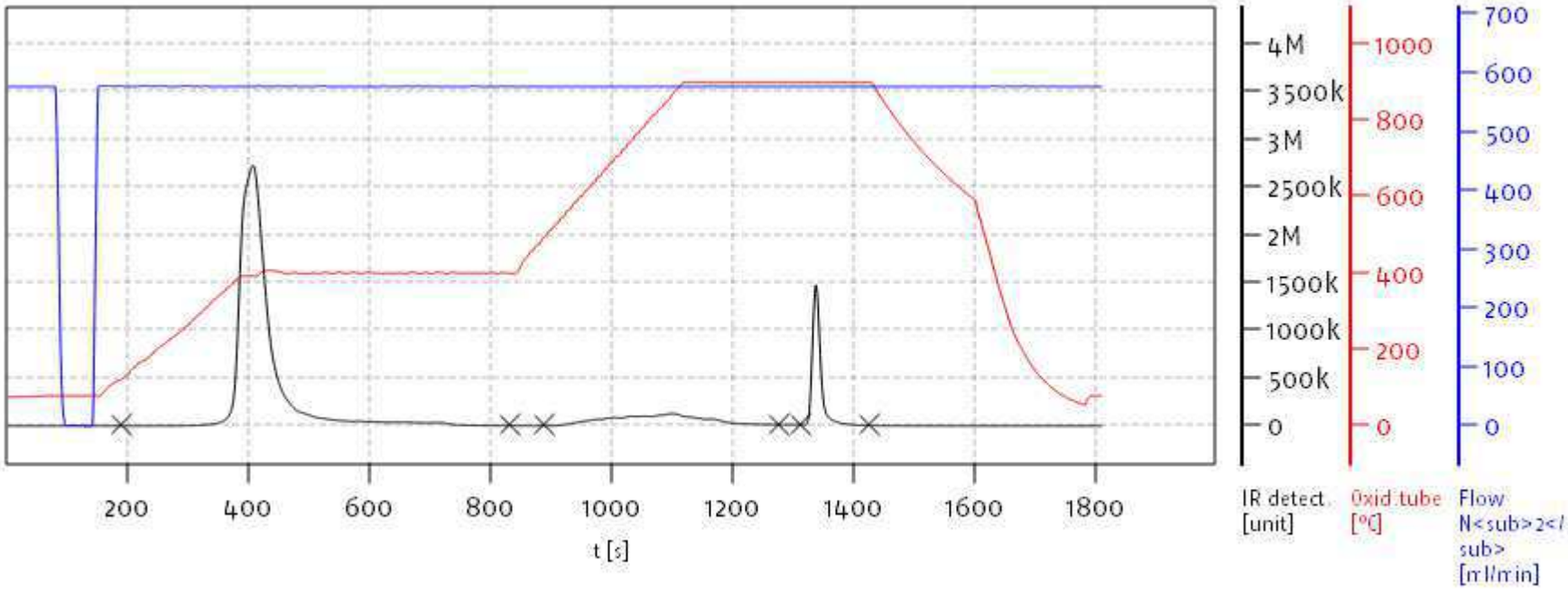
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
87	87	21H0350-04	488.10		1.00	CARBON	9/3/2021 7:18 AM	2.176	0.300	2.476	bl	5 594 510	878 181	887 492	0.9695	1.0000



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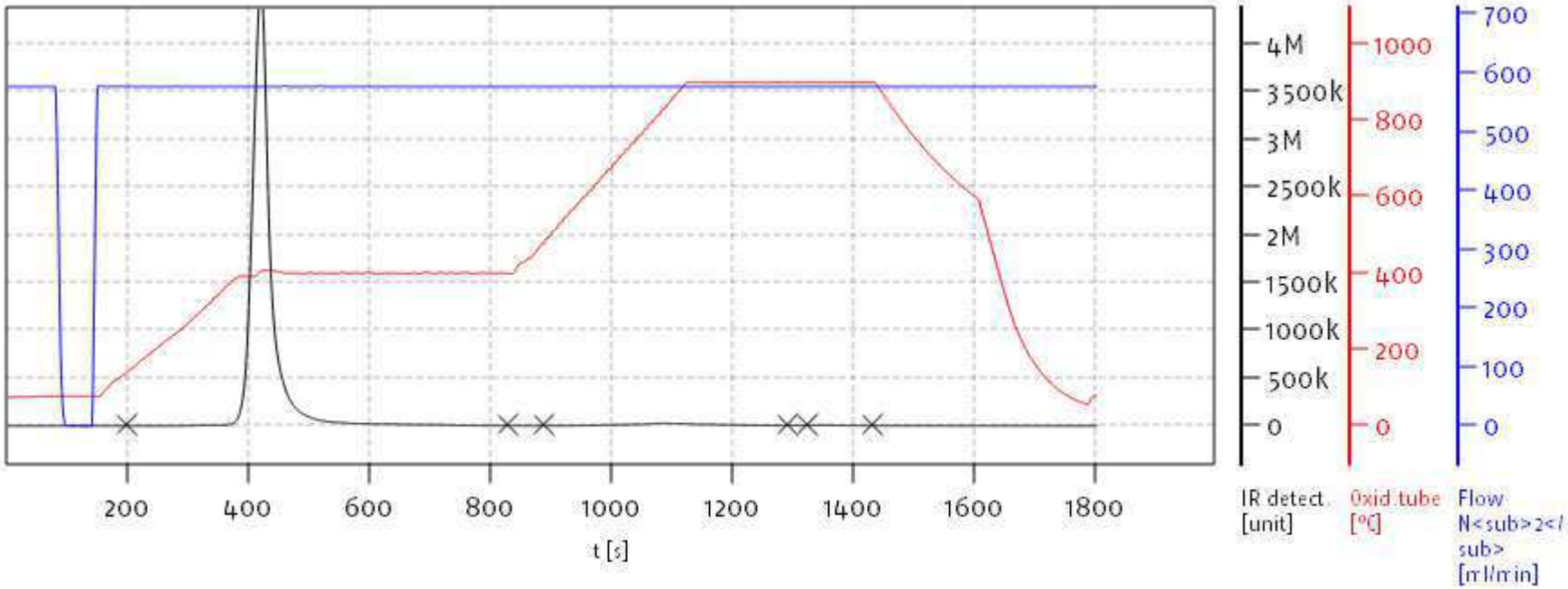
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
88	88	SJH0417-CCV7	22.40		1.00	CARBON	9/3/2021 7:48 AM	43.450	1.147	44.596	bl	5 949 080	163 742	18 486	0.9695	1.0000



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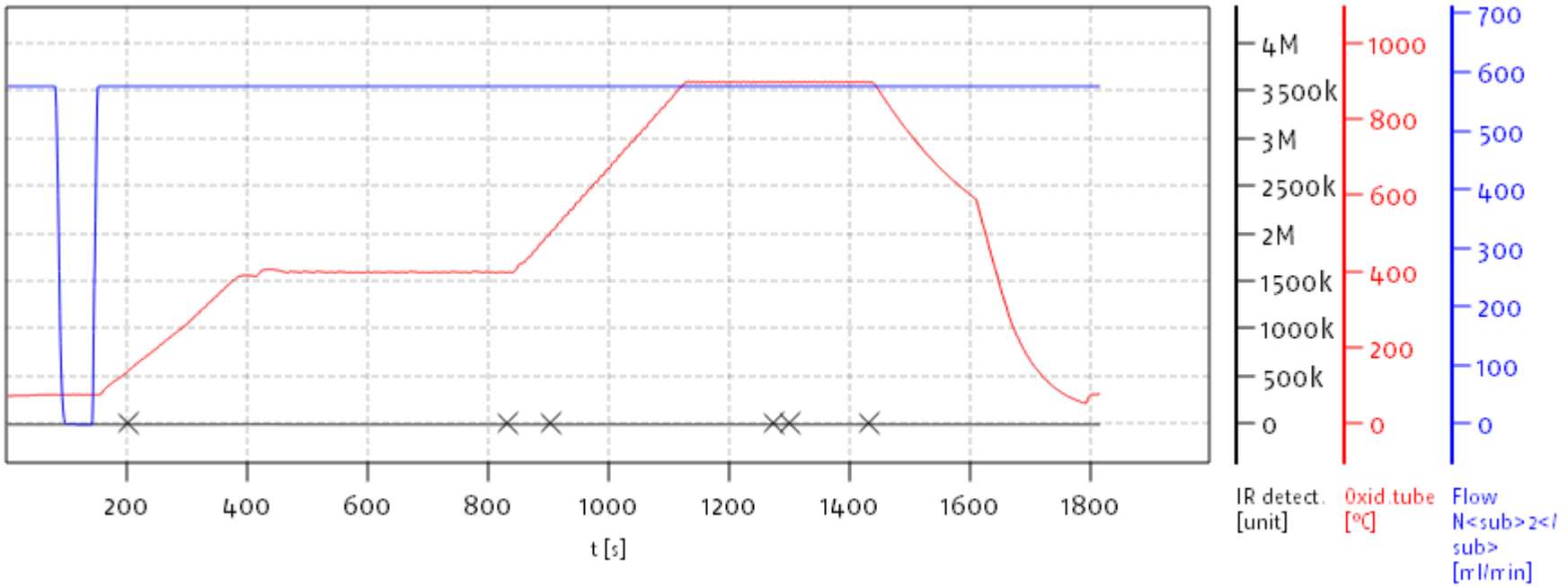
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
89	89	SJH0417-CCB7	620.40		1.00	CARBON	9/3/2021 8:19 AM	0.000	0.000	0.000	bl,C1u,C3u,C2u	5 063	425	470	0.9695	1.0000



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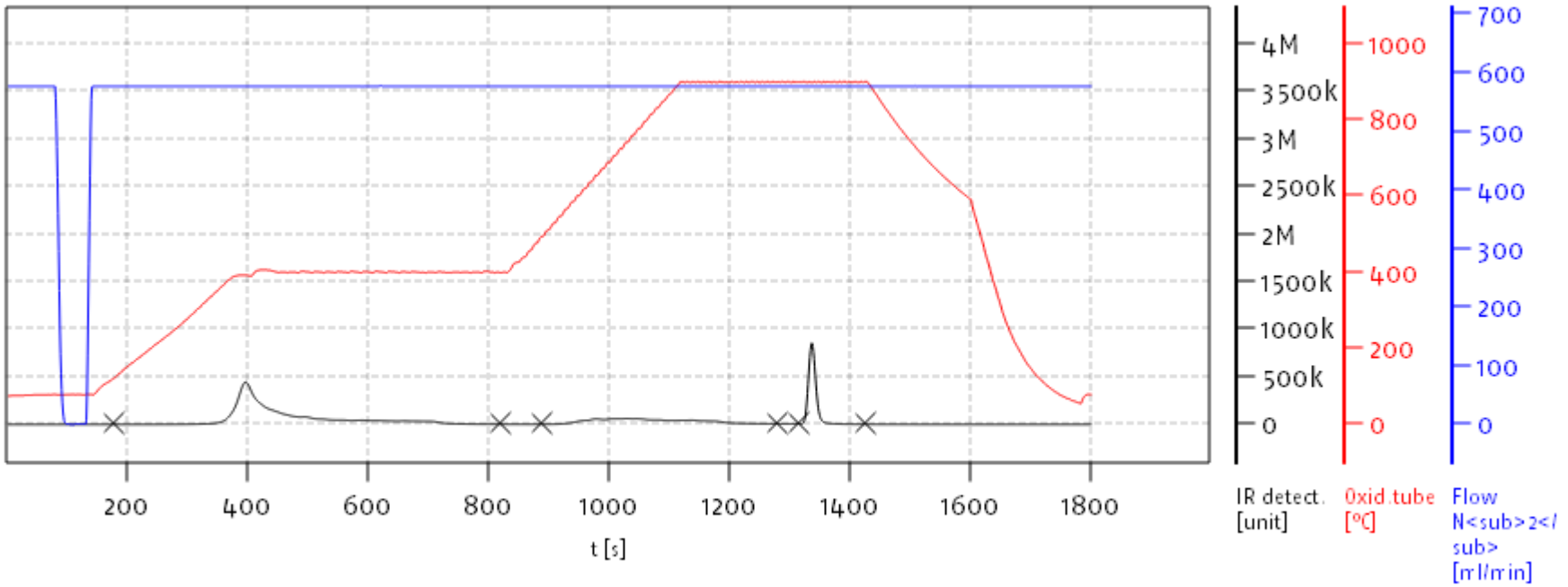
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
90	1	21H0350-08	340.00		1.00	CARBON	9/3/2021 8:49 AM	0.857	0.234	1.090	bl	1 323 280	481 919	464 559	0.9695	1.0000



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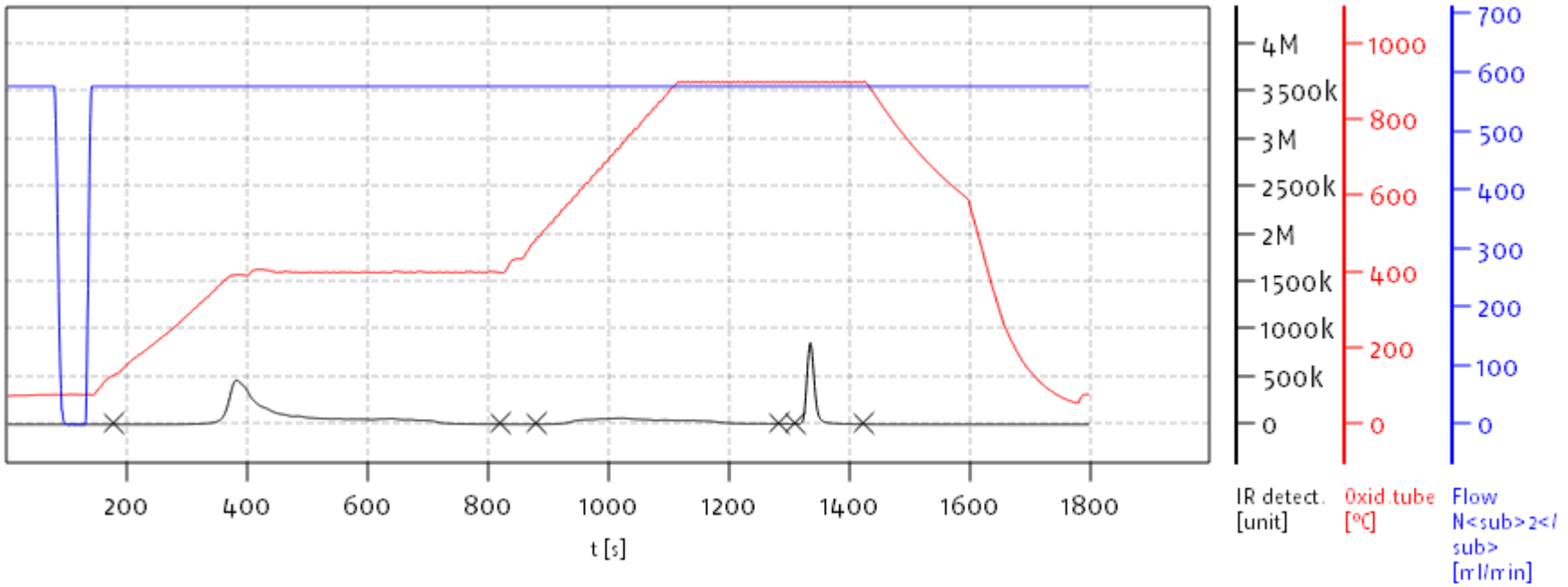
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
91	2	BJH0807-DUP2	318.90		1.00	CARBON	9/3/2021 9:20 AM	1.045	0.253	1.298	bl	1 563 210	488 978	481 545	0.9695	1.0000



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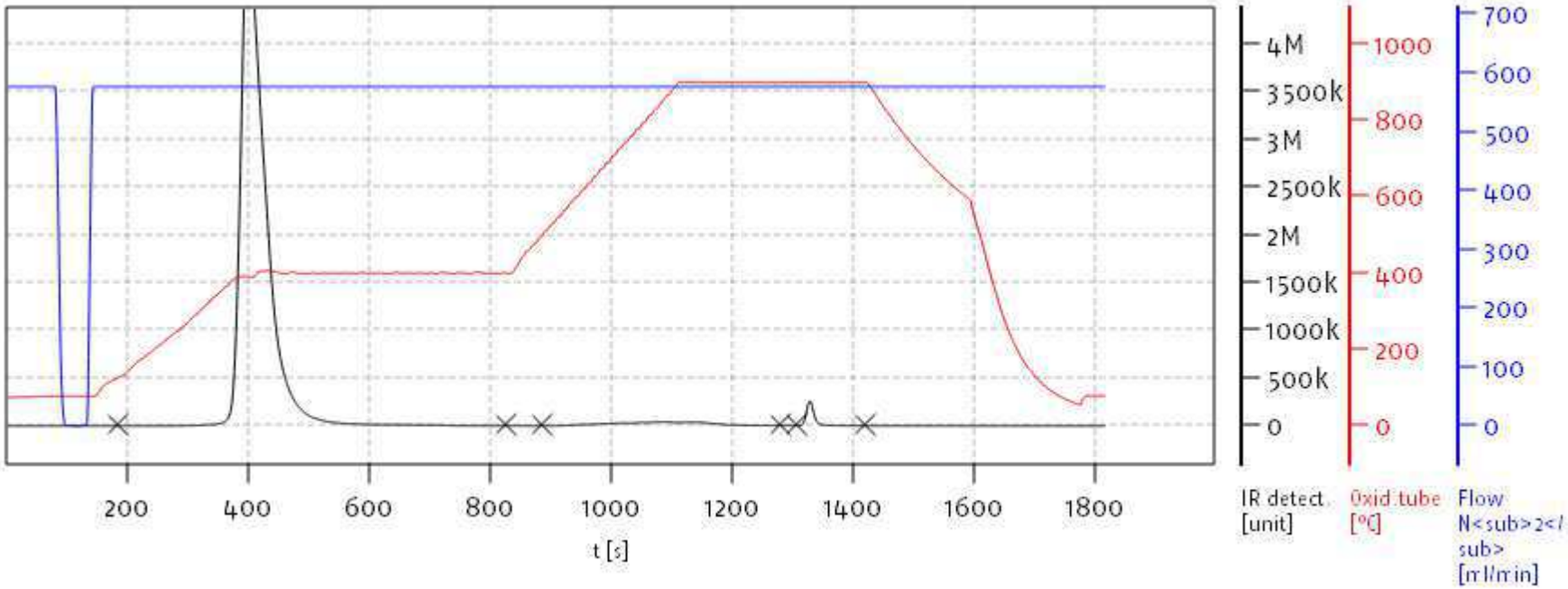
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
92	3	BJH0807-MS2	374.50	0.0140	1.00	CARBON	9/3/2021 9:50 AM	4.031	0.127	4.158	bl,C1o	9 092 430	293 149	147 886	0.9695	1.0000



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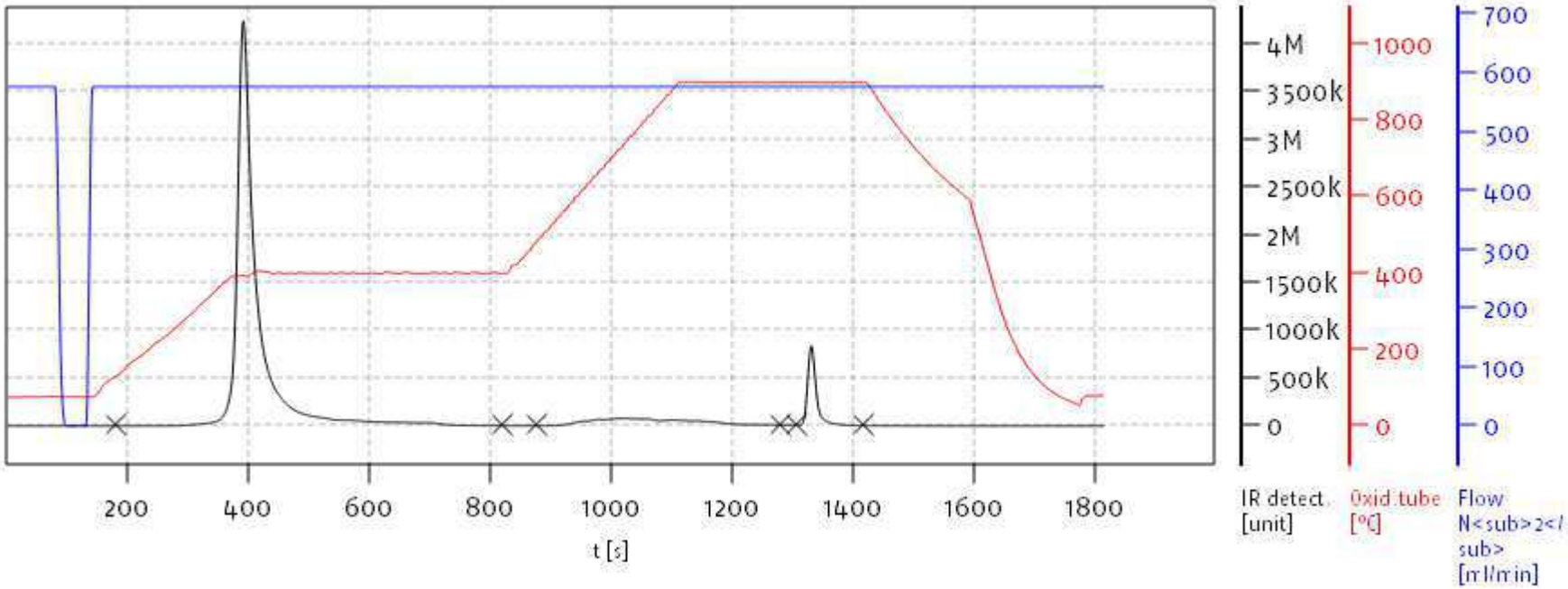
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
93	4	BJH0807-MSD2	387.20	0.0126	1.00	CARBON	9/3/2021 10:21 AM	2.675	0.261	2.936	bl	5 801 620	611 022	530 385	0.9695	1.0000



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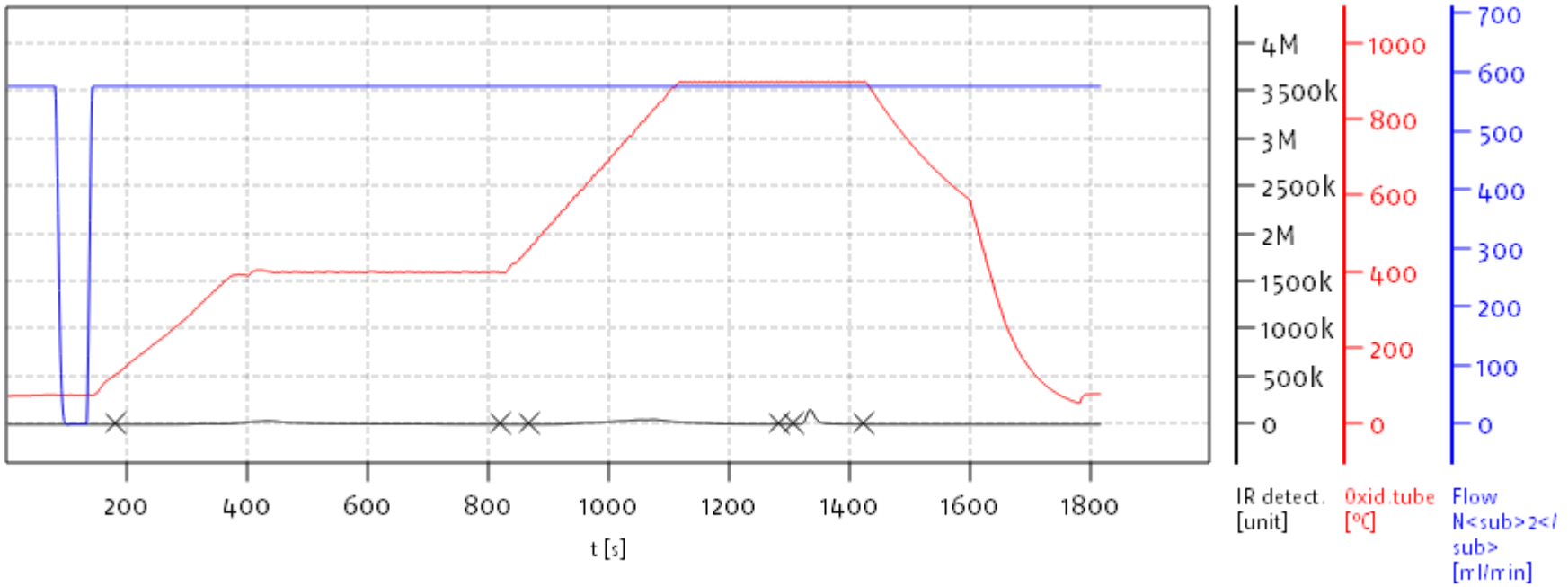
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
94	5	21H0352-01	507.00		1.00	CARBON	9/3/2021 10:52 AM	0.090	0.086	0.177	bl	192 882	270 823	107 095	0.9695	1.0000



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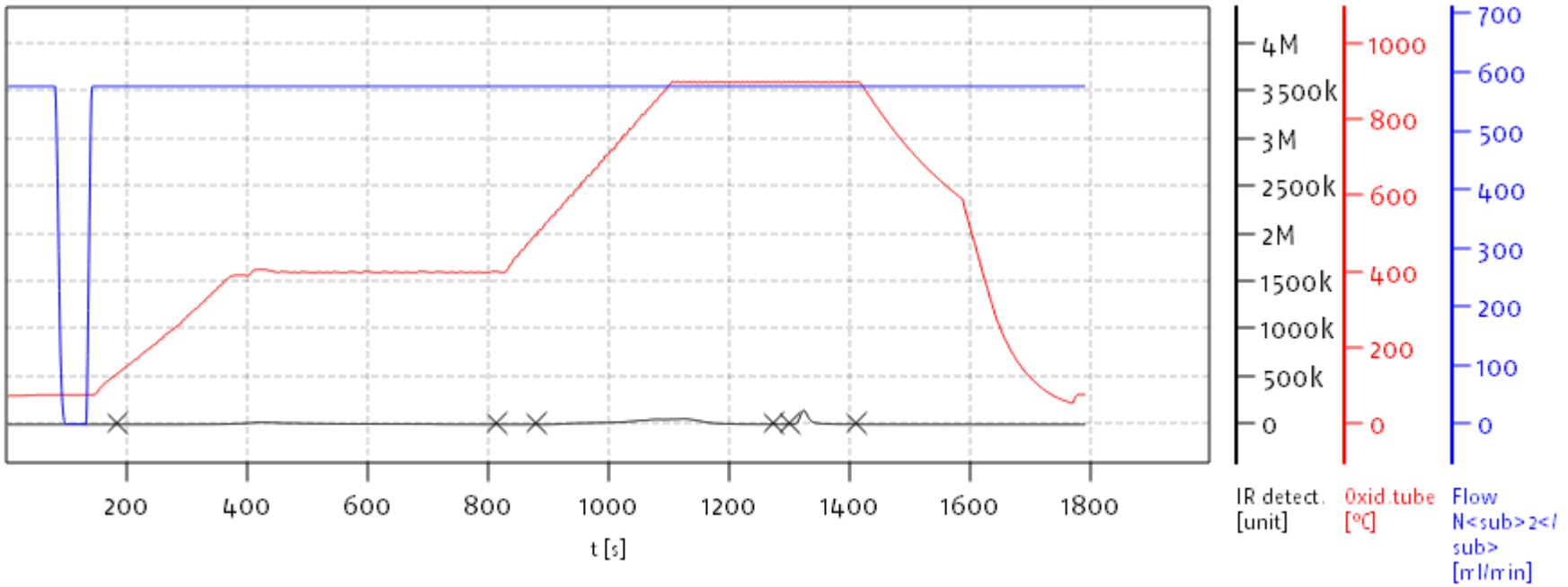
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
95	6	21H0352-02	509.60		1.00	CARBON	9/3/2021 11:22 AM	0.065	0.103	0.168	bl	123 396	322 075	99 756	0.9695	1.0000



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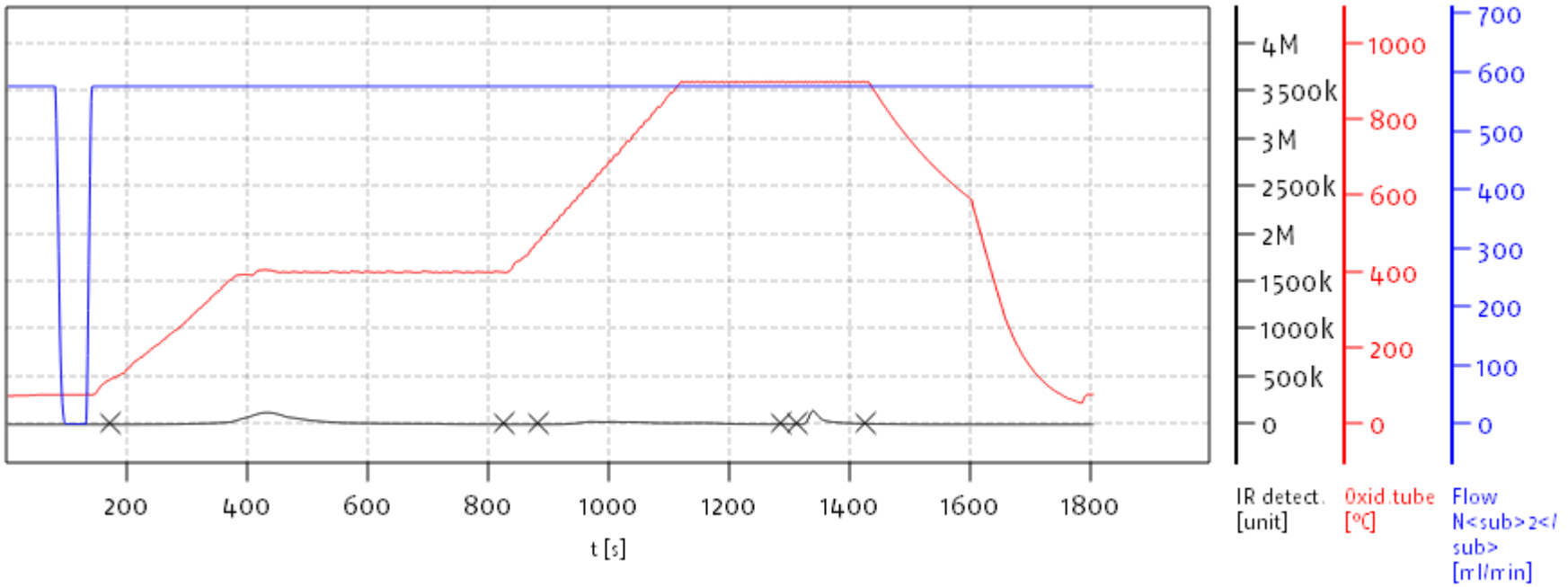
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
96	7	21H0352-03	508.00		1.00	CARBON	9/3/2021 11:52 AM	0.225	0.060	0.285	bl	570 878	191 038	146 786	0.9695	1.0000



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Access: soliTOC superuser

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soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

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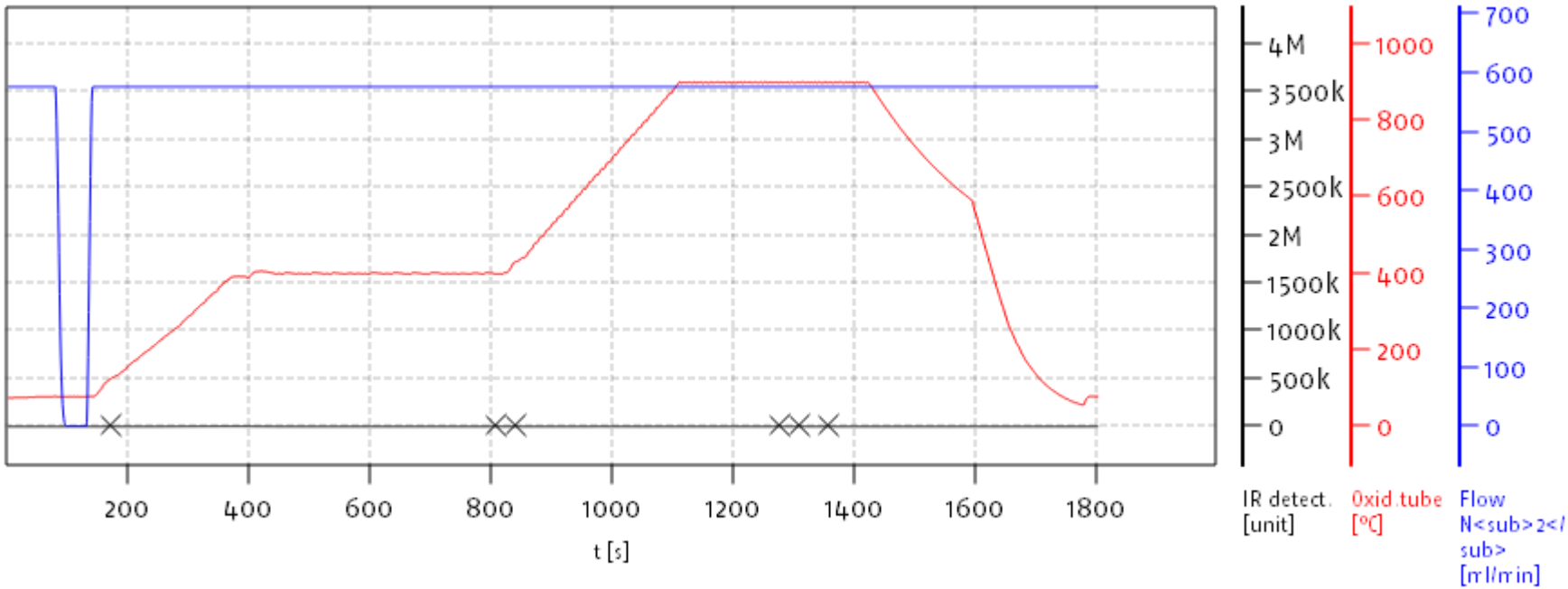
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
97	8	BLANK	1.00		1.00	CARBON	9/3/2021 12:23 PM	0.000	0.000	0.000	bl	13 281	3 010	101	0.9695	1.0000



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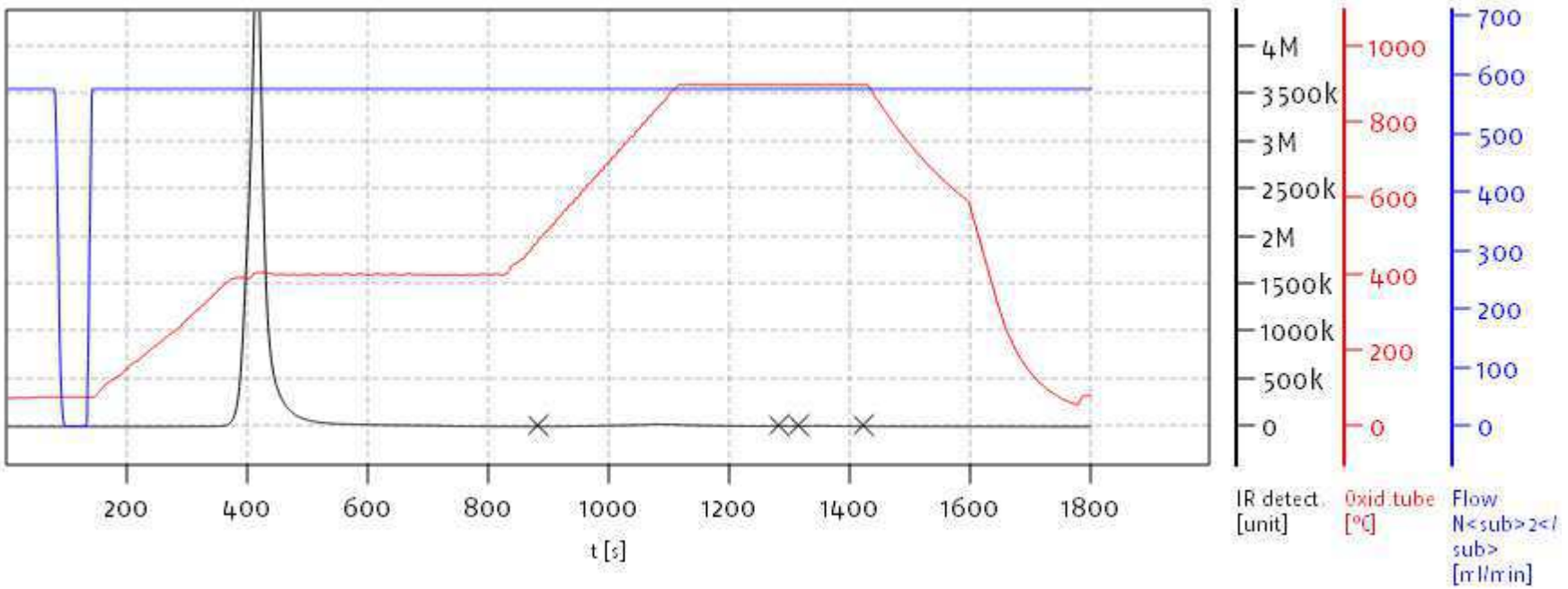
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
98	9	Dfactor	21.50		1.00	CARBON	9/3/2021 12:53 PM	0.062	1.117	1.178		0	153 864	19 501	1.0000	1.0000



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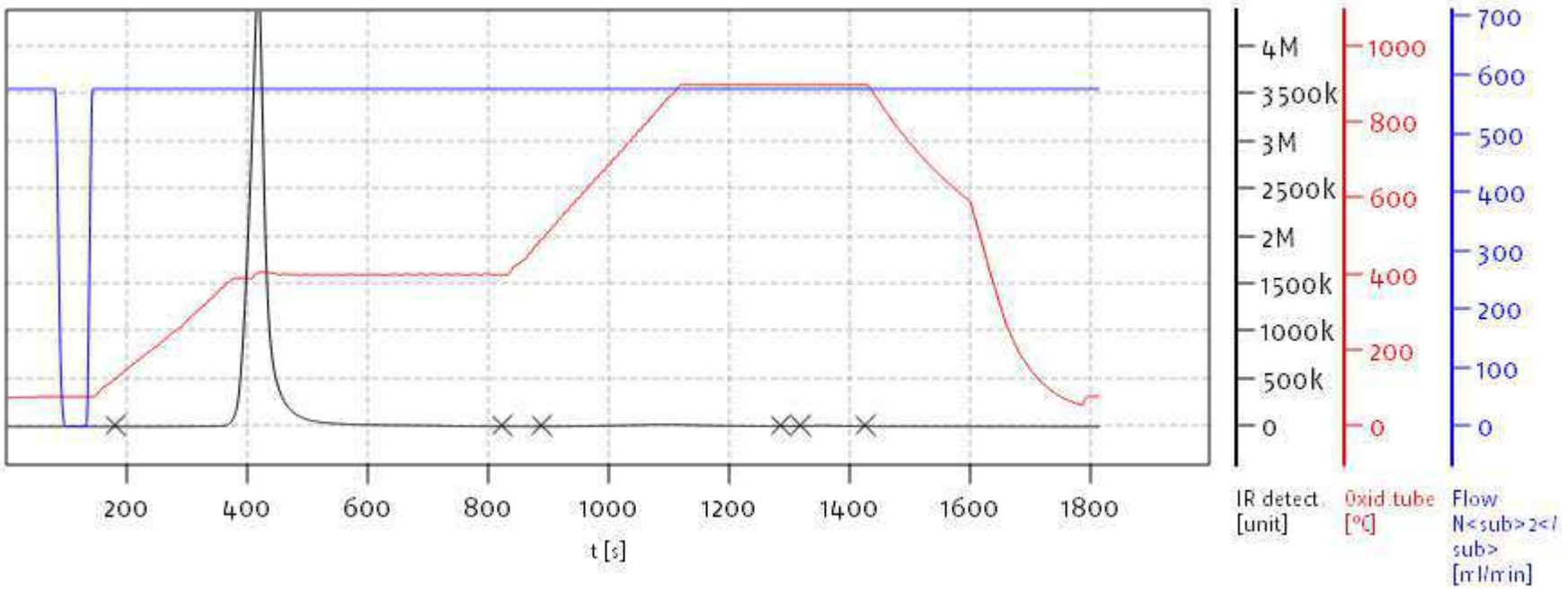
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
99	10	Dfactor	21.40		1.00	CARBON	9/3/2021 1:24 PM	44.552	1.104	45.655	bl	5 680 790	151 525	25 097	0.9934	1.0000



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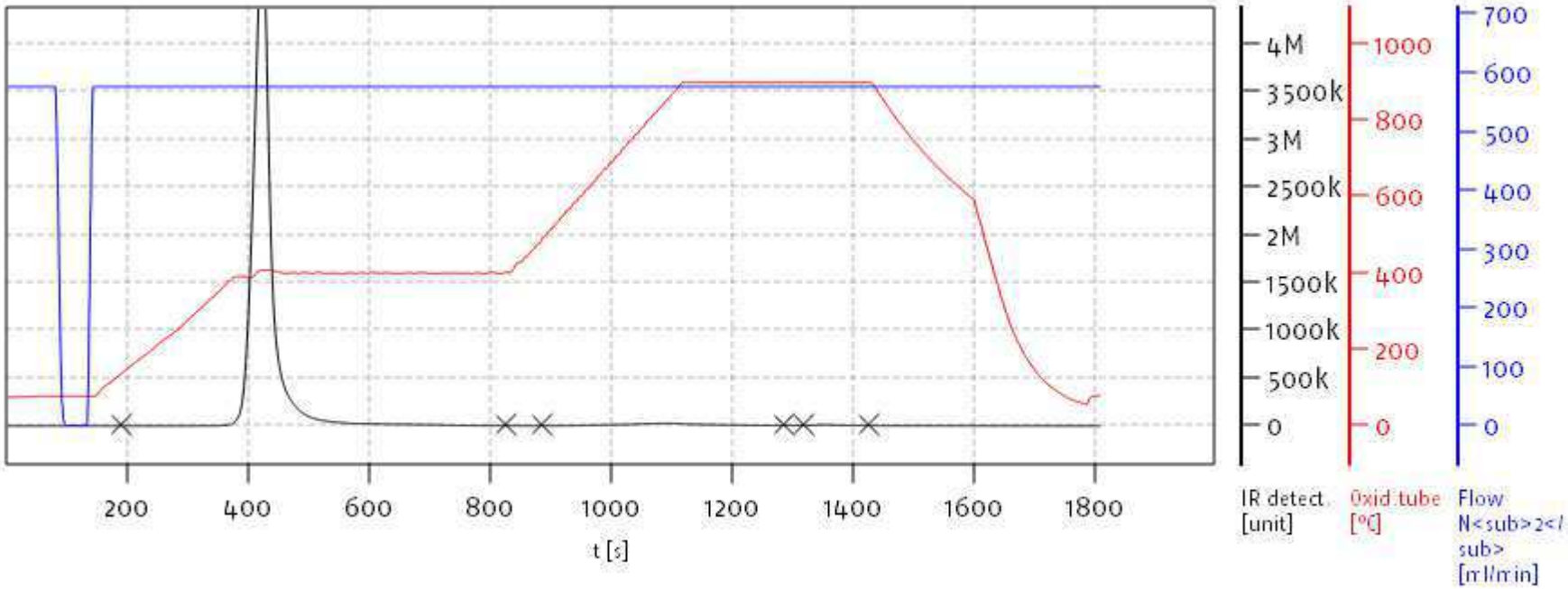
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
100	11	SJH0417-CCV8	24.30		1.00	CARBON	9/3/2021 1:55 PM	44.902	1.087	45.988	bl	6 502 360	168 032	24 323	0.9934	1.0000



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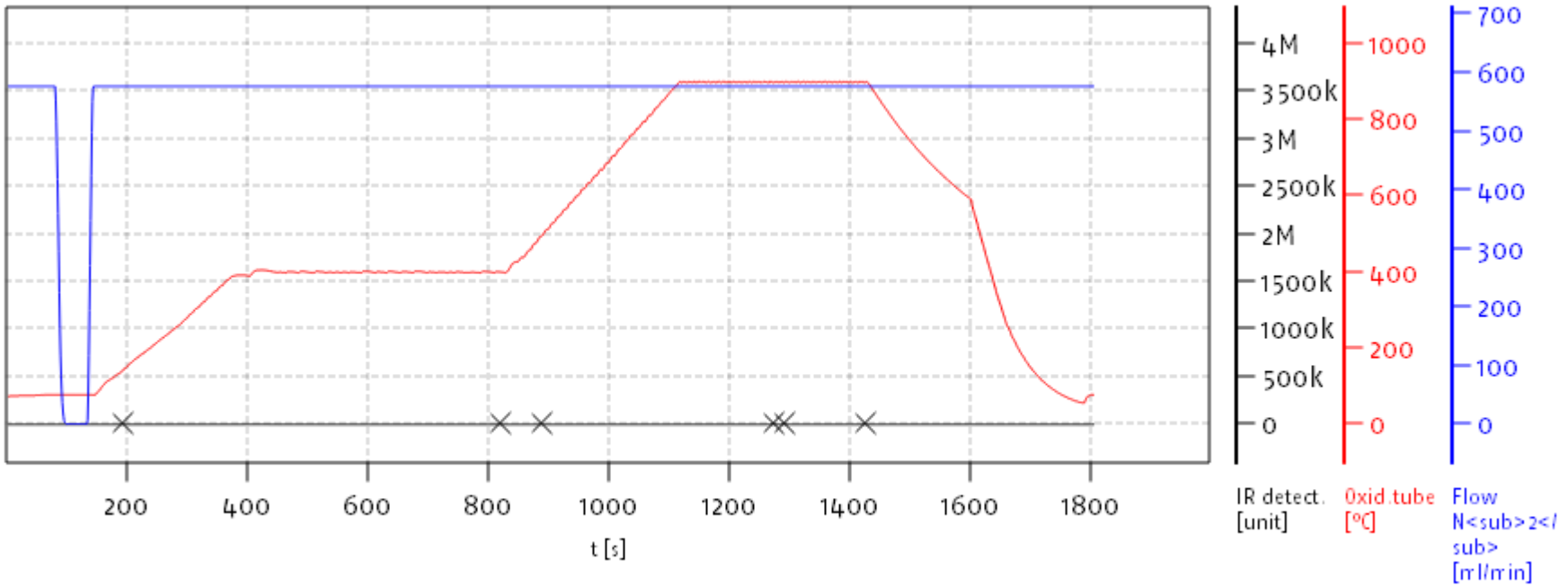
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
101	12	SJH0417-CCB8	577.30		1.00	CARBON	9/3/2021 2:25 PM	0.000	0.000	0.000	bl,C1u,C3u,C2u	2 593	182	600	0.9934	1.0000



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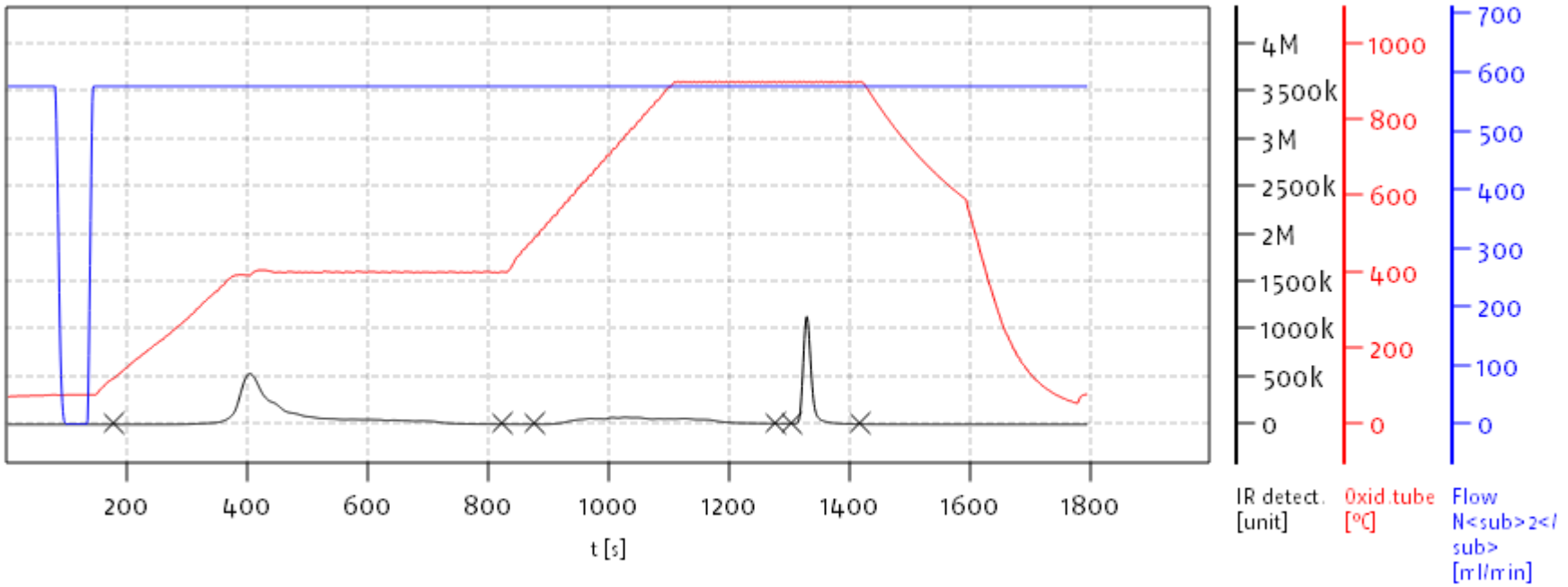
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
102	13	21H0352-07	502.40		1.00	CARBON	9/3/2021 2:56 PM	0.780	0.203	0.983	bl	1 677 240	614 581	678 381	0.9934	1.0000



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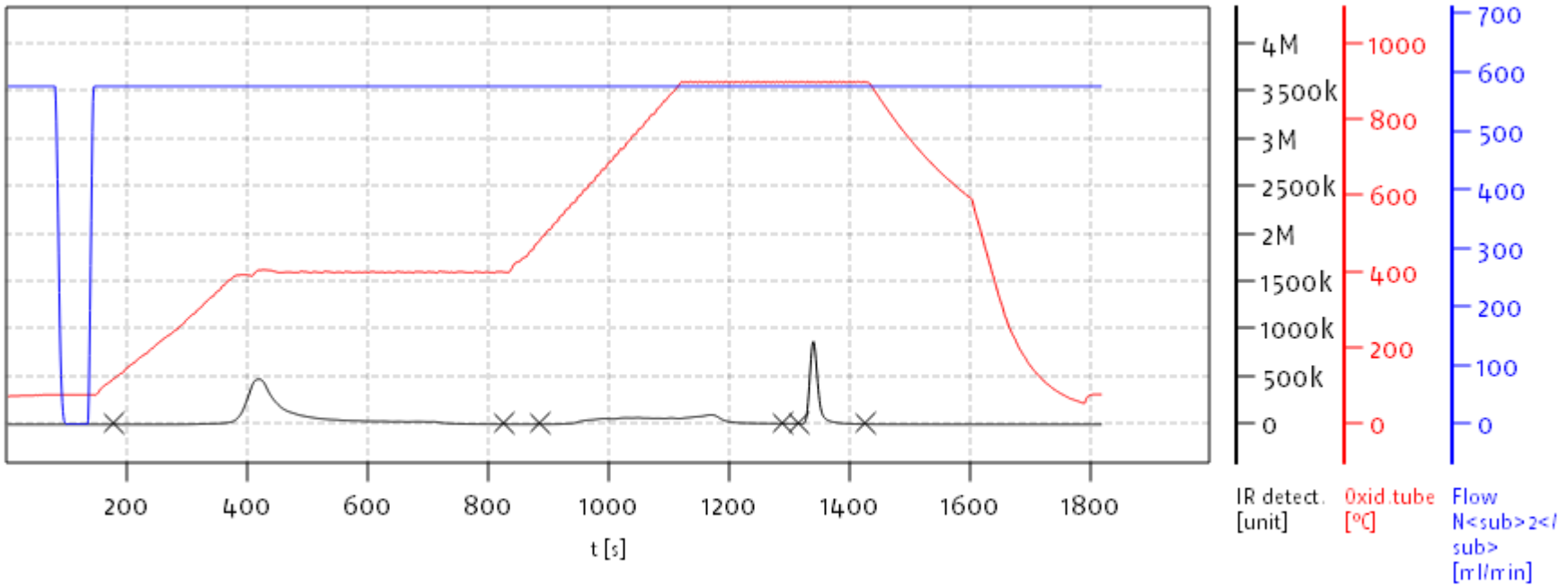
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
103	14	BJH0807-DUP3	501.90		1.00	CARBON	9/3/2021 3:26 PM	0.645	0.221	0.866	bl	1 415 080	669 466	533 841	0.9934	1.0000



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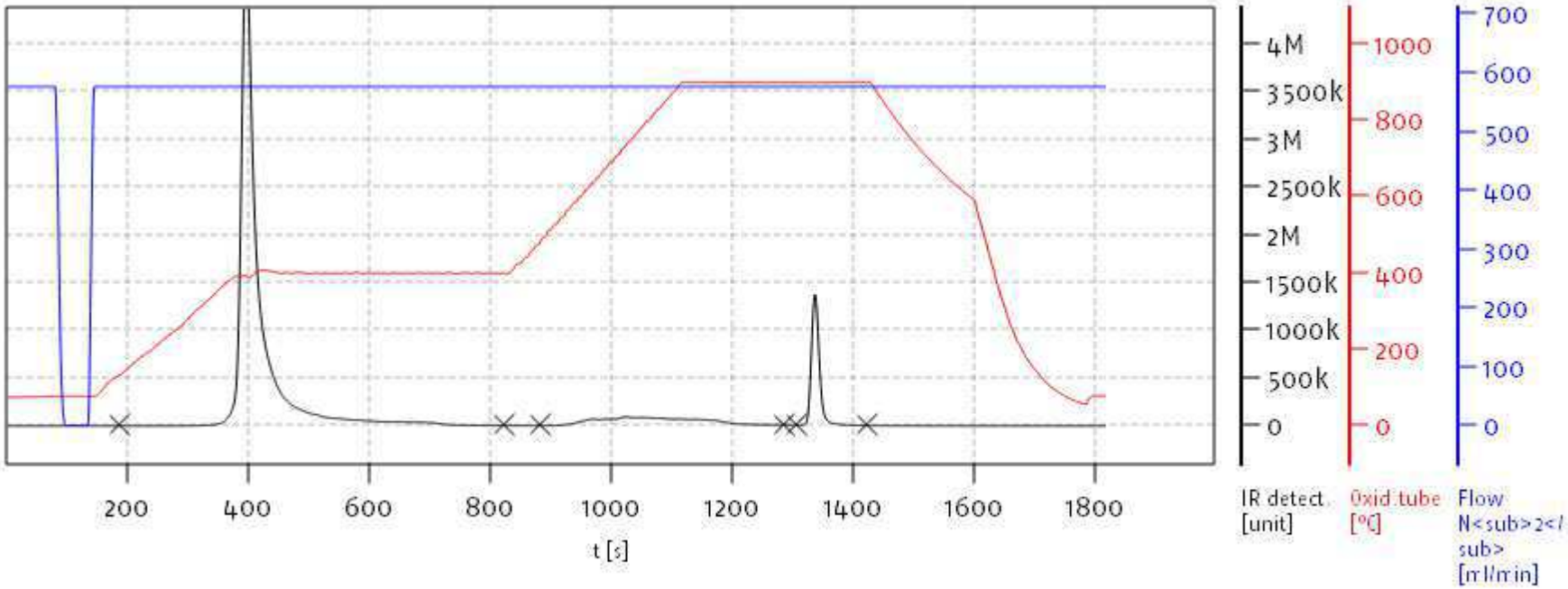
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
104	15	BJH0807-MS3	564.90	0.0155	1.00	CARBON	9/3/2021 3:57 PM	2.016	0.216	2.232	bl	6 000 240	735 816	805 479	0.9934	1.0000



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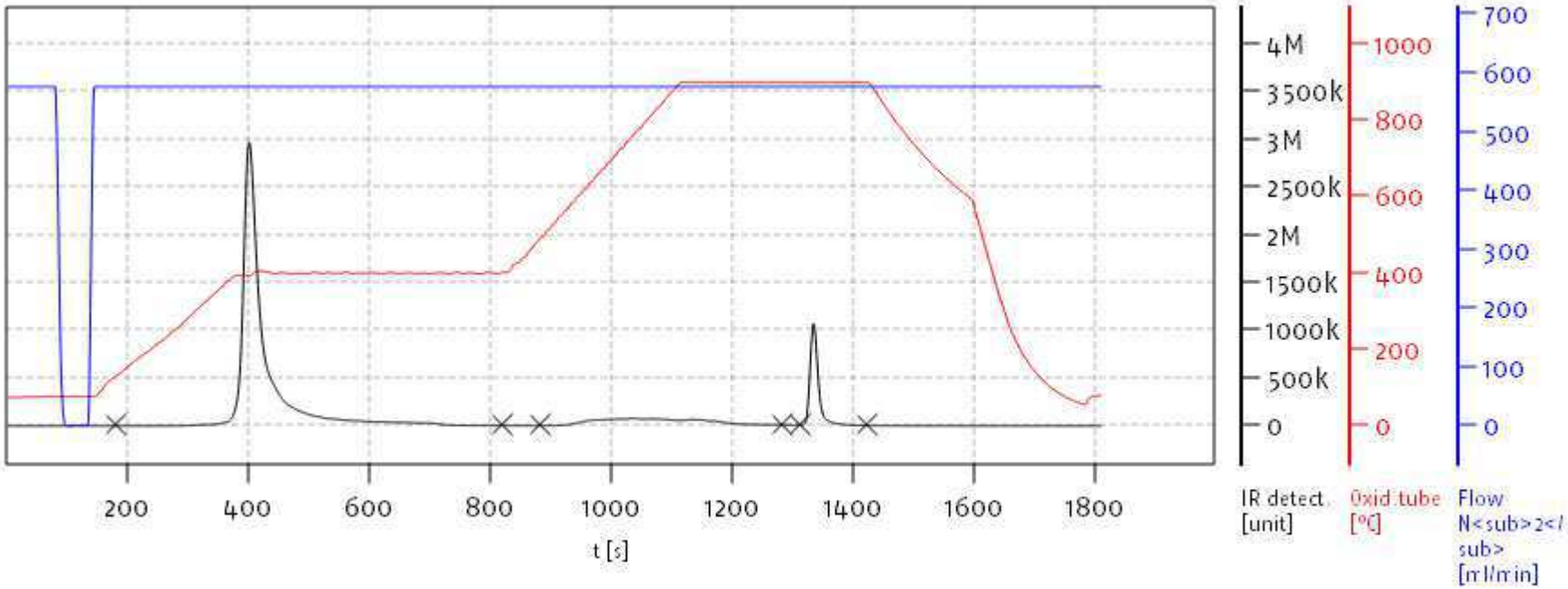
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
105	16	BJH0807-MSD3	521.10	0.0100	1.00	CARBON	9/3/2021 4:28 PM	1.552	0.207	1.758	bl	4 187 490	650 118	650 615	0.9934	1.0000



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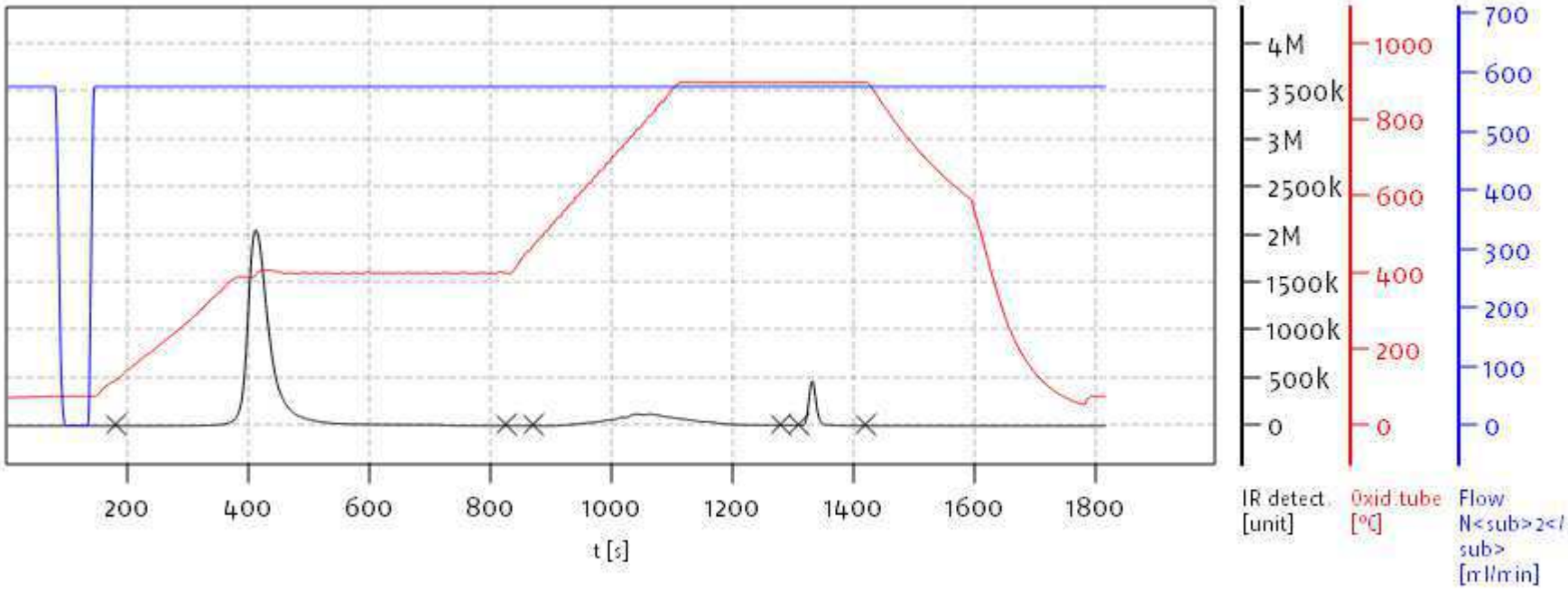
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
106	17	21H0352-08	525.90		1.00	CARBON	9/3/2021 4:58 PM	1.147	0.217	1.364	bl	3 360 850	686 288	256 996	0.9934	1.0000



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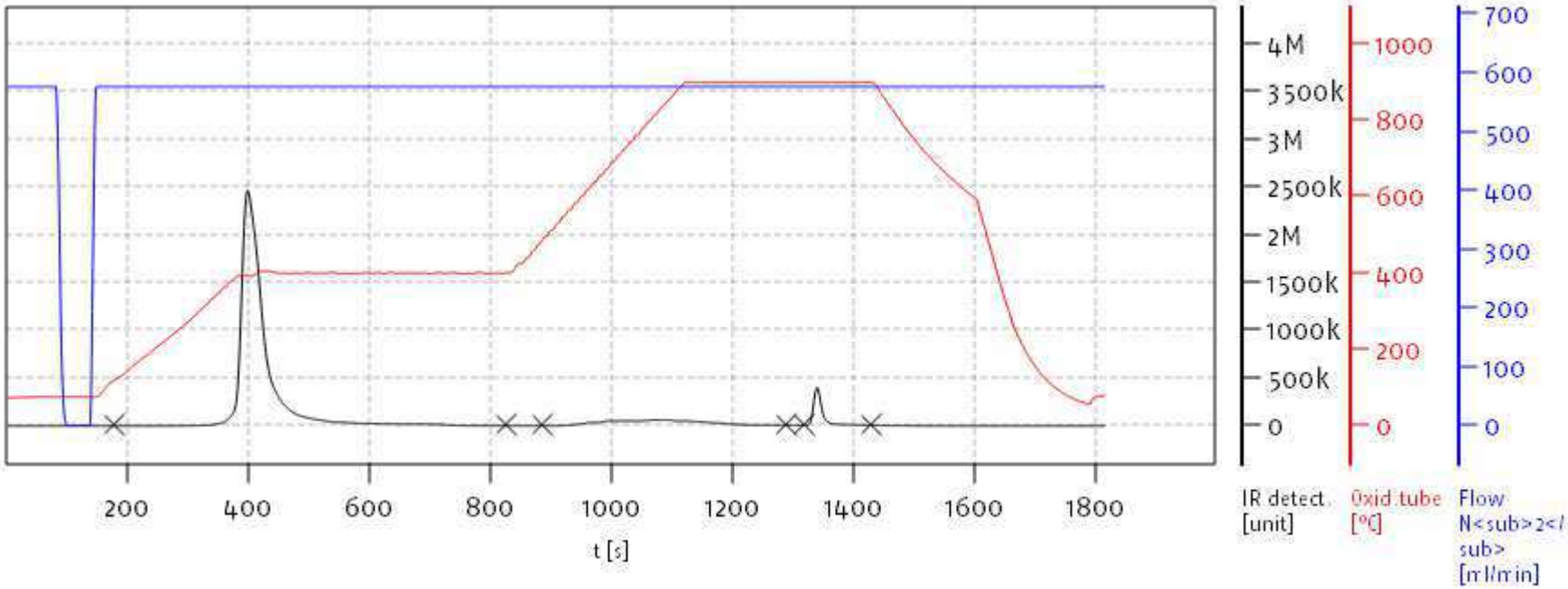
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
107	18	21H0078-32	505.20		1.00	CARBON	9/3/2021 5:29 PM	1.405	0.154	1.560	bl	3 991 000	473 572	262 050	0.9934	1.0000



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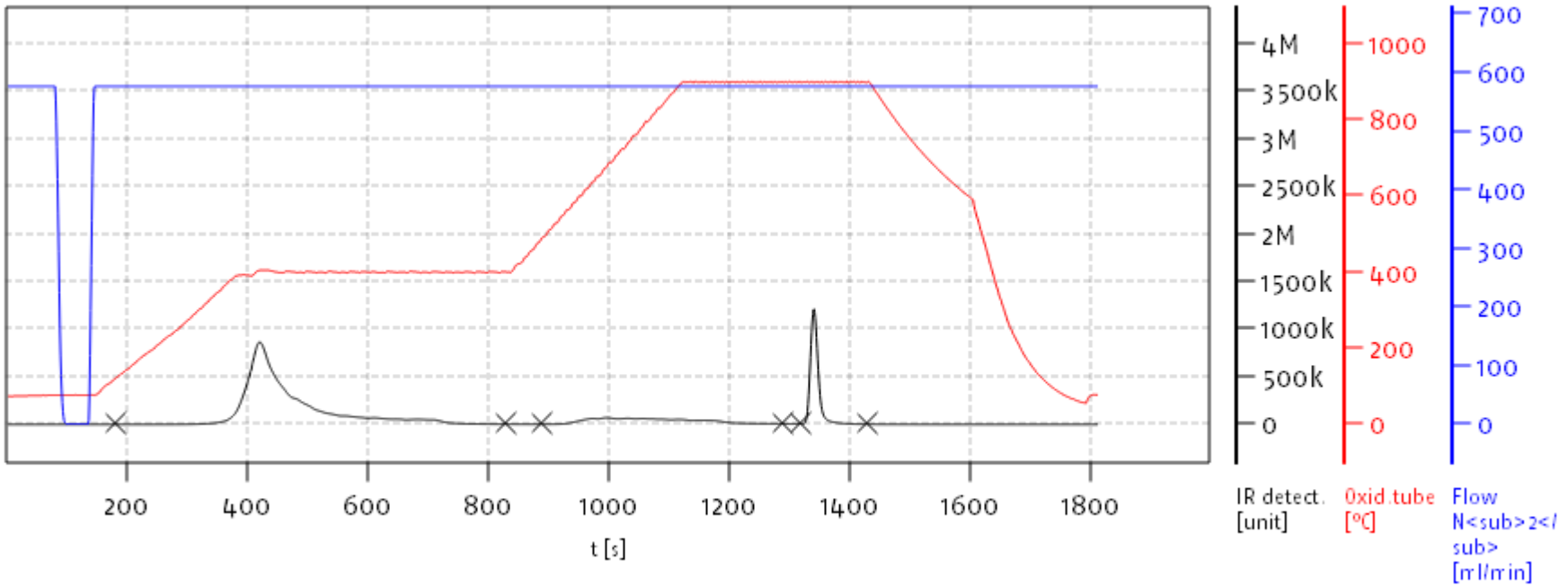
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
108	19	21H0078-34	503.30		1.00	CARBON	9/3/2021 6:00 PM	1.149	0.178	1.327	bl	2 771 310	542 174	694 723	0.9934	1.0000



