

APPENDIX J.2

Soil Chemistry Lab Report



Analytical Resources, Incorporated
Analytical Chemists and Consultants

29 July 2019

Dan Berlin
Anchor QEA, LLC
1201 3rd Ave, Suite 2600
Seattle, WA 98101

RE: King County Closed Landfills - Vashon

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)
19G0163

Associated SDG ID(s)
N/A

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 enclose 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.

Amanda Volgardsen, Project Manager





WORK ORDER

19G0163

Client: Anchor QEA, LLC

Project Manager: Amanda Volgardsen

Project: Vashon Island Landfill

Project Number: Vashon Island Landfill

Preservation Confirmation

Container ID	Container Type	pH
19G0163-01 A	Small OJ, 500 mL	
19G0163-01 A 01	Small OJ, 500 mL	
19G0163-01 B	HDPE NM, 500 mL, 1:1 HNO ₃	5.2 Pass
19G0163-01 C	Glass NM, Amber, 500 mL	
19G0163-01 D	Glass NM, Amber, 500 mL	
19G0163-02 A	Glass WM, Clear, 16 oz	
19G0163-02 B	Glass WM, Clear, 16 oz	
19G0163-02 C	Glass WM, Clear, 16 oz	
19G0163-02 D	Glass WM, Clear, 8 oz	
19G0163-02 E	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-02 F	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-02 G	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-02 H	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-02 I	VOA Vial, Clear, 40 mL, MeOH	
19G0163-02 J	VOA Vial, Clear, 40 mL, MeOH	
19G0163-02 K	VOA Vial, Clear, 40 mL, MeOH	
19G0163-02 L	VOA Vial, Clear, 40 mL, MeOH	
19G0163-02 M	VOA Vial, Clear, 40 mL, MeOH	
19G0163-02 N	VOA Vial, Clear, 40 mL, MeOH	
19G0163-03 A	Glass WM, Clear, 16 oz	
19G0163-03 B	Glass WM, Clear, 8 oz	
19G0163-03 C	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-03 D	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-03 E	VOA Vial, Clear, 40 mL, MeOH	
19G0163-03 F	VOA Vial, Clear, 40 mL, MeOH	
19G0163-03 G	VOA Vial, Clear, 40 mL, MeOH	
19G0163-04 A	Glass WM, Clear, 16 oz	
19G0163-04 B	Glass WM, Clear, 8 oz	
19G0163-04 C	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-04 D	VOA Vial, Clear, 40 mL, NaHSO ₄	
19G0163-04 E	VOA Vial, Clear, 40 mL, MeOH	
19G0163-04 F	VOA Vial, Clear, 40 mL, MeOH	
19G0163-04 G	VOA Vial, Clear, 40 mL, MeOH	
19G0163-05 A	Glass WM, Clear, 16 oz	
19G0163-05 B	Glass WM, Clear, 8 oz	



WORK ORDER

19G0163

Client: Anchor QEA, LLC

Project Manager: Amanda Volgardsen

Project: Vashon Island Landfill

Project Number: Vashon Island Landfill

19G0163-05 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-05 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-05 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-05 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-05 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-06 A	Glass WM, Clear, 16 oz
19G0163-06 B	Glass WM, Clear, 8 oz
19G0163-06 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-06 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-06 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-06 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-06 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-07 A	Glass WM, Clear, 16 oz
19G0163-07 B	Glass WM, Clear, 8 oz
19G0163-07 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-07 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-07 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-07 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-07 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-08 A	Glass WM, Clear, 16 oz
19G0163-08 B	Glass WM, Clear, 8 oz
19G0163-08 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-08 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-08 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-08 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-08 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-09 A	Glass WM, Clear, 16 oz
19G0163-09 B	Glass WM, Clear, 8 oz
19G0163-09 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-09 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-09 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-09 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-09 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-10 A	Glass WM, Clear, 16 oz
19G0163-10 B	Glass WM, Clear, 8 oz
19G0163-10 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-10 D	VOA Vial, Clear, 40 mL, NaHSO ₄



WORK ORDER

19G0163

Client: Anchor QEA, LLC

Project Manager: Amanda Volgardsen

Project: Vashon Island Landfill

Project Number: Vashon Island Landfill

19G0163-10 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-10 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-10 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-11 A	Glass WM, Clear, 16 oz
19G0163-11 B	Glass WM, Clear, 8 oz
19G0163-11 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-11 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-11 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-11 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-11 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-12 A	Glass WM, Clear, 16 oz
19G0163-12 B	Glass WM, Clear, 8 oz
19G0163-12 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-12 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-12 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-12 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-12 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-13 A	Glass WM, Clear, 16 oz
19G0163-13 B	Glass WM, Clear, 8 oz
19G0163-13 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-13 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-13 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-13 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-13 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-14 A	Glass WM, Clear, 16 oz
19G0163-14 B	Glass WM, Clear, 8 oz
19G0163-14 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-14 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-14 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-14 F	VOA Vial, Clear, 40 mL, MeOH
19G0163-14 G	VOA Vial, Clear, 40 mL, MeOH
19G0163-15 A	Glass WM, Clear, 16 oz
19G0163-15 B	Glass WM, Clear, 8 oz
19G0163-15 C	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-15 D	VOA Vial, Clear, 40 mL, NaHSO ₄
19G0163-15 E	VOA Vial, Clear, 40 mL, MeOH
19G0163-15 F	VOA Vial, Clear, 40 mL, MeOH



WORK ORDER

19G0163

Client: Anchor QEA, LLC

Project Manager: Amanda Volgardsen

Project: Vashon Island Landfill

Project Number: Vashon Island Landfill

19G0163-15 G VOA Vial, Clear, 40 mL, MeOH

19G0163-16 A VOA Vial, Clear, 40 mL, HCL

19G0163-16 B VOA Vial, Clear, 40 mL, HCL

JAW

Preservation Confirmed By

07/12/19

Date



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Anchar

Project Name: Vashan Landfill

COC No(s): _____ NA

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

Assigned ARI Job No: 1960163

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 1725

3.0°C 4.1°C 15.8°C

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

Temp Gun ID#: DOO 5206

Cooler Accepted by: JSW Date: 07/16/19 Time: 1725

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: JSW

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 6/26/19

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

Samples Logged by: JSW Date: 07/16/19 Time: 1732 Labels checked by: JSW

**** 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: _____



Cooler Temperature Compliance Form

ARI Work Order: 19G-0163

Cooler#: 3 Temperature(°C): 15.8°C

Sample ID	Bottle Count	Bottle Type
<u>50-10-190711C</u>	<u>4</u>	<u>All for sample</u>

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Cooler#: _____ Temperature(°C): _____

Sample ID	Bottle Count	Bottle Type

Completed by: JM Date: 7/6/19 Time: 1225

00070F

Cooler Temperature Compliance Form

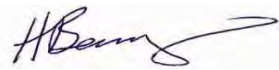
Harold L Benny & Associates, LLC

Project: 19G0163
Project #: 2019-037
Client : Analytical Resources, Inc.

Date Received: July 16, 2019
Date Tested: July 16, 2019
Tested By: H Benny

PROJECT NARRATIVE

1. Fourteen samples were submitted for analysis on July 16, 2019.
2. All samples were for Grain size analysis testing per ASTM D422. The samples were set up per ASTM D421. The samples contained fibrous organic matter that may have broken down during sieving. One sample was selected for triplicate analysis, and is shown on the QA summary.
3. The samples were process ith a standard milkshake mixer prior to hydrometer analysis. An assumed specific gravity of 2.65 was used in the hydrometer calculations.
4. The data is provided in summary tables and plots.
5. There were no noted anomalies in the samples or testing on this project.

Reviewed by: 

Harold L Benny & Associates, LLC

Project: 19G0163

HLB Project #: 2019-037

Client : Analytical Resources, Inc.

Date Received: July 16, 2019

Date Tested: July 16, 2019

Tested By: H Benny

Percent Finer (Passing) Than the Indicated Size

Sieve Size (microns)	1"	3/4"	1/2"	3/8"	#4 (4750)	#10 (2000)	#20 (850)	#40 (425)	#60 (250)	#100 (150)	#200 (75)	32	22	13	9	7	3.2	1.3
19G0163-06	100.0	100.0	100.0	100.0	99.8	98.4	94.6	92.1	88.8	82.6	69.5	42.7	35.0	25.2	20.4	15.5	8.7	3.9
19G0163-06	100.0	100.0	100.0	100.0	98.9	98.5	95.6	94.9	91.9	87.0	72.8	39.9	32.9	24.9	19.9	15.9	9.0	4.0
19G0163-06	100.0	100.0	100.0	100.0	99.9	98.7	94.4	92.5	89.4	83.1	70.3	40.7	35.4	26.5	21.2	16.8	9.7	4.4
19G0163-02	100.0	100.0	100.0	100.0	99.9	98.8	96.0	93.6	88.4	78.1	66.8	48.9	39.5	26.8	20.5	16.6	8.7	4.7
19G0163-03	100.0	100.0	100.0	100.0	98.8	97.4	93.5	88.8	79.6	62.0	37.9	26.6	20.0	14.8	10.4	8.9	5.2	2.2
19G0163-04	100.0	100.0	100.0	100.0	99.3	97.7	93.2	83.9	71.6	51.8	37.7	29.9	21.6	16.6	14.1	10.8	4.2	1.7
19G0163-05	100.0	100.0	100.0	100.0	99.3	97.3	91.7	81.9	74.6	62.9	51.1	39.2	26.7	22.2	19.6	16.9	9.8	4.4
19G0163-07	100.0	100.0	100.0	100.0	99.3	98.6	96.8	91.3	78.7	56.0	38.7	27.7	21.8	14.6	11.7	10.2	4.4	2.9
19G0163-08	100.0	100.0	100.0	100.0	100.0	99.6	98.7	97.1	91.4	64.3	23.8	8.7	8.0	4.3	3.6	2.9	1.4	0.7
19G0163-09	100.0	100.0	100.0	100.0	95.1	93.0	89.9	84.6	68.9	41.3	20.6	16.6	12.5	9.7	8.3	6.9	3.5	2.8
19G0163-10	100.0	100.0	100.0	100.0	99.0	97.1	95.1	88.9	69.8	39.4	19.3	13.7	10.9	8.2	6.2	4.1	4.1	1.4
19G0163-11	100.0	100.0	100.0	100.0	98.7	96.4	93.0	89.0	82.3	73.8	65.5	44.8	33.6	24.5	19.6	15.4	8.4	4.2
19G0163-12	100.0	100.0	100.0	100.0	99.0	95.7	91.9	87.7	80.9	72.5	63.9	46.3	33.7	25.3	21.1	16.1	7.7	4.2
19G0163-13	100.0	100.0	100.0	98.3	96.2	94.3	87.5	78.9	69.4	55.0	41.9	30.4	23.2	16.1	12.5	8.9	4.5	1.8
19G0163-14	100.0	100.0	100.0	100.0	98.8	97.0	94.0	88.7	70.9	44.9	28.8	20.4	16.0	11.7	10.2	7.3	3.6	1.5
19G0163-15	100.0	100.0	100.0	94.2	87.8	83.9	79.2	68.6	46.7	26.5	16.9	12.2	10.4	8.6	7.3	5.5	3.1	1.2

Testing performed according to ASTM D421/D422

Reviewed by:



Harold L Benny & Associates, LLC

Project: 19G0163

HLB Project #: 2019-037

Client : Analytical Resources, Inc.

Date Received: July 16, 2019

Date Tested: July 16, 2019

Tested By: H Benny

Percent Retained in Each Size Fraction

Description	% Gravel			% Coarse Sand	% Medium Sand		% Fine Sand			% Very Coarse Silt	% Coarse Silt	% Medium Silt	% Fine Silt	% Fine Silt	% Very Fine Silt	% Clay
	3/4-1/2"	1/2-3/8"	3/8"-4/750		2000-850	850-425	425-250	250-150	150-75							
Particle Size (microns)				4750-2000												
19G0163-06	0.00	0.00	0.22	1.35	3.82	2.54	3.26	6.23	13.11	26.74	7.77	9.71	4.86	4.86	6.80	<3.2
19G0163-06	0.00	0.00	1.06	0.45	2.93	0.66	2.99	4.88	14.23	32.96	6.97	7.97	4.98	3.99	6.97	8.74
19G0163-06	0.00	0.00	0.12	1.17	4.27	1.94	3.07	6.36	12.77	29.62	5.31	8.84	5.31	4.42	7.07	8.97
19G0163-02	0.00	0.00	0.13	1.05	2.84	2.38	5.23	10.29	11.24	17.92	9.47	12.63	6.31	3.95	7.89	9.73
19G0163-03	0.00	0.00	1.19	1.43	3.87	4.73	9.18	17.63	24.12	11.21	6.66	5.18	4.44	1.48	3.70	8.68
19G0163-04	0.00	0.00	0.65	1.63	4.53	9.27	12.28	19.82	14.17	7.75	8.31	4.98	2.49	3.32	6.64	5.18
19G0163-05	0.00	0.00	0.66	2.07	5.55	9.81	7.32	11.68	11.77	11.98	12.46	4.45	2.67	2.67	7.12	4.15
19G0163-07	0.00	0.00	0.69	0.67	1.89	5.44	12.59	22.76	17.31	10.98	5.83	7.28	2.91	1.46	5.83	9.79
19G0163-08	0.00	0.00	0.04	0.33	0.88	1.63	5.73	27.08	40.50	15.11	0.72	3.62	0.72	0.72	1.45	4.37
19G0163-09	0.00	0.00	4.92	2.09	3.13	5.28	15.67	27.62	20.69	3.97	4.16	2.77	1.39	1.39	3.46	1.45
19G0163-10	0.00	0.00	0.95	1.92	2.01	6.27	19.06	30.43	20.04	5.65	2.73	2.73	2.05	2.05	0.00	3.46
19G0163-11	0.00	0.00	1.25	2.40	3.37	3.99	6.73	8.45	8.35	20.62	11.21	9.11	4.90	4.20	7.01	4.10
19G0163-12	0.00	0.00	1.02	3.33	3.76	4.23	6.73	8.42	8.58	17.61	12.63	8.42	4.21	4.91	8.42	8.41
19G0163-13	0.00	1.72	2.10	1.89	6.76	8.58	9.58	14.38	13.13	11.48	7.15	7.15	3.57	3.57	4.47	7.72
19G0163-14	0.00	0.00	1.17	1.86	2.92	5.38	17.72	26.03	16.08	8.43	4.37	4.37	1.46	2.91	3.64	4.47
19G0163-15	0.00	5.76	6.43	3.91	4.75	10.60	21.89	20.20	9.52	4.73	1.83	1.83	1.22	1.83	2.44	3.64
																3.05

Reviewed by:



Harold L Benny & Associates, LLC

Client : Analytical Resources, Inc.
 Project: 19G0163
 HLB Project #: 2019-037

Date Received: July 16, 2019
 Date Tested: July 16, 2019
 Tested By: H Benny

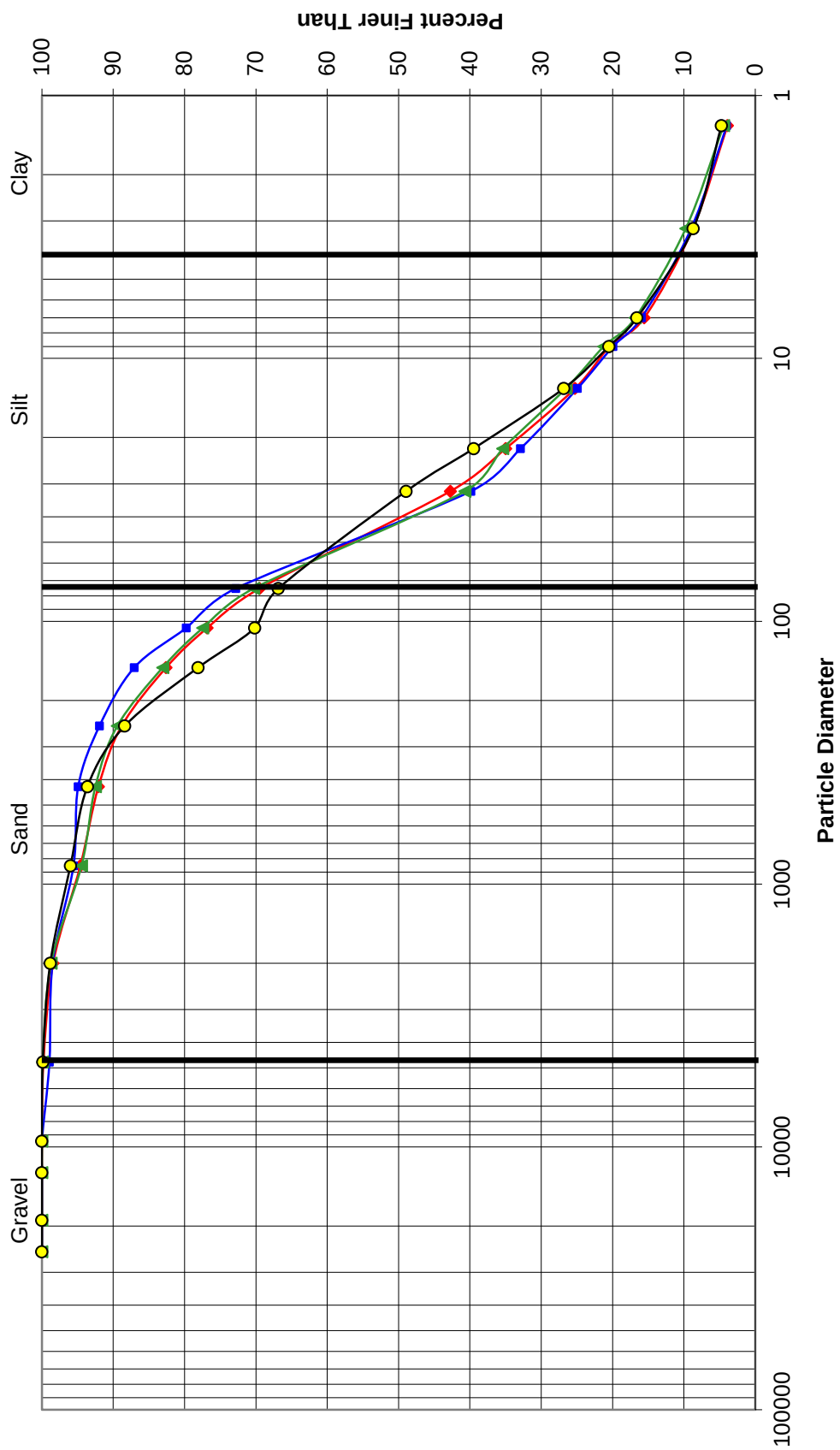
Relative Standard Deviation, By Size																		
Sample ID	1/2"	3/8"	4750	2000	850	425	250	150	106	75	45	32	22	13	9	7	3.2	1.3
19G0163-06	100.00	100.00	99.78	98.42	94.60	92.06	88.80	82.58	76.82	69.47	50.50	42.73	34.96	25.25	20.39	15.54	8.74	3.88
19G0163-06	100.00	100.00	98.94	98.49	95.56	94.91	91.92	87.05	79.76	72.82	45.83	39.86	32.88	24.91	19.93	15.94	8.97	3.99
19G0163-06	100.00	100.00	99.88	98.71	94.44	92.49	89.42	83.06	77.43	70.29	47.75	40.68	35.37	26.53	21.22	16.80	9.73	4.42
AVE	100.0	100.0	99.5	98.5	94.9	93.2	90.05	84.23	78.00	70.86	48.03	41.09	34.40	25.56	20.51	16.09	9.14	4.10
STDEV	0.00	0.00	0.52	0.15	0.61	1.53	1.65	2.45	1.55	1.75	2.34	1.48	1.34	0.85	0.66	0.65	0.52	0.29
%RSD	0.00	0.00	0.52	0.15	0.64	1.65	1.83	2.91	1.99	2.46	4.88	3.60	3.88	3.34	3.20	4.01	5.65	6.96

This Triplicate applies to the Batch Containing the Following Samples

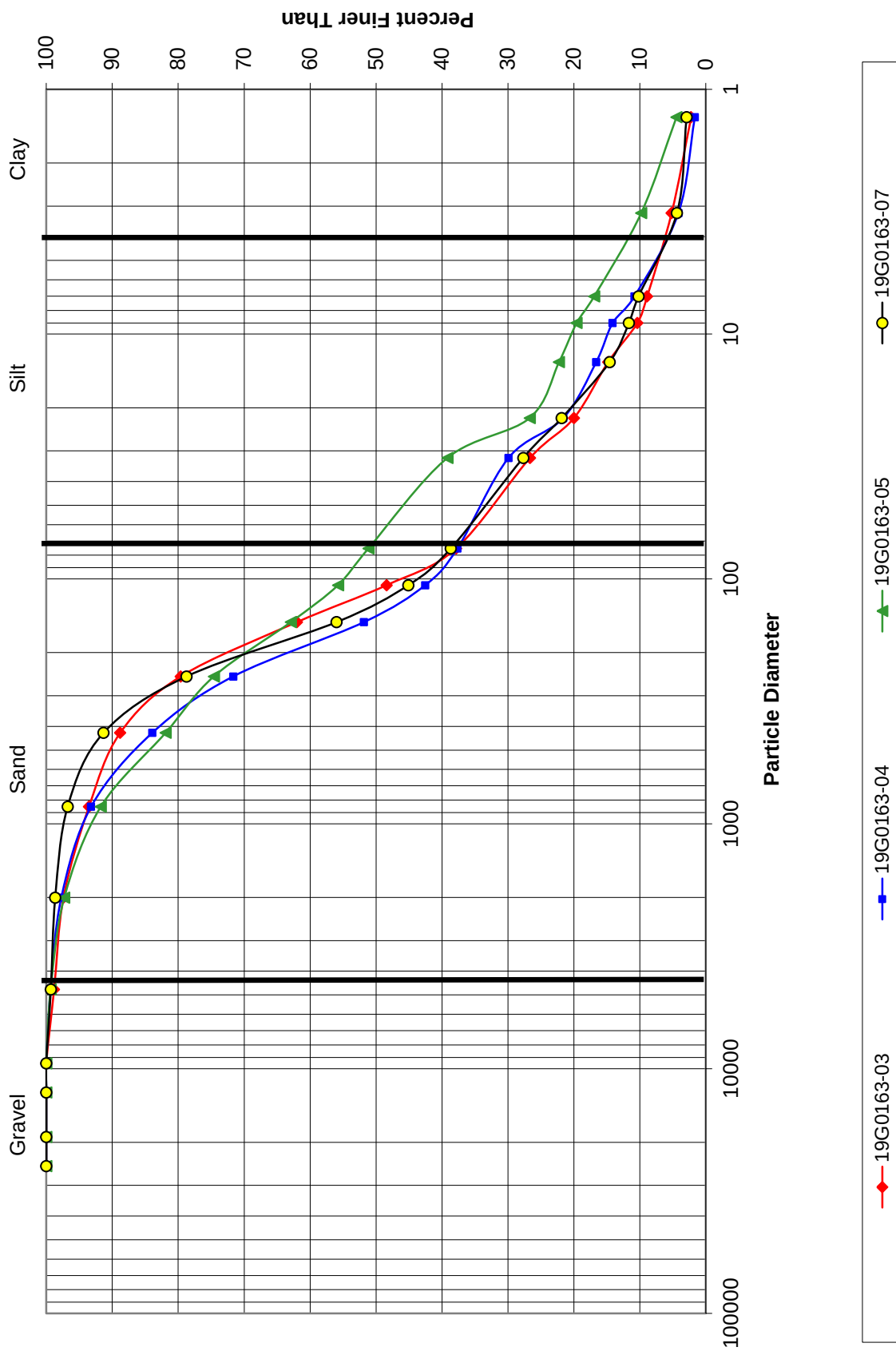
Sample ID	Date Sampled	Date Set up	Date Started	Date Complete	Data Qualifiers
19G0163-06	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-06	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-06	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-02	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-03	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-04	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-05	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-07	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-08	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-09	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-10	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-11	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-12	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-13	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-14	7/11/2019	7/16/2019	7/24/2019	7/26/2019	
19G0163-15	7/11/2019	7/16/2019	7/24/2019	7/26/2019	

Reviewed by: 

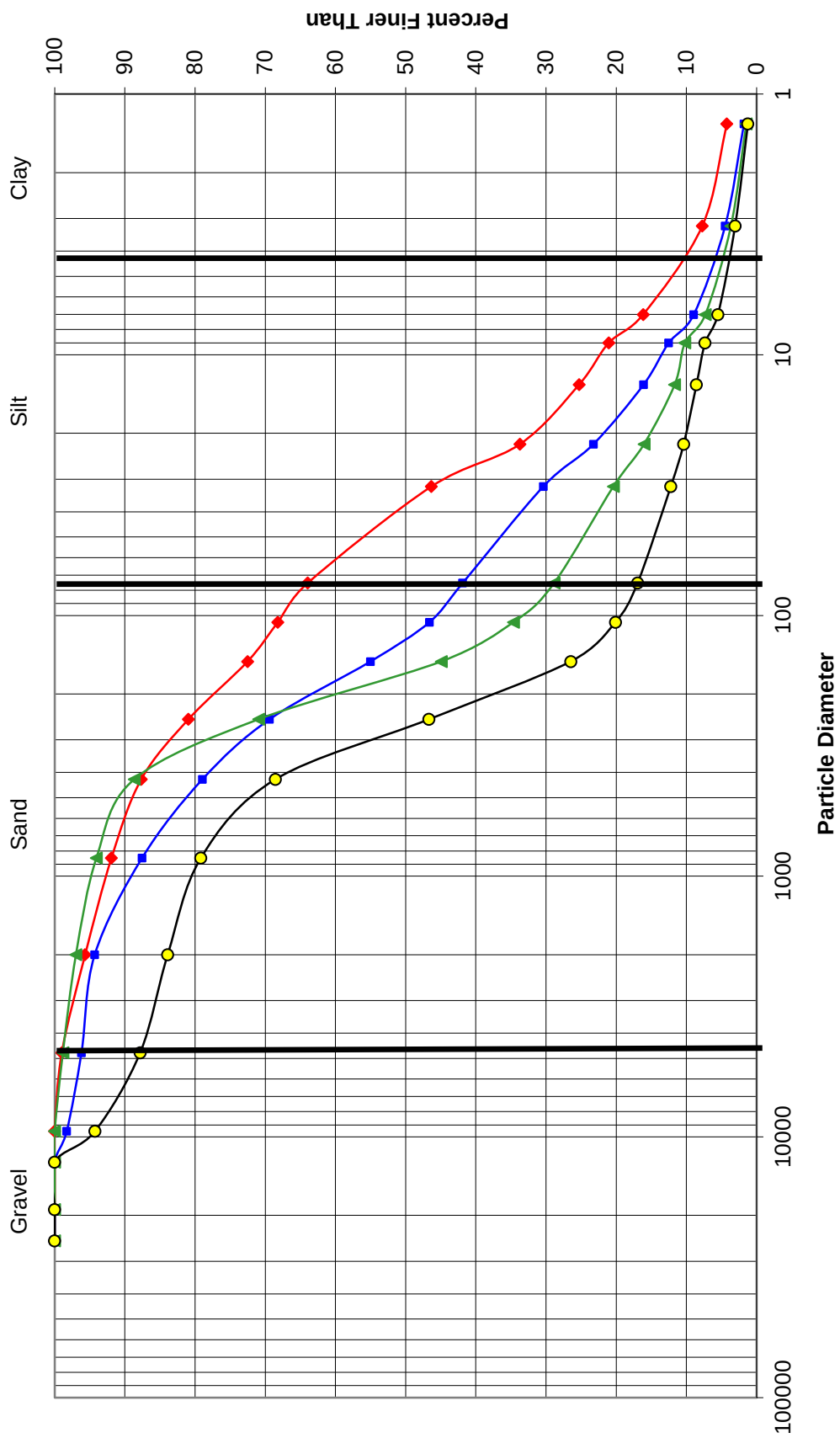
Grain Size Distribution by Hydrometer



Grain Size Distribution by Hydrometer



Grain Size Distribution by Hydrometer





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

Project: King County Closed Landfills - Vashon
Project Number: 100240-04.02
Project Manager: Dan Berlin

Reported:
29-Jul-2019 14:32

Case Narrative

Sample receipt

Samples as listed on the preceding page were received July 11, 2019 under ARI work order 19G0163. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Volatiles - EPA Method SW8260C

The samples were analyzed within the recommended holding times.

Initial calibrations were within method requirements, with the exception of ICAL CF00067 which has a linear COD for 1,1-Dichloropropene at the LCOD limit. The linear COD does not exceed the LCOD limit. No corrective action was taken.

The initial calibration verification (ICV) for NT5 on 7/16/19 is outside of control limits low for Dichlorodifluoromethane. The ICV for NT3 on 7/18/19 is outside of control limits low for Acrolein and 1,2,3-Trichlorobenzene and outside of control limits high for 2,2-Dichloropropane and 2-Pentanone. The ICV for NT5 on 7/19/19 is outside of control limits high for Chloroethane. The samples are non-detect for these compounds. Associated QC has been flagged with "Q" qualifiers. No further corrective action was taken.

Samples SO-03-190711, SO-10-190711D and SO-10-190711 have low internal standard areas for 1,4-Dichlorobenzene-d4. Due to failing surrogates as well samples SO-03-190711 and SO-10-190711D were reanalyzed with all internal standards within area limits. All other internal standard areas were within area limits. No further corrective action was taken.

Samples SO-03-190711 and SO-10-190711D have low surrogate percent recoveries for 4-Bromofluorobenzene. These samples also had low internal standard recoveries. Both samples were reanalyzed with sample SO-03-190711 still having low surrogate percent recovery for 4-Bromofluorobenzene. All other surrogate percent recoveries were within control limits. No further corrective action was taken.

The method blanks have various compounds detected between the method detection limits and the reporting limits. These compounds have been flagged with "J" qualifiers on the method blanks. There were no target compounds detected above the reporting limits in the method blanks. No further corrective action was taken.

The LCSD BHG0439 has high RPD for Acrolein. This is a poor performing compound. All other LCS/LCSD percent recoveries and RPD were within QC limits. No corrective action was taken.

A matrix spike and matrix spike duplicate were prepared in conjunction with sample SO-01-190711. The matrix spike and matrix spike duplicate have low spike recoveries for several "*" flagged compounds with the exception of Acetone which has high spike recoveries. The matrix spike duplicate has high RPD for several "*" flagged compounds as well. This is caused by normal instrument matrix interference. The matrix spike and matrix spike duplicate have no spike recoveries for 2-Chloroethylvinylether, which is a poor performing compound. The results are advisory. The matrix spike/matrix spike duplicate percent recoveries and RPD were within QC limits for all non-flagged compounds.

Gasoline by NWTPH-g (GC/MS)

The samples were analyzed within the recommended holding times.

The gasoline vials contained less than 4g of sample volume and a high volume of moisture. This causes the reporting limits to be elevated. Also the maximum MeOH split volume for the gasoline is 900 uL into 45mL of deionized water, which is reported as a 50x dilution.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.



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

Project: King County Closed Landfills - Vashon
Project Number: 100240-04.02
Project Manager: Dan Berlin

Reported:
29-Jul-2019 14:32

Case Narrative

The method blanks were clean at the reporting limits.

The LCS/LCSD percent recoveries and RPD were within control limits.

Matrix spikes and matrix spike duplicates were prepared in conjunction with samples SO-01-190711 and SO-11-190711. The matrix spike/matrix spike duplicate percent recoveries and RPD were within QC limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The samples were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blanks were clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike and matrix spike duplicate were prepared in conjunction with sample SO-01-190711. The matrix spike/matrix spike duplicate percent recoveries and RPD were within QC limits.

Total Hg - EPA Method 7470A

The sample was digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank was clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike and duplicate were prepared in conjunction with sample SO-10-190711E. The matrix spike percent recovery and duplicate RPD were within QC limits.

Total Hg - EPA Method 7471B

The samples were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blanks were clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike, matrix spike duplicate and duplicate were prepared in conjunction with sample SO-01-190711. The matrix spike, matrix spike duplicate and duplicate percent recoveries and/or RPD were within QC limits.

Total Metals - EPA Method 6010C

The samples were digested and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank have Chromium and Iron detected between the method detection limit and the reporting limit. These metals have been flagged with "J" qualifiers on the method blanks. There were no target metals detected above the



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

Project: King County Closed Landfills - Vashon
Project Number: 100240-04.02
Project Manager: Dan Berlin

Reported:
29-Jul-2019 14:32

Case Narrative

reporting limits in the method blanks. No further corrective action was taken.

The LCS percent recoveries were within control limits.

A matrix spike, matrix spike duplicate and duplicate were prepared in conjunction with sample SO-01-190711. The duplicate has high RPD for Manganese. The matrix spike has low spike recovery for Magnesium. The matrix spike and matrix spike duplicate have natural concentrations of Iron and Manganese that are so much greater than the concentrations spiked that accurate determination of spike recovery are not possible. The Iron and Manganese have been flagged with "HC" qualifiers on the MS/MSD. The results are advisory. All other matrix spike, matrix spike duplicate and duplicate percent recoveries and/or RPD were within QC limits. No further corrective action was taken.

A matrix spike and duplicate were prepared in conjunction with sample SO-10-19011E. The duplicate has an Iron concentration ≤ 5 times the reporting, and the replicate control limit defaults to $\pm$ the reporting limit instead of 20% of the RPD. The Iron has been flagged with an "L" qualifier on the duplicate. The results are advisory. All other matrix spike percent recoveries and duplicate RPD were within QC limits. No further corrective action was taken.

Hexavalent Chromium - EPA Method 7196A

The samples were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blanks were clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike and duplicate were prepared in conjunction with sample SO-10-190711E. The matrix spike percent recovery and duplicate RPD were within QC limits.

Matrix spikes and a duplicate were prepared in conjunction with sample SO-01-190711. The matrix spike MS1 has no spike recovery. The matrix spike was reanalyzed as MS2 with low spike recovery. A post spike was prepared with low spike recovery. This is normal matrix interference. The results are advisory. The duplicate RPD was within QC limits. No further corrective action was taken.

Total Organic Carbon - EPA Method 9060A modified

The samples were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank was clean at the reporting limits.

The LCS percent recoveries were within control limits.

A matrix spike and duplicate were prepared in conjunction with sample SO-01-190711. The matrix spike has no spike recovery for TIC. The results are advisory. All other matrix spike percent recoveries and duplicate RPD were within QC limits. No corrective action was taken.

Grainsize

The samples were submitted to Harold L. Benny & Associates, LLC for grainsize analysis. The report is included here in its entirety.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Anchor QEA, LLC

1201 3rd Ave, Suite 2600

Seattle, WA 98101

Project: King County Closed Landfills - Vashon

Project Number: 100240-04.02

Project Manager: Dan Berlin

Reported:

07/29/2019 14:32

ANALYTICAL REPORT FOR SAMPLES

Laboratory ID	Sample ID	Matrix	Date Sampled	Date Received
19G0163-01	SO-10-190711E	Water	07/11/19 15:10	07/11/19 17:25
19G0163-02	SO-01-190711	Solid	07/11/19 11:05	07/11/19 17:25
19G0163-03	SO-02-190711	Solid	07/11/19 10:50	07/11/19 17:25
19G0163-04	SO-03-190711	Solid	07/11/19 08:35	07/11/19 17:25
19G0163-05	SO-04-190711	Solid	07/11/19 11:30	07/11/19 17:25
19G0163-06	SO-05-190711	Solid	07/11/19 12:05	07/11/19 17:25
19G0163-07	SO-06-190711	Solid	07/11/19 12:20	07/11/19 17:25
19G0163-08	SO-07-190711	Solid	07/11/19 11:55	07/11/19 17:25
19G0163-09	SO-08-190711	Solid	07/11/19 10:25	07/11/19 17:25
19G0163-10	SO-09-190711	Solid	07/11/19 10:10	07/11/19 17:25
19G0163-11	SO-10-190711	Solid	07/11/19 09:45	07/11/19 17:25
19G0163-12	SO-10-190711D	Solid	07/11/19 09:50	07/11/19 17:25
19G0163-13	SO-11-190711	Solid	07/11/19 09:10	07/11/19 17:25
19G0163-14	SO-12-190711	Solid	07/11/19 09:25	07/11/19 17:25
19G0163-15	SO-13-190711	Solid	07/11/19 12:35	07/11/19 17:25
19G0163-16	TB-SO-190711	Water	07/11/19 00:00	07/11/19 17:25



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).
Q	Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
NRS	This surrogate not reported due to chromatographic interference
L	Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to $\pm$ RL instead of 20% RPD
K	Hexavalent Chromium post spike performed on a pH adjusted sample to verify matrix interference.
J	Estimated concentration value detected below the reporting limit.
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
D1	Surrogate was not detected due to sample extract dilution
D	The reported value is from a dilution
B	This analyte was detected in the method blank.
*	Flagged value is not within established control limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-02 F</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 11:05</u>	Prepared:	<u>07/12/19 14:22</u>	File ID:	<u>NT507121906.D</u>
% Solids:	<u>48.32</u>	Preparation:	<u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed:	<u>07/12/19 14:54</u>
Batch:	<u>BHG0316</u>	Sequence:	<u>SHG0192</u>	Initial/Final:	<u>2.35 g Wet / 5 mL</u>
Instrument:	<u>NT5</u>	Column:	<u>RTX-VMS</u>	Calibration:	<u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	4.40	U	1.16	4.40
75-01-4	Vinyl Chloride	1	4.40	U	1.03	4.40
74-83-9	Bromomethane	1	4.40	U	0.82	4.40
75-00-3	Chloroethane	1	4.40	U	2.03	4.40
75-69-4	Trichlorofluoromethane	1	4.40	U	1.17	4.40
107-02-8	Acrolein	1	22.0	U	16.8	22.0
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	8.81	U	1.26	8.81
67-64-1	Acetone	1	150		2.12	22.0
75-35-4	1,1-Dichloroethene	1	4.40	U	1.48	4.40
74-96-4	Bromoethane	1	8.81	U	1.94	8.81
74-88-4	Iodomethane	1	4.40	U	0.95	4.40
75-09-2	Methylene Chloride	1	3.27	J	2.80	8.81
107-13-1	Acrylonitrile	1	22.0	U	4.54	22.0
75-15-0	Carbon Disulfide	1	4.40	U	2.46	4.40
156-60-5	trans-1,2-Dichloroethene	1	4.40	U	1.17	4.40
108-05-4	Vinyl Acetate	1	22.0	U	1.68	22.0
75-34-3	1,1-Dichloroethane	1	4.40	U	0.89	4.40
78-93-3	2-Butanone	1	13.7	J	2.26	22.0
594-20-7	2,2-Dichloropropane	1	4.40	U	1.29	4.40
156-59-2	cis-1,2-Dichloroethene	1	4.40	U	1.06	4.40
67-66-3	Chloroform	1	4.40	U	1.03	4.40
74-97-5	Bromochloromethane	1	4.40	U	1.42	4.40
71-55-6	1,1,1-Trichloroethane	1	4.40	U	1.00	4.40
563-58-6	1,1-Dichloropropene	1	4.40	U	1.37	4.40
56-23-5	Carbon tetrachloride	1	4.40	U	0.94	4.40
107-06-2	1,2-Dichloroethane	1	4.40	U	0.84	4.40
71-43-2	Benzene	1	4.40	U	1.30	4.40
79-01-6	Trichloroethene	1	4.40	U	0.93	4.40
78-87-5	1,2-Dichloropropane	1	4.40	U	0.71	4.40
75-27-4	Bromodichloromethane	1	4.40	U	1.12	4.40
74-95-3	Dibromomethane	1	4.40	U	0.65	4.40
110-75-8	2-Chloroethyl vinyl ether	1	22.0	U	1.22	22.0
108-10-1	4-Methyl-2-Pentanone	1	22.0	U	1.85	22.0
10061-01-5	cis-1,3-Dichloropropene	1	4.40	U	1.00	4.40



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-02 F SDG: 19G0163
Sampled: 07/11/19 11:05 Prepared: 07/12/19 14:22 File ID: NT507121906.D
% Solids: 48.32 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 14:54
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 2.35 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	2.53	J	0.66	4.40
10061-02-6	trans-1,3-Dichloropropene	1	4.40	U	0.95	4.40
591-78-6	2-Hexanone	1	22.0	U	1.93	22.0
79-00-5	1,1,2-Trichloroethane	1	4.40	U	1.26	4.40
142-28-9	1,3-Dichloropropane	1	4.40	U	0.92	4.40
127-18-4	Tetrachloroethene	1	4.40	U	1.13	4.40
124-48-1	Dibromochloromethane	1	4.40	U	1.17	4.40
106-93-4	1,2-Dibromoethane	1	4.40	U	0.77	4.40
108-90-7	Chlorobenzene	1	4.40	U	0.96	4.40
100-41-4	Ethylbenzene	1	4.40	U	0.89	4.40
630-20-6	1,1,1,2-Tetrachloroethane	1	4.40	U	1.03	4.40
179601-23-1	m,p-Xylene	1	8.81	U	1.73	8.81
95-47-6	o-Xylene	1	4.40	U	0.99	4.40
1330-20-7	Xylenes, total	1	8.81	U	2.71	8.81
100-42-5	Styrene	1	4.40	U	0.61	4.40
75-25-2	Bromoform	1	4.40	U	1.31	4.40
79-34-5	1,1,1,2-Tetrachloroethane	1	4.40	U	1.11	4.40
96-18-4	1,2,3-Trichloropropane	1	8.81	U	2.28	8.81
110-57-6	trans-1,4-Dichloro 2-Butene	1	22.0	U	1.92	22.0
103-65-1	n-Propylbenzene	1	4.40	U	1.20	4.40
108-86-1	Bromobenzene	1	4.40	U	0.67	4.40
98-82-8	Isopropyl Benzene	1	4.40	U	1.03	4.40
95-49-8	2-Chlorotoluene	1	4.40	U	1.32	4.40
106-43-4	4-Chlorotoluene	1	4.40	U	1.22	4.40
98-06-6	t-Butylbenzene	1	4.40	U	1.35	4.40
108-67-8	1,3,5-Trimethylbenzene	1	4.40	U	1.12	4.40
95-63-6	1,2,4-Trimethylbenzene	1	4.40	U	1.01	4.40
135-98-8	s-Butylbenzene	1	4.40	U	1.06	4.40
99-87-6	4-Isopropyl Toluene	1	4.40	U	1.04	4.40
541-73-1	1,3-Dichlorobenzene	1	4.40	U	1.00	4.40
106-46-7	1,4-Dichlorobenzene	1	4.40	U	1.02	4.40
104-51-8	n-Butylbenzene	1	4.40	U	1.15	4.40
95-50-1	1,2-Dichlorobenzene	1	4.40	U	1.29	4.40
96-12-8	1,2-Dibromo-3-chloropropane	1	22.0	U	2.58	22.0



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-02 F SDG: 19G0163

Sampled: 07/11/19 11:05 Prepared: 07/12/19 14:22 File ID: NT507121906.D

% Solids: 48.32 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 14:54

Batch: BHG0316 Sequence: SHG0192 Initial/Final: 2.35 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	22.0	U	1.46	22.0
87-68-3	Hexachloro-1,3-Butadiene	1	22.0	U	1.81	22.0
91-20-3	Naphthalene	1	22.0	U	1.89	22.0
87-61-6	1,2,3-Trichlorobenzene	1	1.45	J	1.34	22.0
75-71-8	Dichlorodifluoromethane	1	4.40	U	0.91	4.40
1634-04-4	Methyl tert-butyl Ether	1	4.40	U	1.02	4.40
107-87-9	2-Pentanone	1	22.0	U	22.0	22.0

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	66.4	133	80 - 149	
Toluene-d8	50.000	50.7	101	77 - 120	
4-Bromofluorobenzene	50.000	45.3	90.6	80 - 120	
1,2-Dichlorobenzene-d4	50.000	48.7	97.4	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121906.D

Date : 12-JUL-2019 14:54

Client ID:

Sample Info: 19C0163-02

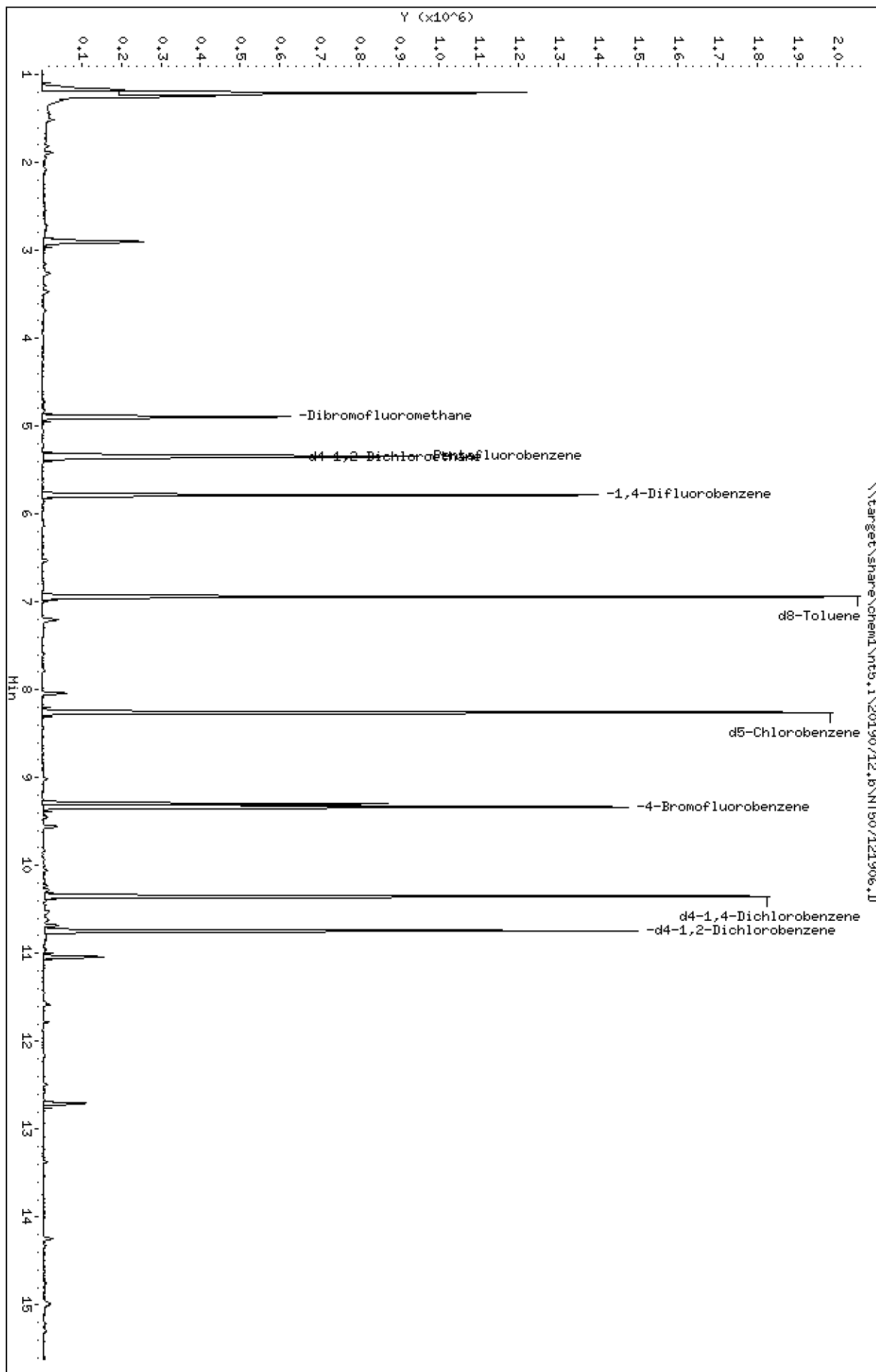
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

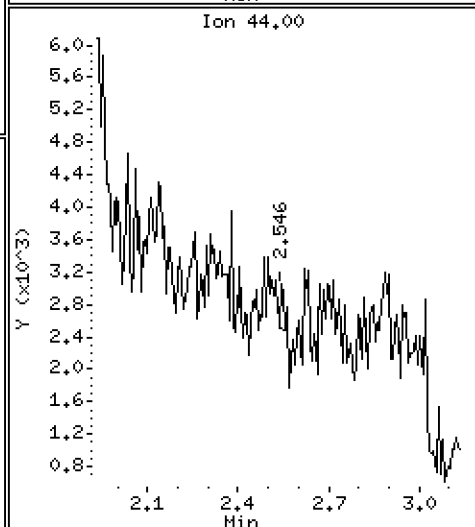
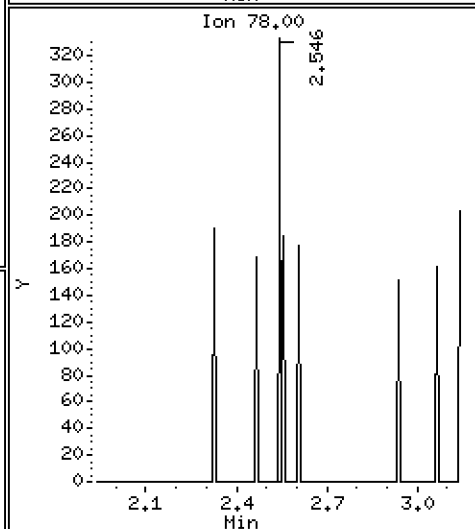
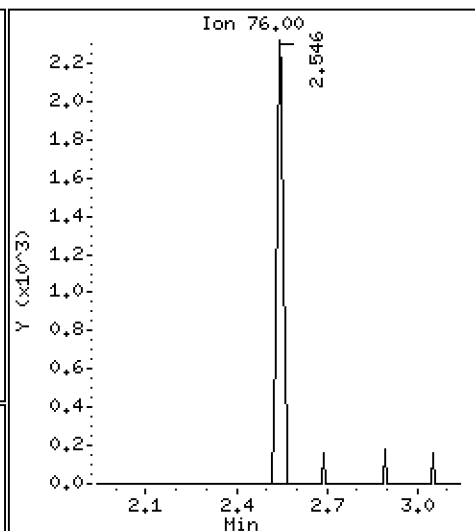
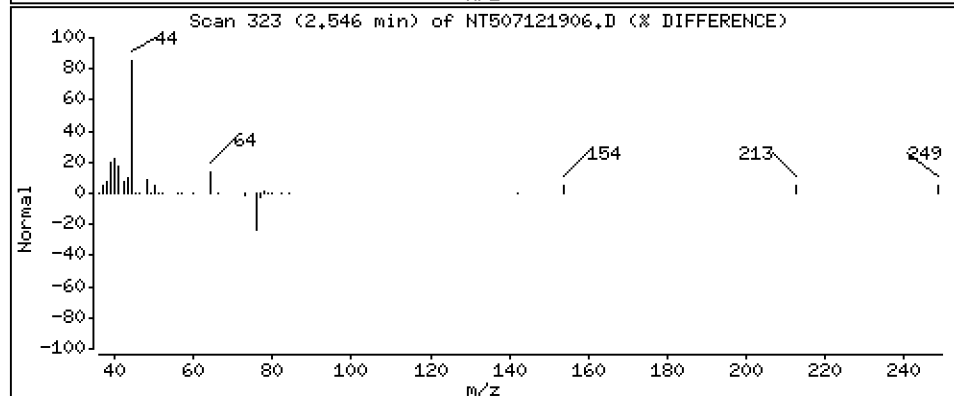
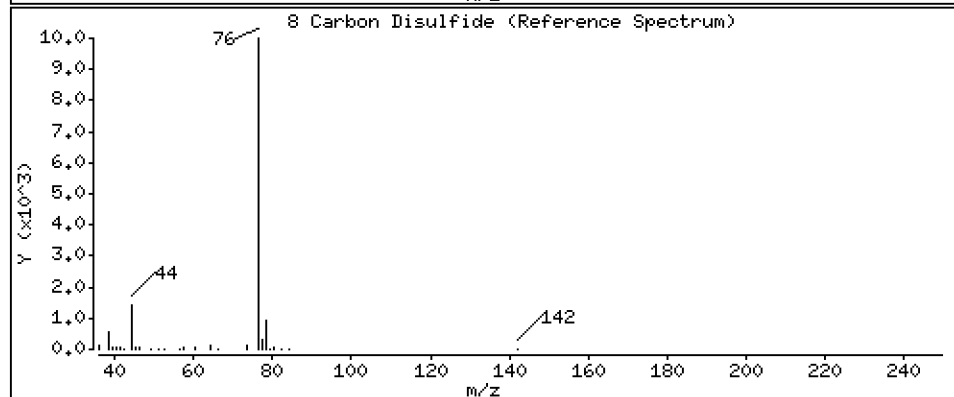
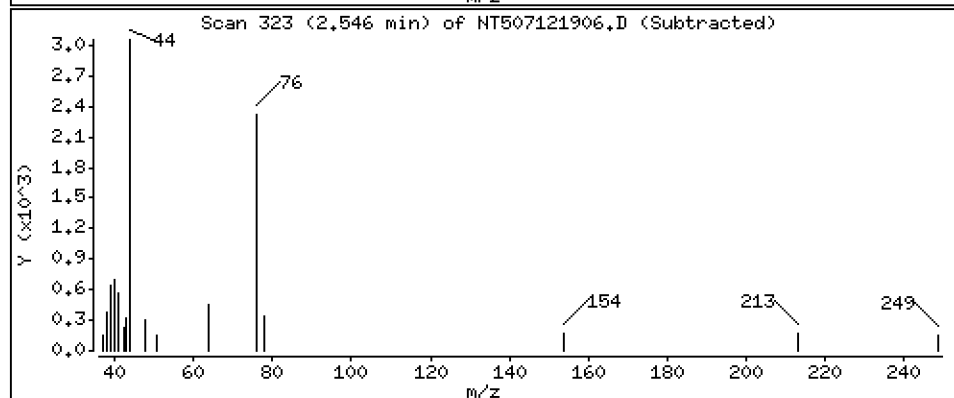
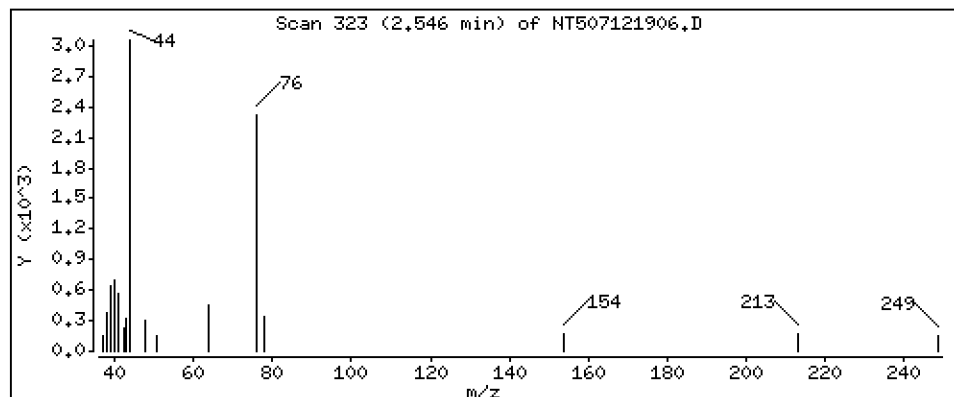
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 0.3898 ug/Kg



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

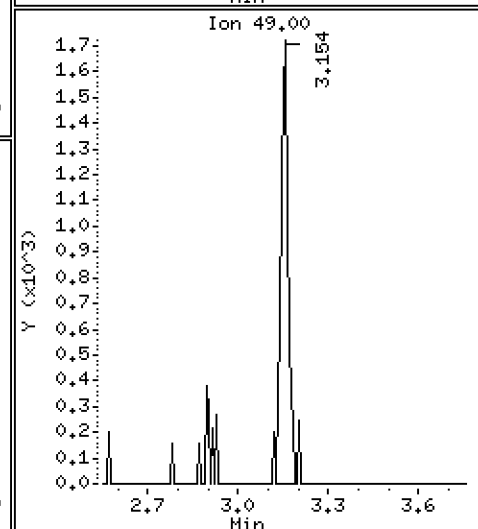
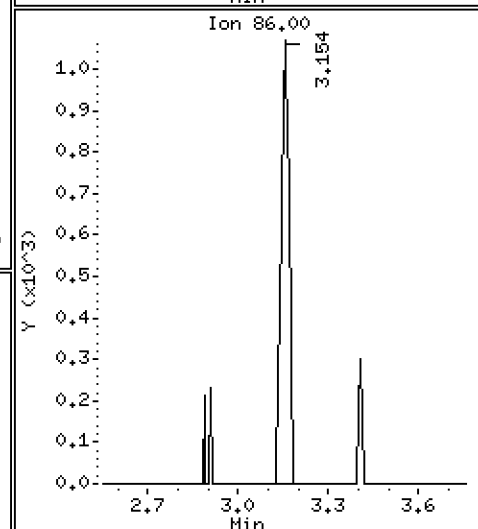
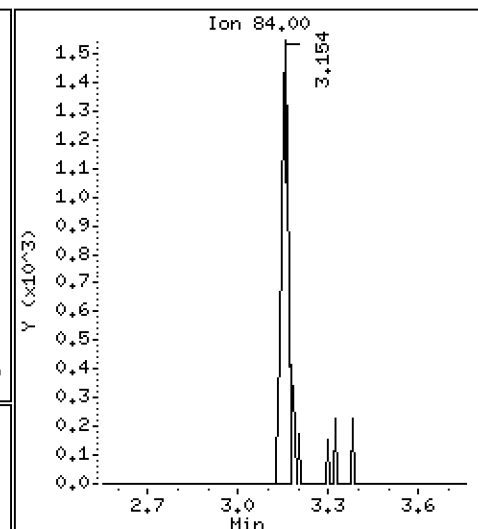
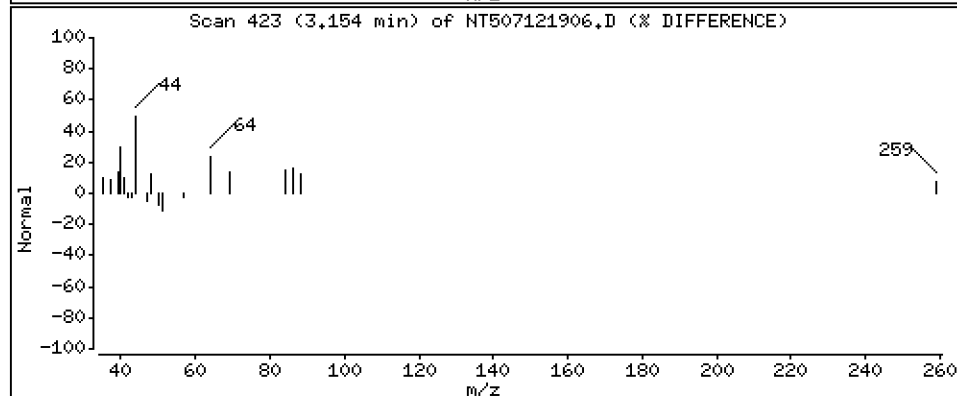
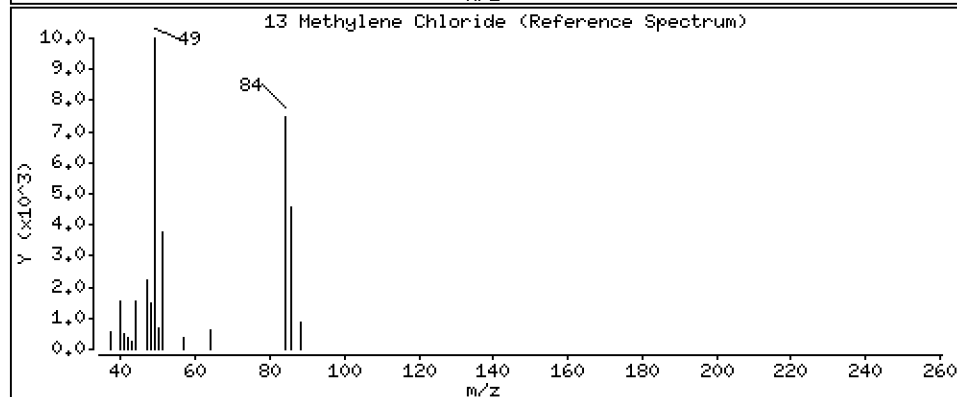
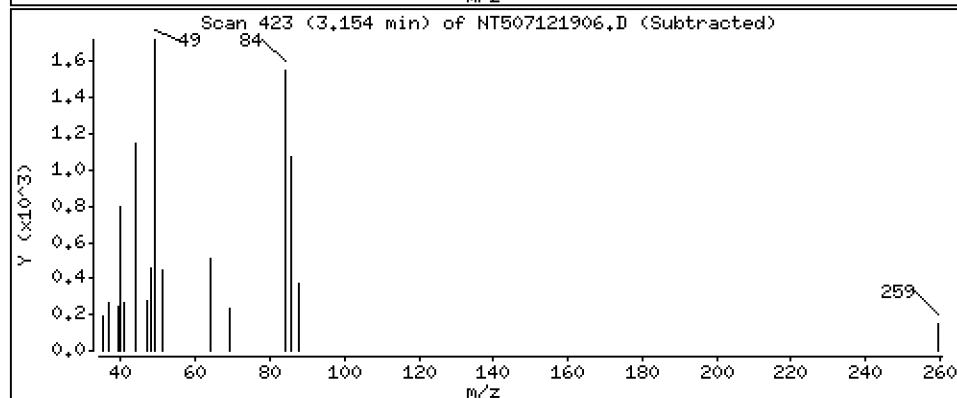
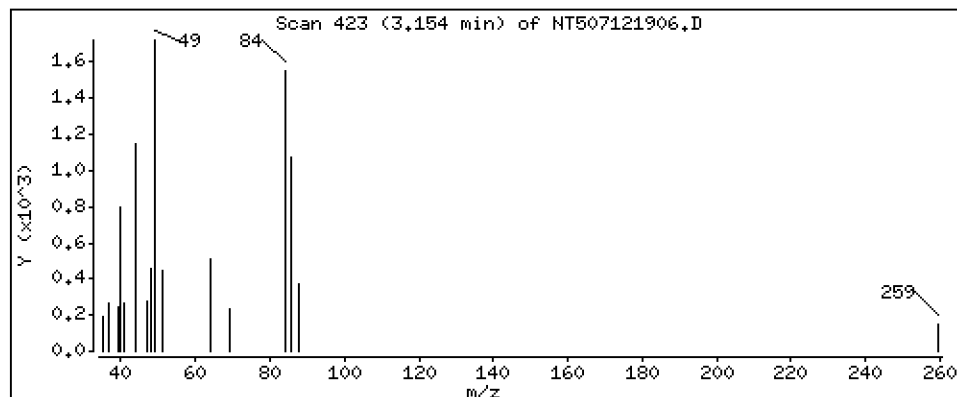
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.7425 ug/Kg



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

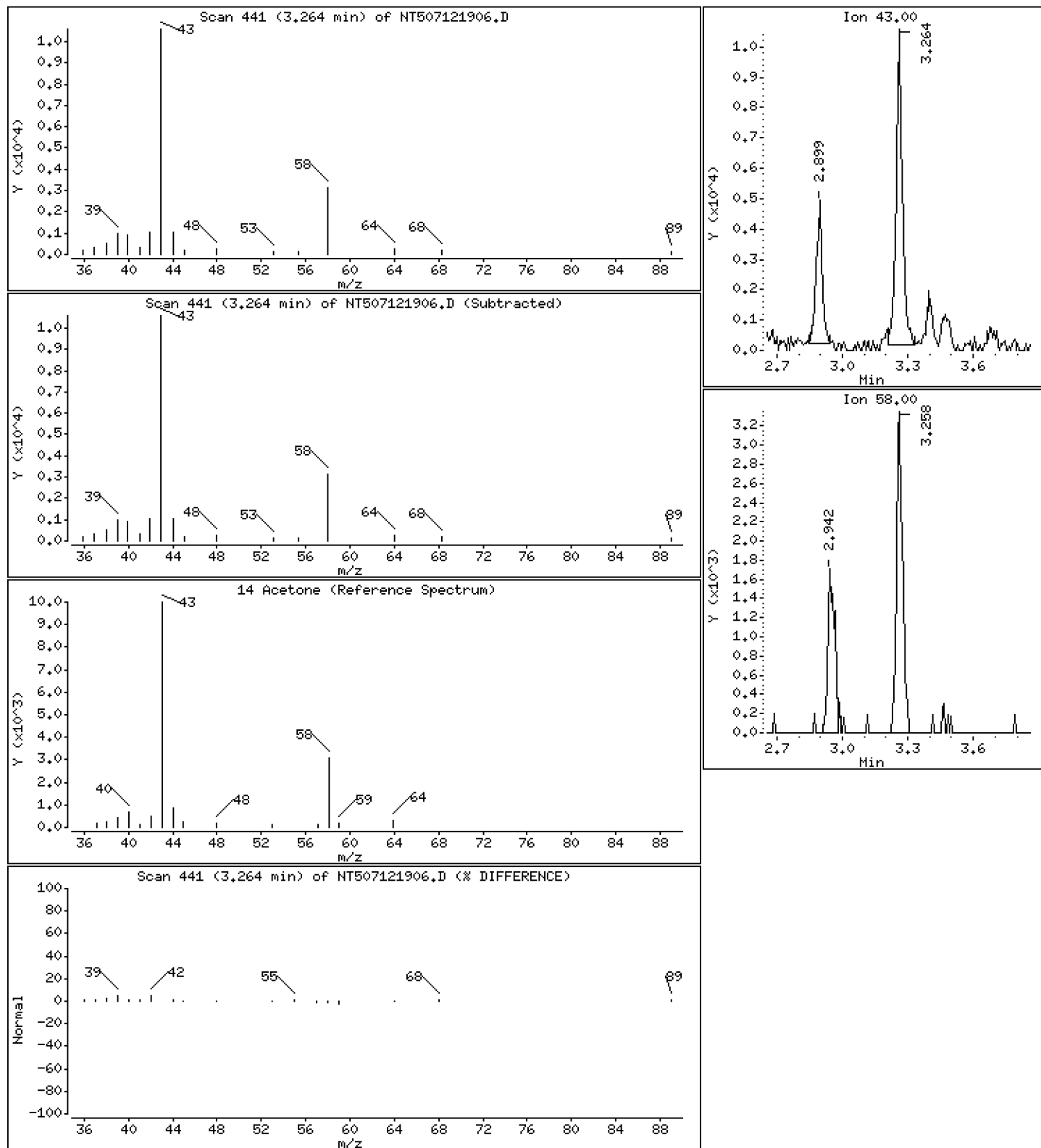
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 33,958 ug/Kg



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

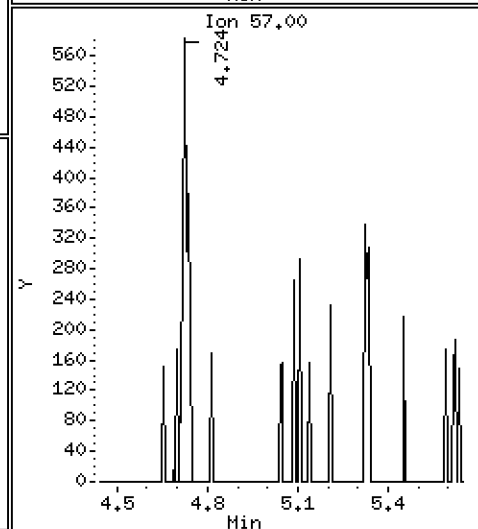
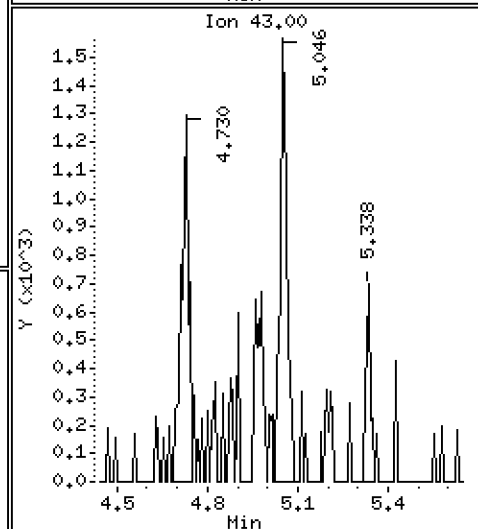
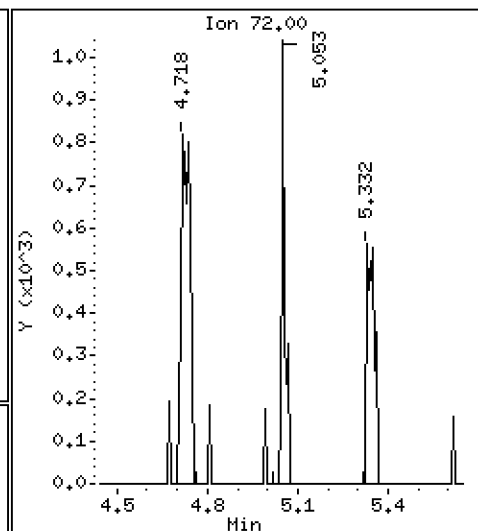
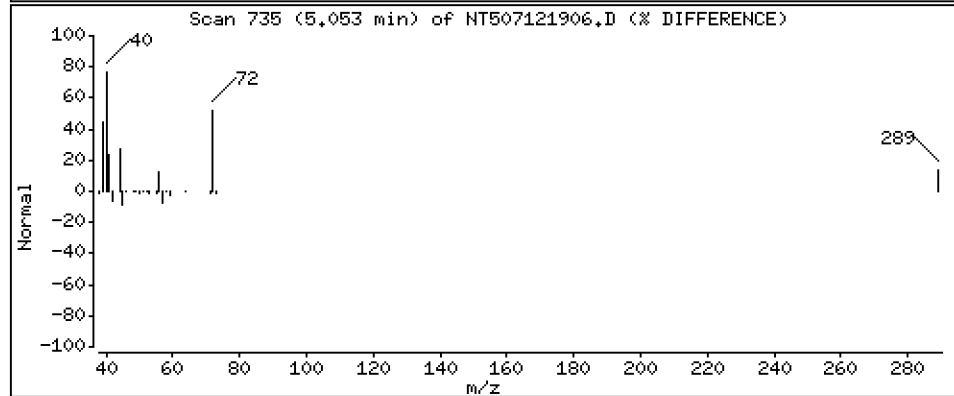
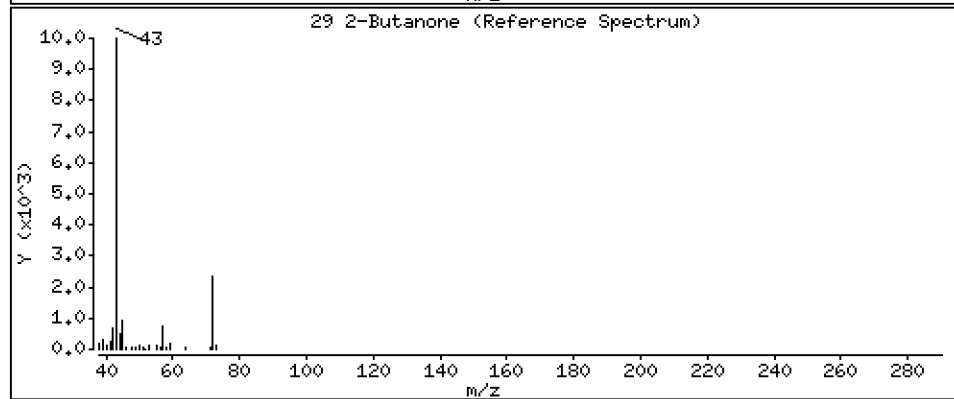
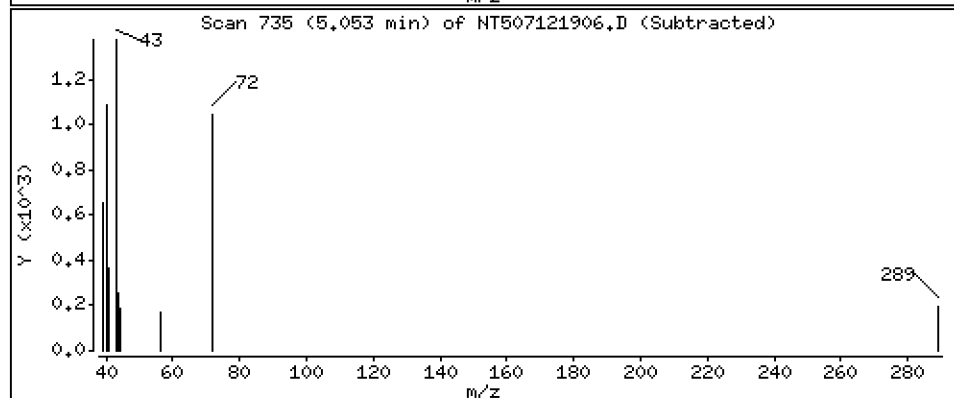
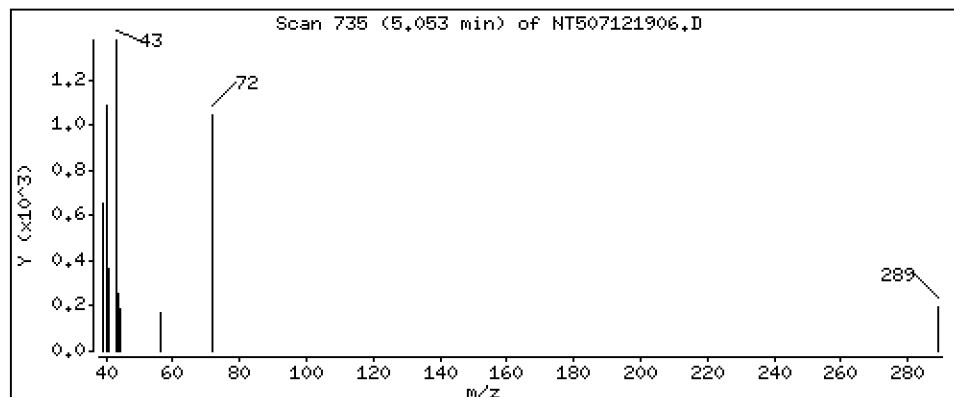
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 3.109 ug/Kg



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

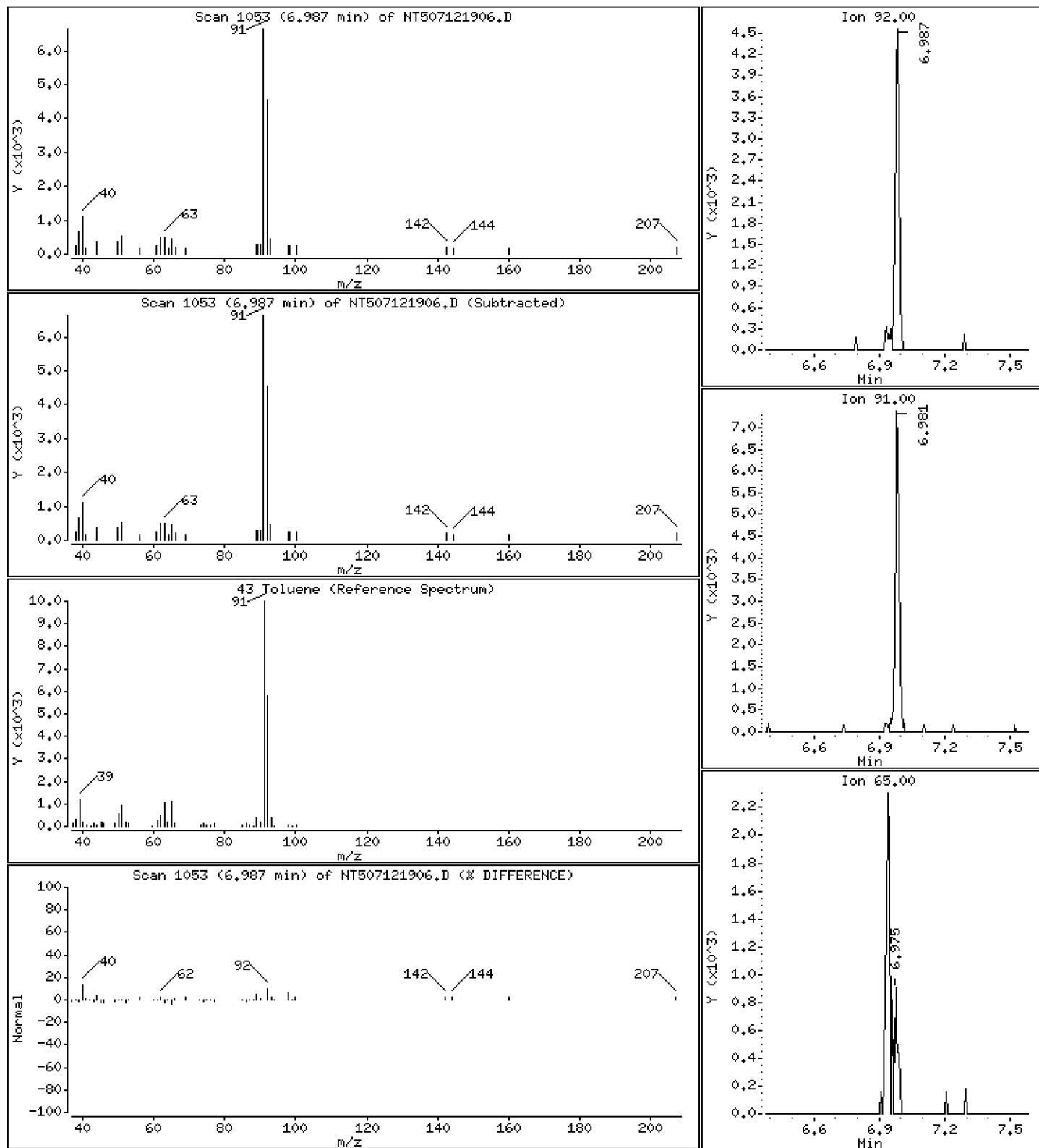
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.5752 ug/Kg



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

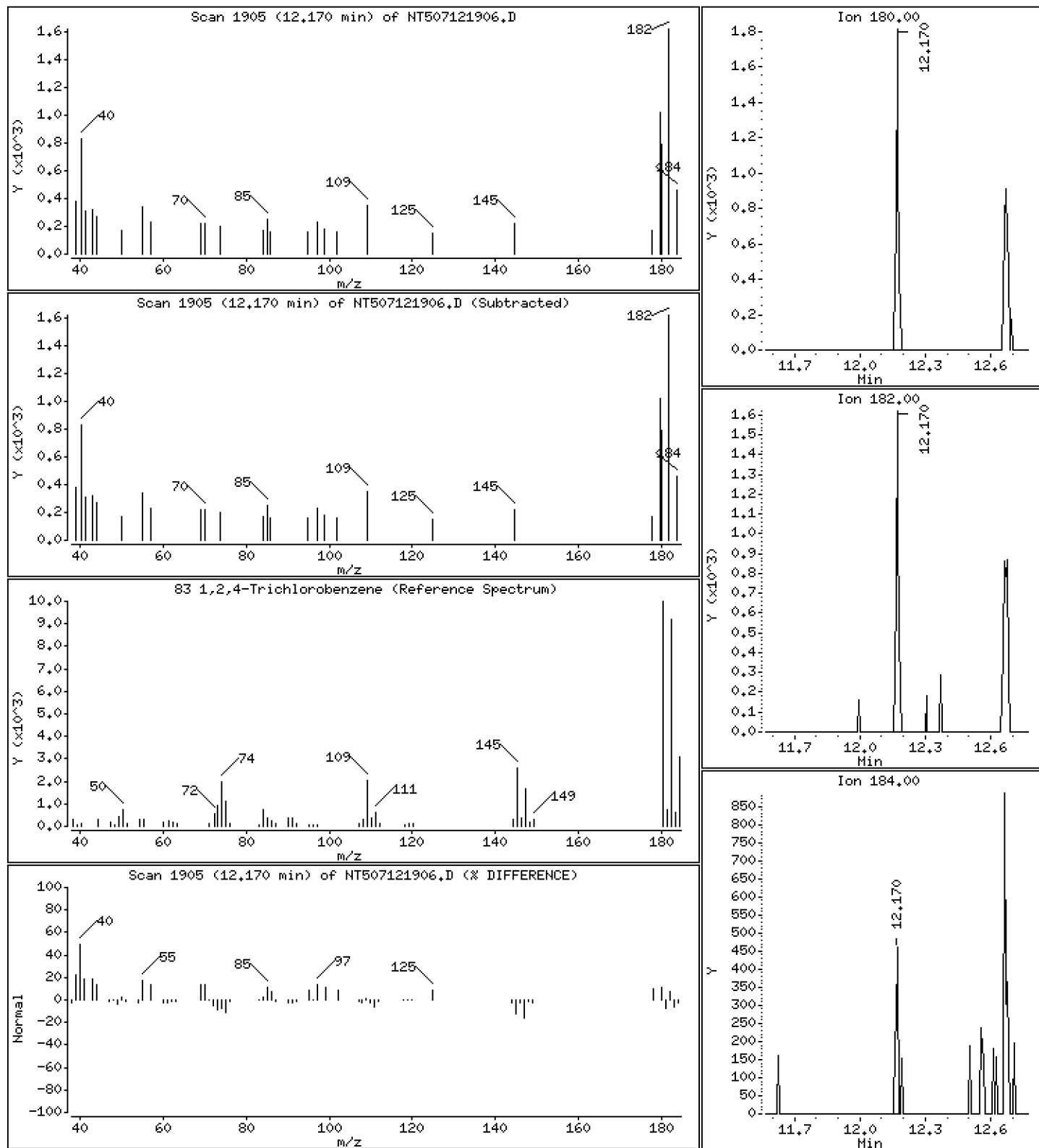
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 0.2978 ug/Kg



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

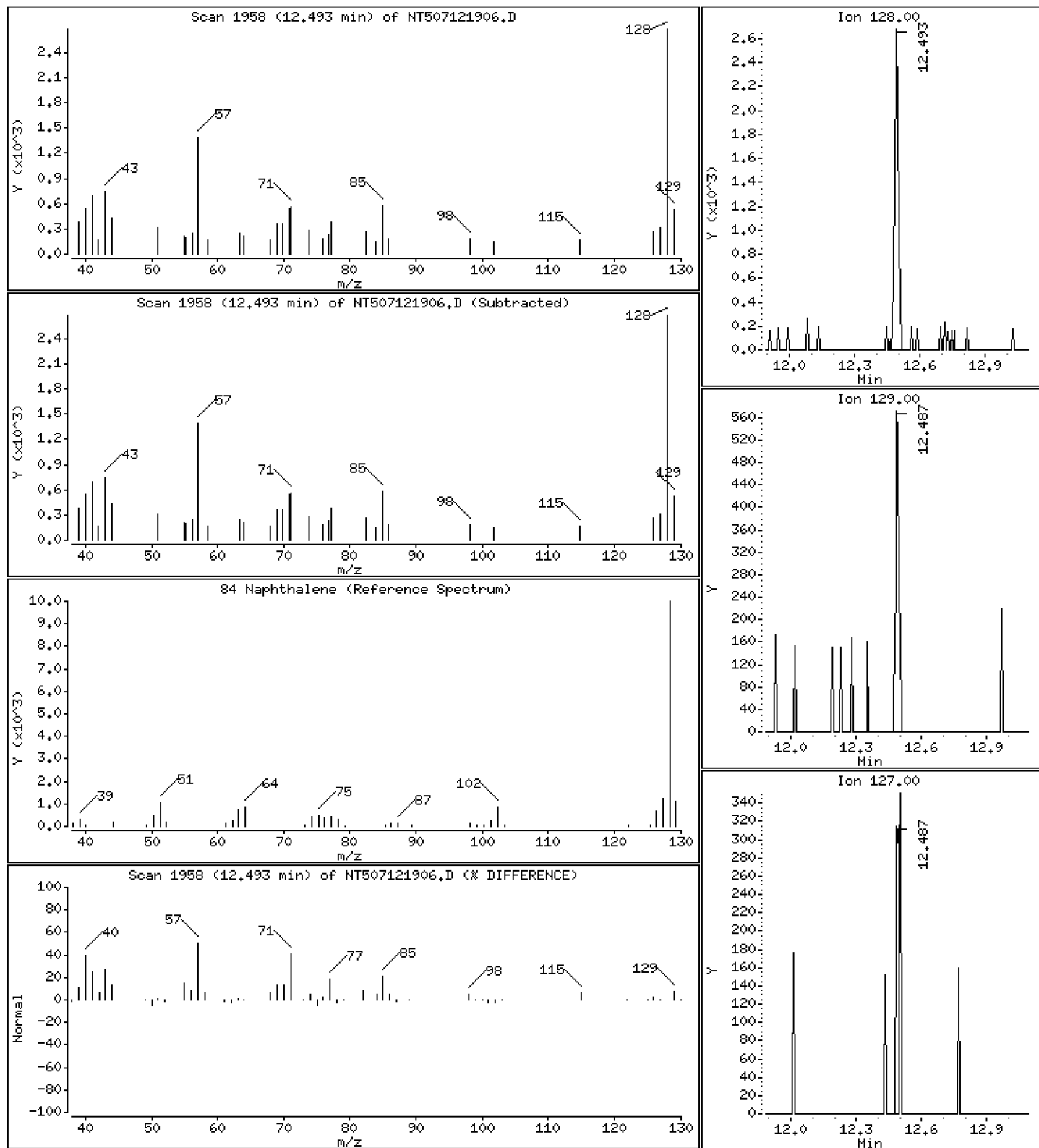
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.3328 ug/Kg



Date : 12-JUL-2019 14:54

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-02

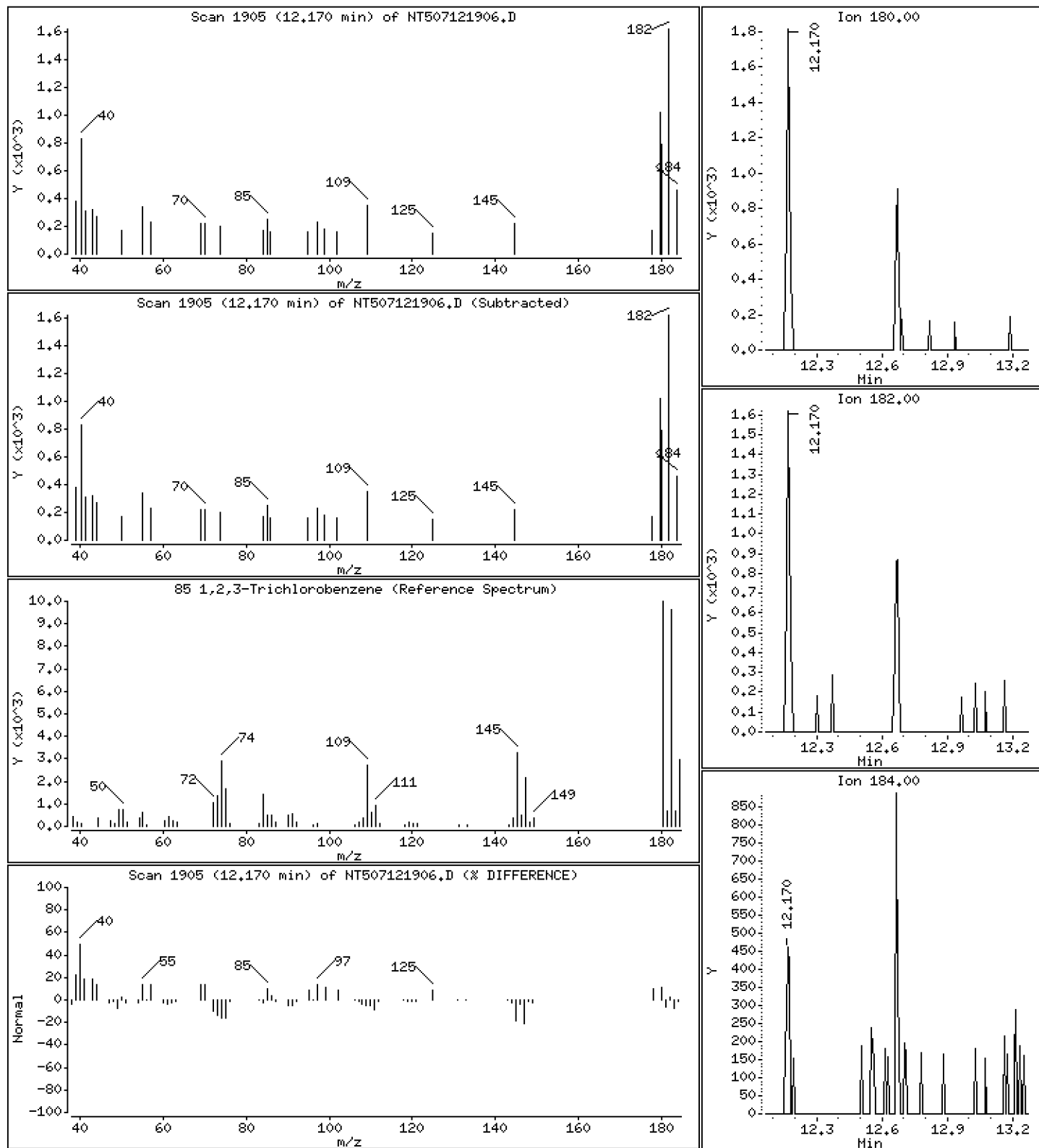
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 0.3291 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121906.D
 Lab Smp Id: 19G0163-02
 Inj Date : 12-JUL-2019 14:54
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-02
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	
1 Dichlorodifluoromethane	85		Compound	Not	Detected.			
2 Chloromethane	50		Compound	Not	Detected.			
3 Vinyl Chloride	62		Compound	Not	Detected.			
4 Bromomethane	94		Compound	Not	Detected.			
5 Chloroethane	64		Compound	Not	Detected.			
6 Trichlorofluoromethane	101		Compound	Not	Detected.			
7 1,1-Dichloroethene	96		Compound	Not	Detected.			
8 Carbon Disulfide	76	2.546	2.540	(0.477)		4163	0.38975	0.3898
9 112Trichloro122Trifluoroethane	101		Compound	Not	Detected.			
10 Iodomethane	142		Compound	Not	Detected.			
11 Bromoethane	108		Compound	Not	Detected.			
12 Acrolein	56		Compound	Not	Detected.			
13 Methylene Chloride	84	3.154	3.154	(0.591)		2822	0.74245	0.7425
14 Acetone	43	3.263	3.257	(0.611)		23238	33.9578	33.958
15 Trans-1,2-Dichloroethene	96		Compound	Not	Detected.			
16 Methyl tert butyl ether	73		Compound	Not	Detected.			
173 n-Hexane	41		Compound	Not	Detected.			
17 1,1-Dichloroethane	63		Compound	Not	Detected.			
18 Acrylonitrile	53		Compound	Not	Detected.			
19 Vinyl Acetate	43		Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96		Compound	Not	Detected.			
22 2,2-Dichloropropane	77		Compound	Not	Detected.			
23 Bromochloromethane	128		Compound	Not	Detected.			
24 Chloroform	83		Compound	Not	Detected.			
25 Carbon Tetrachloride	117		Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111	4.894	4.894	(0.917)		320983	63.2039	63.204 (R)
26 1,1,1-Trichloroethane	97		Compound	Not	Detected.			
28 1,1-Dichloropropene	75		Compound	Not	Detected.			
29 2-Butanone	72	5.052	5.046	(0.946)		1000	3.10937	3.109
30 Benzene	78		Compound	Not	Detected.			
* 31 Pentafluorobenzene	168	5.338	5.338	(1.000)		464385	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.356	5.350	(1.003)		282038	66.3882	66.388 (R)
33 1,2-Dichloroethane	62		Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.782	5.782	(1.000)	958713	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.938	6.938	(1.200)	1137886	50.6831	50.683 (R)
43 Toluene	92	6.987	6.981	(1.208)	6674	0.57524	0.5752
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	963284	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	373576	45.3004	45.300 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119				Compound Not Detected.		
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	429377	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	364853	48.7222	48.722 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180	12.170	12.170	(1.176)	1720	0.29779	0.2978
84 Naphthalene	128	12.492	12.492	(1.207)	3934	0.33281	0.3328
85 1,2,3-Trichlorobenzene	180	12.170	12.669	(1.176)	1720	0.32907	0.3291

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121906.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-02
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	464385	14.97
35 1,4-Difluorobenze	717664	358832	1435328	958713	33.59
52 d5-Chlorobenzene	696563	348282	1393126	963284	38.29
76 d4-1,4-Dichlorobe	380778	190389	761556	429377	12.76

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	-0.00
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-02
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	63.204	126.41	
\$ 32 d4-1,2-Dichloroeth	50.000	66.388	132.78	
\$ 42 d8-Toluene	50.000	50.683	101.37	
\$ 62 4-Bromofluorobenze	50.000	45.300	90.60	
\$ 79 d4-1,2-Dichloroben	50.000	48.722	97.44	

REVIEW SUMMARY FOR FILE - NT507121906.D

Lab ID: 19G0163-02
 nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 14:54

RT	CO-ELUTION COMPOUNDS
12.170	1,2,4-Trichlorobenzene and 1,2,3-Trichlorobenzene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.176	1.224	-0.0482	1,2,3-Trichlorobenzene

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500
 Exception: 2-Chloroethyl Vinyl Ether 0.2500
 Exception: 4-Methyl-2-Pentanone 0.2500

Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-03 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 10:50</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121917.D</u>
% Solids: <u>46.71</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 19:11</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>3.35 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	3.20	U	0.84	3.20
75-01-4	Vinyl Chloride	1	3.20	U	0.75	3.20
74-83-9	Bromomethane	1	2.24	J	0.60	3.20
75-00-3	Chloroethane	1	3.20	U	1.48	3.20
75-69-4	Trichlorofluoromethane	1	3.20	U	0.85	3.20
107-02-8	Acrolein	1	65.4		12.2	16.0
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	6.39	U	0.92	6.39
67-64-1	Acetone	1	1230		1.54	16.0
75-35-4	1,1-Dichloroethene	1	3.20	U	1.07	3.20
74-96-4	Bromoethane	1	6.39	U	1.41	6.39
74-88-4	Iodomethane	1	8.33		0.69	3.20
75-09-2	Methylene Chloride	1	2.51	J	2.03	6.39
107-13-1	Acrylonitrile	1	16.0	U	3.29	16.0
75-15-0	Carbon Disulfide	1	78.2		1.79	3.20
156-60-5	trans-1,2-Dichloroethene	1	3.20	U	0.85	3.20
108-05-4	Vinyl Acetate	1	16.0	U	1.22	16.0
75-34-3	1,1-Dichloroethane	1	3.20	U	0.65	3.20
78-93-3	2-Butanone	1	89.2		1.64	16.0
594-20-7	2,2-Dichloropropane	1	3.20	U	0.93	3.20
156-59-2	cis-1,2-Dichloroethene	1	3.20	U	0.77	3.20
67-66-3	Chloroform	1	3.20	U	0.75	3.20
74-97-5	Bromochloromethane	1	3.20	U	1.03	3.20
71-55-6	1,1,1-Trichloroethane	1	3.20	U	0.72	3.20
563-58-6	1,1-Dichloropropene	1	3.20	U	1.00	3.20
56-23-5	Carbon tetrachloride	1	3.20	U	0.68	3.20
107-06-2	1,2-Dichloroethane	1	3.20	U	0.61	3.20
71-43-2	Benzene	1	3.20	U	0.95	3.20
79-01-6	Trichloroethene	1	3.20	U	0.68	3.20
78-87-5	1,2-Dichloropropane	1	3.20	U	0.52	3.20
75-27-4	Bromodichloromethane	1	3.20	U	0.81	3.20
74-95-3	Dibromomethane	1	3.20	U	0.47	3.20
110-75-8	2-Chloroethyl vinyl ether	1	16.0	U	0.88	16.0
108-10-1	4-Methyl-2-Pentanone	1	27.6		1.34	16.0
10061-01-5	cis-1,3-Dichloropropene	1	3.20	U	0.72	3.20



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 C SDG: 19G0163
Sampled: 07/11/19 10:50 Prepared: 07/12/19 14:22 File ID: NT507121917.D
% Solids: 46.71 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 19:11
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 3.35 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	2.94	J	0.48	3.20
10061-02-6	trans-1,3-Dichloropropene	1	3.20	U	0.69	3.20
591-78-6	2-Hexanone	1	16.0	U	1.40	16.0
79-00-5	1,1,2-Trichloroethane	1	3.20	U	0.91	3.20
142-28-9	1,3-Dichloropropane	1	3.20	U	0.67	3.20
127-18-4	Tetrachloroethene	1	3.20	U	0.82	3.20
124-48-1	Dibromochloromethane	1	3.20	U	0.85	3.20
106-93-4	1,2-Dibromoethane	1	3.20	U	0.56	3.20
108-90-7	Chlorobenzene	1	3.20	U	0.70	3.20
100-41-4	Ethylbenzene	1	3.20	U	0.65	3.20
630-20-6	1,1,1,2-Tetrachloroethane	1	3.20	U	0.74	3.20
179601-23-1	m,p-Xylene	1	6.39	U	1.25	6.39
95-47-6	o-Xylene	1	3.20	U	0.72	3.20
1330-20-7	Xylenes, total	1	6.39	U	1.97	6.39
100-42-5	Styrene	1	3.20	U	0.44	3.20
75-25-2	Bromoform	1	3.20	U	0.95	3.20
79-34-5	1,1,1,2-Tetrachloroethane	1	3.20	U	0.81	3.20
96-18-4	1,2,3-Trichloropropane	1	6.39	U	1.65	6.39
110-57-6	trans-1,4-Dichloro 2-Butene	1	16.0	U	1.40	16.0
103-65-1	n-Propylbenzene	1	3.20	U	0.87	3.20
108-86-1	Bromobenzene	1	3.20	U	0.49	3.20
98-82-8	Isopropyl Benzene	1	3.20	U	0.74	3.20
95-49-8	2-Chlorotoluene	1	3.20	U	0.96	3.20
106-43-4	4-Chlorotoluene	1	3.20	U	0.89	3.20
98-06-6	t-Butylbenzene	1	3.20	U	0.98	3.20
108-67-8	1,3,5-Trimethylbenzene	1	3.20	U	0.81	3.20
95-63-6	1,2,4-Trimethylbenzene	1	1.15	J	0.73	3.20
135-98-8	s-Butylbenzene	1	3.20	U	0.77	3.20
99-87-6	4-Isopropyl Toluene	1	10.3		0.75	3.20
541-73-1	1,3-Dichlorobenzene	1	3.20	U	0.73	3.20
106-46-7	1,4-Dichlorobenzene	1	3.20	U	0.74	3.20
104-51-8	n-Butylbenzene	1	3.20	U	0.84	3.20
95-50-1	1,2-Dichlorobenzene	1	3.20	U	0.94	3.20
96-12-8	1,2-Dibromo-3-chloropropane	1	16.0	U	1.87	16.0



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 C SDG: 19G0163

Sampled: 07/11/19 10:50 Prepared: 07/12/19 14:22 File ID: NT507121917.D

% Solids: 46.71 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 19:11

Batch: BHG0316 Sequence: SHG0192 Initial/Final: 3.35 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	16.0	U	1.06	16.0
87-68-3	Hexachloro-1,3-Butadiene	1	16.0	U	1.31	16.0
91-20-3	Naphthalene	1	16.0	U	1.37	16.0
87-61-6	1,2,3-Trichlorobenzene	1	16.0	U	0.97	16.0
75-71-8	Dichlorodifluoromethane	1	3.20	U	0.66	3.20
1634-04-4	Methyl tert-butyl Ether	1	3.20	U	0.74	3.20
107-87-9	2-Pentanone	1	16.0	U	16.0	16.0

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	69.5	139	80 - 149	
Toluene-d8	50.000	51.7	103	77 - 120	
4-Bromofluorobenzene	50.000	46.7	93.5	80 - 120	
1,2-Dichlorobenzene-d4	50.000	49.0	98.1	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121917.D

Date : 12-JUL-2019 19:11

Client ID:

Sample Info: 19C0163-03

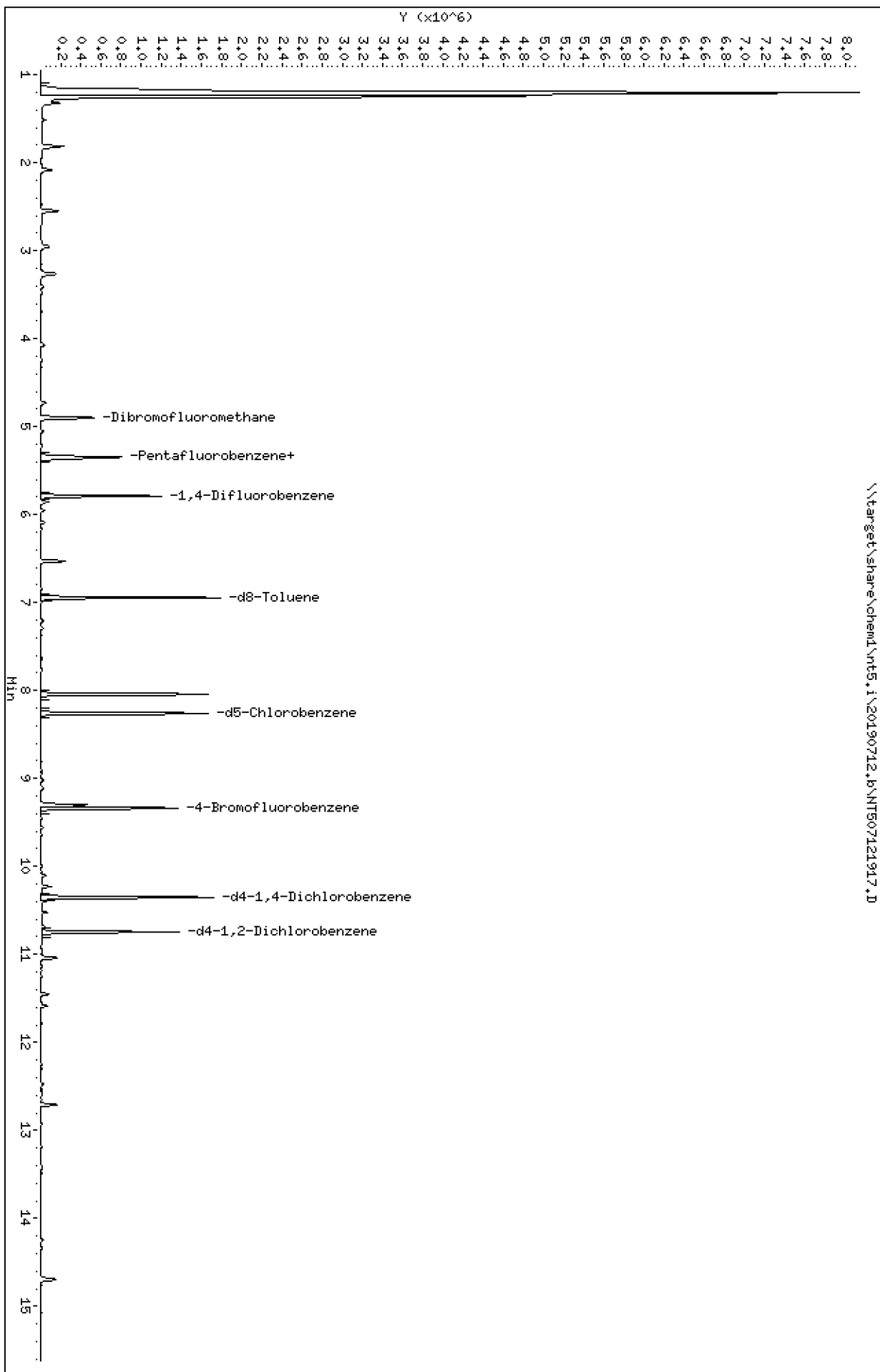
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

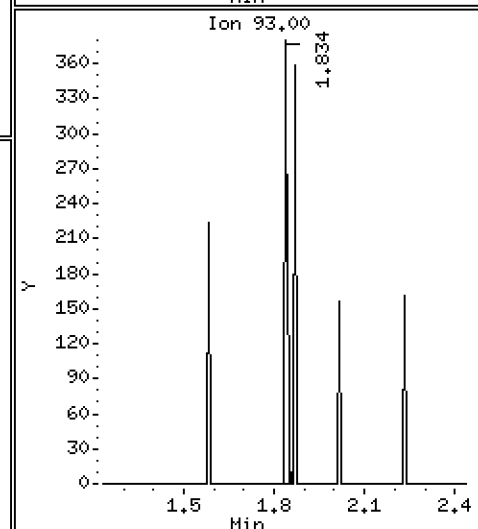
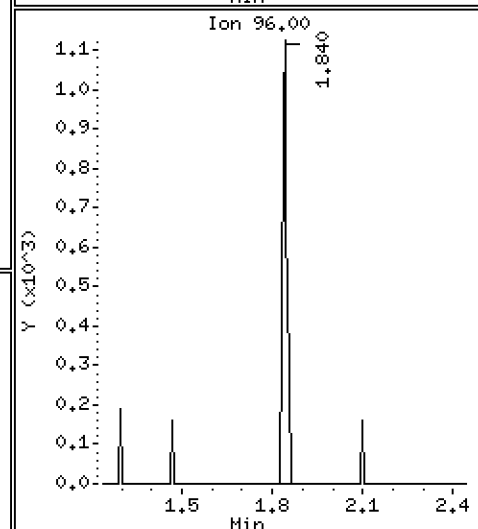
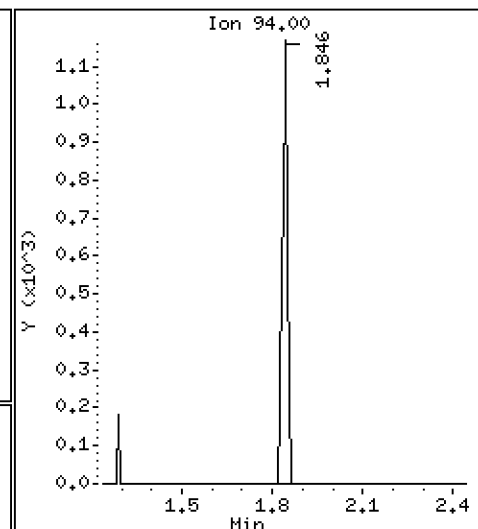
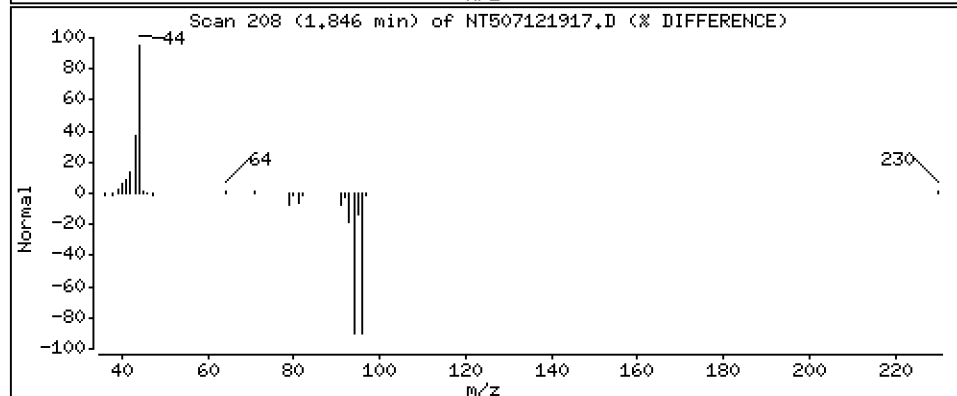
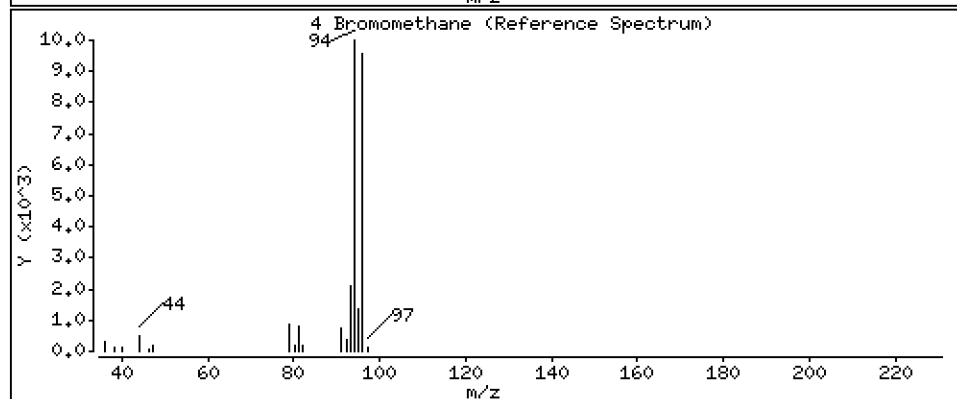
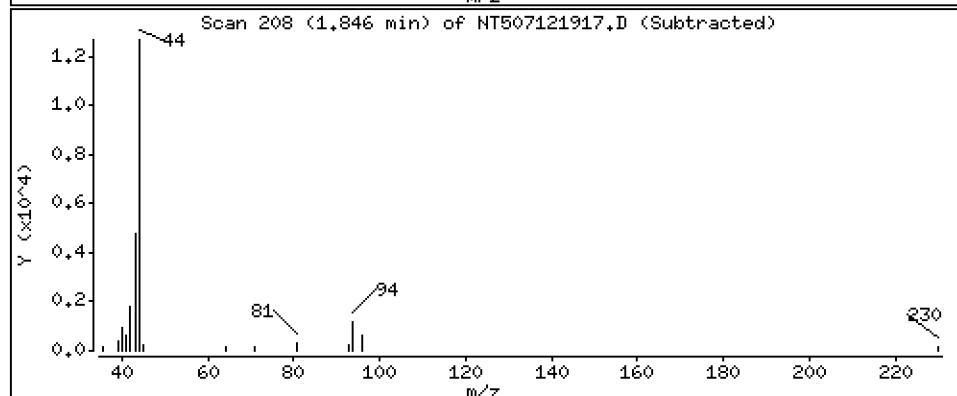
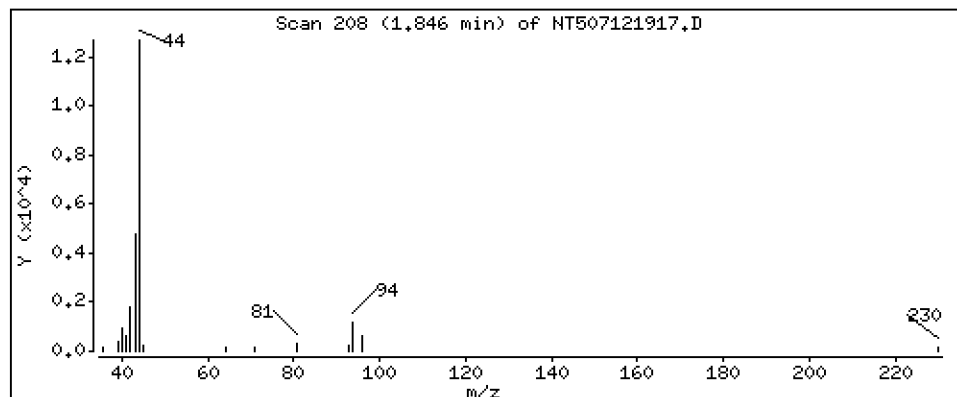
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 0.7009 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

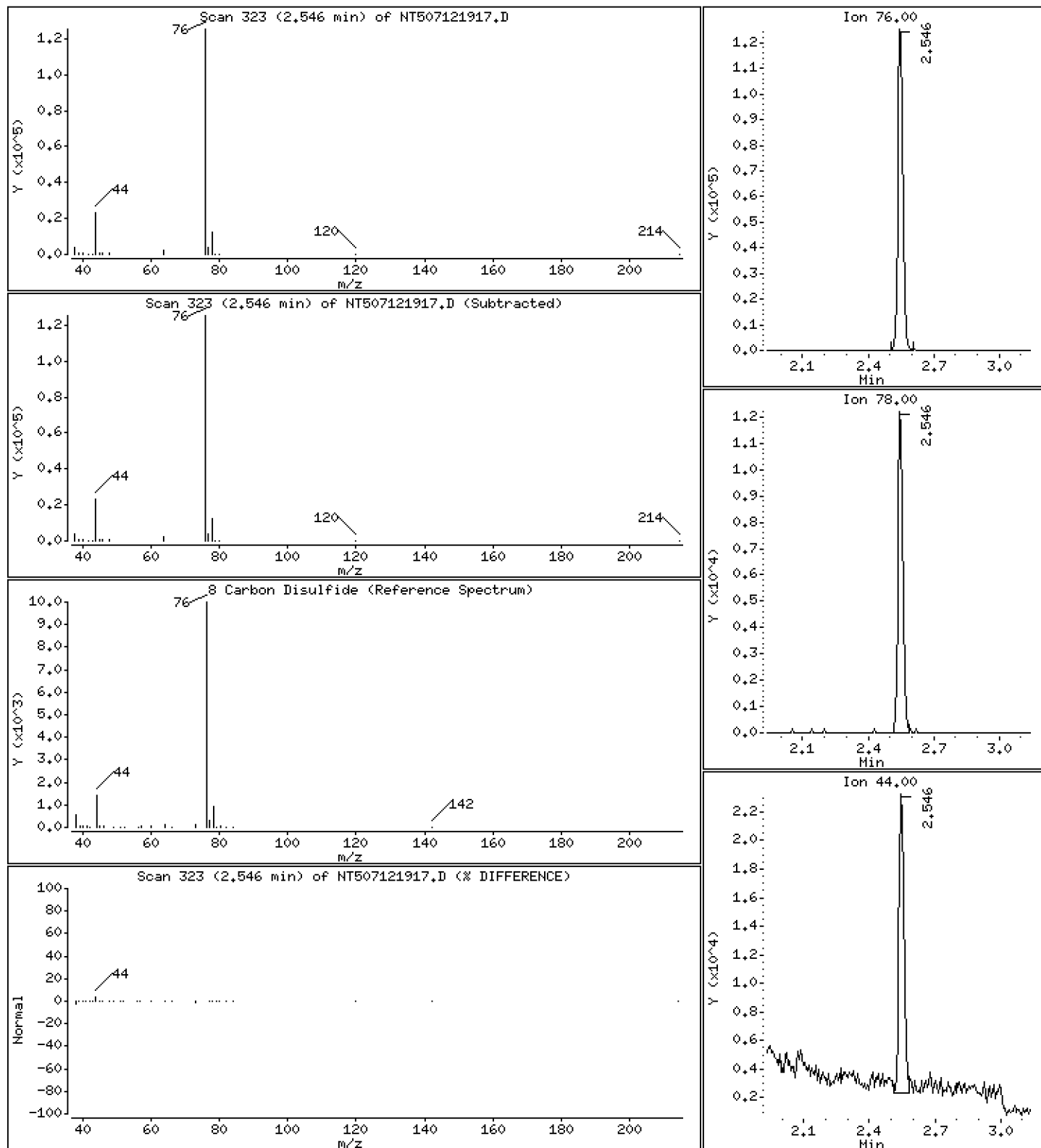
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 24.469 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

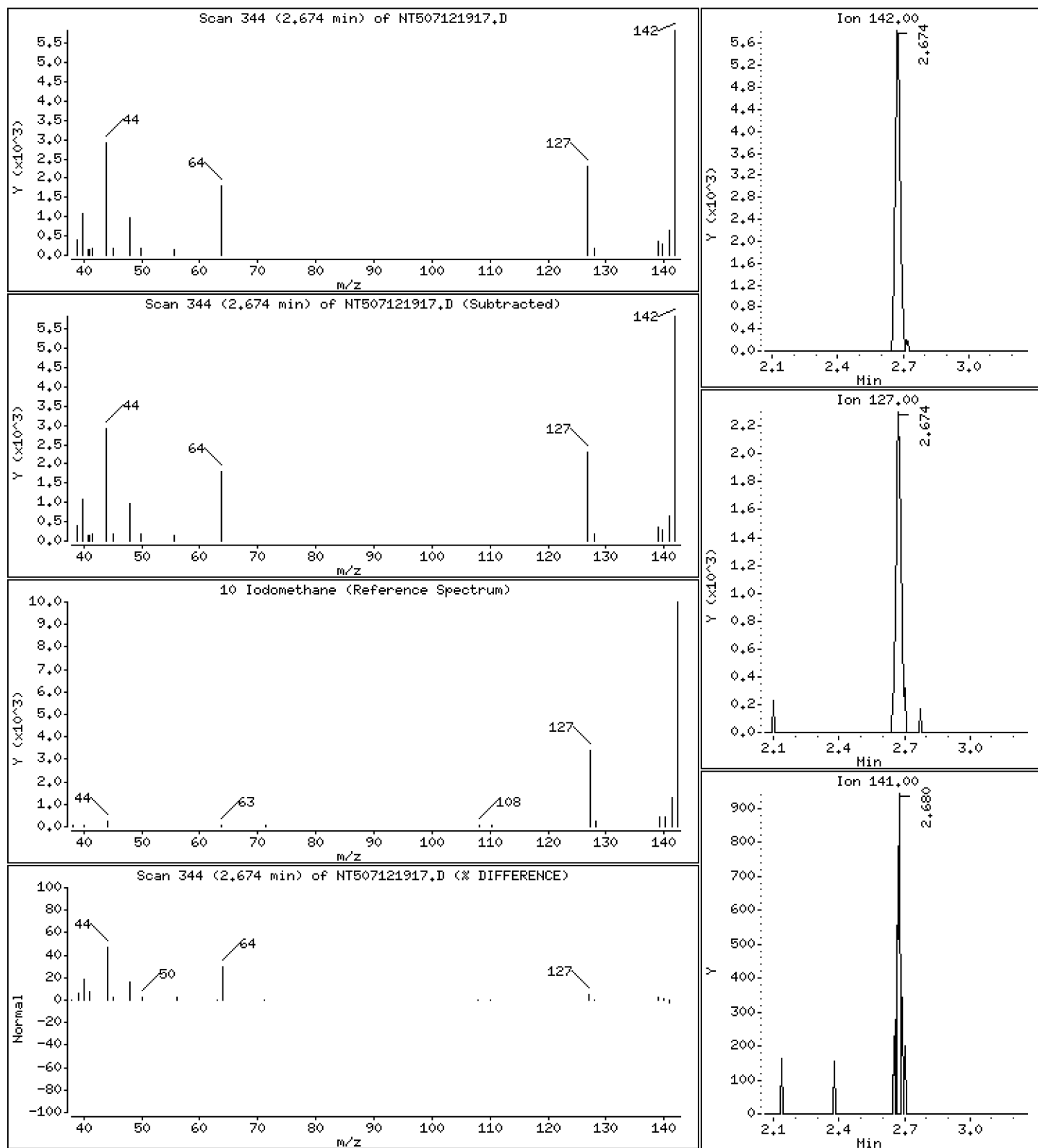
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 2.606 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

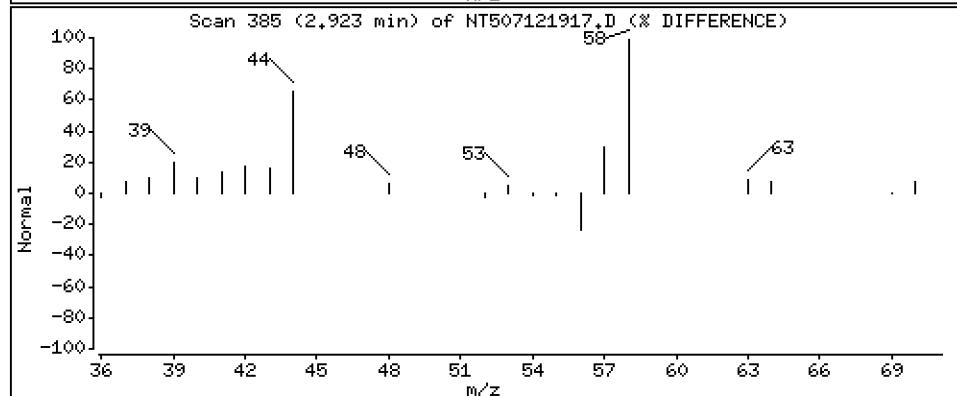
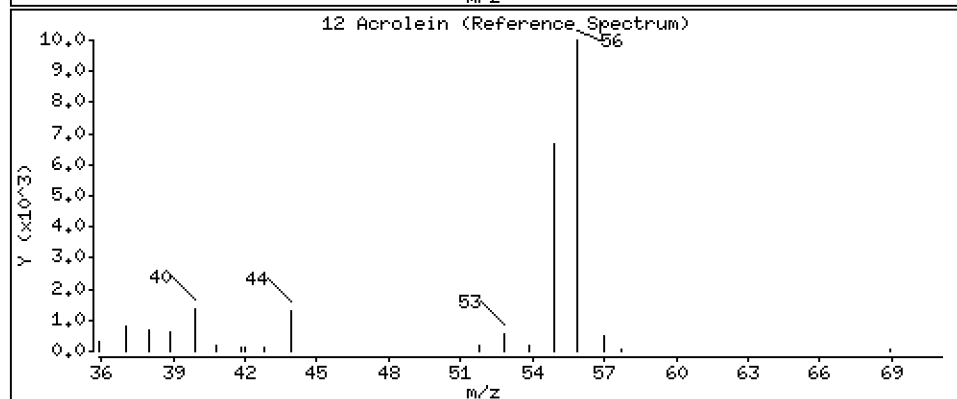
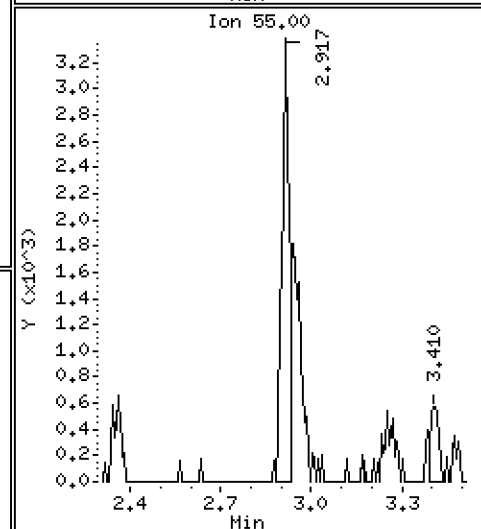
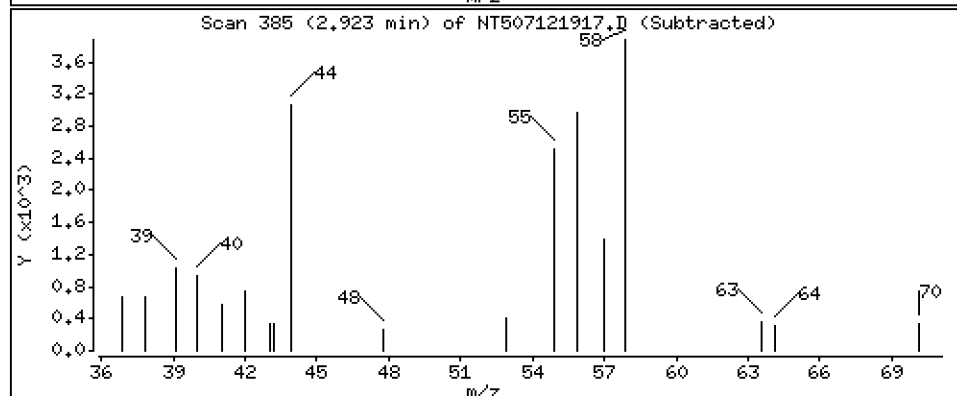
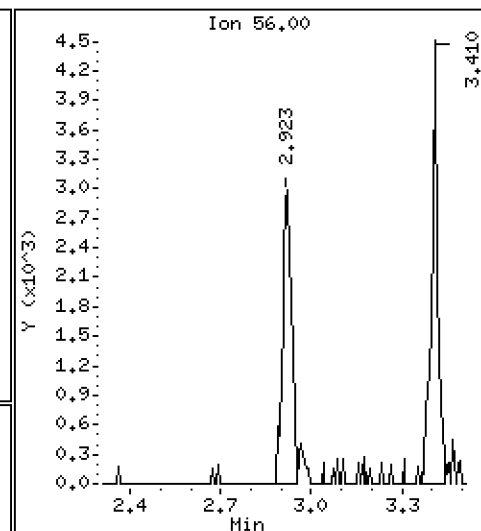
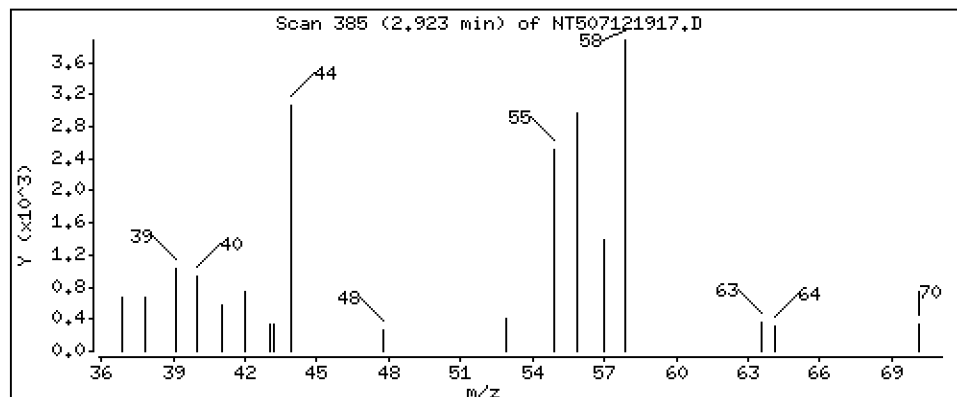
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 20,473 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

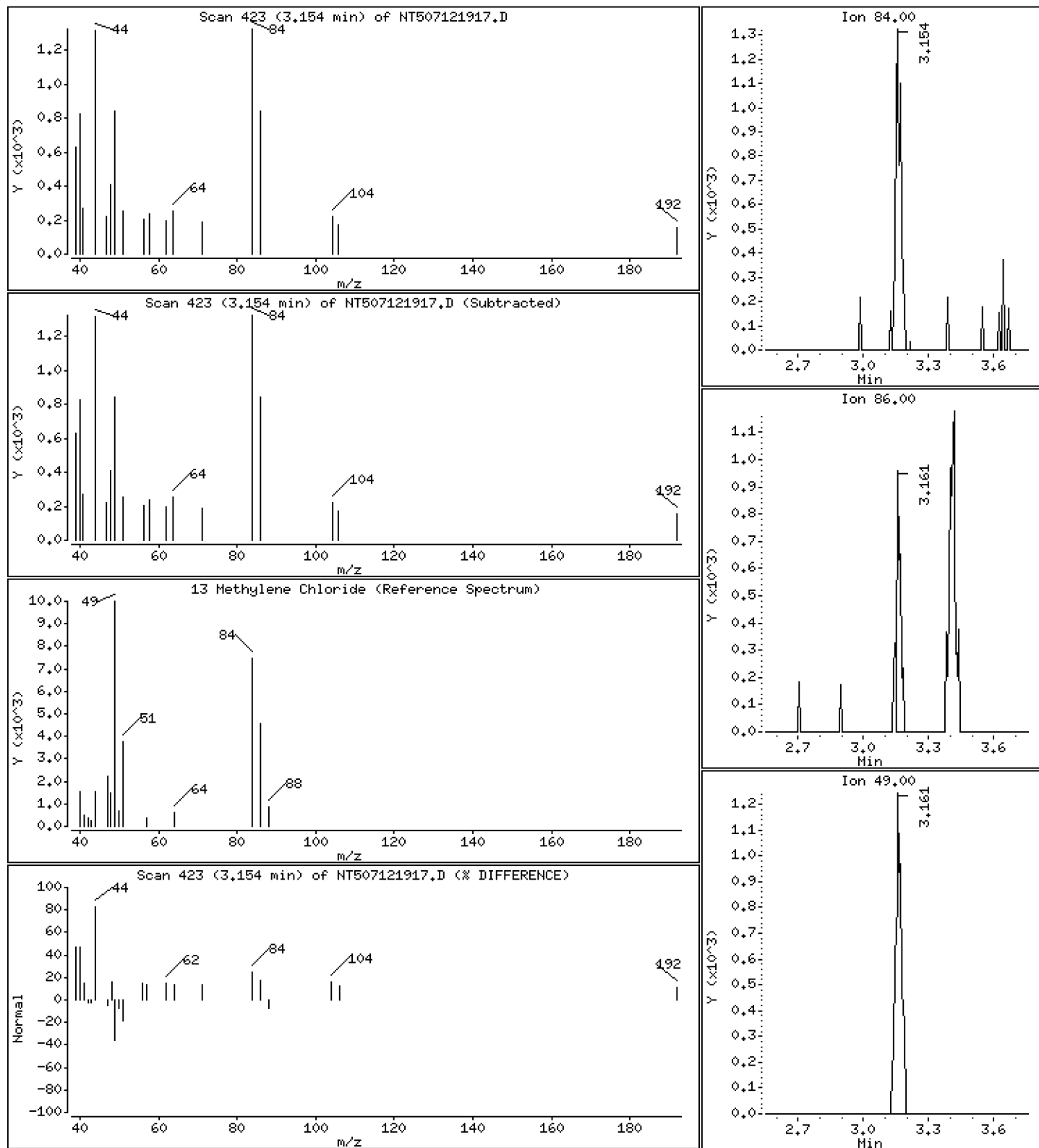
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.7843 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

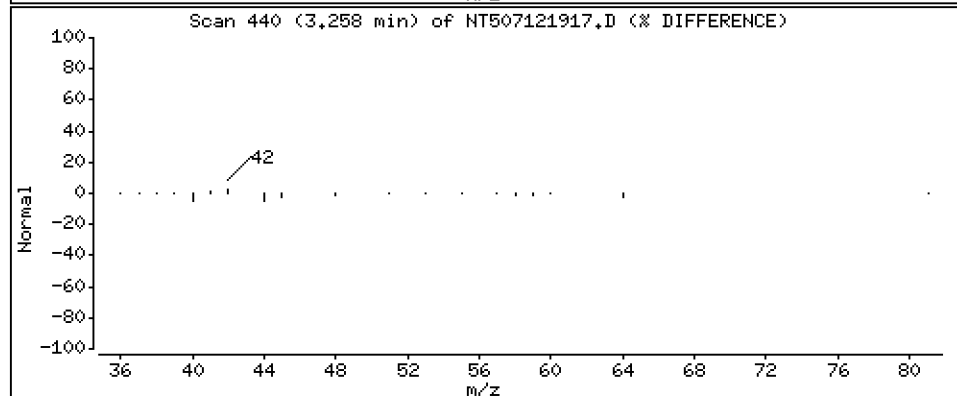
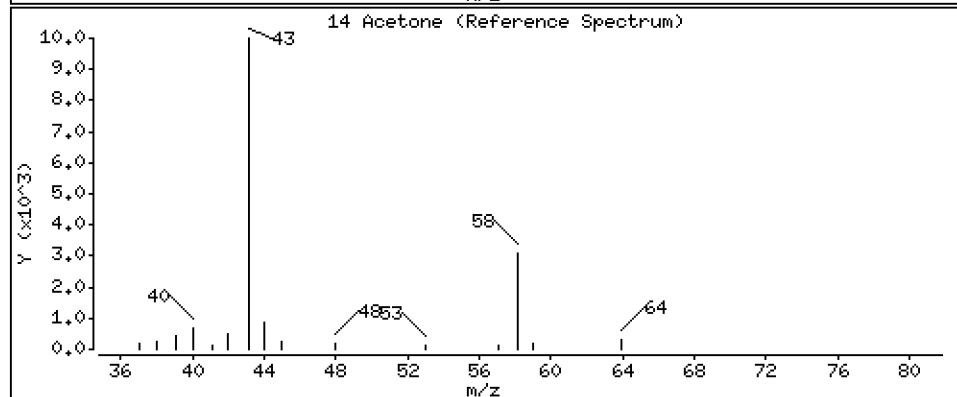
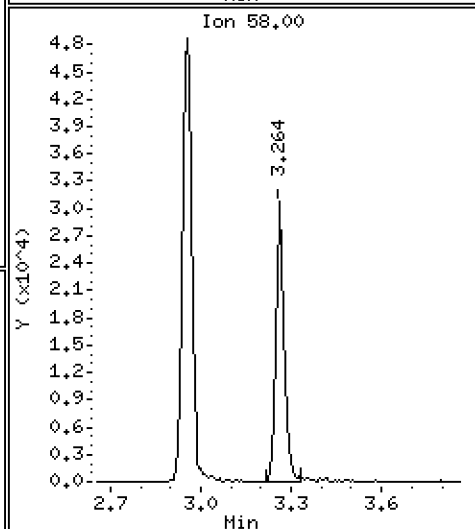
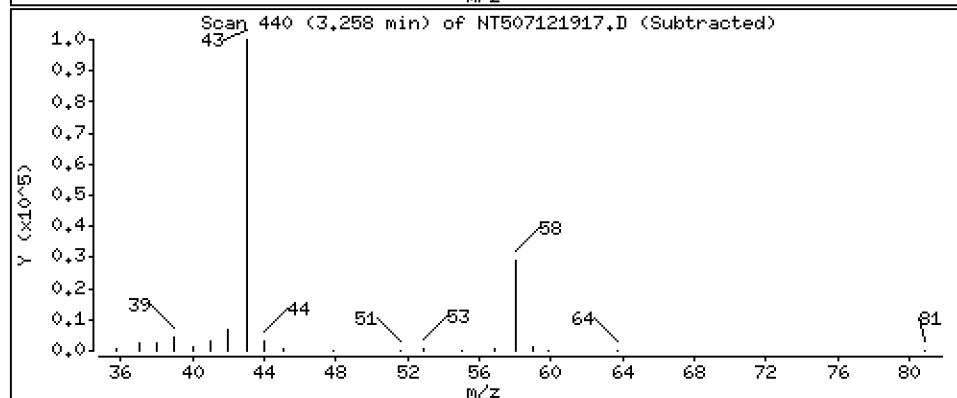
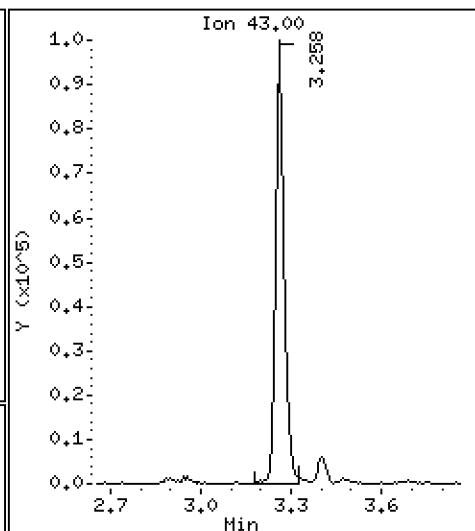
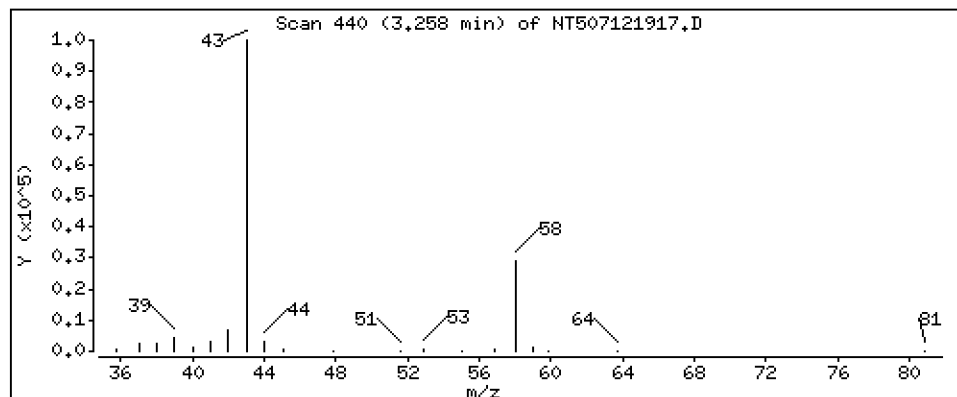
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 383.80 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

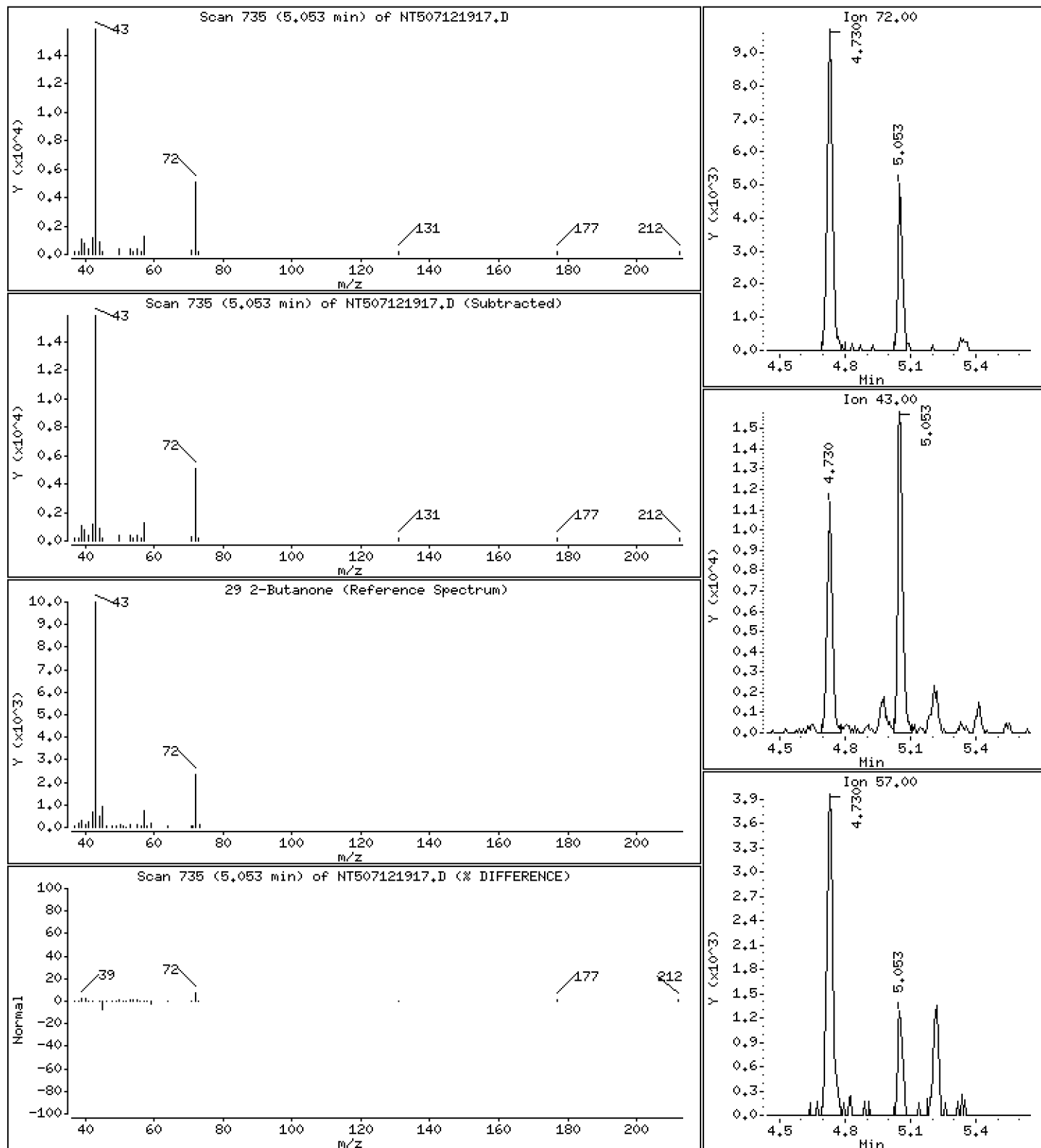
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 27,912 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

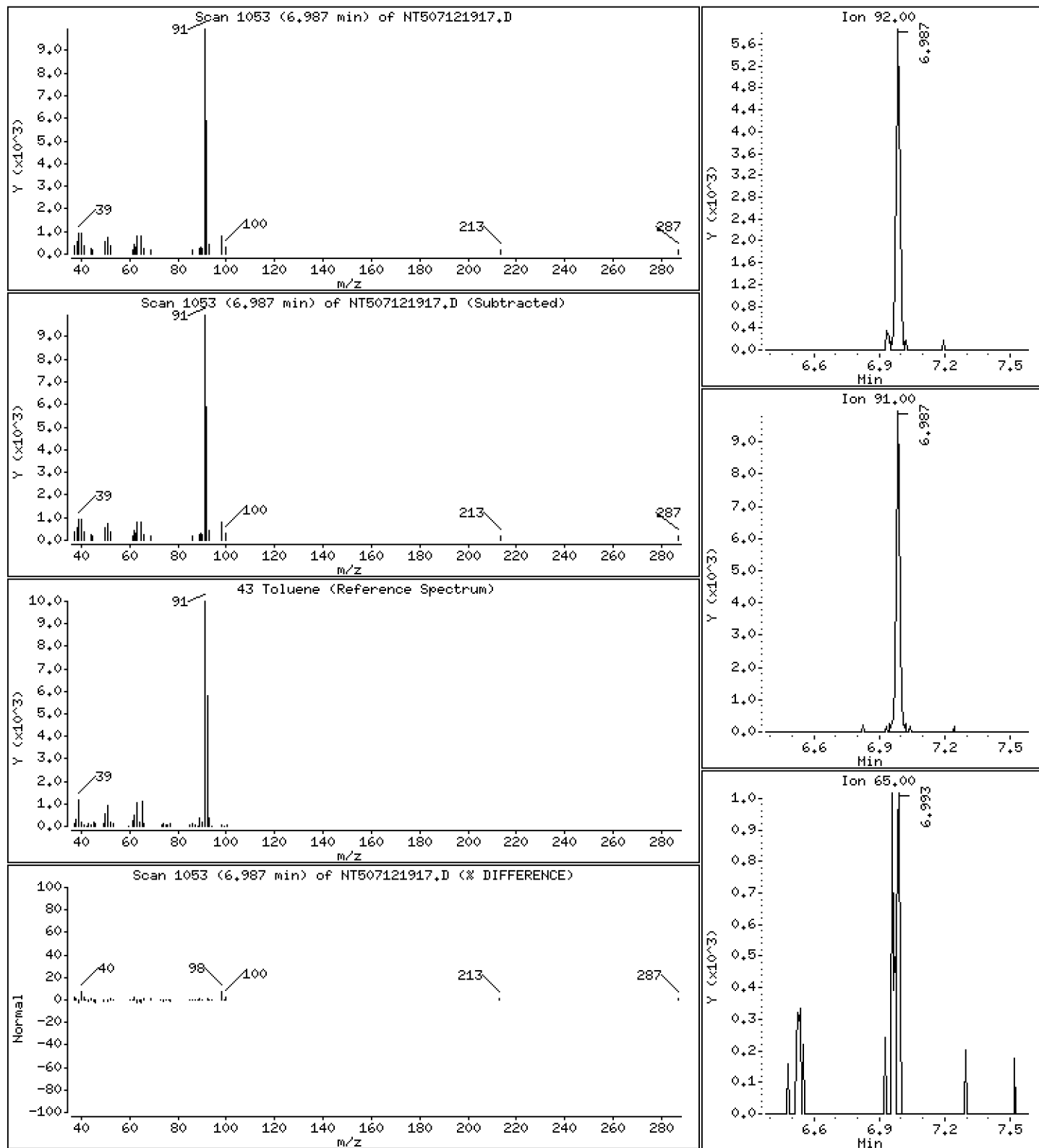
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.9188 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

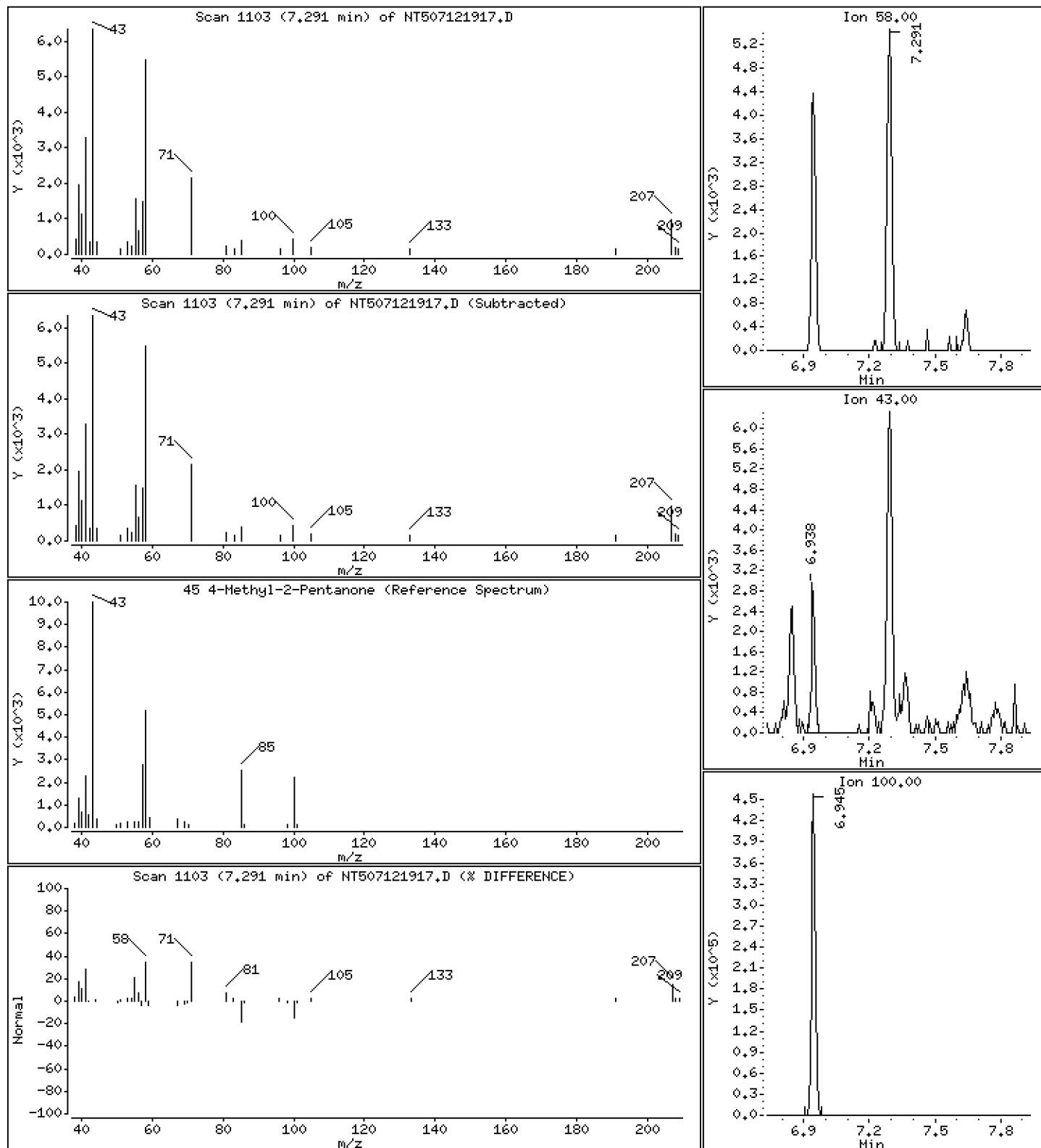
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 8.623 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

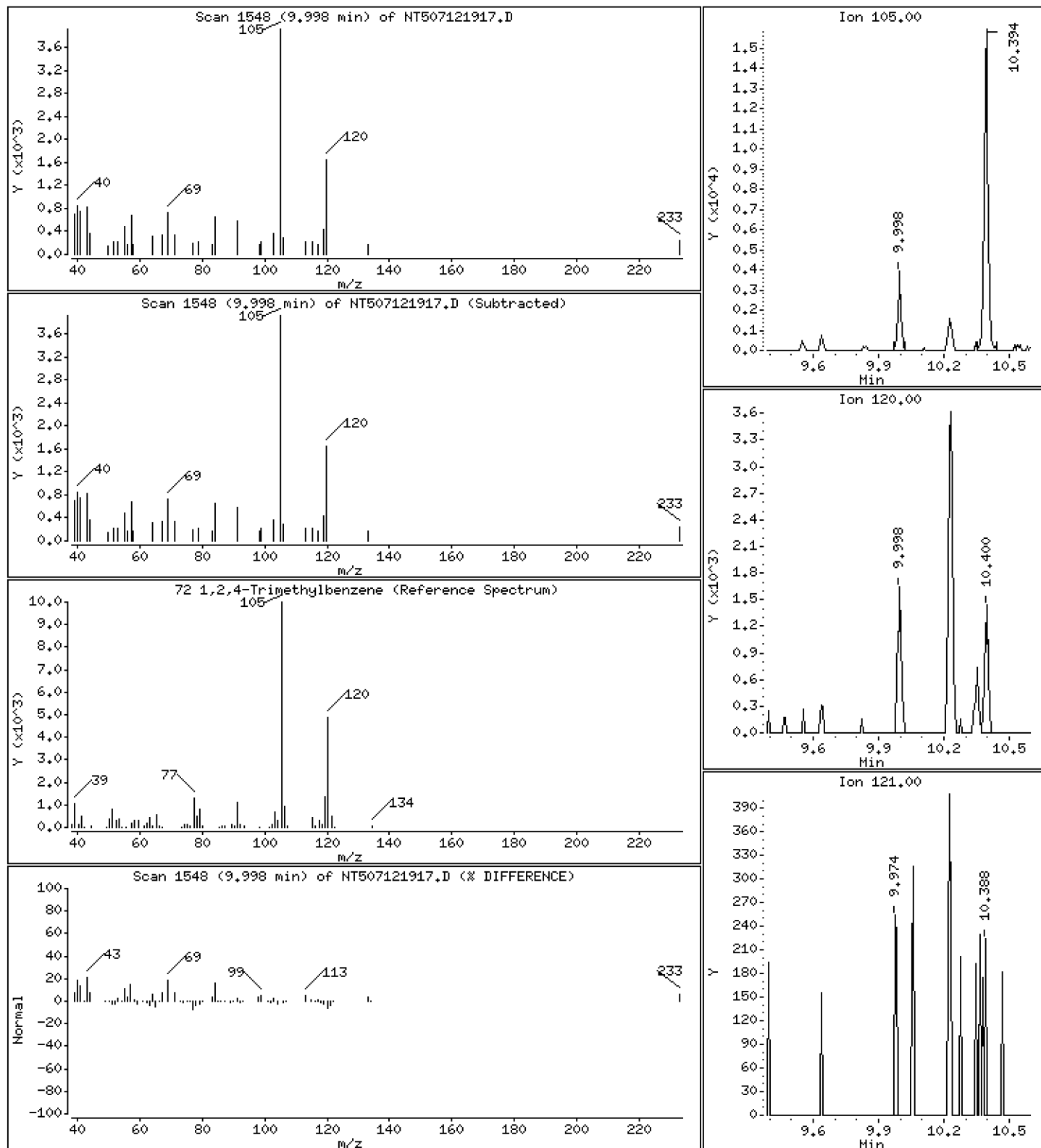
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 0.3584 ug/Kg



Date : 12-JUL-2019 19:11

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-03

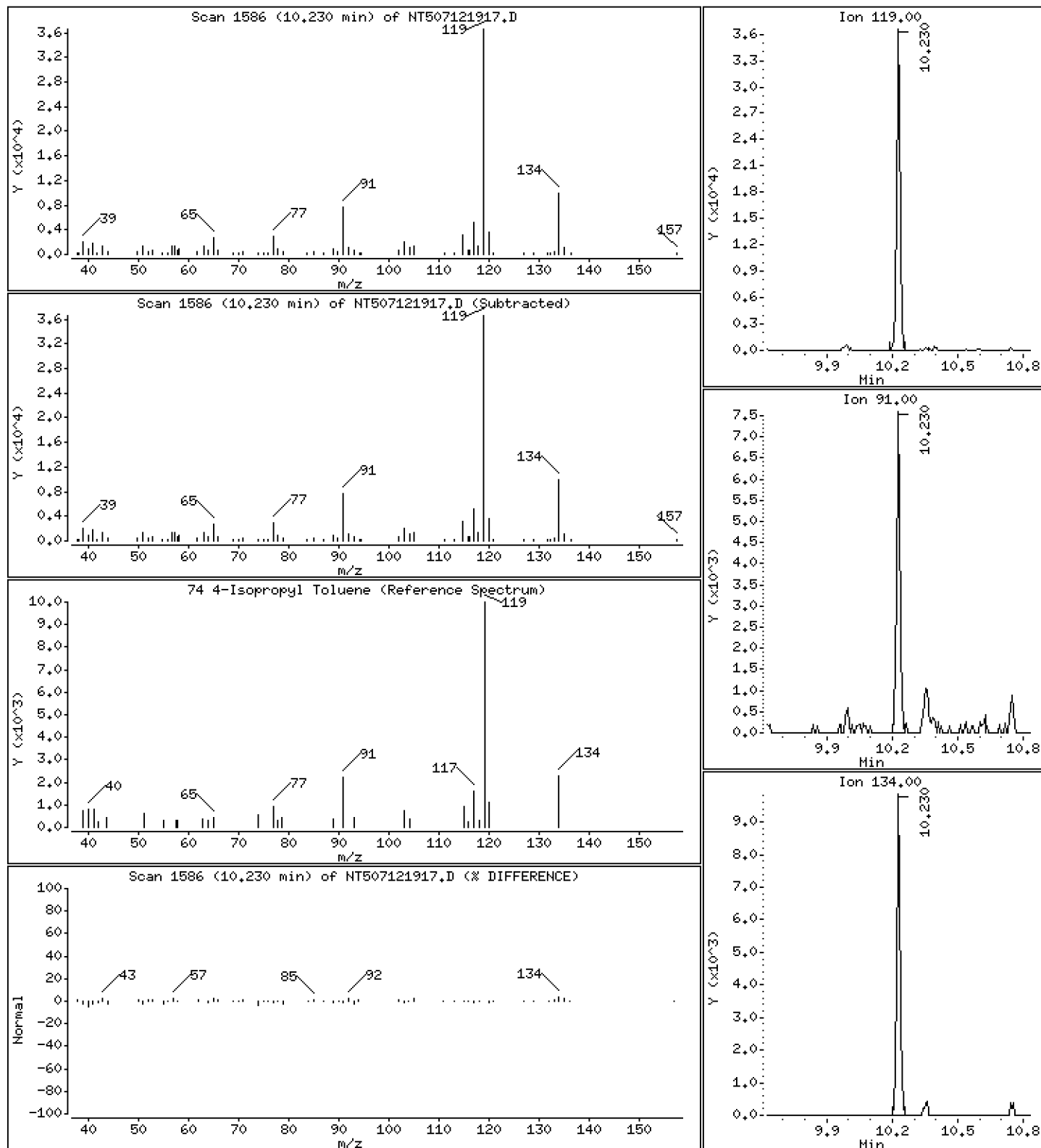
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 3.220 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121917.D

Lab Smp Id: 19G0163-03

Inj Date : 12-JUL-2019 19:11

Operator : PB

Inst ID: nt5.i

Smp Info : 19G0163-03

Misc Info :

Comment :

Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m

Meth Date : 15-Jul-2019 13:36 nt5.i

Quant Type: ISTD

Cal Date : 24-JUN-2019 19:06

Cal File: NT506241914.D

Als bottle: 4

Dil Factor: 1.00000

Integrator: HP RTE

Compound Sublist: voamdl.sub

Target Version: 4.14

Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====			====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85				Compound Not Detected.				
2 Chloromethane	50				Compound Not Detected.				
3 Vinyl Chloride	62				Compound Not Detected.				
4 Bromomethane	94			1.846	1.840 (0.345)		1685	0.70090	0.7009
5 Chloroethane	64				Compound Not Detected.				
6 Trichlorofluoromethane	101				Compound Not Detected.				
7 1,1-Dichloroethene	96				Compound Not Detected.				
8 Carbon Disulfide	76			2.546	2.540 (0.476)		218392	24.4695	24.469
9 112Trichloro122Trifluoroethane	101				Compound Not Detected.				
10 Iodomethane	142			2.673	2.667 (0.500)		10874	2.60606	2.606
11 Bromoethane	108				Compound Not Detected.				
12 Acrolein	56			2.923	2.911 (0.547)		6654	20.4730	20.473
13 Methylene Chloride	84			3.154	3.154 (0.590)		2491	0.78431	0.7843 (M)
14 Acetone	43			3.257	3.257 (0.610)		219463	383.800	383.80
15 Trans-1,2-Dichloroethene	96				Compound Not Detected.				
16 Methyl tert butyl ether	73				Compound Not Detected.				
173 n-Hexane	41				Compound Not Detected.				
17 1,1-Dichloroethane	63				Compound Not Detected.				
18 Acrylonitrile	53				Compound Not Detected.				
19 Vinyl Acetate	43				Compound Not Detected.				
20 Cis-1,2-Dichloroethene	96				Compound Not Detected.				
22 2,2-Dichloropropane	77				Compound Not Detected.				
23 Bromochloromethane	128				Compound Not Detected.				
24 Chloroform	83				Compound Not Detected.				
25 Carbon Tetrachloride	117				Compound Not Detected.				
\$ 27 Dibromofluoromethane	111			4.900	4.894 (0.917)		270560	63.7570	63.757 (R)
26 1,1,1-Trichloroethane	97				Compound Not Detected.				
28 1,1-Dichloropropene	75				Compound Not Detected.				
29 2-Butanone	72			5.052	5.046 (0.945)		7501	27.9122	27.912
30 Benzene	78				Compound Not Detected.				
* 31 Pentafluorobenzene	168			5.344	5.338 (1.000)		388039	50.0000	
\$ 32 d4-1,2-Dichloroethane	65			5.356	5.350 (1.002)		246554	69.4542	69.454 (R)
33 1,2-Dichloroethane	62				Compound Not Detected.				

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	800359	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	969577	51.7310	51.731 (R)
43 Toluene	92	6.987	6.981	(1.207)	8899	0.91877	0.9188
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58	7.291	7.333	(1.260)	8089	8.62317	8.623 (M)
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	807242	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	322989	46.7371	46.737 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105	9.998	9.992	(0.966)	4667	0.35841	0.3584
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	49673	3.21966	3.220
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	380080	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	325065	49.0391	49.039 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121917.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-03
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	388039	-3.93
35 1,4-Difluorobenze	717664	358832	1435328	800359	11.52
52 d5-Chlorobenzene	696563	348282	1393126	807242	15.89
76 d4-1,4-Dichlorobe	380778	190389	761556	380080	-0.18

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-03
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	63.757	127.51	
\$ 32 d4-1,2-Dichloroeth	50.000	69.454	138.91	
\$ 42 d8-Toluene	50.000	51.731	103.46	
\$ 62 4-Bromofluorobenze	50.000	46.737	93.47	
\$ 79 d4-1,2-Dichloroben	50.000	49.039	98.08	

REVIEW SUMMARY FOR FILE - NT507121917.D

Lab ID: 19G0163-03
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 19:11

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
1.260	1.268	-0.0087	4-Methyl-2-Pentanone

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

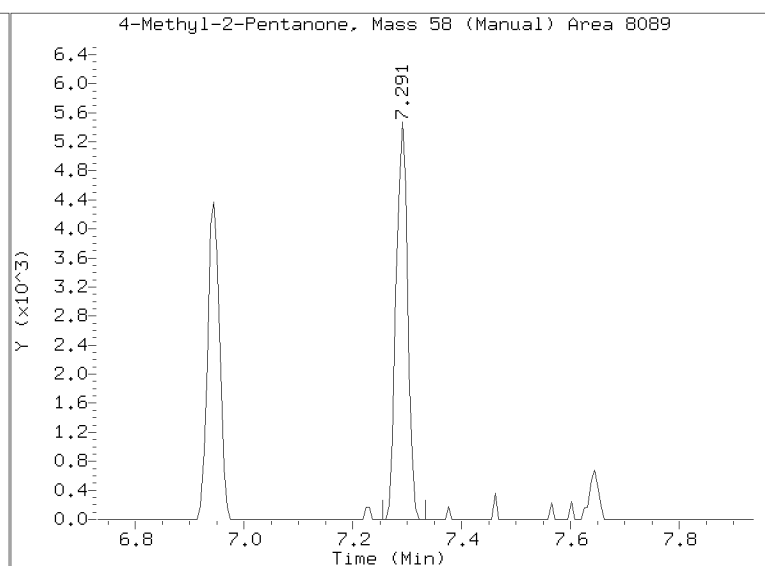
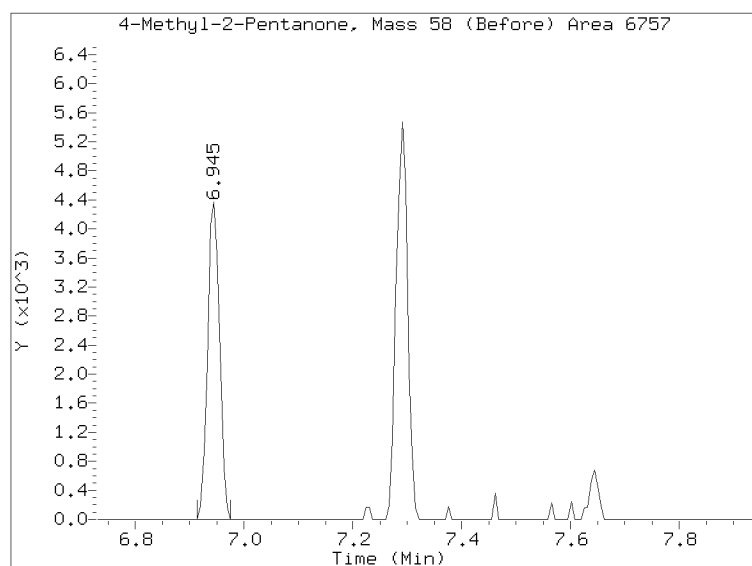
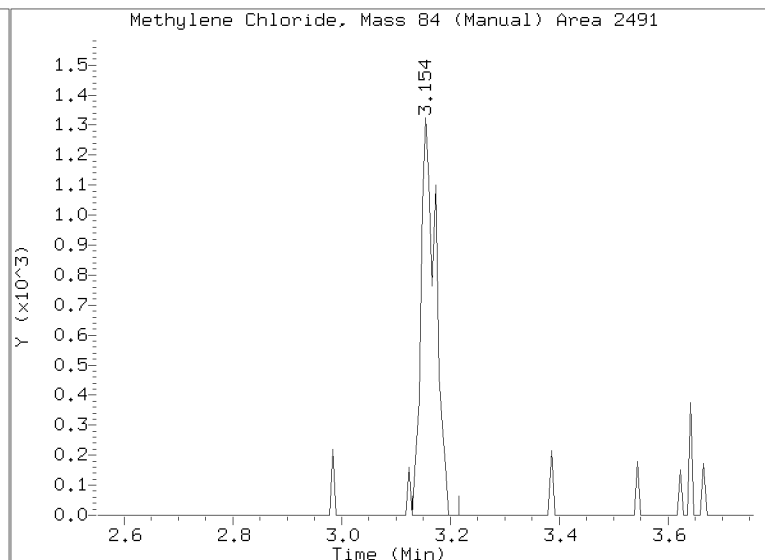
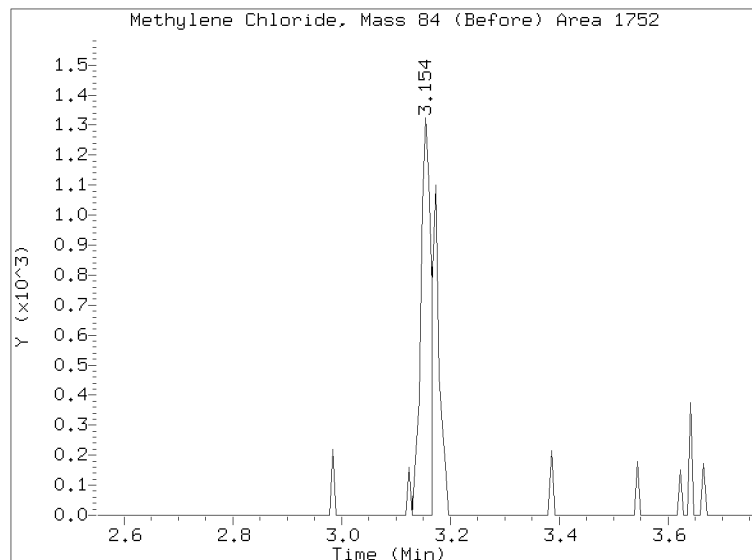
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190712.b/NT507121917.D

Injection Date: 12-JUL-2019 19:11

Lab ID:19G0163-03 Client ID:

Report Date: 07/17/2019 15:04





Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-04 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 08:35</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121918.D</u>
% Solids: <u>23.52</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 19:33</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>2.47 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	8.61	U	2.26	8.61
75-01-4	Vinyl Chloride	1	8.61	U	2.02	8.61
74-83-9	Bromomethane	1	8.61	U	1.61	8.61
75-00-3	Chloroethane	1	8.61	U	3.98	8.61
75-69-4	Trichlorofluoromethane	1	8.61	U	2.29	8.61
107-02-8	Acrolein	1	43.0	U	32.8	43.0
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	17.2	U	2.47	17.2
67-64-1	Acetone	1	3020		4.15	43.0
75-35-4	1,1-Dichloroethene	1	8.61	U	2.89	8.61
74-96-4	Bromoethane	1	17.2	U	3.79	17.2
74-88-4	Iodomethane	1	8.61	U	1.85	8.61
75-09-2	Methylene Chloride	1	5.83	J	5.47	17.2
107-13-1	Acrylonitrile	1	43.0	U	8.86	43.0
75-15-0	Carbon Disulfide	1	8.61	U	4.81	8.61
156-60-5	trans-1,2-Dichloroethene	1	8.61	U	2.29	8.61
108-05-4	Vinyl Acetate	1	43.0	U	3.28	43.0
75-34-3	1,1-Dichloroethane	1	8.61	U	1.75	8.61
78-93-3	2-Butanone	1	148		4.42	43.0
594-20-7	2,2-Dichloropropane	1	8.61	U	2.51	8.61
156-59-2	cis-1,2-Dichloroethene	1	8.61	U	2.07	8.61
67-66-3	Chloroform	1	8.61	U	2.01	8.61
74-97-5	Bromochloromethane	1	8.61	U	2.78	8.61
71-55-6	1,1,1-Trichloroethane	1	8.61	U	1.95	8.61
563-58-6	1,1-Dichloropropene	1	8.61	U	2.69	8.61
56-23-5	Carbon tetrachloride	1	8.61	U	1.83	8.61
107-06-2	1,2-Dichloroethane	1	8.61	U	1.64	8.61
71-43-2	Benzene	1	8.61	U	2.55	8.61
79-01-6	Trichloroethene	1	8.61	U	1.82	8.61
78-87-5	1,2-Dichloropropane	1	8.61	U	1.39	8.61
75-27-4	Bromodichloromethane	1	8.61	U	2.19	8.61
74-95-3	Dibromomethane	1	8.61	U	1.27	8.61
110-75-8	2-Chloroethyl vinyl ether	1	43.0	U	2.38	43.0
108-10-1	4-Methyl-2-Pentanone	1	43.0	U	3.61	43.0
10061-01-5	cis-1,3-Dichloropropene	1	8.61	U	1.95	8.61



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-04 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 08:35</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121918.D</u>
% Solids: <u>23.52</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 19:33</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>2.47 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	8.24	J	1.30	8.61
10061-02-6	trans-1,3-Dichloropropene	1	8.61	U	1.86	8.61
591-78-6	2-Hexanone	1	43.0	U	3.78	43.0
79-00-5	1,1,2-Trichloroethane	1	8.61	U	2.46	8.61
142-28-9	1,3-Dichloropropane	1	8.61	U	1.80	8.61
127-18-4	Tetrachloroethene	1	8.61	U	2.21	8.61
124-48-1	Dibromochloromethane	1	8.61	U	2.29	8.61
106-93-4	1,2-Dibromoethane	1	8.61	U	1.51	8.61
108-90-7	Chlorobenzene	1	8.61	U	1.88	8.61
100-41-4	Ethylbenzene	1	8.61	U	1.74	8.61
630-20-6	1,1,1,2-Tetrachloroethane	1	8.61	U	2.01	8.61
179601-23-1	m,p-Xylene	1	17.2	U	3.37	17.2
95-47-6	o-Xylene	1	8.61	U	1.93	8.61
1330-20-7	Xylenes, total	1	17.2	U	5.30	17.2
100-42-5	Styrene	1	8.61	U	1.19	8.61
75-25-2	Bromoform	1	8.61	U	2.56	8.61
79-34-5	1,1,1,2-Tetrachloroethane	1	8.61	U	2.18	8.61
96-18-4	1,2,3-Trichloropropane	1	17.2	U	4.45	17.2
110-57-6	trans-1,4-Dichloro 2-Butene	1	43.0	U	3.76	43.0
103-65-1	n-Propylbenzene	1	8.61	U	2.34	8.61
108-86-1	Bromobenzene	1	8.61	U	1.32	8.61
98-82-8	Isopropyl Benzene	1	8.61	U	2.01	8.61
95-49-8	2-Chlorotoluene	1	8.61	U	2.58	8.61
106-43-4	4-Chlorotoluene	1	8.61	U	2.38	8.61
98-06-6	t-Butylbenzene	1	8.61	U	2.63	8.61
108-67-8	1,3,5-Trimethylbenzene	1	8.61	U	2.19	8.61
95-63-6	1,2,4-Trimethylbenzene	1	8.61	U	1.98	8.61
135-98-8	s-Butylbenzene	1	8.61	U	2.07	8.61
99-87-6	4-Isopropyl Toluene	1	76.4		2.03	8.61
541-73-1	1,3-Dichlorobenzene	1	8.61	U	1.95	8.61
106-46-7	1,4-Dichlorobenzene	1	8.61	U	2.00	8.61
104-51-8	n-Butylbenzene	1	8.61	U	2.25	8.61
95-50-1	1,2-Dichlorobenzene	1	8.61	U	2.52	8.61
96-12-8	1,2-Dibromo-3-chloropropane	1	43.0	U	5.04	43.0



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04 C SDG: 19G0163
Sampled: 07/11/19 08:35 Prepared: 07/12/19 14:22 File ID: NT507121918.D
% Solids: 23.52 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 19:33
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 2.47 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	43.0	U	2.86	43.0
87-68-3	Hexachloro-1,3-Butadiene	1	43.0	U	3.53	43.0
91-20-3	Naphthalene	1	43.0	U	3.69	43.0
87-61-6	1,2,3-Trichlorobenzene	1	43.0	U	2.63	43.0
75-71-8	Dichlorodifluoromethane	1	8.61	U	1.78	8.61
1634-04-4	Methyl tert-butyl Ether	1	8.61	U	1.99	8.61
107-87-9	2-Pentanone	1	43.0	U	43.0	43.0

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	67.0	134	80 - 149	
Toluene-d8	50.000	48.7	97.3	77 - 120	
4-Bromofluorobenzene	50.000	37.5	75.1	80 - 120	*
1,2-Dichlorobenzene-d4	50.000	46.9	93.9	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121918.D

Date : 12-JUL-2019 19:33

Client ID:

Sample Info: 19C0163-04

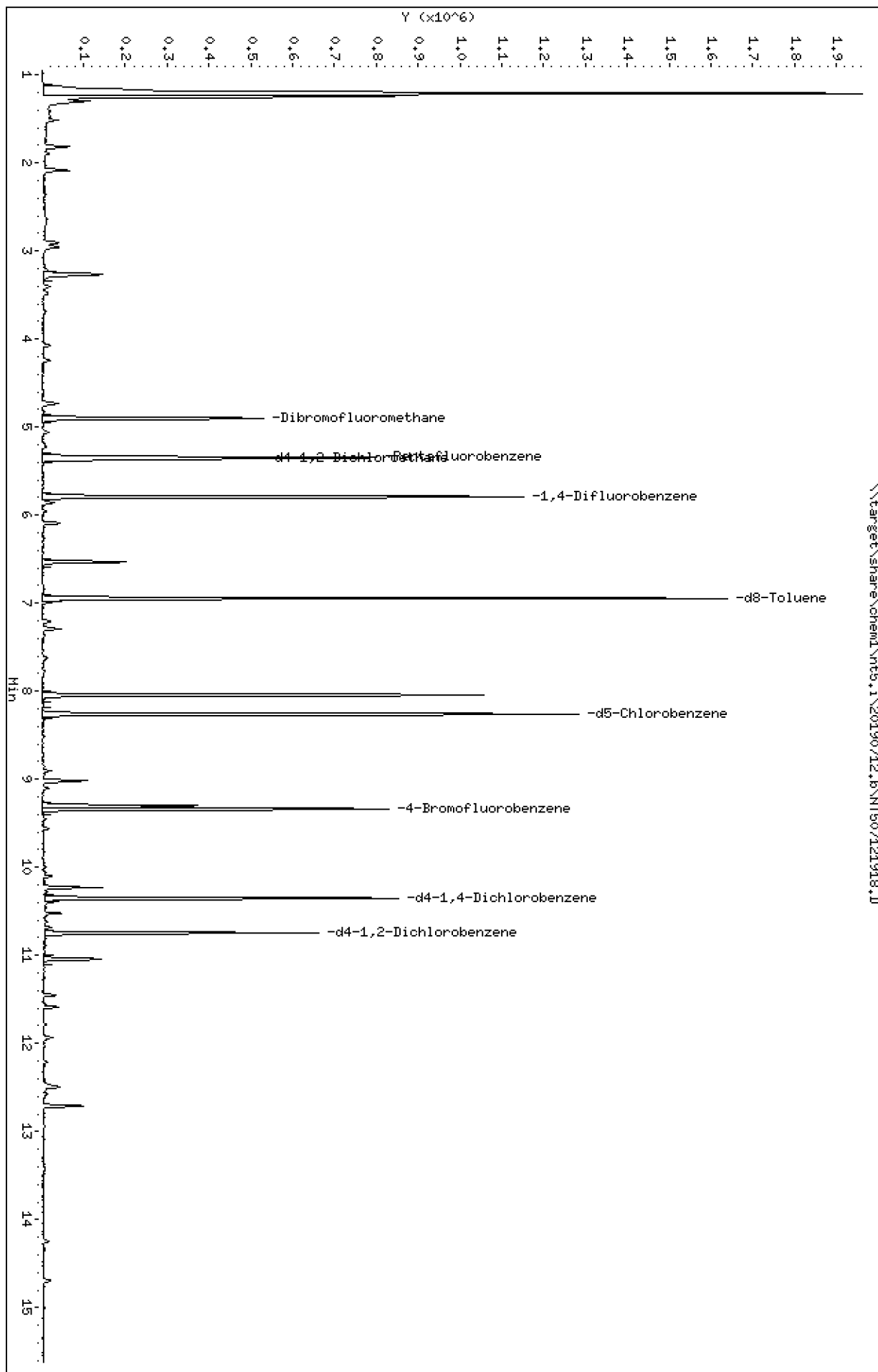
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 19:33

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04

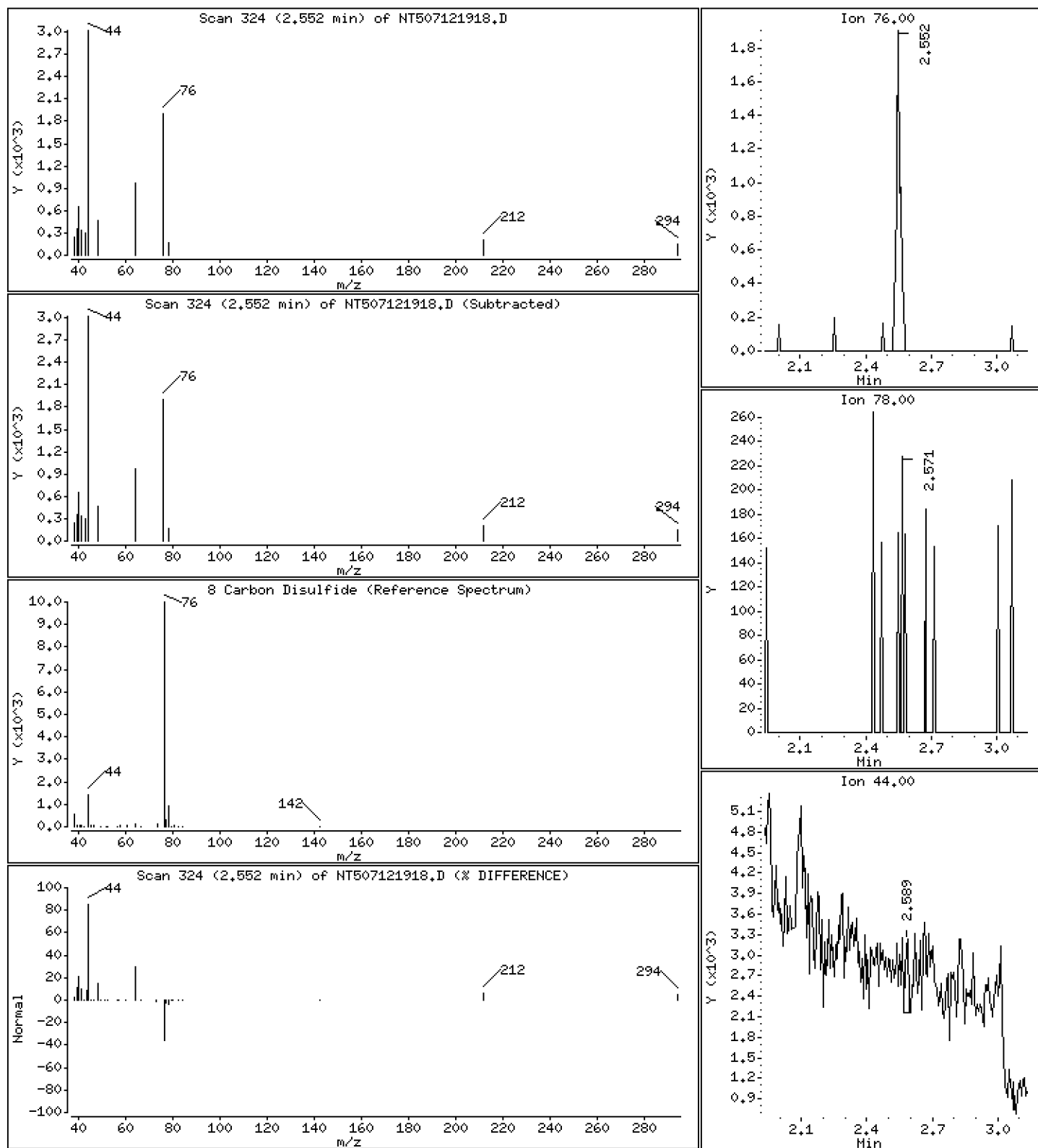
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 0.2997 ug/Kg



Date : 12-JUL-2019 19:33

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04

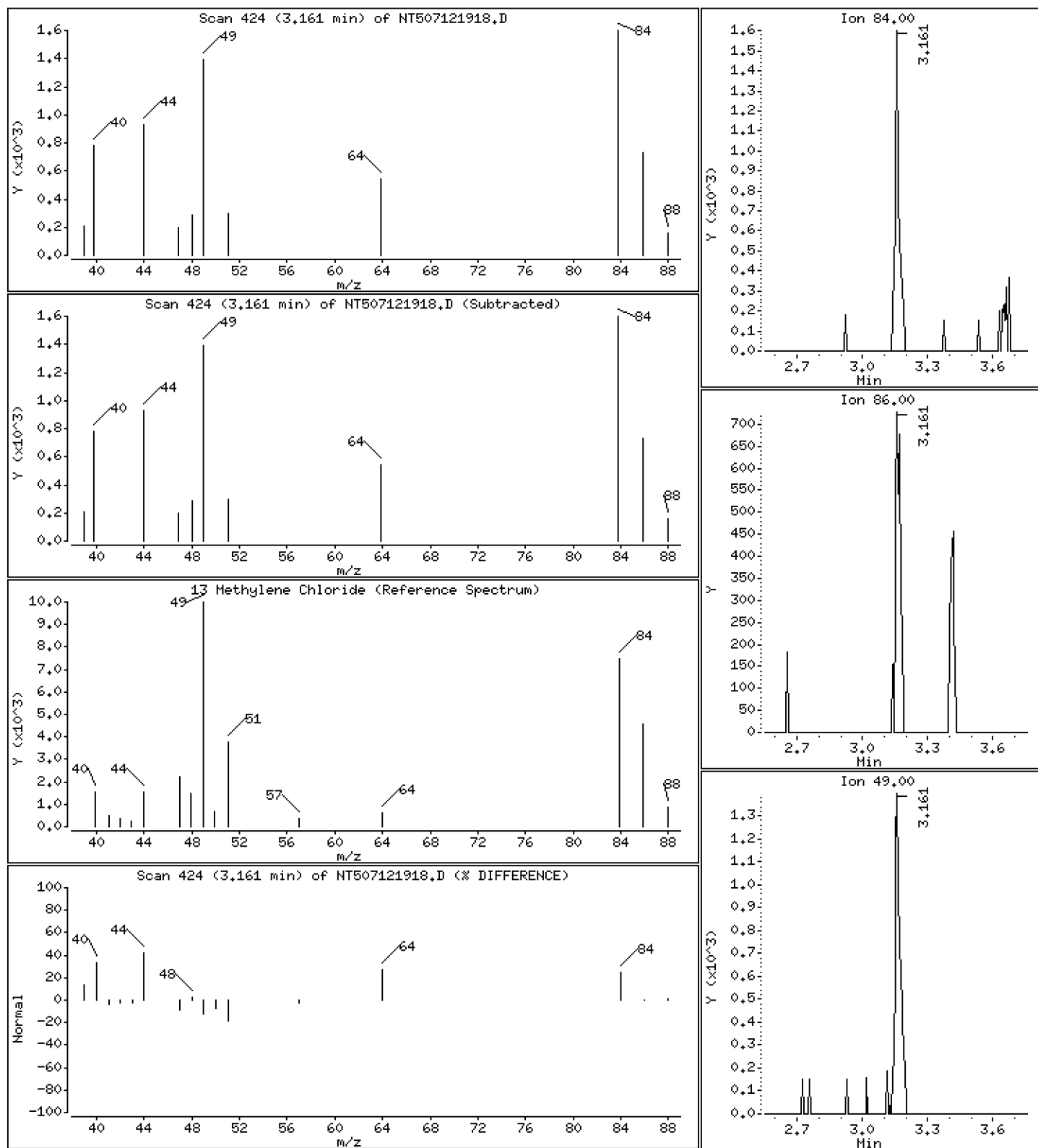
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.6772 ug/Kg



Date : 12-JUL-2019 19:33

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04

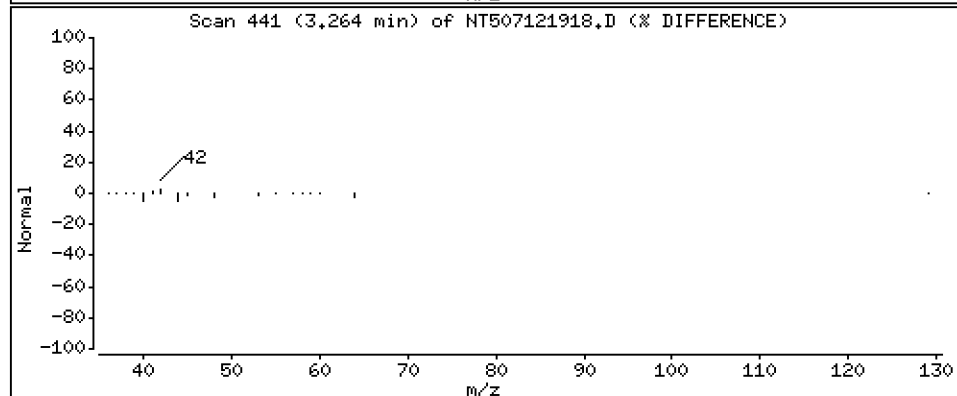
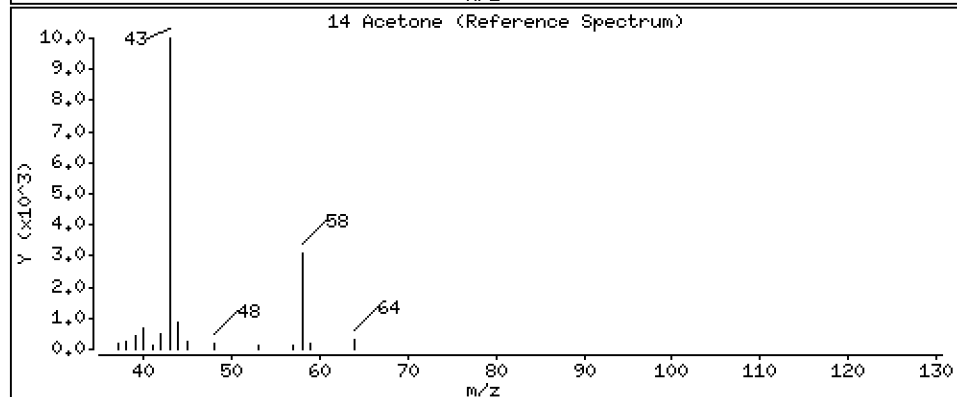
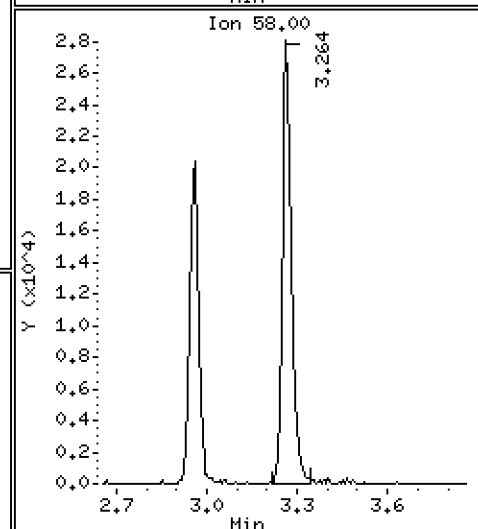
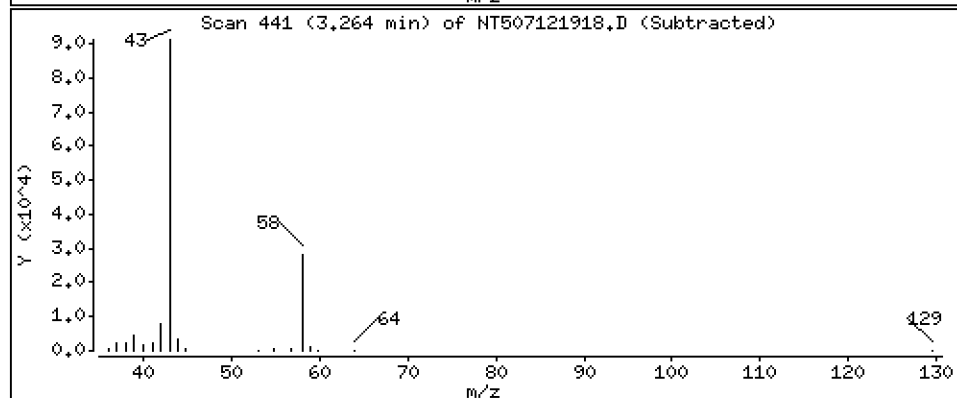
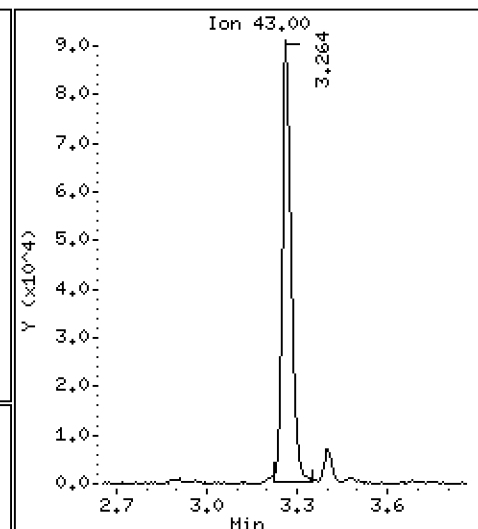
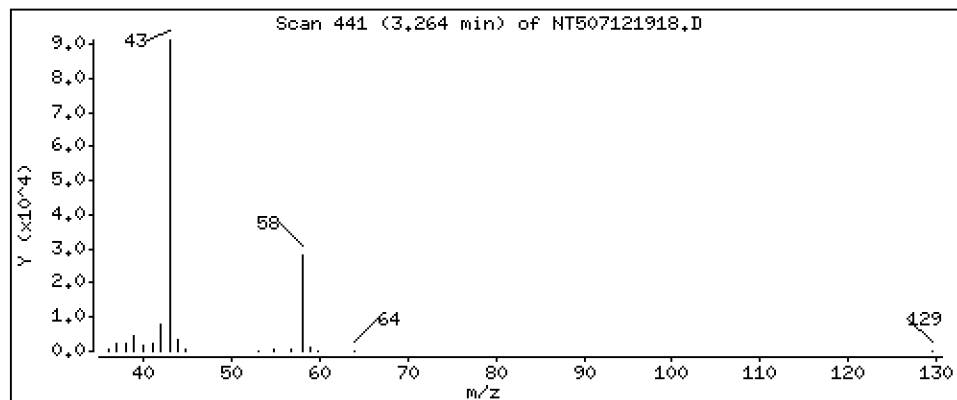
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 350.67 ug/Kg



Date : 12-JUL-2019 19:33

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04

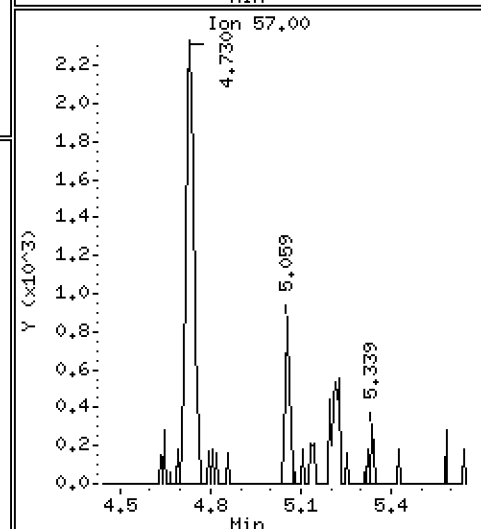
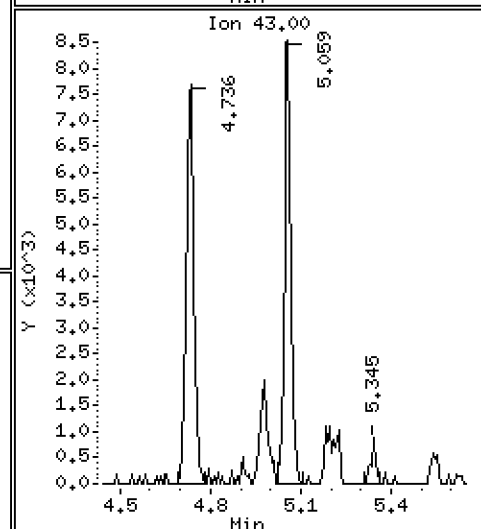
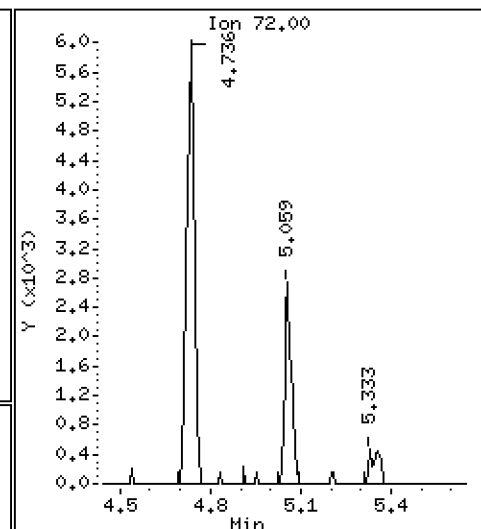
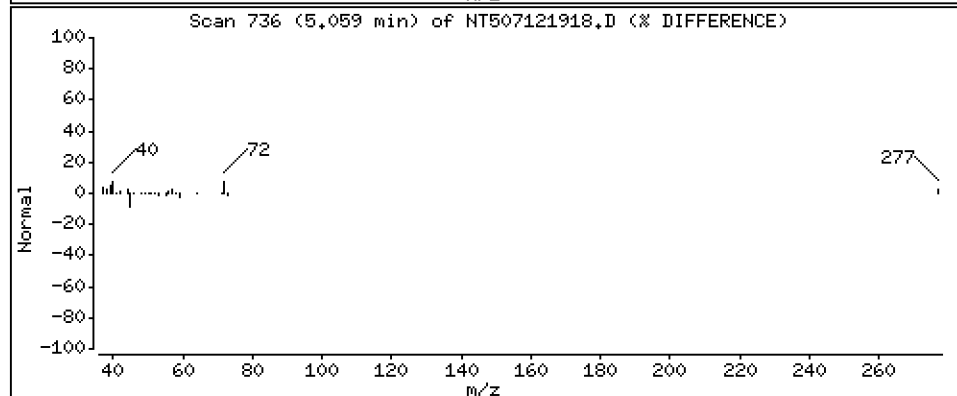
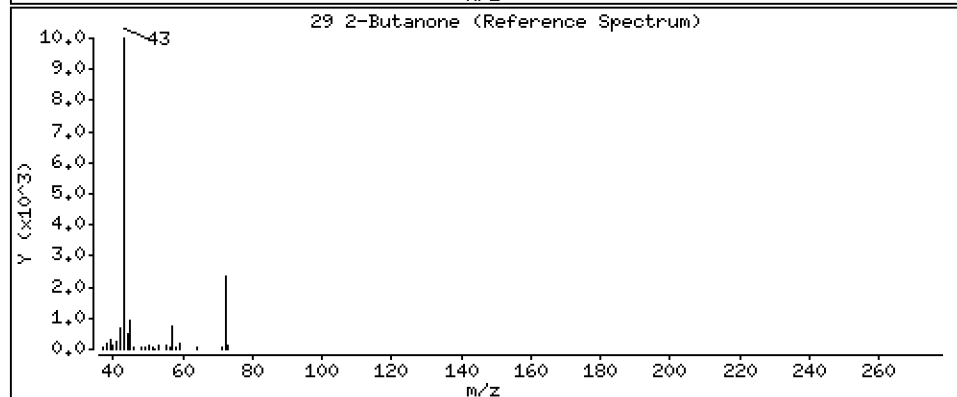
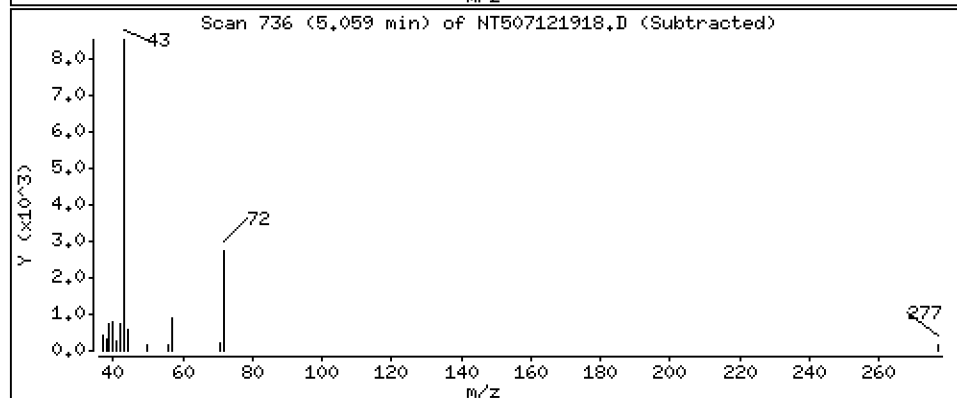
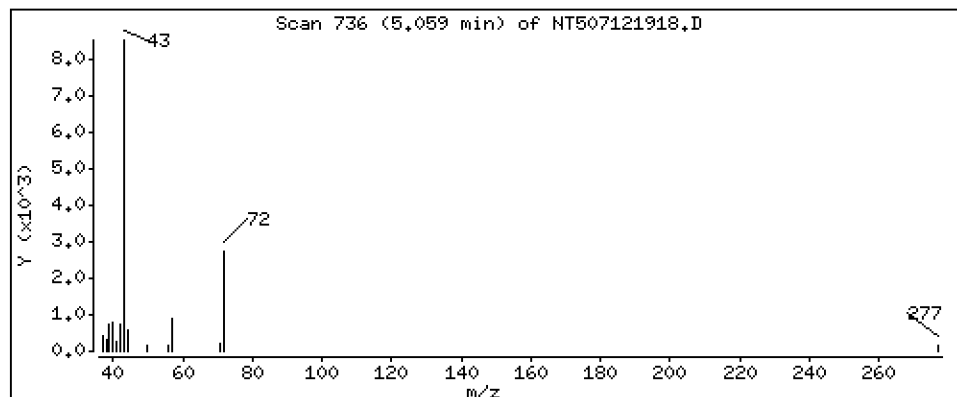
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 17,211 ug/Kg



Date : 12-JUL-2019 19:33

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04

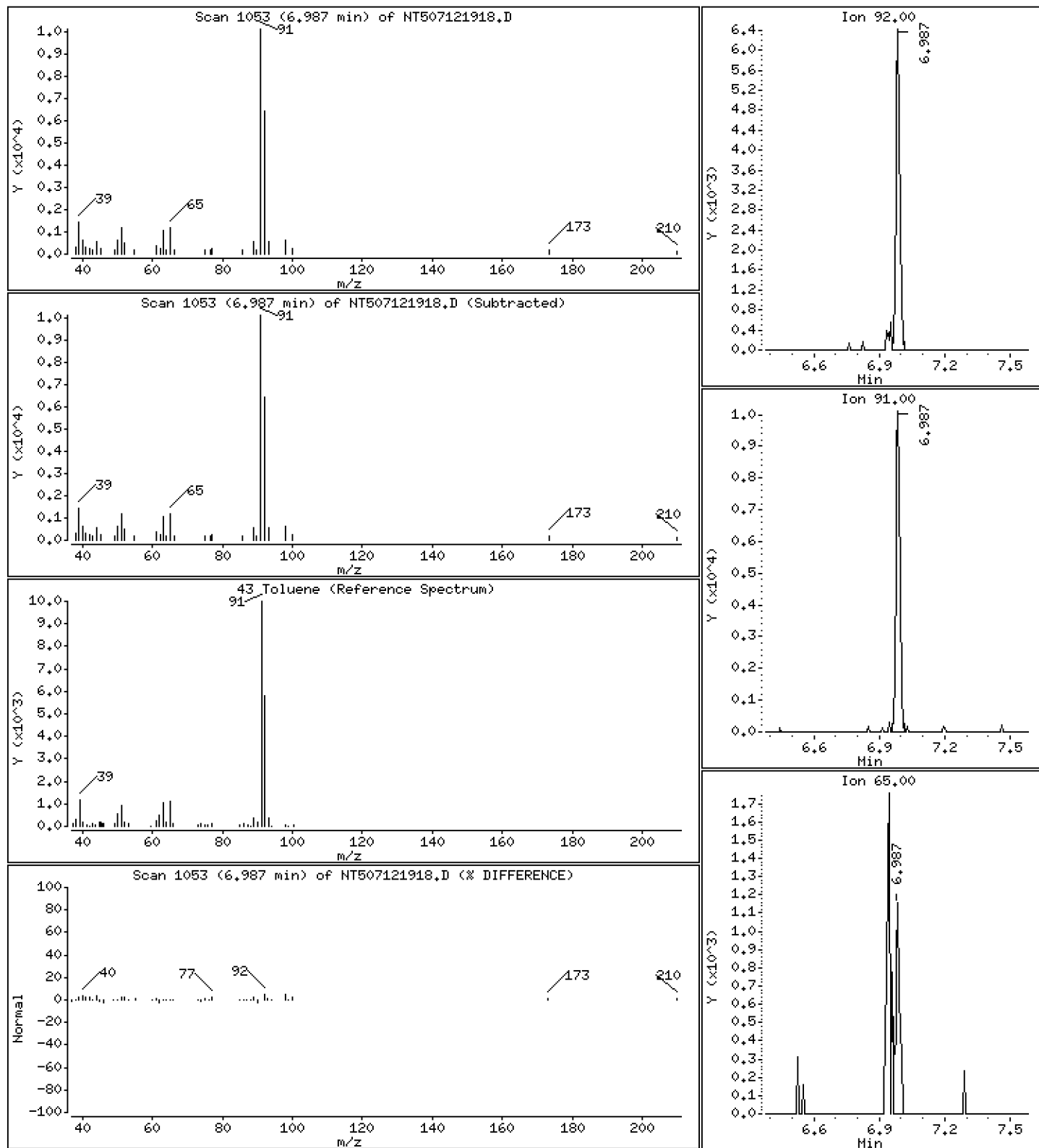
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.9569 ug/Kg



Date : 12-JUL-2019 19:33

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04

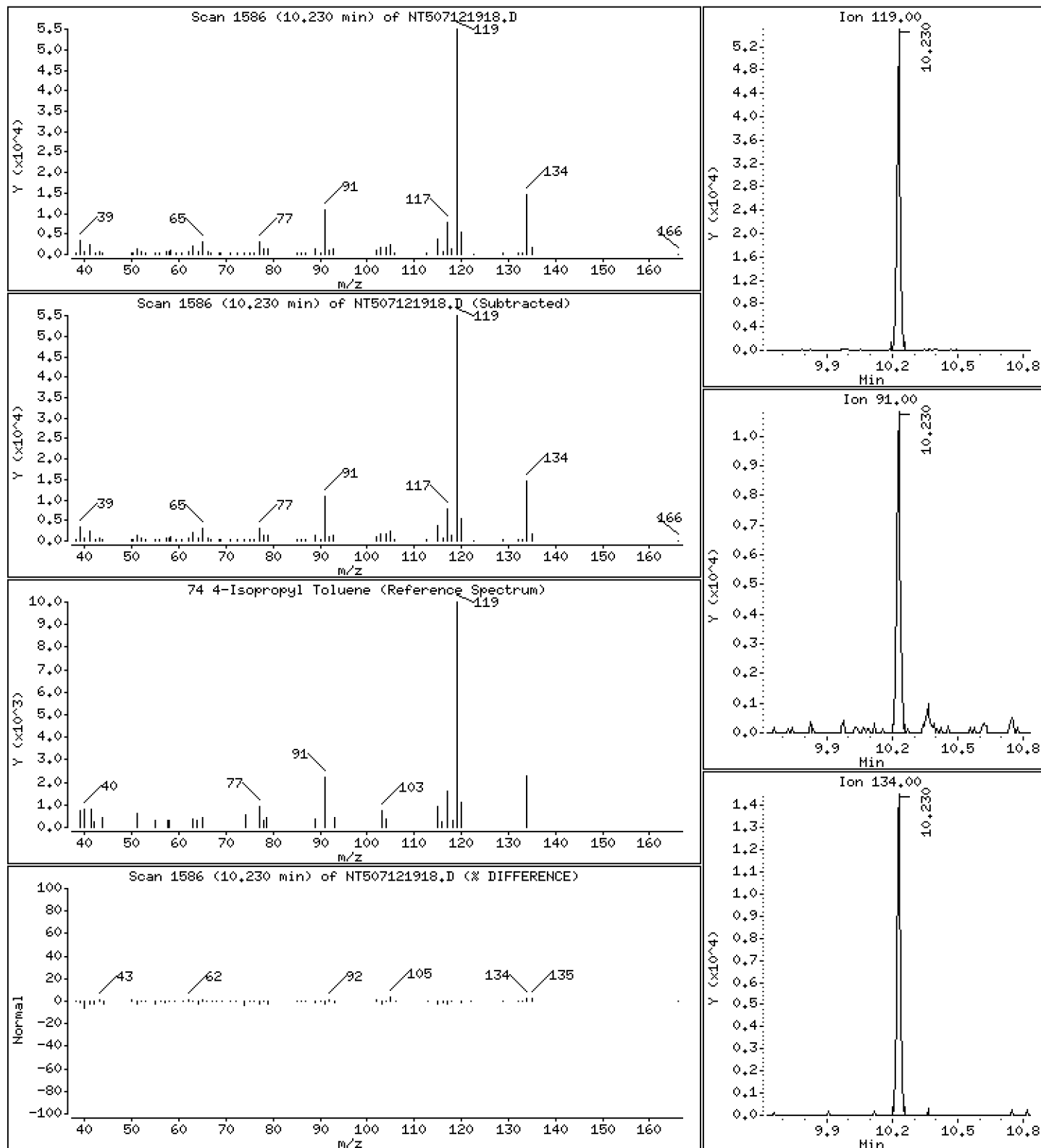
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 8.882 ug/Kg



Date : 12-JUL-2019 19:33

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04

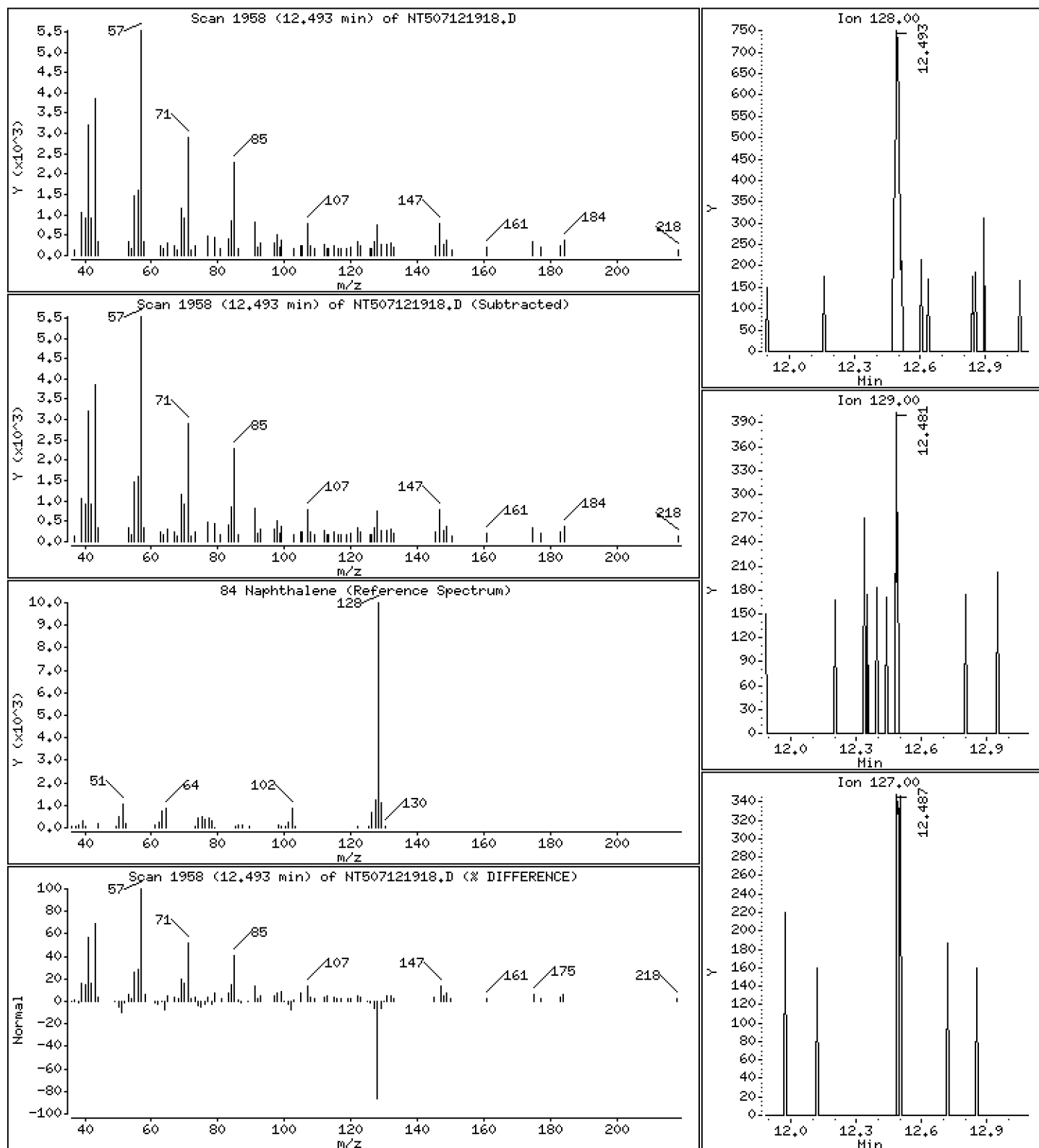
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.2644 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121918.D
 Lab Smp Id: 19G0163-04
 Inj Date : 12-JUL-2019 19:33
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-04
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound Not	Detected.				
2 Chloromethane	50		Compound Not	Detected.				
3 Vinyl Chloride	62		Compound Not	Detected.				
4 Bromomethane	94		Compound Not	Detected.				
5 Chloroethane	64		Compound Not	Detected.				
6 Trichlorofluoromethane	101		Compound Not	Detected.				
7 1,1-Dichloroethene	96		Compound Not	Detected.				
8 Carbon Disulfide	76		2.552	2.540 (0.478)		2693	0.29974	0.2997
9 112Trichloro122Trifluoroethane	101		Compound Not	Detected.				
10 Iodomethane	142		Compound Not	Detected.				
11 Bromoethane	108		Compound Not	Detected.				
12 Acrolein	56		Compound Not	Detected.				
13 Methylene Chloride	84		3.160	3.154 (0.591)		2165	0.67717	0.6772
14 Acetone	43		3.264	3.257 (0.611)		201850	350.671	350.67
15 Trans-1,2-Dichloroethene	96		Compound Not	Detected.				
16 Methyl tert butyl ether	73		Compound Not	Detected.				
173 n-Hexane	41		Compound Not	Detected.				
17 1,1-Dichloroethane	63		Compound Not	Detected.				
18 Acrylonitrile	53		Compound Not	Detected.				
19 Vinyl Acetate	43		Compound Not	Detected.				
20 Cis-1,2-Dichloroethene	96		Compound Not	Detected.				
22 2,2-Dichloropropane	77		Compound Not	Detected.				
23 Bromochloromethane	128		Compound Not	Detected.				
24 Chloroform	83		Compound Not	Detected.				
25 Carbon Tetrachloride	117		Compound Not	Detected.				
\$ 27 Dibromofluoromethane	111		4.900	4.894 (0.917)		266304	62.3404	62.340 (R)
26 1,1,1-Trichloroethane	97		Compound Not	Detected.				
28 1,1-Dichloropropene	75		Compound Not	Detected.				
29 2-Butanone	72		5.058	5.046 (0.947)		4656	17.2114	17.211
30 Benzene	78		Compound Not	Detected.				
* 31 Pentafluorobenzene	168		5.344	5.338 (1.000)		390614	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.350 (1.003)		239477	67.0159	67.016 (R)
33 1,2-Dichloroethane	62		Compound Not	Detected.				

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	776940	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	885404	48.6639	48.664 (R)
43 Toluene	92	6.987	6.981	(1.207)	8997	0.95688	0.9569
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	620210	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	199323	37.5402	37.540 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	67718	8.88206	8.882
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	187826	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	153737	46.9321	46.932 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128	12.492	12.492	(1.207)	1367	0.26437	0.2644
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121918.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-04
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	390614	-3.30
35 1,4-Difluorobenze	717664	358832	1435328	776940	8.26
52 d5-Chlorobenzene	696563	348282	1393126	620210	-10.96
76 d4-1,4-Dichlorobe	380778	190389	761556	187826	-50.67

<-

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.11
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: NONE
Lab Smp Id: 19G0163-04
Level:
Data Type: MS DATA
SpikeList File: voasoil.spk
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Misc Info:

Client SDG: 20151013
Fraction: VOA

Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	62.340	124.68	
\$ 32 d4-1,2-Dichloroeth	50.000	67.016	134.03	
\$ 42 d8-Toluene	50.000	48.664	97.33	
\$ 62 4-Bromofluorobenze	50.000	37.540	75.08	
\$ 79 d4-1,2-Dichloroben	50.000	46.932	93.86	

REVIEW SUMMARY FOR FILE - NT507121918.D

Lab ID: 19G0163-04
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 19:33

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT CCV RRT DELTA COMPOUND

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04RE1 C SDG: 19G0163
Sampled: 07/11/19 08:35 Prepared: 07/12/19 14:22 File ID: NT507191905.D
% Solids: 23.52 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/19/19 15:40
Batch: BHG0418 Sequence: SHG0298 Initial/Final: 2.47 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	8.61	U	2.26	8.61
75-01-4	Vinyl Chloride	1	8.61	U	2.02	8.61
74-83-9	Bromomethane	1	8.61	U	1.61	8.61
75-00-3	Chloroethane	1	8.61	U	3.98	8.61
75-69-4	Trichlorofluoromethane	1	8.61	U	2.29	8.61
107-02-8	Acrolein	1	43.0	U	32.8	43.0
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	17.2	U	2.47	17.2
67-64-1	Acetone	1	2700		4.15	43.0
75-35-4	1,1-Dichloroethene	1	8.61	U	2.89	8.61
74-96-4	Bromoethane	1	17.2	U	3.79	17.2
74-88-4	Iodomethane	1	8.61	U	1.85	8.61
75-09-2	Methylene Chloride	1	17.2	U	5.47	17.2
107-13-1	Acrylonitrile	1	43.0	U	8.86	43.0
75-15-0	Carbon Disulfide	1	8.61	U	4.81	8.61
156-60-5	trans-1,2-Dichloroethene	1	8.61	U	2.29	8.61
108-05-4	Vinyl Acetate	1	43.0	U	3.28	43.0
75-34-3	1,1-Dichloroethane	1	8.61	U	1.75	8.61
78-93-3	2-Butanone	1	125		4.42	43.0
594-20-7	2,2-Dichloropropane	1	8.61	U	2.51	8.61
156-59-2	cis-1,2-Dichloroethene	1	8.61	U	2.07	8.61
67-66-3	Chloroform	1	8.61	U	2.01	8.61
74-97-5	Bromochloromethane	1	8.61	U	2.78	8.61
71-55-6	1,1,1-Trichloroethane	1	8.61	U	1.95	8.61
563-58-6	1,1-Dichloropropene	1	8.61	U	2.69	8.61
56-23-5	Carbon tetrachloride	1	8.61	U	1.83	8.61
107-06-2	1,2-Dichloroethane	1	8.61	U	1.64	8.61
71-43-2	Benzene	1	8.61	U	2.55	8.61
79-01-6	Trichloroethene	1	8.61	U	1.82	8.61
78-87-5	1,2-Dichloropropane	1	8.61	U	1.39	8.61
75-27-4	Bromodichloromethane	1	8.61	U	2.19	8.61
74-95-3	Dibromomethane	1	8.61	U	1.27	8.61
110-75-8	2-Chloroethyl vinyl ether	1	43.0	U	2.38	43.0
108-10-1	4-Methyl-2-Pentanone	1	43.0	U	3.61	43.0
10061-01-5	cis-1,3-Dichloropropene	1	8.61	U	1.95	8.61



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-04RE1 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 08:35</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507191905.D</u>
% Solids: <u>23.52</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/19/19 15:40</u>
Batch: <u>BHG0418</u>	Sequence: <u>SHG0298</u>	Initial/Final: <u>2.47 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	7.37	J	1.30	8.61
10061-02-6	trans-1,3-Dichloropropene	1	8.61	U	1.86	8.61
591-78-6	2-Hexanone	1	43.0	U	3.78	43.0
79-00-5	1,1,2-Trichloroethane	1	8.61	U	2.46	8.61
142-28-9	1,3-Dichloropropane	1	8.61	U	1.80	8.61
127-18-4	Tetrachloroethene	1	8.61	U	2.21	8.61
124-48-1	Dibromochloromethane	1	8.61	U	2.29	8.61
106-93-4	1,2-Dibromoethane	1	8.61	U	1.51	8.61
108-90-7	Chlorobenzene	1	8.61	U	1.88	8.61
100-41-4	Ethylbenzene	1	8.61	U	1.74	8.61
630-20-6	1,1,1,2-Tetrachloroethane	1	8.61	U	2.01	8.61
179601-23-1	m,p-Xylene	1	17.2	U	3.37	17.2
95-47-6	o-Xylene	1	8.61	U	1.93	8.61
1330-20-7	Xylenes, total	1	17.2	U	5.30	17.2
100-42-5	Styrene	1	8.61	U	1.19	8.61
75-25-2	Bromoform	1	8.61	U	2.56	8.61
79-34-5	1,1,1,2-Tetrachloroethane	1	8.61	U	2.18	8.61
96-18-4	1,2,3-Trichloropropane	1	17.2	U	4.45	17.2
110-57-6	trans-1,4-Dichloro 2-Butene	1	43.0	U	3.76	43.0
103-65-1	n-Propylbenzene	1	8.61	U	2.34	8.61
108-86-1	Bromobenzene	1	8.61	U	1.32	8.61
98-82-8	Isopropyl Benzene	1	8.61	U	2.01	8.61
95-49-8	2-Chlorotoluene	1	8.61	U	2.58	8.61
106-43-4	4-Chlorotoluene	1	8.61	U	2.38	8.61
98-06-6	t-Butylbenzene	1	8.61	U	2.63	8.61
108-67-8	1,3,5-Trimethylbenzene	1	8.61	U	2.19	8.61
95-63-6	1,2,4-Trimethylbenzene	1	8.61	U	1.98	8.61
135-98-8	s-Butylbenzene	1	8.61	U	2.07	8.61
99-87-6	4-Isopropyl Toluene	1	61.0		2.03	8.61
541-73-1	1,3-Dichlorobenzene	1	8.61	U	1.95	8.61
106-46-7	1,4-Dichlorobenzene	1	2.80	J	2.00	8.61
104-51-8	n-Butylbenzene	1	8.61	U	2.25	8.61
95-50-1	1,2-Dichlorobenzene	1	8.61	U	2.52	8.61
96-12-8	1,2-Dibromo-3-chloropropane	1	43.0	U	5.04	43.0



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04RE1 C SDG: 19G0163
Sampled: 07/11/19 08:35 Prepared: 07/12/19 14:22 File ID: NT507191905.D
% Solids: 23.52 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/19/19 15:40
Batch: BHG0418 Sequence: SHG0298 Initial/Final: 2.47 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	5.91	J	2.86	43.0
87-68-3	Hexachloro-1,3-Butadiene	1	43.0	U	3.53	43.0
91-20-3	Naphthalene	1	7.19	J	3.69	43.0
87-61-6	1,2,3-Trichlorobenzene	1	7.93	J	2.63	43.0
75-71-8	Dichlorodifluoromethane	1	8.61	U	1.78	8.61
1634-04-4	Methyl tert-butyl Ether	1	8.61	U	1.99	8.61
107-87-9	2-Pentanone	1	43.0	U	43.0	43.0

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	63.1	126	80 - 149	
Toluene-d8	50.000	49.4	98.7	77 - 120	
4-Bromofluorobenzene	50.000	36.7	73.4	80 - 120	*
1,2-Dichlorobenzene-d4	50.000	47.7	95.4	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190719.b\NT507191905.D

Date : 19-JUL-2019 15:40

Client ID:

Sample Info: 19C0163-04RE1

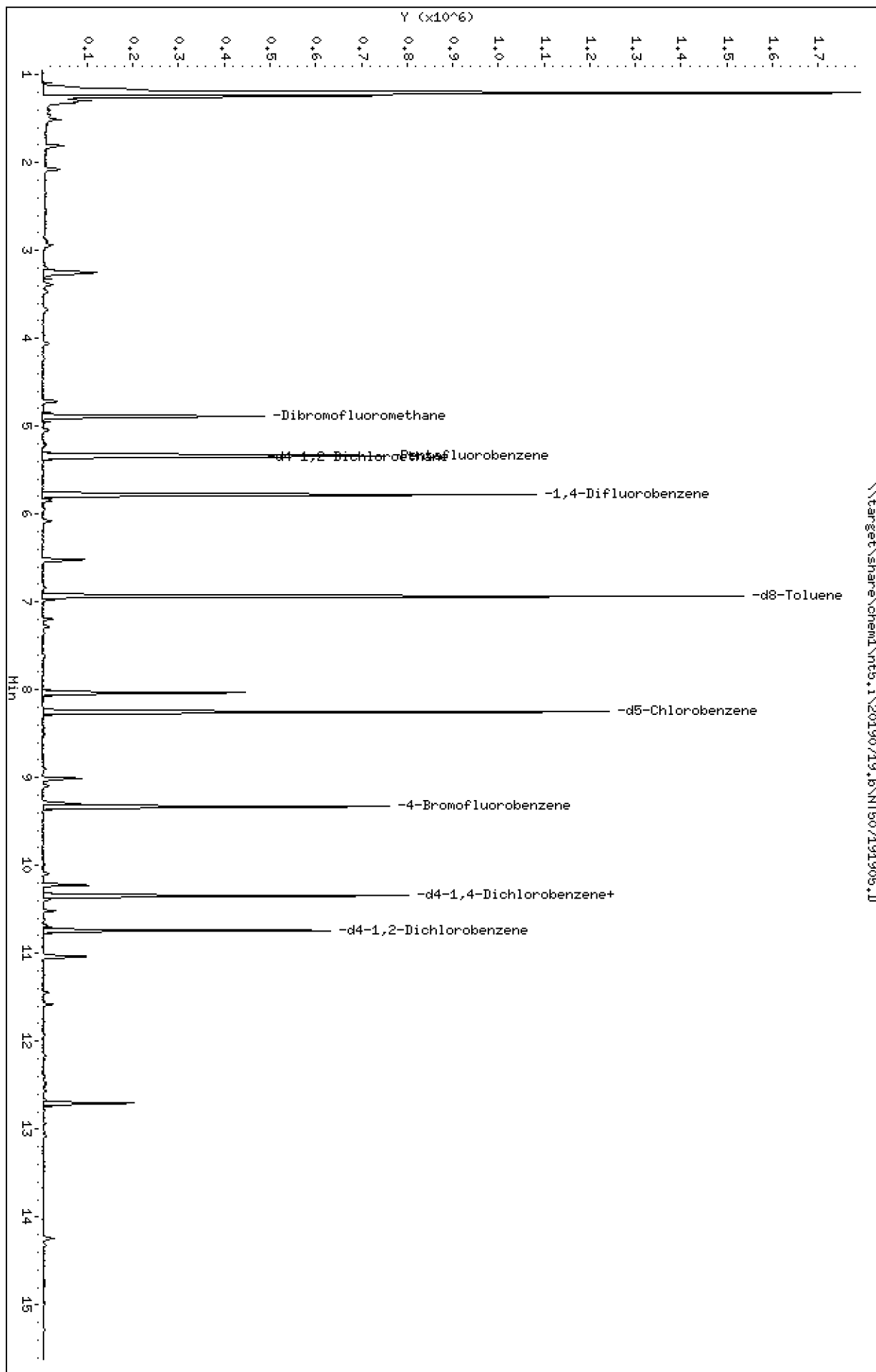
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

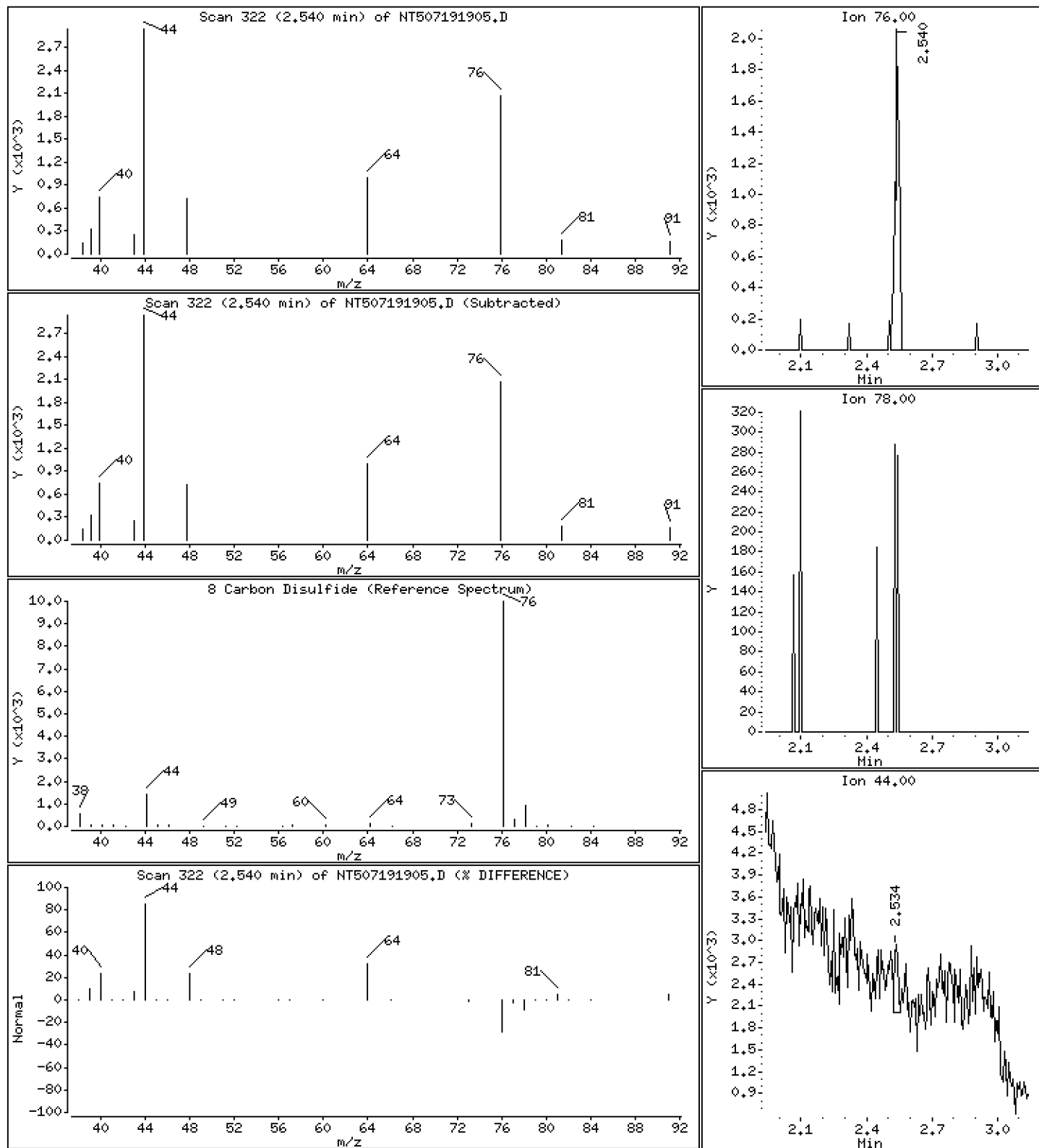
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 0.3649 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

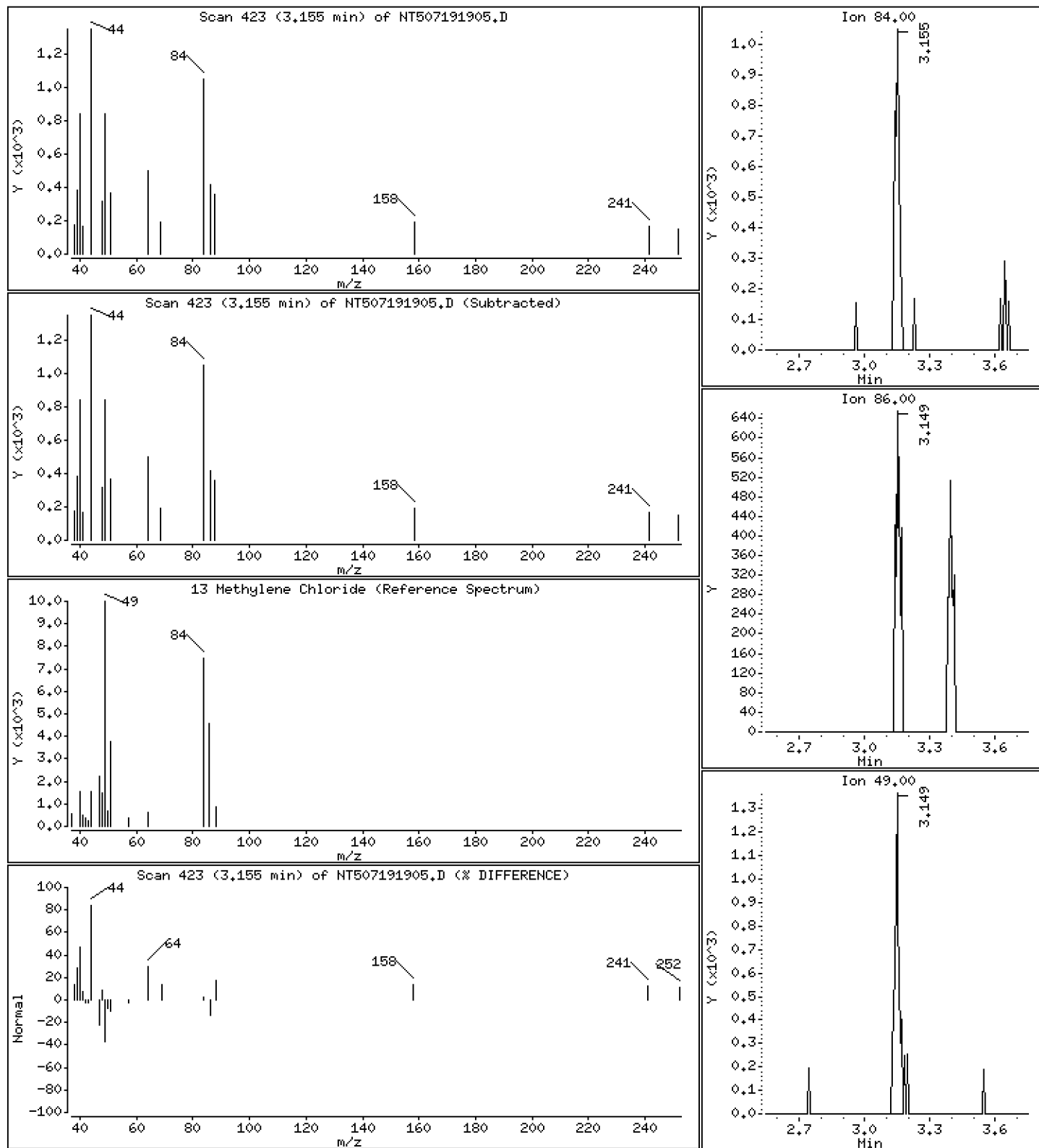
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.5997 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

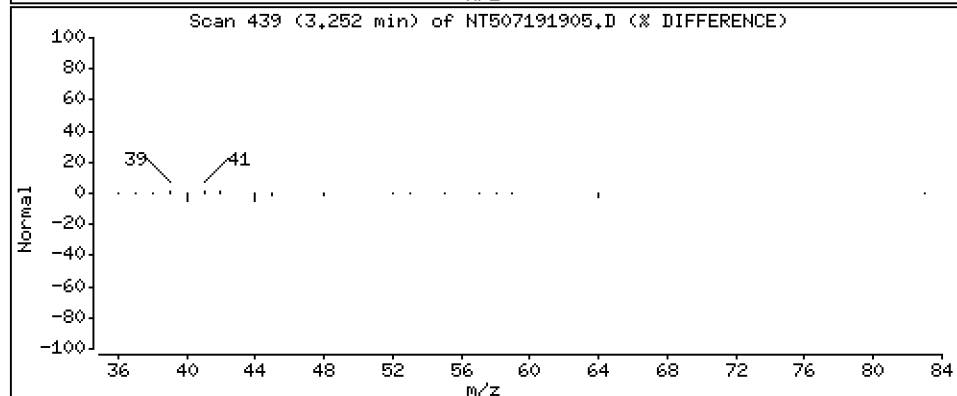
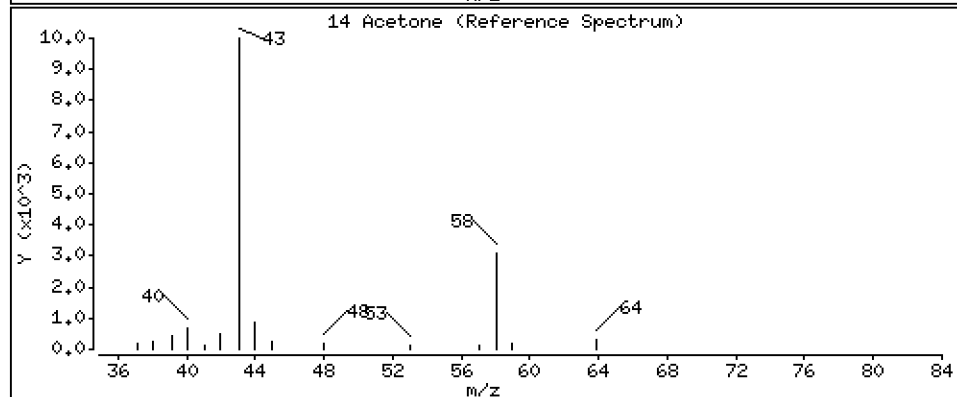
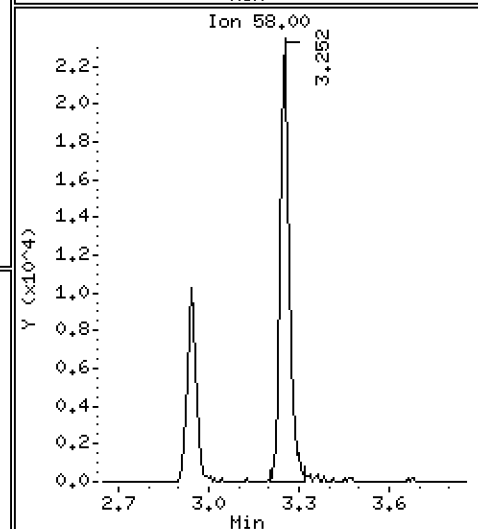
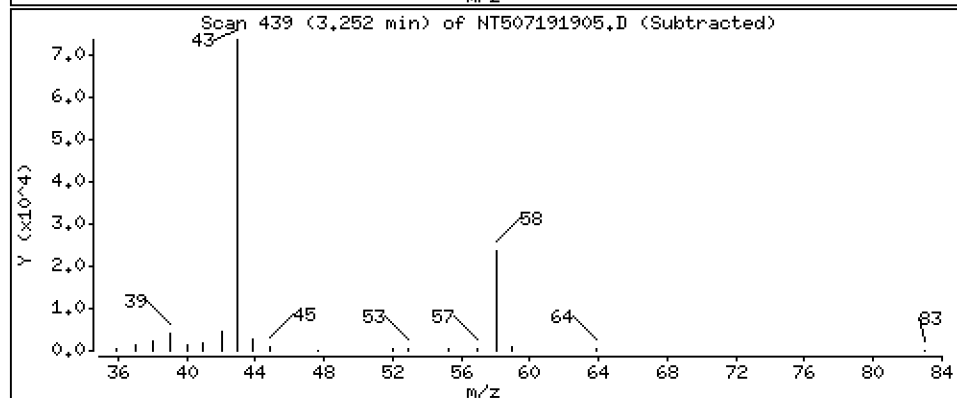
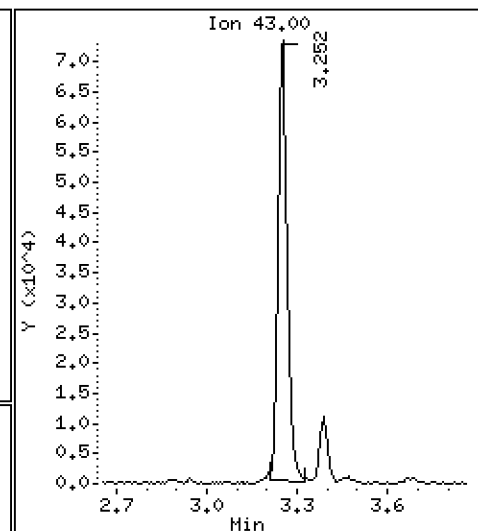
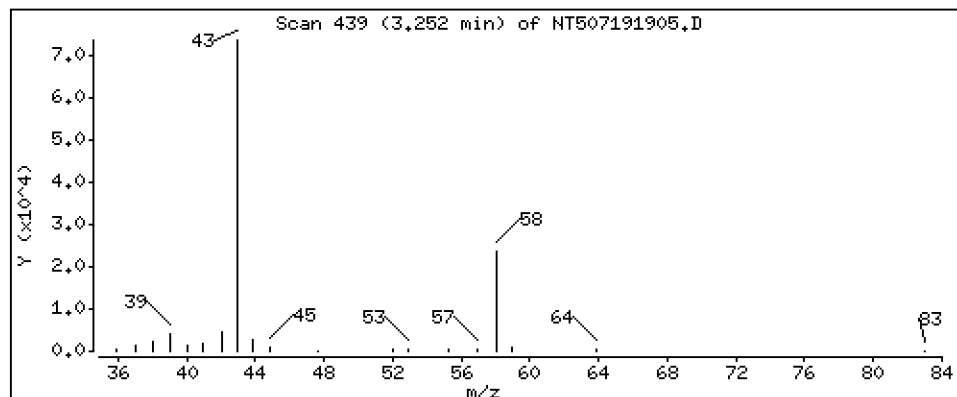
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 313.63 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

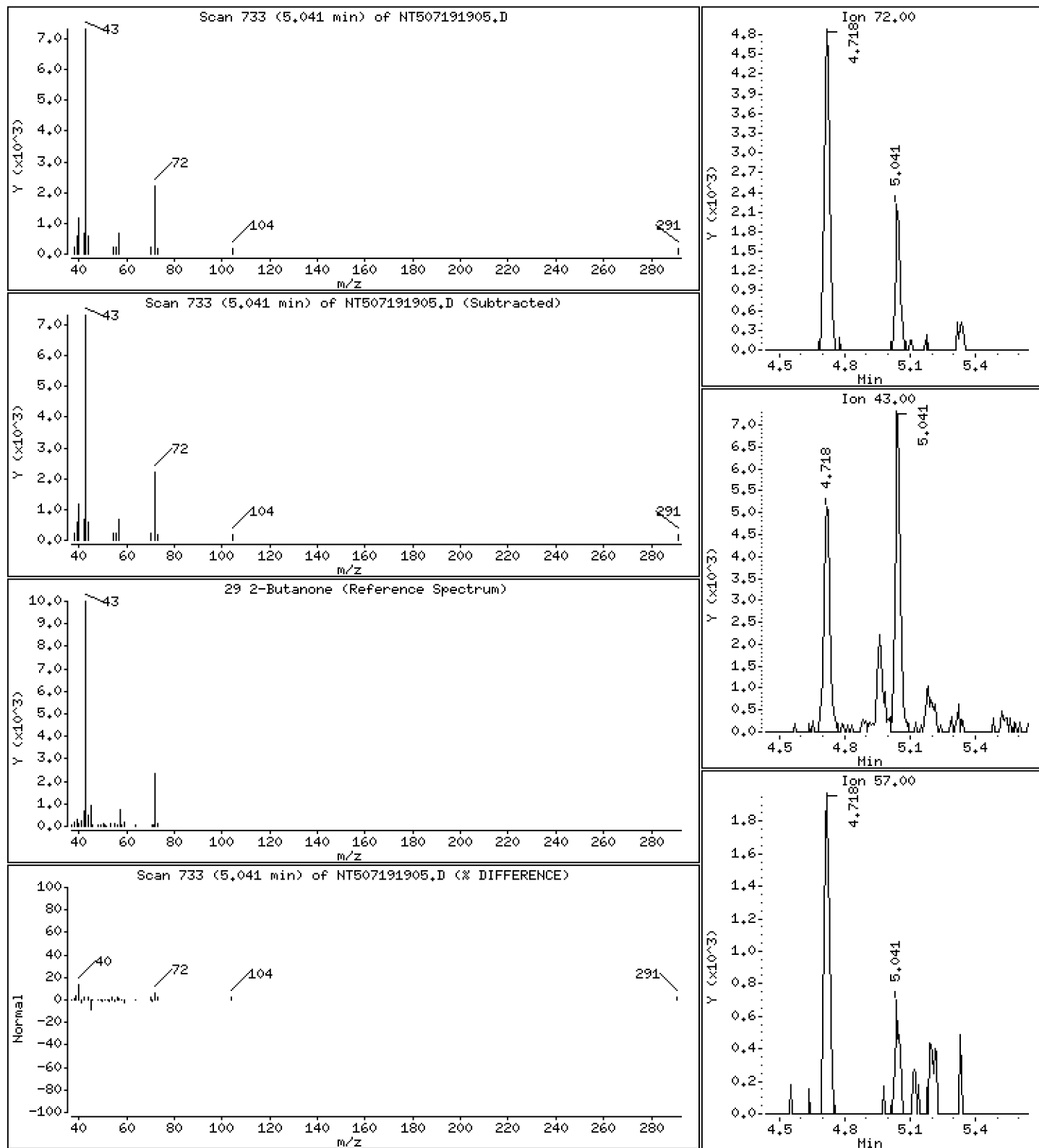
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 14,510 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

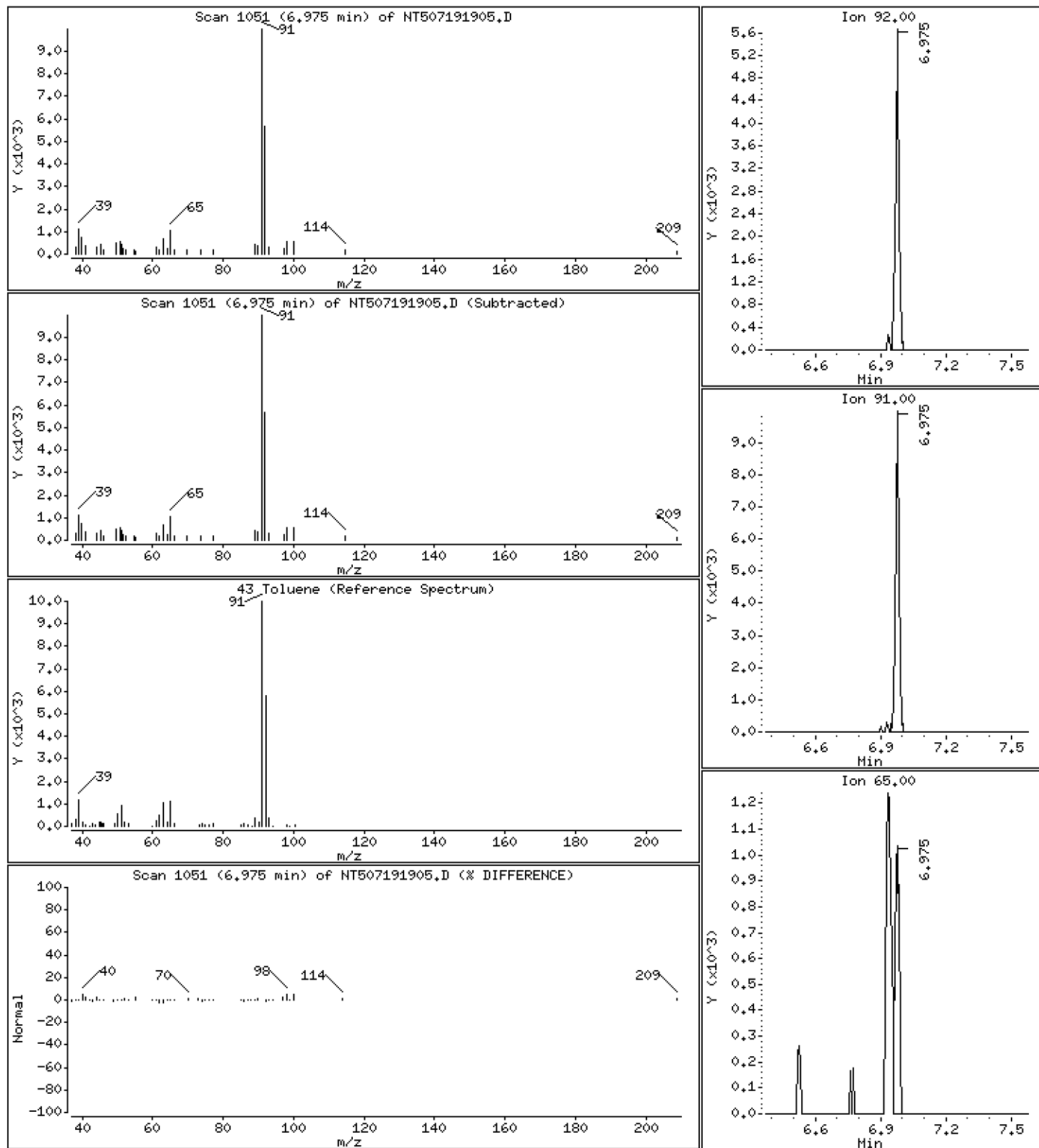
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.8563 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

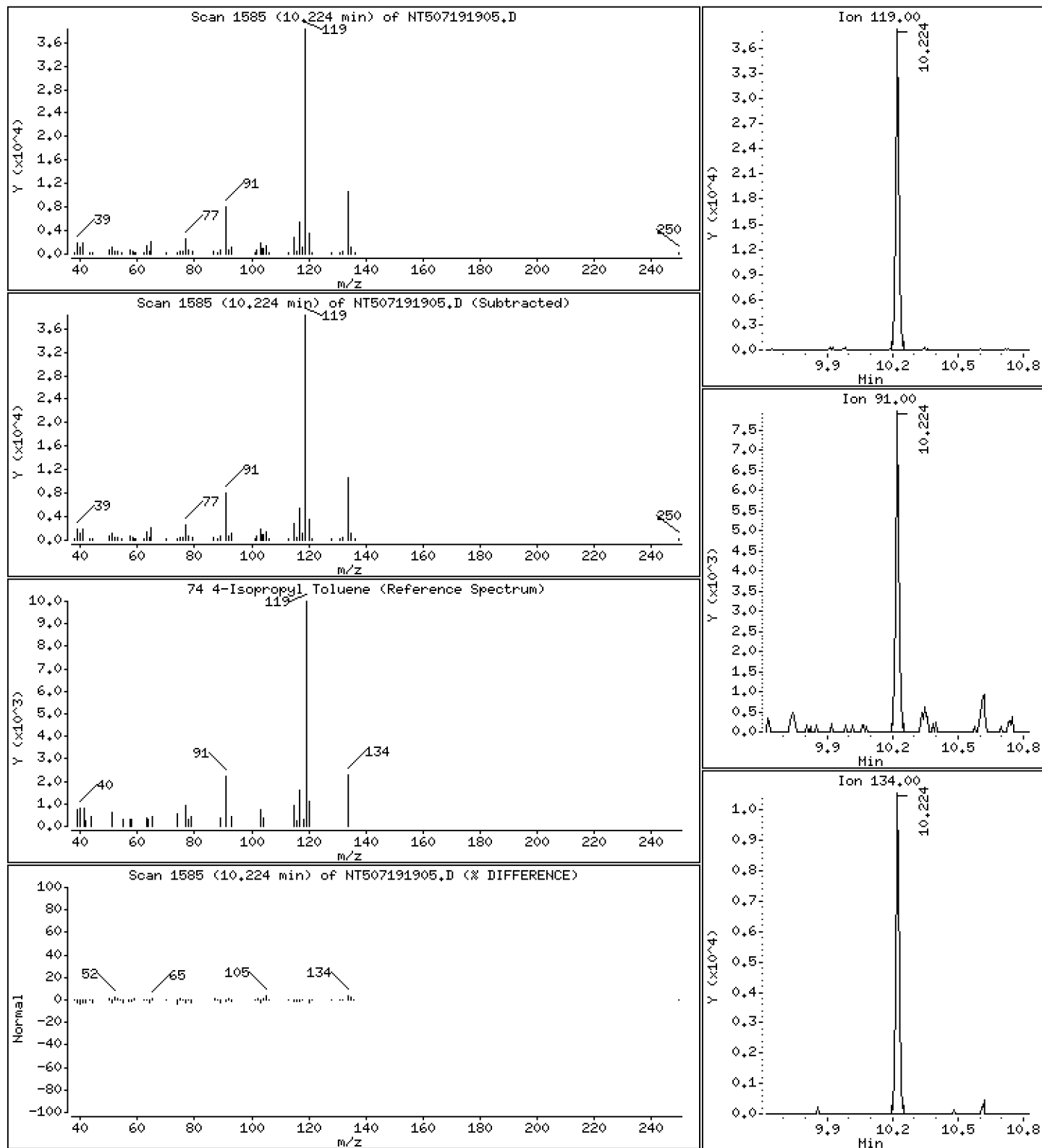
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 7.082 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

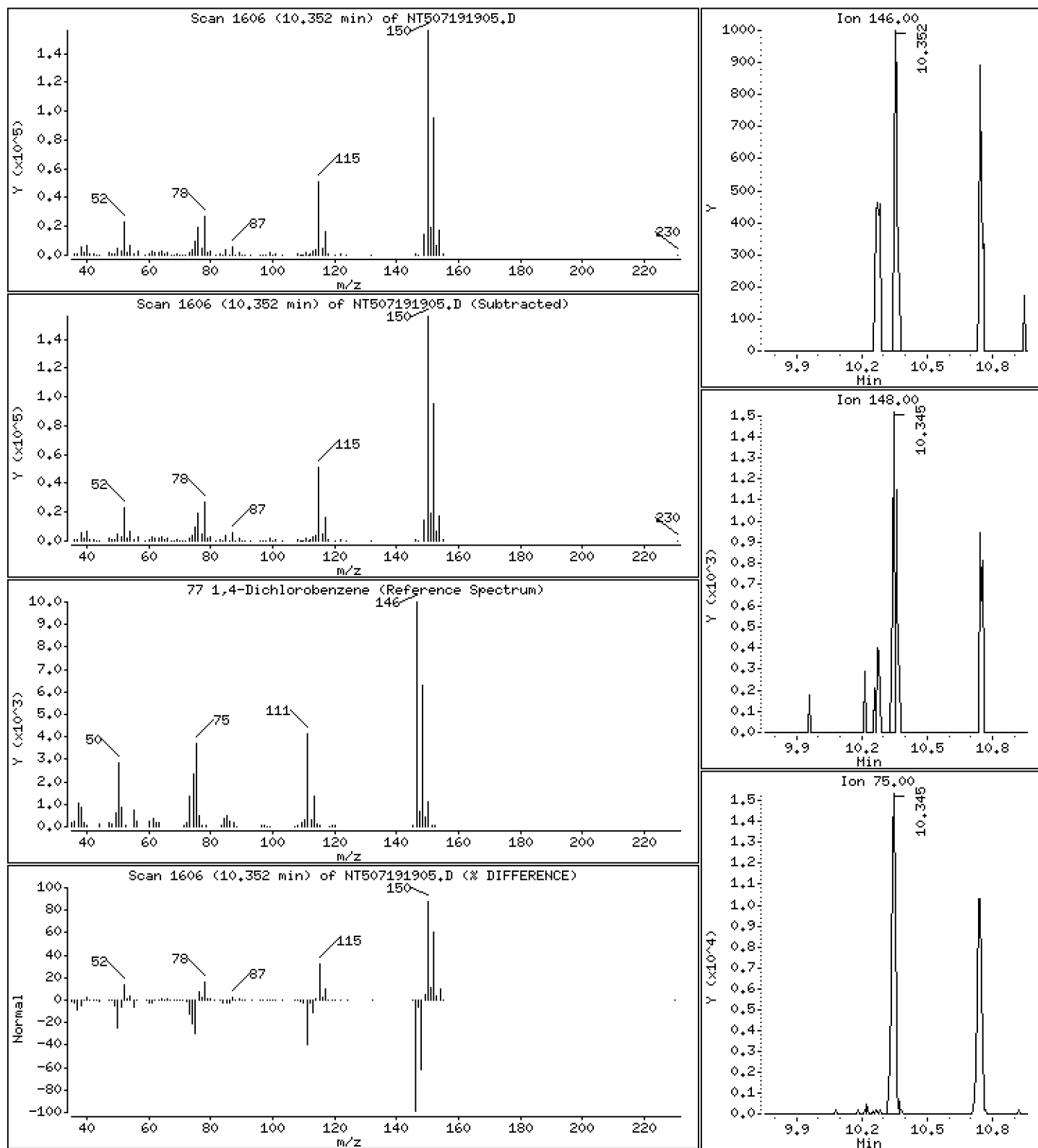
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 0.3248 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

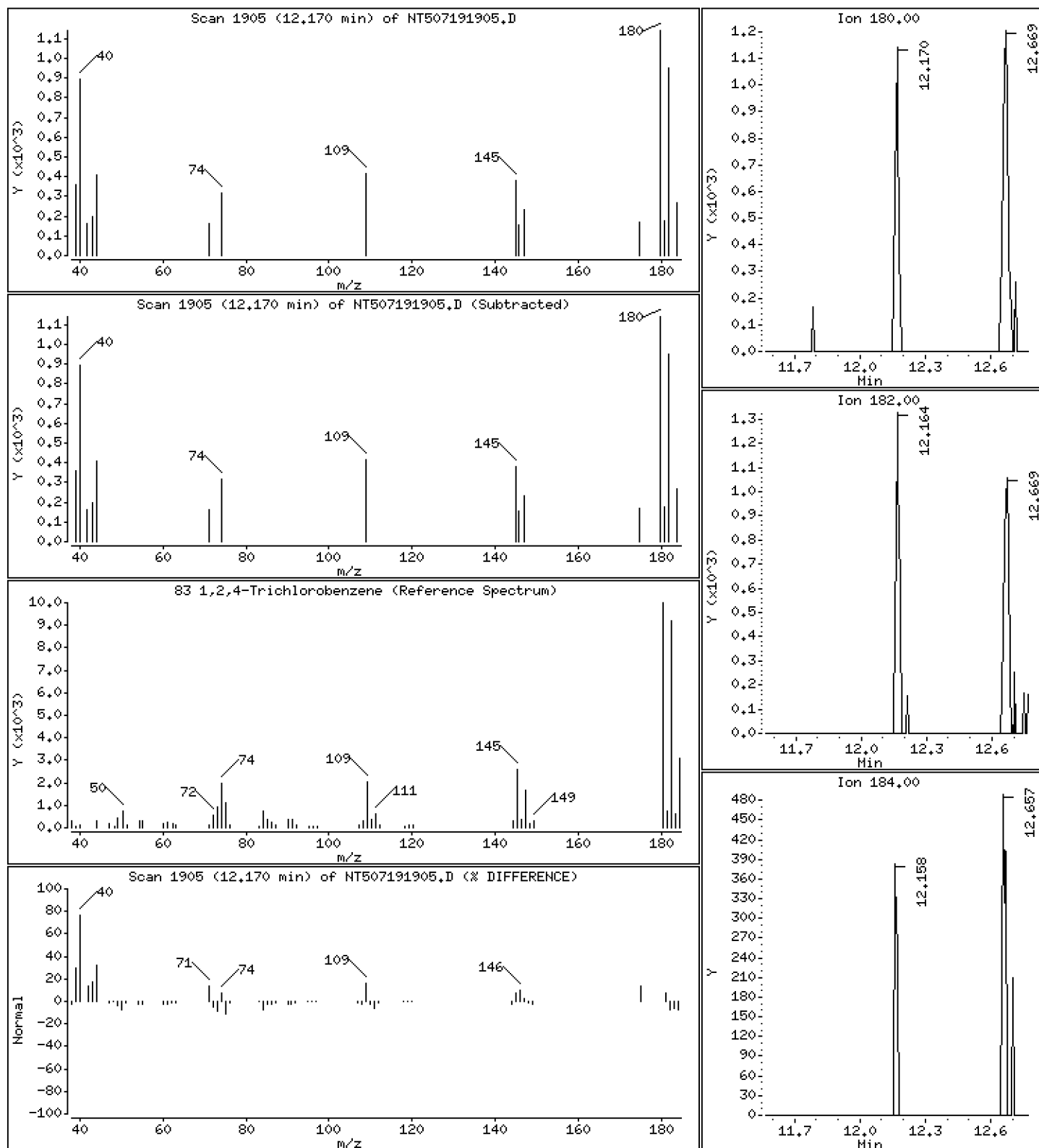
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 0.6865 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

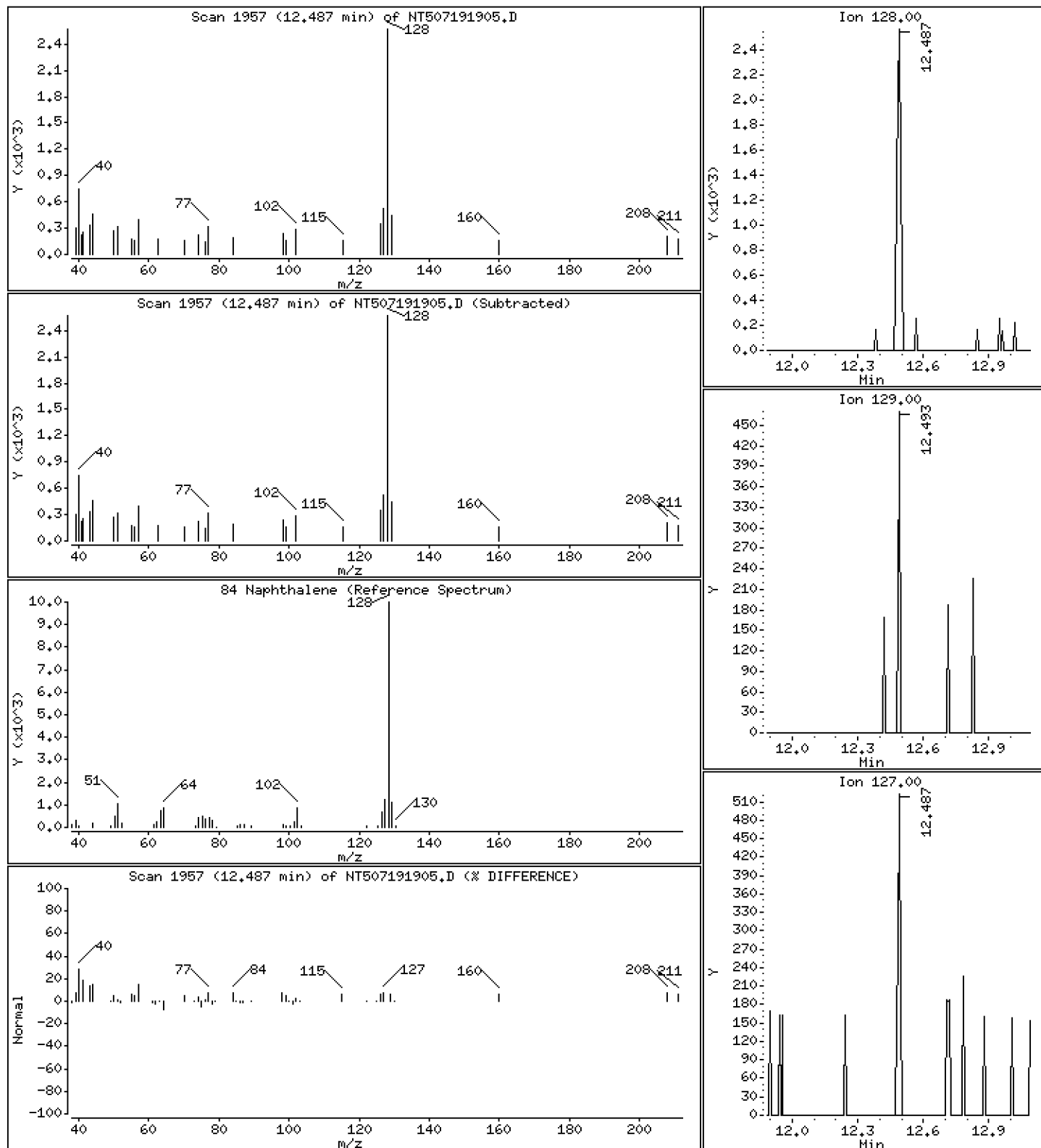
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.8357 ug/Kg



Date : 19-JUL-2019 15:40

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-04RE1

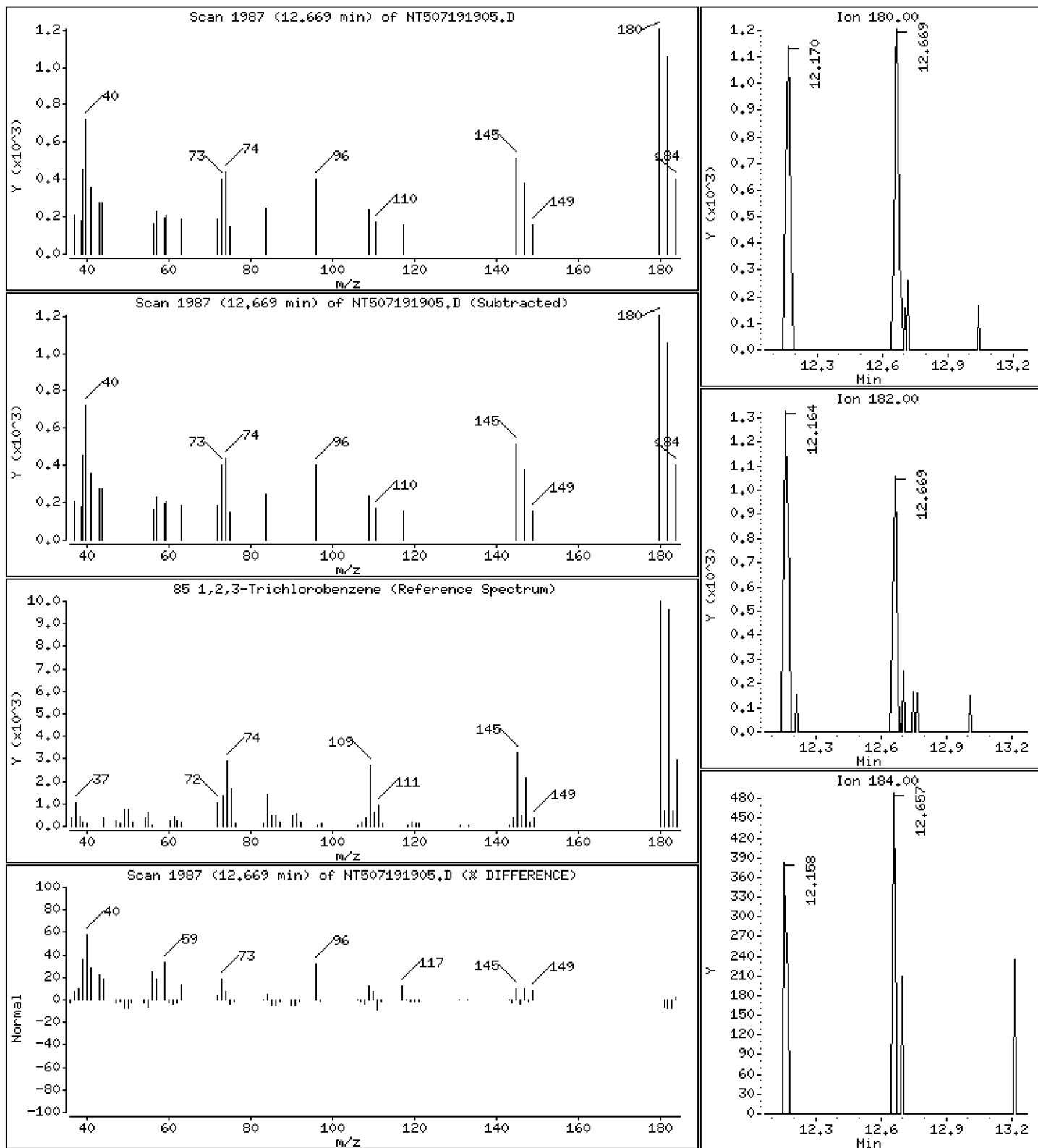
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 0.9213 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190719.b\NT507191905.D
 Lab Smp Id: 19G0163-04RE1
 Inj Date : 19-JUL-2019 15:40
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-04RE1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Meth Date : 22-Jul-2019 15:50 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)
								FINAL (ug/Kg)
=====	=====			====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85			Compound	Not	Detected.		
2 Chloromethane	50			Compound	Not	Detected.		
3 Vinyl Chloride	62			Compound	Not	Detected.		
4 Bromomethane	94			Compound	Not	Detected.		
5 Chloroethane	64			Compound	Not	Detected.		
6 Trichlorofluoromethane	101			Compound	Not	Detected.		
7 1,1-Dichloroethene	96			Compound	Not	Detected.		
8 Carbon Disulfide	76		2.540	2.540	(0.476)		3115	0.36485
9 112Trichloro122Trifluoroethane	101			Compound	Not	Detected.		0.3649
10 Iodomethane	142			Compound	Not	Detected.		
11 Bromoethane	108			Compound	Not	Detected.		
12 Acrolein	56			Compound	Not	Detected.		
13 Methylene Chloride	84		3.154	3.148	(0.592)		1822	0.59970
14 Acetone	43		3.251	3.258	(0.610)		171552	313.626
15 Trans-1,2-Dichloroethene	96			Compound	Not	Detected.		313.63
16 Methyl tert butyl ether	73			Compound	Not	Detected.		
173 n-Hexane	41			Compound	Not	Detected.		
17 1,1-Dichloroethane	63			Compound	Not	Detected.		
18 Acrylonitrile	53			Compound	Not	Detected.		
19 Vinyl Acetate	43			Compound	Not	Detected.		
20 Cis-1,2-Dichloroethene	96			Compound	Not	Detected.		
22 2,2-Dichloropropane	77			Compound	Not	Detected.		
23 Bromochloromethane	128			Compound	Not	Detected.		
24 Chloroform	83			Compound	Not	Detected.		
25 Carbon Tetrachloride	117			Compound	Not	Detected.		
\$ 27 Dibromofluoromethane	111		4.888	4.888	(0.917)		244171	60.1493
26 1,1,1-Trichloroethane	97			Compound	Not	Detected.		60.149(R)
28 1,1-Dichloropropene	75			Compound	Not	Detected.		
29 2-Butanone	72		5.040	5.040	(0.945)		3730	14.5096
30 Benzene	78			Compound	Not	Detected.		14.510
* 31 Pentafluorobenzene	168		5.332	5.332	(1.000)		371196	50.0000
\$ 32 d4-1,2-Dichloroethane	65		5.350	5.350	(1.003)		214177	63.0712
33 1,2-Dichloroethane	62			Compound	Not	Detected.		63.071(R)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.776	5.782	(1.000)	726088	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.932	6.932	(1.200)	839349	49.3636	49.364 (R)
43 Toluene	92	6.975	6.975	(1.207)	7524	0.85627	0.8563
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.252	8.252	(1.000)	579697	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.329	9.329	(1.130)	182131	36.6995	36.700 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.223	10.223	(0.988)	49804	7.08176	7.082
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.345	10.345	(1.000)	173256	50.0000	
77 1,4-Dichlorobenzene	146	10.351	10.357	(1.001)	1203	0.32476	0.3248
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.740	10.740	(1.038)	144109	47.6925	47.693 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180	12.170	12.170	(1.176)	1600	0.68653	0.6865
84 Naphthalene	128	12.486	12.486	(1.207)	3986	0.83570	0.8357
85 1,2,3-Trichlorobenzene	180	12.669	12.663	(1.225)	1943	0.92127	0.9213

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 19-JUL-2019
 Lab File ID: NT507191905.D Calibration Time: 13:28
 Lab Smp Id: 19G0163-04RE1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	371196	-8.10
35 1,4-Difluorobenze	717664	358832	1435328	726088	1.17
52 d5-Chlorobenzene	696563	348282	1393126	579697	-16.78
76 d4-1,4-Dichlorobe	380778	190389	761556	173256	-54.50 <-

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.33	4.83	5.83	5.33	0.00
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.10
52 d5-Chlorobenzene	8.25	7.75	8.75	8.25	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-04RE1
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	60.149	120.30	
\$ 32 d4-1,2-Dichloroeth	50.000	63.071	126.14	
\$ 42 d8-Toluene	50.000	49.364	98.73	
\$ 62 4-Bromofluorobenze	50.000	36.700	73.40	
\$ 79 d4-1,2-Dichloroben	50.000	47.693	95.39	

REVIEW SUMMARY FOR FILE - NT507191905.D

Lab ID: 19G0163-04RE1
nt5.i, 20190719.b\VO122618S.m, 19-JUL-2019 15:40

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507191902.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-05 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 11:30</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121919.D</u>
% Solids: <u>22.49</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 19:56</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>1.59 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	14.0	U	3.68	14.0
75-01-4	Vinyl Chloride	1	14.0	U	3.29	14.0
74-83-9	Bromomethane	1	14.0	U	2.61	14.0
75-00-3	Chloroethane	1	14.0	U	6.46	14.0
75-69-4	Trichlorofluoromethane	1	14.0	U	3.72	14.0
107-02-8	Acrolein	1	69.9	U	53.3	69.9
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	28.0	U	4.01	28.0
67-64-1	Acetone	1	3110		6.74	69.9
75-35-4	1,1-Dichloroethene	1	14.0	U	4.70	14.0
74-96-4	Bromoethane	1	28.0	U	6.15	28.0
74-88-4	Iodomethane	1	7.04	J	3.01	14.0
75-09-2	Methylene Chloride	1	28.0	U	8.88	28.0
107-13-1	Acrylonitrile	1	69.9	U	14.4	69.9
75-15-0	Carbon Disulfide	1	25.8		7.82	14.0
156-60-5	trans-1,2-Dichloroethene	1	14.0	U	3.72	14.0
108-05-4	Vinyl Acetate	1	69.9	U	5.33	69.9
75-34-3	1,1-Dichloroethane	1	14.0	U	2.84	14.0
78-93-3	2-Butanone	1	141		7.17	69.9
594-20-7	2,2-Dichloropropane	1	14.0	U	4.08	14.0
156-59-2	cis-1,2-Dichloroethene	1	14.0	U	3.36	14.0
67-66-3	Chloroform	1	14.0	U	3.27	14.0
74-97-5	Bromochloromethane	1	14.0	U	4.52	14.0
71-55-6	1,1,1-Trichloroethane	1	14.0	U	3.16	14.0
563-58-6	1,1-Dichloropropene	1	14.0	U	4.36	14.0
56-23-5	Carbon tetrachloride	1	14.0	U	2.98	14.0
107-06-2	1,2-Dichloroethane	1	14.0	U	2.67	14.0
71-43-2	Benzene	1	14.0	U	4.14	14.0
79-01-6	Trichloroethene	1	14.0	U	2.96	14.0
78-87-5	1,2-Dichloropropane	1	14.0	U	2.27	14.0
75-27-4	Bromodichloromethane	1	14.0	U	3.55	14.0
74-95-3	Dibromomethane	1	14.0	U	2.06	14.0
110-75-8	2-Chloroethyl vinyl ether	1	69.9	U	3.86	69.9
108-10-1	4-Methyl-2-Pentanone	1	69.9	U	5.87	69.9
10061-01-5	cis-1,3-Dichloropropene	1	14.0	U	3.16	14.0



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-05 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 11:30</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121919.D</u>
% Solids: <u>22.49</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 19:56</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>1.59 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	11.9	J	2.11	14.0
10061-02-6	trans-1,3-Dichloropropene	1	14.0	U	3.02	14.0
591-78-6	2-Hexanone	1	69.9	U	6.14	69.9
79-00-5	1,1,2-Trichloroethane	1	14.0	U	4.00	14.0
142-28-9	1,3-Dichloropropane	1	14.0	U	2.92	14.0
127-18-4	Tetrachloroethene	1	14.0	U	3.59	14.0
124-48-1	Dibromochloromethane	1	14.0	U	3.72	14.0
106-93-4	1,2-Dibromoethane	1	14.0	U	2.46	14.0
108-90-7	Chlorobenzene	1	14.0	U	3.06	14.0
100-41-4	Ethylbenzene	1	14.0	U	2.82	14.0
630-20-6	1,1,1,2-Tetrachloroethane	1	14.0	U	3.26	14.0
179601-23-1	m,p-Xylene	1	28.0	U	5.48	28.0
95-47-6	o-Xylene	1	14.0	U	3.13	14.0
1330-20-7	Xylenes, total	1	28.0	U	8.61	28.0
100-42-5	Styrene	1	14.0	U	1.93	14.0
75-25-2	Bromoform	1	14.0	U	4.15	14.0
79-34-5	1,1,1,2-Tetrachloroethane	1	14.0	U	3.54	14.0
96-18-4	1,2,3-Trichloropropane	1	28.0	U	7.23	28.0
110-57-6	trans-1,4-Dichloro 2-Butene	1	69.9	U	6.11	69.9
103-65-1	n-Propylbenzene	1	14.0	U	3.80	14.0
108-86-1	Bromobenzene	1	14.0	U	2.14	14.0
98-82-8	Isopropyl Benzene	1	14.0	U	3.26	14.0
95-49-8	2-Chlorotoluene	1	14.0	U	4.19	14.0
106-43-4	4-Chlorotoluene	1	14.0	U	3.87	14.0
98-06-6	t-Butylbenzene	1	14.0	U	4.28	14.0
108-67-8	1,3,5-Trimethylbenzene	1	14.0	U	3.55	14.0
95-63-6	1,2,4-Trimethylbenzene	1	14.0	U	3.22	14.0
135-98-8	s-Butylbenzene	1	14.0	U	3.36	14.0
99-87-6	4-Isopropyl Toluene	1	30.4		3.30	14.0
541-73-1	1,3-Dichlorobenzene	1	14.0	U	3.17	14.0
106-46-7	1,4-Dichlorobenzene	1	14.0	U	3.24	14.0
104-51-8	n-Butylbenzene	1	14.0	U	3.66	14.0
95-50-1	1,2-Dichlorobenzene	1	14.0	U	4.10	14.0
96-12-8	1,2-Dibromo-3-chloropropane	1	69.9	U	8.19	69.9



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-05 C SDG: 19G0163

Sampled: 07/11/19 11:30 Prepared: 07/12/19 14:22 File ID: NT507121919.D

% Solids: 22.49 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 19:56

Batch: BHG0316 Sequence: SHG0192 Initial/Final: 1.59 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	69.9	U	4.64	69.9
87-68-3	Hexachloro-1,3-Butadiene	1	69.9	U	5.73	69.9
91-20-3	Naphthalene	1	69.9	U	6.00	69.9
87-61-6	1,2,3-Trichlorobenzene	1	69.9	U	4.26	69.9
75-71-8	Dichlorodifluoromethane	1	14.0	U	2.89	14.0
1634-04-4	Methyl tert-butyl Ether	1	14.0	U	3.23	14.0
107-87-9	2-Pentanone	1	69.9	U	69.9	69.9

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	66.4	133	80 - 149	
Toluene-d8	50.000	50.2	100	77 - 120	
4-Bromofluorobenzene	50.000	44.6	89.1	80 - 120	
1,2-Dichlorobenzene-d4	50.000	47.9	95.9	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121919.D

Date : 12-JUL-2019 19:56

Client ID:

Sample Info: 19C0163-05

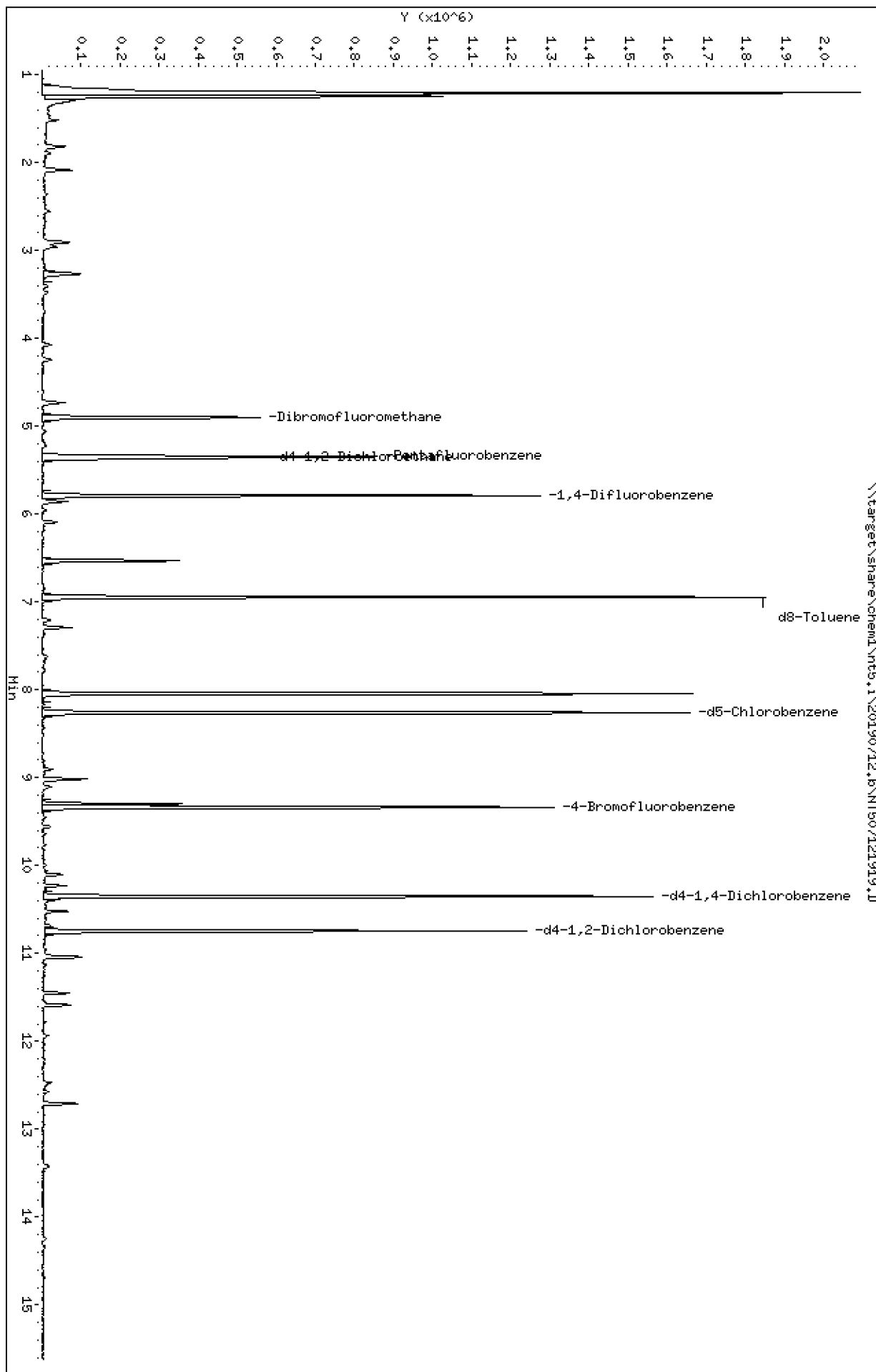
Page 1

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 19:56

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-05

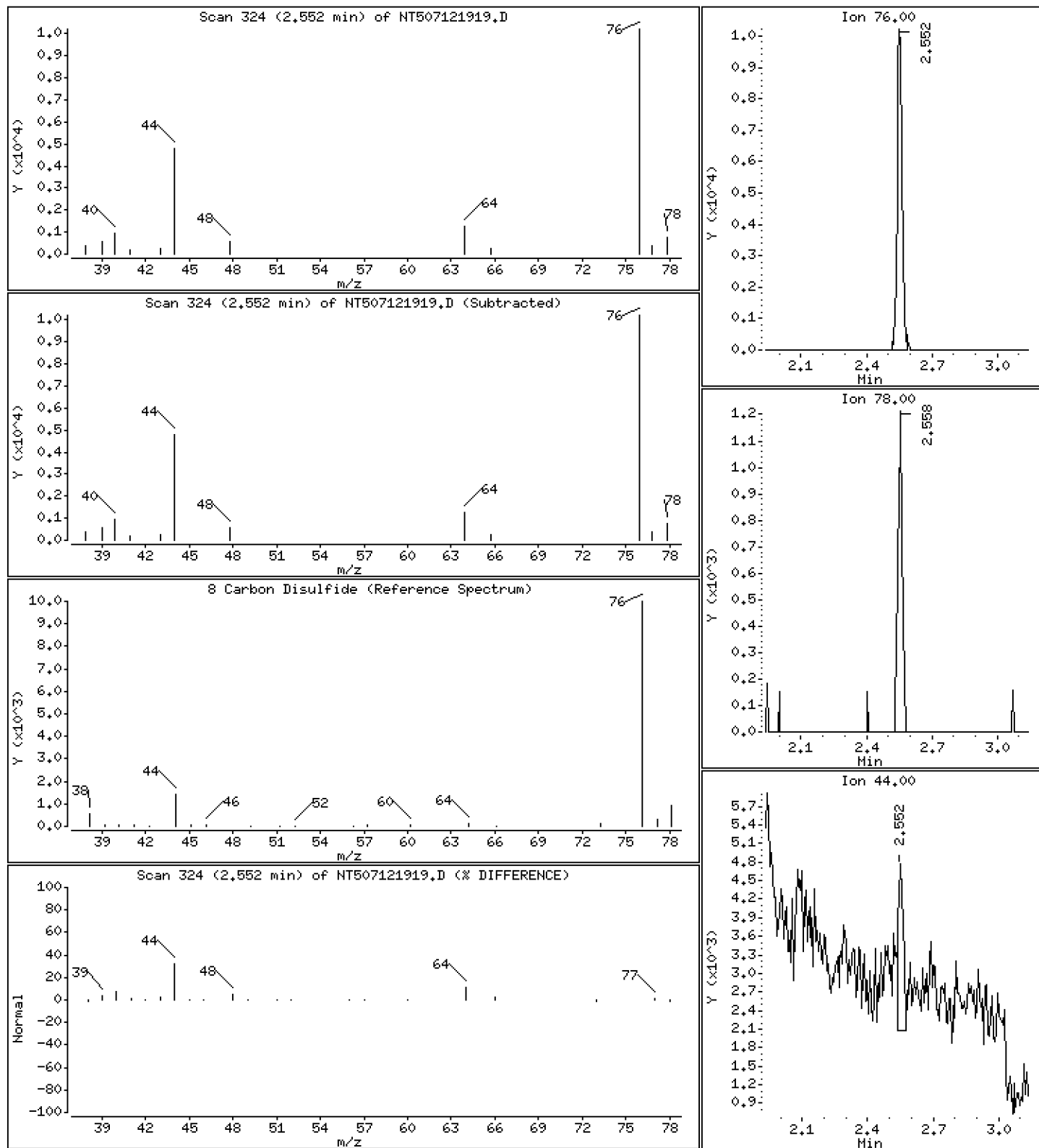
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 1.845 ug/Kg



Date : 12-JUL-2019 19:56

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-05

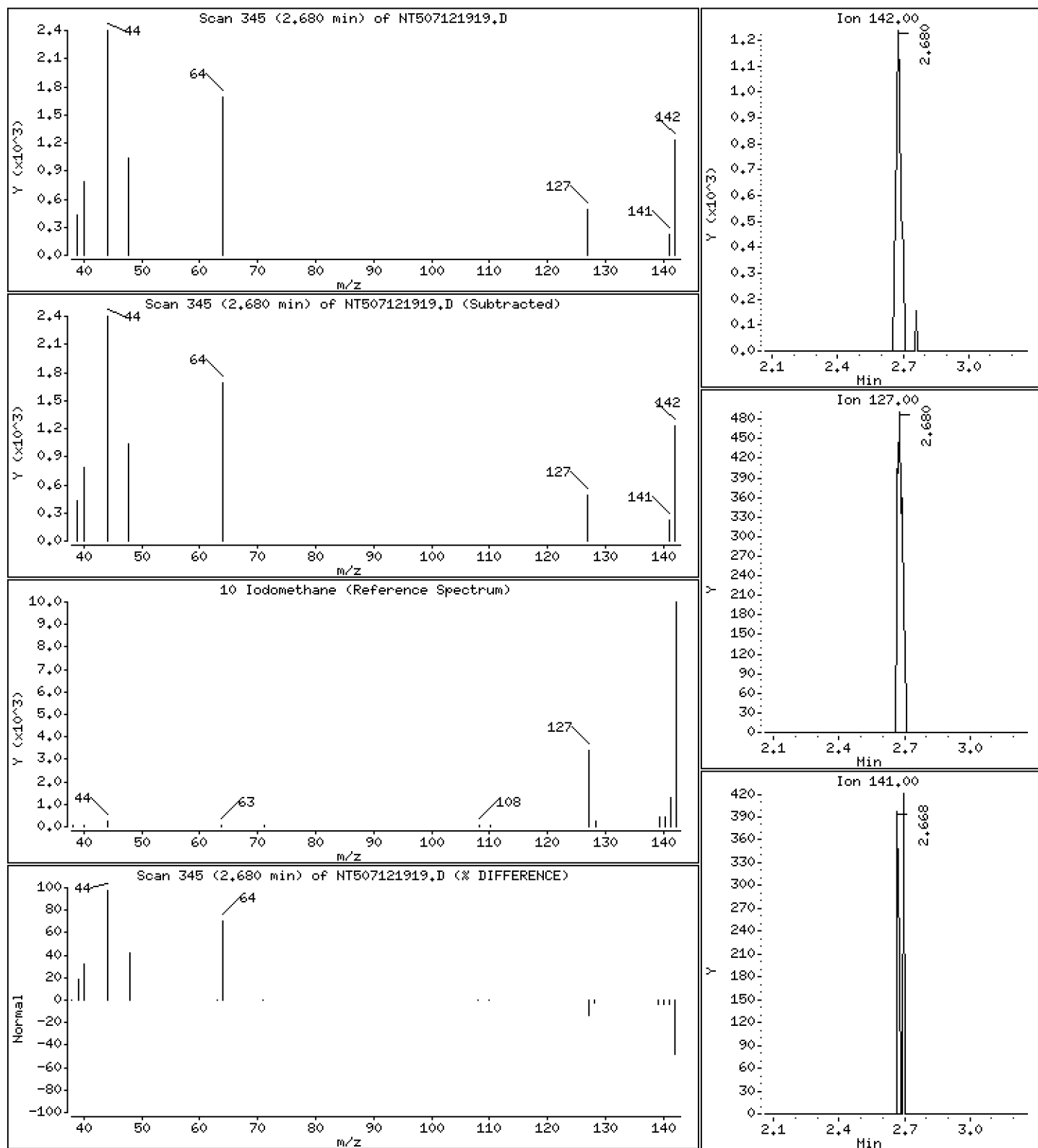
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 0.5032 ug/Kg



Date : 12-JUL-2019 19:56

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-05

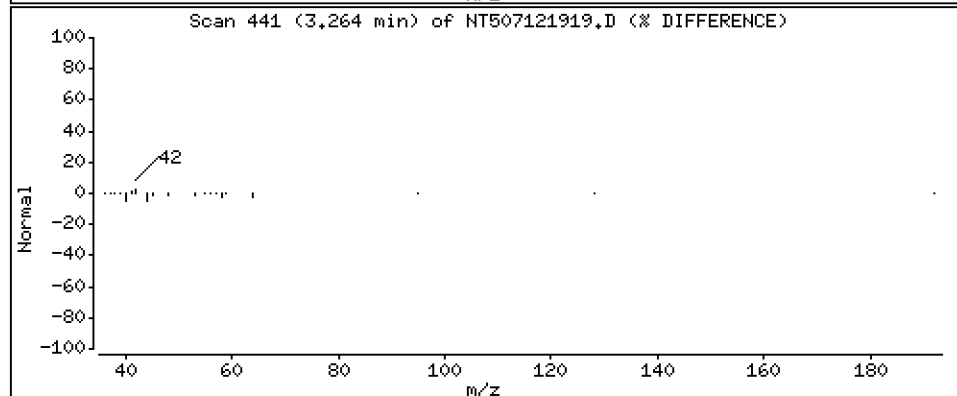
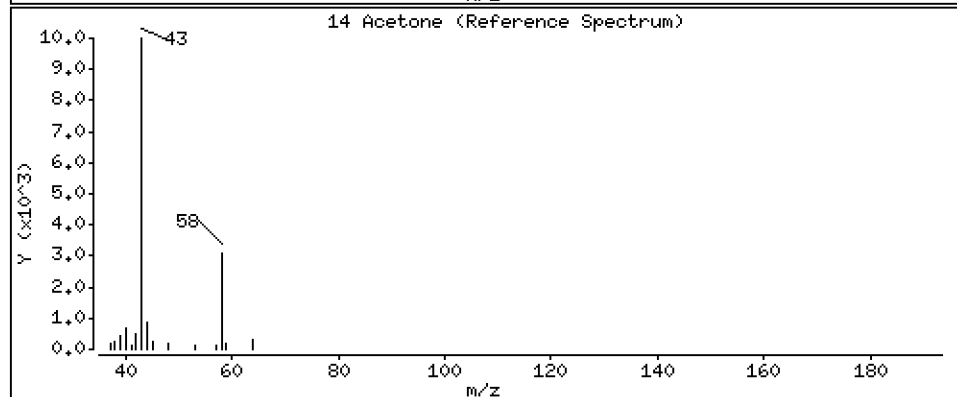
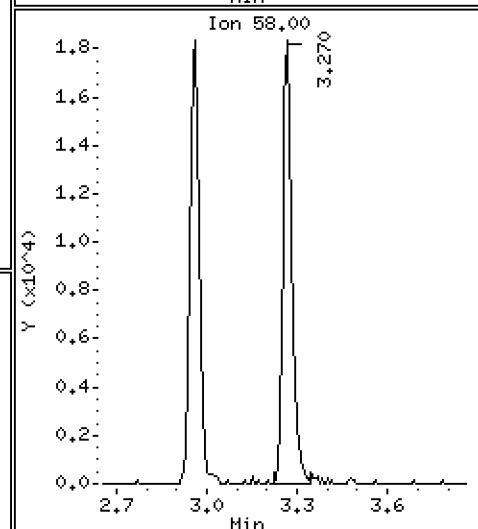
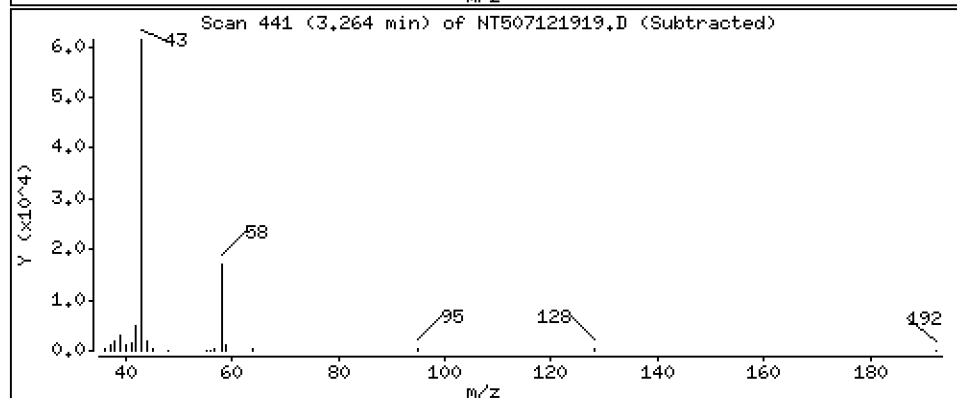
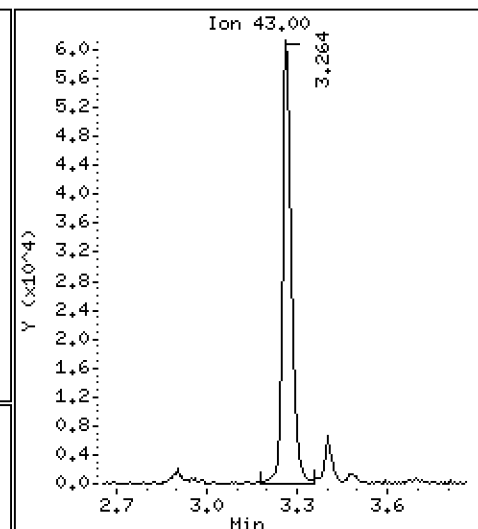
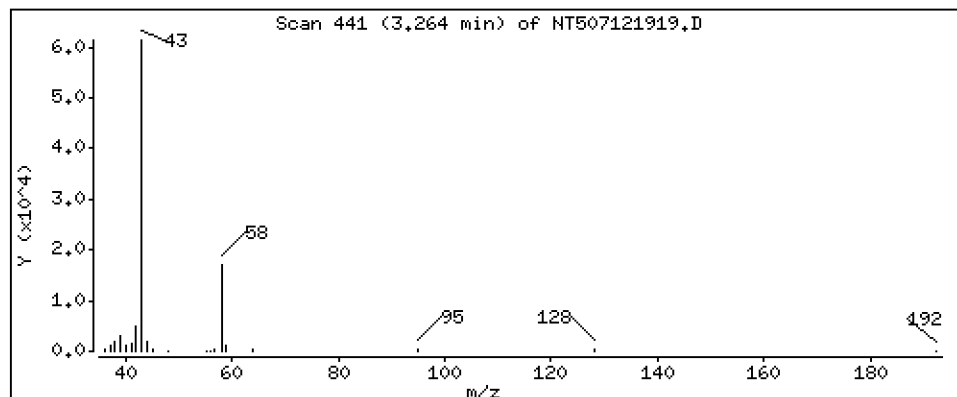
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 222.56 ug/Kg



Date : 12-JUL-2019 19:56

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-05

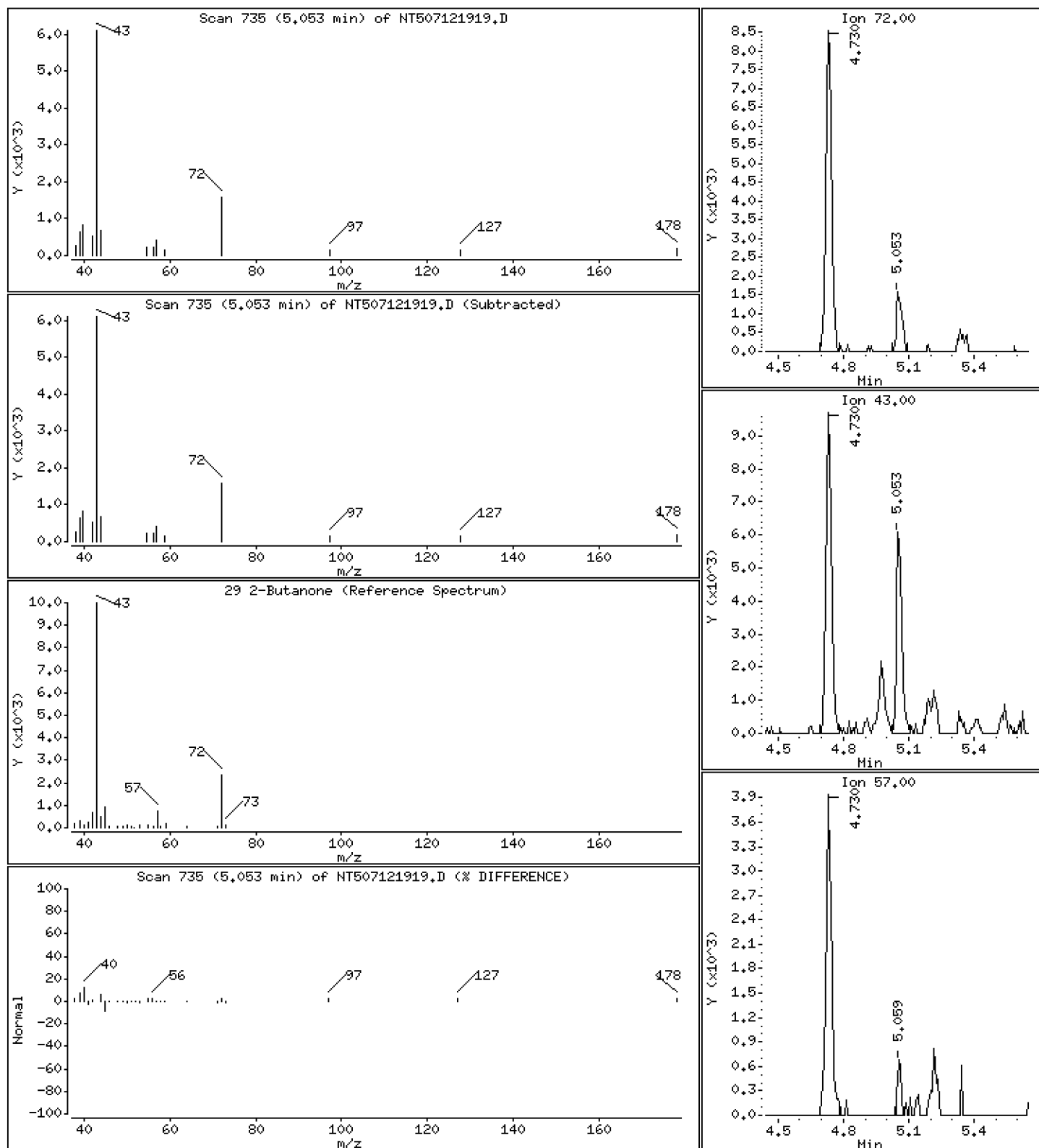
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 10,100 ug/Kg



Date : 12-JUL-2019 19:56

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-05

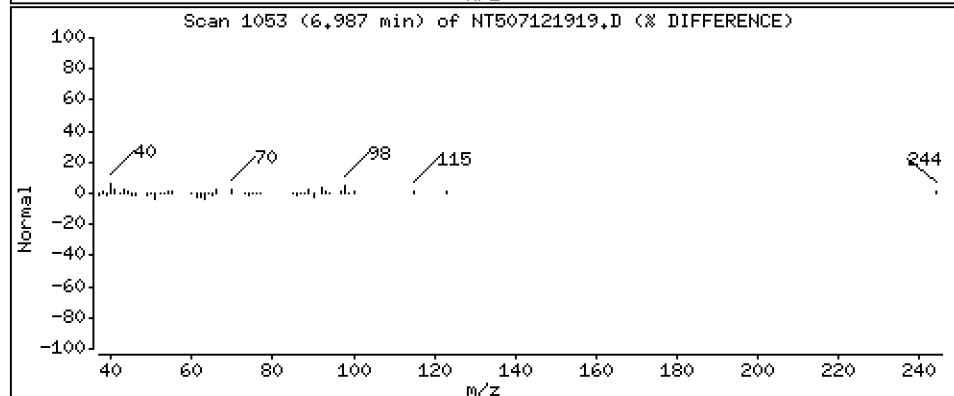
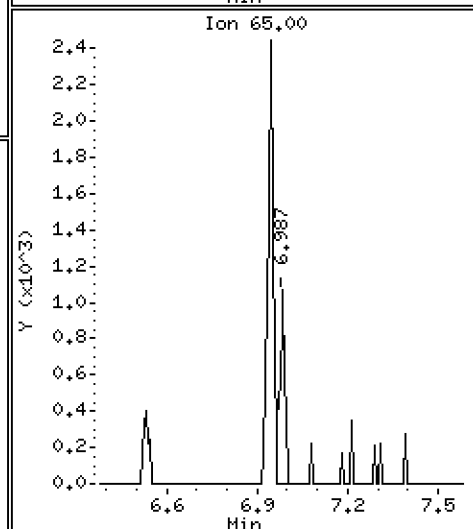
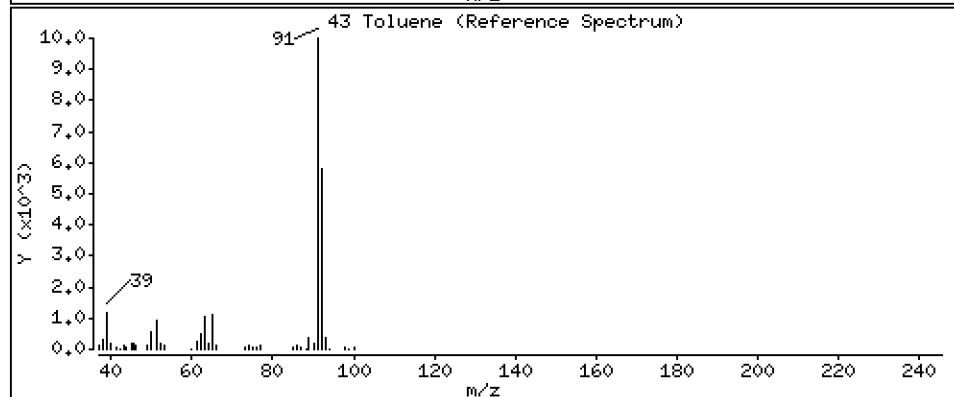
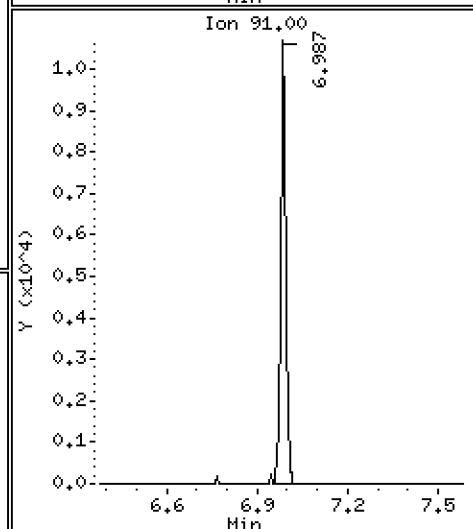
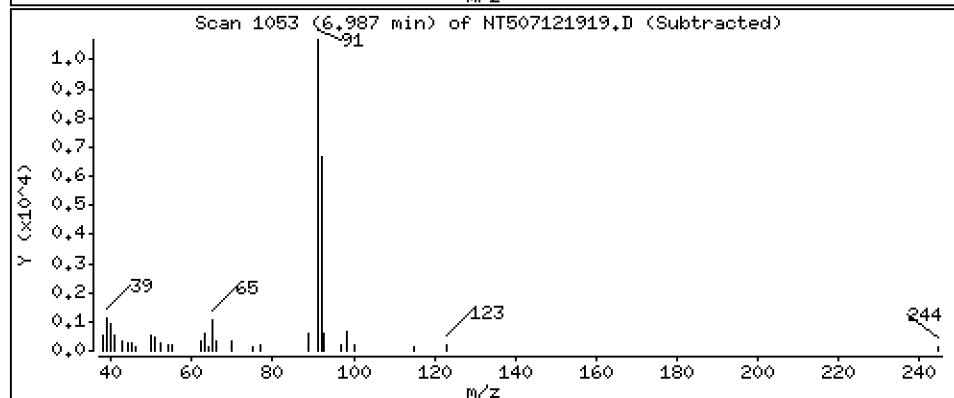
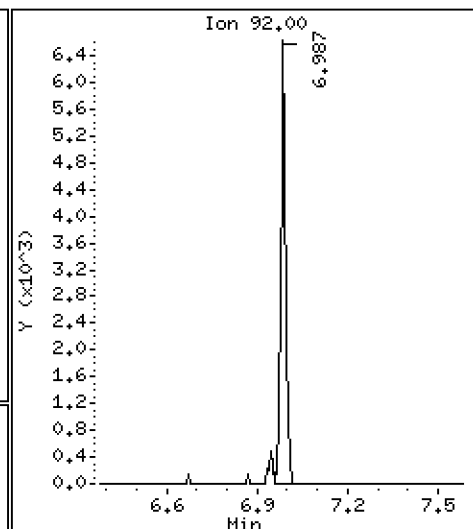
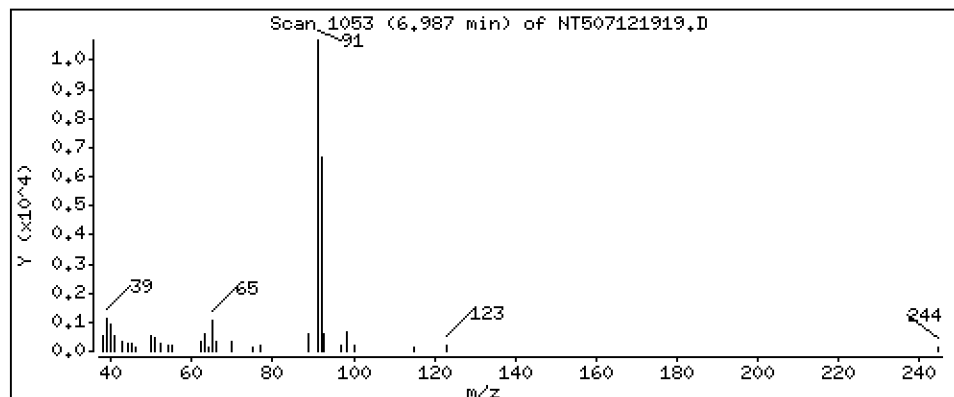
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.8479 ug/Kg



Date : 12-JUL-2019 19:56

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-05

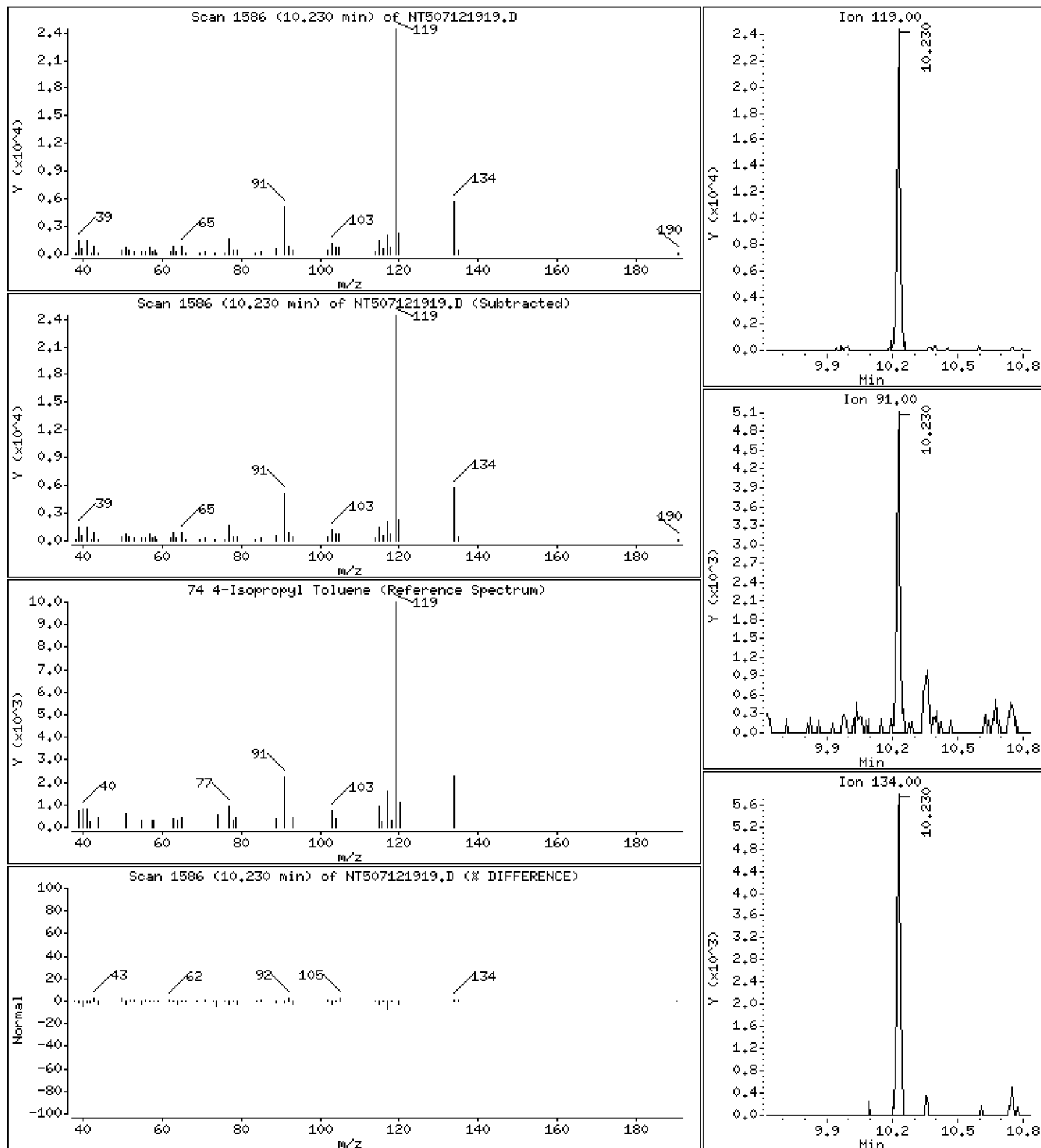
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 2.177 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121919.D
 Lab Smp Id: 19G0163-05
 Inj Date : 12-JUL-2019 19:56
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-05
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound Not Detected.					
2 Chloromethane	50		Compound Not Detected.					
3 Vinyl Chloride	62		Compound Not Detected.					
4 Bromomethane	94		Compound Not Detected.					
5 Chloroethane	64		Compound Not Detected.					
6 Trichlorofluoromethane	101		Compound Not Detected.					
7 1,1-Dichloroethene	96		Compound Not Detected.					
8 Carbon Disulfide	76		2.552 2.540 (0.478)			17734	1.84451	1.845
9 112Trichloro122Trifluoroethane	101		Compound Not Detected.					
10 Iodomethane	142		2.679 2.667 (0.501)			2262	0.50324	0.5032
11 Bromoethane	108		Compound Not Detected.					
12 Acrolein	56		Compound Not Detected.					
13 Methylene Chloride	84		Compound Not Detected.					
14 Acetone	43		3.263 3.257 (0.611)			137094	222.561	222.56
15 Trans-1,2-Dichloroethene	96		Compound Not Detected.					
16 Methyl tert butyl ether	73		Compound Not Detected.					
173 n-Hexane	41		Compound Not Detected.					
17 1,1-Dichloroethane	63		Compound Not Detected.					
18 Acrylonitrile	53		Compound Not Detected.					
19 Vinyl Acetate	43		Compound Not Detected.					
20 Cis-1,2-Dichloroethene	96		Compound Not Detected.					
22 2,2-Dichloropropane	77		Compound Not Detected.					
23 Bromochloromethane	128		Compound Not Detected.					
24 Chloroform	83		Compound Not Detected.					
25 Carbon Tetrachloride	117		Compound Not Detected.					
\$ 27 Dibromofluoromethane	111		4.900 4.894 (0.917)			285561	62.4669	62.467 (R)
26 1,1,1-Trichloroethane	97		Compound Not Detected.					
28 1,1-Dichloropropene	75		Compound Not Detected.					
29 2-Butanone	72		5.052 5.046 (0.945)			2924	10.1004	10.100
30 Benzene	78		Compound Not Detected.					
* 31 Pentafluorobenzene	168		5.344 5.338 (1.000)			418012	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362 5.350 (1.003)			253789	66.3660	66.366 (R)
33 1,2-Dichloroethane	62		Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	853611	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	1002728	50.1622	50.162 (R)
43 Toluene	92	6.987	6.981	(1.207)	8759	0.84790	0.8479
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	814297	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	310598	44.5547	44.555 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	30327	2.17743	2.177
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	343123	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	286913	47.9455	47.946 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121919.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-05
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	418012	3.49
35 1,4-Difluorobenze	717664	358832	1435328	853611	18.94
52 d5-Chlorobenzene	696563	348282	1393126	814297	16.90
76 d4-1,4-Dichlorobe	380778	190389	761556	343123	-9.89

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:	Client SDG: 20151013
Sample Matrix: NONE	Fraction: VOA
Lab Smp Id: 19G0163-05	
Level:	Operator: PB
Data Type: MS DATA	SampleType: SAMPLE
SpikeList File: voasoil.spk	Quant Type: ISTD
Sublist File: voamdl.sub	
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m	
Misc Info:	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	62.467	124.93	
\$ 32 d4-1,2-Dichloroeth	50.000	66.366	132.73	
\$ 42 d8-Toluene	50.000	50.162	100.32	
\$ 62 4-Bromofluorobenze	50.000	44.555	89.11	
\$ 79 d4-1,2-Dichloroben	50.000	47.946	95.89	

REVIEW SUMMARY FOR FILE - NT507121919.D

Lab ID: 19G0163-05
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 19:56

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 C SDG: 19G0163
Sampled: 07/11/19 12:05 Prepared: 07/12/19 14:22 File ID: NT507121920.D
% Solids: 33.21 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 20:18
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 2.25 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	6.69	U	1.76	6.69
75-01-4	Vinyl Chloride	1	6.69	U	1.57	6.69
74-83-9	Bromomethane	1	8.20		1.25	6.69
75-00-3	Chloroethane	1	6.69	U	3.09	6.69
75-69-4	Trichlorofluoromethane	1	6.69	U	1.78	6.69
107-02-8	Acrolein	1	33.5	U	25.5	33.5
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	13.4	U	1.92	13.4
67-64-1	Acetone	1	2940		3.23	33.5
75-35-4	1,1-Dichloroethene	1	6.69	U	2.25	6.69
74-96-4	Bromoethane	1	13.4	U	2.94	13.4
74-88-4	Iodomethane	1	53.4		1.44	6.69
75-09-2	Methylene Chloride	1	4.81	J	4.25	13.4
107-13-1	Acrylonitrile	1	33.5	U	6.89	33.5
75-15-0	Carbon Disulfide	1	6.69	U	3.74	6.69
156-60-5	trans-1,2-Dichloroethene	1	6.69	U	1.78	6.69
108-05-4	Vinyl Acetate	1	33.5	U	2.55	33.5
75-34-3	1,1-Dichloroethane	1	6.69	U	1.36	6.69
78-93-3	2-Butanone	1	354		3.43	33.5
594-20-7	2,2-Dichloropropane	1	6.69	U	1.95	6.69
156-59-2	cis-1,2-Dichloroethene	1	6.69	U	1.61	6.69
67-66-3	Chloroform	1	6.69	U	1.57	6.69
74-97-5	Bromochloromethane	1	6.69	U	2.16	6.69
71-55-6	1,1,1-Trichloroethane	1	6.69	U	1.51	6.69
563-58-6	1,1-Dichloropropene	1	6.69	U	2.09	6.69
56-23-5	Carbon tetrachloride	1	6.69	U	1.43	6.69
107-06-2	1,2-Dichloroethane	1	6.69	U	1.28	6.69
71-43-2	Benzene	1	2.60	J	1.98	6.69
79-01-6	Trichloroethene	1	6.69	U	1.42	6.69
78-87-5	1,2-Dichloropropane	1	6.69	U	1.08	6.69
75-27-4	Bromodichloromethane	1	6.69	U	1.70	6.69
74-95-3	Dibromomethane	1	6.69	U	0.98	6.69
110-75-8	2-Chloroethyl vinyl ether	1	33.5	U	1.85	33.5
108-10-1	4-Methyl-2-Pentanone	1	33.5	U	2.81	33.5
10061-01-5	cis-1,3-Dichloropropene	1	6.69	U	1.51	6.69



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-06 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 12:05</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121920.D</u>
% Solids: <u>33.21</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 20:18</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>2.25 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	6.88		1.01	6.69
10061-02-6	trans-1,3-Dichloropropene	1	6.69	U	1.45	6.69
591-78-6	2-Hexanone	1	33.5	U	2.94	33.5
79-00-5	1,1,2-Trichloroethane	1	6.69	U	1.91	6.69
142-28-9	1,3-Dichloropropane	1	6.69	U	1.40	6.69
127-18-4	Tetrachloroethene	1	6.69	U	1.72	6.69
124-48-1	Dibromochloromethane	1	6.69	U	1.78	6.69
106-93-4	1,2-Dibromoethane	1	6.69	U	1.18	6.69
108-90-7	Chlorobenzene	1	6.69	U	1.47	6.69
100-41-4	Ethylbenzene	1	6.69	U	1.35	6.69
630-20-6	1,1,1,2-Tetrachloroethane	1	6.69	U	1.56	6.69
179601-23-1	m,p-Xylene	1	13.4	U	2.62	13.4
95-47-6	o-Xylene	1	6.69	U	1.50	6.69
1330-20-7	Xylenes, total	1	13.4	U	4.12	13.4
100-42-5	Styrene	1	6.69	U	0.92	6.69
75-25-2	Bromoform	1	6.69	U	1.99	6.69
79-34-5	1,1,2,2-Tetrachloroethane	1	6.69	U	1.69	6.69
96-18-4	1,2,3-Trichloropropane	1	13.4	U	3.46	13.4
110-57-6	trans-1,4-Dichloro 2-Butene	1	33.5	U	2.92	33.5
103-65-1	n-Propylbenzene	1	6.69	U	1.82	6.69
108-86-1	Bromobenzene	1	6.69	U	1.02	6.69
98-82-8	Isopropyl Benzene	1	6.69	U	1.56	6.69
95-49-8	2-Chlorotoluene	1	6.69	U	2.01	6.69
106-43-4	4-Chlorotoluene	1	6.69	U	1.85	6.69
98-06-6	t-Butylbenzene	1	6.69	U	2.05	6.69
108-67-8	1,3,5-Trimethylbenzene	1	6.69	U	1.70	6.69
95-63-6	1,2,4-Trimethylbenzene	1	2.56	J	1.54	6.69
135-98-8	s-Butylbenzene	1	6.69	U	1.61	6.69
99-87-6	4-Isopropyl Toluene	1	8.43		1.58	6.69
541-73-1	1,3-Dichlorobenzene	1	6.69	U	1.52	6.69
106-46-7	1,4-Dichlorobenzene	1	6.69	U	1.55	6.69
104-51-8	n-Butylbenzene	1	6.69	U	1.75	6.69
95-50-1	1,2-Dichlorobenzene	1	6.69	U	1.96	6.69
96-12-8	1,2-Dibromo-3-chloropropane	1	33.5	U	3.92	33.5



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 C SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/12/19 14:22 File ID: NT507121920.D

% Solids: 33.21 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 20:18

Batch: BHG0316 Sequence: SHG0192 Initial/Final: 2.25 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	33.5	U	2.22	33.5
87-68-3	Hexachloro-1,3-Butadiene	1	33.5	U	2.74	33.5
91-20-3	Naphthalene	1	33.5	U	2.87	33.5
87-61-6	1,2,3-Trichlorobenzene	1	33.5	U	2.04	33.5
75-71-8	Dichlorodifluoromethane	1	6.69	U	1.39	6.69
1634-04-4	Methyl tert-butyl Ether	1	6.69	U	1.55	6.69
107-87-9	2-Pentanone	1	33.5	U	33.5	33.5

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	66.3	133	80 - 149	
Toluene-d8	50.000	51.3	103	77 - 120	
4-Bromofluorobenzene	50.000	46.8	93.7	80 - 120	
1,2-Dichlorobenzene-d4	50.000	49.2	98.5	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121920.D

Date : 12-JUL-2019 20:18

Client ID:

Sample Info: 19C0163-06

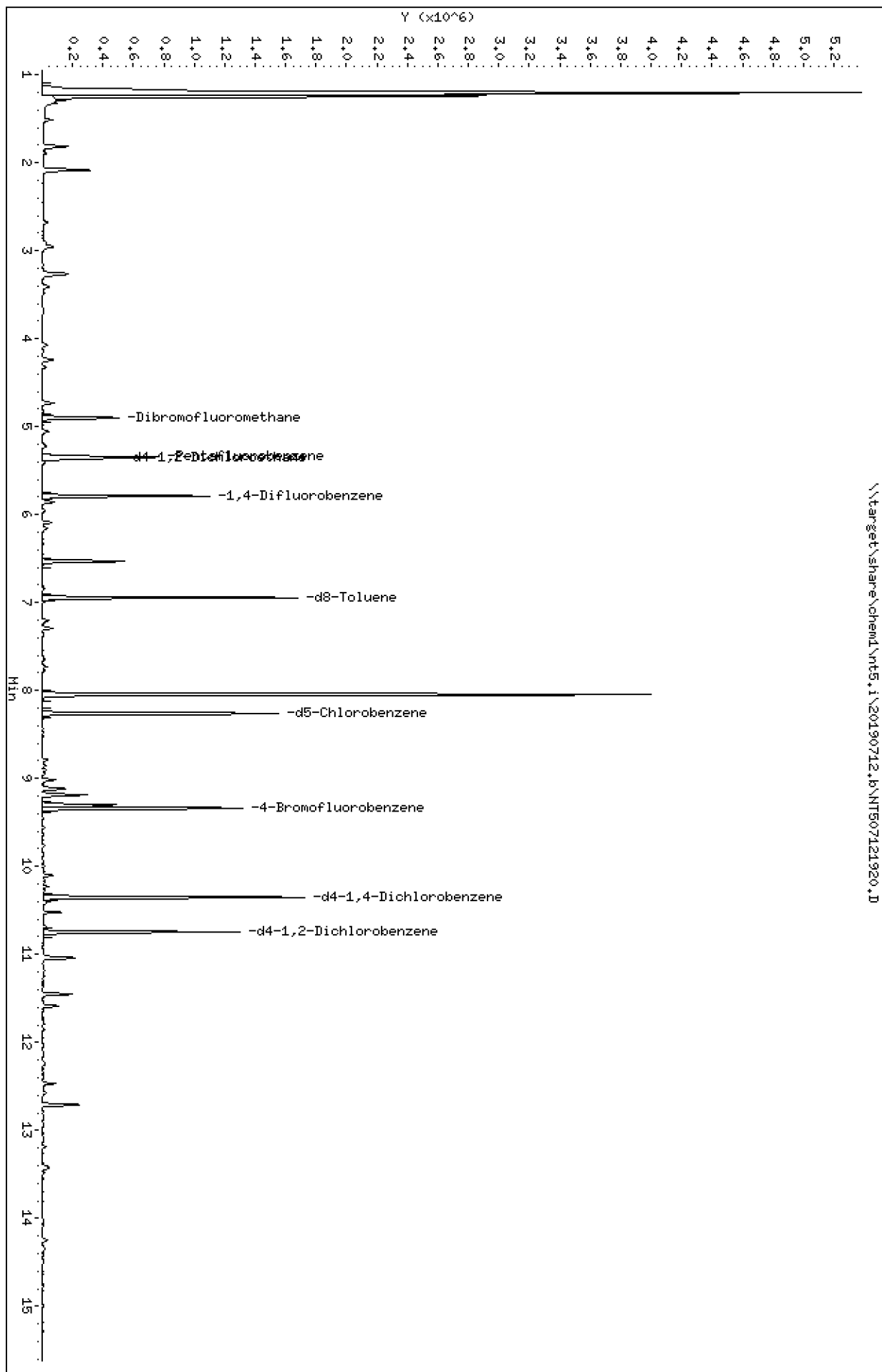
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

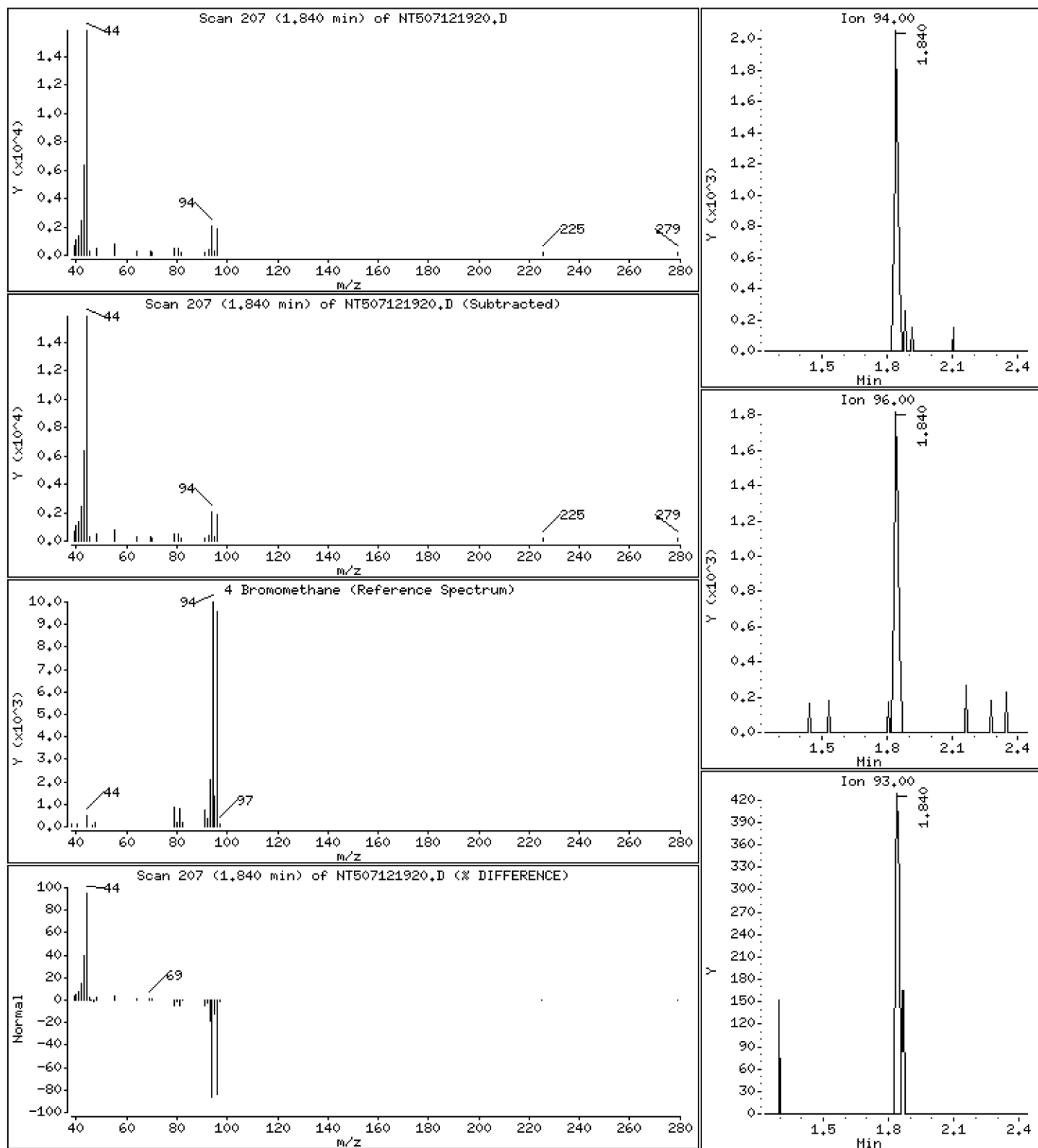
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 1.225 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

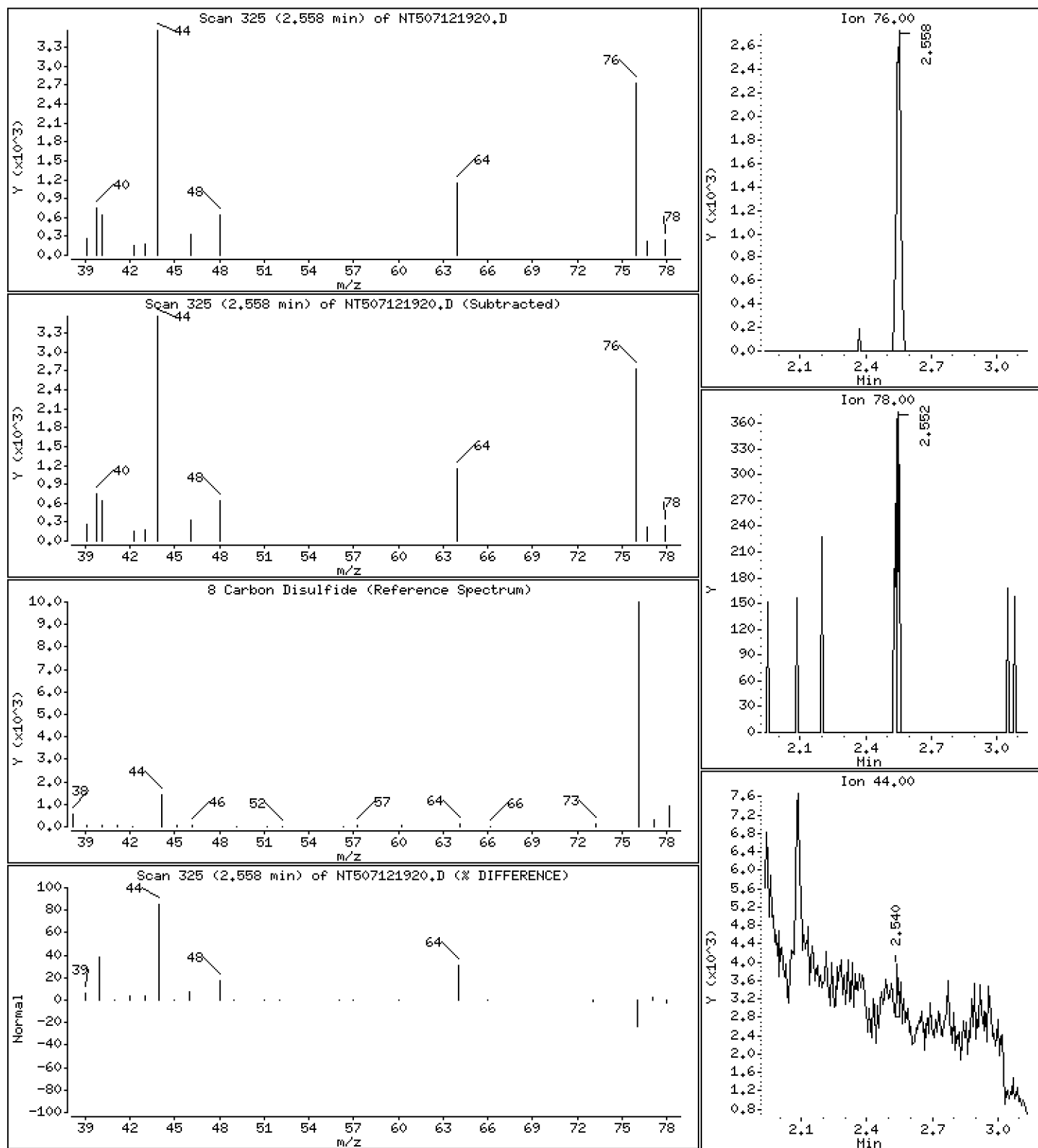
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 0.5227 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

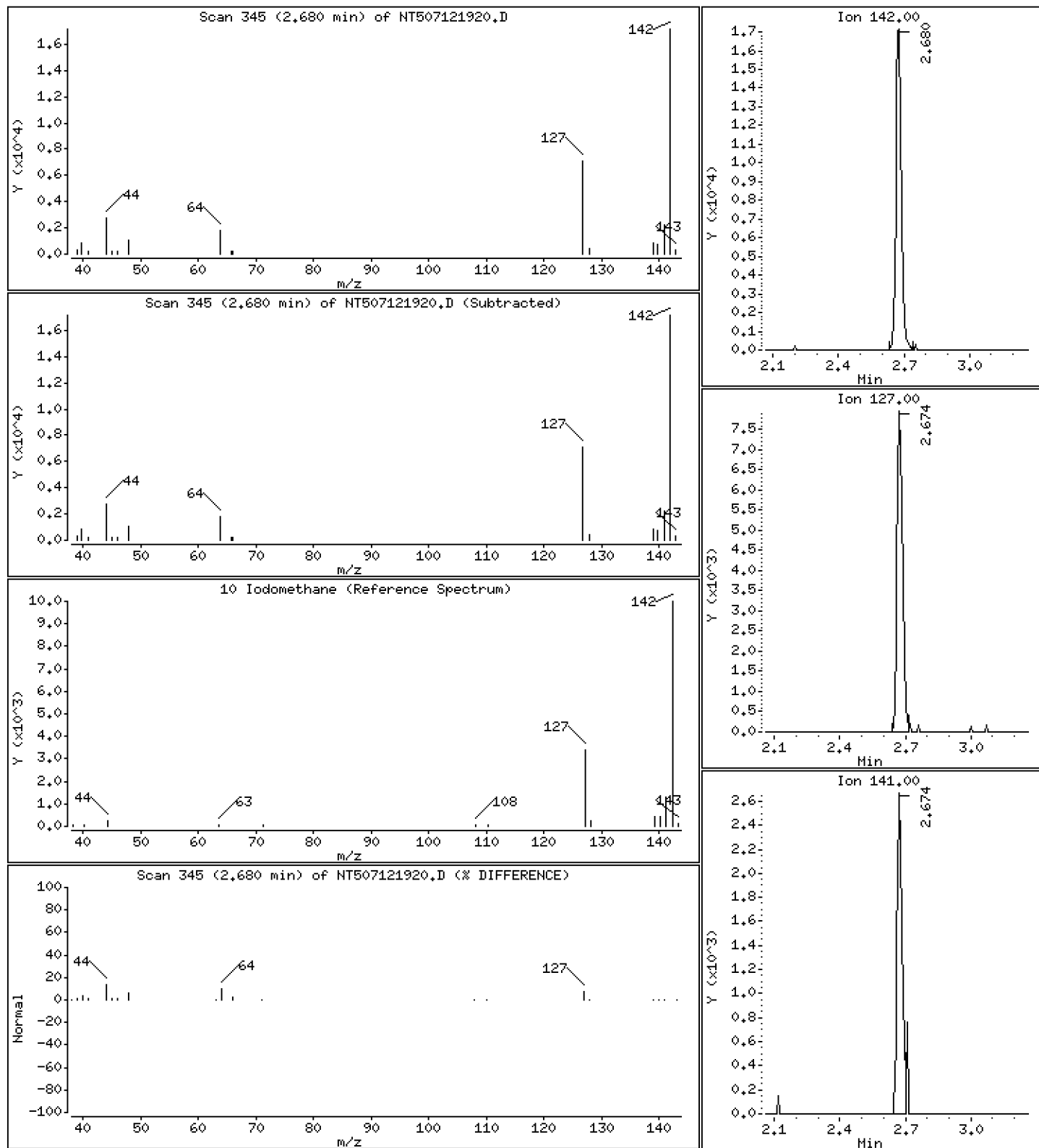
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 7.986 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

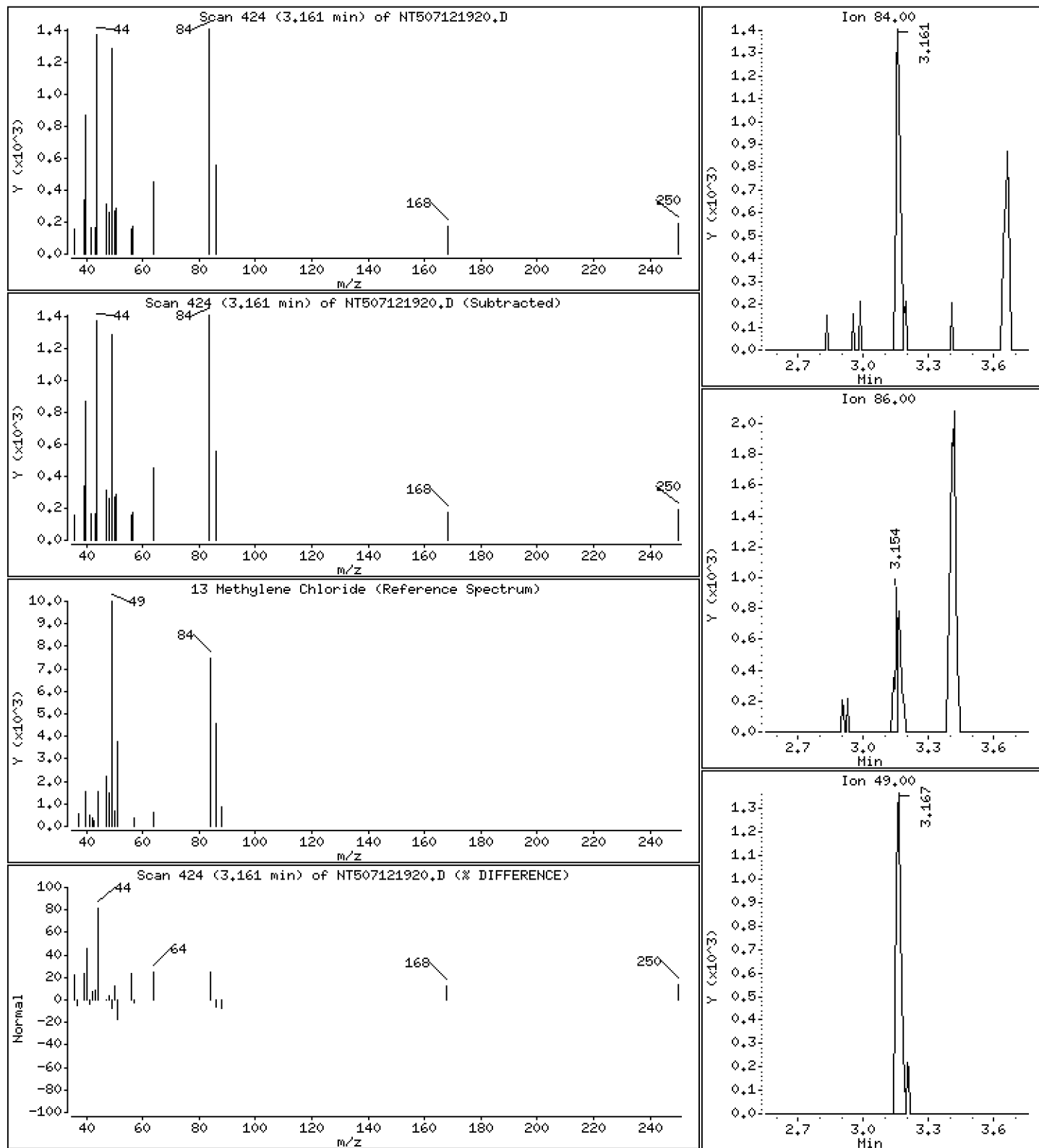
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.7192 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

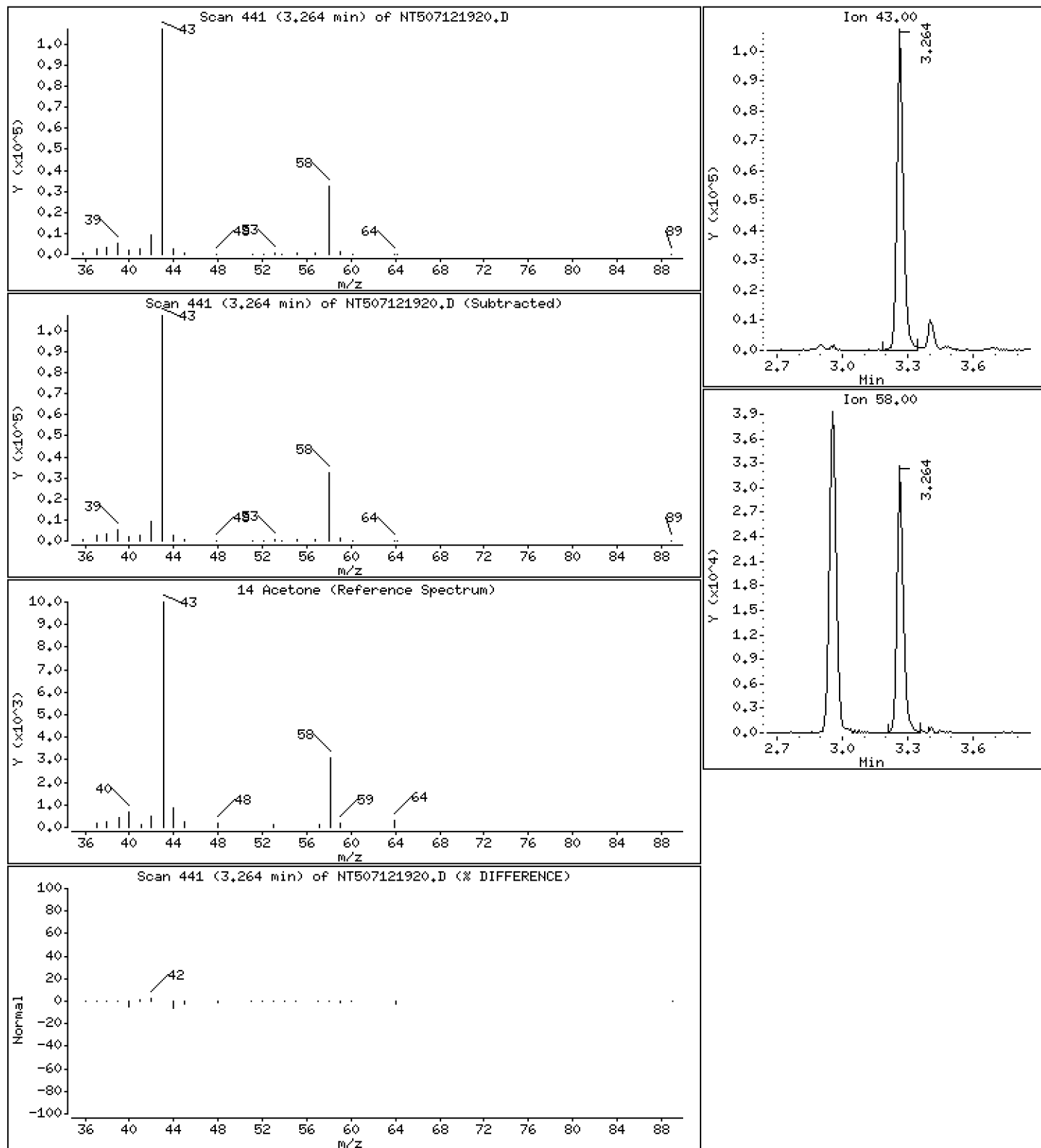
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 438.68 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

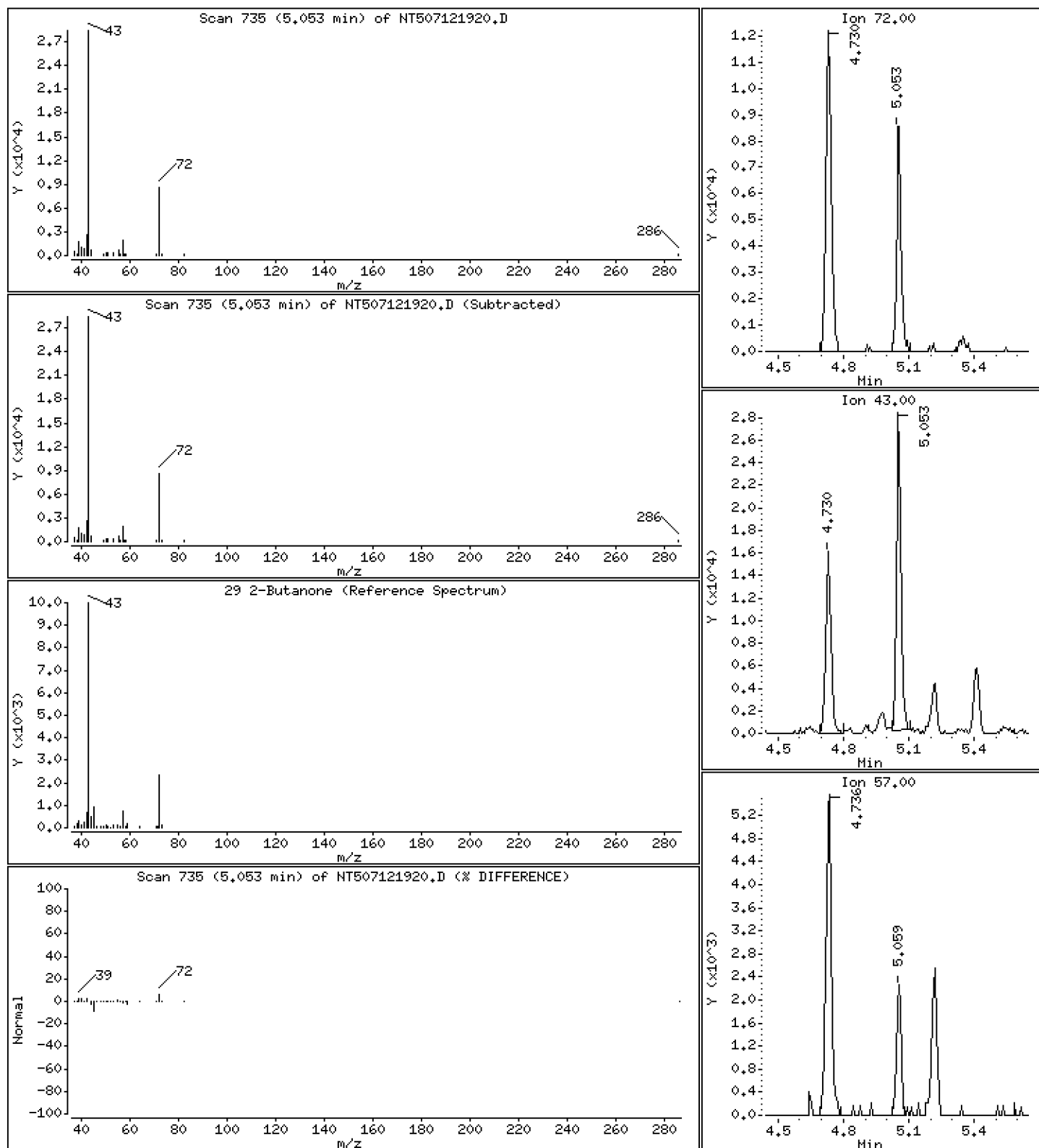
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 52,840 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

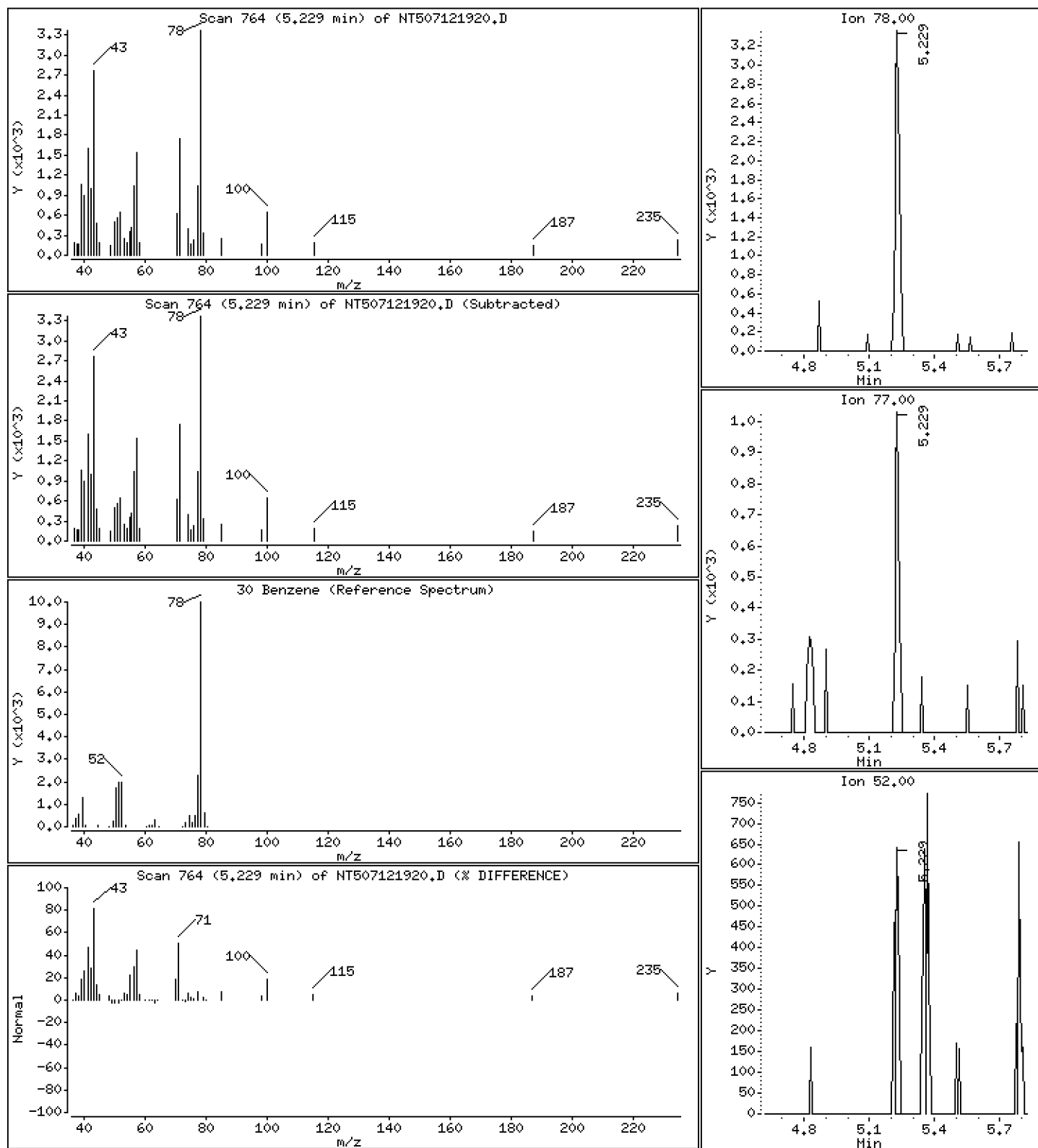
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 0.3881 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

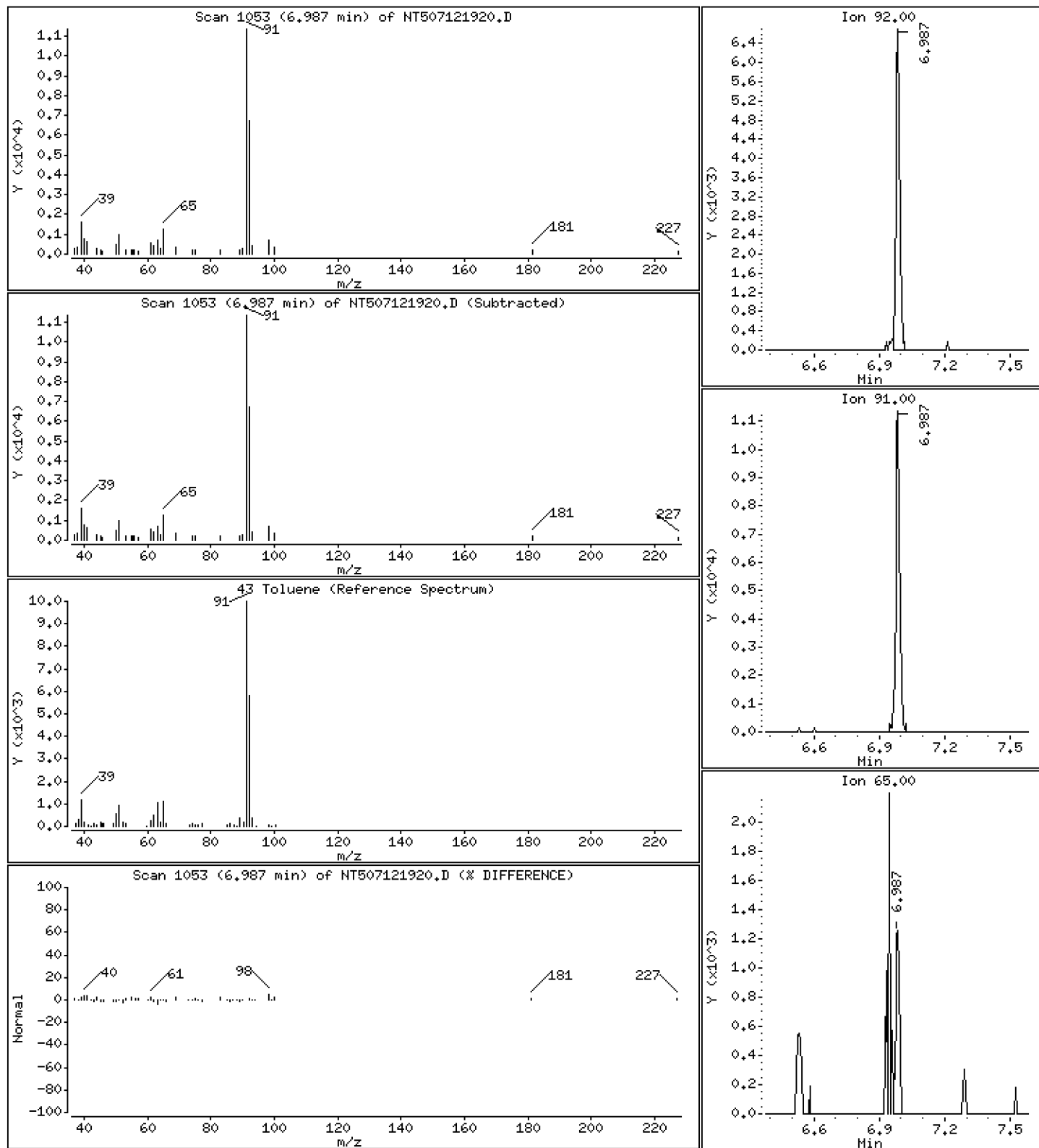
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 1.028 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

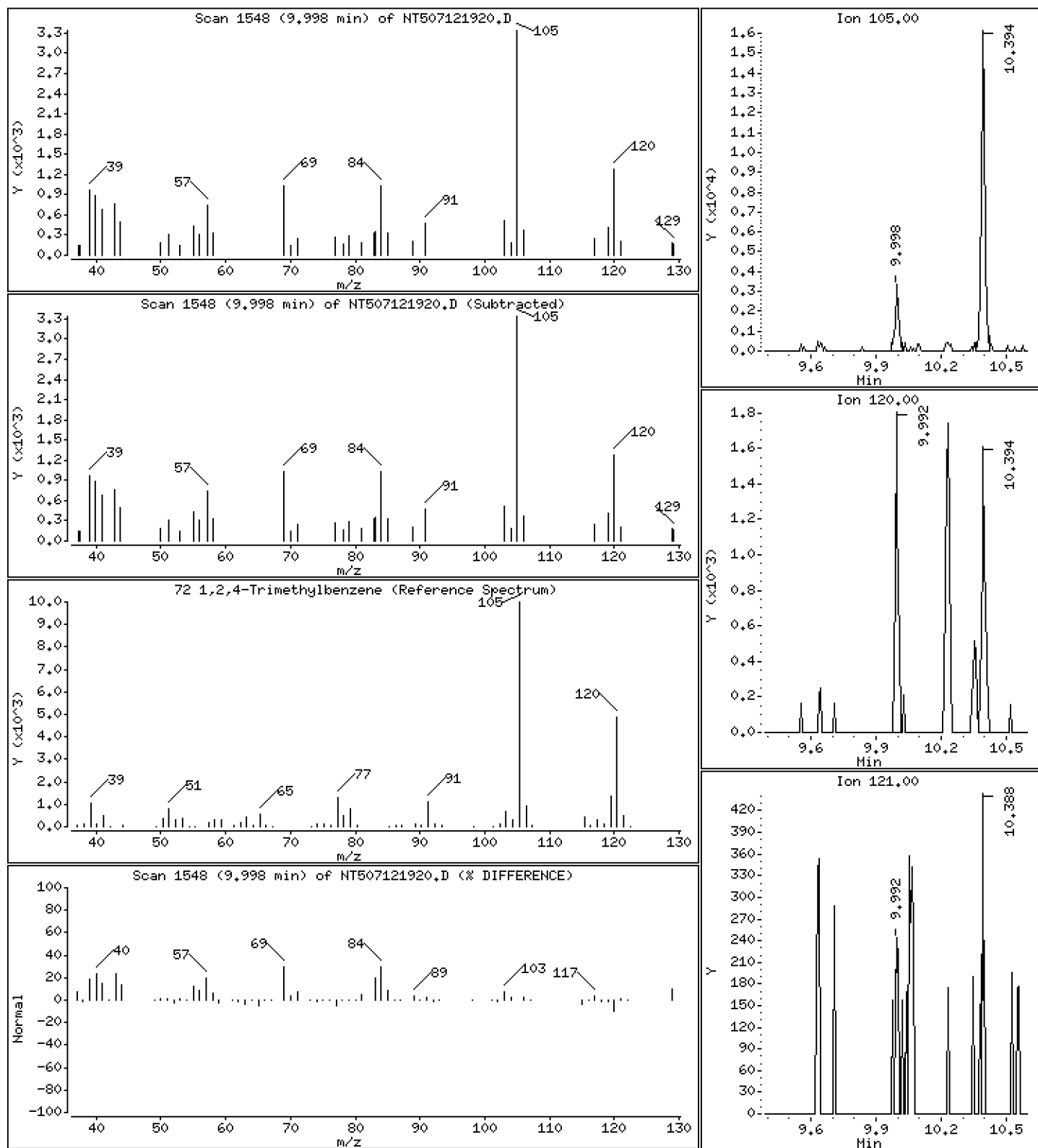
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 0.3825 ug/Kg



Date : 12-JUL-2019 20:18

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-06

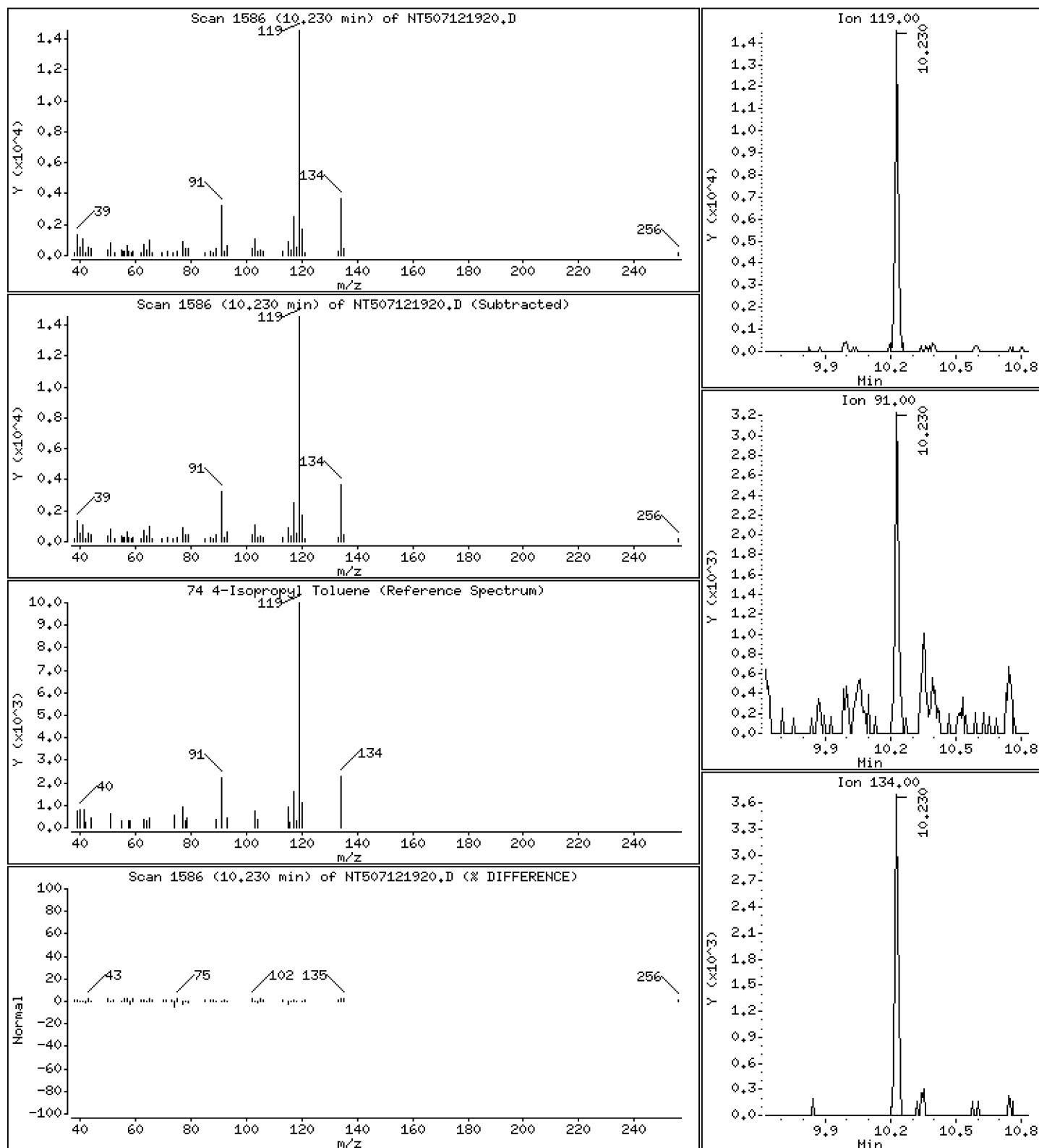
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 1.260 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121920.D
 Lab Smp Id: 19G0163-06
 Inj Date : 12-JUL-2019 20:18
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-06
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====			====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85				Compound Not Detected.				
2 Chloromethane	50				Compound Not Detected.				
3 Vinyl Chloride	62				Compound Not Detected.				
4 Bromomethane	94			1.840	1.840 (0.344)		2853	1.22496	1.225
5 Chloroethane	64				Compound Not Detected.				
6 Trichlorofluoromethane	101				Compound Not Detected.				
7 1,1-Dichloroethene	96				Compound Not Detected.				
8 Carbon Disulfide	76			2.558	2.540 (0.479)		4520	0.52275	0.5227
9 112Trichloro122Trifluoroethane	101				Compound Not Detected.				
10 Iodomethane	142			2.679	2.667 (0.501)		32282	7.98584	7.986
11 Bromoethane	108				Compound Not Detected.				
12 Acrolein	56				Compound Not Detected.				
13 Methylene Chloride	84			3.160	3.154 (0.591)		2213	0.71922	0.7192
14 Acetone	43			3.263	3.257 (0.611)		243016	438.676	438.68
15 Trans-1,2-Dichloroethene	96				Compound Not Detected.				
16 Methyl tert butyl ether	73				Compound Not Detected.				
173 n-Hexane	41				Compound Not Detected.				
17 1,1-Dichloroethane	63				Compound Not Detected.				
18 Acrylonitrile	53				Compound Not Detected.				
19 Vinyl Acetate	43				Compound Not Detected.				
20 Cis-1,2-Dichloroethene	96				Compound Not Detected.				
22 2,2-Dichloropropane	77				Compound Not Detected.				
23 Bromochloromethane	128				Compound Not Detected.				
24 Chloroform	83				Compound Not Detected.				
25 Carbon Tetrachloride	117				Compound Not Detected.				
\$ 27 Dibromofluoromethane	111			4.900	4.894 (0.917)		254046	61.7933	61.793 (R)
26 1,1,1-Trichloroethane	97				Compound Not Detected.				
28 1,1-Dichloropropene	75				Compound Not Detected.				
29 2-Butanone	72			5.052	5.046 (0.945)		13757	52.8401	52.840
30 Benzene	78			5.228	5.222 (0.903)		5173	0.38811	0.3881
* 31 Pentafluorobenzene	168			5.344	5.338 (1.000)		375933	50.0000	
\$ 32 d4-1,2-Dichloroethane	65			5.362	5.350 (1.003)		227894	66.2650	66.265 (R)
33 1,2-Dichloroethane	62				Compound Not Detected.				

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	751937	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	903509	51.3103	51.310 (R)
43 Toluene	92	6.987	6.981	(1.207)	9352	1.02771	1.028
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	747181	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	299590	46.8359	46.836 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105	9.998	9.992	(0.966)	4670	0.38249	0.3825
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	18230	1.26020	1.260
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	356380	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	306018	49.2358	49.236 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121920.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-06
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	375933	-6.93
35 1,4-Difluorobenze	717664	358832	1435328	751937	4.78
52 d5-Chlorobenzene	696563	348282	1393126	747181	7.27
76 d4-1,4-Dichlorobe	380778	190389	761556	356380	-6.41

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:	Client SDG: 20151013
Sample Matrix: NONE	Fraction: VOA
Lab Smp Id: 19G0163-06	
Level:	Operator: PB
Data Type: MS DATA	SampleType: SAMPLE
SpikeList File: voasoil.spk	Quant Type: ISTD
Sublist File: voamdl.sub	
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m	
Misc Info:	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	61.793	123.59	
\$ 32 d4-1,2-Dichloroeth	50.000	66.265	132.53	
\$ 42 d8-Toluene	50.000	51.310	102.62	
\$ 62 4-Bromofluorobenze	50.000	46.836	93.67	
\$ 79 d4-1,2-Dichloroben	50.000	49.236	98.47	

REVIEW SUMMARY FOR FILE - NT507121920.D

Lab ID: 19G0163-06
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 20:18

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT CCV RRT DELTA COMPOUND

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 C SDG: 19G0163
Sampled: 07/11/19 12:20 Prepared: 07/12/19 14:22 File ID: NT507121921.D
% Solids: 50.14 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 20:41
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 3.47 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	2.87	U	0.76	2.87
75-01-4	Vinyl Chloride	1	2.87	U	0.68	2.87
74-83-9	Bromomethane	1	2.87	U	0.54	2.87
75-00-3	Chloroethane	1	2.87	U	1.33	2.87
75-69-4	Trichlorofluoromethane	1	2.87	U	0.76	2.87
107-02-8	Acrolein	1	14.4	U	10.9	14.4
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	5.75	U	0.82	5.75
67-64-1	Acetone	1	849		1.39	14.4
75-35-4	1,1-Dichloroethene	1	2.87	U	0.97	2.87
74-96-4	Bromoethane	1	5.75	U	1.26	5.75
74-88-4	Iodomethane	1	2.87	U	0.62	2.87
75-09-2	Methylene Chloride	1	2.07	J	1.82	5.75
107-13-1	Acrylonitrile	1	14.4	U	2.96	14.4
75-15-0	Carbon Disulfide	1	2.87	U	1.61	2.87
156-60-5	trans-1,2-Dichloroethene	1	2.87	U	0.76	2.87
108-05-4	Vinyl Acetate	1	14.4	U	1.09	14.4
75-34-3	1,1-Dichloroethane	1	2.87	U	0.58	2.87
78-93-3	2-Butanone	1	55.5		1.47	14.4
594-20-7	2,2-Dichloropropane	1	2.87	U	0.84	2.87
156-59-2	cis-1,2-Dichloroethene	1	2.87	U	0.69	2.87
67-66-3	Chloroform	1	2.87	U	0.67	2.87
74-97-5	Bromochloromethane	1	2.87	U	0.93	2.87
71-55-6	1,1,1-Trichloroethane	1	2.87	U	0.65	2.87
563-58-6	1,1-Dichloropropene	1	2.87	U	0.90	2.87
56-23-5	Carbon tetrachloride	1	2.87	U	0.61	2.87
107-06-2	1,2-Dichloroethane	1	2.87	U	0.55	2.87
71-43-2	Benzene	1	2.87	U	0.85	2.87
79-01-6	Trichloroethene	1	2.87	U	0.61	2.87
78-87-5	1,2-Dichloropropane	1	2.87	U	0.47	2.87
75-27-4	Bromodichloromethane	1	2.87	U	0.73	2.87
74-95-3	Dibromomethane	1	2.87	U	0.42	2.87
110-75-8	2-Chloroethyl vinyl ether	1	14.4	U	0.79	14.4
108-10-1	4-Methyl-2-Pentanone	1	14.4	U	1.21	14.4
10061-01-5	cis-1,3-Dichloropropene	1	2.87	U	0.65	2.87



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-07 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 12:20</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121921.D</u>
% Solids: <u>50.14</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 20:41</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>3.47 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	3.13		0.43	2.87
10061-02-6	trans-1,3-Dichloropropene	1	2.87	U	0.62	2.87
591-78-6	2-Hexanone	1	14.4	U	1.26	14.4
79-00-5	1,1,2-Trichloroethane	1	2.87	U	0.82	2.87
142-28-9	1,3-Dichloropropane	1	2.87	U	0.60	2.87
127-18-4	Tetrachloroethene	1	2.87	U	0.74	2.87
124-48-1	Dibromochloromethane	1	2.87	U	0.76	2.87
106-93-4	1,2-Dibromoethane	1	2.87	U	0.51	2.87
108-90-7	Chlorobenzene	1	2.87	U	0.63	2.87
100-41-4	Ethylbenzene	1	2.87	U	0.58	2.87
630-20-6	1,1,1,2-Tetrachloroethane	1	2.87	U	0.67	2.87
179601-23-1	m,p-Xylene	1	5.75	U	1.13	5.75
95-47-6	o-Xylene	1	2.87	U	0.64	2.87
1330-20-7	Xylenes, total	1	5.75	U	1.77	5.75
100-42-5	Styrene	1	2.87	U	0.40	2.87
75-25-2	Bromoform	1	2.87	U	0.85	2.87
79-34-5	1,1,1,2-Tetrachloroethane	1	2.87	U	0.73	2.87
96-18-4	1,2,3-Trichloropropane	1	5.75	U	1.49	5.75
110-57-6	trans-1,4-Dichloro 2-Butene	1	14.4	U	1.26	14.4
103-65-1	n-Propylbenzene	1	2.87	U	0.78	2.87
108-86-1	Bromobenzene	1	2.87	U	0.44	2.87
98-82-8	Isopropyl Benzene	1	2.87	U	0.67	2.87
95-49-8	2-Chlorotoluene	1	2.87	U	0.86	2.87
106-43-4	4-Chlorotoluene	1	2.87	U	0.80	2.87
98-06-6	t-Butylbenzene	1	2.87	U	0.88	2.87
108-67-8	1,3,5-Trimethylbenzene	1	2.87	U	0.73	2.87
95-63-6	1,2,4-Trimethylbenzene	1	0.82	J	0.66	2.87
135-98-8	s-Butylbenzene	1	2.87	U	0.69	2.87
99-87-6	4-Isopropyl Toluene	1	4.44		0.68	2.87
541-73-1	1,3-Dichlorobenzene	1	2.87	U	0.65	2.87
106-46-7	1,4-Dichlorobenzene	1	2.87	U	0.67	2.87
104-51-8	n-Butylbenzene	1	2.87	U	0.75	2.87
95-50-1	1,2-Dichlorobenzene	1	2.87	U	0.84	2.87
96-12-8	1,2-Dibromo-3-chloropropane	1	14.4	U	1.68	14.4



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 C SDG: 19G0163

Sampled: 07/11/19 12:20 Prepared: 07/12/19 14:22 File ID: NT507121921.D

% Solids: 50.14 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 20:41

Batch: BHG0316 Sequence: SHG0192 Initial/Final: 3.47 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	14.4	U	0.95	14.4
87-68-3	Hexachloro-1,3-Butadiene	1	14.4	U	1.18	14.4
91-20-3	Naphthalene	1	14.4	U	1.23	14.4
87-61-6	1,2,3-Trichlorobenzene	1	14.4	U	0.88	14.4
75-71-8	Dichlorodifluoromethane	1	2.87	U	0.59	2.87
1634-04-4	Methyl tert-butyl Ether	1	2.87	U	0.66	2.87
107-87-9	2-Pentanone	1	14.4	U	14.4	14.4

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	67.1	134	80 - 149	
Toluene-d8	50.000	50.6	101	77 - 120	
4-Bromofluorobenzene	50.000	44.0	88.0	80 - 120	
1,2-Dichlorobenzene-d4	50.000	48.0	96.0	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121921.D

Date : 12-JUL-2019 20:41

Client ID:

Sample Info: 19C0163-07

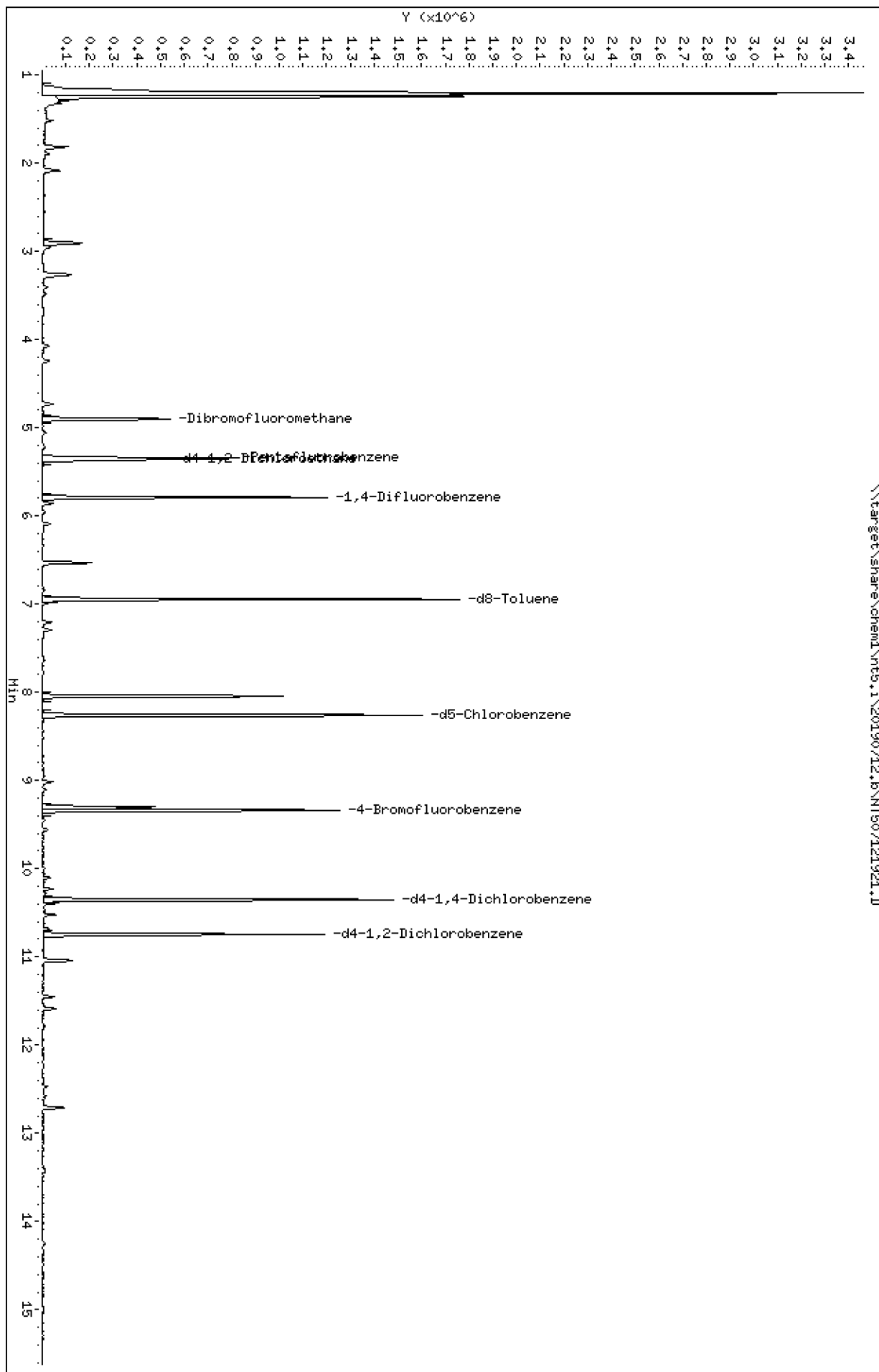
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 20:41

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-07

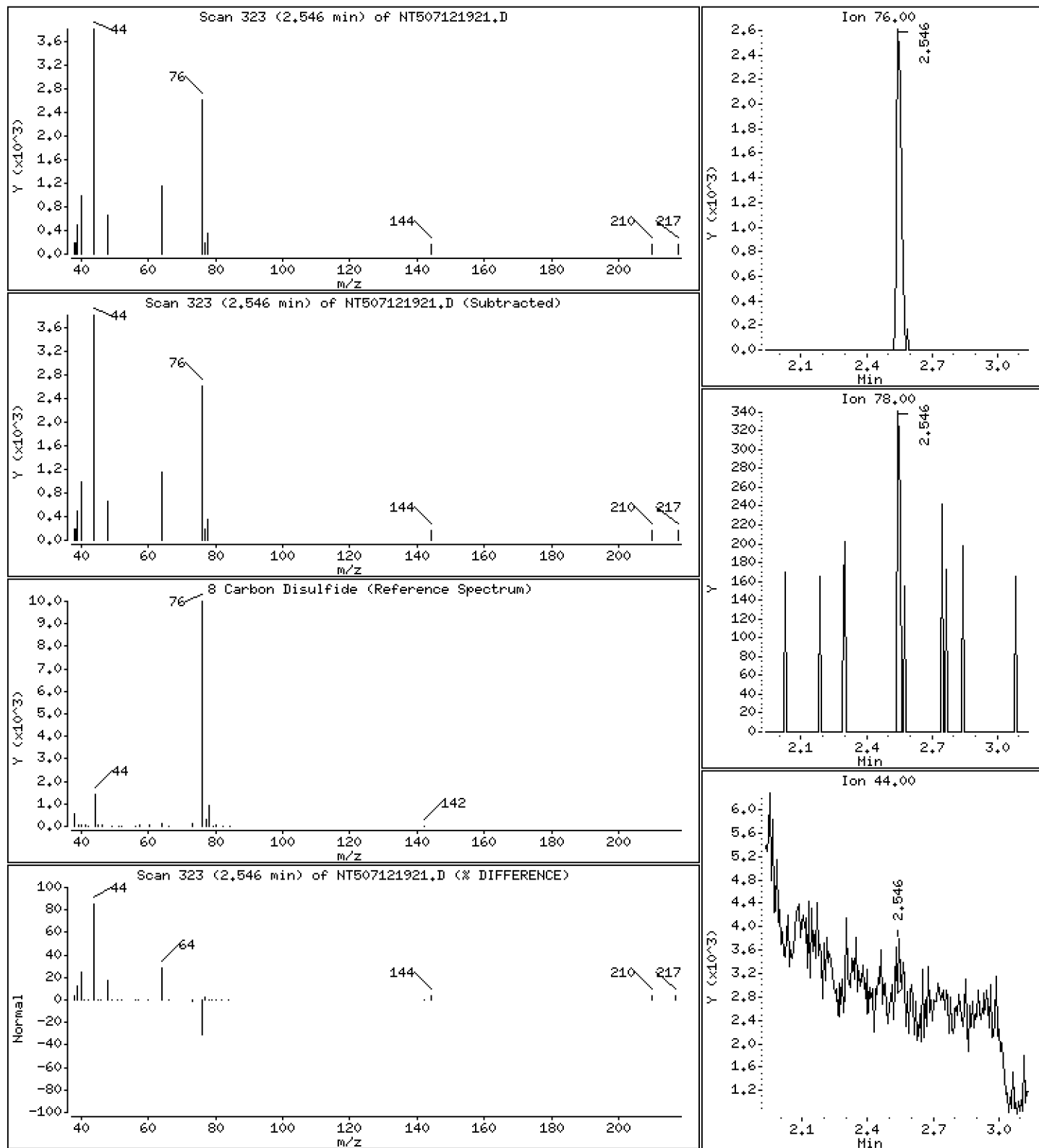
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 0.4694 ug/Kg



Date : 12-JUL-2019 20:41

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-07

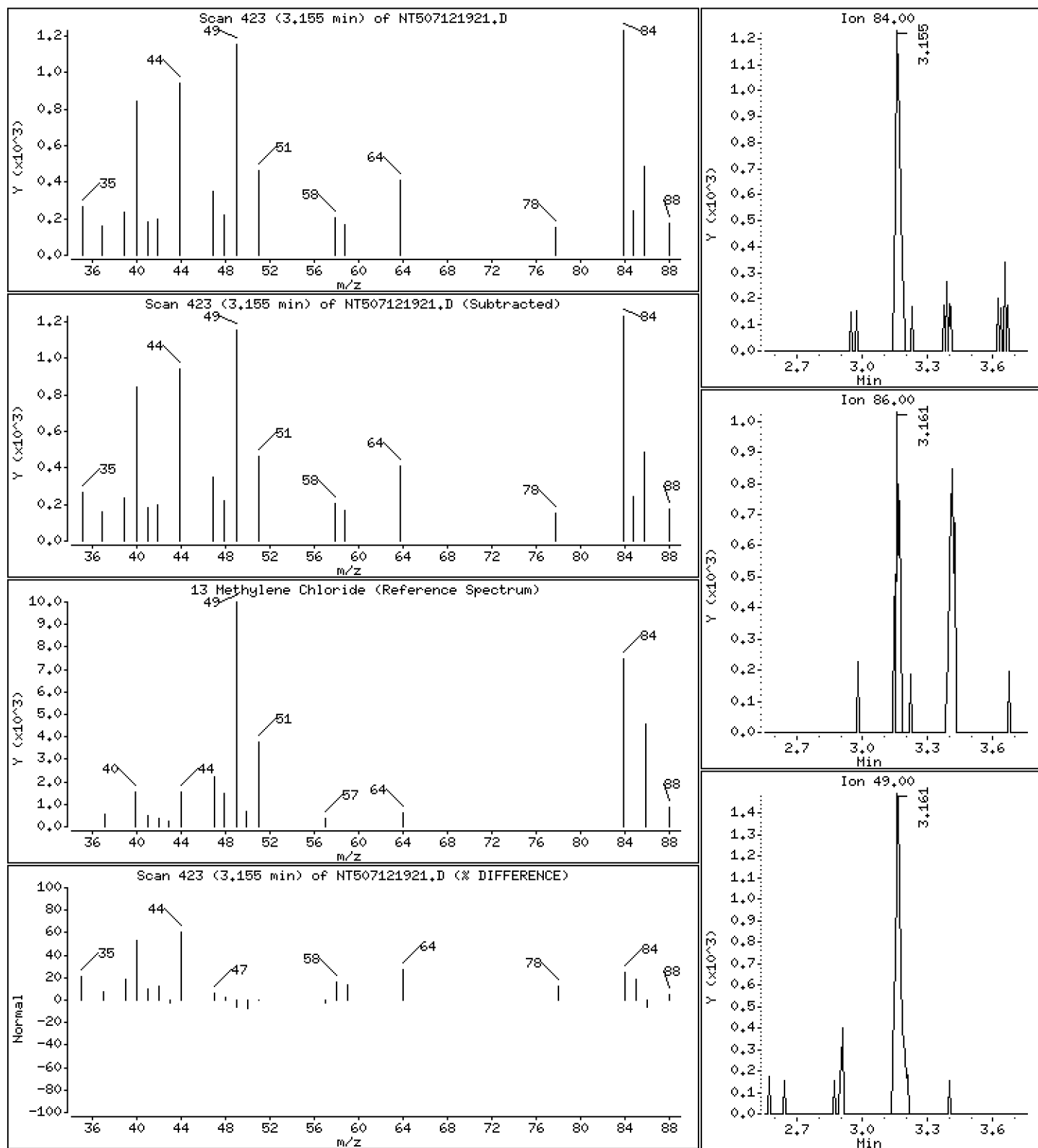
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.7195 ug/Kg



Date : 12-JUL-2019 20:41

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-07

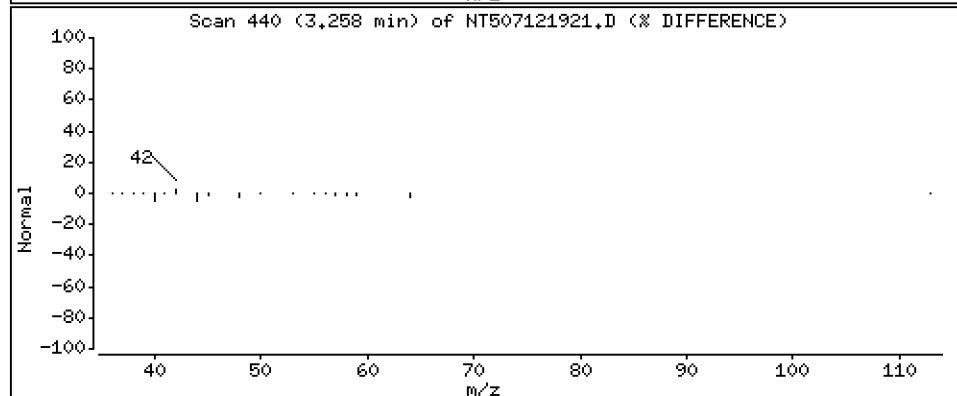
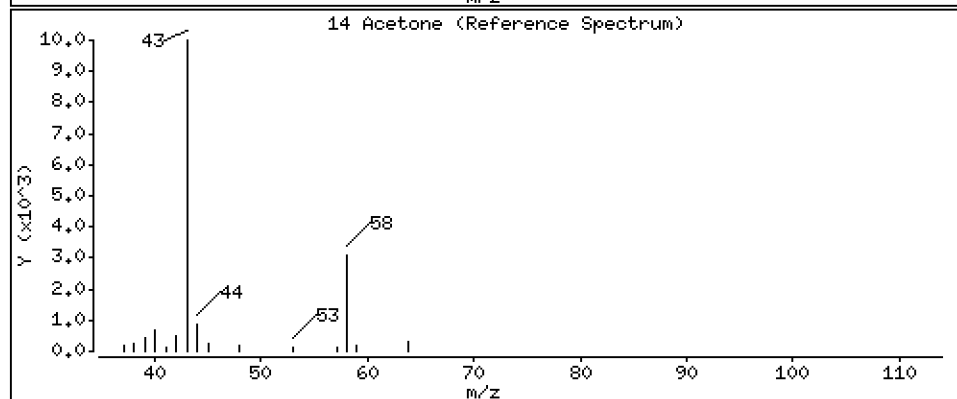
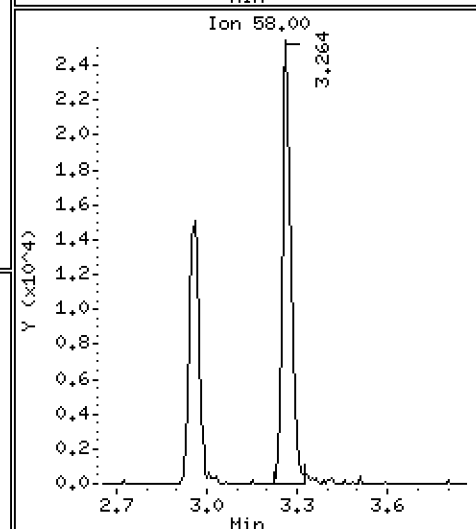
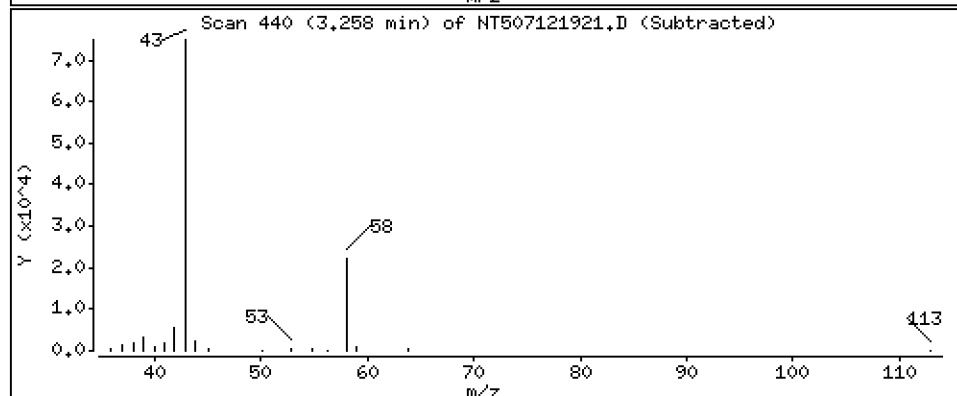
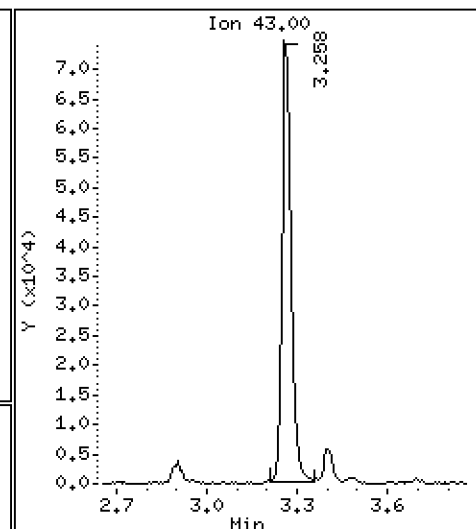
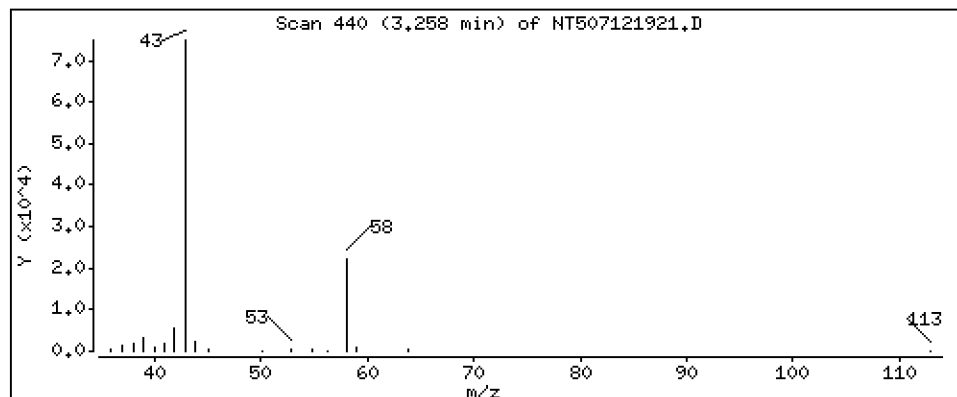
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 295.49 ug/Kg



Date : 12-JUL-2019 20:41

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-07

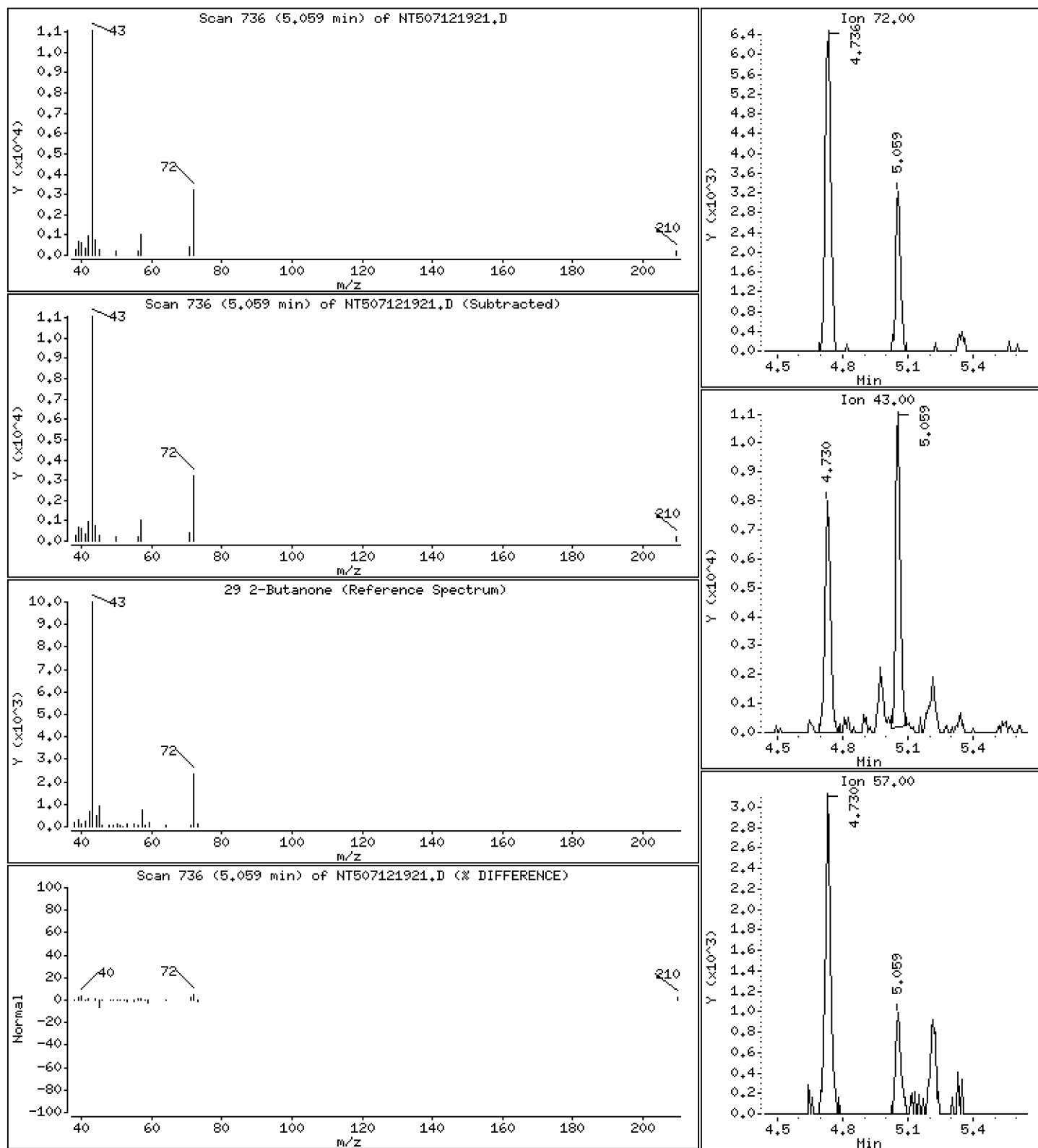
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 19,296 ug/Kg



Date : 12-JUL-2019 20:41

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-07

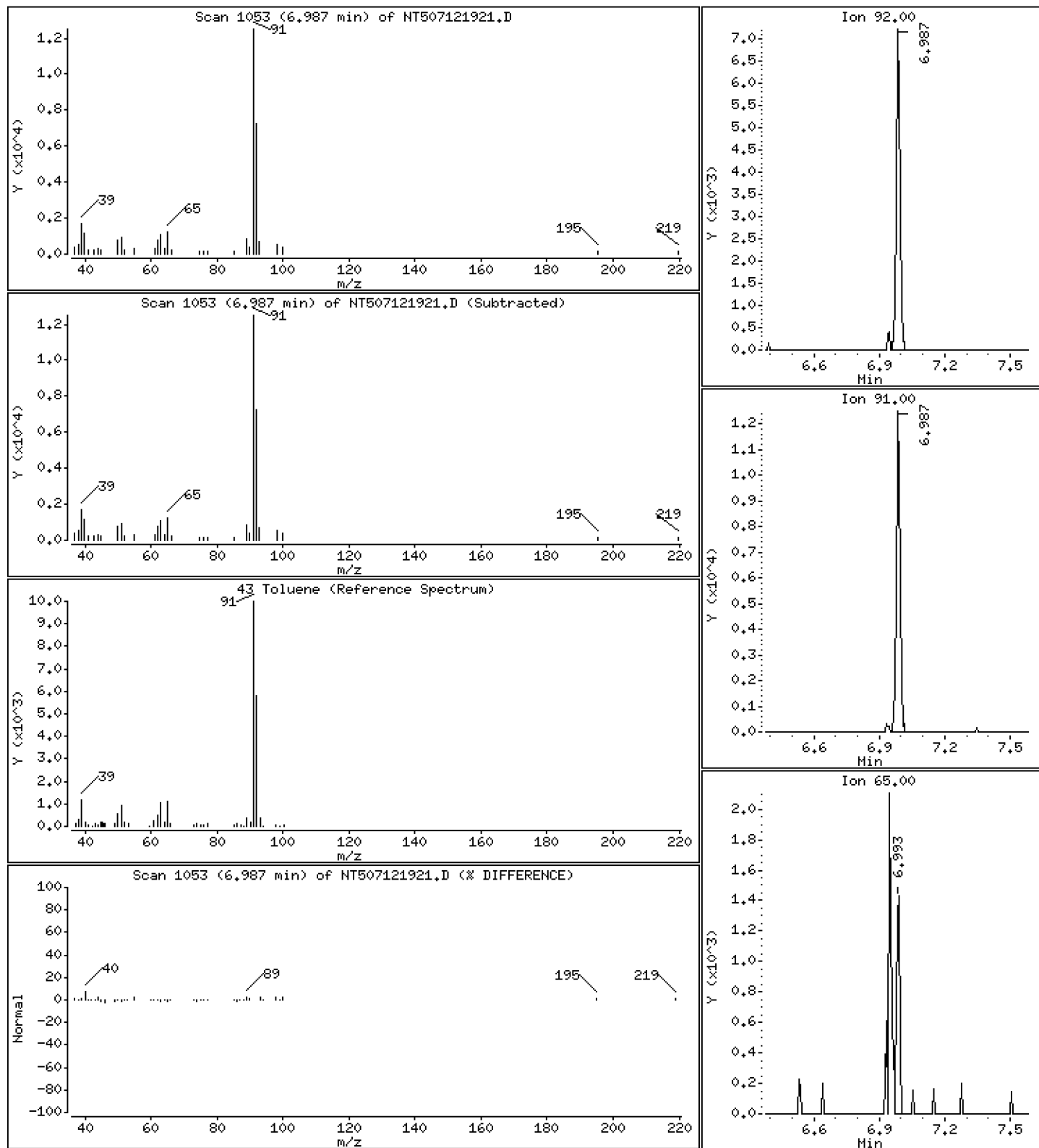
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 1.090 ug/Kg



Date : 12-JUL-2019 20:41

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-07

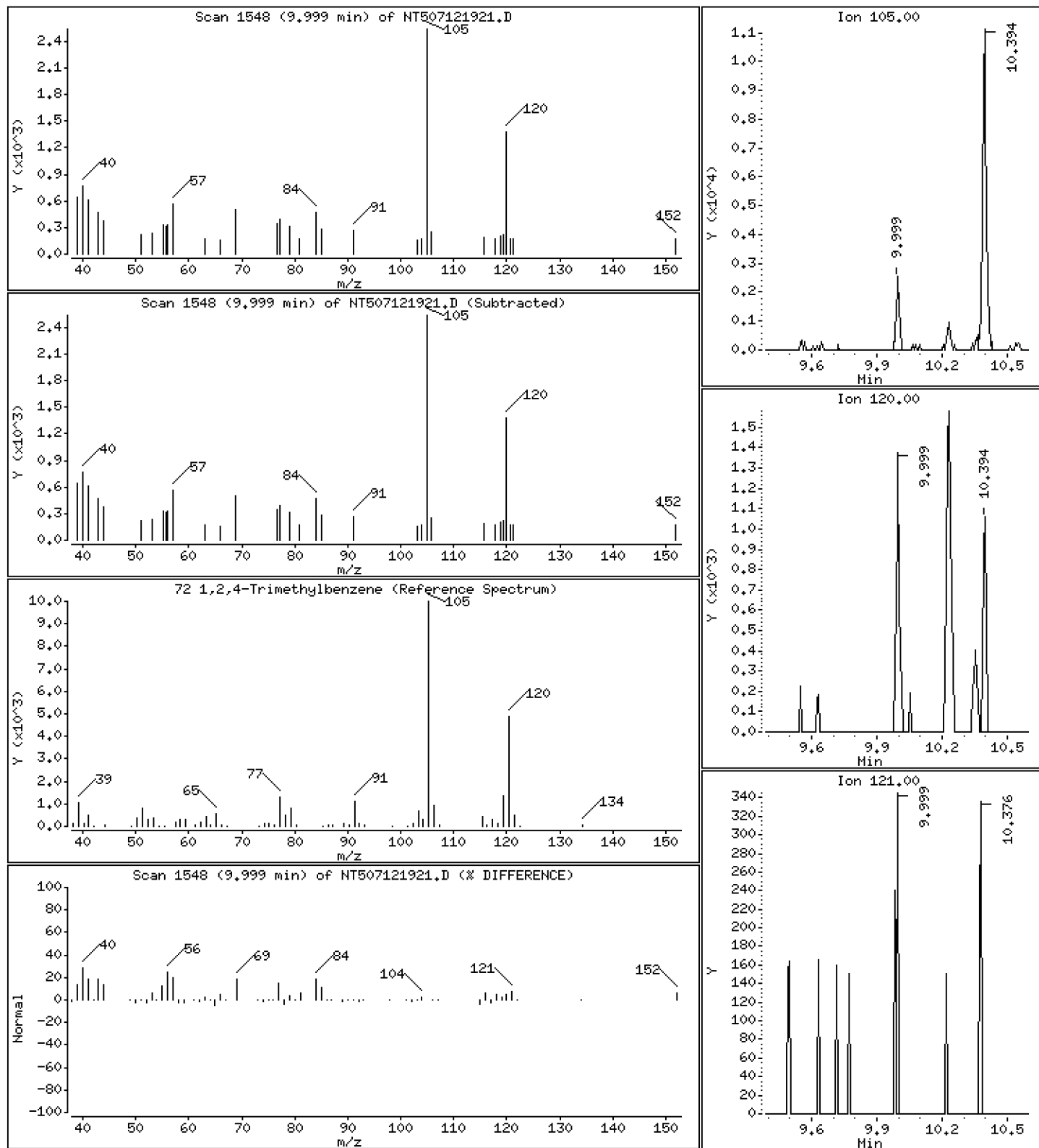
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 0.2845 ug/Kg



Date : 12-JUL-2019 20:41

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-07

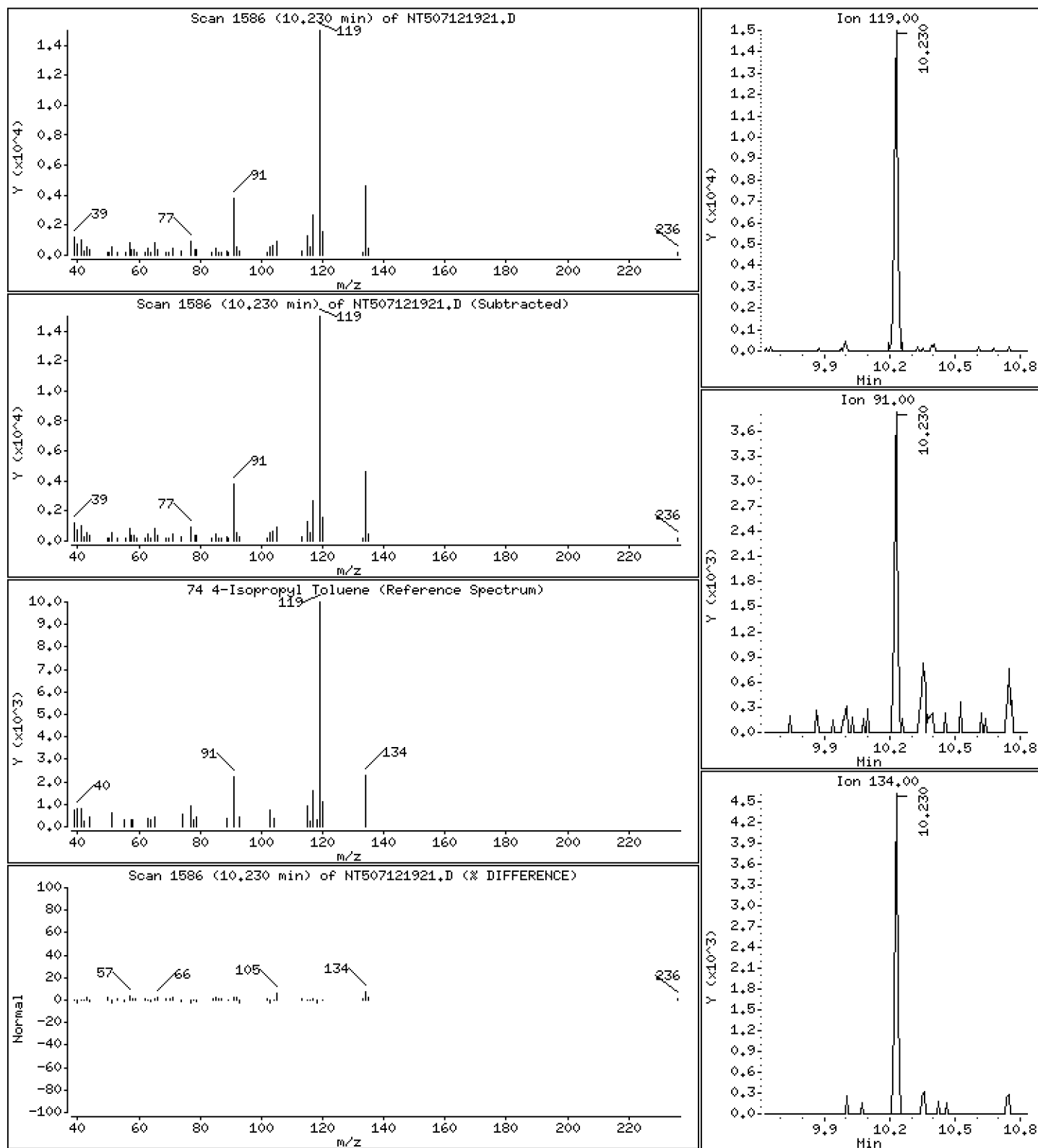
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 1.545 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121921.D
 Lab Smp Id: 19G0163-07
 Inj Date : 12-JUL-2019 20:41
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-07
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound Not Detected.					
2 Chloromethane	50		Compound Not Detected.					
3 Vinyl Chloride	62		Compound Not Detected.					
4 Bromomethane	94		Compound Not Detected.					
5 Chloroethane	64		Compound Not Detected.					
6 Trichlorofluoromethane	101		Compound Not Detected.					
7 1,1-Dichloroethene	96		Compound Not Detected.					
8 Carbon Disulfide	76		2.546	2.540	(0.476)	4255	0.46937	0.4694
9 112Trichloro122Trifluoroethane	101		Compound Not Detected.					
10 Iodomethane	142		Compound Not Detected.					
11 Bromoethane	108		Compound Not Detected.					
12 Acrolein	56		Compound Not Detected.					
13 Methylene Chloride	84		3.154	3.154	(0.590)	2321	0.71948	0.7195
14 Acetone	43		3.257	3.257	(0.610)	171621	295.488	295.49
15 Trans-1,2-Dichloroethene	96		Compound Not Detected.					
16 Methyl tert butyl ether	73		Compound Not Detected.					
173 n-Hexane	41		Compound Not Detected.					
17 1,1-Dichloroethane	63		Compound Not Detected.					
18 Acrylonitrile	53		Compound Not Detected.					
19 Vinyl Acetate	43		Compound Not Detected.					
20 Cis-1,2-Dichloroethene	96		Compound Not Detected.					
22 2,2-Dichloropropane	77		Compound Not Detected.					
23 Bromochloromethane	128		Compound Not Detected.					
24 Chloroform	83		Compound Not Detected.					
25 Carbon Tetrachloride	117		Compound Not Detected.					
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.917)	270936	62.8575	62.857 (R)
26 1,1,1-Trichloroethane	97		Compound Not Detected.					
28 1,1-Dichloropropene	75		Compound Not Detected.					
29 2-Butanone	72		5.058	5.046	(0.947)	5267	19.2959	19.296
30 Benzene	78		Compound Not Detected.					
* 31 Pentafluorobenzene	168		5.344	5.338	(1.000)	394139	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.350	(1.003)	241808	67.0630	67.063 (R)
33 1,2-Dichloroethane	62		Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	807615	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	956290	50.5636	50.564 (R)
43 Toluene	92	6.987	6.981	(1.207)	10649	1.08957	1.090
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	781629	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	294435	44.0014	44.001 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105	9.998	9.992	(0.966)	3229	0.28449	0.2845
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	20773	1.54471	1.545
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	331296	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	277283	47.9904	47.990 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121921.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-07
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	394139	-2.42
35 1,4-Difluorobenze	717664	358832	1435328	807615	12.53
52 d5-Chlorobenzene	696563	348282	1393126	781629	12.21
76 d4-1,4-Dichlorobe	380778	190389	761556	331296	-12.99

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:	Client SDG: 20151013
Sample Matrix: NONE	Fraction: VOA
Lab Smp Id: 19G0163-07	
Level:	Operator: PB
Data Type: MS DATA	SampleType: SAMPLE
SpikeList File: voasoil.spk	Quant Type: ISTD
Sublist File: voamdl.sub	
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m	
Misc Info:	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	62.857	125.71	
\$ 32 d4-1,2-Dichloroeth	50.000	67.063	134.13	
\$ 42 d8-Toluene	50.000	50.564	101.13	
\$ 62 4-Bromofluorobenze	50.000	44.001	88.00	
\$ 79 d4-1,2-Dichloroben	50.000	47.990	95.98	

REVIEW SUMMARY FOR FILE - NT507121921.D

Lab ID: 19G0163-07
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 20:41

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-08 C SDG: 19G0163
Sampled: 07/11/19 11:55 Prepared: 07/12/19 14:22 File ID: NT507121922.D
% Solids: 60.39 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 21:03
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 4.02 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	2.06	U	0.54	2.06
75-01-4	Vinyl Chloride	1	2.06	U	0.48	2.06
74-83-9	Bromomethane	1	2.06	U	0.39	2.06
75-00-3	Chloroethane	1	2.06	U	0.95	2.06
75-69-4	Trichlorofluoromethane	1	2.06	U	0.55	2.06
107-02-8	Acrolein	1	10.3	U	7.85	10.3
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	4.12	U	0.59	4.12
67-64-1	Acetone	1	302		0.99	10.3
75-35-4	1,1-Dichloroethene	1	2.06	U	0.69	2.06
74-96-4	Bromoethane	1	4.12	U	0.91	4.12
74-88-4	Iodomethane	1	0.65	J	0.44	2.06
75-09-2	Methylene Chloride	1	1.78	J	1.31	4.12
107-13-1	Acrylonitrile	1	10.3	U	2.12	10.3
75-15-0	Carbon Disulfide	1	2.06	U	1.15	2.06
156-60-5	trans-1,2-Dichloroethene	1	2.06	U	0.55	2.06
108-05-4	Vinyl Acetate	1	10.3	U	0.78	10.3
75-34-3	1,1-Dichloroethane	1	2.06	U	0.42	2.06
78-93-3	2-Butanone	1	19.8		1.06	10.3
594-20-7	2,2-Dichloropropane	1	2.06	U	0.60	2.06
156-59-2	cis-1,2-Dichloroethene	1	2.06	U	0.49	2.06
67-66-3	Chloroform	1	2.06	U	0.48	2.06
74-97-5	Bromochloromethane	1	2.06	U	0.67	2.06
71-55-6	1,1,1-Trichloroethane	1	2.06	U	0.47	2.06
563-58-6	1,1-Dichloropropene	1	2.06	U	0.64	2.06
56-23-5	Carbon tetrachloride	1	2.06	U	0.44	2.06
107-06-2	1,2-Dichloroethane	1	2.06	U	0.39	2.06
71-43-2	Benzene	1	2.06	U	0.61	2.06
79-01-6	Trichloroethene	1	2.06	U	0.44	2.06
78-87-5	1,2-Dichloropropane	1	2.06	U	0.33	2.06
75-27-4	Bromodichloromethane	1	2.06	U	0.52	2.06
74-95-3	Dibromomethane	1	2.06	U	0.30	2.06
110-75-8	2-Chloroethyl vinyl ether	1	10.3	U	0.57	10.3
108-10-1	4-Methyl-2-Pentanone	1	10.3	U	0.87	10.3
10061-01-5	cis-1,3-Dichloropropene	1	2.06	U	0.47	2.06



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-08 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 11:55</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121922.D</u>
% Solids: <u>60.39</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 21:03</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>4.02 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	1.45	J	0.31	2.06
10061-02-6	trans-1,3-Dichloropropene	1	2.06	U	0.44	2.06
591-78-6	2-Hexanone	1	10.3	U	0.90	10.3
79-00-5	1,1,2-Trichloroethane	1	2.06	U	0.59	2.06
142-28-9	1,3-Dichloropropane	1	2.06	U	0.43	2.06
127-18-4	Tetrachloroethene	1	2.06	U	0.53	2.06
124-48-1	Dibromochloromethane	1	2.06	U	0.55	2.06
106-93-4	1,2-Dibromoethane	1	2.06	U	0.36	2.06
108-90-7	Chlorobenzene	1	2.06	U	0.45	2.06
100-41-4	Ethylbenzene	1	2.06	U	0.42	2.06
630-20-6	1,1,1,2-Tetrachloroethane	1	2.06	U	0.48	2.06
179601-23-1	m,p-Xylene	1	4.12	U	0.81	4.12
95-47-6	o-Xylene	1	2.06	U	0.46	2.06
1330-20-7	Xylenes, total	1	4.12	U	1.27	4.12
100-42-5	Styrene	1	2.06	U	0.28	2.06
75-25-2	Bromoform	1	2.06	U	0.61	2.06
79-34-5	1,1,1,2-Tetrachloroethane	1	2.06	U	0.52	2.06
96-18-4	1,2,3-Trichloropropane	1	4.12	U	1.06	4.12
110-57-6	trans-1,4-Dichloro 2-Butene	1	10.3	U	0.90	10.3
103-65-1	n-Propylbenzene	1	2.06	U	0.56	2.06
108-86-1	Bromobenzene	1	2.06	U	0.32	2.06
98-82-8	Isopropyl Benzene	1	2.06	U	0.48	2.06
95-49-8	2-Chlorotoluene	1	2.06	U	0.62	2.06
106-43-4	4-Chlorotoluene	1	2.06	U	0.57	2.06
98-06-6	t-Butylbenzene	1	2.06	U	0.63	2.06
108-67-8	1,3,5-Trimethylbenzene	1	2.06	U	0.52	2.06
95-63-6	1,2,4-Trimethylbenzene	1	2.06	U	0.47	2.06
135-98-8	s-Butylbenzene	1	2.06	U	0.49	2.06
99-87-6	4-Isopropyl Toluene	1	1.22	J	0.49	2.06
541-73-1	1,3-Dichlorobenzene	1	2.06	U	0.47	2.06
106-46-7	1,4-Dichlorobenzene	1	2.06	U	0.48	2.06
104-51-8	n-Butylbenzene	1	2.06	U	0.54	2.06
95-50-1	1,2-Dichlorobenzene	1	2.06	U	0.60	2.06
96-12-8	1,2-Dibromo-3-chloropropane	1	10.3	U	1.21	10.3



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-08 C SDG: 19G0163

Sampled: 07/11/19 11:55 Prepared: 07/12/19 14:22 File ID: NT507121922.D

% Solids: 60.39 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 21:03

Batch: BHG0316 Sequence: SHG0192 Initial/Final: 4.02 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	10.3	U	0.68	10.3
87-68-3	Hexachloro-1,3-Butadiene	1	10.3	U	0.84	10.3
91-20-3	Naphthalene	1	10.3	U	0.88	10.3
87-61-6	1,2,3-Trichlorobenzene	1	10.3	U	0.63	10.3
75-71-8	Dichlorodifluoromethane	1	2.06	U	0.43	2.06
1634-04-4	Methyl tert-butyl Ether	1	2.06	U	0.48	2.06
107-87-9	2-Pentanone	1	10.3	U	10.3	10.3

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	67.2	134	80 - 149	
Toluene-d8	50.000	51.2	102	77 - 120	
4-Bromofluorobenzene	50.000	47.0	93.9	80 - 120	
1,2-Dichlorobenzene-d4	50.000	49.2	98.4	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121922.D

Date : 12-JUL-2019 21:03

Client ID:

Sample Info: 19C0163-08

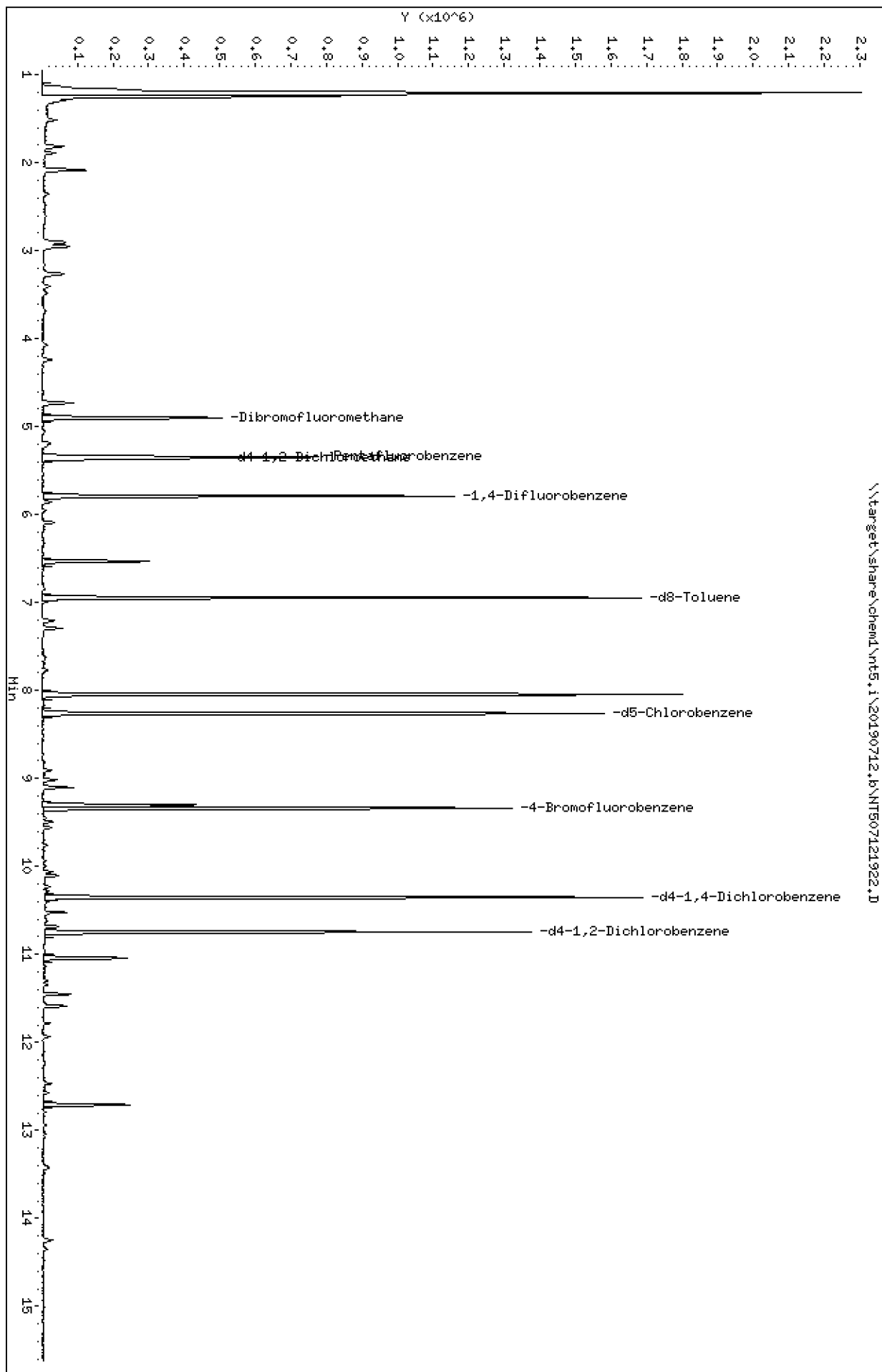
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 21:03

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-08

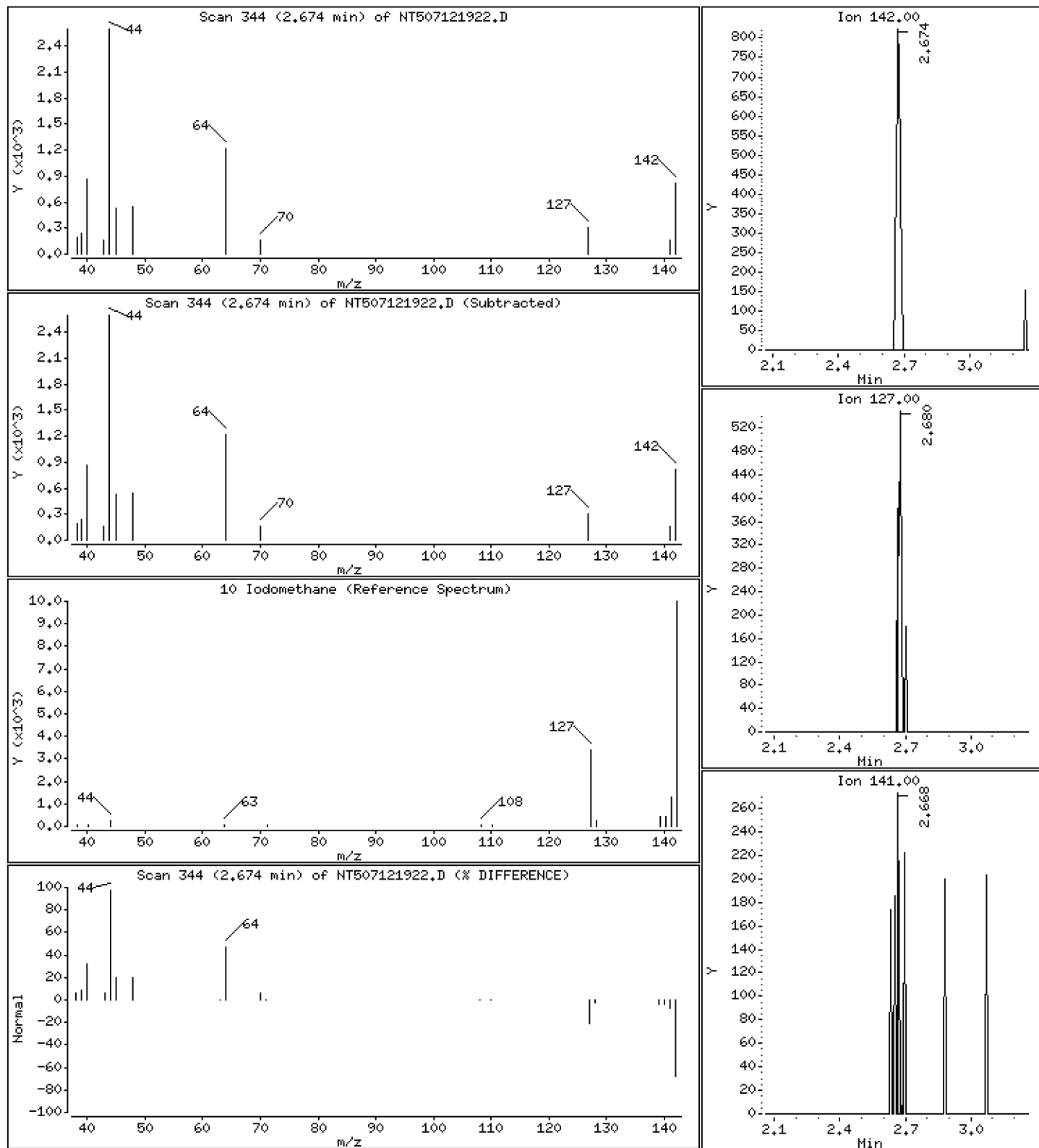
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 0.3154 ug/Kg



Date : 12-JUL-2019 21:03

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-08

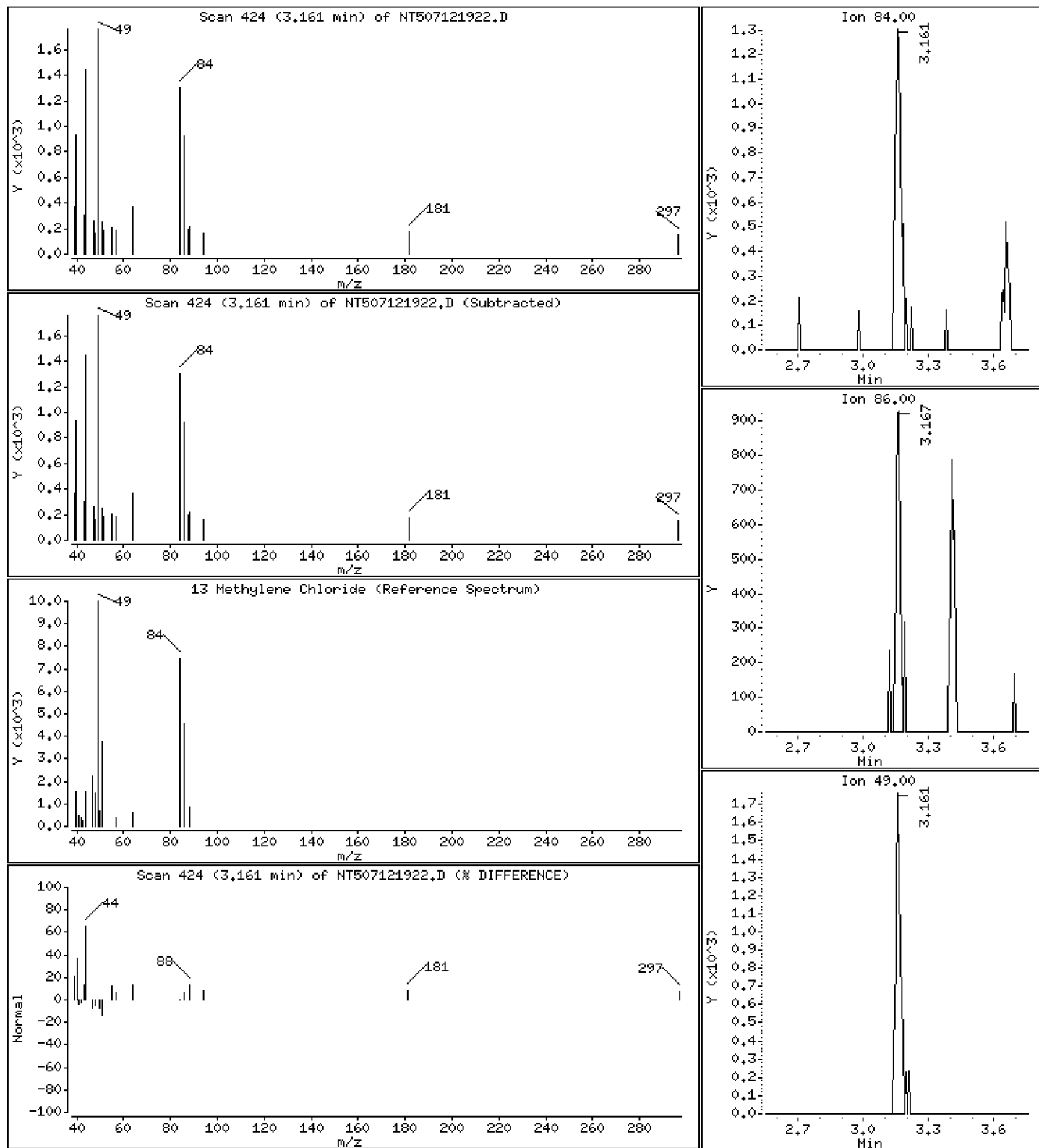
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.8651 ug/Kg



Date : 12-JUL-2019 21:03

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-08

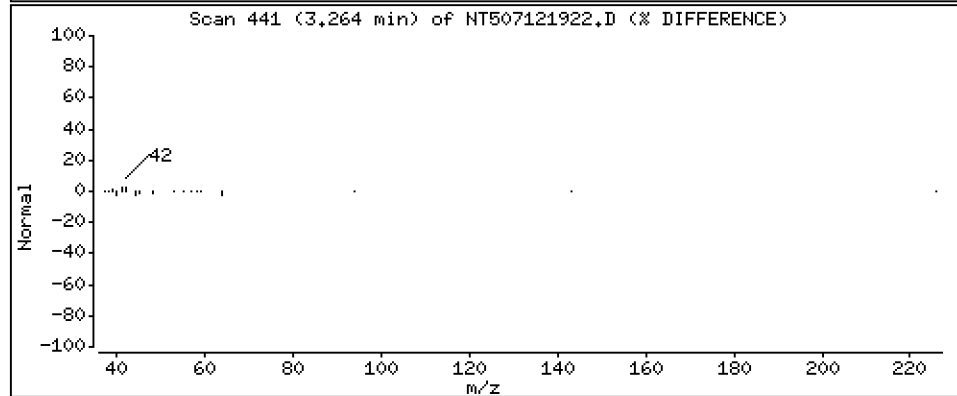
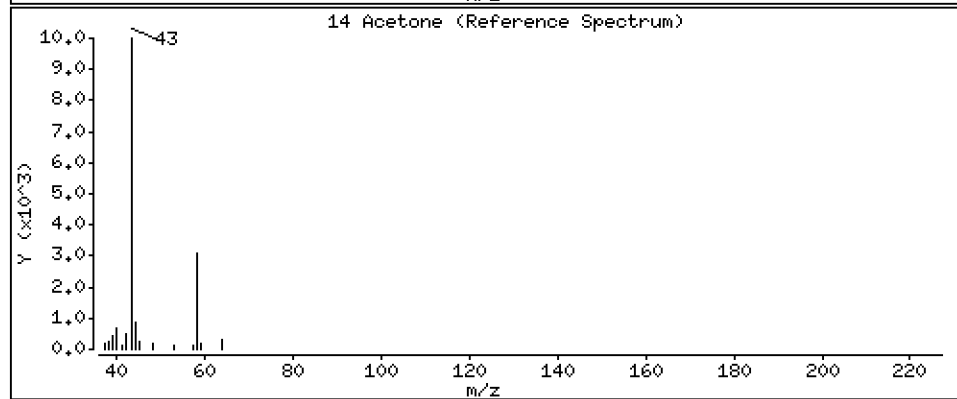
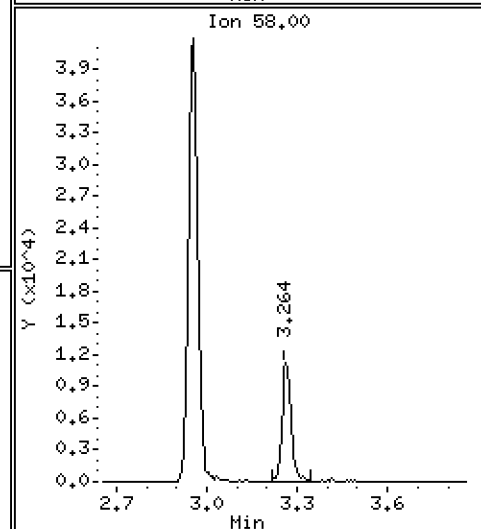
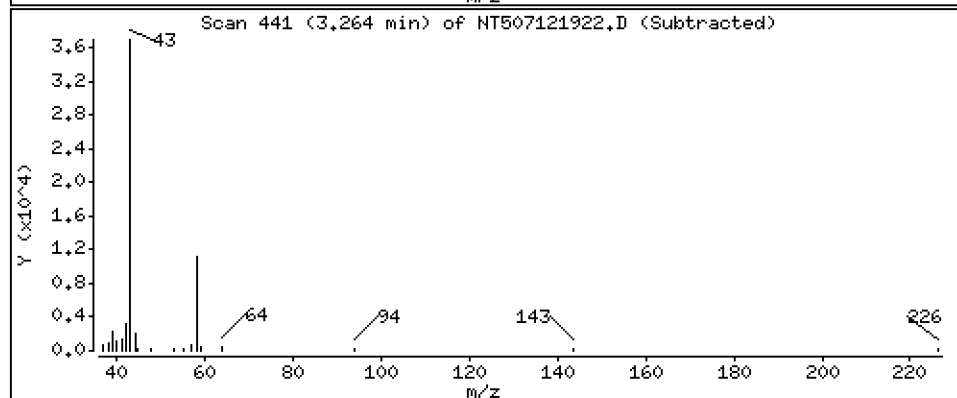
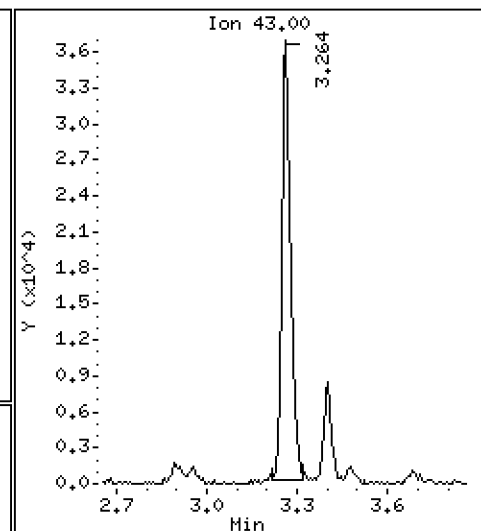
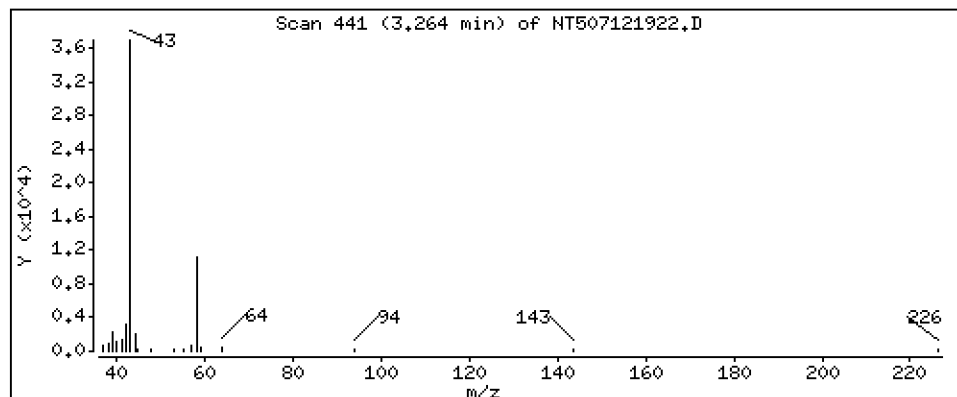
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 146.75 ug/Kg



Date : 12-JUL-2019 21:03

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-08

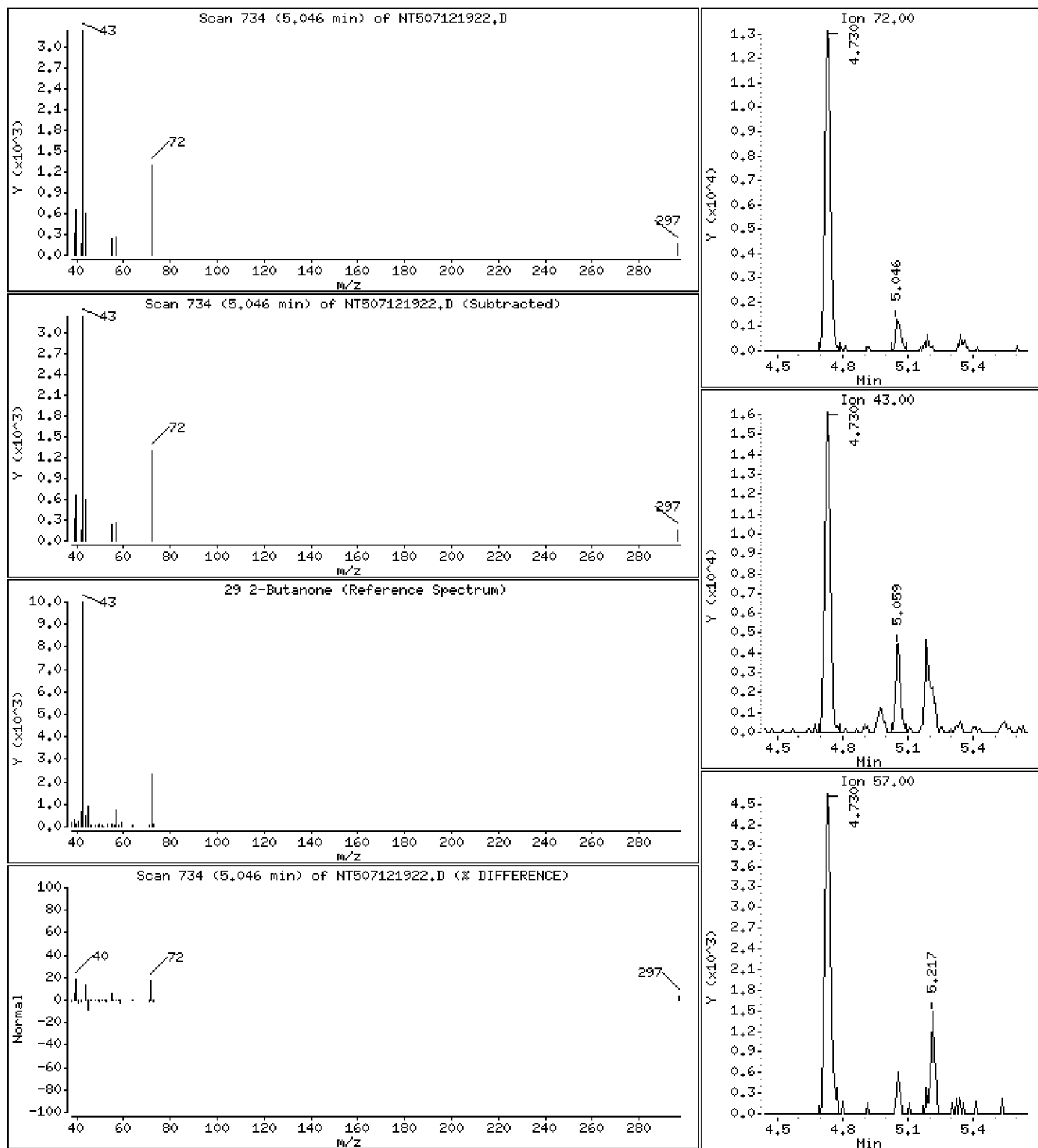
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 9.595 ug/Kg



Date : 12-JUL-2019 21:03

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-08

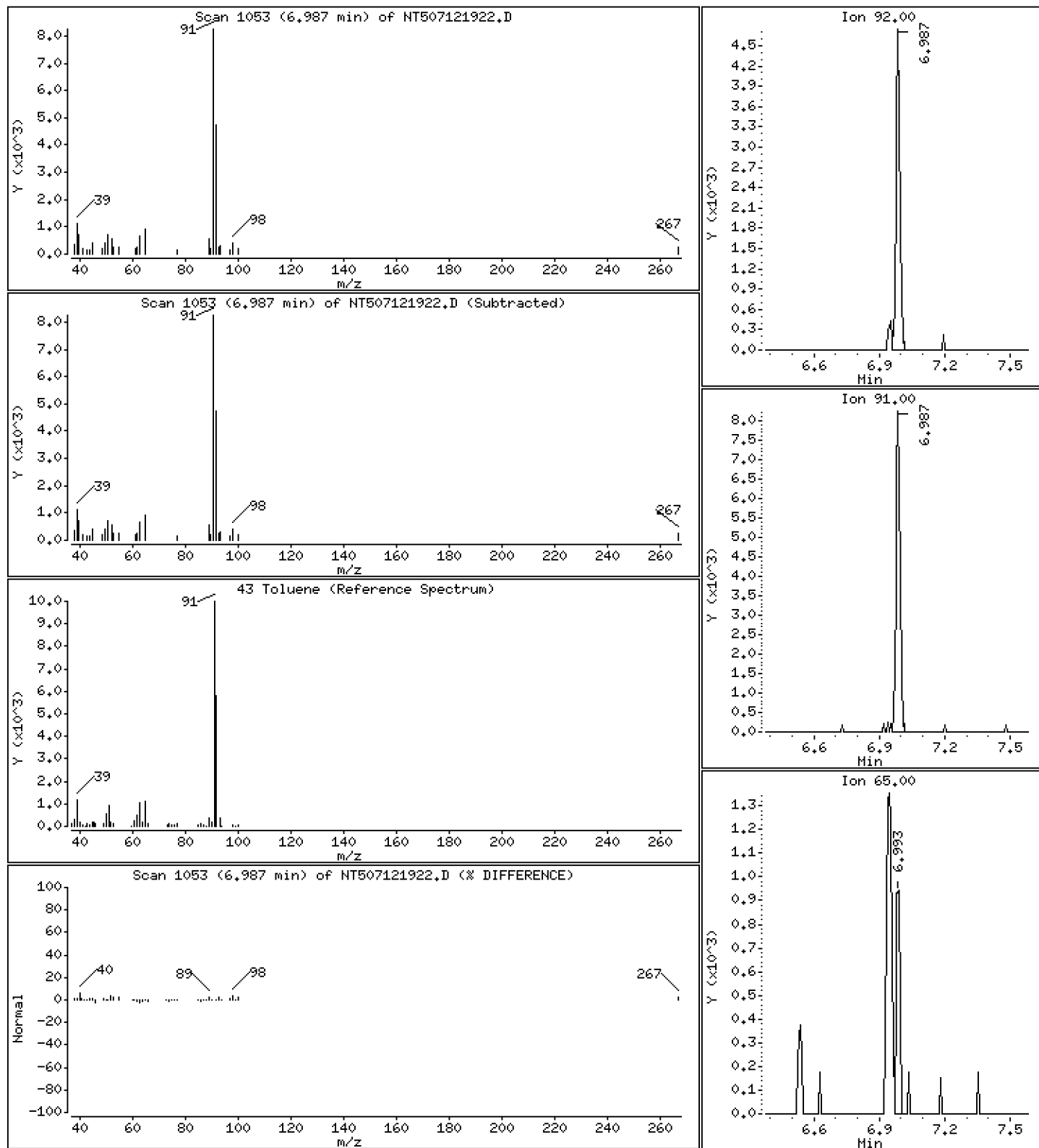
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.7056 ug/Kg



Date : 12-JUL-2019 21:03

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-08

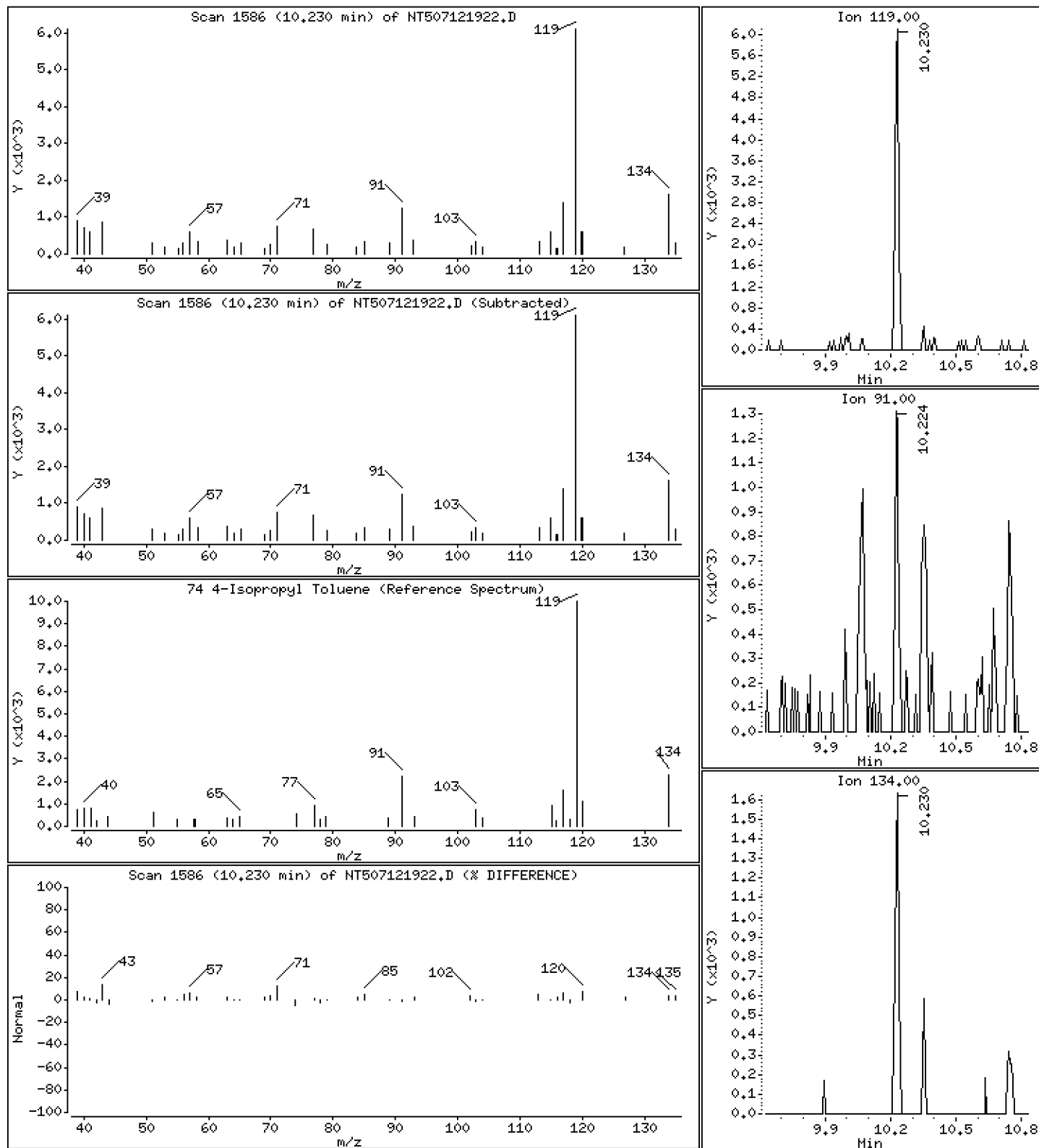
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 0.5943 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121922.D
 Lab Smp Id: 19G0163-08
 Inj Date : 12-JUL-2019 21:03
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-08
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====			====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85			Compound	Not	Detected.			
2 Chloromethane	50			Compound	Not	Detected.			
3 Vinyl Chloride	62			Compound	Not	Detected.			
4 Bromomethane	94			Compound	Not	Detected.			
5 Chloroethane	64			Compound	Not	Detected.			
6 Trichlorofluoromethane	101			Compound	Not	Detected.			
7 1,1-Dichloroethene	96			Compound	Not	Detected.			
8 Carbon Disulfide	76			Compound	Not	Detected.			
9 112Trichloro122Trifluoroethane	101			Compound	Not	Detected.			
10 Iodomethane	142			2.673	2.667	(0.500)	1278	0.31541	0.3154
11 Bromoethane	108			Compound	Not	Detected.			
12 Acrolein	56			Compound	Not	Detected.			
13 Methylene Chloride	84			3.160	3.154	(0.591)	2668	0.86505	0.8651
14 Acetone	43			3.263	3.257	(0.611)	81489	146.752	146.75
15 Trans-1,2-Dichloroethene	96			Compound	Not	Detected.			
16 Methyl tert butyl ether	73			Compound	Not	Detected.			
173 n-Hexane	41			Compound	Not	Detected.			
17 1,1-Dichloroethane	63			Compound	Not	Detected.			
18 Acrylonitrile	53			Compound	Not	Detected.			
19 Vinyl Acetate	43			Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96			Compound	Not	Detected.			
22 2,2-Dichloropropane	77			Compound	Not	Detected.			
23 Bromochloromethane	128			Compound	Not	Detected.			
24 Chloroform	83			Compound	Not	Detected.			
25 Carbon Tetrachloride	117			Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111			4.900	4.894	(0.917)	254699	61.8065	61.807 (R)
26 1,1,1-Trichloroethane	97			Compound	Not	Detected.			
28 1,1-Dichloropropene	75			Compound	Not	Detected.			
29 2-Butanone	72			5.046	5.046	(0.944)	2504	9.59515	9.595
30 Benzene	78			Compound	Not	Detected.			
* 31 Pentafluorobenzene	168			5.344	5.338	(1.000)	376819	50.0000	
\$ 32 d4-1,2-Dichloroethane	65			5.362	5.350	(1.003)	231673	67.2054	67.205 (R)
33 1,2-Dichloroethane	62			Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	765748	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	917722	51.1774	51.177 (R)
43 Toluene	92	6.987	6.981	(1.207)	6539	0.70563	0.7056
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	770260	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	309677	46.9623	46.962 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	8903	0.59433	0.5943
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	369041	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	316521	49.1785	49.179 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121922.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-08
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	376819	-6.71
35 1,4-Difluorobenze	717664	358832	1435328	765748	6.70
52 d5-Chlorobenzene	696563	348282	1393126	770260	10.58
76 d4-1,4-Dichlorobe	380778	190389	761556	369041	-3.08

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-08
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	61.807	123.61	
\$ 32 d4-1,2-Dichloroeth	50.000	67.205	134.41	
\$ 42 d8-Toluene	50.000	51.177	102.35	
\$ 62 4-Bromofluorobenze	50.000	46.962	93.92	
\$ 79 d4-1,2-Dichloroben	50.000	49.179	98.36	

REVIEW SUMMARY FOR FILE - NT507121922.D

Lab ID: 19G0163-08
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 21:03

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 C SDG: 19G0163
Sampled: 07/11/19 10:25 Prepared: 07/12/19 14:22 File ID: NT507121923.D
% Solids: 49.21 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 21:25
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 2.52 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	4.03	U	1.06	4.03
75-01-4	Vinyl Chloride	1	4.03	U	0.95	4.03
74-83-9	Bromomethane	1	4.03	U	0.75	4.03
75-00-3	Chloroethane	1	4.03	U	1.86	4.03
75-69-4	Trichlorofluoromethane	1	4.03	U	1.07	4.03
107-02-8	Acrolein	1	20.2	U	15.4	20.2
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	8.06	U	1.16	8.06
67-64-1	Acetone	1	740		1.94	20.2
75-35-4	1,1-Dichloroethene	1	4.03	U	1.35	4.03
74-96-4	Bromoethane	1	8.06	U	1.77	8.06
74-88-4	Iodomethane	1	1.96	J	0.87	4.03
75-09-2	Methylene Chloride	1	3.10	J	2.56	8.06
107-13-1	Acrylonitrile	1	20.2	U	4.15	20.2
75-15-0	Carbon Disulfide	1	13.2		2.25	4.03
156-60-5	trans-1,2-Dichloroethene	1	4.03	U	1.07	4.03
108-05-4	Vinyl Acetate	1	20.2	U	1.54	20.2
75-34-3	1,1-Dichloroethane	1	4.03	U	0.82	4.03
78-93-3	2-Butanone	1	47.6		2.07	20.2
594-20-7	2,2-Dichloropropane	1	4.03	U	1.18	4.03
156-59-2	cis-1,2-Dichloroethene	1	4.03	U	0.97	4.03
67-66-3	Chloroform	1	4.03	U	0.94	4.03
74-97-5	Bromochloromethane	1	4.03	U	1.30	4.03
71-55-6	1,1,1-Trichloroethane	1	4.03	U	0.91	4.03
563-58-6	1,1-Dichloropropene	1	4.03	U	1.26	4.03
56-23-5	Carbon tetrachloride	1	4.03	U	0.86	4.03
107-06-2	1,2-Dichloroethane	1	4.03	U	0.77	4.03
71-43-2	Benzene	1	4.03	U	1.19	4.03
79-01-6	Trichloroethene	1	4.03	U	0.85	4.03
78-87-5	1,2-Dichloropropane	1	4.03	U	0.65	4.03
75-27-4	Bromodichloromethane	1	4.03	U	1.02	4.03
74-95-3	Dibromomethane	1	4.03	U	0.59	4.03
110-75-8	2-Chloroethyl vinyl ether	1	20.2	U	1.11	20.2
108-10-1	4-Methyl-2-Pentanone	1	20.2	U	1.69	20.2
10061-01-5	cis-1,3-Dichloropropene	1	4.03	U	0.91	4.03



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-09 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 10:25</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121923.D</u>
% Solids: <u>49.21</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 21:25</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>2.52 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	3.38	J	0.61	4.03
10061-02-6	trans-1,3-Dichloropropene	1	4.03	U	0.87	4.03
591-78-6	2-Hexanone	1	20.2	U	1.77	20.2
79-00-5	1,1,2-Trichloroethane	1	4.03	U	1.15	4.03
142-28-9	1,3-Dichloropropane	1	4.03	U	0.84	4.03
127-18-4	Tetrachloroethene	1	4.03	U	1.04	4.03
124-48-1	Dibromochloromethane	1	4.03	U	1.07	4.03
106-93-4	1,2-Dibromoethane	1	4.03	U	0.71	4.03
108-90-7	Chlorobenzene	1	4.03	U	0.88	4.03
100-41-4	Ethylbenzene	1	4.03	U	0.81	4.03
630-20-6	1,1,1,2-Tetrachloroethane	1	4.03	U	0.94	4.03
179601-23-1	m,p-Xylene	1	8.06	U	1.58	8.06
95-47-6	o-Xylene	1	4.03	U	0.90	4.03
1330-20-7	Xylenes, total	1	8.06	U	2.48	8.06
100-42-5	Styrene	1	4.03	U	0.56	4.03
75-25-2	Bromoform	1	4.03	U	1.20	4.03
79-34-5	1,1,1,2-Tetrachloroethane	1	4.03	U	1.02	4.03
96-18-4	1,2,3-Trichloropropane	1	8.06	U	2.08	8.06
110-57-6	trans-1,4-Dichloro 2-Butene	1	20.2	U	1.76	20.2
103-65-1	n-Propylbenzene	1	4.03	U	1.10	4.03
108-86-1	Bromobenzene	1	4.03	U	0.62	4.03
98-82-8	Isopropyl Benzene	1	4.03	U	0.94	4.03
95-49-8	2-Chlorotoluene	1	4.03	U	1.21	4.03
106-43-4	4-Chlorotoluene	1	4.03	U	1.12	4.03
98-06-6	t-Butylbenzene	1	4.03	U	1.23	4.03
108-67-8	1,3,5-Trimethylbenzene	1	4.03	U	1.02	4.03
95-63-6	1,2,4-Trimethylbenzene	1	4.03	U	0.93	4.03
135-98-8	s-Butylbenzene	1	4.03	U	0.97	4.03
99-87-6	4-Isopropyl Toluene	1	2.00	J	0.95	4.03
541-73-1	1,3-Dichlorobenzene	1	4.03	U	0.92	4.03
106-46-7	1,4-Dichlorobenzene	1	4.03	U	0.94	4.03
104-51-8	n-Butylbenzene	1	4.03	U	1.06	4.03
95-50-1	1,2-Dichlorobenzene	1	4.03	U	1.18	4.03
96-12-8	1,2-Dibromo-3-chloropropane	1	20.2	U	2.36	20.2



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 C SDG: 19G0163

Sampled: 07/11/19 10:25 Prepared: 07/12/19 14:22 File ID: NT507121923.D

% Solids: 49.21 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 21:25

Batch: BHG0316 Sequence: SHG0192 Initial/Final: 2.52 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	20.2	U	1.34	20.2
87-68-3	Hexachloro-1,3-Butadiene	1	20.2	U	1.65	20.2
91-20-3	Naphthalene	1	20.2	U	1.73	20.2
87-61-6	1,2,3-Trichlorobenzene	1	20.2	U	1.23	20.2
75-71-8	Dichlorodifluoromethane	1	4.03	U	0.83	4.03
1634-04-4	Methyl tert-butyl Ether	1	4.03	U	0.93	4.03
107-87-9	2-Pentanone	1	20.2	U	20.2	20.2

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	67.4	135	80 - 149	
Toluene-d8	50.000	51.1	102	77 - 120	
4-Bromofluorobenzene	50.000	45.1	90.1	80 - 120	
1,2-Dichlorobenzene-d4	50.000	47.8	95.5	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121923.D

Date : 12-JUL-2019 21:25

Client ID:

Sample Info: 19C0163-09

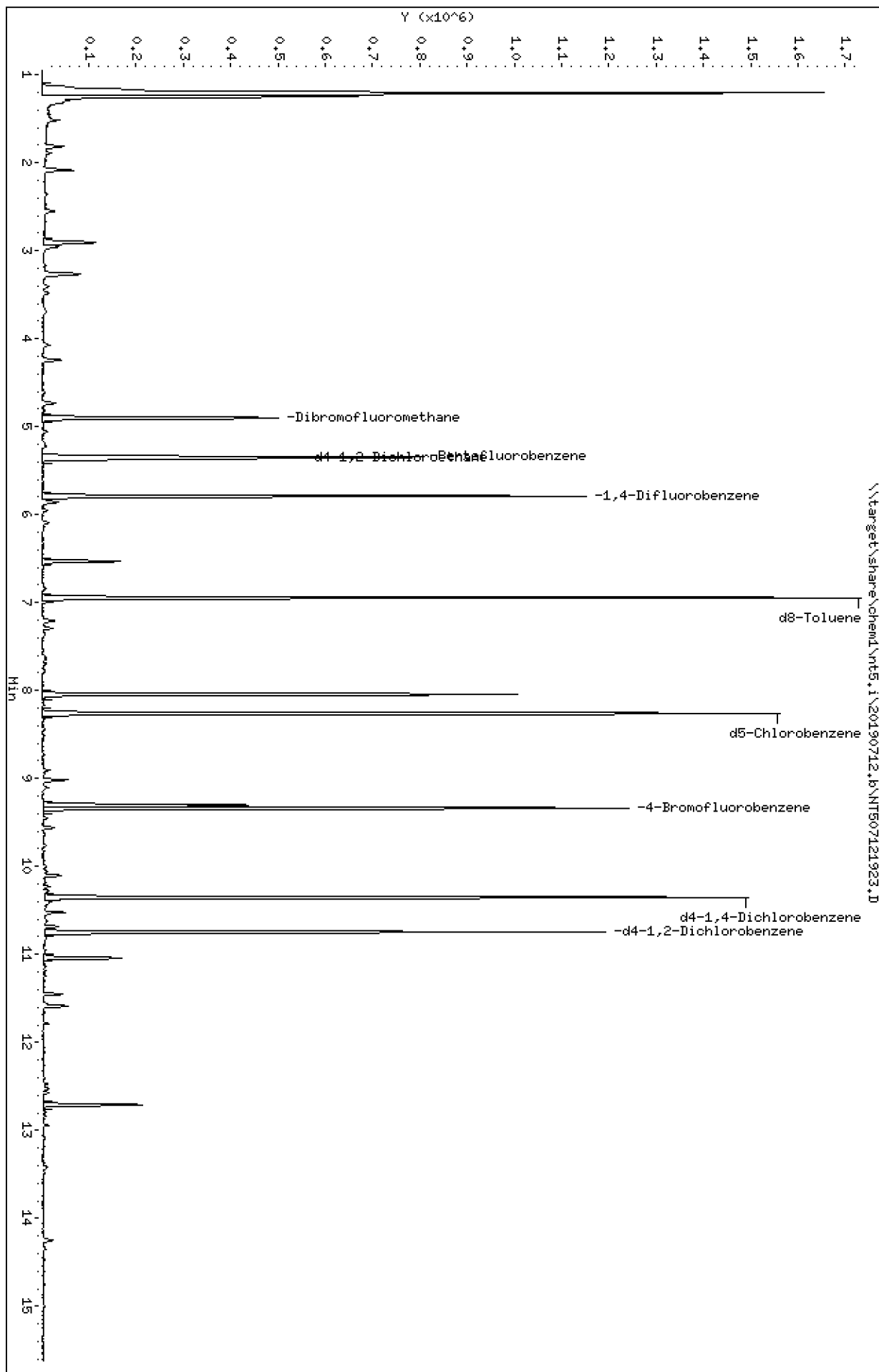
Page 1

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 21:25

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-09

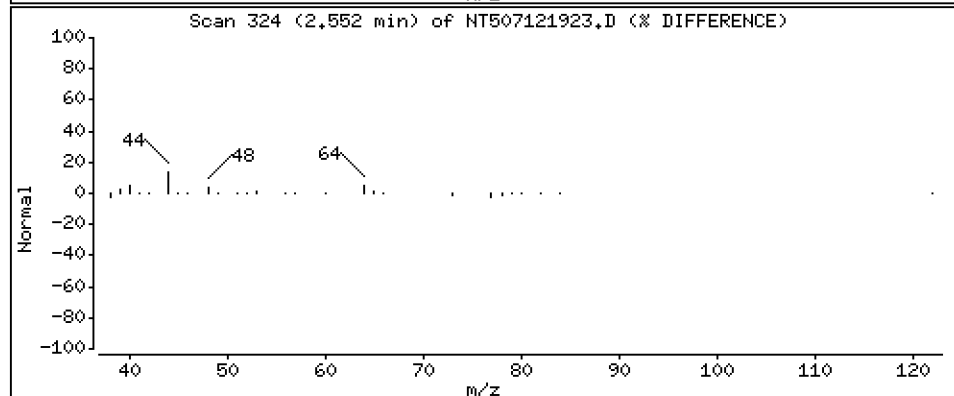
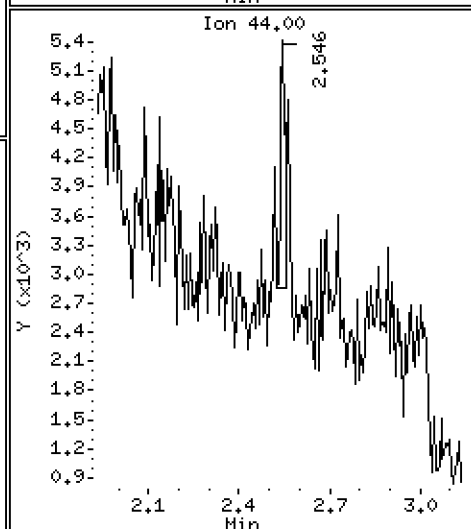
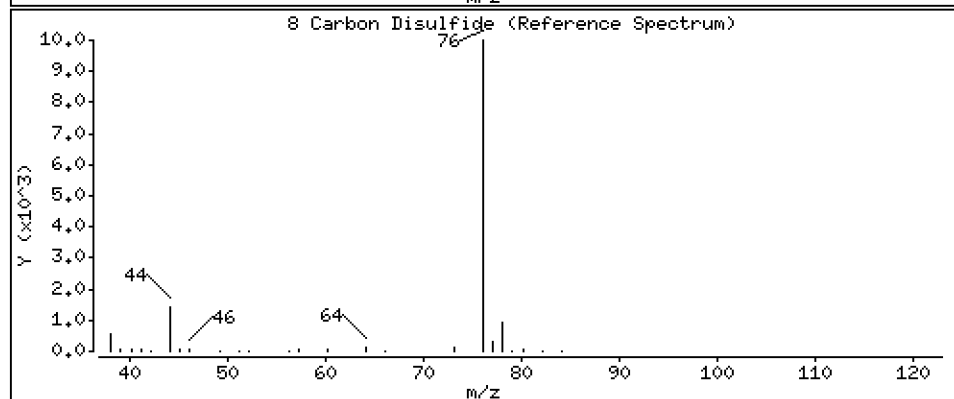
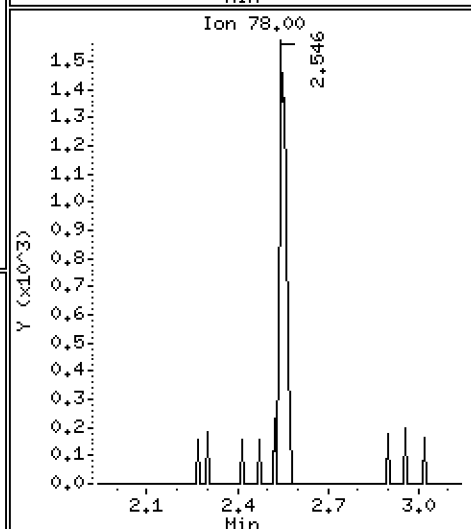
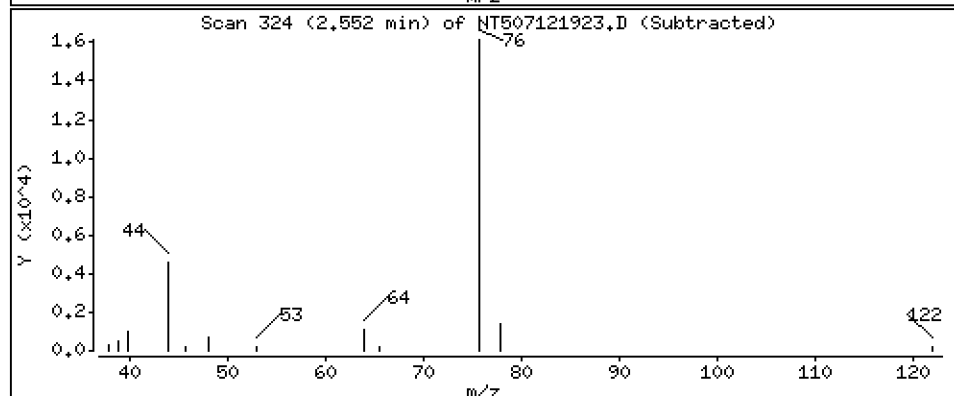
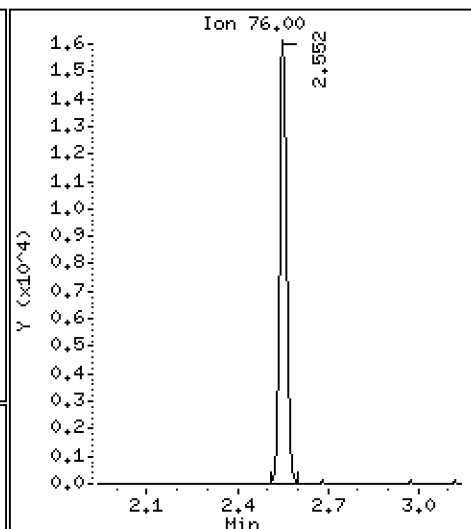
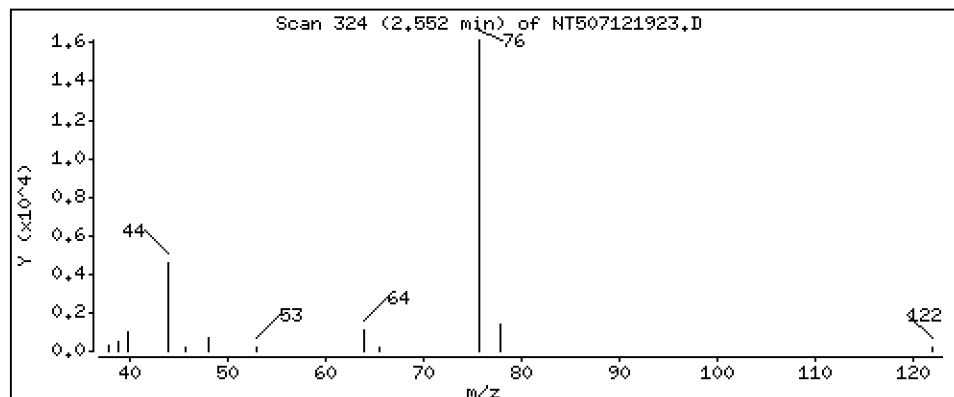
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 3.282 ug/Kg



Date : 12-JUL-2019 21:25

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-09

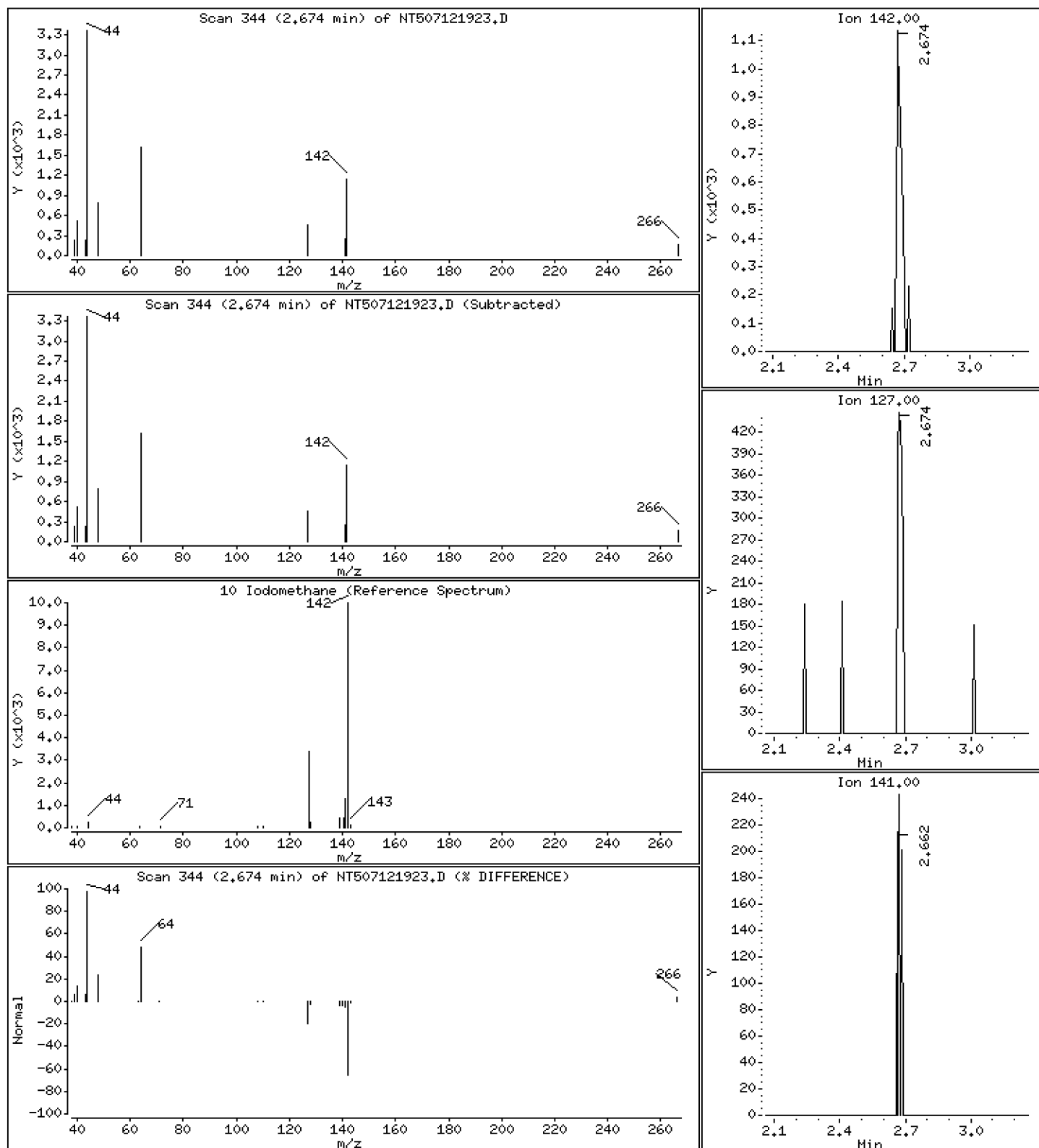
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 0.4860 ug/Kg



Date : 12-JUL-2019 21:25

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-09

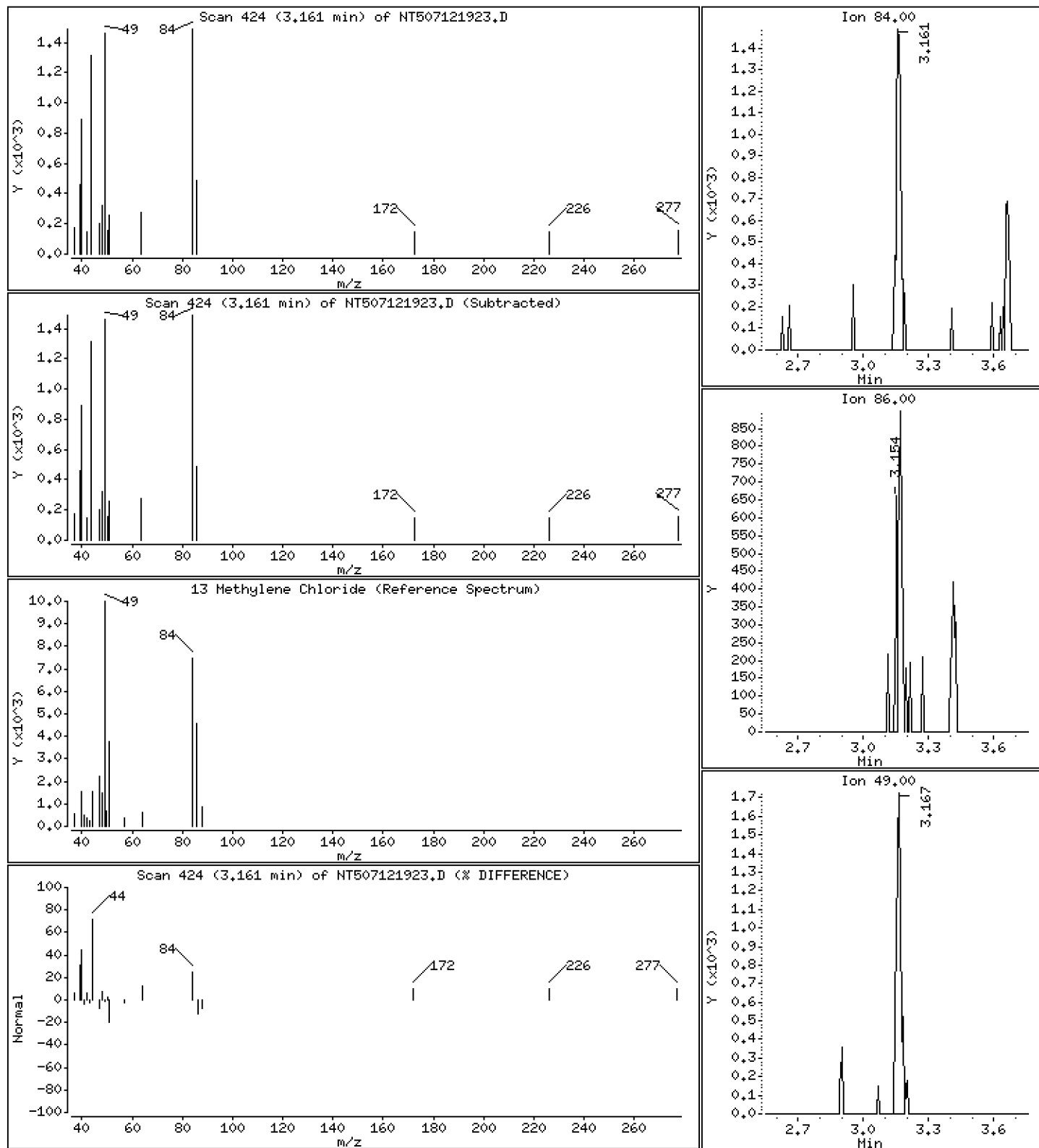
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.7694 ug/Kg



Date : 12-JUL-2019 21:25

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-09

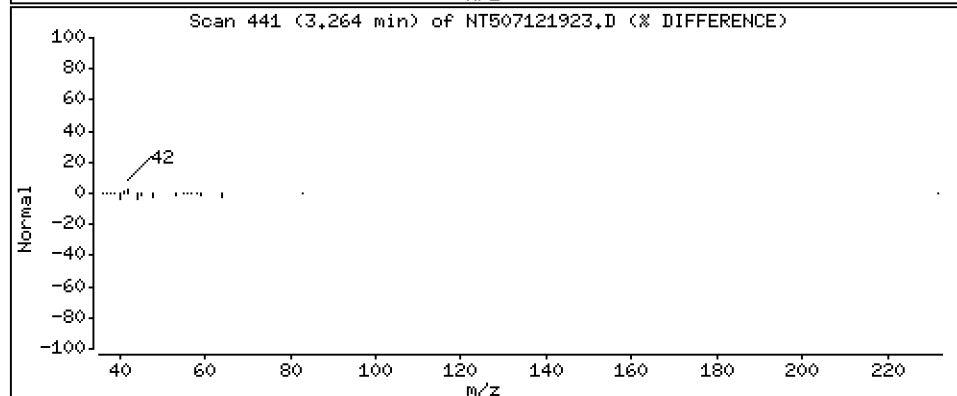
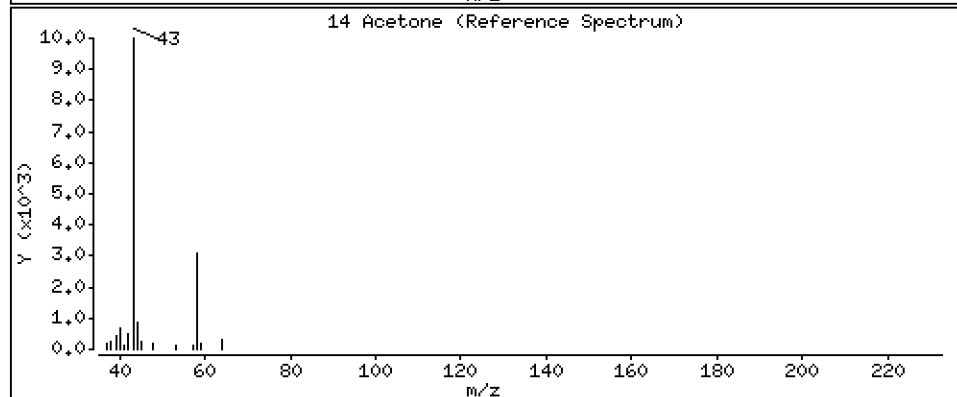
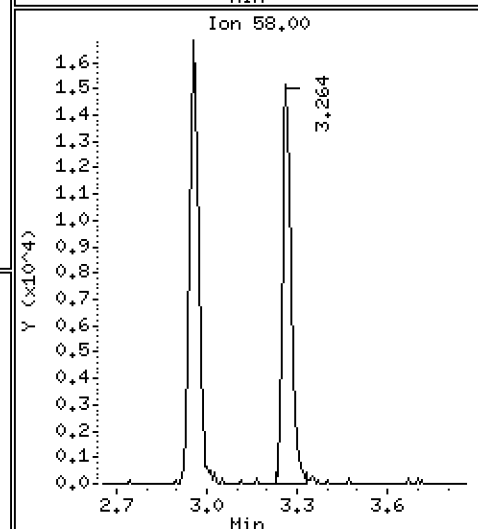
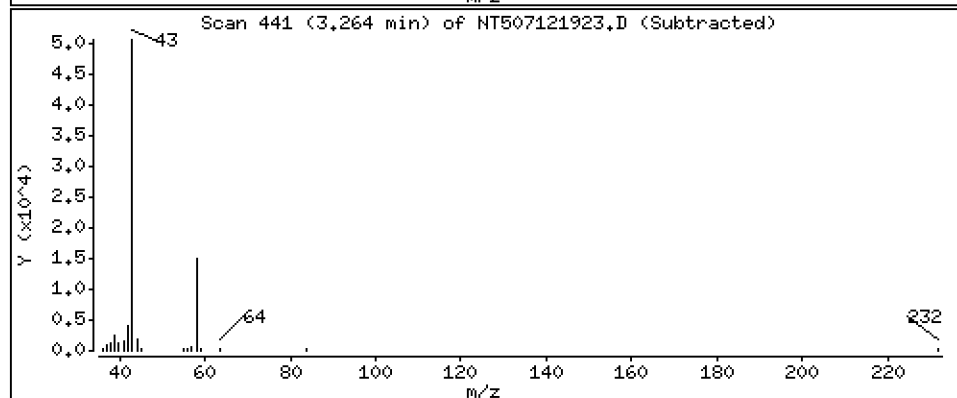
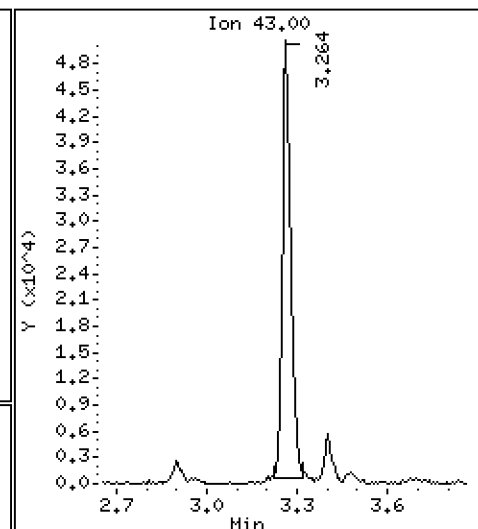
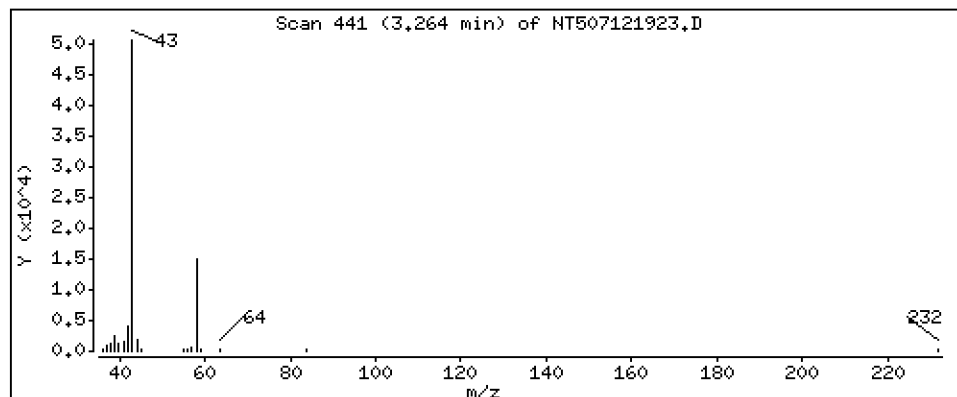
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 183.48 ug/Kg



Date : 12-JUL-2019 21:25

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-09

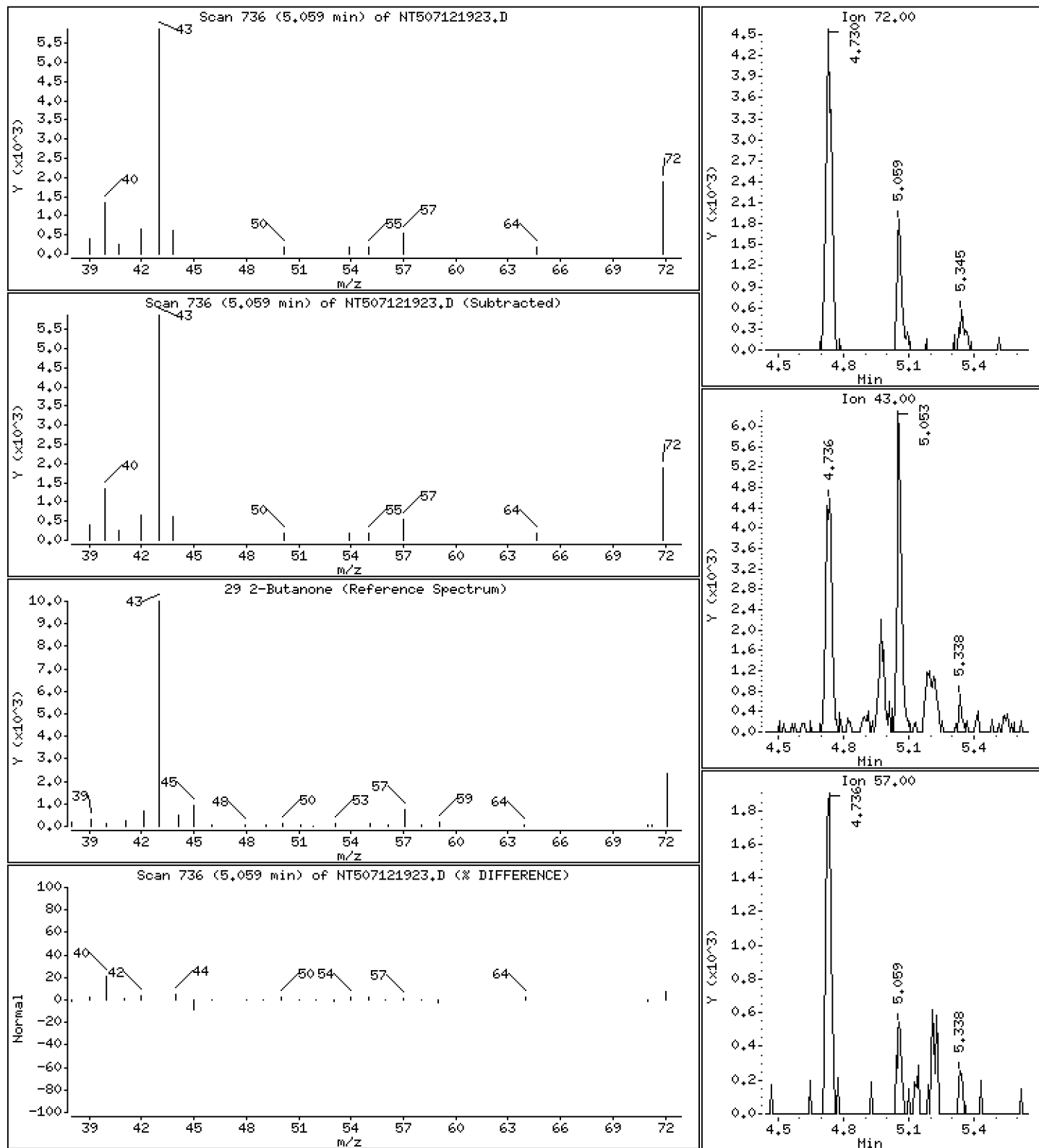
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 11,814 ug/Kg



Date : 12-JUL-2019 21:25

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-09

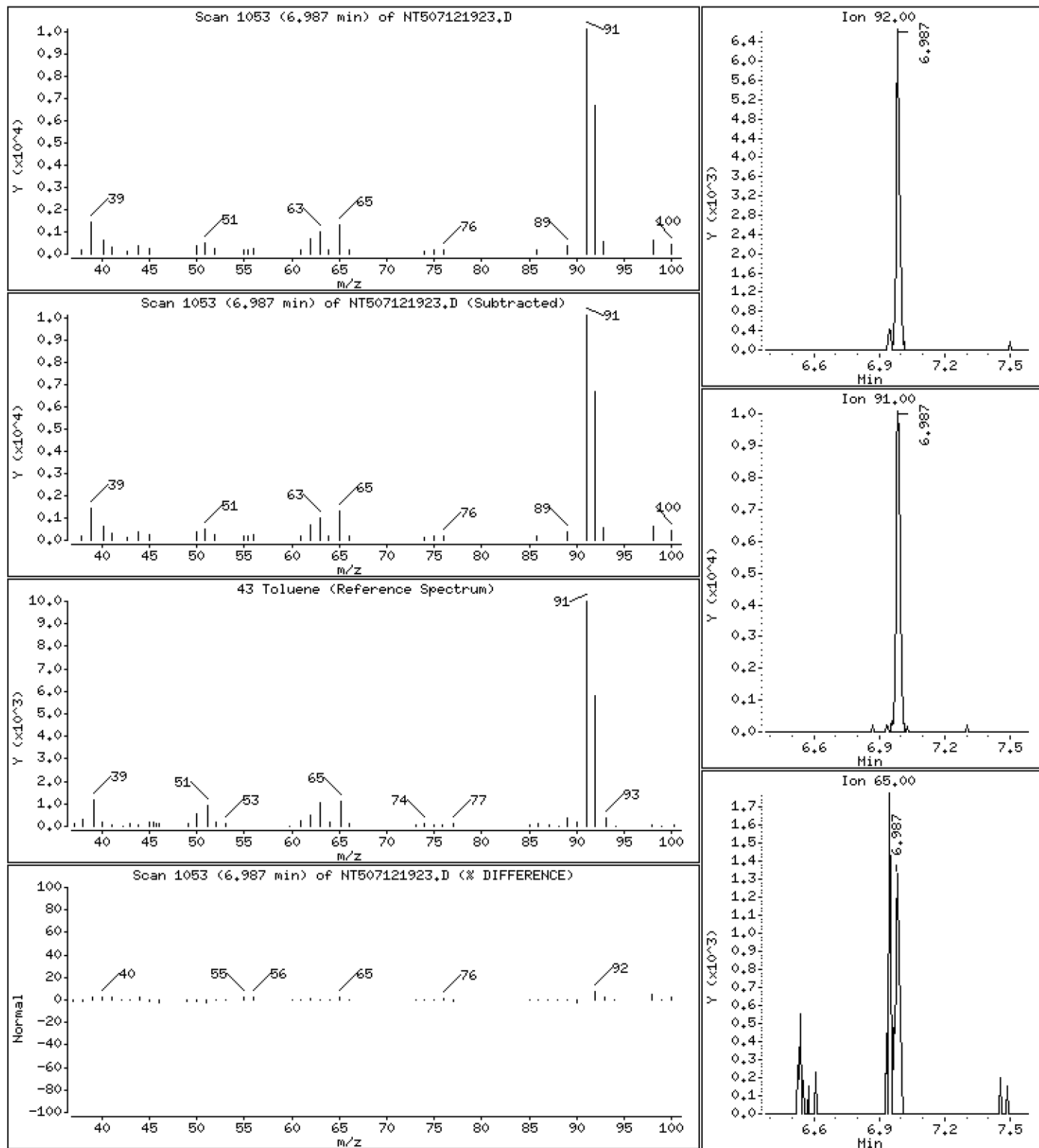
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.8386 ug/Kg



Date : 12-JUL-2019 21:25

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-09

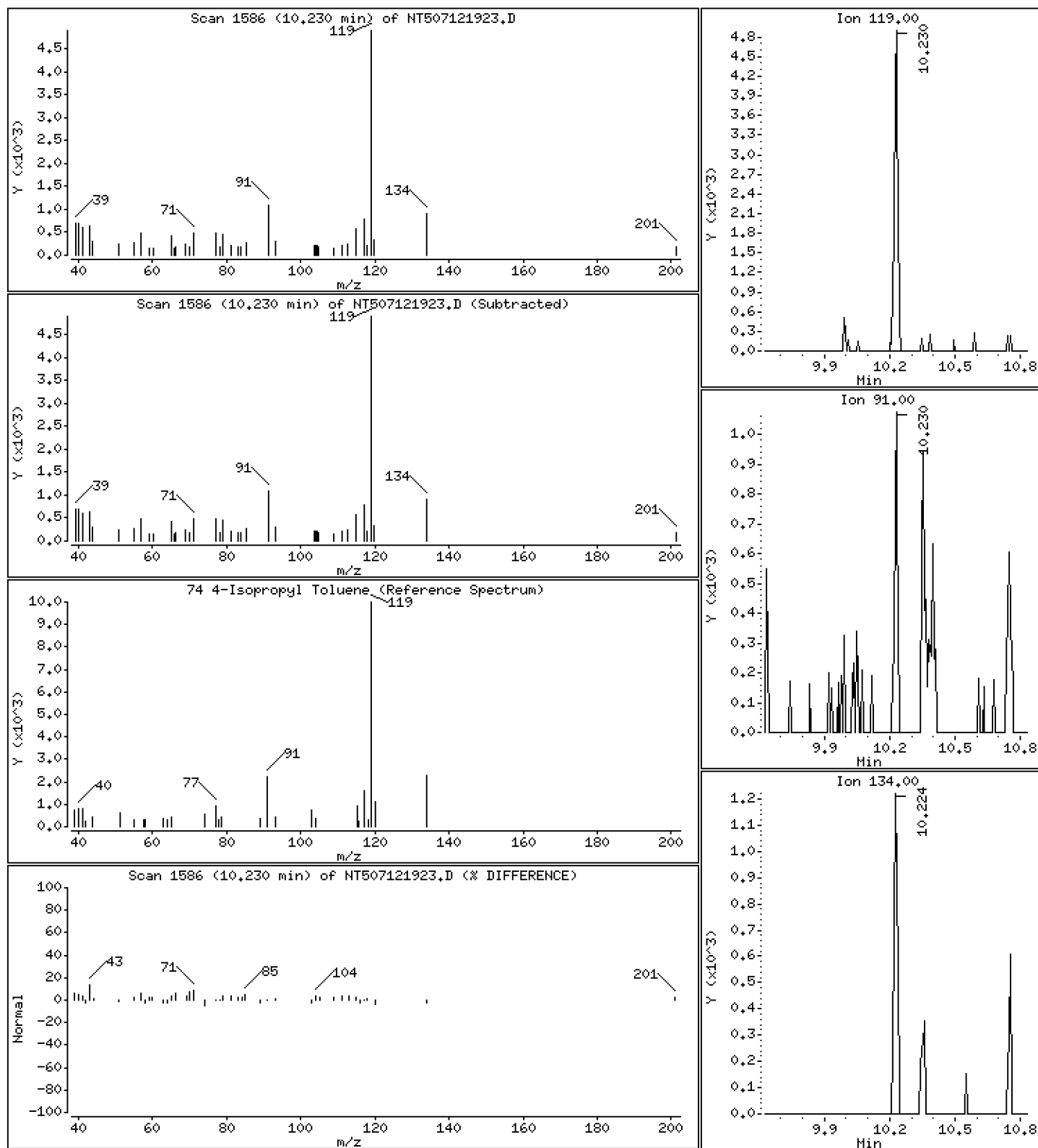
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 0.4967 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121923.D
 Lab Smp Id: 19G0163-09
 Inj Date : 12-JUL-2019 21:25
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-09
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound	Not	Detected.			
2 Chloromethane	50		Compound	Not	Detected.			
3 Vinyl Chloride	62		Compound	Not	Detected.			
4 Bromomethane	94		Compound	Not	Detected.			
5 Chloroethane	64		Compound	Not	Detected.			
6 Trichlorofluoromethane	101		Compound	Not	Detected.			
7 1,1-Dichloroethene	96		Compound	Not	Detected.			
8 Carbon Disulfide	76		2.552	2.540	(0.478)	29529	3.28244	3.282
9 112Trichloro122Trifluoroethane	101		Compound	Not	Detected.			
10 Iodomethane	142		2.673	2.667	(0.500)	2044	0.48600	0.4860
11 Bromoethane	108		Compound	Not	Detected.			
12 Acrolein	56		Compound	Not	Detected.			
13 Methylene Chloride	84		3.160	3.154	(0.591)	2463	0.76938	0.7694
14 Acetone	43		3.263	3.257	(0.611)	105750	183.478	183.48
15 Trans-1,2-Dichloroethene	96		Compound	Not	Detected.			
16 Methyl tert butyl ether	73		Compound	Not	Detected.			
173 n-Hexane	41		Compound	Not	Detected.			
17 1,1-Dichloroethane	63		Compound	Not	Detected.			
18 Acrylonitrile	53		Compound	Not	Detected.			
19 Vinyl Acetate	43		Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96		Compound	Not	Detected.			
22 2,2-Dichloropropane	77		Compound	Not	Detected.			
23 Bromochloromethane	128		Compound	Not	Detected.			
24 Chloroform	83		Compound	Not	Detected.			
25 Carbon Tetrachloride	117		Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.917)	261430	61.1195	61.119(R)
26 1,1,1-Trichloroethane	97		Compound	Not	Detected.			
28 1,1-Dichloropropene	75		Compound	Not	Detected.			
29 2-Butanone	72		5.058	5.046	(0.947)	3200	11.8137	11.814
30 Benzene	78		Compound	Not	Detected.			
* 31 Pentafluorobenzene	168		5.344	5.338	(1.000)	391125	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.350	(1.003)	241293	67.4359	67.436(R)
33 1,2-Dichloroethane	62		Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	780807	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	934820	51.1255	51.125(R)
43 Toluene	92	6.987	6.981	(1.207)	7924	0.83859	0.8386
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	756553	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	291821	45.0562	45.056(R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	6689	0.49665	0.4967
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	331798	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	276402	47.7656	47.766(R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121923.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-09
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	391125	-3.17
35 1,4-Difluorobenze	717664	358832	1435328	780807	8.80
52 d5-Chlorobenzene	696563	348282	1393126	756553	8.61
76 d4-1,4-Dichlorobe	380778	190389	761556	331798	-12.86

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-09
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	61.119	122.24	
\$ 32 d4-1,2-Dichloroeth	50.000	67.436	134.87	
\$ 42 d8-Toluene	50.000	51.125	102.25	
\$ 62 4-Bromofluorobenze	50.000	45.056	90.11	
\$ 79 d4-1,2-Dichloroben	50.000	47.766	95.53	

REVIEW SUMMARY FOR FILE - NT507121923.D

Lab ID: 19G0163-09
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 21:25

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT CCV RRT DELTA COMPOUND

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-10 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 10:10</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121924.D</u>
% Solids: <u>66.29</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 21:47</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>3.55 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	2.12	U	0.56	2.12
75-01-4	Vinyl Chloride	1	2.12	U	0.50	2.12
74-83-9	Bromomethane	1	2.12	U	0.40	2.12
75-00-3	Chloroethane	1	2.12	U	0.98	2.12
75-69-4	Trichlorofluoromethane	1	2.12	U	0.57	2.12
107-02-8	Acrolein	1	10.6	U	8.10	10.6
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	4.25	U	0.61	4.25
67-64-1	Acetone	1	426		1.02	10.6
75-35-4	1,1-Dichloroethene	1	2.12	U	0.71	2.12
74-96-4	Bromoethane	1	4.25	U	0.93	4.25
74-88-4	Iodomethane	1	0.72	J	0.46	2.12
75-09-2	Methylene Chloride	1	1.79	J	1.35	4.25
107-13-1	Acrylonitrile	1	10.6	U	2.19	10.6
75-15-0	Carbon Disulfide	1	2.12	U	1.19	2.12
156-60-5	trans-1,2-Dichloroethene	1	2.12	U	0.57	2.12
108-05-4	Vinyl Acetate	1	10.6	U	0.81	10.6
75-34-3	1,1-Dichloroethane	1	2.12	U	0.43	2.12
78-93-3	2-Butanone	1	27.4		1.09	10.6
594-20-7	2,2-Dichloropropane	1	2.12	U	0.62	2.12
156-59-2	cis-1,2-Dichloroethene	1	2.12	U	0.51	2.12
67-66-3	Chloroform	1	2.12	U	0.50	2.12
74-97-5	Bromochloromethane	1	2.12	U	0.69	2.12
71-55-6	1,1,1-Trichloroethane	1	2.12	U	0.48	2.12
563-58-6	1,1-Dichloropropene	1	2.12	U	0.66	2.12
56-23-5	Carbon tetrachloride	1	2.12	U	0.45	2.12
107-06-2	1,2-Dichloroethane	1	2.12	U	0.41	2.12
71-43-2	Benzene	1	2.12	U	0.63	2.12
79-01-6	Trichloroethene	1	2.12	U	0.45	2.12
78-87-5	1,2-Dichloropropane	1	2.12	U	0.34	2.12
75-27-4	Bromodichloromethane	1	2.12	U	0.54	2.12
74-95-3	Dibromomethane	1	2.12	U	0.31	2.12
110-75-8	2-Chloroethyl vinyl ether	1	10.6	U	0.59	10.6
108-10-1	4-Methyl-2-Pentanone	1	10.6	U	0.89	10.6
10061-01-5	cis-1,3-Dichloropropene	1	2.12	U	0.48	2.12



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-10 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 10:10</u>	Prepared: <u>07/12/19 14:22</u>	File ID: <u>NT507121924.D</u>
% Solids: <u>66.29</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/12/19 21:47</u>
Batch: <u>BHG0316</u>	Sequence: <u>SHG0192</u>	Initial/Final: <u>3.55 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	1.25	J	0.32	2.12
10061-02-6	trans-1,3-Dichloropropene	1	2.12	U	0.46	2.12
591-78-6	2-Hexanone	1	10.6	U	0.93	10.6
79-00-5	1,1,2-Trichloroethane	1	2.12	U	0.61	2.12
142-28-9	1,3-Dichloropropane	1	2.12	U	0.44	2.12
127-18-4	Tetrachloroethene	1	2.12	U	0.55	2.12
124-48-1	Dibromochloromethane	1	2.12	U	0.57	2.12
106-93-4	1,2-Dibromoethane	1	2.12	U	0.37	2.12
108-90-7	Chlorobenzene	1	2.12	U	0.47	2.12
100-41-4	Ethylbenzene	1	2.12	U	0.43	2.12
630-20-6	1,1,1,2-Tetrachloroethane	1	2.12	U	0.50	2.12
179601-23-1	m,p-Xylene	1	4.25	U	0.83	4.25
95-47-6	o-Xylene	1	2.12	U	0.48	2.12
1330-20-7	Xylenes, total	1	4.25	U	1.31	4.25
100-42-5	Styrene	1	2.12	U	0.29	2.12
75-25-2	Bromoform	1	2.12	U	0.63	2.12
79-34-5	1,1,1,2-Tetrachloroethane	1	2.12	U	0.54	2.12
96-18-4	1,2,3-Trichloropropane	1	4.25	U	1.10	4.25
110-57-6	trans-1,4-Dichloro 2-Butene	1	10.6	U	0.93	10.6
103-65-1	n-Propylbenzene	1	2.12	U	0.58	2.12
108-86-1	Bromobenzene	1	2.12	U	0.33	2.12
98-82-8	Isopropyl Benzene	1	2.12	U	0.50	2.12
95-49-8	2-Chlorotoluene	1	2.12	U	0.64	2.12
106-43-4	4-Chlorotoluene	1	2.12	U	0.59	2.12
98-06-6	t-Butylbenzene	1	2.12	U	0.65	2.12
108-67-8	1,3,5-Trimethylbenzene	1	2.12	U	0.54	2.12
95-63-6	1,2,4-Trimethylbenzene	1	2.12	U	0.49	2.12
135-98-8	s-Butylbenzene	1	2.12	U	0.51	2.12
99-87-6	4-Isopropyl Toluene	1	2.12	U	0.50	2.12
541-73-1	1,3-Dichlorobenzene	1	2.12	U	0.48	2.12
106-46-7	1,4-Dichlorobenzene	1	2.12	U	0.49	2.12
104-51-8	n-Butylbenzene	1	2.12	U	0.56	2.12
95-50-1	1,2-Dichlorobenzene	1	2.12	U	0.62	2.12
96-12-8	1,2-Dibromo-3-chloropropane	1	10.6	U	1.25	10.6



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-10 C SDG: 19G0163
Sampled: 07/11/19 10:10 Prepared: 07/12/19 14:22 File ID: NT507121924.D
% Solids: 66.29 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/12/19 21:47
Batch: BHG0316 Sequence: SHG0192 Initial/Final: 3.55 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	10.6	U	0.71	10.6
87-68-3	Hexachloro-1,3-Butadiene	1	10.6	U	0.87	10.6
91-20-3	Naphthalene	1	10.6	U	0.91	10.6
87-61-6	1,2,3-Trichlorobenzene	1	10.6	U	0.65	10.6
75-71-8	Dichlorodifluoromethane	1	2.12	U	0.44	2.12
1634-04-4	Methyl tert-butyl Ether	1	2.12	U	0.49	2.12
107-87-9	2-Pentanone	1	10.6	U	10.6	10.6

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	69.5	139	80 - 149	
Toluene-d8	50.000	50.7	101	77 - 120	
4-Bromofluorobenzene	50.000	44.5	89.1	80 - 120	
1,2-Dichlorobenzene-d4	50.000	49.3	98.7	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121924.D

Date : 12-JUL-2019 21:47

Client ID:

Sample Info: 19C0163-10

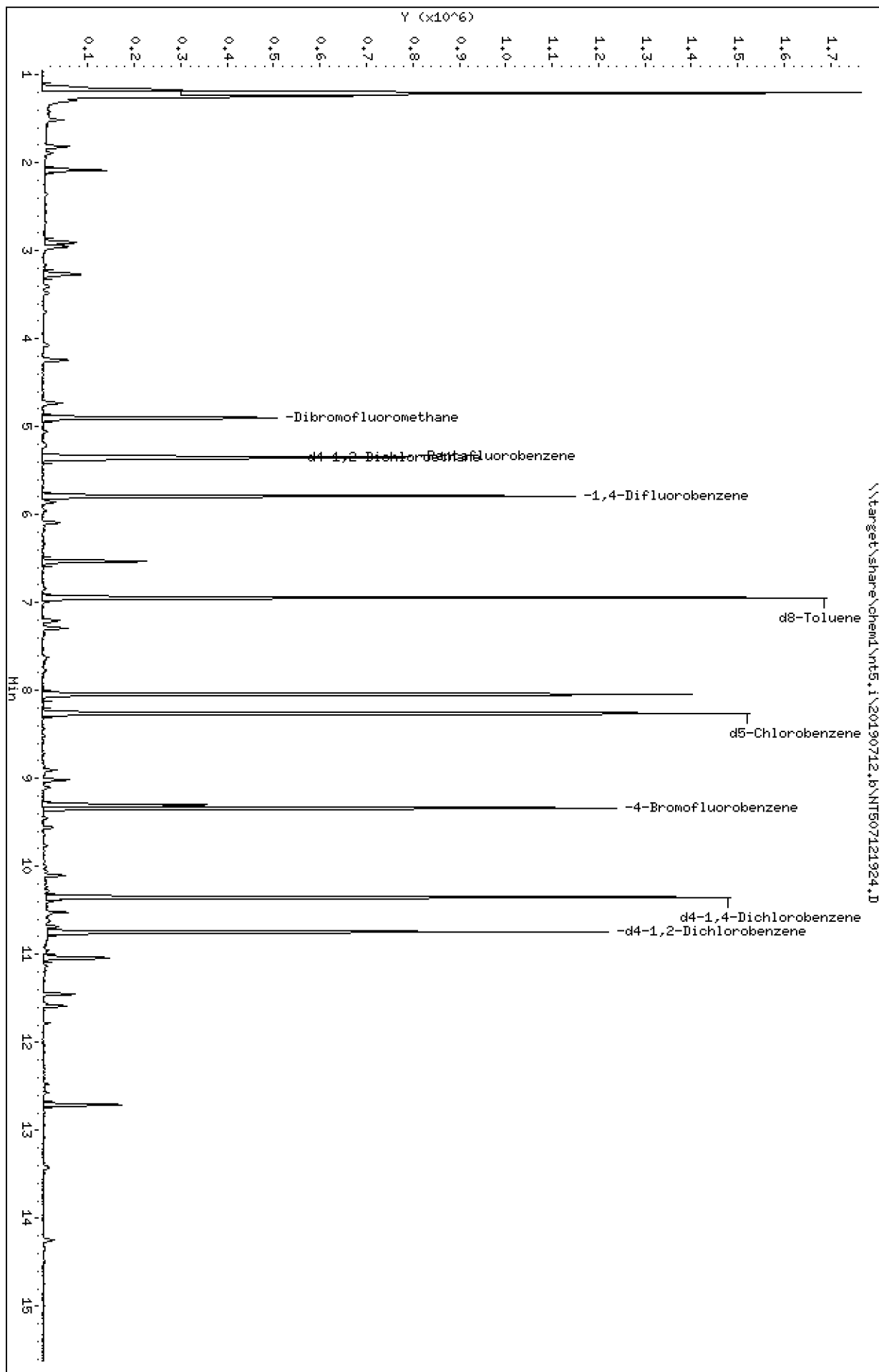
Page 1

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 21:47

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-10

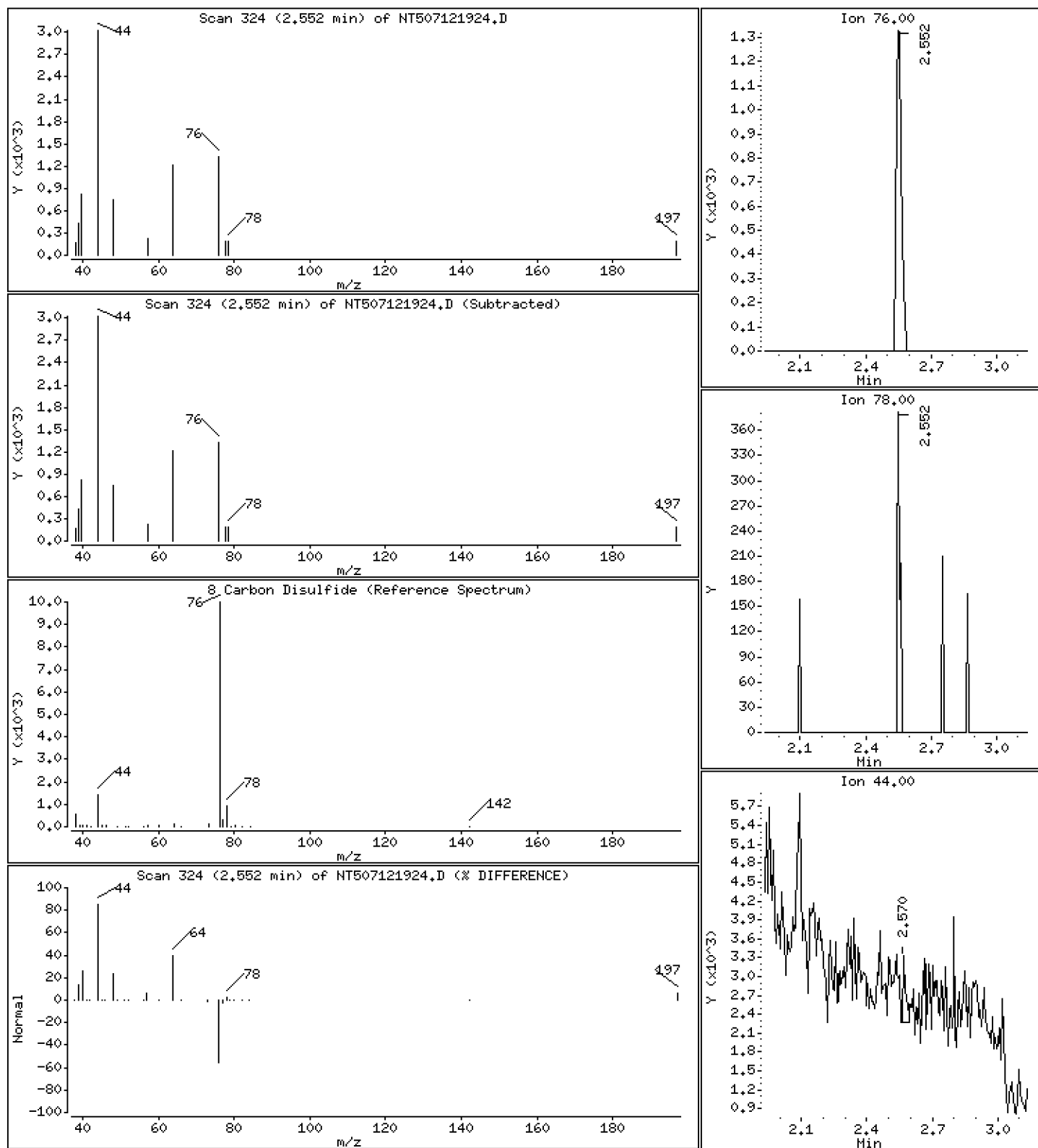
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 0.2886 ug/Kg



Date : 12-JUL-2019 21:47

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-10

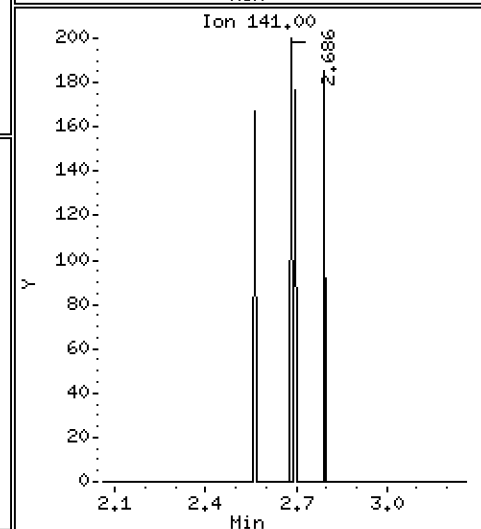
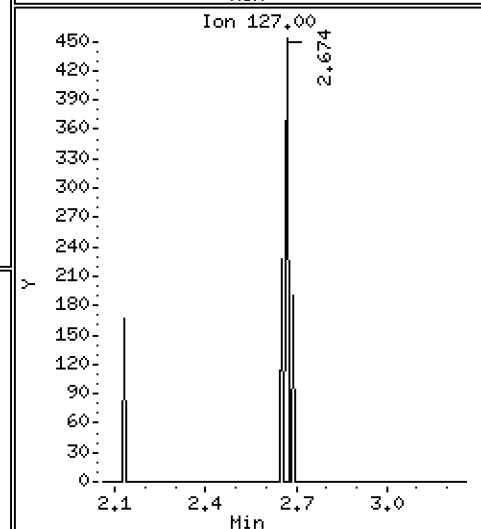
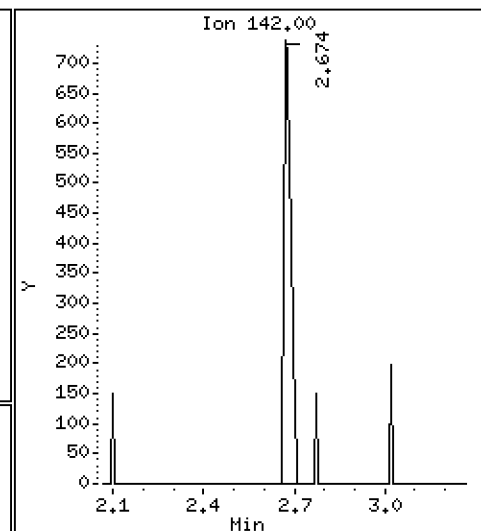
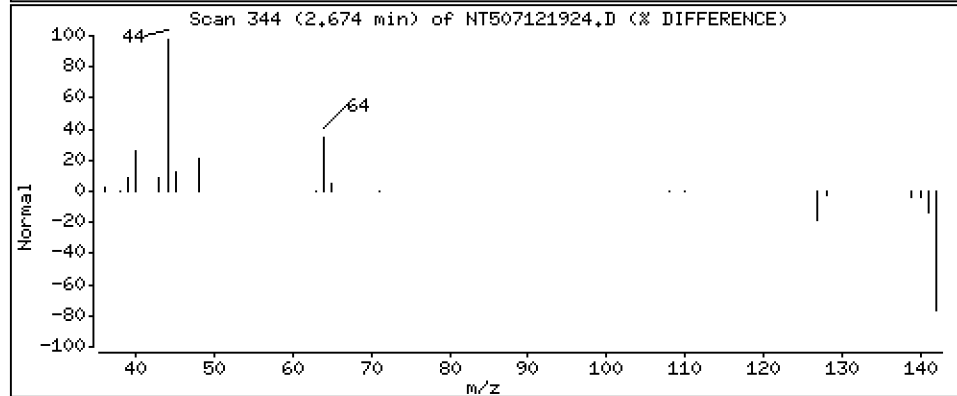
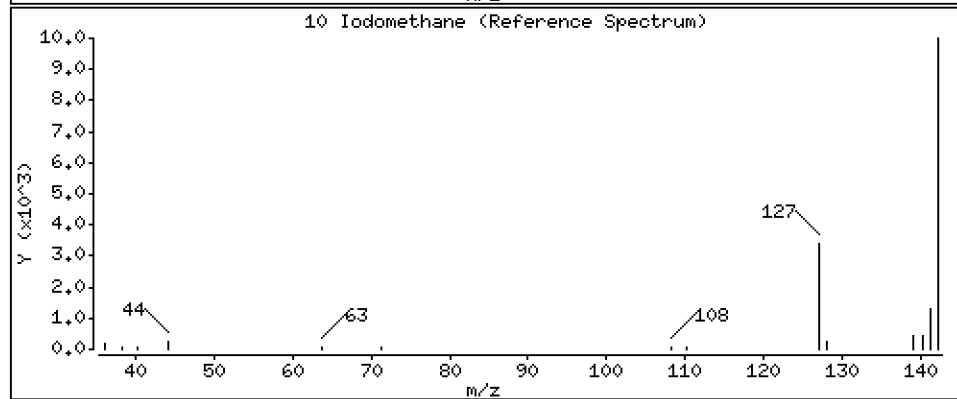
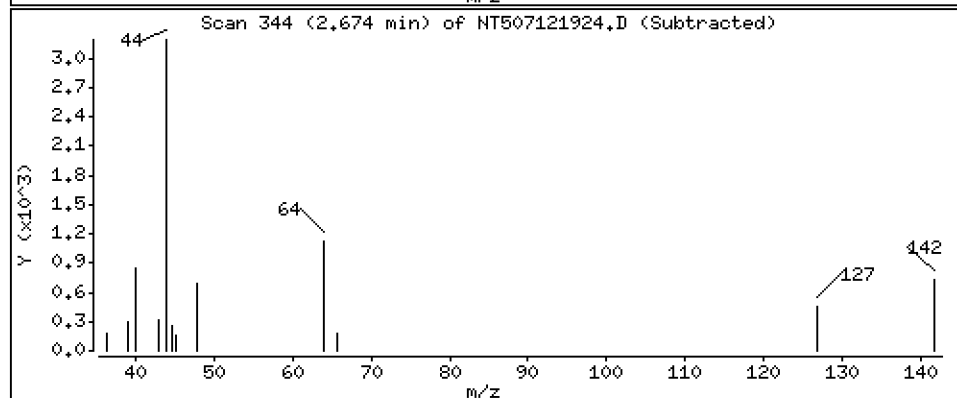
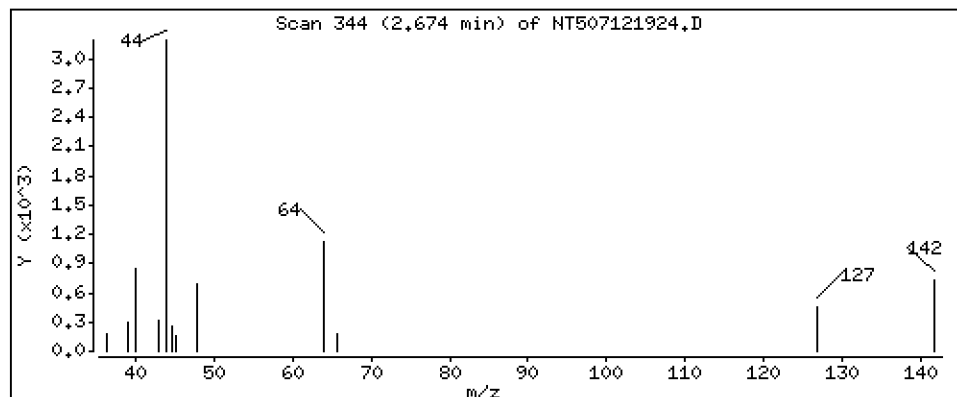
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 0.3384 ug/Kg



Date : 12-JUL-2019 21:47

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-10

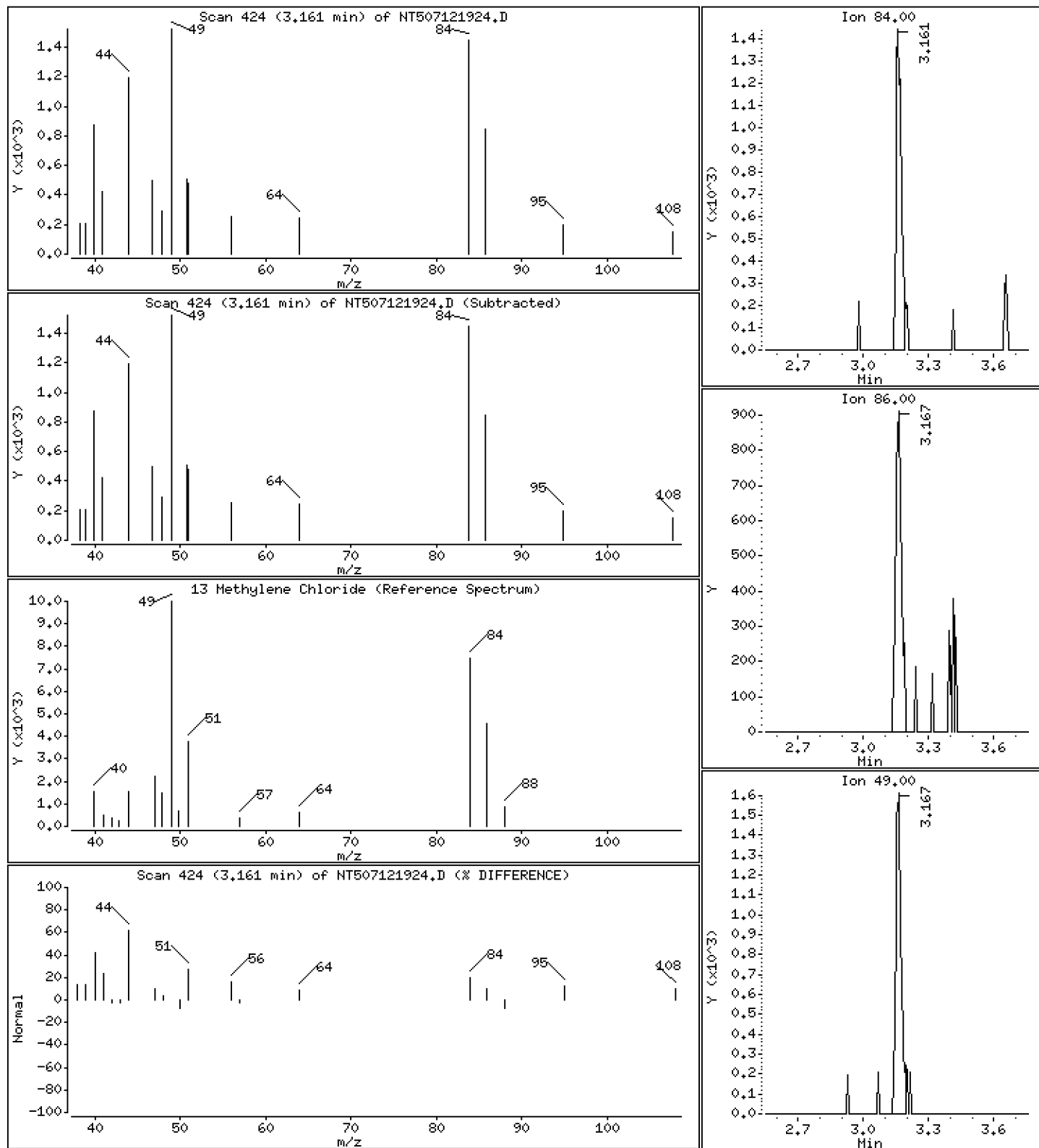
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.8403 ug/Kg



Date : 12-JUL-2019 21:47

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-10

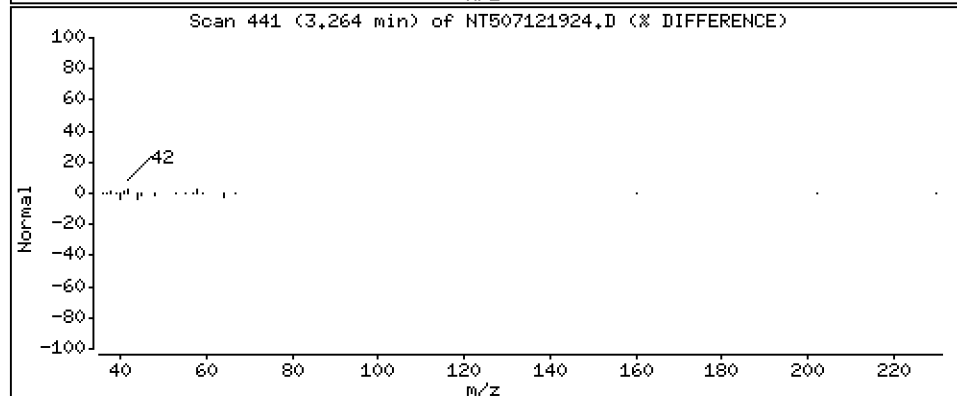
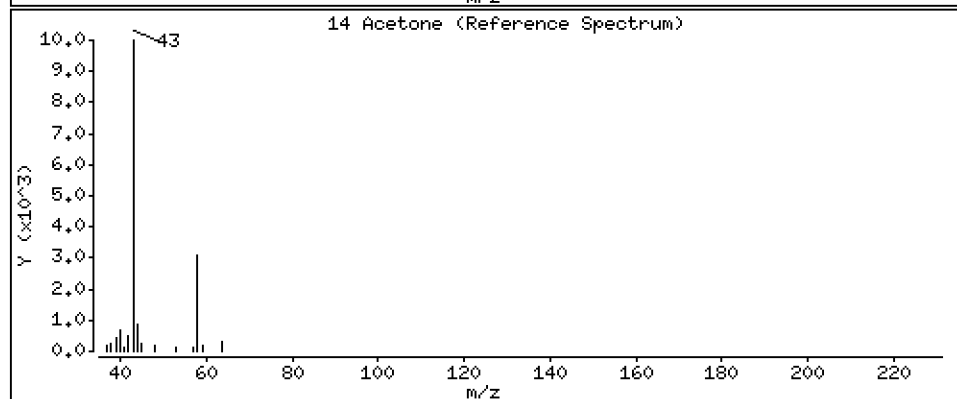
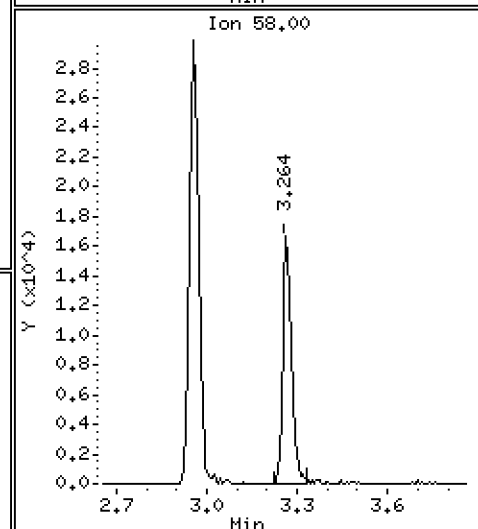
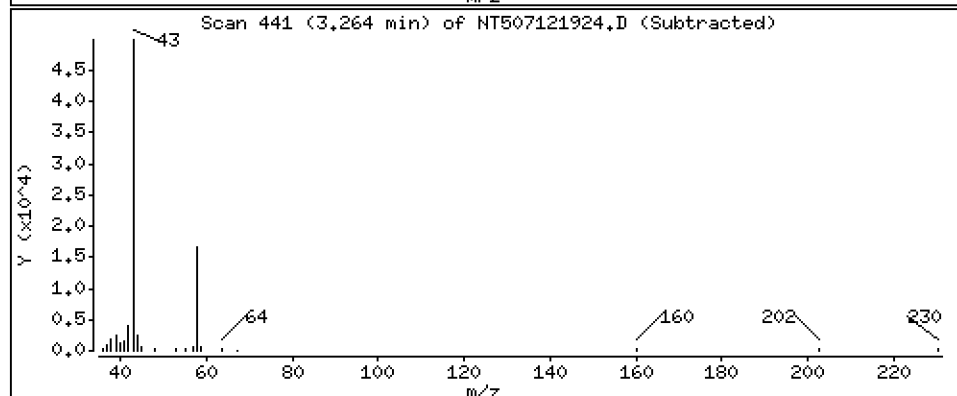
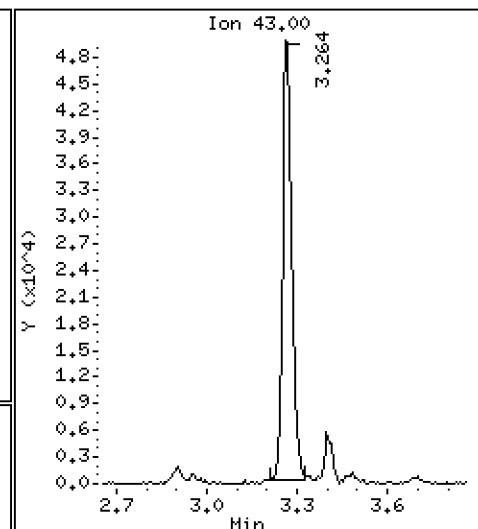
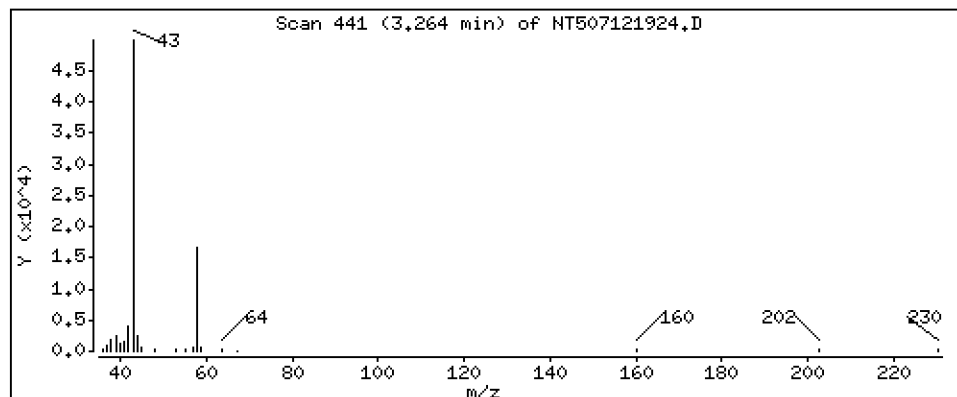
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 200.28 ug/Kg



Date : 12-JUL-2019 21:47

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-10

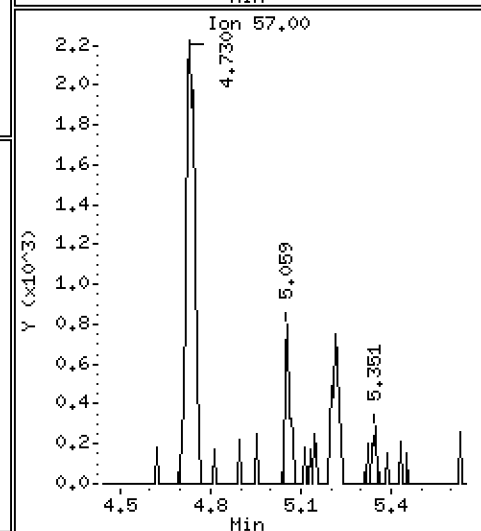
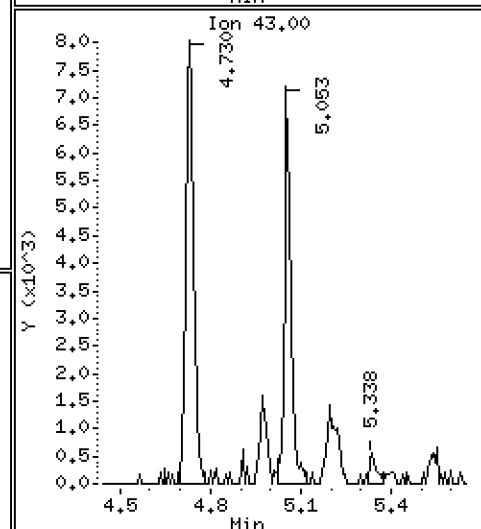
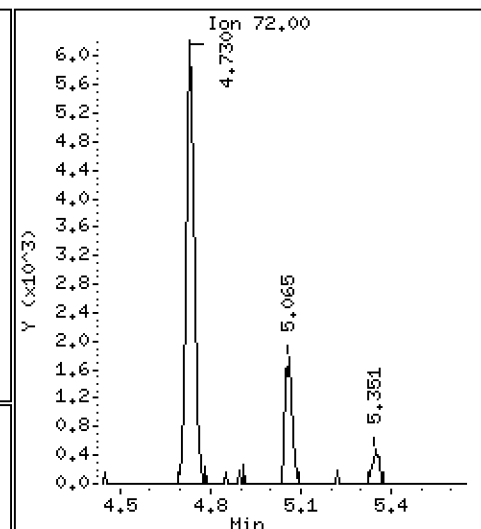
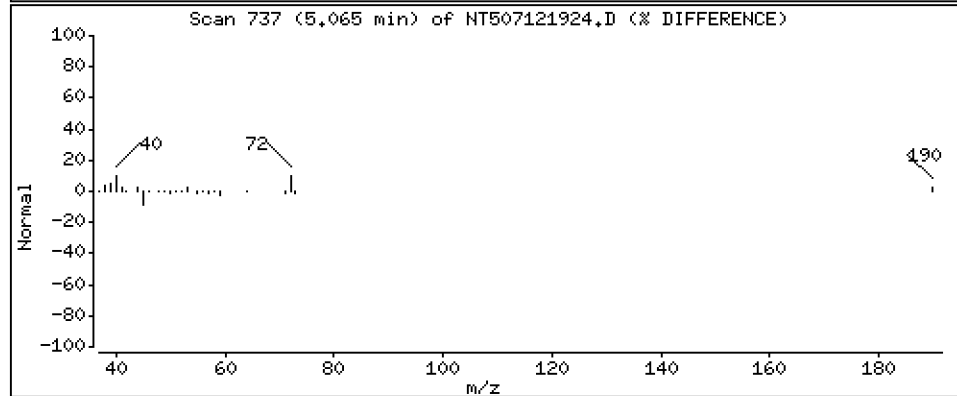
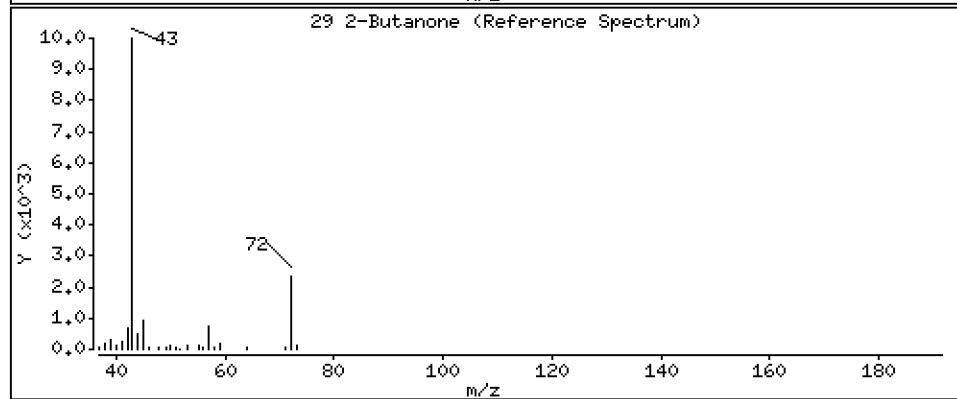
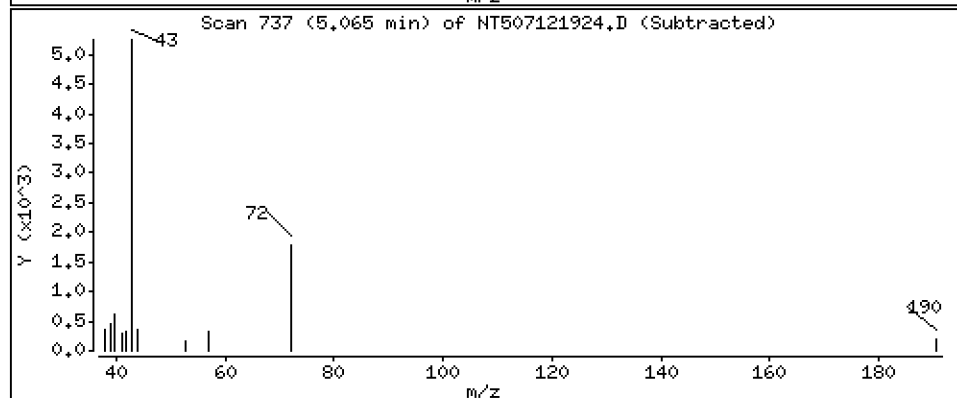
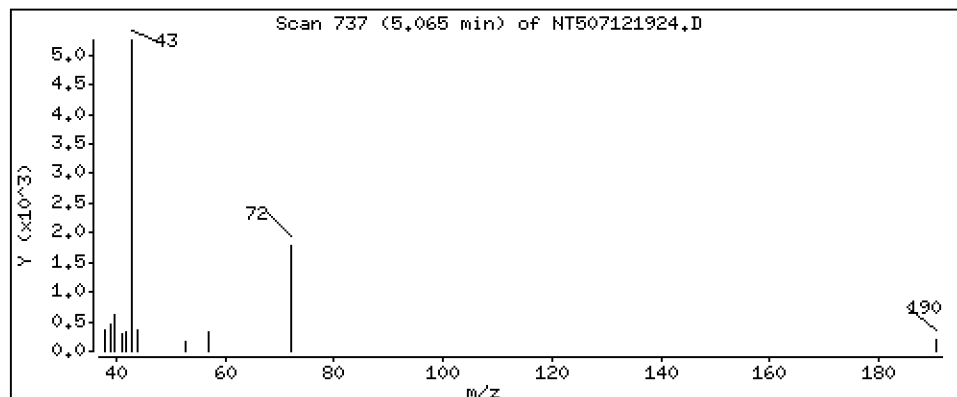
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 12,879 ug/Kg



Date : 12-JUL-2019 21:47

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-10

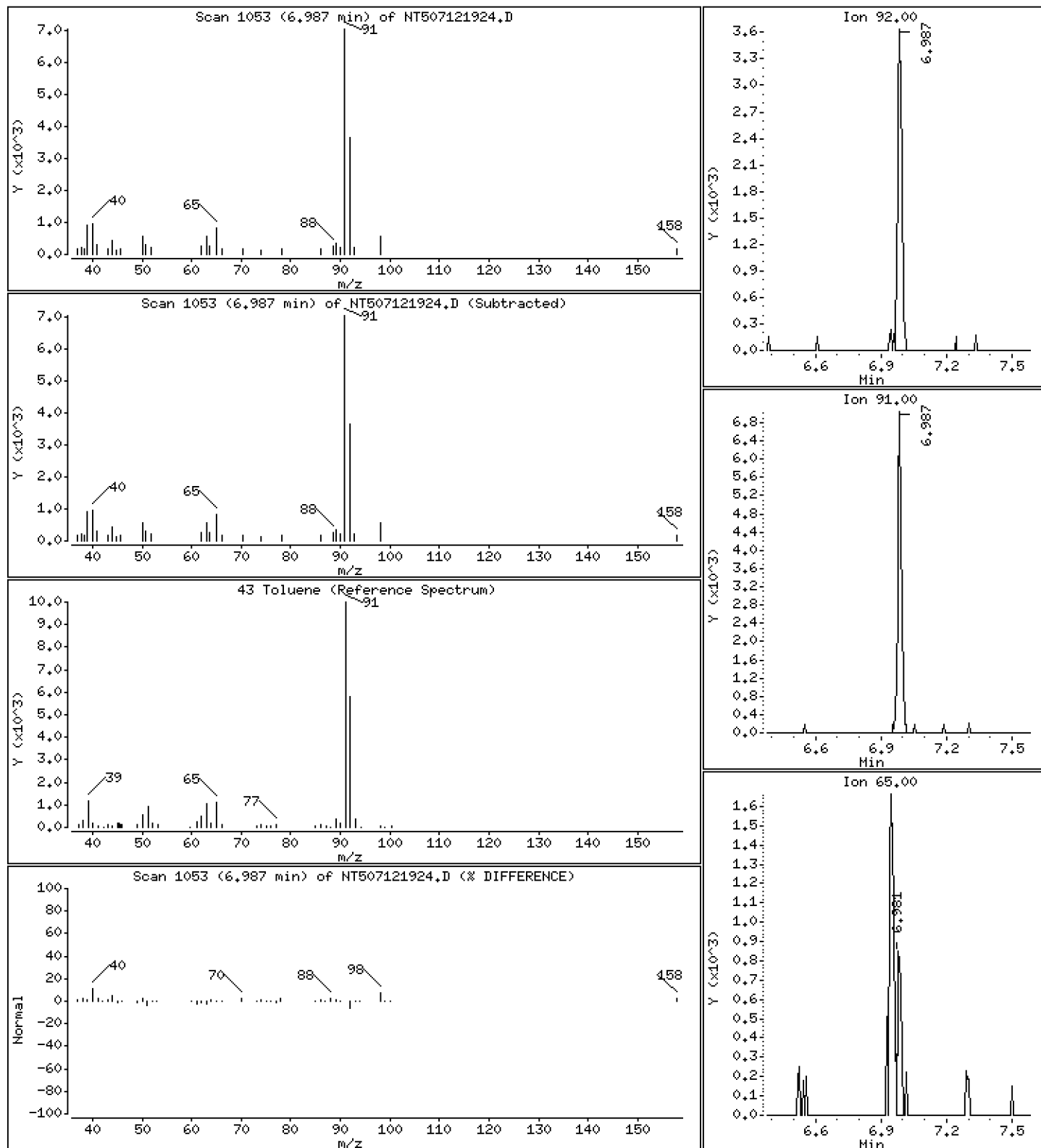
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.5862 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121924.D
 Lab Smp Id: 19G0163-10
 Inj Date : 12-JUL-2019 21:47
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-10
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound	Not	Detected.			
2 Chloromethane	50		Compound	Not	Detected.			
3 Vinyl Chloride	62		Compound	Not	Detected.			
4 Bromomethane	94		Compound	Not	Detected.			
5 Chloroethane	64		Compound	Not	Detected.			
6 Trichlorofluoromethane	101		Compound	Not	Detected.			
7 1,1-Dichloroethene	96		Compound	Not	Detected.			
8 Carbon Disulfide	76		2.552	2.540	(0.478)	2539	0.28857	0.2886
9 112Trichloro122Trifluoroethane	101		Compound	Not	Detected.			
10 Iodomethane	142		2.673	2.667	(0.500)	1392	0.33841	0.3384
11 Bromoethane	108		Compound	Not	Detected.			
12 Acrolein	56		Compound	Not	Detected.			
13 Methylene Chloride	84		3.160	3.154	(0.591)	2631	0.84031	0.8403
14 Acetone	43		3.263	3.257	(0.611)	112898	200.278	200.28
15 Trans-1,2-Dichloroethene	96		Compound	Not	Detected.			
16 Methyl tert butyl ether	73		Compound	Not	Detected.			
173 n-Hexane	41		Compound	Not	Detected.			
17 1,1-Dichloroethane	63		Compound	Not	Detected.			
18 Acrylonitrile	53		Compound	Not	Detected.			
19 Vinyl Acetate	43		Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96		Compound	Not	Detected.			
22 2,2-Dichloropropane	77		Compound	Not	Detected.			
23 Bromochloromethane	128		Compound	Not	Detected.			
24 Chloroform	83		Compound	Not	Detected.			
25 Carbon Tetrachloride	117		Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.917)	259405	62.0077	62.008 (R)
26 1,1,1-Trichloroethane	97		Compound	Not	Detected.			
28 1,1-Dichloropropene	75		Compound	Not	Detected.			
29 2-Butanone	72		5.064	5.046	(0.948)	3412	12.8791	12.879
30 Benzene	78		Compound	Not	Detected.			
* 31 Pentafluorobenzene	168		5.344	5.338	(1.000)	382536	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.350	(1.003)	243191	69.4923	69.492 (R)
33 1,2-Dichloroethane	62		Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	773658	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	917689	50.6524	50.652 (R)
43 Toluene	92	6.987	6.981	(1.207)	5488	0.58616	0.5862
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	756484	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	288509	44.5489	44.549 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119				Compound Not Detected.		
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	326779	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	281173	49.3363	49.336 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121924.D Calibration Time: 12:25
 Lab Smp Id: 19G0163-10
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	382536	-5.30
35 1,4-Difluorobenze	717664	358832	1435328	773658	7.80
52 d5-Chlorobenzene	696563	348282	1393126	756484	8.60
76 d4-1,4-Dichlorobe	380778	190389	761556	326779	-14.18

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-10
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	62.008	124.02	
\$ 32 d4-1,2-Dichloroeth	50.000	69.492	138.98	
\$ 42 d8-Toluene	50.000	50.652	101.30	
\$ 62 4-Bromofluorobenze	50.000	44.549	89.10	
\$ 79 d4-1,2-Dichloroben	50.000	49.336	98.67	

REVIEW SUMMARY FOR FILE - NT507121924.D

Lab ID: 19G0163-10
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 21:47

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT CCV RRT DELTA COMPOUND

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-11 D</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 09:45</u>	Prepared: <u>07/16/19 16:03</u>	File ID: <u>NT507161907.D</u>
% Solids: <u>71.21</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/16/19 17:06</u>
Batch: <u>BHG0391</u>	Sequence: <u>SHG0229</u>	Initial/Final: <u>3.15 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	2.23	U	0.59	2.23
75-01-4	Vinyl Chloride	1	2.23	U	0.52	2.23
74-83-9	Bromomethane	1	2.23	U	0.42	2.23
75-00-3	Chloroethane	1	2.23	U	1.03	2.23
75-69-4	Trichlorofluoromethane	1	2.23	U	0.59	2.23
107-02-8	Acrolein	1	11.1	U	8.49	11.1
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	4.46	U	0.64	4.46
67-64-1	Acetone	1	651		1.07	11.1
75-35-4	1,1-Dichloroethene	1	2.23	U	0.75	2.23
74-96-4	Bromoethane	1	4.46	U	0.98	4.46
74-88-4	Iodomethane	1	2.23	U	0.48	2.23
75-09-2	Methylene Chloride	1	1.50	J	1.42	4.46
107-13-1	Acrylonitrile	1	11.1	U	2.30	11.1
75-15-0	Carbon Disulfide	1	2.23	U	1.25	2.23
156-60-5	trans-1,2-Dichloroethene	1	2.23	U	0.59	2.23
108-05-4	Vinyl Acetate	1	11.1	U	0.85	11.1
75-34-3	1,1-Dichloroethane	1	2.23	U	0.45	2.23
78-93-3	2-Butanone	1	43.6		1.14	11.1
594-20-7	2,2-Dichloropropane	1	2.23	U	0.65	2.23
156-59-2	cis-1,2-Dichloroethene	1	2.23	U	0.53	2.23
67-66-3	Chloroform	1	2.23	U	0.52	2.23
74-97-5	Bromochloromethane	1	2.23	U	0.72	2.23
71-55-6	1,1,1-Trichloroethane	1	2.23	U	0.50	2.23
563-58-6	1,1-Dichloropropene	1	2.23	U	0.70	2.23
56-23-5	Carbon tetrachloride	1	2.23	U	0.47	2.23
107-06-2	1,2-Dichloroethane	1	2.23	U	0.43	2.23
71-43-2	Benzene	1	0.97	J	0.66	2.23
79-01-6	Trichloroethene	1	2.23	U	0.47	2.23
78-87-5	1,2-Dichloropropane	1	2.23	U	0.36	2.23
75-27-4	Bromodichloromethane	1	2.23	U	0.57	2.23
74-95-3	Dibromomethane	1	2.23	U	0.33	2.23
110-75-8	2-Chloroethyl vinyl ether	1	11.1	U	0.62	11.1
108-10-1	4-Methyl-2-Pentanone	1	11.1	U	0.94	11.1
10061-01-5	cis-1,3-Dichloropropene	1	2.23	U	0.50	2.23



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-11 D</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 09:45</u>	Prepared: <u>07/16/19 16:03</u>	File ID: <u>NT507161907.D</u>
% Solids: <u>71.21</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/16/19 17:06</u>
Batch: <u>BHG0391</u>	Sequence: <u>SHG0229</u>	Initial/Final: <u>3.15 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	0.61	J	0.34	2.23
10061-02-6	trans-1,3-Dichloropropene	1	2.23	U	0.48	2.23
591-78-6	2-Hexanone	1	11.1	U	0.98	11.1
79-00-5	1,1,2-Trichloroethane	1	2.23	U	0.64	2.23
142-28-9	1,3-Dichloropropane	1	2.23	U	0.47	2.23
127-18-4	Tetrachloroethene	1	2.23	U	0.57	2.23
124-48-1	Dibromochloromethane	1	2.23	U	0.59	2.23
106-93-4	1,2-Dibromoethane	1	2.23	U	0.39	2.23
108-90-7	Chlorobenzene	1	2.23	U	0.49	2.23
100-41-4	Ethylbenzene	1	2.23	U	0.45	2.23
630-20-6	1,1,1,2-Tetrachloroethane	1	2.23	U	0.52	2.23
179601-23-1	m,p-Xylene	1	4.46	U	0.87	4.46
95-47-6	o-Xylene	1	2.23	U	0.50	2.23
1330-20-7	Xylenes, total	1	4.46	U	1.37	4.46
100-42-5	Styrene	1	2.23	U	0.31	2.23
75-25-2	Bromoform	1	2.23	U	0.66	2.23
79-34-5	1,1,1,2-Tetrachloroethane	1	2.23	U	0.56	2.23
96-18-4	1,2,3-Trichloropropane	1	4.46	U	1.15	4.46
110-57-6	trans-1,4-Dichloro 2-Butene	1	11.1	U	0.97	11.1
103-65-1	n-Propylbenzene	1	2.23	U	0.61	2.23
108-86-1	Bromobenzene	1	2.23	U	0.34	2.23
98-82-8	Isopropyl Benzene	1	2.23	U	0.52	2.23
95-49-8	2-Chlorotoluene	1	2.23	U	0.67	2.23
106-43-4	4-Chlorotoluene	1	2.23	U	0.62	2.23
98-06-6	t-Butylbenzene	1	2.23	U	0.68	2.23
108-67-8	1,3,5-Trimethylbenzene	1	2.23	U	0.57	2.23
95-63-6	1,2,4-Trimethylbenzene	1	2.23	U	0.51	2.23
135-98-8	s-Butylbenzene	1	2.23	U	0.53	2.23
99-87-6	4-Isopropyl Toluene	1	2.23	U	0.53	2.23
541-73-1	1,3-Dichlorobenzene	1	2.23	U	0.51	2.23
106-46-7	1,4-Dichlorobenzene	1	2.23	U	0.52	2.23
104-51-8	n-Butylbenzene	1	2.23	U	0.58	2.23
95-50-1	1,2-Dichlorobenzene	1	2.23	U	0.65	2.23
96-12-8	1,2-Dibromo-3-chloropropane	1	11.1	U	1.31	11.1



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-11 D SDG: 19G0163

Sampled: 07/11/19 09:45 Prepared: 07/16/19 16:03 File ID: NT507161907.D

% Solids: 71.21 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 17:06

Batch: BHG0391 Sequence: SHG0229 Initial/Final: 3.15 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	11.1	U	0.74	11.1
87-68-3	Hexachloro-1,3-Butadiene	1	11.1	U	0.91	11.1
91-20-3	Naphthalene	1	0.98	J	0.96	11.1
87-61-6	1,2,3-Trichlorobenzene	1	0.85	J	0.68	11.1
75-71-8	Dichlorodifluoromethane	1	2.23	U	0.46	2.23
1634-04-4	Methyl tert-butyl Ether	1	2.23	U	0.51	2.23
107-87-9	2-Pentanone	1	11.1	U	11.1	11.1

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	62.7	125	80 - 149	
Toluene-d8	50.000	48.2	96.3	77 - 120	
4-Bromofluorobenzene	50.000	40.7	81.4	80 - 120	
1,2-Dichlorobenzene-d4	50.000	48.5	96.9	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161907.D

Date : 16-JUL-2019 17:06

Client ID:

Sample Info: 19C0163-11

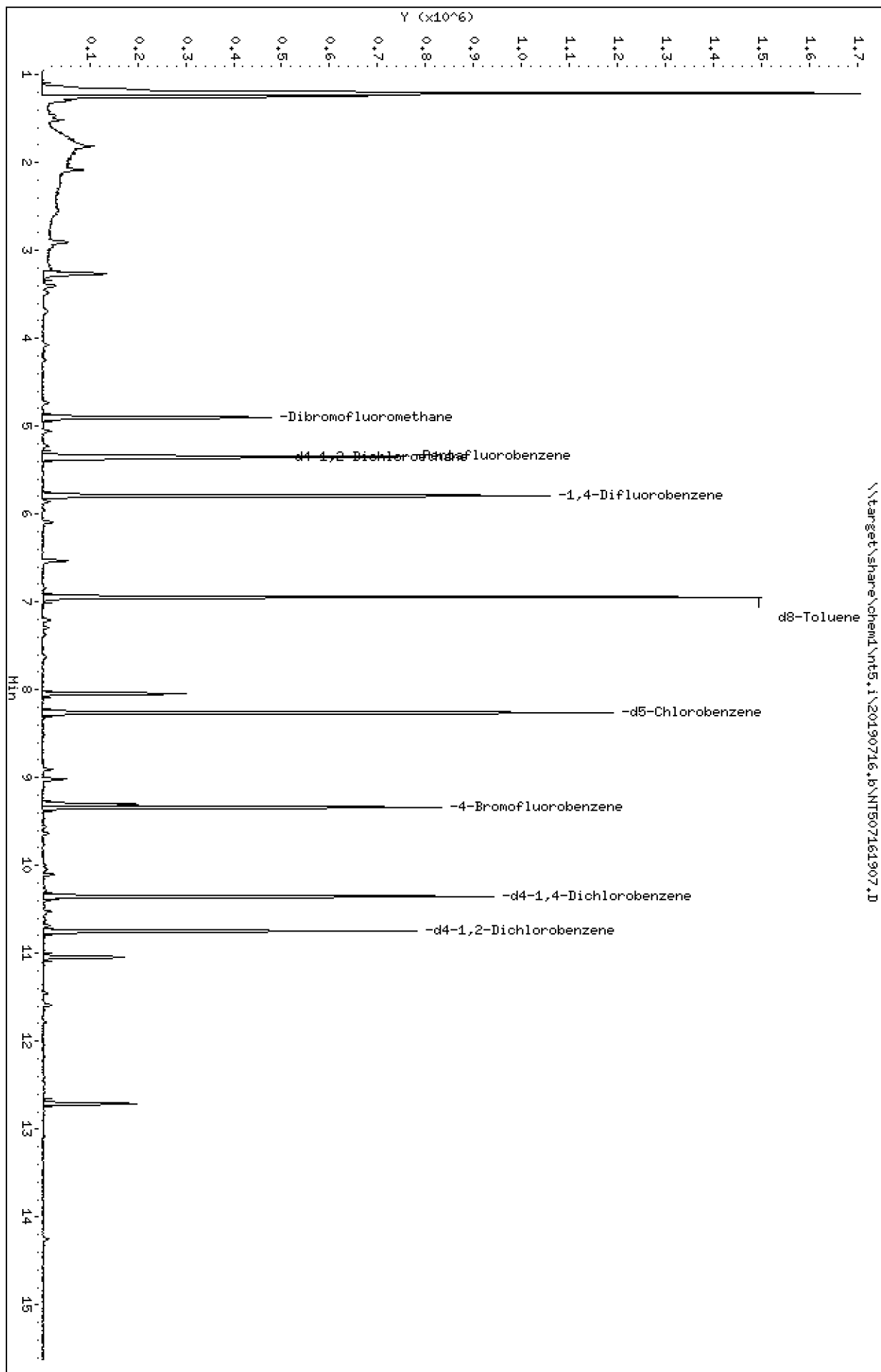
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

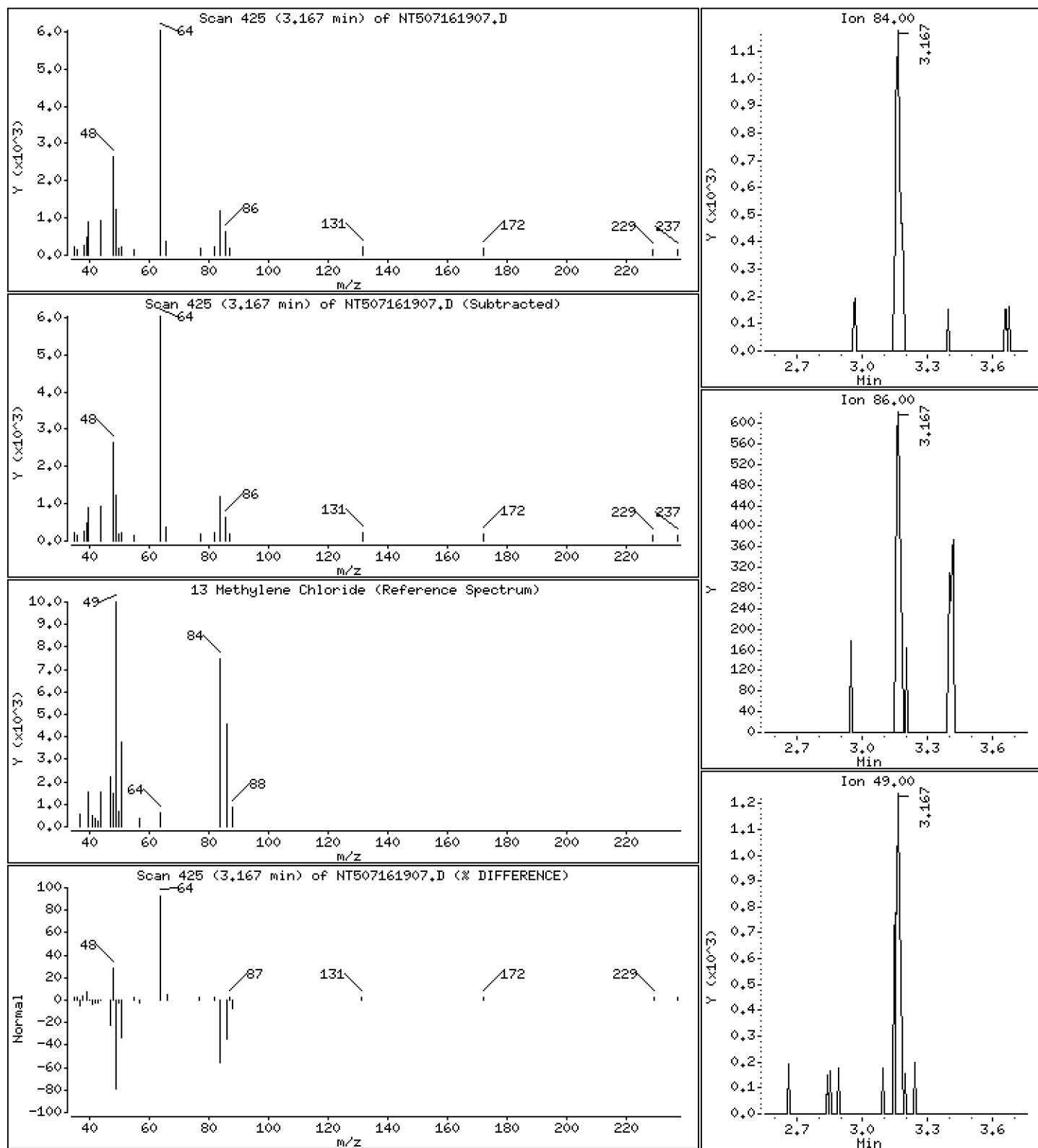
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.6723 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

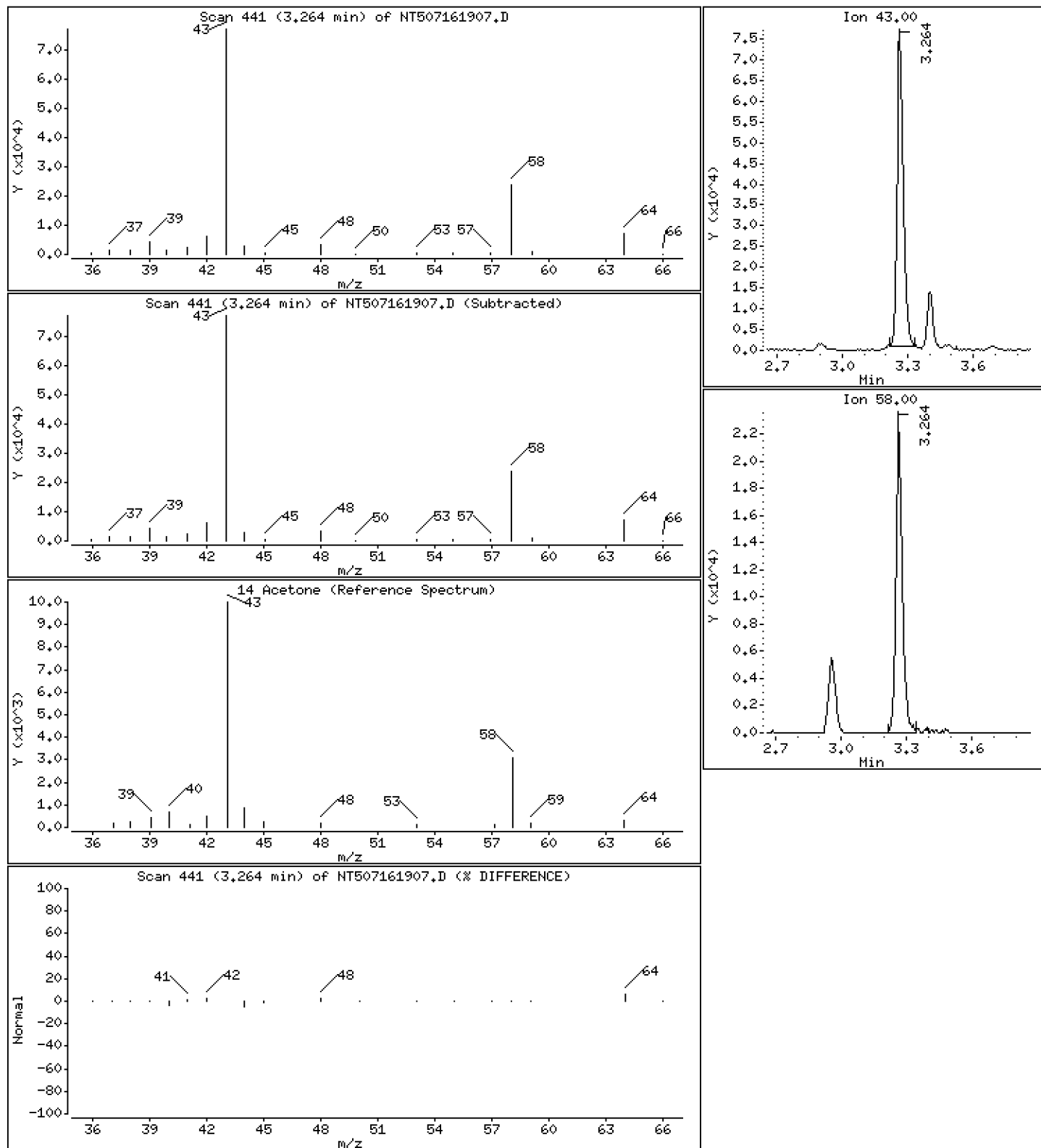
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 292.08 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

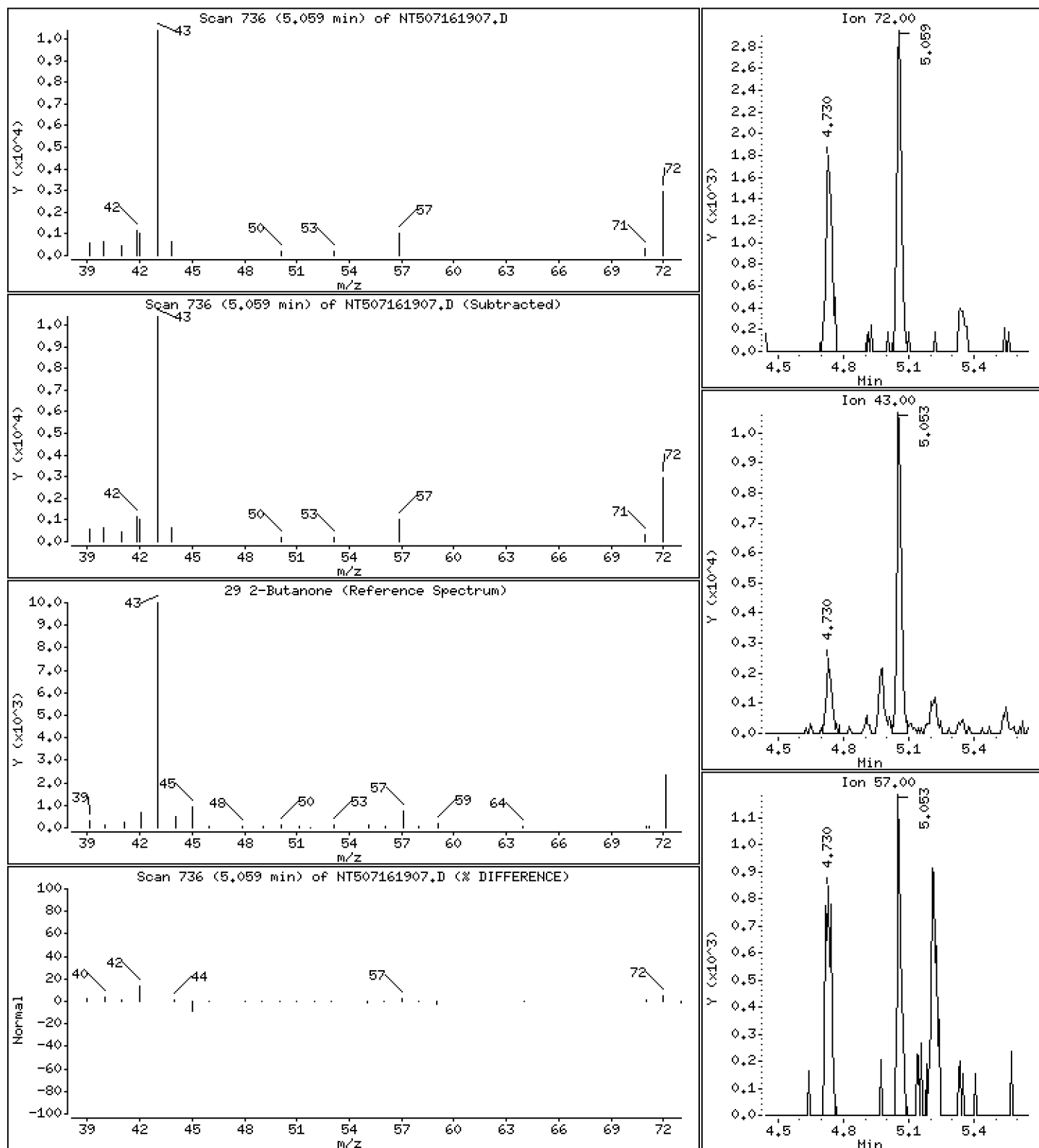
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 19,541 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

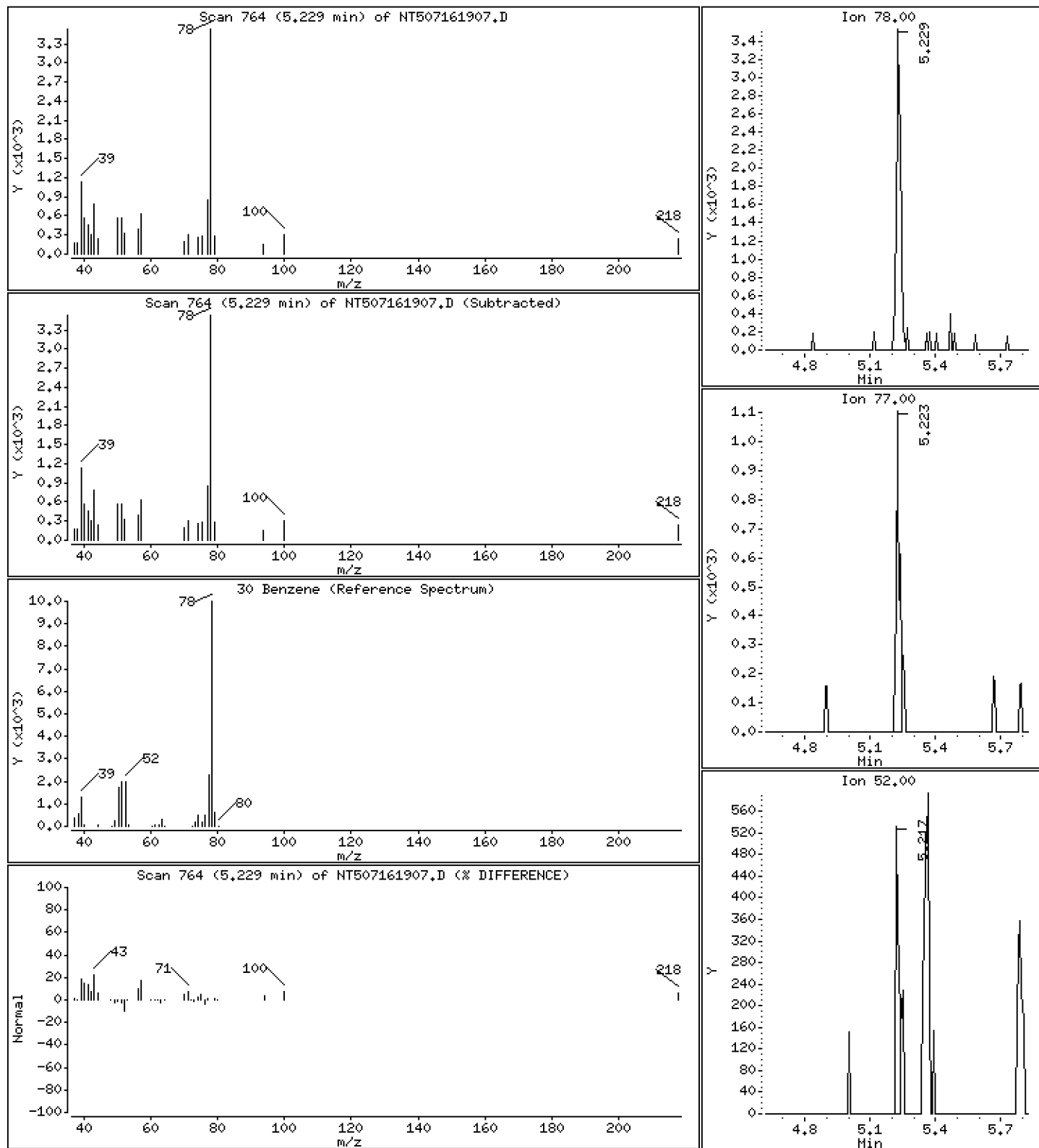
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 0.4340 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

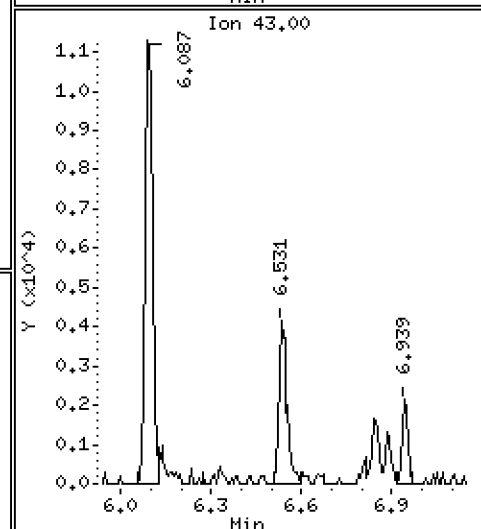
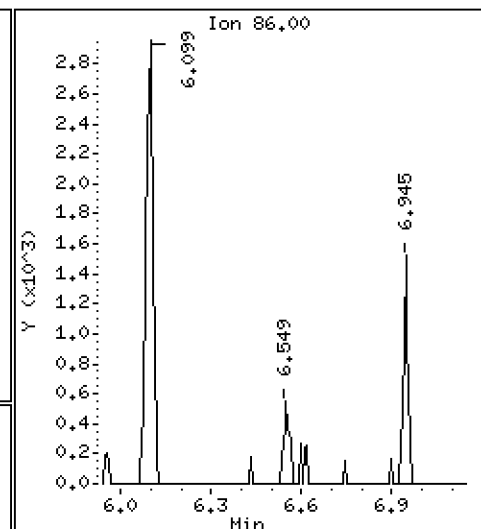
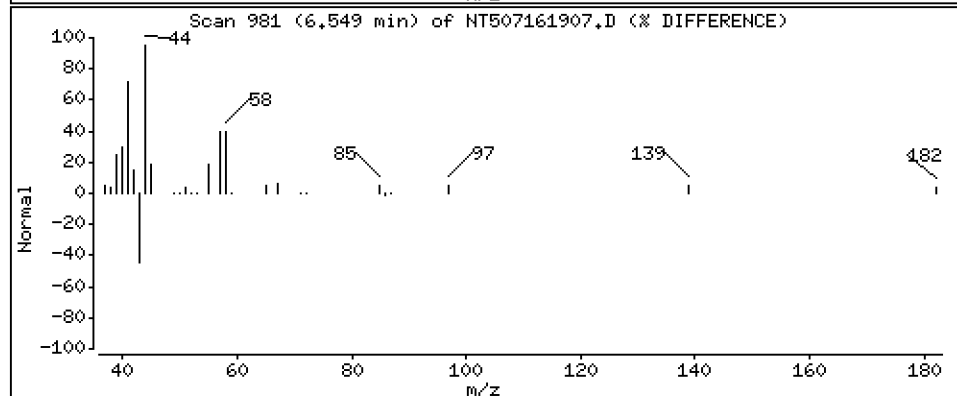
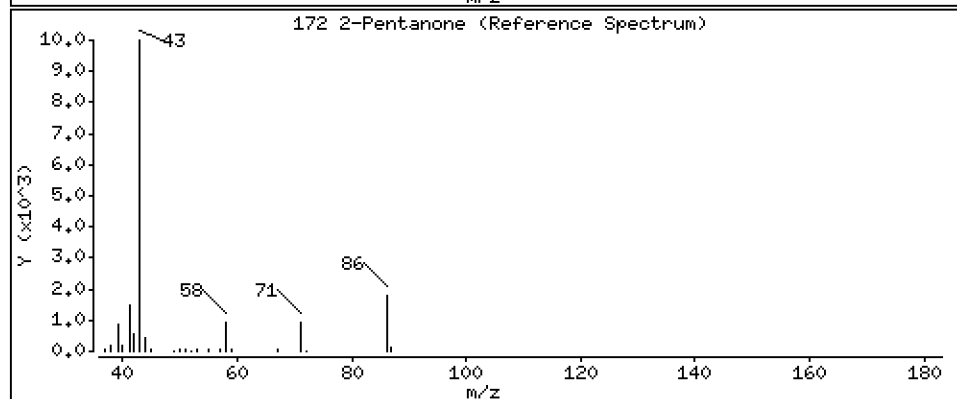
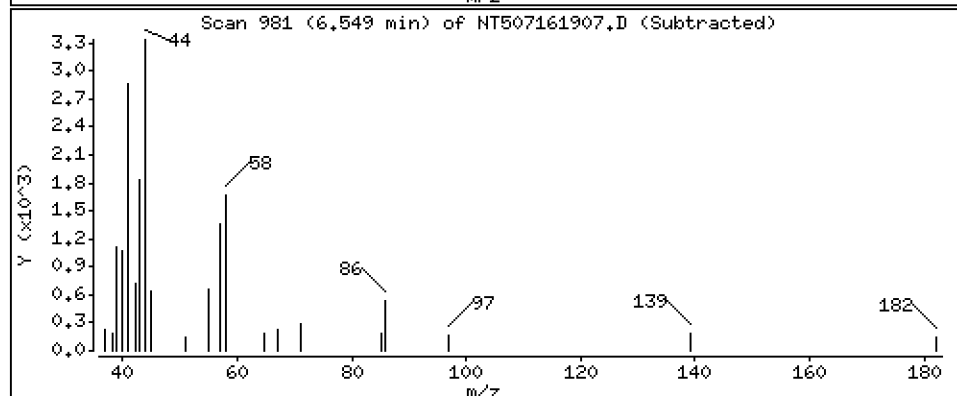
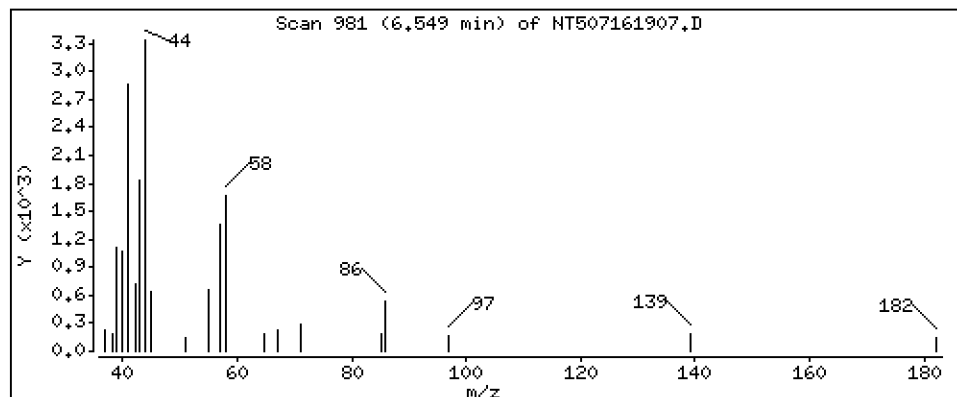
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 2.412 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

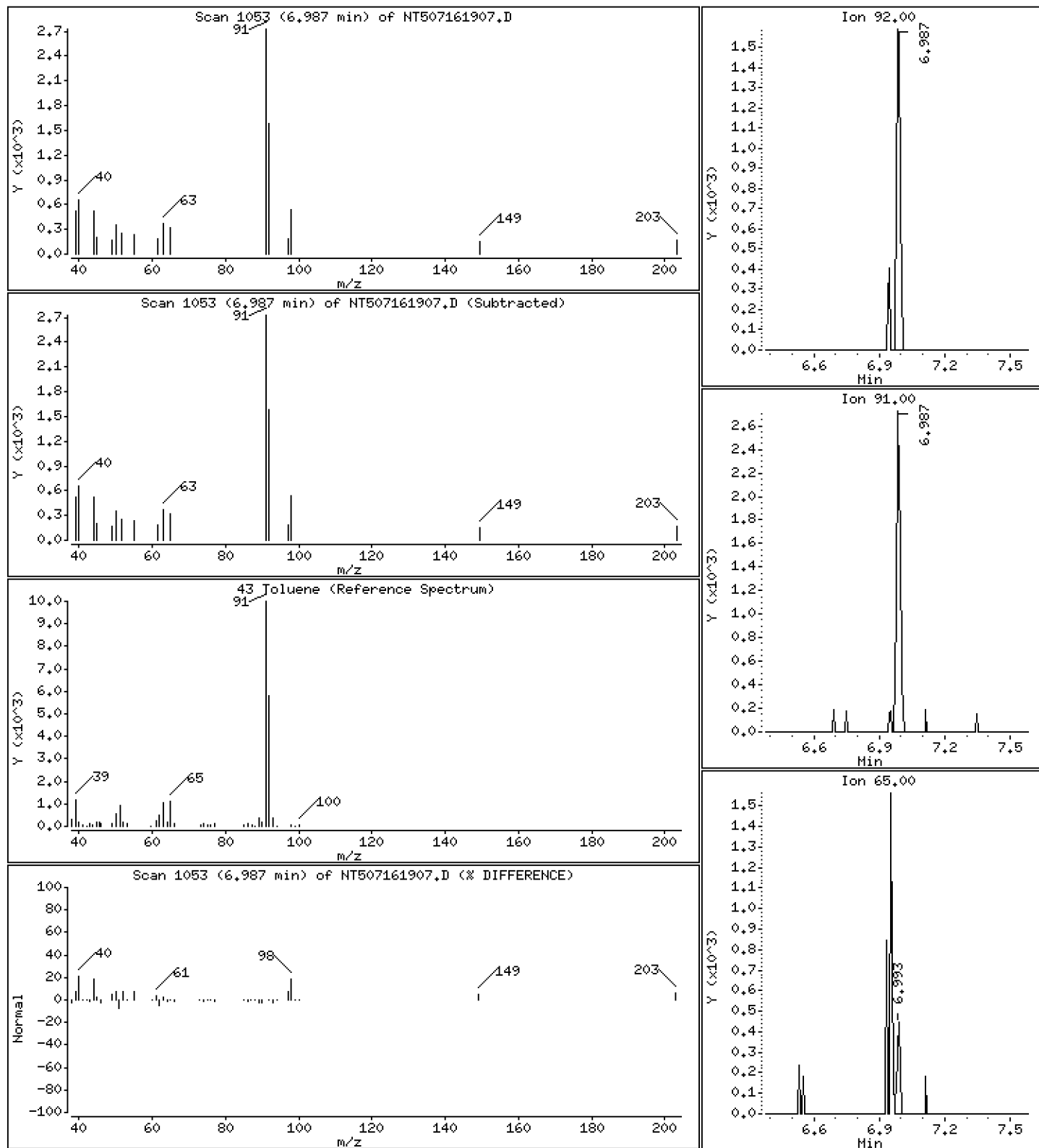
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.2731 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

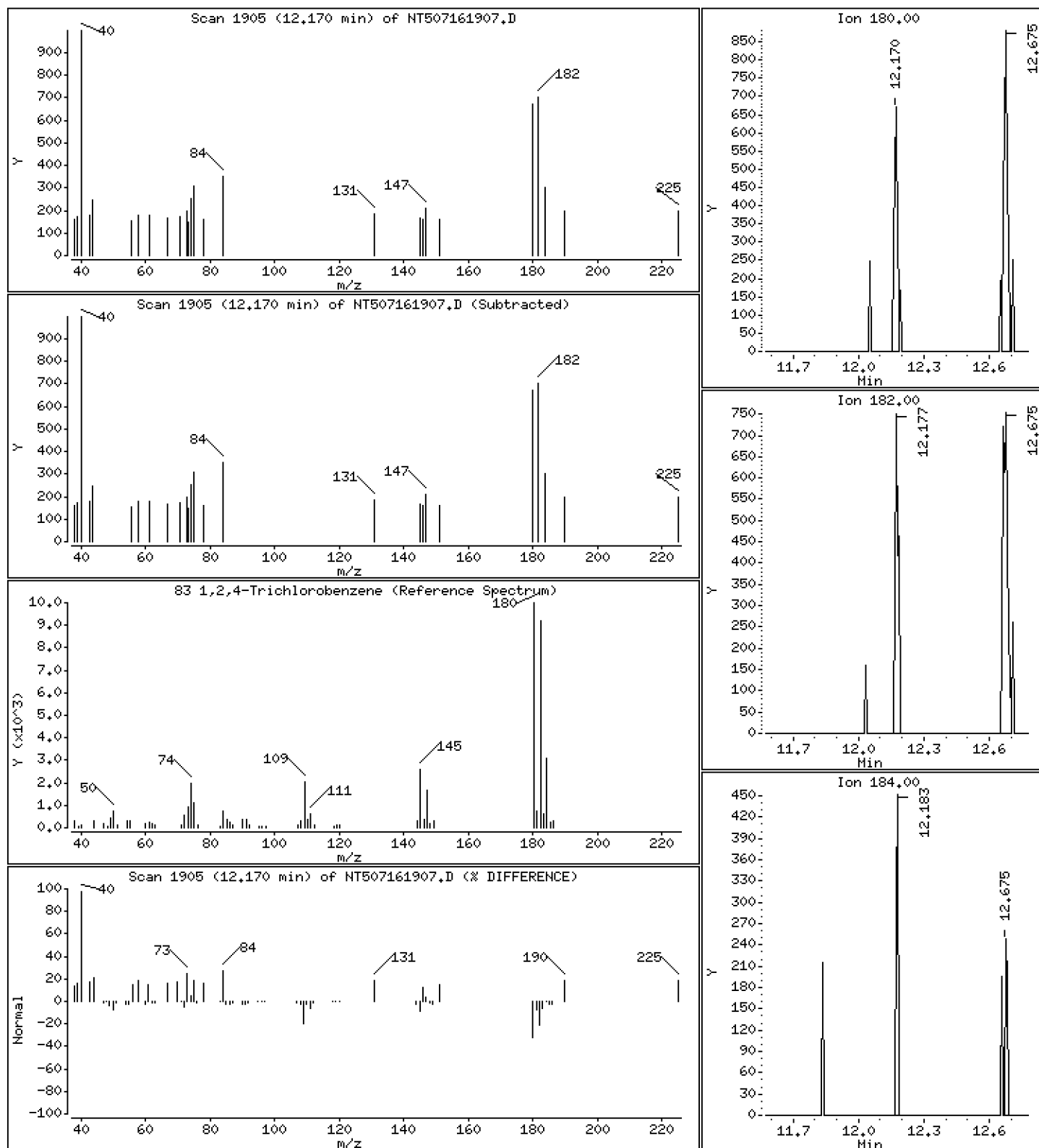
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 0.3067 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

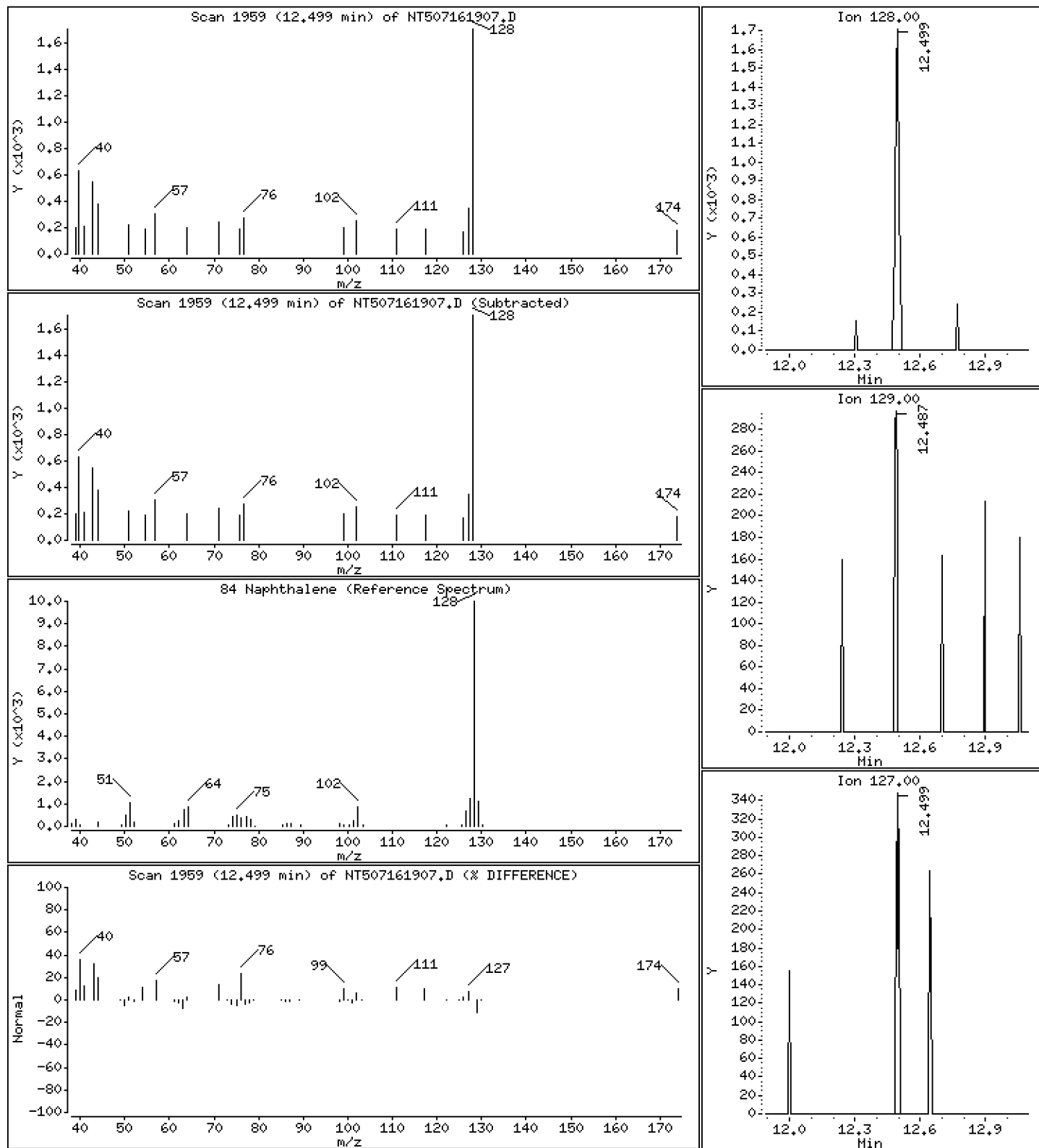
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.4383 ug/Kg



Date : 16-JUL-2019 17:06

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-11

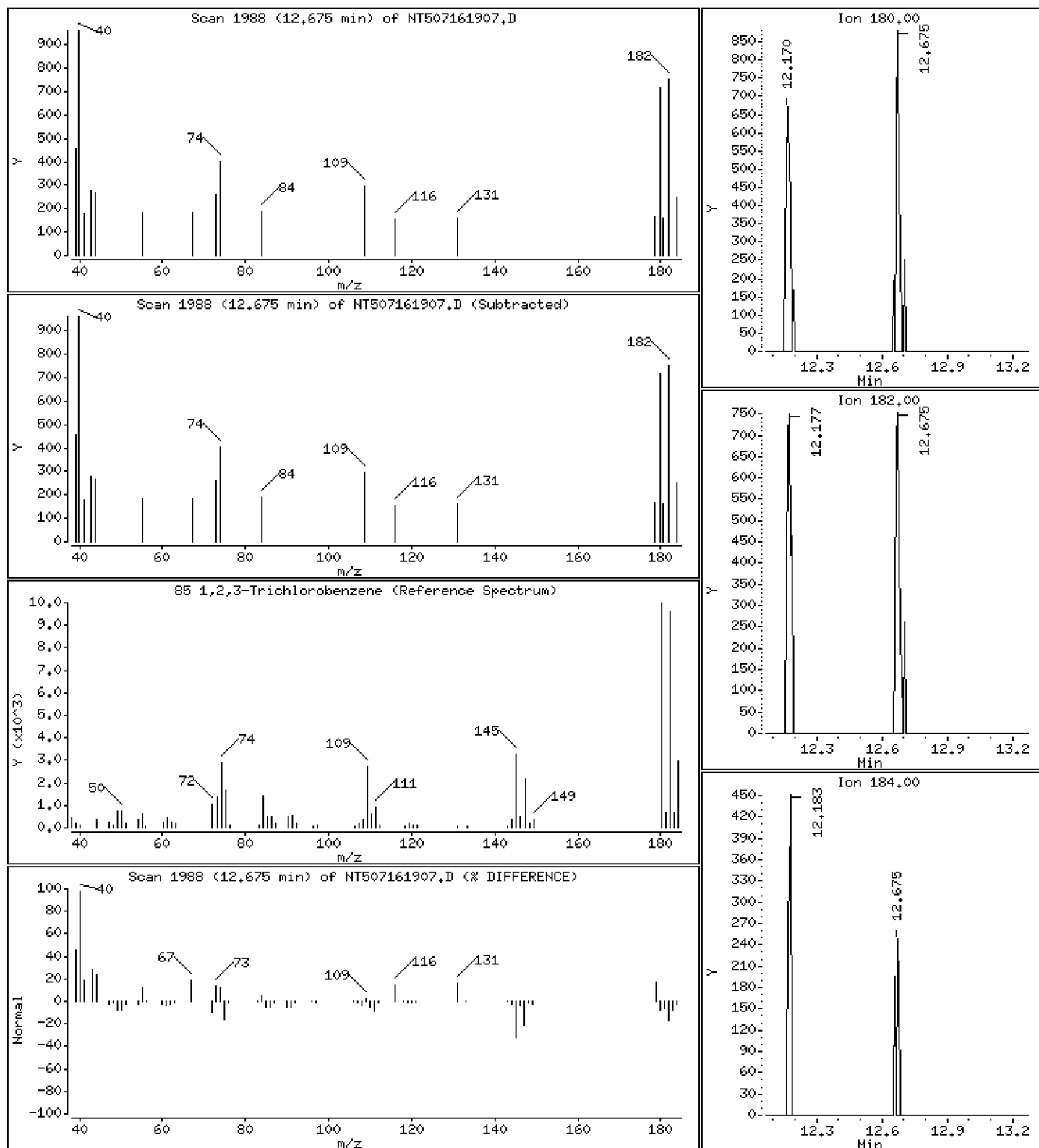
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 0.3801 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161907.D

Lab Smp Id: 19G0163-11

Inj Date : 16-JUL-2019 17:06

Operator : PB

Inst ID: nt5.i

Smp Info : 19G0163-11

Misc Info :

Comment :

Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m

Meth Date : 17-Jul-2019 13:41 nt5.i

Quant Type: ISTD

Cal Date : 24-JUN-2019 19:06

Cal File: NT506241914.D

Als bottle: 4

Dil Factor: 1.00000

Integrator: HP RTE

Compound Sublist: voamdl.sub

Target Version: 4.14

Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====			====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85			Compound	Not	Detected.			
2 Chloromethane	50			Compound	Not	Detected.			
3 Vinyl Chloride	62			Compound	Not	Detected.			
4 Bromomethane	94			Compound	Not	Detected.			
5 Chloroethane	64			Compound	Not	Detected.			
6 Trichlorofluoromethane	101			Compound	Not	Detected.			
7 1,1-Dichloroethene	96			Compound	Not	Detected.			
8 Carbon Disulfide	76			Compound	Not	Detected.			
9 112Trichloro122Trifluoroethane	101			Compound	Not	Detected.			
10 Iodomethane	142			Compound	Not	Detected.			
11 Bromoethane	108			Compound	Not	Detected.			
12 Acrolein	56			Compound	Not	Detected.			
13 Methylene Chloride	84			3.166	3.154	(0.593)	2079	0.67229	0.6723
14 Acetone	43			3.264	3.257	(0.611)	162618	292.078	292.08
15 Trans-1,2-Dichloroethene	96			Compound	Not	Detected.			
16 Methyl tert butyl ether	73			Compound	Not	Detected.			
173 n-Hexane	41			Compound	Not	Detected.			
17 1,1-Dichloroethane	63			Compound	Not	Detected.			
18 Acrylonitrile	53			Compound	Not	Detected.			
19 Vinyl Acetate	43			Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96			Compound	Not	Detected.			
22 2,2-Dichloropropane	77			Compound	Not	Detected.			
23 Bromochloromethane	128			Compound	Not	Detected.			
24 Chloroform	83			Compound	Not	Detected.			
25 Carbon Tetrachloride	117			Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111			4.900	4.894	(0.917)	241997	58.5680	58.568 (R)
26 1,1,1-Trichloroethane	97			Compound	Not	Detected.			
28 1,1-Dichloropropene	75			Compound	Not	Detected.			
29 2-Butanone	72			5.058	5.046	(0.947)	5113	19.5405	19.541
30 Benzene	78			5.229	5.222	(0.903)	5499	0.43401	0.4340
* 31 Pentafluorobenzene	168			5.344	5.338	(1.000)	377824	50.0000	
\$ 32 d4-1,2-Dichloroethane	65			5.362	5.356	(1.003)	216737	62.7055	62.705 (R)
33 1,2-Dichloroethane	62			Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	714797	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86	6.549	6.542	(1.131)	871	2.41237	2.412
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	805984	48.1501	48.150 (R)
43 Toluene	92	6.987	6.981	(1.207)	2362	0.27305	0.2731
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	583822	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	203364	40.6885	40.688 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119				Compound Not Detected.		
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	211590	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	178860	48.4692	48.469 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180	12.170	12.176	(1.176)	873	0.30672	0.3067
84 Naphthalene	128	12.498	12.492	(1.207)	2553	0.43829	0.4383
85 1,2,3-Trichlorobenzene	180	12.675	12.669	(1.225)	979	0.38009	0.3801

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161907.D Calibration Time: 14:57
 Lab Smp Id: 19G0163-11
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	377824	-6.46
35 1,4-Difluorobenze	717664	358832	1435328	714797	-0.40
52 d5-Chlorobenzene	696563	348282	1393126	583822	-16.19
76 d4-1,4-Dichlorobe	380778	190389	761556	211590	-44.43

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.12
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.08
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-11
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	58.568	117.14	
\$ 32 d4-1,2-Dichloroeth	50.000	62.705	125.41	
\$ 42 d8-Toluene	50.000	48.150	96.30	
\$ 62 4-Bromofluorobenze	50.000	40.688	81.38	
\$ 79 d4-1,2-Dichloroben	50.000	48.469	96.94	

REVIEW SUMMARY FOR FILE - NT507161907.D

Lab ID: 19G0163-11
nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 17:06

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12 C SDG: 19G0163
Sampled: 07/11/19 09:50 Prepared: 07/16/19 16:03 File ID: NT507161908.D
% Solids: 72.06 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 17:28
Batch: BHG0391 Sequence: SHG0229 Initial/Final: 2.64 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	2.63	U	0.69	2.63
75-01-4	Vinyl Chloride	1	2.63	U	0.62	2.63
74-83-9	Bromomethane	1	2.63	U	0.49	2.63
75-00-3	Chloroethane	1	2.63	U	1.21	2.63
75-69-4	Trichlorofluoromethane	1	2.63	U	0.70	2.63
107-02-8	Acrolein	1	13.1	U	10.0	13.1
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	5.26	U	0.75	5.26
67-64-1	Acetone	1	1710		1.27	13.1
75-35-4	1,1-Dichloroethene	1	2.63	U	0.88	2.63
74-96-4	Bromoethane	1	5.26	U	1.16	5.26
74-88-4	Iodomethane	1	2.63	U	0.57	2.63
75-09-2	Methylene Chloride	1	5.26	U	1.67	5.26
107-13-1	Acrylonitrile	1	13.1	U	2.71	13.1
75-15-0	Carbon Disulfide	1	2.63	U	1.47	2.63
156-60-5	trans-1,2-Dichloroethene	1	2.63	U	0.70	2.63
108-05-4	Vinyl Acetate	1	13.1	U	1.00	13.1
75-34-3	1,1-Dichloroethane	1	2.63	U	0.53	2.63
78-93-3	2-Butanone	1	118		1.35	13.1
594-20-7	2,2-Dichloropropane	1	2.63	U	0.77	2.63
156-59-2	cis-1,2-Dichloroethene	1	2.63	U	0.63	2.63
67-66-3	Chloroform	1	2.63	U	0.62	2.63
74-97-5	Bromochloromethane	1	2.63	U	0.85	2.63
71-55-6	1,1,1-Trichloroethane	1	2.63	U	0.59	2.63
563-58-6	1,1-Dichloropropene	1	2.63	U	0.82	2.63
56-23-5	Carbon tetrachloride	1	2.63	U	0.56	2.63
107-06-2	1,2-Dichloroethane	1	2.63	U	0.50	2.63
71-43-2	Benzene	1	1.24	J	0.78	2.63
79-01-6	Trichloroethene	1	2.63	U	0.56	2.63
78-87-5	1,2-Dichloropropane	1	2.63	U	0.43	2.63
75-27-4	Bromodichloromethane	1	2.63	U	0.67	2.63
74-95-3	Dibromomethane	1	2.63	U	0.39	2.63
110-75-8	2-Chloroethyl vinyl ether	1	13.1	U	0.73	13.1
108-10-1	4-Methyl-2-Pentanone	1	13.1	U	1.10	13.1
10061-01-5	cis-1,3-Dichloropropene	1	2.63	U	0.59	2.63



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-12 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 09:50</u>	Prepared: <u>07/16/19 16:03</u>	File ID: <u>NT507161908.D</u>
% Solids: <u>72.06</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/16/19 17:28</u>
Batch: <u>BHG0391</u>	Sequence: <u>SHG0229</u>	Initial/Final: <u>2.64 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	1.31	J	0.40	2.63
10061-02-6	trans-1,3-Dichloropropene	1	2.63	U	0.57	2.63
591-78-6	2-Hexanone	1	13.1	U	1.15	13.1
79-00-5	1,1,2-Trichloroethane	1	2.63	U	0.75	2.63
142-28-9	1,3-Dichloropropane	1	2.63	U	0.55	2.63
127-18-4	Tetrachloroethene	1	2.63	U	0.68	2.63
124-48-1	Dibromochloromethane	1	2.63	U	0.70	2.63
106-93-4	1,2-Dibromoethane	1	2.63	U	0.46	2.63
108-90-7	Chlorobenzene	1	2.63	U	0.58	2.63
100-41-4	Ethylbenzene	1	2.63	U	0.53	2.63
630-20-6	1,1,1,2-Tetrachloroethane	1	2.63	U	0.61	2.63
179601-23-1	m,p-Xylene	1	5.26	U	1.03	5.26
95-47-6	o-Xylene	1	2.63	U	0.59	2.63
1330-20-7	Xylenes, total	1	5.26	U	1.62	5.26
100-42-5	Styrene	1	2.63	U	0.36	2.63
75-25-2	Bromoform	1	2.63	U	0.78	2.63
79-34-5	1,1,1,2-Tetrachloroethane	1	2.63	U	0.66	2.63
96-18-4	1,2,3-Trichloropropane	1	5.26	U	1.36	5.26
110-57-6	trans-1,4-Dichloro 2-Butene	1	13.1	U	1.15	13.1
103-65-1	n-Propylbenzene	1	2.63	U	0.71	2.63
108-86-1	Bromobenzene	1	2.63	U	0.40	2.63
98-82-8	Isopropyl Benzene	1	2.63	U	0.61	2.63
95-49-8	2-Chlorotoluene	1	2.63	U	0.79	2.63
106-43-4	4-Chlorotoluene	1	2.63	U	0.73	2.63
98-06-6	t-Butylbenzene	1	2.63	U	0.80	2.63
108-67-8	1,3,5-Trimethylbenzene	1	2.63	U	0.67	2.63
95-63-6	1,2,4-Trimethylbenzene	1	2.63	U	0.60	2.63
135-98-8	s-Butylbenzene	1	2.63	U	0.63	2.63
99-87-6	4-Isopropyl Toluene	1	1.07	J	0.62	2.63
541-73-1	1,3-Dichlorobenzene	1	2.63	U	0.60	2.63
106-46-7	1,4-Dichlorobenzene	1	2.63	U	0.61	2.63
104-51-8	n-Butylbenzene	1	2.63	U	0.69	2.63
95-50-1	1,2-Dichlorobenzene	1	2.63	U	0.77	2.63
96-12-8	1,2-Dibromo-3-chloropropane	1	13.1	U	1.54	13.1



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12 C SDG: 19G0163

Sampled: 07/11/19 09:50 Prepared: 07/16/19 16:03 File ID: NT507161908.D

% Solids: 72.06 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 17:28

Batch: BHG0391 Sequence: SHG0229 Initial/Final: 2.64 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	13.1	U	0.87	13.1
87-68-3	Hexachloro-1,3-Butadiene	1	13.1	U	1.08	13.1
91-20-3	Naphthalene	1	13.1	U	1.13	13.1
87-61-6	1,2,3-Trichlorobenzene	1	13.1	U	0.80	13.1
75-71-8	Dichlorodifluoromethane	1	2.63	U	0.54	2.63
1634-04-4	Methyl tert-butyl Ether	1	2.63	U	0.61	2.63
107-87-9	2-Pentanone	1	13.1	U	13.1	13.1

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	64.5	129	80 - 149	
Toluene-d8	50.000	47.8	95.7	77 - 120	
4-Bromofluorobenzene	50.000	38.2	76.4	80 - 120	*
1,2-Dichlorobenzene-d4	50.000	46.8	93.6	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161908.D

Date : 16-JUL-2019 17:28

Client ID:

Sample Info: 19C0163-12

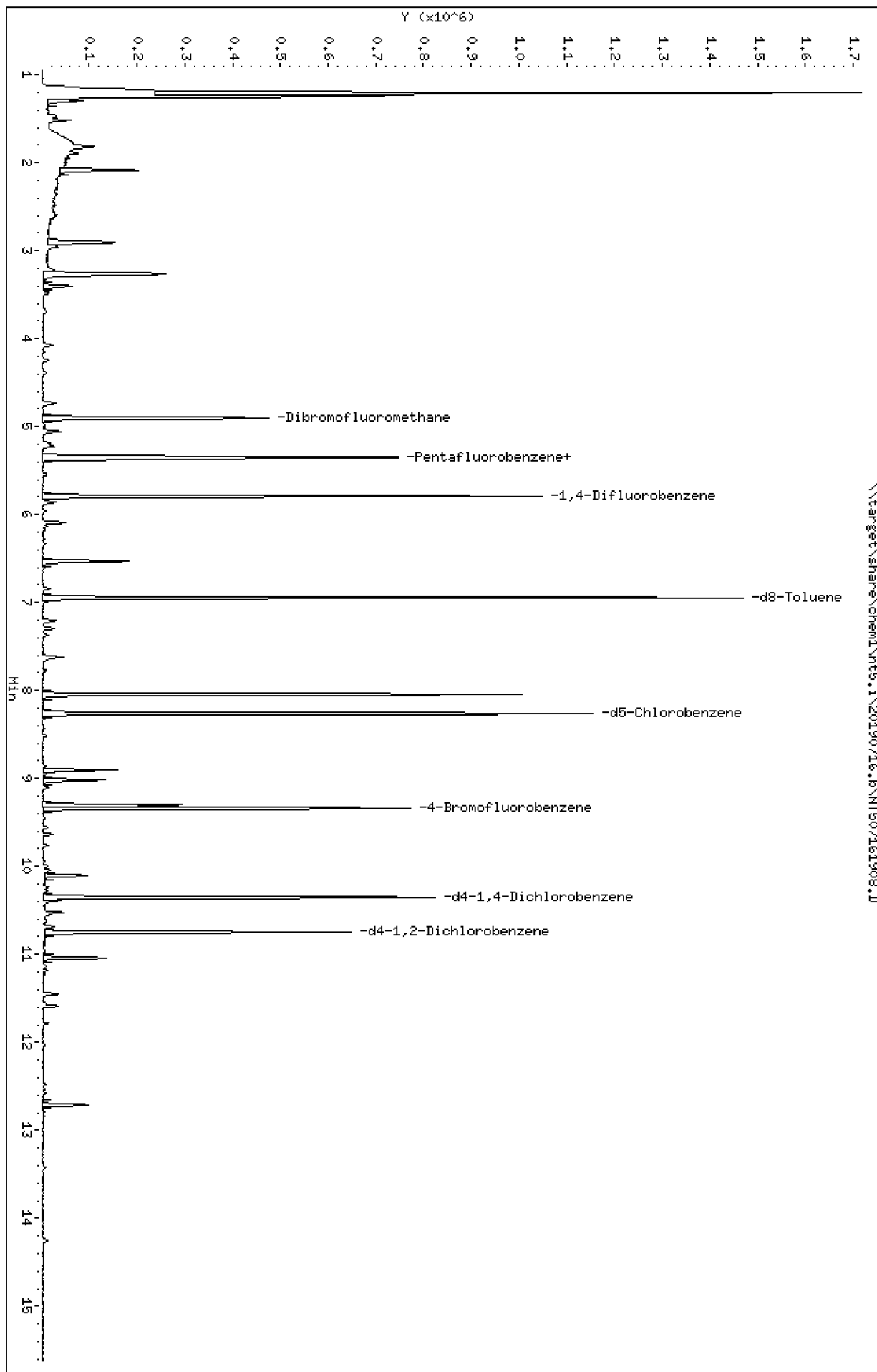
Page 1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 16-JUL-2019 17:28

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12

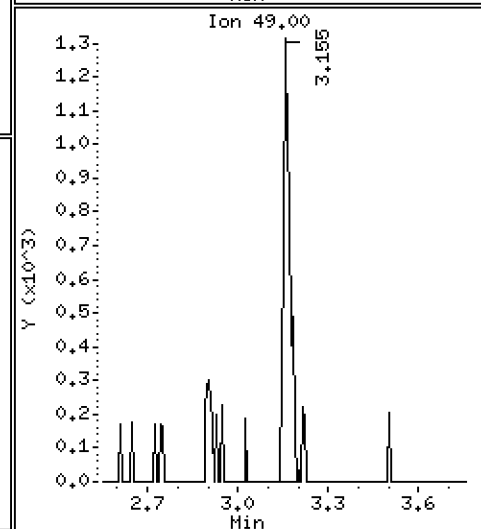
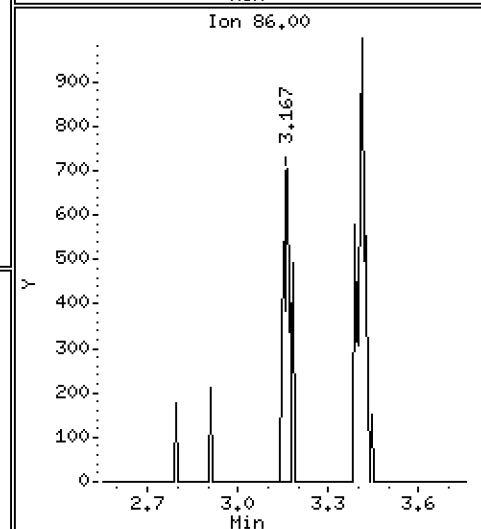
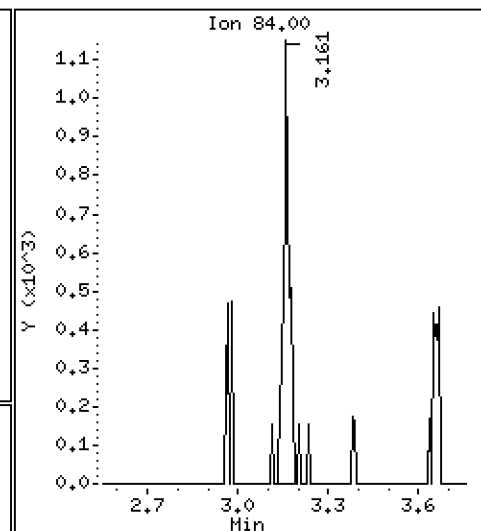
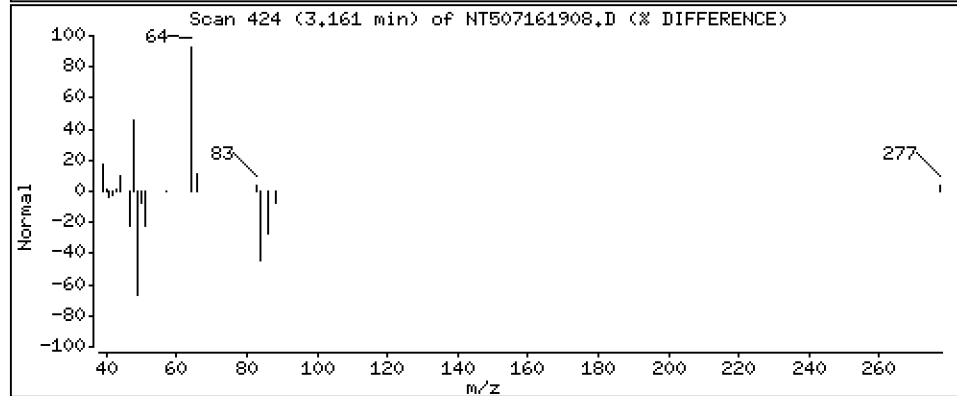
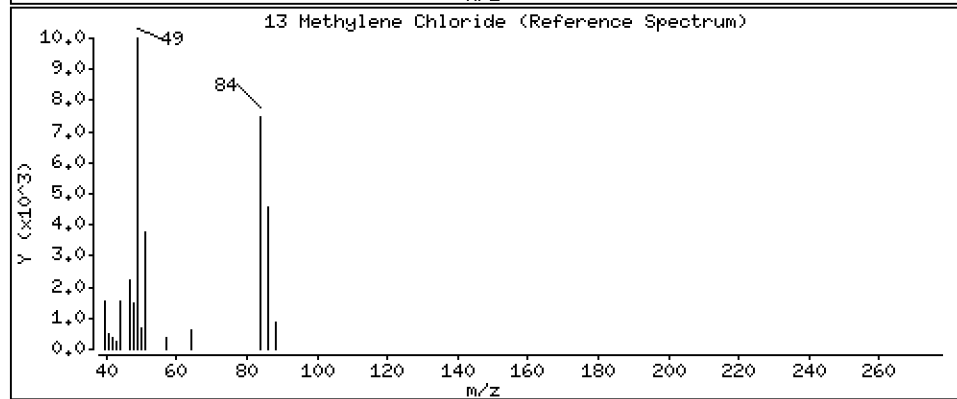
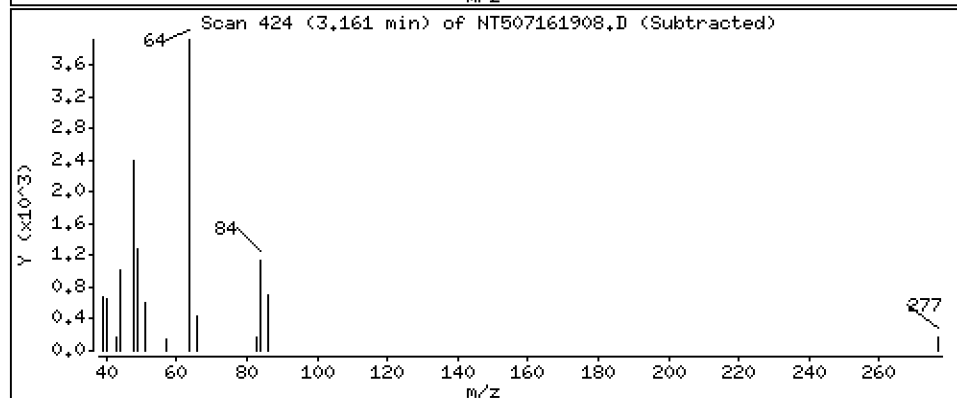
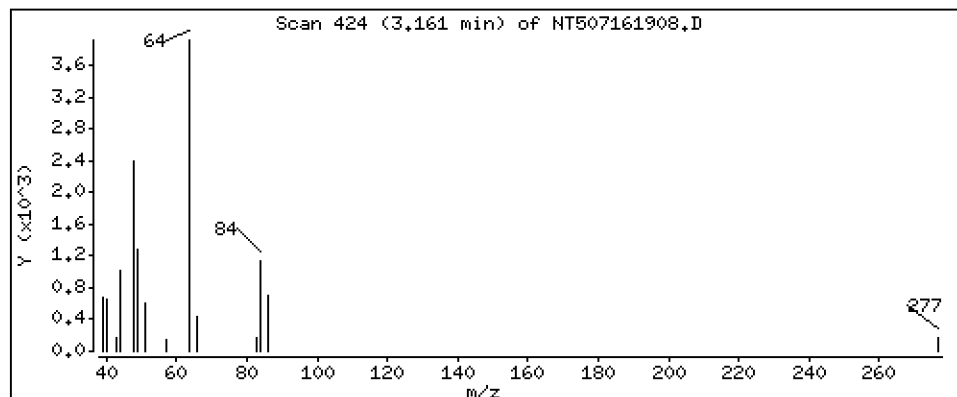
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.5844 ug/Kg



Date : 16-JUL-2019 17:28

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12

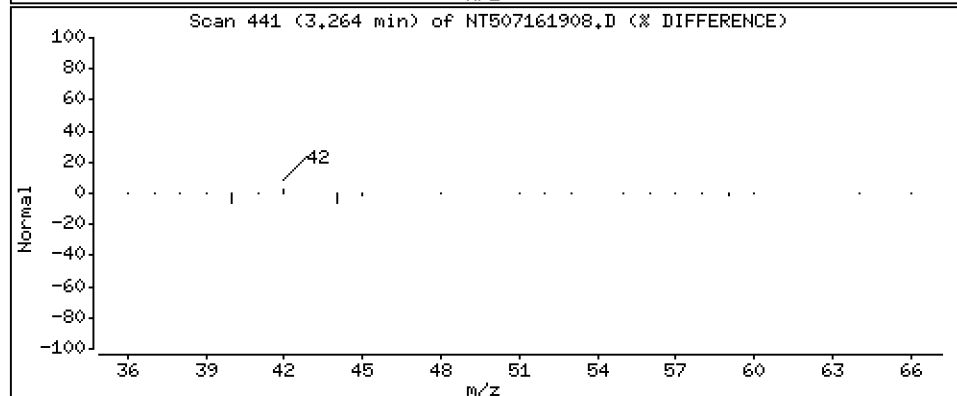
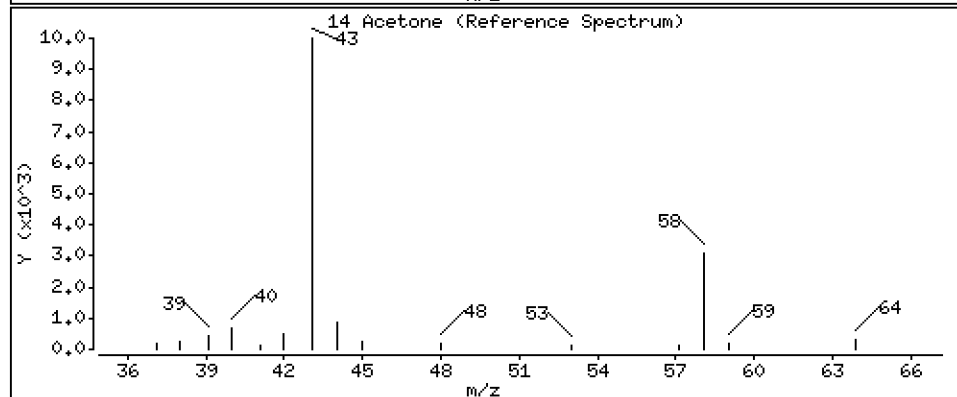
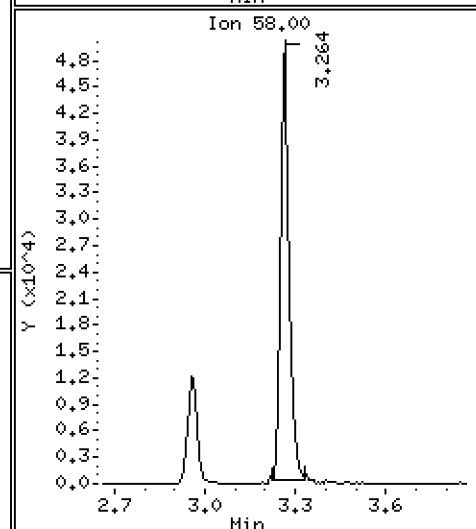
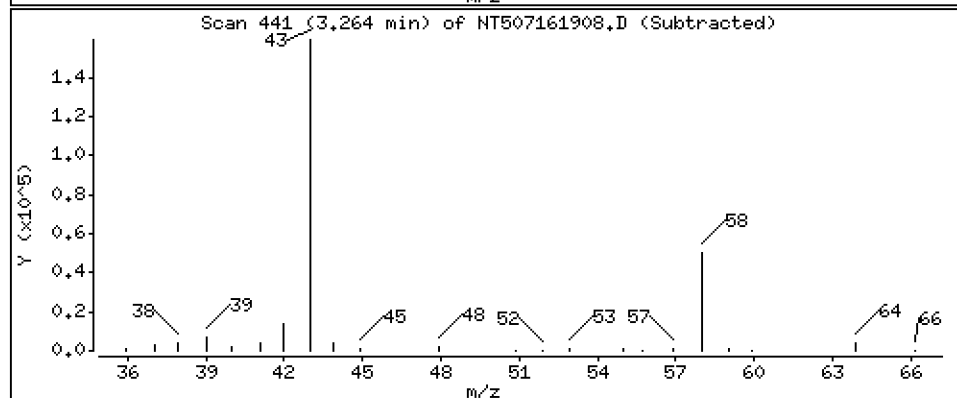
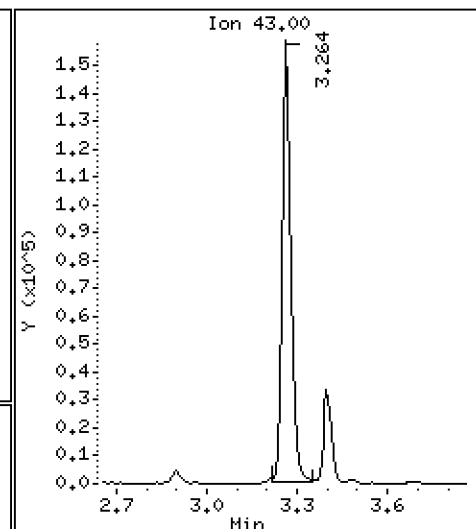
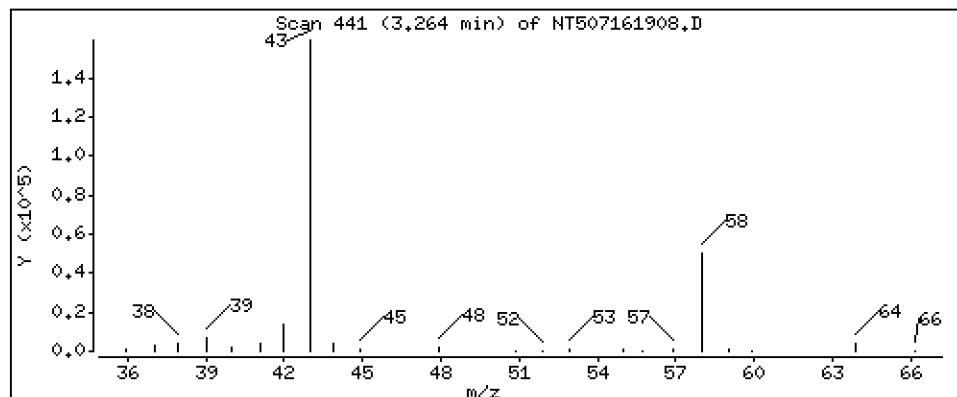
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 650.95 ug/Kg



Date : 16-JUL-2019 17:28

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12

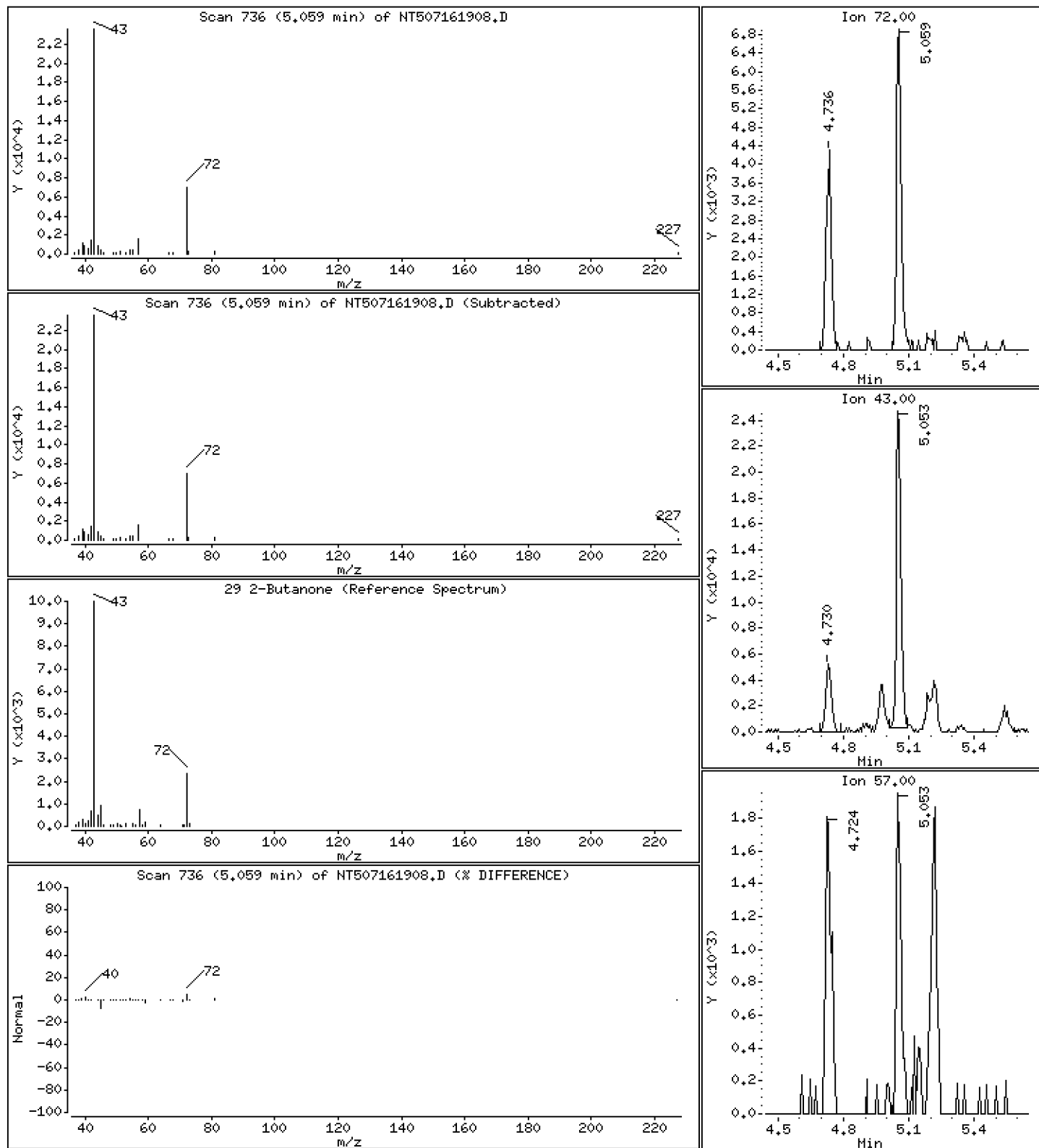
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 44,794 ug/Kg



Date : 16-JUL-2019 17:28

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12

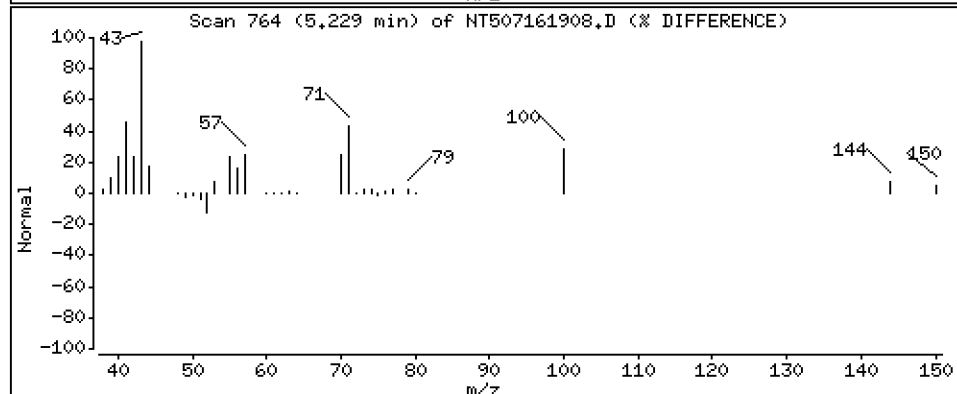
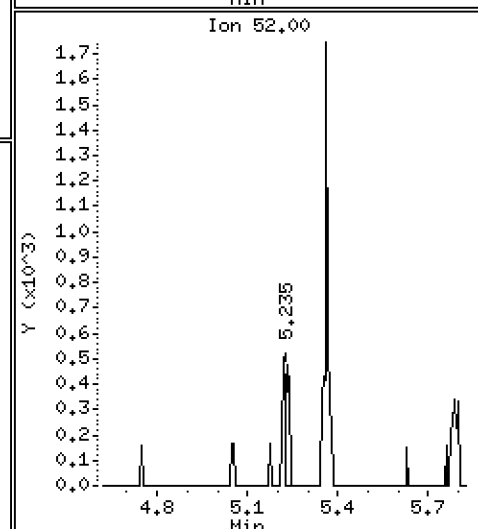
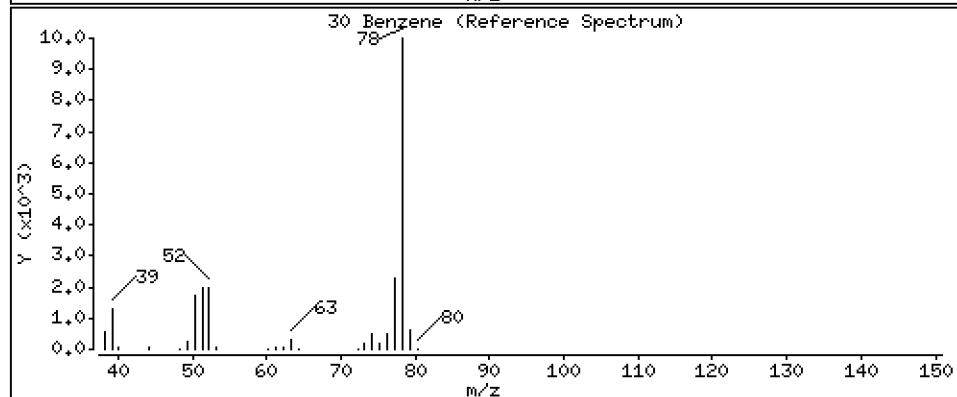
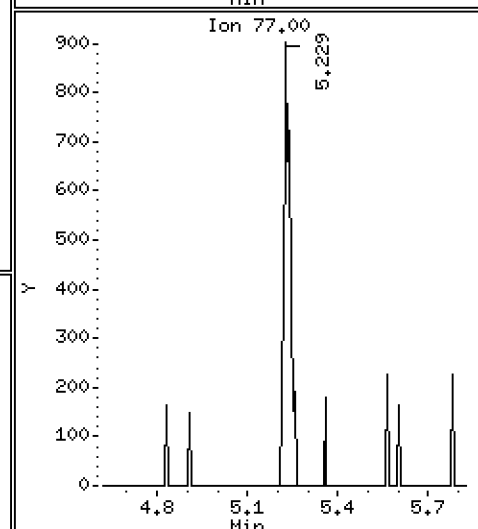
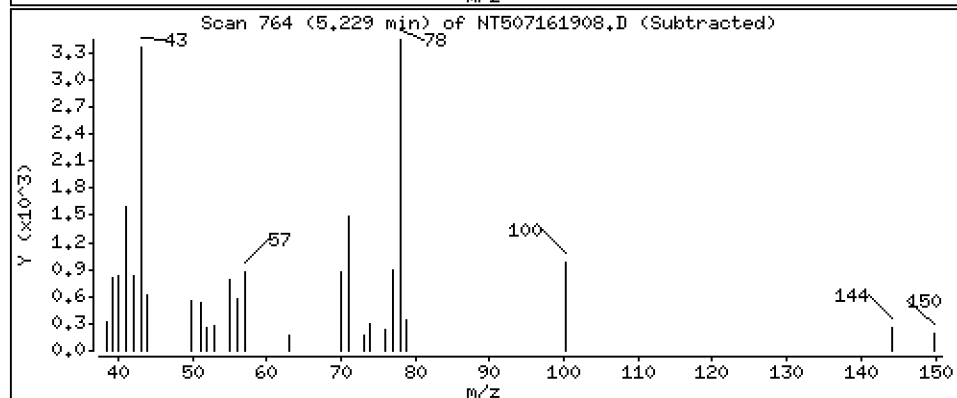
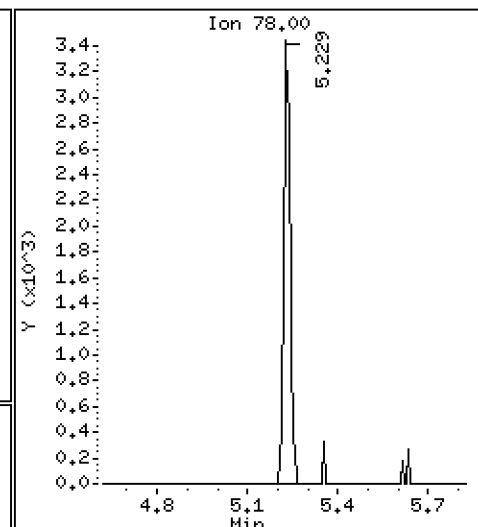
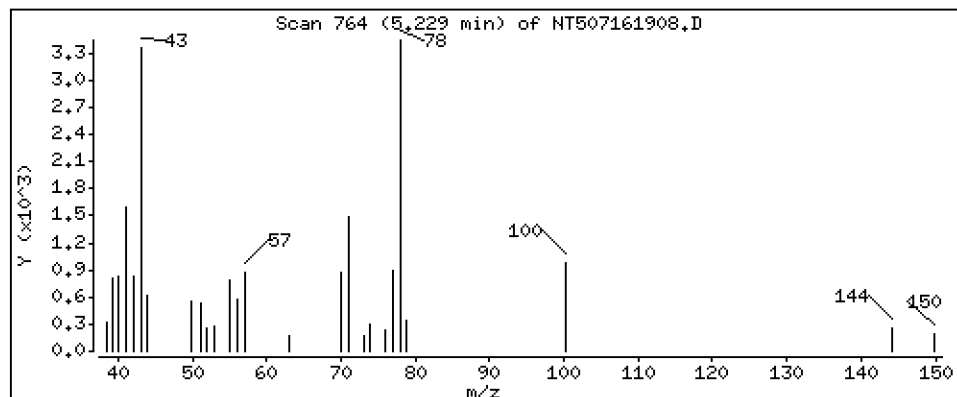
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 0.4732 ug/Kg



Date : 16-JUL-2019 17:28

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12

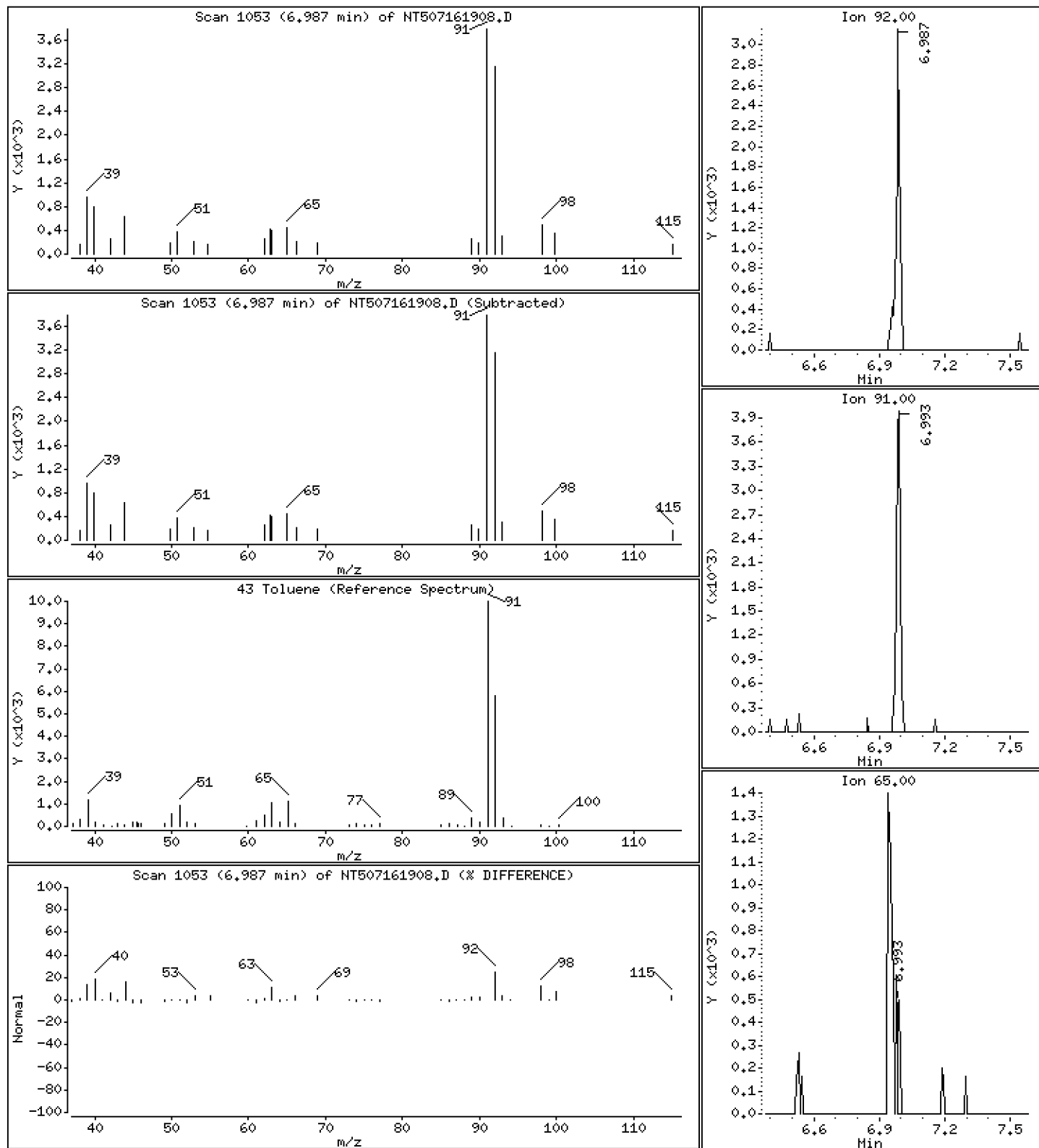
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.4971 ug/Kg



Date : 16-JUL-2019 17:28

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12

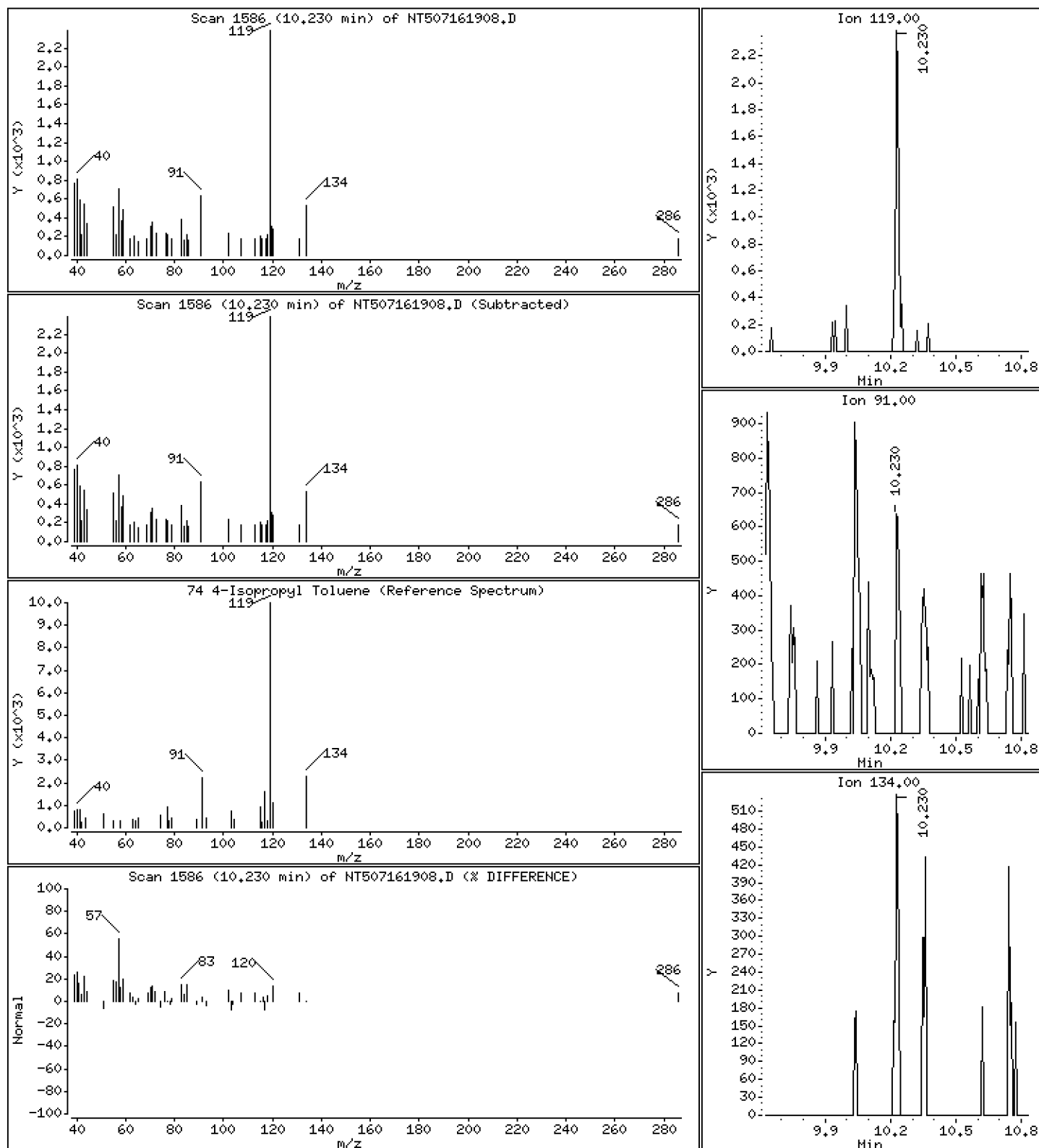
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 0.4055 ug/Kg



Date : 16-JUL-2019 17:28

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12

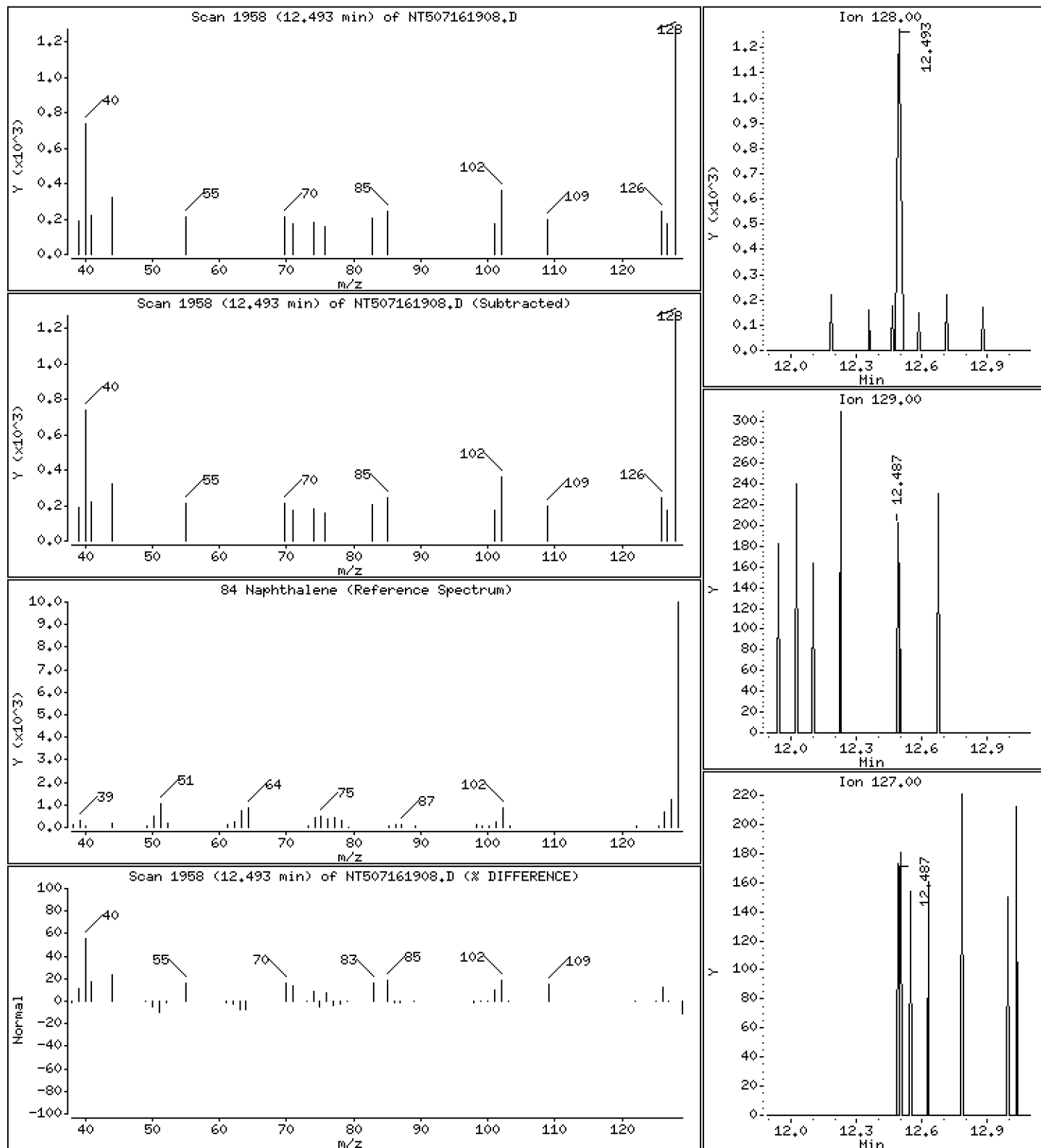
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.3770 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161908.D
 Lab Smp Id: 19G0163-12
 Inj Date : 16-JUL-2019 17:28
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-12
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Meth Date : 17-Jul-2019 13:41 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====								
1 Dichlorodifluoromethane	85			Compound Not	Detected.				
2 Chloromethane	50			Compound Not	Detected.				
3 Vinyl Chloride	62			Compound Not	Detected.				
4 Bromomethane	94			Compound Not	Detected.				
5 Chloroethane	64			Compound Not	Detected.				
6 Trichlorofluoromethane	101			Compound Not	Detected.				
7 1,1-Dichloroethene	96			Compound Not	Detected.				
8 Carbon Disulfide	76			Compound Not	Detected.				
9 112Trichloro122Trifluoroethane	101			Compound Not	Detected.				
10 Iodomethane	142			Compound Not	Detected.				
11 Bromoethane	108			Compound Not	Detected.				
12 Acrolein	56			Compound Not	Detected.				
13 Methylene Chloride	84		3.160	3.154	(0.591)		1776	0.58442	0.5844
14 Acetone	43		3.264	3.257	(0.611)		356154	650.953	650.95
15 Trans-1,2-Dichloroethene	96			Compound Not	Detected.				
16 Methyl tert butyl ether	73			Compound Not	Detected.				
173 n-Hexane	41			Compound Not	Detected.				
17 1,1-Dichloroethane	63			Compound Not	Detected.				
18 Acrylonitrile	53			Compound Not	Detected.				
19 Vinyl Acetate	43			Compound Not	Detected.				
20 Cis-1,2-Dichloroethene	96			Compound Not	Detected.				
22 2,2-Dichloropropane	77			Compound Not	Detected.				
23 Bromochloromethane	128			Compound Not	Detected.				
24 Chloroform	83			Compound Not	Detected.				
25 Carbon Tetrachloride	117			Compound Not	Detected.				
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.917)		241465	59.4684	59.468 (R)
26 1,1,1-Trichloroethane	97			Compound Not	Detected.				
28 1,1-Dichloropropene	75			Compound Not	Detected.				
29 2-Butanone	72		5.058	5.046	(0.947)		11518	44.7940	44.794
30 Benzene	78		5.229	5.222	(0.903)		5946	0.47316	0.4732
* 31 Pentafluorobenzene	168		5.344	5.338	(1.000)		371285	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.356	(1.003)		219072	64.4973	64.497 (R)
33 1,2-Dichloroethane	62			Compound Not	Detected.				

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	708943	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	794311	47.8445	47.845 (R)
43 Toluene	92	6.987	6.981	(1.207)	4265	0.49712	0.4971
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	553204	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	180818	38.1798	38.180 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	3017	0.40553	0.4055
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	183280	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	149554	46.7876	46.788 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128	12.492	12.492	(1.207)	1902	0.37696	0.3770
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161908.D Calibration Time: 14:57
 Lab Smp Id: 19G0163-12
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	371285	-8.08
35 1,4-Difluorobenze	717664	358832	1435328	708943	-1.22
52 d5-Chlorobenzene	696563	348282	1393126	553204	-20.58
76 d4-1,4-Dichlorobe	380778	190389	761556	183280	-51.87

<-

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.12
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:	Client SDG: 20151013
Sample Matrix: NONE	Fraction: VOA
Lab Smp Id: 19G0163-12	
Level:	Operator: PB
Data Type: MS DATA	SampleType: SAMPLE
SpikeList File: voasoil.spk	Quant Type: ISTD
Sublist File: voamdl.sub	
Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m	
Misc Info:	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	59.468	118.94	
\$ 32 d4-1,2-Dichloroeth	50.000	64.497	128.99	
\$ 42 d8-Toluene	50.000	47.845	95.69	
\$ 62 4-Bromofluorobenze	50.000	38.180	76.36	
\$ 79 d4-1,2-Dichloroben	50.000	46.788	93.58	

REVIEW SUMMARY FOR FILE - NT507161908.D

Lab ID: 19G0163-12
nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 17:28

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-12RE1 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 09:50</u>	Prepared: <u>07/17/19 13:53</u>	File ID: <u>NT507191906.D</u>
% Solids: <u>72.06</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/19/19 16:02</u>
Batch: <u>BHG0418</u>	Sequence: <u>SHG0298</u>	Initial/Final: <u>2.64 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	2.63	U	0.69	2.63
75-01-4	Vinyl Chloride	1	2.63	U	0.62	2.63
74-83-9	Bromomethane	1	2.63	U	0.49	2.63
75-00-3	Chloroethane	1	2.63	U	1.21	2.63
75-69-4	Trichlorofluoromethane	1	2.63	U	0.70	2.63
107-02-8	Acrolein	1	13.1	U	10.0	13.1
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	5.26	U	0.75	5.26
67-64-1	Acetone	1	1550		1.27	13.1
75-35-4	1,1-Dichloroethene	1	2.63	U	0.88	2.63
74-96-4	Bromoethane	1	5.26	U	1.16	5.26
74-88-4	Iodomethane	1	2.63	U	0.57	2.63
75-09-2	Methylene Chloride	1	5.26	U	1.67	5.26
107-13-1	Acrylonitrile	1	13.1	U	2.71	13.1
75-15-0	Carbon Disulfide	1	2.63	U	1.47	2.63
156-60-5	trans-1,2-Dichloroethene	1	2.63	U	0.70	2.63
108-05-4	Vinyl Acetate	1	13.1	U	1.00	13.1
75-34-3	1,1-Dichloroethane	1	2.63	U	0.53	2.63
78-93-3	2-Butanone	1	79.9		1.35	13.1
594-20-7	2,2-Dichloropropane	1	2.63	U	0.77	2.63
156-59-2	cis-1,2-Dichloroethene	1	2.63	U	0.63	2.63
67-66-3	Chloroform	1	2.63	U	0.62	2.63
74-97-5	Bromochloromethane	1	2.63	U	0.85	2.63
71-55-6	1,1,1-Trichloroethane	1	2.63	U	0.59	2.63
563-58-6	1,1-Dichloropropene	1	2.63	U	0.82	2.63
56-23-5	Carbon tetrachloride	1	2.63	U	0.56	2.63
107-06-2	1,2-Dichloroethane	1	2.63	U	0.50	2.63
71-43-2	Benzene	1	2.63	U	0.78	2.63
79-01-6	Trichloroethene	1	2.63	U	0.56	2.63
78-87-5	1,2-Dichloropropane	1	2.63	U	0.43	2.63
75-27-4	Bromodichloromethane	1	2.63	U	0.67	2.63
74-95-3	Dibromomethane	1	2.63	U	0.39	2.63
110-75-8	2-Chloroethyl vinyl ether	1	13.1	U	0.73	13.1
108-10-1	4-Methyl-2-Pentanone	1	13.1	U	1.10	13.1
10061-01-5	cis-1,3-Dichloropropene	1	2.63	U	0.59	2.63



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-12RE1 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 09:50</u>	Prepared: <u>07/17/19 13:53</u>	File ID: <u>NT507191906.D</u>
% Solids: <u>72.06</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/19/19 16:02</u>
Batch: <u>BHG0418</u>	Sequence: <u>SHG0298</u>	Initial/Final: <u>2.64 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	4.78		0.40	2.63
10061-02-6	trans-1,3-Dichloropropene	1	2.63	U	0.57	2.63
591-78-6	2-Hexanone	1	13.1	U	1.15	13.1
79-00-5	1,1,2-Trichloroethane	1	2.63	U	0.75	2.63
142-28-9	1,3-Dichloropropane	1	2.63	U	0.55	2.63
127-18-4	Tetrachloroethene	1	2.63	U	0.68	2.63
124-48-1	Dibromochloromethane	1	2.63	U	0.70	2.63
106-93-4	1,2-Dibromoethane	1	2.63	U	0.46	2.63
108-90-7	Chlorobenzene	1	2.63	U	0.58	2.63
100-41-4	Ethylbenzene	1	2.63	U	0.53	2.63
630-20-6	1,1,1,2-Tetrachloroethane	1	2.63	U	0.61	2.63
179601-23-1	m,p-Xylene	1	5.26	U	1.03	5.26
95-47-6	o-Xylene	1	2.63	U	0.59	2.63
1330-20-7	Xylenes, total	1	5.26	U	1.62	5.26
100-42-5	Styrene	1	2.63	U	0.36	2.63
75-25-2	Bromoform	1	2.63	U	0.78	2.63
79-34-5	1,1,1,2-Tetrachloroethane	1	2.63	U	0.66	2.63
96-18-4	1,2,3-Trichloropropane	1	5.26	U	1.36	5.26
110-57-6	trans-1,4-Dichloro 2-Butene	1	13.1	U	1.15	13.1
103-65-1	n-Propylbenzene	1	2.63	U	0.71	2.63
108-86-1	Bromobenzene	1	2.63	U	0.40	2.63
98-82-8	Isopropyl Benzene	1	2.63	U	0.61	2.63
95-49-8	2-Chlorotoluene	1	2.63	U	0.79	2.63
106-43-4	4-Chlorotoluene	1	2.63	U	0.73	2.63
98-06-6	t-Butylbenzene	1	2.63	U	0.80	2.63
108-67-8	1,3,5-Trimethylbenzene	1	2.63	U	0.67	2.63
95-63-6	1,2,4-Trimethylbenzene	1	2.63	U	0.60	2.63
135-98-8	s-Butylbenzene	1	2.63	U	0.63	2.63
99-87-6	4-Isopropyl Toluene	1	1.13	J	0.62	2.63
541-73-1	1,3-Dichlorobenzene	1	2.63	U	0.60	2.63
106-46-7	1,4-Dichlorobenzene	1	2.63	U	0.61	2.63
104-51-8	n-Butylbenzene	1	2.63	U	0.69	2.63
95-50-1	1,2-Dichlorobenzene	1	2.63	U	0.77	2.63
96-12-8	1,2-Dibromo-3-chloropropane	1	13.1	U	1.54	13.1



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12RE1 C SDG: 19G0163
Sampled: 07/11/19 09:50 Prepared: 07/17/19 13:53 File ID: NT507191906.D
% Solids: 72.06 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/19/19 16:02
Batch: BHG0418 Sequence: SHG0298 Initial/Final: 2.64 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	0.92	J	0.87	13.1
87-68-3	Hexachloro-1,3-Butadiene	1	13.1	U	1.08	13.1
91-20-3	Naphthalene	1	1.30	J	1.13	13.1
87-61-6	1,2,3-Trichlorobenzene	1	13.1	U	0.80	13.1
75-71-8	Dichlorodifluoromethane	1	2.63	U	0.54	2.63
1634-04-4	Methyl tert-butyl Ether	1	2.63	U	0.61	2.63
107-87-9	2-Pentanone	1	13.1	U	13.1	13.1

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	63.7	127	80 - 149	
Toluene-d8	50.000	50.2	100	77 - 120	
4-Bromofluorobenzene	50.000	42.9	85.8	80 - 120	
1,2-Dichlorobenzene-d4	50.000	47.1	94.3	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190719.b\NT507191906.D

Date : 19-JUL-2019 16:02

Client ID:

Sample Info: 19C0163-12RE1

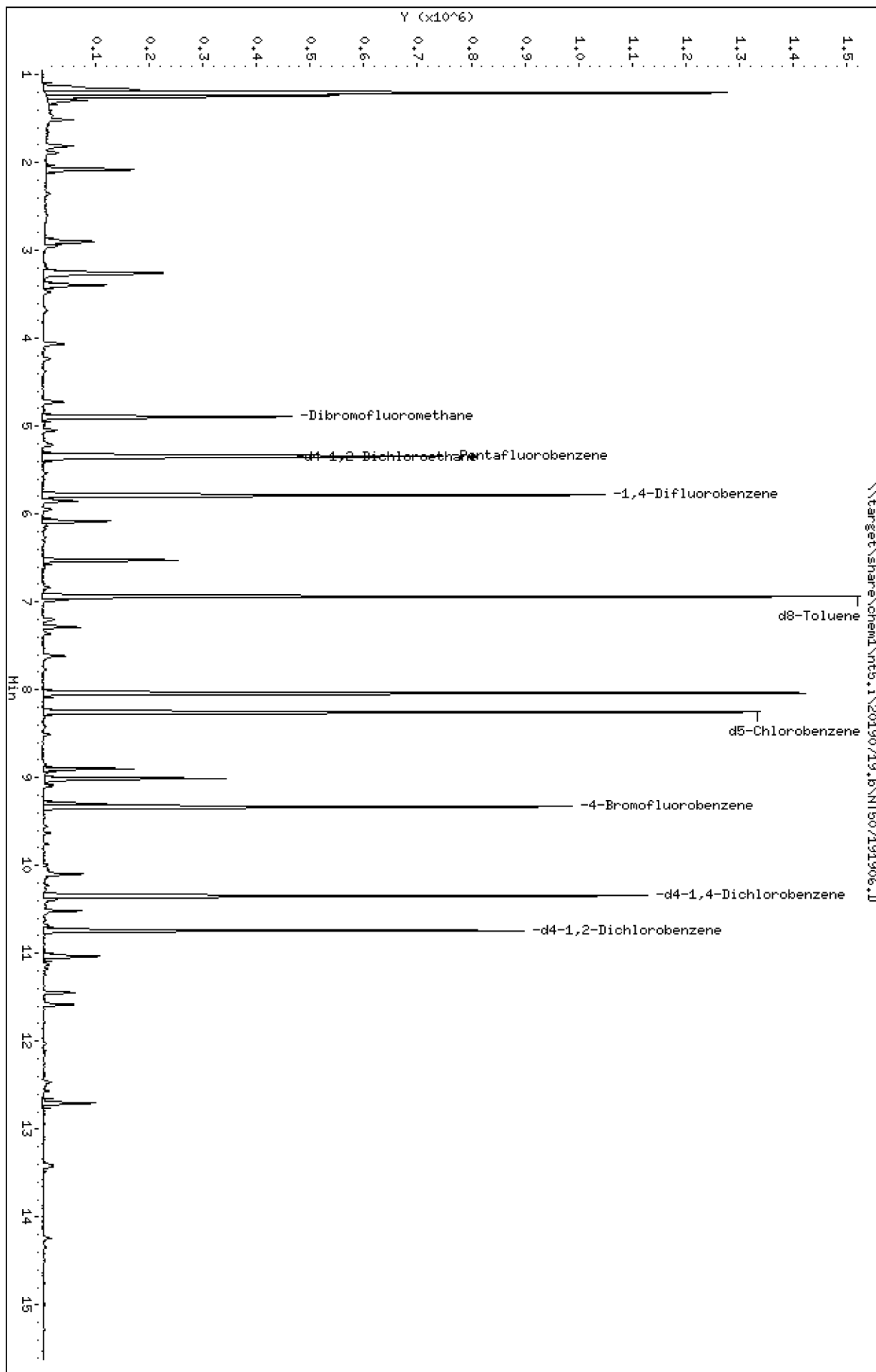
Page 1

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Date : 19-JUL-2019 16:02

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12RE1

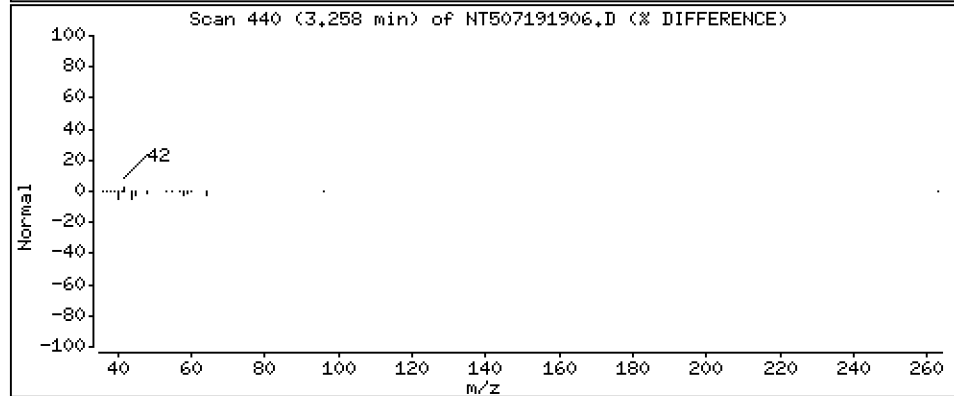
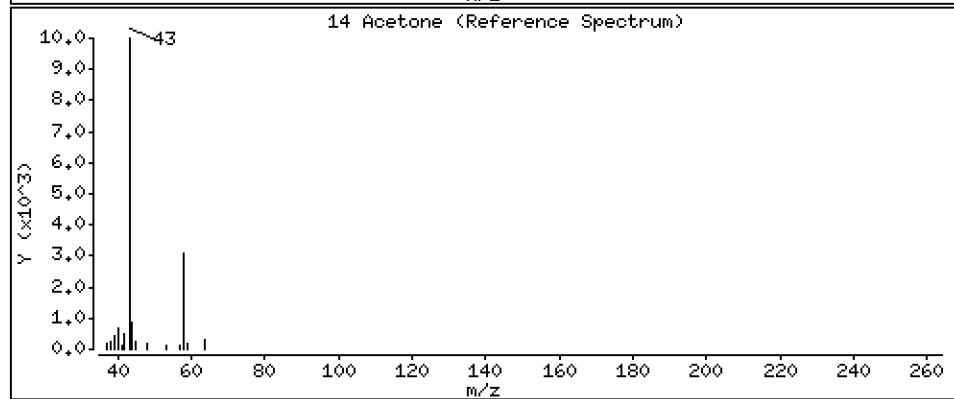
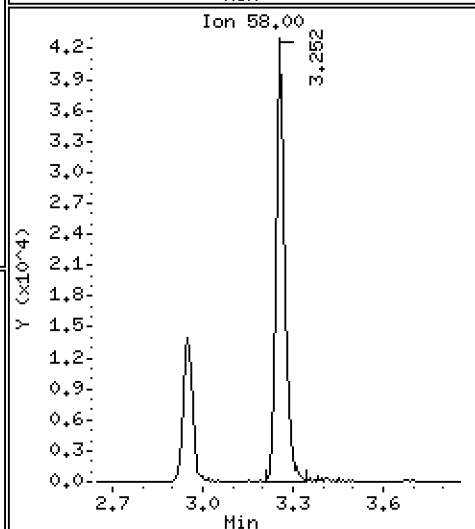
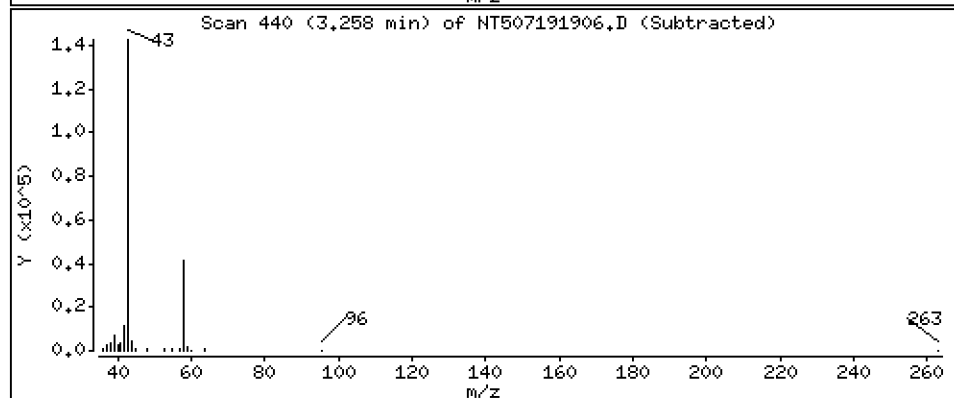
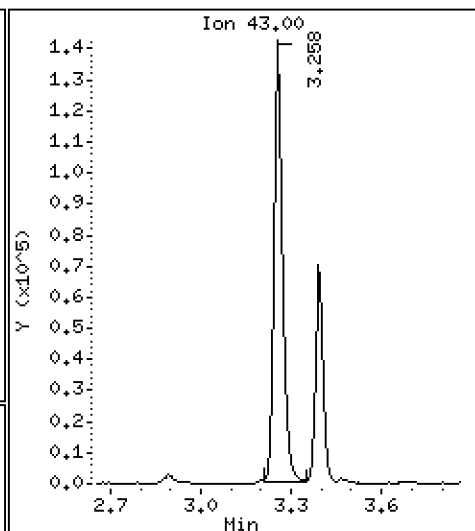
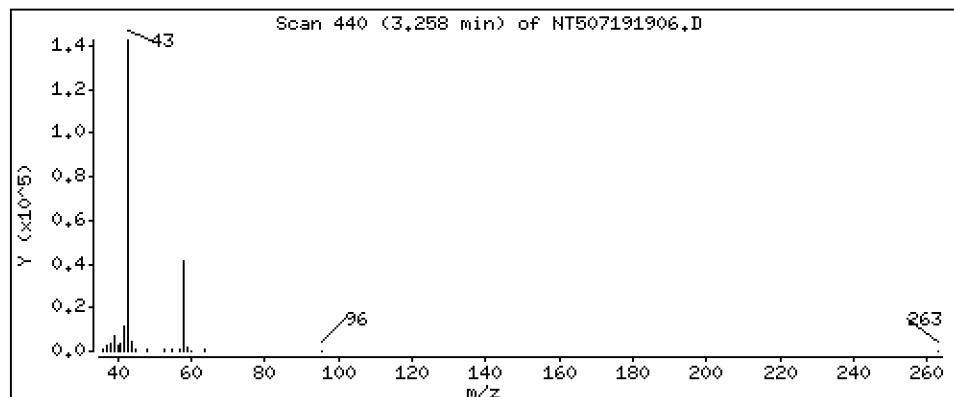
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 589.11 ug/Kg



Date : 19-JUL-2019 16:02

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12RE1

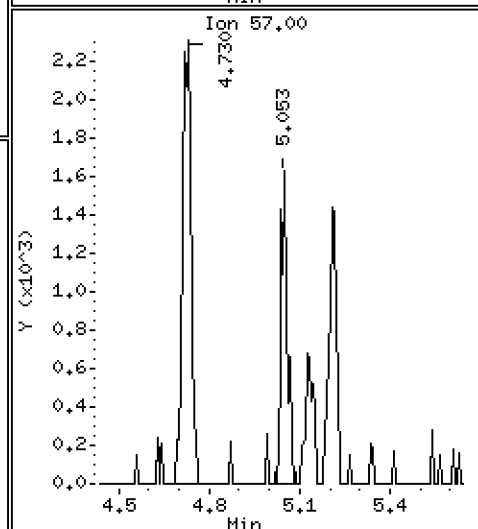
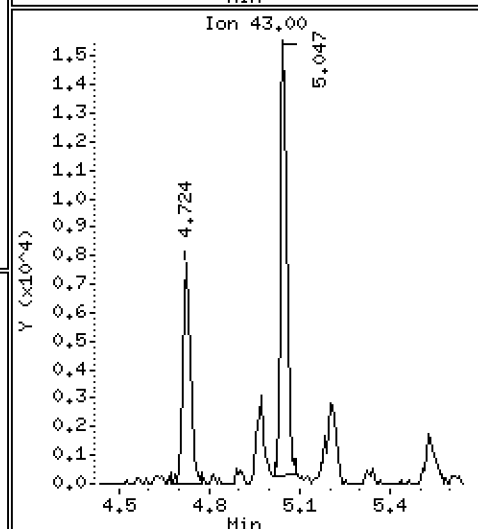
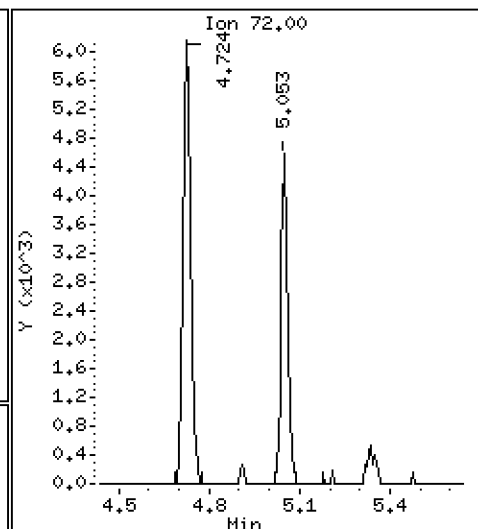
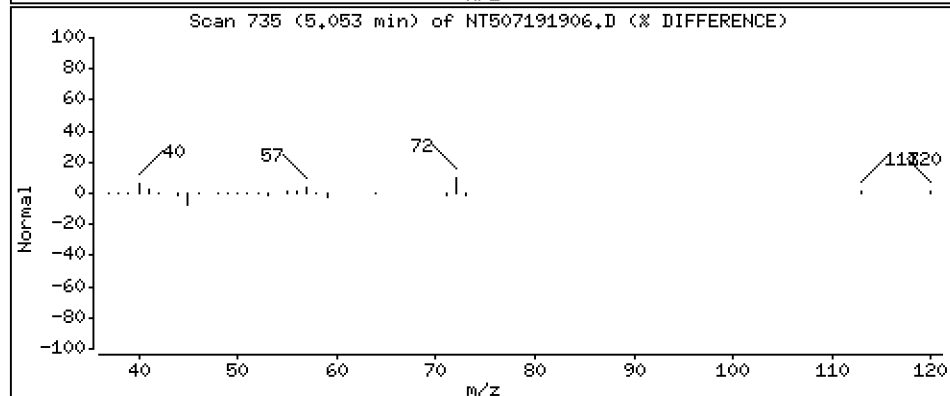
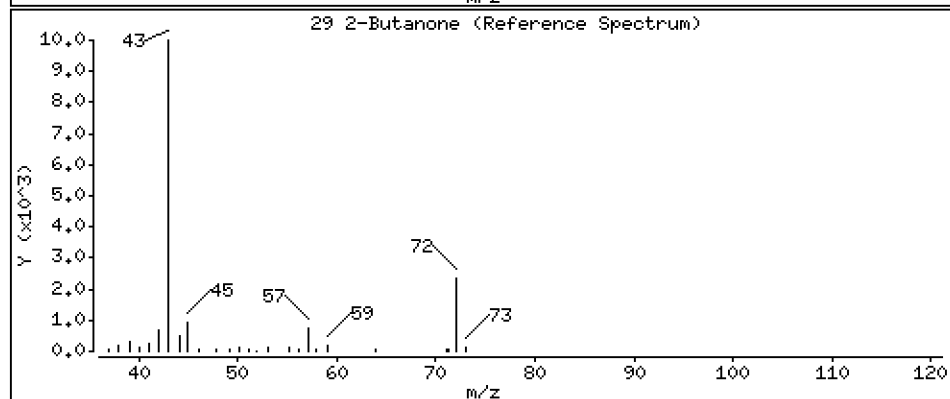
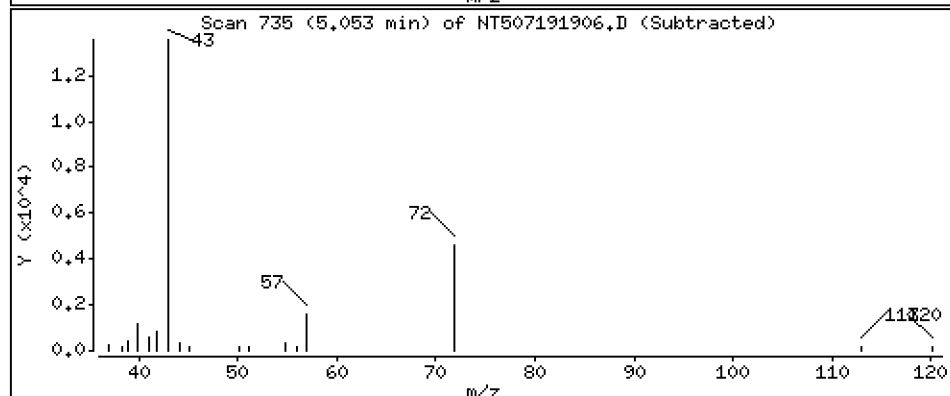
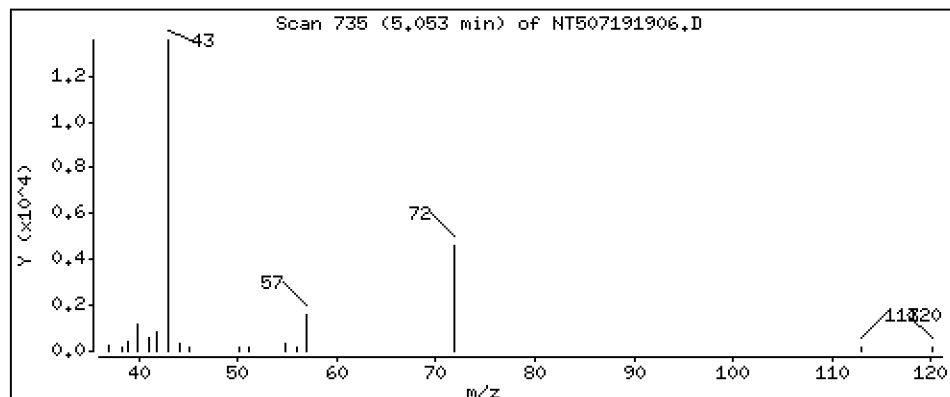
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 30.392 ug/Kg



Date : 19-JUL-2019 16:02

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12RE1

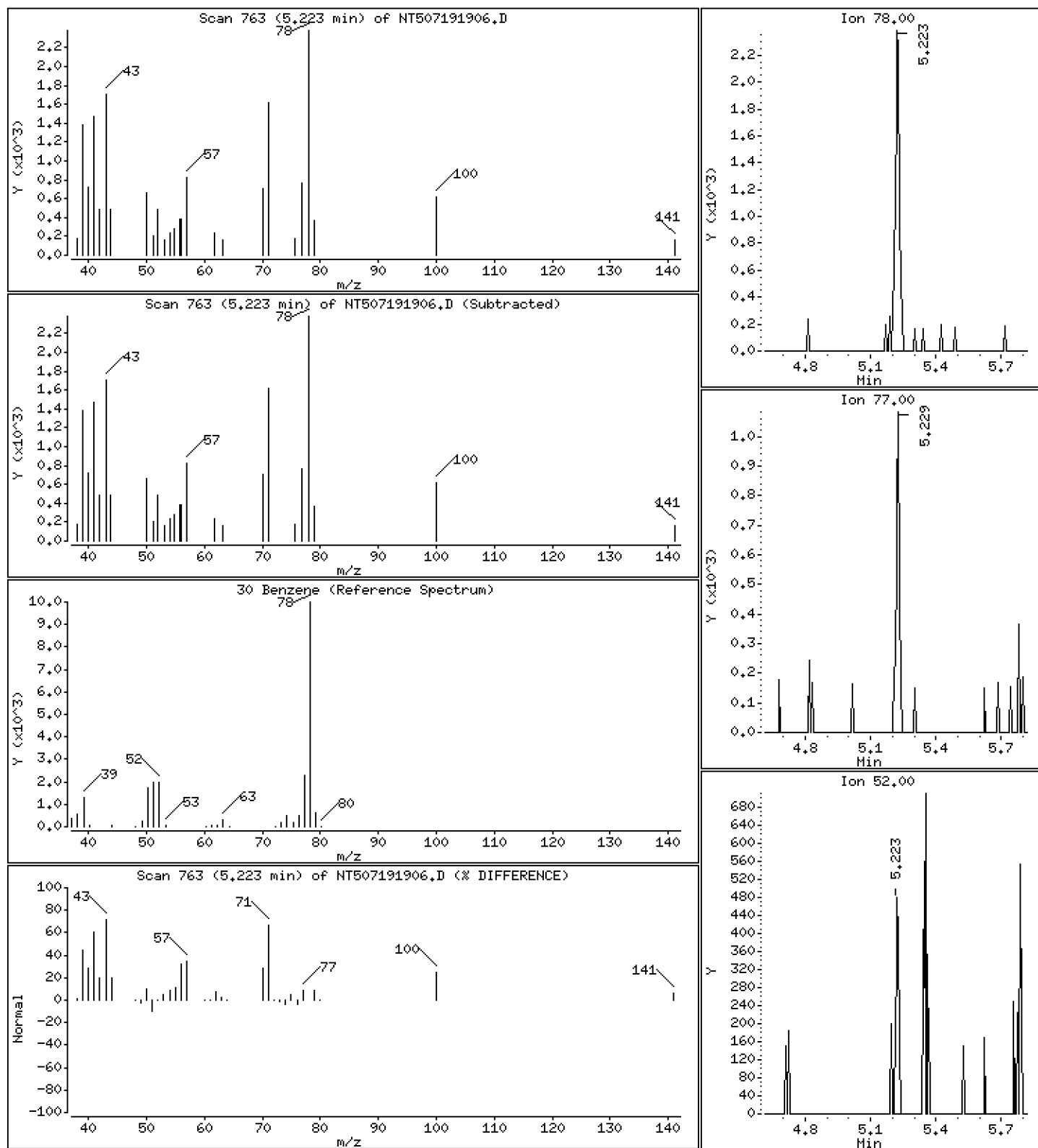
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 0.2956 ug/Kg



Date : 19-JUL-2019 16:02

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12RE1

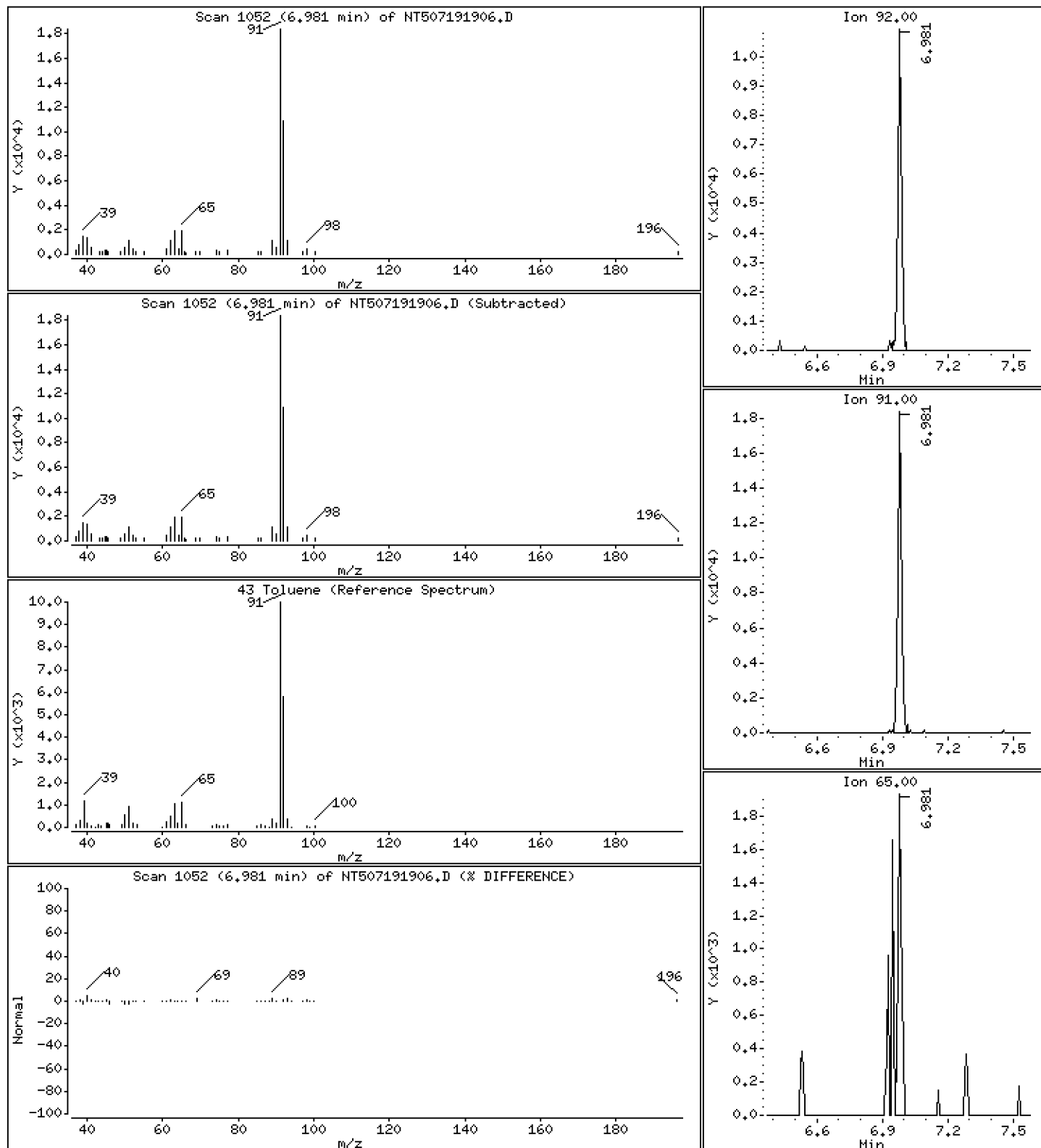
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 1.819 ug/Kg

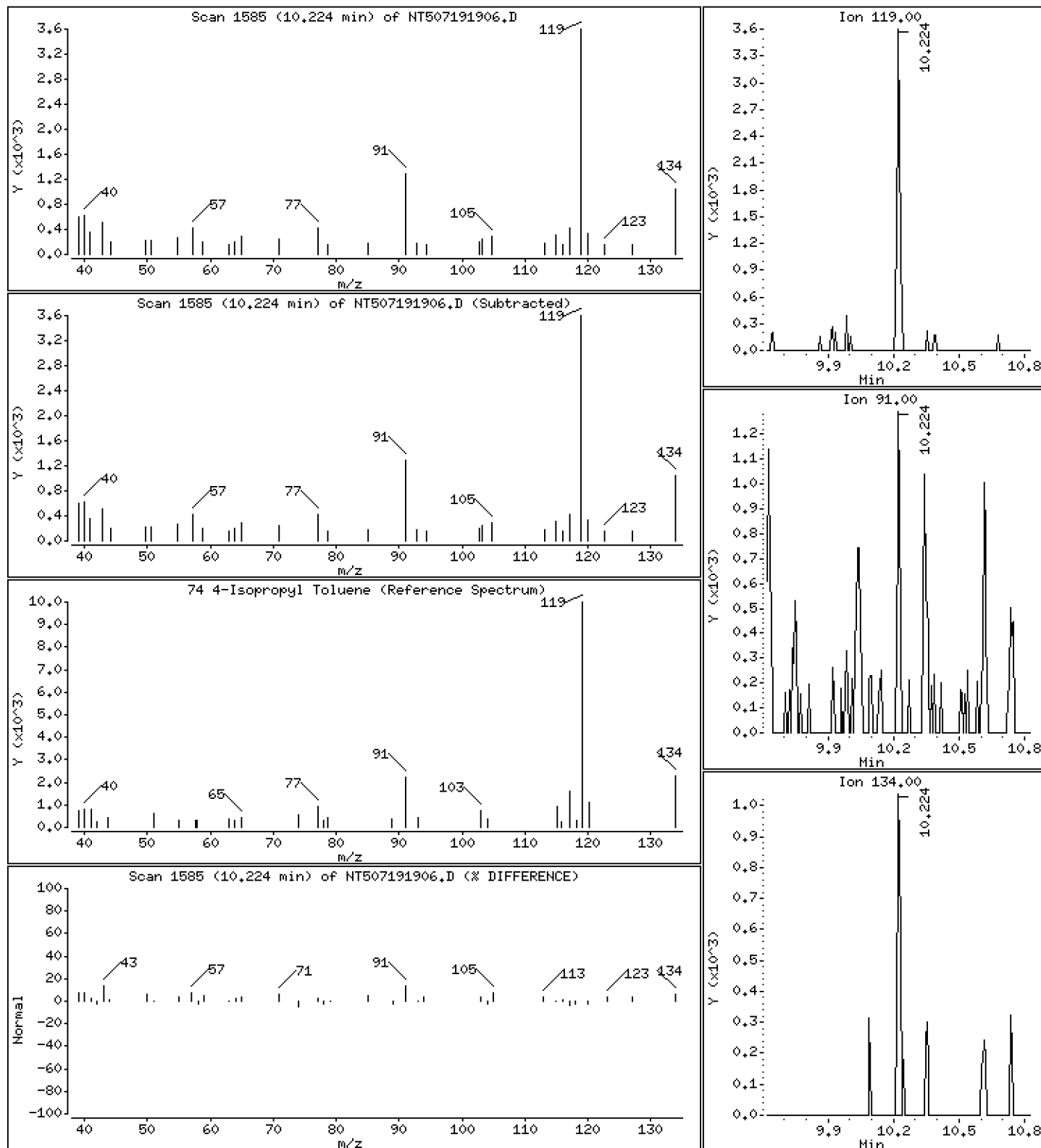


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 0.4284 ug/Kg



Date : 19-JUL-2019 16:02

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12RE1

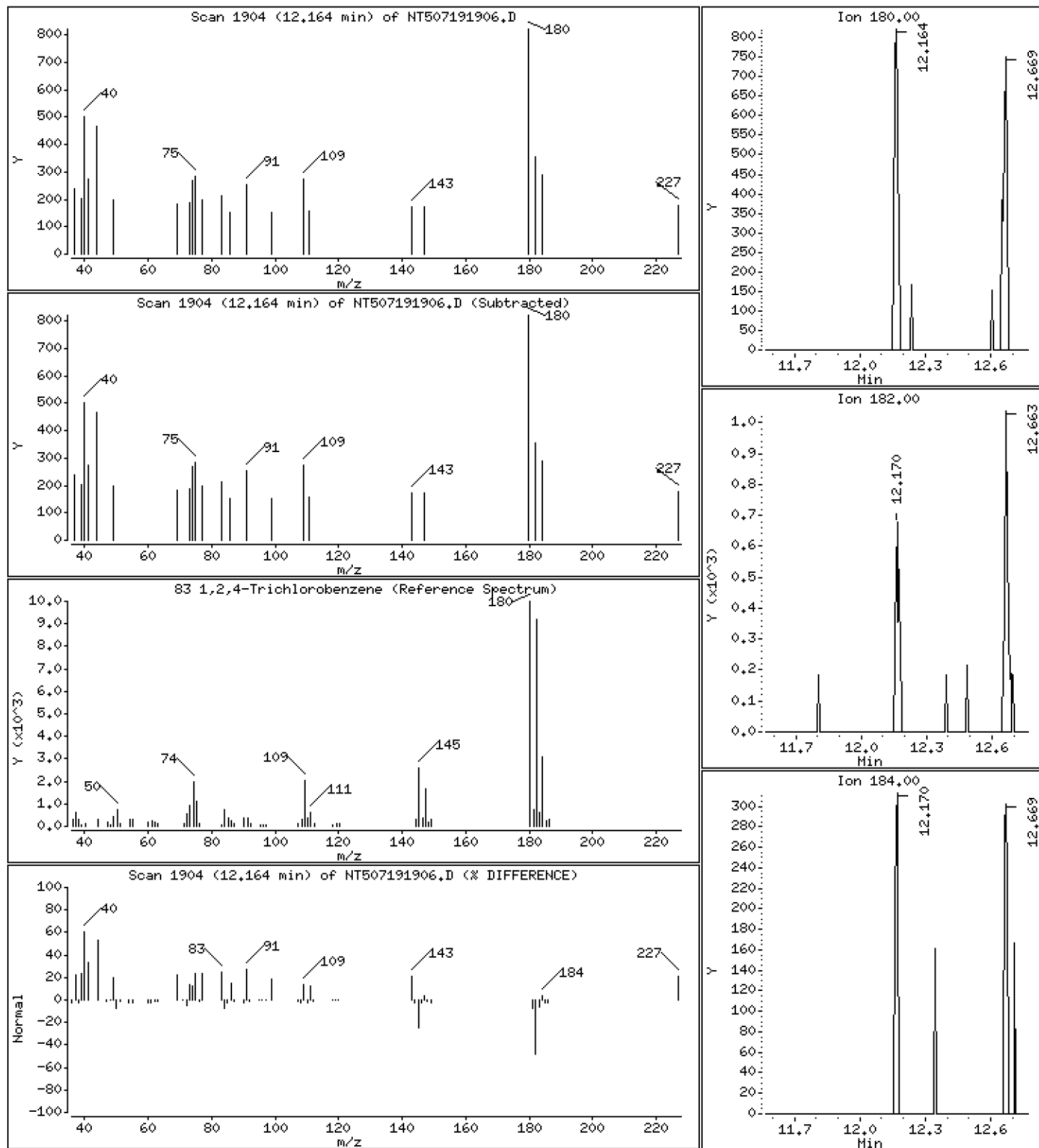
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 0.3498 ug/Kg



Date : 19-JUL-2019 16:02

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12RE1

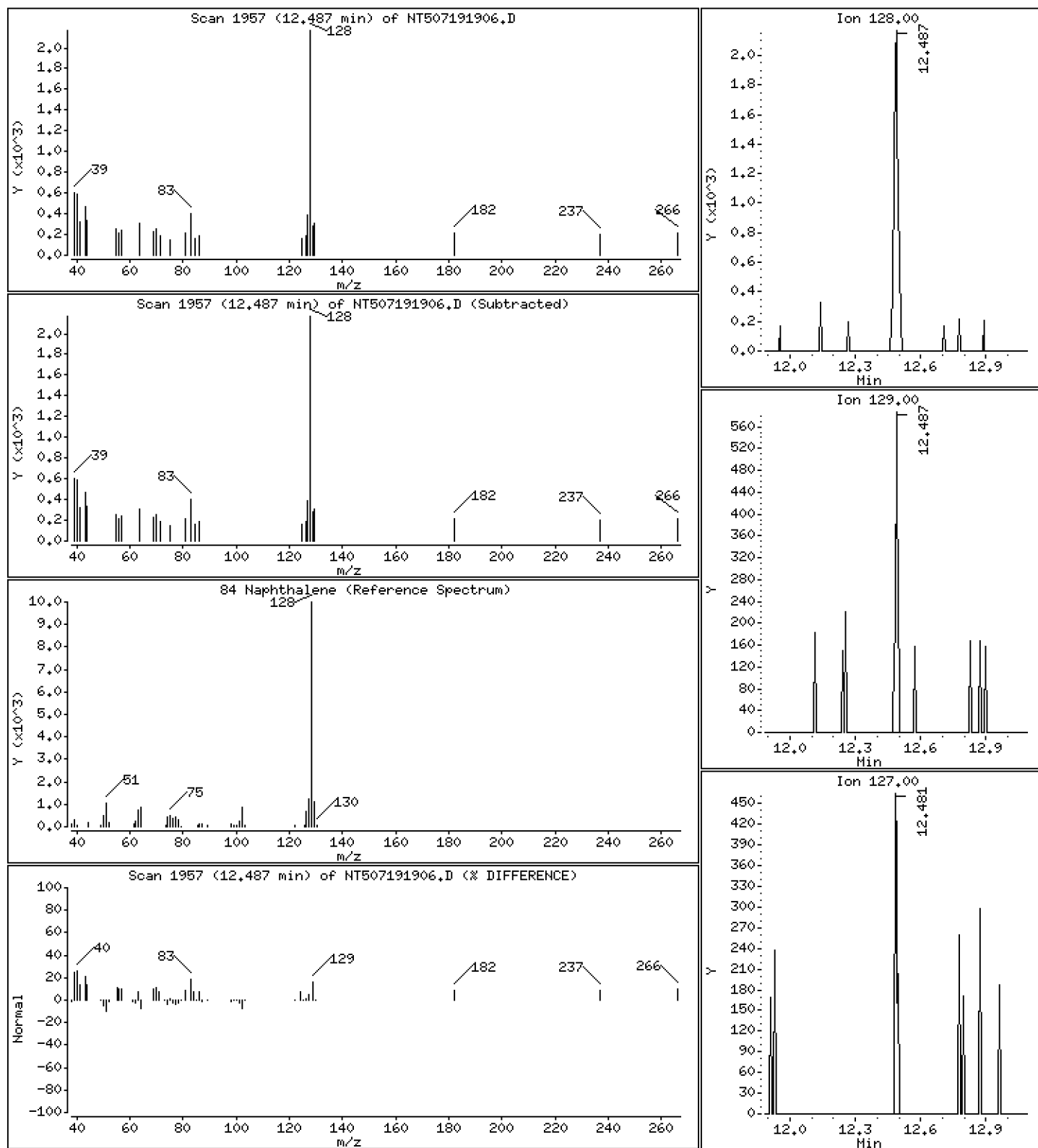
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.4951 ug/Kg



Date : 19-JUL-2019 16:02

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-12RE1

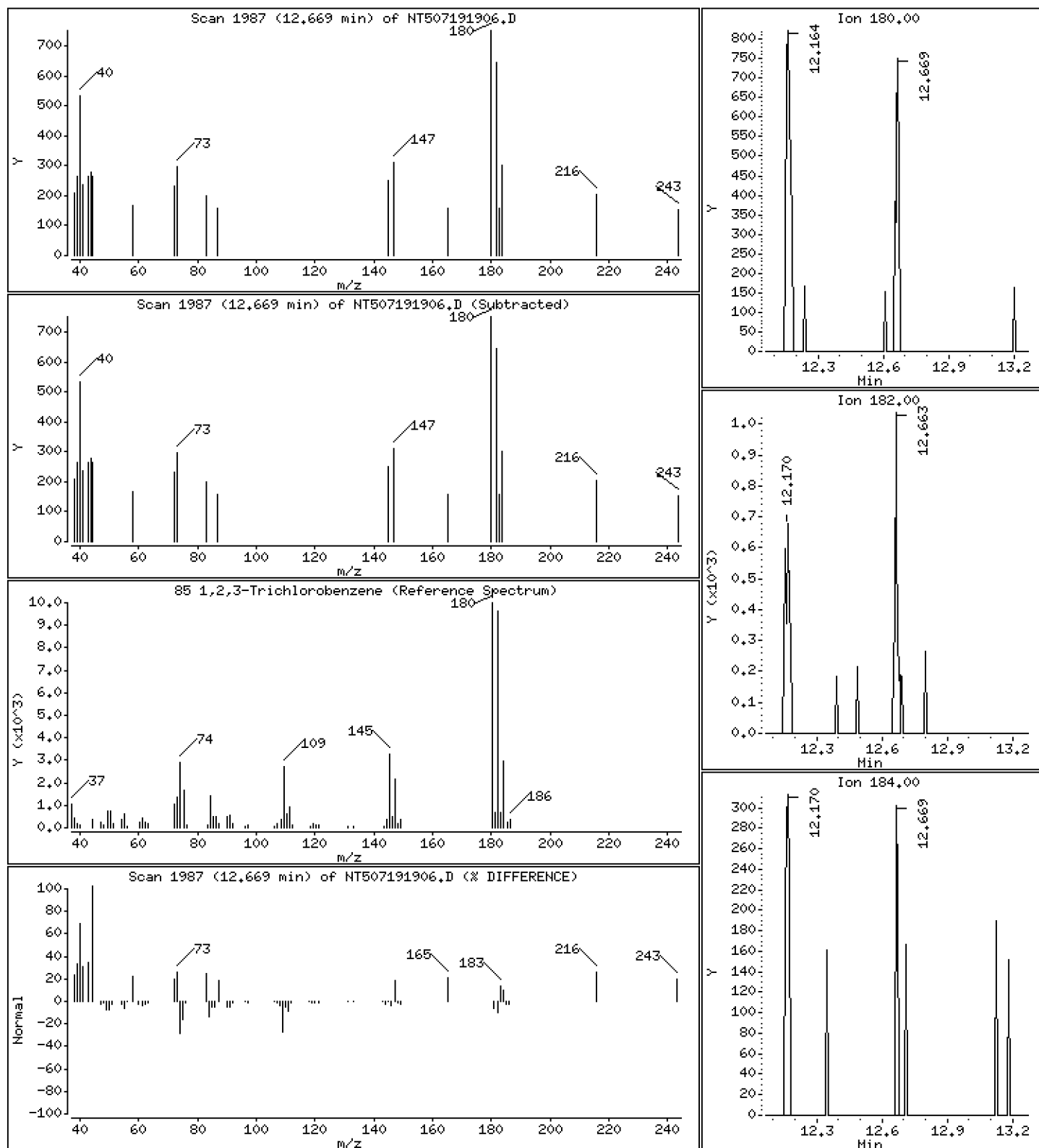
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 0.2957 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190719.b\NT507191906.D
 Lab Smp Id: 19G0163-12RE1
 Inj Date : 19-JUL-2019 16:02
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-12RE1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Meth Date : 22-Jul-2019 15:50 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====								
1 Dichlorodifluoromethane	85			Compound Not	Detected.				
2 Chloromethane	50			Compound Not	Detected.				
3 Vinyl Chloride	62			Compound Not	Detected.				
4 Bromomethane	94			Compound Not	Detected.				
5 Chloroethane	64			Compound Not	Detected.				
6 Trichlorofluoromethane	101			Compound Not	Detected.				
7 1,1-Dichloroethene	96			Compound Not	Detected.				
8 Carbon Disulfide	76			Compound Not	Detected.				
9 112Trichloro122Trifluoroethane	101			Compound Not	Detected.				
10 Iodomethane	142			Compound Not	Detected.				
11 Bromoethane	108			Compound Not	Detected.				
12 Acrolein	56			Compound Not	Detected.				
13 Methylene Chloride	84			Compound Not	Detected.				
14 Acetone	43		3.258	3.258	(0.610)		312217	589.109	589.11
15 Trans-1,2-Dichloroethene	96			Compound Not	Detected.				
16 Methyl tert butyl ether	73			Compound Not	Detected.				
173 n-Hexane	41			Compound Not	Detected.				
17 1,1-Dichloroethane	63			Compound Not	Detected.				
18 Acrylonitrile	53			Compound Not	Detected.				
19 Vinyl Acetate	43			Compound Not	Detected.				
20 Cis-1,2-Dichloroethene	96			Compound Not	Detected.				
22 2,2-Dichloropropane	77			Compound Not	Detected.				
23 Bromochloromethane	128			Compound Not	Detected.				
24 Chloroform	83			Compound Not	Detected.				
25 Carbon Tetrachloride	117			Compound Not	Detected.				
\$ 27 Dibromofluoromethane	111		4.894	4.888	(0.917)		234100	59.5197	59.520 (R)
26 1,1,1-Trichloroethane	97			Compound Not	Detected.				
28 1,1-Dichloropropene	75			Compound Not	Detected.				
29 2-Butanone	72		5.052	5.040	(0.946)		7570	30.3925	30.392
30 Benzene	78		5.223	5.216	(0.903)		3720	0.29559	0.2956
* 31 Pentafluorobenzene	168		5.338	5.332	(1.000)		359650	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.350	(1.003)		209602	63.7055	63.706 (R)
33 1,2-Dichloroethane	62			Compound Not	Detected.				