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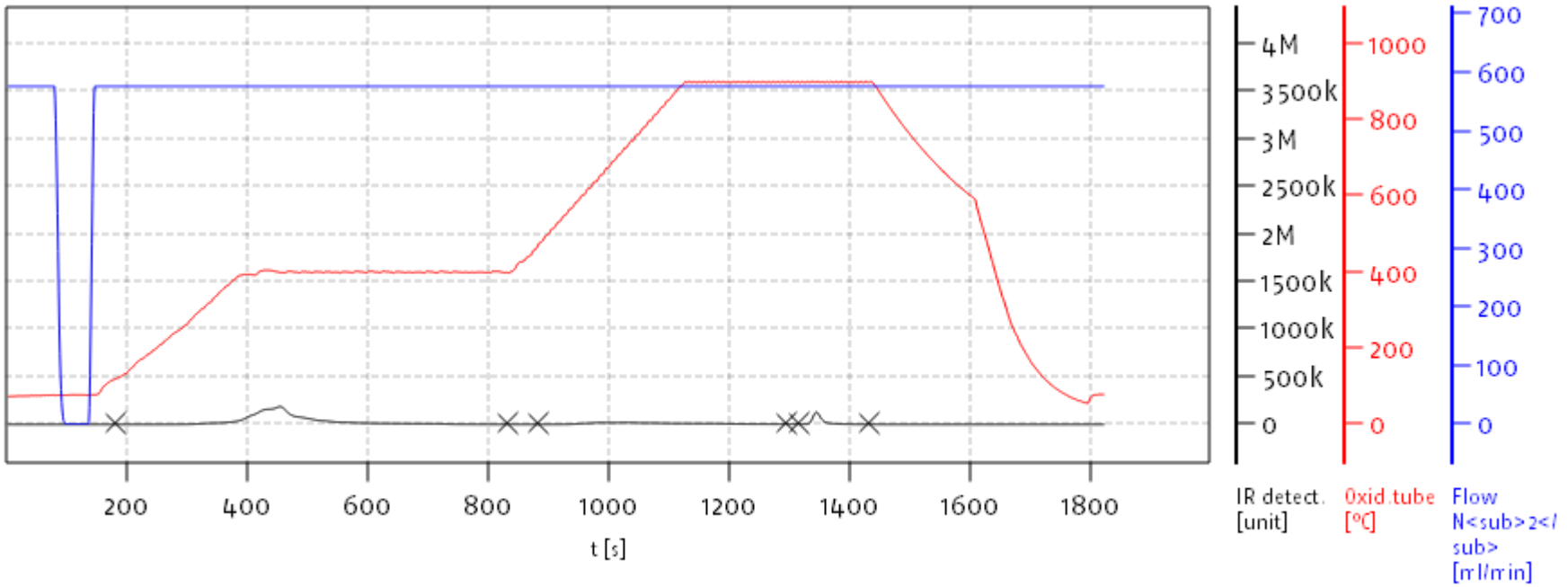
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
109	20	BJH0434-DUP5	640.30		1.00	CARBON	9/3/2021 6:31 PM	0.202	0.035	0.236	bl	704 426	142 797	88 777	0.9934	1.0000



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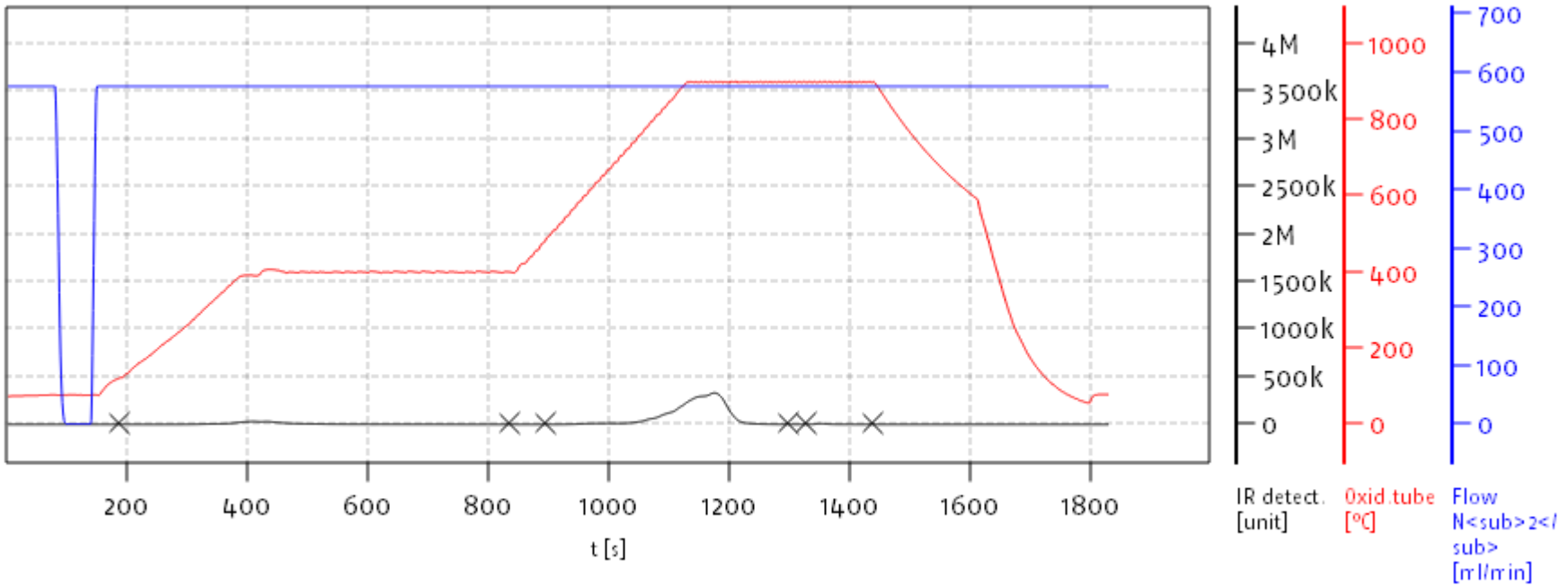
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
110	21	21H0089-02RE1	178.50		1.00	CARBON	9/3/2021 7:02 PM	0.110	1.108	1.219	bl	129 071	1 182 940	8 754	0.9934	1.0000



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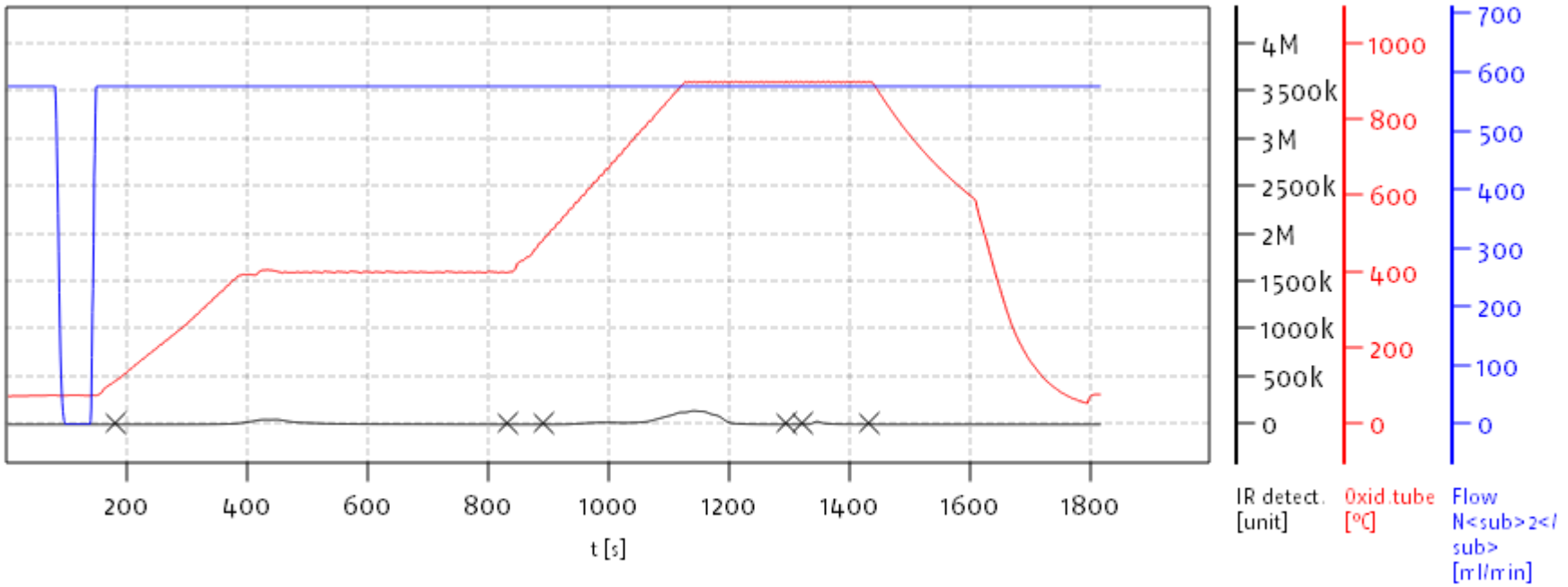
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
111	22	BJH0435-DUP2	506.40		1.00	CARBON	9/3/2021 7:32 PM	0.067	0.191	0.258	bl	199 576	585 675	25 656	0.9934	1.0000



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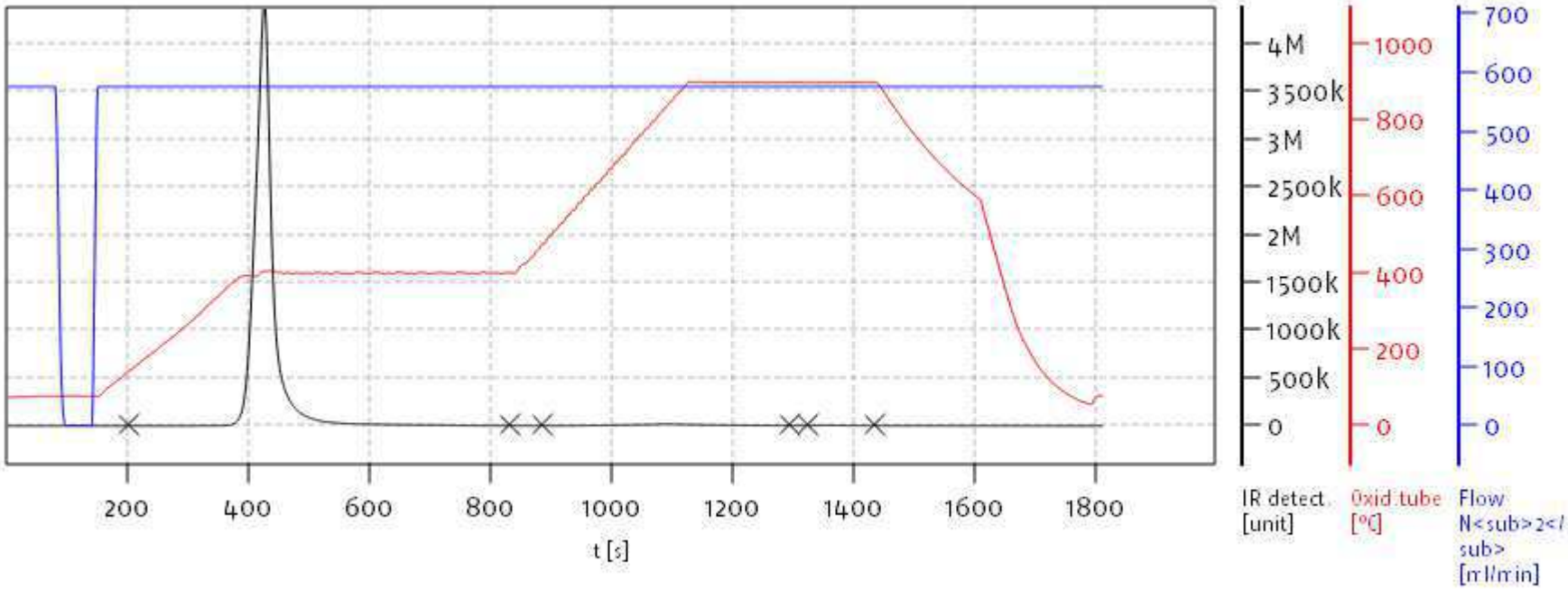
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
112	23	SJH0417-CCV9	20.60		1.00	CARBON	9/3/2021 8:03 PM	44.885	0.853	45.739	bl	5 517 480	115 775	16 972	0.9934	1.0000



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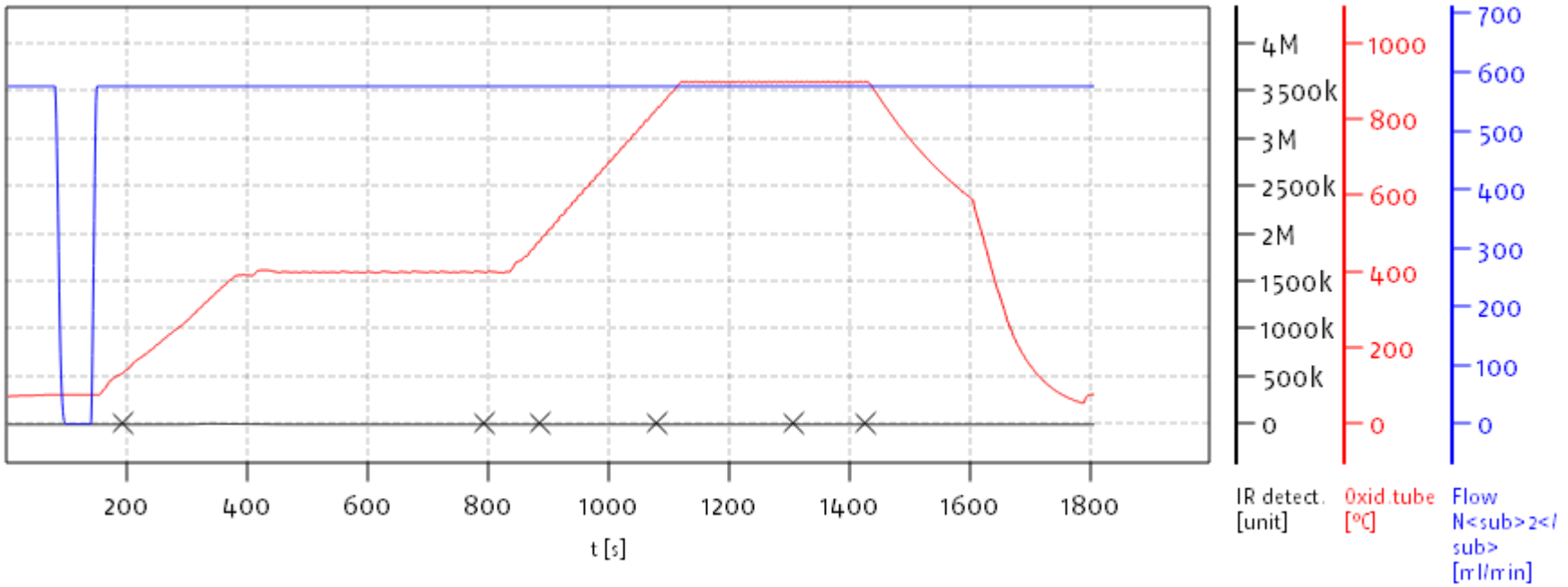
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
113	24	SJH0417-CCB9	542.20		1.00	CARBON	9/3/2021 8:33 PM	0.004	0.000	0.004	bl,C3u,C2u	24 910	589	247	0.9934	1.0000



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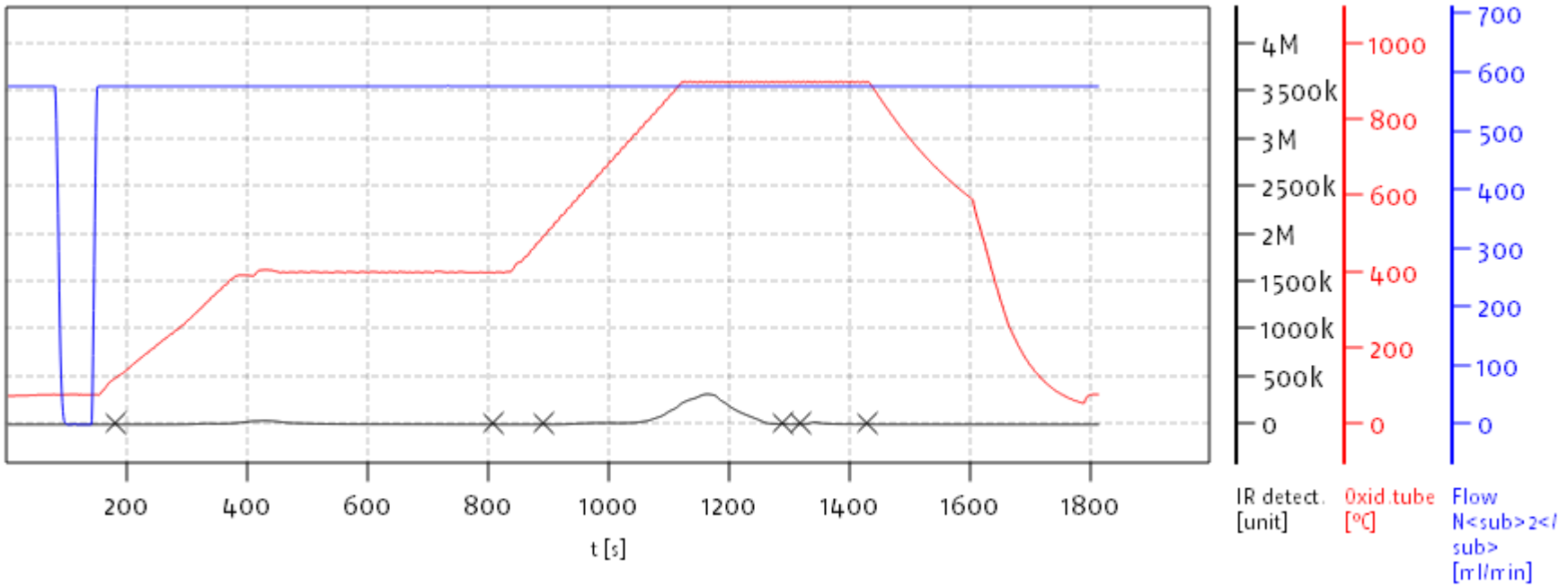
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
114	25	21H0089-11RE1	326.10		1.00	CARBON	9/3/2021 9:04 PM	0.088	0.697	0.785	bl	166 944	1 357 640	26 706	0.9934	1.0000



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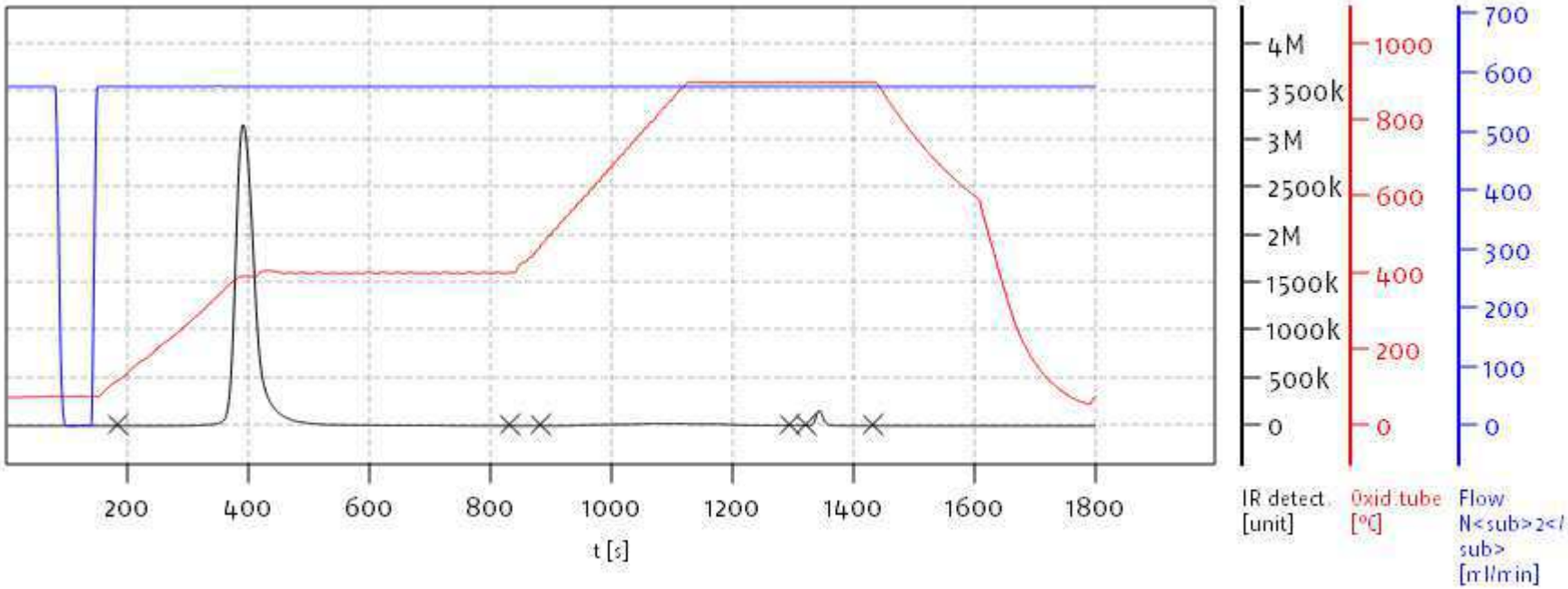
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
115	26	21H0140-09RE1	281.30		1.00	CARBON	9/3/2021 9:34 PM	2.658	0.106	2.764	bl	4 392 200	188 321	87 875	0.9934	1.0000



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Serial No: 0300.181017
Mode CCC

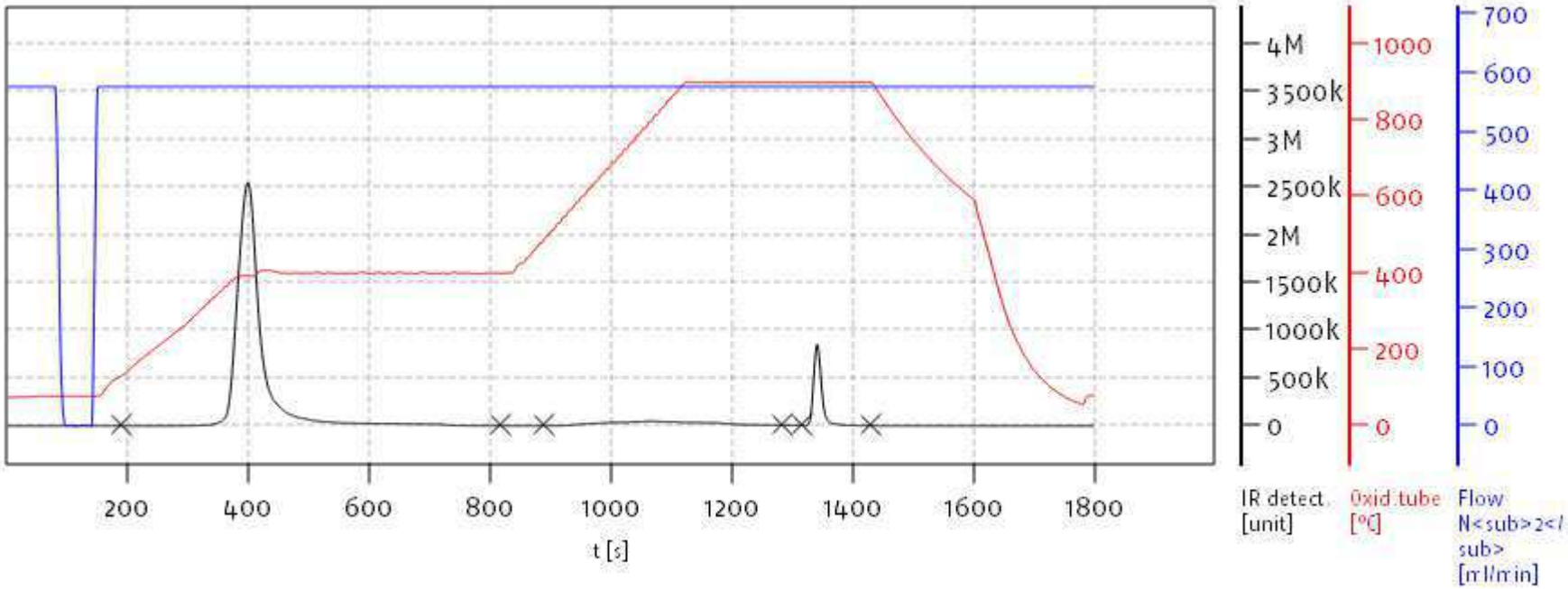
elementar
EXCELLENCE IN ELEMENTS

Document: from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
116	27	21H0184-16RE1	268.10		1.00	CARBON	9/3/2021 10:05 PM	2.940	0.227	3.167	bl	4 219 730	372 042	498 197	0.9934	1.0000



Name:

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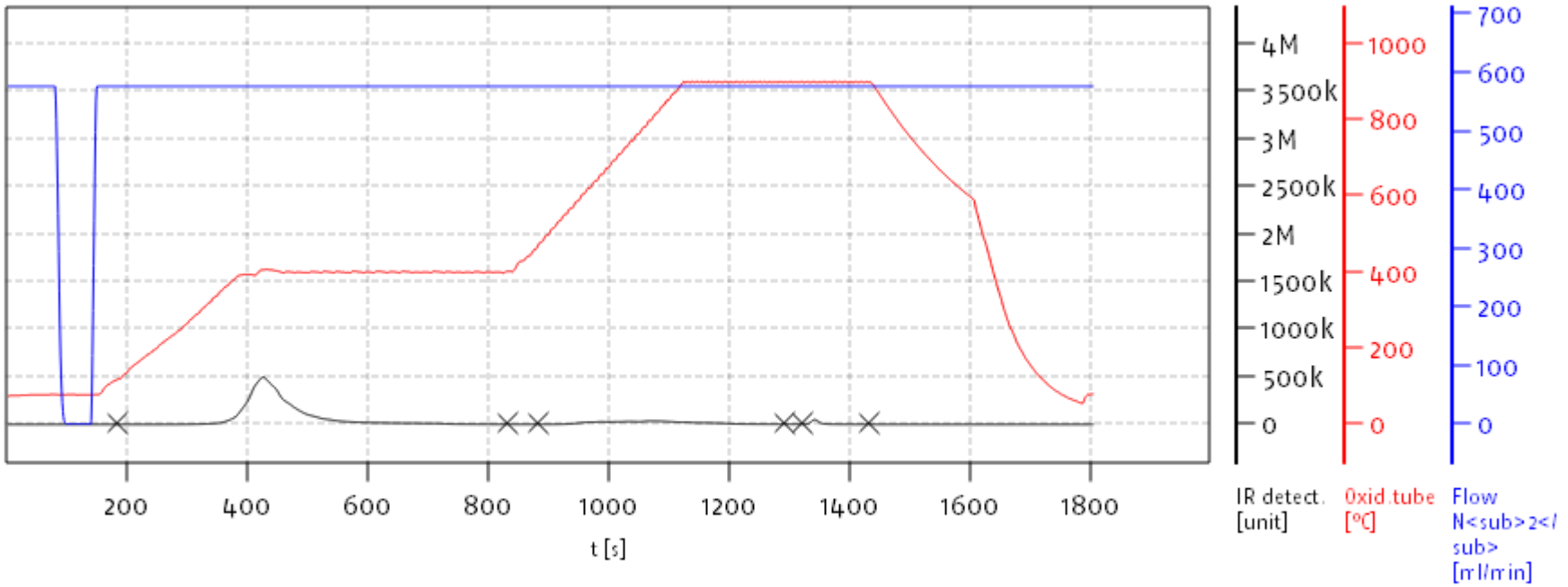
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
117	28	BJH0513-DUP4	557.20		1.00	CARBON	9/3/2021 10:35 PM	0.471	0.072	0.544	bl	1 556 930	250 483	31 935	0.9934	1.0000



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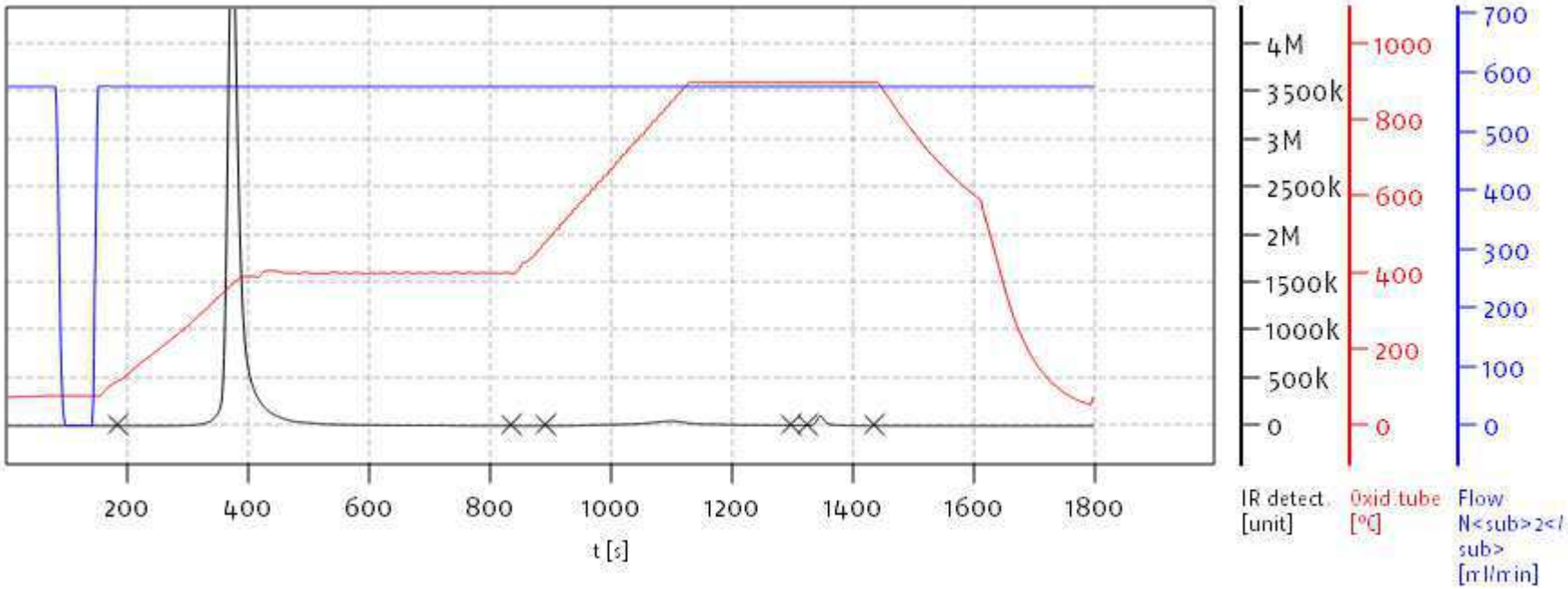
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
118	29	21H0260-01RE1	87.40		1.00	CARBON	9/3/2021 11:06 PM	9.323	0.436	9.760	bl	4 809 280	237 538	70 533	0.9934	1.0000



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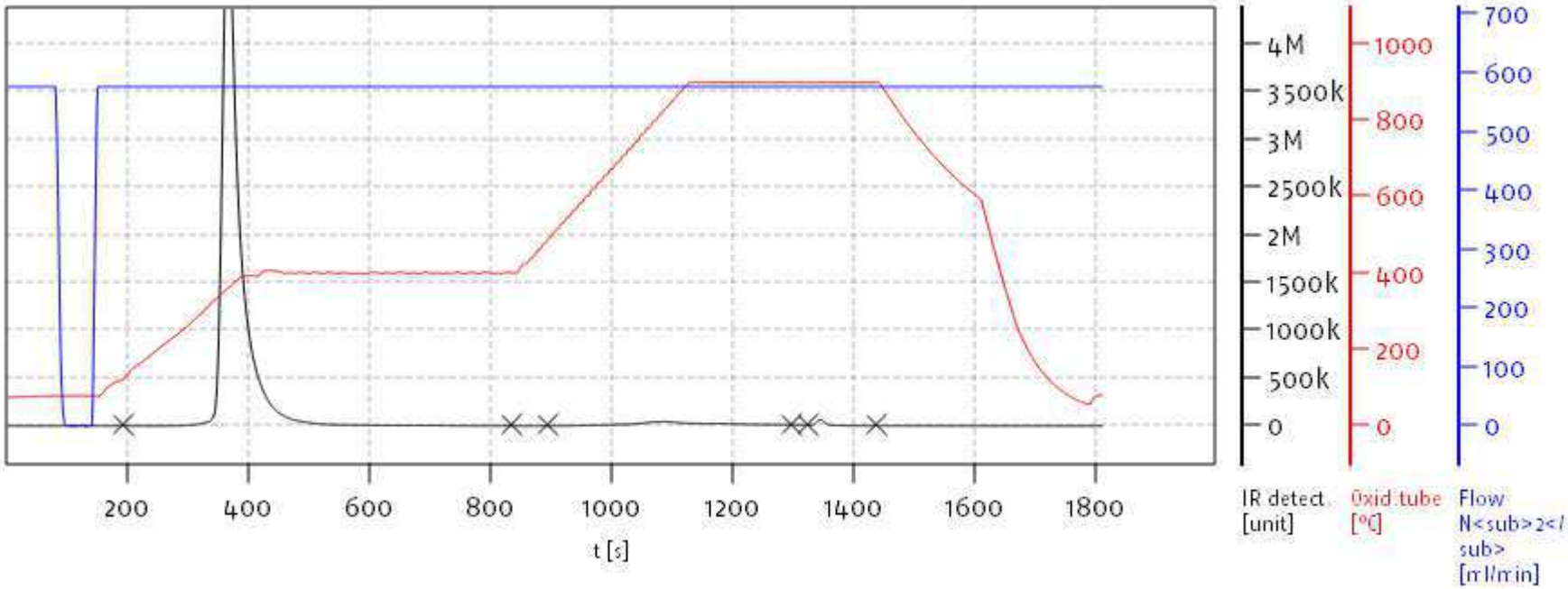
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
119	30	21H0260-02RE1	63.60		1.00	CARBON	9/3/2021 11:36 PM	17.777	0.688	18.466	bl	6 713 090	270 882	49 004	0.9934	1.0000



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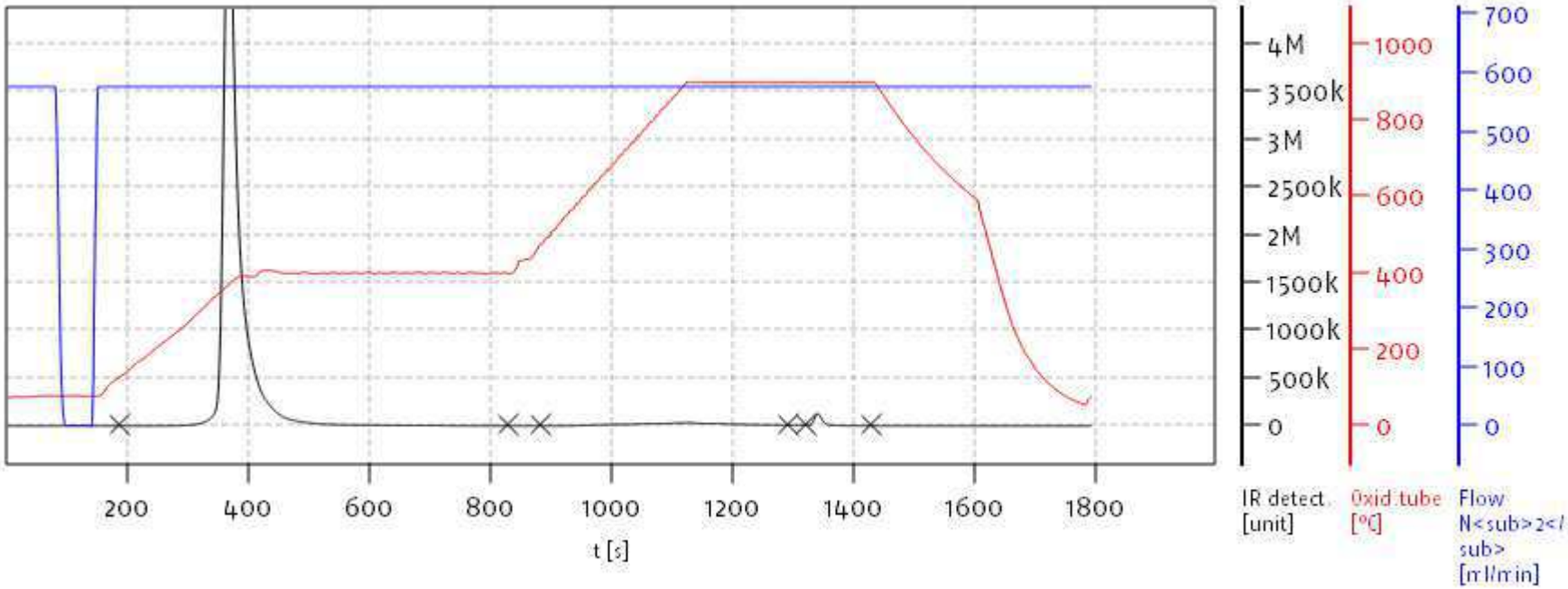
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
120	31	21H0261-01RE1	72.60		1.00	CARBON	9/4/2021 12:07 AM	14.733	0.515	15.248	bl	6 318 590	232 862	79 747	0.9934	1.0000



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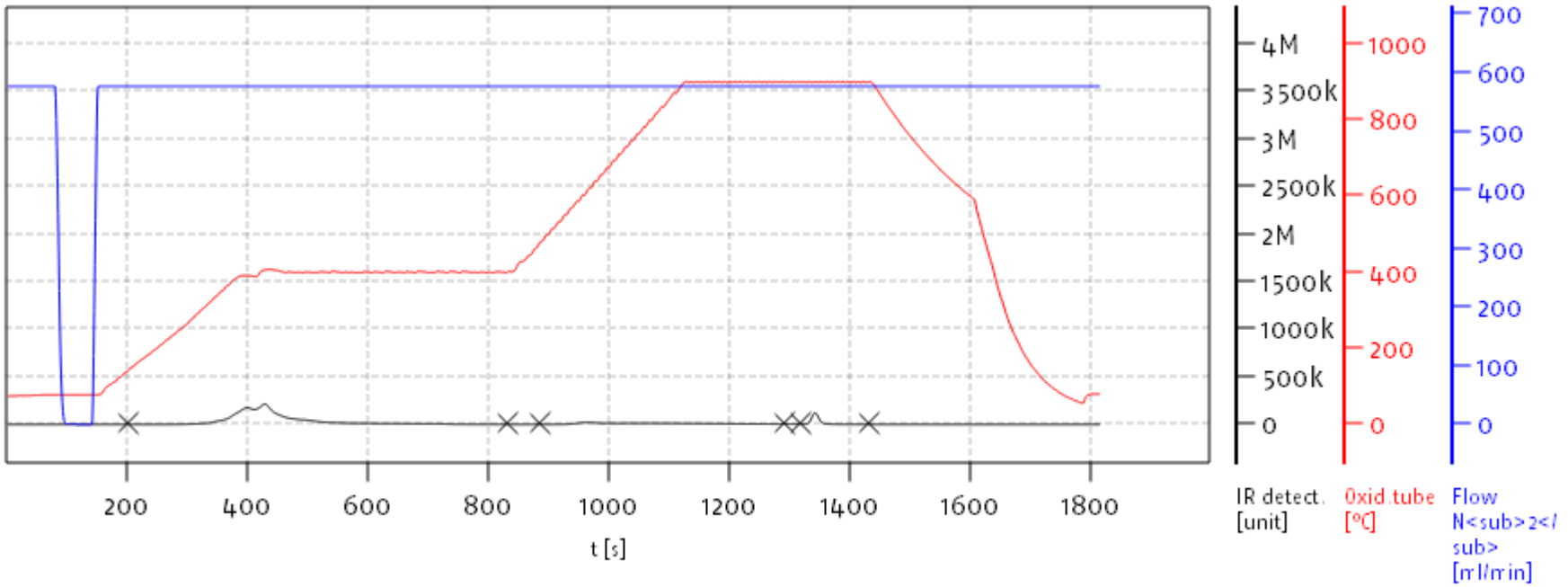
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
121	32	21H0262-01RE1	68.20		1.00	CARBON	9/4/2021 12:37 AM	2.000	0.313	2.313	bl	767 177	138 246	68 653	0.9934	1.0000



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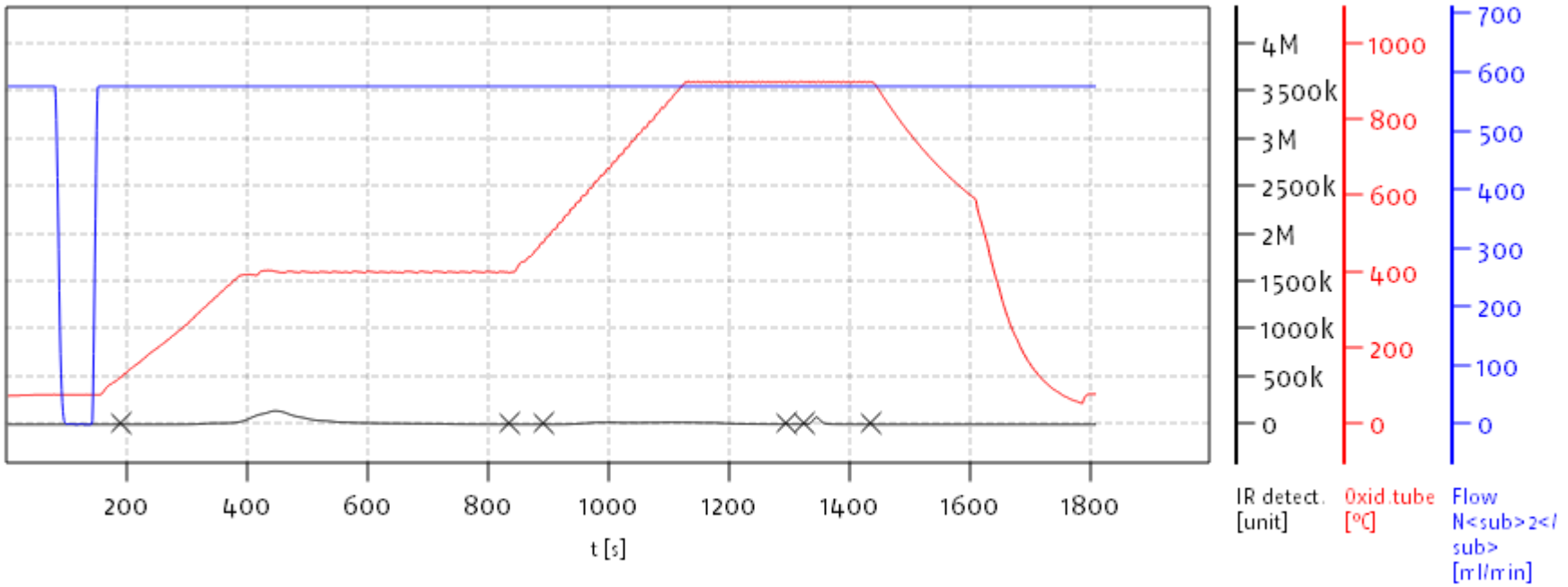
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
122	33	BJH0674-DUP2	504.60		1.00	CARBON	9/4/2021 1:08 AM	0.209	0.060	0.269	bl	606 908	190 542	46 291	0.9934	1.0000



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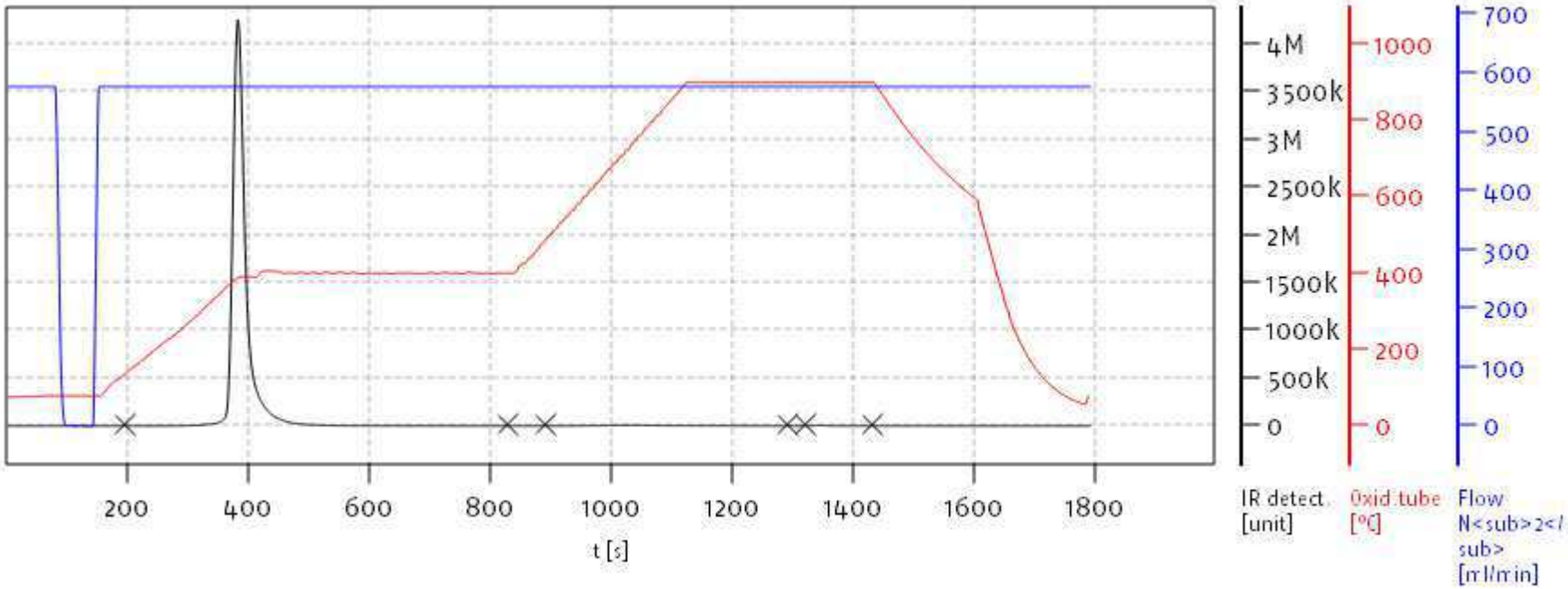
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
123	34	21H0274-03RE1	201.70		1.00	CARBON	9/4/2021 1:38 AM	3.256	0.026	3.281	bl,C2u	3 925 640	42 303	6 590	0.9934	1.0000



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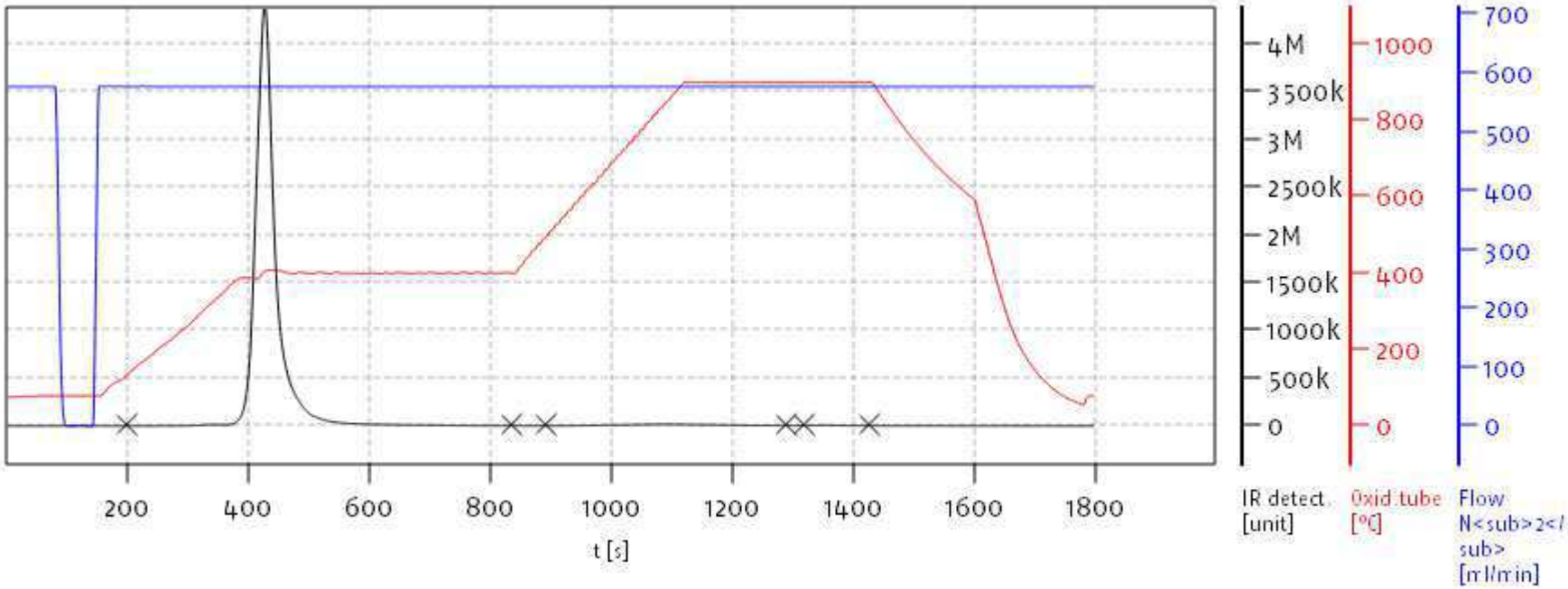
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
124	35	SJH0417-CCVA	23.20		1.00	CARBON	9/4/2021 2:09 AM	45.048	0.820	45.868	bl	6 235 010	124 372	17 518	0.9934	1.0000



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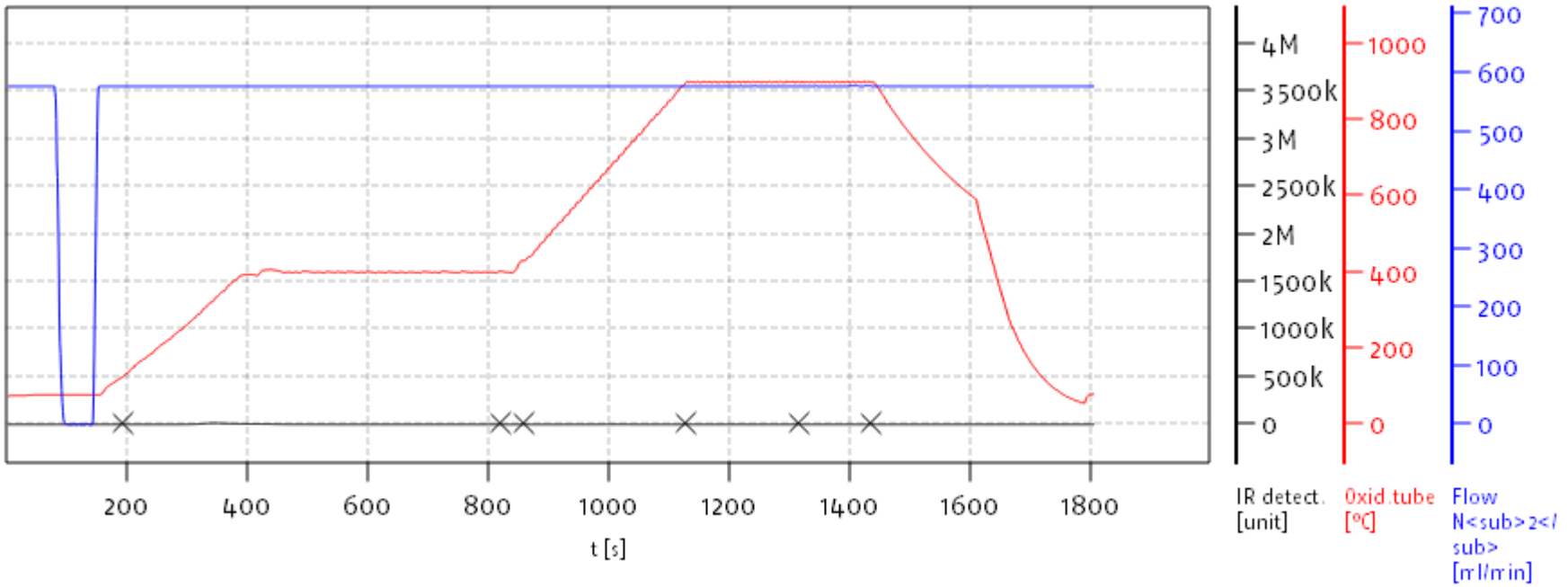
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
125	36	SJH0417-CCBA	555.10		1.00	CARBON	9/4/2021 2:39 AM	0.009	0.000	0.009	bl,C3u,C2u	41 446	2 172	358	0.9934	1.0000



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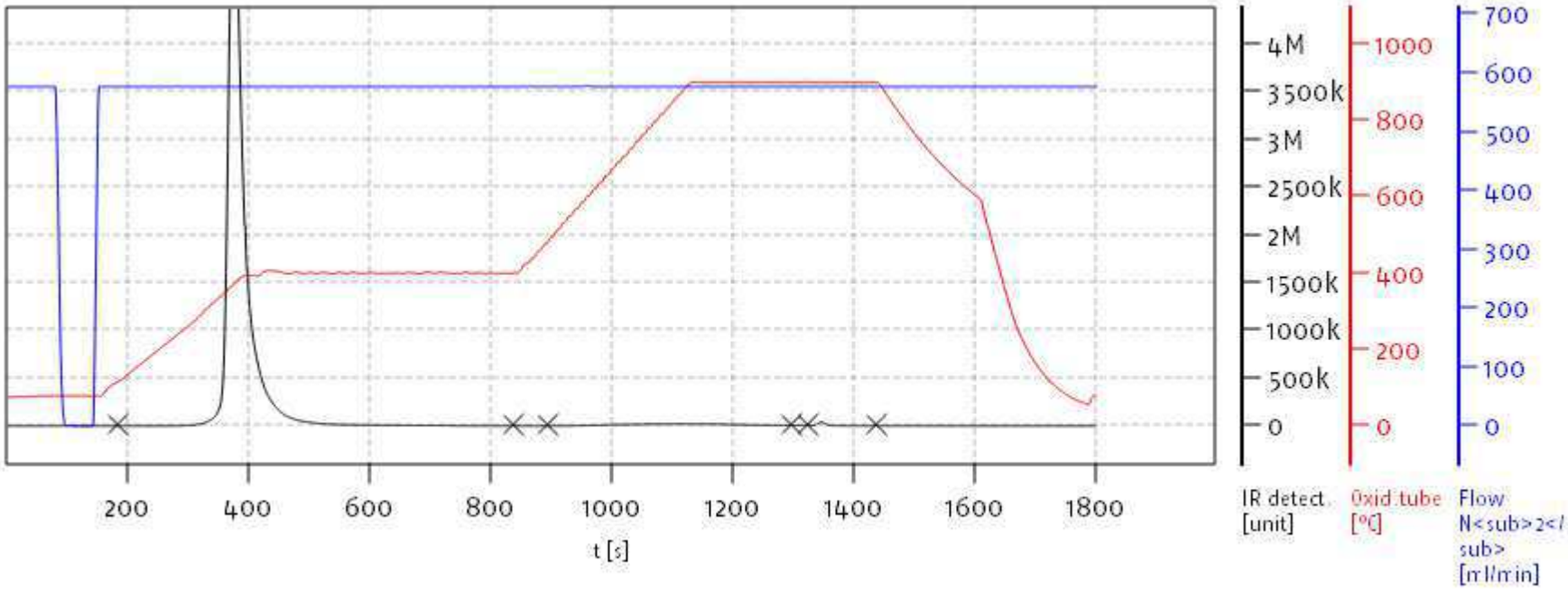
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
126	37	21H0275-01RE1	52.60		1.00	CARBON	9/4/2021 3:10 AM	21.405	0.525	21.930	bl	6 706 260	175 202	27 764	0.9934	1.0000



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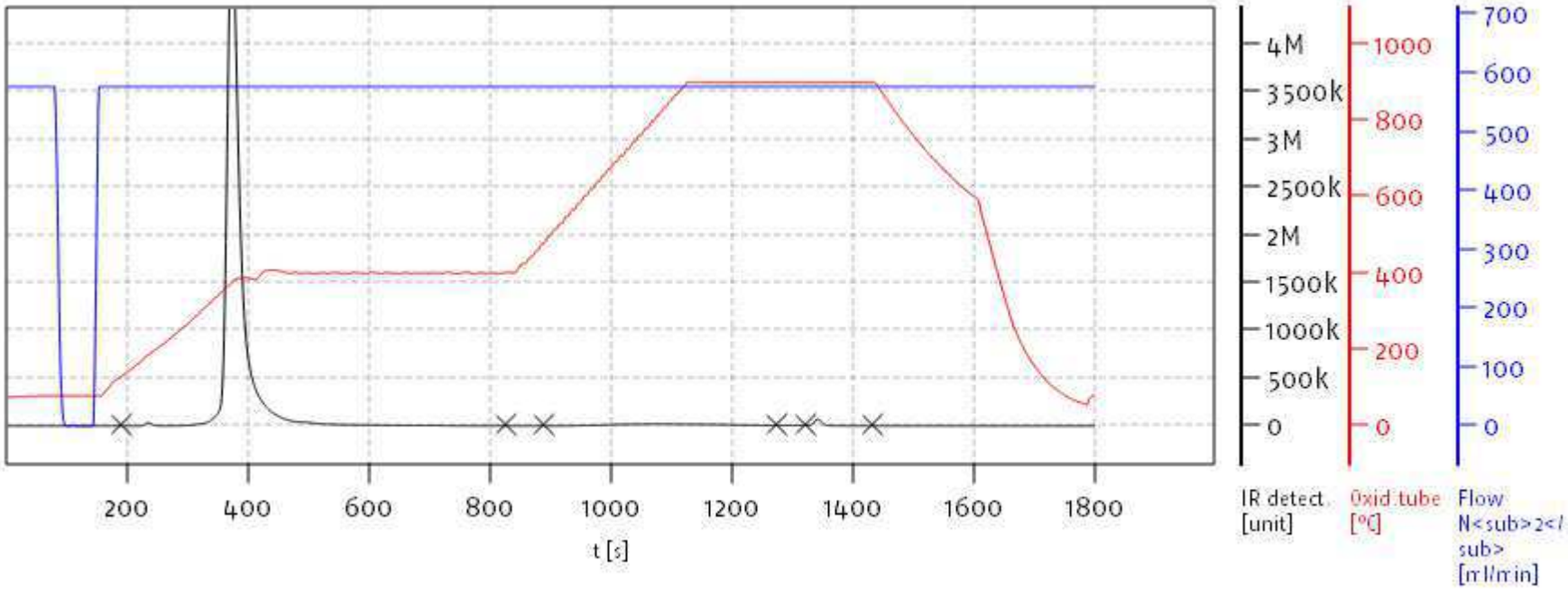
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
127	38	21H0275-03RE1	58.50		1.00	CARBON	9/4/2021 3:40 AM	14.961	0.407	15.368	bl	5 198 730	152 749	40 890	0.9934	1.0000



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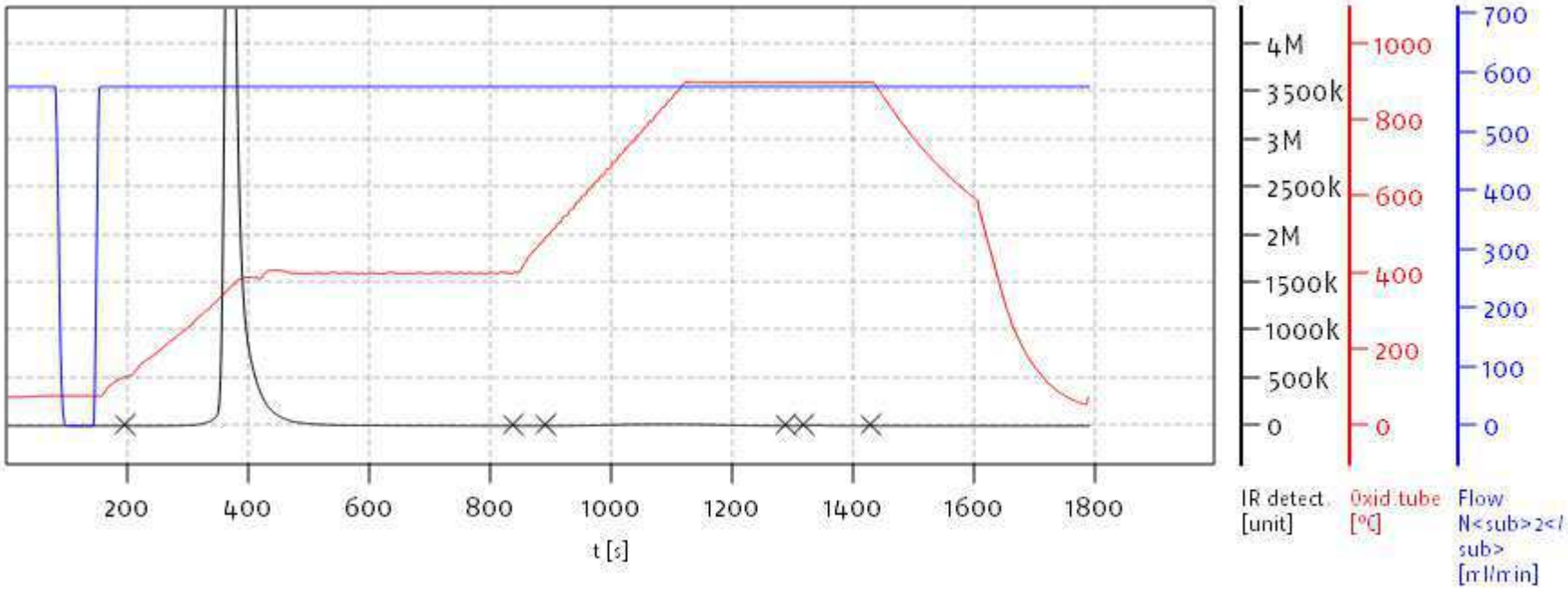
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
128	39	21H0275-06RE1	54.60		1.00	CARBON	9/4/2021 4:10 AM	23.200	0.351	23.550	bl	7 561 650	125 020	8 527	0.9934	1.0000



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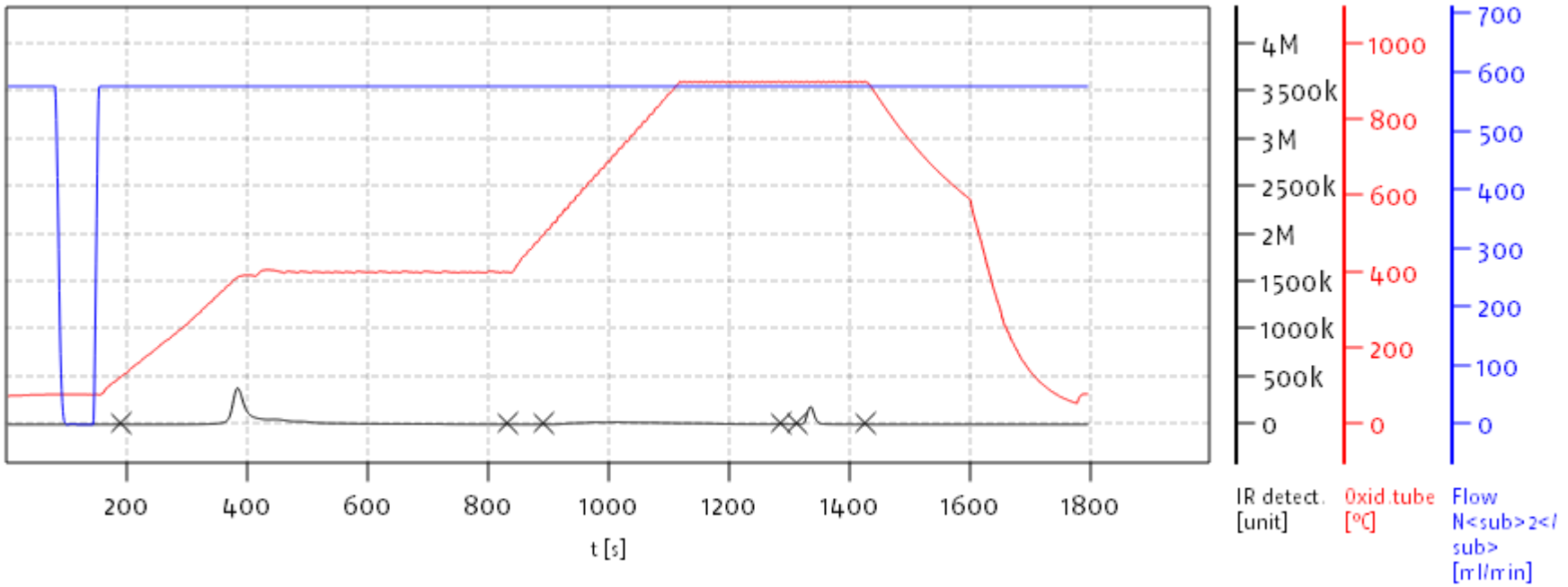
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
129	40	21H0224-08RE1	130.60		1.00	CARBON	9/4/2021 4:41 AM	0.842	0.206	1.048	bl	578 148	170 686	100 163	0.9934	1.0000



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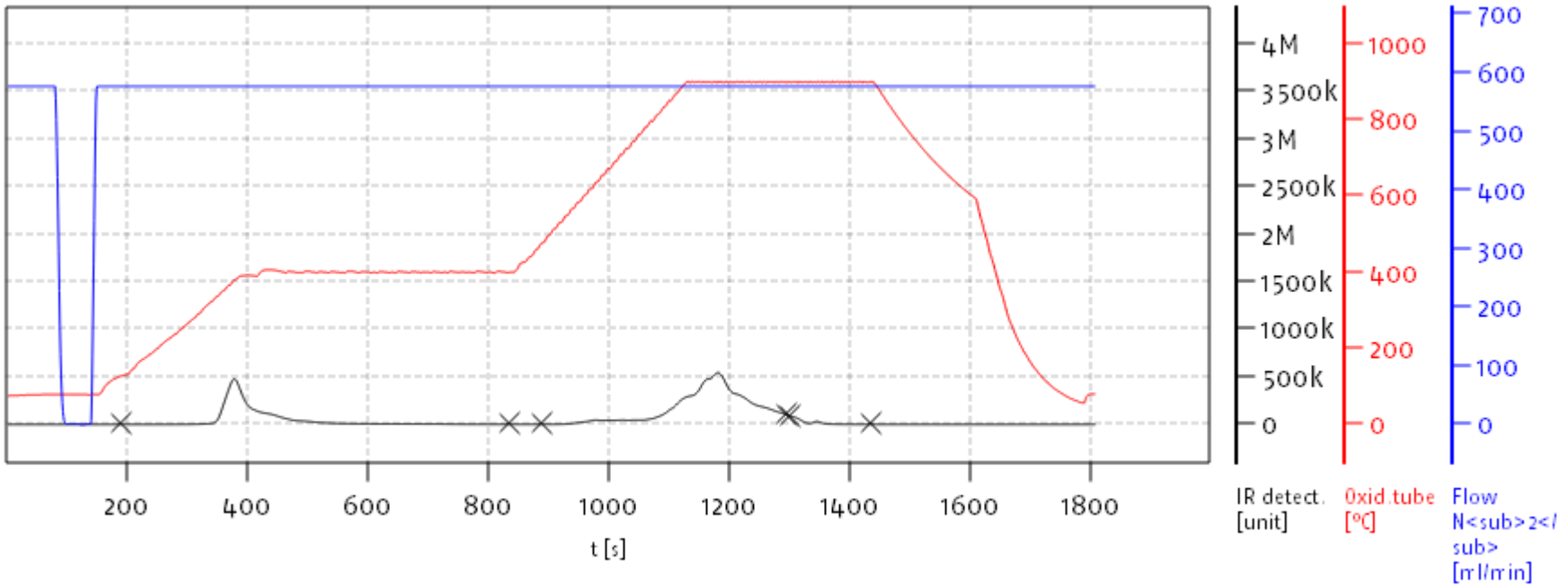
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
130	41	21H0234-01RE1	148.30		1.00	CARBON	9/4/2021 5:11 AM	1.218	2.776	3.994	bl	1 016 790	2 449 230	82 919	0.9934	1.0000