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.782	5.782	(1.000)	709973	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.938	6.932	(1.200)	834723	50.2058	50.206 (R)
43 Toluene	92	6.981	6.975	(1.207)	15626	1.81868	1.819
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.252	8.252	(1.000)	634979	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.329	9.329	(1.130)	233163	42.8922	42.892 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.223	10.223	(0.988)	4353	0.42840	0.4284
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.345	10.345	(1.000)	250323	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.740	10.740	(1.038)	205757	47.1304	47.130 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180	12.164	12.170	(1.176)	1178	0.34984	0.3498
84 Naphthalene	128	12.486	12.486	(1.207)	3412	0.49512	0.4951
85 1,2,3-Trichlorobenzene	180	12.669	12.663	(1.225)	901	0.29568	0.2957

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 19-JUL-2019
 Lab File ID: NT507191906.D Calibration Time: 13:28
 Lab Smp Id: 19G0163-12RE1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	359650	-10.96
35 1,4-Difluorobenze	717664	358832	1435328	709973	-1.07
52 d5-Chlorobenzene	696563	348282	1393126	634979	-8.84
76 d4-1,4-Dichlorobe	380778	190389	761556	250323	-34.26

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.33	4.83	5.83	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
52 d5-Chlorobenzene	8.25	7.75	8.75	8.25	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-12RE1
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	59.520	119.04	
\$ 32 d4-1,2-Dichloroeth	50.000	63.706	127.41	
\$ 42 d8-Toluene	50.000	50.206	100.41	
\$ 62 4-Bromofluorobenze	50.000	42.892	85.78	
\$ 79 d4-1,2-Dichloroben	50.000	47.130	94.26	

REVIEW SUMMARY FOR FILE - NT507191906.D

Lab ID: 19G0163-12RE1
nt5.i, 20190719.b\VO122618S.m, 19-JUL-2019 16:02

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507191902.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13 C SDG: 19G0163
Sampled: 07/11/19 09:10 Prepared: 07/16/19 16:03 File ID: NT507161909.D
% Solids: 21.61 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 17:50
Batch: BHG0391 Sequence: SHG0229 Initial/Final: 2.37 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	9.76	U	2.57	9.76
75-01-4	Vinyl Chloride	1	9.76	U	2.29	9.76
74-83-9	Bromomethane	1	9.76	U	1.83	9.76
75-00-3	Chloroethane	1	9.76	U	4.51	9.76
75-69-4	Trichlorofluoromethane	1	9.76	U	2.60	9.76
107-02-8	Acrolein	1	48.8	U	37.2	48.8
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	19.5	U	2.80	19.5
67-64-1	Acetone	1	1860		4.71	48.8
75-35-4	1,1-Dichloroethene	1	9.76	U	3.28	9.76
74-96-4	Bromoethane	1	19.5	U	4.30	19.5
74-88-4	Iodomethane	1	5.58	J	2.10	9.76
75-09-2	Methylene Chloride	1	7.75	J	6.20	19.5
107-13-1	Acrylonitrile	1	48.8	U	10.1	48.8
75-15-0	Carbon Disulfide	1	8.86	J	5.46	9.76
156-60-5	trans-1,2-Dichloroethene	1	9.76	U	2.60	9.76
108-05-4	Vinyl Acetate	1	48.8	U	3.72	48.8
75-34-3	1,1-Dichloroethane	1	9.76	U	1.98	9.76
78-93-3	2-Butanone	1	83.1		5.01	48.8
594-20-7	2,2-Dichloropropane	1	9.76	U	2.85	9.76
156-59-2	cis-1,2-Dichloroethene	1	9.76	U	2.34	9.76
67-66-3	Chloroform	1	9.76	U	2.28	9.76
74-97-5	Bromochloromethane	1	9.76	U	3.15	9.76
71-55-6	1,1,1-Trichloroethane	1	9.76	U	2.21	9.76
563-58-6	1,1-Dichloropropene	1	9.76	U	3.05	9.76
56-23-5	Carbon tetrachloride	1	9.76	U	2.08	9.76
107-06-2	1,2-Dichloroethane	1	9.76	U	1.86	9.76
71-43-2	Benzene	1	9.76	U	2.89	9.76
79-01-6	Trichloroethene	1	9.76	U	2.07	9.76
78-87-5	1,2-Dichloropropane	1	9.76	U	1.58	9.76
75-27-4	Bromodichloromethane	1	9.76	U	2.48	9.76
74-95-3	Dibromomethane	1	9.76	U	1.44	9.76
110-75-8	2-Chloroethyl vinyl ether	1	48.8	U	2.69	48.8
108-10-1	4-Methyl-2-Pentanone	1	48.8	U	4.10	48.8
10061-01-5	cis-1,3-Dichloropropene	1	9.76	U	2.21	9.76



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-13 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 09:10</u>	Prepared: <u>07/16/19 16:03</u>	File ID: <u>NT507161909.D</u>
% Solids: <u>21.61</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/16/19 17:50</u>
Batch: <u>BHG0391</u>	Sequence: <u>SHG0229</u>	Initial/Final: <u>2.37 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	12.6		1.47	9.76
10061-02-6	trans-1,3-Dichloropropene	1	9.76	U	2.11	9.76
591-78-6	2-Hexanone	1	48.8	U	4.29	48.8
79-00-5	1,1,2-Trichloroethane	1	9.76	U	2.79	9.76
142-28-9	1,3-Dichloropropane	1	9.76	U	2.04	9.76
127-18-4	Tetrachloroethene	1	9.76	U	2.51	9.76
124-48-1	Dibromochloromethane	1	9.76	U	2.60	9.76
106-93-4	1,2-Dibromoethane	1	9.76	U	1.72	9.76
108-90-7	Chlorobenzene	1	9.76	U	2.14	9.76
100-41-4	Ethylbenzene	1	9.76	U	1.97	9.76
630-20-6	1,1,1,2-Tetrachloroethane	1	9.76	U	2.27	9.76
179601-23-1	m,p-Xylene	1	19.5	U	3.83	19.5
95-47-6	o-Xylene	1	9.76	U	2.19	9.76
1330-20-7	Xylenes, total	1	19.5	U	6.01	19.5
100-42-5	Styrene	1	9.76	U	1.35	9.76
75-25-2	Bromoform	1	9.76	U	2.90	9.76
79-34-5	1,1,1,2-Tetrachloroethane	1	9.76	U	2.47	9.76
96-18-4	1,2,3-Trichloropropane	1	19.5	U	5.05	19.5
110-57-6	trans-1,4-Dichloro 2-Butene	1	48.8	U	4.27	48.8
103-65-1	n-Propylbenzene	1	9.76	U	2.66	9.76
108-86-1	Bromobenzene	1	9.76	U	1.49	9.76
98-82-8	Isopropyl Benzene	1	9.76	U	2.27	9.76
95-49-8	2-Chlorotoluene	1	9.76	U	2.93	9.76
106-43-4	4-Chlorotoluene	1	9.76	U	2.70	9.76
98-06-6	t-Butylbenzene	1	9.76	U	2.99	9.76
108-67-8	1,3,5-Trimethylbenzene	1	9.76	U	2.48	9.76
95-63-6	1,2,4-Trimethylbenzene	1	9.76	U	2.25	9.76
135-98-8	s-Butylbenzene	1	9.76	U	2.34	9.76
99-87-6	4-Isopropyl Toluene	1	63.2		2.30	9.76
541-73-1	1,3-Dichlorobenzene	1	9.76	U	2.22	9.76
106-46-7	1,4-Dichlorobenzene	1	9.76	U	2.26	9.76
104-51-8	n-Butylbenzene	1	9.76	U	2.56	9.76
95-50-1	1,2-Dichlorobenzene	1	9.76	U	2.86	9.76
96-12-8	1,2-Dibromo-3-chloropropane	1	48.8	U	5.72	48.8



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13 C SDG: 19G0163

Sampled: 07/11/19 09:10 Prepared: 07/16/19 16:03 File ID: NT507161909.D

% Solids: 21.61 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 17:50

Batch: BHG0391 Sequence: SHG0229 Initial/Final: 2.37 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	48.8	U	3.24	48.8
87-68-3	Hexachloro-1,3-Butadiene	1	48.8	U	4.00	48.8
91-20-3	Naphthalene	1	48.8	U	4.19	48.8
87-61-6	1,2,3-Trichlorobenzene	1	48.8	U	2.98	48.8
75-71-8	Dichlorodifluoromethane	1	9.76	U	2.02	9.76
1634-04-4	Methyl tert-butyl Ether	1	9.76	U	2.26	9.76
107-87-9	2-Pentanone	1	48.8	U	48.8	48.8

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	66.0	132	80 - 149	
Toluene-d8	50.000	50.3	101	77 - 120	
4-Bromofluorobenzene	50.000	40.9	81.9	80 - 120	
1,2-Dichlorobenzene-d4	50.000	48.1	96.1	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161909.D

Date : 16-JUL-2019 17:50

Client ID:

Sample Info: 19C0163-13

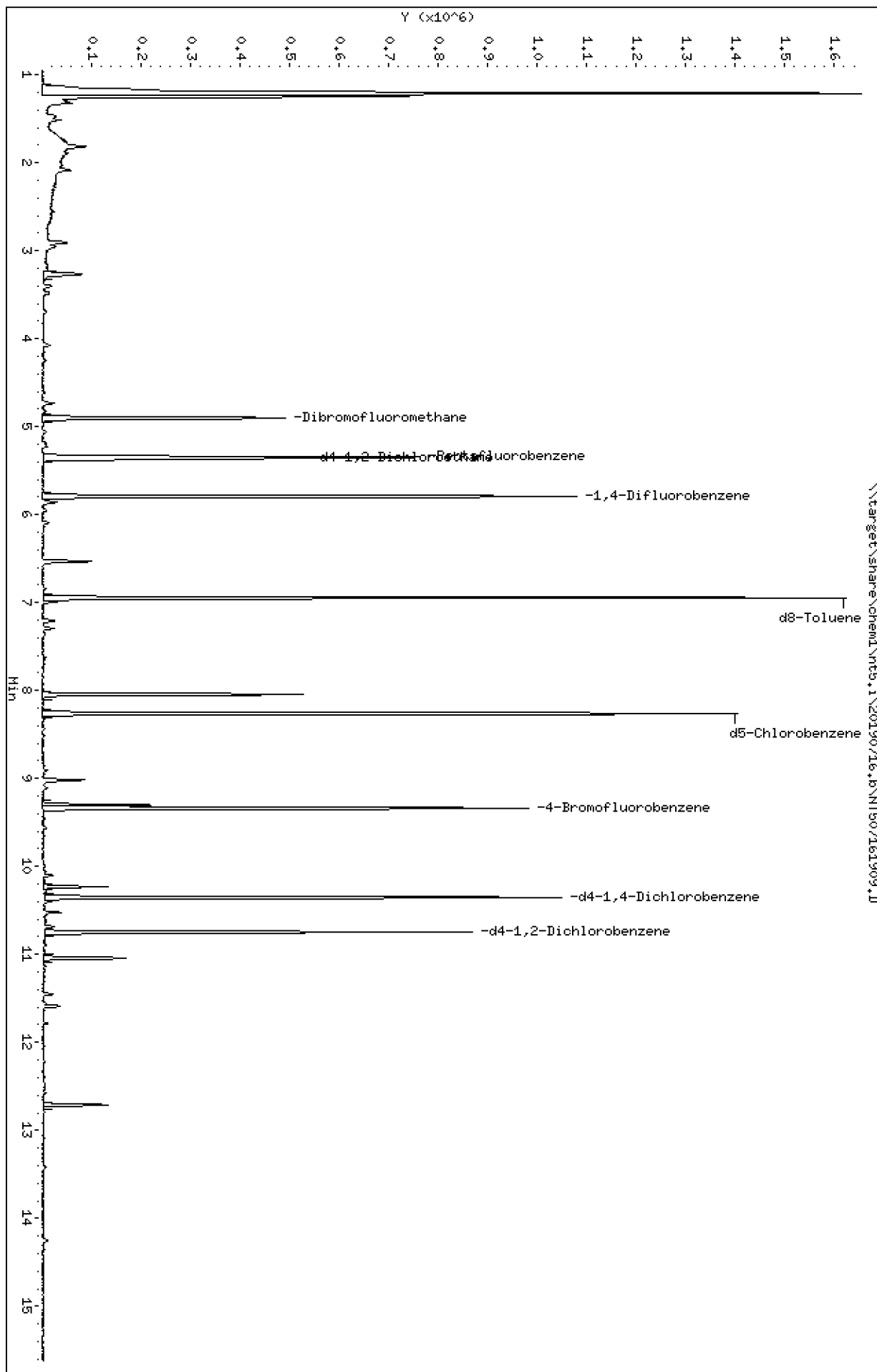
Page 1

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

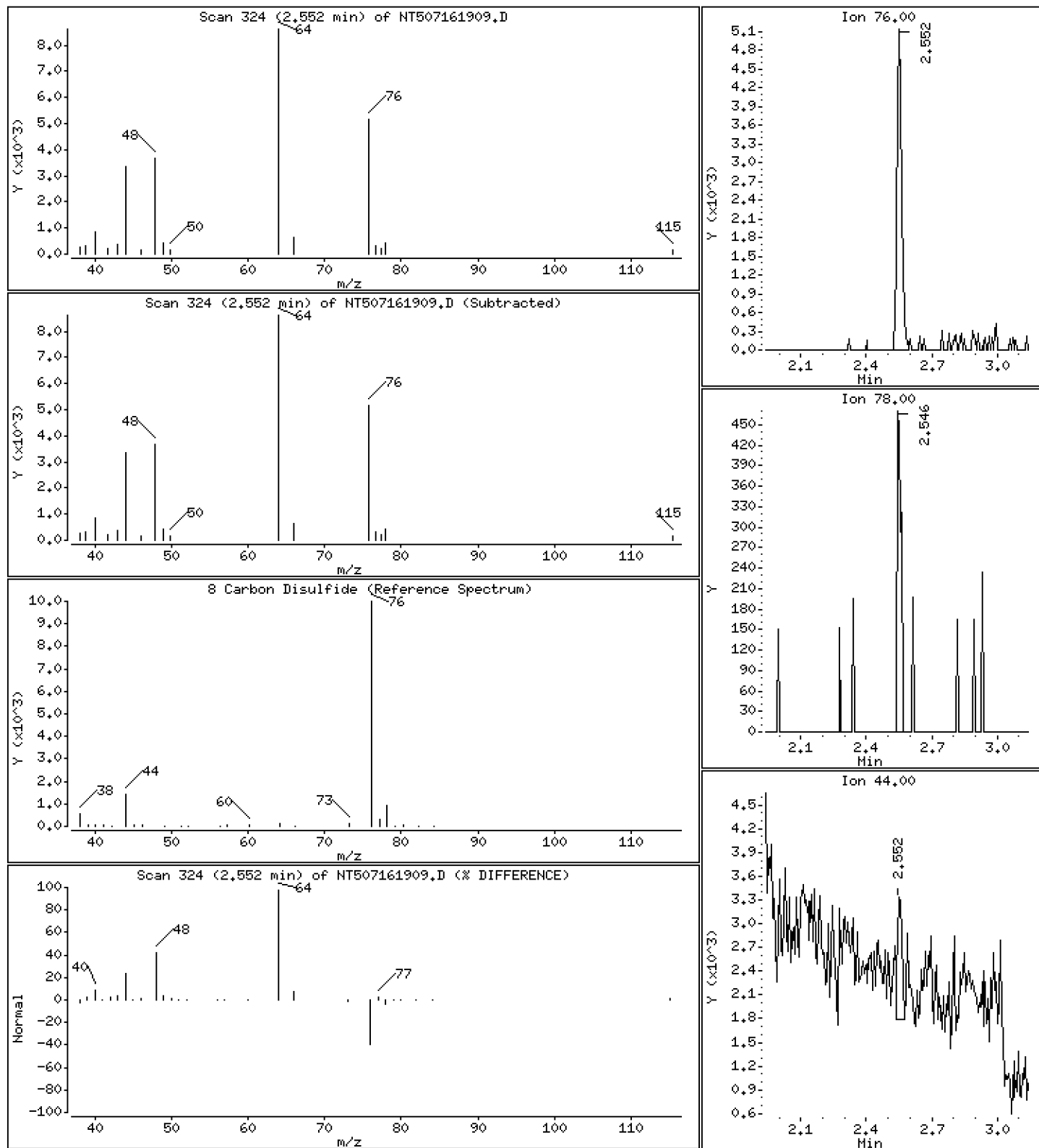
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 0.9072 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

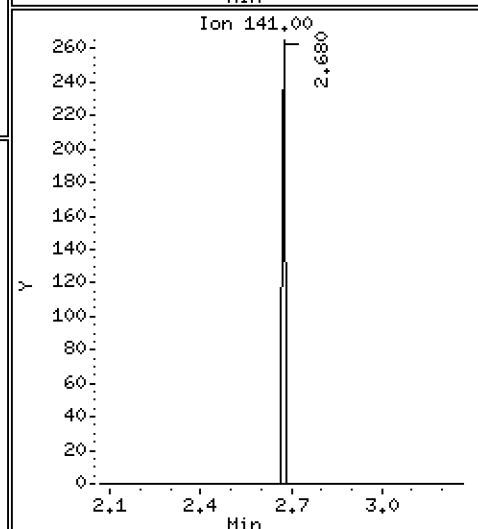
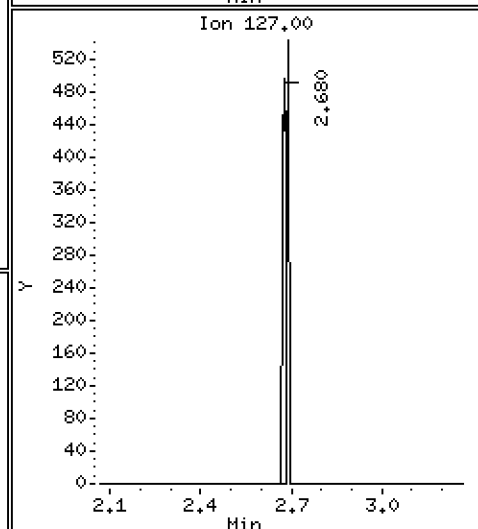
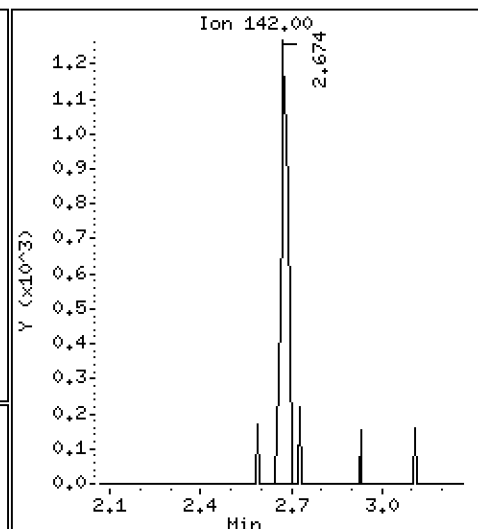
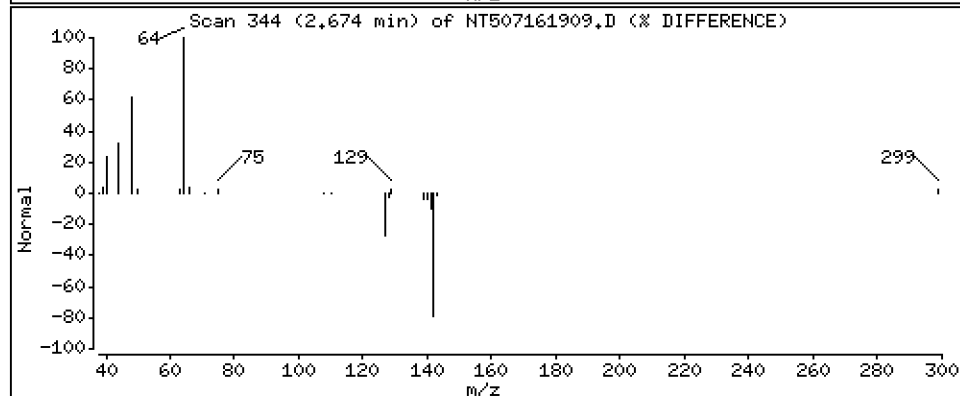
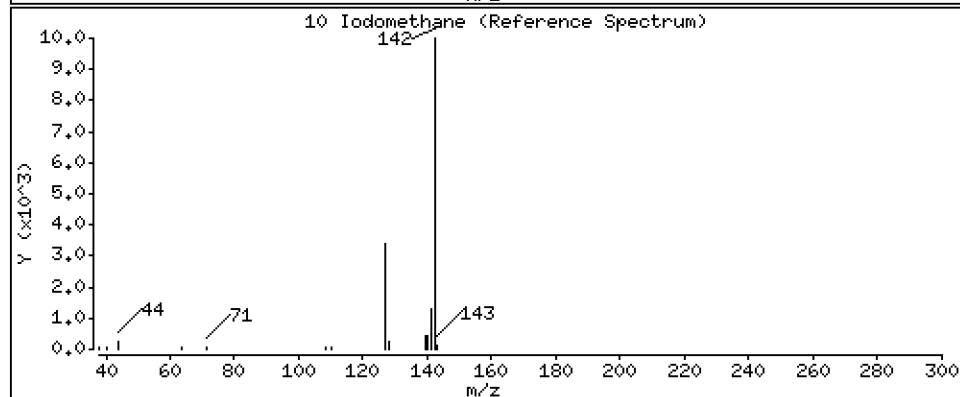
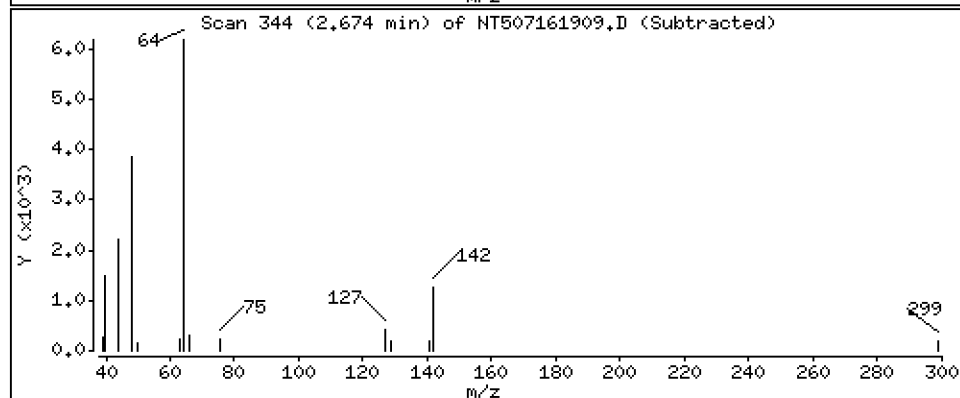
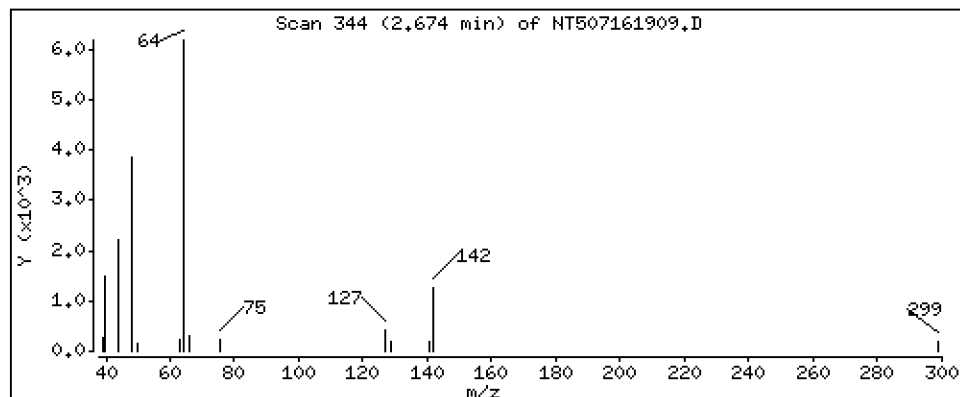
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 0.5718 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

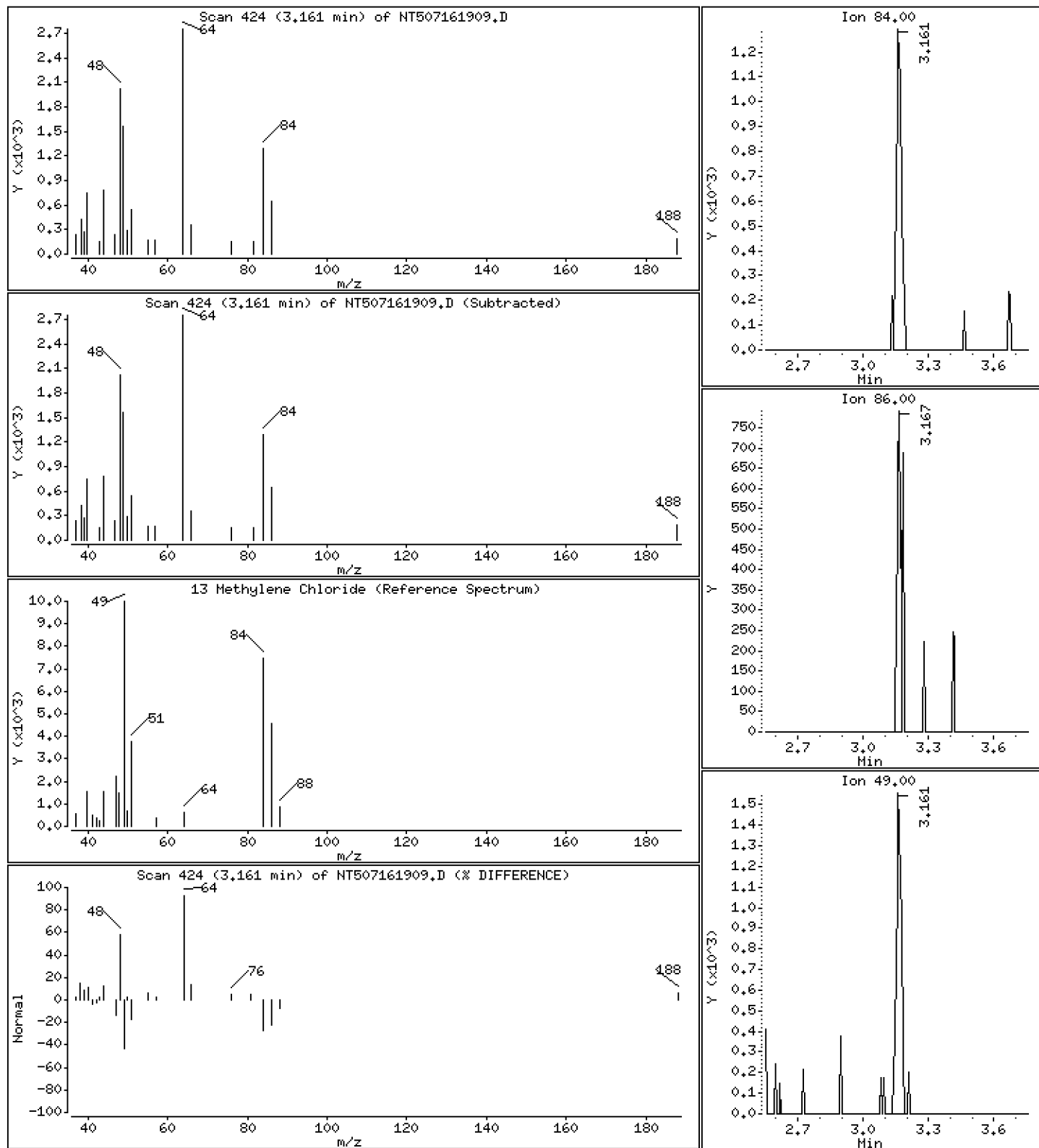
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.7943 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

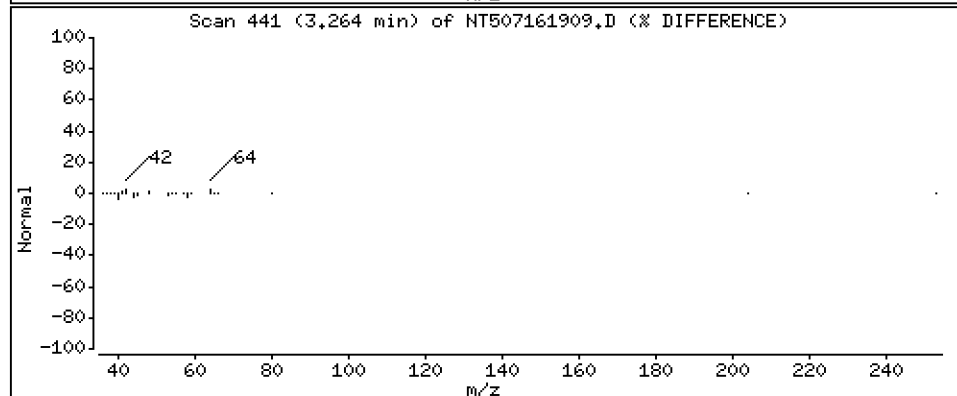
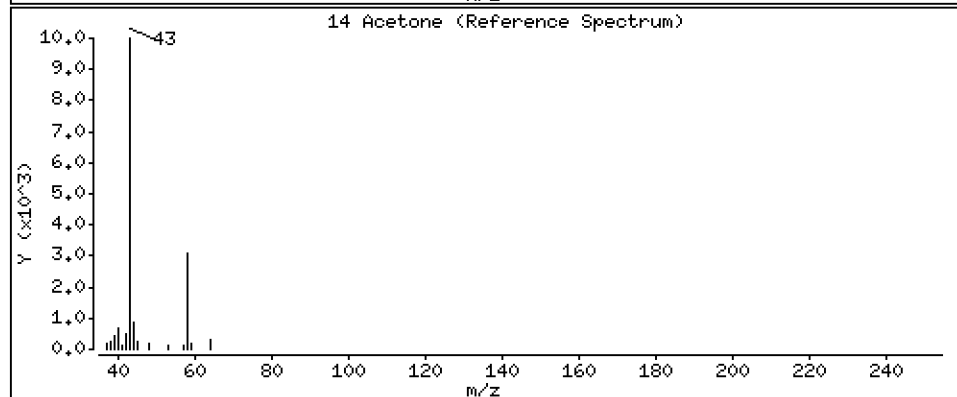
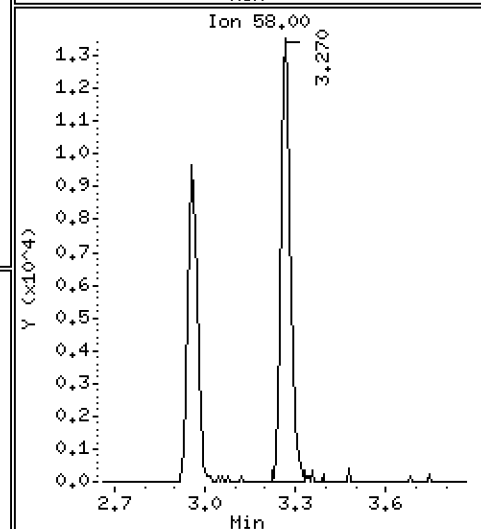
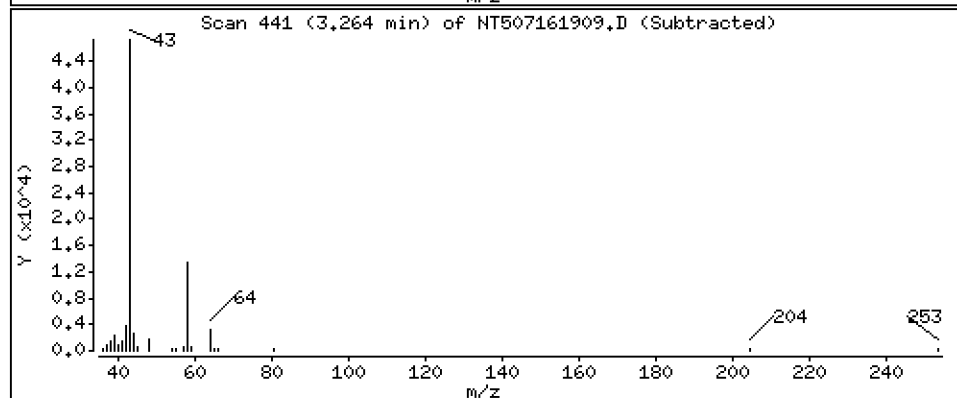
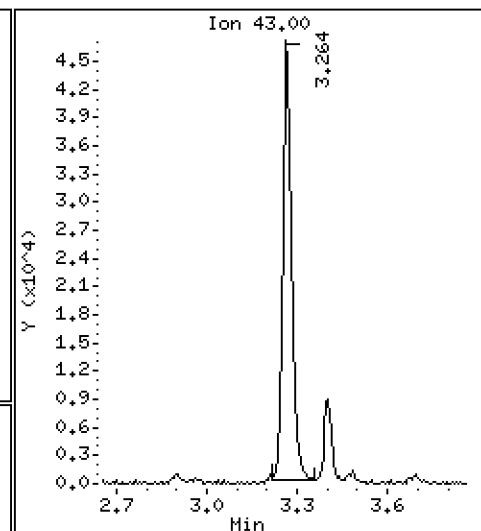
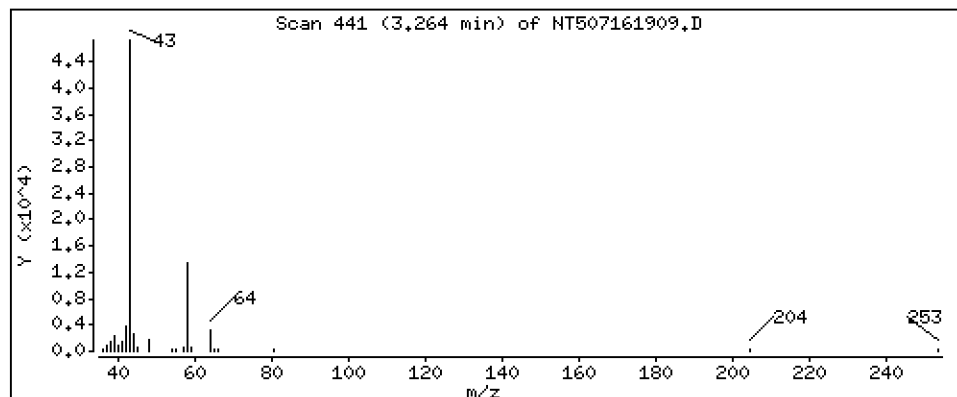
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 190.81 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

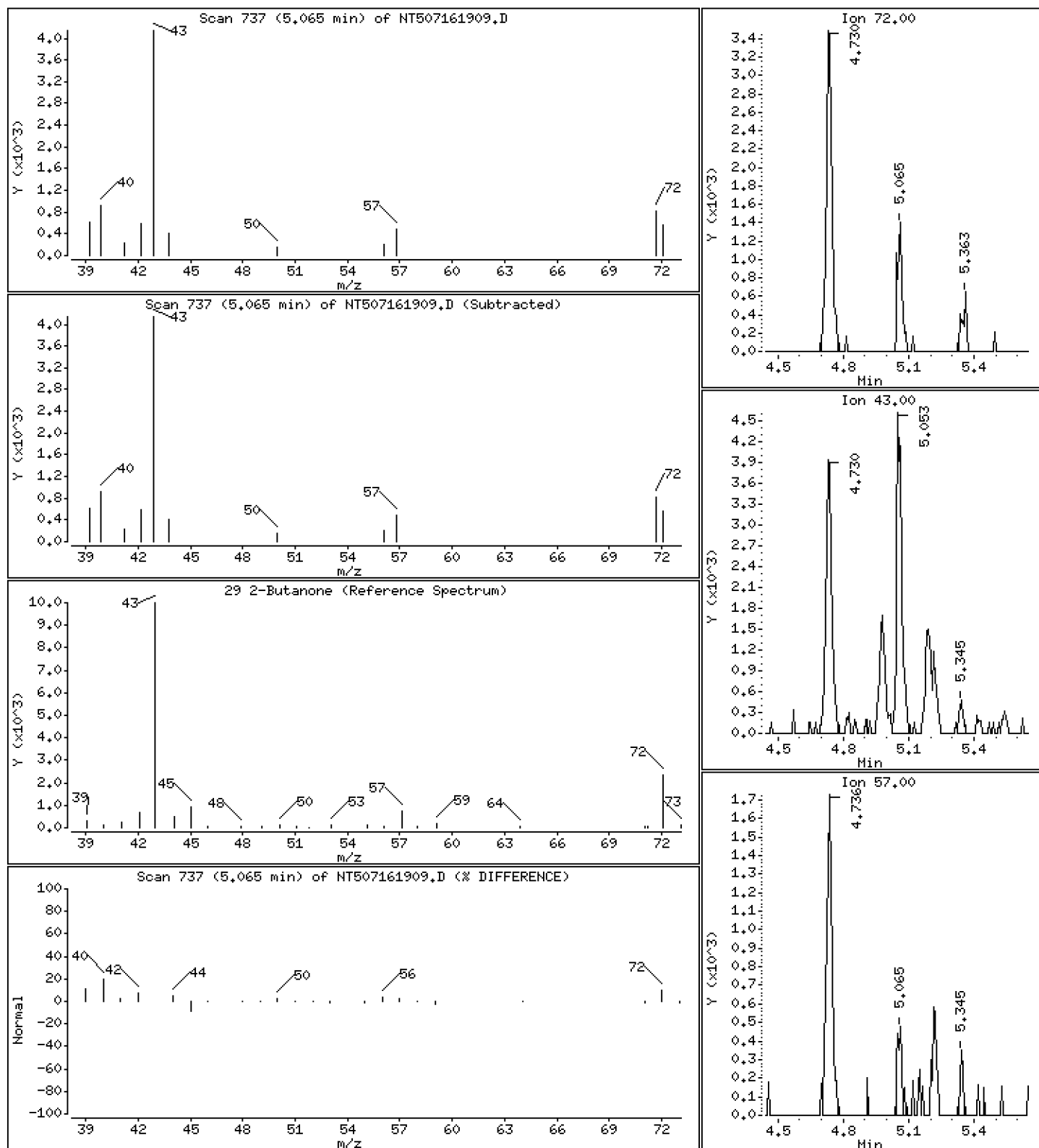
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 8.515 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

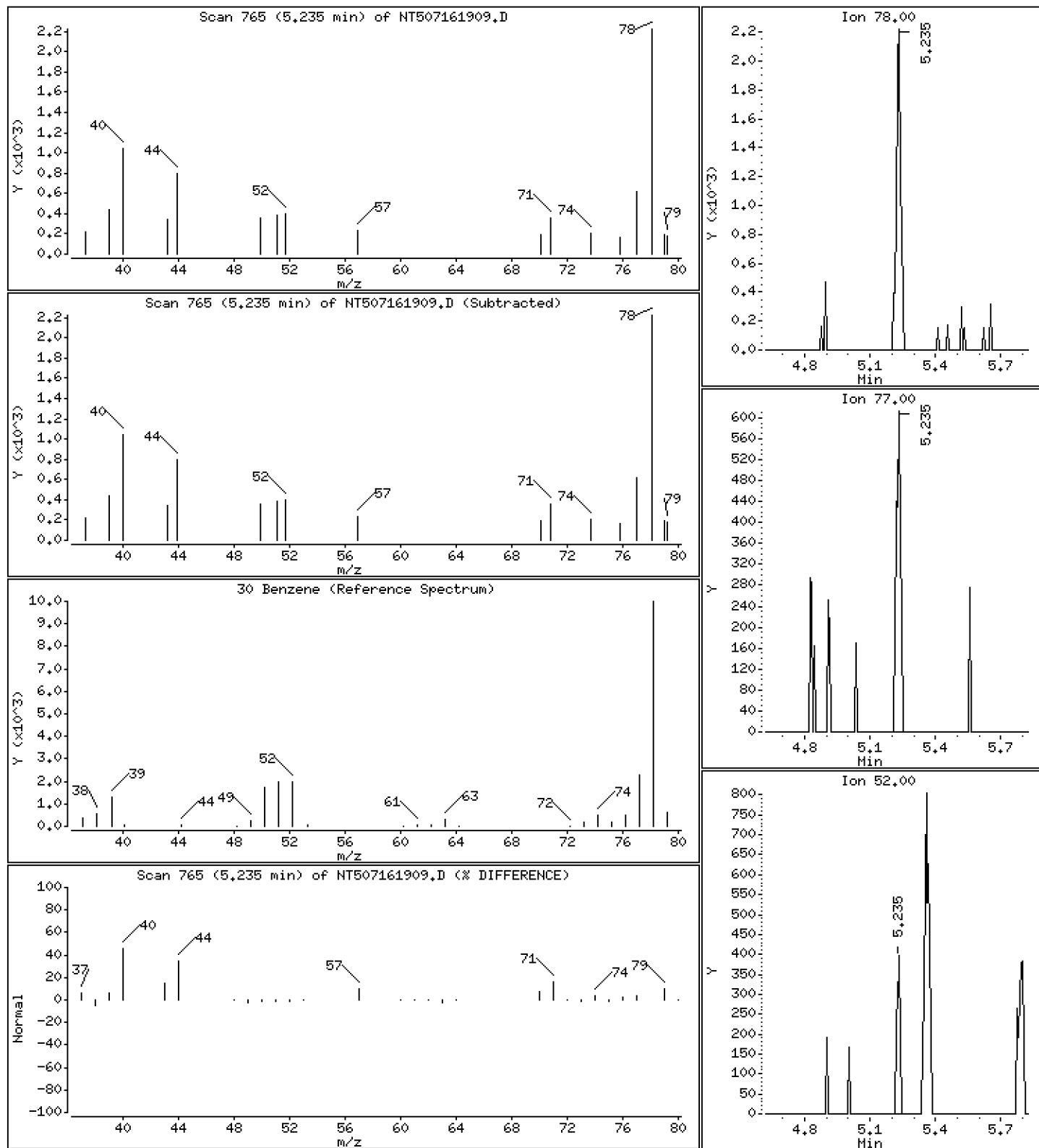
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 0.2772 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

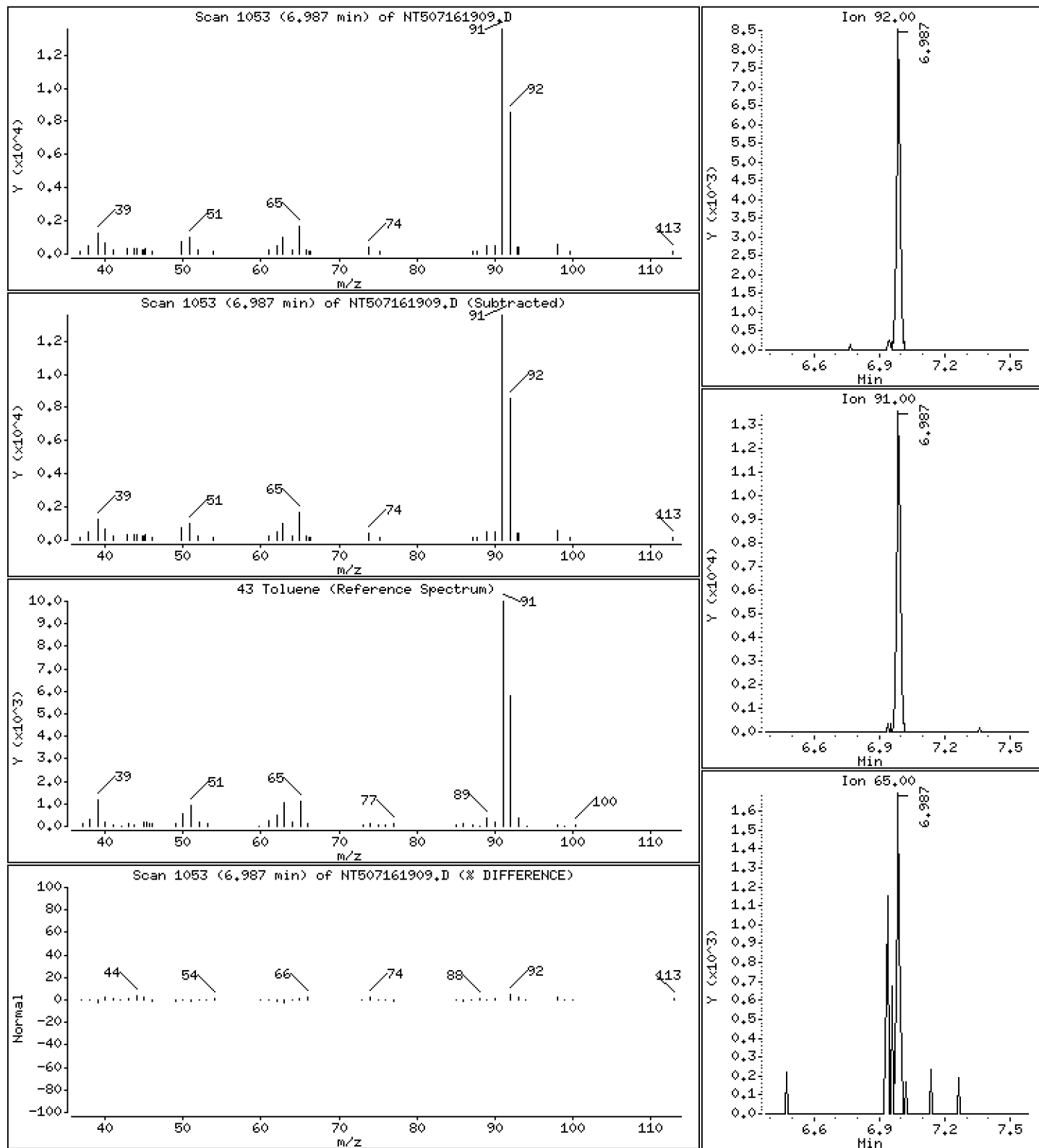
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 1.288 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

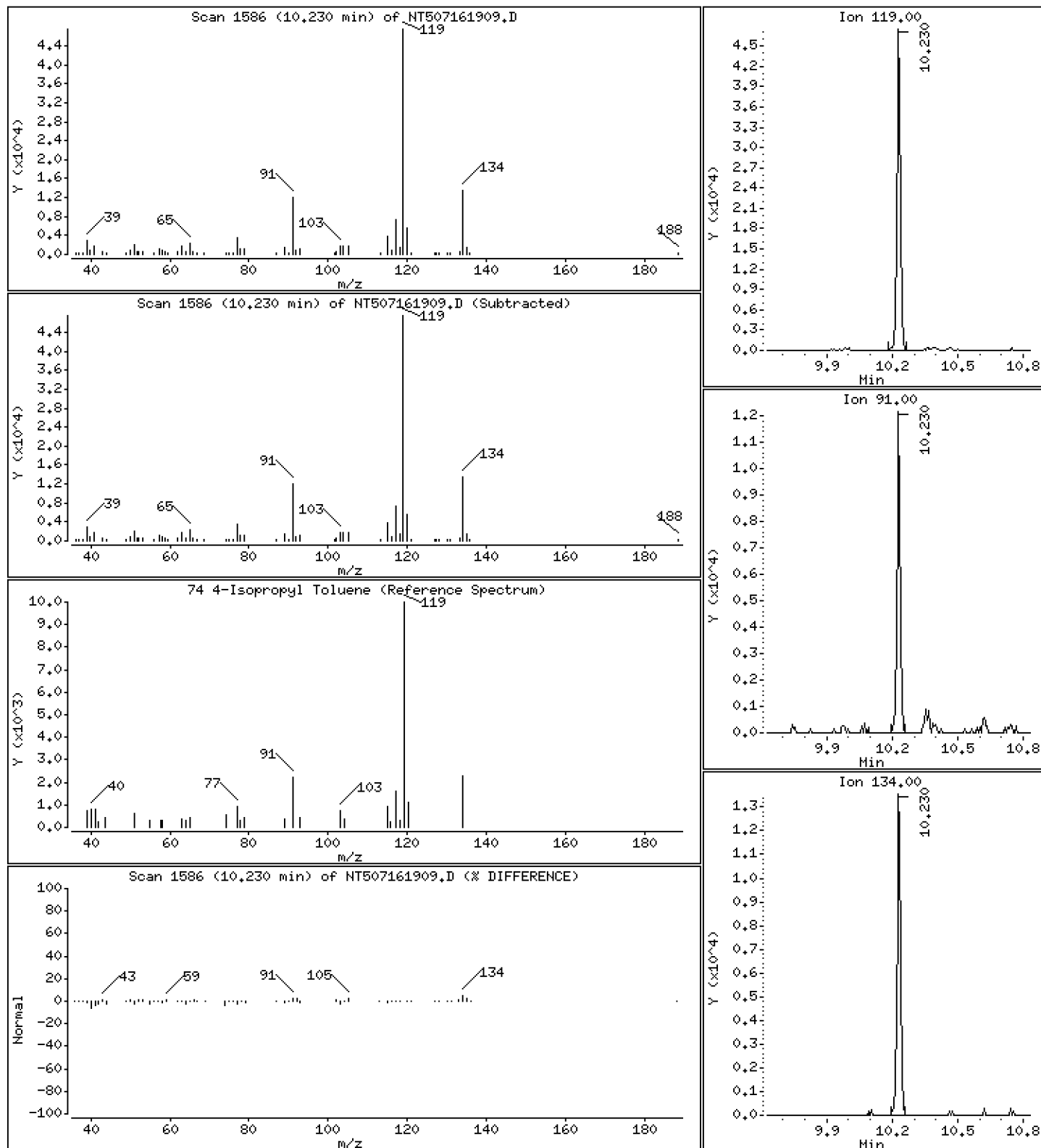
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 6.471 ug/Kg



Date : 16-JUL-2019 17:50

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-13

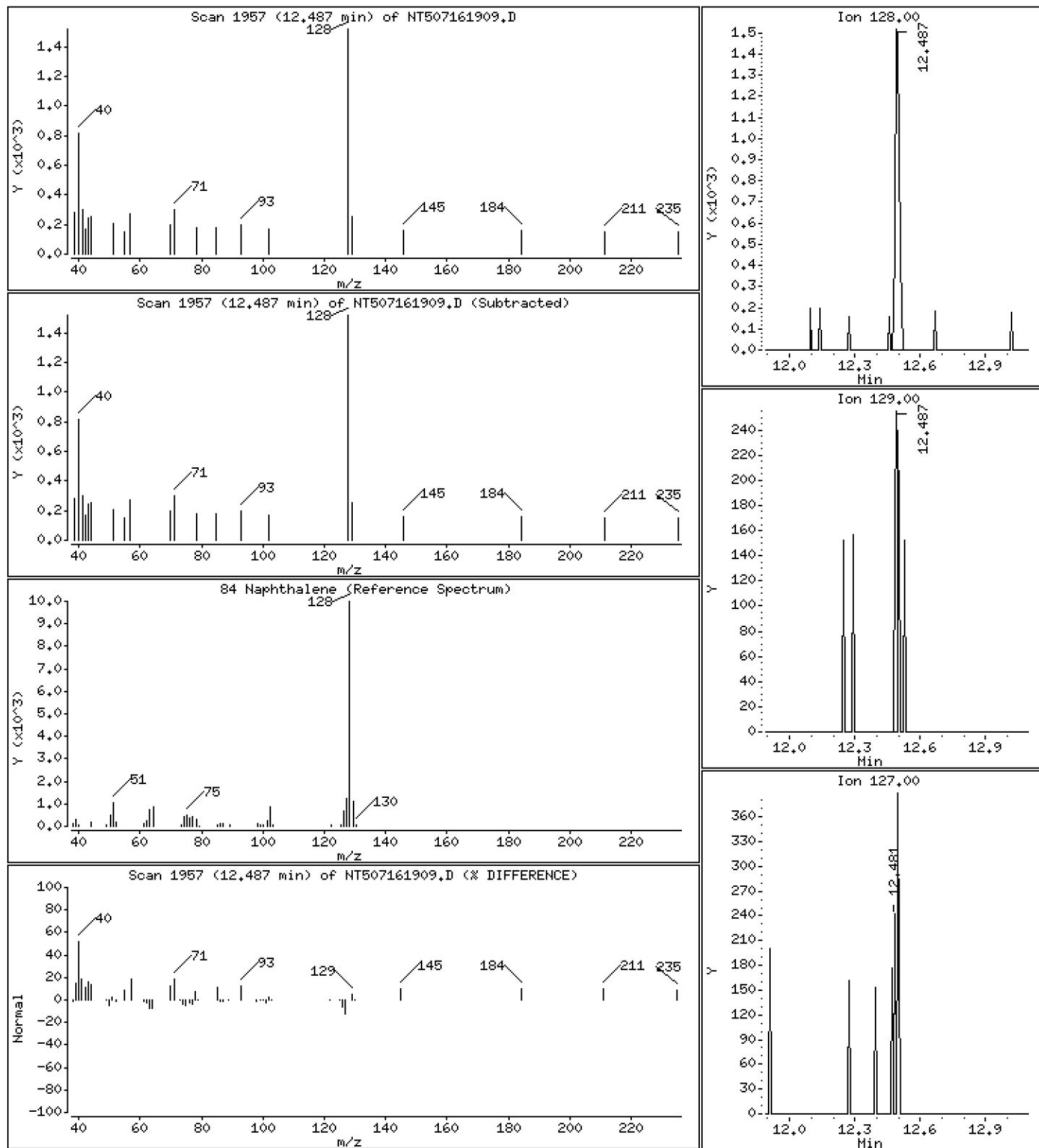
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.3751 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161909.D
 Lab Smp Id: 19G0163-13
 Inj Date : 16-JUL-2019 17:50
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-13
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Meth Date : 17-Jul-2019 13:41 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound	Not	Detected.			
2 Chloromethane	50		Compound	Not	Detected.			
3 Vinyl Chloride	62		Compound	Not	Detected.			
4 Bromomethane	94		Compound	Not	Detected.			
5 Chloroethane	64		Compound	Not	Detected.			
6 Trichlorofluoromethane	101		Compound	Not	Detected.			
7 1,1-Dichloroethene	96		Compound	Not	Detected.			
8 Carbon Disulfide	76		2.552	2.539	(0.478)	7876	0.90719	0.9072
9 112Trichloro122Trifluoroethane	101		Compound	Not	Detected.			
10 Iodomethane	142		2.674	2.667	(0.500)	2321	0.57184	0.5718
11 Bromoethane	108		Compound	Not	Detected.			
12 Acrolein	56		Compound	Not	Detected.			
13 Methylene Chloride	84		3.160	3.154	(0.591)	2454	0.79431	0.7943
14 Acetone	43		3.264	3.257	(0.611)	106133	190.808	190.81
15 Trans-1,2-Dichloroethene	96		Compound	Not	Detected.			
16 Methyl tert butyl ether	73		Compound	Not	Detected.			
173 n-Hexane	41		Compound	Not	Detected.			
17 1,1-Dichloroethane	63		Compound	Not	Detected.			
18 Acrylonitrile	53		Compound	Not	Detected.			
19 Vinyl Acetate	43		Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96		Compound	Not	Detected.			
22 2,2-Dichloropropane	77		Compound	Not	Detected.			
23 Bromochloromethane	128		Compound	Not	Detected.			
24 Chloroform	83		Compound	Not	Detected.			
25 Carbon Tetrachloride	117		Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.917)	249727	60.4969	60.497 (R)
26 1,1,1-Trichloroethane	97		Compound	Not	Detected.			
28 1,1-Dichloropropene	75		Compound	Not	Detected.			
29 2-Butanone	72		5.064	5.046	(0.948)	2226	8.51536	8.515
30 Benzene	78		5.235	5.222	(0.903)	3683	0.27716	0.2772
* 31 Pentafluorobenzene	168		5.344	5.338	(1.000)	377461	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.363	5.356	(1.003)	227902	65.9991	65.999 (R)
33 1,2-Dichloroethane	62		Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.794	5.788	(1.000)	749665	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.198)	883210	50.3095	50.309 (R)
43 Toluene	92	6.987	6.981	(1.206)	11684	1.28788	1.288
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	676487	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	237153	40.9493	40.949 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	62800	6.47094	6.471
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	239088	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	200458	48.0743	48.074 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128	12.486	12.492	(1.206)	2469	0.37511	0.3751
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161909.D Calibration Time: 14:57
 Lab Smp Id: 19G0163-13
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	377461	-6.55
35 1,4-Difluorobenze	717664	358832	1435328	749665	4.46
52 d5-Chlorobenzene	696563	348282	1393126	676487	-2.88
76 d4-1,4-Dichlorobe	380778	190389	761556	239088	-37.21

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.12
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.11
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.08
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-13
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	60.497	120.99	
\$ 32 d4-1,2-Dichloroeth	50.000	65.999	132.00	
\$ 42 d8-Toluene	50.000	50.309	100.62	
\$ 62 4-Bromofluorobenze	50.000	40.949	81.90	
\$ 79 d4-1,2-Dichloroben	50.000	48.074	96.15	

REVIEW SUMMARY FOR FILE - NT507161909.D

Lab ID: 19G0163-13
nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 17:50

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT CCV RRT DELTA COMPOUND

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-14 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 09:25</u>	Prepared: <u>07/16/19 16:03</u>	File ID: <u>NT507161910.D</u>
% Solids: <u>43.42</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/16/19 18:12</u>
Batch: <u>BHG0391</u>	Sequence: <u>SHG0229</u>	Initial/Final: <u>2.47 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	4.66	U	1.23	4.66
75-01-4	Vinyl Chloride	1	4.66	U	1.10	4.66
74-83-9	Bromomethane	1	4.66	U	0.87	4.66
75-00-3	Chloroethane	1	4.66	U	2.15	4.66
75-69-4	Trichlorofluoromethane	1	4.66	U	1.24	4.66
107-02-8	Acrolein	1	23.3	U	17.8	23.3
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	9.32	U	1.34	9.32
67-64-1	Acetone	1	1020		2.25	23.3
75-35-4	1,1-Dichloroethene	1	4.66	U	1.57	4.66
74-96-4	Bromoethane	1	9.32	U	2.05	9.32
74-88-4	Iodomethane	1	4.66	U	1.00	4.66
75-09-2	Methylene Chloride	1	3.13	J	2.96	9.32
107-13-1	Acrylonitrile	1	23.3	U	4.80	23.3
75-15-0	Carbon Disulfide	1	4.75		2.61	4.66
156-60-5	trans-1,2-Dichloroethene	1	4.66	U	1.24	4.66
108-05-4	Vinyl Acetate	1	23.3	U	1.78	23.3
75-34-3	1,1-Dichloroethane	1	4.66	U	0.95	4.66
78-93-3	2-Butanone	1	53.3		2.39	23.3
594-20-7	2,2-Dichloropropane	1	4.66	U	1.36	4.66
156-59-2	cis-1,2-Dichloroethene	1	4.66	U	1.12	4.66
67-66-3	Chloroform	1	4.66	U	1.09	4.66
74-97-5	Bromochloromethane	1	4.66	U	1.51	4.66
71-55-6	1,1,1-Trichloroethane	1	4.66	U	1.05	4.66
563-58-6	1,1-Dichloropropene	1	4.66	U	1.45	4.66
56-23-5	Carbon tetrachloride	1	4.66	U	0.99	4.66
107-06-2	1,2-Dichloroethane	1	4.66	U	0.89	4.66
71-43-2	Benzene	1	4.66	U	1.38	4.66
79-01-6	Trichloroethene	1	4.66	U	0.99	4.66
78-87-5	1,2-Dichloropropane	1	4.66	U	0.76	4.66
75-27-4	Bromodichloromethane	1	4.66	U	1.18	4.66
74-95-3	Dibromomethane	1	4.66	U	0.69	4.66
110-75-8	2-Chloroethyl vinyl ether	1	23.3	U	1.29	23.3
108-10-1	4-Methyl-2-Pentanone	1	23.3	U	1.96	23.3
10061-01-5	cis-1,3-Dichloropropene	1	4.66	U	1.05	4.66



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14 C SDG: 19G0163
Sampled: 07/11/19 09:25 Prepared: 07/16/19 16:03 File ID: NT507161910.D
% Solids: 43.42 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 18:12
Batch: BHG0391 Sequence: SHG0229 Initial/Final: 2.47 g Wet / 5 mL
Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	7.17		0.70	4.66
10061-02-6	trans-1,3-Dichloropropene	1	4.66	U	1.01	4.66
591-78-6	2-Hexanone	1	23.3	U	2.05	23.3
79-00-5	1,1,2-Trichloroethane	1	4.66	U	1.33	4.66
142-28-9	1,3-Dichloropropane	1	4.66	U	0.97	4.66
127-18-4	Tetrachloroethene	1	4.66	U	1.20	4.66
124-48-1	Dibromochloromethane	1	4.66	U	1.24	4.66
106-93-4	1,2-Dibromoethane	1	4.66	U	0.82	4.66
108-90-7	Chlorobenzene	1	4.66	U	1.02	4.66
100-41-4	Ethylbenzene	1	4.66	U	0.94	4.66
630-20-6	1,1,1,2-Tetrachloroethane	1	4.66	U	1.09	4.66
179601-23-1	m,p-Xylene	1	9.32	U	1.83	9.32
95-47-6	o-Xylene	1	4.66	U	1.04	4.66
1330-20-7	Xylenes, total	1	9.32	U	2.87	9.32
100-42-5	Styrene	1	4.66	U	0.64	4.66
75-25-2	Bromoform	1	4.66	U	1.38	4.66
79-34-5	1,1,1,2-Tetrachloroethane	1	4.66	U	1.18	4.66
96-18-4	1,2,3-Trichloropropane	1	9.32	U	2.41	9.32
110-57-6	trans-1,4-Dichloro 2-Butene	1	23.3	U	2.04	23.3
103-65-1	n-Propylbenzene	1	4.66	U	1.27	4.66
108-86-1	Bromobenzene	1	4.66	U	0.71	4.66
98-82-8	Isopropyl Benzene	1	4.66	U	1.09	4.66
95-49-8	2-Chlorotoluene	1	4.66	U	1.40	4.66
106-43-4	4-Chlorotoluene	1	4.66	U	1.29	4.66
98-06-6	t-Butylbenzene	1	4.66	U	1.43	4.66
108-67-8	1,3,5-Trimethylbenzene	1	4.66	U	1.18	4.66
95-63-6	1,2,4-Trimethylbenzene	1	4.66	U	1.07	4.66
135-98-8	s-Butylbenzene	1	4.66	U	1.12	4.66
99-87-6	4-Isopropyl Toluene	1	30.5		1.10	4.66
541-73-1	1,3-Dichlorobenzene	1	4.66	U	1.06	4.66
106-46-7	1,4-Dichlorobenzene	1	4.66	U	1.08	4.66
104-51-8	n-Butylbenzene	1	4.66	U	1.22	4.66
95-50-1	1,2-Dichlorobenzene	1	4.66	U	1.37	4.66
96-12-8	1,2-Dibromo-3-chloropropane	1	23.3	U	2.73	23.3



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14 C SDG: 19G0163

Sampled: 07/11/19 09:25 Prepared: 07/16/19 16:03 File ID: NT507161910.D

% Solids: 43.42 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 18:12

Batch: BHG0391 Sequence: SHG0229 Initial/Final: 2.47 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	23.3	U	1.55	23.3
87-68-3	Hexachloro-1,3-Butadiene	1	23.3	U	1.91	23.3
91-20-3	Naphthalene	1	23.3	U	2.00	23.3
87-61-6	1,2,3-Trichlorobenzene	1	23.3	U	1.42	23.3
75-71-8	Dichlorodifluoromethane	1	4.66	U	0.97	4.66
1634-04-4	Methyl tert-butyl Ether	1	4.66	U	1.08	4.66
107-87-9	2-Pentanone	1	23.3	U	23.3	23.3

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	66.3	133	80 - 149	
Toluene-d8	50.000	51.2	102	77 - 120	
4-Bromofluorobenzene	50.000	43.9	87.9	80 - 120	
1,2-Dichlorobenzene-d4	50.000	47.5	95.0	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161910.D

Date : 16-JUL-2019 18:12

Client ID:

Sample Info: 19C0163-14

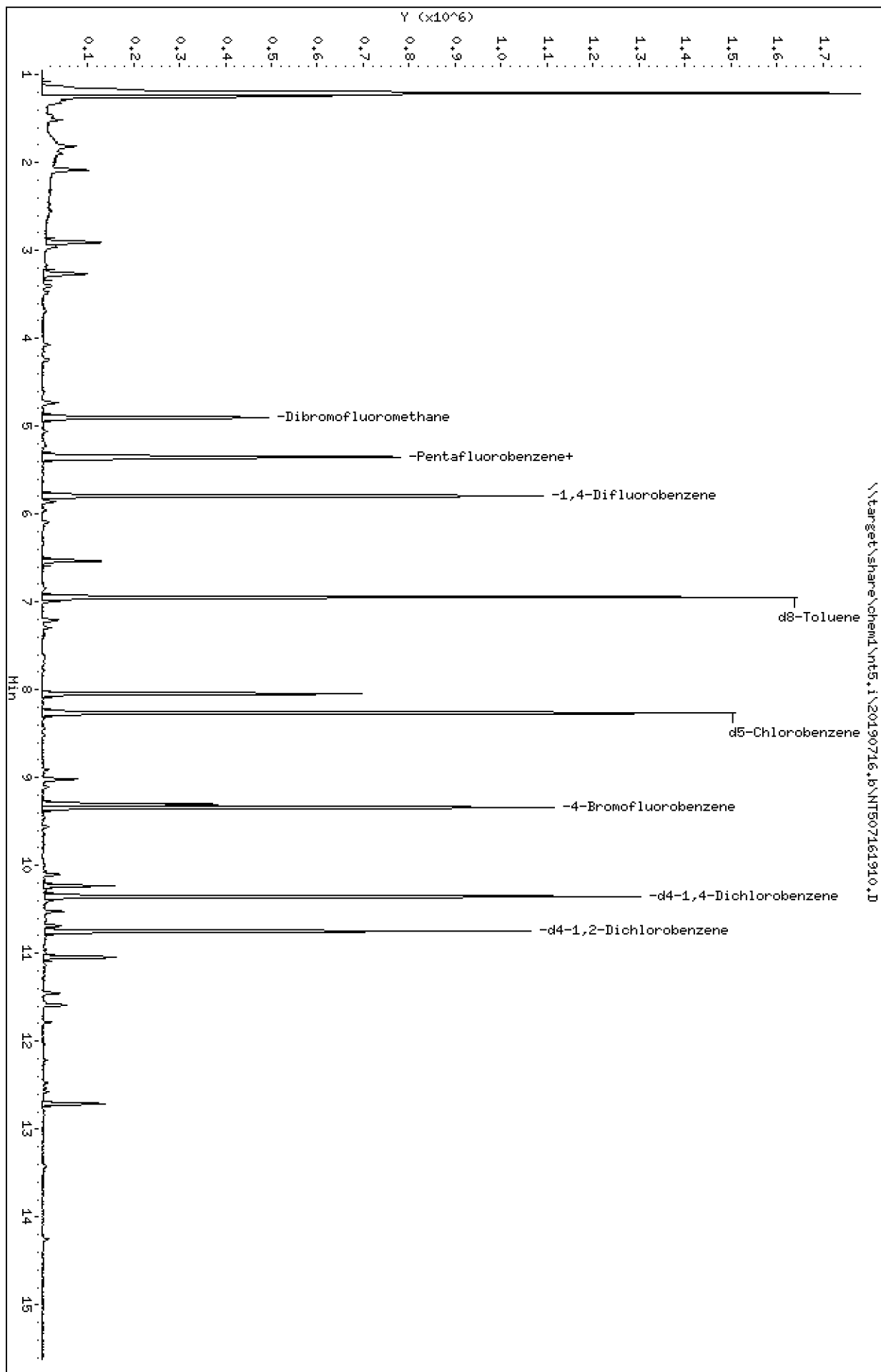
Page 1

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

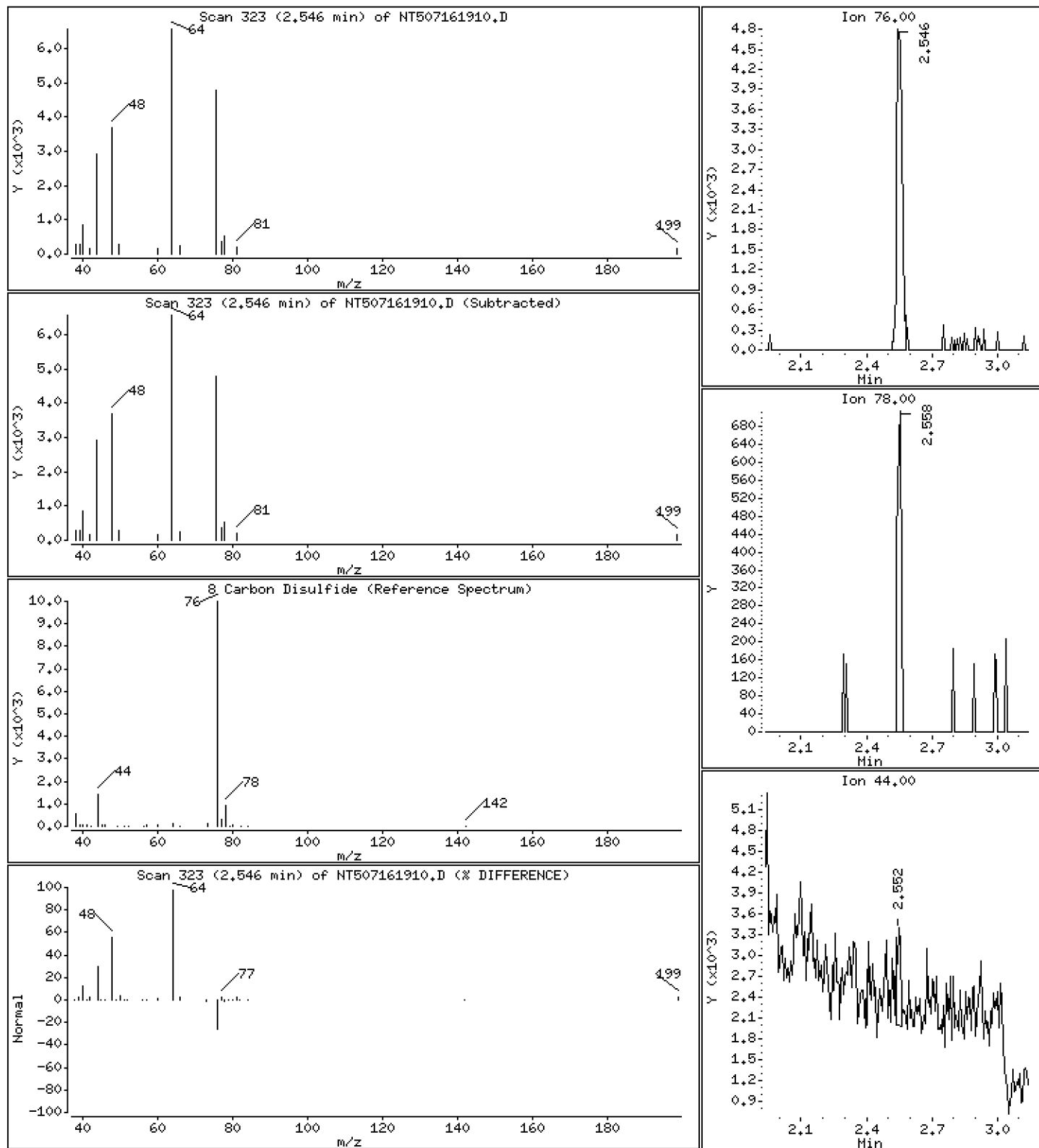
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 1.018 ug/Kg



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

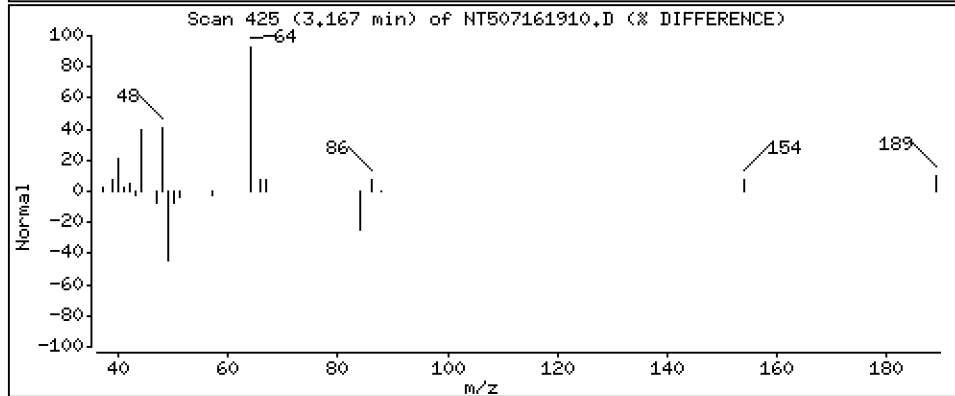
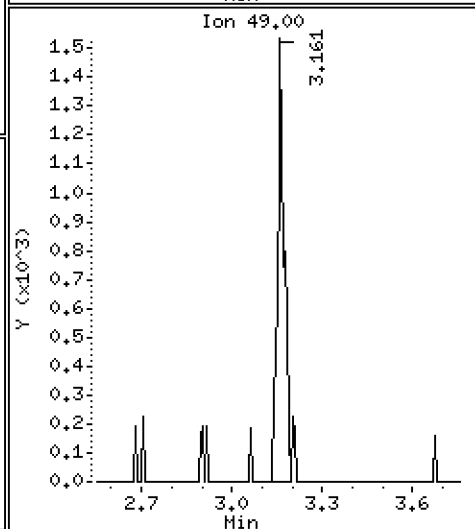
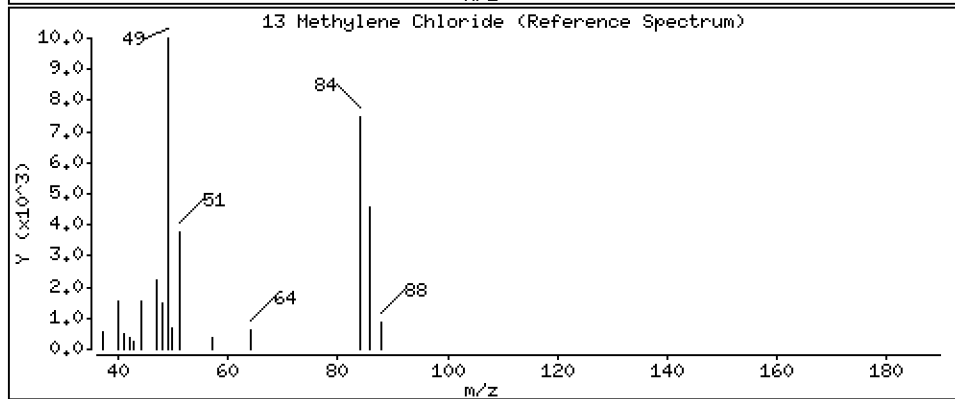
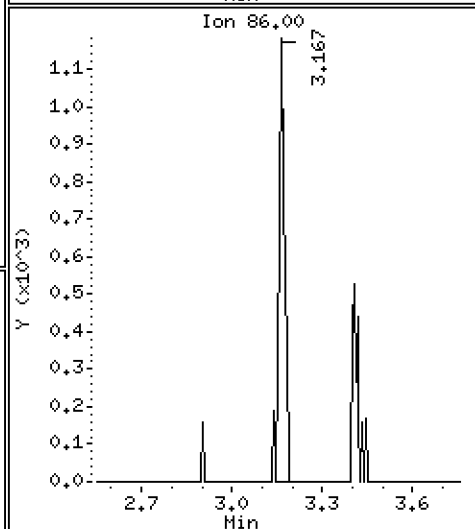
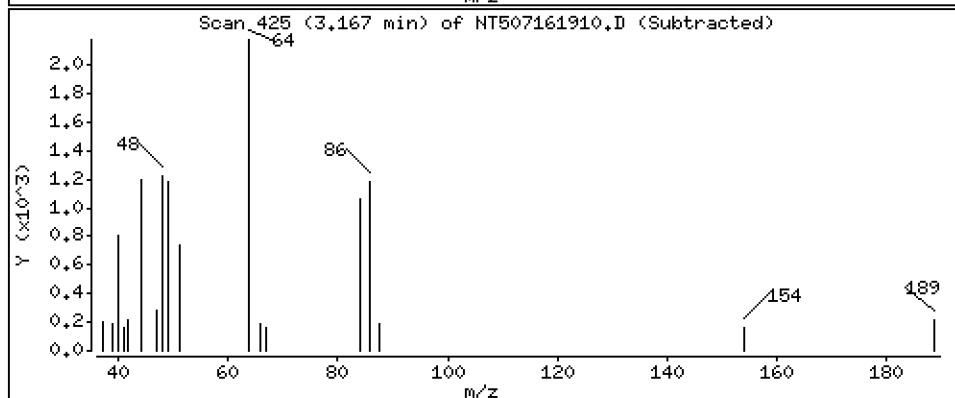
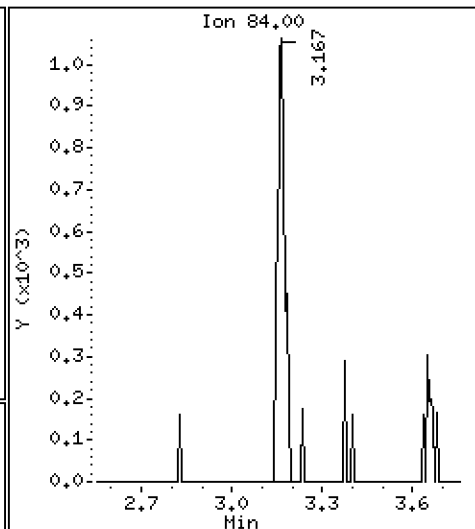
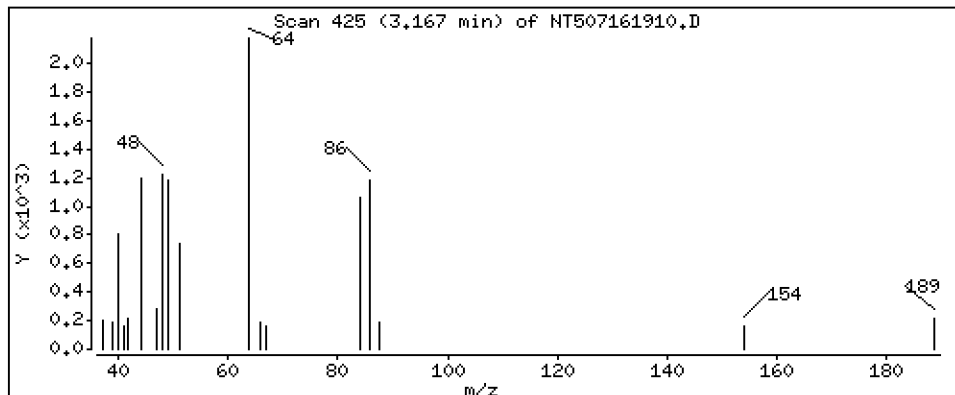
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.6716 ug/Kg



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

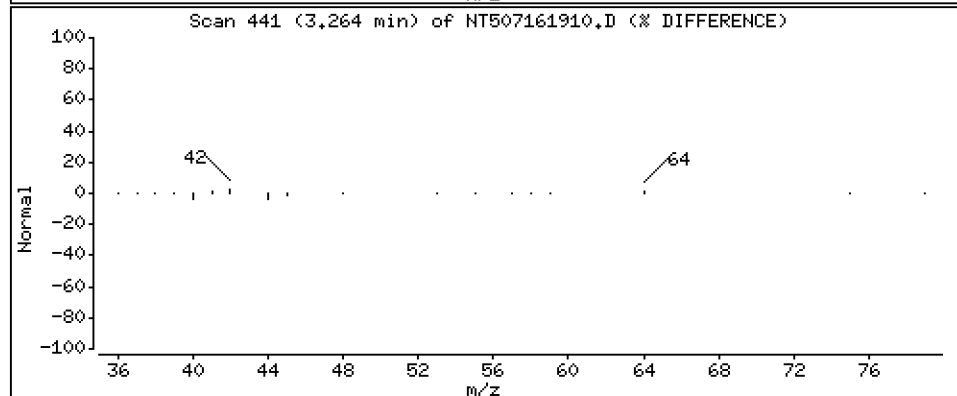
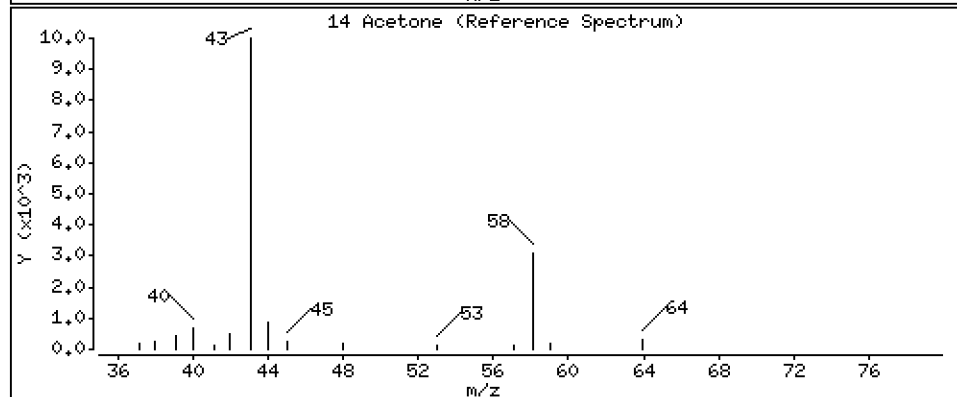
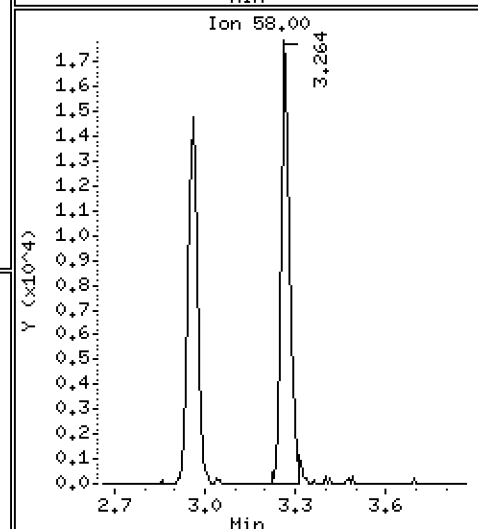
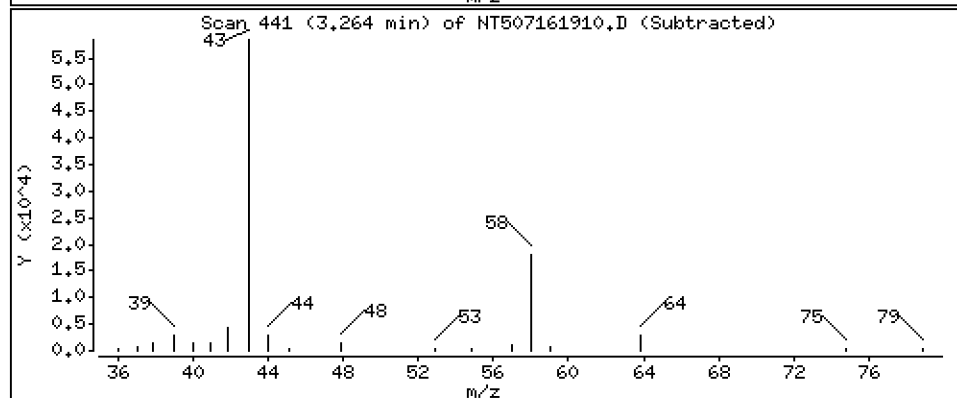
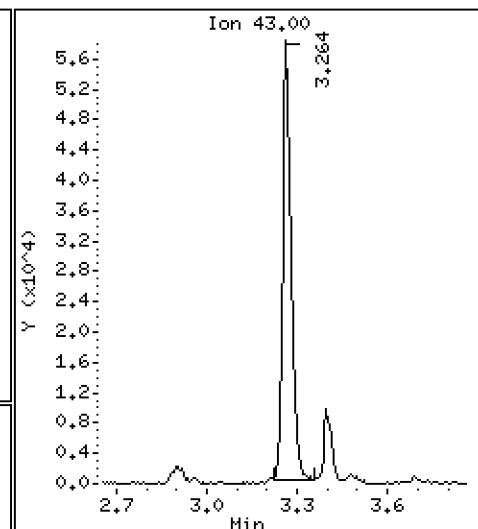
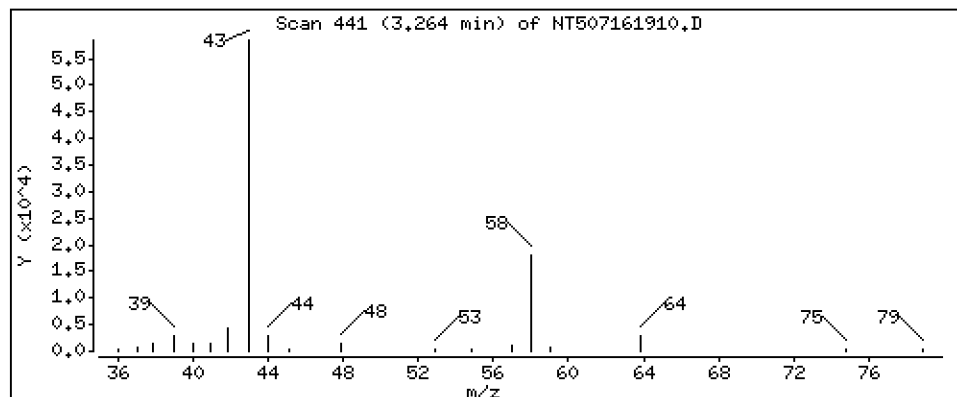
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 218.68 ug/Kg



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

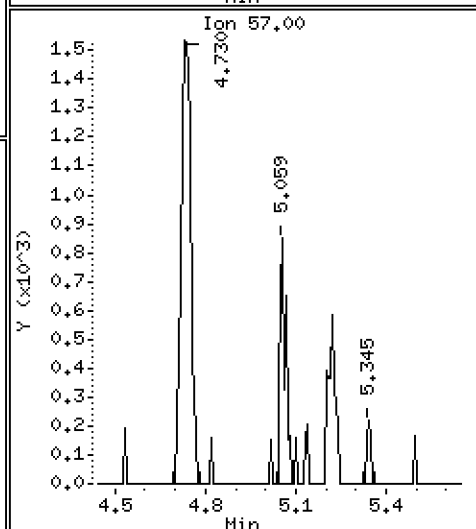
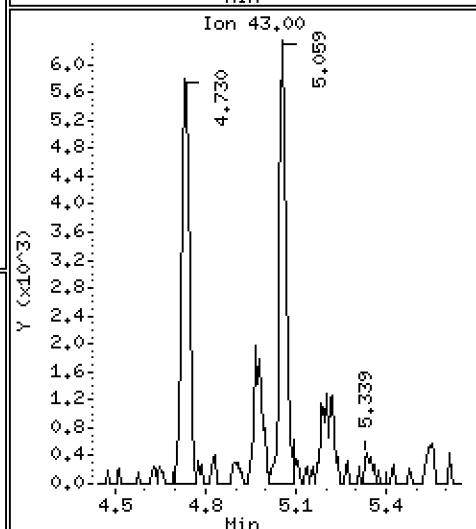
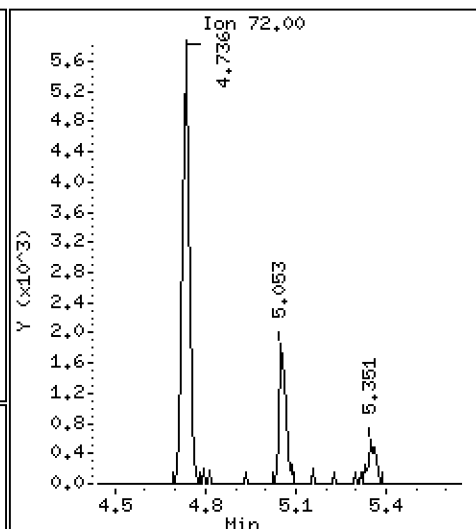
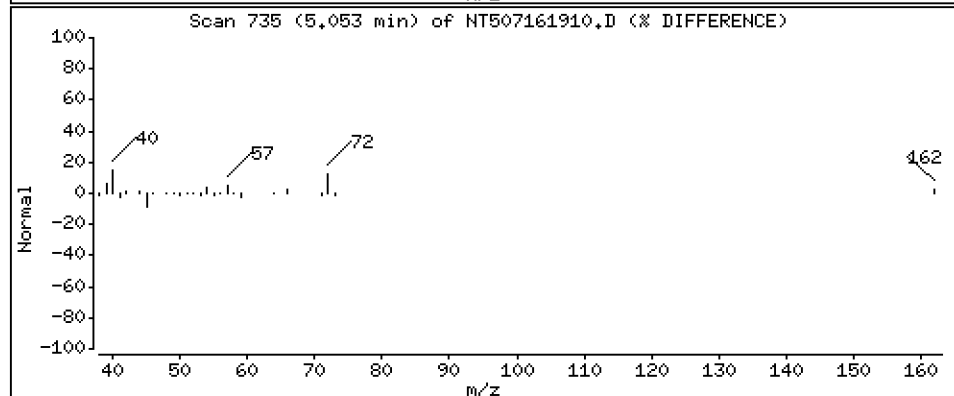
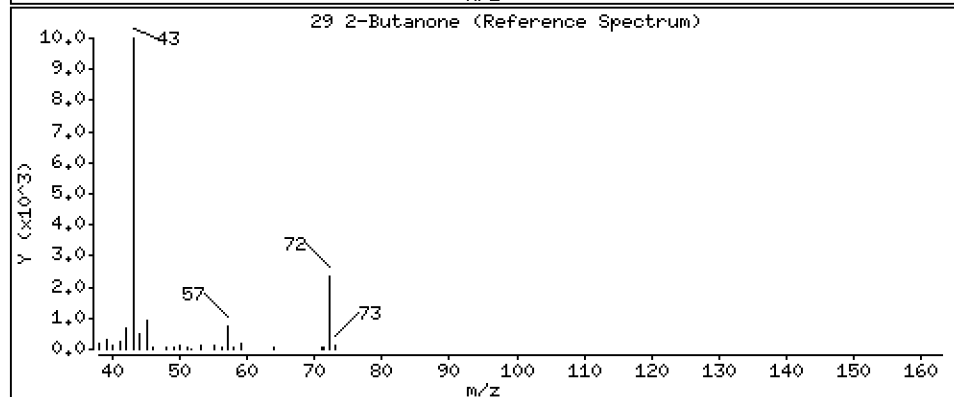
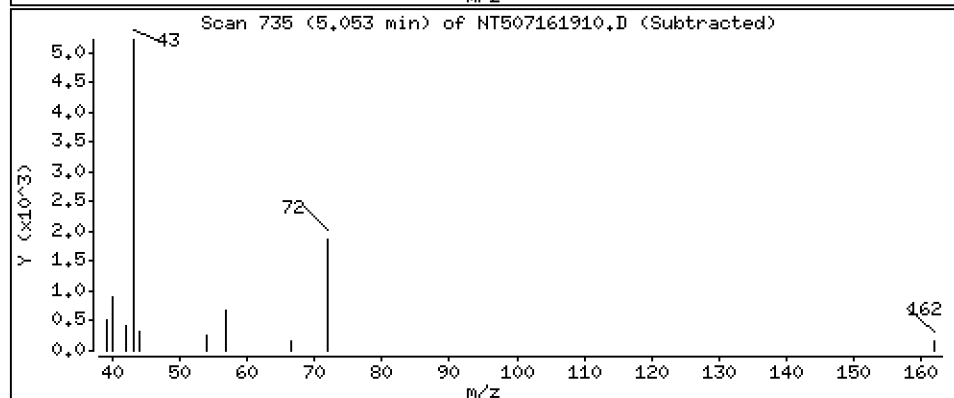
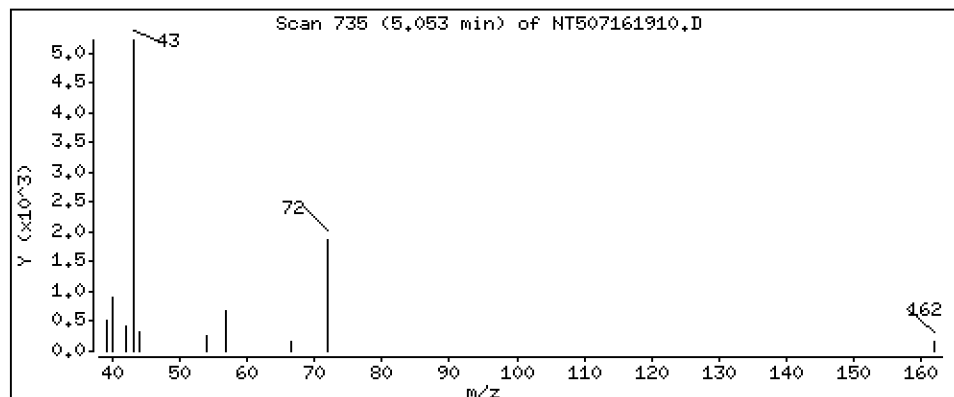
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 11.432 ug/Kg



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

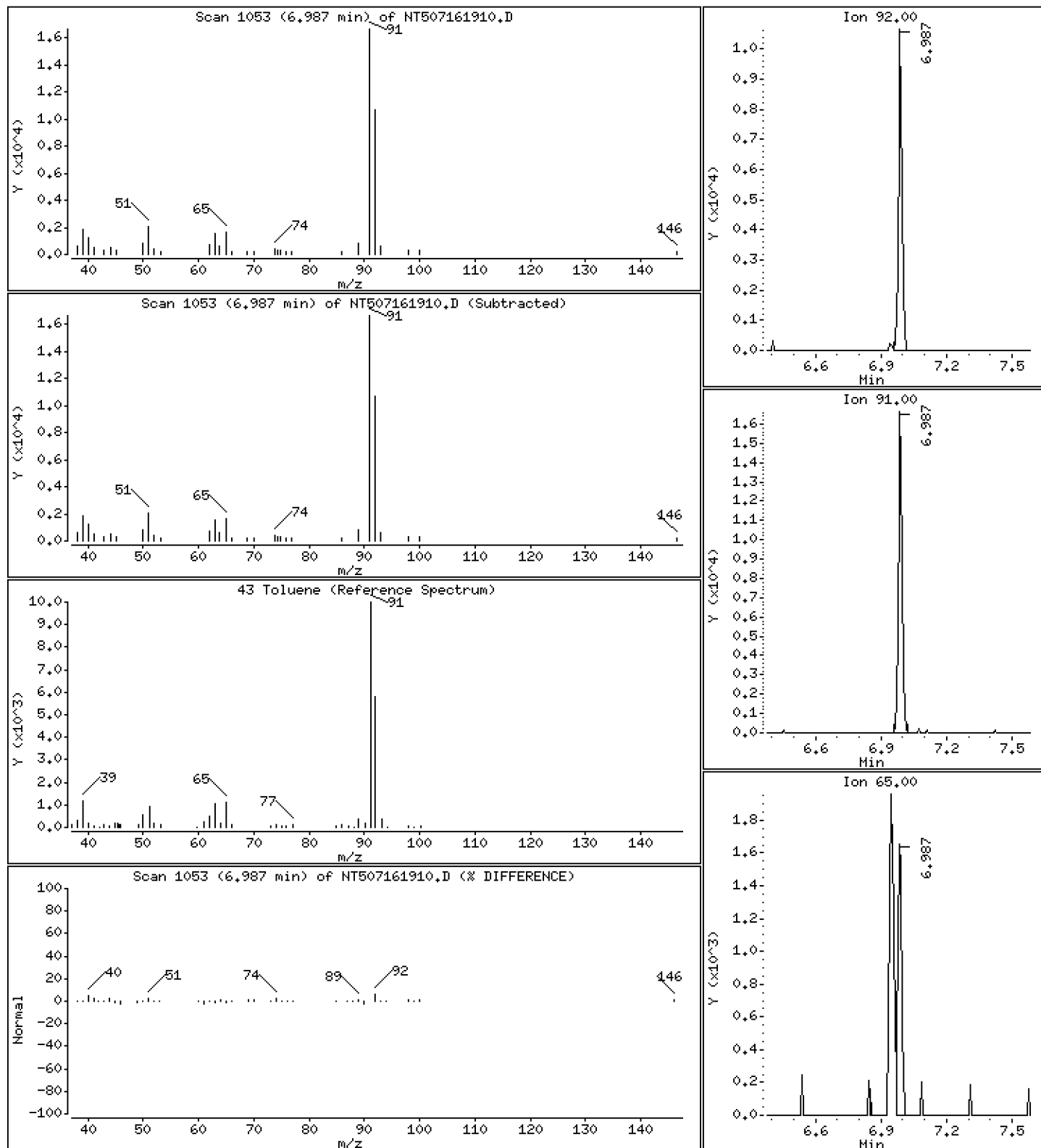
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 1.539 ug/Kg



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

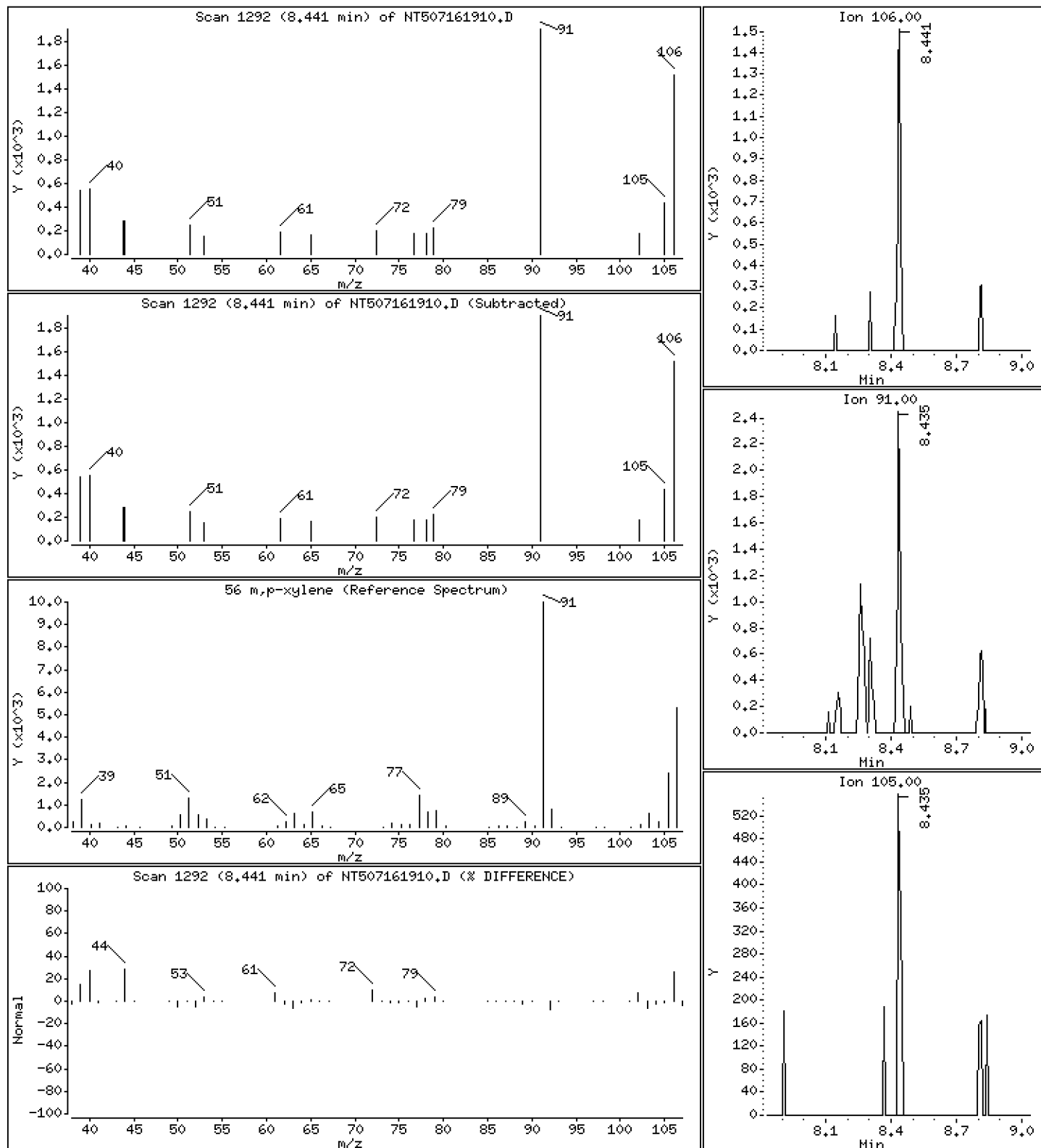
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 0.2547 ug/Kg



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

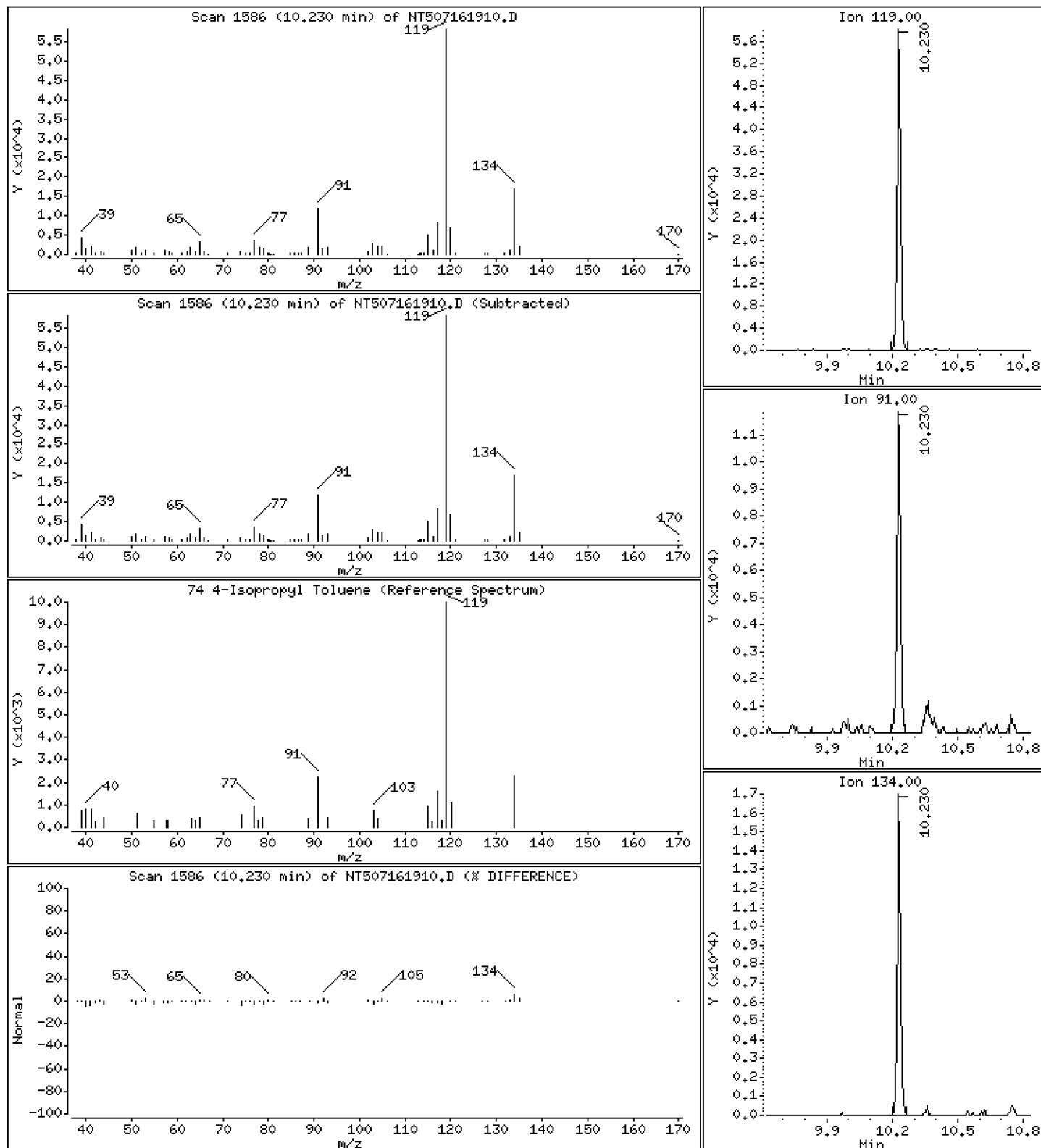
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 6.539 ug/Kg



Date : 16-JUL-2019 18:12

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-14

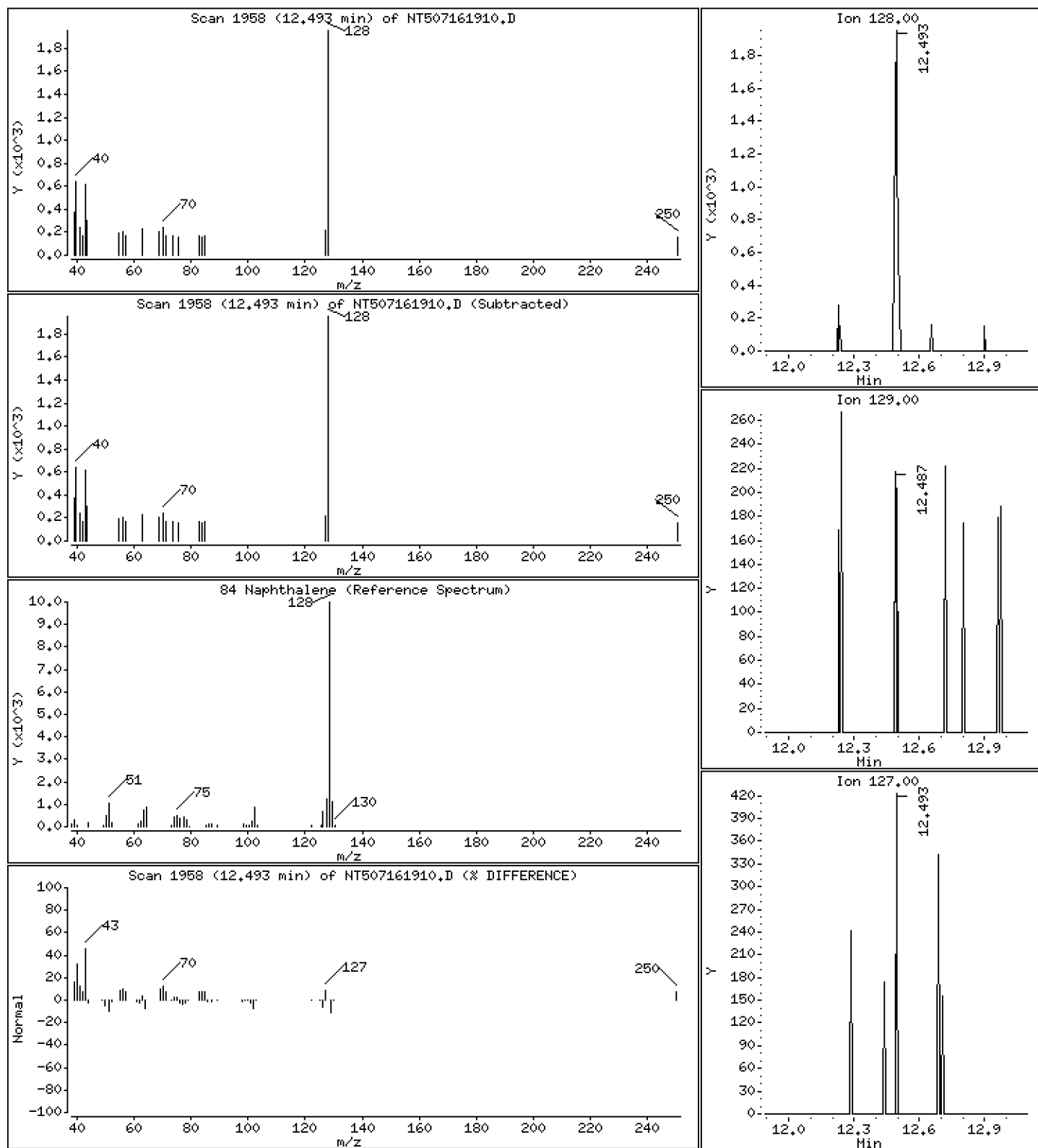
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.2777 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161910.D
Lab Smp Id: 19G0163-14
Inj Date : 16-JUL-2019 18:12
Operator : PB Inst ID: nt5.i
Smp Info : 19G0163-14
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Meth Date : 17-Jul-2019 13:41 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamdl.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG						CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====		=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound	Not	Detected.			
2 Chloromethane	50		Compound	Not	Detected.			
3 Vinyl Chloride	62		Compound	Not	Detected.			
4 Bromomethane	94		Compound	Not	Detected.			
5 Chloroethane	64		Compound	Not	Detected.			
6 Trichlorofluoromethane	101		Compound	Not	Detected.			
7 1,1-Dichloroethene	96		Compound	Not	Detected.			
8 Carbon Disulfide	76	2.546	2.539	(0.476)		8834	1.01838	1.018
9 112Trichloro122Trifluoroethane	101		Compound	Not	Detected.			
10 Iodomethane	142		Compound	Not	Detected.			
11 Bromoethane	108		Compound	Not	Detected.			
12 Acrolein	56		Compound	Not	Detected.			
13 Methylene Chloride	84	3.166	3.154	(0.593)		2073	0.67155	0.6716
14 Acetone	43	3.264	3.257	(0.611)		121534	218.679	218.68
15 Trans-1,2-Dichloroethene	96		Compound	Not	Detected.			
16 Methyl tert butyl ether	73		Compound	Not	Detected.			
173 n-Hexane	41		Compound	Not	Detected.			
17 1,1-Dichloroethane	63		Compound	Not	Detected.			
18 Acrylonitrile	53		Compound	Not	Detected.			
19 Vinyl Acetate	43		Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96		Compound	Not	Detected.			
22 2,2-Dichloropropane	77		Compound	Not	Detected.			
23 Bromochloromethane	128		Compound	Not	Detected.			
24 Chloroform	83		Compound	Not	Detected.			
25 Carbon Tetrachloride	117		Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111	4.900	4.894	(0.917)		253844	61.5456	61.546 (R)
26 1,1,1-Trichloroethane	97		Compound	Not	Detected.			
28 1,1-Dichloropropene	75		Compound	Not	Detected.			
29 2-Butanone	72	5.052	5.046	(0.945)		2986	11.4322	11.432
30 Benzene	78		Compound	Not	Detected.			
* 31 Pentafluorobenzene	168	5.344	5.338	(1.000)		377146	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.362	5.356	(1.003)		228648	66.2704	66.270 (R)
33 1,2-Dichloroethane	62		Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.794	5.788	(1.000)	752490	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.198)	902061	51.1904	51.190 (R)
43 Toluene	92	6.987	6.981	(1.206)	14013	1.53879	1.539
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	726073	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106	8.441	8.434	(1.021)	1762	0.25471	0.2547
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.341	9.335	(1.130)	273130	43.9407	43.941 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	78809	6.53923	6.539
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	296903	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	246022	47.5124	47.512 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128	12.492	12.492	(1.207)	2270	0.27772	0.2777
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161910.D Calibration Time: 14:57
 Lab Smp Id: 19G0163-14
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	377146	-6.63
35 1,4-Difluorobenze	717664	358832	1435328	752490	4.85
52 d5-Chlorobenzene	696563	348282	1393126	726073	4.24
76 d4-1,4-Dichlorobe	380778	190389	761556	296903	-22.03

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.12
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.11
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.08
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:	Client SDG: 20151013
Sample Matrix: NONE	Fraction: VOA
Lab Smp Id: 19G0163-14	
Level:	Operator: PB
Data Type: MS DATA	SampleType: SAMPLE
SpikeList File: voasoil.spk	Quant Type: ISTD
Sublist File: voamdl.sub	
Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m	
Misc Info:	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	61.546	123.09	
\$ 32 d4-1,2-Dichloroeth	50.000	66.270	132.54	
\$ 42 d8-Toluene	50.000	51.190	102.38	
\$ 62 4-Bromofluorobenze	50.000	43.941	87.88	
\$ 79 d4-1,2-Dichloroben	50.000	47.512	95.02	

REVIEW SUMMARY FOR FILE - NT507161910.D

Lab ID: 19G0163-14
nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 18:12

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-15 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 12:35</u>	Prepared: <u>07/16/19 16:03</u>	File ID: <u>NT507161911.D</u>
% Solids: <u>87.89</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/16/19 18:35</u>
Batch: <u>BHG0391</u>	Sequence: <u>SHG0229</u>	Initial/Final: <u>2.68 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
74-87-3	Chloromethane	1	2.12	U	0.56	2.12
75-01-4	Vinyl Chloride	1	2.12	U	0.50	2.12
74-83-9	Bromomethane	1	2.12	U	0.40	2.12
75-00-3	Chloroethane	1	2.12	U	0.98	2.12
75-69-4	Trichlorofluoromethane	1	2.12	U	0.56	2.12
107-02-8	Acrolein	1	10.6	U	8.09	10.6
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	4.25	U	0.61	4.25
67-64-1	Acetone	1	686		1.02	10.6
75-35-4	1,1-Dichloroethene	1	2.12	U	0.71	2.12
74-96-4	Bromoethane	1	4.25	U	0.93	4.25
74-88-4	Iodomethane	1	2.12	U	0.46	2.12
75-09-2	Methylene Chloride	1	4.25	U	1.35	4.25
107-13-1	Acrylonitrile	1	10.6	U	2.19	10.6
75-15-0	Carbon Disulfide	1	2.12	U	1.19	2.12
156-60-5	trans-1,2-Dichloroethene	1	2.12	U	0.56	2.12
108-05-4	Vinyl Acetate	1	10.6	U	0.81	10.6
75-34-3	1,1-Dichloroethane	1	2.12	U	0.43	2.12
78-93-3	2-Butanone	1	33.4		1.09	10.6
594-20-7	2,2-Dichloropropane	1	2.12	U	0.62	2.12
156-59-2	cis-1,2-Dichloroethene	1	2.12	U	0.51	2.12
67-66-3	Chloroform	1	2.12	U	0.50	2.12
74-97-5	Bromochloromethane	1	2.12	U	0.69	2.12
71-55-6	1,1,1-Trichloroethane	1	2.12	U	0.48	2.12
563-58-6	1,1-Dichloropropene	1	2.12	U	0.66	2.12
56-23-5	Carbon tetrachloride	1	2.12	U	0.45	2.12
107-06-2	1,2-Dichloroethane	1	2.12	U	0.41	2.12
71-43-2	Benzene	1	2.12	U	0.63	2.12
79-01-6	Trichloroethene	1	2.12	U	0.45	2.12
78-87-5	1,2-Dichloropropane	1	2.12	U	0.34	2.12
75-27-4	Bromodichloromethane	1	2.12	U	0.54	2.12
74-95-3	Dibromomethane	1	2.12	U	0.31	2.12
110-75-8	2-Chloroethyl vinyl ether	1	10.6	U	0.59	10.6
108-10-1	4-Methyl-2-Pentanone	1	10.6	U	0.89	10.6
10061-01-5	cis-1,3-Dichloropropene	1	2.12	U	0.48	2.12



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: <u>Solid</u>	Laboratory ID: <u>19G0163-15 C</u>	SDG: <u>19G0163</u>
Sampled: <u>07/11/19 12:35</u>	Prepared: <u>07/16/19 16:03</u>	File ID: <u>NT507161911.D</u>
% Solids: <u>87.89</u>	Preparation: <u>EPA 5035 (Sodium Bisulfate)</u>	Analyzed: <u>07/16/19 18:35</u>
Batch: <u>BHG0391</u>	Sequence: <u>SHG0229</u>	Initial/Final: <u>2.68 g Wet / 5 mL</u>
Instrument: <u>NT5</u>	Column: <u>RTX-VMS</u>	Calibration: <u>CF00067</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
108-88-3	Toluene	1	2.09	J	0.32	2.12
10061-02-6	trans-1,3-Dichloropropene	1	2.12	U	0.46	2.12
591-78-6	2-Hexanone	1	10.6	U	0.93	10.6
79-00-5	1,1,2-Trichloroethane	1	2.12	U	0.61	2.12
142-28-9	1,3-Dichloropropane	1	2.12	U	0.44	2.12
127-18-4	Tetrachloroethene	1	2.12	U	0.55	2.12
124-48-1	Dibromochloromethane	1	2.12	U	0.56	2.12
106-93-4	1,2-Dibromoethane	1	2.12	U	0.37	2.12
108-90-7	Chlorobenzene	1	2.12	U	0.46	2.12
100-41-4	Ethylbenzene	1	2.12	U	0.43	2.12
630-20-6	1,1,1,2-Tetrachloroethane	1	2.12	U	0.49	2.12
179601-23-1	m,p-Xylene	1	4.25	U	0.83	4.25
95-47-6	o-Xylene	1	2.12	U	0.48	2.12
1330-20-7	Xylenes, total	1	4.25	U	1.31	4.25
100-42-5	Styrene	1	2.12	U	0.29	2.12
75-25-2	Bromoform	1	2.12	U	0.63	2.12
79-34-5	1,1,1,2-Tetrachloroethane	1	2.12	U	0.54	2.12
96-18-4	1,2,3-Trichloropropane	1	4.25	U	1.10	4.25
110-57-6	trans-1,4-Dichloro 2-Butene	1	10.6	U	0.93	10.6
103-65-1	n-Propylbenzene	1	2.12	U	0.58	2.12
108-86-1	Bromobenzene	1	2.12	U	0.32	2.12
98-82-8	Isopropyl Benzene	1	2.12	U	0.49	2.12
95-49-8	2-Chlorotoluene	1	2.12	U	0.64	2.12
106-43-4	4-Chlorotoluene	1	2.12	U	0.59	2.12
98-06-6	t-Butylbenzene	1	2.12	U	0.65	2.12
108-67-8	1,3,5-Trimethylbenzene	1	2.12	U	0.54	2.12
95-63-6	1,2,4-Trimethylbenzene	1	2.12	U	0.49	2.12
135-98-8	s-Butylbenzene	1	2.12	U	0.51	2.12
99-87-6	4-Isopropyl Toluene	1	5.55		0.50	2.12
541-73-1	1,3-Dichlorobenzene	1	2.12	U	0.48	2.12
106-46-7	1,4-Dichlorobenzene	1	2.12	U	0.49	2.12
104-51-8	n-Butylbenzene	1	2.12	U	0.56	2.12
95-50-1	1,2-Dichlorobenzene	1	2.12	U	0.62	2.12
96-12-8	1,2-Dibromo-3-chloropropane	1	10.6	U	1.24	10.6



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 C SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/16/19 16:03 File ID: NT507161911.D

% Solids: 87.89 Preparation: EPA 5035 (Sodium Bisulfate) Analyzed: 07/16/19 18:35

Batch: BHG0391 Sequence: SHG0229 Initial/Final: 2.68 g Wet / 5 mL

Instrument: NT5 Column: RTX-VMS Calibration: CF00067

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	10.6	U	0.70	10.6
87-68-3	Hexachloro-1,3-Butadiene	1	10.6	U	0.87	10.6
91-20-3	Naphthalene	1	10.6	U	0.91	10.6
87-61-6	1,2,3-Trichlorobenzene	1	10.6	U	0.65	10.6
75-71-8	Dichlorodifluoromethane	1	2.12	U	0.44	2.12
1634-04-4	Methyl tert-butyl Ether	1	2.12	U	0.49	2.12
107-87-9	2-Pentanone	1	10.6	U	10.6	10.6

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.000	69.4	139	80 - 149	
Toluene-d8	50.000	50.9	102	77 - 120	
4-Bromofluorobenzene	50.000	45.7	91.4	80 - 120	
1,2-Dichlorobenzene-d4	50.000	50.1	100	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161911.D

Date : 16-JUL-2019 18:36

Client ID:

Sample Info: 19C0163-15

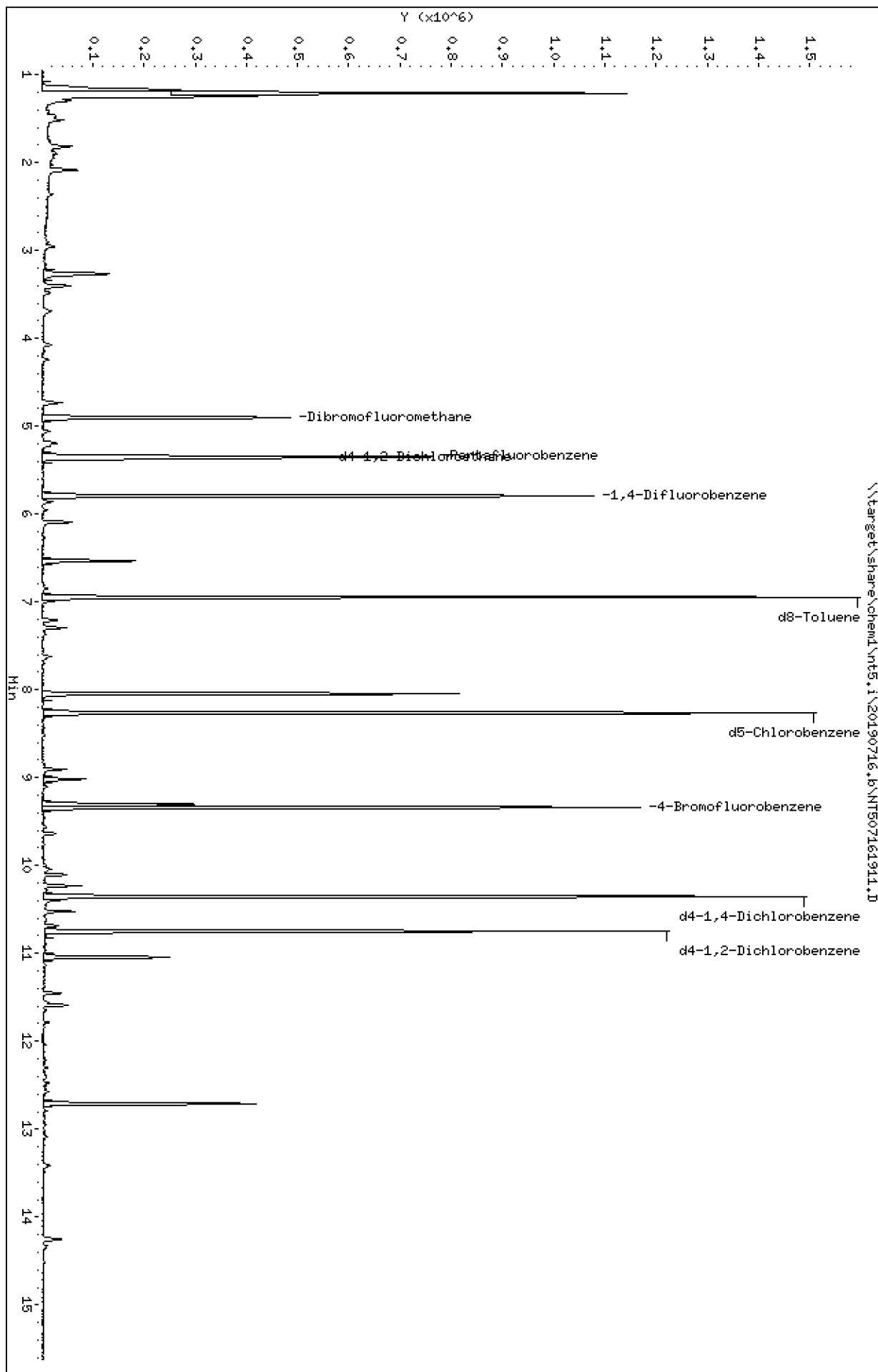
Page 1

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



Date : 16-JUL-2019 18:35

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-15

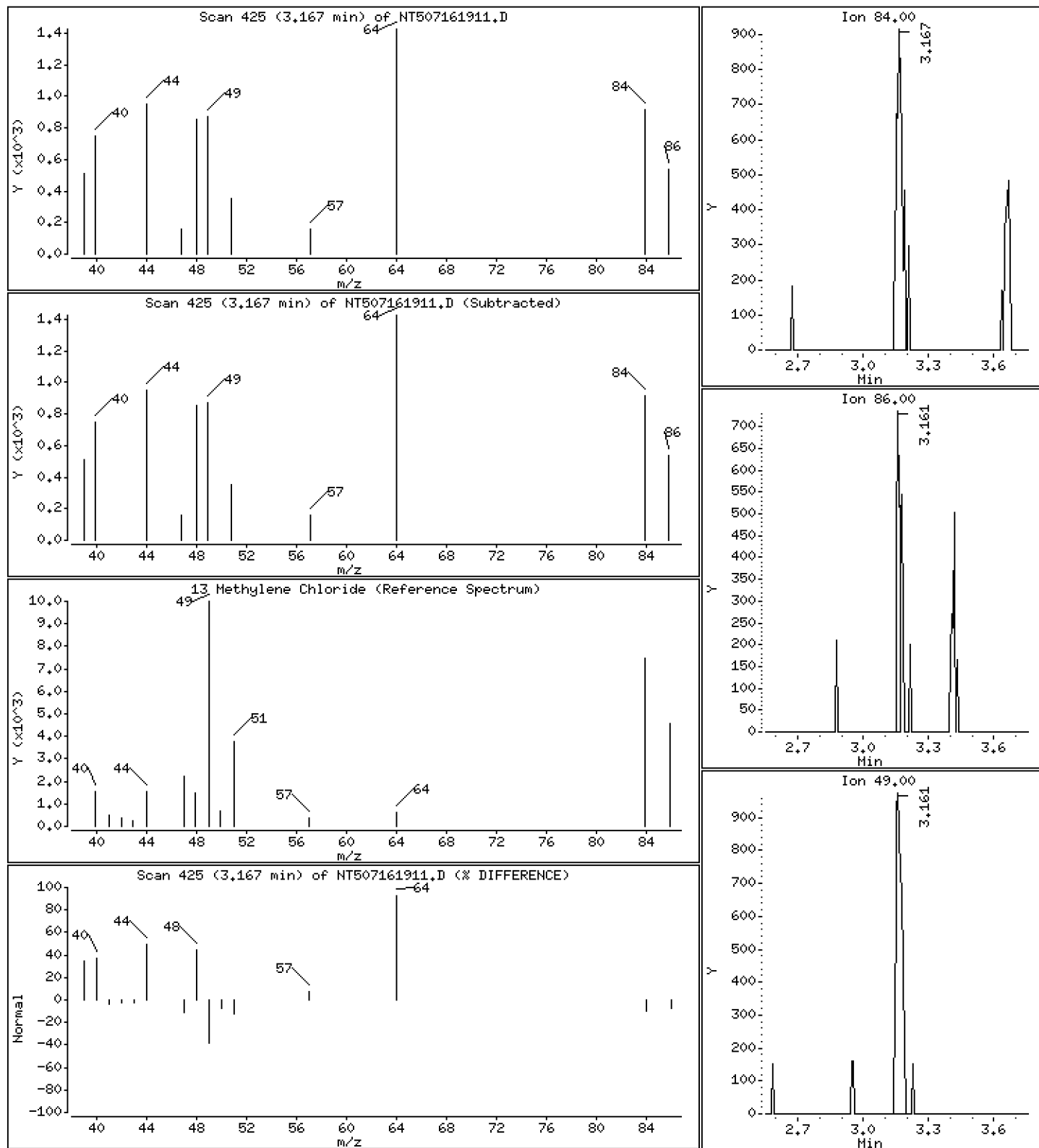
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.6078 ug/Kg



Date : 16-JUL-2019 18:35

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-15

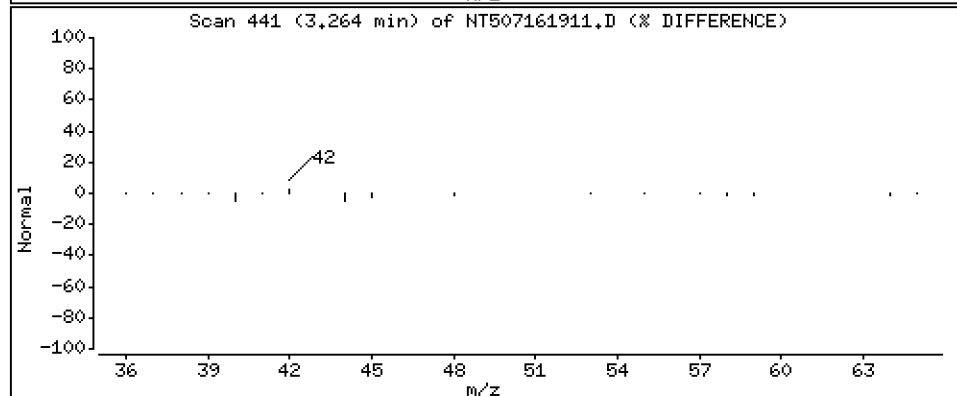
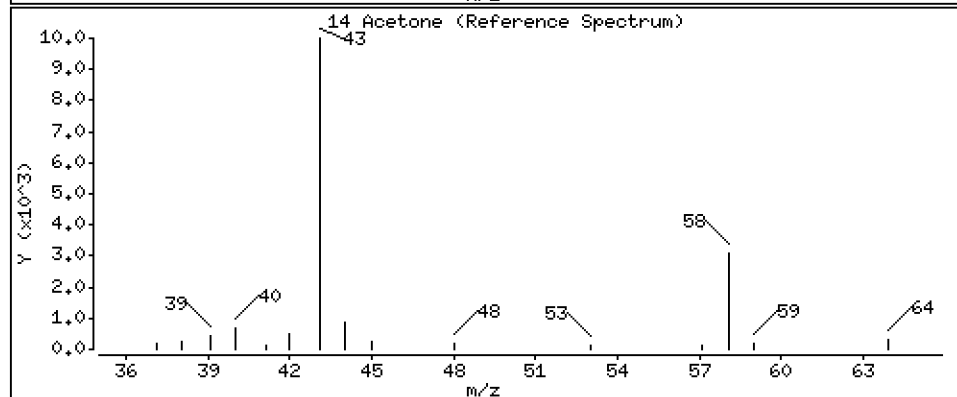
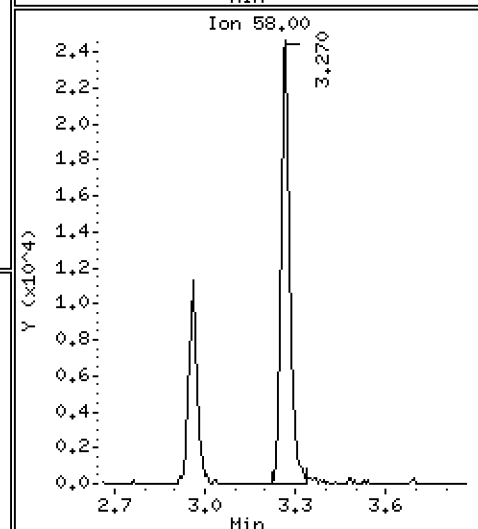
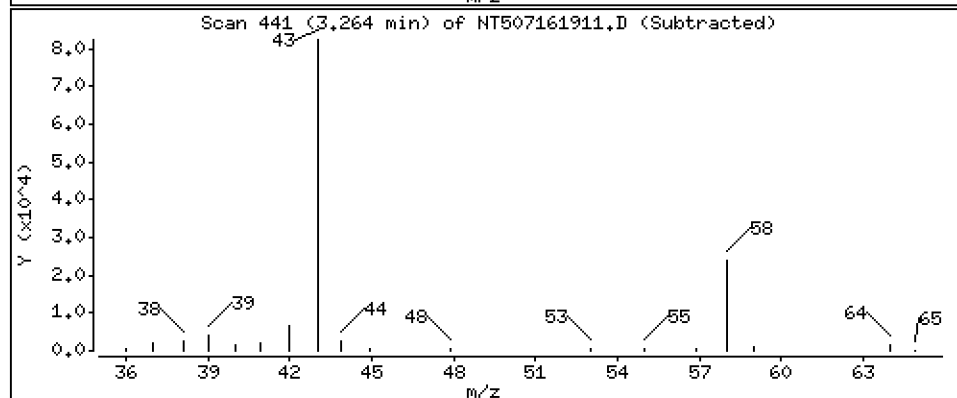
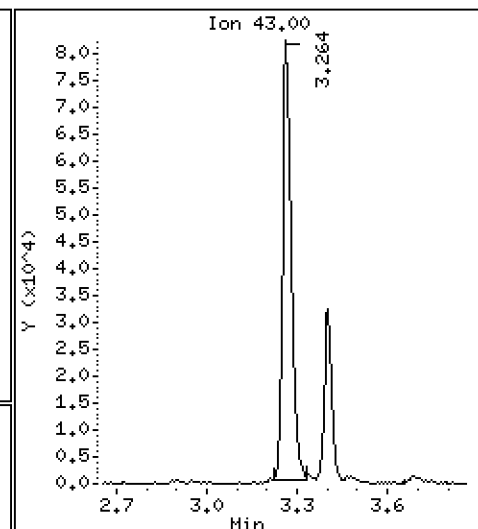
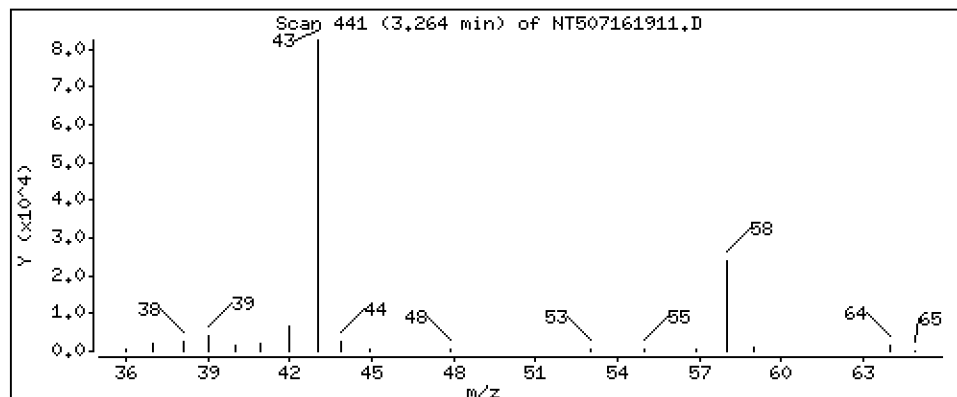
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 322.99 ug/Kg



Date : 16-JUL-2019 18:35

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-15

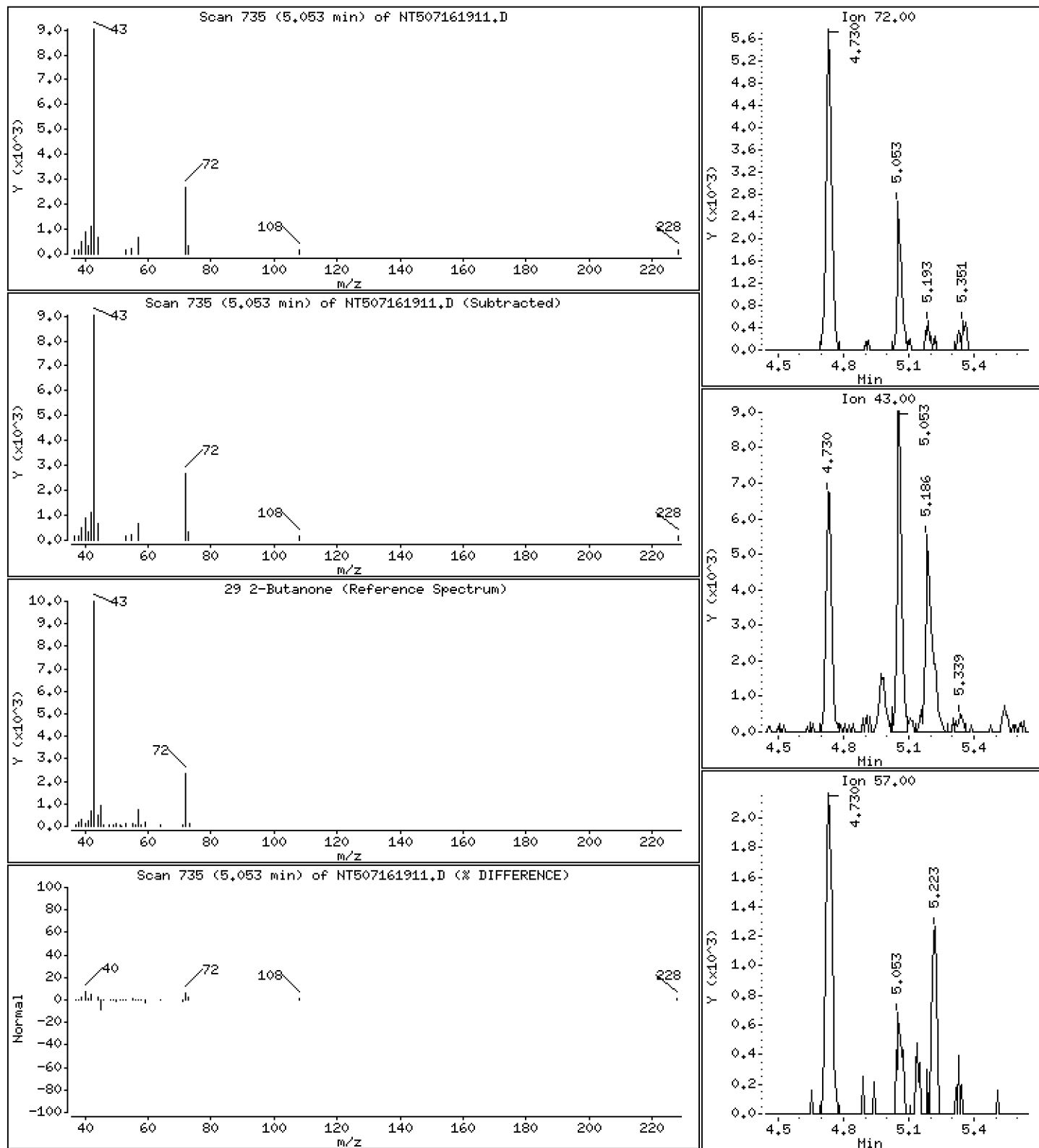
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 15.722 ug/Kg



Date : 16-JUL-2019 18:35

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-15

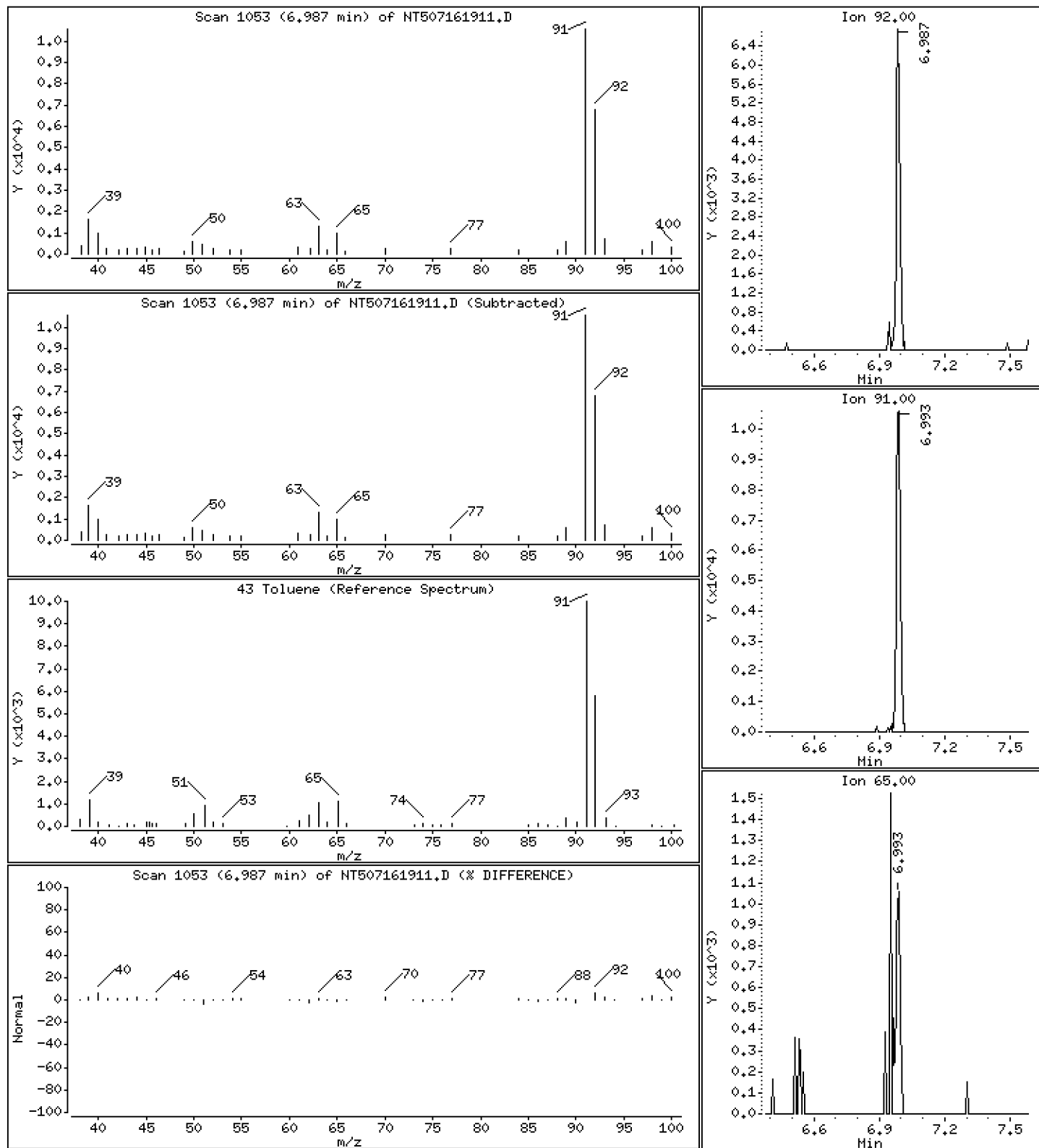
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 0.9866 ug/Kg



Date : 16-JUL-2019 18:35

Client ID:

Instrument: nt5.i

Sample Info: 19G0163-15

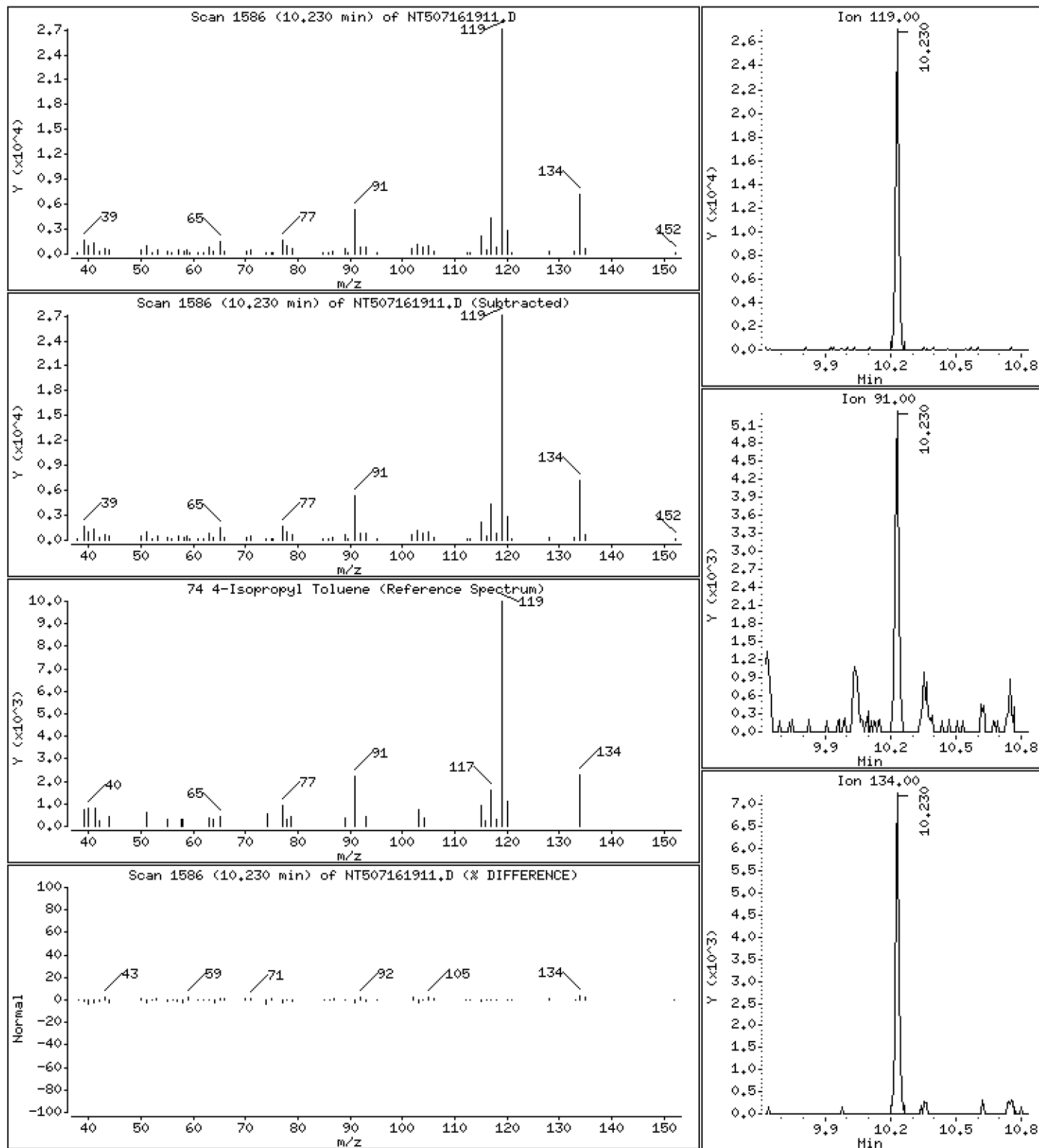
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 2.613 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161911.D
 Lab Smp Id: 19G0163-15
 Inj Date : 16-JUL-2019 18:35
 Operator : PB Inst ID: nt5.i
 Smp Info : 19G0163-15
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Meth Date : 17-Jul-2019 13:41 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

						CONCENTRATIONS	
		QUANT SIG				ON-COLUMN	FINAL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/Kg)	(ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	96	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	3.166	3.154	(0.593)	1853	0.60776	0.6078
14 Acetone	43	3.264	3.257	(0.611)	177300	322.991	322.99
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
16 Methyl tert butyl ether	73	Compound Not Detected.					
173 n-Hexane	41	Compound Not Detected.					
17 1,1-Dichloroethane	63	Compound Not Detected.					
18 Acrylonitrile	53	Compound Not Detected.					
19 Vinyl Acetate	43	Compound Not Detected.					
20 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
22 2,2-Dichloropropane	77	Compound Not Detected.					
23 Bromochloromethane	128	Compound Not Detected.					
24 Chloroform	83	Compound Not Detected.					
25 Carbon Tetrachloride	117	Compound Not Detected.					
\$ 27 Dibromofluoromethane	111	4.906	4.894	(0.918)	250540	61.5007	61.501 (R)
26 1,1,1-Trichloroethane	97	Compound Not Detected.					
28 1,1-Dichloropropene	75	Compound Not Detected.					
29 2-Butanone	72	5.052	5.046	(0.945)	4056	15.7221	15.722
30 Benzene	78	Compound Not Detected.					
* 31 Pentafluorobenzene	168	5.344	5.338	(1.000)	372509	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.362	5.356	(1.003)	236394	69.3684	69.368 (R)
33 1,2-Dichloroethane	62	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.794	5.788	(1.000)	738042	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.198)	879145	50.8666	50.867 (R)
43 Toluene	92	6.987	6.981	(1.206)	8812	0.98660	0.9866
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.264	8.258	(1.000)	721971	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.341	9.335	(1.130)	282441	45.6968	45.697 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	35409	2.61297	2.613
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	333845	50.0000	
77 1,4-Dichlorobenzene	146				Compound Not Detected.		
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	291737	50.1065	50.107 (R)
80 1,2-Dichlorobenzene	146				Compound Not Detected.		
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225				Compound Not Detected.		
83 1,2,4-Trichlorobenzene	180				Compound Not Detected.		
84 Naphthalene	128				Compound Not Detected.		
85 1,2,3-Trichlorobenzene	180				Compound Not Detected.		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161911.D Calibration Time: 14:57
 Lab Smp Id: 19G0163-15
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	372509	-7.78
35 1,4-Difluorobenze	717664	358832	1435328	738042	2.84
52 d5-Chlorobenzene	696563	348282	1393126	721971	3.65
76 d4-1,4-Dichlorobe	380778	190389	761556	333845	-12.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.12
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.11
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.08
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: NONE
Lab Smp Id: 19G0163-15
Level:
Data Type: MS DATA
SpikeList File: voasoil.spk
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Misc Info:

Client SDG: 20151013
Fraction: VOA

Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	61.501	123.00	
\$ 32 d4-1,2-Dichloroeth	50.000	69.368	138.74	
\$ 42 d8-Toluene	50.000	50.867	101.73	
\$ 62 4-Bromofluorobenze	50.000	45.697	91.39	
\$ 79 d4-1,2-Dichloroben	50.000	50.107	100.21	

REVIEW SUMMARY FOR FILE - NT507161911.D

Lab ID: 19G0163-15
nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 18:35

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: 19G0163-16 A

SDG: 19G0163

Sampled: 07/11/19 00:00

Prepared: 07/18/19 11:06

File ID: V307181911G.D

% Solids:

Preparation: EPA 5030 (Purge and Trap)

Analyzed: 07/18/19 13:42

Batch: BHG0439

Sequence: SHG0265

Initial/Final: 10 mL / 10 mL

Instrument: NT3

Column: RTX-VMS

Calibration: CG00042

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
74-87-3	Chloromethane	1	0.50	U	0.09	0.50
75-01-4	Vinyl Chloride	1	0.20	U	0.06	0.20
74-83-9	Bromomethane	1	1.00	U	0.25	1.00
75-00-3	Chloroethane	1	0.20	U	0.09	0.20
75-69-4	Trichlorofluoromethane	1	0.20	U	0.04	0.20
107-02-8	Acrolein	1	5.00	U	2.48	5.00
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	0.20	U	0.04	0.20
67-64-1	Acetone	1	2.17	J	2.06	5.00
75-35-4	1,1-Dichloroethene	1	0.20	U	0.05	0.20
74-96-4	Bromoethane	1	0.20	U	0.04	0.20
74-88-4	Iodomethane	1	1.00	U	0.23	1.00
75-09-2	Methylene Chloride	1	1.00	U	0.49	1.00
107-13-1	Acrylonitrile	1	1.00	U	0.60	1.00
75-15-0	Carbon Disulfide	1	0.20	U	0.04	0.20
156-60-5	trans-1,2-Dichloroethene	1	0.20	U	0.05	0.20
108-05-4	Vinyl Acetate	1	0.20	U	0.07	0.20
75-34-3	1,1-Dichloroethane	1	0.20	U	0.05	0.20
78-93-3	2-Butanone	1	5.00	U	0.81	5.00
594-20-7	2,2-Dichloropropane	1	0.20	U	0.05	0.20
156-59-2	cis-1,2-Dichloroethene	1	0.20	U	0.04	0.20
67-66-3	Chloroform	1	0.20	U	0.03	0.20
74-97-5	Bromochloromethane	1	0.20	U	0.06	0.20
71-55-6	1,1,1-Trichloroethane	1	0.20	U	0.04	0.20
563-58-6	1,1-Dichloropropene	1	0.20	U	0.03	0.20
56-23-5	Carbon tetrachloride	1	0.20	U	0.04	0.20
107-06-2	1,2-Dichloroethane	1	0.20	U	0.07	0.20
71-43-2	Benzene	1	0.20	U	0.03	0.20
79-01-6	Trichloroethene	1	0.20	U	0.05	0.20
78-87-5	1,2-Dichloropropane	1	0.20	U	0.04	0.20
75-27-4	Bromodichloromethane	1	0.20	U	0.05	0.20
74-95-3	Dibromomethane	1	0.20	U	0.15	0.20
110-75-8	2-Chloroethyl vinyl ether	1	1.00	U	0.25	1.00
108-10-1	4-Methyl-2-Pentanone	1	5.00	U	0.97	5.00
10061-01-5	cis-1,3-Dichloropropene	1	0.20	U	0.06	0.20



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: 19G0163-16 A

SDG: 19G0163

Sampled: 07/11/19 00:00

Prepared: 07/18/19 11:06

File ID: V307181911G.D

% Solids:

Preparation: EPA 5030 (Purge and Trap)

Analyzed: 07/18/19 13:42

Batch: BHG0439

Sequence: SHG0265

Initial/Final: 10 mL / 10 mL

Instrument: NT3

Column: RTX-VMS

Calibration: CG00042

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
108-88-3	Toluene	1	0.20	U	0.04	0.20
10061-02-6	trans-1,3-Dichloropropene	1	0.20	U	0.08	0.20
591-78-6	2-Hexanone	1	5.00	U	0.90	5.00
79-00-5	1,1,2-Trichloroethane	1	0.20	U	0.13	0.20
142-28-9	1,3-Dichloropropane	1	0.20	U	0.06	0.20
127-18-4	Tetrachloroethene	1	0.20	U	0.05	0.20
124-48-1	Dibromochloromethane	1	0.20	U	0.05	0.20
106-93-4	1,2-Dibromoethane	1	0.20	U	0.07	0.20
108-90-7	Chlorobenzene	1	0.20	U	0.02	0.20
100-41-4	Ethylbenzene	1	0.20	U	0.04	0.20
630-20-6	1,1,1,2-Tetrachloroethane	1	0.20	U	0.04	0.20
179601-23-1	m,p-Xylene	1	0.40	U	0.05	0.40
95-47-6	o-Xylene	1	0.20	U	0.03	0.20
100-42-5	Styrene	1	0.20	U	0.05	0.20
75-25-2	Bromoform	1	0.20	U	0.06	0.20
79-34-5	1,1,2,2-Tetrachloroethane	1	0.20	U	0.06	0.20
96-18-4	1,2,3-Trichloropropane	1	0.50	U	0.13	0.50
110-57-6	trans-1,4-Dichloro 2-Butene	1	1.00	U	0.32	1.00
103-65-1	n-Propylbenzene	1	0.20	U	0.02	0.20
108-86-1	Bromobenzene	1	0.20	U	0.06	0.20
1330-20-7	Xylenes, total	1	0.60	U	0.09	0.60
98-82-8	Isopropyl Benzene	1	0.20	U	0.02	0.20
95-49-8	2-Chlorotoluene	1	0.20	U	0.02	0.20
106-43-4	4-Chlorotoluene	1	0.20	U	0.02	0.20
98-06-6	t-Butylbenzene	1	0.20	U	0.03	0.20
108-67-8	1,3,5-Trimethylbenzene	1	0.20	U	0.02	0.20
95-63-6	1,2,4-Trimethylbenzene	1	0.20	U	0.02	0.20
135-98-8	s-Butylbenzene	1	0.20	U	0.02	0.20
99-87-6	4-Isopropyl Toluene	1	0.20	U	0.03	0.20
541-73-1	1,3-Dichlorobenzene	1	0.20	U	0.04	0.20
106-46-7	1,4-Dichlorobenzene	1	0.20	U	0.04	0.20
104-51-8	n-Butylbenzene	1	0.20	U	0.02	0.20
95-50-1	1,2-Dichlorobenzene	1	0.20	U	0.04	0.20
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	U	0.37	0.50



Form I
ORGANIC ANALYSIS DATA SHEET
EPA 8260C
Volatile Organic Compounds

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: 19G0163-16 A

SDG: 19G0163

Sampled: 07/11/19 00:00

Prepared: 07/18/19 11:06

File ID: V307181911G.D

% Solids:

Preparation: EPA 5030 (Purge and Trap)

Analyzed: 07/18/19 13:42

Batch: BHG0439

Sequence: SHG0265

Initial/Final: 10 mL / 10 ml

Instrument: NT3

Column: RTX-VMS

Calibration: CG00042

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
120-82-1	1,2,4-Trichlorobenzene	1	0.50	U	0.11	0.50
87-68-3	Hexachloro-1,3-Butadiene	1	0.50	U	0.07	0.50
91-20-3	Naphthalene	1	0.50	U	0.12	0.50
87-61-6	1,2,3-Trichlorobenzene	1	0.50	U	0.11	0.50
75-71-8	Dichlorodifluoromethane	1	0.20	U	0.05	0.20
1634-04-4	Methyl tert-butyl Ether	1	0.50	U	0.07	0.50
107-87-9	2-Pentanone	1	5.00	U	5.00	5.00

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	5.0000	4.90	98.1	80 - 129	
1,2-Dichlorobenzene-d4	5.0000	5.12	102	80 - 120	
Toluene-d8	5.0000	4.98	99.6	80 - 120	
4-Bromofluorobenzene	5.0000	4.94	98.8	80 - 120	

Data File: \\target\share\chemd\nt3.i\20190718.b\W307181911G.D

Date : 18-JUL-2019 13:42

Client ID:

Sample Info: 19C0163-16

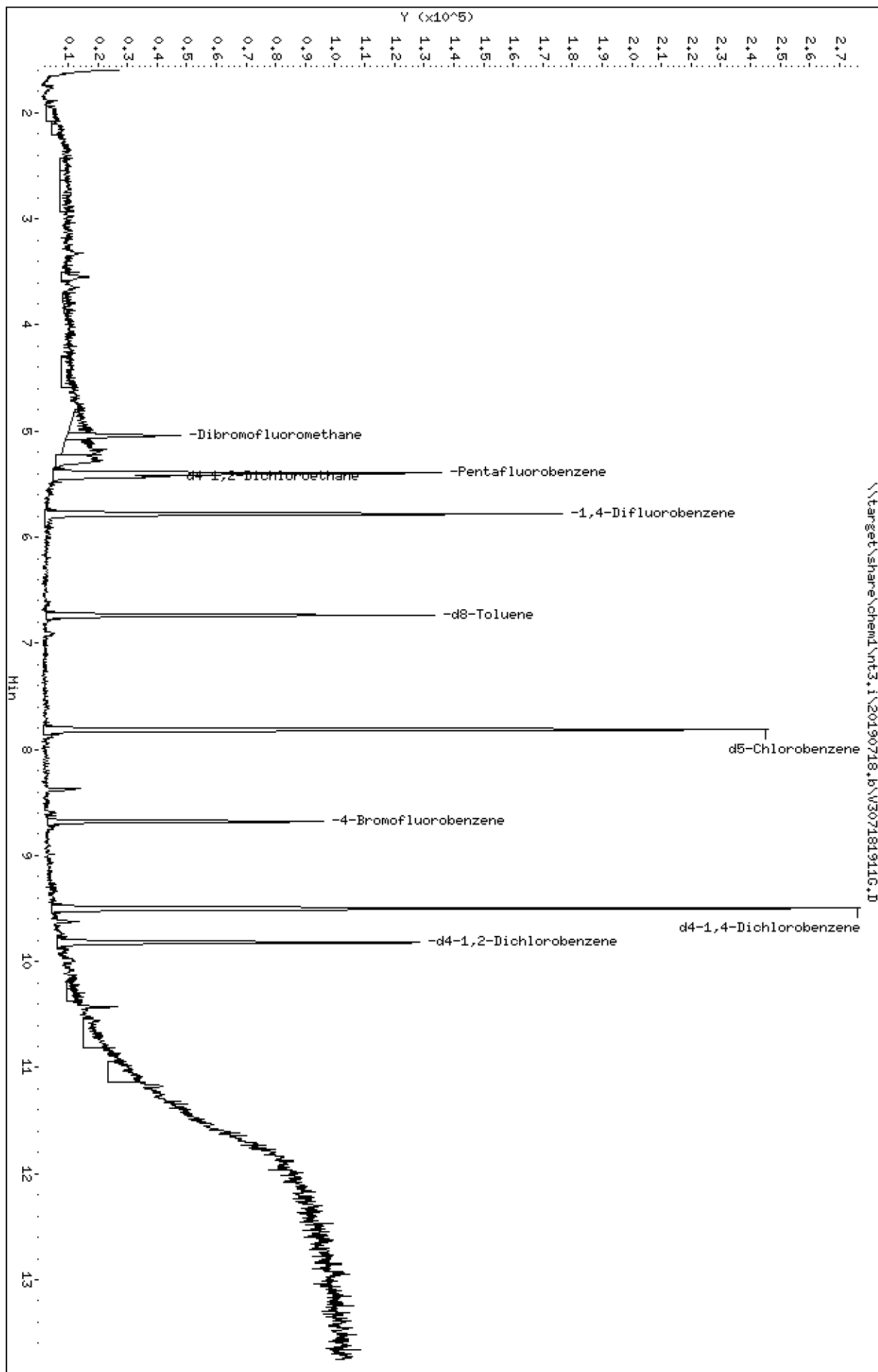
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

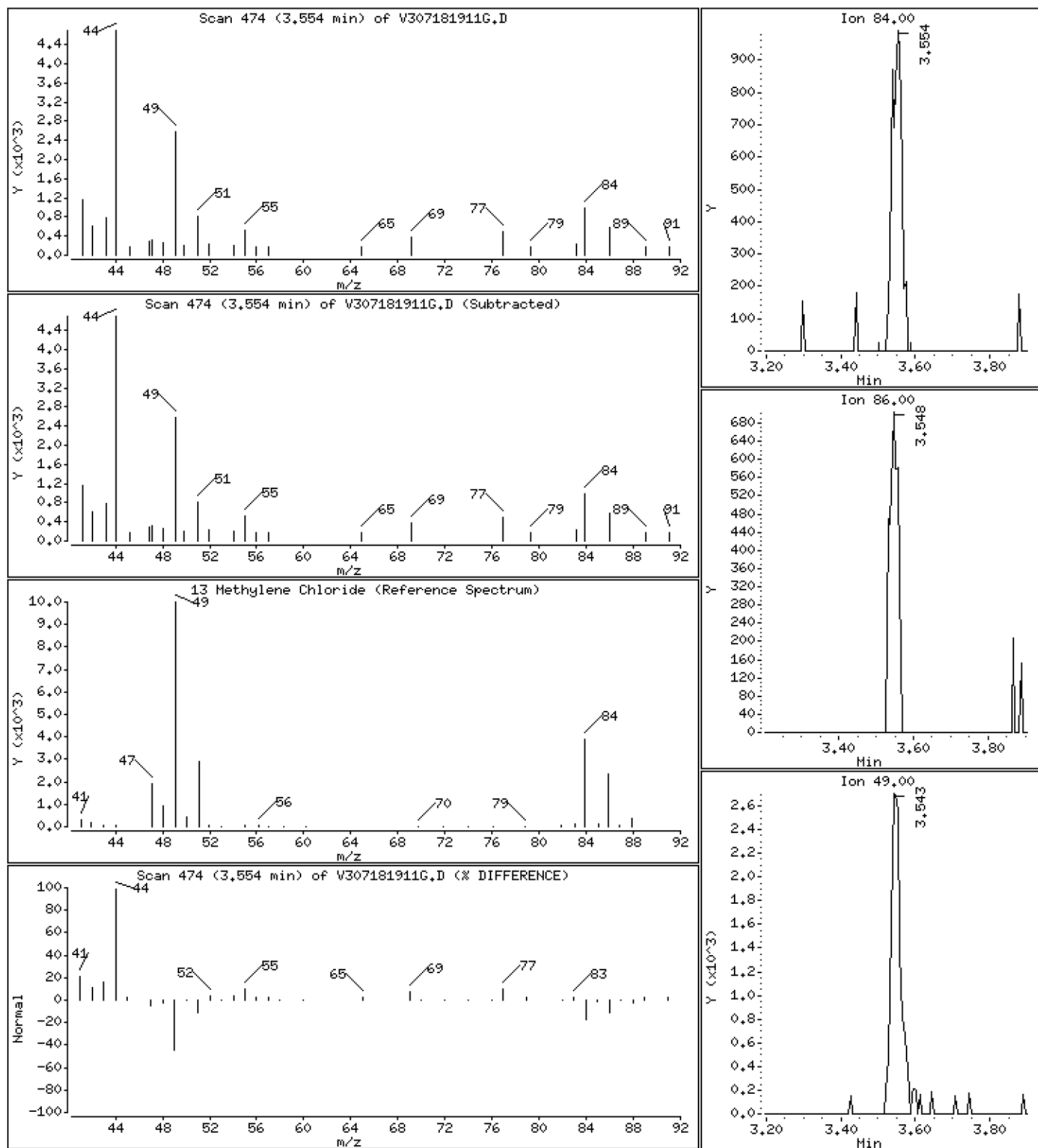
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.3778 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

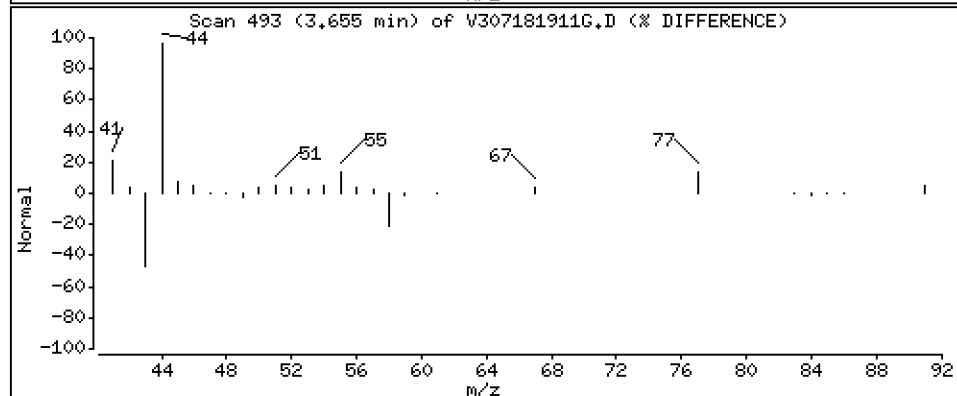
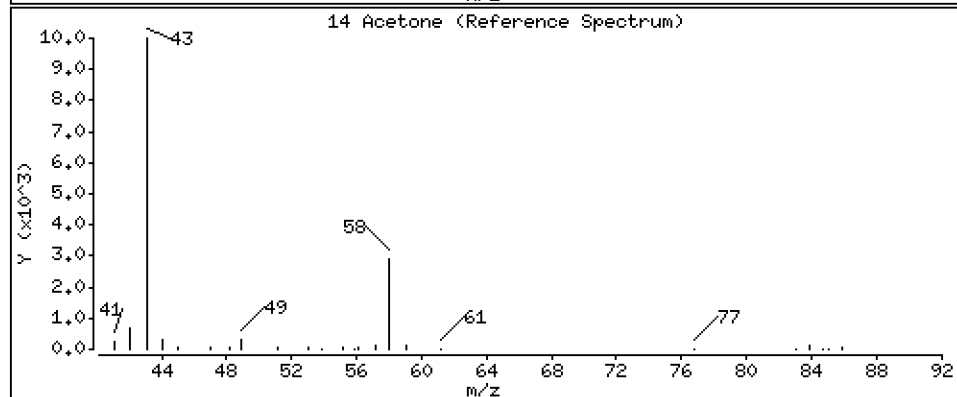
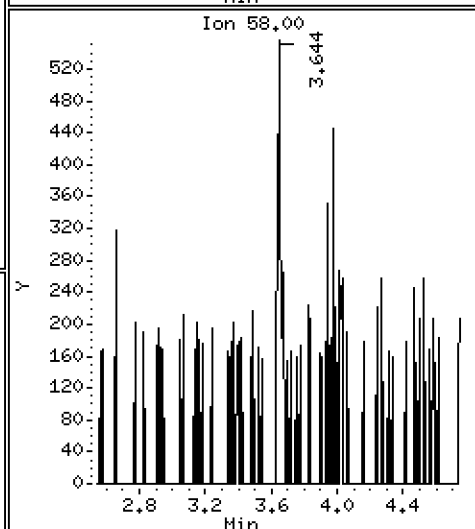
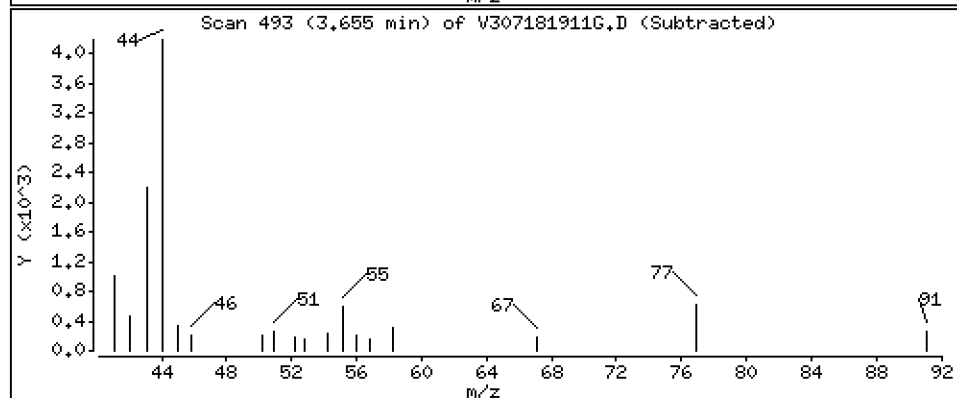
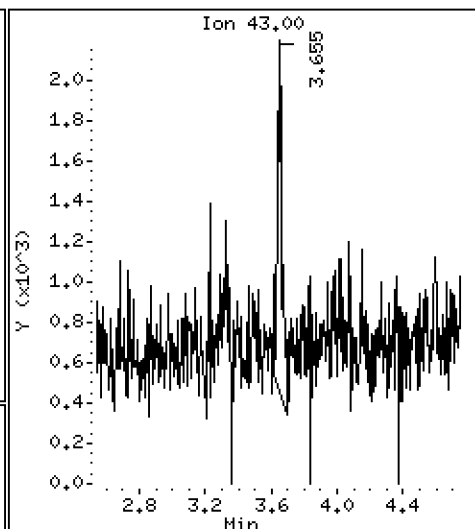
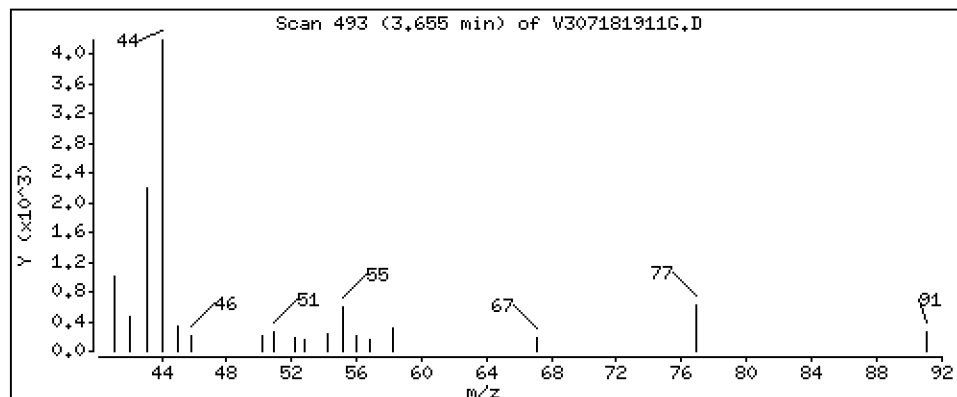
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 2.171 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

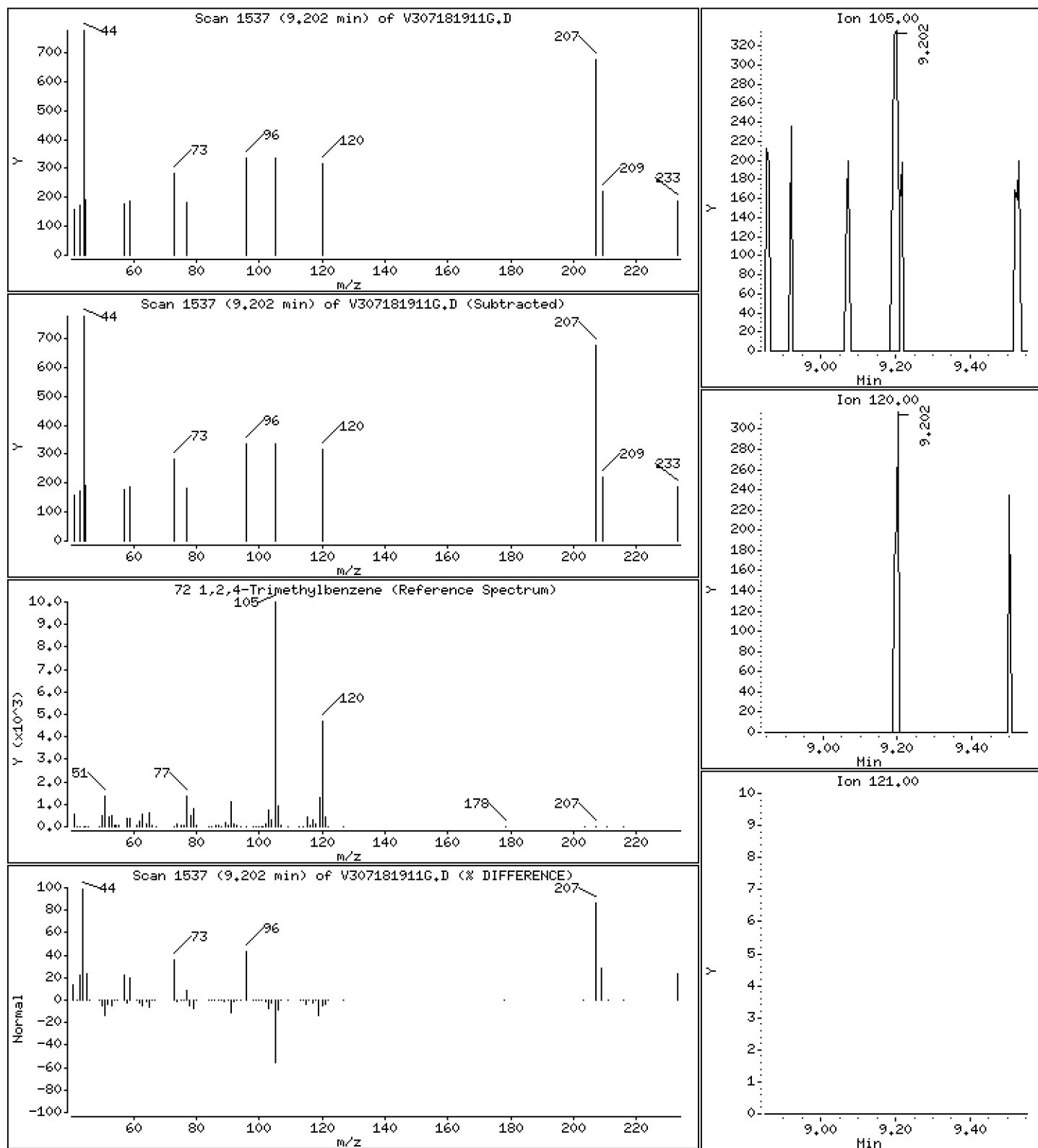
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 0.02128 ug/L



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718.b\V307181911G.D
Lab Smp Id: 19G0163-16
Inj Date : 18-JUL-2019 13:42
Operator : PKC Inst ID: nt3.i
Smp Info : 19G0163-16
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: mdl.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	61	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	3.553	3.547	(0.658)	1823	0.37783	0.3778 (M)
14 Acetone	43	3.654	3.643	(0.677)	3468	2.17051	2.171 (MH)
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
17 Methyl tert butyl ether	73	Compound Not Detected.					
18 1,1-Dichloroethane	63	Compound Not Detected.					
19 Acrylonitrile	53	Compound Not Detected.					
20 Vinyl Acetate	43	Compound Not Detected.					
22 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
23 2,2-Dichloropropane	77	Compound Not Detected.					
24 Bromochloromethane	128	Compound Not Detected.					
25 Chloroform	83	Compound Not Detected.					
26 Carbon Tetrachloride	117	Compound Not Detected.					
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.934)	14975	4.83270	4.833 (R)
28 1,1,1-Trichloroethane	97	Compound Not Detected.					
30 1,1-Dichloropropene	75	Compound Not Detected.					
29 2-Butanone	43	Compound Not Detected.					
31 Benzene	78	Compound Not Detected.					
* 32 Pentafluorobenzene	168	5.397	5.402	(1.000)	60556	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434	(1.006)	20009	4.90351	4.904 (R)
34 1,2-Dichloroethane	62	Compound Not Detected.					
36 Trichloroethene	130	Compound Not Detected.					
* 37 1,4-Difluorobenzene	114	5.779	5.784	(1.000)	94130	10.0000	
38 Dibromomethane	93	Compound Not Detected.					

						CONCENTRATIONS	
		QUANT	SIG			ON-COLUMN	FINAL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
39 1,2-Dichloropropane	63	Compound	Not	Detected.			
40 Bromodichloromethane	83	Compound	Not	Detected.			
173 2-Pentanone	86	Compound	Not	Detected.			
41 2-Chloroethyl Vinyl Ether	63	Compound	Not	Detected.			
42 Cis 1,3-dichloropropene	75	Compound	Not	Detected.			
\$ 43 d8-Toluene	98	6.736	6.735	(1.165)	61485	4.97864	4.979 (R)
44 Toluene	92	Compound	Not	Detected.			
46 Tetrachloroethene	166	Compound	Not	Detected.			
45 4-Methyl-2-Pentanone	58	Compound	Not	Detected.			
47 Trans 1,3-Dichloropropene	75	Compound	Not	Detected.			
48 1,1,2-Trichloroethane	97	Compound	Not	Detected.			
49 Chlorodibromomethane	129	Compound	Not	Detected.			
50 1,3-Dichloropropane	76	Compound	Not	Detected.			
51 1,2-Dibromoethane	107	Compound	Not	Detected.			
52 2-Hexanone	43	Compound	Not	Detected.			
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	96757	10.0000	
54 Chlorobenzene	112	Compound	Not	Detected.			
55 Ethyl Benzene	106	Compound	Not	Detected.			
56 1,1,1,2-Tetrachloroethane	131	Compound	Not	Detected.			
57 m,p-xylene	106	Compound	Not	Detected.			
58 o-Xylene	106	Compound	Not	Detected.			
59 Styrene	104	Compound	Not	Detected.			
60 Bromoform	173	Compound	Not	Detected.			
61 Isopropyl Benzene	105	Compound	Not	Detected.			
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	18970	4.93756	4.938 (R)
63 Bromobenzene	156	Compound	Not	Detected.			
64 N-Propyl Benzene	91	Compound	Not	Detected.			
65 1,1,2,2-Tetrachloroethane	83	Compound	Not	Detected.			
66 2-Chloro Toluene	91	Compound	Not	Detected.			
67 1,3,5-Trimethyl Benzene	105	Compound	Not	Detected.			
68 1,2,3-Trichloropropane	110	Compound	Not	Detected.			
69 Trans-1,4-Dichloro 2-Butene	53	Compound	Not	Detected.			
70 4-Chloro Toluene	91	Compound	Not	Detected.			
71 T-Butyl Benzene	119	Compound	Not	Detected.			
72 1,2,4-Trimethylbenzene	105	9.201	9.201	(0.969)	384	0.02128	0.02128
73 S-Butyl Benzene	105	Compound	Not	Detected.			
74 4-Isopropyl Toluene	119	Compound	Not	Detected.			
75 1,3-Dichlorobenzene	146	Compound	Not	Detected.			
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	53470	10.0000	
77 1,4-Dichlorobenzene	146	Compound	Not	Detected.			
78 N-Butyl Benzene	91	Compound	Not	Detected.			
\$ 79 d4-1,2-Dichlorobenzene	152	9.818	9.817	(1.034)	25692	5.12188	5.122 (R)
80 1,2-Dichlorobenzene	146	Compound	Not	Detected.			
81 1,2-Dibromo 3-Chloropropane	75	Compound	Not	Detected.			
83 Hexachloro 1,3-Butadiene	225	Compound	Not	Detected.			
84 1,2,4-Trichlorobenzene	180	Compound	Not	Detected.			
85 Naphthalene	128	Compound	Not	Detected.			
86 1,2,3-Trichlorobenzene	180	Compound	Not	Detected.			

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181911G.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-16
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	60556	-17.82
37 1,4-Difluorobenze	116116	58058	232232	94130	-18.93
53 d5-Chlorobenzene	124912	62456	249824	96757	-22.54
76 d4-1,4-Dichlorobe	77169	38585	154338	53470	-30.71

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	-0.09
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.08
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-16
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: mdl.sub
Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.833	96.65	
\$ 33 d4-1,2-Dichloroeth	5.000	4.904	98.07	
\$ 43 d8-Toluene	5.000	4.979	99.57	
\$ 62 4-Bromofluorobenze	5.000	4.938	98.75	
\$ 79 d4-1,2-Dichloroben	5.000	5.122	102.44	

REVIEW SUMMARY FOR FILE - V307181911G.D

Lab ID: 19G0163-16

nt3.i, 20190718.b\8260C071619.m, 18-JUL-2019 13:42

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: V307181930G.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

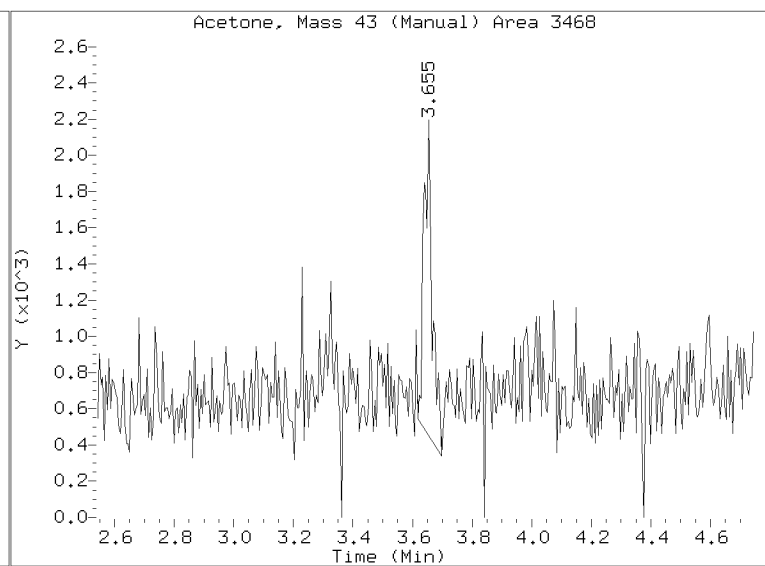
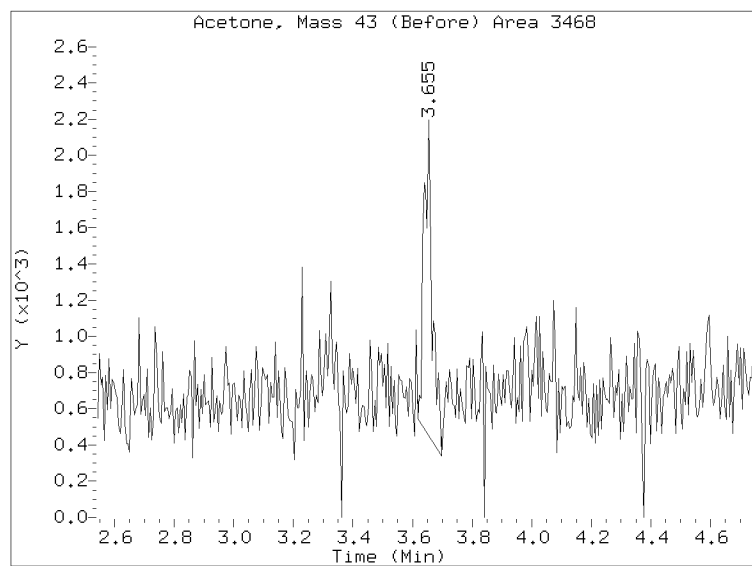
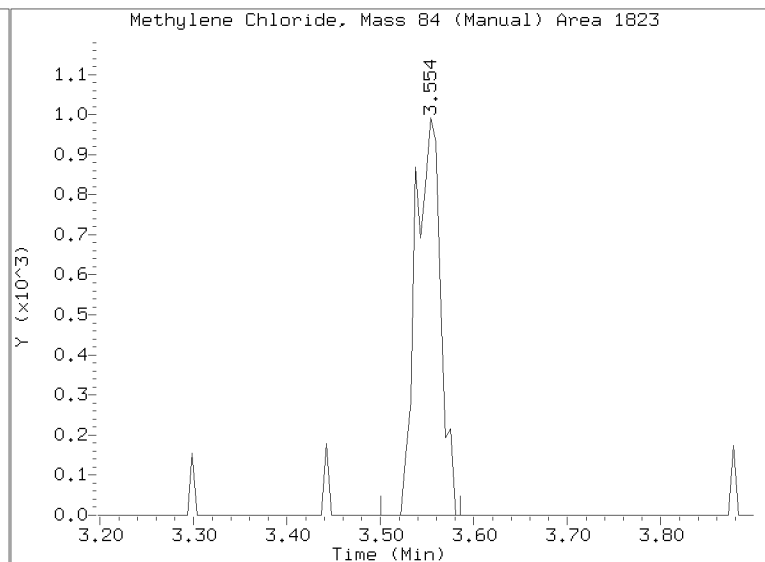
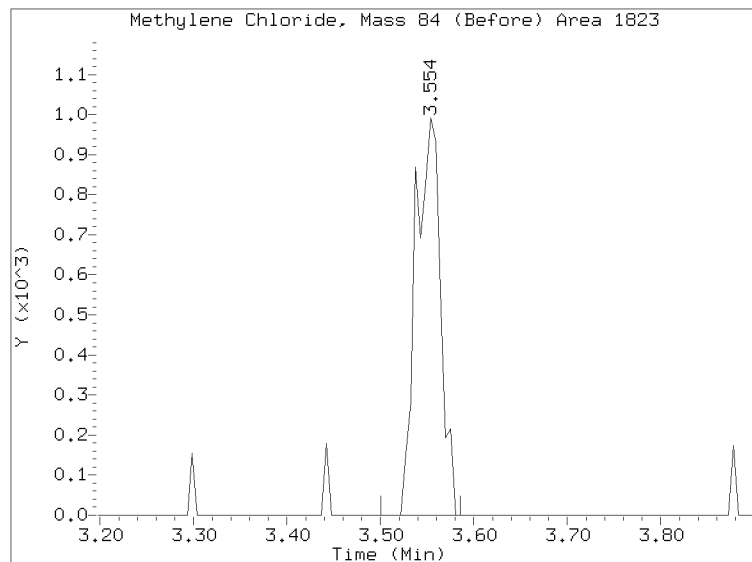
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190718.b/V307181911G.D

Injection Date: 18-JUL-2019 13:42

Lab ID:19G0163-16 Client ID:

Report Date: 07/19/2019 09:43





PREPARATION BATCH SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0316

Batch Matrix: Solid

Preparation: EPA 5035 (Sodium Bisulfate)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02	NT507121906.D	07/12/19 14:22	
SO-02-190711	19G0163-03	NT507121917.D	07/12/19 14:22	
SO-03-190711	19G0163-04	NT507121918.D	07/12/19 14:22	
SO-04-190711	19G0163-05	NT507121919.D	07/12/19 14:22	
SO-05-190711	19G0163-06	NT507121920.D	07/12/19 14:22	
SO-06-190711	19G0163-07	NT507121921.D	07/12/19 14:22	
SO-07-190711	19G0163-08	NT507121922.D	07/12/19 14:22	
SO-08-190711	19G0163-09	NT507121923.D	07/12/19 14:22	
SO-09-190711	19G0163-10	NT507121924.D	07/12/19 14:22	
Blank	BHG0316-BLK1	NT507121905.D	07/12/19 07:22	
LCS	BHG0316-BS1	NT507121903A.D	07/12/19 07:22	
LCS Dup	BHG0316-BSD1	NT507121904A.D	07/12/19 07:22	
SO-01-190711	BHG0316-MS1	NT507121925.D	07/12/19 07:22	
SO-01-190711	BHG0316-MSD1	NT507121926.D	07/12/19 07:22	



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

VOA Method 5035 Extraction Bench Sheet

(8260C, 8260C-SIM, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

Work Order(s)

Element Batch(es)

Prep/Extraction Date

Analyst

5H20316-0217

7/12/19

D

	Lab ID	Vial No.	Method 5035 Sample Weight					Extract Split Basis			
			NaHSO ₃ Lot#	CH ₃ OH Lot#	Vial Weight (g)	Tare (from vial) (g)	Initial Weight (g)	Final Volume (mL)	MeOH Split Volume (μL)	Diluent Volume (mL)	Dilution
1	19G0163-02	E	H5741		38.01	35.66	2.35				
2	19G0109-01	A					5.80	5	20/100	5	250/150
3	19G0111-01	B					1.67				
4	↓	B					5.23	5	40/200	5	250/150
5	19G0165-02	D			39.81	35.76	4.05				
6	↓	D			40.59	35.46	5.13				
7	03	D			40.53	35.94	4.69				
8	07	E			39.90	35.73	4.17				
9	05	D			40.95	35.47	4.48				
10	06	E			40.67	35.65	5.02				
11	07	D			39.60	35.64	3.96				
12	08	D			40.59	36.24	4.35				
13	09	D			39.02	35.67	3.35				
14	19G0163-03	C			38.27	35.80	2.47				
15	↓	C			37.24	35.65	1.59				
			Balance ID: SLF302								



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants
Work Order(s)

VOA Method 5035 Extraction Bench Sheet

(8260C, 8260C-SIM, NWTPH-GX, AK-101, TPH-G, VPH, TCLP-ZHE)

Analyst

Prep/Extraction Date

Element Batch(es)

7/12/19

BHG0319

Method 5035 Sample Weight										Extract Split Basis		
	Lab ID	Vial No.	NaHSO ₃ Lot#	CH ₃ OH Lot#	Vial Weight (g)	Tare (from vial) (g)	Initial Weight (g)	Final Volume (mL)	MeOH Split Volume (μL)	Diluent Volume (mL)	Dilution	
1	19G0163-06	C	H5741		37.74	35.51	2.25					
2	07	C	↓		39.08	35.61	3.47					
3	08	C			39.42	35.40	4.02					
4	09	C			37.87	35.35	2.52					
5	10	C			39.05	35.70	3.35					
6	0245 G	G			39.35	35.90	3.45					
7	0245 E	E	↓		38.28	35.56	2.72					
8												
9												
10												
11												
12												
13												
14												
15												
							Balance ID: SLF302					



PREPARATION BENCH SHEET

BHG0316

Printed: 7/15/2019 1:33:02PM

Matrix: Solid

Prepared using: Volatiles - EPA 5035 (Sodium Bisulfate)

Surrogate used: H006534

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	% Solids	Extraction Comments
19G0163-02 F	8260C VOA	07/12/19@14:22	2.35	5				1		
19G0163-03 C	8260C VOA	07/12/19@14:22	3.35	5				1		
19G0163-04 C	8260C VOA	07/12/19@14:22	2.47	5				1		
19G0163-05 C	8260C VOA	07/12/19@14:22	1.59	5				1		
19G0163-06 C	8260C VOA	07/12/19@14:22	2.25	5				1		
19G0163-07 C	8260C VOA	07/12/19@14:22	3.47	5				1		
19G0163-08 C	8260C VOA	07/12/19@14:22	4.02	5				1		
19G0163-09 C	8260C VOA	07/12/19@14:22	2.52	5				1		
19G0163-10 C	8260C VOA	07/12/19@14:22	3.55	5				1		
19G0165-02 D	8260C VOA	07/12/19@14:22	4.05	5				1		BTEX only
19G0165-03 D	8260C VOA	07/12/19@14:22	5.13	5				1		BTEX only
19G0165-04 E	8260C VOA	07/12/19@14:22	4.69	5				1		BTEX only
19G0165-05 D	8260C VOA	07/12/19@14:22	4.17	5				1		BTEX only
19G0165-06 E	8260C VOA	07/12/19@14:22	4.48	5				1		BTEX only
19G0165-07 D	8260C VOA	07/12/19@14:22	5.02	5				1		BTEX only
19G0165-08 D	8260C VOA	07/12/19@14:22	3.96	5				1		BTEX only
19G0165-09 D	8260C VOA	07/12/19@14:22	4.35	5				1		BTEX only
BHG0316-BLK1	QC	07/12/19@07:22	5	5				1		
BHG0316-BS1	QC	07/12/19@07:22	5	5	H006309		12.5	1		
BHG0316-BSD1	QC	07/12/19@07:22	5	5	H006309		12.5	1		
BHG0316-MS1	QC	07/12/19@07:22	3.49	5	H006309	19G0163-02	12.5	1		
BHG0316-MSD1	QC	07/12/19@07:22	2.72	5	H006309	19G0163-02	12.5	1		

3146



PREPARATION BENCH SHEET

BHG0316

Printed: 7/15/2019 1:33:02PM

Matrix: Solid

Prepared using: Volatiles - EPA 5035 (Sodium Bisulfate)

Surrogate used: H006534

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	% Solids	Extraction Comments
------------	----------	----------	----------------	---------------	----------	-----------	-------------	-----------------	-------------	---------------------

From BHE0477 on 5/20/2019 by PAB

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date



PREPARATION BATCH SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0391

Batch Matrix: Solid

Preparation: EPA 5035 (Sodium Bisulfate)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-10-190711	19G0163-11	NT507161907.D	07/16/19 16:03	
SO-10-190711D	19G0163-12	NT507161908.D	07/16/19 16:03	
SO-11-190711	19G0163-13	NT507161909.D	07/16/19 16:03	
SO-12-190711	19G0163-14	NT507161910.D	07/16/19 16:03	
SO-13-190711	19G0163-15	NT507161911.D	07/16/19 16:03	
Blank	BHG0391-BLK1	NT507161905.D	07/16/19 07:03	
LCS	BHG0391-BS1	NT507161903AX.D	07/16/19 07:03	
LCS Dup	BHG0391-BSD1	NT507161904.D	07/16/19 07:03	



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

VOA Method 5035 Extraction Bench Sheet

(8260C, 8260C-SIM, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

Work Order(s)

Element Batch(es)

Prep/Extraction Date

Analyst

BAG0341/0342/0343

7/6/19

h

	Lab ID	Vial No.	Method 5035 Sample Weight					Extract Split Basis			
			NaHSO ₃ Lot#	CH ₃ OH Lot#	Vial Weight (g)	Tare (from vial) (g)	Initial Weight (g)	Final Volume (mL)	MeOH Split Volume (μL)	Diluent Volume (mL)	Dilution
1	19G0197-02	E	H5741		41.13	35.85	5.28				
2	19G063-11	D			38.87	35.72	3.15				
3	12	C			38.35	35.71	2.64				
4	13	C			38.13	35.76	2.37				
5	14	C			38.38	35.91	2.47				
6	15	C			38.46	35.78	2.68				
7	19G0197-01	A					1.60				
8		A					5.63	5	100	5	100
9	19G0195-02	A					0.53	5	1	5	500
10	103	A					0.57	5	1	5	500
11											
12											
13											
14											
15											
			Balance ID: SLF302								



PREPARATION BENCH SHEET

BHG0391

Printed: 7/17/2019 1:56:16PM

Matrix: Solid

Prepared using: Volatiles - EPA 5035 (Sodium Bisulfate)

Surrogate used: H006534

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	% Solids	Extraction Comments
19G0163-11 D	8260C VOA	07/16/19@16:03	3.15	5				1	71.21	
19G0163-12 C	8260C VOA	07/16/19@16:03	2.64	5				1	72.06	
19G0163-13 C	8260C VOA	07/16/19@16:03	2.37	5				1	21.61	
19G0163-14 C	8260C VOA	07/16/19@16:03	2.47	5				1	43.42	
19G0163-15 C	8260C VOA	07/16/19@16:03	2.68	5				1	87.89	
19G0197-02 E	8260C VOA	07/16/19@16:03	5.28	5				1	53.41	BTEX only
BHG0391-BLK1	QC	07/16/19@07:03	5	5				1		
BHG0391-BS1	QC	07/16/19@07:03	5	5	H006309		12.5	1		
BHG0391-BSD1	QC	07/16/19@07:03	5	5	H006309		12.5	1		

From BHE0477 on 5/20/2019 by PAB

344 of 3146

Spiking Witnessed By

bch ARI with Solids.rpt

Date

Preparation Reviewed By

Date

Extracts Received By

Date



PREPARATION BATCH SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Batch: BHG0418 Batch Matrix: Solid Preparation: EPA 5035 (Sodium Bisulfate)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-03-190711	19G0163-04RE1	NT507191905.D	07/12/19 14:22	From BHG0316 by PAB on 17-Jul-2019
SO-10-190711D	19G0163-12RE1	NT507191906.D	07/17/19 13:53	From BHG0391 by PAB on 17-Jul-2019
Blank	BHG0418-BLK1	NT507191904.D	07/17/19 13:53	
LCS	BHG0418-BS1	NT507191902A.D	07/17/19 13:53	
LCS Dup	BHG0418-BSD1	NT507191903.D	07/17/19 13:53	

VOA Method 5035 Extraction Bench Sheet

(8260C, 8260C-SIM, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

Work Order(s)

Element Batch(es)

Prep/Extraction Date

Analyst

5HG0418/0490/0491

7/19/15

13

Method 5035 Sample Weight											Extract Split Basis		
Lab ID	Vial No.	NaHSO ₃ Lot#	CH ₃ OH Lot#	Vial Weight (g)	Tare (from vial) (g)	Initial Weight (g)	Final Volume (mL)	MeOH Split Volume (μL)	Diluent Volume (mL)	Dilution			
1	19G0163-0445-10	45741		38.67	36.12	2.55							
2	12045-11	↓		37.60	35.65	1.95							
3	19G0232-01	C				5.42		100	5	50			
4	↓	33.26	04187	33.24	28.345	4.695	5	100	5	50			
5	19G0242-01	C				1.64							
6	↓					5.40	5	100	5	50			
7	19G0243-01	C				1.71							
8	↓					5.06	5	100	5	50			
9	19G0253-01	B				5.01	5	100	5	50/250			
10	↓	B											
11													
12													
13													
14													
15													

Balance ID: SLF302



PREPARATION BENCH SHEET

BHG0418

Printed: 7/22/2019 4:00:02PM

Matrix: Solid

Prepared using: Volatiles - EPA 5035 (Sodium Bisulfate)

Surrogate used: H006534

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	% Solids	Extraction Comments
19G0163-04RE1 C	8260C VOA	07/12/19@14:22	2.47	5				1	23.52	From BHG0316 by PAB on 17-Jul-2019
19G0163-12RE1 C	8260C VOA	07/17/19@13:53	2.64	5				1	72.06	From BHG0391 by PAB on 17-Jul-2019
BHG0418-BLK1	QC	07/17/19@13:53	5	5				1		
BHG0418-BS1	QC	07/17/19@13:53	5	5	H006309		12.5	1		
BHG0418-BSD1	QC	07/17/19@13:53	5	5	H006309		12.5	1		

From BHG0391 on 7/17/2019 by PAB

347 of 3146

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date



EPA 8260C

SDG: 19G0163

Project: King County Closed Landfills - Vashon

Preparation: EPA 5030 (Purge and Trap)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
TB-SO-190711	19G0163-16	V307181911G.D	07/18/19 11:06	
Blank	BHG0439-BLK1	V307181909G.D	07/18/19 07:56	
LCS	BHG0439-BS1	V307181903GLCS.D	07/18/19 07:56	
LCS Dup	BHG0439-BSD1	V307181904G.D	07/18/19 07:56	



PREPARATION BENCH SHEET

BHG0439

Printed: 7/19/2019 9:09:31AM

Matrix: Water

Prepared using: Volatiles - EPA 5030 (Purge and Trap)

Surrogate used: H001676

Lab Number	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	pH	Extraction Comments
19G0106-01 A	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0118-11RE1 C	8260C VOA	07/18/19@09:56	0.2	10				1	2	From BHG0413 by LH on 18-Jul-2019
19G0157-17 C	8260C VOA	07/18/19@10:22	10	10				1	7	Dont use the version for this project
19G0157-18 C	8260C VOA	07/18/19@11:06	2	10				1	7	Dont use the version for this project
19G0163-16 A	8260C Gas (NWTPH)	07/18/19@11:06	10	10				1	2	
19G0163-16 A	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-01 B	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-02 B	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-03 A	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-04 A	8260C VOA	07/18/19@11:06	10	10				1	2	
BHG0439-BLK1	QC	07/18/19@07:56	10	10				1		
BHG0439-BLK2	QC	07/18/19@07:56	10	10				1		
BHG0439-BS1	QC	07/18/19@07:56	10	10	H006786		5	1		
BHG0439-BS2	QC	07/18/19@07:56	10	10	H005013		2	1		
BHG0439-BSD1	QC	07/18/19@07:56	10	10	H006786		5	1		
BHG0439-BSD2	QC	07/18/19@07:56	10	10	H005013		2	1		

From BHG0413 on 7/18/2019 by LH

349 of 3146

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>19G0163</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>King County Closed Landfills - V2</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BHG0316-BLK1</u>
Sampled:	<u>N/A</u>	File ID:	<u>NT507121905.D</u>
Solids:		Prepared:	<u>07/12/19 07:22</u>
		Analyzed:	<u>07/12/19 13:27</u>
Batch:	<u>BHG0316</u>	Preparation:	<u>EPA 5035 (Sodium Bisulfate)</u>
		Initial/Final:	<u>5 g / 5 mL</u>
Instrument:	<u>NT5</u>	Sequence:	<u>SHG0192</u>
		Calibration:	<u>CF00067</u>
		Column:	<u>RTX-VMS</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
74-87-3	Chloromethane	1	1.00	U	0.26	1.00
75-01-4	Vinyl Chloride	1	1.00	U	0.24	1.00
74-83-9	Bromomethane	1	1.00	U	0.19	1.00
75-00-3	Chloroethane	1	1.00	U	0.46	1.00
75-69-4	Trichlorofluoromethane	1	1.00	U	0.27	1.00
107-02-8	Acrolein	1	5.00	U	3.81	5.00
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	2.00	U	0.29	2.00
67-64-1	Acetone	1	5.00	U	0.48	5.00
75-35-4	1,1-Dichloroethene	1	1.00	U	0.34	1.00
74-96-4	Bromoethane	1	2.00	U	0.44	2.00
74-88-4	Iodomethane	1	1.00	U	0.22	1.00
75-09-2	Methylene Chloride	1	0.97	J	0.64	2.00
107-13-1	Acrylonitrile	1	5.00	U	1.03	5.00
75-15-0	Carbon Disulfide	1	1.00	U	0.56	1.00
156-60-5	trans-1,2-Dichloroethene	1	1.00	U	0.27	1.00
108-05-4	Vinyl Acetate	1	5.00	U	0.38	5.00
75-34-3	1,1-Dichloroethane	1	1.00	U	0.20	1.00
78-93-3	2-Butanone	1	5.00	U	0.51	5.00
594-20-7	2,2-Dichloropropane	1	1.00	U	0.29	1.00
156-59-2	cis-1,2-Dichloroethene	1	1.00	U	0.24	1.00
67-66-3	Chloroform	1	1.00	U	0.23	1.00
74-97-5	Bromochloromethane	1	1.00	U	0.32	1.00
71-55-6	1,1,1-Trichloroethane	1	1.00	U	0.23	1.00
563-58-6	1,1-Dichloropropene	1	1.00	U	0.31	1.00
56-23-5	Carbon tetrachloride	1	1.00	U	0.21	1.00
107-06-2	1,2-Dichloroethane	1	1.00	U	0.19	1.00
71-43-2	Benzene	1	1.00	U	0.30	1.00
79-01-6	Trichloroethene	1	1.00	U	0.21	1.00
78-87-5	1,2-Dichloropropane	1	1.00	U	0.16	1.00
75-27-4	Bromodichloromethane	1	1.00	U	0.25	1.00
74-95-3	Dibromomethane	1	1.00	U	0.15	1.00
110-75-8	2-Chloroethyl vinyl ether	1	5.00	U	0.28	5.00
108-10-1	4-Methyl-2-Pentanone	1	5.00	U	0.42	5.00
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U	0.23	1.00
108-88-3	Toluene	1	1.00	U	0.15	1.00
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U	0.22	1.00
591-78-6	2-Hexanone	1	5.00	U	0.44	5.00



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>19G0163</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>King County Closed Landfills - V2</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BHG0316-BLK1</u>
Sampled:	<u>N/A</u>	File ID:	<u>NT507121905.D</u>
Solids:		Prepared:	<u>07/12/19 07:22</u>
		Analyzed:	<u>07/12/19 13:27</u>
		Preparation:	<u>EPA 5035 (Sodium Bisulfate)</u>
Batch:	<u>BHG0316</u>	Initial/Final:	<u>5 g / 5 mL</u>
		Sequence:	<u>SHG0192</u>
		Calibration:	<u>CF00067</u>
Instrument:	<u>NT5</u>	Column:	<u>RTX-VMS</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
79-00-5	1,1,2-Trichloroethane	1	1.00	U	0.29	1.00
142-28-9	1,3-Dichloropropane	1	1.00	U	0.21	1.00
127-18-4	Tetrachloroethene	1	1.00	U	0.26	1.00
124-48-1	Dibromochloromethane	1	1.00	U	0.27	1.00
106-93-4	1,2-Dibromoethane	1	1.00	U	0.18	1.00
108-90-7	Chlorobenzene	1	1.00	U	0.22	1.00
100-41-4	Ethylbenzene	1	1.00	U	0.20	1.00
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U	0.23	1.00
179601-23-1	m,p-Xylene	1	2.00	U	0.39	2.00
95-47-6	o-Xylene	1	1.00	U	0.22	1.00
1330-20-7	Xylenes, total	1	2.00	U	0.62	2.00
100-42-5	Styrene	1	1.00	U	0.14	1.00
75-25-2	Bromoform	1	1.00	U	0.30	1.00
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U	0.25	1.00
96-18-4	1,2,3-Trichloropropane	1	2.00	U	0.52	2.00
110-57-6	trans-1,4-Dichloro 2-Butene	1	5.00	U	0.44	5.00
103-65-1	n-Propylbenzene	1	1.00	U	0.27	1.00
108-86-1	Bromobenzene	1	1.00	U	0.15	1.00
98-82-8	Isopropyl Benzene	1	1.00	U	0.23	1.00
95-49-8	2-Chlorotoluene	1	1.00	U	0.30	1.00
106-43-4	4-Chlorotoluene	1	1.00	U	0.28	1.00
98-06-6	t-Butylbenzene	1	1.00	U	0.31	1.00
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U	0.25	1.00
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U	0.23	1.00
135-98-8	s-Butylbenzene	1	1.00	U	0.24	1.00
99-87-6	4-Isopropyl Toluene	1	1.00	U	0.24	1.00
541-73-1	1,3-Dichlorobenzene	1	1.00	U	0.23	1.00
106-46-7	1,4-Dichlorobenzene	1	0.29	J	0.23	1.00
104-51-8	n-Butylbenzene	1	1.00	U	0.26	1.00
95-50-1	1,2-Dichlorobenzene	1	1.00	U	0.29	1.00
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U	0.59	5.00
120-82-1	1,2,4-Trichlorobenzene	1	0.73	J	0.33	5.00
87-68-3	Hexachloro-1,3-Butadiene	1	0.41	J	0.41	5.00
91-20-3	Naphthalene	1	1.00	J	0.43	5.00
87-61-6	1,2,3-Trichlorobenzene	1	0.87	J	0.31	5.00
75-71-8	Dichlorodifluoromethane	1	1.00	U	0.21	1.00
1634-04-4	Methyl tert-butyl Ether	1	1.00	U	0.23	1.00



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0316-BLK1 File ID: NT507121905.D
Sampled: N/A Prepared: 07/12/19 07:22 Analyzed: 07/12/19 13:27
Solids: Preparation: EPA 5035 (Sodium Bisulfate) Initial/Final: 5 g / 5 mL
Batch: BHG0316 Sequence: SHG0192 Calibration: CF00067
Instrument: NT5 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
107-87-9	2-Pentanone	1	5.00	U	5.00	5.00
SURROGATES		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		50.000	58.5	117	80 - 149	
Toluene-d8		50.000	51.0	102	77 - 120	
4-Bromofluorobenzene		50.000	49.0	98.0	80 - 120	
1,2-Dichlorobenzene-d4		50.000	50.7	101	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121905.D

Date : 12-JUL-2019 13:27

Client ID:

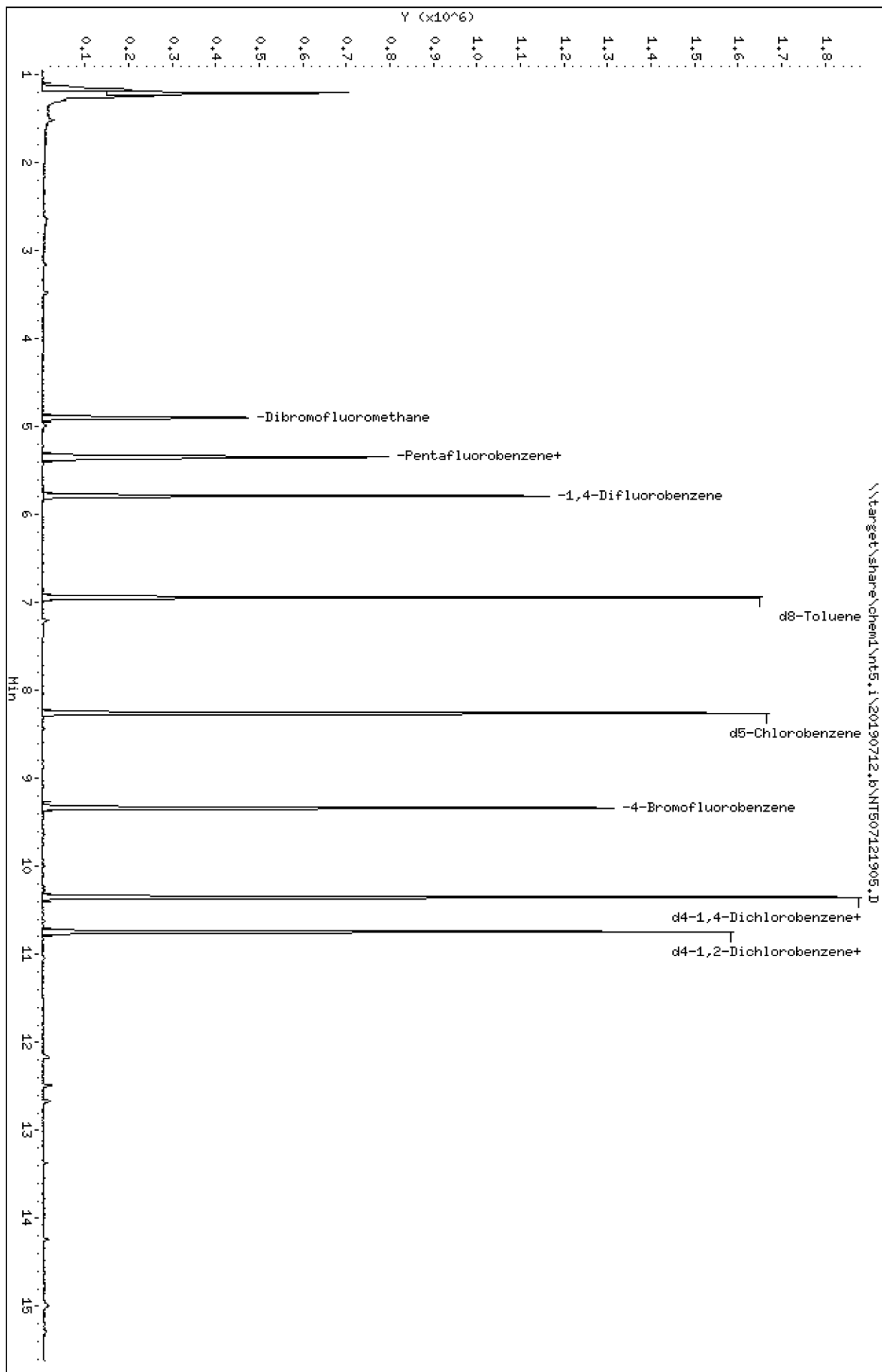
Sample Info: BLK1

Instrument: nt5.i

Page 1

Column phase: RTXWMS

Operator: PB
Column diameter: 0.18



Date : 12-JUL-2019 13:27

Client ID:

Instrument: nt5.i

Sample Info: BLK1

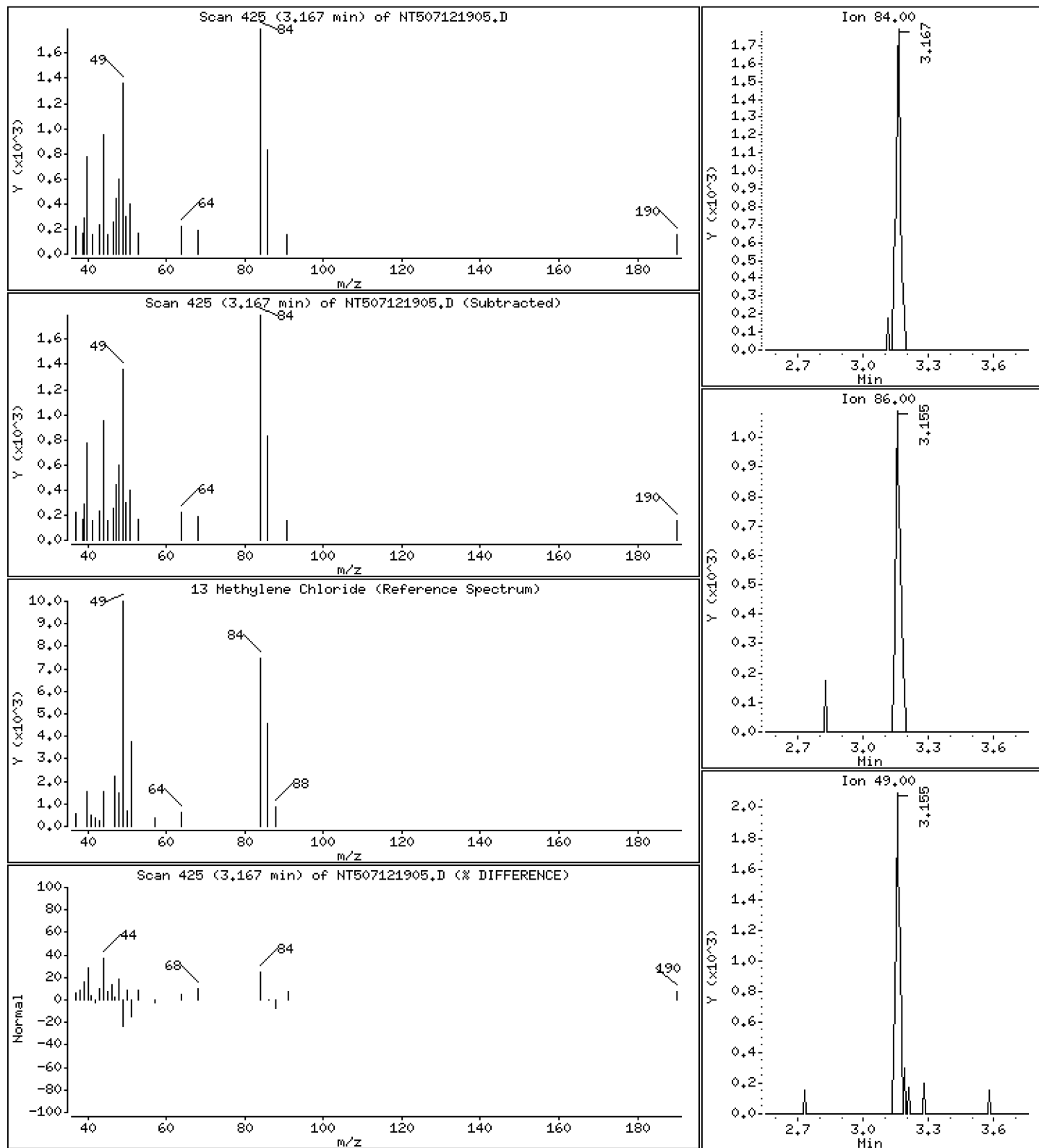
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.9741 ug/Kg



Date : 12-JUL-2019 13:27

Client ID:

Instrument: nt5.i

Sample Info: BLK1

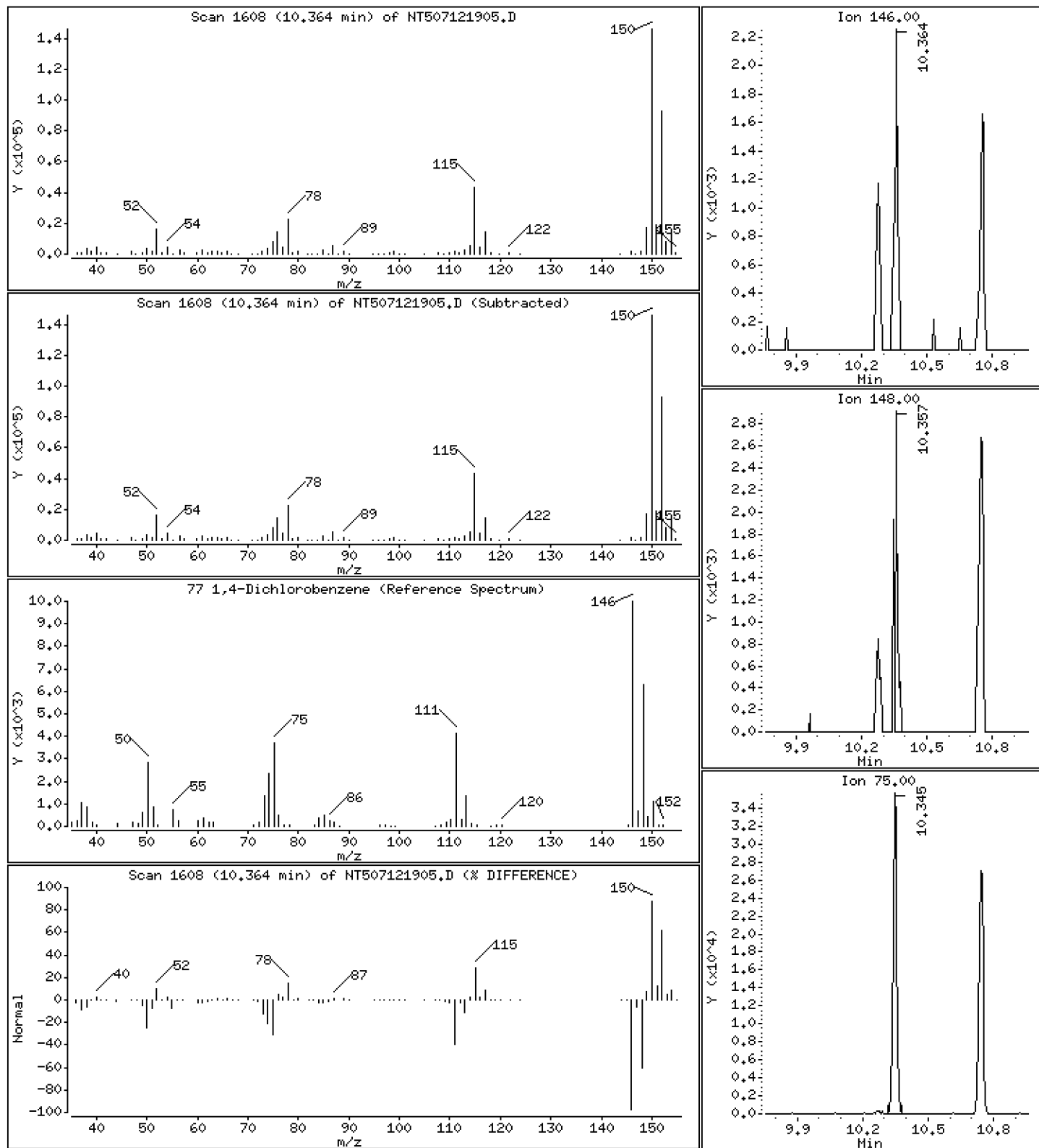
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 0.2916 ug/Kg



Date : 12-JUL-2019 13:27

Client ID:

Instrument: nt5.i

Sample Info: BLK1

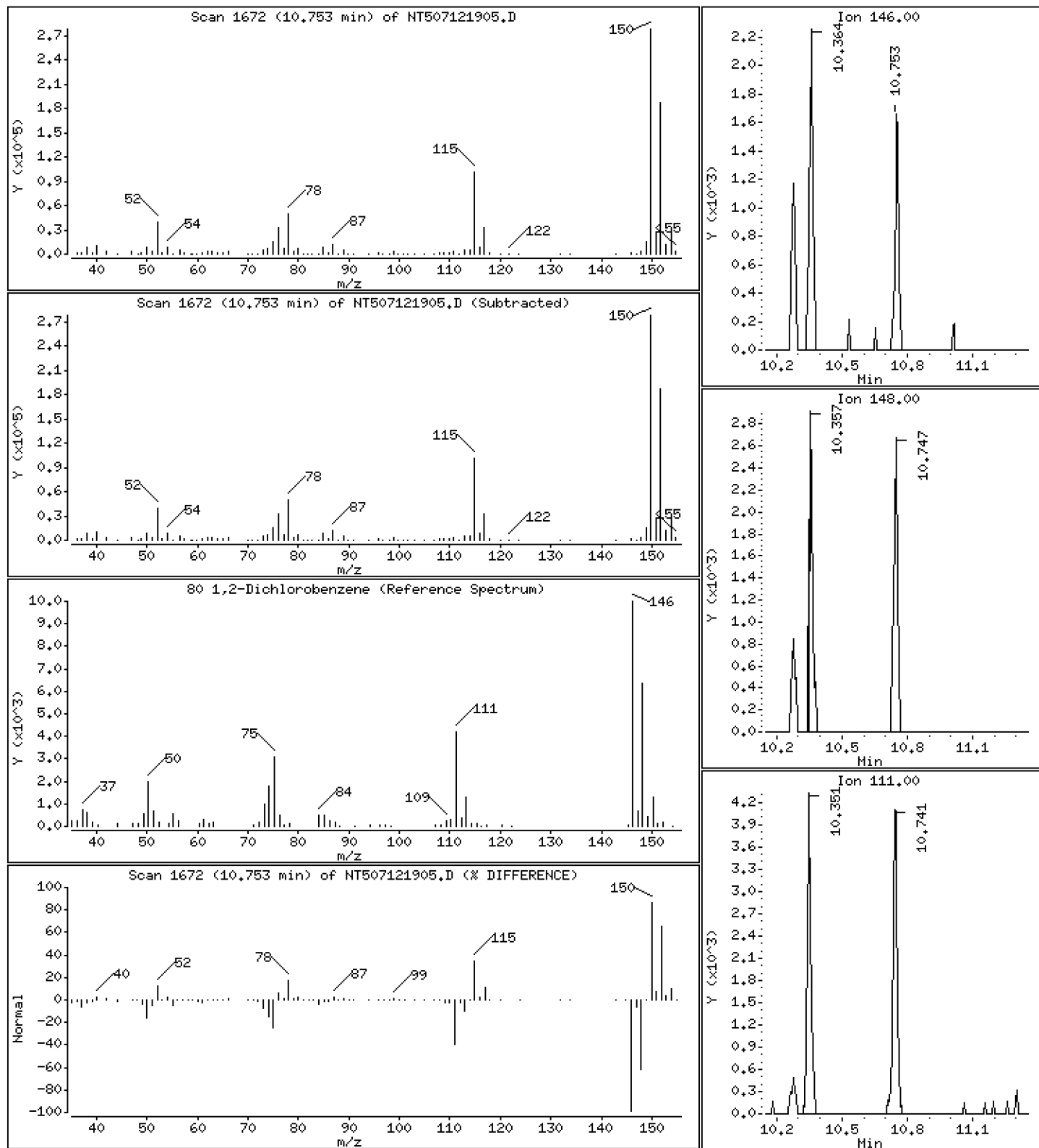
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 0.2567 ug/Kg



Date : 12-JUL-2019 13:27

Client ID:

Instrument: nt5.i

Sample Info: BLK1

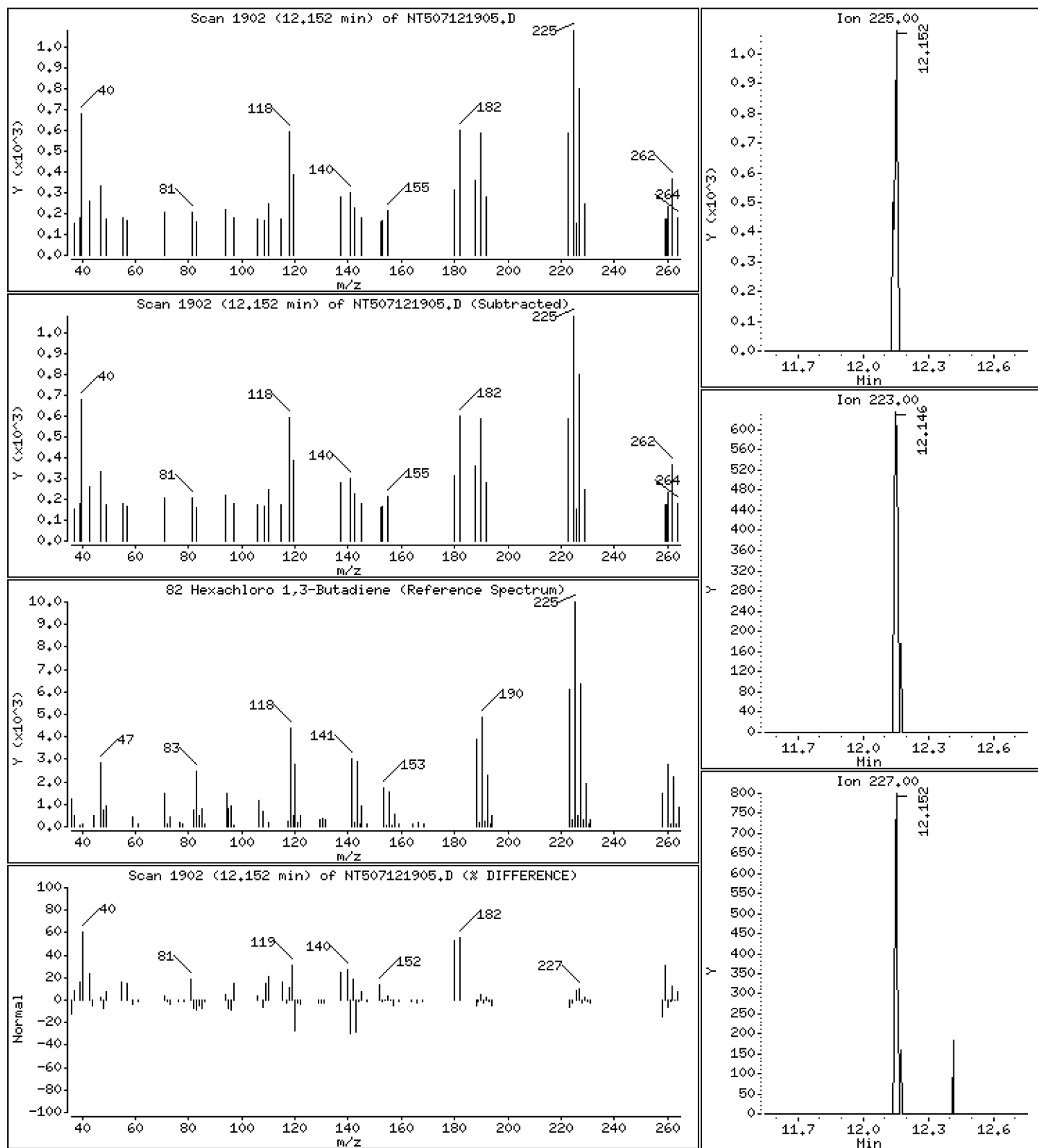
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 0.4130 ug/Kg



Date : 12-JUL-2019 13:27

Client ID:

Instrument: nt5.i

Sample Info: BLK1

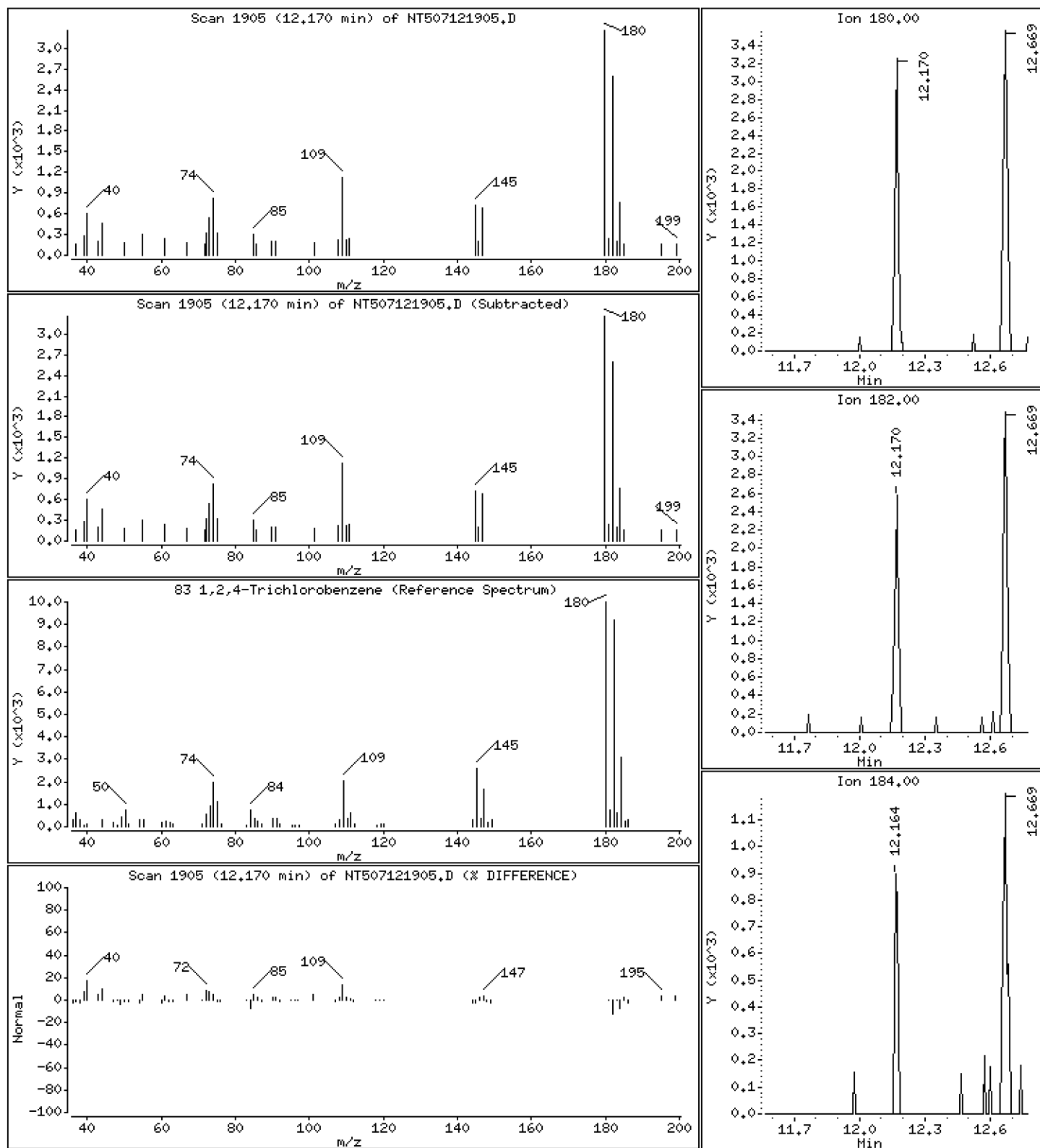
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 0.7283 ug/Kg



Date : 12-JUL-2019 13:27

Client ID:

Instrument: nt5.i

Sample Info: BLK1

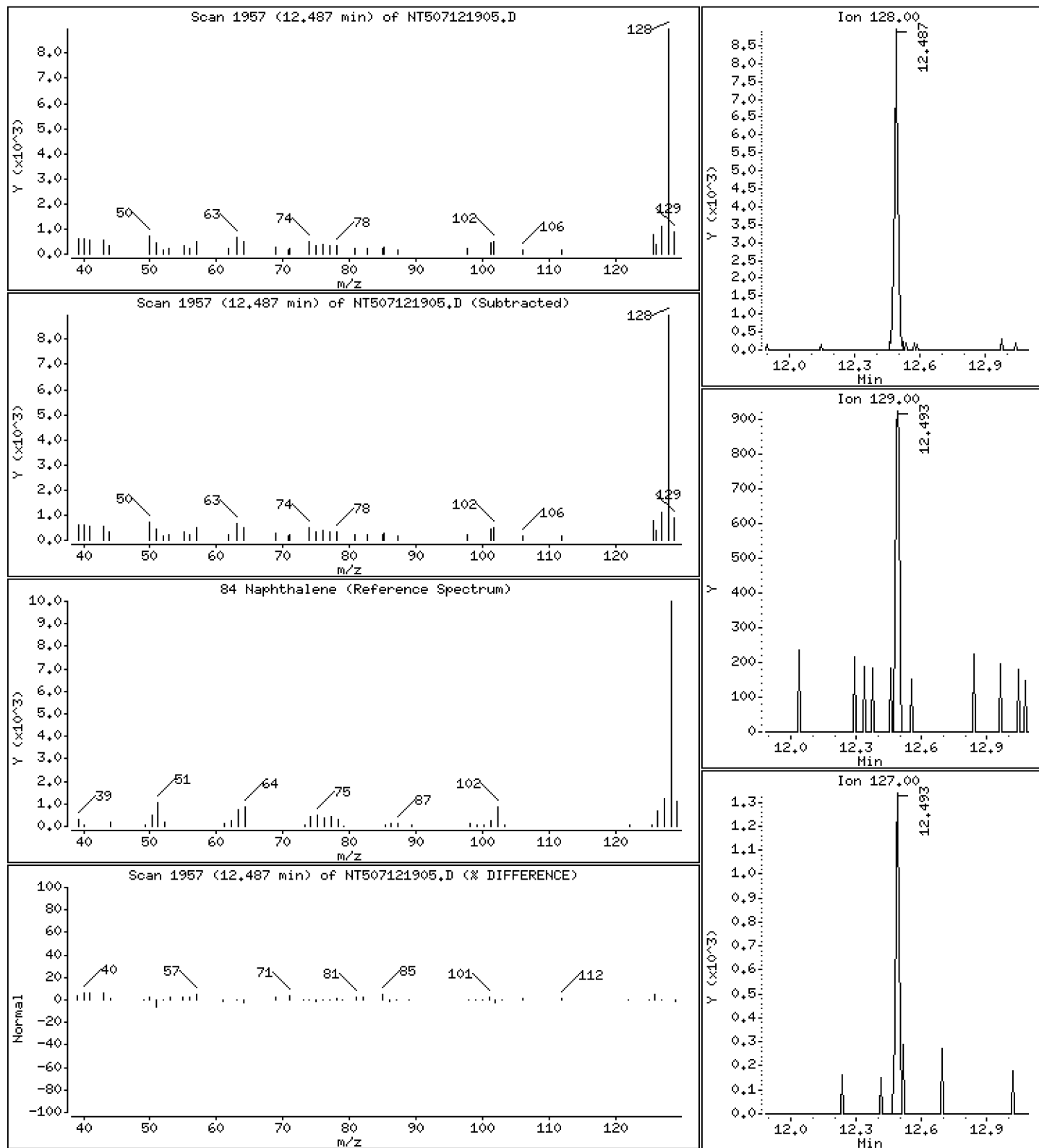
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 0.9965 ug/Kg



Date : 12-JUL-2019 13:27

Client ID:

Instrument: nt5.i

Sample Info: BLK1

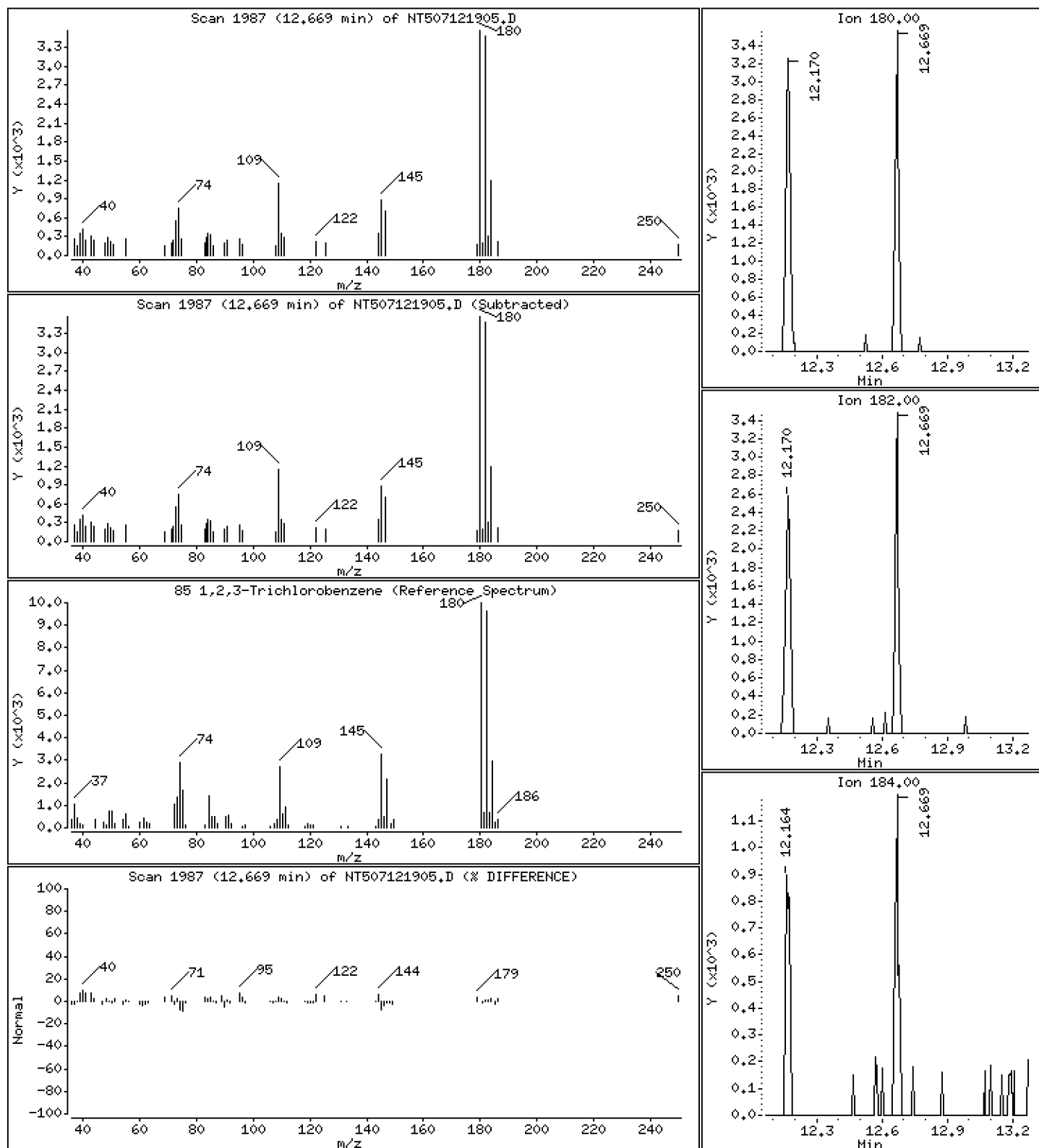
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 0.8688 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121905.D
 Lab Smp Id: bhg0316-BLK1
 Inj Date : 12-JUL-2019 13:27
 Operator : PB Inst ID: nt5.i
 Smp Info : BLK1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====			=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85			Compound Not	Detected.				
2 Chloromethane	50			Compound Not	Detected.				
3 Vinyl Chloride	62			Compound Not	Detected.				
4 Bromomethane	94			Compound Not	Detected.				
5 Chloroethane	64			Compound Not	Detected.				
6 Trichlorofluoromethane	101			Compound Not	Detected.				
7 1,1-Dichloroethene	96			Compound Not	Detected.				
8 Carbon Disulfide	76			Compound Not	Detected.				
9 112Trichloro122Trifluoroethane	101			Compound Not	Detected.				
10 Iodomethane	142			Compound Not	Detected.				
11 Bromoethane	108			Compound Not	Detected.				
12 Acrolein	56			Compound Not	Detected.				
13 Methylene Chloride	84		3.166	3.154	(0.593)		3180	0.97410	0.9741
14 Acetone	43			Compound Not	Detected.				
15 Trans-1,2-Dichloroethene	96			Compound Not	Detected.				
16 Methyl tert butyl ether	73			Compound Not	Detected.				
173 n-Hexane	41			Compound Not	Detected.				
17 1,1-Dichloroethane	63			Compound Not	Detected.				
18 Acrylonitrile	53			Compound Not	Detected.				
19 Vinyl Acetate	43			Compound Not	Detected.				
20 Cis-1,2-Dichloroethene	96			Compound Not	Detected.				
22 2,2-Dichloropropane	77			Compound Not	Detected.				
23 Bromochloromethane	128			Compound Not	Detected.				
24 Chloroform	83			Compound Not	Detected.				
25 Carbon Tetrachloride	117			Compound Not	Detected.				
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.918)		248810	57.0417	57.042 (R)
26 1,1,1-Trichloroethane	97			Compound Not	Detected.				
28 1,1-Dichloropropene	75			Compound Not	Detected.				
29 2-Butanone	72			Compound Not	Detected.				
30 Benzene	78			Compound Not	Detected.				
* 31 Pentafluorobenzene	168		5.338	5.338	(1.000)		398855	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.350	(1.003)		213327	58.4645	58.465 (R)
33 1,2-Dichloroethane	62			Compound Not	Detected.				

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	792396	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	946055	50.9832	50.983 (R)
43 Toluene	92				Compound Not Detected.		
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	792670	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	332528	49.0020	49.002 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119				Compound Not Detected.		
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	443934	50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.363	(1.001)	2768	0.29163	0.2916
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	392651	50.7149	50.715 (R)
80 1,2-Dichlorobenzene	146	10.752	10.752	(1.039)	2236	0.25670	0.2567
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.174)	1464	0.41296	0.4130
83 1,2,4-Trichlorobenzene	180	12.170	12.170	(1.176)	4349	0.72828	0.7283
84 Naphthalene	128	12.486	12.492	(1.206)	12178	0.99646	0.9965
85 1,2,3-Trichlorobenzene	180	12.669	12.669	(1.224)	4695	0.86880	0.8688

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121905.D Calibration Time: 12:25
 Lab Smp Id: bhg0316-BLK1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	398855	-1.26
35 1,4-Difluorobenze	717664	358832	1435328	792396	10.41
52 d5-Chlorobenzene	696563	348282	1393126	792670	13.80
76 d4-1,4-Dichlorobe	380778	190389	761556	443934	16.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	-0.00
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: bhg0316-BLK1
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	57.042	114.08	
\$ 32 d4-1,2-Dichloroeth	50.000	58.465	116.93	
\$ 42 d8-Toluene	50.000	50.983	101.97	
\$ 62 4-Bromofluorobenze	50.000	49.002	98.00	
\$ 79 d4-1,2-Dichloroben	50.000	50.715	101.43	

REVIEW SUMMARY FOR FILE - NT507121905.D

Lab ID: bhg0316-BLK1
nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 13:27

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0391-BLK1 File ID: NT507161905.D
Sampled: N/A Prepared: 07/16/19 07:03 Analyzed: 07/16/19 16:08
Solids: Preparation: EPA 5035 (Sodium Bisulfate) Initial/Final: 5 g / 5 mL
Batch: BHG0391 Sequence: SHG0229 Calibration: CF00067
Instrument: NT5 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
74-87-3	Chloromethane	1	1.00	U	0.26	1.00
75-01-4	Vinyl Chloride	1	1.00	U	0.24	1.00
74-83-9	Bromomethane	1	1.00	U	0.19	1.00
75-00-3	Chloroethane	1	1.00	U	0.46	1.00
75-69-4	Trichlorofluoromethane	1	1.00	U	0.27	1.00
107-02-8	Acrolein	1	5.00	U	3.81	5.00
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	2.00	U	0.29	2.00
67-64-1	Acetone	1	5.00	U	0.48	5.00
75-35-4	1,1-Dichloroethene	1	1.00	U	0.34	1.00
74-96-4	Bromoethane	1	2.00	U	0.44	2.00
74-88-4	Iodomethane	1	1.00	U	0.22	1.00
75-09-2	Methylene Chloride	1	0.91	J	0.64	2.00
107-13-1	Acrylonitrile	1	5.00	U	1.03	5.00
75-15-0	Carbon Disulfide	1	1.00	U	0.56	1.00
156-60-5	trans-1,2-Dichloroethene	1	1.00	U	0.27	1.00
108-05-4	Vinyl Acetate	1	5.00	U	0.38	5.00
75-34-3	1,1-Dichloroethane	1	1.00	U	0.20	1.00
78-93-3	2-Butanone	1	5.00	U	0.51	5.00
594-20-7	2,2-Dichloropropane	1	1.00	U	0.29	1.00
156-59-2	cis-1,2-Dichloroethene	1	1.00	U	0.24	1.00
67-66-3	Chloroform	1	1.00	U	0.23	1.00
74-97-5	Bromochloromethane	1	1.00	U	0.32	1.00
71-55-6	1,1,1-Trichloroethane	1	1.00	U	0.23	1.00
563-58-6	1,1-Dichloropropene	1	1.00	U	0.31	1.00
56-23-5	Carbon tetrachloride	1	1.00	U	0.21	1.00
107-06-2	1,2-Dichloroethane	1	1.00	U	0.19	1.00
71-43-2	Benzene	1	1.00	U	0.30	1.00
79-01-6	Trichloroethene	1	1.00	U	0.21	1.00
78-87-5	1,2-Dichloropropane	1	1.00	U	0.16	1.00
75-27-4	Bromodichloromethane	1	1.00	U	0.25	1.00
74-95-3	Dibromomethane	1	1.00	U	0.15	1.00
110-75-8	2-Chloroethyl vinyl ether	1	5.00	U	0.28	5.00
108-10-1	4-Methyl-2-Pentanone	1	5.00	U	0.42	5.00
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U	0.23	1.00
108-88-3	Toluene	1	1.00	U	0.15	1.00
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U	0.22	1.00
591-78-6	2-Hexanone	1	5.00	U	0.44	5.00



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>19G0163</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>King County Closed Landfills - V2</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BHG0391-BLK1</u>
Sampled:	<u>N/A</u>	File ID:	<u>NT507161905.D</u>
Solids:		Prepared:	<u>07/16/19 07:03</u>
		Analyzed:	<u>07/16/19 16:08</u>
		Preparation:	<u>EPA 5035 (Sodium Bisulfate)</u>
Batch:	<u>BHG0391</u>	Initial/Final:	<u>5 g / 5 mL</u>
		Sequence:	<u>SHG0229</u>
		Calibration:	<u>CF00067</u>
Instrument:	<u>NT5</u>	Column:	<u>RTX-VMS</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
79-00-5	1,1,2-Trichloroethane	1	1.00	U	0.29	1.00
142-28-9	1,3-Dichloropropane	1	1.00	U	0.21	1.00
127-18-4	Tetrachloroethene	1	1.00	U	0.26	1.00
124-48-1	Dibromochloromethane	1	1.00	U	0.27	1.00
106-93-4	1,2-Dibromoethane	1	1.00	U	0.18	1.00
108-90-7	Chlorobenzene	1	1.00	U	0.22	1.00
100-41-4	Ethylbenzene	1	1.00	U	0.20	1.00
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U	0.23	1.00
179601-23-1	m,p-Xylene	1	2.00	U	0.39	2.00
95-47-6	o-Xylene	1	1.00	U	0.22	1.00
1330-20-7	Xylenes, total	1	2.00	U	0.62	2.00
100-42-5	Styrene	1	1.00	U	0.14	1.00
75-25-2	Bromoform	1	1.00	U	0.30	1.00
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U	0.25	1.00
96-18-4	1,2,3-Trichloropropane	1	2.00	U	0.52	2.00
110-57-6	trans-1,4-Dichloro 2-Butene	1	5.00	U	0.44	5.00
103-65-1	n-Propylbenzene	1	1.00	U	0.27	1.00
108-86-1	Bromobenzene	1	1.00	U	0.15	1.00
98-82-8	Isopropyl Benzene	1	1.00	U	0.23	1.00
95-49-8	2-Chlorotoluene	1	1.00	U	0.30	1.00
106-43-4	4-Chlorotoluene	1	1.00	U	0.28	1.00
98-06-6	t-Butylbenzene	1	1.00	U	0.31	1.00
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U	0.25	1.00
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U	0.23	1.00
135-98-8	s-Butylbenzene	1	1.00	U	0.24	1.00
99-87-6	4-Isopropyl Toluene	1	1.00	U	0.24	1.00
541-73-1	1,3-Dichlorobenzene	1	1.00	U	0.23	1.00
106-46-7	1,4-Dichlorobenzene	1	0.35	J	0.23	1.00
104-51-8	n-Butylbenzene	1	1.00	U	0.26	1.00
95-50-1	1,2-Dichlorobenzene	1	0.34	J	0.29	1.00
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U	0.59	5.00
120-82-1	1,2,4-Trichlorobenzene	1	0.77	J	0.33	5.00
87-68-3	Hexachloro-1,3-Butadiene	1	0.45	J	0.41	5.00
91-20-3	Naphthalene	1	1.09	J	0.43	5.00
87-61-6	1,2,3-Trichlorobenzene	1	0.91	J	0.31	5.00
75-71-8	Dichlorodifluoromethane	1	1.00	U	0.21	1.00
1634-04-4	Methyl tert-butyl Ether	1	1.00	U	0.23	1.00



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0391-BLK1 File ID: NT507161905.D
Sampled: N/A Prepared: 07/16/19 07:03 Analyzed: 07/16/19 16:08
Solids: Preparation: EPA 5035 (Sodium Bisulfate) Initial/Final: 5 g / 5 mL
Batch: BHG0391 Sequence: SHG0229 Calibration: CF00067
Instrument: NT5 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
107-87-9	2-Pentanone	1	5.00	U	5.00	5.00
SURROGATES		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		50.000	55.1	110	80 - 149	
Toluene-d8		50.000	50.3	101	77 - 120	
4-Bromofluorobenzene		50.000	49.1	98.2	80 - 120	
1,2-Dichlorobenzene-d4		50.000	51.3	103	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161905.D

Date : 16-JUL-2019 16:08

Client ID:

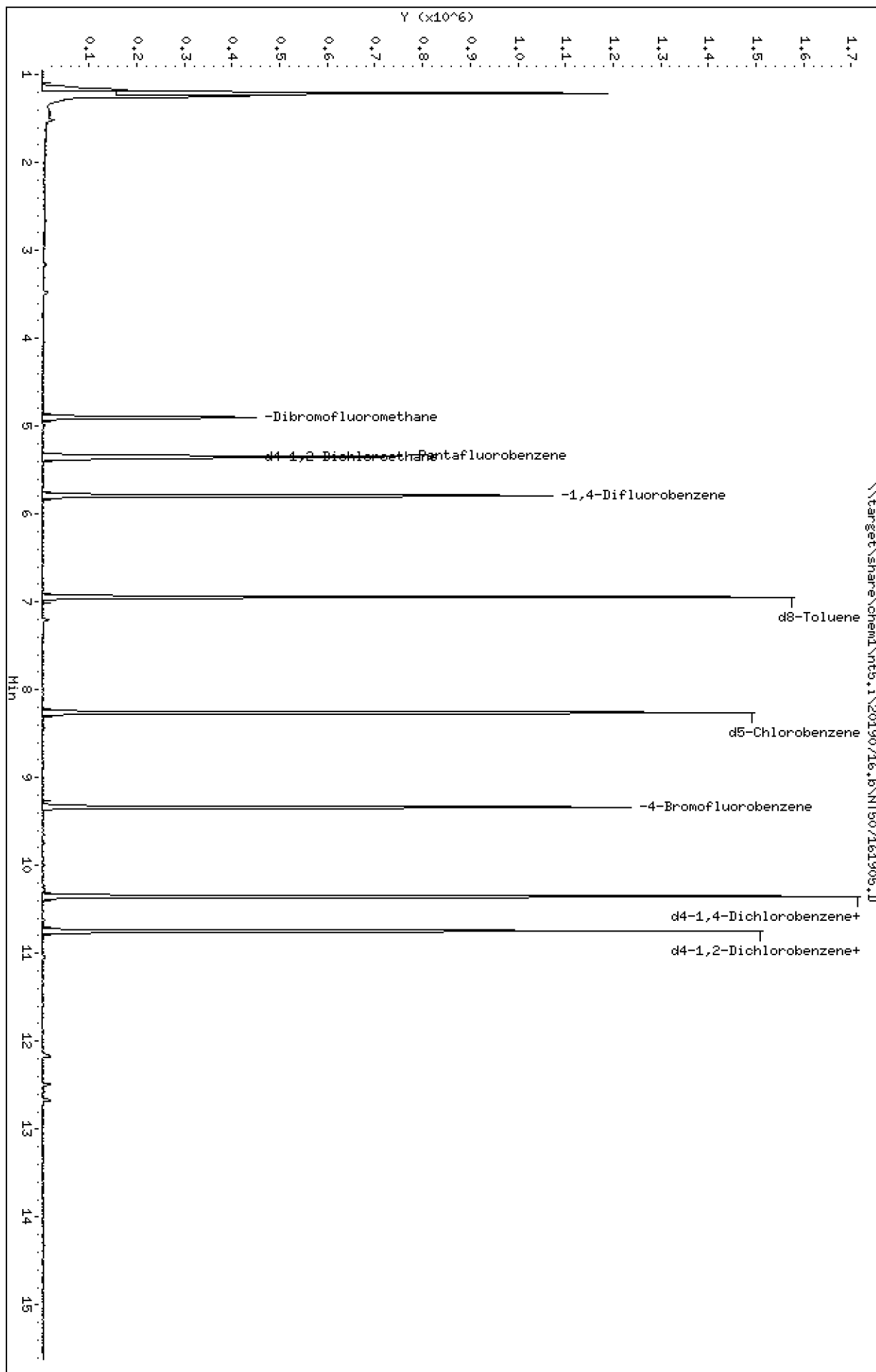
Sample Info: BLK1

Instrument: nt5.i

Page 1

Column phase: RTXWMS

Operator: PB
Column diameter: 0.18



Date : 16-JUL-2019 16:08

Client ID:

Instrument: nt5.i

Sample Info: BLK1

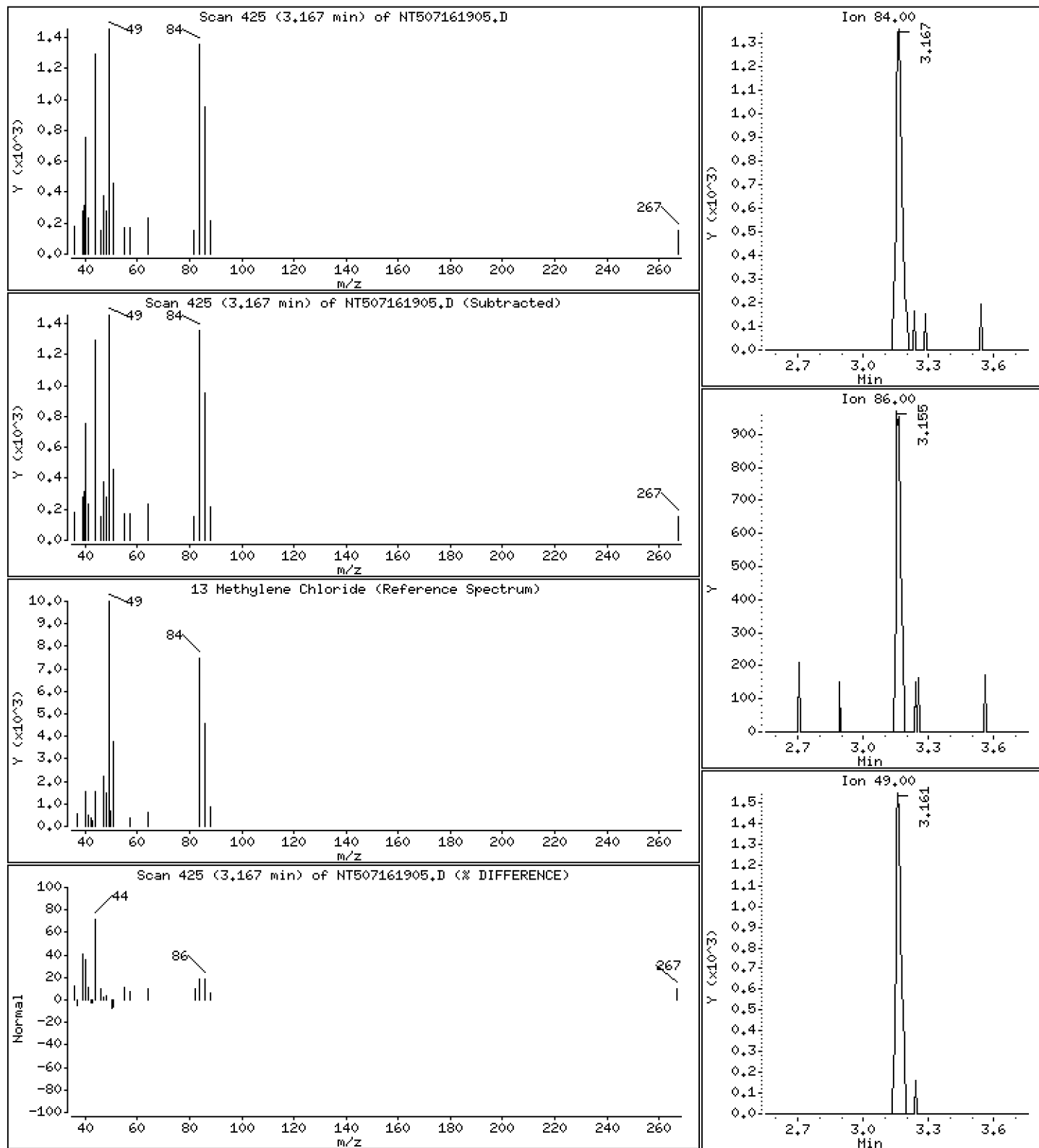
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.9146 ug/Kg



Date : 16-JUL-2019 16:08

Client ID:

Instrument: nt5.i

Sample Info: BLK1

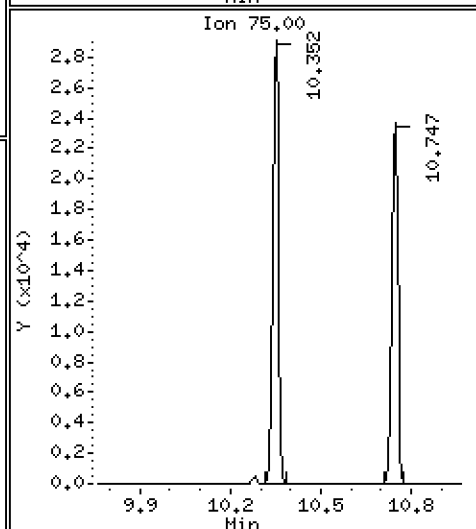
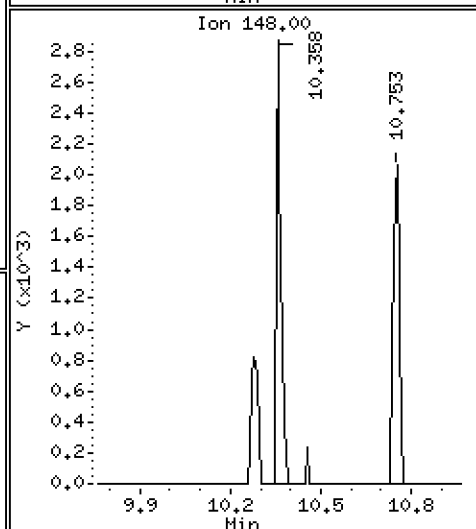
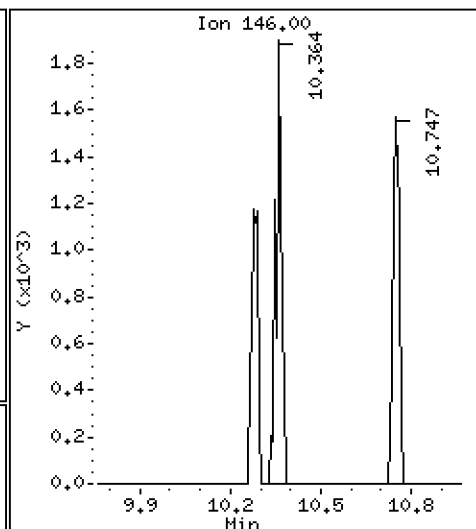
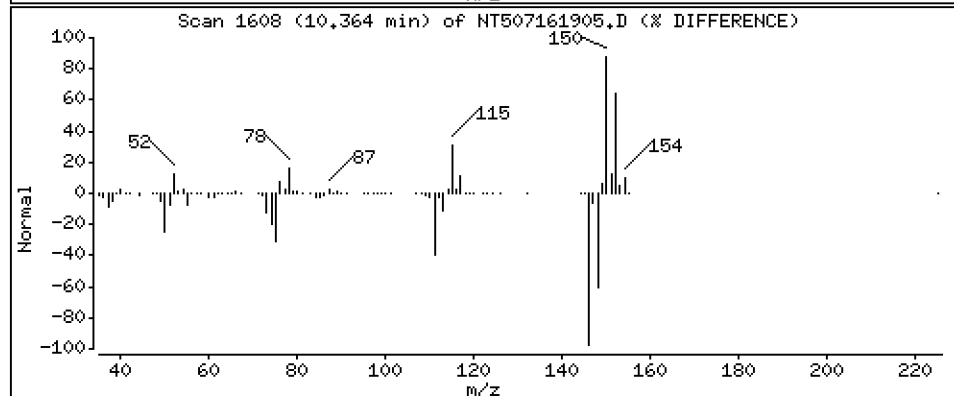
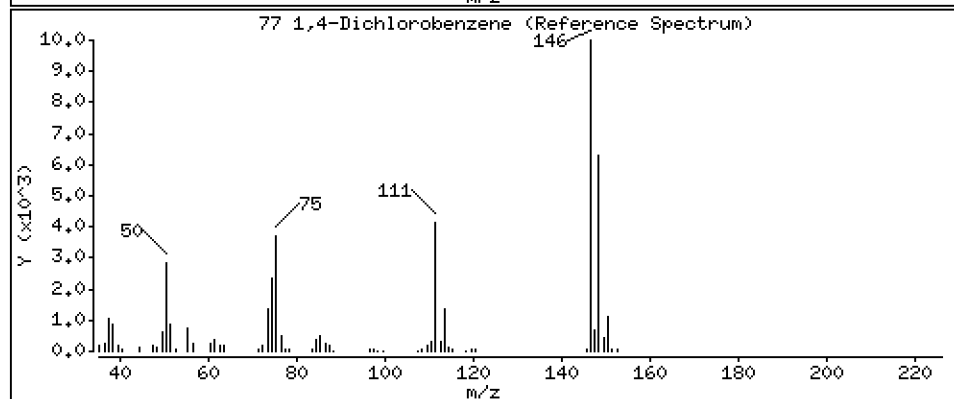
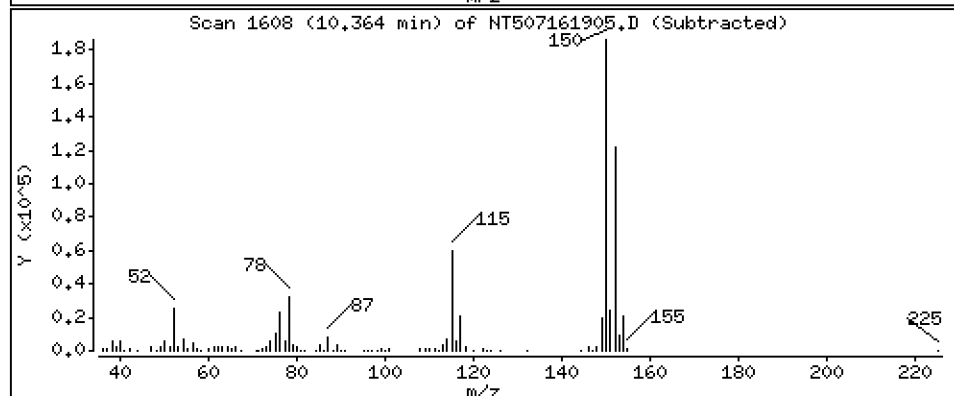
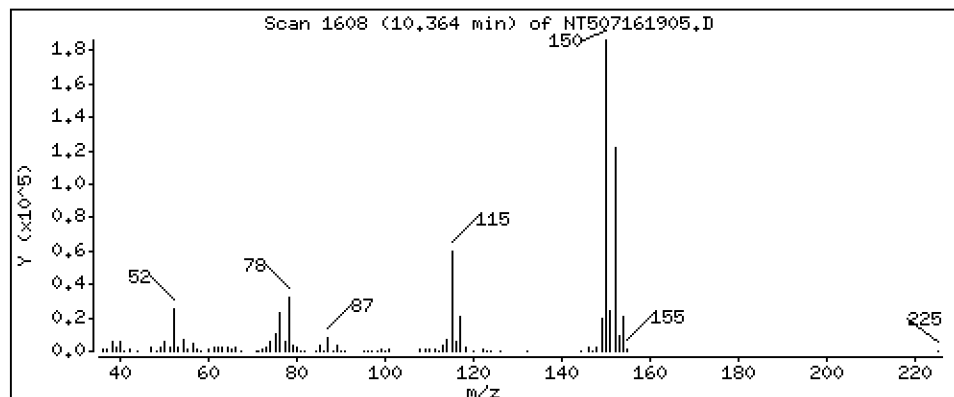
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 0.3465 ug/Kg



Date : 16-JUL-2019 16:08

Client ID:

Instrument: nt5.i

Sample Info: BLK1

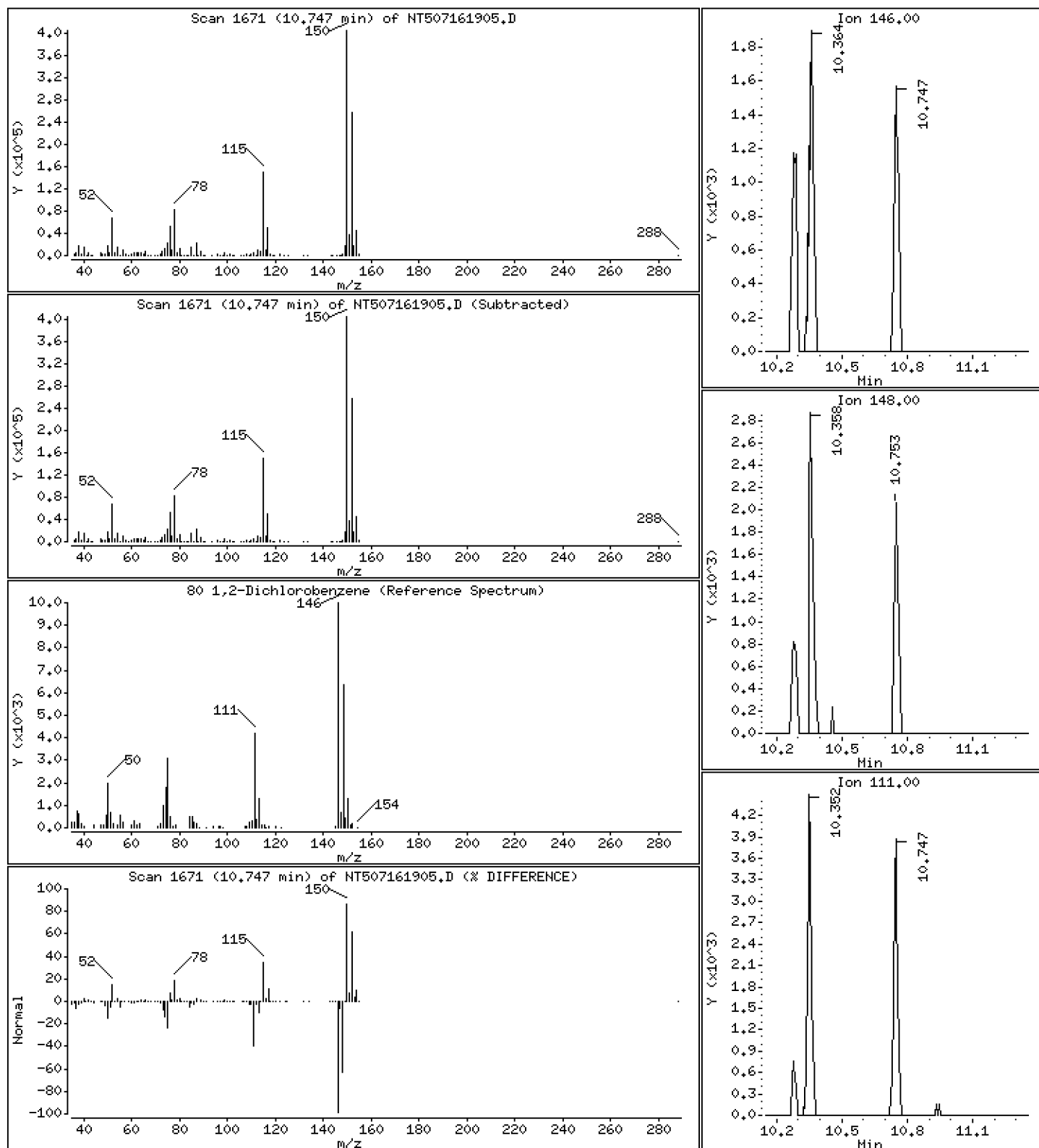
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 0.3404 ug/Kg



Date : 16-JUL-2019 16:08

Client ID:

Instrument: nt5.i

Sample Info: BLK1

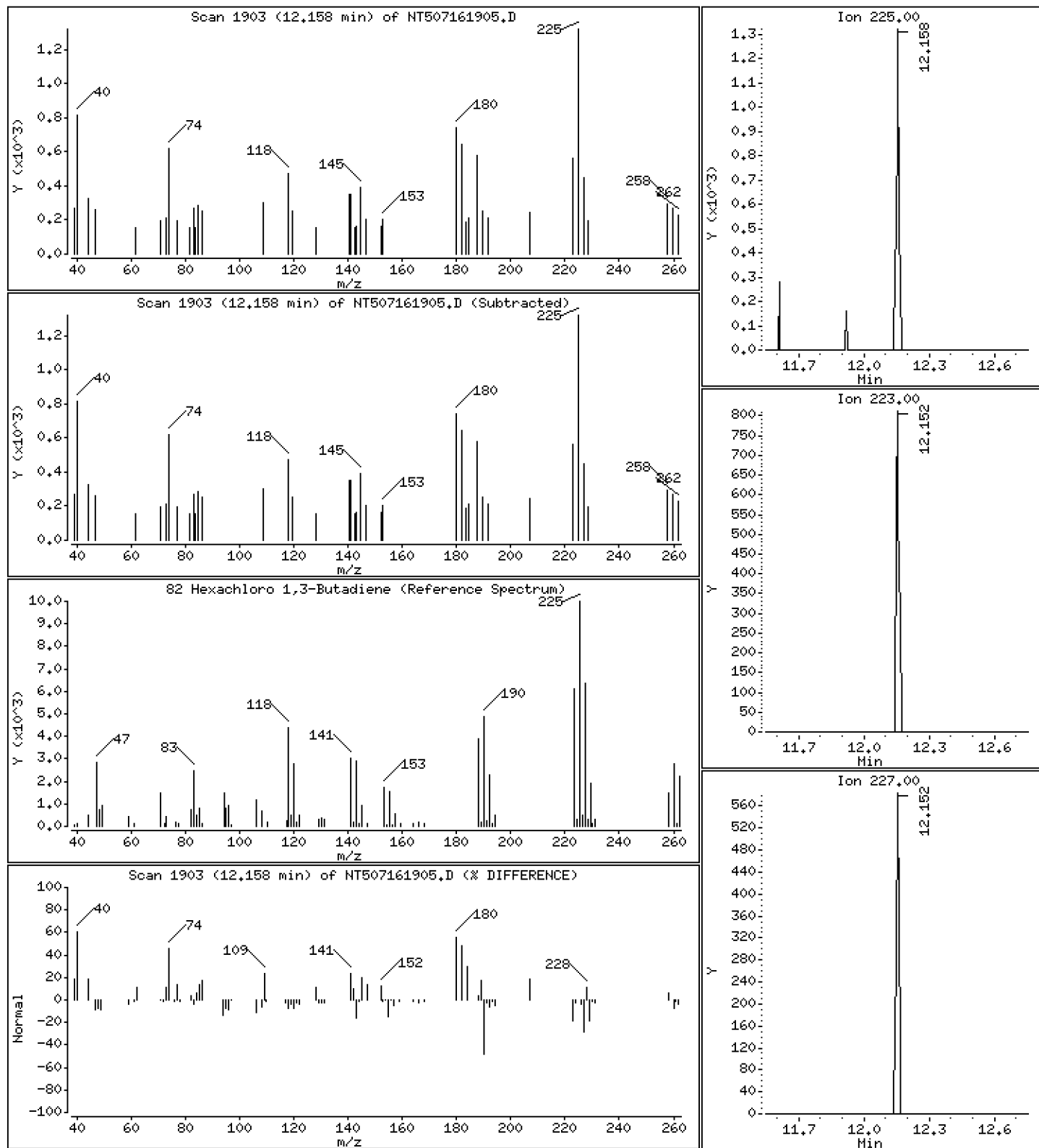
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 0.4507 ug/Kg



Date : 16-JUL-2019 16:08

Client ID:

Instrument: nt5.i

Sample Info: BLK1

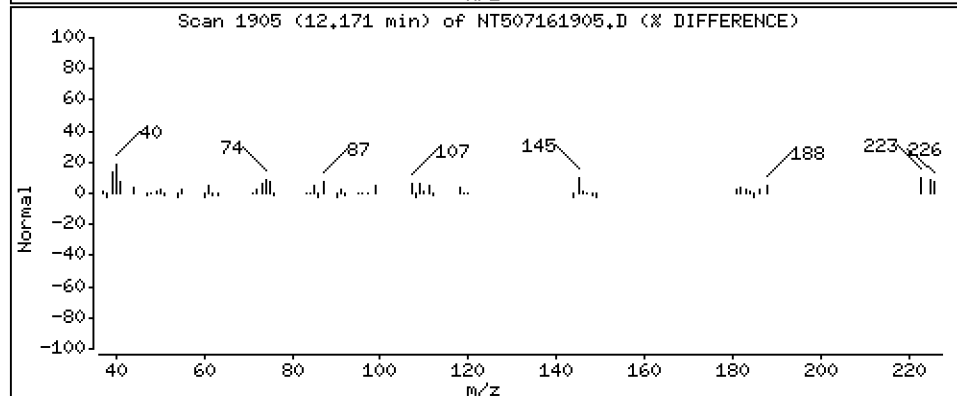
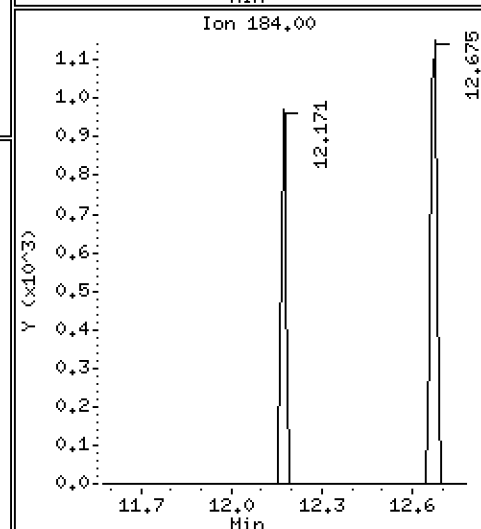
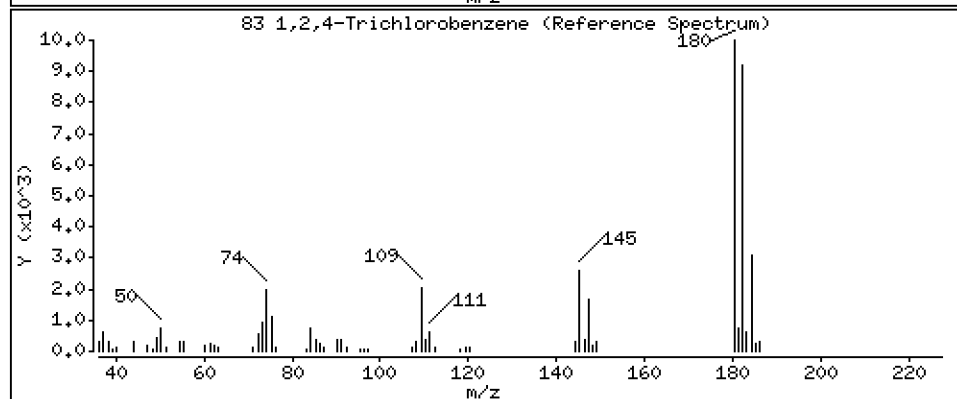
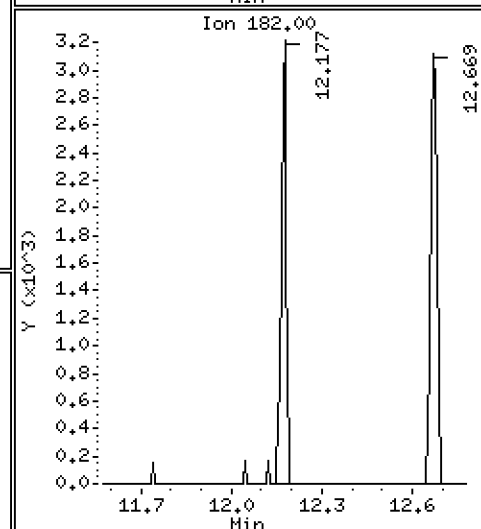
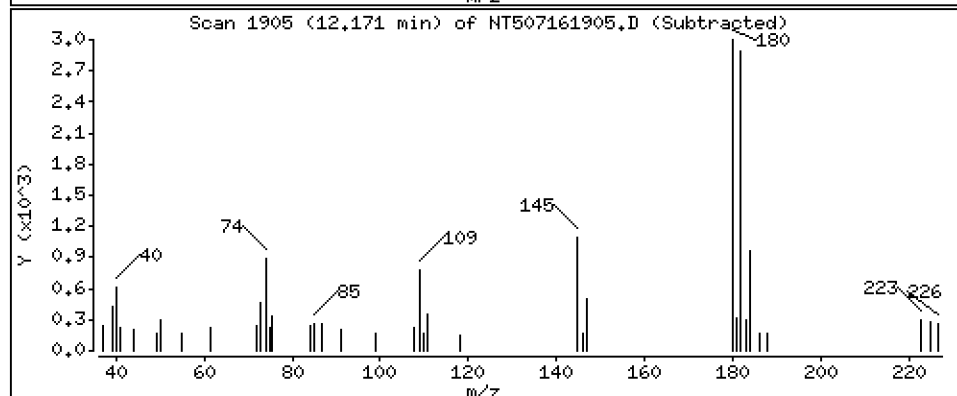
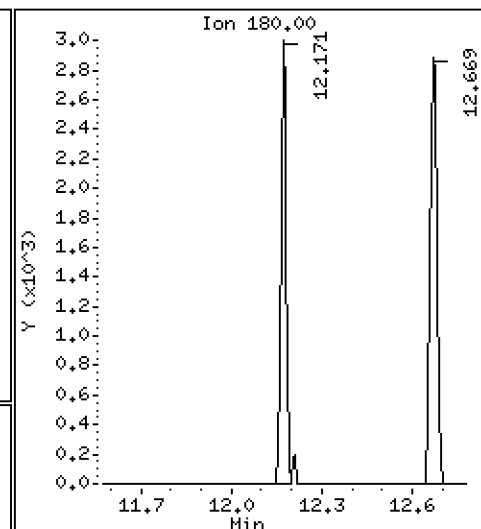
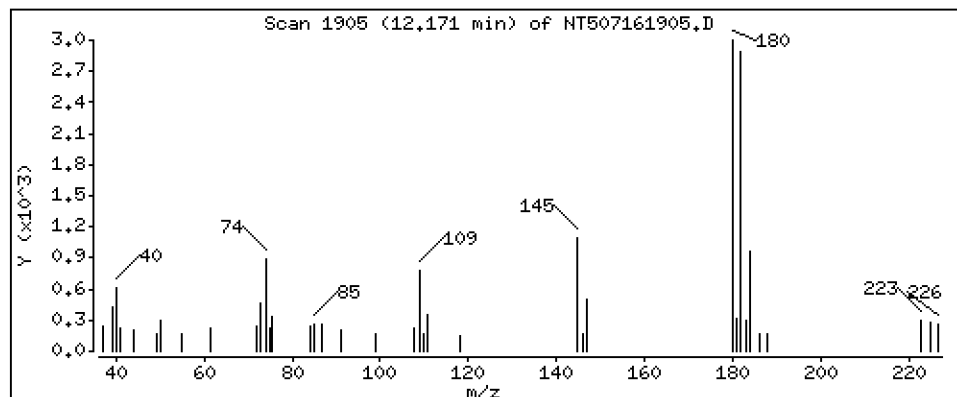
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 0.7654 ug/Kg



Date : 16-JUL-2019 16:08

Client ID:

Instrument: nt5.i

Sample Info: BLK1

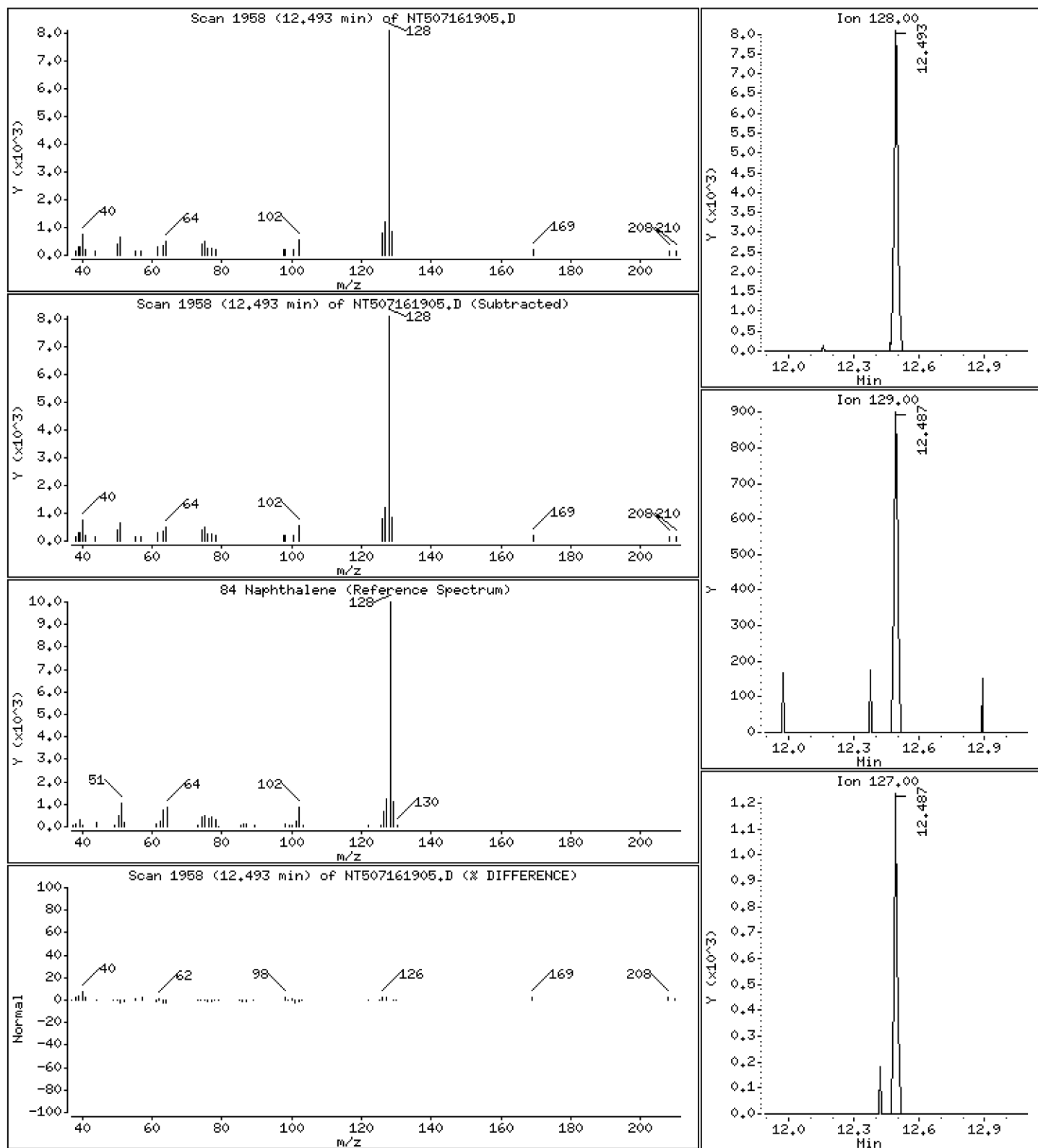
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 1.090 ug/Kg



Date : 16-JUL-2019 16:08

Client ID:

Instrument: nt5.i

Sample Info: BLK1

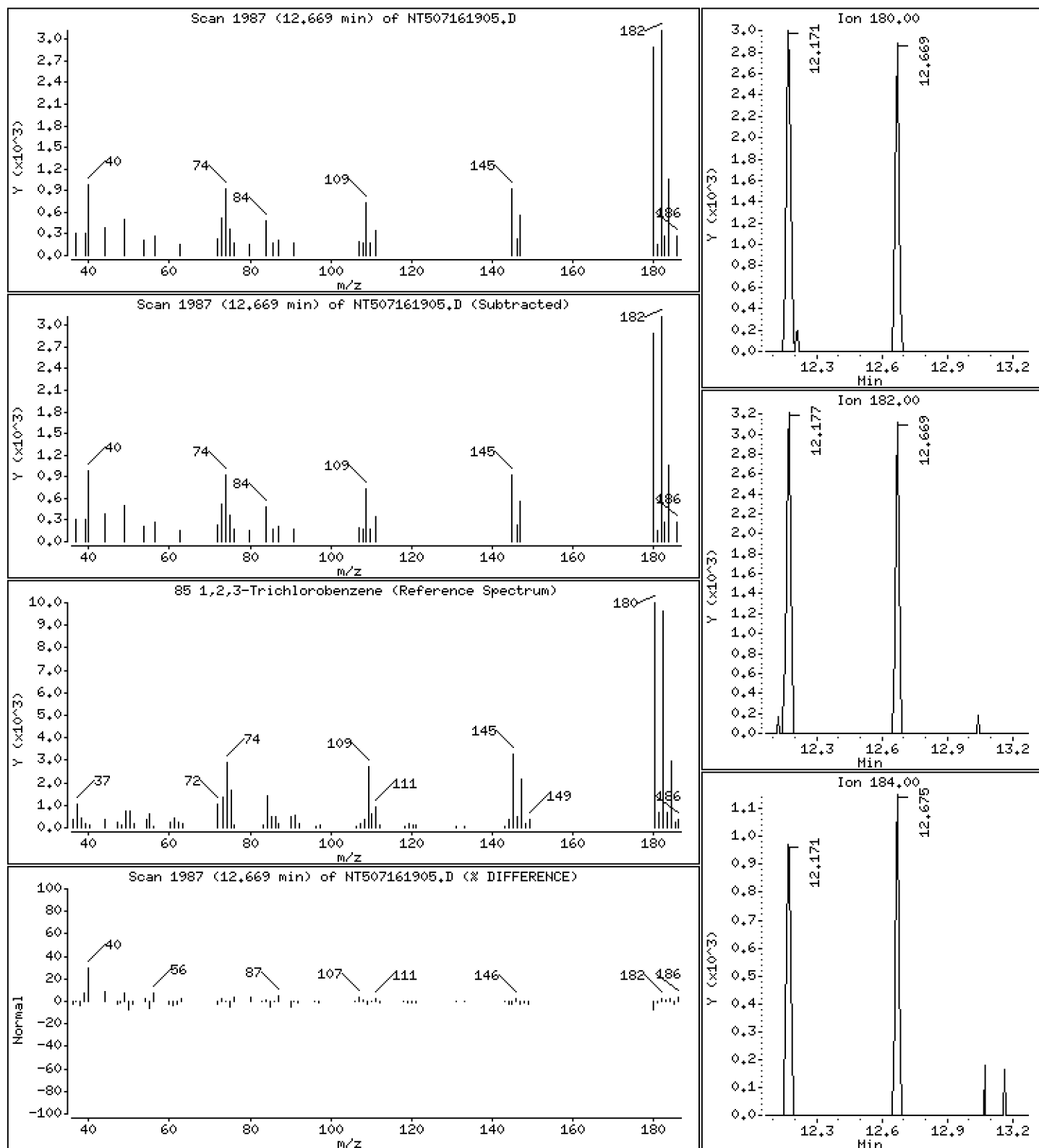
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 0.9120 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161905.D
 Lab Smp Id: bhg0391-BLK1
 Inj Date : 16-JUL-2019 16:08
 Operator : PB Inst ID: nt5.i
 Smp Info : BLK1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Meth Date : 17-Jul-2019 13:41 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====			=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85			Compound Not	Detected.				
2 Chloromethane	50			Compound Not	Detected.				
3 Vinyl Chloride	62			Compound Not	Detected.				
4 Bromomethane	94			Compound Not	Detected.				
5 Chloroethane	64			Compound Not	Detected.				
6 Trichlorofluoromethane	101			Compound Not	Detected.				
7 1,1-Dichloroethene	96			Compound Not	Detected.				
8 Carbon Disulfide	76			Compound Not	Detected.				
9 112Trichloro122Trifluoroethane	101			Compound Not	Detected.				
10 Iodomethane	142			Compound Not	Detected.				
11 Bromoethane	108			Compound Not	Detected.				
12 Acrolein	56			Compound Not	Detected.				
13 Methylene Chloride	84		3.166	3.154	(0.593)		2830	0.91461	0.9146
14 Acetone	43			Compound Not	Detected.				
15 Trans-1,2-Dichloroethene	96			Compound Not	Detected.				
16 Methyl tert butyl ether	73			Compound Not	Detected.				
173 n-Hexane	41			Compound Not	Detected.				
17 1,1-Dichloroethane	63			Compound Not	Detected.				
18 Acrylonitrile	53			Compound Not	Detected.				
19 Vinyl Acetate	43			Compound Not	Detected.				
20 Cis-1,2-Dichloroethene	96			Compound Not	Detected.				
22 2,2-Dichloropropane	77			Compound Not	Detected.				
23 Bromochloromethane	128			Compound Not	Detected.				
24 Chloroform	83			Compound Not	Detected.				
25 Carbon Tetrachloride	117			Compound Not	Detected.				
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.917)		225750	54.6044	54.604 (R)
26 1,1,1-Trichloroethane	97			Compound Not	Detected.				
28 1,1-Dichloropropene	75			Compound Not	Detected.				
29 2-Butanone	72			Compound Not	Detected.				
30 Benzene	78			Compound Not	Detected.				
* 31 Pentafluorobenzene	168		5.344	5.338	(1.000)		378042	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.356	(1.003)		190692	55.1384	55.138 (R)
33 1,2-Dichloroethane	62			Compound Not	Detected.				

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	734085	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	864821	50.3075	50.308 (R)
43 Toluene	92				Compound Not Detected.		
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	713115	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	299616	49.0776	49.078 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119				Compound Not Detected.		
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	395090	50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.363	(1.001)	2927	0.34651	0.3465
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	353549	51.3099	51.310 (R)
80 1,2-Dichlorobenzene	146	10.746	10.752	(1.038)	2639	0.34042	0.3404
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225	12.158	12.152	(1.175)	1422	0.45070	0.4507
83 1,2,4-Trichlorobenzene	180	12.170	12.176	(1.176)	4068	0.76544	0.7654
84 Naphthalene	128	12.492	12.492	(1.207)	11851	1.08958	1.090
85 1,2,3-Trichlorobenzene	180	12.669	12.669	(1.224)	4386	0.91195	0.9120

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161905.D Calibration Time: 14:57
 Lab Smp Id: bhg0391-BLK1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	378042	-6.41
35 1,4-Difluorobenze	717664	358832	1435328	734085	2.29
52 d5-Chlorobenzene	696563	348282	1393126	713115	2.38
76 d4-1,4-Dichlorobe	380778	190389	761556	395090	3.76

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.12
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name:
Sample Matrix: NONE
Lab Smp Id: bhg0391-BLK1
Level:
Data Type: MS DATA
SpikeList File: voasoil.spk
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Misc Info:

Client SDG: 20151013
Fraction: VOA

Operator: PB
SampleType: SAMPLE
Quant Type: ISTD

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	54.604	109.21	
\$ 32 d4-1,2-Dichloroeth	50.000	55.138	110.28	
\$ 42 d8-Toluene	50.000	50.308	100.62	
\$ 62 4-Bromofluorobenze	50.000	49.078	98.16	
\$ 79 d4-1,2-Dichloroben	50.000	51.310	102.62	

REVIEW SUMMARY FOR FILE - NT507161905.D

Lab ID: bhg0391-BLK1
nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 16:08

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>19G0163</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>King County Closed Landfills - V2</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BHG0418-BLK1</u>
Sampled:	<u>N/A</u>	File ID:	<u>NT507191904.D</u>
Solids:		Prepared:	<u>07/17/19 13:53</u>
		Analyzed:	<u>07/19/19 14:31</u>
Batch:	<u>BHG0418</u>	Preparation:	<u>EPA 5035 (Sodium Bisulfate)</u>
		Initial/Final:	<u>5 g / 5 mL</u>
Instrument:	<u>NT5</u>	Sequence:	<u>SHG0298</u>
		Calibration:	<u>CF00067</u>
		Column:	<u>RTX-VMS</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
74-87-3	Chloromethane	1	1.00	U	0.26	1.00
75-01-4	Vinyl Chloride	1	1.00	U	0.24	1.00
74-83-9	Bromomethane	1	1.00	U	0.19	1.00
75-00-3	Chloroethane	1	1.00	U	0.46	1.00
75-69-4	Trichlorofluoromethane	1	1.00	U	0.27	1.00
107-02-8	Acrolein	1	5.00	U	3.81	5.00
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	2.00	U	0.29	2.00
67-64-1	Acetone	1	3.68	J	0.48	5.00
75-35-4	1,1-Dichloroethene	1	1.00	U	0.34	1.00
74-96-4	Bromoethane	1	2.00	U	0.44	2.00
74-88-4	Iodomethane	1	1.00	U	0.22	1.00
75-09-2	Methylene Chloride	1	2.00	U	0.64	2.00
107-13-1	Acrylonitrile	1	5.00	U	1.03	5.00
75-15-0	Carbon Disulfide	1	1.00	U	0.56	1.00
156-60-5	trans-1,2-Dichloroethene	1	1.00	U	0.27	1.00
108-05-4	Vinyl Acetate	1	5.00	U	0.38	5.00
75-34-3	1,1-Dichloroethane	1	1.00	U	0.20	1.00
78-93-3	2-Butanone	1	5.00	U	0.51	5.00
594-20-7	2,2-Dichloropropane	1	1.00	U	0.29	1.00
156-59-2	cis-1,2-Dichloroethene	1	1.00	U	0.24	1.00
67-66-3	Chloroform	1	1.00	U	0.23	1.00
74-97-5	Bromochloromethane	1	1.00	U	0.32	1.00
71-55-6	1,1,1-Trichloroethane	1	1.00	U	0.23	1.00
563-58-6	1,1-Dichloropropene	1	1.00	U	0.31	1.00
56-23-5	Carbon tetrachloride	1	1.00	U	0.21	1.00
107-06-2	1,2-Dichloroethane	1	1.00	U	0.19	1.00
71-43-2	Benzene	1	1.00	U	0.30	1.00
79-01-6	Trichloroethene	1	1.00	U	0.21	1.00
78-87-5	1,2-Dichloropropane	1	1.00	U	0.16	1.00
75-27-4	Bromodichloromethane	1	1.00	U	0.25	1.00
74-95-3	Dibromomethane	1	1.00	U	0.15	1.00
110-75-8	2-Chloroethyl vinyl ether	1	5.00	U	0.28	5.00
108-10-1	4-Methyl-2-Pentanone	1	5.00	U	0.42	5.00
10061-01-5	cis-1,3-Dichloropropene	1	1.00	U	0.23	1.00
108-88-3	Toluene	1	1.00	U	0.15	1.00
10061-02-6	trans-1,3-Dichloropropene	1	1.00	U	0.22	1.00
591-78-6	2-Hexanone	1	5.00	U	0.44	5.00



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>19G0163</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>King County Closed Landfills - V2</u>
Matrix:	<u>Solid</u>	Laboratory ID:	<u>BHG0418-BLK1</u>
Sampled:	<u>N/A</u>	File ID:	<u>NT507191904.D</u>
Solids:		Prepared:	<u>07/17/19 13:53</u>
		Analyzed:	<u>07/19/19 14:31</u>
Batch:	<u>BHG0418</u>	Preparation:	<u>EPA 5035 (Sodium Bisulfate)</u>
		Initial/Final:	<u>5 g / 5 mL</u>
Instrument:	<u>NT5</u>	Sequence:	<u>SHG0298</u>
		Calibration:	<u>CF00067</u>
		Column:	<u>RTX-VMS</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
79-00-5	1,1,2-Trichloroethane	1	1.00	U	0.29	1.00
142-28-9	1,3-Dichloropropane	1	1.00	U	0.21	1.00
127-18-4	Tetrachloroethene	1	1.00	U	0.26	1.00
124-48-1	Dibromochloromethane	1	1.00	U	0.27	1.00
106-93-4	1,2-Dibromoethane	1	1.00	U	0.18	1.00
108-90-7	Chlorobenzene	1	1.00	U	0.22	1.00
100-41-4	Ethylbenzene	1	1.00	U	0.20	1.00
630-20-6	1,1,1,2-Tetrachloroethane	1	1.00	U	0.23	1.00
179601-23-1	m,p-Xylene	1	2.00	U	0.39	2.00
95-47-6	o-Xylene	1	1.00	U	0.22	1.00
1330-20-7	Xylenes, total	1	2.00	U	0.62	2.00
100-42-5	Styrene	1	1.00	U	0.14	1.00
75-25-2	Bromoform	1	1.00	U	0.30	1.00
79-34-5	1,1,2,2-Tetrachloroethane	1	1.00	U	0.25	1.00
96-18-4	1,2,3-Trichloropropane	1	2.00	U	0.52	2.00
110-57-6	trans-1,4-Dichloro 2-Butene	1	5.00	U	0.44	5.00
103-65-1	n-Propylbenzene	1	1.00	U	0.27	1.00
108-86-1	Bromobenzene	1	1.00	U	0.15	1.00
98-82-8	Isopropyl Benzene	1	1.00	U	0.23	1.00
95-49-8	2-Chlorotoluene	1	1.00	U	0.30	1.00
106-43-4	4-Chlorotoluene	1	1.00	U	0.28	1.00
98-06-6	t-Butylbenzene	1	1.00	U	0.31	1.00
108-67-8	1,3,5-Trimethylbenzene	1	1.00	U	0.25	1.00
95-63-6	1,2,4-Trimethylbenzene	1	1.00	U	0.23	1.00
135-98-8	s-Butylbenzene	1	1.00	U	0.24	1.00
99-87-6	4-Isopropyl Toluene	1	1.00	U	0.24	1.00
541-73-1	1,3-Dichlorobenzene	1	1.00	U	0.23	1.00
106-46-7	1,4-Dichlorobenzene	1	0.29	J	0.23	1.00
104-51-8	n-Butylbenzene	1	1.00	U	0.26	1.00
95-50-1	1,2-Dichlorobenzene	1	1.00	U	0.29	1.00
96-12-8	1,2-Dibromo-3-chloropropane	1	5.00	U	0.59	5.00
120-82-1	1,2,4-Trichlorobenzene	1	0.93	J	0.33	5.00
87-68-3	Hexachloro-1,3-Butadiene	1	5.00	U	0.41	5.00
91-20-3	Naphthalene	1	1.18	J	0.43	5.00
87-61-6	1,2,3-Trichlorobenzene	1	1.15	J	0.31	5.00
75-71-8	Dichlorodifluoromethane	1	1.00	U	0.21	1.00
1634-04-4	Methyl tert-butyl Ether	1	1.00	U	0.23	1.00



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0418-BLK1 File ID: NT507191904.D
Sampled: N/A Prepared: 07/17/19 13:53 Analyzed: 07/19/19 14:31
Solids: Preparation: EPA 5035 (Sodium Bisulfate) Initial/Final: 5 g / 5 mL
Batch: BHG0418 Sequence: SHG0298 Calibration: CF00067
Instrument: NT5 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
107-87-9	2-Pentanone	1	5.00	U	5.00	5.00
SURROGATES		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		50.000	57.8	116	80 - 149	
Toluene-d8		50.000	52.4	105	77 - 120	
4-Bromofluorobenzene		50.000	48.9	97.7	80 - 120	
1,2-Dichlorobenzene-d4		50.000	50.3	101	80 - 120	

Data File: \\target\share\chemd\nt5.i\20190719.b\NT507191904.D

Date : 19-JUL-2019 14:31

Client ID:

Sample Info: BLK1

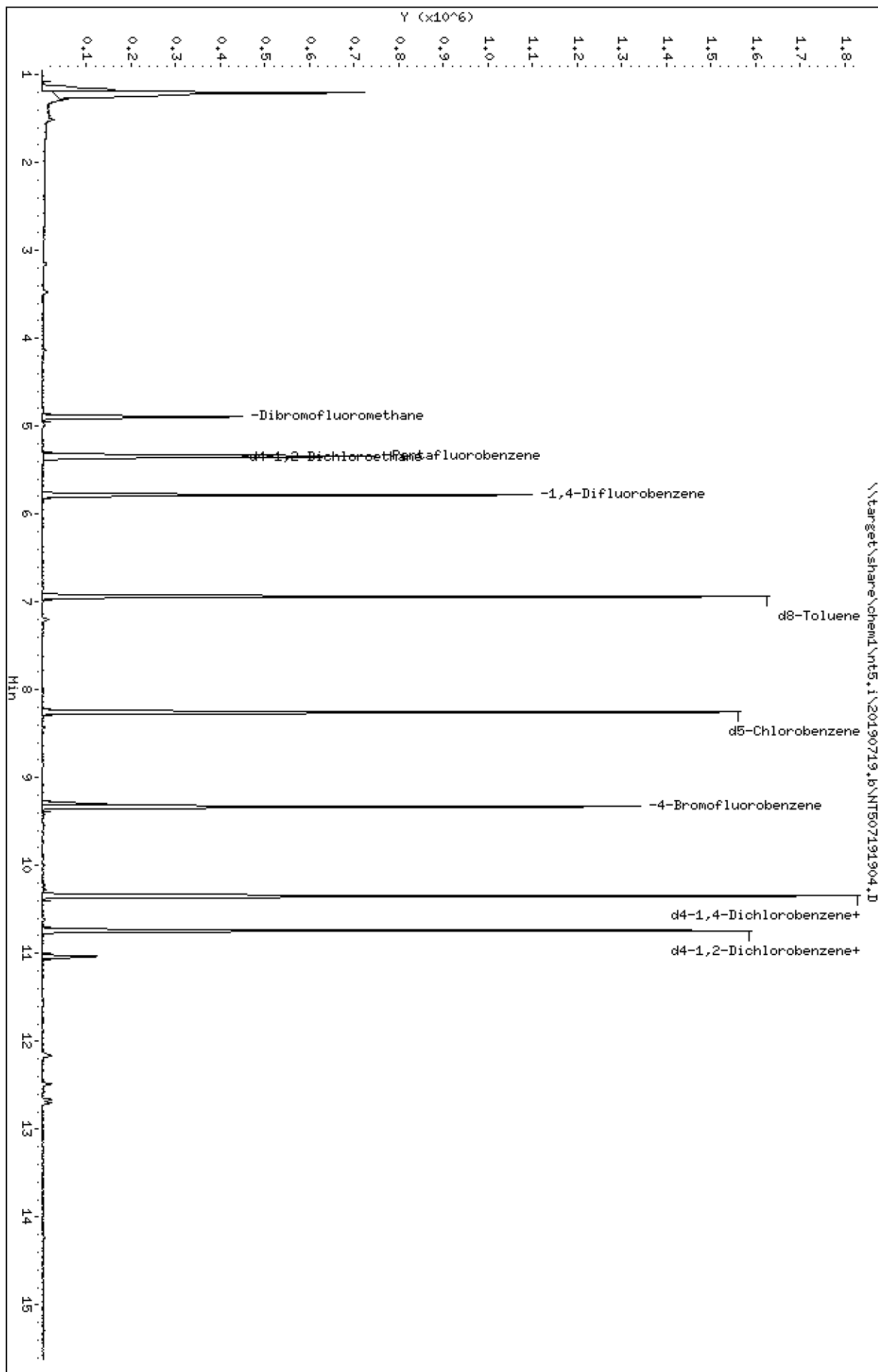
Instrument: nt5.i

Page 1

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 19-JUL-2019 14:31

Client ID:

Instrument: nt5.i

Sample Info: BLK1

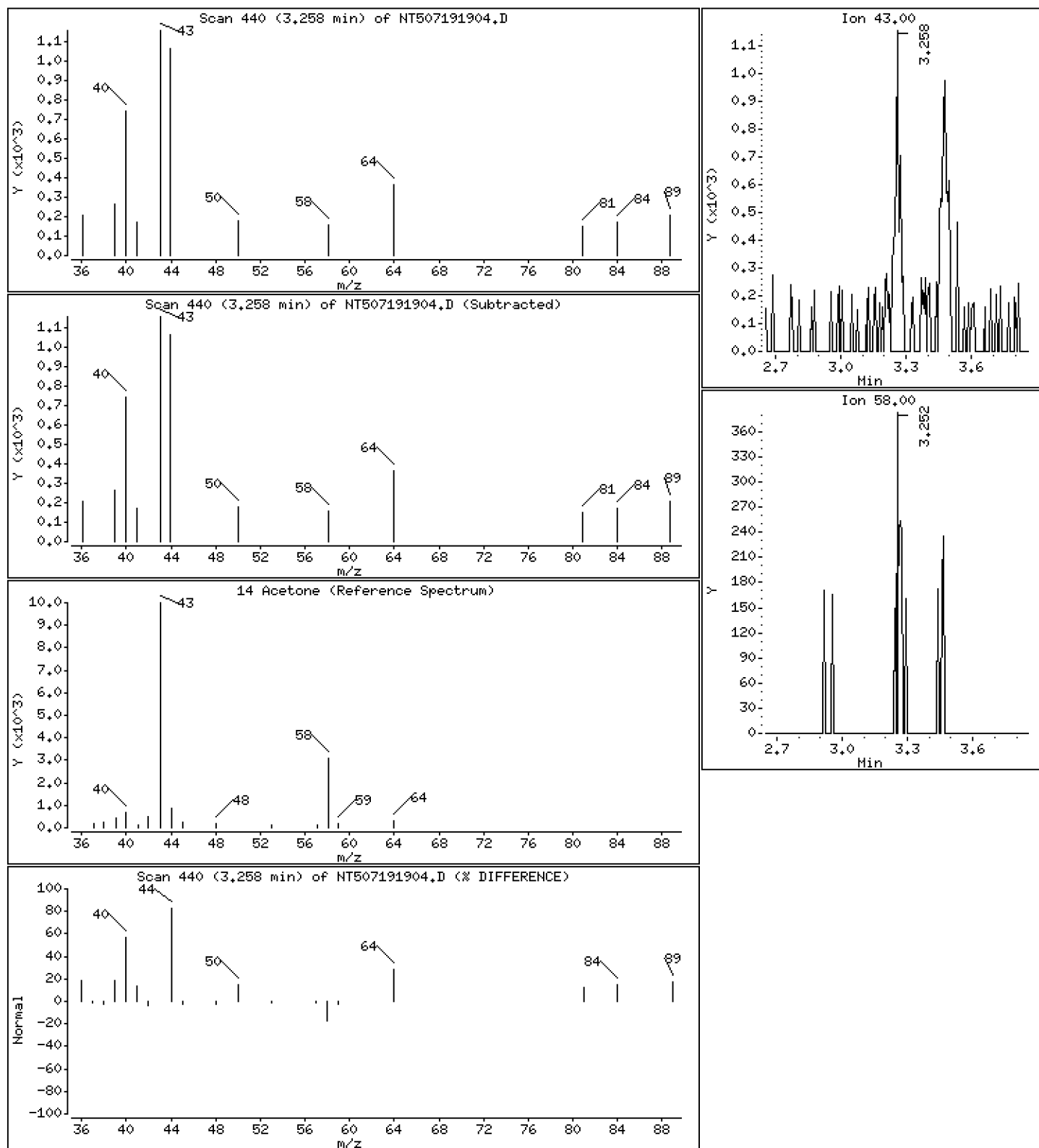
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 3.683 ug/Kg



Date : 19-JUL-2019 14:31

Client ID:

Instrument: nt5.i

Sample Info: BLK1

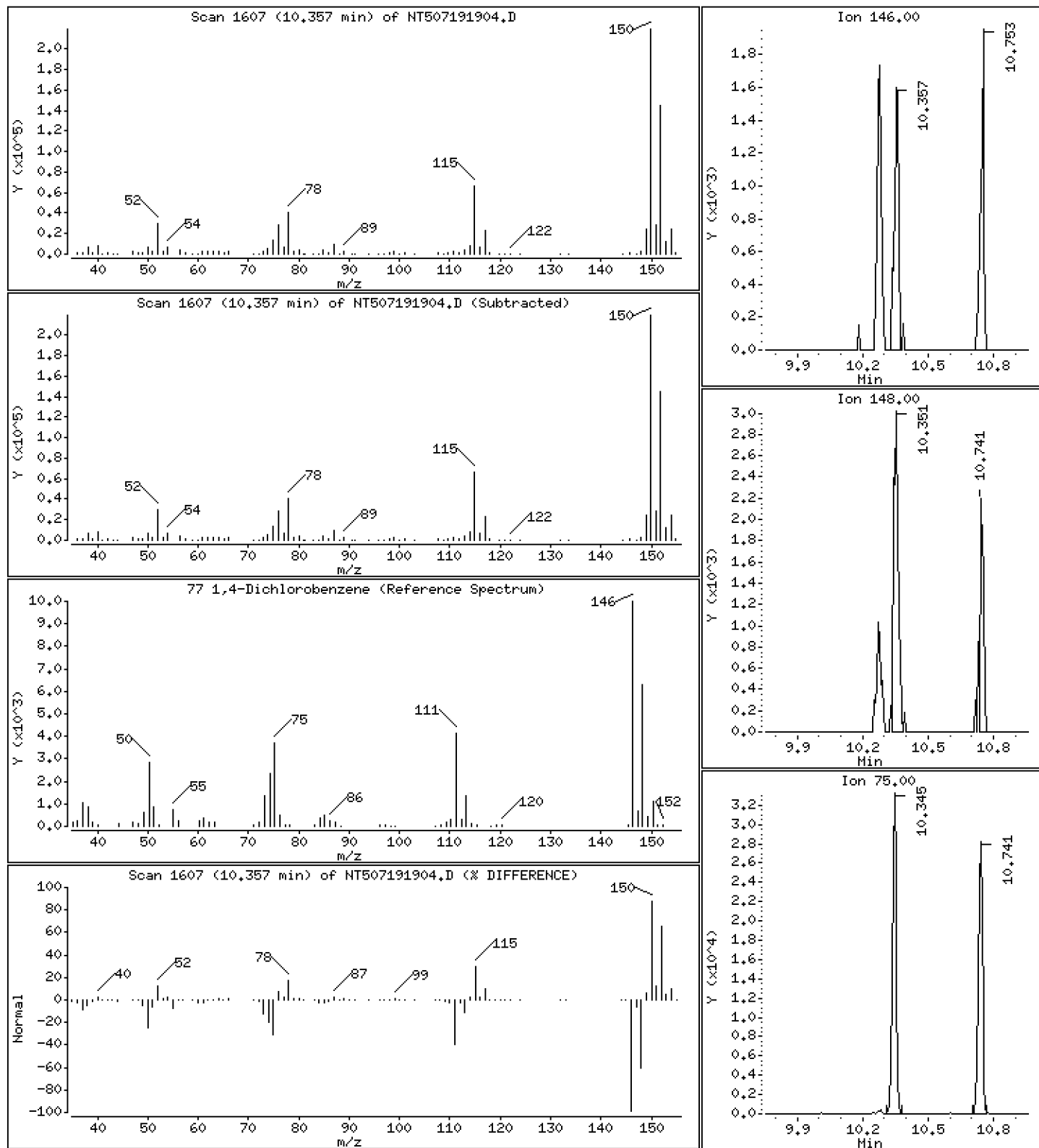
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 0.2876 ug/Kg



Date : 19-JUL-2019 14:31

Client ID:

Instrument: nt5.i

Sample Info: BLK1

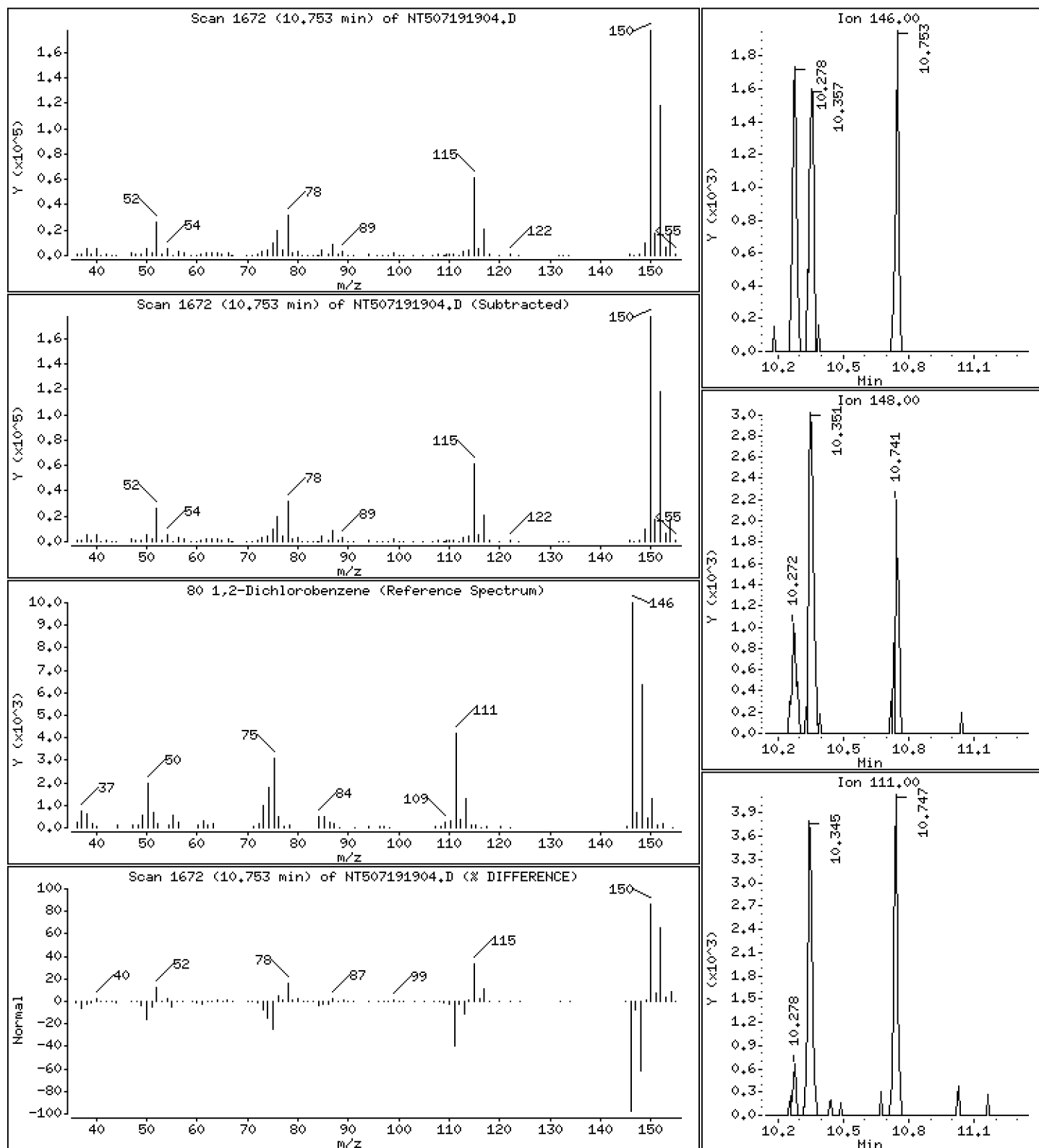
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 0.2749 ug/Kg



Date : 19-JUL-2019 14:31

Client ID:

Instrument: nt5.i

Sample Info: BLK1

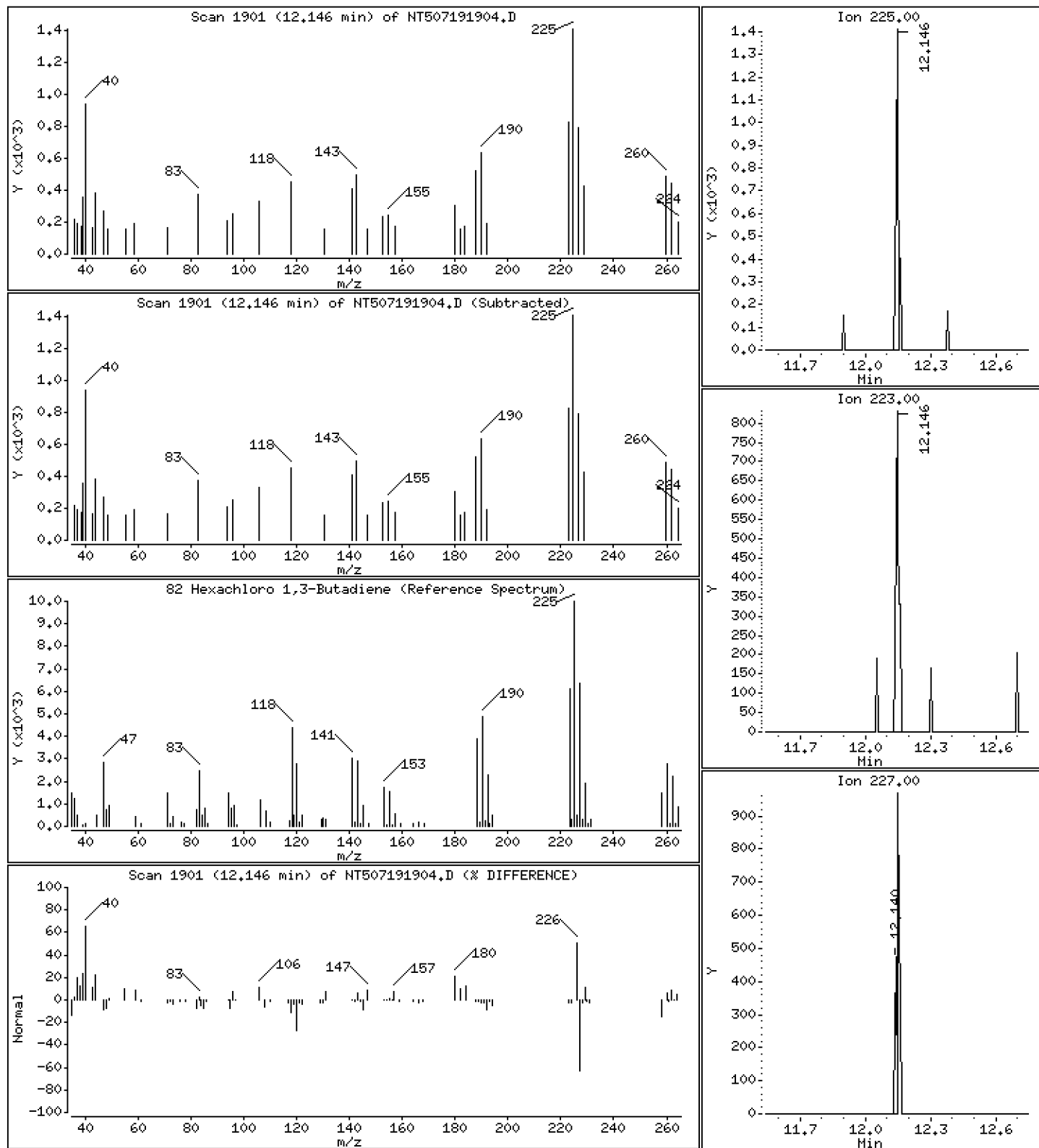
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 0.3971 ug/Kg



Date : 19-JUL-2019 14:31

Client ID:

Instrument: nt5.i

Sample Info: BLK1

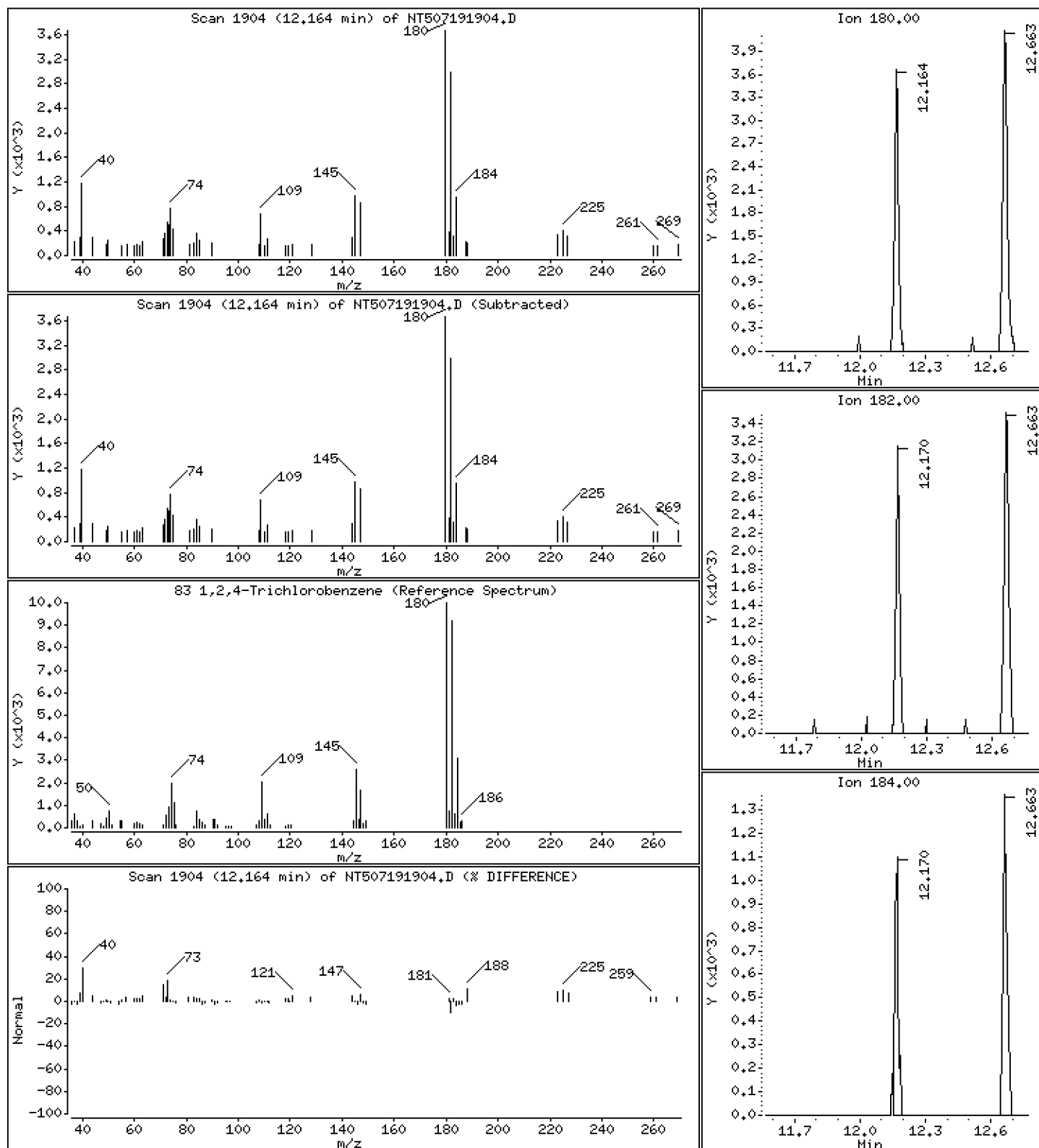
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 0.9294 ug/Kg



Date : 19-JUL-2019 14:31

Client ID:

Instrument: nt5.i

Sample Info: BLK1

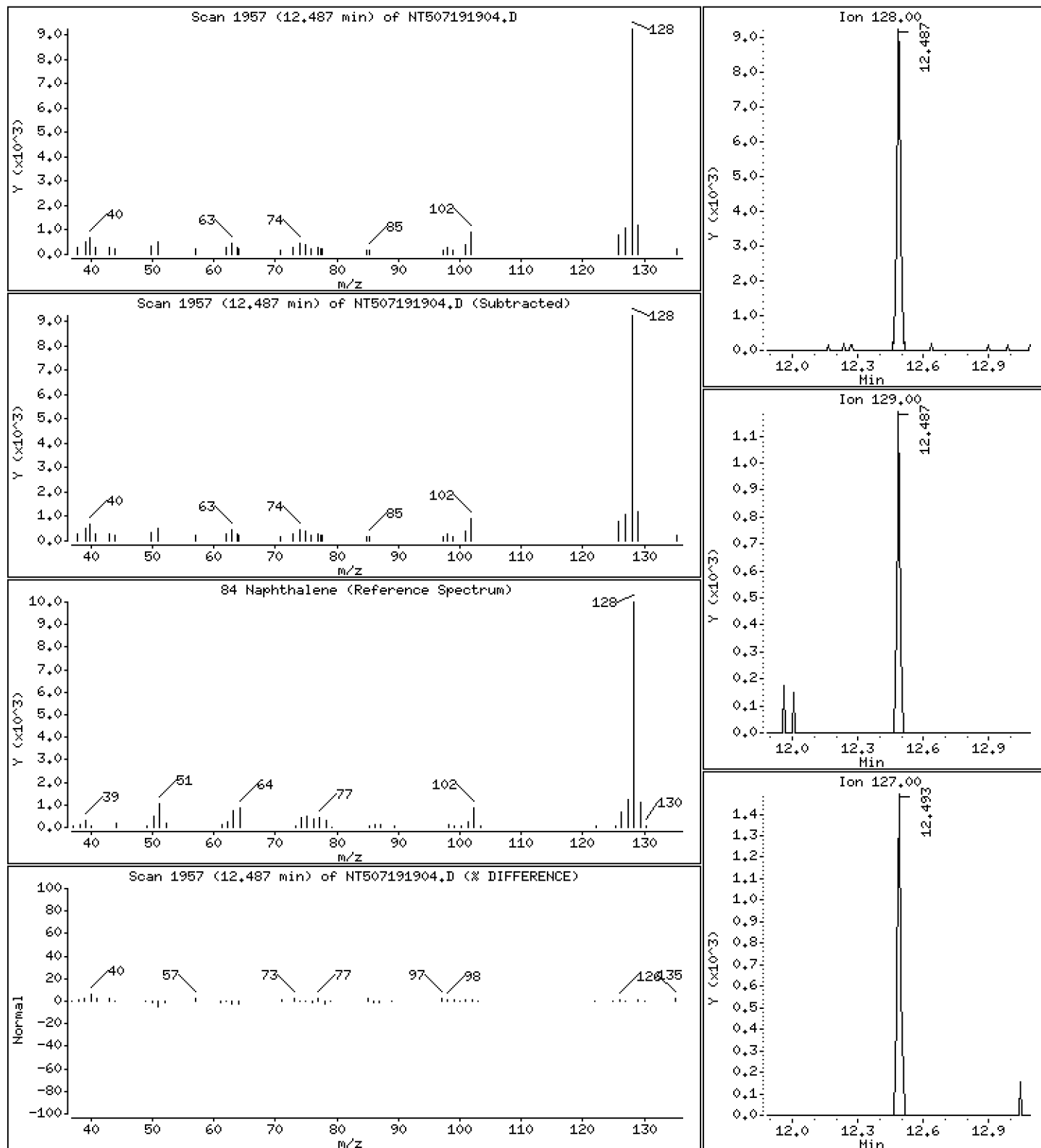
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 1.181 ug/Kg



Date : 19-JUL-2019 14:31

Client ID:

Instrument: nt5.i

Sample Info: BLK1

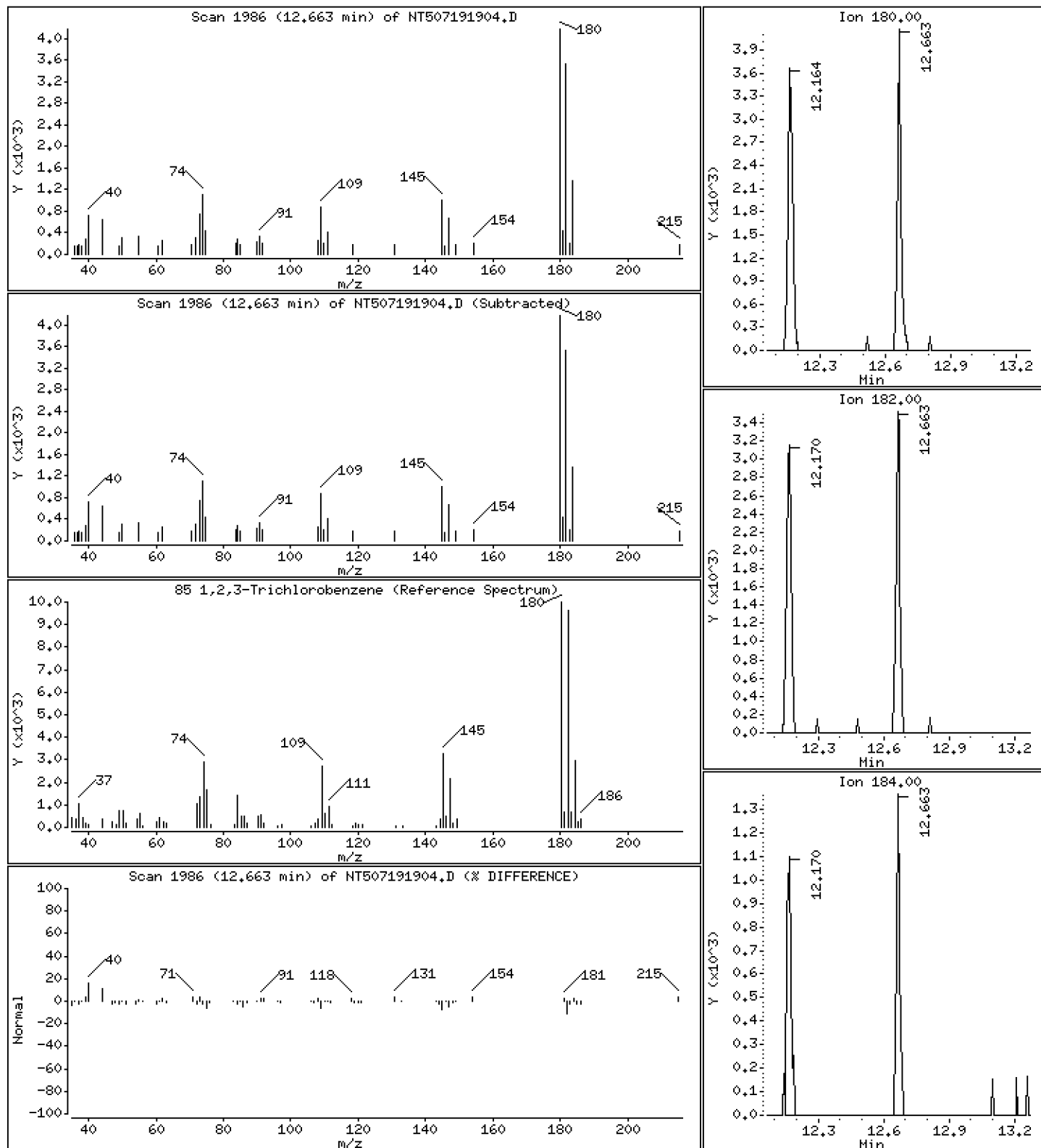
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 1.147 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190719.b\NT507191904.D
Lab Smp Id: bhg0418-BLK1
Inj Date : 19-JUL-2019 14:31
Operator : PB Inst ID: nt5.i
Smp Info : BLK1
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
Meth Date : 22-Jul-2019 15:50 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamdl.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT MASS	SIG					CONCENTRATIONS	
			RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====		=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		Compound	Not	Detected.			
2 Chloromethane	50		Compound	Not	Detected.			
3 Vinyl Chloride	62		Compound	Not	Detected.			
4 Bromomethane	94		Compound	Not	Detected.			
5 Chloroethane	64		Compound	Not	Detected.			
6 Trichlorofluoromethane	101		Compound	Not	Detected.			
7 1,1-Dichloroethene	96		Compound	Not	Detected.			
8 Carbon Disulfide	76		Compound	Not	Detected.			
9 112Trichloro122Trifluoroethane	101		Compound	Not	Detected.			
10 Iodomethane	142		Compound	Not	Detected.			
11 Bromoethane	108		Compound	Not	Detected.			
12 Acrolein	56		Compound	Not	Detected.			
13 Methylene Chloride	84		Compound	Not	Detected.			
14 Acetone	43		3.257	3.258	(0.610)	2018	3.68288	3.683
15 Trans-1,2-Dichloroethene	96		Compound	Not	Detected.			
16 Methyl tert butyl ether	73		Compound	Not	Detected.			
173 n-Hexane	41		Compound	Not	Detected.			
17 1,1-Dichloroethane	63		Compound	Not	Detected.			
18 Acrylonitrile	53		Compound	Not	Detected.			
19 Vinyl Acetate	43		Compound	Not	Detected.			
20 Cis-1,2-Dichloroethene	96		Compound	Not	Detected.			
22 2,2-Dichloropropane	77		Compound	Not	Detected.			
23 Bromochloromethane	128		Compound	Not	Detected.			
24 Chloroform	83		Compound	Not	Detected.			
25 Carbon Tetrachloride	117		Compound	Not	Detected.			
\$ 27 Dibromofluoromethane	111		4.894	4.888	(0.917)	226577	55.7190	55.719 (R)
26 1,1,1-Trichloroethane	97		Compound	Not	Detected.			
28 1,1-Dichloropropene	75		Compound	Not	Detected.			
29 2-Butanone	72		Compound	Not	Detected.			
30 Benzene	78		Compound	Not	Detected.			
* 31 Pentafluorobenzene	168		5.338	5.332	(1.000)	371837	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.350	(1.003)	196600	57.7953	57.795 (R)
33 1,2-Dichloroethane	62		Compound	Not	Detected.			

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130				Compound Not Detected.		
* 35 1,4-Difluorobenzene	114	5.782	5.782	(1.000)	729245	50.0000	
37 Dibromomethane	93				Compound Not Detected.		
38 1,2-Dichloropropane	63				Compound Not Detected.		
39 Bromodichloromethane	83				Compound Not Detected.		
172 2-Pentanone	86				Compound Not Detected.		
40 2-Chloroethyl Vinyl Ether	63				Compound Not Detected.		
41 Cis 1,3-dichloropropene	75				Compound Not Detected.		
\$ 42 d8-Toluene	98	6.938	6.932	(1.200)	894396	52.3732	52.373 (R)
43 Toluene	92				Compound Not Detected.		
44 Tetrachloroethene	166				Compound Not Detected.		
45 4-Methyl-2-Pentanone	58				Compound Not Detected.		
46 Trans 1,3-Dichloropropene	75				Compound Not Detected.		
47 1,1,2-Trichloroethane	97				Compound Not Detected.		
48 Chlorodibromomethane	129				Compound Not Detected.		
49 1,3-Dichloropropane	76				Compound Not Detected.		
50 1,2-Dibromoethane	107				Compound Not Detected.		
51 2-Hexanone	43				Compound Not Detected.		
* 52 d5-Chlorobenzene	117	8.252	8.252	(1.000)	750855	50.0000	
53 Chlorobenzene	112				Compound Not Detected.		
54 Ethyl Benzene	91				Compound Not Detected.		
55 1,1,1,2-Tetrachloroethane	131				Compound Not Detected.		
56 m,p-xylene	106				Compound Not Detected.		
57 o-Xylene	106				Compound Not Detected.		
58 Styrene	104				Compound Not Detected.		
59 Bromoform	173				Compound Not Detected.		
60 Isopropyl Benzene	105				Compound Not Detected.		
61 Cyclohexanone	55				Compound Not Detected.		
\$ 62 4-Bromofluorobenzene	174	9.329	9.329	(1.130)	314033	48.8536	48.854 (R)
63 Bromobenzene	156				Compound Not Detected.		
64 N-Propyl Benzene	91				Compound Not Detected.		
65 1,1,1,2,2-Tetrachloroethane	83				Compound Not Detected.		
66 2-Chloro Toluene	91				Compound Not Detected.		
67 1,3,5-Trimethyl Benzene	105				Compound Not Detected.		
68 1,2,3-Trichloropropane	110				Compound Not Detected.		
69 Trans-1,4-Dichloro 2-Butene	53				Compound Not Detected.		
70 4-Chloro Toluene	91				Compound Not Detected.		
71 T-Butyl Benzene	119				Compound Not Detected.		
72 1,2,4-Trimethylbenzene	105				Compound Not Detected.		
73 S-Butyl Benzene	105				Compound Not Detected.		
74 4-Isopropyl Toluene	119				Compound Not Detected.		
75 1,3-Dichlorobenzene	146				Compound Not Detected.		
* 76 d4-1,4-Dichlorobenzene	152	10.345	10.345	(1.000)	420033	50.0000	
77 1,4-Dichlorobenzene	146	10.357	10.357	(1.001)	2583	0.28763	0.2876
78 N-Butyl Benzene	91				Compound Not Detected.		
\$ 79 d4-1,2-Dichlorobenzene	152	10.740	10.740	(1.038)	368449	50.2969	50.297 (R)
80 1,2-Dichlorobenzene	146	10.752	10.746	(1.039)	2266	0.27494	0.2749
81 1,2-Dibromo 3-Chloropropane	75				Compound Not Detected.		
82 Hexachloro 1,3-Butadiene	225	12.145	12.146	(1.174)	1332	0.39711	0.3971
83 1,2,4-Trichlorobenzene	180	12.164	12.170	(1.176)	5251	0.92936	0.9294
84 Naphthalene	128	12.486	12.486	(1.207)	13655	1.18089	1.181
85 1,2,3-Trichlorobenzene	180	12.663	12.663	(1.224)	5867	1.14745	1.147

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 19-JUL-2019
 Lab File ID: NT507191904.D Calibration Time: 13:28
 Lab Smp Id: bhg0418-BLK1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	371837	-7.94
35 1,4-Difluorobenze	717664	358832	1435328	729245	1.61
52 d5-Chlorobenzene	696563	348282	1393126	750855	7.79
76 d4-1,4-Dichlorobe	380778	190389	761556	420033	10.31

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.33	4.83	5.83	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.00
52 d5-Chlorobenzene	8.25	7.75	8.75	8.25	-0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: bhg0418-BLK1
Level: Operator: PB
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: voasoil.spk Quant Type: ISTD
Sublist File: voamdl.sub
Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
Misc Info:

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	55.719	111.44	
\$ 32 d4-1,2-Dichloroeth	50.000	57.795	115.59	
\$ 42 d8-Toluene	50.000	52.373	104.75	
\$ 62 4-Bromofluorobenze	50.000	48.854	97.71	
\$ 79 d4-1,2-Dichloroben	50.000	50.297	100.59	

REVIEW SUMMARY FOR FILE - NT507191904.D

Lab ID: bhg0418-BLK1
nt5.i, 20190719.b\VO122618S.m, 19-JUL-2019 14:31

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507191902.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>19G0163</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>King County Closed Landfills - V2</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>BHG0439-BLK1</u>
Sampled:	<u>N/A</u>	File ID:	<u>V307181909G.D</u>
Solids:		Prepared:	<u>07/18/19 07:56</u>
Batch:	<u>BHG0439</u>	Analyzed:	<u>07/18/19 12:49</u>
Instrument:	<u>NT3</u>	Preparation:	<u>EPA 5030 (Purge and Trap)</u>
Column:	<u>RTX-VMS</u>	Initial/Final:	<u>10 mL / 10 mL</u>
		Calibration:	<u>CG00042</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
74-87-3	Chloromethane	1	0.50	U	0.09	0.50
75-01-4	Vinyl Chloride	1	0.20	U	0.06	0.20
74-83-9	Bromomethane	1	1.00	U	0.25	1.00
75-00-3	Chloroethane	1	0.20	U	0.09	0.20
75-69-4	Trichlorofluoromethane	1	0.20	U	0.04	0.20
107-02-8	Acrolein	1	5.00	U	2.48	5.00
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	1	0.20	U	0.04	0.20
67-64-1	Acetone	1	5.00	U	2.06	5.00
75-35-4	1,1-Dichloroethene	1	0.20	U	0.05	0.20
74-96-4	Bromoethane	1	0.20	U	0.04	0.20
74-88-4	Iodomethane	1	1.00	U	0.23	1.00
75-09-2	Methylene Chloride	1	1.00	U	0.49	1.00
107-13-1	Acrylonitrile	1	1.00	U	0.60	1.00
75-15-0	Carbon Disulfide	1	0.20	U	0.04	0.20
156-60-5	trans-1,2-Dichloroethene	1	0.20	U	0.05	0.20
108-05-4	Vinyl Acetate	1	0.20	U	0.07	0.20
75-34-3	1,1-Dichloroethane	1	0.20	U	0.05	0.20
78-93-3	2-Butanone	1	5.00	U	0.81	5.00
594-20-7	2,2-Dichloropropane	1	0.20	U	0.05	0.20
156-59-2	cis-1,2-Dichloroethene	1	0.20	U	0.04	0.20
67-66-3	Chloroform	1	0.20	U	0.03	0.20
74-97-5	Bromochloromethane	1	0.20	U	0.06	0.20
71-55-6	1,1,1-Trichloroethane	1	0.20	U	0.04	0.20
563-58-6	1,1-Dichloropropene	1	0.20	U	0.03	0.20
56-23-5	Carbon tetrachloride	1	0.20	U	0.04	0.20
107-06-2	1,2-Dichloroethane	1	0.20	U	0.07	0.20
71-43-2	Benzene	1	0.20	U	0.03	0.20
79-01-6	Trichloroethene	1	0.20	U	0.05	0.20
78-87-5	1,2-Dichloropropane	1	0.20	U	0.04	0.20
75-27-4	Bromodichloromethane	1	0.20	U	0.05	0.20
74-95-3	Dibromomethane	1	0.20	U	0.15	0.20
110-75-8	2-Chloroethyl vinyl ether	1	1.00	U	0.25	1.00
108-10-1	4-Methyl-2-Pentanone	1	5.00	U	0.97	5.00
10061-01-5	cis-1,3-Dichloropropene	1	0.20	U	0.06	0.20
108-88-3	Toluene	1	0.20	U	0.04	0.20
10061-02-6	trans-1,3-Dichloropropene	1	0.20	U	0.08	0.20
591-78-6	2-Hexanone	1	5.00	U	0.90	5.00



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory:	<u>Analytical Resources, Inc.</u>	SDG:	<u>19G0163</u>
Client:	<u>Anchor QEA, LLC</u>	Project:	<u>King County Closed Landfills - V2</u>
Matrix:	<u>Water</u>	Laboratory ID:	<u>BHG0439-BLK1</u>
Sampled:	<u>N/A</u>	File ID:	<u>V307181909G.D</u>
Solids:		Prepared:	<u>07/18/19 07:56</u>
Batch:	<u>BHG0439</u>	Analyzed:	<u>07/18/19 12:49</u>
Instrument:	<u>NT3</u>	Preparation:	<u>EPA 5030 (Purge and Trap)</u>
Column:	<u>RTX-VMS</u>	Initial/Final:	<u>10 mL / 10 mL</u>
		Calibration:	<u>CG00042</u>

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
79-00-5	1,1,2-Trichloroethane	1	0.20	U	0.13	0.20
142-28-9	1,3-Dichloropropane	1	0.20	U	0.06	0.20
127-18-4	Tetrachloroethene	1	0.20	U	0.05	0.20
124-48-1	Dibromochloromethane	1	0.20	U	0.05	0.20
106-93-4	1,2-Dibromoethane	1	0.20	U	0.07	0.20
108-90-7	Chlorobenzene	1	0.20	U	0.02	0.20
100-41-4	Ethylbenzene	1	0.20	U	0.04	0.20
630-20-6	1,1,1,2-Tetrachloroethane	1	0.20	U	0.04	0.20
179601-23-1	m,p-Xylene	1	0.40	U	0.05	0.40
95-47-6	o-Xylene	1	0.20	U	0.03	0.20
100-42-5	Styrene	1	0.20	U	0.05	0.20
75-25-2	Bromoform	1	0.20	U	0.06	0.20
79-34-5	1,1,2,2-Tetrachloroethane	1	0.20	U	0.06	0.20
96-18-4	1,2,3-Trichloropropane	1	0.50	U	0.13	0.50
110-57-6	trans-1,4-Dichloro 2-Butene	1	1.00	U	0.32	1.00
103-65-1	n-Propylbenzene	1	0.20	U	0.02	0.20
108-86-1	Bromobenzene	1	0.20	U	0.06	0.20
1330-20-7	Xylenes, total	1	0.60	U	0.09	0.60
98-82-8	Isopropyl Benzene	1	0.20	U	0.02	0.20
95-49-8	2-Chlorotoluene	1	0.20	U	0.02	0.20
106-43-4	4-Chlorotoluene	1	0.20	U	0.02	0.20
98-06-6	t-Butylbenzene	1	0.20	U	0.03	0.20
108-67-8	1,3,5-Trimethylbenzene	1	0.20	U	0.02	0.20
95-63-6	1,2,4-Trimethylbenzene	1	0.20	U	0.02	0.20
135-98-8	s-Butylbenzene	1	0.20	U	0.02	0.20
99-87-6	4-Isopropyl Toluene	1	0.20	U	0.03	0.20
541-73-1	1,3-Dichlorobenzene	1	0.20	U	0.04	0.20
106-46-7	1,4-Dichlorobenzene	1	0.20	U	0.04	0.20
104-51-8	n-Butylbenzene	1	0.20	U	0.02	0.20
95-50-1	1,2-Dichlorobenzene	1	0.20	U	0.04	0.20
96-12-8	1,2-Dibromo-3-chloropropane	1	0.50	U	0.37	0.50
120-82-1	1,2,4-Trichlorobenzene	1	0.50	U	0.11	0.50
87-68-3	Hexachloro-1,3-Butadiene	1	0.50	U	0.07	0.50
91-20-3	Naphthalene	1	0.50	U	0.12	0.50
87-61-6	1,2,3-Trichlorobenzene	1	0.12	J	0.11	0.50
75-71-8	Dichlorodifluoromethane	1	0.20	U	0.05	0.20
1634-04-4	Methyl tert-butyl Ether	1	0.50	U	0.07	0.50



Form I
METHOD BLANK DATA SHEET
EPA 8260C

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Water Laboratory ID: BHG0439-BLK1 File ID: V307181909G.D
Sampled: N/A Prepared: 07/18/19 07:56 Analyzed: 07/18/19 12:49
Solids: Preparation: EPA 5030 (Purge and Trap) Initial/Final: 10 mL / 10 ml
Batch: BHG0439 Sequence: SHG0265 Calibration: CG00042
Instrument: NT3 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
107-87-9	2-Pentanone	1	5.00	U	5.00	5.00
SURROGATES		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		5.0000	4.63	92.6	80 - 129	
1,2-Dichlorobenzene-d4		5.0000	4.69	93.8	80 - 120	
Toluene-d8		5.0000	4.93	98.5	80 - 120	
4-Bromofluorobenzene		5.0000	4.59	91.9	80 - 120	

Data File: \\target\share\chemd\nt3.i\20190718.b\W307181909G.D

Date : 18-JUL-2019 12:49

Client ID:

Sample Info: BHC0439-BLK1

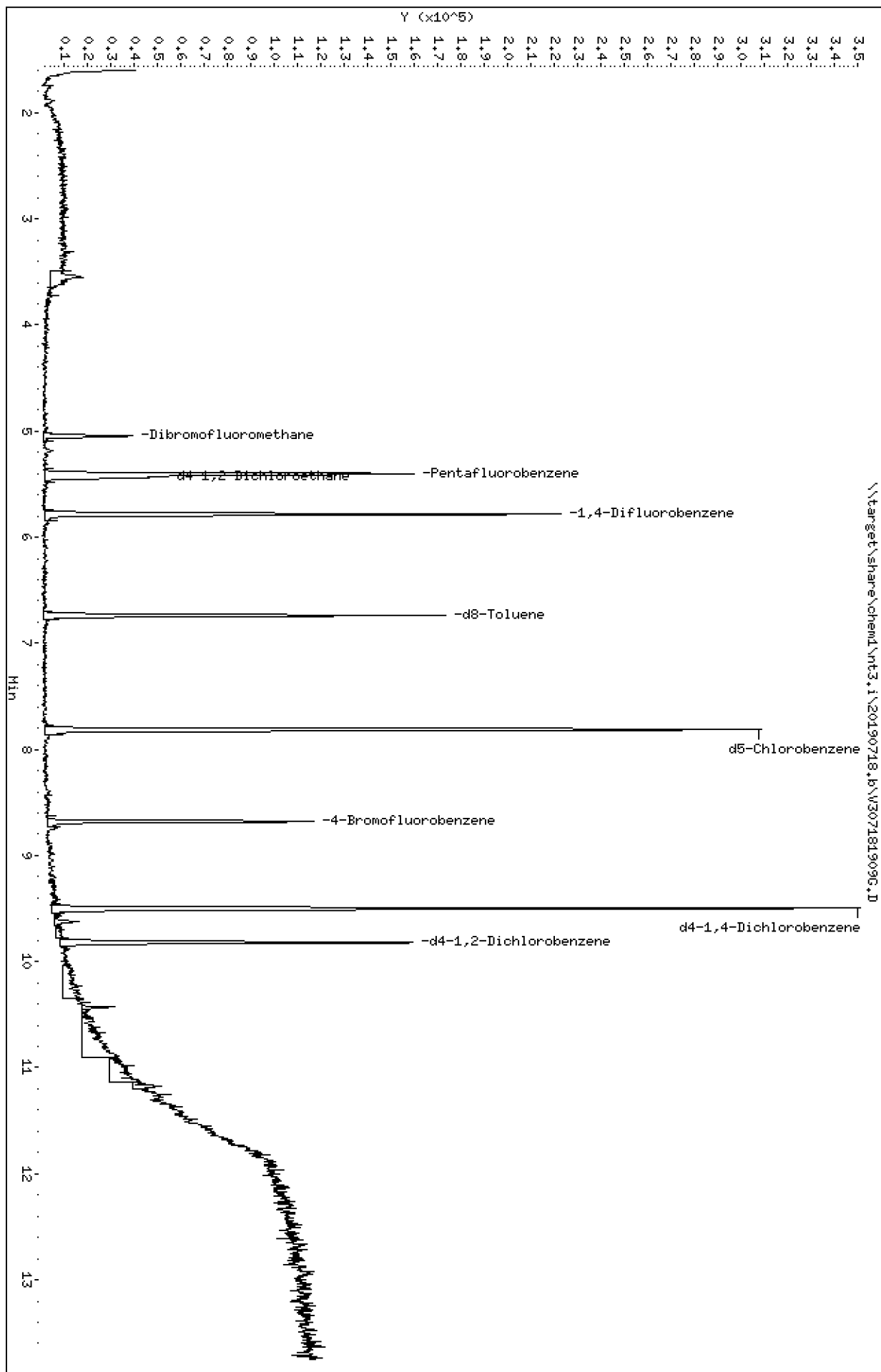
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



Date : 18-JUL-2019 12:49

Client ID:

Instrument: nt3.i

Sample Info: BHG0439-BLK1

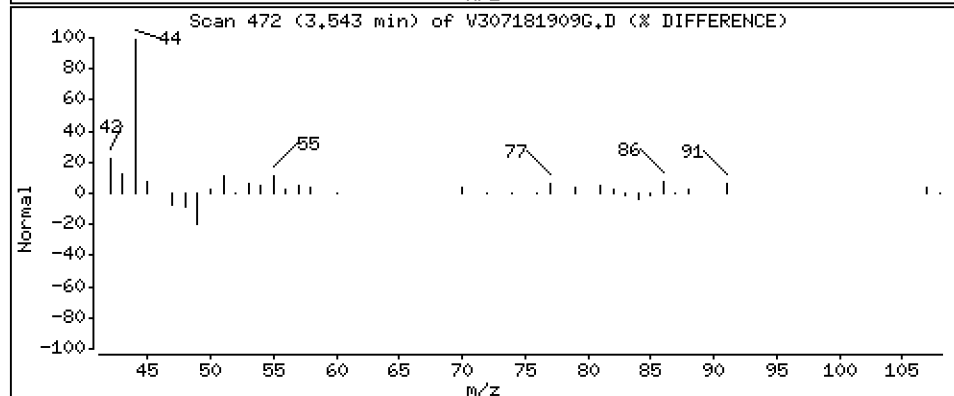
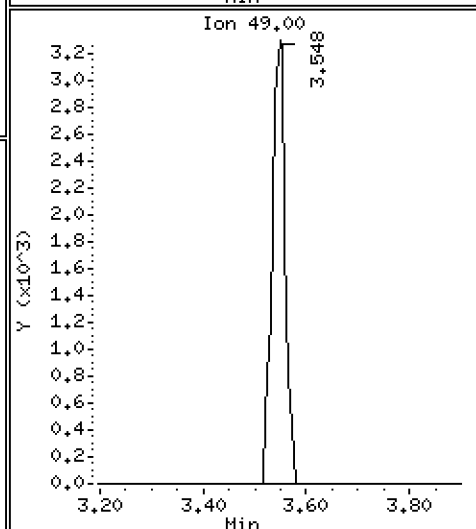
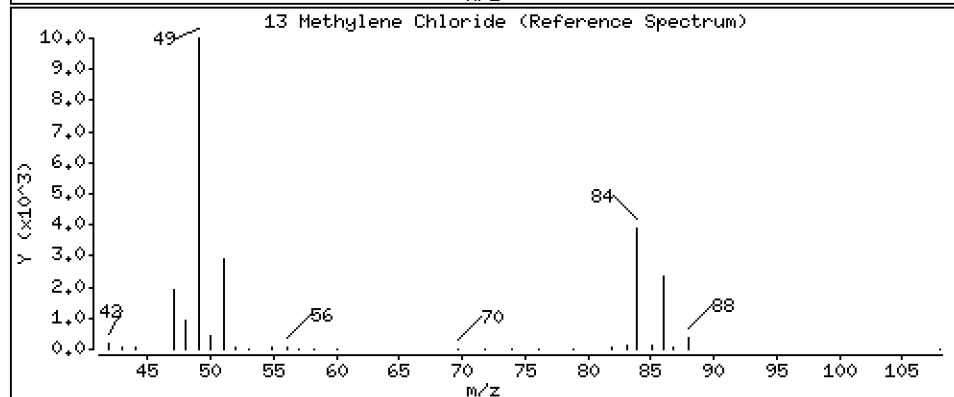
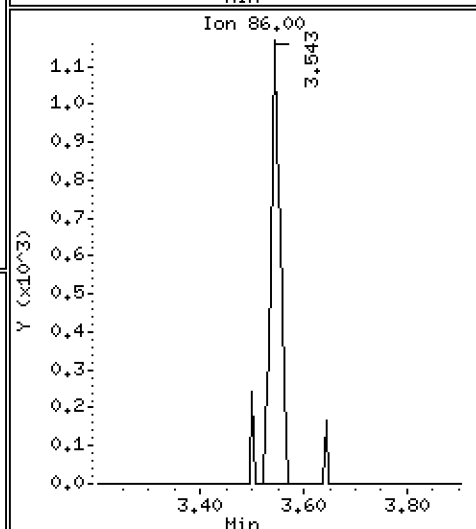
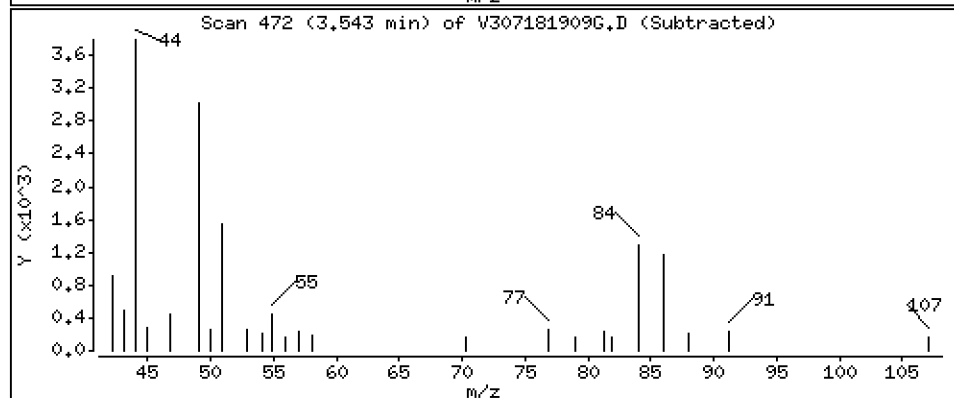
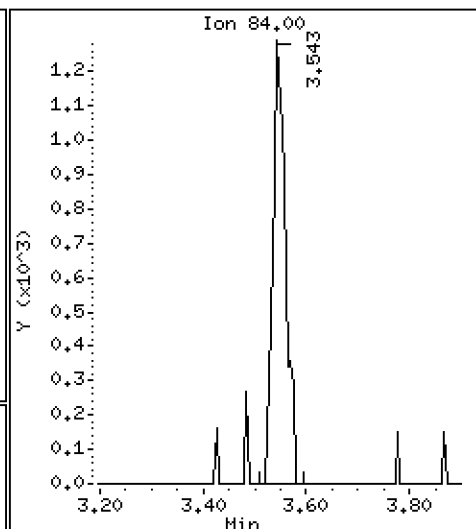
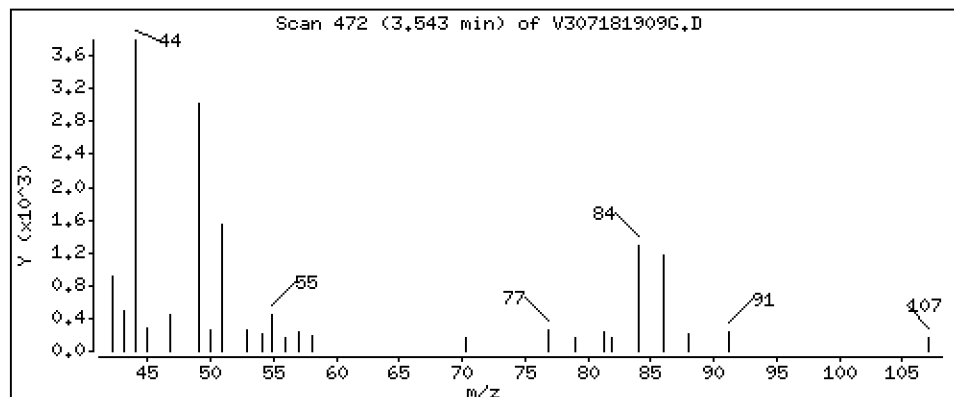
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.3669 ug/L



Date : 18-JUL-2019 12:49

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BLK1

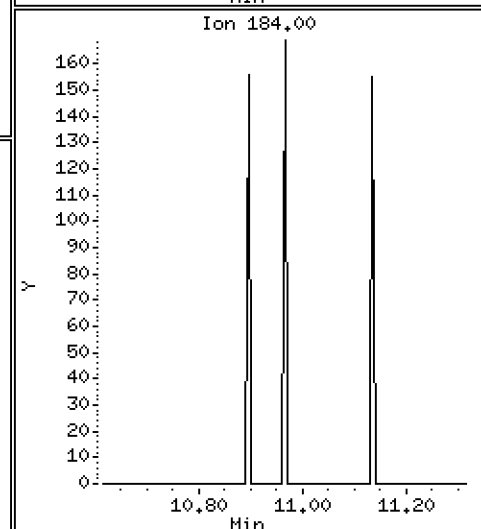
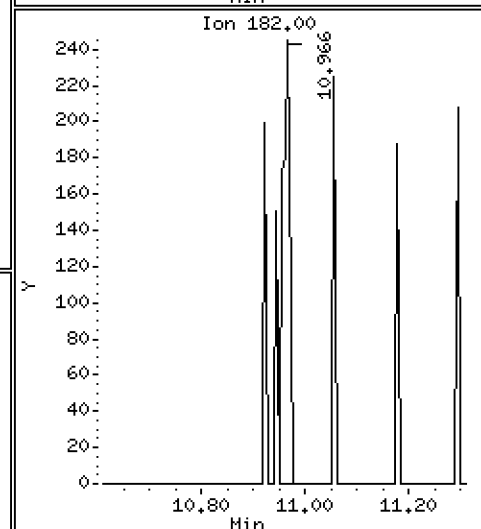
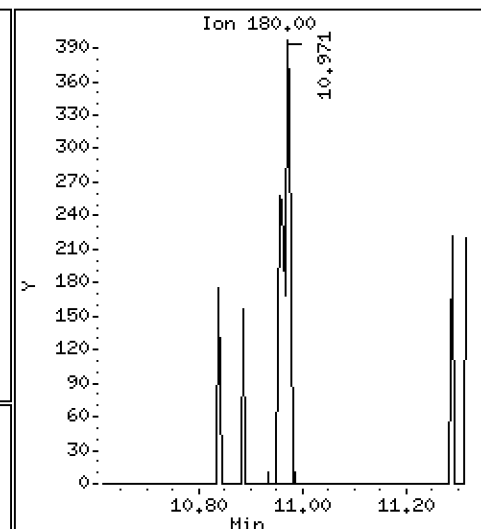
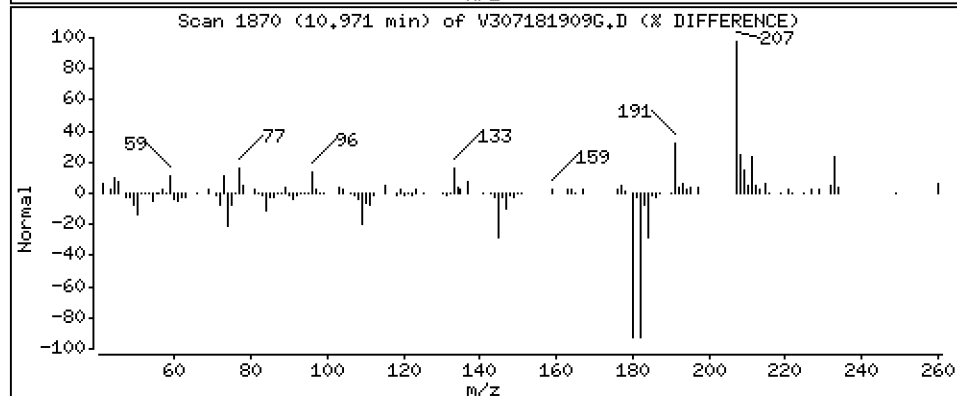
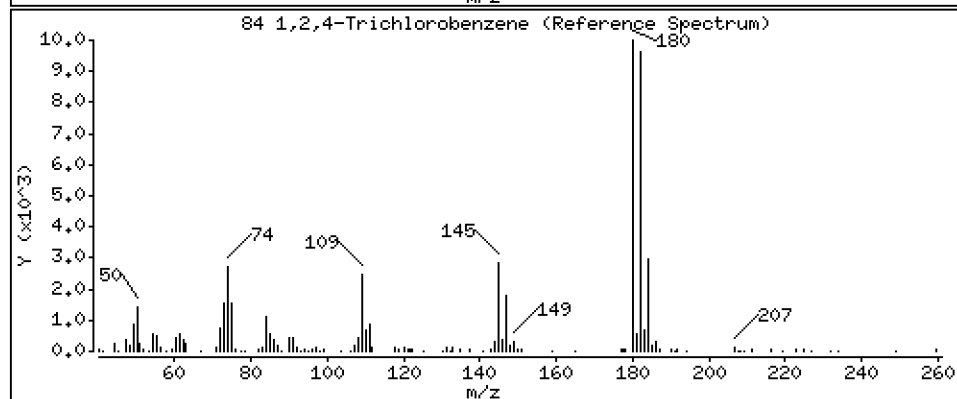
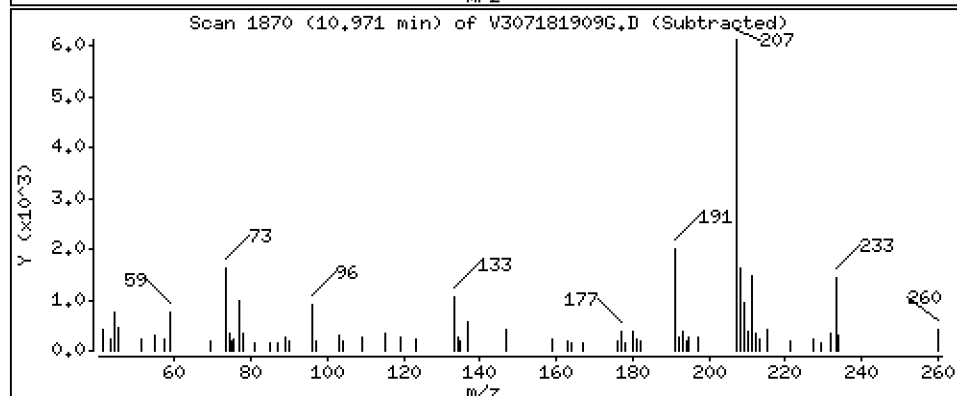
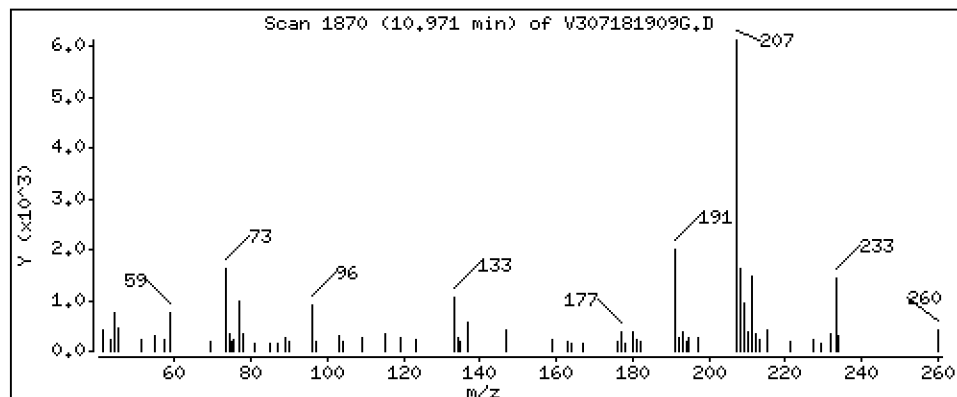
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

84 1,2,4-Trichlorobenzene

Concentration: 0.05552 ug/L



Date : 18-JUL-2019 12:49

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BLK1

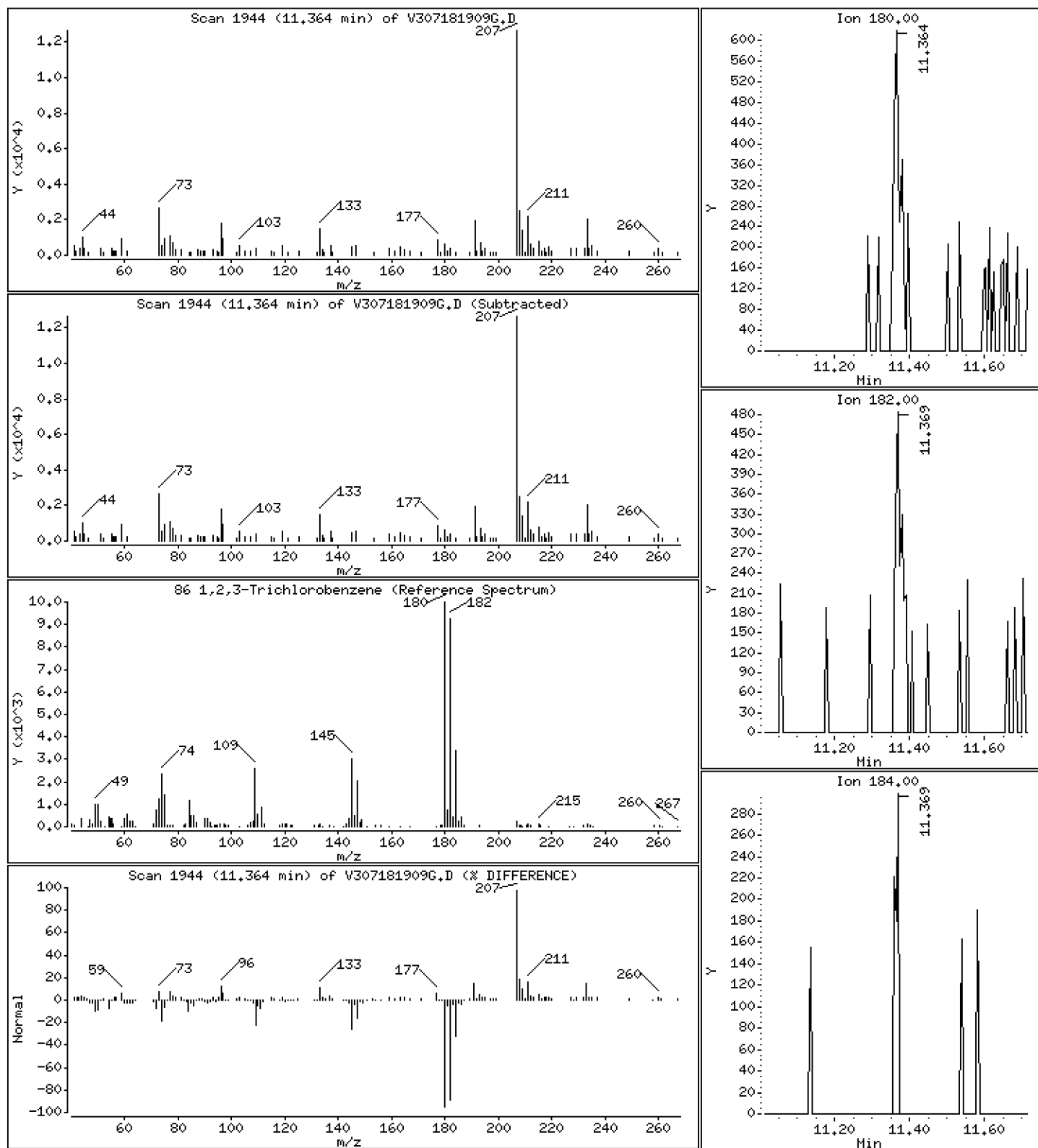
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

86 1,2,3-Trichlorobenzene

Concentration: 0.1218 ug/L



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718.b\V307181909G.D
 Lab Smp Id: BHG0439-BLK1
 Inj Date : 18-JUL-2019 12:49
 Operator : PKC Inst ID: nt3.i
 Smp Info : BHG0439-BLK1
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: mdl.sub
 Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	Compound Not Detected.					
5 Chloroethane	64	Compound Not Detected.					
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	61	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	Compound Not Detected.					
13 Methylene Chloride	84	3.542	3.547	(0.656)	2215	0.36690	0.3669 (M)
14 Acetone	43	Compound Not Detected.					
15 Trans-1,2-Dichloroethene	96	Compound Not Detected.					
17 Methyl tert butyl ether	73	Compound Not Detected.					
18 1,1-Dichloroethane	63	Compound Not Detected.					
19 Acrylonitrile	53	Compound Not Detected.					
20 Vinyl Acetate	43	Compound Not Detected.					
22 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
23 2,2-Dichloropropane	77	Compound Not Detected.					
24 Bromochloromethane	128	Compound Not Detected.					
25 Chloroform	83	Compound Not Detected.					
26 Carbon Tetrachloride	117	Compound Not Detected.					
\$ 27 Dibromofluoromethane	111	5.046	5.046	(0.934)	18807	4.85068	4.851 (R)
28 1,1,1-Trichloroethane	97	Compound Not Detected.					
30 1,1-Dichloropropene	75	Compound Not Detected.					
29 2-Butanone	43	Compound Not Detected.					
31 Benzene	78	Compound Not Detected.					
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	75770	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.434	5.434	(1.006)	23644	4.63087	4.631 (R)
34 1,2-Dichloroethane	62	Compound Not Detected.					
36 Trichloroethene	130	Compound Not Detected.					
* 37 1,4-Difluorobenzene	114	5.785	5.784	(1.000)	123016	10.0000	
38 Dibromomethane	93	Compound Not Detected.					

						CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)	
=====	=====	=====	=====	=====	=====	=====	=====	
39 1,2-Dichloropropane	63	Compound	Not	Detected.				
40 Bromodichloromethane	83	Compound	Not	Detected.				
173 2-Pentanone	86	Compound	Not	Detected.				
41 2-Chloroethyl Vinyl Ether	63	Compound	Not	Detected.				
42 Cis 1,3-dichloropropene	75	Compound	Not	Detected.				
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	79519	4.92695	4.927 (R)	
44 Toluene	92	Compound	Not	Detected.				
46 Tetrachloroethene	166	Compound	Not	Detected.				
45 4-Methyl-2-Pentanone	58	Compound	Not	Detected.				
47 Trans 1,3-Dichloropropene	75	Compound	Not	Detected.				
48 1,1,2-Trichloroethane	97	Compound	Not	Detected.				
49 Chlorodibromomethane	129	Compound	Not	Detected.				
50 1,3-Dichloropropane	76	Compound	Not	Detected.				
51 1,2-Dibromoethane	107	Compound	Not	Detected.				
52 2-Hexanone	43	Compound	Not	Detected.				
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	123872	10.0000		
54 Chlorobenzene	112	Compound	Not	Detected.				
55 Ethyl Benzene	106	Compound	Not	Detected.				
56 1,1,1,2-Tetrachloroethane	131	Compound	Not	Detected.				
57 m,p-xylene	106	Compound	Not	Detected.				
58 o-Xylene	106	Compound	Not	Detected.				
59 Styrene	104	Compound	Not	Detected.				
60 Bromoform	173	Compound	Not	Detected.				
61 Isopropyl Benzene	105	Compound	Not	Detected.				
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	22589	4.59252	4.593 (R)	
63 Bromobenzene	156	Compound	Not	Detected.				
64 N-Propyl Benzene	91	Compound	Not	Detected.				
65 1,1,2,2-Tetrachloroethane	83	Compound	Not	Detected.				
66 2-Chloro Toluene	91	Compound	Not	Detected.				
67 1,3,5-Trimethyl Benzene	105	Compound	Not	Detected.				
68 1,2,3-Trichloropropane	110	Compound	Not	Detected.				
69 Trans-1,4-Dichloro 2-Butene	53	Compound	Not	Detected.				
70 4-Chloro Toluene	91	Compound	Not	Detected.				
71 T-Butyl Benzene	119	Compound	Not	Detected.				
72 1,2,4-Trimethylbenzene	105	Compound	Not	Detected.				
73 S-Butyl Benzene	105	Compound	Not	Detected.				
74 4-Isopropyl Toluene	119	Compound	Not	Detected.				
75 1,3-Dichlorobenzene	146	Compound	Not	Detected.				
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	71515	10.0000		
77 1,4-Dichlorobenzene	146	Compound	Not	Detected.				
78 N-Butyl Benzene	91	Compound	Not	Detected.				
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	31464	4.68984	4.690 (R)	
80 1,2-Dichlorobenzene	146	Compound	Not	Detected.				
81 1,2-Dibromo 3-Chloropropane	75	Compound	Not	Detected.				
83 Hexachloro 1,3-Butadiene	225	Compound	Not	Detected.				
84 1,2,4-Trichlorobenzene	180	10.970	10.965	(1.155)	453	0.05552	0.05552 (M)	
85 Naphthalene	128	Compound	Not	Detected.				
86 1,2,3-Trichlorobenzene	180	11.364	11.363	(1.196)	772	0.12181	0.1218 (M)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181909G.D Calibration Time: 22:11
 Lab Smp Id: BHG0439-BLK1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	75770	2.83
37 1,4-Difluorobenze	116116	58058	232232	123016	5.94
53 d5-Chlorobenzene	124912	62456	249824	123872	-0.83
76 d4-1,4-Dichlorobe	77169	38585	154338	71515	-7.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0439-BLK1
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: mdl.sub
Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.851	97.01	
\$ 33 d4-1,2-Dichloroeth	5.000	4.631	92.62	
\$ 43 d8-Toluene	5.000	4.927	98.54	
\$ 62 4-Bromofluorobenze	5.000	4.593	91.85	
\$ 79 d4-1,2-Dichloroben	5.000	4.690	93.80	

REVIEW SUMMARY FOR FILE - V307181909G.D

Lab ID: BHG0439-BLK1

nt3.i, 20190718.b\8260C071619.m, 18-JUL-2019 12:49

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: V307181930G.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

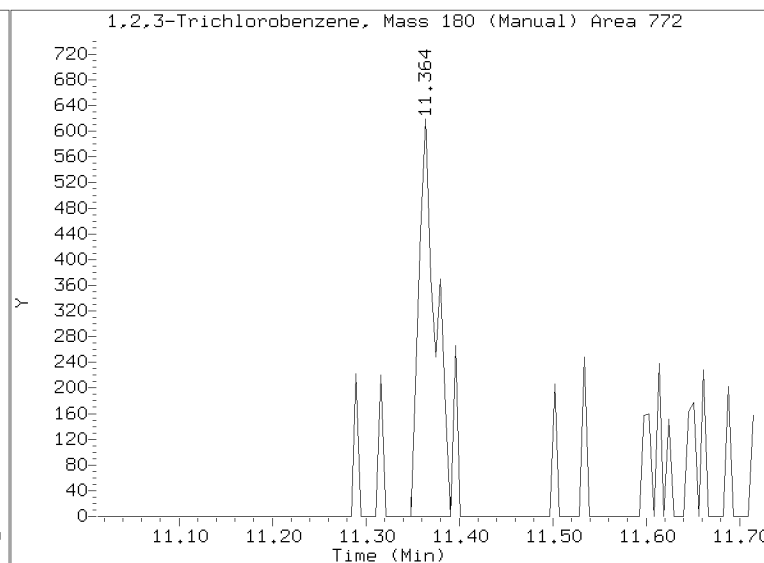
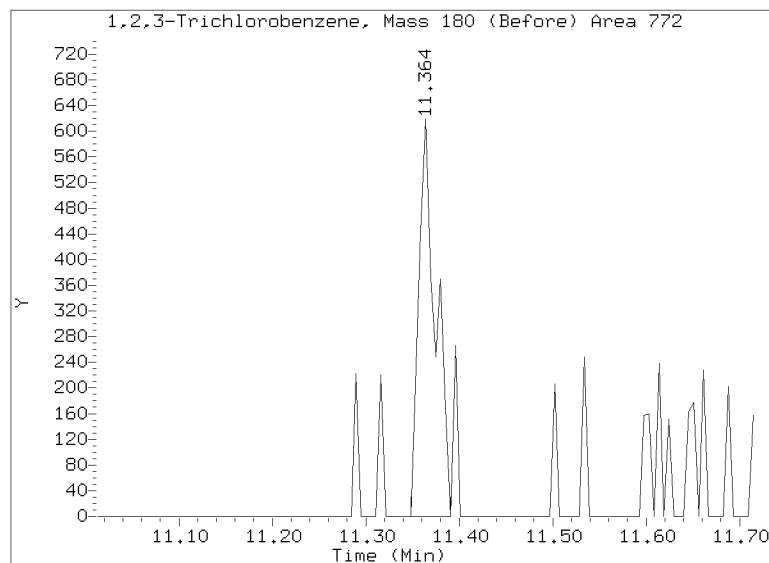
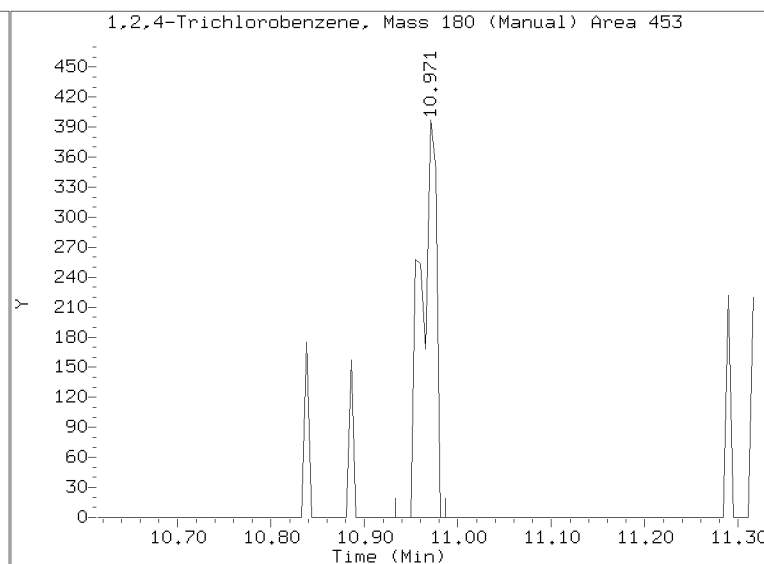
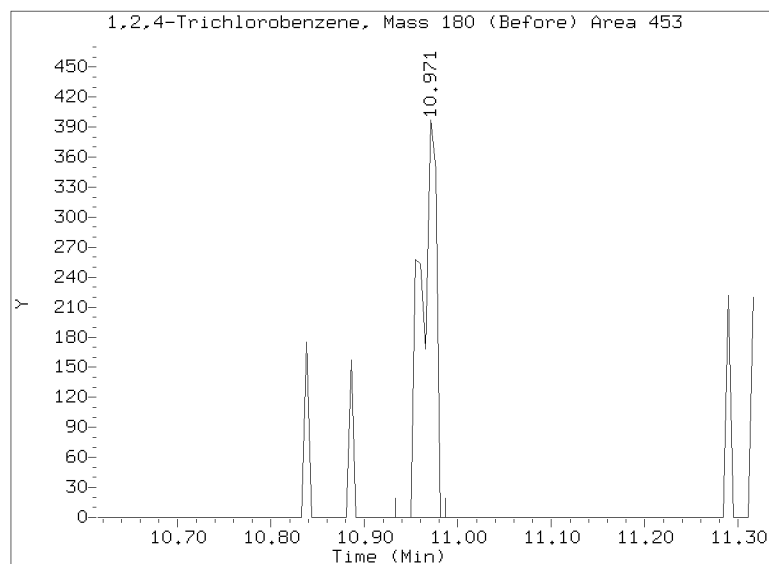
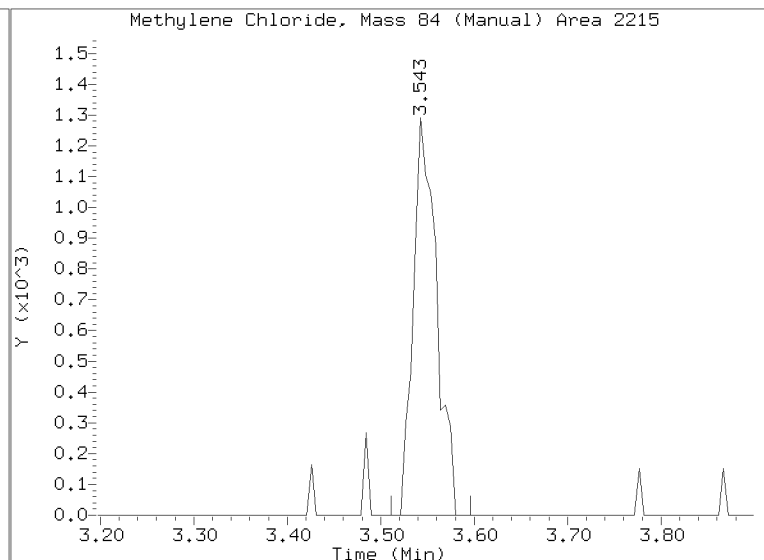
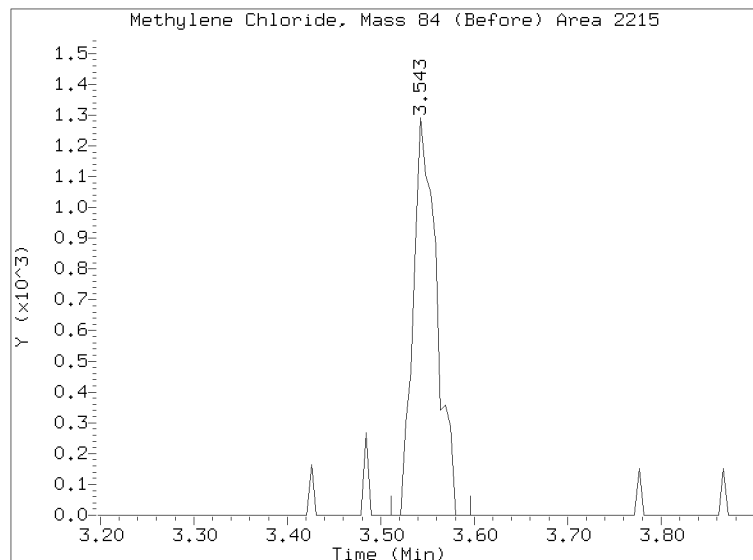
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190718.b/V307181909G.D

Injection Date: 18-JUL-2019 12:49

Lab ID: BHG0439-BLK1 Client ID:

Report Date: 07/19/2019 09:43





LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 12:25

Batch: BHG0316

Laboratory ID: BHG0316-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Chloromethane	50.0	48.3		96.5	64 - 132
Vinyl Chloride	50.0	50.5		101	74 - 135
Bromomethane	50.0	52.2		104	53 - 144
Chloroethane	50.0	53.5		107	55 - 149
Trichlorofluoromethane	50.0	50.1		100	61 - 164
Acrolein	250	238		95.1	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	52.1		104	74 - 143
Acetone	250	256		103	48 - 137
1,1-Dichloroethene	50.0	50.7		101	77 - 134
Bromoethane	50.0	50.1		100	65 - 145
Iodomethane	50.0	46.2		92.4	31 - 162
Methylene Chloride	50.0	46.9		93.9	69 - 129
Acrylonitrile	50.0	47.6		95.2	69 - 134
Carbon Disulfide	50.0	51.2		102	71 - 137
trans-1,2-Dichloroethene	50.0	50.3		101	79 - 130
Vinyl Acetate	50.0	51.8		104	66 - 141
1,1-Dichloroethane	50.0	50.3		101	80 - 126
2-Butanone	250	270		108	70 - 132
2,2-Dichloropropane	50.0	54.4		109	77 - 138
cis-1,2-Dichloroethene	50.0	51.5		103	80 - 125
Chloroform	50.0	51.3		103	80 - 126
Bromochloromethane	50.0	48.8		97.7	80 - 129
1,1,1-Trichloroethane	50.0	52.6		105	78 - 133
1,1-Dichloropropene	50.0	50.6		101	79 - 120
Carbon tetrachloride	50.0	47.0		94.1	71 - 129
1,2-Dichloroethane	50.0	43.2		86.4	76 - 120
Benzene	50.0	46.7		93.4	80 - 120
Trichloroethene	50.0	46.0		91.9	80 - 120
1,2-Dichloropropane	50.0	45.8		91.6	79 - 120
Bromodichloromethane	50.0	46.1		92.3	80 - 122
Dibromomethane	50.0	46.0		91.9	80 - 120
2-Chloroethyl vinyl ether	50.0	44.8		89.6	51 - 129
4-Methyl-2-Pentanone	250	236		94.3	73 - 121



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 12:25

Batch: BHG0316

Laboratory ID: BHG0316-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
cis-1,3-Dichloropropene	50.0	46.9		93.8	80 - 120
Toluene	50.0	45.2		90.4	75 - 120
trans-1,3-Dichloropropene	50.0	46.8		93.7	80 - 124
2-Hexanone	250	228		91.3	68 - 122
1,1,2-Trichloroethane	50.0	44.8		89.6	79 - 120
1,3-Dichloropropane	50.0	42.9		85.9	78 - 120
Tetrachloroethene	50.0	44.0		87.9	74 - 124
Dibromochloromethane	50.0	44.0		88.0	74 - 125
1,2-Dibromoethane	50.0	45.1		90.1	80 - 120
Chlorobenzene	50.0	42.6		85.2	78 - 120
Ethylbenzene	50.0	44.3		88.6	80 - 125
1,1,1,2-Tetrachloroethane	50.0	43.8		87.5	80 - 120
m,p-Xylene	100	87.5		87.5	76 - 121
o-Xylene	50.0	43.5		87.0	67 - 132
Xylenes, total	150	131		87.3	67 - 132
Styrene	50.0	43.7		87.5	80 - 120
Bromoform	50.0	42.3		84.6	64 - 128
1,1,2,2-Tetrachloroethane	50.0	44.0		88.0	74 - 120
1,2,3-Trichloropropane	50.0	43.0		86.0	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	45.4		90.9	65 - 125
n-Propylbenzene	50.0	46.0		92.0	72 - 124
Bromobenzene	50.0	42.7		85.3	76 - 120
Isopropyl Benzene	50.0	45.8		91.5	74 - 121
2-Chlorotoluene	50.0	44.8		89.5	75 - 120
4-Chlorotoluene	50.0	45.0		90.1	69 - 124
t-Butylbenzene	50.0	44.6		89.1	72 - 122
1,3,5-Trimethylbenzene	50.0	45.0		90.0	74 - 122
1,2,4-Trimethylbenzene	50.0	45.2		90.3	75 - 121
s-Butylbenzene	50.0	45.4		90.8	70 - 128
4-Isopropyl Toluene	50.0	45.8		91.6	75 - 125
1,3-Dichlorobenzene	50.0	42.7		85.4	75 - 120
1,4-Dichlorobenzene	50.0	42.6		85.1	73 - 120
n-Butylbenzene	50.0	46.7		93.4	73 - 130



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 12:25

Batch: BHG0316

Laboratory ID: BHG0316-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	50.0	42.4		84.8	76 - 120
1,2-Dibromo-3-chloropropane	50.0	45.0		90.0	65 - 126
1,2,4-Trichlorobenzene	50.0	44.5		89.0	66 - 140
Hexachloro-1,3-Butadiene	50.0	44.6		89.1	67 - 133
Naphthalene	50.0	44.2		88.4	69 - 125
1,2,3-Trichlorobenzene	50.0	43.4		86.8	68 - 132
Dichlorodifluoromethane	50.0	43.3		86.5	67 - 142
Methyl tert-butyl Ether	50.0	48.1		96.1	79 - 127
2-Pentanone	250	246		98.5	77 - 120

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloromethane	50.0	46.8		93.5	3.18	30	64 - 132
Vinyl Chloride	50.0	48.6		97.3	3.71	30	74 - 135
Bromomethane	50.0	51.9		104	0.471	30	53 - 144
Chloroethane	50.0	51.6		103	3.60	30	55 - 149
Trichlorofluoromethane	50.0	48.4		96.9	3.29	30	61 - 164
Acrolein	250	231		92.4	2.89	30	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	51.4		103	1.36	30	74 - 143
Acetone	250	240		96.0	6.50	30	48 - 137
1,1-Dichloroethene	50.0	49.1		98.3	3.15	30	77 - 134
Bromoethane	50.0	47.3		94.5	5.76	30	65 - 145
Iodomethane	50.0	45.7		91.4	1.14	30	31 - 162
Methylene Chloride	50.0	45.7		91.4	2.63	30	69 - 129
Acrylonitrile	50.0	47.0		94.1	1.17	30	69 - 134
Carbon Disulfide	50.0	49.8		99.7	2.77	30	71 - 137
trans-1,2-Dichloroethene	50.0	49.5		99.0	1.60	30	79 - 130
Vinyl Acetate	50.0	49.5		99.1	4.52	30	66 - 141
1,1-Dichloroethane	50.0	49.5		99.0	1.71	30	80 - 126
2-Butanone	250	260		104	4.07	30	70 - 132
2,2-Dichloropropane	50.0	52.4		105	3.70	30	77 - 138
cis-1,2-Dichloroethene	50.0	50.1		100	2.72	30	80 - 125

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 13:05

Batch: BHG0316

Laboratory ID: BHG0316-BSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS Dup

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloroform	50.0	49.2		98.4	4.26	30	80 - 126
Bromochloromethane	50.0	47.5		95.0	2.81	30	80 - 129
1,1,1-Trichloroethane	50.0	50.8		102	3.57	30	78 - 133
1,1-Dichloropropene	50.0	49.7		99.4	1.84	30	79 - 120
Carbon tetrachloride	50.0	46.7		93.5	0.679	30	71 - 129
1,2-Dichloroethane	50.0	42.4		84.7	1.94	30	76 - 120
Benzene	50.0	45.5		91.1	2.55	30	80 - 120
Trichloroethene	50.0	46.0		91.9	0.0307	30	80 - 120
1,2-Dichloropropane	50.0	45.2		90.4	1.27	30	79 - 120
Bromodichloromethane	50.0	45.1		90.2	2.25	30	80 - 122
Dibromomethane	50.0	43.7		87.4	5.08	30	80 - 120
2-Chloroethyl vinyl ether	50.0	43.5		87.0	2.92	30	51 - 129
4-Methyl-2-Pentanone	250	231		92.4	2.05	30	73 - 121
cis-1,3-Dichloropropene	50.0	45.4		90.8	3.26	30	80 - 120
Toluene	50.0	44.6		89.2	1.34	30	75 - 120
trans-1,3-Dichloropropene	50.0	45.0		90.0	3.99	30	80 - 124
2-Hexanone	250	219		87.6	4.12	30	68 - 122
1,1,2-Trichloroethane	50.0	42.2		84.3	6.06	30	79 - 120
1,3-Dichloropropane	50.0	41.1		82.3	4.32	30	78 - 120
Tetrachloroethene	50.0	43.4		86.9	1.21	30	74 - 124
Dibromochloromethane	50.0	42.0		84.0	4.66	30	74 - 125
1,2-Dibromoethane	50.0	42.9		85.8	4.95	30	80 - 120
Chlorobenzene	50.0	42.6		85.2	0.0840	30	78 - 120
Ethylbenzene	50.0	43.6		87.1	1.72	30	80 - 125
1,1,1,2-Tetrachloroethane	50.0	42.1		84.3	3.79	30	80 - 120
m,p-Xylene	100	86.4		86.4	1.23	30	76 - 121
o-Xylene	50.0	42.5		85.0	2.33	30	67 - 132
Xylenes, total	150	129		85.9	1.59	30	67 - 132
Styrene	50.0	43.3		86.6	0.953	30	80 - 120
Bromoform	50.0	40.3		80.6	4.87	30	64 - 128
1,1,2,2-Tetrachloroethane	50.0	41.6		83.1	5.73	30	74 - 120
1,2,3-Trichloropropane	50.0	41.3		82.6	4.10	30	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	42.6		85.2	6.42	30	65 - 125

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 13:05

Batch: BHG0316

Laboratory ID: BHG0316-BSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS Dup

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
n-Propylbenzene	50.0	45.0		90.0	2.19	30	72 - 124
Bromobenzene	50.0	41.5		83.1	2.68	30	76 - 120
Isopropyl Benzene	50.0	44.8		89.6	2.10	30	74 - 121
2-Chlorotoluene	50.0	43.7		87.4	2.40	30	75 - 120
4-Chlorotoluene	50.0	43.7		87.4	2.99	30	69 - 124
t-Butylbenzene	50.0	43.6		87.2	2.21	30	72 - 122
1,3,5-Trimethylbenzene	50.0	44.0		88.0	2.30	30	74 - 122
1,2,4-Trimethylbenzene	50.0	44.2		88.3	2.24	30	75 - 121
s-Butylbenzene	50.0	44.5		88.9	2.08	30	70 - 128
4-Isopropyl Toluene	50.0	45.4		90.9	0.865	30	75 - 125
1,3-Dichlorobenzene	50.0	42.6		85.2	0.143	30	75 - 120
1,4-Dichlorobenzene	50.0	42.2		84.5	0.757	30	73 - 120
n-Butylbenzene	50.0	45.7		91.4	2.23	30	73 - 130
1,2-Dichlorobenzene	50.0	41.4		82.8	2.41	30	76 - 120
1,2-Dibromo-3-chloropropane	50.0	41.6		83.1	7.91	30	65 - 126
1,2,4-Trichlorobenzene	50.0	44.0		88.0	1.10	30	66 - 140
Hexachloro-1,3-Butadiene	50.0	45.6		91.1	2.21	30	67 - 133
Naphthalene	50.0	43.8		87.7	0.858	30	69 - 125
1,2,3-Trichlorobenzene	50.0	43.1		86.3	0.643	30	68 - 132
Dichlorodifluoromethane	50.0	40.9		81.8	5.63	30	67 - 142
Methyl tert-butyl Ether	50.0	45.4		90.7	5.81	30	79 - 127
2-Pentanone	250	235		94.1	4.55	30	77 - 120

* Indicates values outside of QC limits

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121903A.D

Date : 12-JUL-2019 12:25

Client ID:

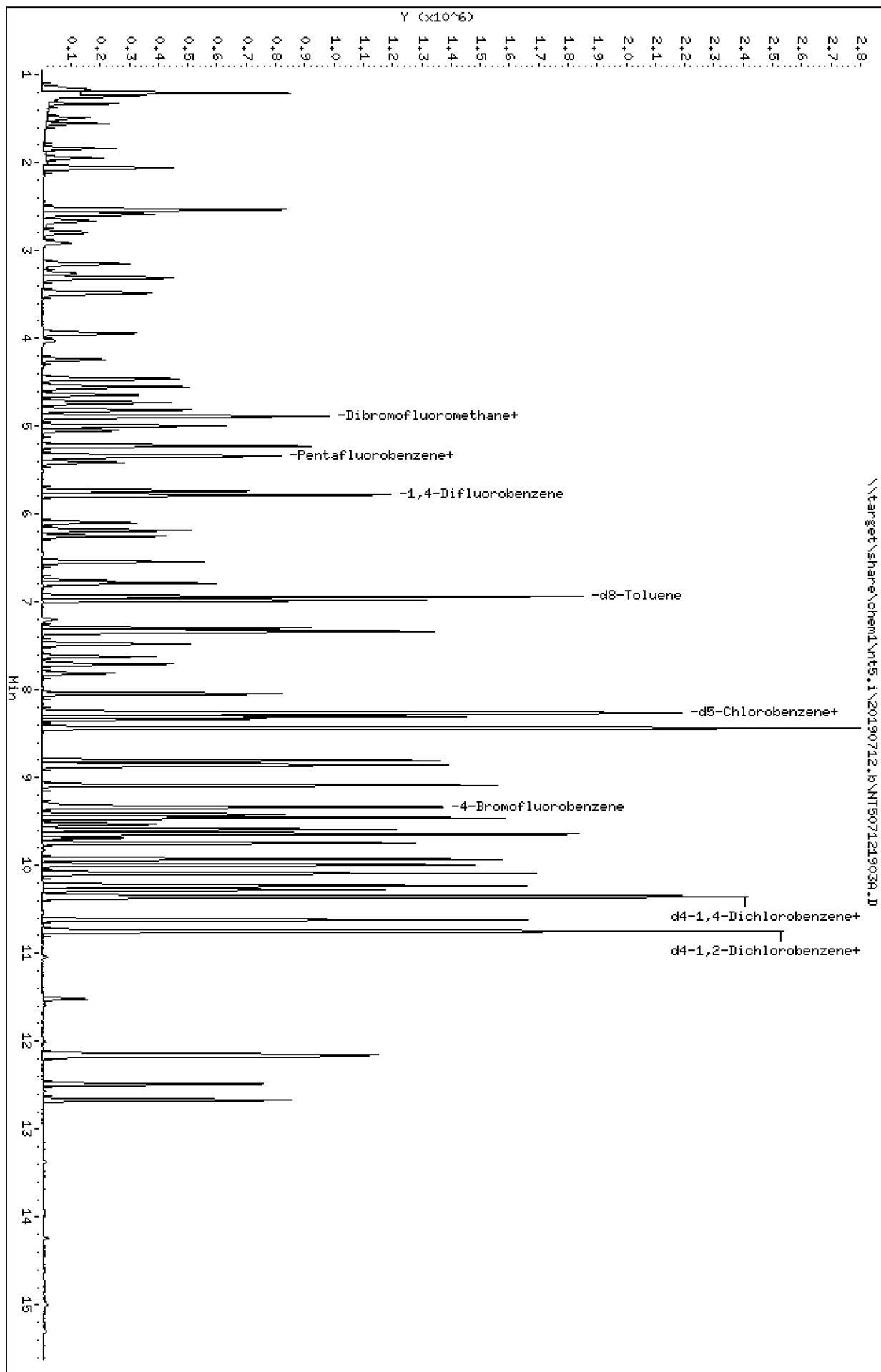
Sample Info: ICW1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

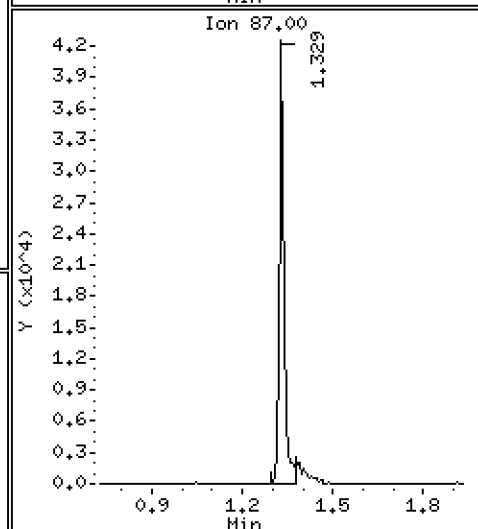
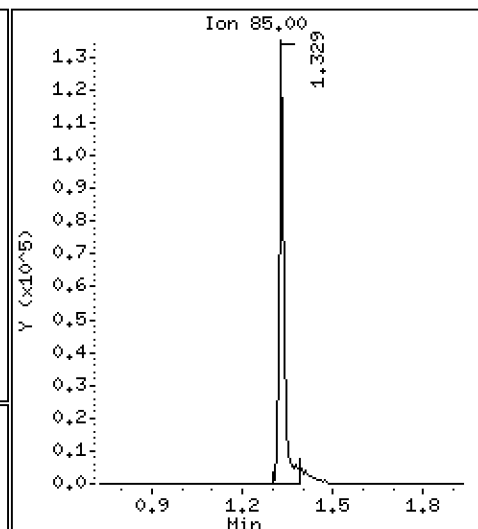
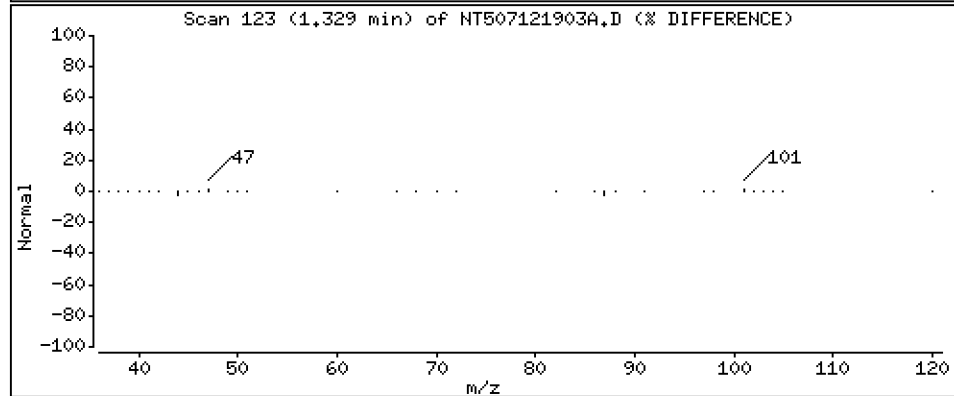
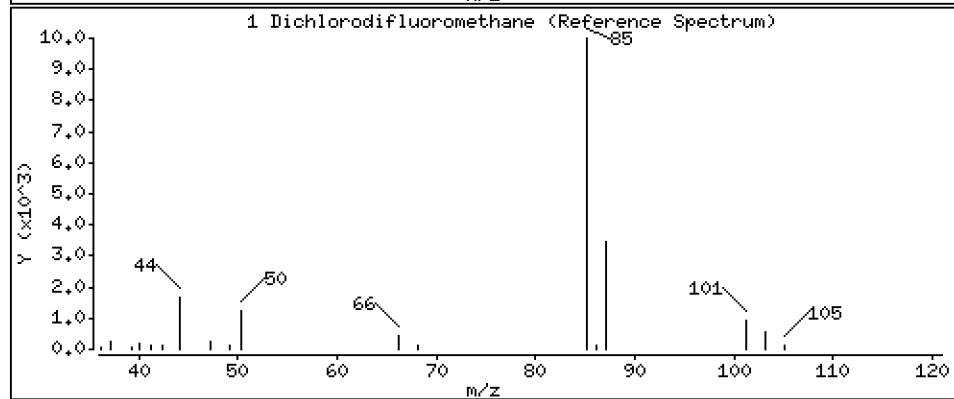
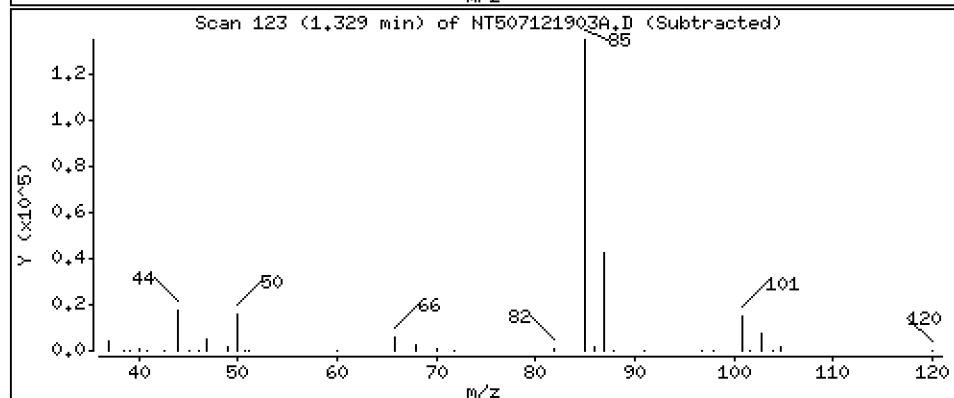
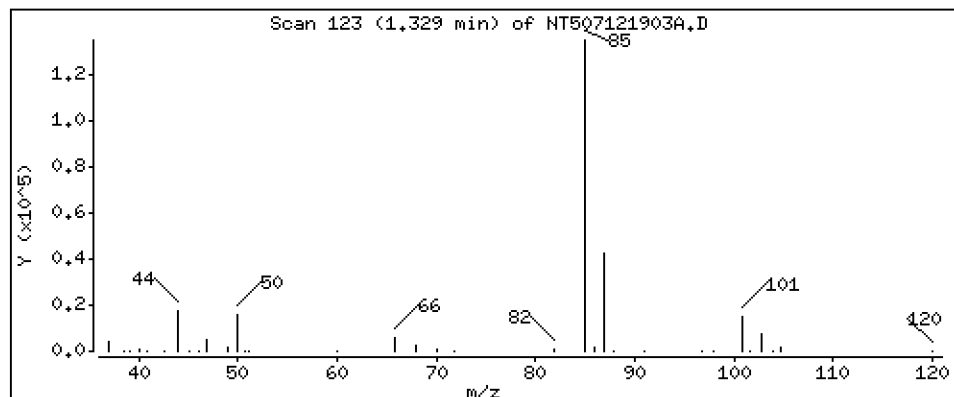
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 43,268 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

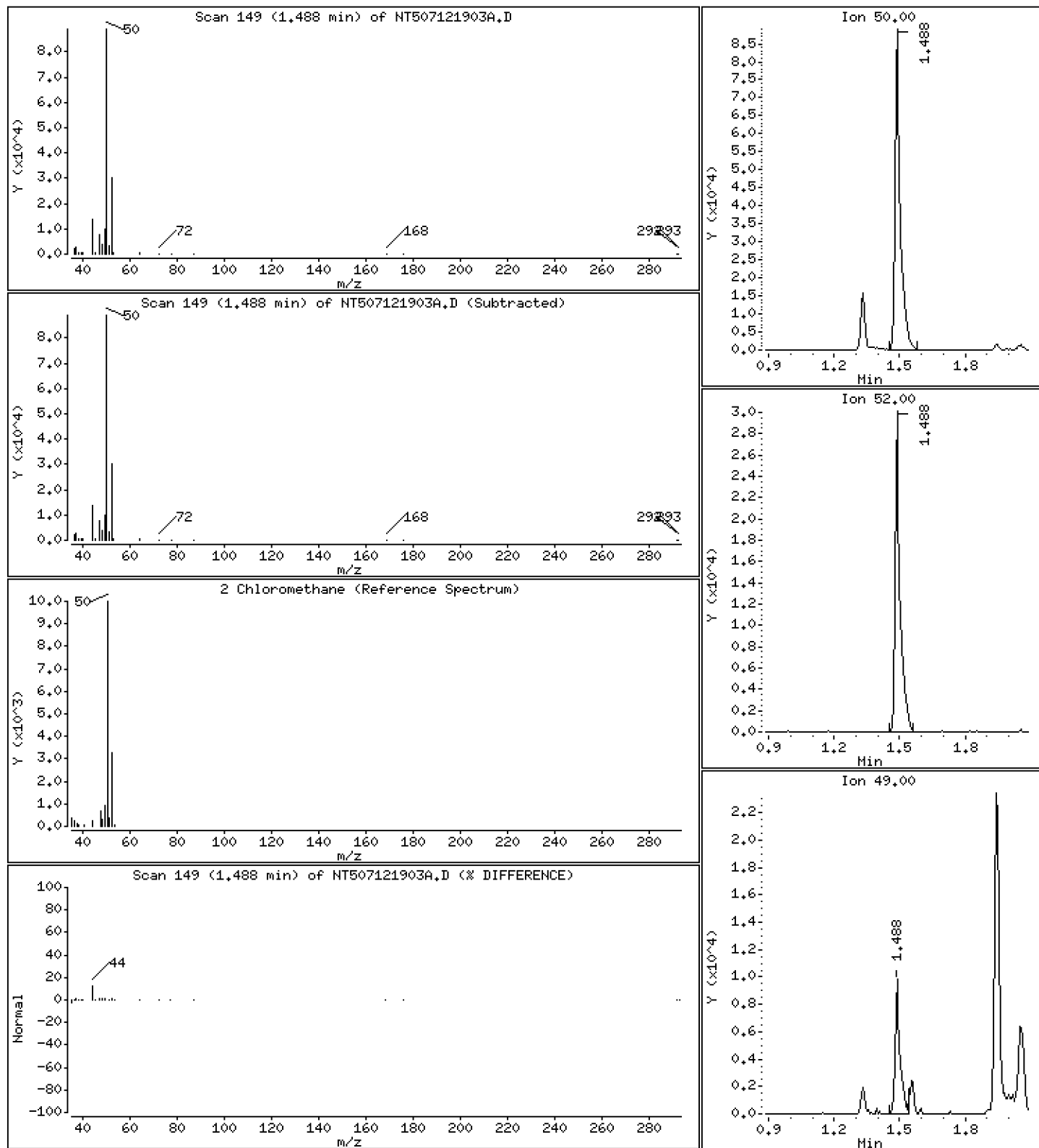
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 48,260 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

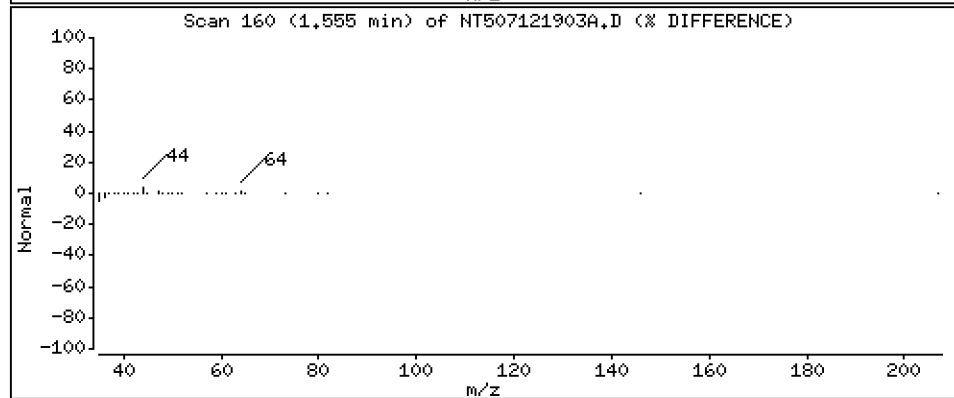
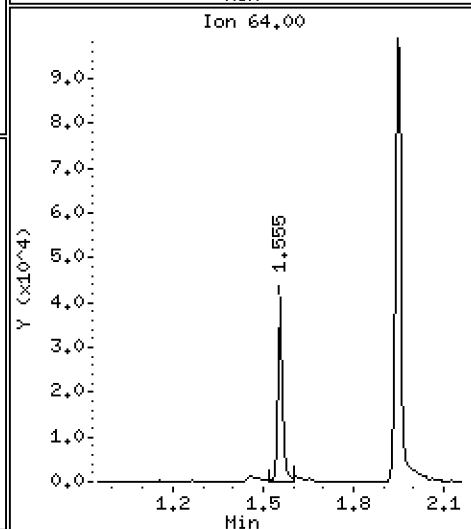
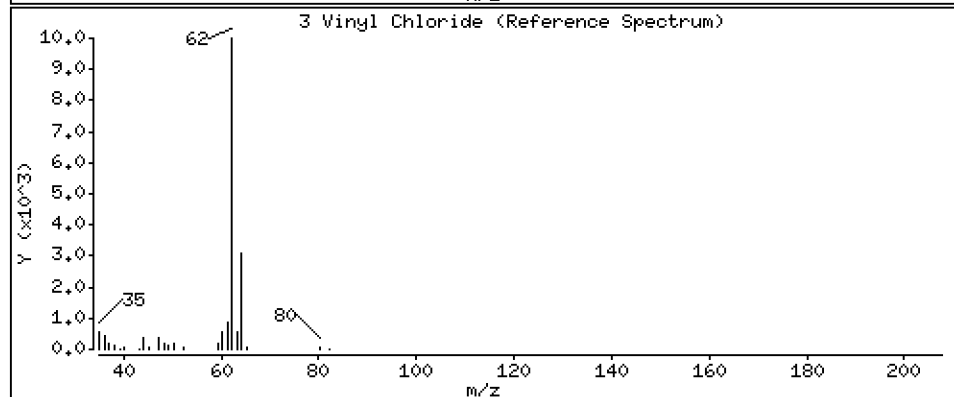
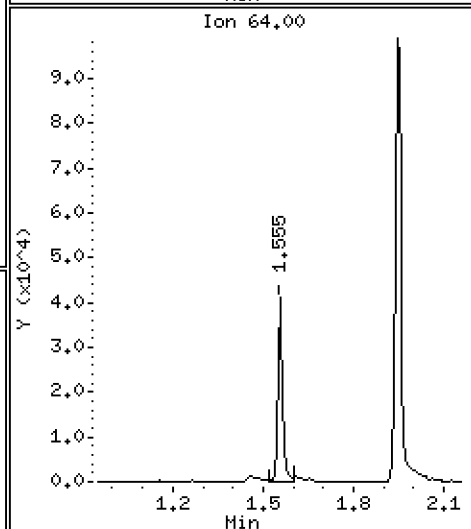
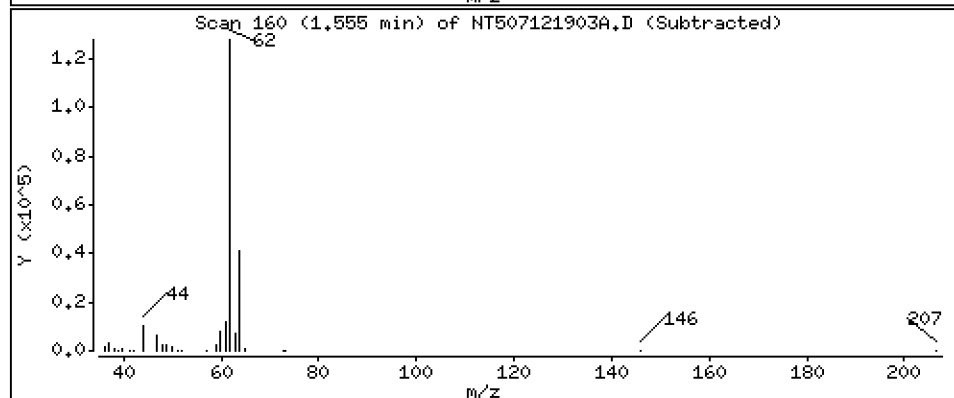
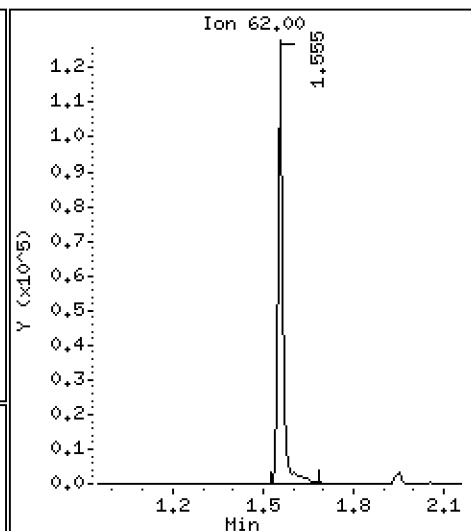
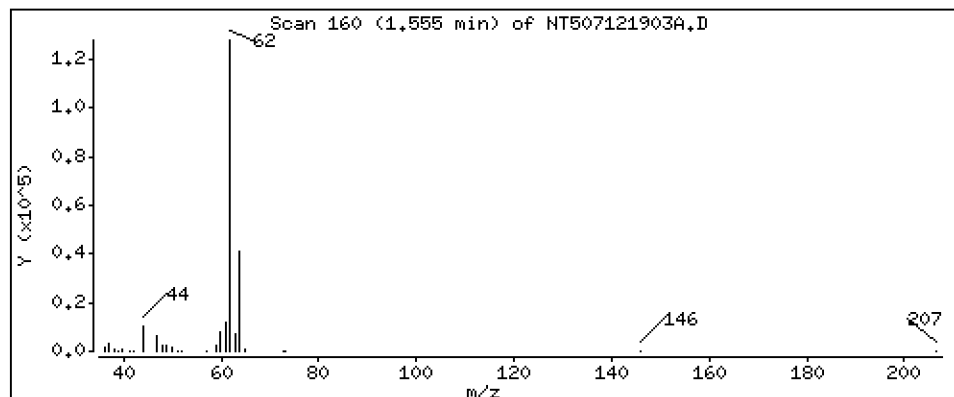
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 50,474 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

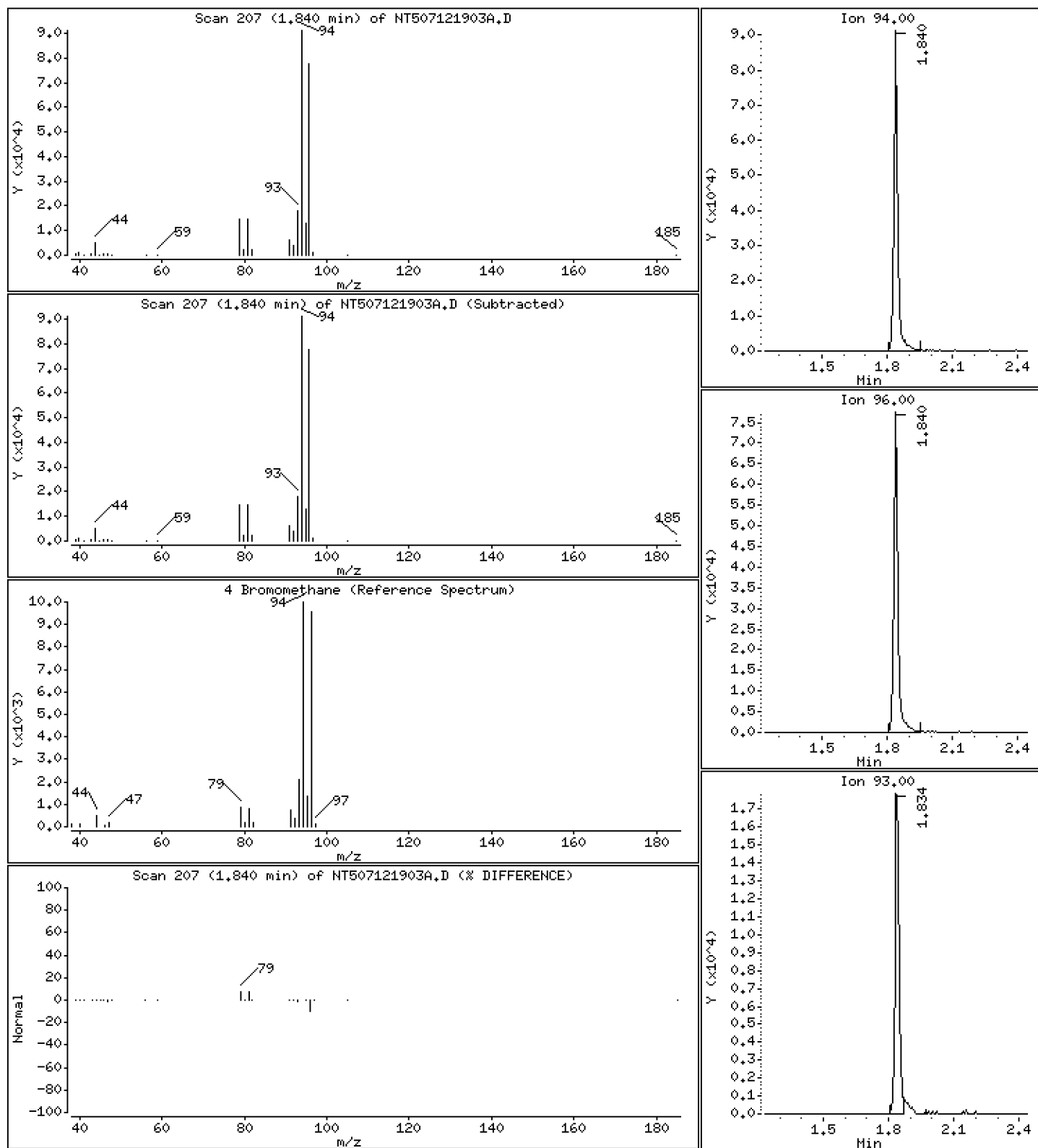
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 52,183 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

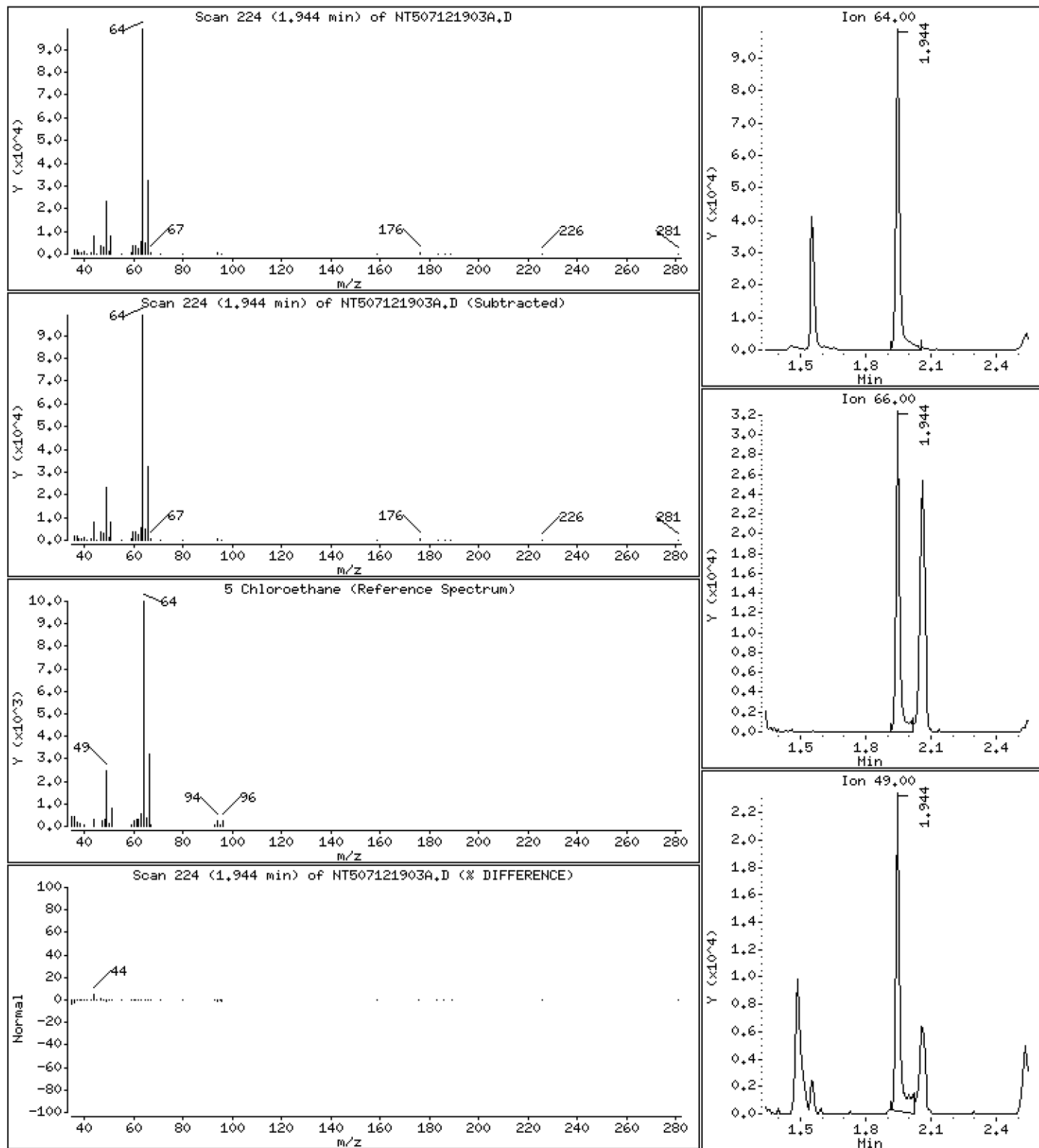
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 53,461 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

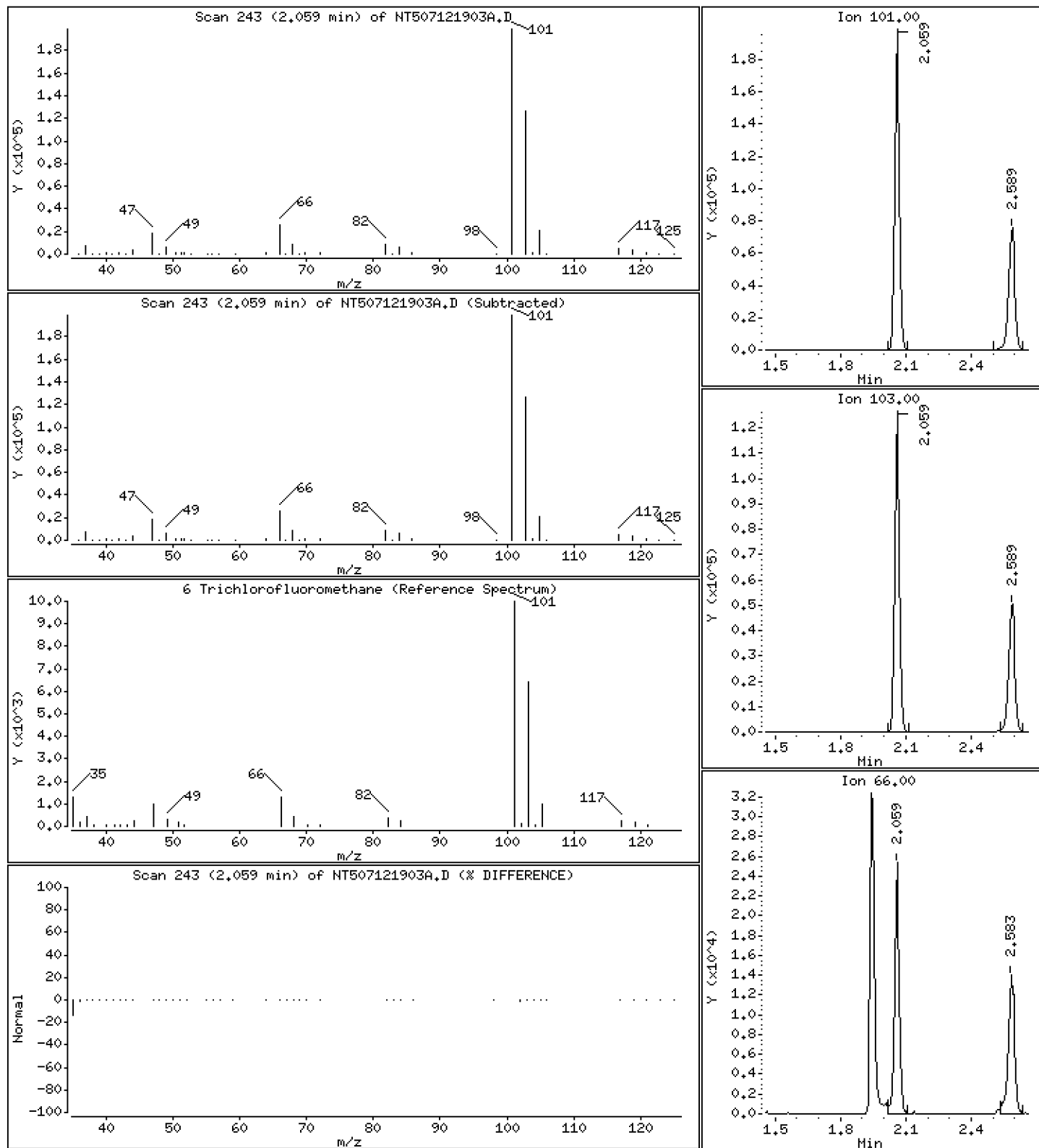
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 50.058 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

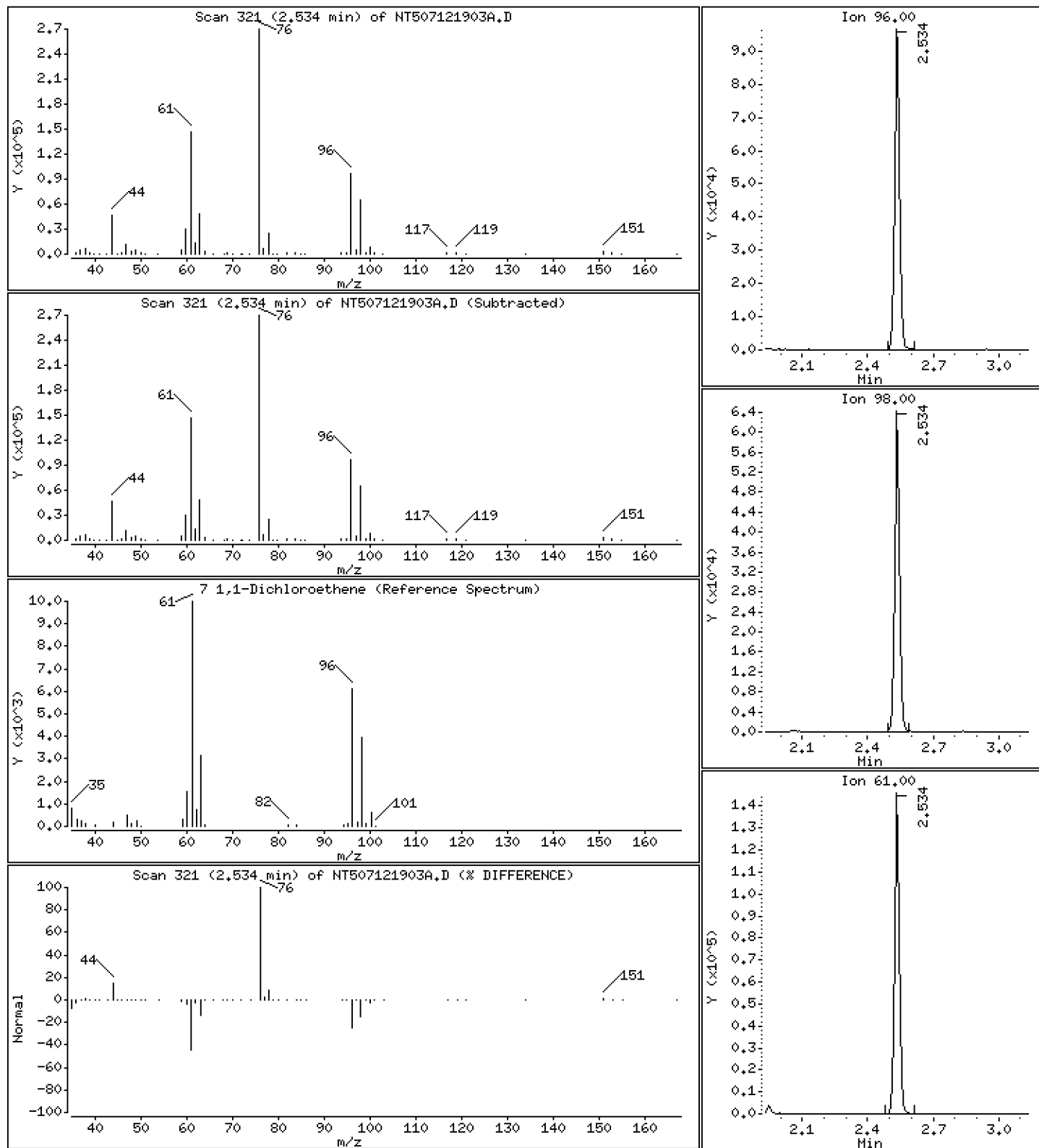
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 50,710 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

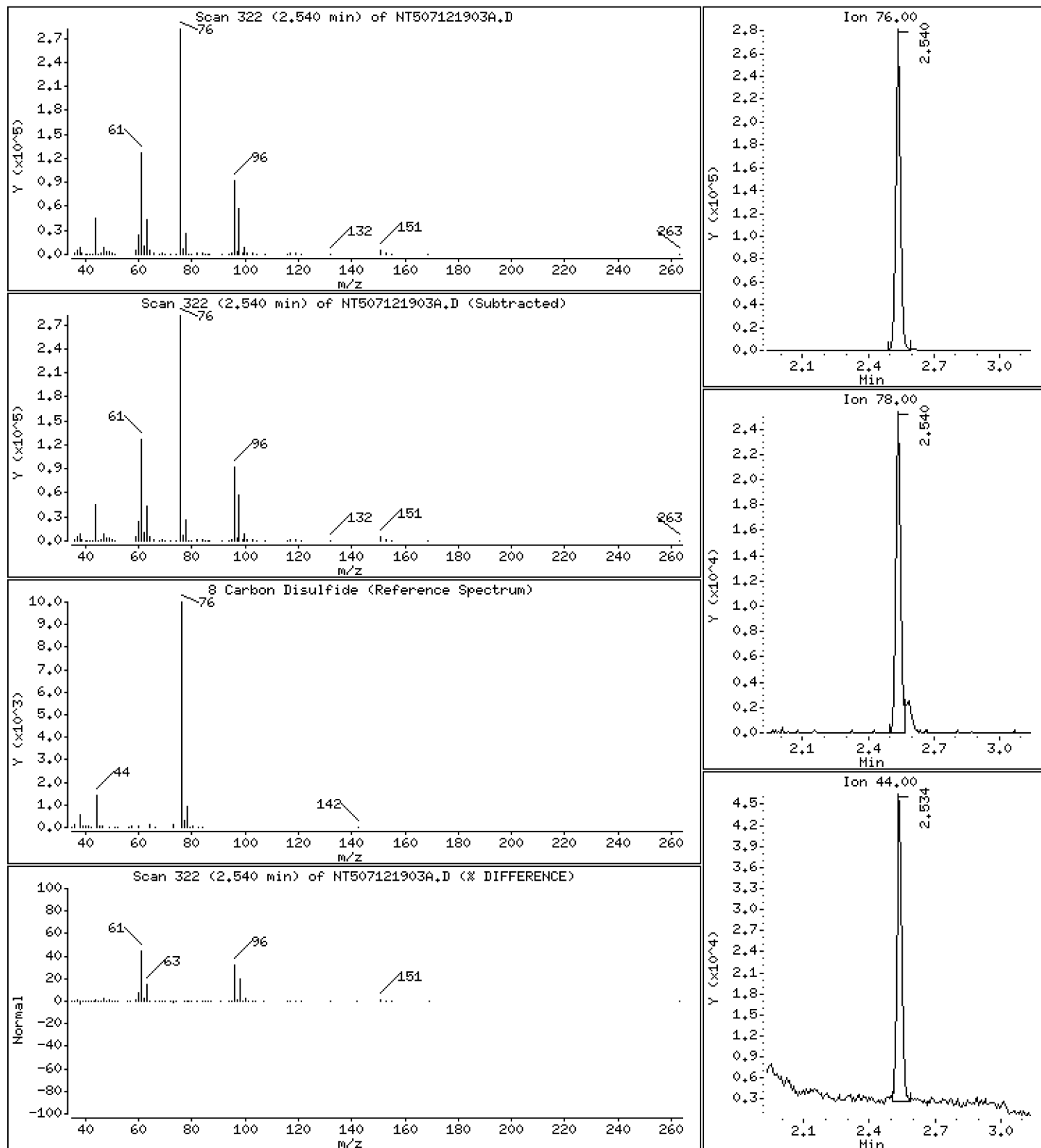
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 51,233 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

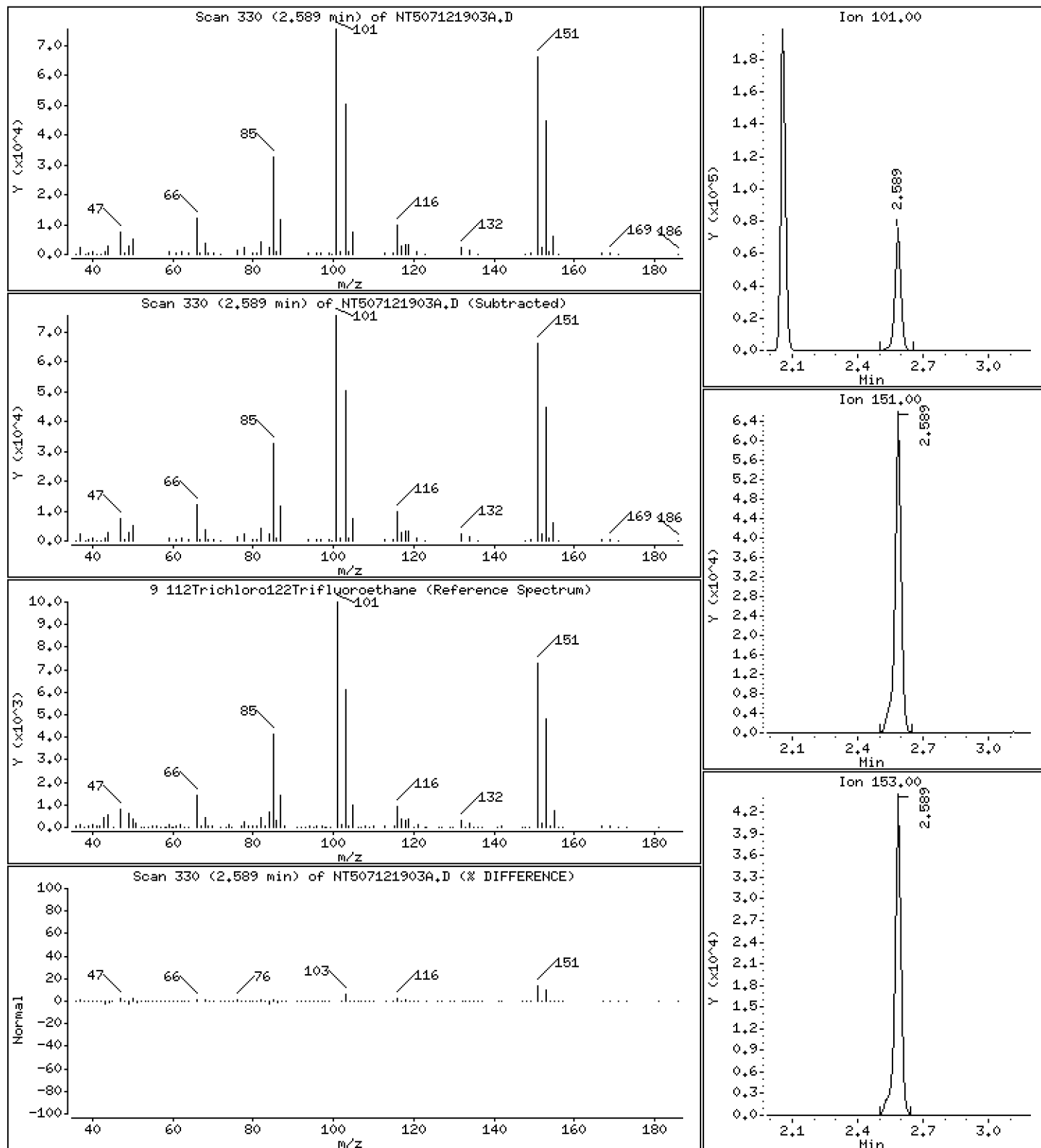
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 52,056 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

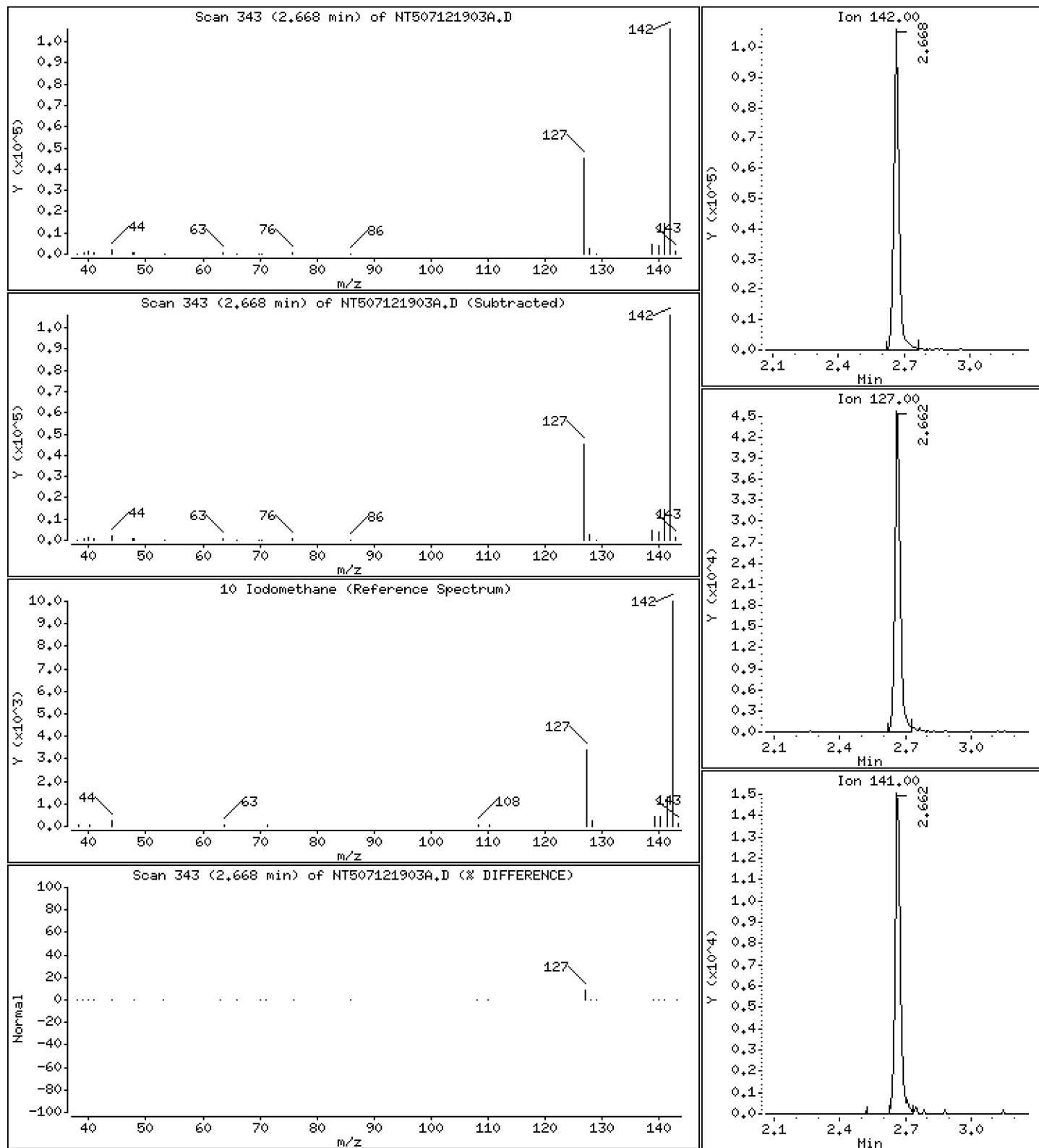
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 46,218 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

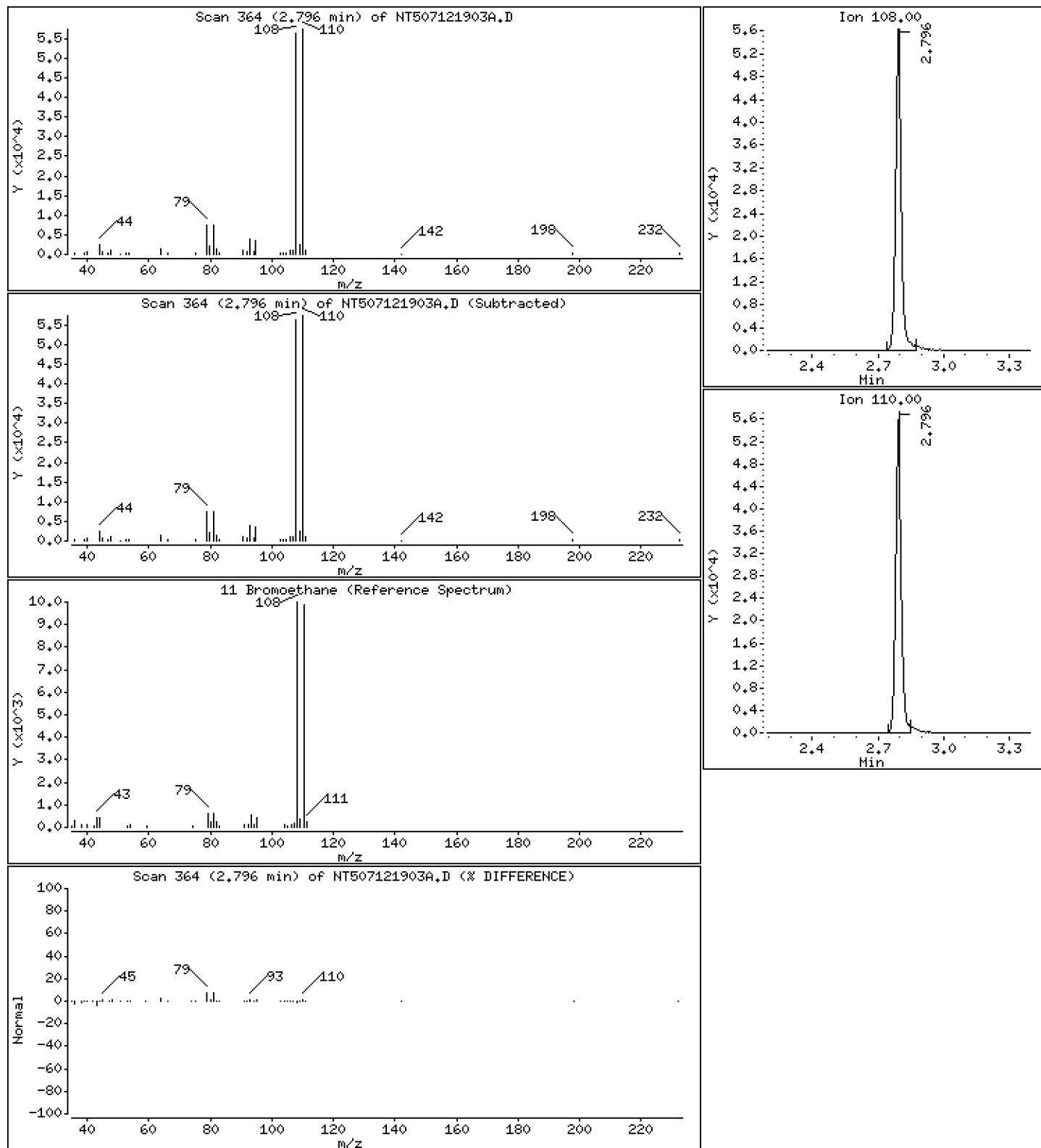
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 50.072 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

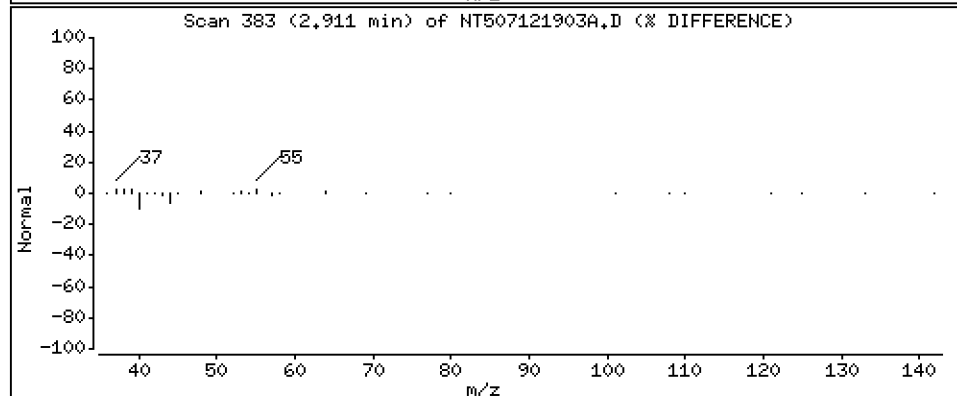
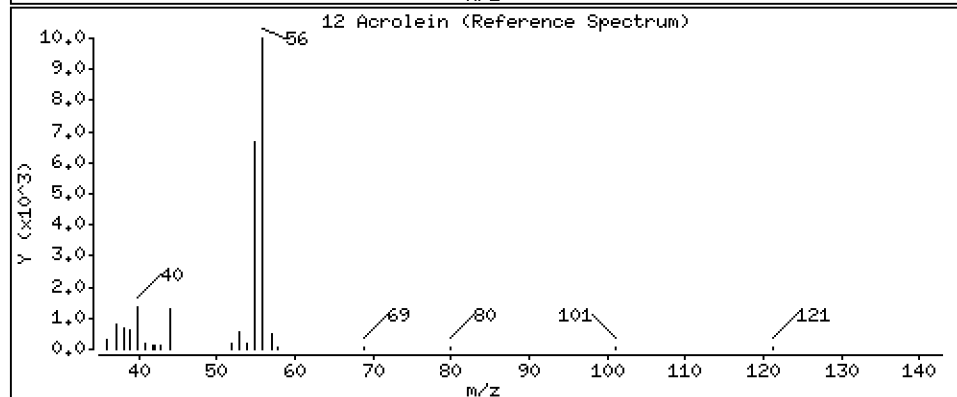
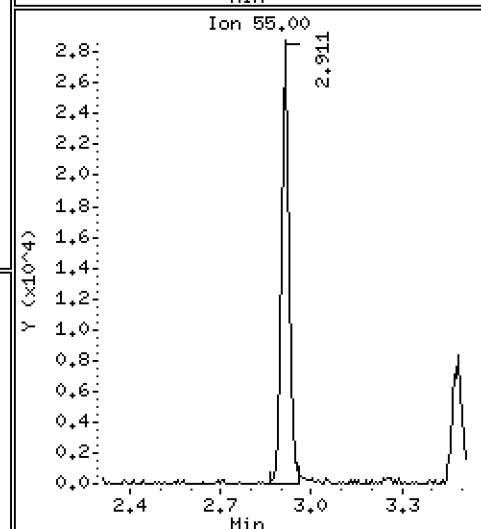
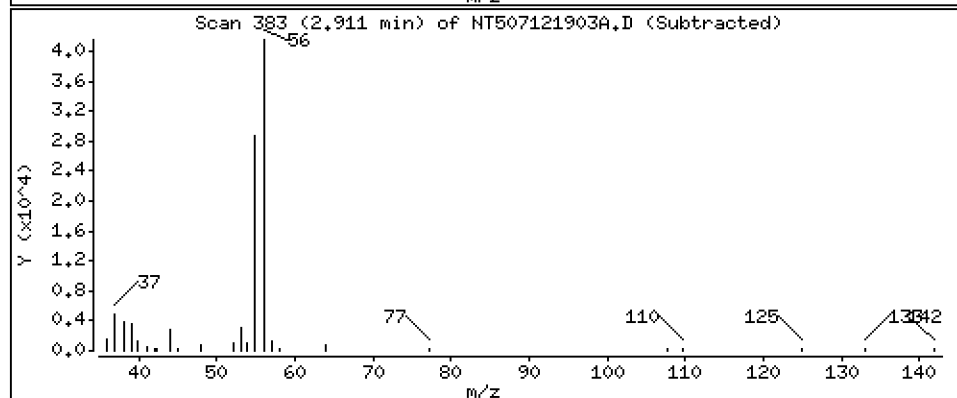
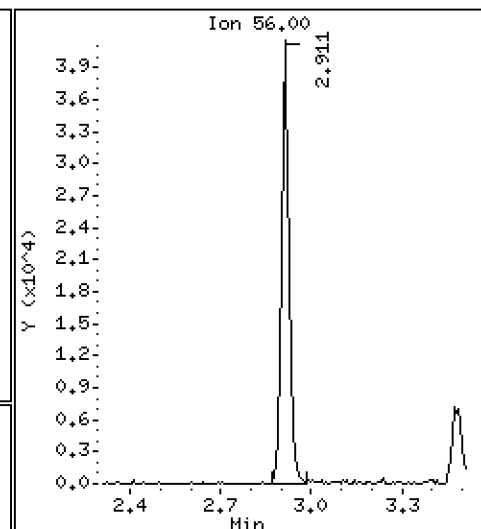
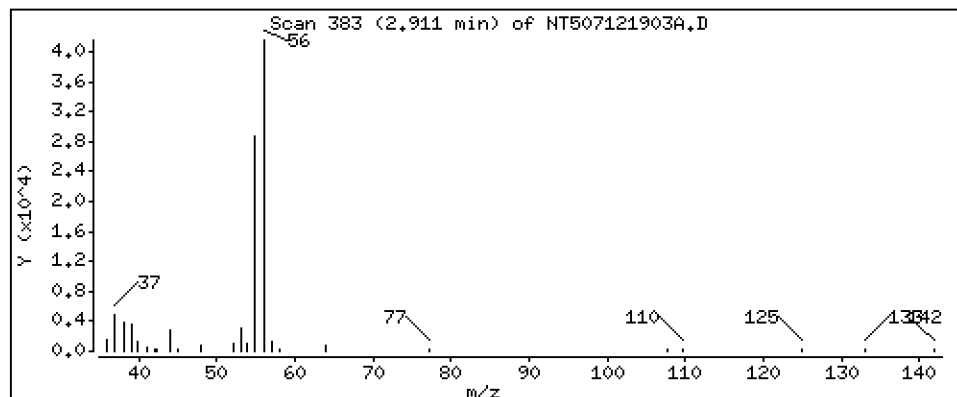
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 237.79 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

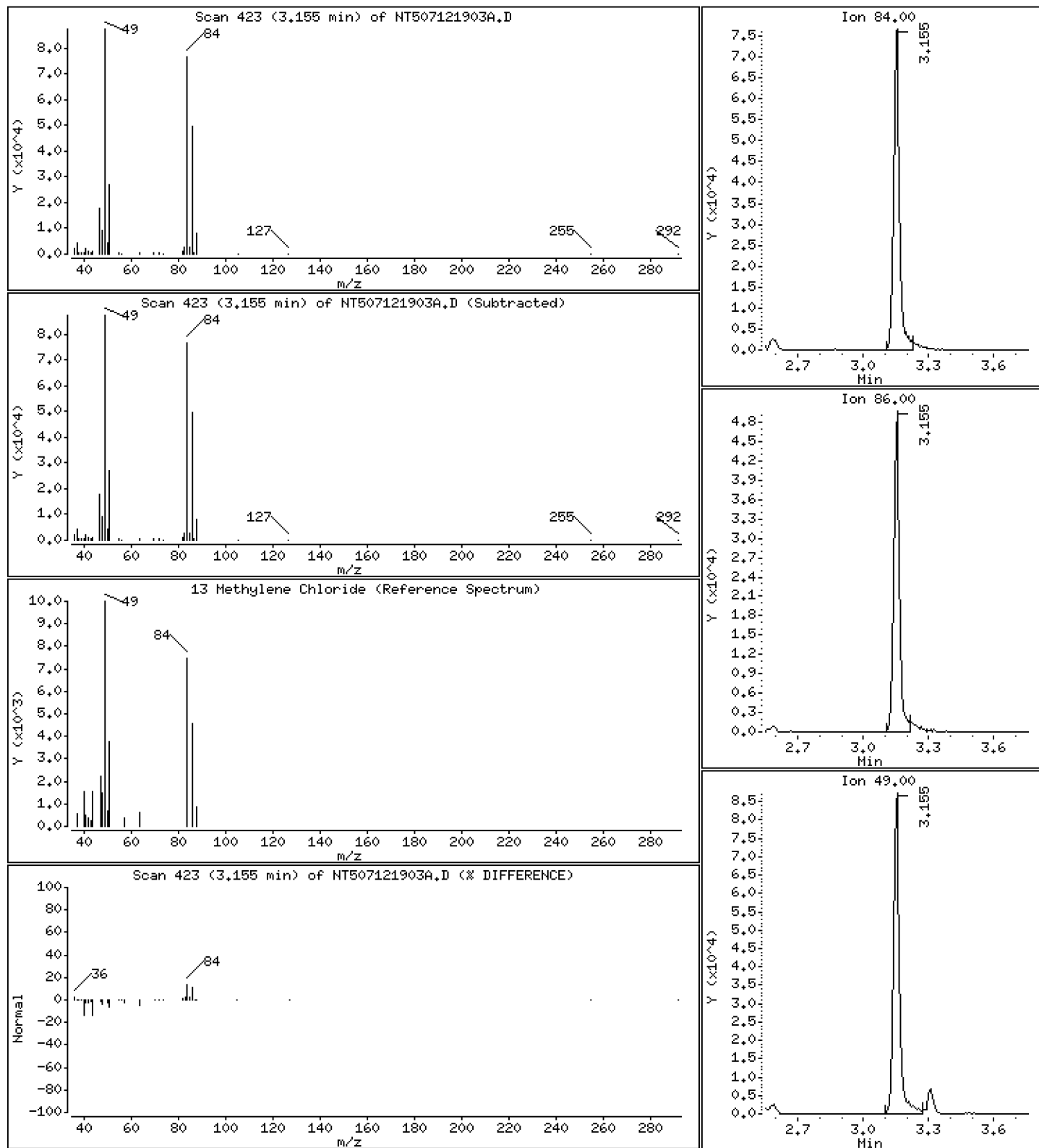
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 46,934 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

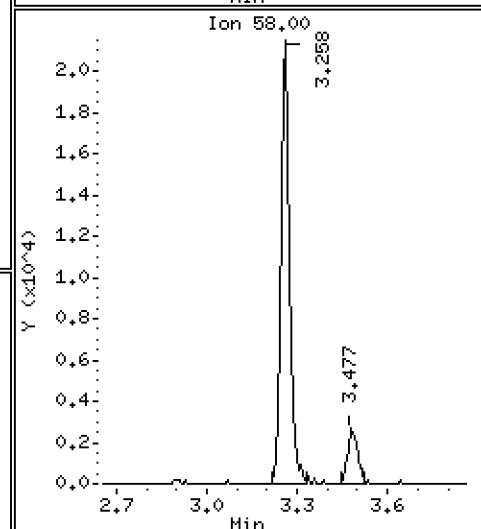
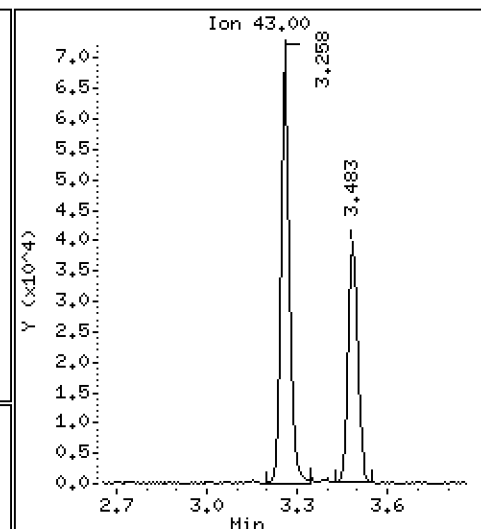
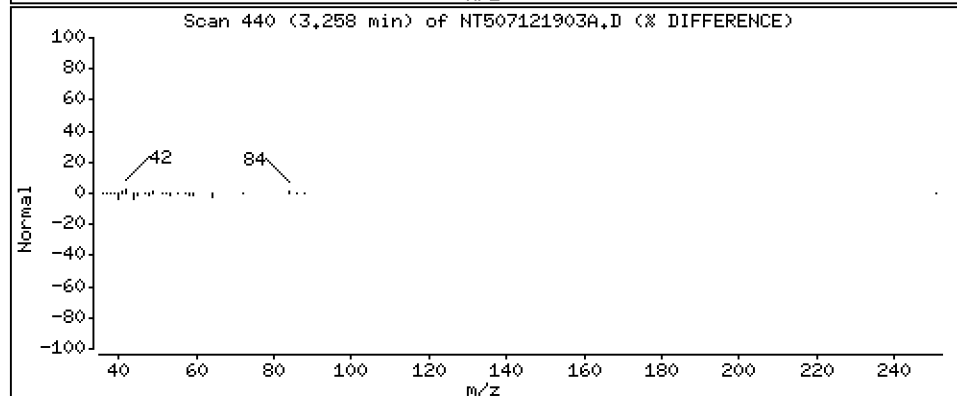
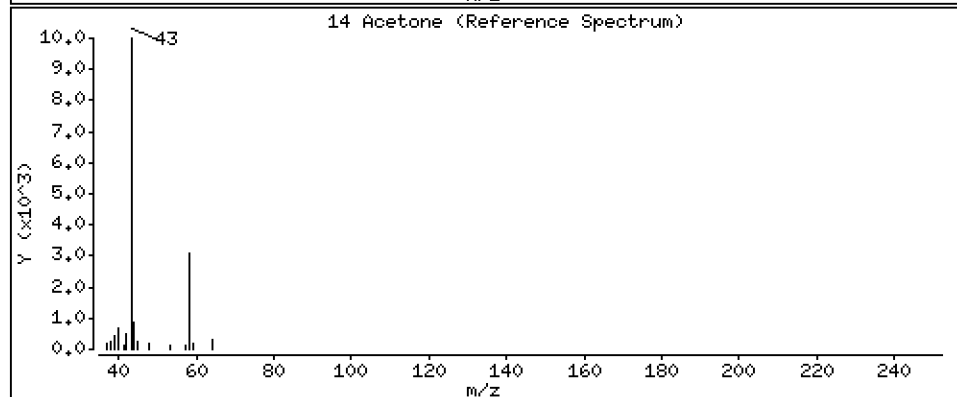
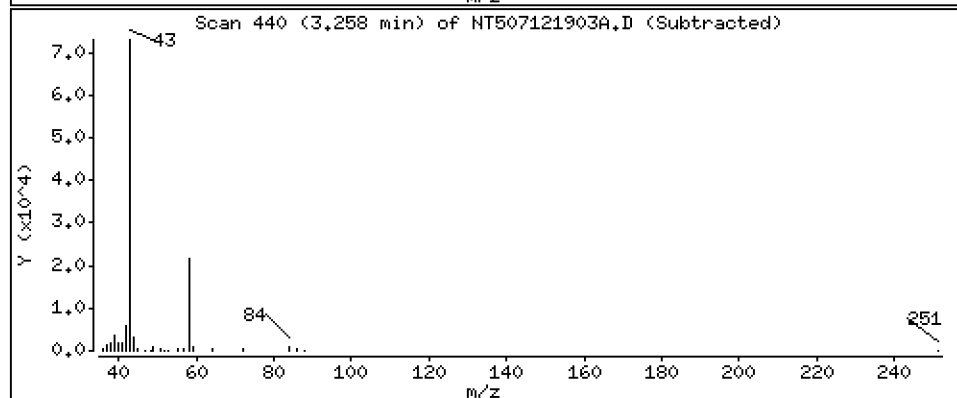
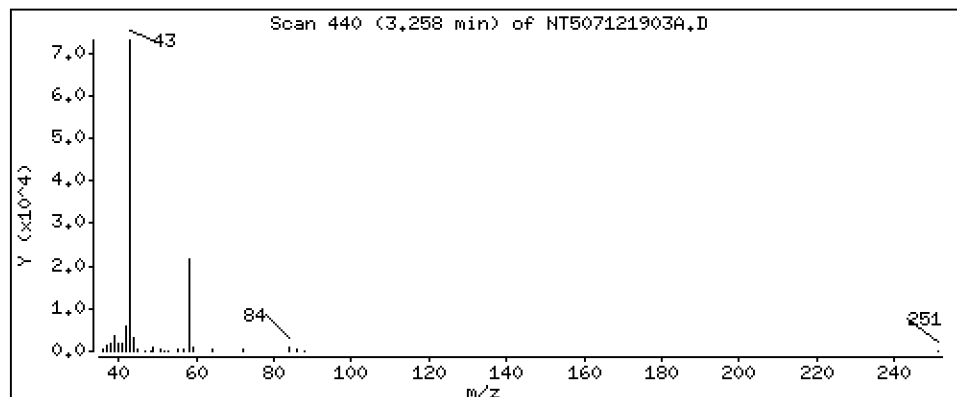
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 256.26 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

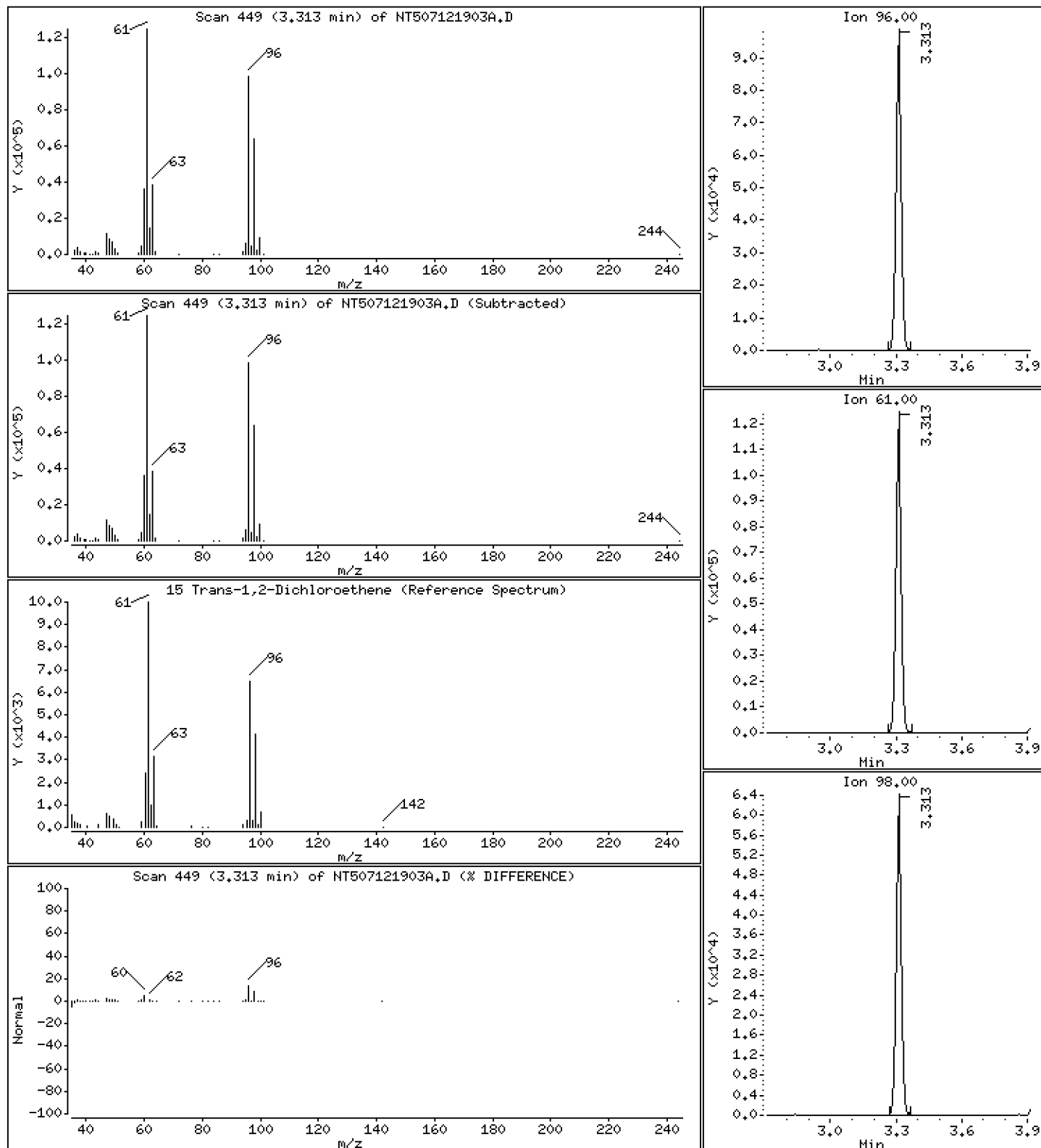
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 50,304 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

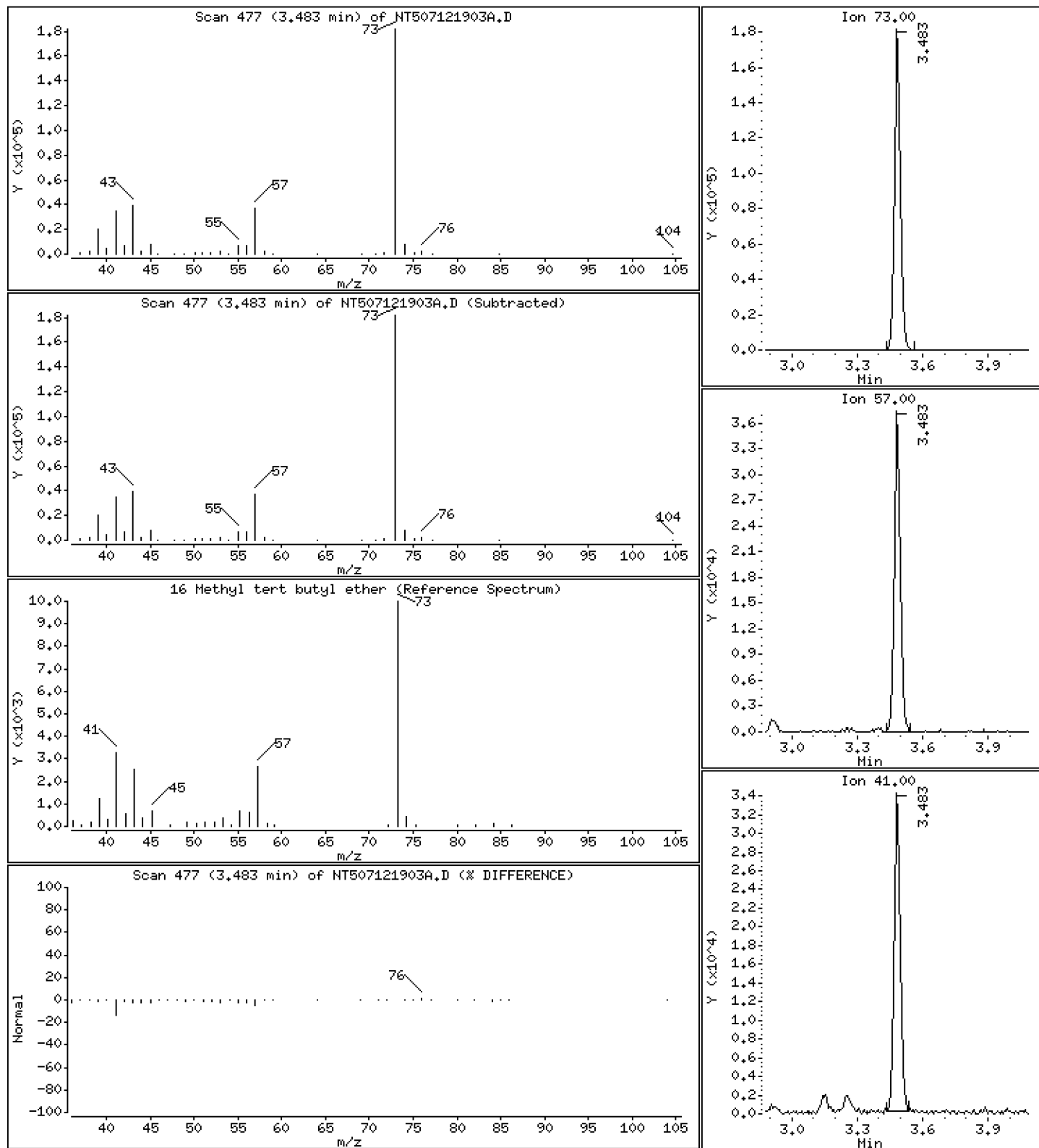
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 48,068 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

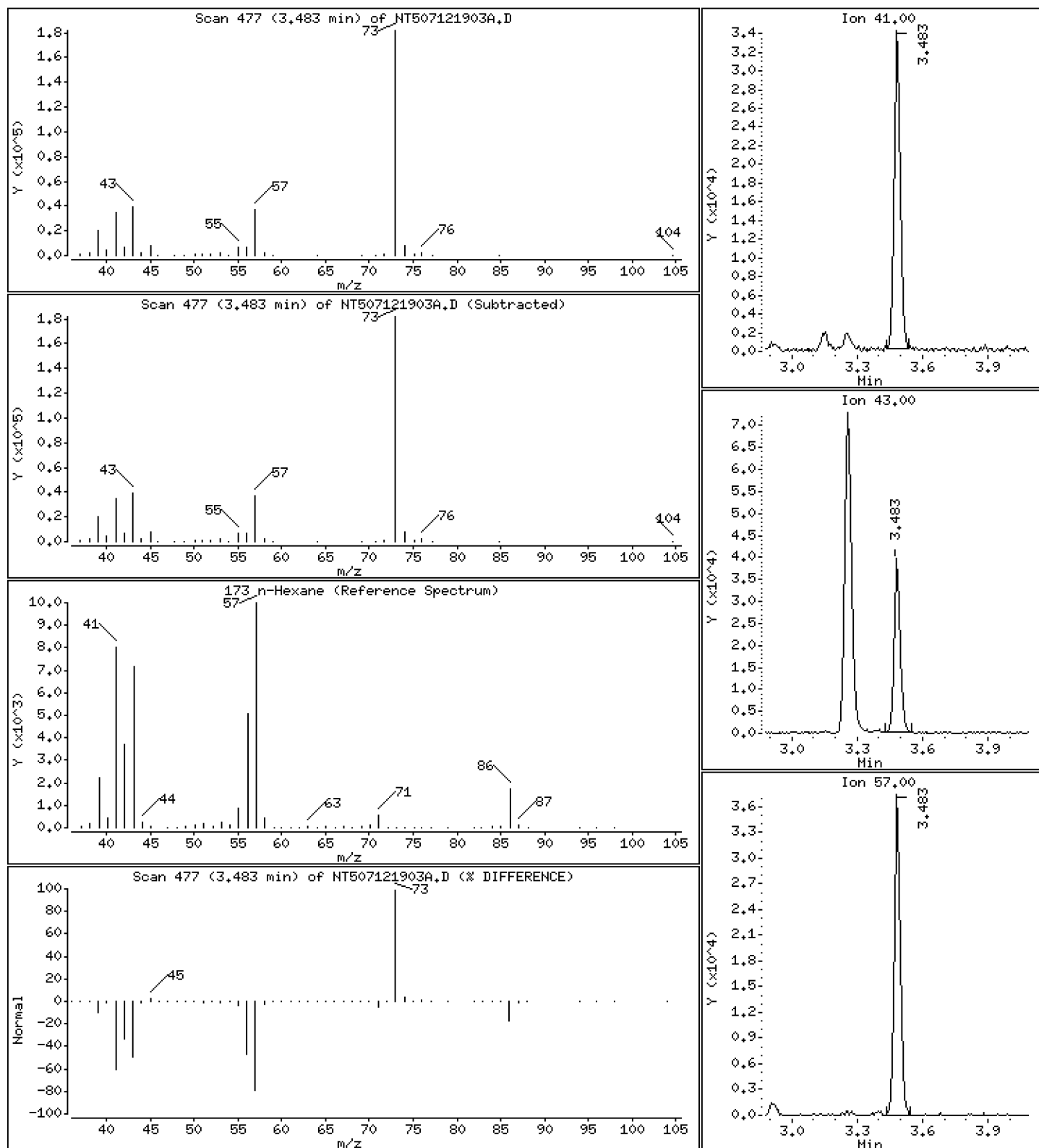
Sample Info: ICV1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

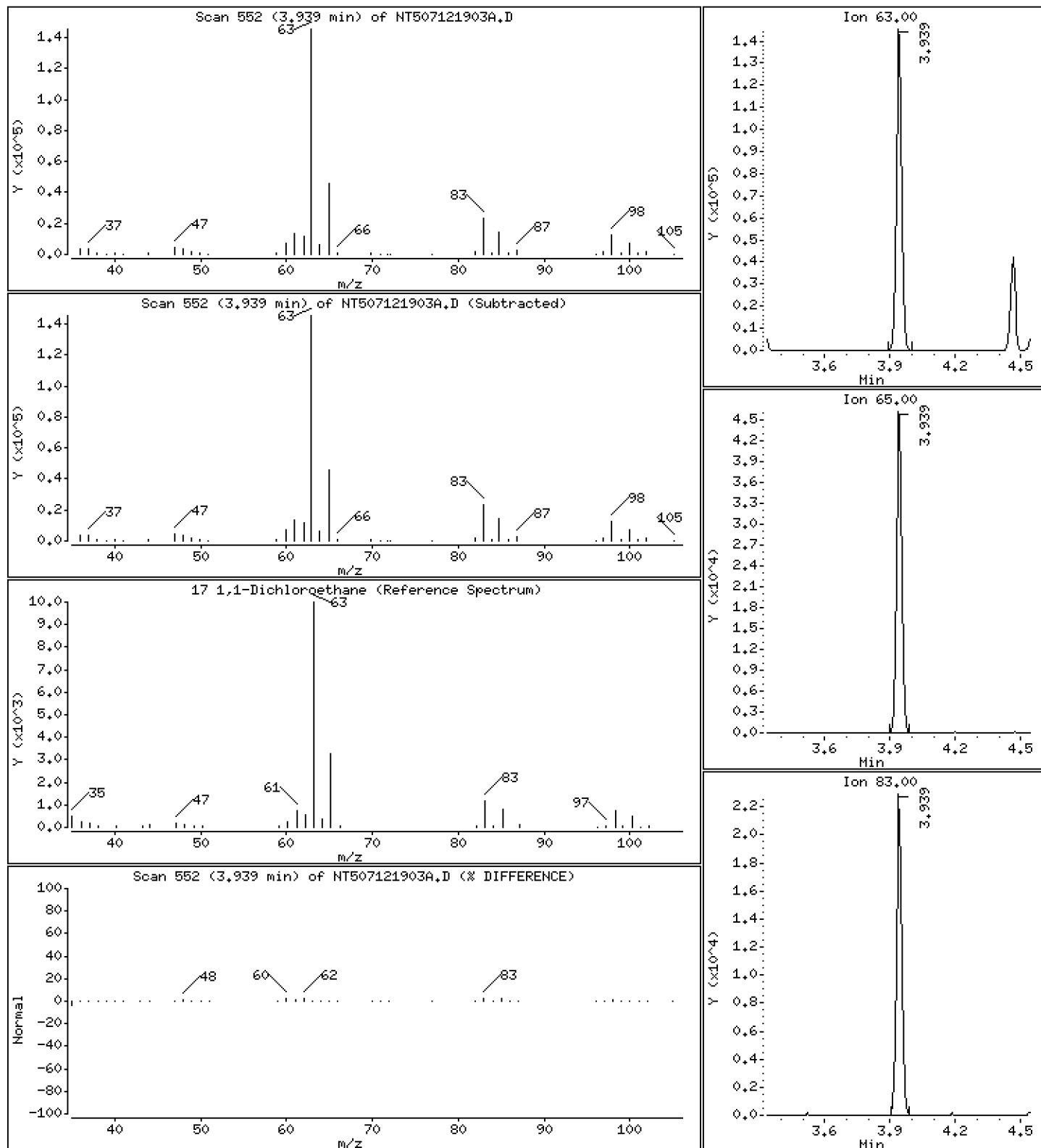
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 50,329 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

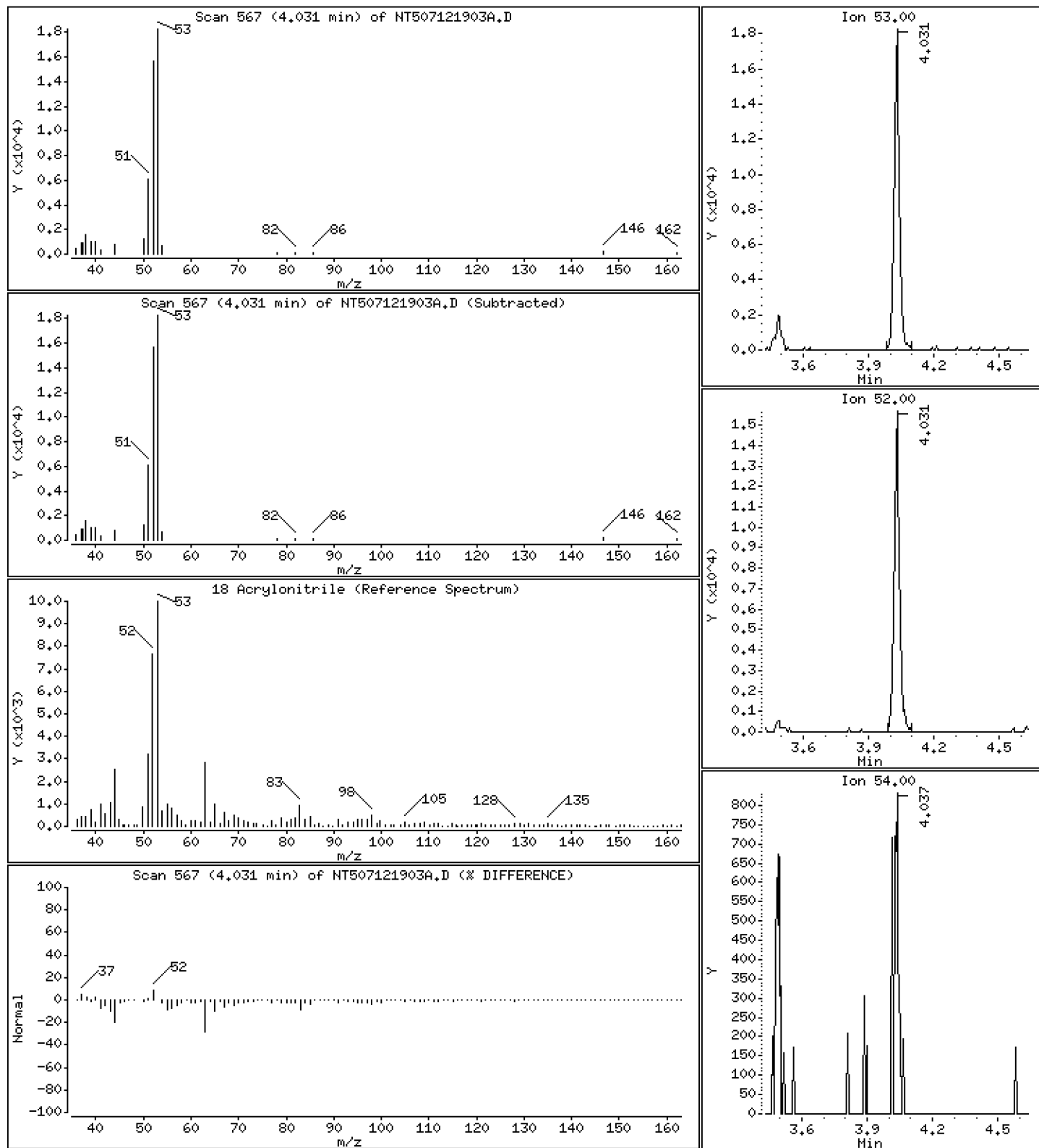
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 47,603 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

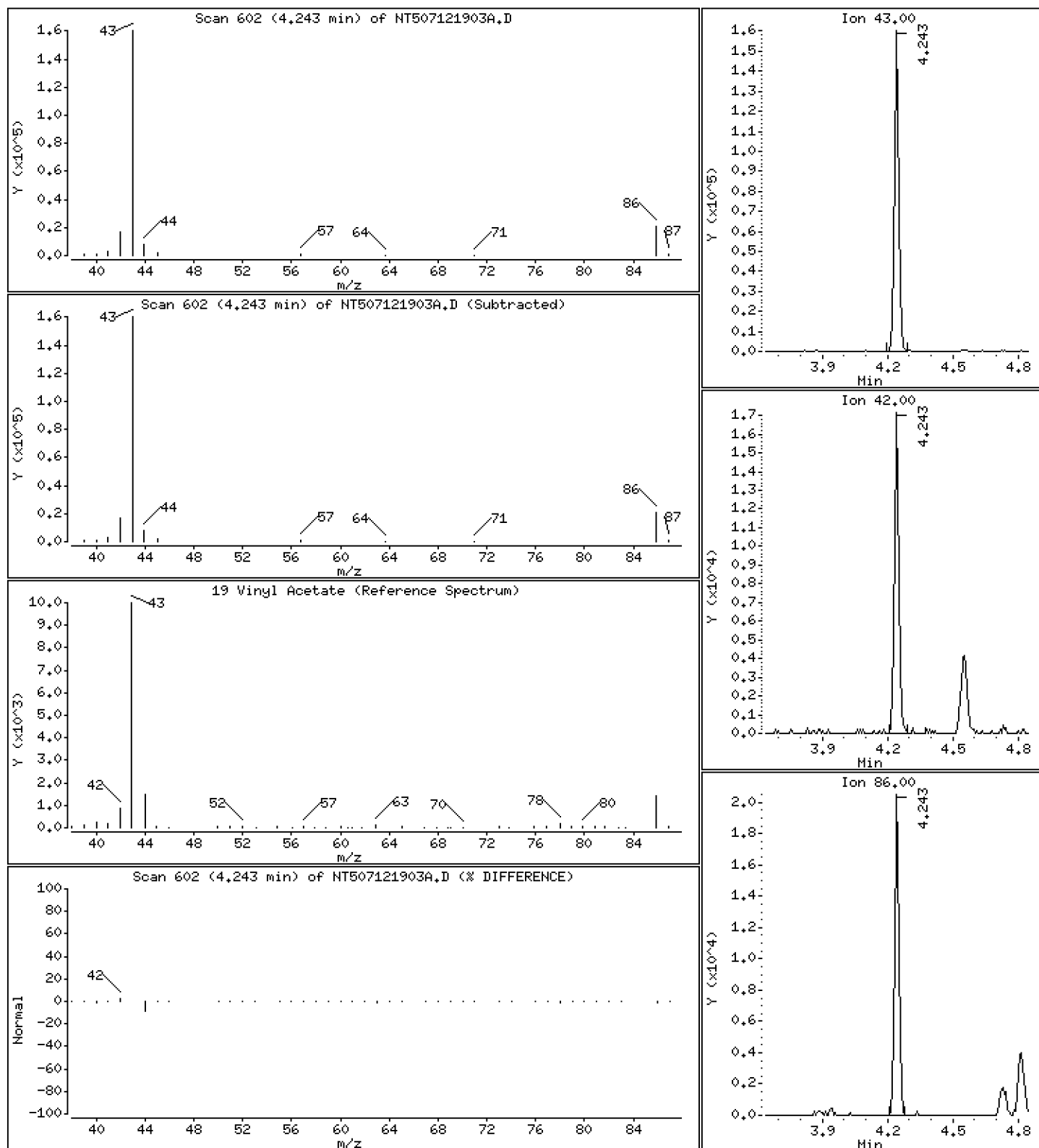
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 51.822 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

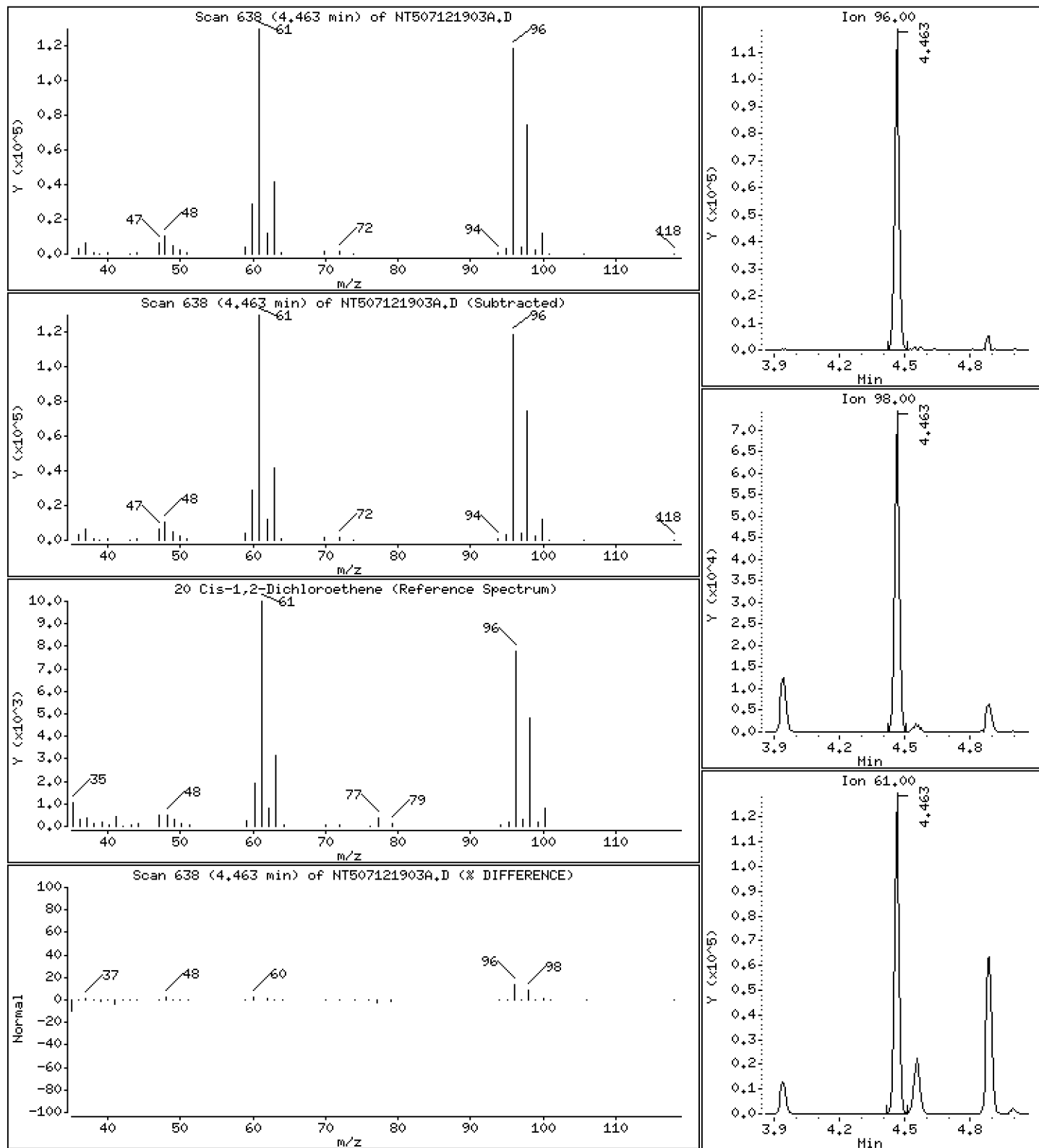
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 51.484 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

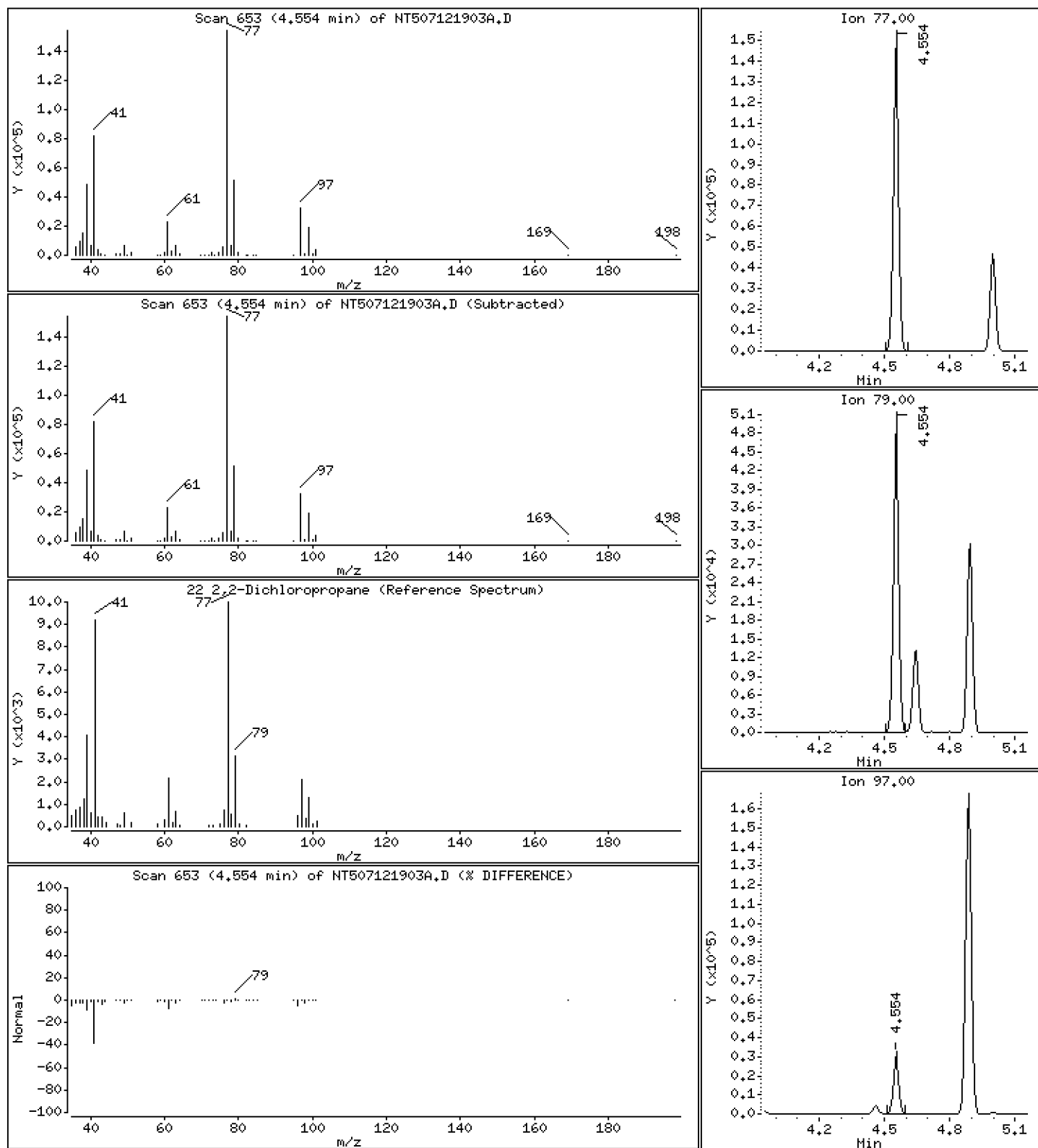
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22,2-Dichloropropane

Concentration: 54,420 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

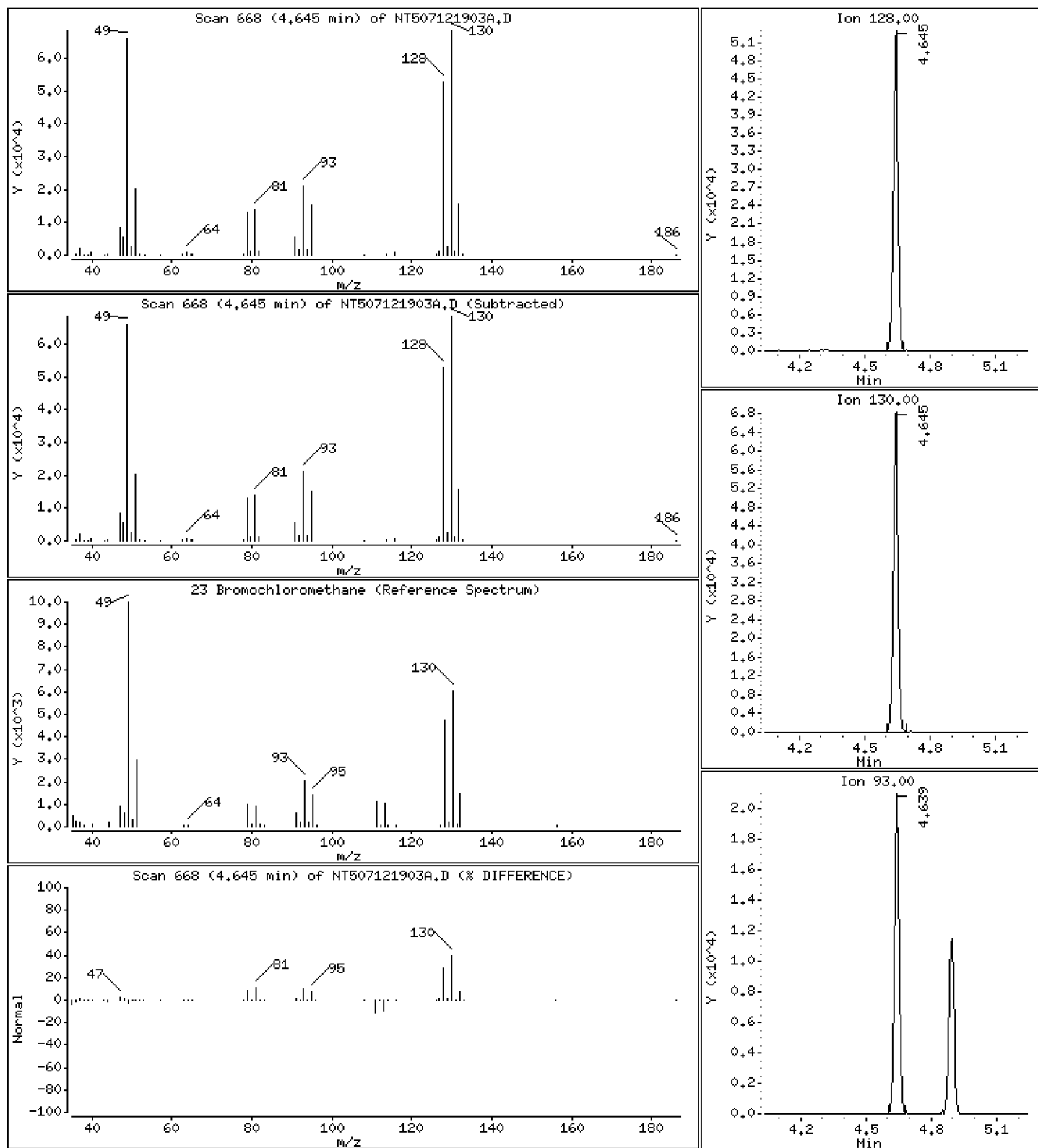
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

23 Bromochloromethane

Concentration: 48,833 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

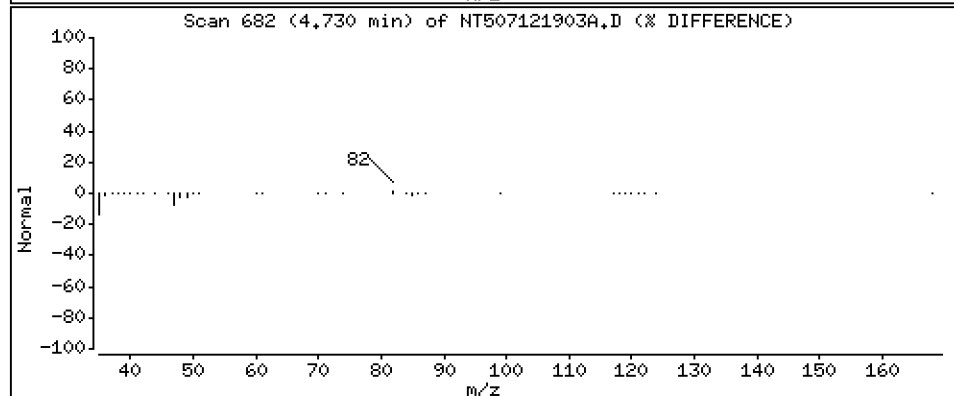
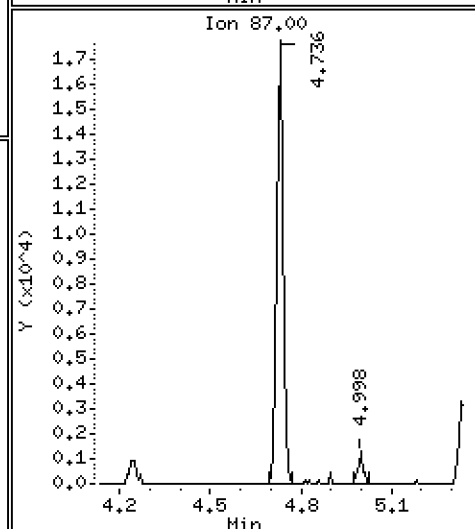
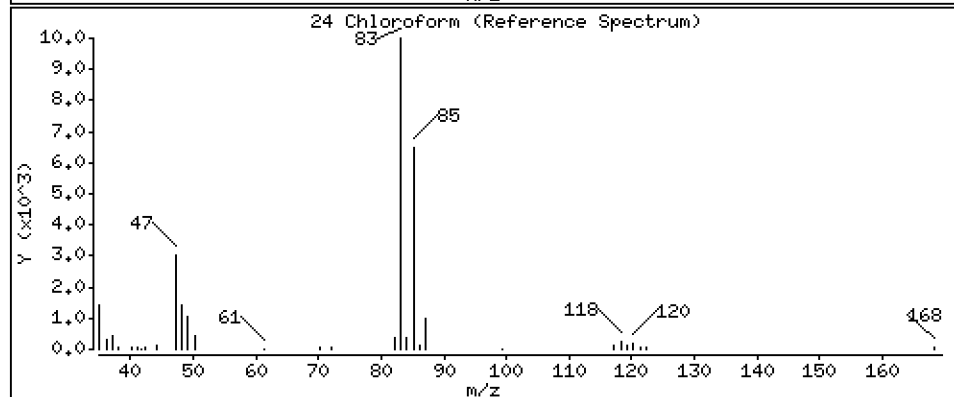
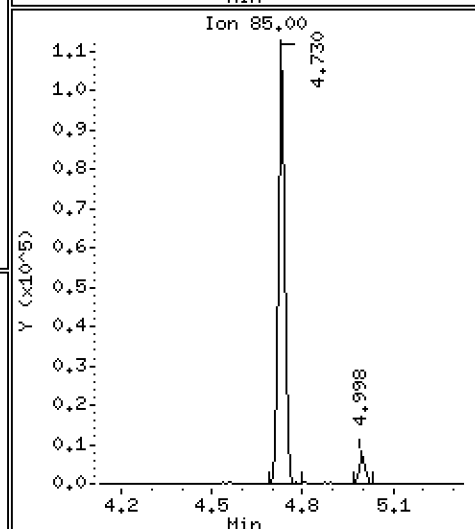
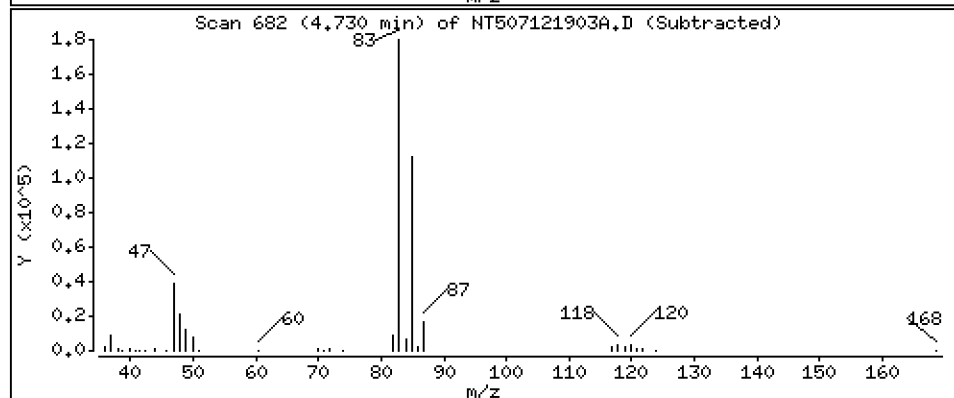
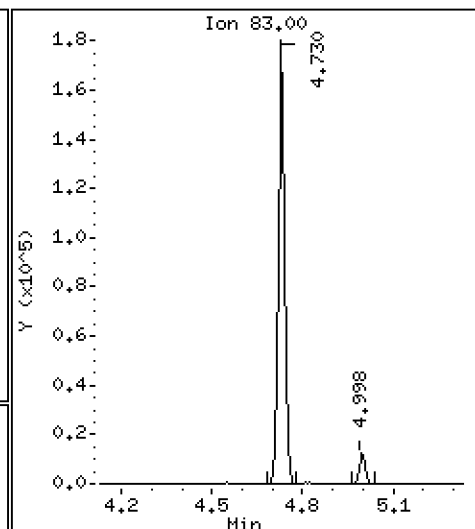
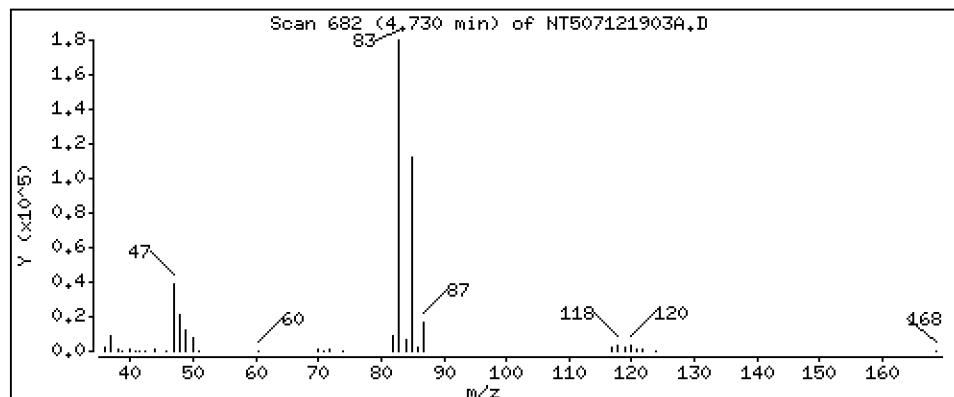
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 51,343 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

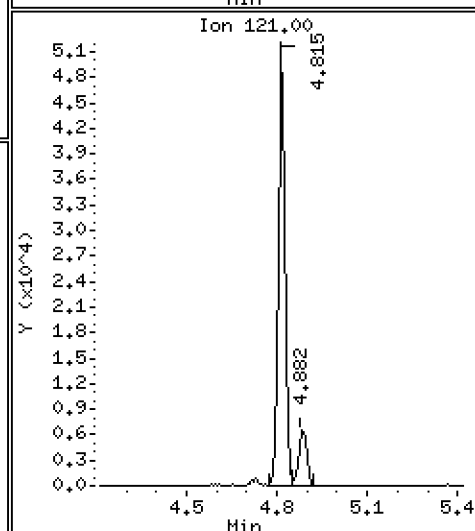
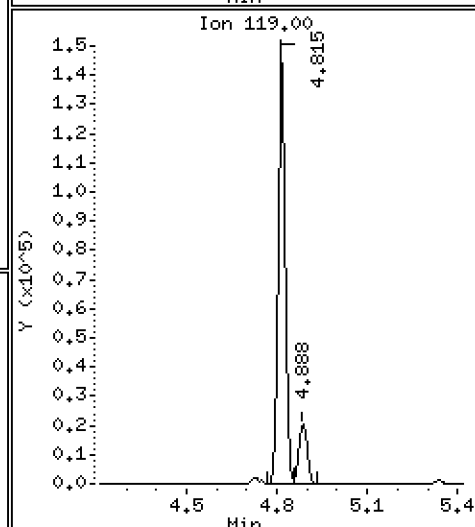
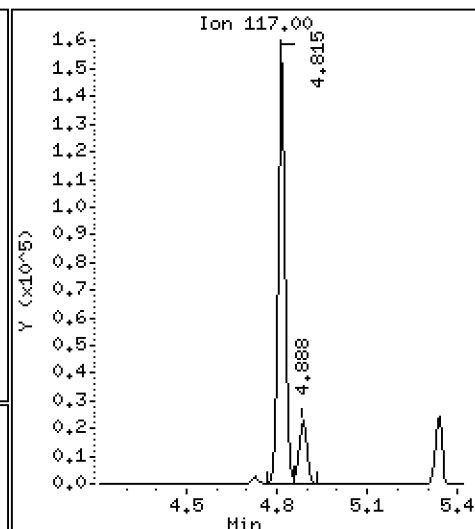
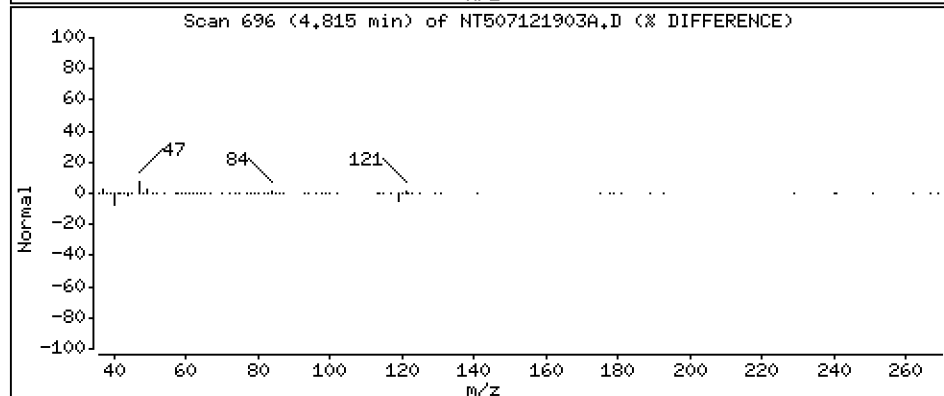
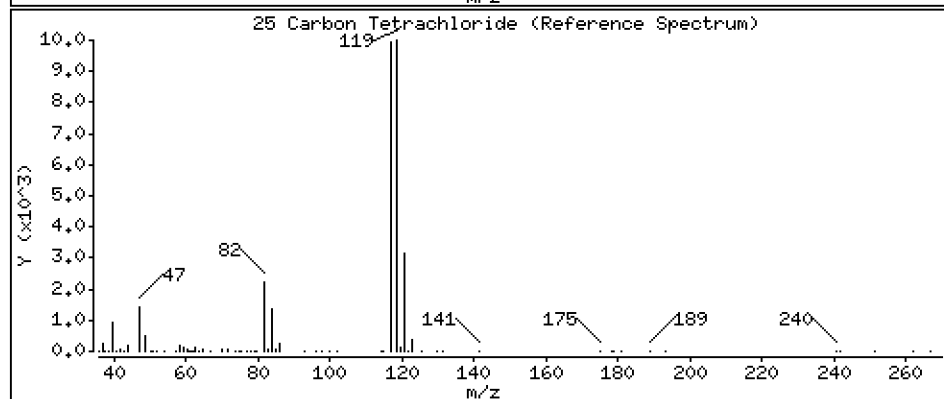
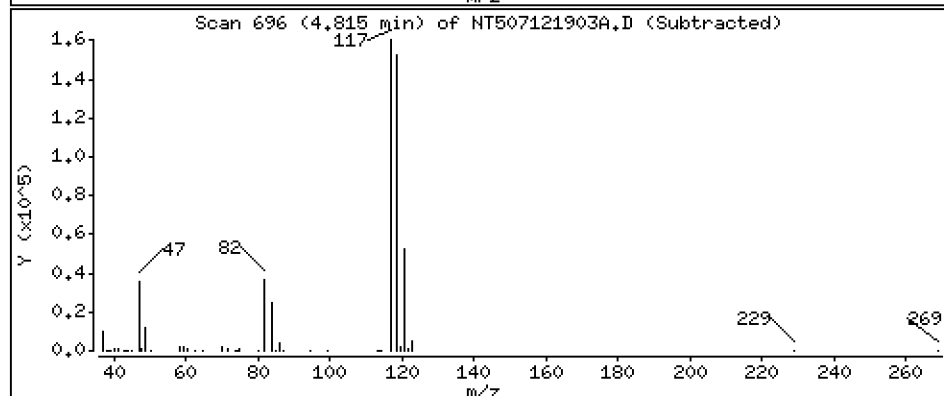
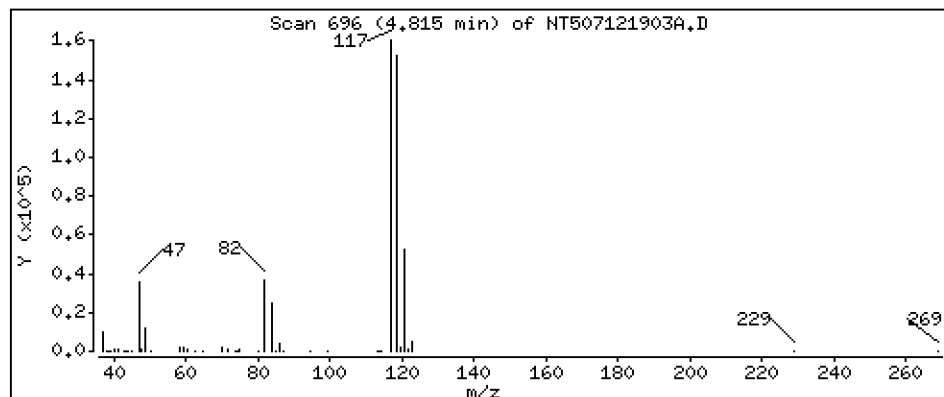
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 47,046 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

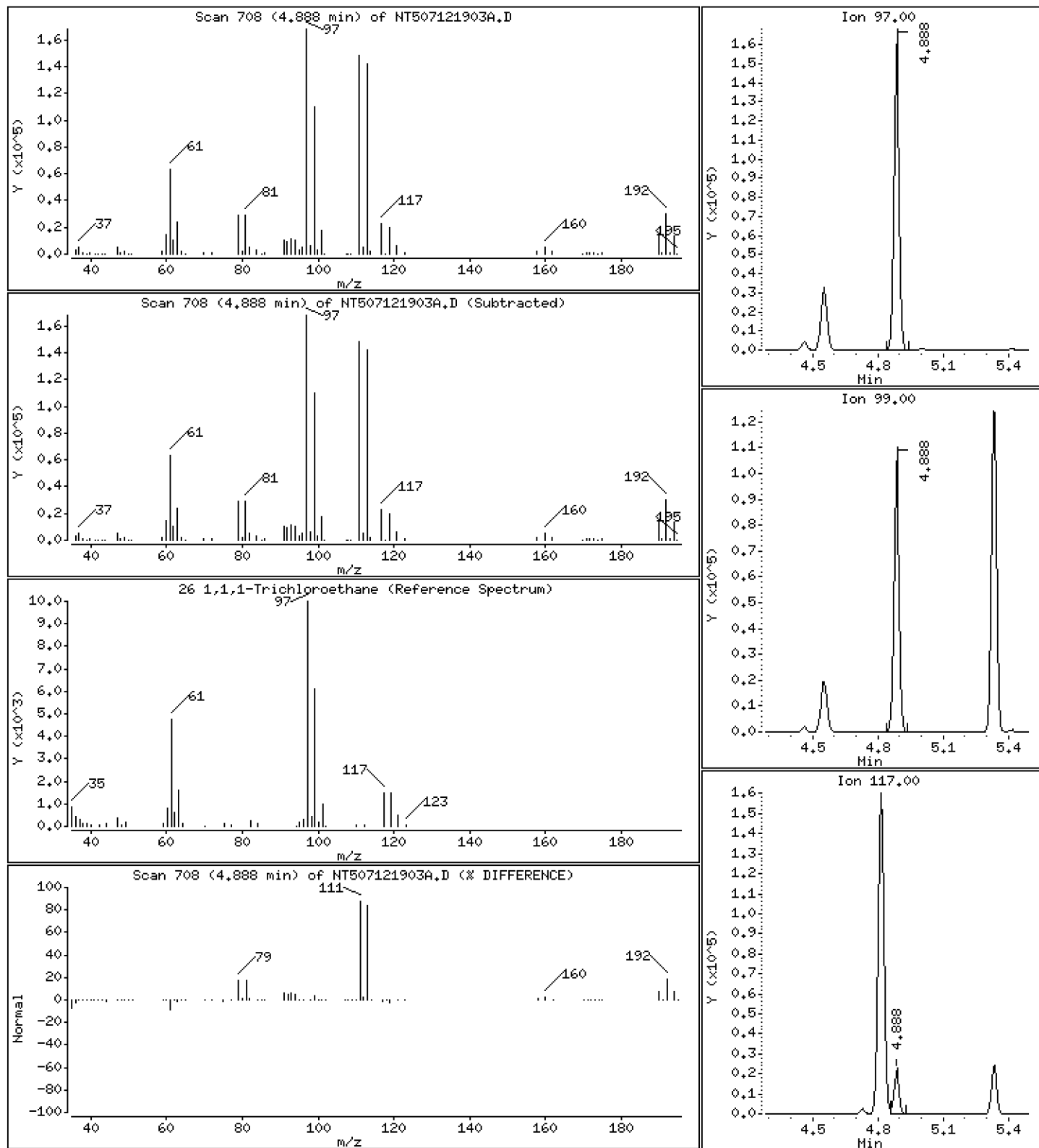
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 52,647 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

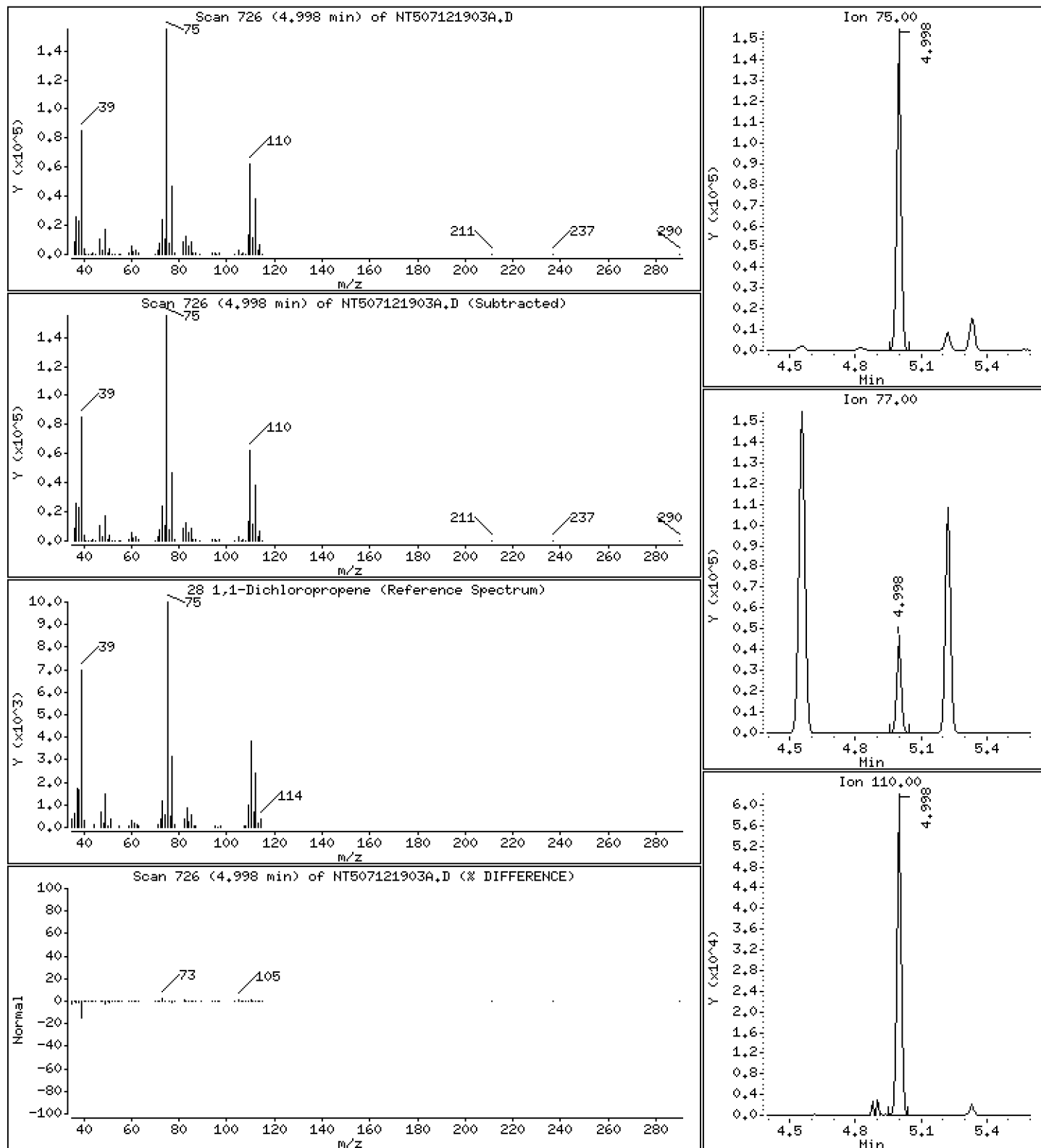
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 50.631 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

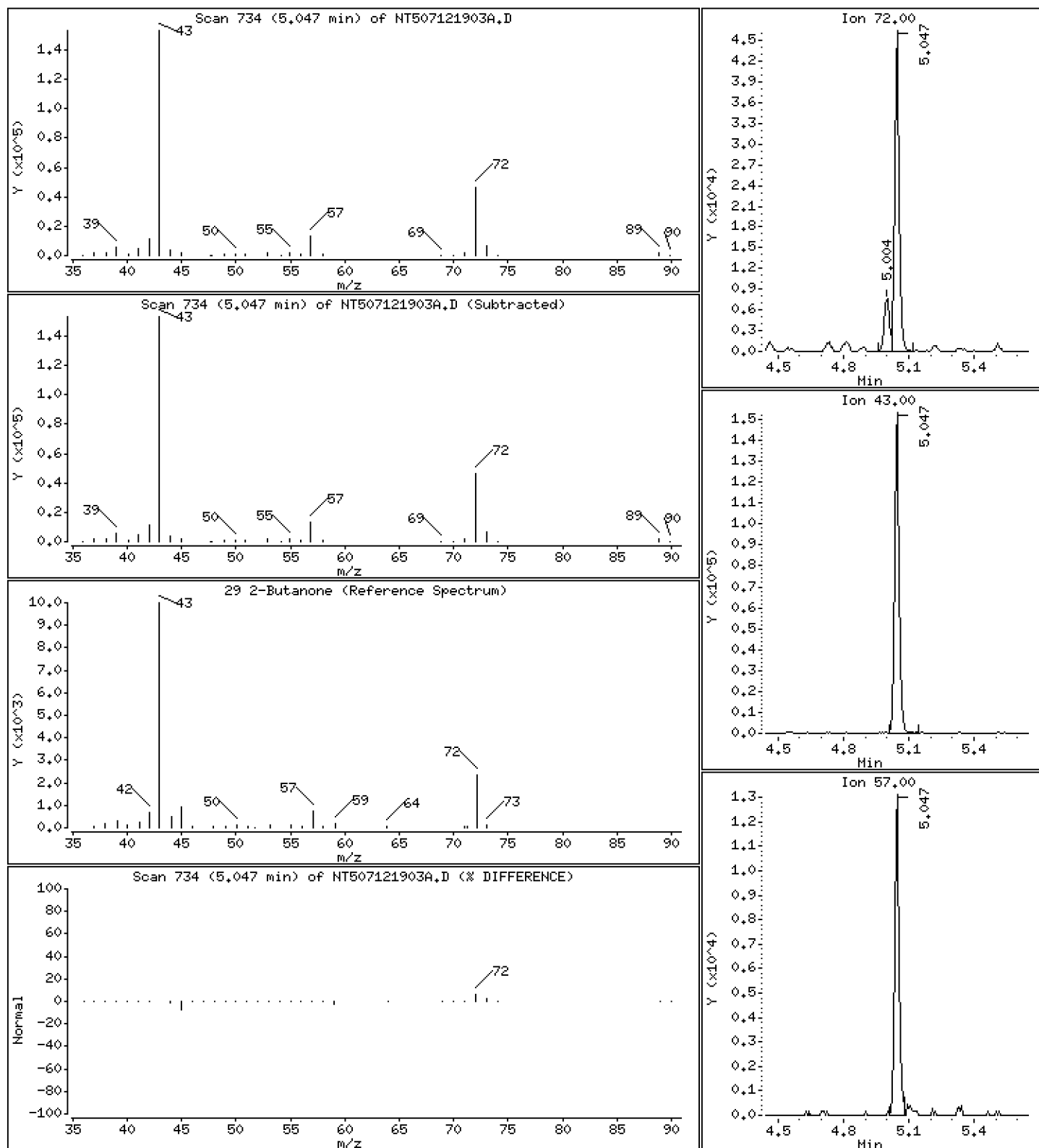
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 270.32 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

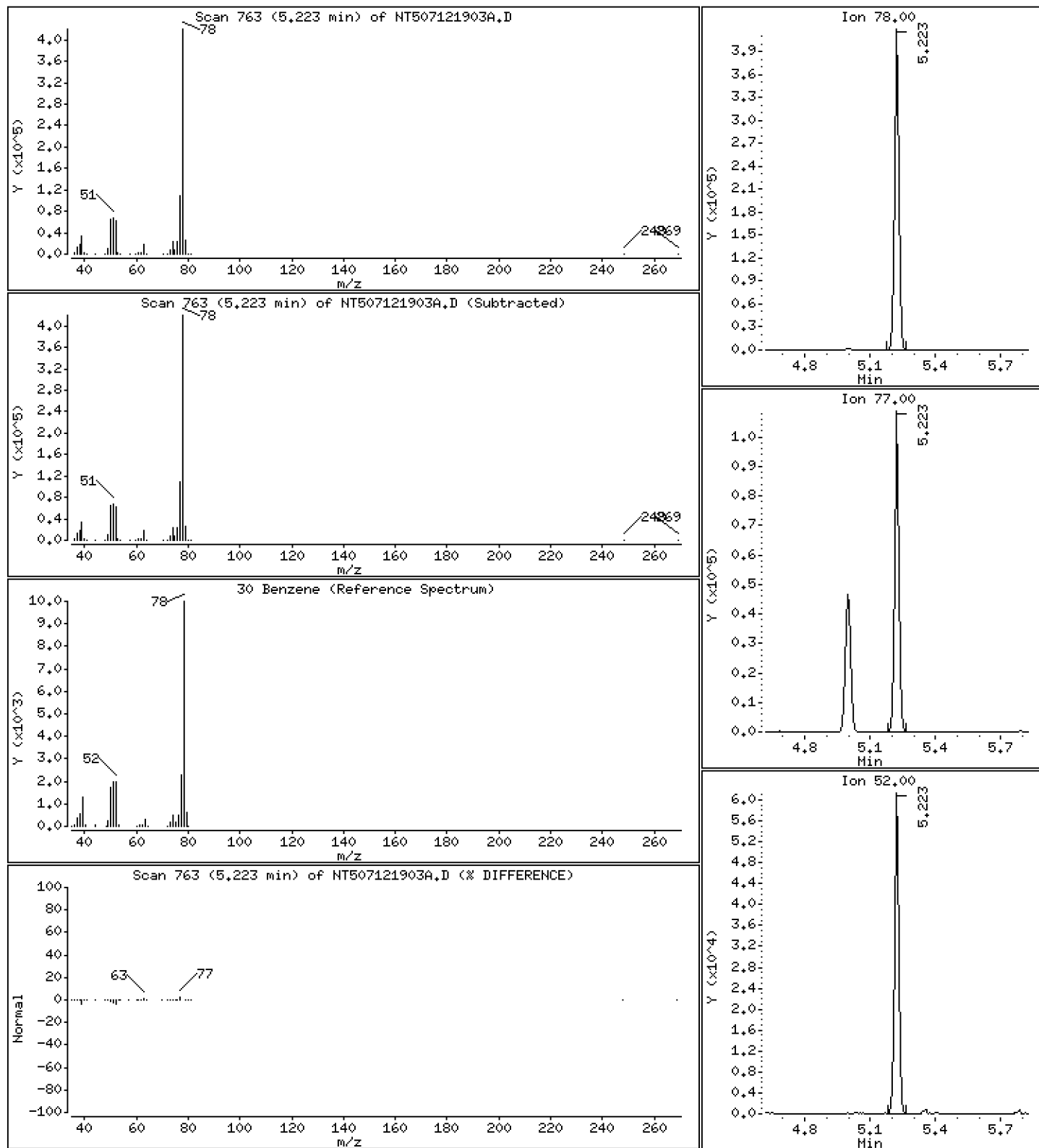
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 46,709 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

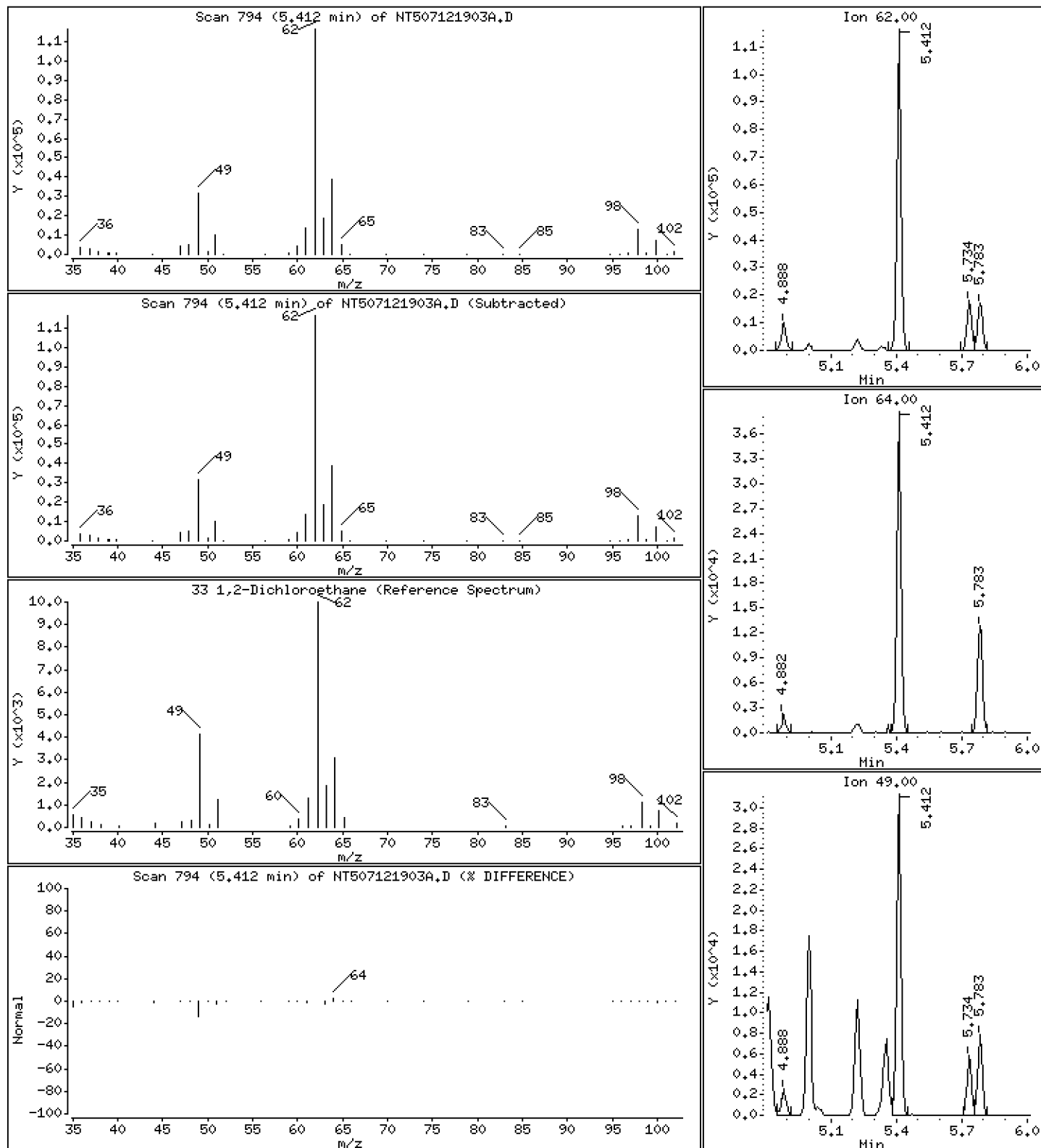
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 43,185 ug/Kg



Client ID:

Instrument: nt5.i

Sample Info: ICV1

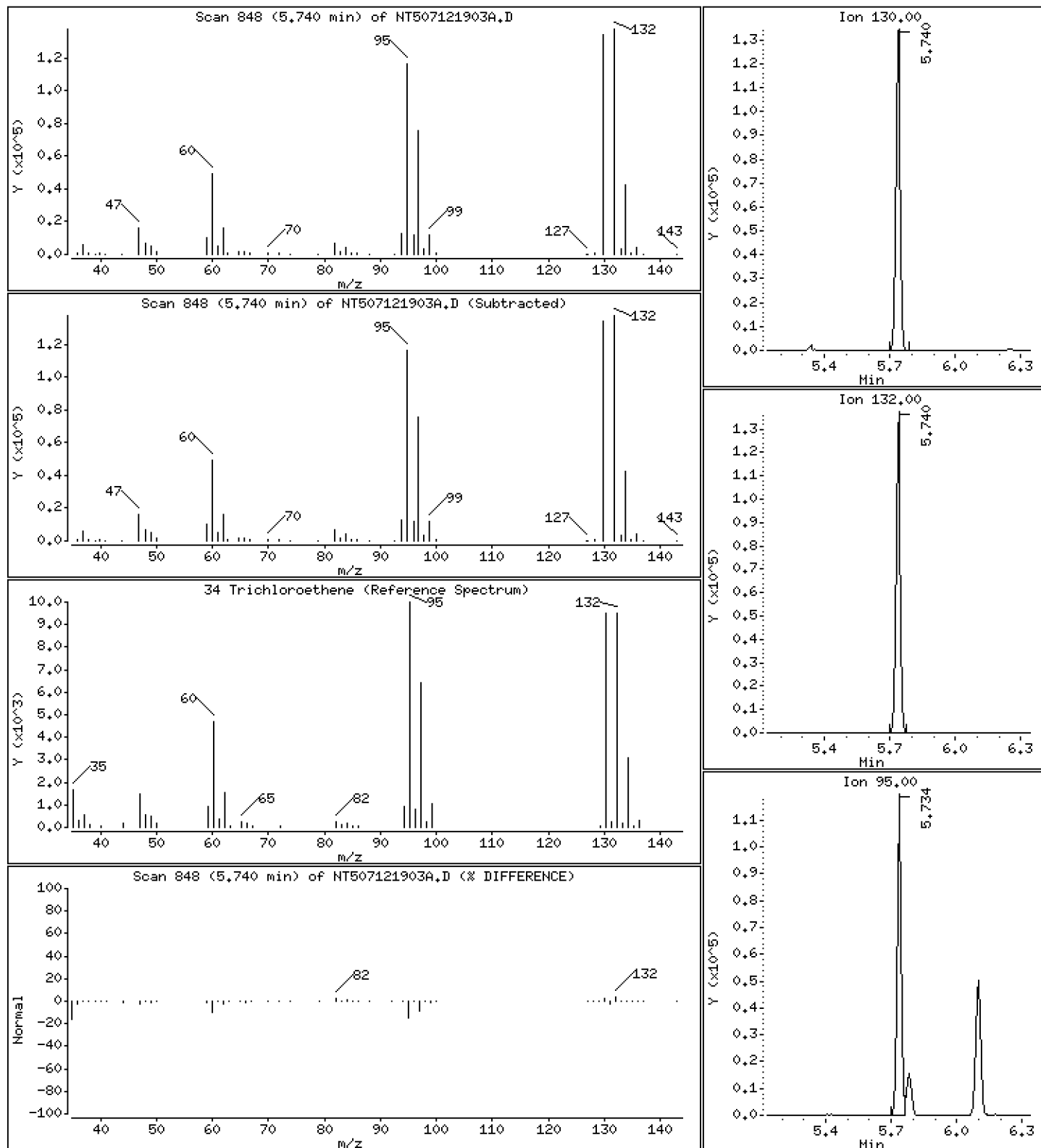
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 45,971 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

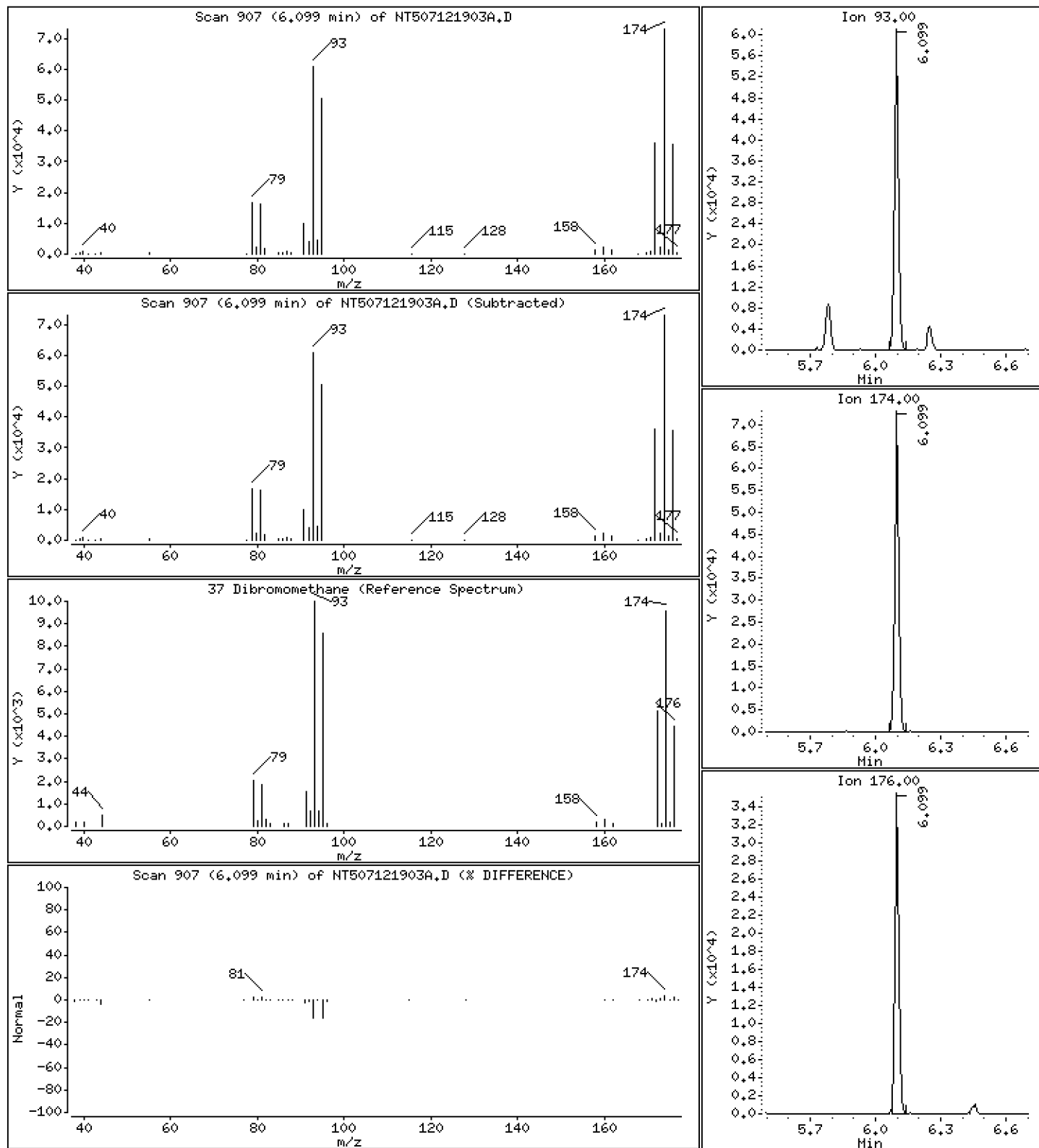
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 45,960 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

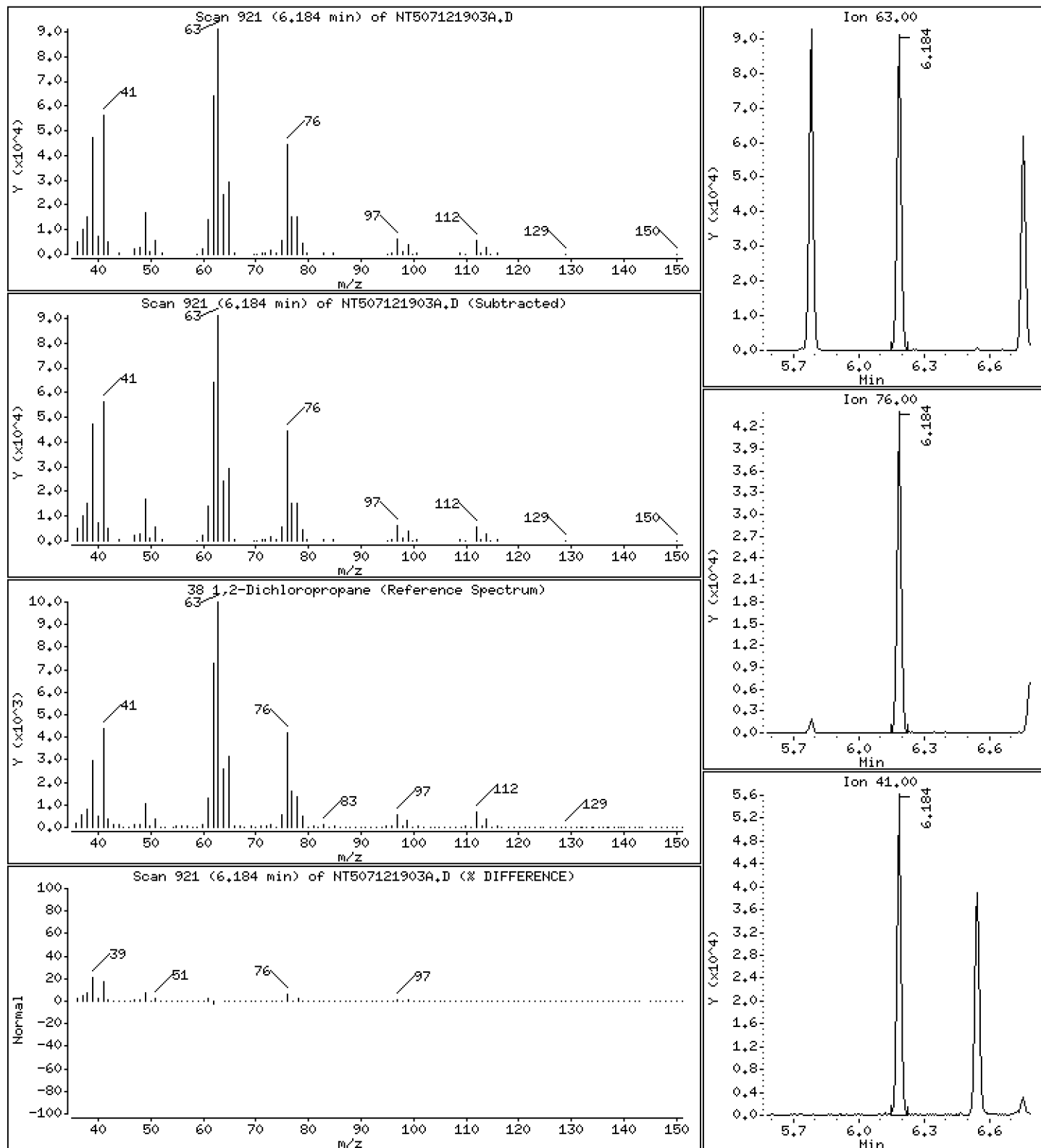
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 45,799 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

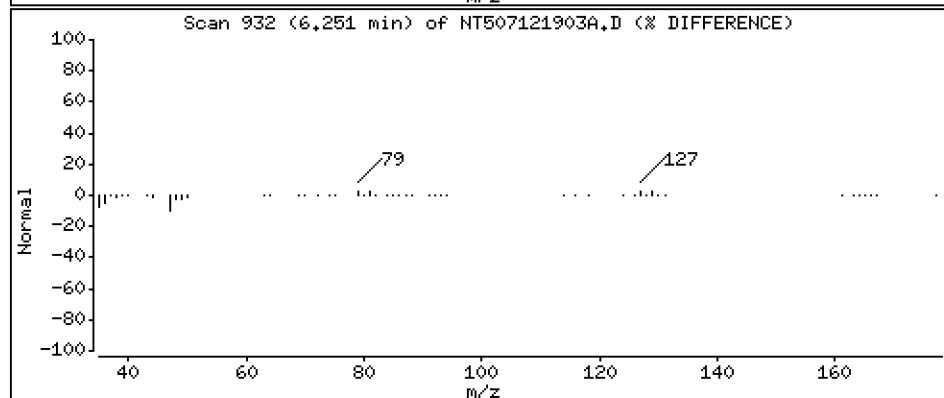
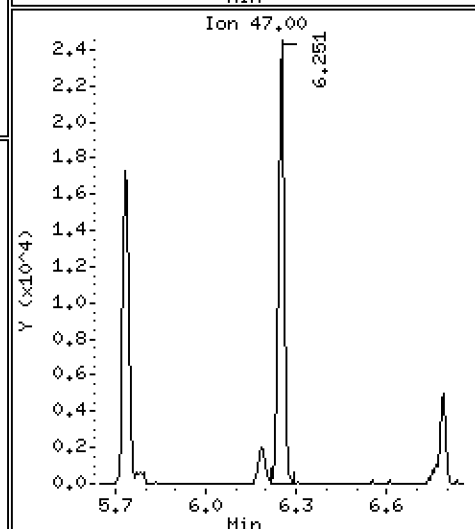
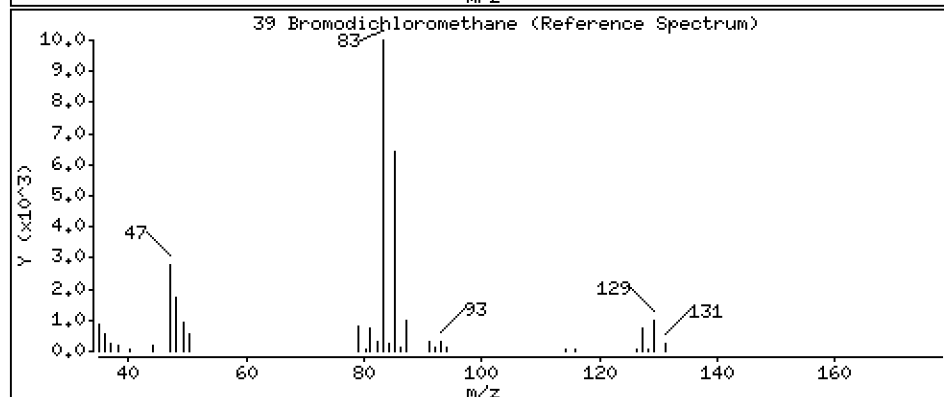
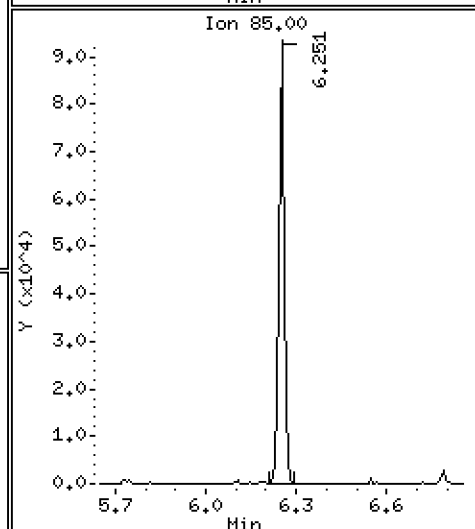
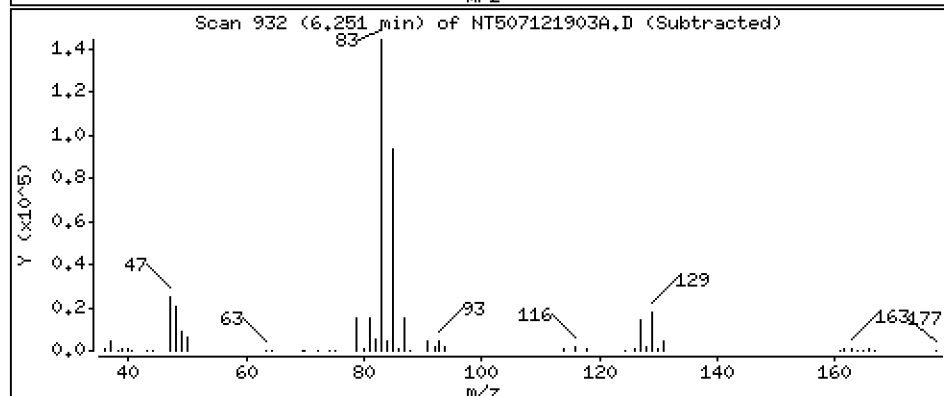
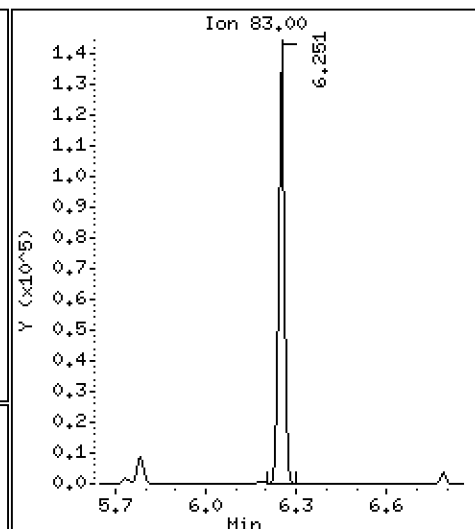
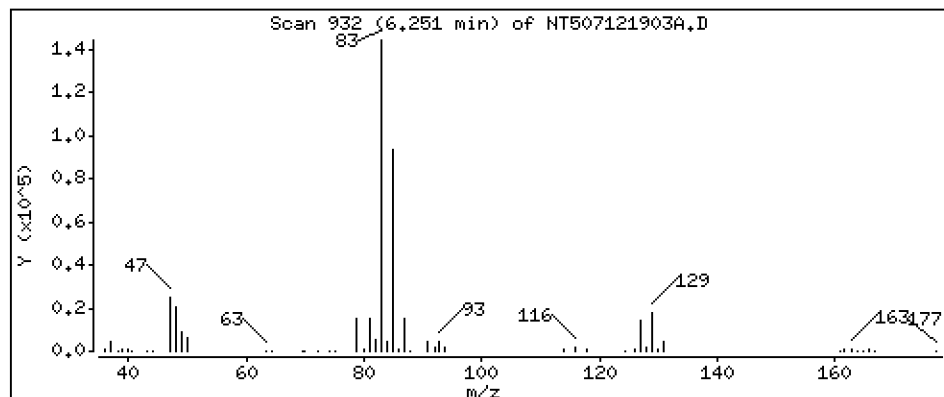
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 46,139 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

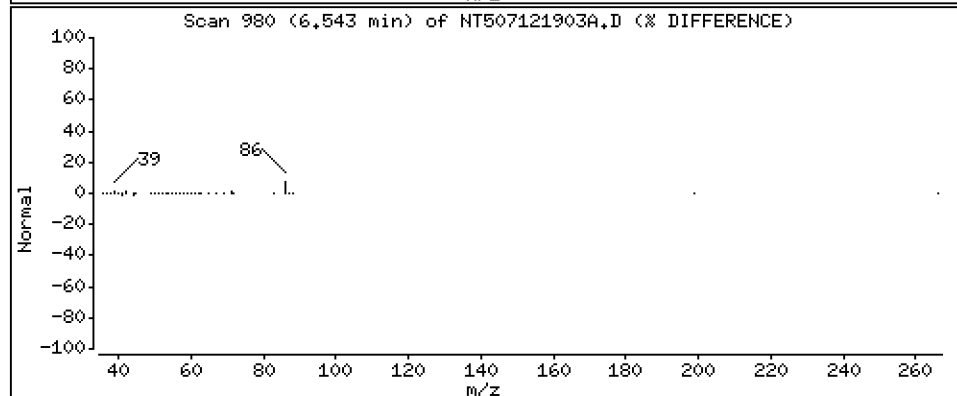
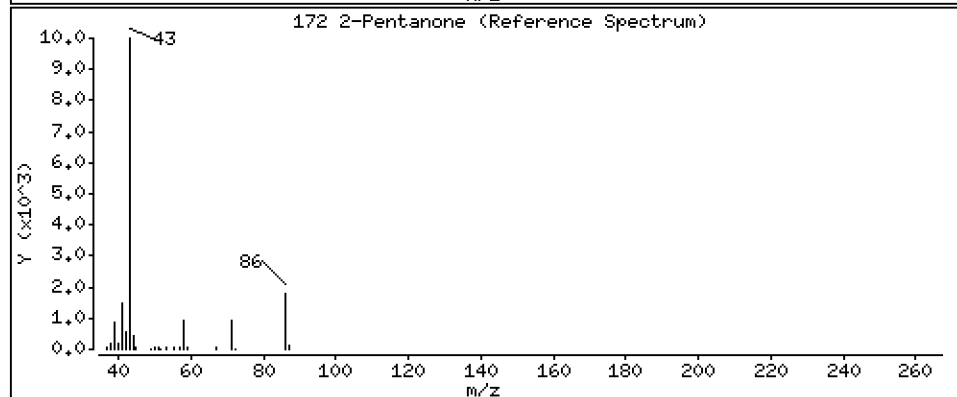
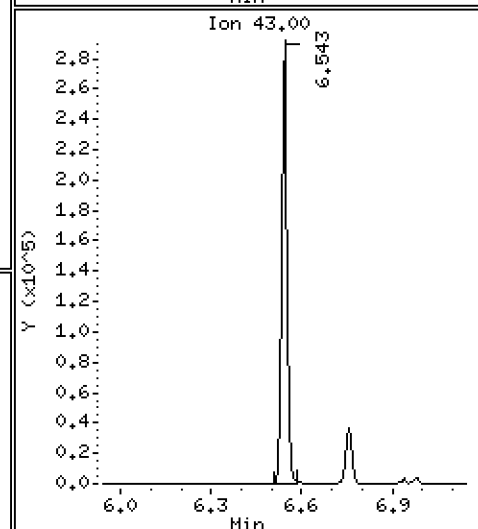
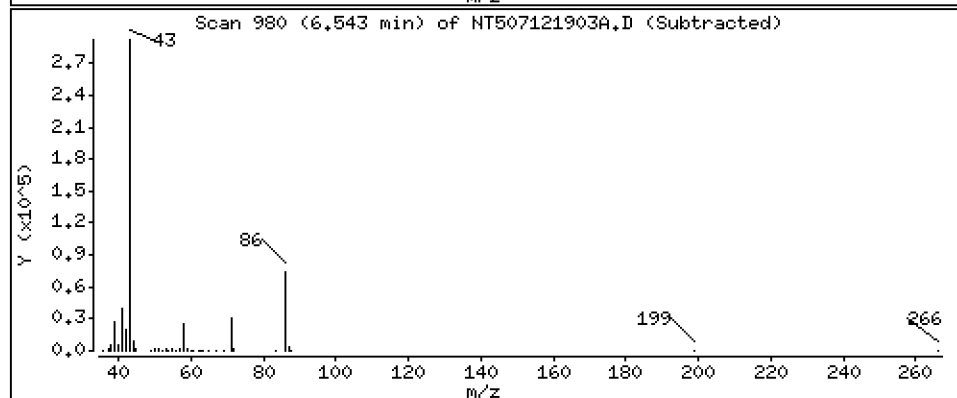
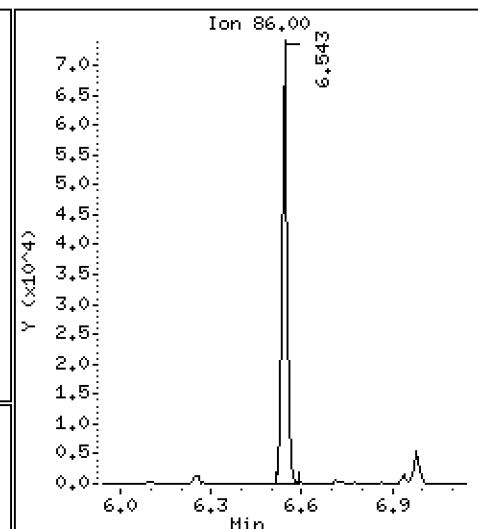
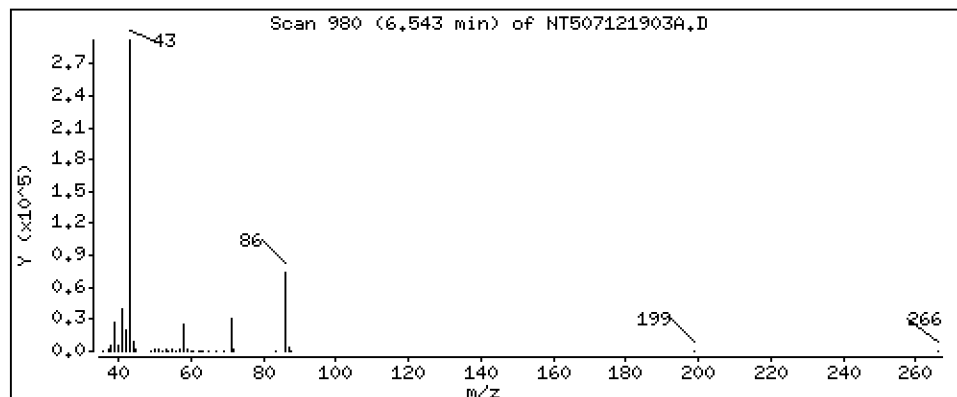
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 246.31 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

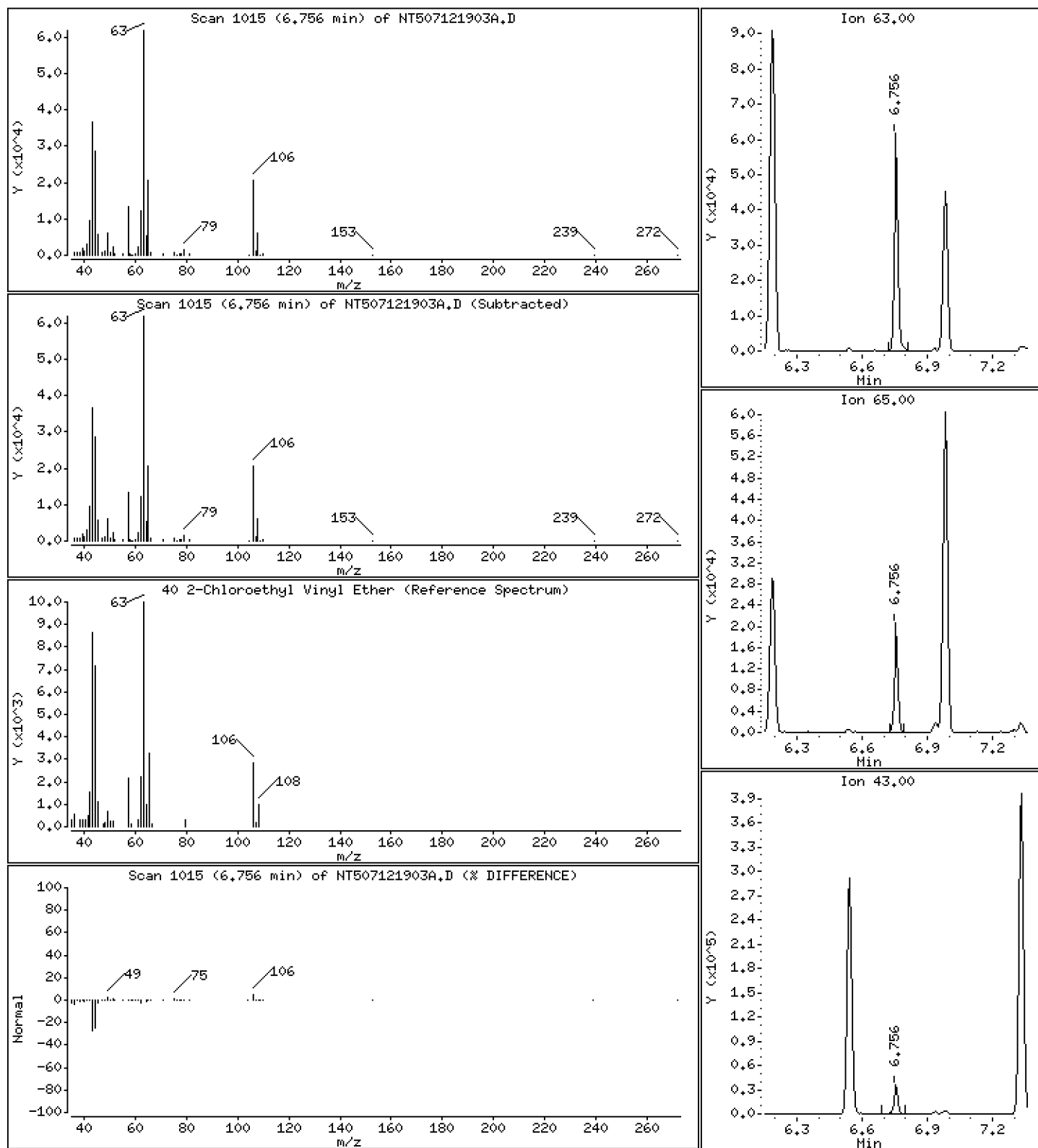
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

40 2-Chloroethyl Vinyl Ether

Concentration: 44,800 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

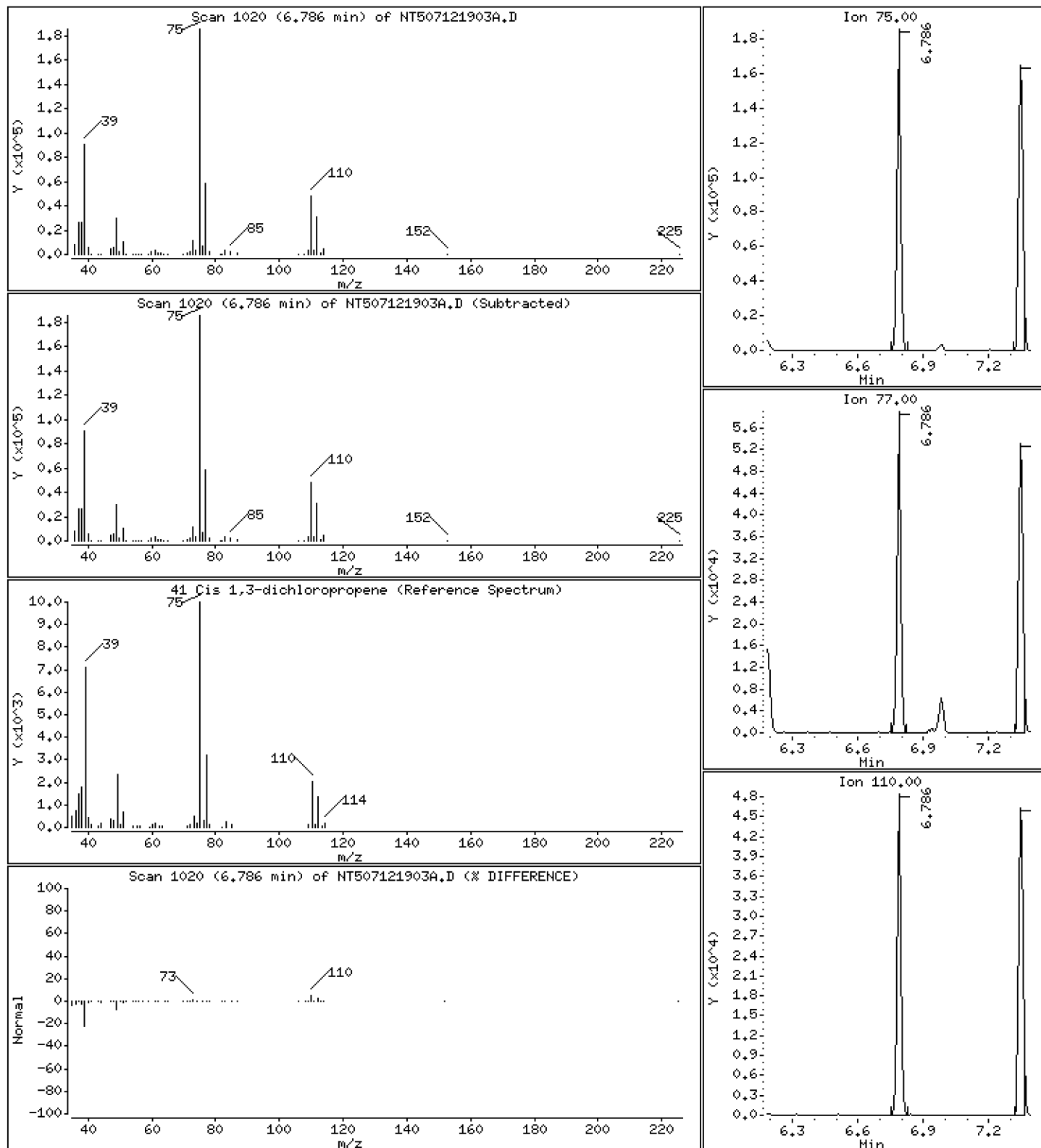
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

41 Cis 1,3-dichloropropene

Concentration: 46,922 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

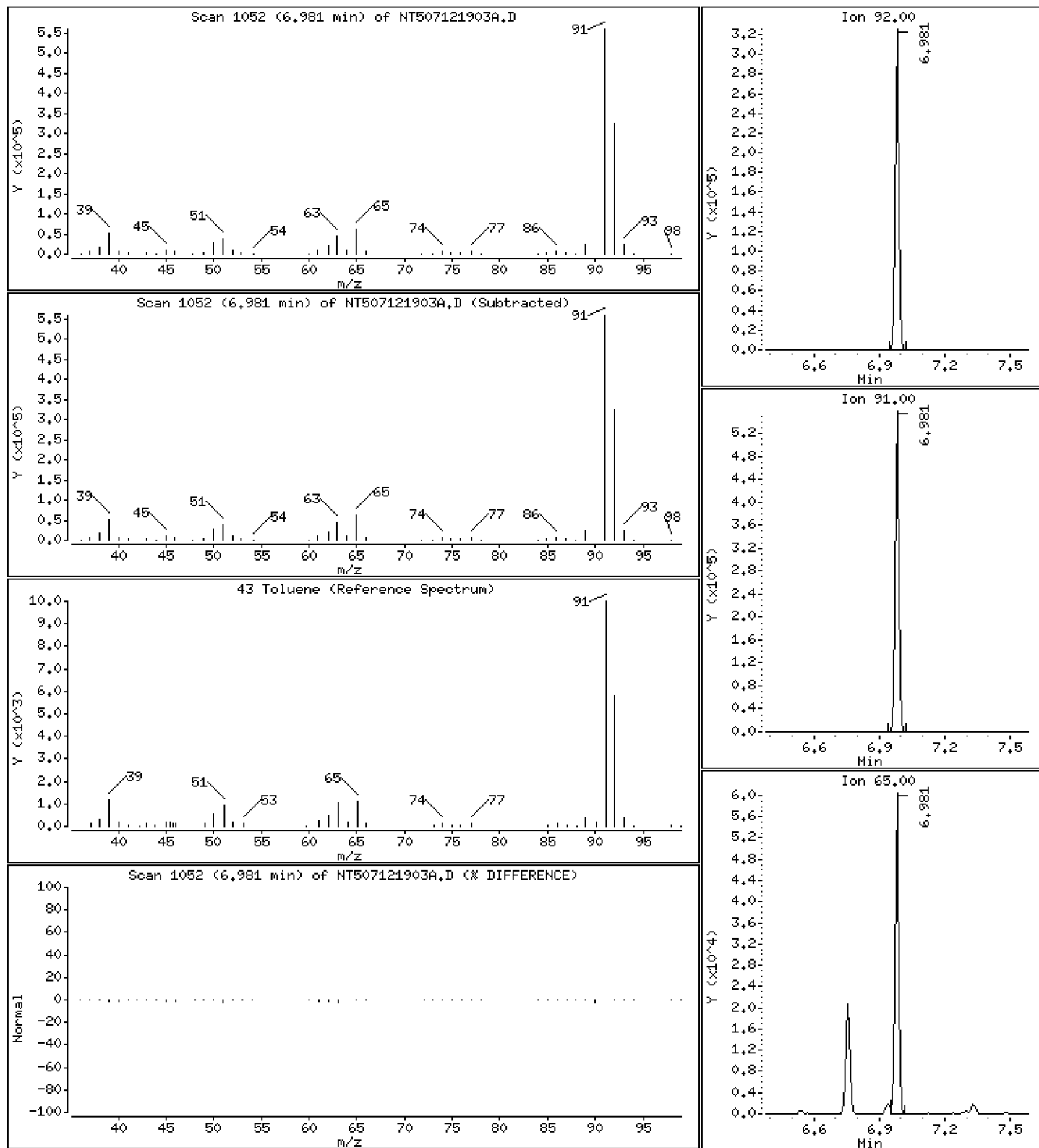
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 45,202 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

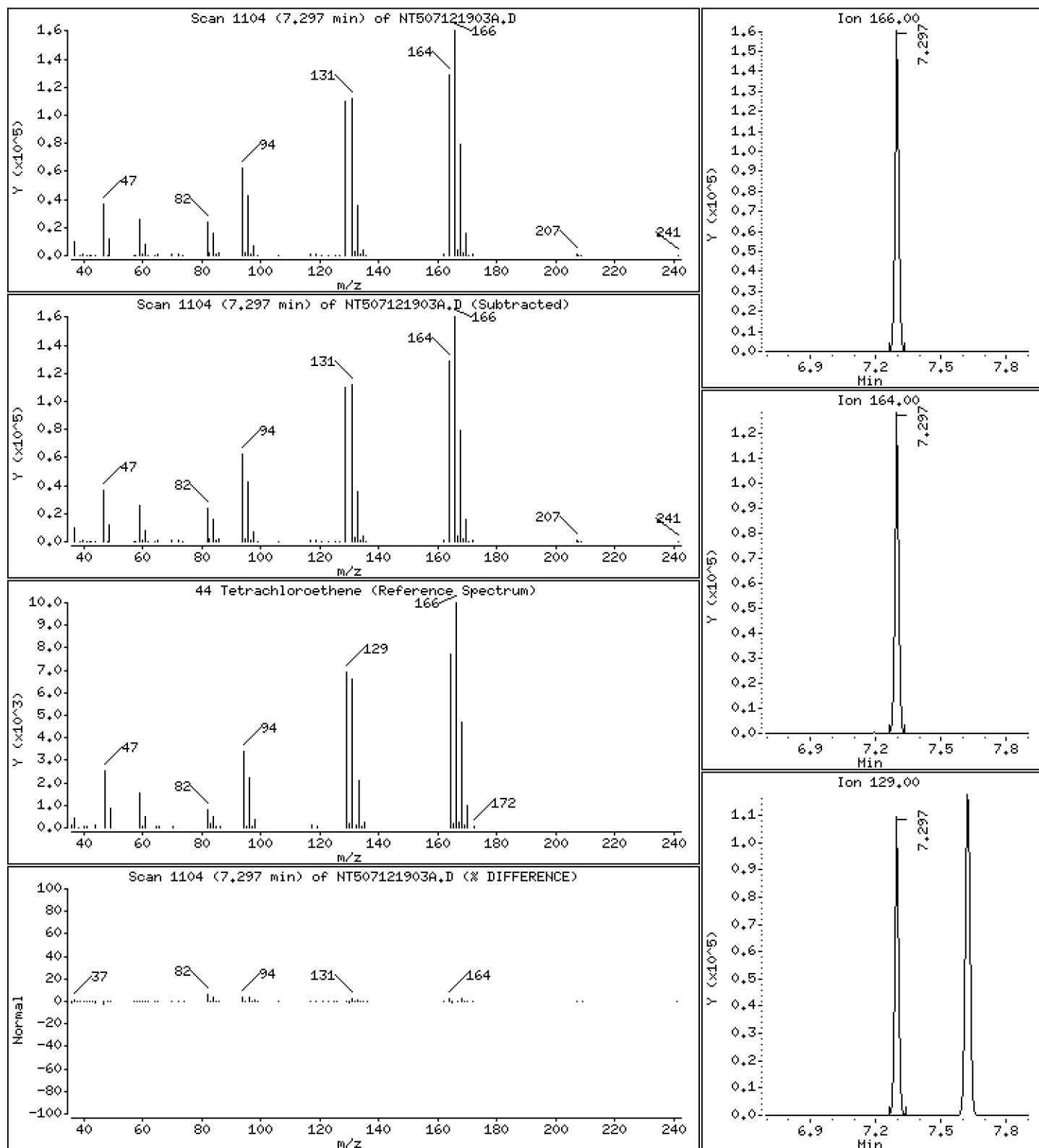
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 43,968 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

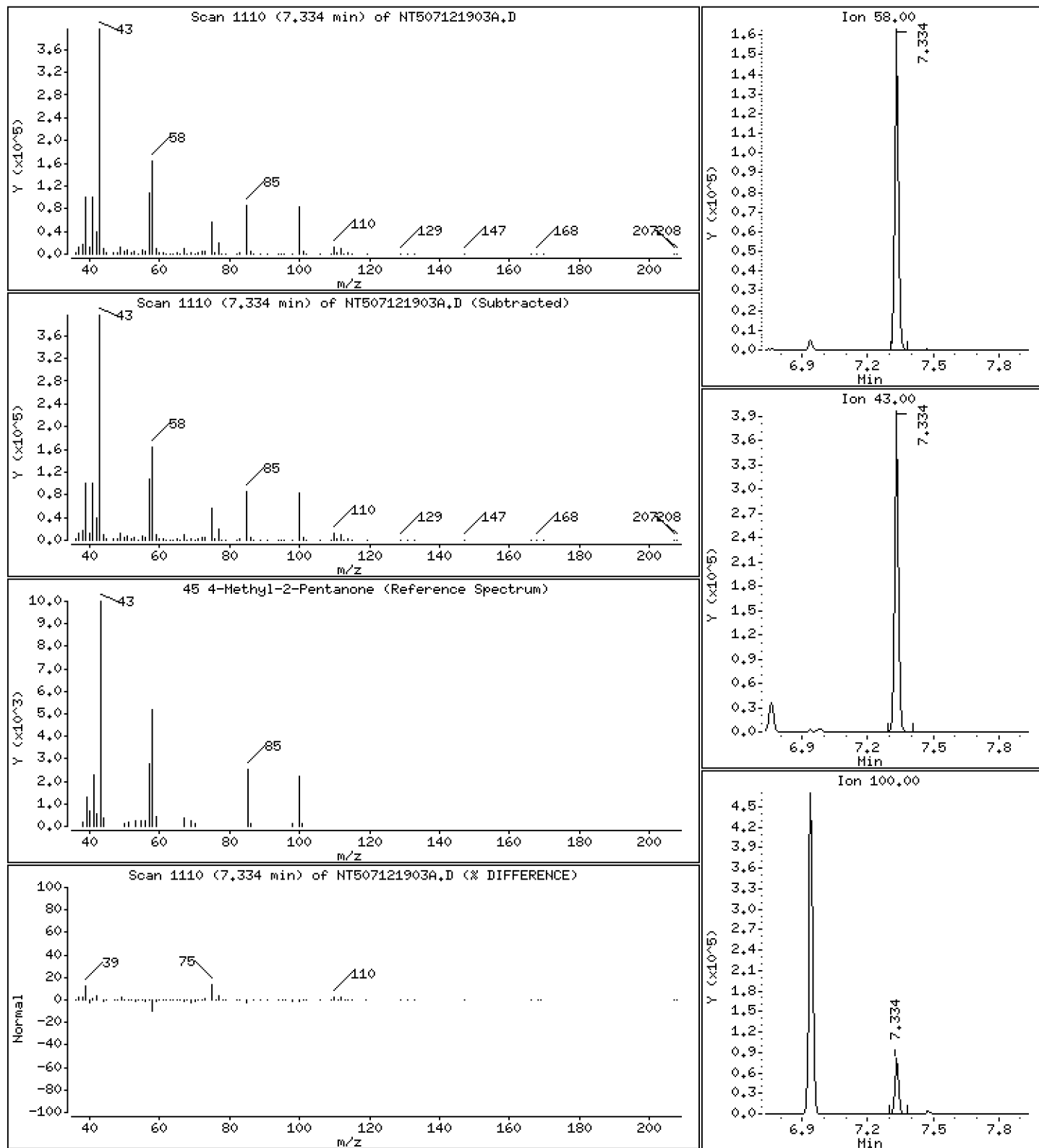
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 235.78 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

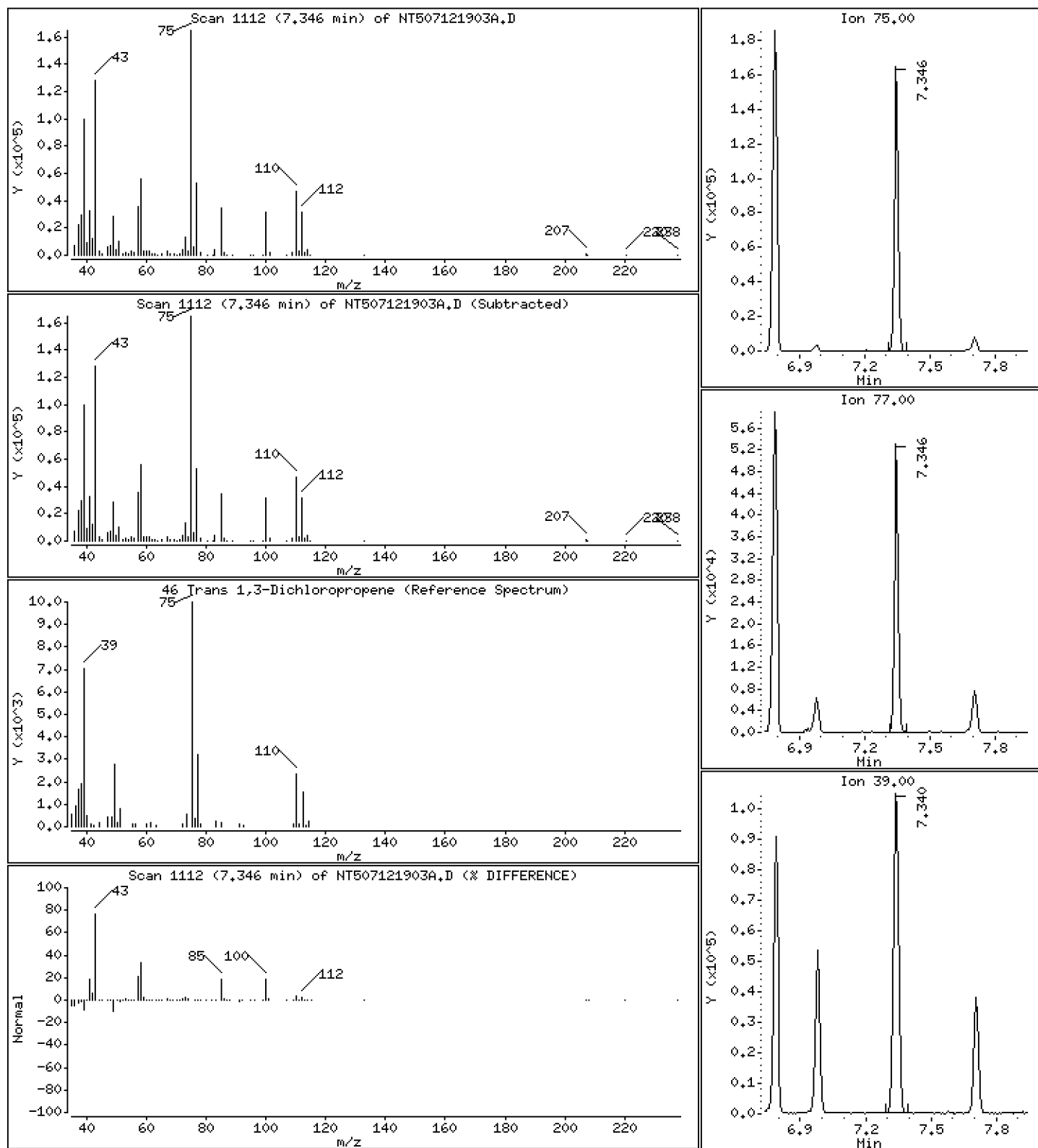
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 46,846 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

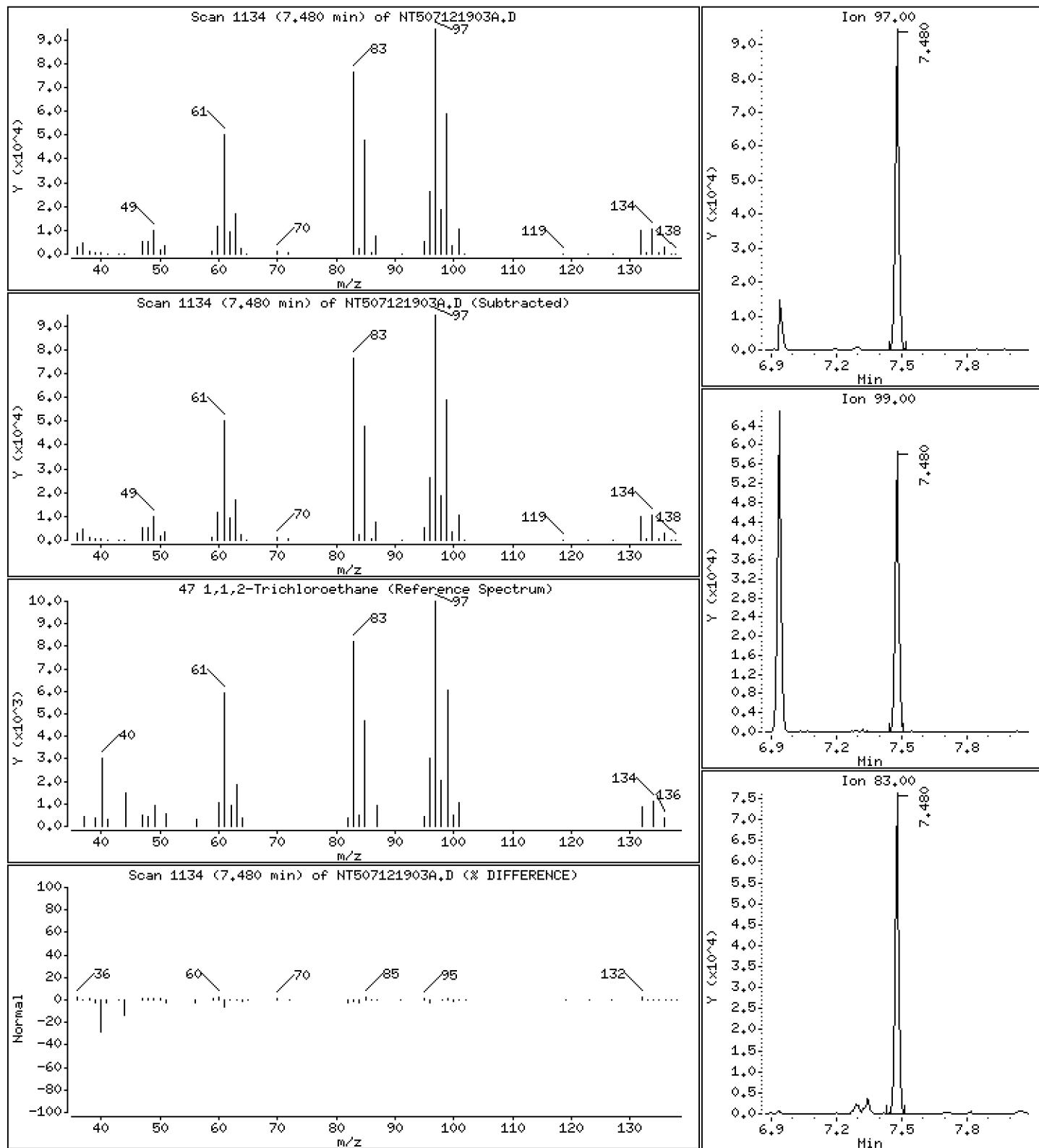
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 44,798 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

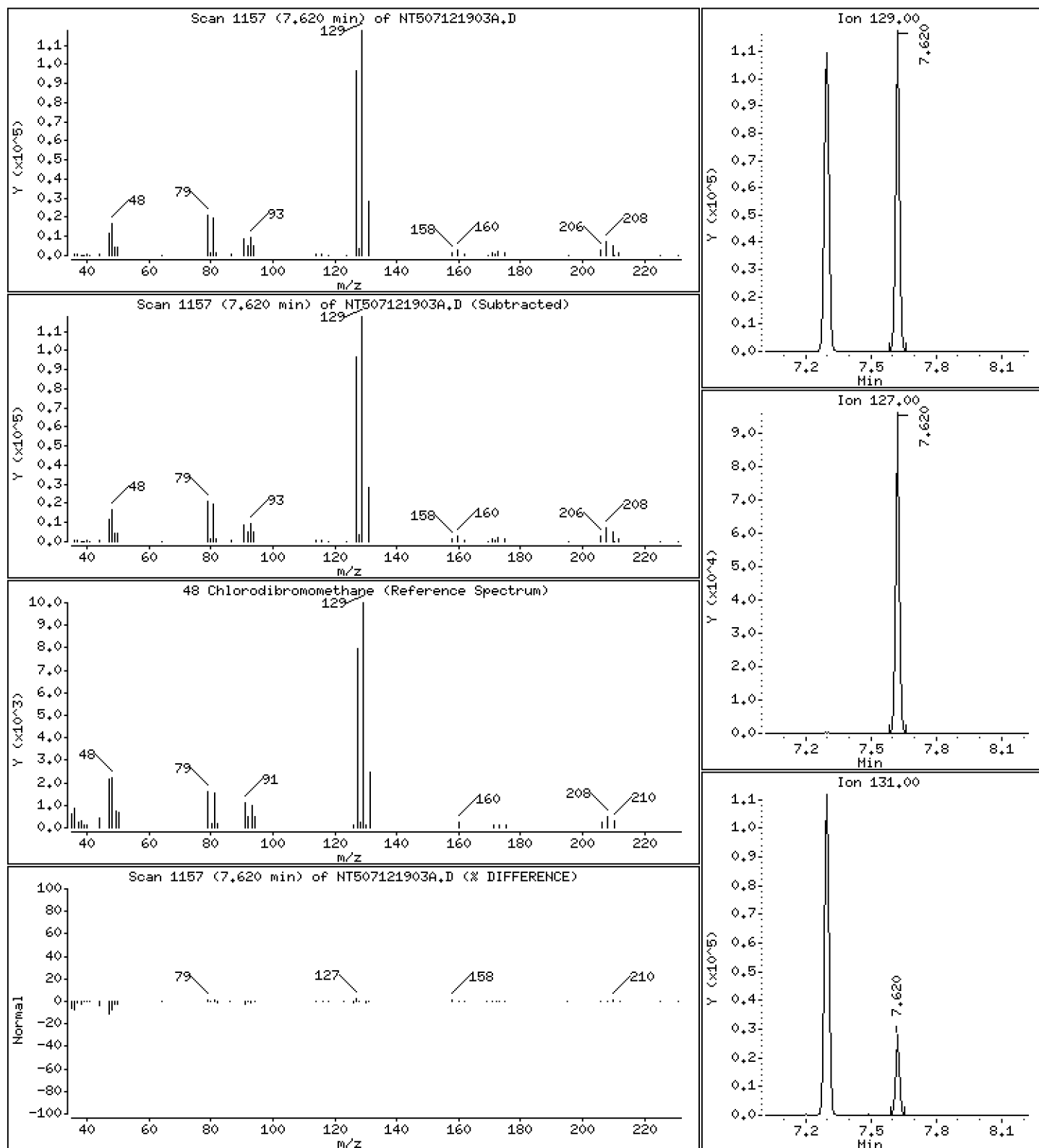
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 44,005 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: IGV1

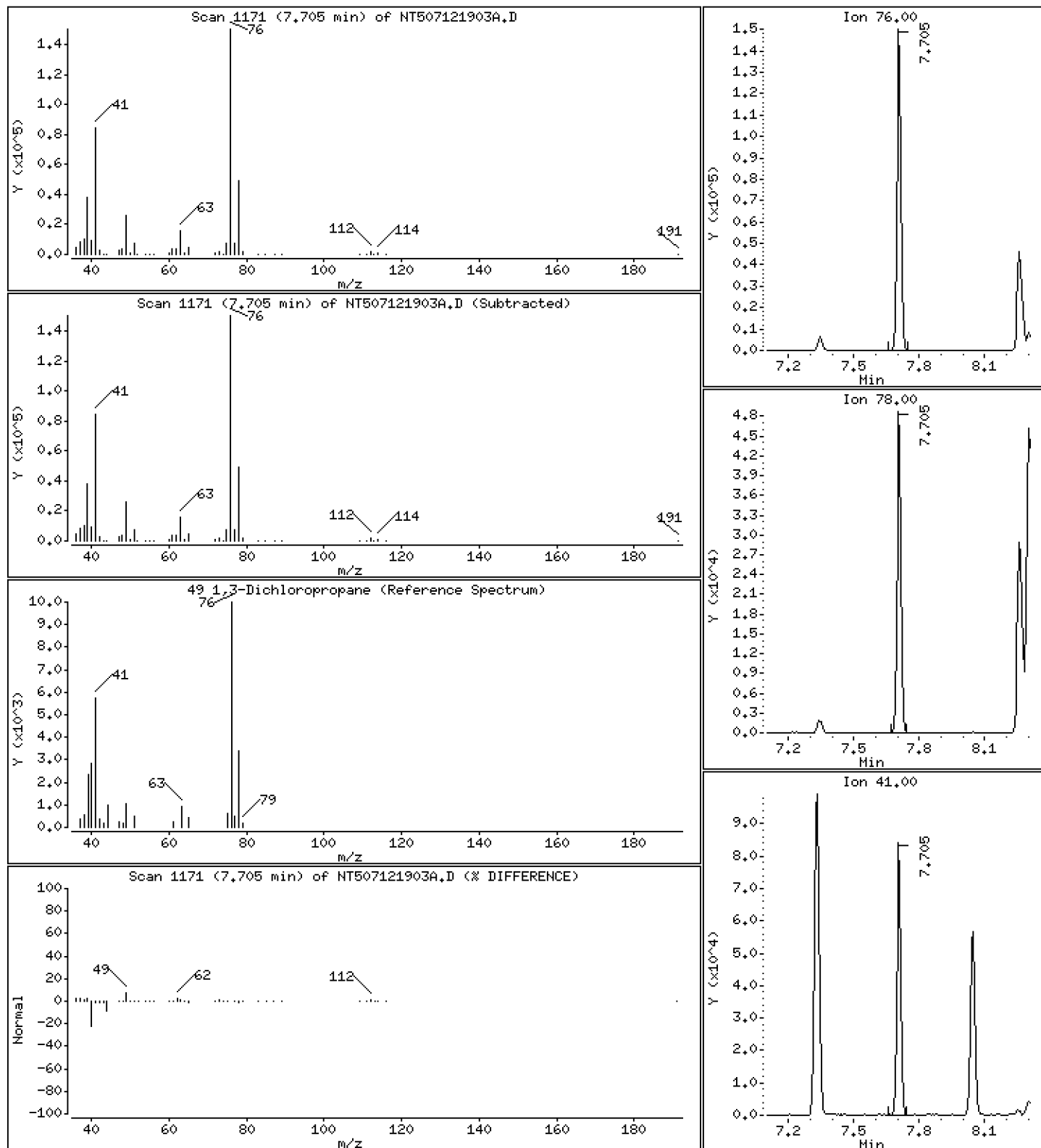
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 42,943 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

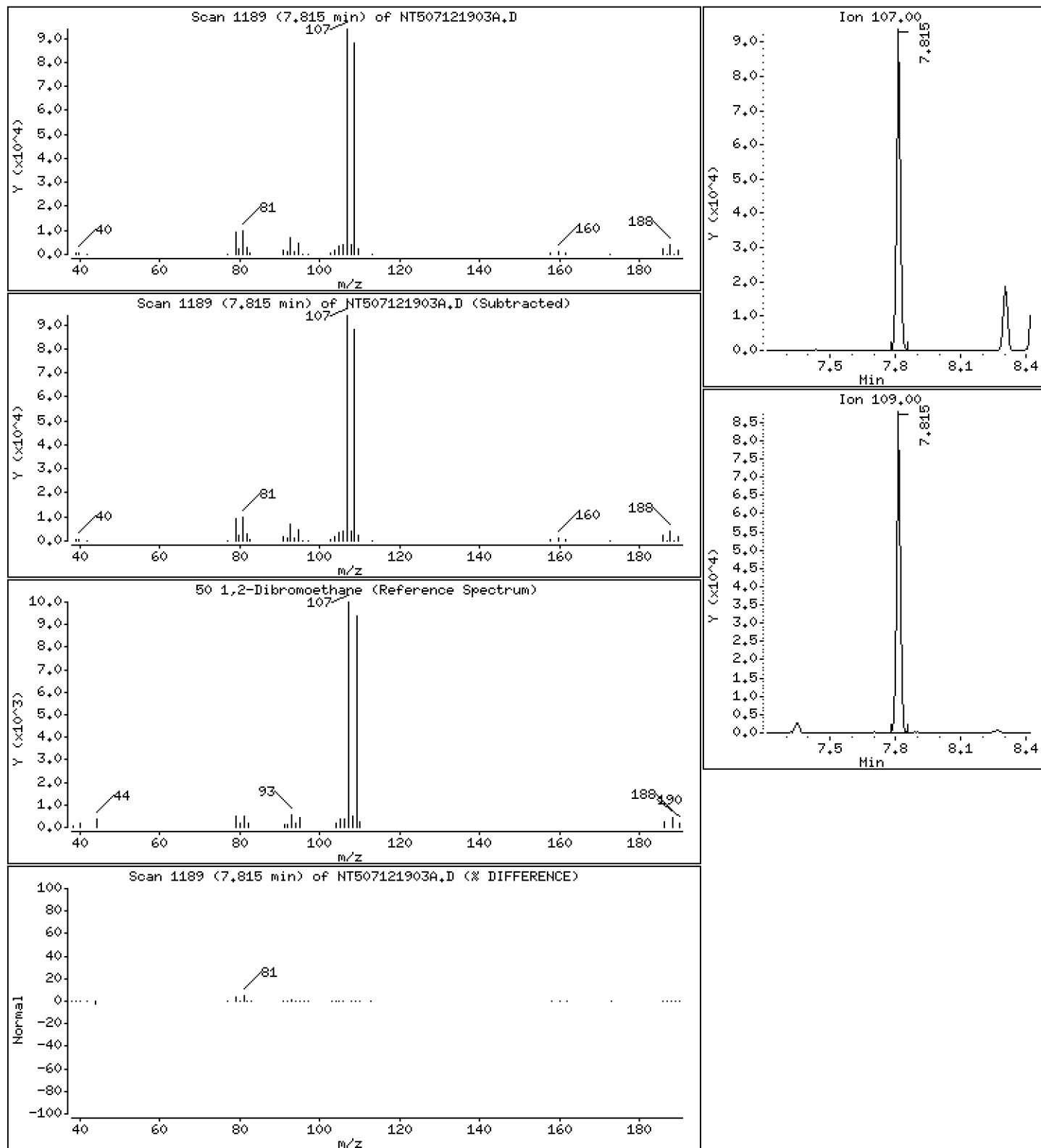
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 45.058 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

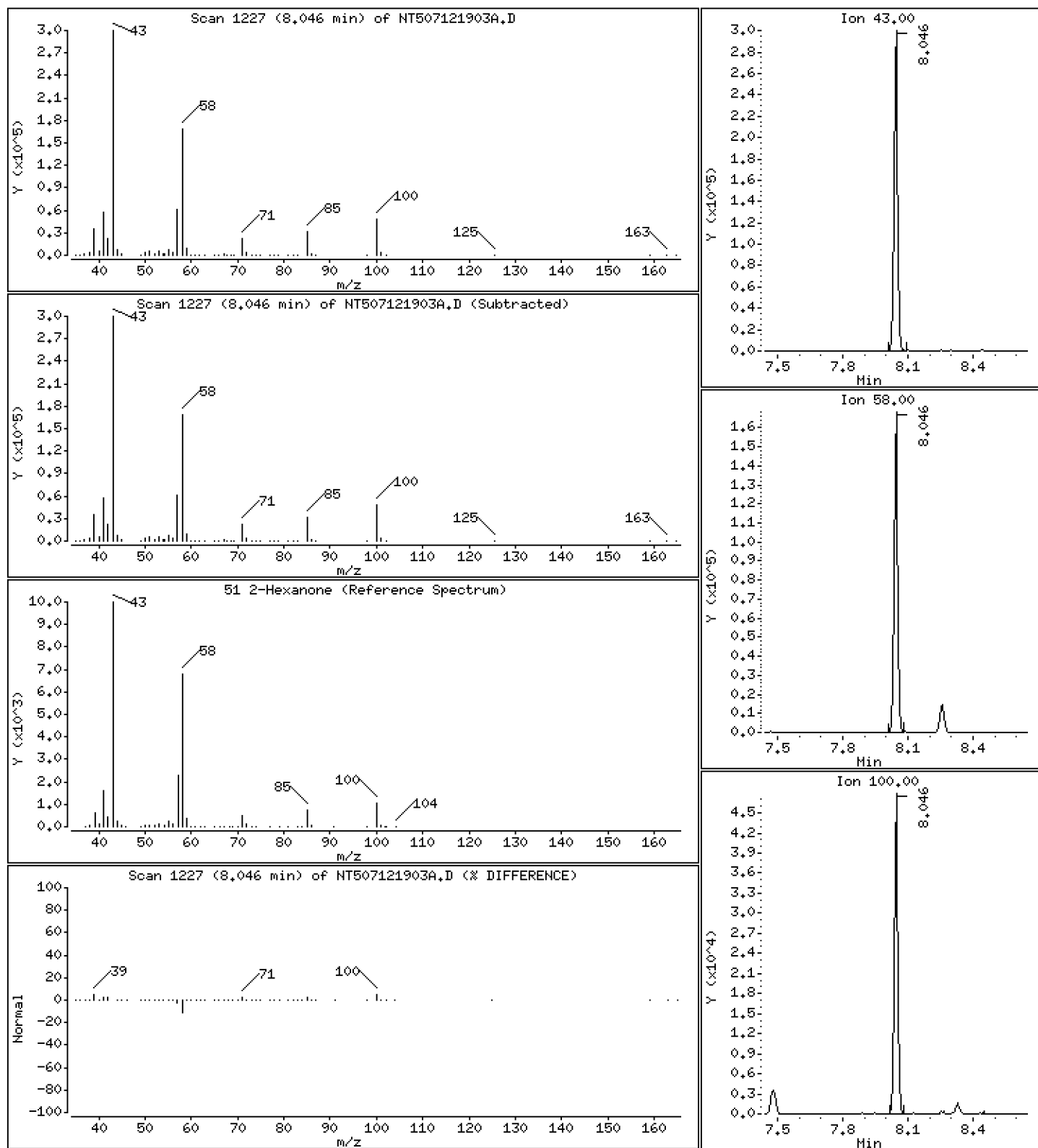
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 228.30 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

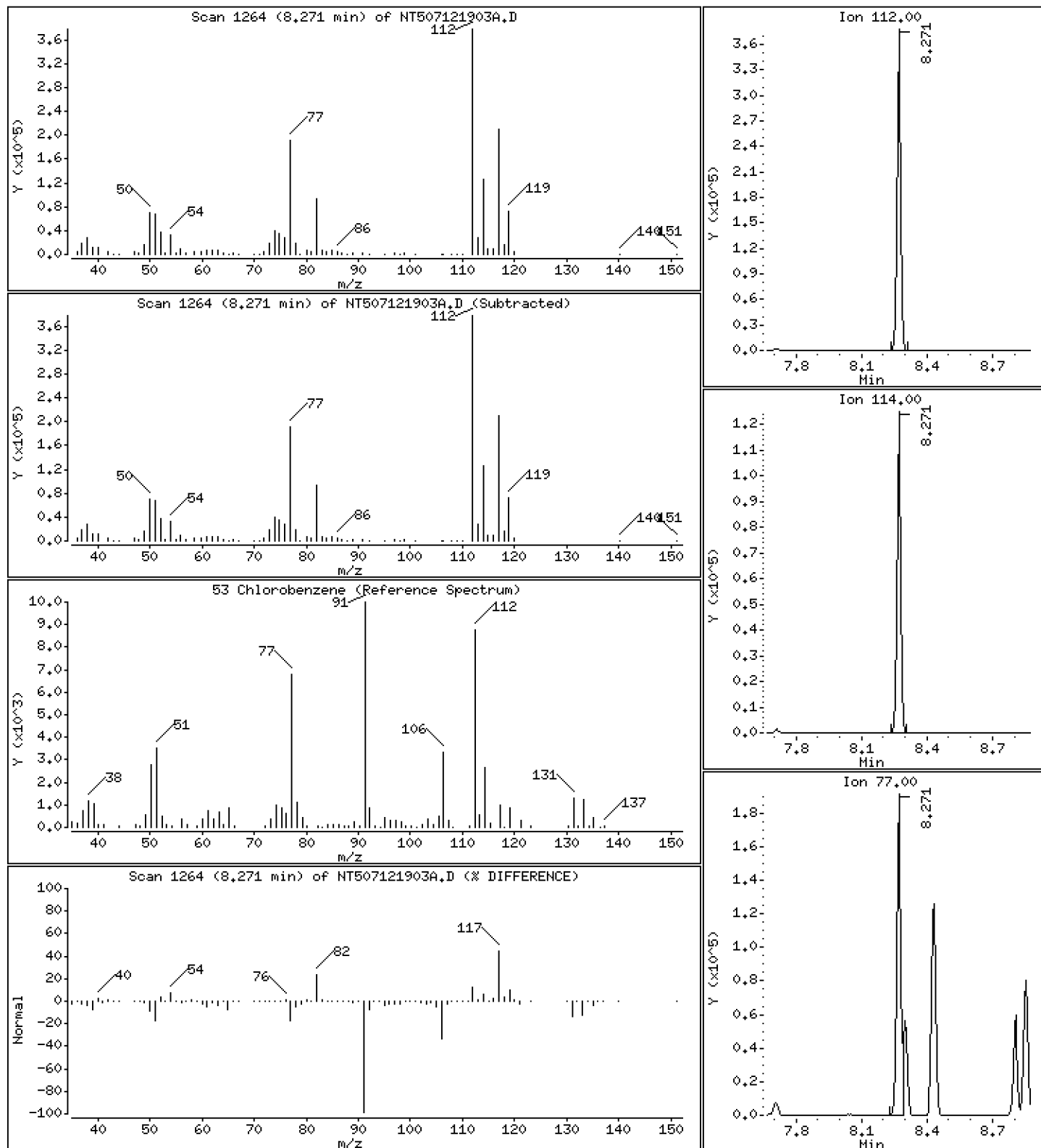
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 42,612 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

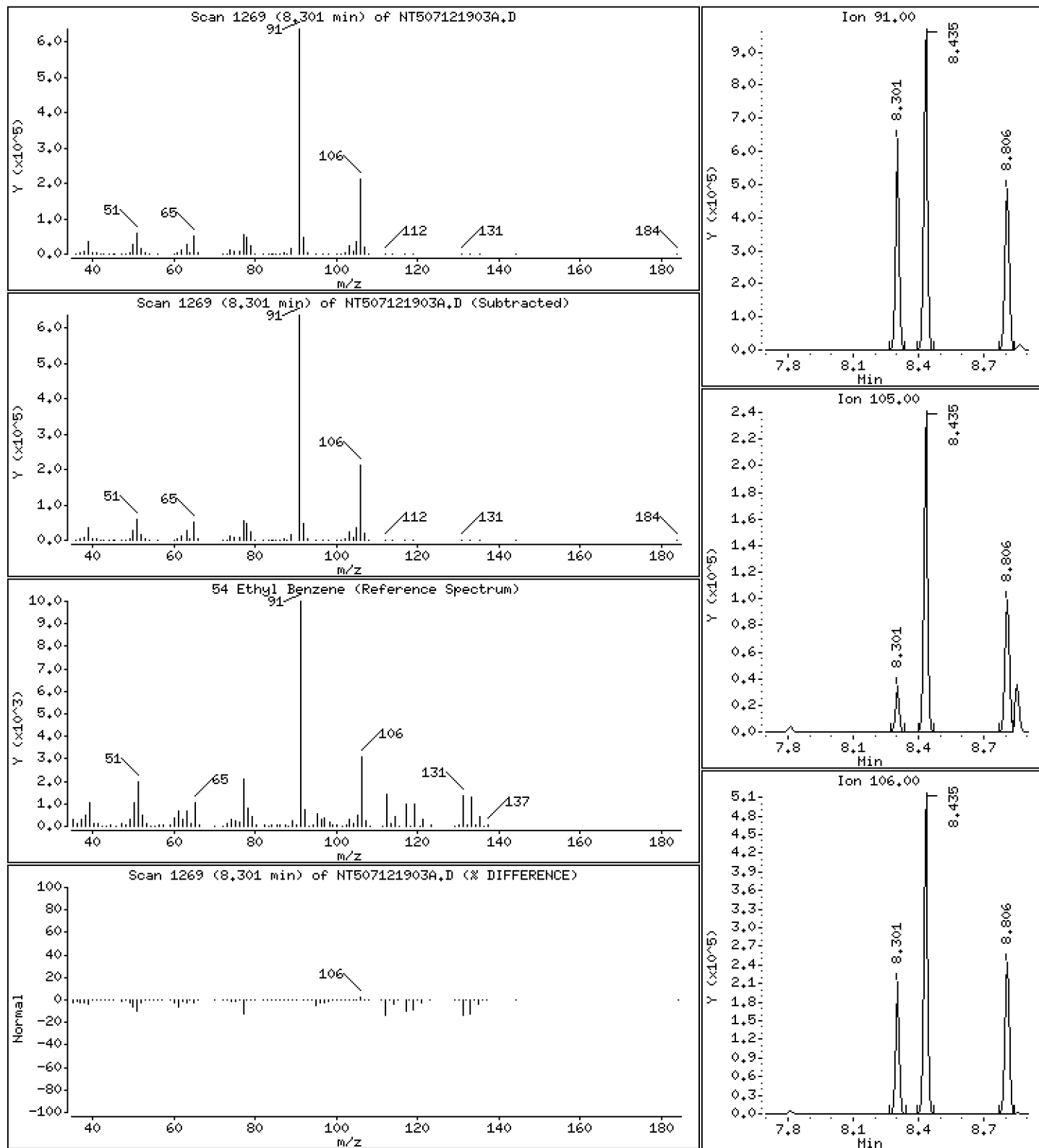
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 44,322 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

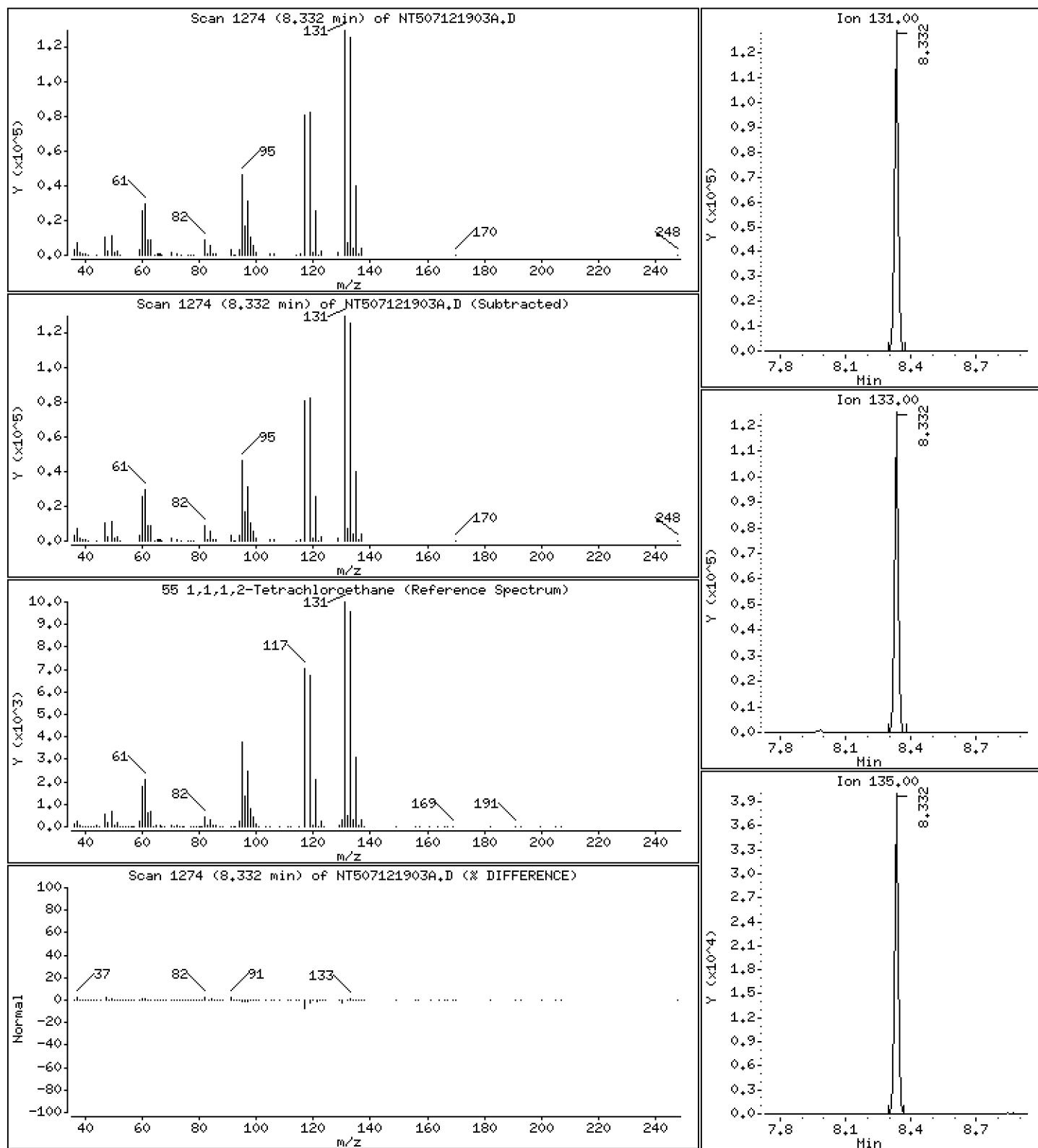
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 43,764 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

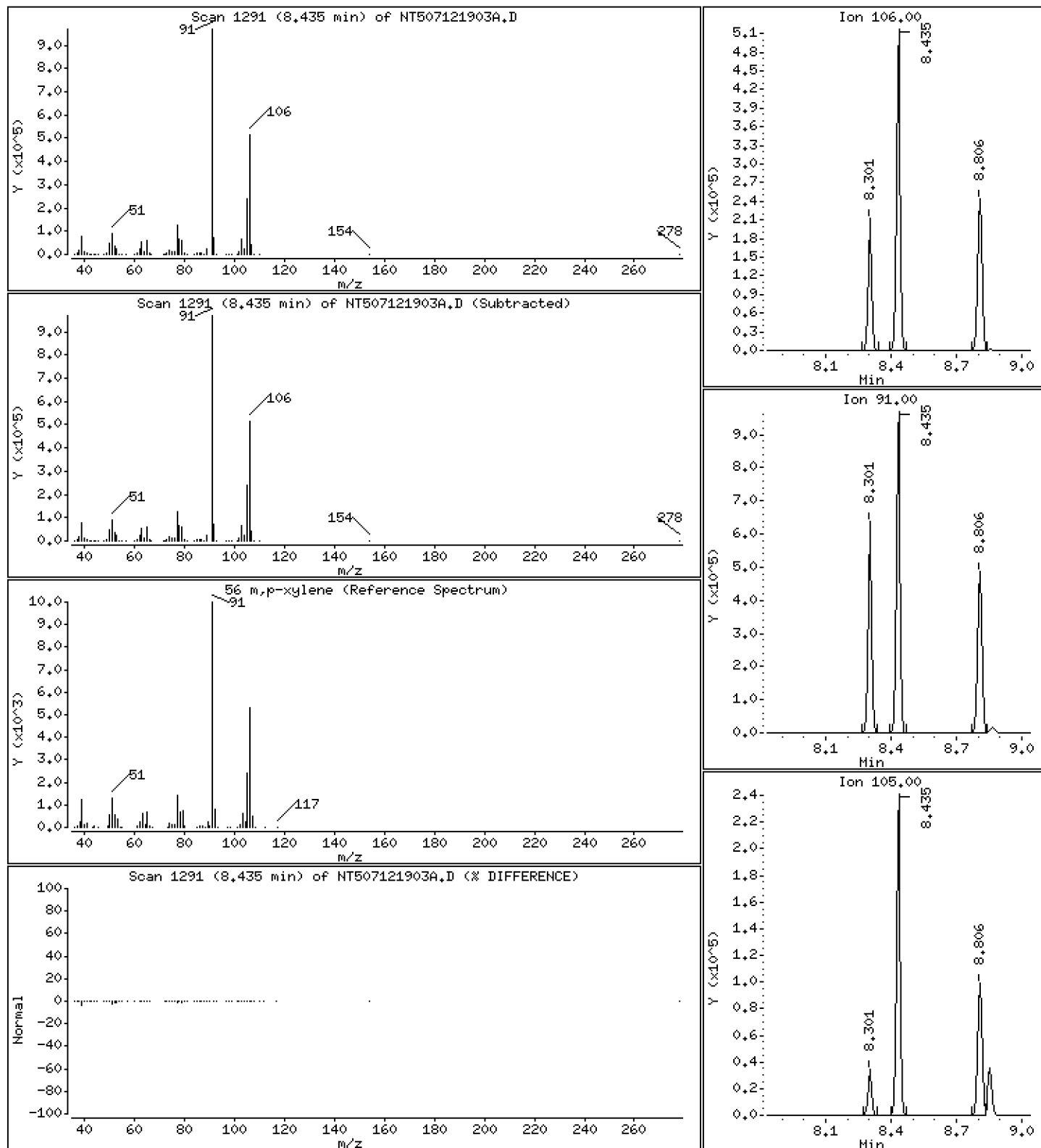
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 87.478 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

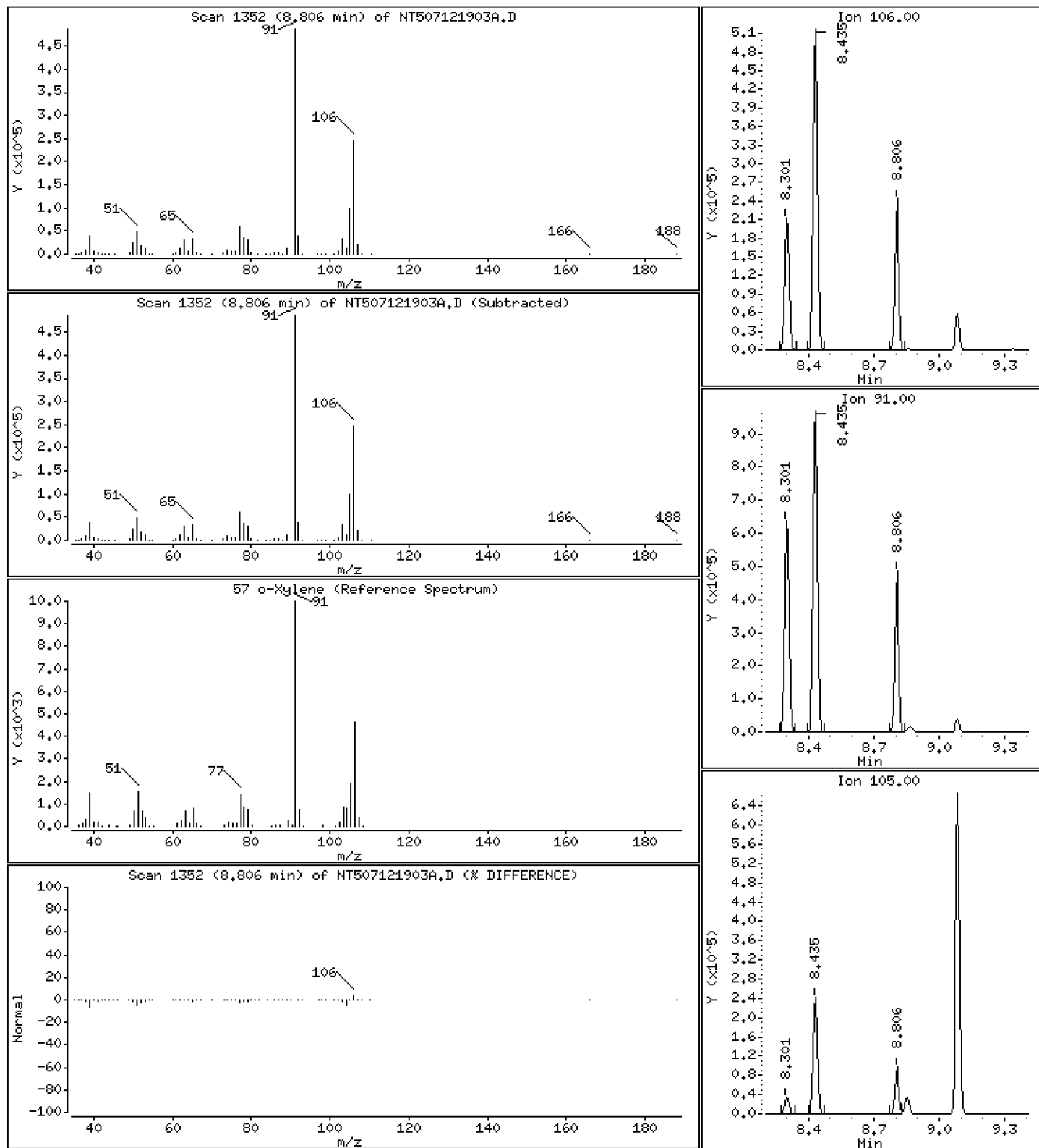
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 43.478 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

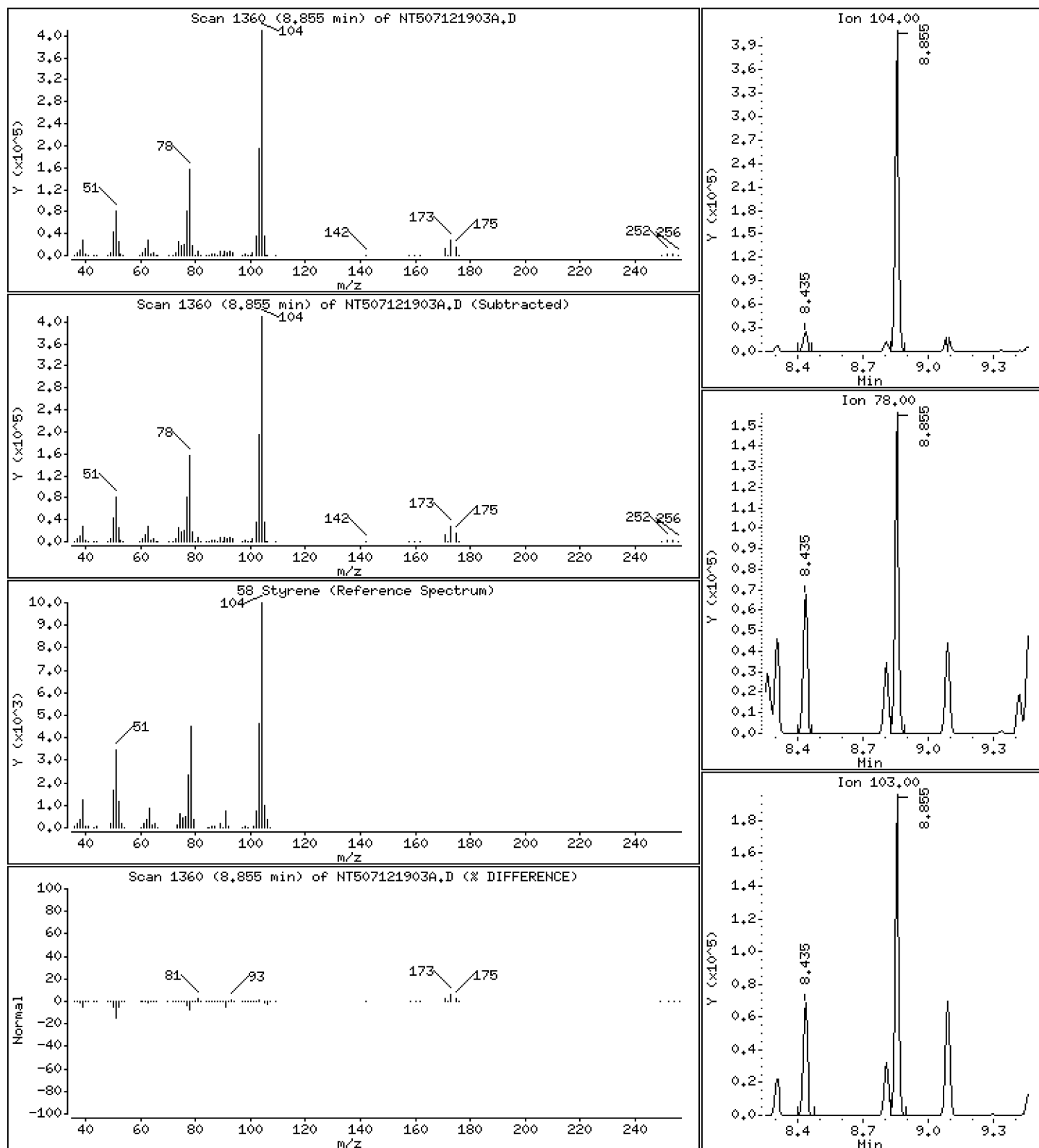
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 43,726 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

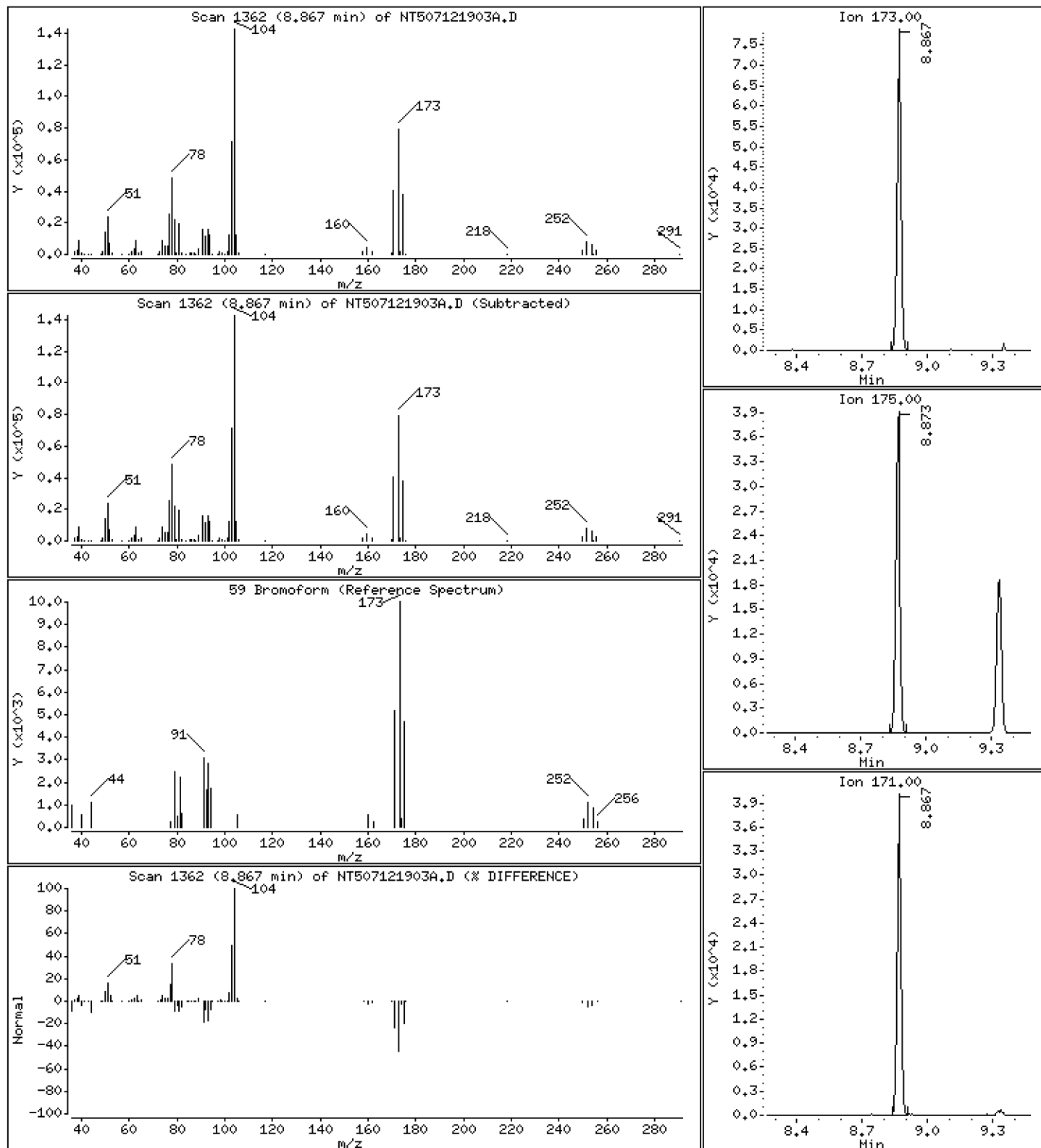
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59 Bromoform

Concentration: 42,309 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

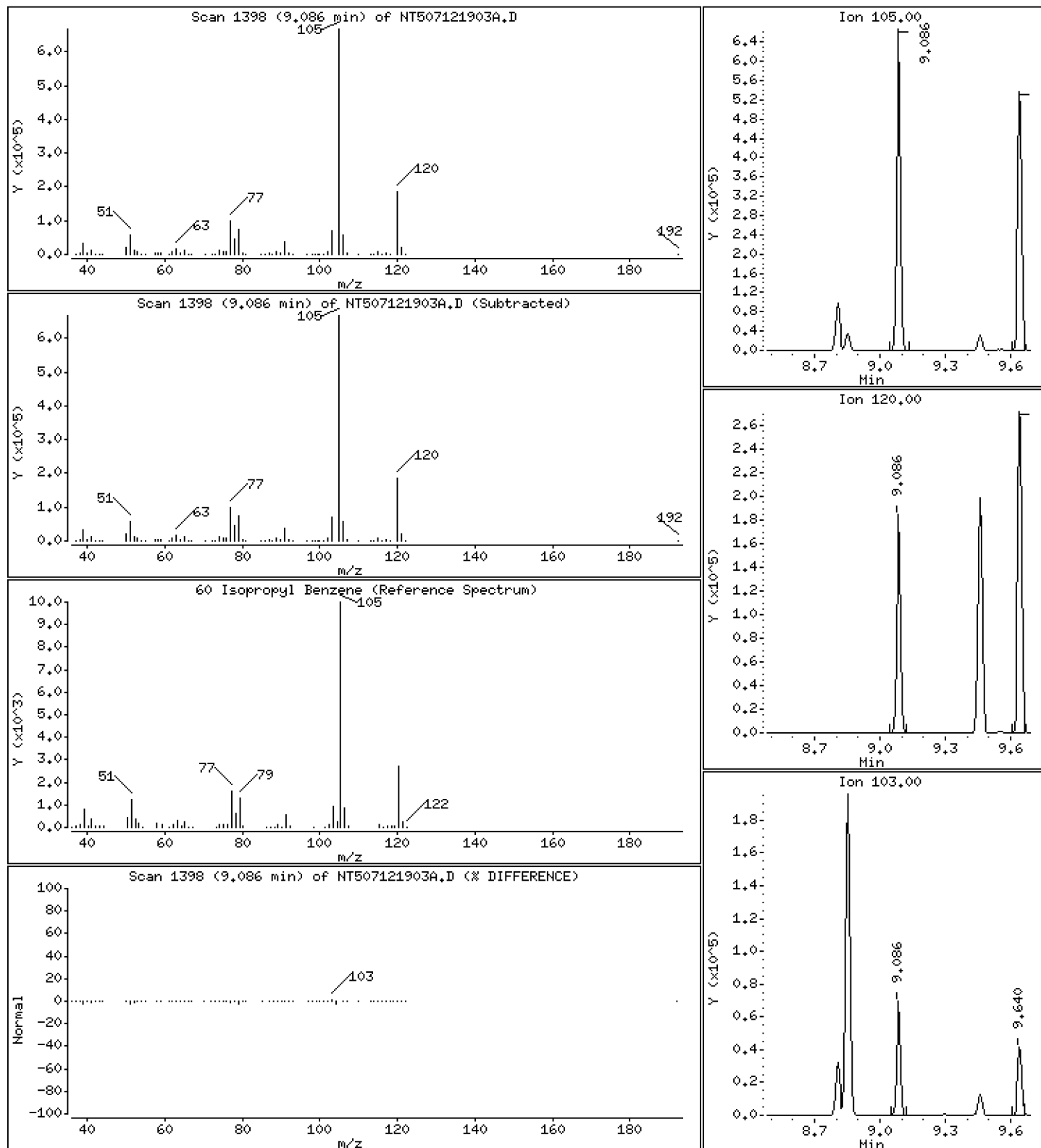
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 45,768 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

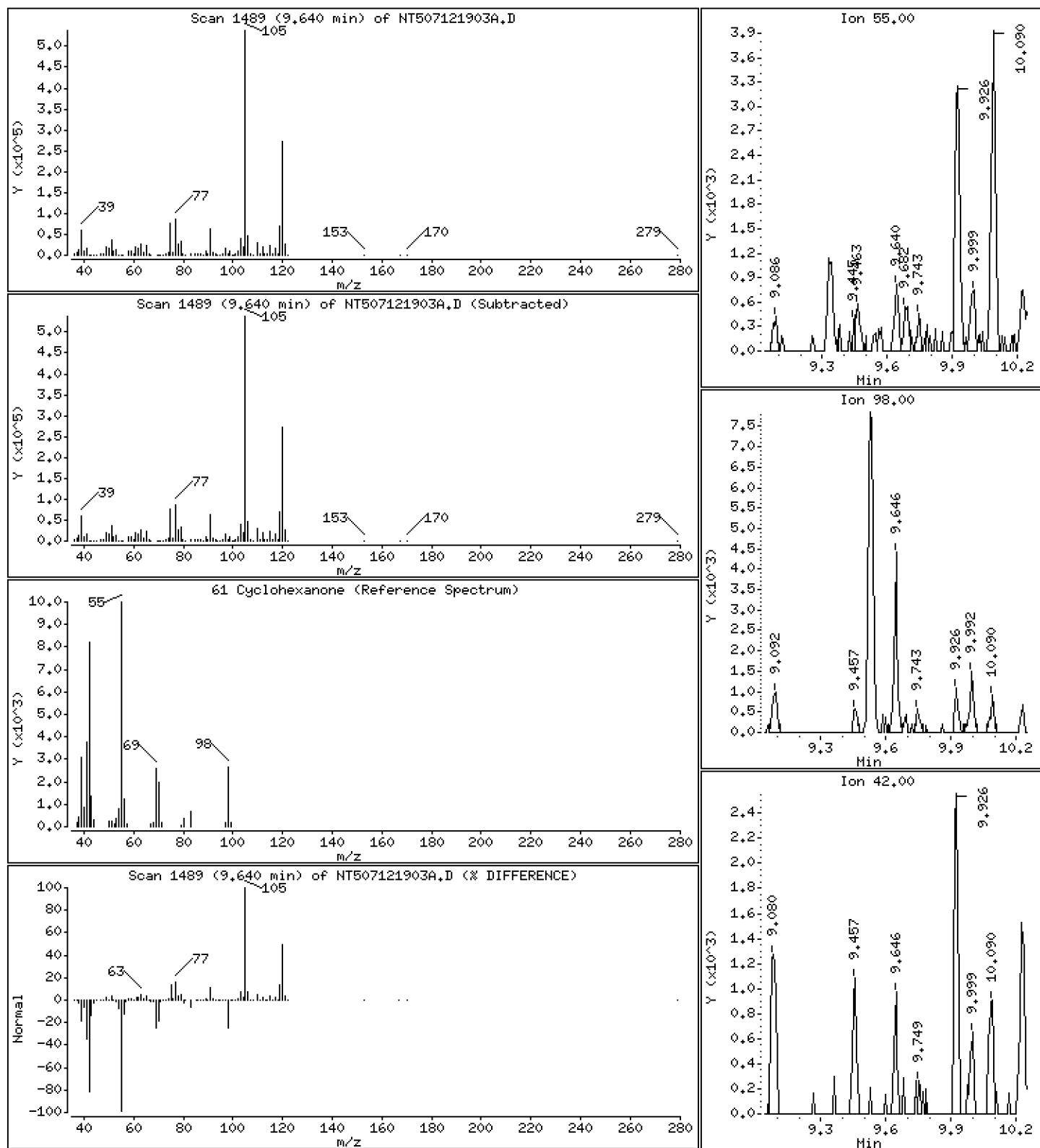
Sample Info: ICV1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

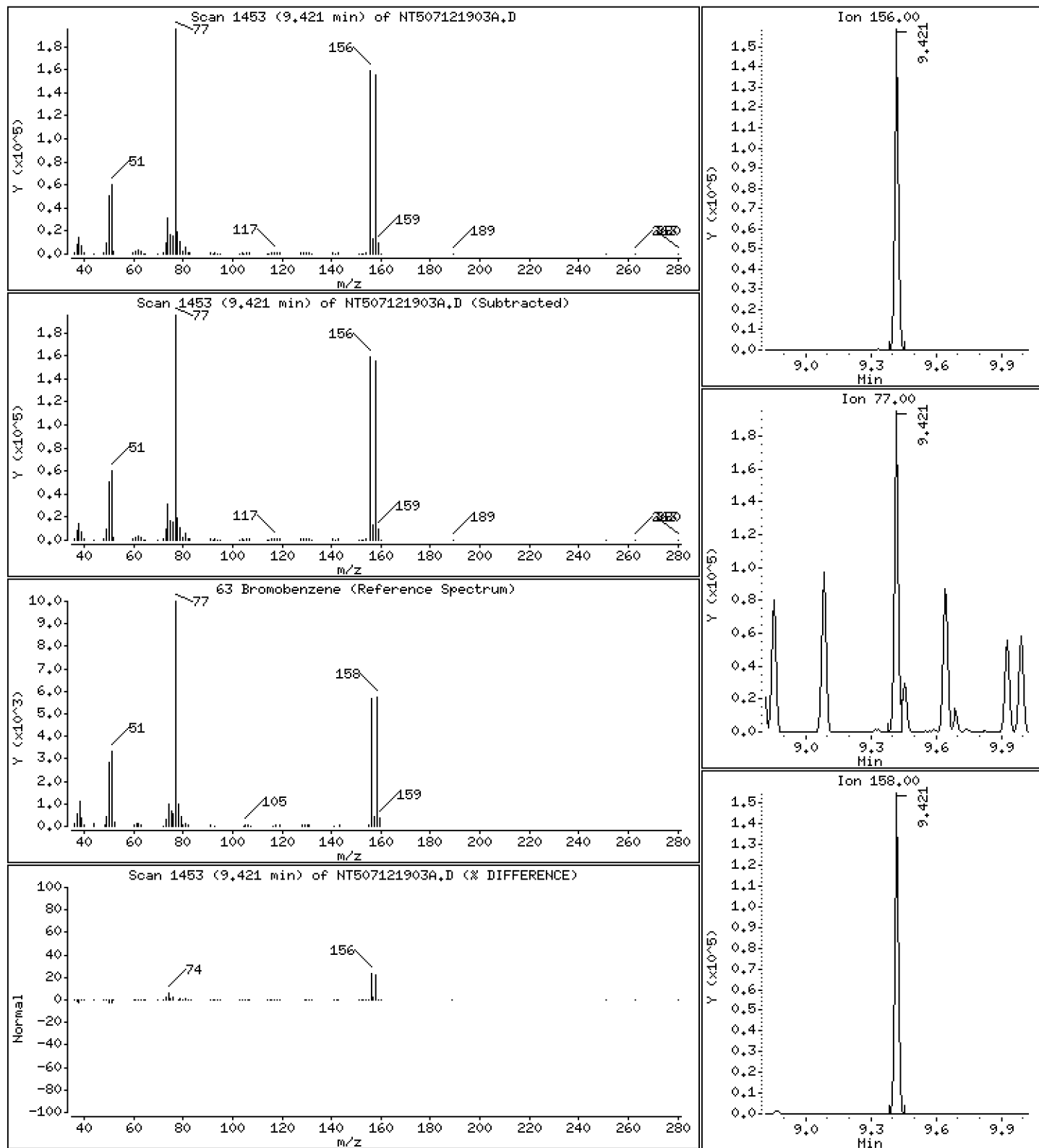
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 42,658 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

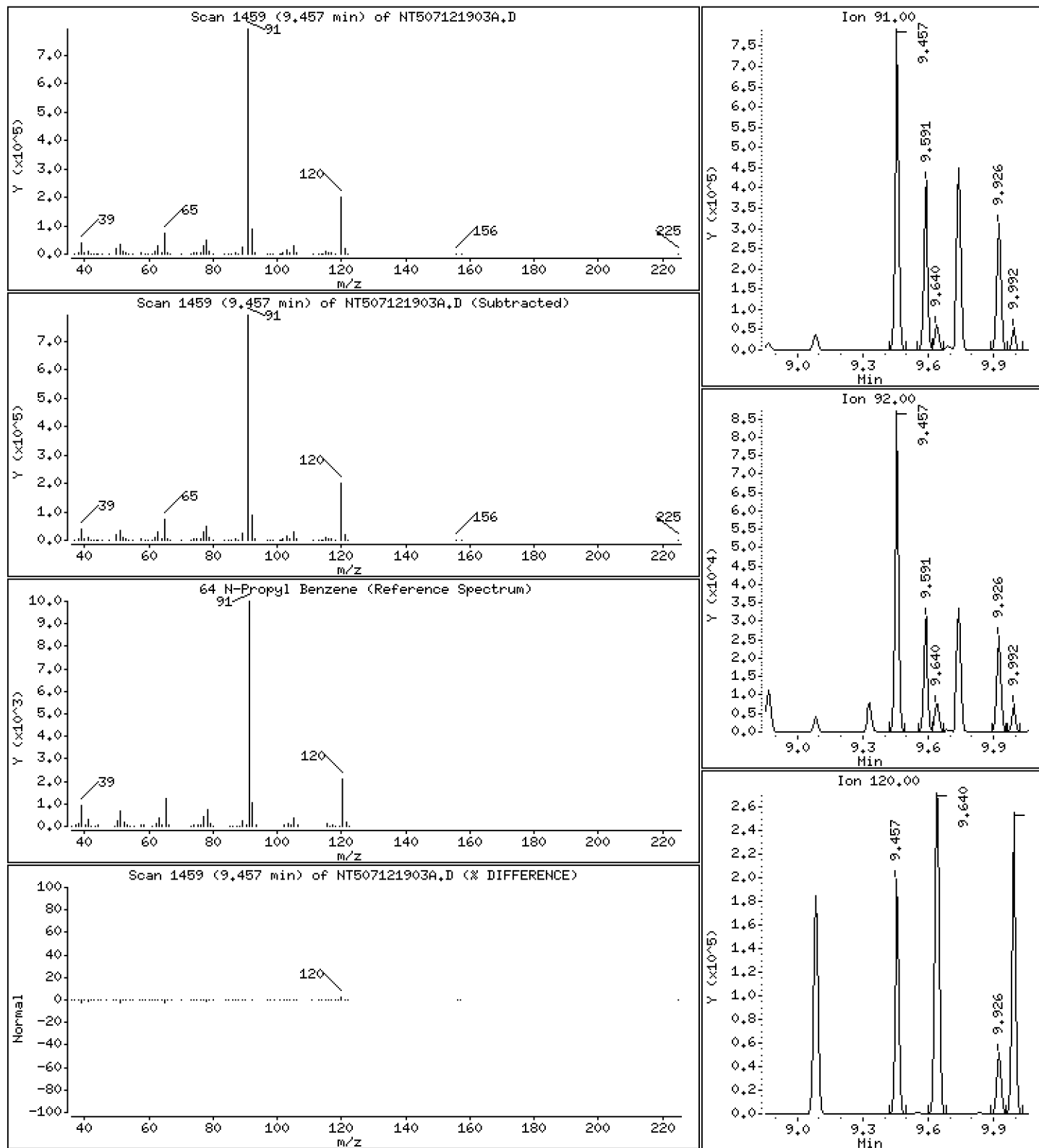
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 45,999 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

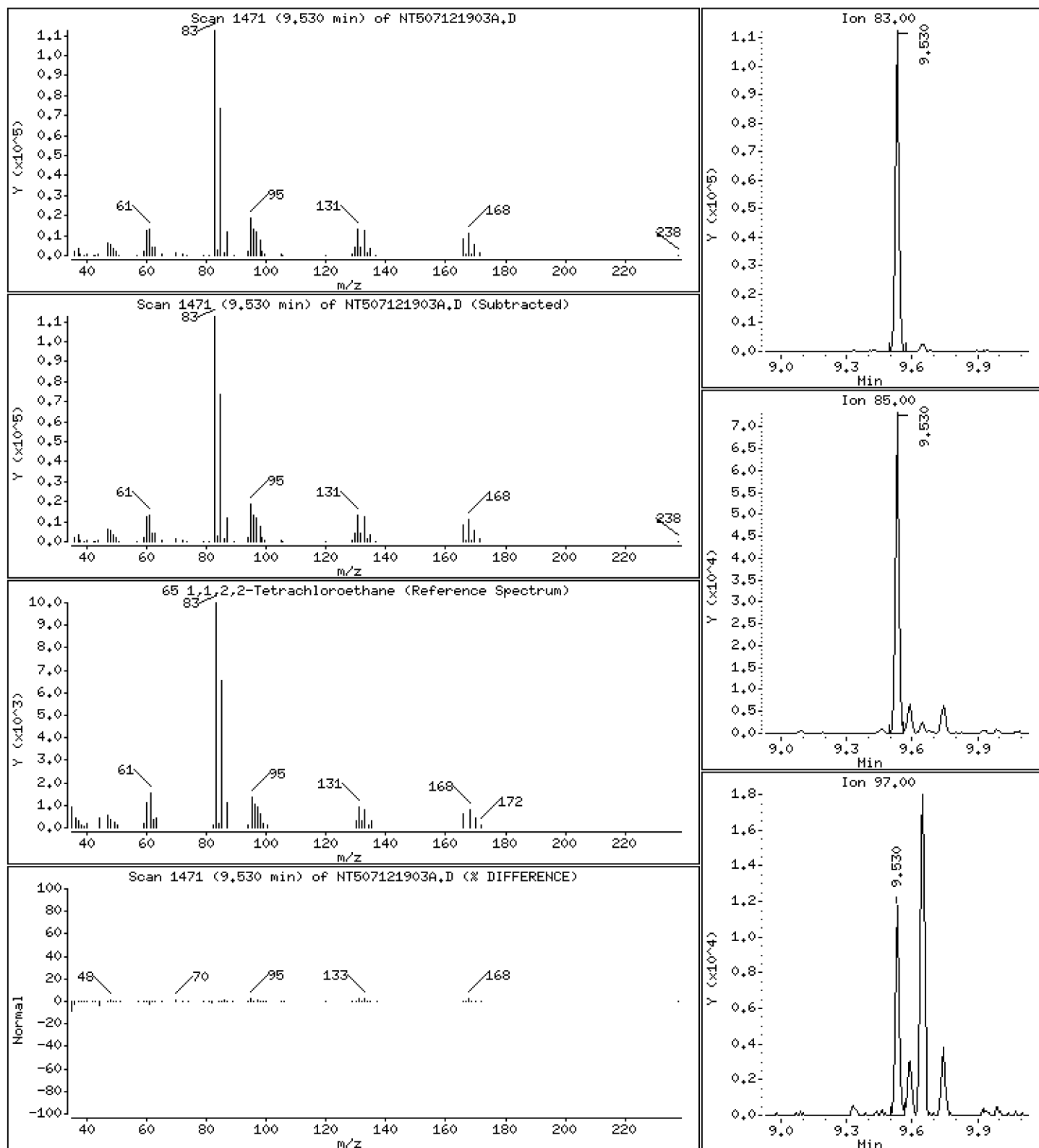
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 44,002 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

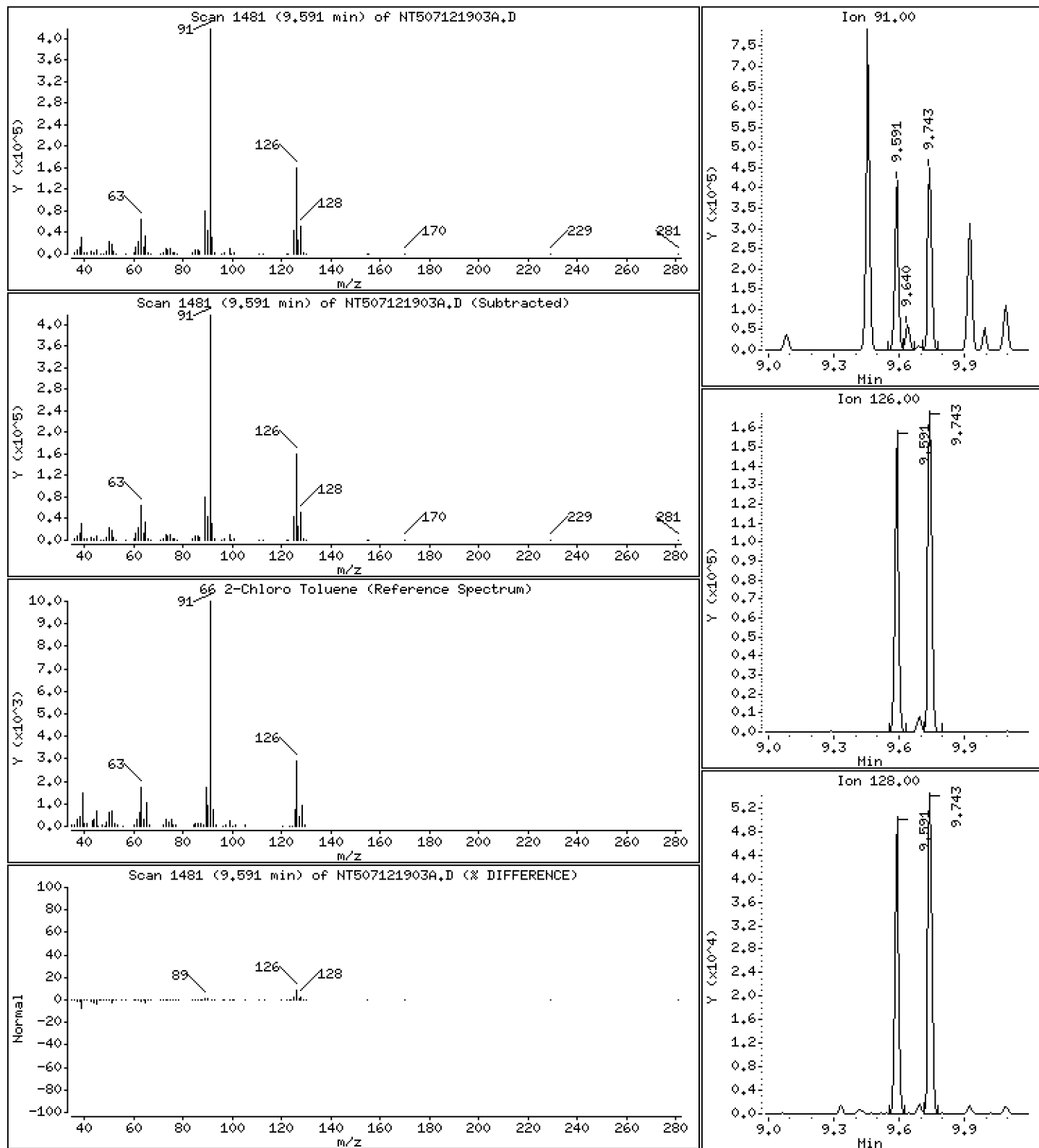
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 44,772 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: IGV1

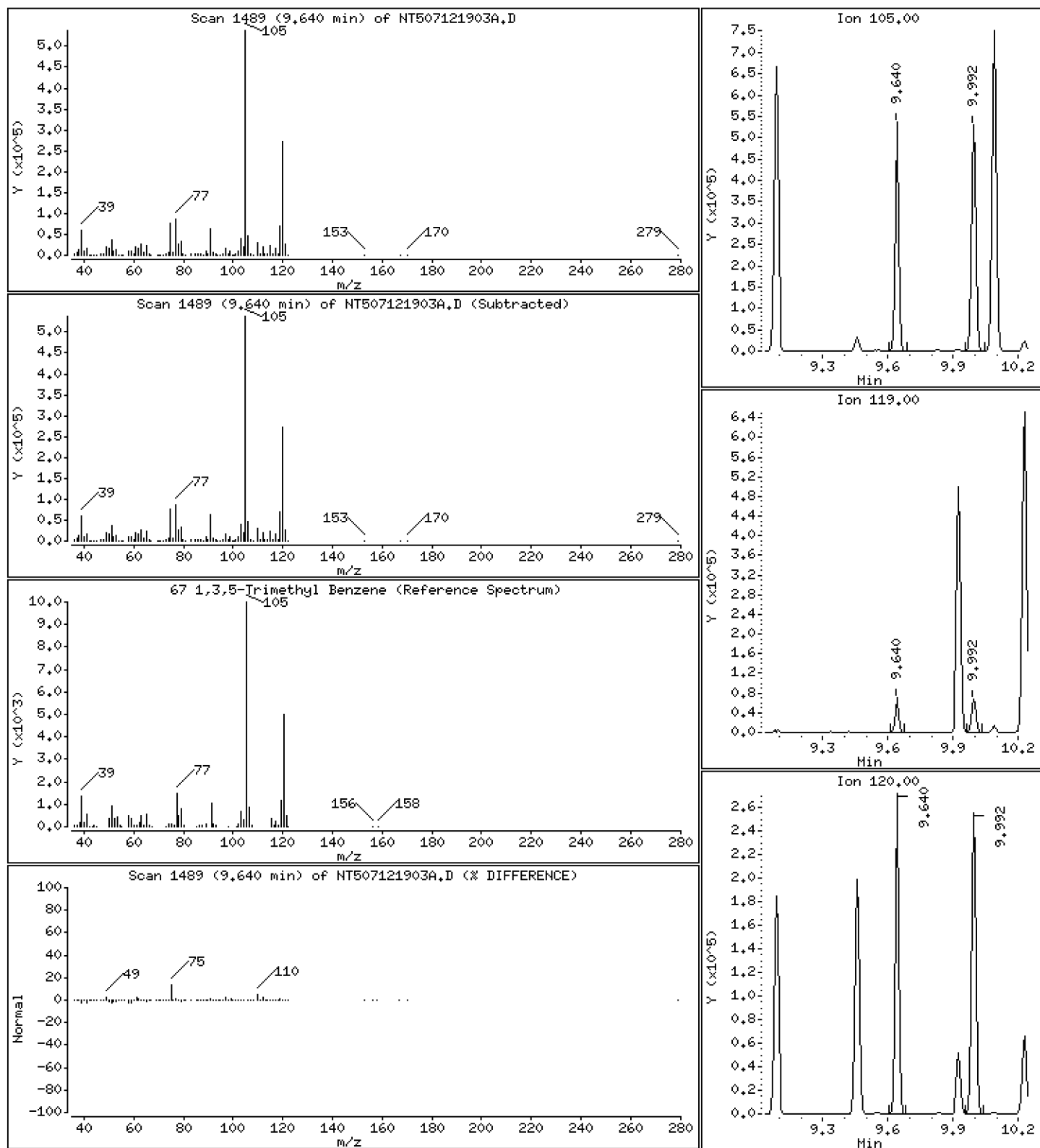
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 45.016 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

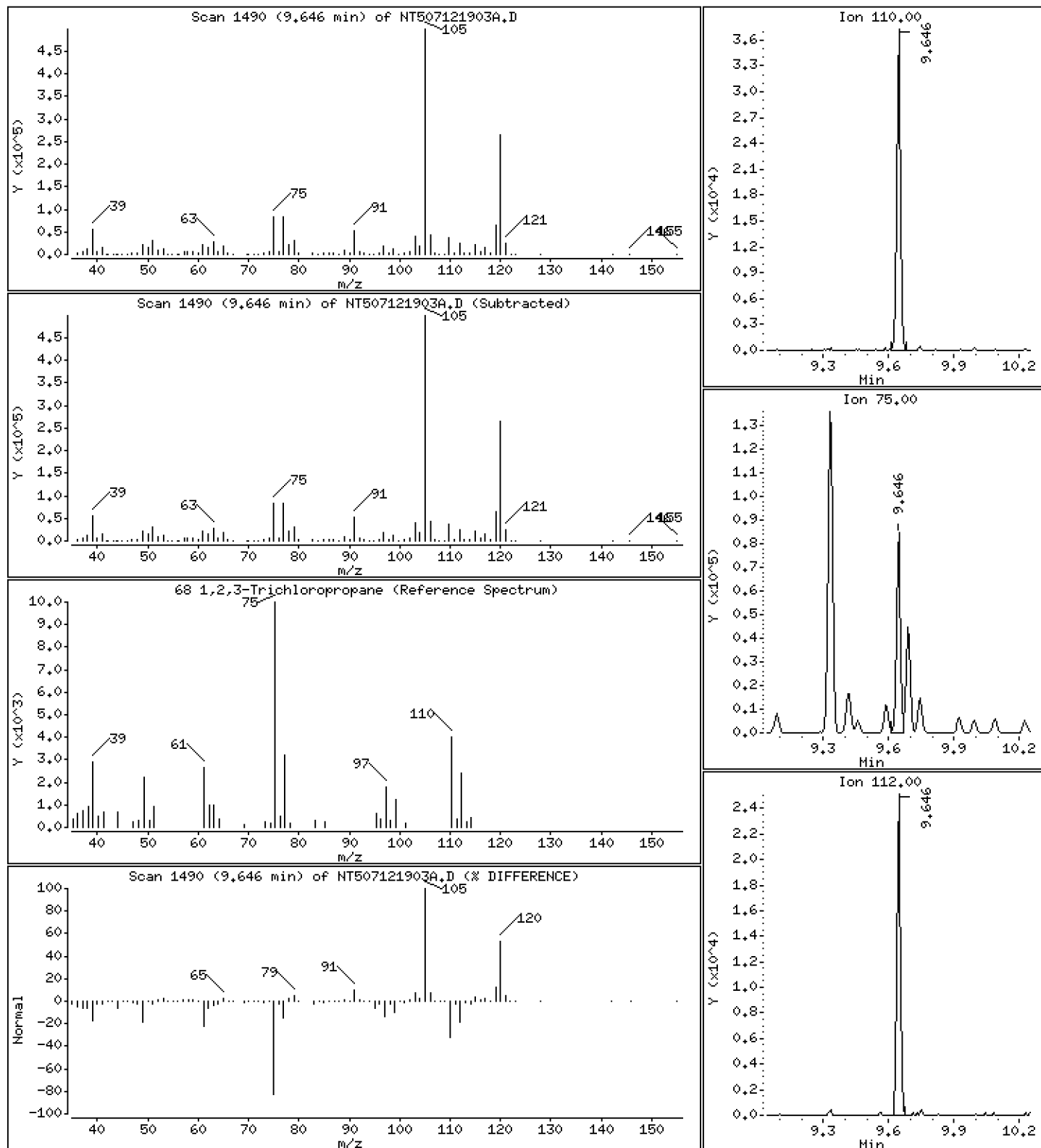
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 43,007 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

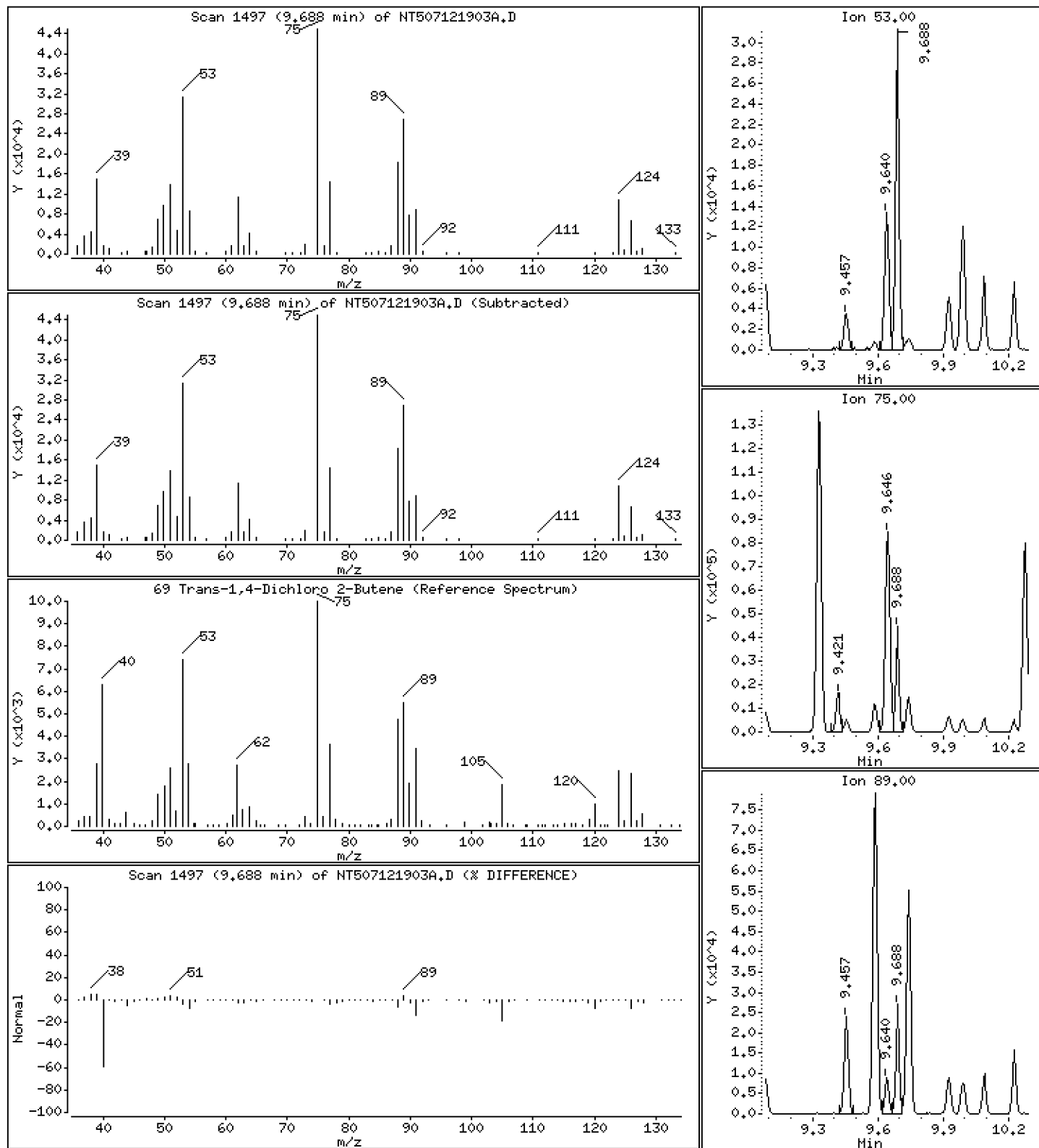
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 45,448 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

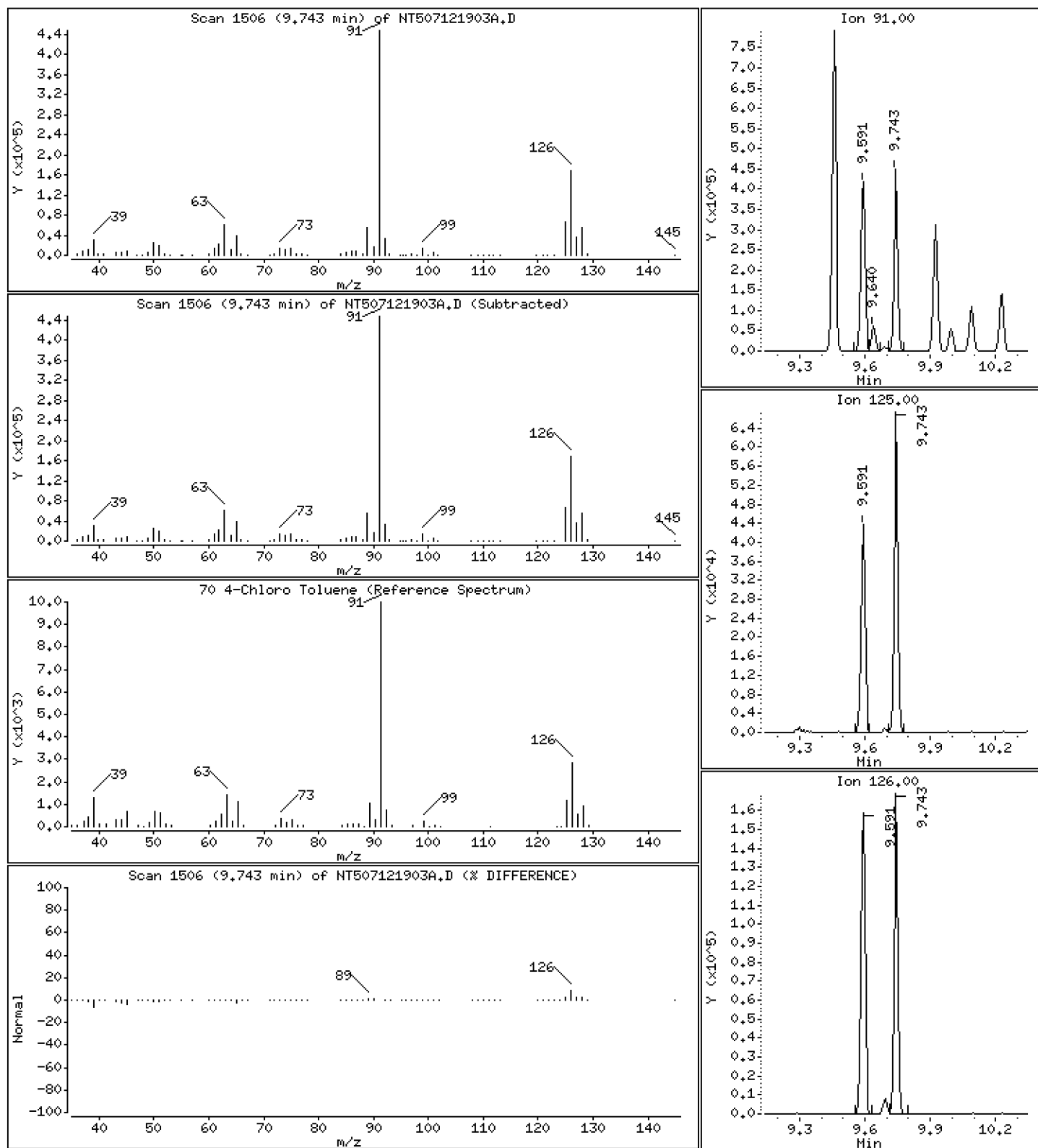
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 45.038 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

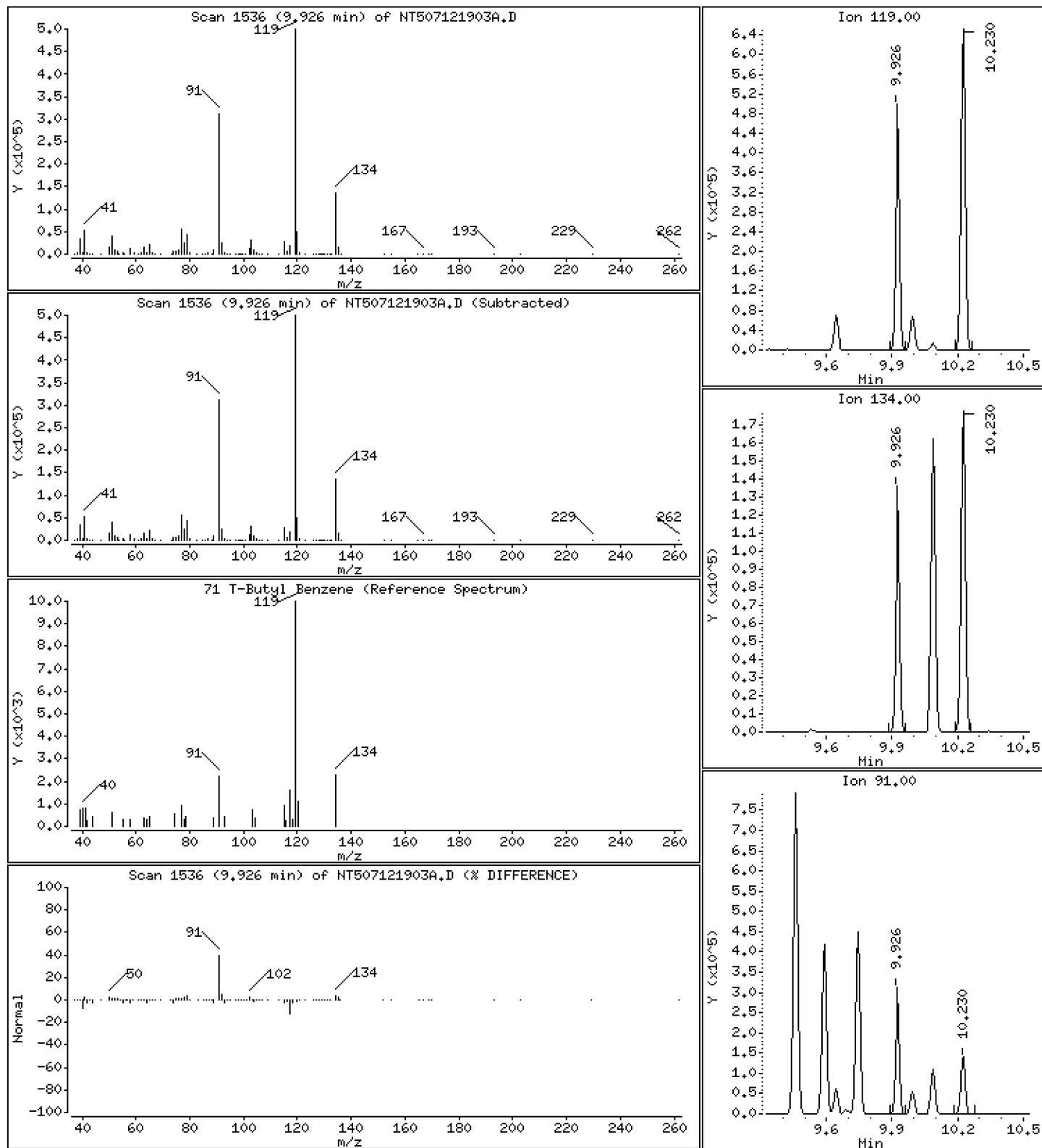
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 44,562 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

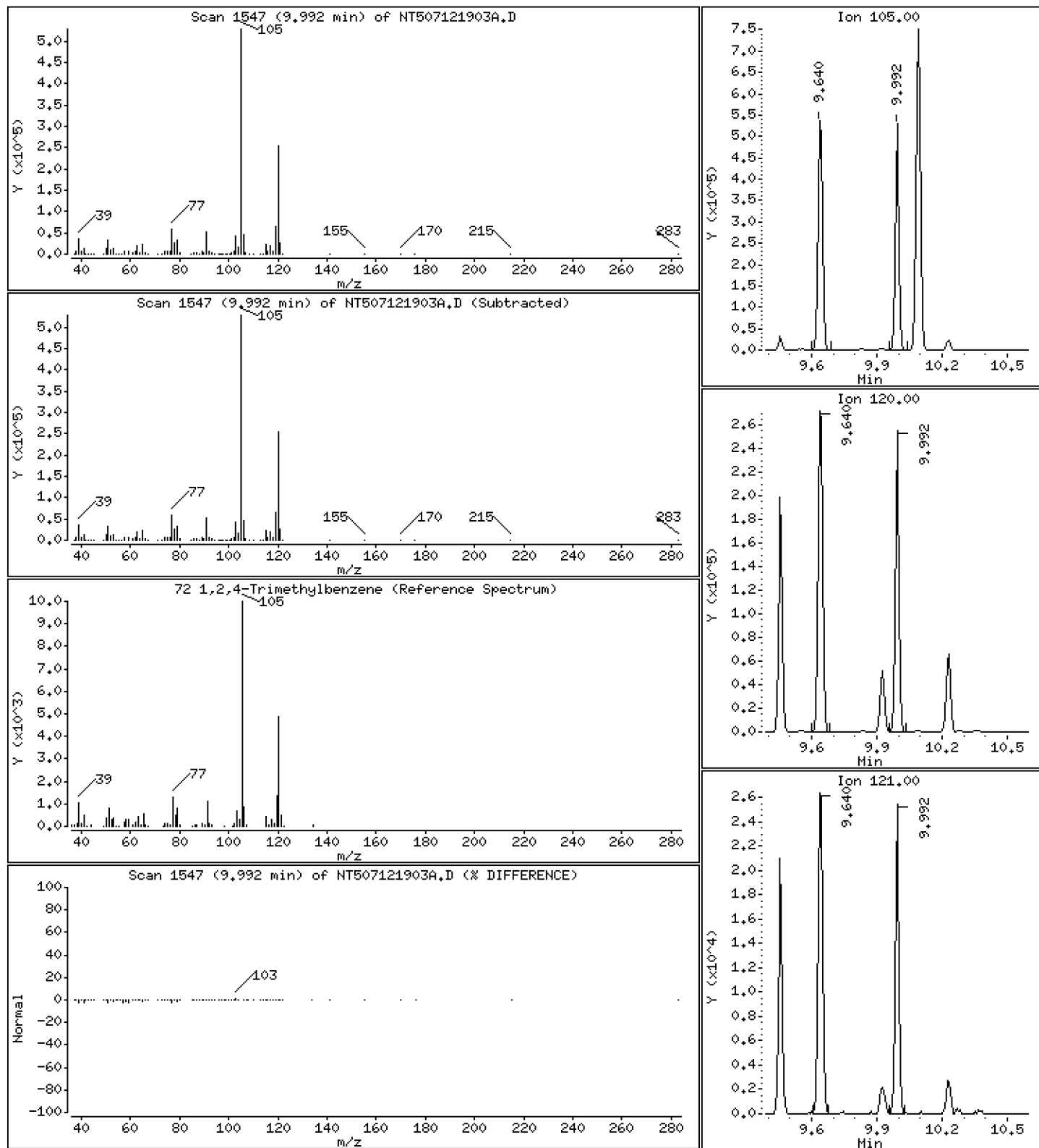
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 45,160 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

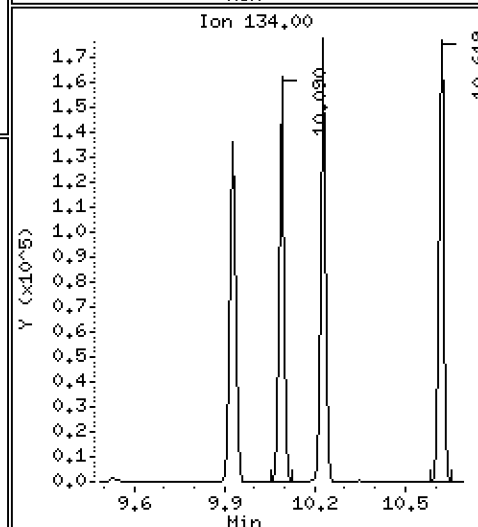
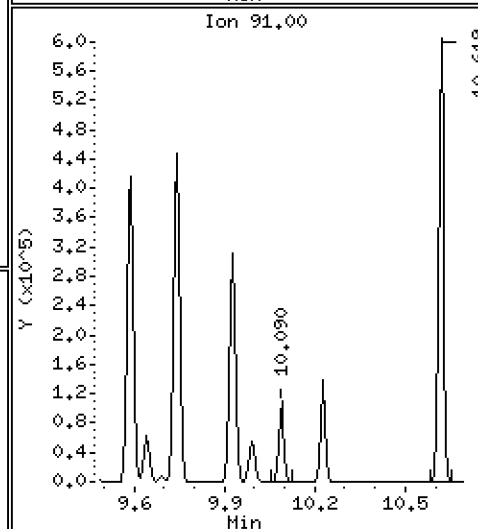
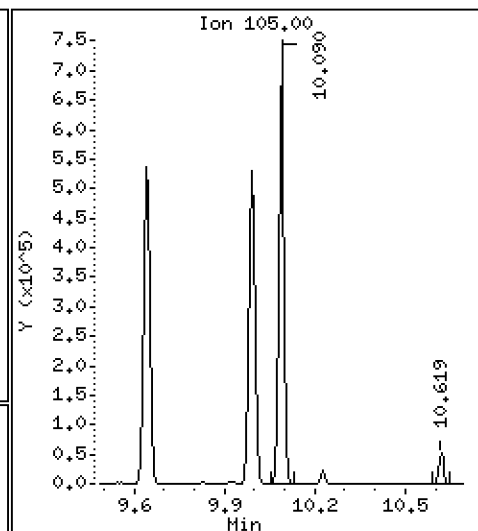
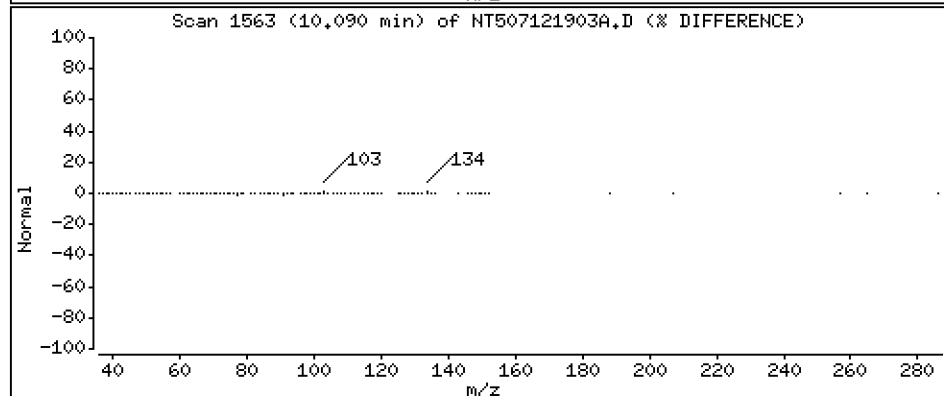
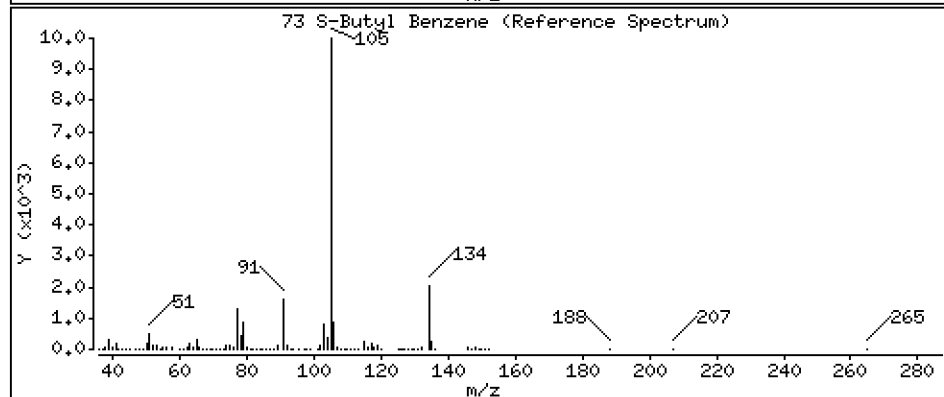
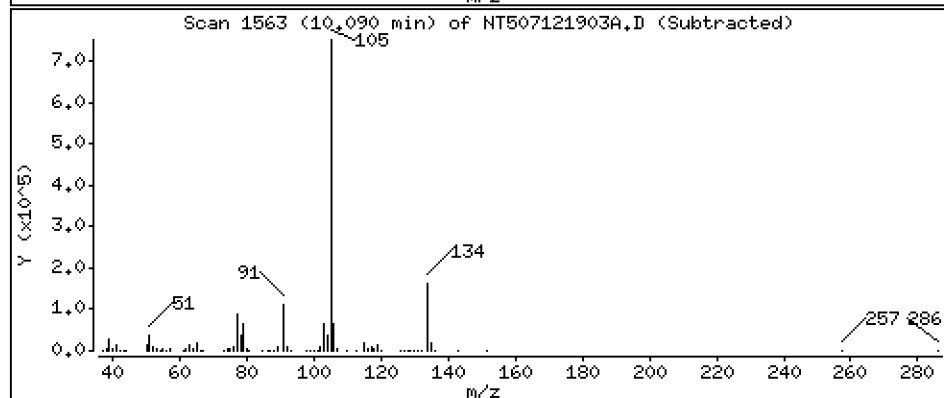
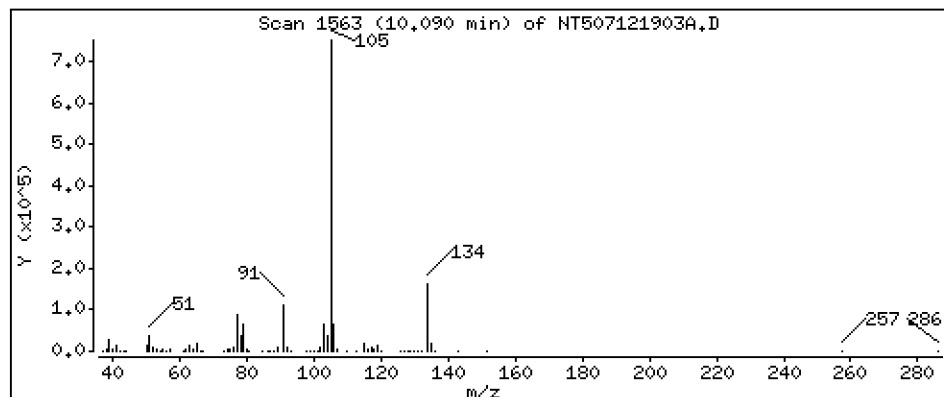
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 45.397 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

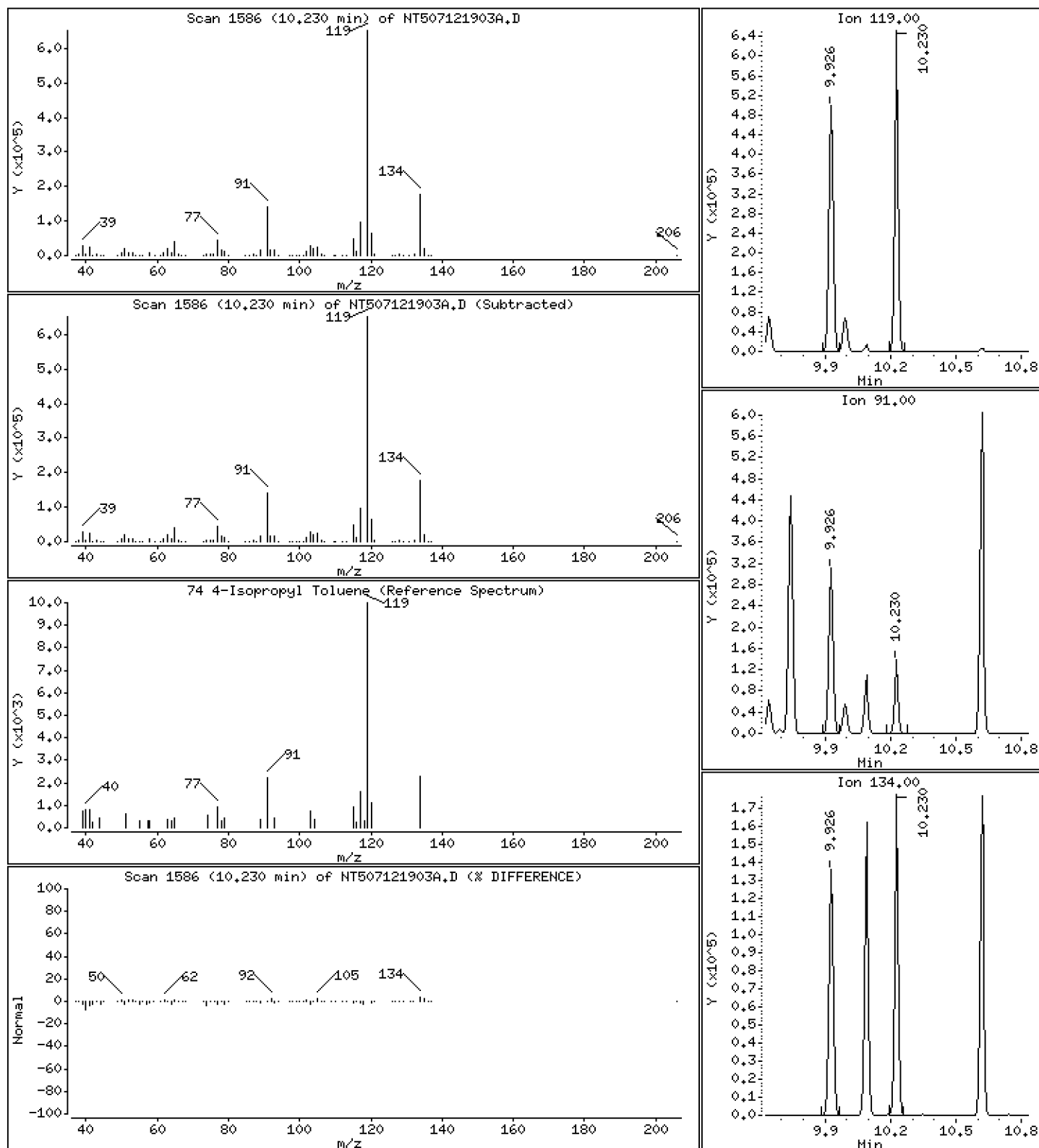
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 45,822 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

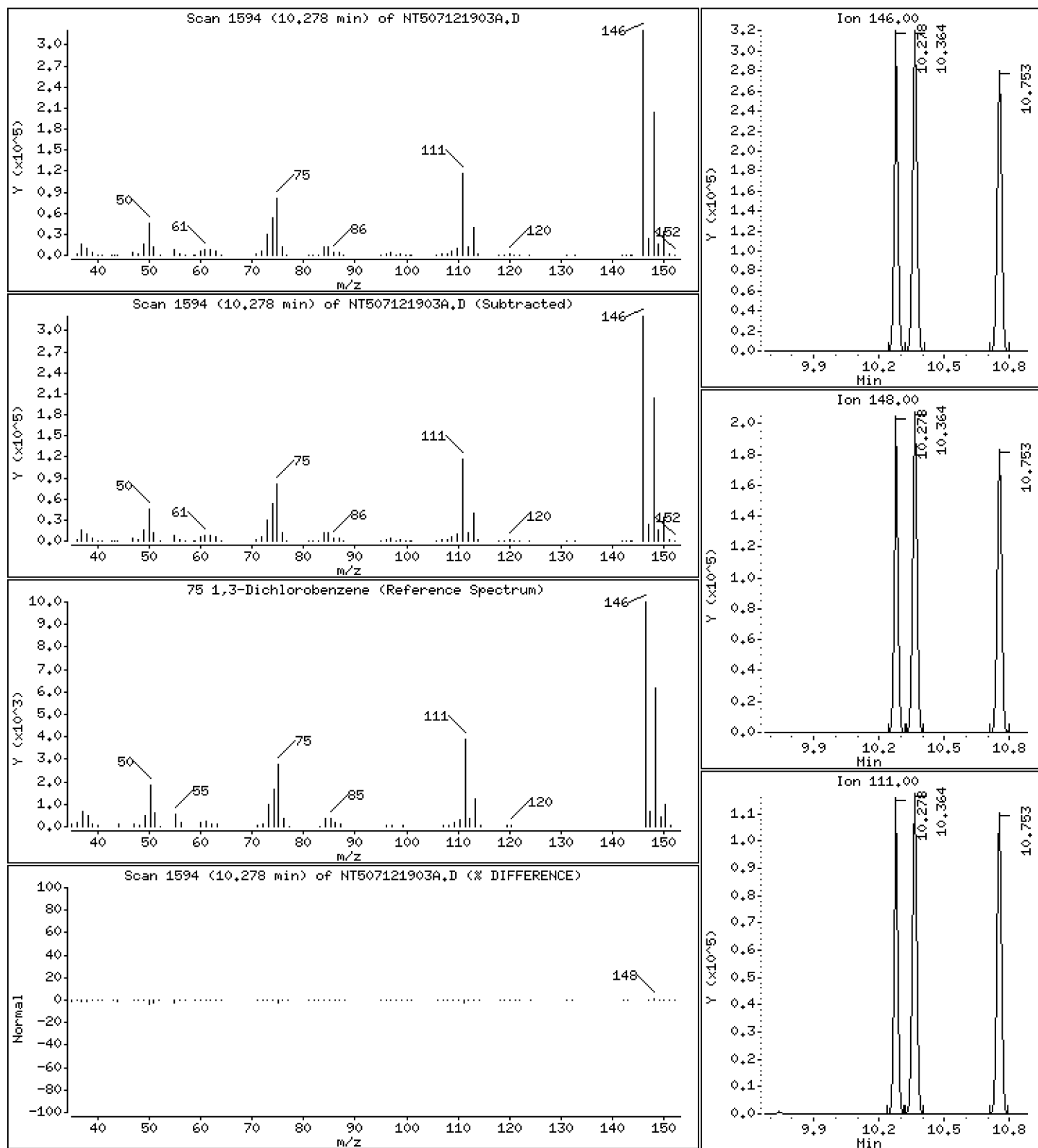
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 42.678 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

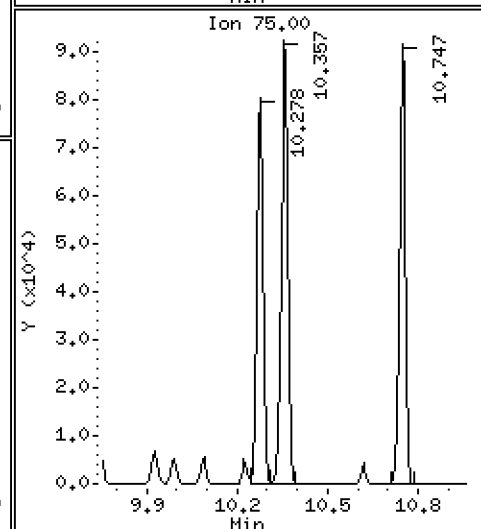
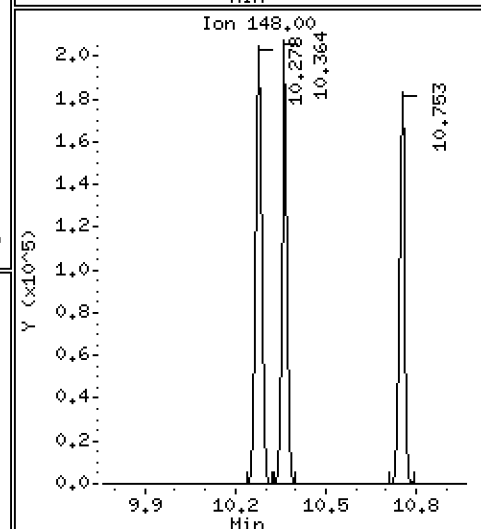
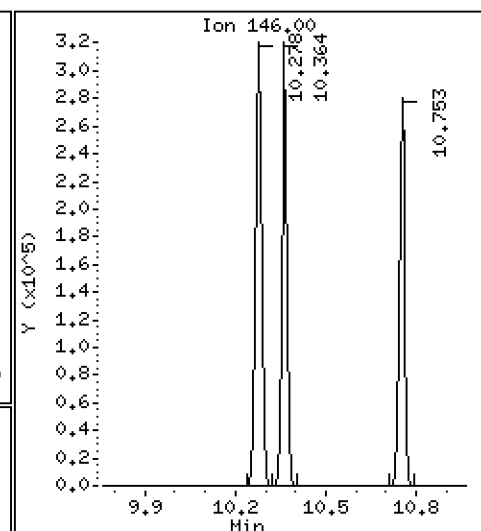
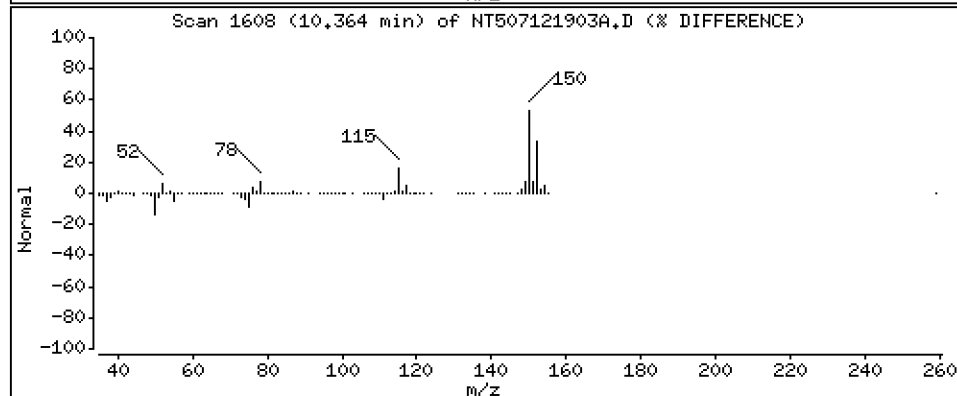
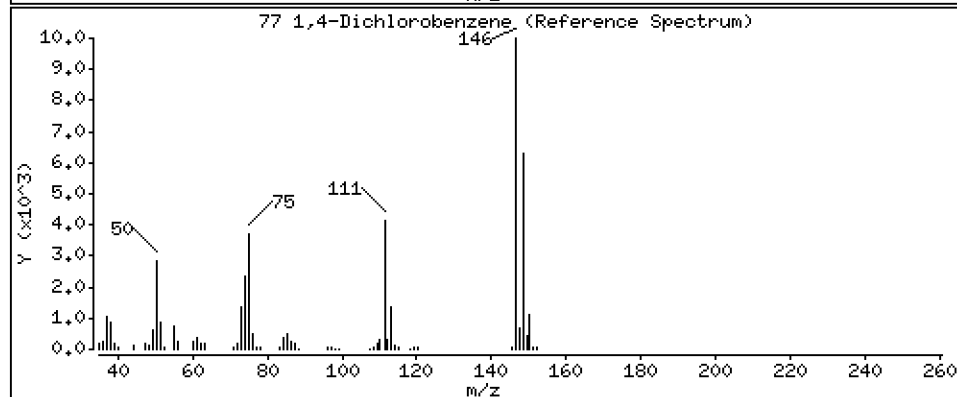
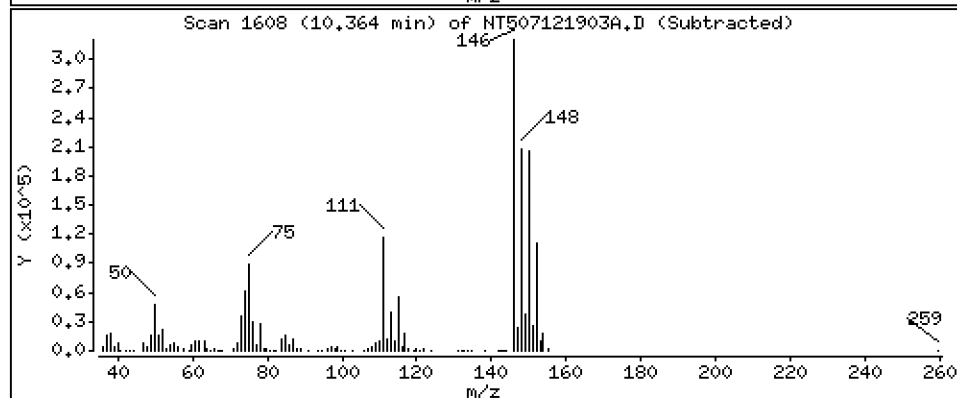
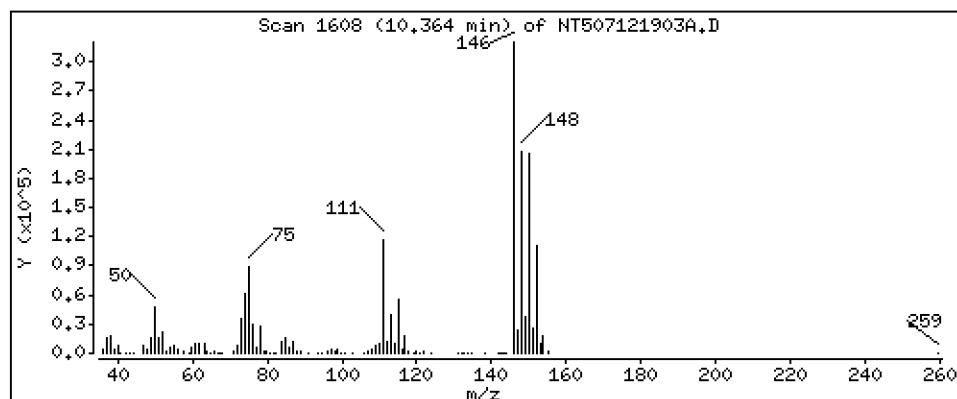
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 42,559 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

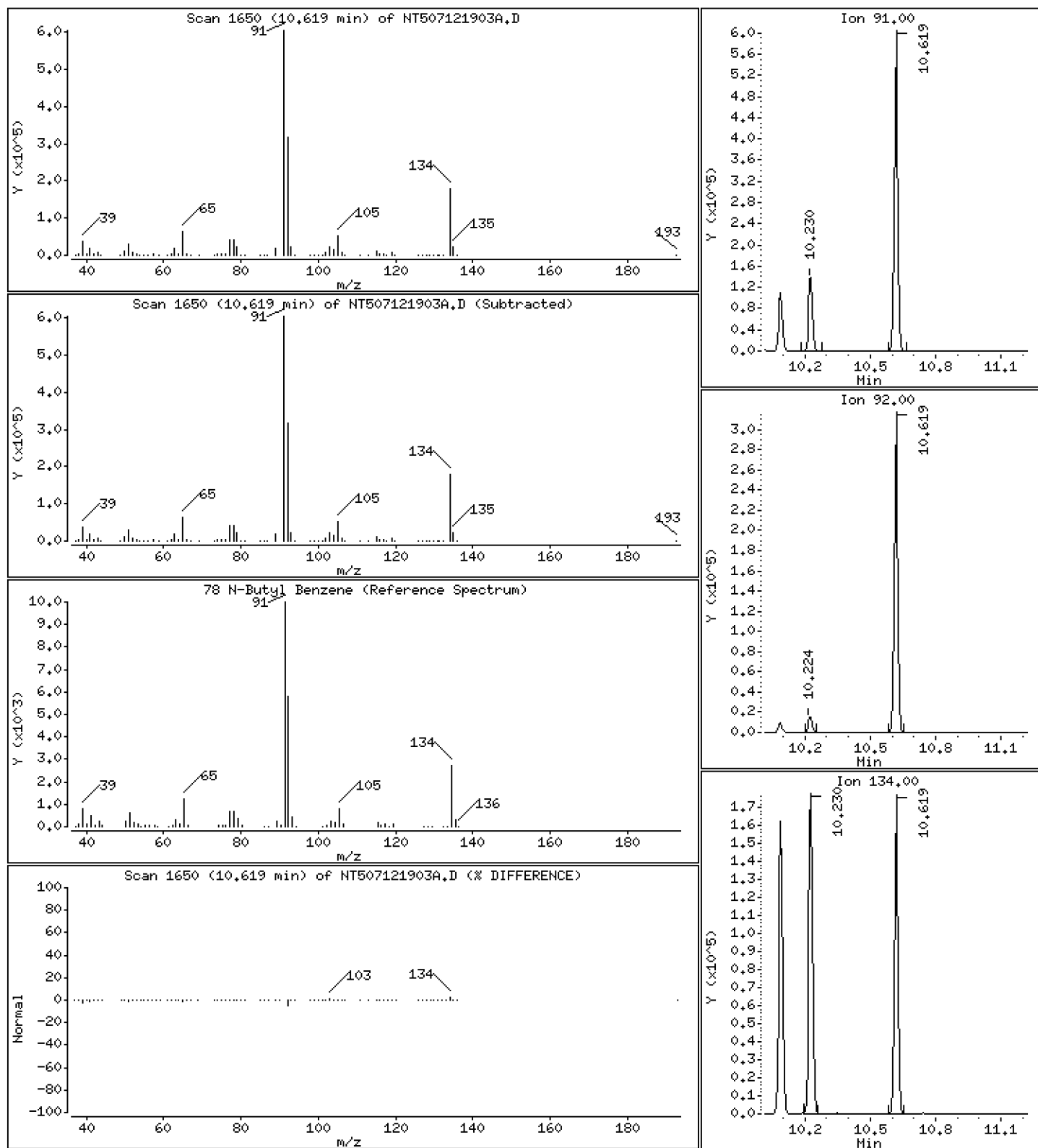
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 46,715 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

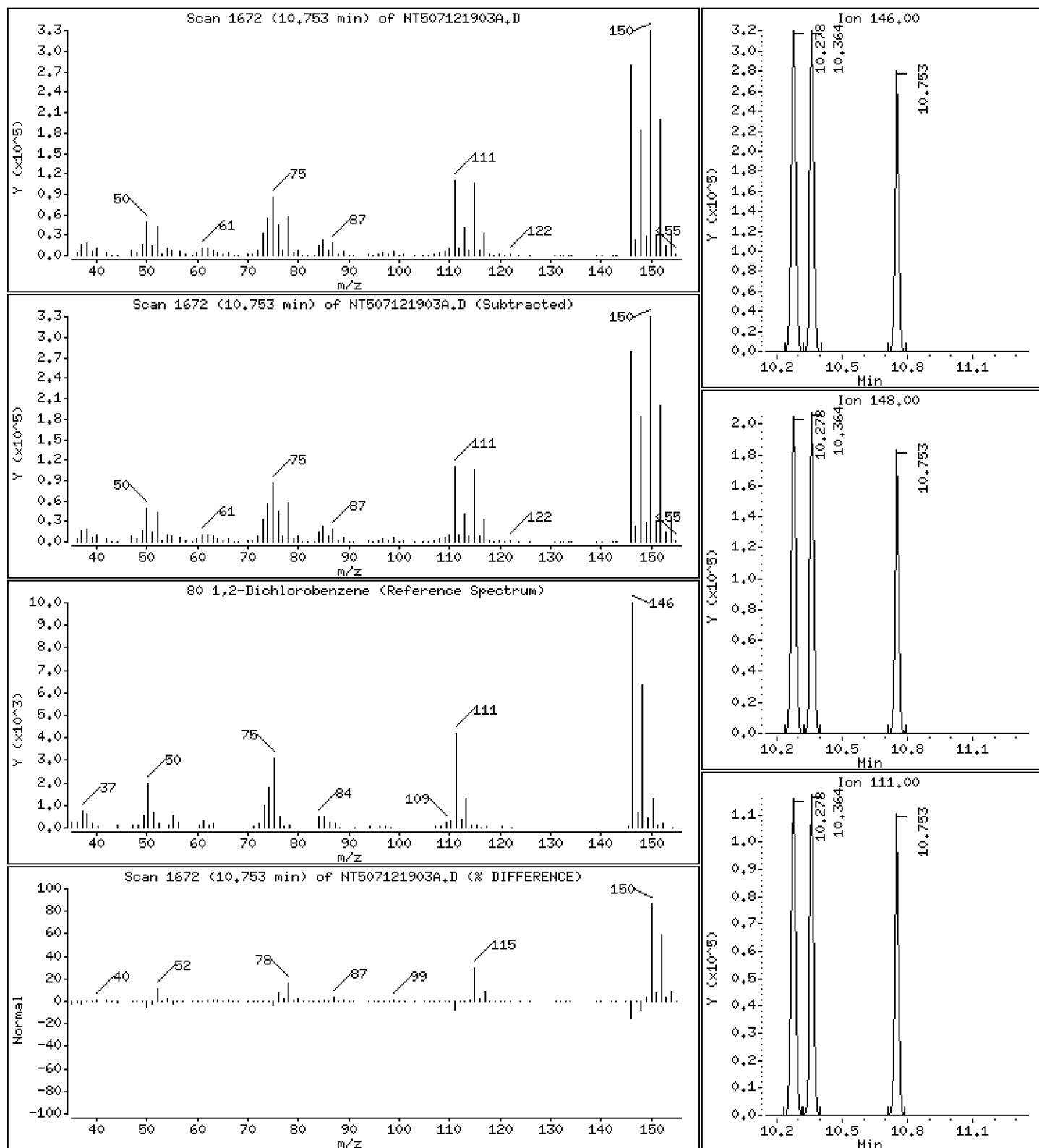
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 42,422 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

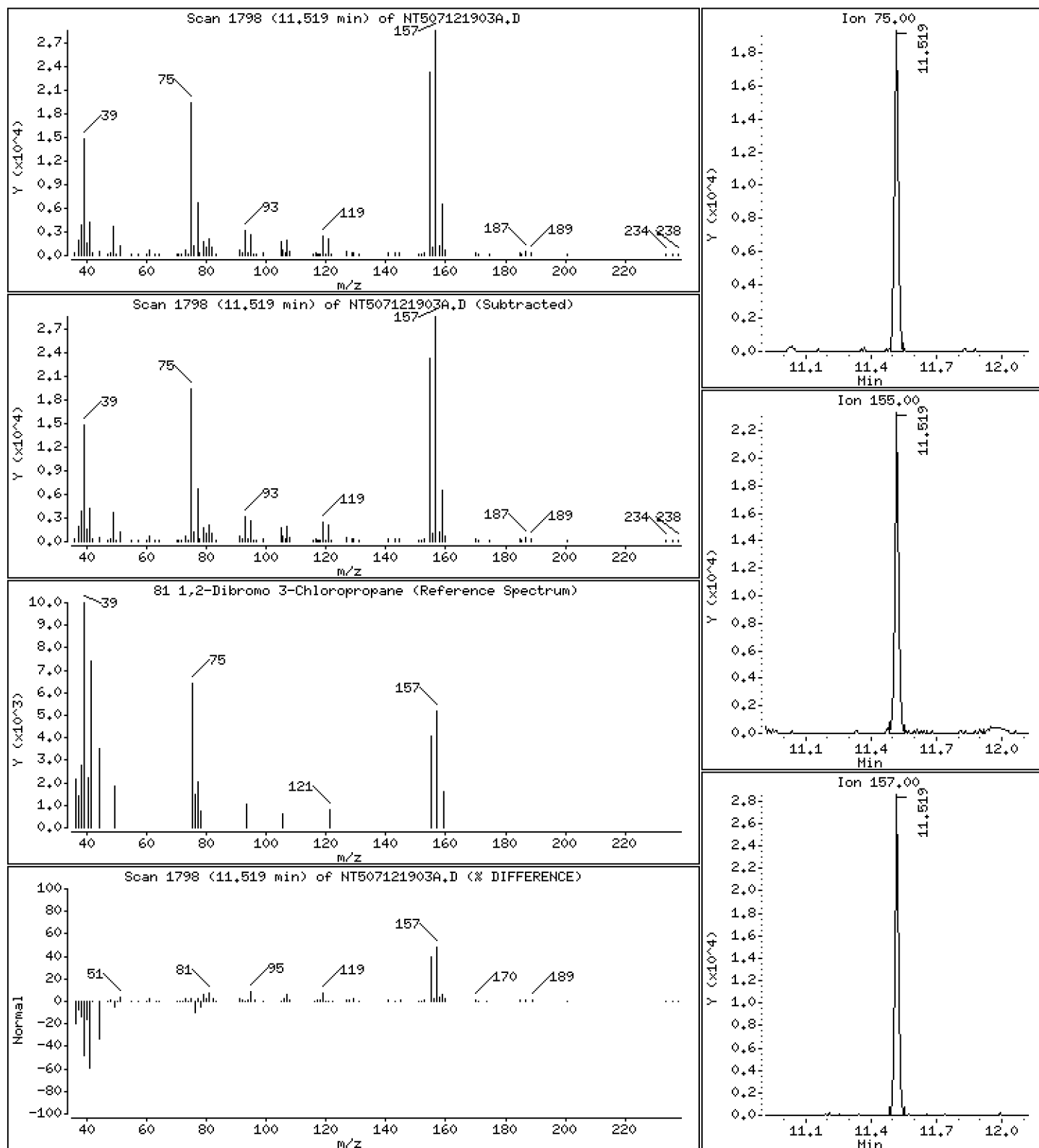
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 44,999 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

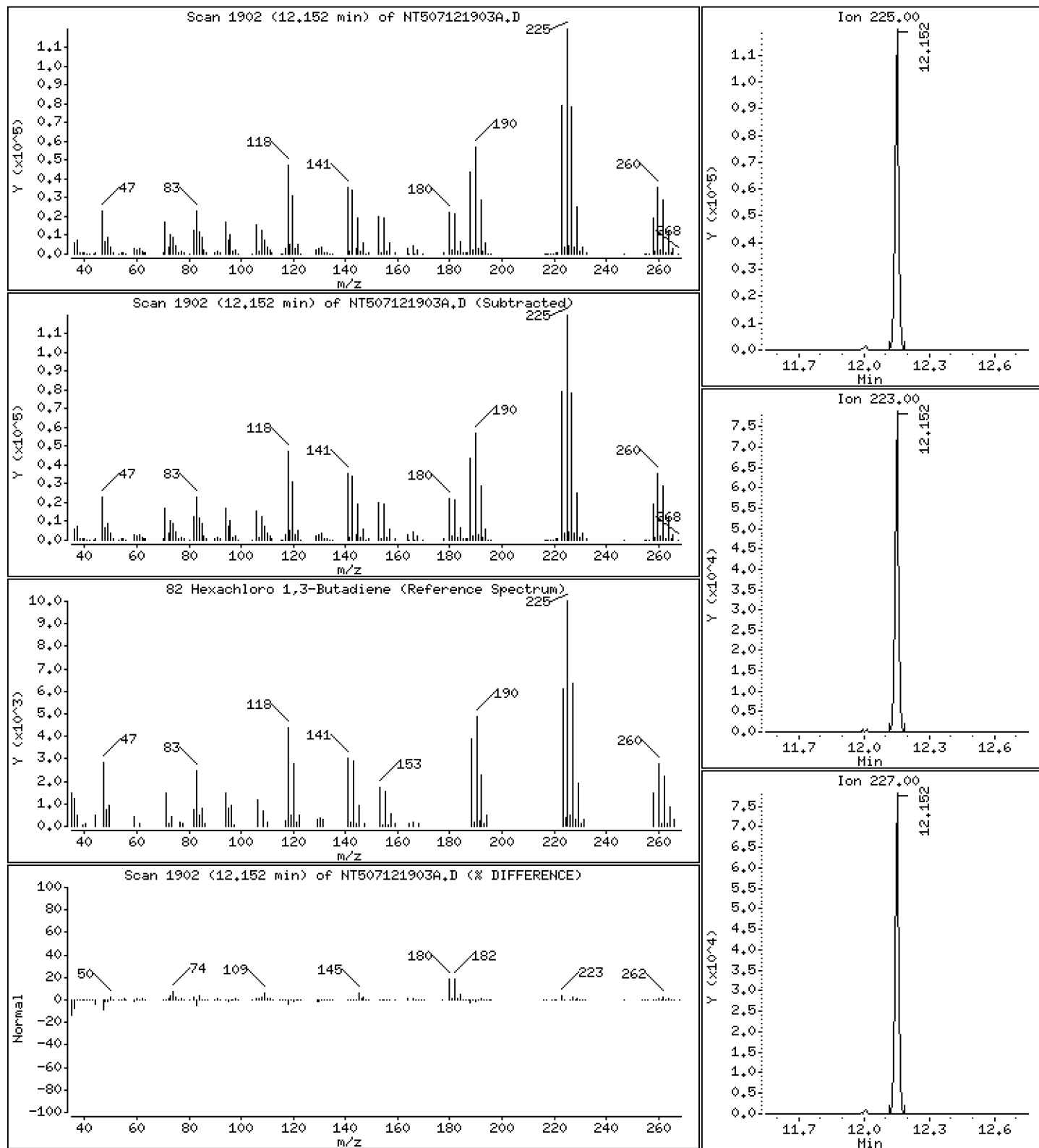
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 44,565 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

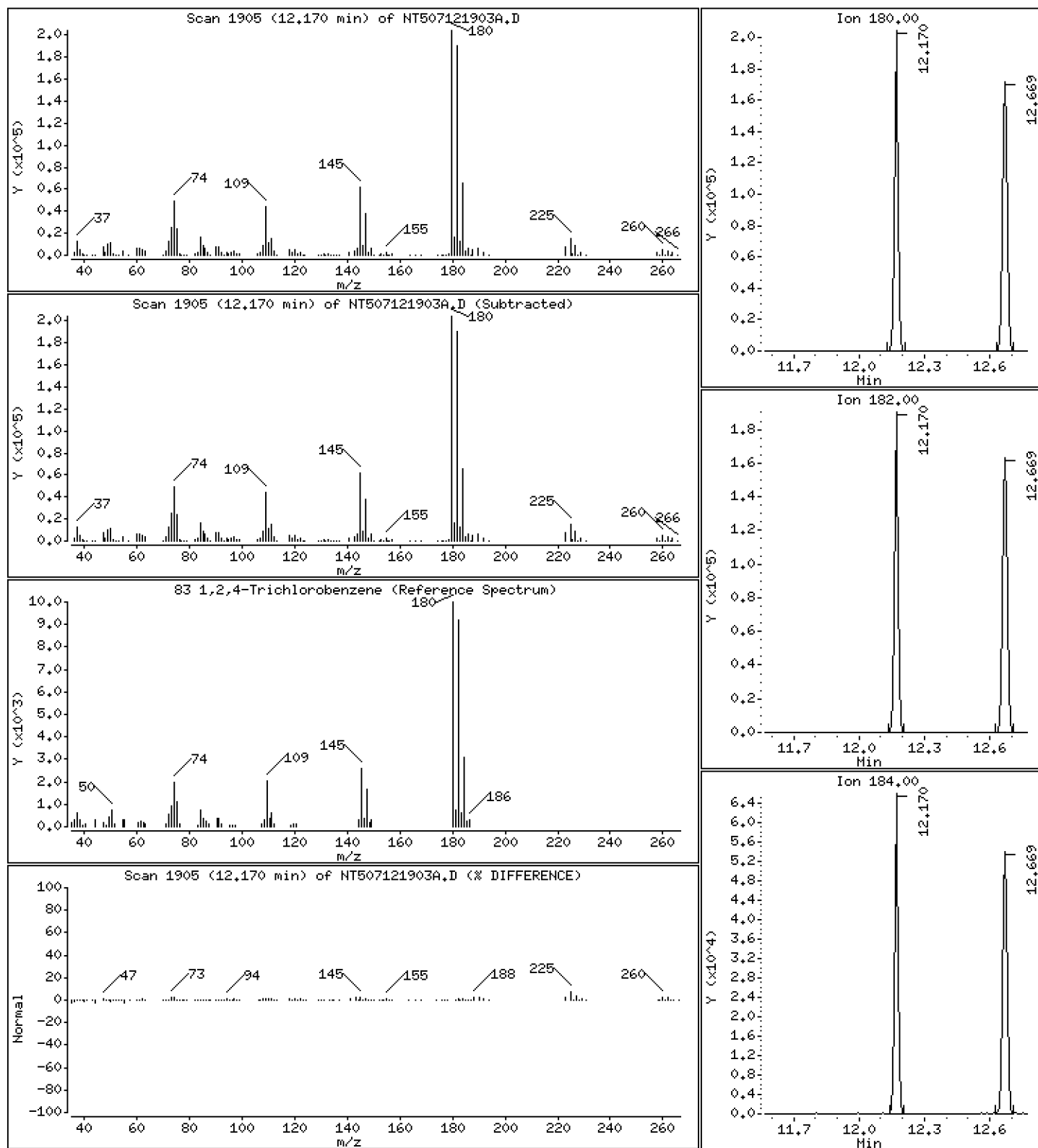
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 44,504 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

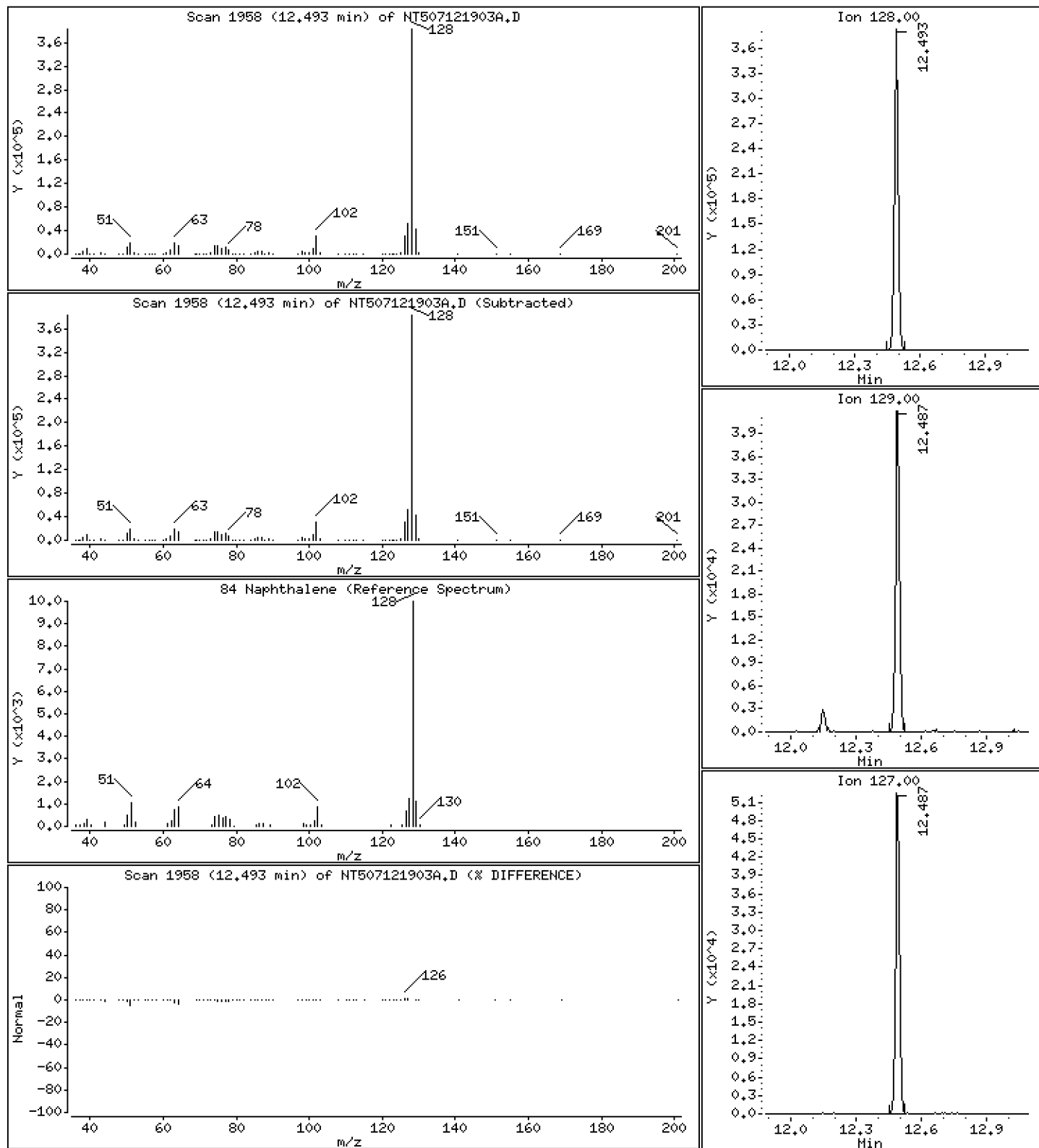
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 44,214 ug/Kg



Date : 12-JUL-2019 12:25

Client ID:

Instrument: nt5.i

Sample Info: ICV1

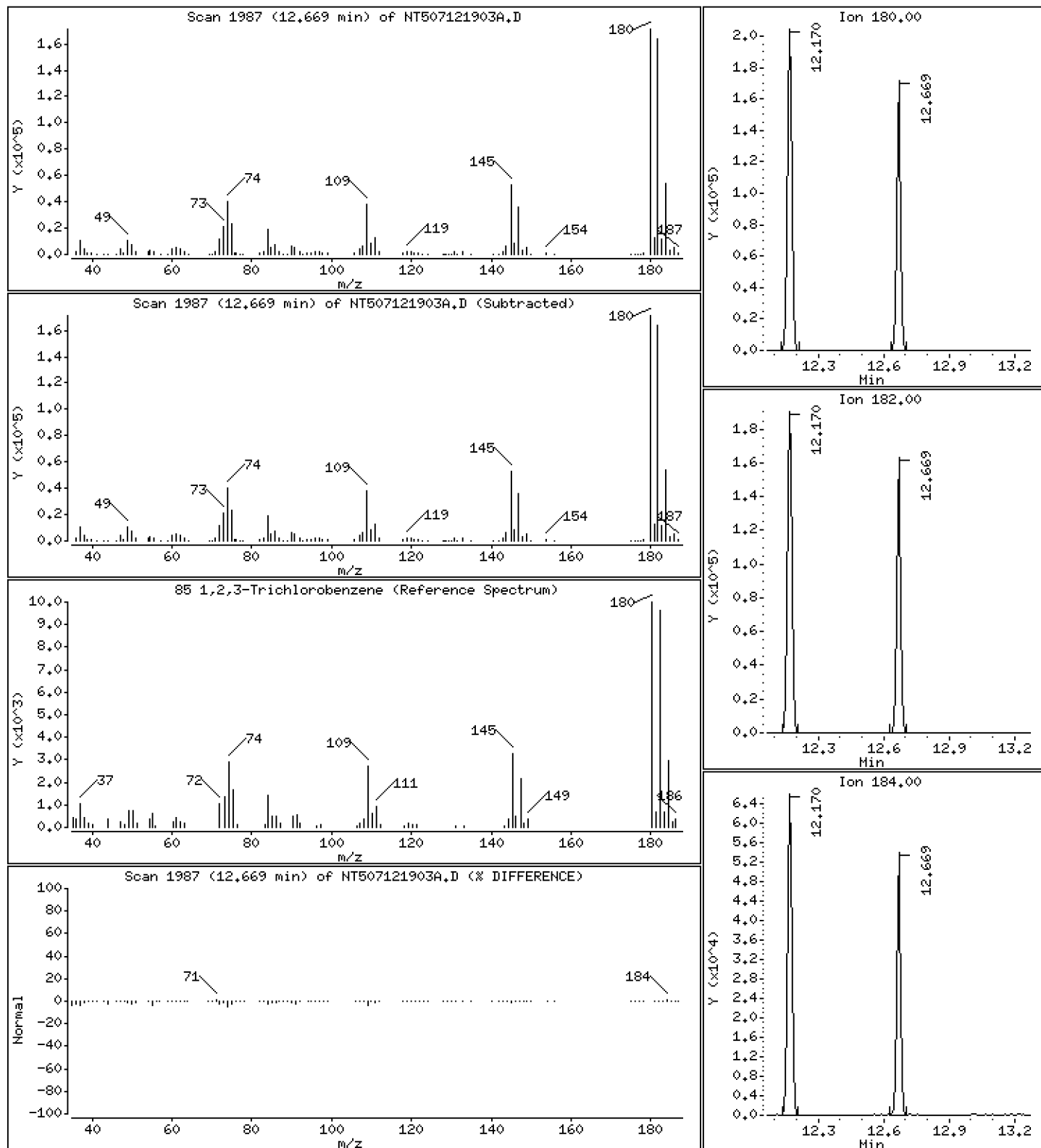
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 43,418 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121903A.D
Lab Smp Id: bhg0316-bs1
Inj Date : 12-JUL-2019 12:25
Operator : PB Inst ID: nt5.i
Smp Info : ICV1
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
Meth Date : 12-Jul-2019 12:44 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamdl.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	1.329	1.329	(0.249)	179142	43.2683	43.268
2 Chloromethane	50	1.487	1.487	(0.279)	165658	48.2605	48.260
3 Vinyl Chloride	62	1.554	1.554	(0.291)	174895	50.4743	50.474
4 Bromomethane	94	1.840	1.840	(0.345)	132822	52.1827	52.183
5 Chloroethane	64	1.943	1.943	(0.364)	146290	53.4607	53.461
6 Trichlorofluoromethane	101	2.059	2.059	(0.386)	330500	50.0581	50.058
7 1,1-Dichloroethene	96	2.534	2.534	(0.475)	171732	50.7103	50.710
8 Carbon Disulfide	76	2.540	2.540	(0.476)	484130	51.2331	51.233
9 112Trichloro122Trifluoroethane	101	2.588	2.588	(0.485)	160905	52.0560	52.056
10 Iodomethane	142	2.667	2.667	(0.500)	204183	46.2185	46.218
11 Bromoethane	108	2.795	2.795	(0.524)	114152	50.0717	50.072
12 Acrolein	56	2.911	2.911	(0.545)	81827	237.792	237.79
13 Methylene Chloride	84	3.154	3.154	(0.591)	157823	46.9338	46.934
14 Acetone	43	3.257	3.257	(0.610)	155144	256.259	256.26
15 Trans-1,2-Dichloroethene	96	3.312	3.312	(0.621)	183066	50.3037	50.304
16 Methyl tert butyl ether	73	3.483	3.483	(0.652)	379134	48.0681	48.068
173 n-Hexane	41	3.483	3.483	(0.652)	74205		
17 1,1-Dichloroethane	63	3.939	3.939	(0.738)	274809	50.3293	50.329
18 Acrylonitrile	53	4.030	4.030	(0.755)	34241	47.6033	47.603
19 Vinyl Acetate	43	4.243	4.243	(0.795)	259437	51.8217	51.822
20 Cis-1,2-Dichloroethene	96	4.462	4.462	(0.836)	192543	51.4843	51.484
22 2,2-Dichloropropane	77	4.553	4.553	(0.853)	286342	54.4202	54.420
23 Bromochloromethane	128	4.645	4.645	(0.870)	89665	48.8325	48.833
24 Chloroform	83	4.730	4.730	(0.886)	295312	51.3426	51.343
25 Carbon Tetrachloride	117	4.815	4.815	(0.833)	285790	47.0464	47.046
\$ 27 Dibromofluoromethane	111	4.894	4.894	(0.917)	261887	58.2880	58.288 (R)
26 1,1,1-Trichloroethane	97	4.888	4.888	(0.916)	296970	52.6471	52.647
28 1,1-Dichloropropene	75	4.997	4.997	(0.864)	248398	50.6310	50.631
29 2-Butanone	72	5.046	5.046	(0.945)	76913	270.318	270.32
30 Benzene	78	5.222	5.222	(0.903)	683361	46.7087	46.709
* 31 Pentafluorobenzene	168	5.338	5.338	(1.000)	410842	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.350	5.350	(1.002)	223223	59.3917	59.392 (R)
33 1,2-Dichloroethane	62	5.411	5.411	(0.936)	181473	43.1853	43.185

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130	5.740	5.740	(0.993)	209872	45.9710	45.971
* 35 1,4-Difluorobenzene	114	5.782	5.782	(1.000)	825368	50.0000	
37 Dibromomethane	93	6.098	6.098	(1.055)	92242	45.9600	45.960
38 1,2-Dichloropropane	63	6.184	6.184	(1.069)	146795	45.7987	45.799
39 Bromodichloromethane	83	6.251	6.251	(1.081)	220049	46.1390	46.139
172 2-Pentanone	86	6.543	6.543	(1.132)	102689	246.312	246.31
40 2-Chloroethyl Vinyl Ether	63	6.756	6.756	(1.168)	83229	44.8005	44.800
41 Cis 1,3-dichloropropene	75	6.786	6.786	(1.174)	261466	46.9223	46.922
\$ 42 d8-Toluene	98	6.938	6.938	(1.200)	988217	51.1279	51.128 (R)
43 Toluene	92	6.981	6.981	(1.207)	451494	45.2016	45.202
44 Tetrachloroethene	166	7.297	7.297	(0.884)	226840	43.9677	43.968
45 4-Methyl-2-Pentanone	58	7.333	7.333	(1.268)	228085	235.780	235.78
46 Trans 1,3-Dichloropropene	75	7.346	7.346	(1.270)	230777	46.8464	46.846
47 1,1,2-Trichloroethane	97	7.479	7.479	(1.294)	131819	44.7975	44.798
48 Chlorodibromomethane	129	7.619	7.619	(0.923)	175840	44.0053	44.005
49 1,3-Dichloropropane	76	7.705	7.705	(0.933)	215633	42.9426	42.943
50 1,2-Dibromoethane	107	7.814	7.814	(1.351)	133988	45.0577	45.058
51 2-Hexanone	43	8.045	8.045	(0.974)	398564	228.304	228.30
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	840463	50.0000	
53 Chlorobenzene	112	8.270	8.270	(1.001)	510278	42.6121	42.612
54 Ethyl Benzene	91	8.301	8.301	(1.005)	871106	44.3223	44.322
55 1,1,1,2-Tetrachloroethane	131	8.331	8.331	(1.009)	186311	43.7638	43.764
56 m,p-xylene	106	8.435	8.435	(1.021)	700471	87.4780	87.478
57 o-Xylene	106	8.806	8.806	(1.066)	330948	43.4777	43.478
58 Styrene	104	8.854	8.854	(1.072)	533385	43.7259	43.726
59 Bromoform	173	8.867	8.867	(0.857)	115464	42.3090	42.309
60 Isopropyl Benzene	105	9.086	9.086	(0.878)	905026	45.7683	45.768
61 Cyclohexanone	55	9.639	9.639	(1.167)	1319		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	357530	49.6903	49.690 (R)
63 Bromobenzene	156	9.420	9.420	(0.910)	217266	42.6579	42.658
64 N-Propyl Benzene	91	9.457	9.457	(0.914)	1030980	45.9990	45.999
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530	(0.921)	156584	44.0015	44.002
66 2-Chloro Toluene	91	9.590	9.590	(0.927)	572198	44.7720	44.772
67 1,3,5-Trimethyl Benzene	105	9.639	9.639	(0.931)	733745	45.0159	45.016
68 1,2,3-Trichloropropane	110	9.645	9.645	(0.932)	53117	43.0075	43.007
69 Trans-1,4-Dichloro 2-Butene	53	9.688	9.688	(0.936)	44178	45.4477	45.448
70 4-Chloro Toluene	91	9.743	9.743	(0.941)	596667	45.0380	45.038
71 T-Butyl Benzene	119	9.925	9.925	(0.959)	673233	44.5620	44.562
72 1,2,4-Trimethylbenzene	105	9.992	9.992	(0.965)	717310	45.1605	45.160
73 S-Butyl Benzene	105	10.089	10.089	(0.975)	996068	45.3969	45.397
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	862328	45.8219	45.822
75 1,3-Dichlorobenzene	146	10.278	10.278	(0.993)	429943	42.6779	42.678
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	463623	50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.363	(1.001)	421859	42.5590	42.559
78 N-Butyl Benzene	91	10.619	10.619	(1.026)	766511	46.7146	46.715
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	412598	51.0281	51.028 (R)
80 1,2-Dichlorobenzene	146	10.752	10.752	(1.039)	385908	42.4216	42.422
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.113)	29679	44.9989	44.999
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.174)	164994	44.5647	44.565
83 1,2,4-Trichlorobenzene	180	12.170	12.170	(1.176)	277548	44.5039	44.504
84 Naphthalene	128	12.492	12.492	(1.207)	564313	44.2136	44.214
85 1,2,3-Trichlorobenzene	180	12.669	12.669	(1.224)	245039	43.4181	43.418

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121903A.D Calibration Time: 12:25
 Lab Smp Id: bhg0316-bs1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	410842	1.71
35 1,4-Difluorobenze	717664	358832	1435328	825368	15.01
52 d5-Chlorobenzene	696563	348282	1393126	840463	20.66
76 d4-1,4-Dichlorobe	380778	190389	761556	463623	21.76

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: bhg0316-bs1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	43.268	86.54	
2 Chloromethane	50.000	48.260	96.52	
3 Vinyl Chloride	50.000	50.474	100.95	
4 Bromomethane	50.000	52.183	104.37	
5 Chloroethane	50.000	53.461	106.92	
6 Trichlorofluoromet	50.000	50.058	100.12	
12 Acrolein	250.00	237.79	95.12	
9 112Trichloro122Tri	50.000	52.056	104.11	
14 Acetone	250.00	256.26	102.50	
7 1,1-Dichloroethene	50.000	50.710	101.42	
11 Bromoethane	50.000	50.072	100.14	
10 Iodomethane	50.000	46.218	92.44	
13 Methylene Chloride	50.000	46.934	93.87	
8 Carbon Disulfide	50.000	51.233	102.47	
18 Acrylonitrile	50.000	47.603	95.21	
15 Trans-1,2-Dichloro	50.000	50.304	100.61	
19 Vinyl Acetate	50.000	51.822	103.64	
17 1,1-Dichloroethane	50.000	50.329	100.66	
29 2-Butanone	250.00	270.32	108.13	
22 2,2-Dichloropropan	50.000	54.420	108.84	
20 Cis-1,2-Dichloroet	50.000	51.484	102.97	
24 Chloroform	50.000	51.343	102.69	
23 Bromochloromethane	50.000	48.833	97.67	
26 1,1,1-Trichloroeth	50.000	52.647	105.29	
28 1,1-Dichloropropen	50.000	50.631	101.26	
25 Carbon Tetrachlori	50.000	47.046	94.09	
33 1,2-Dichloroethane	50.000	43.185	86.37	
30 Benzene	50.000	46.709	93.42	
34 Trichloroethene	50.000	45.971	91.94	
38 1,2-Dichloropropan	50.000	45.799	91.60	
39 Bromodichlorometha	50.000	46.139	92.28	
172 2-Pentanone	250.00	246.31	98.52	
37 Dibromomethane	50.000	45.960	91.92	
40 2-Chloroethyl Viny	50.000	44.800	89.60	
45 4-Methyl-2-Pentano	250.00	235.78	94.31	
41 Cis 1,3-dichloropr	50.000	46.922	93.84	
43 Toluene	50.000	45.202	90.40	
46 Trans 1,3-Dichloro	50.000	46.846	93.69	
51 2-Hexanone	250.00	228.30	91.32	
47 1,1,2-Trichloroeth	50.000	44.798	89.60	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	42.943	85.89	
44 Tetrachloroethene	50.000	43.968	87.94	
48 Chlorodibromometha	50.000	44.005	88.01	
50 1,2-Dibromoethane	50.000	45.058	90.12	
53 Chlorobenzene	50.000	42.612	85.22	
55 1,1,1,2-Tetrachlor	50.000	43.764	87.53	
54 Ethyl Benzene	50.000	44.322	88.64	
56 m,p-xylene	100.00	87.478	87.48	
57 o-Xylene	50.000	43.478	86.96	
58 Styrene	50.000	43.726	87.45	
60 Isopropyl Benzene	50.000	45.768	91.54	
59 Bromoform	50.000	42.309	84.62	
65 1,1,2,2-Tetrachlor	50.000	44.002	88.00	
68 1,2,3-Trichloropro	50.000	43.007	86.01	
69 Trans-1,4-Dichloro	50.000	45.448	90.90	
64 N-Propyl Benzene	50.000	45.999	92.00	
63 Bromobenzene	50.000	42.658	85.32	
67 1,3,5-Trimethyl Be	50.000	45.016	90.03	
66 2-Chloro Toluene	50.000	44.772	89.54	
70 4-Chloro Toluene	50.000	45.038	90.08	
71 T-Butyl Benzene	50.000	44.562	89.12	
72 1,2,4-Trimethylben	50.000	45.160	90.32	
73 S-Butyl Benzene	50.000	45.397	90.79	
74 4-Isopropyl Toluen	50.000	45.822	91.64	
75 1,3-Dichlorobenzen	50.000	42.678	85.36	
77 1,4-Dichlorobenzen	50.000	42.559	85.12	
78 N-Butyl Benzene	50.000	46.715	93.43	
80 1,2-Dichlorobenzen	50.000	42.422	84.84	
81 1,2-Dibromo 3-Chlo	50.000	44.999	90.00	
83 1,2,4-Trichloroben	50.000	44.504	89.01	
82 Hexachloro 1,3-But	50.000	44.565	89.13	
84 Naphthalene	50.000	44.214	88.43	
85 1,2,3-Trichloroben	50.000	43.418	86.84	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	58.288	116.58	
\$ 32 d4-1,2-Dichloroeth	50.000	59.392	118.78	
\$ 42 d8-Toluene	50.000	51.128	102.26	
\$ 62 4-Bromofluorobenze	50.000	49.690	99.38	
\$ 79 d4-1,2-Dichloroben	50.000	51.028	102.06	

REVIEW SUMMARY FOR FILE - NT507121903A.D

Lab ID: bhg0316-bs1
 nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 12:25

RT	CO-ELUTION COMPOUNDS
3.483	n-Hexane and Methyl tert butyl ether
9.640	Cyclohexanone and 1,3,5-Trimethyl Benzene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121904A.D

Date : 12-JUL-2019 13:05

Client ID:

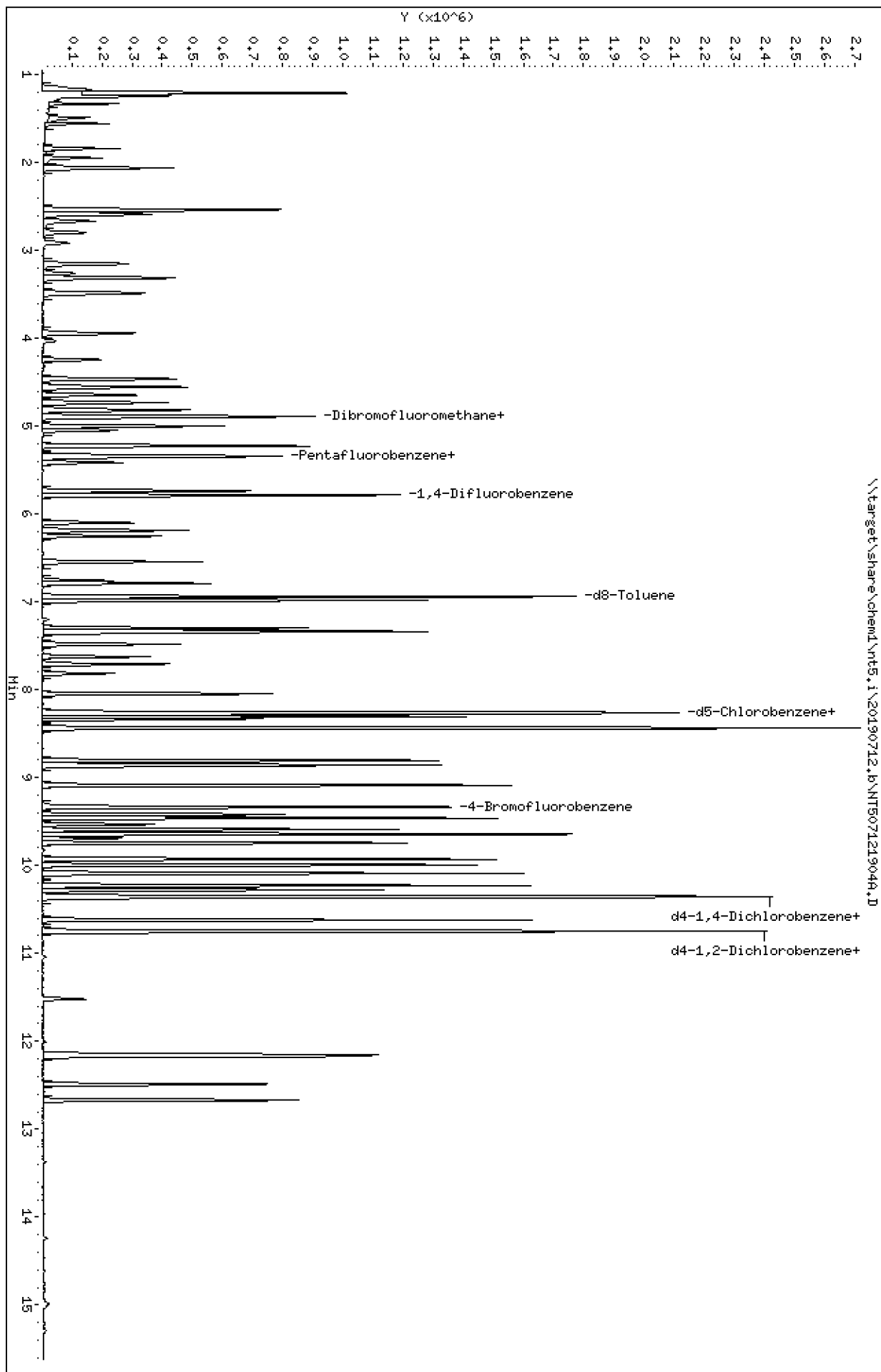
Sample Info: BSD1

Instrument: nt5.i

Page 1

Column phase: RTXWMS

Operator: PB
Column diameter: 0.18



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

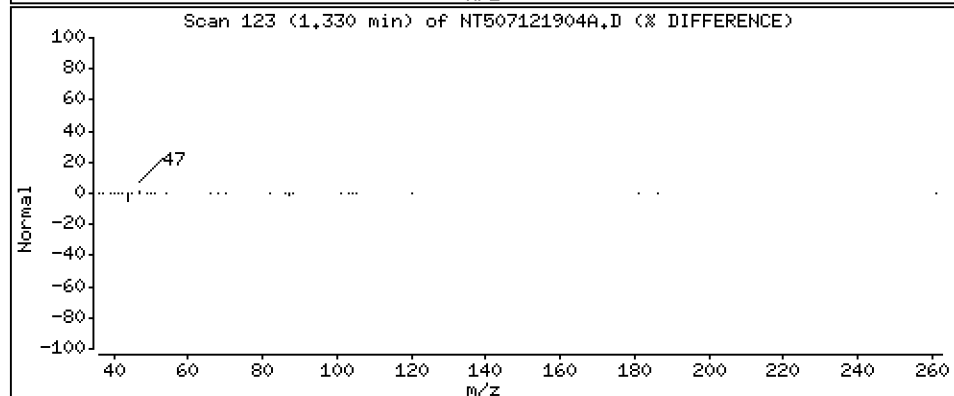
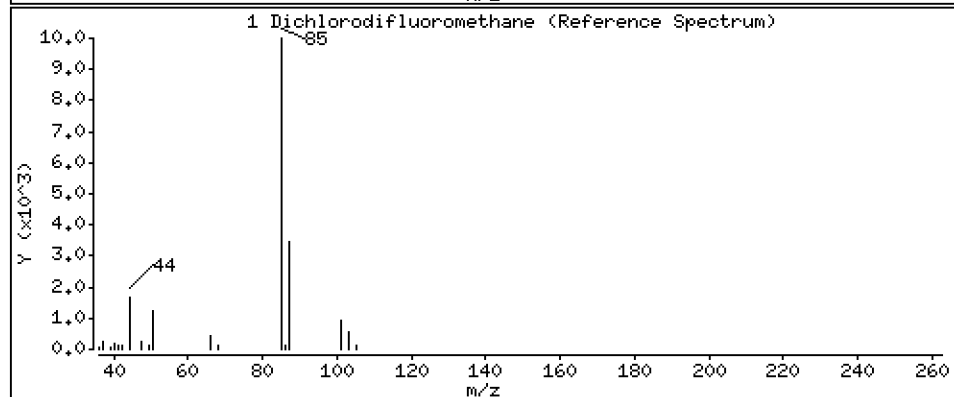
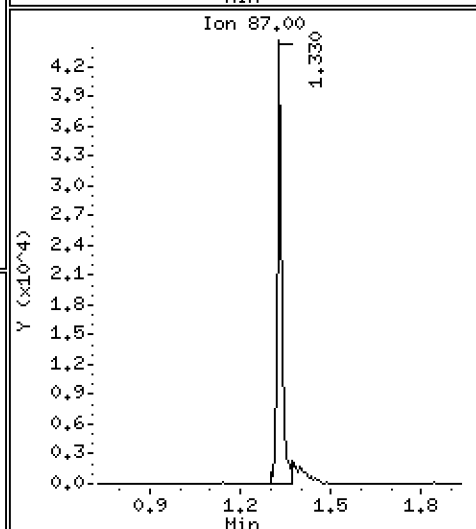
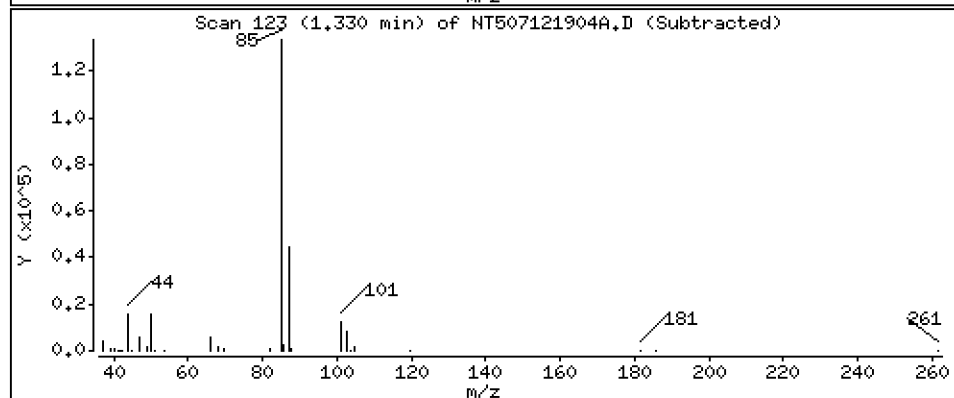
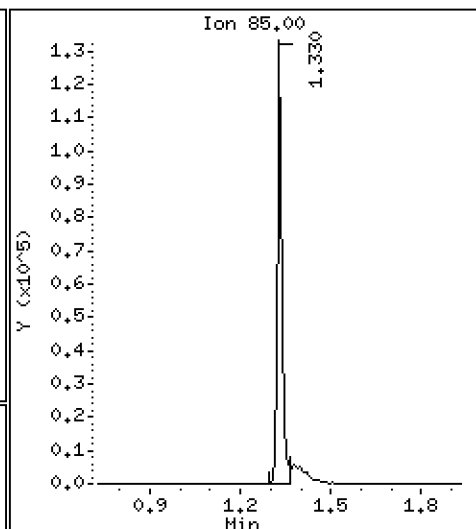
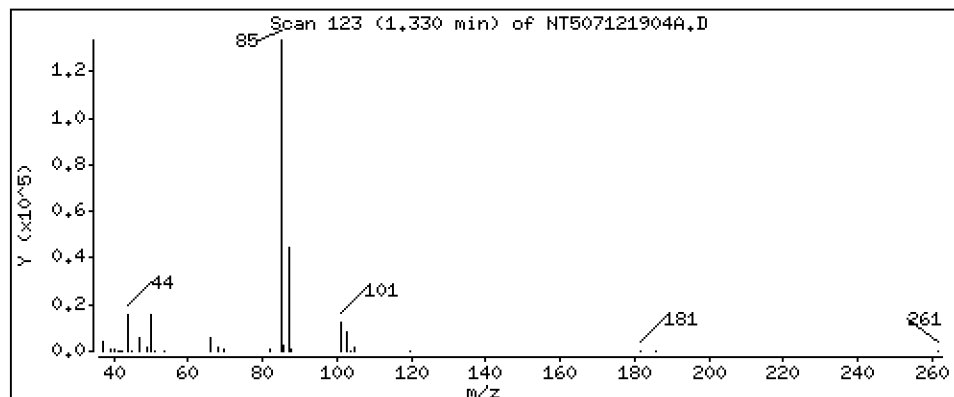
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 40,899 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

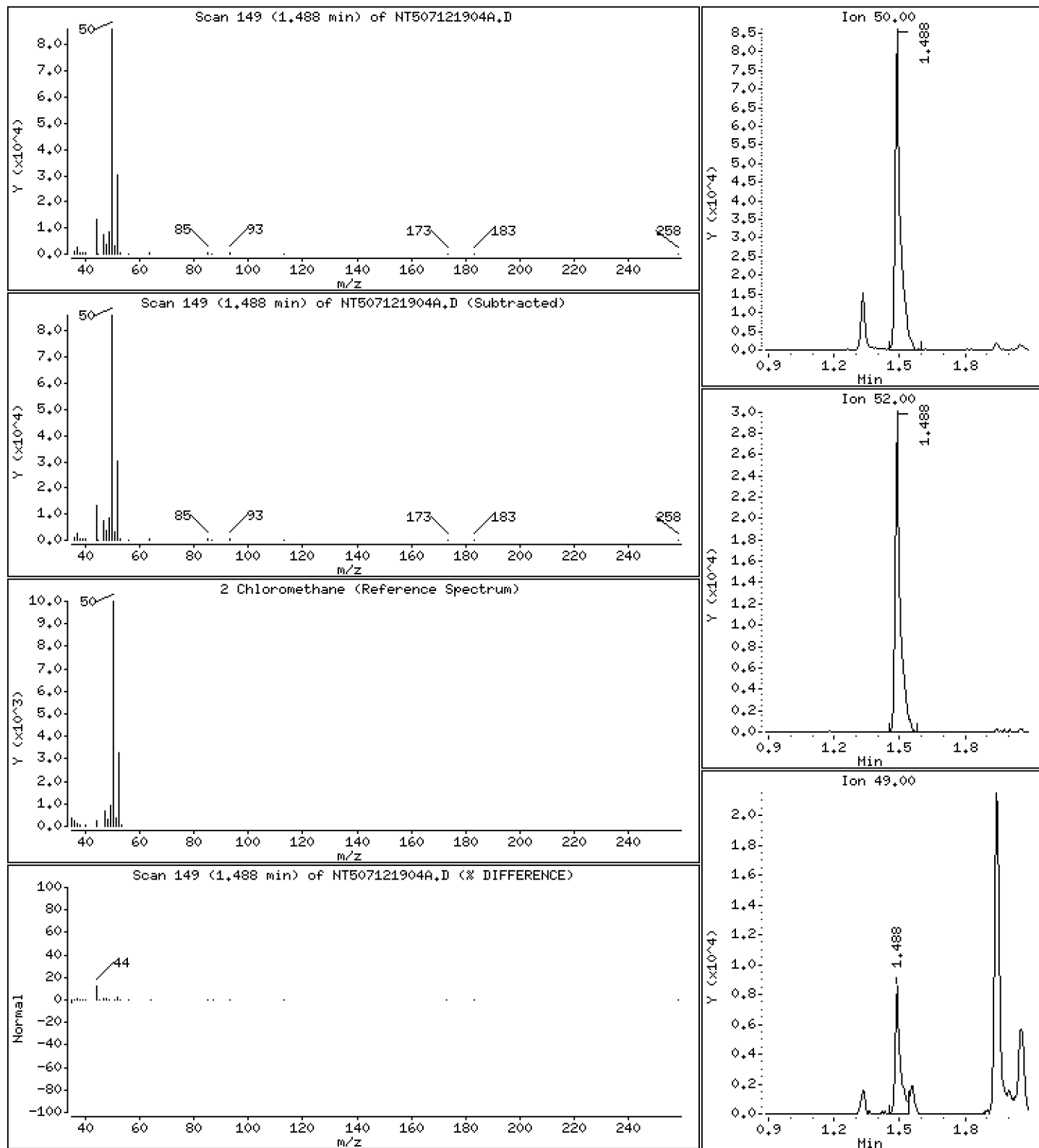
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 46,751 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

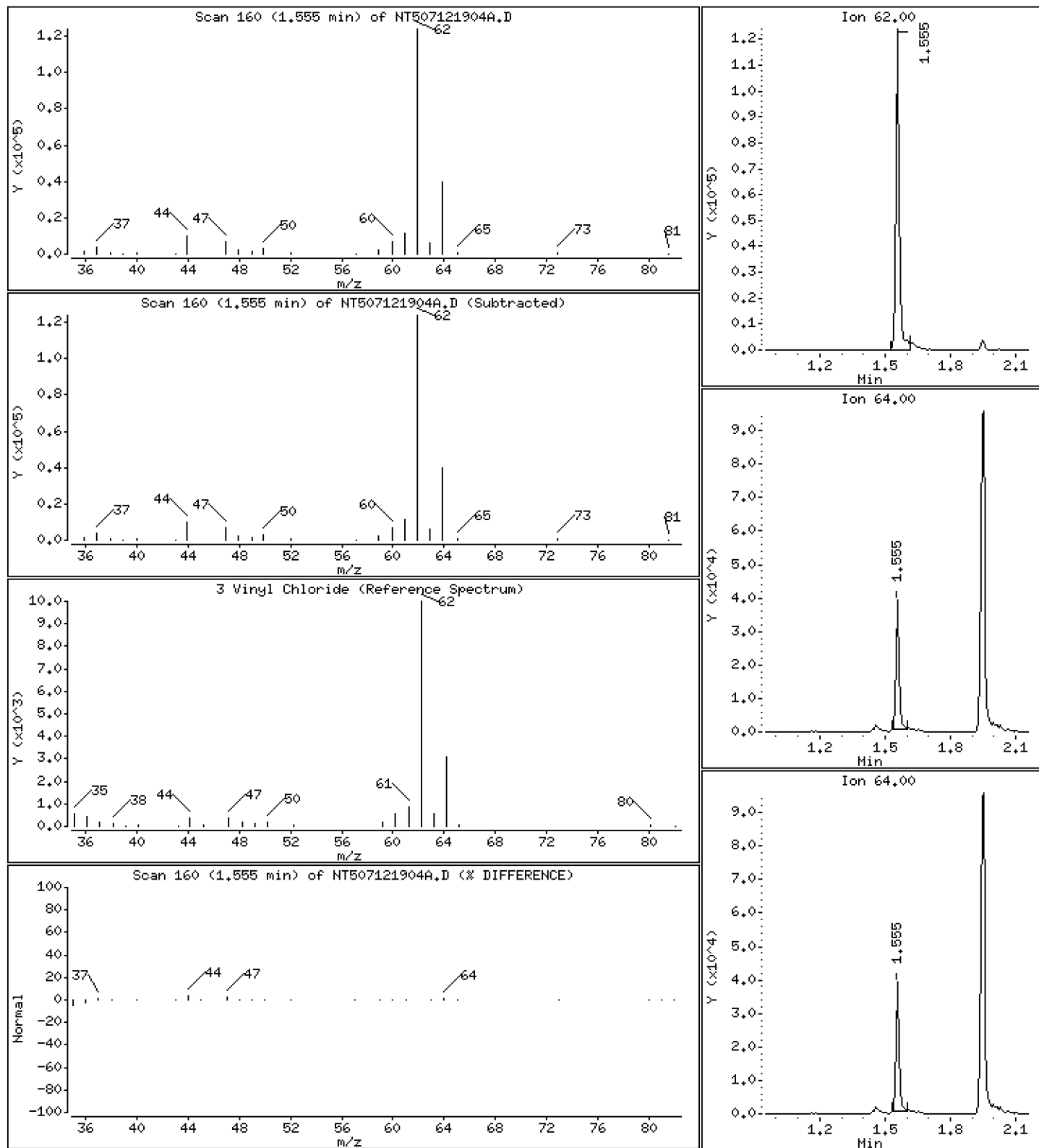
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 48,638 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

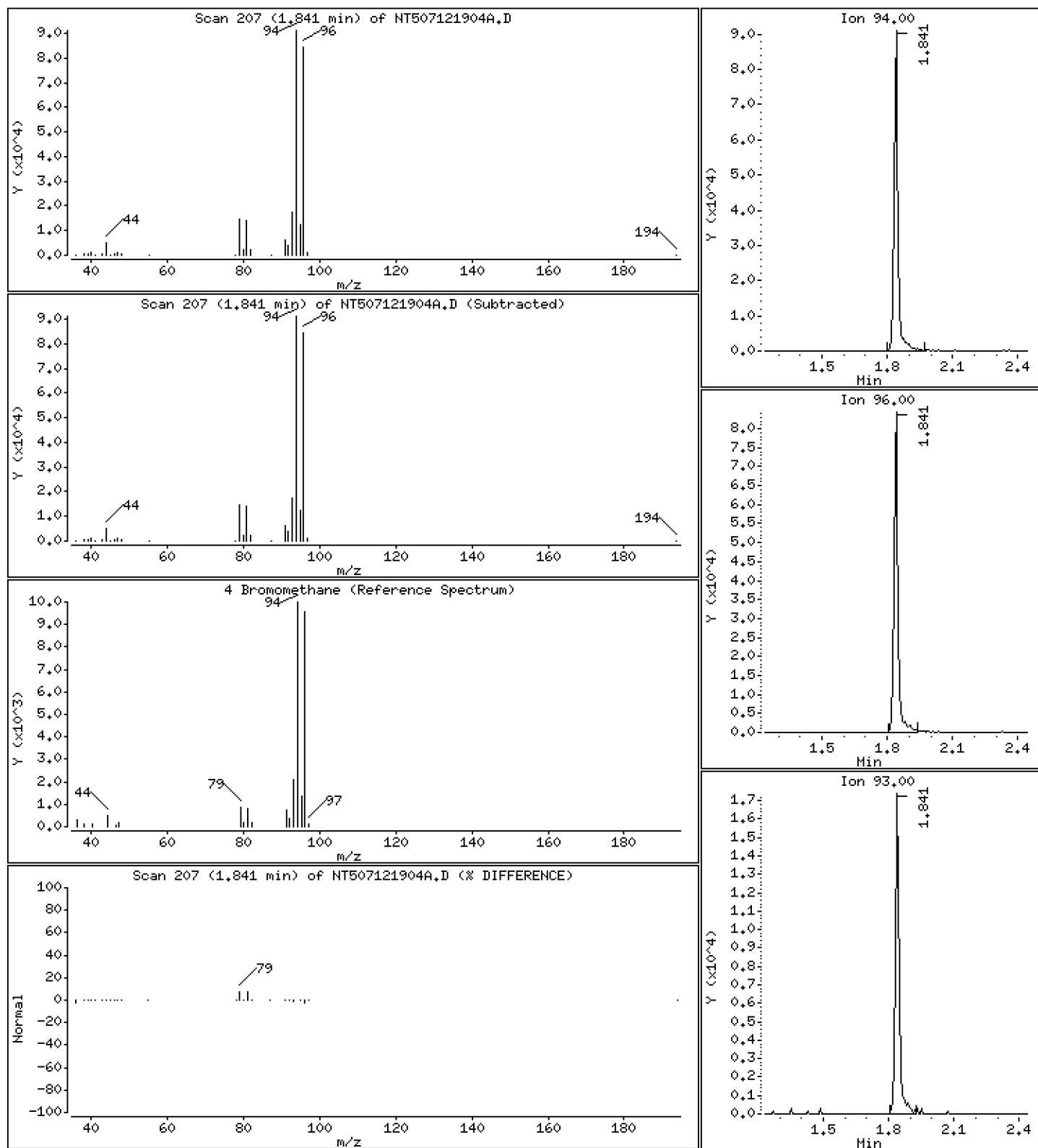
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 51.938 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

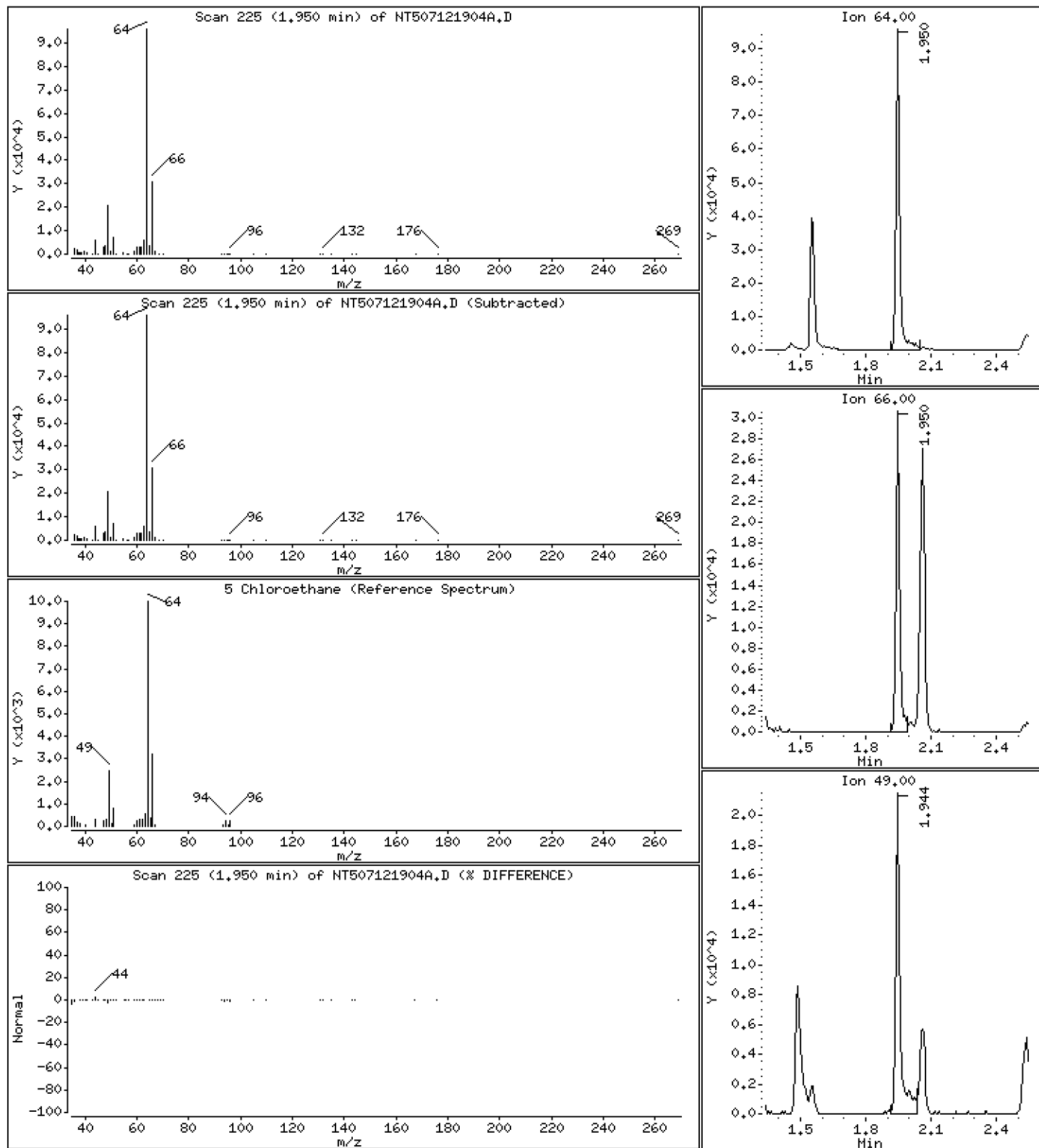
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 51,568 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

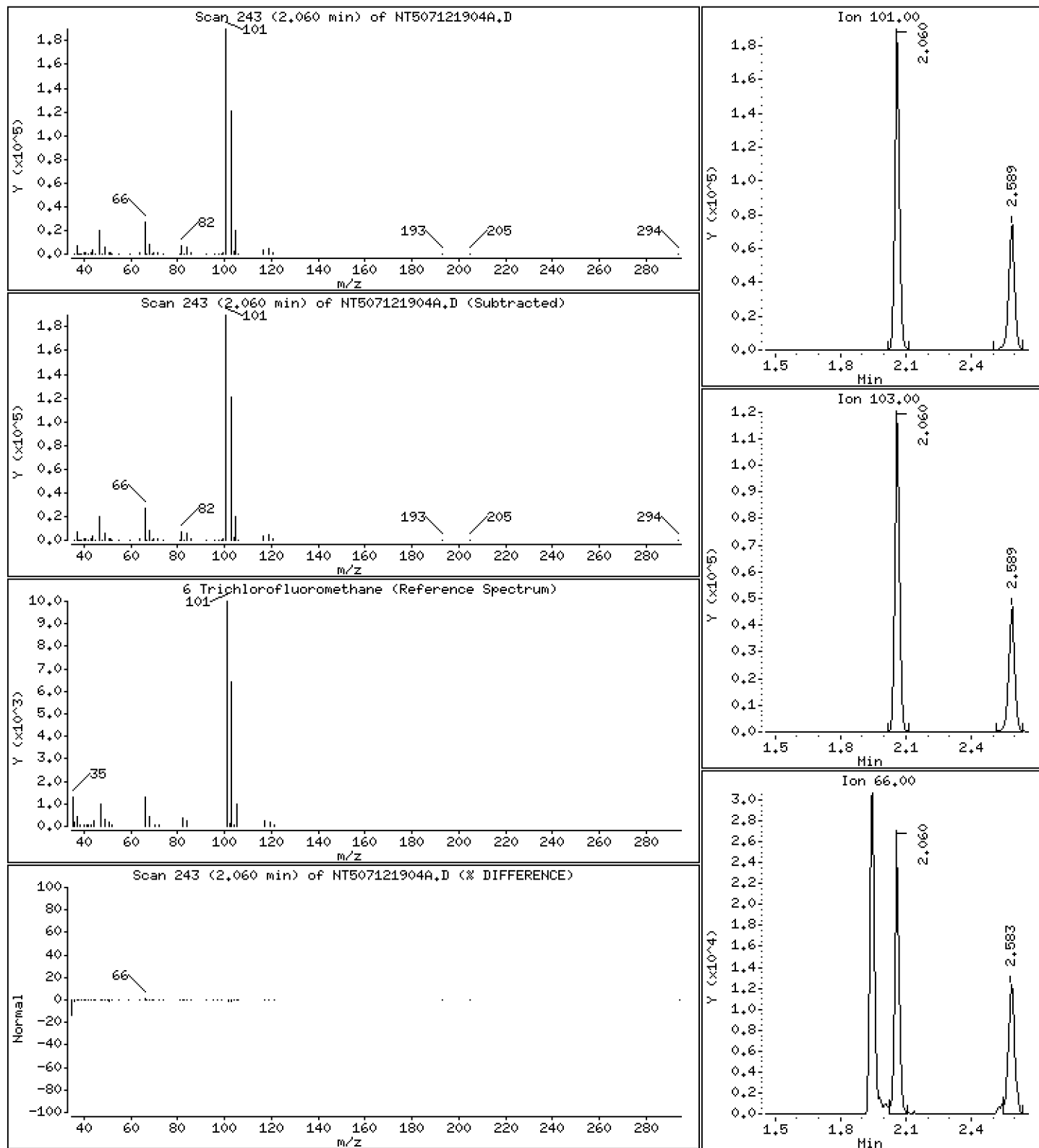
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 48,437 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

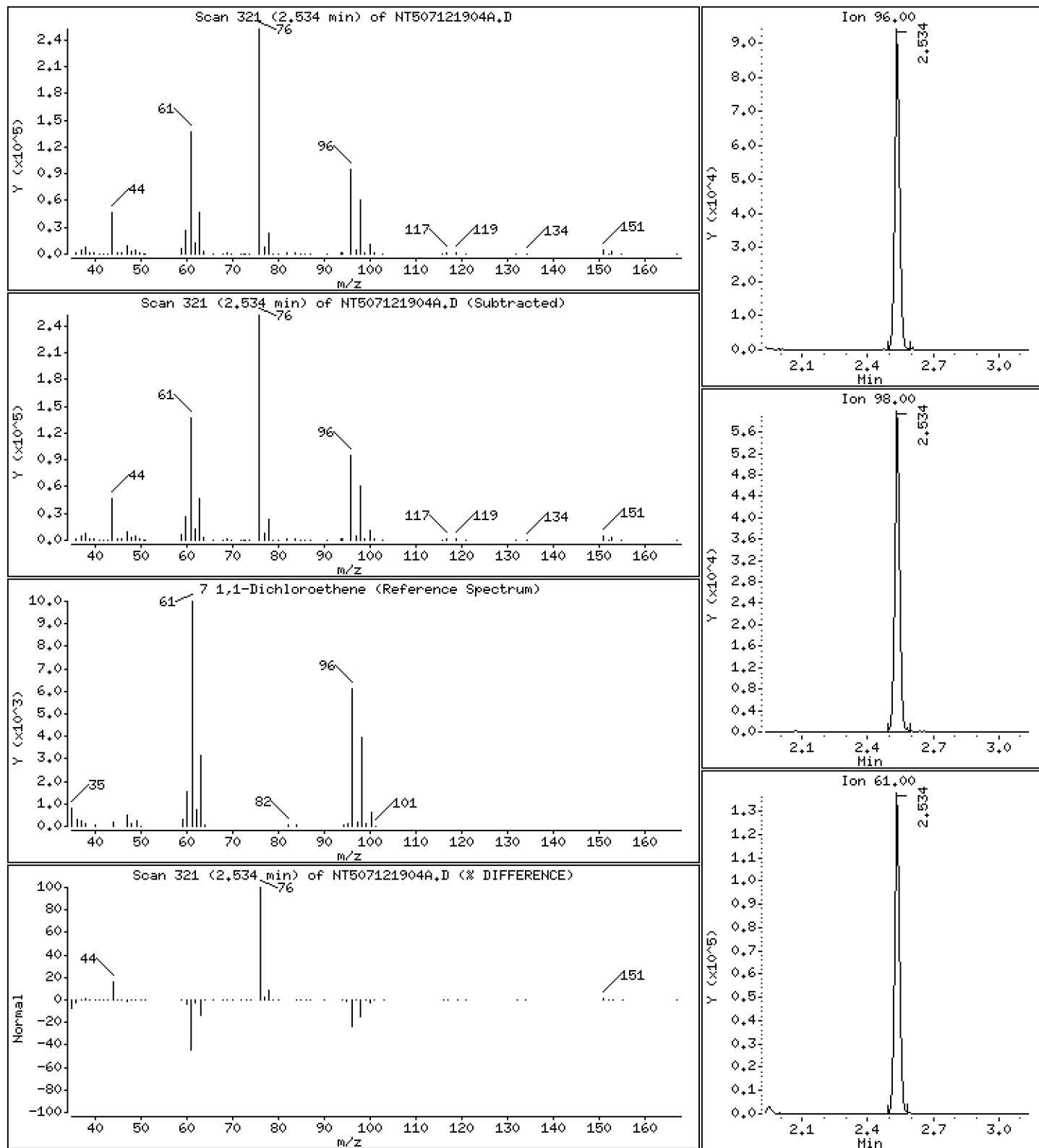
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 49,138 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

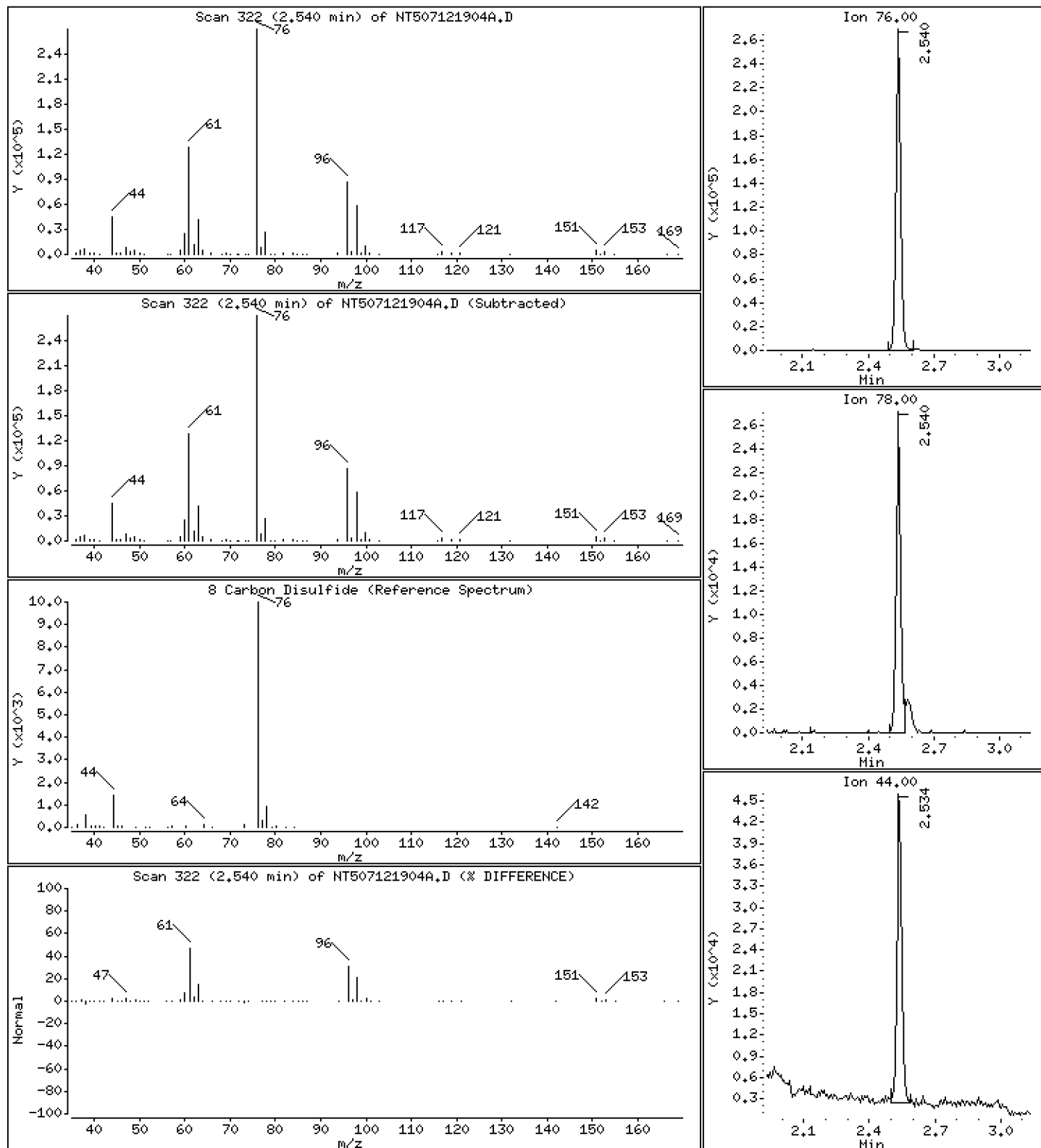
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 49,832 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

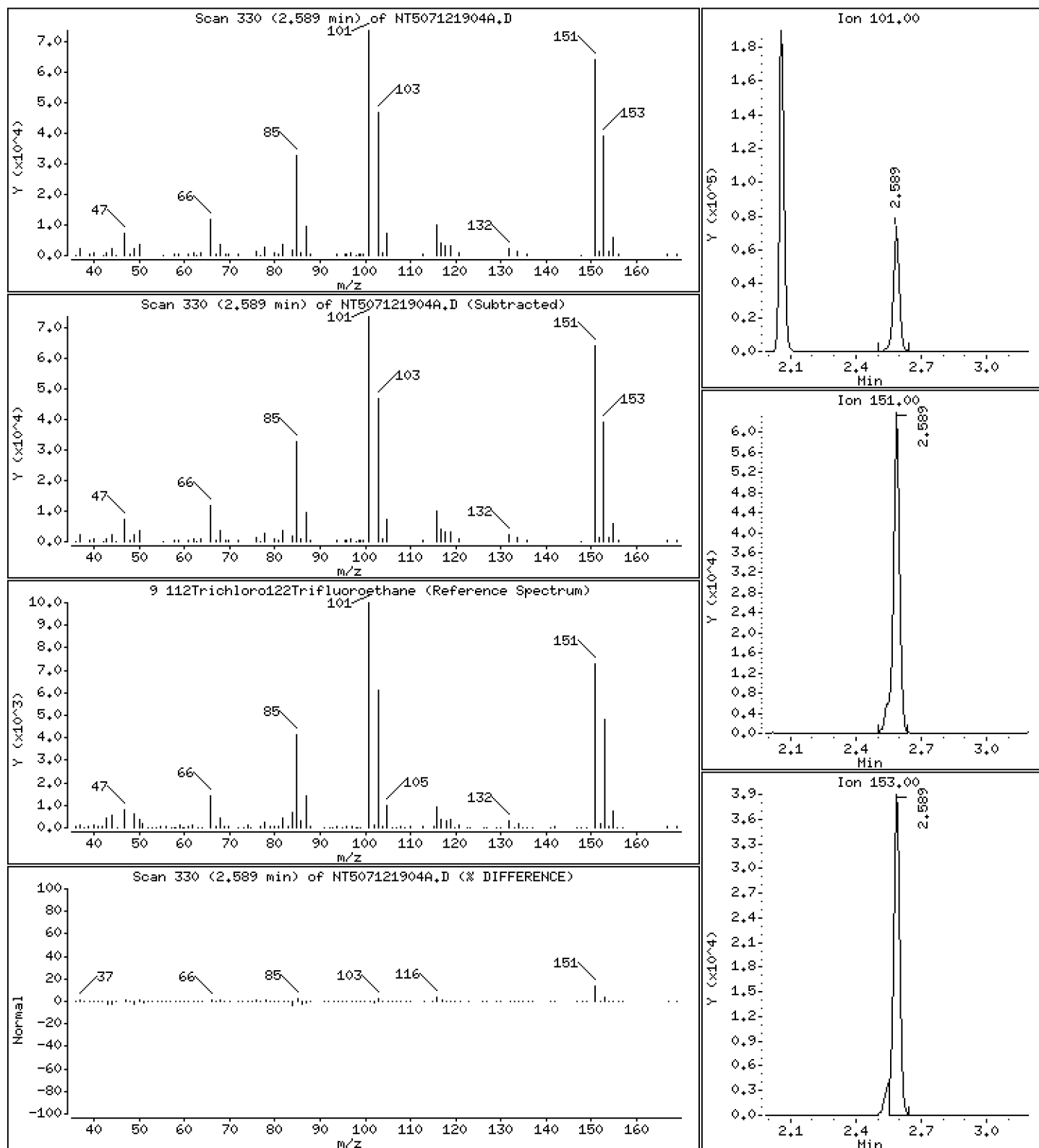
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 51,352 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

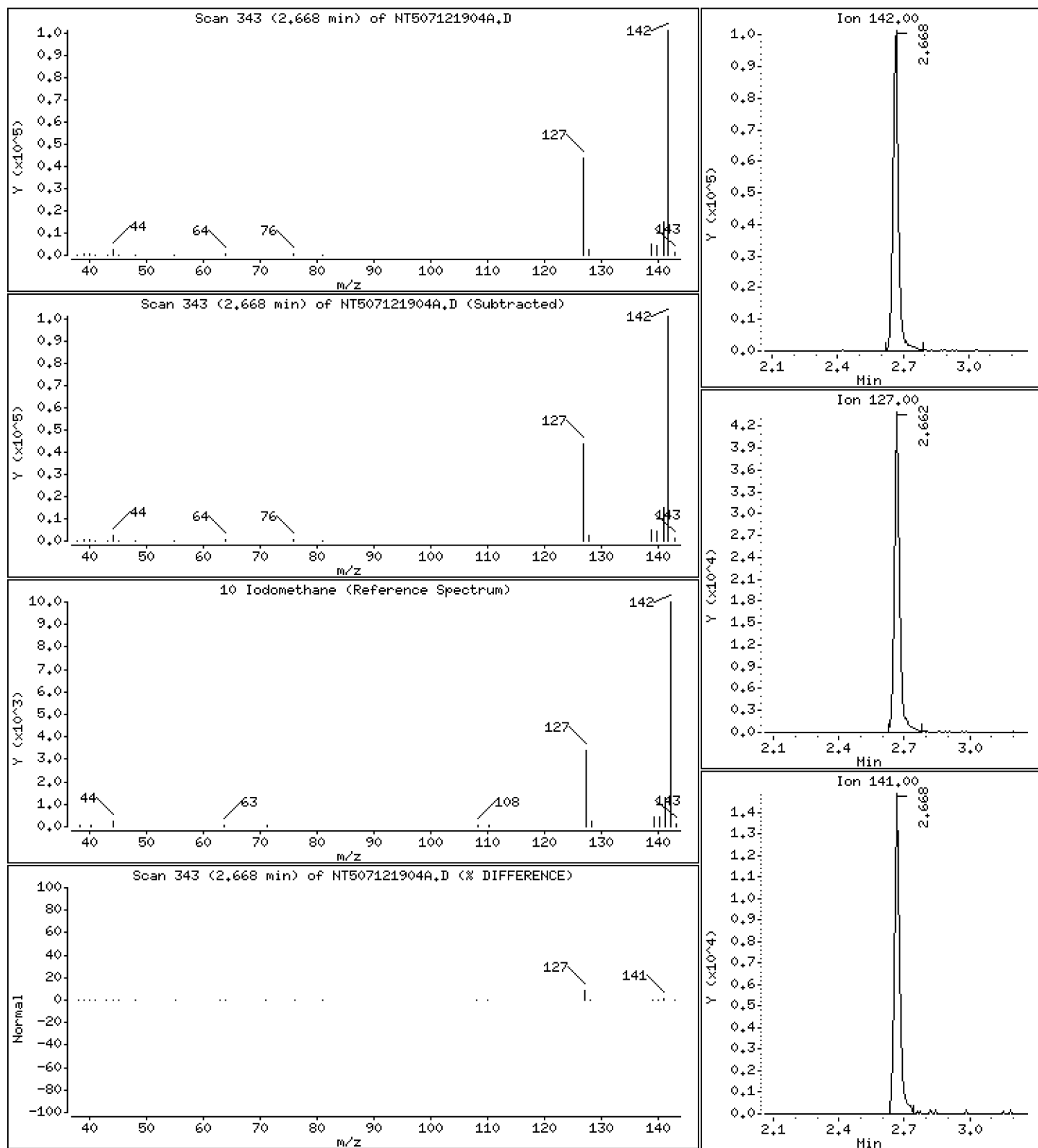
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 45,692 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