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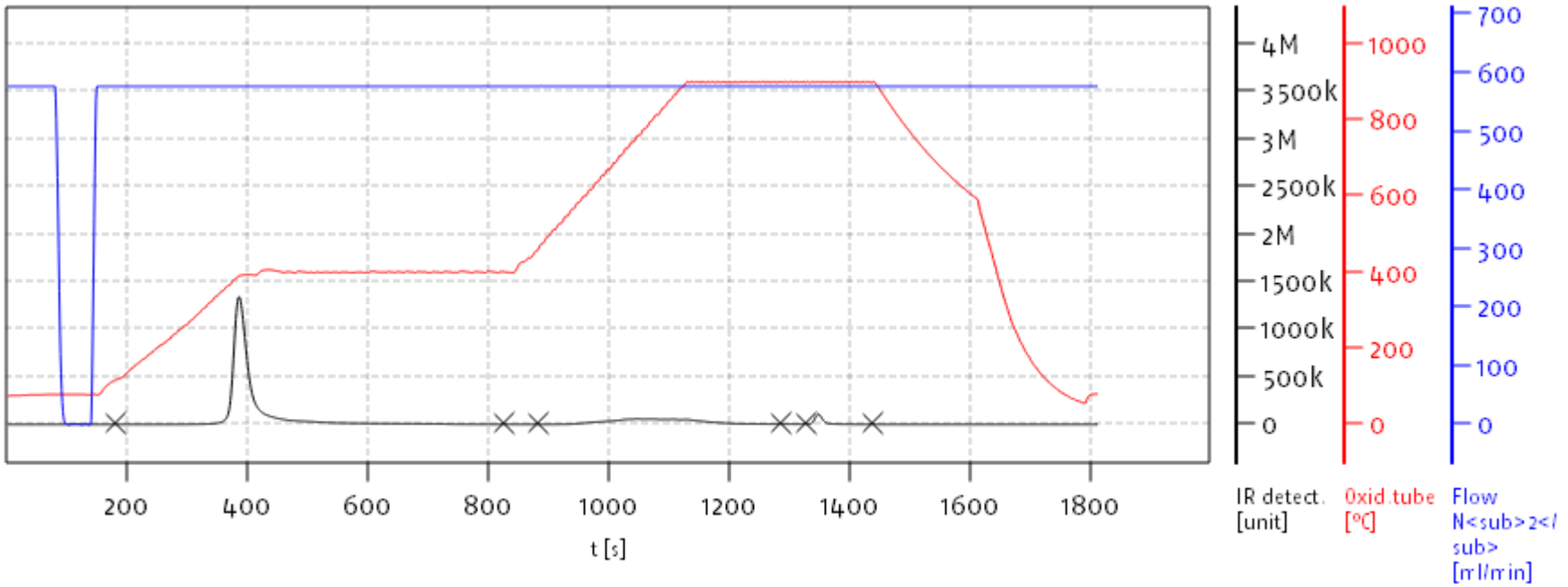
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
131	42	BJH0677-DUP3	222.40		1.00	CARBON	9/4/2021 5:42 AM	1.249	0.288	1.538	bl	1 612 950	391 499	65 783	0.9934	1.0000



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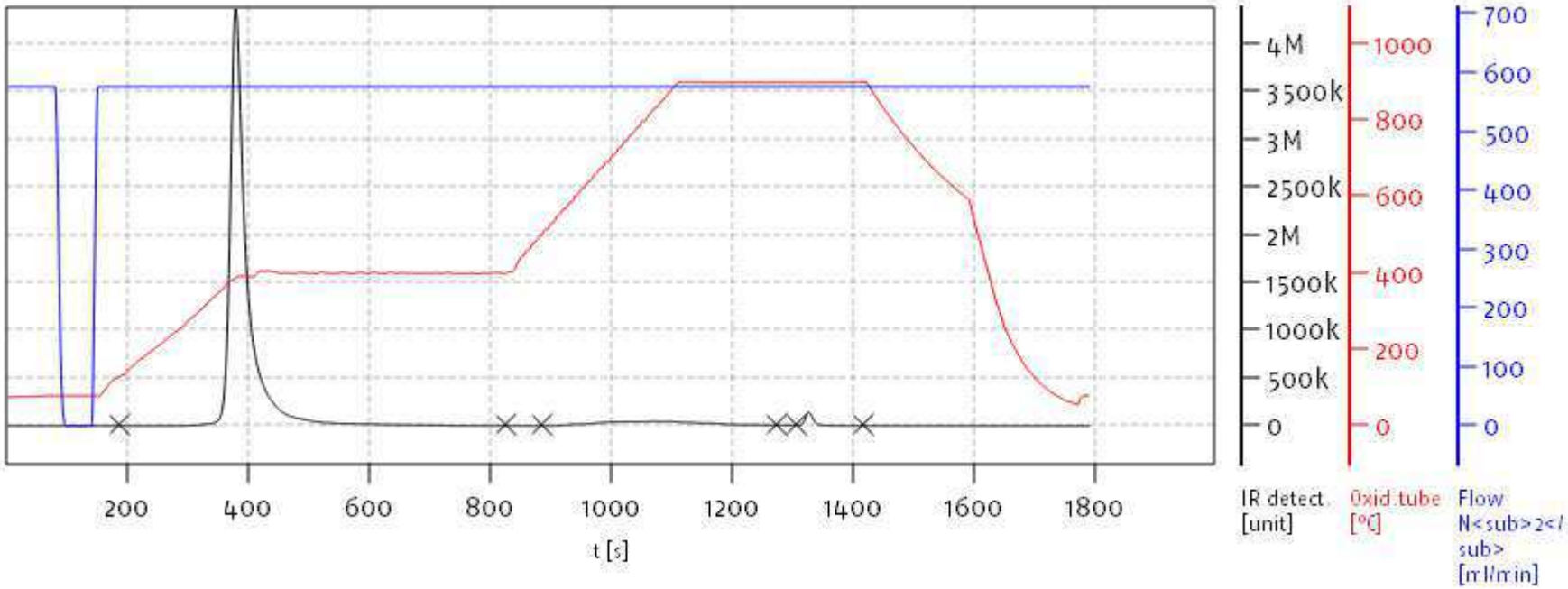
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
132	43	BJH0677-MS3	262.40	0.0118	1.00	CARBON	9/4/2021 6:12 AM	3.403	0.236	3.639	bl	5 258 690	378 093	86 584	0.9934	1.0000



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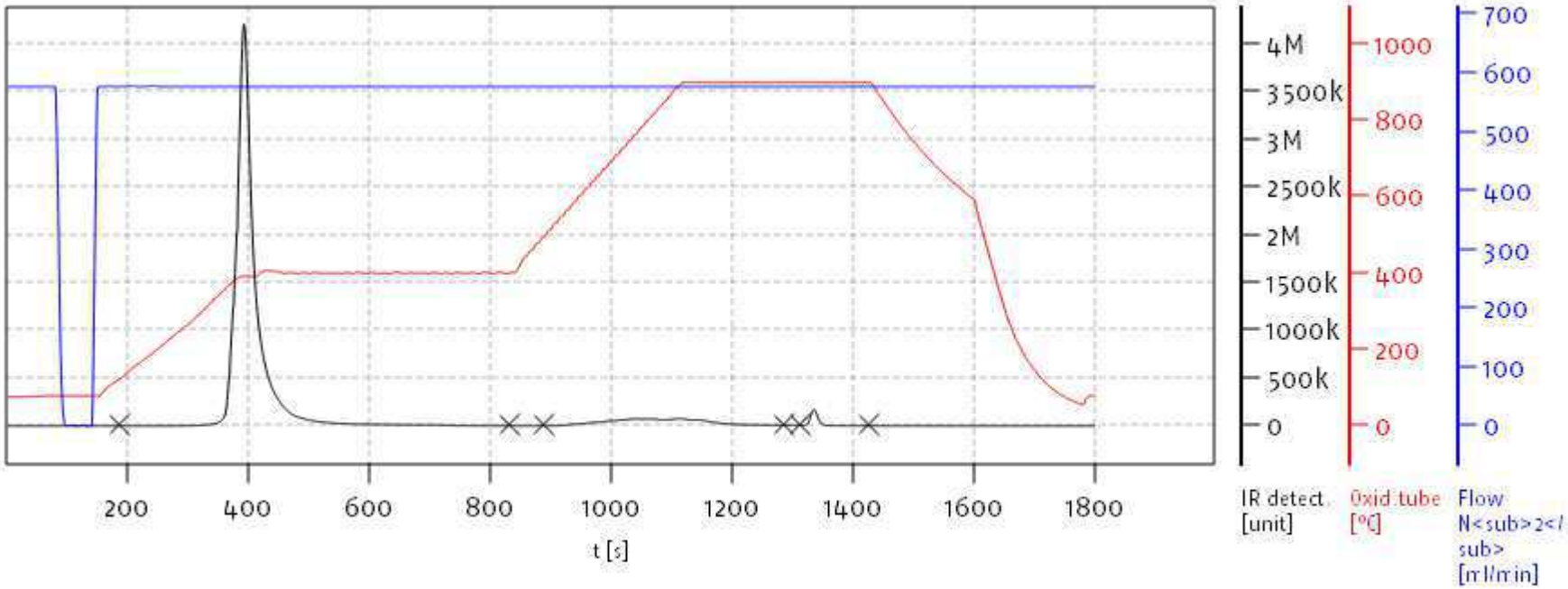
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
133	44	BJH0677-MSD3	234.20	0.0140	1.00	CARBON	9/4/2021 6:43 AM	4.011	0.396	4.408	bl	5 522 710	561 441	99 186	0.9934	1.0000



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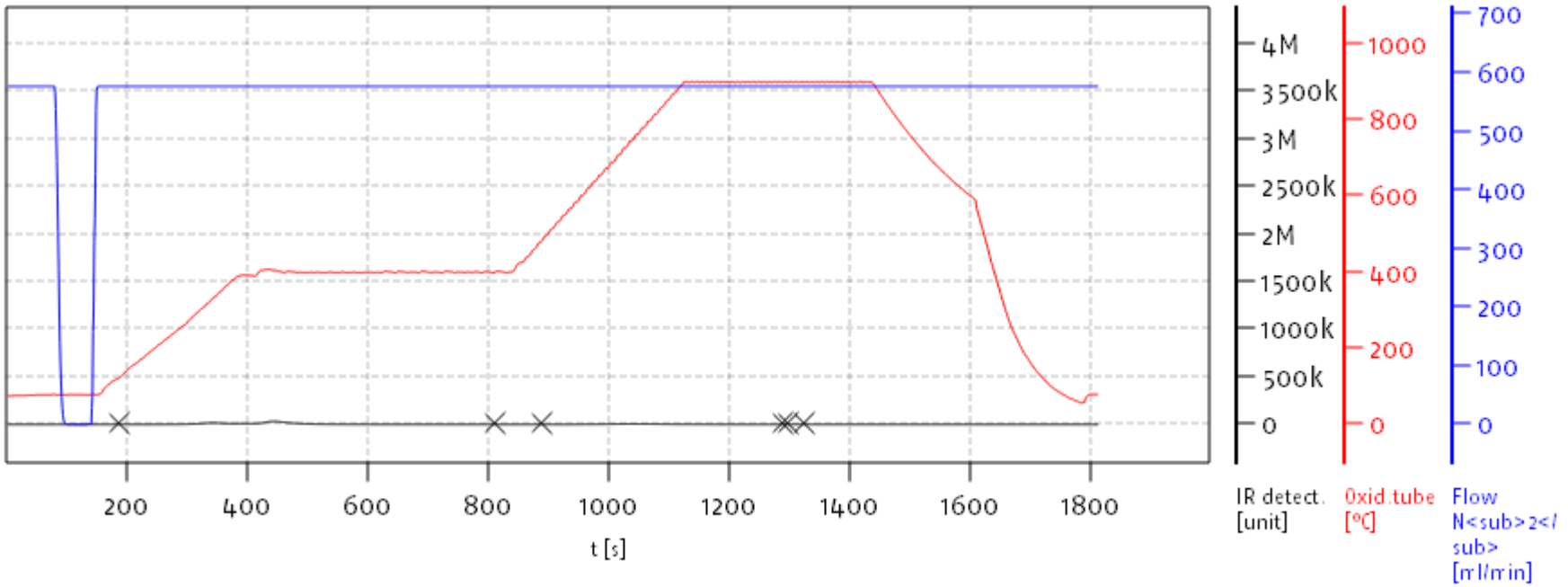
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
134	45	BJI0020-MRL1	555.10		1.00	CARBON	9/4/2021 7:13 AM	0.031	0.004	0.035	bl,C2u	113 783	24 431	88	0.9934	1.0000



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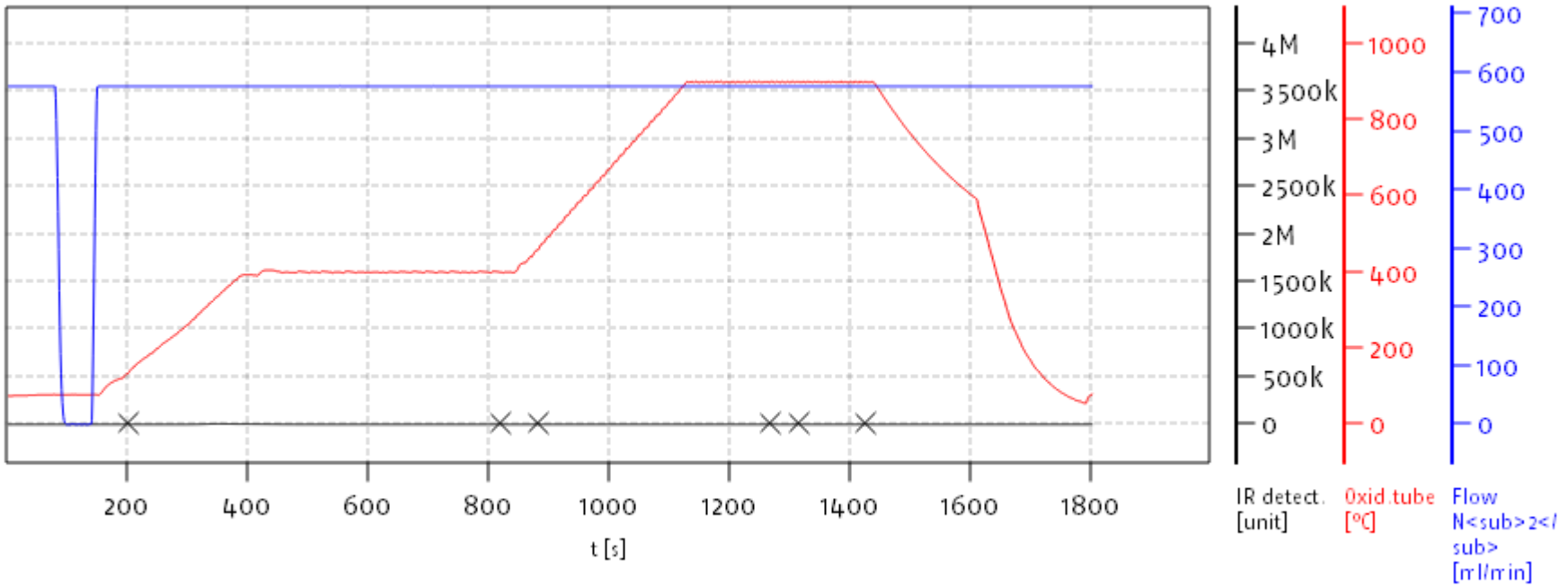
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
135	46	BJI0020-BLK1	590.20		1.00	CARBON	9/4/2021 7:44 AM	0.003	0.000	0.003	bl,C3u,C2u	22 846	2 237	357	0.9934	1.0000



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Access: soliTOC superuser

Date: Mon Sep 6 07:32:29 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
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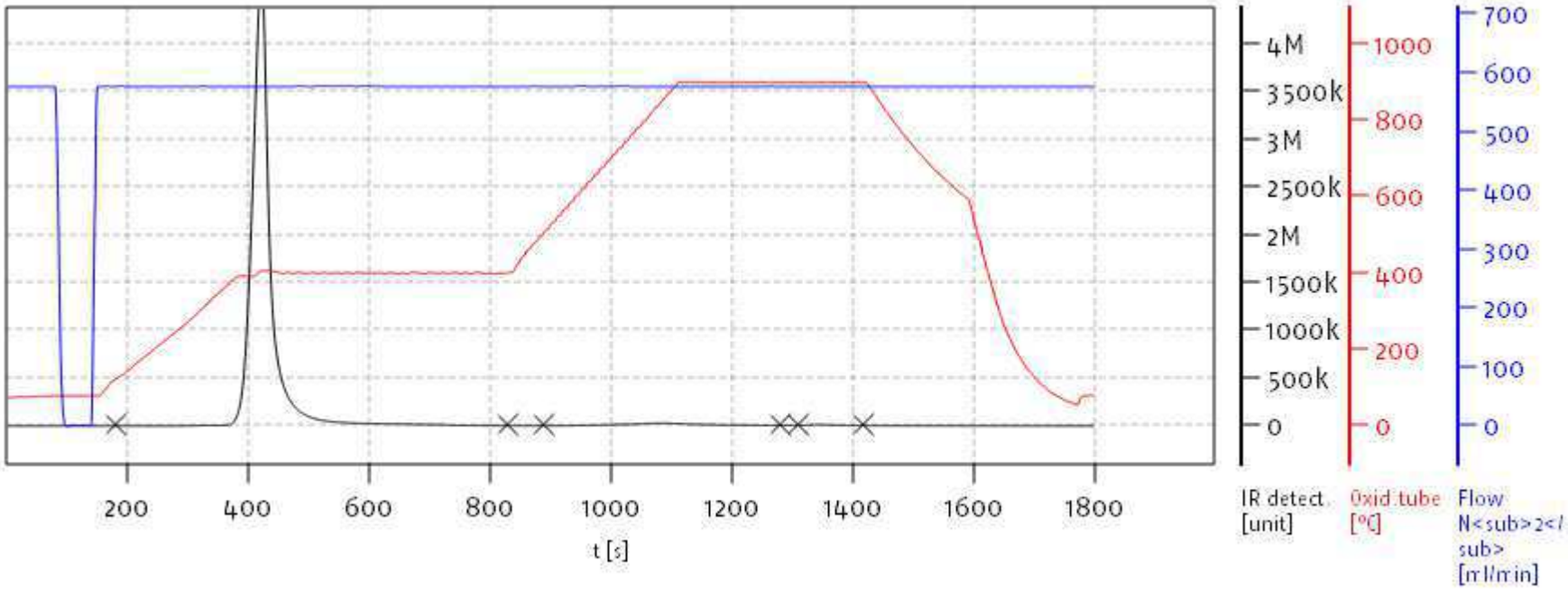
Document: from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
136	47	SJH0417-CCVB	23.20		1.00	CARBON	9/4/2021 8:14 AM	44.275	1.190	45.465	bl	6 116 640	175 084	28 999	0.9934	1.0000



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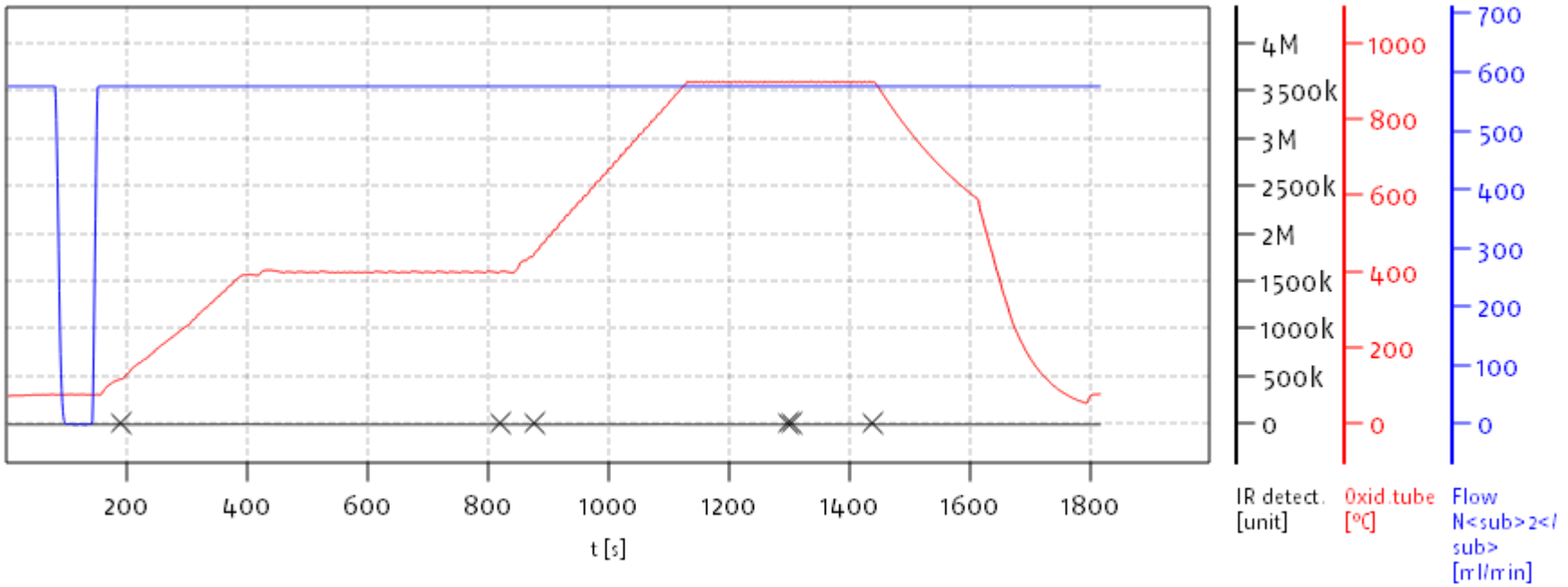
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
137	48	SJH0417-CCBB	671.00		1.00	CARBON	9/4/2021 8:45 AM	0.000	0.000	0.000	bl,C1u,C3u,C2u	7 053	3 769	344	0.9934	1.0000



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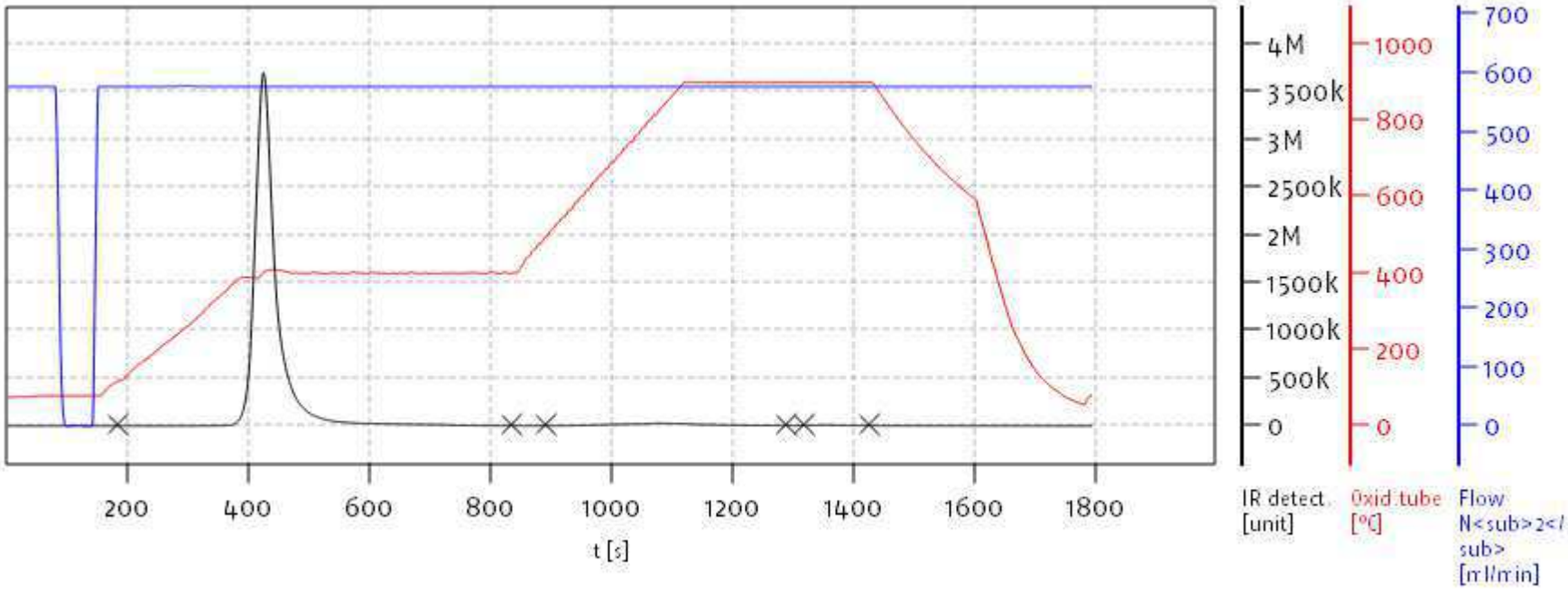
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
138	49	BJI0020-BS1	20.80		1.00	CARBON	9/4/2021 9:15 AM	44.997	1.344	46.341	bl	5 579 820	177 218	21 972	0.9934	1.0000



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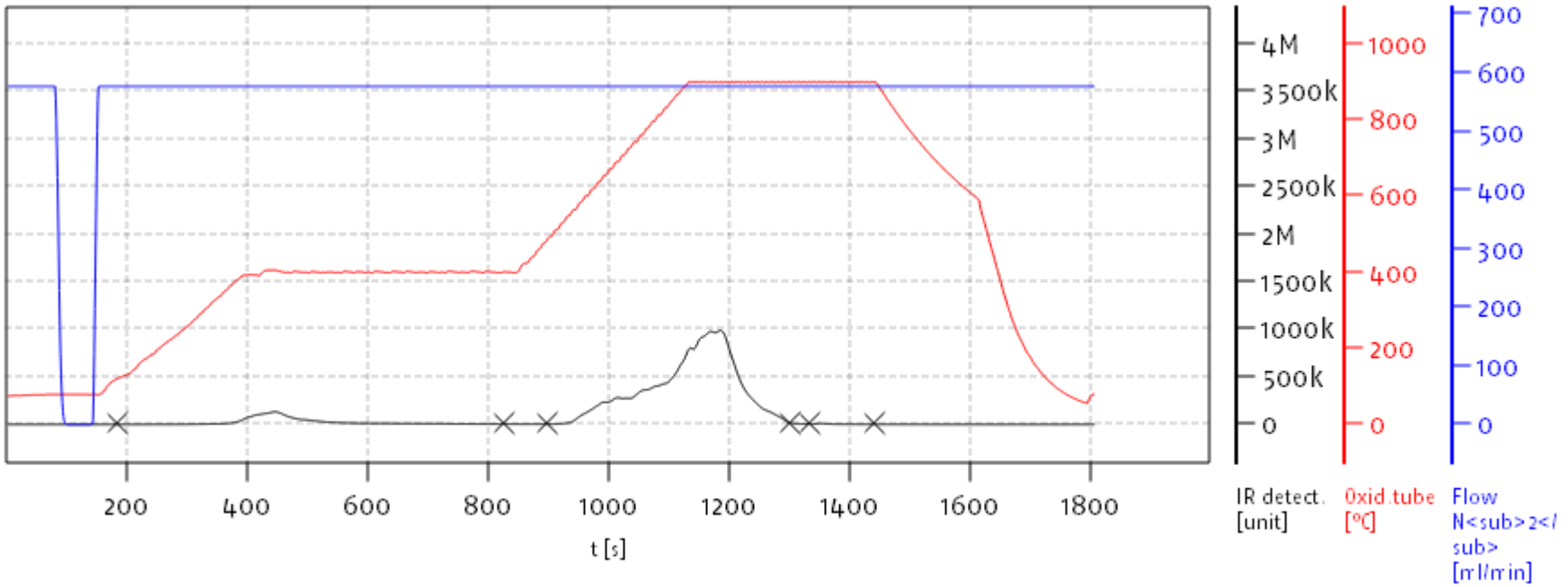
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
139	50	21G0404-01	522.30		1.00	CARBON	9/4/2021 9:46 AM	0.173	1.814	1.987	bl	548 547	5 621 650	13 691	0.9934	1.0000



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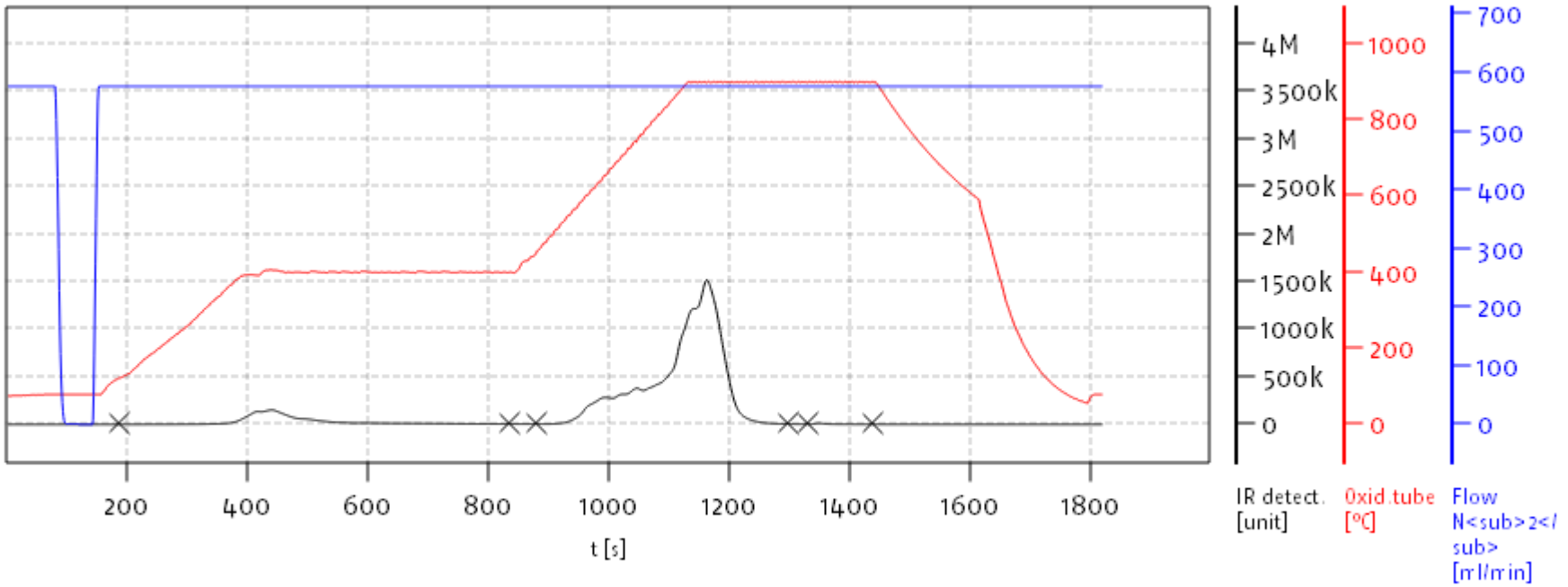
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
140	51	BJI0020-DUP1	581.00		1.00	CARBON	9/4/2021 10:16 AM	0.184	1.745	1.929	bl	645 498	6 016 200	13 903	0.9934	1.0000



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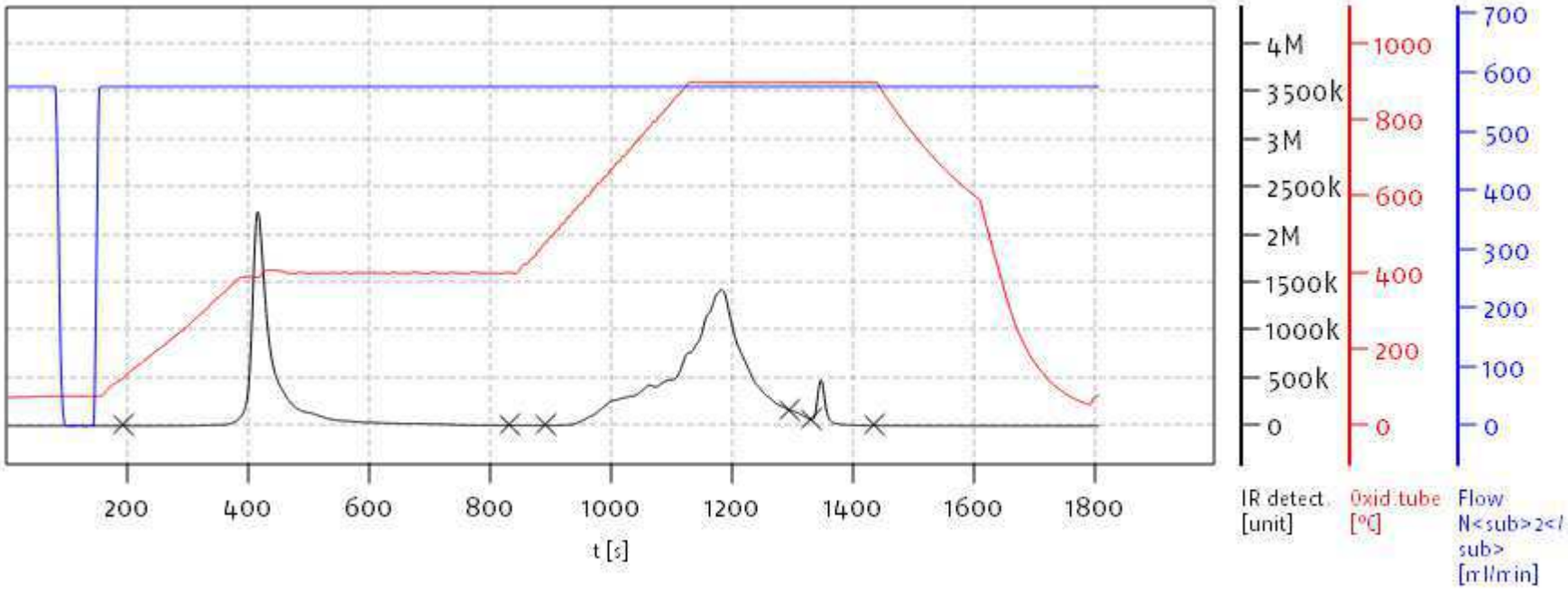
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
141	52	BJI0020-MS1	612.90	0.0111	1.00	CARBON	9/4/2021 10:47 AM	0.979	1.919	2.898	bl	3 292 890	6 974 070	305 999	0.9934	1.0000



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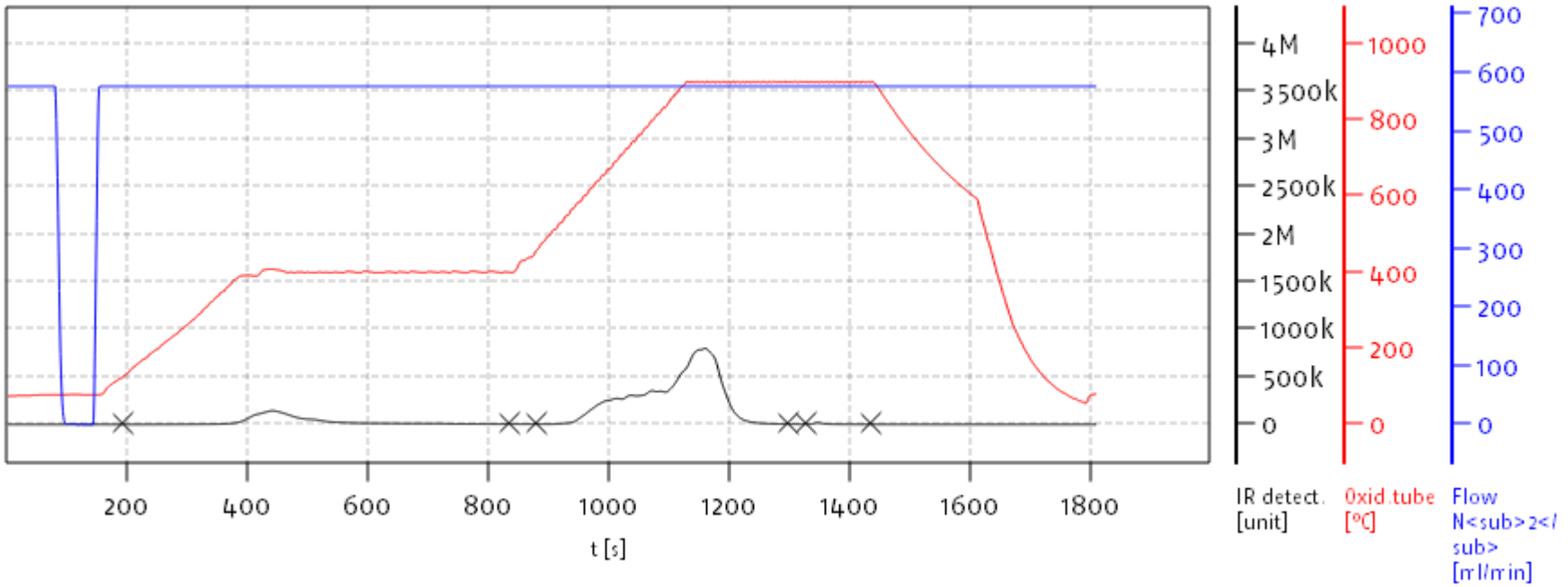
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
142	53	21G0404-02	525.30		1.00	CARBON	9/4/2021 11:18 AM	0.189	1.243	1.432	bl	598 291	3 878 040	16 854	0.9934	1.0000



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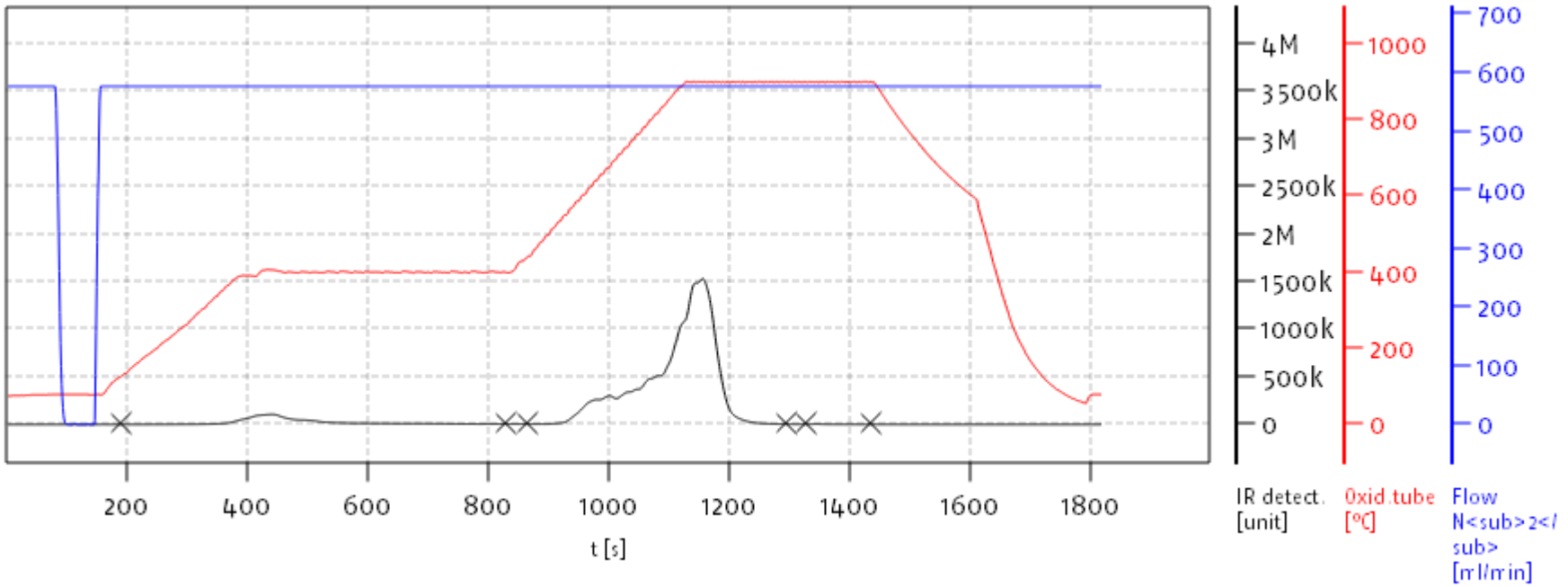
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
143	54	21G0404-03	639.30		1.00	CARBON	9/4/2021 11:48 AM	0.127	1.583	1.710	bl,C2u	495 307	6 002 960	7 000	0.9934	1.0000



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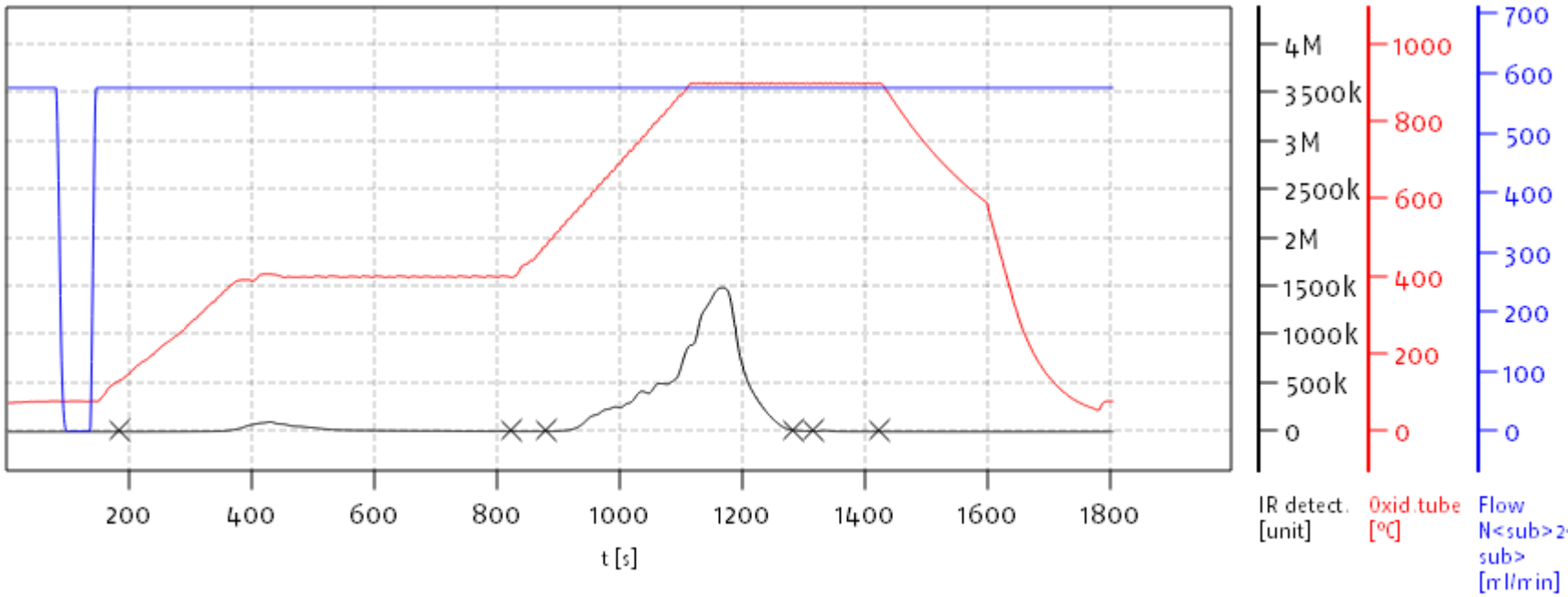
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
144	55	21G0404-04	633.10		1.00	CARBON	9/4/2021 12:19 PM	0.122	1.903	2.025	bl	468 750	7 145 870	14 459	0.9934	1.0000



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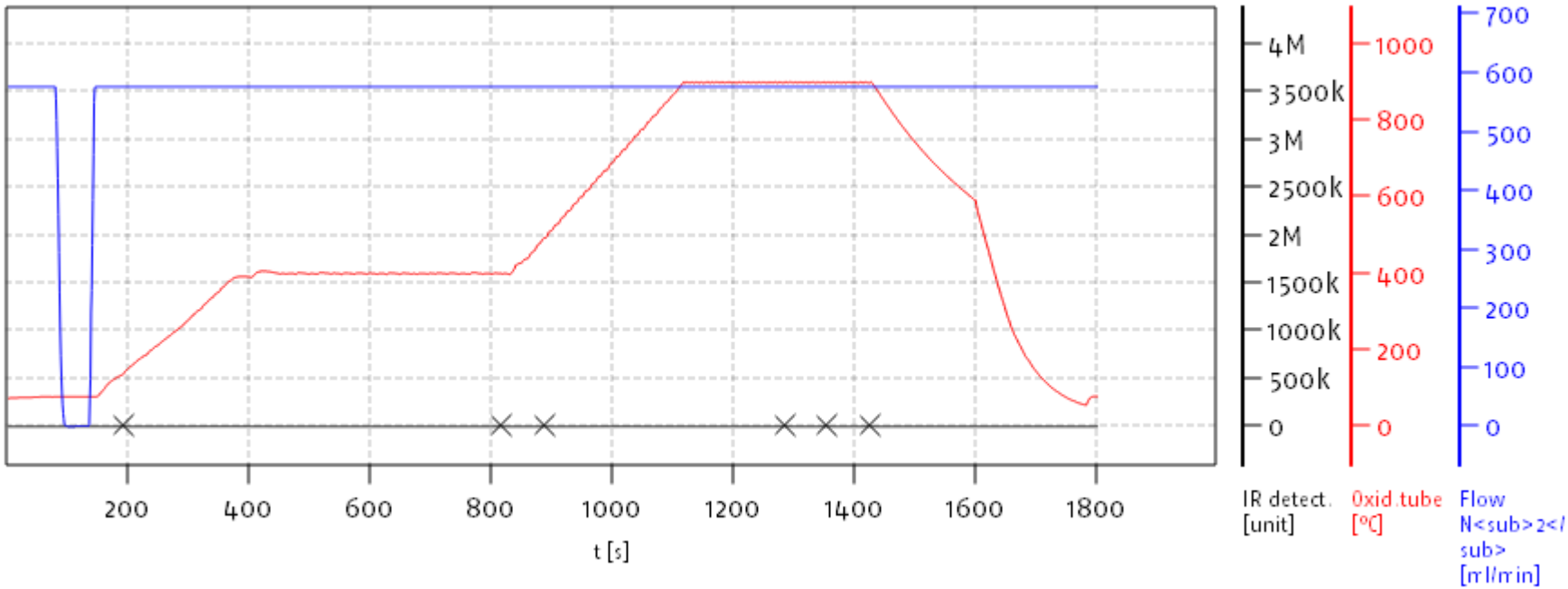
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
145	56	BLANK	1.00		1.00	CARBON	9/4/2021 12:49 PM	0.000	0.000	0.000	bl	6 526	3 629	43	0.9934	1.0000



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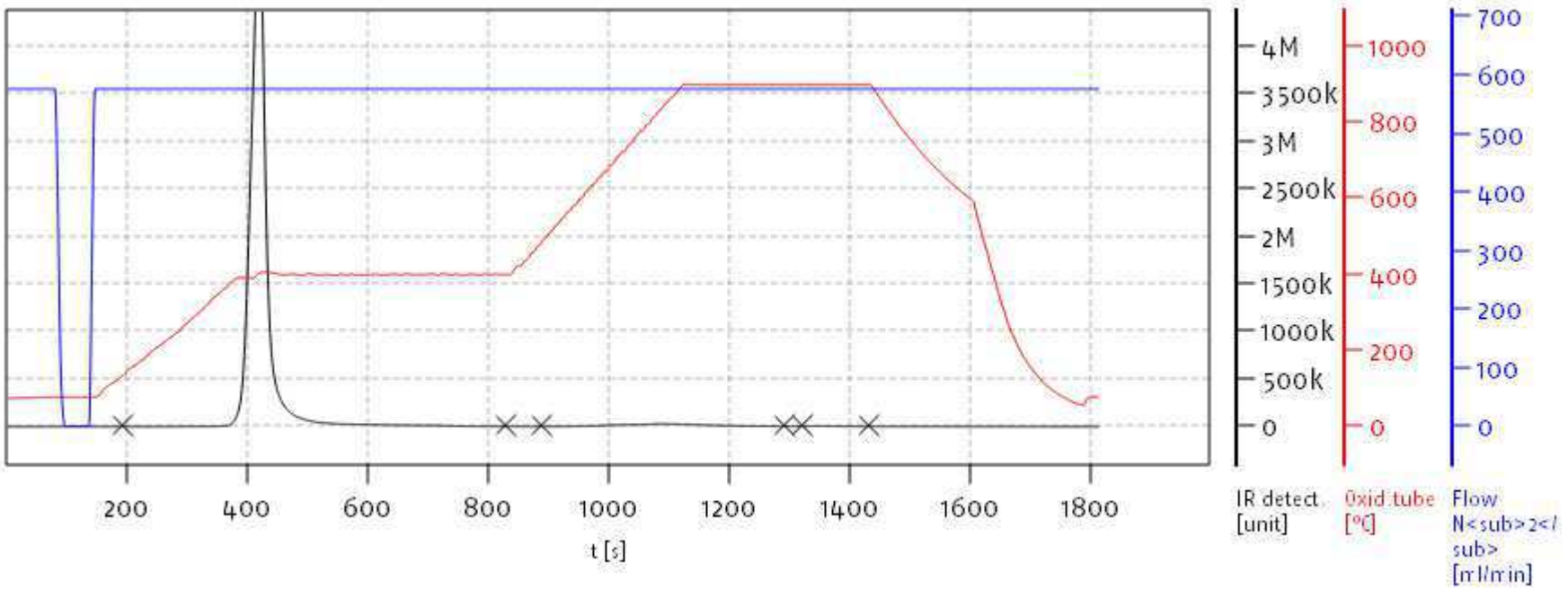
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
146	57	Dfactor	22.10		1.00	CARBON	9/4/2021 1:20 PM	44.478	1.375	45.853	bl	6 029 760	191 631	15 936	0.9664	1.0000



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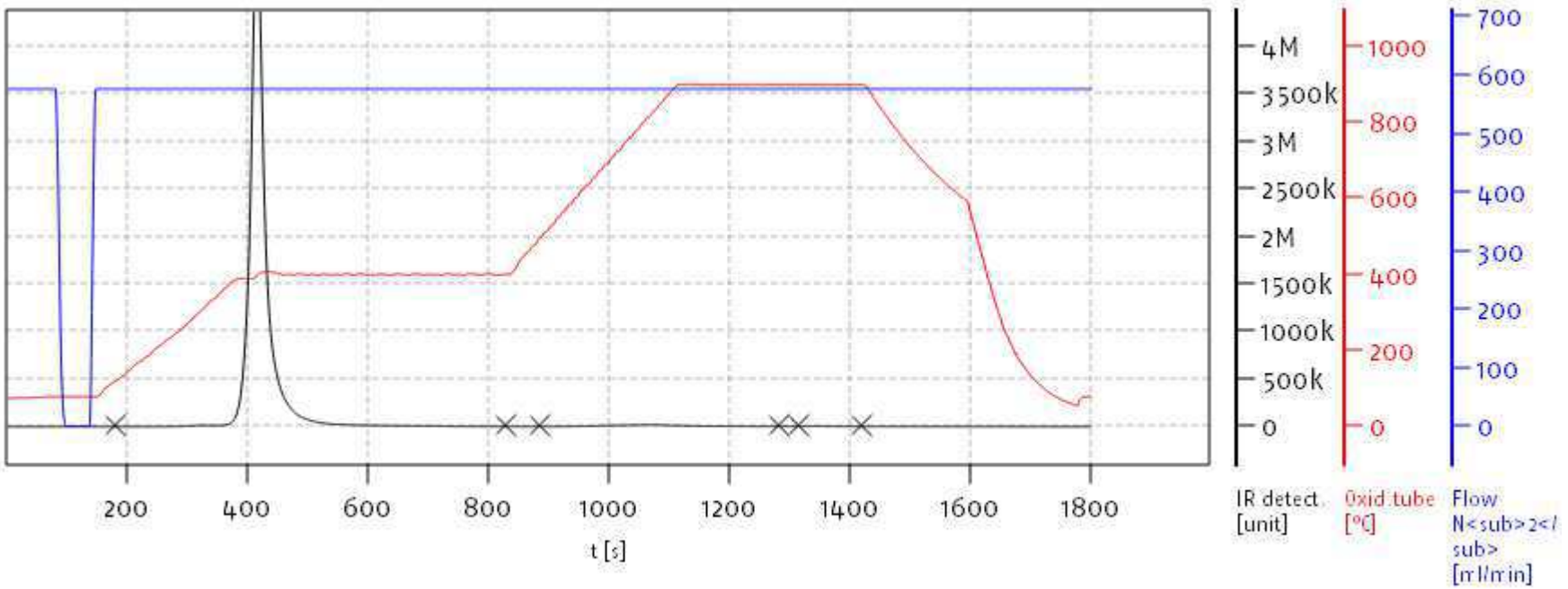
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
147	58	Dfactor	21.20		1.00	CARBON	9/4/2021 1:50 PM	44.446	0.812	45.257	bl	5 790 610	113 570	11 430	0.9654	1.0000



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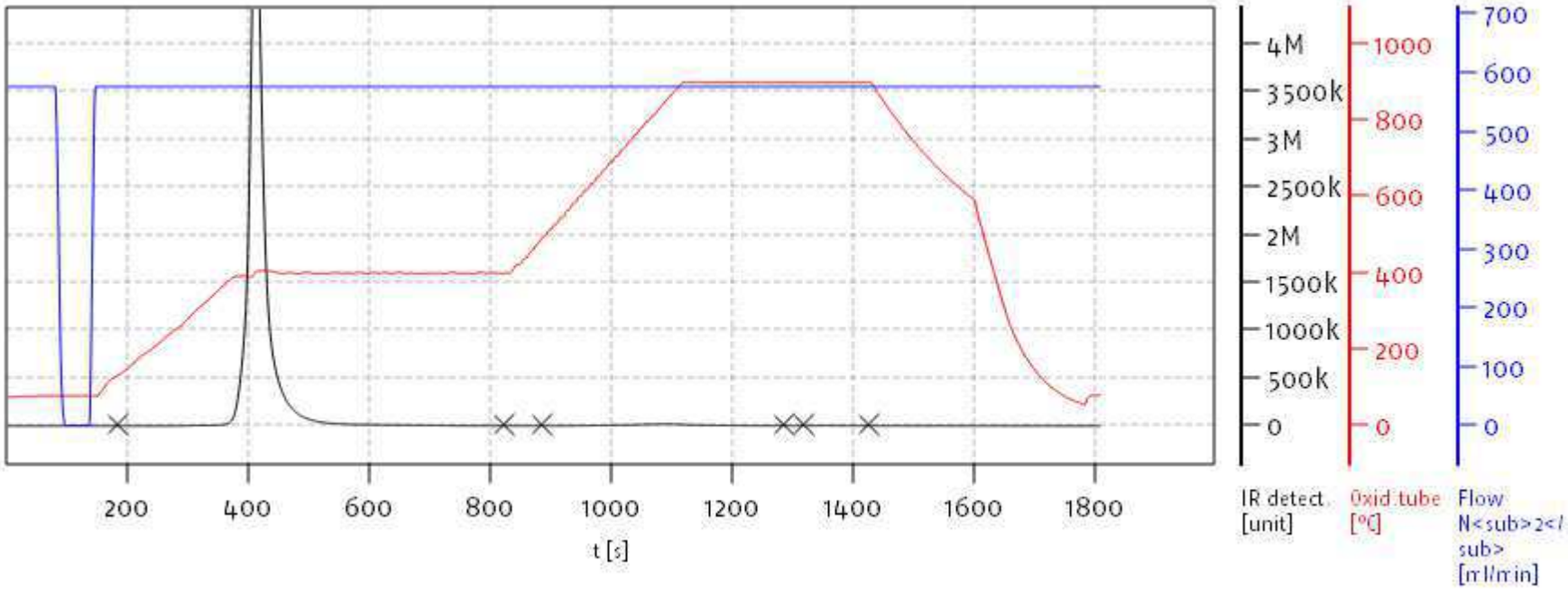
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
148	59	SJH0417-CCVC	22.20		1.00	CARBON	9/4/2021 2:21 PM	45.176	0.686	45.863	bl	6 159 530	101 875	8 921	0.9659	1.0000



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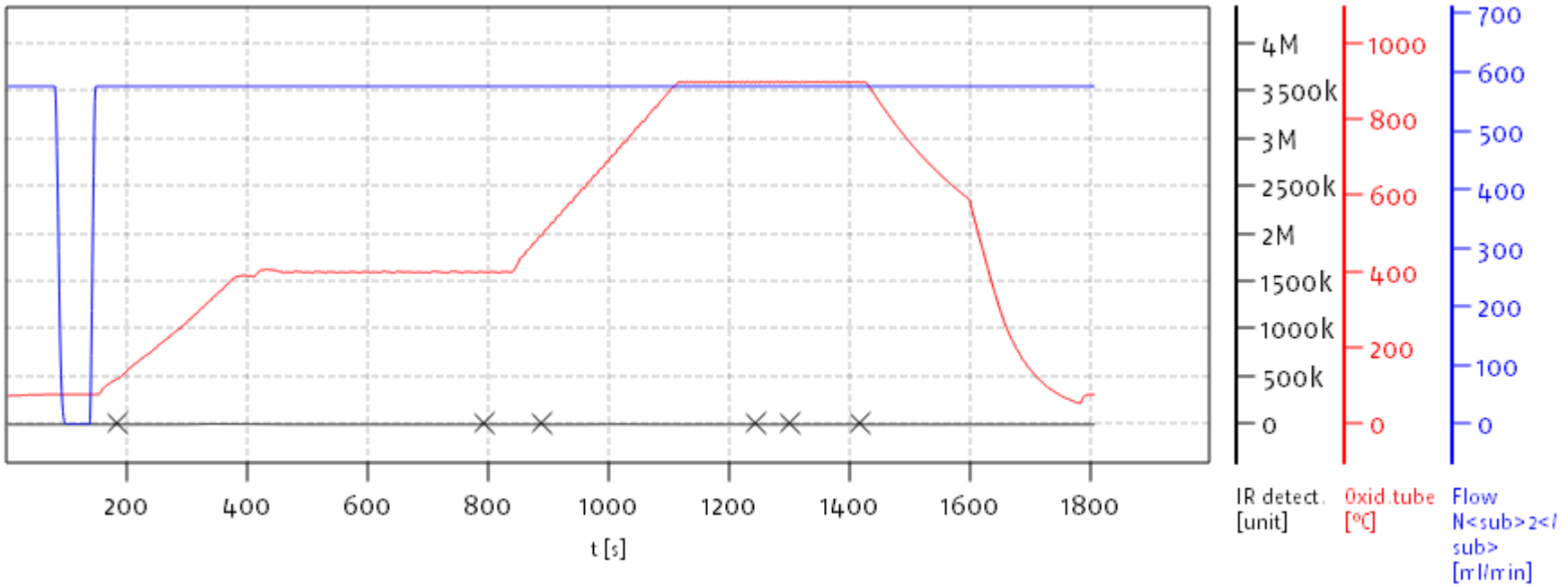
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
149	60	SJH0417-CCBC	615.10		1.00	CARBON	9/4/2021 2:52 PM	0.002	0.000	0.002	bl,C3u,C2u	19 312	6 926	510	0.9659	1.0000



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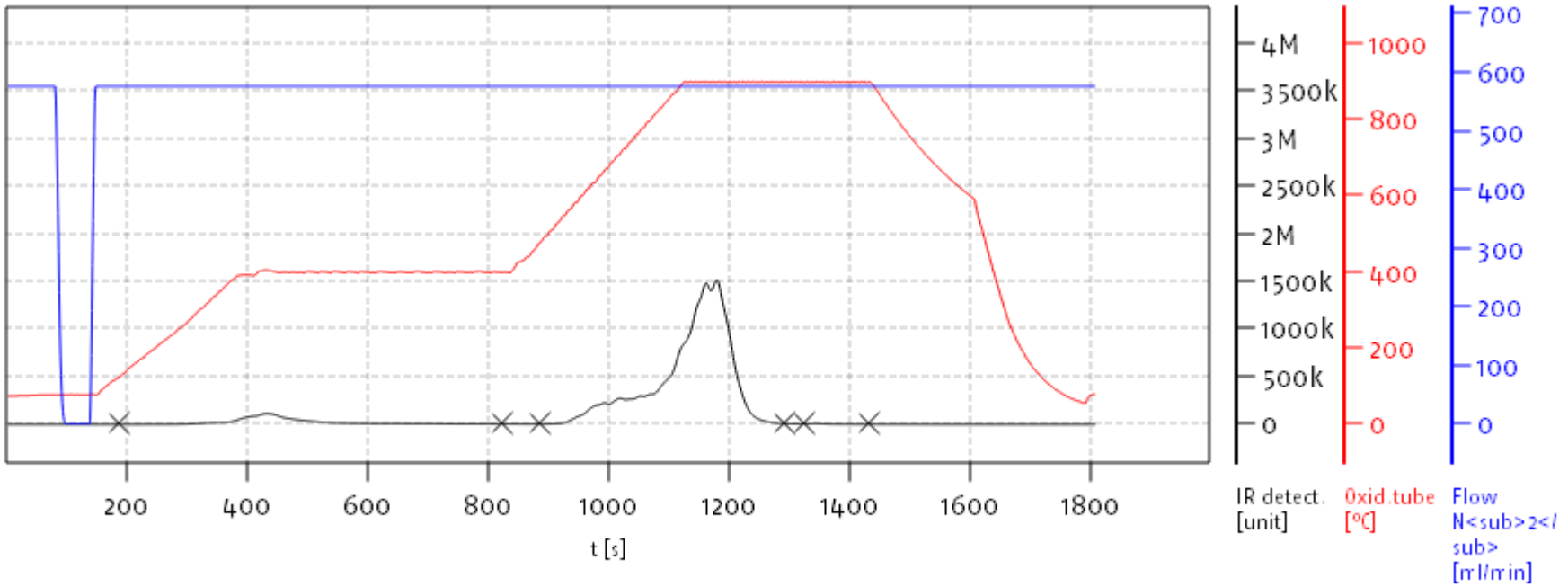
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
150	61	21G0404-05	521.40		1.00	CARBON	9/4/2021 3:22 PM	0.161	2.055	2.216	bl	523 278	6 356 600	13 821	0.9659	1.0000



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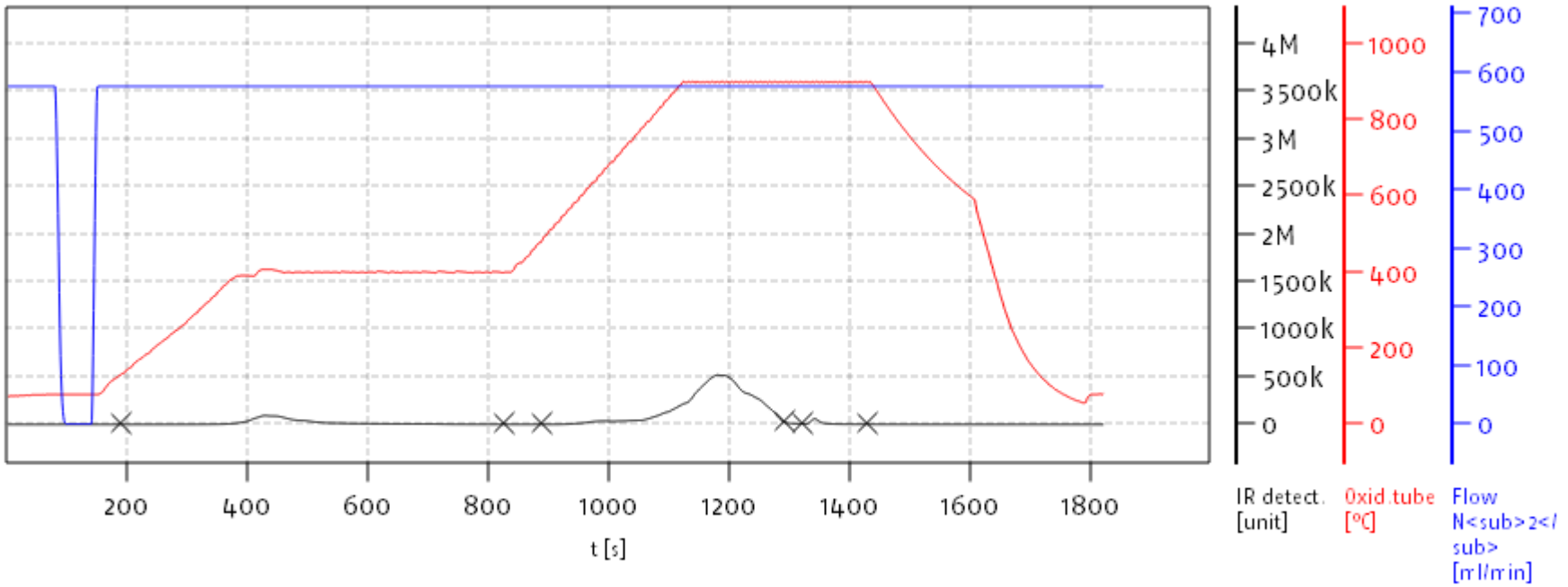
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
151	79	21G0246-01RE1	942.50		1.00	CARBON	9/4/2021 3:53 PM	0.067	0.447	0.514	bl	363 635	2 504 590	46 067	0.9659	1.0000



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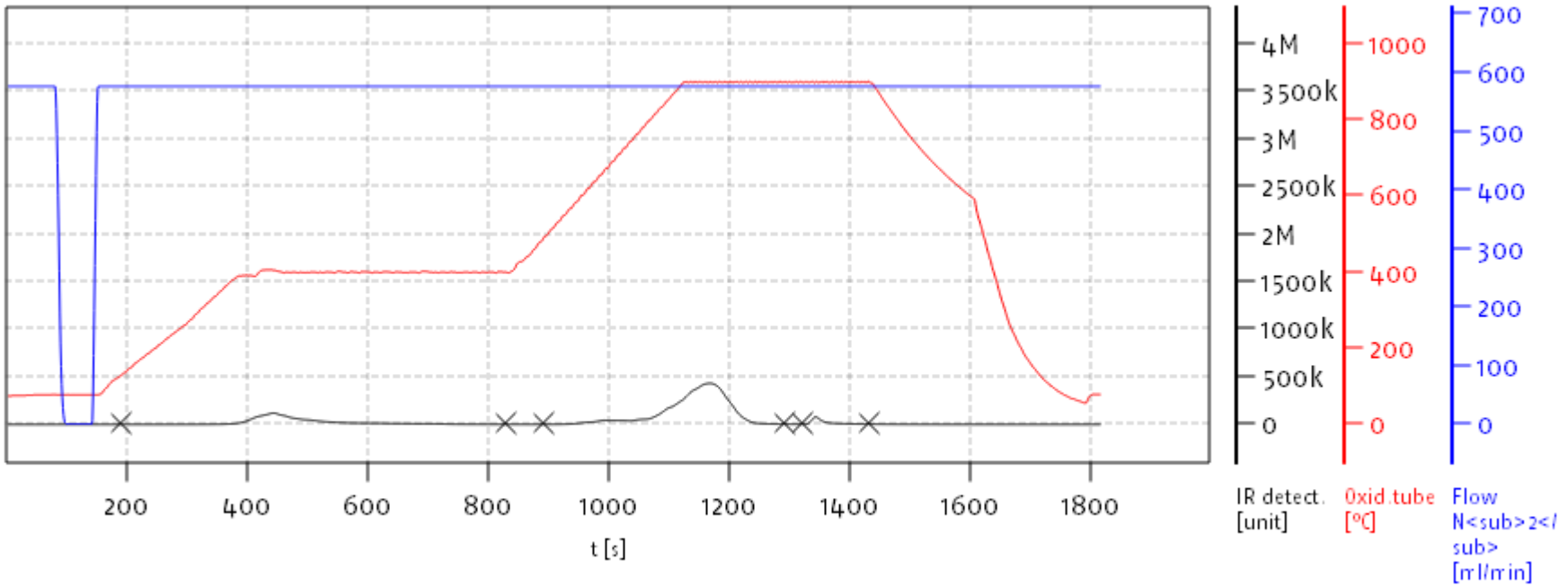
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
152	80	BJH0059-DUP3	941.80		1.00	CARBON	9/4/2021 4:24 PM	0.090	0.306	0.397	bl	467 496	1 719 420	75 580	0.9659	1.0000