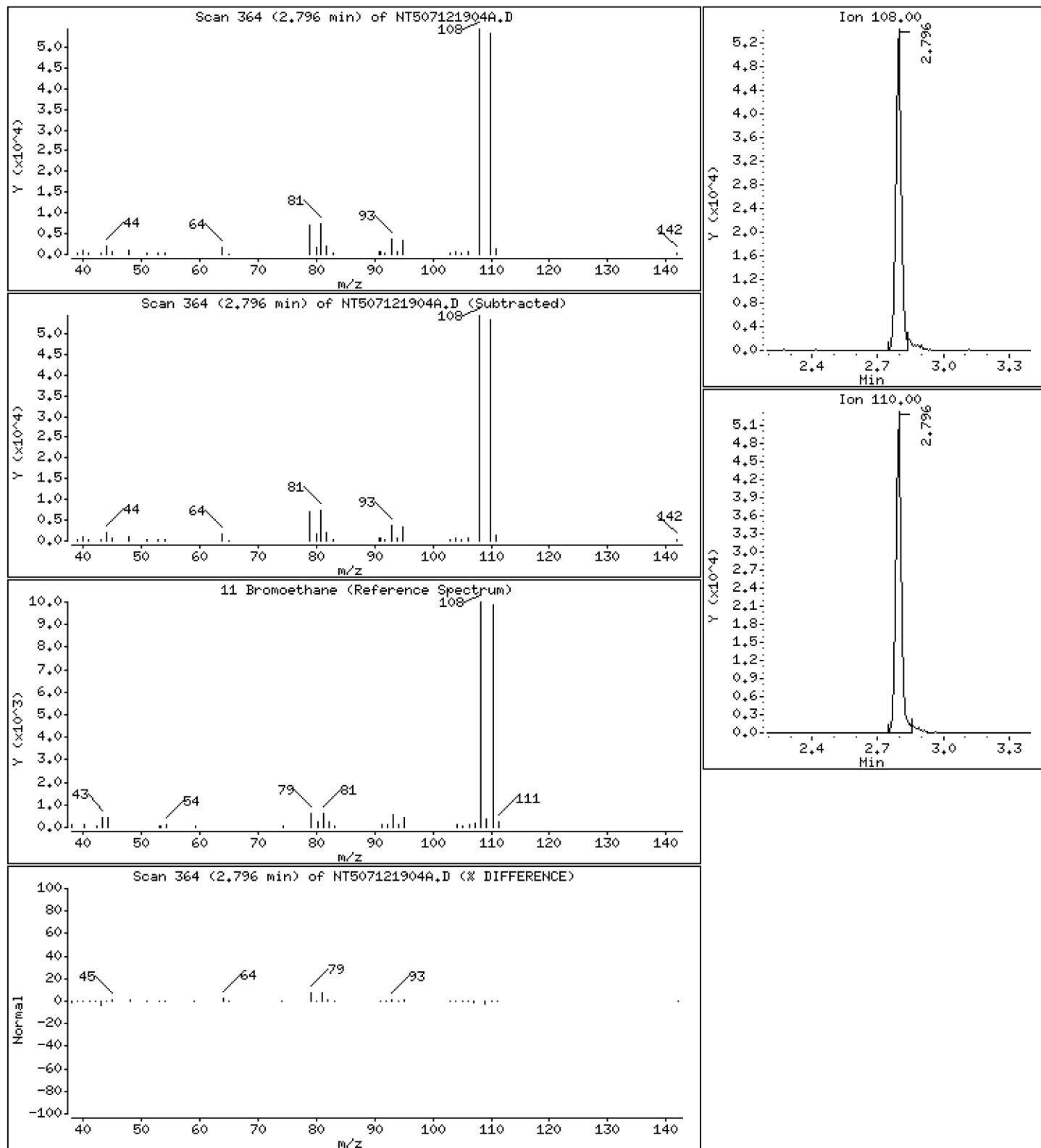
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 47,267 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

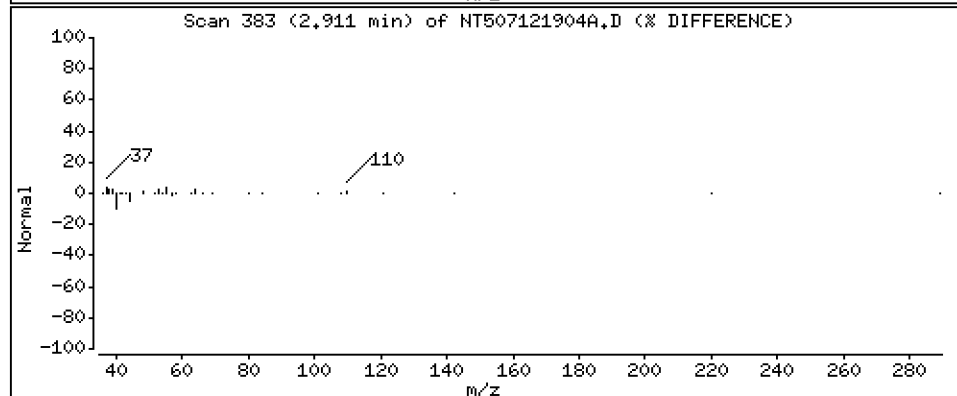
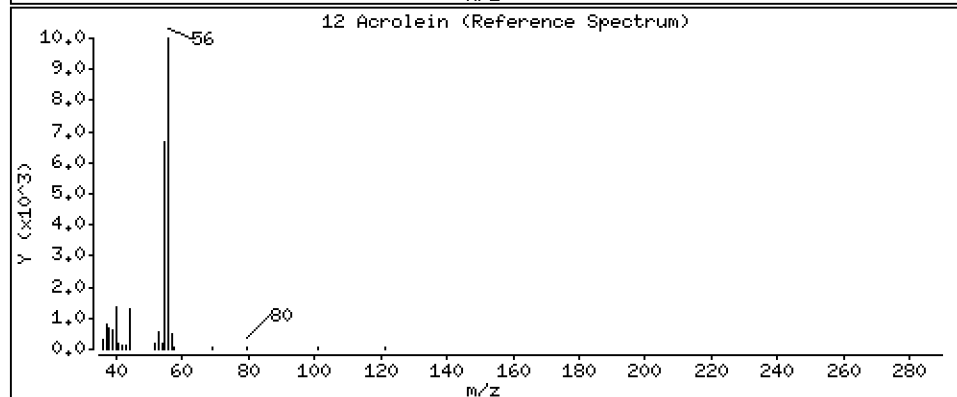
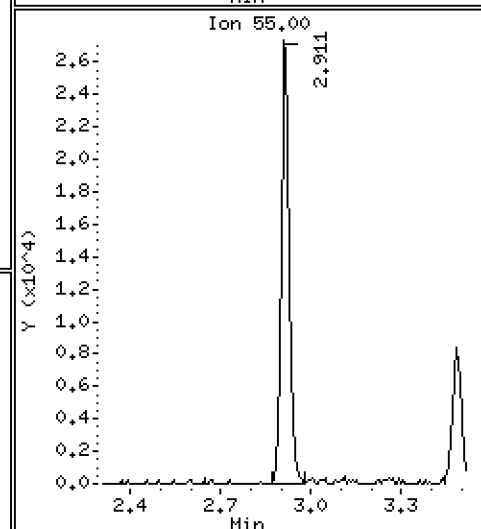
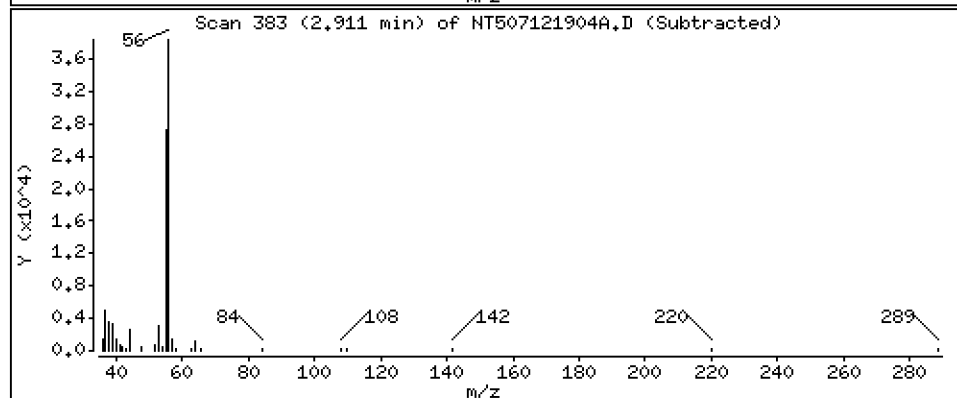
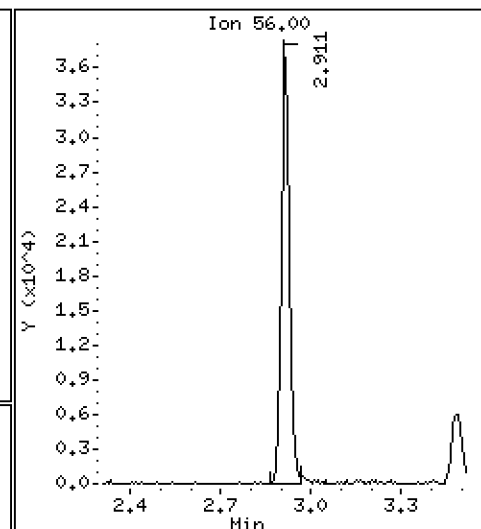
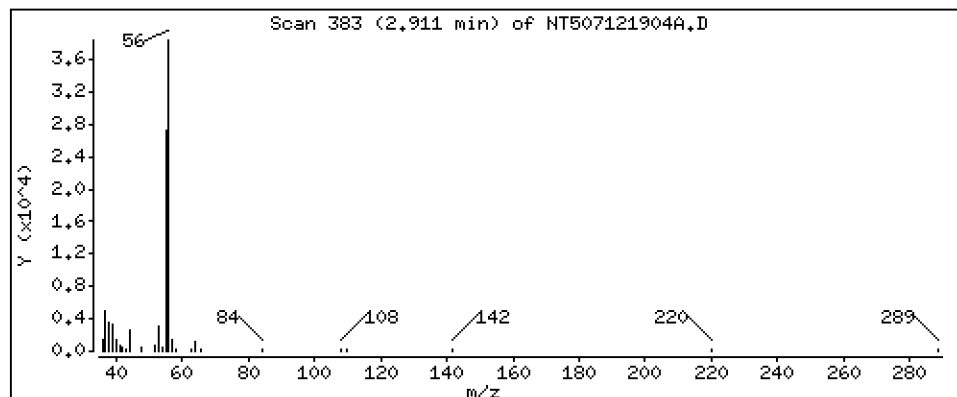
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 231.01 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

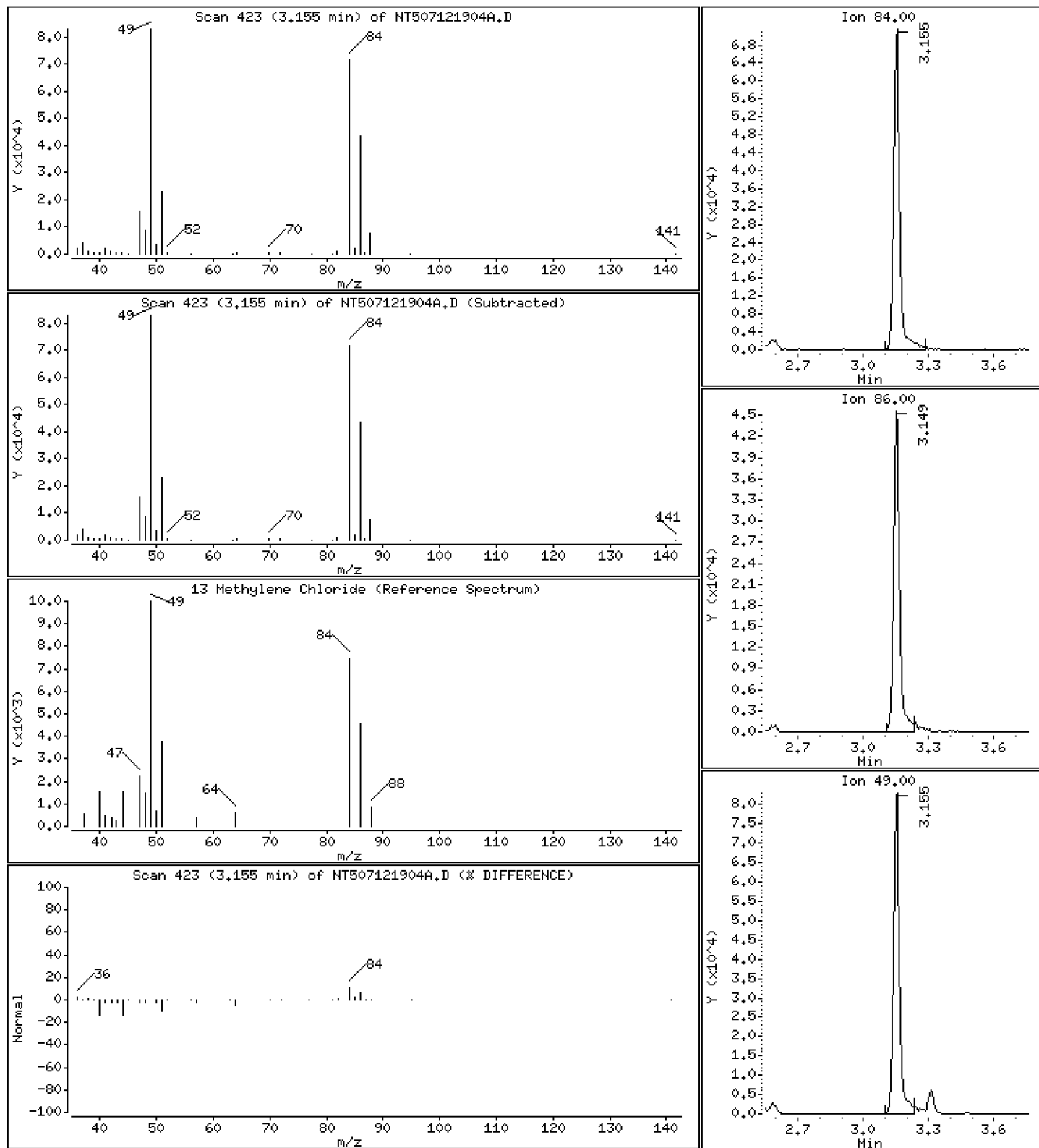
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 45,714 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

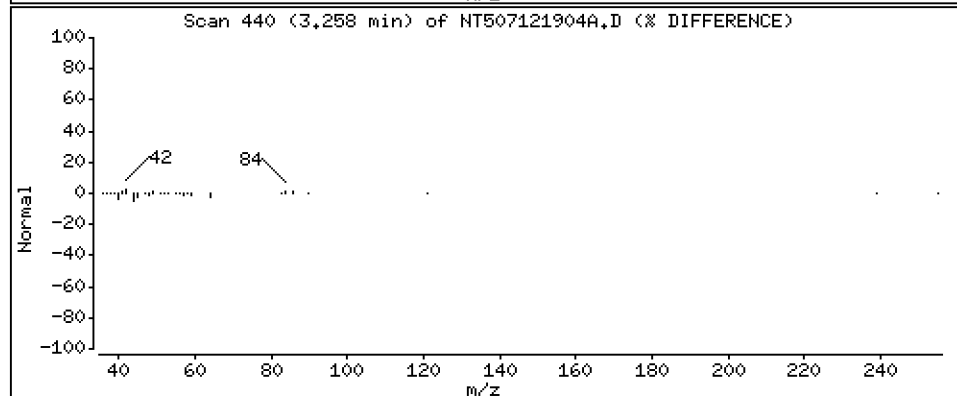
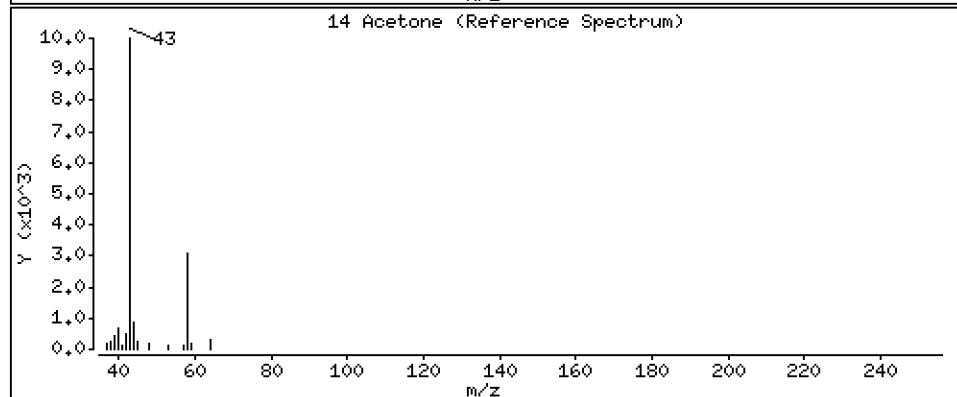
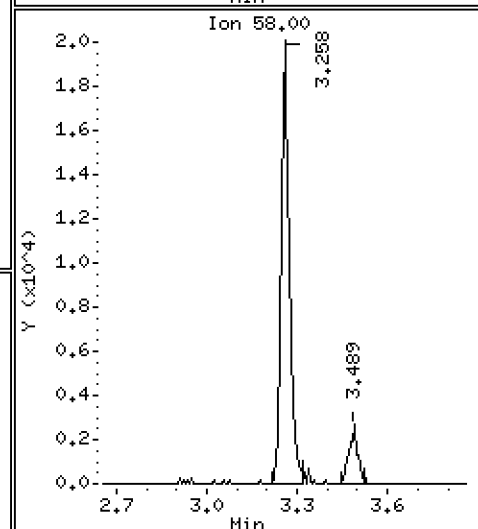
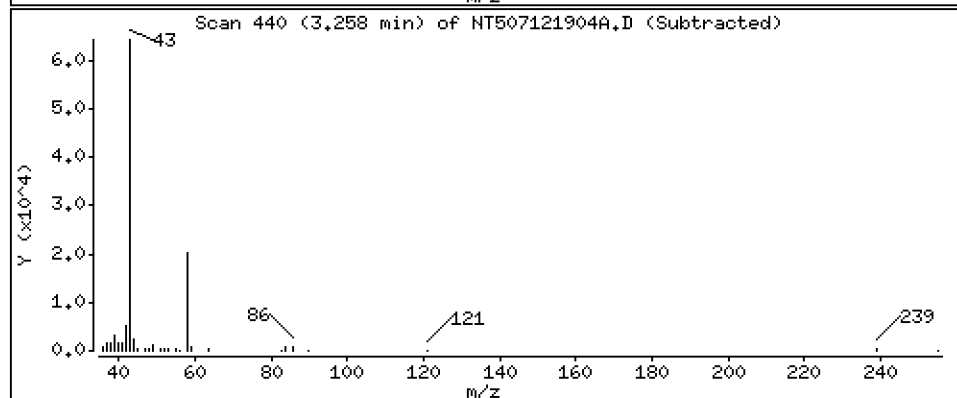
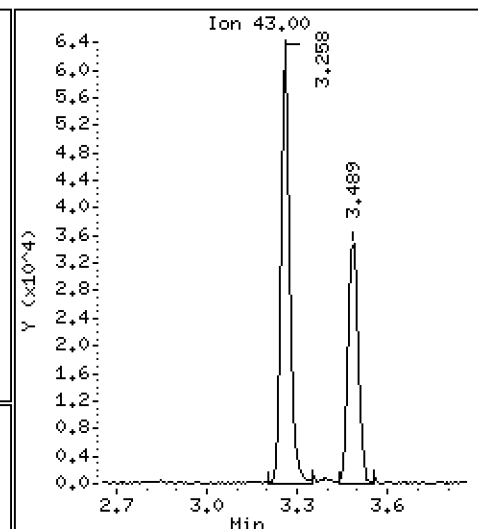
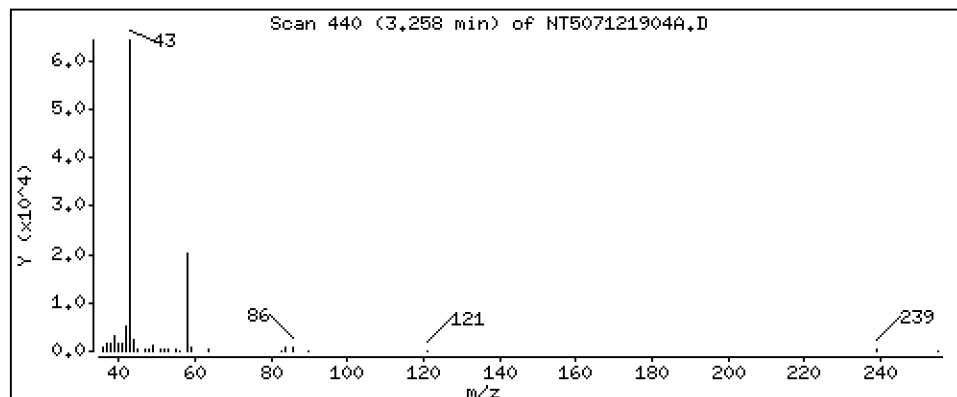
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 240.12 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

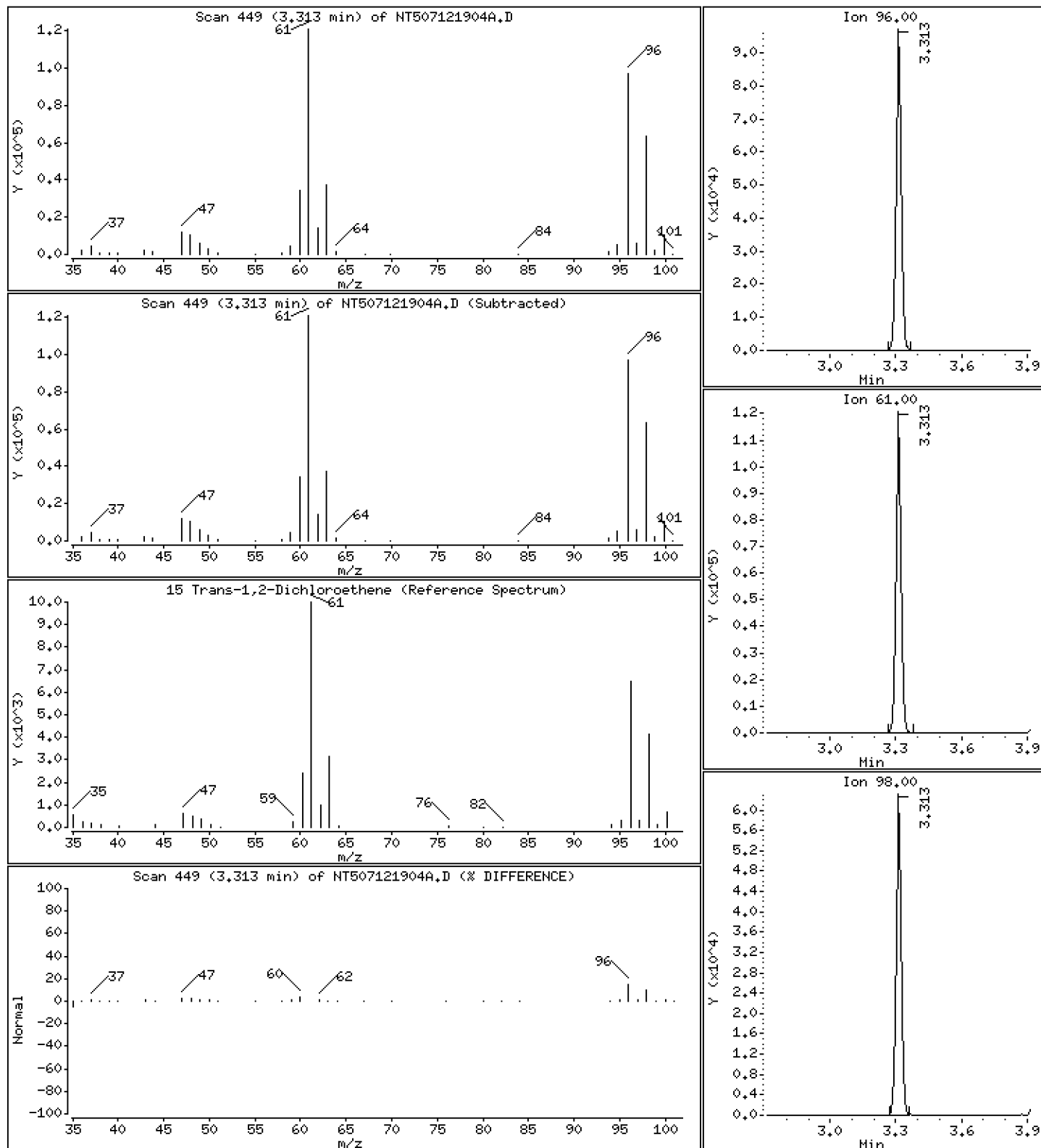
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 49,505 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

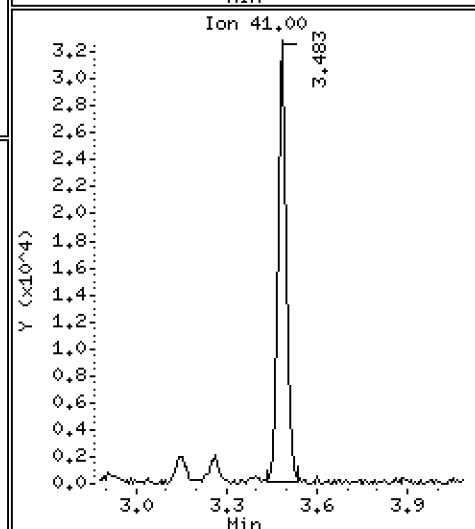
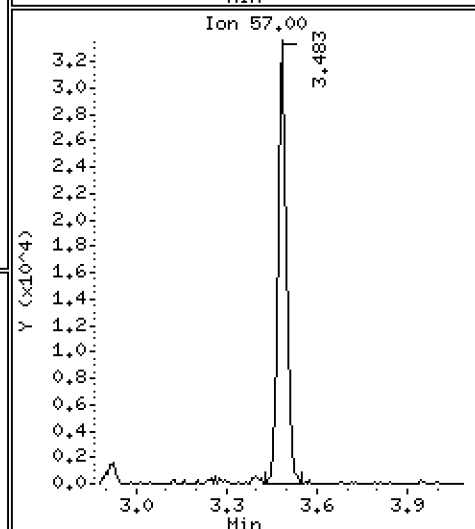
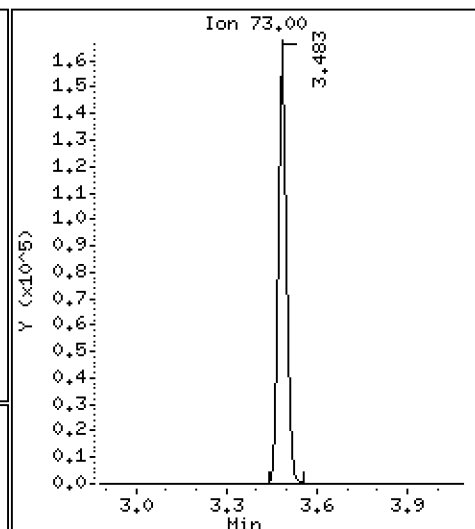
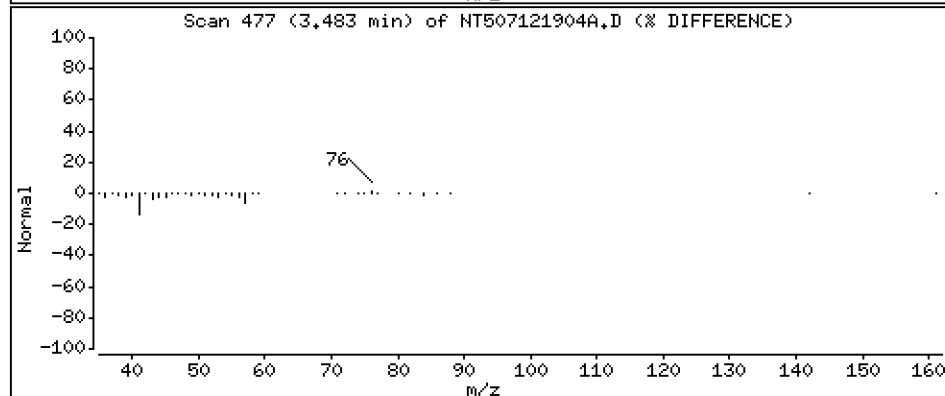
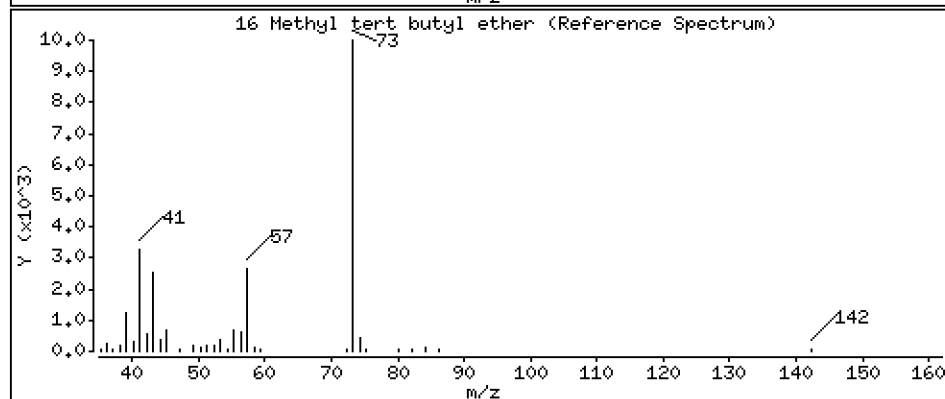
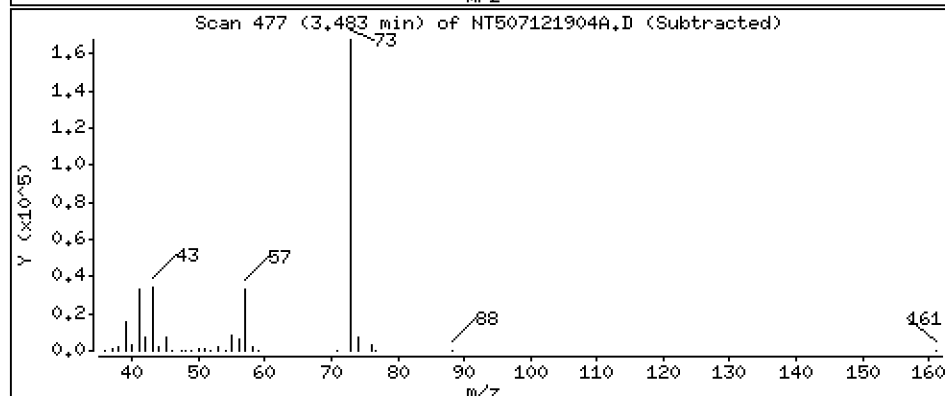
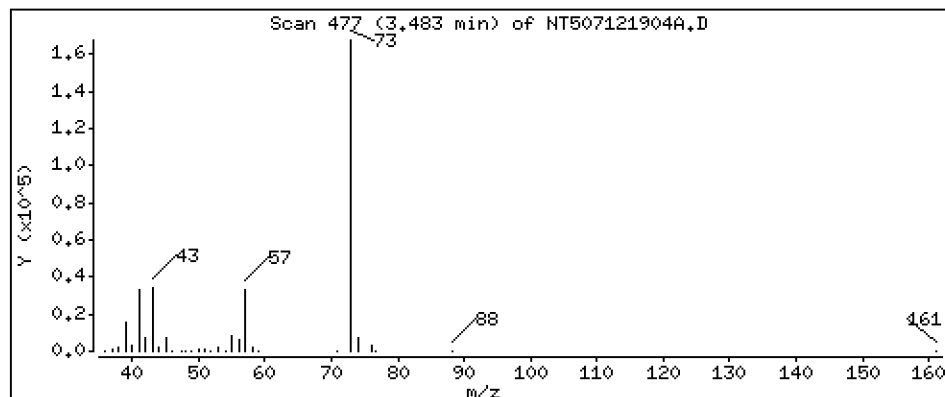
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 45,356 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

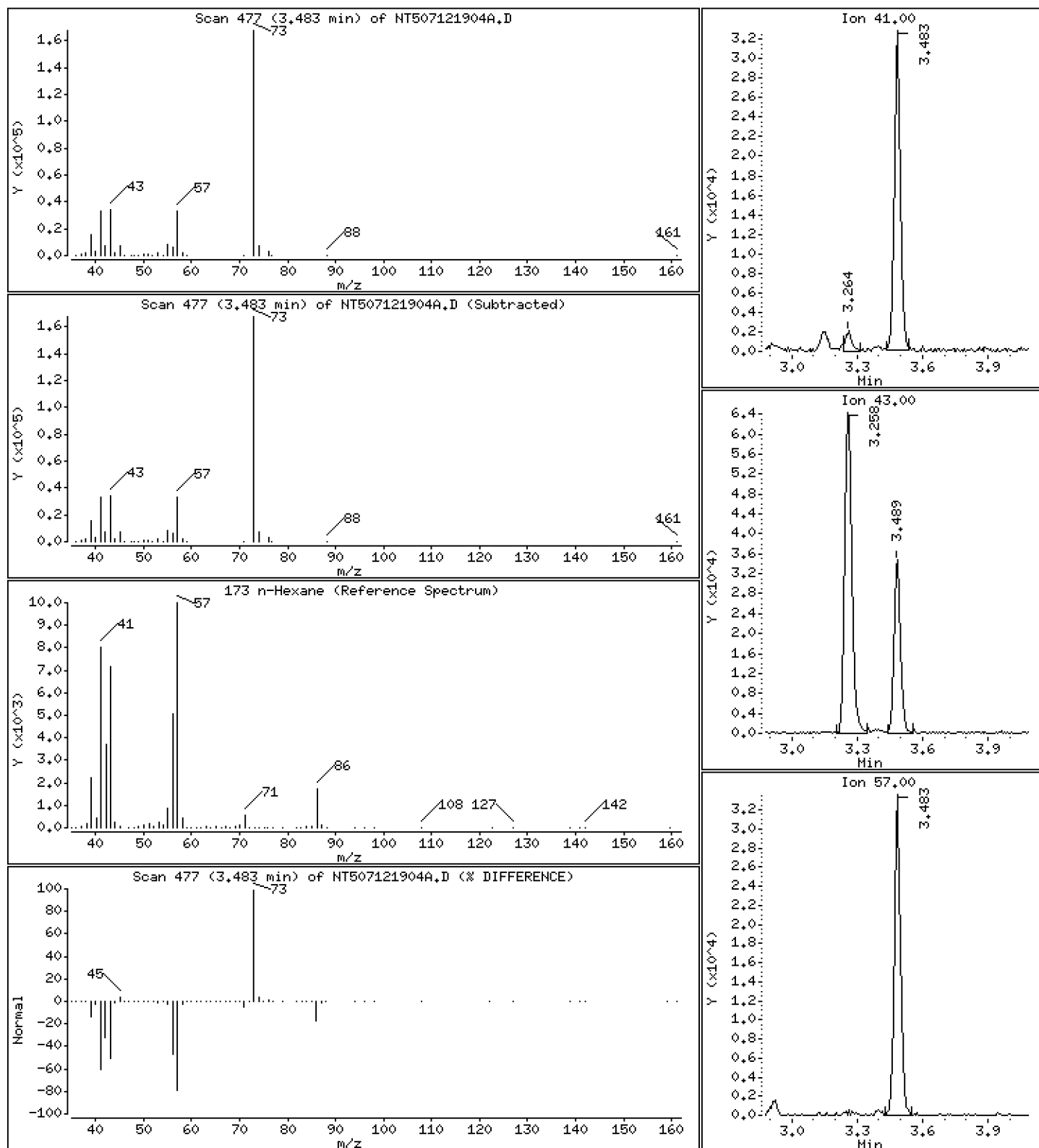
Sample Info: BSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

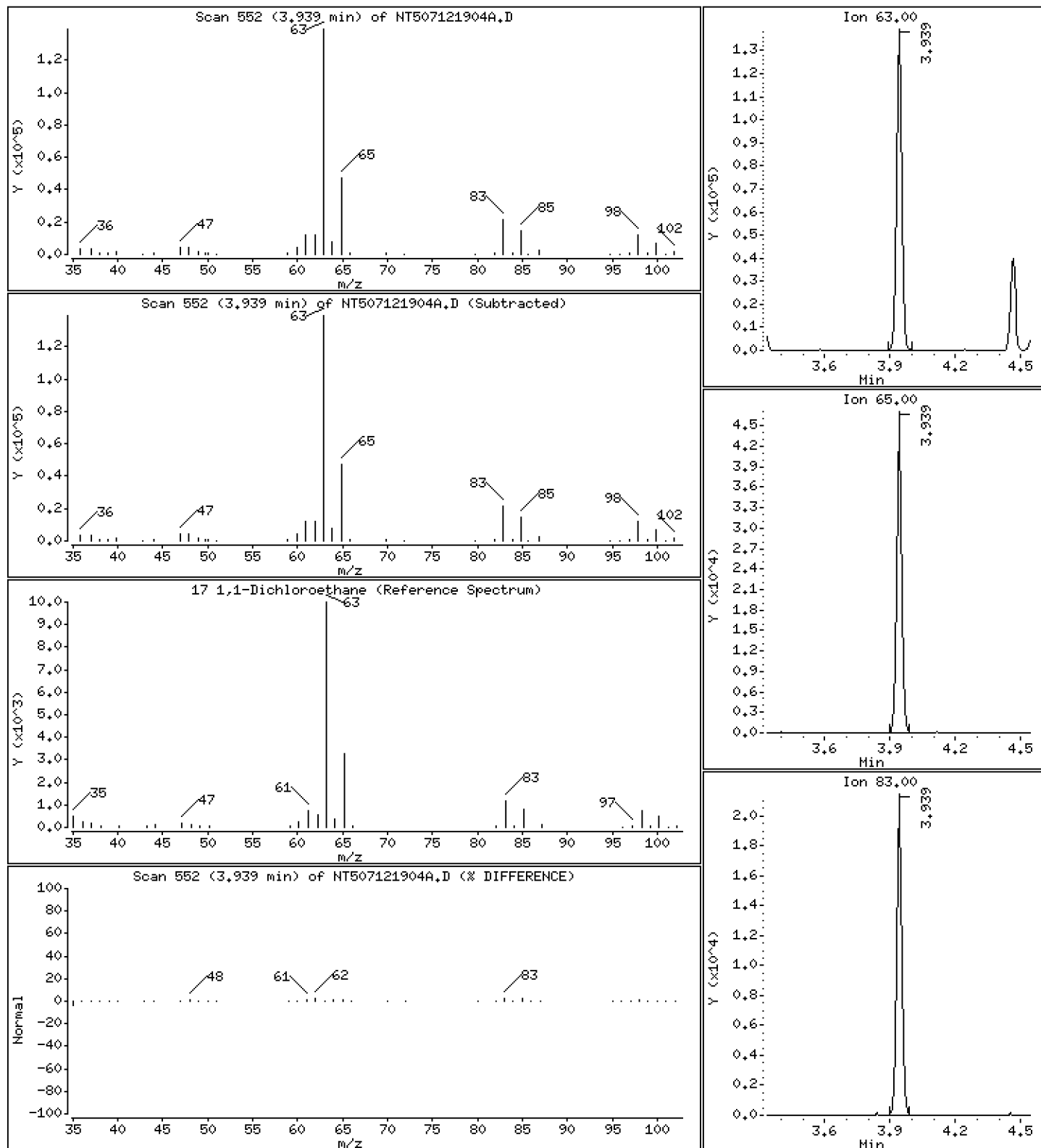
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 49.477 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

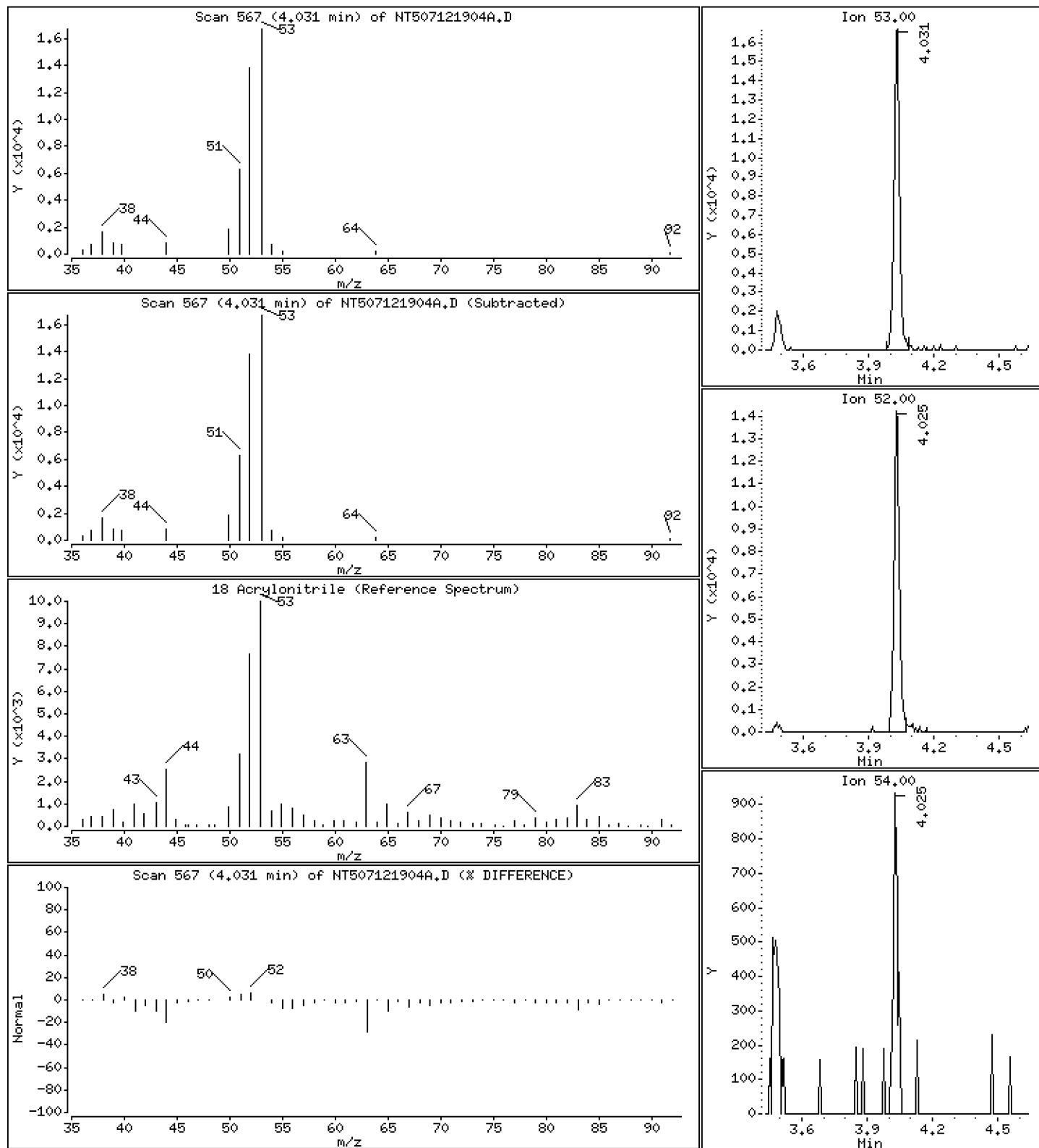
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 47,050 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

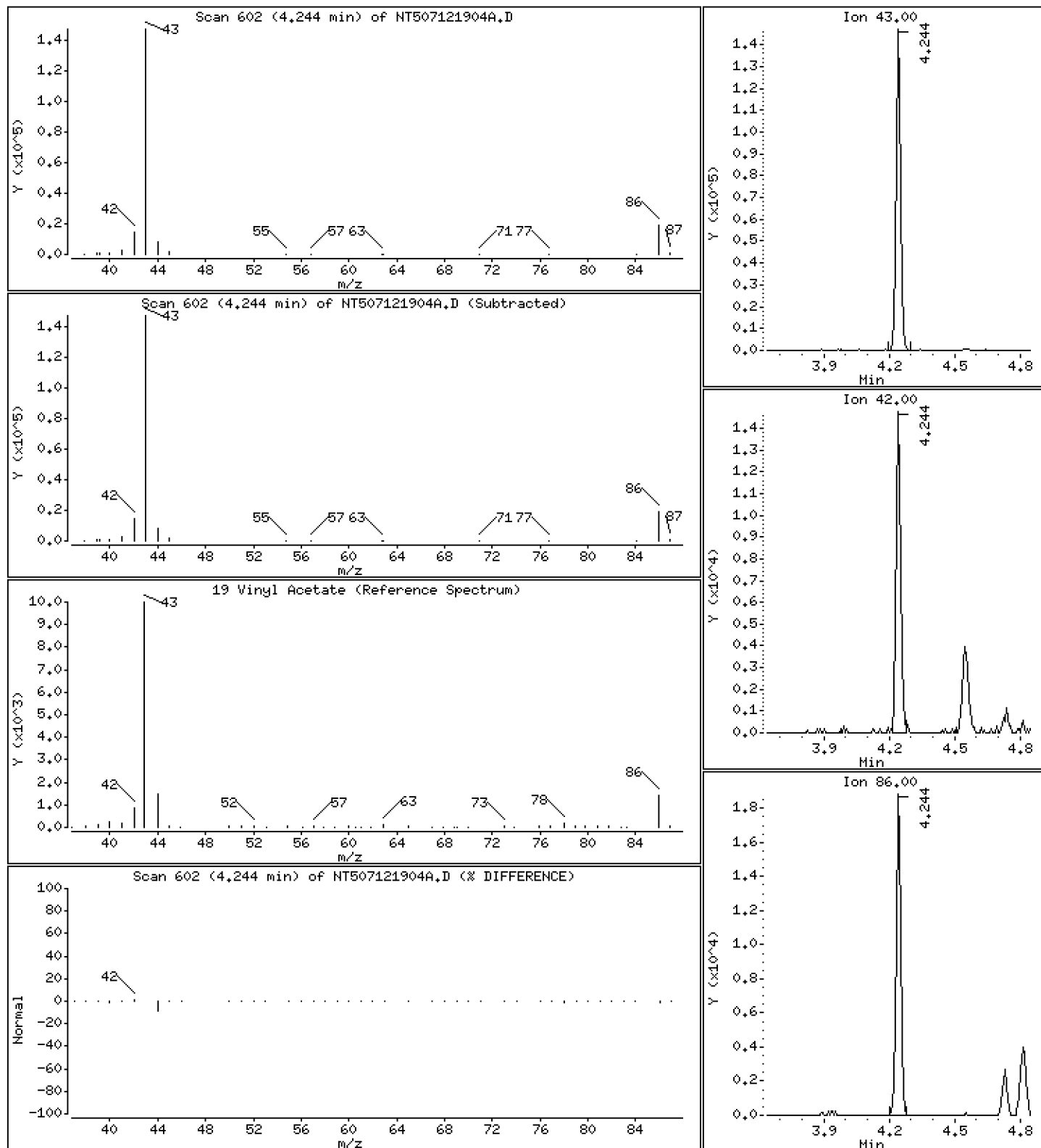
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 49,531 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

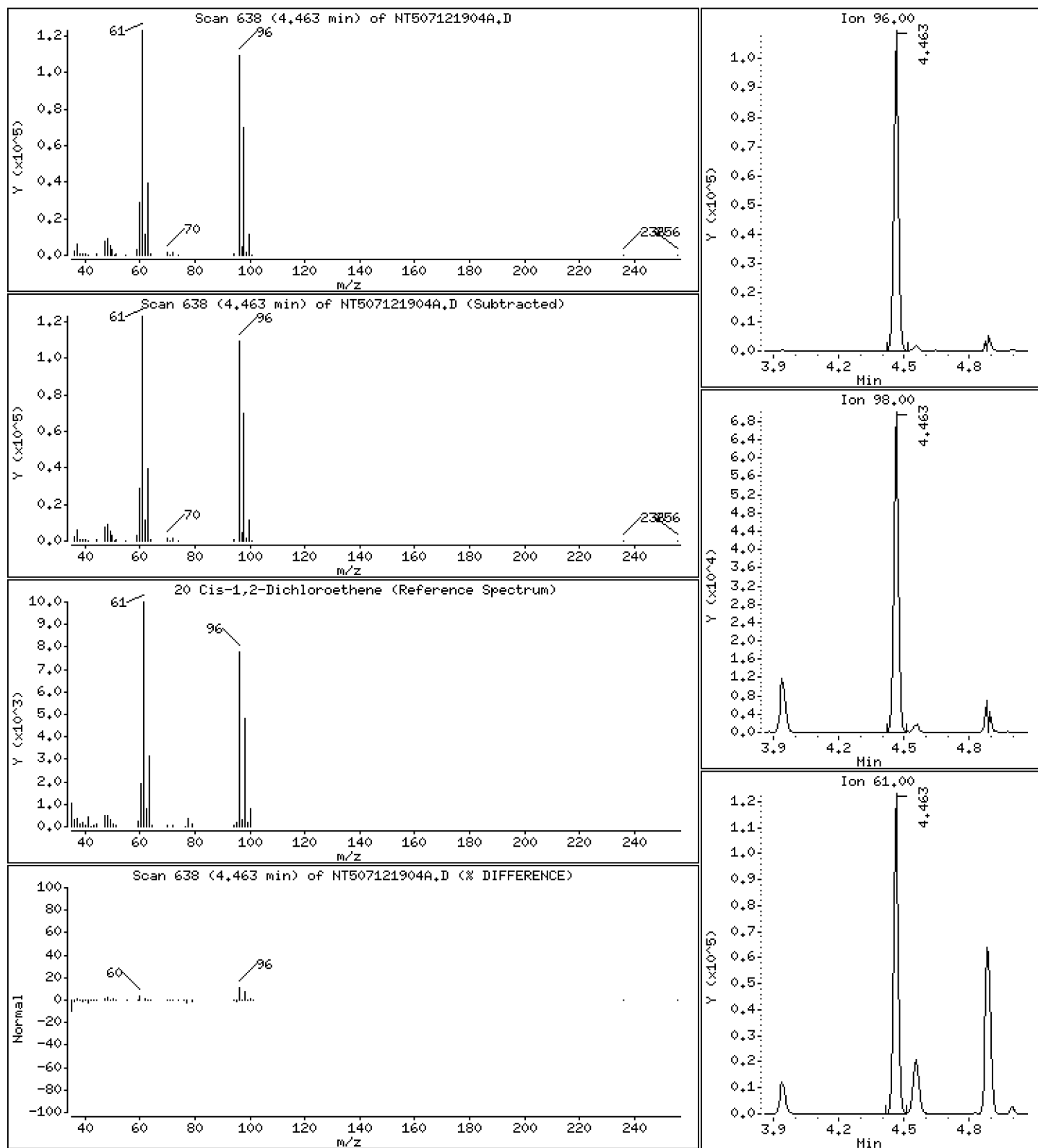
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 50,101 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

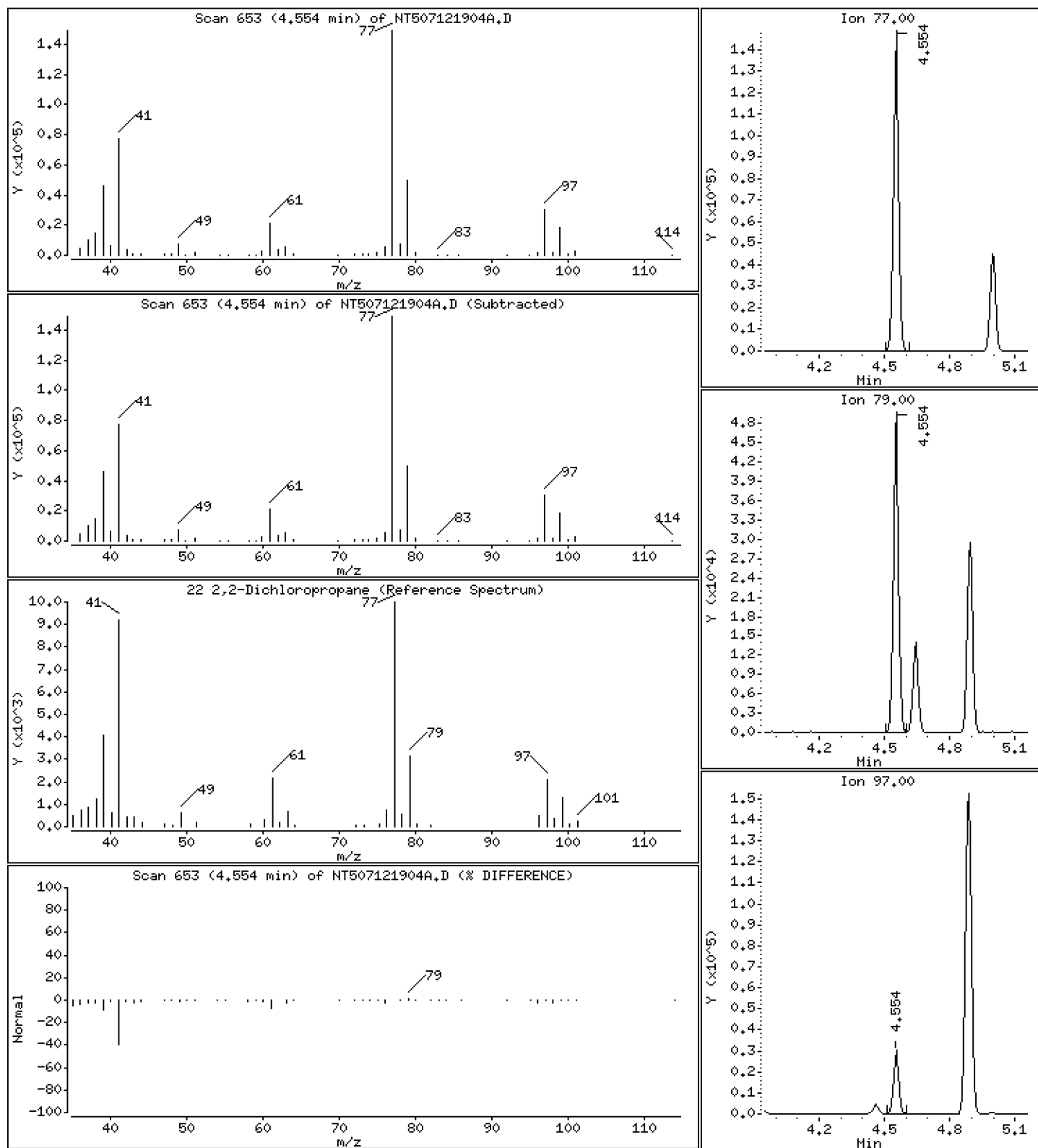
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22 2,2-Dichloropropane

Concentration: 52,445 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

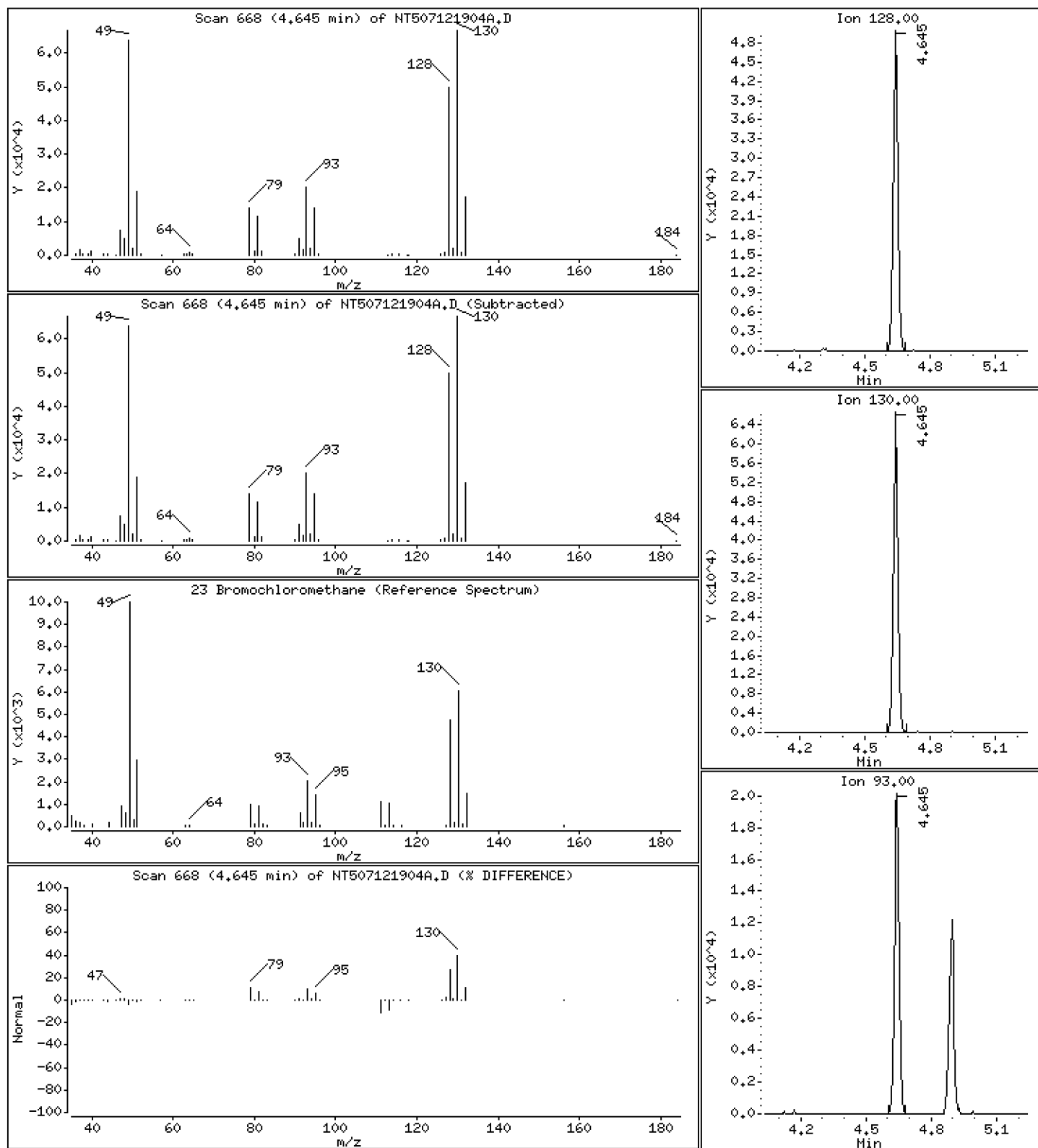
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

23 Bromochloromethane

Concentration: 47.478 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

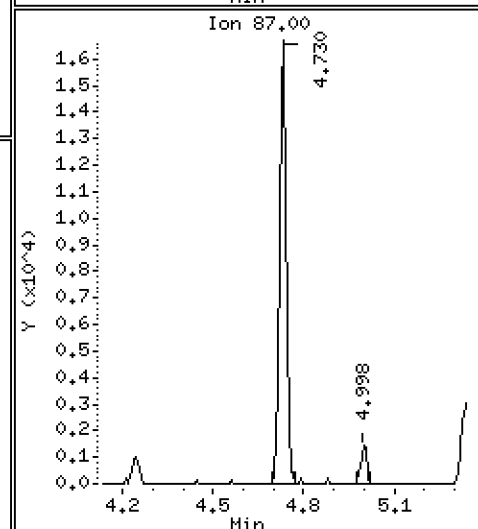
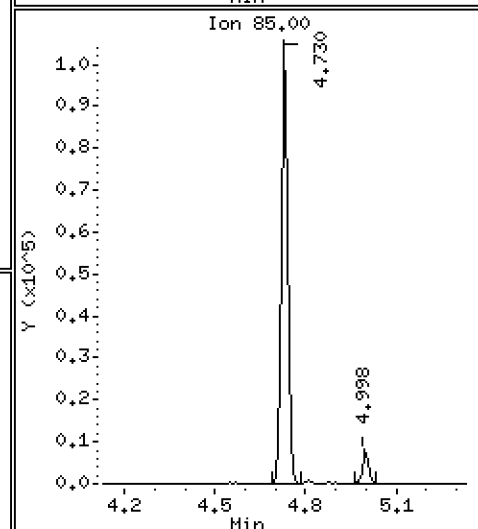
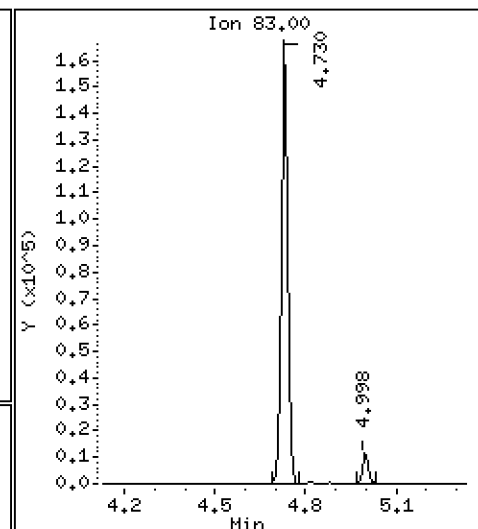
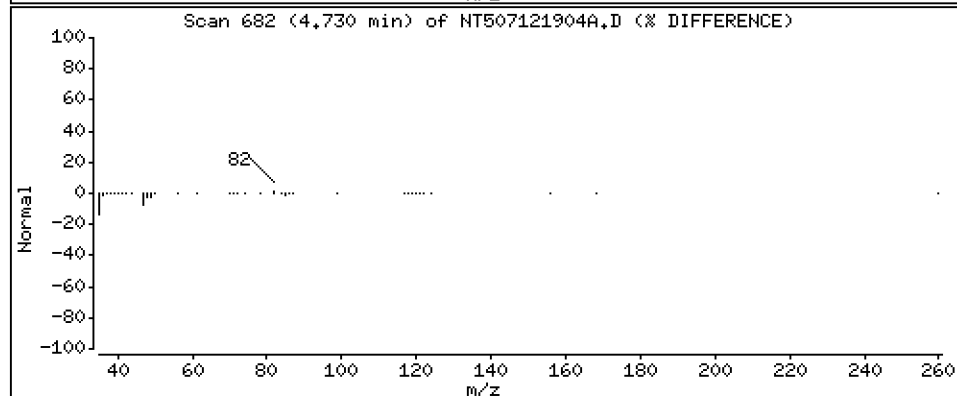
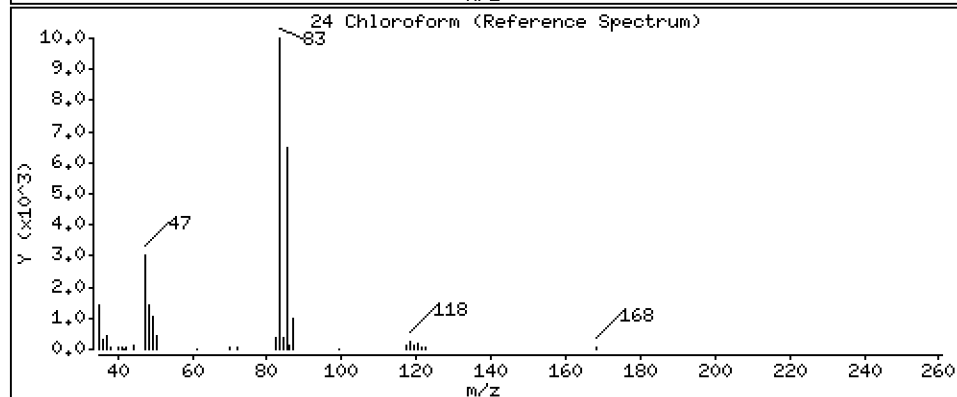
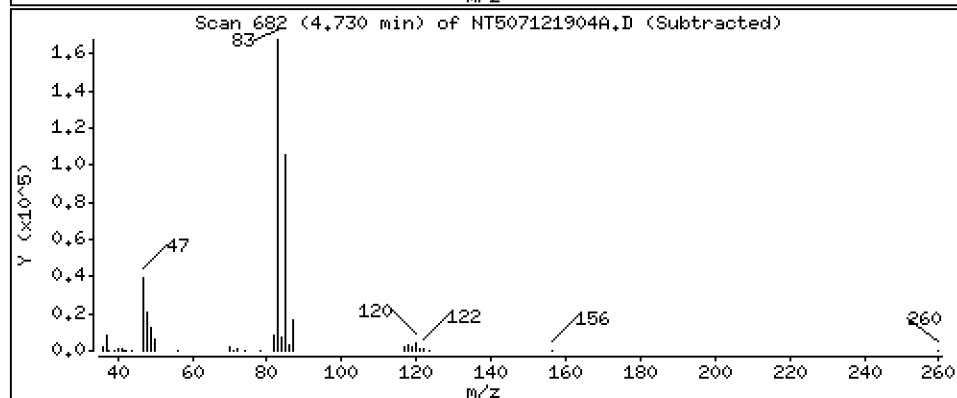
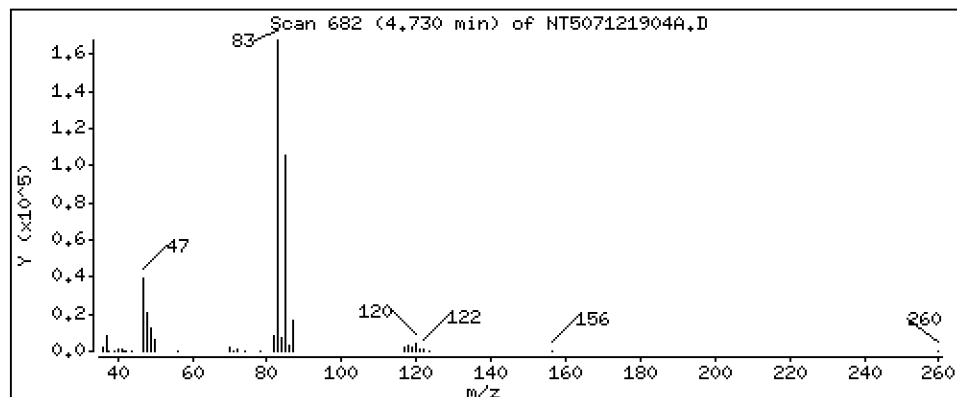
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 49,203 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

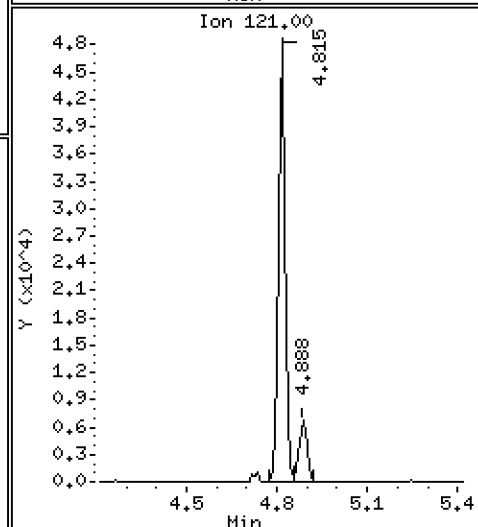
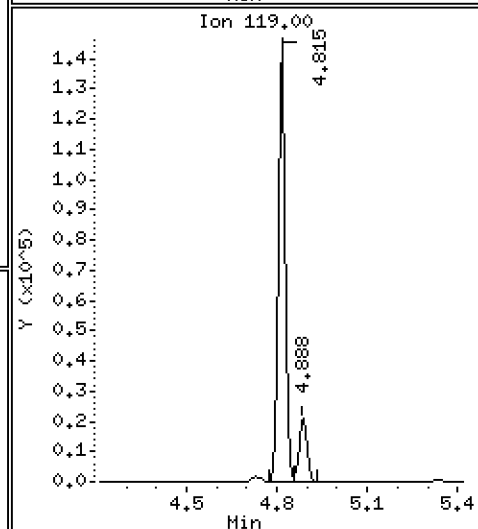
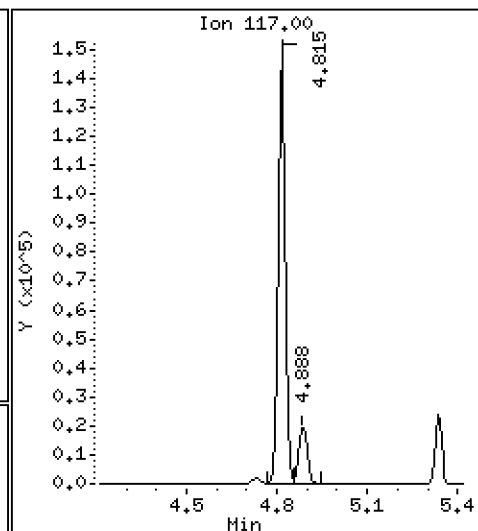
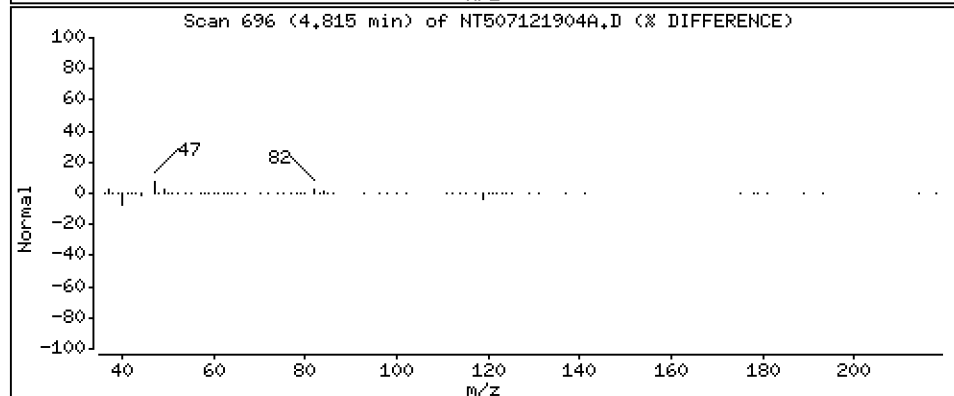
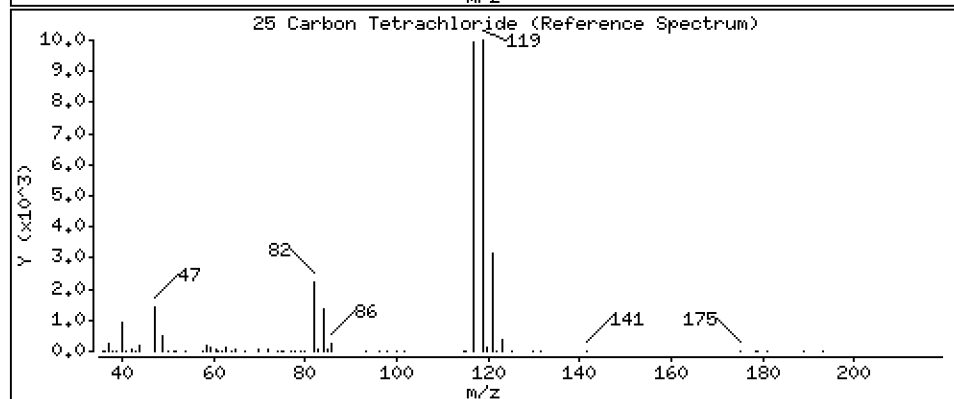
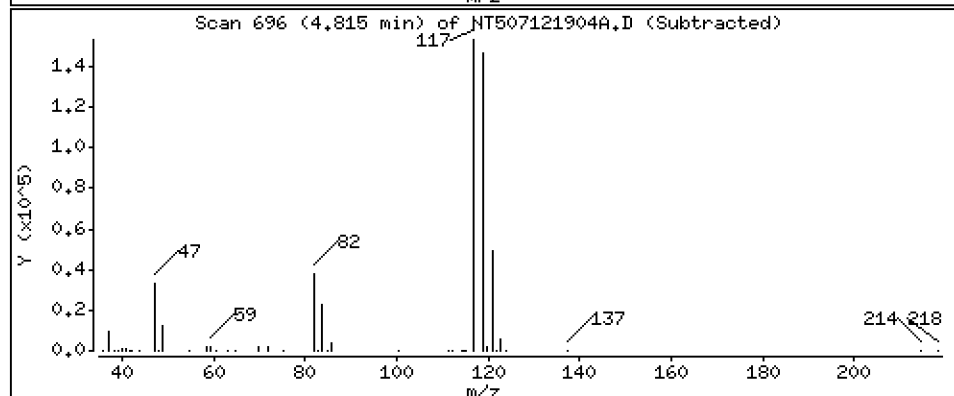
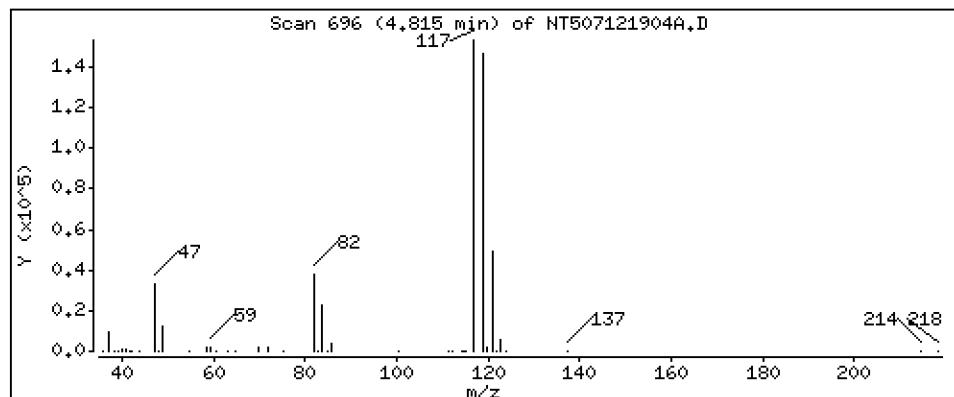
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 46,728 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

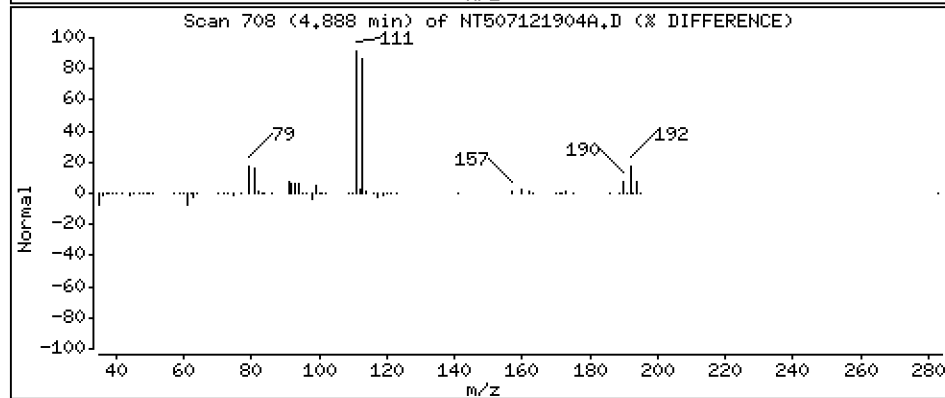
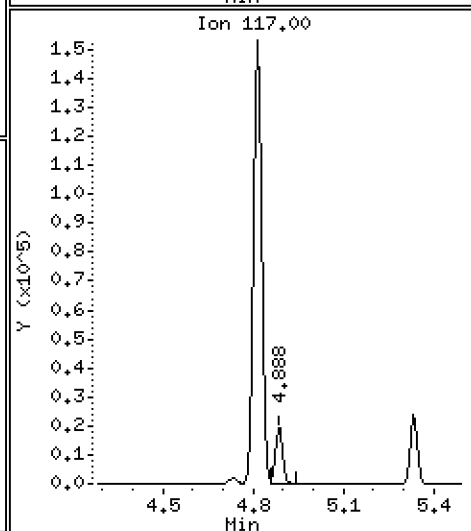
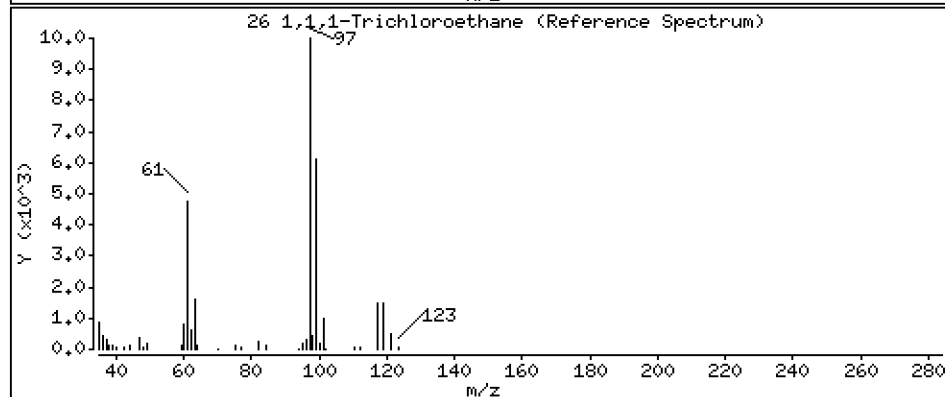
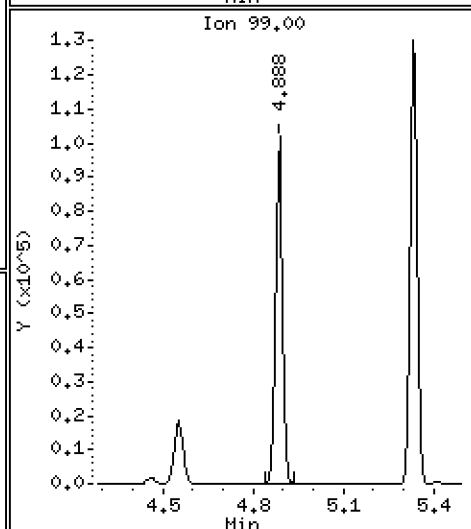
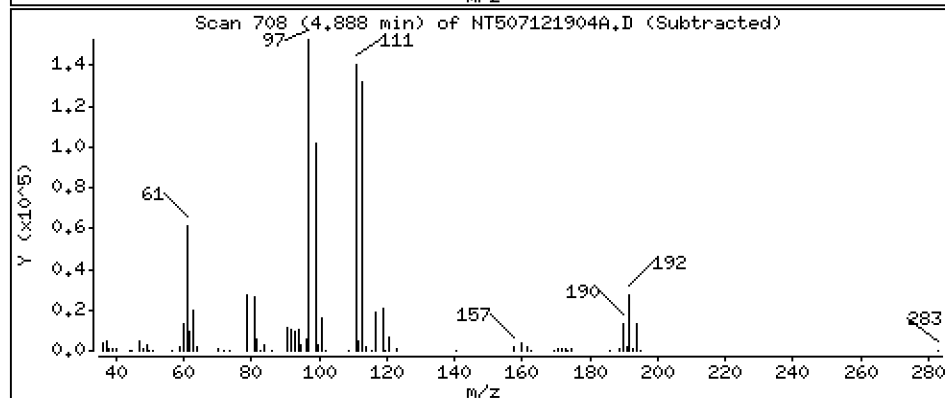
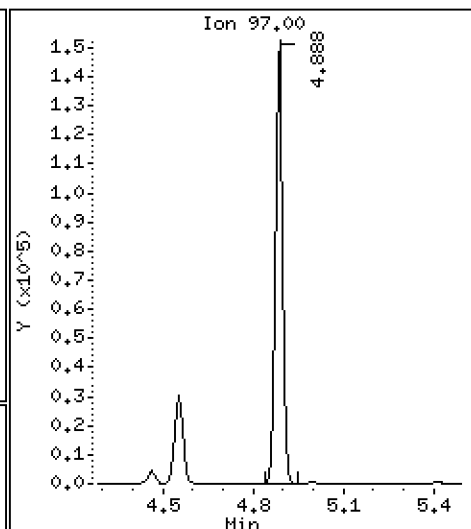
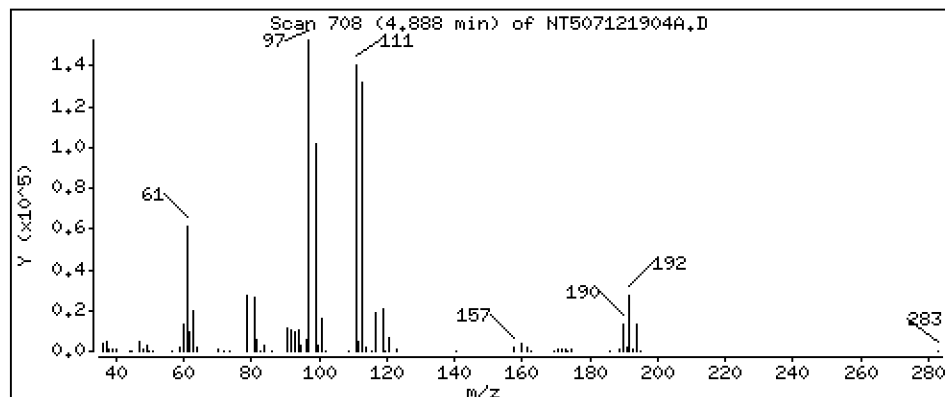
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 50,802 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

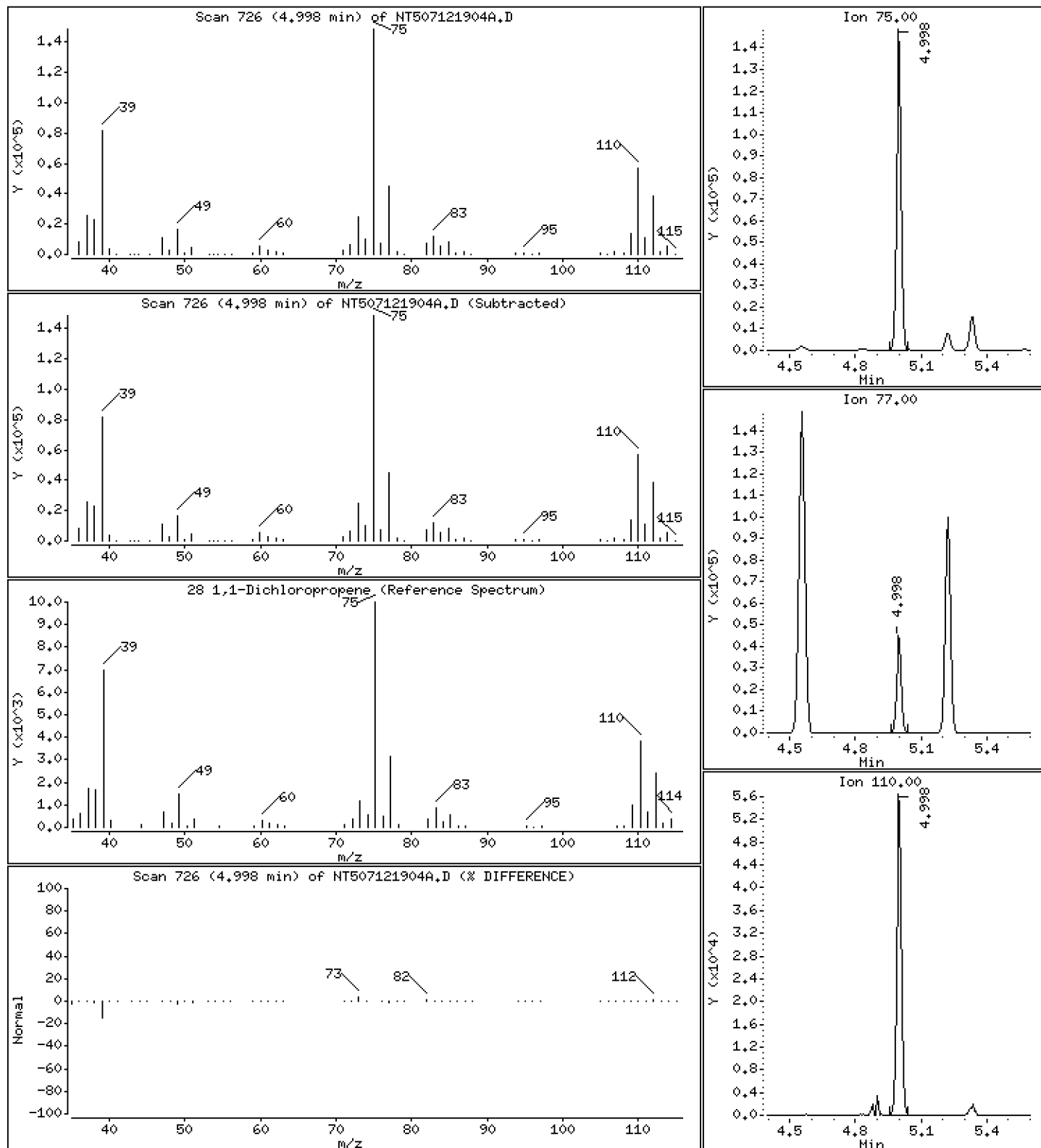
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 49,709 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

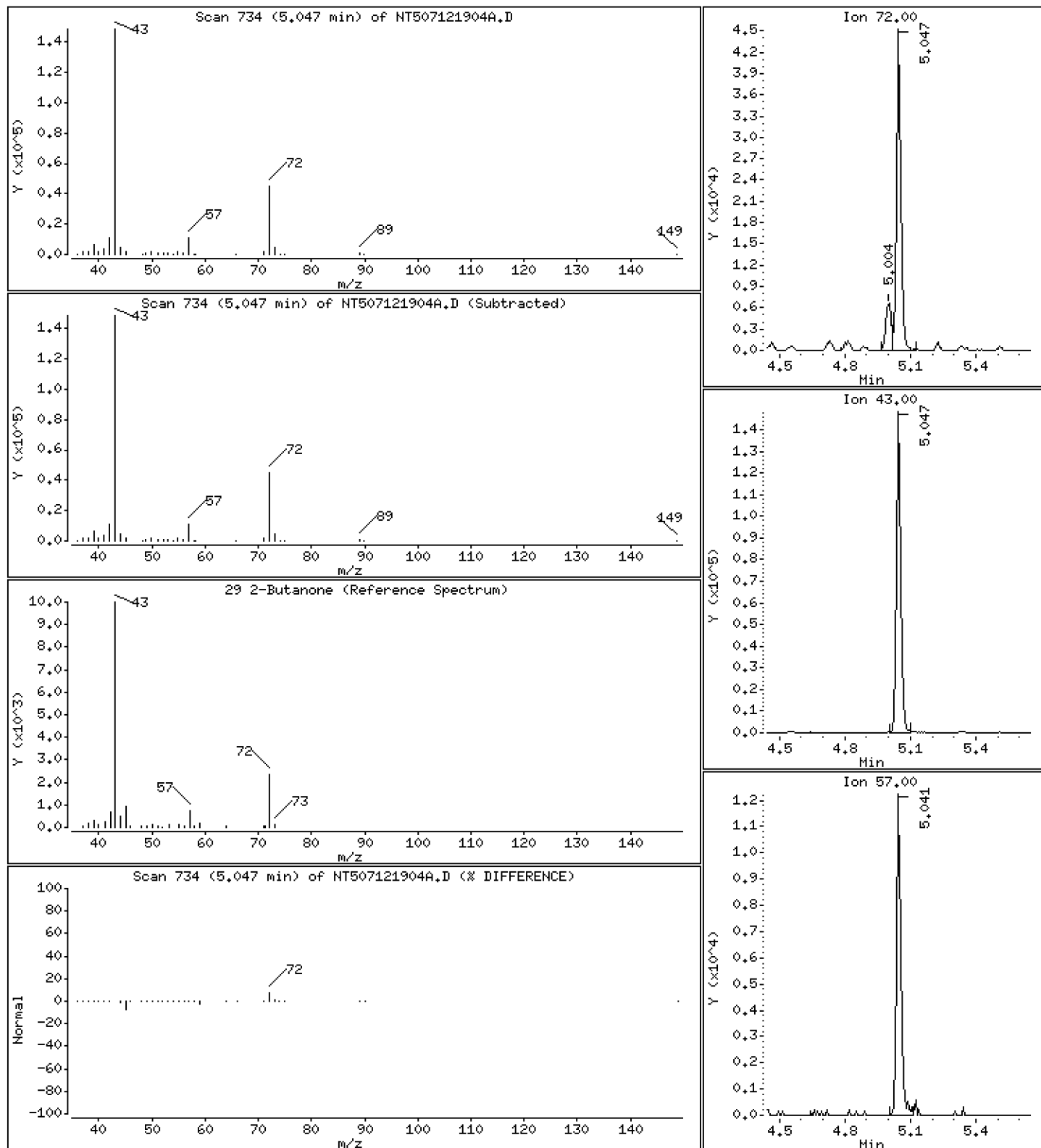
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 259.54 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

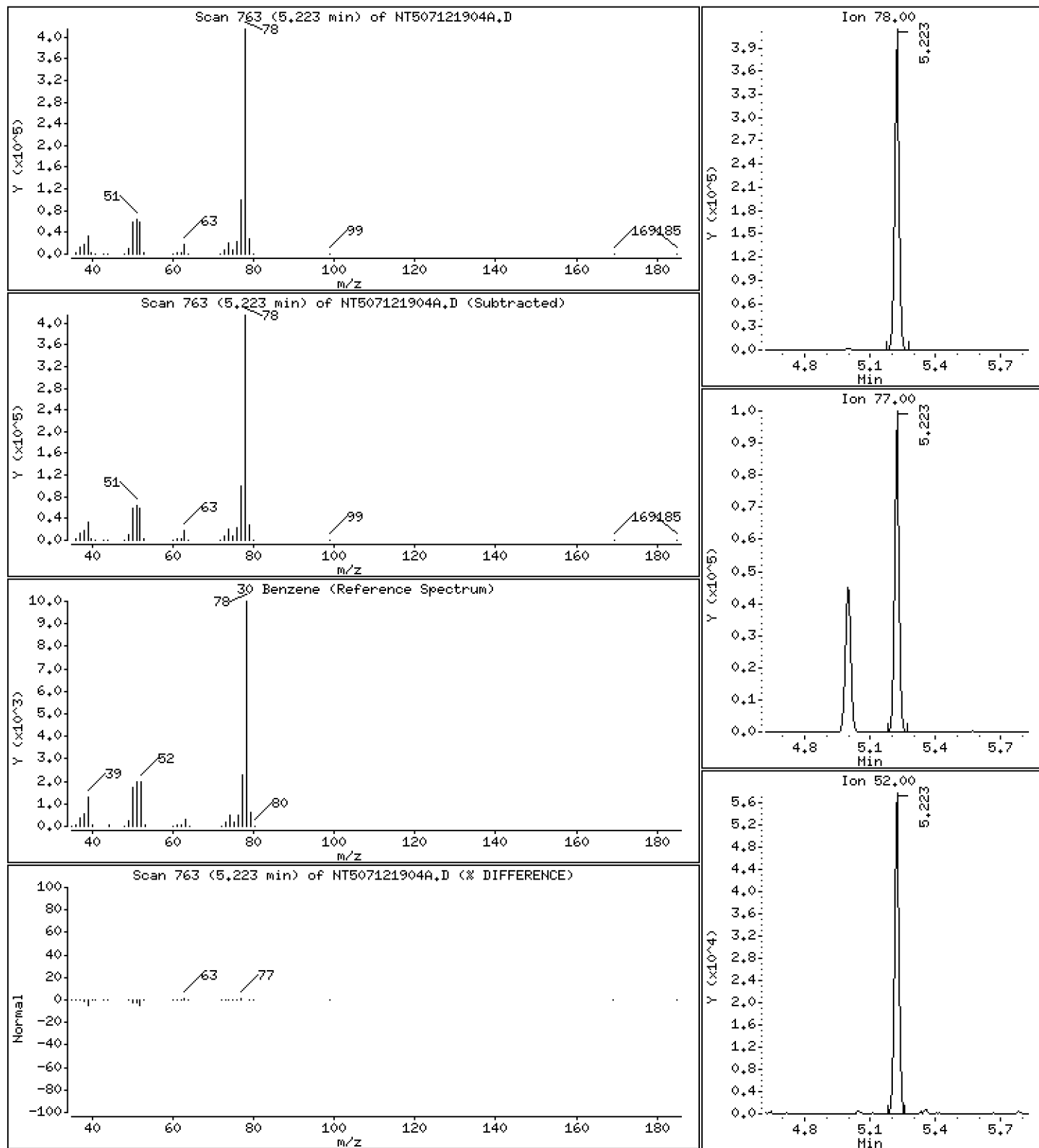
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 45,531 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

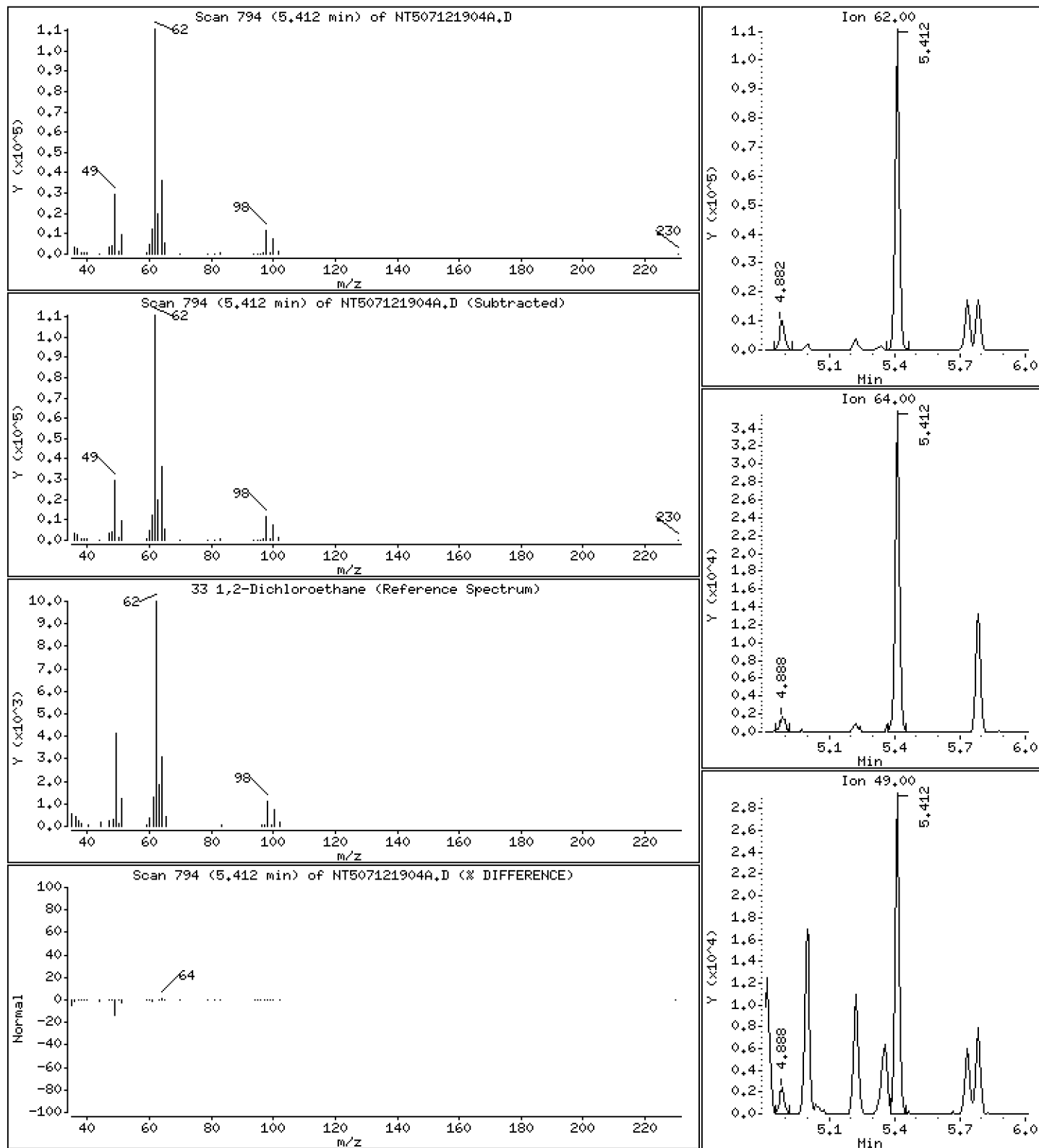
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 42,354 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

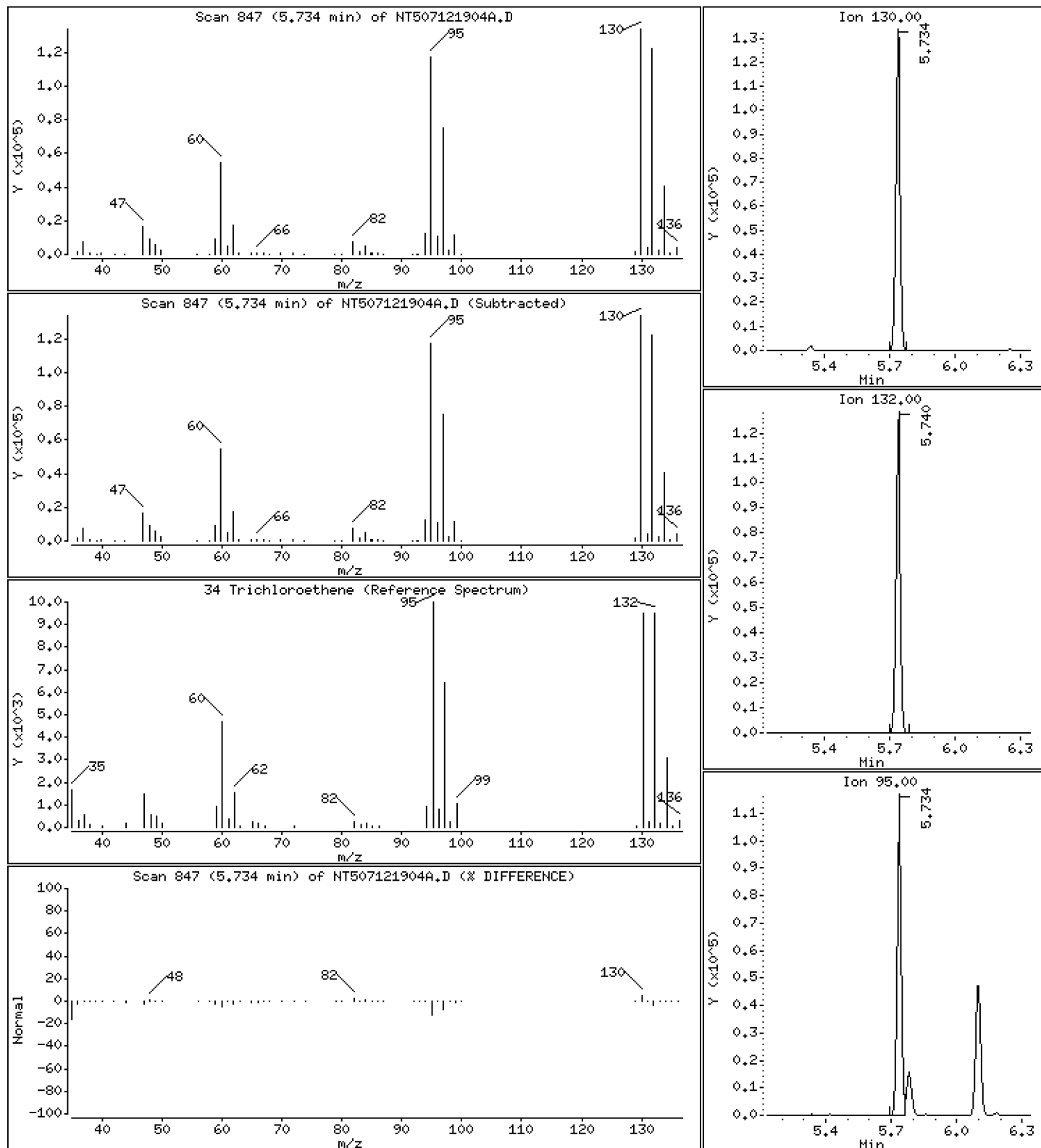
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 45.957 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

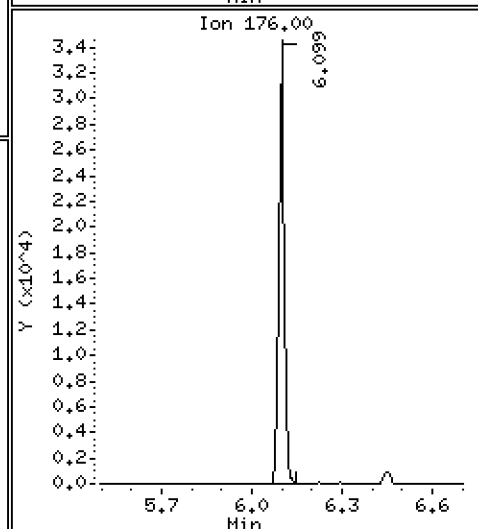
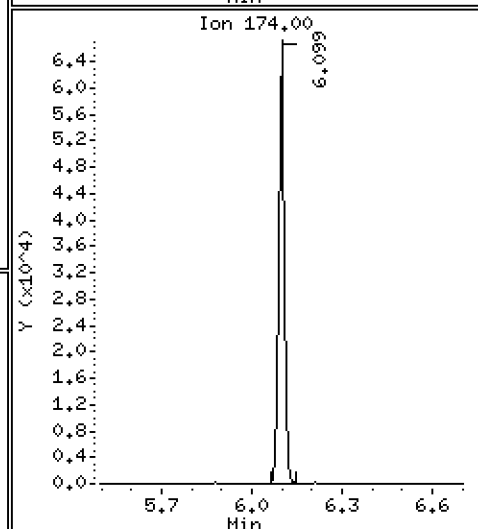
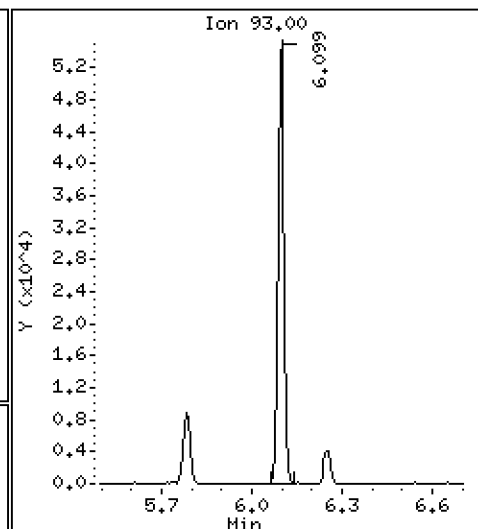
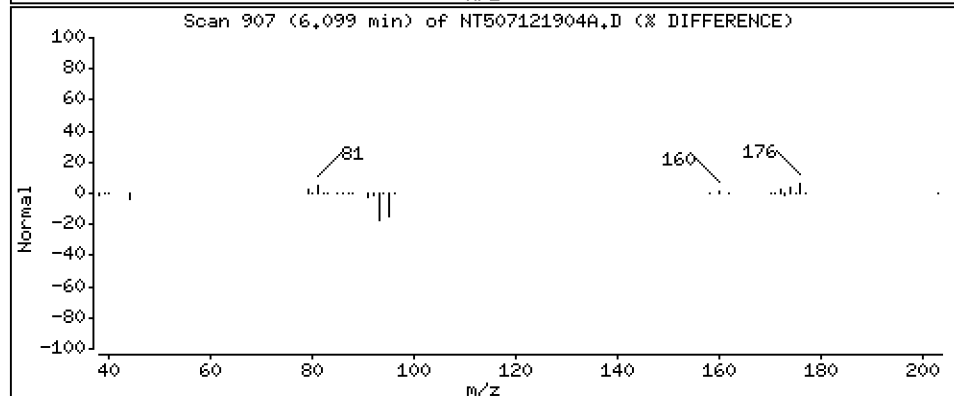
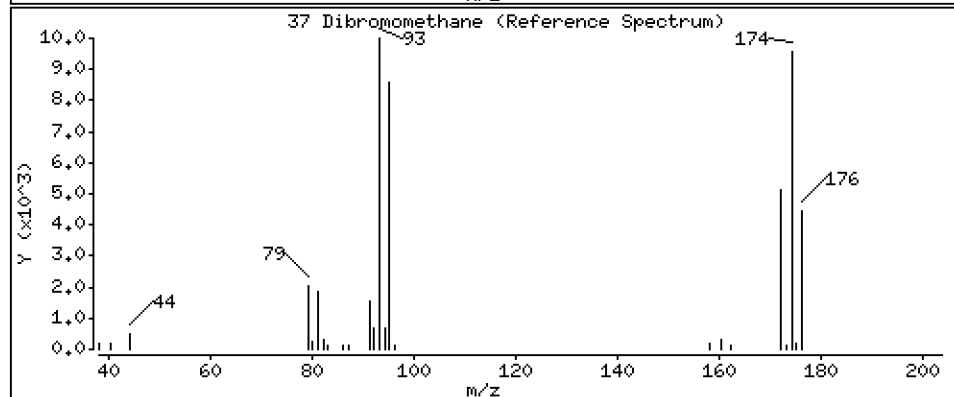
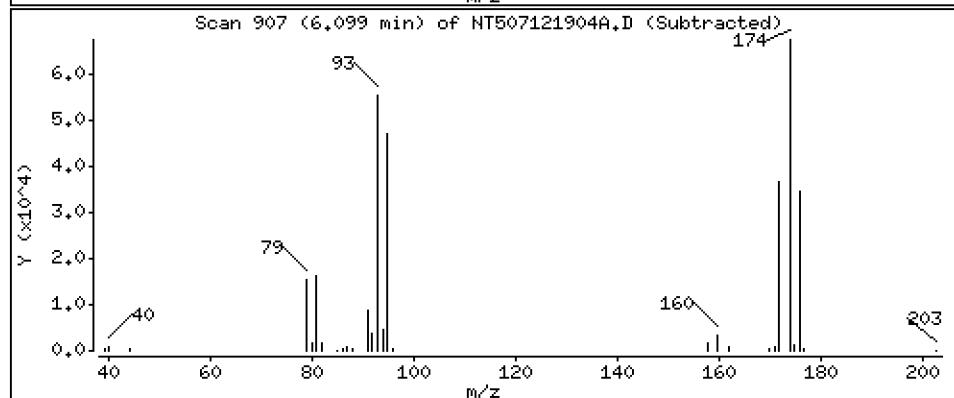
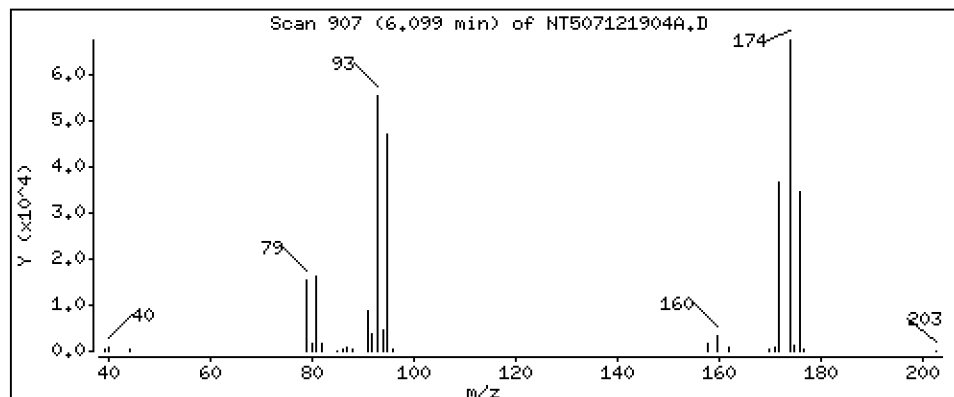
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 43,681 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

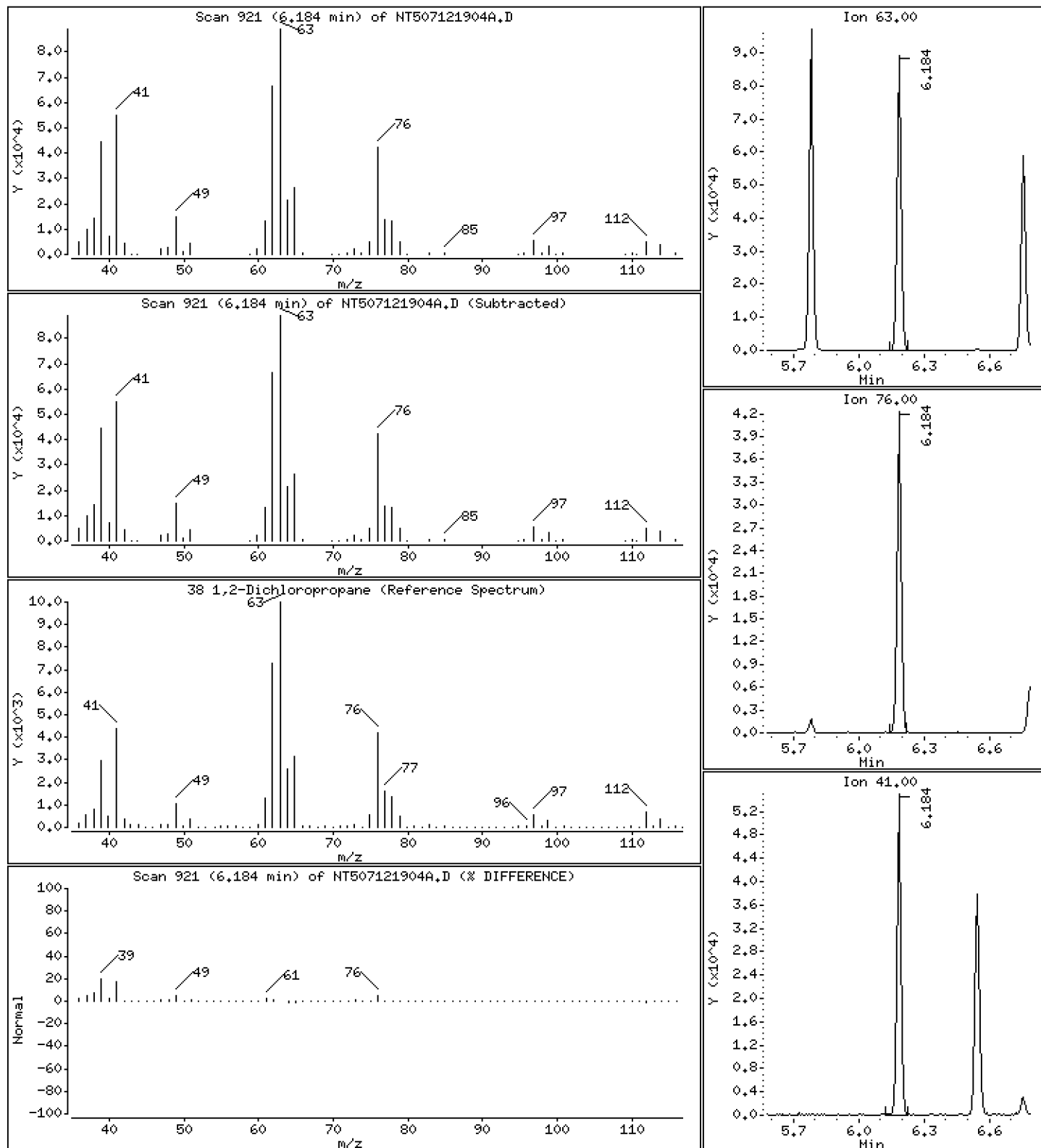
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 45,223 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

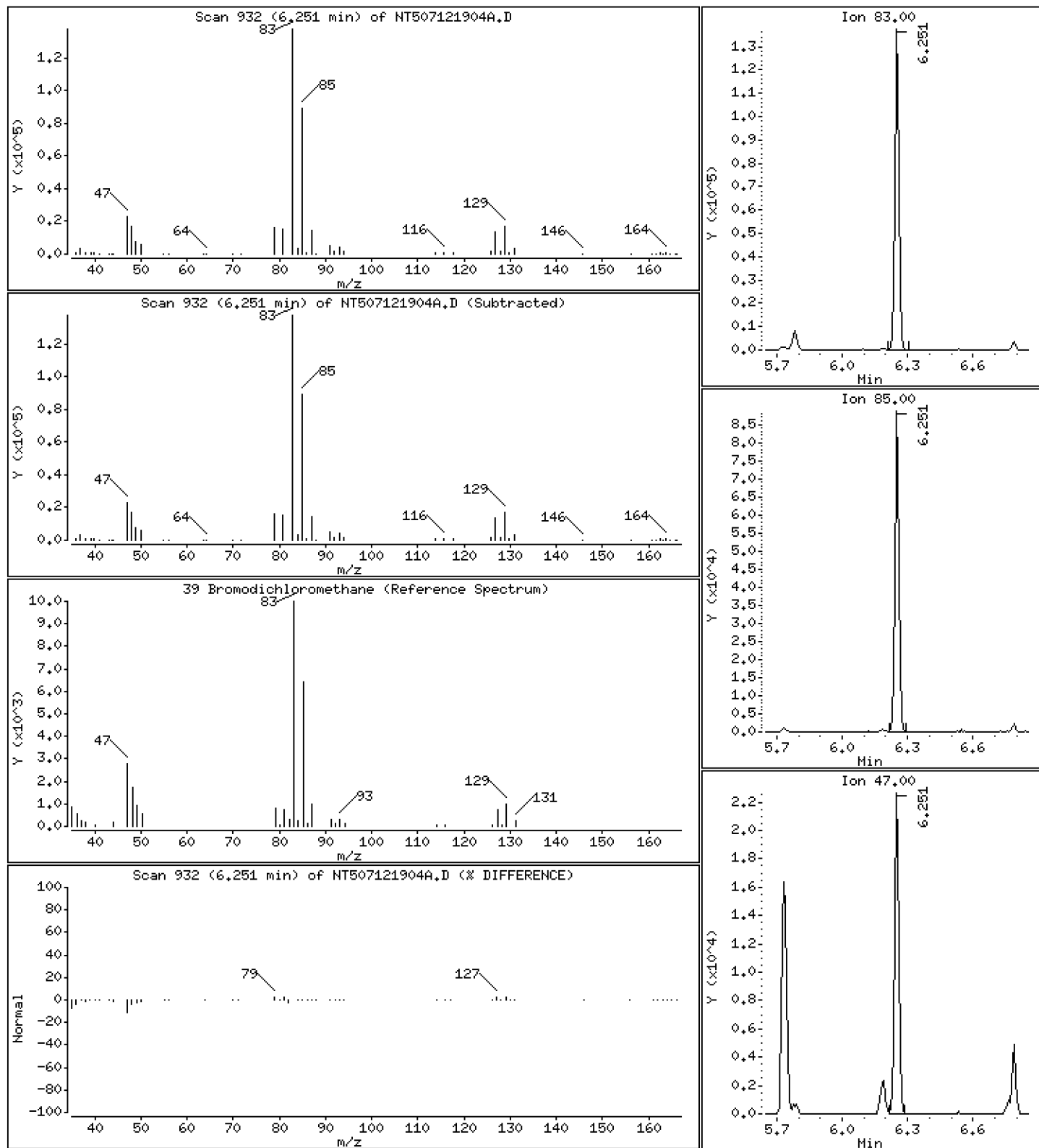
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 45,111 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

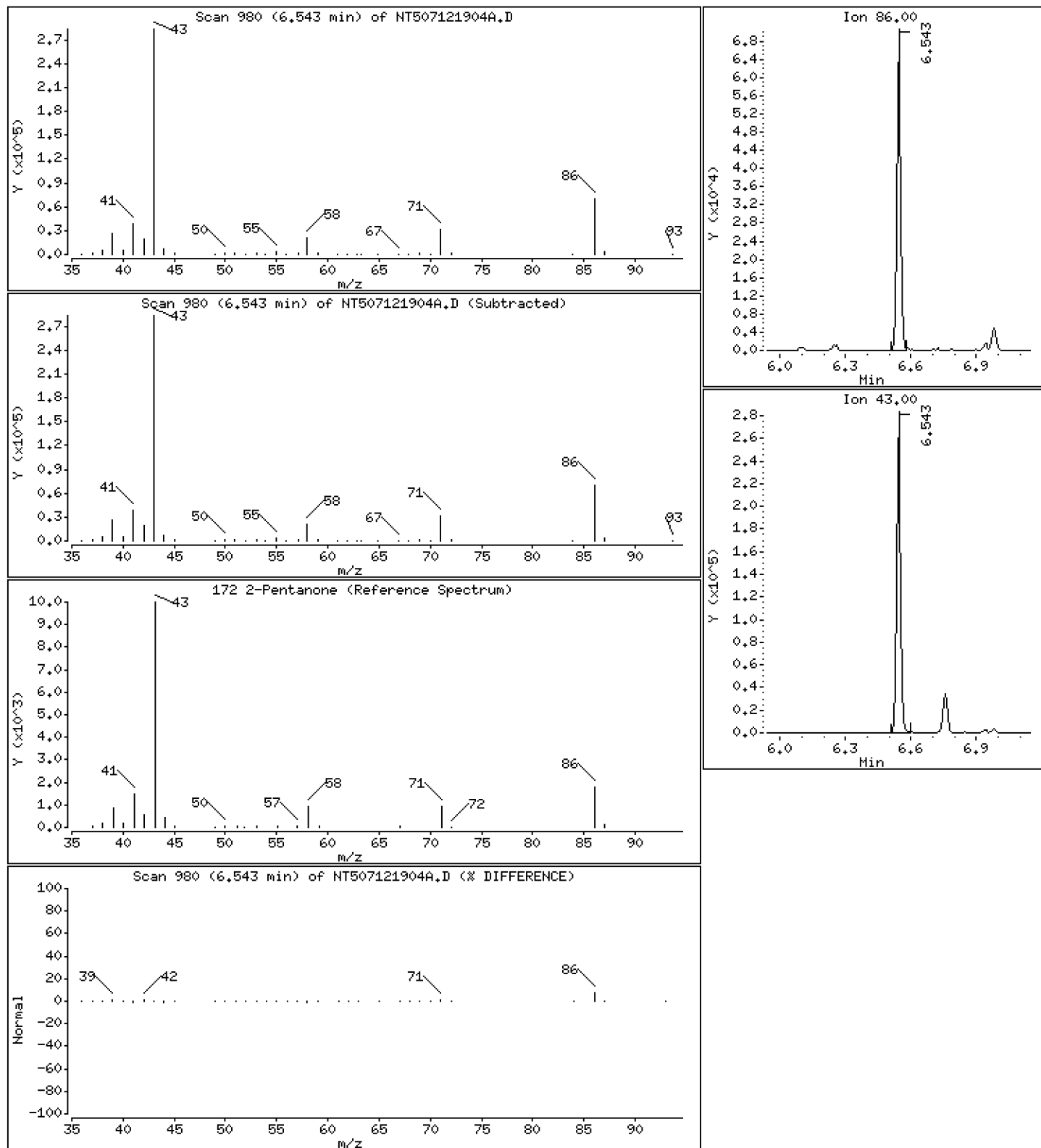
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 235.36 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

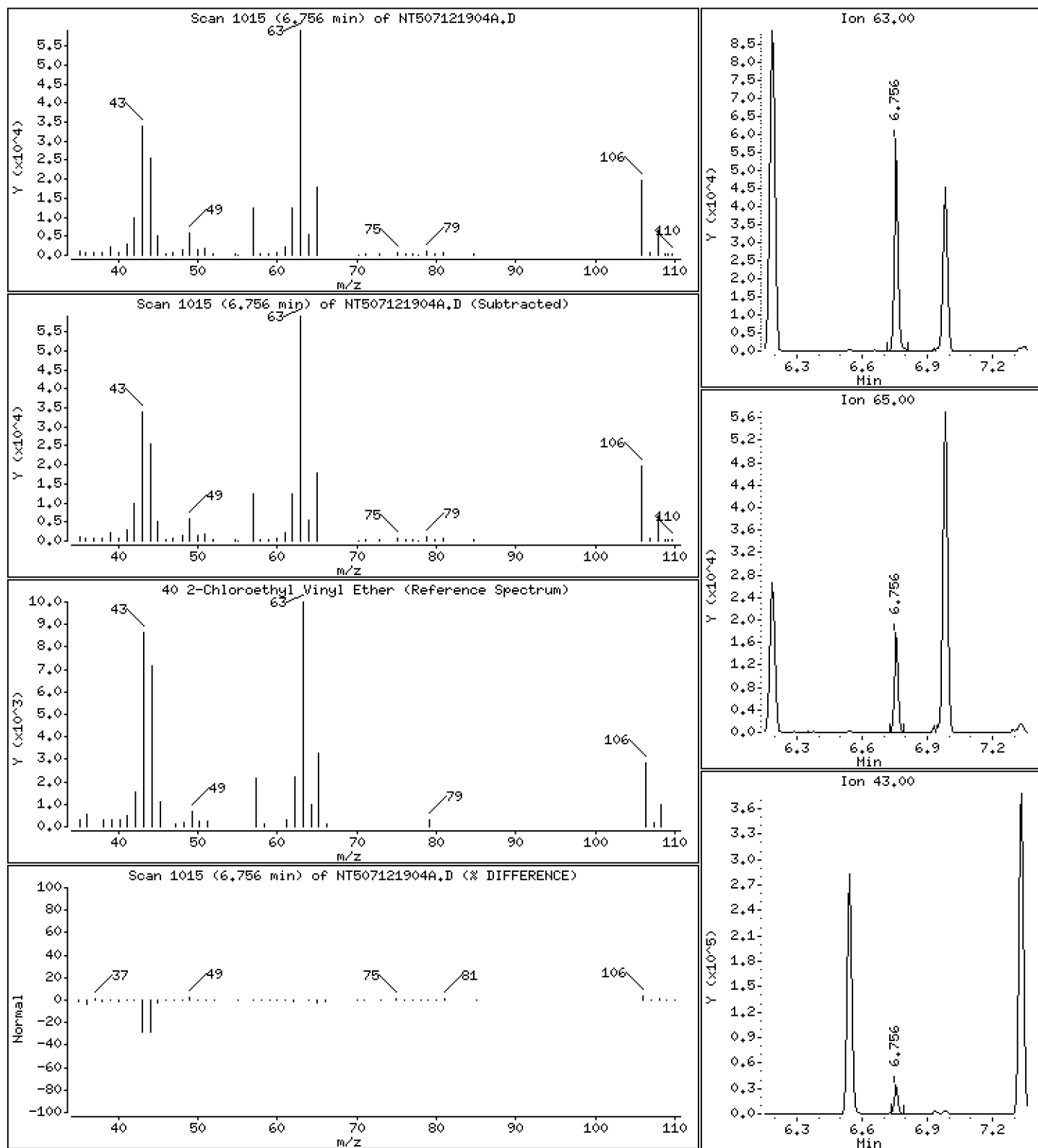
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

40 2-Chloroethyl Vinyl Ether

Concentration: 43,513 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

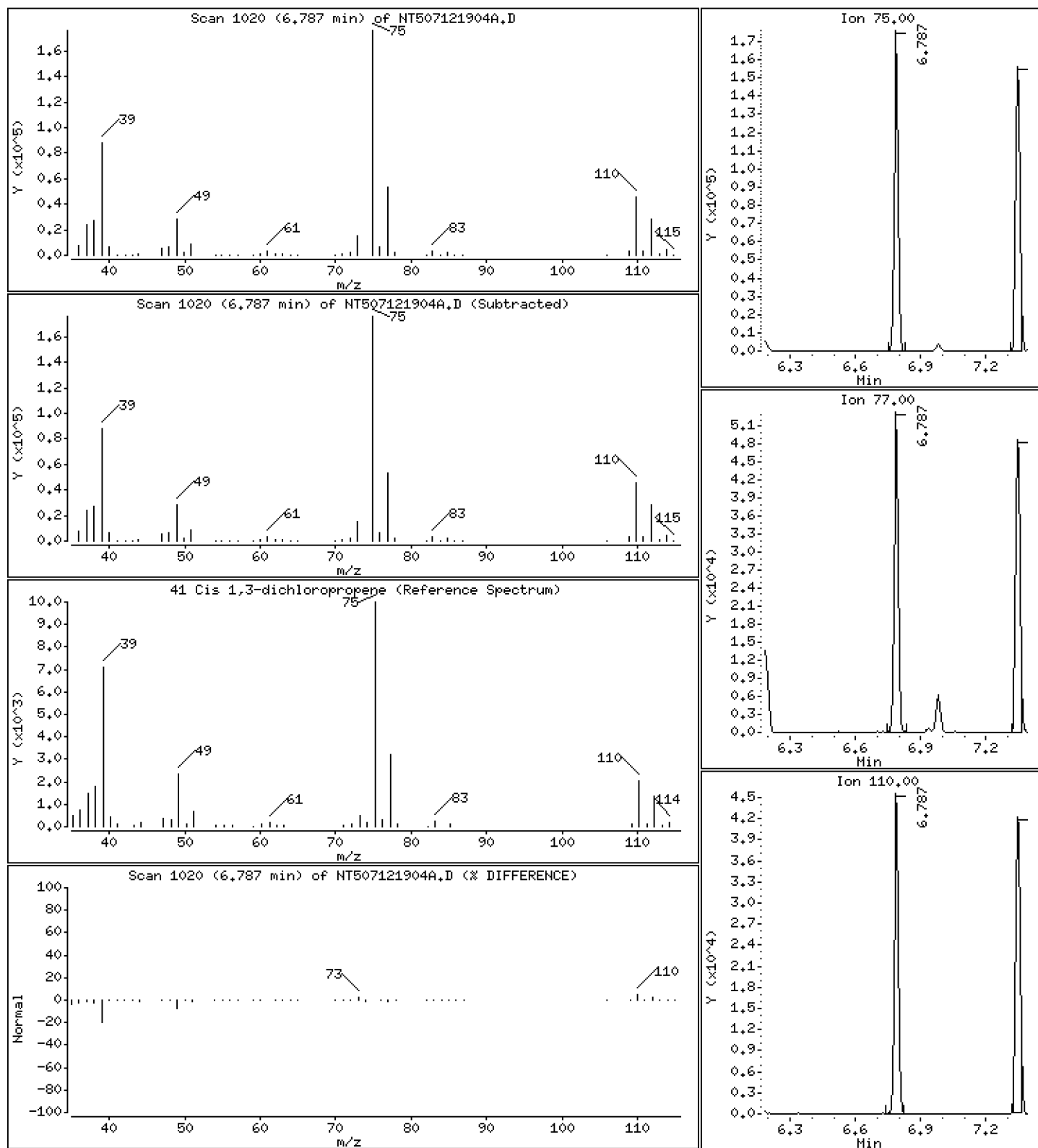
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

41 Cis 1,3-dichloropropene

Concentration: 45,416 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

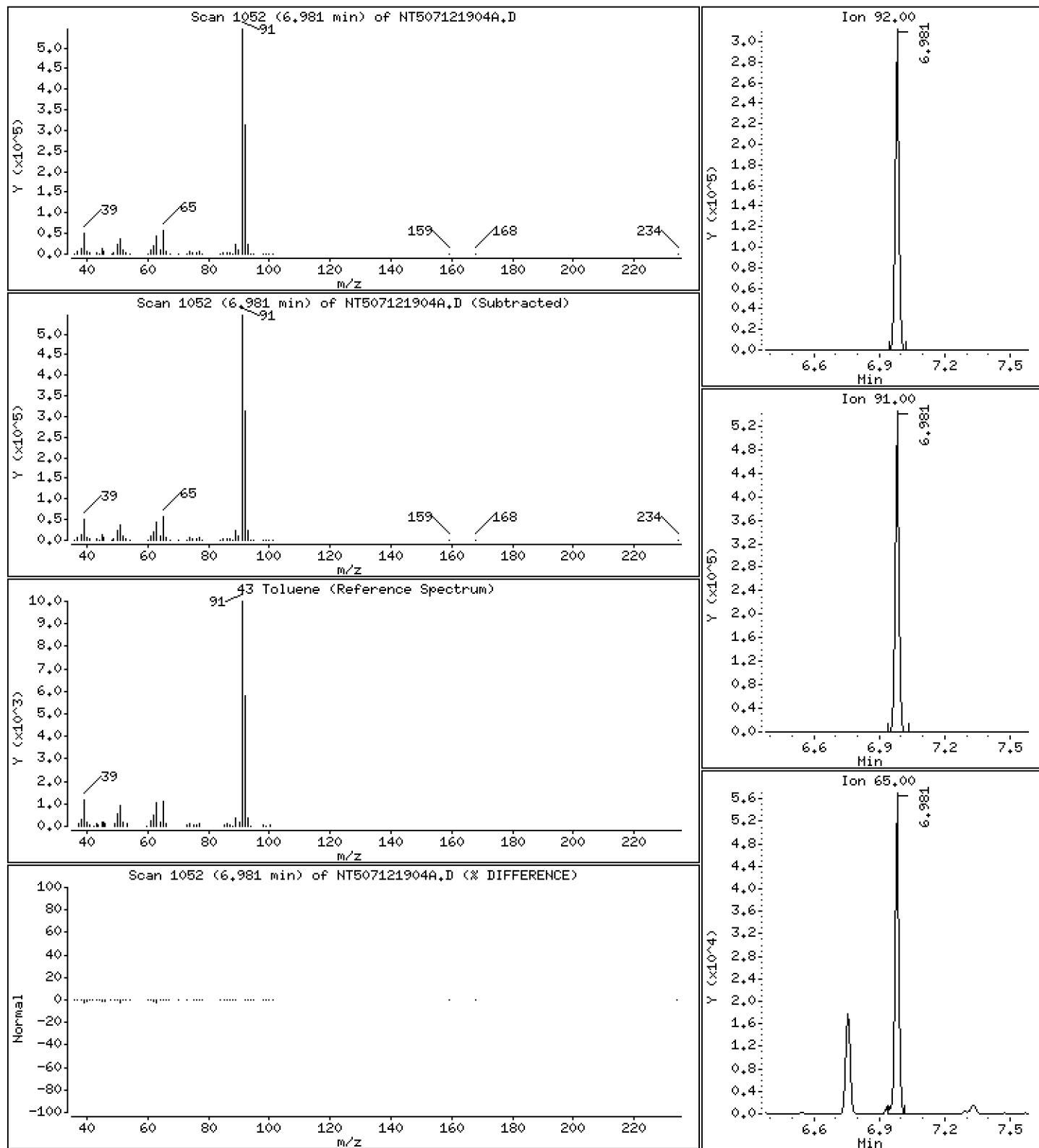
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 44,599 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

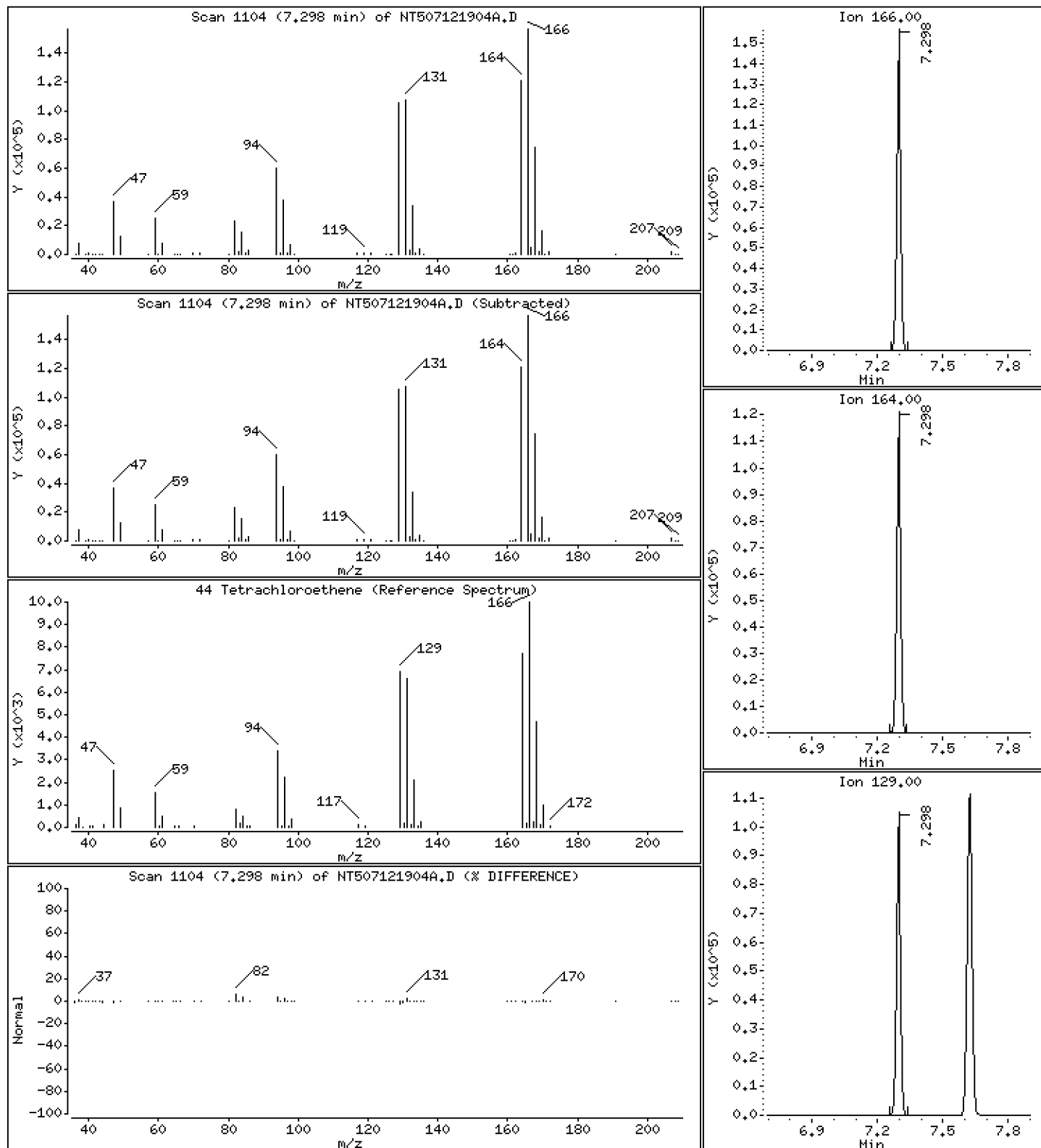
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 43,438 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

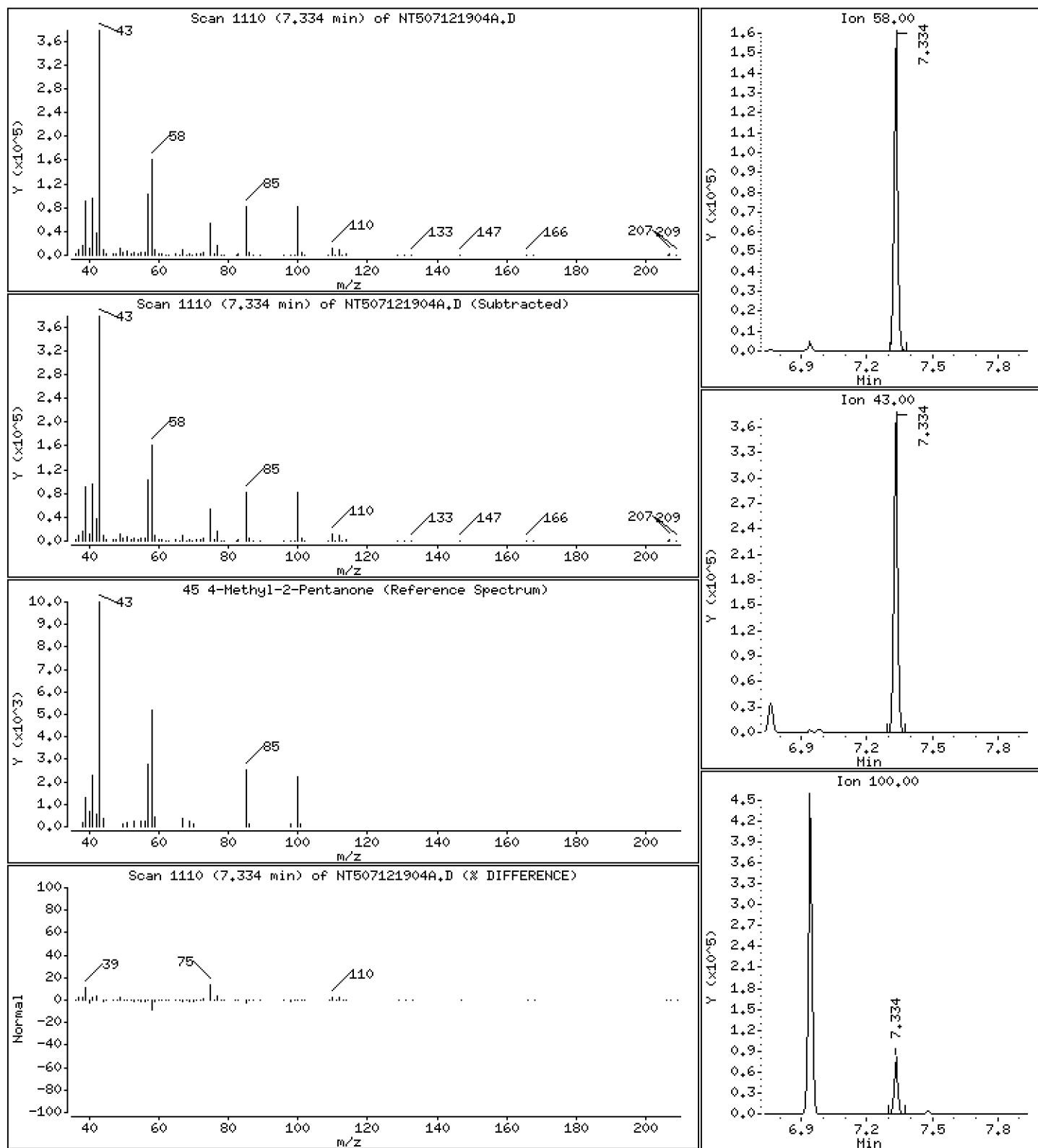
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 231.00 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

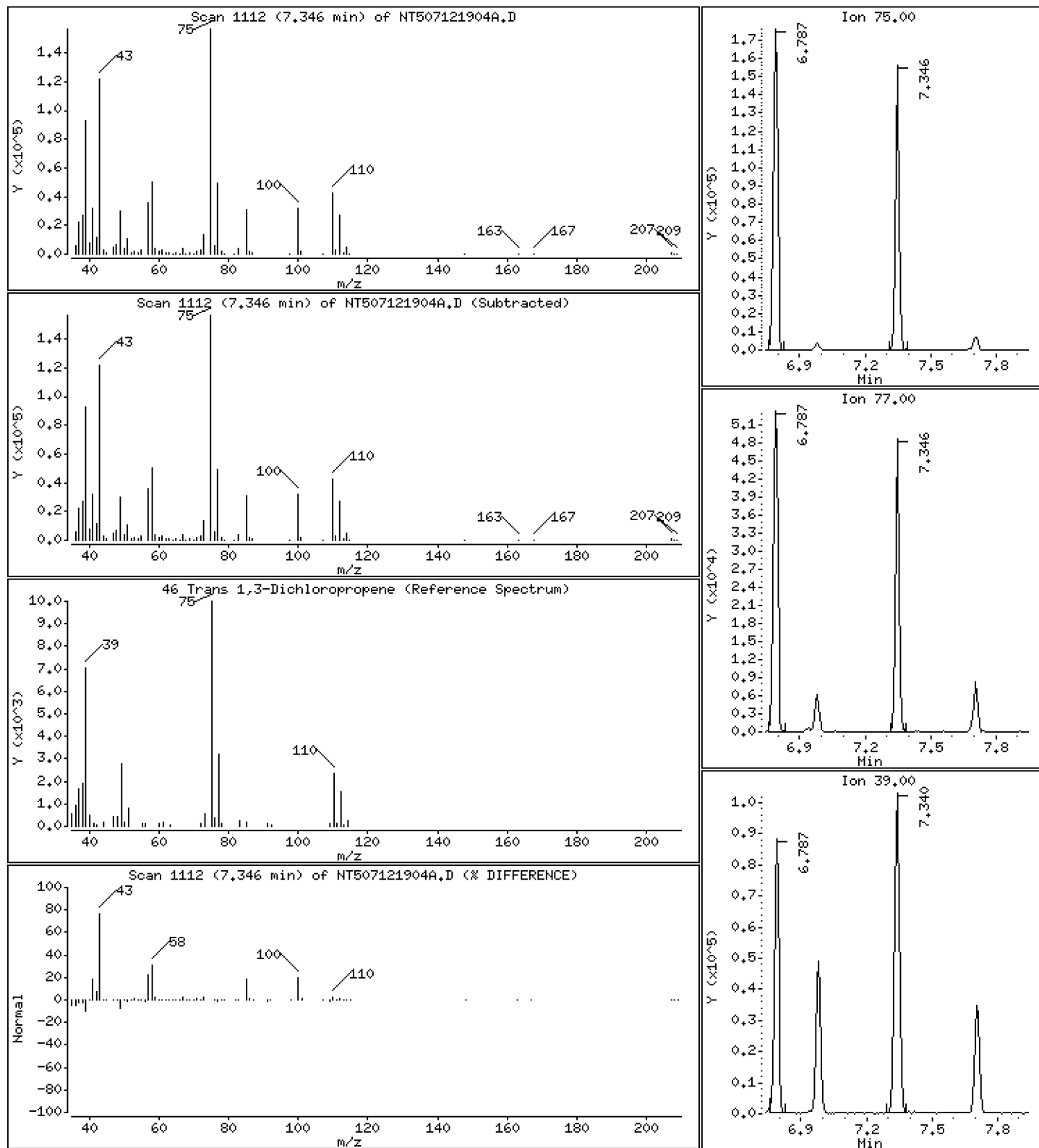
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 45.016 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

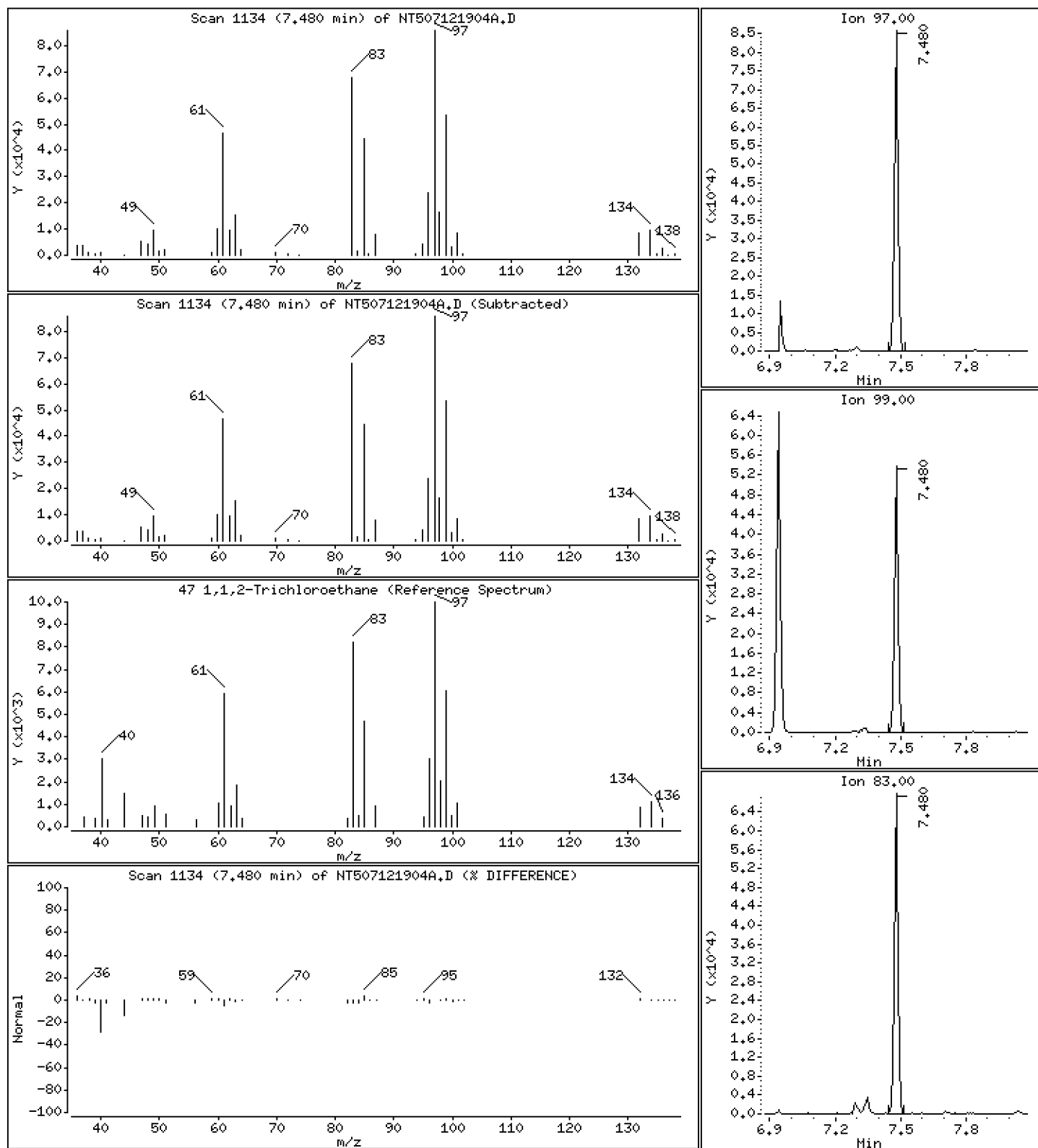
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 42,162 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

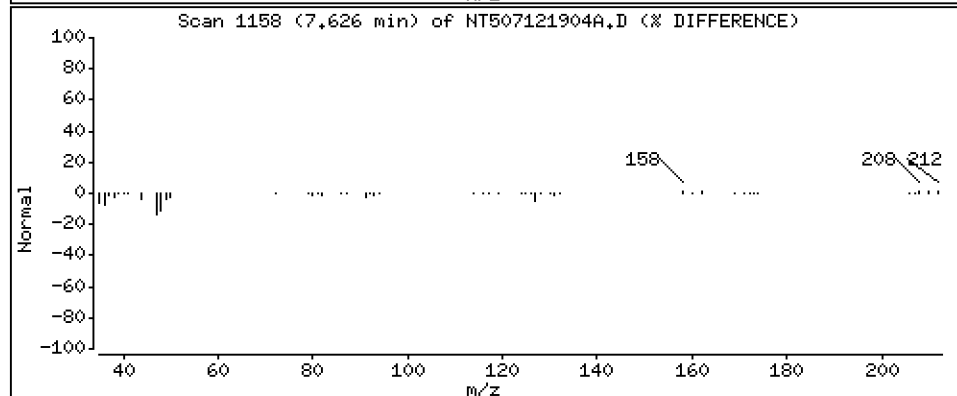
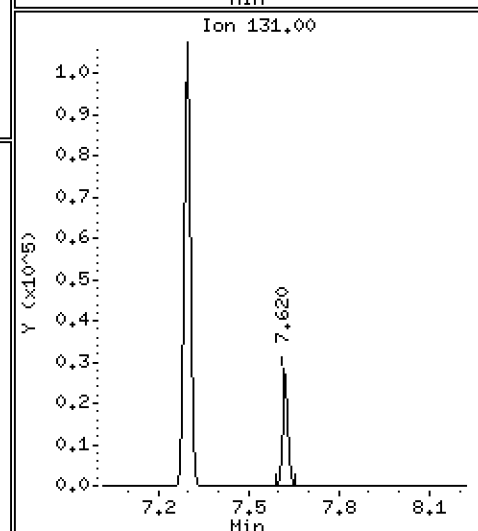
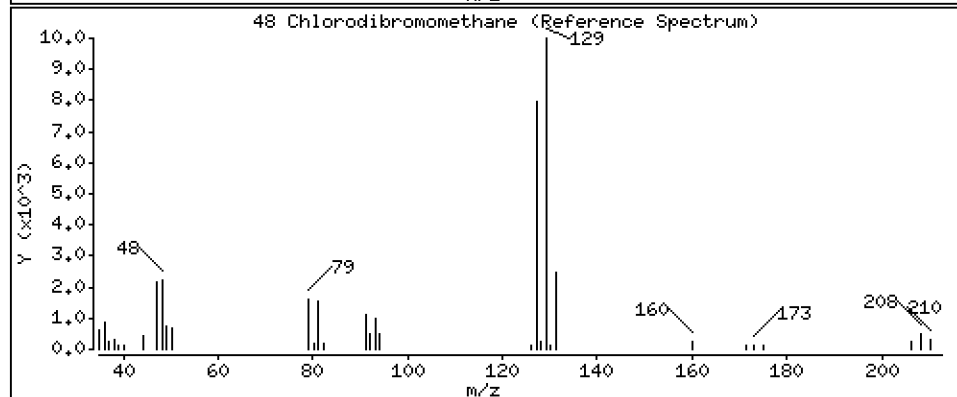
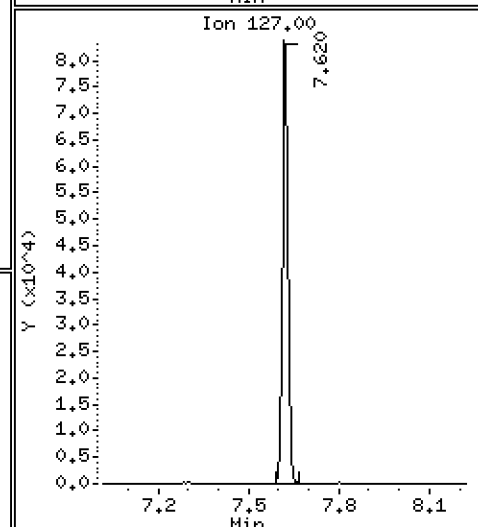
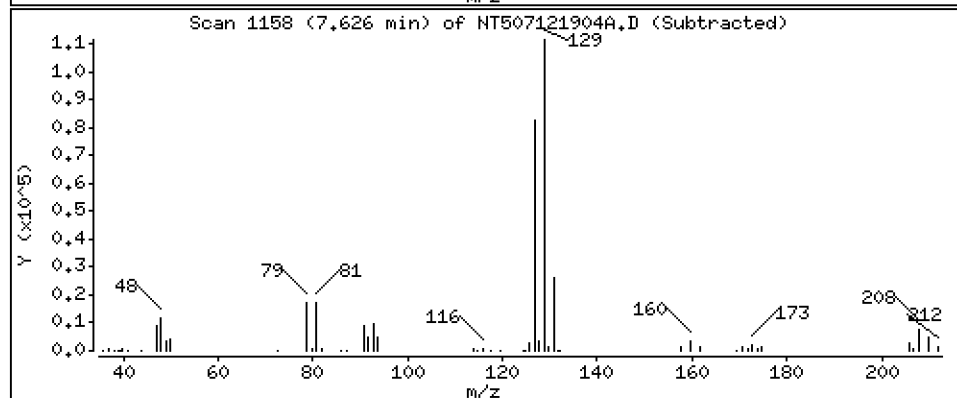
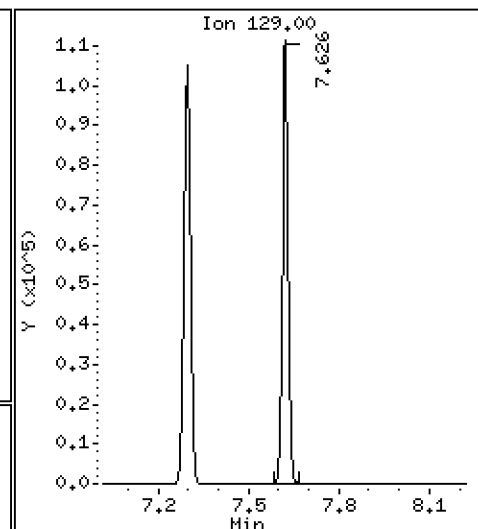
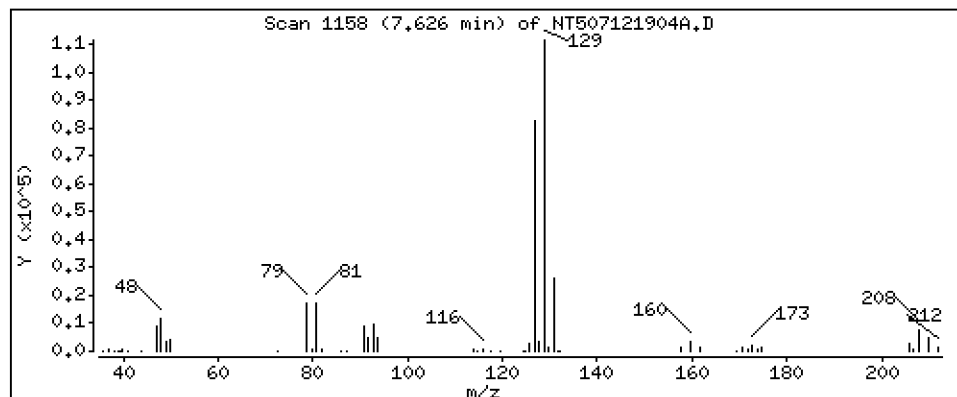
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 42,001 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

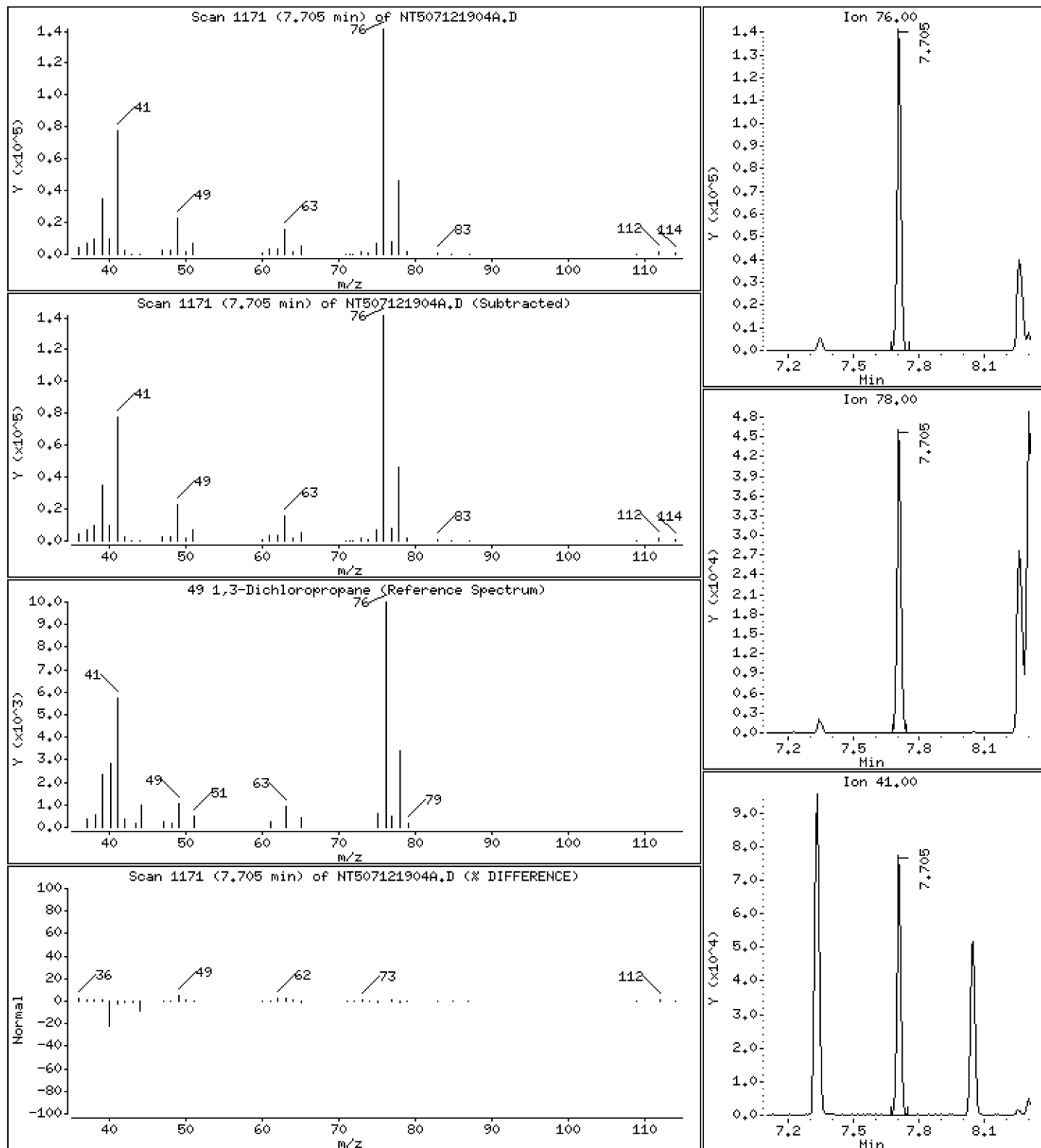
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 41.127 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

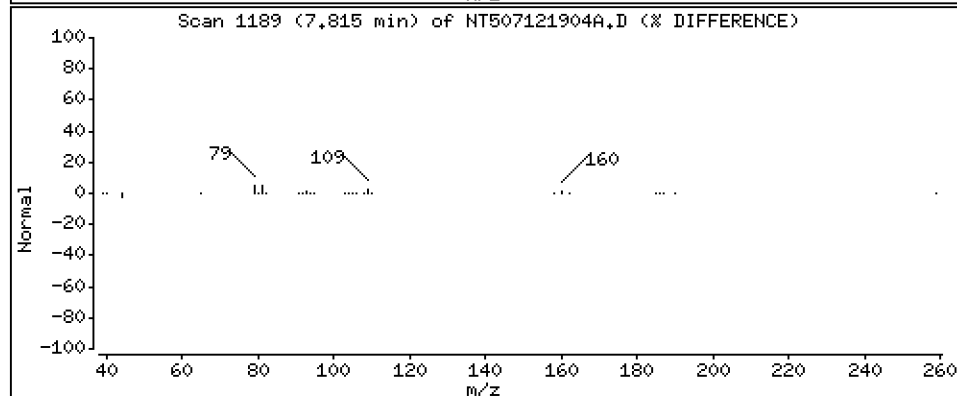
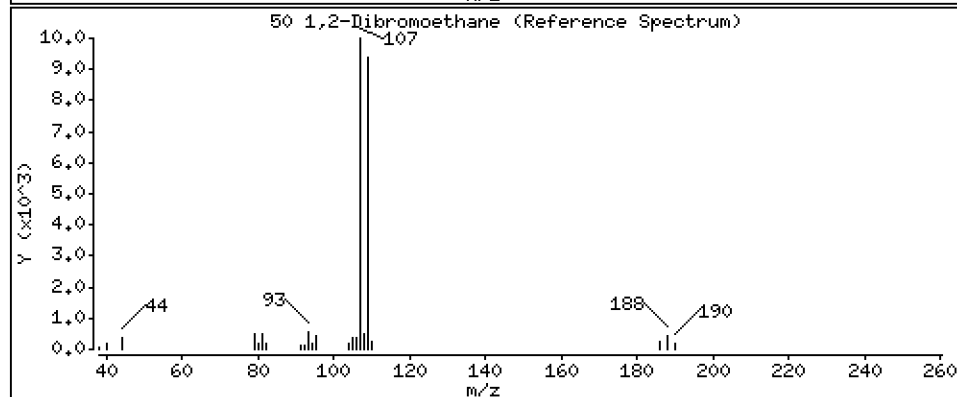
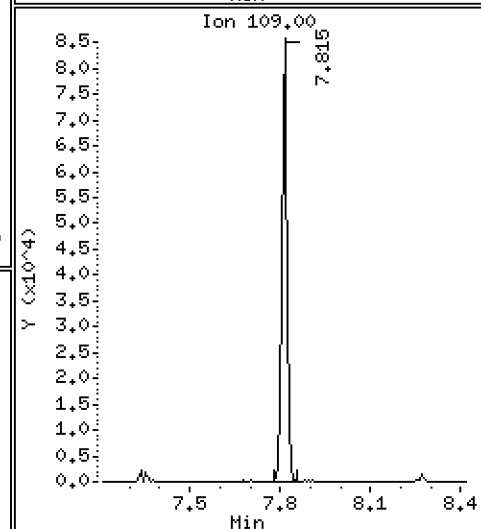
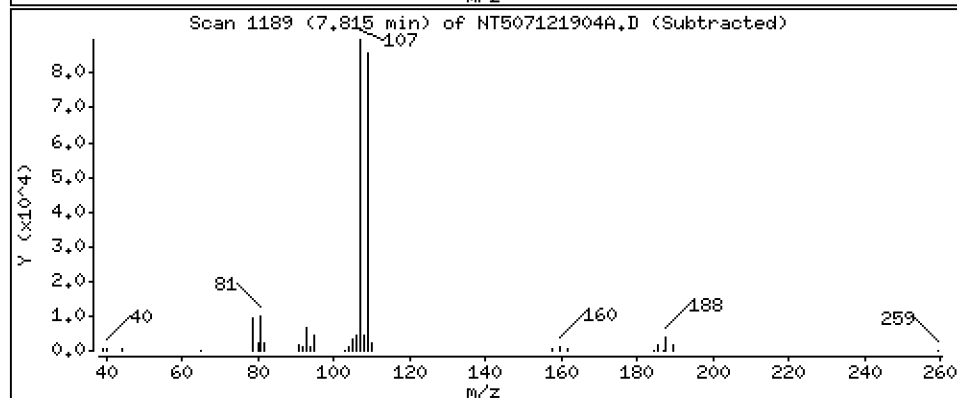
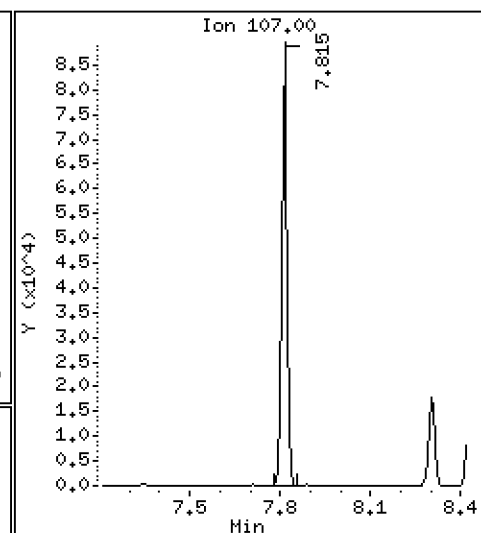
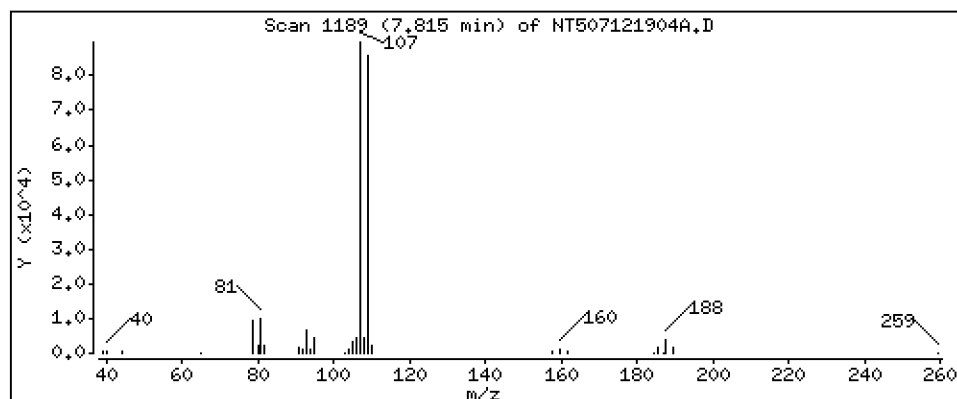
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 42,882 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

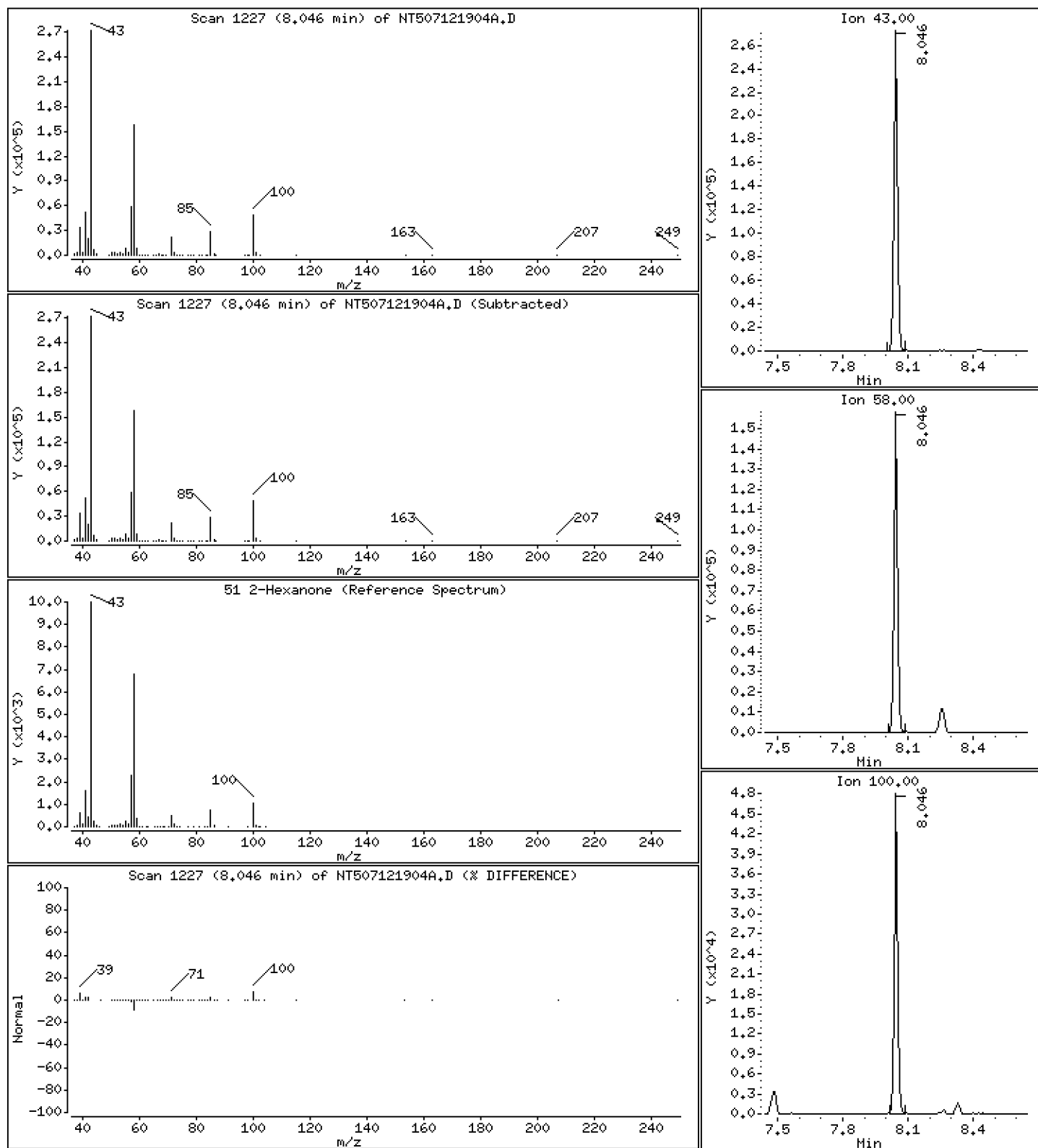
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 219.09 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

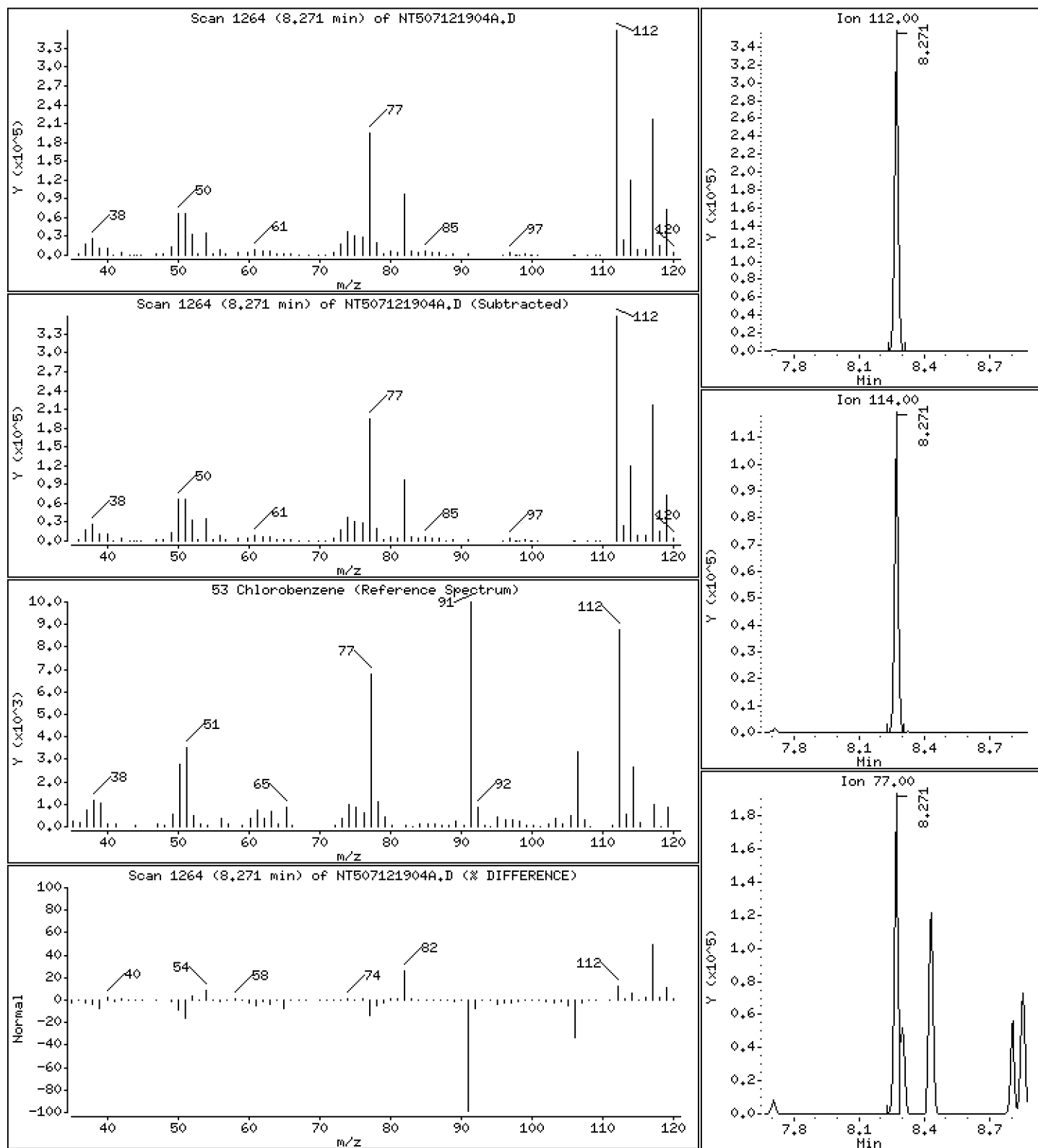
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 42,576 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

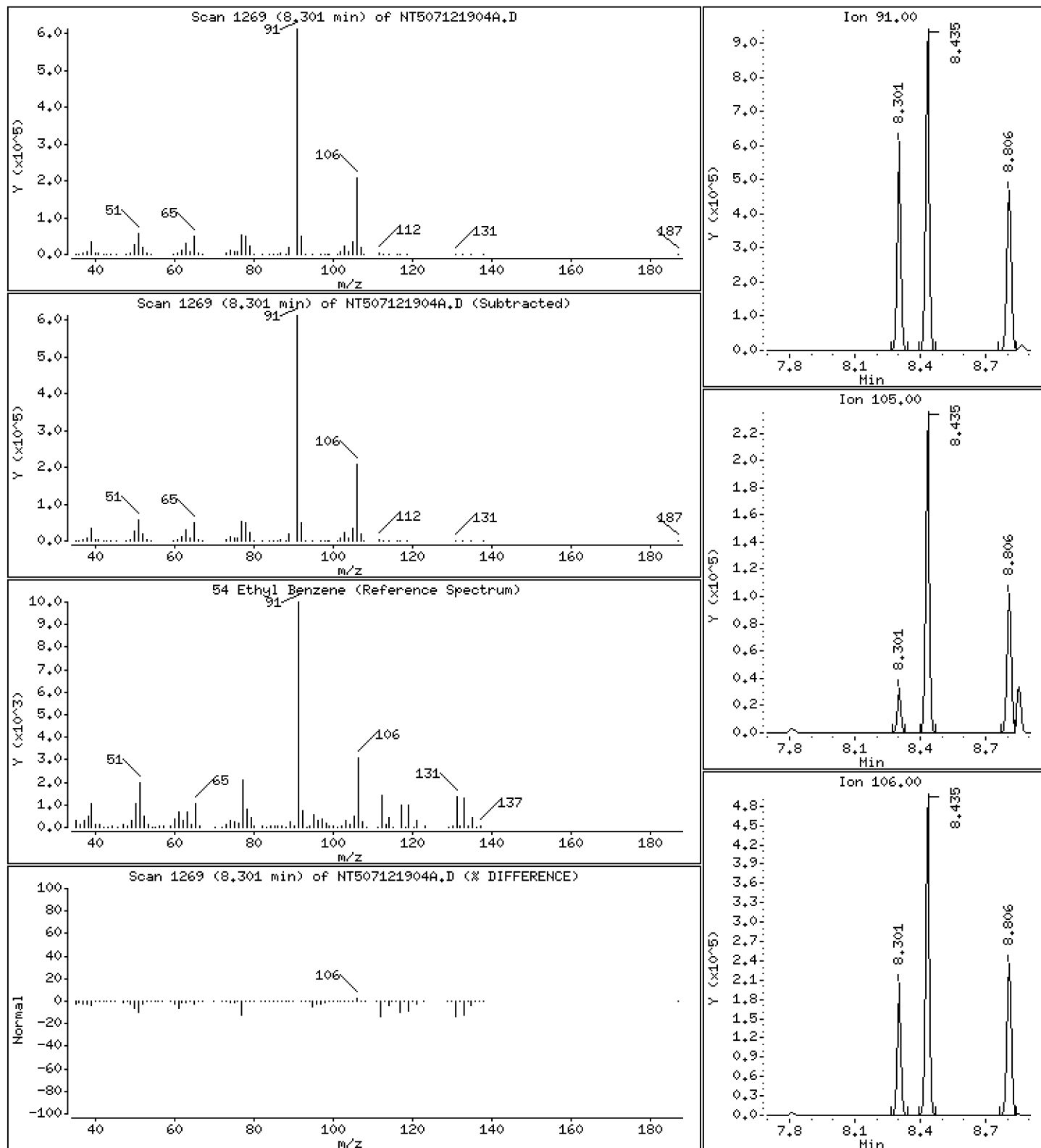
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 43,566 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

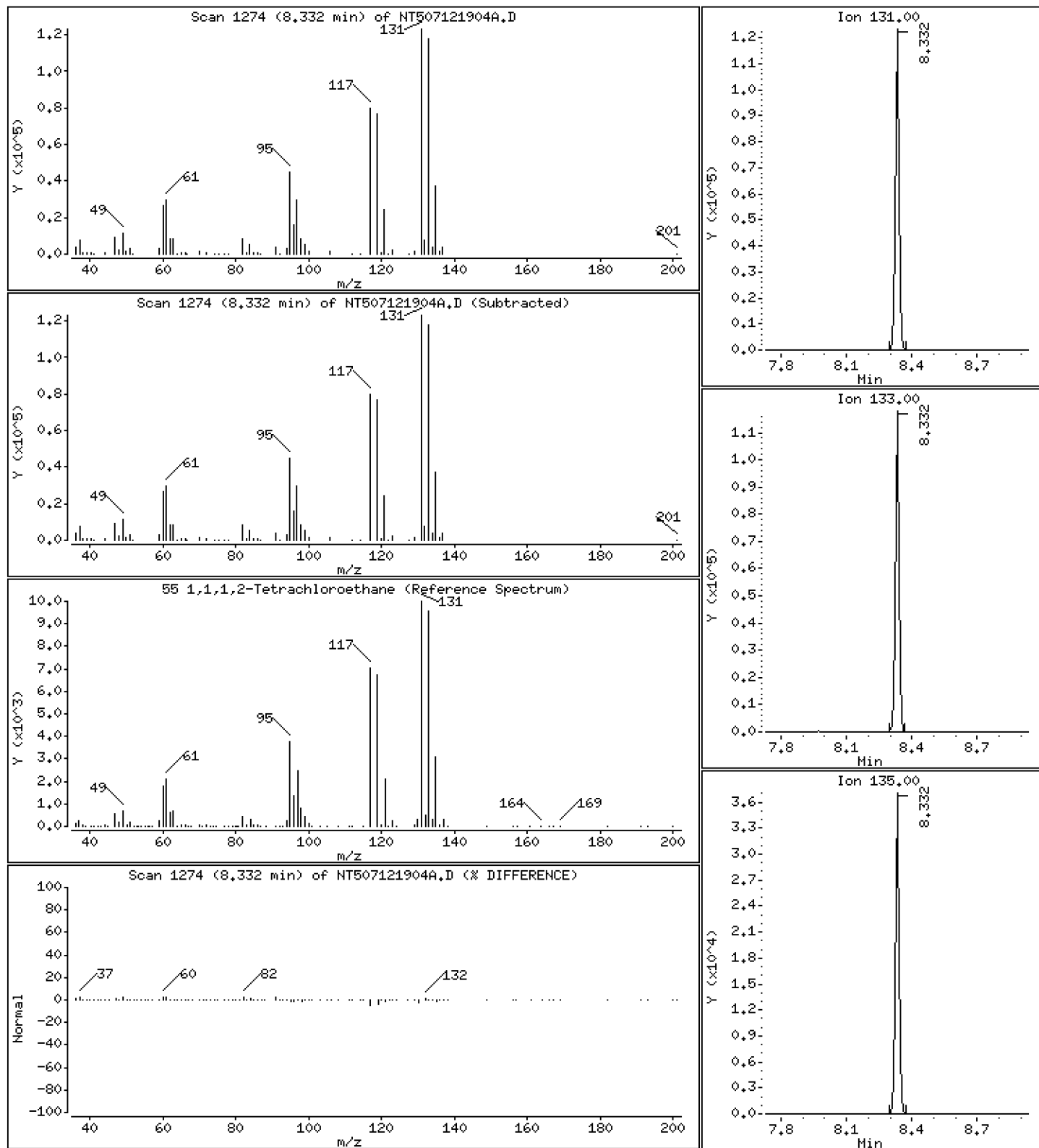
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 42,138 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

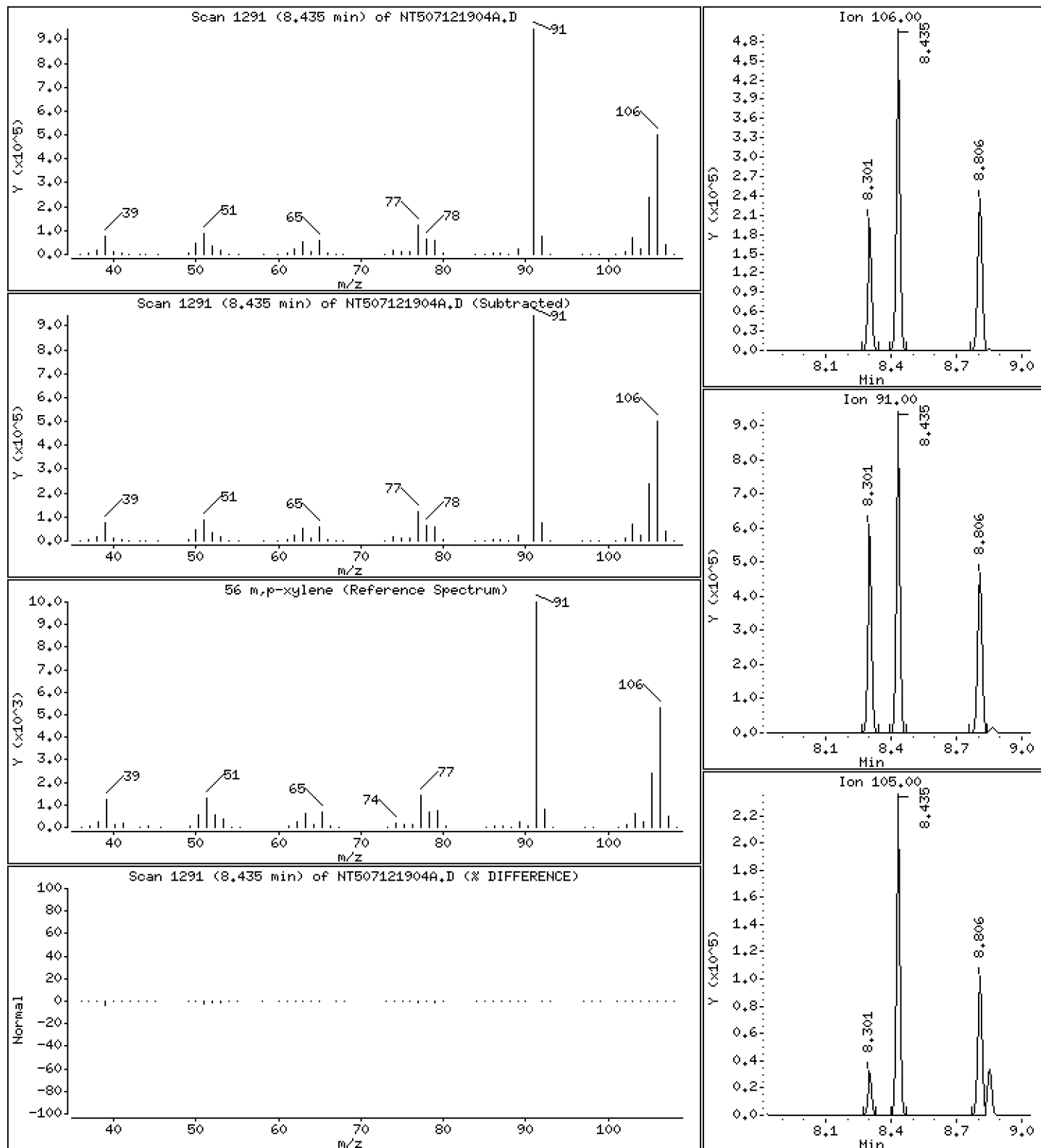
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 86,412 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

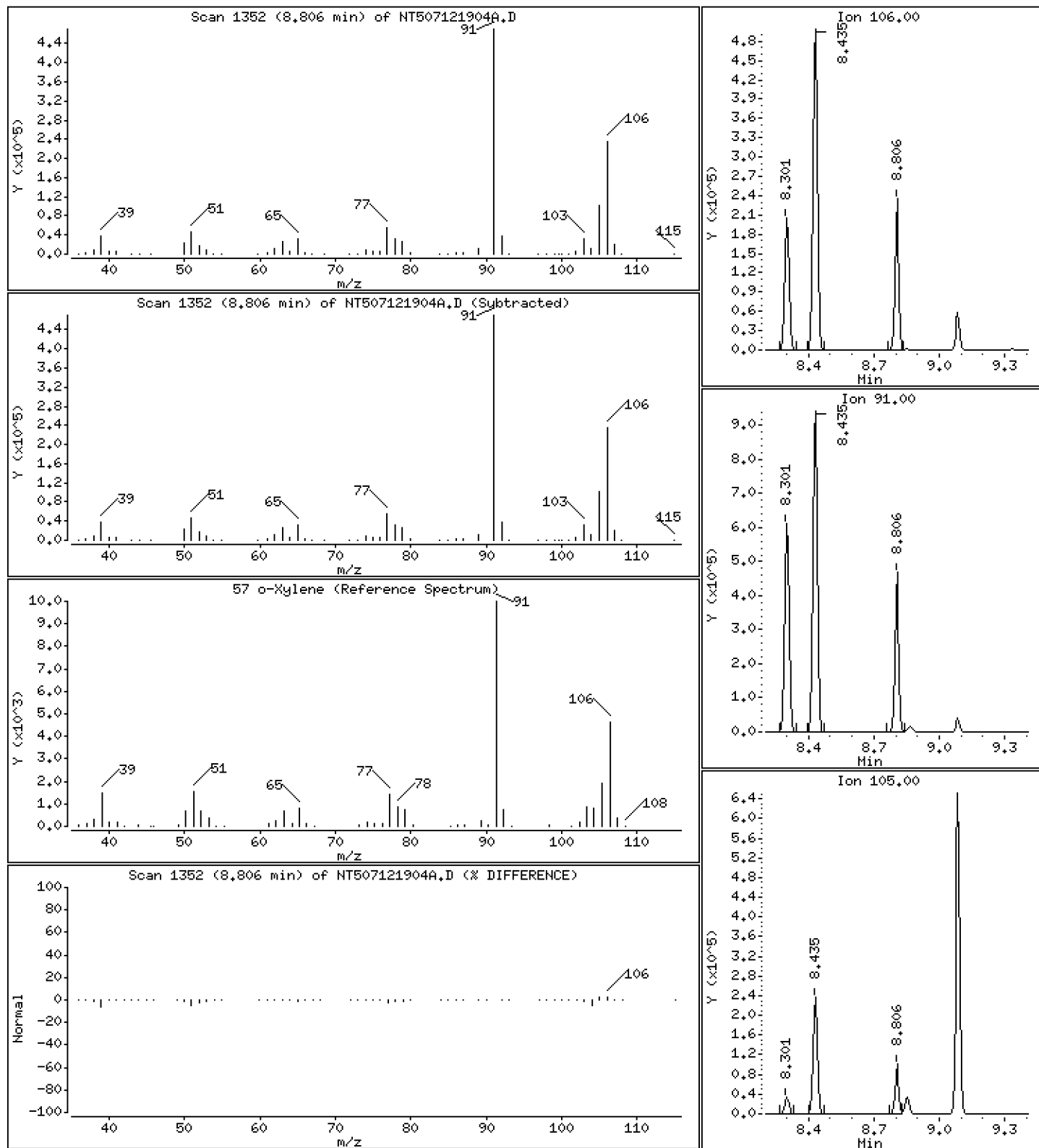
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 42.476 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

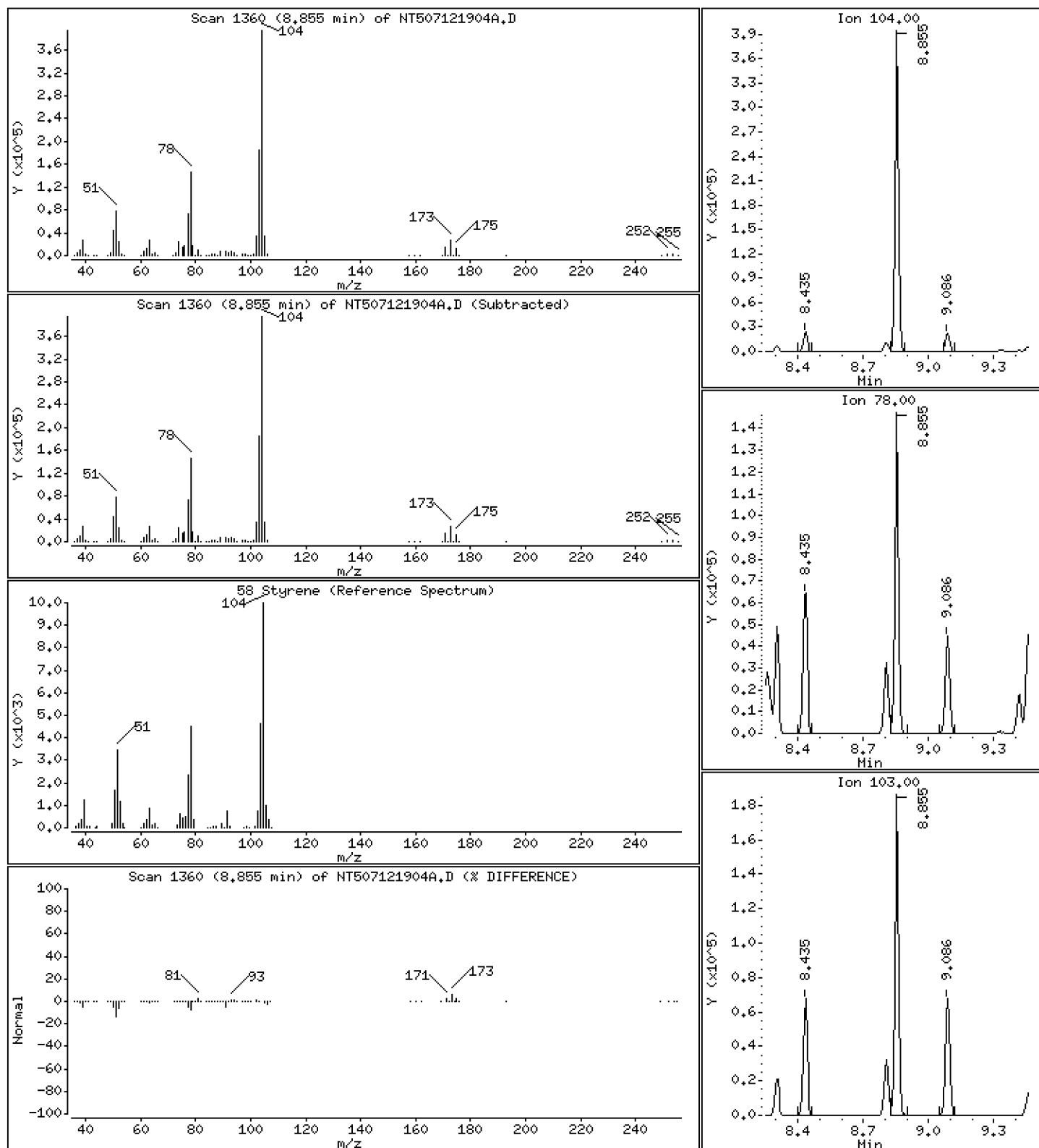
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 43,311 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

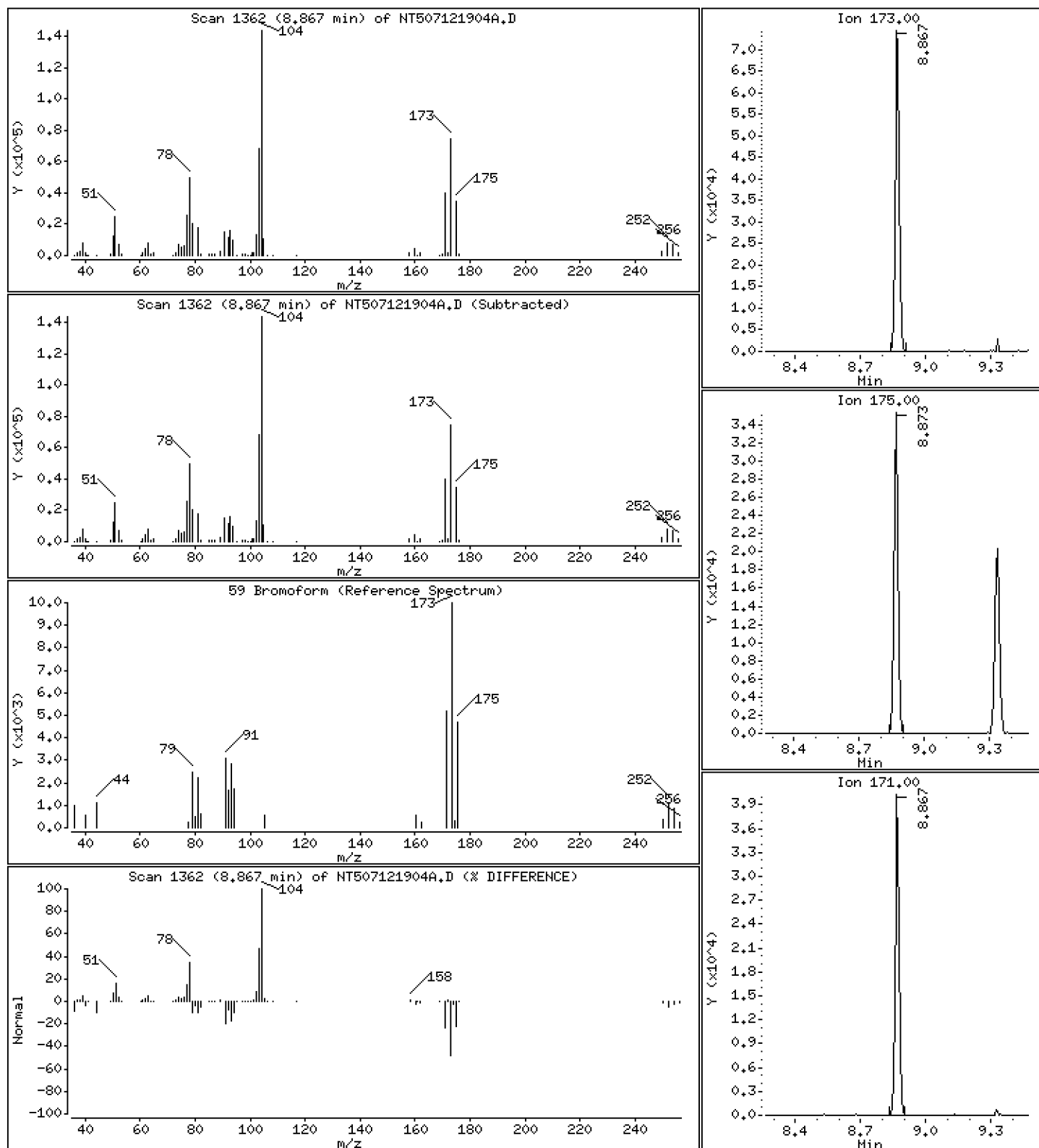
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59 Bromoform

Concentration: 40,297 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

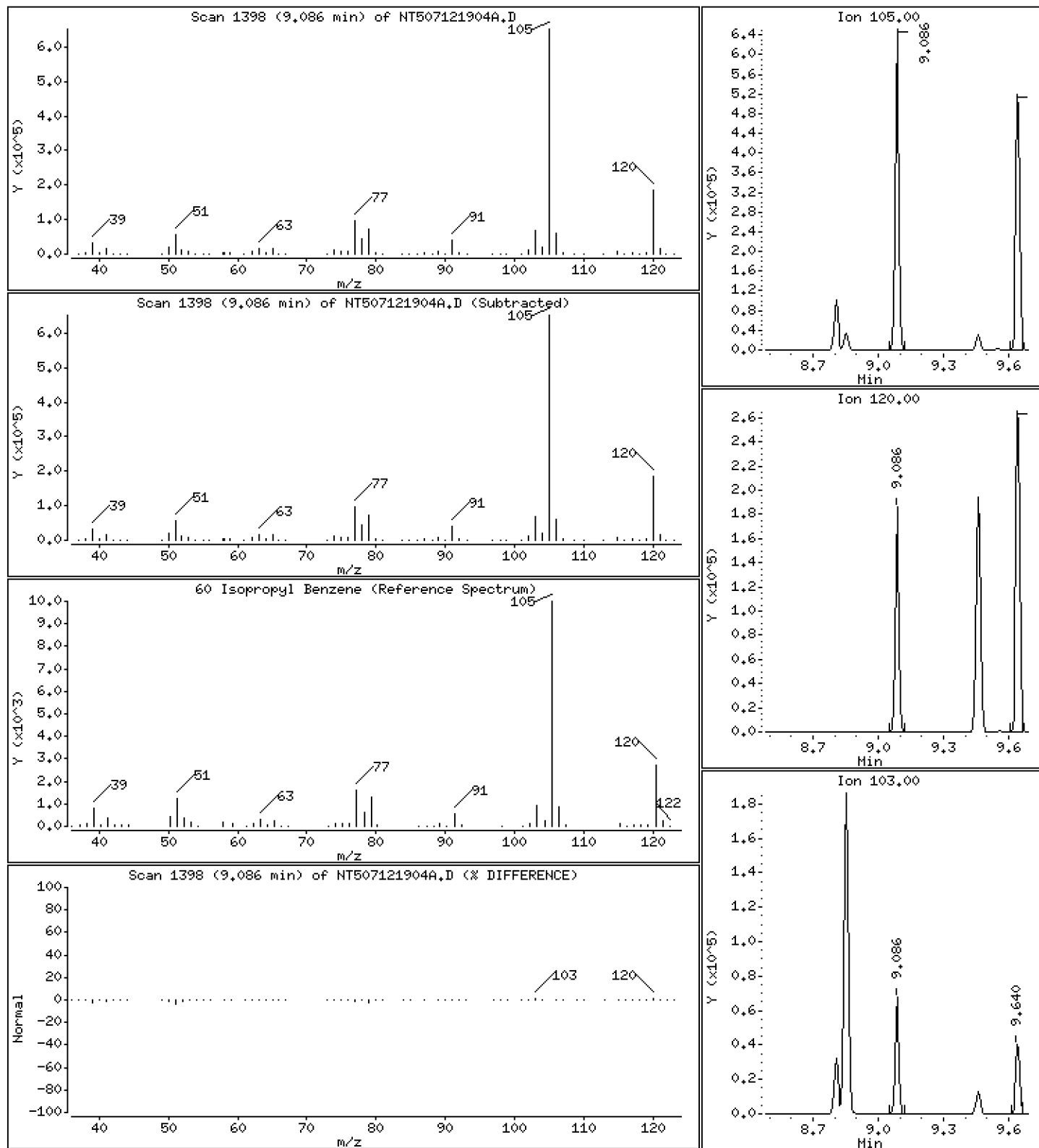
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 44,818 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

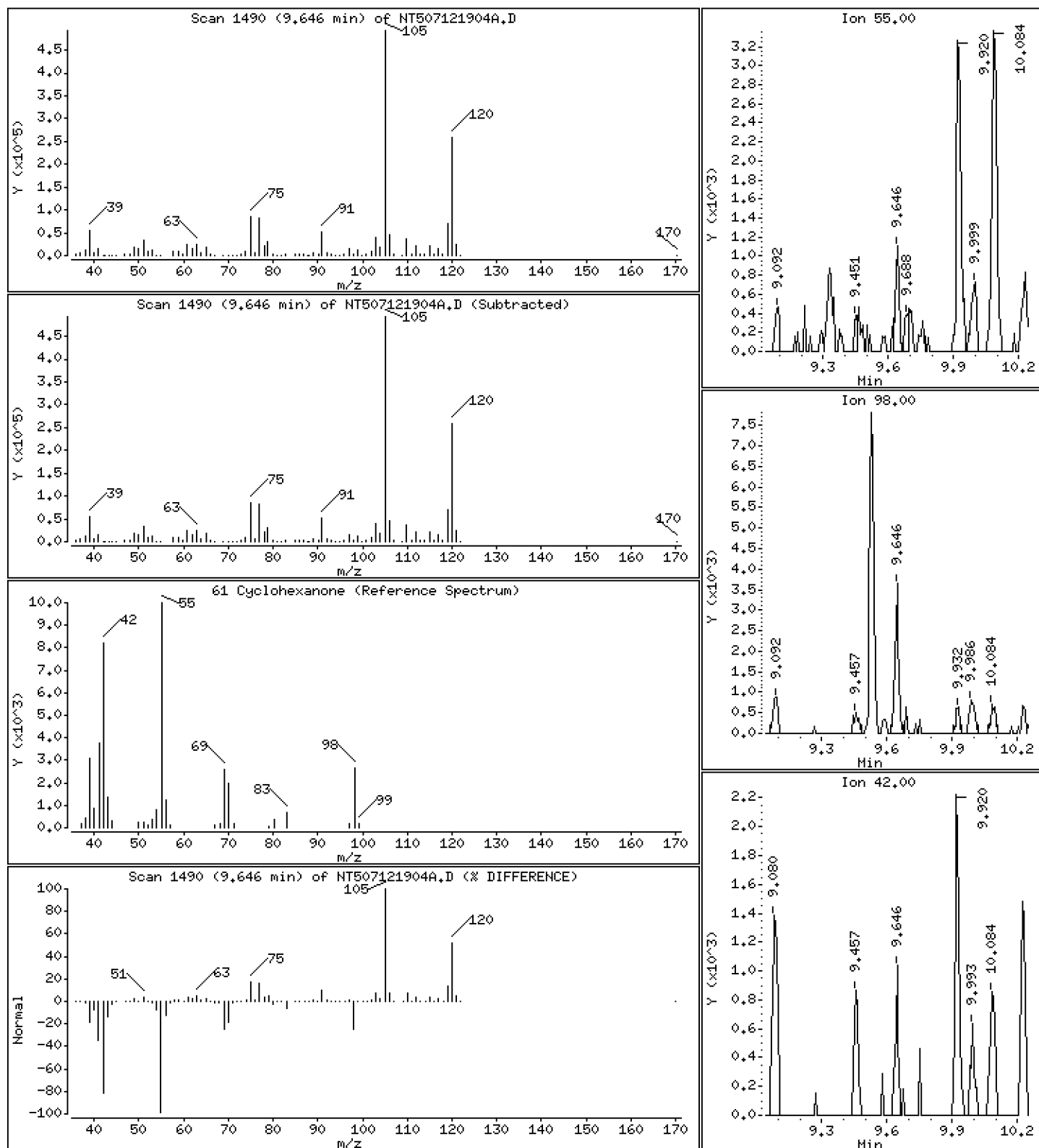
Sample Info: BSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

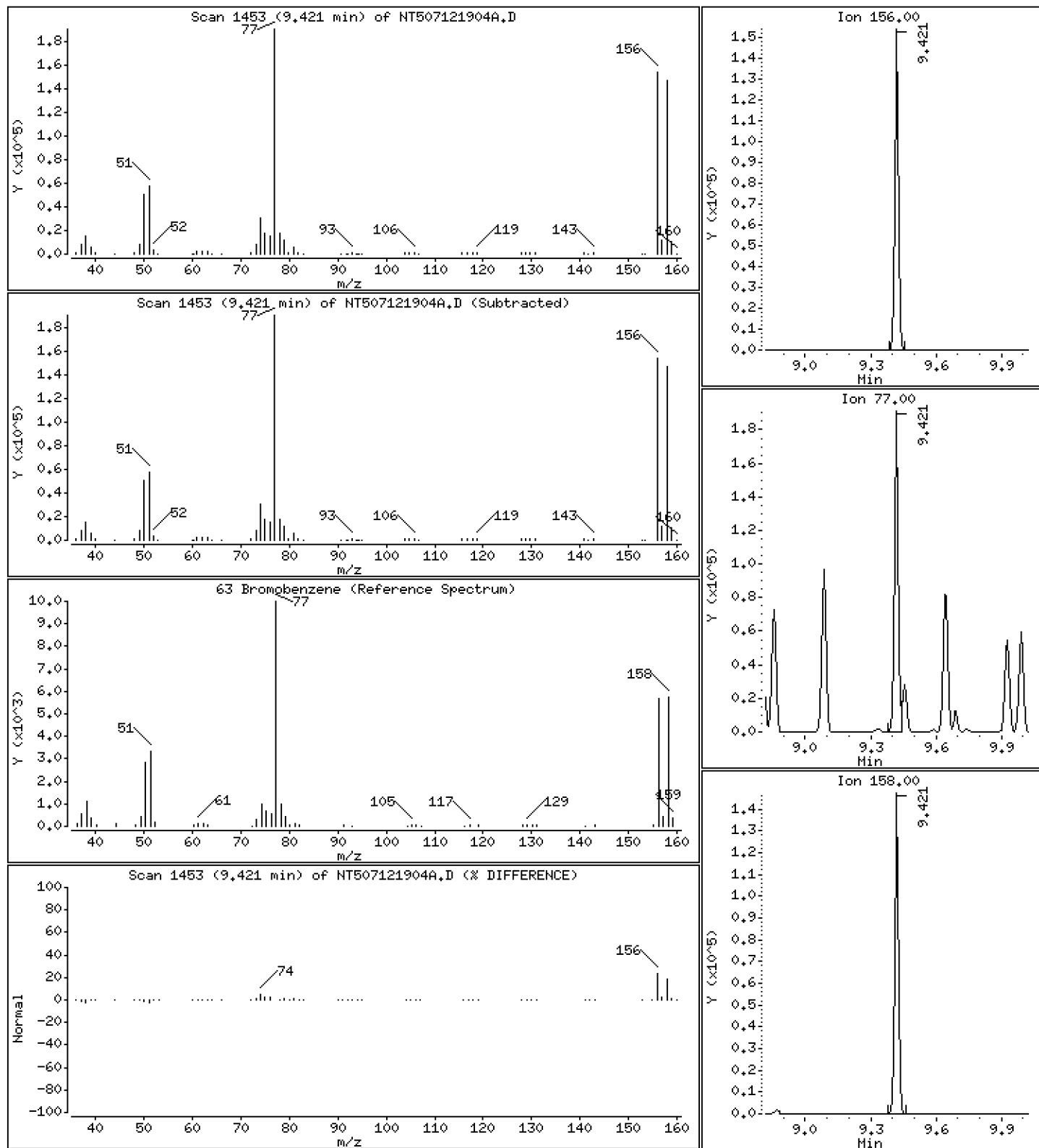
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 41,528 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

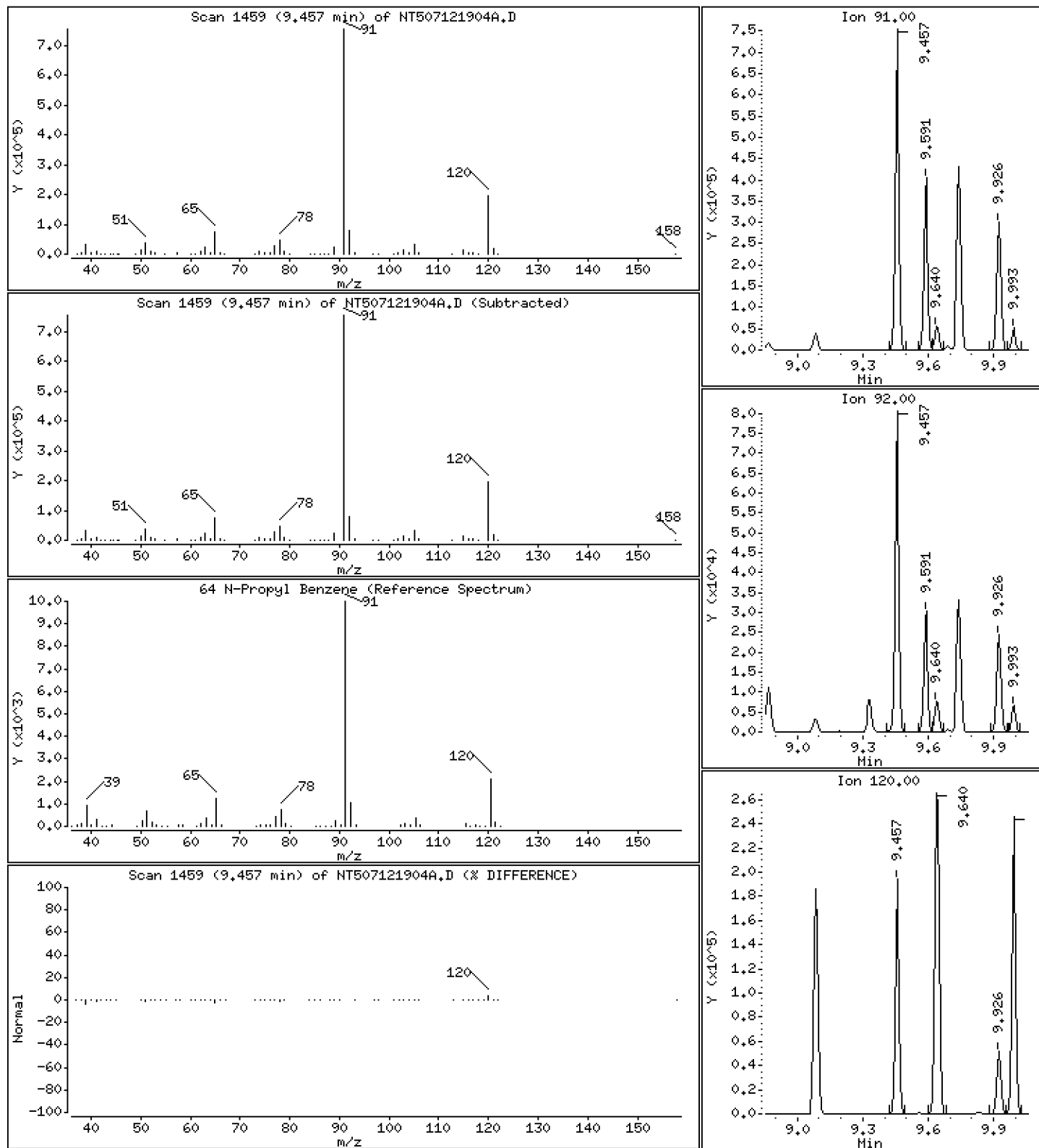
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 45,002 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

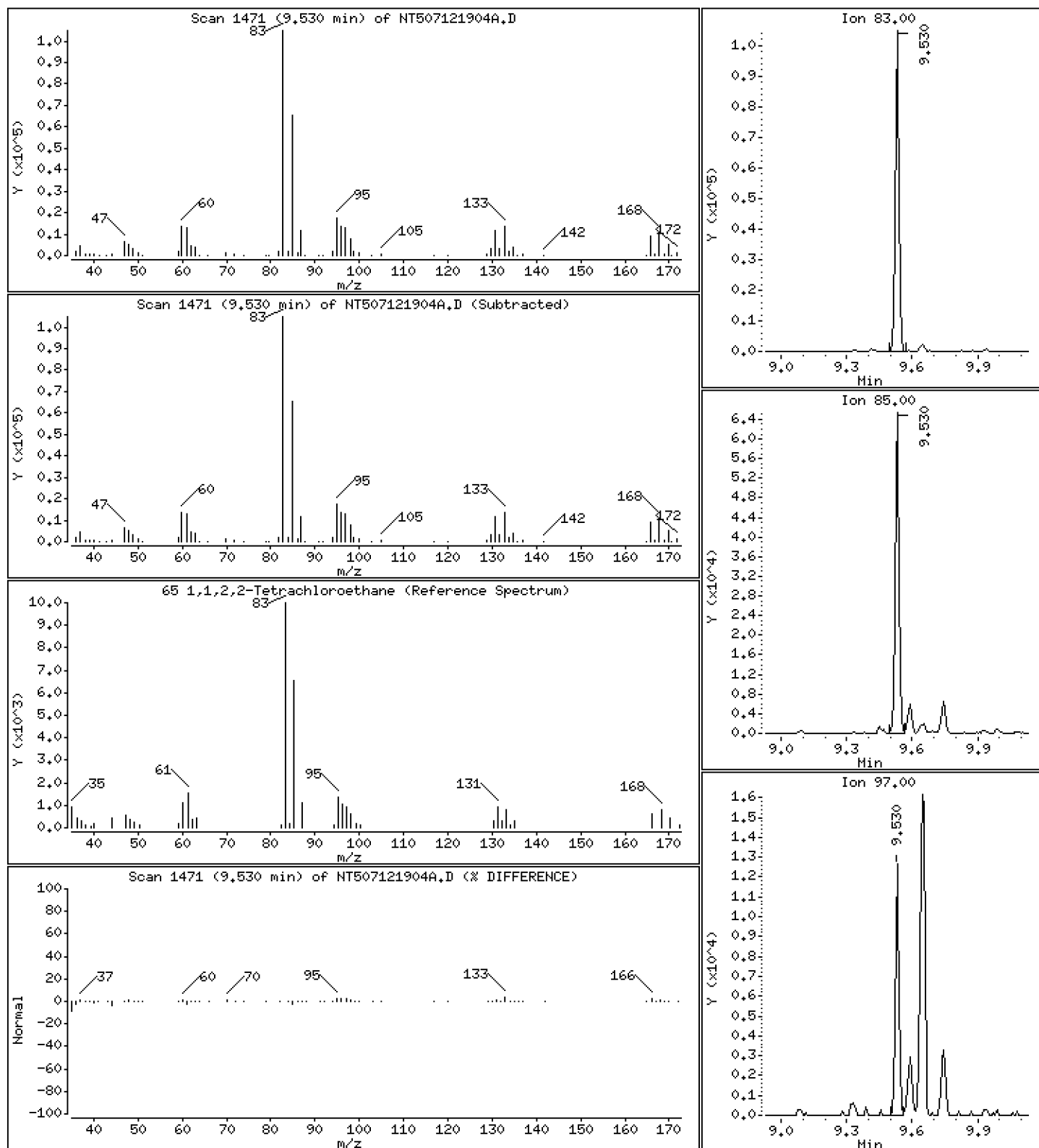
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 41,550 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

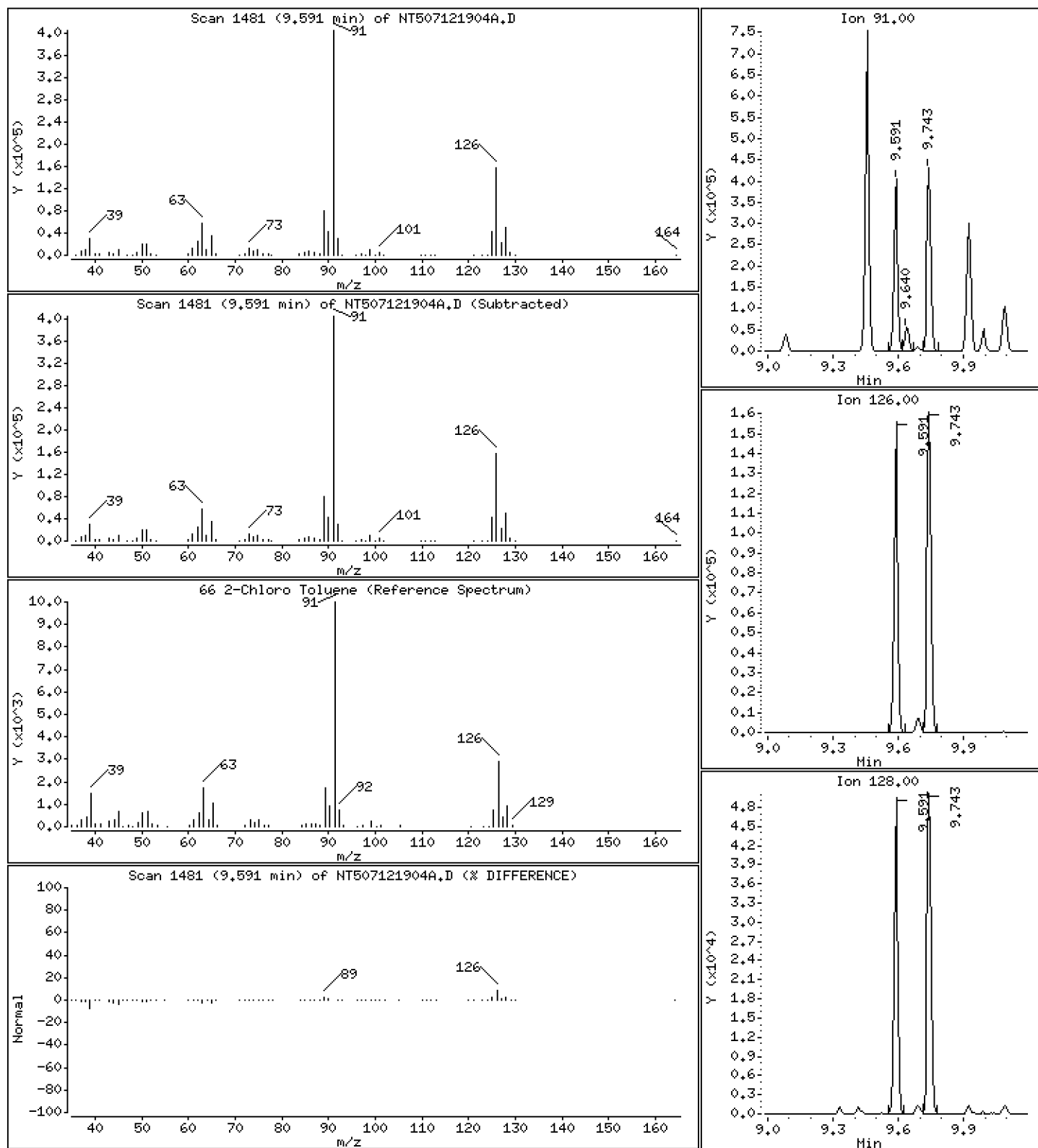
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 43,711 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

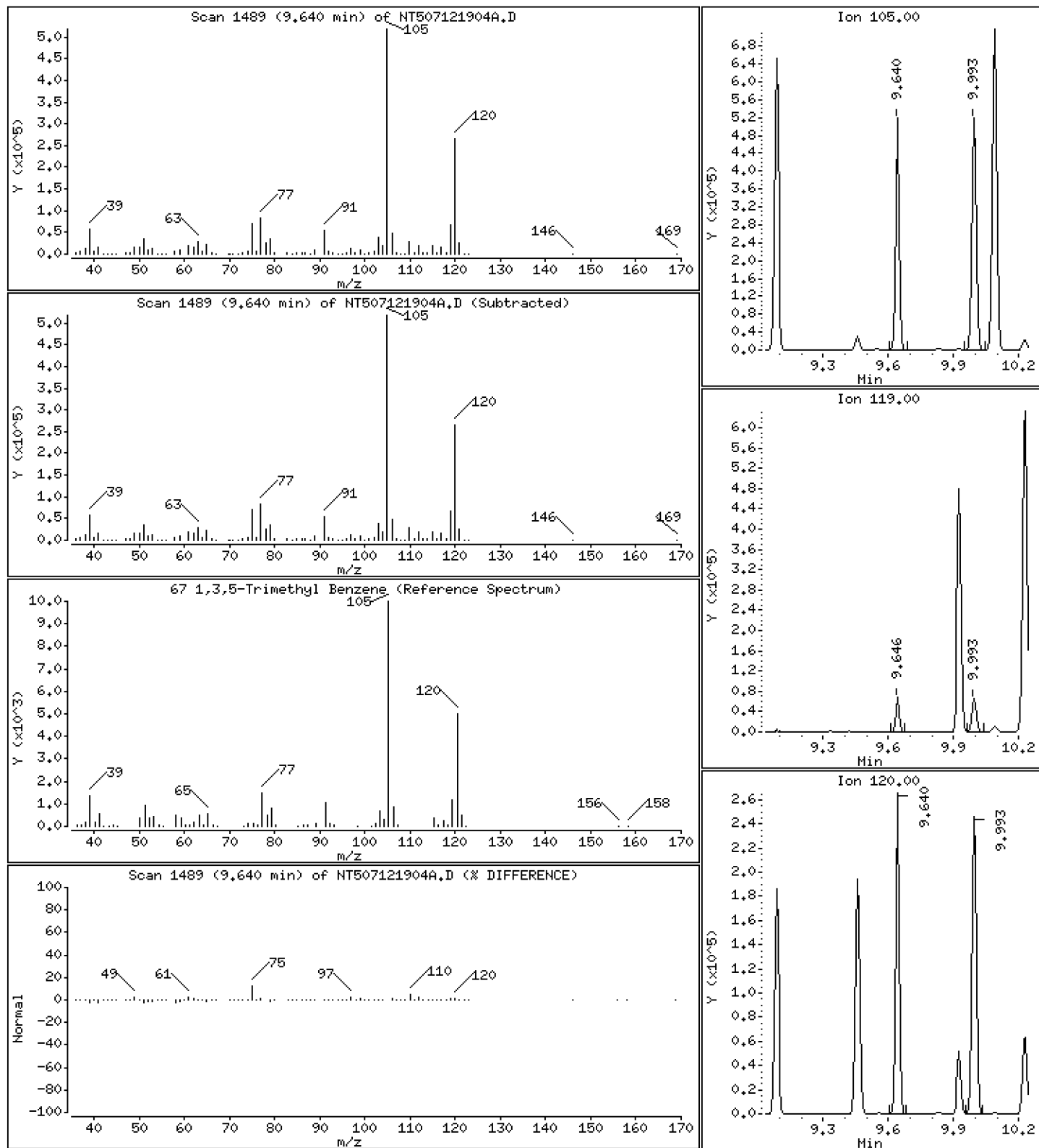
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 43,991 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

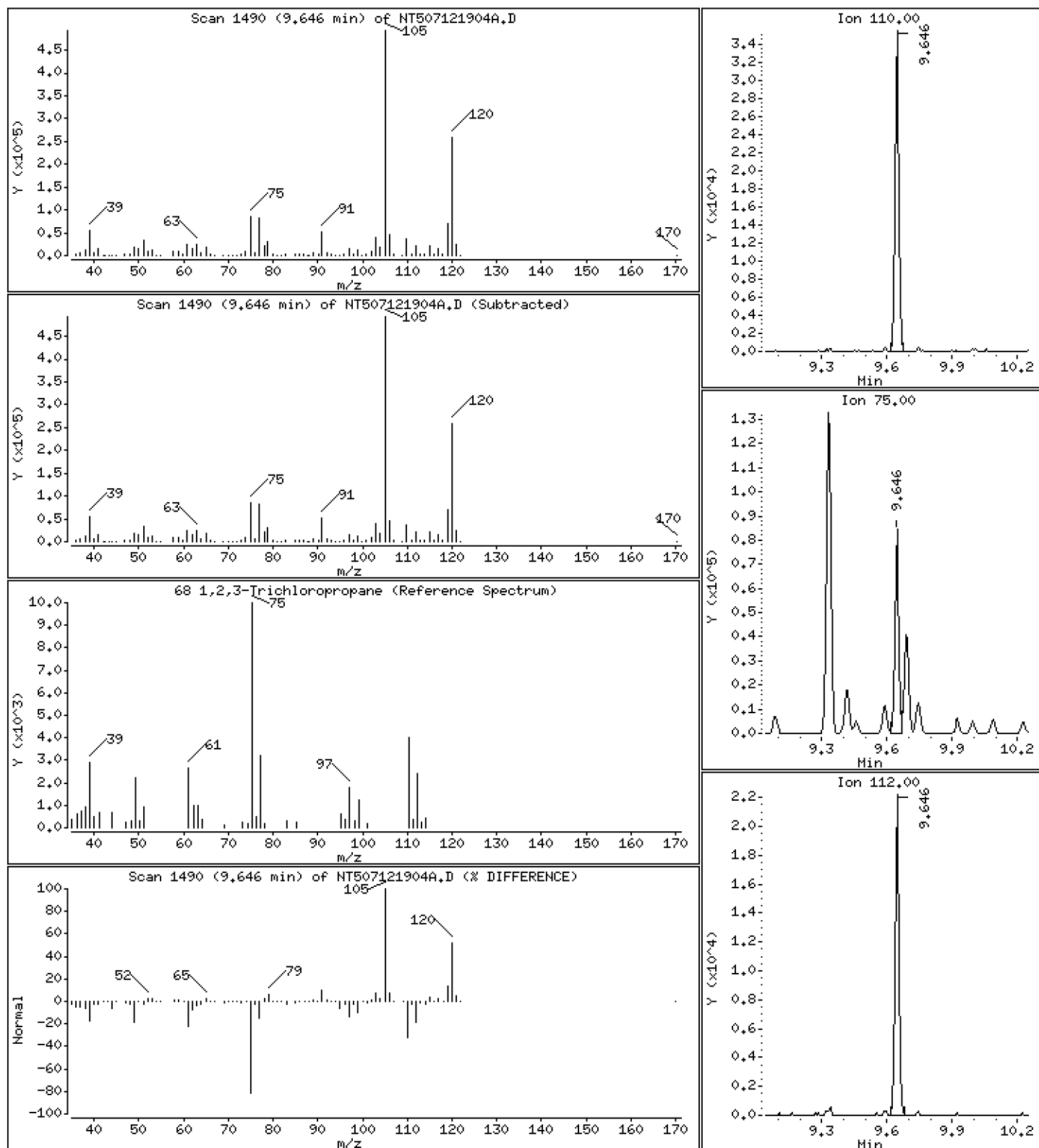
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 41,278 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

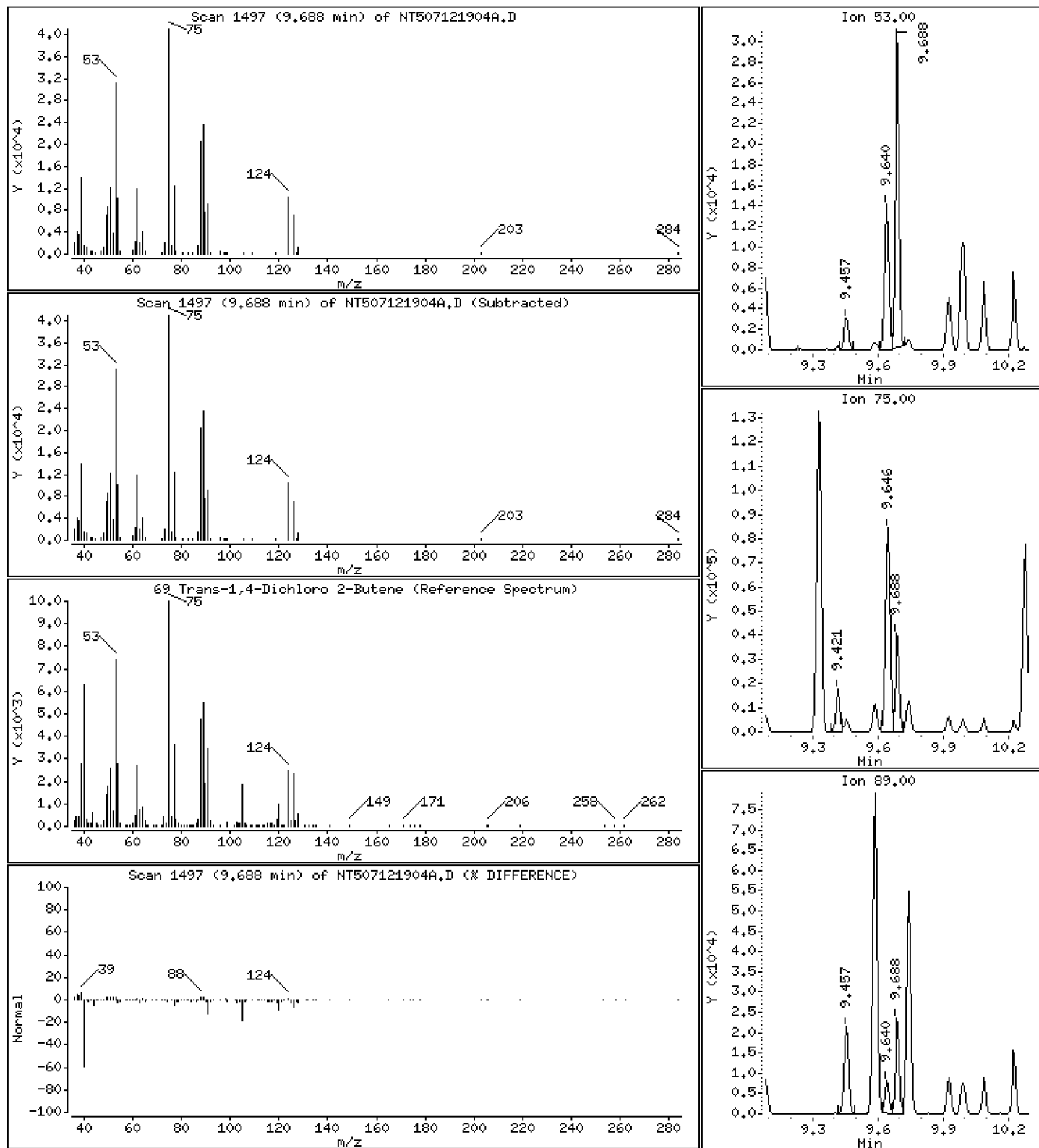
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 42,622 ug/Kg

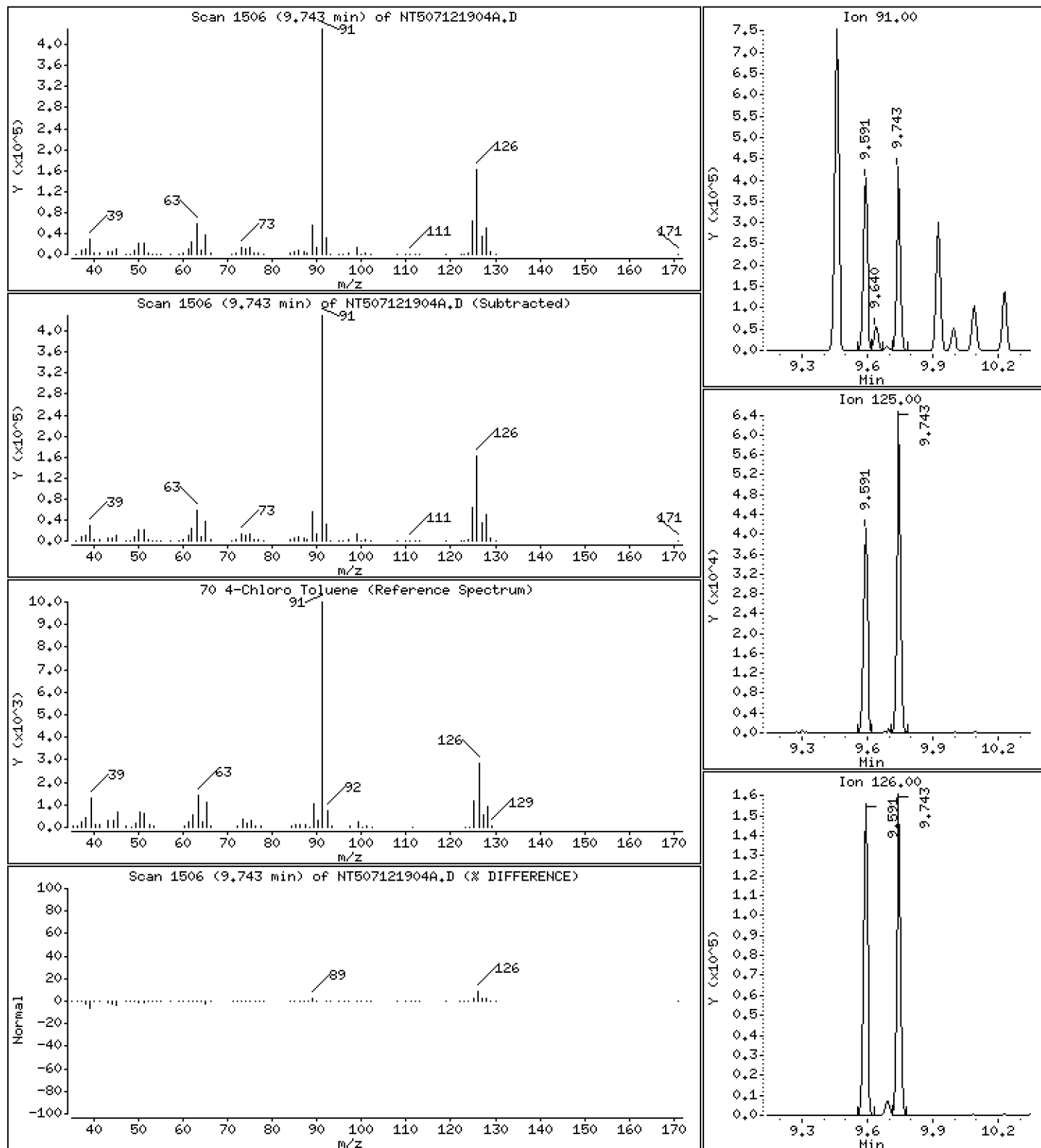


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 43.710 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

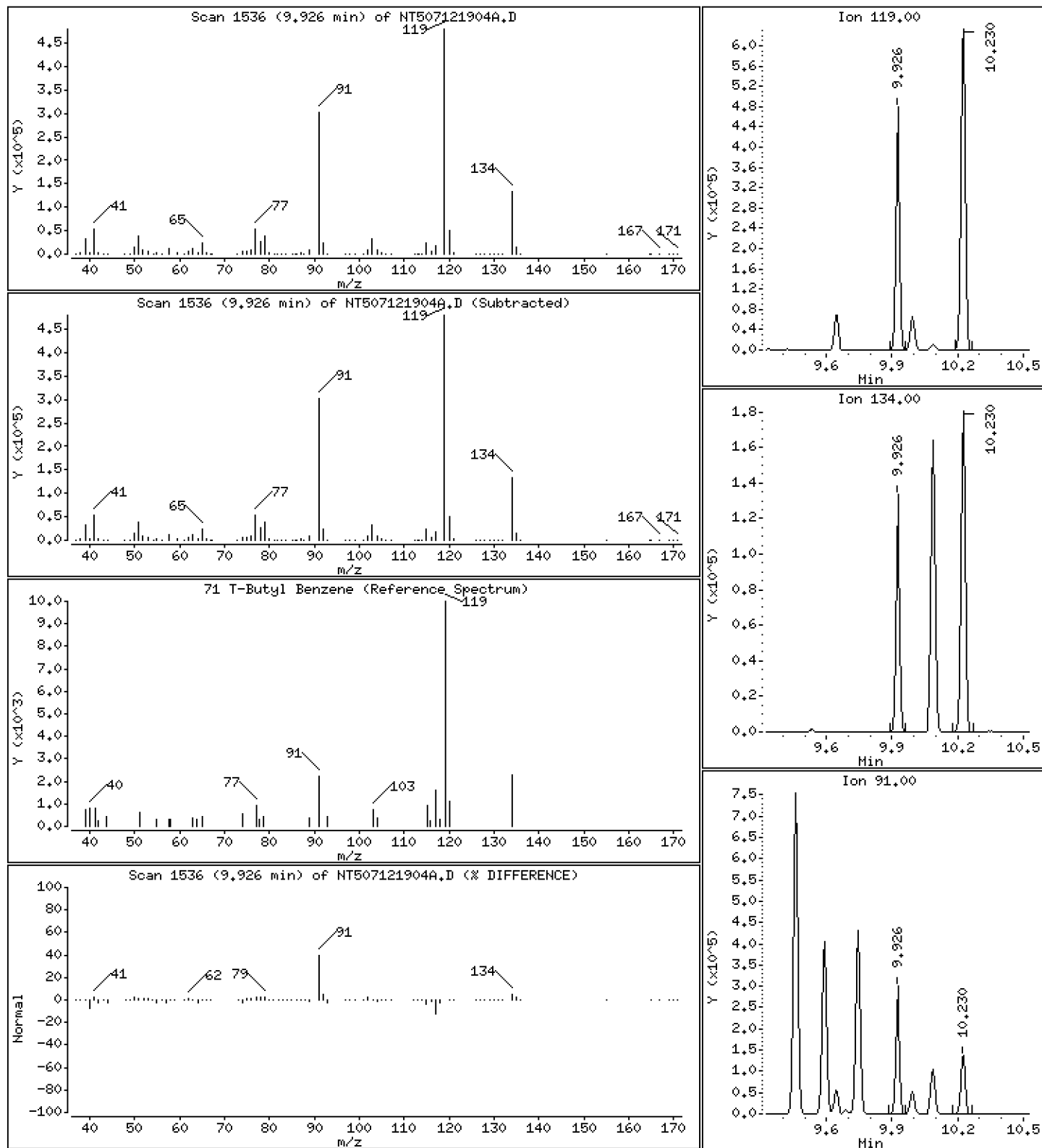
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 43,588 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

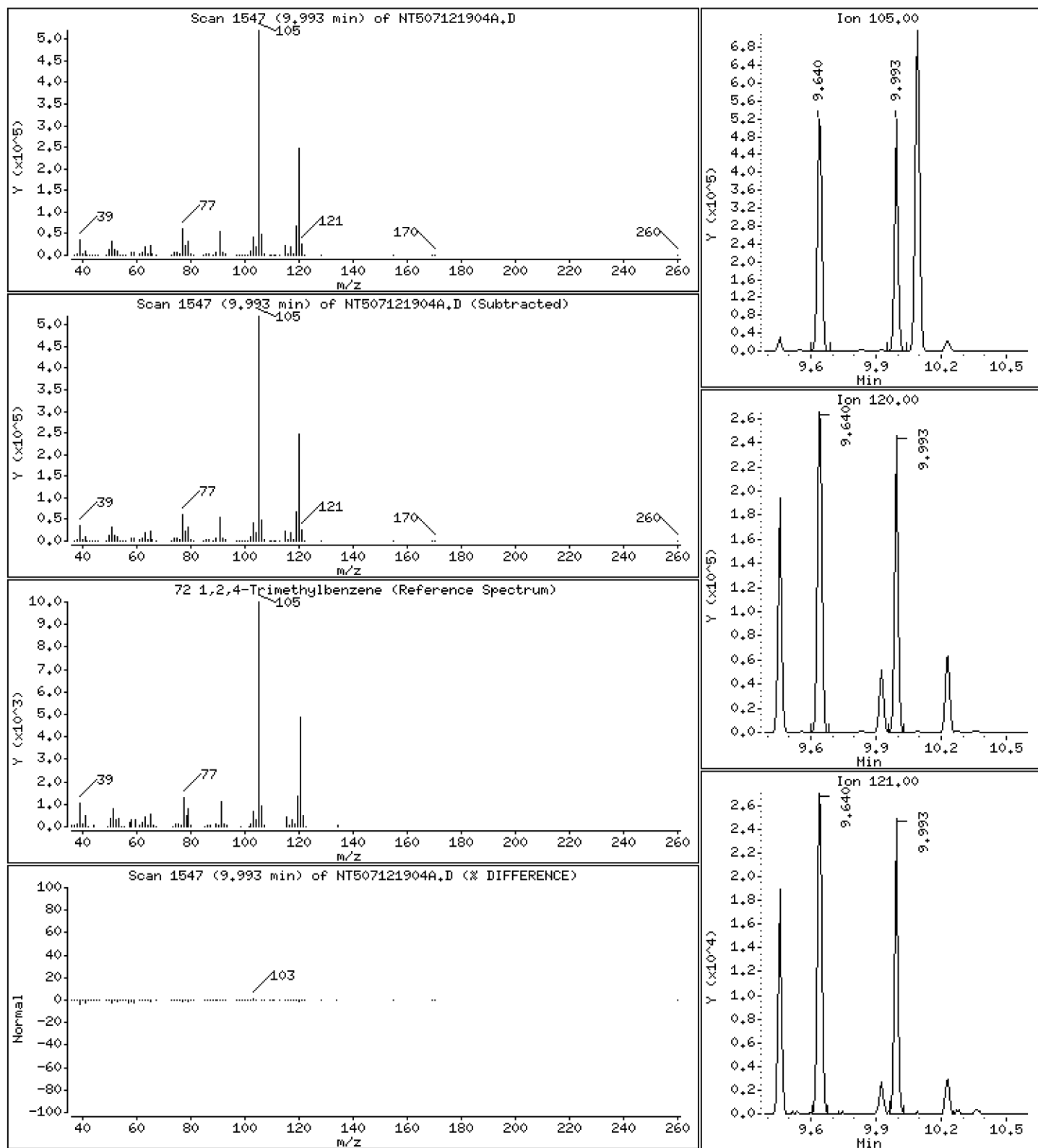
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 44,162 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

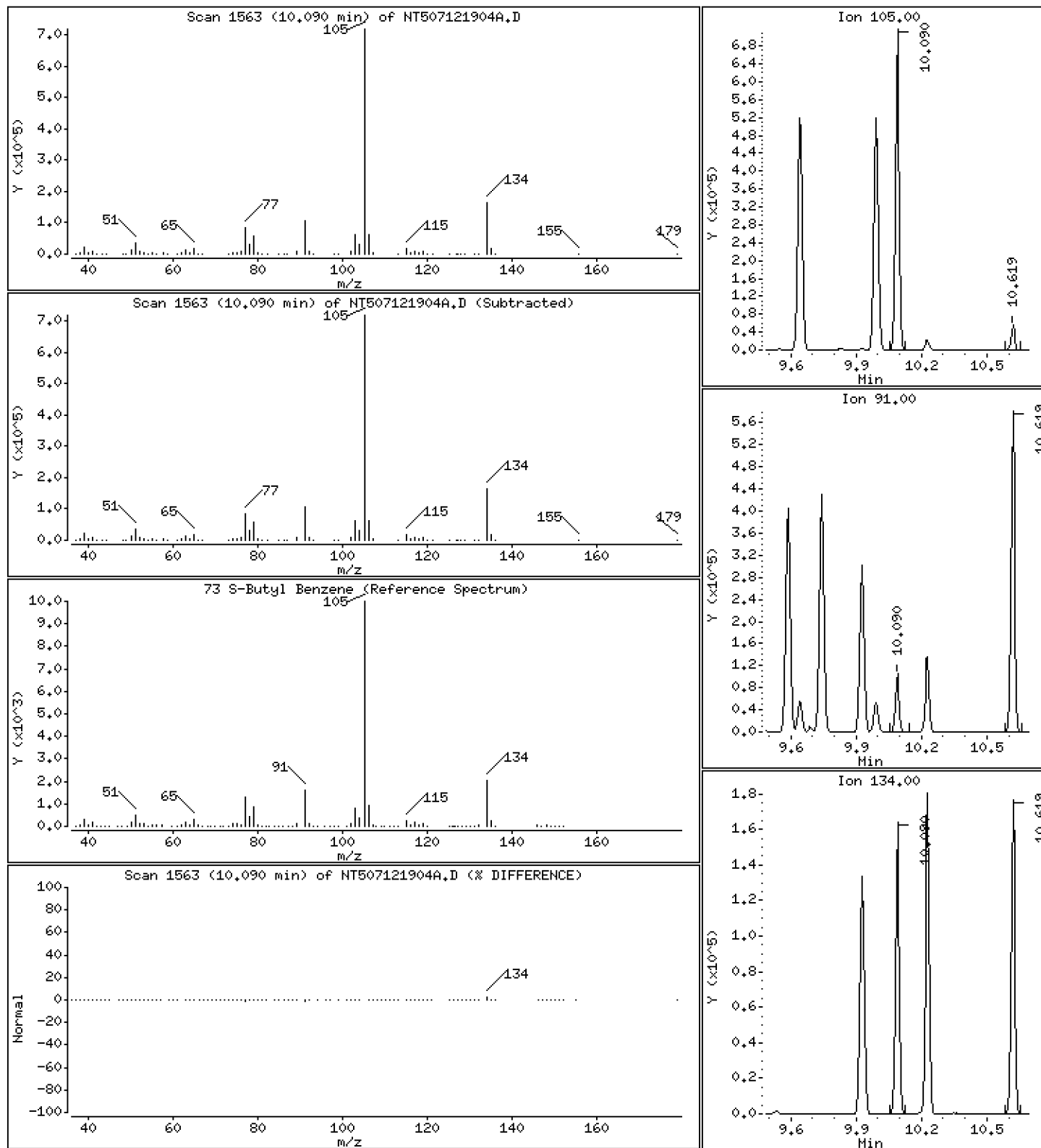
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 44.461 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

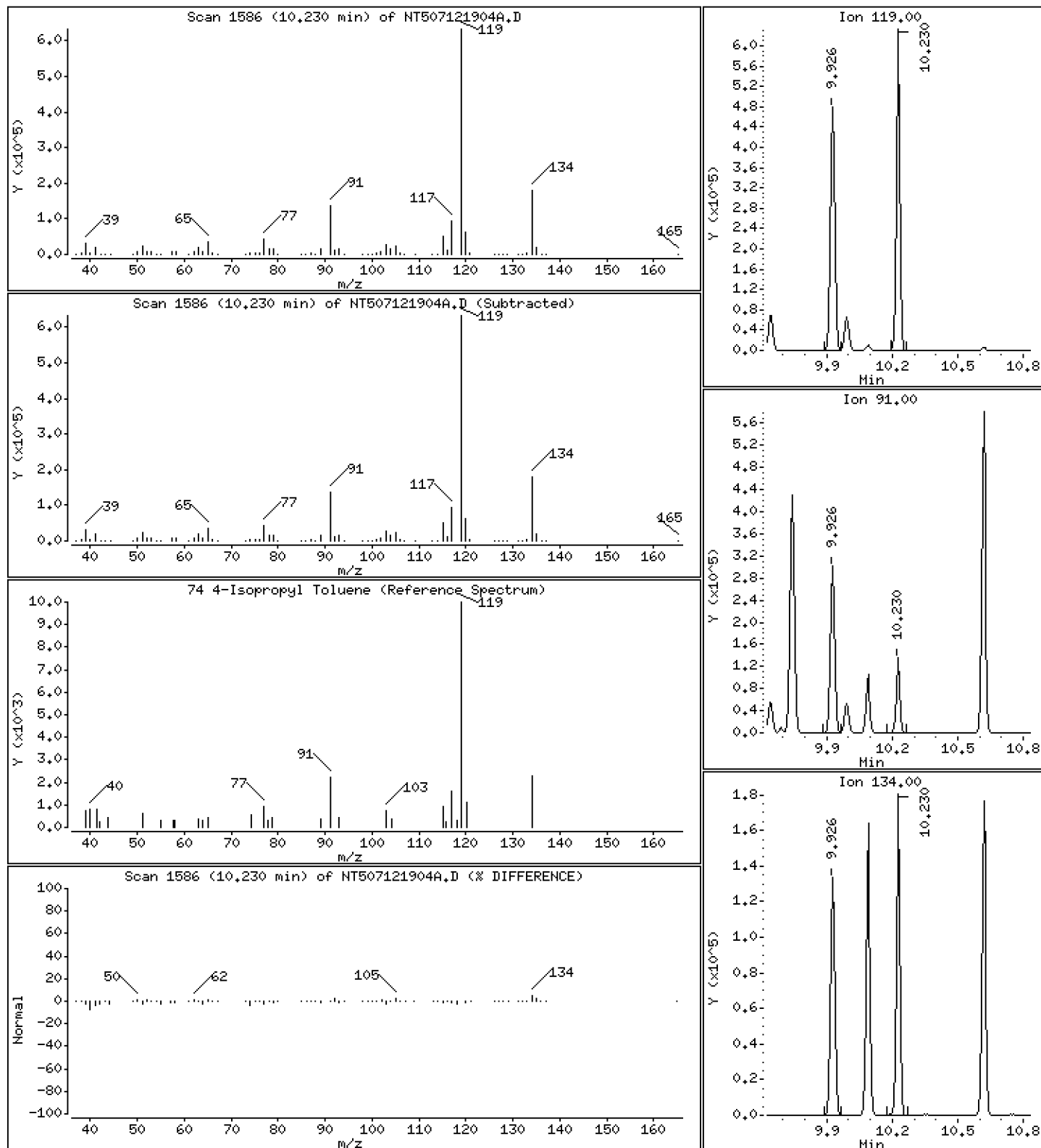
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 45.427 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

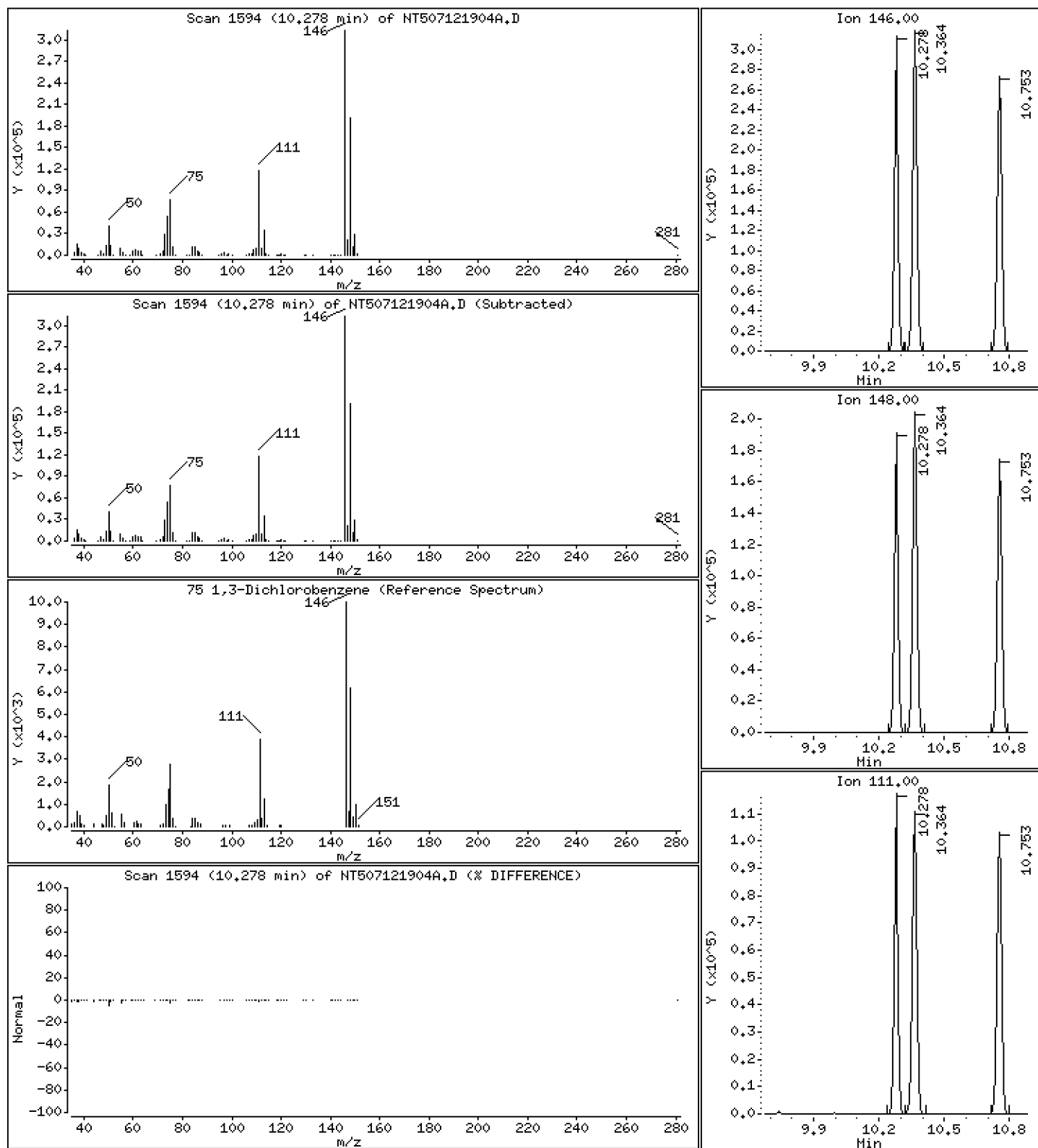
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 42,617 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

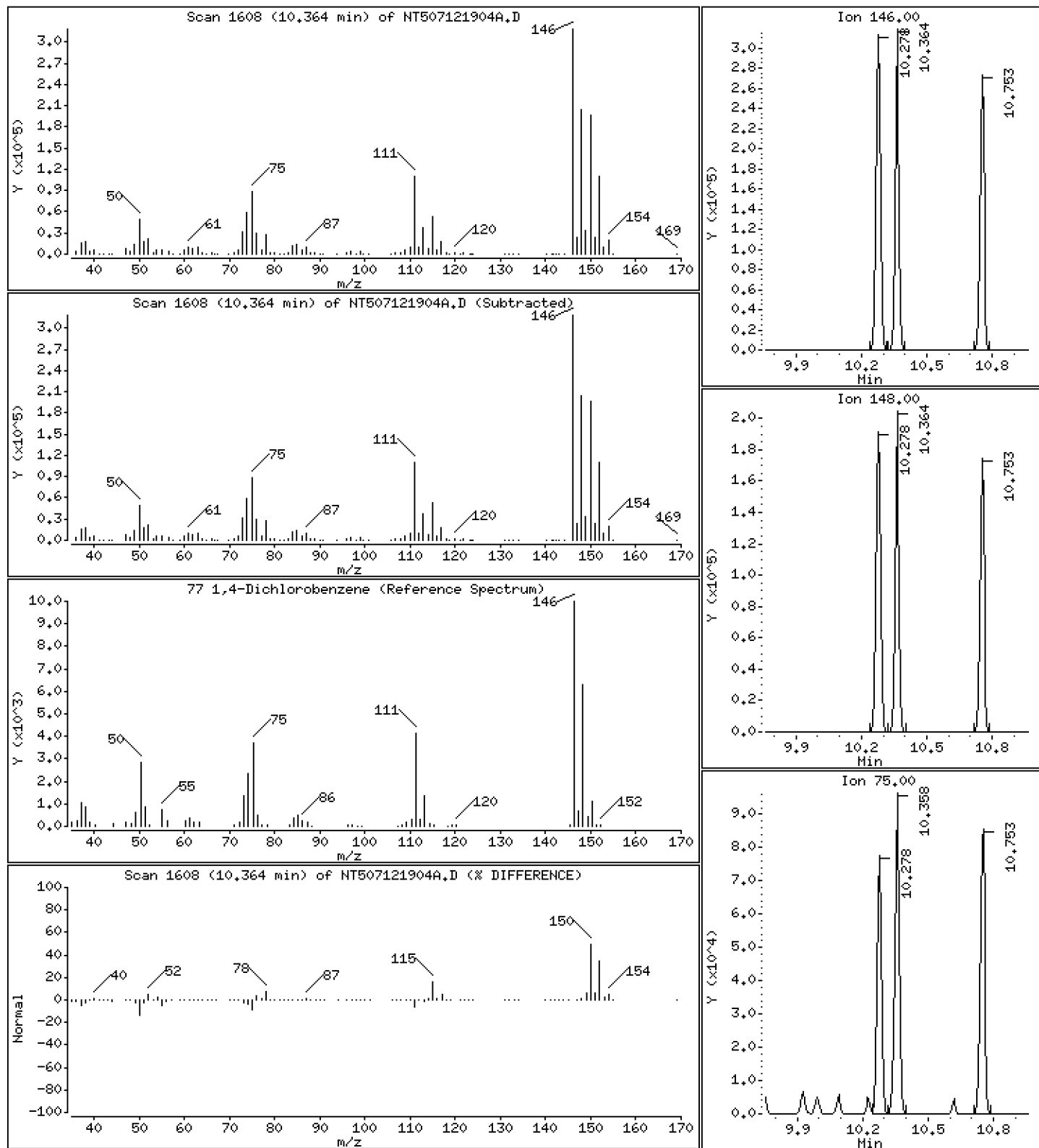
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 42,238 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

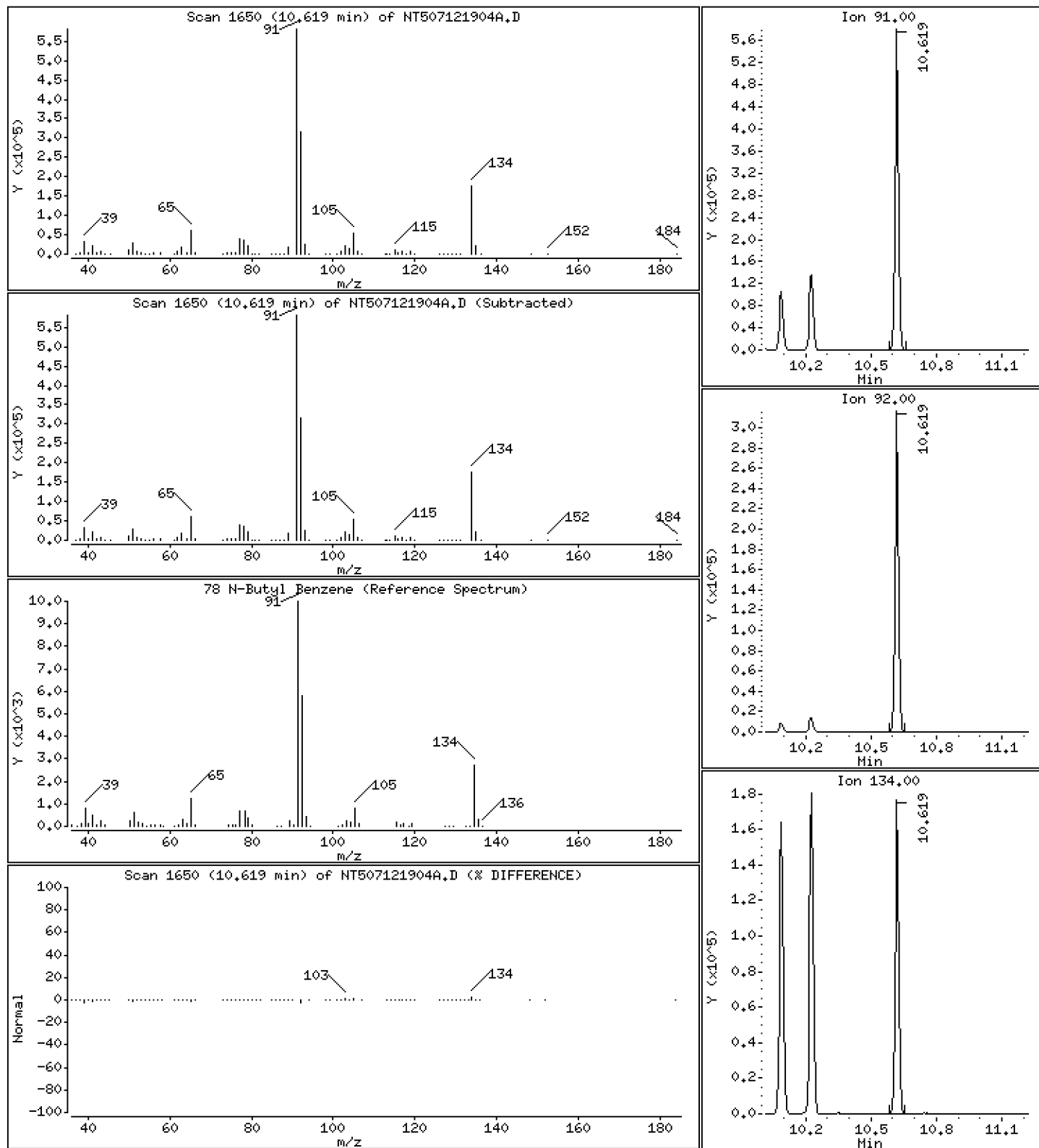
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 45,686 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

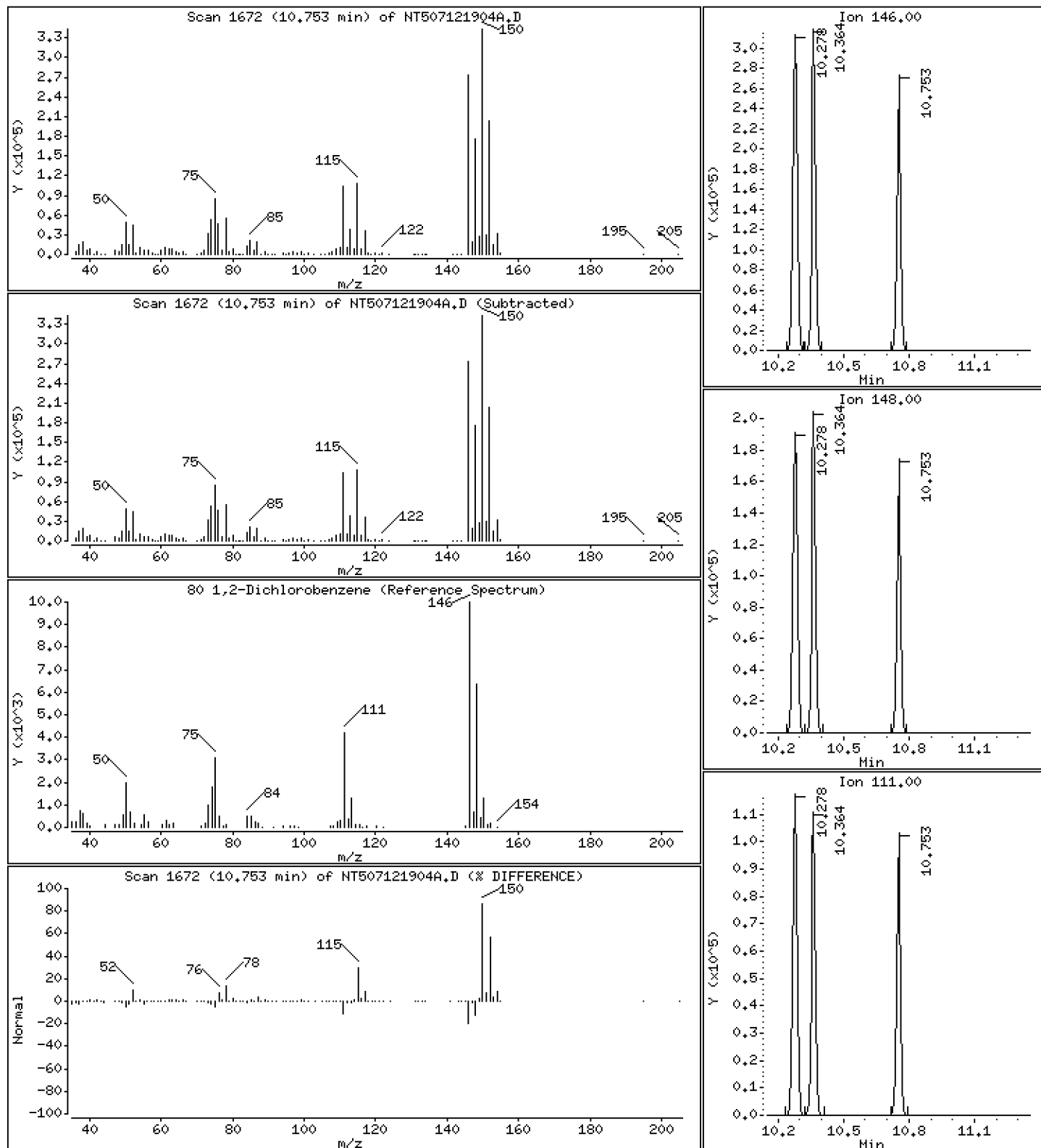
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 41.410 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

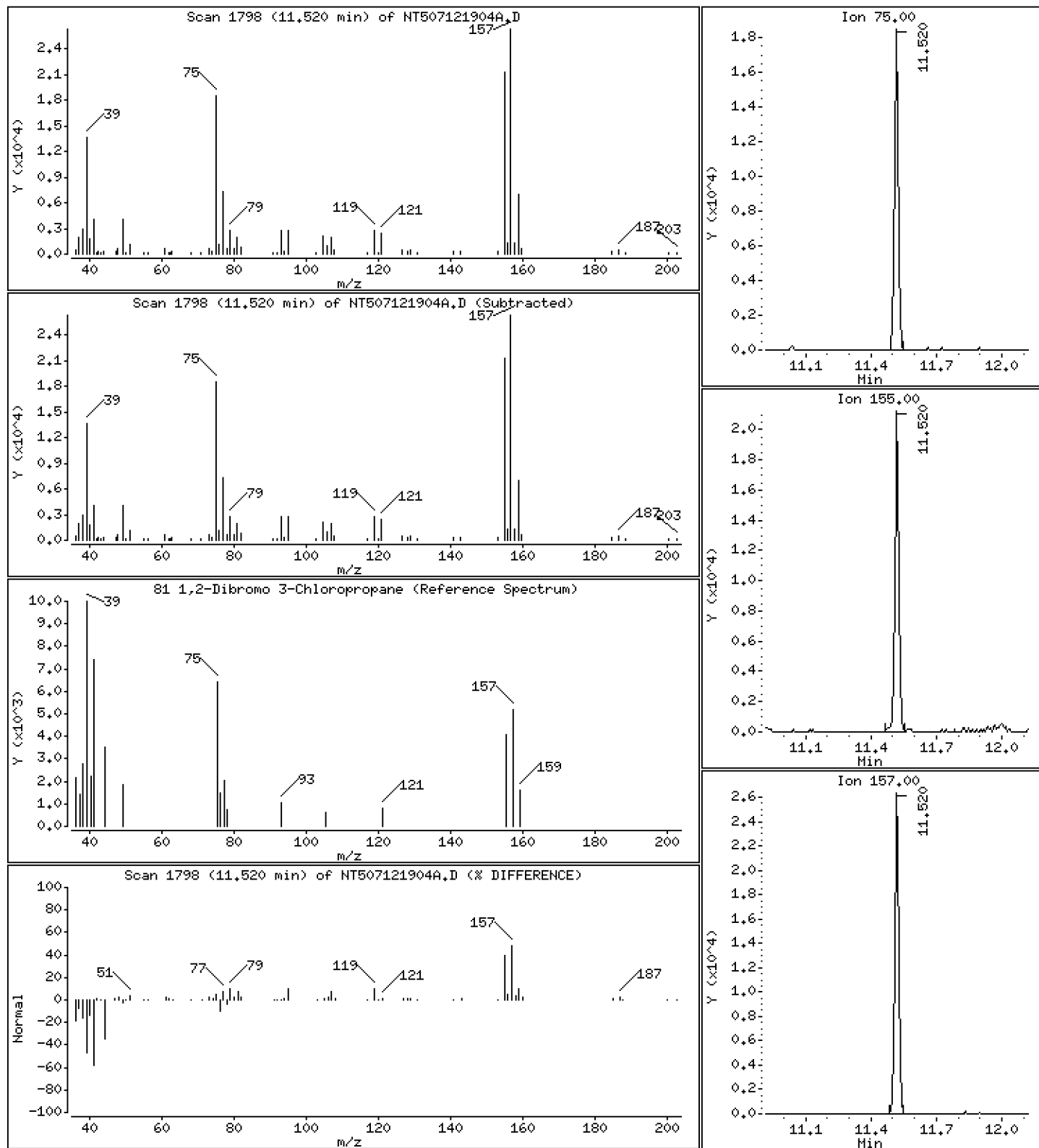
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 41,574 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

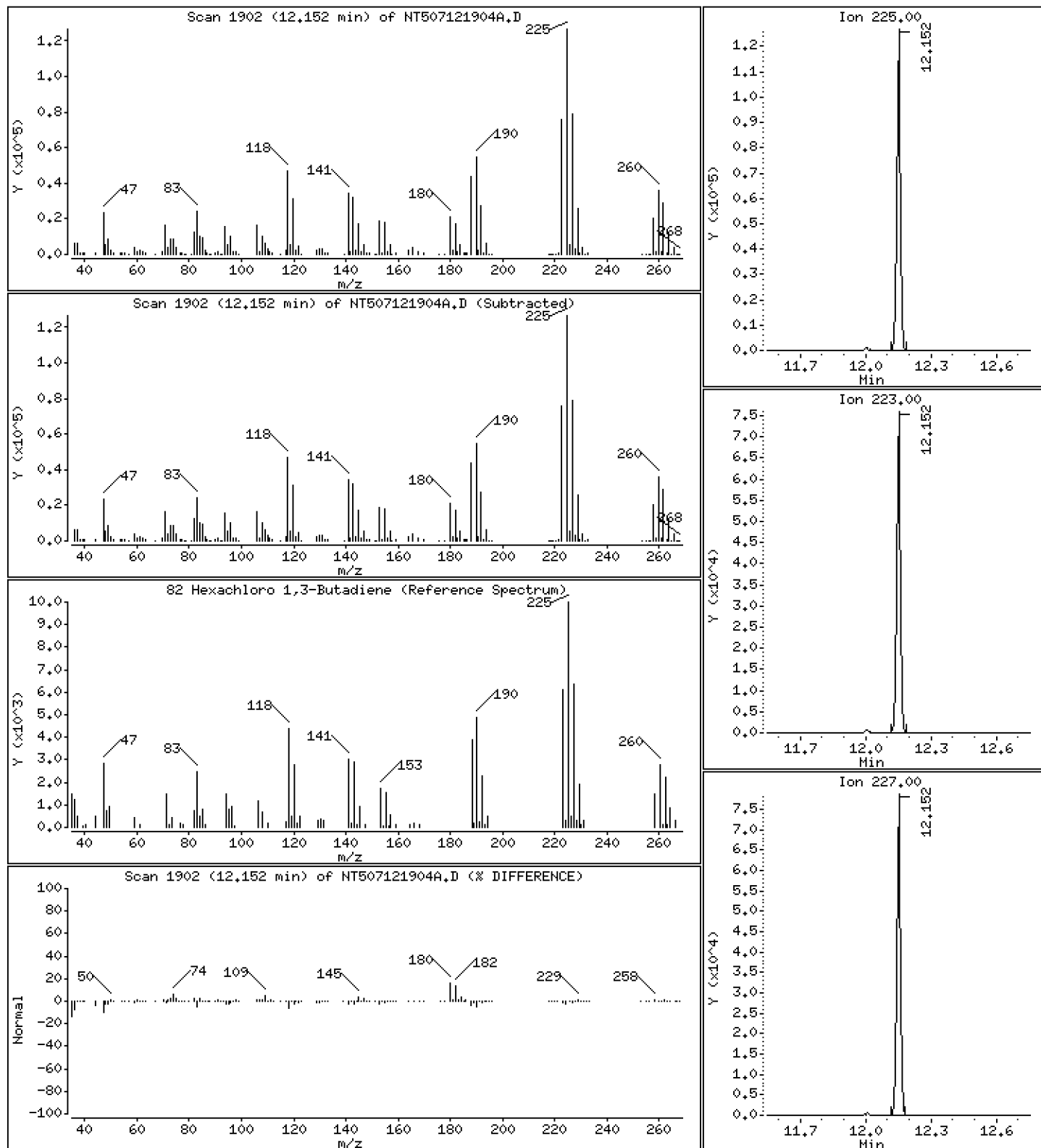
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 45,560 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

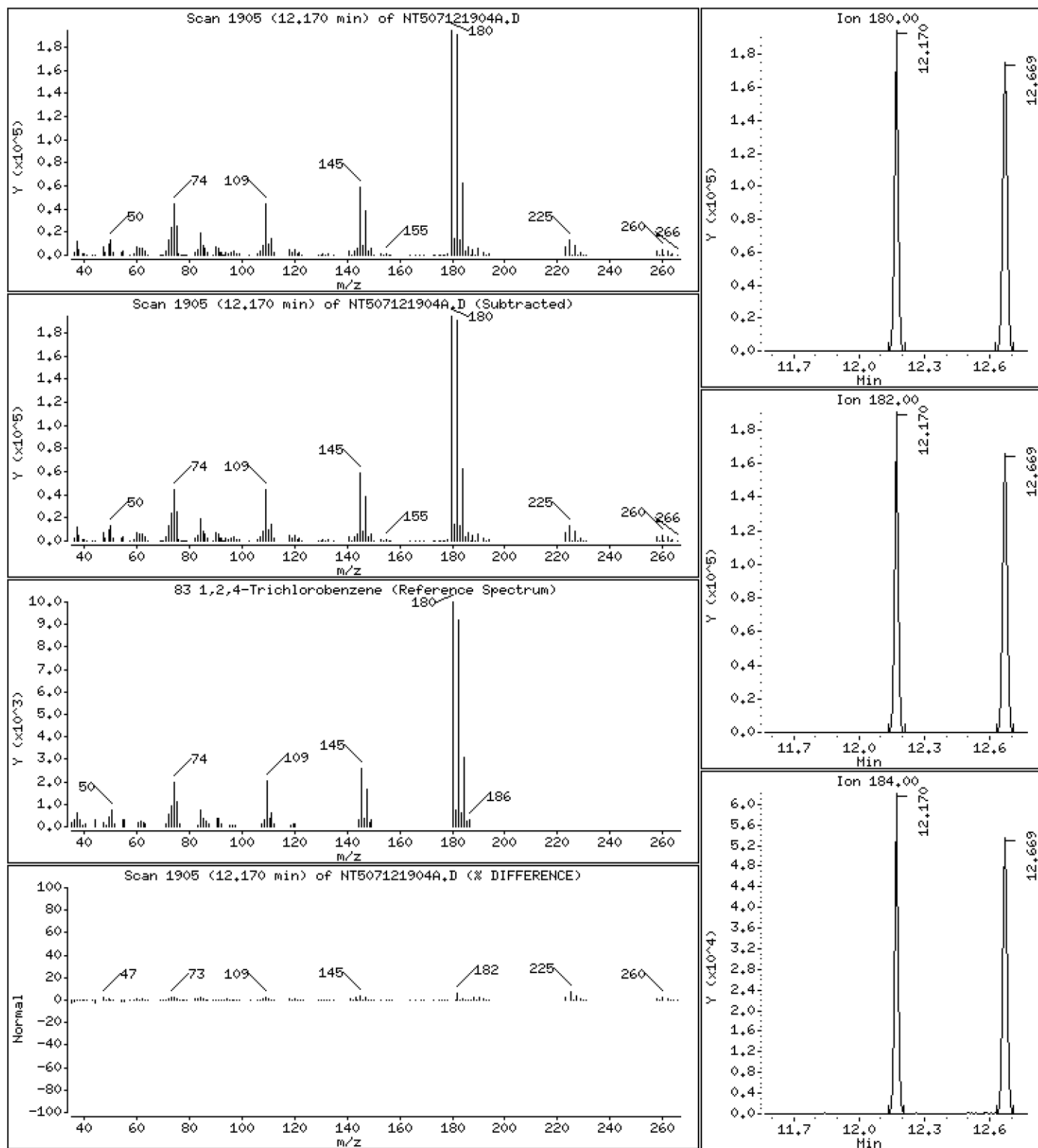
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 44,019 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

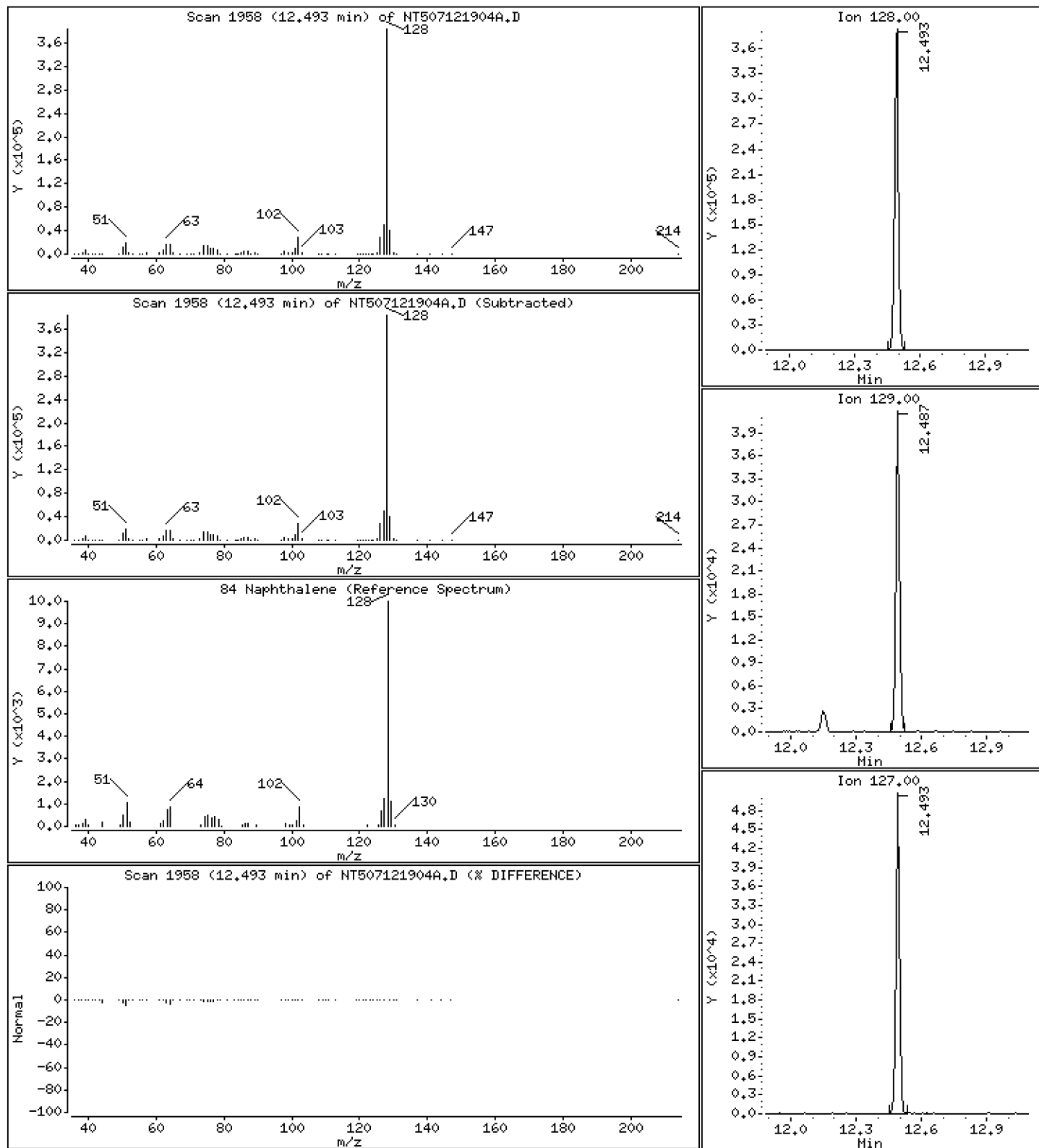
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 43,836 ug/Kg



Date : 12-JUL-2019 13:05

Client ID:

Instrument: nt5.i

Sample Info: BSD1

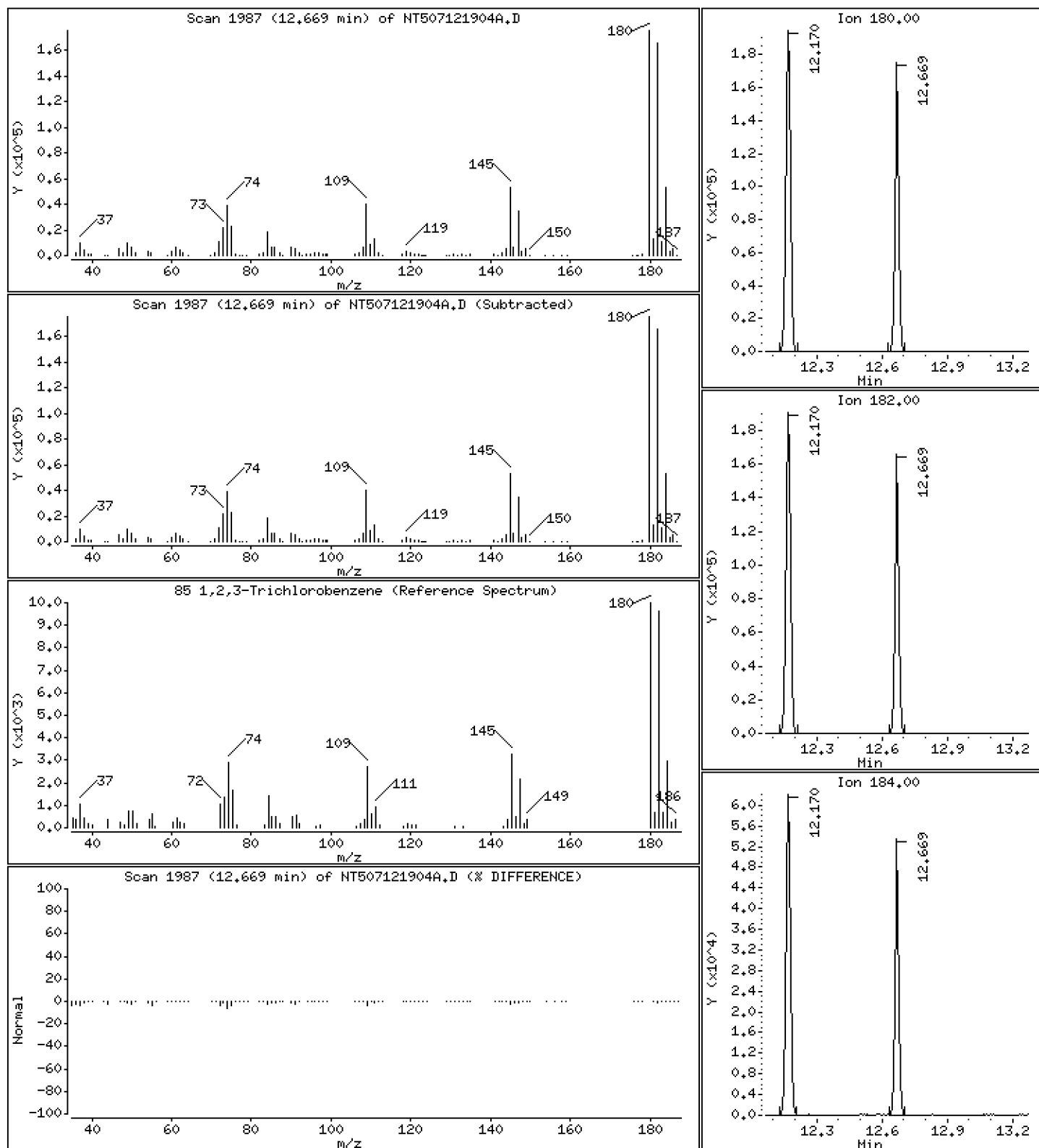
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 43,140 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121904A.D
 Lab Smp Id: bhg0316-BSD1
 Inj Date : 12-JUL-2019 13:05
 Operator : PB Inst ID: nt5.i
 Smp Info : BSD1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/Kg)	(ug/Kg)	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
1 Dichlorodifluoromethane	85	1.329	1.329	(0.249)	168018	40.8993	40.899		
2 Chloromethane	50	1.487	1.487	(0.279)	159230	46.7511	46.751		
3 Vinyl Chloride	62	1.554	1.554	(0.291)	167222	48.6377	48.638		
4 Bromomethane	94	1.840	1.840	(0.345)	131171	51.9376	51.938		
5 Chloroethane	64	1.950	1.943	(0.365)	140015	51.5682	51.568		
6 Trichlorofluoromethane	101	2.059	2.059	(0.386)	317311	48.4368	48.437		
7 1,1-Dichloroethene	96	2.534	2.534	(0.475)	165115	49.1381	49.138		
8 Carbon Disulfide	76	2.540	2.540	(0.476)	467232	49.8320	49.832		
9 112Trichloro122Trifluoroethane	101	2.588	2.588	(0.485)	157496	51.3521	51.352		
10 Iodomethane	142	2.667	2.667	(0.500)	200291	45.6925	45.692		
11 Bromoethane	108	2.795	2.795	(0.524)	106920	47.2667	47.267		
12 Acrolein	56	2.911	2.911	(0.545)	78877	231.014	231.01		
13 Methylene Chloride	84	3.154	3.154	(0.591)	152528	45.7143	45.714		
14 Acetone	43	3.258	3.257	(0.610)	144243	240.119	240.12		
15 Trans-1,2-Dichloroethene	96	3.312	3.312	(0.621)	178760	49.5051	49.505		
16 Methyl tert butyl ether	73	3.483	3.483	(0.652)	354961	45.3557	45.356		
173 n-Hexane	41	3.483	3.483	(0.652)	70852				
17 1,1-Dichloroethane	63	3.939	3.939	(0.738)	268056	49.4769	49.477		
18 Acrylonitrile	53	4.030	4.030	(0.755)	33580	47.0499	47.050		
19 Vinyl Acetate	43	4.243	4.243	(0.795)	246044	49.5314	49.531		
20 Cis-1,2-Dichloroethene	96	4.462	4.462	(0.836)	185915	50.1013	50.101		
22 2,2-Dichloropropane	77	4.553	4.553	(0.853)	273803	52.4446	52.445		
23 Bromochloromethane	128	4.645	4.645	(0.870)	86500	47.4777	47.478		
24 Chloroform	83	4.730	4.730	(0.886)	280807	49.2031	49.203		
25 Carbon Tetrachloride	117	4.815	4.815	(0.833)	279640	46.7279	46.728		
\$ 27 Dibromofluoromethane	111	4.894	4.894	(0.917)	257664	57.7971	57.797 (R)		
26 1,1,1-Trichloroethane	97	4.888	4.888	(0.916)	284338	50.8024	50.802		
28 1,1-Dichloropropene	75	4.997	4.997	(0.864)	240255	49.7094	49.709		
29 2-Butanone	72	5.046	5.046	(0.945)	73272	259.538	259.54		
30 Benzene	78	5.223	5.222	(0.903)	656234	45.5307	45.531		
* 31 Pentafluorobenzene	168	5.338	5.338	(1.000)	407650	50.0000			
\$ 32 d4-1,2-Dichloroethane	65	5.350	5.350	(1.002)	213686	57.2994	57.299 (R)		
33 1,2-Dichloroethane	62	5.411	5.411	(0.936)	175338	42.3543	42.354		

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130	5.734	5.740 (0.992)		206692	45.9569	45.957
* 35 1,4-Difluorobenzene	114	5.782	5.782 (1.000)		813111	50.0000	
37 Dibromomethane	93	6.099	6.098 (1.055)		86366	43.6809	43.681
38 1,2-Dichloropropane	63	6.184	6.184 (1.069)		142796	45.2227	45.223
39 Bromodichloromethane	83	6.251	6.251 (1.081)		211952	45.1112	45.111
172 2-Pentanone	86	6.543	6.543 (1.132)		96665	235.358	235.36
40 2-Chloroethyl Vinyl Ether	63	6.756	6.756 (1.168)		79637	43.5132	43.513
41 Cis 1,3-dichloropropene	75	6.786	6.786 (1.174)		249315	45.4161	45.416
\$ 42 d8-Toluene	98	6.938	6.938 (1.200)		972379	51.0668	51.067 (R)
43 Toluene	92	6.981	6.981 (1.207)		438863	44.5994	44.599
44 Tetrachloroethene	166	7.297	7.297 (0.884)		220684	43.4384	43.438
45 4-Methyl-2-Pentanone	58	7.334	7.333 (1.268)		220139	230.996	231.00
46 Trans 1,3-Dichloropropene	75	7.346	7.346 (1.270)		218465	45.0156	45.016
47 1,1,2-Trichloroethane	97	7.480	7.479 (1.294)		122222	42.1622	42.162
48 Chlorodibromomethane	129	7.626	7.619 (0.923)		165265	42.0008	42.001
49 1,3-Dichloropropane	76	7.705	7.705 (0.933)		203359	41.1269	41.127
50 1,2-Dibromoethane	107	7.814	7.814 (1.351)		125623	42.8815	42.882
51 2-Hexanone	43	8.045	8.045 (0.974)		376639	219.093	219.09
* 52 d5-Chlorobenzene	117	8.258	8.258 (1.000)		827618	50.0000	
53 Chlorobenzene	112	8.270	8.270 (1.001)		502058	42.5763	42.576
54 Ethyl Benzene	91	8.301	8.301 (1.005)		843162	43.5663	43.566
55 1,1,1,2-Tetrachloroethane	131	8.331	8.331 (1.009)		176647	42.1378	42.138
56 m,p-xylene	106	8.435	8.435 (1.021)		681361	86.4121	86.412
57 o-Xylene	106	8.806	8.806 (1.066)		318381	42.4759	42.476
58 Styrene	104	8.854	8.854 (1.072)		520249	43.3110	43.311
59 Bromoform	173	8.867	8.867 (0.857)		108947	40.2975	40.297
60 Isopropyl Benzene	105	9.086	9.086 (0.878)		877964	44.8184	44.818
61 Cyclohexanone	55	9.645	9.639 (1.168)		1615		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335 (1.130)		353374	49.8749	49.875 (R)
63 Bromobenzene	156	9.420	9.420 (0.910)		209537	41.5283	41.528
64 N-Propyl Benzene	91	9.457	9.457 (0.914)		999203	45.0016	45.002
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530 (0.921)		146480	41.5504	41.550
66 2-Chloro Toluene	91	9.591	9.590 (0.927)		553417	43.7108	43.711
67 1,3,5-Trimethyl Benzene	105	9.639	9.639 (0.931)		710348	43.9915	43.991
68 1,2,3-Trichloropropane	110	9.645	9.645 (0.932)		50505	41.2782	41.278
69 Trans-1,4-Dichloro 2-Butene	53	9.688	9.688 (0.936)		41044	42.6218	42.622
70 4-Chloro Toluene	91	9.743	9.743 (0.941)		573664	43.7100	43.710
71 T-Butyl Benzene	119	9.925	9.925 (0.959)		652361	43.5877	43.588
72 1,2,4-Trimethylbenzene	105	9.992	9.992 (0.965)		694891	44.1616	44.162
73 S-Butyl Benzene	105	10.089	10.089 (0.975)		966429	44.4614	44.461
74 4-Isopropyl Toluene	119	10.229	10.229 (0.988)		846915	45.4272	45.427
75 1,3-Dichlorobenzene	146	10.278	10.278 (0.993)		425319	42.6170	42.617
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351 (1.000)		459292	50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.363 (1.001)		414765	42.2379	42.238
78 N-Butyl Benzene	91	10.619	10.619 (1.026)		742627	45.6858	45.686
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746 (1.038)		405139	50.5781	50.578 (R)
80 1,2-Dichlorobenzene	146	10.753	10.752 (1.039)		373184	41.4098	41.410
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519 (1.113)		27164	41.5741	41.574
82 Hexachloro 1,3-Butadiene	225	12.152	12.152 (1.174)		167104	45.5602	45.560
83 1,2,4-Trichlorobenzene	180	12.170	12.170 (1.176)		271957	44.0186	44.019
84 Naphthalene	128	12.492	12.492 (1.207)		554266	43.8359	43.836
85 1,2,3-Trichlorobenzene	180	12.669	12.669 (1.224)		241194	43.1398	43.140

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121904A.D Calibration Time: 12:25
 Lab Smp Id: bhg0316-BSD1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	407650	0.92
35 1,4-Difluorobenze	717664	358832	1435328	813111	13.30
52 d5-Chlorobenzene	696563	348282	1393126	827618	18.81
76 d4-1,4-Dichlorobe	380778	190389	761556	459292	20.62

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: bhg0316-BSD1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	40.899	81.80	
2 Chloromethane	50.000	46.751	93.50	
3 Vinyl Chloride	50.000	48.638	97.28	
4 Bromomethane	50.000	51.938	103.88	
5 Chloroethane	50.000	51.568	103.14	
6 Trichlorofluoromet	50.000	48.437	96.87	
12 Acrolein	250.00	231.01	92.41	
9 112Trichloro122Tri	50.000	51.352	102.70	
14 Acetone	250.00	240.12	96.05	
7 1,1-Dichloroethene	50.000	49.138	98.28	
11 Bromoethane	50.000	47.267	94.53	
10 Iodomethane	50.000	45.692	91.38	
13 Methylene Chloride	50.000	45.714	91.43	
8 Carbon Disulfide	50.000	49.832	99.66	
18 Acrylonitrile	50.000	47.050	94.10	
15 Trans-1,2-Dichloro	50.000	49.505	99.01	
19 Vinyl Acetate	50.000	49.531	99.06	
17 1,1-Dichloroethane	50.000	49.477	98.95	
29 2-Butanone	250.00	259.54	103.82	
22 2,2-Dichloropropan	50.000	52.445	104.89	
20 Cis-1,2-Dichloroet	50.000	50.101	100.20	
24 Chloroform	50.000	49.203	98.41	
23 Bromochloromethane	50.000	47.478	94.96	
26 1,1,1-Trichloroeth	50.000	50.802	101.60	
28 1,1-Dichloropropen	50.000	49.709	99.42	
25 Carbon Tetrachlori	50.000	46.728	93.46	
33 1,2-Dichloroethane	50.000	42.354	84.71	
30 Benzene	50.000	45.531	91.06	
34 Trichloroethene	50.000	45.957	91.91	
38 1,2-Dichloropropan	50.000	45.223	90.45	
39 Bromodichlorometha	50.000	45.111	90.22	
172 2-Pentanone	250.00	235.36	94.14	
37 Dibromomethane	50.000	43.681	87.36	
40 2-Chloroethyl Viny	50.000	43.513	87.03	
45 4-Methyl-2-Pentano	250.00	231.00	92.40	
41 Cis 1,3-dichloropr	50.000	45.416	90.83	
43 Toluene	50.000	44.599	89.20	
46 Trans 1,3-Dichloro	50.000	45.016	90.03	
51 2-Hexanone	250.00	219.09	87.64	
47 1,1,2-Trichloroeth	50.000	42.162	84.32	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	41.127	82.25	
44 Tetrachloroethene	50.000	43.438	86.88	
48 Chlorodibromometha	50.000	42.001	84.00	
50 1,2-Dibromoethane	50.000	42.882	85.76	
53 Chlorobenzene	50.000	42.576	85.15	
55 1,1,1,2-Tetrachlor	50.000	42.138	84.28	
54 Ethyl Benzene	50.000	43.566	87.13	
56 m,p-xylene	100.00	86.412	86.41	
57 o-Xylene	50.000	42.476	84.95	
58 Styrene	50.000	43.311	86.62	
60 Isopropyl Benzene	50.000	44.818	89.64	
59 Bromoform	50.000	40.297	80.59	
65 1,1,2,2-Tetrachlor	50.000	41.550	83.10	
68 1,2,3-Trichloropro	50.000	41.278	82.56	
69 Trans-1,4-Dichloro	50.000	42.622	85.24	
64 N-Propyl Benzene	50.000	45.002	90.00	
63 Bromobenzene	50.000	41.528	83.06	
67 1,3,5-Trimethyl Be	50.000	43.991	87.98	
66 2-Chloro Toluene	50.000	43.711	87.42	
70 4-Chloro Toluene	50.000	43.710	87.42	
71 T-Butyl Benzene	50.000	43.588	87.18	
72 1,2,4-Trimethylben	50.000	44.162	88.32	
73 S-Butyl Benzene	50.000	44.461	88.92	
74 4-Isopropyl Toluen	50.000	45.427	90.85	
75 1,3-Dichlorobenzen	50.000	42.617	85.23	
77 1,4-Dichlorobenzen	50.000	42.238	84.48	
78 N-Butyl Benzene	50.000	45.686	91.37	
80 1,2-Dichlorobenzen	50.000	41.410	82.82	
81 1,2-Dibromo 3-Chlo	50.000	41.574	83.15	
83 1,2,4-Trichloroben	50.000	44.019	88.04	
82 Hexachloro 1,3-But	50.000	45.560	91.12	
84 Naphthalene	50.000	43.836	87.67	
85 1,2,3-Trichloroben	50.000	43.140	86.28	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	57.797	115.59	
\$ 32 d4-1,2-Dichloroeth	50.000	57.299	114.60	
\$ 42 d8-Toluene	50.000	51.067	102.13	
\$ 62 4-Bromofluorobenze	50.000	49.875	99.75	
\$ 79 d4-1,2-Dichloroben	50.000	50.578	101.16	

REVIEW SUMMARY FOR FILE - NT507121904A.D

Lab ID: bhg0316-BSD1
 nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 13:05

RT	CO-ELUTION COMPOUNDS
3.483	n-Hexane and Methyl tert butyl ether
9.646	Cyclohexanone and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/16/19 14:57

Batch: BHG0391

Laboratory ID: BHG0391-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Chloromethane	50.0	44.6		89.2	64 - 132
Vinyl Chloride	50.0	46.5		93.0	74 - 135
Bromomethane	50.0	50.0		100	53 - 144
Chloroethane	50.0	49.5		98.9	55 - 149
Trichlorofluoromethane	50.0	47.5		95.0	61 - 164
Acrolein	250	233		93.4	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	49.5		99.0	74 - 143
Acetone	250	215		86.0	48 - 137
1,1-Dichloroethene	50.0	47.2		94.4	77 - 134
Bromoethane	50.0	45.7		91.3	65 - 145
Iodomethane	50.0	43.7		87.3	31 - 162
Methylene Chloride	50.0	45.2		90.3	69 - 129
Acrylonitrile	50.0	44.5		89.0	69 - 134
Carbon Disulfide	50.0	47.8		95.6	71 - 137
trans-1,2-Dichloroethene	50.0	48.5		97.0	79 - 130
Vinyl Acetate	50.0	50.2		100	66 - 141
1,1-Dichloroethane	50.0	49.5		99.0	80 - 126
2-Butanone	250	244		97.6	70 - 132
2,2-Dichloropropane	50.0	53.1		106	77 - 138
cis-1,2-Dichloroethene	50.0	50.8		102	80 - 125
Chloroform	50.0	51.3		103	80 - 126
Bromochloromethane	50.0	49.0		98.1	80 - 129
1,1,1-Trichloroethane	50.0	51.9		104	78 - 133
1,1-Dichloropropene	50.0	48.9		97.8	79 - 120
Carbon tetrachloride	50.0	46.6		93.2	71 - 129
1,2-Dichloroethane	50.0	46.1		92.2	76 - 120
Benzene	50.0	46.3		92.5	80 - 120
Trichloroethene	50.0	45.8		91.6	80 - 120
1,2-Dichloropropane	50.0	46.9		93.9	79 - 120
Bromodichloromethane	50.0	47.5		95.0	80 - 122
Dibromomethane	50.0	45.9		91.9	80 - 120
2-Chloroethyl vinyl ether	50.0	43.6		87.1	51 - 129
4-Methyl-2-Pentanone	250	221		88.4	73 - 121



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/16/19 14:57

Batch: BHG0391

Laboratory ID: BHG0391-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
cis-1,3-Dichloropropene	50.0	48.5		97.1	80 - 120
Toluene	50.0	45.5		91.0	75 - 120
trans-1,3-Dichloropropene	50.0	48.2		96.3	80 - 124
2-Hexanone	250	219		87.8	68 - 122
1,1,2-Trichloroethane	50.0	43.3		86.6	79 - 120
1,3-Dichloropropane	50.0	45.2		90.3	78 - 120
Tetrachloroethene	50.0	44.2		88.4	74 - 124
Dibromochloromethane	50.0	46.1		92.3	74 - 125
1,2-Dibromoethane	50.0	44.2		88.4	80 - 120
Chlorobenzene	50.0	44.6		89.3	78 - 120
Ethylbenzene	50.0	45.0		90.1	80 - 125
1,1,1,2-Tetrachloroethane	50.0	45.9		91.8	80 - 120
m,p-Xylene	100	89.6		89.6	76 - 121
o-Xylene	50.0	44.7		89.4	67 - 132
Xylenes, total	150	134		89.5	67 - 132
Styrene	50.0	45.2		90.4	80 - 120
Bromoform	50.0	43.9		87.7	64 - 128
1,1,2,2-Tetrachloroethane	50.0	43.8		87.5	74 - 120
1,2,3-Trichloropropane	50.0	42.2		84.4	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	47.9		95.8	65 - 125
n-Propylbenzene	50.0	47.2		94.5	72 - 124
Bromobenzene	50.0	45.3		90.5	76 - 120
Isopropyl Benzene	50.0	46.9		93.8	74 - 121
2-Chlorotoluene	50.0	47.1		94.2	75 - 120
4-Chlorotoluene	50.0	46.9		93.8	69 - 124
t-Butylbenzene	50.0	46.3		92.7	72 - 122
1,3,5-Trimethylbenzene	50.0	47.7		95.3	74 - 122
1,2,4-Trimethylbenzene	50.0	47.5		95.0	75 - 121
s-Butylbenzene	50.0	46.9		93.9	70 - 128
4-Isopropyl Toluene	50.0	48.0		96.0	75 - 125
1,3-Dichlorobenzene	50.0	45.6		91.2	75 - 120
1,4-Dichlorobenzene	50.0	45.9		91.9	73 - 120
n-Butylbenzene	50.0	48.1		96.2	73 - 130



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/16/19 14:57

Batch: BHG0391

Laboratory ID: BHG0391-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	50.0	45.5		90.9	76 - 120
1,2-Dibromo-3-chloropropane	50.0	43.1		86.1	65 - 126
1,2,4-Trichlorobenzene	50.0	48.0		96.1	66 - 140
Hexachloro-1,3-Butadiene	50.0	48.0		96.0	67 - 133
Naphthalene	50.0	44.7		89.4	69 - 125
1,2,3-Trichlorobenzene	50.0	46.7		93.5	68 - 132
Dichlorodifluoromethane	50.0	39.0	Q	77.9	67 - 142
Methyl tert-butyl Ether	50.0	48.3		96.7	79 - 127
2-Pentanone	250	220		88.0	77 - 120

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloromethane	50.0	45.7		91.4	2.50	30	64 - 132
Vinyl Chloride	50.0	47.0		94.0	0.999	30	74 - 135
Bromomethane	50.0	51.5		103	2.94	30	53 - 144
Chloroethane	50.0	50.2		100	1.46	30	55 - 149
Trichlorofluoromethane	50.0	47.4		94.8	0.168	30	61 - 164
Acrolein	250	239		95.7	2.50	30	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	51.3		103	3.65	30	74 - 143
Acetone	250	227		90.7	5.29	30	48 - 137
1,1-Dichloroethene	50.0	47.3		94.6	0.197	30	77 - 134
Bromoethane	50.0	46.8		93.5	2.35	30	65 - 145
Iodomethane	50.0	44.9		89.9	2.86	30	31 - 162
Methylene Chloride	50.0	44.0		88.0	2.56	30	69 - 129
Acrylonitrile	50.0	45.3		90.6	1.81	30	69 - 134
Carbon Disulfide	50.0	48.8		97.6	2.04	30	71 - 137
trans-1,2-Dichloroethene	50.0	49.0		98.1	1.13	30	79 - 130
Vinyl Acetate	50.0	49.2		98.4	1.98	30	66 - 141
1,1-Dichloroethane	50.0	48.9		97.8	1.28	30	80 - 126
2-Butanone	250	246		98.6	0.968	30	70 - 132
2,2-Dichloropropane	50.0	54.2		108	1.92	30	77 - 138
cis-1,2-Dichloroethene	50.0	50.6		101	0.392	30	80 - 125

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/16/19 15:46

Batch: BHG0391

Laboratory ID: BHG0391-BSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS Dup

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloroform	50.0	51.0		102	0.615	30	80 - 126
Bromochloromethane	50.0	48.0		96.0	2.09	30	80 - 129
1,1,1-Trichloroethane	50.0	52.1		104	0.399	30	78 - 133
1,1-Dichloropropene	50.0	51.6		103	5.45	30	79 - 120
Carbon tetrachloride	50.0	49.5		98.9	5.96	30	71 - 129
1,2-Dichloroethane	50.0	45.7		91.5	0.798	30	76 - 120
Benzene	50.0	47.8		95.5	3.22	30	80 - 120
Trichloroethene	50.0	47.9		95.8	4.57	30	80 - 120
1,2-Dichloropropane	50.0	46.9		93.9	0.00958	30	79 - 120
Bromodichloromethane	50.0	47.4		94.8	0.277	30	80 - 122
Dibromomethane	50.0	45.8		91.6	0.265	30	80 - 120
2-Chloroethyl vinyl ether	50.0	44.0		88.0	1.01	30	51 - 129
4-Methyl-2-Pentanone	250	224		89.5	1.25	30	73 - 121
cis-1,3-Dichloropropene	50.0	48.5		97.1	0.00248	30	80 - 120
Toluene	50.0	46.6		93.3	2.51	30	75 - 120
trans-1,3-Dichloropropene	50.0	47.6		95.3	1.06	30	80 - 124
2-Hexanone	250	232		92.7	5.49	30	68 - 122
1,1,2-Trichloroethane	50.0	44.1		88.1	1.77	30	79 - 120
1,3-Dichloropropane	50.0	45.2		90.4	0.0777	30	78 - 120
Tetrachloroethene	50.0	47.5		95.1	7.34	30	74 - 124
Dibromochloromethane	50.0	45.7		91.4	0.972	30	74 - 125
1,2-Dibromoethane	50.0	44.0		87.9	0.478	30	80 - 120
Chlorobenzene	50.0	45.4		90.9	1.77	30	78 - 120
Ethylbenzene	50.0	47.6		95.2	5.52	30	80 - 125
1,1,1,2-Tetrachloroethane	50.0	46.2		92.4	0.654	30	80 - 120
m,p-Xylene	100	93.3		93.3	4.12	30	76 - 121
o-Xylene	50.0	46.0		92.0	2.89	30	67 - 132
Xylenes, total	150	139		92.9	3.71	30	67 - 132
Styrene	50.0	46.9		93.9	3.85	30	80 - 120
Bromoform	50.0	44.2		88.3	0.654	30	64 - 128
1,1,2,2-Tetrachloroethane	50.0	43.6		87.3	0.269	30	74 - 120
1,2,3-Trichloropropane	50.0	44.2		88.5	4.76	30	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	46.5		93.0	2.97	30	65 - 125

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/16/19 15:46

Batch: BHG0391

Laboratory ID: BHG0391-BSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS Dup

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
n-Propylbenzene	50.0	49.4		98.8	4.43	30	72 - 124
Bromobenzene	50.0	45.7		91.4	0.913	30	76 - 120
Isopropyl Benzene	50.0	49.1		98.1	4.50	30	74 - 121
2-Chlorotoluene	50.0	47.3		94.5	0.396	30	75 - 120
4-Chlorotoluene	50.0	48.4		96.8	3.13	30	69 - 124
t-Butylbenzene	50.0	48.0		96.1	3.59	30	72 - 122
1,3,5-Trimethylbenzene	50.0	48.7		97.4	2.16	30	74 - 122
1,2,4-Trimethylbenzene	50.0	49.2		98.4	3.55	30	75 - 121
s-Butylbenzene	50.0	49.2		98.4	4.68	30	70 - 128
4-Isopropyl Toluene	50.0	49.9		99.7	3.83	30	75 - 125
1,3-Dichlorobenzene	50.0	47.0		94.1	3.10	30	75 - 120
1,4-Dichlorobenzene	50.0	46.5		93.0	1.25	30	73 - 120
n-Butylbenzene	50.0	50.9		102	5.69	30	73 - 130
1,2-Dichlorobenzene	50.0	46.0		91.9	1.08	30	76 - 120
1,2-Dibromo-3-chloropropane	50.0	44.3		88.6	2.86	30	65 - 126
1,2,4-Trichlorobenzene	50.0	48.9		97.8	1.84	30	66 - 140
Hexachloro-1,3-Butadiene	50.0	51.9		104	7.84	30	67 - 133
Naphthalene	50.0	45.8		91.6	2.44	30	69 - 125
1,2,3-Trichlorobenzene	50.0	47.4		94.7	1.31	30	68 - 132
Dichlorodifluoromethane	50.0	41.8	Q	83.6	7.10	30	67 - 142
Methyl tert-butyl Ether	50.0	46.9		93.9	2.93	30	79 - 127
2-Pentanone	250	228		91.1	3.43	30	77 - 120

* Indicates values outside of QC limits

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161903A.D

Date : 16-JUL-2019 14:57

Client ID:

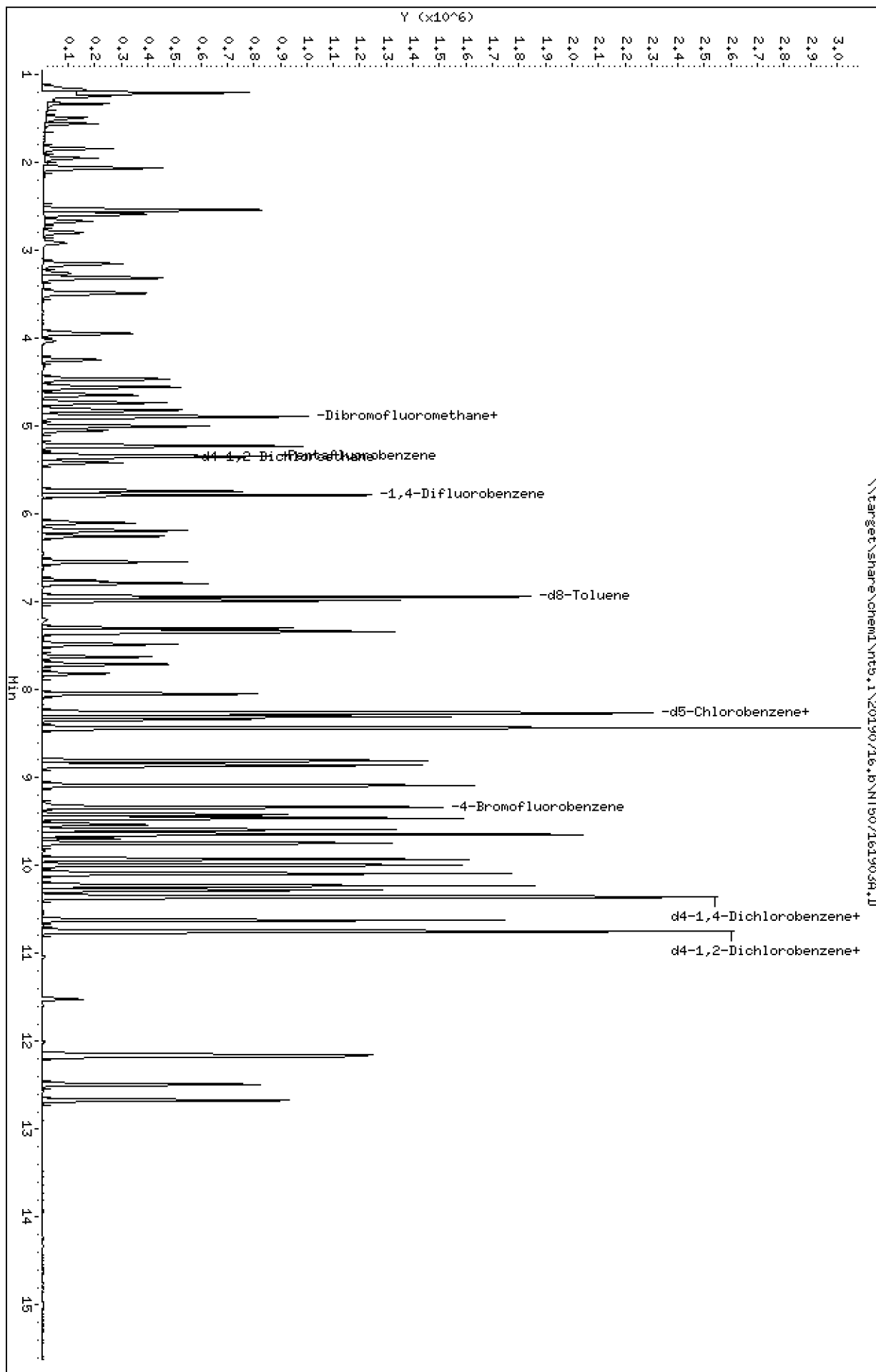
Sample Info: ICW1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

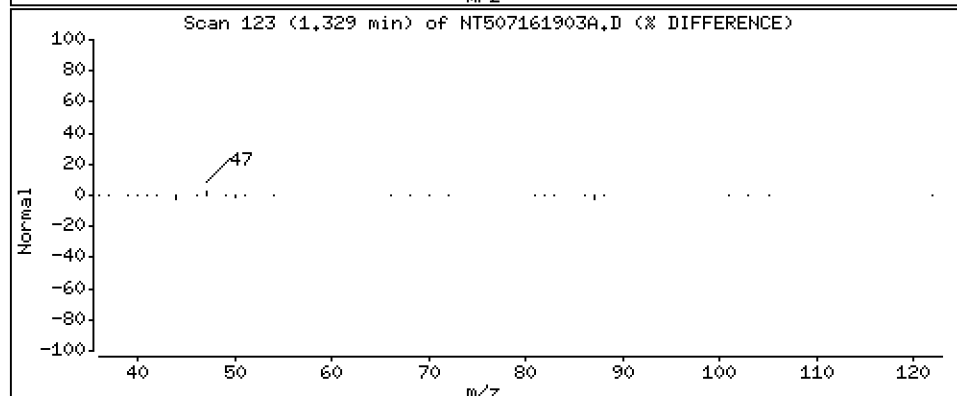
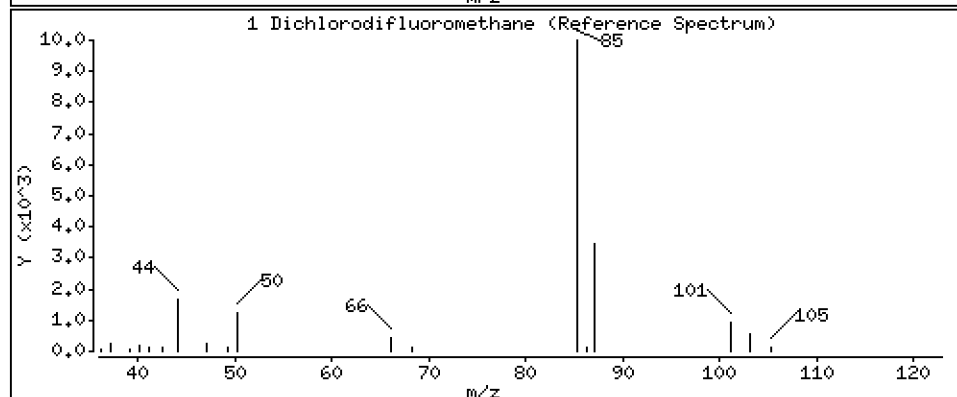
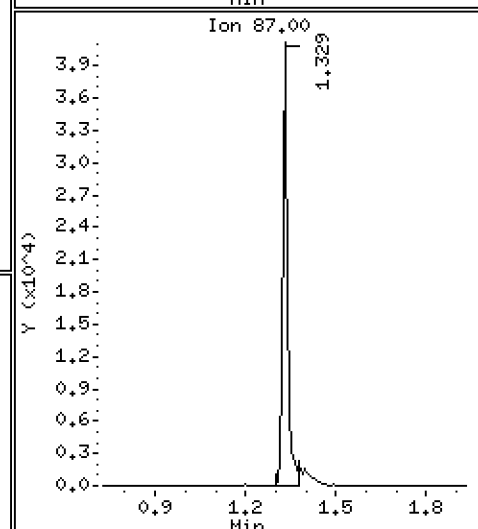
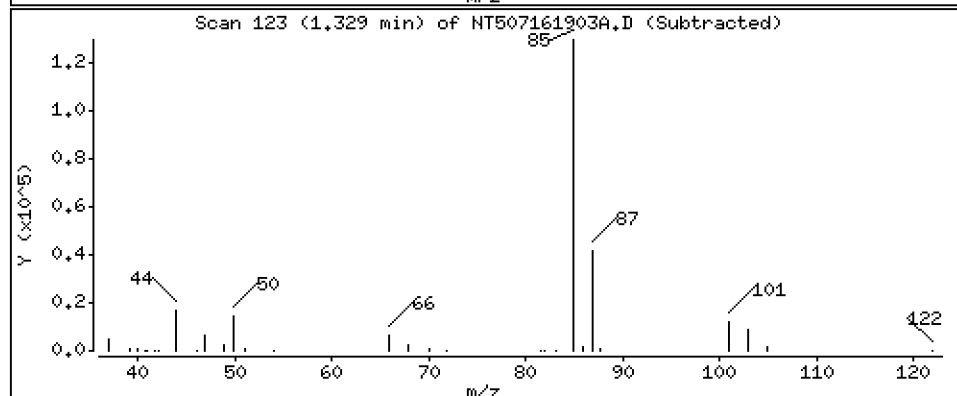
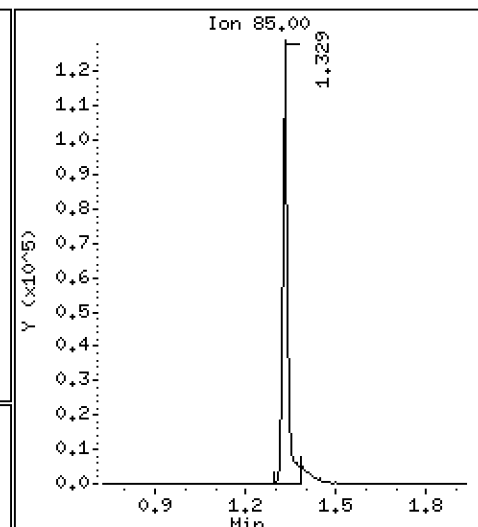
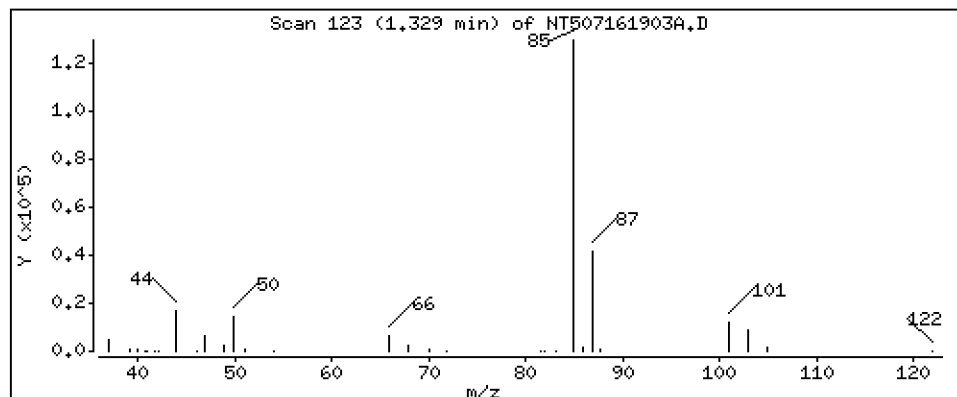
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 38,952 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

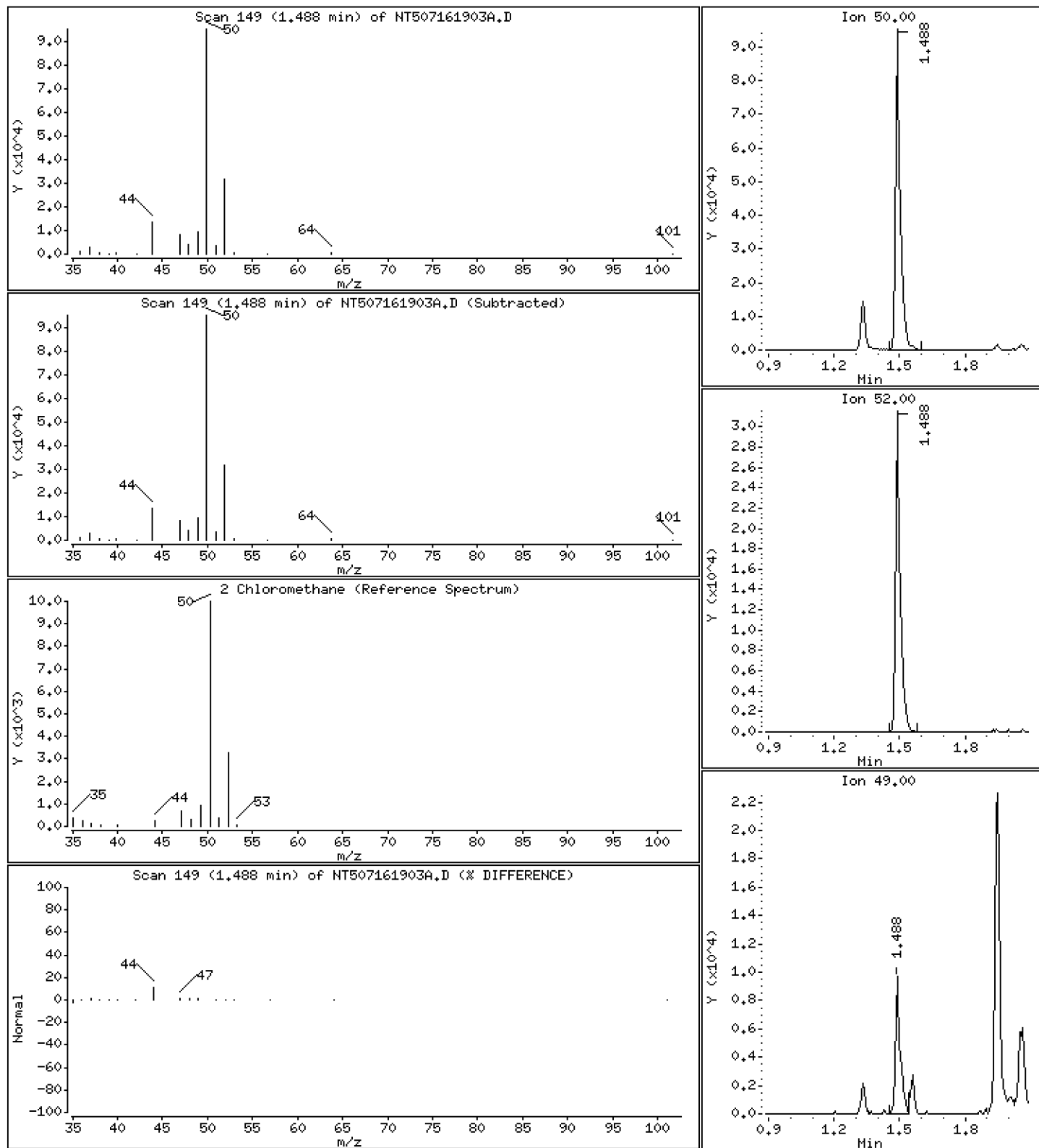
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 44,593 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

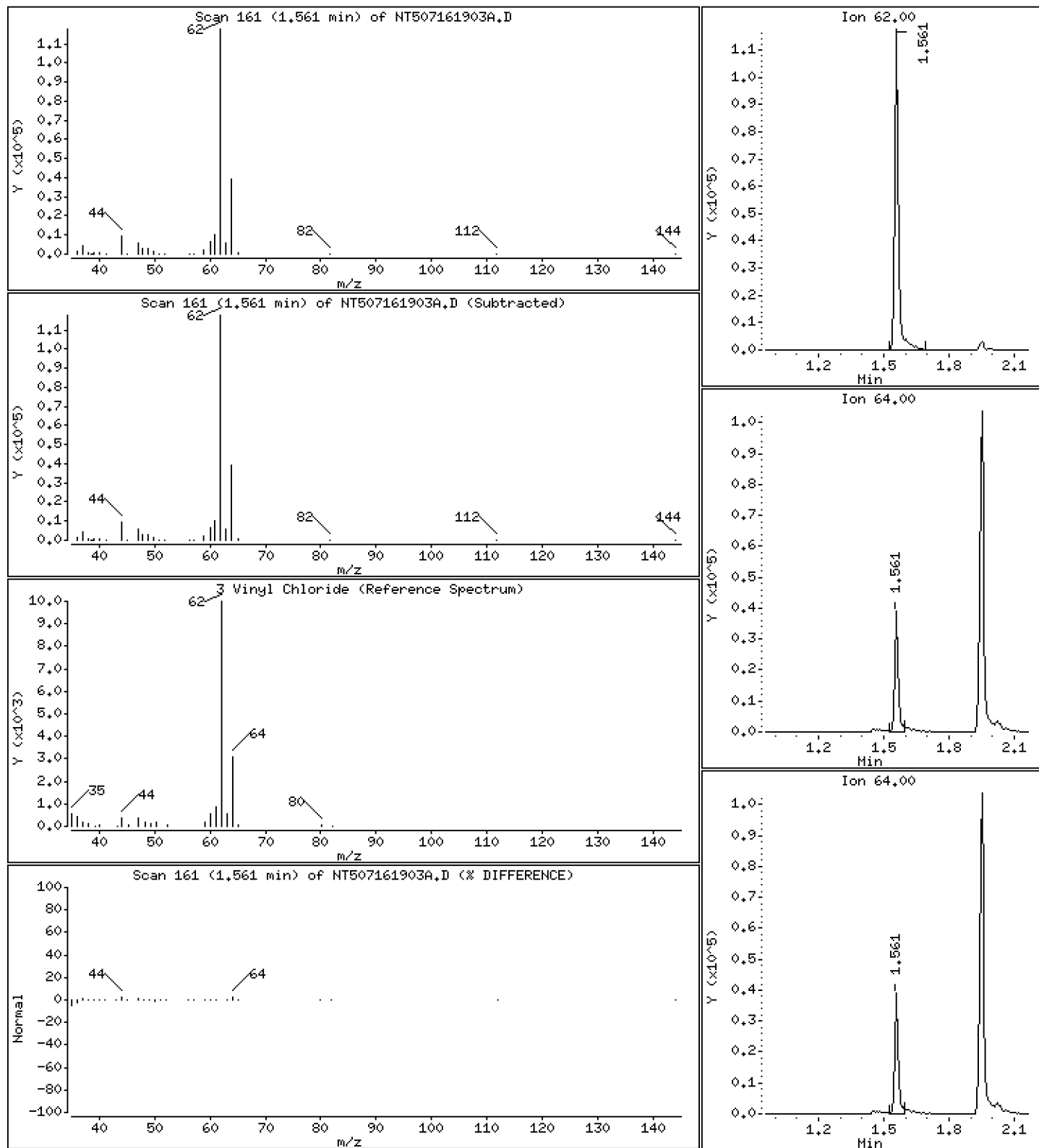
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 46,520 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

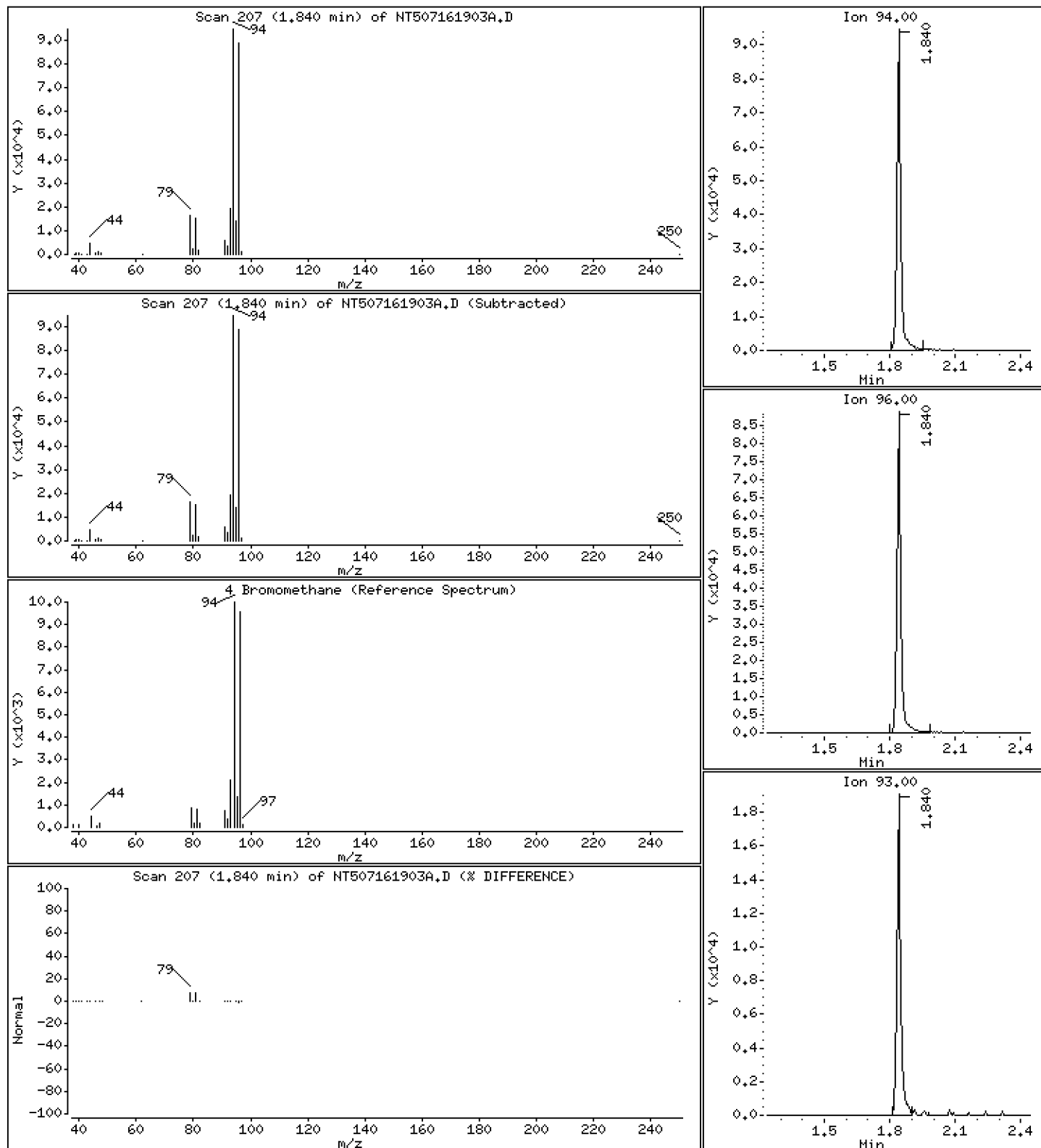
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 50.012 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

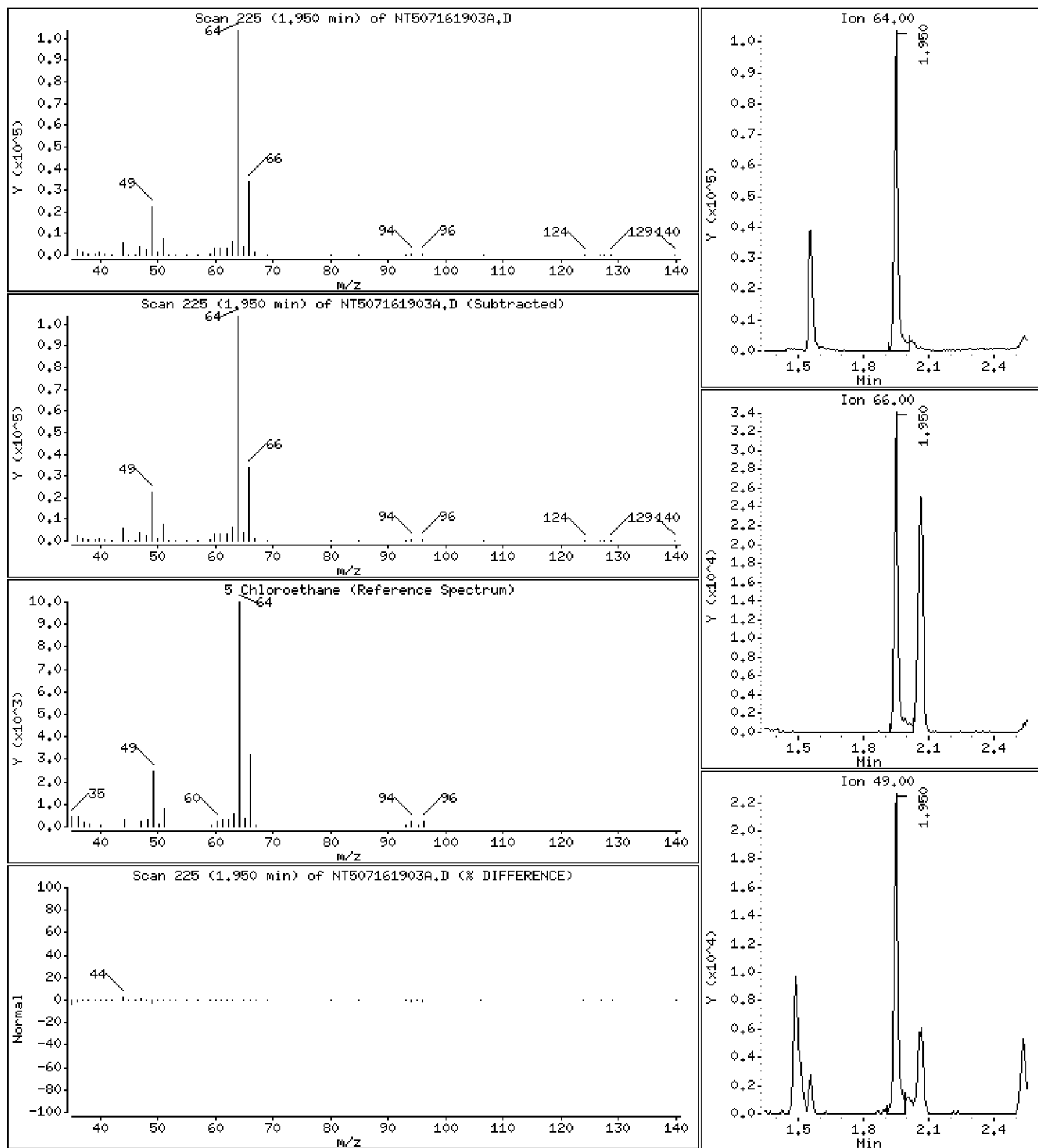
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 49.463 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

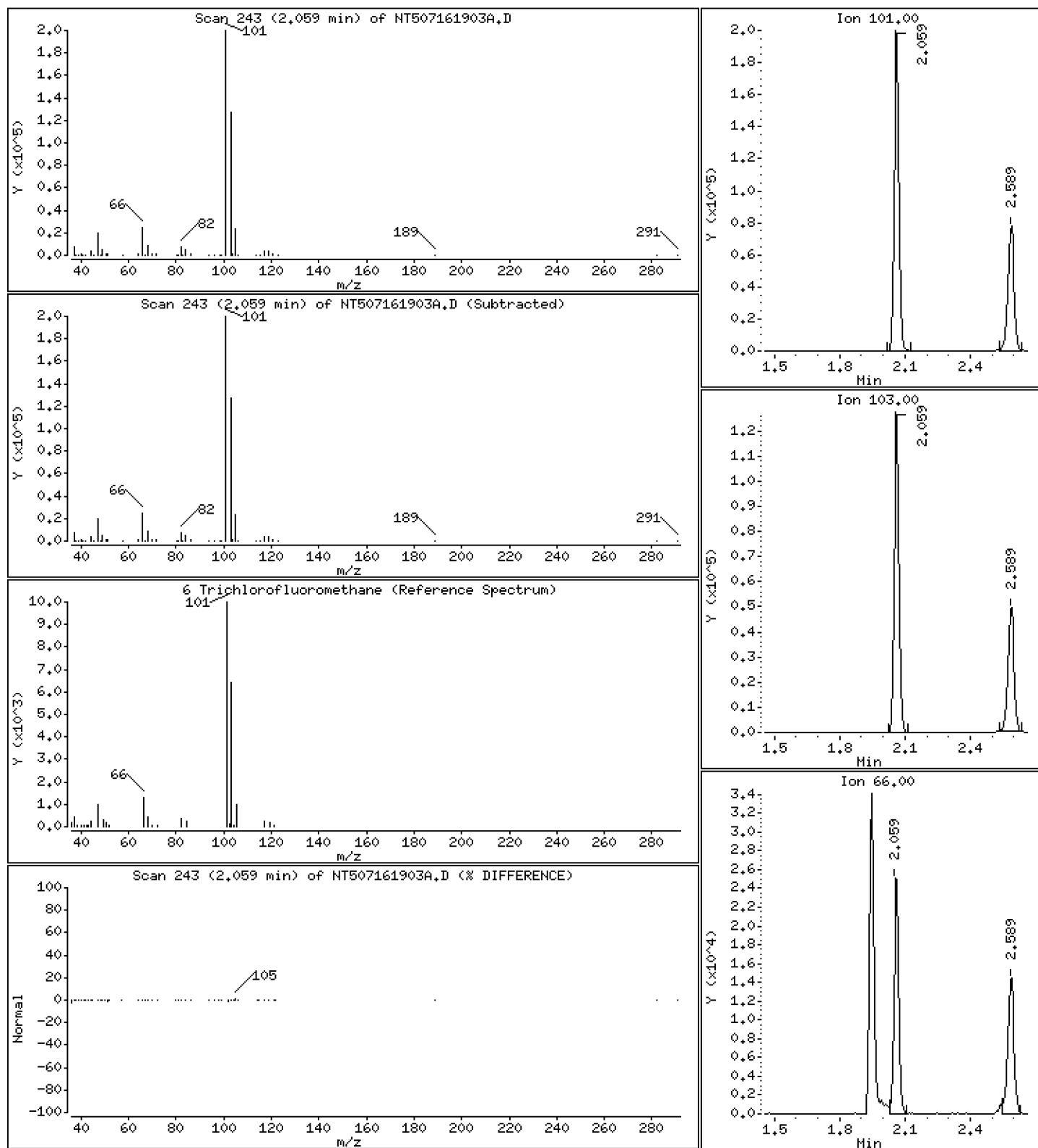
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 47,499 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

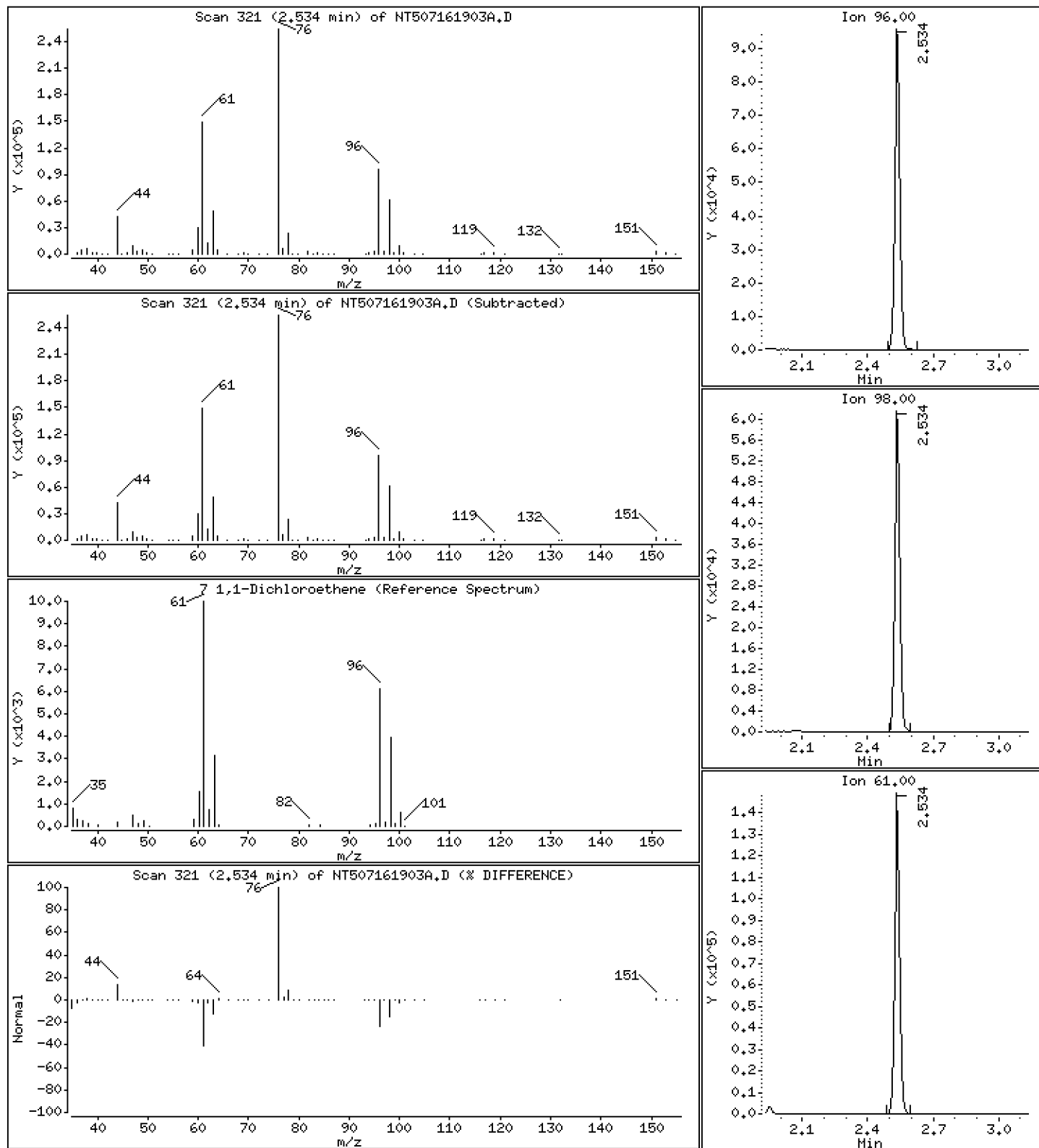
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 47,190 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

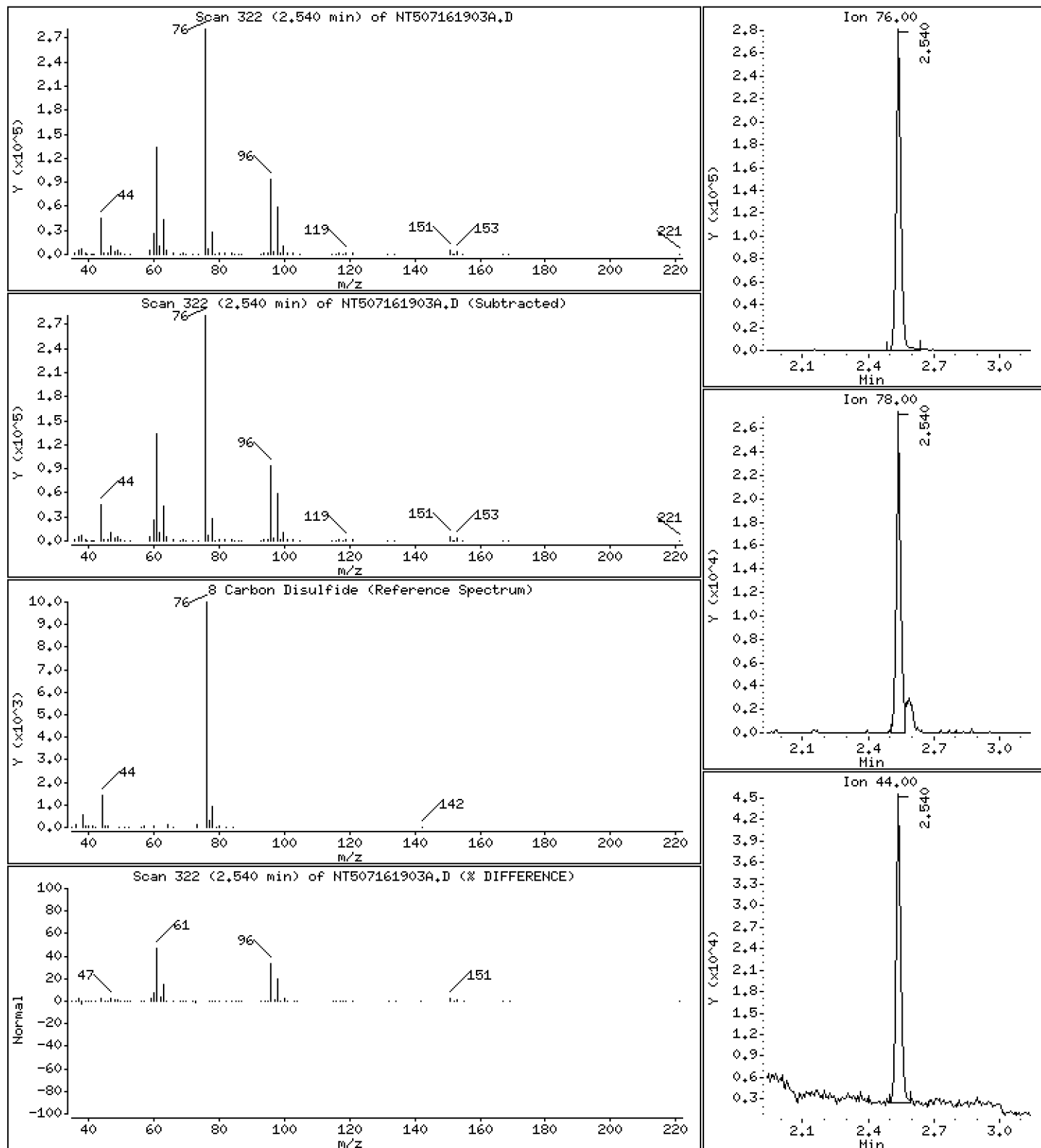
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 47,823 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

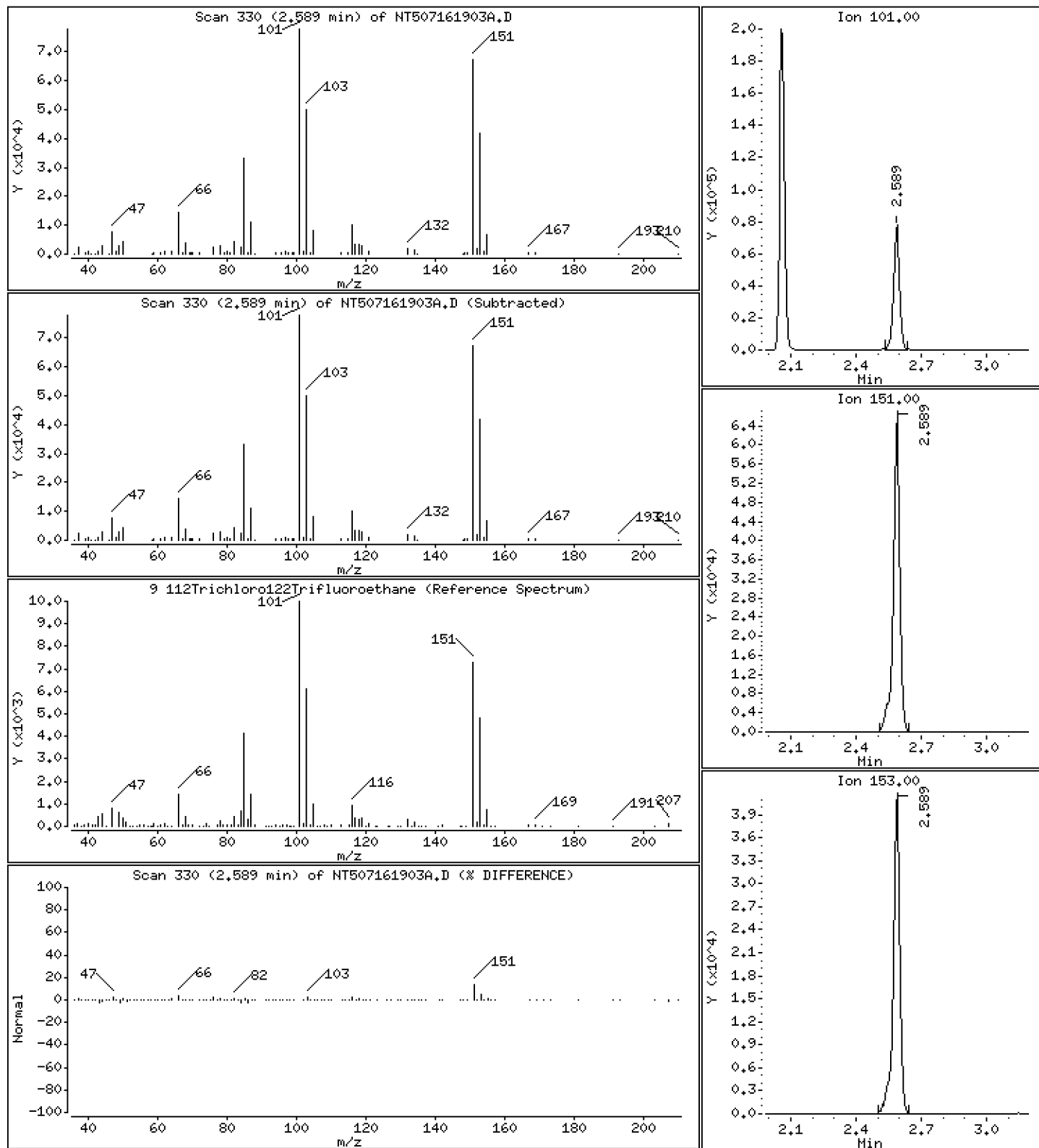
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 49,497 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

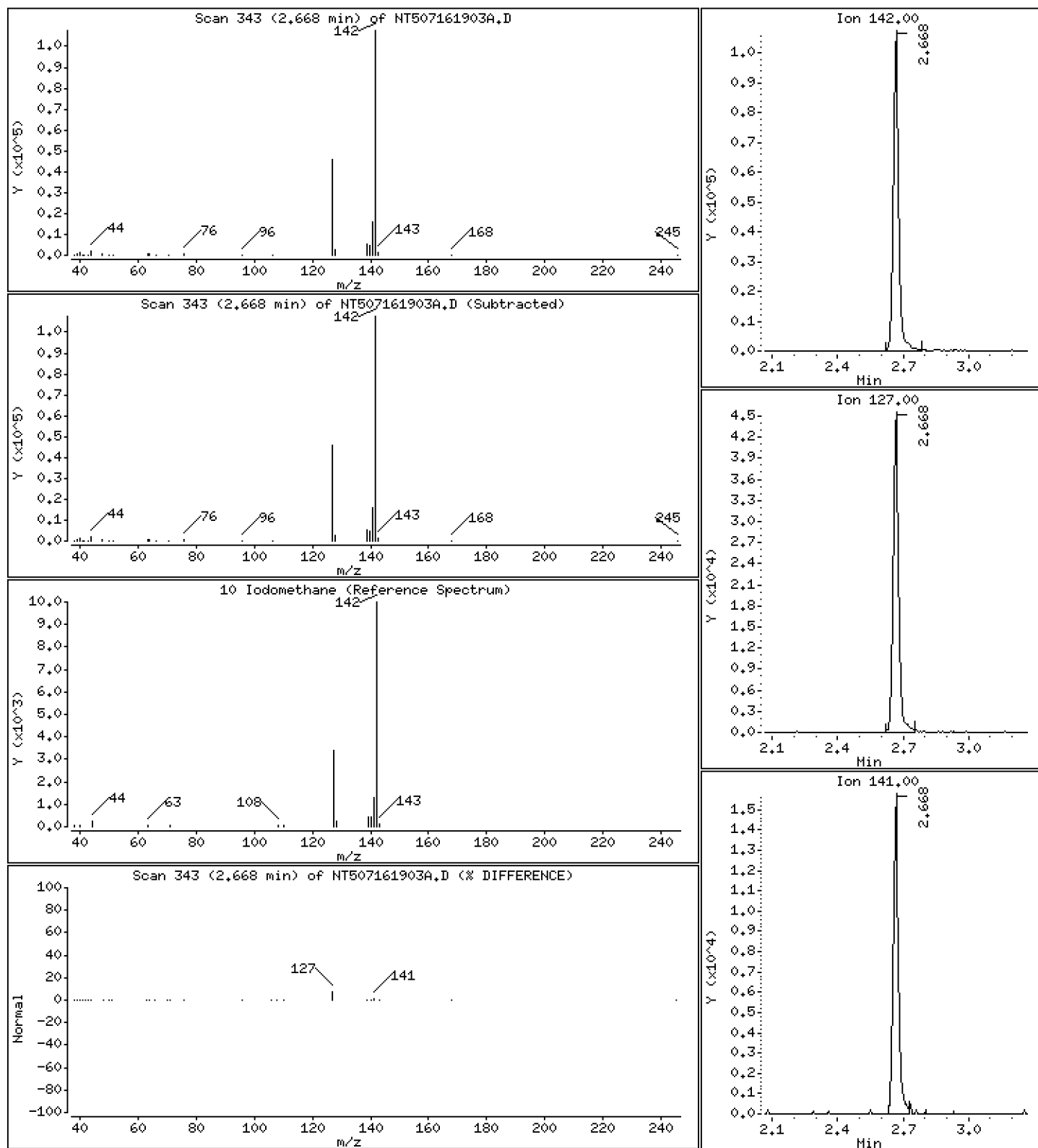
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 43,662 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

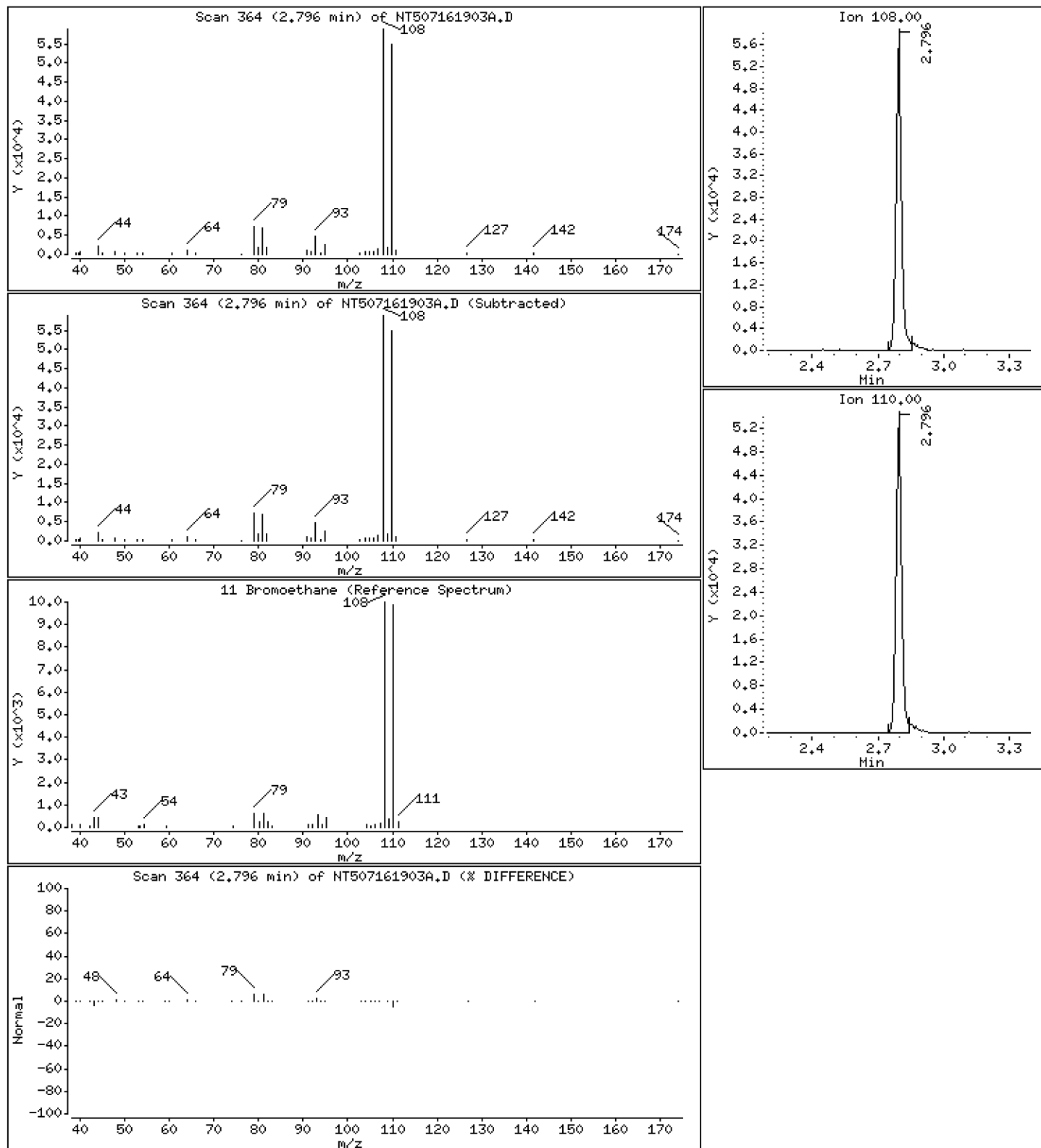
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 45.671 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

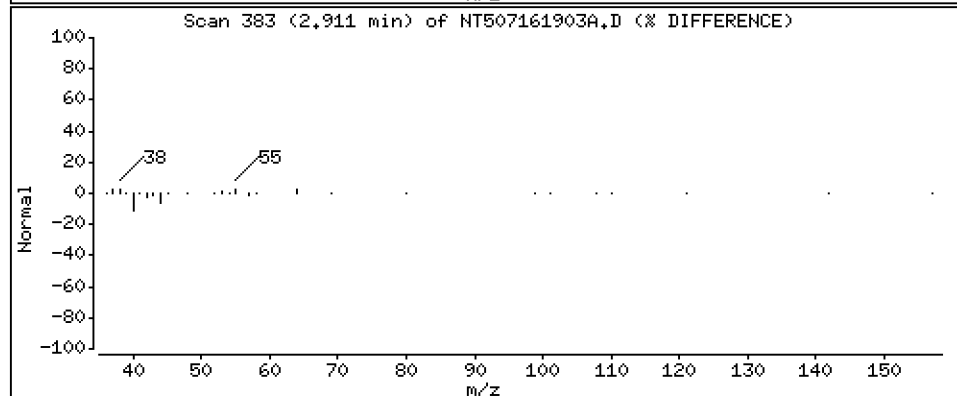
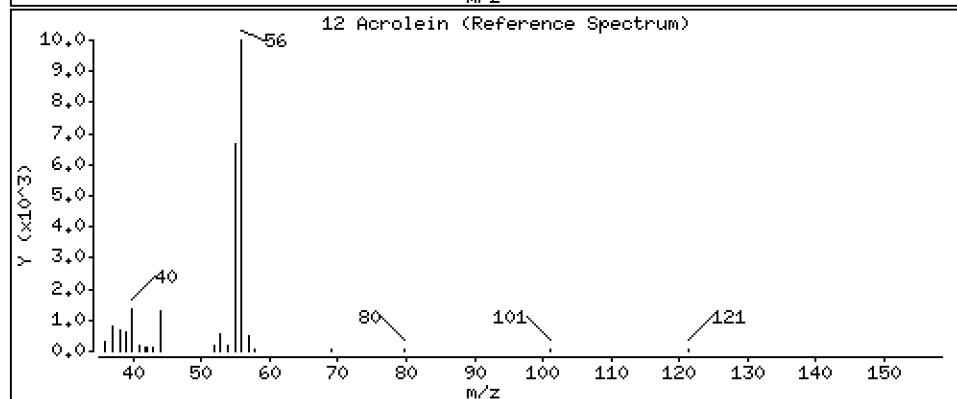
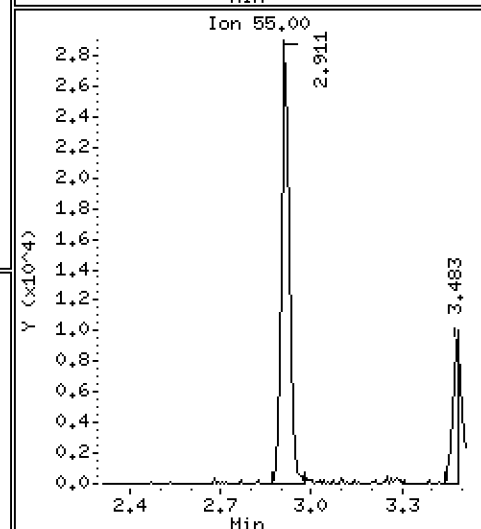
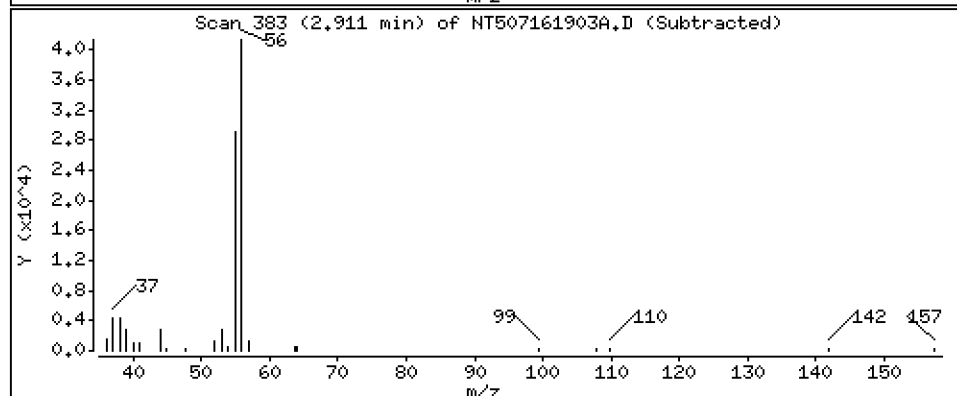
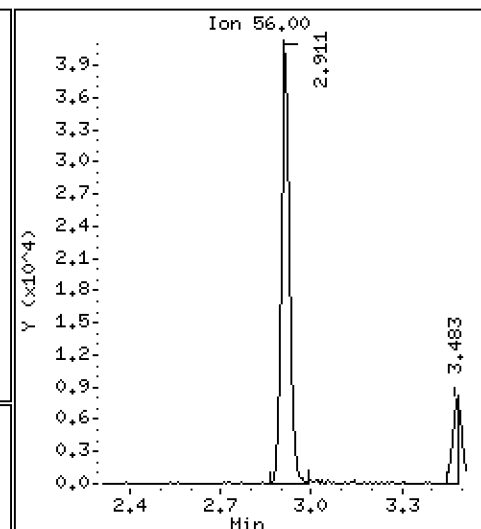
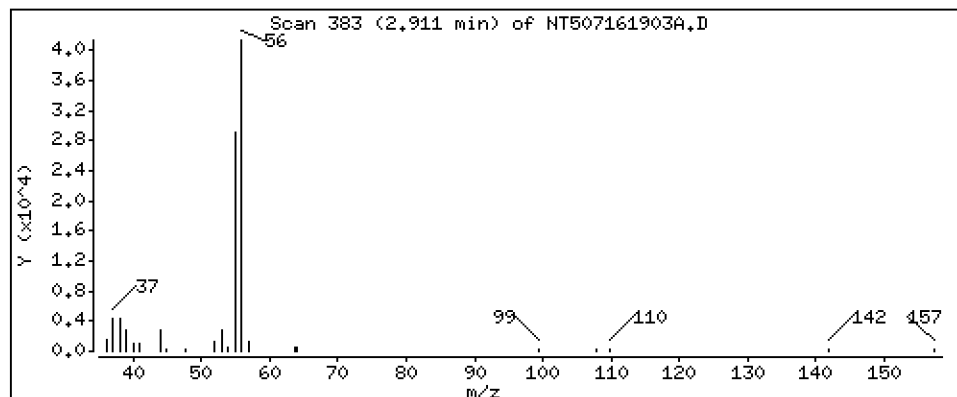
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 233.39 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

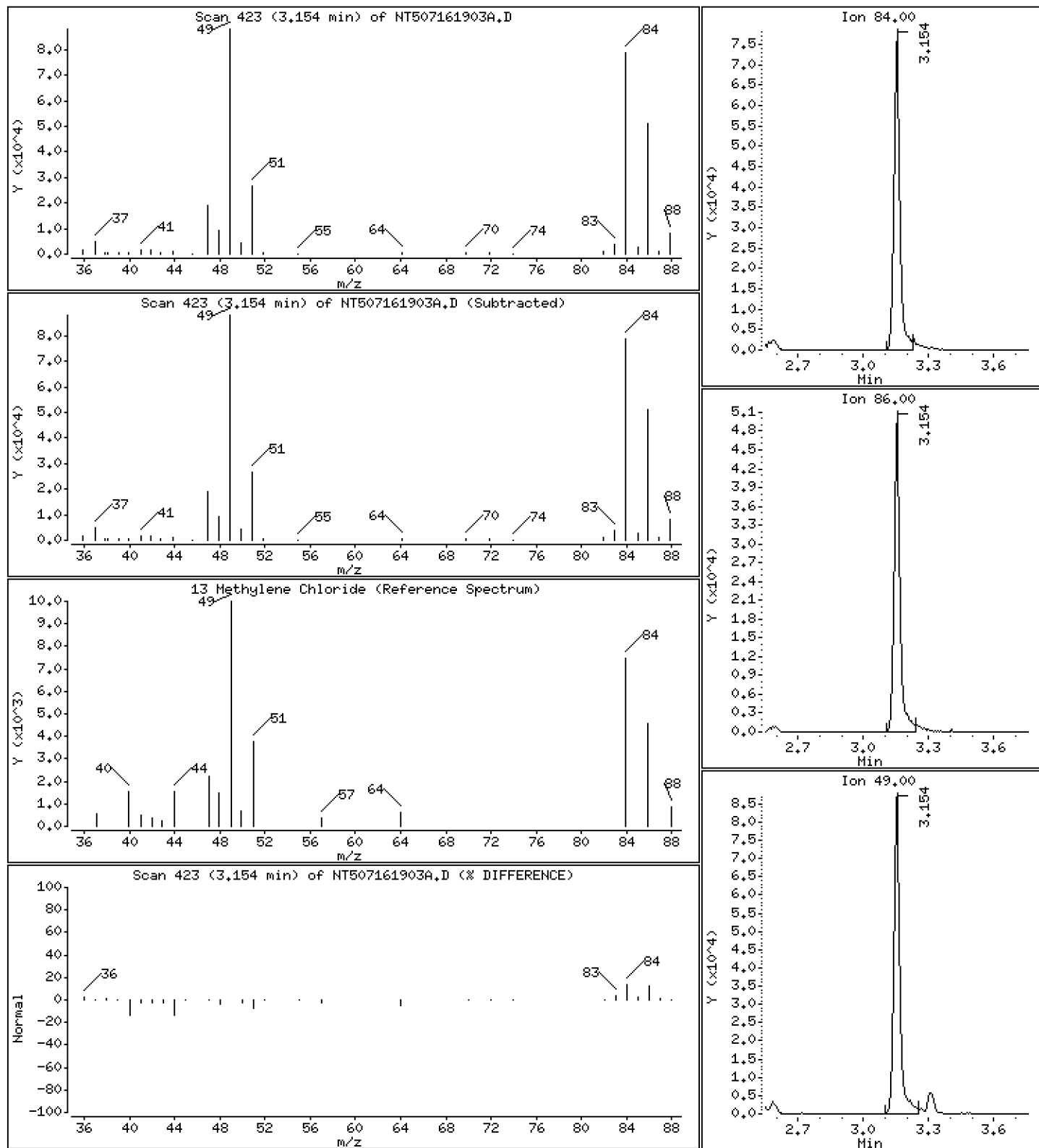
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 45,157 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

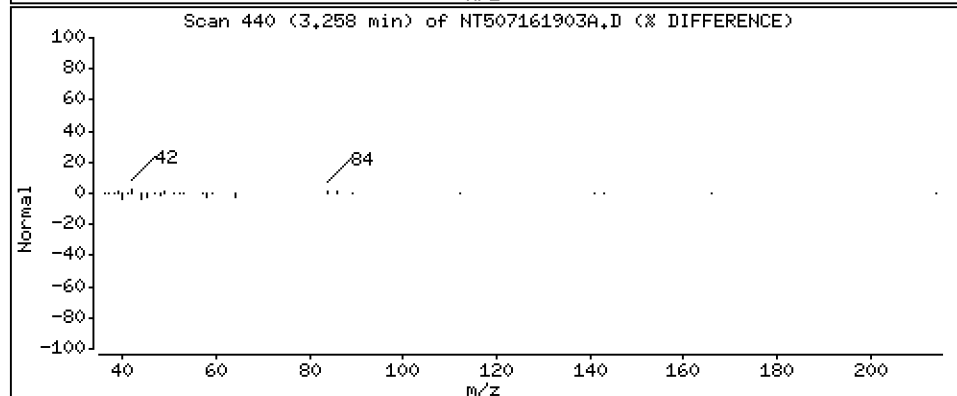
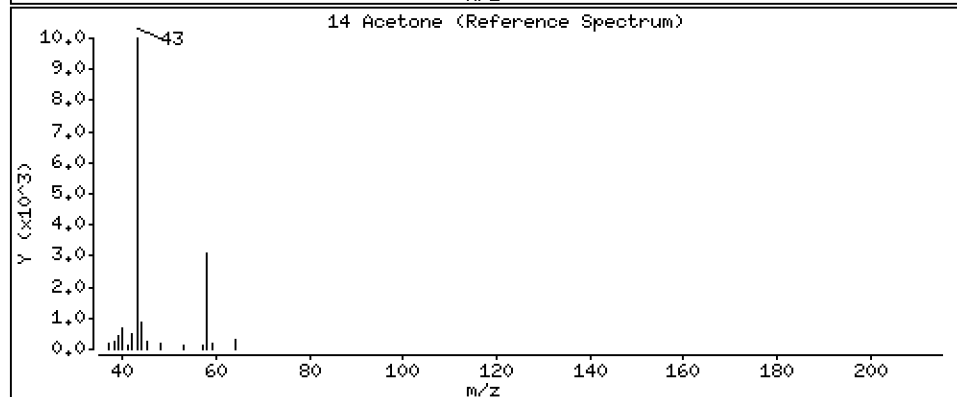
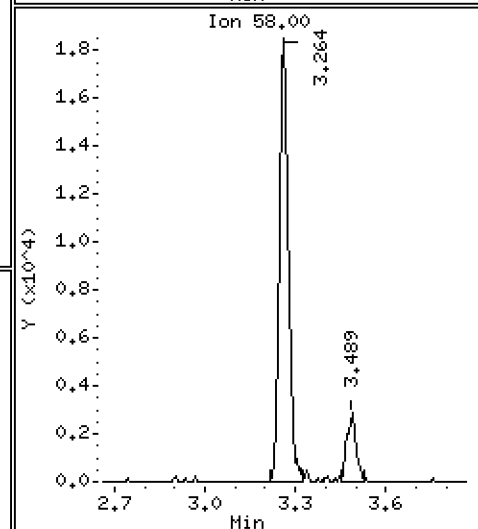
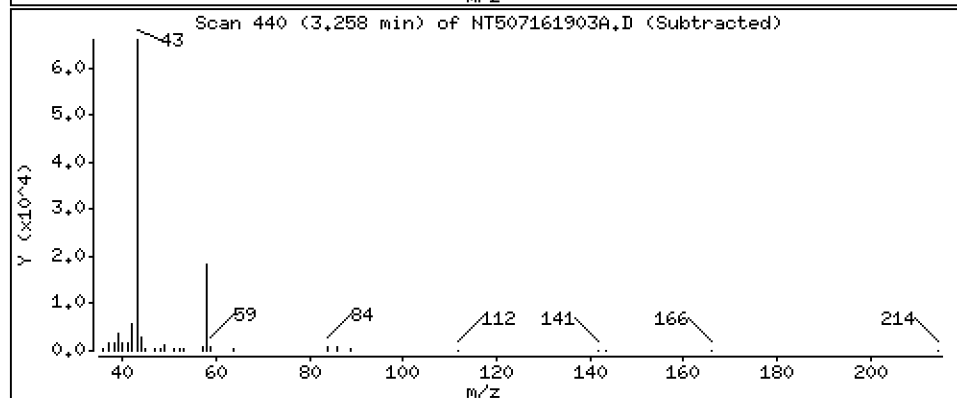
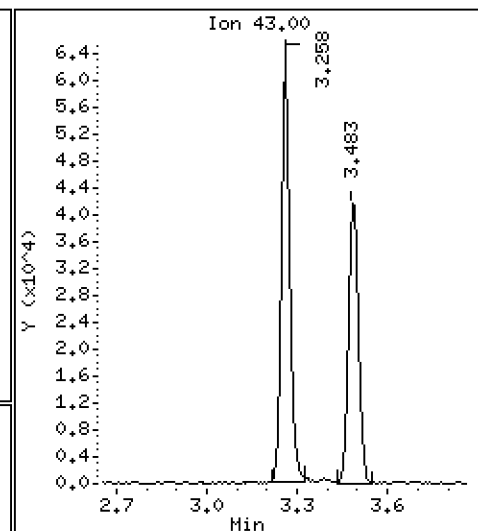
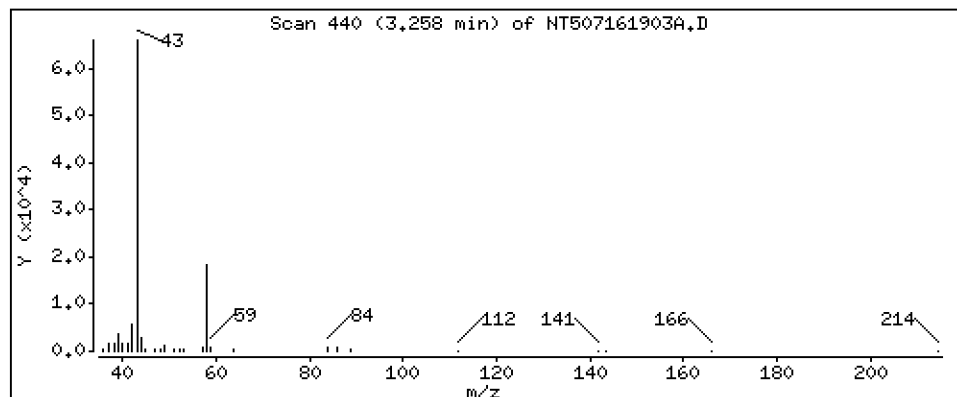
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 214.99 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