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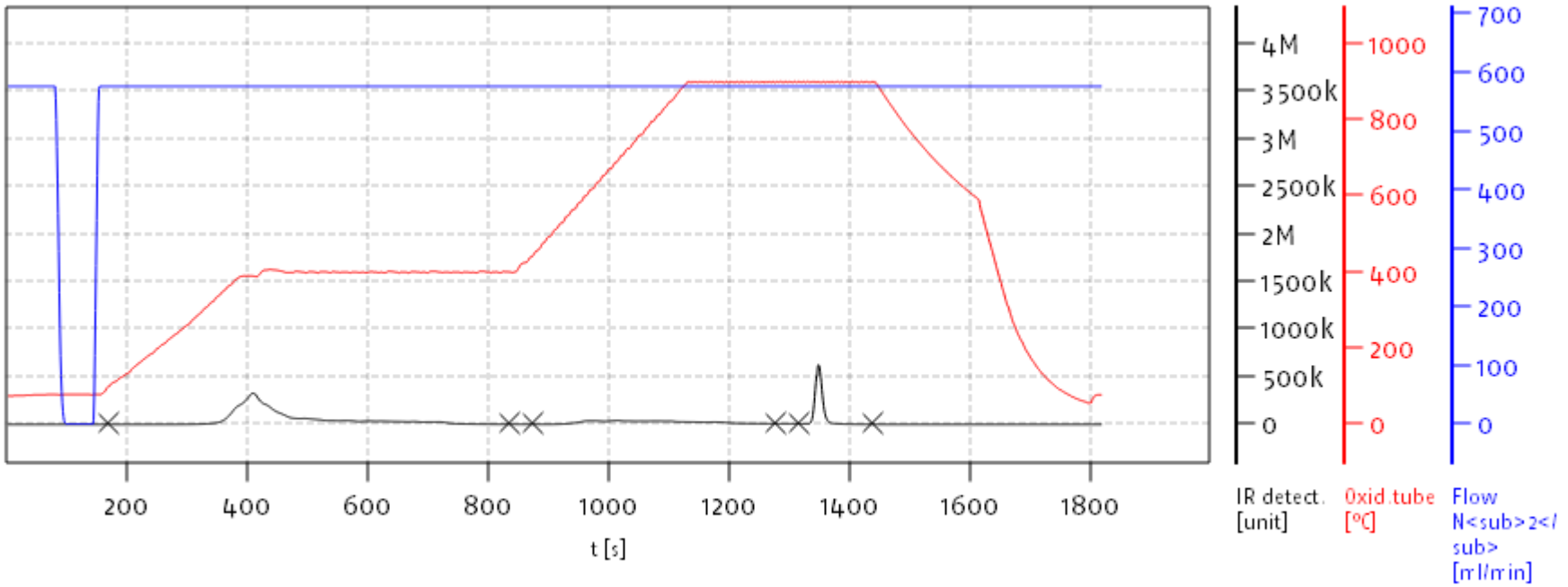
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
153	81	21G0212-13RE1	222.40		1.00	CARBON	9/4/2021 4:54 PM	1.087	0.245	1.332	bl	1 163 090	334 092	331 194	0.9659	1.0000



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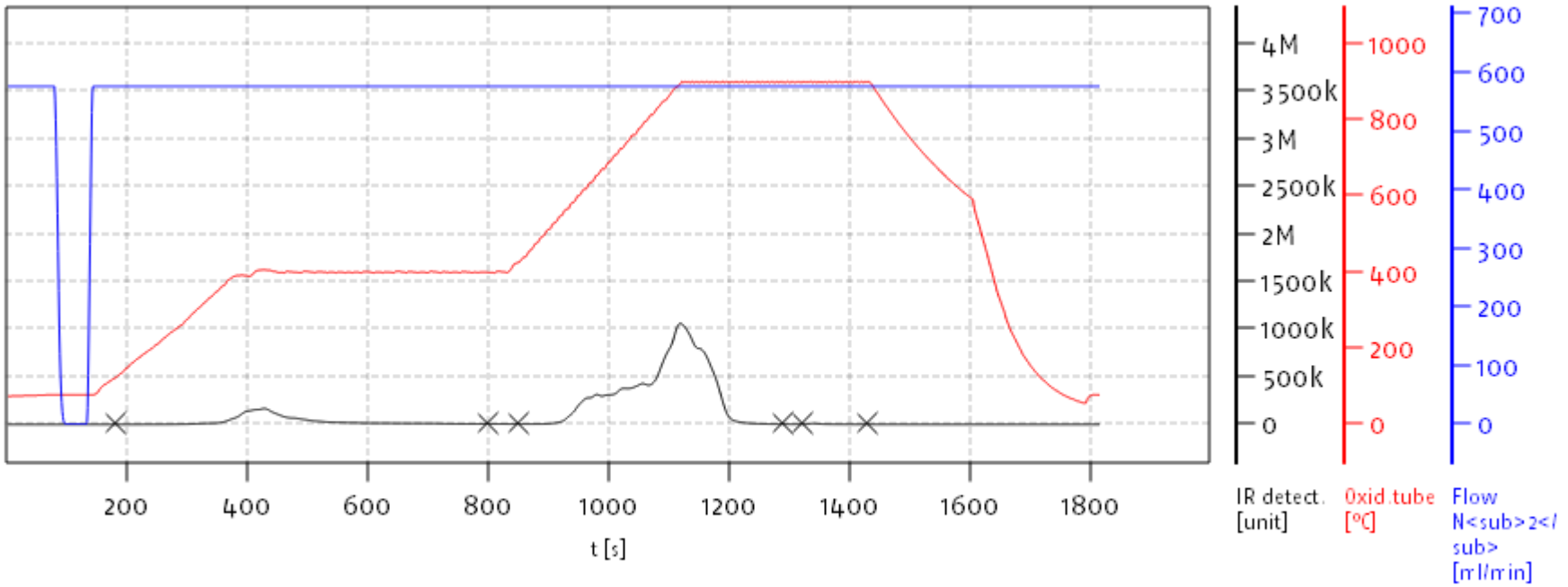
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
154	65	21G0404-09	552.80		1.00	CARBON	9/4/2021 5:25 PM	0.207	1.534	1.741	bl	712 562	5 033 350	11 887	0.9659	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

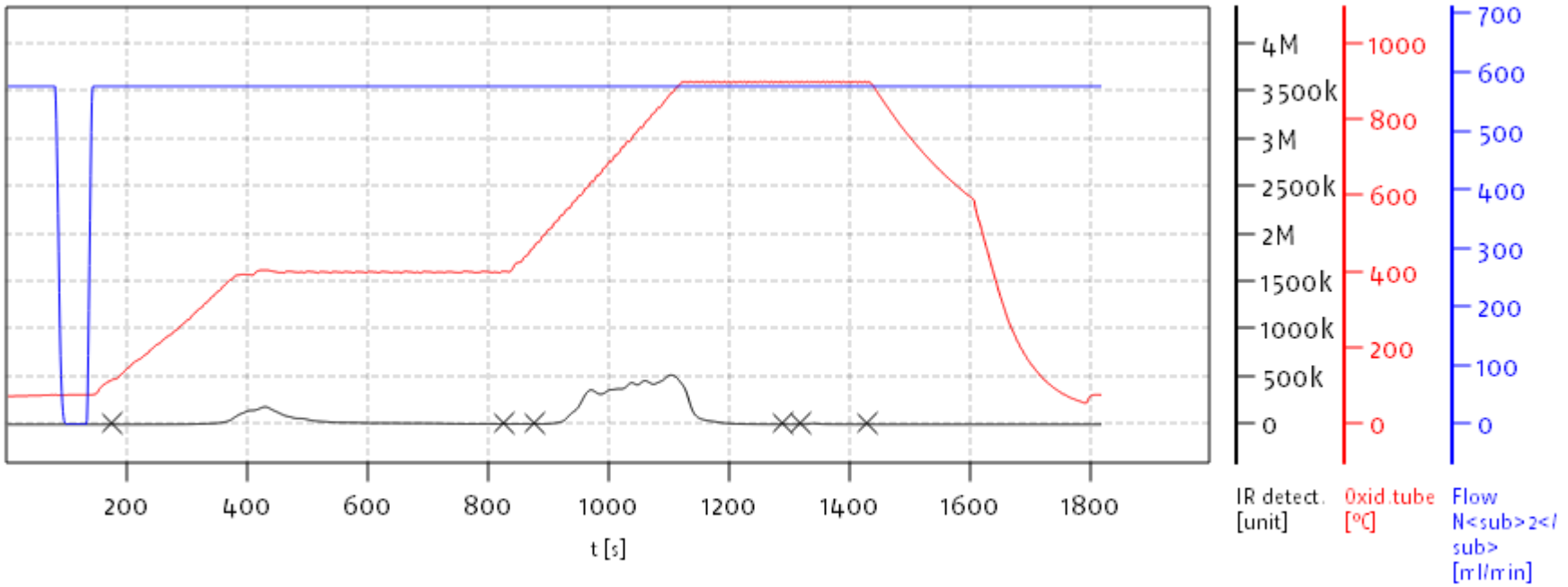
elementar
EXCELLENCE IN ELEMENTS

Document: from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
155	66	21G0404-10	620.20		1.00	CARBON	9/4/2021 5:56 PM	0.198	0.817	1.014	bl	763 245	3 010 330	10 658	0.9659	1.0000



Name:

Access: soliTOC superuser

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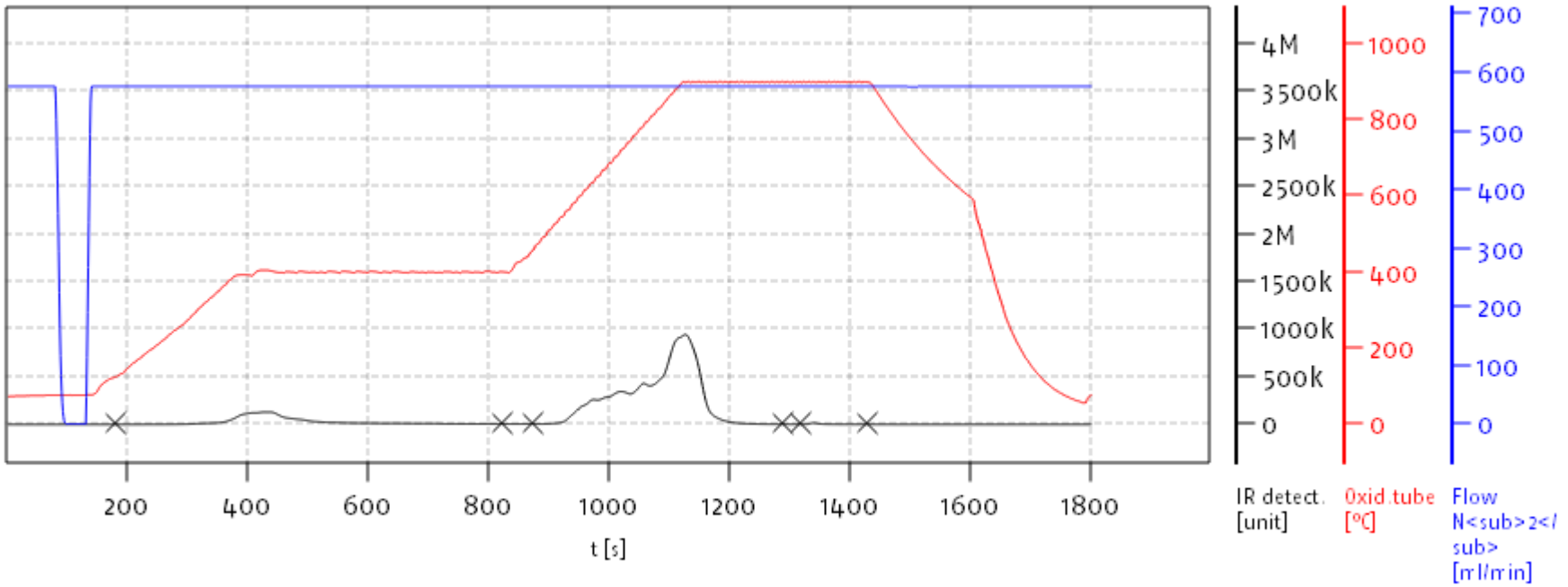
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
156	67	21G0404-11	546.20		1.00	CARBON	9/4/2021 6:26 PM	0.186	1.213	1.400	bl	633 854	3 935 900	13 681	0.9659	1.0000



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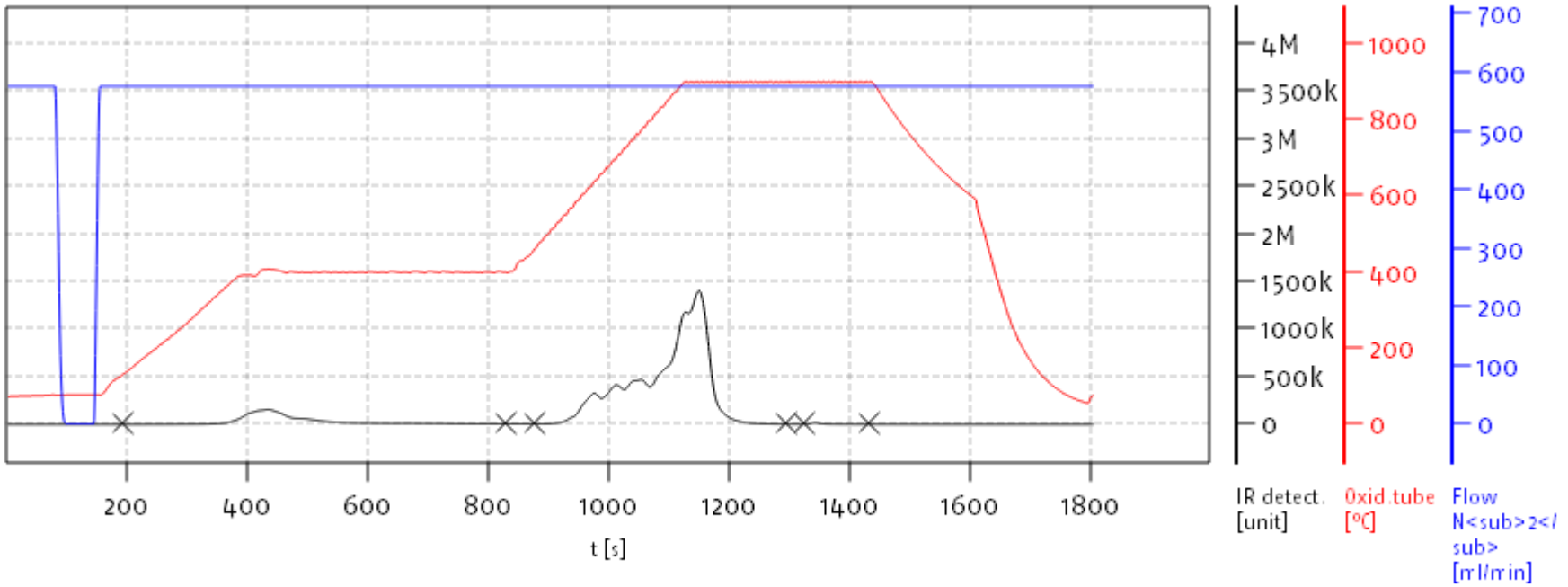
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
157	68	21G0404-12	633.50		1.00	CARBON	9/4/2021 6:57 PM	0.175	1.427	1.602	bl	685 397	5 364 700	17 550	0.9659	1.0000



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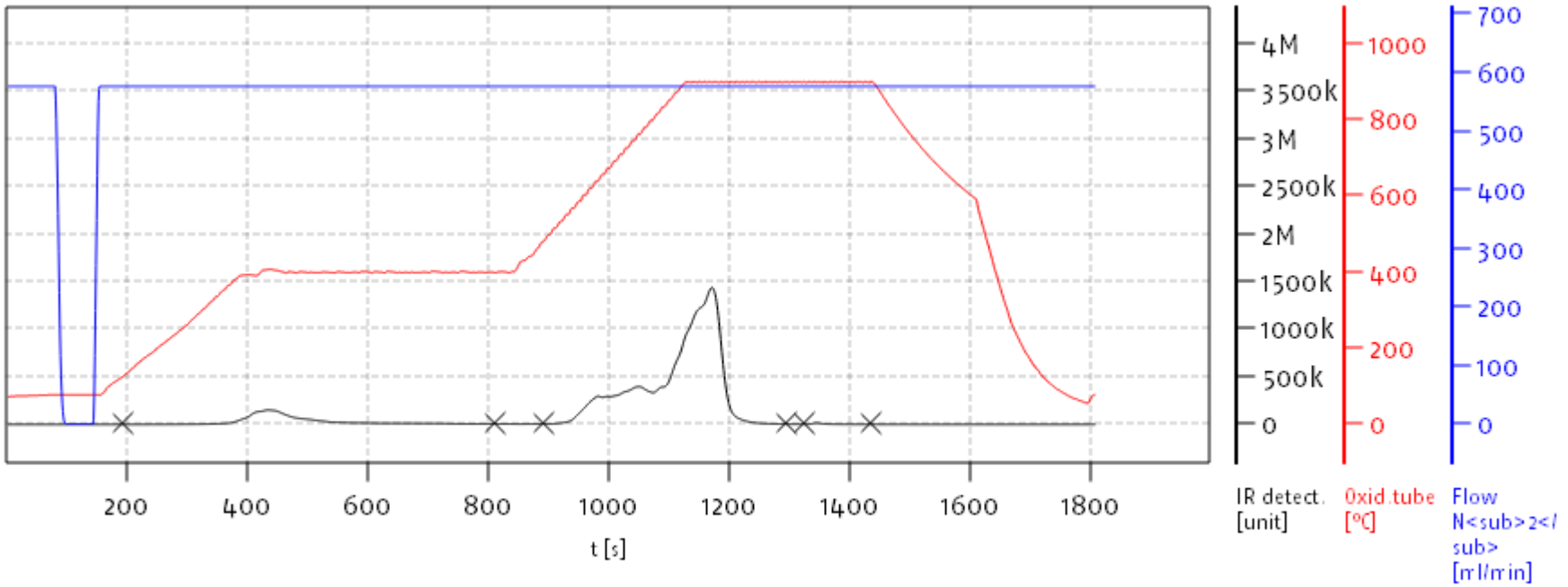
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
158	69	21G0404-13	637.40		1.00	CARBON	9/4/2021 7:27 PM	0.163	1.473	1.636	bl	643 456	5 569 870	16 083	0.9659	1.0000



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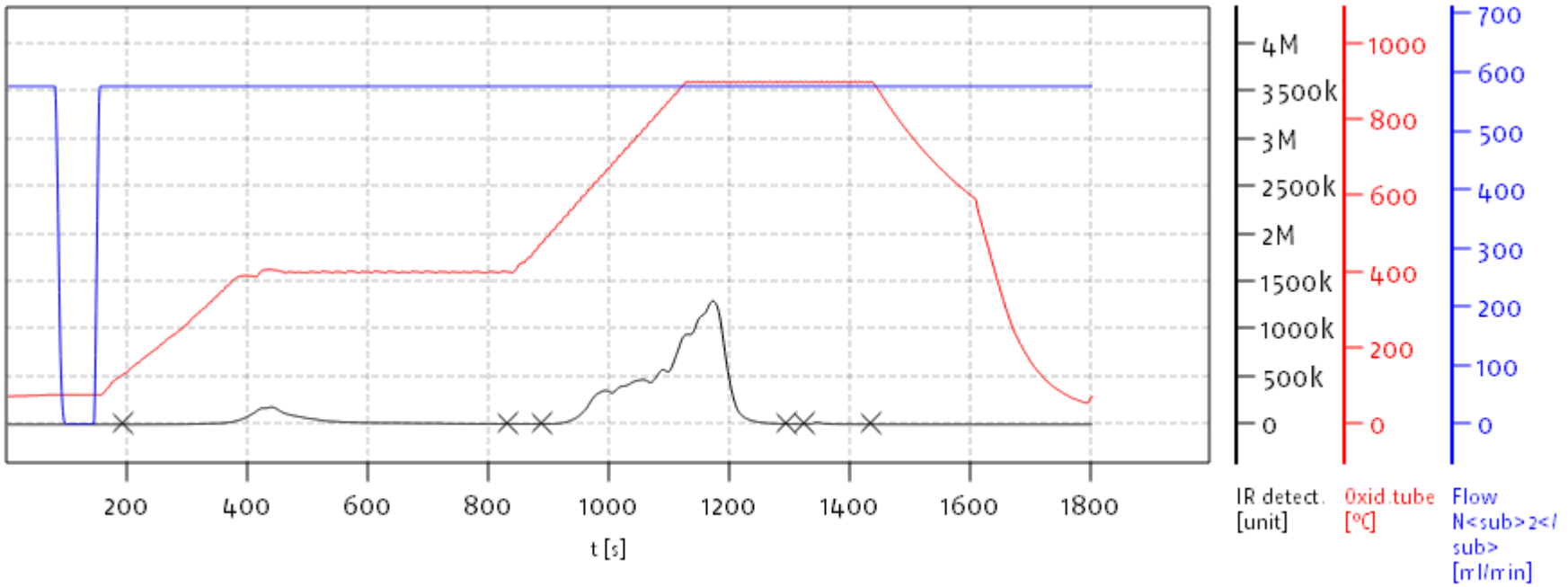
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
159	70	21G0404-14	710.00		1.00	CARBON	9/4/2021 7:58 PM	0.176	1.453	1.629	bl	765 817	6 121 060	21 081	0.9659	1.0000



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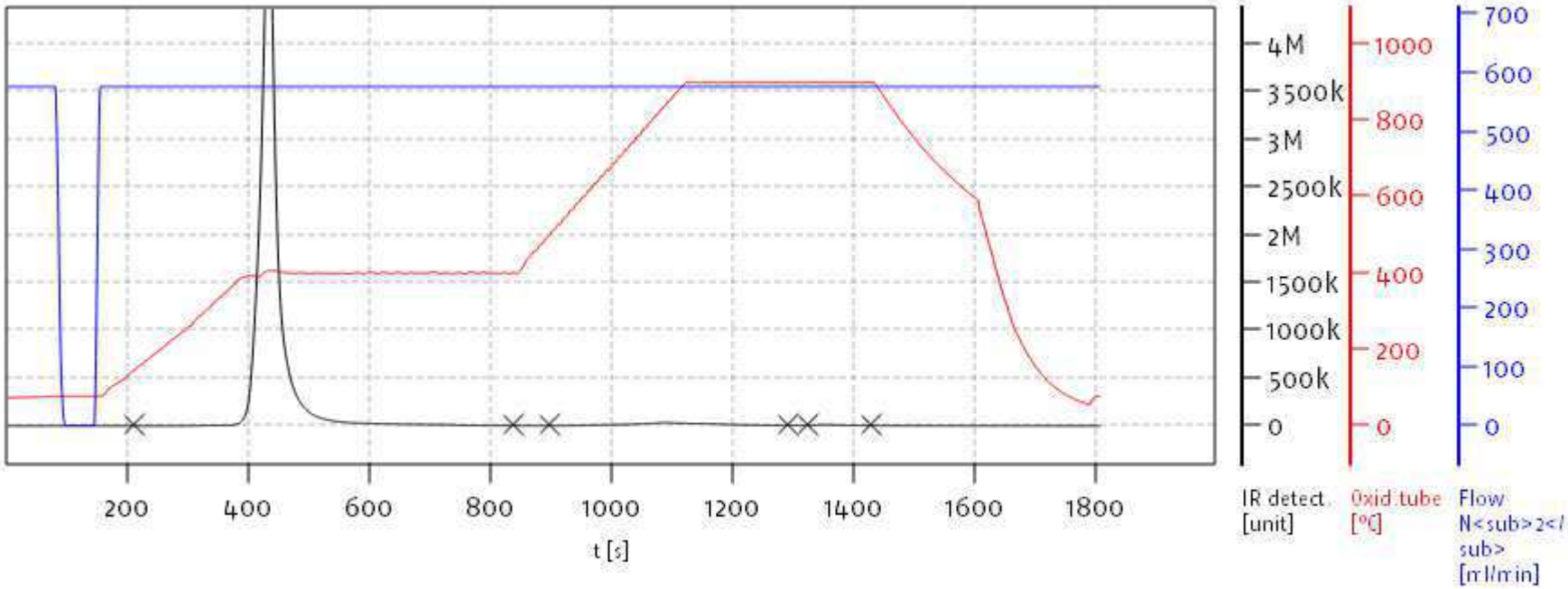
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
160	71	SJH0417-CCVD	24.20		1.00	CARBON	9/4/2021 8:28 PM	44.639	1.387	46.026	bl	6 619 220	210 384	25 610	0.9659	1.0000



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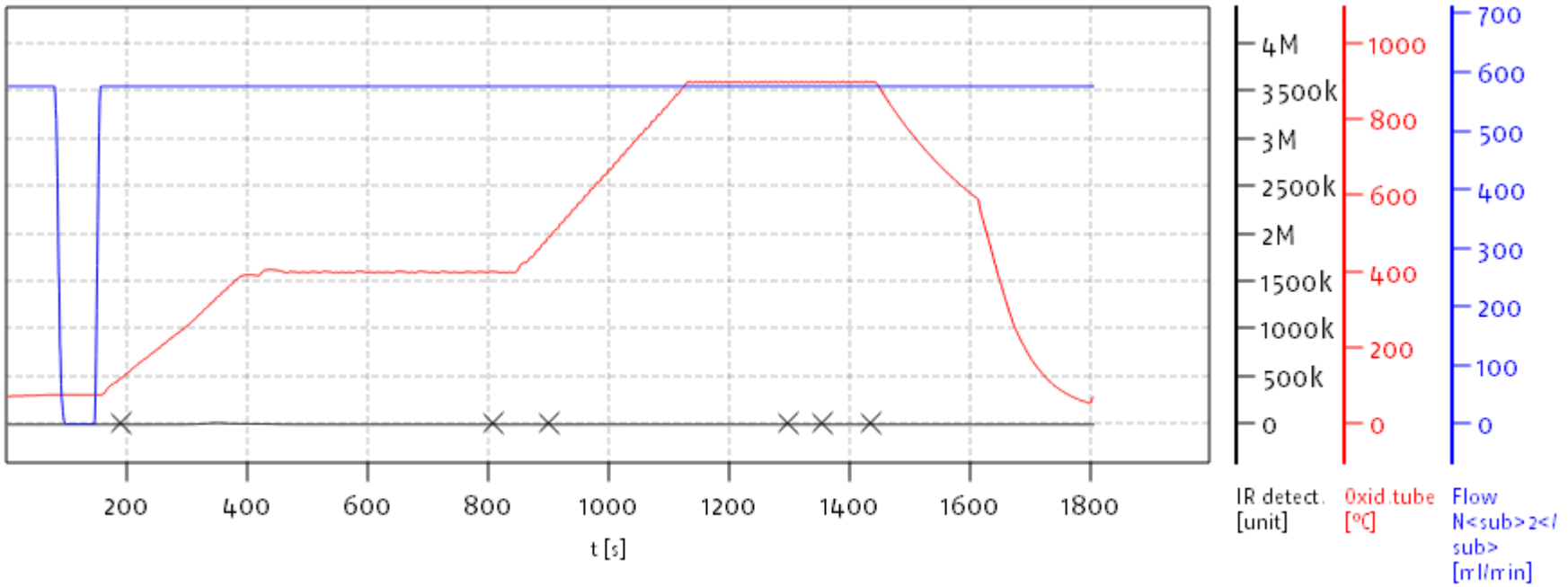
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
161	72	SJH0417-CCBD	601.00		1.00	CARBON	9/4/2021 8:59 PM	0.008	0.000	0.008	bl,C3u,C2u	42 640	3 332	353	0.9659	1.0000



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Access: soliTOC superuser

Date: Mon Sep 6 07:32:29 2021

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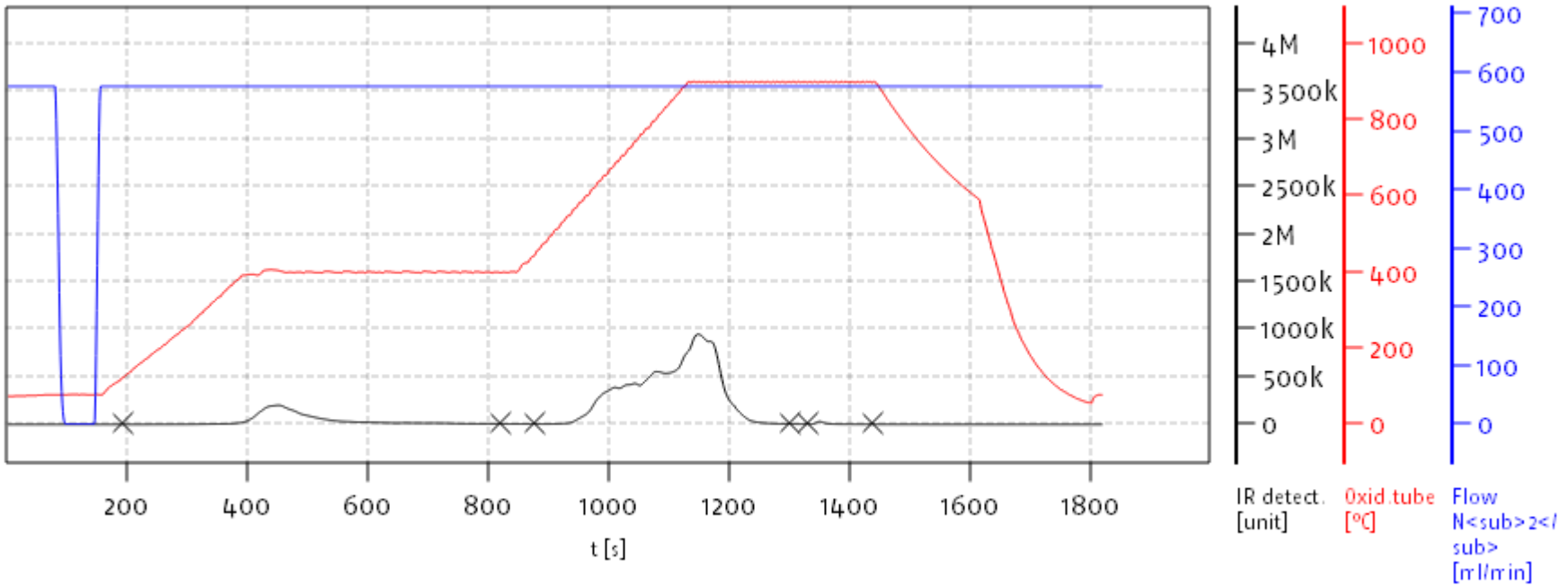
Document: from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
162	73	21G0404-15	677.90		1.00	CARBON	9/4/2021 9:30 PM	0.202	1.241	1.442	bl	834 934	4 991 450	25 967	0.9659	1.0000



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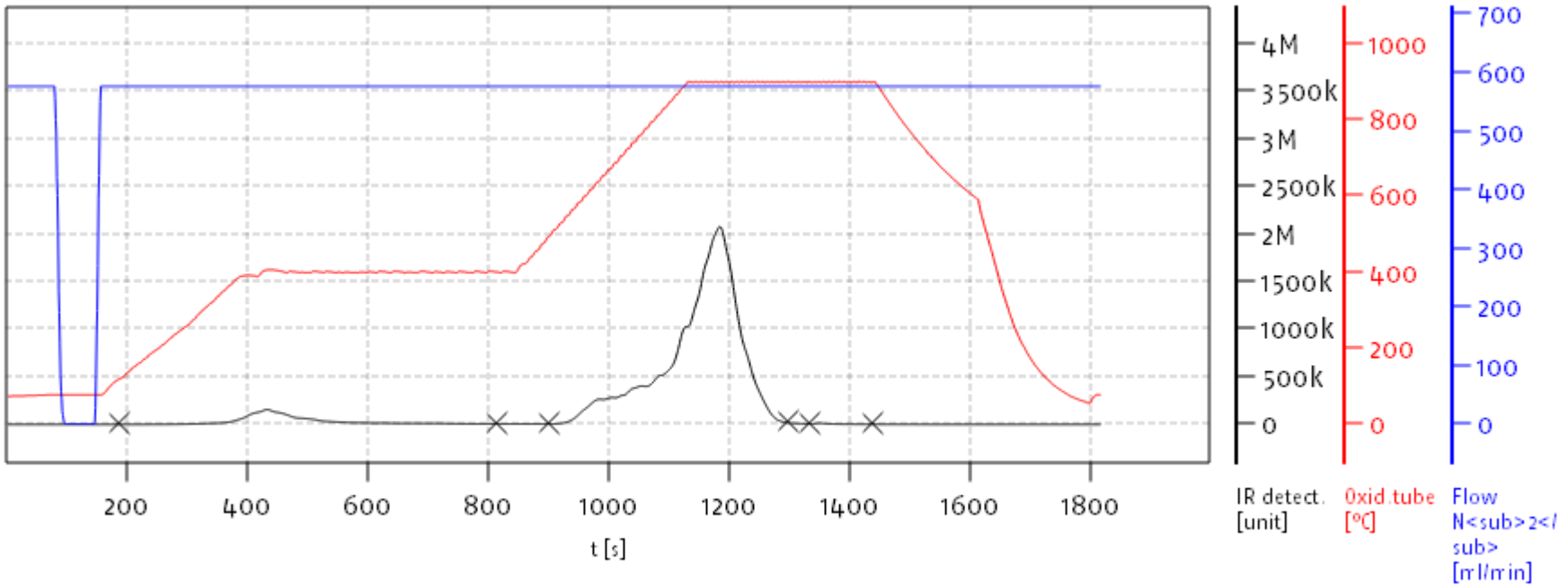
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
163	74	21G0404-16	663.10		1.00	CARBON	9/4/2021 10:00 PM	0.169	2.297	2.466	bl,C3o	690 940	9 029 690	18 887	0.9659	1.0000



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Analyst: BF

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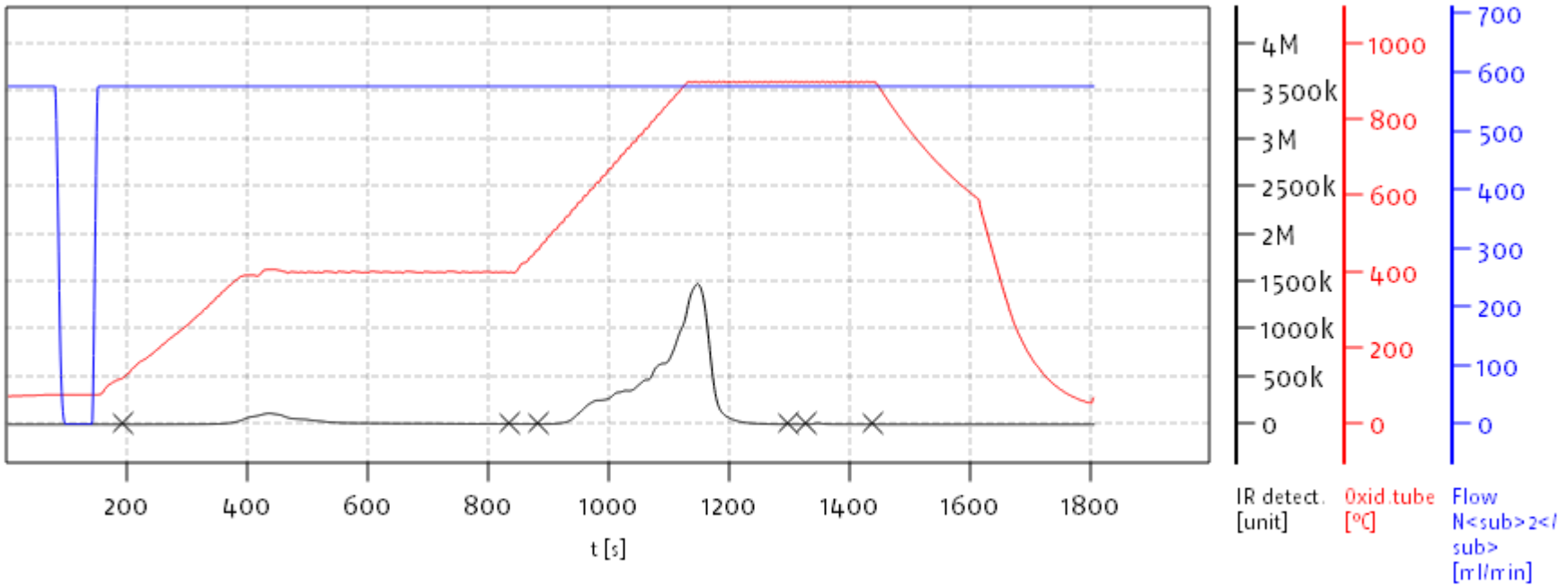
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
164	75	21G0404-17	566.00		1.00	CARBON	9/4/2021 10:31 PM	0.150	1.606	1.756	bl	530 918	5 394 360	12 925	0.9659	1.0000



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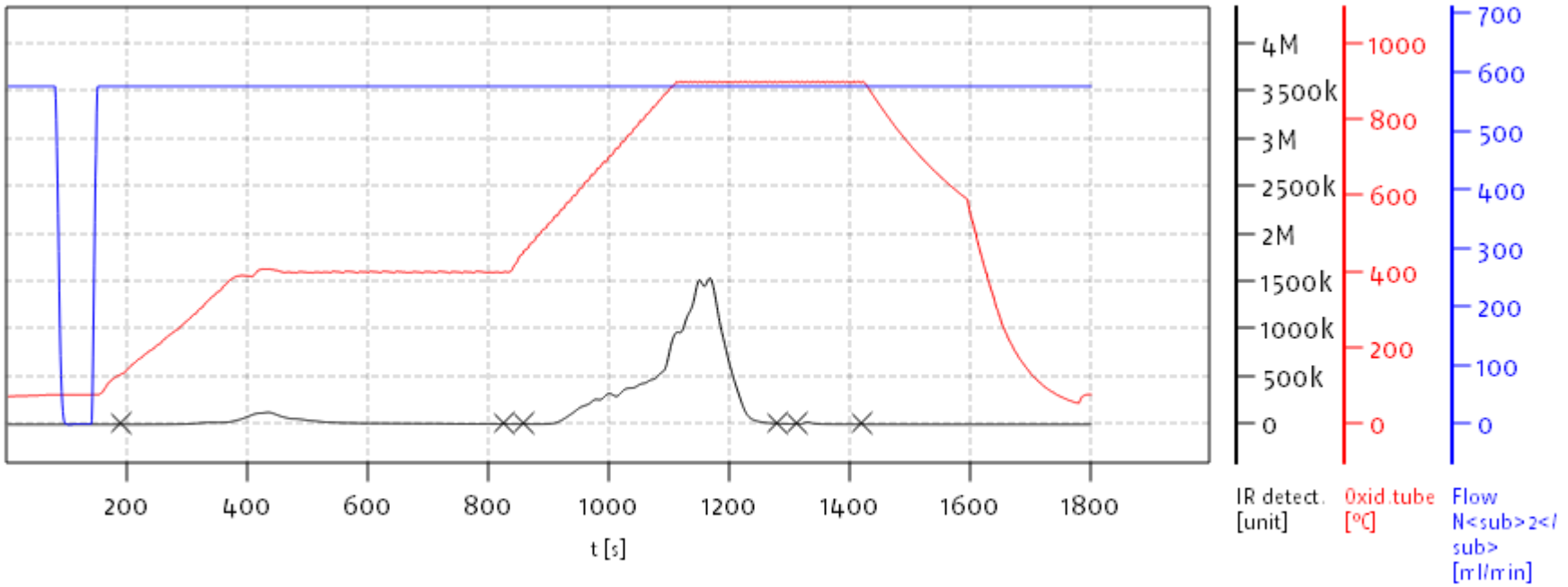
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
165	76	21G0404-18	622.30		1.00	CARBON	9/4/2021 11:01 PM	0.153	1.899	2.052	bl	583 694	7 009 080	21 249	0.9659	1.0000



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Balance: BAL3
Analyst: BF

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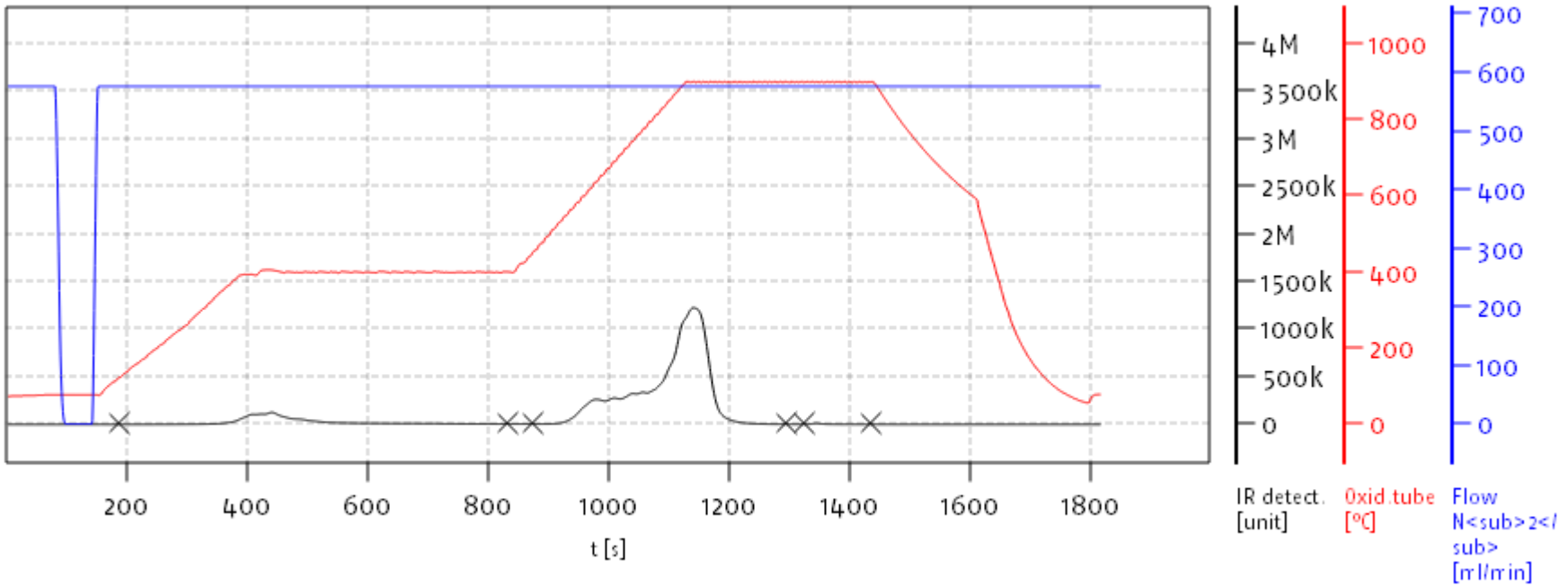
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
166	77	21G0404-19	541.80		1.00	CARBON	9/4/2021 11:32 PM	0.162	1.427	1.589	bl	550 013	4 588 350	12 027	0.9659	1.0000



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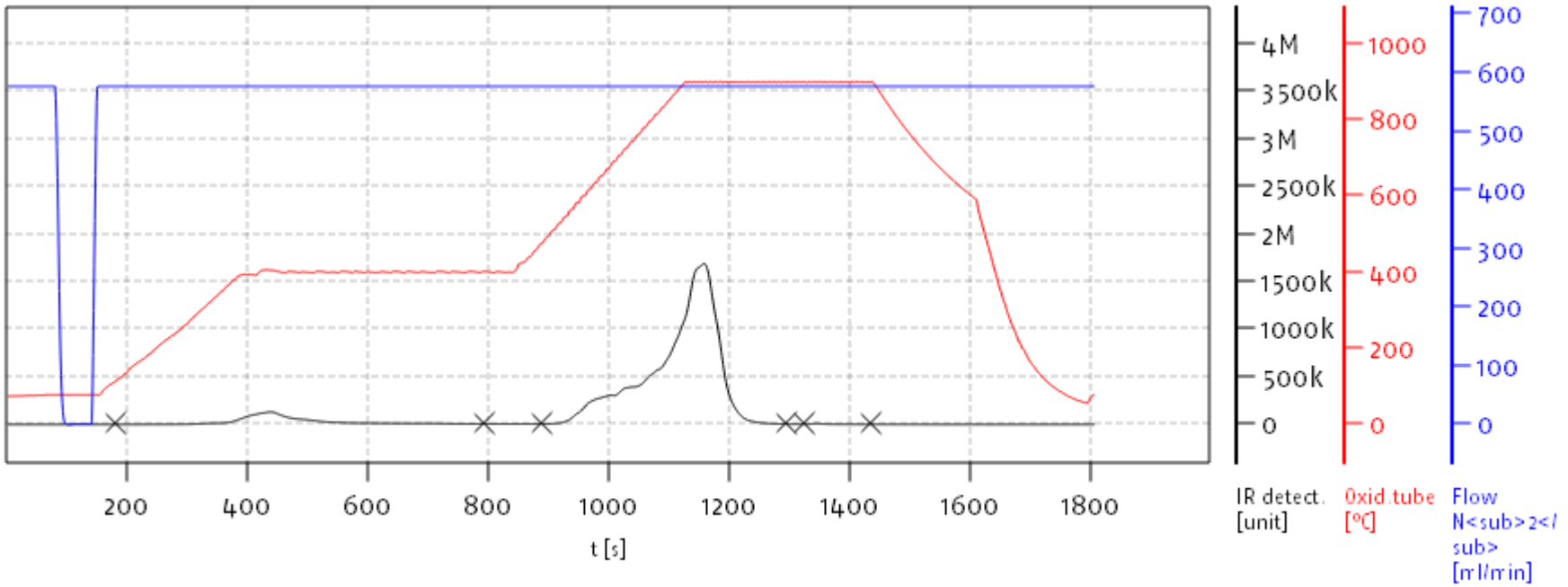
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
167	78	21G0404-20	591.30		1.00	CARBON	9/5/2021 12:03 AM	0.160	1.918	2.078	bl	590 136	6 727 000	12 136	0.9659	1.0000



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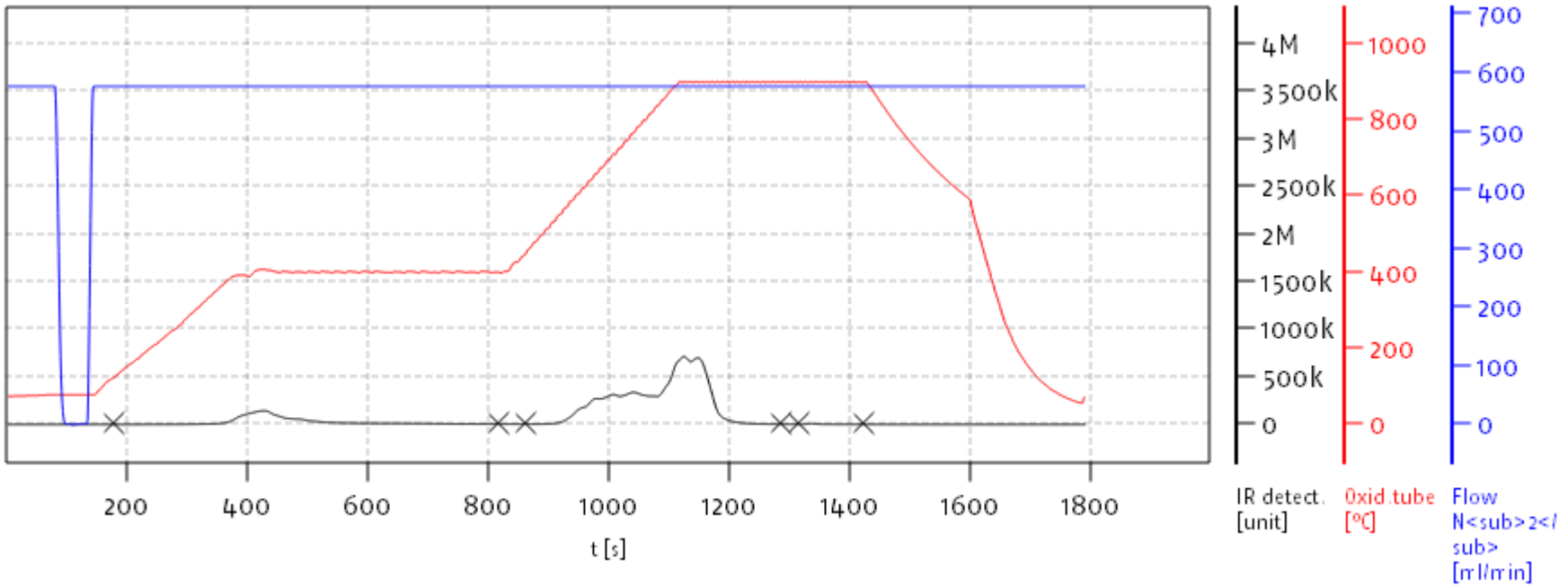
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
168	62	21G0404-06	533.50		1.00	CARBON	9/5/2021 12:33 AM	0.179	1.125	1.304	bl	597 419	3 565 740	10 508	0.9659	1.0000



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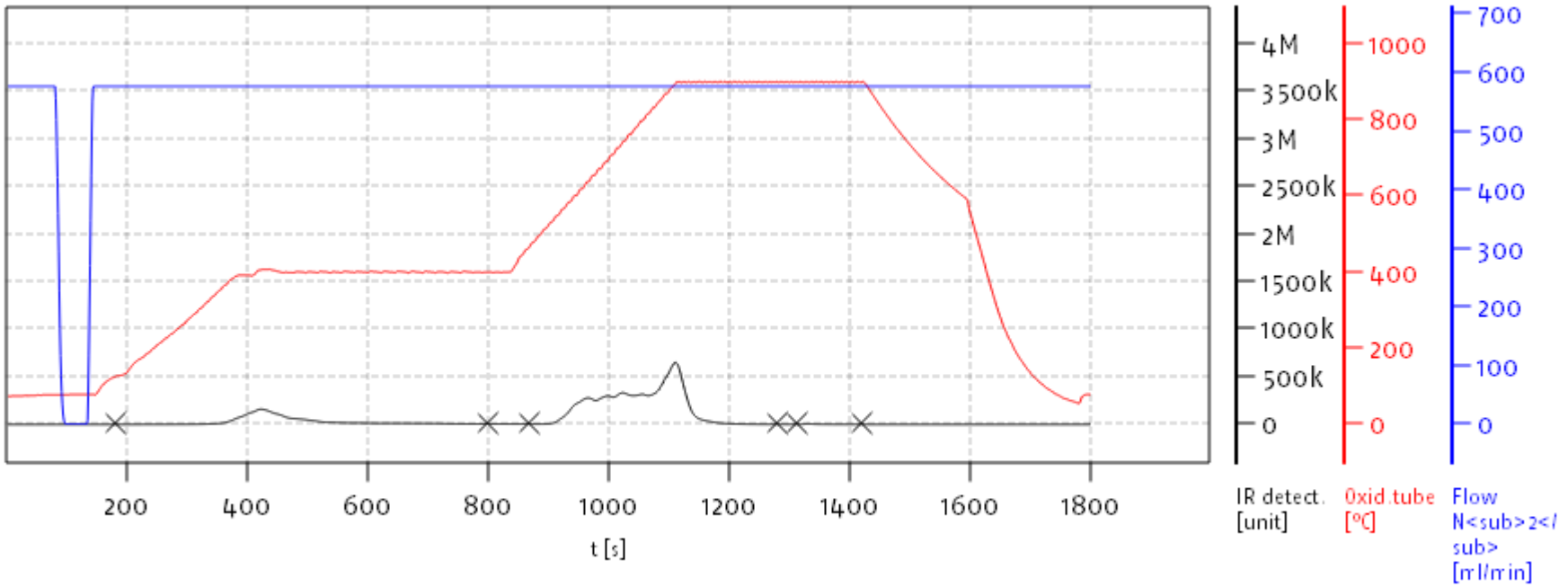
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
169	63	21G0404-07	539.20		1.00	CARBON	9/5/2021 1:03 AM	0.191	0.846	1.037	bl	643 913	2 712 040	7 911	0.9659	1.0000



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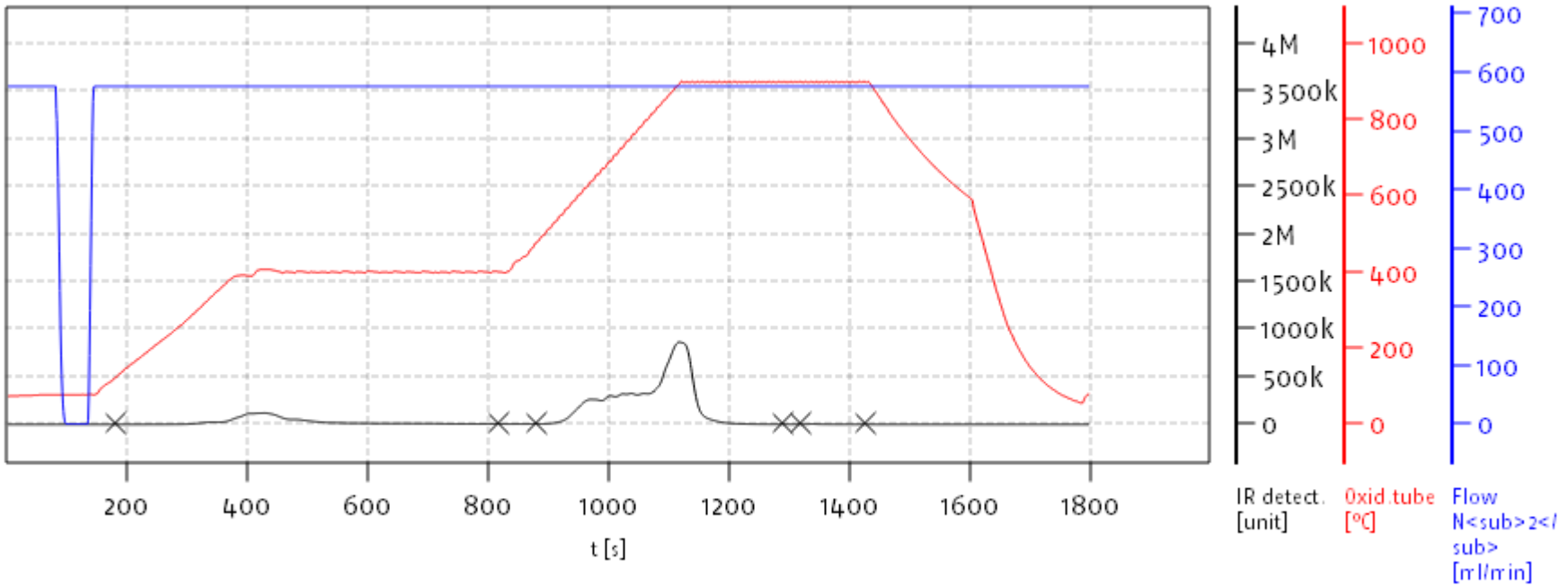
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
170	64	21G0404-08	516.70		1.00	CARBON	9/5/2021 1:34 AM	0.183	1.078	1.261	bl,C2u	591 304	3 310 160	6 897	0.9659	1.0000



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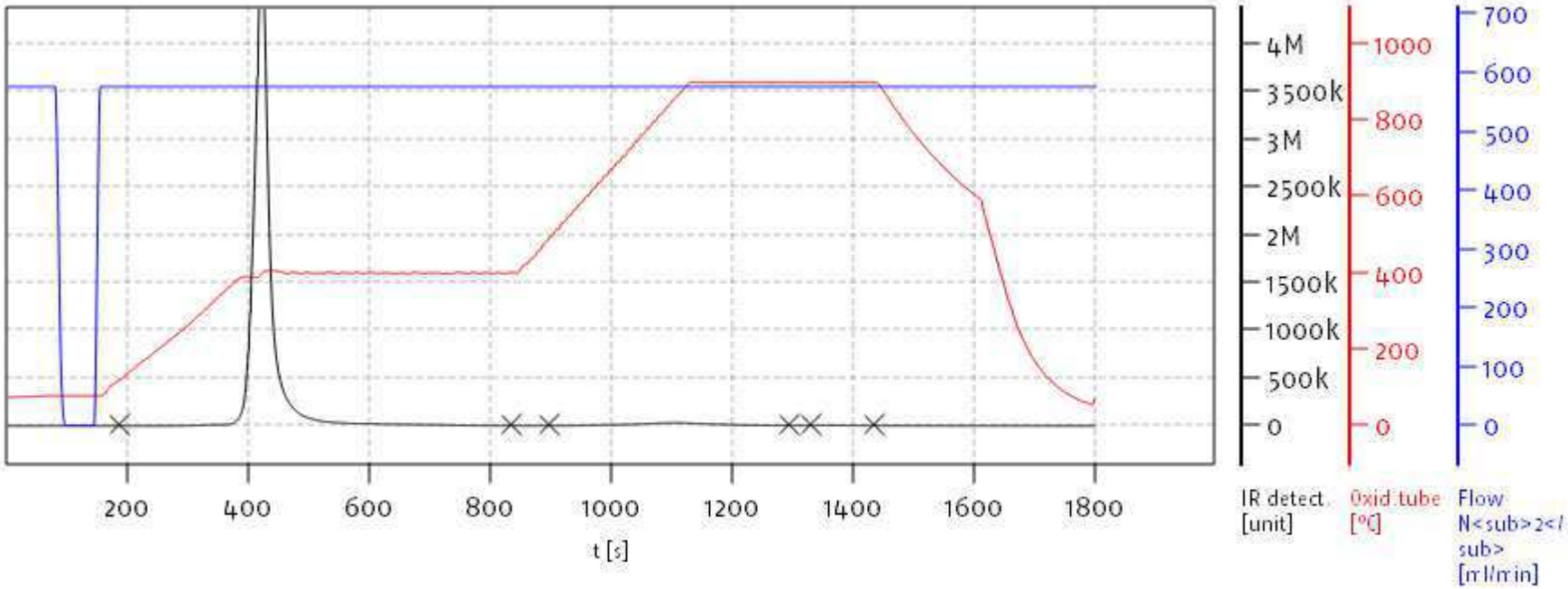
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
171	82	SJH0417-CCVE	20.70		1.00	CARBON	9/5/2021 2:04 AM	44.006	1.526	45.532	bl	5 590 000	198 692	17 093	0.9659	1.0000



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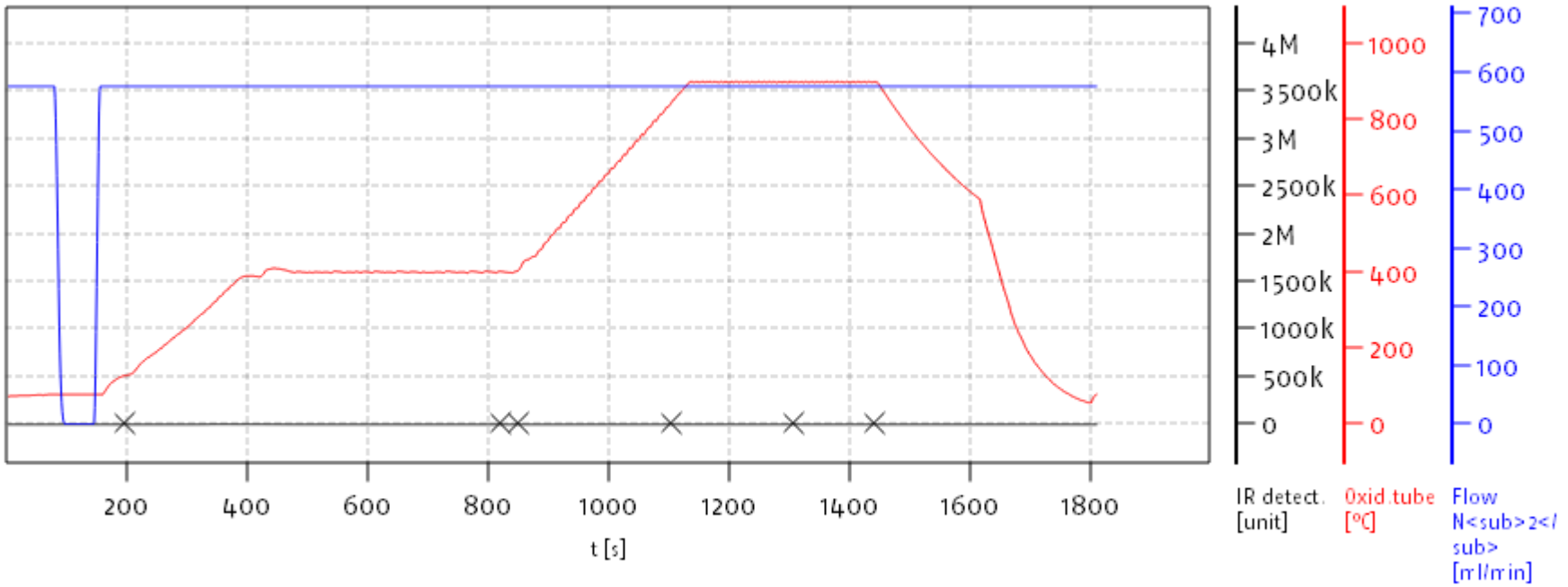
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
172	83	SJH0417-CCBE	669.30		1.00	CARBON	9/5/2021 2:35 AM	0.000	0.000	0.000	bl,C3u,C2u	9 031	185	277	0.9659	1.0000



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Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00021	Instrument:	TOC Cube
Calibration Date:	08/10/2021 12:39		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.008374	1136972	0.015851	1268816	0.020935	1128063	0.030804	1237761	0.04486	1233816	0.059515	1290515
Total Carbon	0.008374	1136972	0.015851	1268816	0.020935	1128063	0.030804	1237761	0.04486	1233816	0.059515	1290515
Total Inorganic Carbon	0.008374	1136972	0.015851	1268816	0.020935	1128063	0.030804	1237761	0.04486	1233816	0.059515	1290515
% Soot	0.008374	1136972	0.015851	1268816	0.020935	1128063	0.030804	1237761	0.04486	1233816	0.059515	1290515

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00021	Instrument:	TOC Cube
Calibration Date:	08/10/2021 12:39		

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.074169	1310642	0.090319	1267275	0.11873	1241877	0.14864	1216079	0.234	1269470	0.312	1255862
Total Carbon	0.074169	1310642	0.090319	1267275	0.11873	1241877	0.14864	1216079	0.234	1269470	0.312	1255862
Total Inorganic Carbon	0.074169	1310642	0.090319	1267275	0.11873	1241877	0.14864	1216079	0.234	1269470	0.312	1255862
% Soot	0.074169	1310642	0.090319	1267275	0.11873	1241877	0.14864	1216079	0.234	1269470	0.312	1255862

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00021	Instrument:	TOC Cube
Calibration Date:	08/10/2021 12:39		

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.432	1282236	0.588	1272976	0.9	1313973	1.218	1298577	1.506	1294082	1.824	1297751
Total Carbon	0.432	1282236	0.588	1272976	0.9	1313973	1.218	1298577	1.506	1294082	1.824	1297751
Total Inorganic Carbon	0.432	1282236	0.588	1272976	0.9	1313973	1.218	1298577	1.506	1294082	1.824	1297751
% Soot	0.432	1282236	0.588	1272976	0.9	1313973	1.218	1298577	1.506	1294082	1.824	1297751

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00021	Instrument:	TOC Cube
Calibration Date:	08/10/2021 12:39		

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	2.394	1299464	3	1290681	4.194	1296753	4.806	1298028	5.418	1299159	7.188	1270865
Total Carbon	2.394	1299464	3	1290681	4.194	1296753	4.806	1298028	5.418	1299159	7.188	1270865
Total Inorganic Carbon	2.394	1299464	3	1290681	4.194	1296753	4.806	1298028	5.418	1299159	7.188	1270865
% Soot	2.394	1299464	3	1290681	4.194	1296753	4.806	1298028	5.418	1299159	7.188	1270865

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

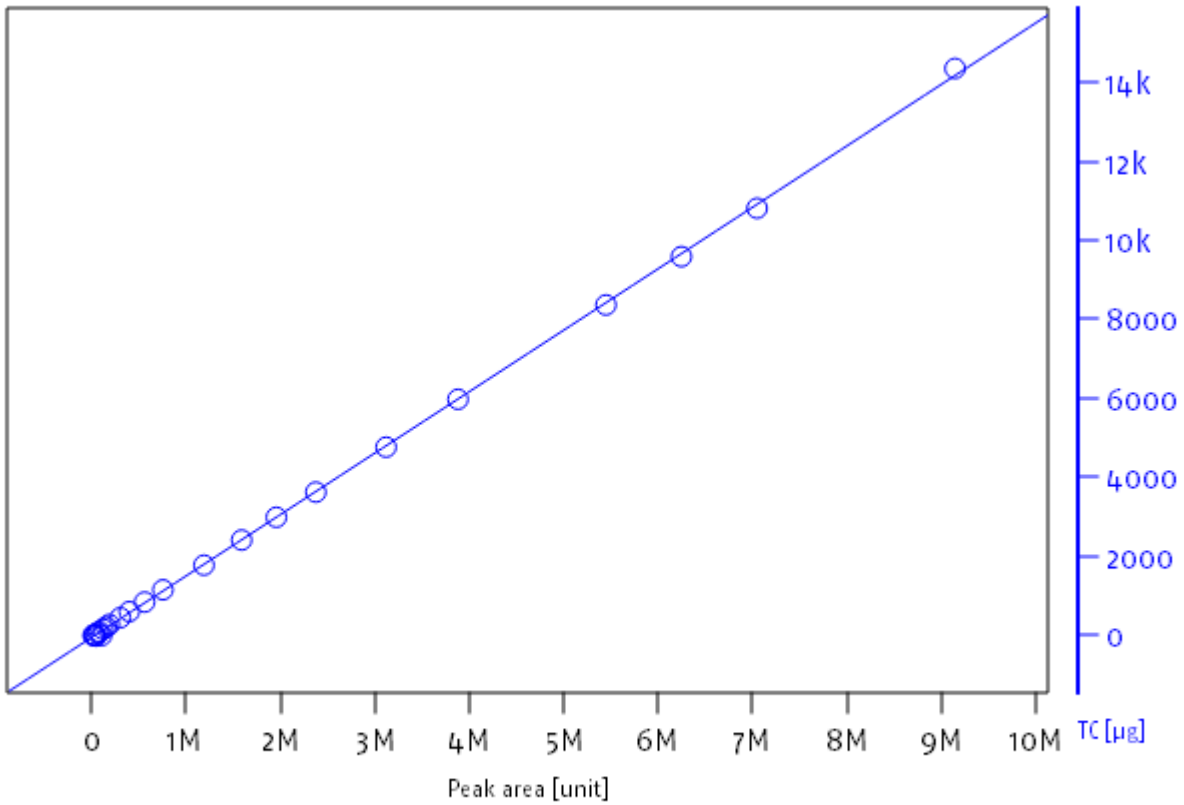
Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00021	Instrument:	TOC Cube
Calibration Date:	08/10/2021 12:39		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Total Organic Carbon	1265487	3.8	0.9998			
Total Carbon	1265487	3.8	0.9998			
Total Inorganic Carbon	1265487	3.8	0.9998			
% Soot	1265487	3.8	0.9998			