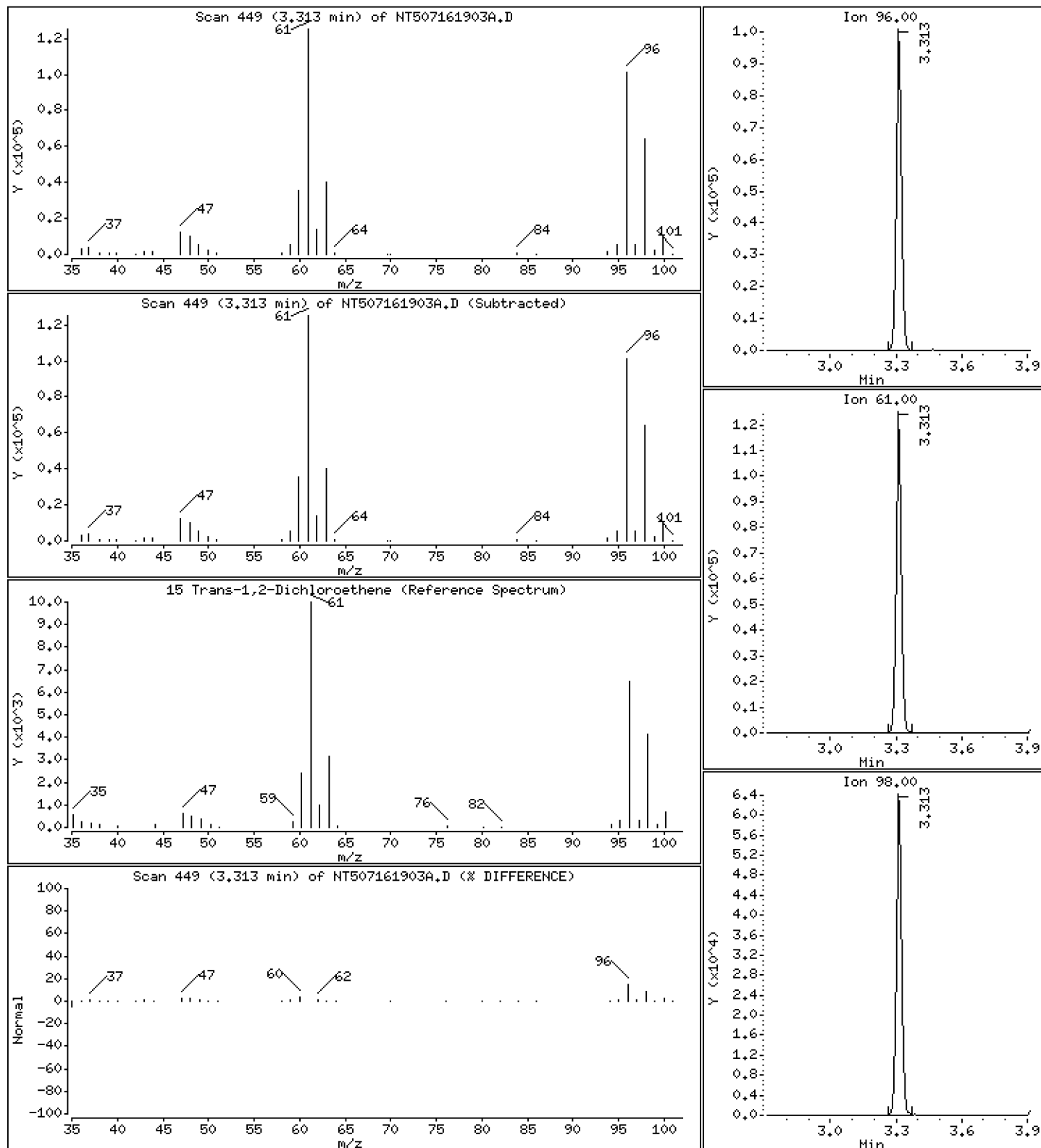
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 48,491 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

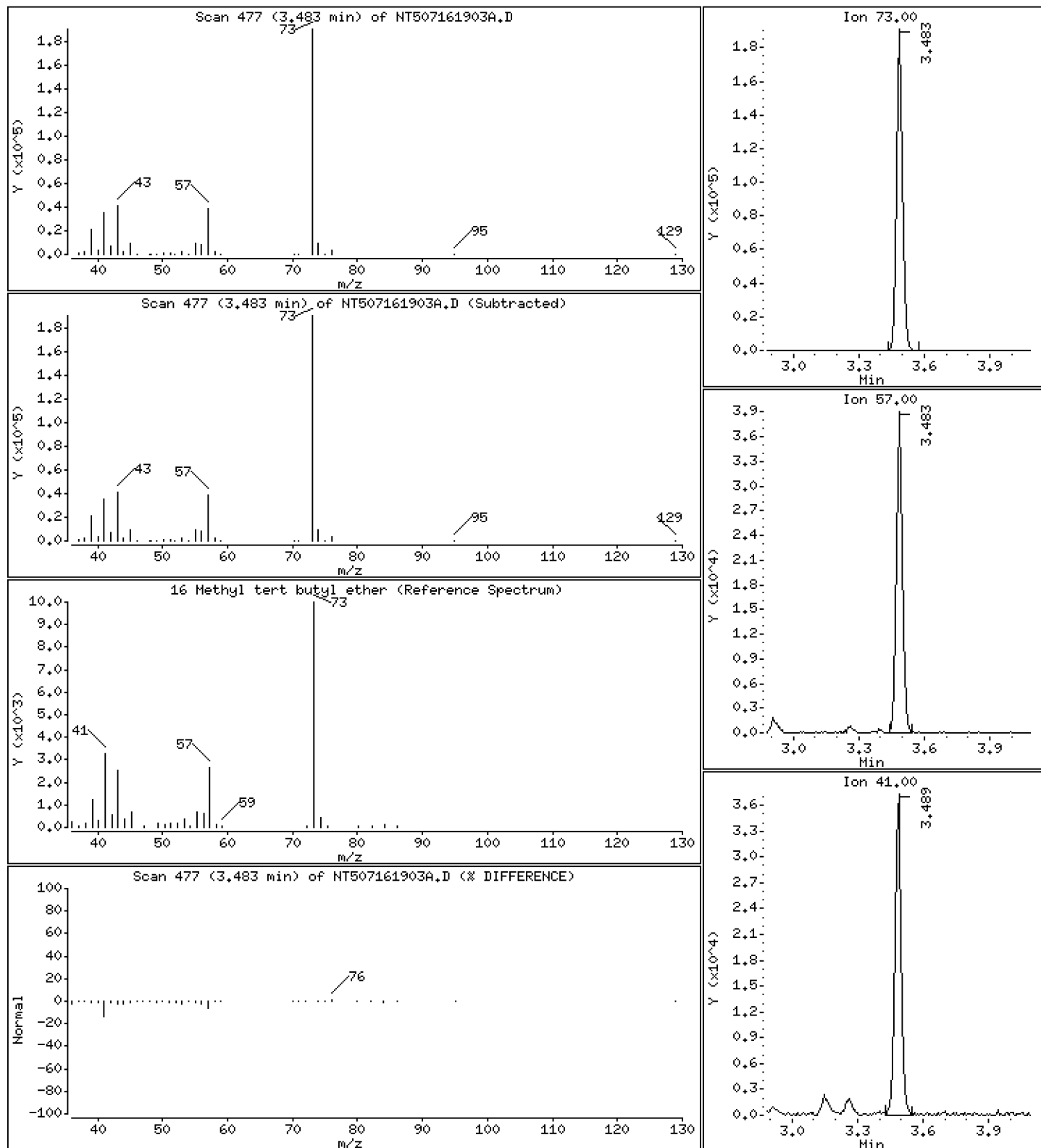
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 48,330 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

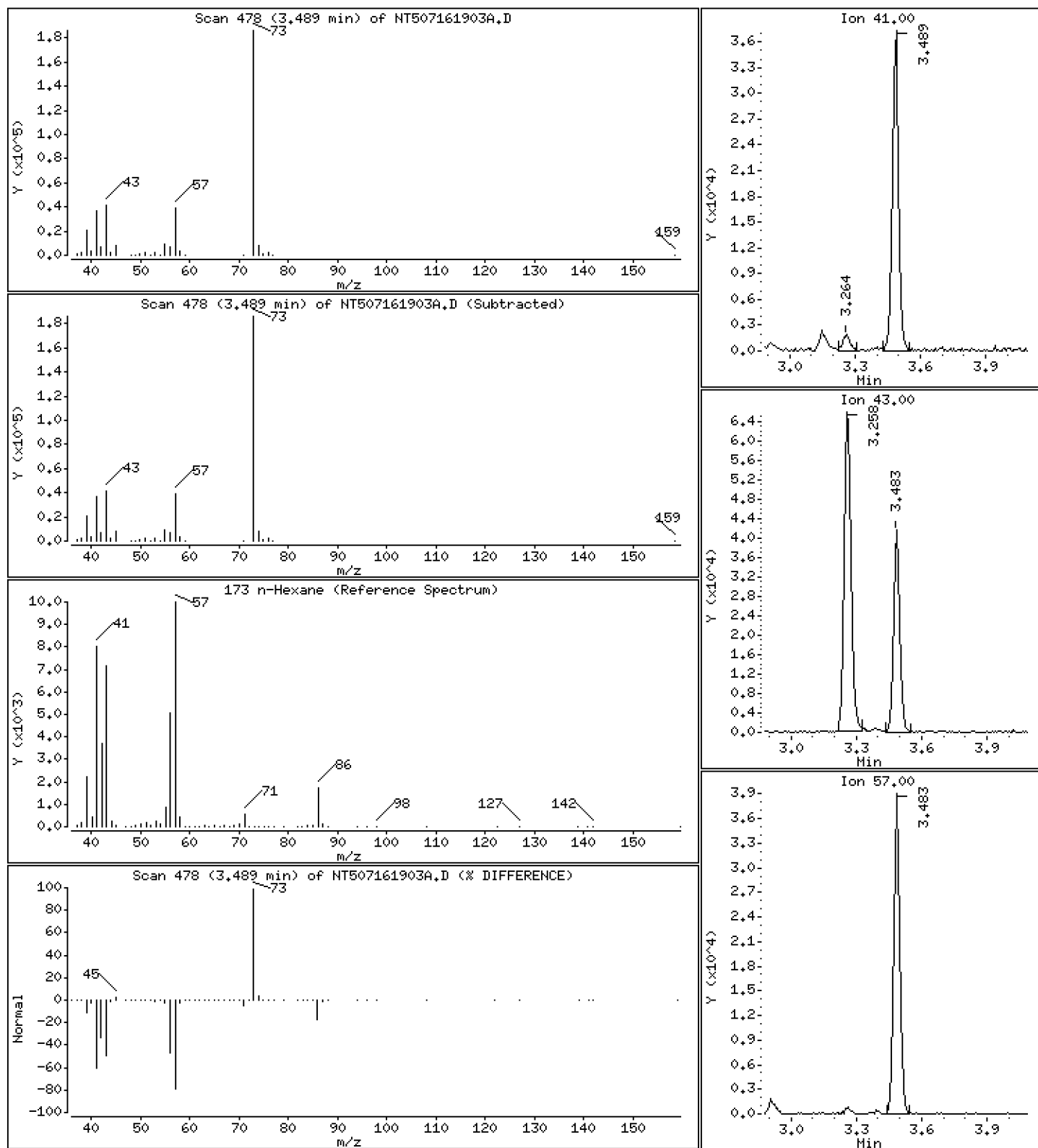
Sample Info: ICV1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

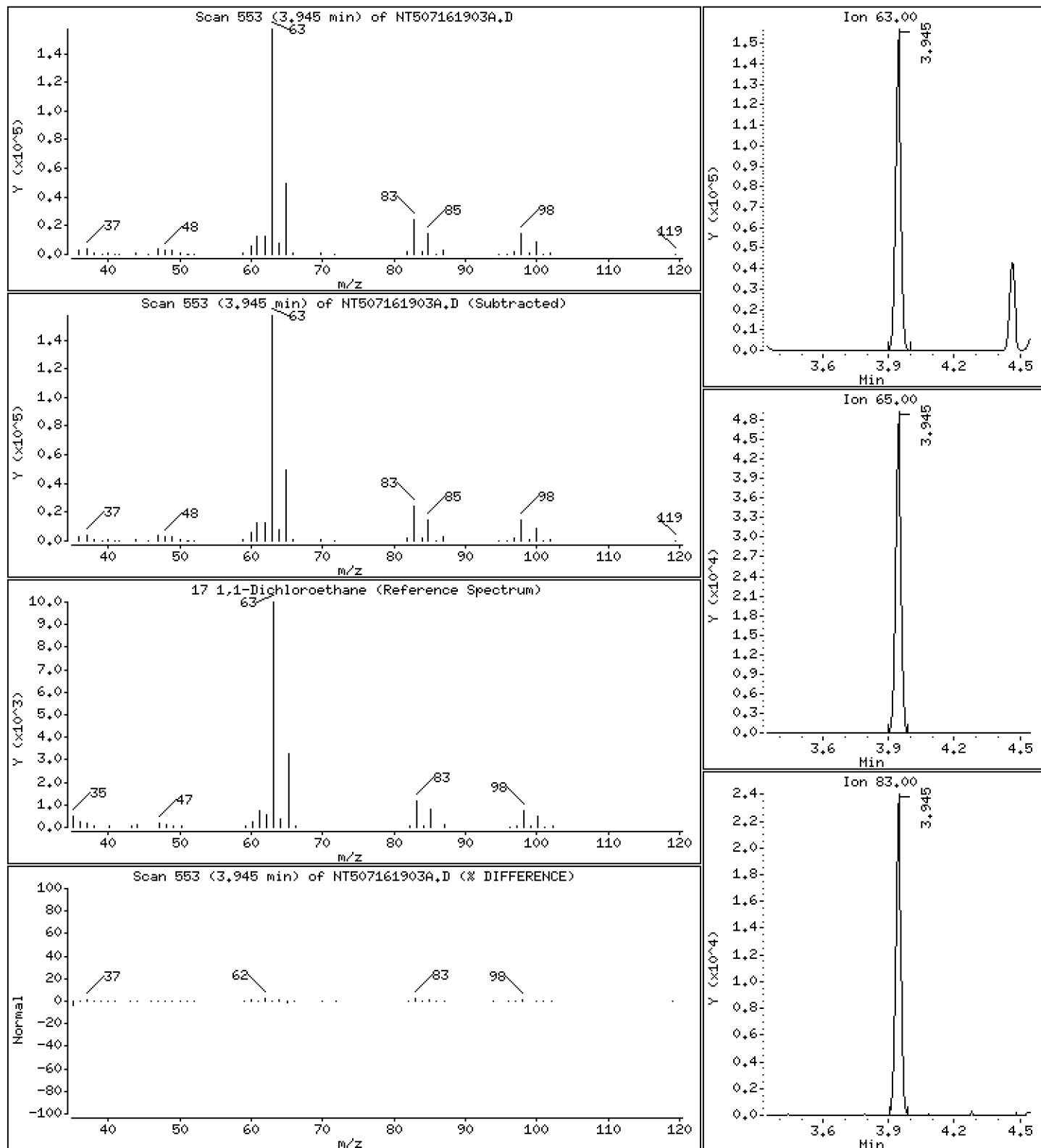
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 49,521 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

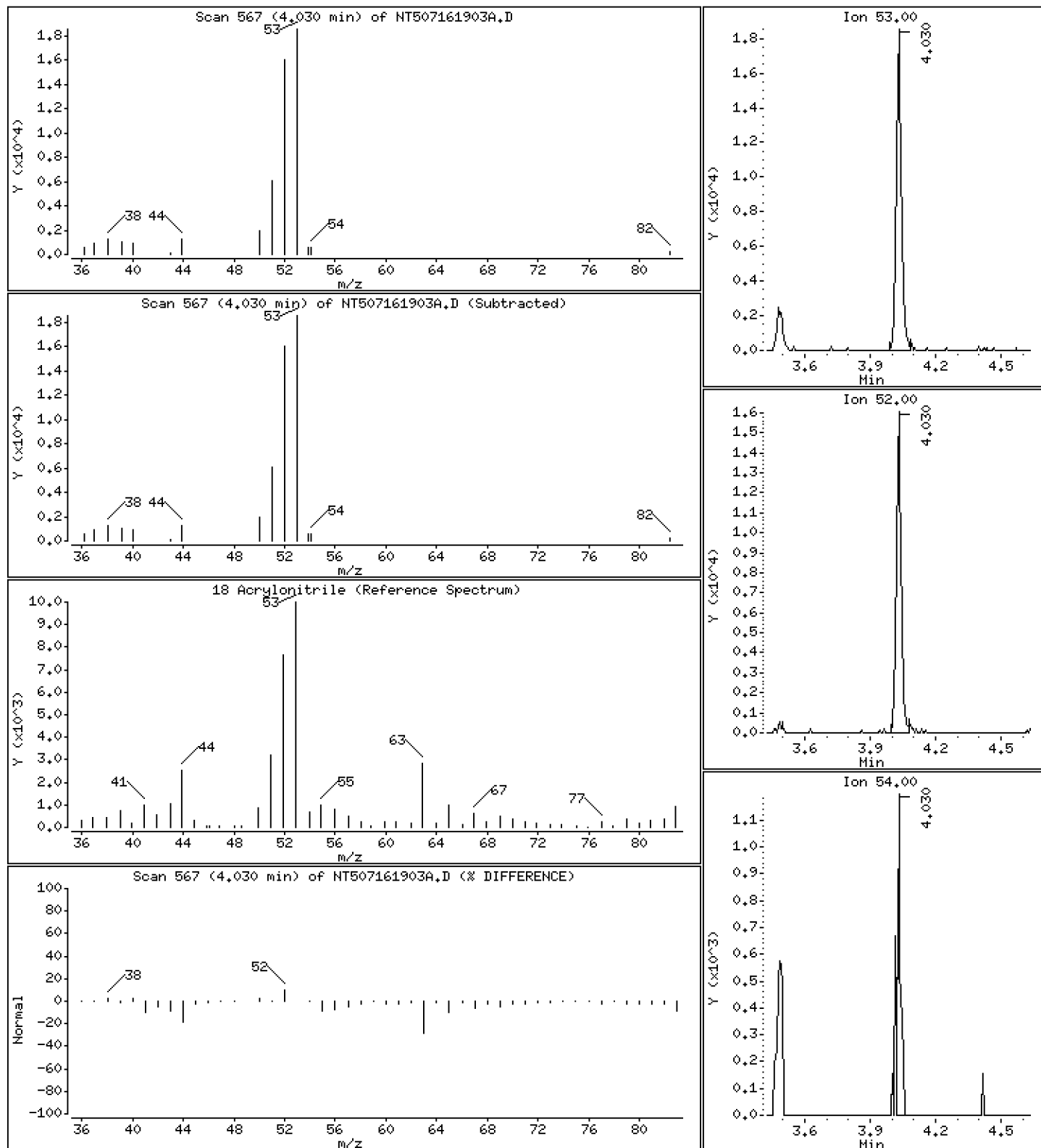
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 44,484 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

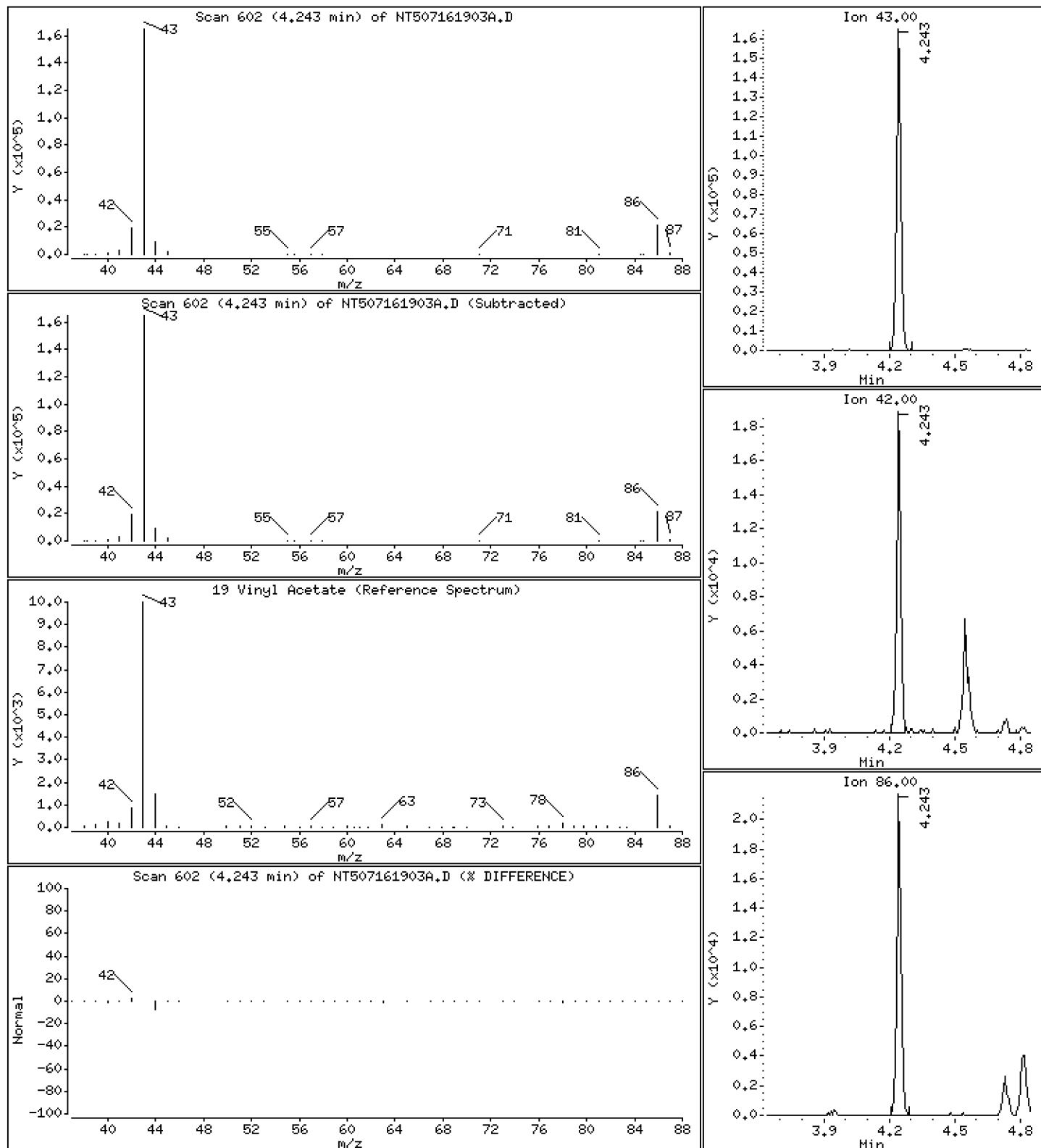
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 50,203 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

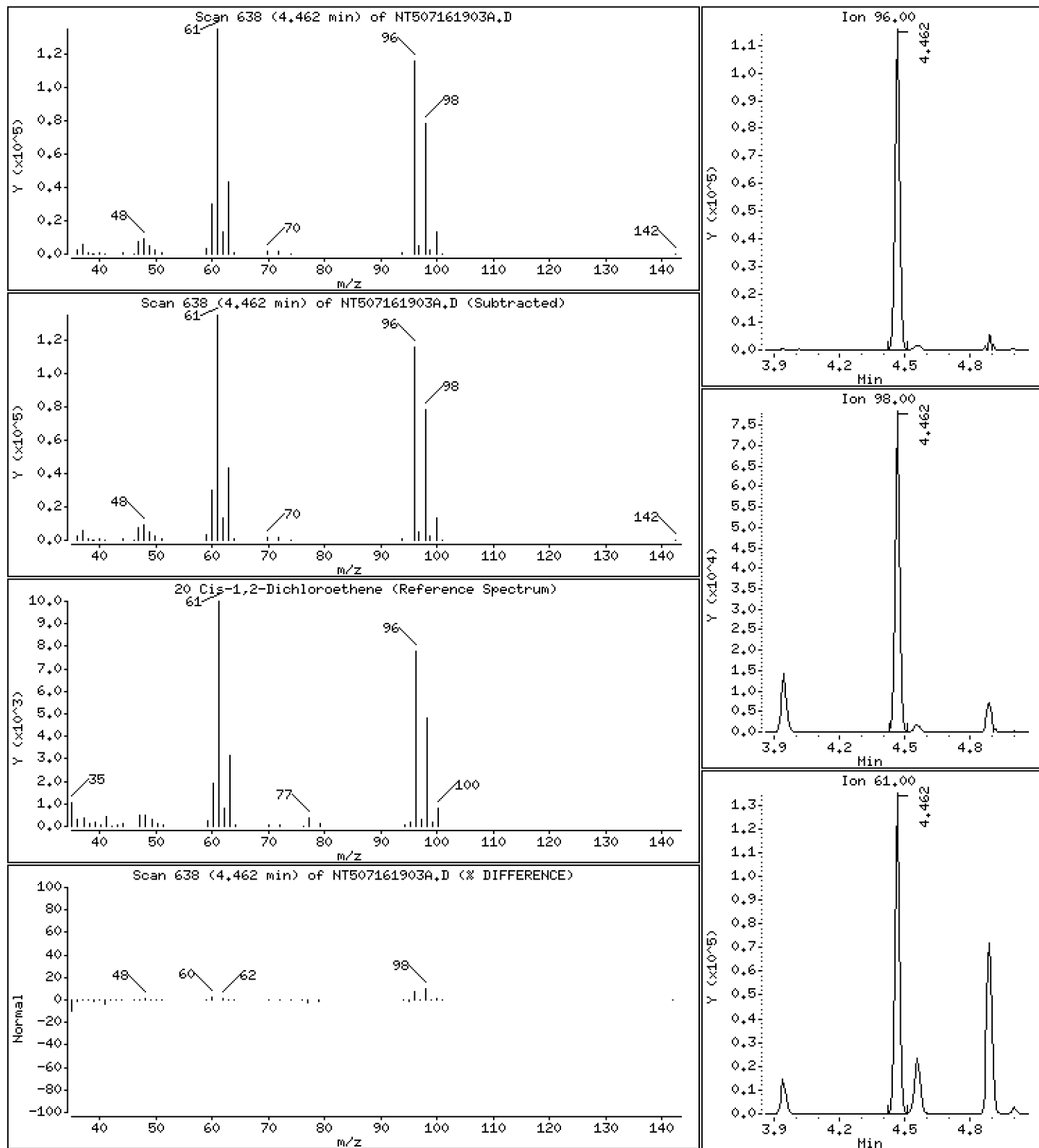
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 50,773 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

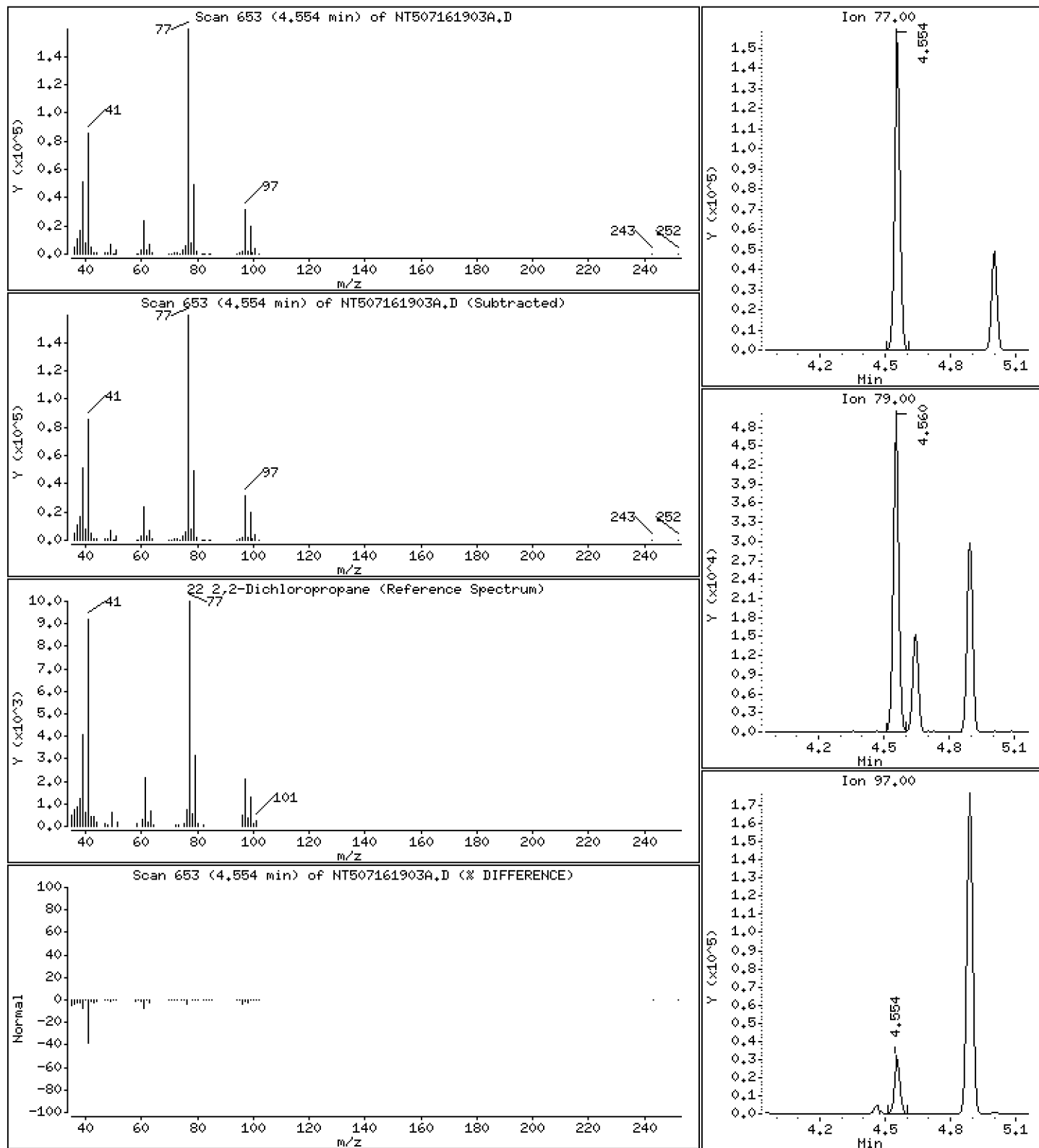
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22 2,2-Dichloropropane

Concentration: 53,136 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

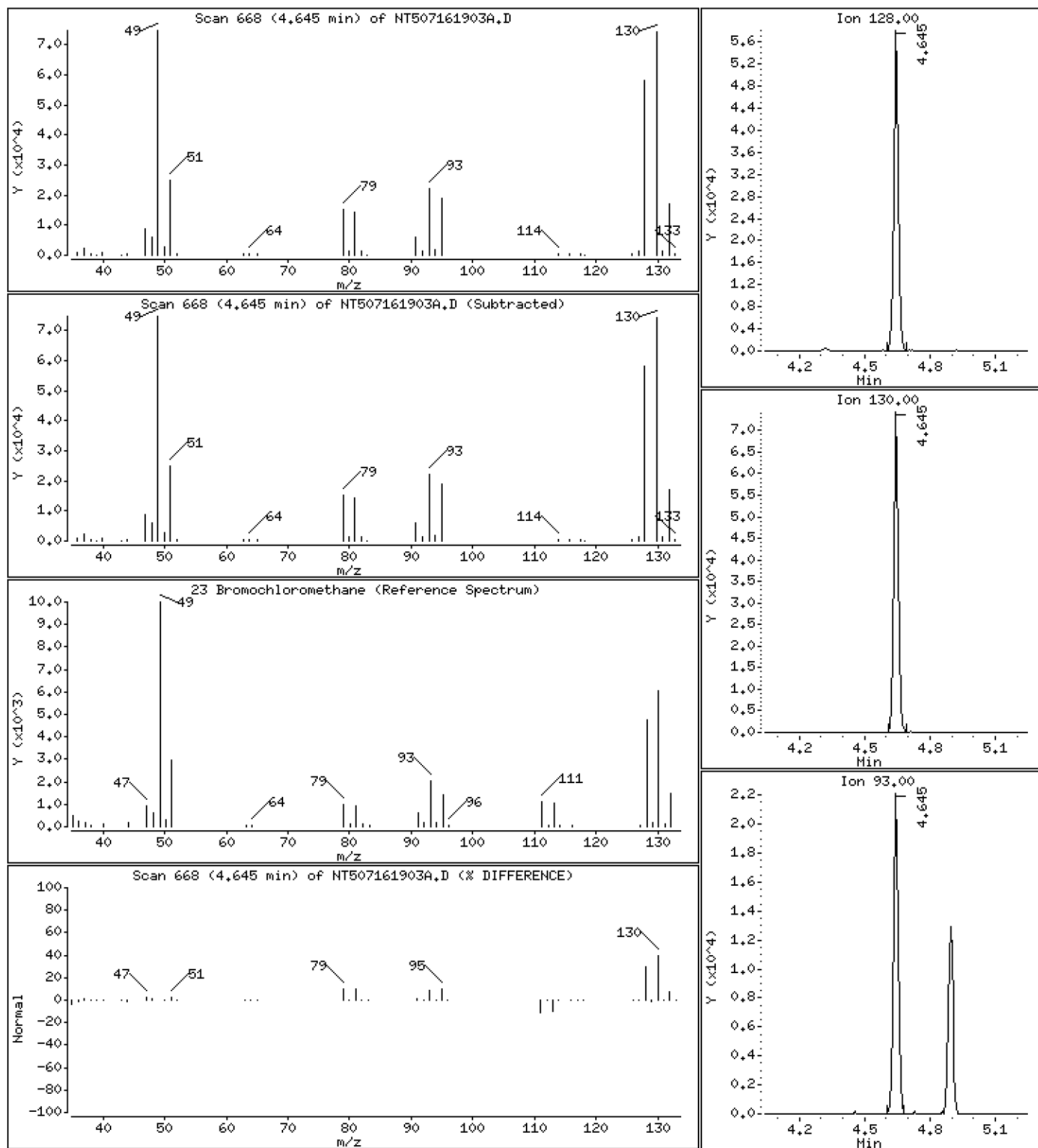
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

23 Bromochloromethane

Concentration: 49.032 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

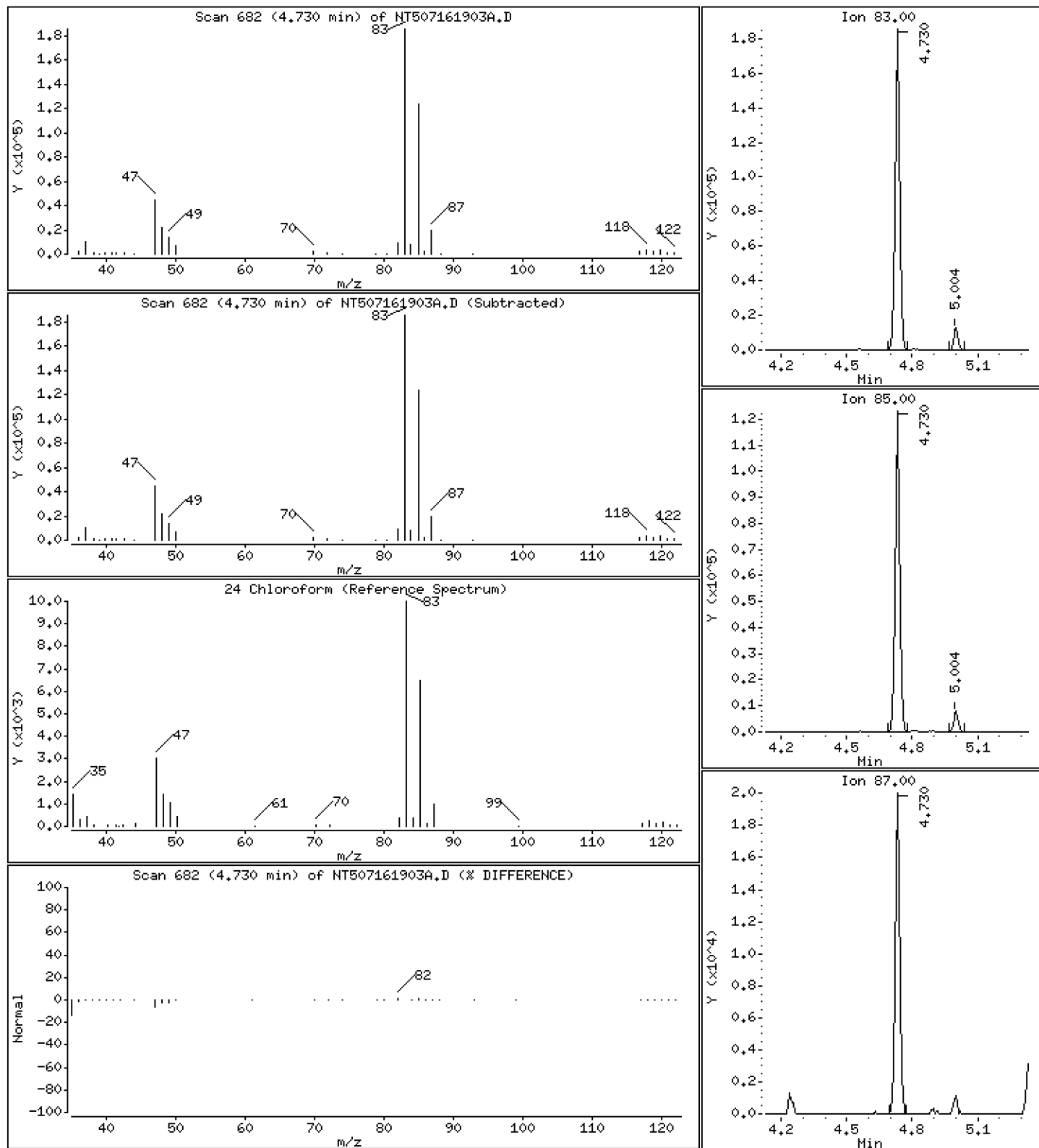
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 51,341 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

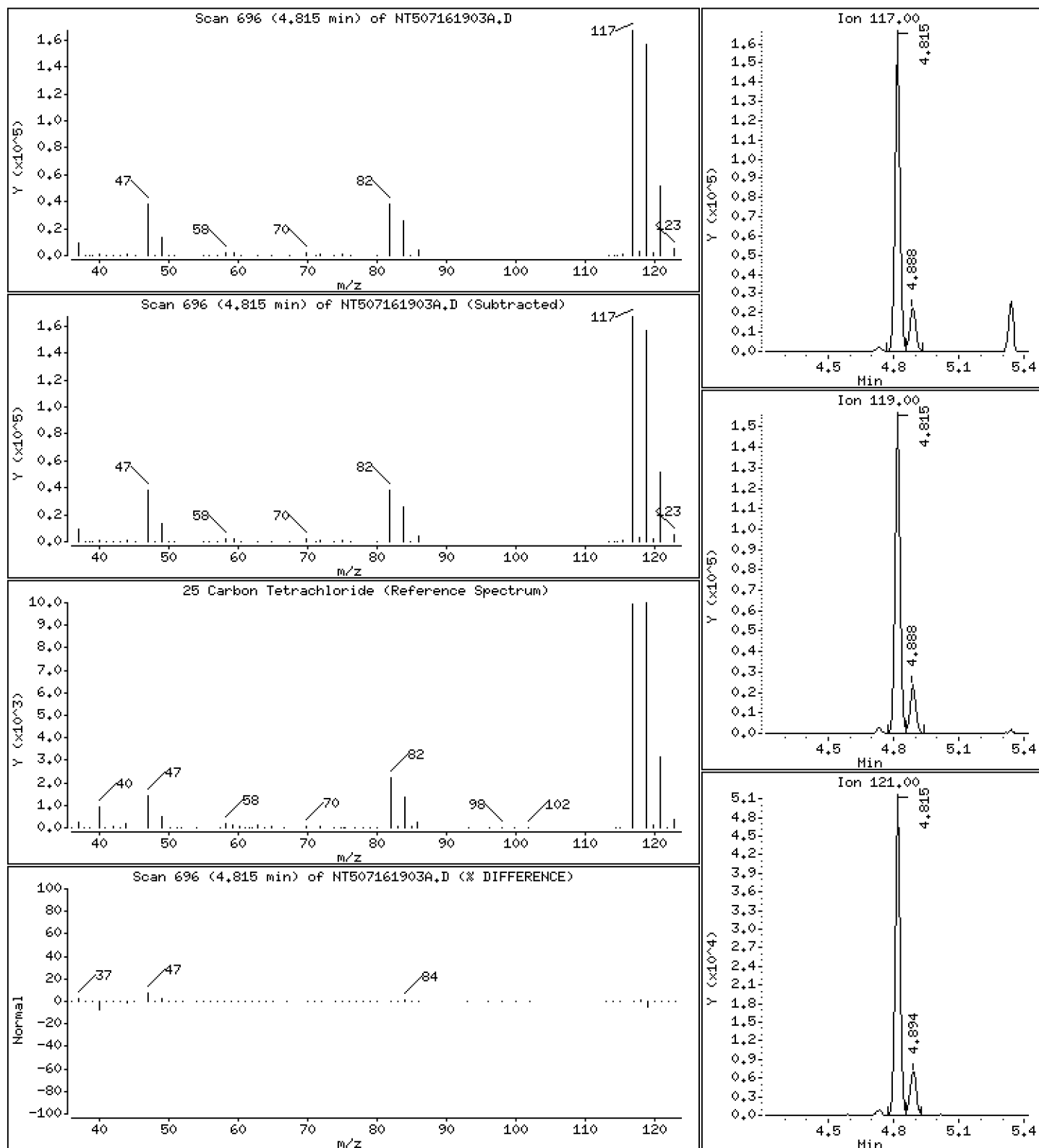
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 46,597 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

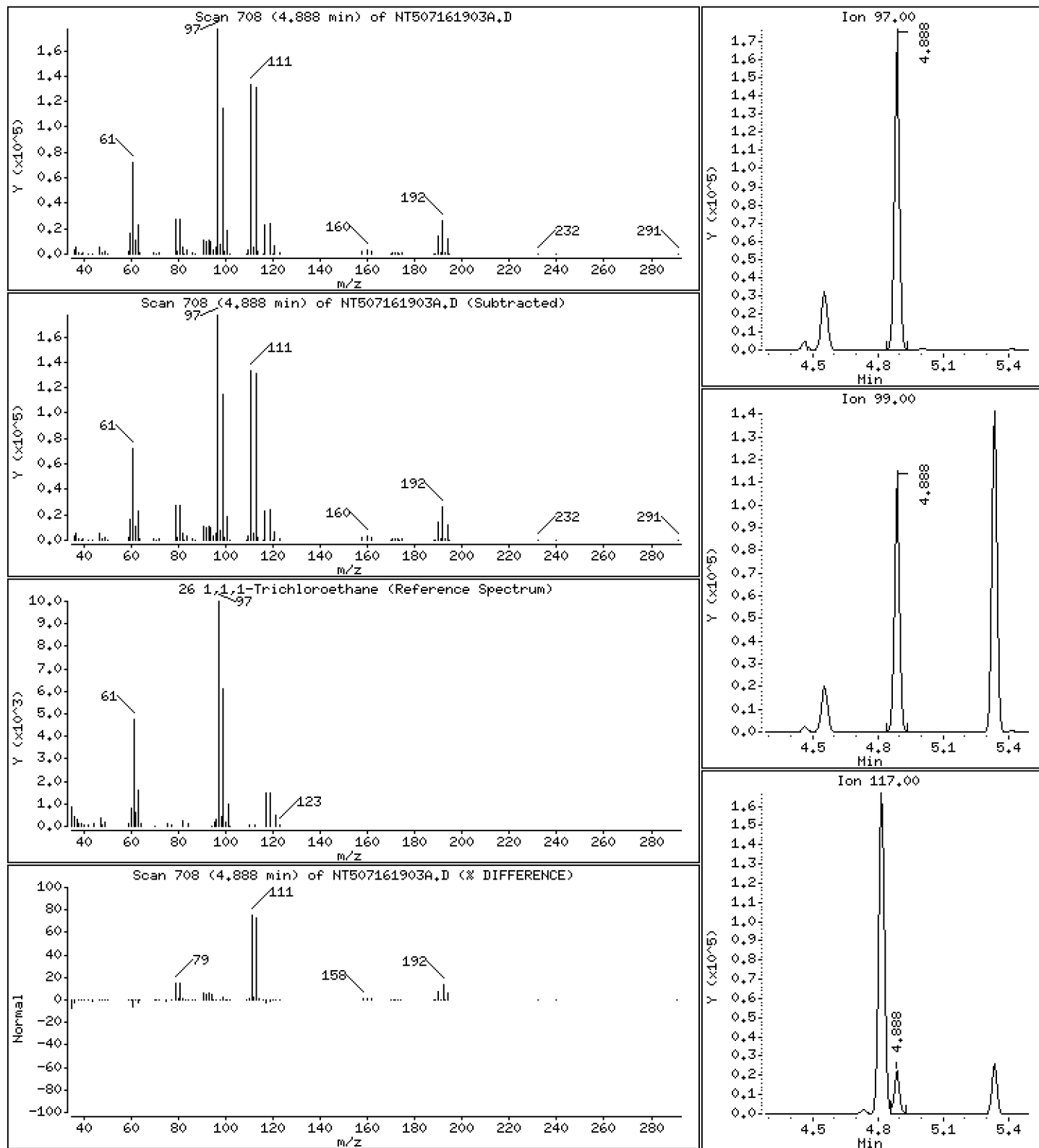
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 51.857 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

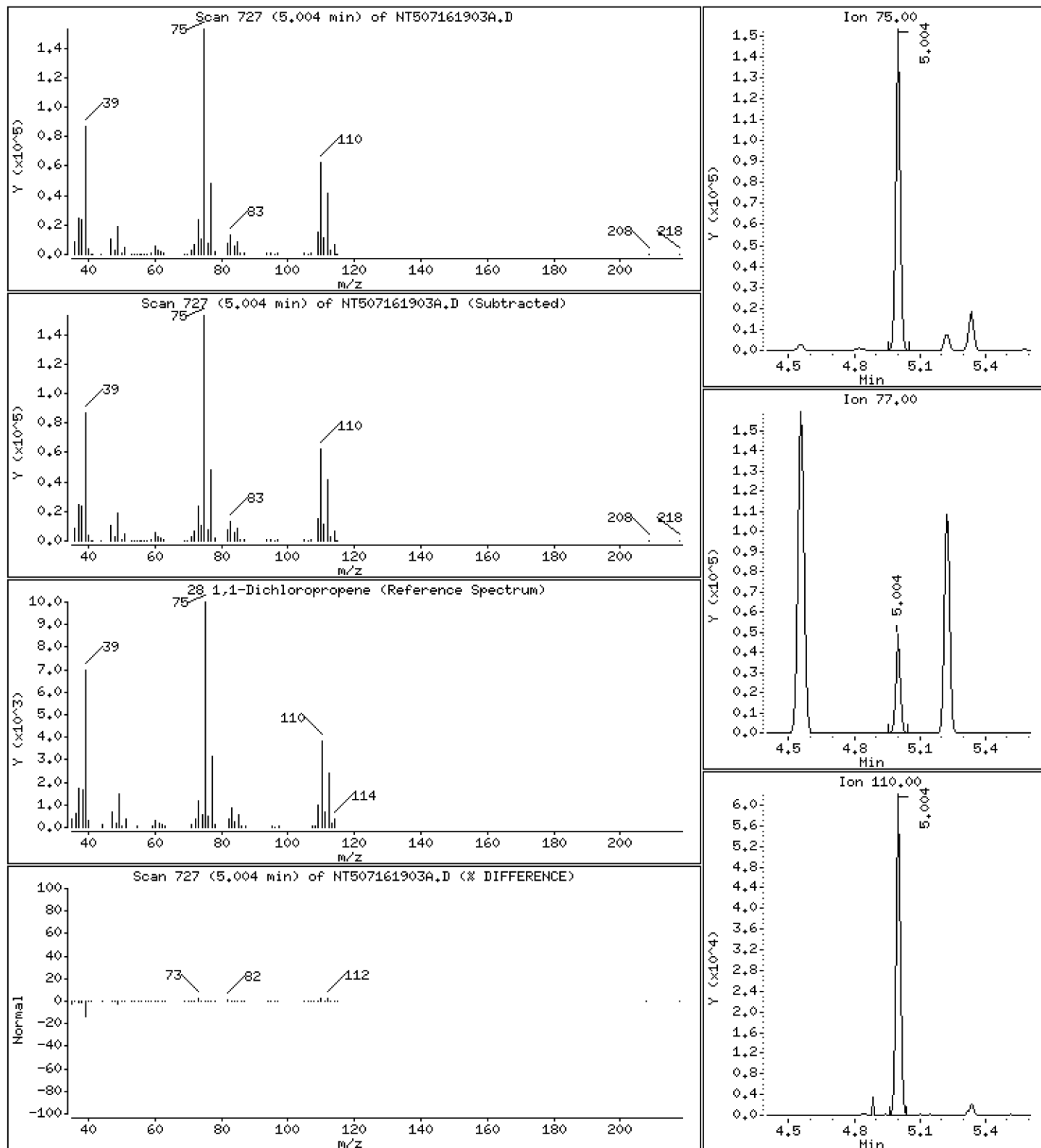
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 48,895 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

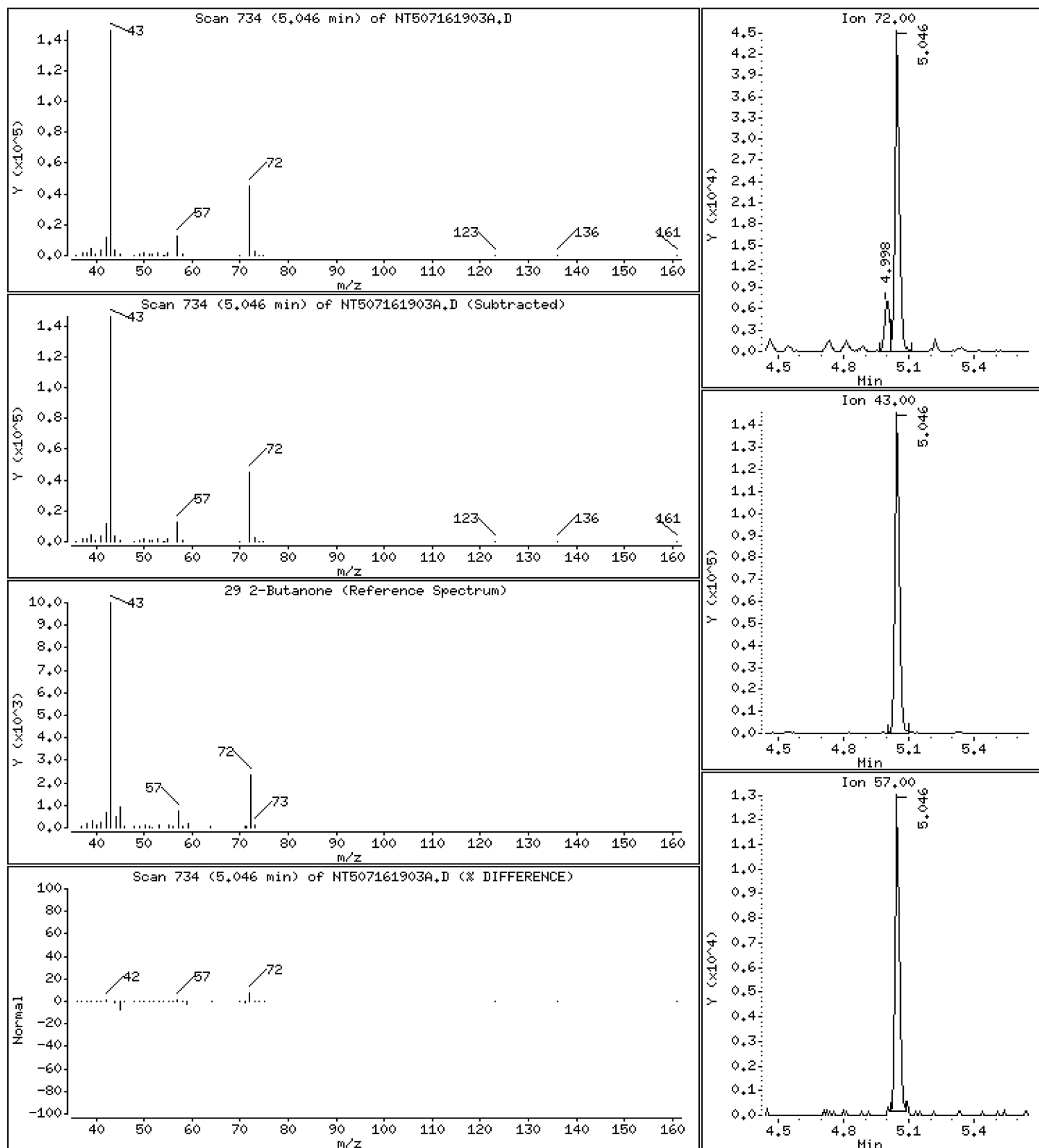
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 244.12 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

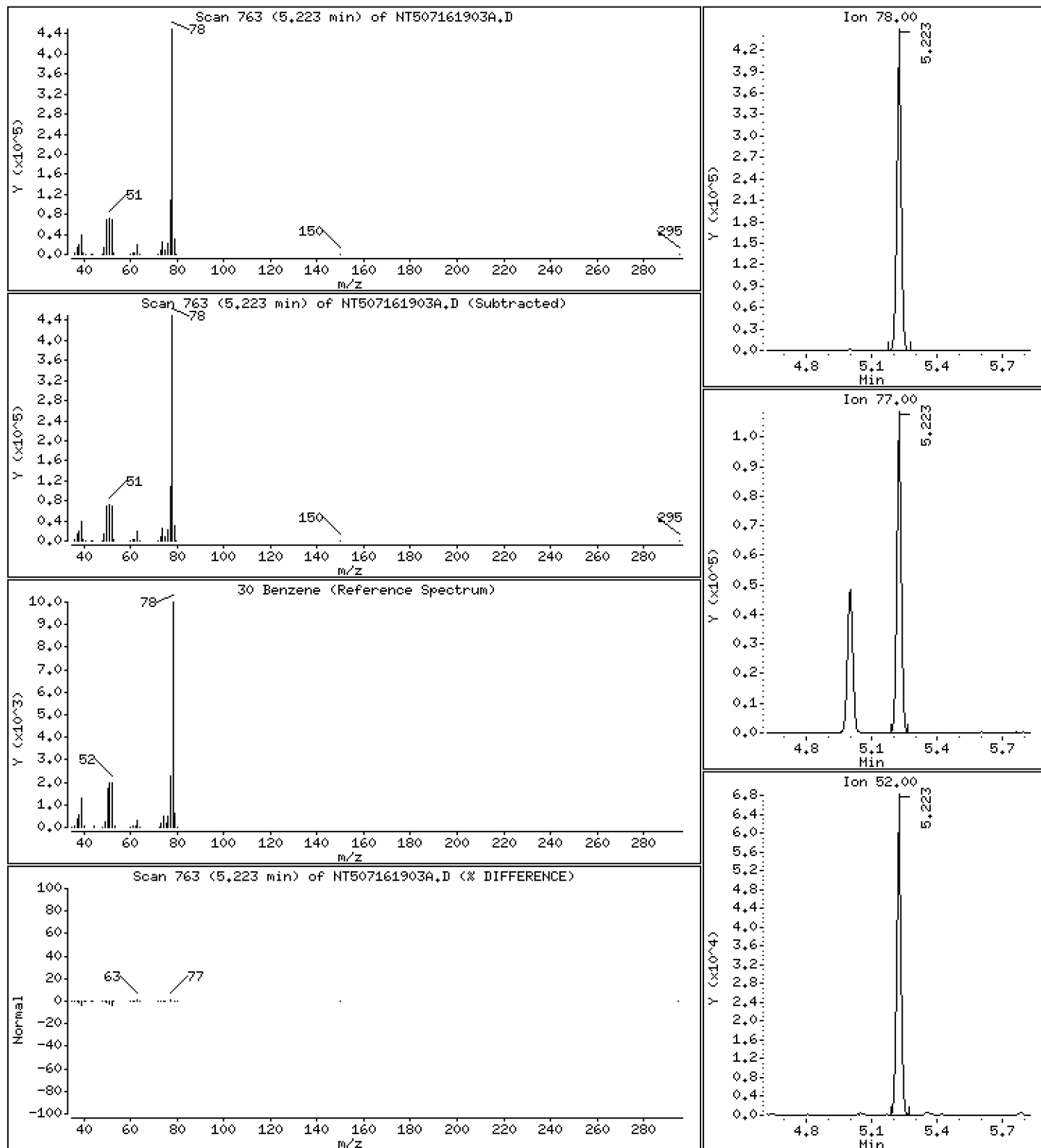
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 46,257 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

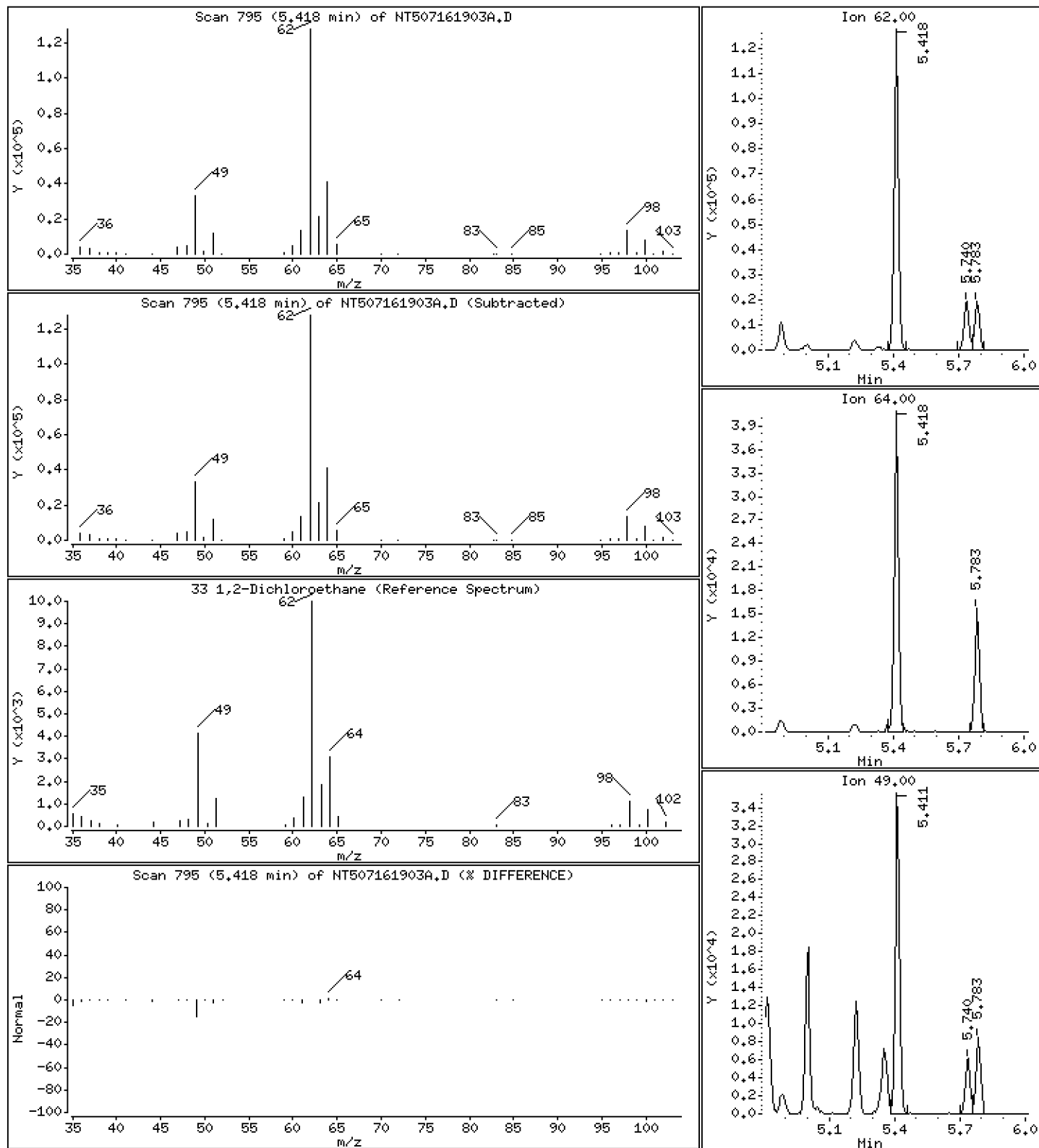
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 46,105 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

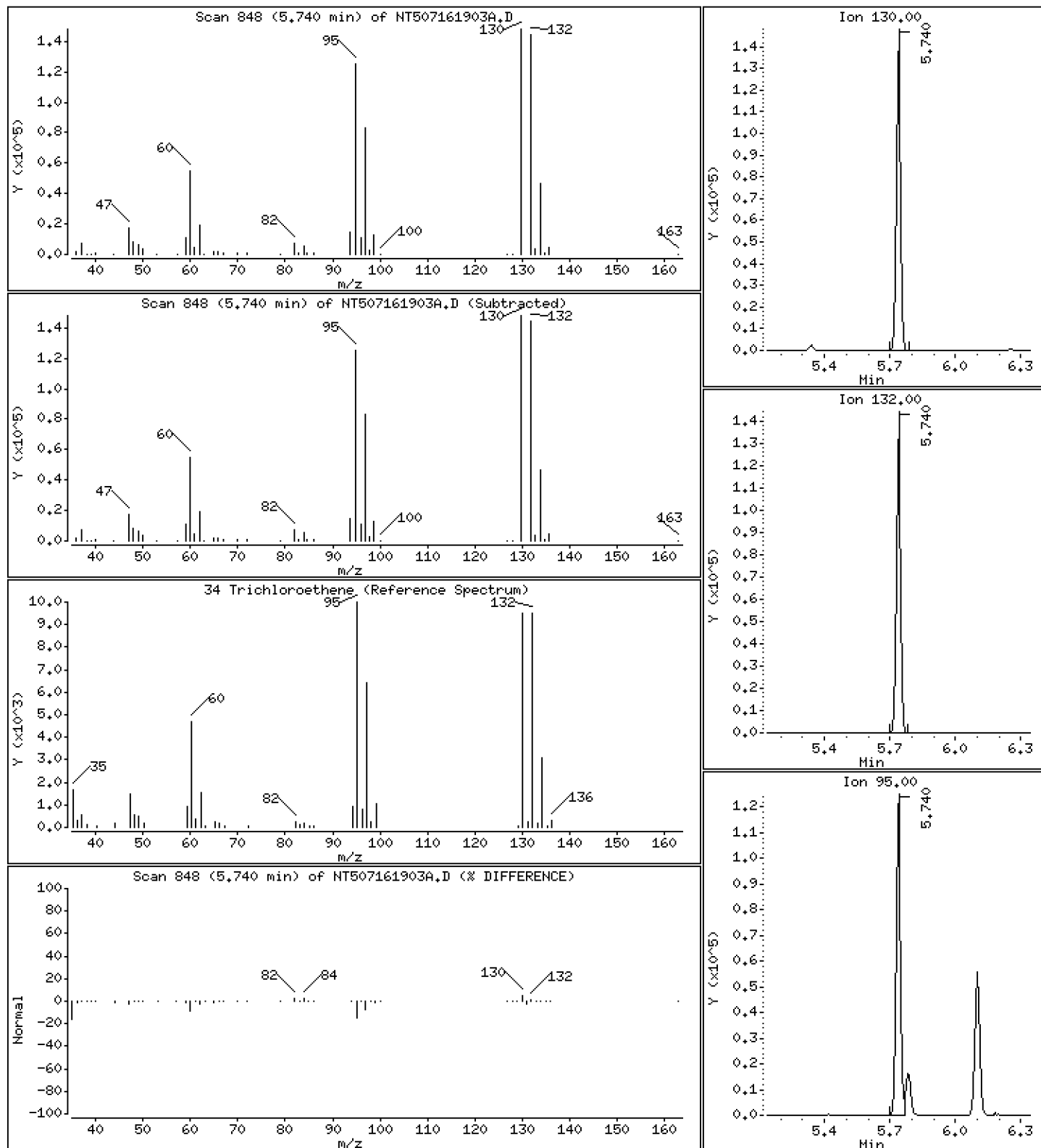
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 45,780 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

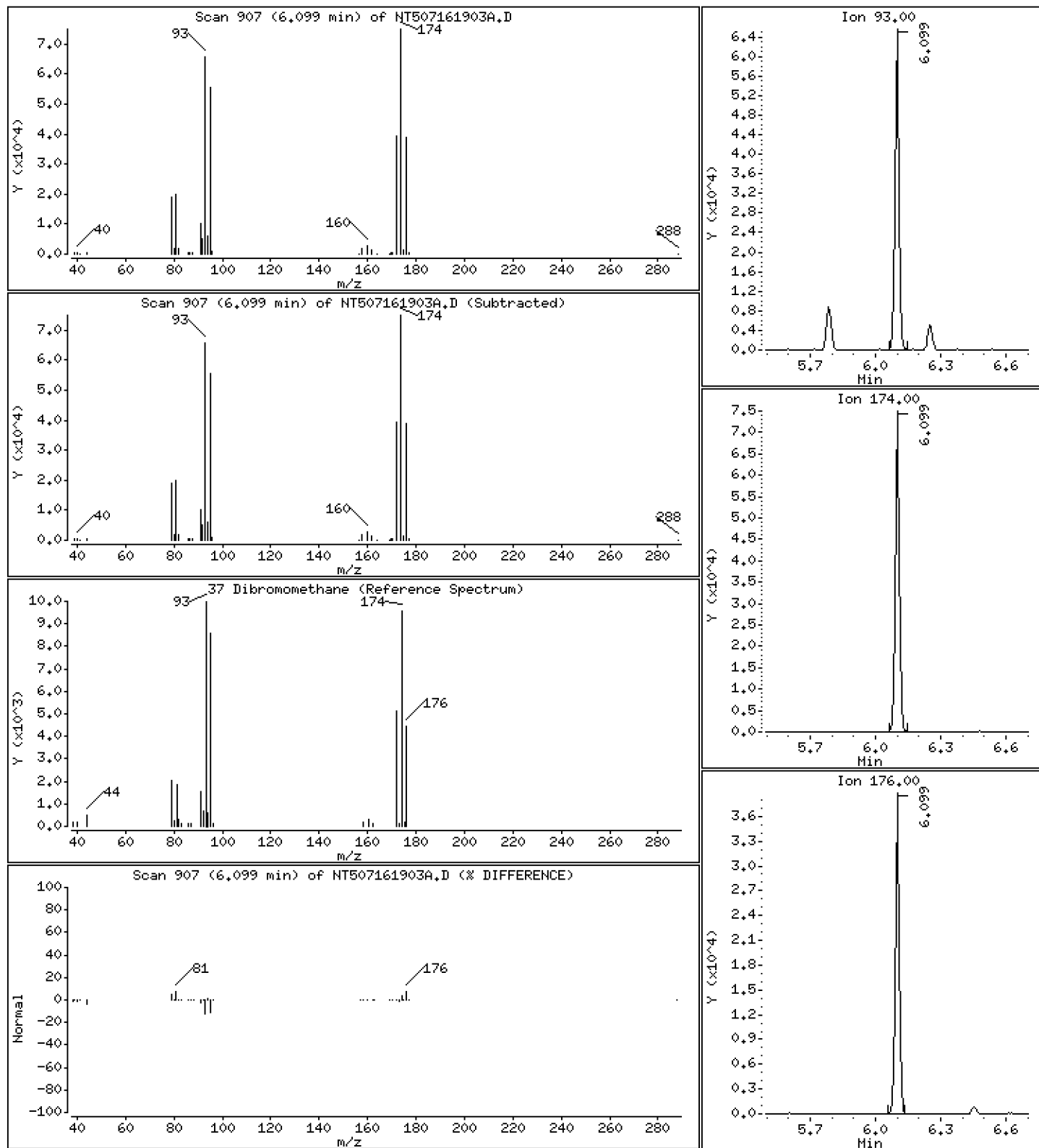
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 45.935 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

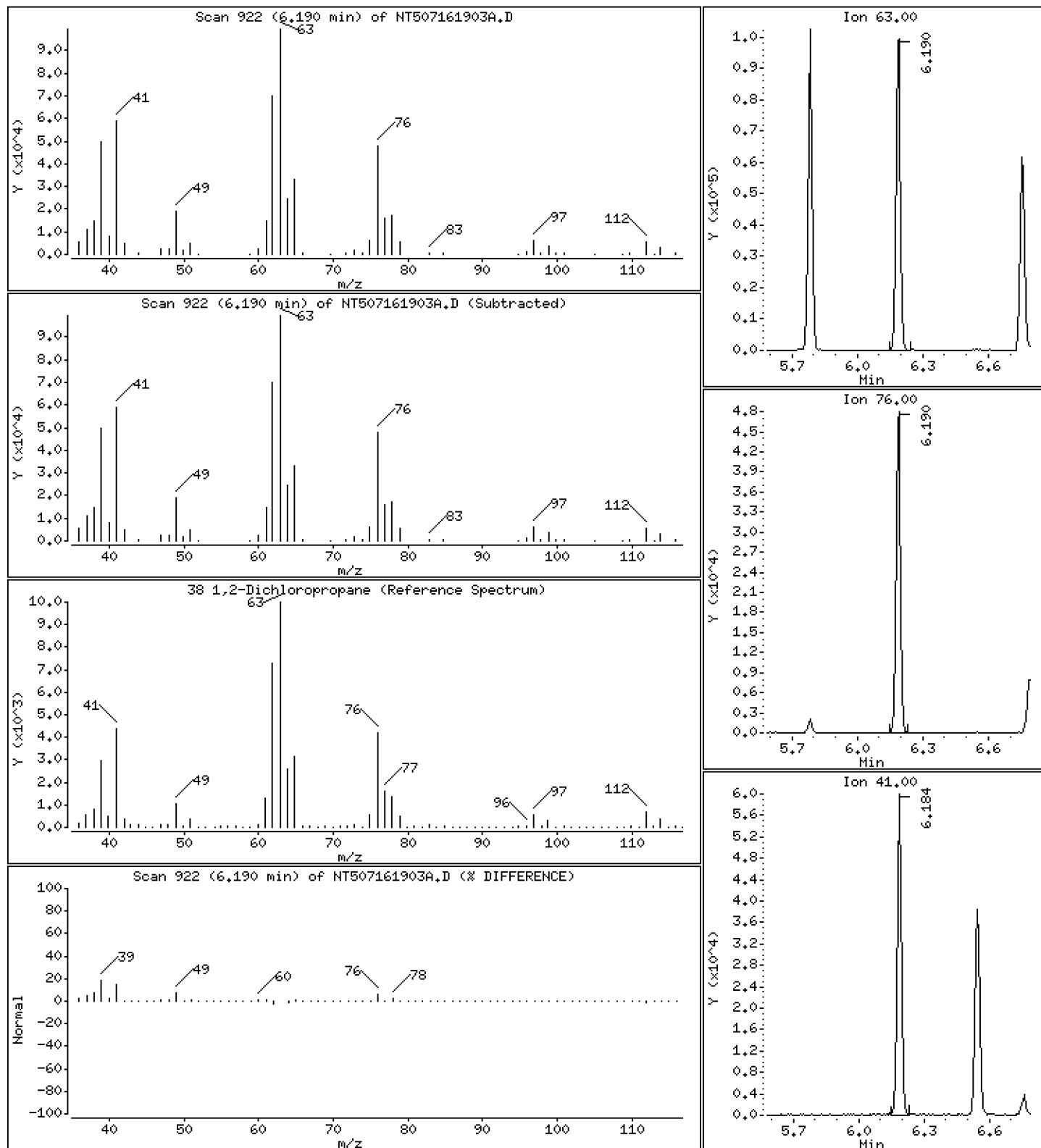
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 46.928 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

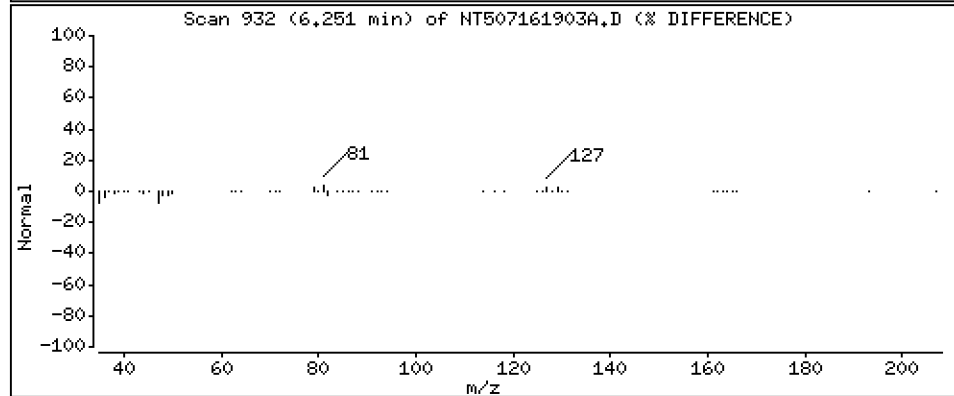
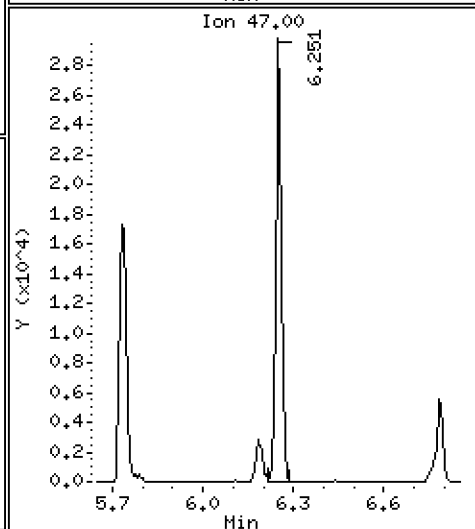
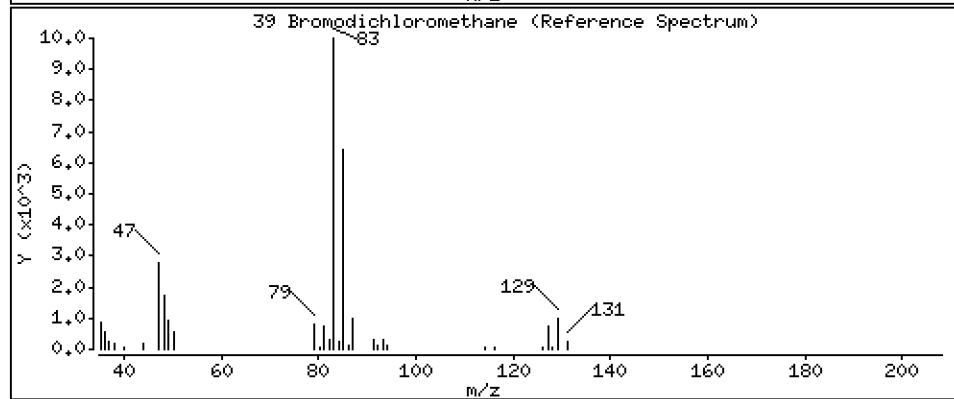
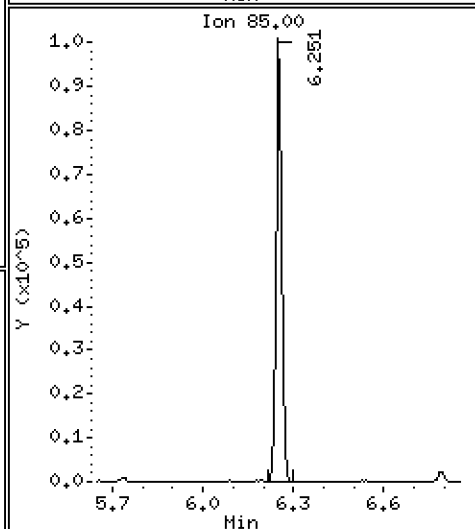
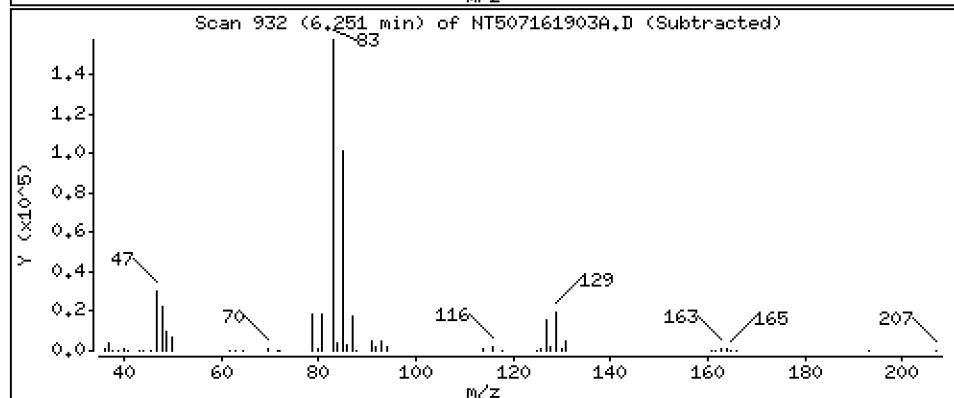
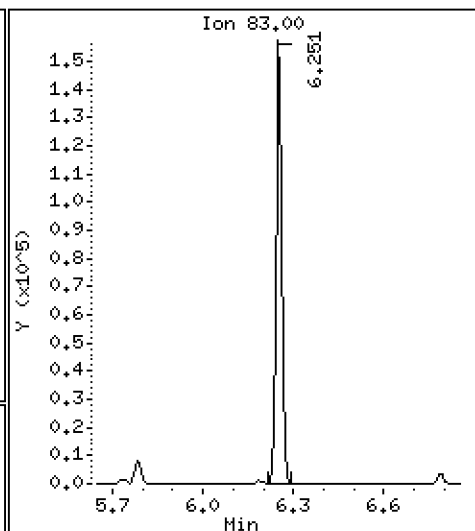
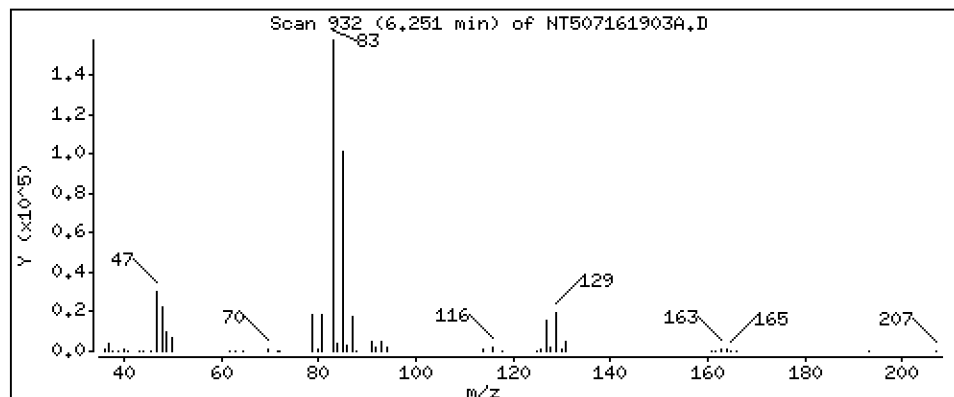
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 47,509 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

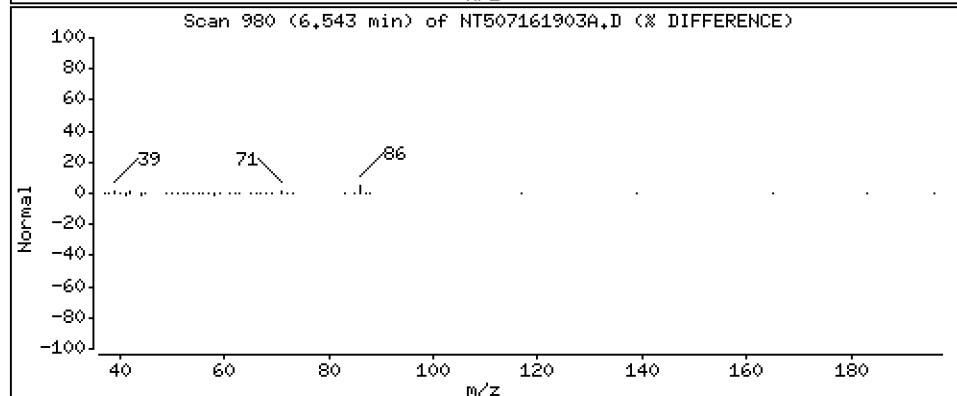
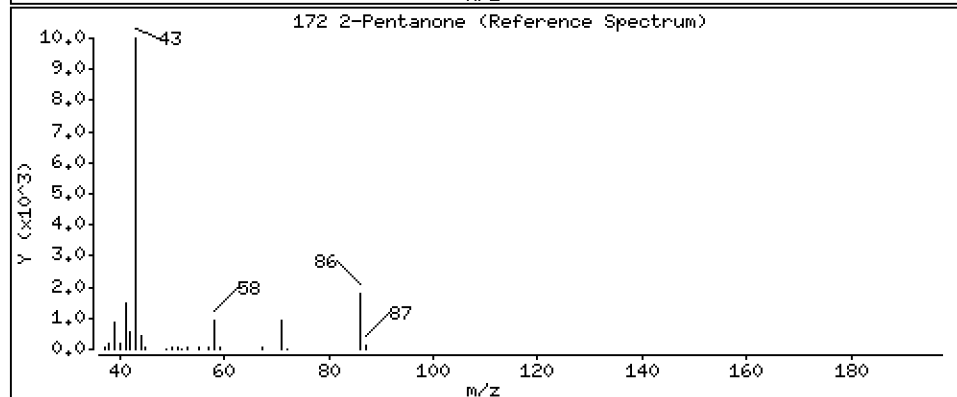
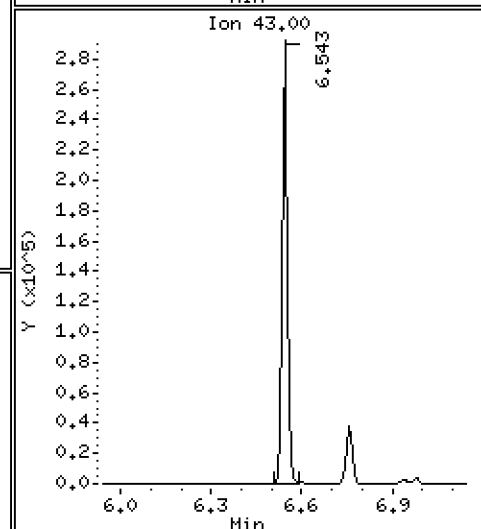
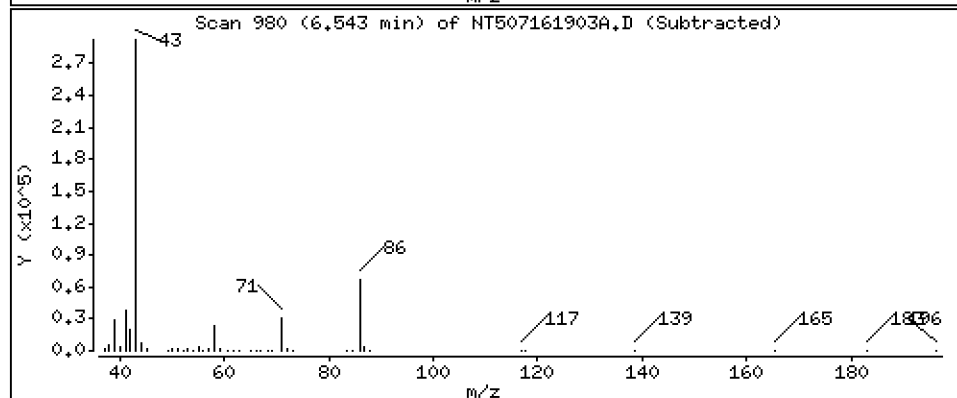
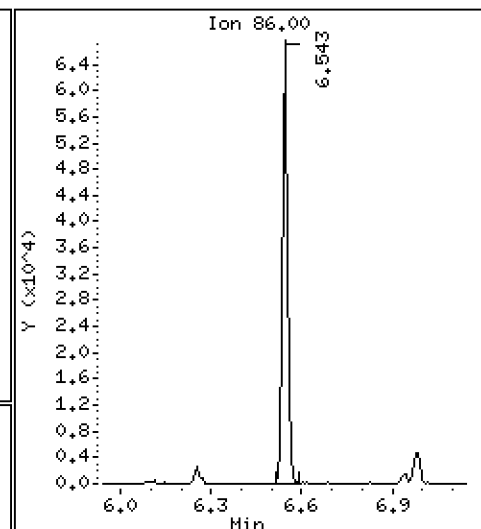
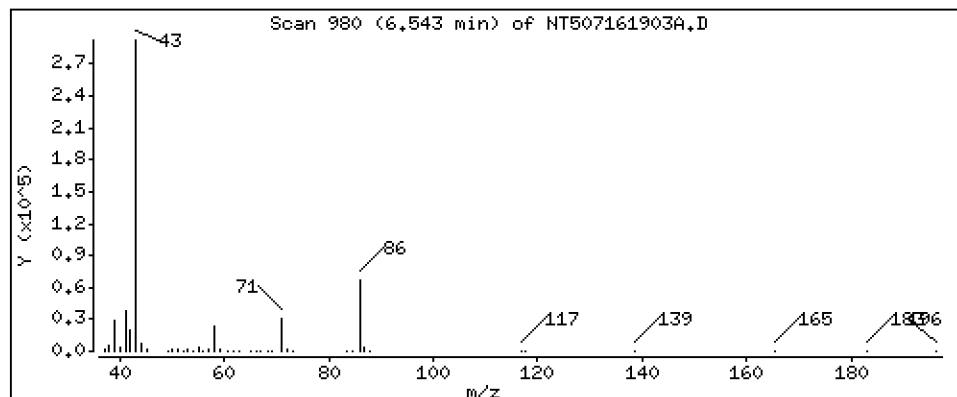
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 219.97 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

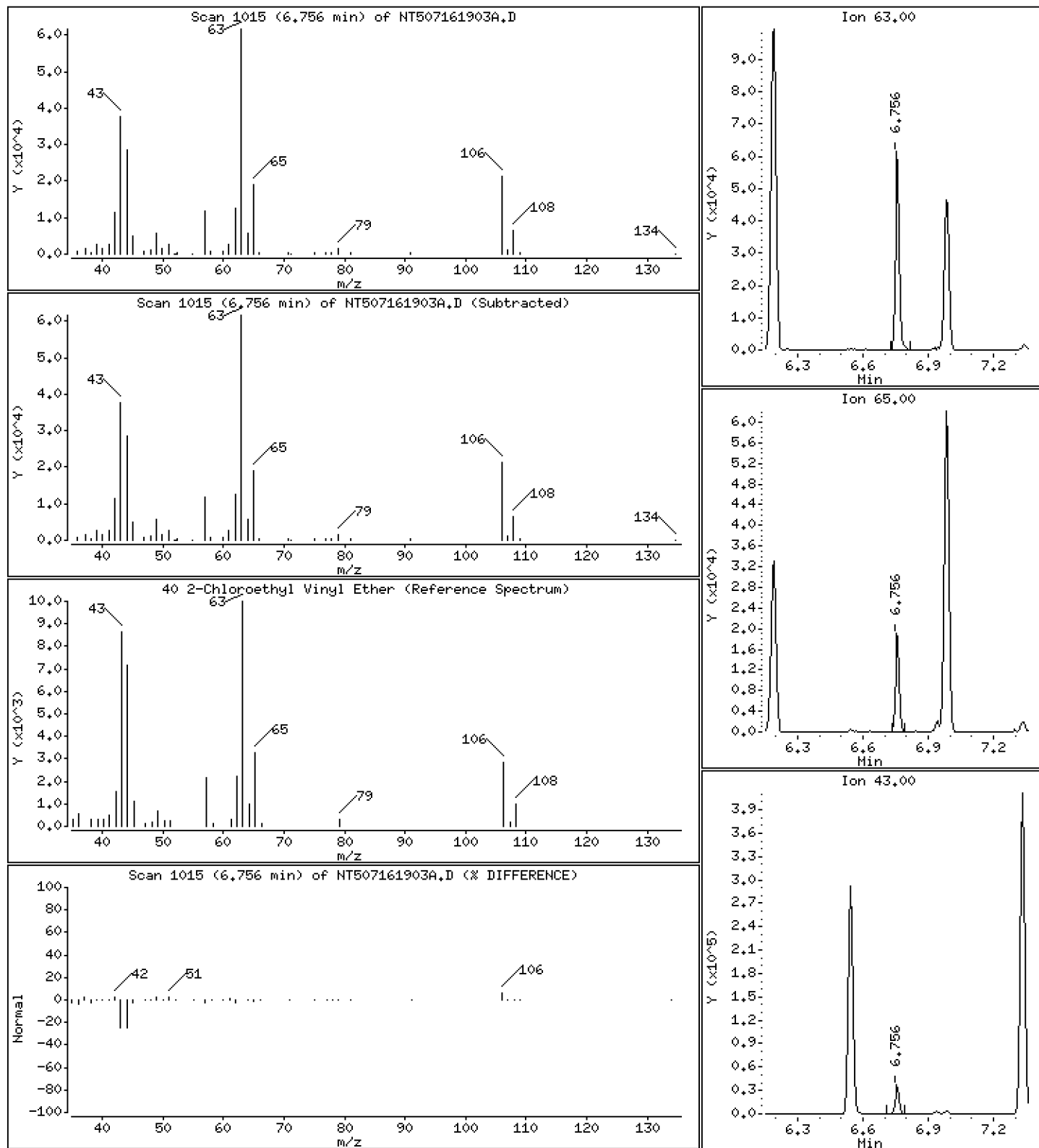
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

40 2-Chloroethyl Vinyl Ether

Concentration: 43,553 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

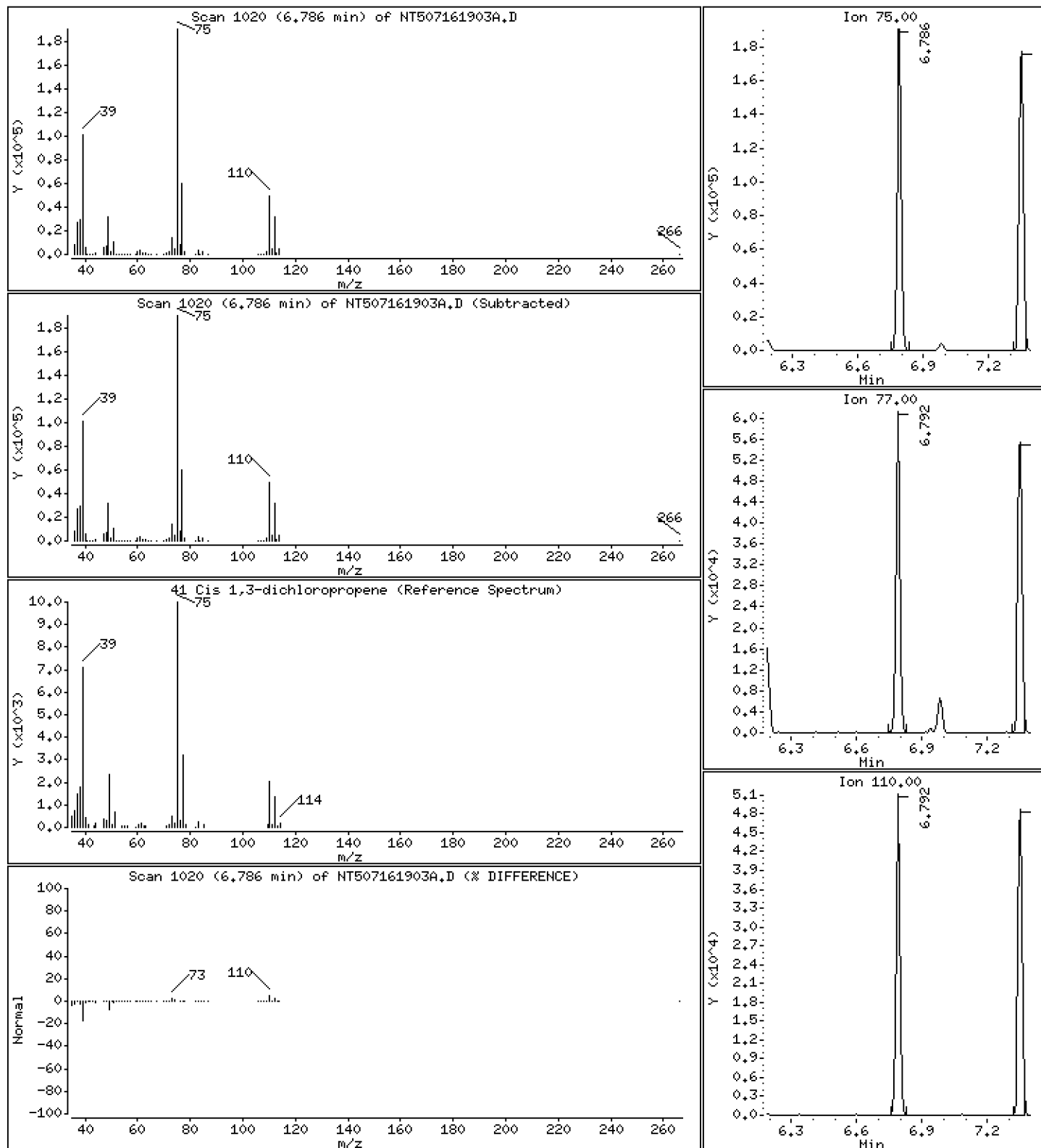
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

41 Cis 1,3-dichloropropene

Concentration: 48,542 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: IGV1

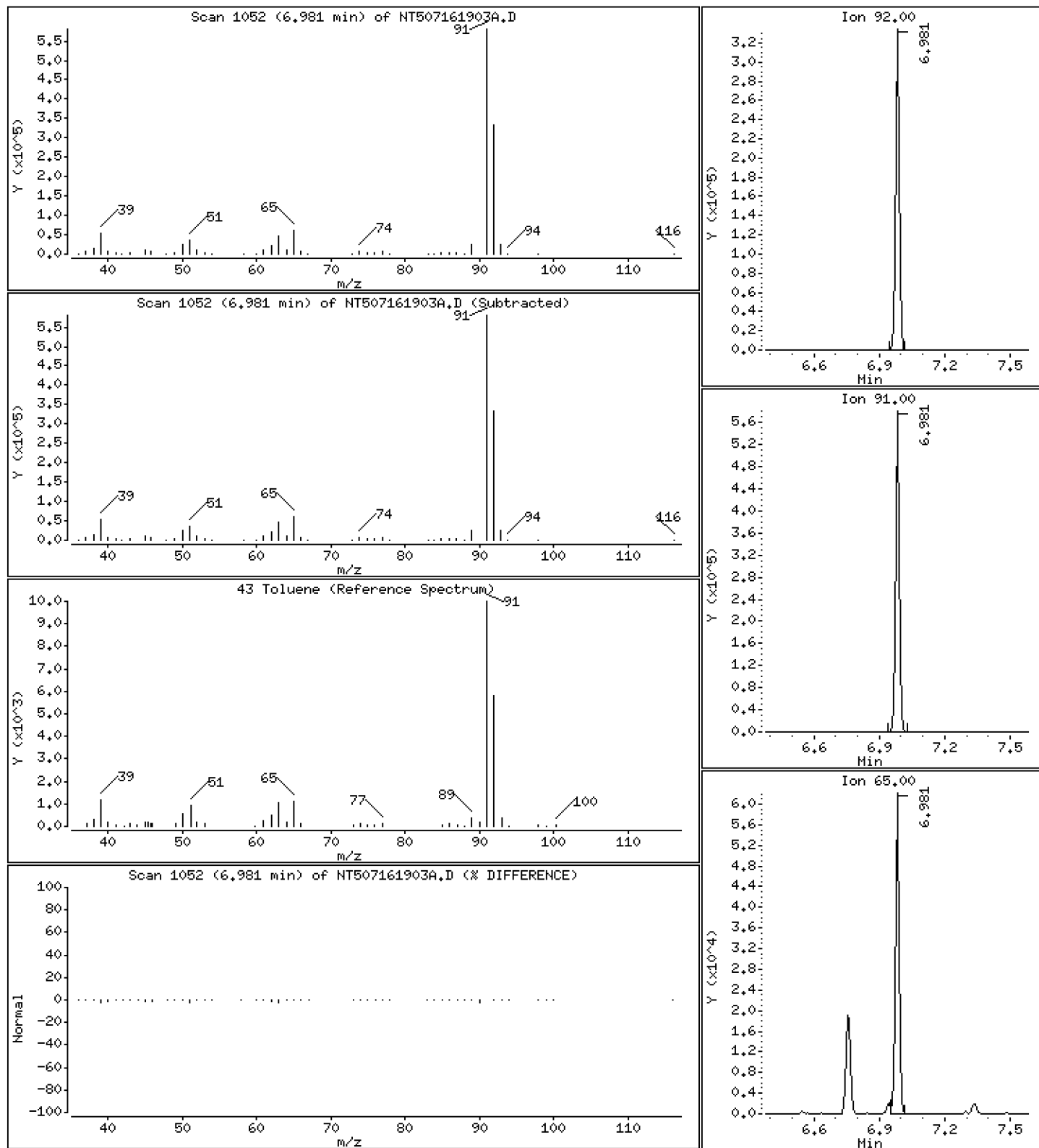
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 45.491 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

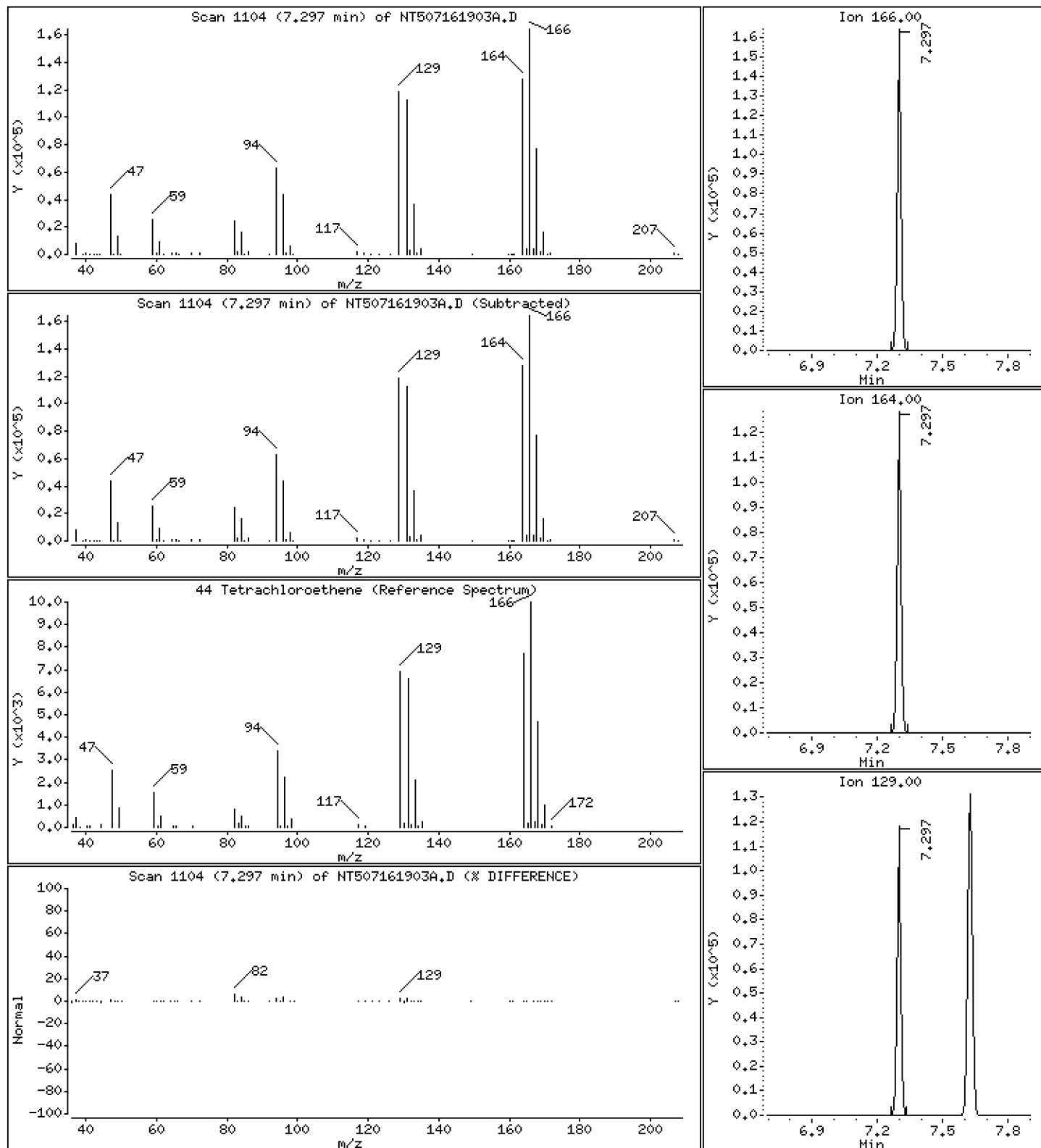
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 44,178 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

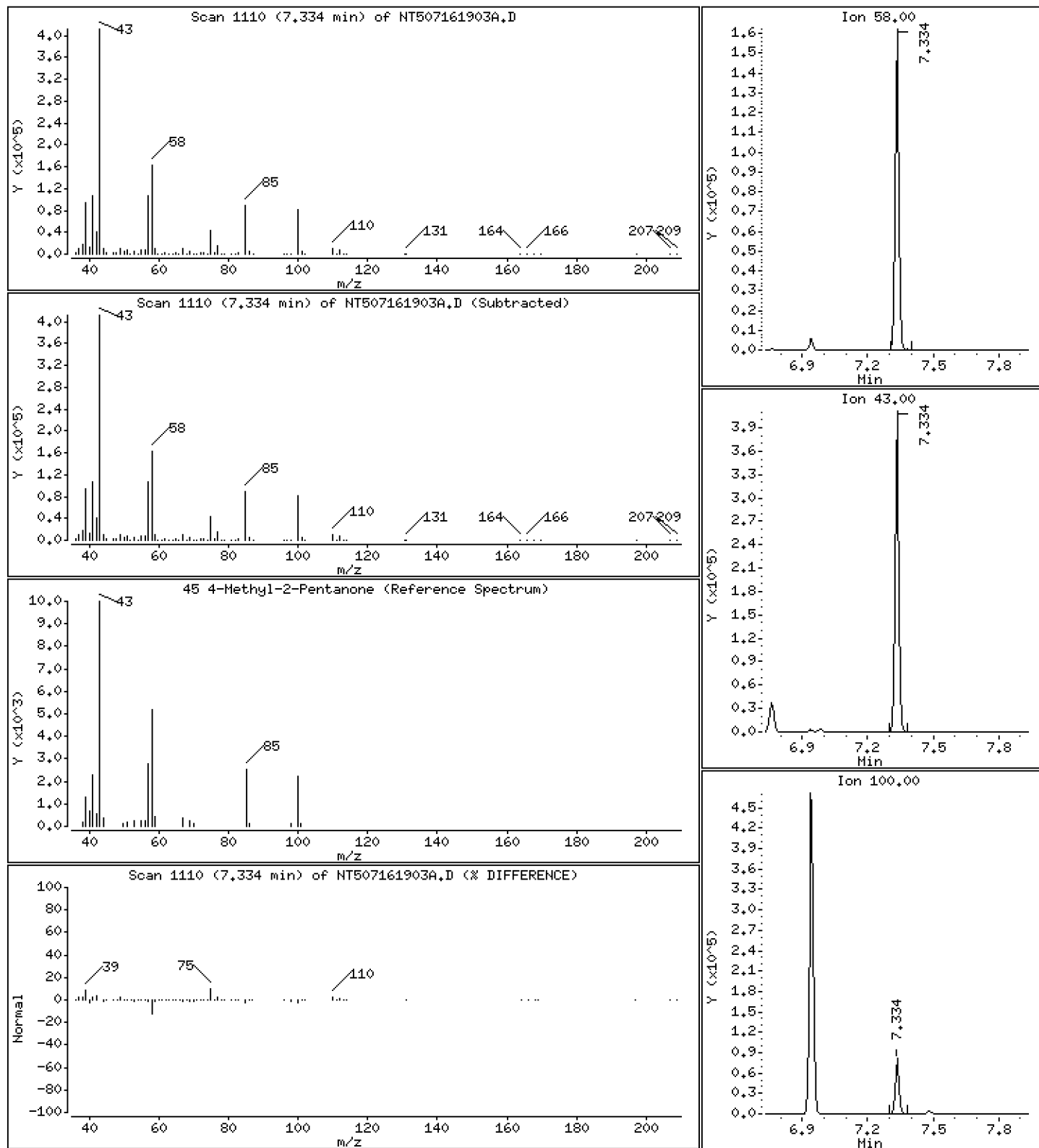
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 221.00 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

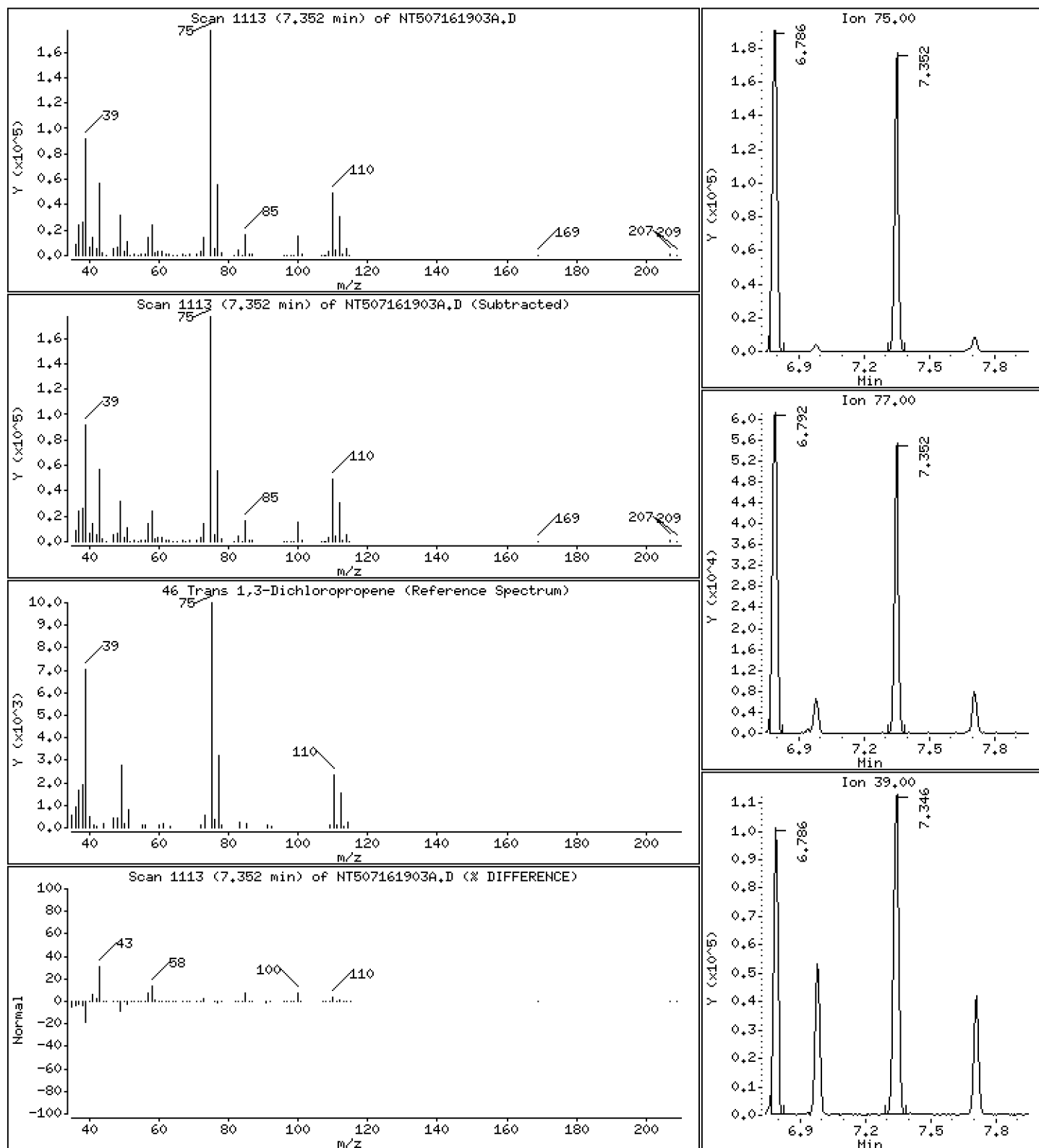
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 48,153 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

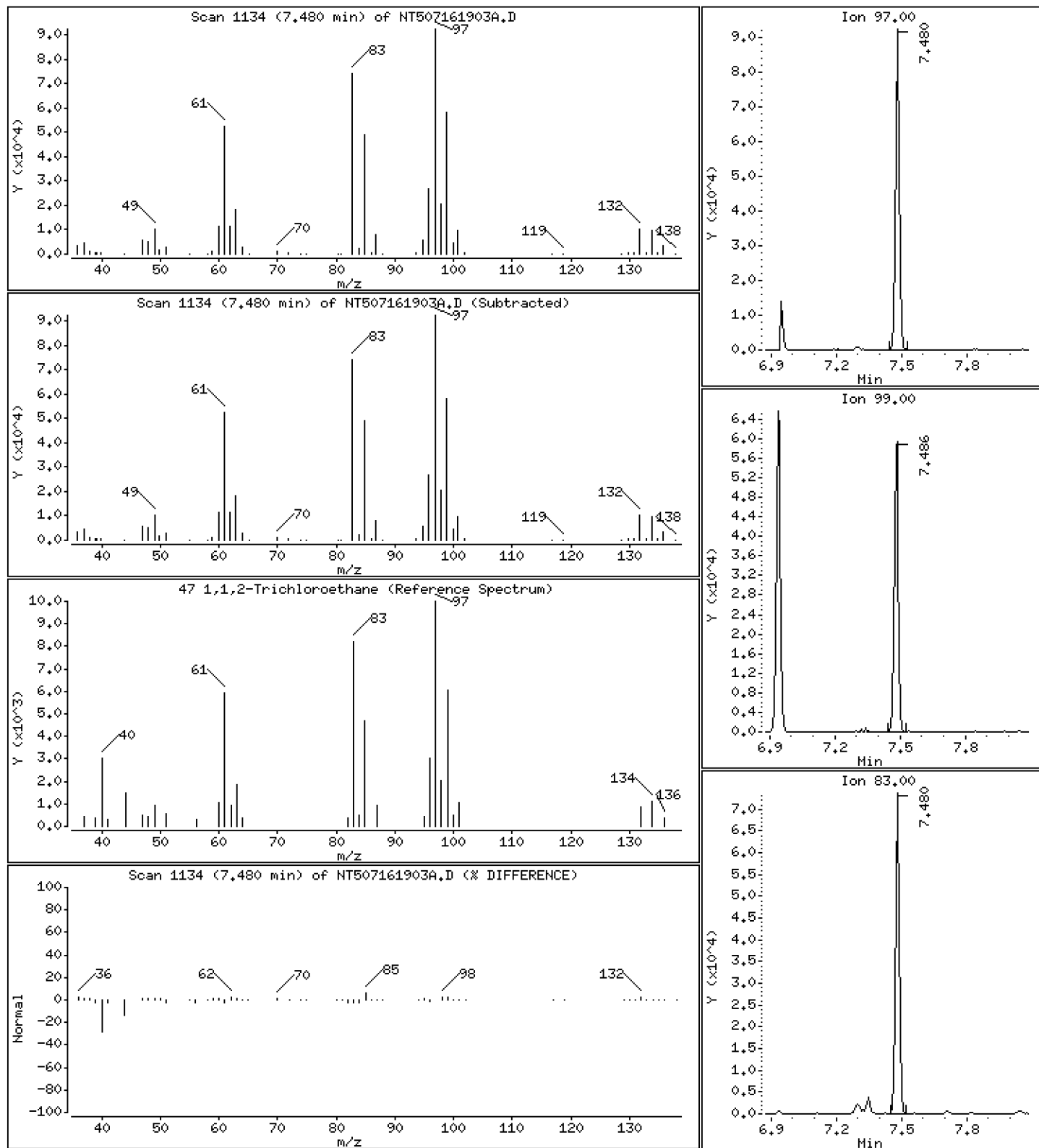
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 43,285 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

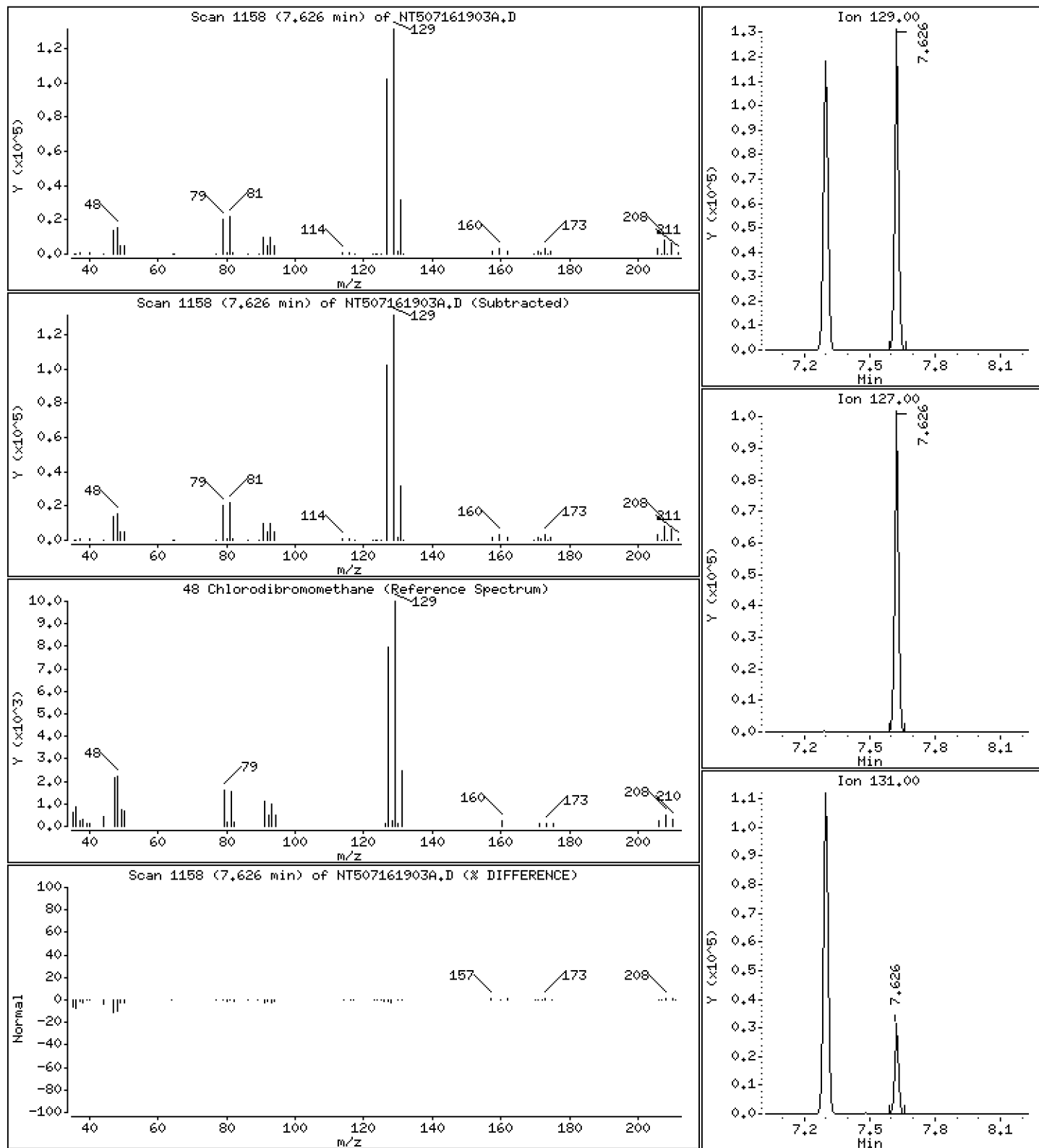
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 46,130 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

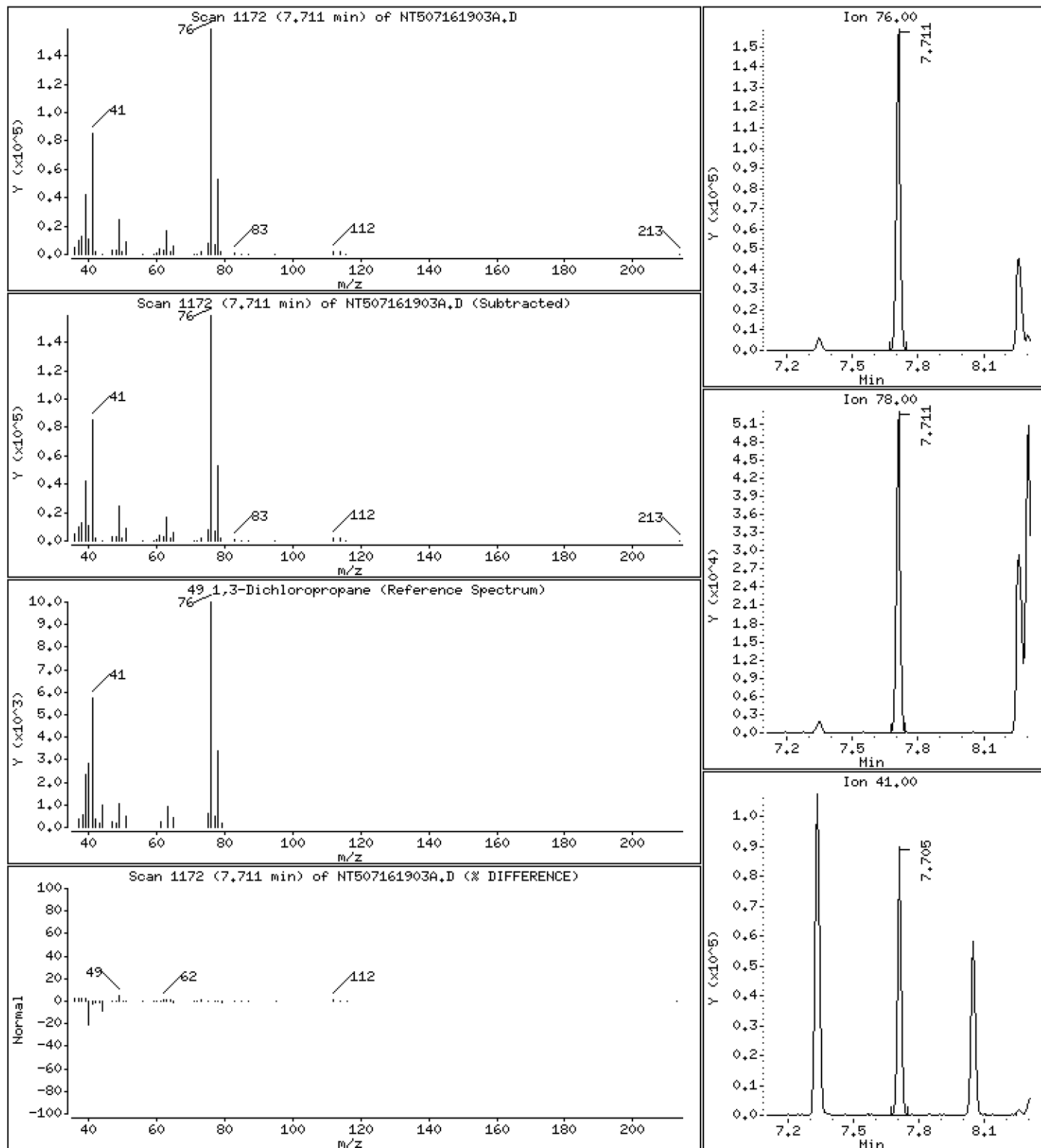
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 45,168 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

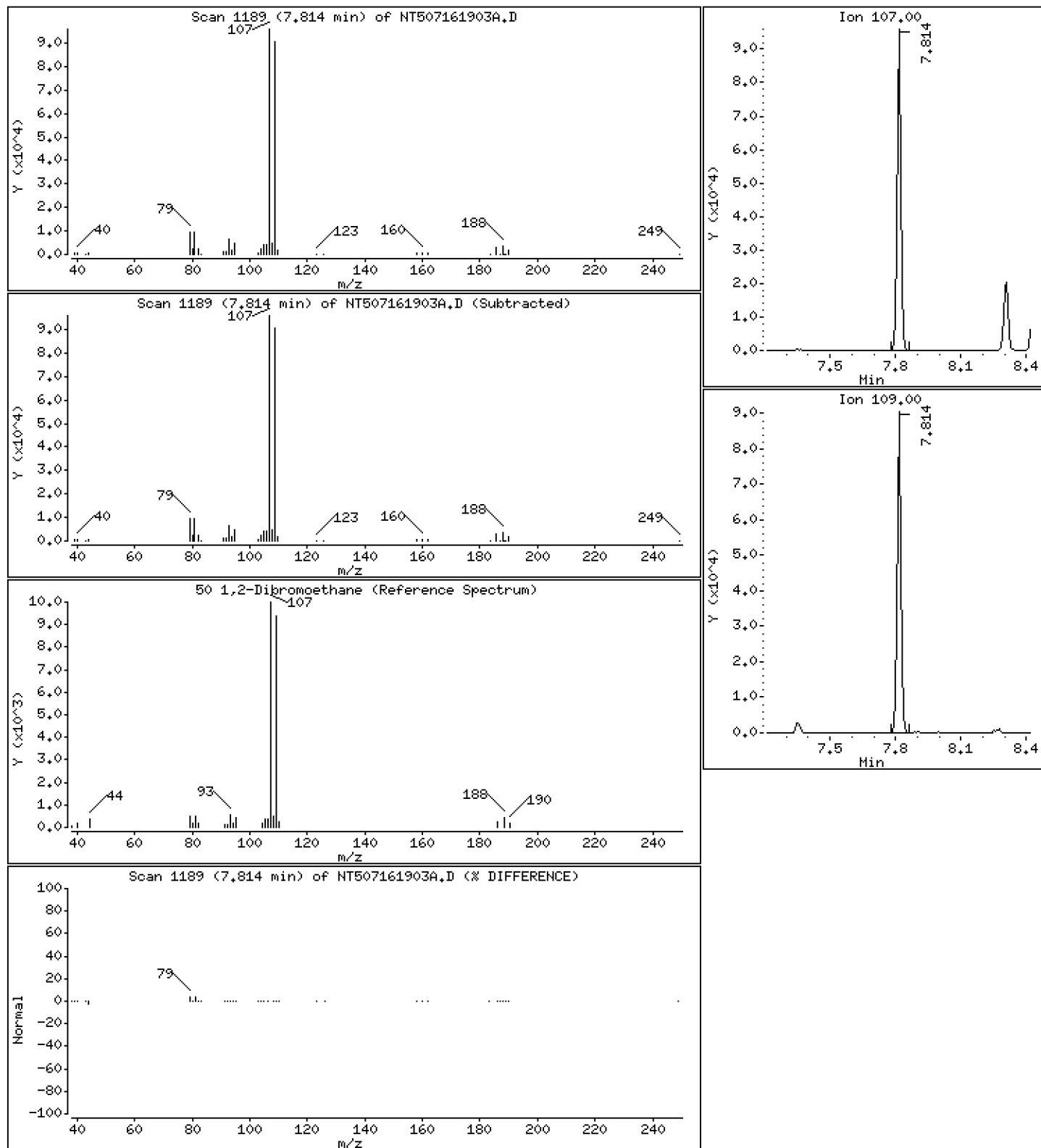
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 44,178 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

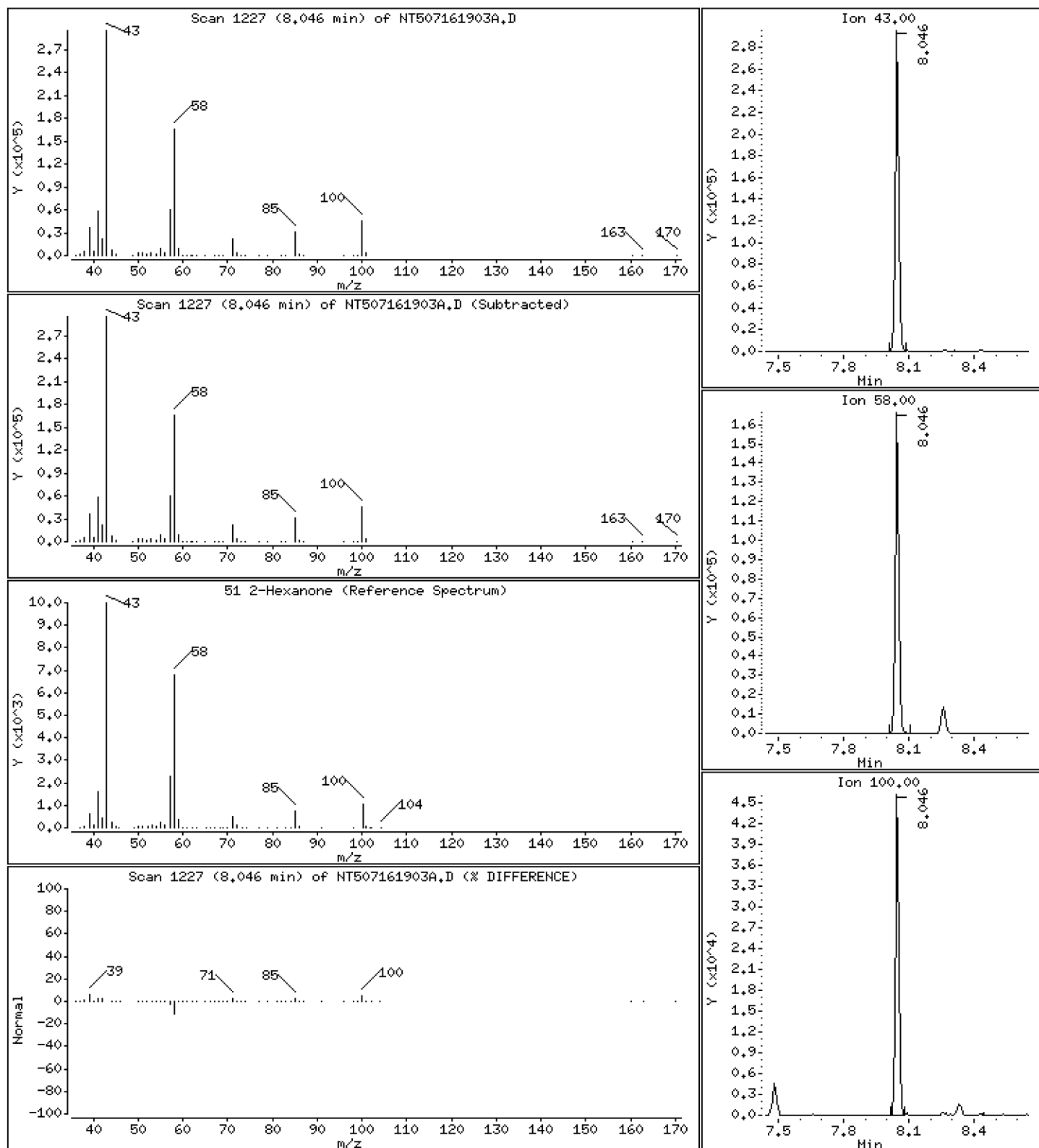
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 219.38 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

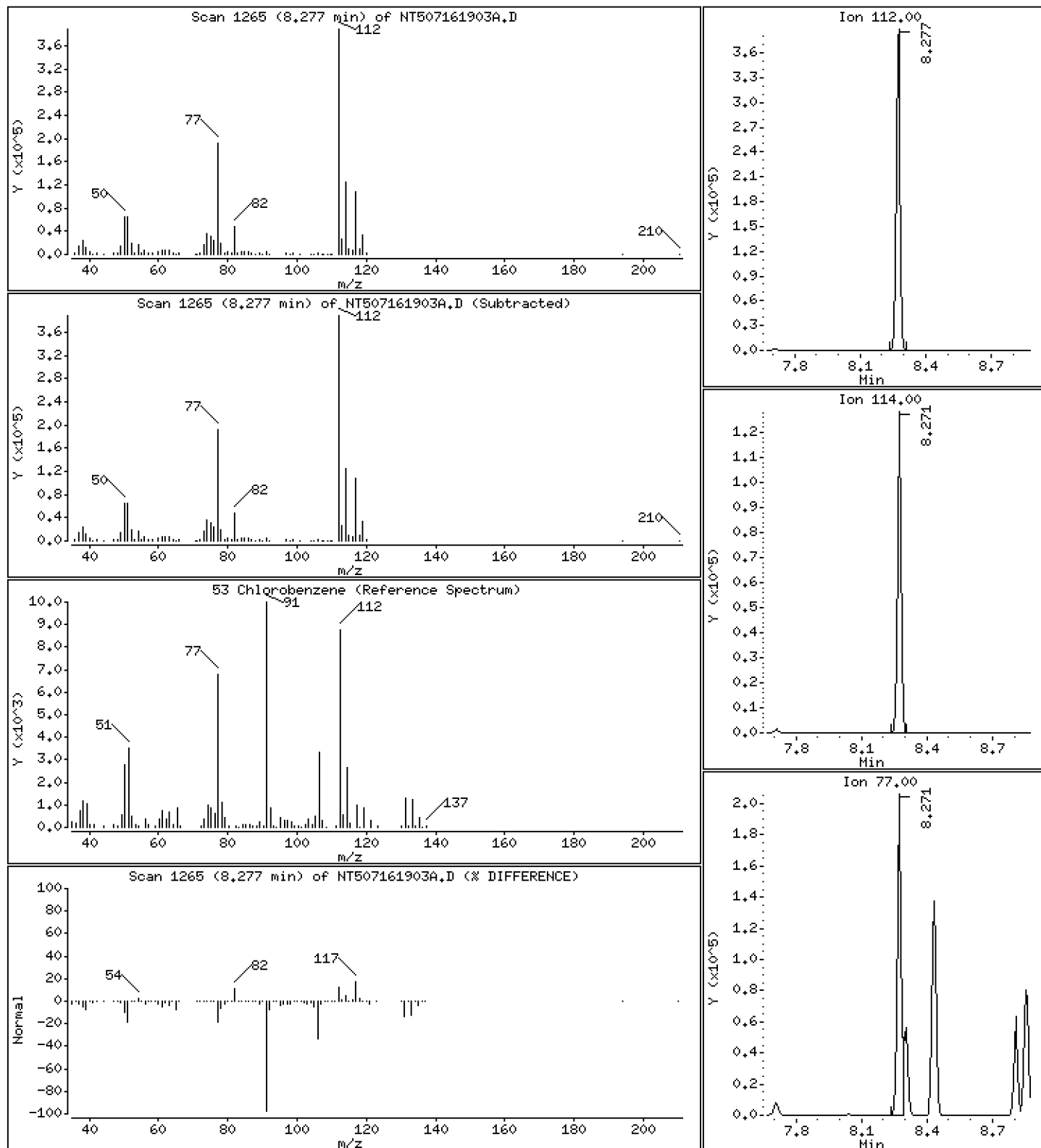
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 44,628 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

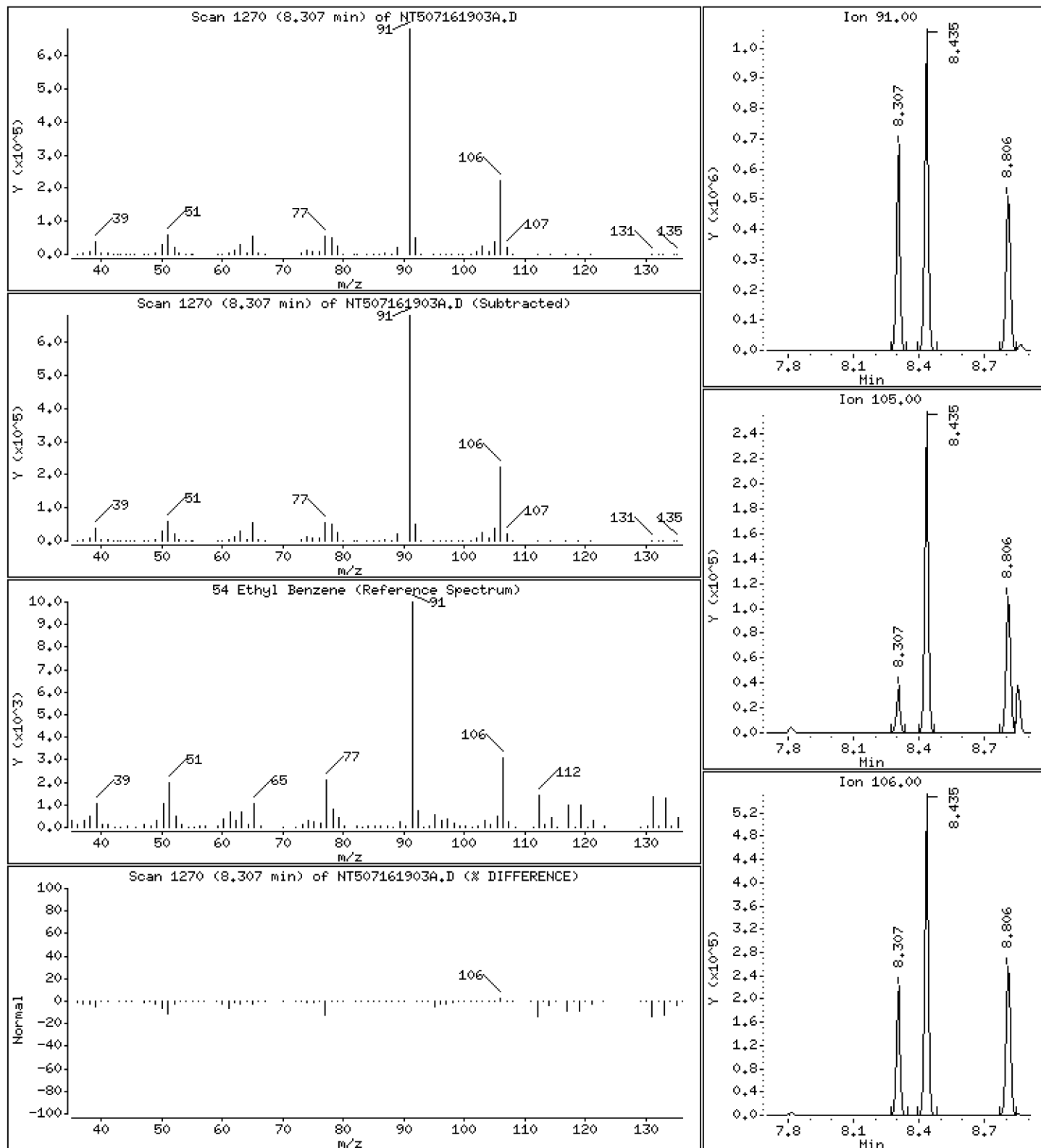
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 45.048 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: IGV1

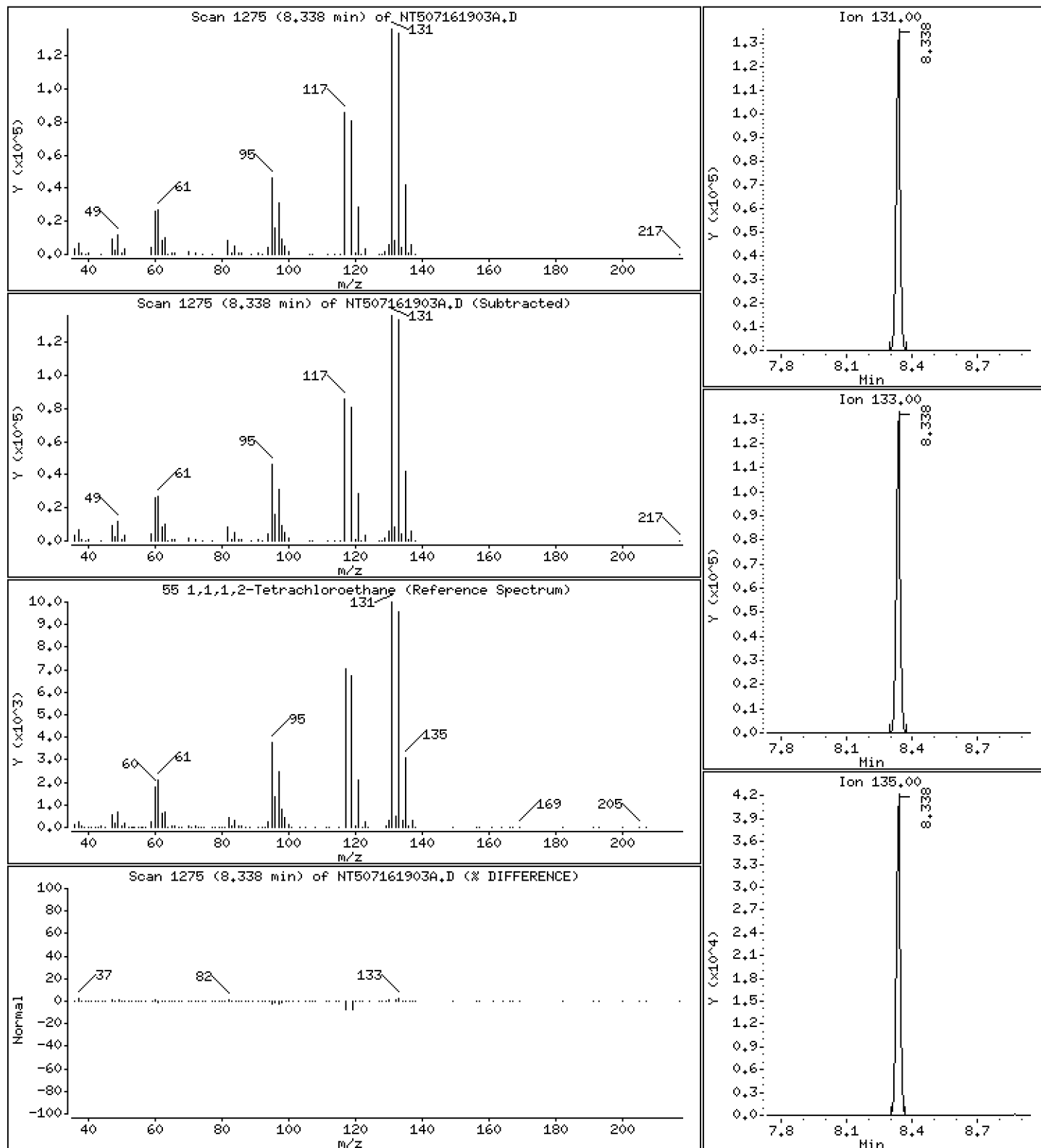
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 45.895 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

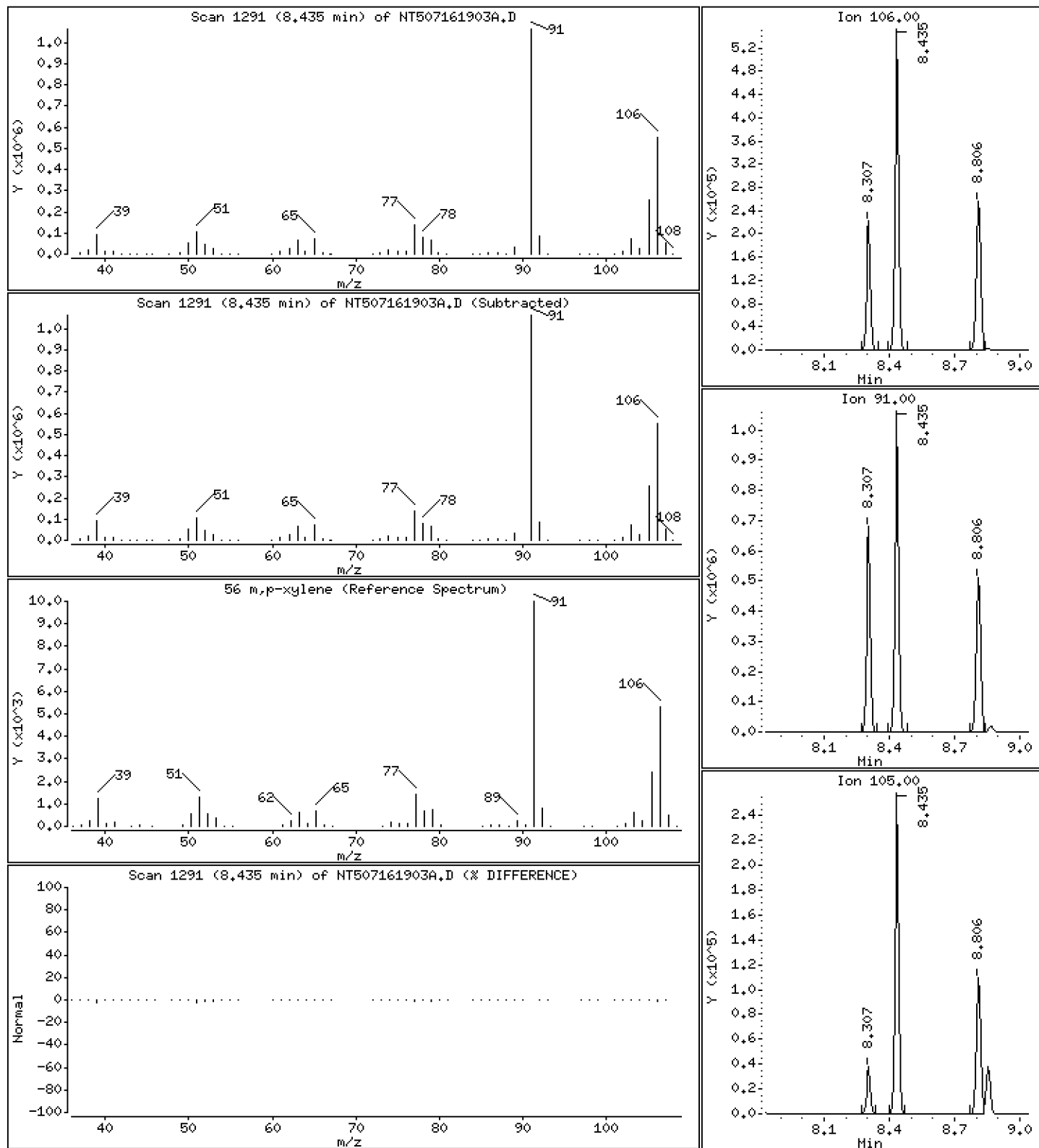
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 89,574 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

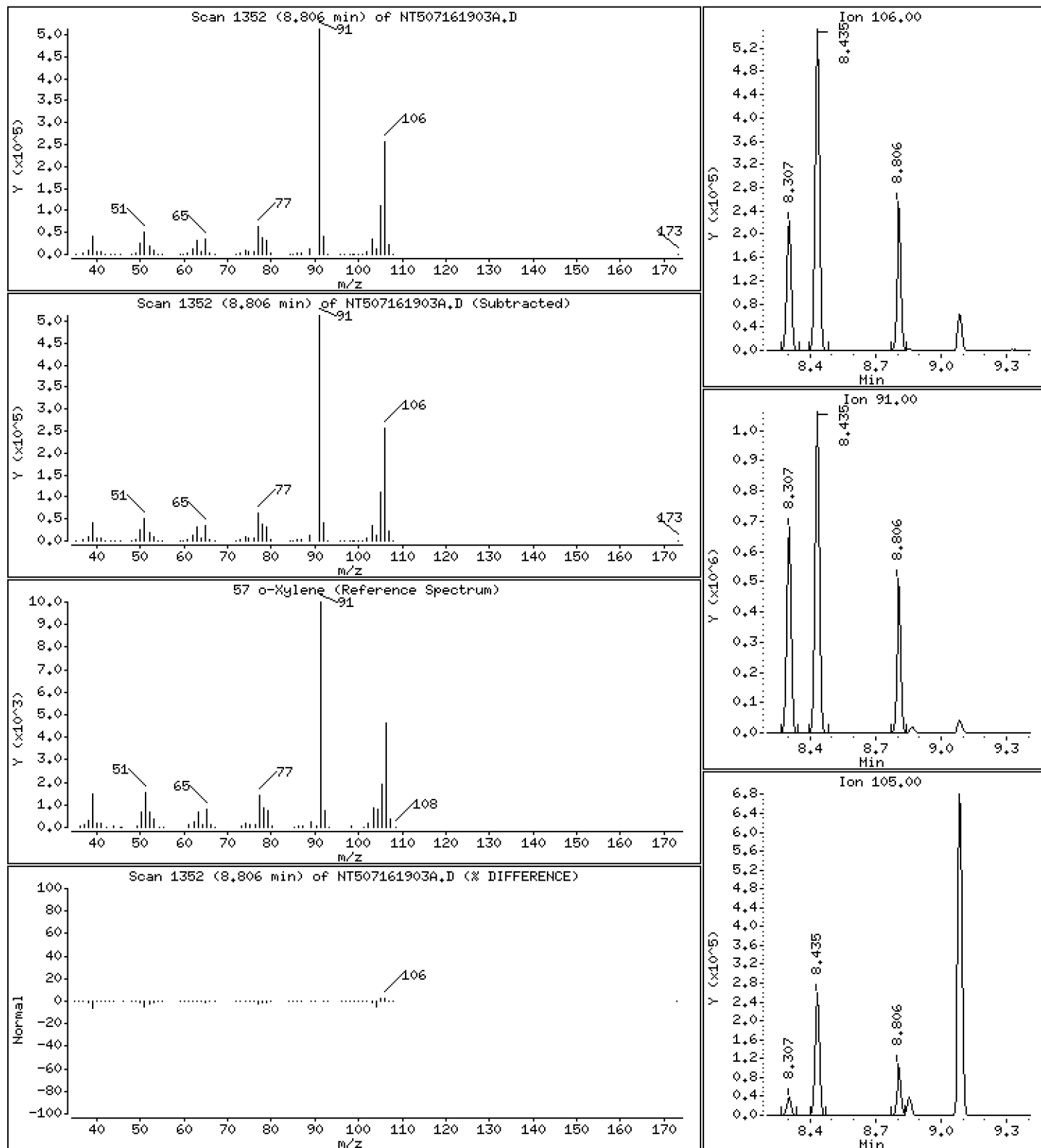
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 44,705 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

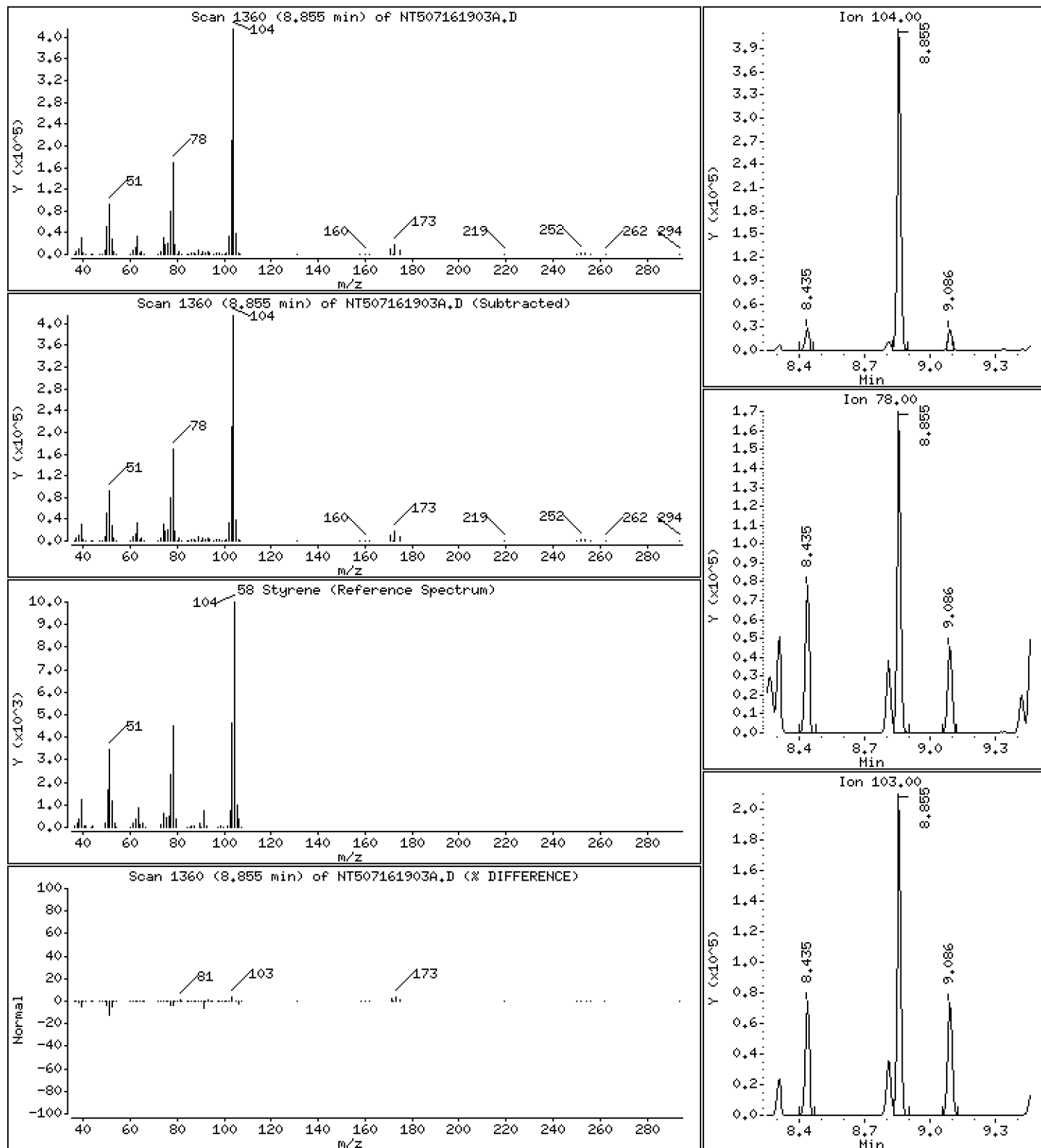
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 45,176 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

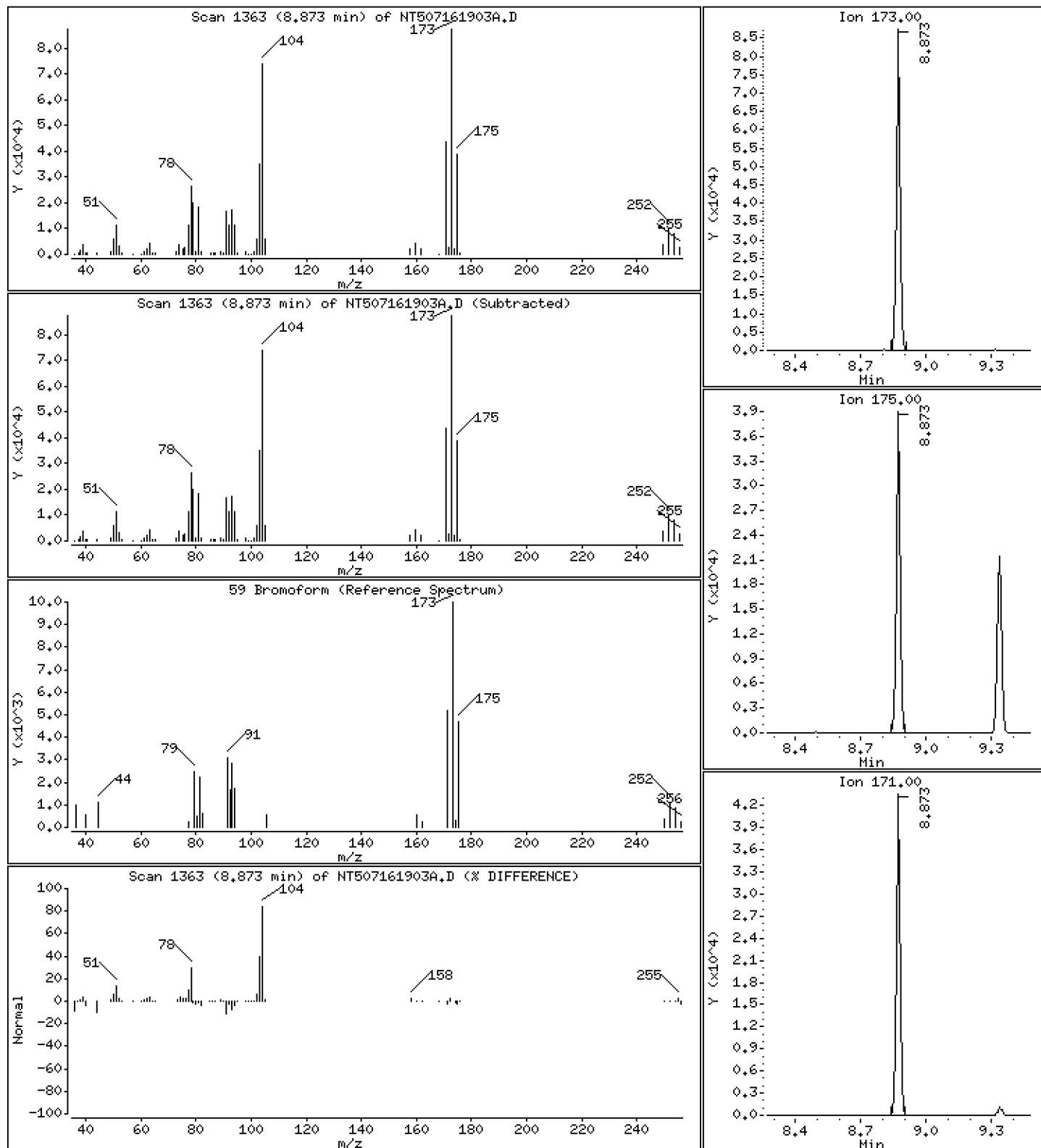
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59. Bromoform

Concentration: 43,862 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

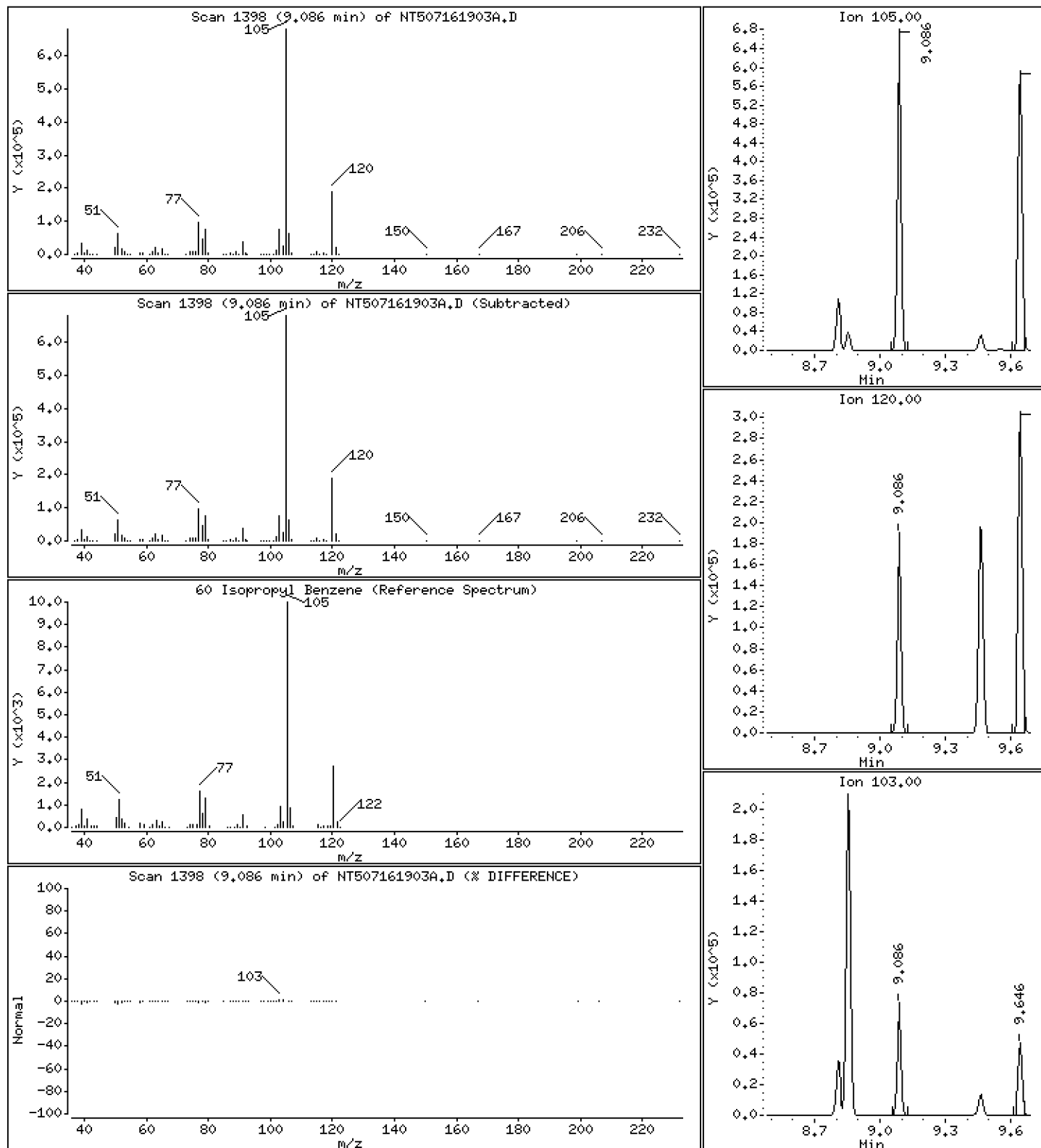
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 46,904 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

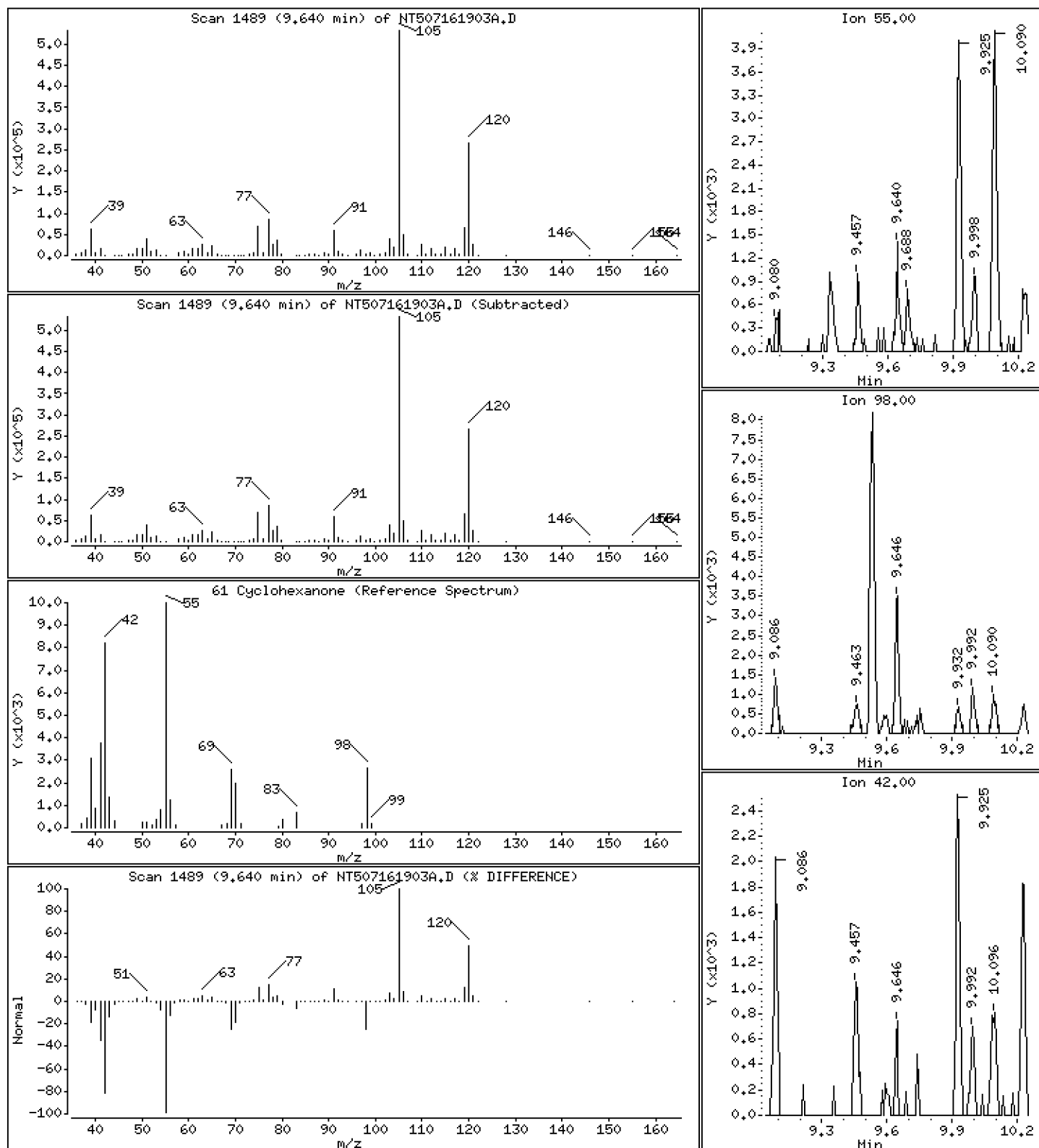
Sample Info: ICV1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

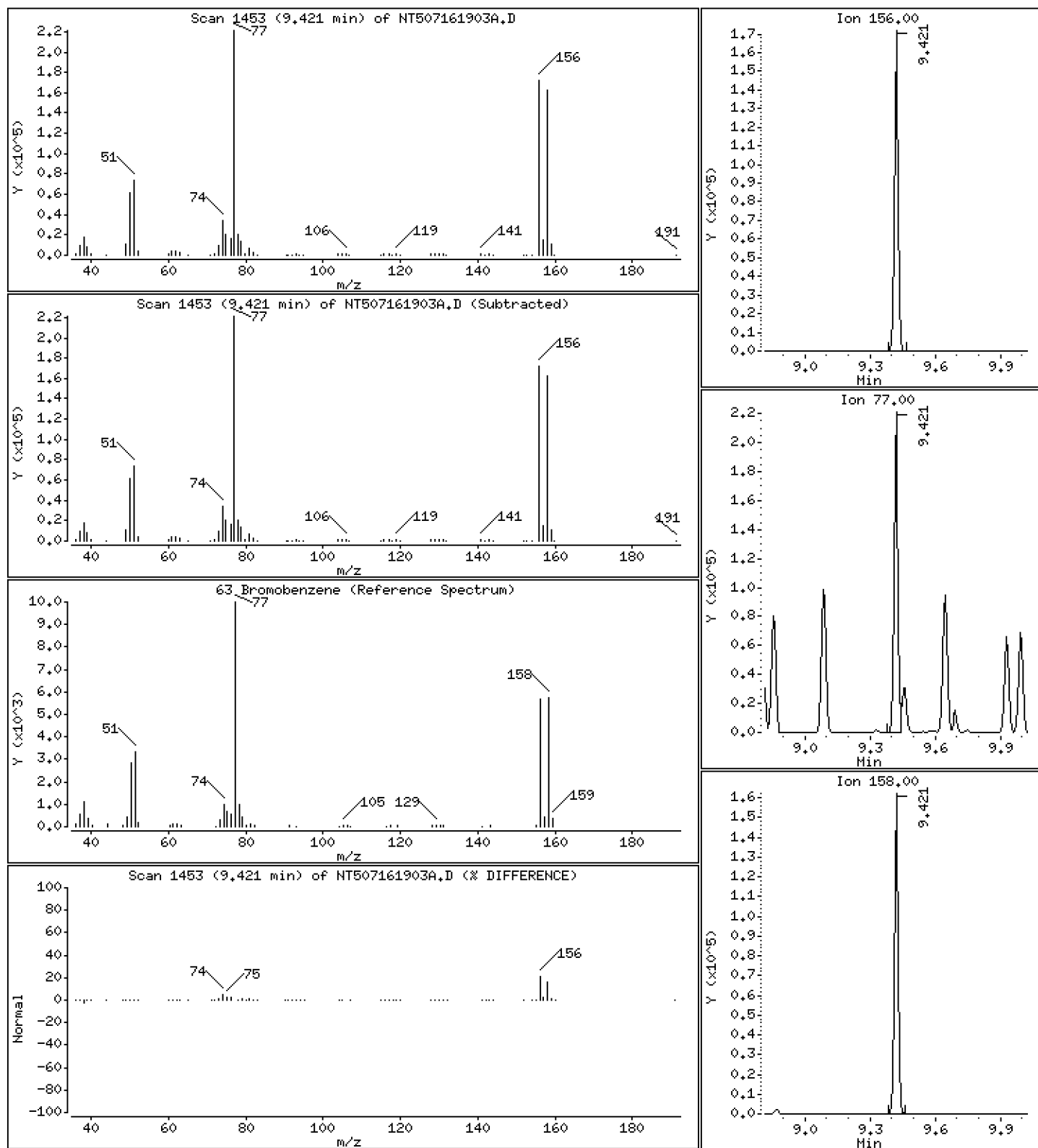
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 45,270 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

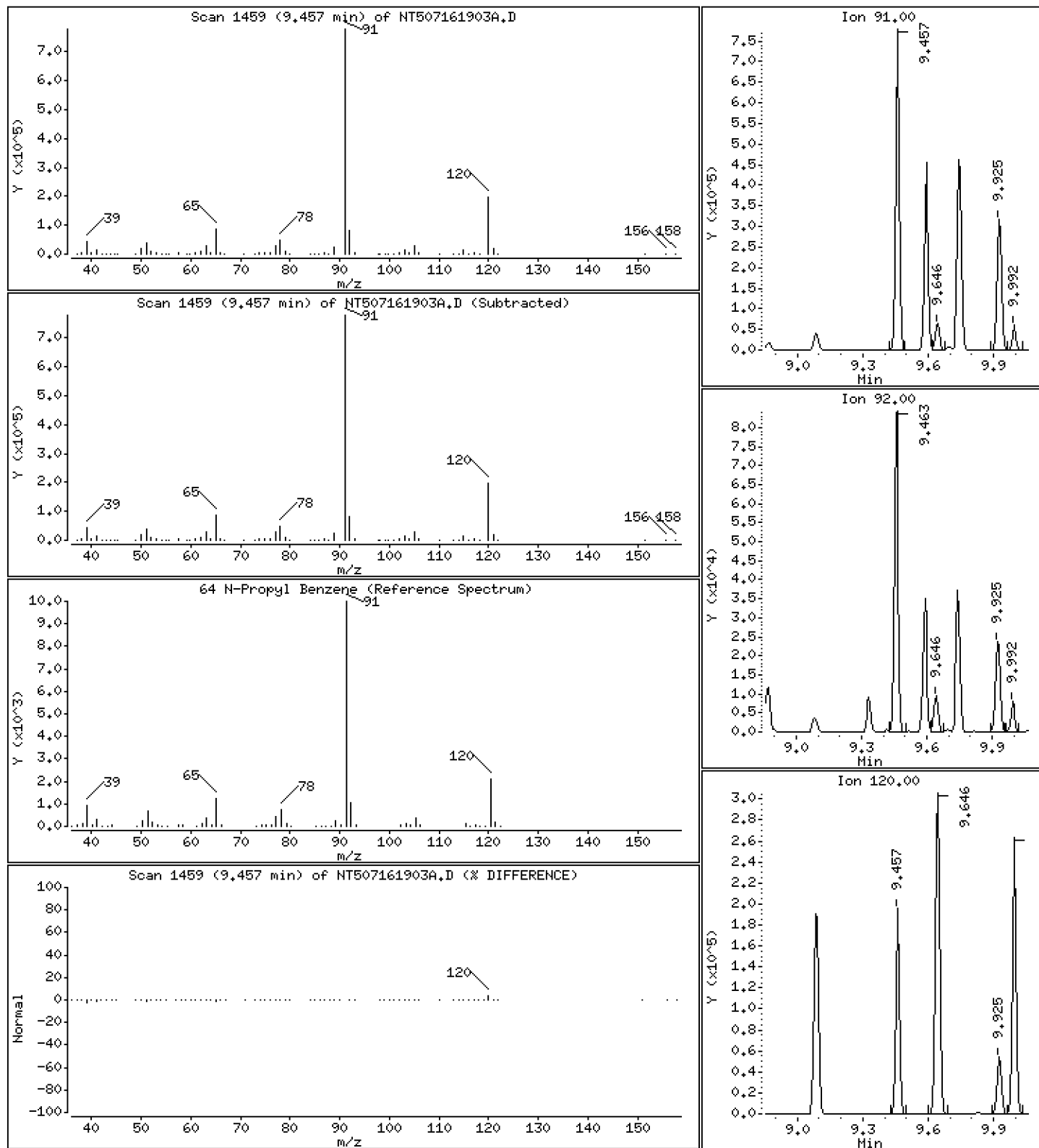
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 47,248 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

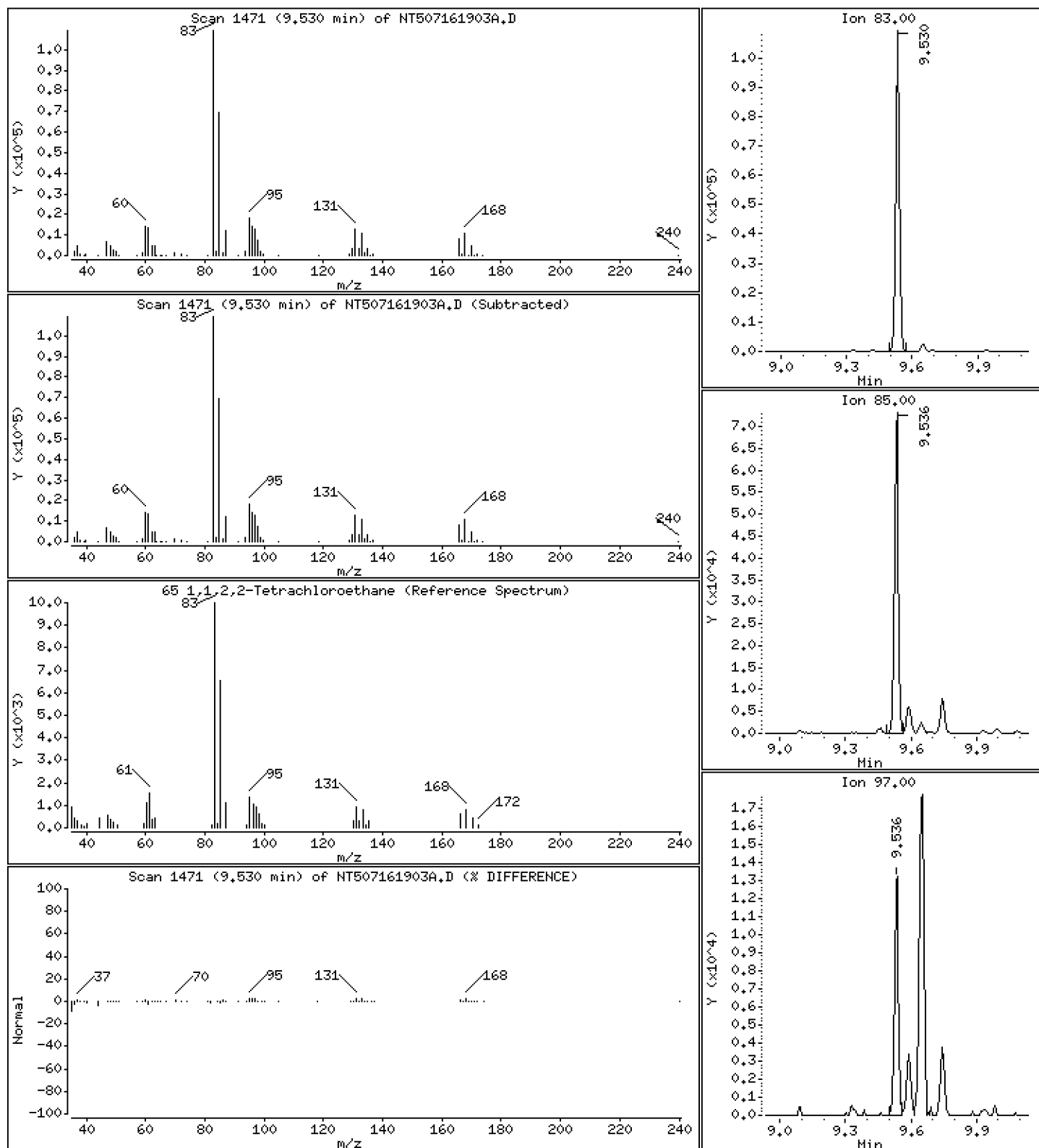
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 43,764 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

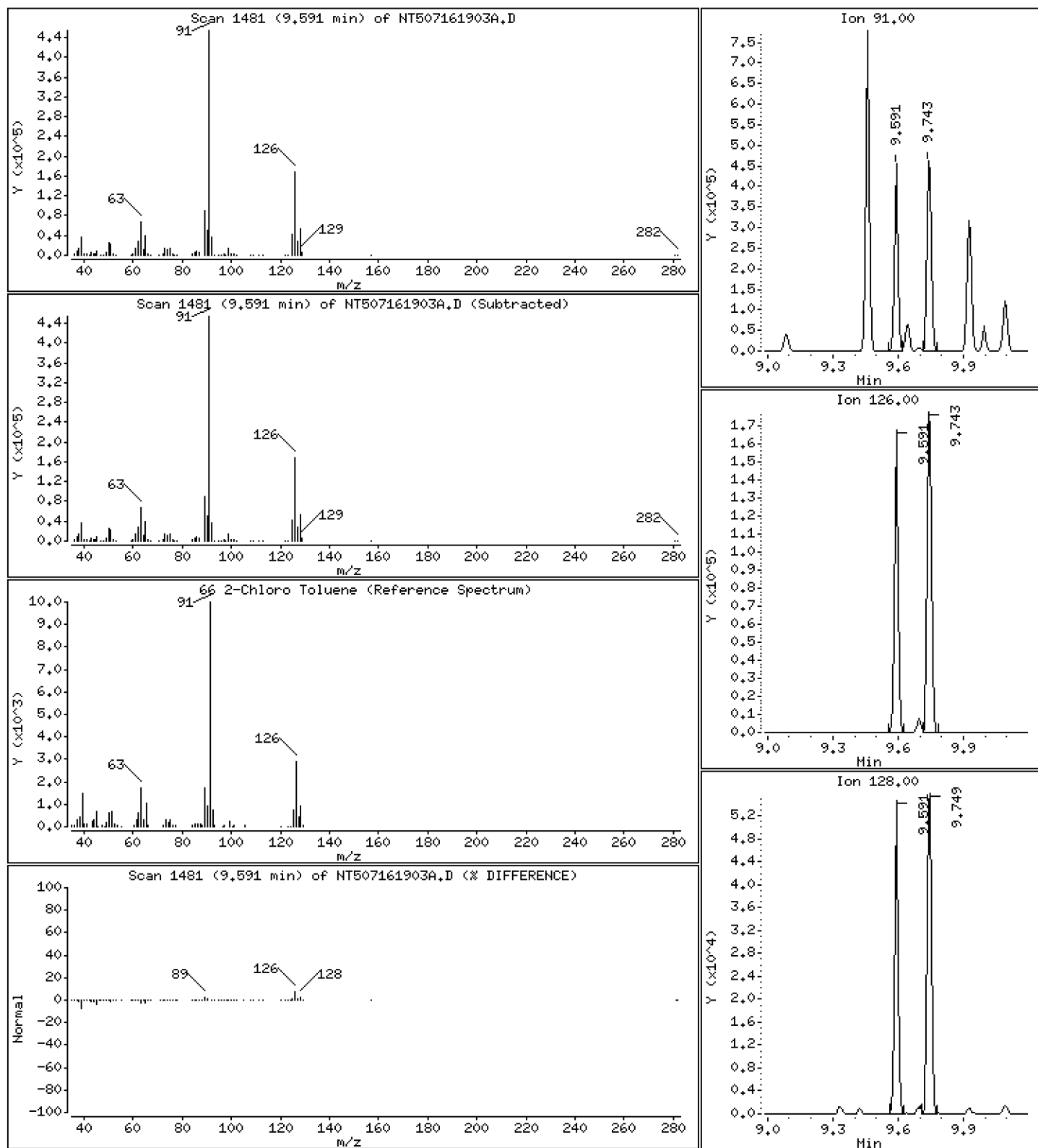
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 47,077 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

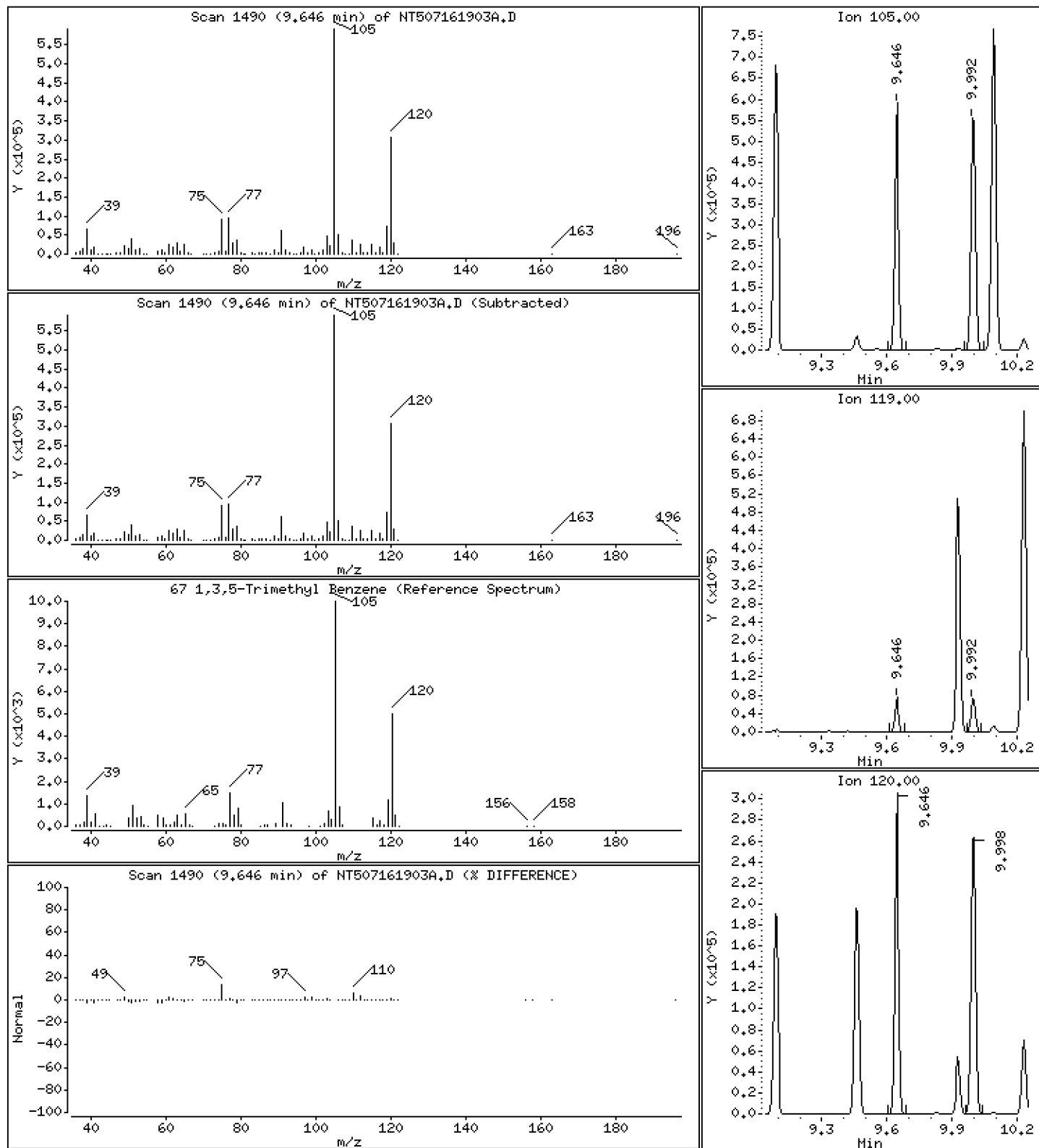
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 47.665 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

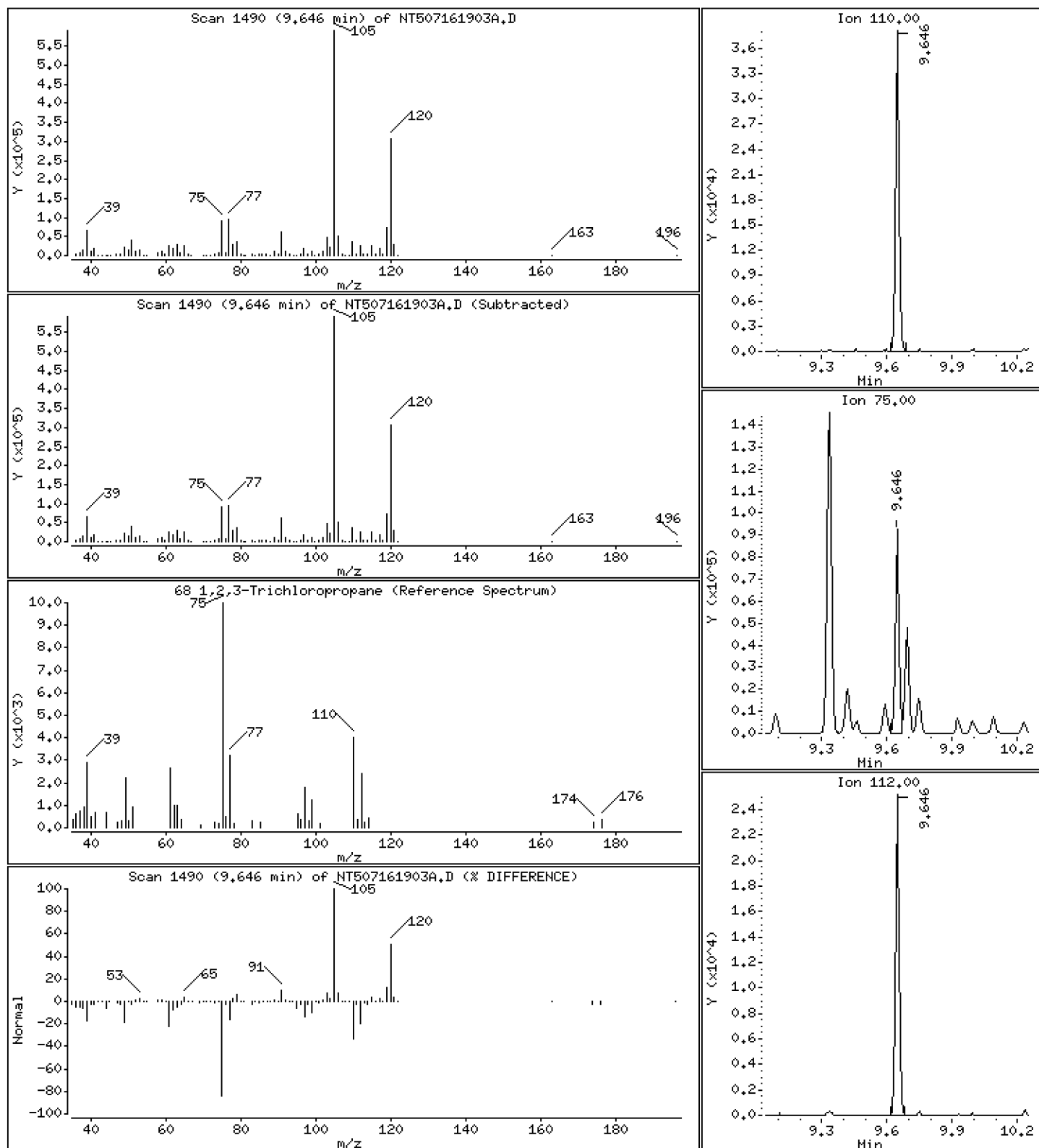
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 42,175 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

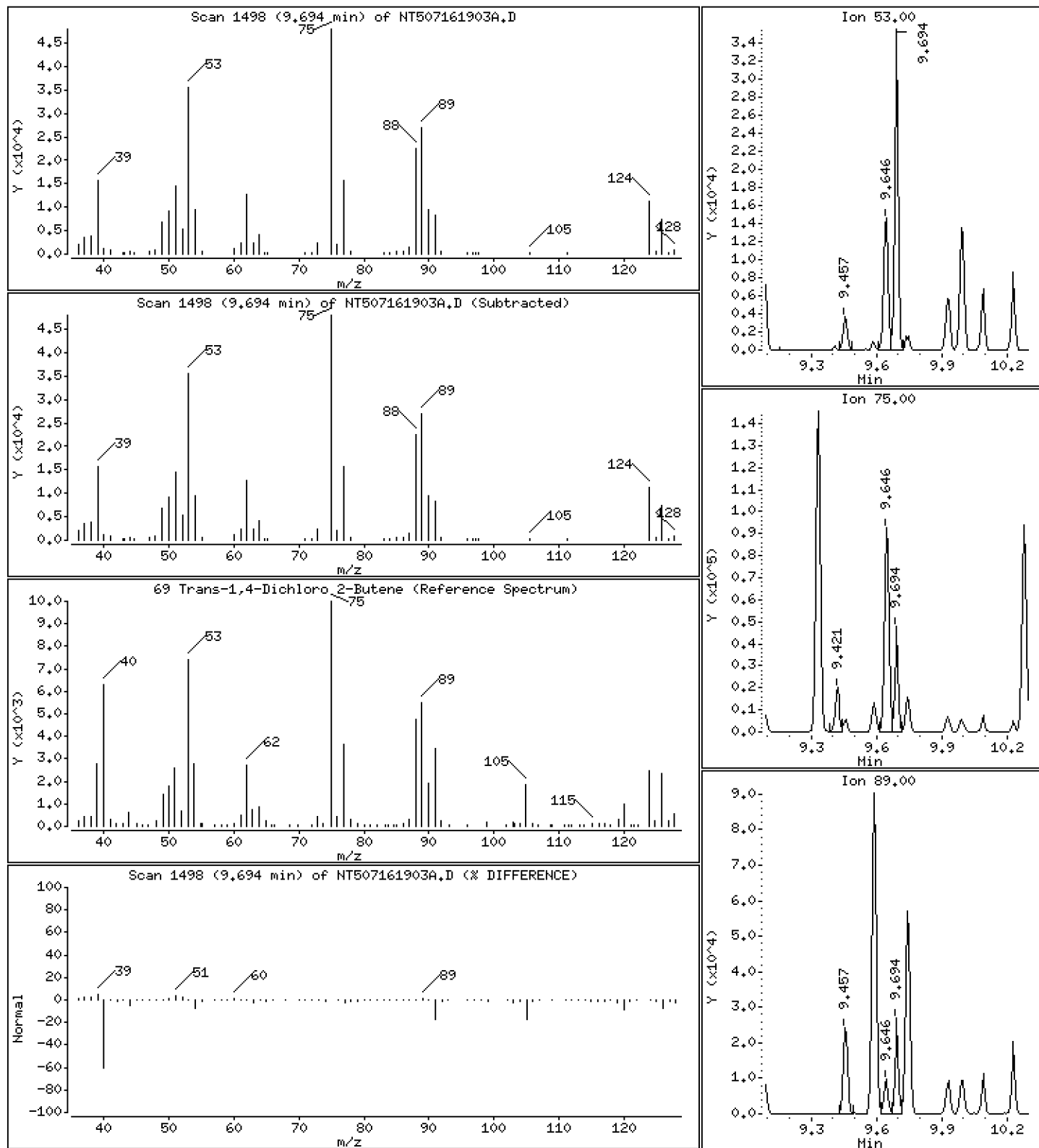
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 47.923 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

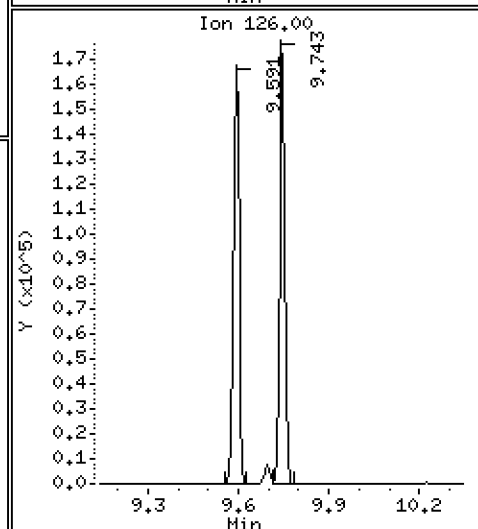
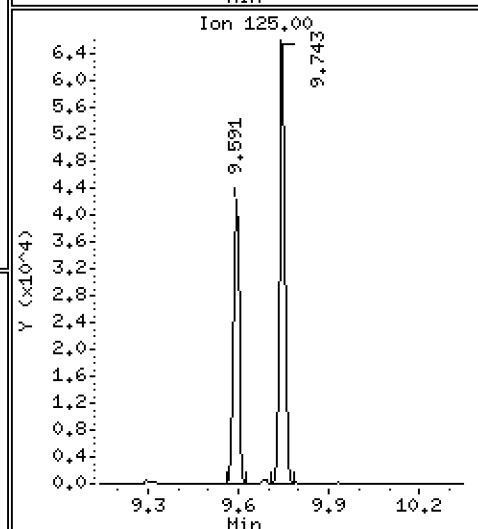
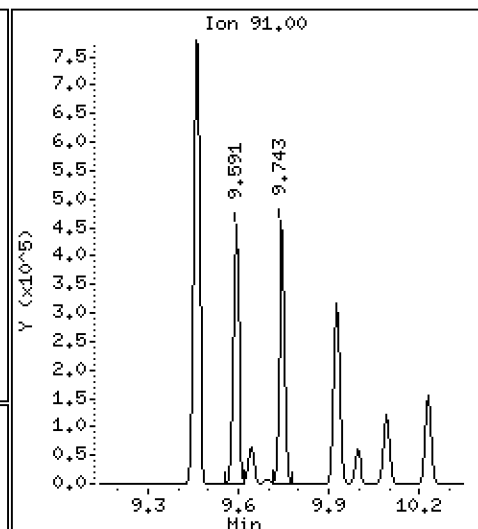
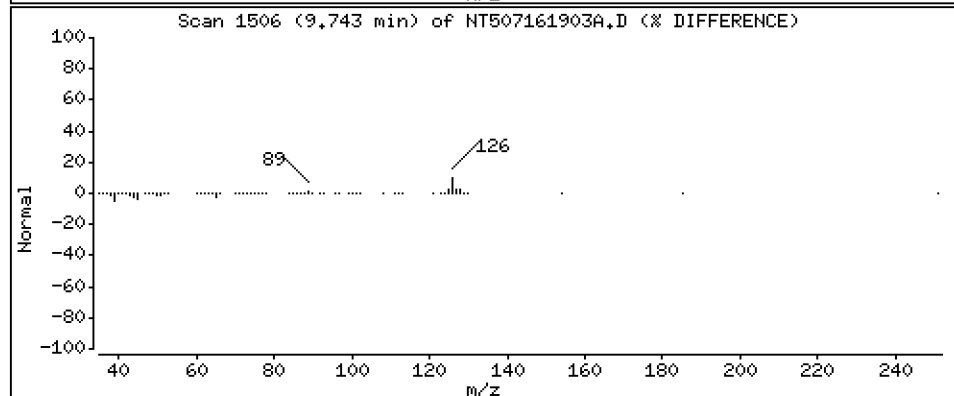
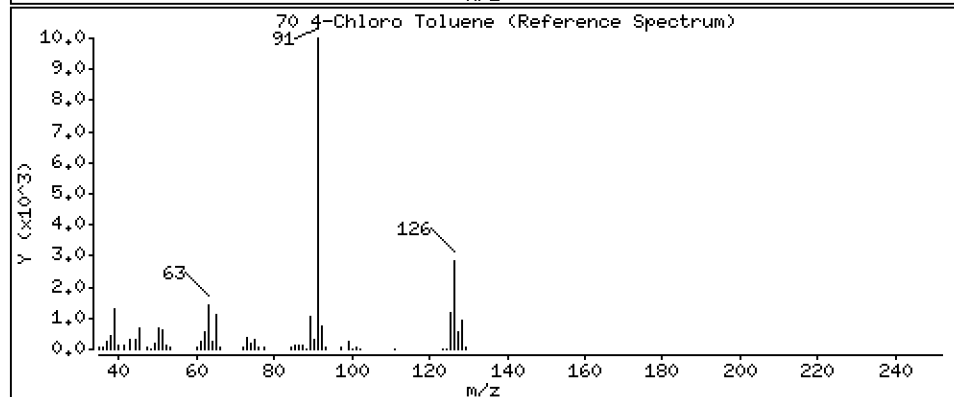
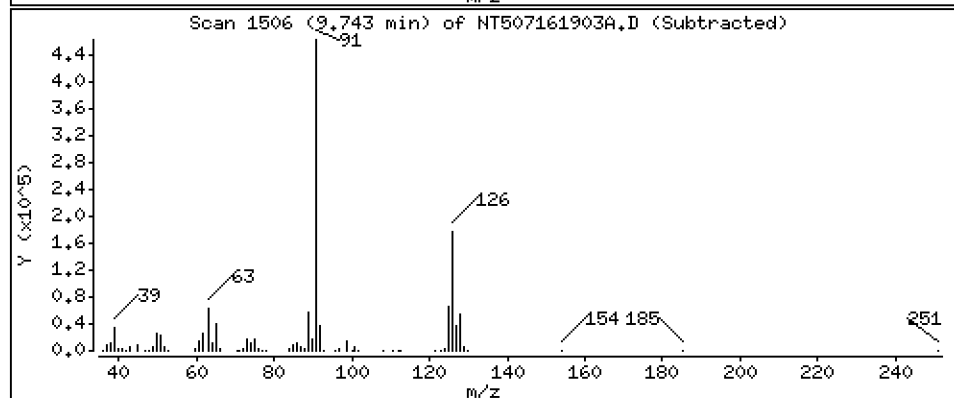
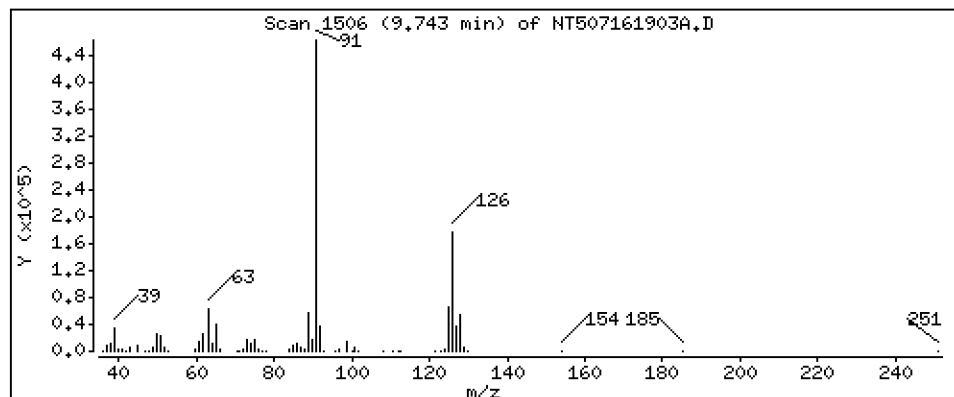
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 46,894 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

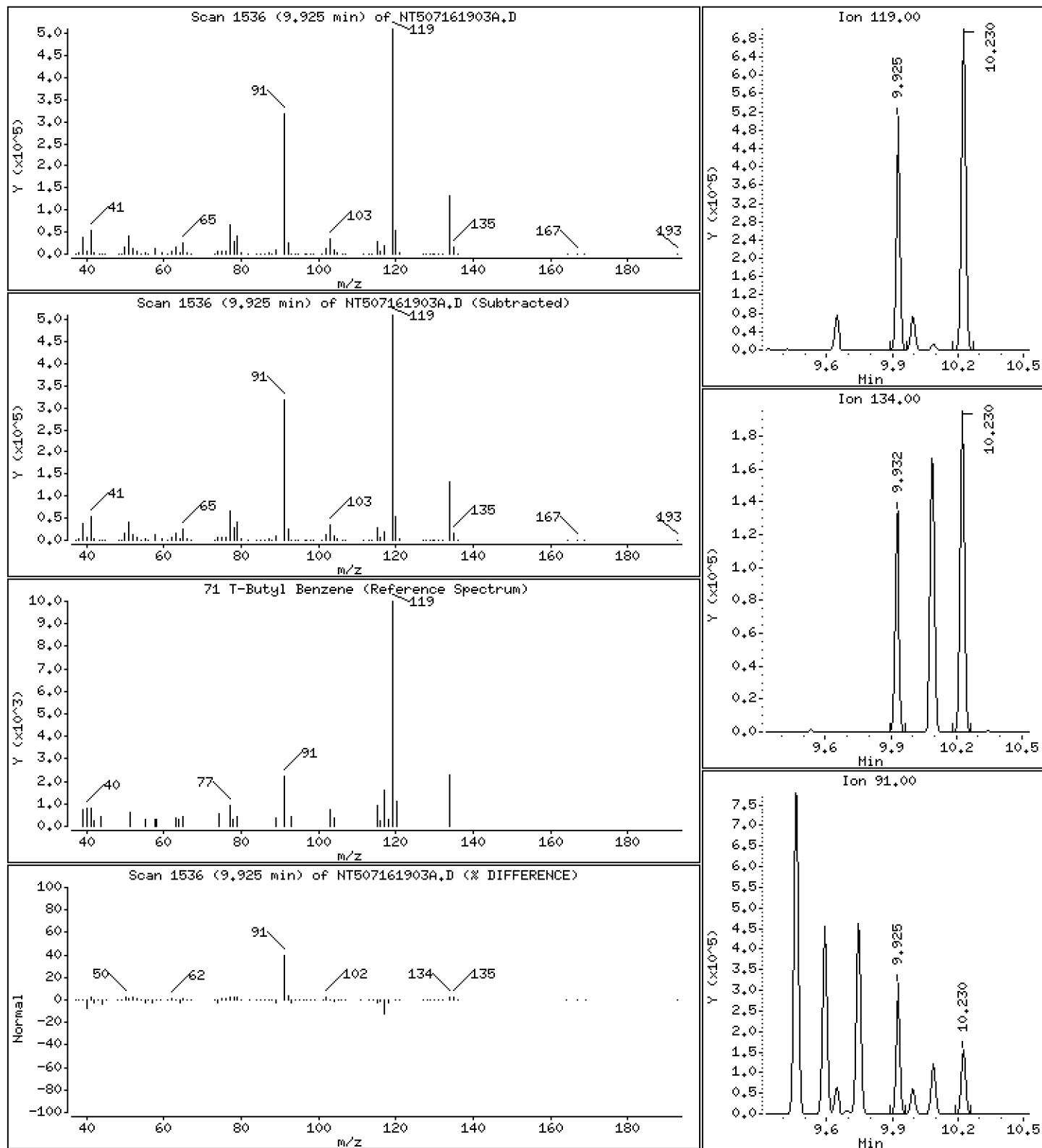
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 46,349 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: IGV1

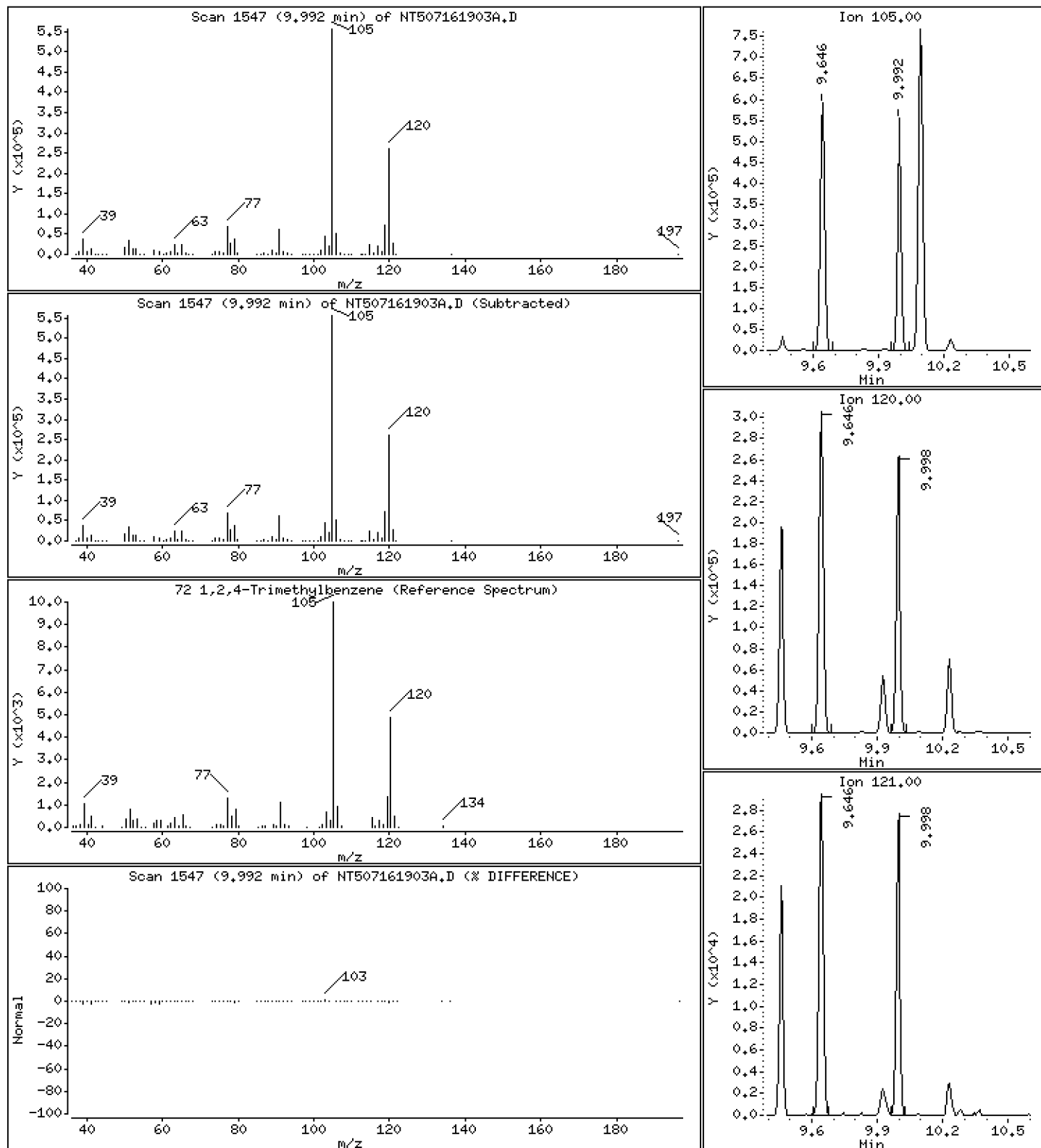
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 47,508 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

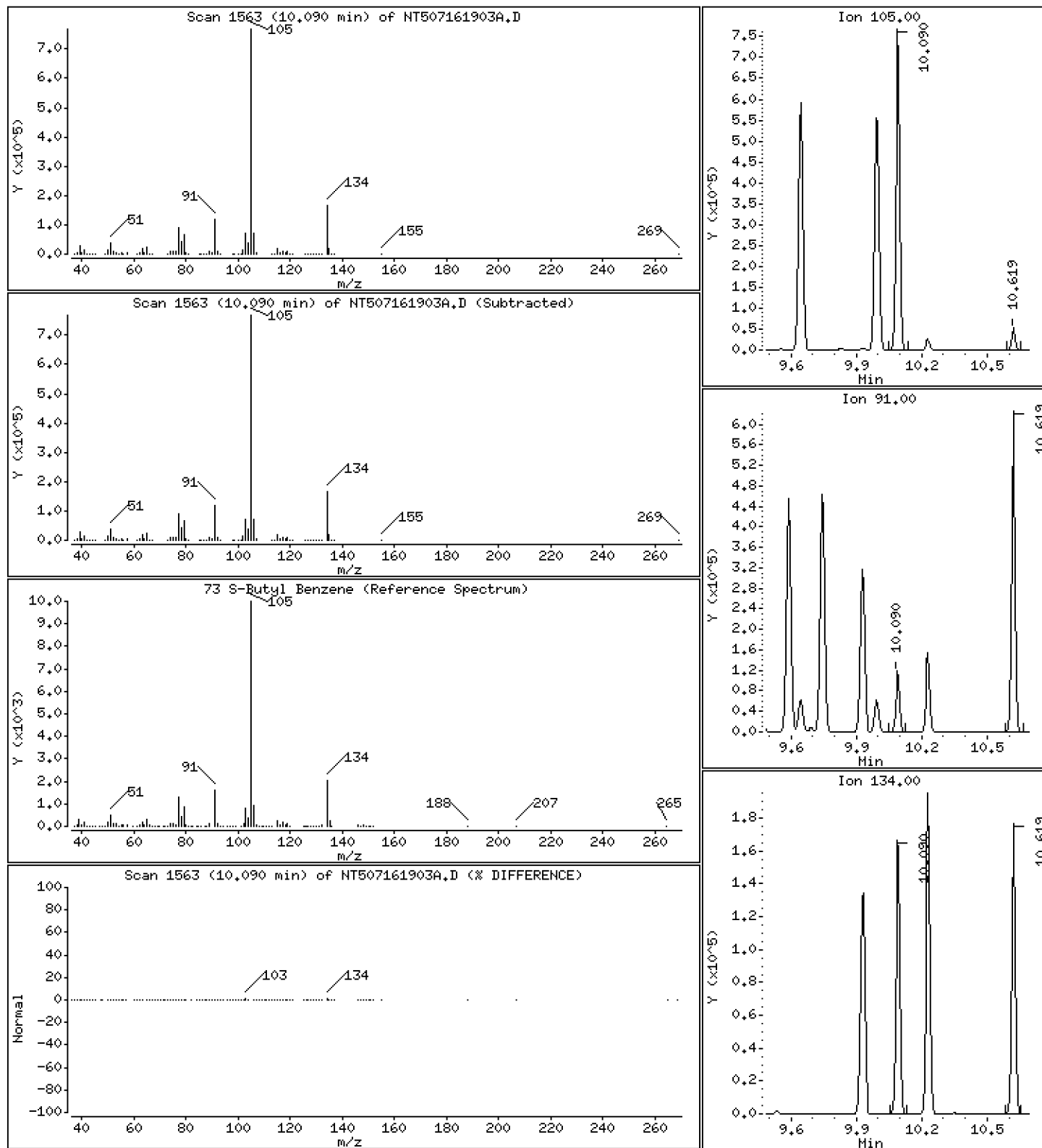
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 46.947 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

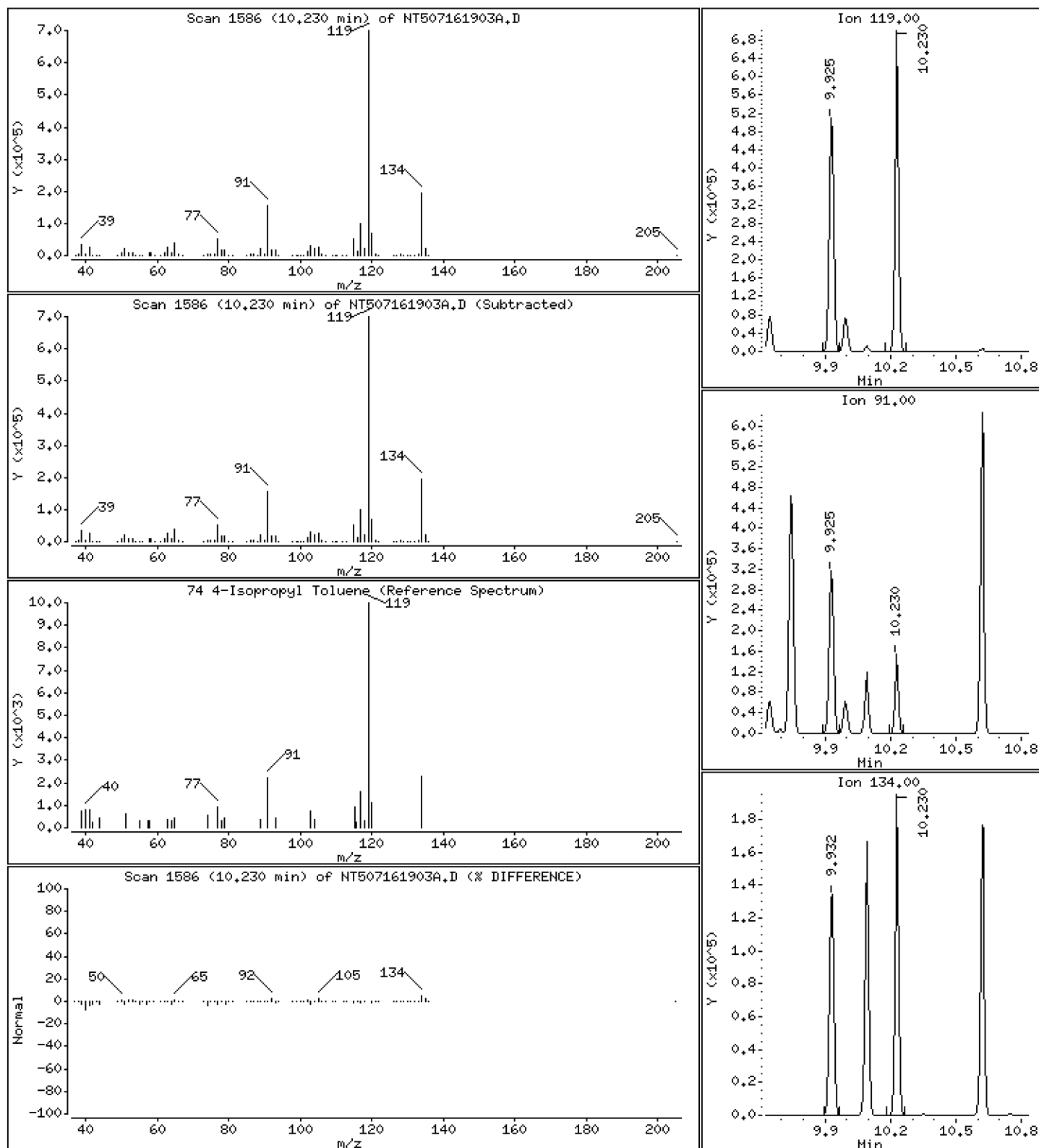
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 47,980 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

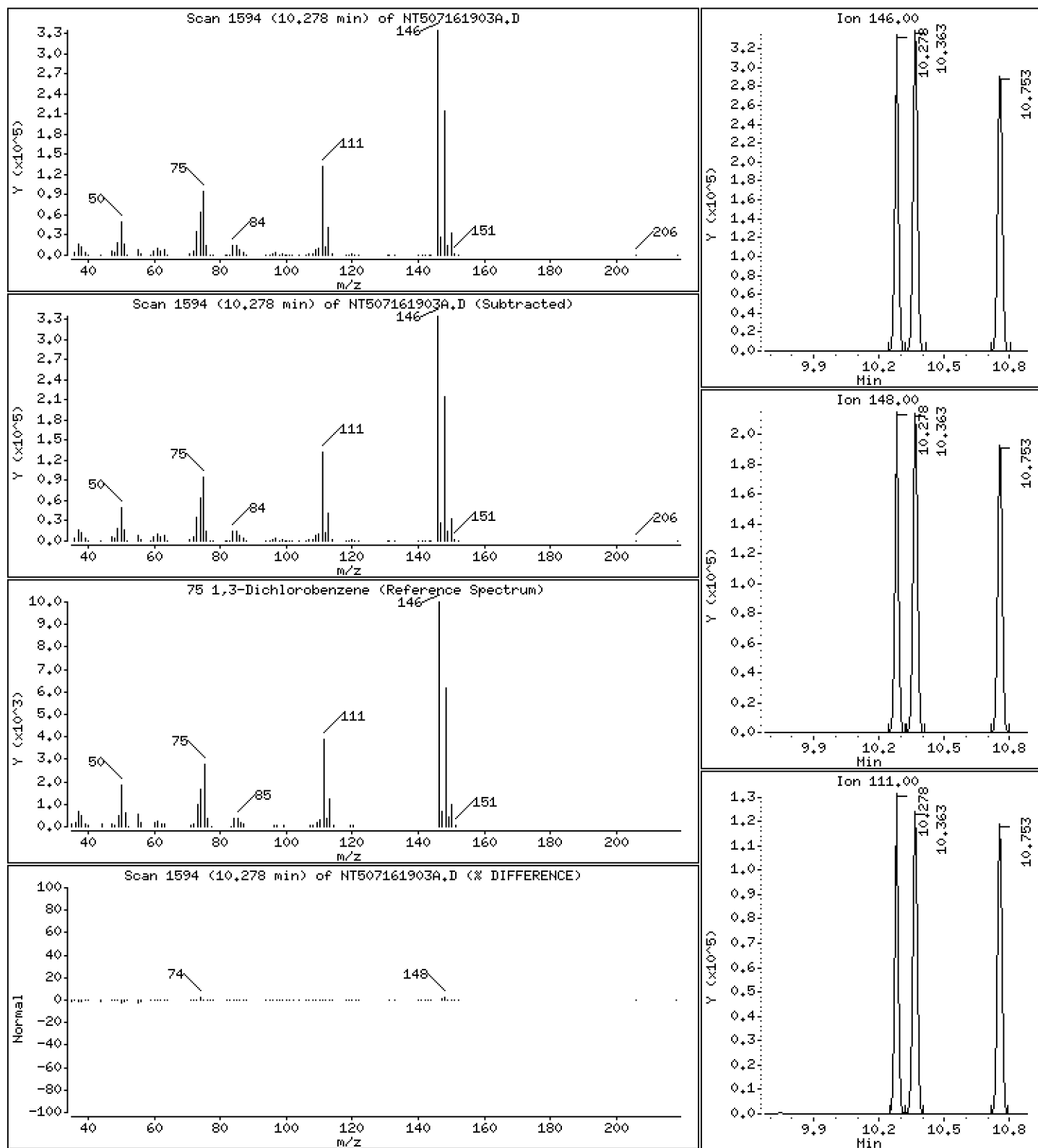
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 45,610 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

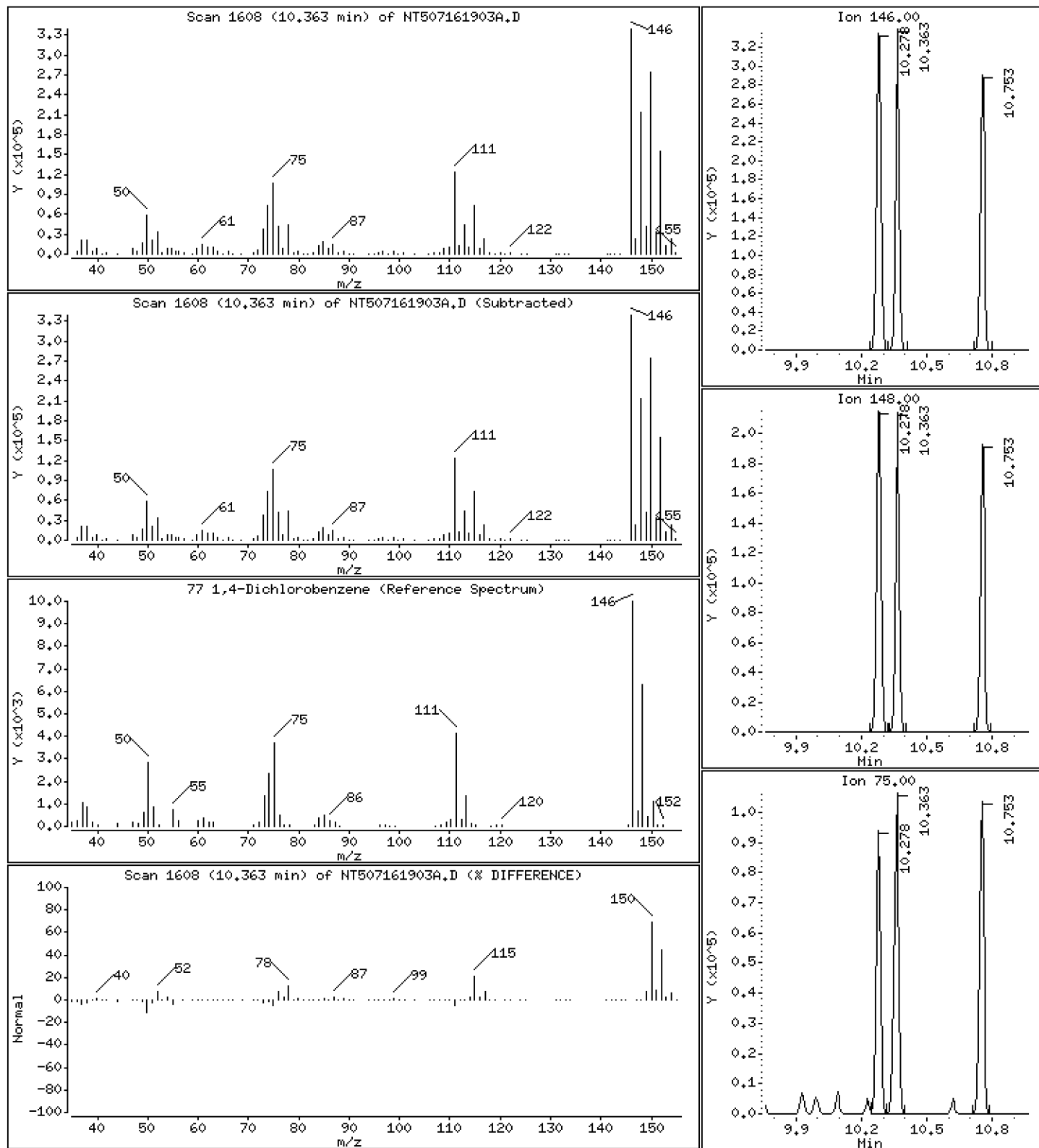
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 45,929 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

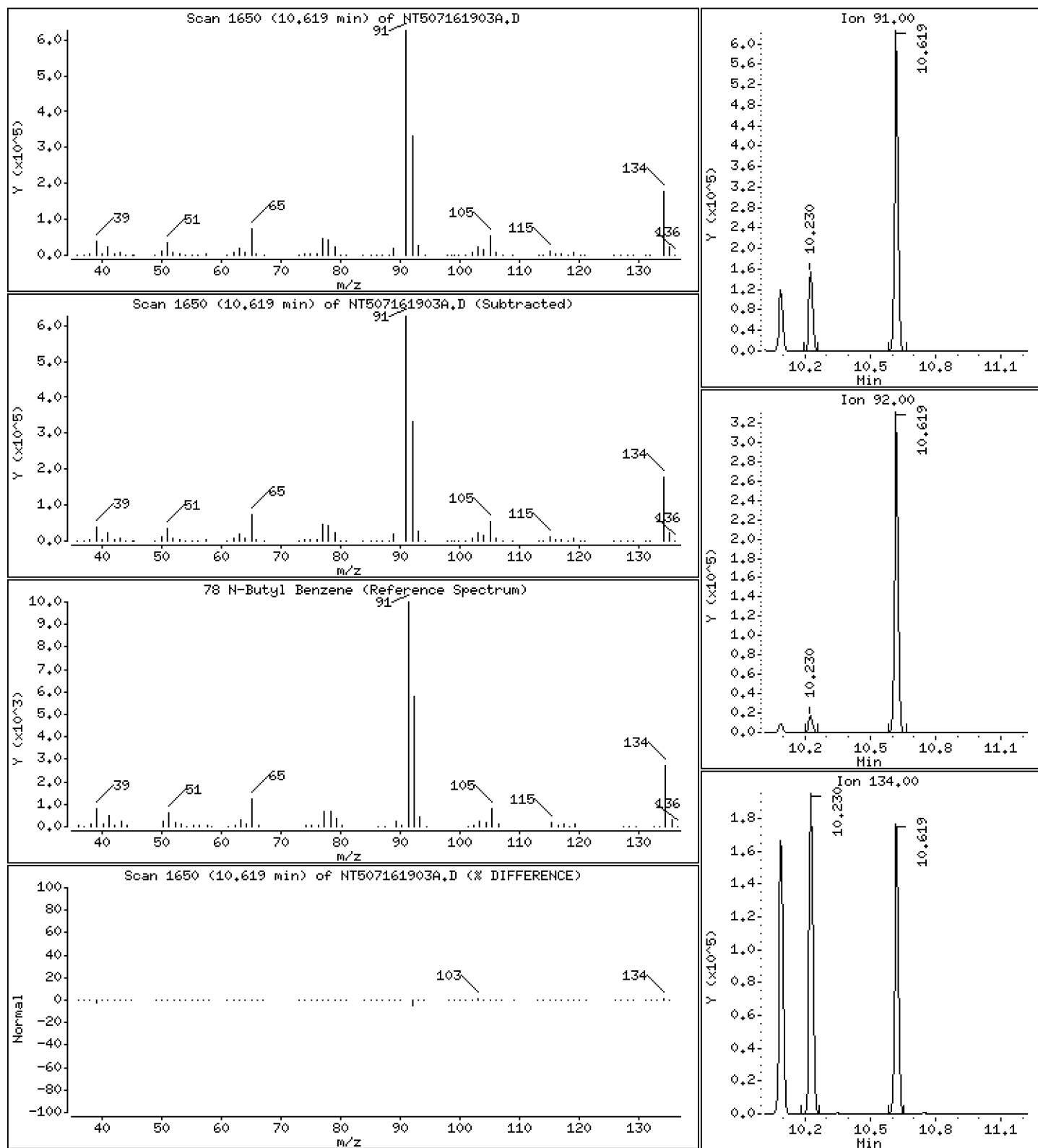
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 48,122 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

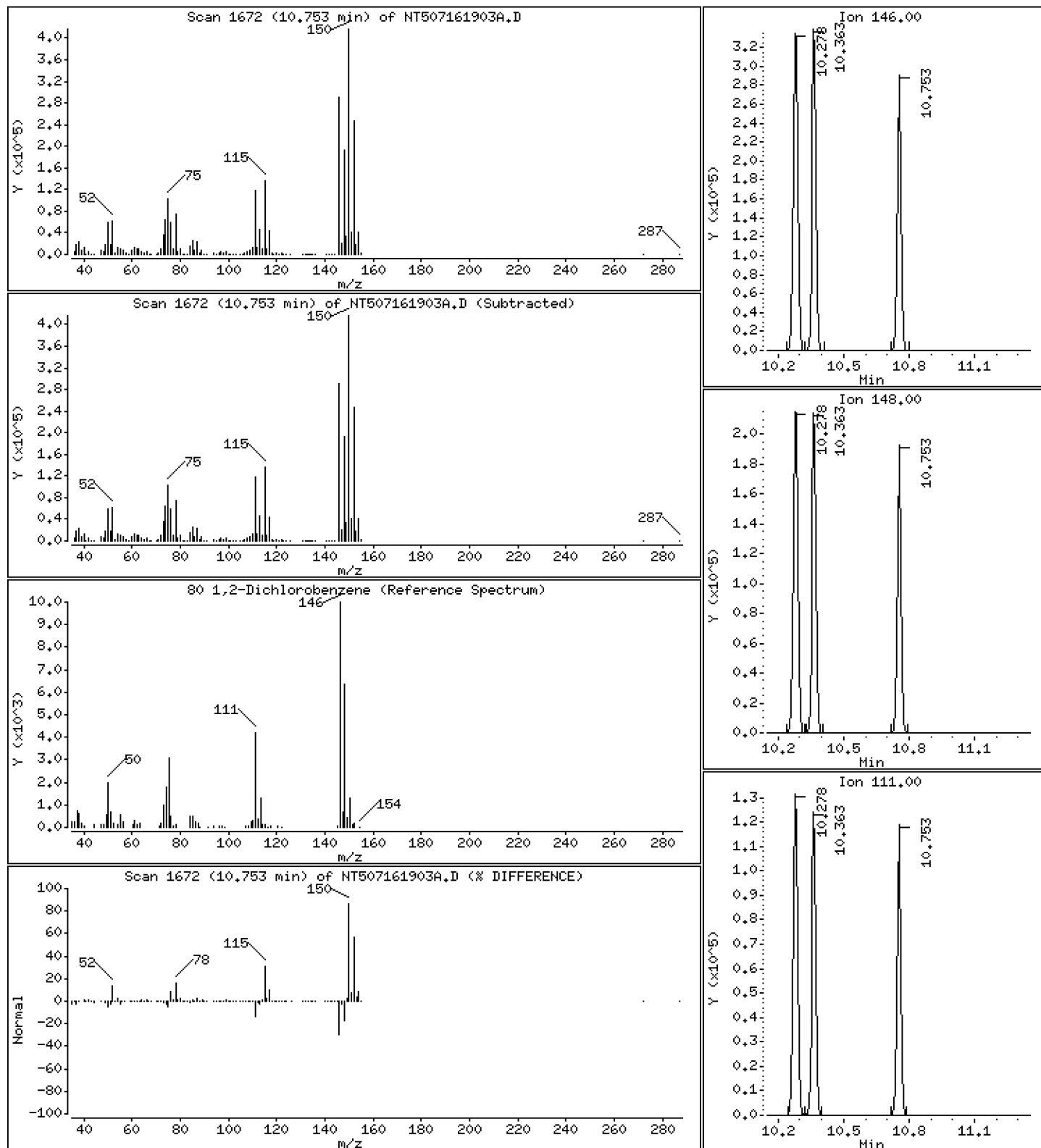
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 45.466 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

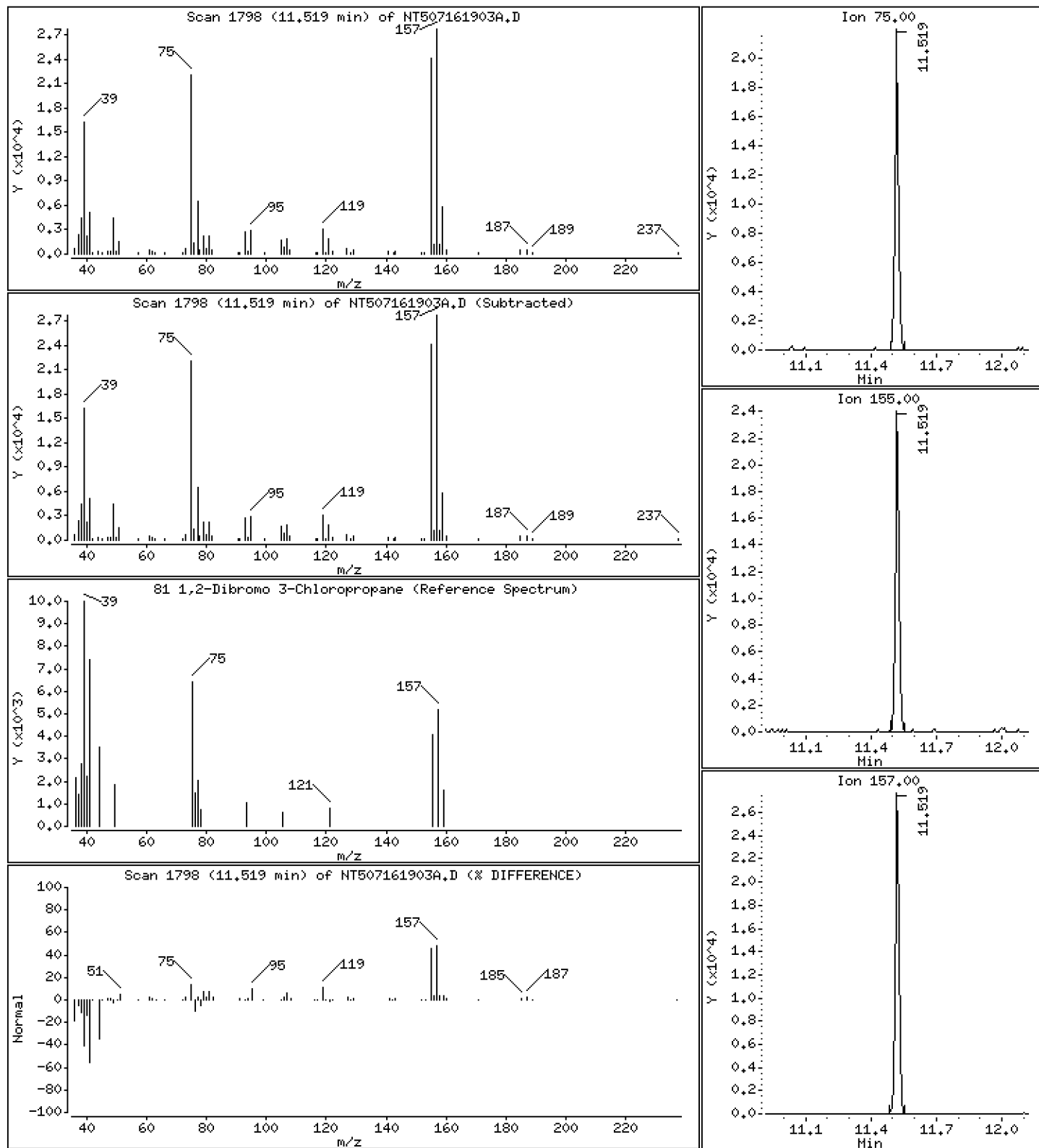
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 43.051 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

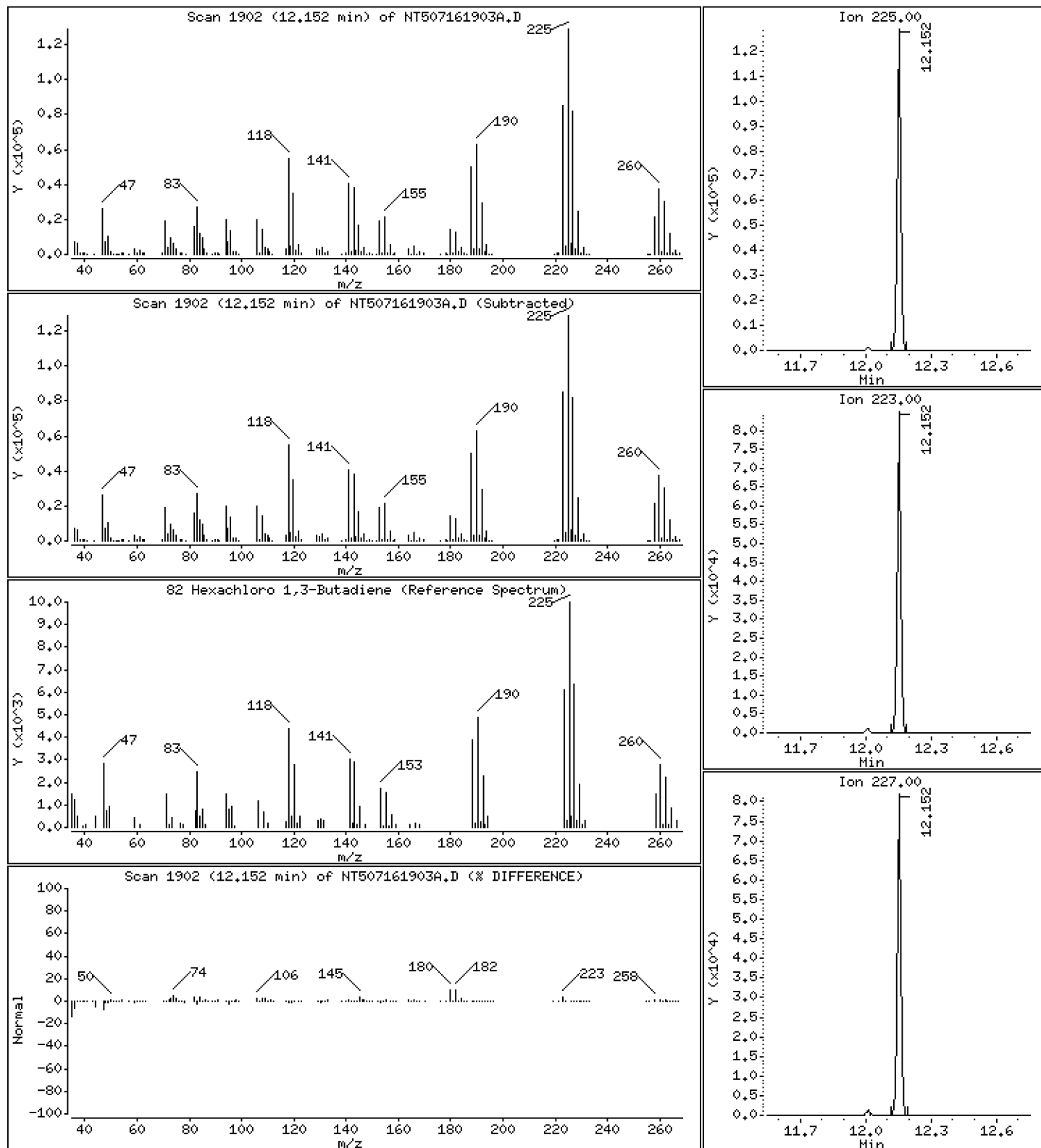
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 48,017 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

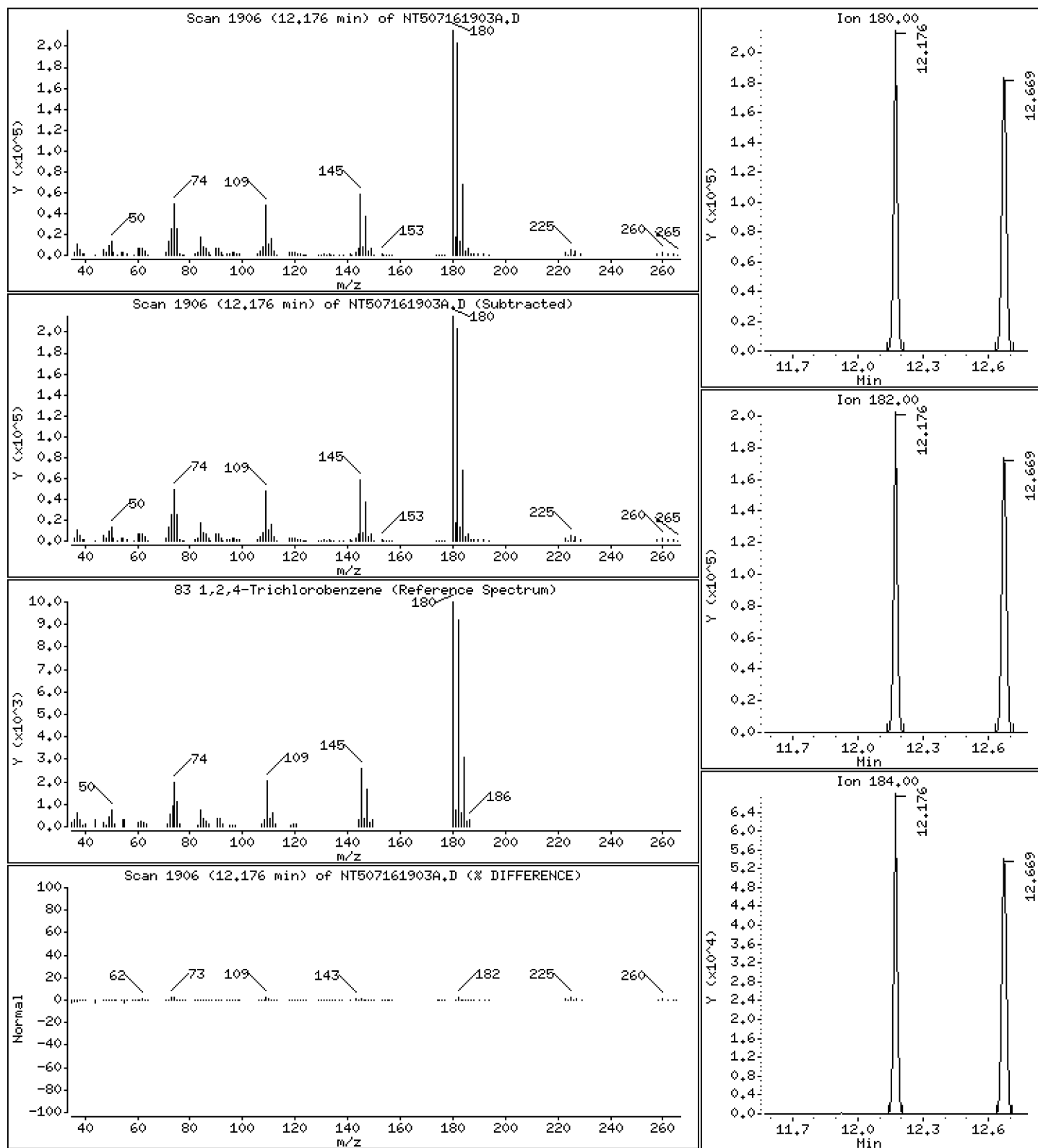
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 48,031 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

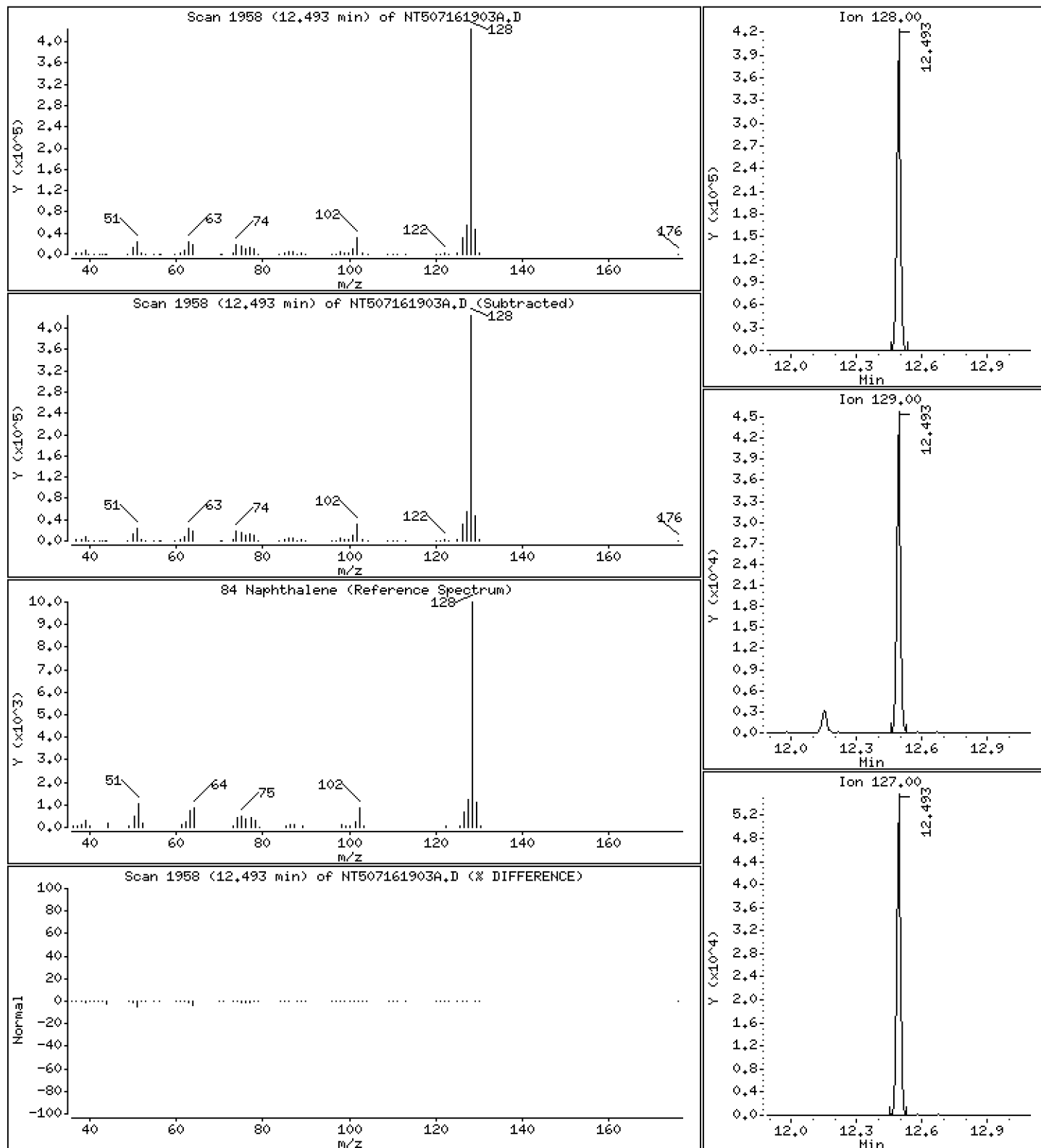
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 44,694 ug/Kg



Date : 16-JUL-2019 14:57

Client ID:

Instrument: nt5.i

Sample Info: ICV1

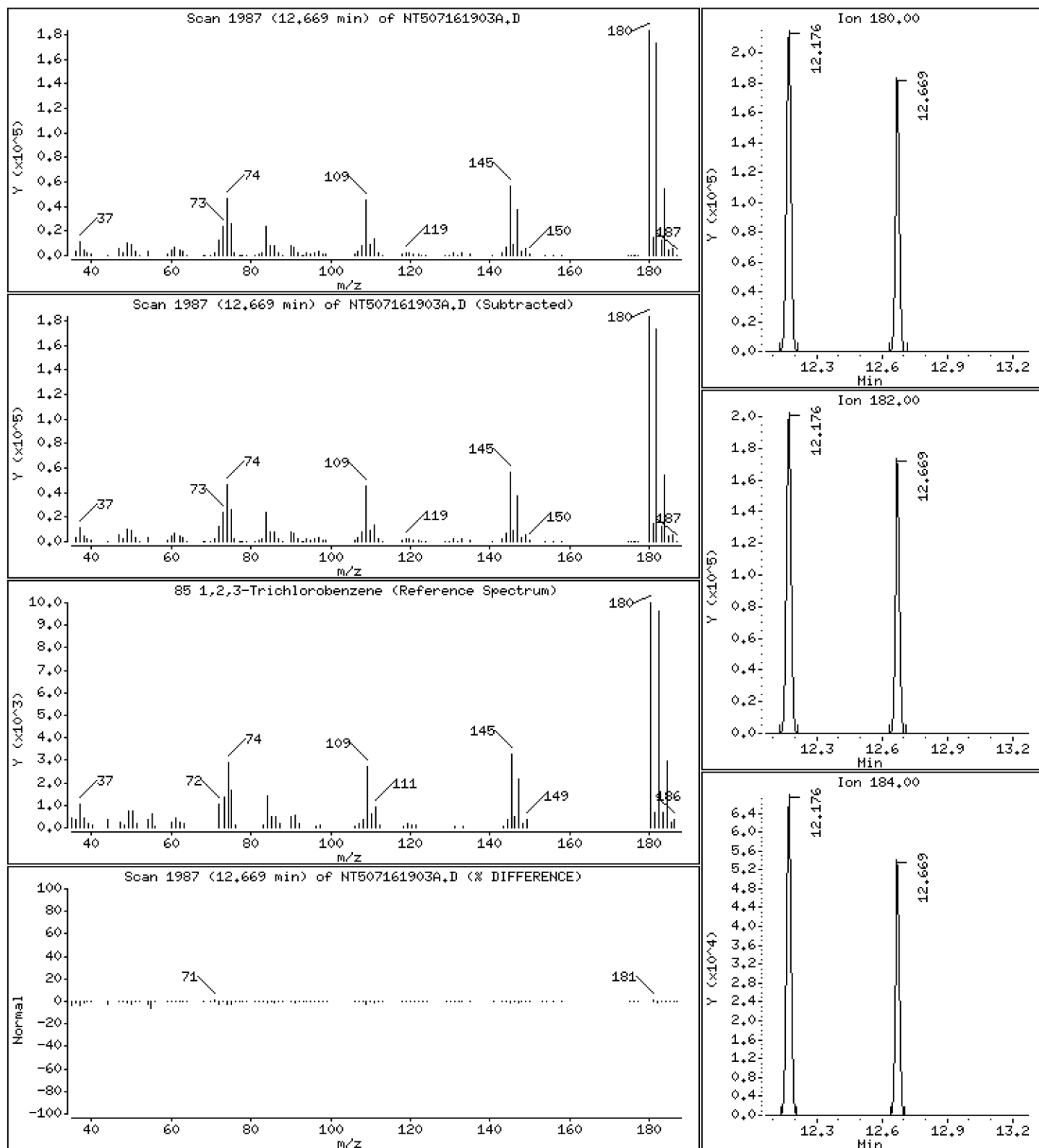
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 46,744 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161903A.D
Lab Smp Id: bhg0391-bs1
Inj Date : 16-JUL-2019 14:57
Operator : PB Inst ID: nt5.i
Smp Info : ICV1
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Meth Date : 16-Jul-2019 15:18 patrickb Quant Type: ISTD
Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamd1.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	1.329	1.329	(0.249)	173064	38.9524	38.952
2 Chloromethane	50	1.487	1.487	(0.279)	164259	44.5926	44.593
3 Vinyl Chloride	62	1.560	1.560	(0.292)	172978	46.5198	46.520
4 Bromomethane	94	1.840	1.840	(0.345)	136605	50.0124	50.012
5 Chloroethane	64	1.949	1.949	(0.365)	145248	49.4634	49.463
6 Trichlorofluoromethane	101	2.059	2.059	(0.386)	336530	47.4986	47.499
7 1,1-Dichloroethene	96	2.533	2.533	(0.475)	171493	47.1895	47.190
8 Carbon Disulfide	76	2.539	2.539	(0.476)	484944	47.8227	47.823
9 112Trichloro122Trifluoroethane	101	2.588	2.588	(0.485)	164182	49.4973	49.497
10 Iodomethane	142	2.667	2.667	(0.500)	206991	43.6618	43.662
11 Bromoethane	108	2.795	2.795	(0.524)	111733	45.6714	45.671
12 Acrolein	56	2.911	2.911	(0.545)	86185	233.392	233.39
13 Methylene Chloride	84	3.154	3.154	(0.591)	162952	45.1574	45.157
14 Acetone	43	3.257	3.257	(0.610)	139676	214.991	214.99
15 Trans-1,2-Dichloroethene	96	3.312	3.312	(0.621)	189373	48.4914	48.491
16 Methyl tert butyl ether	73	3.482	3.482	(0.652)	409072	48.3302	48.330
173 n-Hexane	41	3.489	3.489	(0.654)	81996		
17 1,1-Dichloroethane	63	3.945	3.945	(0.739)	290165	49.5210	49.521
18 Acrylonitrile	53	4.030	4.030	(0.755)	34337	44.4843	44.484
19 Vinyl Acetate	43	4.243	4.243	(0.795)	269709	50.2030	50.203
20 Cis-1,2-Dichloroethene	96	4.462	4.462	(0.836)	203765	50.7728	50.773
22 2,2-Dichloropropane	77	4.553	4.553	(0.853)	300028	53.1363	53.136
23 Bromochloromethane	128	4.644	4.644	(0.870)	96613	49.0316	49.032
24 Chloroform	83	4.730	4.730	(0.886)	316896	51.3415	51.341
25 Carbon Tetrachloride	117	4.815	4.815	(0.832)	299651	46.5971	46.597
\$ 27 Dibromofluoromethane	111	4.894	4.894	(0.917)	270588	56.1213	56.121 (R)
26 1,1,1-Trichloroethane	97	4.888	4.888	(0.916)	313900	51.8570	51.857
28 1,1-Dichloropropene	75	5.003	5.003	(0.864)	253943	48.8954	48.895
29 2-Butanone	72	5.046	5.046	(0.945)	74538	244.122	244.12
30 Benzene	78	5.222	5.222	(0.902)	716422	46.2573	46.257
* 31 Pentafluorobenzene	168	5.338	5.338	(1.000)	440880	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.356	5.356	(1.003)	227902	56.5053	56.505 (R)
33 1,2-Dichloroethane	62	5.417	5.417	(0.936)	205098	46.1051	46.105

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130	5.739	5.739	(0.992)	221248	45.7796	45.780
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	873744	50.0000	
37 Dibromomethane	93	6.098	6.098	(1.054)	97595	45.9348	45.935
38 1,2-Dichloropropane	63	6.190	6.190	(1.069)	159231	46.9281	46.928
39 Bromodichloromethane	83	6.250	6.250	(1.080)	239861	47.5086	47.509
172 2-Pentanone	86	6.542	6.542	(1.130)	97082	219.970	219.97
40 2-Chloroethyl Vinyl Ether	63	6.755	6.755	(1.167)	85653	43.5526	43.553
41 Cis 1,3-dichloropropene	75	6.786	6.786	(1.172)	286347	48.5422	48.542
\$ 42 d8-Toluene	98	6.938	6.938	(1.199)	1030737	50.3752	50.375 (R)
43 Toluene	92	6.981	6.981	(1.206)	481016	45.4909	45.491
44 Tetrachloroethene	166	7.297	7.297	(0.884)	234552	44.1784	44.178
45 4-Methyl-2-Pentanone	58	7.333	7.333	(1.267)	226317	220.999	221.00
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.270)	251115	48.1526	48.153
47 1,1,2-Trichloroethane	97	7.479	7.479	(1.292)	134835	43.2855	43.285
48 Chlorodibromomethane	129	7.625	7.625	(0.923)	189688	46.1301	46.130
49 1,3-Dichloropropane	76	7.711	7.711	(0.934)	233399	45.1679	45.168
50 1,2-Dibromoethane	107	7.814	7.814	(1.350)	139071	44.1777	44.178
51 2-Hexanone	43	8.045	8.045	(0.974)	394110	219.376	219.38
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	864891	50.0000	
53 Chlorobenzene	112	8.276	8.276	(1.002)	549948	44.6277	44.628
54 Ethyl Benzene	91	8.307	8.307	(1.006)	911098	45.0478	45.048
55 1,1,1,2-Tetrachloroethane	131	8.337	8.337	(1.010)	201063	45.8951	45.895
56 m,p-xylene	106	8.434	8.434	(1.021)	738101	89.5739	89.574
57 o-Xylene	106	8.806	8.806	(1.066)	350177	44.7046	44.705
58 Styrene	104	8.854	8.854	(1.072)	567088	45.1758	45.176
59 Bromoform	173	8.872	8.872	(0.857)	122265	43.8624	43.862
60 Isopropyl Benzene	105	9.085	9.085	(0.878)	947329	46.9039	46.904
61 Cyclohexanone	55	9.639	9.639	(1.167)	1623		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	365700	49.3903	49.390 (R)
63 Bromobenzene	156	9.420	9.420	(0.910)	235504	45.2699	45.270
64 N-Propyl Benzene	91	9.457	9.457	(0.914)	1081636	47.2479	47.248
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530	(0.921)	159073	43.7643	43.764
66 2-Chloro Toluene	91	9.590	9.590	(0.927)	614532	47.0769	47.077
67 1,3,5-Trimethyl Benzene	105	9.645	9.645	(0.932)	793550	47.6650	47.665
68 1,2,3-Trichloropropane	110	9.645	9.645	(0.932)	53204	42.1753	42.175
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.694	(0.937)	47581	47.9230	47.923
70 4-Chloro Toluene	91	9.742	9.742	(0.941)	634553	46.8941	46.894
71 T-Butyl Benzene	119	9.925	9.925	(0.959)	715218	46.3492	46.349
72 1,2,4-Trimethylbenzene	105	9.992	9.992	(0.965)	770751	47.5083	47.508
73 S-Butyl Benzene	105	10.089	10.089	(0.975)	1052134	46.9474	46.947
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	922266	47.9800	47.980
75 1,3-Dichlorobenzene	146	10.278	10.278	(0.993)	469318	45.6103	45.610
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	473545	50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.363	(1.001)	465006	45.9289	45.929
78 N-Butyl Benzene	91	10.618	10.618	(1.026)	806503	48.1221	48.122
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	421042	50.9814	50.981 (R)
80 1,2-Dichlorobenzene	146	10.752	10.752	(1.039)	422451	45.4657	45.466
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.113)	29002	43.0511	43.051
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.174)	181580	48.0169	48.017
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	305958	48.0314	48.031
84 Naphthalene	128	12.492	12.492	(1.207)	582649	44.6937	44.694
85 1,2,3-Trichlorobenzene	180	12.669	12.669	(1.224)	269453	46.7436	46.744

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161903A.D Calibration Time: 14:57
 Lab Smp Id: bhg0391-bs1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	440880	9.15
35 1,4-Difluorobenze	717664	358832	1435328	873744	21.75
52 d5-Chlorobenzene	696563	348282	1393126	864891	24.17
76 d4-1,4-Dichlorobe	380778	190389	761556	473545	24.36

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: bhg0391-bs1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	38.952	77.90	
2 Chloromethane	50.000	44.593	89.19	
3 Vinyl Chloride	50.000	46.520	93.04	
4 Bromomethane	50.000	50.012	100.02	
5 Chloroethane	50.000	49.463	98.93	
6 Trichlorofluoromet	50.000	47.499	95.00	
12 Acrolein	250.00	233.39	93.36	
9 112Trichloro122Tri	50.000	49.497	98.99	
14 Acetone	250.00	214.99	86.00	
7 1,1-Dichloroethene	50.000	47.190	94.38	
11 Bromoethane	50.000	45.671	91.34	
10 Iodomethane	50.000	43.662	87.32	
13 Methylene Chloride	50.000	45.157	90.31	
8 Carbon Disulfide	50.000	47.823	95.65	
18 Acrylonitrile	50.000	44.484	88.97	
15 Trans-1,2-Dichloro	50.000	48.491	96.98	
19 Vinyl Acetate	50.000	50.203	100.41	
17 1,1-Dichloroethane	50.000	49.521	99.04	
29 2-Butanone	250.00	244.12	97.65	
22 2,2-Dichloropropan	50.000	53.136	106.27	
20 Cis-1,2-Dichloroet	50.000	50.773	101.55	
24 Chloroform	50.000	51.341	102.68	
23 Bromochloromethane	50.000	49.032	98.06	
26 1,1,1-Trichloroeth	50.000	51.857	103.71	
28 1,1-Dichloropropen	50.000	48.895	97.79	
25 Carbon Tetrachlori	50.000	46.597	93.19	
33 1,2-Dichloroethane	50.000	46.105	92.21	
30 Benzene	50.000	46.257	92.51	
34 Trichloroethene	50.000	45.780	91.56	
38 1,2-Dichloropropan	50.000	46.928	93.86	
39 Bromodichlorometha	50.000	47.509	95.02	
172 2-Pentanone	250.00	219.97	87.99	
37 Dibromomethane	50.000	45.935	91.87	
40 2-Chloroethyl Viny	50.000	43.553	87.11	
45 4-Methyl-2-Pentano	250.00	221.00	88.40	
41 Cis 1,3-dichloropr	50.000	48.542	97.08	
43 Toluene	50.000	45.491	90.98	
46 Trans 1,3-Dichloro	50.000	48.153	96.31	
51 2-Hexanone	250.00	219.38	87.75	
47 1,1,2-Trichloroeth	50.000	43.285	86.57	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	45.168	90.34	
44 Tetrachloroethene	50.000	44.178	88.36	
48 Chlorodibromometha	50.000	46.130	92.26	
50 1,2-Dibromoethane	50.000	44.178	88.36	
53 Chlorobenzene	50.000	44.628	89.26	
55 1,1,1,2-Tetrachlor	50.000	45.895	91.79	
54 Ethyl Benzene	50.000	45.048	90.10	
56 m,p-xylene	100.00	89.574	89.57	
57 o-Xylene	50.000	44.705	89.41	
58 Styrene	50.000	45.176	90.35	
60 Isopropyl Benzene	50.000	46.904	93.81	
59 Bromoform	50.000	43.862	87.72	
65 1,1,2,2-Tetrachlor	50.000	43.764	87.53	
68 1,2,3-Trichloropro	50.000	42.175	84.35	
69 Trans-1,4-Dichloro	50.000	47.923	95.85	
64 N-Propyl Benzene	50.000	47.248	94.50	
63 Bromobenzene	50.000	45.270	90.54	
67 1,3,5-Trimethyl Be	50.000	47.665	95.33	
66 2-Chloro Toluene	50.000	47.077	94.15	
70 4-Chloro Toluene	50.000	46.894	93.79	
71 T-Butyl Benzene	50.000	46.349	92.70	
72 1,2,4-Trimethylben	50.000	47.508	95.02	
73 S-Butyl Benzene	50.000	46.947	93.89	
74 4-Isopropyl Toluen	50.000	47.980	95.96	
75 1,3-Dichlorobenzen	50.000	45.610	91.22	
77 1,4-Dichlorobenzen	50.000	45.929	91.86	
78 N-Butyl Benzene	50.000	48.122	96.24	
80 1,2-Dichlorobenzen	50.000	45.466	90.93	
81 1,2-Dibromo 3-Chlo	50.000	43.051	86.10	
83 1,2,4-Trichloroben	50.000	48.031	96.06	
82 Hexachloro 1,3-But	50.000	48.017	96.03	
84 Naphthalene	50.000	44.694	89.39	
85 1,2,3-Trichloroben	50.000	46.744	93.49	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	56.121	112.24	
\$ 32 d4-1,2-Dichloroeth	50.000	56.505	113.01	
\$ 42 d8-Toluene	50.000	50.375	100.75	
\$ 62 4-Bromofluorobenze	50.000	49.390	98.78	
\$ 79 d4-1,2-Dichloroben	50.000	50.981	101.96	

REVIEW SUMMARY FOR FILE - NT507161903A.D

Lab ID: bhg0391-bs1
 nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 14:57

RT	CO-ELUTION COMPOUNDS
9.646	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.646	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190716.b\N1507161904.D

Date : 16-JUL-2019 15:46

Client ID:

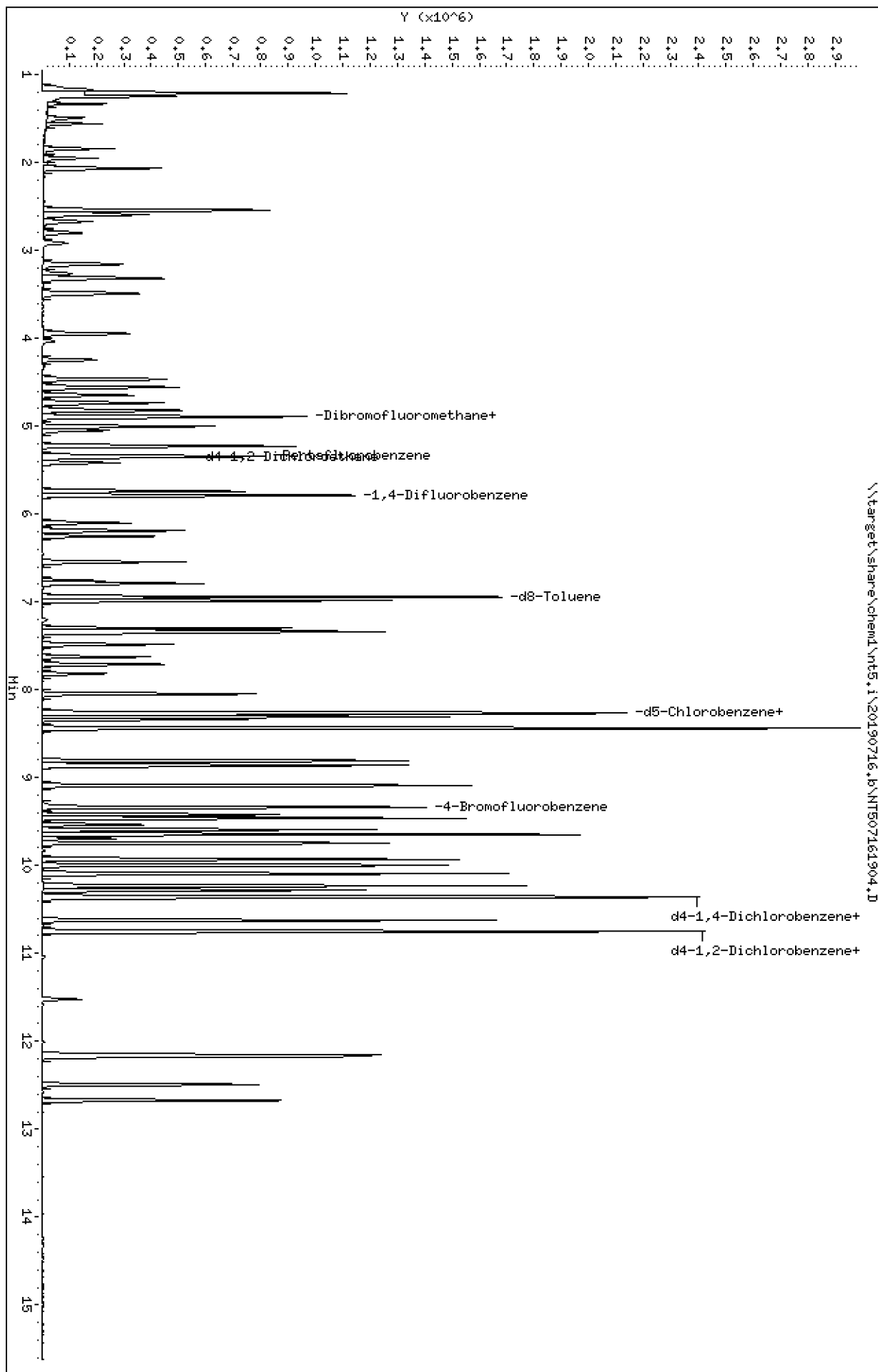
Sample Info: BSD1

Instrument: nt5.i

Page 1

Column phase: RTXWHS

Operator: PB
Column diameter: 0.18



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

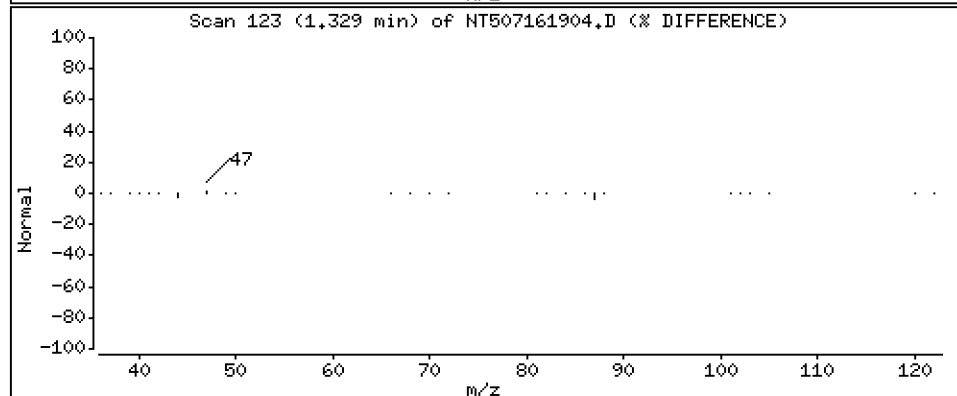
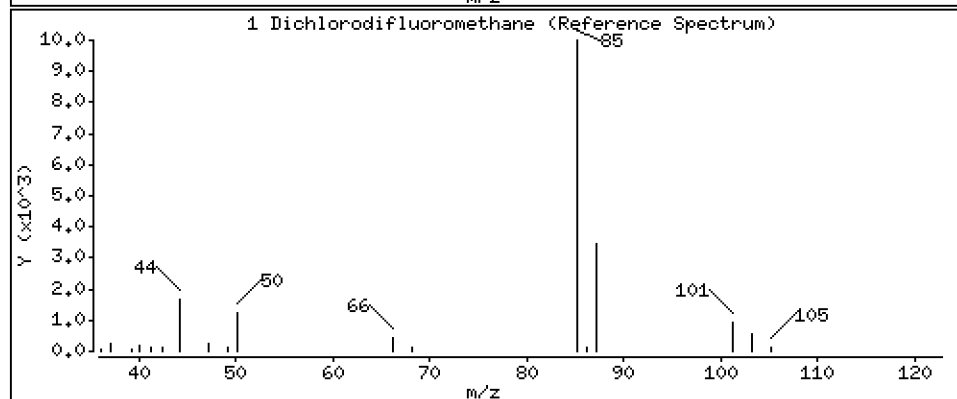
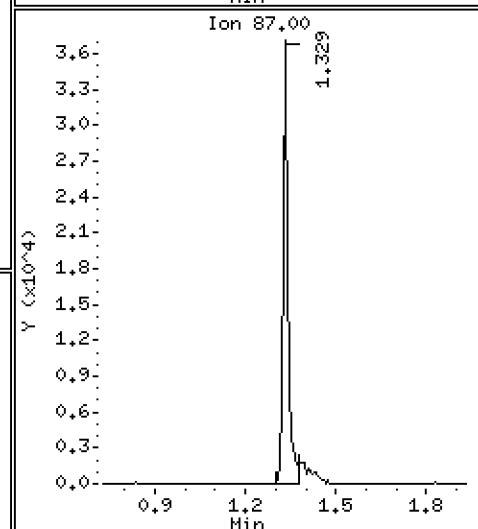
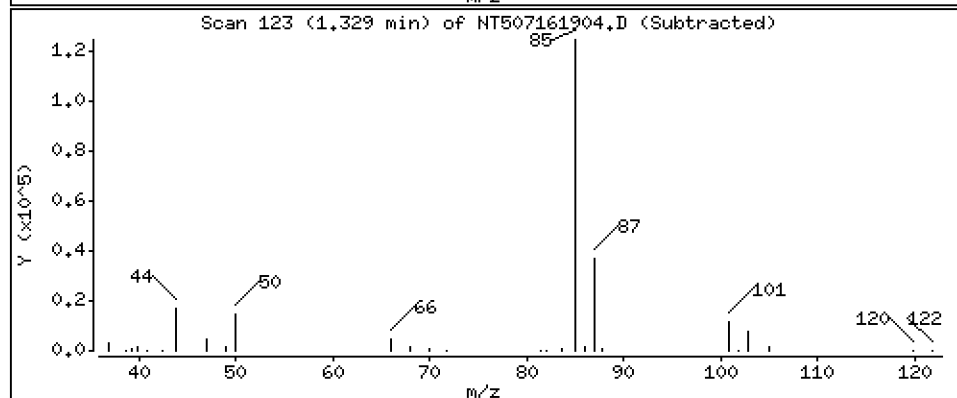
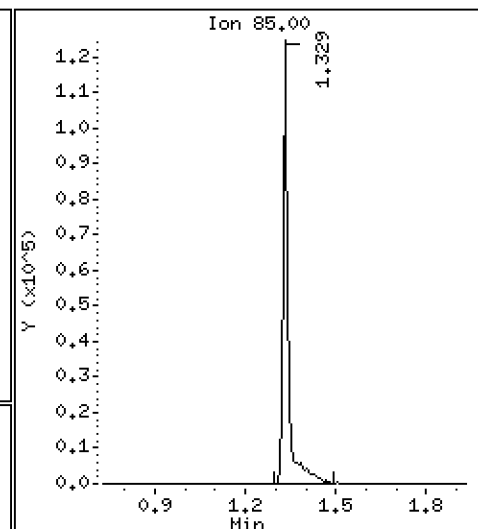
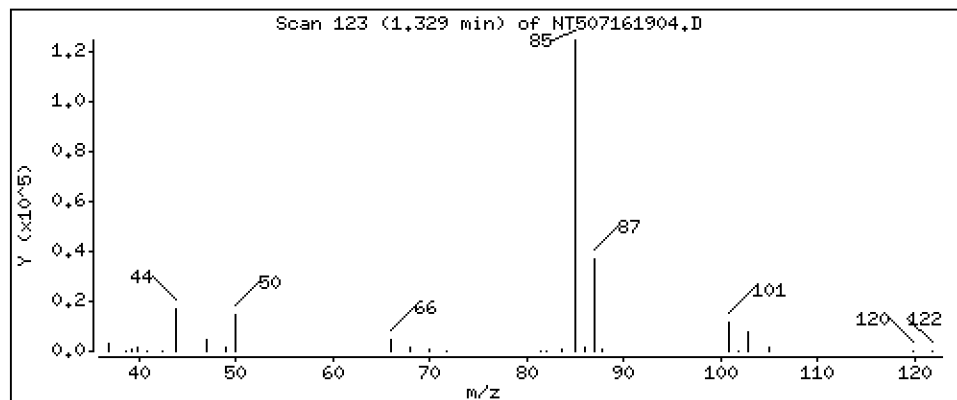
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 41.821 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

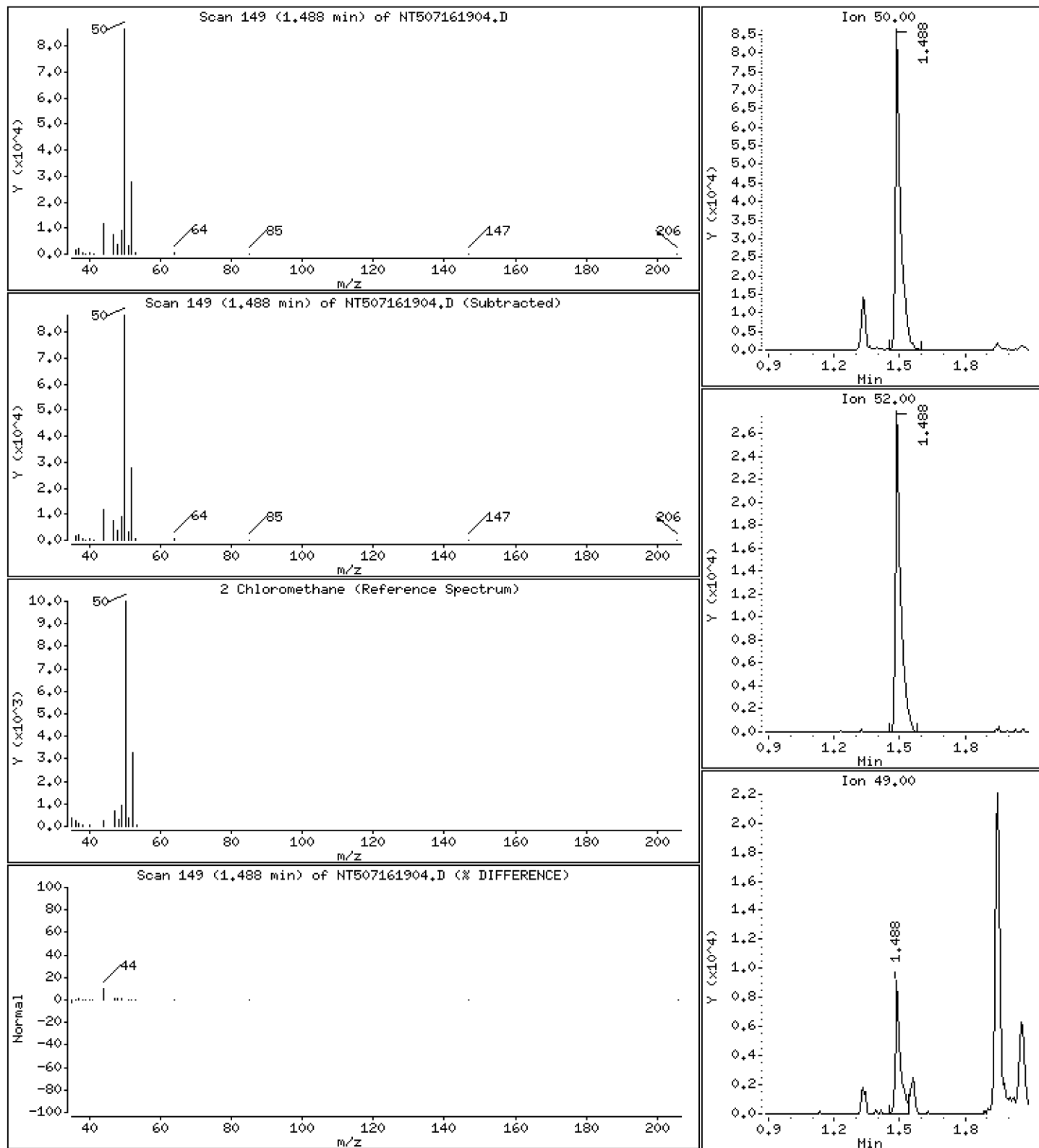
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 45,721 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

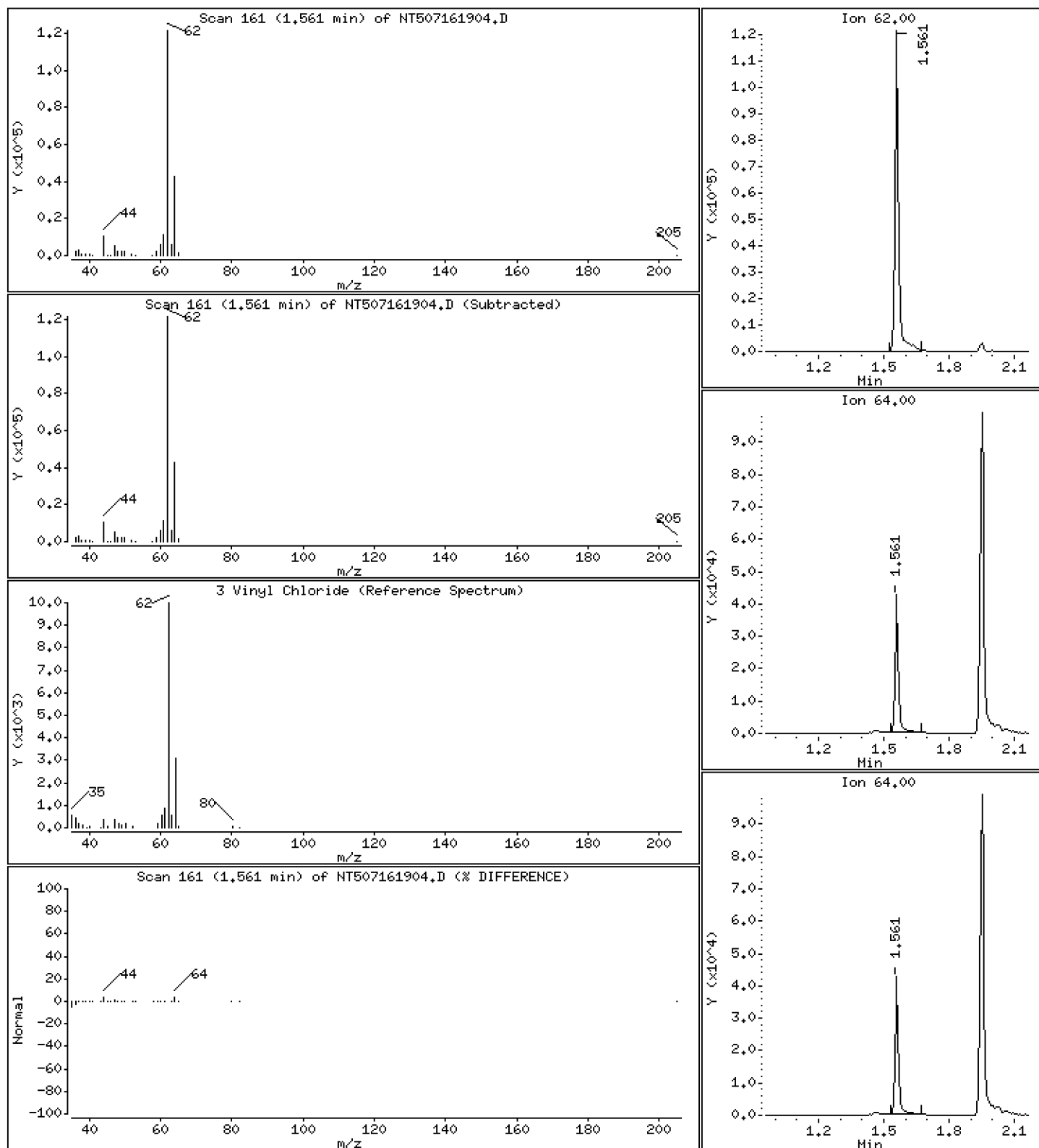
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 46.987 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

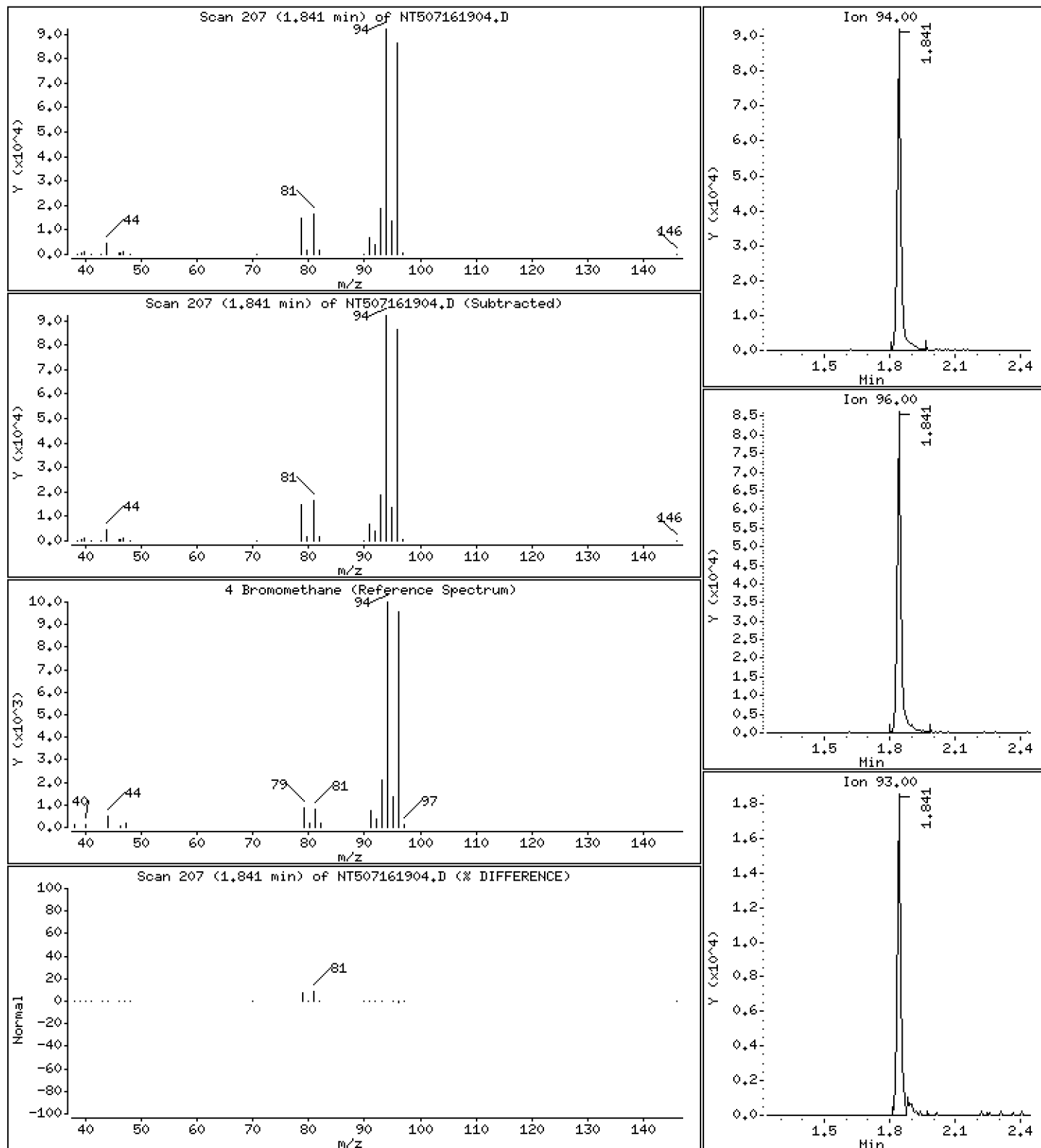
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 51.507 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

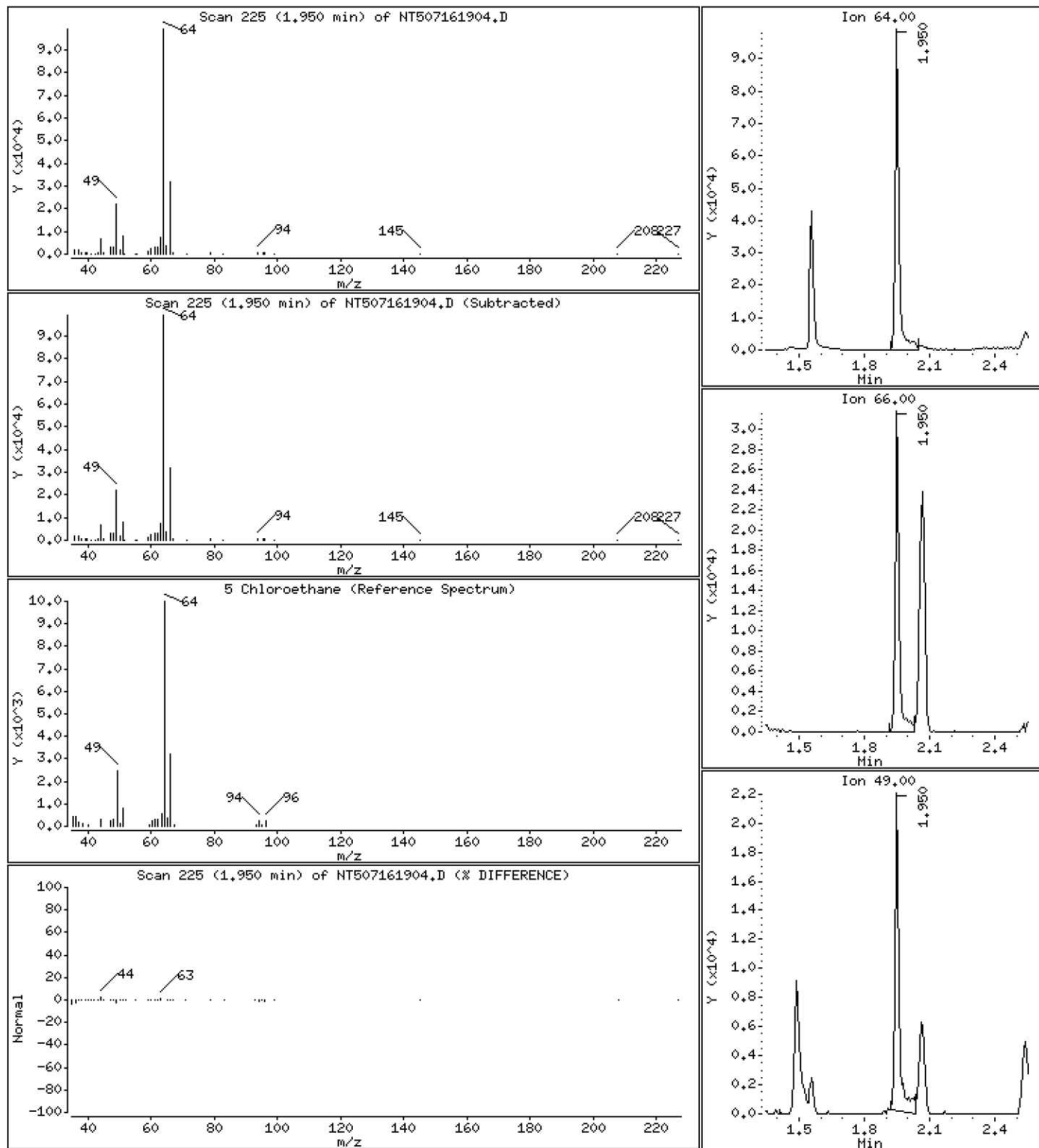
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 50,193 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

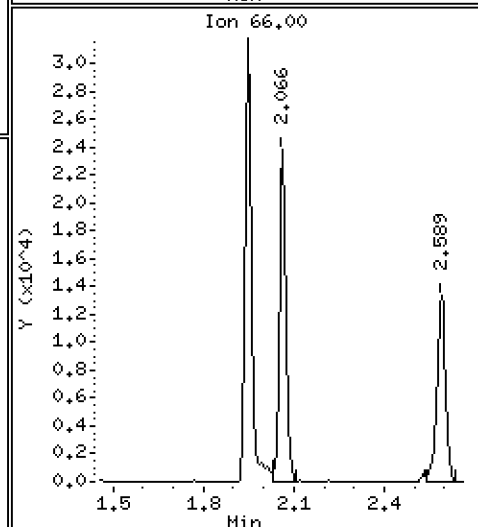
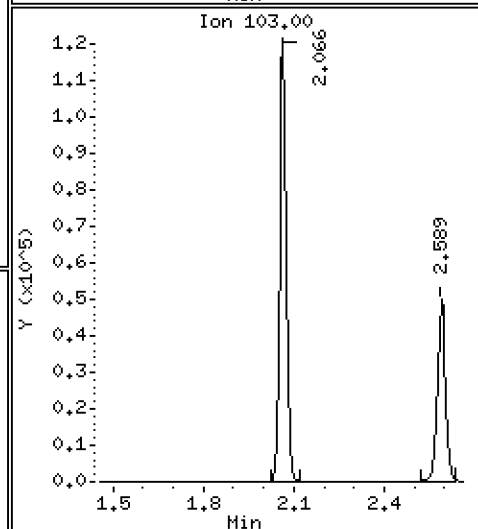
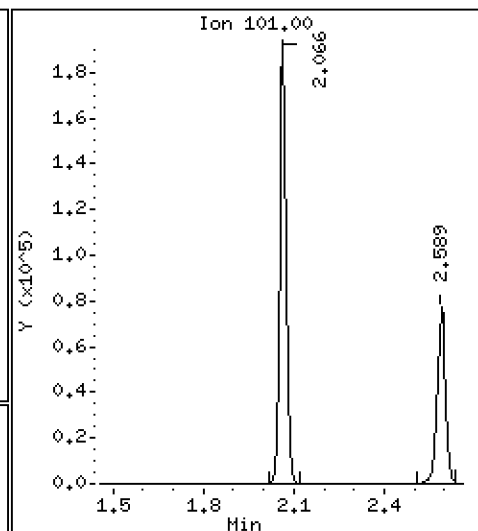
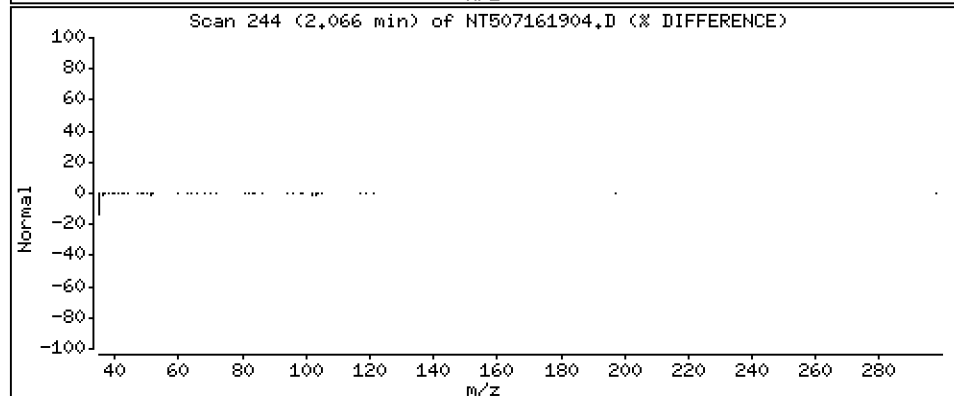
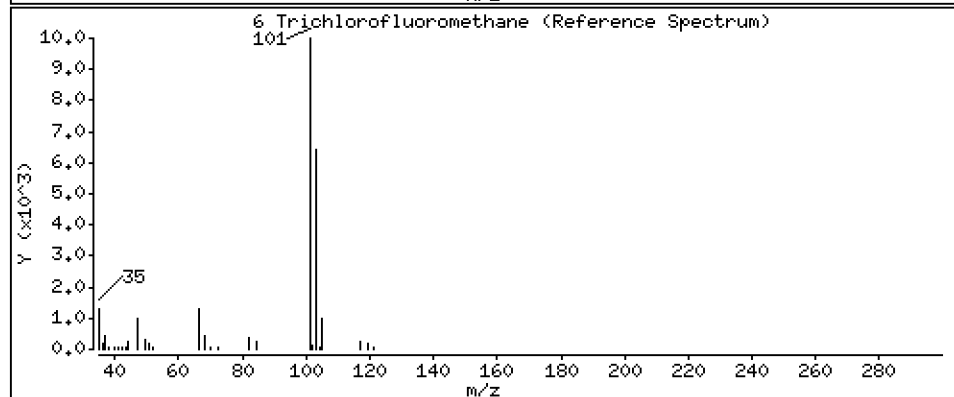
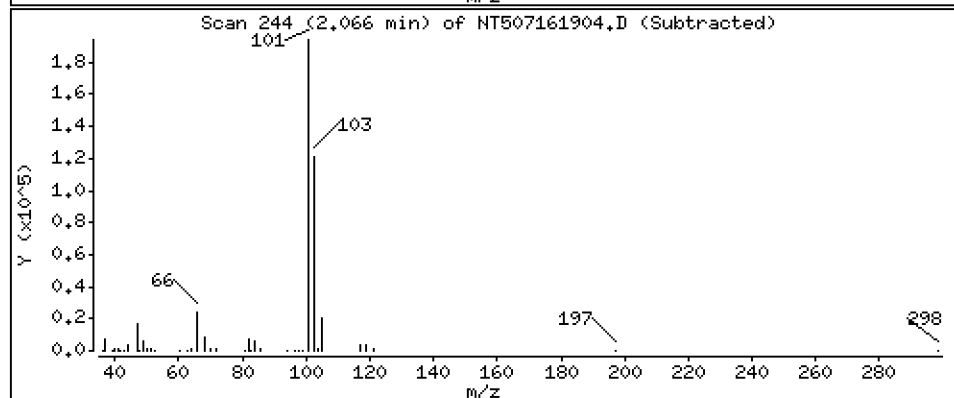
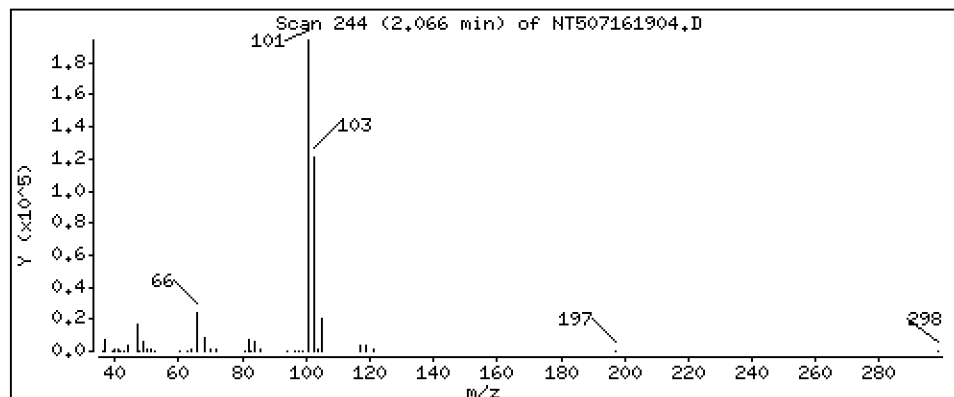
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 47.419 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

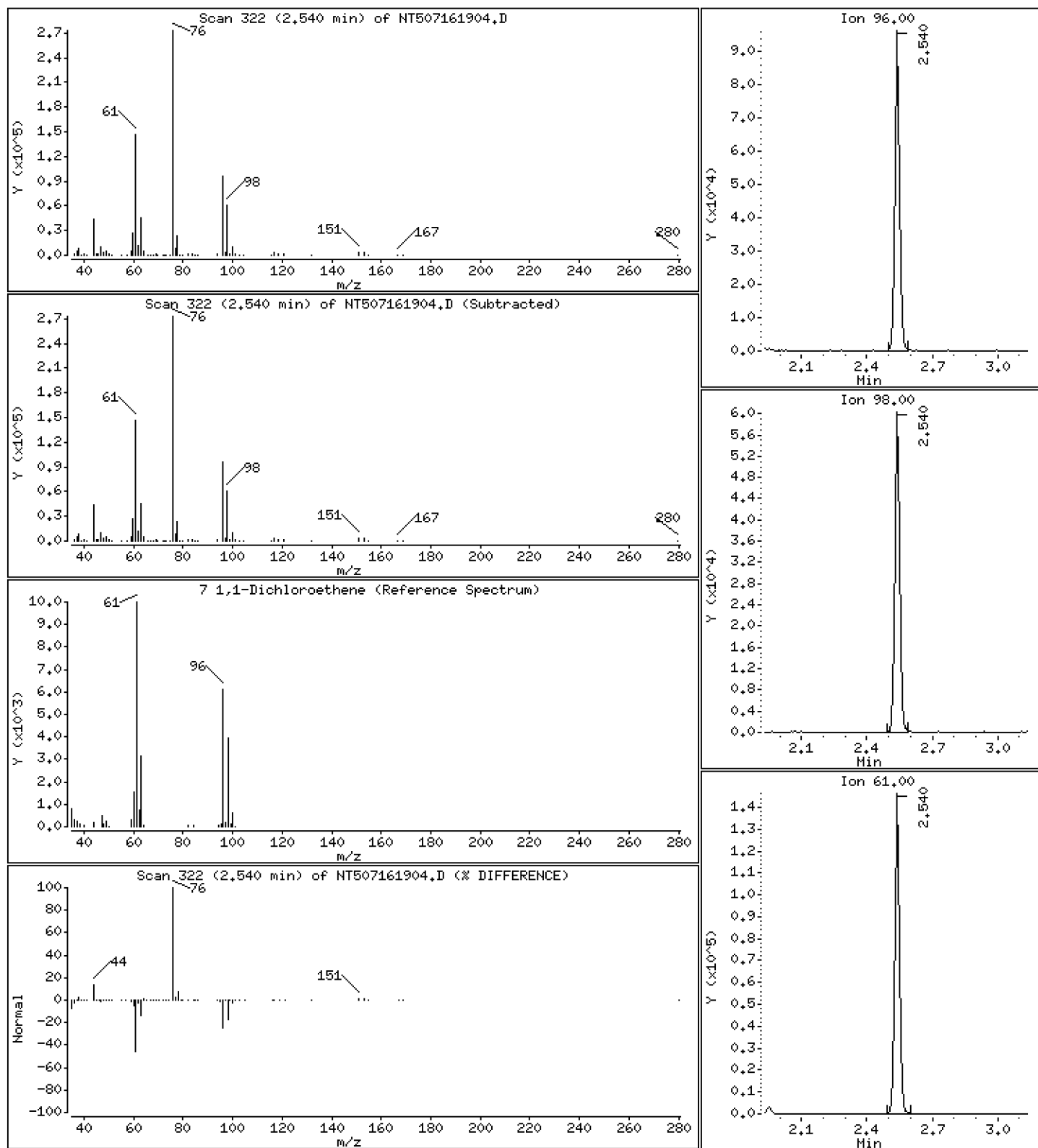
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 47,283 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

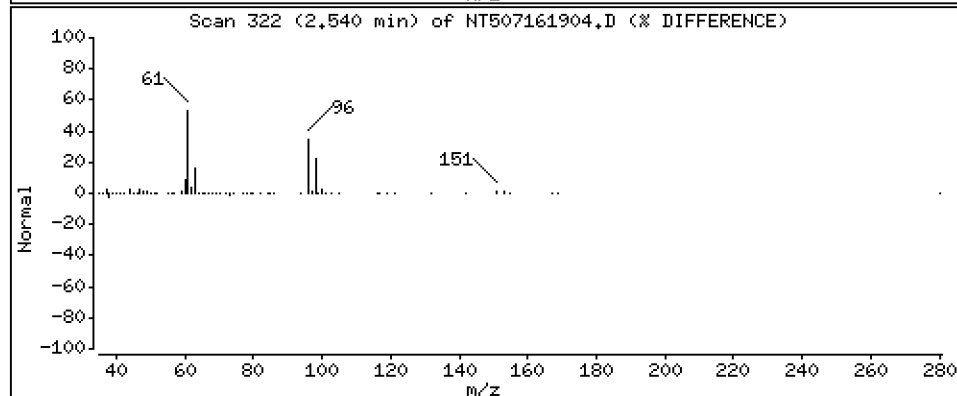
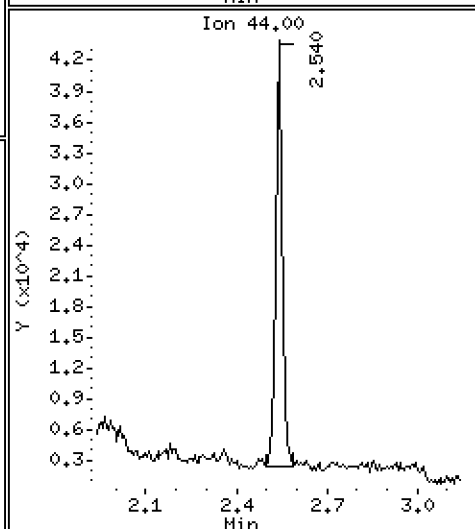
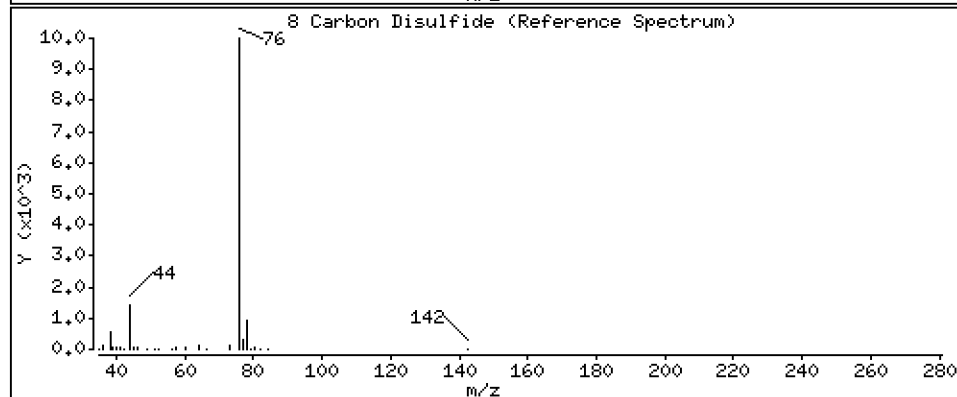
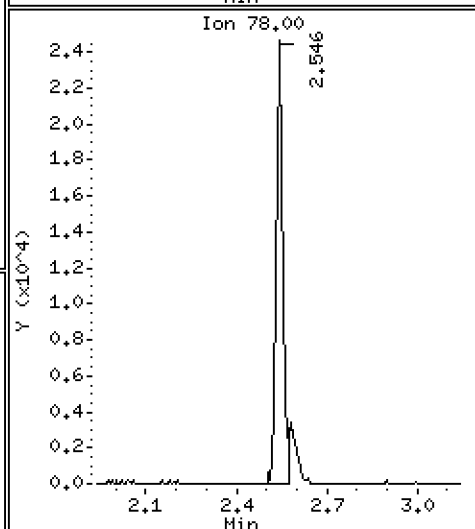
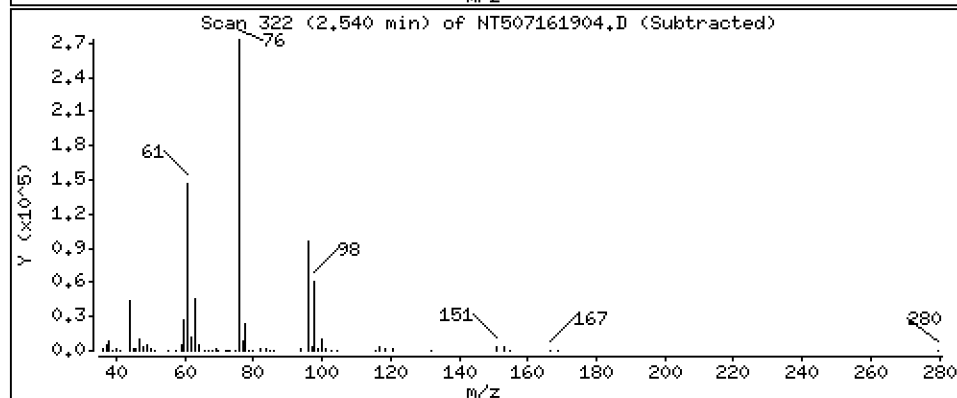
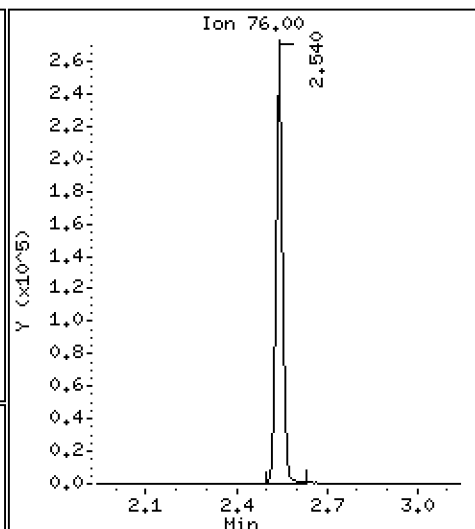
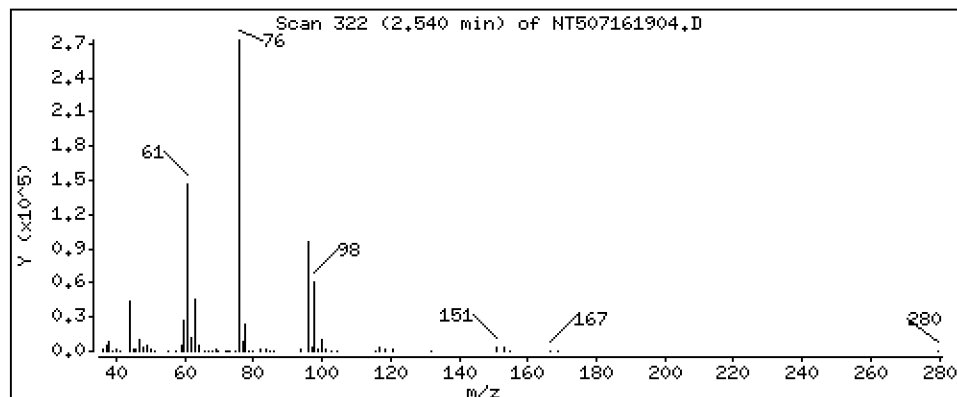
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 48,809 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

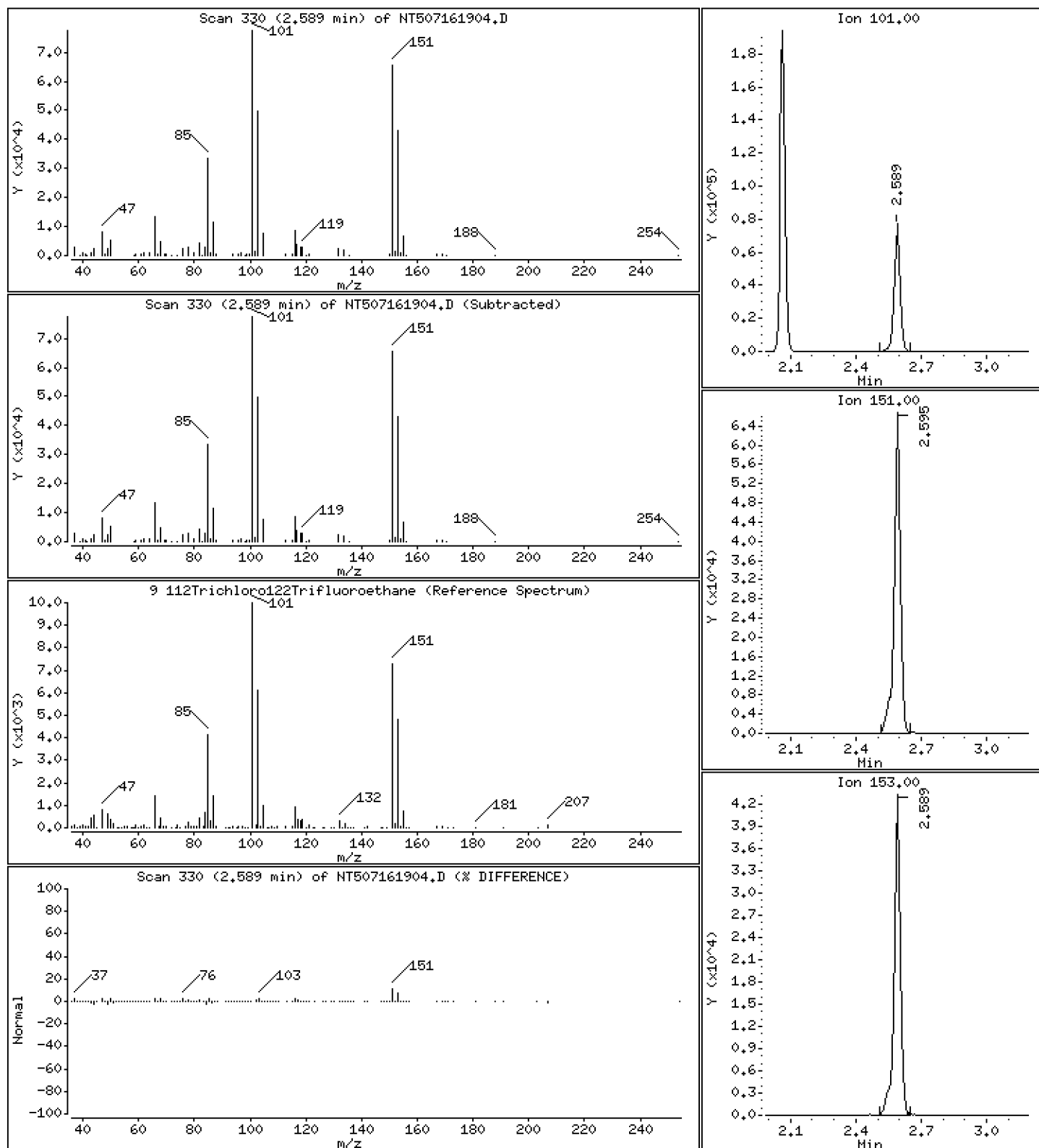
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 51,338 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

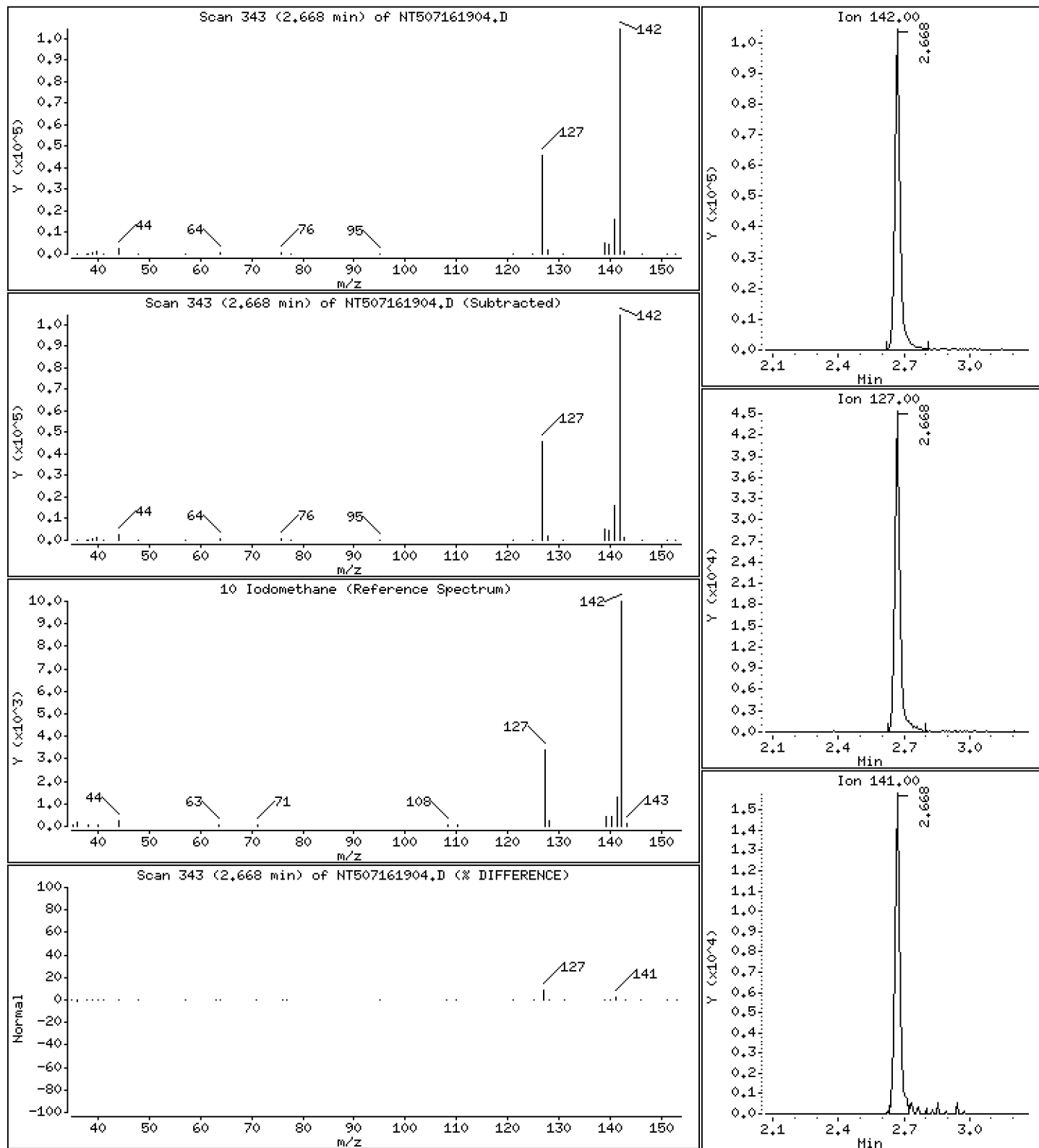
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 44.927 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

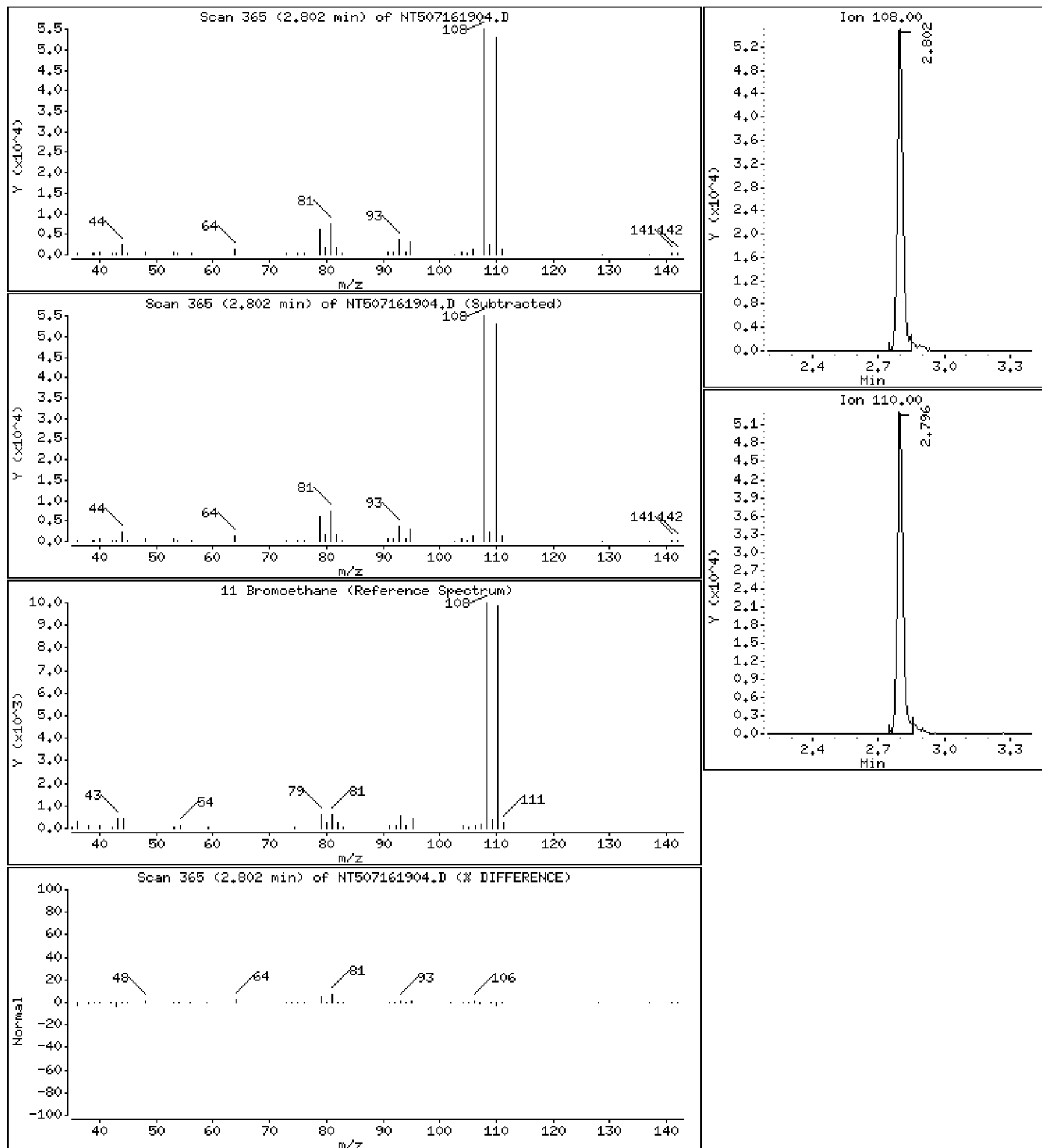
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 46.758 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

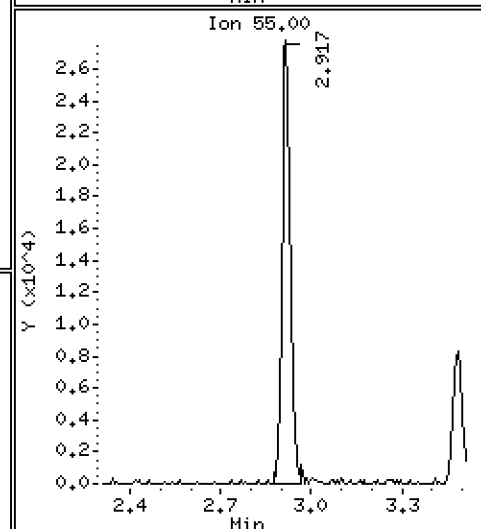
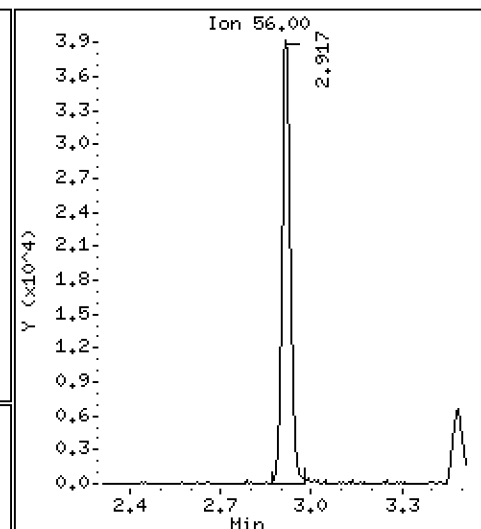
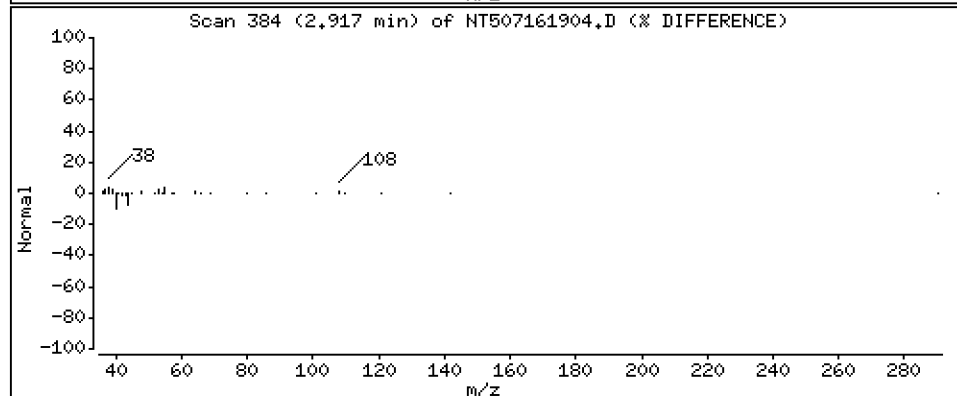
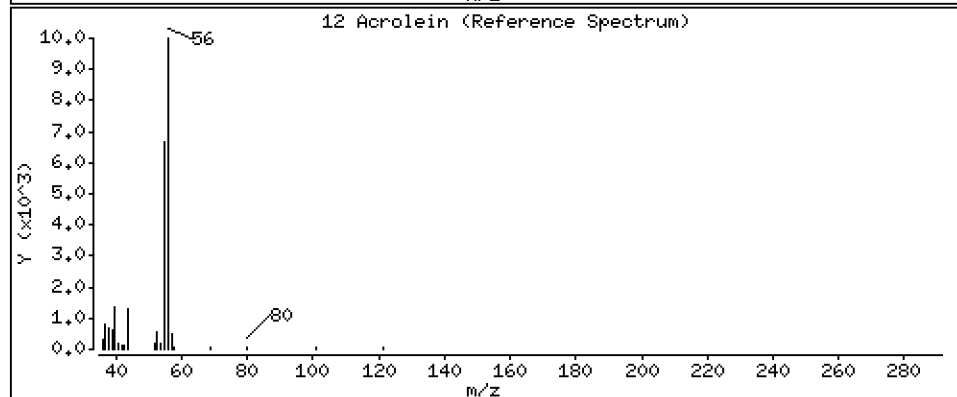
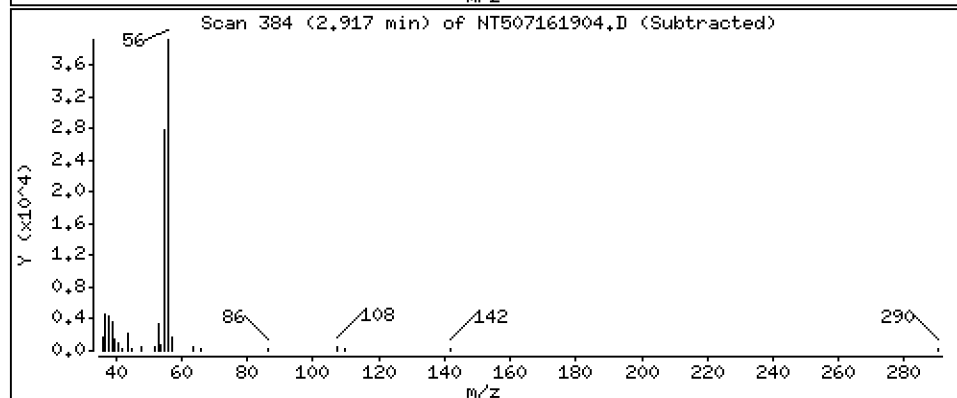
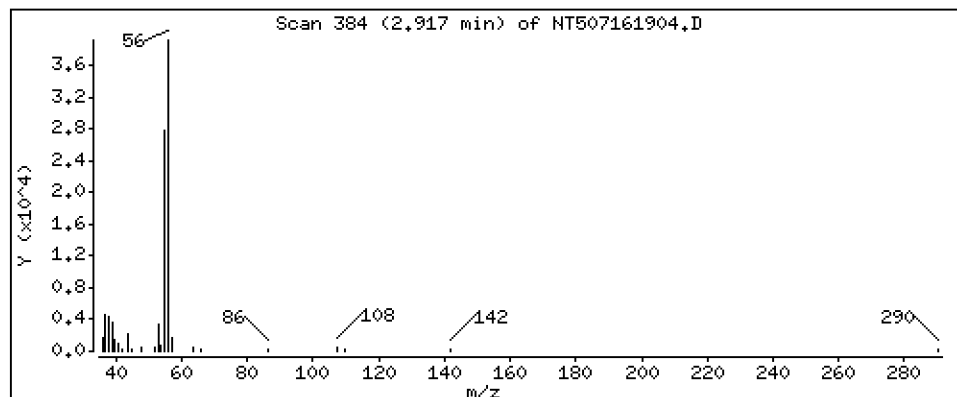
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 239.29 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

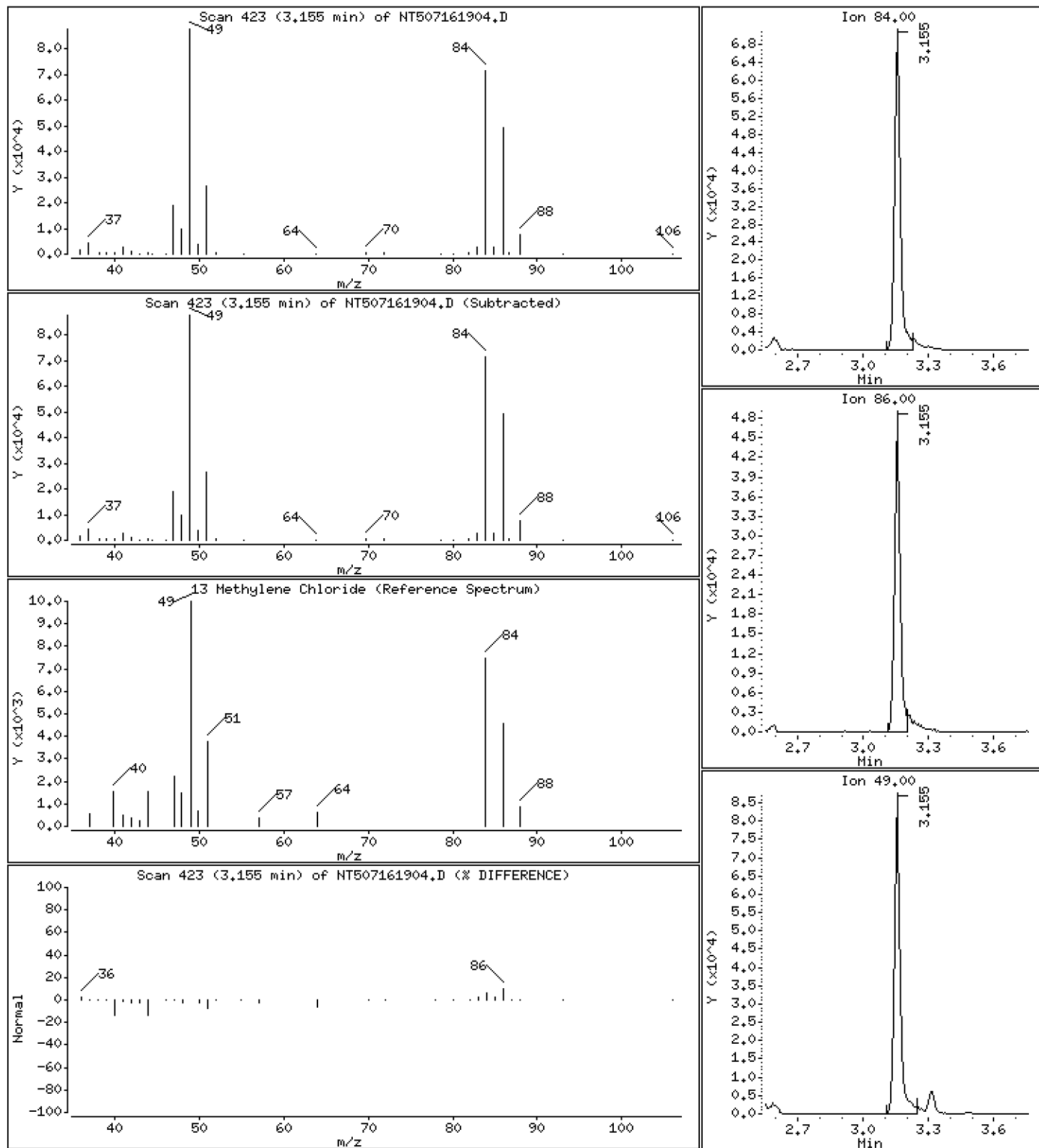
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 44,017 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

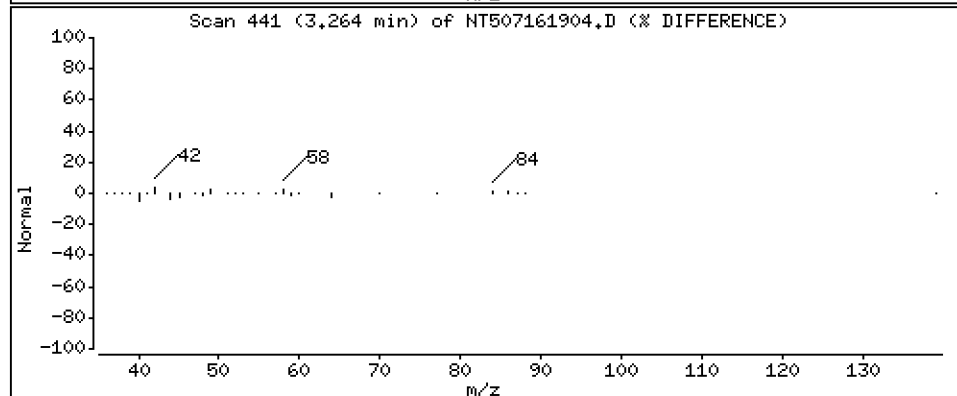
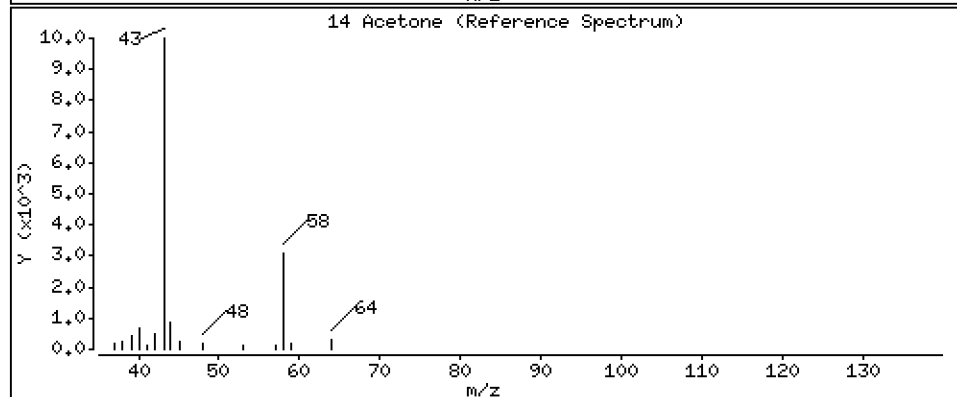
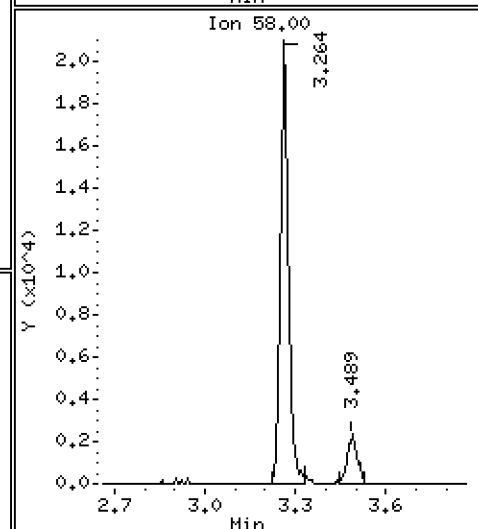
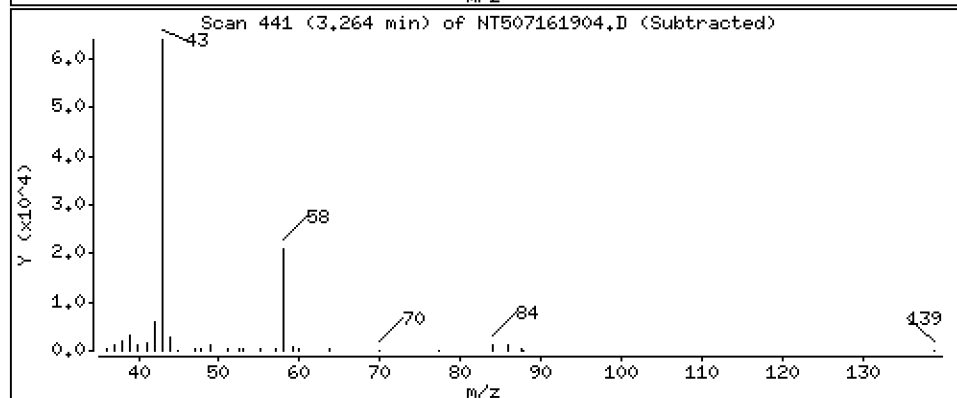
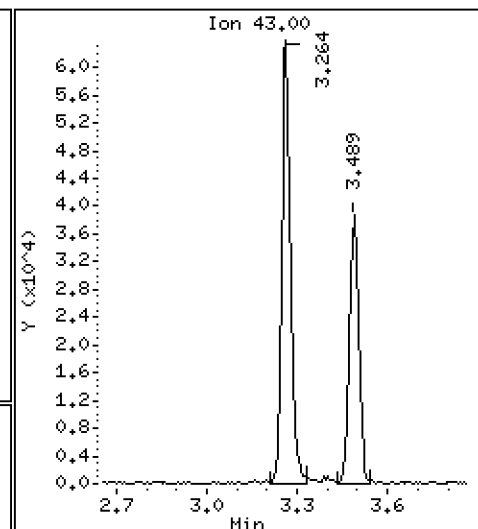
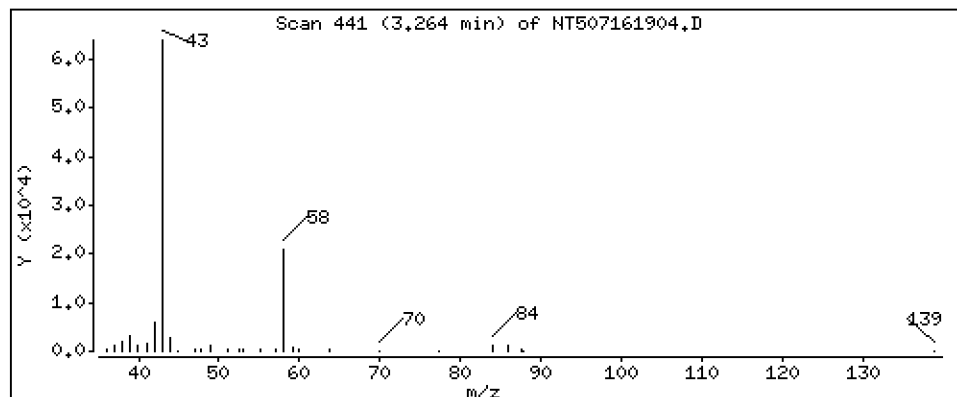
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 226.67 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

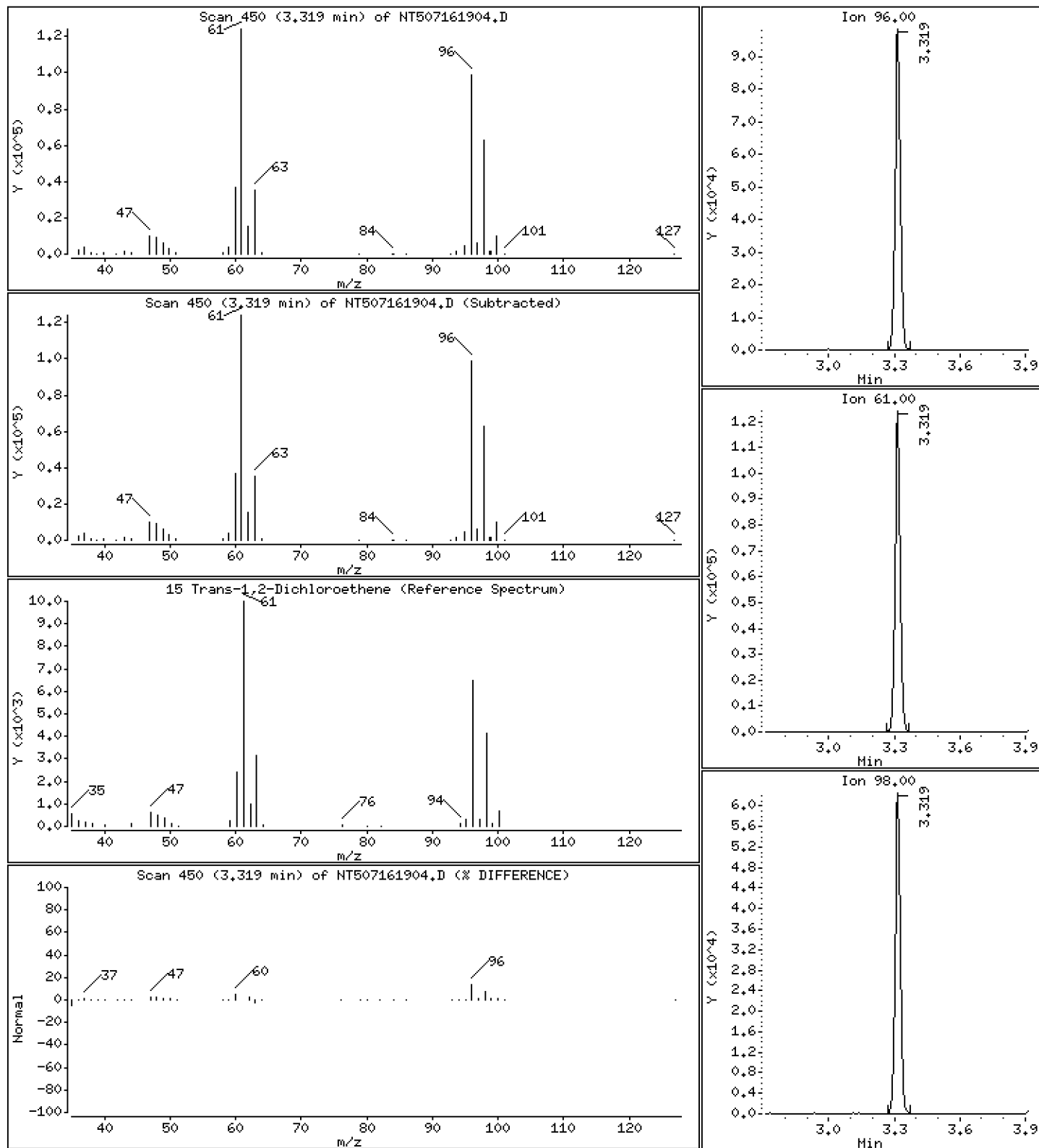
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 49,044 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

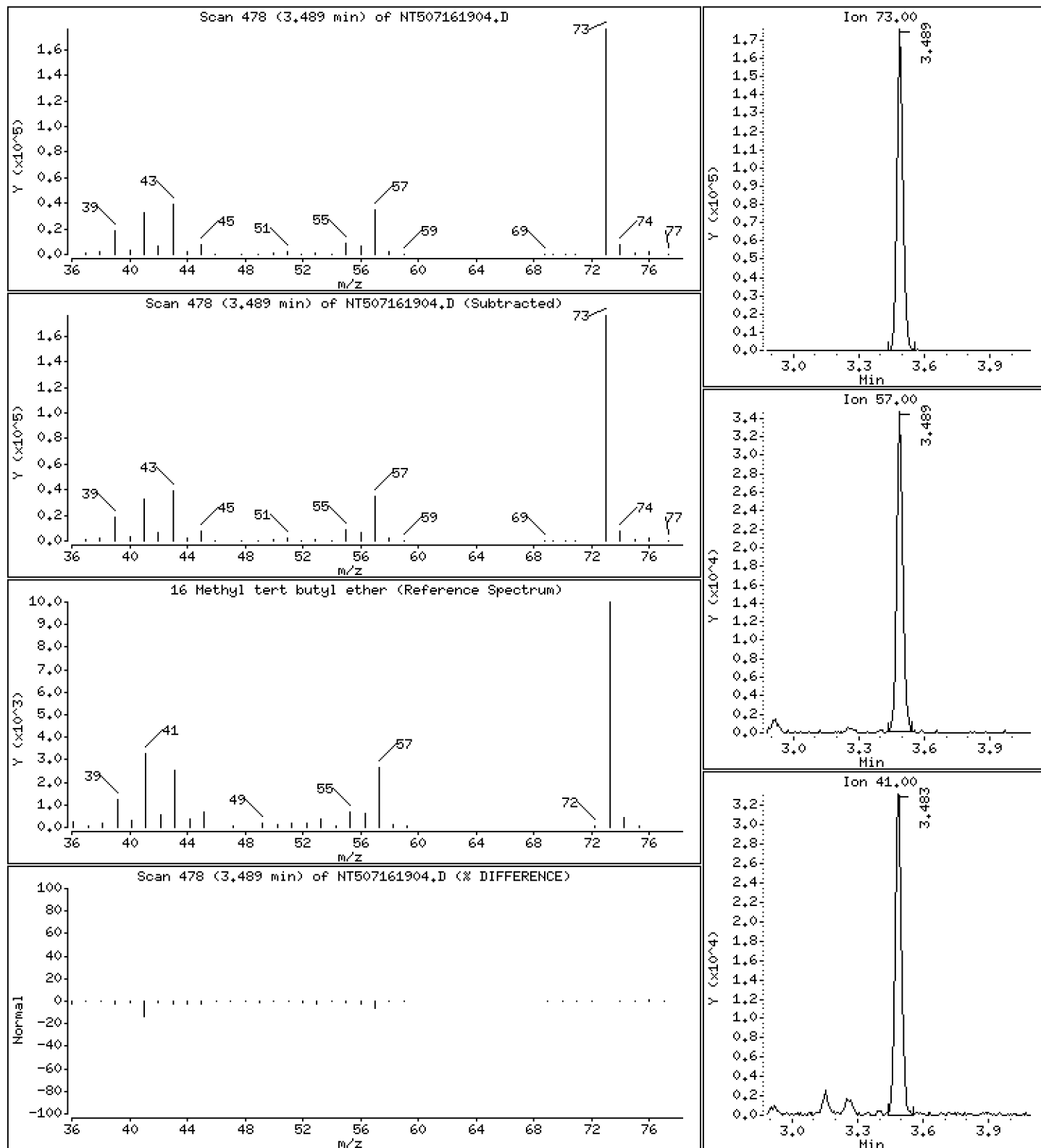
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 46,933 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

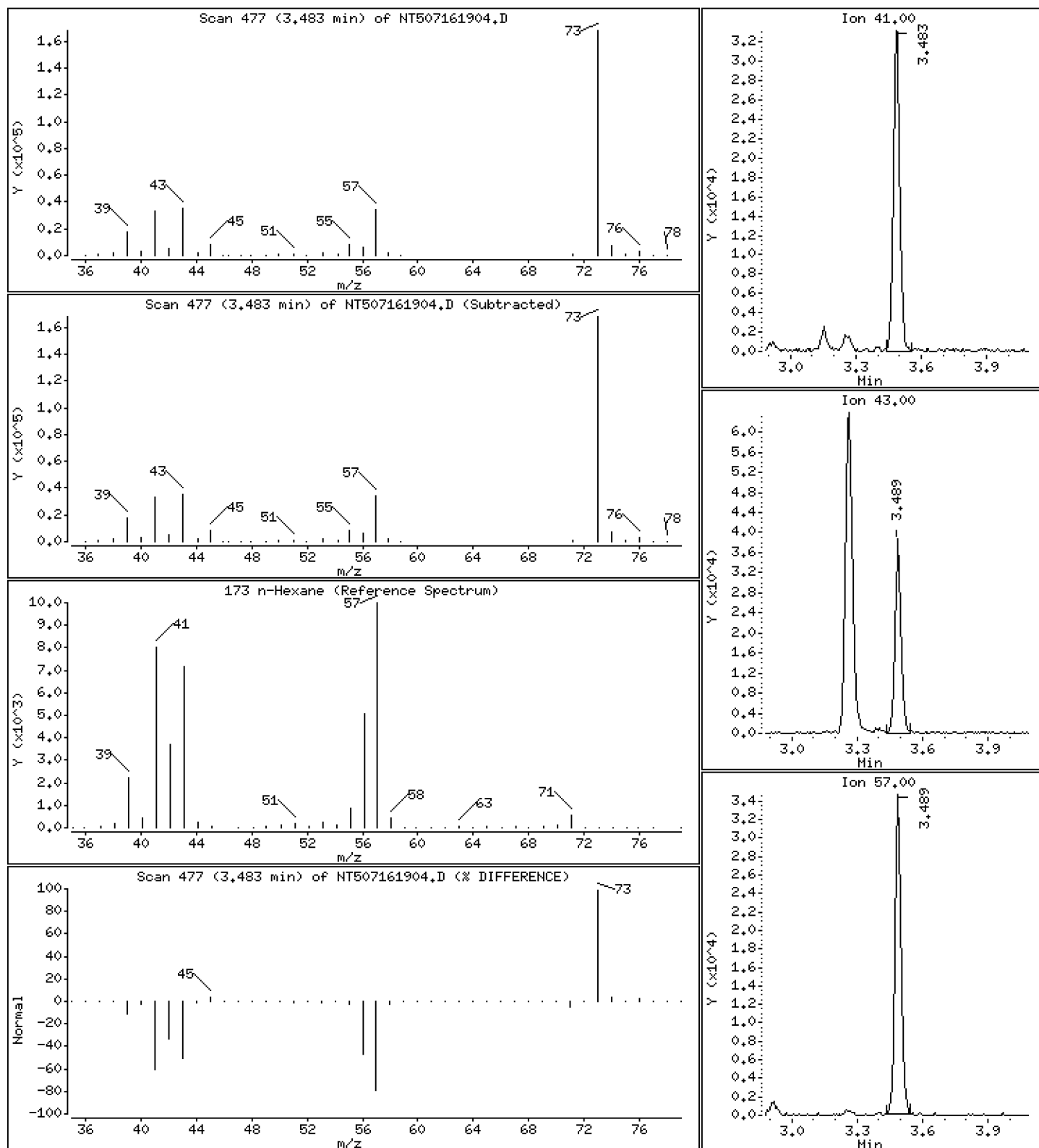
Sample Info: BSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

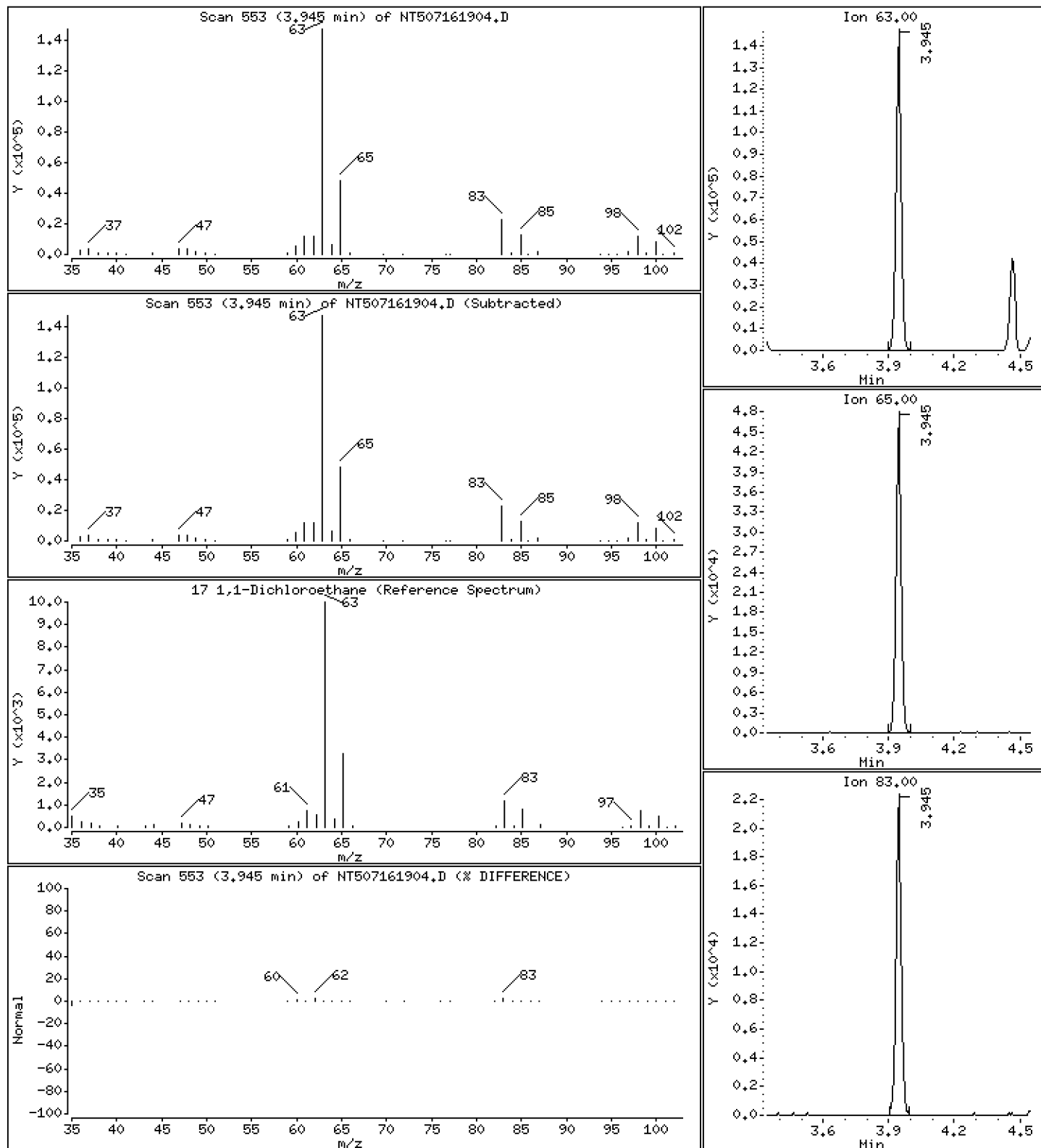
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 48,889 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

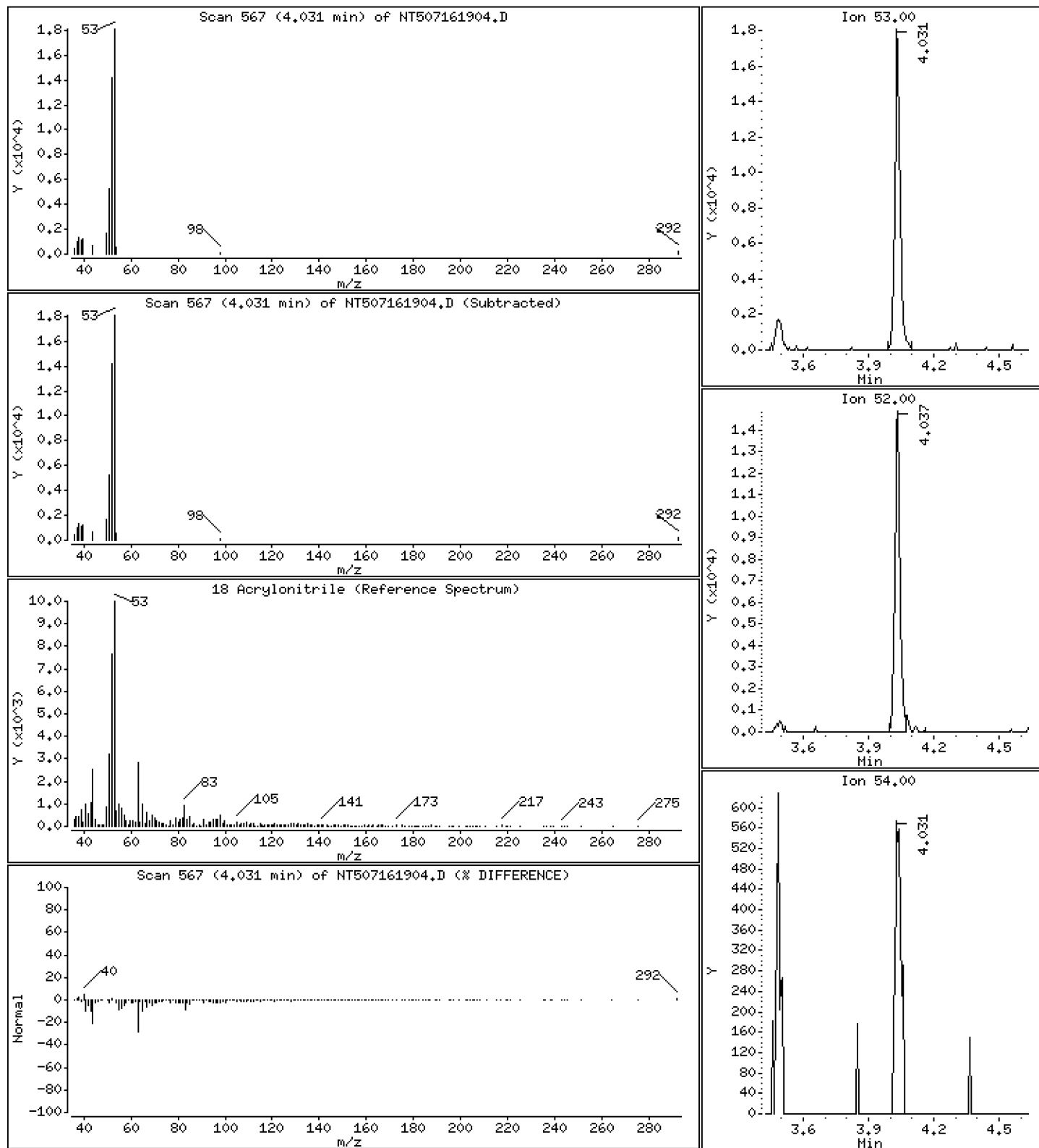
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 45,297 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

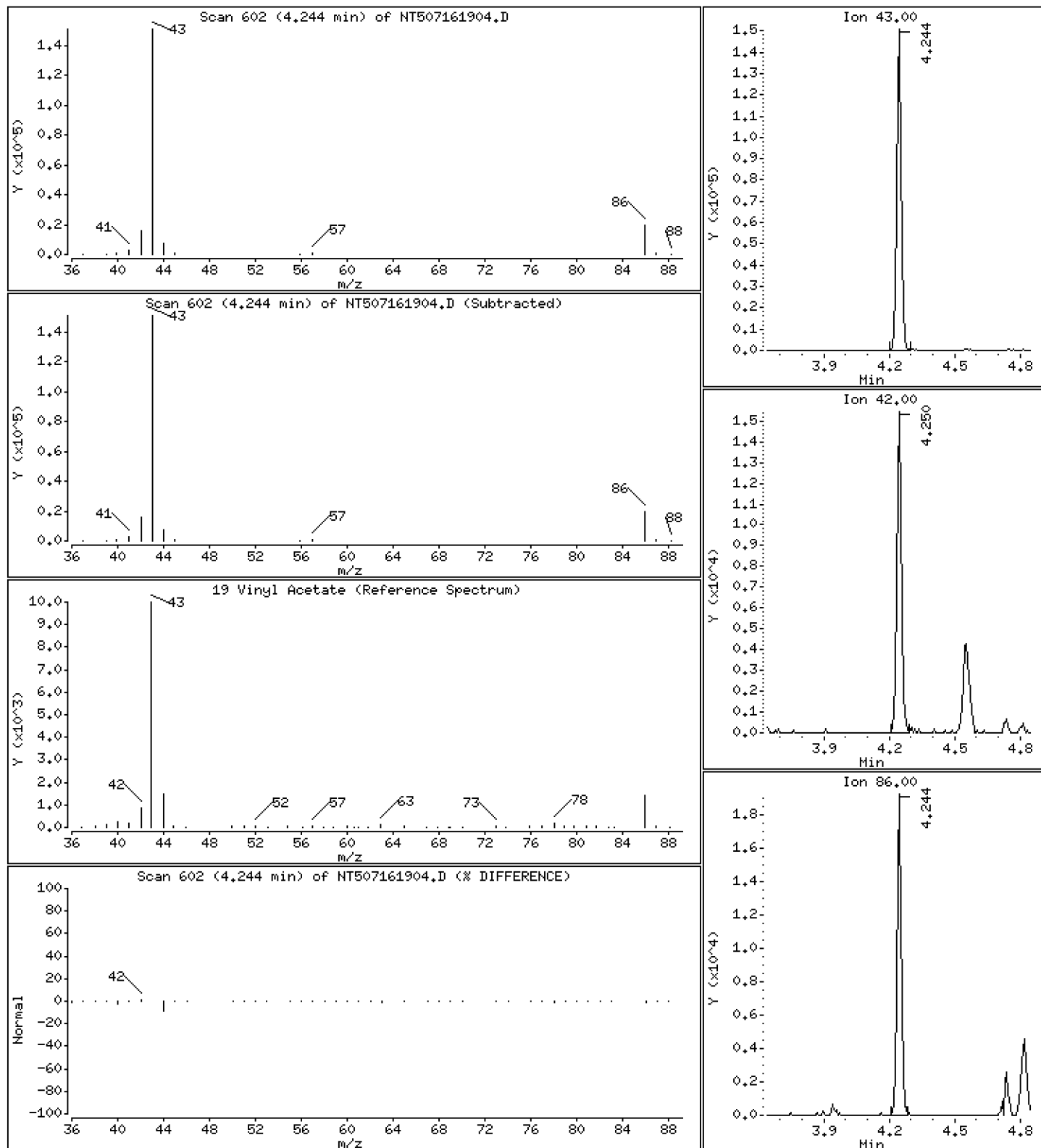
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 49,220 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

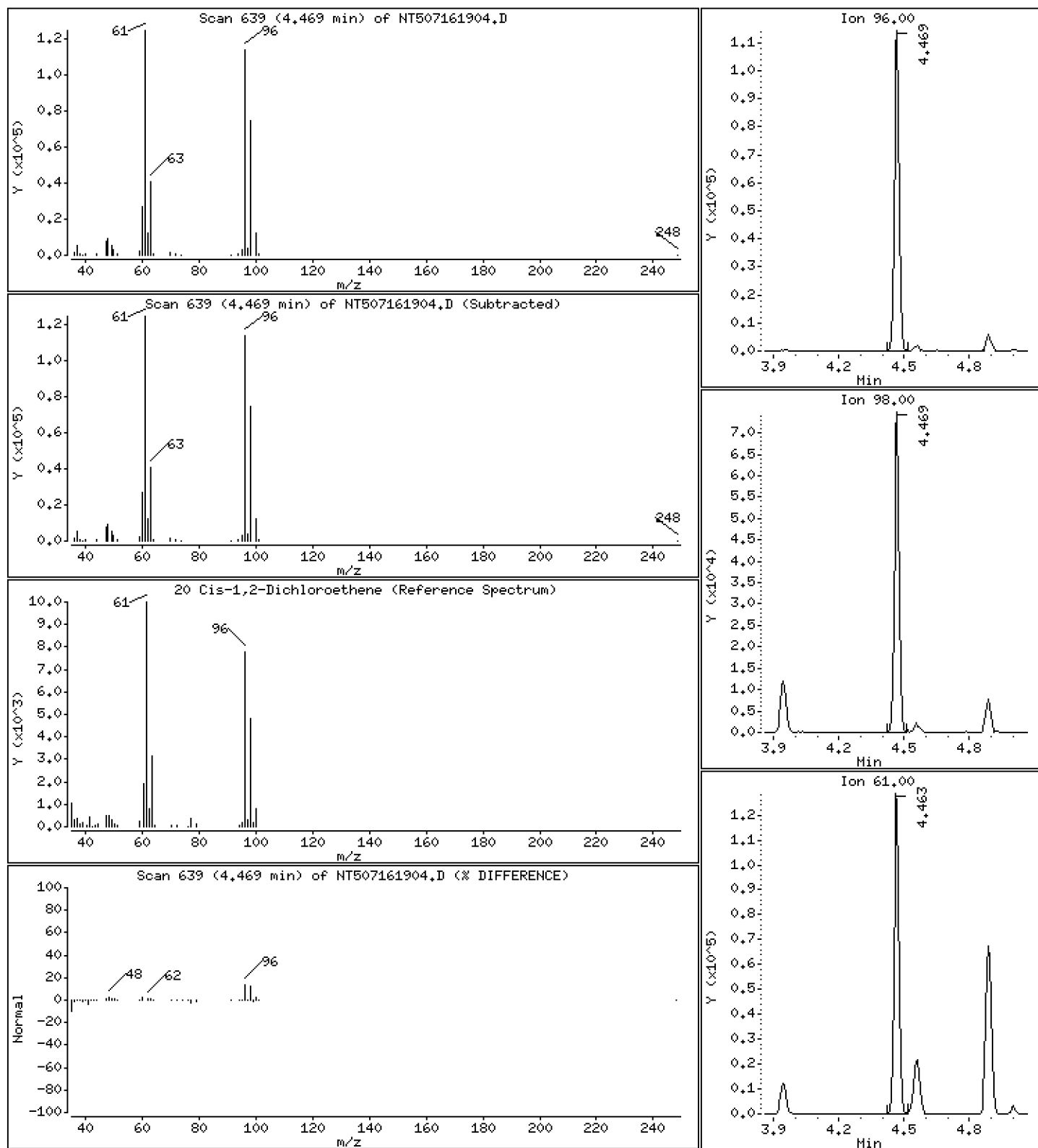
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 50,574 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

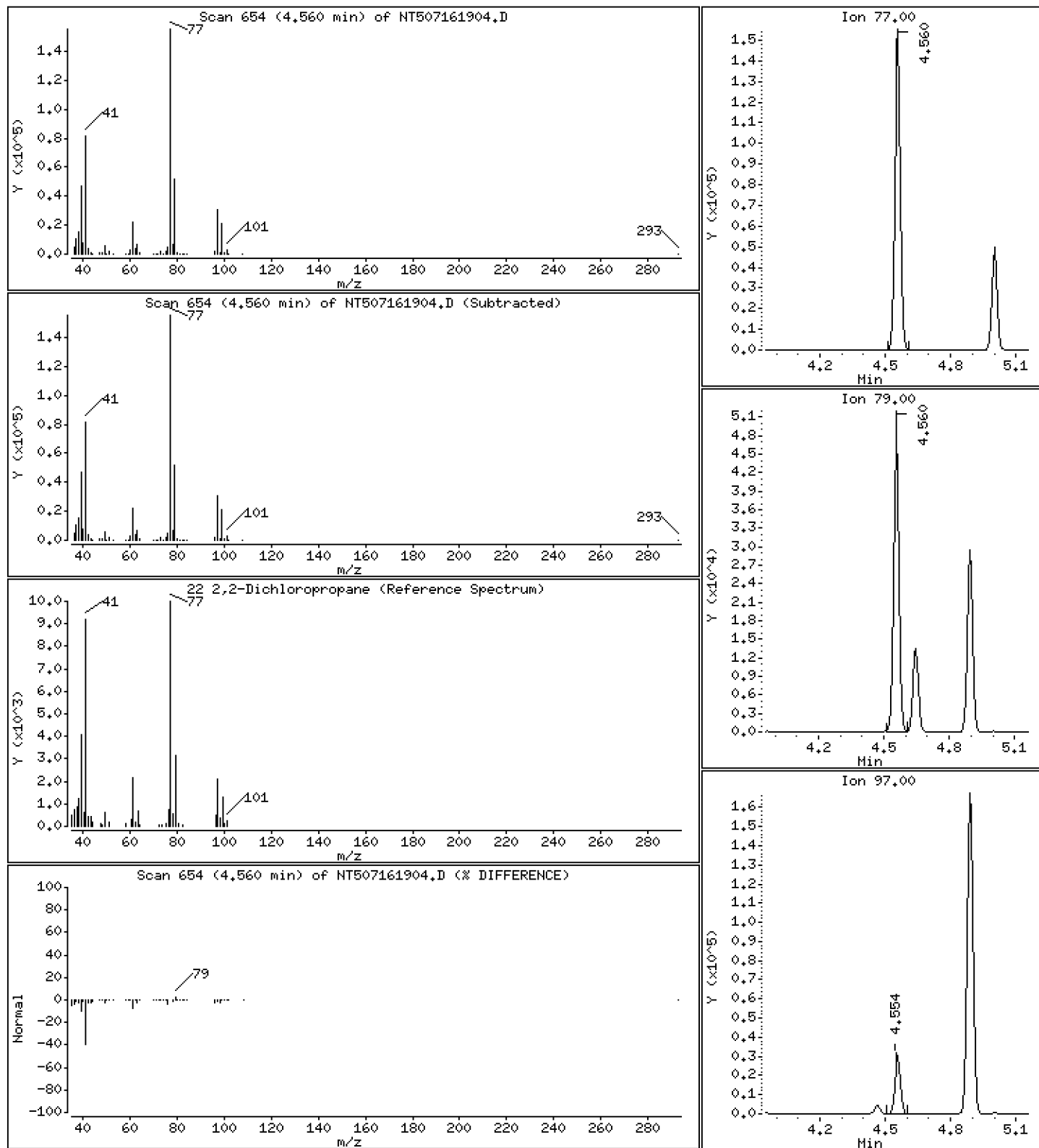
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22 2,2-Dichloropropane

Concentration: 54.169 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

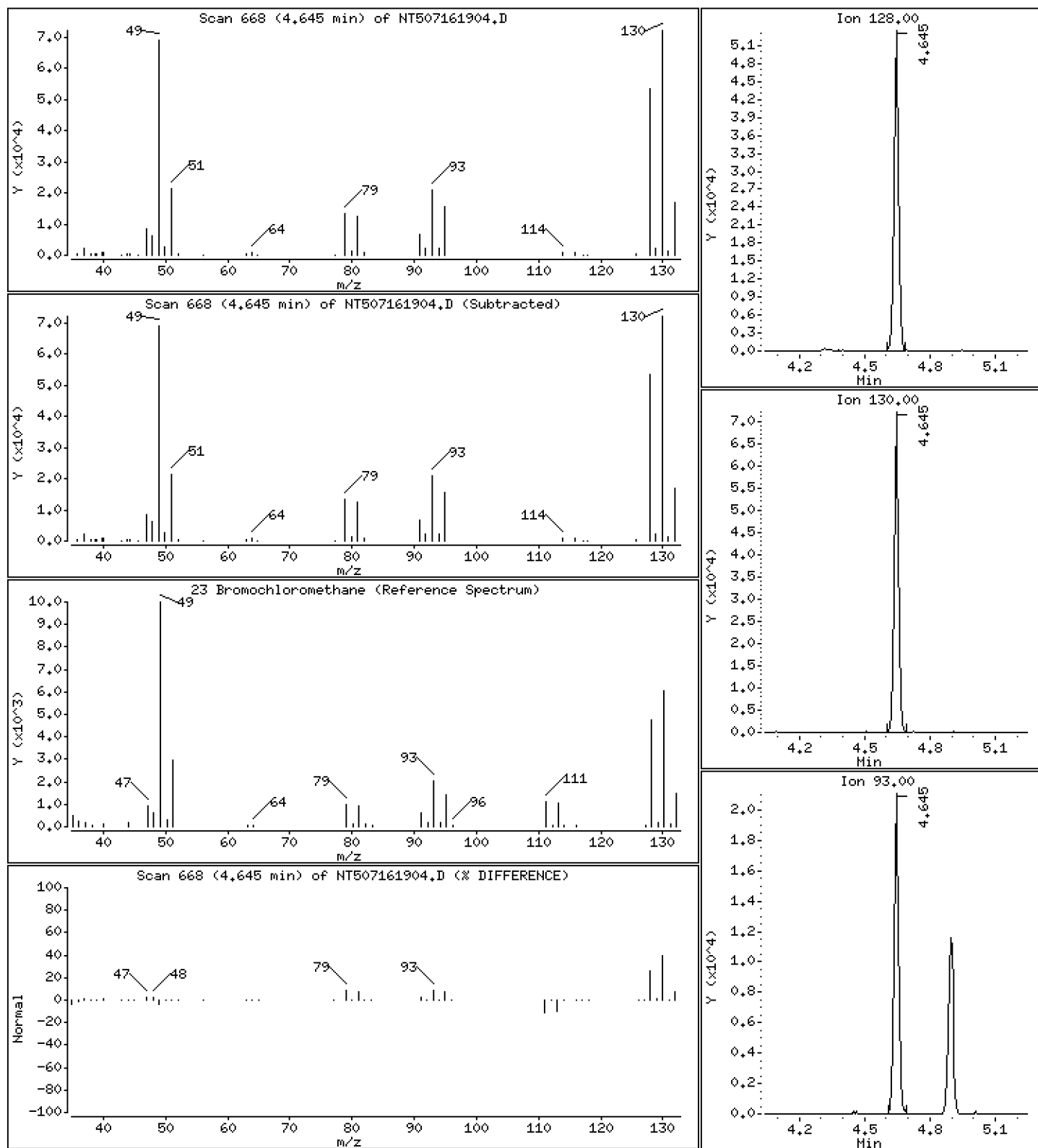
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

23 Bromochloromethane

Concentration: 48,019 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

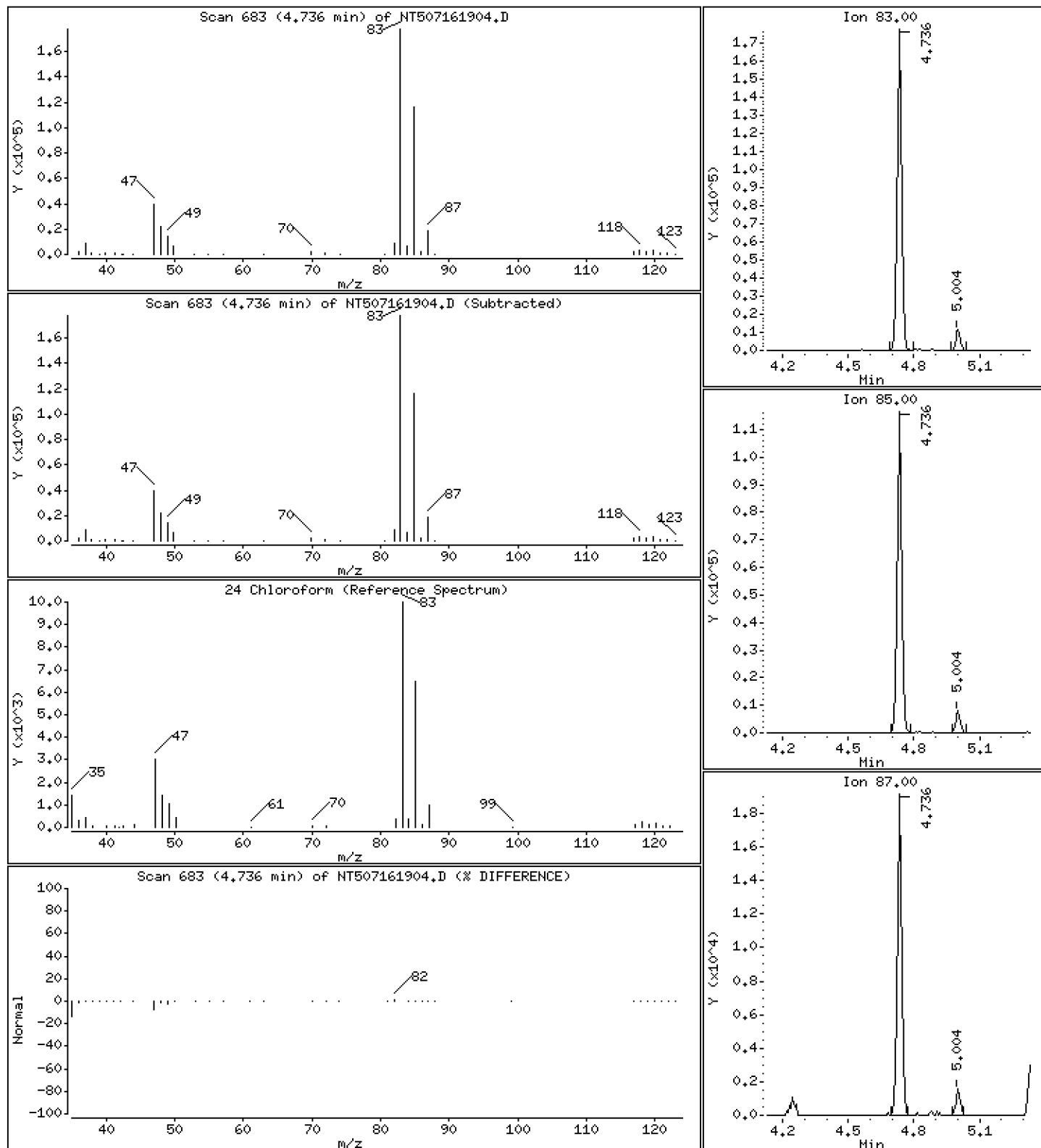
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 51.027 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