Calibration parameters TC, Whole range

a	-1.664439e-02
b	+1.556221e-06
c	+0.000000e+00
d	+0.000000e+00
e	+0.000000e+00
r	0.999802
r_old	0.999802
Proc.-SD	57.257020 µg

Calibration graph TC, Whole range



Name:

Access: soliTOC superuser

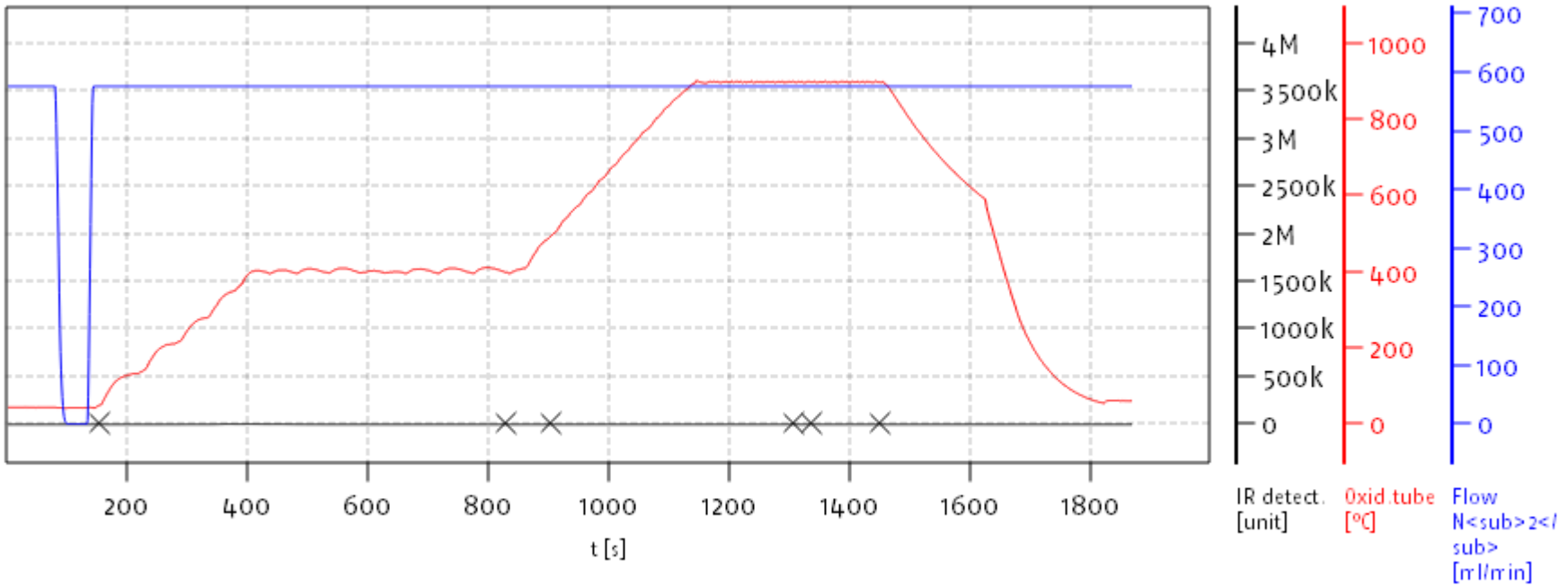
Date: Wed Aug 11 13:29:19 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
1	1	BLANK	1.00		1.00	CARBON	8/10/2021 1:17 PM	0.000	0.000	0.000	bl	22 805	4 168	1 160	1.0000	1.0000



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Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

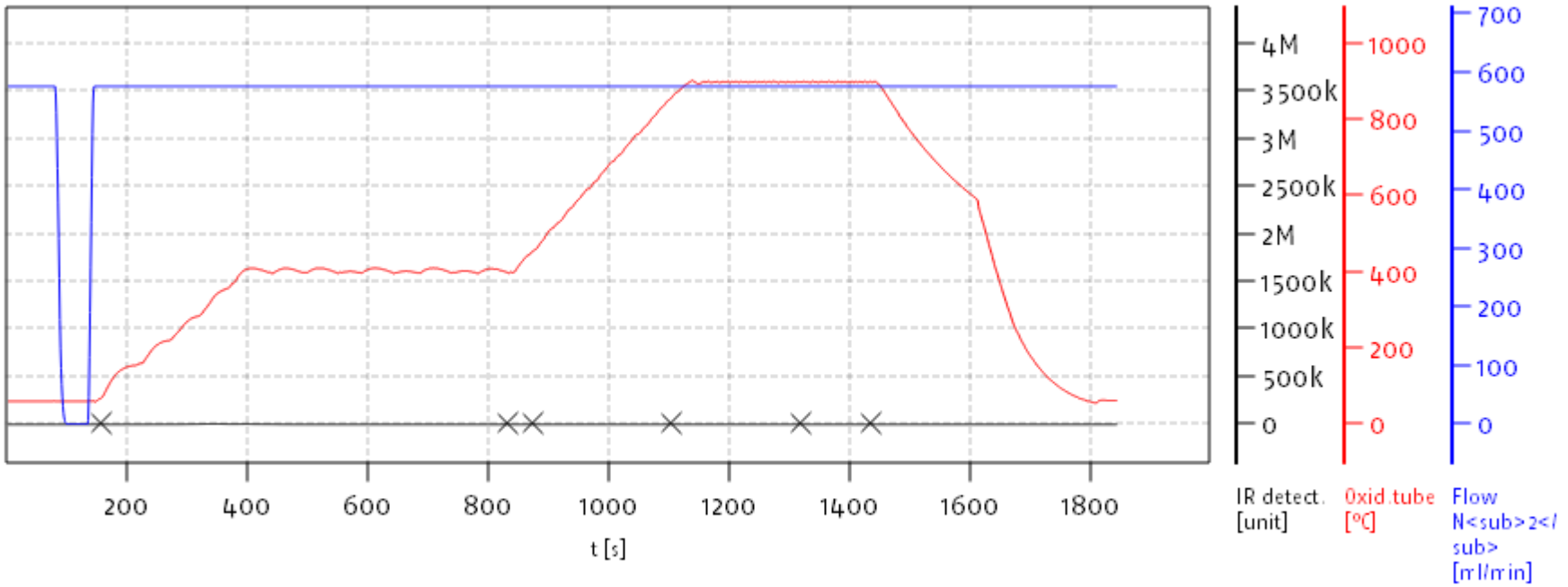
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
2	2	BLANK	1.00		1.00	CARBON	8/10/2021 1:48 PM	0.000	0.000	0.000	bl	25 029	584	417	1.0000	1.0000



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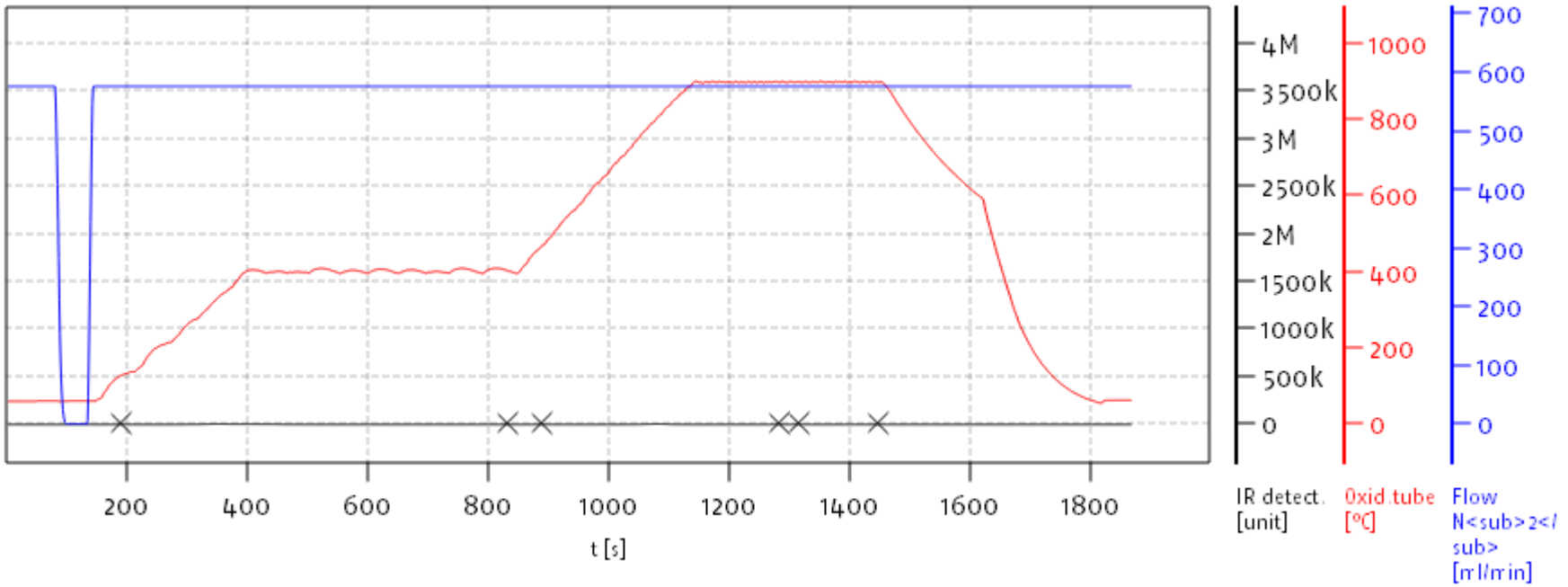
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
3	3	SJH0113-CAL1	200.00	0.0028	1.00	CARBON	8/10/2021 2:19 PM	0.022	0.010	0.032	bl,C2u	22 693	9 521	406	1.0000	1.0000



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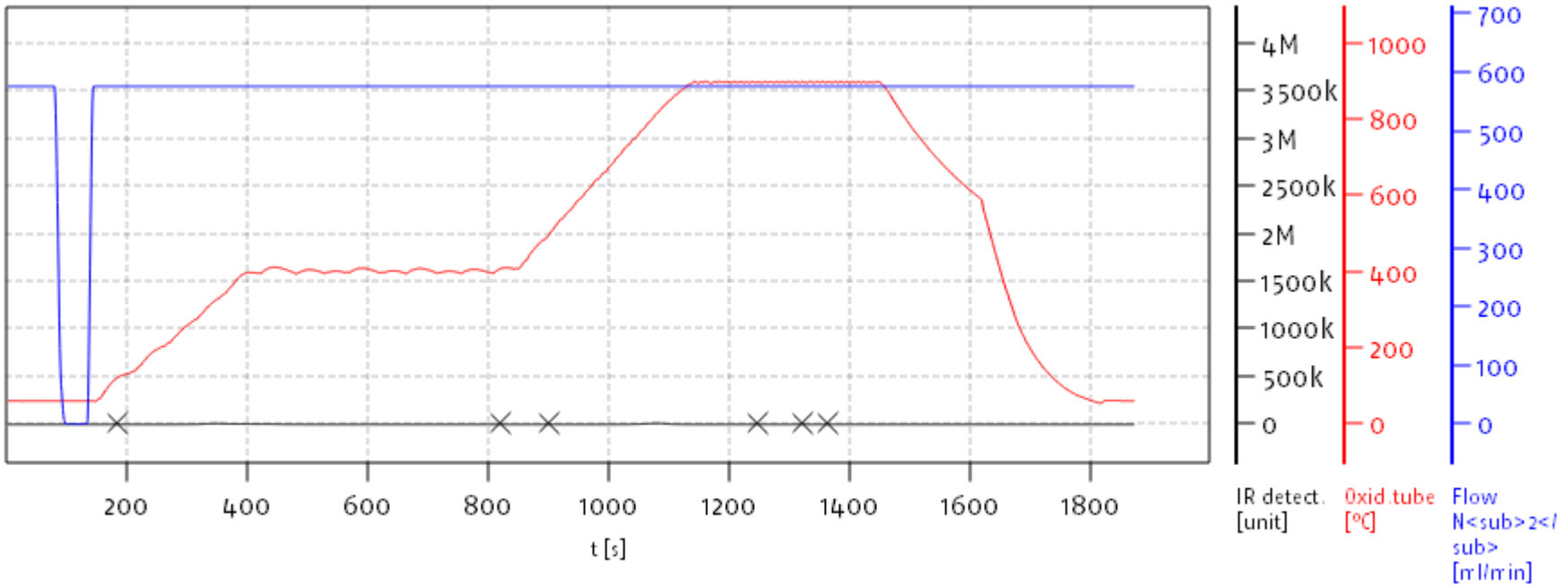
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
4	4	SJH0113-CAL2	200.00	0.0053	1.00	CARBON	8/10/2021 2:51 PM	0.029	0.018	0.046	bl,C2u	30 832	20 112	139	1.0000	1.0000



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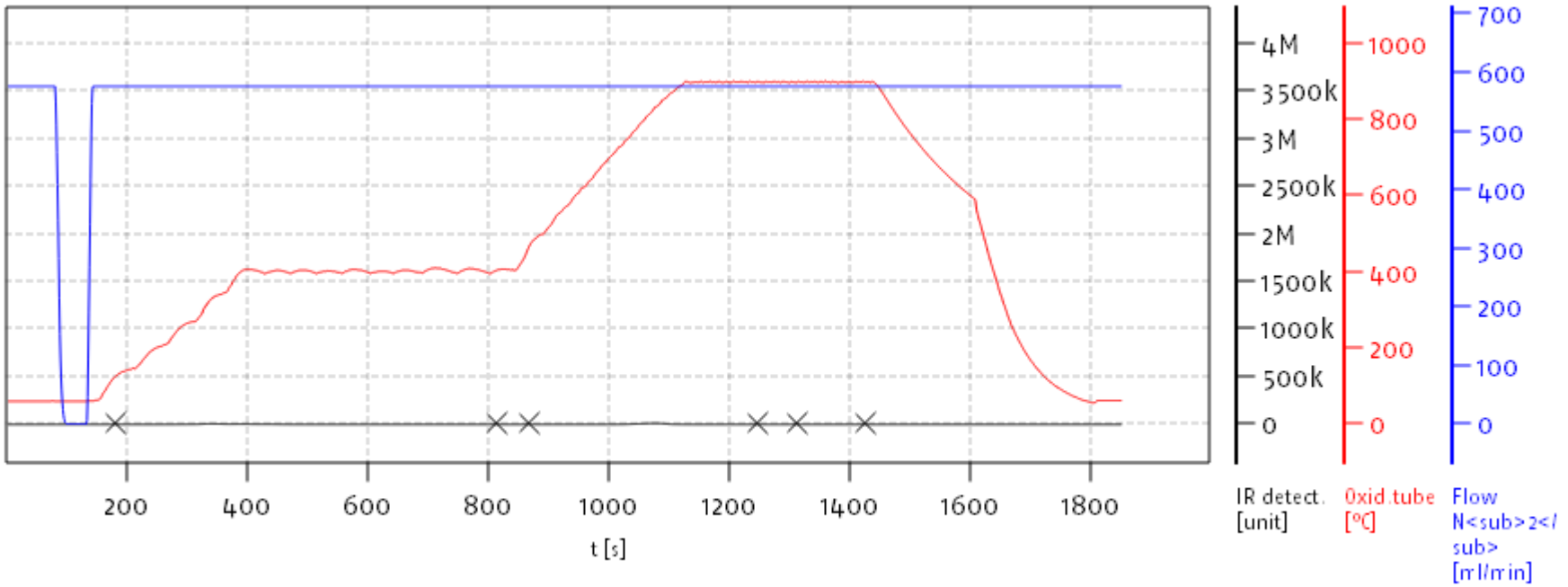
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
5	5	SJH0113-CAL3	200.00	0.0070	1.00	CARBON	8/10/2021 3:22 PM	0.022	0.021	0.043	bl,C2u	22 146	23 616	314	1.0000	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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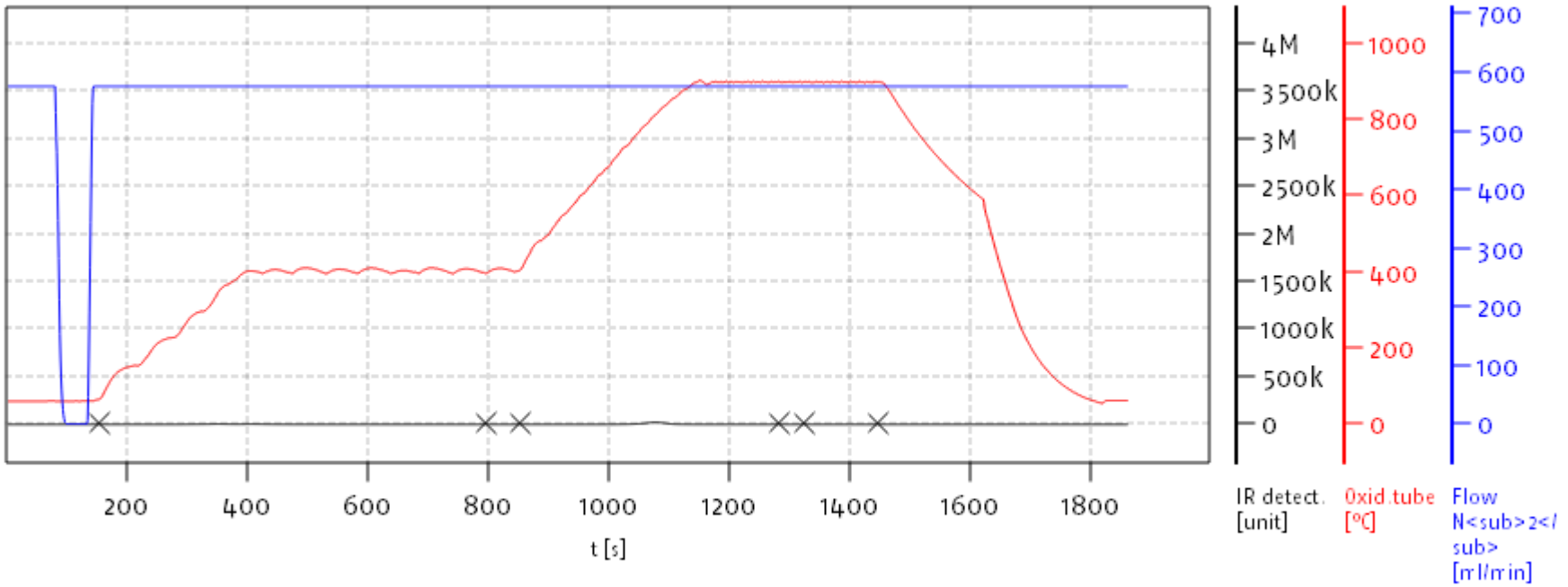
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
6	6	SJH0113-CAL4	200.00	0.0103	1.00	CARBON	8/10/2021 3:54 PM	0.018	0.032	0.050	bl,C2u	17 342	38 128	280	1.0000	1.0000



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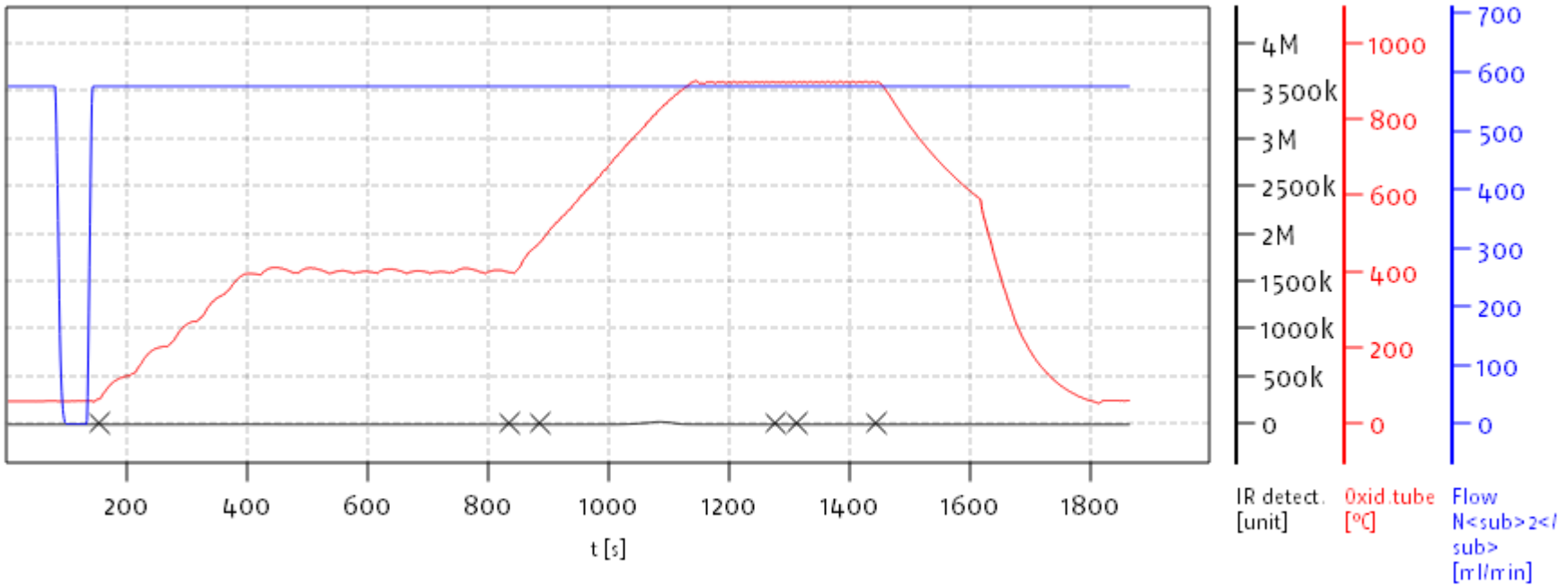
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
7	7	SJH0113-CAL5	200.00	0.0150	1.00	CARBON	8/10/2021 4:25 PM	0.009	0.046	0.055	bl,C1u,C2u	6 405	55 349	275	1.0000	1.0000



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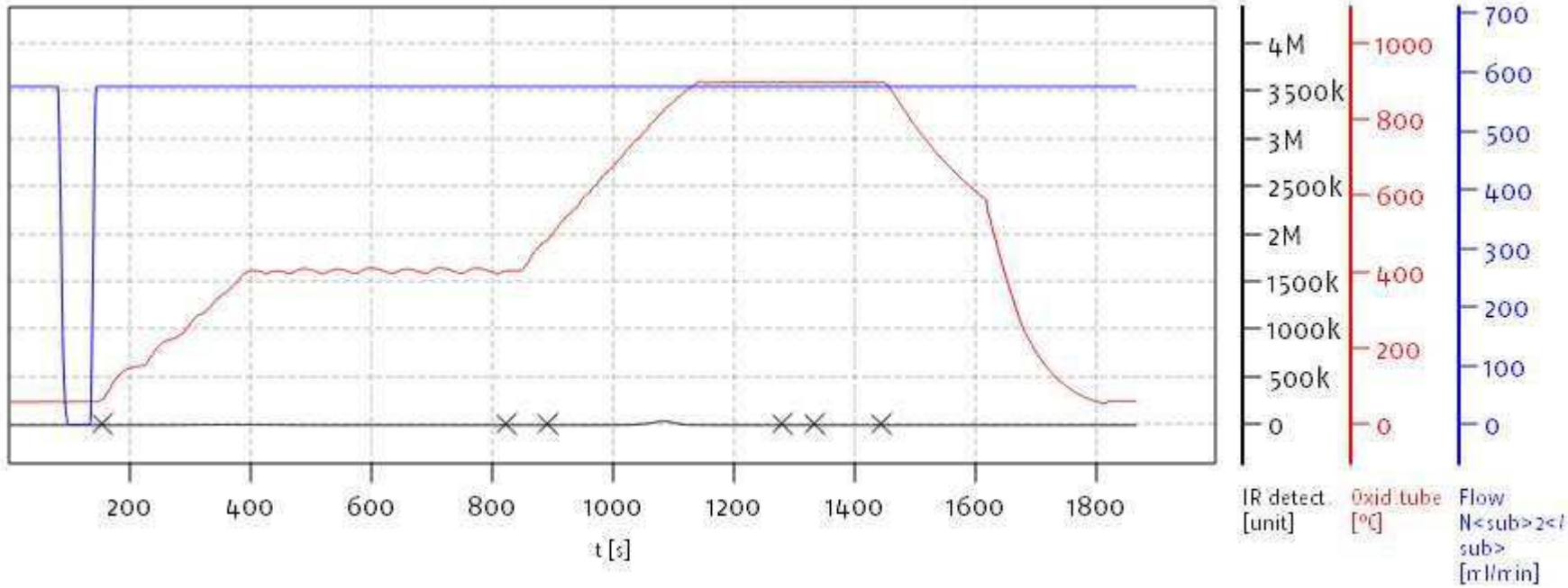
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
8	8	SJH0113-CAL6	200.00	0.0199	1.00	CARBON	8/10/2021 4:57 PM	0.024	0.063	0.087	bl,C2u	25 078	76 805	308	1.0000	1.0000



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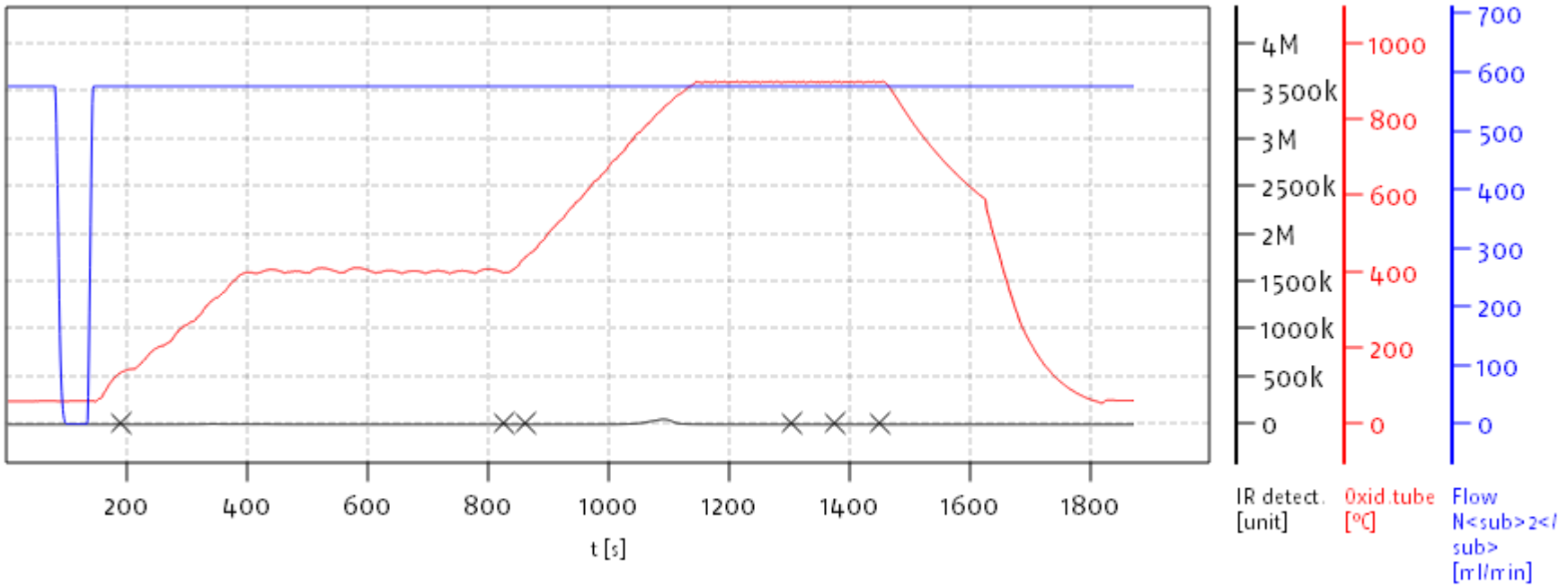
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
9	9	SJH0113-CAL7	200.00	0.0248	1.00	CARBON	8/10/2021 5:28 PM	0.017	0.079	0.096	bl,C2u	16 608	97 209	190	1.0000	1.0000



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Date: Wed Aug 11 13:04:23 2021

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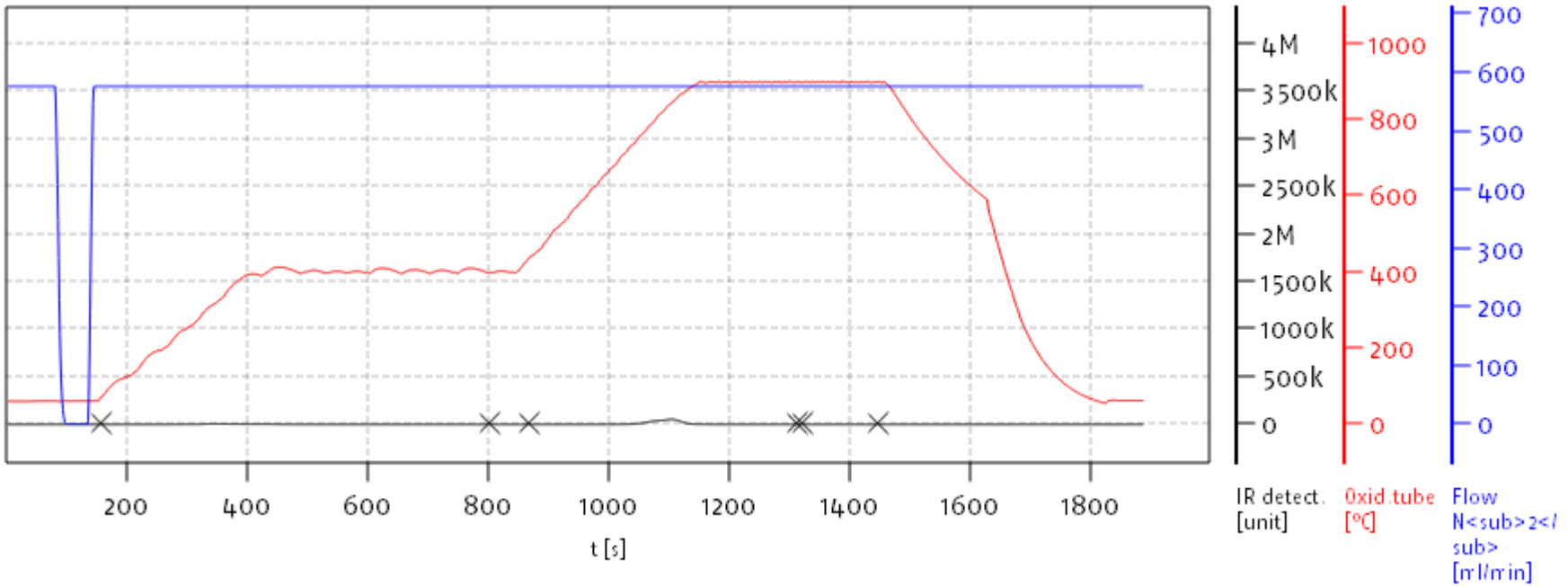
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
10	10	SJH0113-CAL8	200.00	0.0302	1.00	CARBON	8/10/2021 6:00 PM	0.024	0.092	0.116	bl,C2u	24 582	114 459	270	1.0000	1.0000



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Date: Wed Aug 11 13:04:23 2021

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Serial No: 0300.181017
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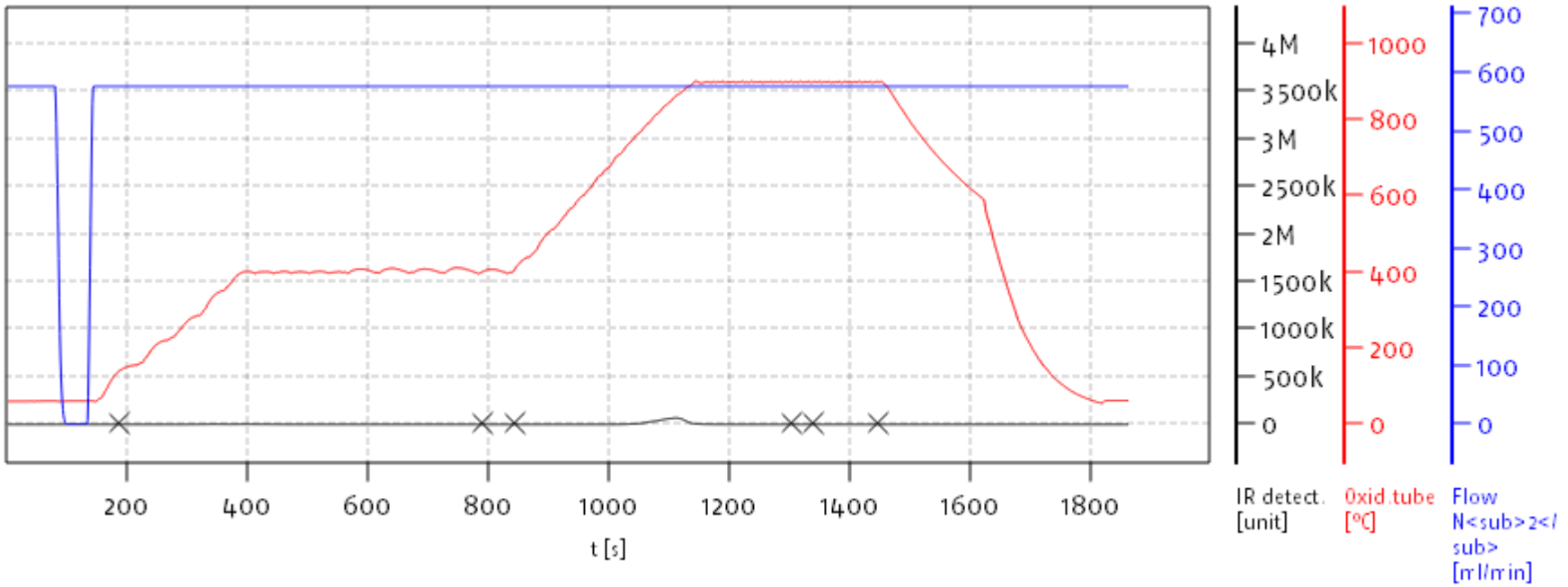
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
11	11	SJH0113-CAL9	200.00	0.0397	1.00	CARBON	8/10/2021 6:32 PM	0.014	0.118	0.132	bl,C2u	12 556	147 448	246	1.0000	1.0000



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Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

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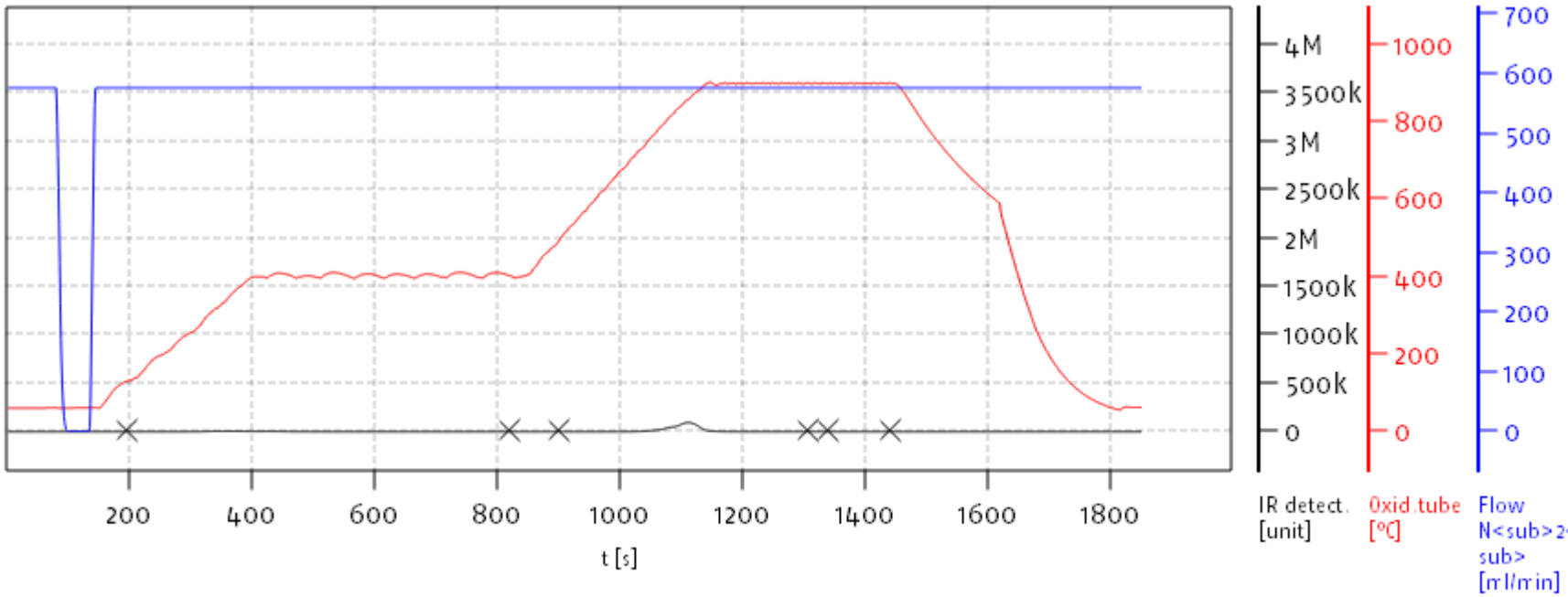
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
12	12	SJH0113-CALA	200.00	0.0497	1.00	CARBON	8/10/2021 7:03 PM	0.024	0.145	0.168	bl,C2u	24 575	180 758	227	1.0000	1.0000



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Soli TOC Cube, Carbon
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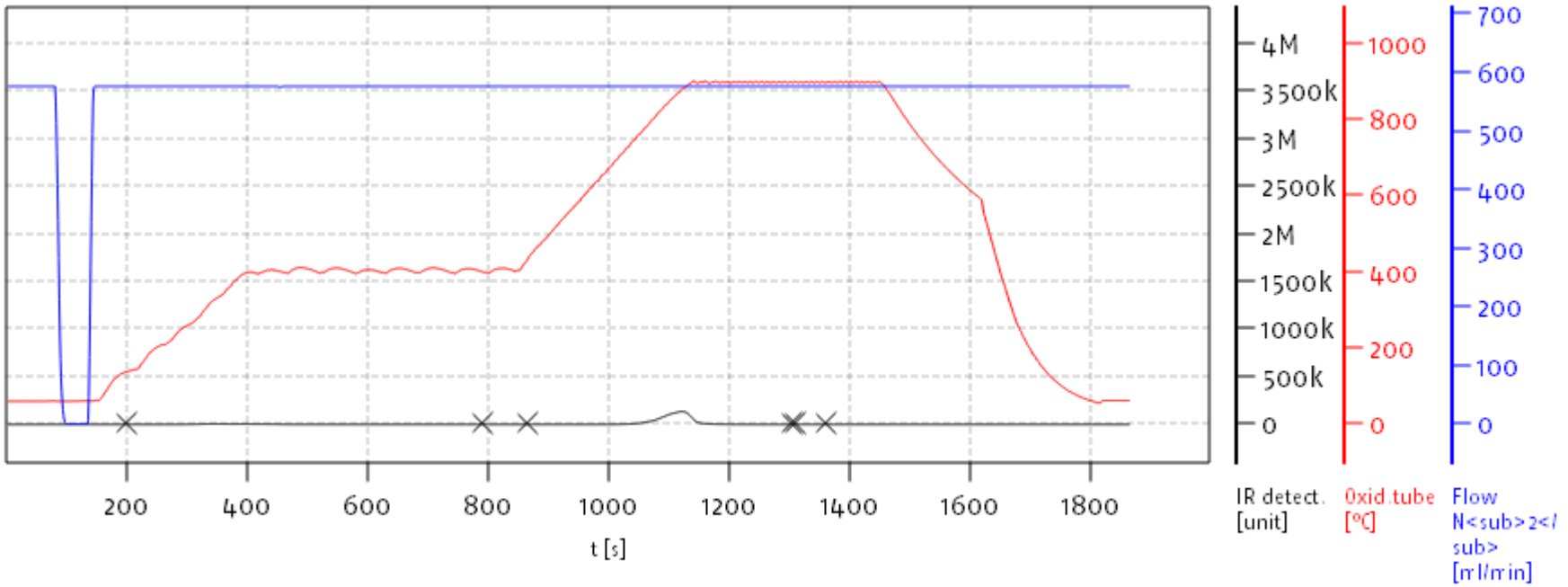
Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
13	13	SJH0113-CALB	200.00	0.0039	1.00	CARBON	8/10/2021 7:34 PM	0.023	0.236	0.260	bl,C2u	24 401	297 056	121	1.0000	1.0000



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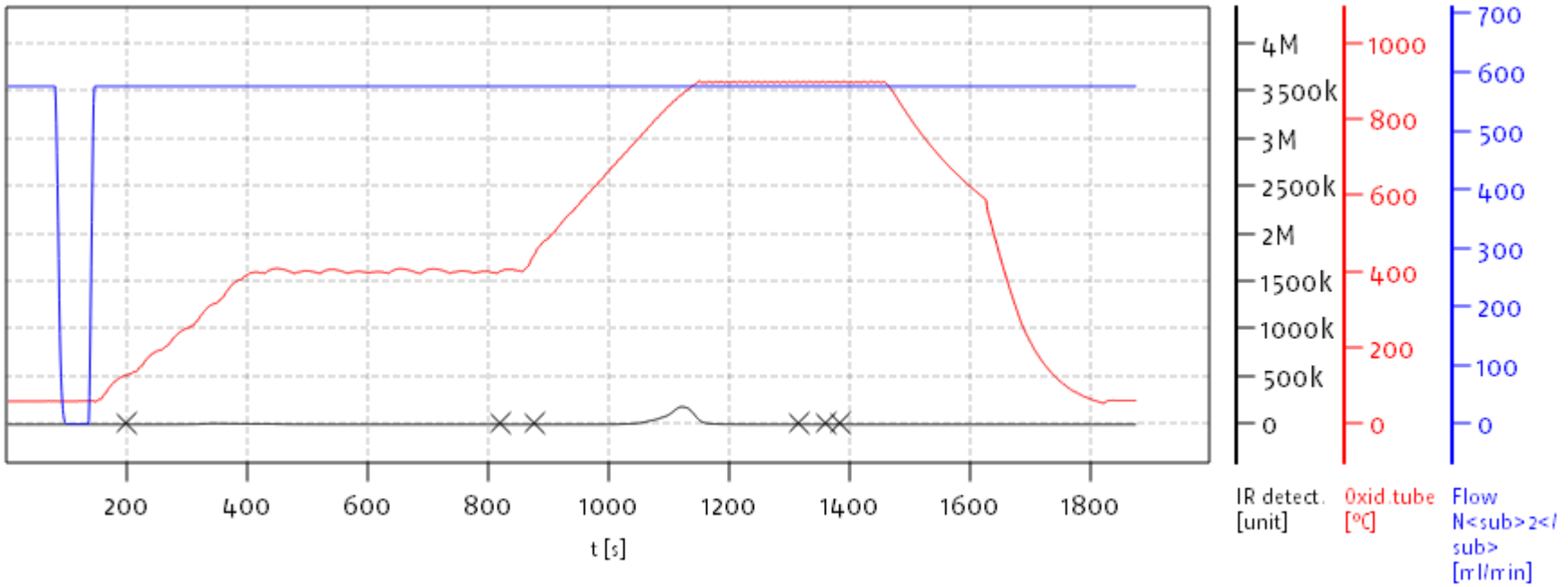
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
14	14	SJH0113-CALC	200.00	0.0052	1.00	CARBON	8/10/2021 8:06 PM	0.036	0.311	0.347	bl,C2u	40 501	391 829	67	1.0000	1.0000



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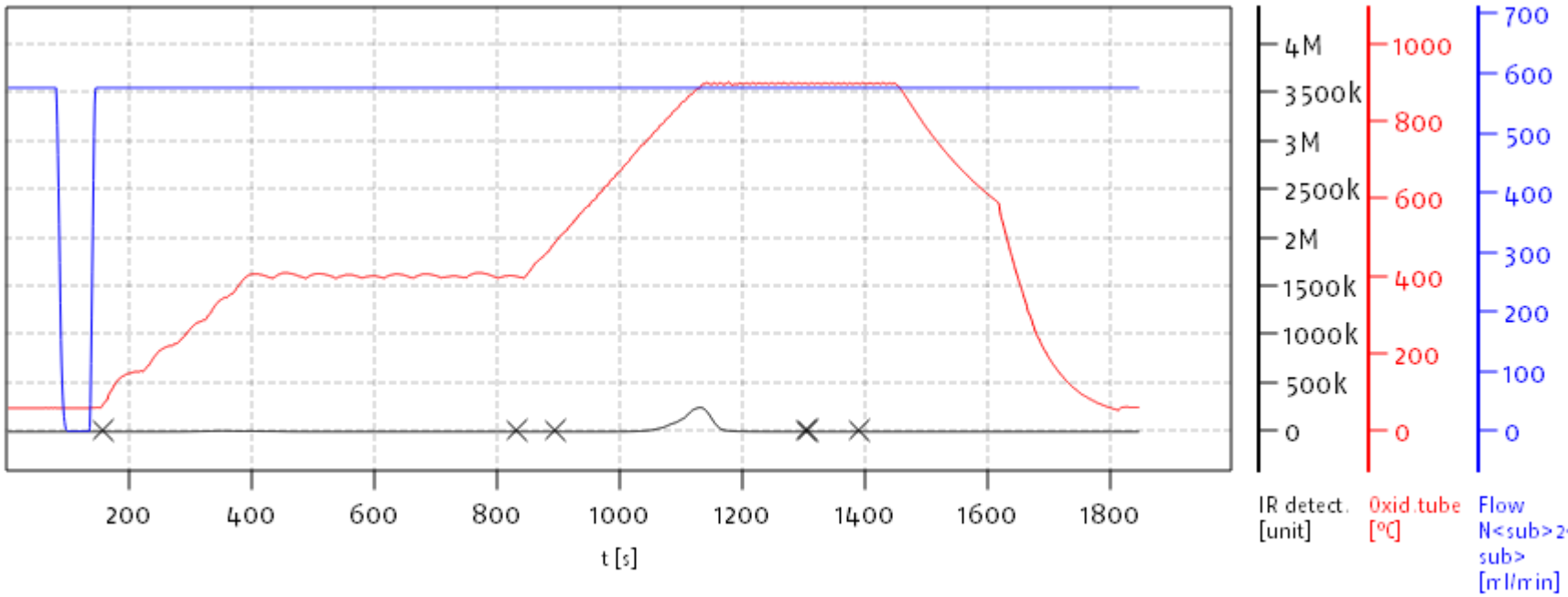
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
15	15	SJH0113-CALD	200.00	0.0072	1.00	CARBON	8/10/2021 8:37 PM	0.032	0.439	0.470	bl,C2u	34 638	553 926	294	1.0000	1.0000



Name:

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elementar
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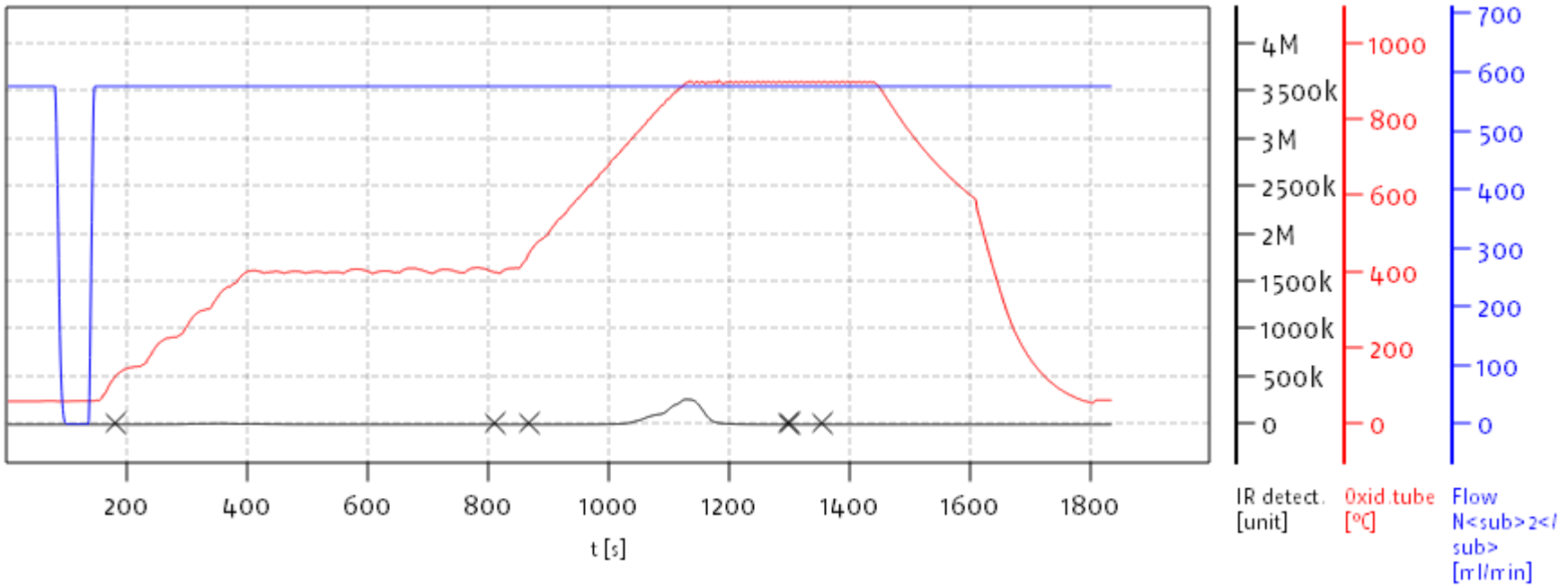
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
16	16	SJH0113-CALE	200.00	0.0098	1.00	CARBON	8/10/2021 9:08 PM	0.037	0.592	0.630	bl,C2u	42 067	748 510	251	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

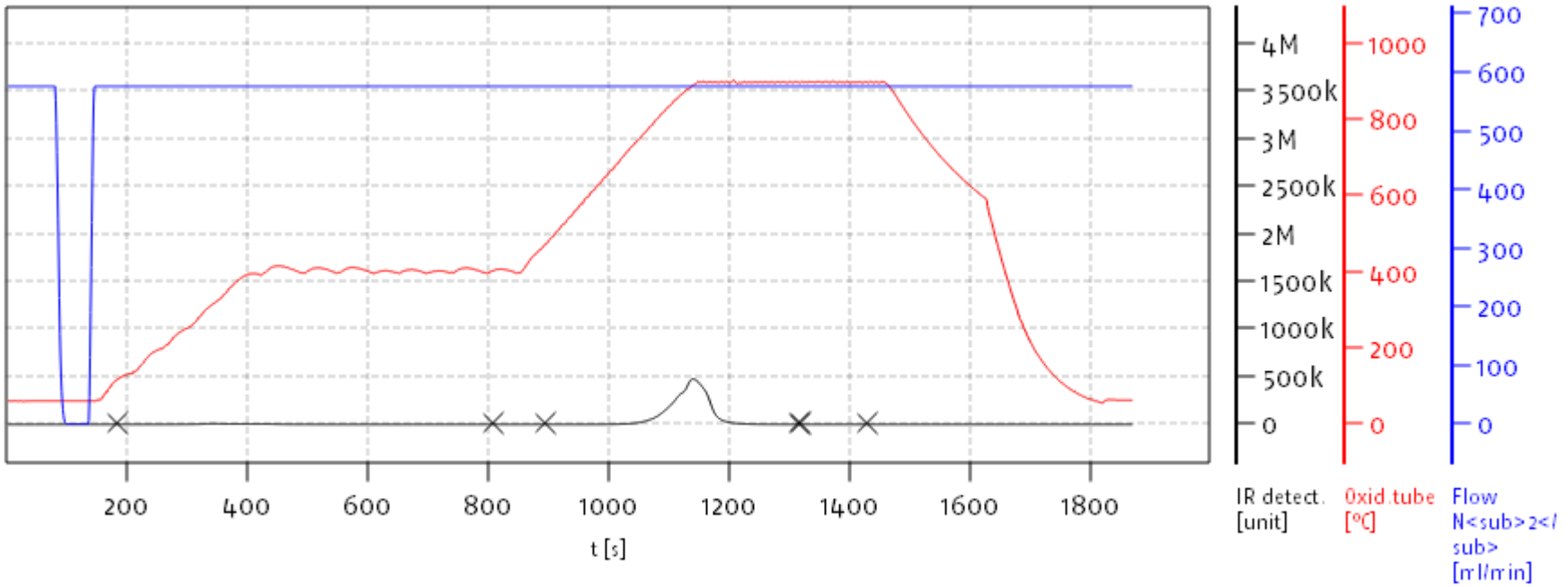
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
17	17	SJH0113-CALF	200.00	0.0150	1.00	CARBON	8/10/2021 9:40 PM	0.030	0.934	0.964	bl,C2u	32 751	1 182 576	479	1.0000	1.0000



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Date: Wed Aug 11 13:04:23 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
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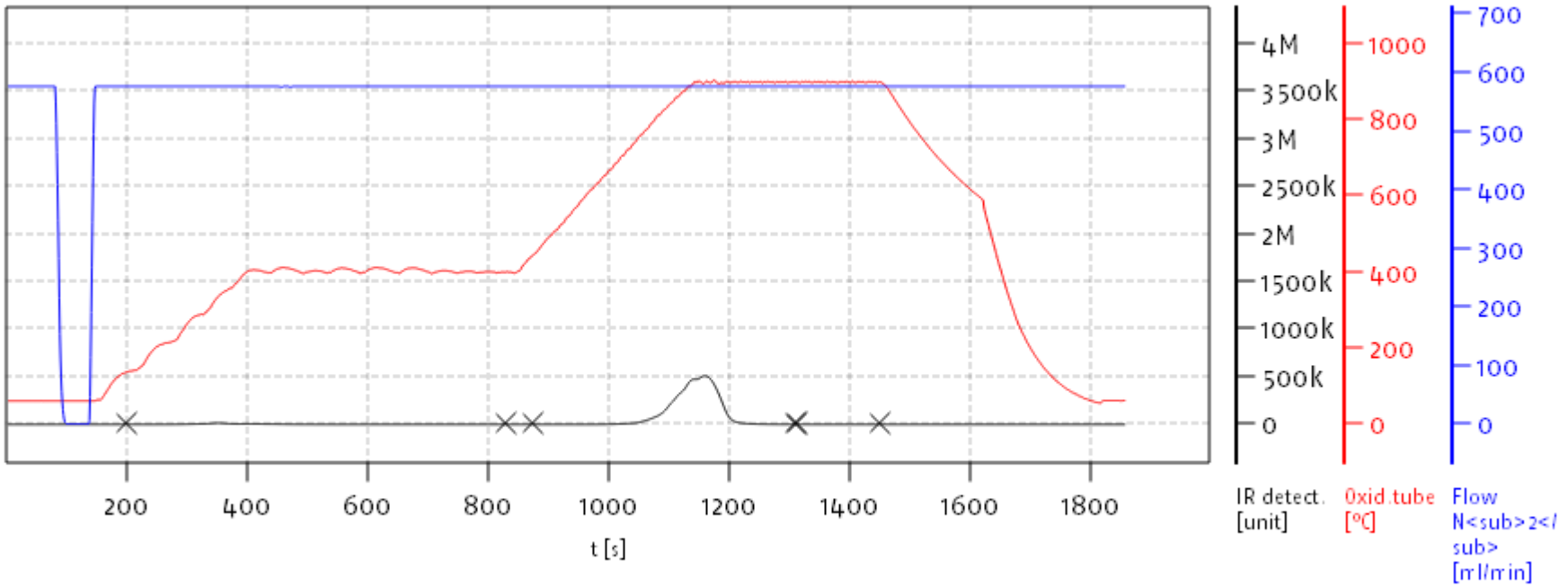
Document: TOC Calibration EH00021 081021BF from: --.--.-- (modified)

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
18	18	SJH0113-CALG	200.00	0.0203	1.00	CARBON	8/10/2021 10:11 PM	0.039	1.249	1.287	bl,C2u	42 932	1 581 667	955	1.0000	1.0000



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Balance: BAL3
Analyst: BF

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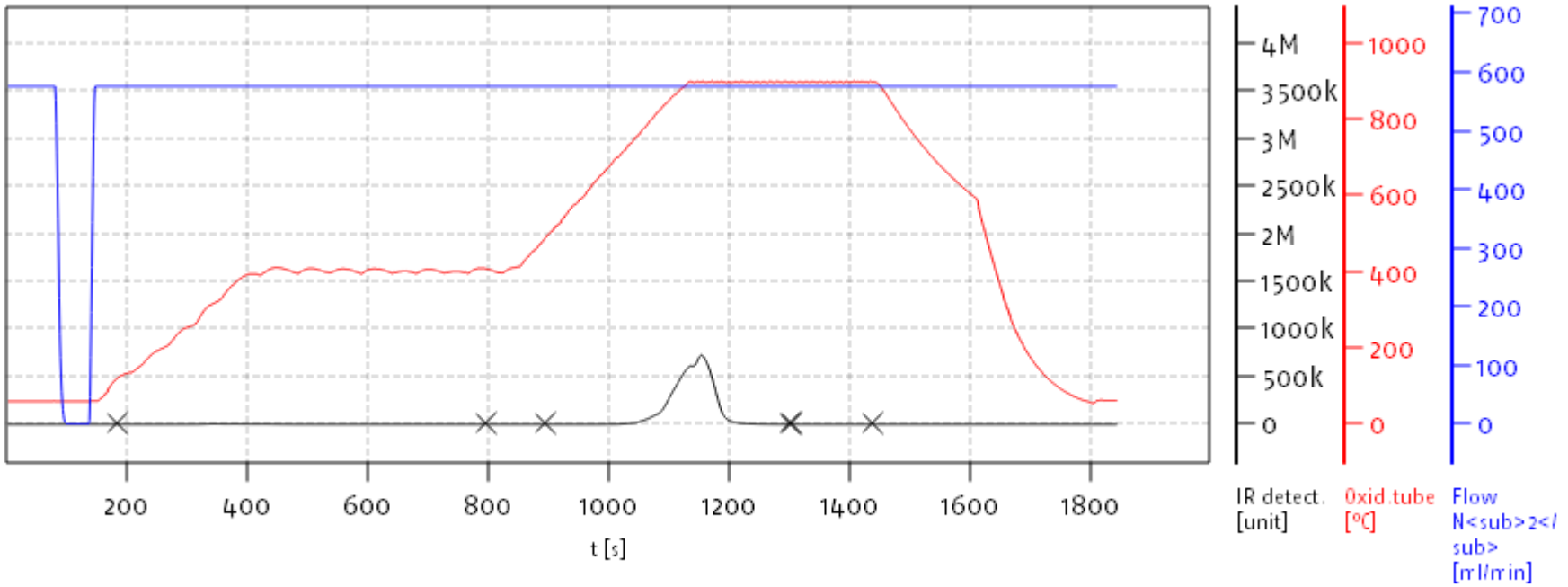
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
19	19	SJH0113-CALH	200.00	0.0251	1.00	CARBON	8/10/2021 10:42 PM	0.019	1.538	1.557	bl,C2u	17 895	1 948 888	1 191	1.0000	1.0000



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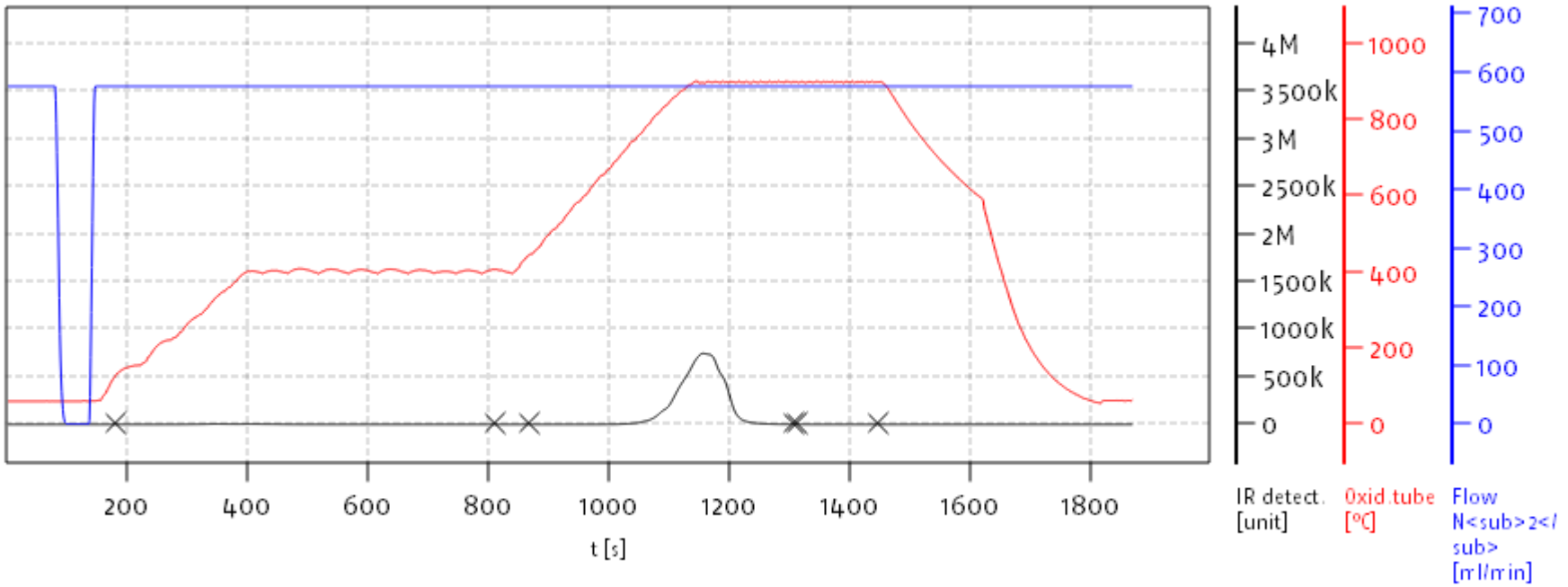
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
20	20	SJH0113-CALI	200.00	0.0304	1.00	CARBON	8/10/2021 11:14 PM	0.024	1.868	1.892	bl,C2u	23 738	2 367 098	1 836	1.0000	1.0000



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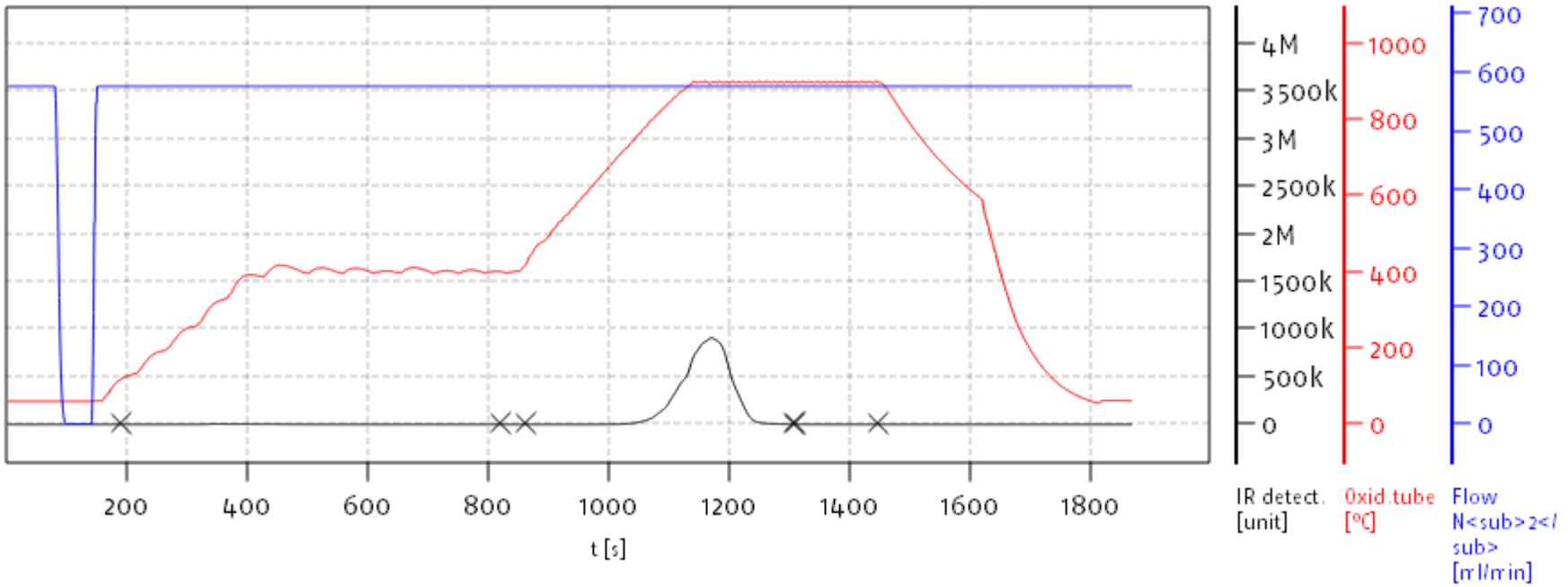
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
21	21	SJH0113-CALJ	200.00	0.0399	1.00	CARBON	8/10/2021 11:45 PM	0.023	2.454	2.477	bl,C2u	21 349	3 110 916	2 579	1.0000	1.0000



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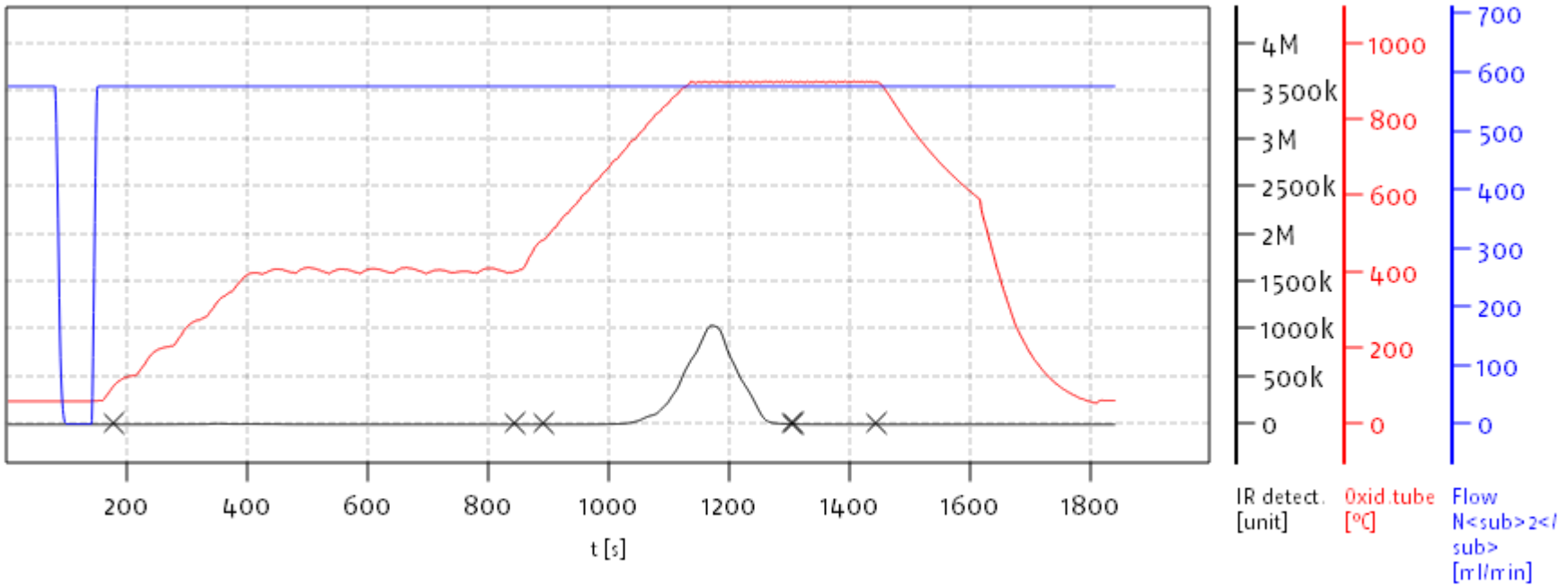
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
22	22	SJH0113-CALK	200.00	0.0500	1.00	CARBON	8/11/2021 12:16 AM	0.030	3.054	3.084	bl,C2u	29 231	3 872 043	4 133	1.0000	1.0000