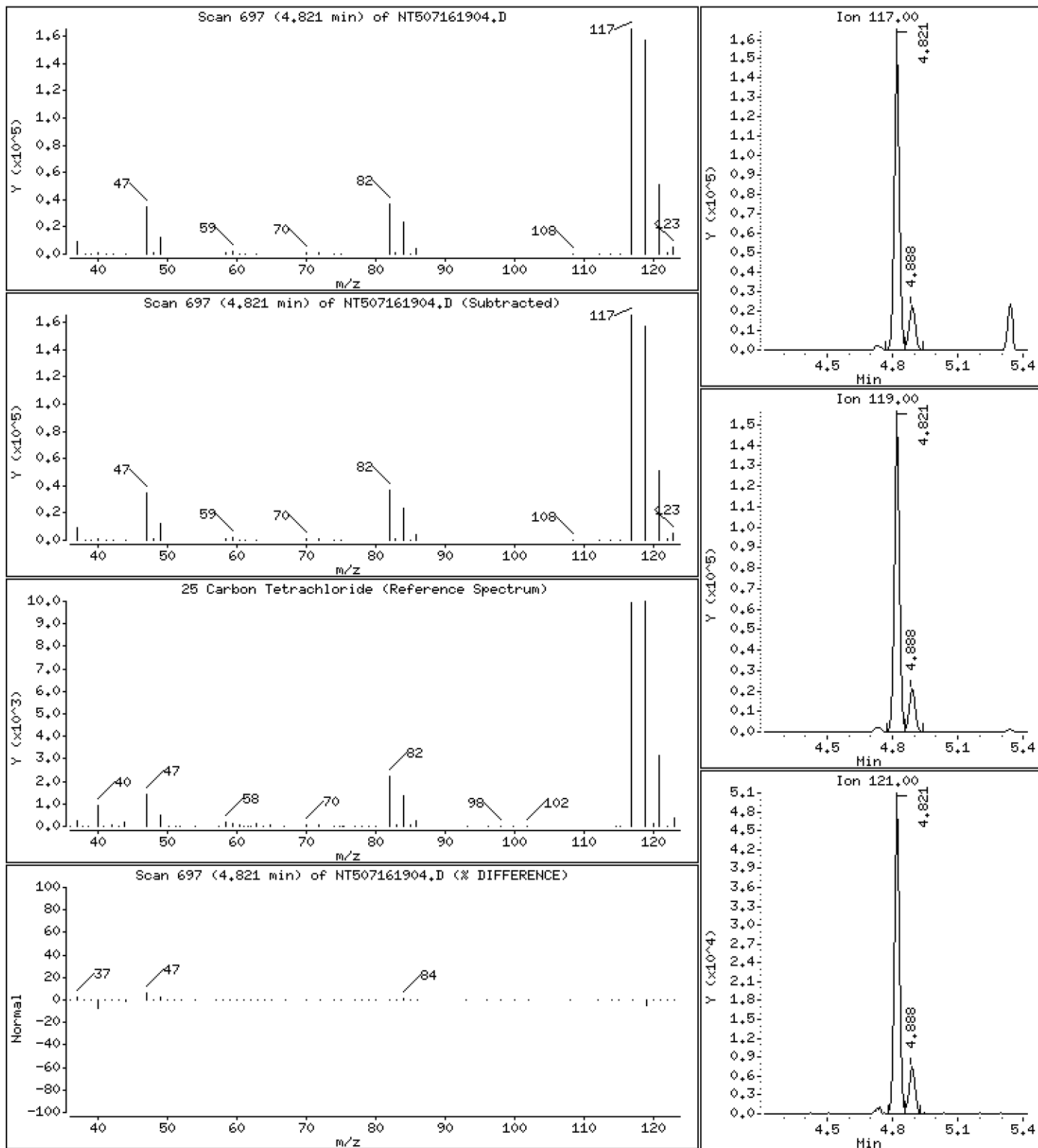
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 49.458 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

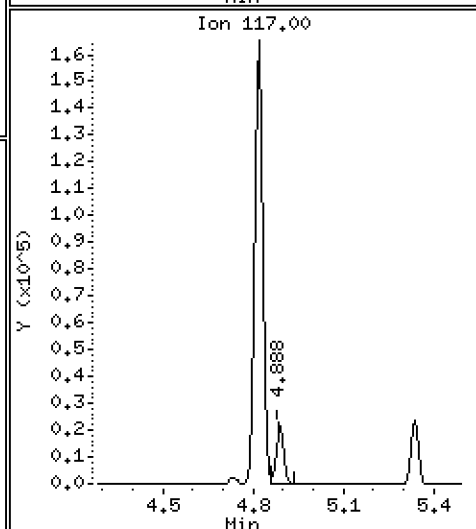
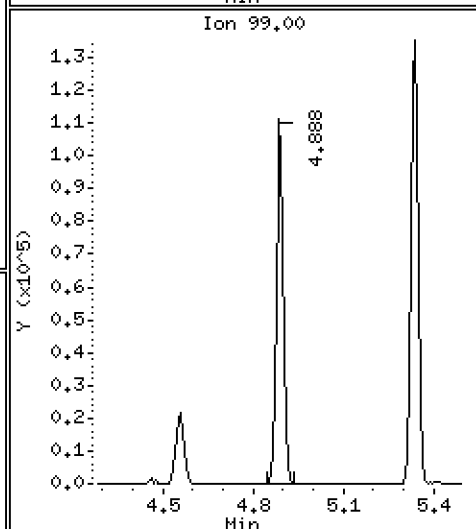
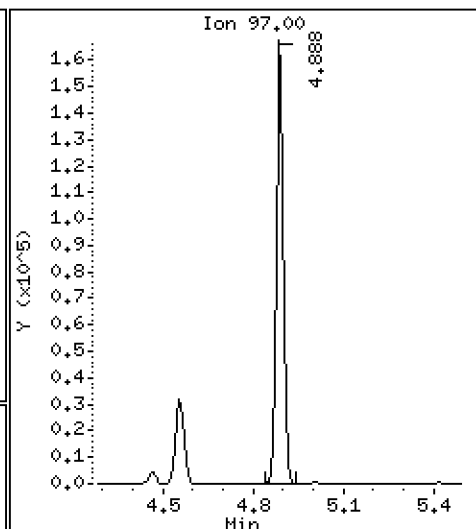
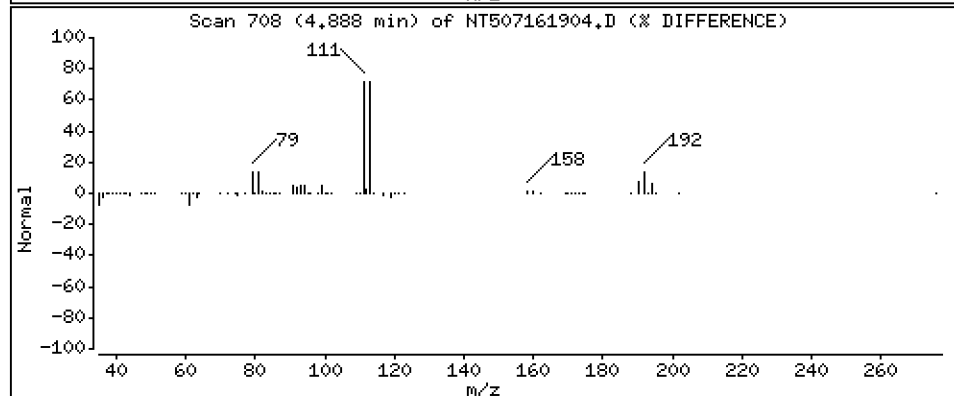
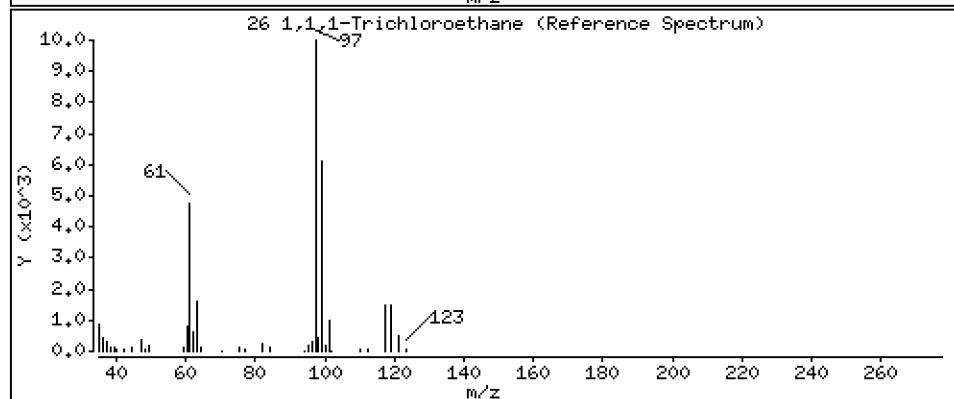
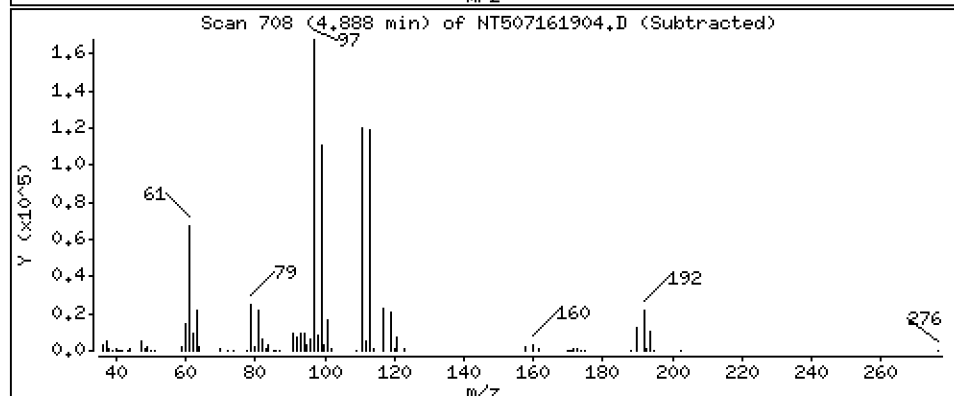
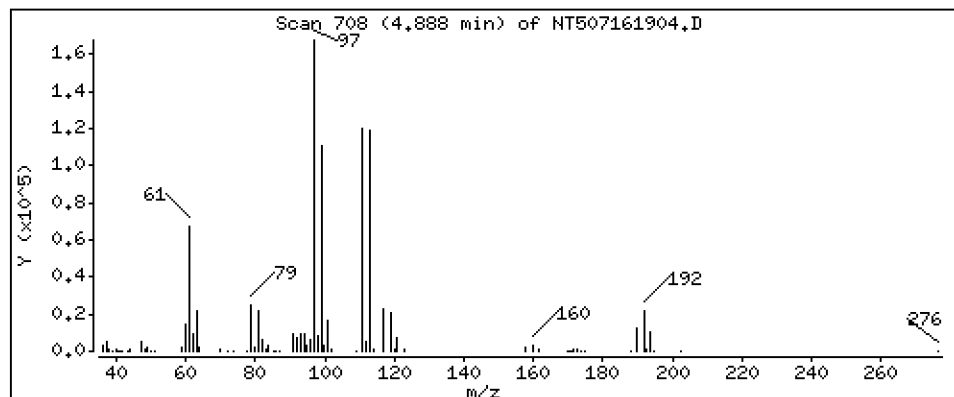
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 52,064 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

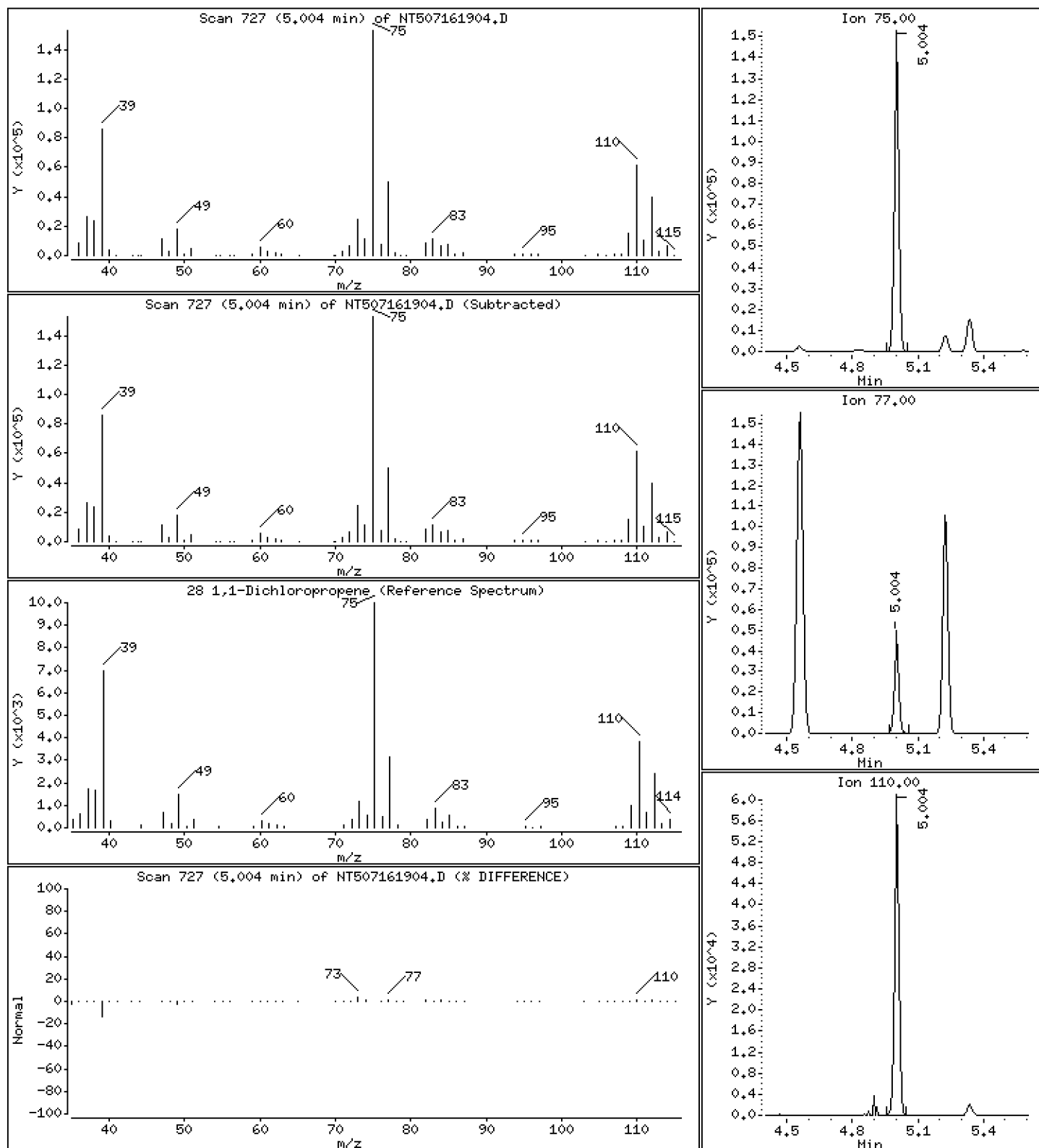
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 51.635 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

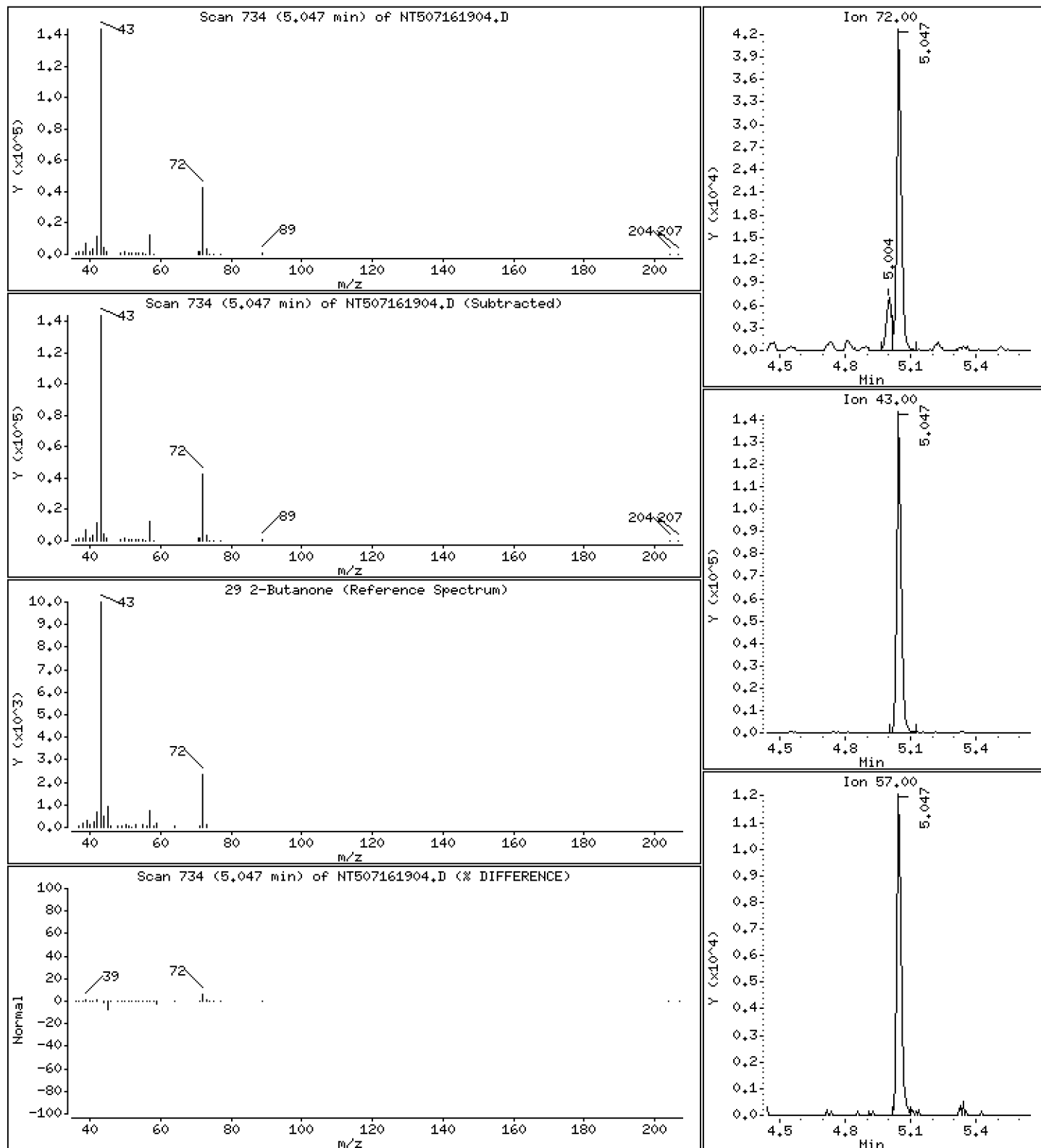
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 246.50 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

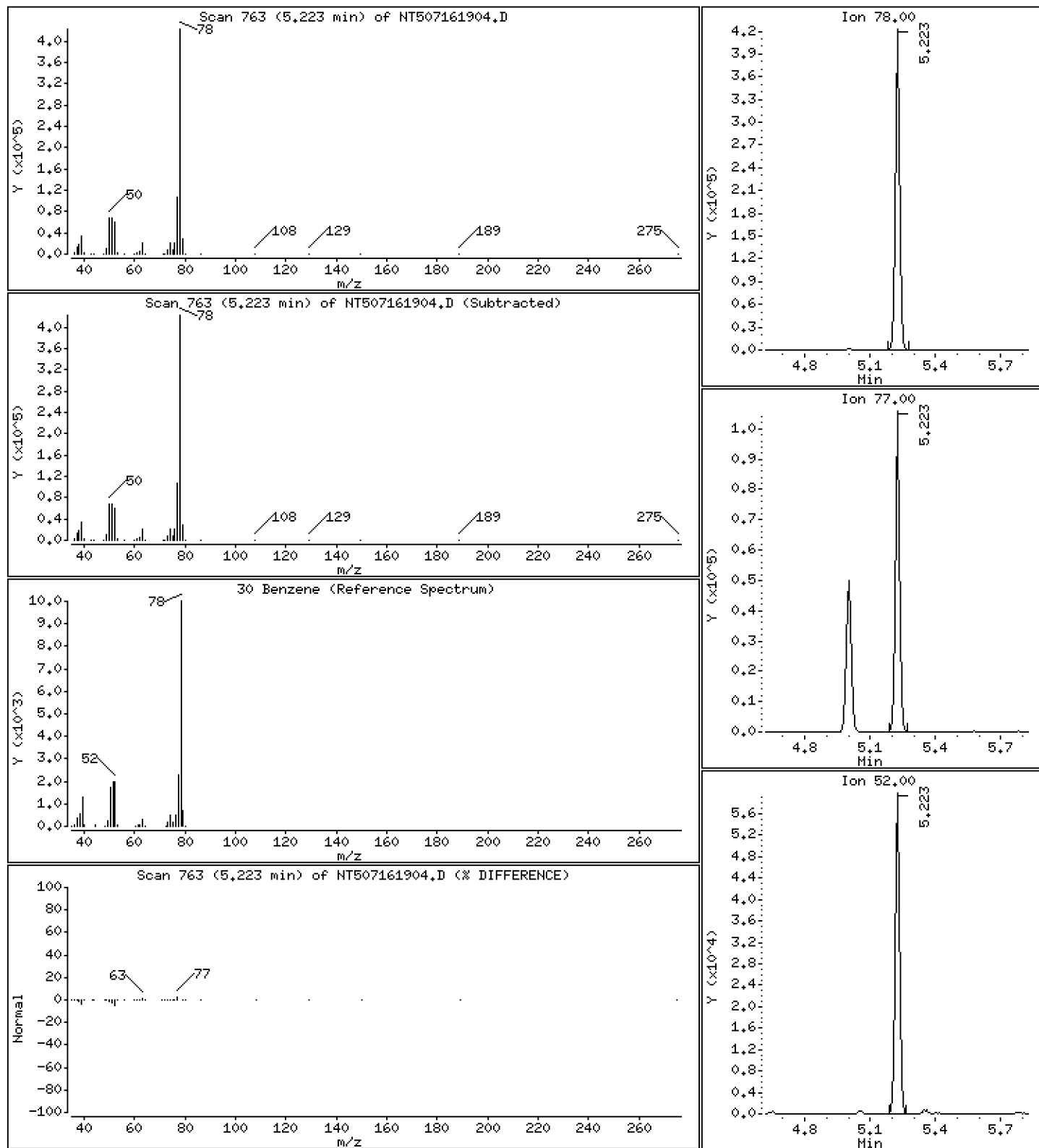
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 47,772 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

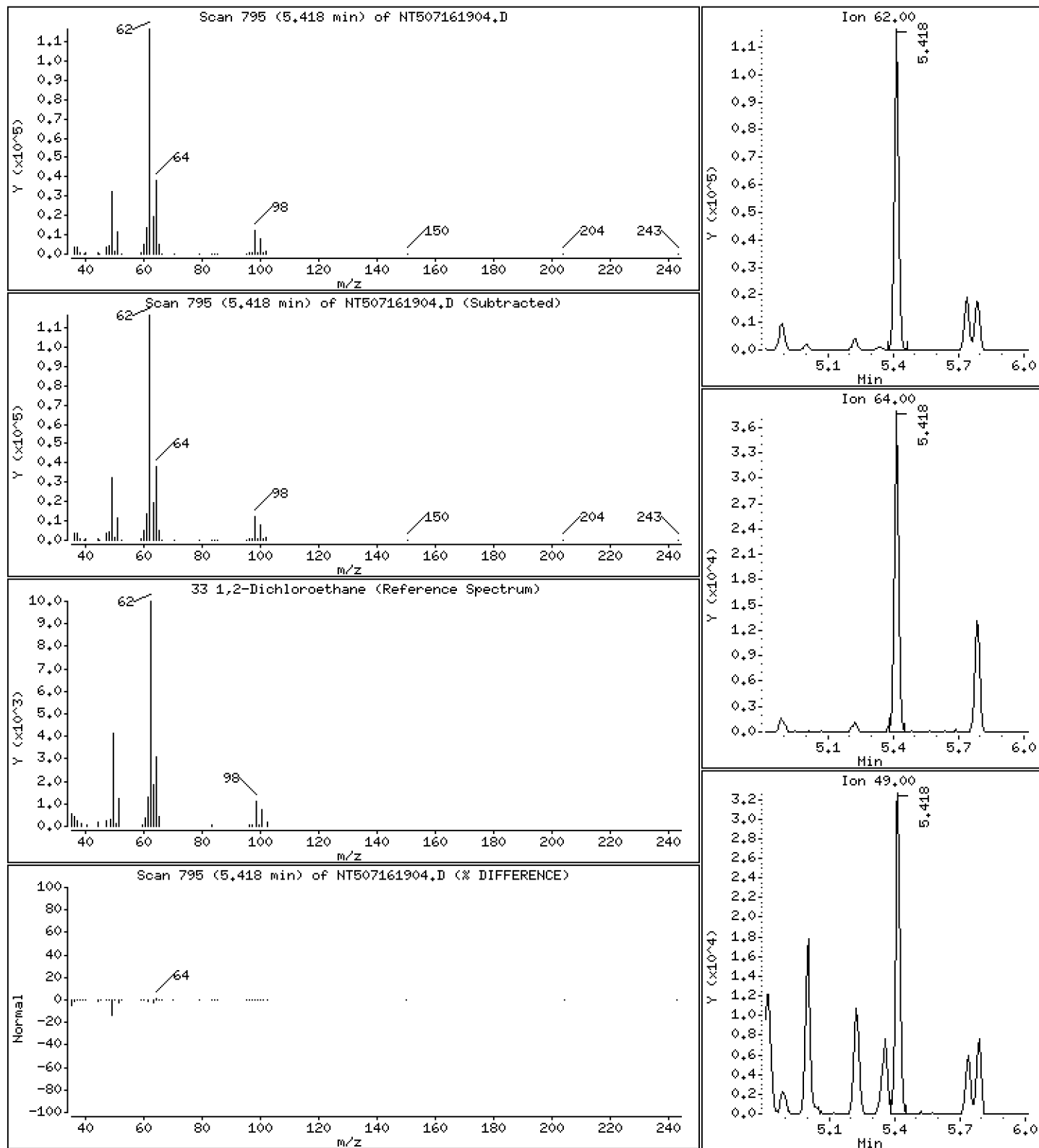
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 45,739 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

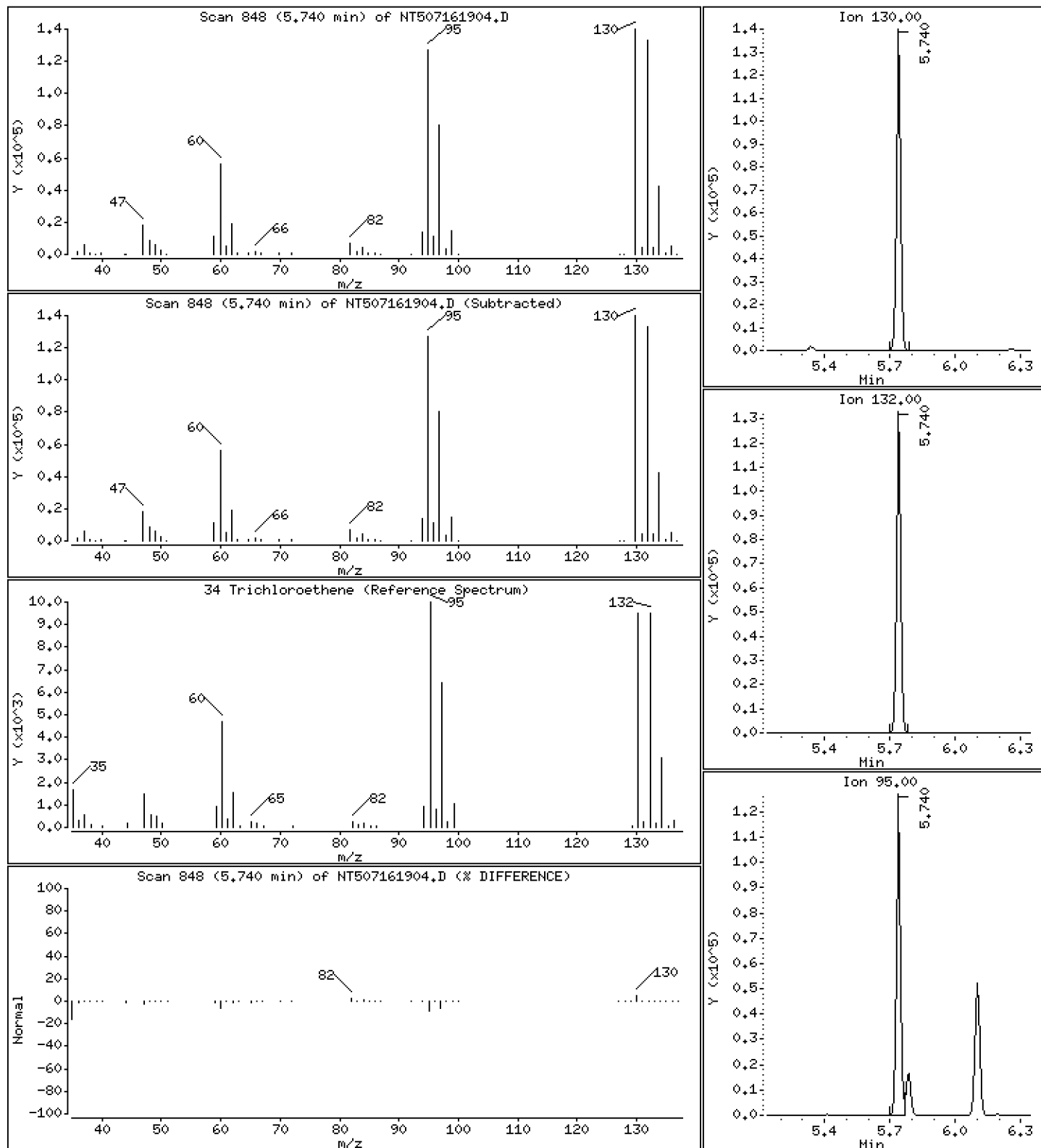
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 47.920 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

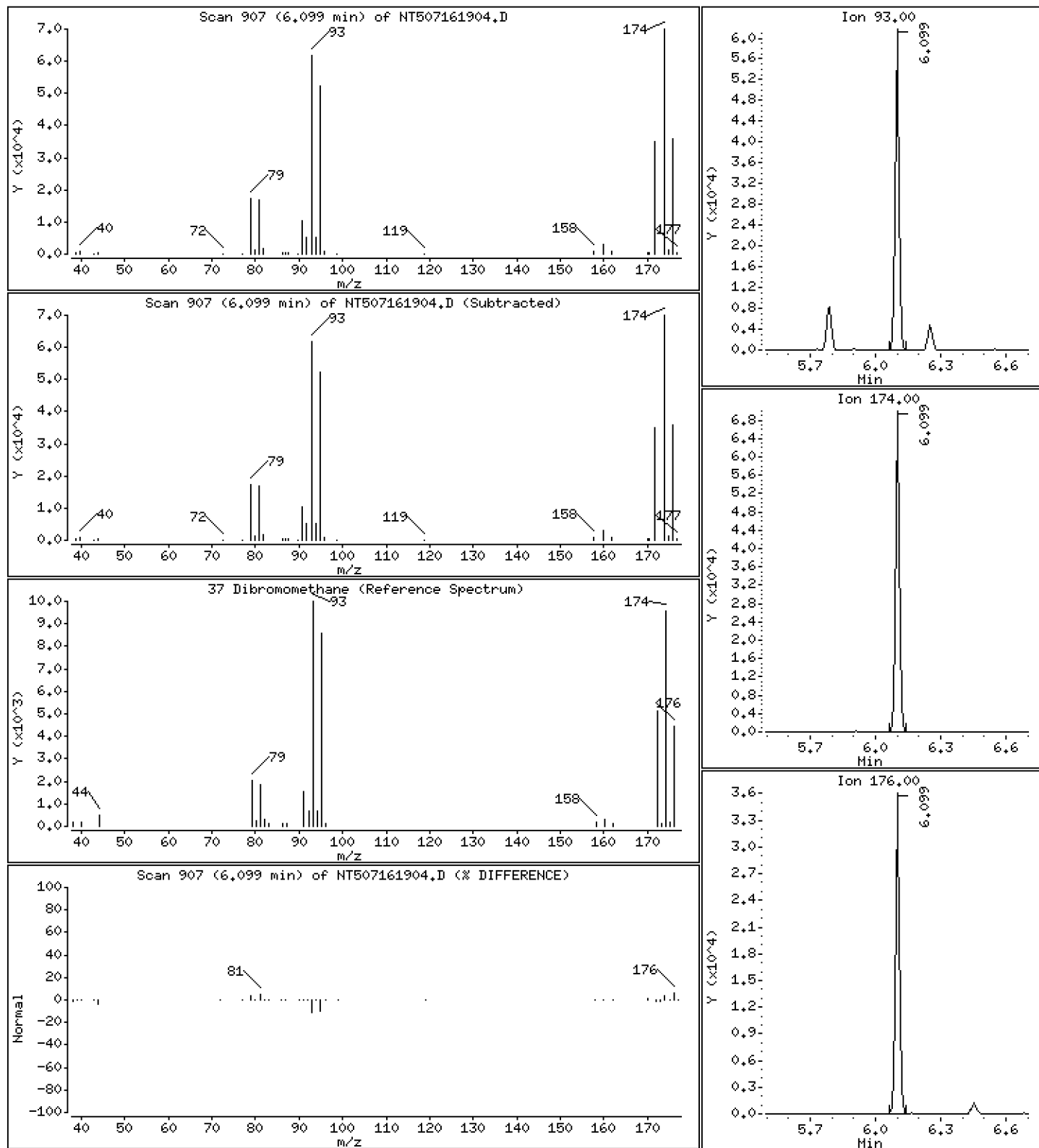
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 45,813 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

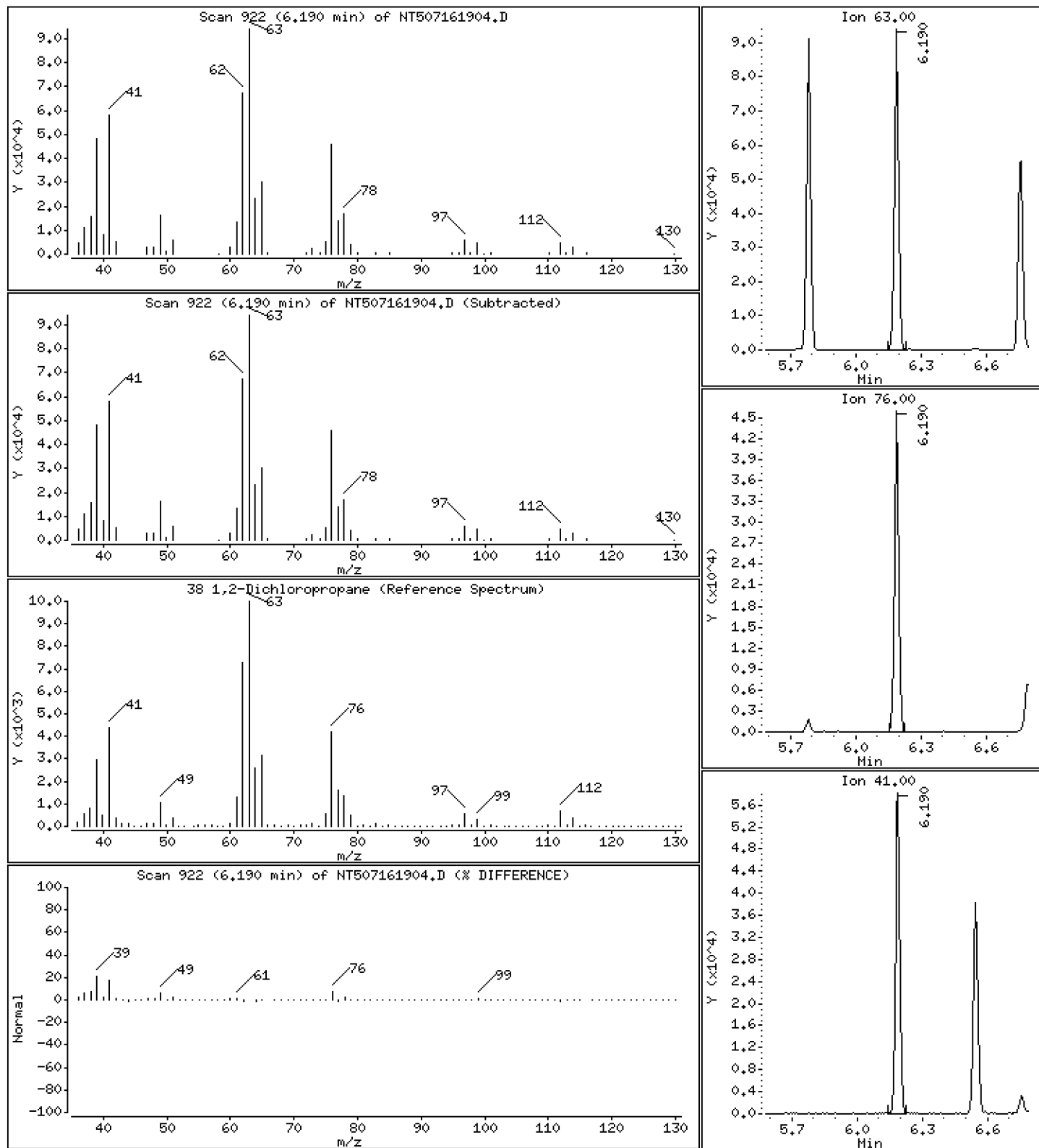
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 46.933 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

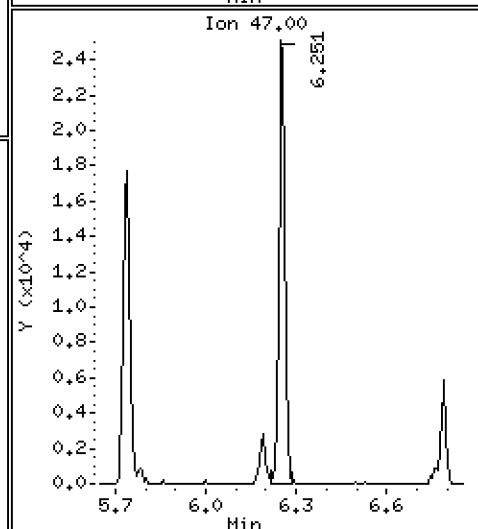
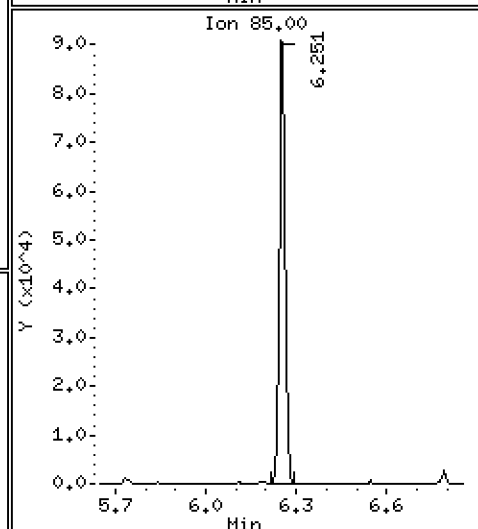
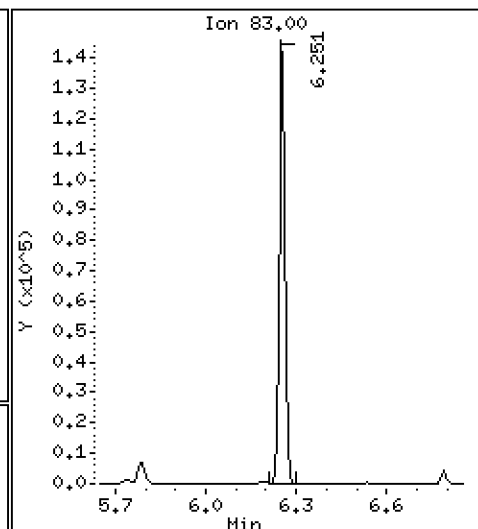
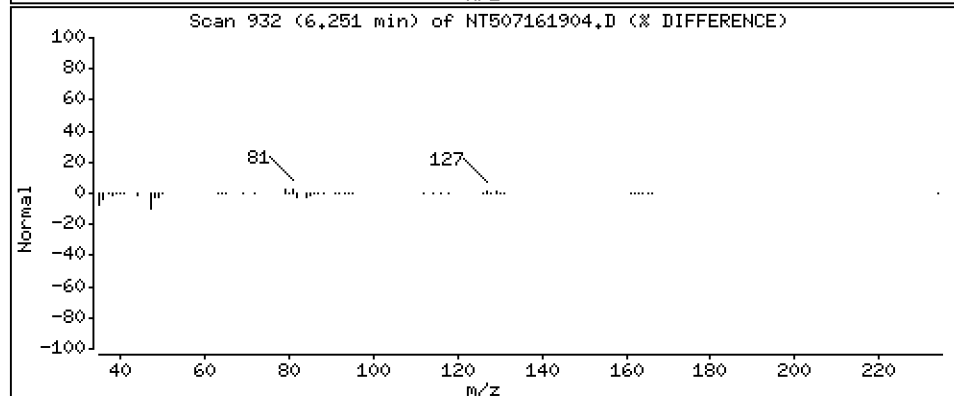
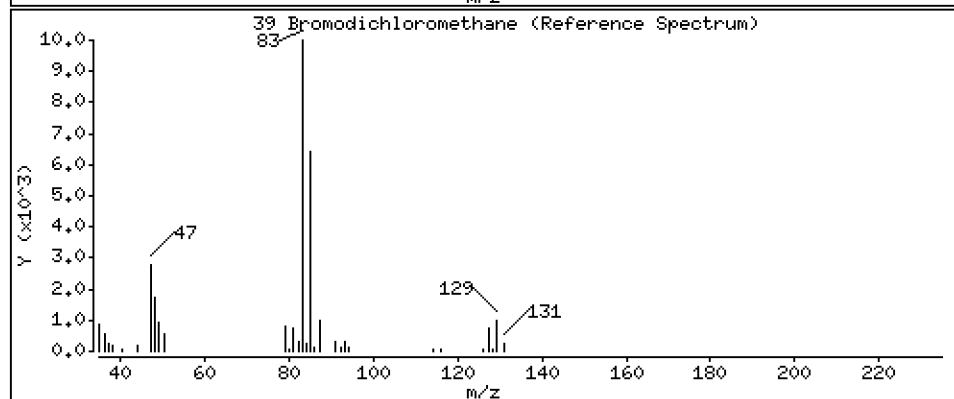
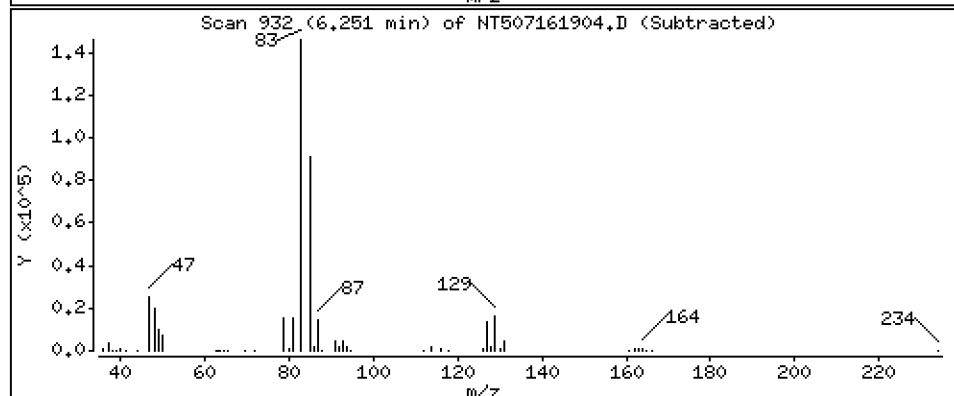
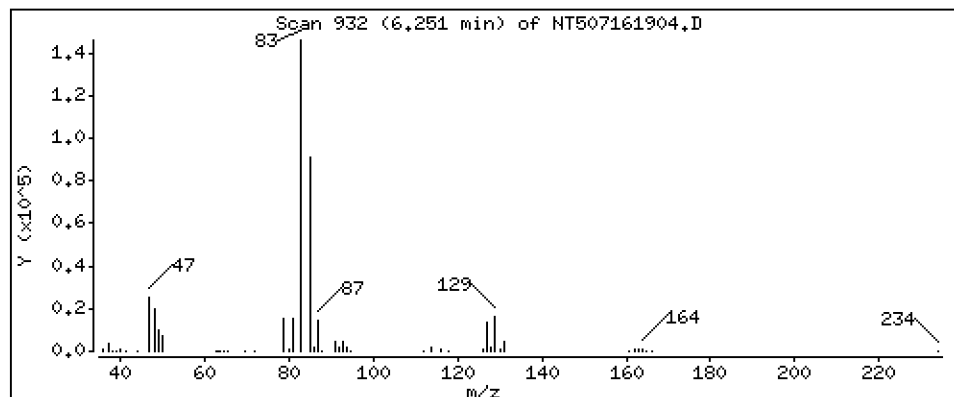
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 47,377 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

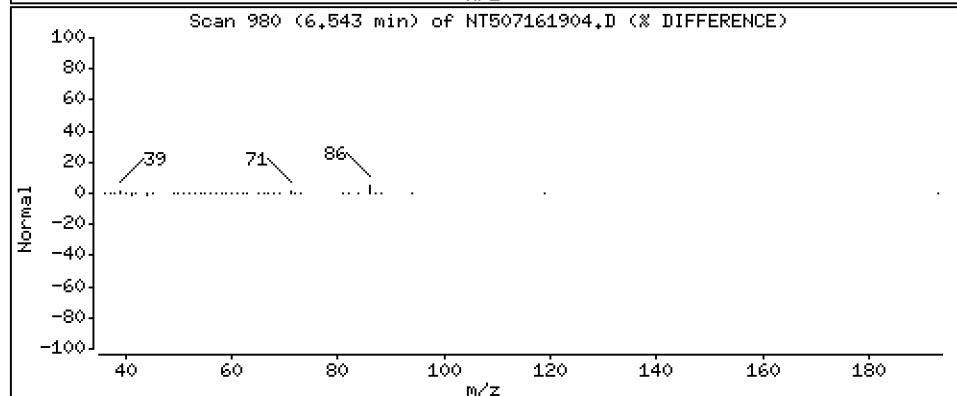
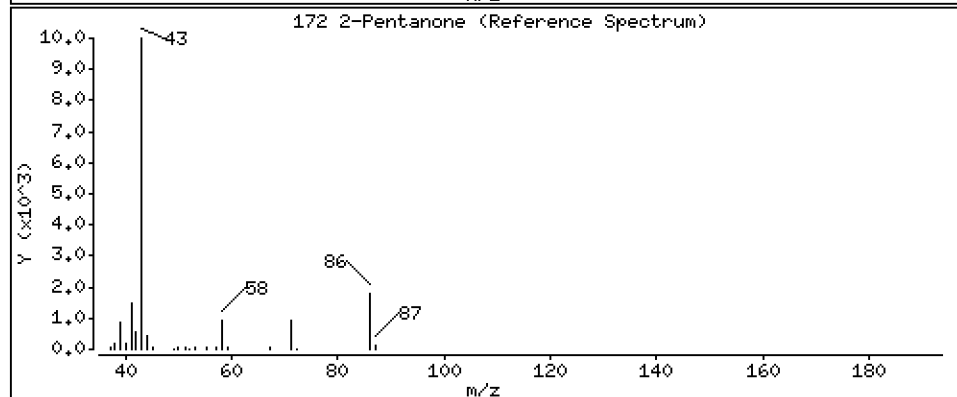
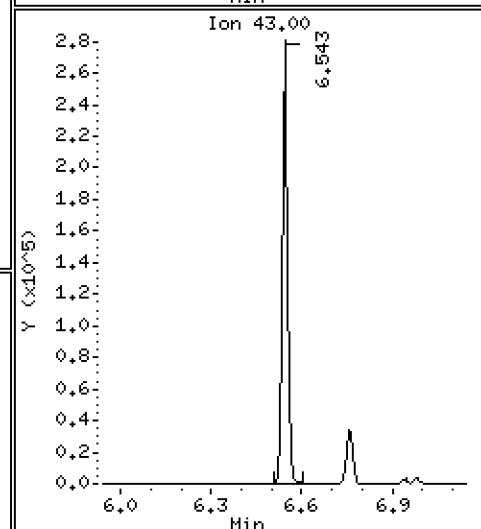
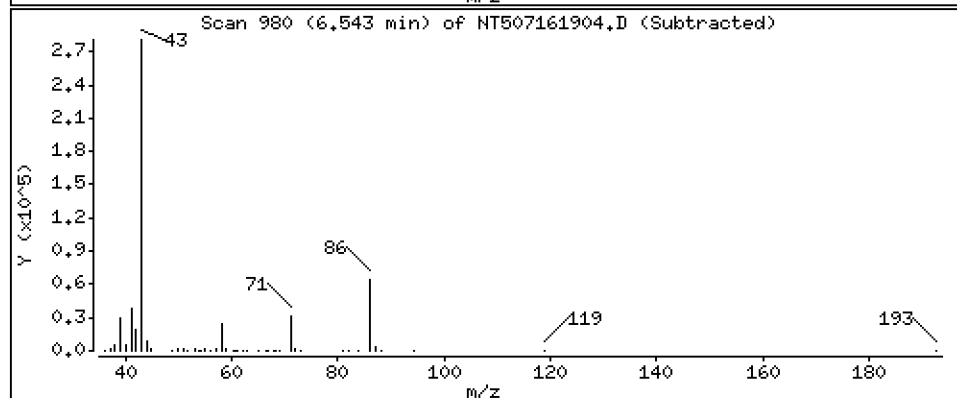
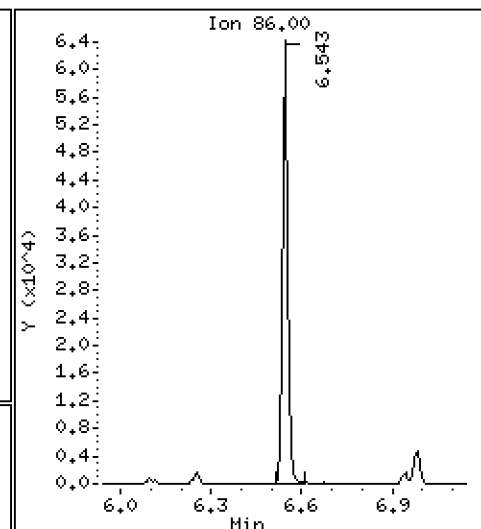
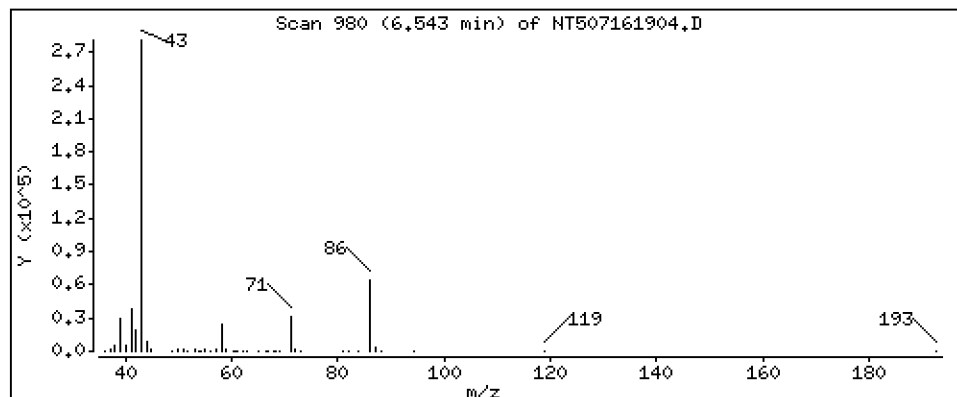
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 227.65 ug/Kg

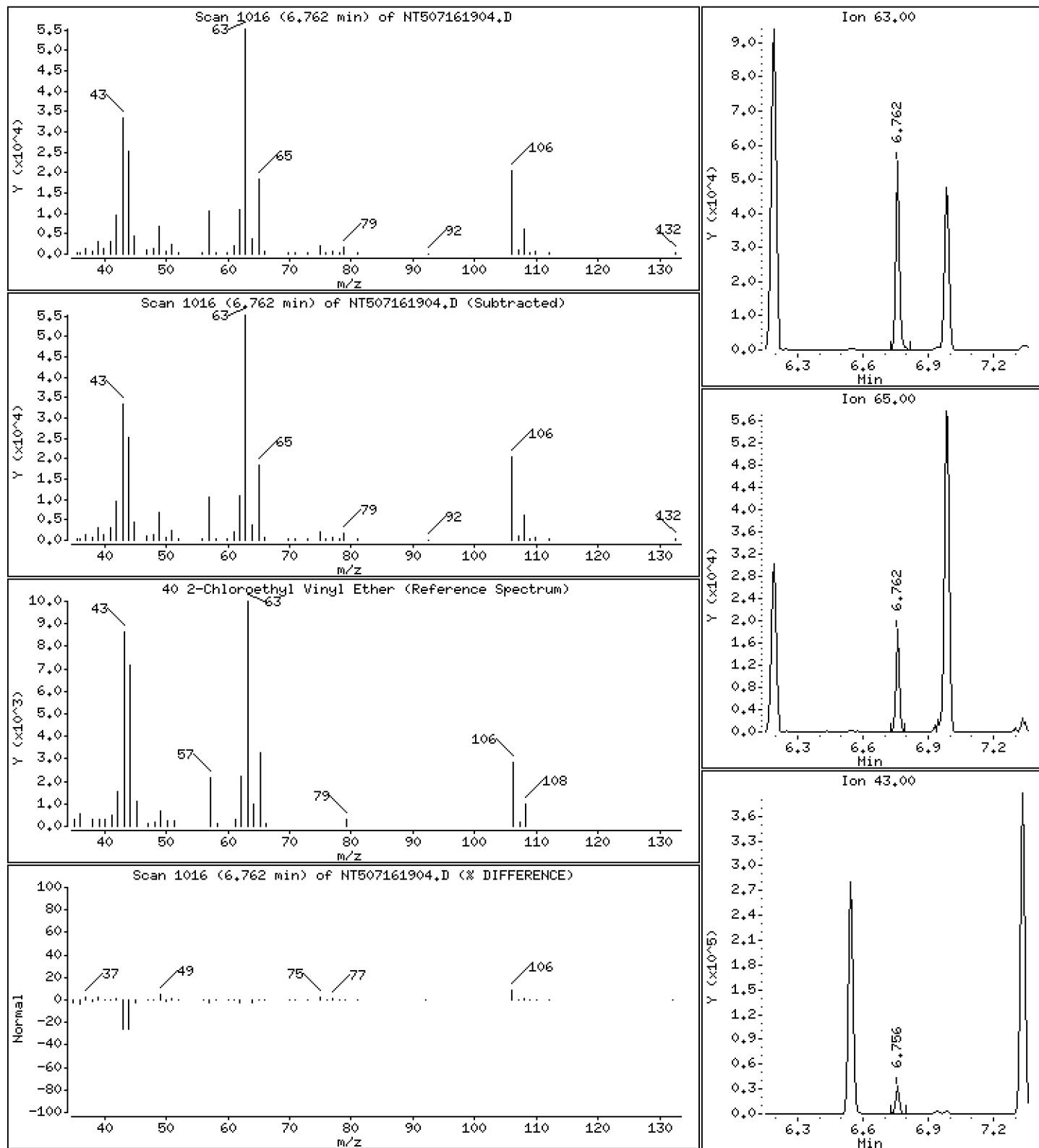


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 43,993 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

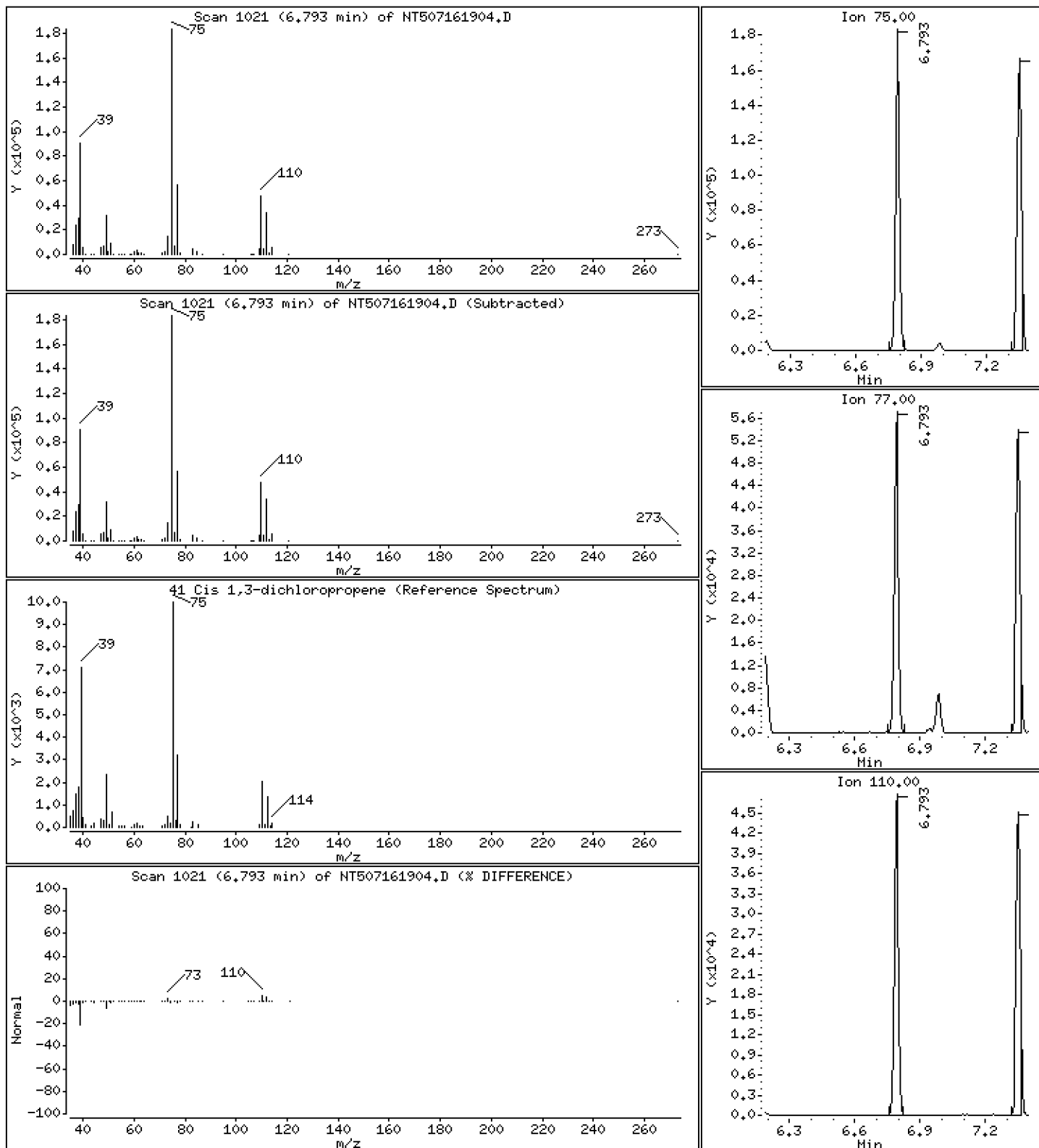
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

41 Cis 1,3-dichloropropene

Concentration: 48,543 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

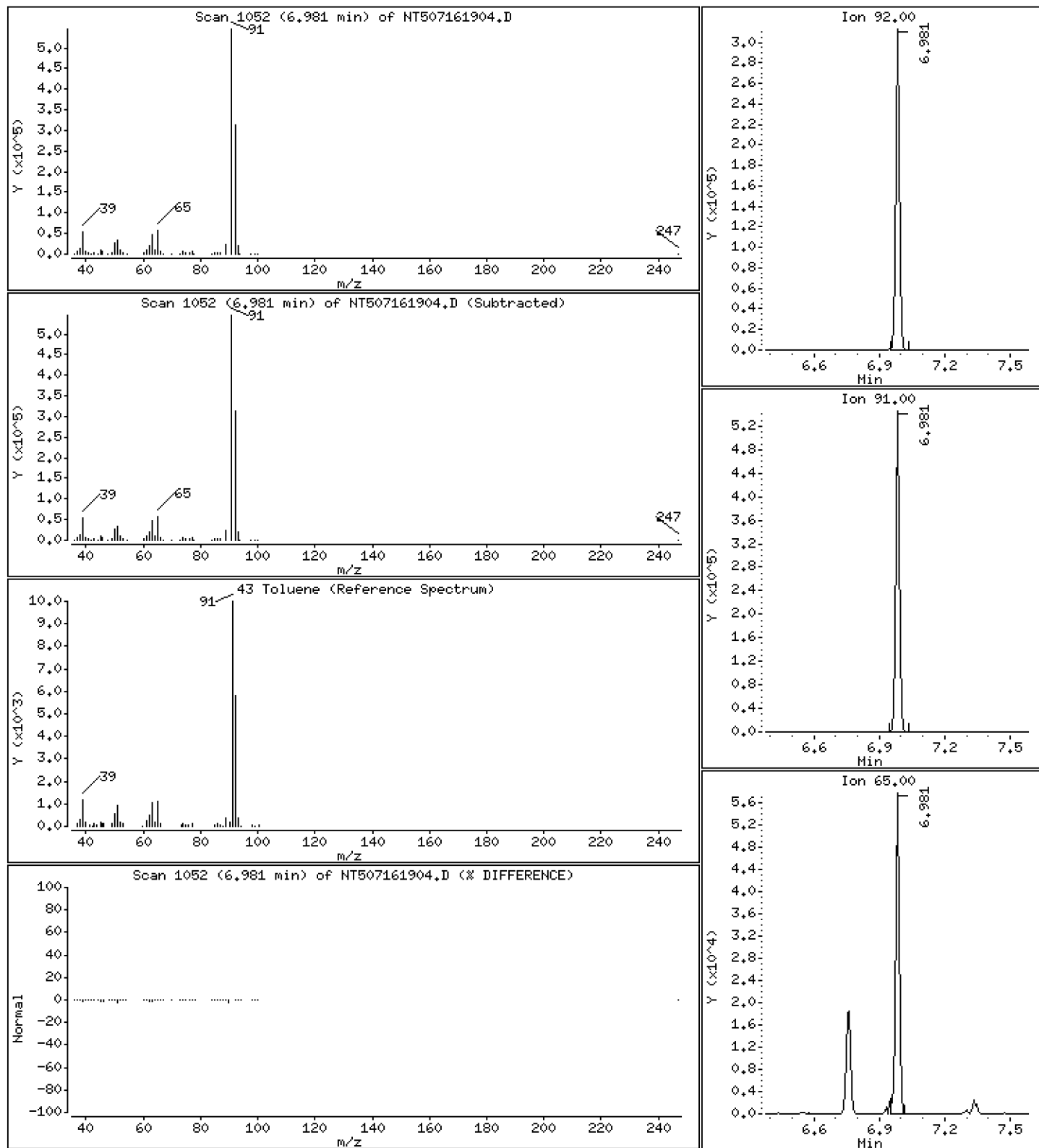
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 46.645 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

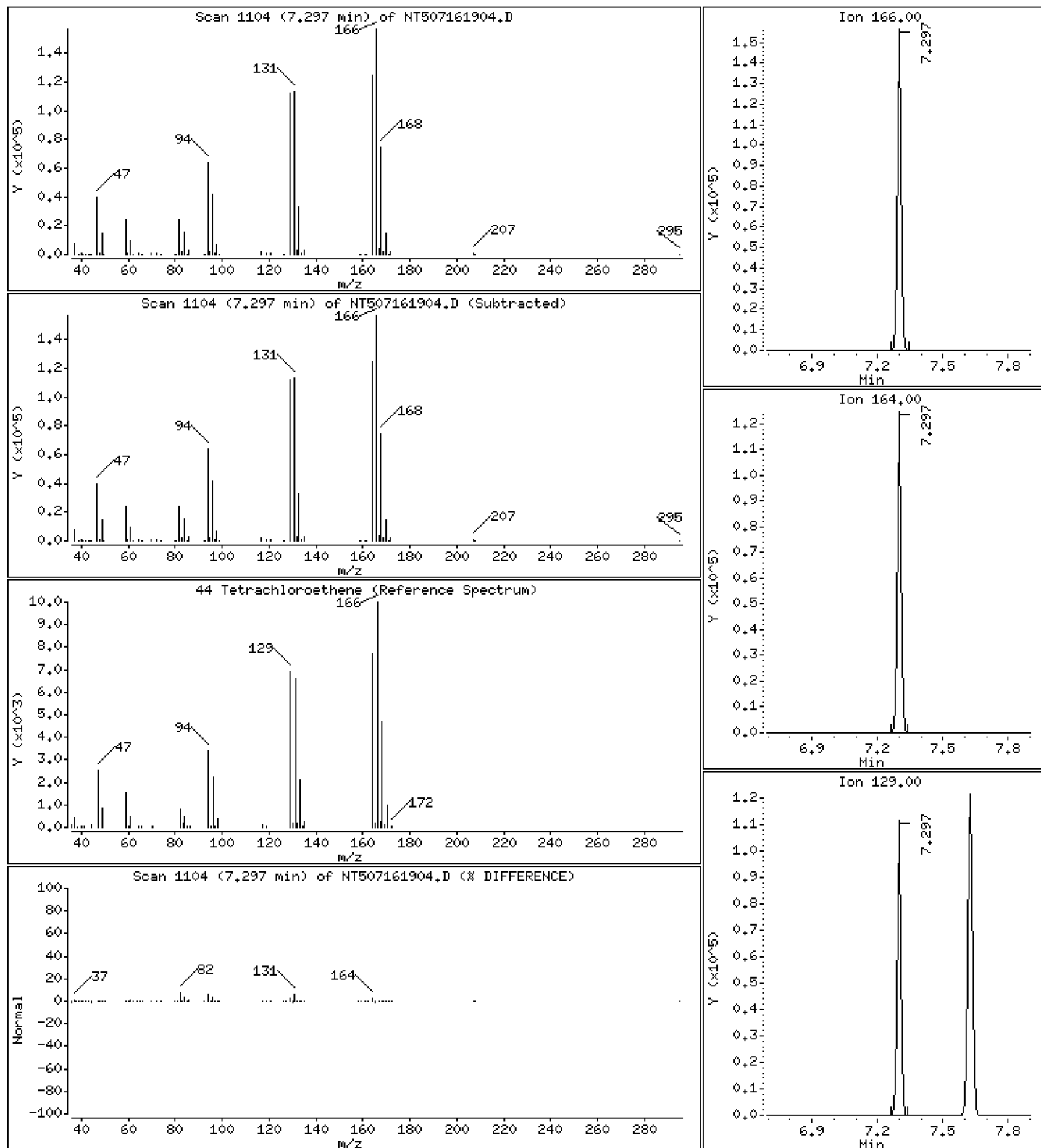
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 47,544 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

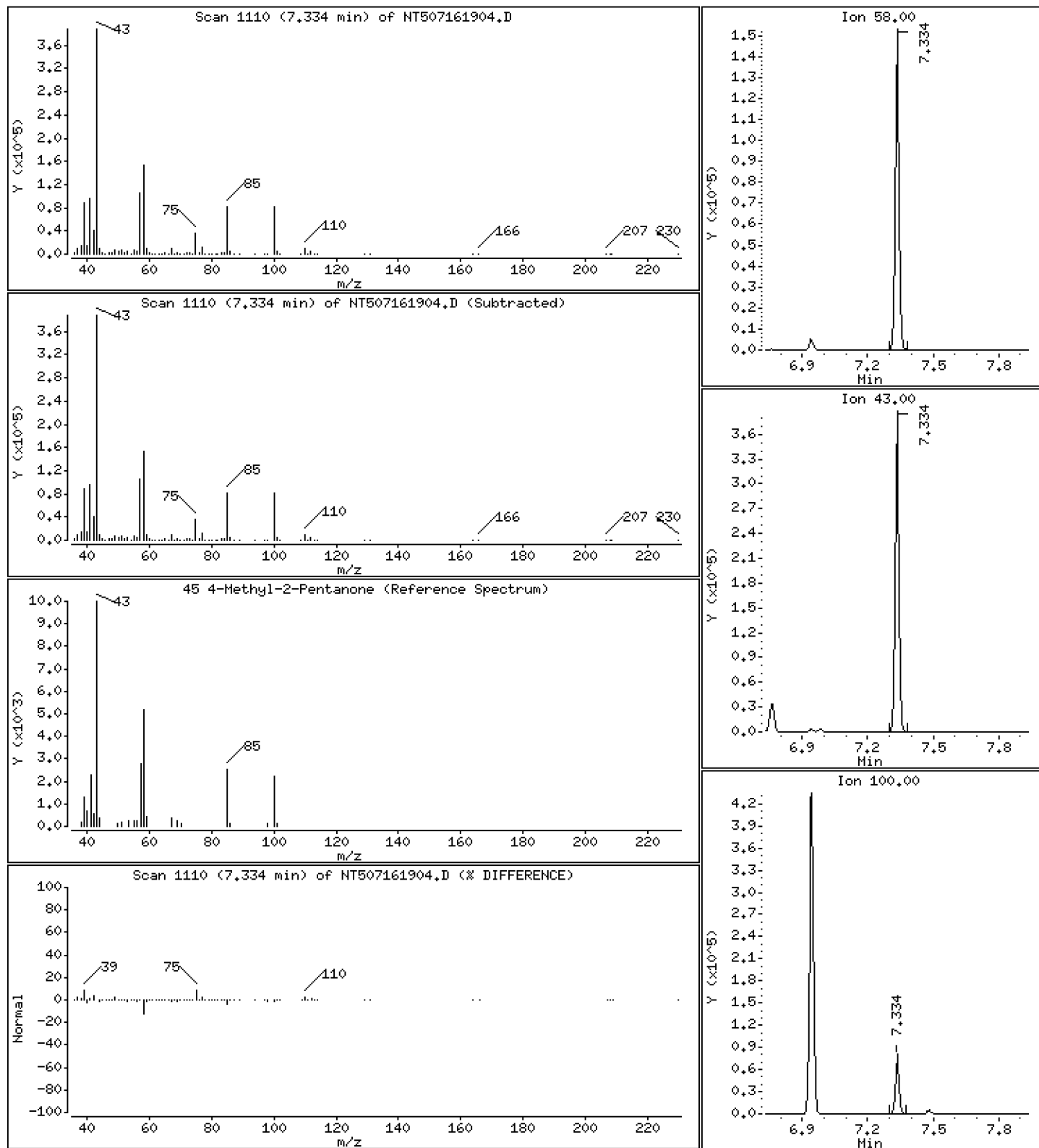
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 223.79 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

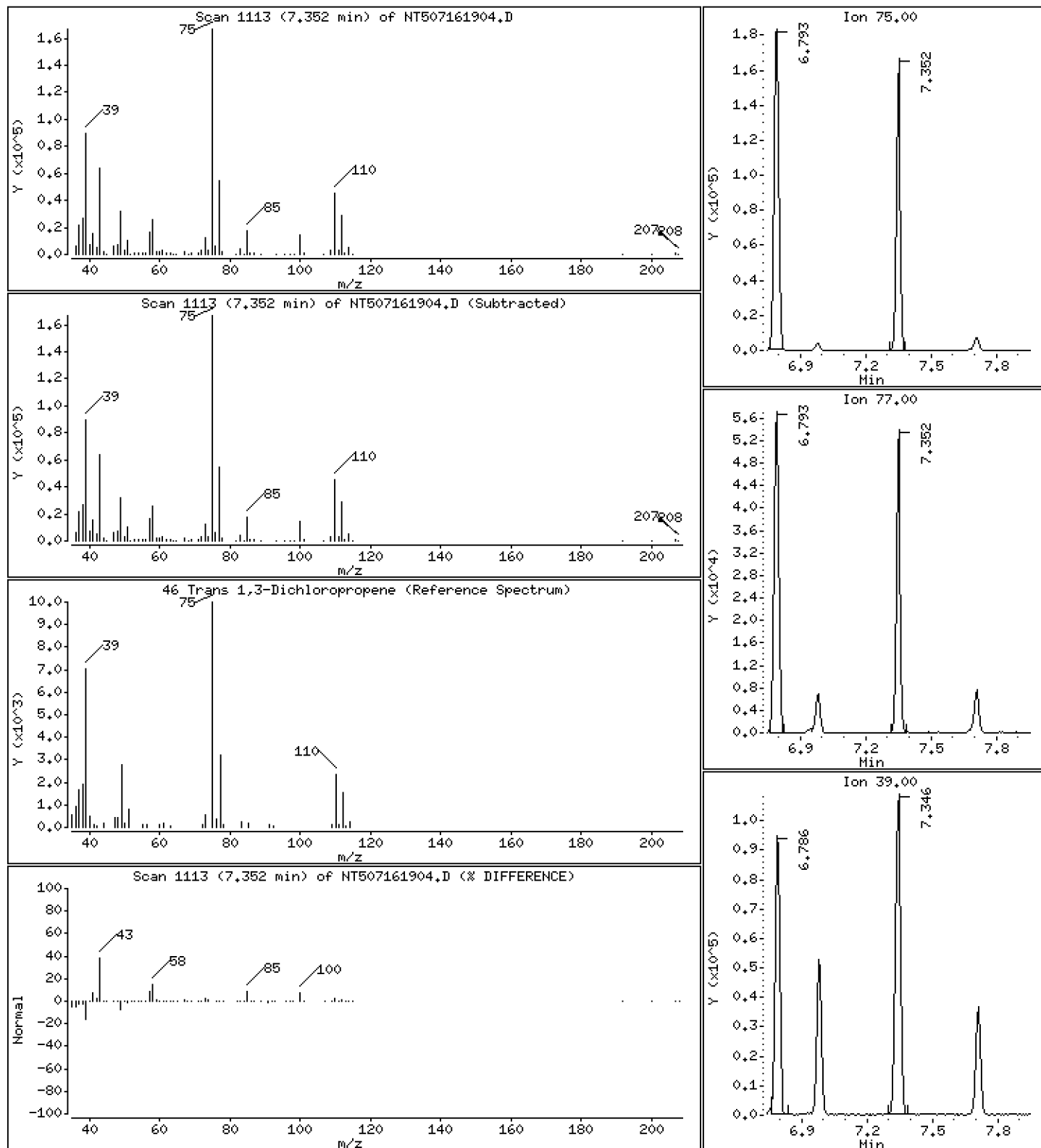
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 47,643 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

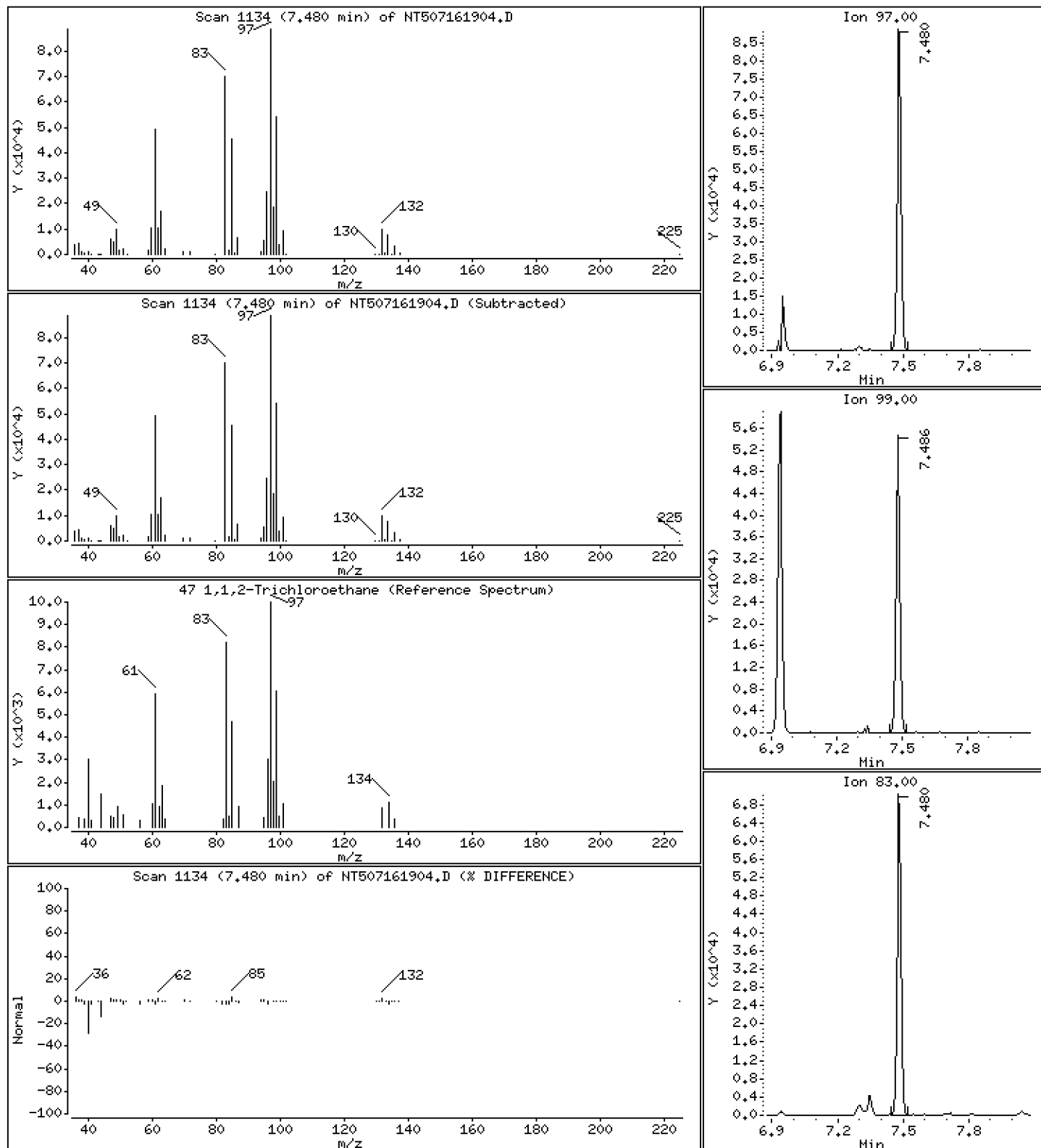
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 44,058 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

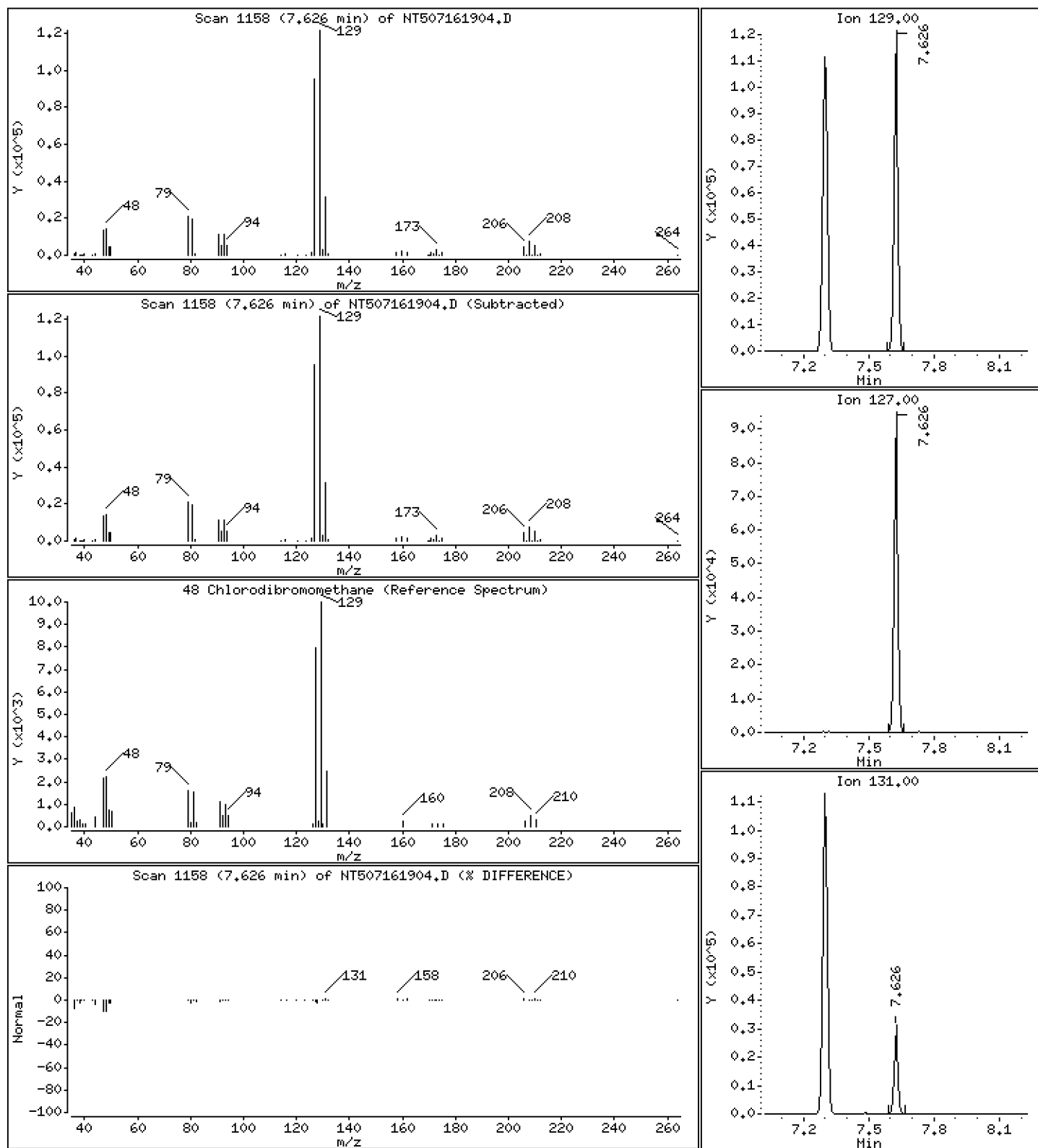
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 45,684 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

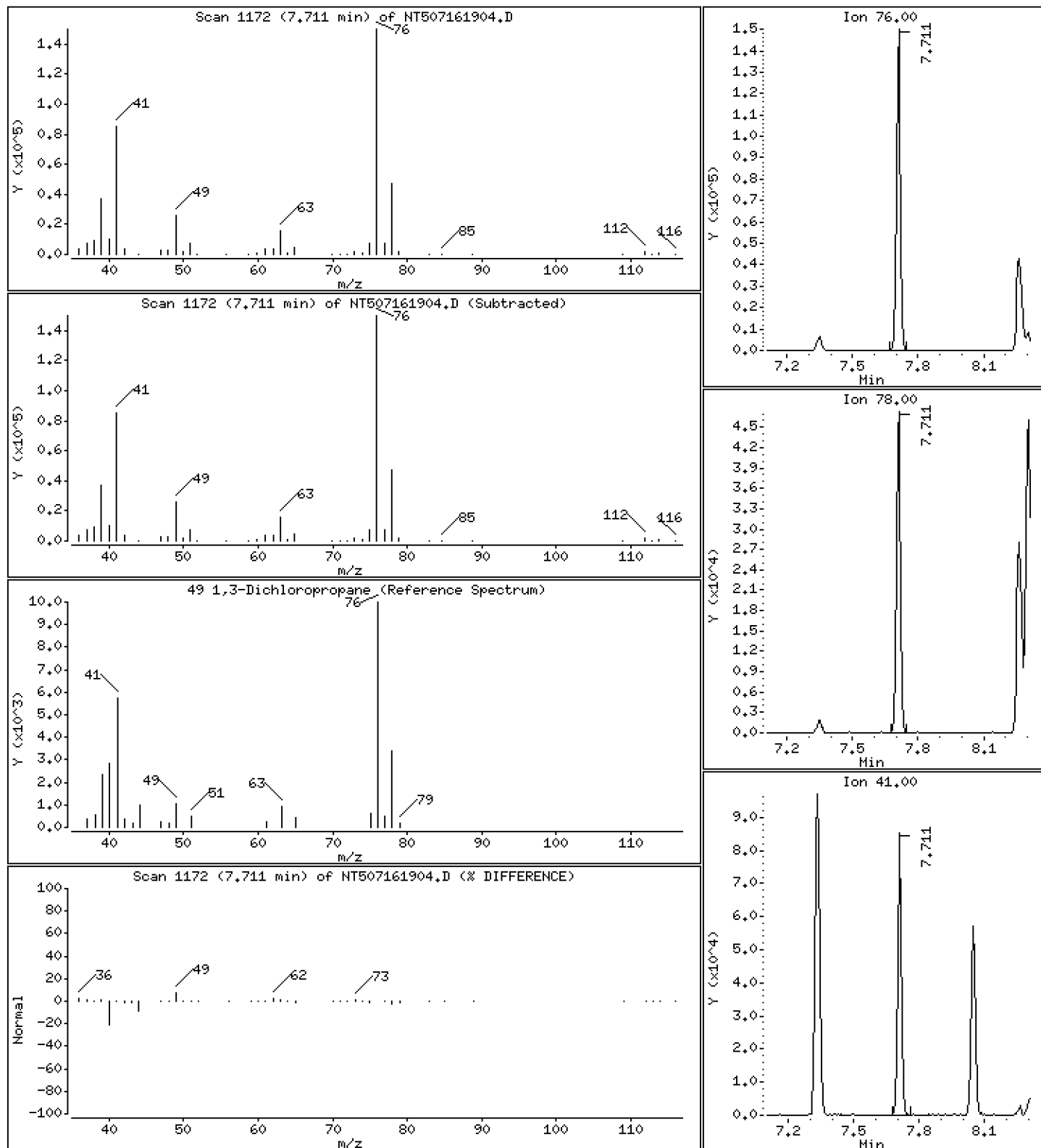
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 45,203 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

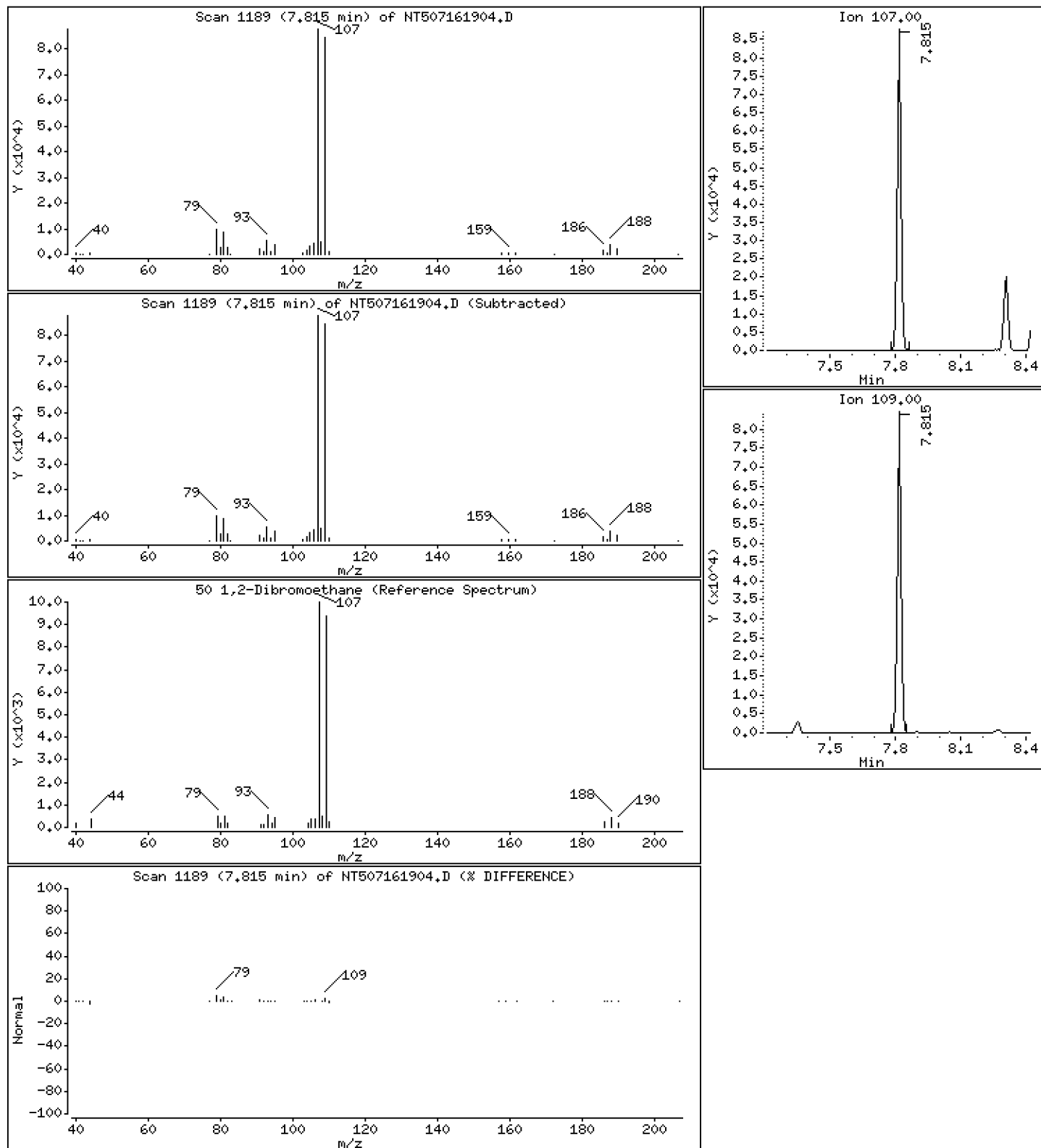
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 43,967 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

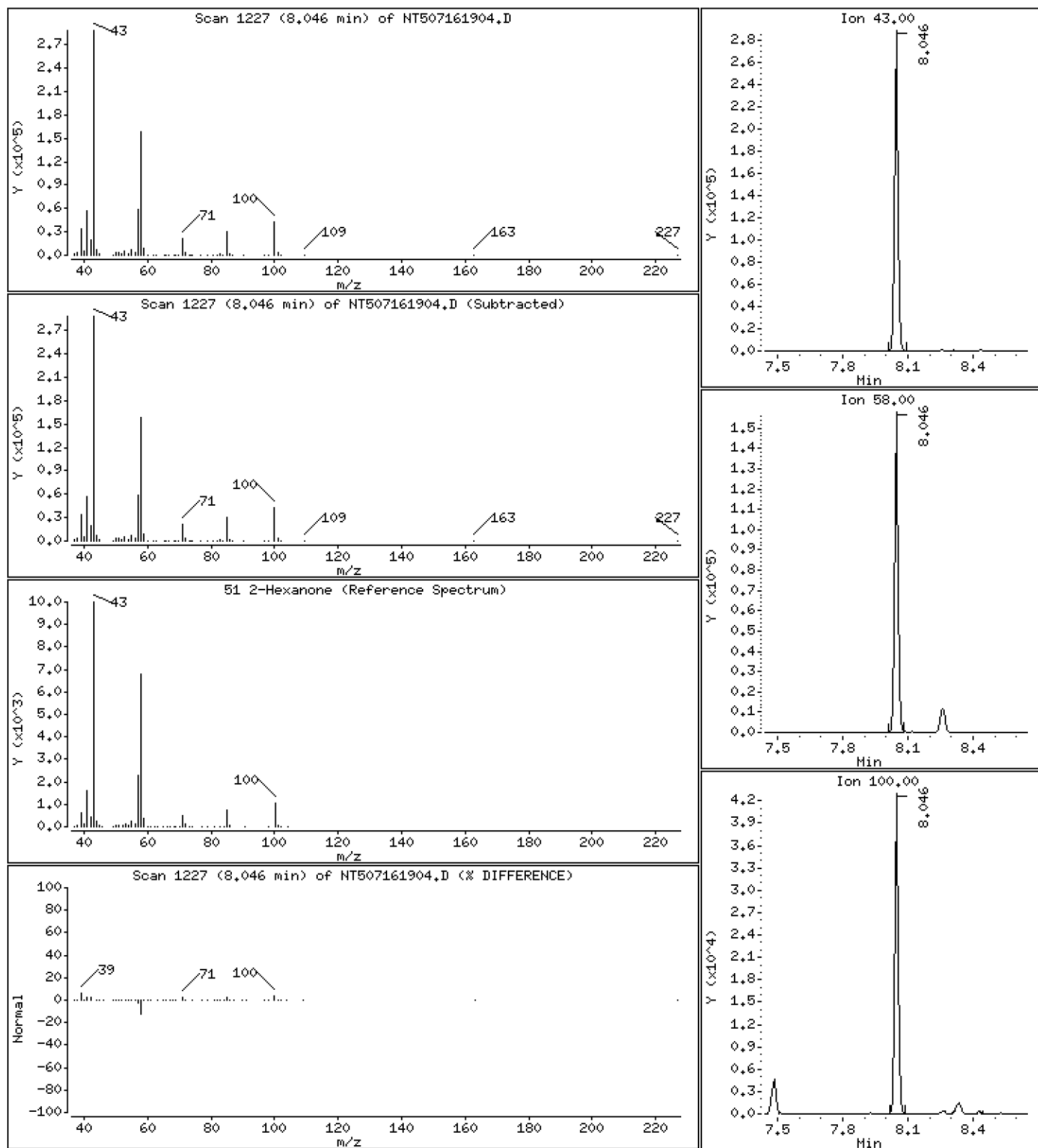
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 231.75 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

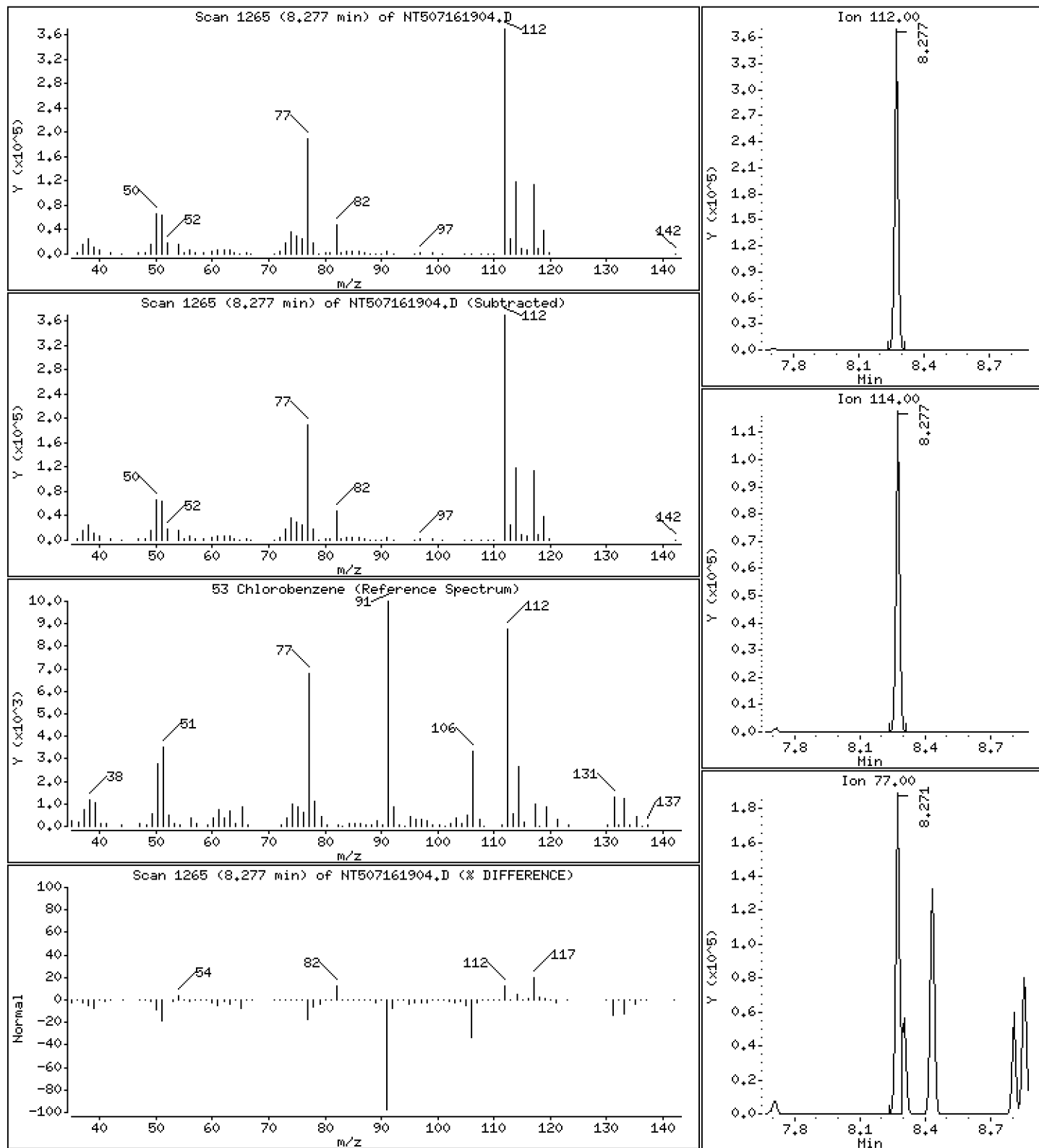
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 45.425 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

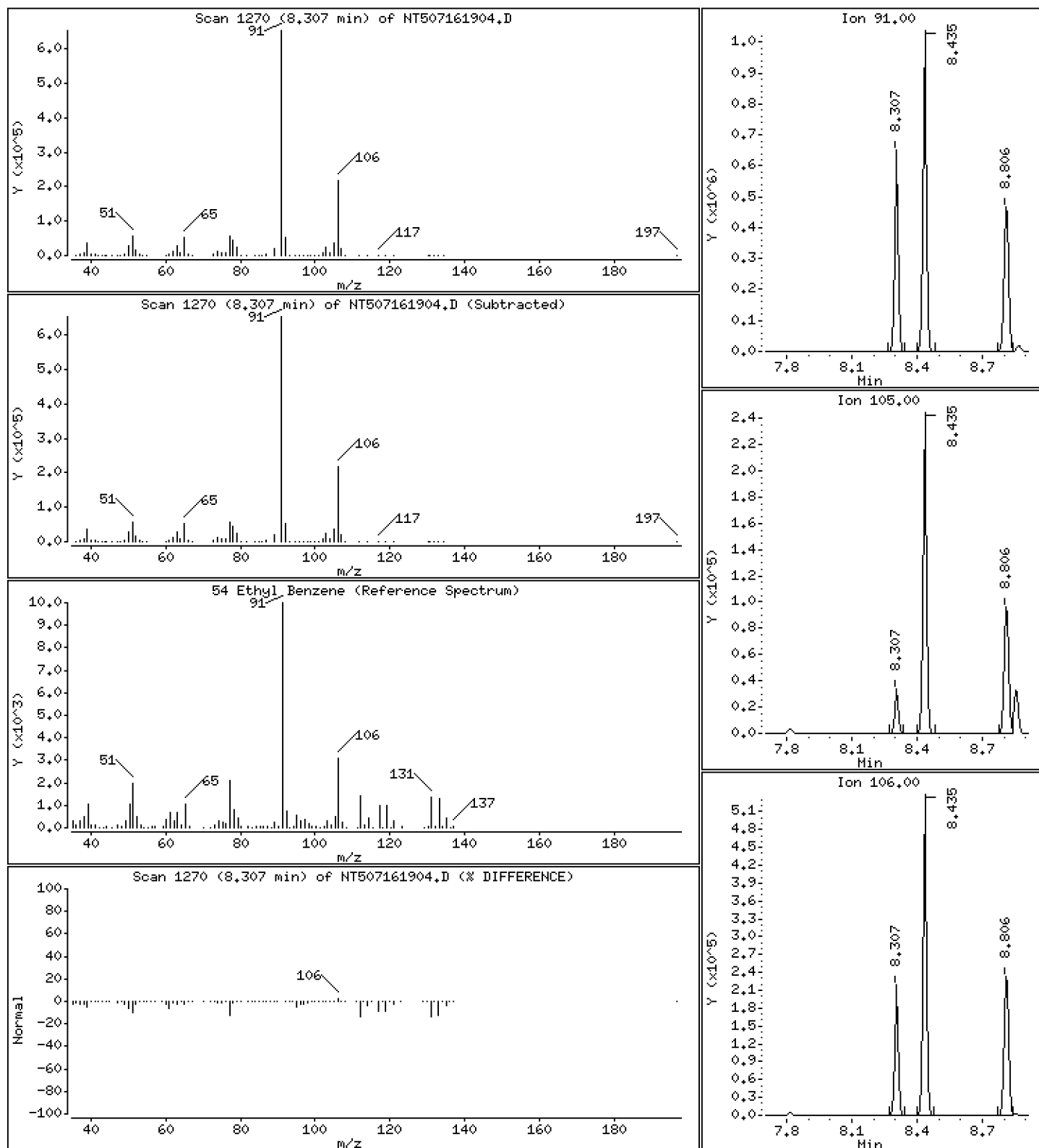
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 47.603 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

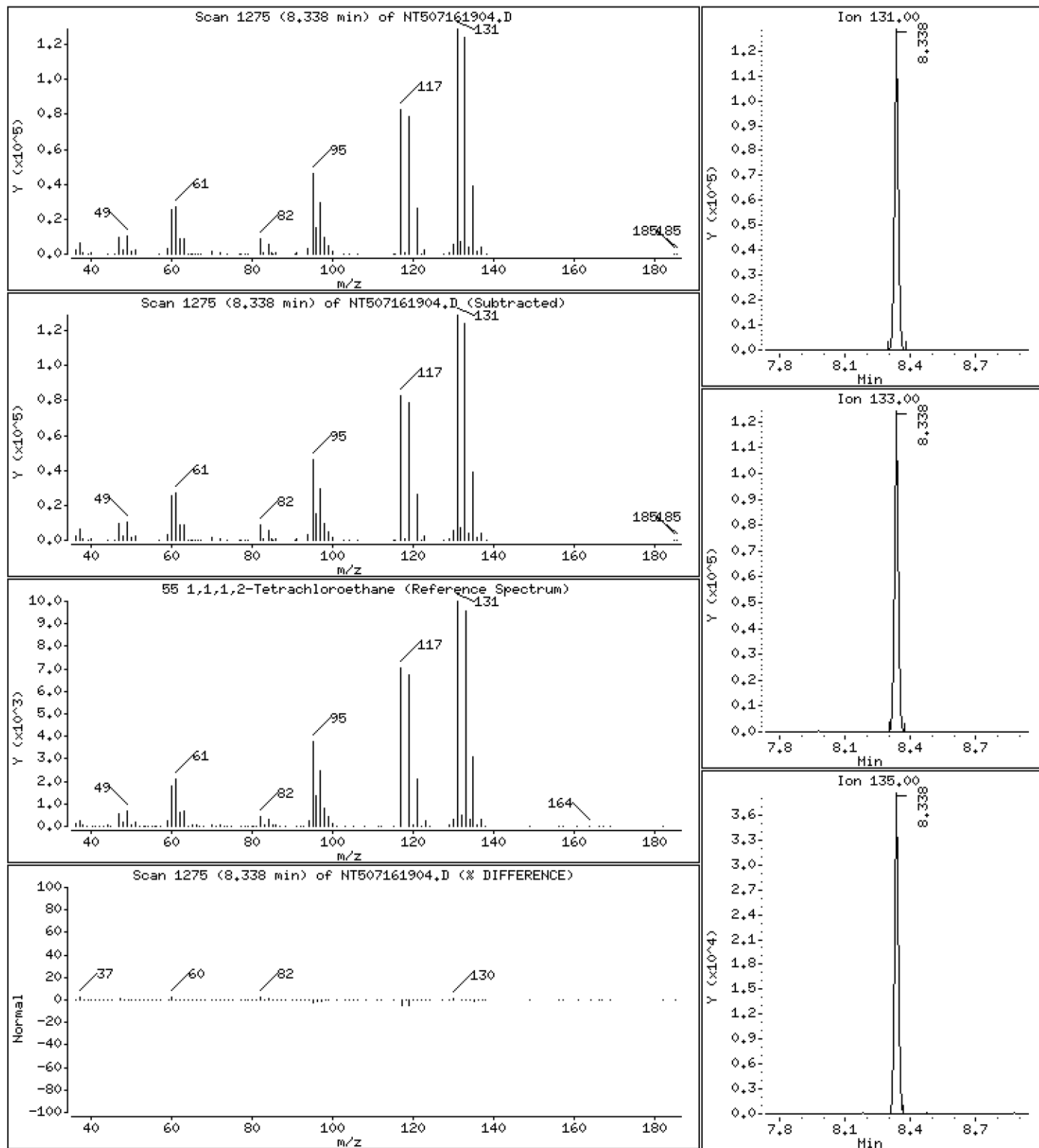
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 46,196 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

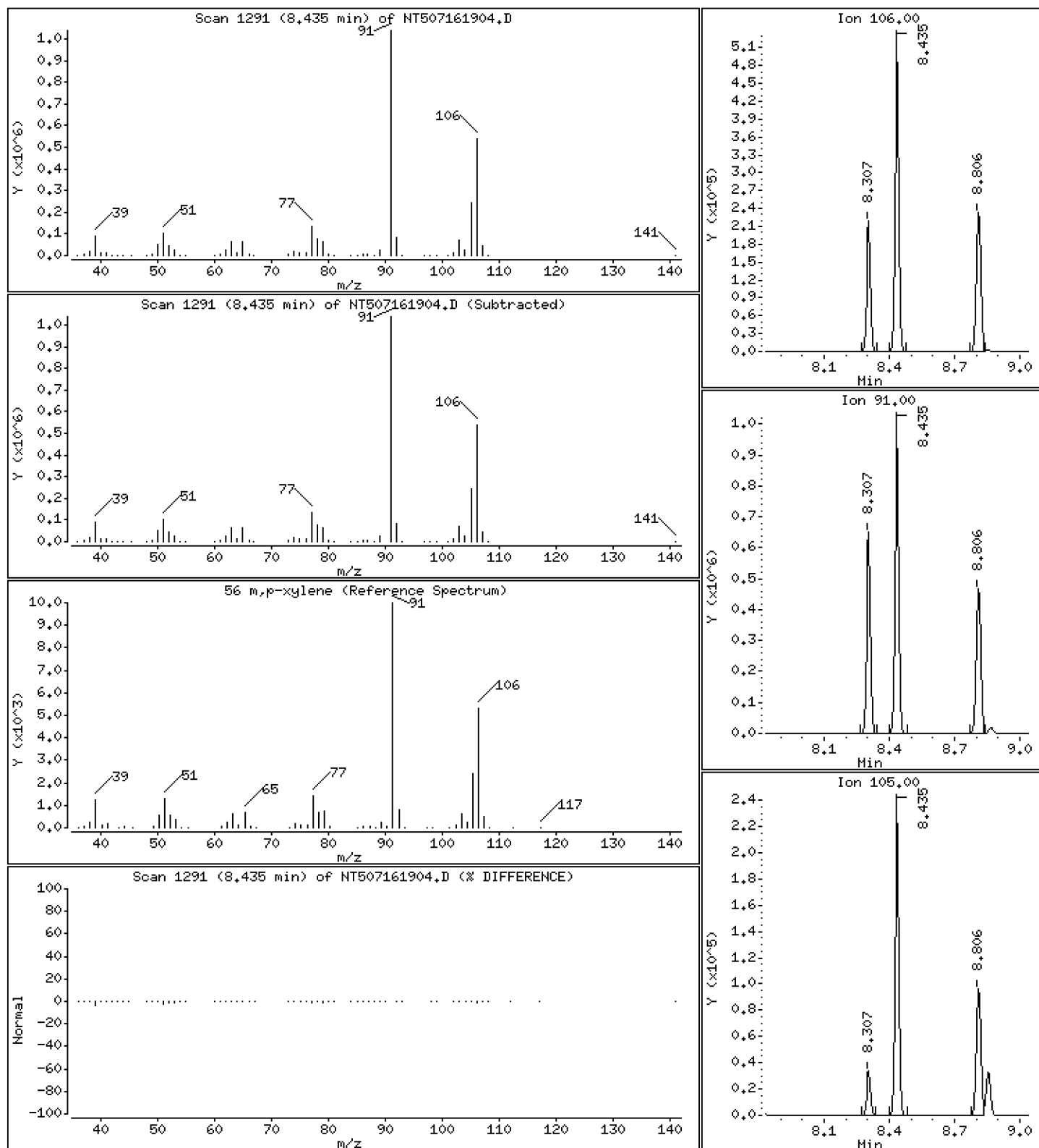
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 93,338 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

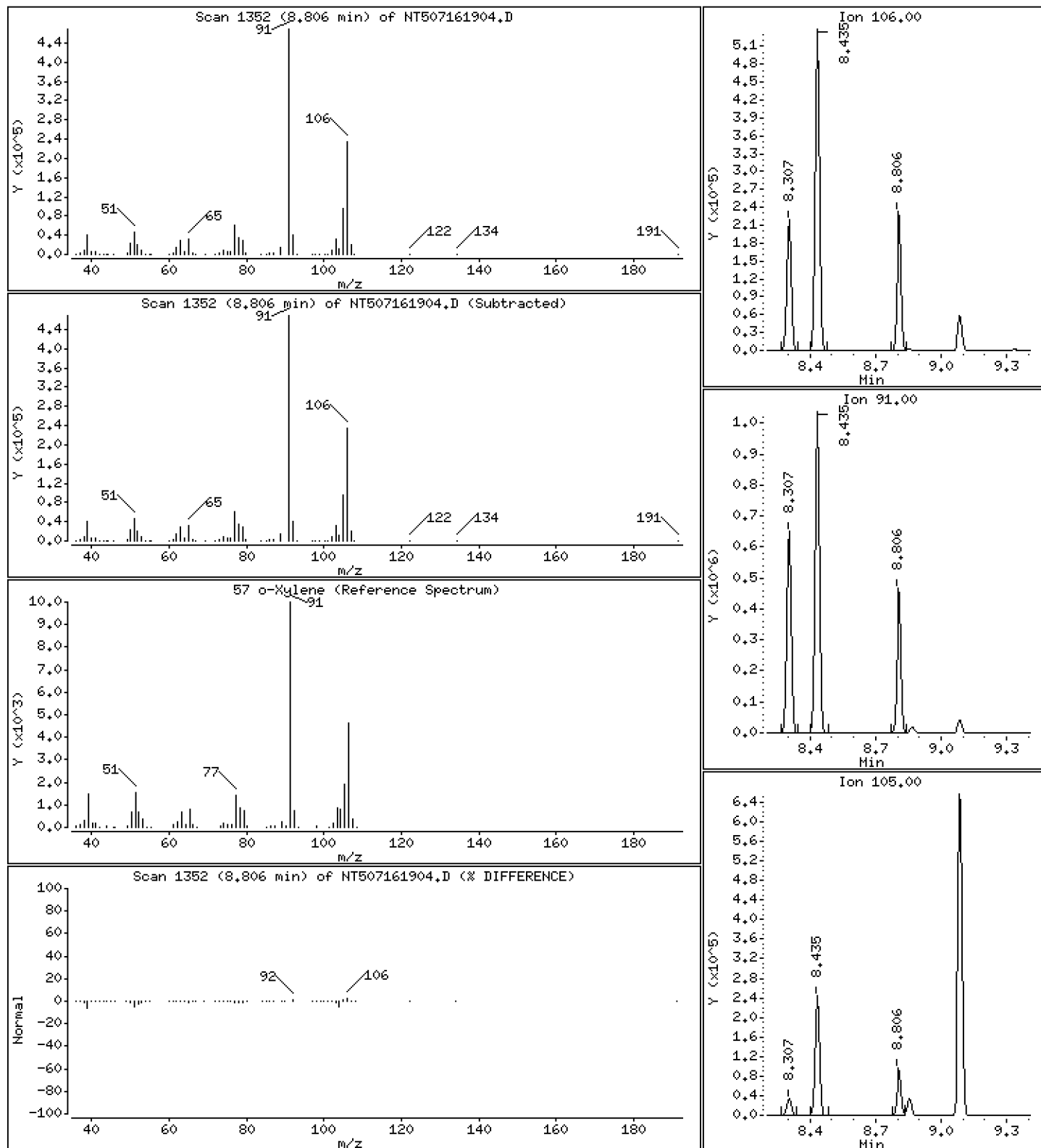
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 46,016 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

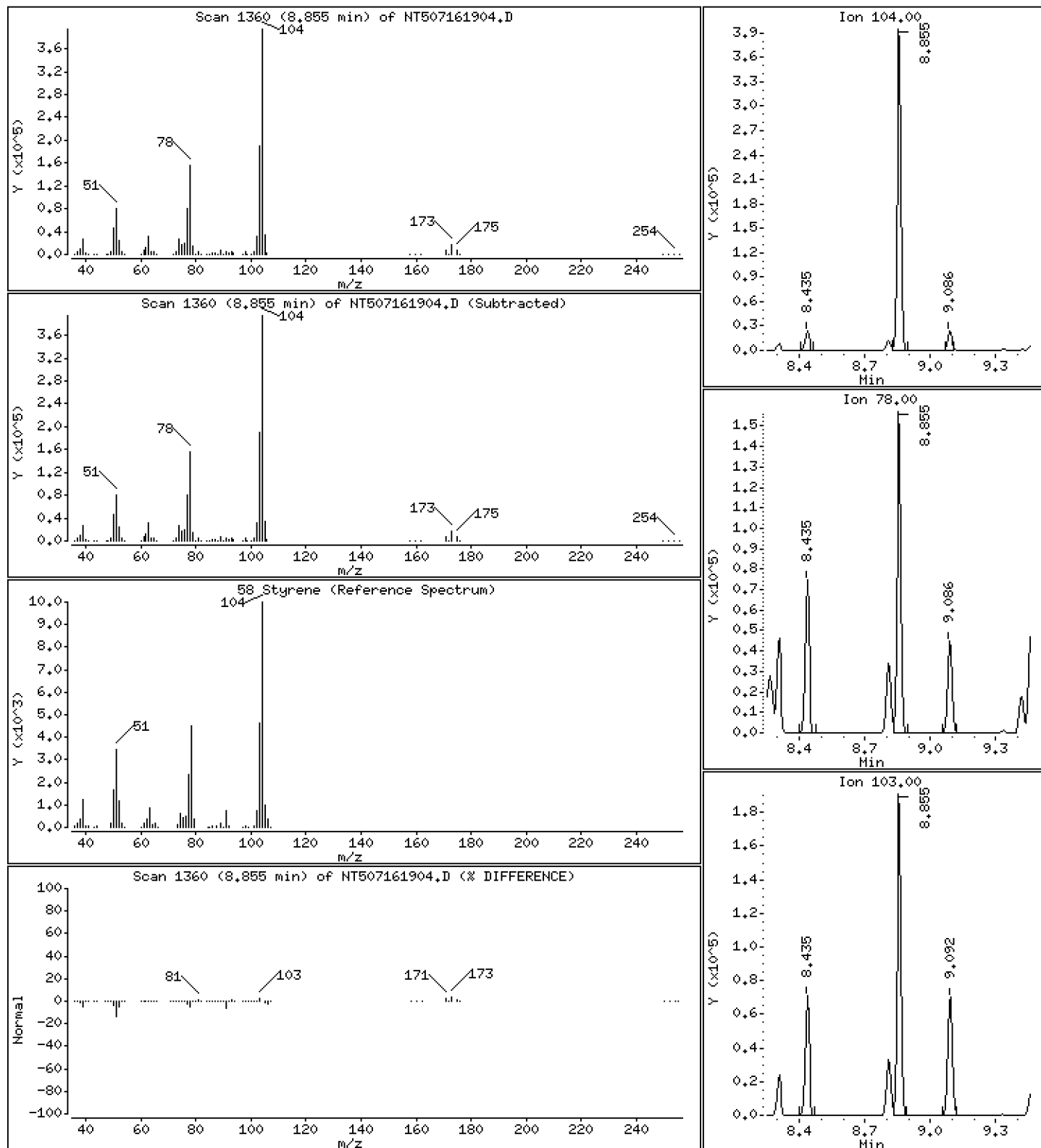
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 46,948 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

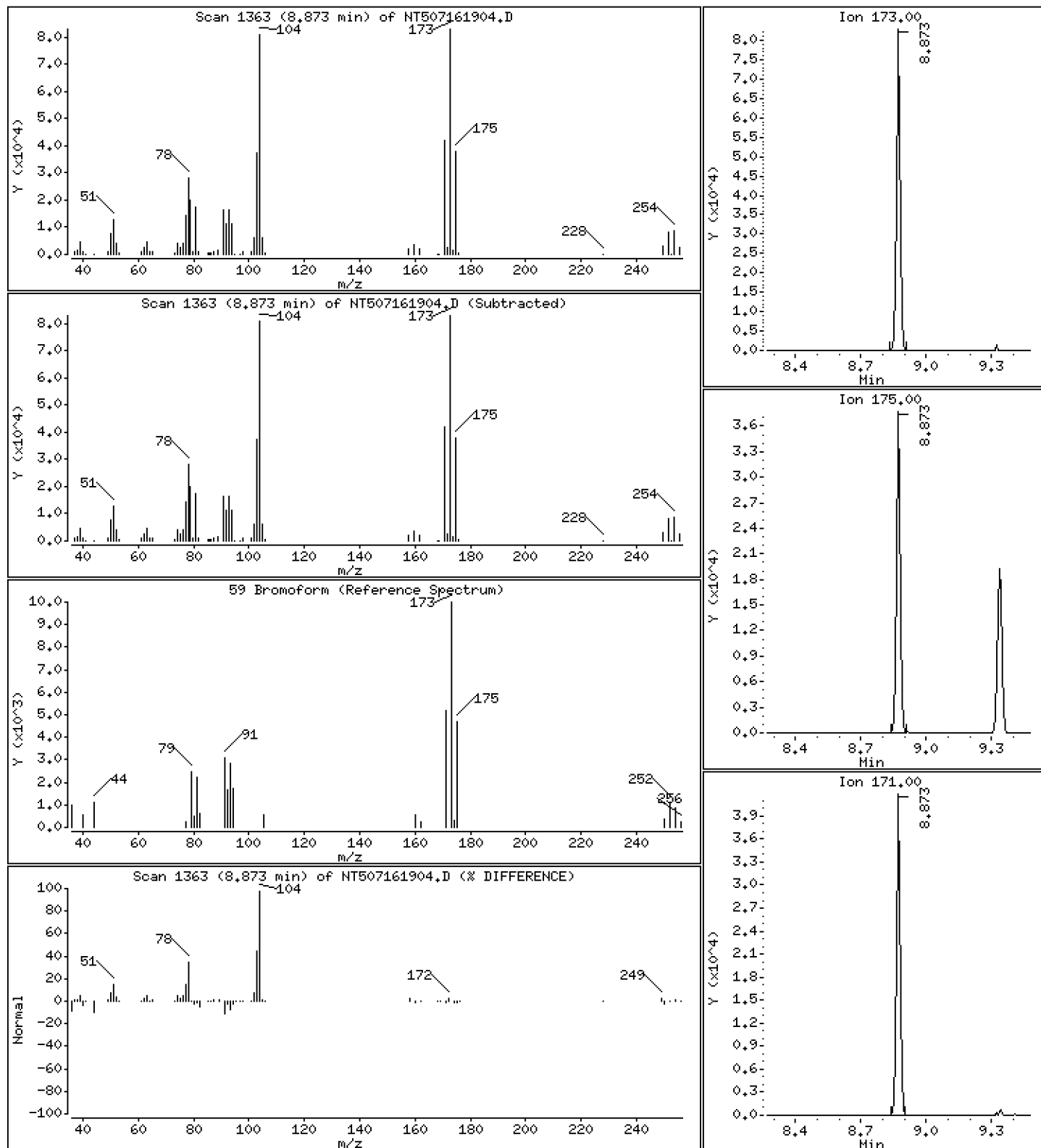
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59 Bromoform

Concentration: 44,150 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

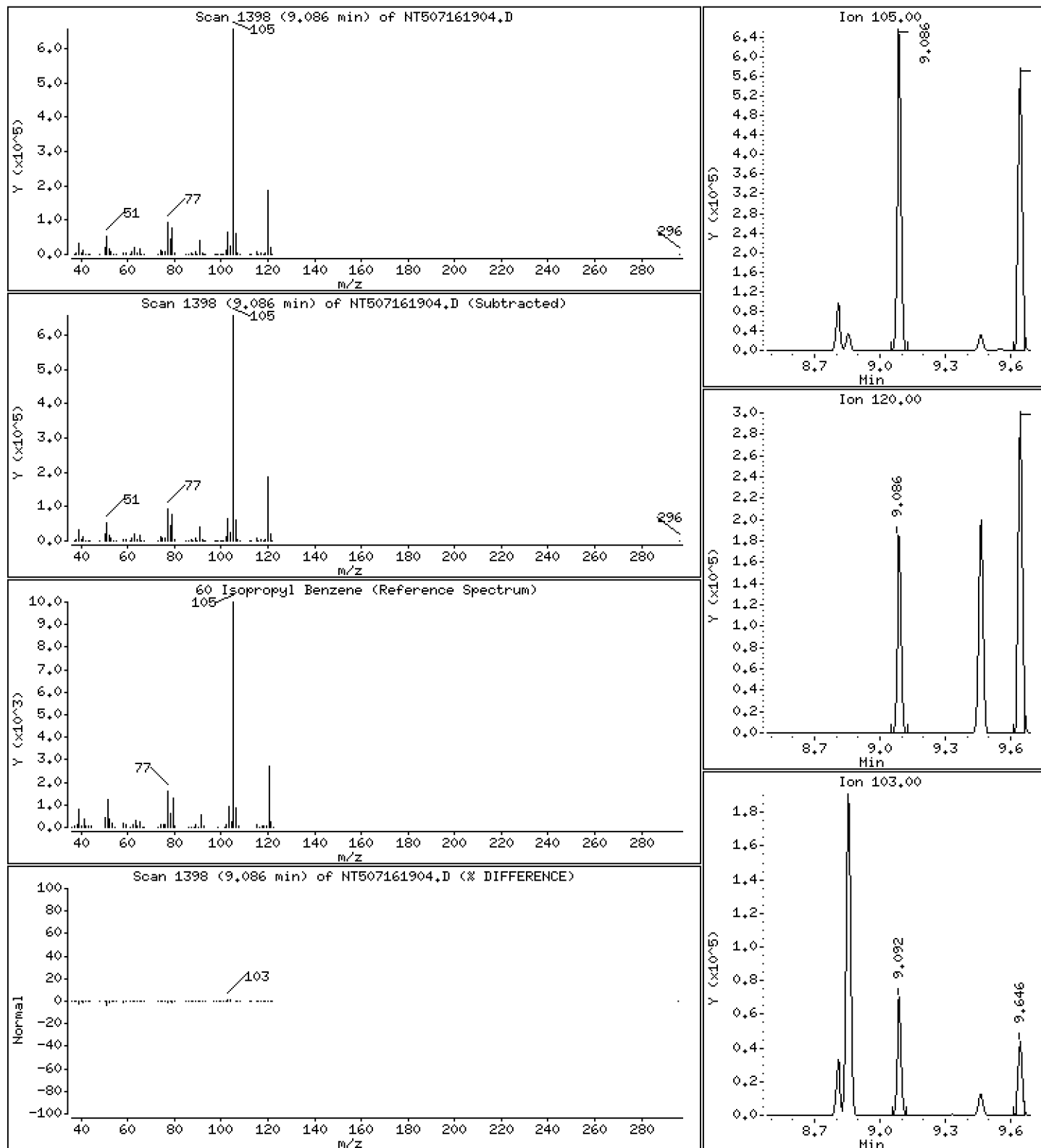
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 49,064 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

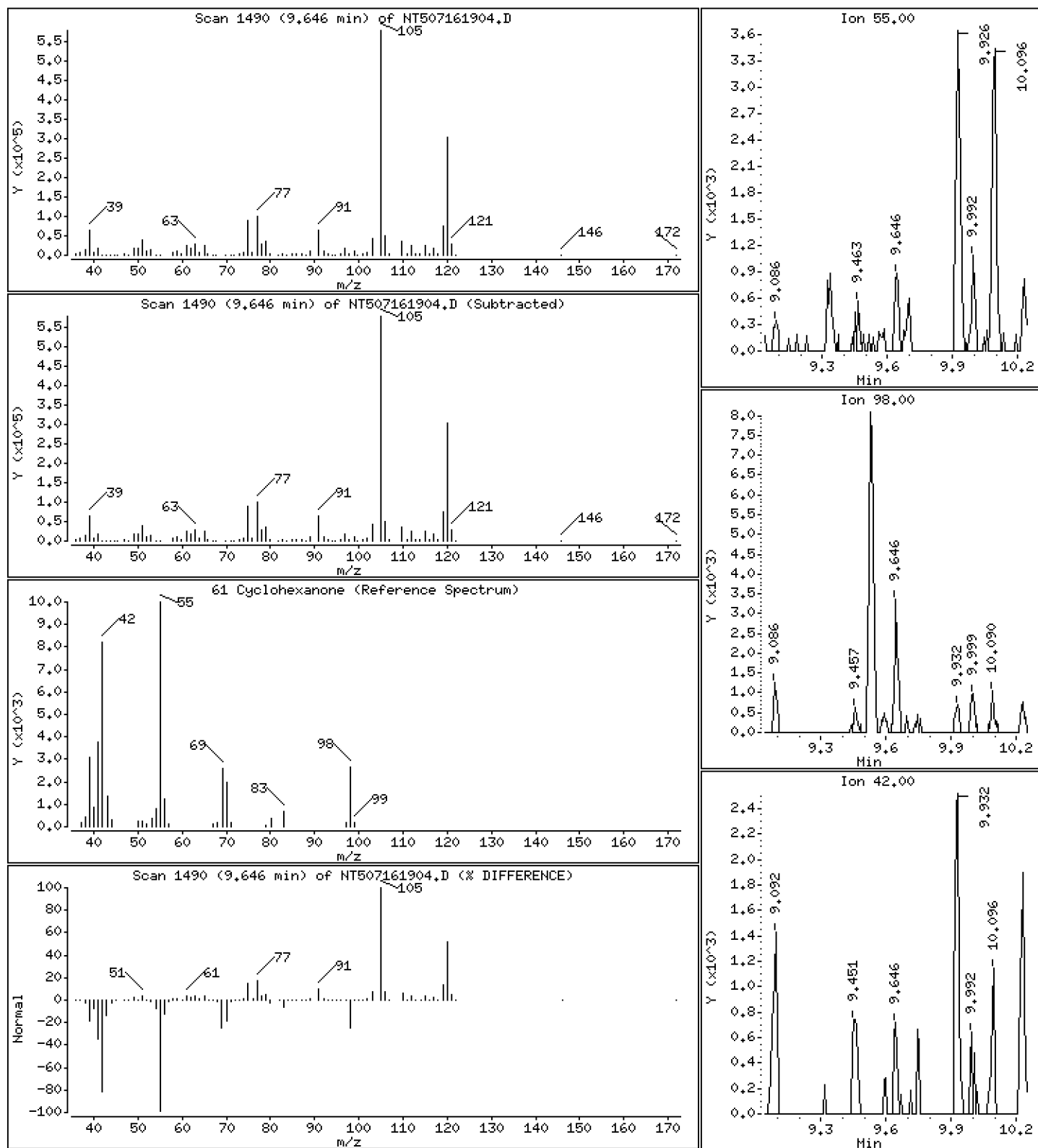
Sample Info: BSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

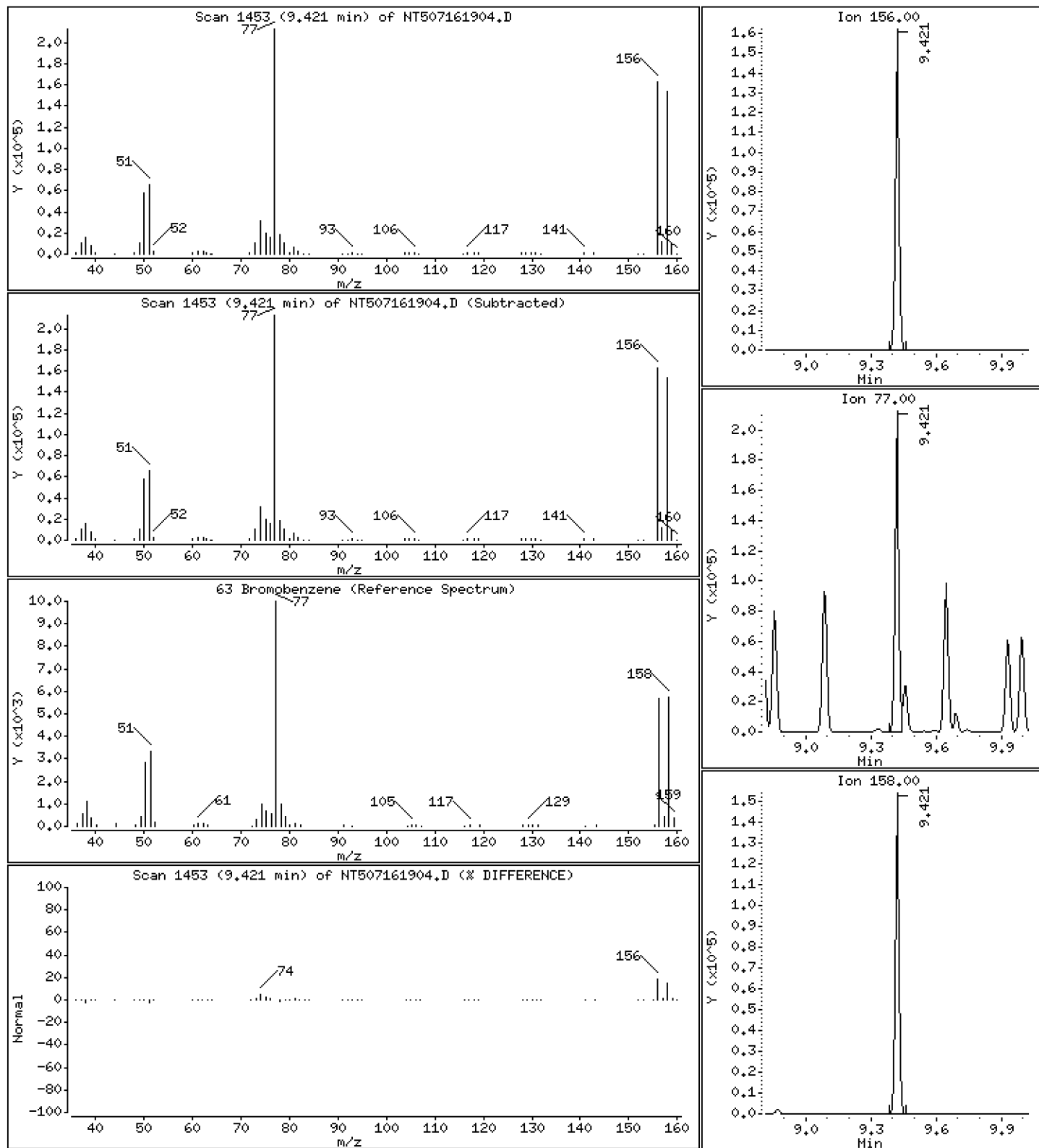
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 45.685 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

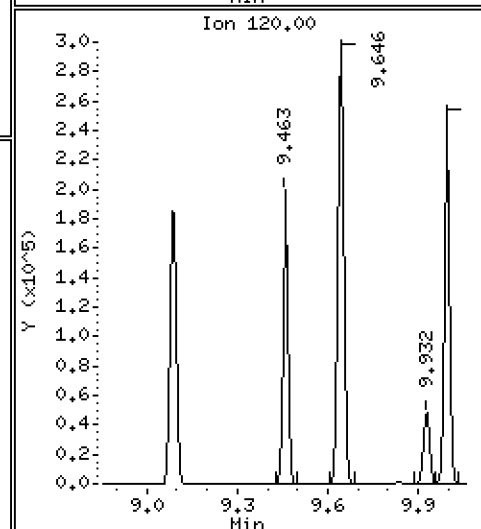
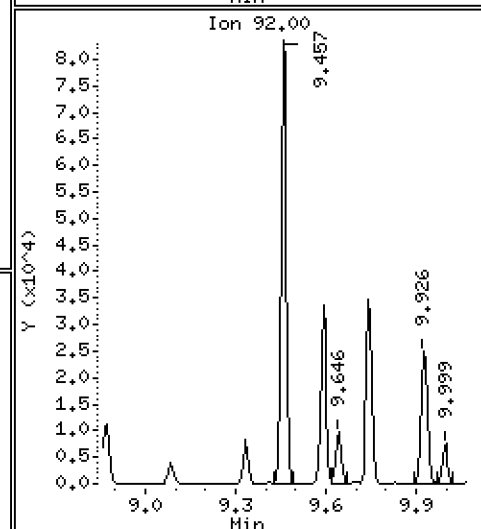
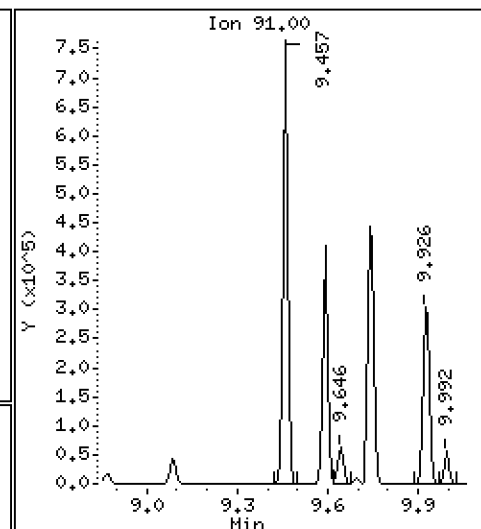
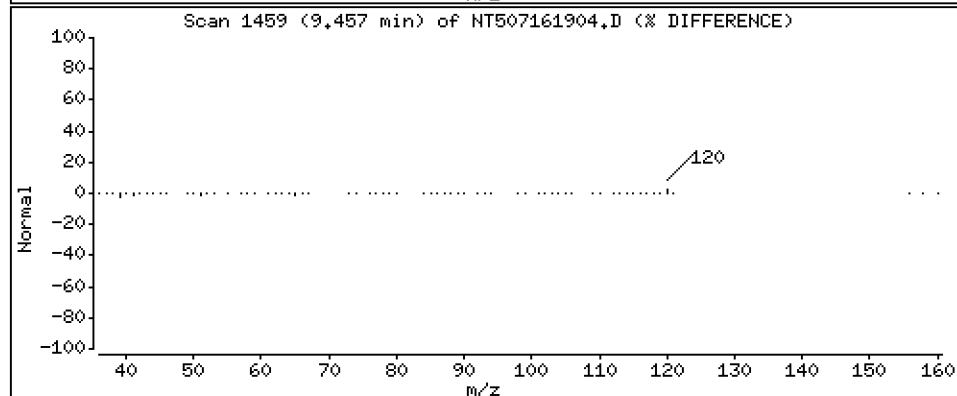
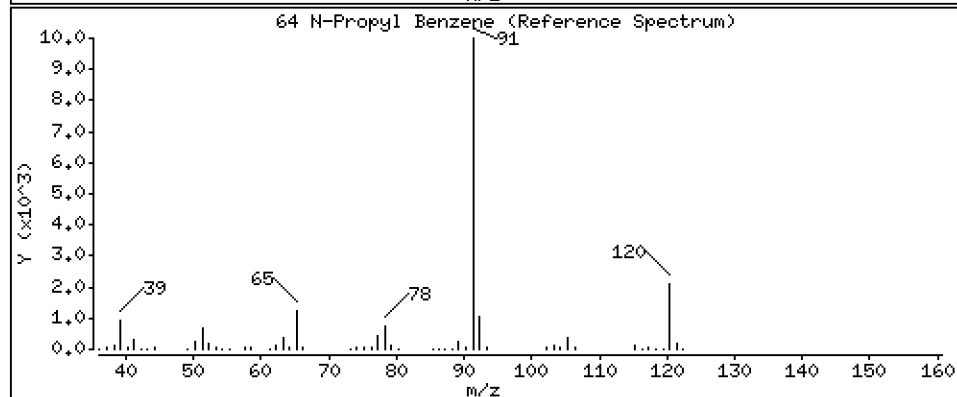
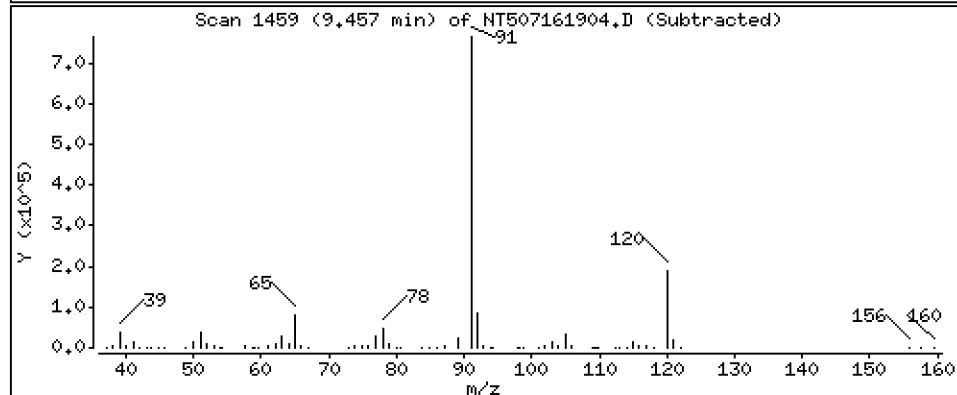
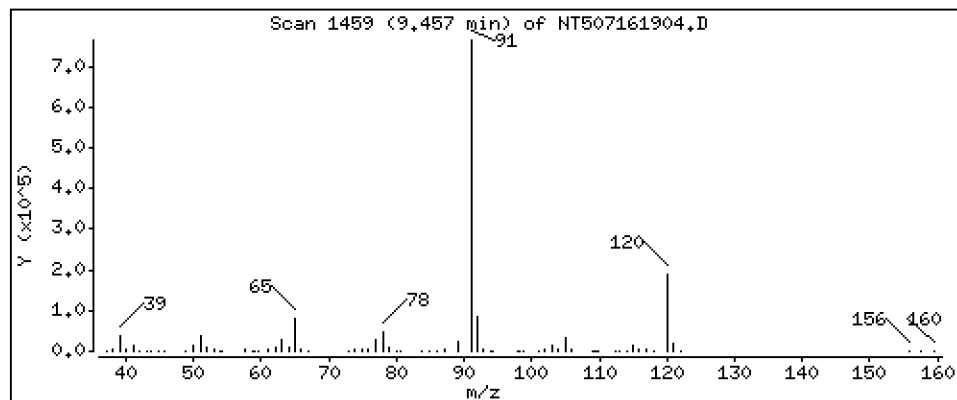
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 49,388 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

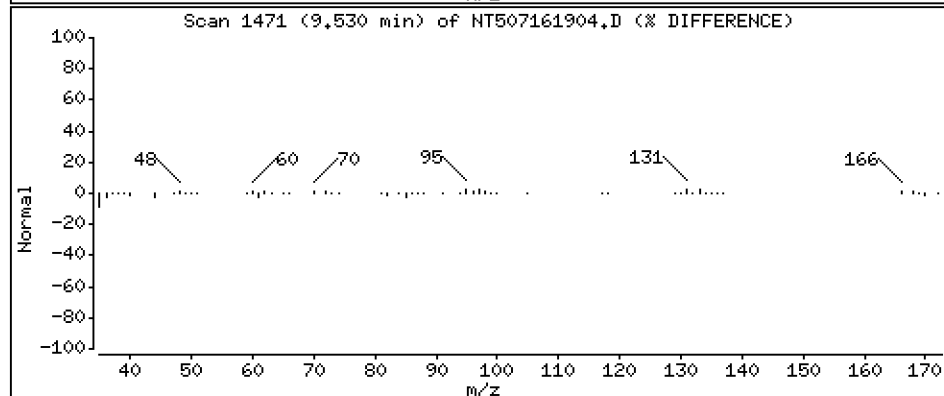
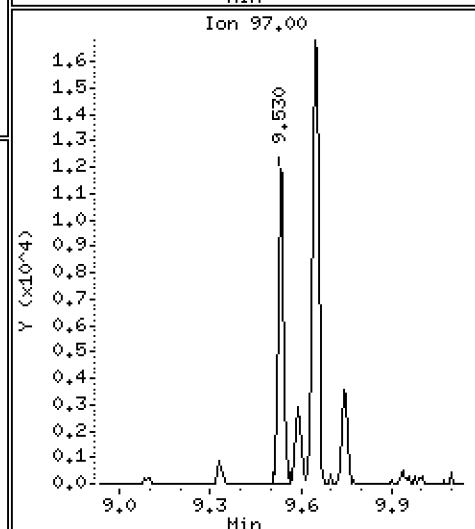
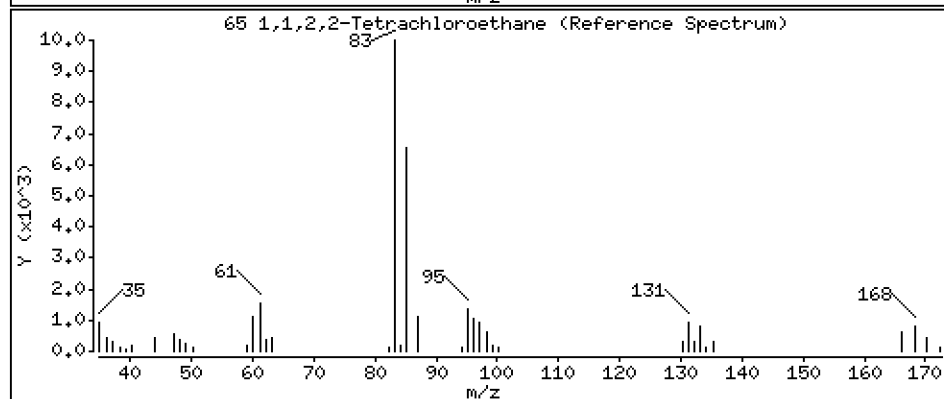
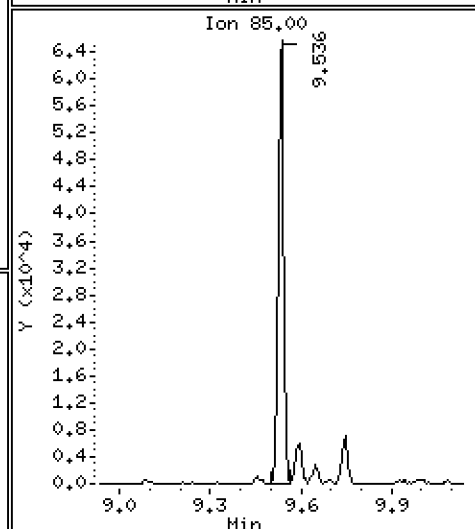
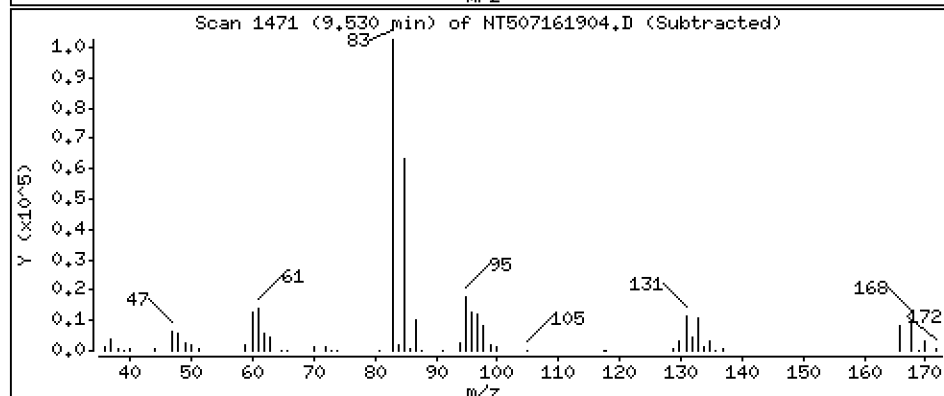
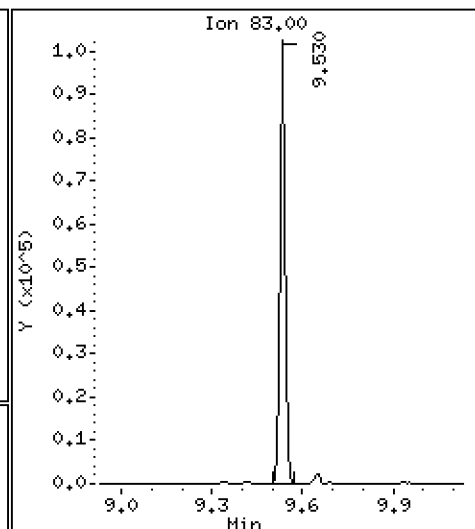
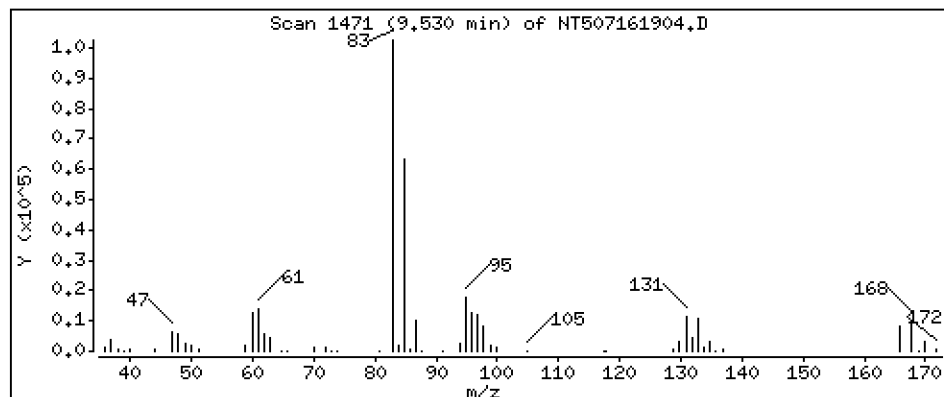
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 43,647 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

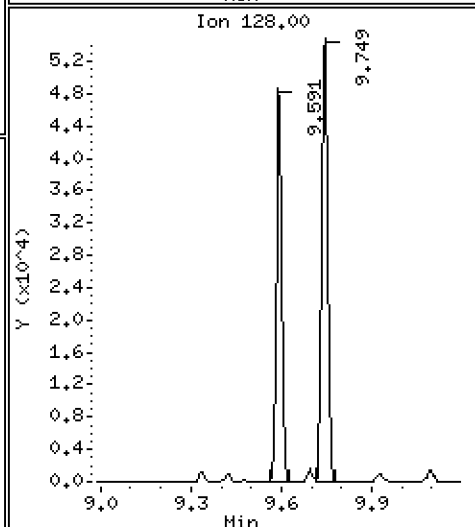
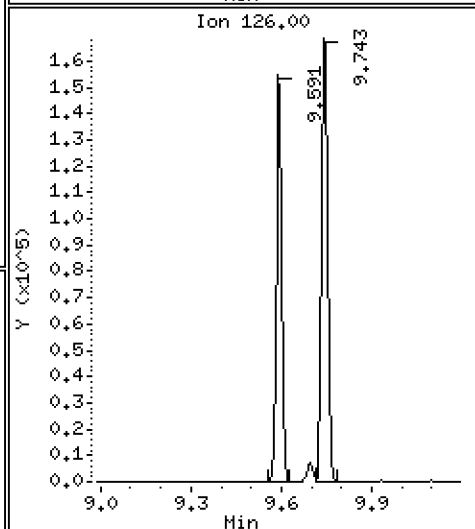
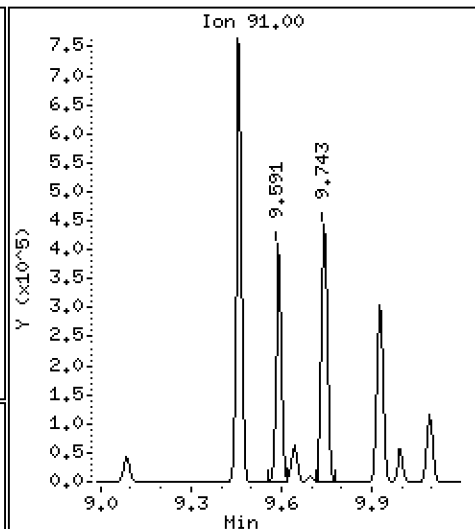
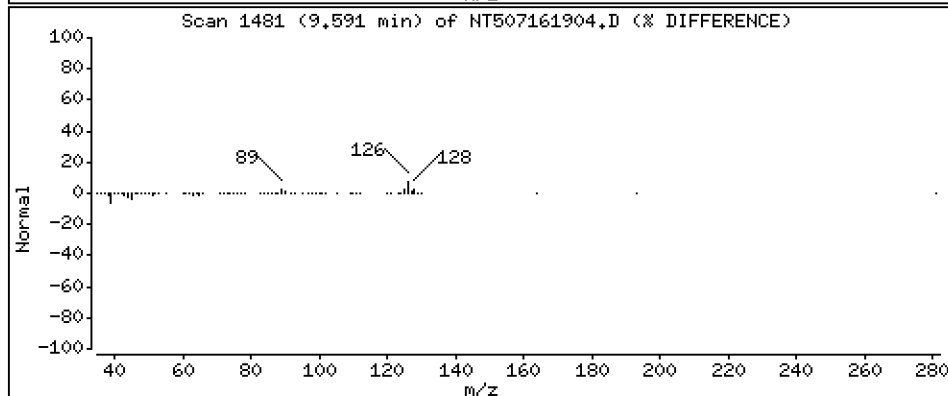
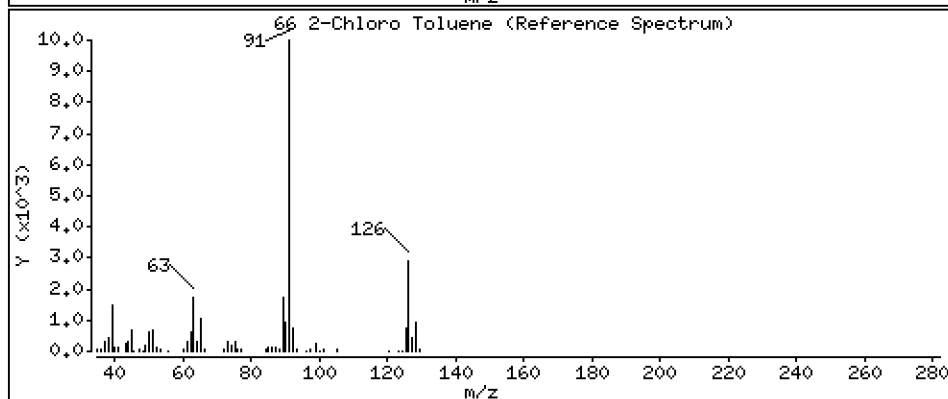
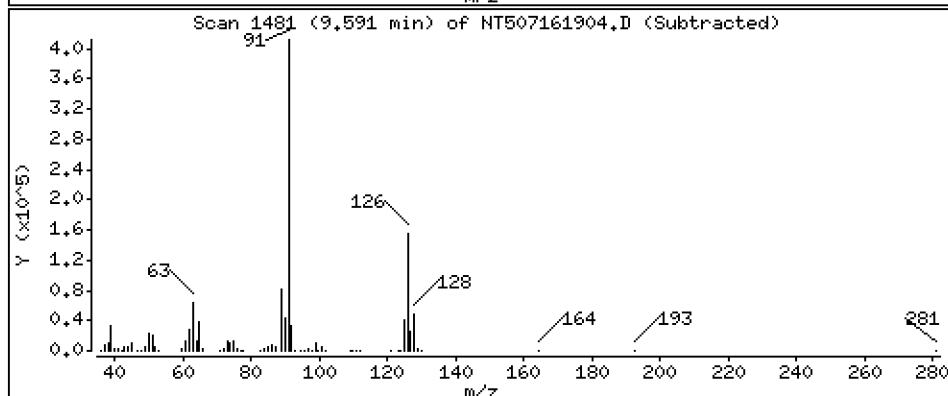
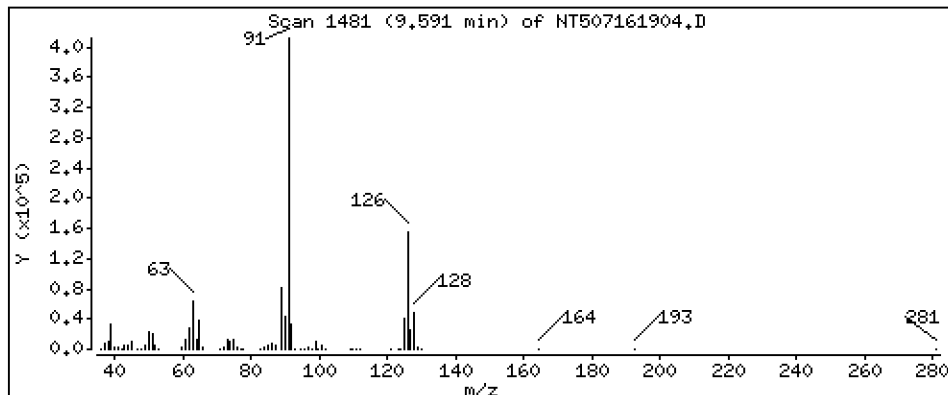
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 47,264 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

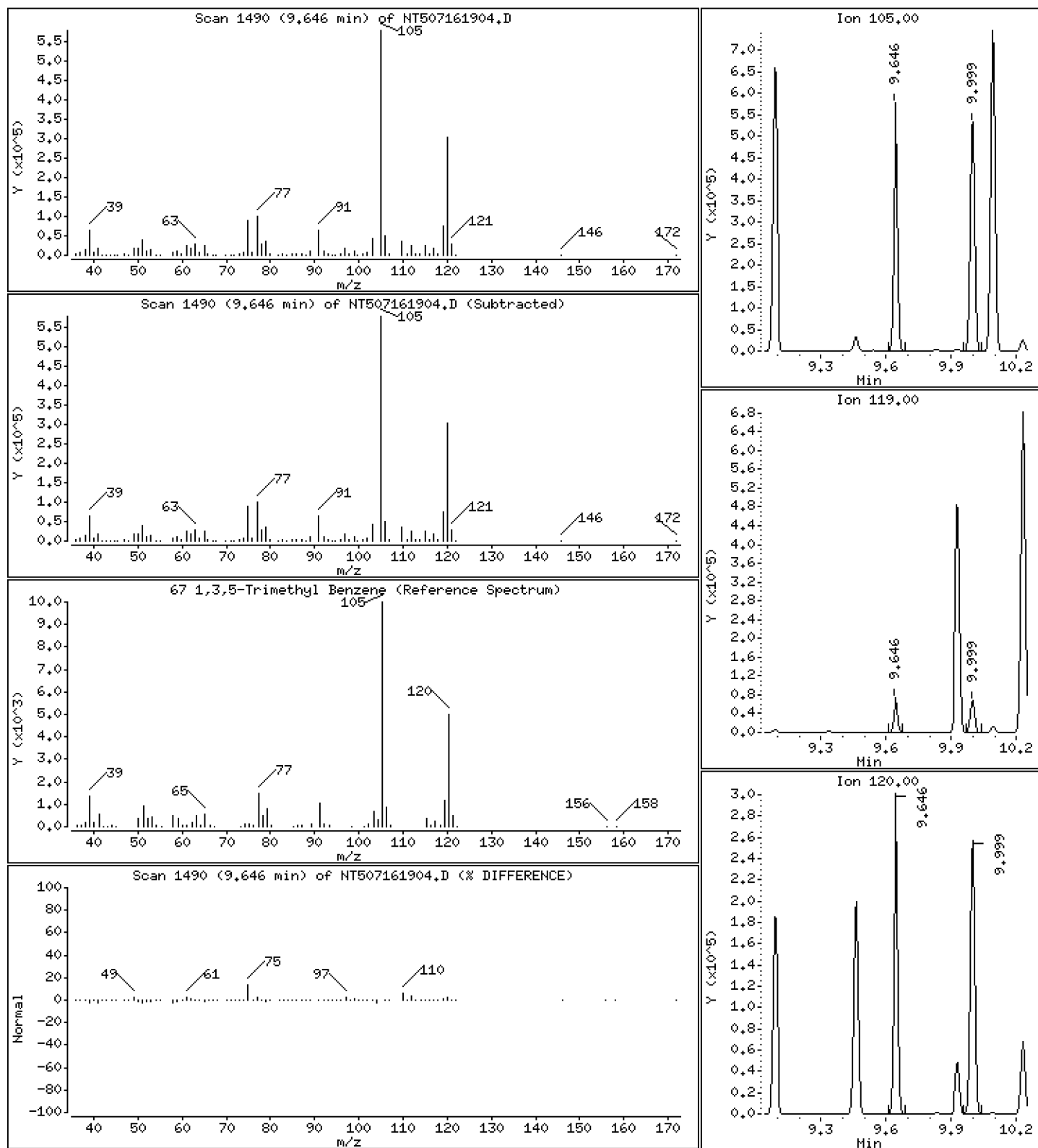
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 48,707 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

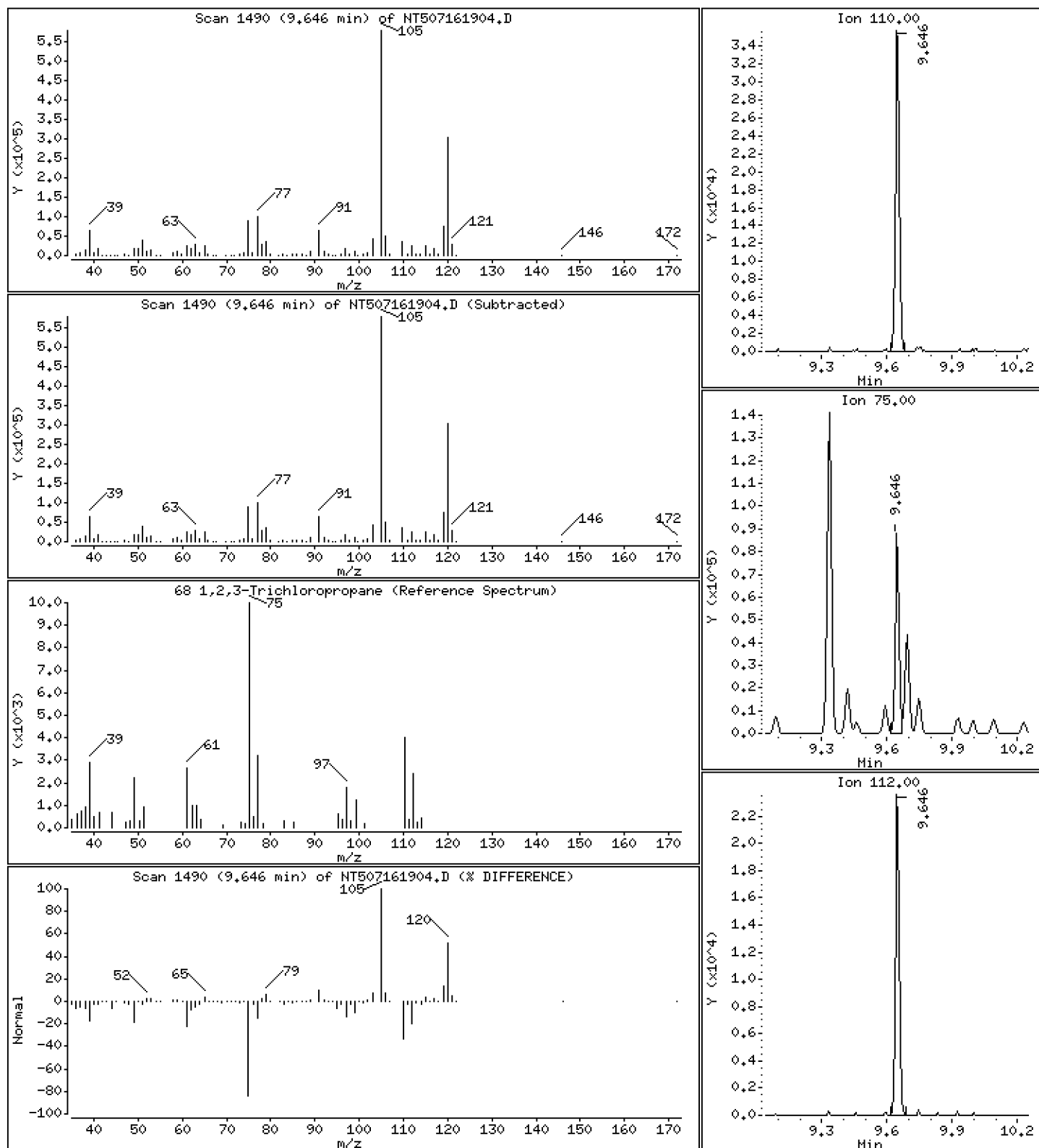
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 44,230 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

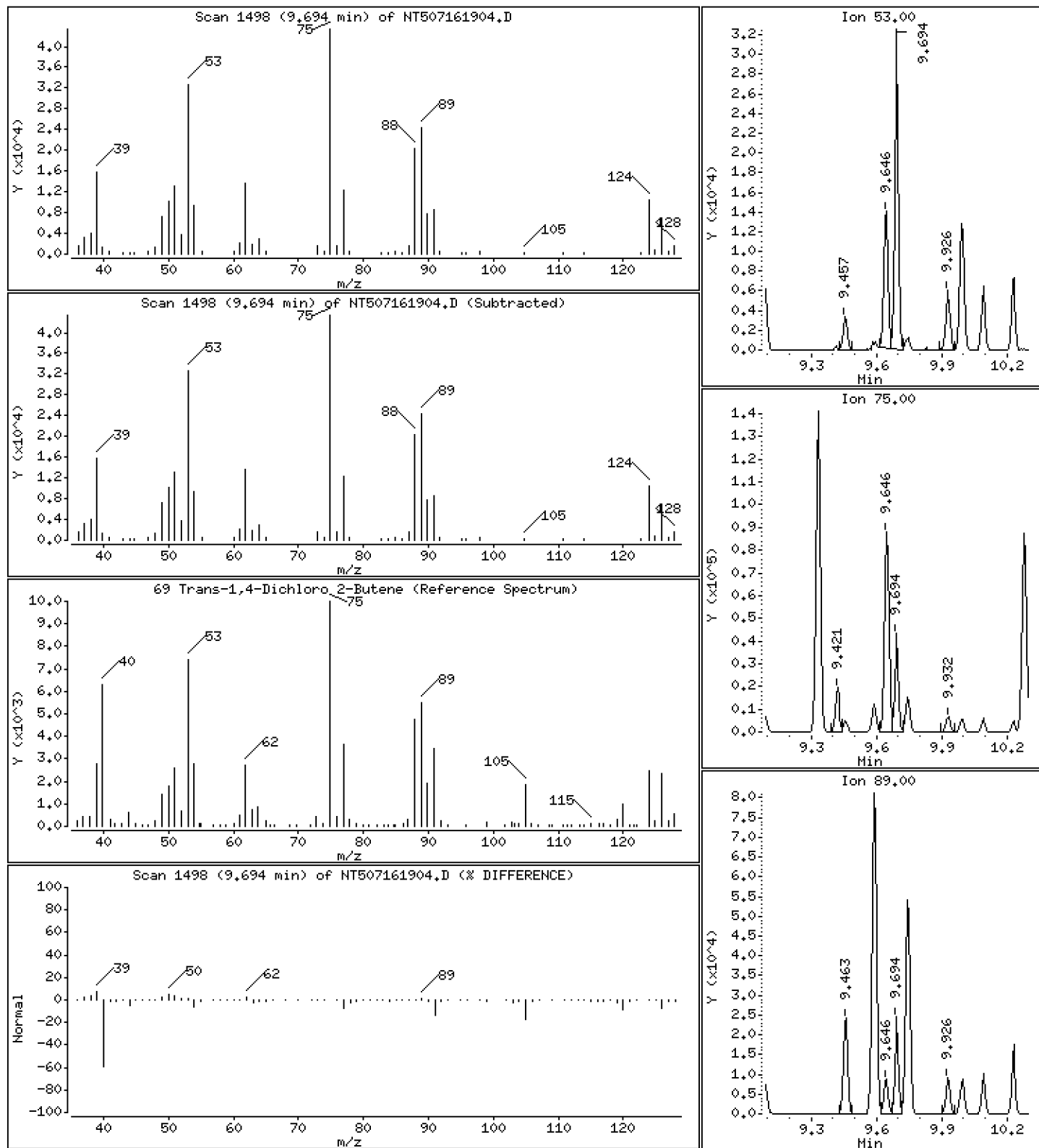
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 46,520 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

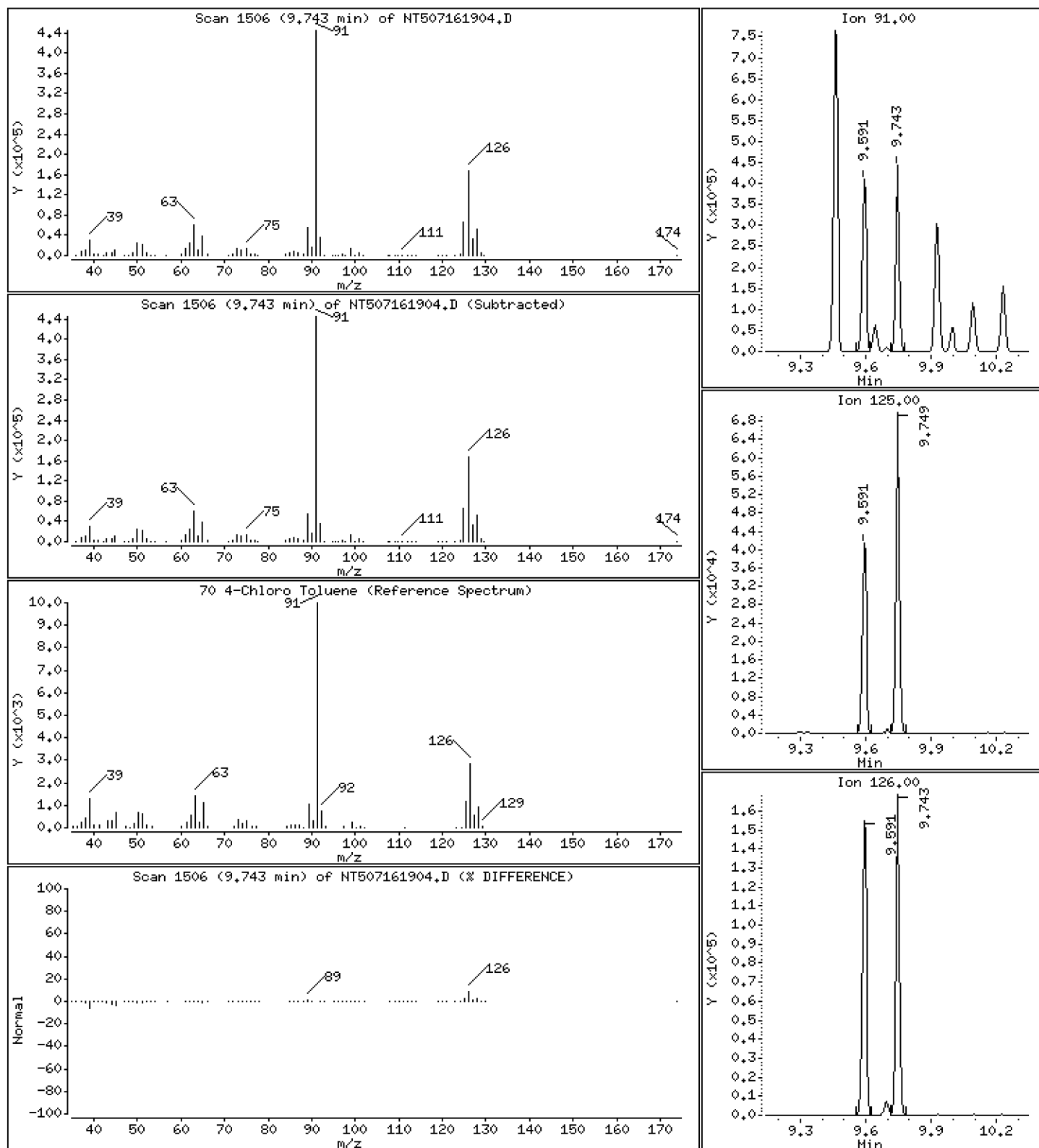
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 48,383 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

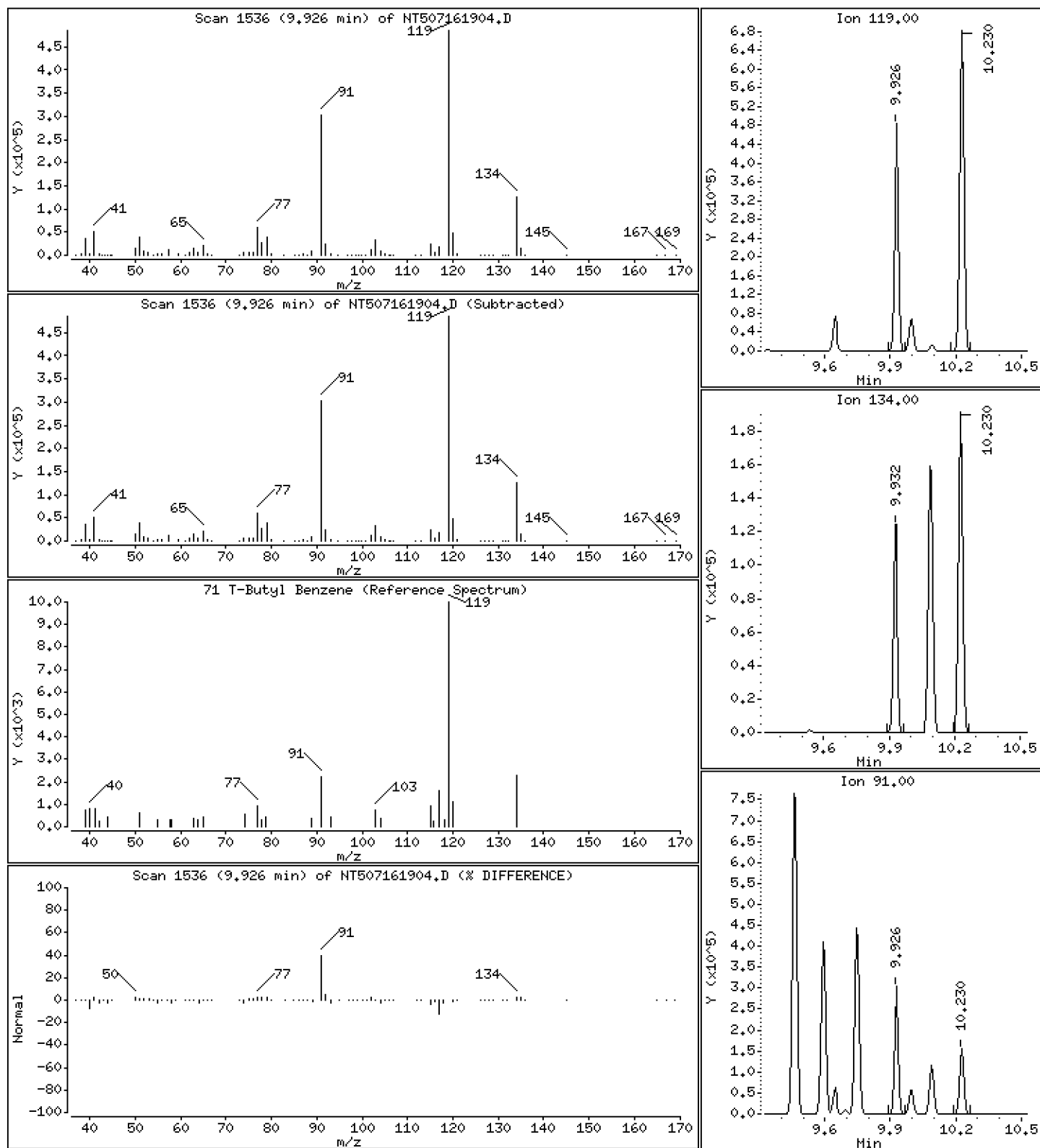
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 48,042 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

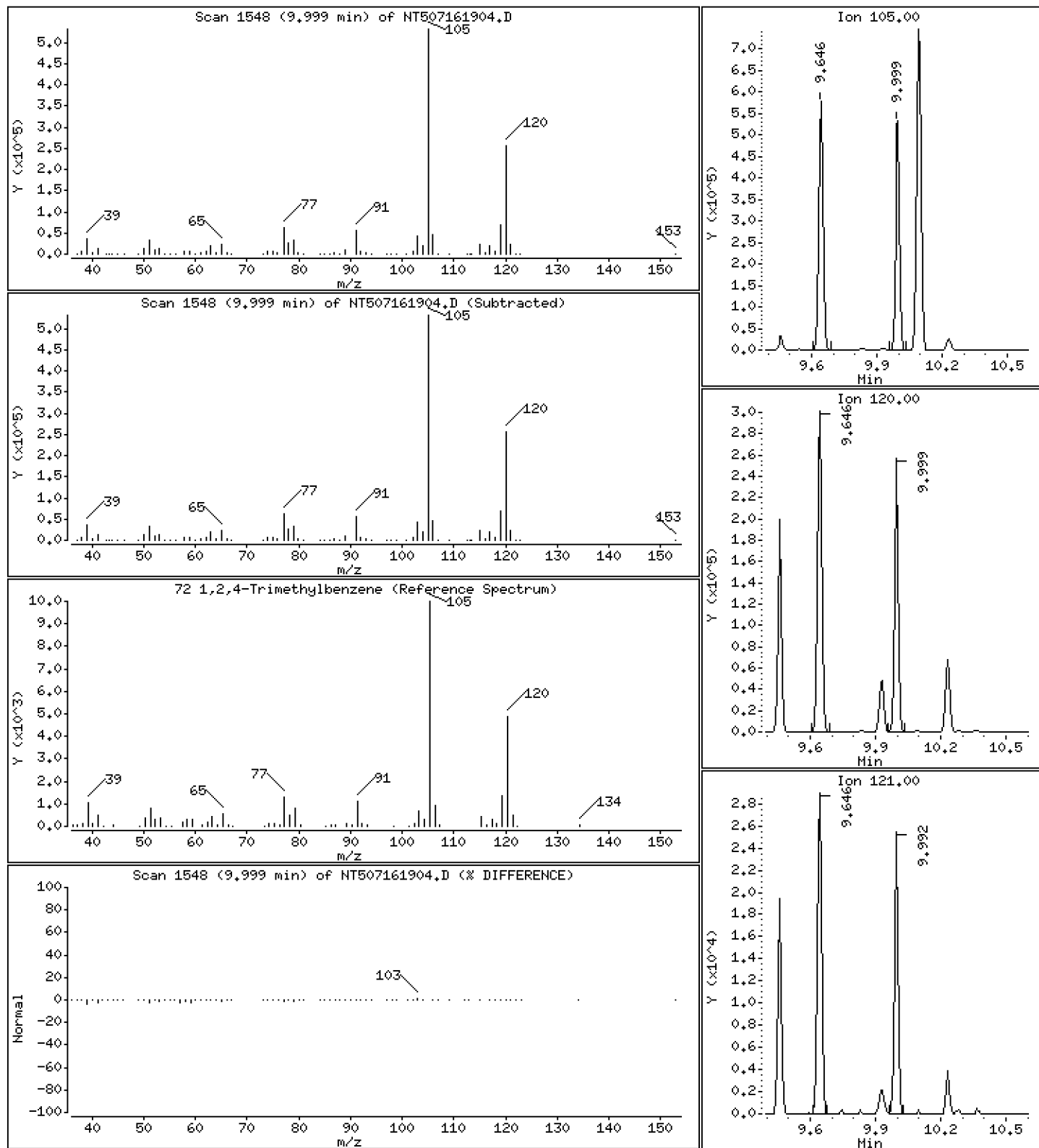
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 49,224 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

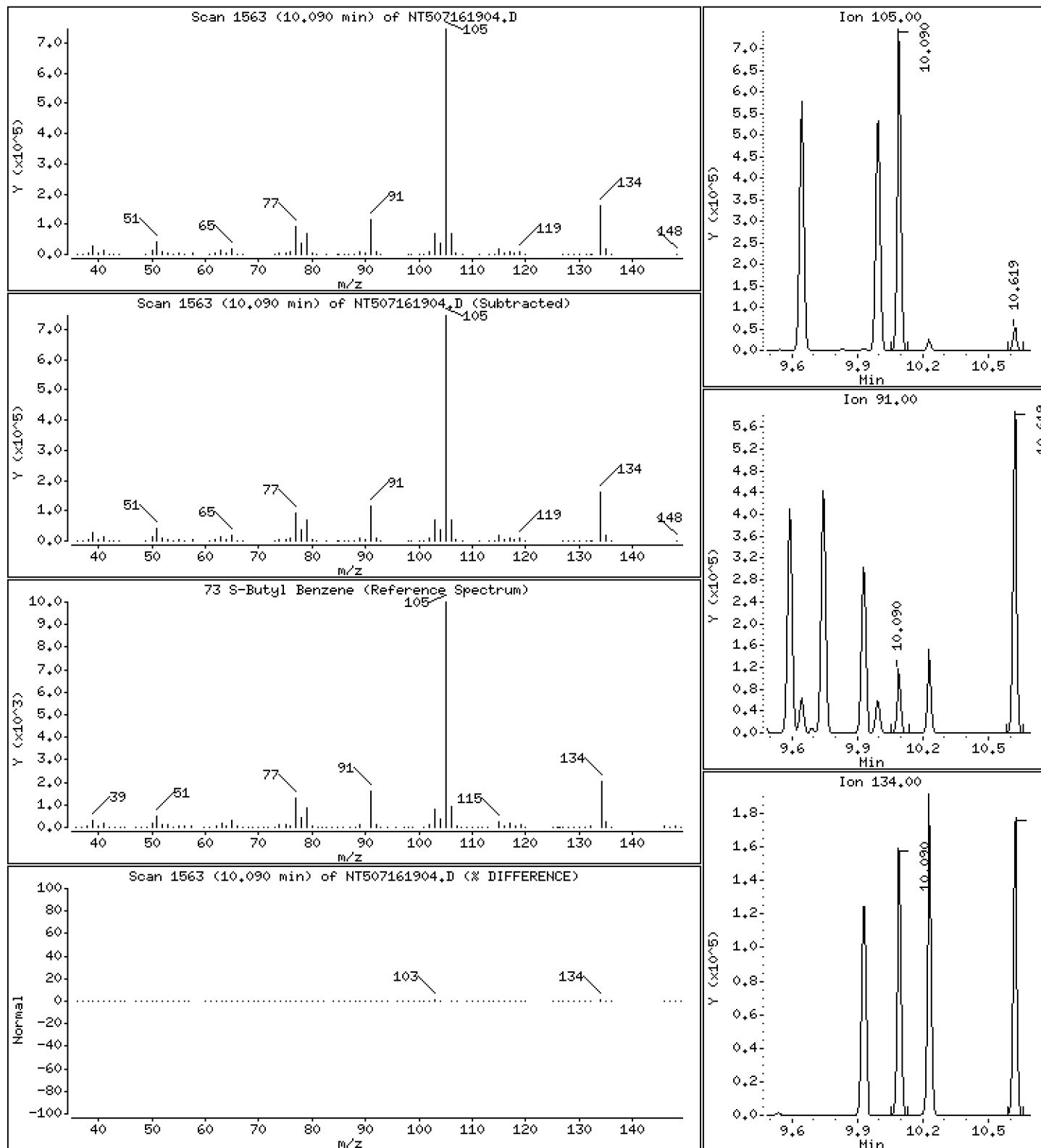
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 49,197 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

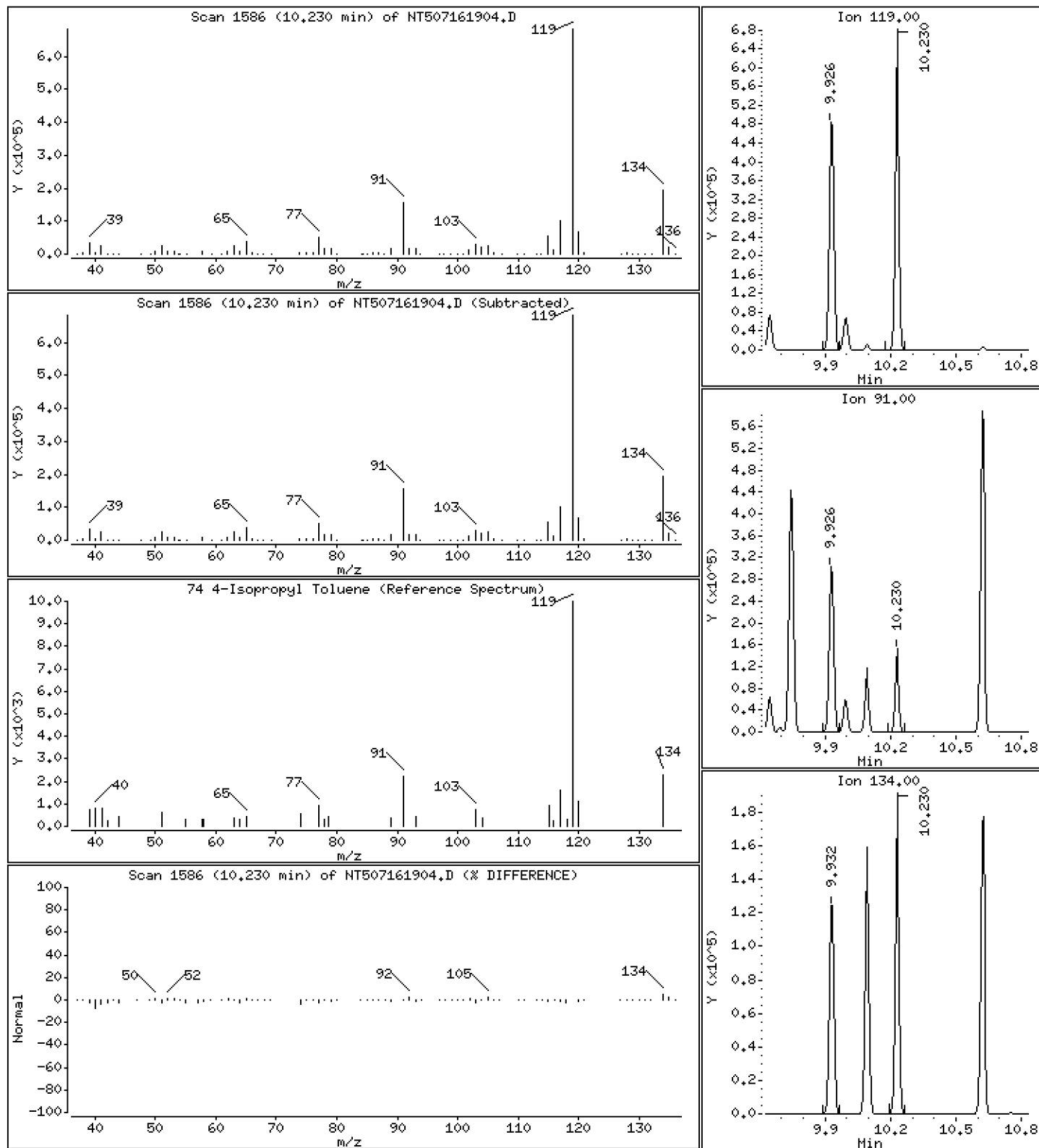
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 49,852 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

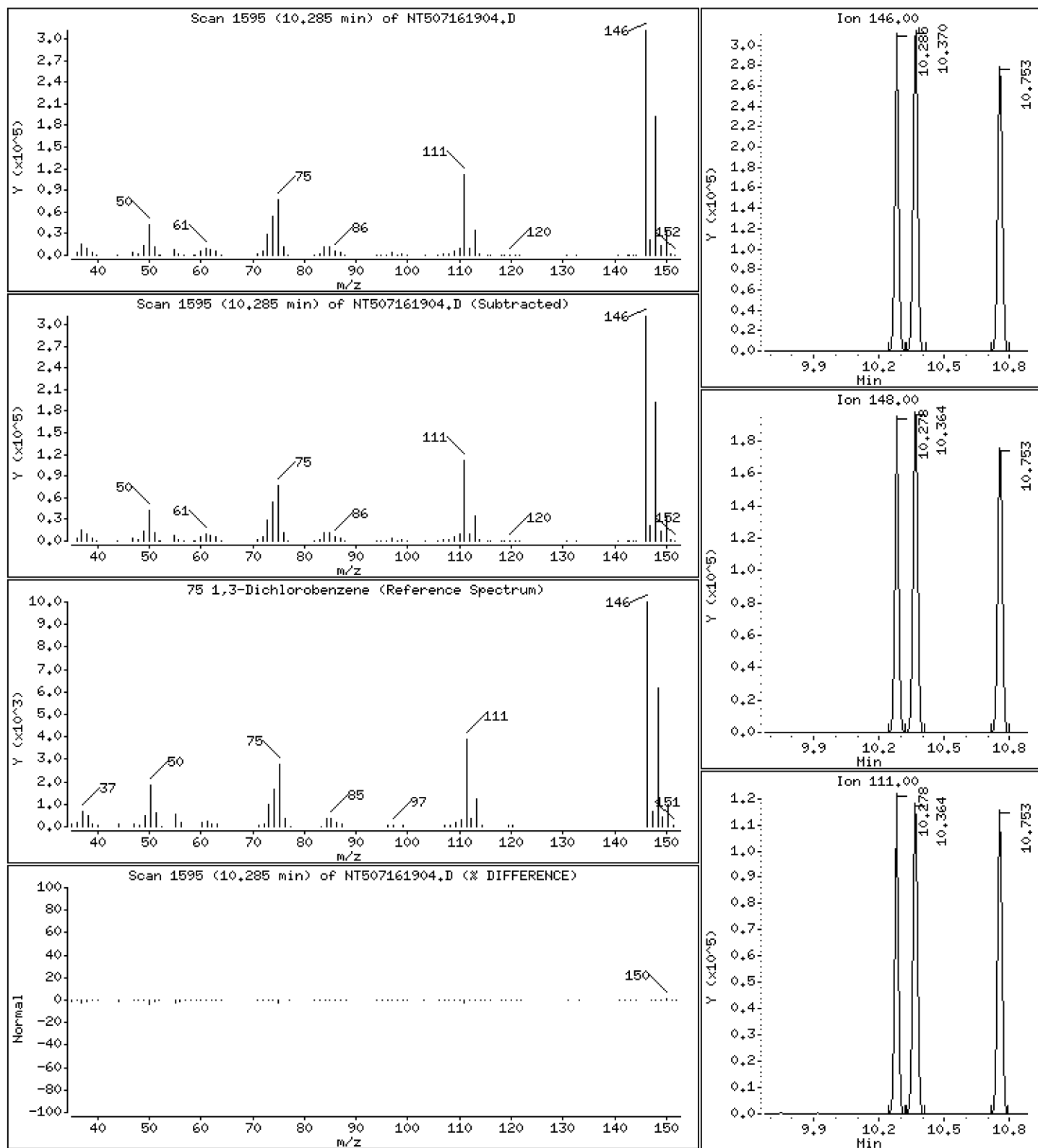
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 47.045 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

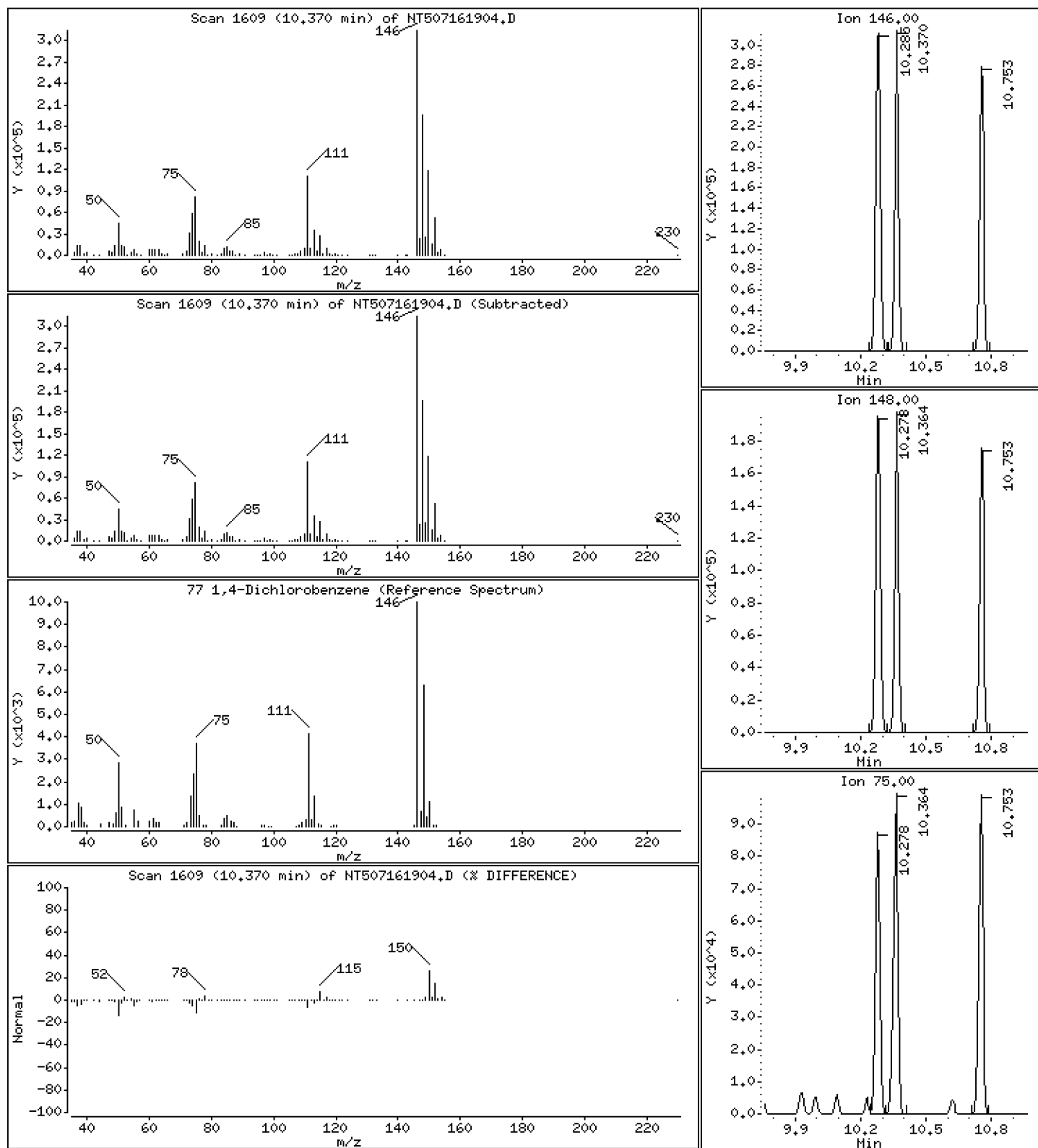
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 46,508 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

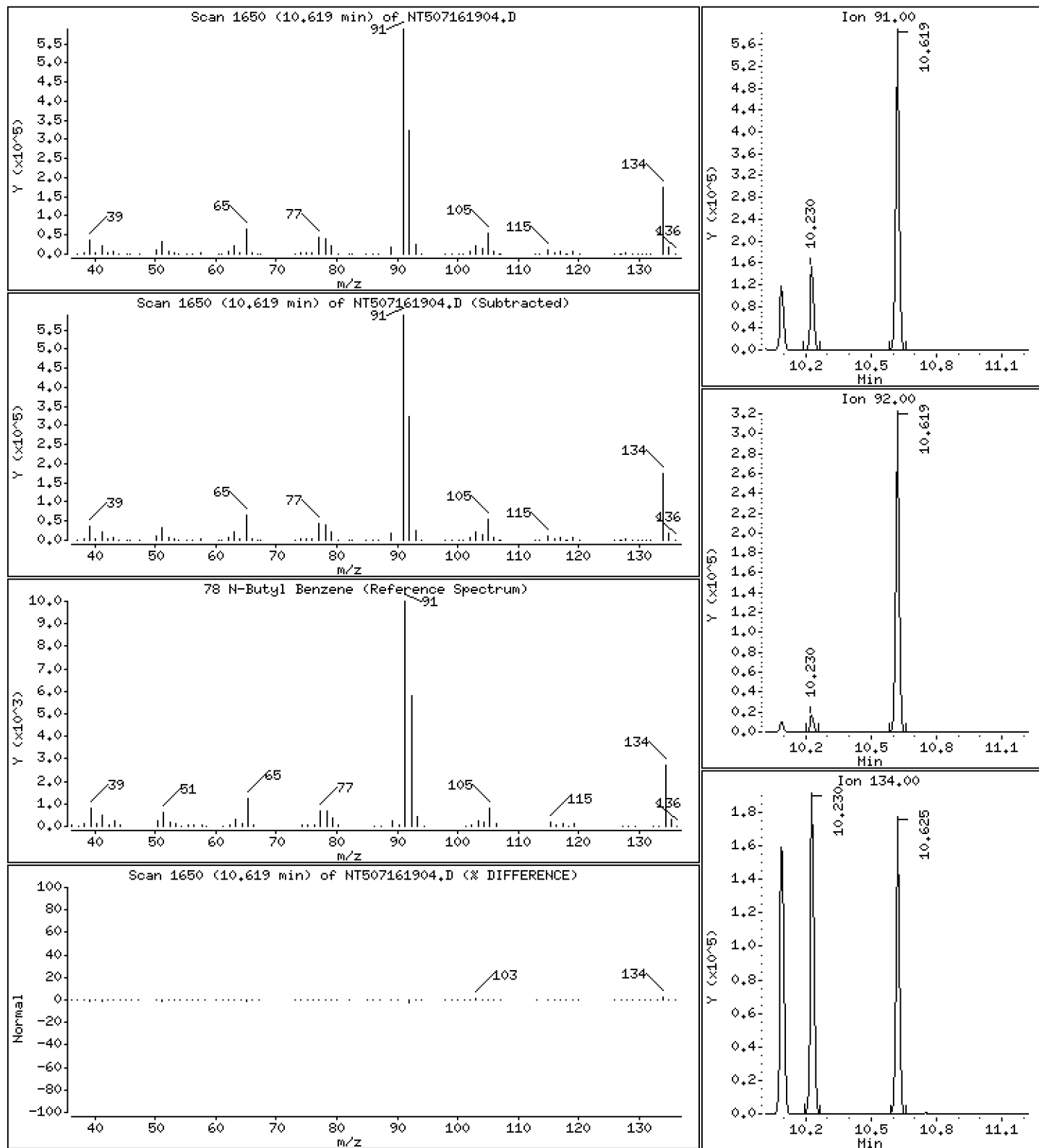
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 50.939 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

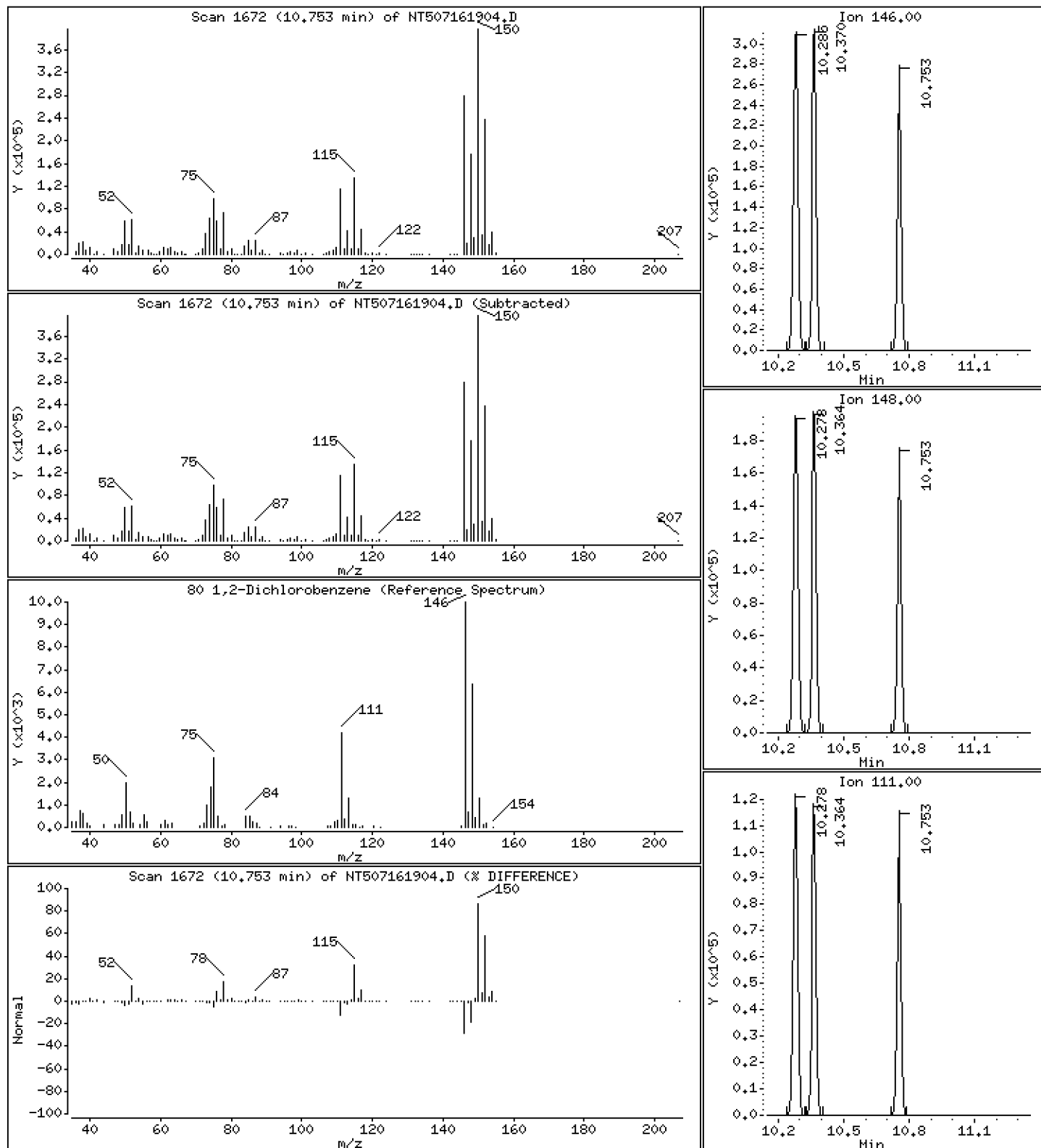
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 45,959 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

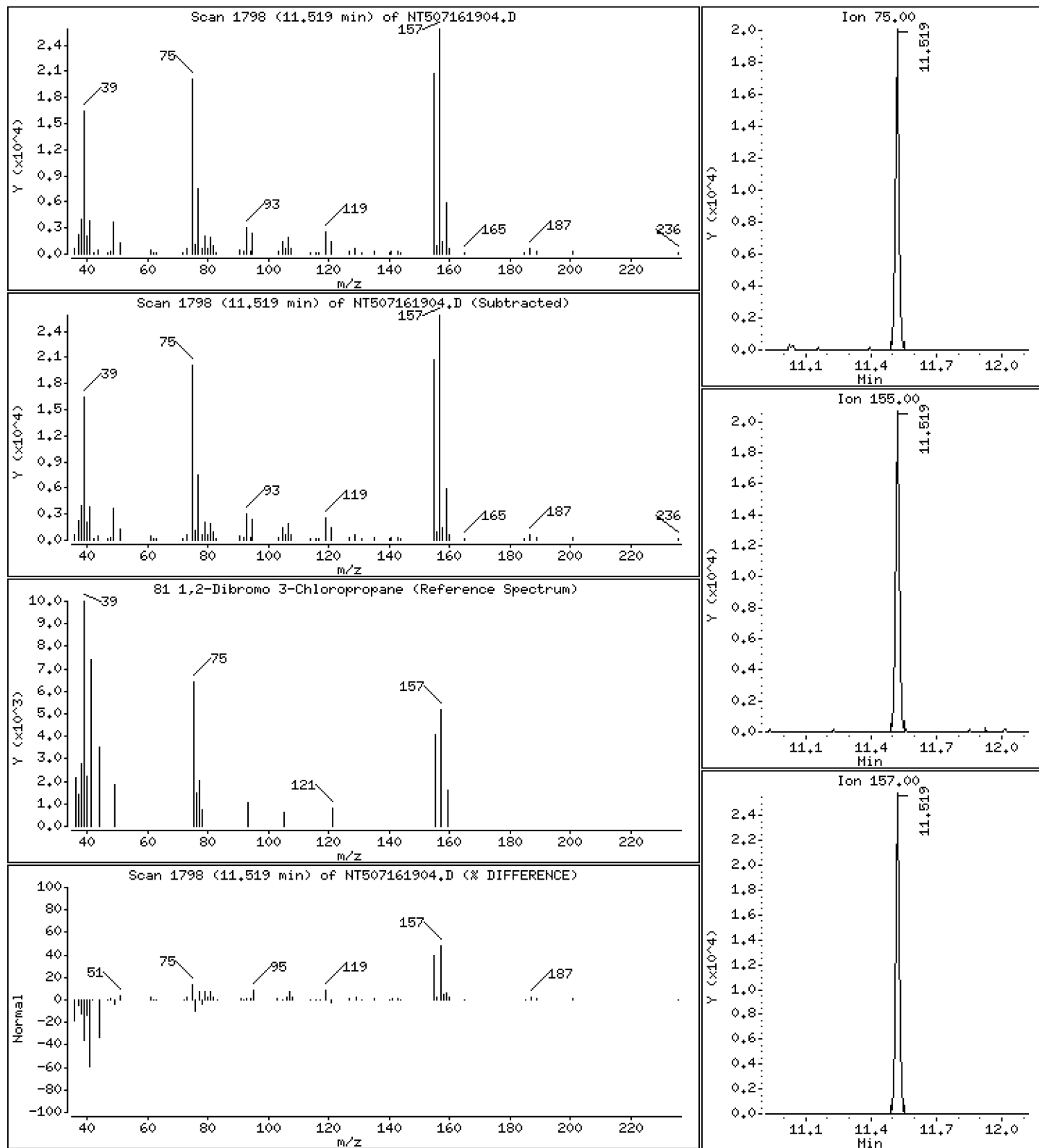
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 44,302 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

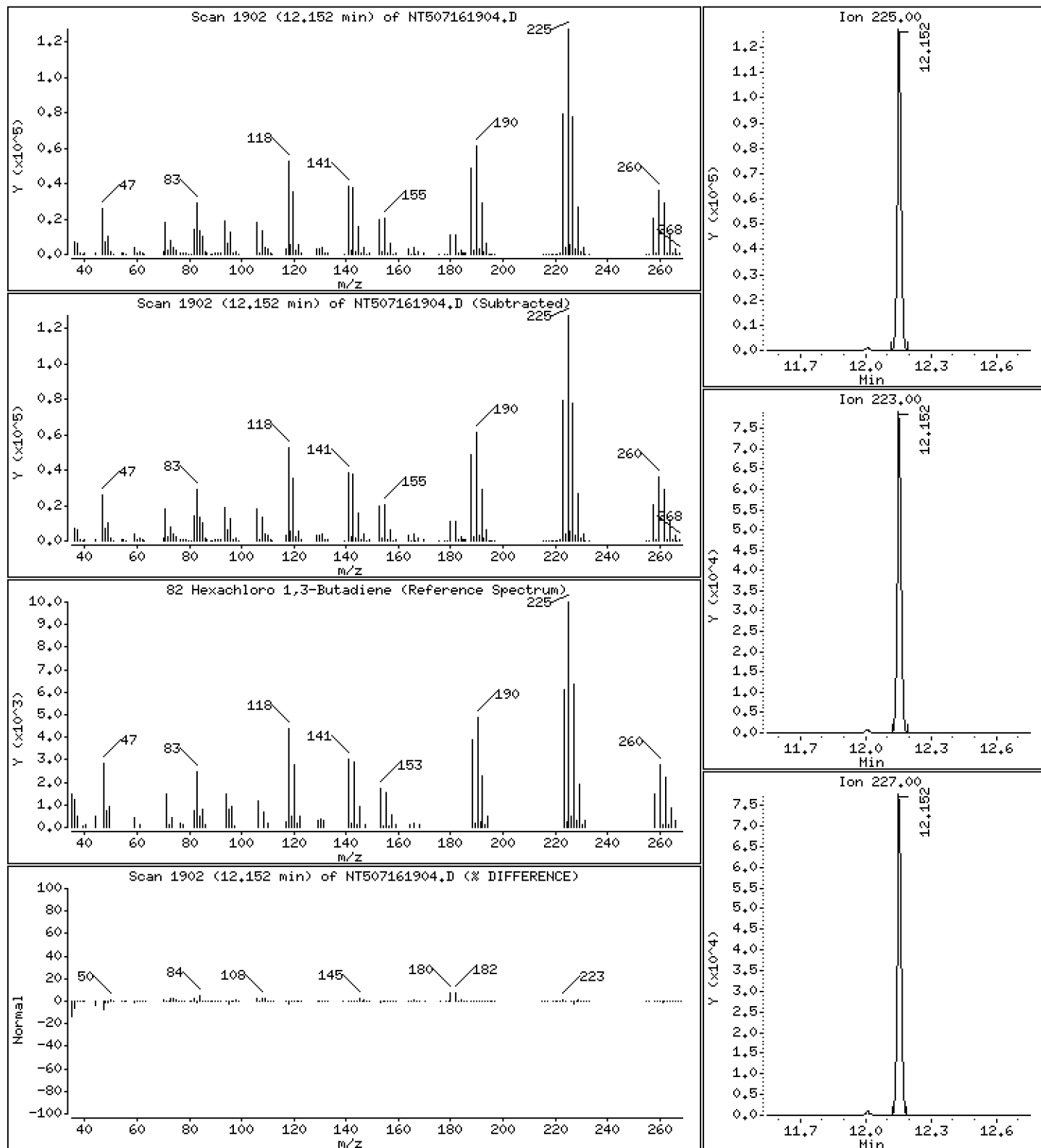
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 51.933 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

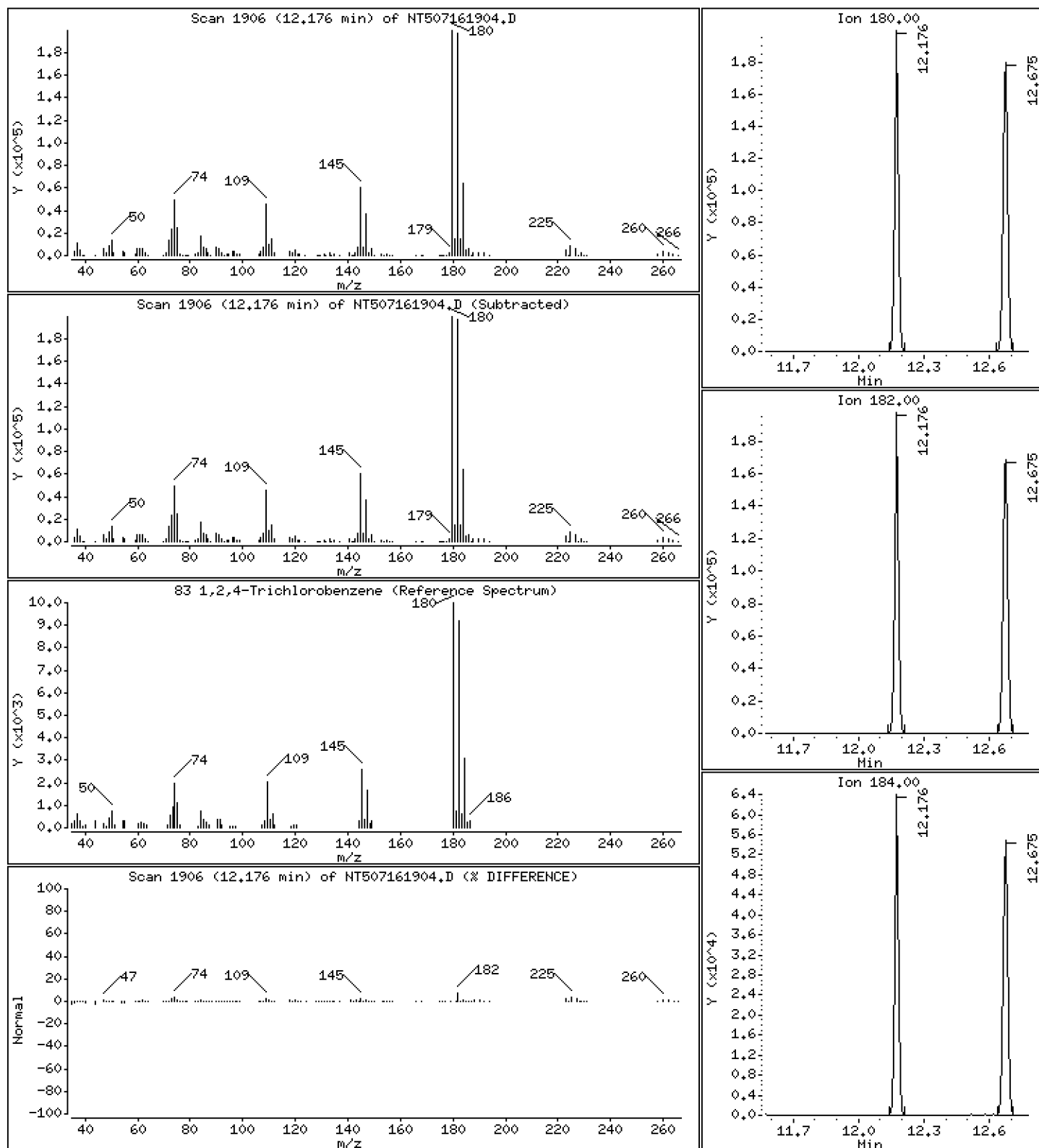
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 48,923 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

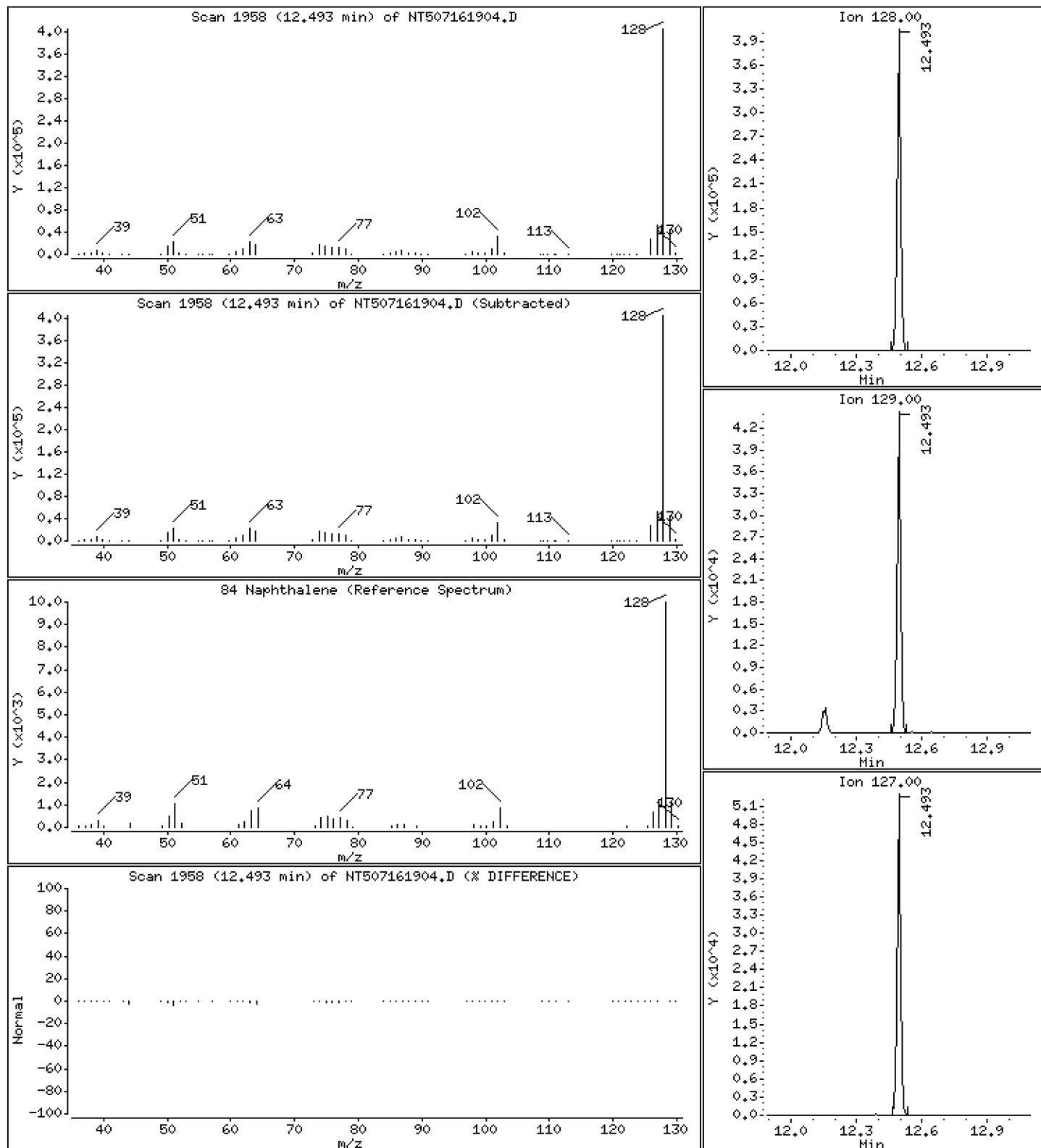
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 45.796 ug/Kg



Date : 16-JUL-2019 15:46

Client ID:

Instrument: nt5.i

Sample Info: BSD1

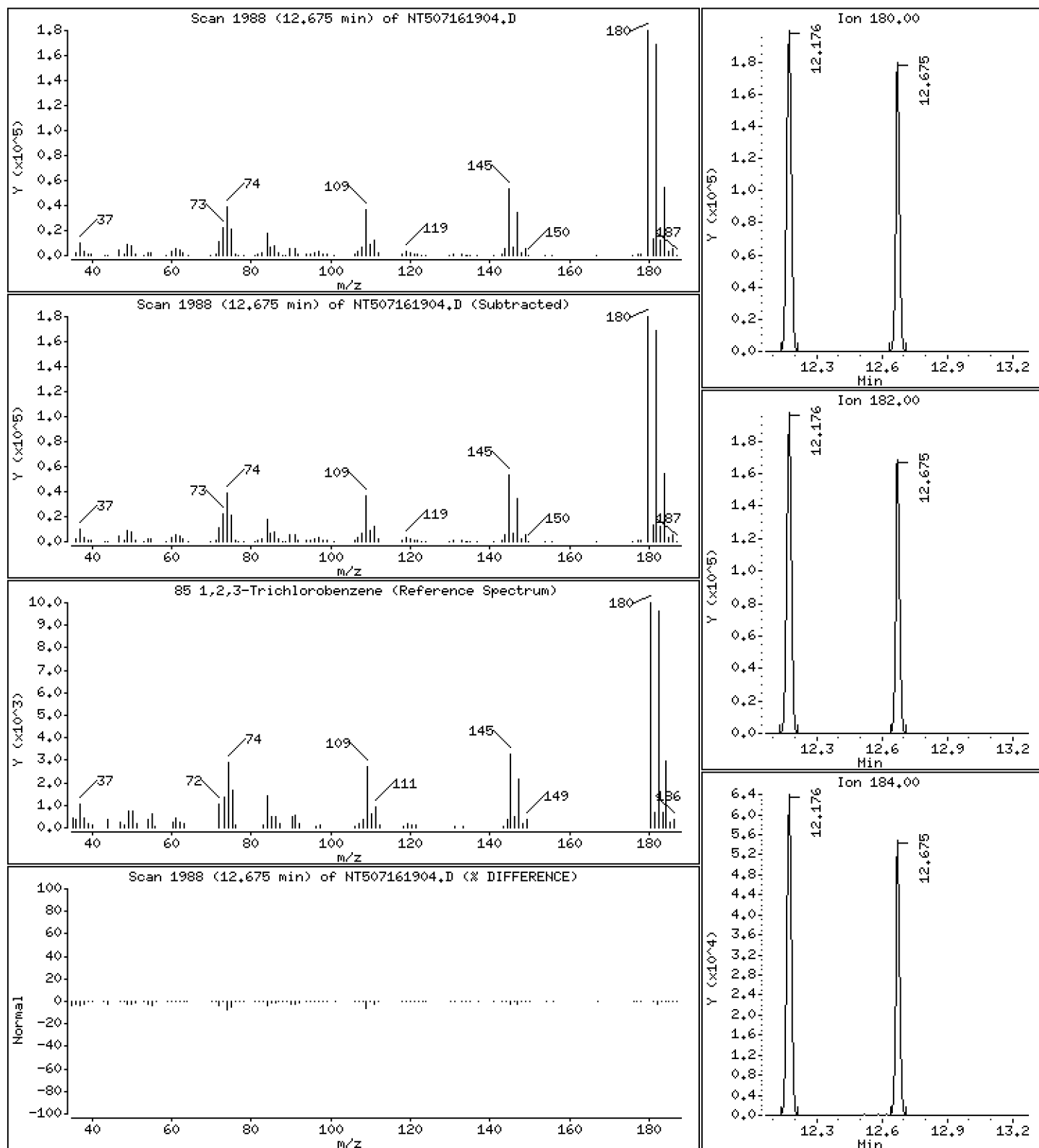
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 47,360 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161904.D
Lab Smp Id: bgh0391-BSD1
Inj Date : 16-JUL-2019 15:46
Operator : PB Inst ID: nt5.i
Smp Info : BSD1
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Meth Date : 17-Jul-2019 13:41 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamdl.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	1.329	1.329	(0.249)	177422	41.8208	41.821
2 Chloromethane	50	1.487	1.487	(0.279)	160813	45.7207	45.721
3 Vinyl Chloride	62	1.560	1.560	(0.292)	166830	46.9871	46.987
4 Bromomethane	94	1.840	1.840	(0.345)	134338	51.5072	51.507
5 Chloroethane	64	1.950	1.949	(0.365)	140738	50.1930	50.193
6 Trichlorofluoromethane	101	2.065	2.059	(0.387)	320801	47.4188	47.419
7 1,1-Dichloroethene	96	2.540	2.533	(0.476)	164076	47.2827	47.283
8 Carbon Disulfide	76	2.540	2.539	(0.476)	472603	48.8087	48.809
9 112Trichloro122Trifluoroethane	101	2.588	2.588	(0.485)	162602	51.3381	51.338
10 Iodomethane	142	2.667	2.667	(0.500)	203376	44.9270	44.927
11 Bromoethane	108	2.801	2.795	(0.525)	109228	46.7579	46.758
12 Acrolein	56	2.917	2.911	(0.546)	84376	239.294	239.29
13 Methylene Chloride	84	3.154	3.154	(0.591)	151666	44.0165	44.017
14 Acetone	43	3.264	3.257	(0.611)	140615	226.667	226.67
15 Trans-1,2-Dichloroethene	96	3.318	3.312	(0.622)	182887	49.0442	49.044
16 Methyl tert butyl ether	73	3.489	3.482	(0.654)	379315	46.9328	46.933
173 n-Hexane	41	3.483	3.489	(0.652)	76237		
17 1,1-Dichloroethane	63	3.945	3.945	(0.739)	273533	48.8891	48.889
18 Acrylonitrile	53	4.030	4.030	(0.755)	33386	45.2967	45.297
19 Vinyl Acetate	43	4.243	4.243	(0.795)	252493	49.2200	49.220
20 Cis-1,2-Dichloroethene	96	4.468	4.462	(0.837)	193806	50.5740	50.574
22 2,2-Dichloropropane	77	4.559	4.553	(0.854)	292054	54.1690	54.169
23 Bromochloromethane	128	4.645	4.644	(0.870)	90347	48.0189	48.019
24 Chloroform	83	4.736	4.730	(0.887)	300739	51.0269	51.027
25 Carbon Tetrachloride	117	4.821	4.815	(0.833)	294868	49.4579	49.458
\$ 27 Dibromofluoromethane	111	4.894	4.894	(0.917)	254203	55.2151	55.215 (R)
26 1,1,1-Trichloroethane	97	4.888	4.888	(0.916)	300929	52.0641	52.064
28 1,1-Dichloropropene	75	5.003	5.003	(0.864)	248627	51.6351	51.635
29 2-Butanone	72	5.046	5.046	(0.945)	71866	246.497	246.50
30 Benzene	78	5.222	5.222	(0.902)	685956	47.7719	47.772
* 31 Pentafluorobenzene	168	5.338	5.338	(1.000)	420981	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.356	5.356	(1.003)	214669	55.7402	55.740 (R)
33 1,2-Dichloroethane	62	5.417	5.417	(0.936)	188639	45.7387	45.739

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130	5.740	5.739	(0.992)	214715	47.9203	47.920
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	810064	50.0000	
37 Dibromomethane	93	6.099	6.098	(1.054)	90243	45.8134	45.813
38 1,2-Dichloropropane	63	6.190	6.190	(1.069)	147640	46.9326	46.933
39 Bromodichloromethane	83	6.251	6.250	(1.080)	221765	47.3773	47.377
172 2-Pentanone	86	6.543	6.542	(1.130)	93150	227.653	227.65
40 2-Chloroethyl Vinyl Ether	63	6.762	6.755	(1.168)	80214	43.9933	43.993
41 Cis 1,3-dichloropropene	75	6.792	6.786	(1.173)	265484	48.5434	48.543
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	963147	50.7722	50.772 (R)
43 Toluene	92	6.981	6.981	(1.206)	457274	46.6452	46.645
44 Tetrachloroethene	166	7.297	7.297	(0.884)	231985	47.5438	47.544
45 4-Methyl-2-Pentanone	58	7.333	7.333	(1.267)	212472	223.789	223.79
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.270)	230351	47.6433	47.643
47 1,1,2-Trichloroethane	97	7.479	7.479	(1.292)	127240	44.0583	44.058
48 Chlorodibromomethane	129	7.625	7.625	(0.923)	172645	45.6838	45.684
49 1,3-Dichloropropane	76	7.711	7.711	(0.934)	214671	45.2030	45.203
50 1,2-Dibromoethane	107	7.814	7.814	(1.350)	128320	43.9669	43.967
51 2-Hexanone	43	8.045	8.045	(0.974)	382635	231.750	231.75
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	794874	50.0000	
53 Chlorobenzene	112	8.276	8.276	(1.002)	514460	45.4253	45.425
54 Ethyl Benzene	91	8.307	8.307	(1.006)	884837	47.6030	47.603
55 1,1,1,2-Tetrachloroethane	131	8.337	8.337	(1.010)	185998	46.1961	46.196
56 m,p-xylene	106	8.435	8.434	(1.021)	706855	93.3382	93.338
57 o-Xylene	106	8.806	8.806	(1.066)	331268	46.0158	46.016
58 Styrene	104	8.854	8.854	(1.072)	541630	46.9484	46.948
59 Bromoform	173	8.873	8.872	(0.857)	114372	44.1502	44.150
60 Isopropyl Benzene	105	9.086	9.085	(0.878)	920943	49.0640	49.064
61 Cyclohexanone	55	9.645	9.639	(1.168)	1386		
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	337691	49.6248	49.625 (R)
63 Bromobenzene	156	9.420	9.420	(0.910)	220873	45.6853	45.685
64 N-Propyl Benzene	91	9.457	9.457	(0.914)	1050752	49.3884	49.388
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530	(0.921)	147437	43.6469	43.647
66 2-Chloro Toluene	91	9.590	9.590	(0.927)	573377	47.2636	47.264
67 1,3,5-Trimethyl Benzene	105	9.645	9.645	(0.932)	753603	48.7069	48.707
68 1,2,3-Trichloropropane	110	9.645	9.645	(0.932)	51854	44.2302	44.230
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.694	(0.937)	42925	46.5204	46.520
70 4-Chloro Toluene	91	9.743	9.742	(0.941)	608443	48.3830	48.383
71 T-Butyl Benzene	119	9.925	9.925	(0.959)	688964	48.0422	48.042
72 1,2,4-Trimethylbenzene	105	9.998	9.992	(0.966)	742165	49.2242	49.224
73 S-Butyl Benzene	105	10.089	10.089	(0.975)	1024660	49.1975	49.197
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	890544	49.8519	49.852
75 1,3-Dichlorobenzene	146	10.284	10.278	(0.994)	449882	47.0454	47.045
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	440087	50.0000	
77 1,4-Dichlorobenzene	146	10.369	10.363	(1.002)	437597	46.5077	46.508
78 N-Butyl Benzene	91	10.619	10.618	(1.026)	793392	50.9388	50.939
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	394709	51.4264	51.426 (R)
80 1,2-Dichlorobenzene	146	10.752	10.752	(1.039)	396862	45.9589	45.959
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.113)	27736	44.3020	44.302
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.174)	182514	51.9332	51.933
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	289621	48.9234	48.923
84 Naphthalene	128	12.492	12.492	(1.207)	554831	45.7955	45.796
85 1,2,3-Trichlorobenzene	180	12.675	12.669	(1.225)	253716	47.3598	47.360

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 16-JUL-2019
 Lab File ID: NT507161904.D Calibration Time: 14:57
 Lab Smp Id: bgh0391-BSD1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	420981	4.22
35 1,4-Difluorobenze	717664	358832	1435328	810064	12.88
52 d5-Chlorobenzene	696563	348282	1393126	794874	14.11
76 d4-1,4-Dichlorobe	380778	190389	761556	440087	15.58

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: bgh0391-BSD1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	41.821	83.64	
2 Chloromethane	50.000	45.721	91.44	
3 Vinyl Chloride	50.000	46.987	93.97	
4 Bromomethane	50.000	51.507	103.01	
5 Chloroethane	50.000	50.193	100.39	
6 Trichlorofluoromet	50.000	47.419	94.84	
12 Acrolein	250.00	239.29	95.72	
9 112Trichloro122Tri	50.000	51.338	102.68	
14 Acetone	250.00	226.67	90.67	
7 1,1-Dichloroethene	50.000	47.283	94.57	
11 Bromoethane	50.000	46.758	93.52	
10 Iodomethane	50.000	44.927	89.85	
13 Methylene Chloride	50.000	44.017	88.03	
8 Carbon Disulfide	50.000	48.809	97.62	
18 Acrylonitrile	50.000	45.297	90.59	
15 Trans-1,2-Dichloro	50.000	49.044	98.09	
19 Vinyl Acetate	50.000	49.220	98.44	
17 1,1-Dichloroethane	50.000	48.889	97.78	
29 2-Butanone	250.00	246.50	98.60	
22 2,2-Dichloropropan	50.000	54.169	108.34	
20 Cis-1,2-Dichloroet	50.000	50.574	101.15	
24 Chloroform	50.000	51.027	102.05	
23 Bromochloromethane	50.000	48.019	96.04	
26 1,1,1-Trichloroeth	50.000	52.064	104.13	
28 1,1-Dichloropropen	50.000	51.635	103.27	
25 Carbon Tetrachlori	50.000	49.458	98.92	
33 1,2-Dichloroethane	50.000	45.739	91.48	
30 Benzene	50.000	47.772	95.54	
34 Trichloroethene	50.000	47.920	95.84	
38 1,2-Dichloropropan	50.000	46.933	93.87	
39 Bromodichlorometha	50.000	47.377	94.75	
172 2-Pentanone	250.00	227.65	91.06	
37 Dibromomethane	50.000	45.813	91.63	
40 2-Chloroethyl Viny	50.000	43.993	87.99	
45 4-Methyl-2-Pentano	250.00	223.79	89.52	
41 Cis 1,3-dichloropr	50.000	48.543	97.09	
43 Toluene	50.000	46.645	93.29	
46 Trans 1,3-Dichloro	50.000	47.643	95.29	
51 2-Hexanone	250.00	231.75	92.70	
47 1,1,2-Trichloroeth	50.000	44.058	88.12	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	45.203	90.41	
44 Tetrachloroethene	50.000	47.544	95.09	
48 Chlorodibromometha	50.000	45.684	91.37	
50 1,2-Dibromoethane	50.000	43.967	87.93	
53 Chlorobenzene	50.000	45.425	90.85	
55 1,1,1,2-Tetrachlor	50.000	46.196	92.39	
54 Ethyl Benzene	50.000	47.603	95.21	
56 m,p-xylene	100.00	93.338	93.34	
57 o-Xylene	50.000	46.016	92.03	
58 Styrene	50.000	46.948	93.90	
60 Isopropyl Benzene	50.000	49.064	98.13	
59 Bromoform	50.000	44.150	88.30	
65 1,1,2,2-Tetrachlor	50.000	43.647	87.29	
68 1,2,3-Trichloropro	50.000	44.230	88.46	
69 Trans-1,4-Dichloro	50.000	46.520	93.04	
64 N-Propyl Benzene	50.000	49.388	98.78	
63 Bromobenzene	50.000	45.685	91.37	
67 1,3,5-Trimethyl Be	50.000	48.707	97.41	
66 2-Chloro Toluene	50.000	47.264	94.53	
70 4-Chloro Toluene	50.000	48.383	96.77	
71 T-Butyl Benzene	50.000	48.042	96.08	
72 1,2,4-Trimethylben	50.000	49.224	98.45	
73 S-Butyl Benzene	50.000	49.197	98.39	
74 4-Isopropyl Toluen	50.000	49.852	99.70	
75 1,3-Dichlorobenzen	50.000	47.045	94.09	
77 1,4-Dichlorobenzen	50.000	46.508	93.02	
78 N-Butyl Benzene	50.000	50.939	101.88	
80 1,2-Dichlorobenzen	50.000	45.959	91.92	
81 1,2-Dibromo 3-Chlo	50.000	44.302	88.60	
83 1,2,4-Trichloroben	50.000	48.923	97.85	
82 Hexachloro 1,3-But	50.000	51.933	103.87	
84 Naphthalene	50.000	45.796	91.59	
85 1,2,3-Trichloroben	50.000	47.360	94.72	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	55.215	110.43	
\$ 32 d4-1,2-Dichloroeth	50.000	55.740	111.48	
\$ 42 d8-Toluene	50.000	50.772	101.54	
\$ 62 4-Bromofluorobenze	50.000	49.625	99.25	
\$ 79 d4-1,2-Dichloroben	50.000	51.426	102.85	

REVIEW SUMMARY FOR FILE - NT507161904.D

Lab ID: bgh0391-BSD1
 nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 15:46

RT	CO-ELUTION COMPOUNDS
9.646	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.646	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane
9.646	Cyclohexanone and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507161903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500

Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 13:28

Batch: BHG0418

Laboratory ID: BHG0418-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Chloromethane	50.0	50.1		100	64 - 132
Vinyl Chloride	50.0	54.4		109	74 - 135
Bromomethane	50.0	52.3		105	53 - 144
Chloroethane	50.0	60.4	Q	121	55 - 149
Trichlorofluoromethane	50.0	51.4		103	61 - 164
Acrolein	250	246		98.3	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	56.1		112	74 - 143
Acetone	250	262		105	48 - 137
1,1-Dichloroethene	50.0	53.7		107	77 - 134
Bromoethane	50.0	52.1		104	65 - 145
Iodomethane	50.0	48.2		96.5	31 - 162
Methylene Chloride	50.0	48.2		96.4	69 - 129
Acrylonitrile	50.0	48.2		96.5	69 - 134
Carbon Disulfide	50.0	54.4		109	71 - 137
trans-1,2-Dichloroethene	50.0	53.8		108	79 - 130
Vinyl Acetate	50.0	53.8		108	66 - 141
1,1-Dichloroethane	50.0	53.7		107	80 - 126
2-Butanone	250	272		109	70 - 132
2,2-Dichloropropane	50.0	59.8		120	77 - 138
cis-1,2-Dichloroethene	50.0	55.3		111	80 - 125
Chloroform	50.0	55.1		110	80 - 126
Bromochloromethane	50.0	51.4		103	80 - 129
1,1,1-Trichloroethane	50.0	57.8		116	78 - 133
1,1-Dichloropropene	50.0	56.6		113	79 - 120
Carbon tetrachloride	50.0	53.2		106	71 - 129
1,2-Dichloroethane	50.0	49.5		98.9	76 - 120
Benzene	50.0	51.1		102	80 - 120
Trichloroethene	50.0	51.1		102	80 - 120
1,2-Dichloropropane	50.0	52.0		104	79 - 120
Bromodichloromethane	50.0	50.2		100	80 - 122
Dibromomethane	50.0	49.7		99.5	80 - 120
2-Chloroethyl vinyl ether	50.0	47.5		94.9	51 - 129
4-Methyl-2-Pentanone	250	247		98.7	73 - 121



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 13:28

Batch: BHG0418

Laboratory ID: BHG0418-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
cis-1,3-Dichloropropene	50.0	51.8		104	80 - 120
Toluene	50.0	50.0		99.9	75 - 120
trans-1,3-Dichloropropene	50.0	51.5		103	80 - 124
2-Hexanone	250	246		98.3	68 - 122
1,1,2-Trichloroethane	50.0	46.6		93.2	79 - 120
1,3-Dichloropropane	50.0	47.2		94.3	78 - 120
Tetrachloroethene	50.0	49.4		98.7	74 - 124
Dibromochloromethane	50.0	47.8		95.6	74 - 125
1,2-Dibromoethane	50.0	48.2		96.4	80 - 120
Chlorobenzene	50.0	48.0		95.9	78 - 120
Ethylbenzene	50.0	49.5		98.9	80 - 125
1,1,1,2-Tetrachloroethane	50.0	47.3		94.5	80 - 120
m,p-Xylene	100	97.7		97.7	76 - 121
o-Xylene	50.0	48.5		96.9	67 - 132
Xylenes, total	150	146		97.4	67 - 132
Styrene	50.0	48.5		96.9	80 - 120
Bromoform	50.0	44.7		89.3	64 - 128
1,1,2,2-Tetrachloroethane	50.0	45.6		91.3	74 - 120
1,2,3-Trichloropropane	50.0	46.0		92.1	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	50.0		100	65 - 125
n-Propylbenzene	50.0	51.1		102	72 - 124
Bromobenzene	50.0	46.8		93.6	76 - 120
Isopropyl Benzene	50.0	51.1		102	74 - 121
2-Chlorotoluene	50.0	50.0		99.9	75 - 120
4-Chlorotoluene	50.0	50.8		102	69 - 124
t-Butylbenzene	50.0	49.5		99.0	72 - 122
1,3,5-Trimethylbenzene	50.0	50.4		101	74 - 122
1,2,4-Trimethylbenzene	50.0	50.7		101	75 - 121
s-Butylbenzene	50.0	50.8		102	70 - 128
4-Isopropyl Toluene	50.0	51.6		103	75 - 125
1,3-Dichlorobenzene	50.0	47.4		94.8	75 - 120
1,4-Dichlorobenzene	50.0	47.6		95.2	73 - 120
n-Butylbenzene	50.0	52.3		105	73 - 130



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 13:28

Batch: BHG0418

Laboratory ID: BHG0418-BS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	50.0	46.6		93.2	76 - 120
1,2-Dibromo-3-chloropropane	50.0	46.1		92.3	65 - 126
1,2,4-Trichlorobenzene	50.0	48.7		97.4	66 - 140
Hexachloro-1,3-Butadiene	50.0	50.4		101	67 - 133
Naphthalene	50.0	45.9		91.7	69 - 125
1,2,3-Trichlorobenzene	50.0	46.3		92.7	68 - 132
Dichlorodifluoromethane	50.0	45.1		90.3	67 - 142
Methyl tert-butyl Ether	50.0	49.2		98.3	79 - 127
2-Pentanone	250	251		100	77 - 120

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloromethane	50.0	50.5		101	0.833	30	64 - 132
Vinyl Chloride	50.0	52.2		104	3.98	30	74 - 135
Bromomethane	50.0	54.9		110	4.84	30	53 - 144
Chloroethane	50.0	56.5	Q	113	6.81	30	55 - 149
Trichlorofluoromethane	50.0	51.9		104	0.956	30	61 - 164
Acrolein	250	257		103	4.49	30	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	55.3		111	1.44	30	74 - 143
Acetone	250	254		102	2.83	30	48 - 137
1,1-Dichloroethene	50.0	54.2		108	0.980	30	77 - 134
Bromoethane	50.0	52.4		105	0.477	30	65 - 145
Iodomethane	50.0	47.9		95.8	0.740	30	31 - 162
Methylene Chloride	50.0	48.3		96.6	0.163	30	69 - 129
Acrylonitrile	50.0	49.4		98.8	2.41	30	69 - 134
Carbon Disulfide	50.0	53.7		107	1.15	30	71 - 137
trans-1,2-Dichloroethene	50.0	53.4		107	0.829	30	79 - 130
Vinyl Acetate	50.0	52.1		104	3.13	30	66 - 141
1,1-Dichloroethane	50.0	54.4		109	1.26	30	80 - 126
2-Butanone	250	271		108	0.237	30	70 - 132
2,2-Dichloropropane	50.0	59.8		120	0.0762	30	77 - 138
cis-1,2-Dichloroethene	50.0	54.6		109	1.36	30	80 - 125

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 14:08

Batch: BHG0418

Laboratory ID: BHG0418-BSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS Dup

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloroform	50.0	56.3		113	2.17	30	80 - 126
Bromochloromethane	50.0	50.8		102	1.19	30	80 - 129
1,1,1-Trichloroethane	50.0	58.6		117	1.33	30	78 - 133
1,1-Dichloropropene	50.0	56.0		112	0.959	30	79 - 120
Carbon tetrachloride	50.0	54.0		108	1.55	30	71 - 129
1,2-Dichloroethane	50.0	49.9		99.7	0.761	30	76 - 120
Benzene	50.0	51.1		102	0.134	30	80 - 120
Trichloroethene	50.0	51.4		103	0.654	30	80 - 120
1,2-Dichloropropane	50.0	50.8		102	2.29	30	79 - 120
Bromodichloromethane	50.0	51.5		103	2.50	30	80 - 122
Dibromomethane	50.0	49.2		98.5	1.02	30	80 - 120
2-Chloroethyl vinyl ether	50.0	46.5		93.1	1.95	30	51 - 129
4-Methyl-2-Pentanone	250	245		98.0	0.725	30	73 - 121
cis-1,3-Dichloropropene	50.0	52.2		104	0.886	30	80 - 120
Toluene	50.0	50.2		100	0.416	30	75 - 120
trans-1,3-Dichloropropene	50.0	51.1		102	0.708	30	80 - 124
2-Hexanone	250	238		95.2	3.25	30	68 - 122
1,1,2-Trichloroethane	50.0	47.2		94.3	1.22	30	79 - 120
1,3-Dichloropropane	50.0	45.8		91.7	2.86	30	78 - 120
Tetrachloroethene	50.0	49.0		98.0	0.785	30	74 - 124
Dibromochloromethane	50.0	47.0		94.1	1.64	30	74 - 125
1,2-Dibromoethane	50.0	47.0		93.9	2.55	30	80 - 120
Chlorobenzene	50.0	46.9		93.9	2.16	30	78 - 120
Ethylbenzene	50.0	48.6		97.1	1.81	30	80 - 125
1,1,1,2-Tetrachloroethane	50.0	47.7		95.5	1.03	30	80 - 120
m,p-Xylene	100	97.1		97.1	0.561	30	76 - 121
o-Xylene	50.0	47.5		94.9	2.07	30	67 - 132
Xylenes, total	150	145		96.4	1.06	30	67 - 132
Styrene	50.0	48.2		96.4	0.591	30	80 - 120
Bromoform	50.0	43.9		87.8	1.69	30	64 - 128
1,1,2,2-Tetrachloroethane	50.0	44.1		88.3	3.36	30	74 - 120
1,2,3-Trichloropropane	50.0	45.3		90.6	1.59	30	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	46.9		93.8	6.49	30	65 - 125

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 14:08

Batch: BHG0418

Laboratory ID: BHG0418-BSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: LCS Dup

Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
n-Propylbenzene	50.0	49.6		99.2	3.03	30	72 - 124
Bromobenzene	50.0	44.8		89.6	4.41	30	76 - 120
Isopropyl Benzene	50.0	49.1		98.3	3.82	30	74 - 121
2-Chlorotoluene	50.0	47.9		95.8	4.18	30	75 - 120
4-Chlorotoluene	50.0	48.2		96.4	5.19	30	69 - 124
t-Butylbenzene	50.0	47.5		94.9	4.20	30	72 - 122
1,3,5-Trimethylbenzene	50.0	48.3		96.7	4.14	30	74 - 122
1,2,4-Trimethylbenzene	50.0	49.0		98.0	3.33	30	75 - 121
s-Butylbenzene	50.0	49.0		98.0	3.65	30	70 - 128
4-Isopropyl Toluene	50.0	49.7		99.4	3.83	30	75 - 125
1,3-Dichlorobenzene	50.0	46.1		92.3	2.68	30	75 - 120
1,4-Dichlorobenzene	50.0	46.3		92.7	2.70	30	73 - 120
n-Butylbenzene	50.0	50.3		101	3.80	30	73 - 130
1,2-Dichlorobenzene	50.0	45.5		91.0	2.36	30	76 - 120
1,2-Dibromo-3-chloropropane	50.0	43.6		87.3	5.52	30	65 - 126
1,2,4-Trichlorobenzene	50.0	46.2		92.4	5.24	30	66 - 140
Hexachloro-1,3-Butadiene	50.0	46.9		93.8	7.19	30	67 - 133
Naphthalene	50.0	43.2		86.5	5.91	30	69 - 125
1,2,3-Trichlorobenzene	50.0	44.1		88.1	5.04	30	68 - 132
Dichlorodifluoromethane	50.0	42.7		85.4	5.53	30	67 - 142
Methyl tert-butyl Ether	50.0	50.6		101	2.92	30	79 - 127
2-Pentanone	250	241		96.4	4.06	30	77 - 120

* Indicates values outside of QC limits

Data File: \\target\share\chemd\nt5.i\20190719.b\NT507191902A.D

Date : 19-JUL-2019 13:28

Client ID:

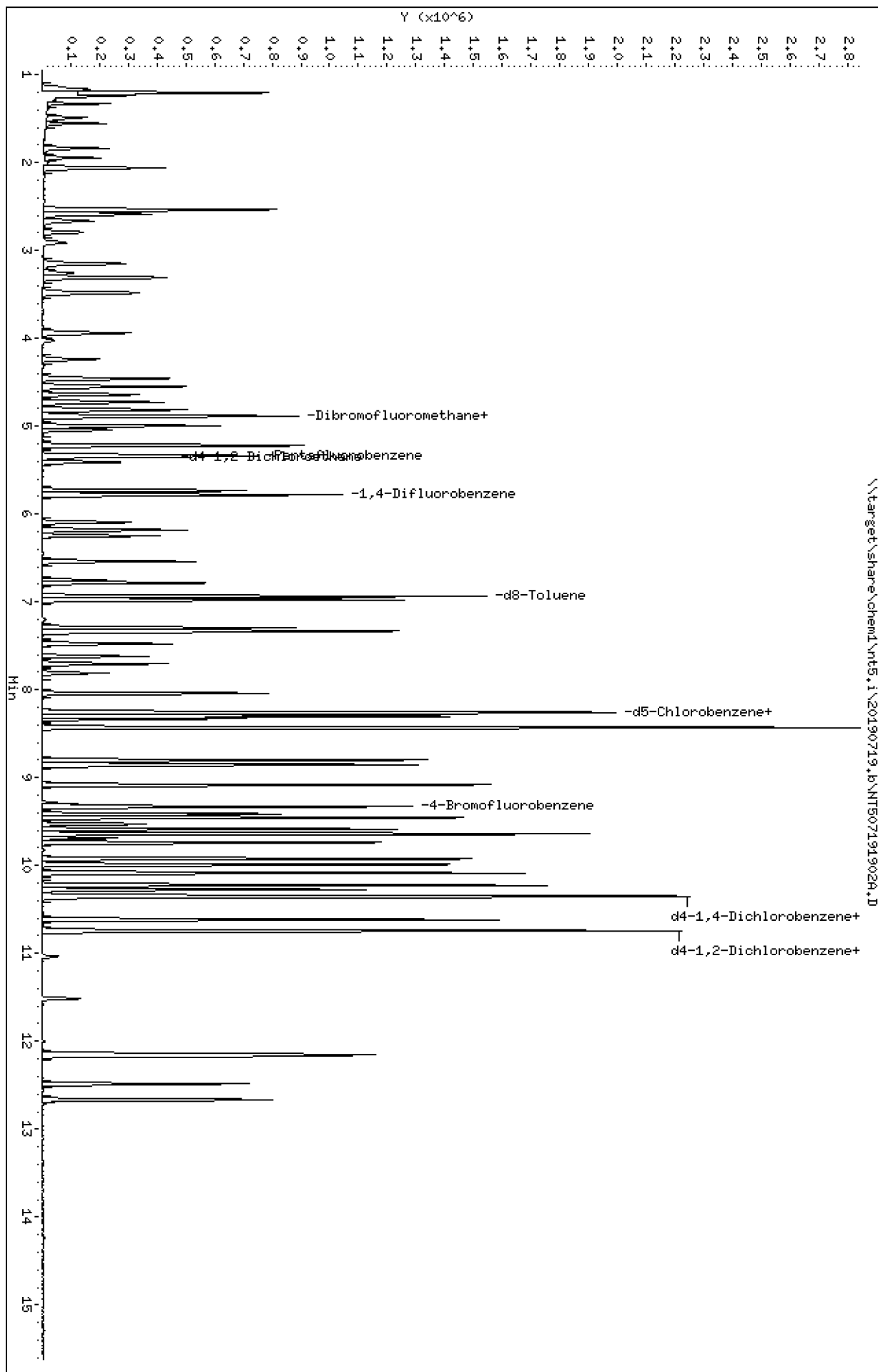
Sample Info: ICW1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

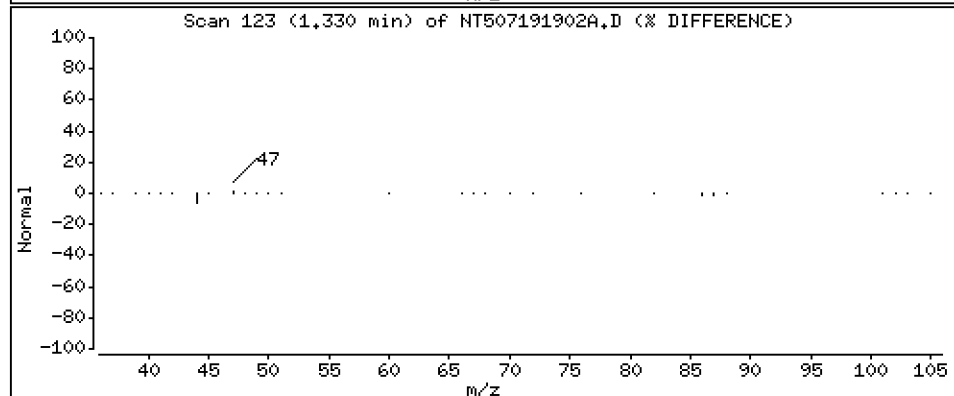
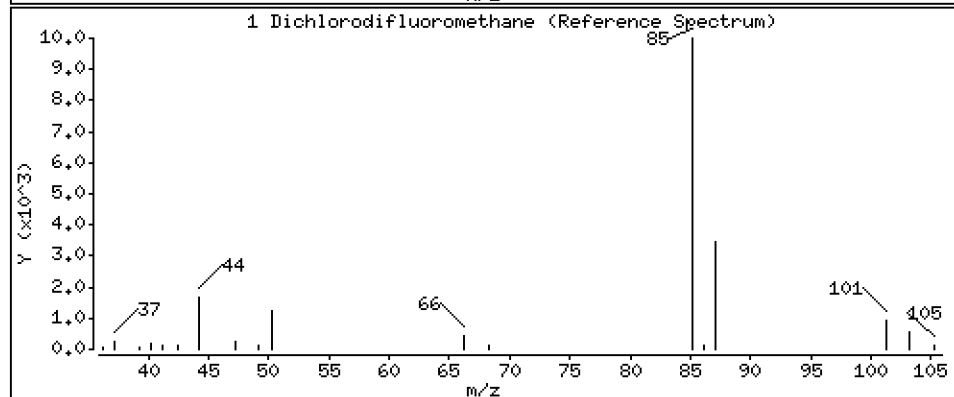
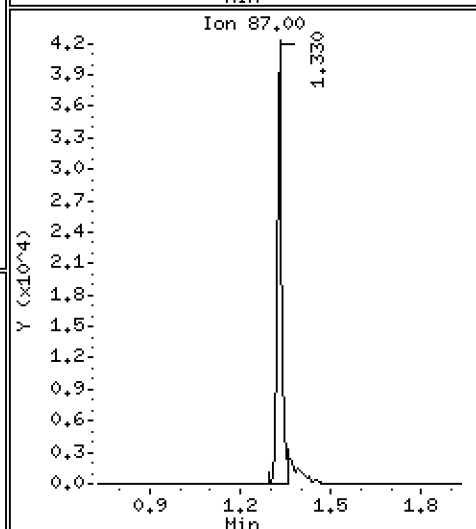
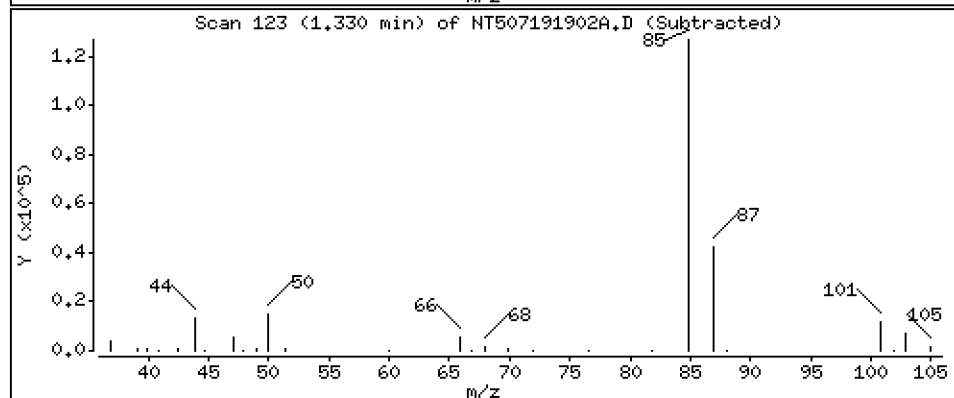
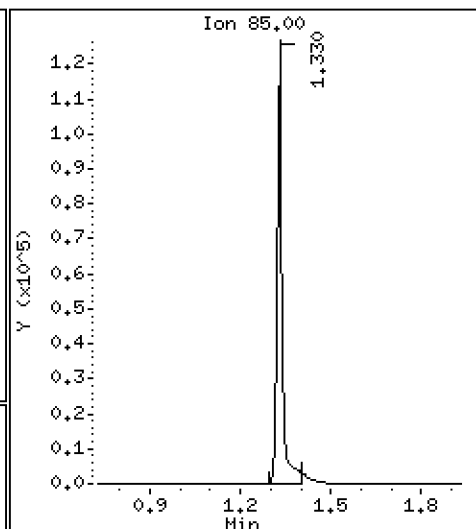
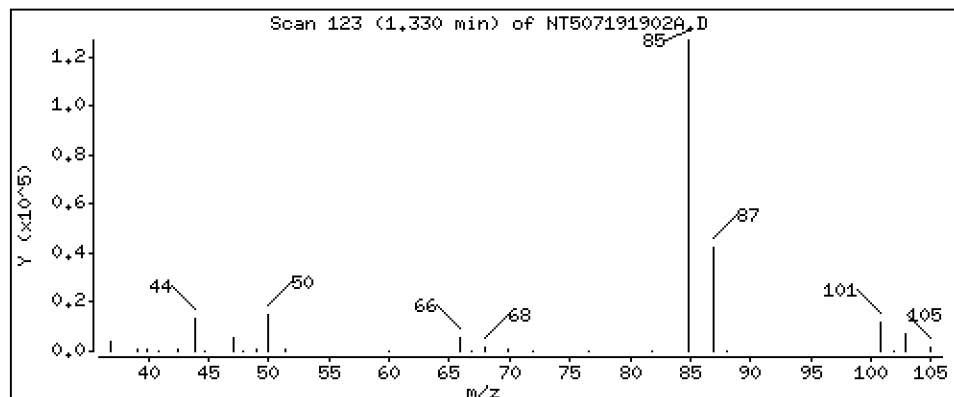
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 45,126 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

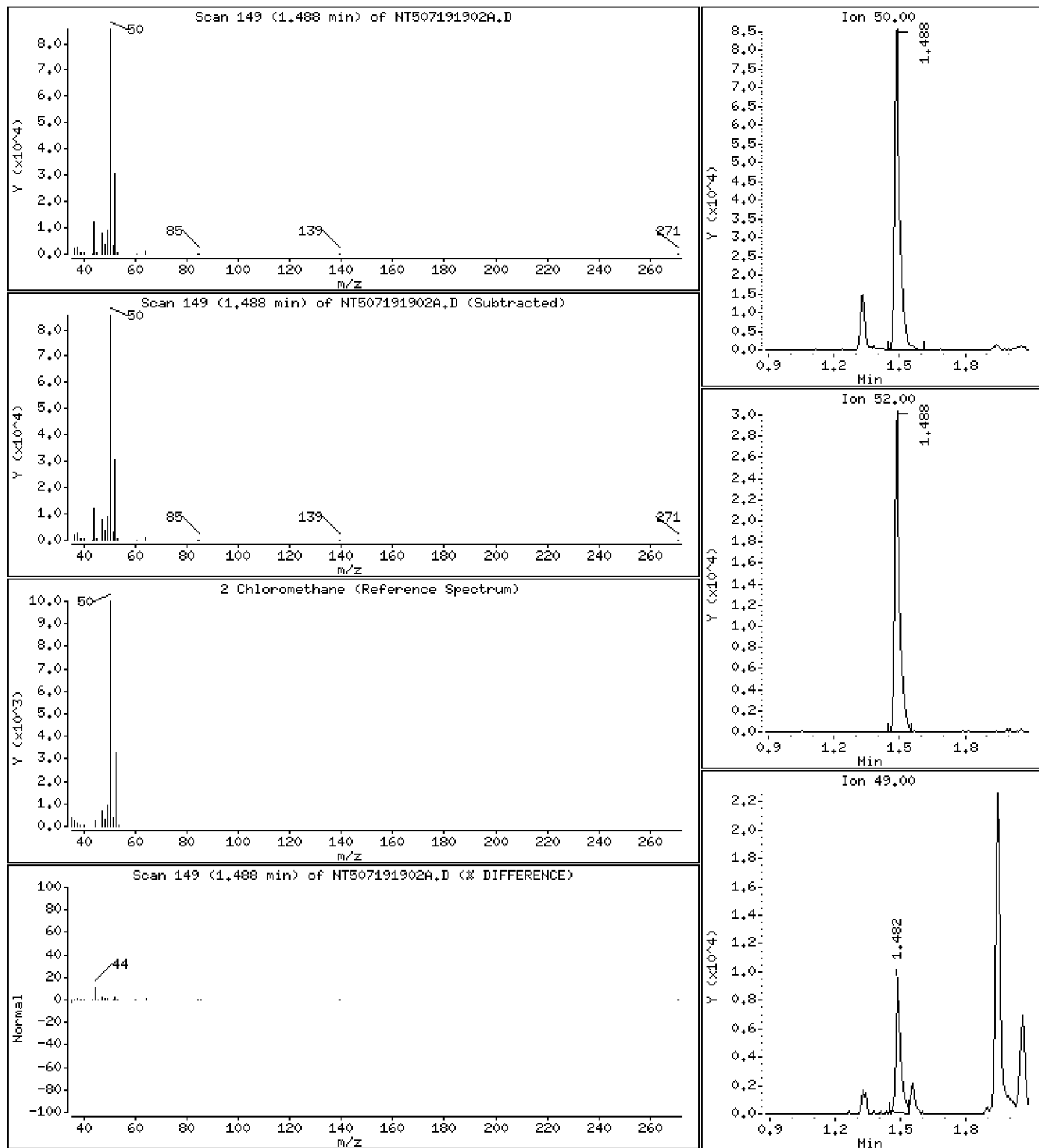
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 50,125 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

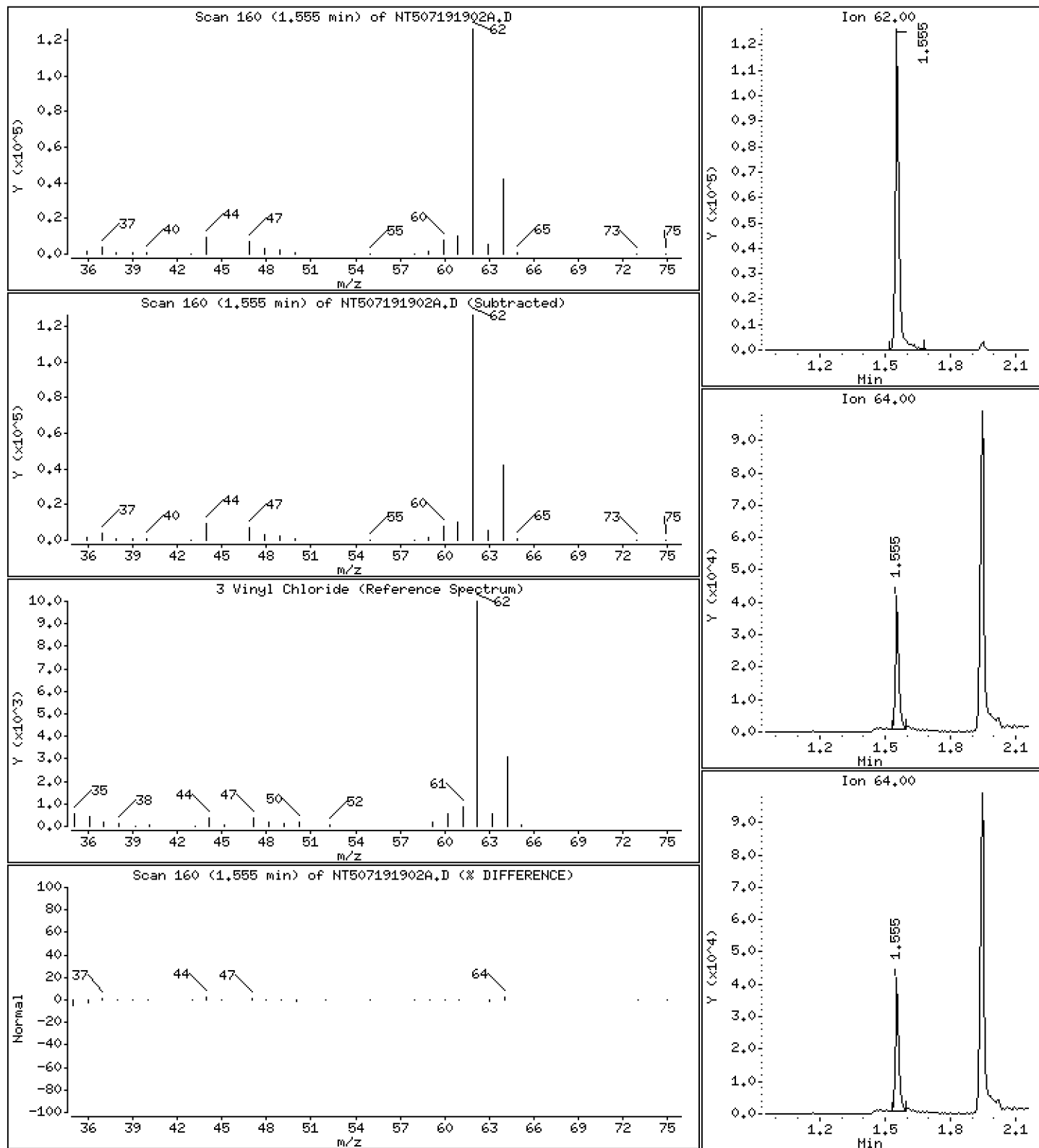
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 54,351 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

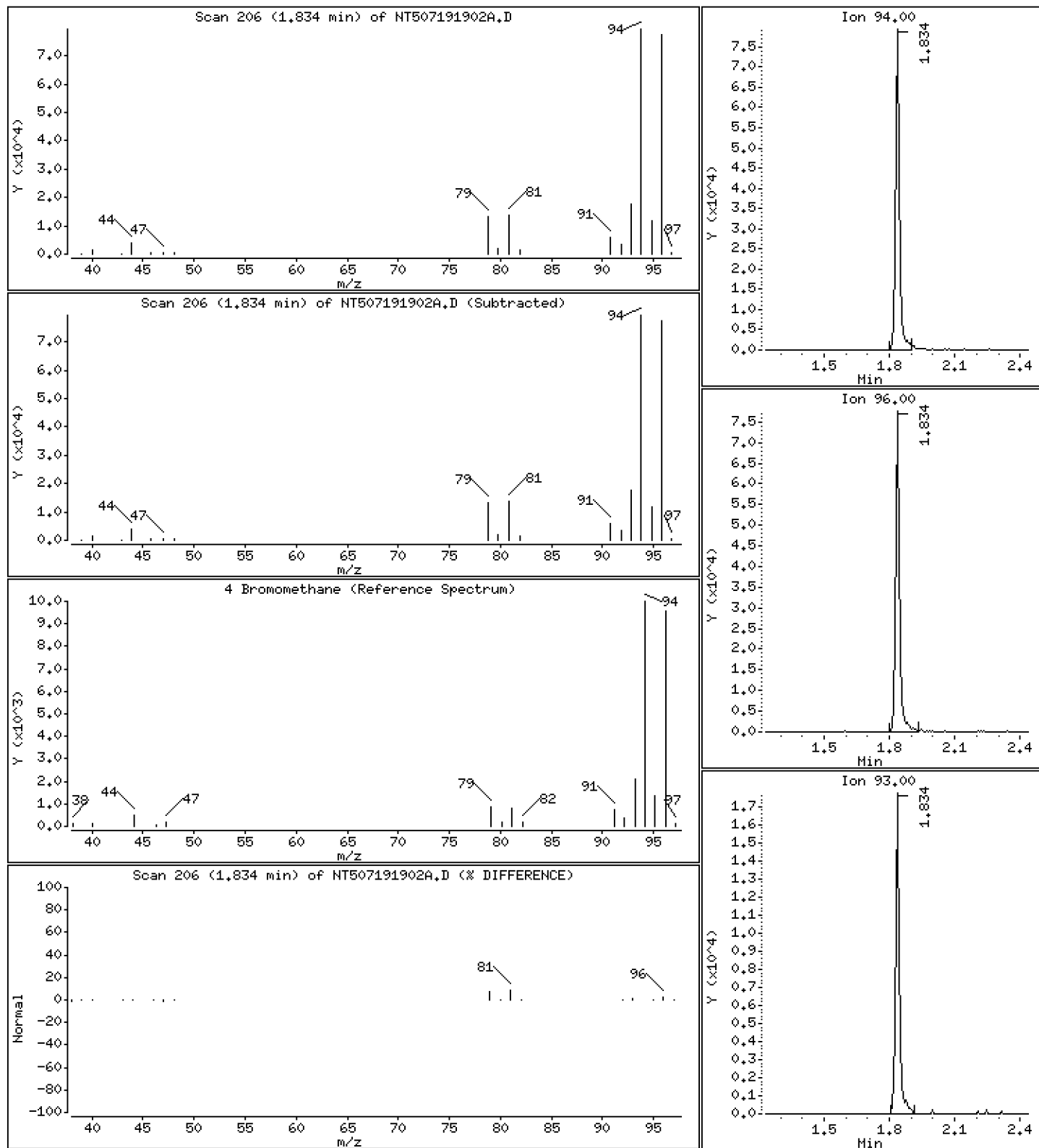
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 52,268 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

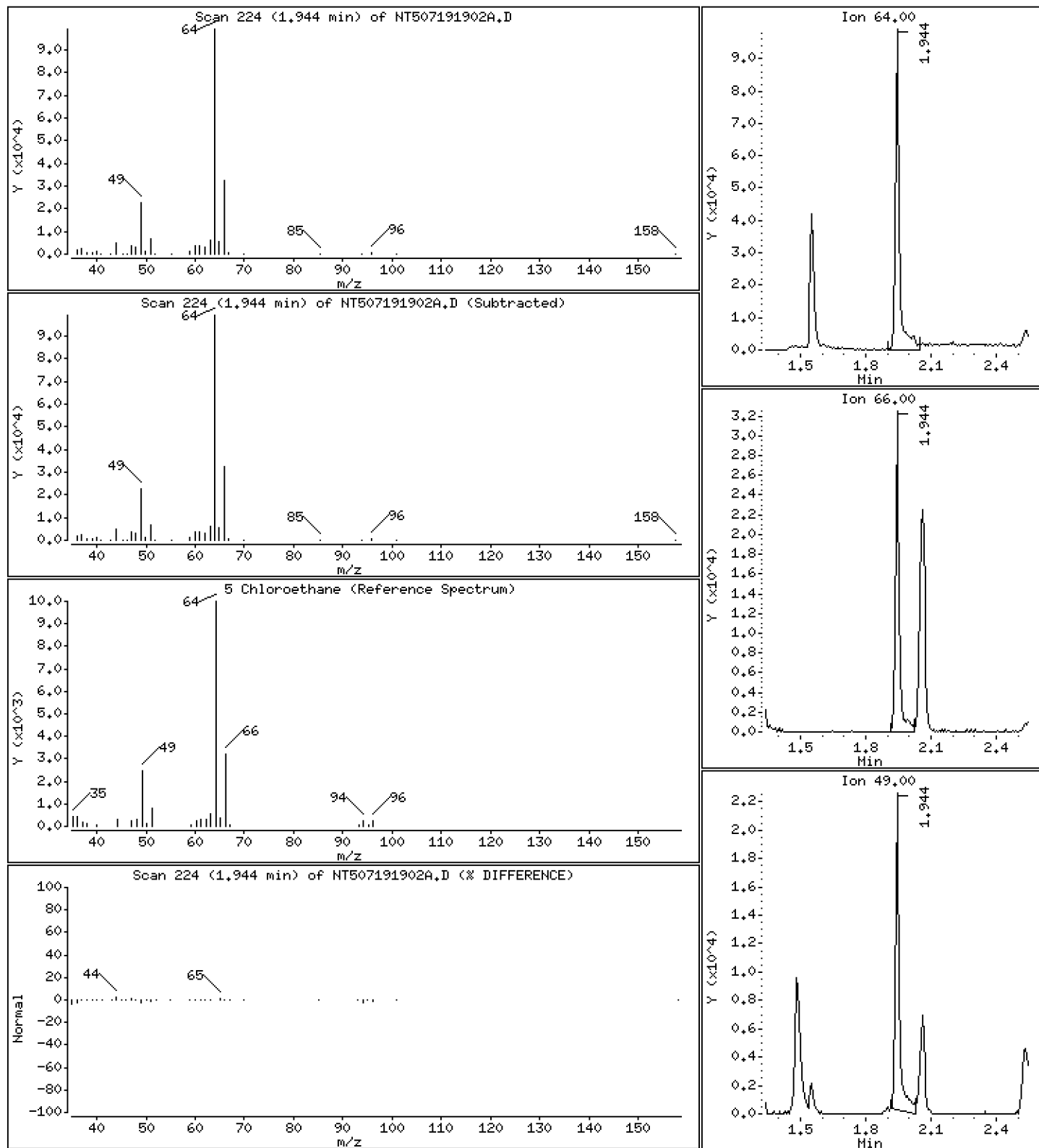
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 60,446 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

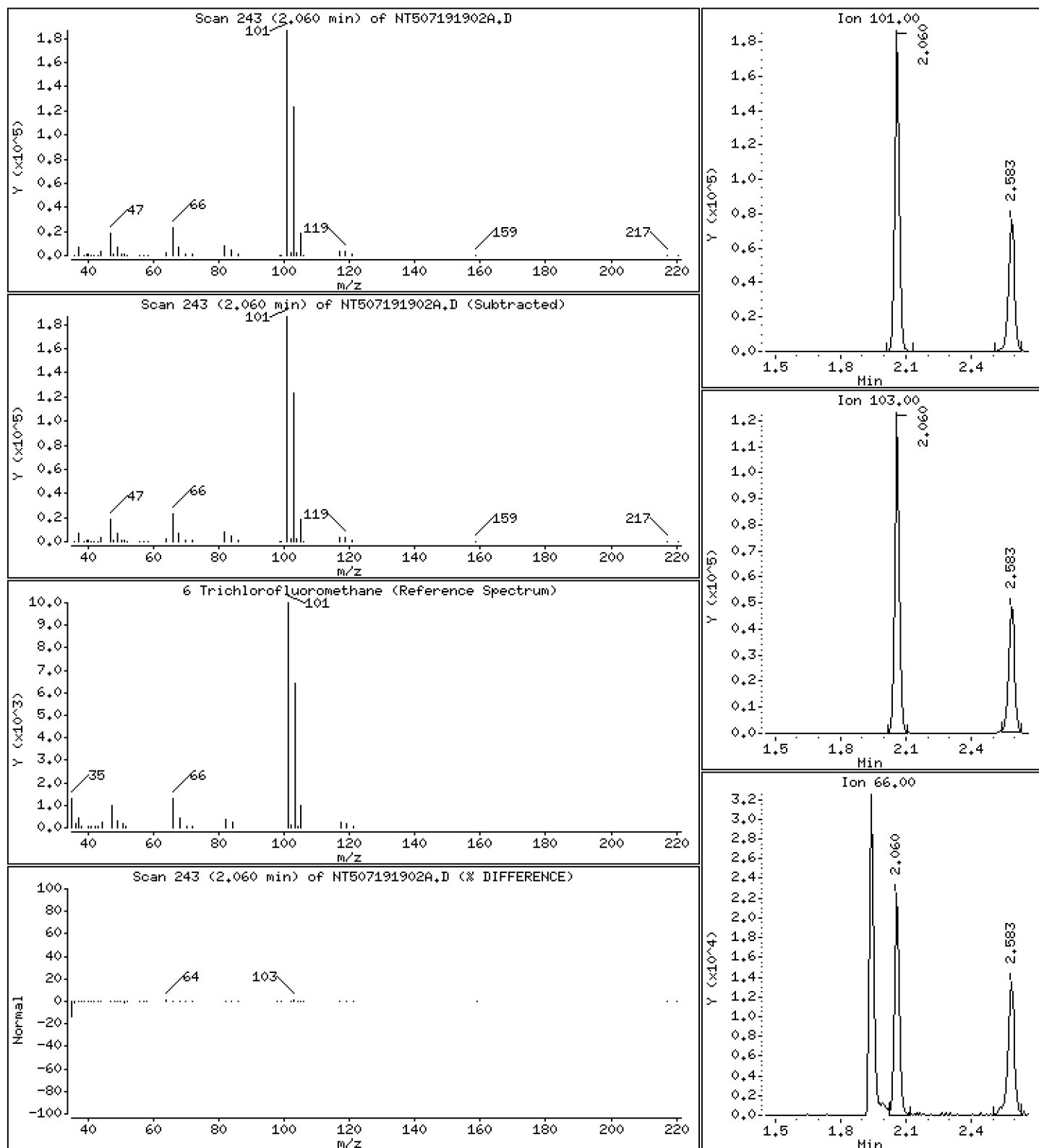
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 51.435 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

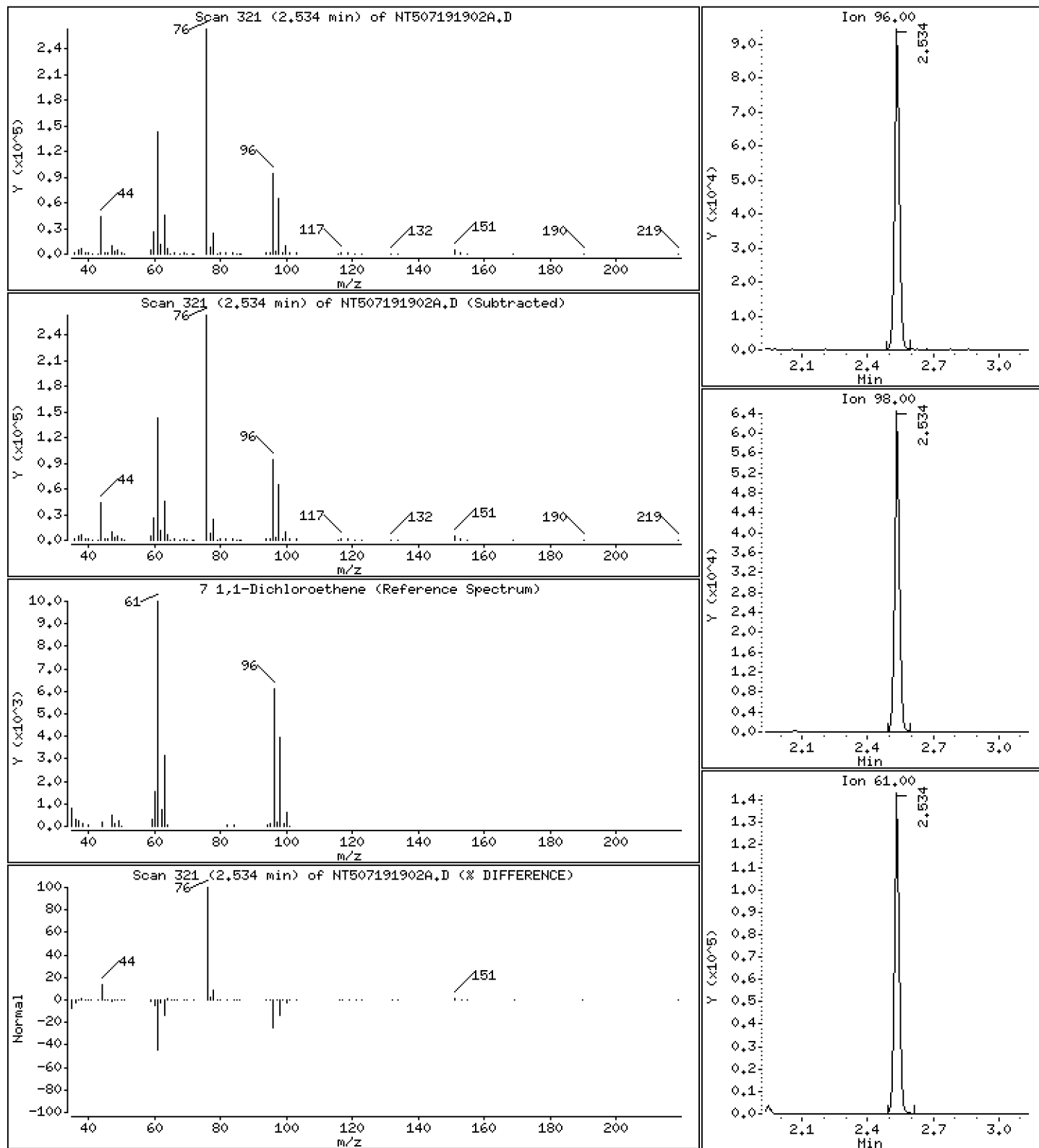
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 53.667 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

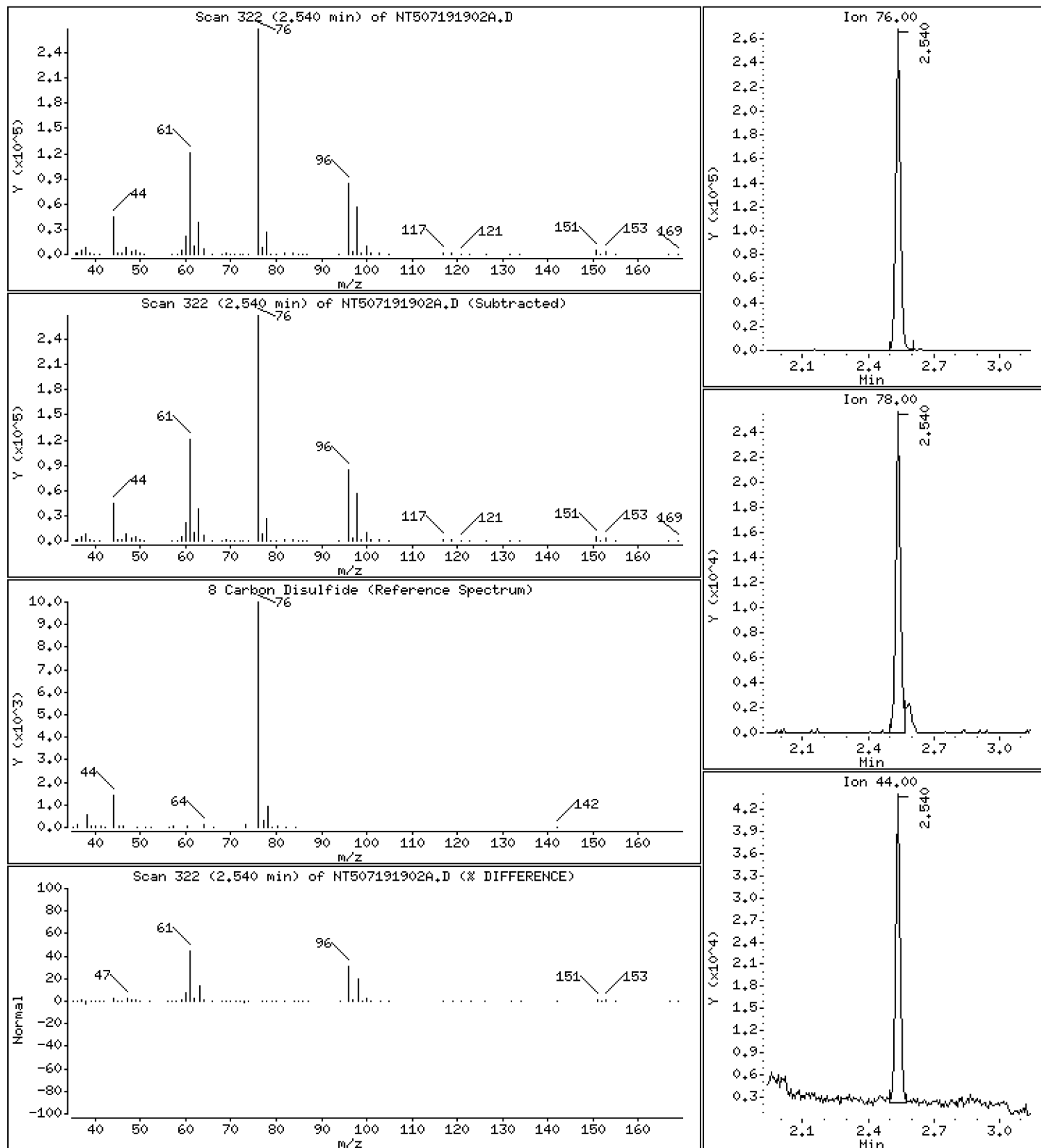
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 54,372 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

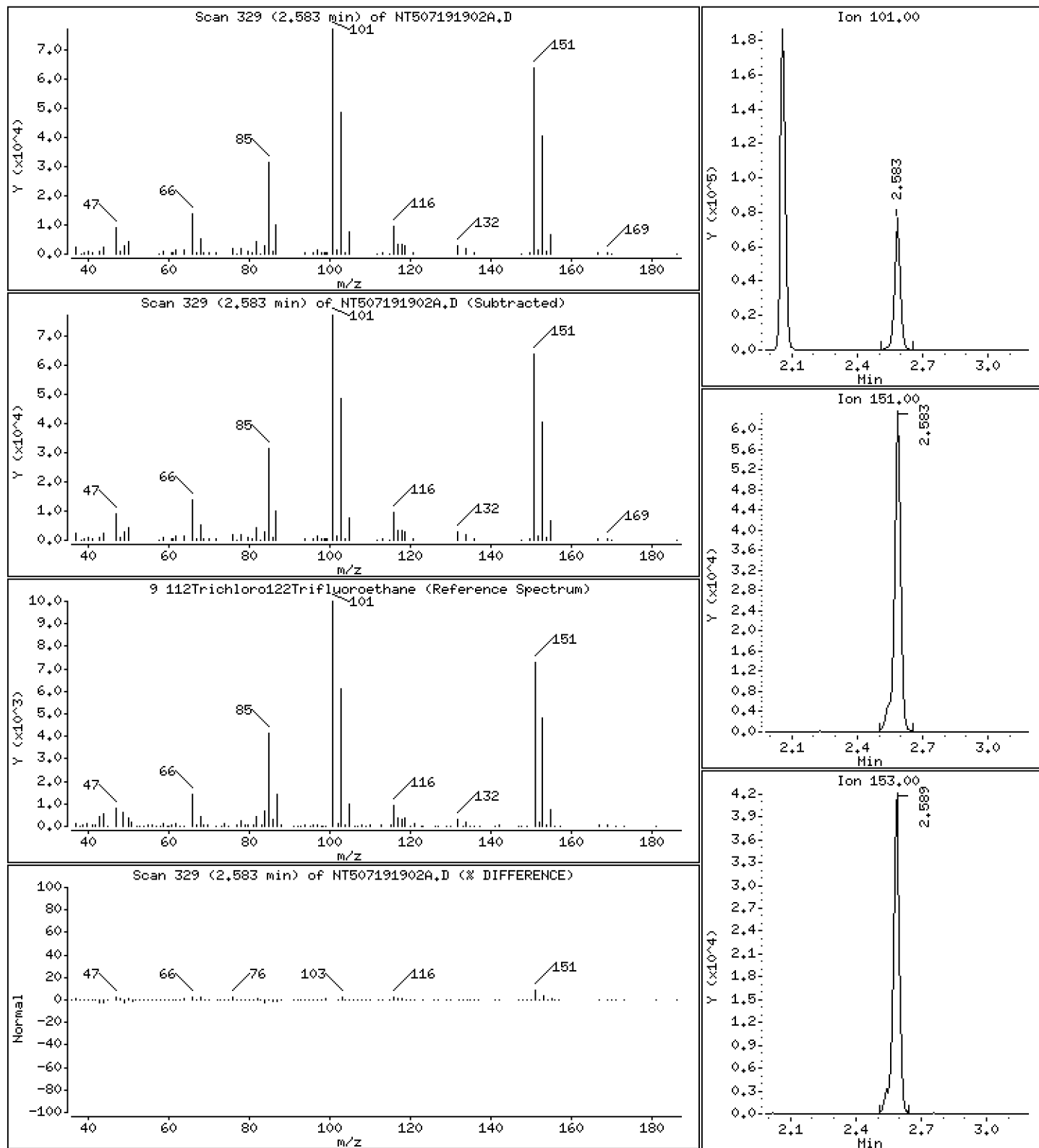
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 56,137 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

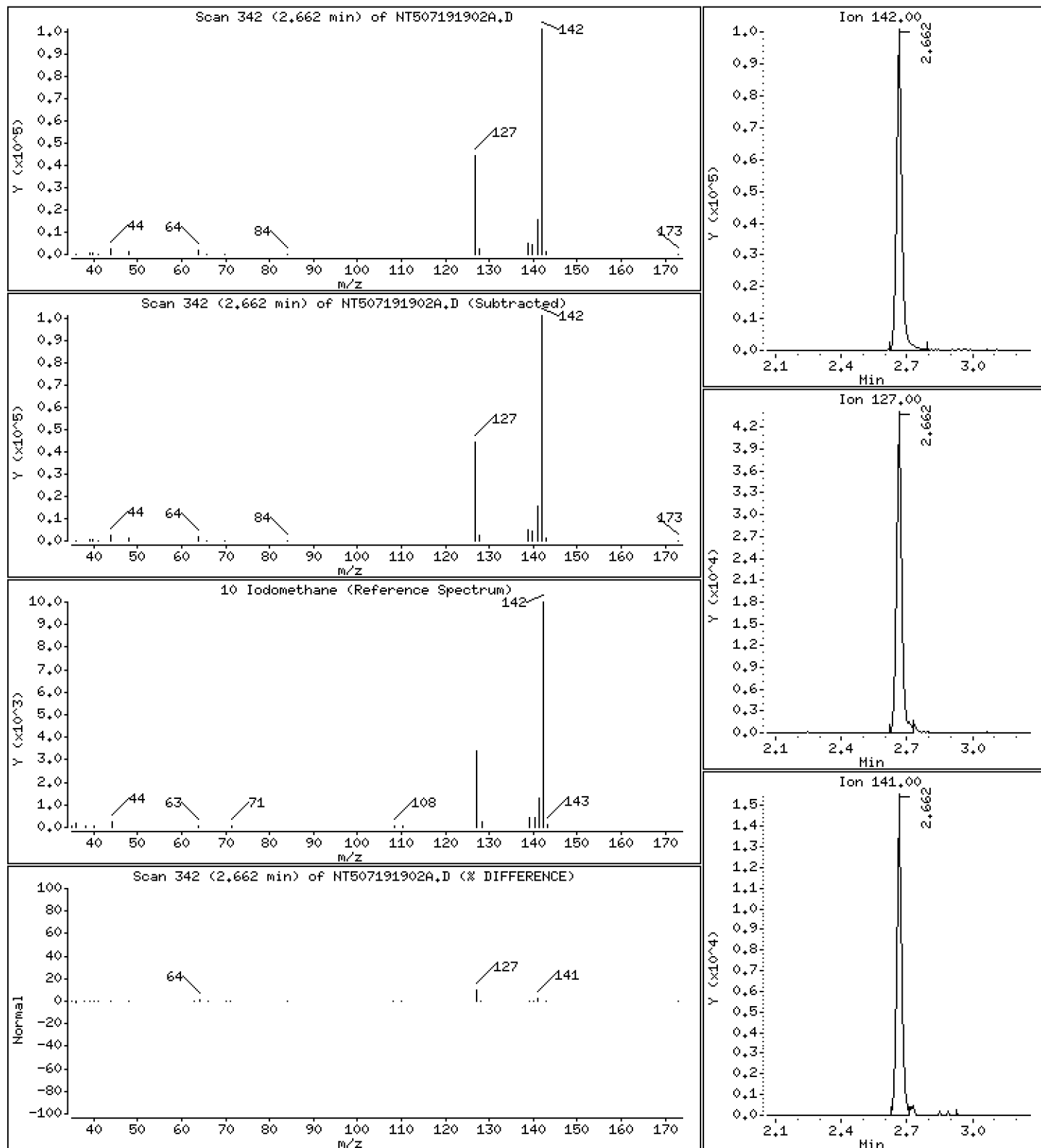
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 48,246 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

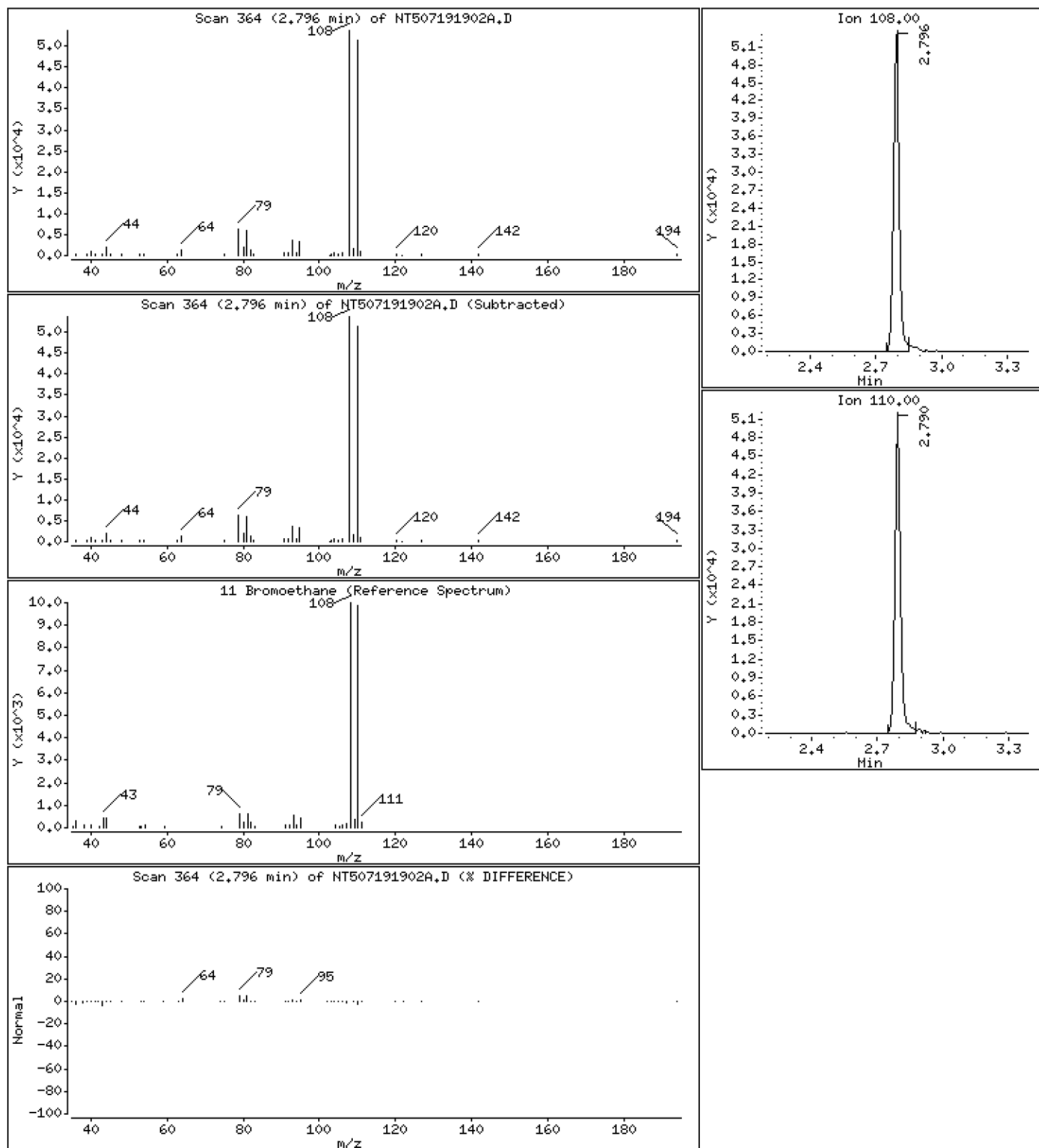
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 52,107 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

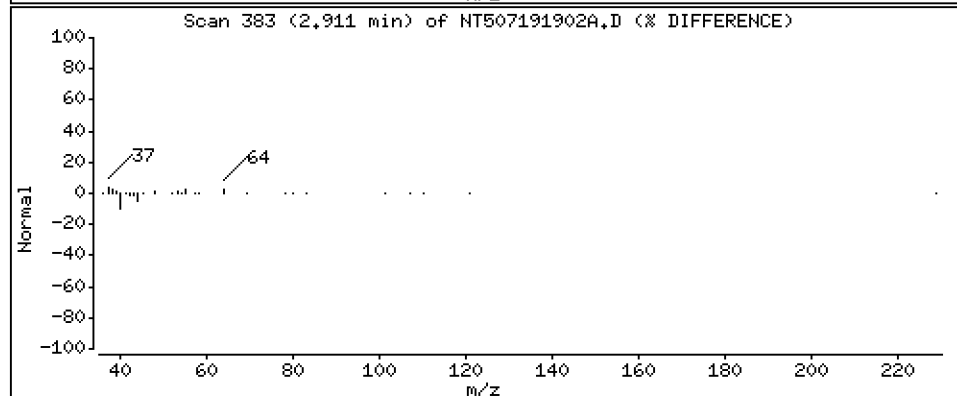
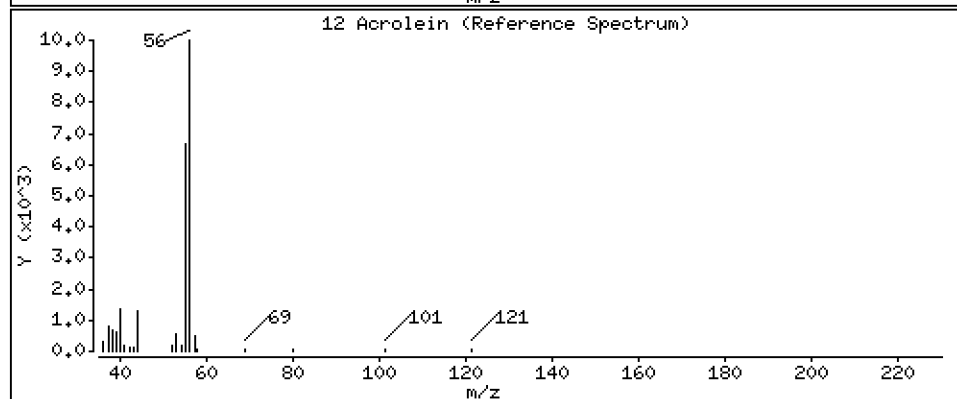
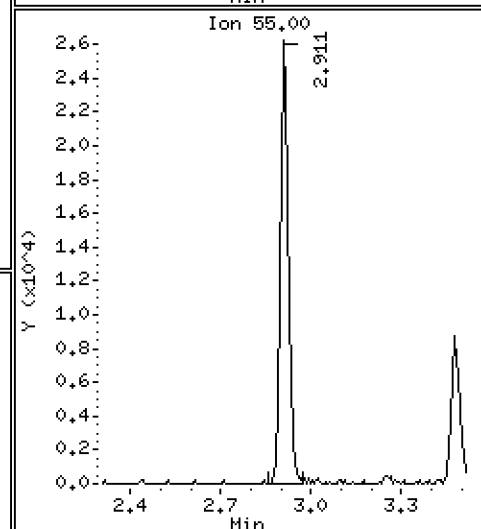
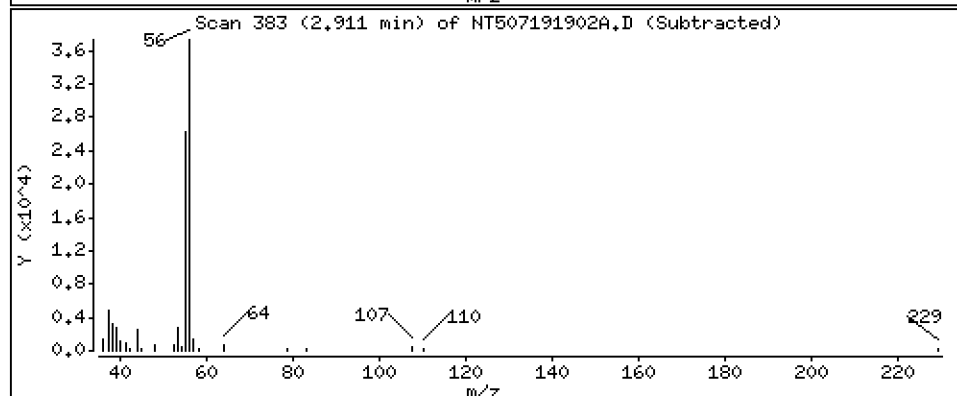
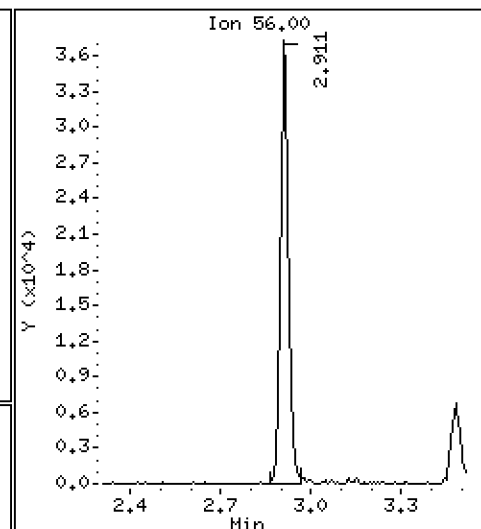
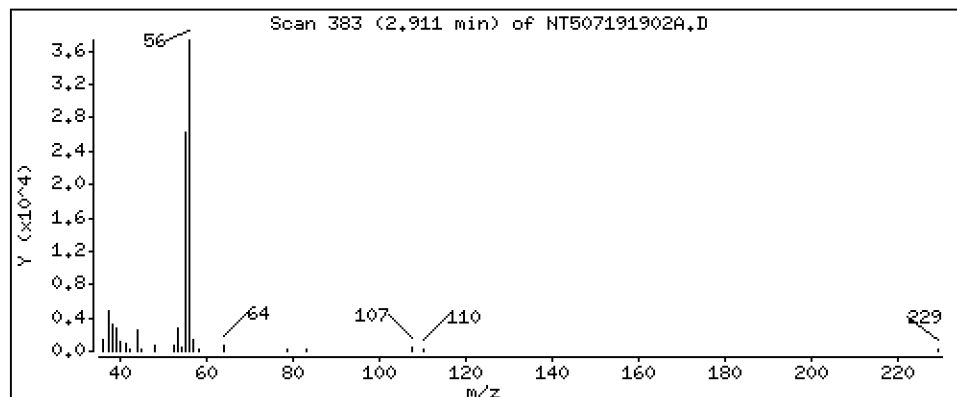
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 245.81 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

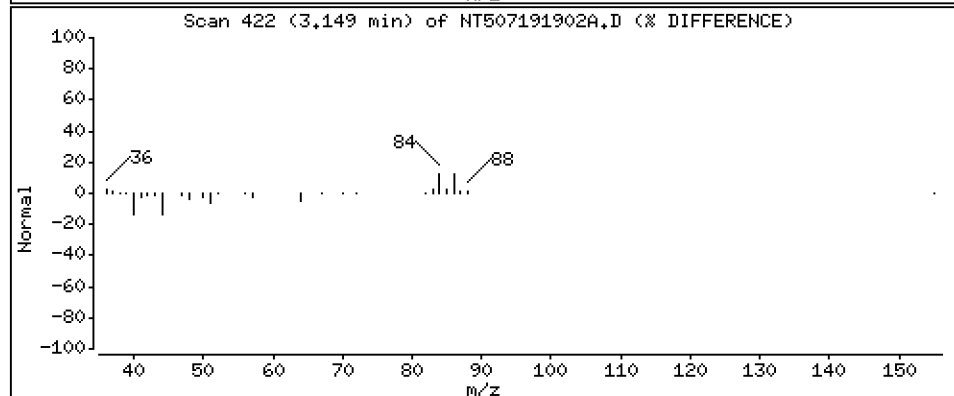
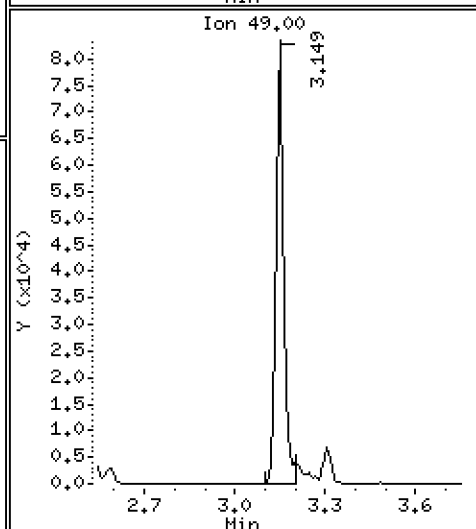
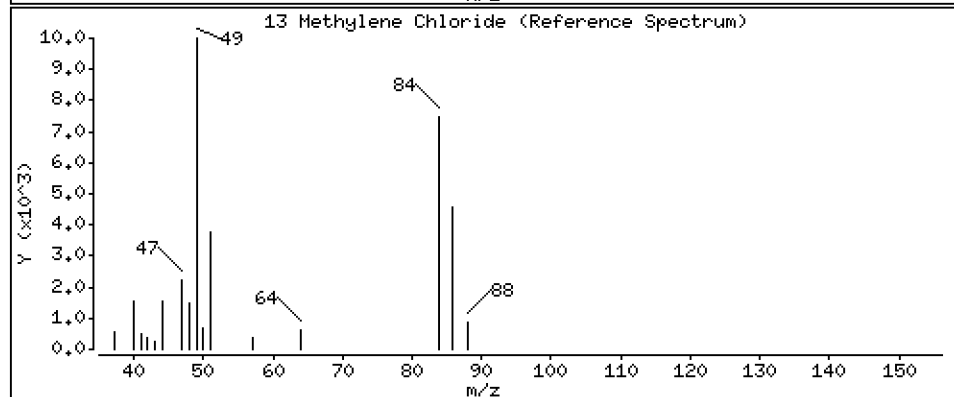
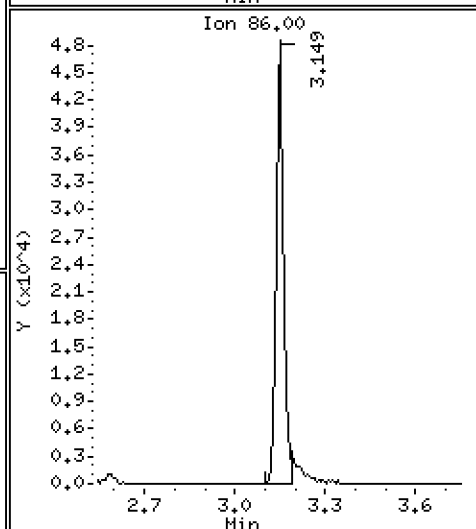
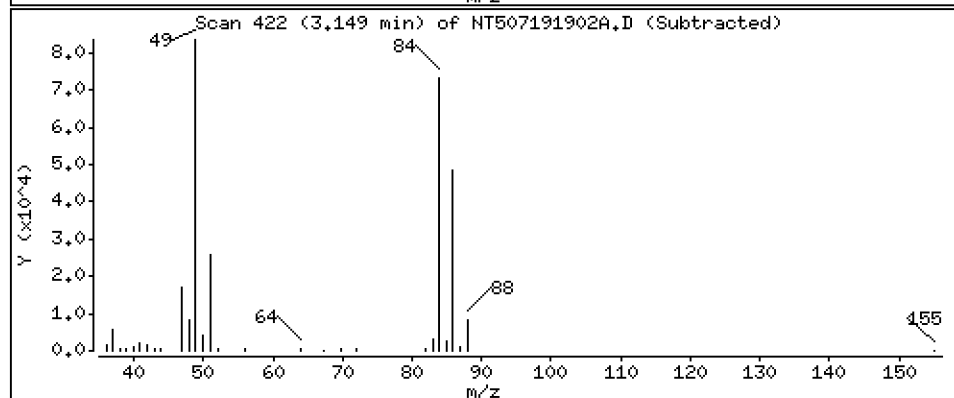
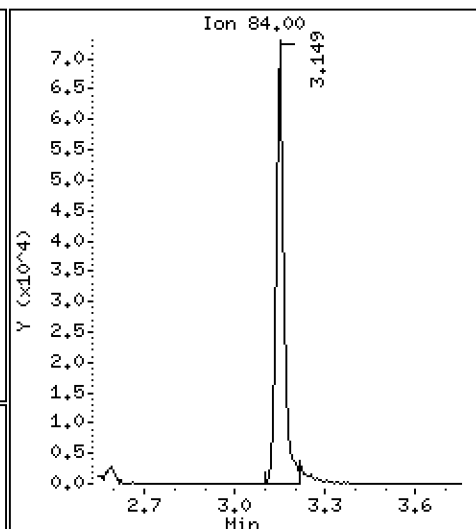
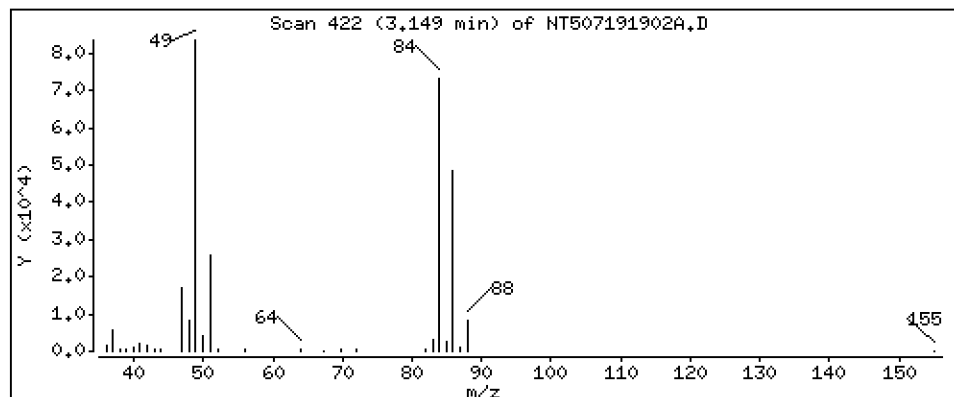
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 48,220 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

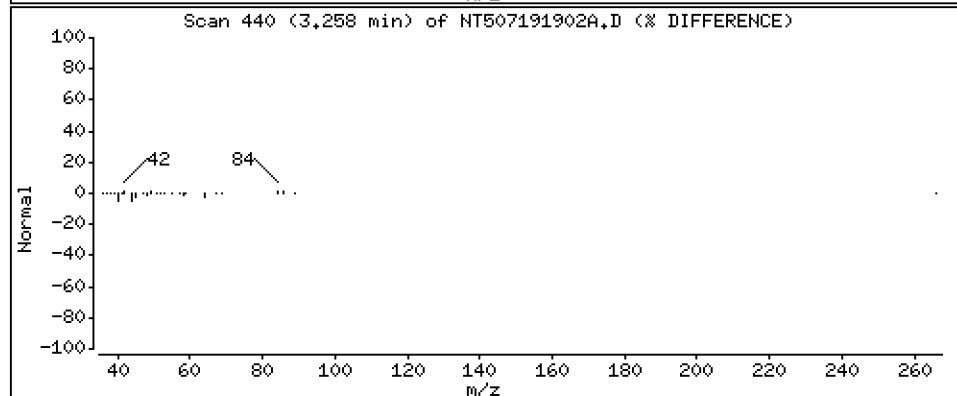
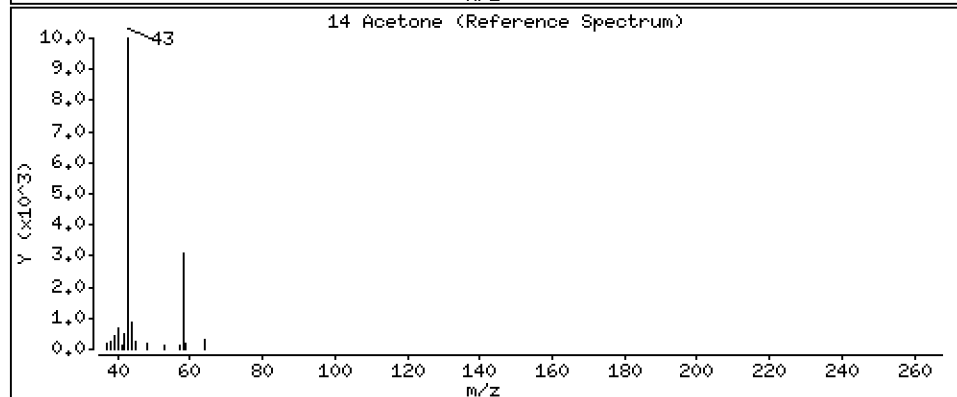
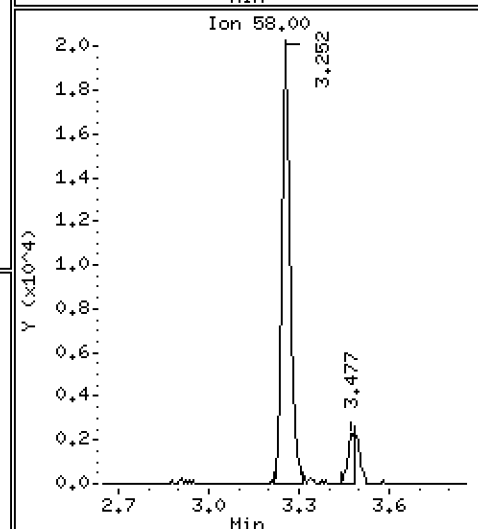
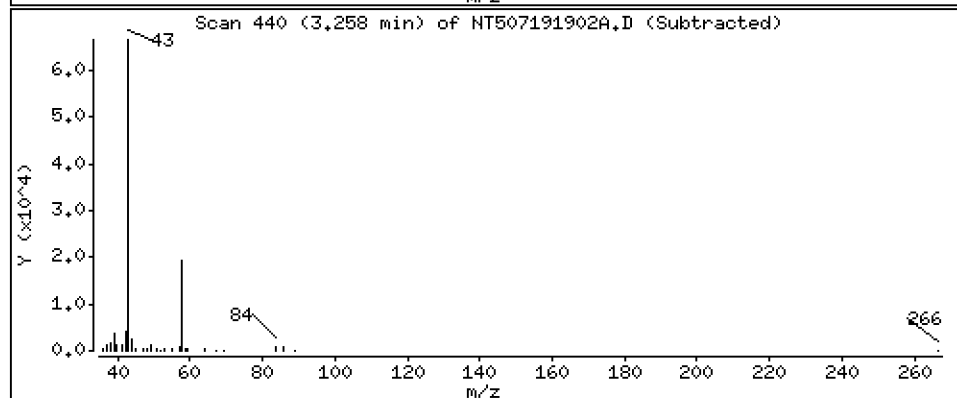
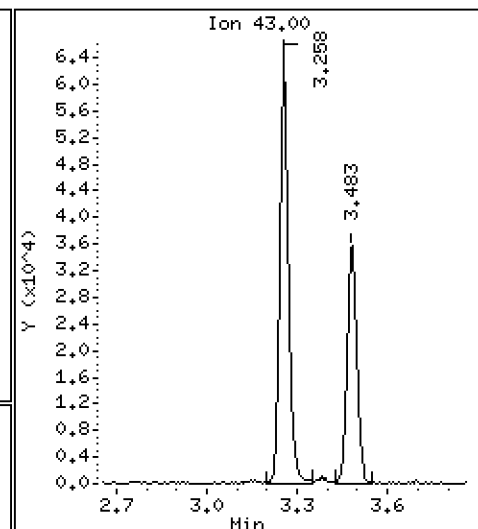
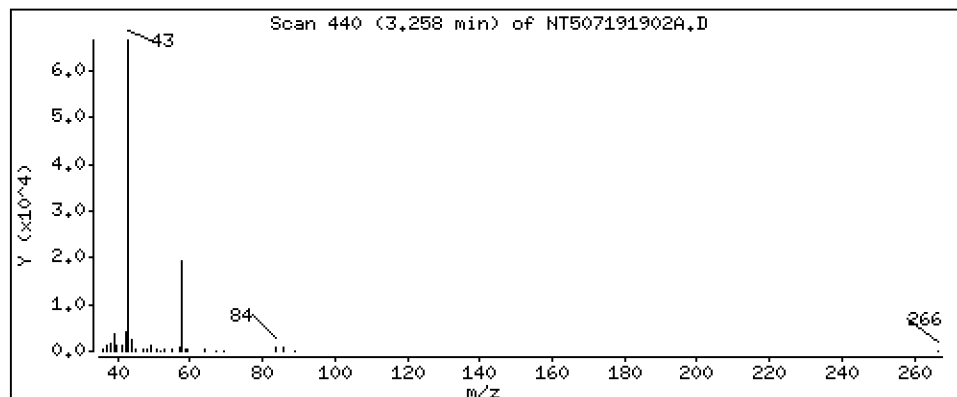
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 261.57 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

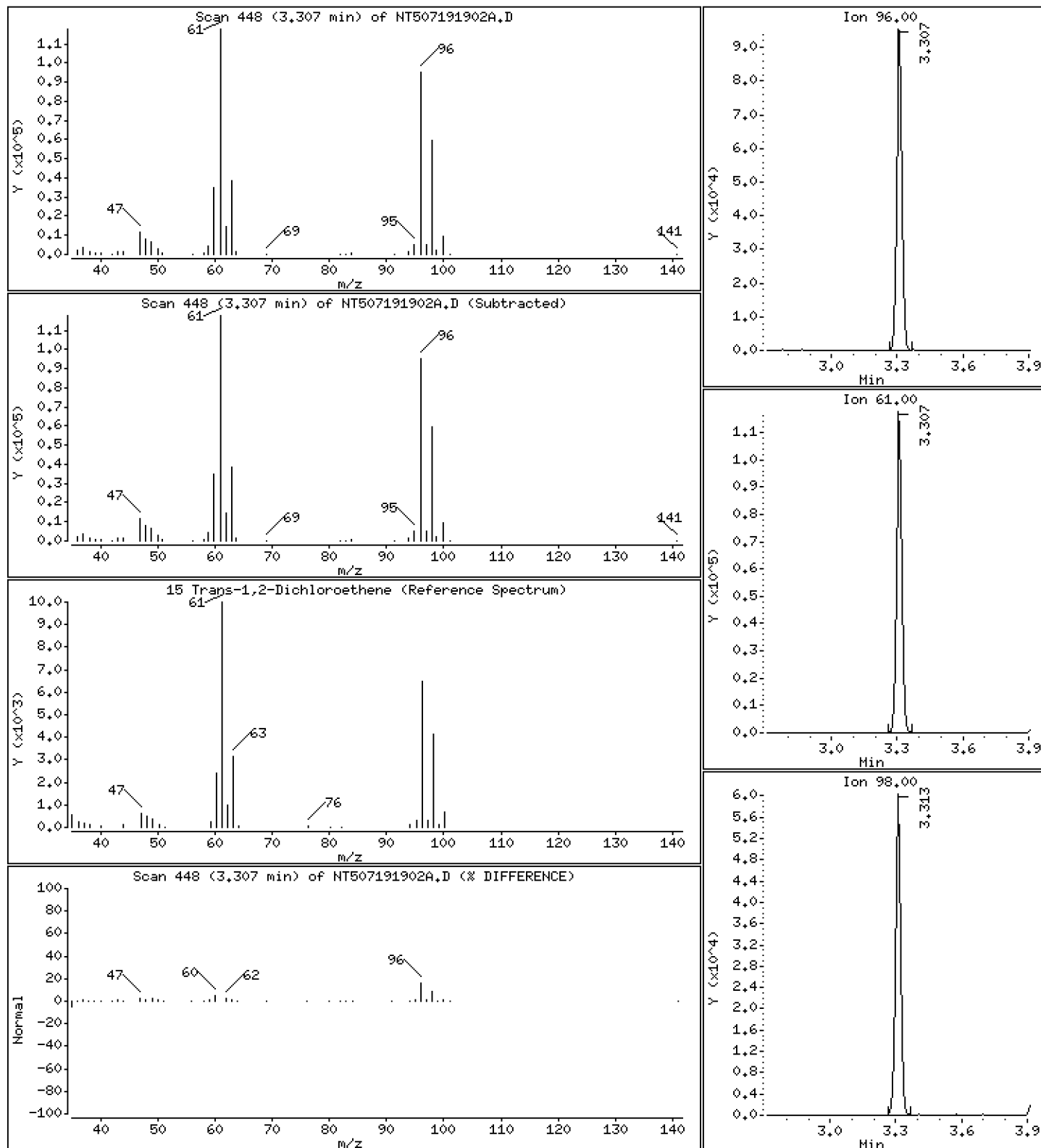
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 53,815 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

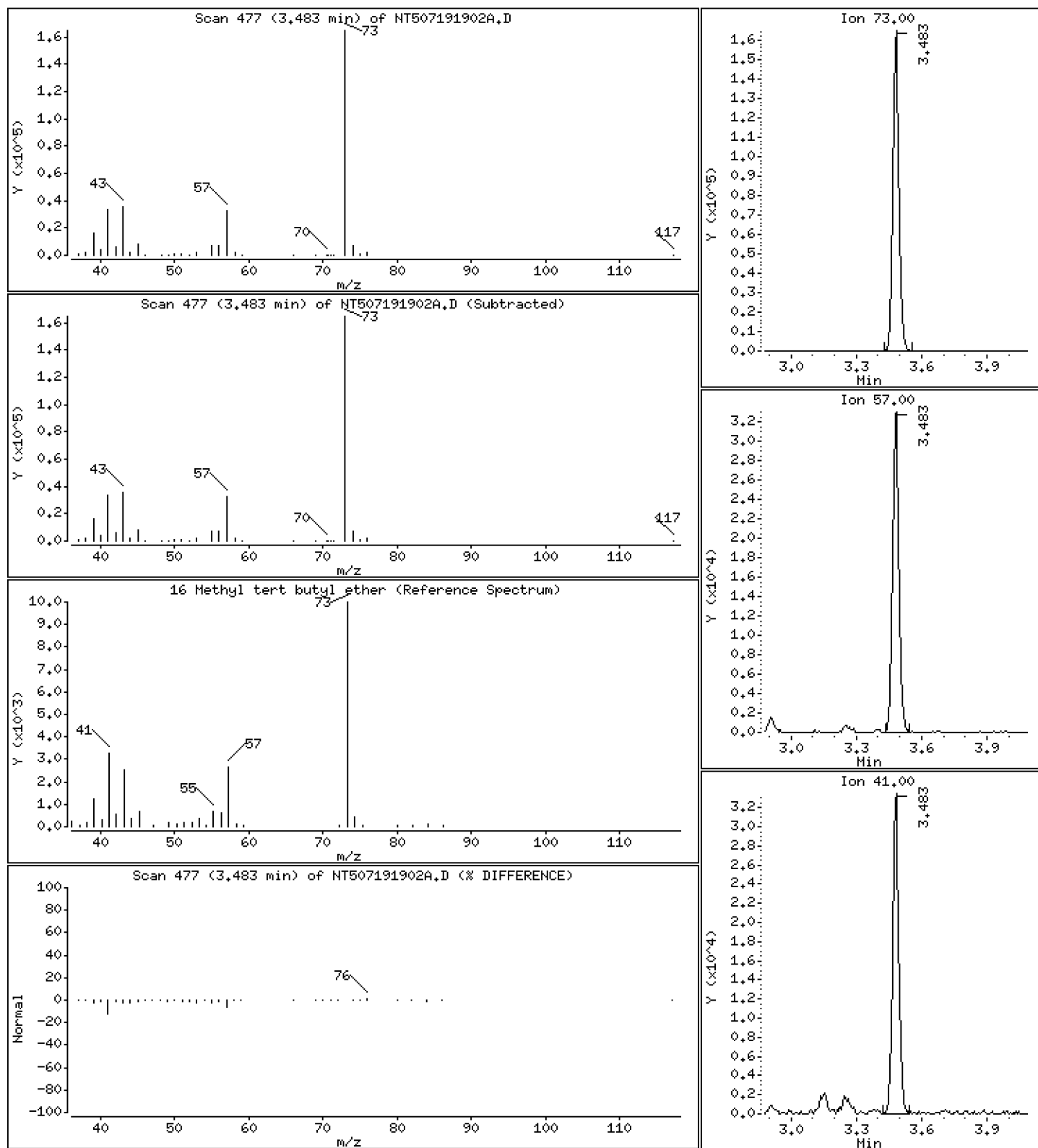
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 49,164 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

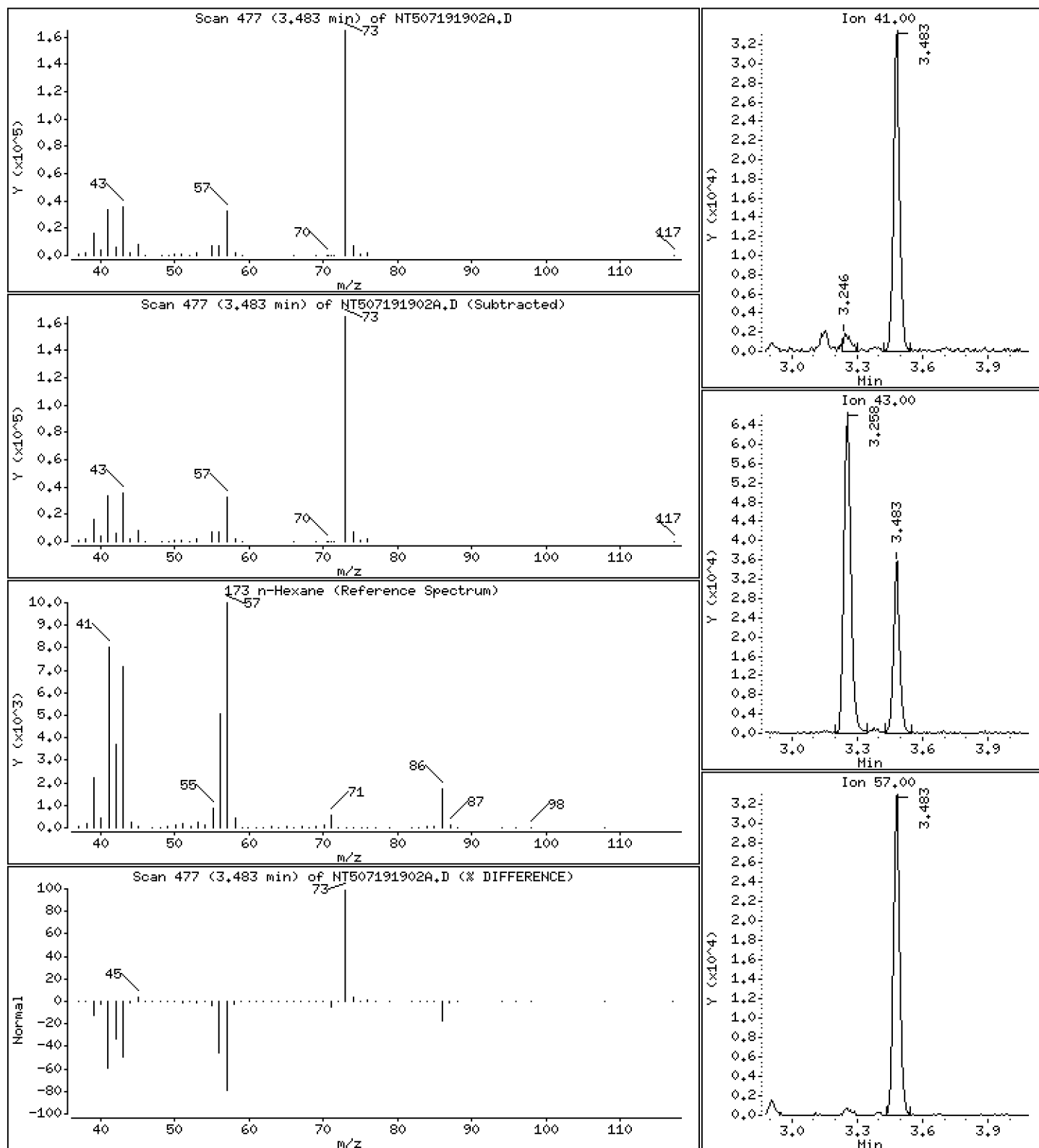
Sample Info: ICV1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

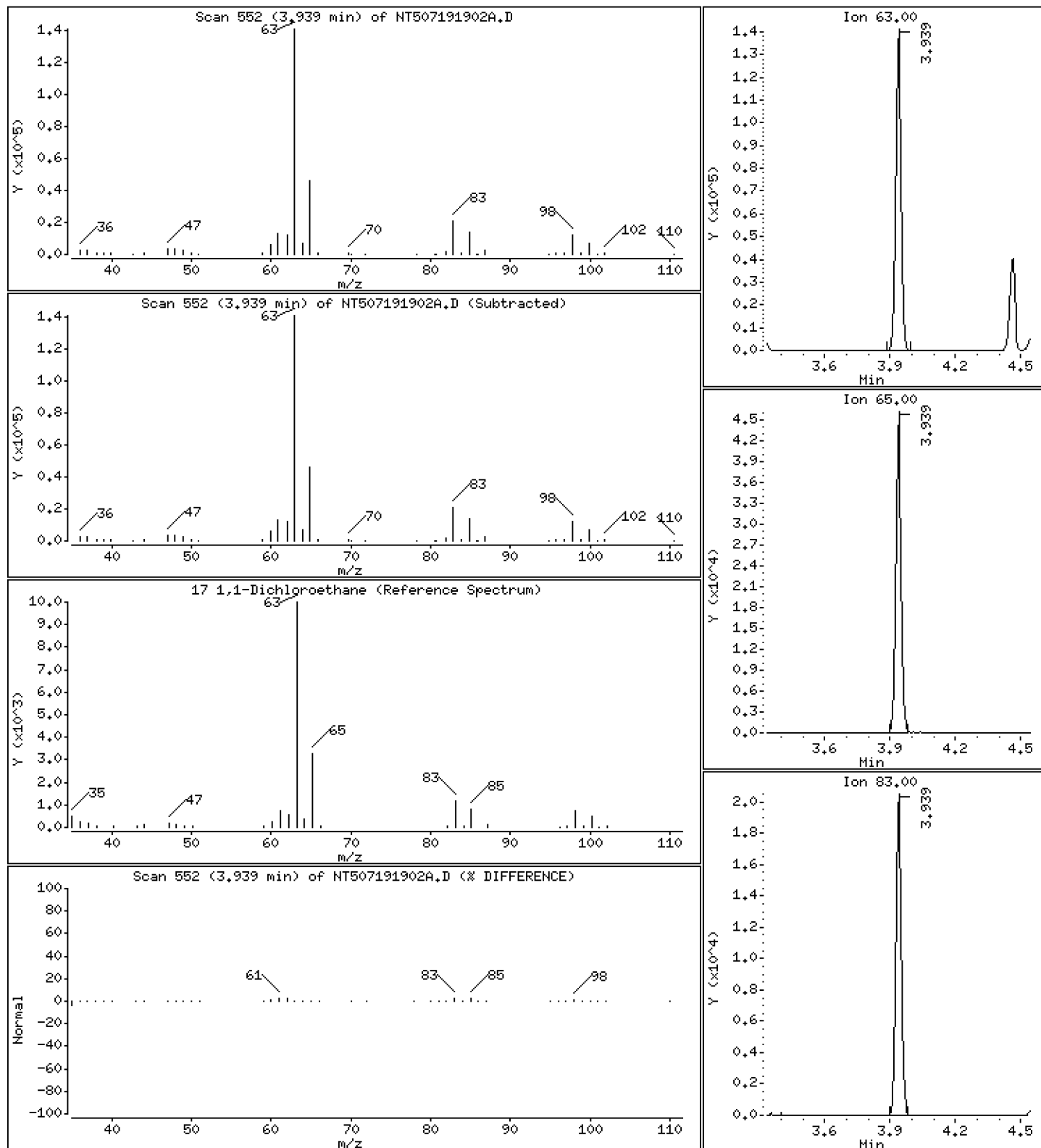
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 53,674 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

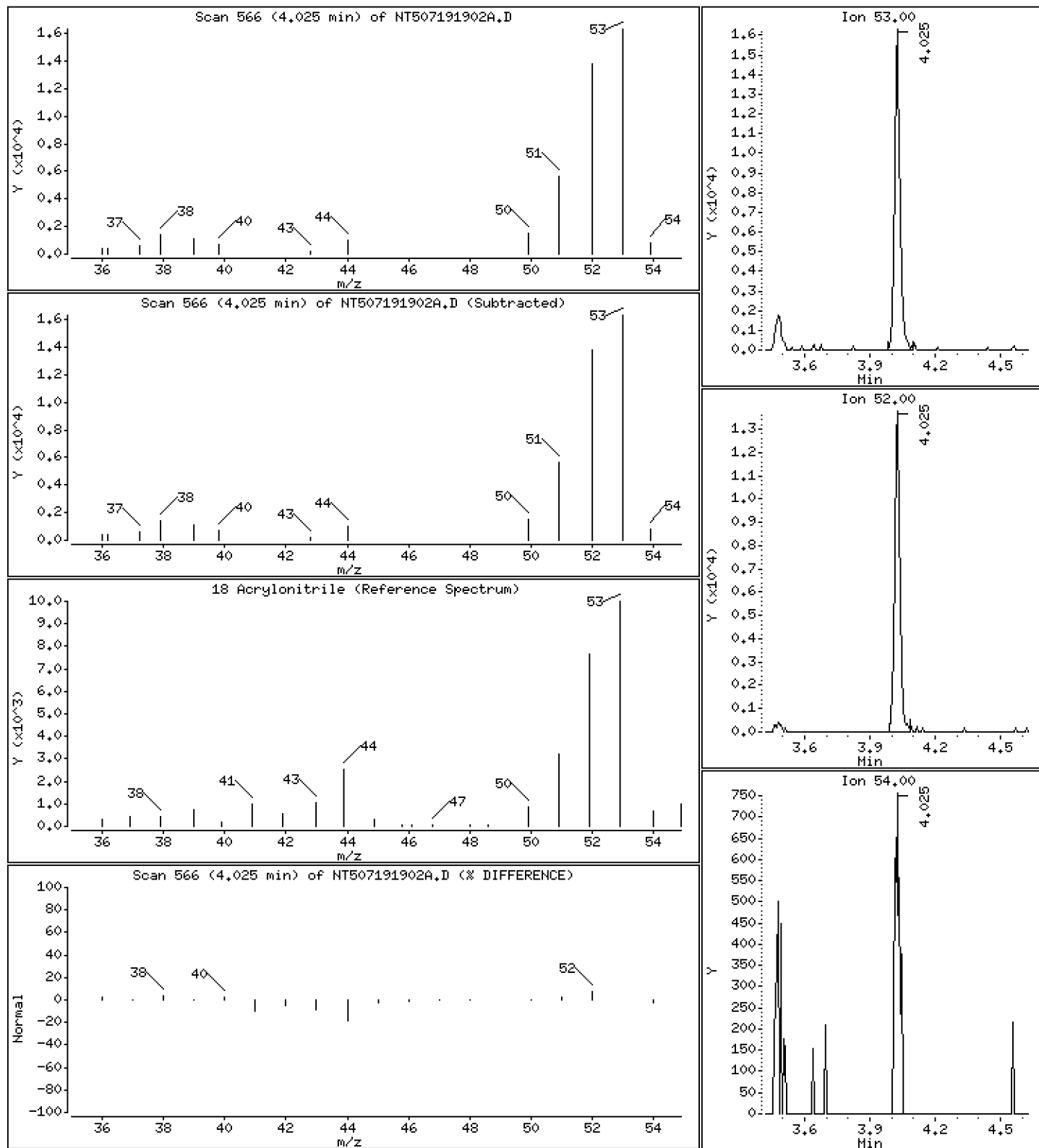
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 48,227 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

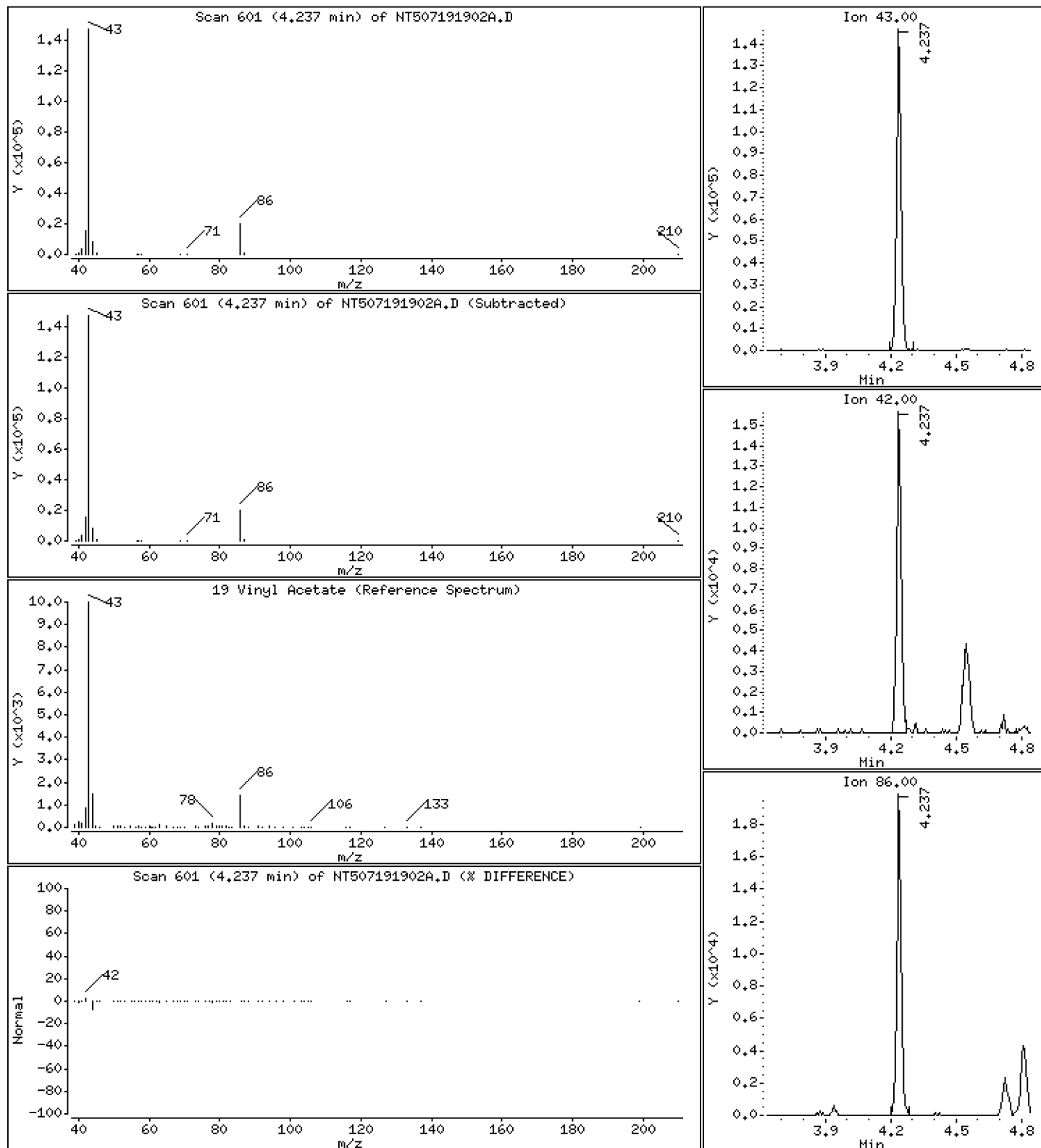
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 53,782 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

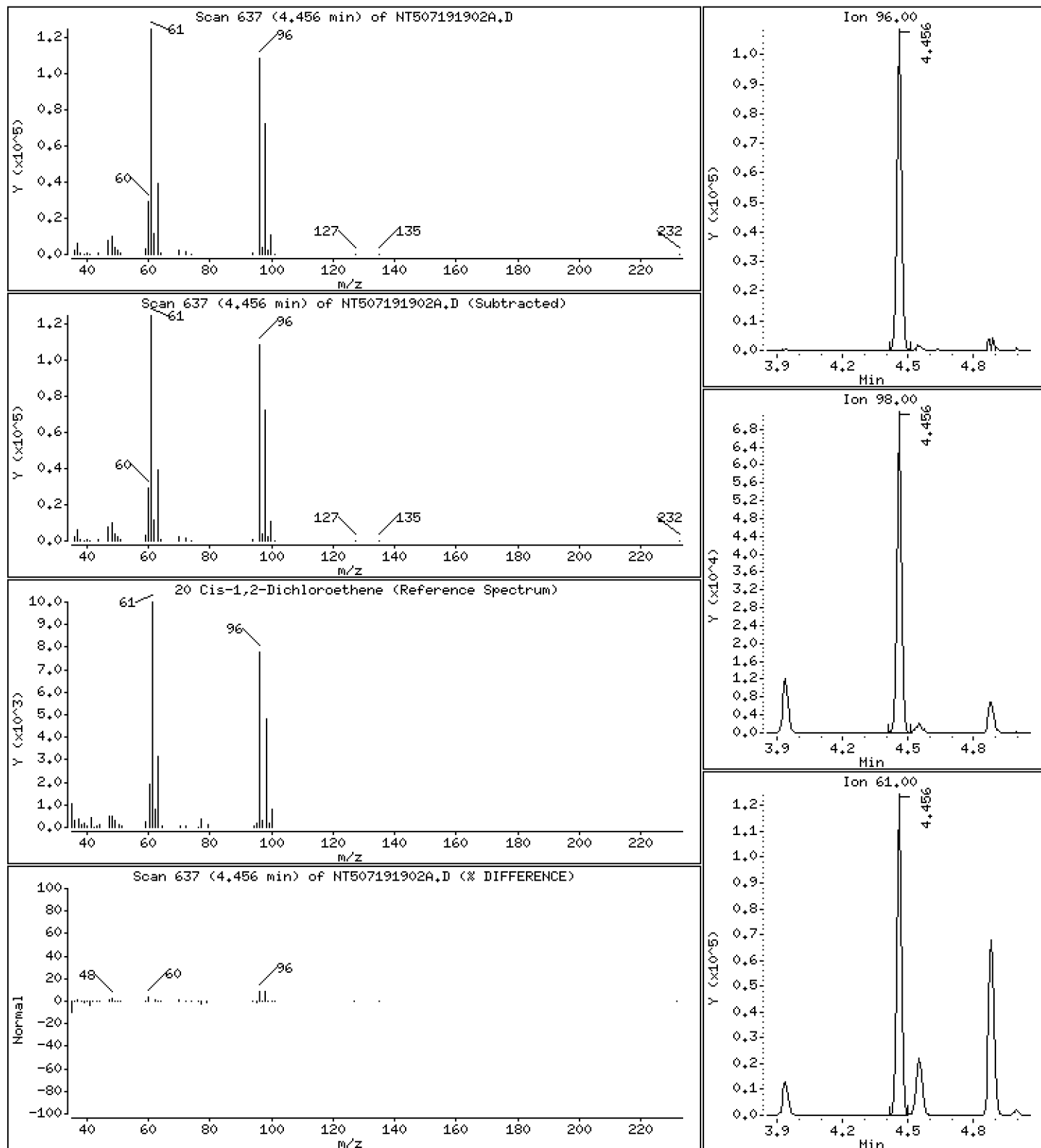
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 55,315 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

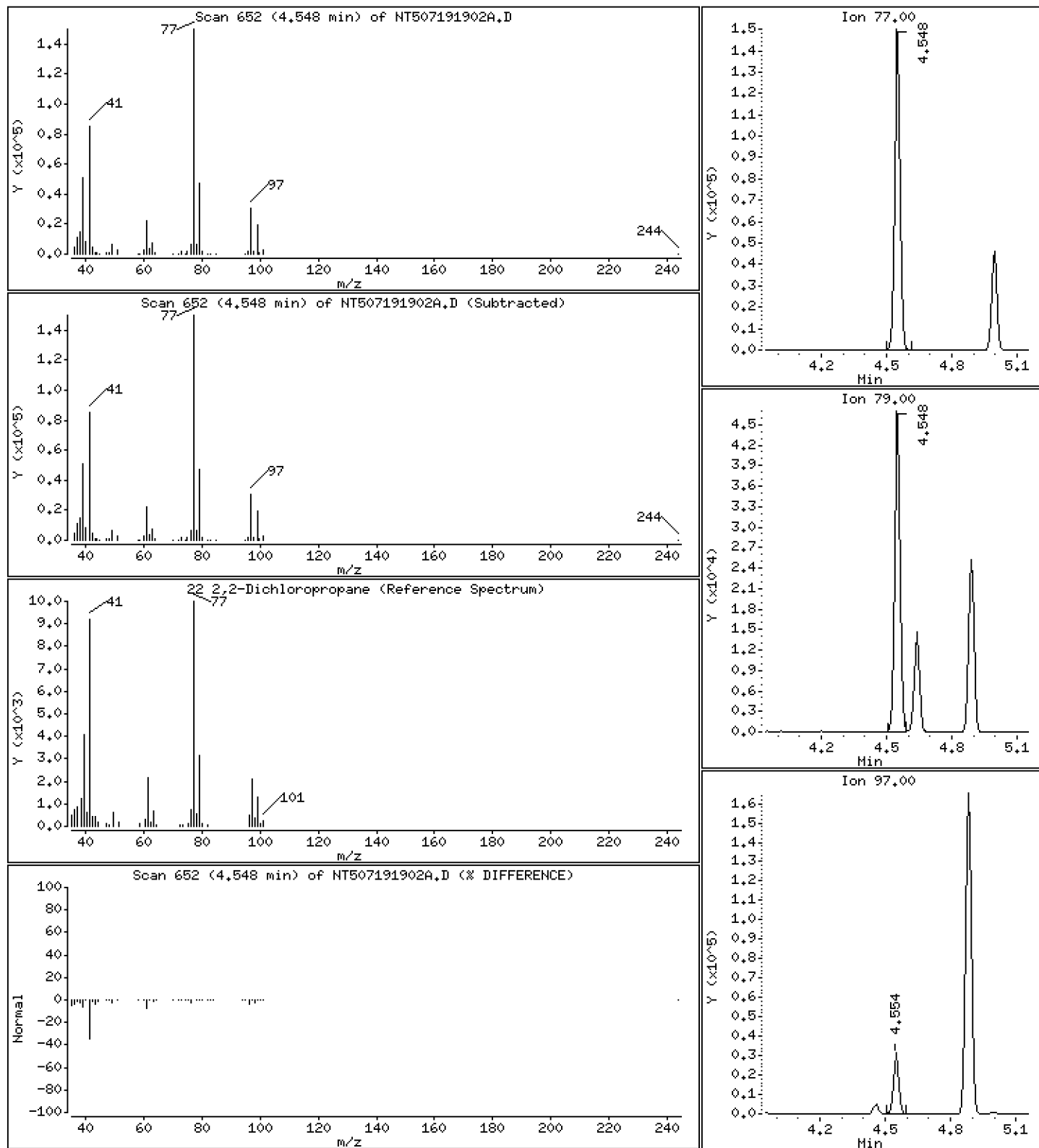
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22 2,2-Dichloropropane

Concentration: 59,850 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

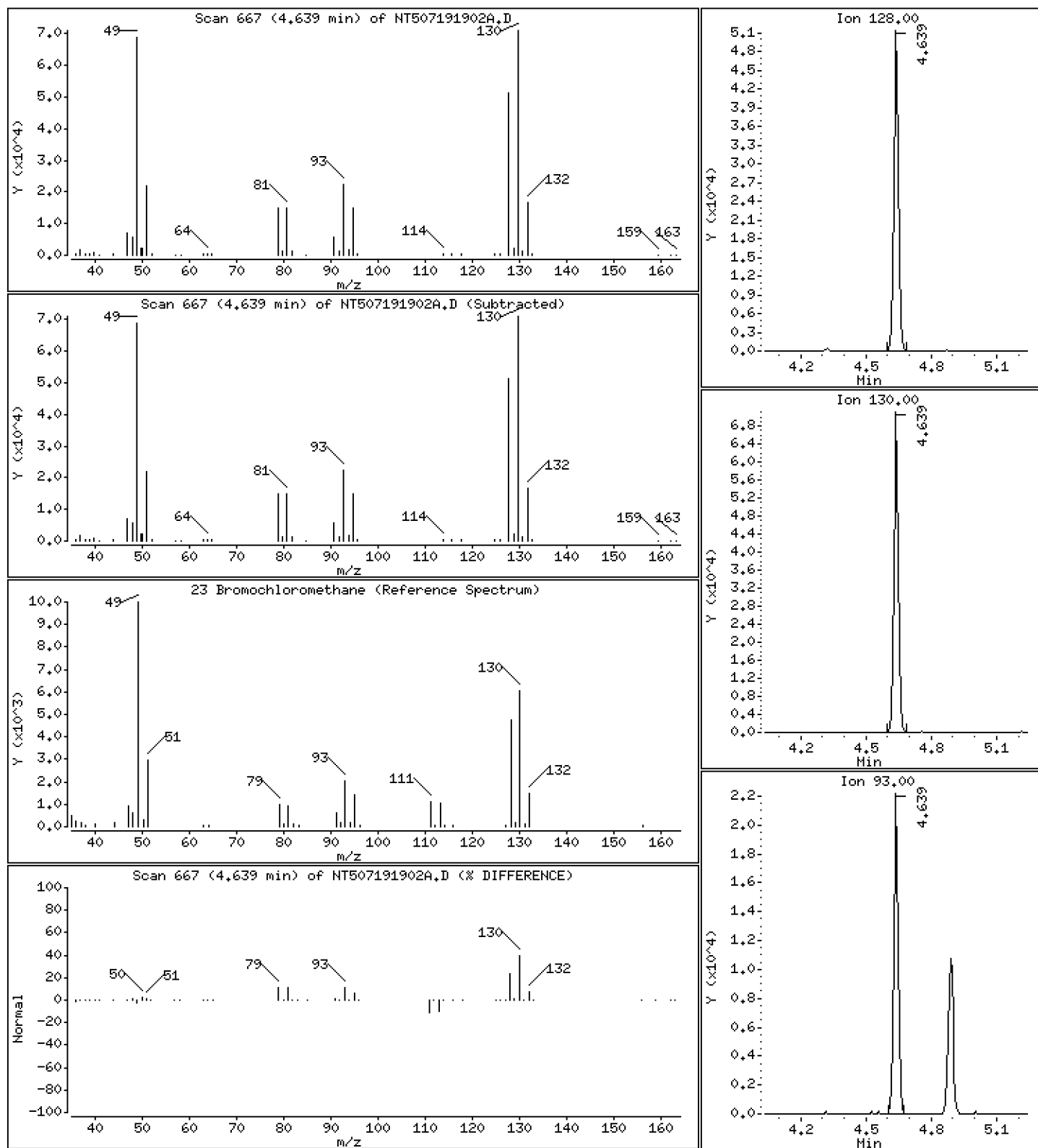
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

23 Bromochloromethane

Concentration: 51.413 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

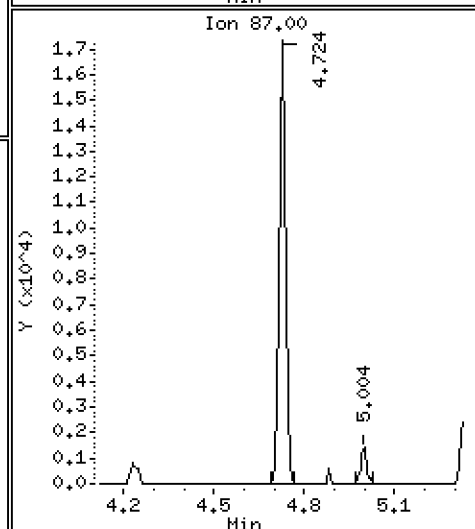
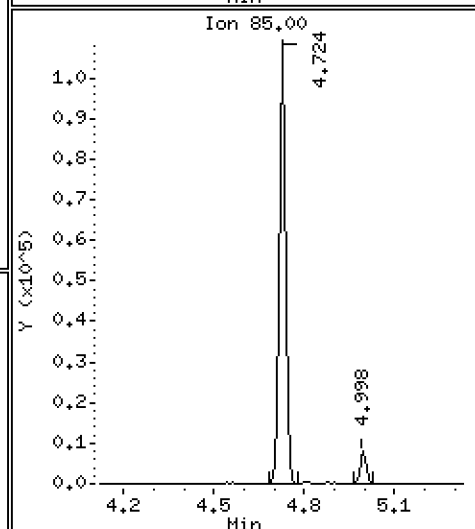
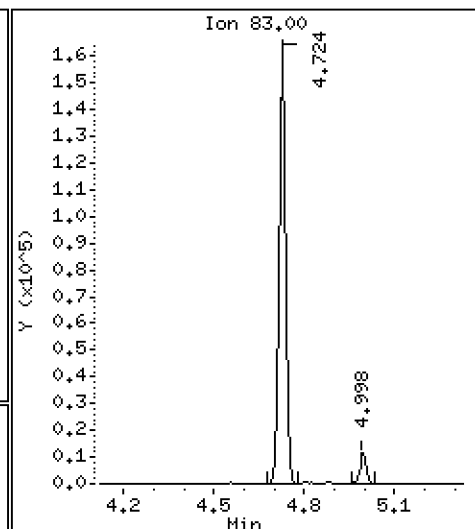
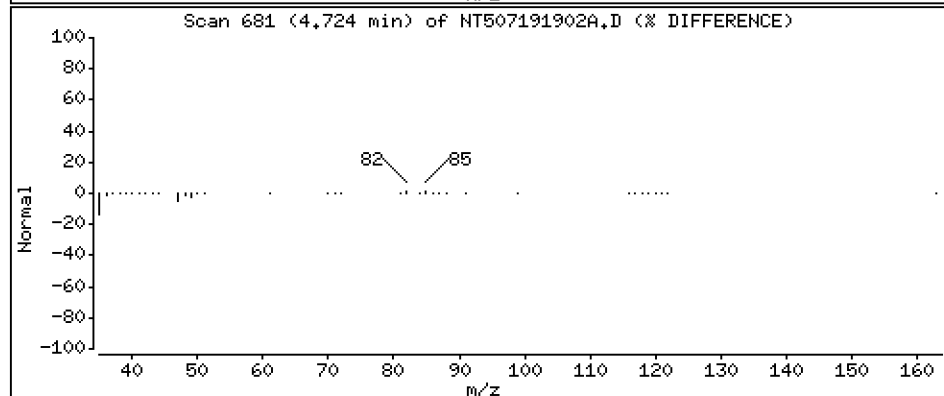
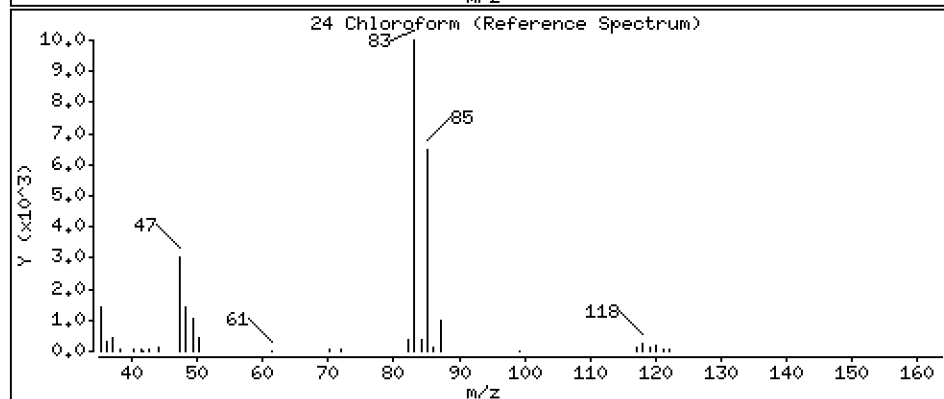
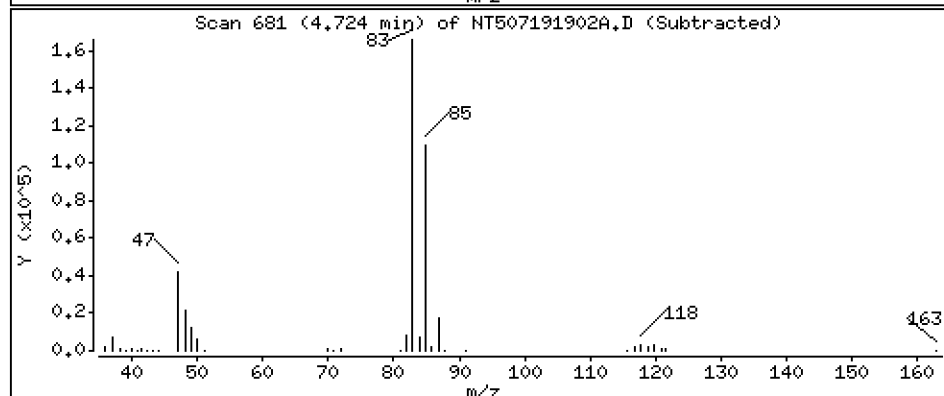
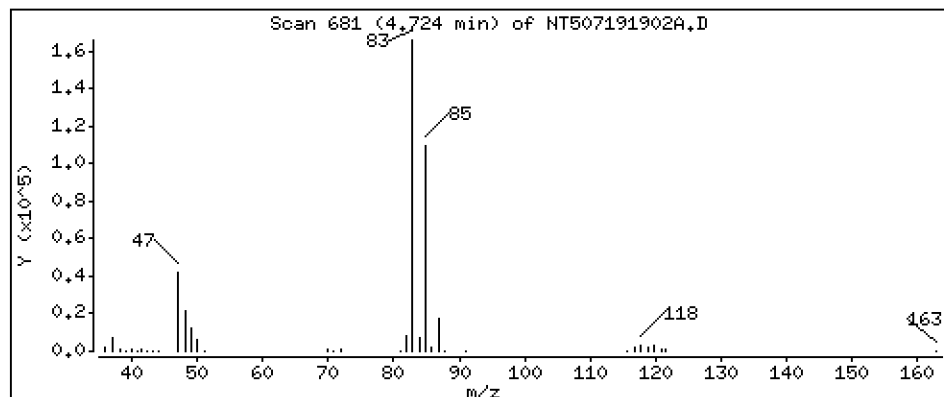
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 55.061 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

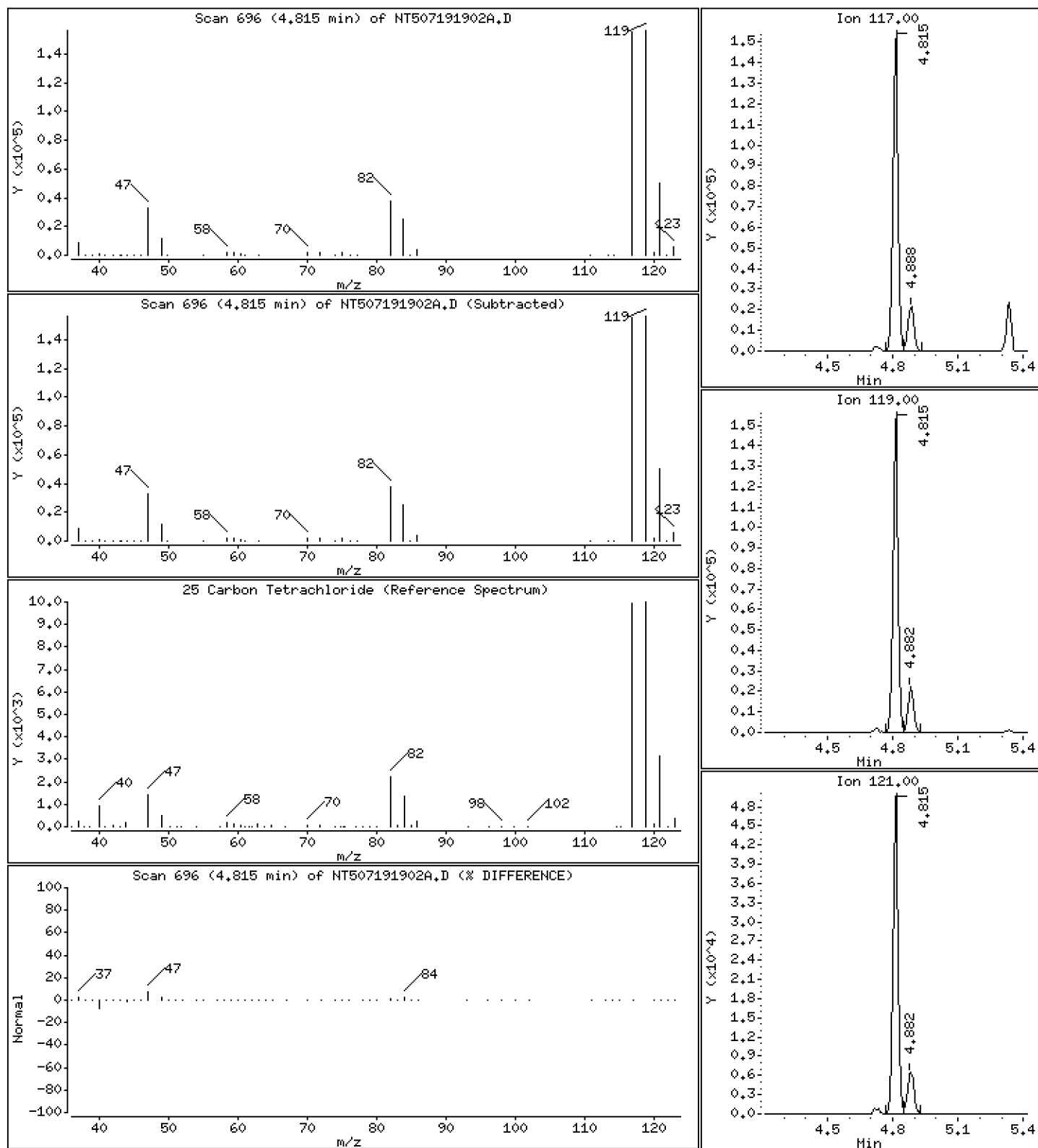
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 53,174 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

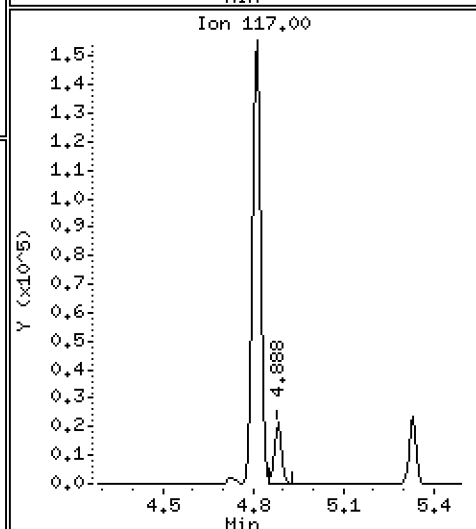
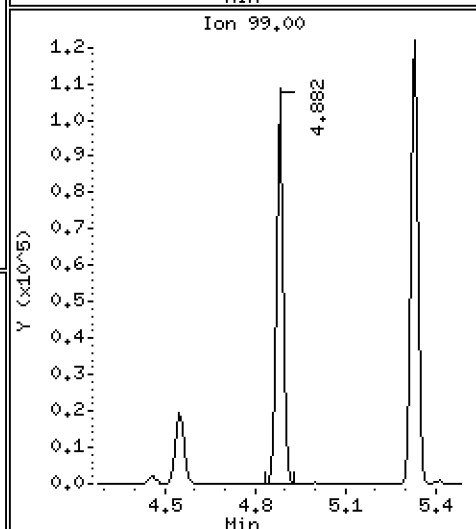
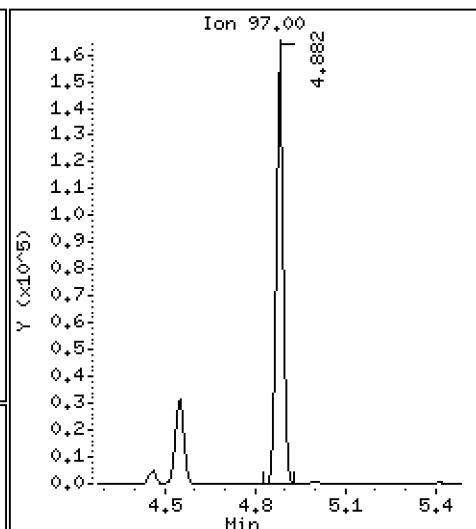
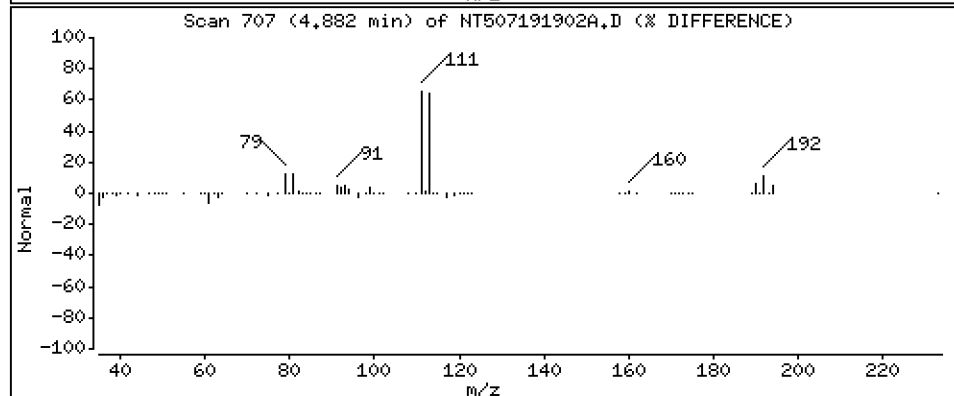
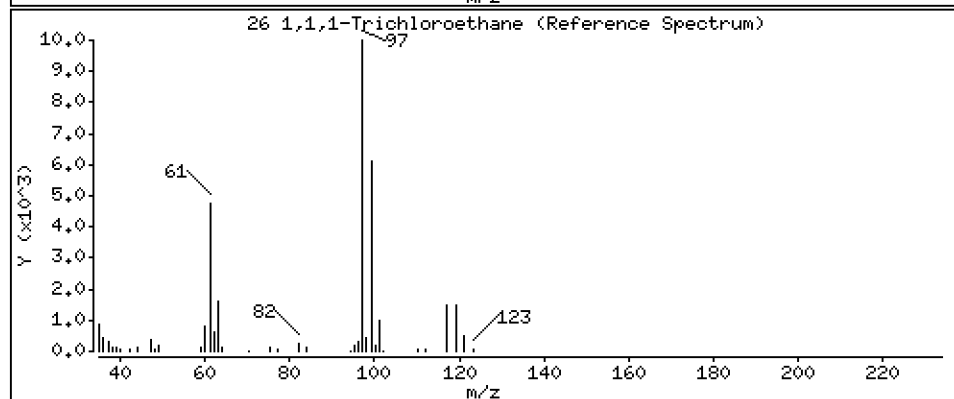
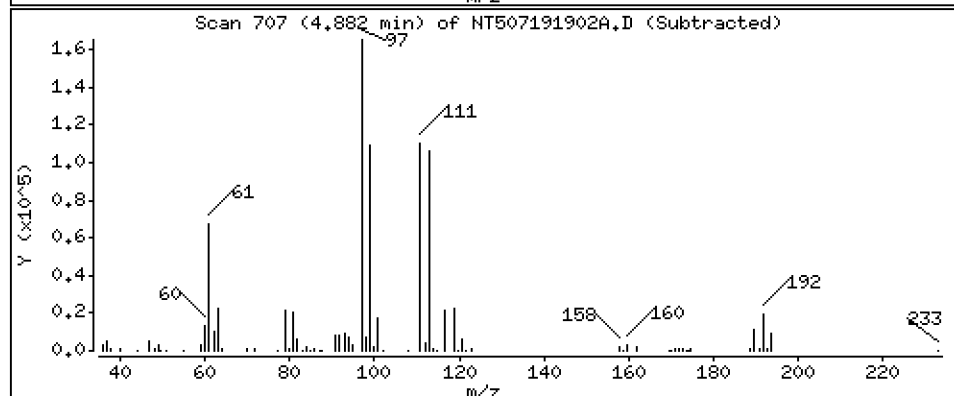
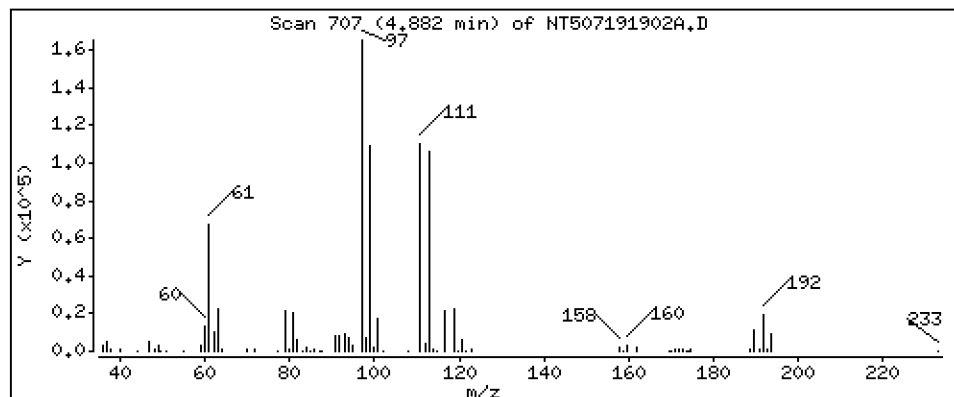
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 57,784 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

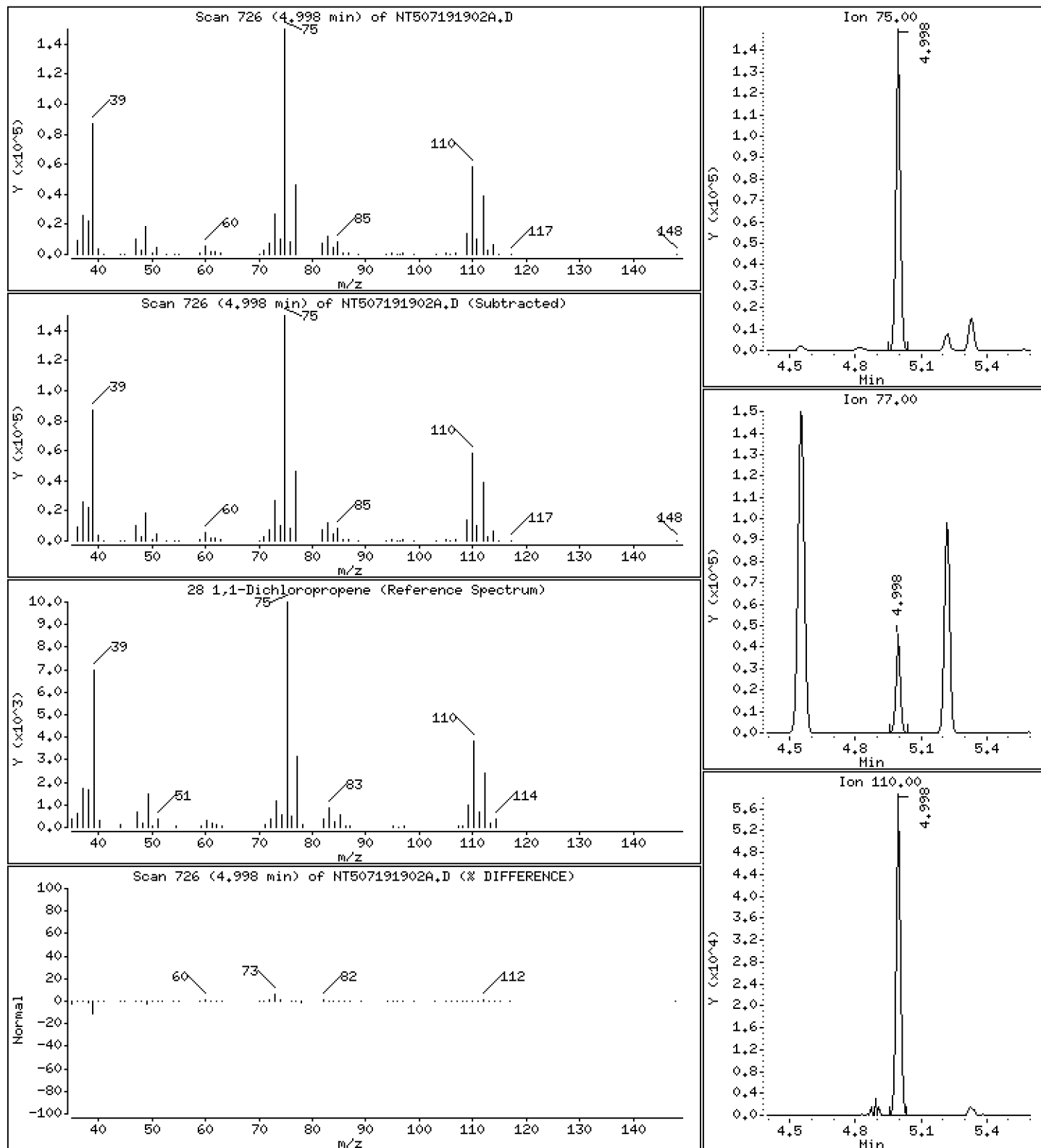
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 56,589 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

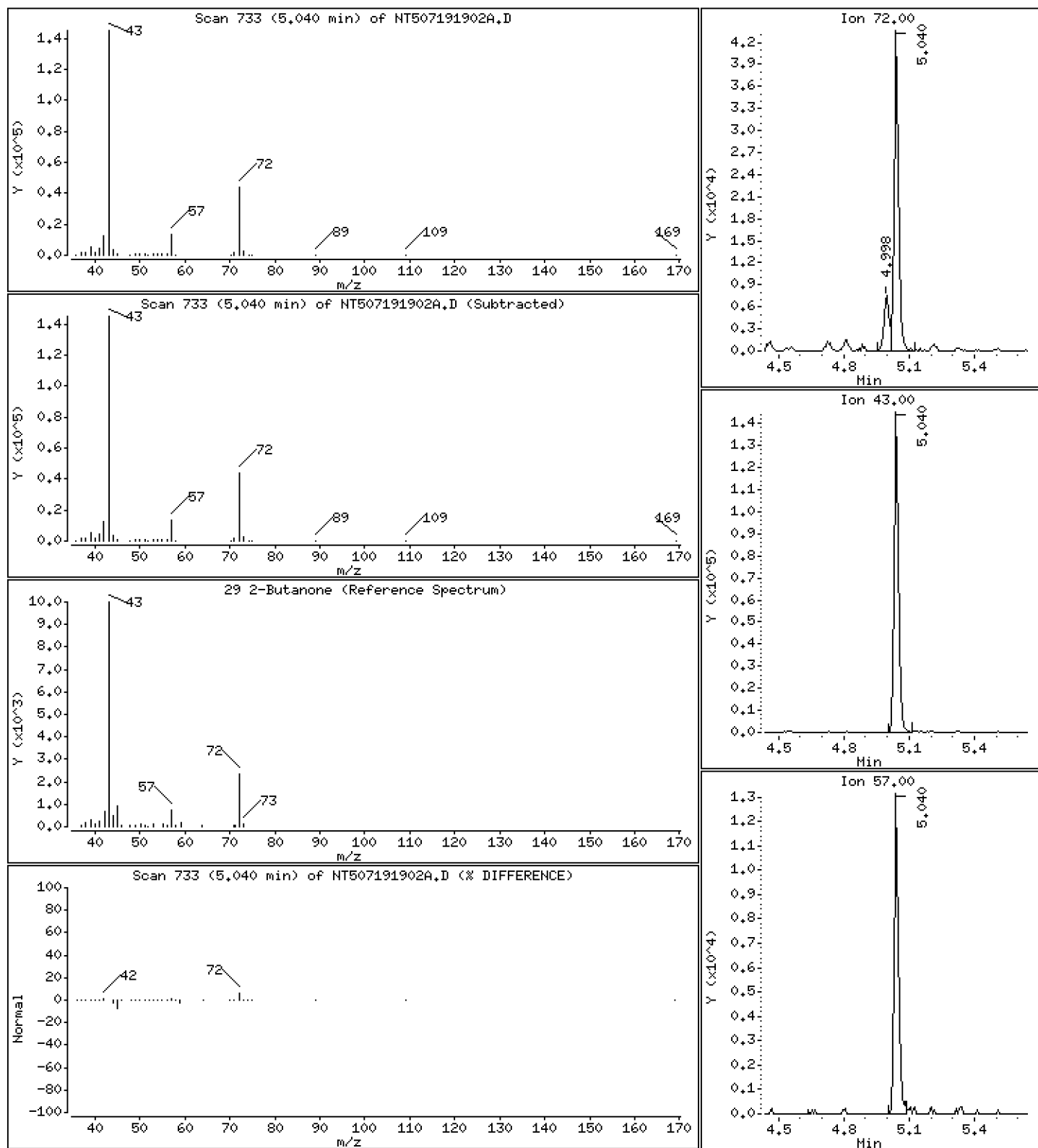
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 271.62 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