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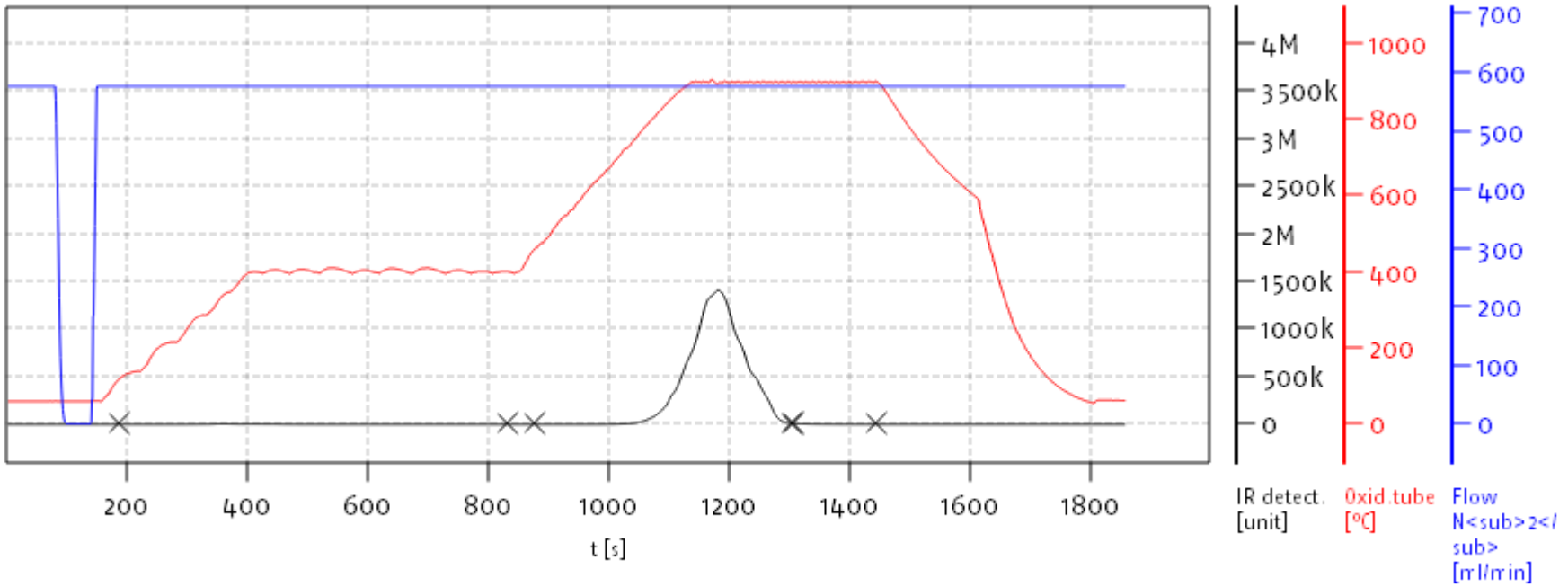
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
23	23	SJH0113-CALL	200.00	0.0699	1.00	CARBON	8/11/2021 12:48 AM	0.028	4.289	4.317	bl	19 838	5 438 583	10 830	1.0000	1.0000



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soliTOC V2.0.2 (31015f9) 2018-11-19
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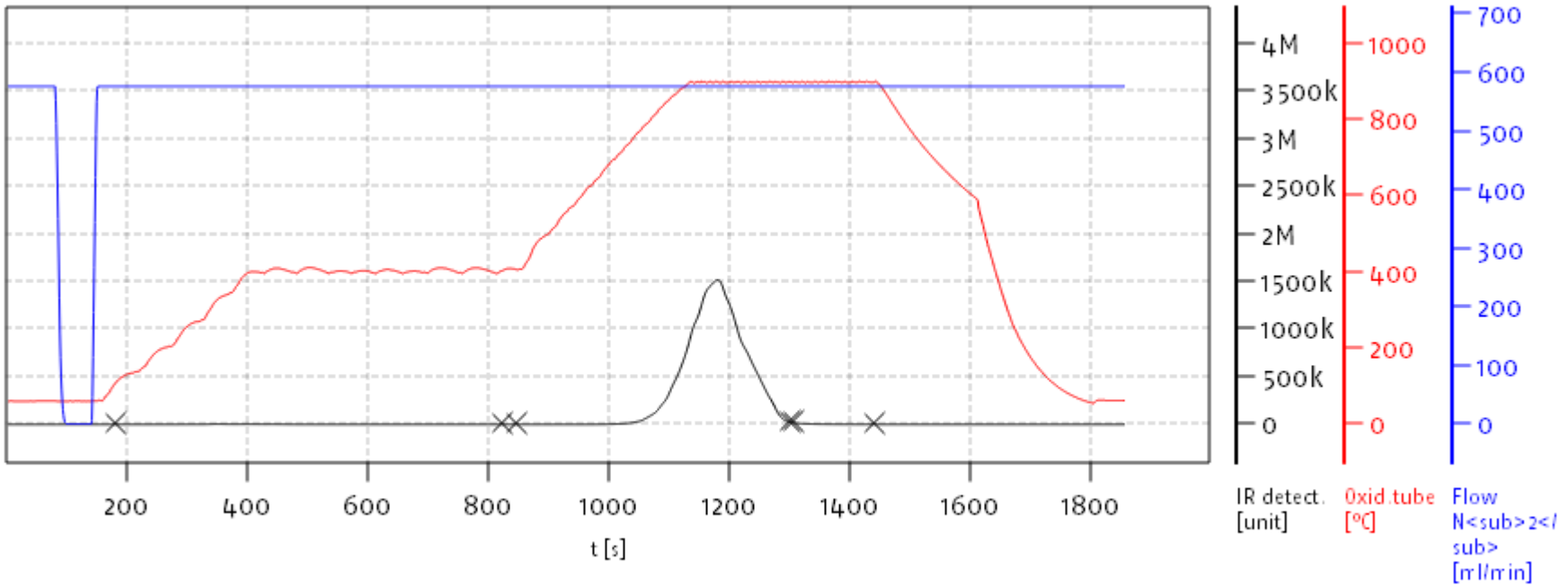
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
24	24	SJH0113-CALM	200.00	0.0801	1.00	CARBON	8/11/2021 1:19 AM	0.030	4.919	4.949	bl	16 438	6 238 324	16 703	1.0000	1.0000



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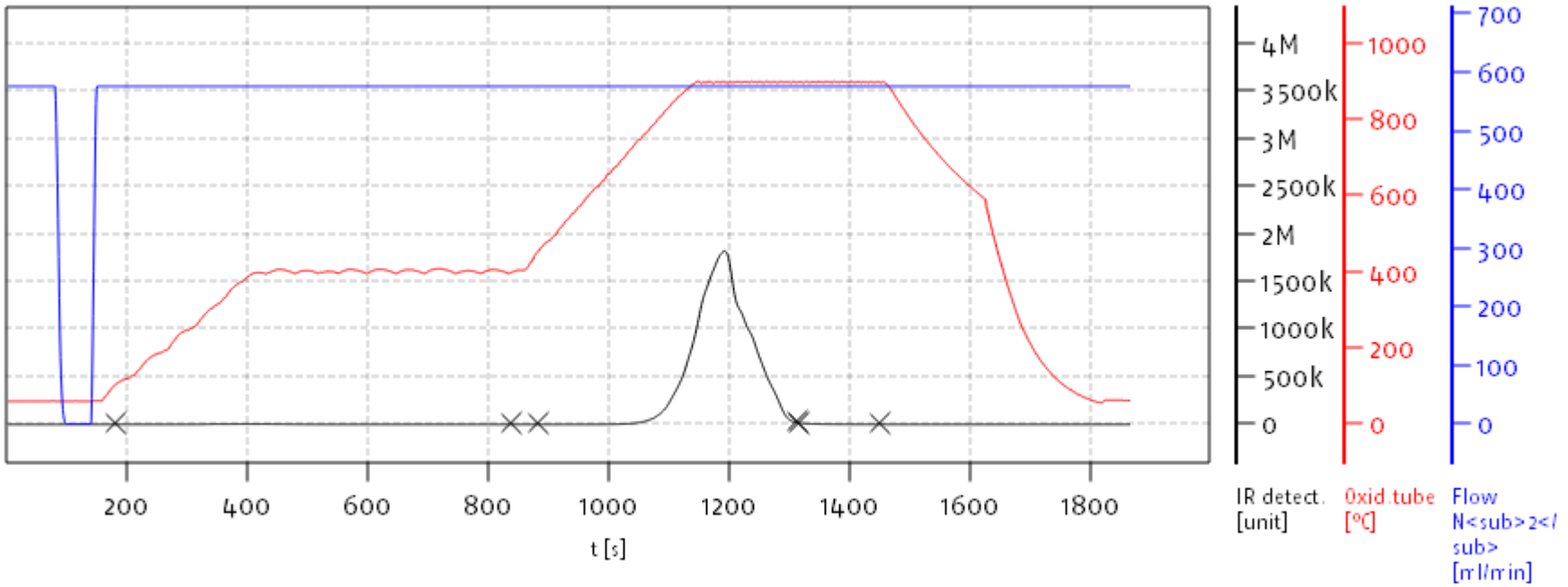
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
25	25	SJH0113-CALN	200.00	0.0903	1.00	CARBON	8/11/2021 1:50 AM	0.035	5.550	5.585	bl	23 597	7 038 842	15 761	1.0000	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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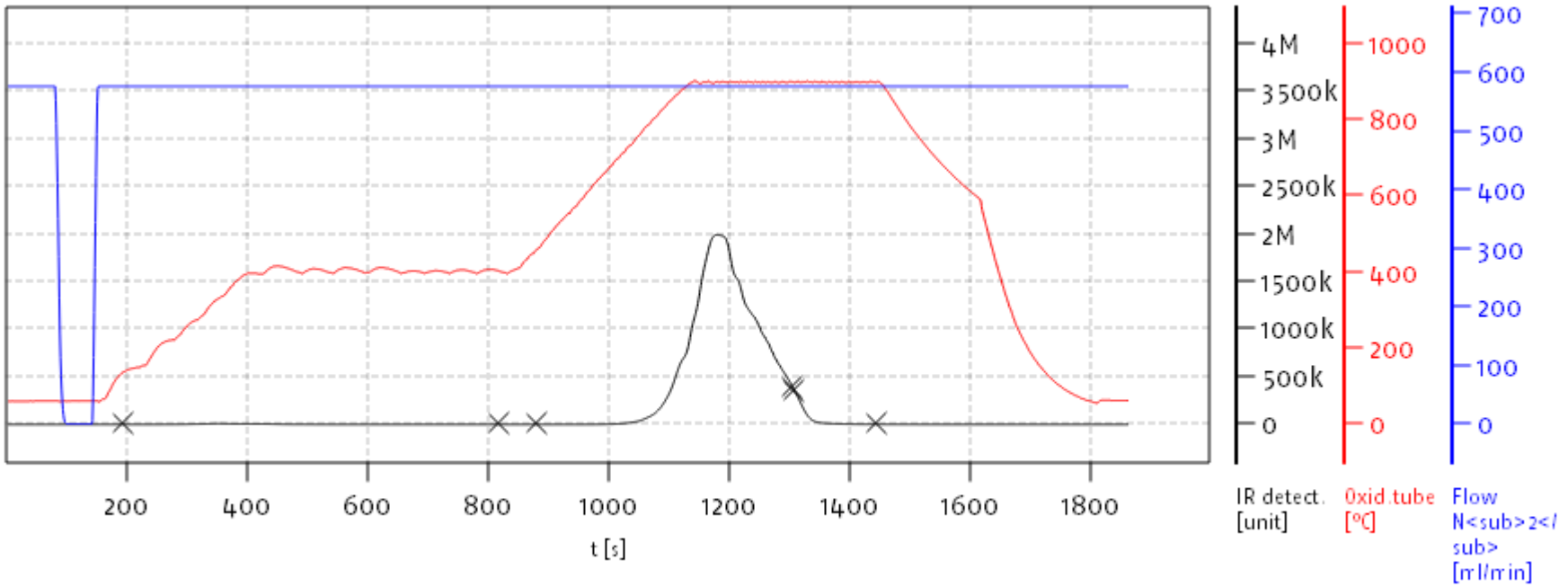
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
26	26	SJH0113-CALO	200.00	0.1198	1.00	CARBON	8/11/2021 2:22 AM	0.206	7.202	7.408	bl,C3o	38 020	9 134 974	218 134	1.0000	1.0000



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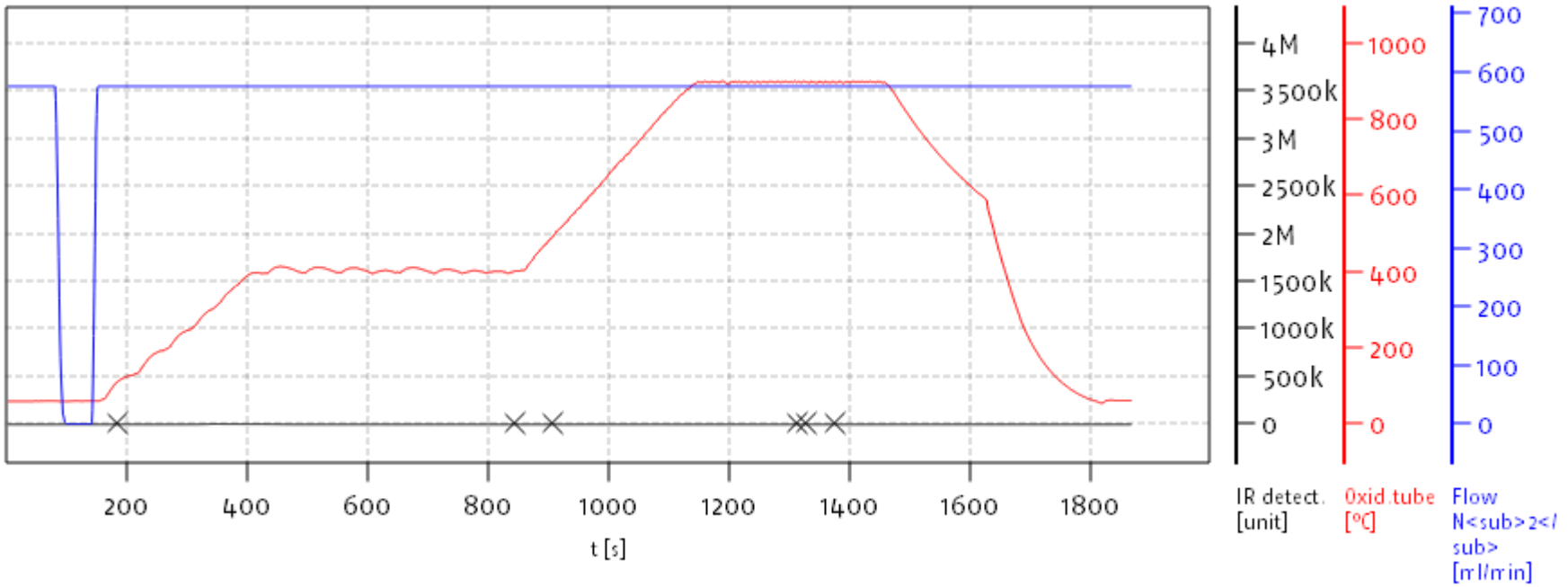
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
27	27	BLANK	1.00		1.00	CARBON	8/11/2021 2:53 AM	0.000	0.000	0.000	bl	19 335	23	0	1.0000	1.0000



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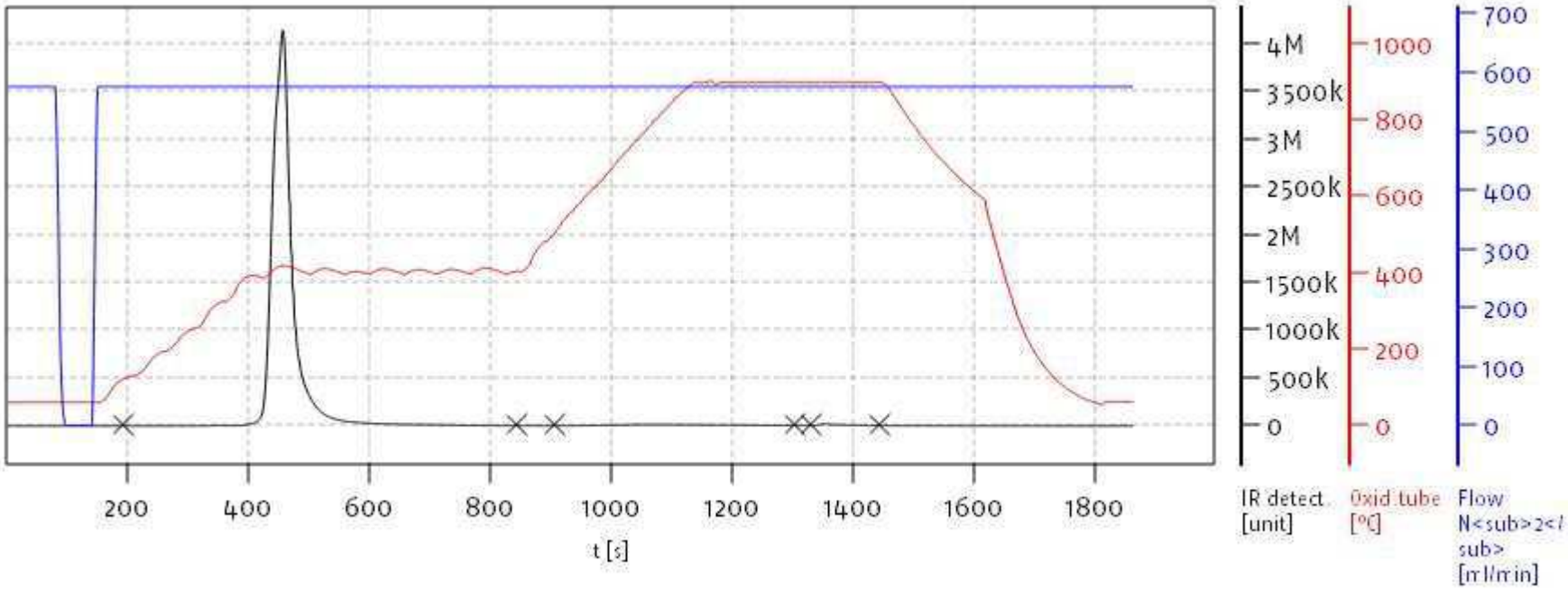
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
28	28	Dfactor	20.90		1.00	CARBON	8/11/2021 3:25 AM	44.744	0.921	45.666	bl	5 800 620	119 521	37 001	1.0154	1.0000



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Balance: BAL3
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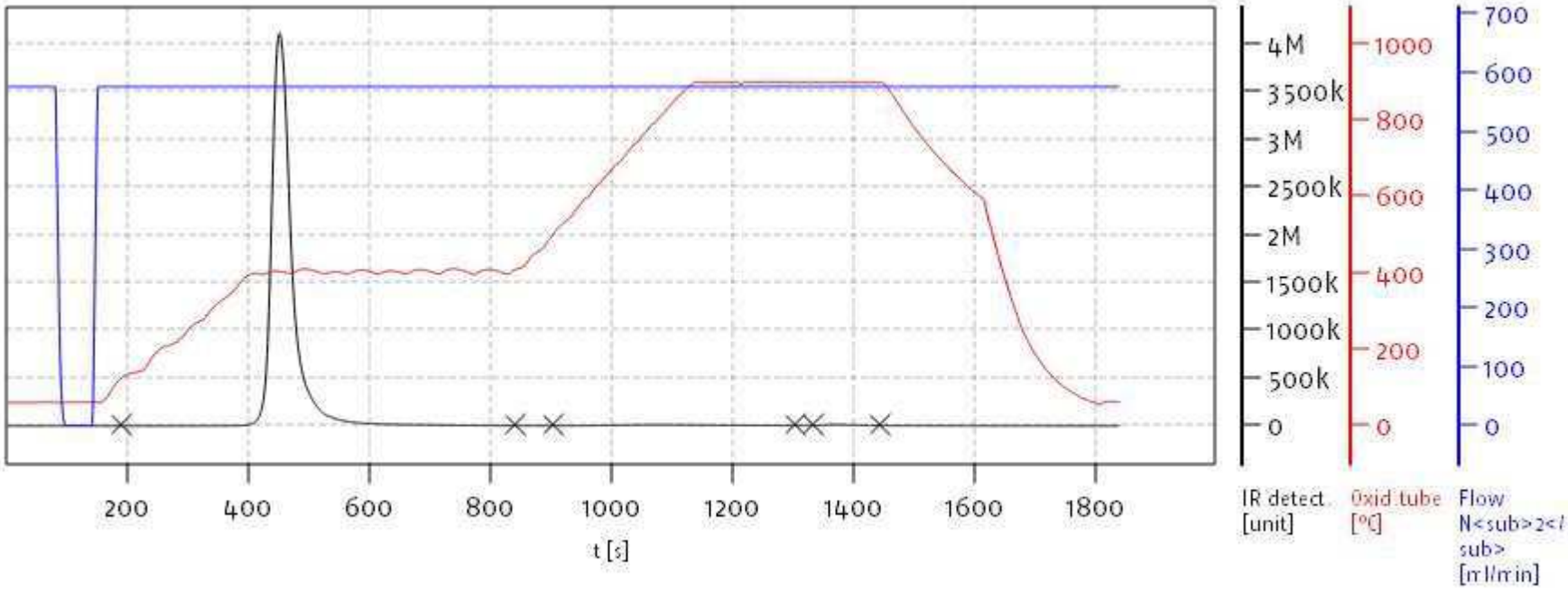
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
29	29	Dfactor	21.50		1.00	CARBON	8/11/2021 3:56 AM	44.697	0.738	45.435	bl	5 956 386	98 039	31 649	1.0173	1.0000



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Soli TOC Cube, Carbon
Balance: BAL3
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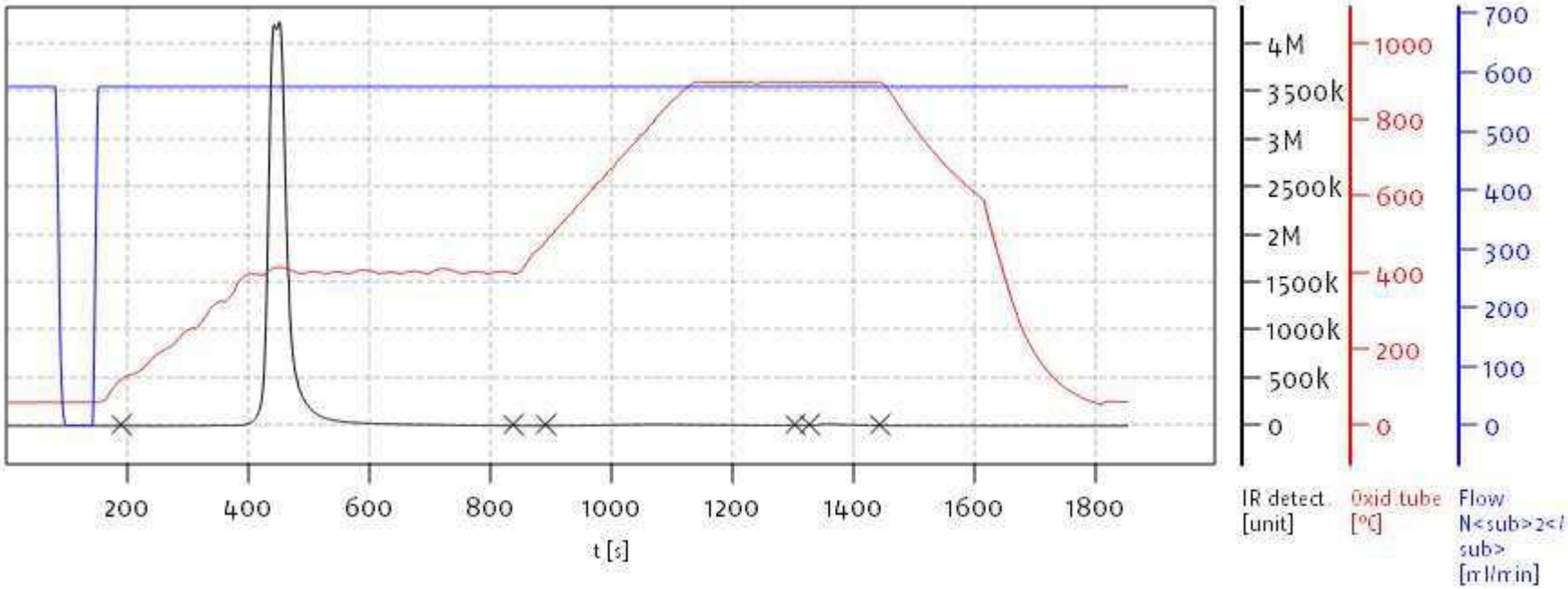
Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
30	30	SJH0113-ICV1	21.40		1.00	CARBON	8/11/2021 4:27 AM	44.407	0.930	45.337	bl	5 886 637	123 684	40 335	1.0163	1.0000



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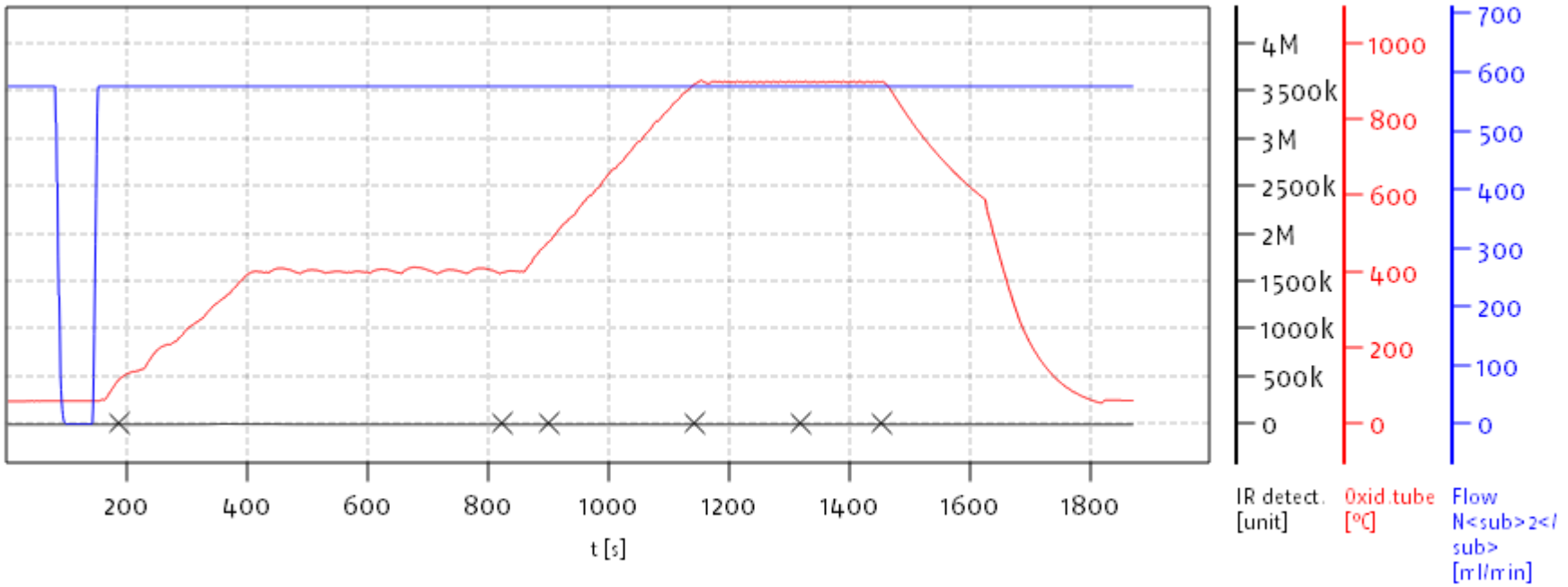
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
31	31	SJH0113-ICB1	613.30		1.00	CARBON	8/11/2021 4:59 AM	0.007	0.001	0.008	bl,C3u,C2u	20 520	1 826	970	1.0163	1.0000



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Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00065	Instrument:	TOC Cube
Calibration Date:	08/24/2021 17:16		

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.005112	1267041	0.01624	1156589	0.020451	1208352	0.030375	1027852	0.045412	1355038	0.060149	1226039
Total Carbon	0.005112	1267041	0.01624	1156589	0.020451	1208352	0.030375	1027852	0.045412	1355038	0.060149	1226039
Total Inorganic Carbon	0.005112	1267041	0.01624	1156589	0.020451	1208352	0.030375	1027852	0.045412	1355038	0.060149	1226039
% Soot	0.005112	1267041	0.01624	1156589	0.020451	1208352	0.030375	1027852	0.045412	1355038	0.060149	1226039

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00065	Instrument:	TOC Cube
Calibration Date:	08/24/2021 17:16		

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.076991	1301360	0.091126	1300200	0.1191	1370840	0.14977	1231288	0.252	1210857	0.336	1231923
Total Carbon	0.076991	1301360	0.091126	1300200	0.1191	1370840	0.14977	1231288	0.252	1210857	0.336	1231923
Total Inorganic Carbon	0.076991	1301360	0.091126	1300200	0.1191	1370840	0.14977	1231288	0.252	1210857	0.336	1231923
% Soot	0.076991	1301360	0.091126	1300200	0.1191	1370840	0.14977	1231288	0.252	1210857	0.336	1231923

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00065	Instrument:	TOC Cube
Calibration Date:	08/24/2021 17:16		

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.414	1268309	0.582	1278292	0.882	1265125	1.194	1264020	1.518	1271667	1.812	1261887
Total Carbon	0.414	1268309	0.582	1278292	0.882	1265125	1.194	1264020	1.518	1271667	1.812	1261887
Total Inorganic Carbon	0.414	1268309	0.582	1278292	0.882	1265125	1.194	1264020	1.518	1271667	1.812	1261887
% Soot	0.414	1268309	0.582	1278292	0.882	1265125	1.194	1264020	1.518	1271667	1.812	1261887

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00065	Instrument:	TOC Cube
Calibration Date:	08/24/2021 17:16		

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	2.4	1255529	2.988	1141805	4.194	1173122	4.818	1173843	5.412	1191617	7.224	1189552
Total Carbon	2.4	1255529	2.988	1141805	4.194	1173122	4.818	1173843	5.412	1191617	7.224	892723
Total Inorganic Carbon	2.4	1255529	2.988	1141805	4.194	1173122	4.818	1173843	5.412	1191617	7.224	892723
% Soot	2.4	1255529	2.988	1141805	4.194	1173122	4.818	1173843	5.412	1191617	7.224	892723

Analytical Resources, Incorporated
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INITIAL CALIBRATION DATA

EPA 9060A m

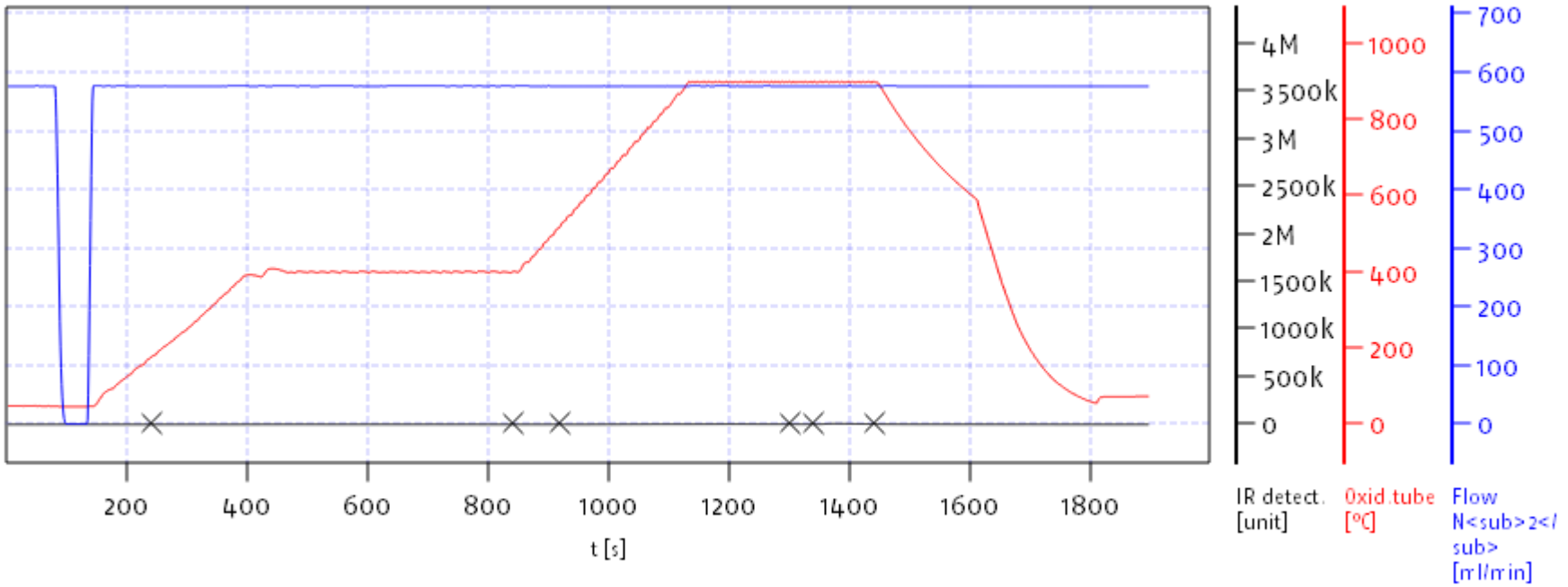
Laboratory:	Analytical Resources, Inc.	SDG:	21H0078
Client:	Anchor QEA, LLC	Project:	Lower Duwamish AOC4
Calibration:	EH00065	Instrument:	TOC Cube
Calibration Date:	08/24/2021 17:16		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Total Organic Carbon	1234256	5.9	0.9993			
Total Carbon	1221888	8.2	0.9742			
Total Inorganic Carbon	1221888	8.2	0.9742			
% Soot	1221888	8.2	0.9742			

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
1	9	BLANK	1.00		1.00	CARBON	8/24/2021 6:00 PM	0.000	0.000	0.000	bl	13 861	33 454	21 567	1.0000	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

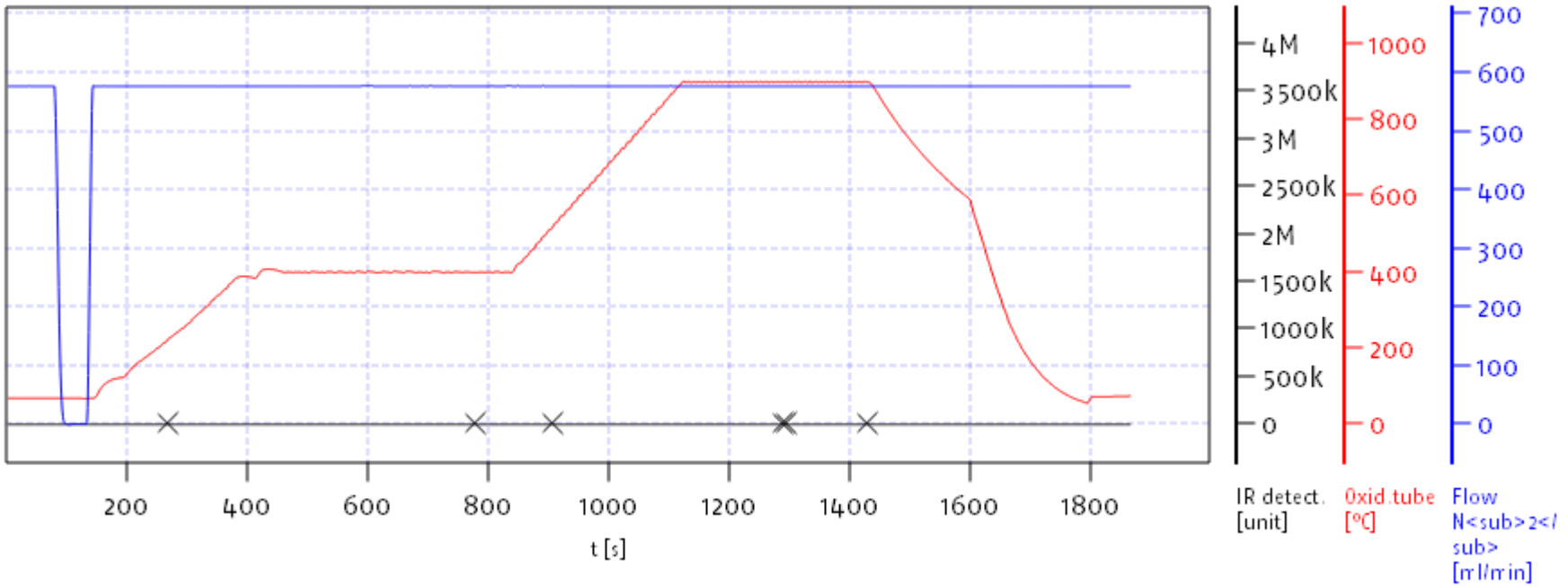
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00065 082421BFb from: 8/25/2021 11:47 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
2	10	BLANK	1.00		1.00	CARBON	8/24/2021 6:31 PM	0.000	0.000	0.000	bl	1 643	8	245	1.0000	1.0000



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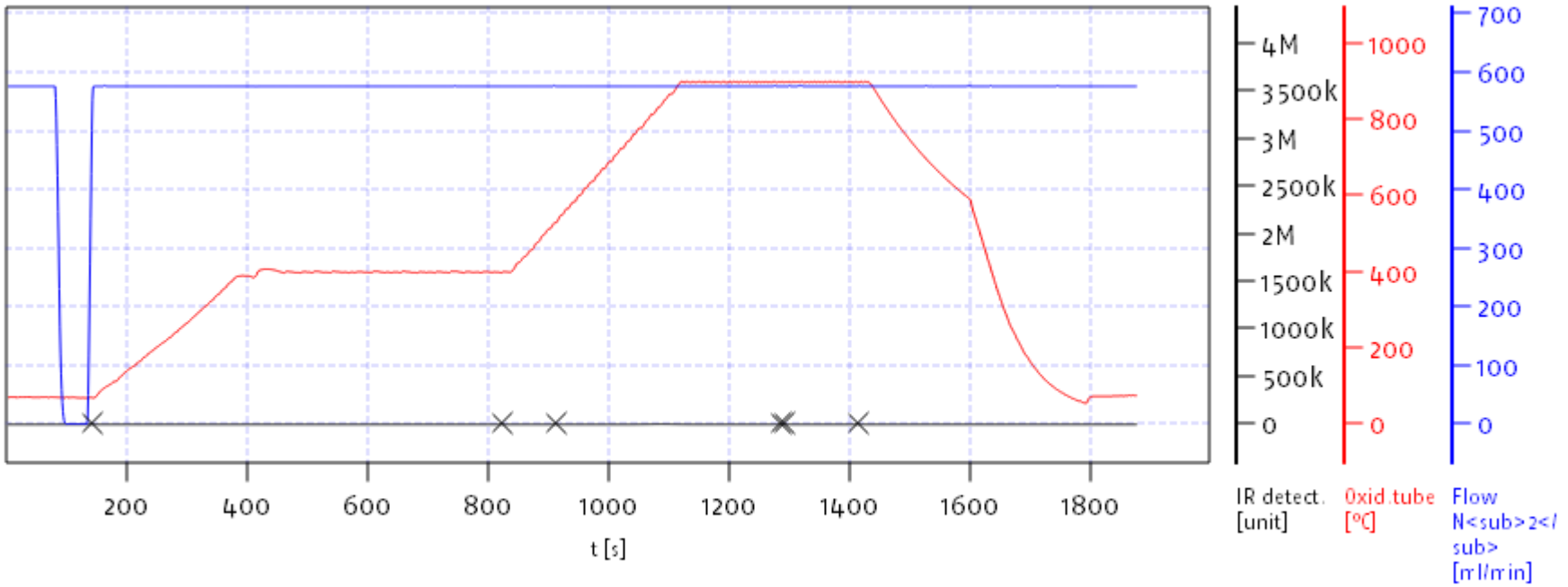
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
3	11	SEQ-CAL1	200.00	0.0017	1.00	CARBON	8/24/2021 7:03 PM	0.000	0.008	0.008	bl,C1u,C3u,C2u	1 070	6 478	141	1.0000	1.1719



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Balance: BAL3
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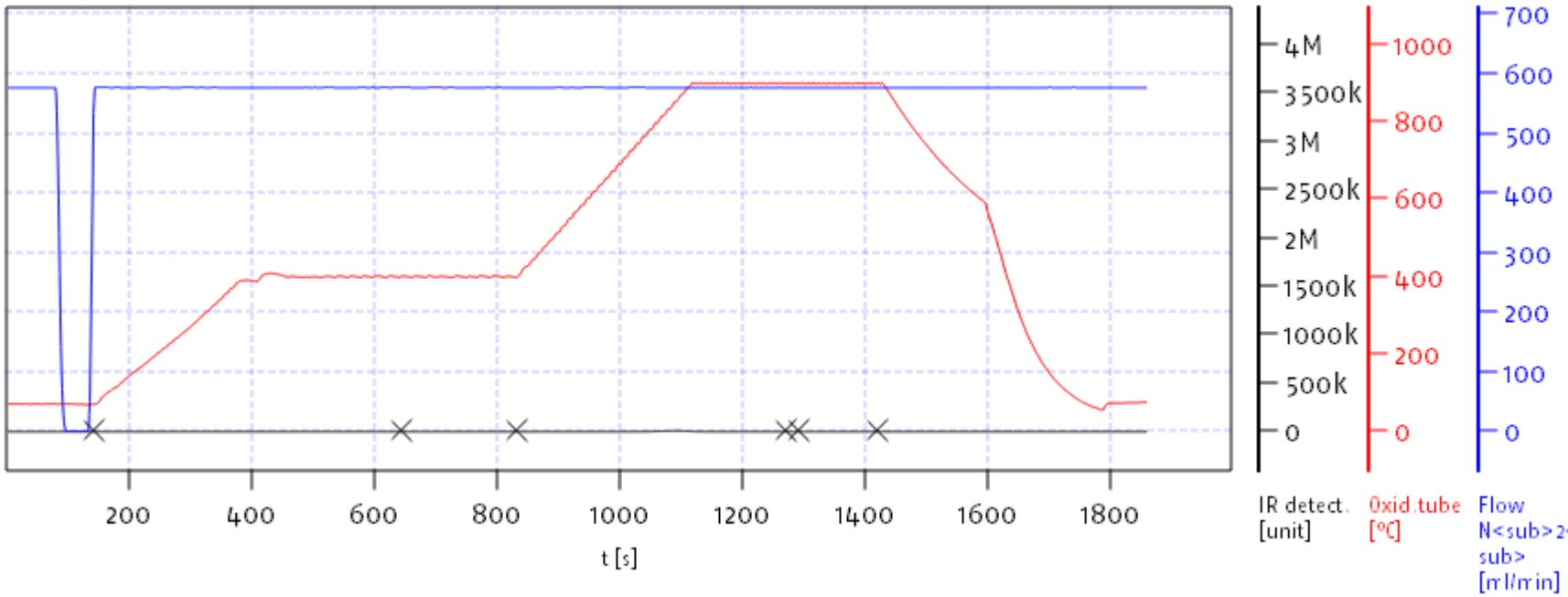
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
4	12	SEQ-CAL2	200.00	0.0054	1.00	CARBON	8/24/2021 7:34 PM	0.000	0.015	0.015	bl,C1u,C2u	660	18 783	85	1.0000	0.9072



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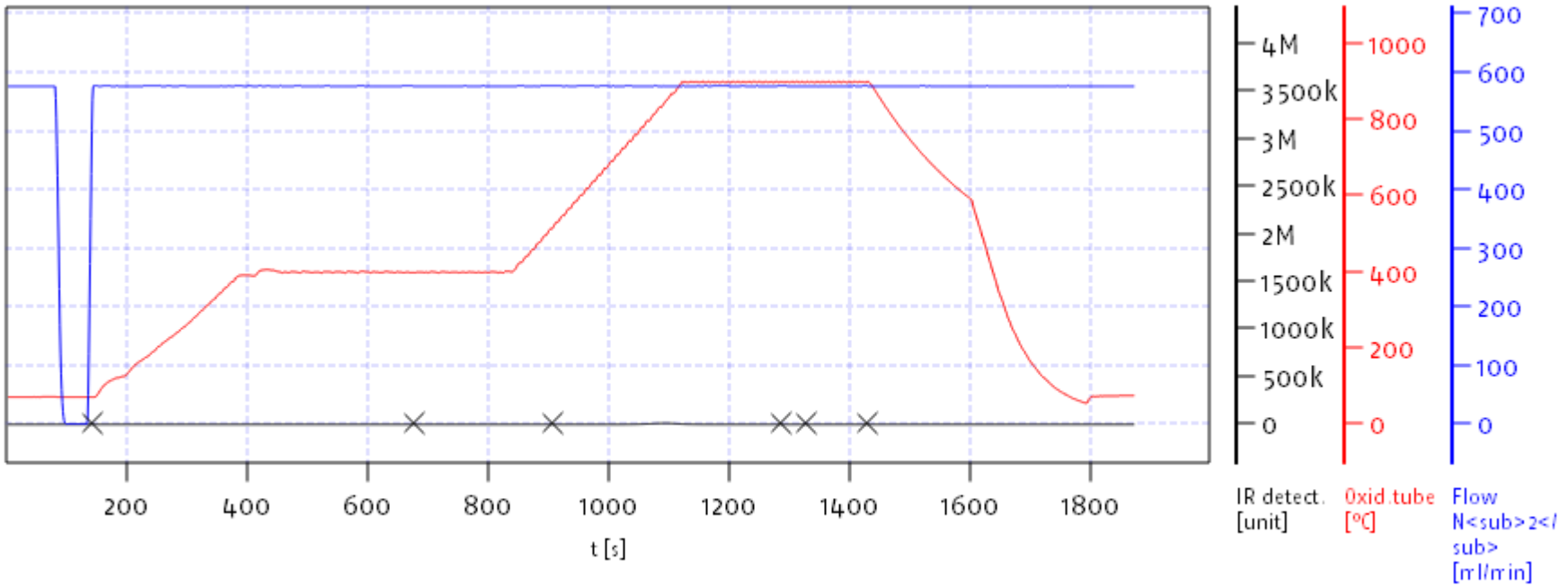
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
5	13	SEQ-CAL3	200.00	0.0068	1.00	CARBON	8/24/2021 8:06 PM	0.000	0.022	0.022	bl,C1u,C2u	889	24 712	60	1.0000	1.0307



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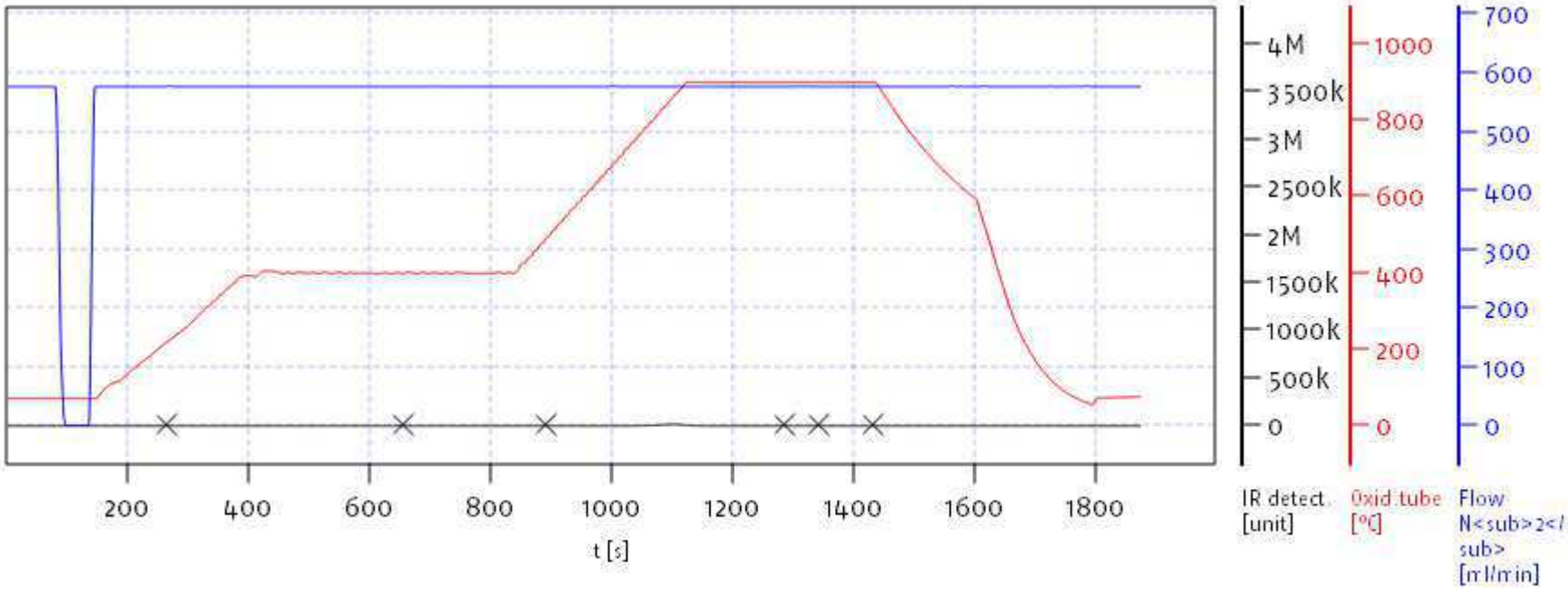
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
6	14	SEQ-CAL4	200.00	0.0101	1.00	CARBON	8/24/2021 8:38 PM	0.000	0.030	0.030	bl,C1u,C2u	1 503	31 221	84	1.0000	1.1361



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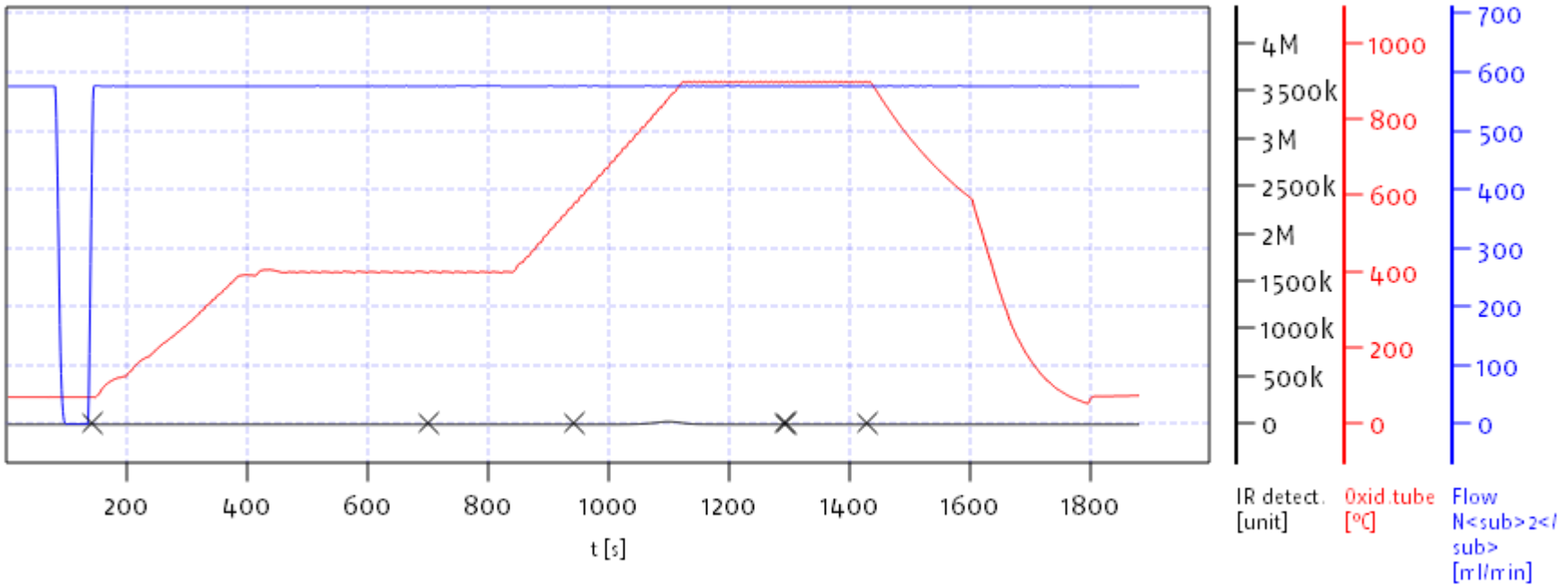
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
7	15	SEQ-CAL5	200.00	0.0151	1.00	CARBON	8/24/2021 9:10 PM	0.000	0.045	0.045	bl,C1u,C2u	776	61 535	62	1.0000	0.8900



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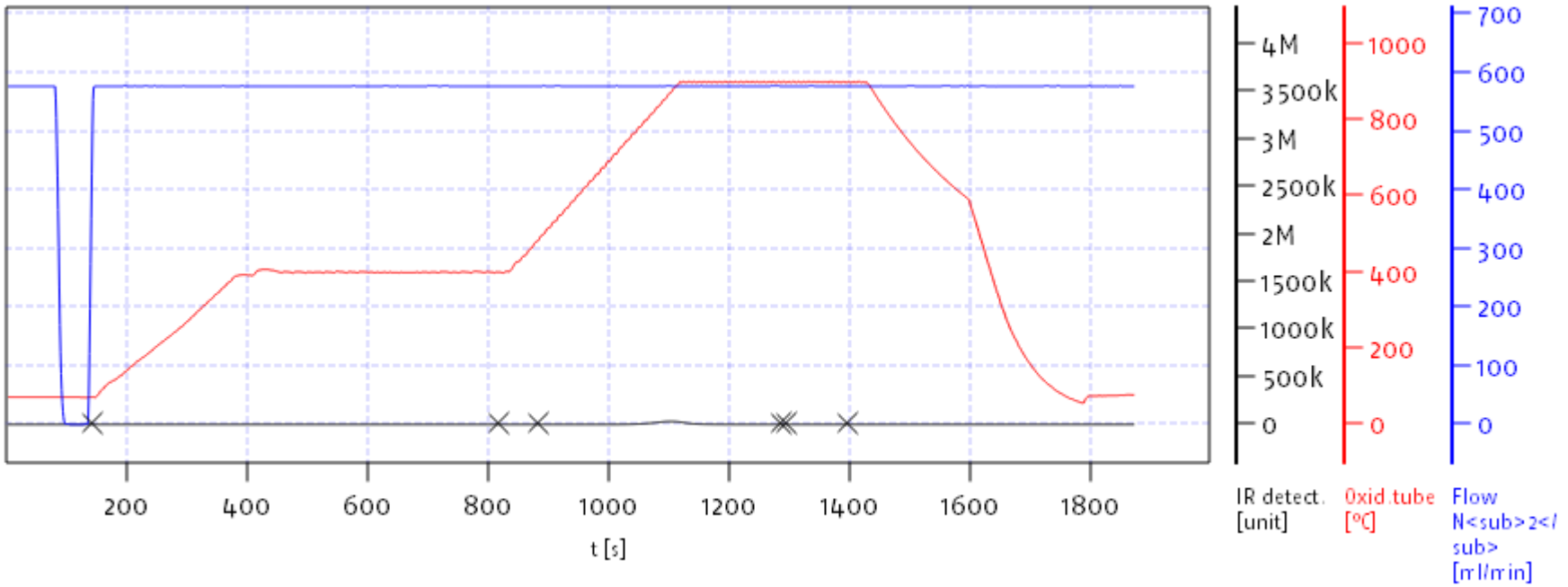
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
8	16	SEQ-CAL6	200.00	0.0200	1.00	CARBON	8/24/2021 9:41 PM	0.000	0.061	0.061	bl,C1u,C2u	1 086	73 745	55	1.0000	1.0168



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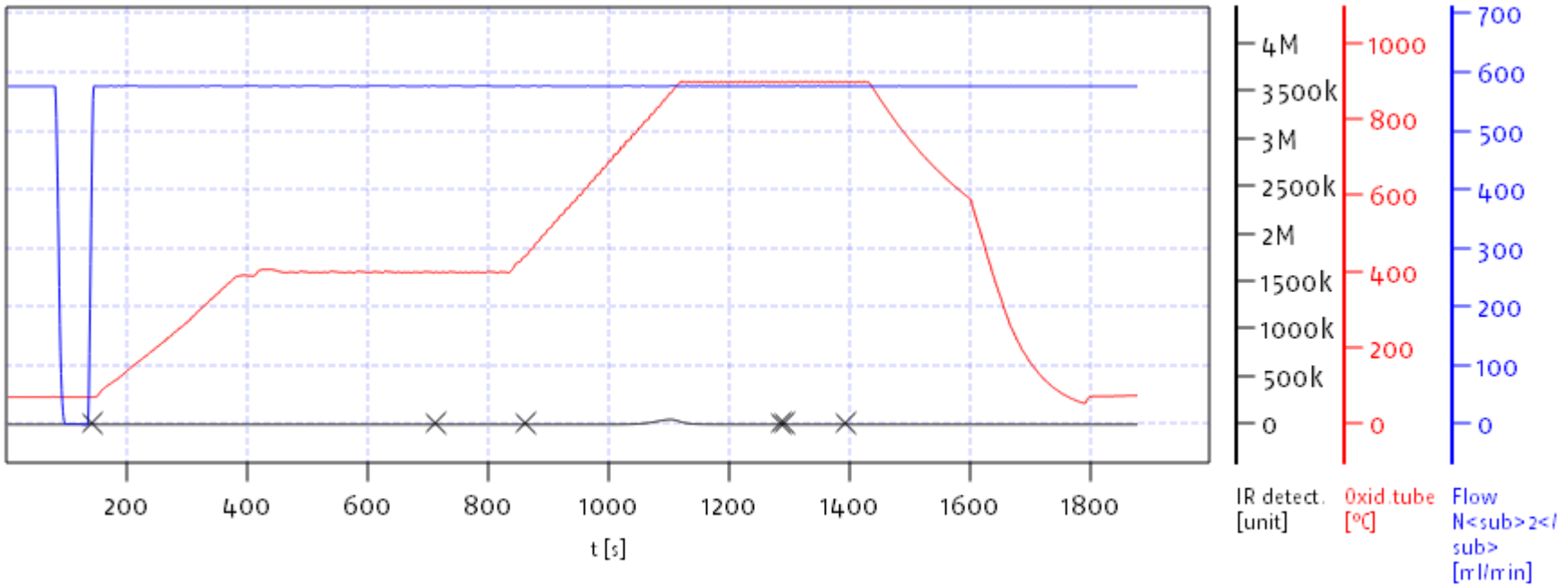
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
9	17	SEQ-CAL7	200.00	0.0256	1.00	CARBON	8/24/2021 10:13 PM	0.000	0.075	0.075	bl,C1u,C2u	1 149	100 193	99	1.0000	0.9293



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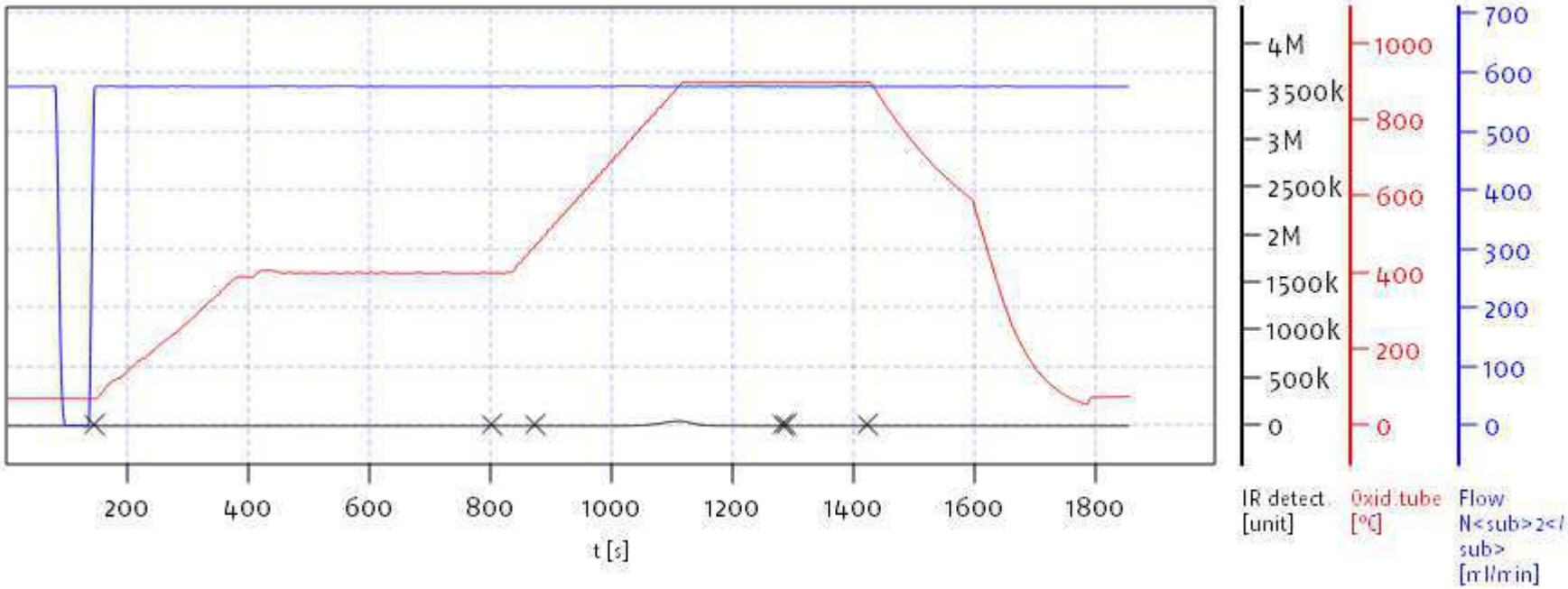
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
10	18	SEQ-CAL8	200.00	0.0303	1.00	CARBON	8/24/2021 10:44 PM	0.000	0.091	0.091	bl,C1u,C2u	779	118 482	109	1.0000	0.9492



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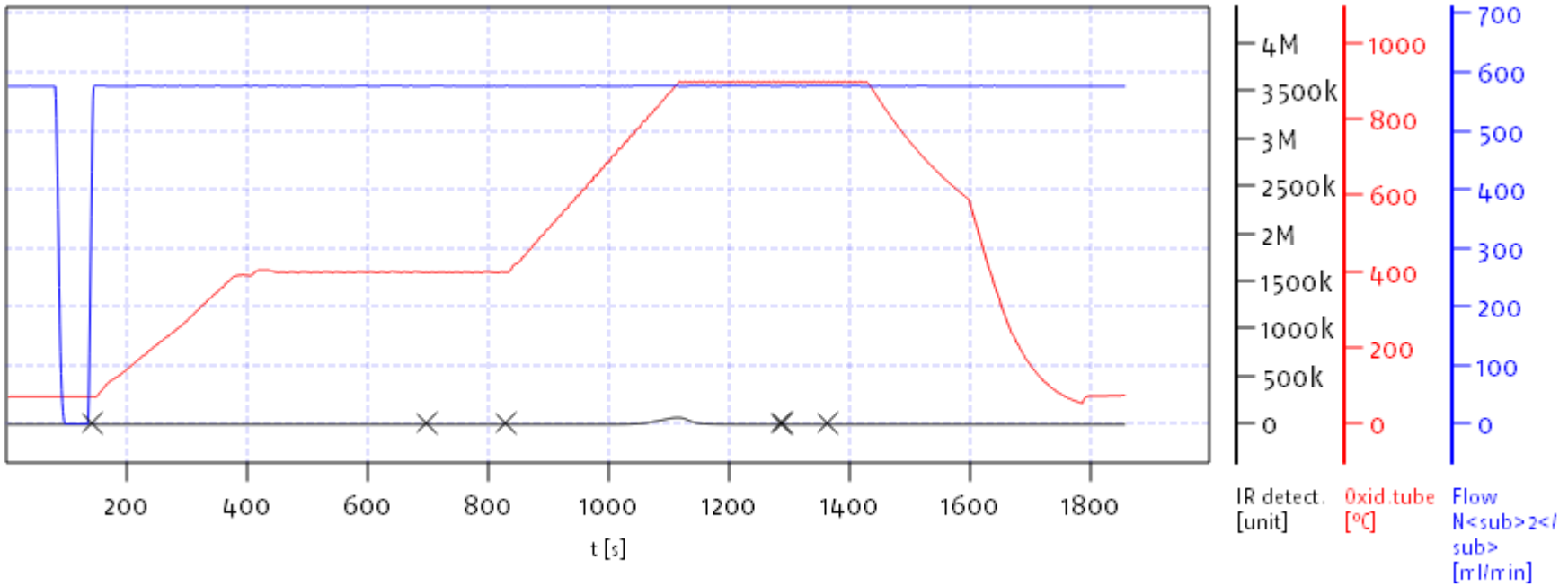
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
11	19	SEQ-CAL9	200.00	0.0396	1.00	CARBON	8/24/2021 11:16 PM	0.000	0.120	0.120	bl,C1u,C2u	848	163 267	93	1.0000	0.9178



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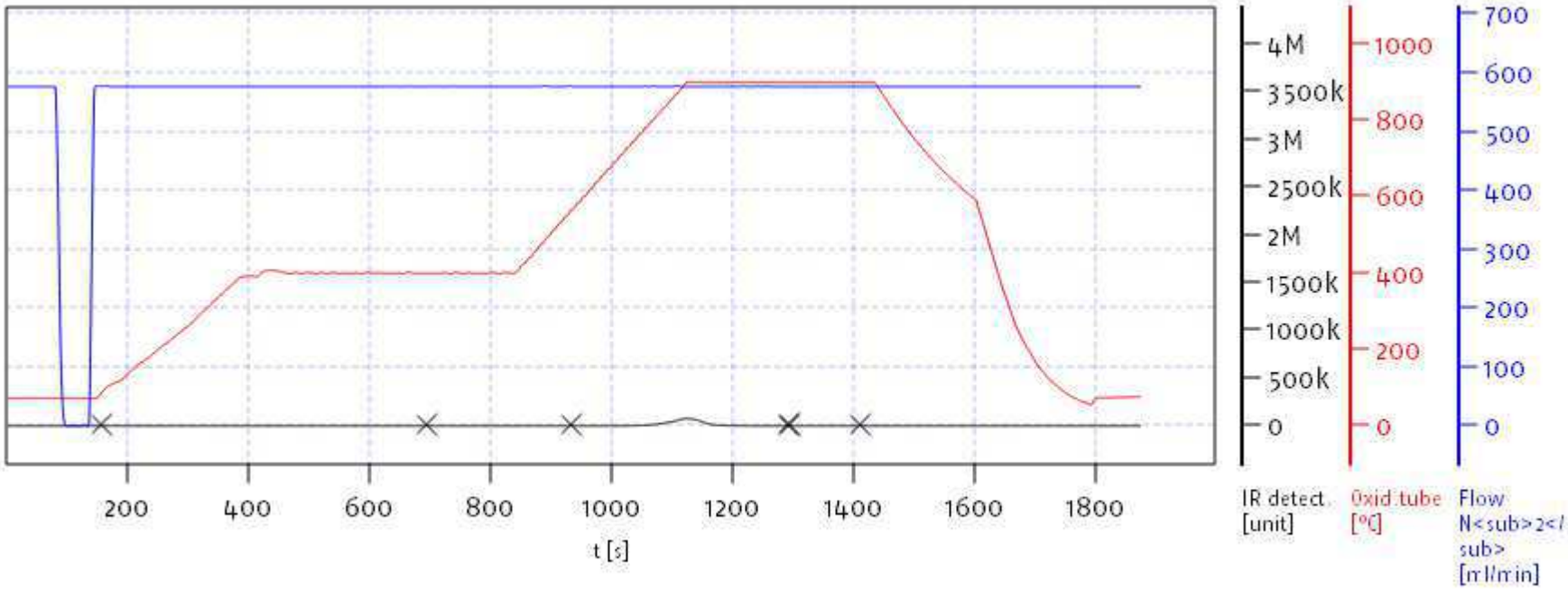
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
12	20	SEQ-CALA	200.00	0.0498	1.00	CARBON	8/24/2021 11:48 PM	0.000	0.151	0.151	bl,C1u,C2u	1 818	184 410	146	1.0000	1.0237



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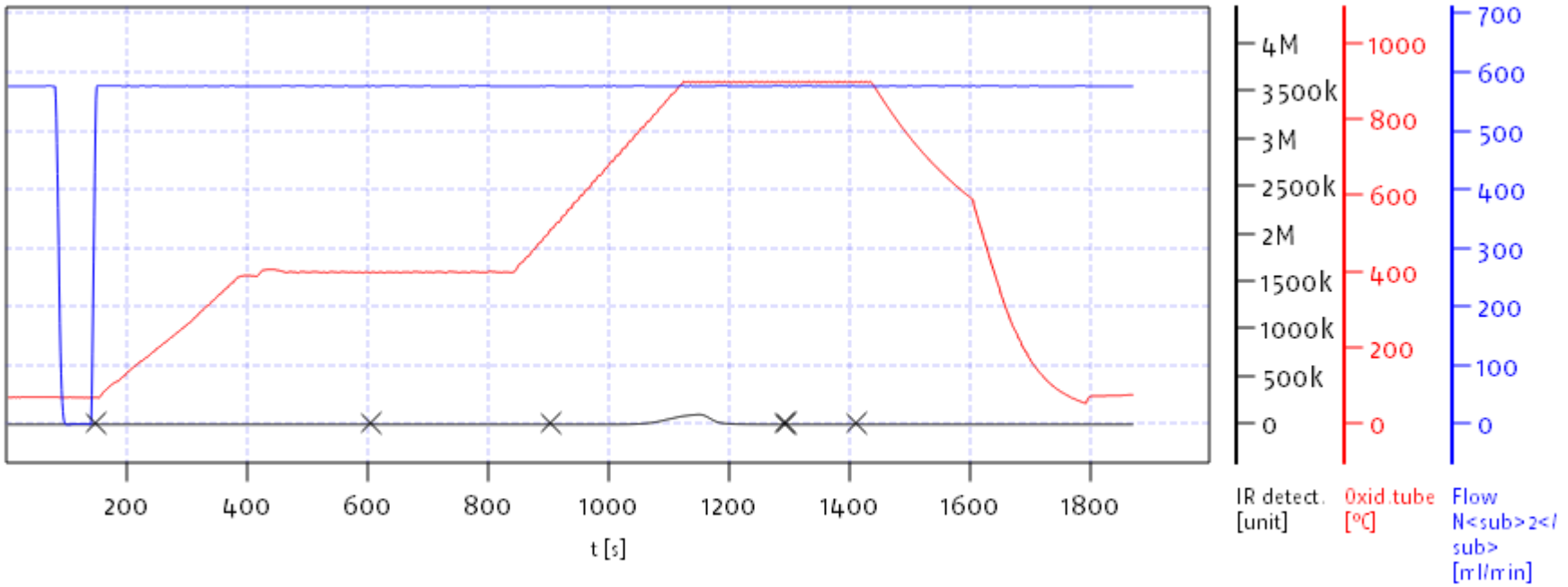
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
13	21	SEQ-CALB	200.00	0.0042	1.00	CARBON	8/25/2021 12:19 AM	0.000	0.258	0.258	bl,C1u,C2u	972	305 136	284	1.0000	1.0636



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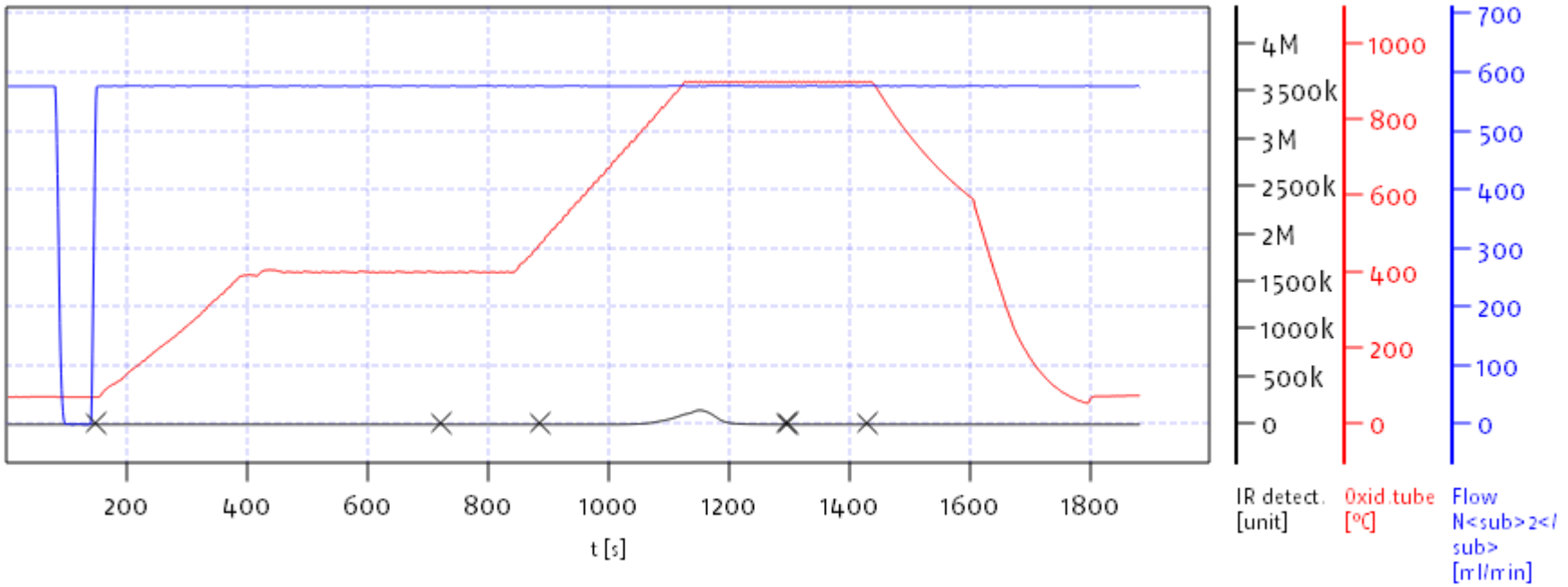
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
14	22	SEQ-CALC	200.00	0.0056	1.00	CARBON	8/25/2021 12:51 AM	0.000	0.324	0.324	bl,C1u,C2u	925	413 926	393	1.0000	0.9869



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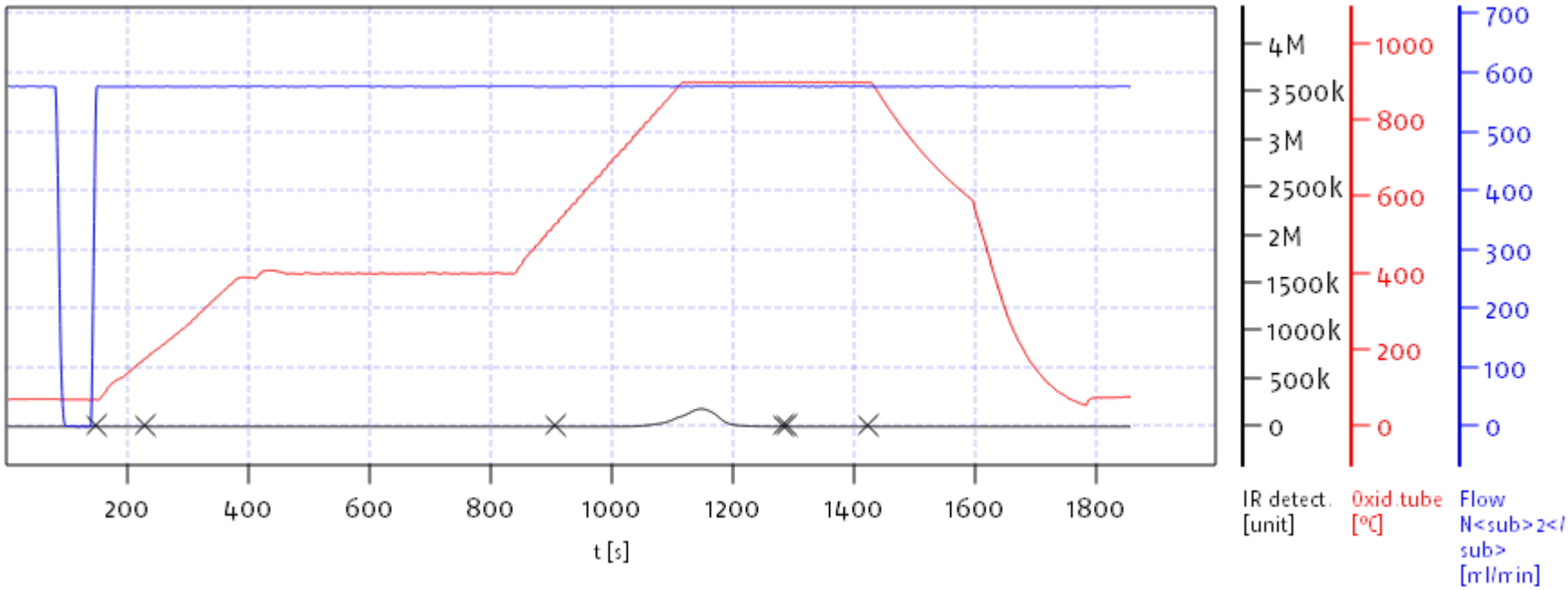
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
15	23	SEQ-CALD	200.00	0.0069	1.00	CARBON	8/25/2021 1:22 AM	0.000	0.444	0.444	bl,C1u,C2u	172	525 080	677	1.0000	1.0675



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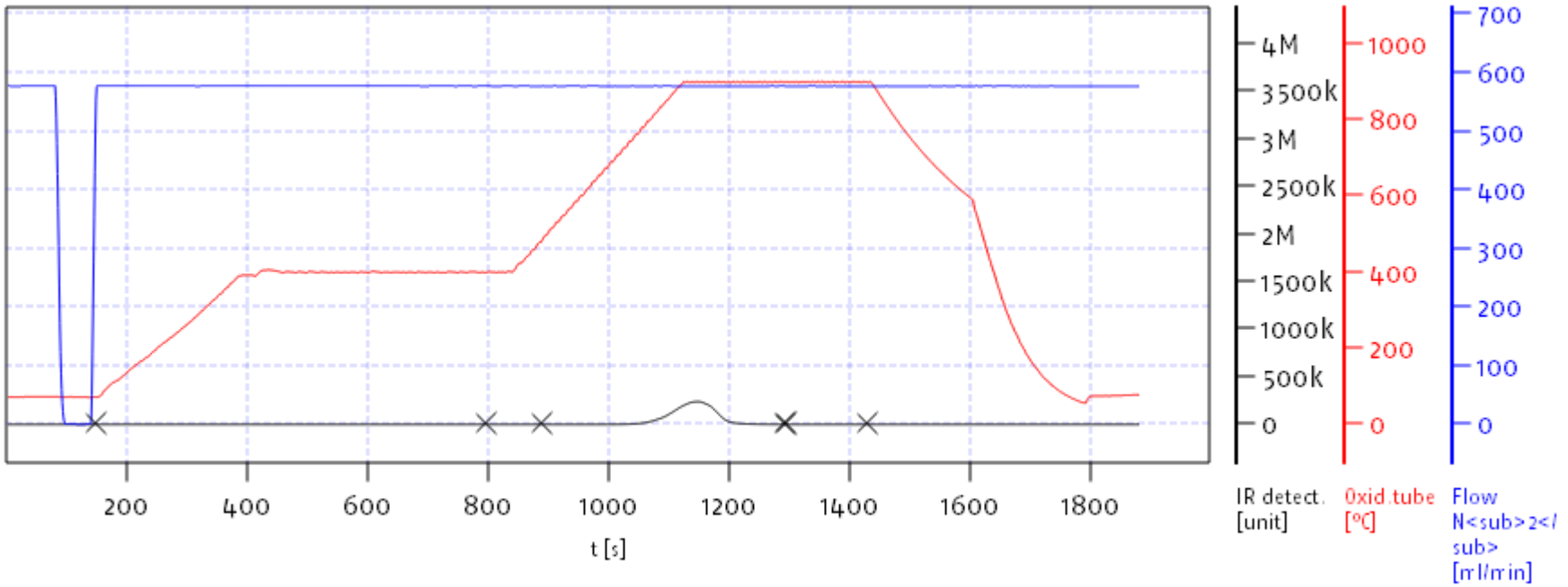
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
16	24	SEQ-CALE	200.00	0.0097	1.00	CARBON	8/25/2021 1:54 AM	0.000	0.600	0.600	bl,C1u,C2u	989	743 966	687	1.0000	1.0196



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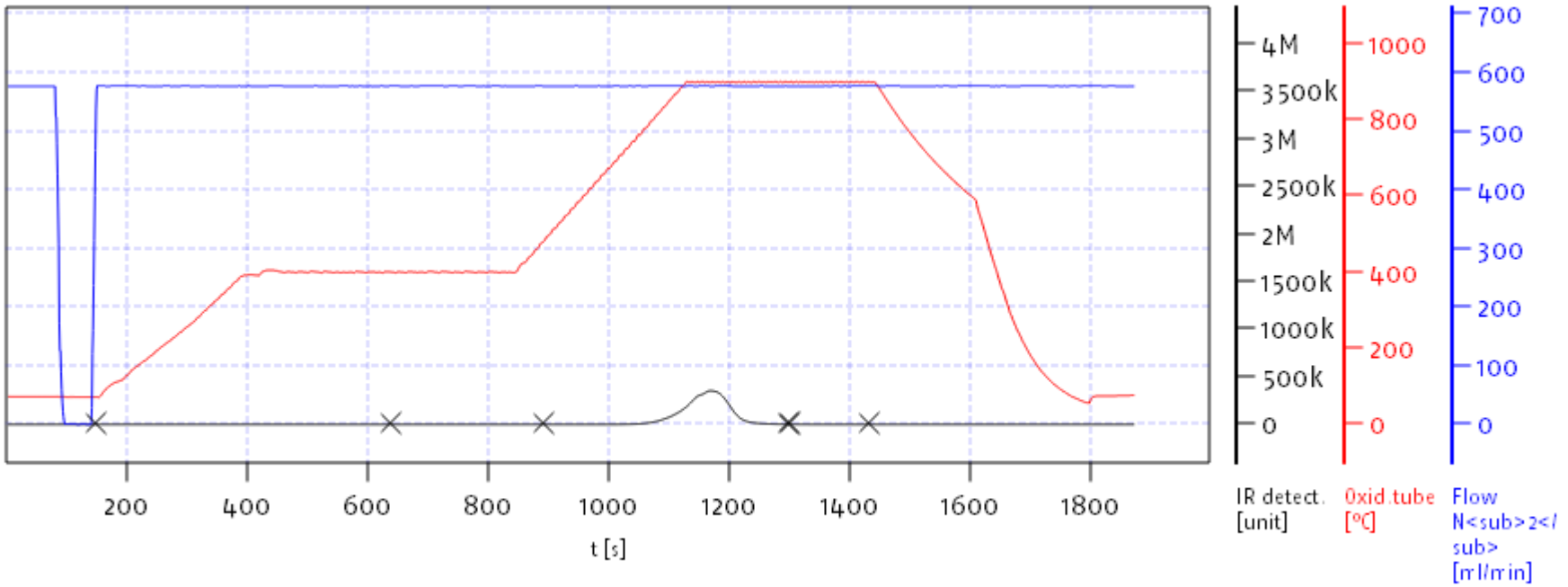
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
17	25	SEQ-CALF	200.00	0.0147	1.00	CARBON	8/25/2021 2:26 AM	0.000	0.906	0.906	bl,C1u,C2u	925	1 115 840	1 898	1.0000	1.0277



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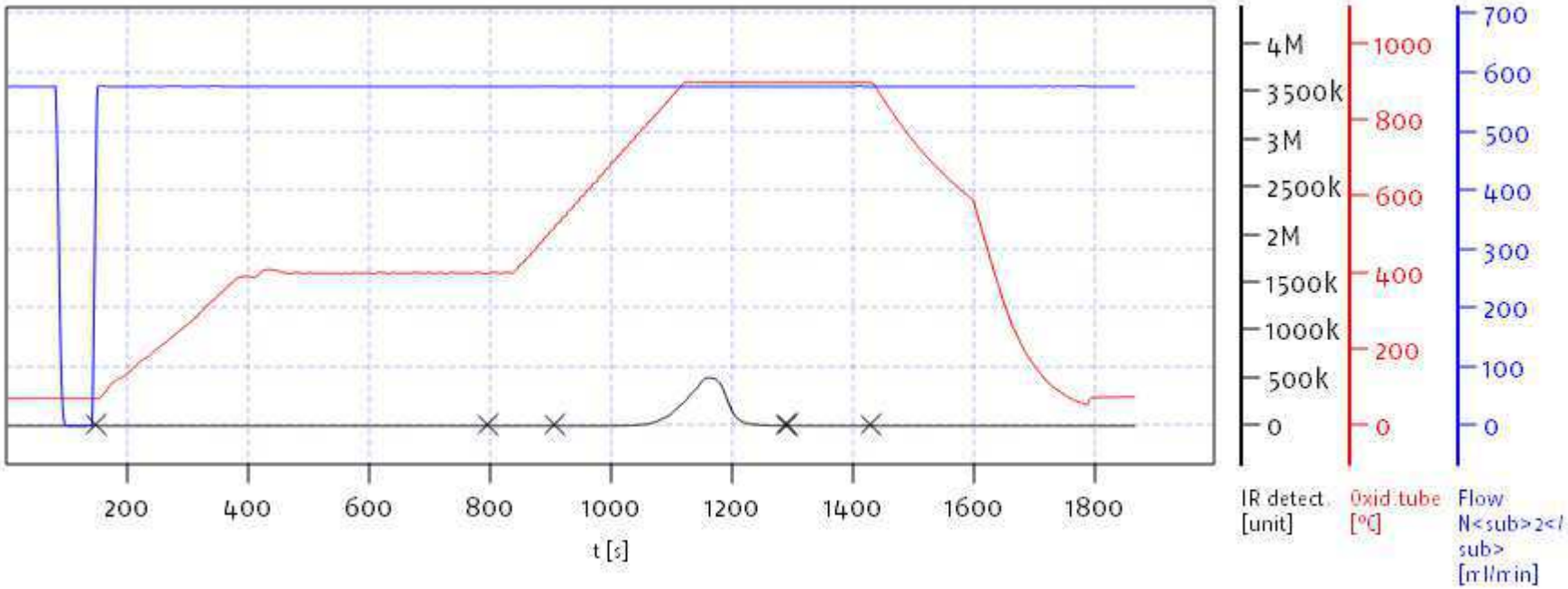
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
18	26	SEQ-CALG	200.00	0.0199	1.00	CARBON	8/25/2021 2:58 AM	0.000	1.206	1.206	bl,C1u,C2u	1 253	1 509 240	2 258	1.0000	1.0121



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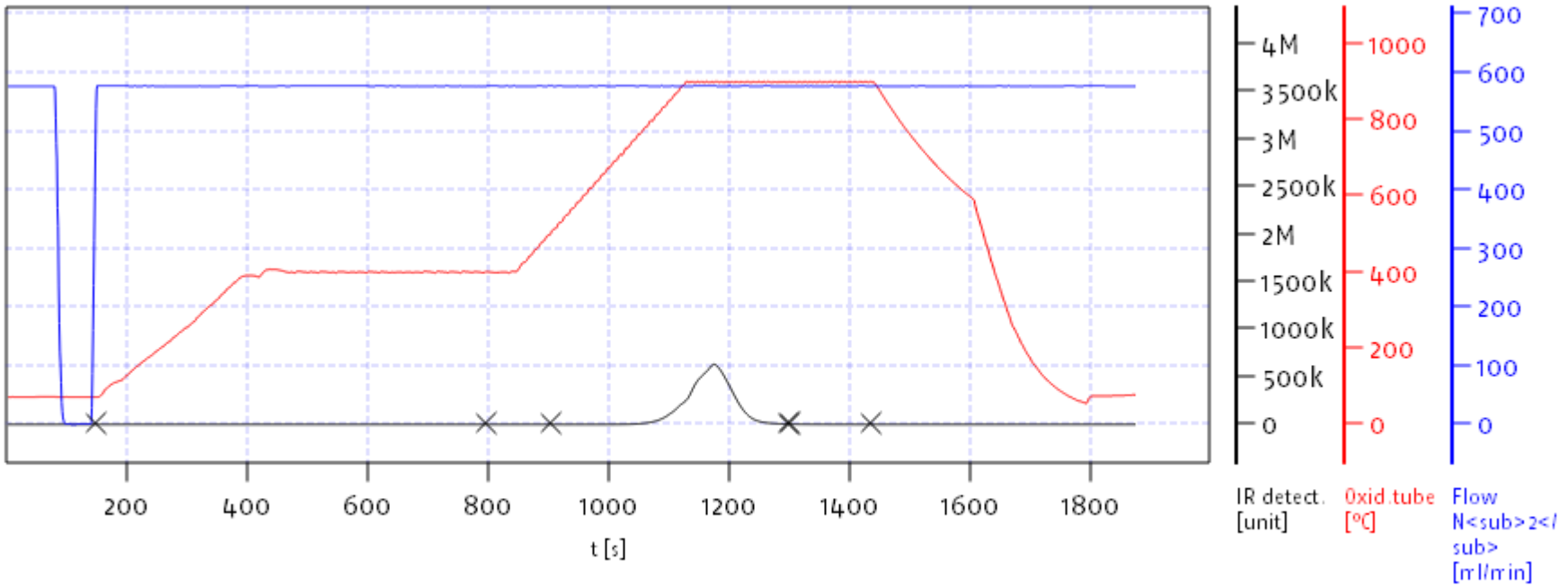
	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
19	27	SEQ-CALH	200.00	0.0253	1.00	CARBON	8/25/2021 3:29 AM	0.000	1.524	1.524	bl,C1u,C2u	1 233	1 930 390	4 311	1.0000	1.0003



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

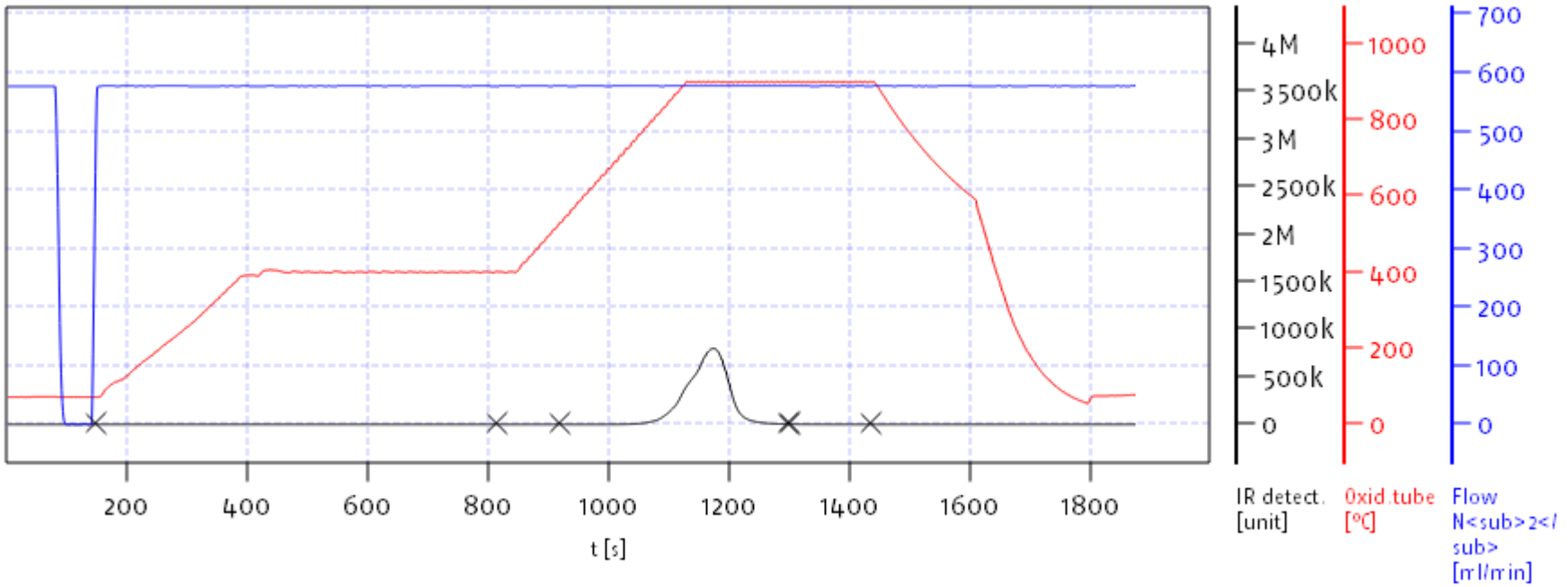
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
20	28	SEQ-CALI	200.00	0.0302	1.00	CARBON	8/25/2021 4:01 AM	0.000	1.800	1.800	bl,C1u,C2u	1 600	2 286 540	3 907	1.0000	0.9976



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

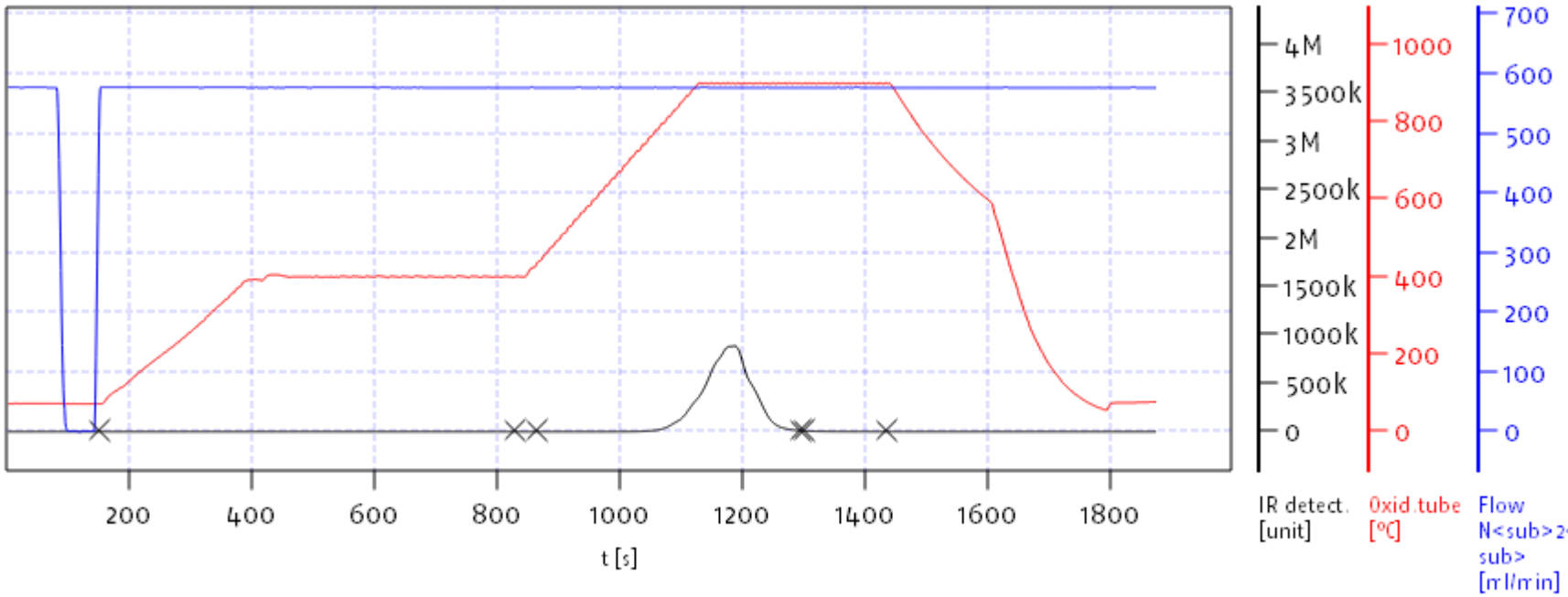
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
21	29	SEQ-CALJ	200.00	0.0400	1.00	CARBON	8/25/2021 4:33 AM	0.000	2.400	2.400	bl,C1u	1 589	**3 013 270**	**9 826**	1.0000	1.0096



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

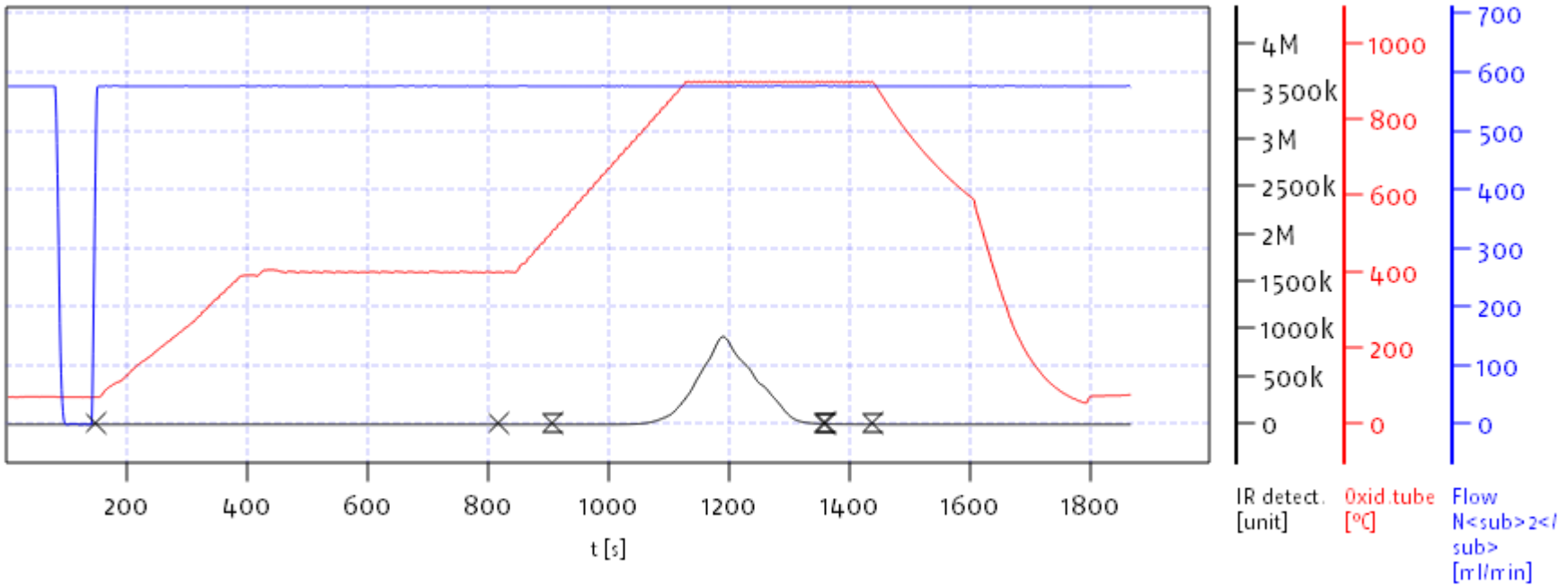
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
22	30	SEQ-CALK	200.00	0.0498	1.00	CARBON	8/25/2021 11:41 AM	0.000	3.012	3.012	bl,C1u	2 117	**3 411 713**	**0**	1.0000	1.0310



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

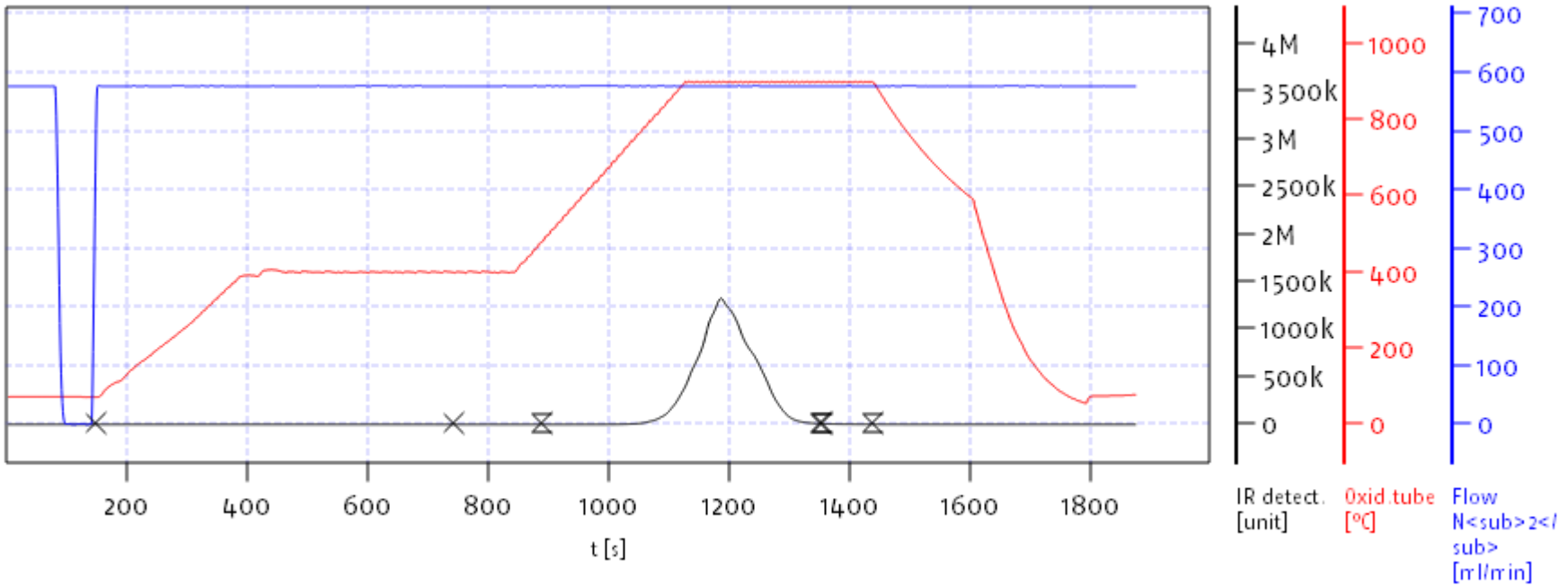
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00065 082421BFb from: 8/25/2021 11:47 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
23	31	SEQ-CALL	200.00	0.0699	1.00	CARBON	8/25/2021 11:42 AM	0.000	4.206	4.206	bl,C1u	1 285	**4 920 073**	**0**	1.0000	1.0206



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

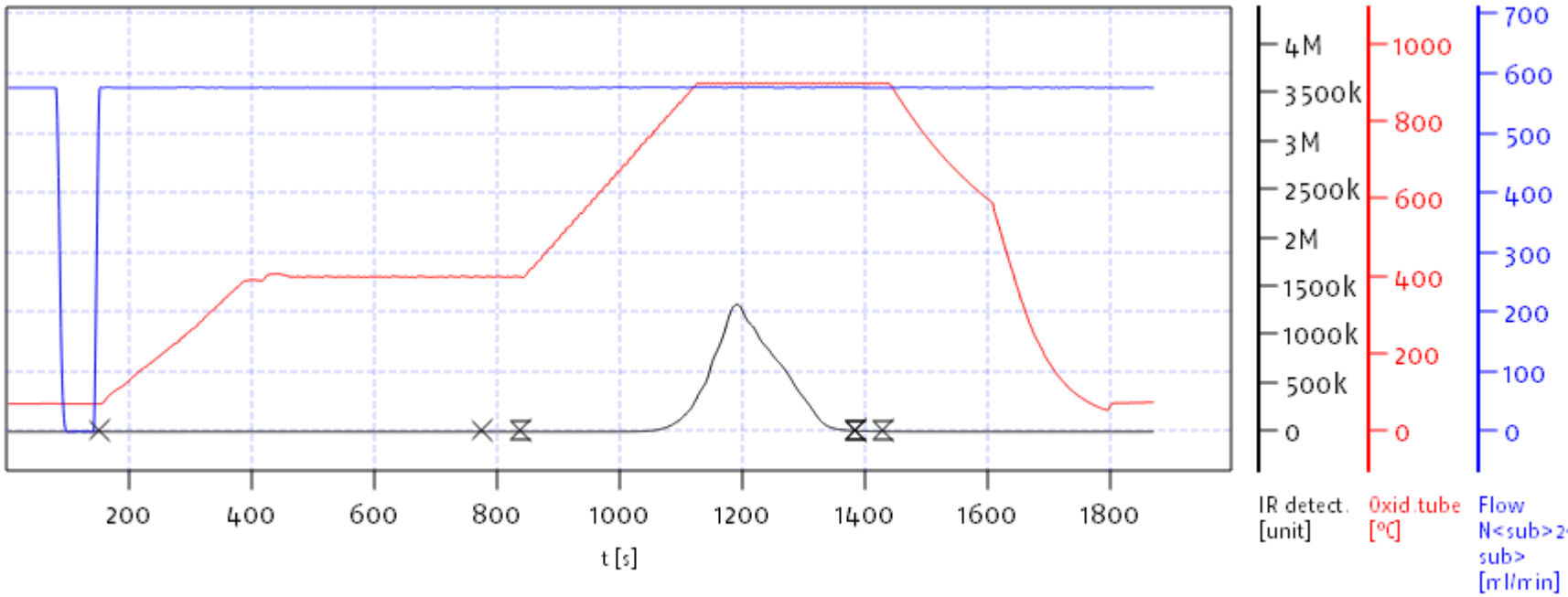
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
24	32	SEQ-CALM	200.00	0.0803	1.00	CARBON	8/25/2021 11:43 AM	0.000	4.812	4.812	bl,C1u	1 537	**5 655 573**	**0**	1.0000	1.0683



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

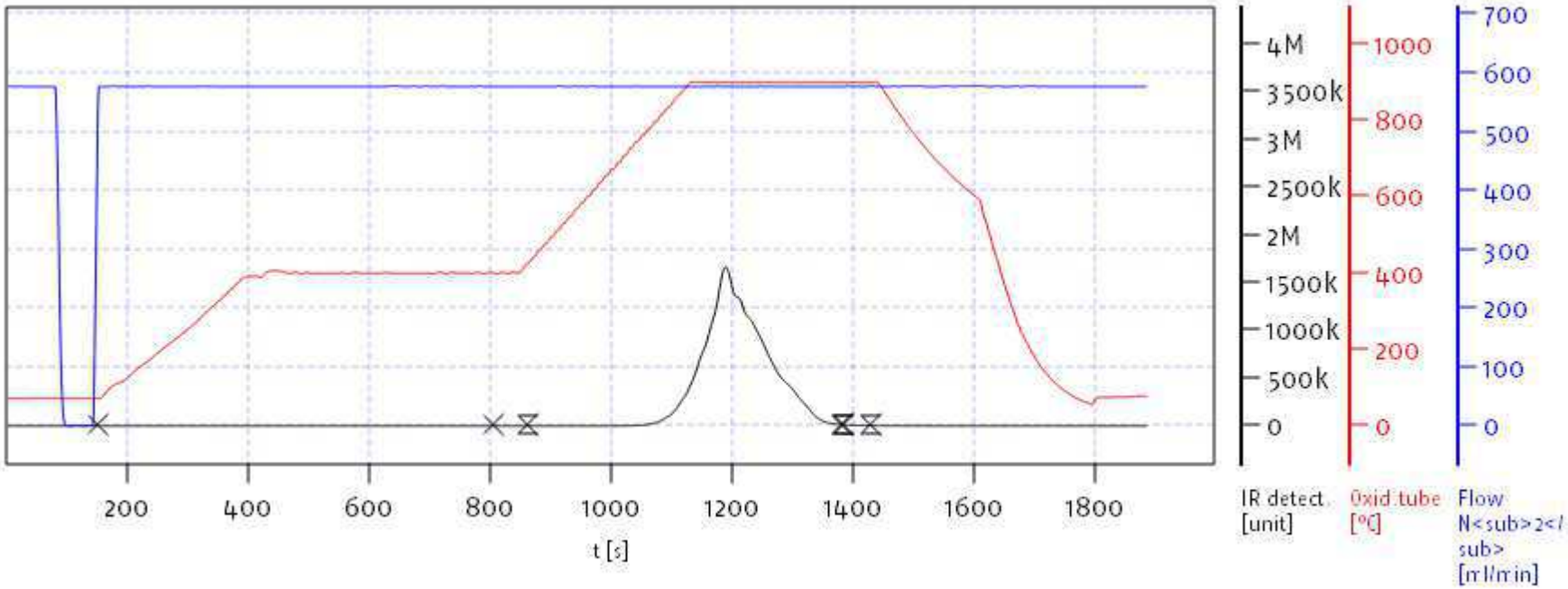
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00065 082421BFb from: 8/25/2021 11:47 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
25	33	SEQ-CALN	200.00	0.0902	1.00	CARBON	8/25/2021 11:45 AM	0.000	5.406	5.406	bl,C1u	1 694	**6 449 031**	**0**	1.0000	1.0610



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

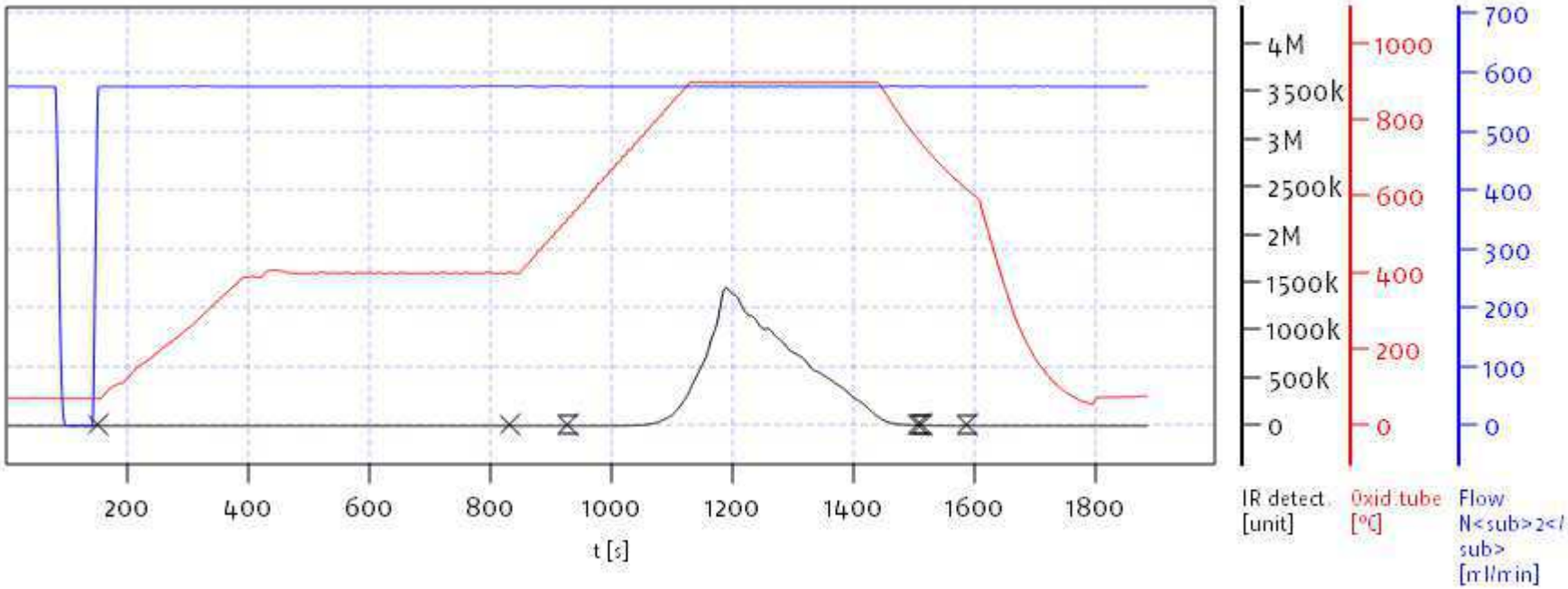
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00065 082421BFb from: 8/25/2021 11:47 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
26	34	SEQ-CALO	200.00	0.1204	1.00	CARBON	8/25/2021 11:46 AM	0.000	7.218	7.218	bl,C1u,C3o	1 658	8 593 324	0	1.0000	1.3657



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

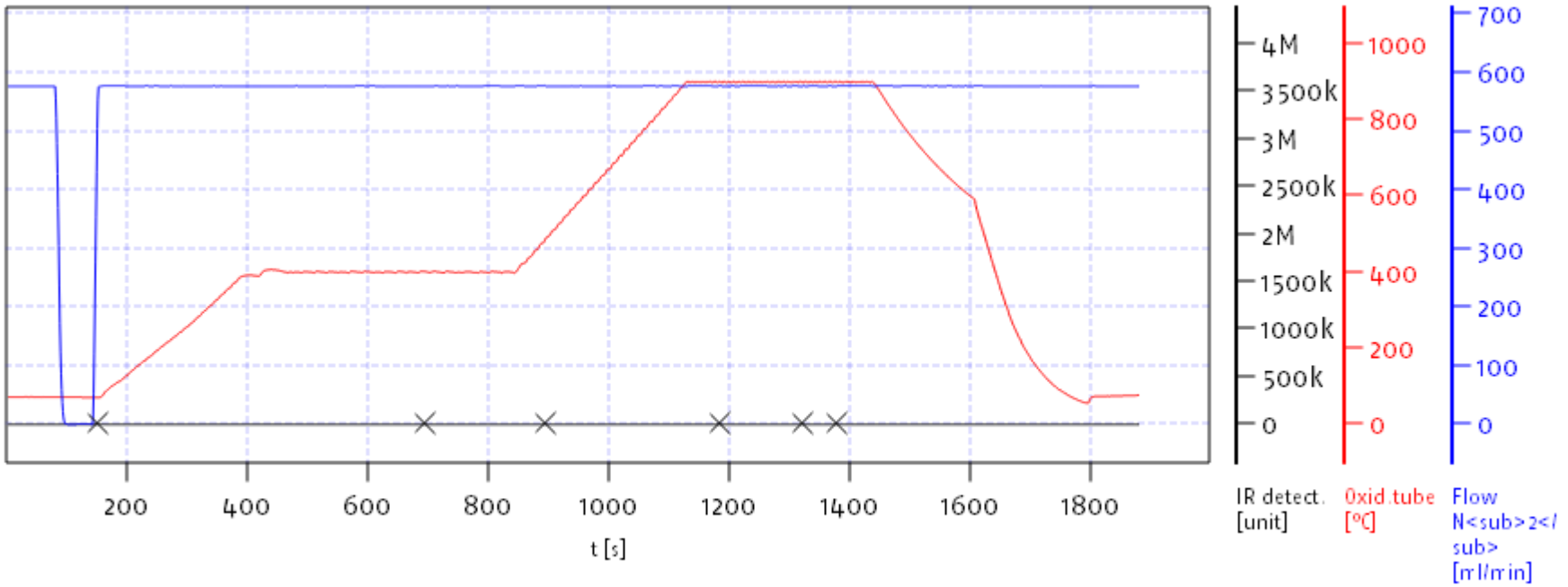
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00065 082421BFb from: 8/25/2021 11:47 AM

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
27	35	BLANK	1.00		1.00	CARBON	8/25/2021 7:43 AM	0.000	0.000	0.000	bl	708	0	0	1.0000	1.0293



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

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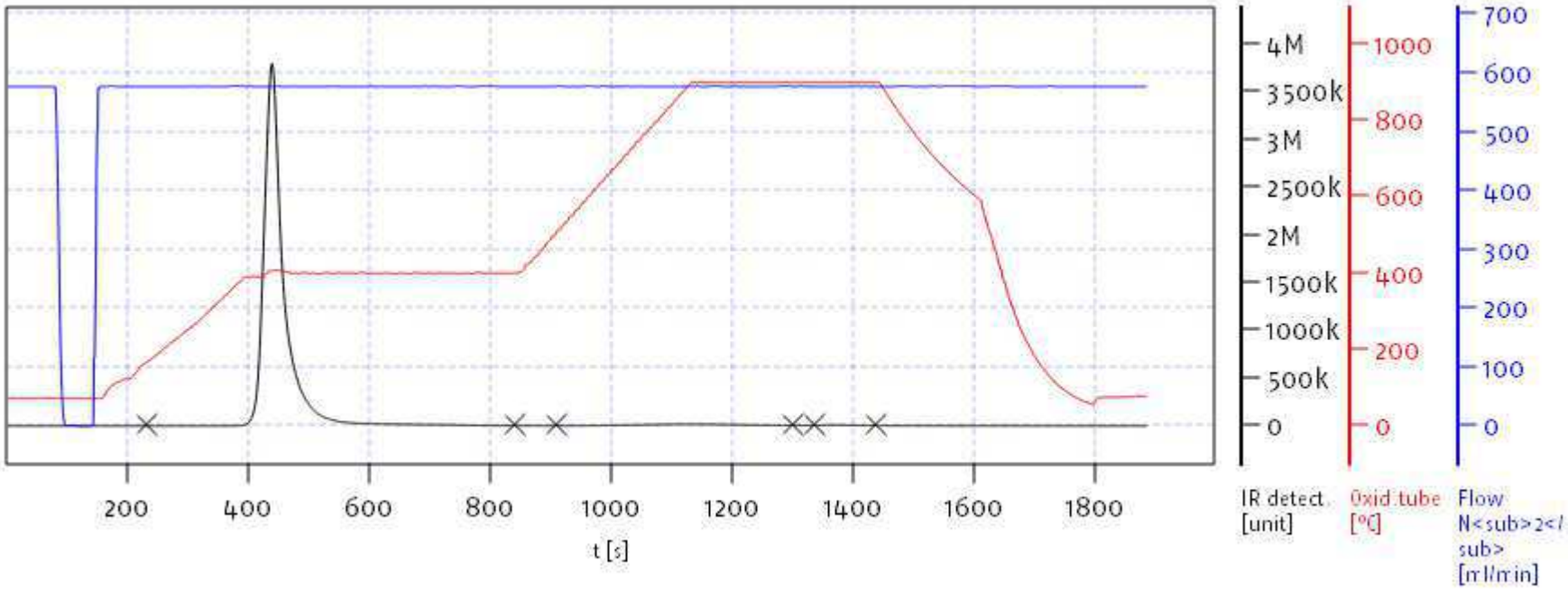
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
28	36	Dfactor	20.30		1.00	CARBON	8/25/2021 8:15 AM	44.446	0.000	44.446	bl	5 319 150	136 410	24 452	1.0755	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

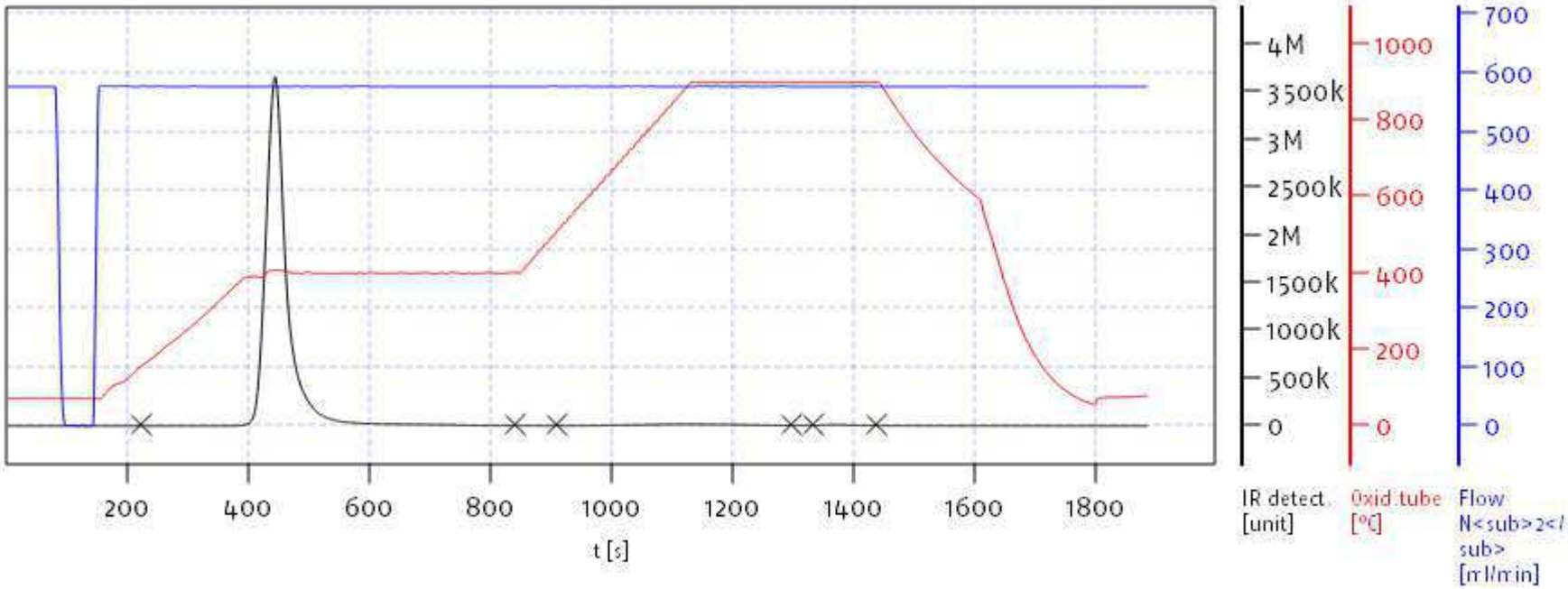
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
29	37	Dfactor	21.00		1.00	CARBON	8/25/2021 8:47 AM	44.446	0.000	44.446	bl	5 524 800	134 598	27 280	1.0712	1.0000



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

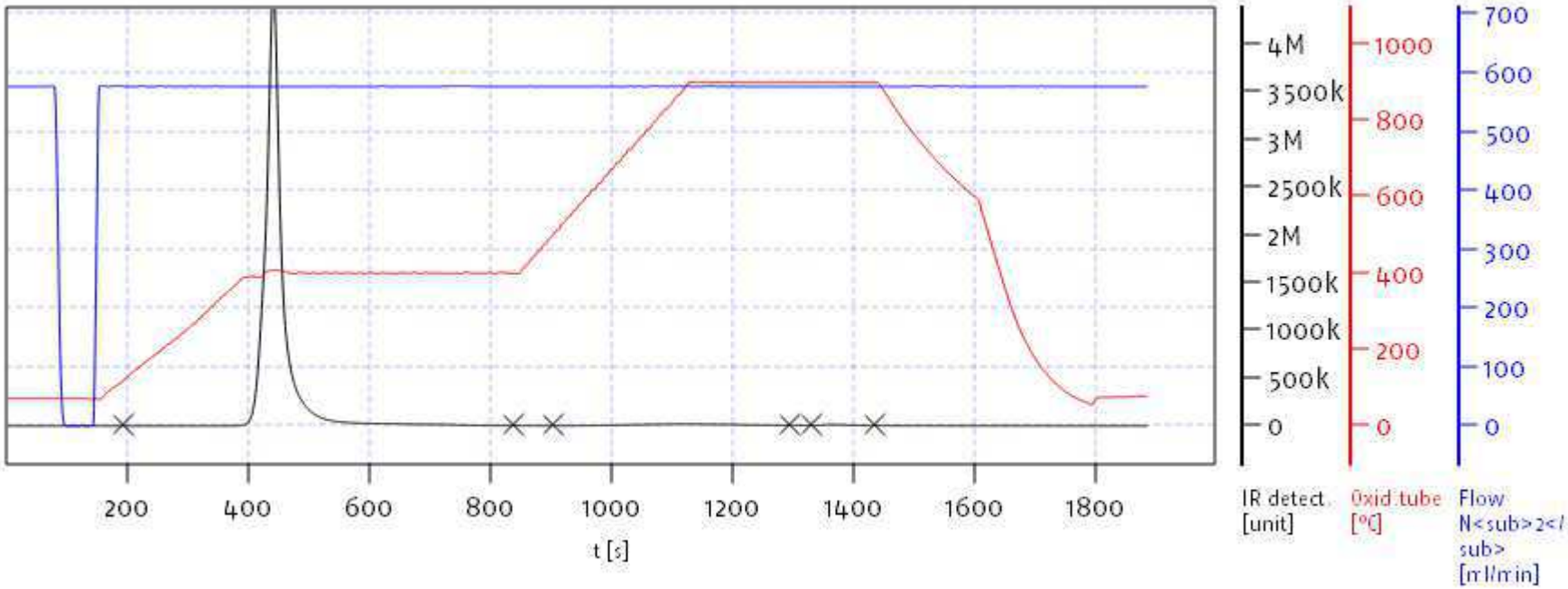
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
30	38	SEQ-ICV1	20.50		1.00	CARBON	8/25/2021 9:19 AM	47.154	1.091	48.245	bl	5 328 380	151 538	28 760	1.0733	1.0293



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

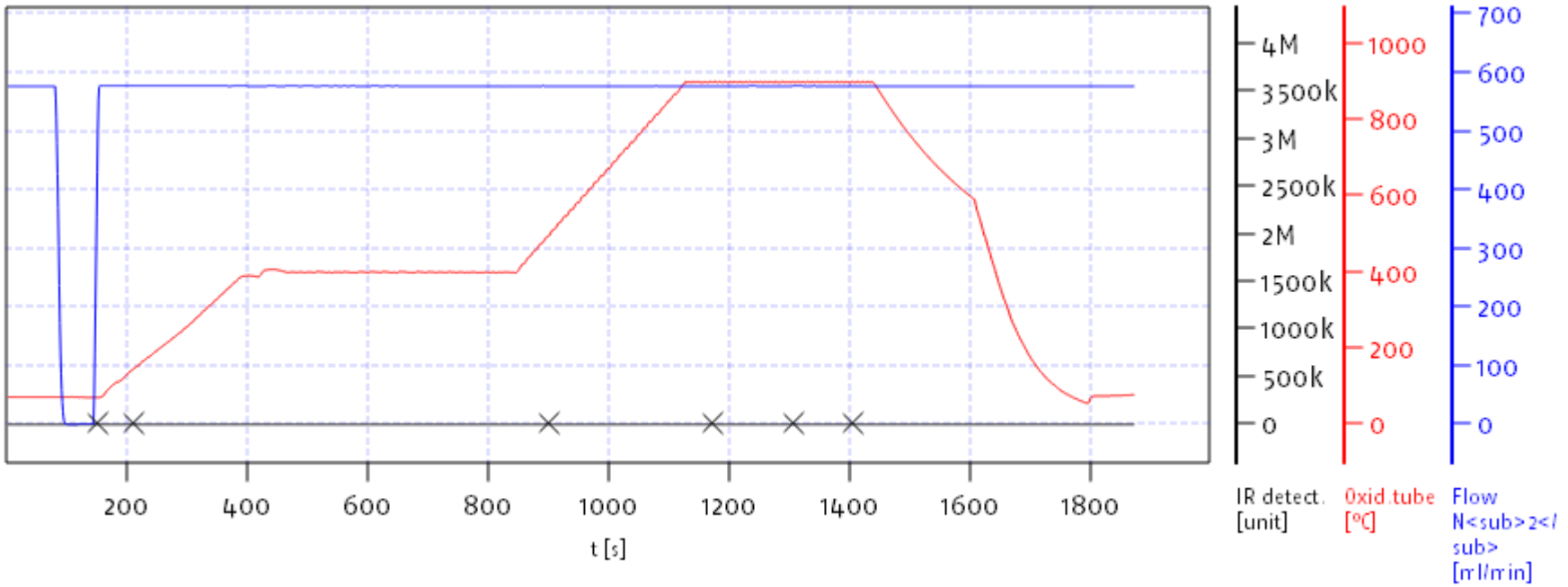
soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

elementar
EXCELLENCE IN ELEMENTS

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

Analytical Resources, Incorporated
Analytical Chemists and Consultants

	Pos.	Name	Weight [mg]	Memo	Dilut. Factor	Method	Date Time	TOC [%]	TIC900 [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
31	39	SEQ-ICB1	599.20		1.00	CARBON	8/25/2021 9:51 AM	0.000	0.000	0.000	bl,C1u,C3u,C2u	172	1 307	338	1.0733	1.0293



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:01 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

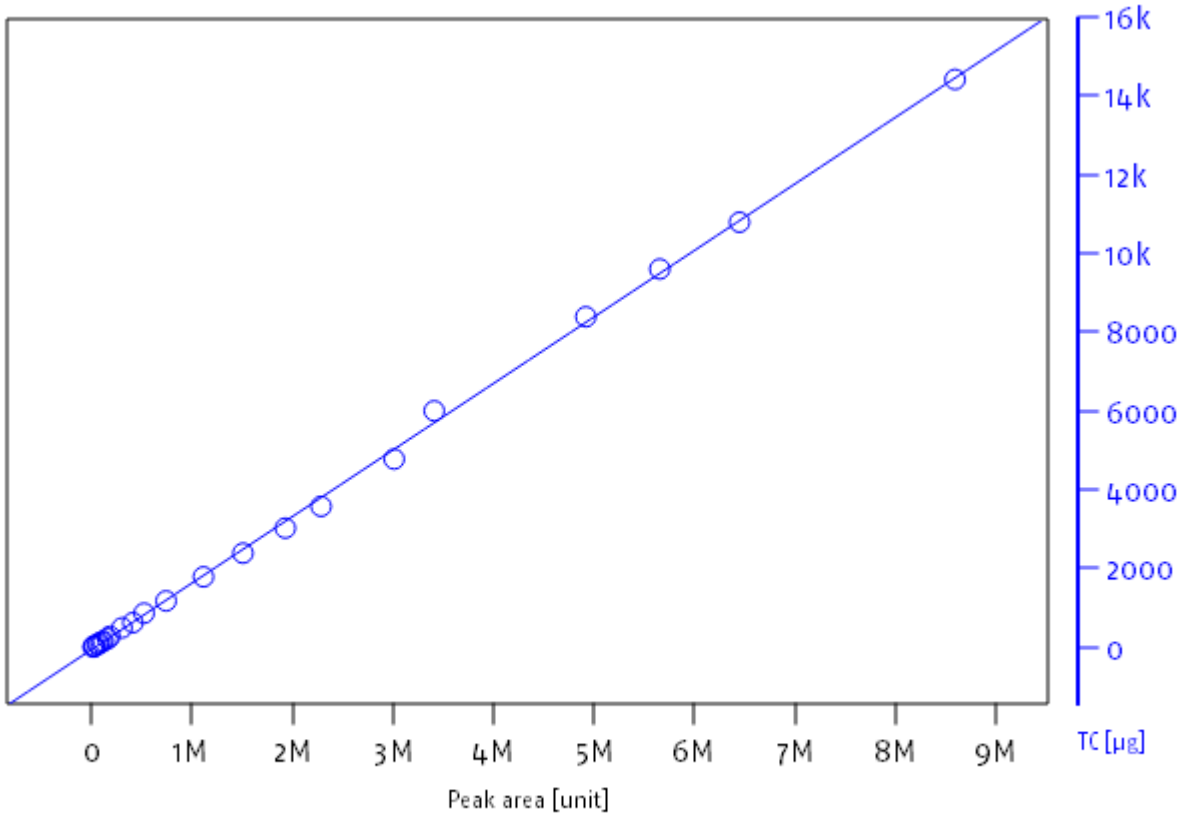
elementar
EXCELLENCE IN ELEMENTS

Document: TOC Calibration EH00065 082421BFb from: 8/25/2021 11:47 AM

Calibration parameters TC, Whole range

a	-1.970923e-02
b	+1.688862e-06
c	+0.000000e+00
d	+0.000000e+00
e	+0.000000e+00
r	0.999218
r_old	0.999218
Proc.-SD	115.145985 µg

Calibration graph TC, Whole range



Name:

Access: soliTOC superuser

Date: Wed Aug 25 11:48:57 2021

soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00021
Sequence: SJH0113
Date Analyzed: 08/11/21 04:59

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJH0113-ICB1	Total Organic Carbon	0.007	0.02	0.02	%	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00021
Sequence: SJH0183
Date Analyzed: 08/16/21 17:38

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJH0183-ICB1	Total Organic Carbon	0.00	0.02	0.02	%	
SJH0183-CCB1	Total Organic Carbon	0.003	0.02	0.02	%	
SJH0183-CCB2	Total Organic Carbon	0.003	0.02	0.02	%	
SJH0183-CCB3	Total Organic Carbon	0.002	0.02	0.02	%	
SJH0183-CCB4	Total Organic Carbon	0.005	0.02	0.02	%	
SJH0183-CCB5	Total Organic Carbon	0.003	0.02	0.02	%	
SJH0183-CCB6	Total Organic Carbon	0.005	0.02	0.02	%	
SJH0183-CCB7	Total Organic Carbon	0.008	0.02	0.02	%	
SJH0183-CCB8	Total Organic Carbon	0.001	0.02	0.02	%	
SJH0183-CCB9	Total Organic Carbon	0.002	0.02	0.02	%	
SJH0183-CCBA	Total Organic Carbon	0.002	0.02	0.02	%	
SJH0183-CCBB	Total Organic Carbon	0.006	0.02	0.02	%	
SJH0183-CCBC	Total Organic Carbon	0.001	0.02	0.02	%	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00065
Sequence: SJH0323
Date Analyzed: 08/25/21 09:51

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJH0323-ICB1	Total Organic Carbon	0.00	0.02	0.02	%	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00065
Sequence: SJH0417
Date Analyzed: 09/01/21 13:17

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SJH0417-ICB1	Total Organic Carbon	0.005	0.02	0.02	%	
SJH0417-CCB1	Total Organic Carbon	0.01	0.02	0.02	%	
SJH0417-CCB2	Total Organic Carbon	0.004	0.02	0.02	%	
SJH0417-CCB3	Total Organic Carbon	0.007	0.02	0.02	%	
SJH0417-CCB4	Total Organic Carbon	0.007	0.02	0.02	%	
SJH0417-CCB5	Total Organic Carbon	0.007	0.02	0.02	%	
SJH0417-CCB6	Total Organic Carbon	0.005	0.02	0.02	%	
SJH0417-CCB7	Total Organic Carbon	0.00	0.02	0.02	%	
SJH0417-CCB8	Total Organic Carbon	0.00	0.02	0.02	%	
SJH0417-CCB9	Total Organic Carbon	0.004	0.02	0.02	%	
SJH0417-CCBA	Total Organic Carbon	0.009	0.02	0.02	%	
SJH0417-CCBB	Total Organic Carbon	0.00	0.02	0.02	%	
SJH0417-CCBC	Total Organic Carbon	0.002	0.02	0.02	%	
SJH0417-CCBD	Total Organic Carbon	0.008	0.02	0.02	%	
SJH0417-CCBE	Total Organic Carbon	0.00	0.02	0.02	%	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00021
Control Limt: +/- 10.00%
Sequence: SJH0113

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJH0113-ICV1	Total Organic Carbon	44.446	44.4	99.9	%	EPA 9060A m
	Total Carbon	44.446	45.3	102	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	0.93		%	EPA 9060A m
	% Soot	0.0000	0.32		%	EPA 9060A m

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00021
Control Limt: +/- 10.00%
Sequence: SJH0183

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJH0183-ICV1	Total Organic Carbon	44.446	44.6	100	%	EPA 9060A m
SJH0183-CCV1	Total Organic Carbon	44.446	43.1	97.1	%	EPA 9060A m
SJH0183-CCV2	Total Organic Carbon	44.446	43.0	96.7	%	EPA 9060A m
SJH0183-CCV3	Total Organic Carbon	44.446	44.7	101	%	EPA 9060A m
SJH0183-CCV4	Total Organic Carbon	44.446	45.1	102	%	EPA 9060A m
SJH0183-CCV5	Total Organic Carbon	44.446	44.4	99.9	%	EPA 9060A m
SJH0183-CCV6	Total Organic Carbon	44.446	44.4	99.8	%	EPA 9060A m
SJH0183-CCV7	Total Organic Carbon	44.446	43.8	98.5	%	EPA 9060A m
SJH0183-CCV8	Total Organic Carbon	44.446	44.6	100	%	EPA 9060A m
SJH0183-CCV9	Total Organic Carbon	44.446	43.8	98.5	%	EPA 9060A m
SJH0183-CCVA	Total Organic Carbon	44.446	43.2	97.1	%	EPA 9060A m
SJH0183-CCVB	Total Organic Carbon	44.446	44.0	99.0	%	EPA 9060A m
SJH0183-CCVC	Total Organic Carbon	44.446	44.6	100	%	EPA 9060A m

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00065
Control Limt: +/- 10.00%
Sequence: SJH0323

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJH0323-ICV1	Total Organic Carbon	44.446	47.2	106	%	EPA 9060A m
	Total Carbon	44.446	48.2	109	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	1.09		%	EPA 9060A m
	% Soot	0.0000	0.14		%	EPA 9060A m

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Instrument ID: TOC Cube
Calibration: EH00065
Control Limt: +/- 10.00%
Sequence: SJH0417

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SJH0417-ICV1	Total Organic Carbon	44.446	45.0	101	%	EPA 9060A m
SJH0417-CCV1	Total Organic Carbon	44.446	45.0	101	%	EPA 9060A m
SJH0417-CCV2	Total Organic Carbon	44.446	45.0	101	%	EPA 9060A m
SJH0417-CCV3	Total Organic Carbon	44.446	45.0	101	%	EPA 9060A m
SJH0417-CCV4	Total Organic Carbon	44.446	44.1	99.3	%	EPA 9060A m
SJH0417-CCV5	Total Organic Carbon	44.446	44.8	101	%	EPA 9060A m
SJH0417-CCV6	Total Organic Carbon	44.446	43.7	98.3	%	EPA 9060A m
SJH0417-CCV7	Total Organic Carbon	44.446	43.5	97.8	%	EPA 9060A m
SJH0417-CCV8	Total Organic Carbon	44.446	44.9	101	%	EPA 9060A m
SJH0417-CCV9	Total Organic Carbon	44.446	44.9	101	%	EPA 9060A m
SJH0417-CCVA	Total Organic Carbon	44.446	45.0	101	%	EPA 9060A m
SJH0417-CCVB	Total Organic Carbon	44.446	44.3	99.6	%	EPA 9060A m
SJH0417-CCVC	Total Organic Carbon	44.446	45.2	102	%	EPA 9060A m
SJH0417-CCVD	Total Organic Carbon	44.446	44.6	100	%	EPA 9060A m
SJH0417-CCVE	Total Organic Carbon	44.446	44.0	99.0	%	EPA 9060A m

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

STANDARD REFERENCE MATERIAL RECOVERY

EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Laboratory ID: BJH0351-SRM1
Batch: BJH0351
Initial/Final: 0.035 g / 0.035 mL
Preparation: PSEP 1986 (modified)
Analyzed: 08/19/2021 5:59
Standard ID: H003424
Expires: 12/31/2079
Standard Lot#: 1941b
Description: 1941B- Organics in Marine Sediment (Conv)

ANALYTE	TRUE (% wet)	FOUND (% wet)	MDL	MRL	Q	SRM % REC.	QC LIMITS REC.
Total Organic Carbon	2.9900	2.40	0.02	0.02		80.4	80 - 120

* Values outside of QC limits

Analytical Resources, Incorporated
Analytical Chemists and Consultants

HOLDING TIME SUMMARY

Analysis: EPA 9060A m

Laboratory: Analytical Resources, Inc. SDG: 21H0078

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-IT698BX 21H0078-10	08/03/21 14:53	08/04/21 11:44	08/13/21 13:07	9	14	08/19/21 19:39			
LDW21-IT702BY 21H0078-31	08/03/21 16:50	08/04/21 11:44	08/13/21 13:07	9	14	08/19/21 20:10			
LDW21-IT702CY 21H0078-32	08/03/21 16:50	08/04/21 11:44	08/13/21 13:07	9	14	09/03/21 17:29			
LDW21-IT702EY 21H0078-34	08/03/21 16:50	08/04/21 11:44	08/13/21 13:07	9	14	09/03/21 18:00			

* Indicates hold time exceedance.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 9060A m

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument: TOC Cube

Analyte	MDL	RL	Units
Total Organic Carbon	0.02	0.02	%

H001822

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, Ohio 44139
Telephone: 440/337-1200
Toll Free: 800/854-0530
Fax: 440/337-1180
web: www.mpbio.com

Certificate of Analysis

Product Description: Microcrystalline Cellulose Powder
Catalog Number: 191499
Lot: Q9483

Formula: $(C_6H_{10}O_5)n$
CAS #: 9004-34-6
Physical Description: White Powder

Formula Weight: N/A
Storage: 15 - 30°C

Test	Specification	Result
Identity Test	Passes	Passes
Purity	97.0 - 102.0%	97.0 - 102.0%
Moisture	<5.0%	3.4%
Particle Size/Mesh +60 mesh +200 mesh	Wt % <8% >45%	 <1% 55%
pH	5 - 7	6.73
Residue on Ignition	<0.05%	<0.05%
Water Soluble Substances	<12.0 mg/5 g	4.5 mg/5 g
Heavy Metals	<10 ppm	<10 ppm

Identification A & B: Passes
Bulk Density: 0.29 g/ml
Bulk Density (graduated cylinder): 0.31 g/ml
Conductivity: 18 µS/cm
Starch: Negative
Ether Soluble Substances: 0.01%
Total Aerobic microbial Count: 100 cfu/g
Total Mold and Yeast Count: 20 cfu/g
Staphylococcus aureus: Absent/1 g
Pseudomonas aeruginosa: Absent/1 g
E. coli: Absent/1 g
Salmonella: Absent/10 g
Particle size:
- 450 mesh: 77%
- d10: 37 um
- d50: 139 um
- d90: 271 um
TUP: <9/600 cm^2
Degree of brightness: >88%
Powder flow-angle of repose: <42°
Recommended Retest Date: 11/30/2022

07/26/2018 - John Huang, PhD
MP Biomedicals, LLC.
Quality Control Manager

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National Institute of Standards & Technology

Certificate of Analysis

Standard Reference Material® 1941b

Organics in Marine Sediment

This Standard Reference Material (SRM) is marine sediment collected at the mouth of the Baltimore (MD) Harbor. SRM 1941b is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in marine sediment and similar matrices. Information values are also provided for total organic carbon (TOC), total carbon, hydrogen, and nitrogen. All of the constituents for which certified, reference, and information values are provided in SRM 1941b were naturally present in the sediment before processing. A unit of SRM 1941b consists of a bottle containing 50 g of radiation-sterilized, freeze-dried sediment.

Certified Mass Fraction Values: Certified mass fraction values for PAHs, PCB congeners, and chlorinated pesticides are provided in Table 1 through Table 3. The certified values for the PAHs, PCB congeners, and chlorinated pesticides are based on the agreement of results obtained at NIST from two or more chemically independent analytical techniques along with results from an interlaboratory comparison study [1]. A NIST certified value is a value for which NIST has the highest confidence in its accuracy in that all known or suspected sources of bias have been investigated or taken into account [1].

Reference Mass Fraction Values: Reference mass fraction values for additional PAHs (some in combination), additional PCB congeners, and additional chlorinated pesticides are provided in Table 4 through Table 7. Reference values for alkylated PAH groups are provided in Table 8 and for selected hopanes and steranes in Table 9. A reference value for total organic carbon is provided in Table 10. Reference values are noncertified values that are the best estimate of the true value; however, the values do not meet the NIST criteria for certification and are provided with associated uncertainties that may reflect only measurement precision, may not include all sources of uncertainty, or may reflect a lack of sufficient statistical agreement among multiple analytical methods [1].

Information Mass Fraction Values: Information mass fraction values are provided in Table 11 for carbon, hydrogen, and nitrogen. An information value is considered to be a value that will be of use to the SRM user, but insufficient information is available to assess the uncertainty associated with the value [1]. Information values cannot be used to establish metrological traceability.

Expiration of Certification: The certification of **SRM 1941b** is valid, within the measurement uncertainty specified, until **01 October 2020**, provided the SRM is handled and stored in accordance with the instructions given in this certificate (see "Instructions for Handling, Storage, and Use"). This certification is nullified if the SRM is damaged, contaminated, or otherwise modified.

Maintenance of SRM Certification: NIST will monitor this SRM over the period of its certification. If substantive technical changes occur that affect the certification before the expiration of this certificate, NIST will notify the purchaser. Registration (see attached sheet or register online) will facilitate notification.

Coordination of the technical measurements leading to the certification of this material was under the leadership of M.M. Schantz and S.A. Wise of the NIST Chemical Sciences Division.

Analytical measurements for the certification of SRM 1941b were performed at NIST by J.R. Kucklick, B.J. Porter, D.L. Poster, M.M. Schantz, P. Schubert, S. Tutschku, and L.L. Yu of the NIST Chemical Sciences Division.

Carlos A. Gonzalez, Chief
Chemical Sciences Division

Robert L. Watters, Jr., Director
Office of Reference Materials

Gaithersburg, MD 20899
Certificate Issue Date: 16 January 2015

Measurements for TOC were provided by a commercial laboratory and T.L. Wade of the Geochemical and Environmental Research Group, Texas A&M University (College Station, TX). The carbon, hydrogen, and nitrogen data were provided by a commercial laboratory. Results for the PAHs, PCBs, and chlorinated pesticides from 38 laboratories (see Appendix A) that participated in an interlaboratory comparison exercise coordinated by NIST were used. Results for the alkylated PAH groups, hopanes, and steranes from 33 laboratories (see Appendix B) that participated in another interlaboratory comparison exercise coordinated by NIST were also used.

Collection and preparation of SRM 1941b were performed by M.P. Cronise and C.N. Fales of the NIST Office of Reference Materials and B.J. Porter and M.M. Schantz of the NIST Chemical Sciences Division. The sediment material was collected with the assistance of G.G. Lauenstein, J. Collier, and J. Lewis (National Oceanic and Atmospheric Administration, Silver Spring, MD).

Consultation on the statistical design of the experimental work and evaluation of the data were provided by S.D. Leigh and J.H. Yen of the NIST Statistical Engineering Division.

Support aspects involved in the issuance of this SRM were coordinated through the NIST Office of Reference Materials.

INSTRUCTIONS FOR HANDLING, STORAGE, AND USE

Handling: This material is naturally occurring marine sediment from an urban area and may contain constituents of unknown toxicities; therefore, caution and care should be exercised during its handling and use.

Storage: SRM 1941b must be stored in its original bottle at temperatures less than 30 °C and away from direct sunlight.

Use: Prior to removal of subsamples for analysis, the contents of the bottle should be mixed. The mass fractions of constituents in SRM 1941b are reported on a dry-mass basis. The SRM, as received, contains a mass fraction of approximately 2.4 % moisture (see "Conversion to Dry-Mass Basis"). The sediment sample should be dried to a constant mass before weighing for analysis; or a separate subsample of the sediment should be removed from the bottle at the time of analysis and dried to determine the mass fraction on a dry-mass basis. If the constituents of interest are volatile, then the moisture must be determined with a separate subsample.

PREPARATION AND ANALYSIS[1]

Sample Collection and Preparation: The sediment used to prepare this SRM was collected from the Chesapeake Bay at the mouth of the Baltimore (MD) Harbor near the Francis Scott Key Bridge (39°12.3'N and 76°31.4'W). This location is very near the site where SRM 1941 and SRM 1941a were collected. The sediment was collected using a Kynar-coated modified Van Veen-type grab sampler. A total of approximately 3300 kg of wet sediment was collected from the site. The sediment was freeze-dried, sieved at 150 µm (100 % passing), homogenized in a cone blender, radiation sterilized (^{60}Co), and then packaged in screw-capped amber glass bottles each containing approximately 50 g.

Conversion to Dry-Mass Basis: The results for the constituents in SRM 1941b are reported on a dry-mass basis; however, the material "as received" contains residual moisture. The amount of moisture in SRM 1941b was determined by measuring the mass loss after freeze-drying subsamples of 1.1 g to 1.3 g for four days at 1 Pa with a –10 °C shelf temperature and a –50 °C condenser temperature. The moisture content in SRM 1941b at the time of the certification analyses was 2.39 % ± 0.08 % (95 % confidence level). Analytical results for the organic constituents were determined on an as-received basis and then converted to a dry-mass basis by dividing by the conversion factor of 0.9761 (gram dry mass per gram as-received mass).

Polycyclic Aromatic Hydrocarbons: The general approach used for the value assignment of the PAHs in SRM 1941b was similar to that reported in detail elsewhere [2]. The approach consisted of combining results from analyses using various combinations of different extraction techniques and solvents, clean-up/isolation procedures, and chromatographic separation and detection techniques: Soxhlet extraction and pressurized-fluid extraction (PFE) using dichloromethane (DCM) or a hexane/acetone mixture, cleanup of the extracts using solid-phase extraction (SPE) or normal-phase liquid chromatography (LC), followed by analysis using the following techniques: (1) reversed-phase liquid chromatography with fluorescence detection (LC-FL) analysis of the total PAH fraction, (2) reversed-phase

[1] Certain commercial equipment, instruments or materials are identified in this certificate to adequately specify the experimental procedure. Such identification does not imply recommendation or endorsement by the National Institute of Standards

LC-FL analysis of isomeric PAH fractions isolated by normal-phase LC (i.e., multidimensional LC), (3) gas chromatography/mass spectrometry (GC/MS) analysis of the PAH fraction on three stationary phases of different selectivity, i.e., a 5 % (all column compositions are given as mole fractions in %) phenyl-substituted methylpolysiloxane phase, a 50 % phenyl-substituted methylpolysiloxane phase, and a relatively non-polar proprietary phase.

Three sets of GC/MS results, designated as GC/MS (I), GC/MS (II), and GC/MS (III), were obtained using three columns with different selectivities for the separation of PAHs. For GC/MS (I) analyses, duplicate subsamples of approximately 1 g from ten bottles of SRM 1941b were extracted using PFE with DCM. Copper powder was added to the extract to remove elemental sulfur. The concentrated extract was passed through an aminopropyl SPE cartridge and eluted with 2 % DCM in hexane (all solvent concentrations are given as volume fractions in %). The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 µm film thickness; DB-5 MS, J&W Scientific, Folsom, CA). The GC/MS (II) analyses were performed using 5 g subsamples from six bottles of SRM 1941b. These samples were extracted using PFE with DCM. The high molecular mass compounds were removed from the extracts using size exclusion chromatography (SEC) with a preparative-scale divinylbenzene-polystyrene column (10 µm particle size with 10 nm diameter pores), and the sulfur was removed from the extracts by adding copper powder. The concentrated extract was passed through an aminopropyl SPE cartridge and eluted with 10 % DCM in hexane. The analysis was by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 50 % phenyl-substituted methylpolysiloxane phase (0.25 µm film thickness; DB-17 MS, J&W Scientific). For the GC/MS (III), 9 g subsamples from six bottles of SRM 1941b were Soxhlet-extracted for 18 h with 250 mL of a mixture of 50 % hexane/50 % acetone. Copper powder was added to the extract to remove elemental sulfur, and the concentrated extract was passed through a silica SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a relatively non-polar proprietary phase (0.25 µm film thickness; DB-XLB, J&W Scientific).

Two sets of LC-FL results, designated as LC-FL (total) and LC-FL (isomer), were used in the certification process. For the LC-FL (total), subsamples of approximately 1 g from six bottles of SRM 1941b were extracted using PFE with a mixture of 50 % hexane/50 % acetone. The extracts were concentrated and then processed through an aminopropylsilane SPE cartridge using 2 % DCM in hexane to obtain the total PAH fraction. For the LC-FL (isomer), a 5 g subsample from the six bottles was extracted using PFE with DCM and processed through an aminopropylsilane SPE cartridge using 10 % DCM in hexane; the PAH fraction was then fractionated further on a semi-preparative aminopropylsilane column (µBondapak NH_2, 9 mm i.d. × 30 cm, Waters Associates, Milford, MA) to isolate isomeric PAH fractions as described previously [3–6]. The total PAH fraction and the isomeric PAH fractions were analyzed using a 5 µm particle-size polymeric octadecylsilane (C_{18}) column (4.6 mm i.d. × 25 cm, Hypersil-PAH, Keystone Scientific, Inc., Bellefonte, PA) with wavelength-programmed fluorescence detection [4,5].

For the GC/MS and LC-FL measurements described above, selected perdeuterated PAHs were added to the sediment prior to solvent extraction for use as internal standards for quantification purposes.

In addition to the analyses performed at NIST, SRM 1941b was used in an interlaboratory comparison exercise in 1999 as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment [7]. Results from 38 laboratories that participated in this exercise were used as the sixth data set in the determination of the certified values for PAHs in SRM 1941b. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest.

Homogeneity Assessment for PAHs: The homogeneity of SRM 1941b was assessed by analyzing duplicate samples of approximately 1 g from ten bottles selected by stratified random sampling. Samples were extracted, processed, and analyzed as described above for GC/MS (I). No statistically significant differences among bottles were observed for the PAHs at this sample size.

PAH Isomers of Molecular Mass 300 and 302: For the determination of the molecular mass 300 and 302 isomers, three subsamples of approximately 5 g each were extracted using PFE with DCM. The extracts were then concentrated with a solvent change to hexane and passed through an aminopropyl SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS using a 0.25 mm i.d. × 60 m fused silica capillary column with a 50 % phenyl-substituted methylpolysiloxane phase (0.25 µm film thickness; DB-17MS, J&W Scientific). Perdeuterated dibenzo[*a,i*]pyrene was added to the sediment prior to extraction for use as an internal standard [8].

PCBs and Chlorinated Pesticides: The general approach used for the determination of PCBs and chlorinated pesticides in SRM 1941b consisted of combining results from analyses using various combinations of different extraction techniques and solvents, cleanup/isolation procedures, and chromatographic separation and detection techniques. Techniques and solvents included Soxhlet extraction and PFE using DCM or a hexane/acetone mixture,

clean-up/isolation using SPE or LC, followed by analysis using GC/MS and gas chromatography with electron capture detection (GC-ECD) on two columns with different selectivity for the separation of PCBs and chlorinated pesticides. The analytical methods are described in detail elsewhere [2].

Six sets of results were obtained and designated as GC-ECD (I) A and B, GC/MS (I) A and B, GC/MS (II), and Interlaboratory Comparison Exercise. For the GC-ECD (I) analyses, approximately 10 g subsamples from six bottles of SRM 1941b were extracted using PFE with DCM. Copper powder was added to the extract to remove elemental sulfur, and SEC, as described above, was used to remove the high molecular mass compounds. The concentrated extract was then fractionated on a semi-preparative aminopropylsilane column to isolate two fractions containing: (1) the PCBs and lower-polarity pesticides and (2) the more polar pesticides. GC-ECD analyses of the two fractions were performed on two columns of different selectivities for PCB separations: 0.25 mm × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5, J&W Scientific), and a 0.25 mm × 60 m fused silica capillary column with a non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific). The results from the 5 % phenyl phase are designated as GC-ECD (IA) and the results from the proprietary phase are designated as GC-ECD (IB). For the GC-ECD analyses, two PCB congeners that are not significantly present in the sediment extract (PCB 103 and PCB 198 [9,10]) and endosulfan I-d_4, 4,4'-DDE-d_8, 4,4'-DD-d_8, and 4,4'-DDT-d_8 were added to the sediment prior to extraction for use as internal standards for quantification purposes.

Two sets of results were obtained by GC/MS. For GC/MS (I), approximately 9 g subsamples from six bottles were Soxhlet- extracted with a mixture of 50 % hexane/50 % acetone for approximately 18 h. Copper powder was added to the extract to remove elemental sulfur, and the concentrated extract was passed through a silica SPE cartridge and eluted with 10 % DCM in hexane. The processed extract was then analyzed by GC/MS with two ionization modes, electron impact (EI) and negative ion chemical ionization (NICI). The GC/MS EI method, GC/MS (IA), used a 0.25 mm i.d. × 60 m fused silica capillary column with a relatively non-polar proprietary phase (0.25 μm film thickness; DB-XLB, J&W Scientific). The GC/MS NICI method, GC/MS (IB), used a 0.25 mm i.d. × 60 m fused silica capillary column with a 5 % phenyl-substituted methylpolysiloxane phase (0.25 μm film thickness; DB-5MS, J&W Scientific). The GC/MS (II) results were obtained in the same manner as the GC/MS (IA) analyses except that three subsamples were Soxhlet-extracted with DCM for approximately 18 h. For the GC/MS analyses, selected carbon-13 labeled PCB congeners and chlorinated pesticides were added to the sediment prior to extraction for use as internal standards for quantification purposes.

In addition to the analyses performed at NIST, SRM 1941b was used in an interlaboratory comparison exercise in 1999 as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment [7]. Results from 38 laboratories that participated in this exercise were used as the sixth data set in the determination of the certified values for PCB congeners and chlorinated pesticides in SRM 1941b. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest.

The reference value for PCB 77 was determined from a separate fraction. The samples were extracted and processed as for GC-ECD (I) above. The first (PCB and lower-polarity pesticide) fraction from the semi-preparative aminopropylsilane column was further fractionated using a Cosmosil PYE (pyrenylethyl group bonded) column (5 μm particle size, 4.6 mm i.d. × 25 cm ; Phenomenex, Torrance, CA) [11]. Three fractions were collected: the first fraction contained the pesticides and multi-*ortho* PCBs, the second fraction contained the polychlorinated naphthalenes, non-*ortho* PCB congeners, and some mono-*ortho* PCB congeners, and the third fraction removed the residual planar compounds from the column. The second fraction was analyzed by GC/MS NICI using the same column as GC/MS (IB) above. Carbon-13 labeled PCB 77 was used as an internal standard for quantification purposes.

Alkylated PAH Groups, Hopanes, and Steranes: SRM 1941b was used in an interlaboratory comparison exercise in 2011 [12]. Results from 33 laboratories that participated in this exercise were used in the determination of the reference values for alkylated PAH groups, hopanes, and steranes in SRM 1941b. Note that not all laboratories returned data for each analyte. The laboratories participating in this exercise used the analytical procedures routinely used in their laboratories to measure the analytes of interest. For the alkylated PAHs, the majority of the laboratories (>90 %) used the parent PAH for determination of the response factor for the corresponding alkylated group.

Total Organic Carbon (TOC): Two laboratories provided results for TOC using similar procedures. Briefly, subsamples of approximately 200 mg were reacted with 6 mol/L hydrochloric acid and rinsed with deionized water prior to combustion in a gas fusion furnace. The carbon monoxide and carbon dioxide produced were measured and compared to a blank for calculation of the percent TOC. Each laboratory analyzed subsamples from three bottles of SRM 1941b. One of the laboratories also analyzed three subsamples from three bottles of SRM 1941b for carbon, hydrogen, and nitrogen.

Table 1. Certified Mass Fraction Values for PAHs in SRM 1941b

PAHs	Mass Fractions[a] (µg/kg)		
Naphthalene[b,c,d,e,f,g]	848	±	95[h]
Fluorene[b,c,d,e,f,g]	85	±	15[h]
Phenanthrene[b,c,d,e,f,g]	406	±	44[h]
Anthracene[b,c,d,e,f,g]	184	±	18[h]
3-Methylphenanthrene[b,c,d]	105	±	13[h]
2-Methylphenathrene[b,c,d]	128	±	14[h]
1-Methylphenanthrene[b,c,d,g]	73.2	±	5.9[h]
Fluoranthene[b,c,d,e,f,g]	651	±	50[h]
Pyrene[b,c,d,e,f,g]	581	±	39[h]
Benz[*a*]anthracene[b,c,d,e,f,g]	335	±	25[h]
Chrysene[d,f]	291	±	31[h]
Triphenylene[d,f]	108	±	5[i]
Benzo[*b*]fluoranthene[c,e]	453	±	21[h]
Benzo[*k*]fluoranthene[b,c,d,e]	225	±	18[h]
Benzo[*e*]pyrene[b,c,d,g]	325	±	25[h]
Benzo[*a*]pyrene[b,c,d,f,g]	358	±	17[h]
Perylene[b,c,d,f,g]	397	±	45[h]
Benzo[*ghi*]perylene[b,c,d,f,g]	307	±	45[h]
Indeno[1,2,3-*cd*]pyrene[b,c,d,f,g]	341	±	57[h]
Dibenz[*a,j*]anthracene[b,c,d,f]	48.9	±	4.6[h]
Dibenz[*a,c*]anthracene[c,f]	36.7	±	5.2[h]
Dibenz[*a,h*]anthracene[c,f]	53	±	10[h]
Benzo[*b*]chrysene[b,c,d,f]	53	±	12[h]
Picene[b,c,d]	46.6	±	4.7[h]

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] GC/MS (I) on 5 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[c] GC/MS (II) on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[d] GC/MS (III) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.
[e] LC-FL (total) of total PAH fraction after PFE with DCM.
[f] LC-FL (isomer) of isomeric PAH fractions after PFE with DCM.
[g] 1999 Interlaboratory Comparison Study [7] with 21 to 29 laboratories submitting data for each PAH.
[h] Certified values are weighted means of the results from two to six analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[i] The certified value is an unweighted mean of the results from two analytical methods. The uncertainty listed with the value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the value is metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Table 2. Certified Mass Fraction Values for PCB Congeners[a] in SRM 1941b

PCB Congeners			Mass Fractions[b] (µg/kg)		
PCB	8	(2,4'-Dichlorobiphenyl)[c,d,e,f,g]	1.65	±	0.19[h]
PCB	18	(2,2',5-Trichlorobiphenyl)[c,d,e,f,g]	2.39	±	0.29[h]
PCB	28	(2,4,4'-Trichlorobiphenyl)[c,d,e,f,g]	4.52	±	0.57[h]
PCB	31	(2,4',5-Trichlorobiphenyl)[c,e,f]	3.18	±	0.41[h]
PCB	44	(2,2'3,5'-Tetrachlorobiphenyl)[c,d,e,f,g]	3.85	±	0.20[i]
PCB	49	(2,2'4,5'-Tetrachlorobiphenyl)[c,d,e,f]	4.34	±	0.28[i]
PCB	52	(2,2',5,5'-Tetrachlorobiphenyl)[c,d,e,f,g]	5.24	±	0.28[i]
PCB	66	(2,3',4,4'-Tetrachlorobiphenyl)[c,e,f,g,j]	4.96	±	0.53[i]
PCB	87	(2,2',3,4,5'-Pentachlorobiphenyl)[c,d,f,j]	1.14	±	0.16[h]
PCB	95	(2,2',3,5',6-Pentachlorobiphenyl)[c,e,f,g]	3.93	±	0.62[i]
PCB	99	(2,2',4,4',5-Pentachlorobiphenyl)[c,d,e,f,g]	2.90	±	0.36[i]
PCB	101	(2,2',4,5,5'-Pentachlorobiphenyl)[c,e,f,g,j]	5.11	±	0.34[i]
PCB	105	(2,3,3',4,4'-Pentachlorobiphenyl)[c,d,e,f,g,j]	1.43	±	0.10[i]
PCB	110	(2,3,3',4',6-Pentachlorobiphenyl)[c,e,f,j]	4.62	±	0.36[i]
PCB	118	(2,3',4,4',5-Pentachlorobiphenyl)[c,d,e,f,g,j]	4.23	±	0.19[i]
PCB	128	(2,2',3,3',4,4'-Hexachlorobiphenyl)[c,d,e,f,g,j]	0.696	±	0.044[i]
PCB	138	(2,2',3,4,4',5'-Hexachlorobiphenyl)[c,e,f,j]	3.60	±	0.28[i]
PCB	149	(2,2',3,4',5',6-Hexachlorobiphenyl)[c,d,e,j]	4.35	±	0.26[h]
PCB	153	(2,2',4,4',5,5'-Hexachlorobiphenyl)[c,d,e,f,g,j]	5.47	±	0.32[i]
PCB	156	(2,3,3',4,4',5-Hexachlorobiphenyl)[c,d,e,f,j]	0.507	±	0.090[h]
PCB	170	(2,2',3,3',4,4',5-Heptachlorobiphenyl)[c,d,e,f,g,j]	1.35	±	0.09[i]
PCB	180	(2,2',3,4,4',5,5'-Heptachlorobiphenyl)[c,d,e,f,g,j]	3.24	±	0.51[i]
PCB	183	(2,2',3,4,4',5',6-Heptachlorobiphenyl)[c,d,e,j]	0.979	±	0.087[h]
PCB	187	(2,2',3,4',5,5',6-Heptachlorobiphenyl)[c,d,e,f,g,j]	2.17	±	0.22[i]
PCB	194	(2,2',3,3',4,4',5,5'-Octachlorobiphenyl)[c,d,e,j]	1.04	±	0.06[h]
PCB	195	(2,2',3,3',4,4',5,6-Octachlorbiphenyl)[c,e,g,j]	0.645	±	0.060[i]
PCB	201	(2,2',3,3',4,5',6,6'-Octachlorobiphenyl)[c,e,j]	0.777	±	0.034[h]
PCB	206	(2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl)[c,e,f,g,j]	2.42	±	0.19[i]
PCB	209	Decachlorobiphenyl[c,d,e,f,g,j]	4.86	±	0.45[i]

[a] PCB congeners are numbered according to the scheme proposed by Ballschmiter and Zell [9] and later revised by Schulte and Malisch [10] to conform to IUPAC rules, except PCB 201. Under the Ballschmiter and Zell numbering system, the IUPAC PCB 201 is listed as PCB 200.

[b] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

[c] GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

[d] GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.

[e] GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

[f] GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.

[g] 1999 Interlaboratory Comparison Study [7] with 13 to 31 laboratories submitting data for each PCB congener.

[h] Certified values are unweighted means of the results from three to five analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[i] Certified values are weighted means of the results from three to six analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[j] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

Table 3. Certified Mass Fraction Values for Chlorinated Pesticides in SRM 1941b

Chlorinated Pesticides	Mass Fractions[a] (µg/kg)
Hexachlorobenzene[b,c,d,e]	5.83 ± 0.38[f]
cis-Chlordane[b,c,d,e,g]	0.85 ± 0.11[h]
trans-Chlordane[b,c,e]	0.566 ± 0.093[f]
cis-Nonachlor[b,e,g]	0.378 ± 0.053[h]
trans-Nonachlor[b,c,d,e,g]	0.438 ± 0.073[f]
4,4'-DDE[b,d,e,g]	3.22 ± 0.28[h]
4,4'-DDD[b,d,e,g]	4.66 ± 0.46[h]

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.
[c] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).
[d] GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.
[e] 1999 Interlaboratory Comparison Study [7] with 13 to 31 laboratories submitting data for each pesticide.
[f] Certified values are unweighted means of the results from three to five analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the constituent listed and the values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[g] GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.
[h] Certified values are weighted means of the results from three to five analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the chlorinated pesticides listed and the values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Table 4. Reference Mass Fraction Values for PAHs in SRM 1941b

PAHs	Mass Fractions[a] (µg/kg)		
1-Methylnaphthalene[b,c,d,e]	127	±	14[f]
2-Methylnaphthalene[b,c,d,e]	276	±	53[f]
2,6-Dimethylnaphthalene[b,c,d,e]	75.9	±	4.5[f]
2,3,5-Trimethylnaphthalene[b,c,d,e]	25.5	±	5.1[f]
Biphenyl[b,c,d,e]	74.0	±	8.0[f]
Acenaphthylene[b,c,d,e]	53.3	±	6.4[f]
Acenaphthene[b,c,d,e]	38.4	±	5.2[f]
9-Methylphenanthrene[c]	63.5	±	2.5[g]
4-Methylphenanthrene and 9-Methylphenanthrene[b,d]	80.1	±	4.8[f]
2-Methylanthracene[c,d]	36	±	15[f]
8-Methylfluoranthene[b]	49.5	±	2.7[g]
7-Methylfluoranthene[b]	45.4	±	1.5[g]
1-Methylfluoranthene[b]	42.4	±	2.1[g]
3-Methylfluoranthene[b]	28.8	±	1.3[g]
2-Methylpyrene[b]	78.7	±	4.0[g]
4-Methylpyrene[b]	66.4	±	2.6[g]
1-Methylpyrene[b]	52.5	±	2.3[g]
Acephenanthrene[d]	30.5	±	1.9[g]
Benzo[*c*]phenanthrene[b,c,d]	58	±	15[f]
Benzo[*a*]fluoranthene[b,c,d]	73	±	18[f]
Benzo[*j*]fluoranthene[c]	217	±	5[g]
Indeno[1,2,3-*cd*]fluoranthene[d]	9.63	±	0.34[g]
Pentaphene[d]	25.3	±	1.0[g]

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] GC/MS (I) on 5 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[c] GC/MS (II) on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM.
[d] GC/MS (III) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.
[e] 1999 Interlaboratory Comparison Study [7] with 14 to 26 laboratories submitting data for each PAH.
[f] Reference values are weighted means of the results from two to four analytical methods [13]. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of PAHs listed as determined by the methods indicted. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[g] Reference values are the means of results obtained by NIST using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the analyte mean, and the coverage factor, k, is determined from the Student's t-distribution for the associated degrees of freedom (19 for footnote b and 5 for footnotes c and d) and 95 % confidence level for each analyte. The measurand is the total mass fraction of the PAHs listed as determined by the method indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

Table 5. Reference Mass Fraction Values for PAHs of Molecular Mass 300 and 302 in SRM 1941b

PAHs of Molecular Mass 300 and 302	Mass Fractions[a,b,c] (µg/kg)		
Coronene	72.6	±	4.7
Dibenzo[*b,e*]fluoranthene	10.3	±	0.3
Naphtho[1,2-*b*]fluoranthene	91.0	±	3.1
Naphtho[1,2-*k*]fluoranthene and Naphtho[2,3-*j*]fluoranthene	79.8	±	2.5
Naphtho[2,3-*b*]fluoranthene	23.5	±	0.3
Dibenzo[*b,k*]fluoranthene	95.6	±	3.1
Dibenzo[*a,k*]fluoranthene	26.6	±	0.4
Dibenzo[*j,l*]fluoranthene	63.8	±	1.8
Dibenzo[*a,l*]pyrene	11.1	±	1.0
Naphtho[2,3-*k*]fluoranthene	10.7	±	0.6
Naphtho[1,2-*a*]pyrene	16.7	±	1.4
Naphtho[2,3-*e*]pyrene	33.2	±	2.3
Dibenzo[*a,e*]pyrene	76.1	±	3.6
Naphtho[2,1-*a*]pyrene	59.2	±	1.8
Dibenzo[*e,i*]pyrene	35.0	±	2.4
Naphtho[2,3-*a*]pyrene	16.5	±	0.6
Benzo[*b*]perylene	38.2	±	1.2
Dibenzo[*a,i*]pyrene	25.5	±	1.0
Dibenzo[*a,h*]pyrene	6.94	±	0.29

[a] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

[b] Reference values are the means of results obtained by NIST using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the analyte mean, and the coverage factor, k, is determined from the Student's t-distribution for two degrees of freedom and 95 % confidence level for each analyte. The measurand is the total mass fraction of the constituent listed as determined by the method indicted. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.

[c] GC/MS on 50 % phenyl-substituted methylpolysiloxane phase after PFE with DCM [8].

Table 6. Reference Mass Fraction Values for PCB Congeners[a] in SRM 1941b

PCB Congeners			Mass Fractions[b,c] (µg/kg)		
PCB	45	(2,2',3,6-Tetrachlorobiphenyl)[d,e]	0.73	±	0.12
PCB	56	(2,3,3',4'-Tetrachlorobiphenyl)[d,f,g]	1.21	±	0.11
PCB	63	(2,3,4',5-Tetrachlorobiphenyl)[e,f,g]	0.213	±	0.040
PCB	70	(2,3',4',5-Tetrachlorobiphenyl)[e,f,g]	4.99	±	0.29
PCB	74	(2,4,4',5-Tetrachlorobiphenyl)[e,f,g]	2.04	±	0.15
PCB	77	(3,3',4,4'-Tetrachlorobiphenyl)[h]	0.31	±	0.03
PCB	107	(2,3,3',4',5-Pentachlorobiphenyl)[d,e,f,g]	0.628	±	0.028
PCB	132	(2,2',3,3',4,6'-Hexachlorobiphenyl)[d,f,g]	1.28	±	0.27
PCB	146	(2,2',3,4',5,5'-Hexachlorobiphenyl)[e,f,g]	1.22	±	0.12
PCB	158	(2,3,3',4,4',6-Hexachlorobiphenyl)[d,e,f,g]	0.65	±	0.15
PCB	163	(2,3,3',4',5,6-Hexachlorobiphenyl)[e,f,g]	1.28	±	0.06
PCB	174	(2,2',3,3',4,5,6'-Heptachlorobiphenyl)[d,e,f,g]	1.51	±	0.39
PCB	193	(2,3,3',4',5,5',6-Heptachlorobiphenyl)[d,e,f,g]	0.292	±	0.075

[a] PCB congeners are numbered according to the scheme proposed by Ballschmiter and Zell [9] and later revised by Schulte and Malisch [10] to conform with IUPAC rules, except PCB 107. Under the Ballschmiter and Zell numbering system, the IUPAC PCB 107 is listed as PCB 108.

[b] Mass fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.

[c] For these PCB congeners except PCB 77, the reference values are unweighted means of the results from two to four analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled within-method variance following the ISO/JCGM Guide [14,15]. For PCB 77, the reference value is the mean of results obtained by NIST using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the analyte mean, and the coverage factor, k, is determined from the Student's t-distribution corresponding to two degrees of freedom and 95 % confidence level for PCB 77. The measurand is the total mass fraction of the PCB Congeners listed as determined by the method or methods indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as microgram per kilogram on a dry-mass basis.

[d] GC-ECD (IA) on 5 % phenyl-substituted methylpolysiloxane phase after PFE extraction with DCM.

[e] GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).

[f] GC/MS (IA) on a relatively non-polar proprietary phase after Soxhlet extraction with 50 % hexane/50 % acetone mixture.

[g] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).

[h] GC/MS NICI on a 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC-ECD (I) fractionated using a PYE column.

Table 7. Reference Mass Fraction Values for Selected Chlorinated Pesticides in SRM 1941b

Chlorinated Pesticides	Mass Fractions[a,b] (µg/kg)		
2,4'-DDE[c,d]	0.38	±	0.12
4,4'-DDT[e,f]	1.12	±	0.42

[a] Mass Fractions reported on dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] The reference values are unweighted means of the results from two analytical methods. The uncertainty listed with each value is an expanded uncertainty about the mean, with coverage factor 2, calculated by combining a between-method variance [16] with a pooled, within-method variance following the ISO/JCGM Guide [14,15]. The measurand is the total mass fraction of the chlorinated pesticides listed as determined by the methods indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[c] GC/MS (IB) on 5 % phenyl-substituted methylpolysiloxane phase; same extracts analyzed as in GC/MS (IA).
[d] GC-ECD (IB) on a relatively non-polar proprietary phase; same extracts analyzed as in GC-ECD (IA).
[e] GC/MS (II) on a relatively non-polar proprietary phase after Soxhlet extraction with DCM.
[f] 1999 Interlaboratory Comparison Study [7] with 10 laboratories submitting data for 4,4'-DDT.

Table 8. Reference Mass Fraction Values for Alkylated PAH Groups in SRM 1941b

Alkylated PAH Group	Mass Fraction[a,b] (µg/kg)		
C2-decalins	18	±	5
C4-decalins	41	±	4
C2-naphthalenes	187	±	53
C3-naphthalenes	158	±	42
C1-benzothiophenes	25	±	14
C2-benzothiophenes	20	±	11
C3-benzothiophenes	22	±	13
C4-benzothiophenes	18	±	5
C1-fluorenes	57	±	18
C2-fluorenes	122	±	43
C3-fluorenes	128	±	31
C1-phenanthrenes/anthracenes	313	±	99
C2-phenanthrenes/anthracenes	247	±	62
C3-phenanthrenes/anthracenes	165	±	46
C4-phenanthrenes/anthracenes	87	±	36
C1-dibenzothiophenes	54	±	13
C2-dibenzothiophenes	91	±	18
C3-dibenzothiophenes	84	±	15
C4-dibenzothiophenes	57	±	13
C1-fluoranthenes/pyrenes	252	±	48
C2-fluoranthenes/pyrenes	205	±	38
C3-fluoranthenes/pyrenes	102	±	22
C4-fluoranthenes/pyrenes	121	±	59
C1-benzanthraces/chrysenes/triphenylenes	208	±	43
C2-benzanthraces/chrysenes/triphenylenes	120	±	24
C3-benzanthraces/chrysenes/triphenylenes	73	±	31
C4-benzanthraces/chrysenes/triphenylenes	41	±	11

[a] The reference mass fraction value reported on a dry-mass basis is the median of results using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the median, and the coverage factor, $k = 2$. The measurand is the total mass fraction of the alkylated PAH groups listed as determined by the interlaboratory study methods. The values listed are metrologically traceable to the SI unit of mass fraction, expressed as micrograms per kilogram on a dry-mass basis.
[b] Data from the interlaboratory study [12].

Table 9. Reference Mass Fraction Values for Hopanes and Steranes in SRM 1941b

Hopane or Sterane	Mass Fraction[a,b] (µg/kg)		
17α(H)-22,29,30-Trisnorhopane	54	±	18
17α(H)-21β(H)-30-Norhopane	137	±	21
17α(H)-21β(H)-30-Hopane	215	±	44
17α(H)-21β(H)-22R-Homohopane	44	±	10
17α(H)-21β(H)-22S-Homohopane	48	±	13
5α(H)-14α(H),17α(H)-Cholestane 20R	41	±	11
5α(H)-14β(H),17β(H)-Cholestane 20R	27	±	6
5α(H)-14β(H),17β(H)-24-Methylcholestane 20R	21	±	8
5α(H)-14α(H),17α(H)-24-Ethylcholestane 20R	19	±	5
5α(H)-14β(H),17β(H)-24-Ethylcholestane 20R	41	±	9

[a] The reference mass fraction value reported on a dry-mass basis is the median of results using one analytical technique. The expanded uncertainty, U, is calculated as $U = ku_c$, where u_c is one standard deviation of the median, and the coverage factor, $k = 2$. The measurand is the total mass fraction of the constituent listed as determined by the methods used during the interlaboratory study. The values are metrologically traceable to the SI unit of mass, expressed as micrograms per kilogram on a dry-mass basis.
[b] Data from the interlaboratory study [12].

Table 10. Reference Mass Fraction Value for Total Organic Carbon in SRM 1941b

Total Organic Carbon (TOC)	2.99 % ± 0.24 %[a,b]

[a] Mass fraction is reported on a dry-mass basis; material as received contains approximately 2.4 % moisture.
[b] The reference value for total organic carbon is a weighted mean value from routine measurements made by two laboratories [21]. The uncertainty listed is an expanded uncertainty about the mean, with coverage factor 2 (approximately 95 % confidence), calculated by combining a between-method variance incorporating inter-method bias with a pooled within-method variance. The reporting follows the ISO/JCGM Guides [2]. The measurand is the total mass fraction of TOC listed as determined by the methods indicted. The values listed are metrologically traceable to the SI unit of mass, expressed as a percent on a dry-mass basis.

Table 11. Information Mass Fraction Values for Carbon, Hydrogen, and Nitrogen in SRM 1941b

Elements	Mass Fractions[a] (%)
Carbon	3.3
Hydrogen	1.2
Nitrogen	<0.5

[a] Mass fraction is reported on a dry-mass basis; material as received contains approximately 2.4 % moisture.

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Certificate Revision History: 16 January 2015 (Corrected IUPAC name for PCB-56 and PCB-107; editorial changes); 10 June 2014 (Units corrected from mg/kg to µg/kg in Tables 8 and 9; editorial changes); 10 April 2012 (Reference value added for alkylated PAH groups, hopanes, and steranes; extension of certification period; editorial changes); 16 August 2004 (Reference values for the butyl tins removed; editorial changes); 15 July 2002 (Original certificate date).

Users of this SRM should ensure that the Certificate of Analysis in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail srminfo@nist.gov; or via the Internet at http://www.nist.gov/srm.

APPENDIX A

The laboratories listed below performed measurements that contributed to the certification of PAHs, PCBs, and chlorinated pesticides in SRM 1941b Organics in Marine Sediment.

Arthur D. Little, Inc; Cambridge, MA
Axys Analytical Services; Sidney, BC, Canada
B & B Laboratories; College Station, TX
Battelle Ocean Sciences; Duxbury, MA
Bedford Institute of Oceanography; Dartmouth, NS, Canada
California Department of Fish and Game; Rancho Cordova, CA
Central Contra Costa Sanitary District; Martinez, CA
Chesapeake Biological Laboratory; Solomons, MD
Centro de Investigacionies Energeticas Medioambientales y Tecnologicas; Madrid, Spain
City of Los Angeles Environmental Monitoring Division; Playa del Rey, CA
City of San Jose Environmental Services Department; San Jose, CA
Columbia Analytical Services; Kelso, WA
East Bay Municipal Utility District; Oakland, CA
Florida Department of Environmental Protection; Tallahassee, FL
Manchester Environmental Laboratory; Port Orchard, WA
Murray State University; Murray, KY
Massachusetts Water Resources Authority Central Lab; Winthrop, MA
National Research Council of Canada; Ottawa, Ontario, Canada
National Oceanic and Atmospheric Association (NOAA), National Marine Fisheries Service (NMFS), Auke Bay Laboratory; Juneau, AK
NOAA, National Ocean Service/Center for Coastal Environmental Health and Biomolecular Research; Charleston, SC
NOAA, NMFS, Sandy Hook Marine Laboratory; Highlands, NJ
NOAA, NMFS, Northwest Fisheries Science Center; Seattle, WA
Orange County Sanitation District; Fountain Valley, CA
Philip Analytical Services; Burlington, Ontario, Canada
Serv de Hidrografia Naval; Buenos Aires, Argentina
Skidaway Institute of Technology; Savannah, GA
Southwest Laboratory of Oklahoma; Broken Arrow, OK
Severn Trent Knoxville Laboratory; Knoxville, TN
Texas A&M University, Geochemical and Environmental Research Group; College Station, TX
Texas Parks and Wildlife Department; San Marcos, TX
University of California at Los Angeles, Institute of Geophysics and Planetary Physics; Los Angeles, CA
University of Connecticut, Environmental Research Institute; Storrs, CT
University of Rhode Island, Graduate School of Oceanography; Narragansett, RI
US Department of Agriculture, Environmental Chemistry Laboratory; Beltsville, MD
US Environmental Protection Agency, Atlantic Ecology Division; Narragansett, RI
US Geological Survey, National Water Quality Laboratory; Denver, CO
Woods Hole Group Environmental Lab; Raynham, MA
Wright State University; Dayton, OH

APPENDIX B

The laboratories listed below performed measurements that contributed to the certification of alkylated PAH groups, hopanes, and steranes in SRM 1941b Organics in Marine Sediment.

Alpha Analytical, Inc.; Mansfield, MA
Analytical Resources, Inc.; Tukwila, WA
Axys Analytical Services; Sydney, BC, Canada
Battelle Analytical & Environmental Chemistry Laboratory; Duxbury, MA
Center for Laboratory Sciences; Pasco, WA
Columbia Analytical Services; Jacksonville, FL
Columbia Analytical Services; Rochester, NY
Columbia Analytical Services, Kelso, WA
Florida Department of Environmental Protection; Tallahassee, FL
Florida International University; North Miami, FL
Michigan Department of Natural Resources and Environment; Lansing, MI
Mississippi State Chemical Laboratory; Mississippi State, MS
NIST; Charleston, SC
NIST; Gaithersburg, MD
NOAA/NCCOS/NOS; Charleston, SC
NOAA/NMFS/Alaska Fisheries Science Center; Juneau, AK
NY State Department of Health; Albany, NY
Pace Analytical Services, Inc. Minneapolis; Minneapolis, MN
RJ Lee Group, Inc; Monroeville, PA
TDI/B&B Laboratories, Inc.; College Station, TX
TestAmerica Laboratories; Mobile, AL
TestAmerica Laboratories; West Sacramento, CA
TestAmerica Laboratories; University Park, IL
TestAmerica Laboratories; Schriever, LA
TestAmerica Laboratories; Edison, NJ
TestAmerica Laboratories; Knoxville, TN
TestAmerica Laboratories; Pittsburgh, PA
TestAmerica Laboratories; South Burlington, VT
TestAmerica Laboratories; Tacoma, WA
US Army Engineer Research and Development Center; Vicksburg, MS
USGS Columbia Environmental Research Center; Columbia, MO
University of Iowa, State Hygienic Laboratory; Iowa City, IO
Washington State Public Health Laboratories; Shoreline, WA

NIST

Date of Issue:
31 March 2014

SAFETY DATA SHEET

1. Substance and Source Identification

Product Identifier

SRM Number: 1941b
SRM Name: Organics in Marine Sediment
Other Means of Identification: Not applicable.

Recommended Use of This Material and Restrictions of Use

This Standard Reference Material (SRM) is marine sediment collected at the mouth of the Baltimore (MD) Harbor. SRM 1941b is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and chlorinated pesticides in marine sediment and similar matrices. All of the constituents for which certified, reference, and information values are provided in SRM 1941b were naturally present in the sediment before processing. A unit of SRM 1941b consists of a bottle containing 50 g of radiation-sterilized, freeze-dried sediment.

Company Information

National Institute of Standards and Technology
Standard Reference Materials Program
100 Bureau Drive, Stop 2300
Gaithersburg, Maryland 20899-2300

Telephone: 301-975-2200
FAX: 301-948-3730
E-mail: SRMMSDS@nist.gov
Website: http://www.nist.gov/srm

Emergency Telephone ChemTrec:
1-800-424-9300 (North America)
+1-703-527-3887 (International)

2. Hazards Identification

Classification

Physical Hazard: Not classified.
Health Hazard: Not classified.

Label Elements
Symbol
No Symbol/Pictogram

Signal Word
Not applicable.

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients(s) with Unknown Acute Toxicity: Not applicable.

3. Composition and Information on Hazardous Ingredients

Substance: Marine sediment

Other Designations: Sediment.

This material is naturally occurring marine sediment from an urban area. The material contains trace amounts of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and should be handled with care. Components are listed in compliance with OSHA's 29 CFR 1910.1200; for the actual values see the Certificate of Analysis.

Hazardous Component(s)	CAS Number	EC Number (EINECS)	Nominal Mass Concentration (%)
Marine Sediment	Not available	Not available	100

4. First Aid Measures

Description of First Aid Measures:

Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.

Skin Contact: Wash skin with soap and water.

Eye Contact: Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.

Ingestion: If adverse effects occur after ingestion, seek medical treatment.

Most Important Symptoms/Effects, Acute and Delayed: May cause irritation.

Indication of any immediate medical attention and special treatment needed, if necessary: If any of the above symptoms are present, seek medical attention if needed.

5. Fire Fighting Measures

Fire and Explosion Hazards: Negligible fire hazard. Avoid generating dust. See Section 9, "Physical and Chemical Properties" for flammability properties.

Extinguishing Media:
Suitable: Use extinguishing media appropriate for surrounding fire.
Unsuitable: None listed.

Specific Hazards Arising from the Chemical: None listed.

Special Protective Equipment and Precautions for Fire-Fighters: Avoid inhalation of material or combustion byproducts. Wear full protective clothing and NIOSH approved self-contained breathing apparatus (SCBA).

NFPA Ratings (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health = 1 Fire = 0 Reactivity = 0

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Any accumulated material on surfaces should be removed and properly disposed of. Use suitable protective equipment; see Section 8, "Exposure Controls and Personal Protection".

Methods and Materials for Containment and Clean up: Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

7. Handling and Storage

Safe Handling Precautions: Minimize dust generation and accumulation on surfaces. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. See Section 8, "Exposure Controls and Personal Protection".

Storage: Store and handling in accordance with all current regulations and standards.

8. Exposure Controls and Personal Protection

Exposure Limits: No occupational exposure limits have been established for marine sediment. This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. The exposure limits for Particulates Not Otherwise Regulated (PNOR) are applicable.

OSHA (PEL): 15 mg/m^3 (TWA, total particulates not otherwise regulated)
OSHA (PEL) 5 mg/m^3 (TWA, respirable particulates not otherwise regulated)

NIOSH (REL): 10 mg/m^3 (TWA, total particulates not otherwise regulated, 8 h)
NIOSH (REL): 5 mg/m^3 (TWA, respirable particulates not otherwise regulated)

Engineering Controls: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Personal Protection: In accordance with OSHA 29 CFR 1910.132, subpart I, wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material.

Respiratory Protection: If workplace conditions warrant a respirator, a respiratory protection program that meets OSHA 29CFR 1910.134 must be followed. Refer to NIOSH 42 CFR 84 for applicable certified respirators.

Eye/Face Protection: Wear splash resistant safety goggles with a face shield. An eye wash station should be readily available near areas of use.

Skin and Body Protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Chemical-resistant gloves should be worn at all times when handling chemicals.

9. Physical and Chemical Properties

Descriptive Properties:

Appearance (physical state, color, etc.):	amorphous powder
Molecular Formula:	not applicable
Molar Mass (g/mol):	not applicable
Odor:	not available
Odor threshold:	not available
pH:	not available
Evaporation rate:	not applicable
Melting point/freezing point (°C):	not available
Specific Gravity (water=1)	not available
Vapor Pressure (mmHg):	not applicable
Vapor Density (air = 1):	not applicable
Viscosity (cP):	not applicable
Solubility(ies):	not available
Partition coefficient (n-octanol/water):	not available
Particle Size:	<150 μm

Thermal Stability Properties:

Autoignition Temperature (°C):	not available
Thermal Decomposition (°C):	not available
Initial boiling point and boiling range (°C):	not available
Explosive Limits, LEL (Volume %):	not available
Explosive Limits, UEL (Volume %):	not available
Flash Point (°C):	not available
Flammability (solid, gas):	not available

10. Stability and Reactivity

Reactivity: Stable at normal temperatures and pressure.

Stability: X Stable _____ Unstable

Possible Hazardous Reactions: None listed.

Conditions to Avoid: Avoid generating dust.

Incompatible Materials: None listed.

Fire/Explosion Information: See Section 5, "Fire Fighting Measures".

Hazardous Decomposition: Thermal decomposition will produce oxides of carbon.

Hazardous Polymerization: _____ Will Occur X Will Not Occur

11. TOXICOLOGICAL INFORMATION

Route of Exposure: X Inhalation X Skin _____ Ingestion

Symptoms Related to the Physical, Chemical and Toxicological Characteristics: Generated dust may cause irritation if inhaled.

Potential Health Effects (Acute, Chronic and Delayed):

Inhalation: Generated dust may cause irritation.

Skin Contact: May cause mechanical irritation.

Eye Contact: May cause mechanical irritation.

Ingestion: No data available.

Numerical Measures of Toxicity:

Acute Toxicity: Not classified; no data available.

Skin Corrosion/Irritation: Not classified; no data available.

Serious Eye damage/ Eye irritation: Not classified; no data available.

Respiratory Sensitization: Not classified; no data available.

Skin Sensitization: Not classified; no data available.

Germ Cell Mutagenicity: Not classified; no data available.

Carcinogenicity: Not classified.

Listed as a Carcinogen/Potential Carcinogen _____ Yes X No
Marine sediment is not listed by NTP, IARC or OSHA as a carcinogen.

Reproductive Toxicity: Not classified; no data available.

Specific Target Organ Toxicity, Single Exposure: Not classified; no data available.

Specific Target Organ Toxicity, Repeated Exposure: Not classified; no data available.

Aspiration Hazard: Not classified; no data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity Data: No data available.

Persistence and Degradability: No data available.

Bioaccumulative Potential: No data available.

Mobility in Soil: No data available.

Other Adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose of waste in accordance with all applicable federal, state, and local regulations.

14. TRANSPORTATION INFORMATION

U.S. DOT and IATA: Not regulated by DOT or IATA.

15. REGULATORY INFORMATION

U.S. Regulations:

CERCLA Sections 102a/103 (40 CFR 302.4): Not regulated.

SARA Title III Section 302 (40 CFR 355.30): Not regulated.

SARA Title III Section 304 (40 CFR 355.40): Not regulated.

SARA Title III Sections 311/312 Hazardous Categories (40 CFR 370.21):

ACUTE HEALTH:	No.
CHRONIC HEALTH:	No.
FIRE:	No.
REACTIVE:	No.
PRESSURE:	No.

State Regulations:
California Proposition 65: Not listed.

U.S. TSCA Inventory: Not listed.

TSCA 12(b), Export Notification: Not listed.

Canadian Regulations:
WHMIS Information: Not provided for this material.

16. OTHER INFORMATION

Issue Date: 31 March 2014

Sources: 29 CFR Occupational Health and Safety Office (OSHA) 1910.1000, *Limits for Air Contaminants*, Table Z-1; available at http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9992 (accessed Mar 2014).

Center for Disease Control (CDC) NIOSH Pocket Guide to Chemical Hazards, *Particulates not otherwise regulated*; available at http://www.cdc.gov/niosh/npg/npgd0480.html (accessed Mar 2014).

Key of Acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists	NRC	Nuclear Regulatory Commission
ALI	Annual Limit on Intake	NTP	National Toxicology Program
CAS	Chemical Abstracts Service	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act
DOT	Department of Transportation	REL	Recommended Exposure Limit
EC50	Effective Concentration, 50 %	RM	Reference Material
EINECS	European Inventory of Existing Commercial Chemical Substances	RQ	Reportable Quantity
EPCRA	Emergency Planning and Community Right-to-Know Act	RTECS	Registry of Toxic Effects of Chemical Substances
IARC	International Agency for Research on Cancer	SARA	Superfund Amendments and Reauthorization Act
IATA	International Air Transportation Agency	SCBA	Self-Contained Breathing Apparatus
IDLH	Immediately Dangerous to Life and Health	SRM	Standard Reference Material
LC50	Lethal Concentration, 50 %	STEL	Short Term Exposure Limit
LD50	Lethal Dose, 50 %	TLV	Threshold Limit Value
LEL	Lower Explosive Limit	TPQ	Threshold Planning Quantity
MSDS	Material Safety Data Sheet	TSCA	Toxic Substances Control Act
NFPA	National Fire Protection Association	TWA	Time Weighted Average
NIOSH	National Institute for Occupational Safety and Health	UEL	Upper Explosive Limit
NIST	National Institute of Standards and Technology	WHMIS	Workplace Hazardous Materials Information System

Disclaimer: Physical and chemical data contained in this SDS are provided only for use in assessing the hazardous nature of the material. The SDS was prepared carefully, using current references; however, NIST does not certify the data in the SDS. The certified values for this material are given in the NIST Certificate of Analysis.

Users of this SRM should ensure that the SDS in their possession is current. This can be accomplished by contacting the SRM Program: telephone (301) 975-2200; fax (301) 948-3730; e-mail srmmsds@nist.gov; or via the Internet at http://www.nist.gov/srm.

Bill to: 68455

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TUKWILA, WA 98168-3240

1 (206)695-6205

Ship to: 68456

DAVE MITCHELL
ANALYTICAL RESOURCES INC
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SUITE 100
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1 (206)695-6205

Ship via	UPS Ground	**Description**		**Ship from**	
Salesmen	MCMIDM2	**Instructions**		**Blanket**	
Contact	DAVE MITCHELL	**Pro#**		**Truck#**	

Order discrepancies (other than back ordered items) must be reported to our Customer Relations Department at 301-975-6776 within 5 days of receipt of shipment or this order will be considered complete. NIST SRMs/RMs are generally not returnable - with the exception of defective goods or shipments made in error by NIST. To return a SRM/RM, please call for instructions and a Return SRM/RM Authorization Number before shipment. Returns WILL NOT BE ACCEPTED without prior authorization.

Order	UOM	Ship	UOM	B/O	UOM	Item	Description
1	EACH	1	EACH	0	EACH	1941B	Organics in Marine Sediment
						Total qty:	1 / EACH
							NOT FOR HUMAN CONSUMPTION, LABORATORY USE ONLY.

9/21/16
04:04 PM

Picked by	
Packed by	
# of pieces	
Weight	

1700101

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT698BX

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-10 C	SDG:	21H0078
Sampled:	08/03/21 14:53	Prepared:	08/13/21 14:20	File ID:	
% Solids:	82.20	Preparation:	No Prep Wet Chem	Analyzed:	08/13/21 14:22
Batch:	BJH0362	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	82.20	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT702BY

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-31 C	SDG:	21H0078
Sampled:	08/03/21 16:50	Prepared:	08/13/21 14:20	File ID:	
% Solids:	70.72	Preparation:	No Prep Wet Chem	Analyzed:	08/13/21 14:22
Batch:	BJH0362	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	70.72	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT702CY

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-32 C	SDG:	21H0078
Sampled:	08/03/21 16:50	Prepared:	08/13/21 14:20	File ID:	
% Solids:	67.06	Preparation:	No Prep Wet Chem	Analyzed:	08/13/21 14:22
Batch:	BJH0362	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	67.06	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

LDW21-IT702EY

Laboratory:	Analytical Resources, Inc.				
Client:	Anchor QEA, LLC				
Project:	Lower Duwamish AOC4				
Matrix:	Sediment	Laboratory ID:	21H0078-34 C	SDG:	21H0078
Sampled:	08/03/21 16:50	Prepared:	08/13/21 14:20	File ID:	
% Solids:	62.10	Preparation:	No Prep Wet Chem	Analyzed:	08/13/21 14:22
Batch:	BJH0362	Sequence:		Initial/Final:	5 g Wet / 5 g
Instrument:	BAL2			Calibration:	

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	62.10	1	0.04	0.04	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

PREPARATION BATCH SUMMARY

SM 2540 G-97

Laboratory:	Analytical Resources, Inc.			SDG:	21H0078
Client:	Anchor QEA, LLC			Project:	Lower Duwamish AOC4
Batch:	BJH0362	Batch Matrix:	Solid	Preparation:	No Prep Wet Chem

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
LDW21-IT698BX	21H0078-10		08/13/21 14:20	
LDW21-IT702BY	21H0078-31		08/13/21 14:20	
LDW21-IT702CY	21H0078-32		08/13/21 14:20	
LDW21-IT702EY	21H0078-34		08/13/21 14:20	
Blank	BJH0362-BLK1		08/13/21 14:20	

TOTAL SOLIDS/VOLATILE SOLIDS (TS / TVS) BENCHSHEET for Solid samples

Method: PSEP 1986, SM2540, EPA 160.1

(dry at 104 (12-24 hr) then combust at 550 (30 min))

Batch:	BJH0362
Date:	8/13/2021 14:22
Analyst:	DOE

Instrumentation

Drying Ovens:	1	**Analytical Balance:**	BAL2
Muffle Furnace:	2		

Batch drying time				**Oven Temps, °C**	
record times as mm/dd/yy hh:mm		TS (%) calculated as:		Start Temp	103
date/time in oven:	8/13/2021 15:00	Final dry wt (g) = (Dry Wt - Tare Wt)		Dry Cycle 1	102
date/time out:	8/16/2021 9:10	TS = (Final Dry Wt)/ (grams Sample-Tare)		Dry Cycle 2	
elapsed hrs =	66.2	> 24 hr		Dry Cycle 3	

TVS (mg/kg dry wt) calculated as:
Final ash wt (g) = (min ash wt - tare wt)
TVS (mg/kg) = [(Dry wt-Ash wt)/ (dry weight)] *1,000,000
if ash wt > dry wt, "Chk for Err"
if dry wt-ash wt < 0.001 g, "< (1/dry wt)*1,000,000

Balance Calibration Check

Record weights to 4 places											
	Cal Weight ID:	CV-02	CV-02	CV-02	CV-02	CV-02		CV-02	CV-02	CV-02	
	Date & Time:	8/13/21 14:30	8/13/21 14:35	8/16/21 9:40							
Cal Wt (g):	10.0000	9.9998	9.9997	9.9999							
		Cal OK!	Cal OK!	Cal OK!							

Sample ID	Dish #	Tare Wt. (g)	Dish & Sample (g)	Dry Wt 104C (grams) 1	2	3	dry Wt (g)	TS (%)	Notes	ASH WT 550C (grams) 1	2	3	Ash Wt (g)	TVS (mg/kg)	TVS (%)	Notes	Fixed (%)
BJH0362-BLK1	18	0.8149	0.0000	0.8152			0.0003	-0.04%									
21F0430-01	19	0.8207	5.2854	3.4373			2.6166	58.61%									
BJH0362-DUP1	20	0.8045	5.1892	3.3421			2.5376	57.87%	RPD=1.3								
BJH0362-DUP2	21	0.8108	5.1102	3.2402			2.4294	56.51%	RSD=1.8								
21F0430-02	22	0.8340	5.8048	4.4596			3.6256	72.94%									
21F0430-03	23	0.7953	5.5566	3.7388			2.9435	61.82%									
21F0430-04	24	0.8128	5.4866	3.6799			2.8671	61.34%									
21F0430-05	25	0.8086	6.2554	3.6614			2.8528	52.38%									
21F0430-06	26	0.7735	6.0359	3.5532			2.7797	52.82%									
21F0430-07	27	0.8024	4.4658	2.6907			1.8883	51.55%									
21F0430-08	28	0.8143	5.6633	3.2208			2.4065	49.63%									
21F0430-09	29	0.7744	6.9904	4.2379			3.4635	55.72%									
21F0430-10	30	0.8038	6.3815	3.8152			3.0114	53.99%									
21F0430-11	31	0.7982	6.9266	4.0377			3.2395	52.86%									
21F0430-12	32	0.7914	5.5405	3.4208			2.6294	55.37%									
21F0430-13	33	0.7864	5.9580	3.7102			2.9238	56.54%									
21F0430-14	34	0.8162	6.8077	4.9751			4.1589	69.41%									
21F0430-15	35	0.7784	4.9702	3.7113			2.9329	69.97%									
21H0078-10	36	0.7847	5.9355	5.0189			4.2342	82.20%									
21H0078-31	37	0.7876	5.7268	4.2804			3.4928	70.72%									
21H0078-32	38	0.7938	4.6952	3.4100			2.6162	67.06%									
21H0078-34	39	0.7764	4.5182	3.1002			2.3238	62.10%									

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Form I

METHOD BLANK DATA SHEET

SM 2540 G-97

TotalAnalytes

Blank

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Batch: BJH0362
Laboratory ID: BJH0362-BLK1
Prepared: 08/13/21 14:20
Matrix: Solid
Preparation: No Prep Wet Chem
Analyzed: 08/13/21 14:22
Sequence:
Calibration:
Instrument: BAL2

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	ND	1	0.04	0.04	U

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HOLDING TIME SUMMARY

Analysis: SM 2540 G-97

Laboratory: Analytical Resources, Inc. SDG: 21H0078

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-IT698BX 21H0078-10	08/03/21 14:53	08/04/21 11:44	08/13/21 14:20	9	28	08/13/21 14:22	10	28	
LDW21-IT702BY 21H0078-31	08/03/21 16:50	08/04/21 11:44	08/13/21 14:20	9	28	08/13/21 14:22	10	28	
LDW21-IT702CY 21H0078-32	08/03/21 16:50	08/04/21 11:44	08/13/21 14:20	9	28	08/13/21 14:22	10	28	
LDW21-IT702EY 21H0078-34	08/03/21 16:50	08/04/21 11:44	08/13/21 14:20	9	28	08/13/21 14:22	10	28	

* Indicates hold time exceedance.

Analytical Resources, Incorporated
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METHOD DETECTION AND REPORTING LIMITS

SM 2540 G-97

Laboratory: Analytical Resources, Inc.
SDG: 21H0078
Client: Anchor QEA, LLC
Project: Lower Duwamish AOC4
Matrix: Solid
Instrument:

Analyte	MDL	RL	Units
Total Solids	0.04	0.04	%