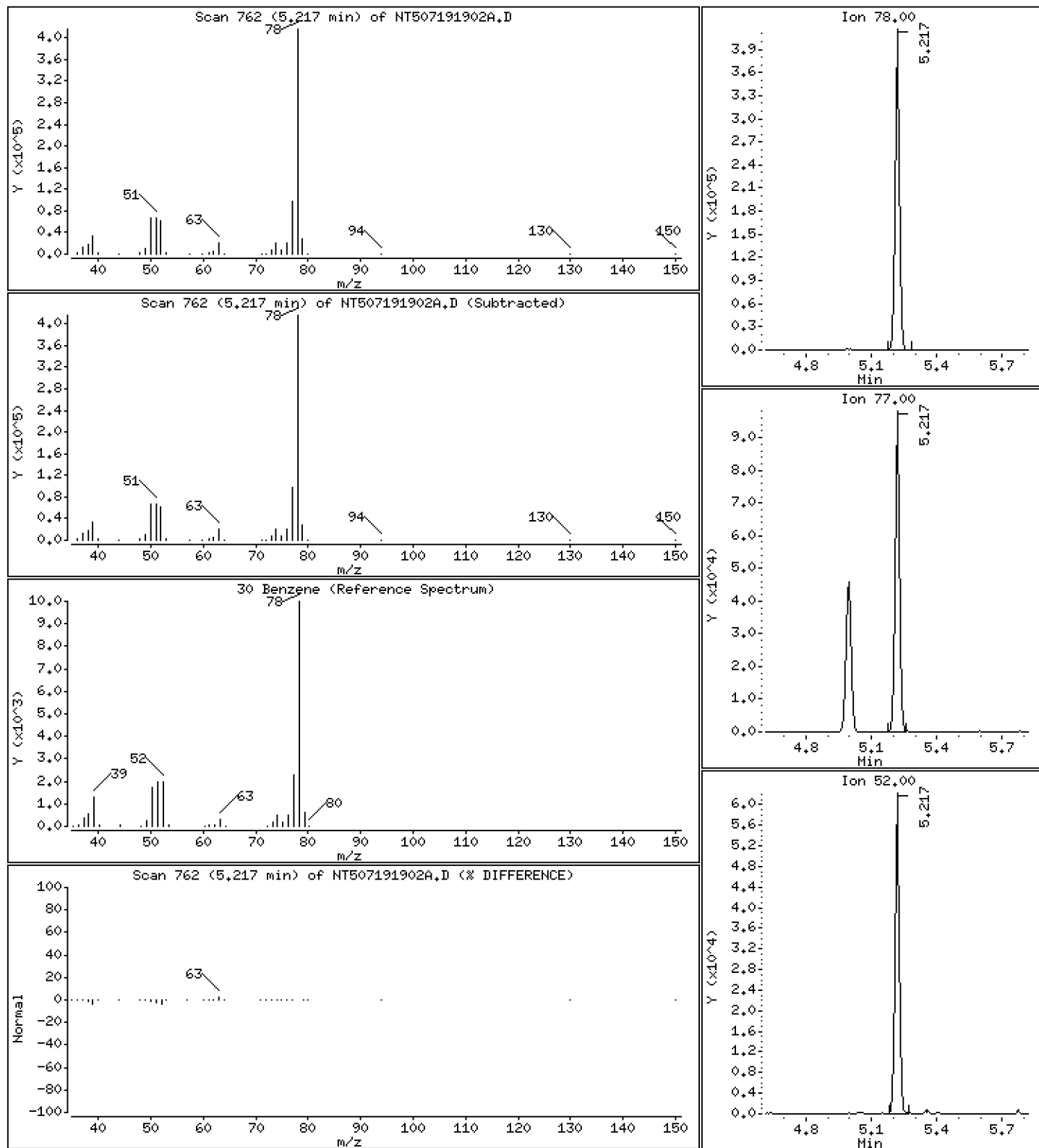
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 51.136 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

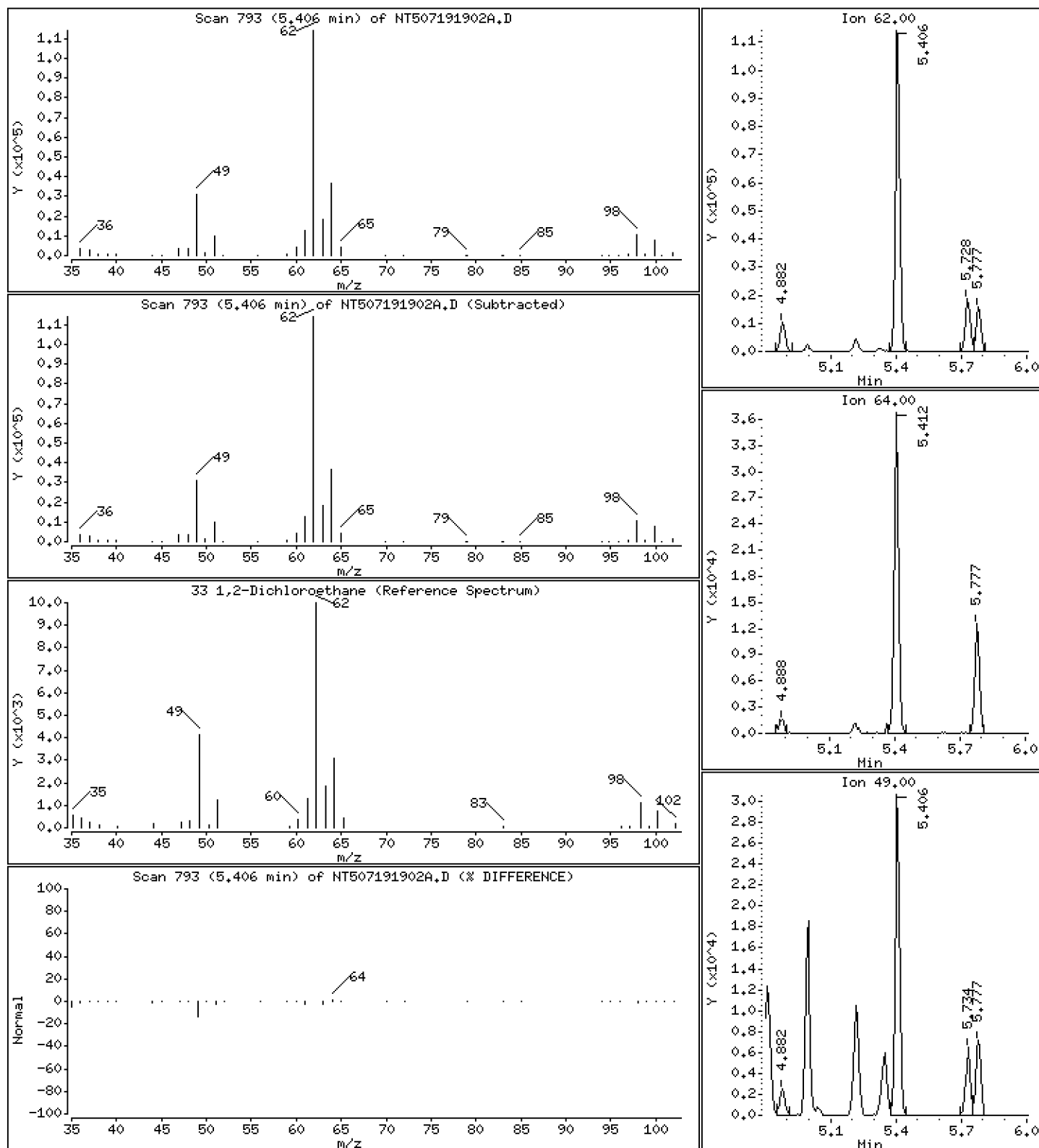
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 49,474 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

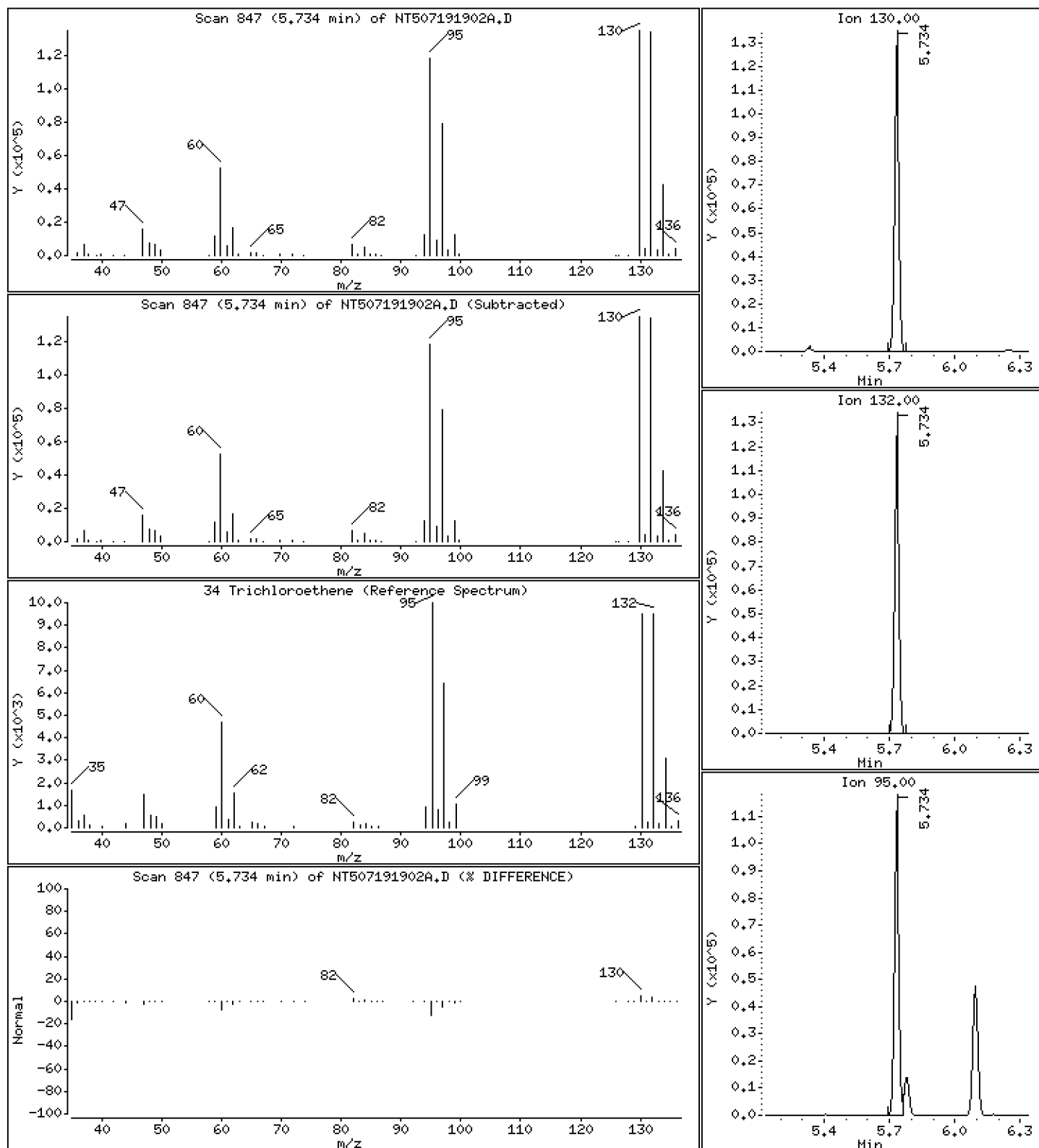
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 51.065 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

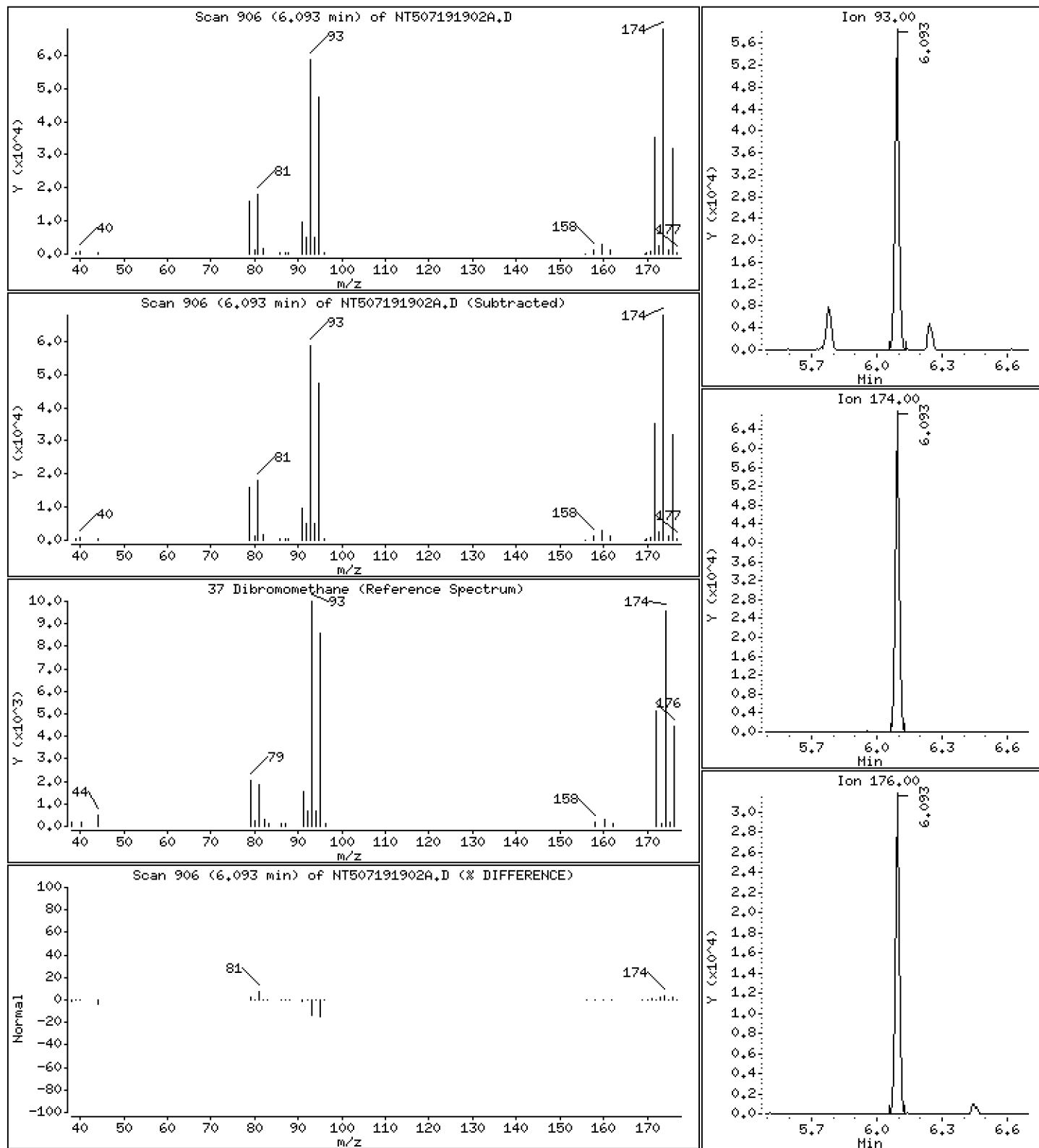
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 49,734 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

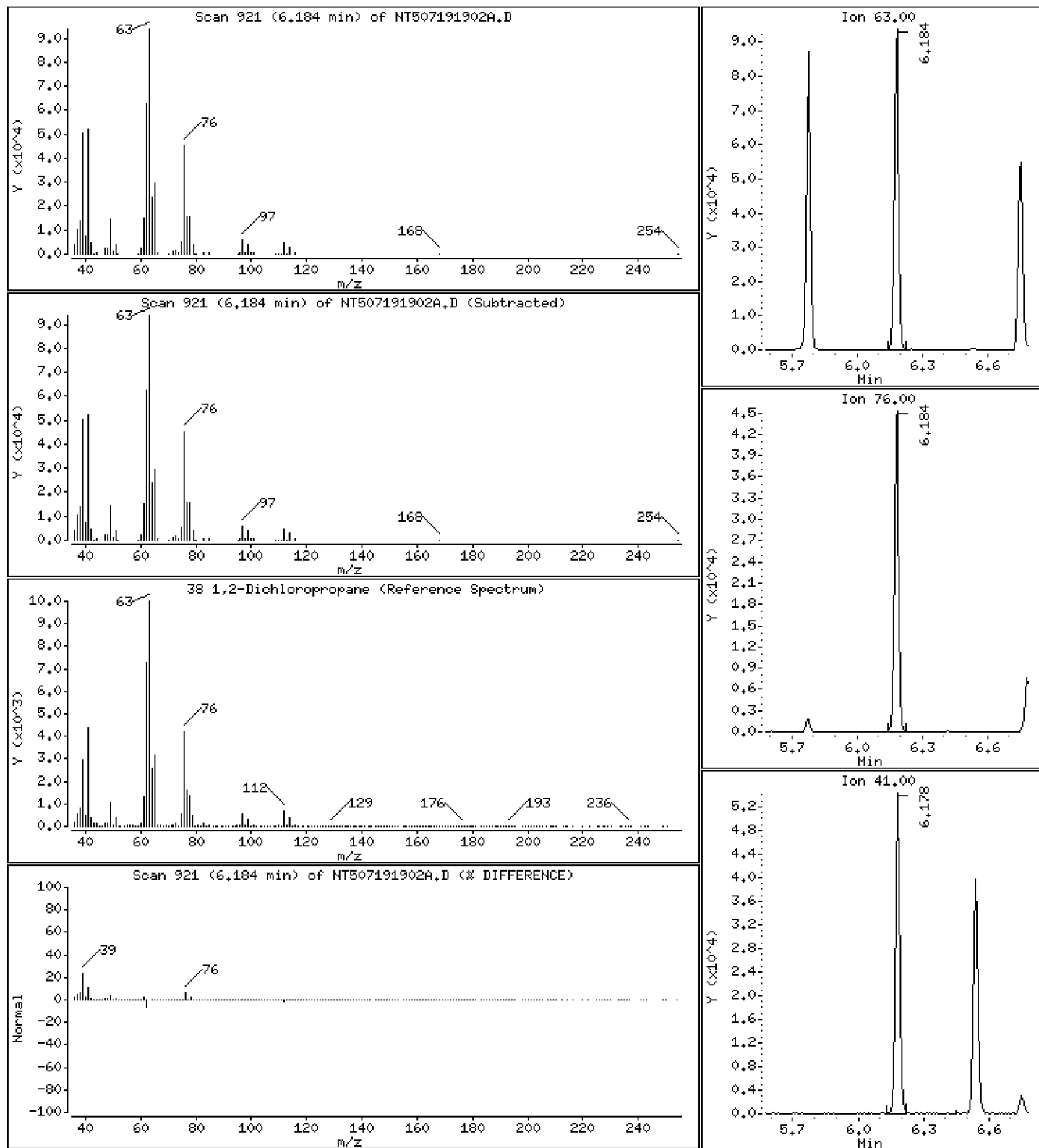
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 52,018 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

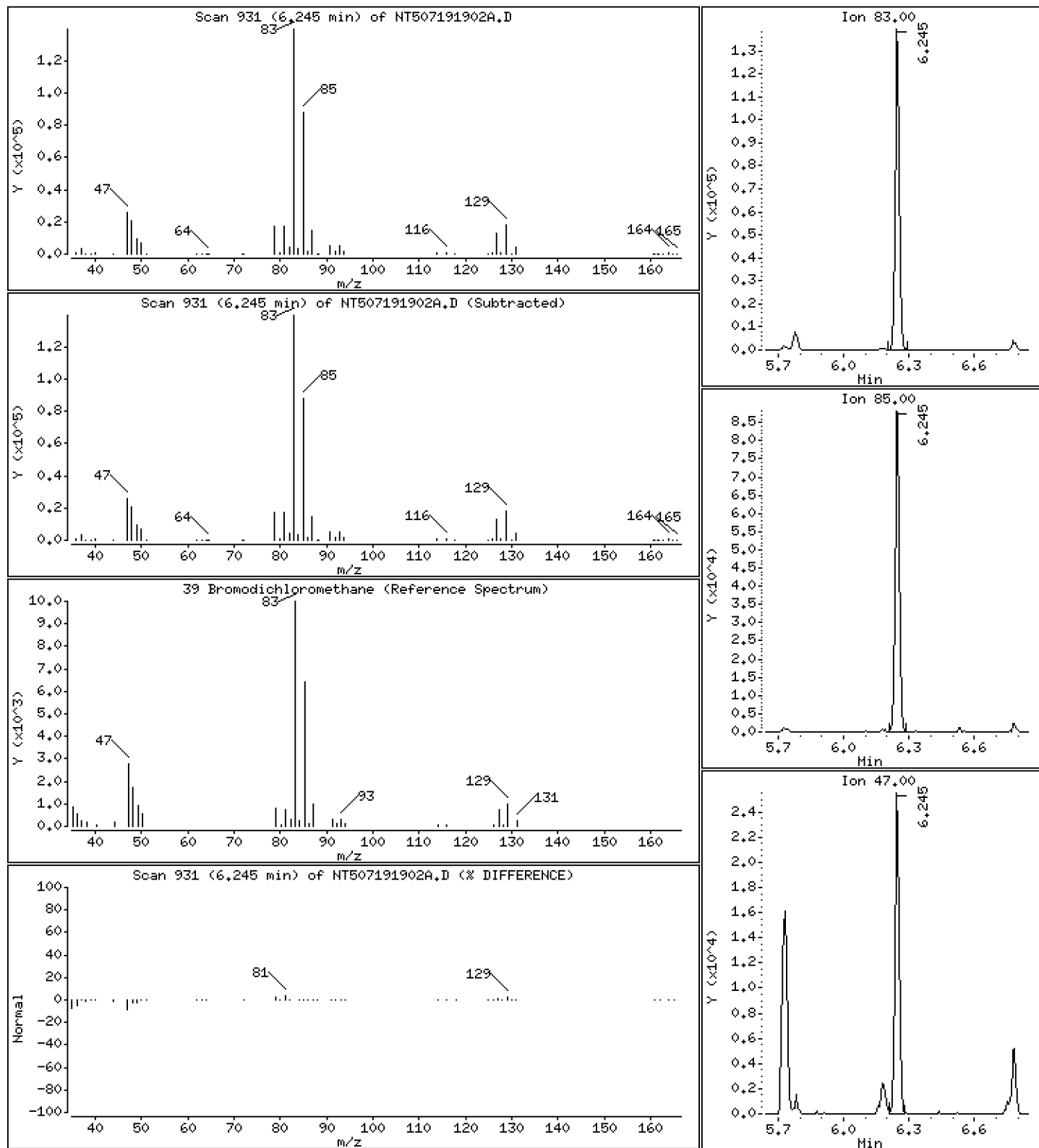
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 50,239 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

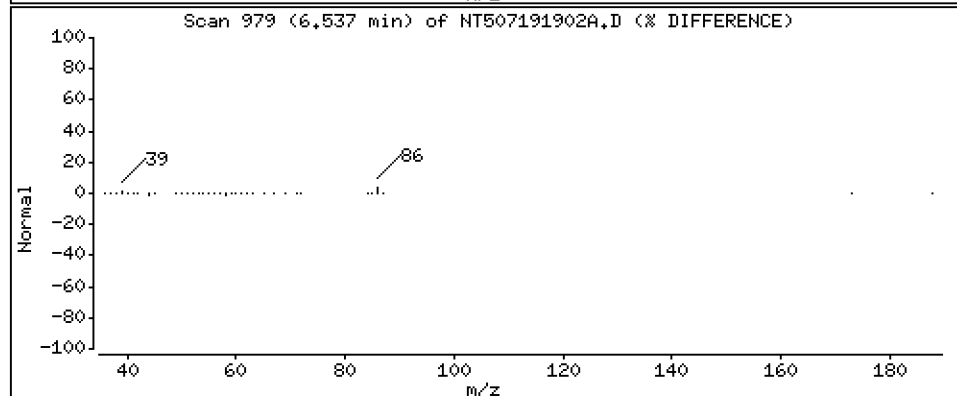
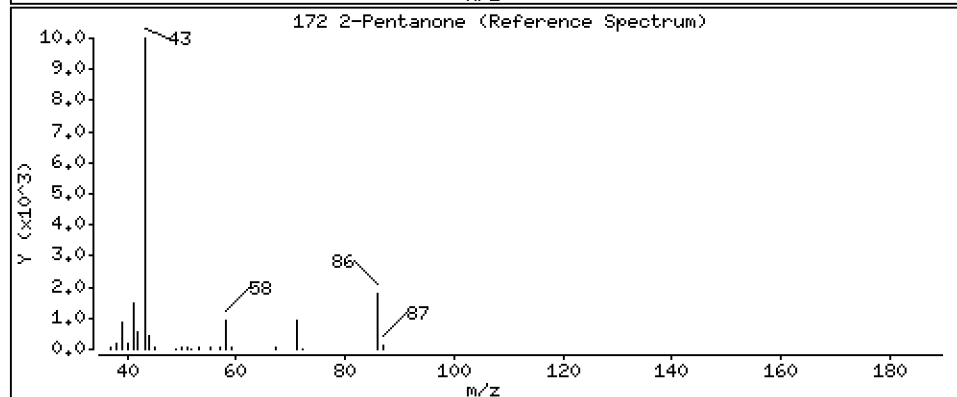
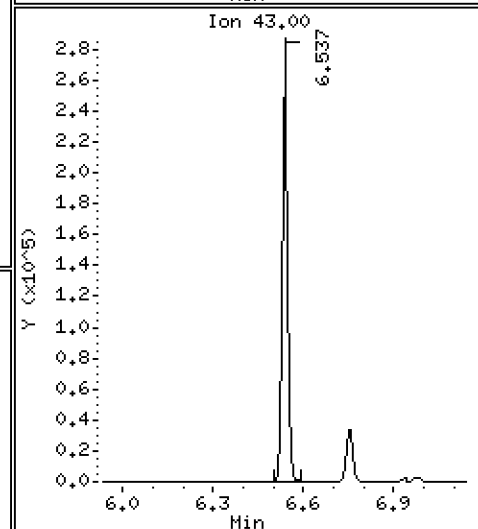
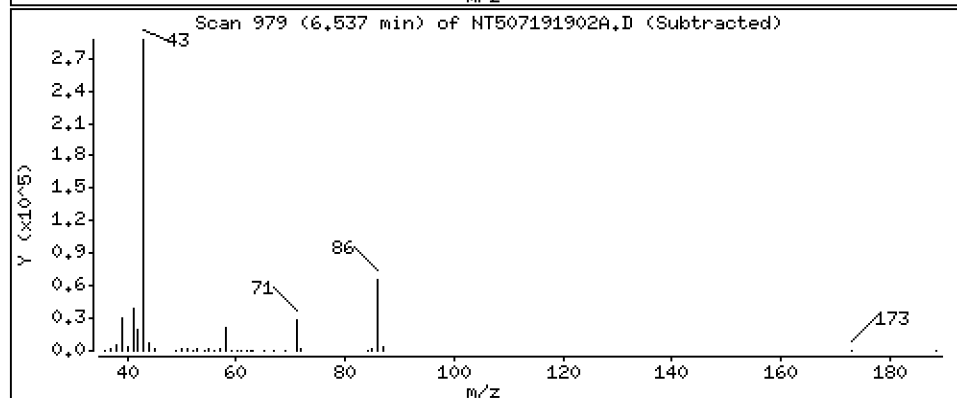
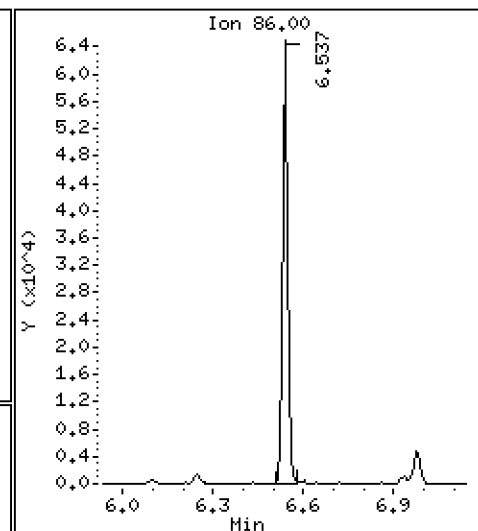
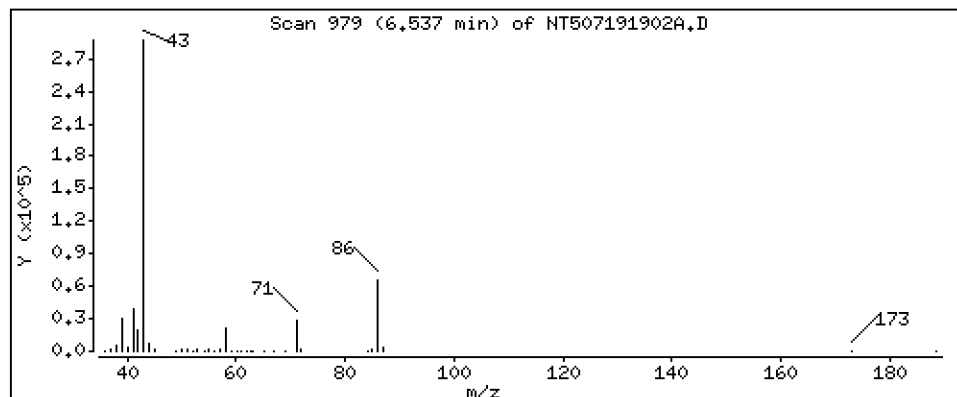
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 251.05 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

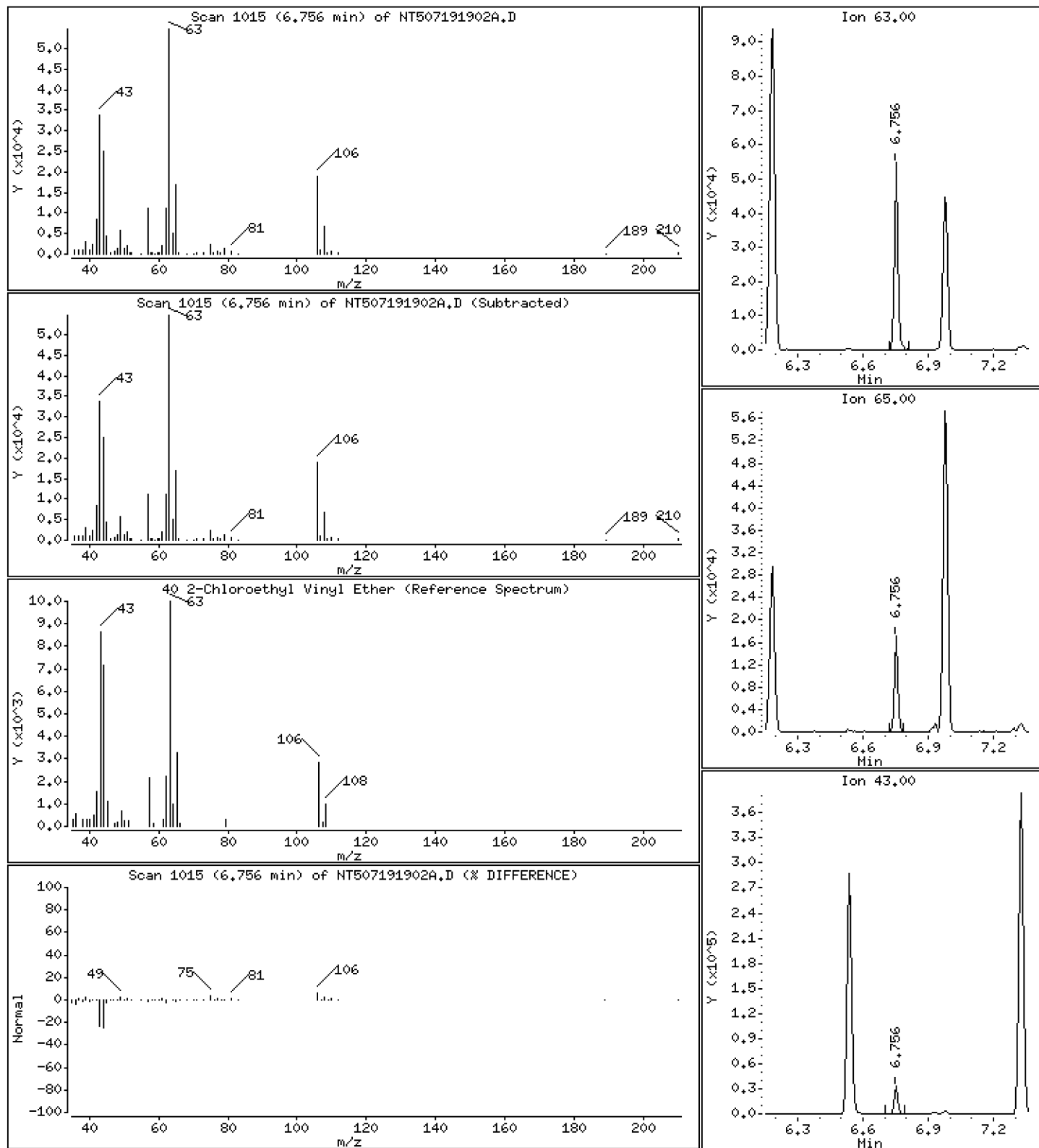
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

40 2-Chloroethyl Vinyl Ether

Concentration: 47.455 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

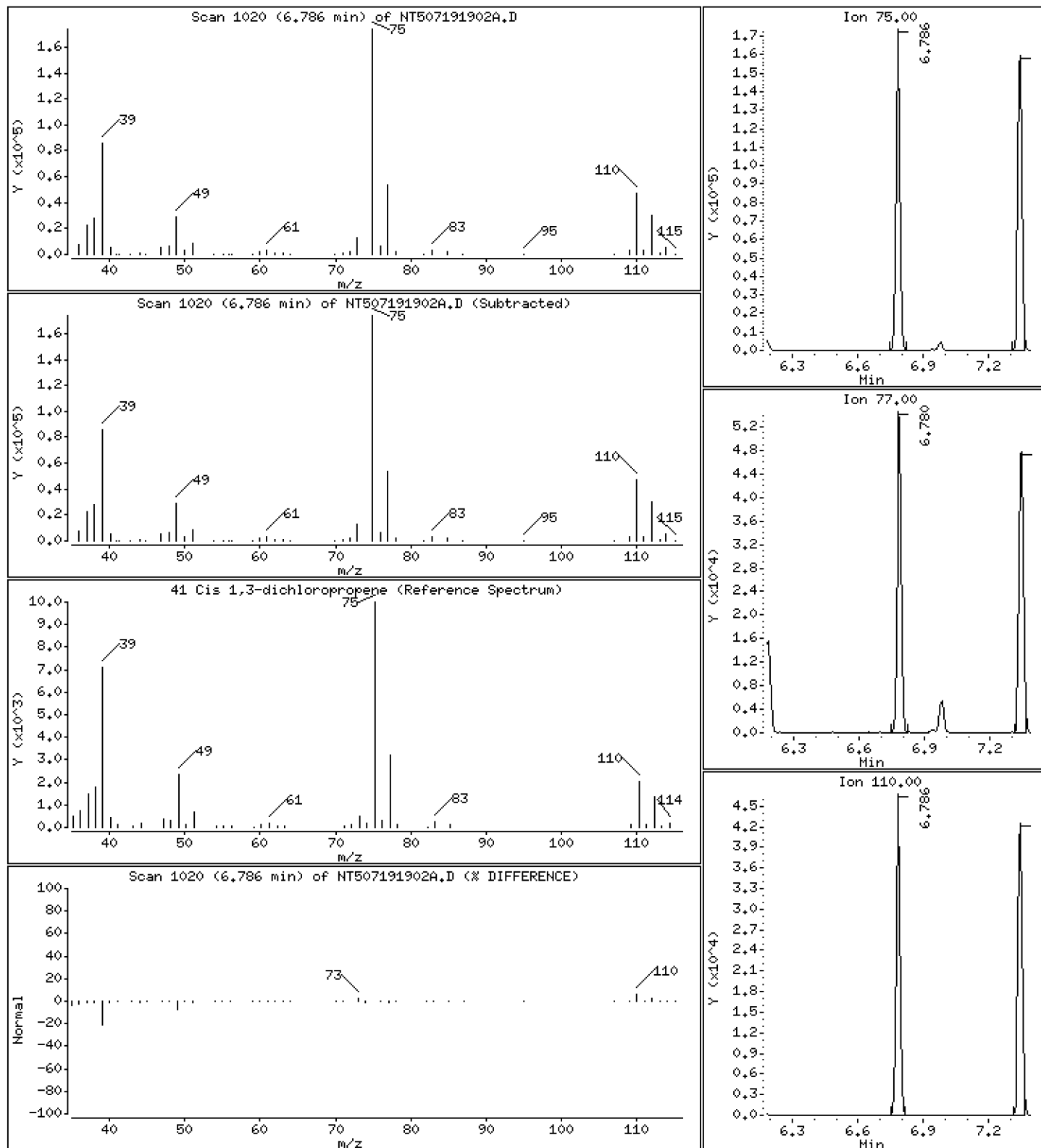
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

41 Cis 1,3-dichloropropene

Concentration: 51.764 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

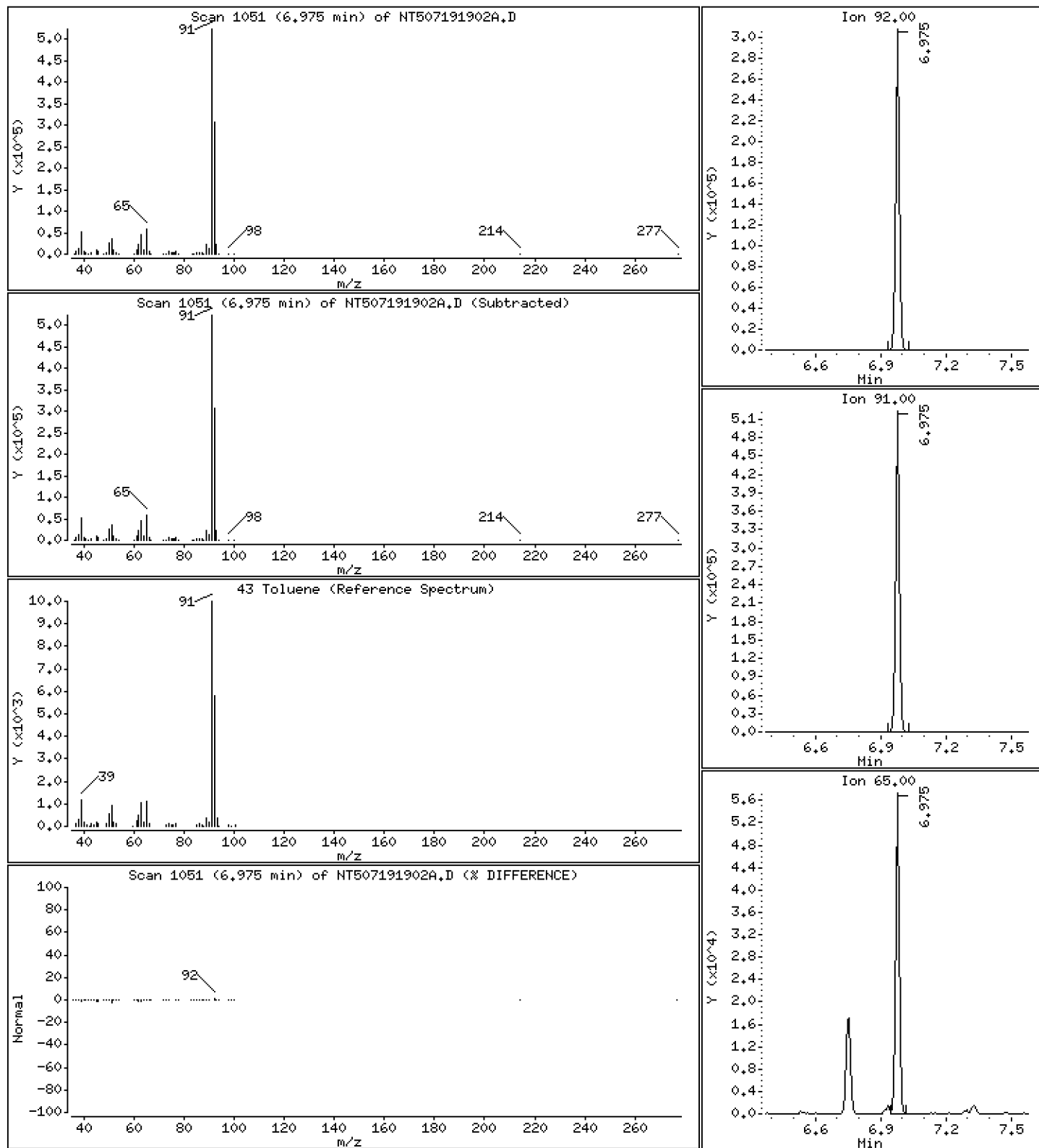
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 49.951 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

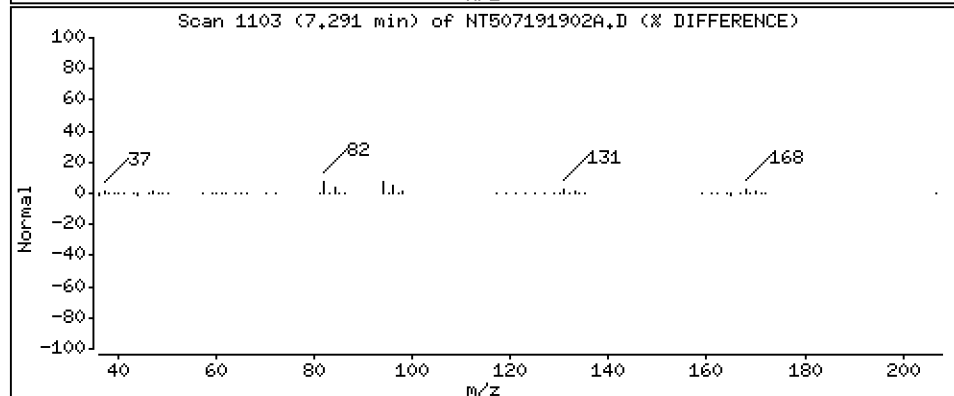
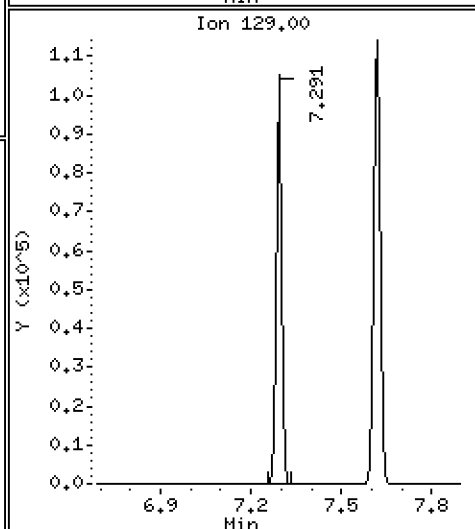
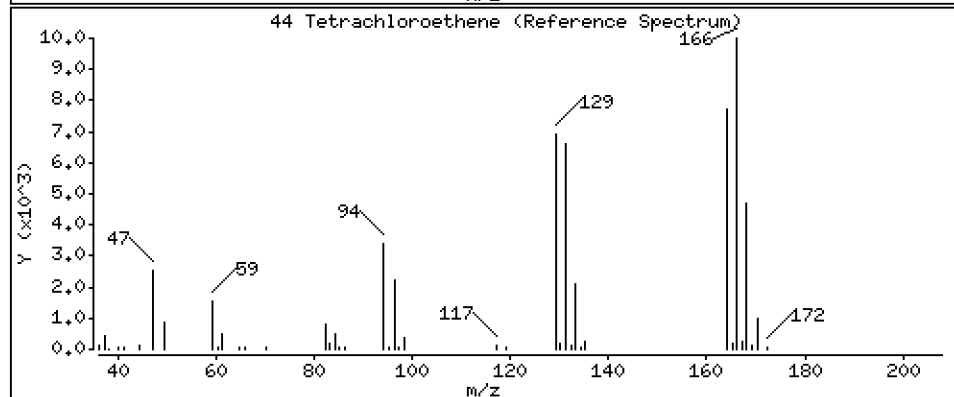
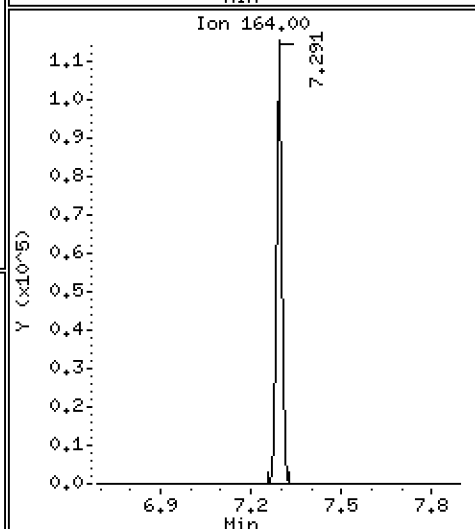
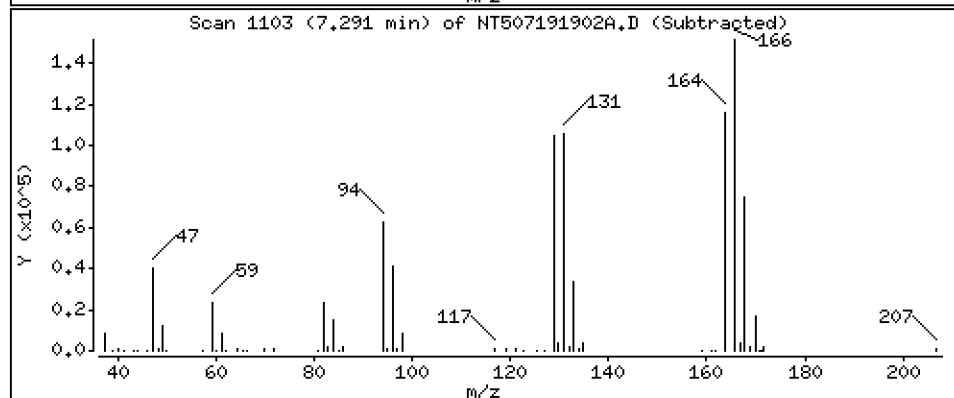
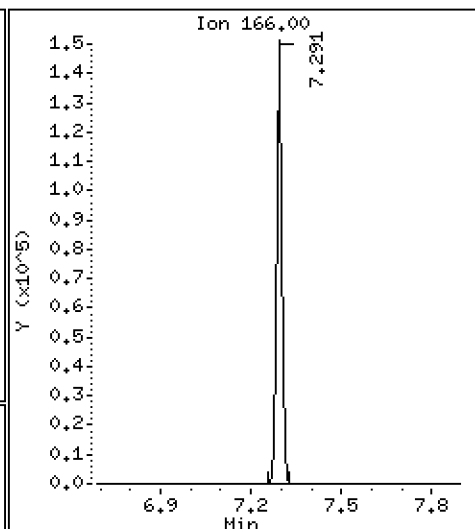
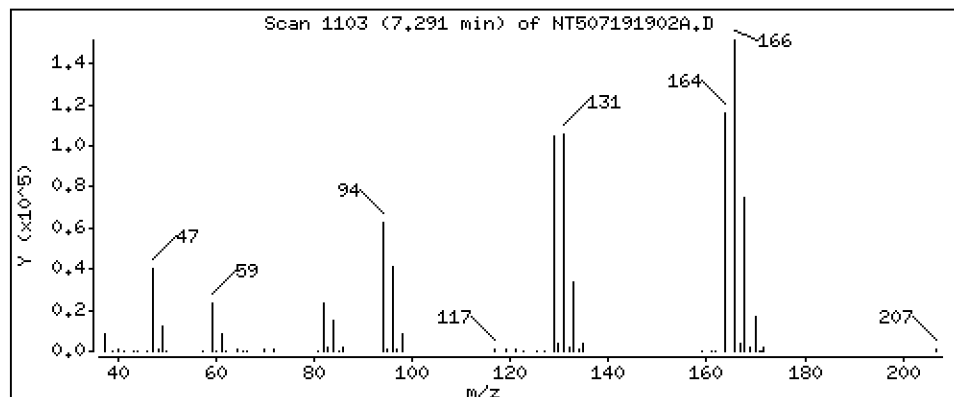
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 49,364 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

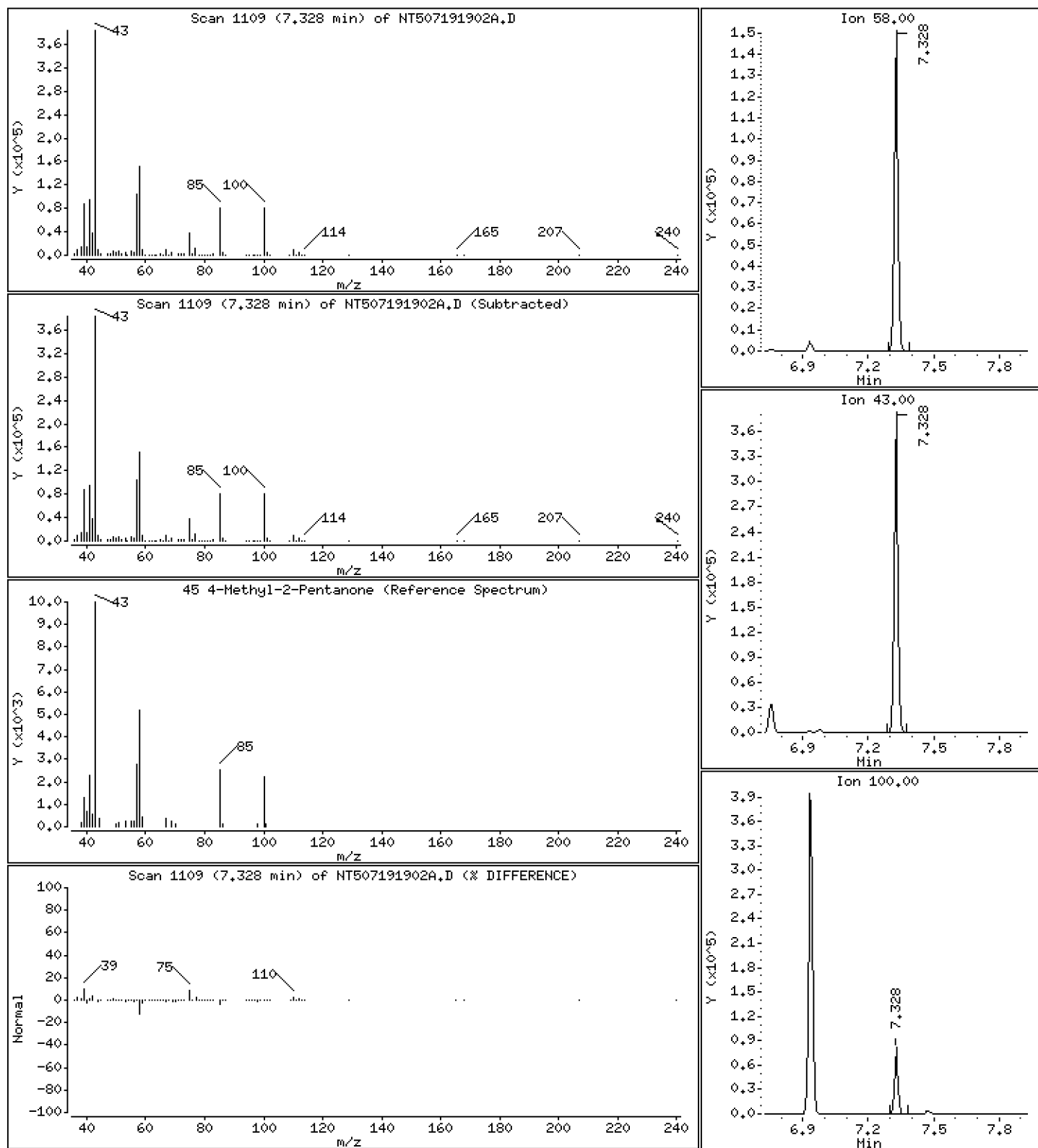
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 246.68 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

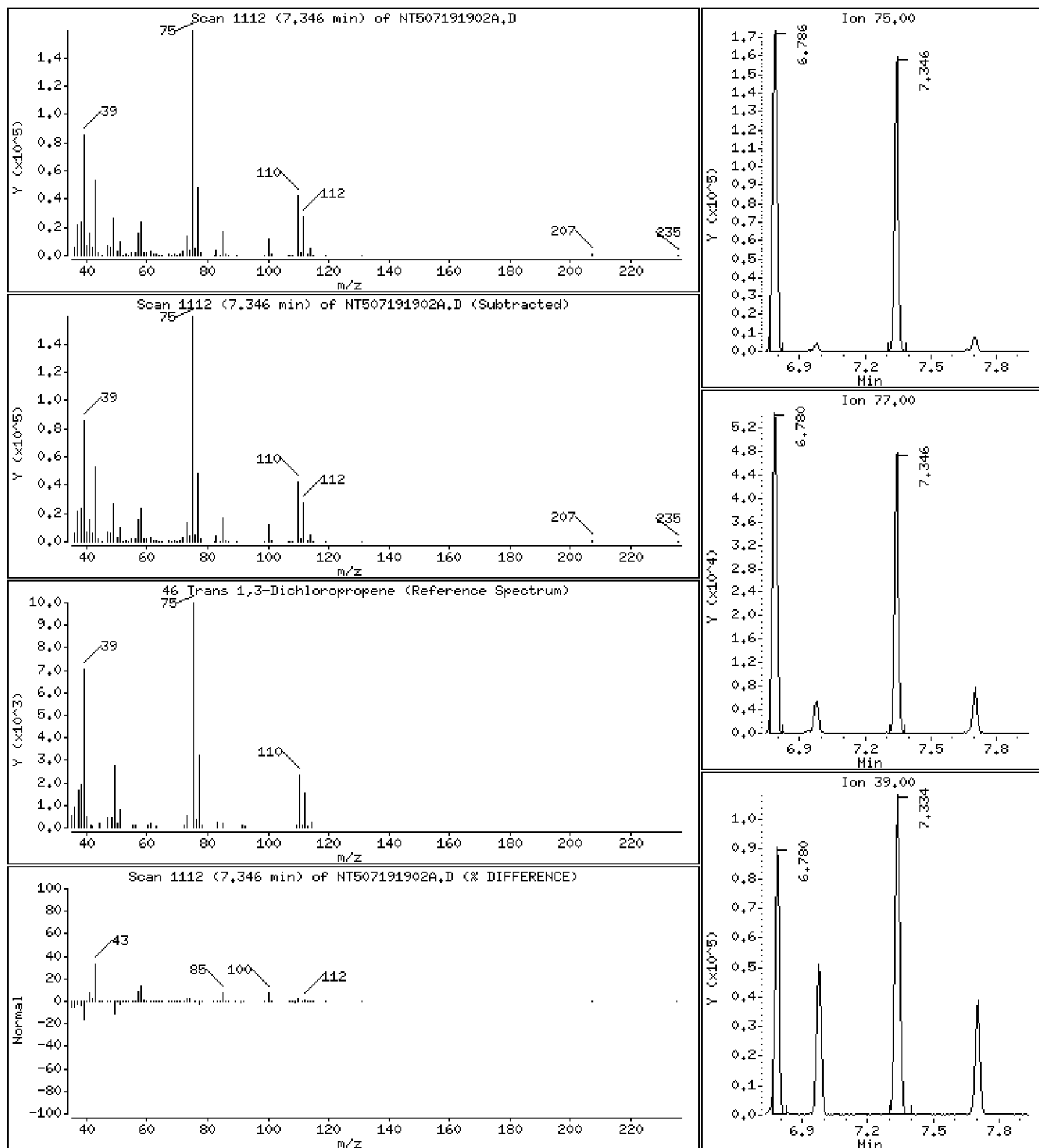
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 51.501 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

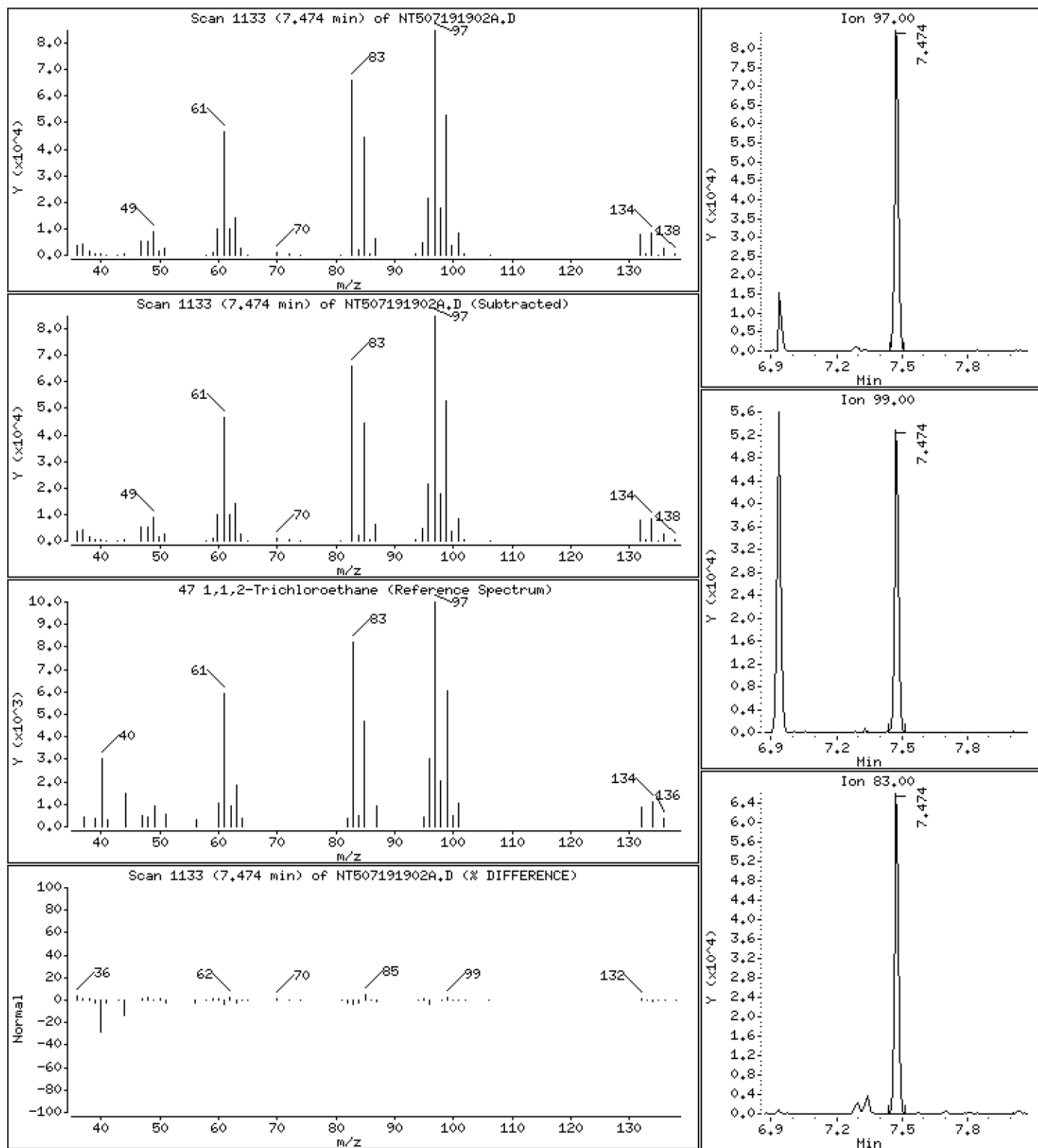
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 46,584 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

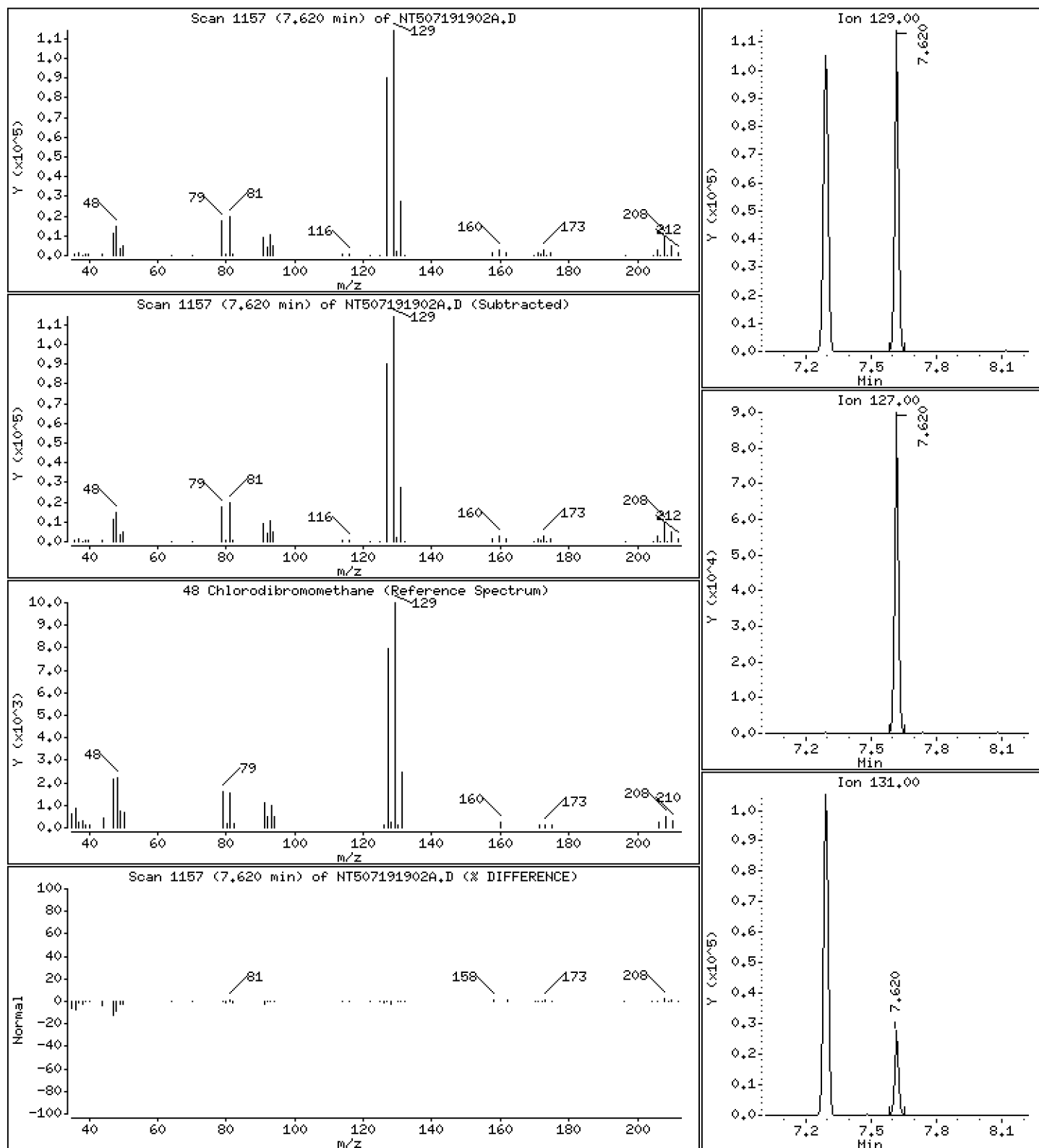
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 47,806 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

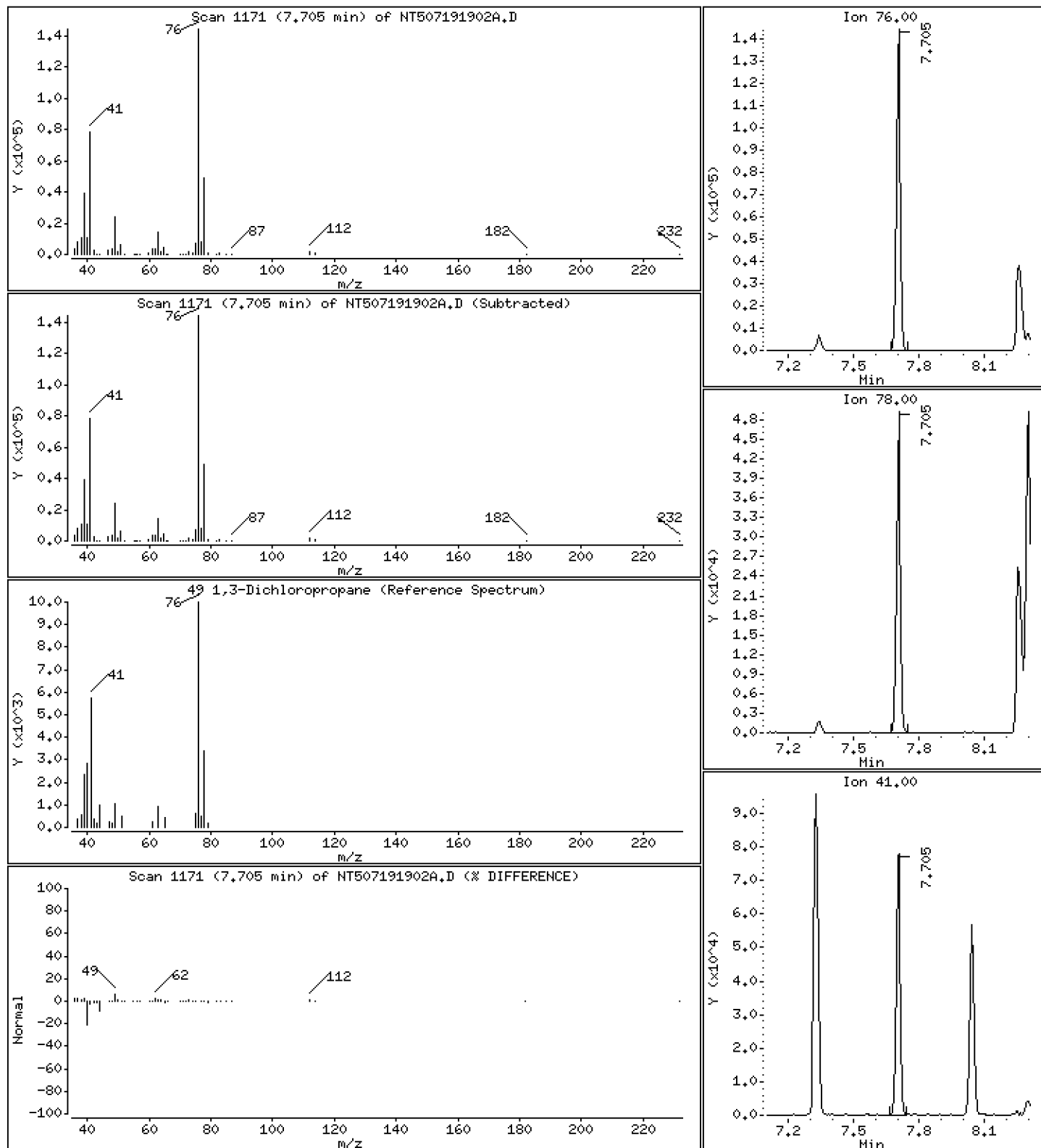
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 47,164 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

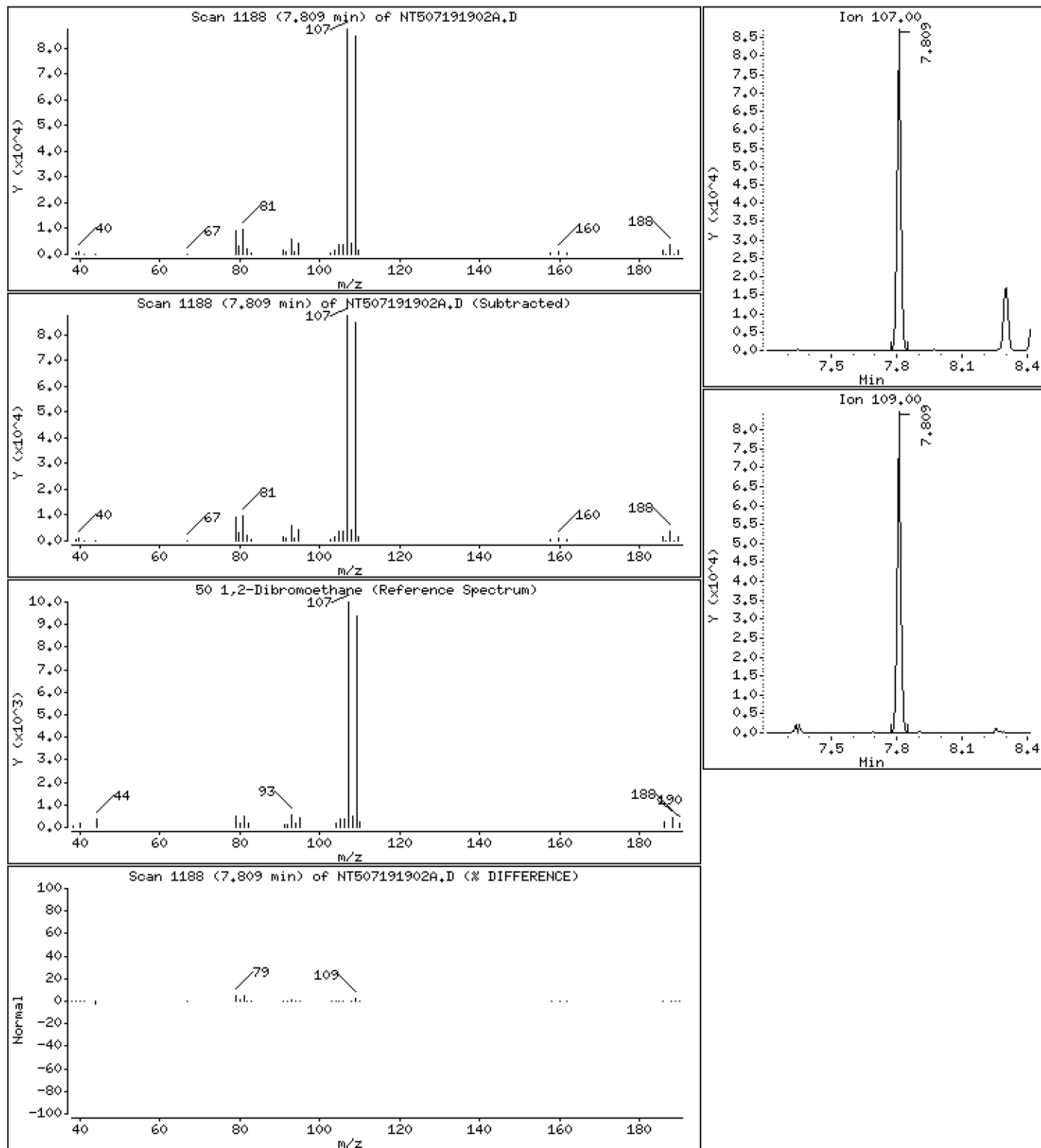
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 48,177 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

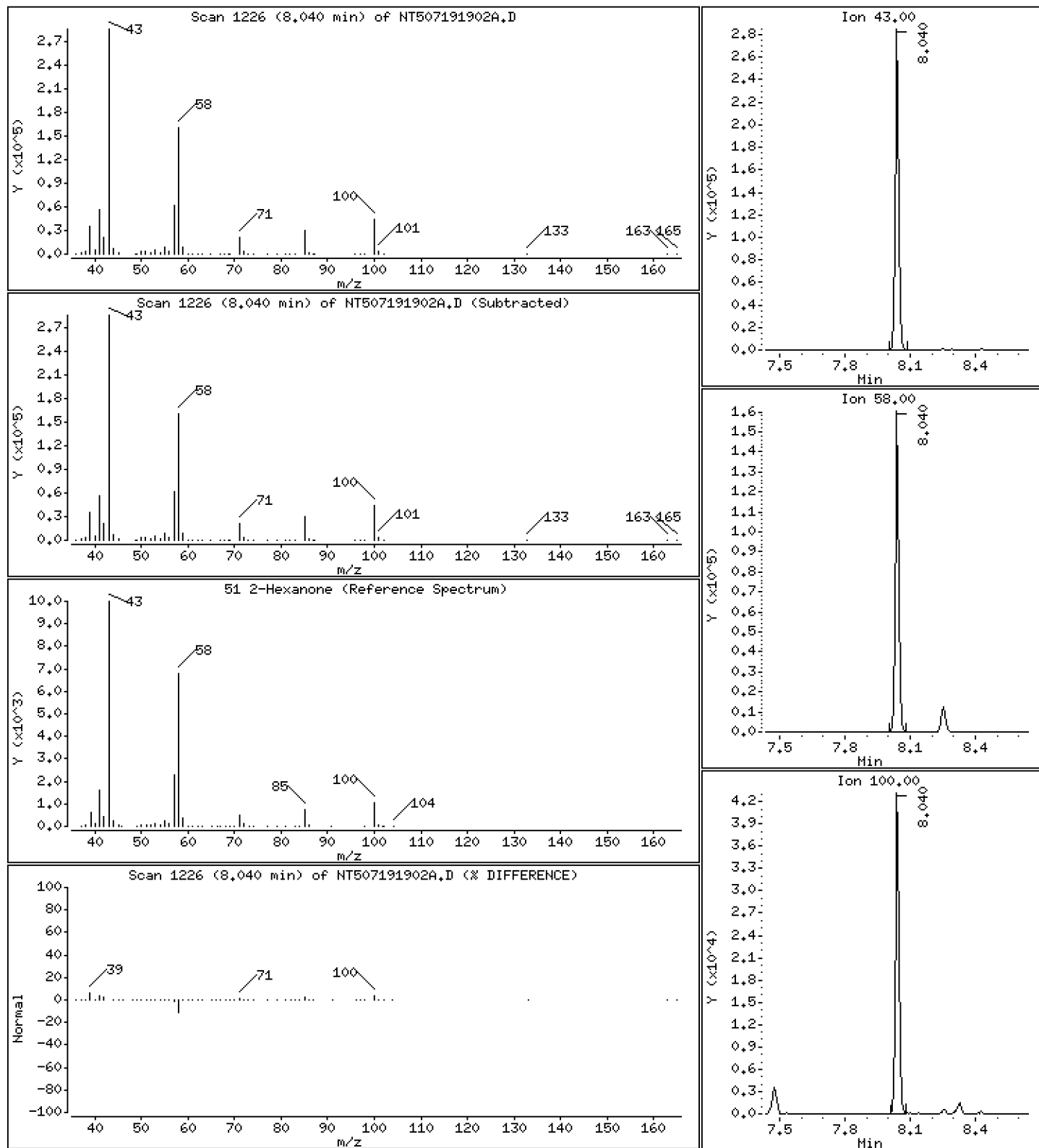
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 245.79 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

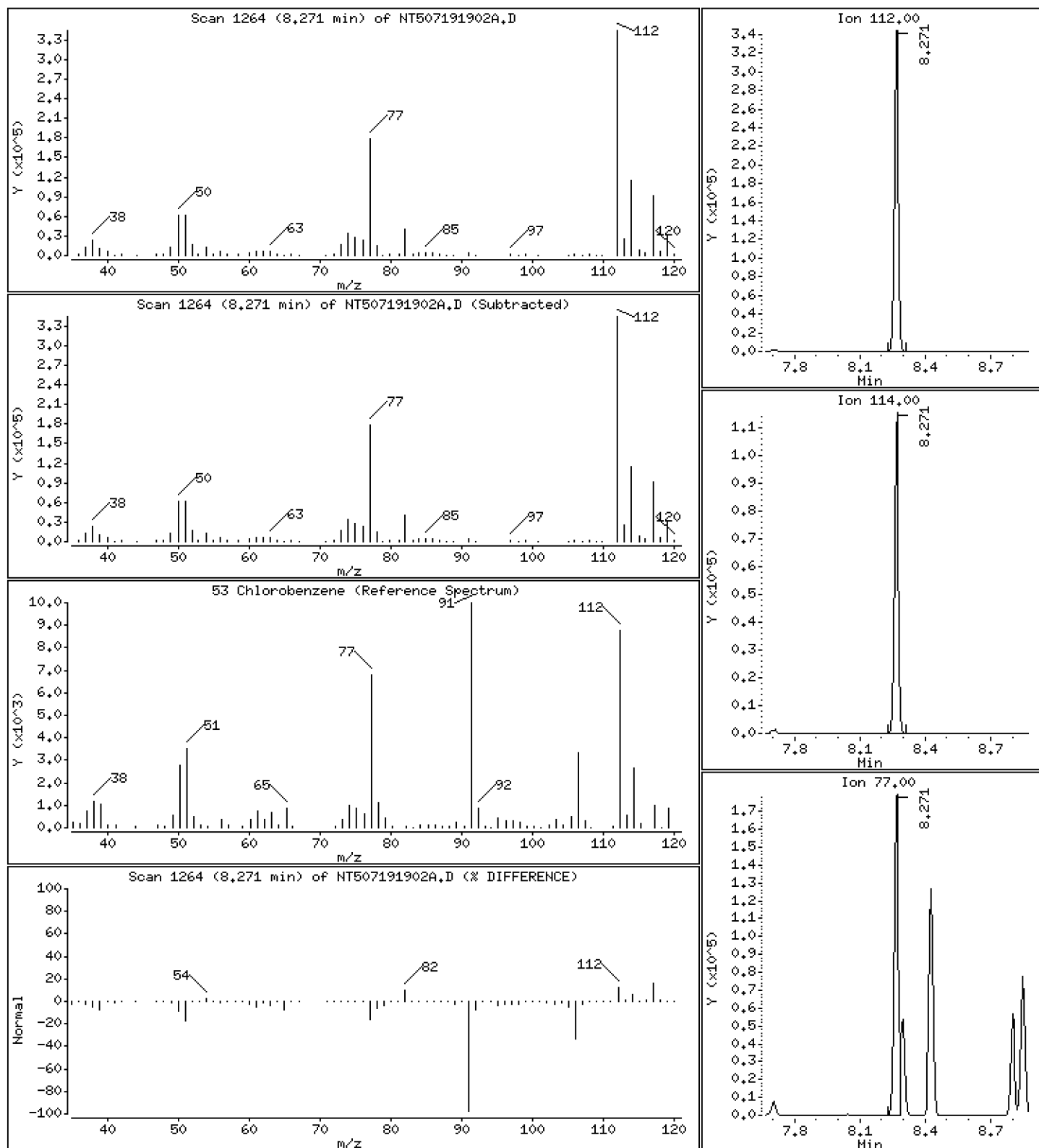
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 47,954 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

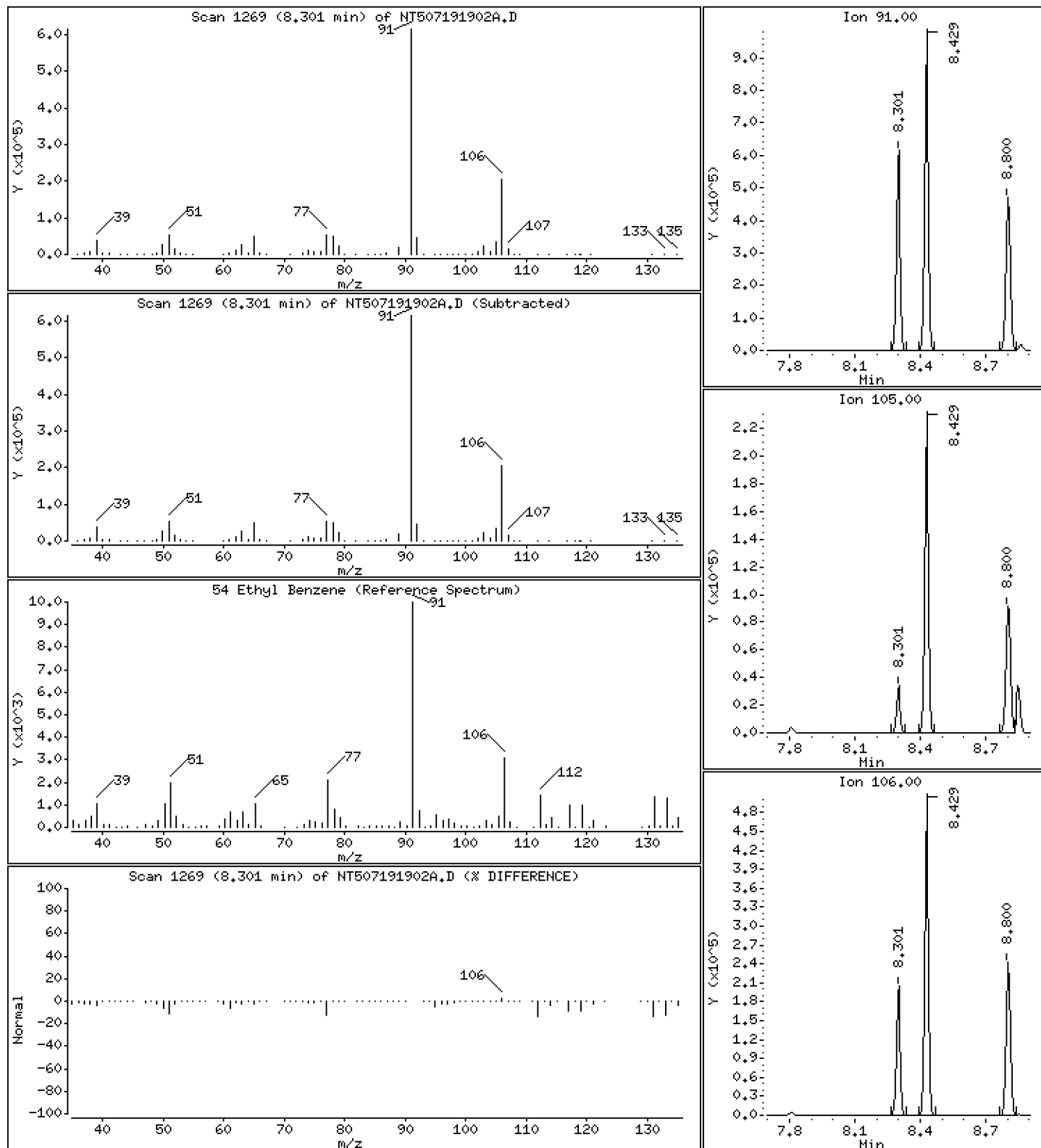
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 49.456 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

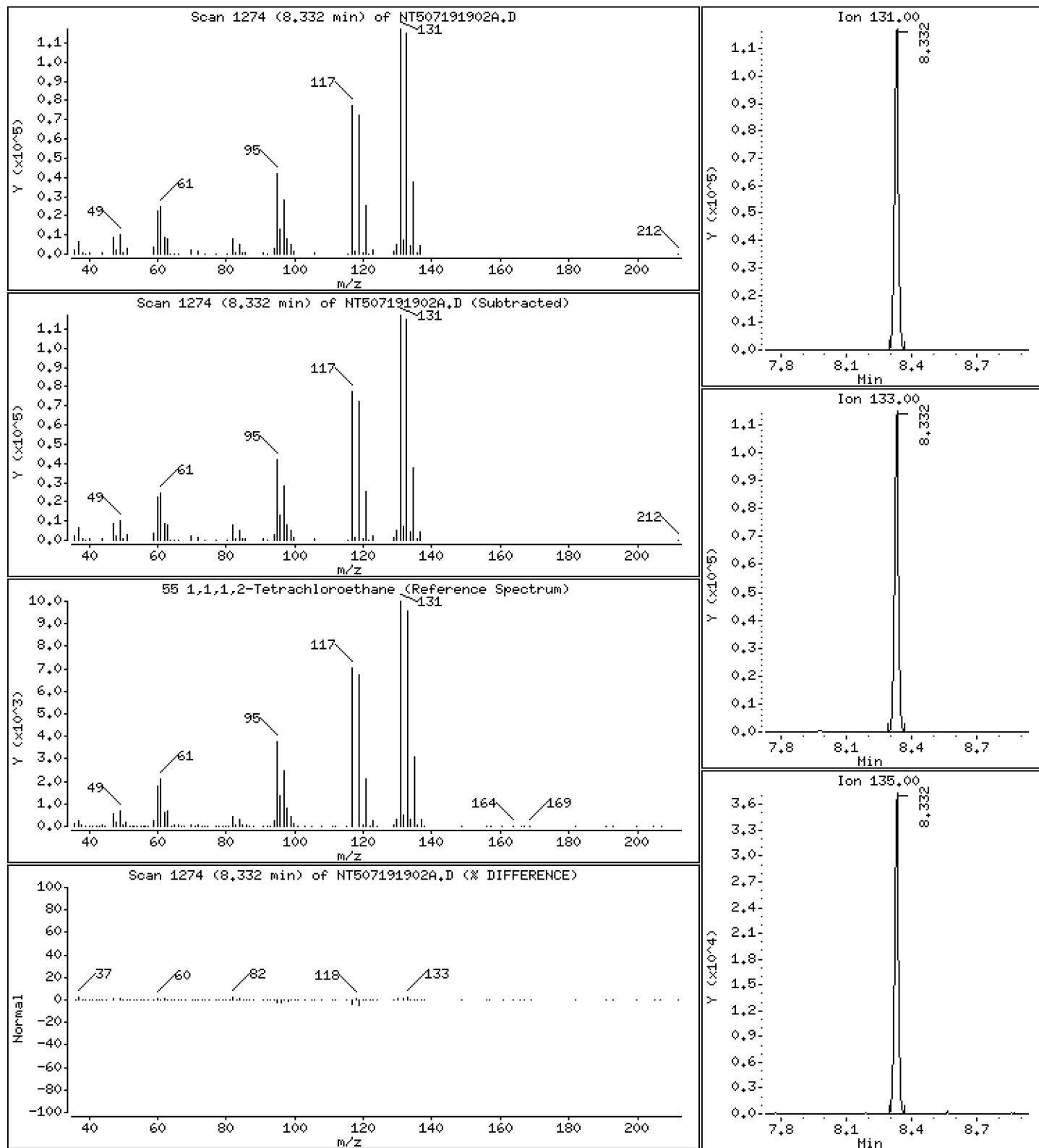
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 47,254 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

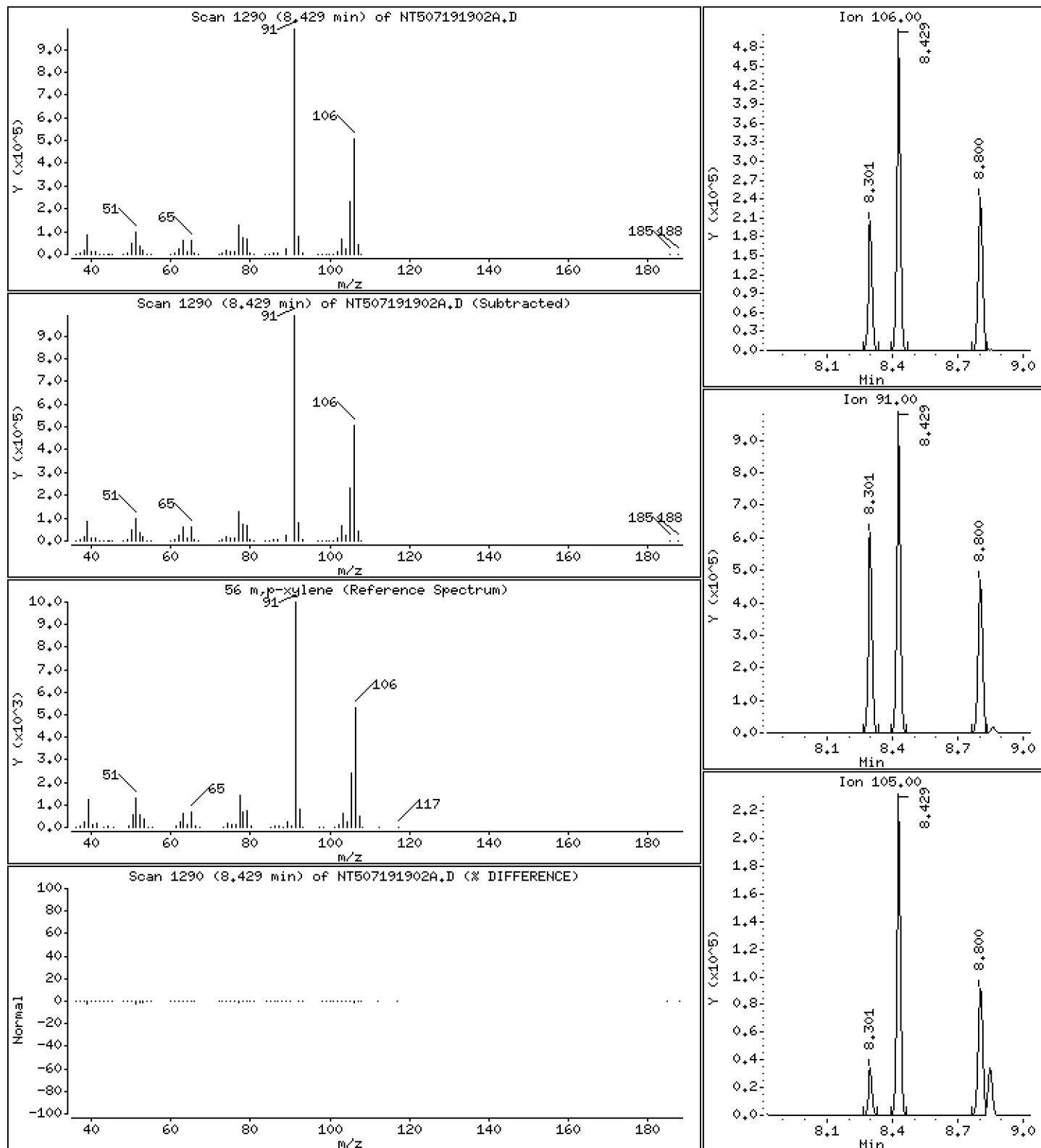
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 97.689 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

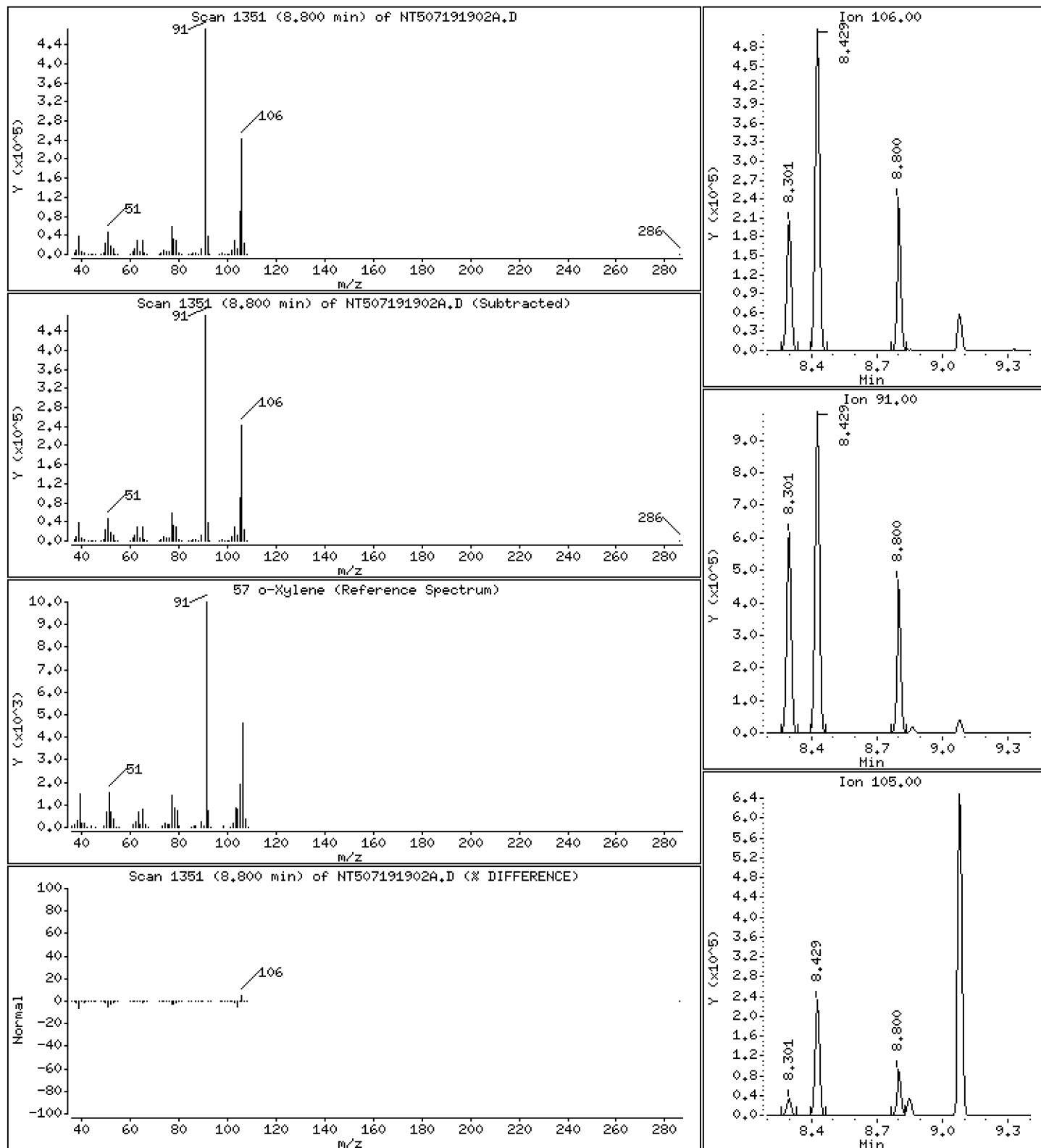
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 48,451 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

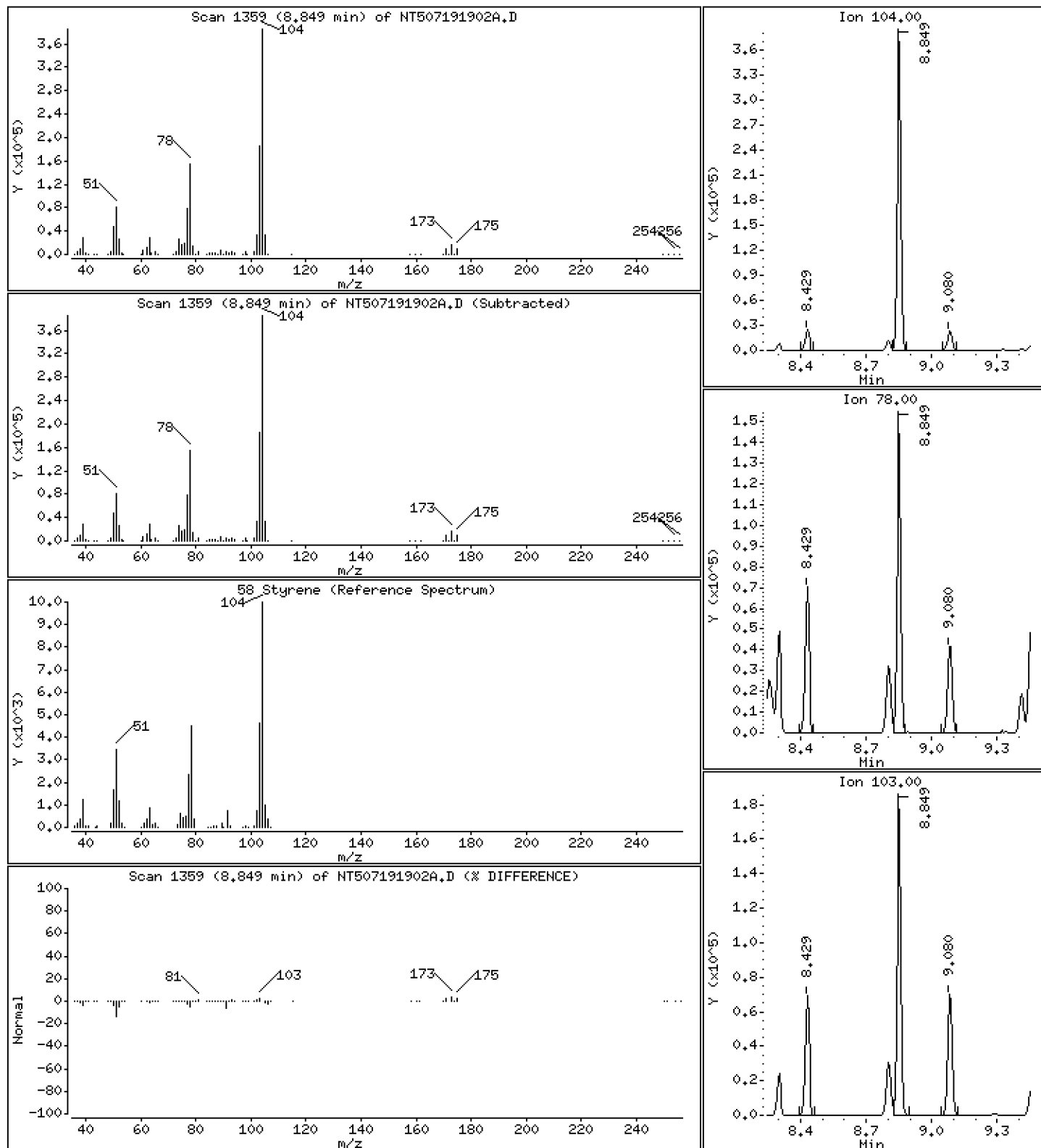
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 48,462 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

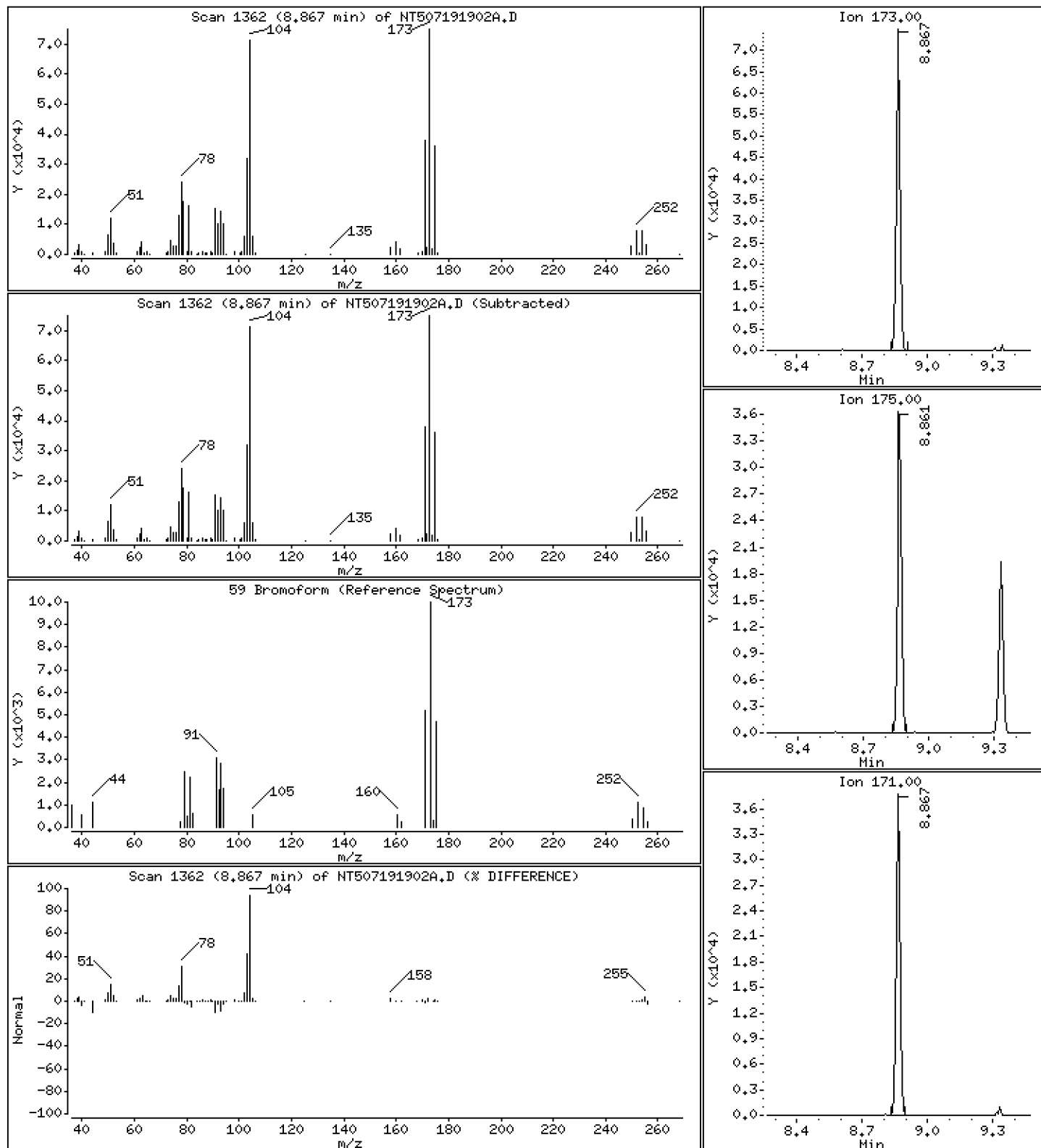
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59 Bromoform

Concentration: 44,664 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

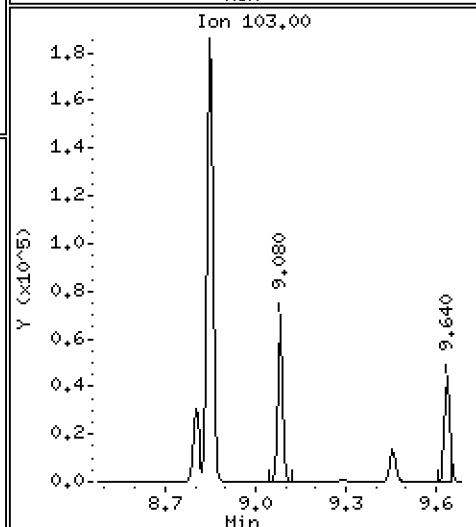
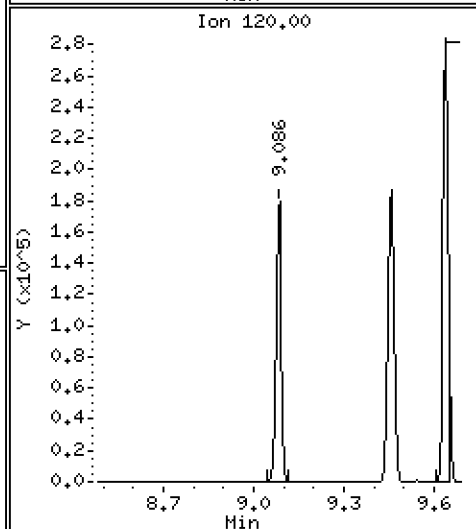
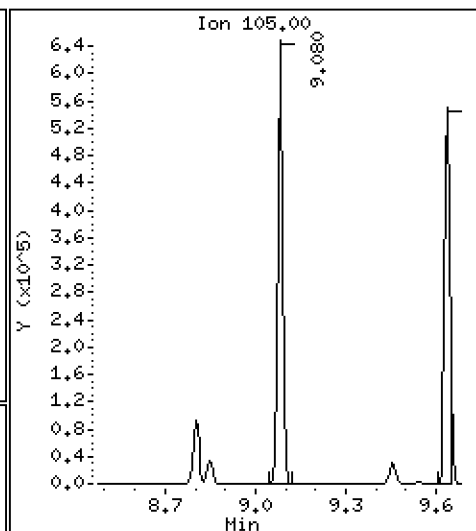
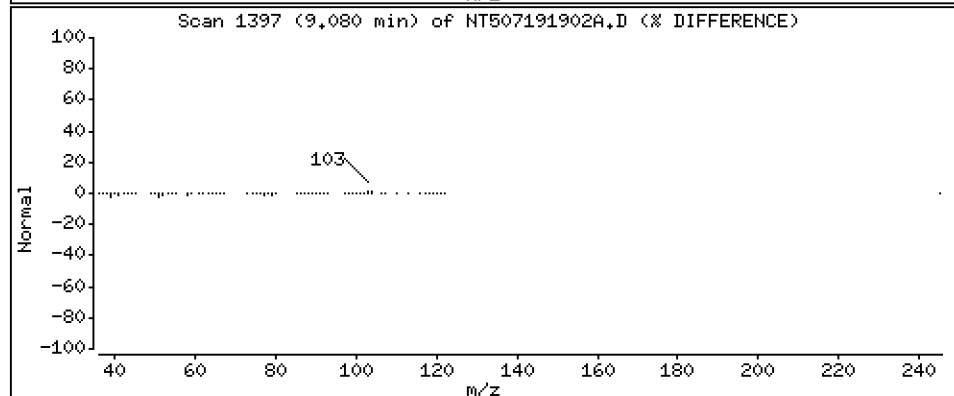
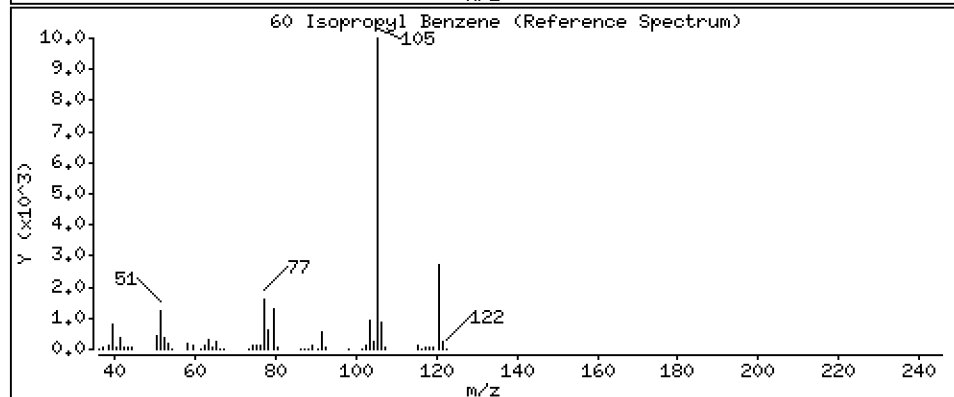
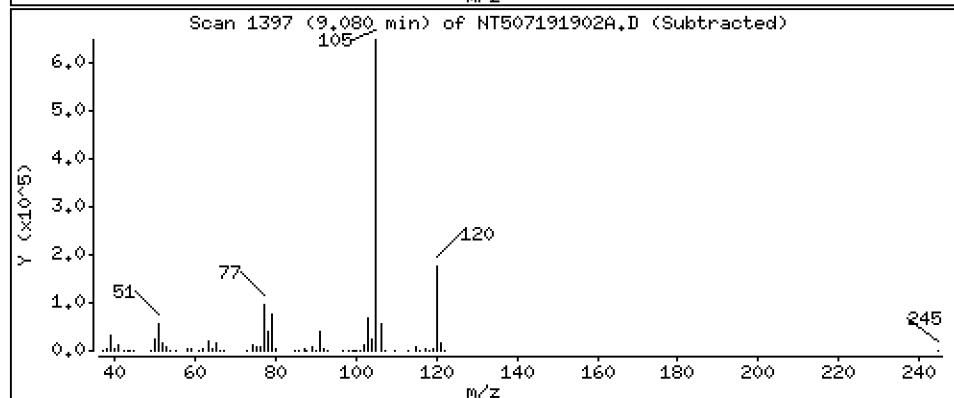
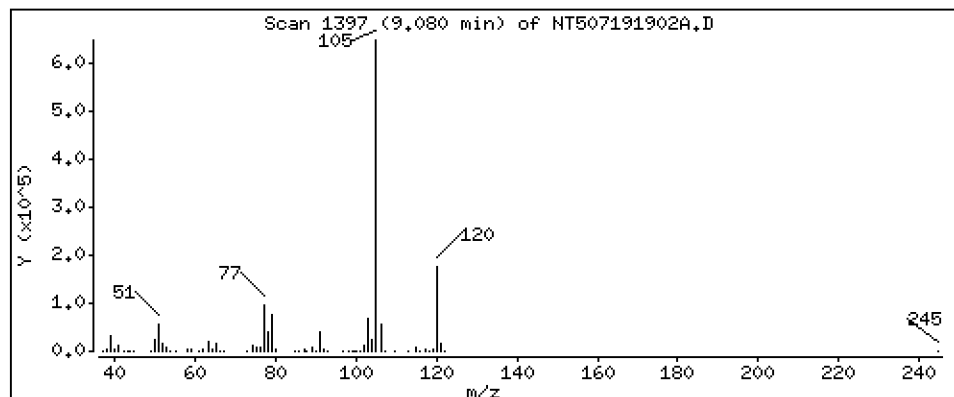
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 51.056 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

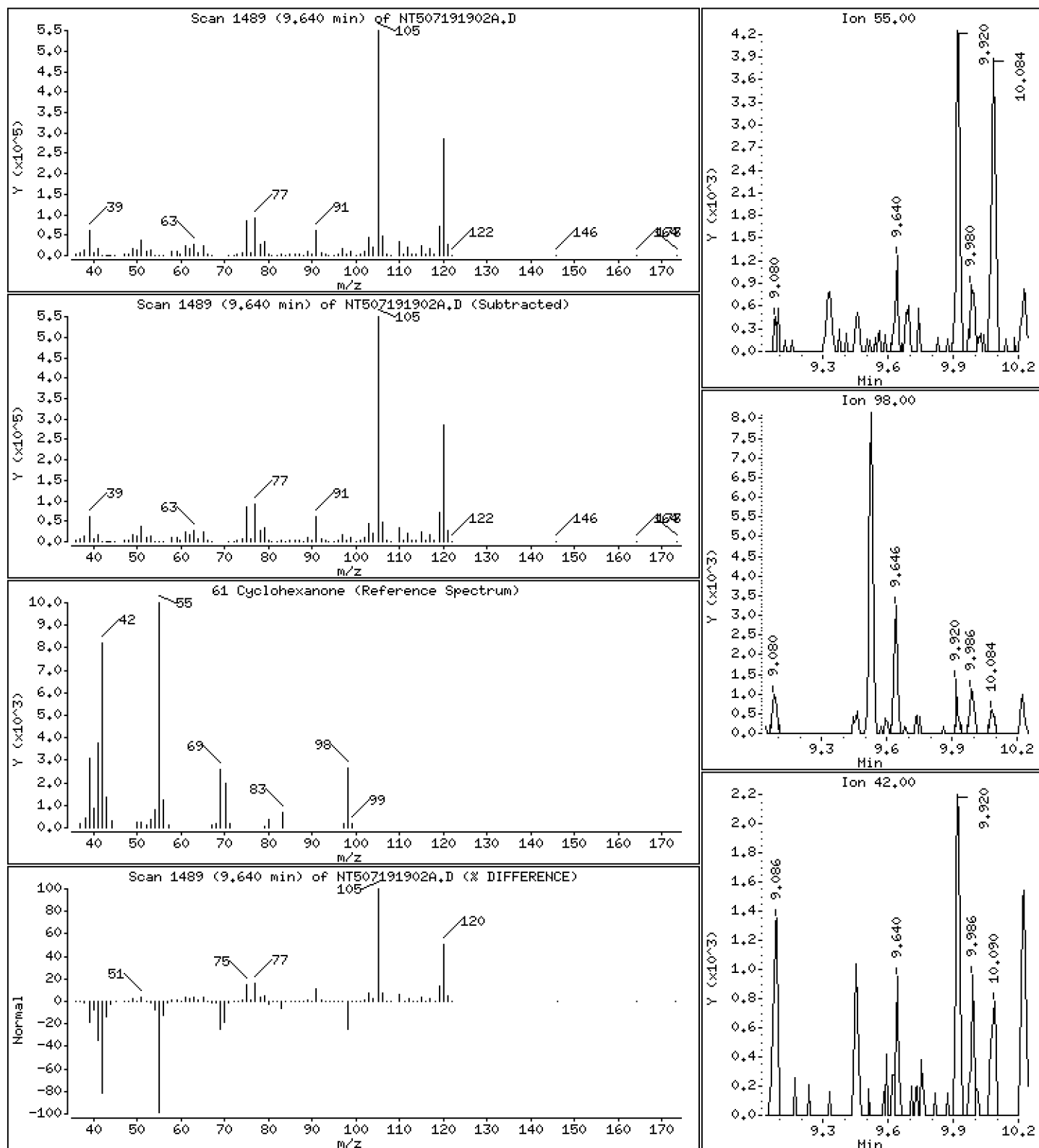
Sample Info: ICV1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

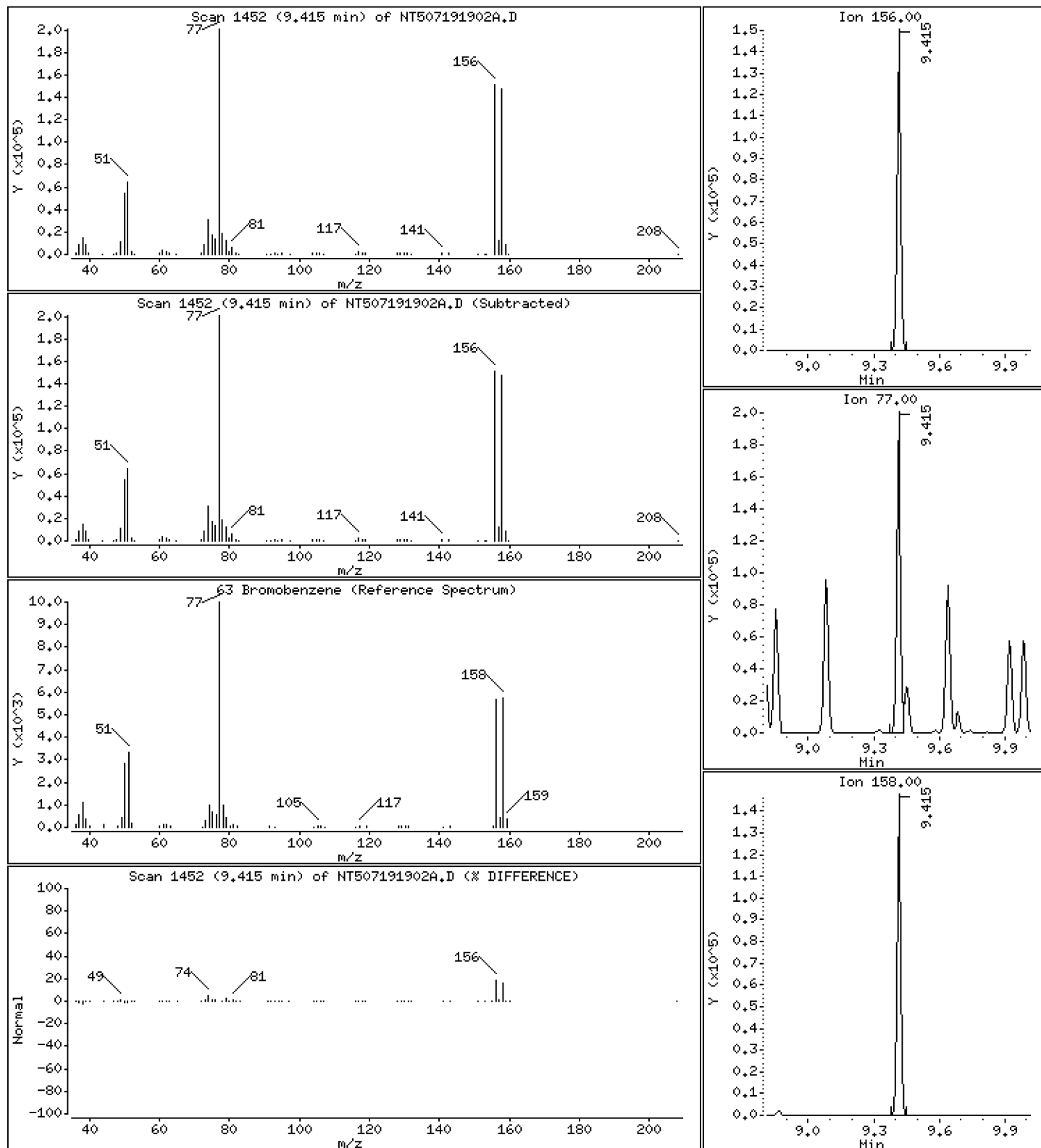
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 46,800 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

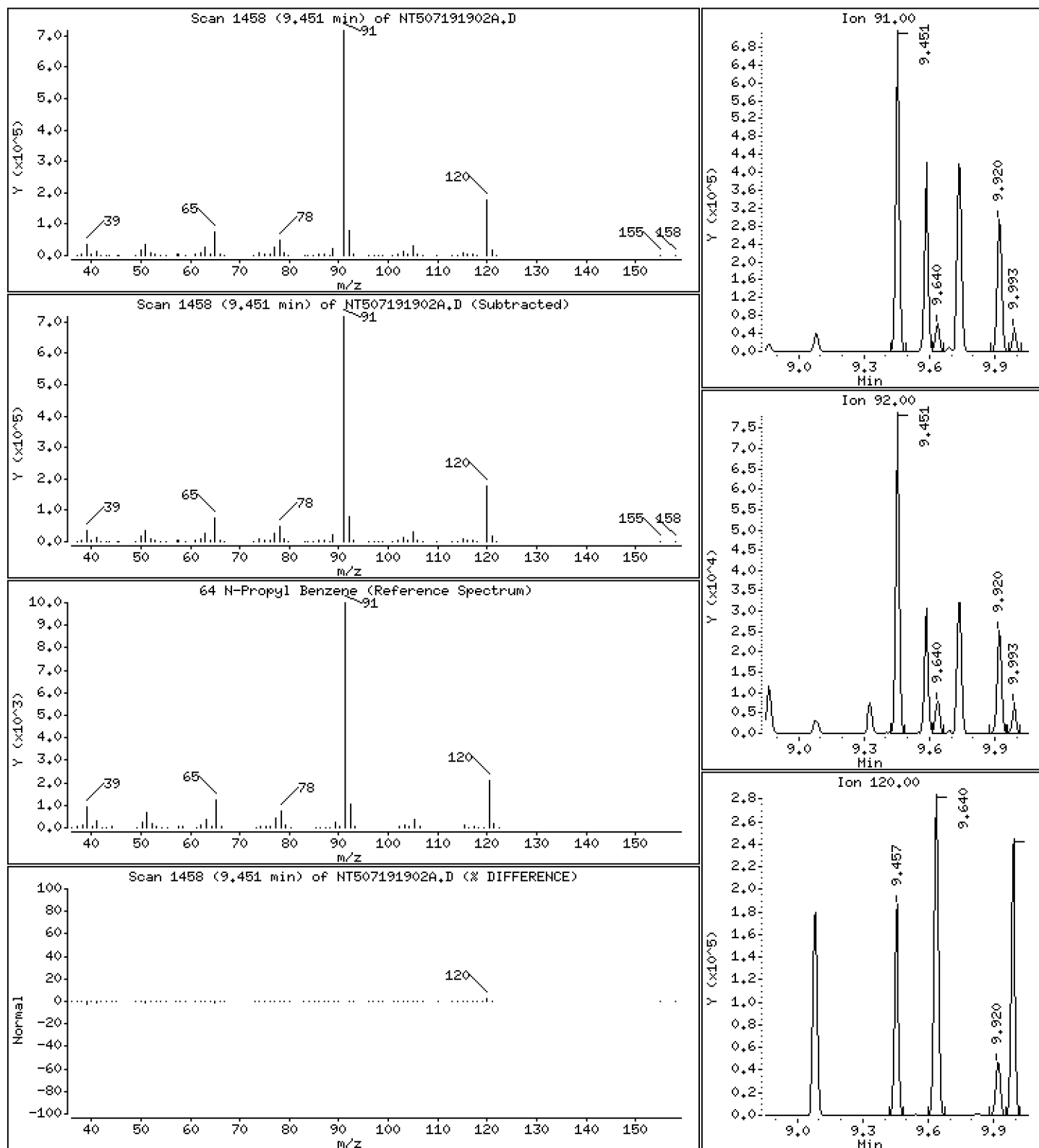
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 51,120 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

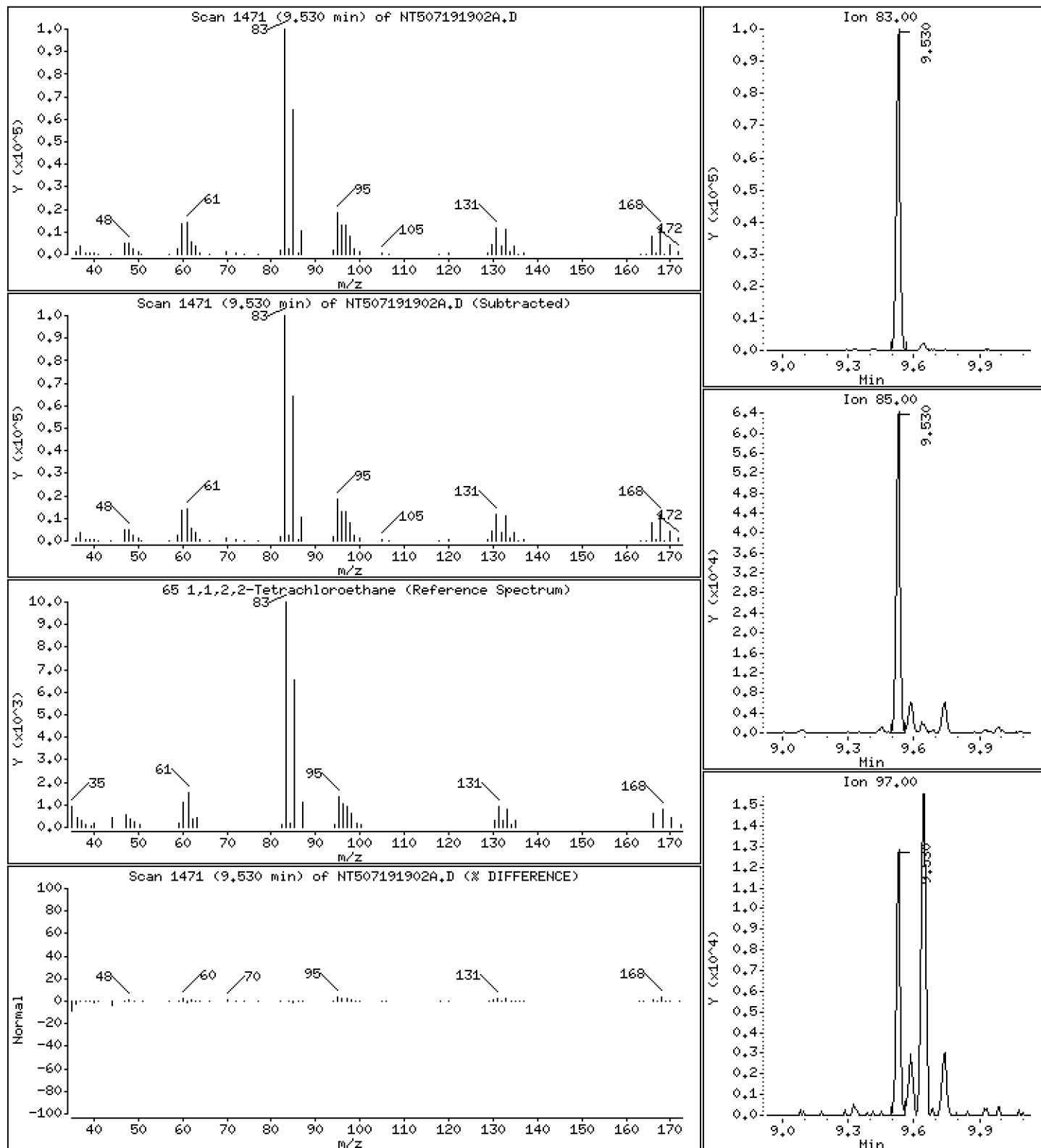
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 45,640 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

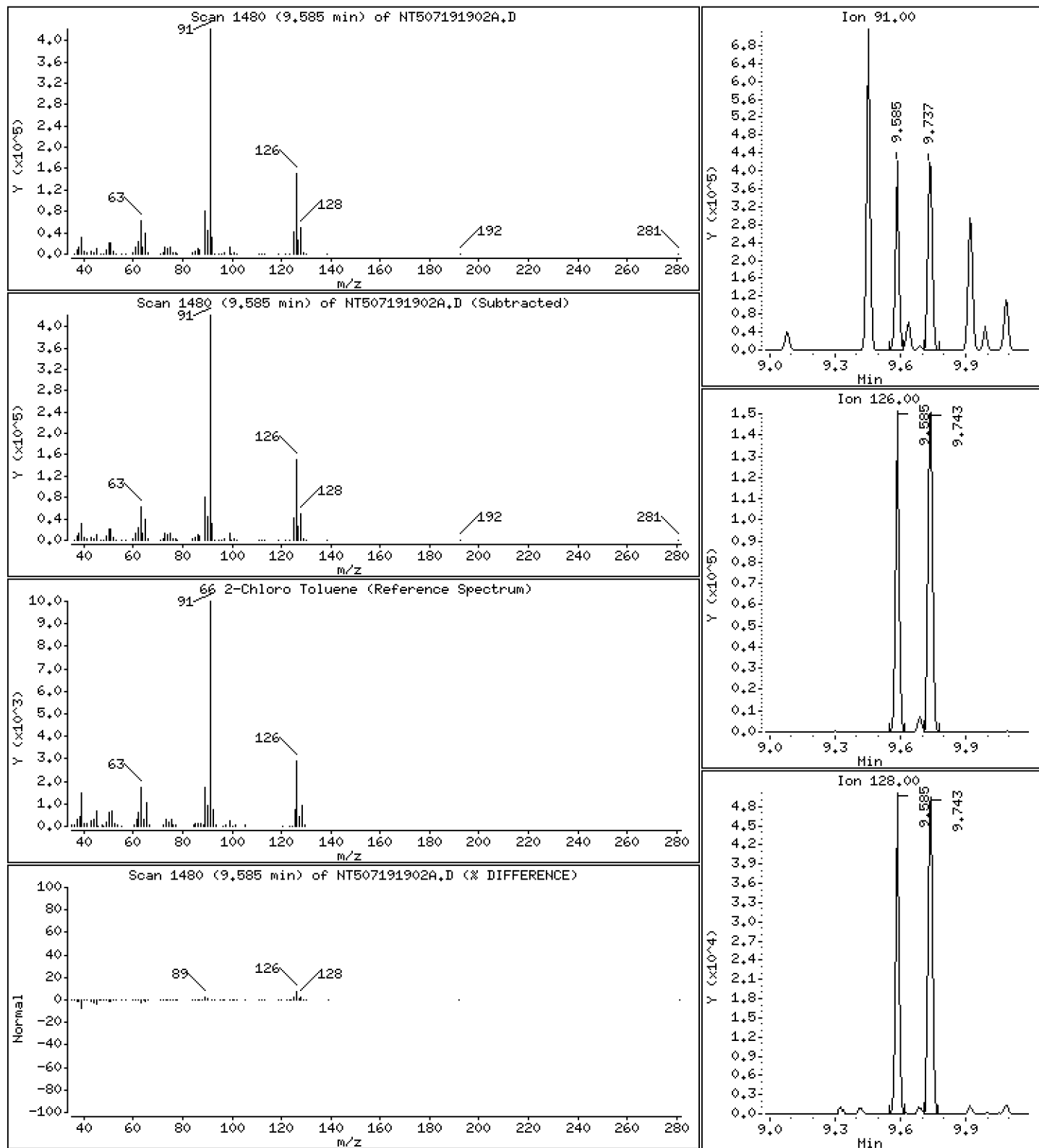
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 49,961 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

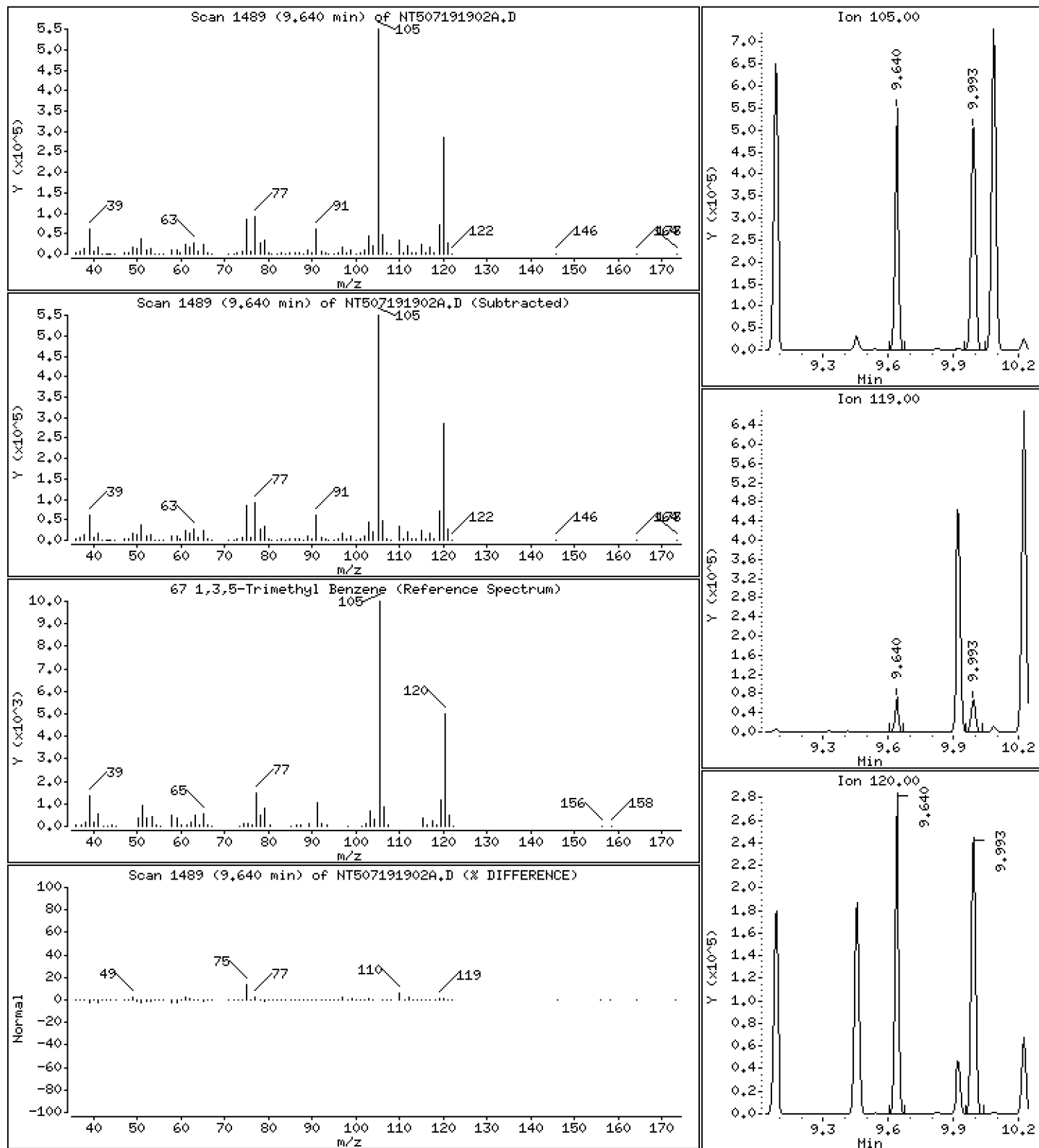
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 50,388 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

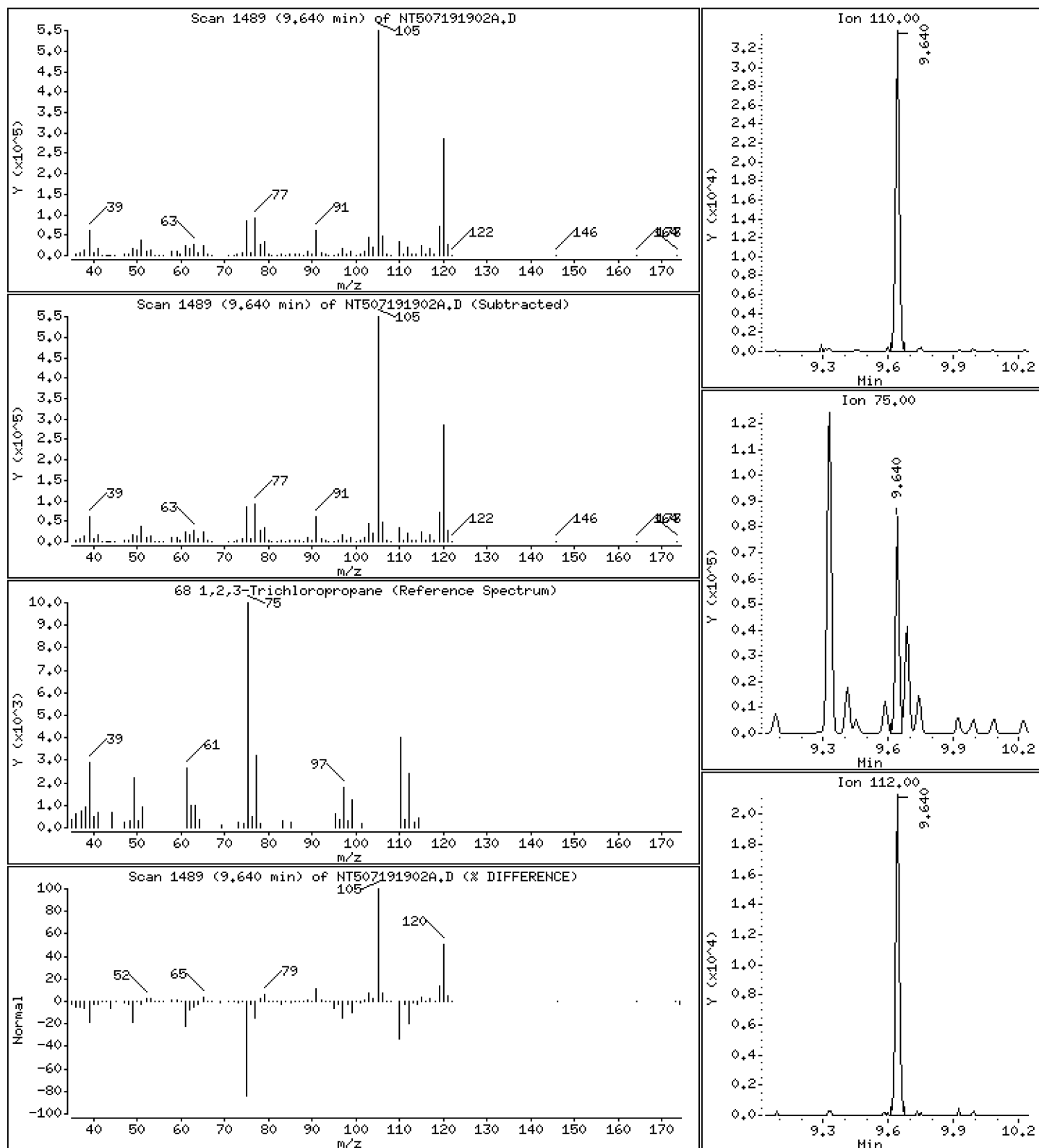
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 46.039 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

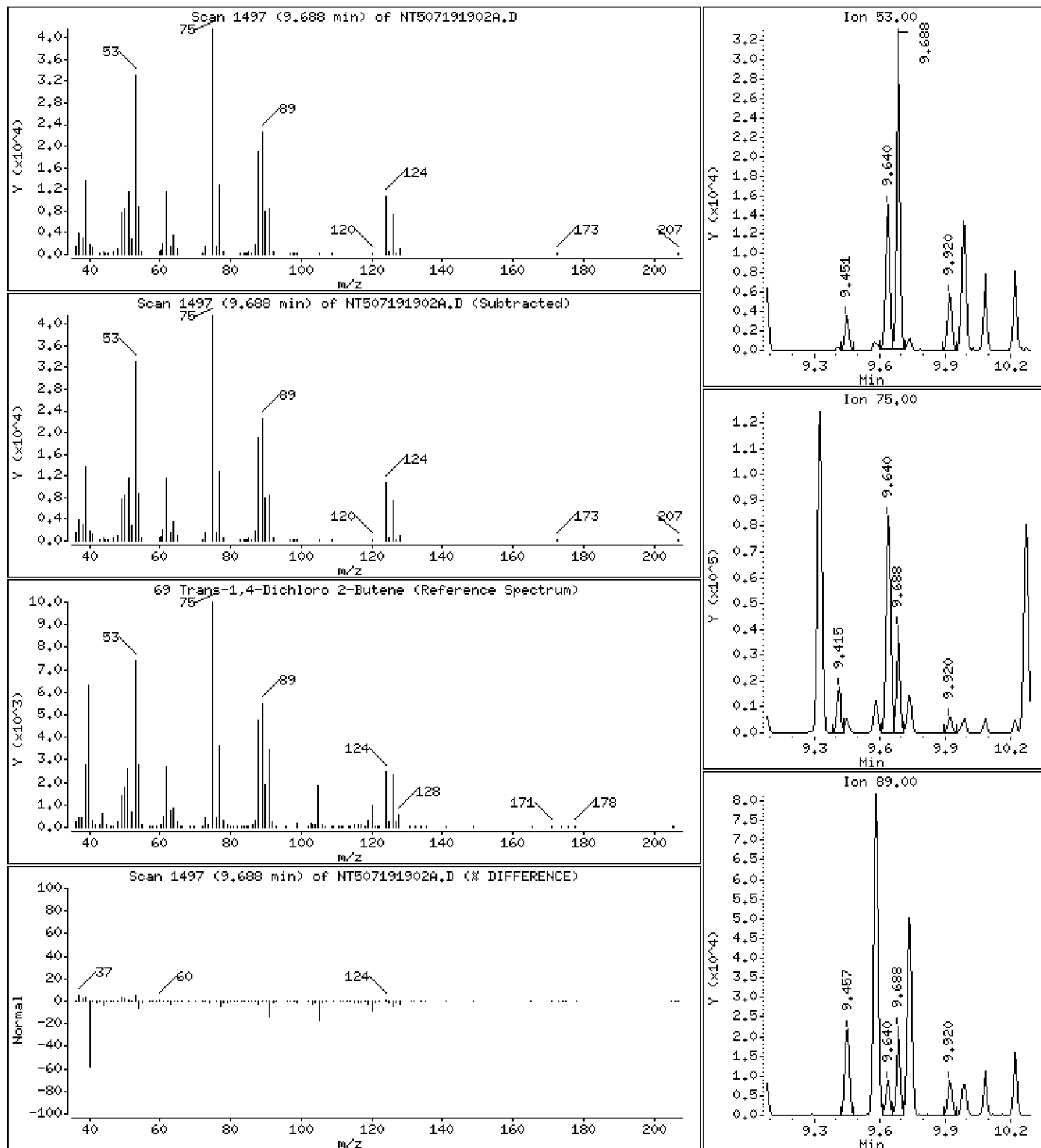
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 50.042 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

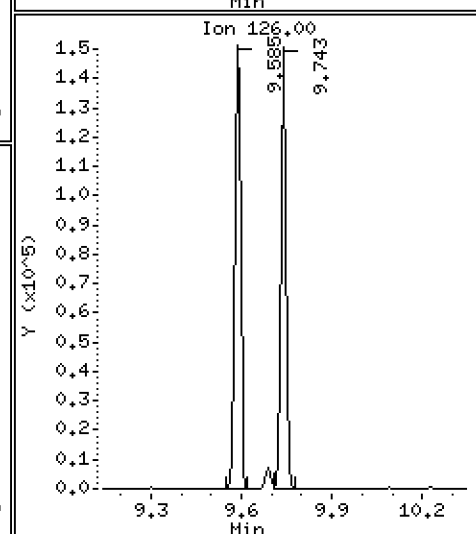
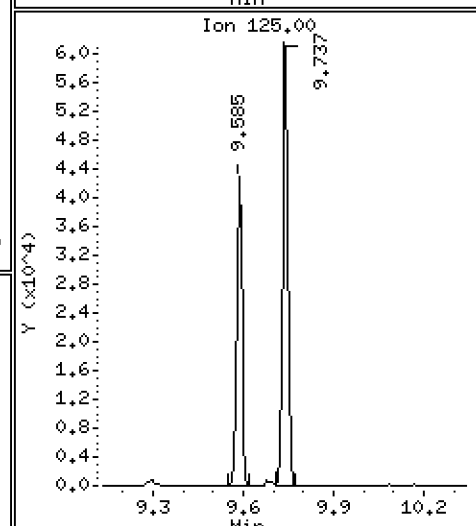
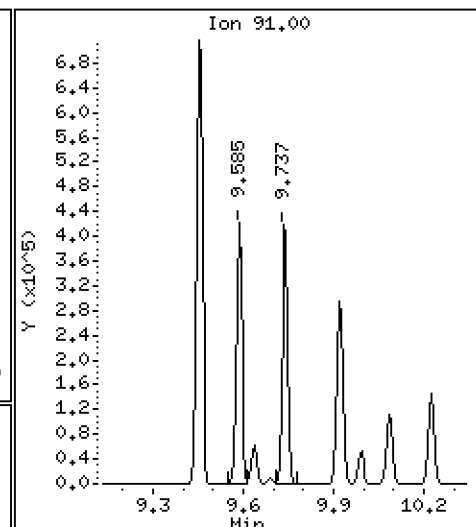
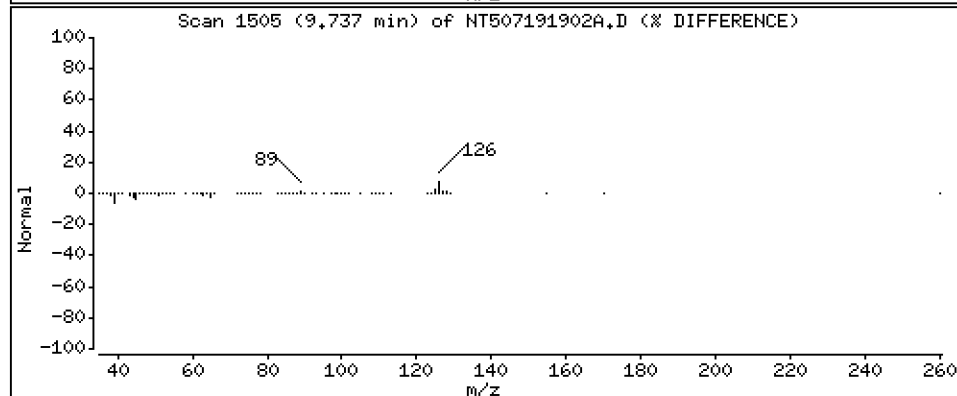
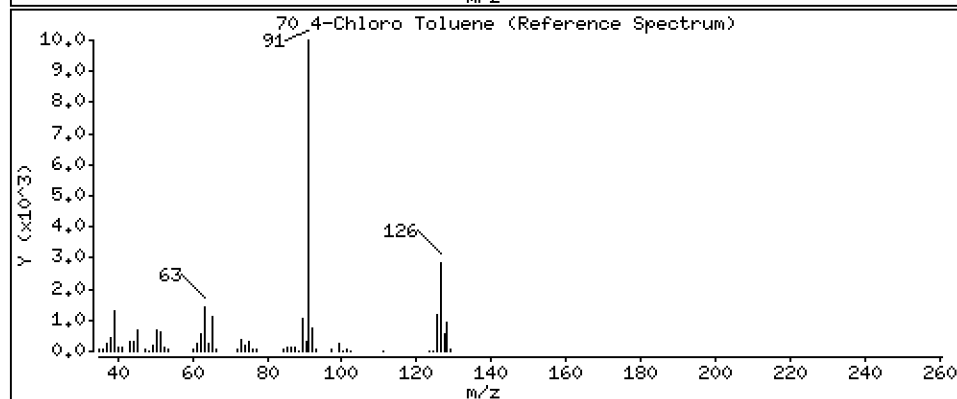
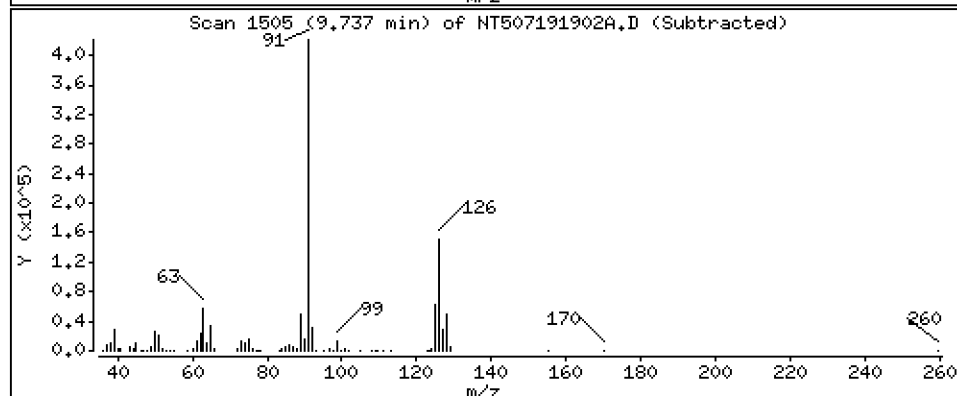
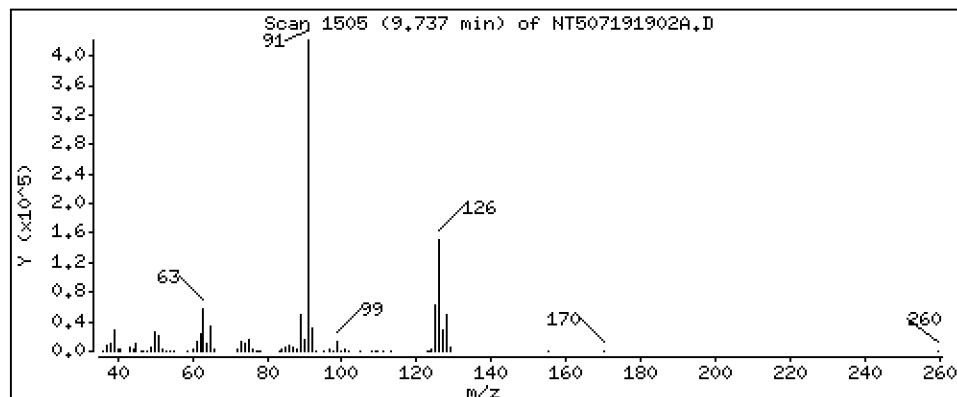
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 50,756 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

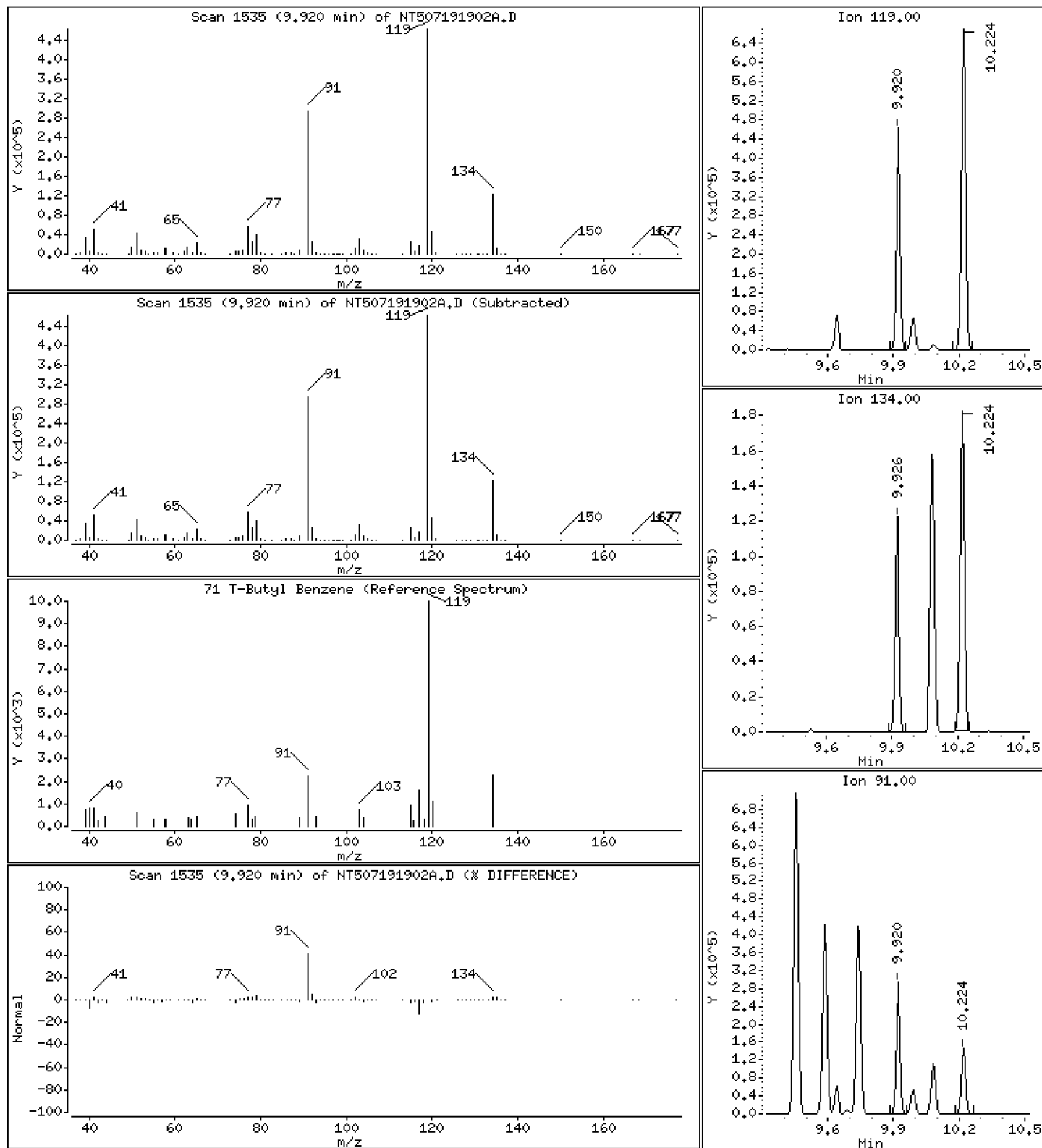
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 49.487 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

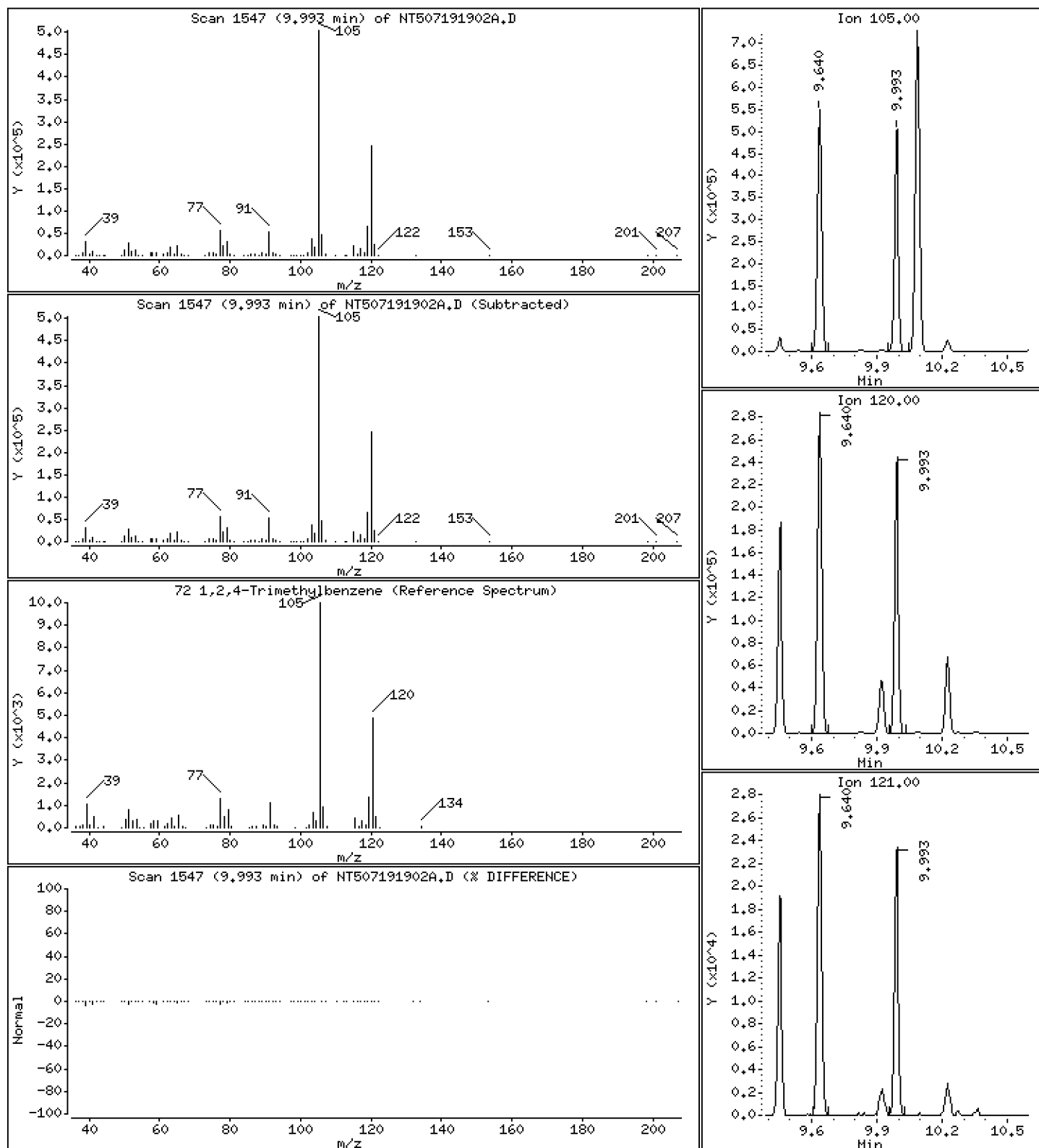
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 50.672 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

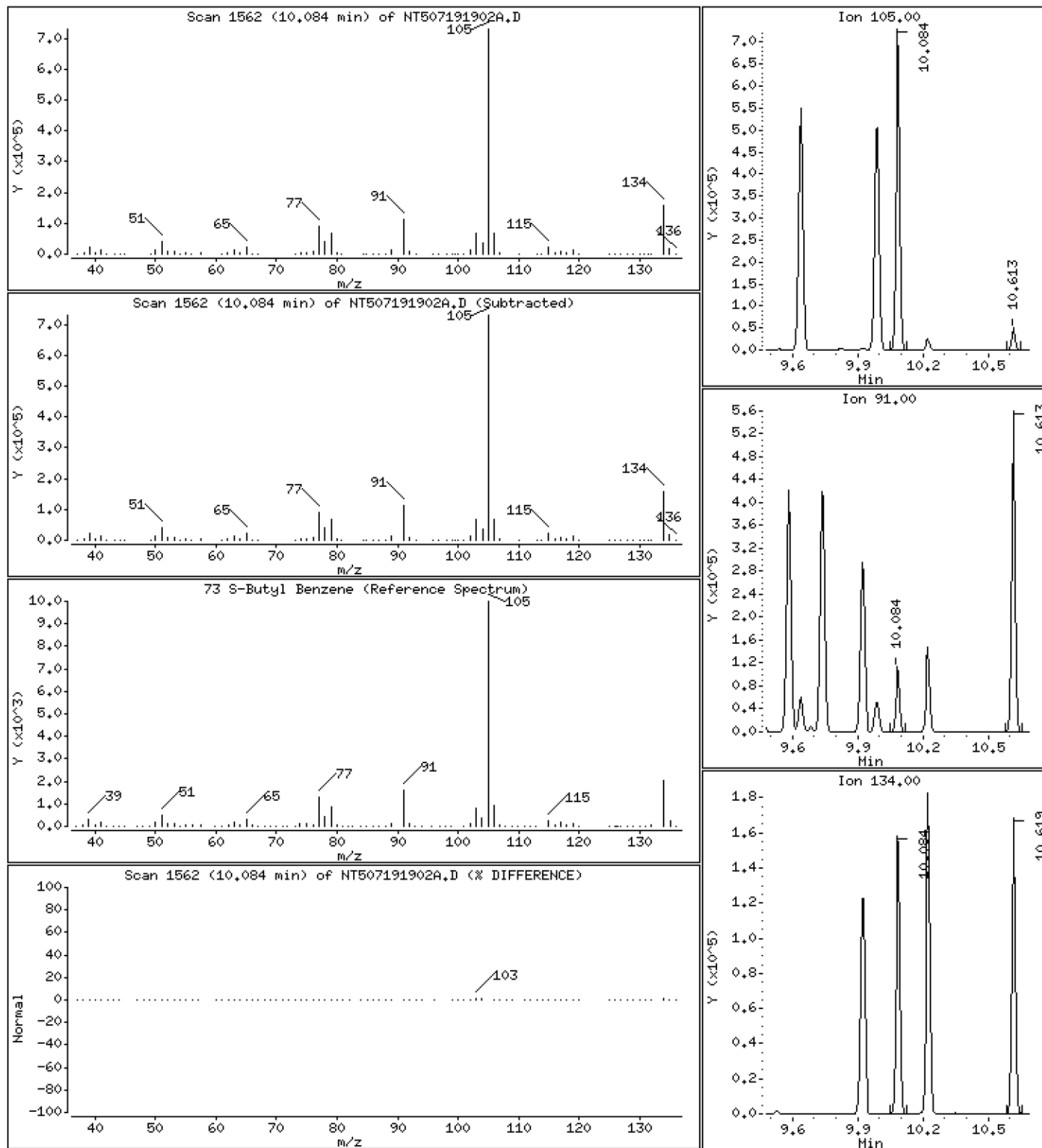
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 50.818 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

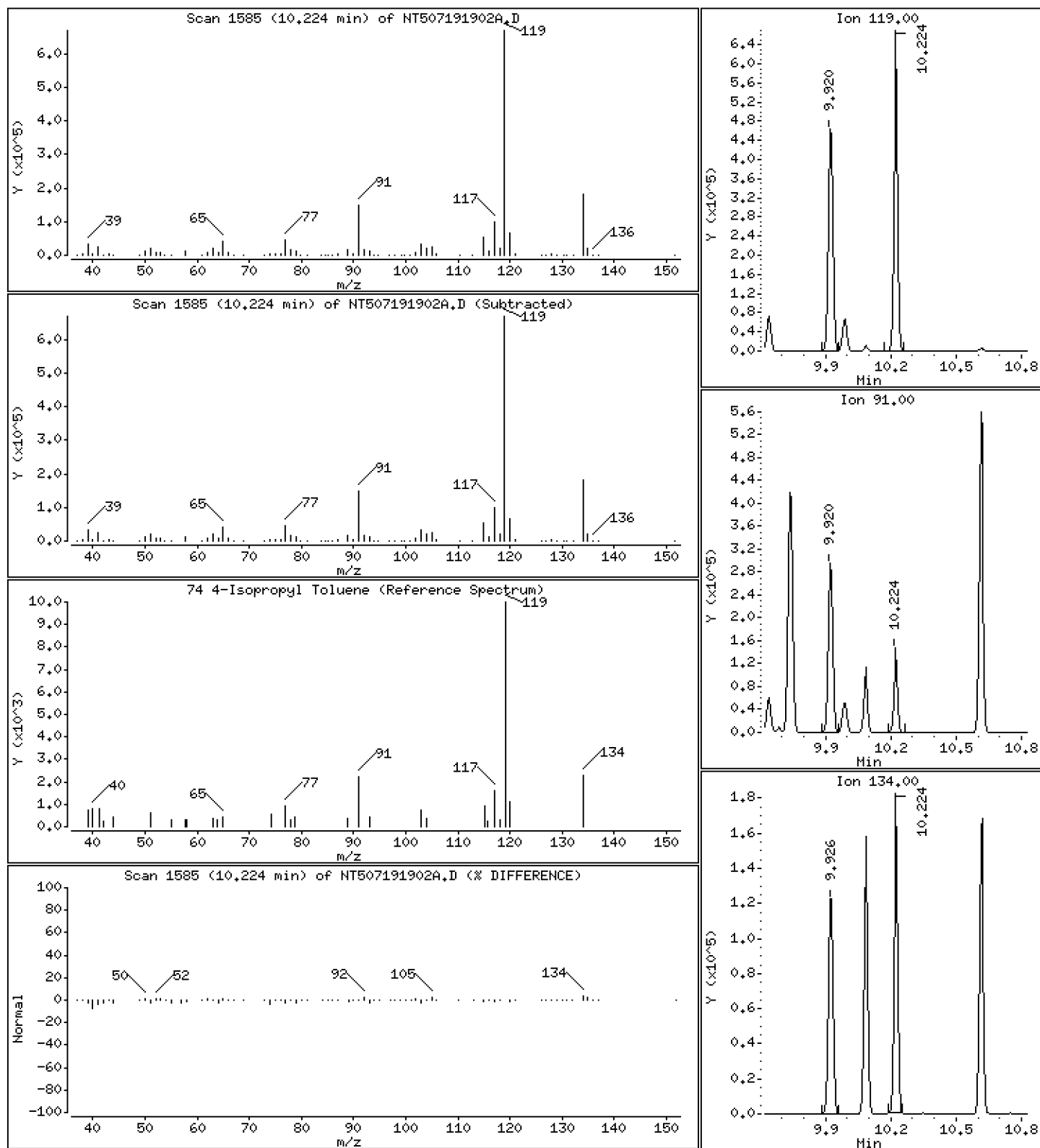
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 51,640 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

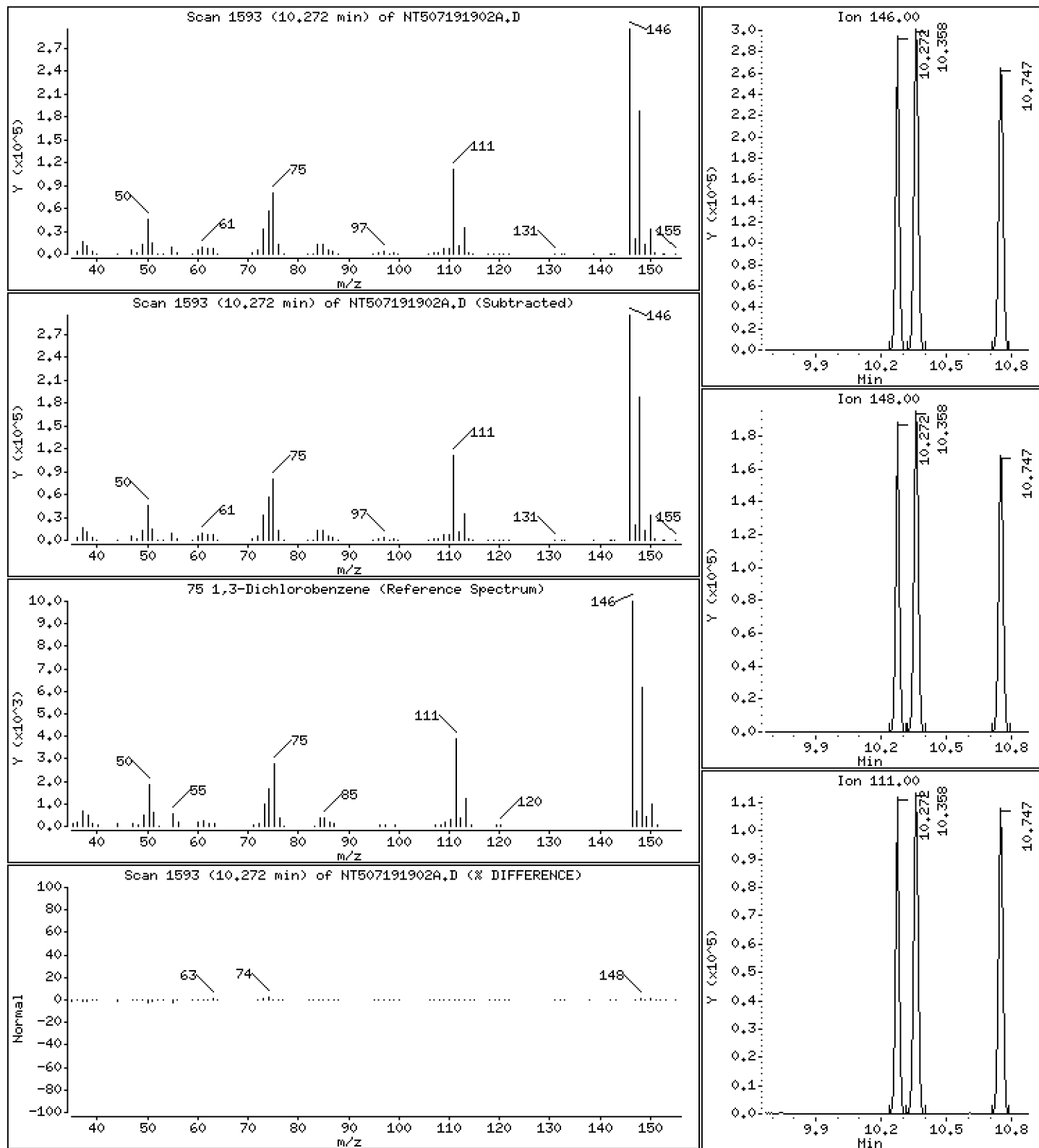
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 47,394 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

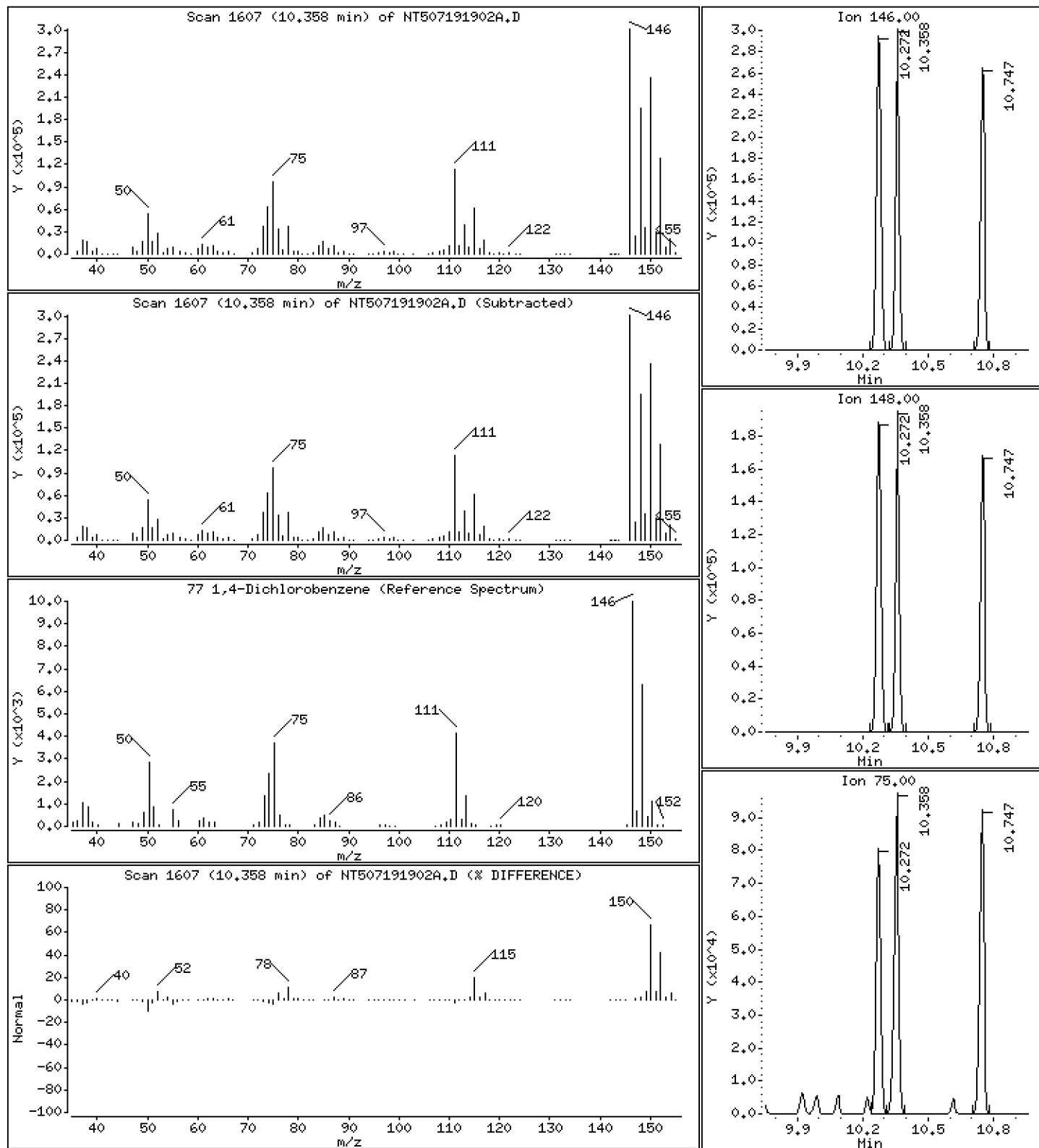
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 47,614 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

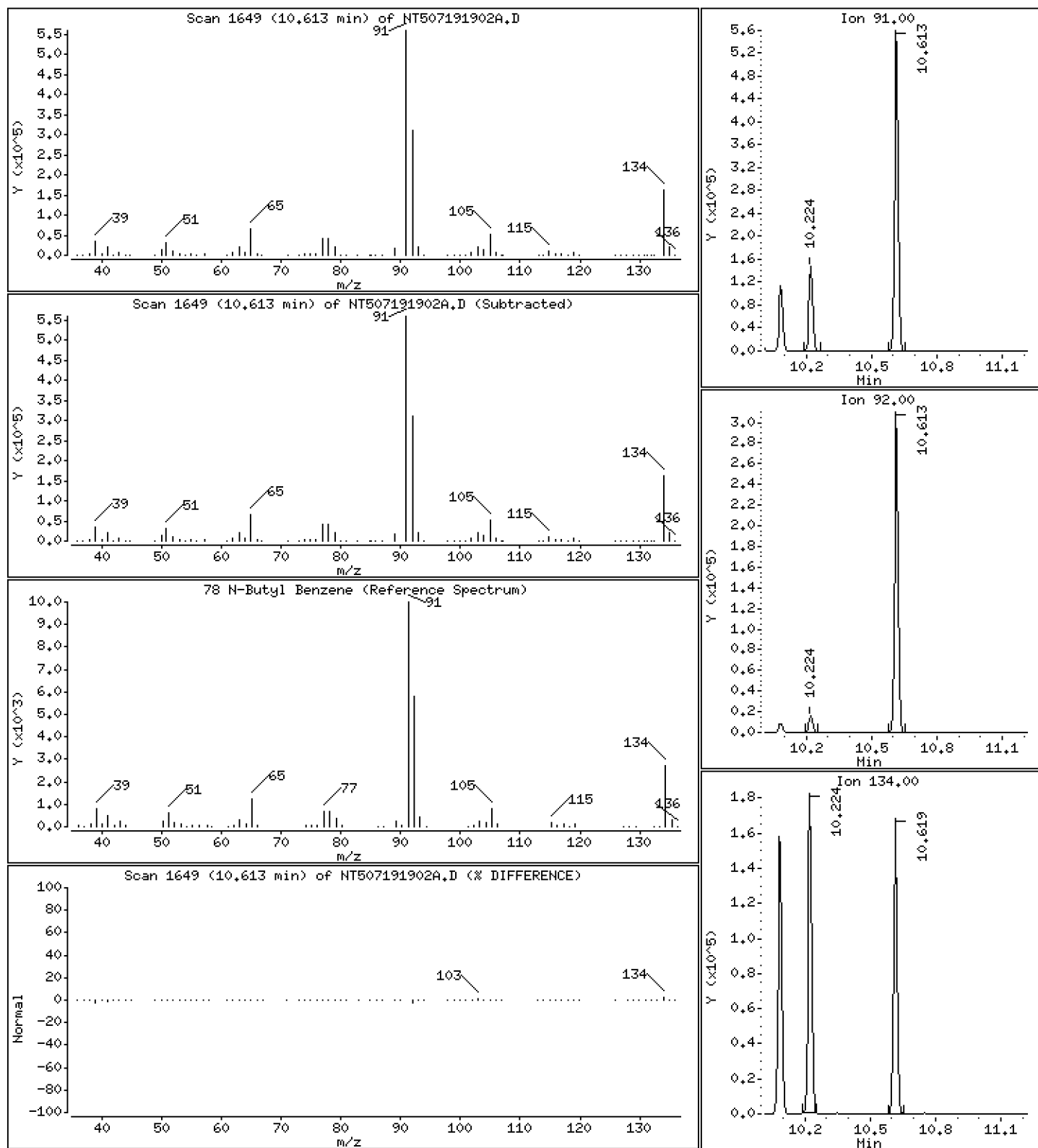
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 52,272 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

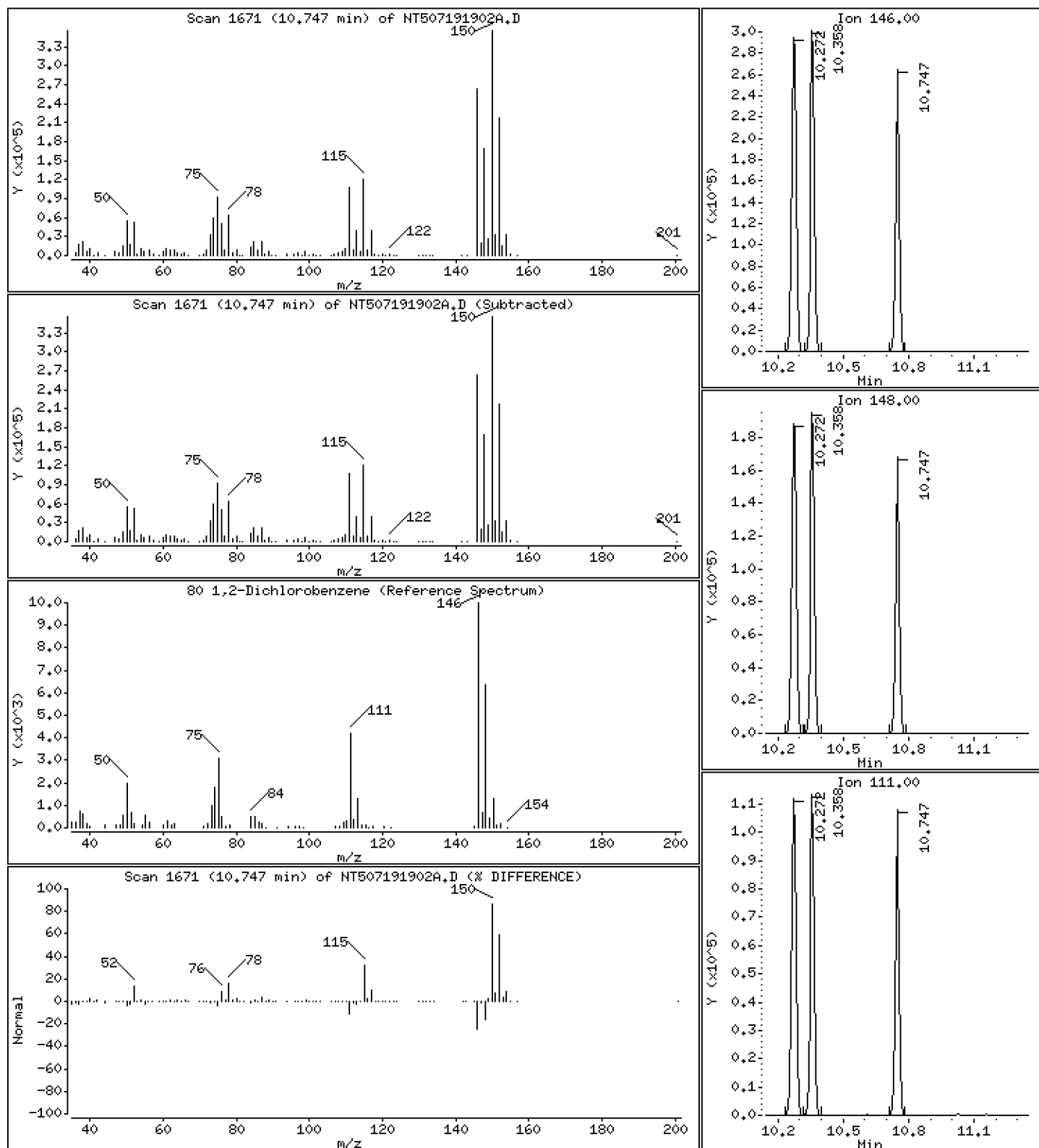
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 46,602 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

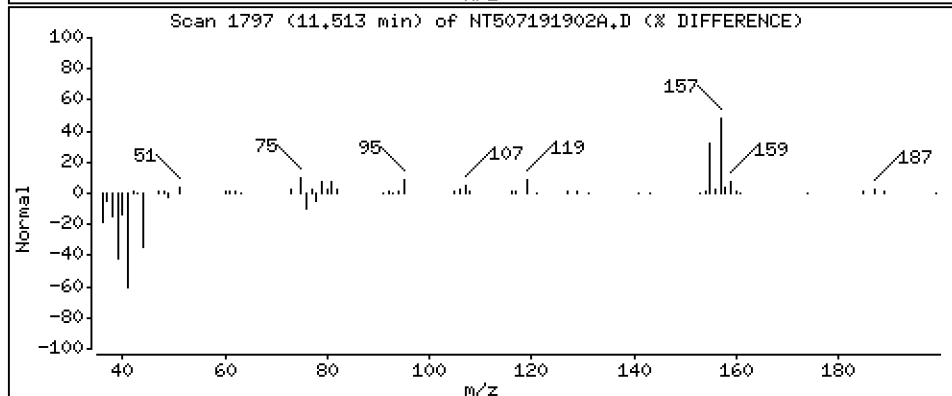
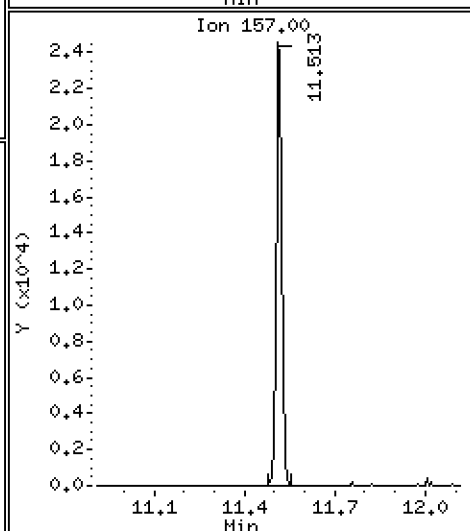
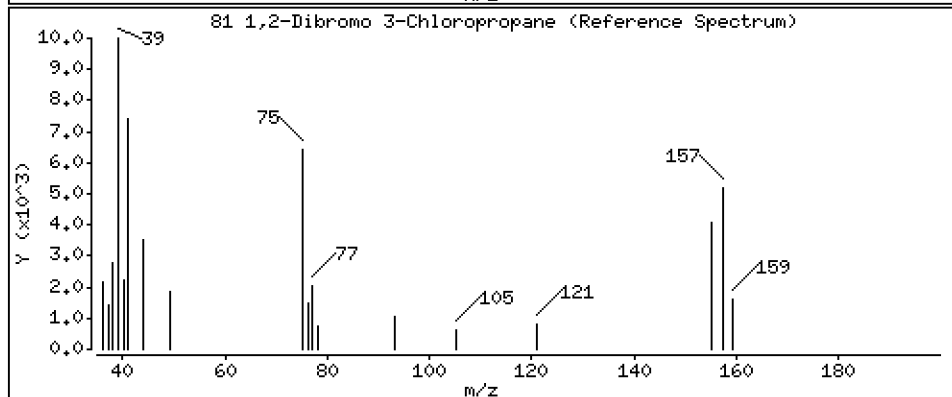
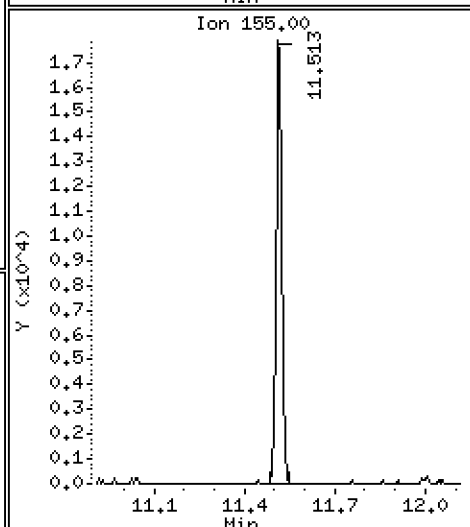
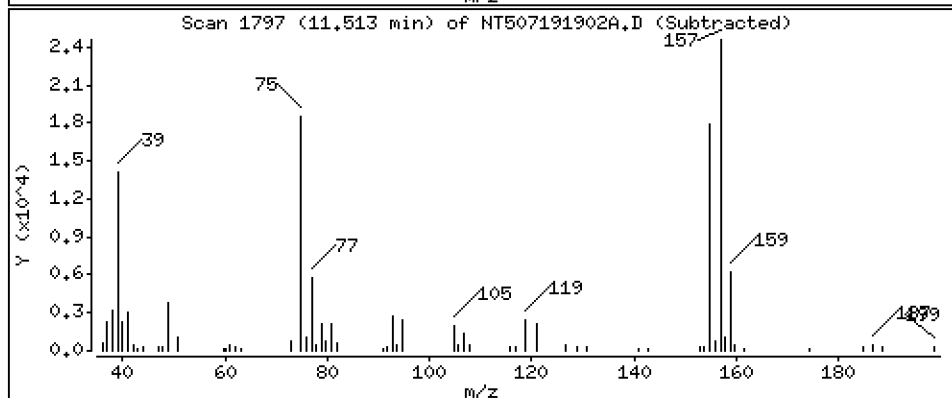
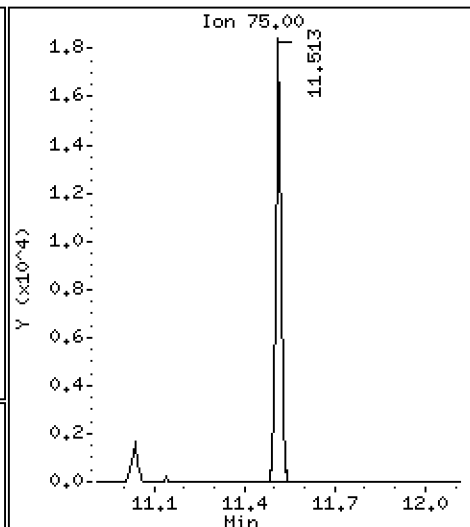
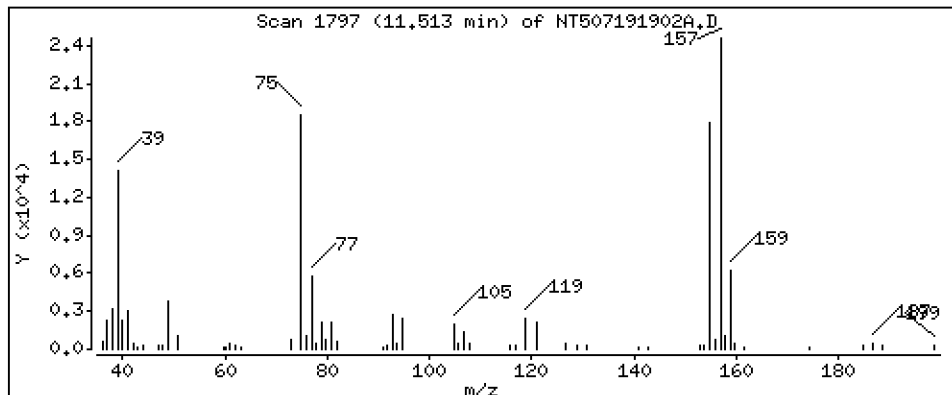
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 46,127 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

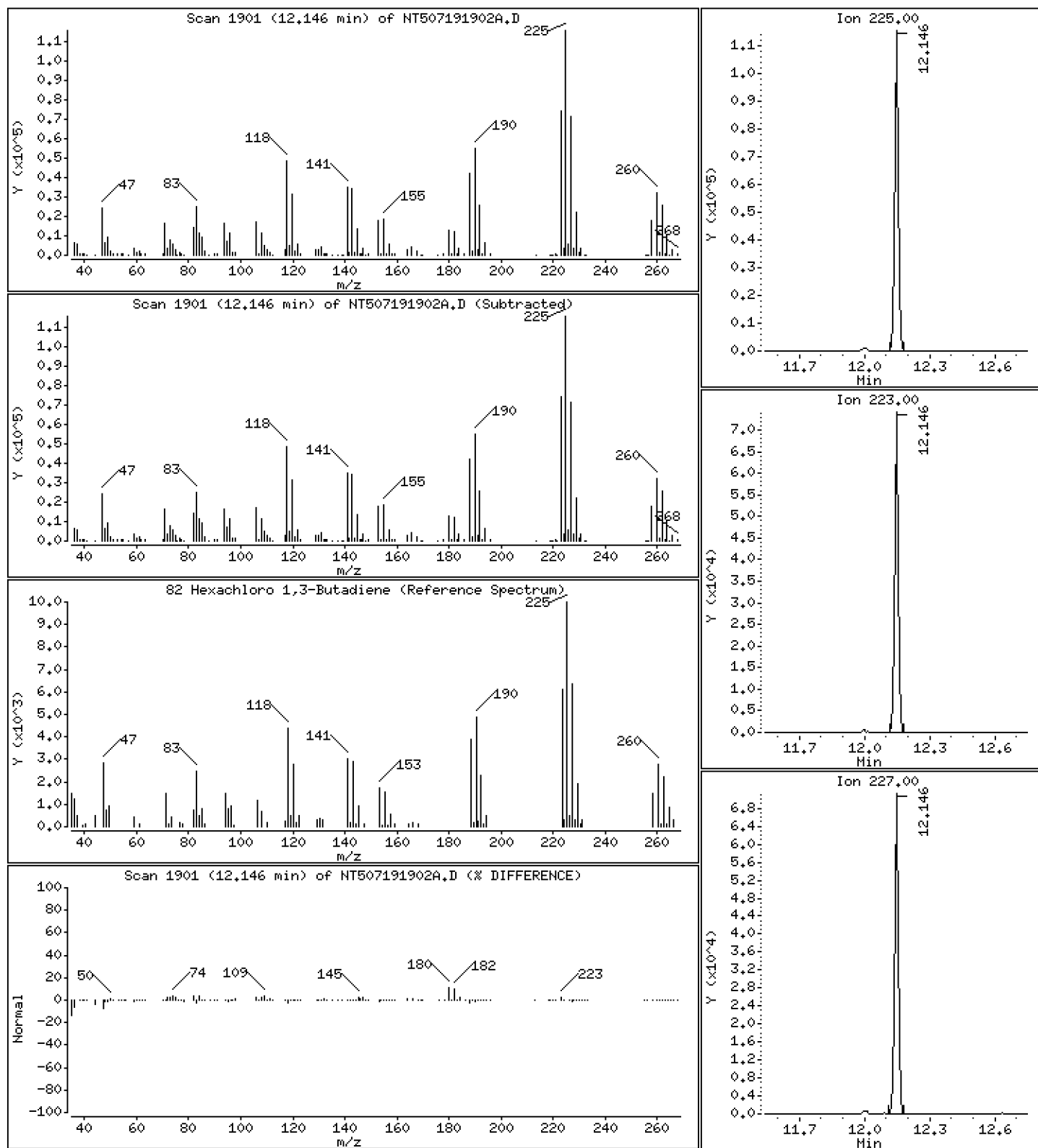
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 50,410 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

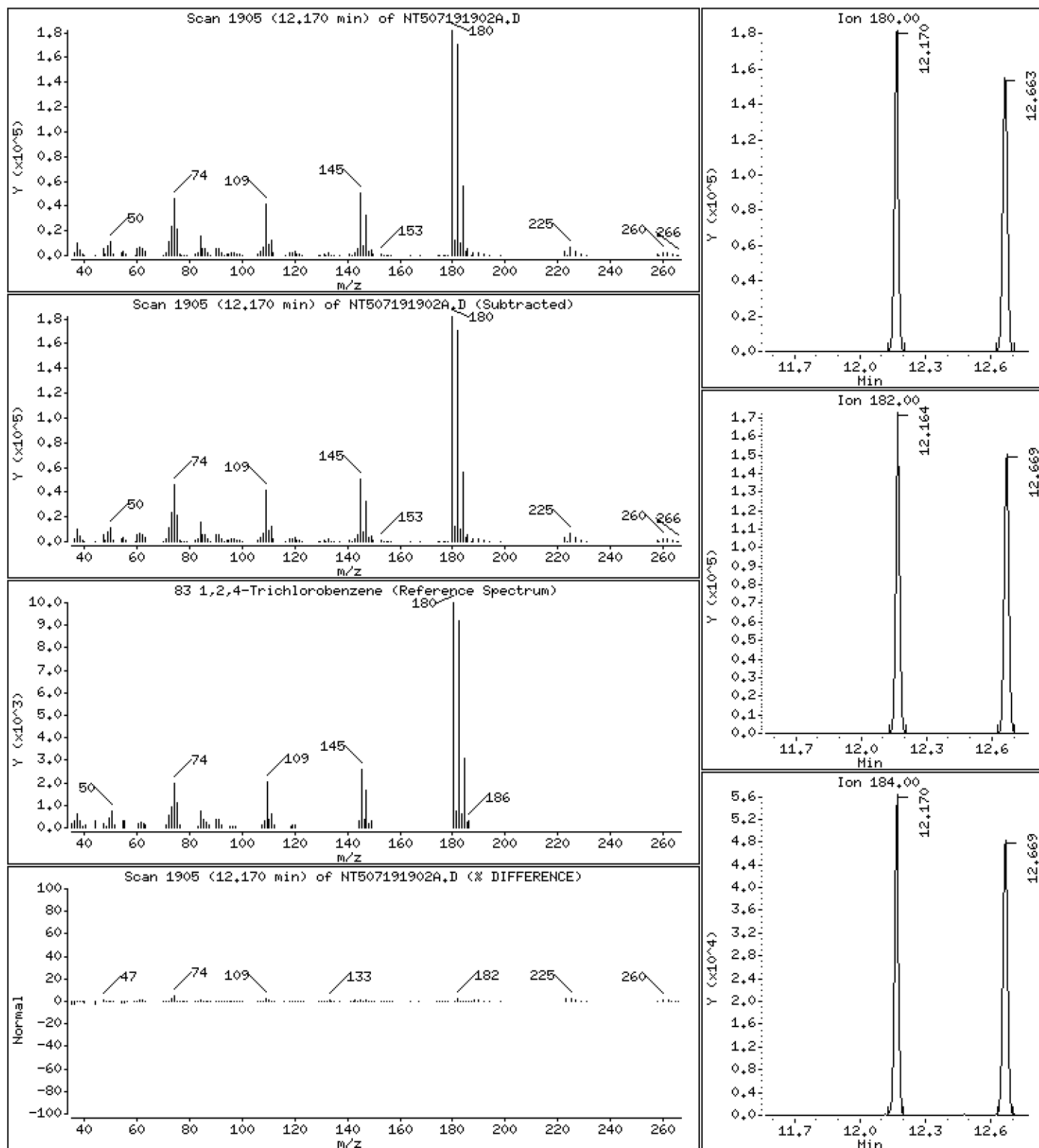
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 48,681 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

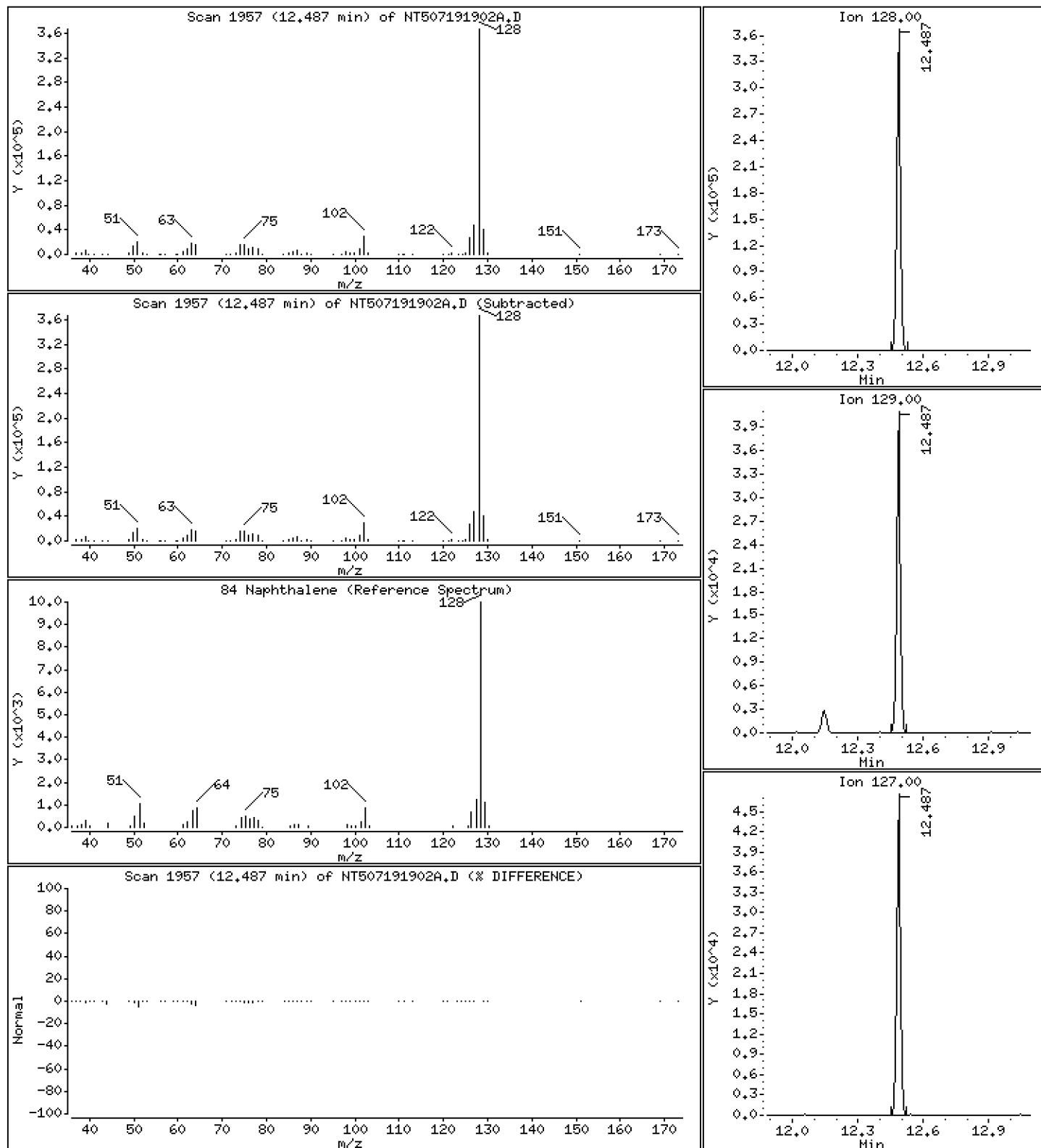
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 45,862 ug/Kg



Date : 19-JUL-2019 13:28

Client ID:

Instrument: nt5.i

Sample Info: ICV1

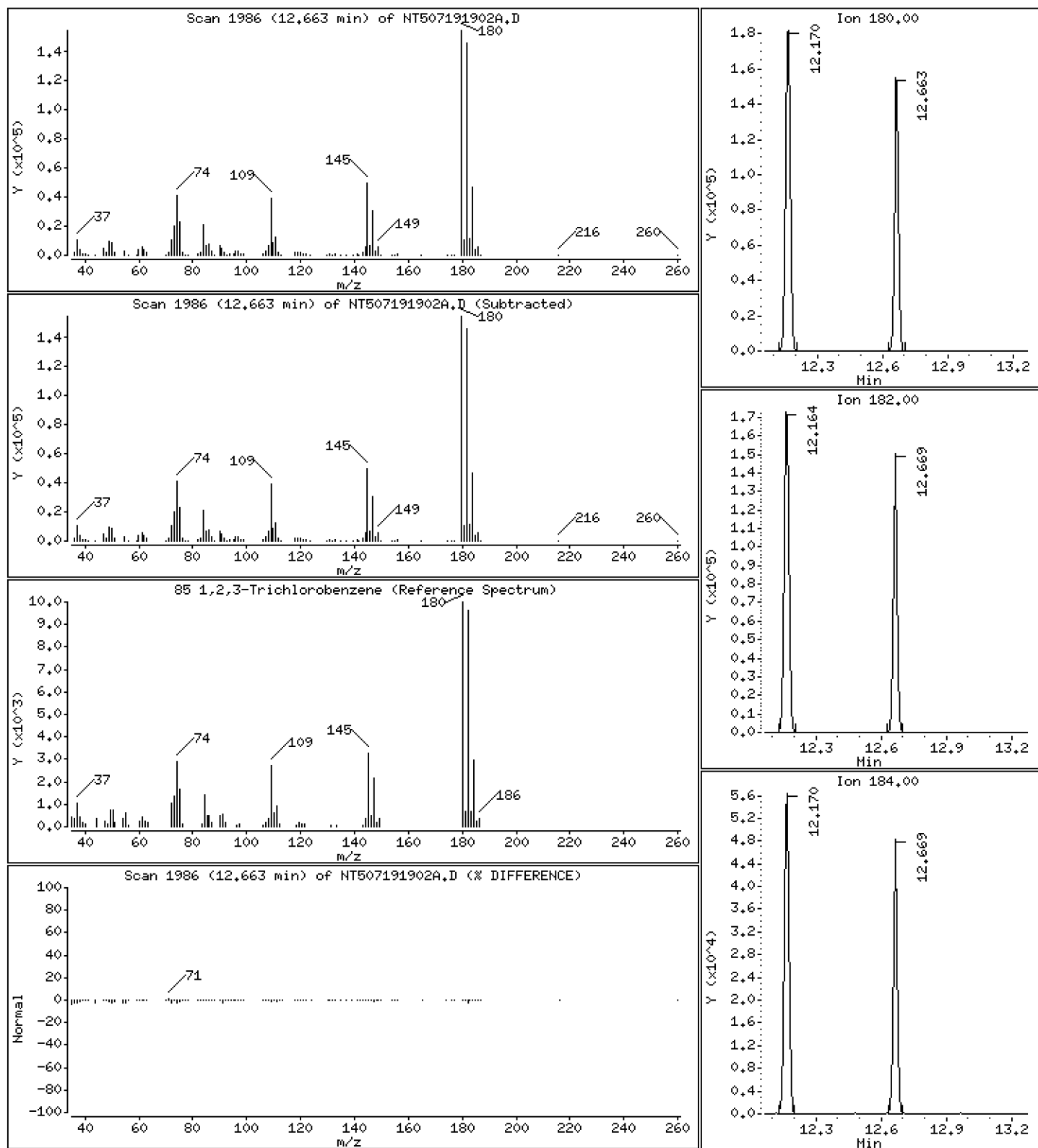
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 46,337 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190719.b\NT507191902A.D
 Lab Smp Id: bhg0418-bs1
 Inj Date : 19-JUL-2019 13:28
 Operator : PB Inst ID: nt5.i
 Smp Info : ICV1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Meth Date : 19-Jul-2019 13:49 patrickb Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamd1.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE		ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====	=====	=====	=====	=====	=====		=====	=====
1 Dichlorodifluoromethane	85	1.329	1.329	(0.249)	170553	45.1259		45.126	
2 Chloromethane	50	1.487	1.487	(0.279)	157067	50.1254		50.125	
3 Vinyl Chloride	62	1.554	1.554	(0.292)	171919	54.3513		54.351	
4 Bromomethane	94	1.834	1.834	(0.344)	121446	52.2677		52.268	
5 Chloroethane	64	1.943	1.943	(0.365)	150993	60.4464		60.446	
6 Trichlorofluoromethane	101	2.059	2.059	(0.386)	310003	51.4354		51.435	
7 1,1-Dichloroethene	96	2.534	2.534	(0.475)	165909	53.6672		53.667	
8 Carbon Disulfide	76	2.540	2.540	(0.476)	469023	54.3721		54.372	
9 112Trichloro122Trifluoroethane	101	2.582	2.582	(0.484)	158399	56.1368		56.137	
10 Iodomethane	142	2.661	2.661	(0.499)	194568	48.2460		48.246	
11 Bromoethane	108	2.795	2.795	(0.524)	108440	52.1065		52.107	
12 Acrolein	56	2.911	2.911	(0.546)	77217	245.814		245.81	
13 Methylene Chloride	84	3.148	3.148	(0.590)	148018	48.2196		48.220	
14 Acetone	43	3.258	3.258	(0.611)	144559	261.567		261.57	
15 Trans-1,2-Dichloroethene	96	3.306	3.306	(0.620)	178778	53.8146		53.815	
16 Methyl tert butyl ether	73	3.483	3.483	(0.653)	353992	49.1644		49.164	
173 n-Hexane	41	3.483	3.483	(0.653)	72342				
17 1,1-Dichloroethane	63	3.939	3.939	(0.739)	267535	53.6740		53.674	
18 Acrylonitrile	53	4.024	4.024	(0.755)	31667	48.2271		48.227	
19 Vinyl Acetate	43	4.237	4.237	(0.795)	245791	53.7824		53.782	
20 Cis-1,2-Dichloroethene	96	4.456	4.456	(0.836)	188844	55.3152		55.315	
22 2,2-Dichloropropane	77	4.547	4.547	(0.853)	287471	59.8498		59.850	
23 Bromochloromethane	128	4.638	4.638	(0.870)	86177	51.4128		51.413	
24 Chloroform	83	4.724	4.724	(0.886)	289106	55.0615		55.061	
25 Carbon Tetrachloride	117	4.815	4.815	(0.833)	284339	53.1745		53.174	
\$ 27 Dibromofluoromethane	111	4.888	4.888	(0.917)	222586	54.2696		54.270 (R)	
26 1,1,1-Trichloroethane	97	4.882	4.882	(0.916)	297544	57.7839		57.784	
28 1,1-Dichloropropene	75	4.997	4.997	(0.864)	244388	56.5895		56.589	
29 2-Butanone	72	5.040	5.040	(0.945)	70550	271.623		271.62	
30 Benzene	78	5.216	5.216	(0.902)	658559	51.1364		51.136	
* 31 Pentafluorobenzene	168	5.332	5.332	(1.000)	375043	50.0000			
\$ 32 d4-1,2-Dichloroethane	65	5.350	5.350	(1.003)	191051	55.6839		55.684 (R)	
33 1,2-Dichloroethane	62	5.405	5.405	(0.935)	183005	49.4737		49.474	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130	5.734	5.734	(0.992)	205215	51.0653	51.065
* 35 1,4-Difluorobenzene	114	5.782	5.782	(1.000)	726541	50.0000	
37 Dibromomethane	93	6.092	6.092	(1.054)	87864	49.7336	49.734
38 1,2-Dichloropropane	63	6.184	6.184	(1.069)	146765	52.0178	52.018
39 Bromodichloromethane	83	6.245	6.245	(1.080)	210914	50.2391	50.239
172 2-Pentanone	86	6.537	6.537	(1.130)	92131	251.047	251.05
40 2-Chloroethyl Vinyl Ether	63	6.756	6.756	(1.168)	77604	47.4547	47.455
41 Cis 1,3-dichloropropene	75	6.786	6.786	(1.174)	253910	51.7644	51.764
\$ 42 d8-Toluene	98	6.932	6.932	(1.199)	878403	51.6282	51.628 (R)
43 Toluene	92	6.975	6.975	(1.206)	439193	49.9511	49.951
44 Tetrachloroethene	166	7.291	7.291	(0.884)	220890	49.3643	49.364
45 4-Methyl-2-Pentanone	58	7.327	7.327	(1.267)	210053	246.675	246.68
46 Trans 1,3-Dichloropropene	75	7.346	7.346	(1.270)	223330	51.5013	51.501
47 1,1,2-Trichloroethane	97	7.473	7.473	(1.292)	120663	46.5841	46.584
48 Chlorodibromomethane	129	7.619	7.619	(0.923)	165682	47.8064	47.806
49 1,3-Dichloropropane	76	7.705	7.705	(0.934)	205407	47.1641	47.164
50 1,2-Dibromoethane	107	7.808	7.808	(1.350)	126110	48.1770	48.177
51 2-Hexanone	43	8.039	8.039	(0.974)	372152	245.787	245.79
* 52 d5-Chlorobenzene	117	8.252	8.252	(1.000)	728946	50.0000	
53 Chlorobenzene	112	8.270	8.270	(1.002)	498049	47.9536	47.954
54 Ethyl Benzene	91	8.301	8.301	(1.006)	843036	49.4561	49.456
55 1,1,1,2-Tetrachloroethane	131	8.331	8.331	(1.010)	174478	47.2542	47.254
56 m,p-xylene	106	8.429	8.429	(1.021)	678444	97.6890	97.689
57 o-Xylene	106	8.800	8.800	(1.066)	319868	48.4508	48.451
58 Styrene	104	8.848	8.848	(1.072)	512718	48.4618	48.462
59 Bromoform	173	8.867	8.867	(0.857)	106641	44.6637	44.664
60 Isopropyl Benzene	105	9.079	9.079	(0.878)	883288	51.0565	51.056
61 Cyclohexanone	55	9.639	9.639	(1.168)	1457		
\$ 62 4-Bromofluorobenzene	174	9.329	9.329	(1.130)	302597	48.4894	48.489 (R)
63 Bromobenzene	156	9.414	9.414	(0.910)	208542	46.8000	46.800
64 N-Propyl Benzene	91	9.451	9.451	(0.914)	1002422	51.1203	51.120
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530	(0.921)	142097	45.6404	45.640
66 2-Chloro Toluene	91	9.584	9.584	(0.926)	558630	49.9607	49.961
67 1,3,5-Trimethyl Benzene	105	9.639	9.639	(0.932)	718553	50.3877	50.388
68 1,2,3-Trichloropropane	110	9.639	9.639	(0.932)	49748	46.0395	46.039
69 Trans-1,4-Dichloro 2-Butene	53	9.688	9.688	(0.936)	42558	50.0417	50.042
70 4-Chloro Toluene	91	9.737	9.737	(0.941)	588302	50.7565	50.756
71 T-Butyl Benzene	119	9.919	9.919	(0.959)	654107	49.4872	49.487
72 1,2,4-Trimethylbenzene	105	9.992	9.992	(0.966)	704158	50.6718	50.672
73 S-Butyl Benzene	105	10.083	10.083	(0.975)	975522	50.8181	50.818
74 4-Isopropyl Toluene	119	10.223	10.223	(0.988)	850232	51.6395	51.640
75 1,3-Dichlorobenzene	146	10.272	10.272	(0.993)	417720	47.3939	47.394
* 76 d4-1,4-Dichlorobenzene	152	10.345	10.345	(1.000)	405621	50.0000	
77 1,4-Dichlorobenzene	146	10.357	10.357	(1.001)	412920	47.6140	47.614
78 N-Butyl Benzene	91	10.613	10.613	(1.026)	750397	52.2721	52.272
\$ 79 d4-1,2-Dichlorobenzene	152	10.740	10.740	(1.038)	355541	50.2593	50.259 (R)
80 1,2-Dichlorobenzene	146	10.746	10.746	(1.039)	370898	46.6018	46.602
81 1,2-Dibromo 3-Chloropropane	75	11.513	11.513	(1.113)	26617	46.1271	46.127
82 Hexachloro 1,3-Butadiene	225	12.146	12.146	(1.174)	163287	50.4103	50.410
83 1,2,4-Trichlorobenzene	180	12.170	12.170	(1.176)	265615	48.6807	48.681
84 Naphthalene	128	12.486	12.486	(1.207)	512122	45.8621	45.862
85 1,2,3-Trichlorobenzene	180	12.663	12.663	(1.224)	228796	46.3370	46.337

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 19-JUL-2019
 Lab File ID: NT507191902A.D Calibration Time: 13:28
 Lab Smp Id: bhg0418-bs1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	375043	-7.15
35 1,4-Difluorobenze	717664	358832	1435328	726541	1.24
52 d5-Chlorobenzene	696563	348282	1393126	728946	4.65
76 d4-1,4-Dichlorobe	380778	190389	761556	405621	6.52

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.33	4.83	5.83	5.33	0.00
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
52 d5-Chlorobenzene	8.25	7.75	8.75	8.25	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: bhg0418-bs1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	45.126	90.25	
2 Chloromethane	50.000	50.125	100.25	
3 Vinyl Chloride	50.000	54.351	108.70	
4 Bromomethane	50.000	52.268	104.54	
5 Chloroethane	50.000	60.446	120.89	
6 Trichlorofluoromet	50.000	51.435	102.87	
12 Acrolein	250.00	245.81	98.33	
9 112Trichloro122Tri	50.000	56.137	112.27	
14 Acetone	250.00	261.57	104.63	
7 1,1-Dichloroethene	50.000	53.667	107.33	
11 Bromoethane	50.000	52.107	104.21	
10 Iodomethane	50.000	48.246	96.49	
13 Methylene Chloride	50.000	48.220	96.44	
8 Carbon Disulfide	50.000	54.372	108.74	
18 Acrylonitrile	50.000	48.227	96.45	
15 Trans-1,2-Dichloro	50.000	53.815	107.63	
19 Vinyl Acetate	50.000	53.782	107.56	
17 1,1-Dichloroethane	50.000	53.674	107.35	
29 2-Butanone	250.00	271.62	108.65	
22 2,2-Dichloropropan	50.000	59.850	119.70	
20 Cis-1,2-Dichloroet	50.000	55.315	110.63	
24 Chloroform	50.000	55.061	110.12	
23 Bromochloromethane	50.000	51.413	102.83	
26 1,1,1-Trichloroeth	50.000	57.784	115.57	
28 1,1-Dichloropropen	50.000	56.589	113.18	
25 Carbon Tetrachlori	50.000	53.174	106.35	
33 1,2-Dichloroethane	50.000	49.474	98.95	
30 Benzene	50.000	51.136	102.27	
34 Trichloroethene	50.000	51.065	102.13	
38 1,2-Dichloropropan	50.000	52.018	104.04	
39 Bromodichlorometha	50.000	50.239	100.48	
172 2-Pentanone	250.00	251.05	100.42	
37 Dibromomethane	50.000	49.734	99.47	
40 2-Chloroethyl Viny	50.000	47.455	94.91	
45 4-Methyl-2-Pentano	250.00	246.68	98.67	
41 Cis 1,3-dichloropr	50.000	51.764	103.53	
43 Toluene	50.000	49.951	99.90	
46 Trans 1,3-Dichloro	50.000	51.501	103.00	
51 2-Hexanone	250.00	245.79	98.31	
47 1,1,2-Trichloroeth	50.000	46.584	93.17	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	47.164	94.33	
44 Tetrachloroethene	50.000	49.364	98.73	
48 Chlorodibromometha	50.000	47.806	95.61	
50 1,2-Dibromoethane	50.000	48.177	96.35	
53 Chlorobenzene	50.000	47.954	95.91	
55 1,1,1,2-Tetrachlor	50.000	47.254	94.51	
54 Ethyl Benzene	50.000	49.456	98.91	
56 m,p-xylene	100.00	97.689	97.69	
57 o-Xylene	50.000	48.451	96.90	
58 Styrene	50.000	48.462	96.92	
60 Isopropyl Benzene	50.000	51.056	102.11	
59 Bromoform	50.000	44.664	89.33	
65 1,1,2,2-Tetrachlor	50.000	45.640	91.28	
68 1,2,3-Trichloropro	50.000	46.039	92.08	
69 Trans-1,4-Dichloro	50.000	50.042	100.08	
64 N-Propyl Benzene	50.000	51.120	102.24	
63 Bromobenzene	50.000	46.800	93.60	
67 1,3,5-Trimethyl Be	50.000	50.388	100.78	
66 2-Chloro Toluene	50.000	49.961	99.92	
70 4-Chloro Toluene	50.000	50.756	101.51	
71 T-Butyl Benzene	50.000	49.487	98.97	
72 1,2,4-Trimethylben	50.000	50.672	101.34	
73 S-Butyl Benzene	50.000	50.818	101.64	
74 4-Isopropyl Toluen	50.000	51.640	103.28	
75 1,3-Dichlorobenzen	50.000	47.394	94.79	
77 1,4-Dichlorobenzen	50.000	47.614	95.23	
78 N-Butyl Benzene	50.000	52.272	104.54	
80 1,2-Dichlorobenzen	50.000	46.602	93.20	
81 1,2-Dibromo 3-Chlo	50.000	46.127	92.25	
83 1,2,4-Trichloroben	50.000	48.681	97.36	
82 Hexachloro 1,3-But	50.000	50.410	100.82	
84 Naphthalene	50.000	45.862	91.72	
85 1,2,3-Trichloroben	50.000	46.337	92.67	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	54.270	108.54	
\$ 32 d4-1,2-Dichloroeth	50.000	55.684	111.37	
\$ 42 d8-Toluene	50.000	51.628	103.26	
\$ 62 4-Bromofluorobenze	50.000	48.489	96.98	
\$ 79 d4-1,2-Dichloroben	50.000	50.259	100.52	

REVIEW SUMMARY FOR FILE - NT507191902A.D

Lab ID: bhg0418-bs1
 nt5.i, 20190719.b\VO122618S.m, 19-JUL-2019 13:28

RT	CO-ELUTION COMPOUNDS
9.640	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.640	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane
3.483	n-Hexane and Methyl tert butyl ether
9.640	Cyclohexanone and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507191902.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500

Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190719.b\NT507191903.D

Date: 19-JUL-2019 14:08

Client ID:

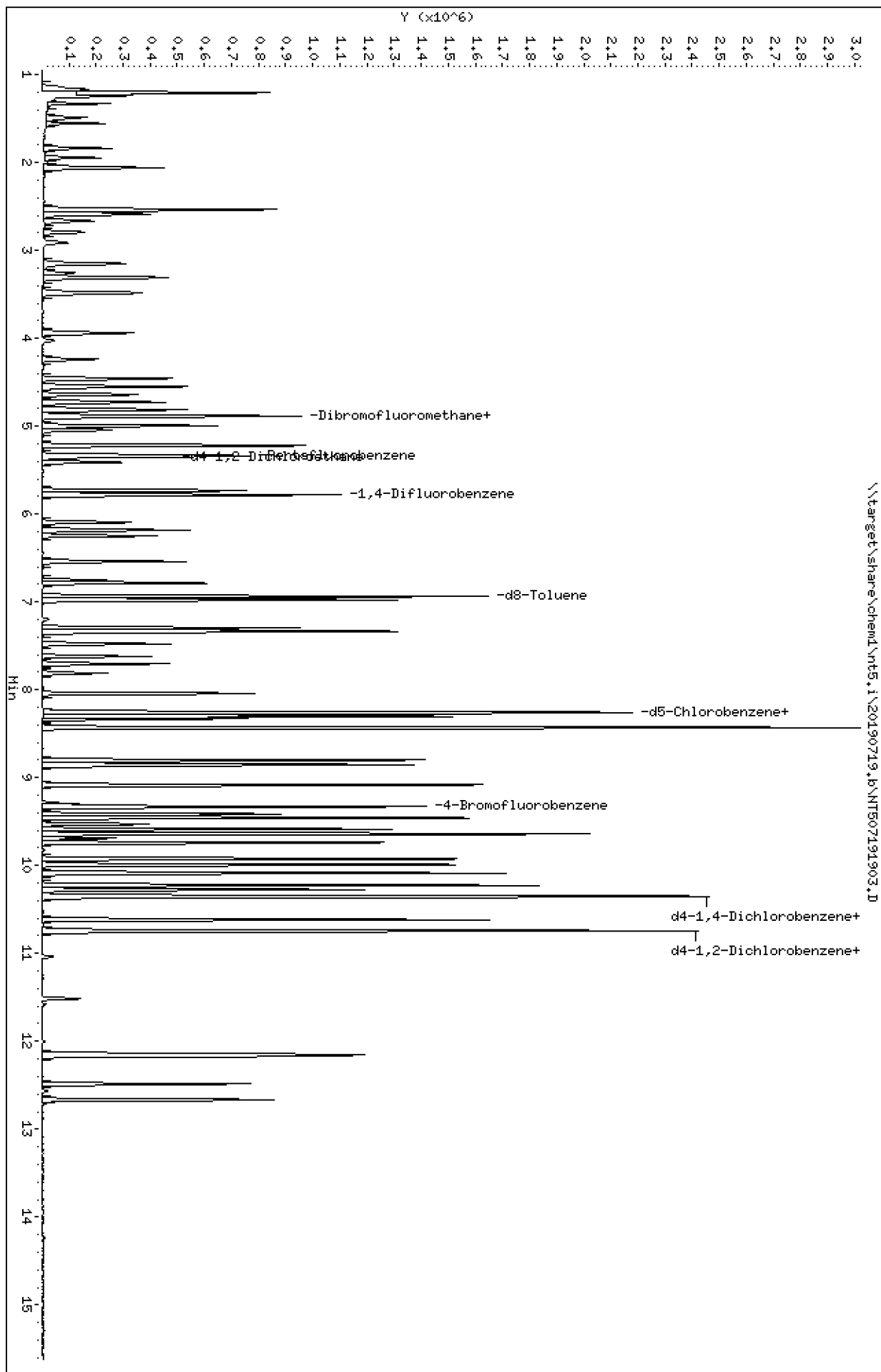
Sample Info: BSD1

Instrument: nt5.i

Page 1

Column phase: RTXWMS

Operator: PB
Column diameter: 0.18



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

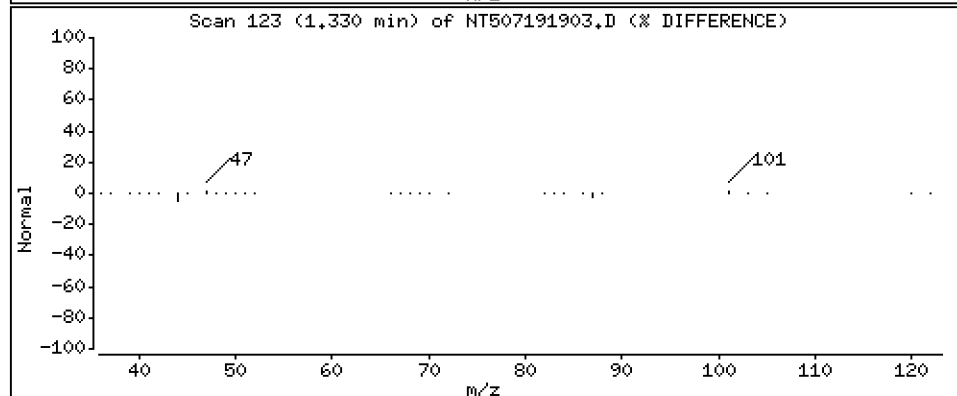
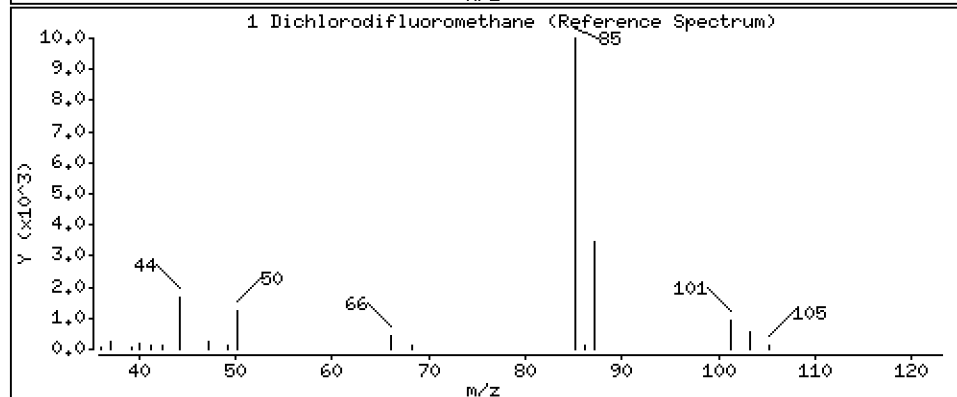
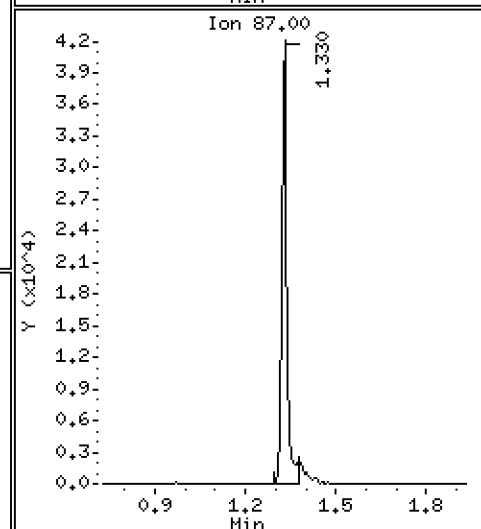
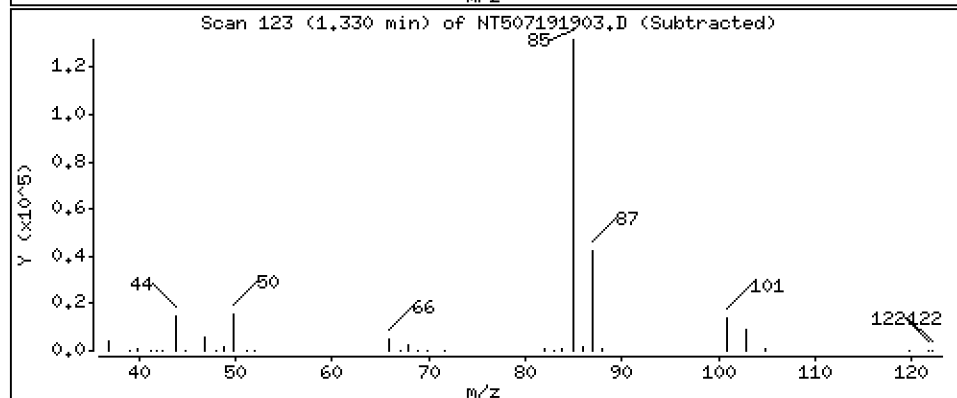
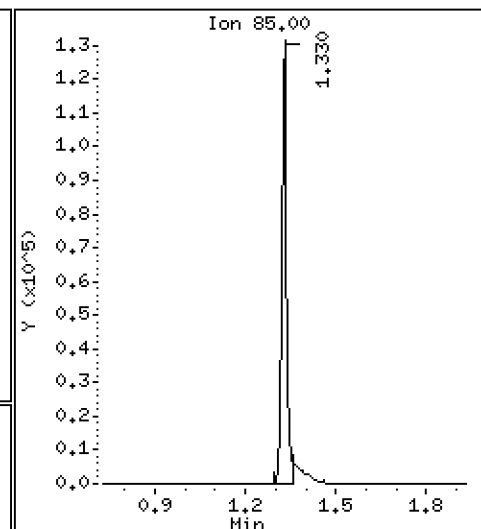
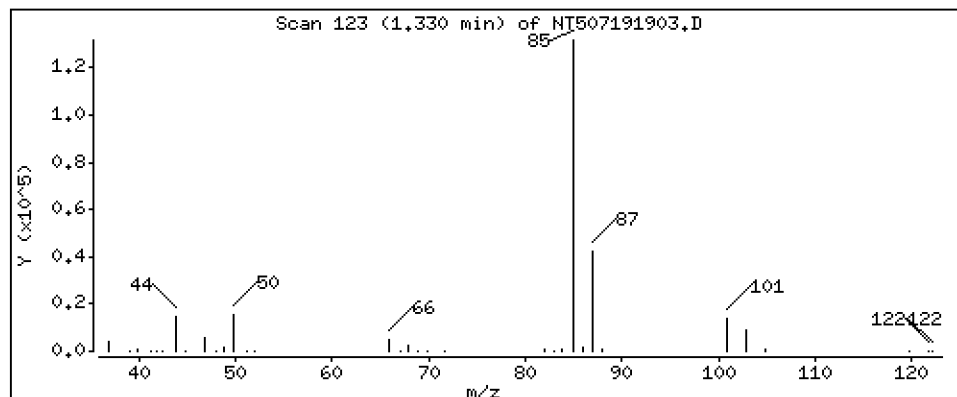
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 42,700 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

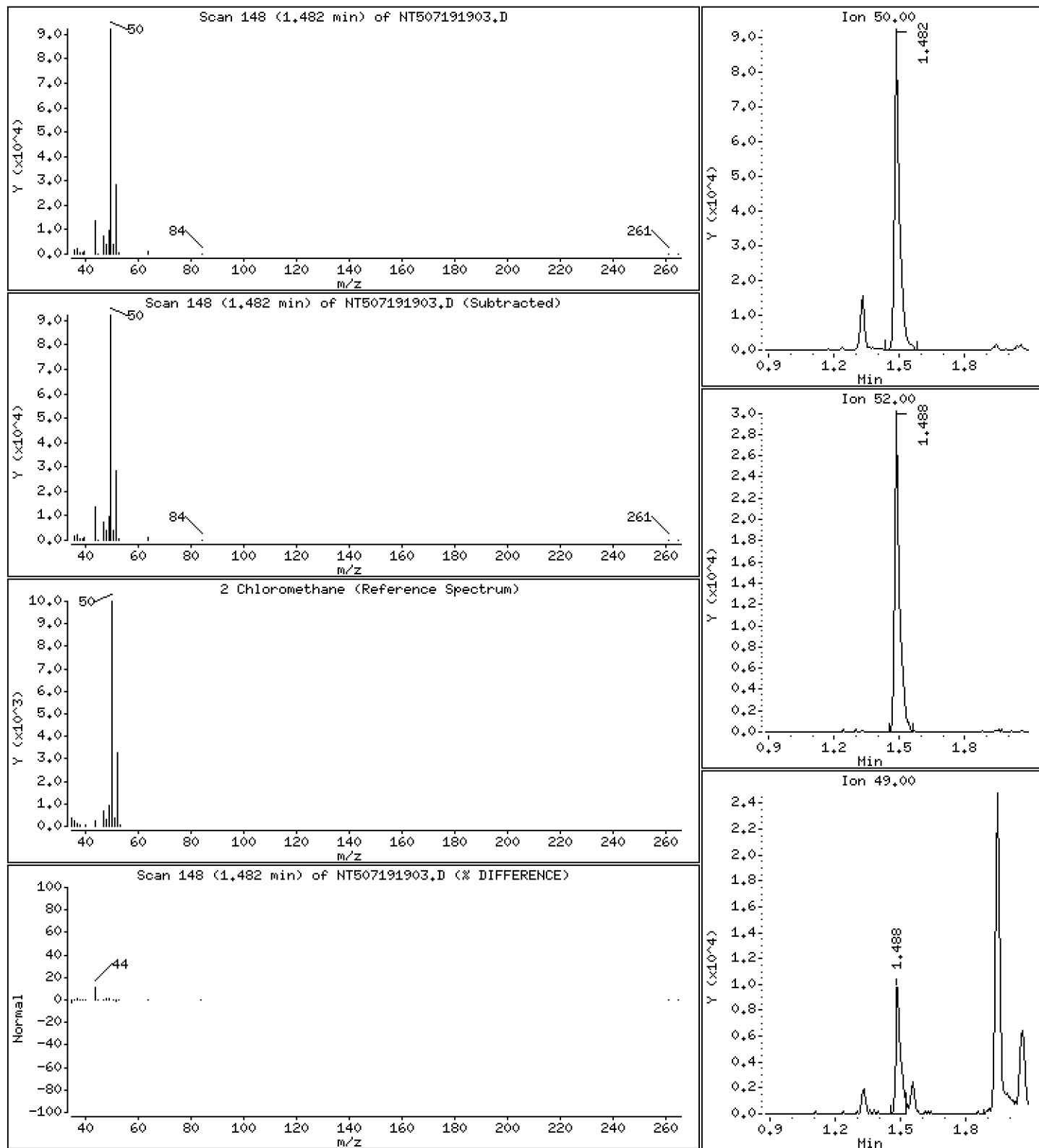
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 50,545 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

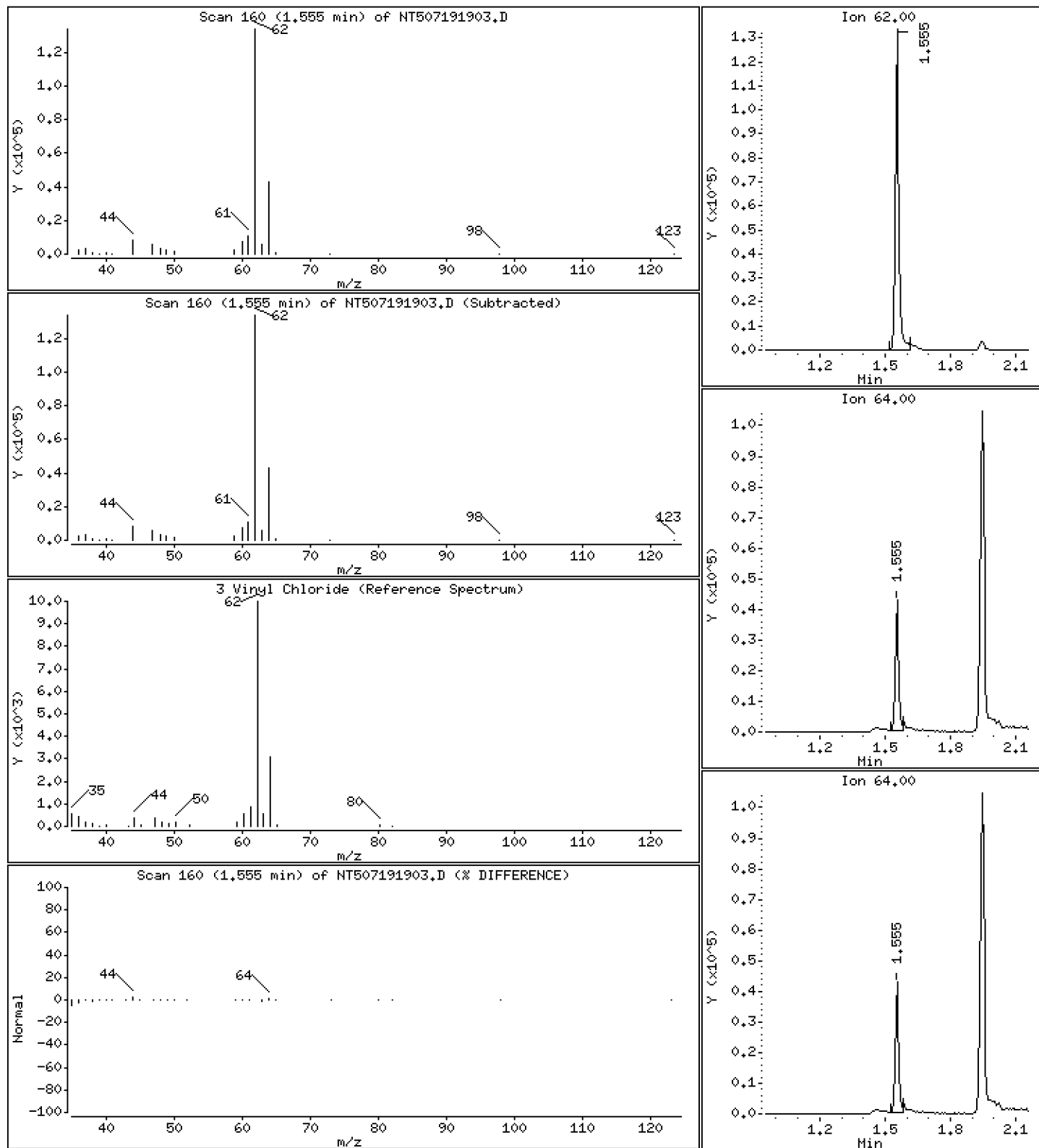
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 52,228 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

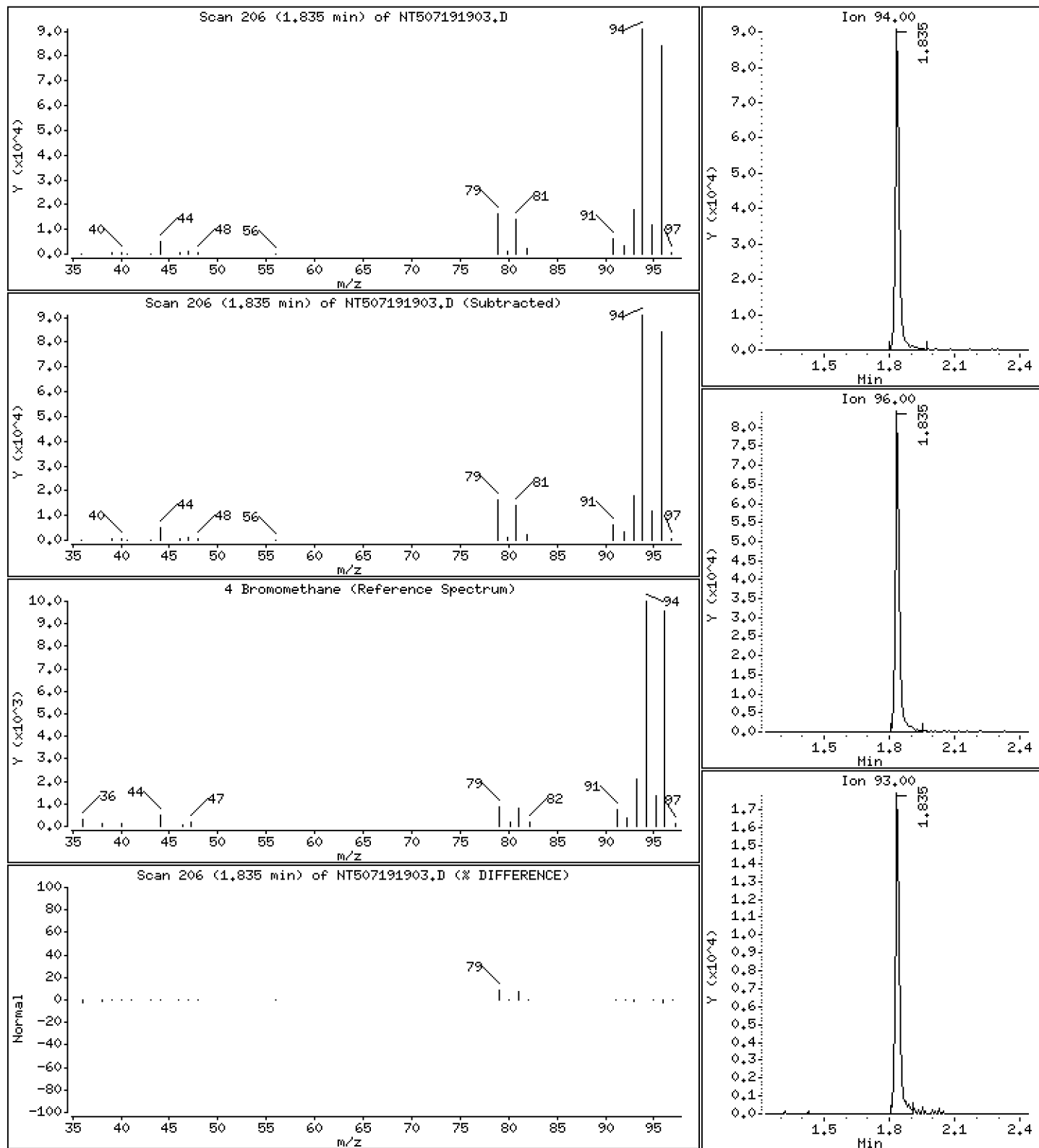
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 54.862 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

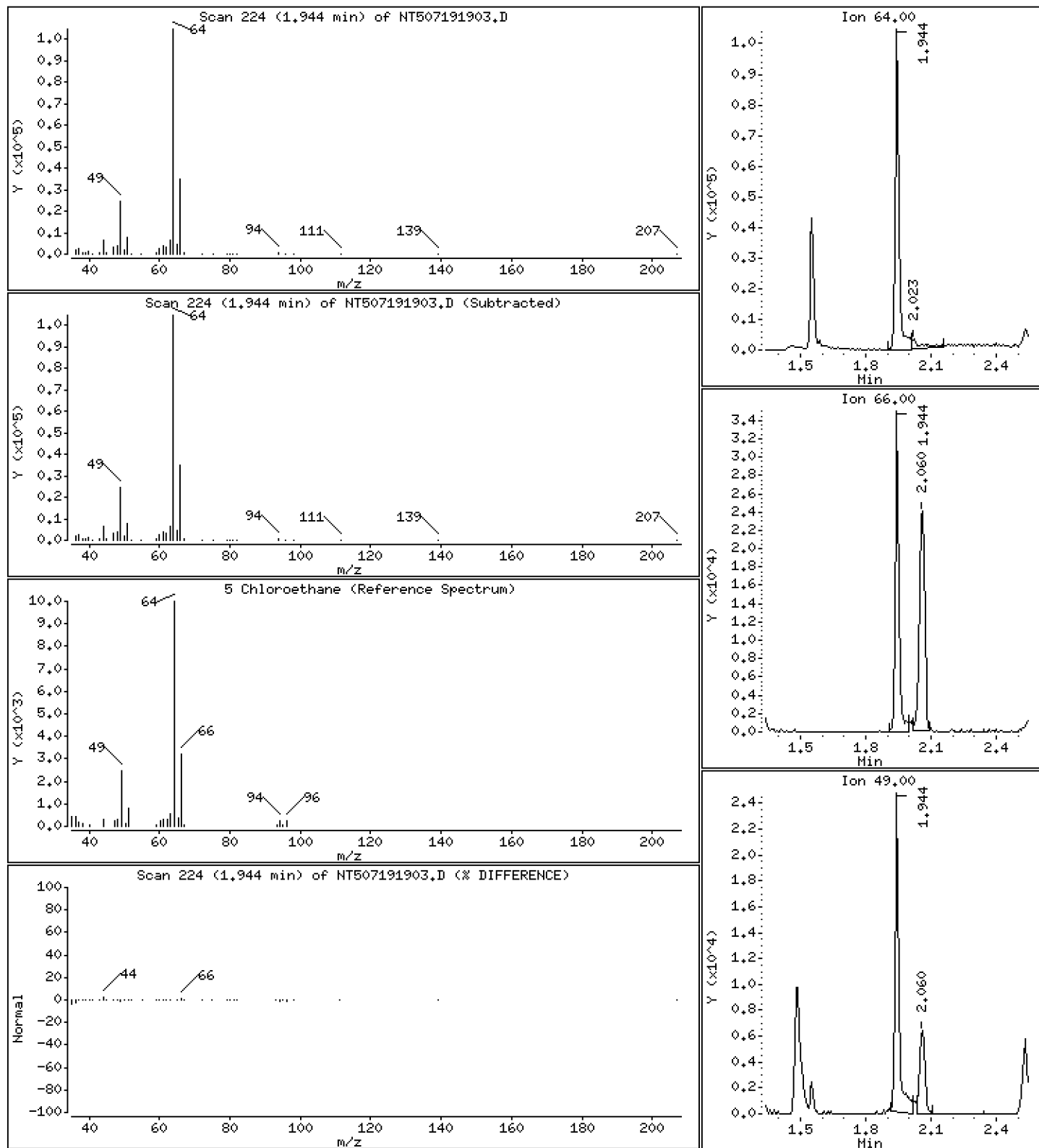
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 56.465 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

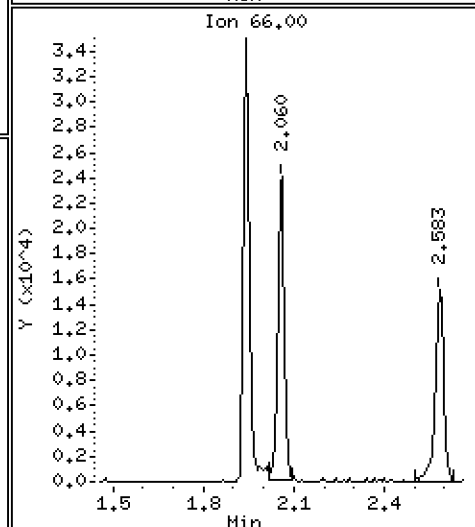
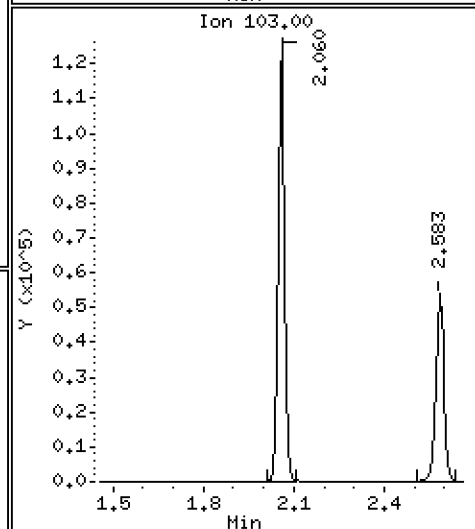
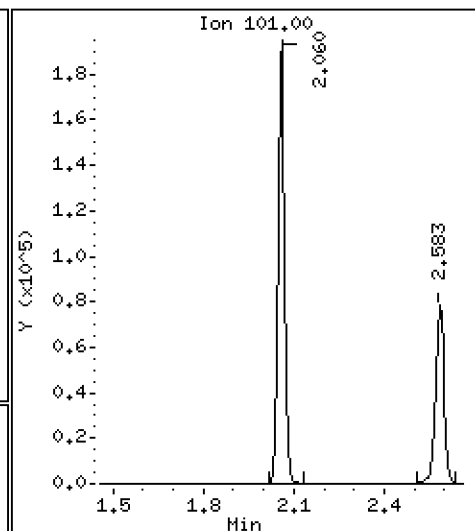
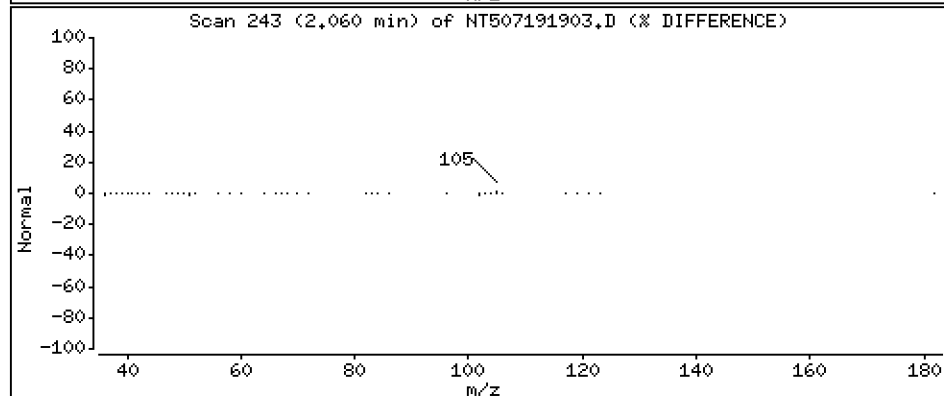
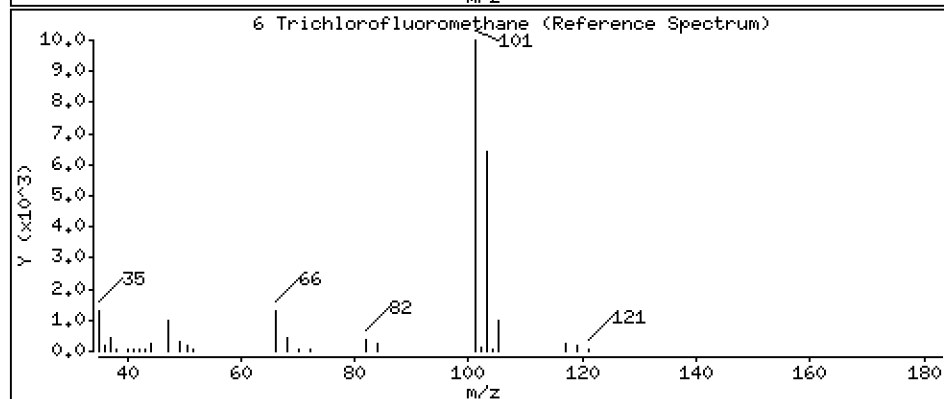
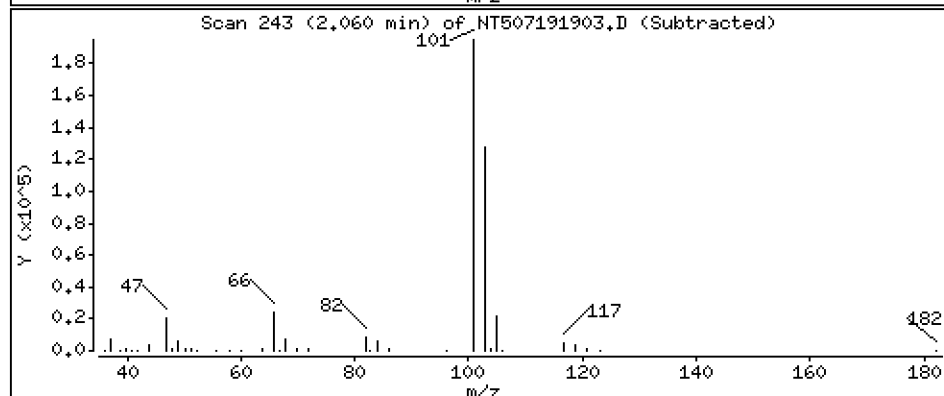
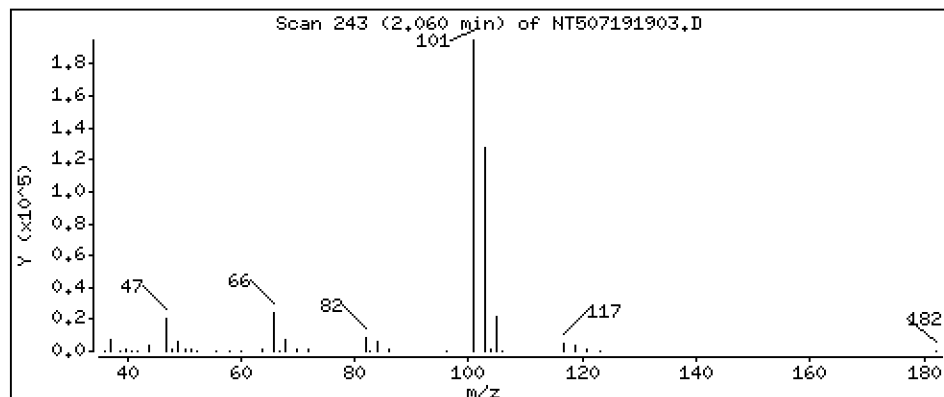
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 51.929 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

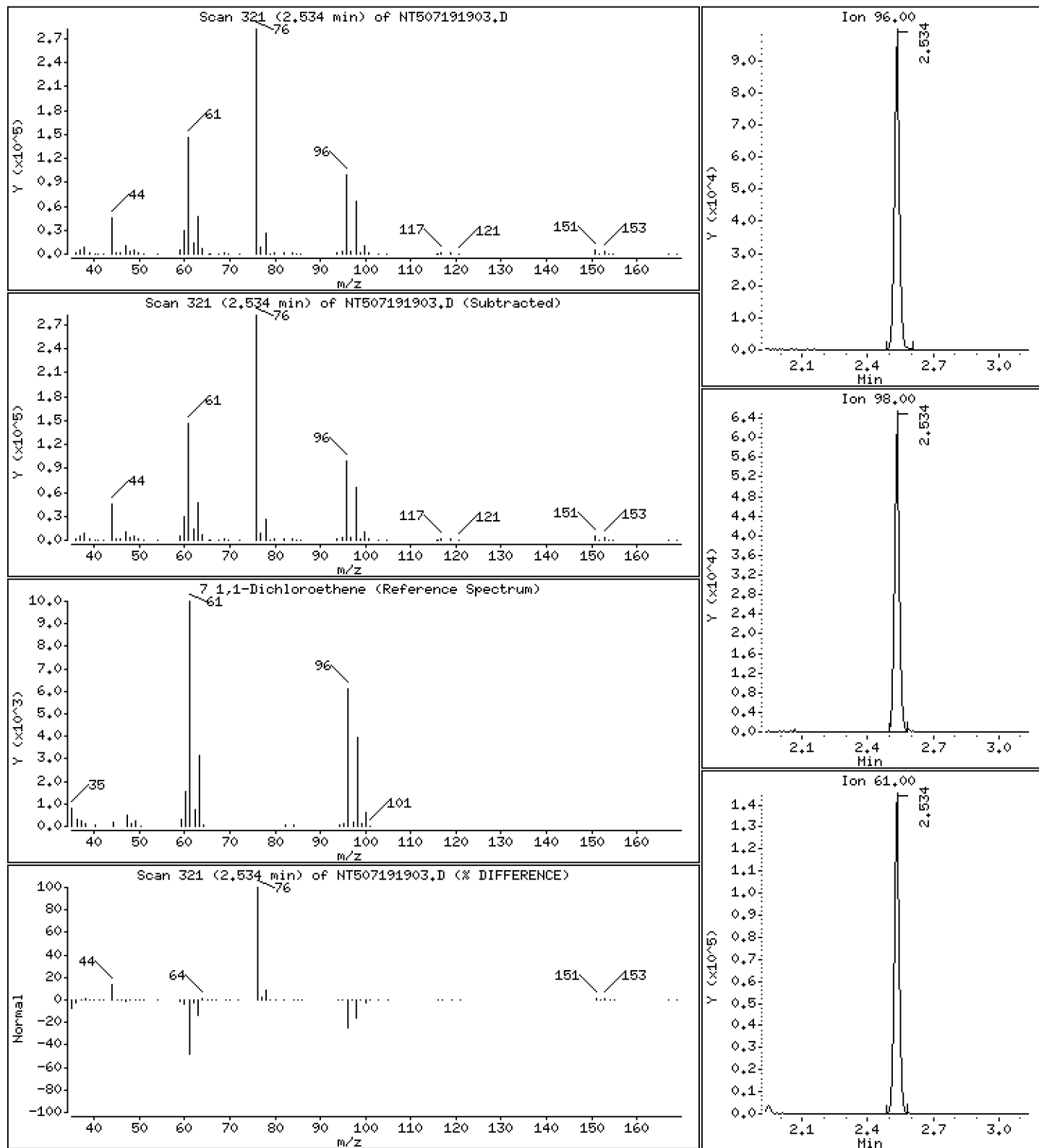
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 54.196 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

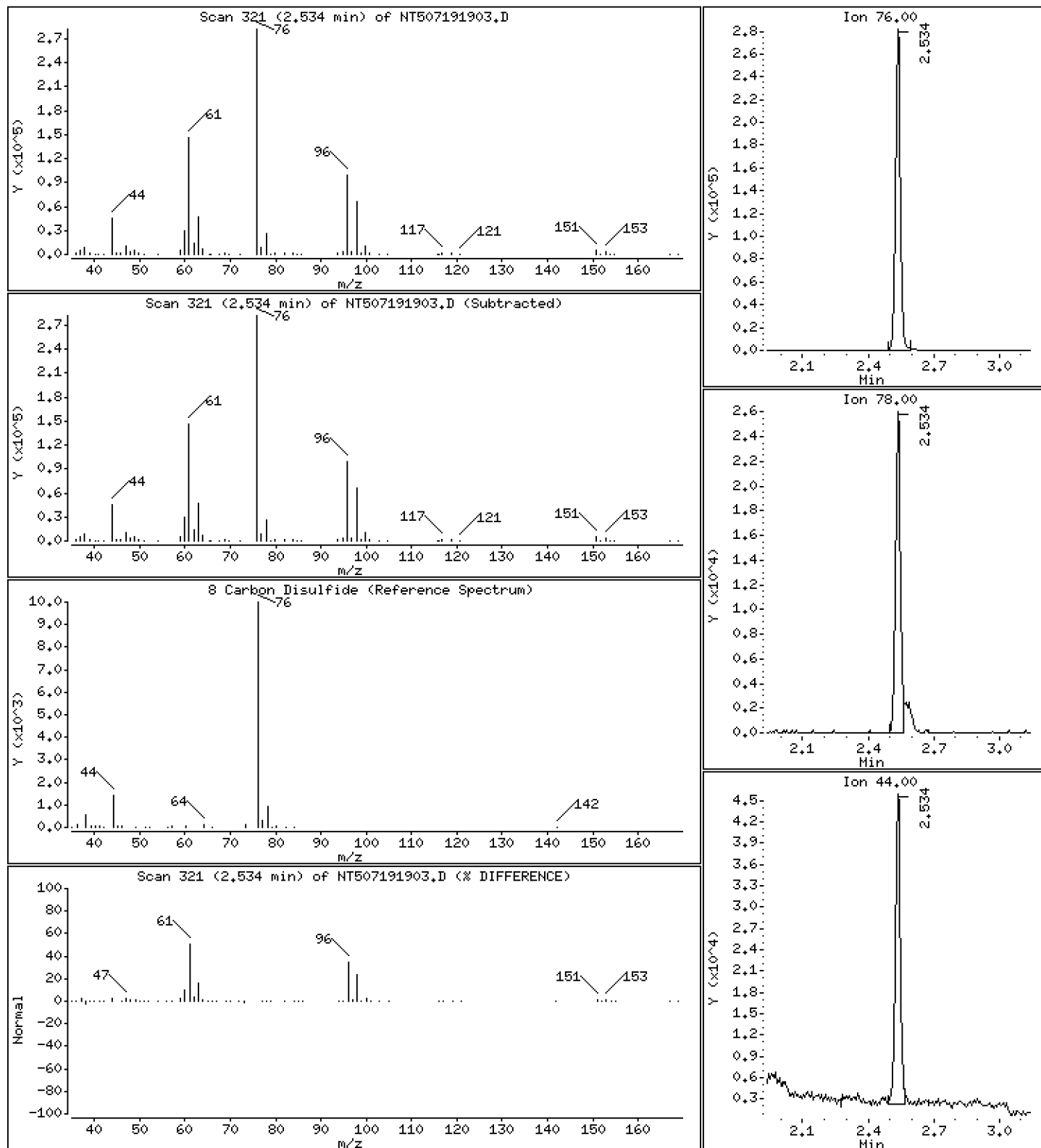
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 53,750 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

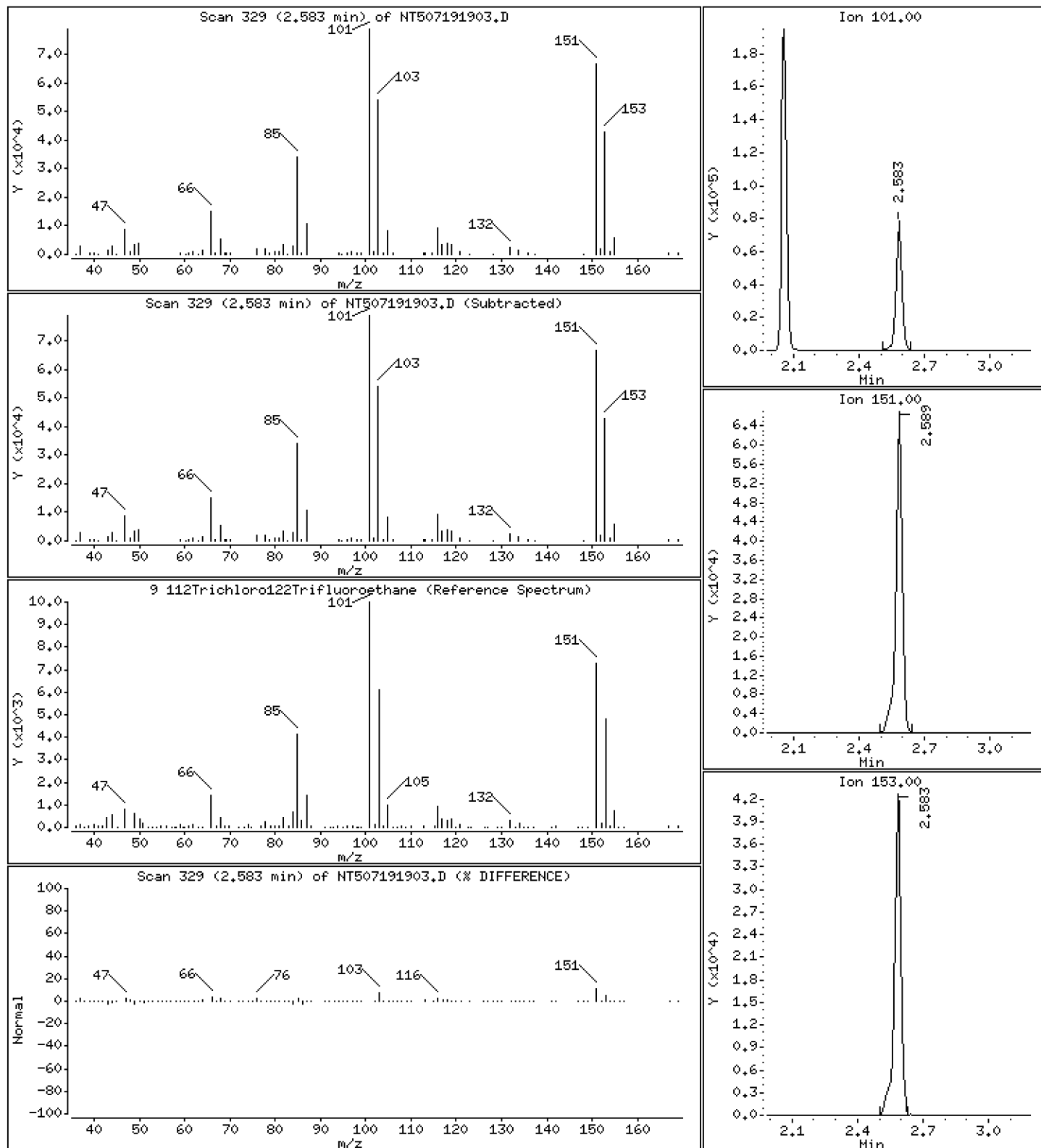
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 55,337 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

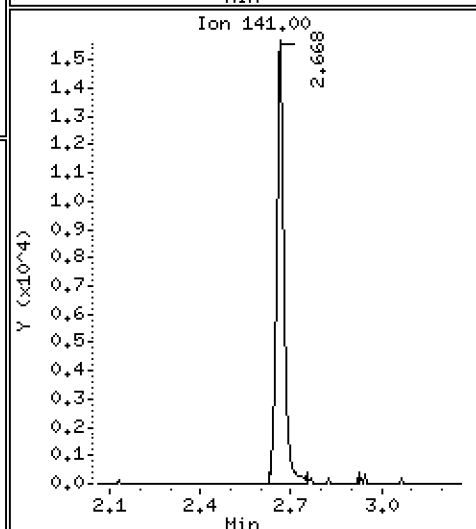
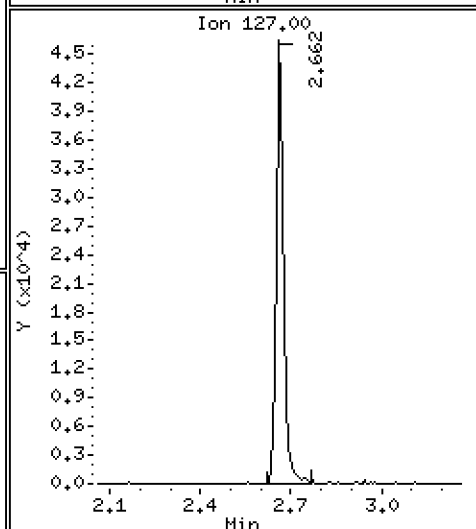
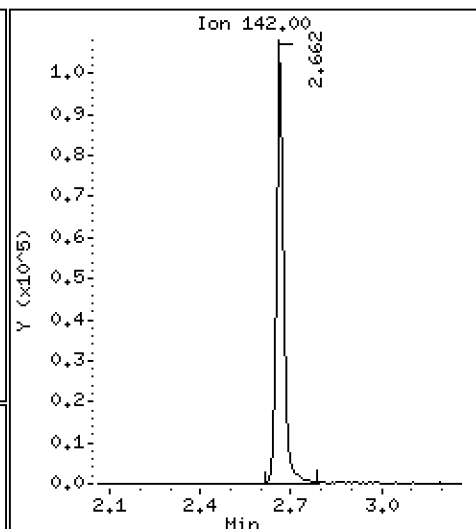
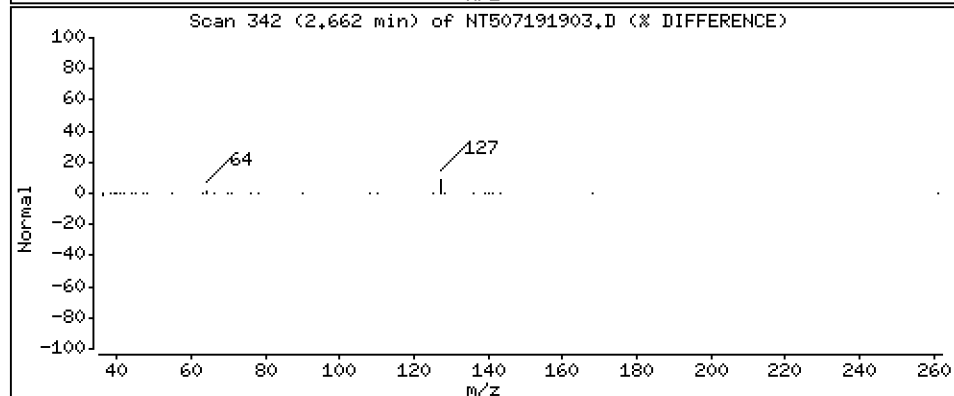
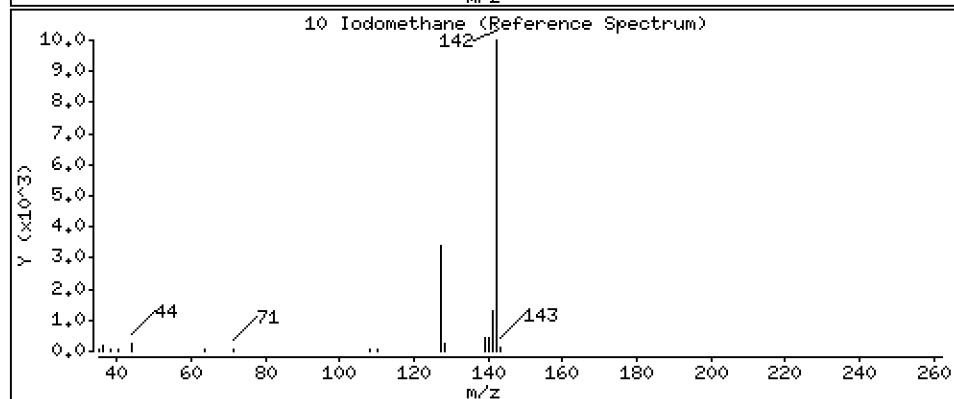
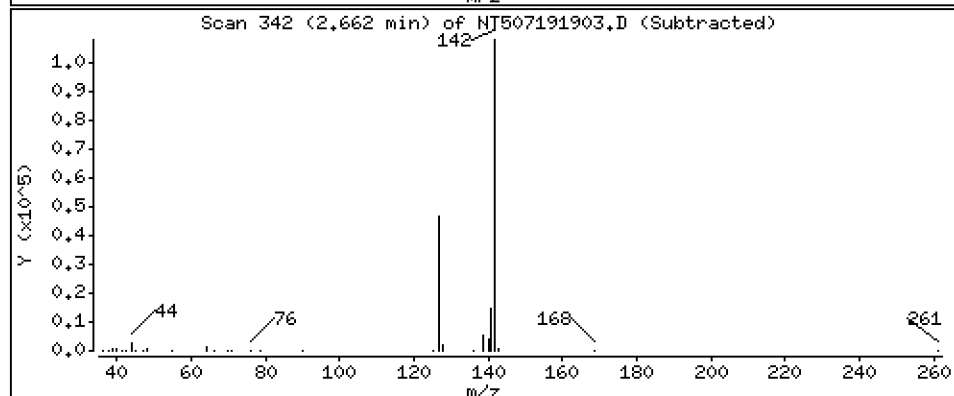
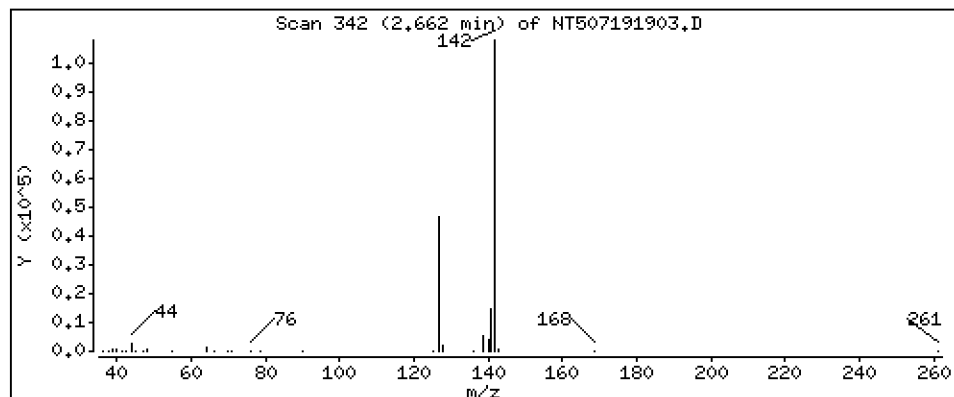
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 47,890 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

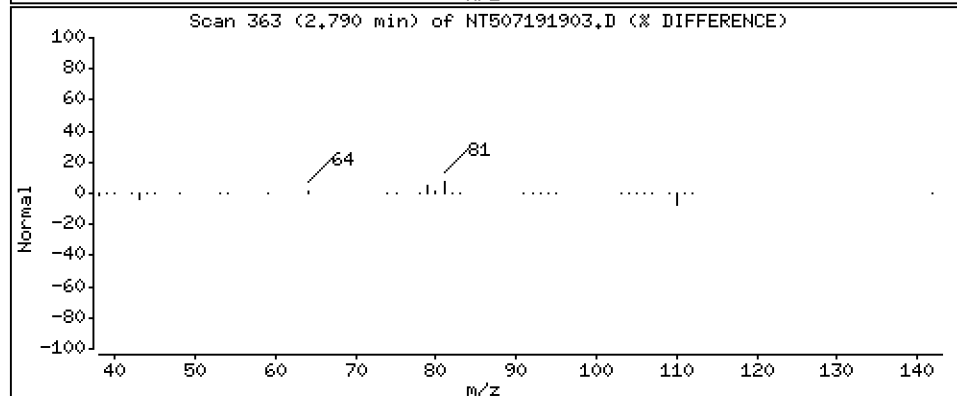
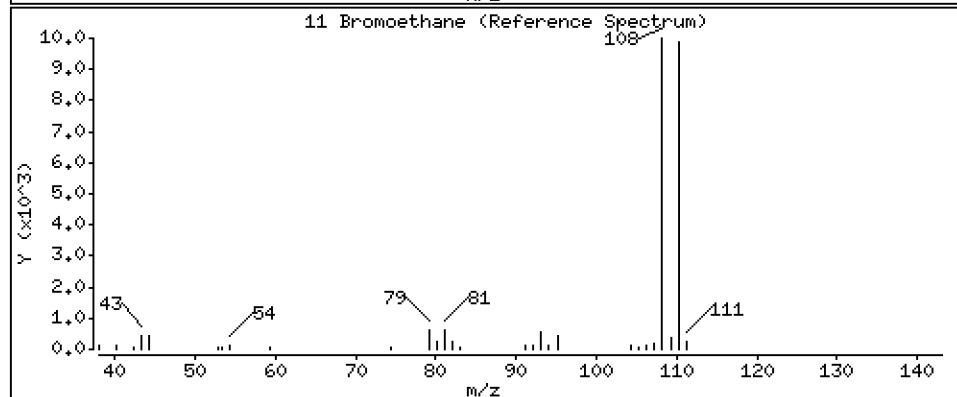
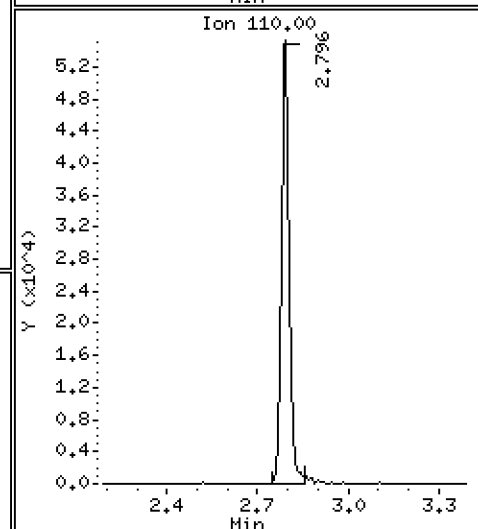
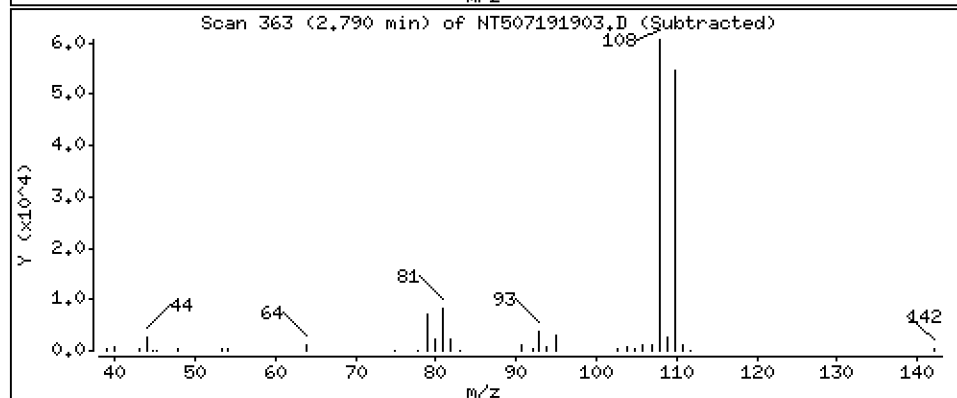
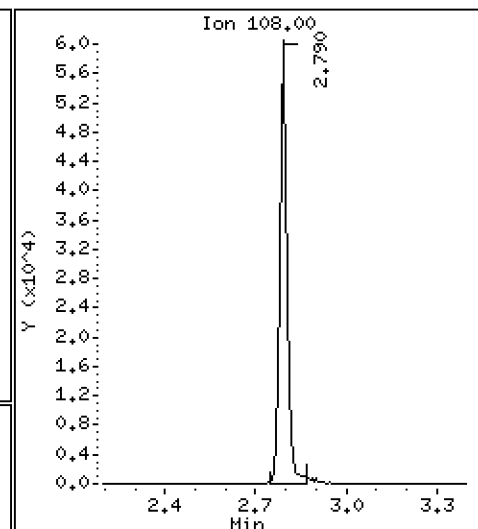
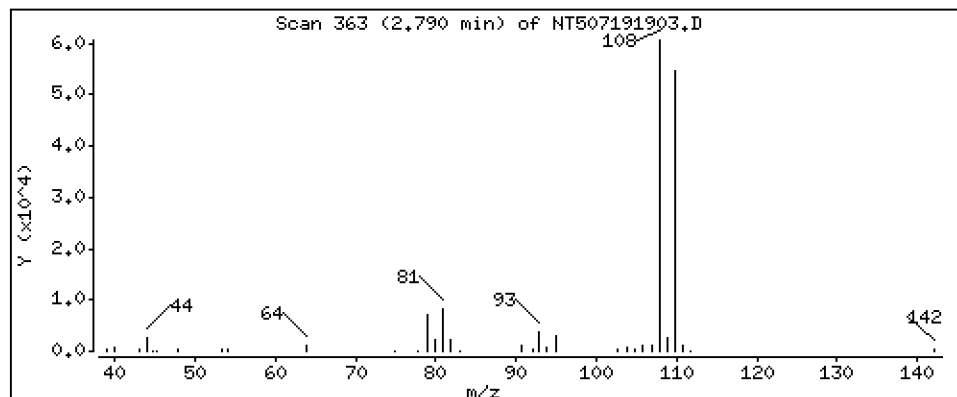
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 52,356 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

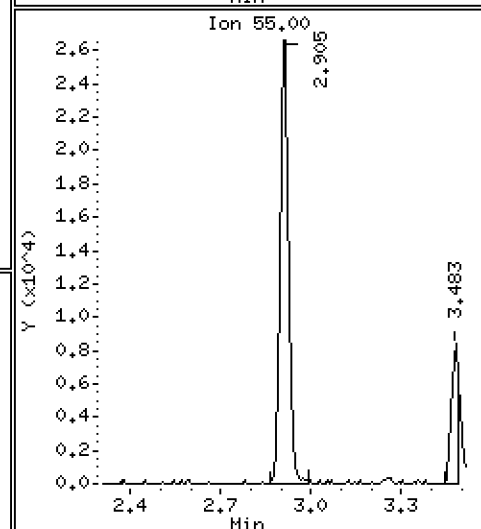
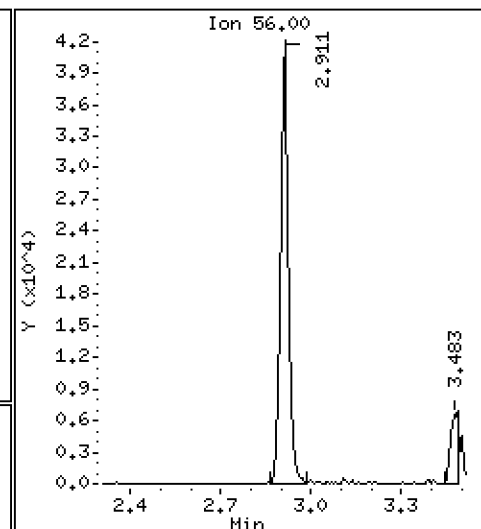
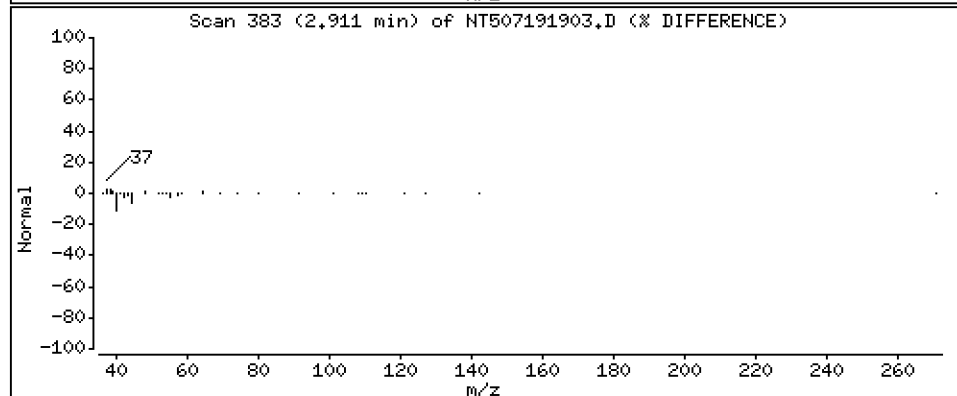
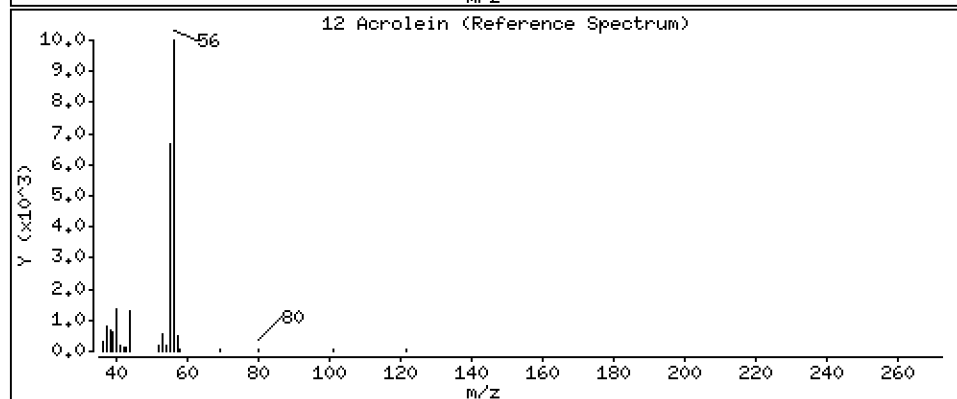
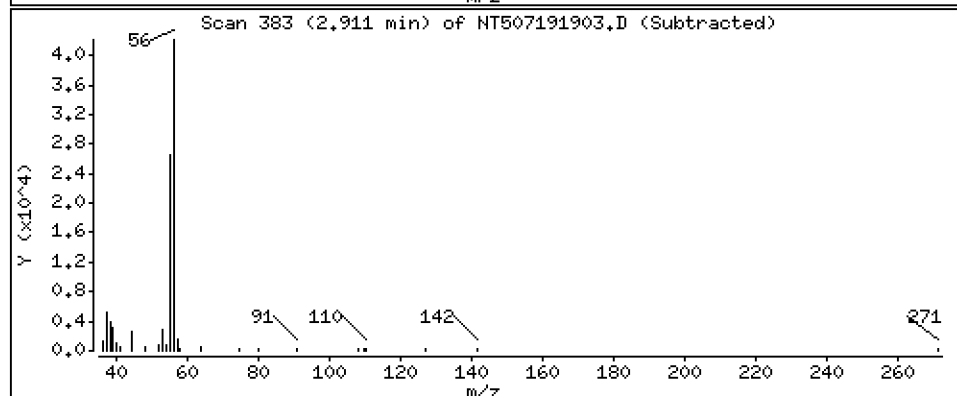
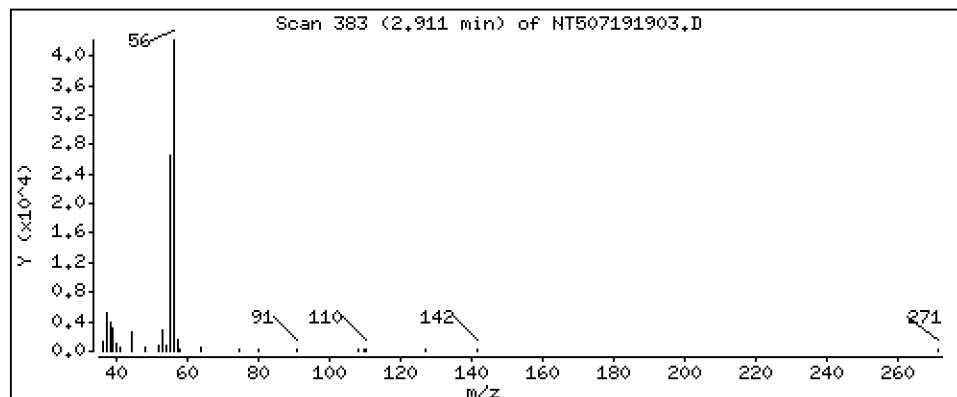
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 257.09 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

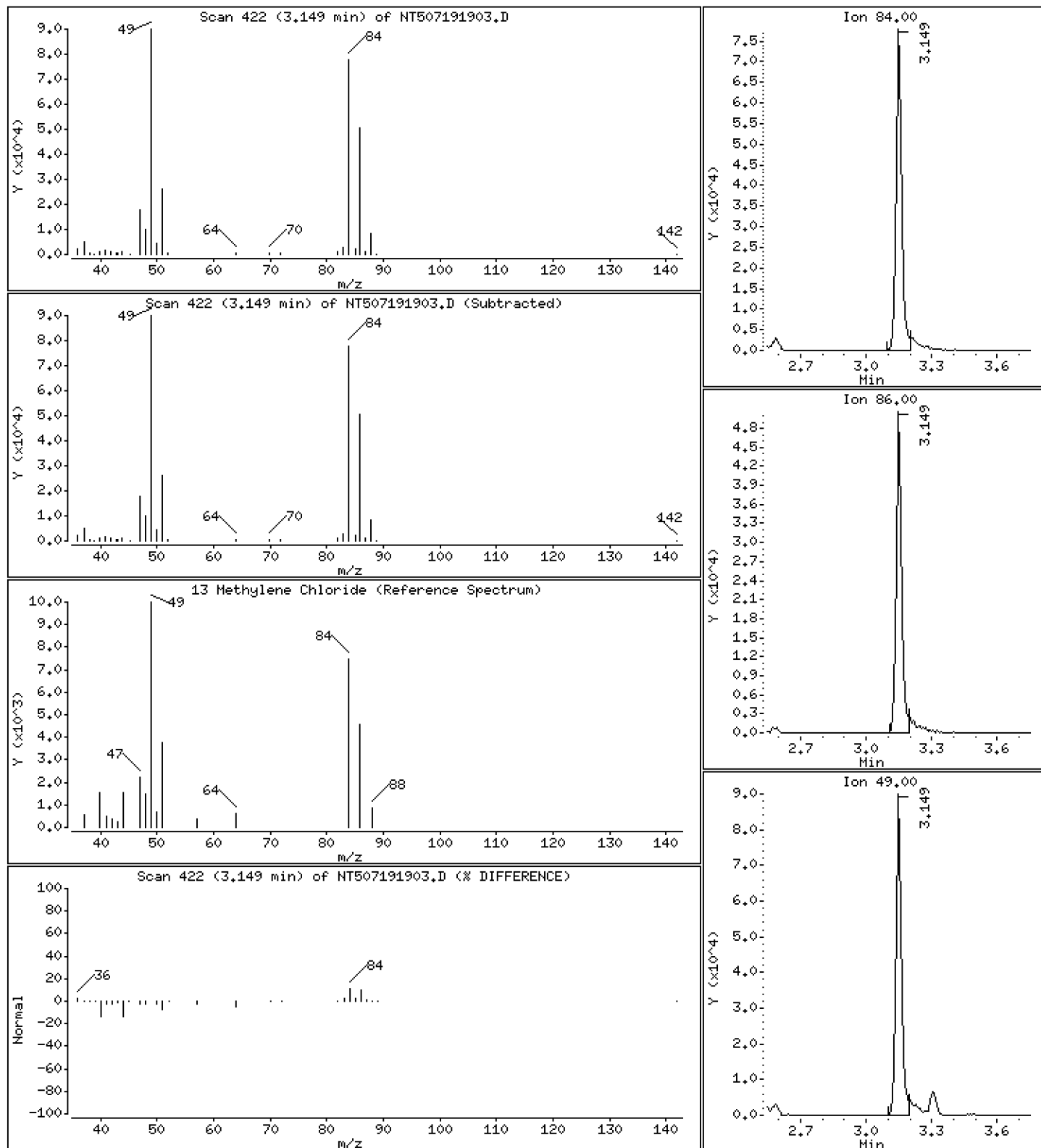
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 48,298 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

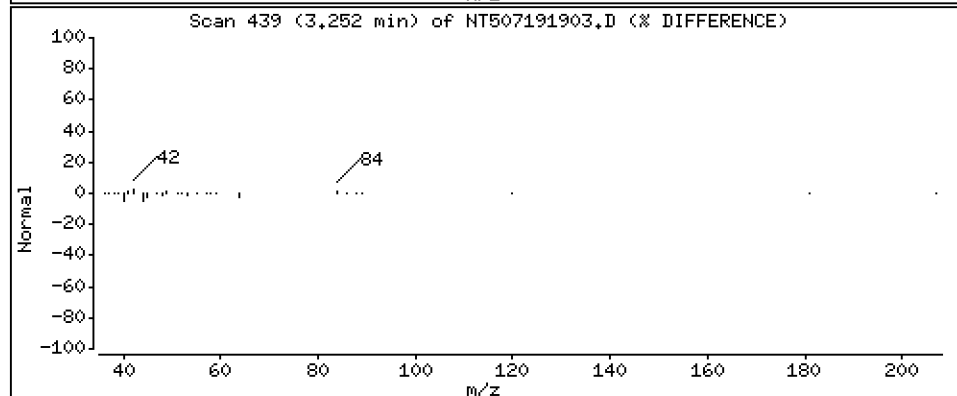
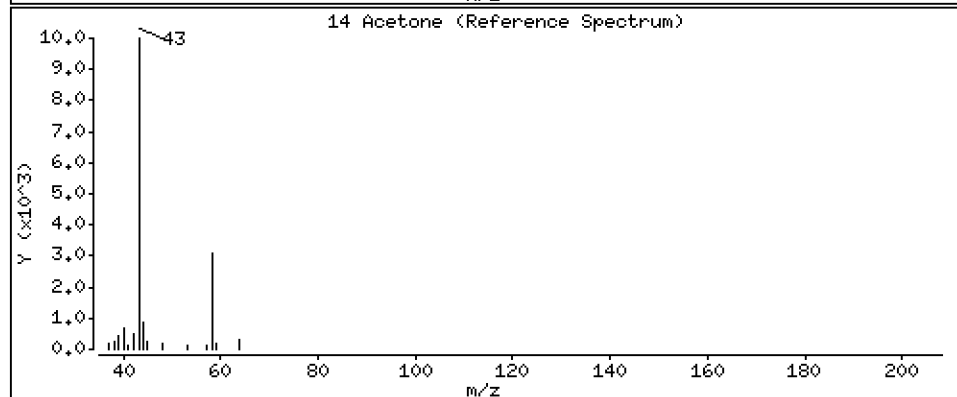
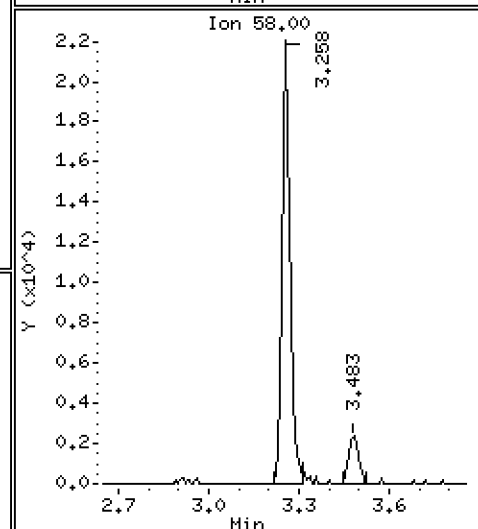
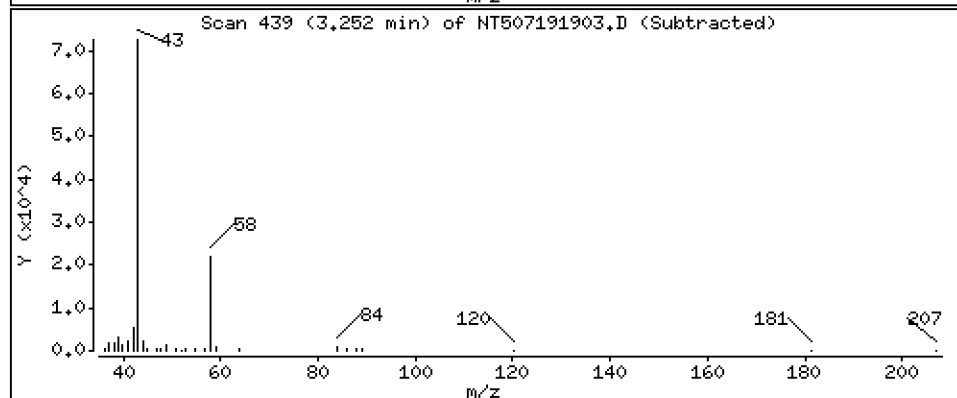
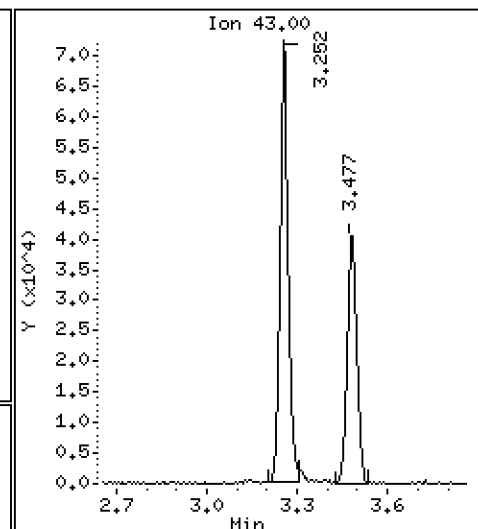
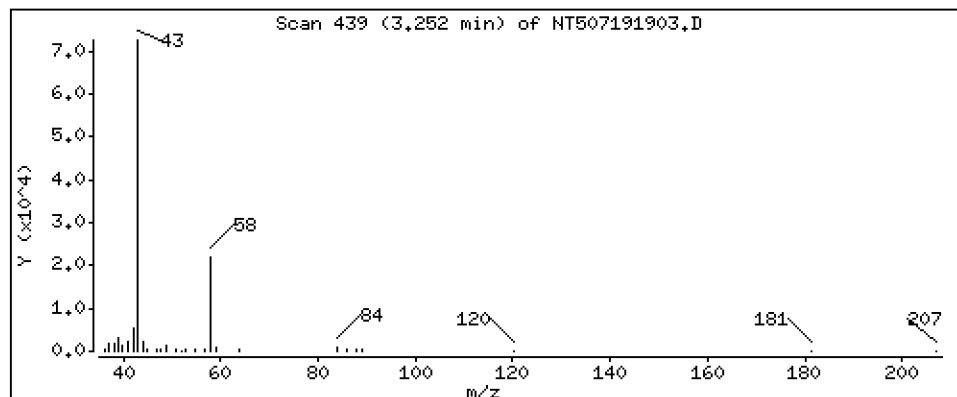
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 254.27 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

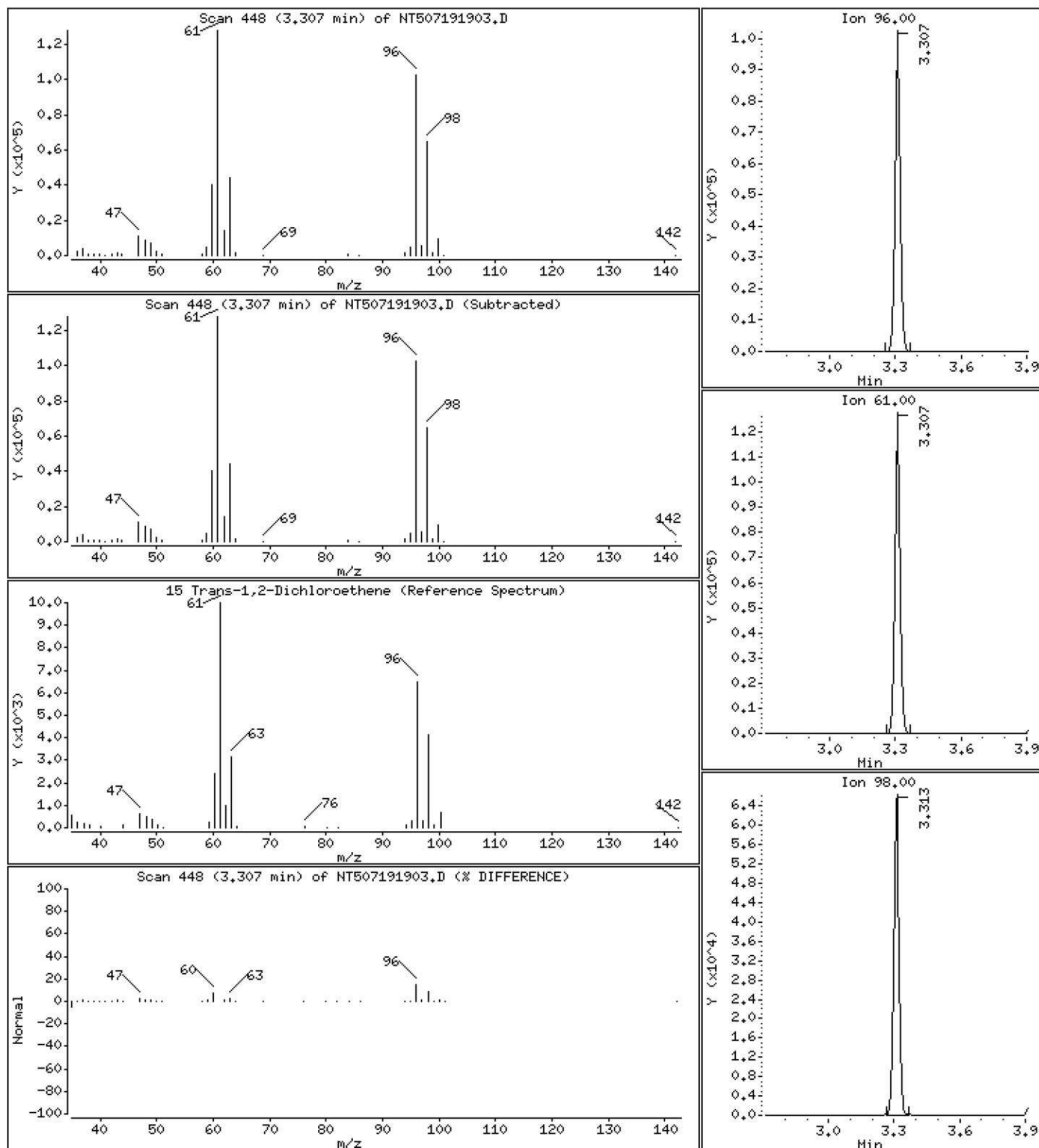
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 53,370 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

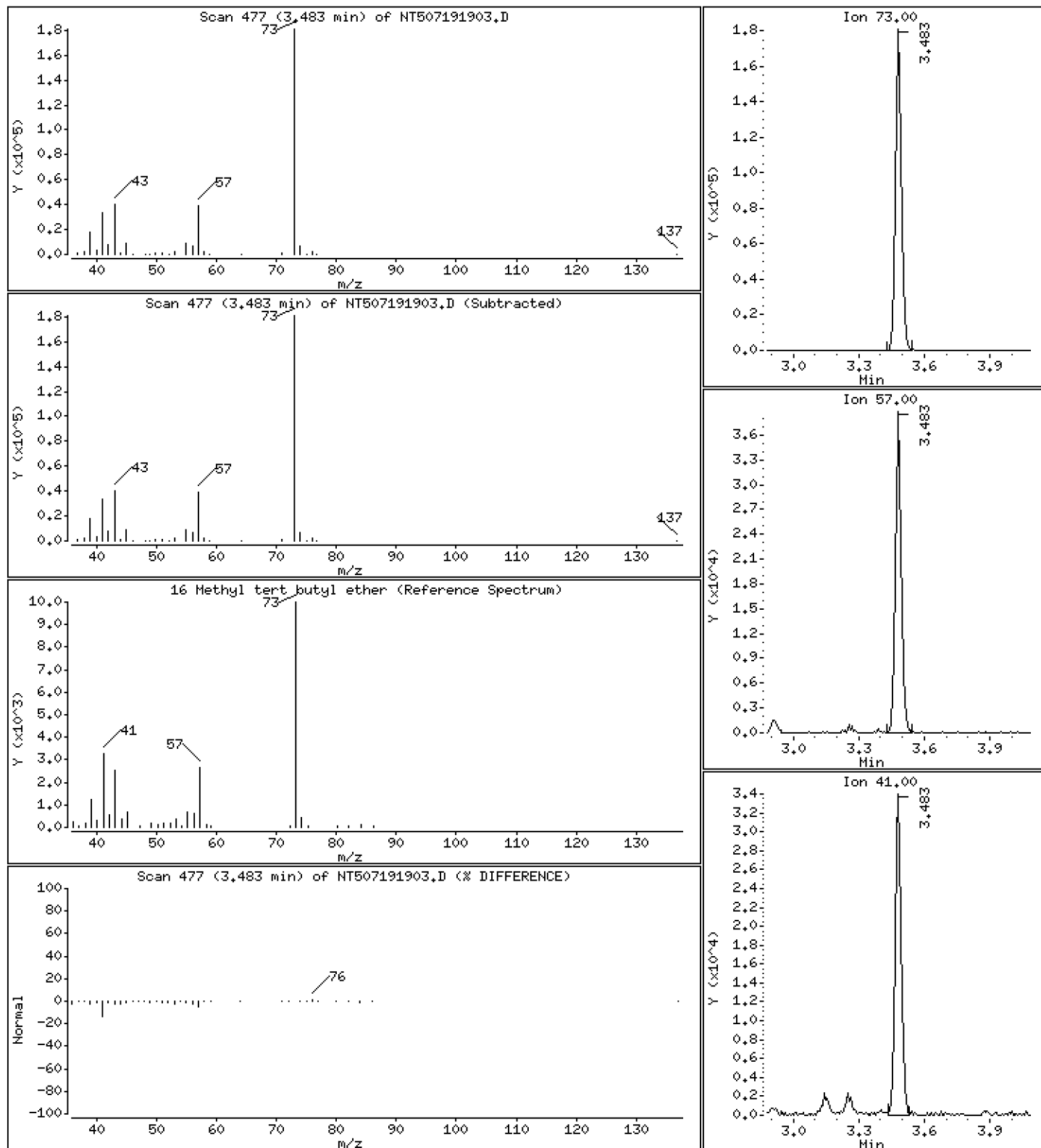
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 50,620 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

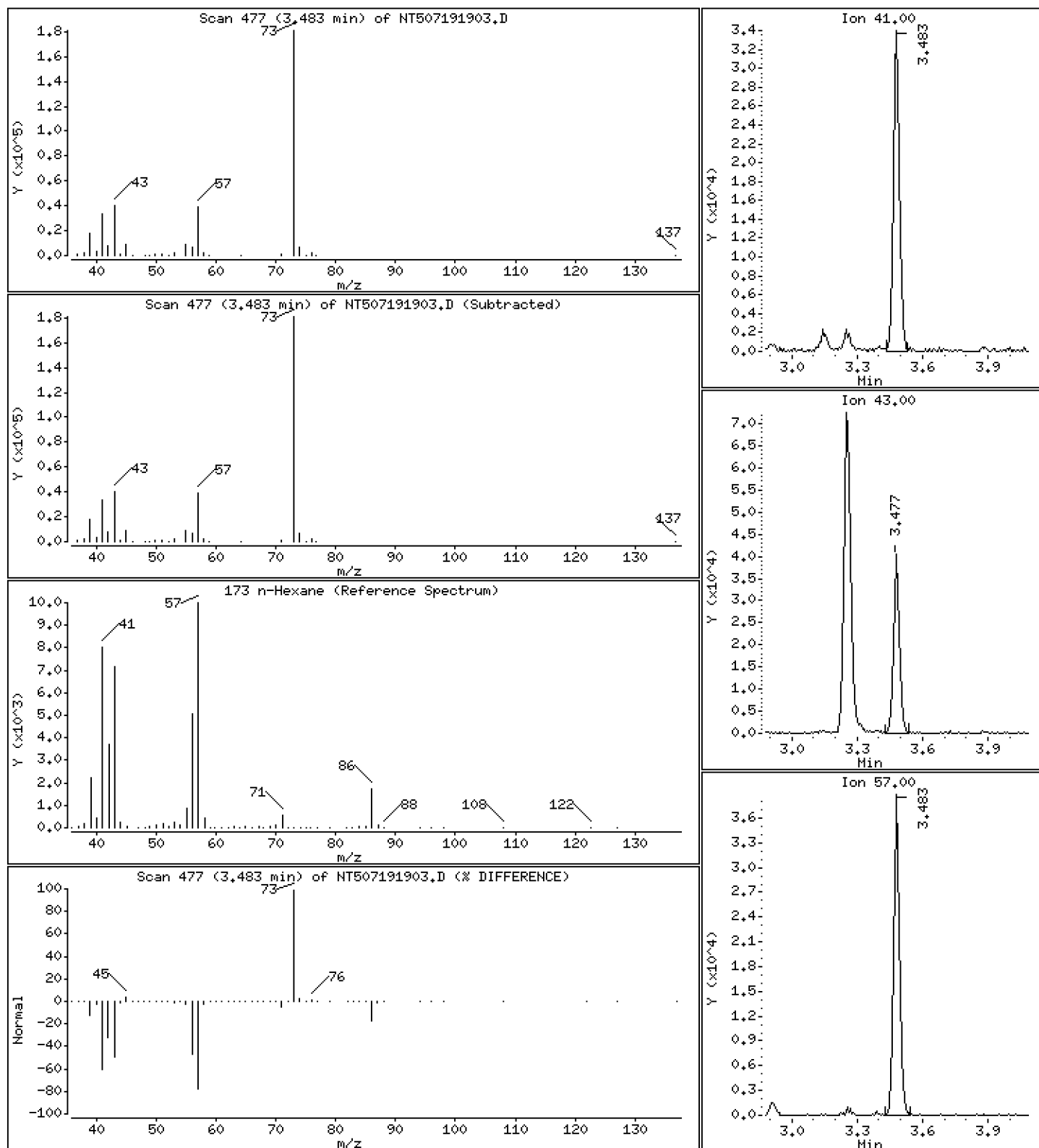
Sample Info: BSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

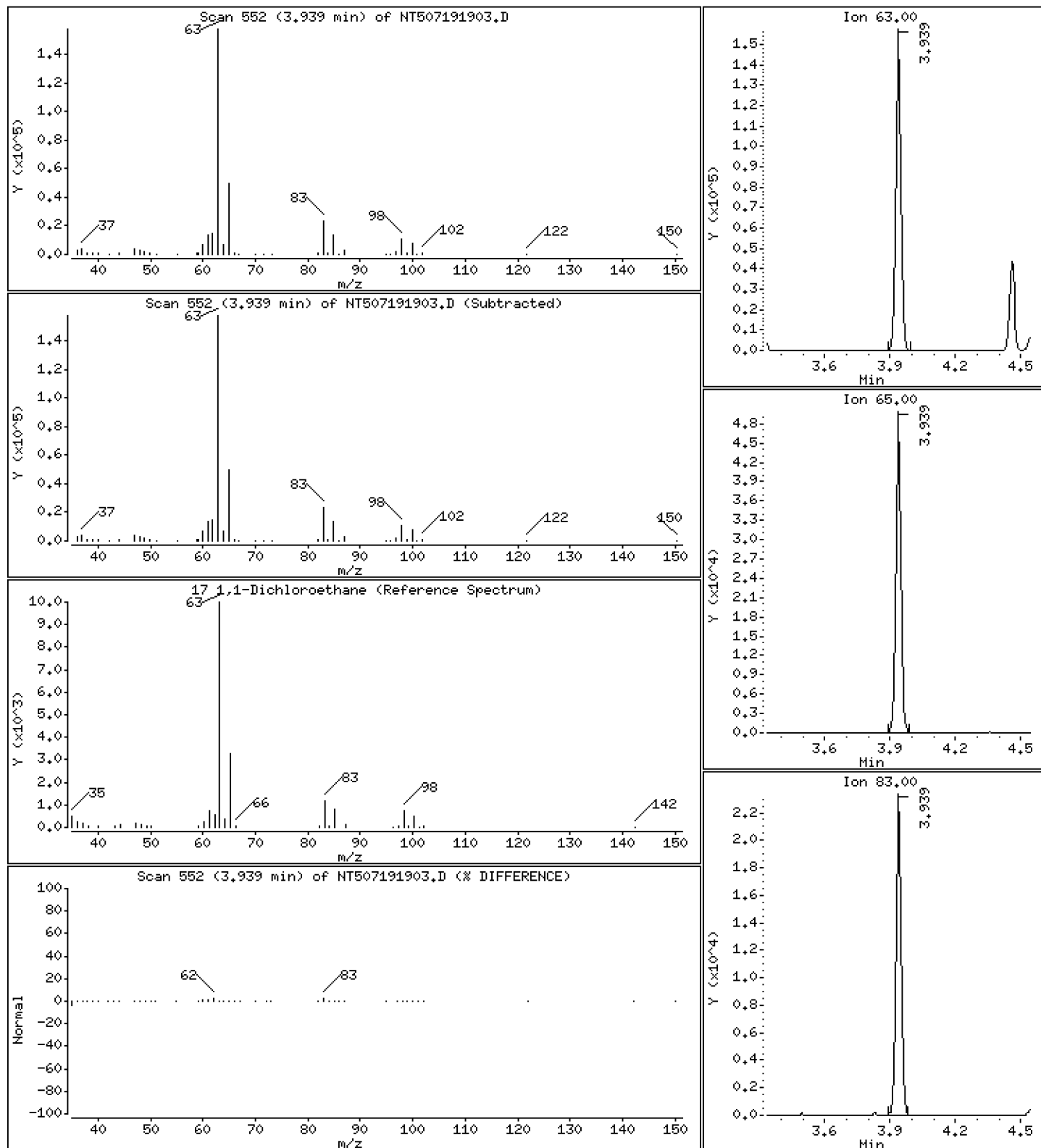
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 54,355 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

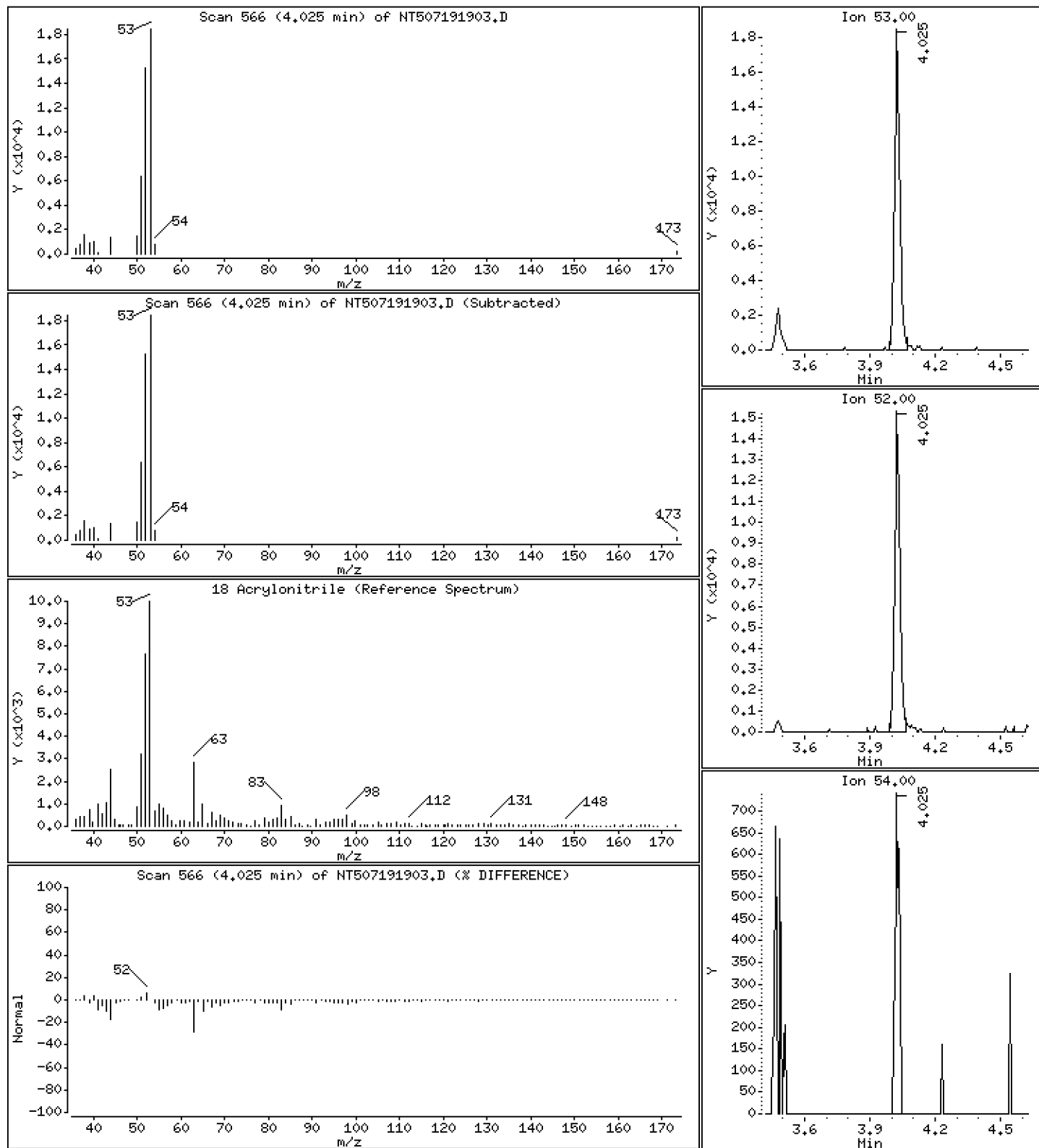
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 49,402 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

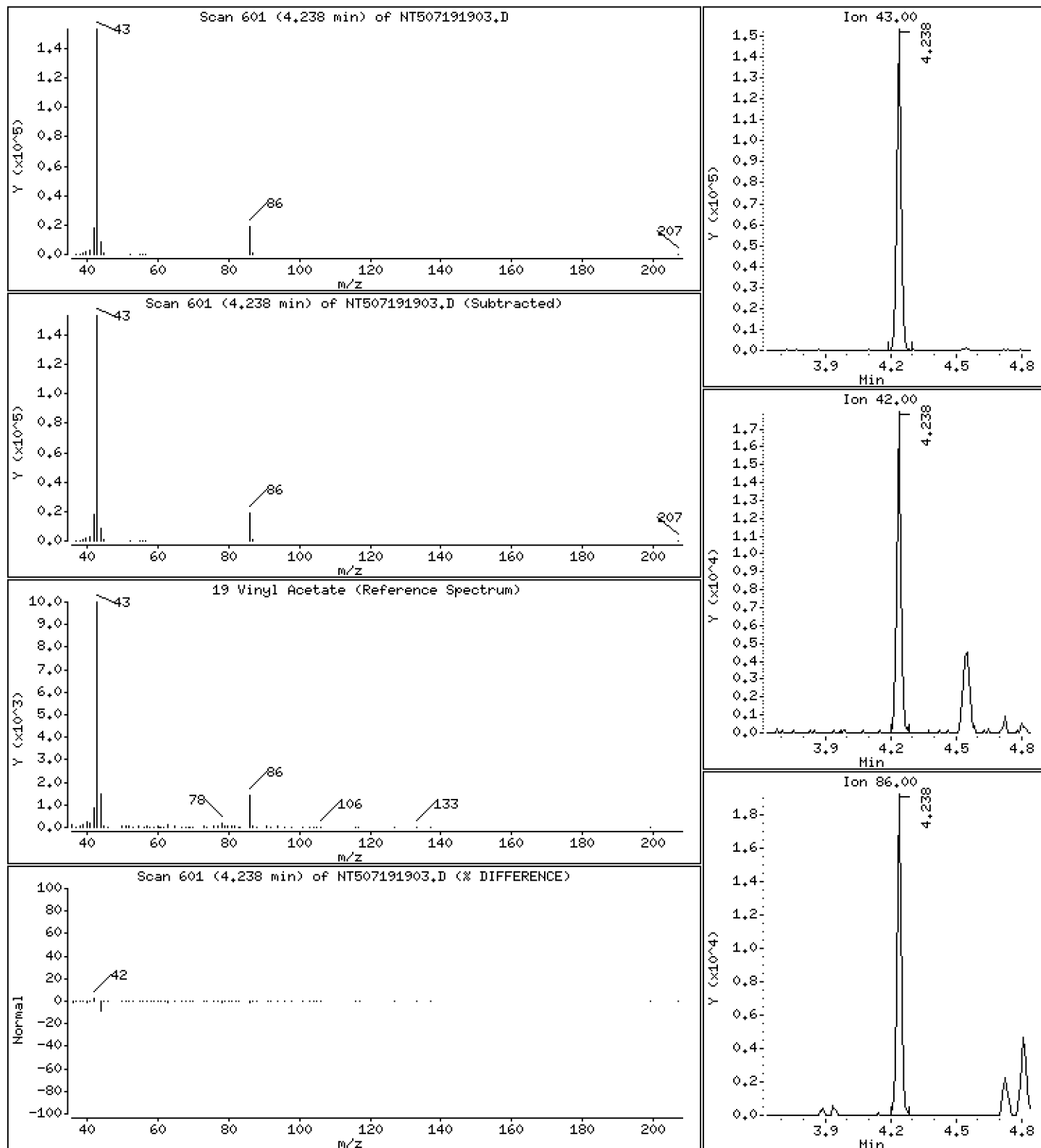
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 52,127 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

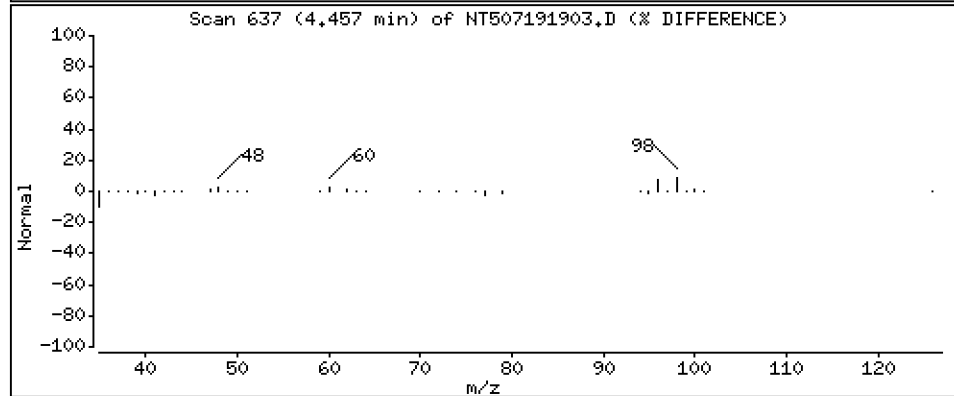
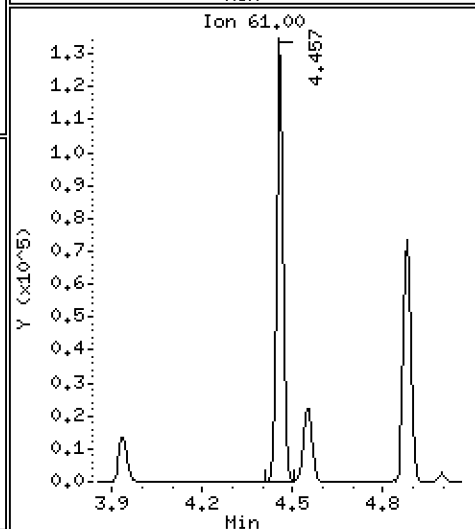
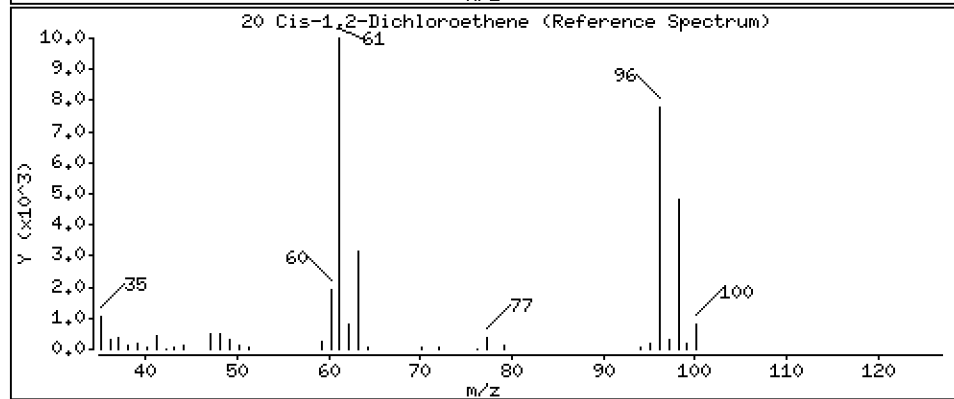
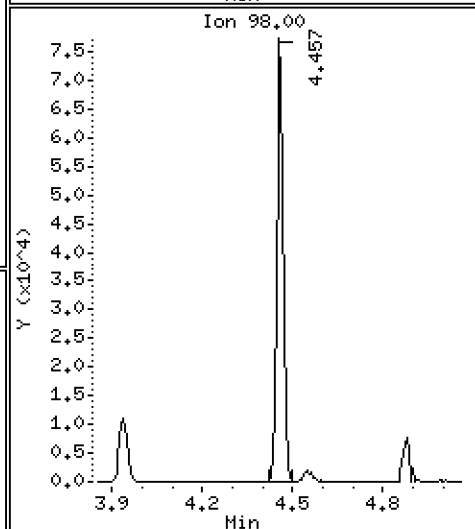
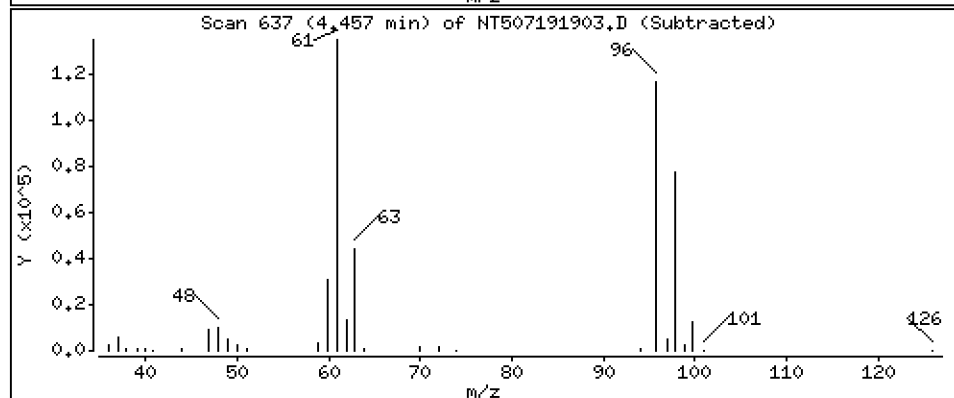
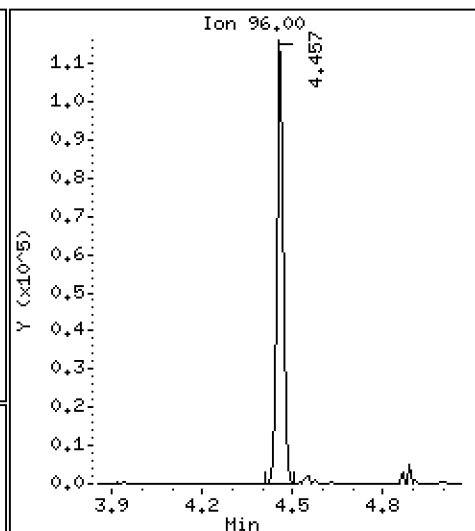
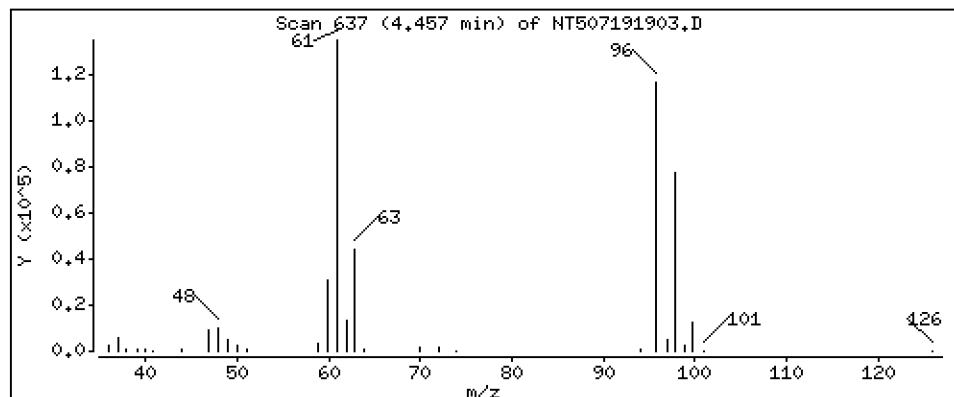
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 54,566 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

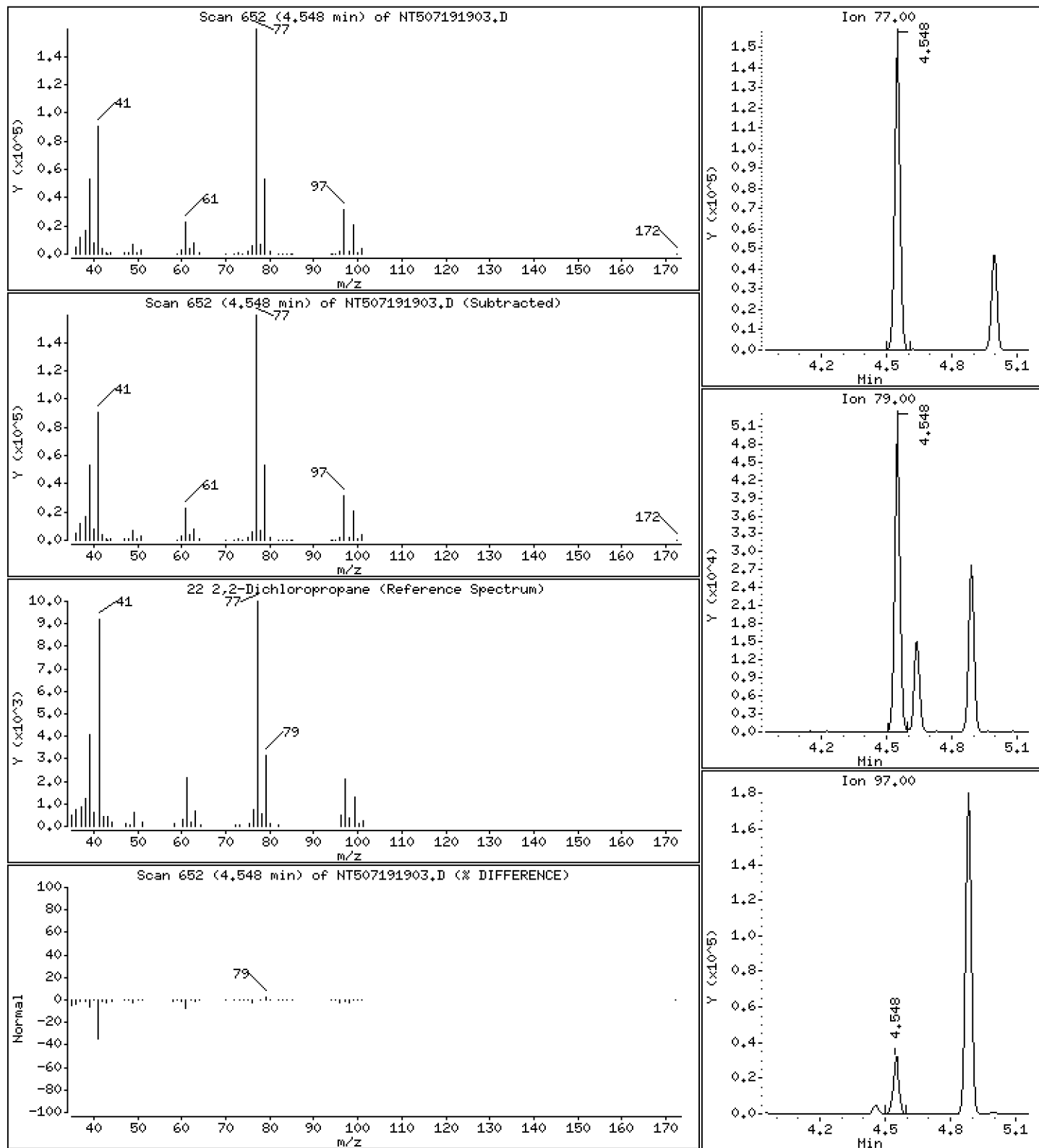
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22 2,2-Dichloropropane

Concentration: 59,804 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

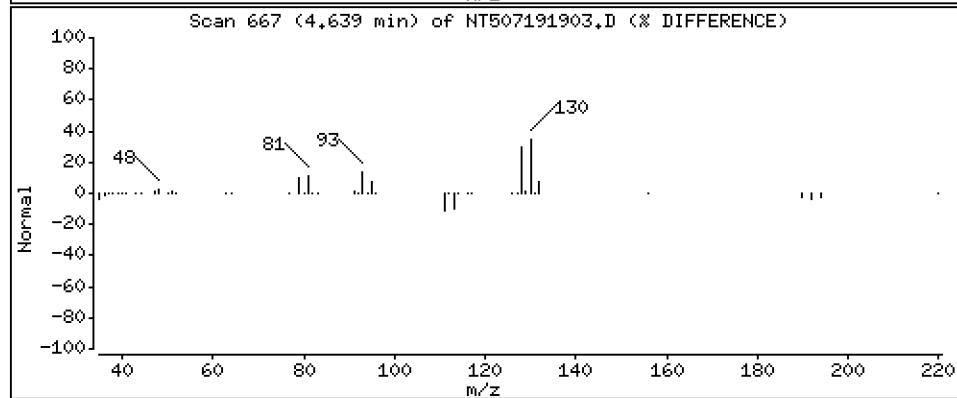
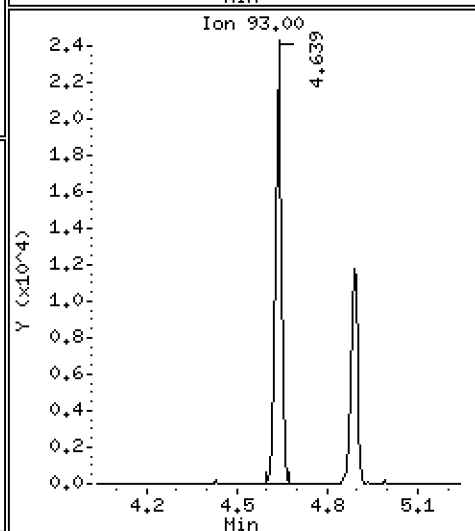
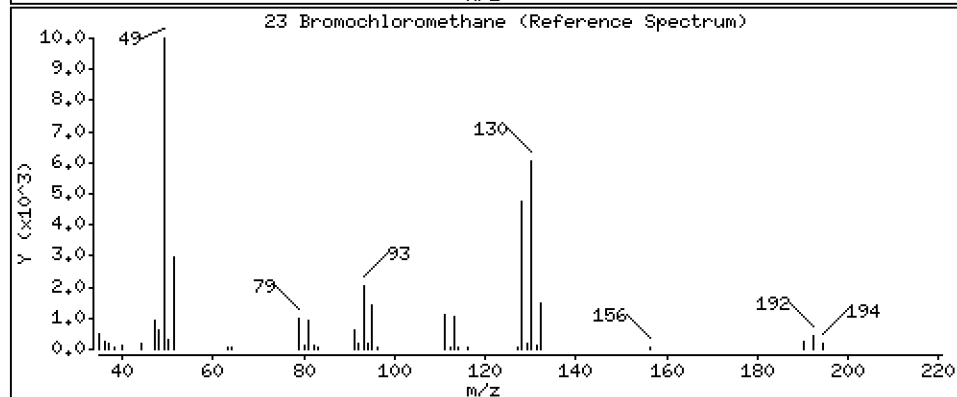
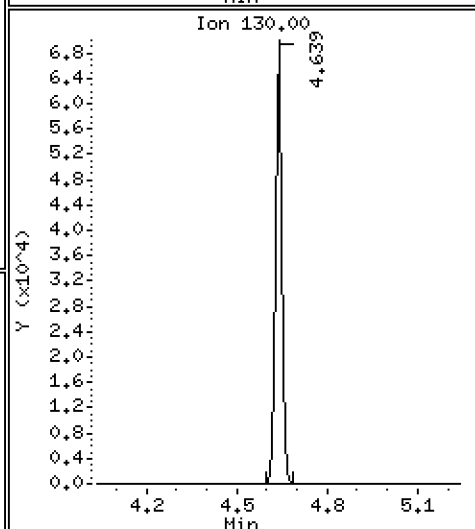
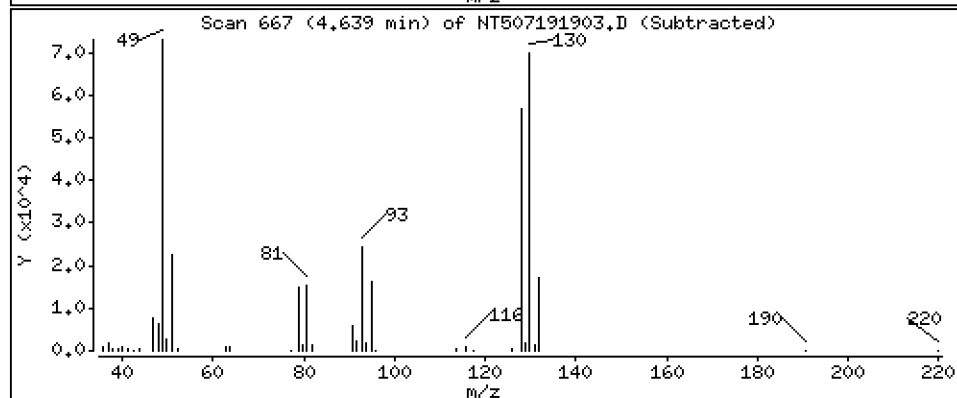
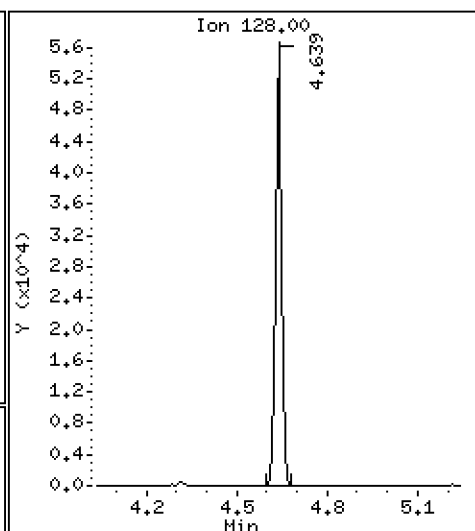
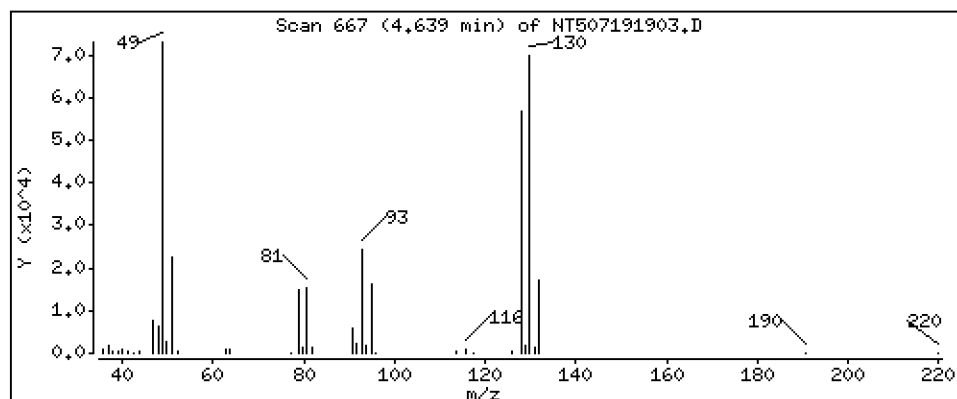
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

23 Bromochloromethane

Concentration: 50.806 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

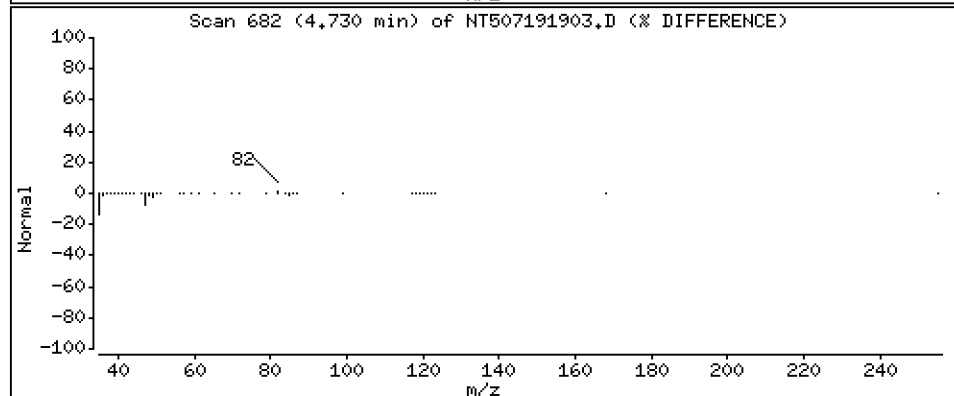
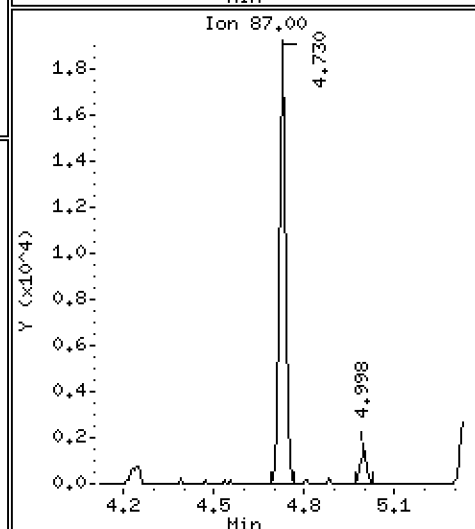
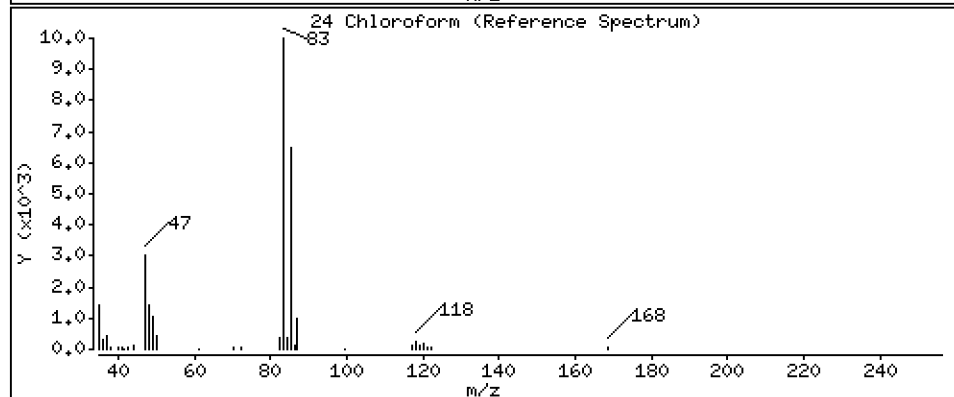
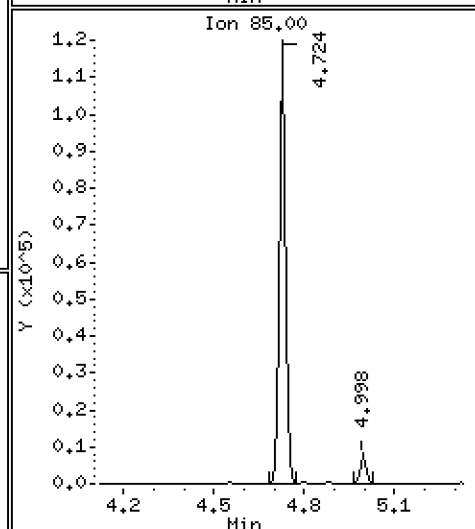
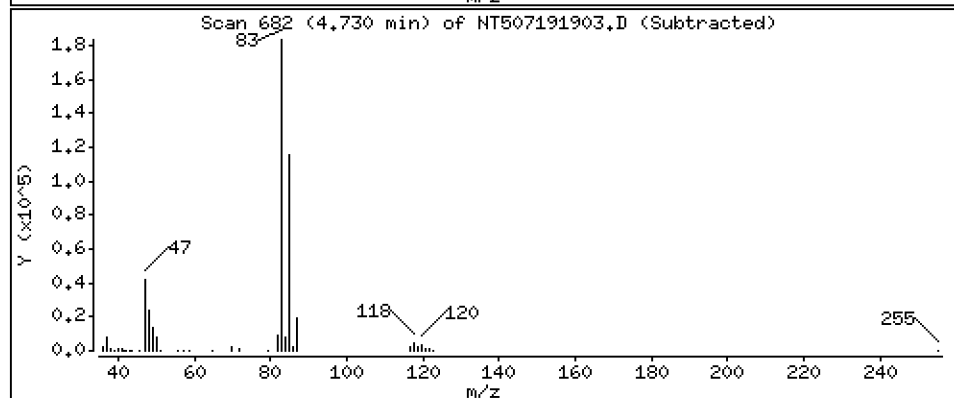
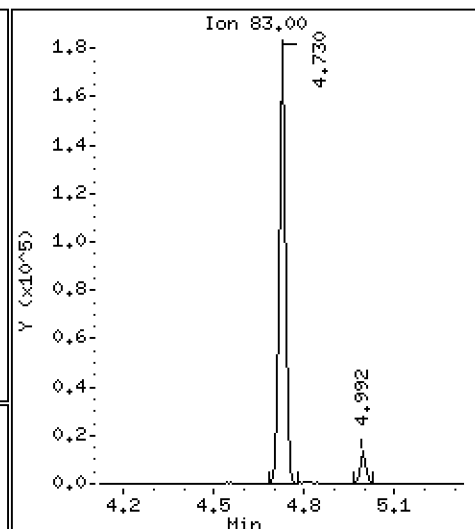
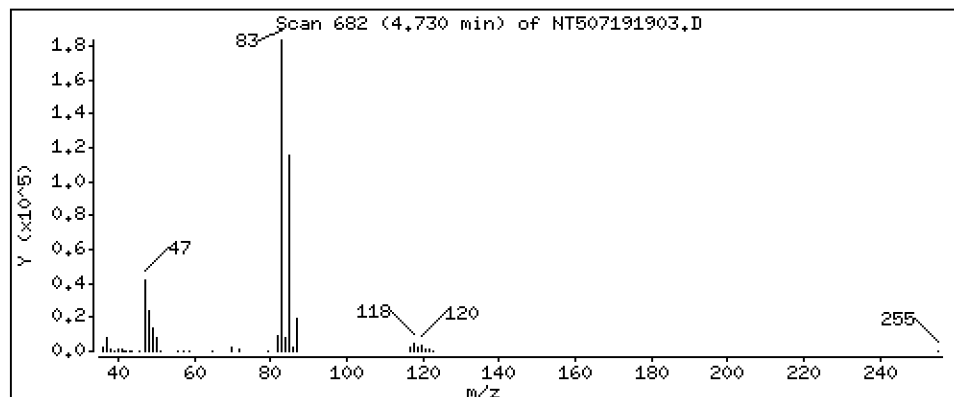
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 56,269 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

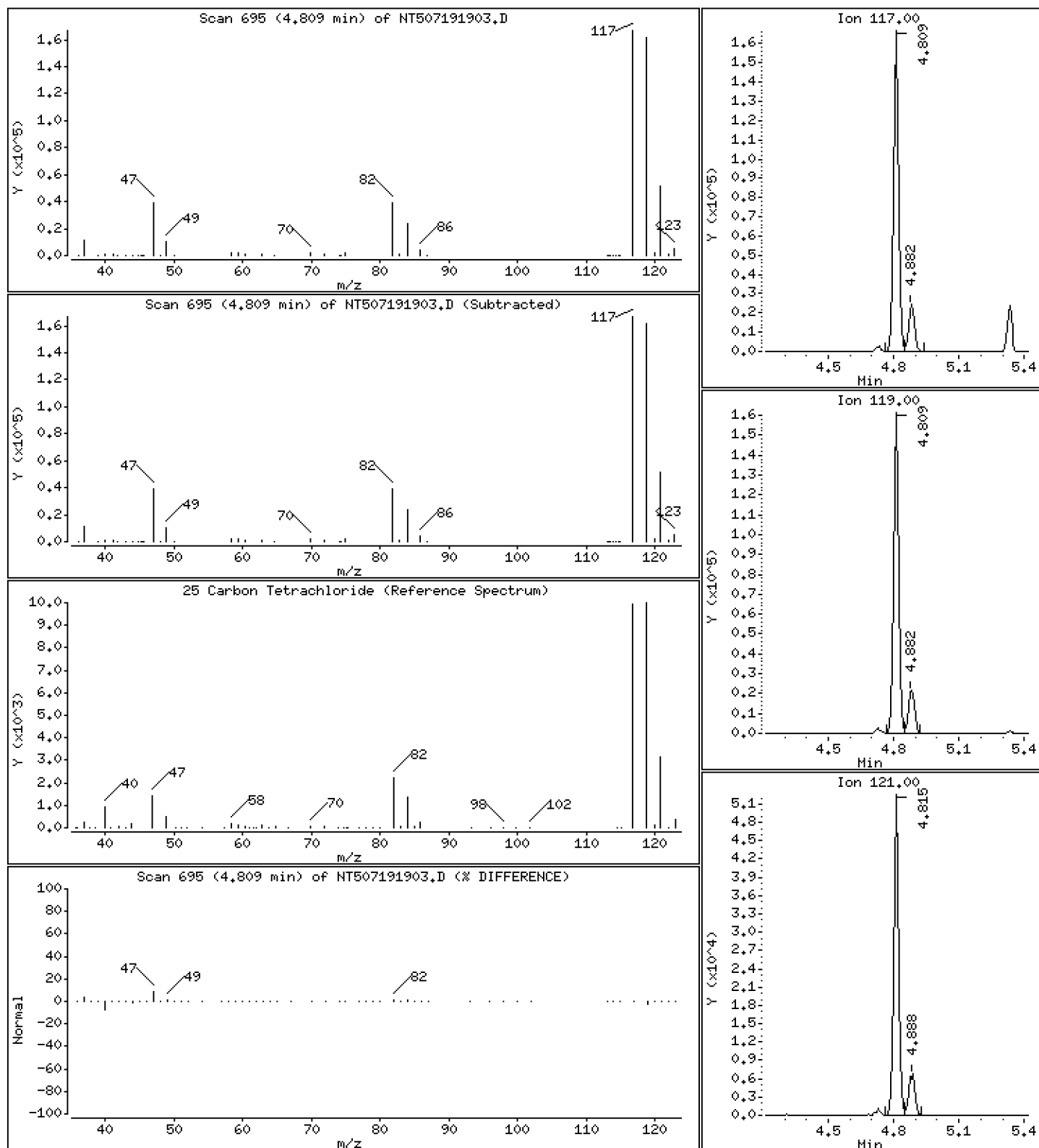
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 54.007 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

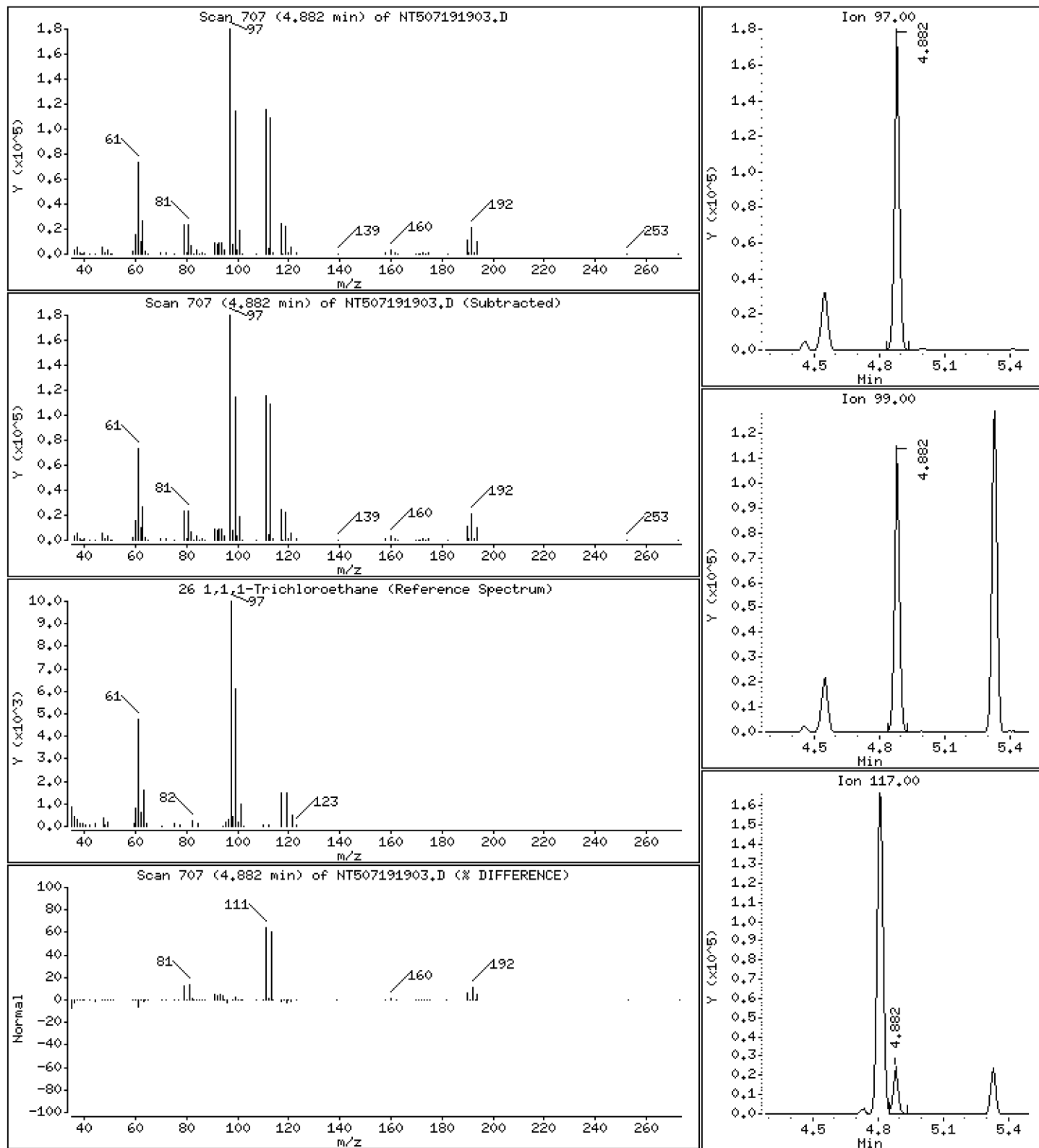
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 58,558 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

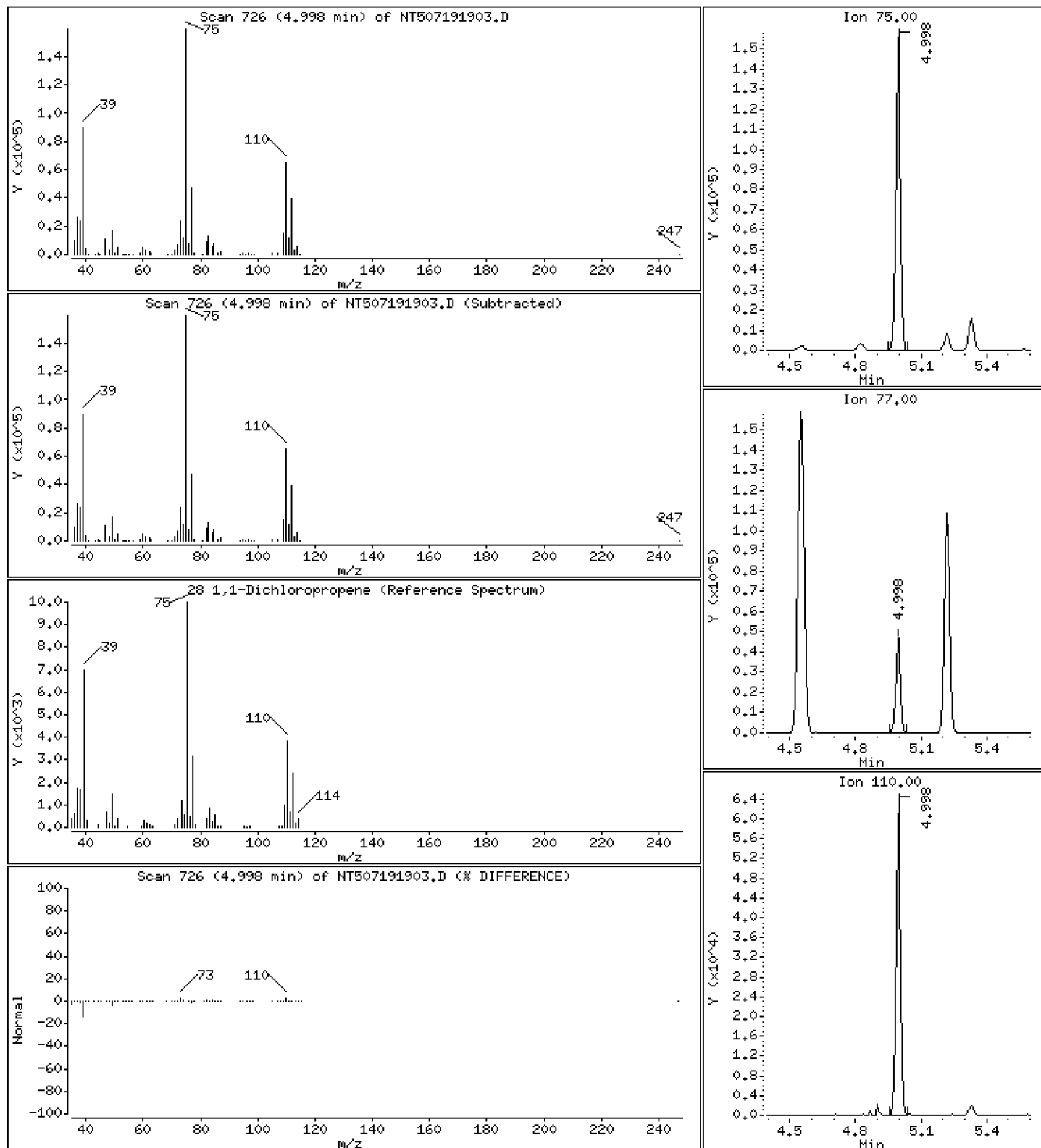
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 56.049 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

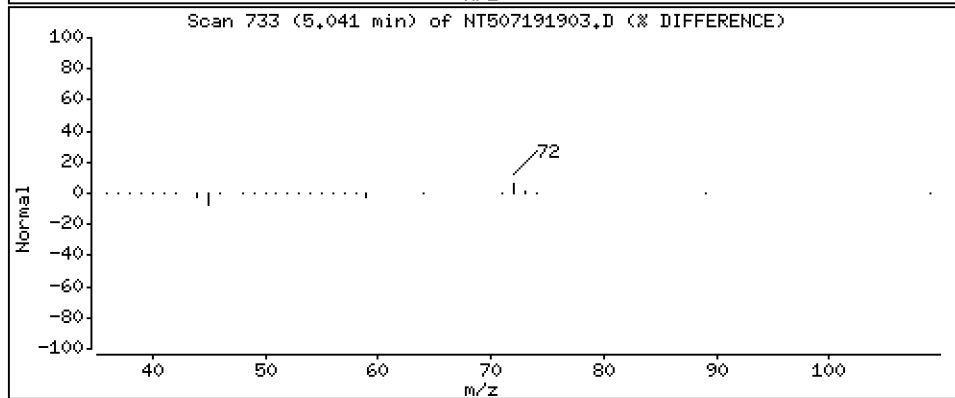
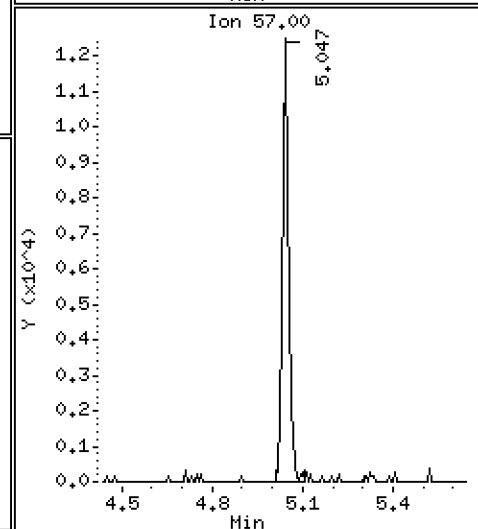
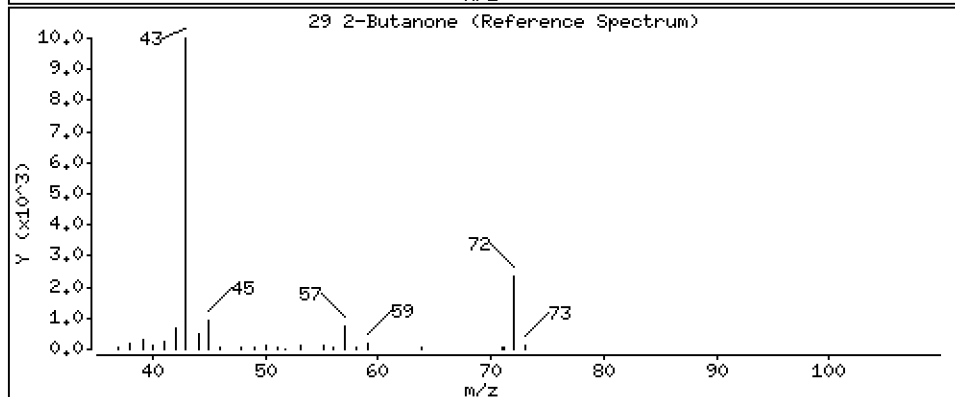
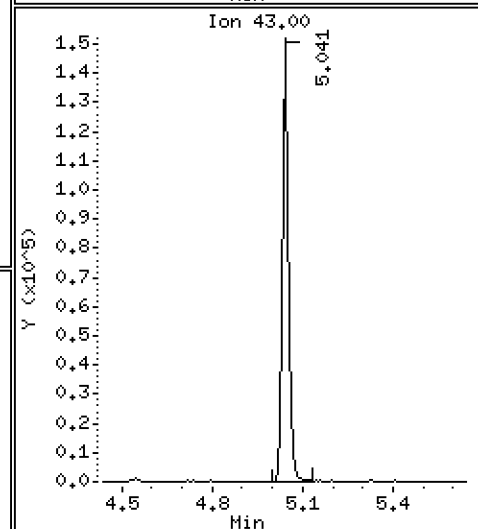
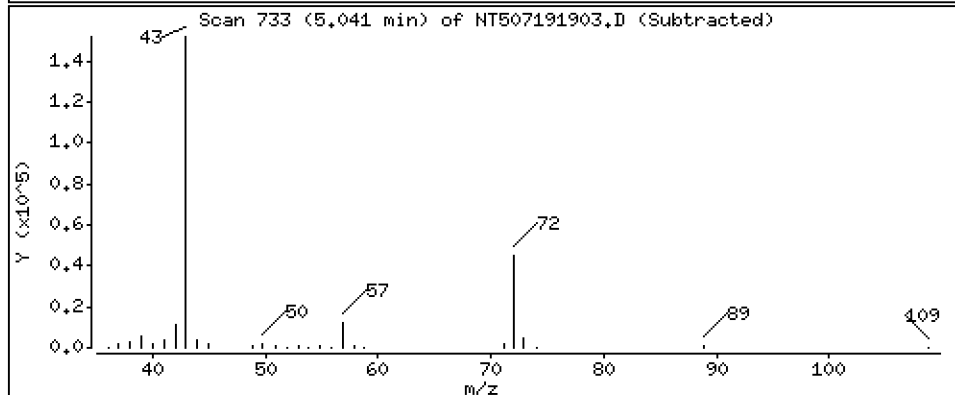
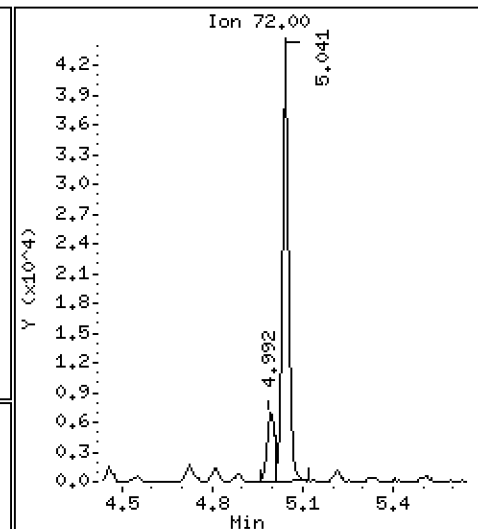
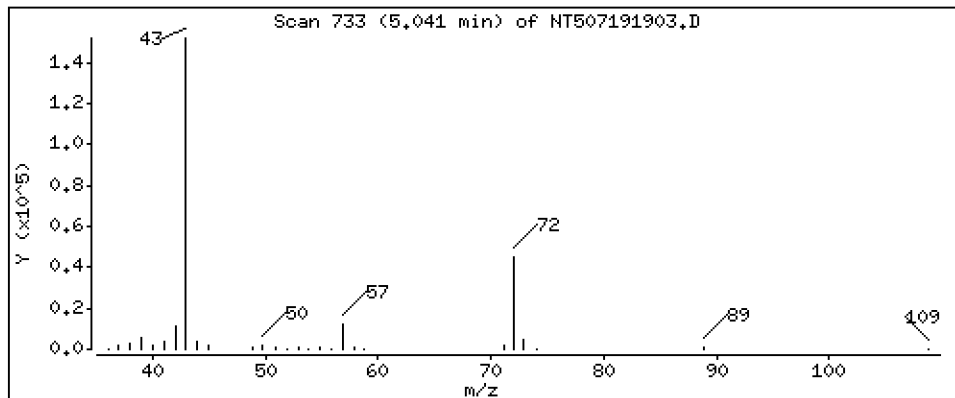
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 270.98 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

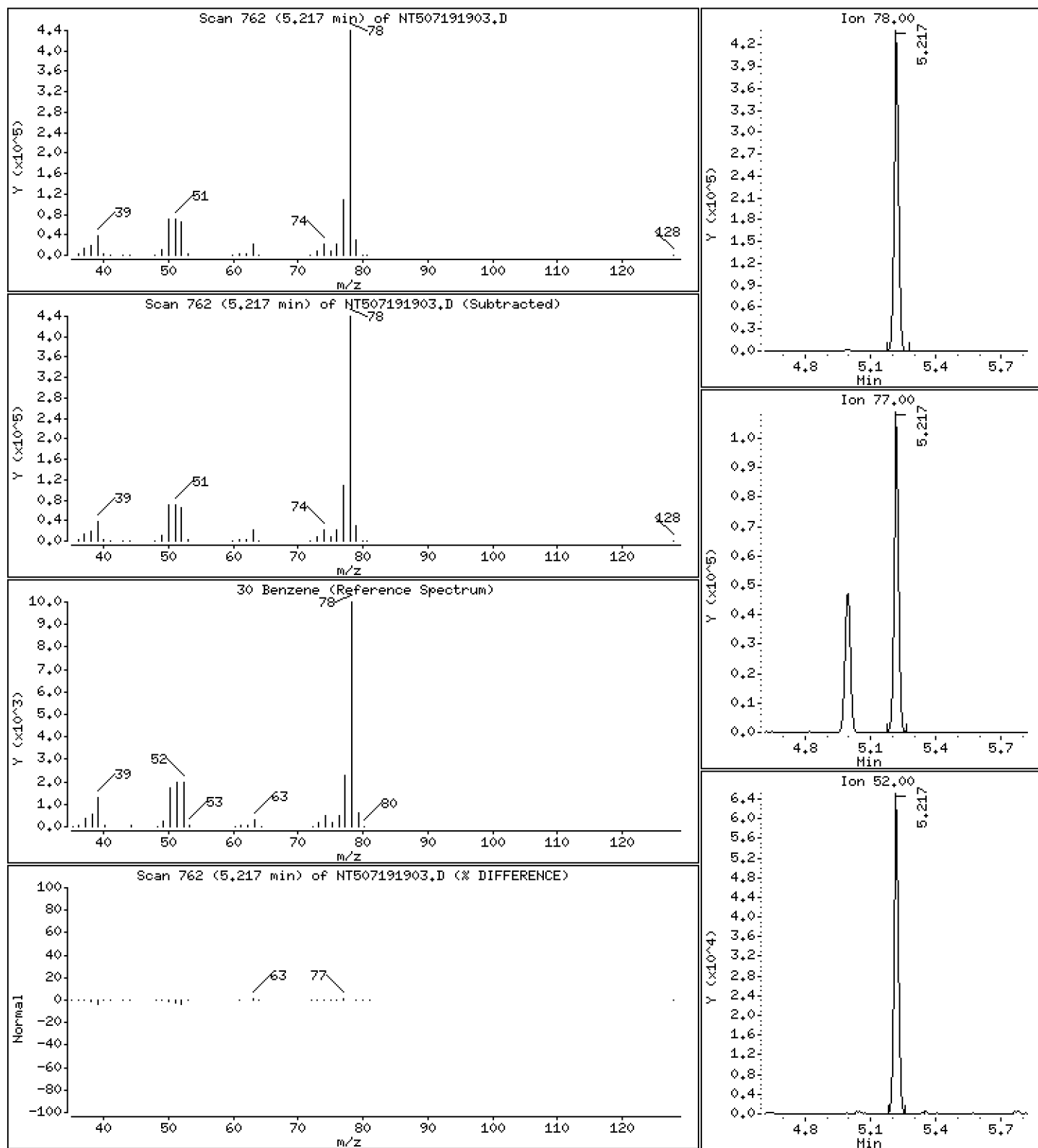
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 51.068 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

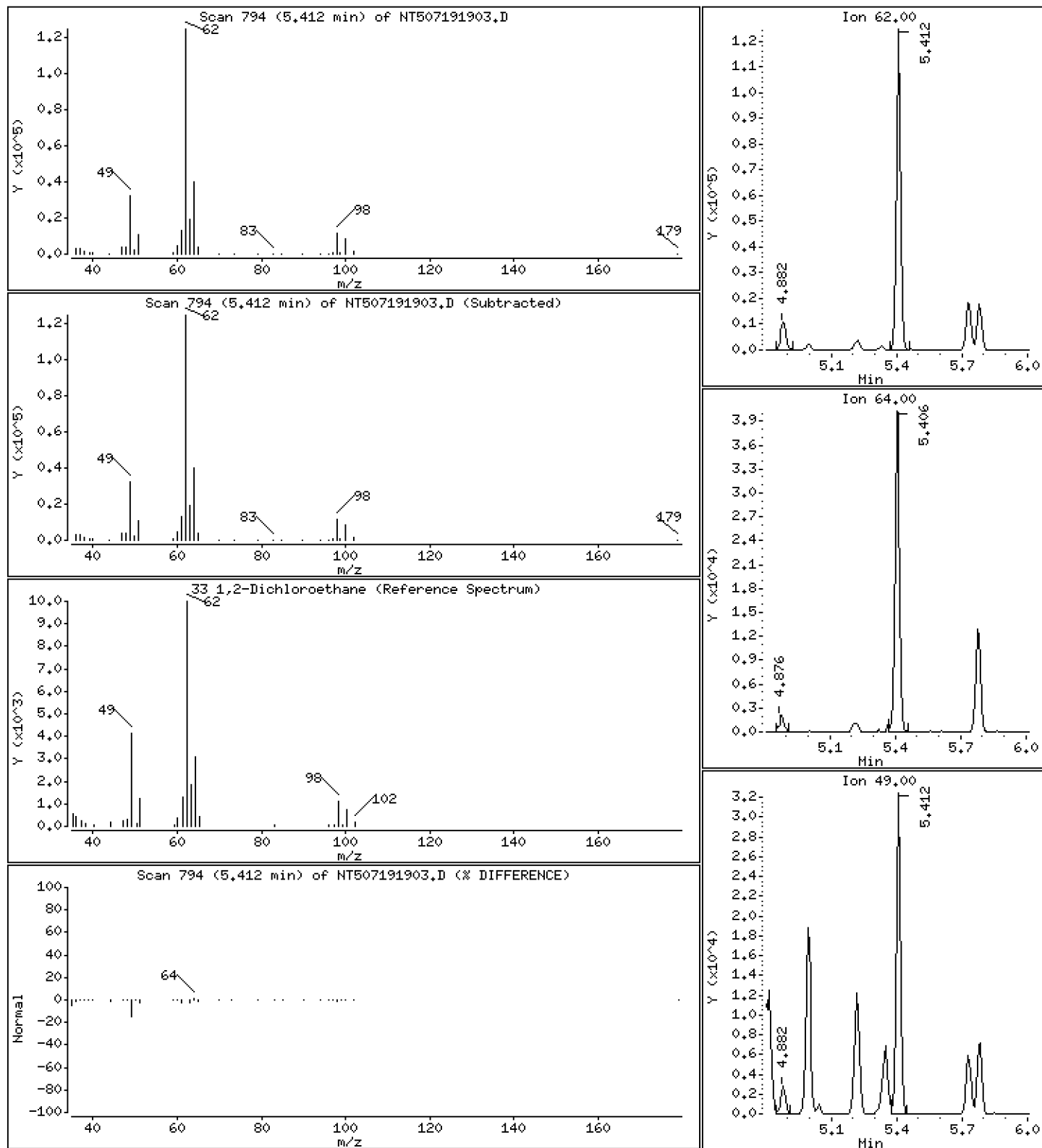
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 49,851 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

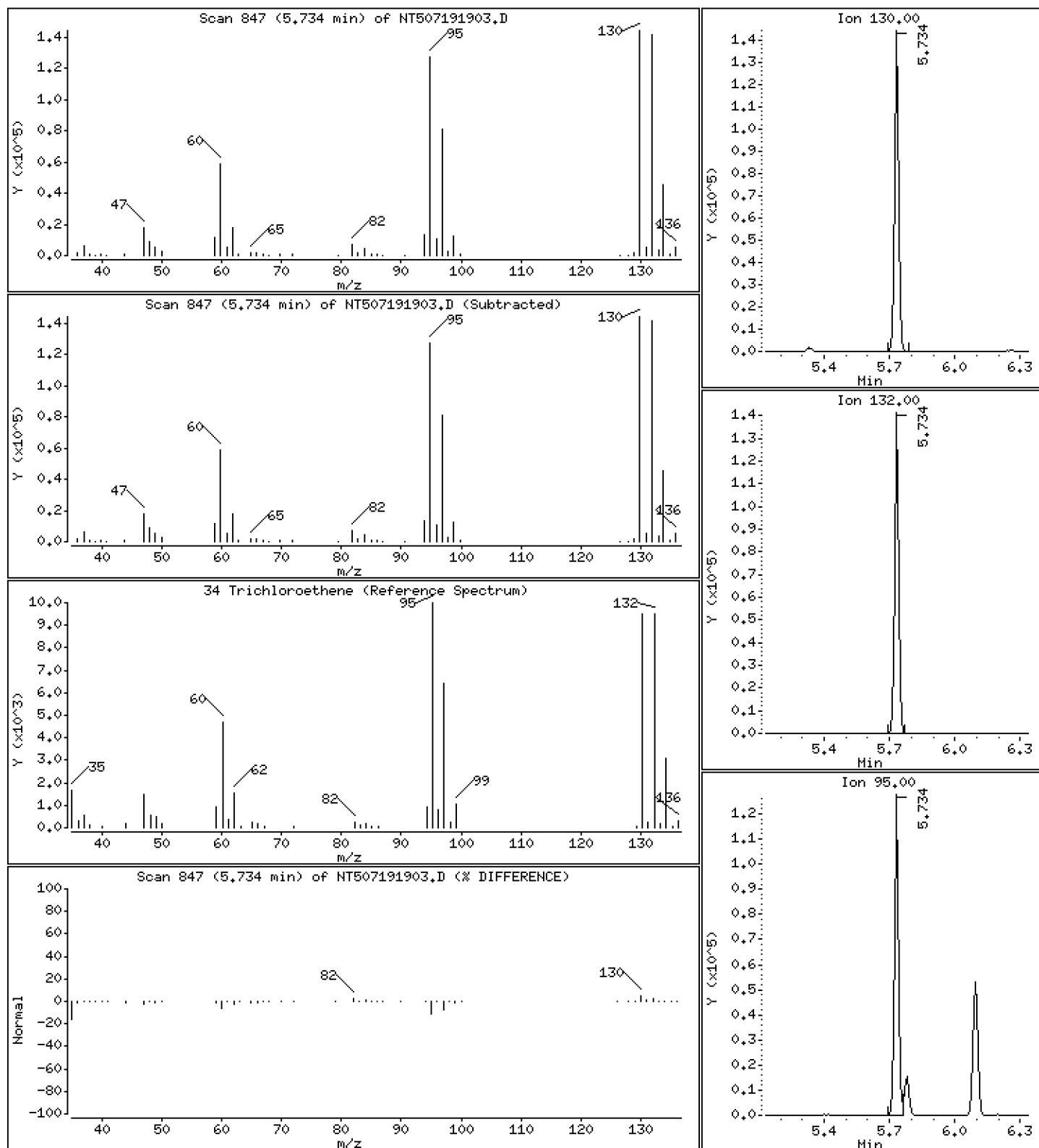
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 51.400 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

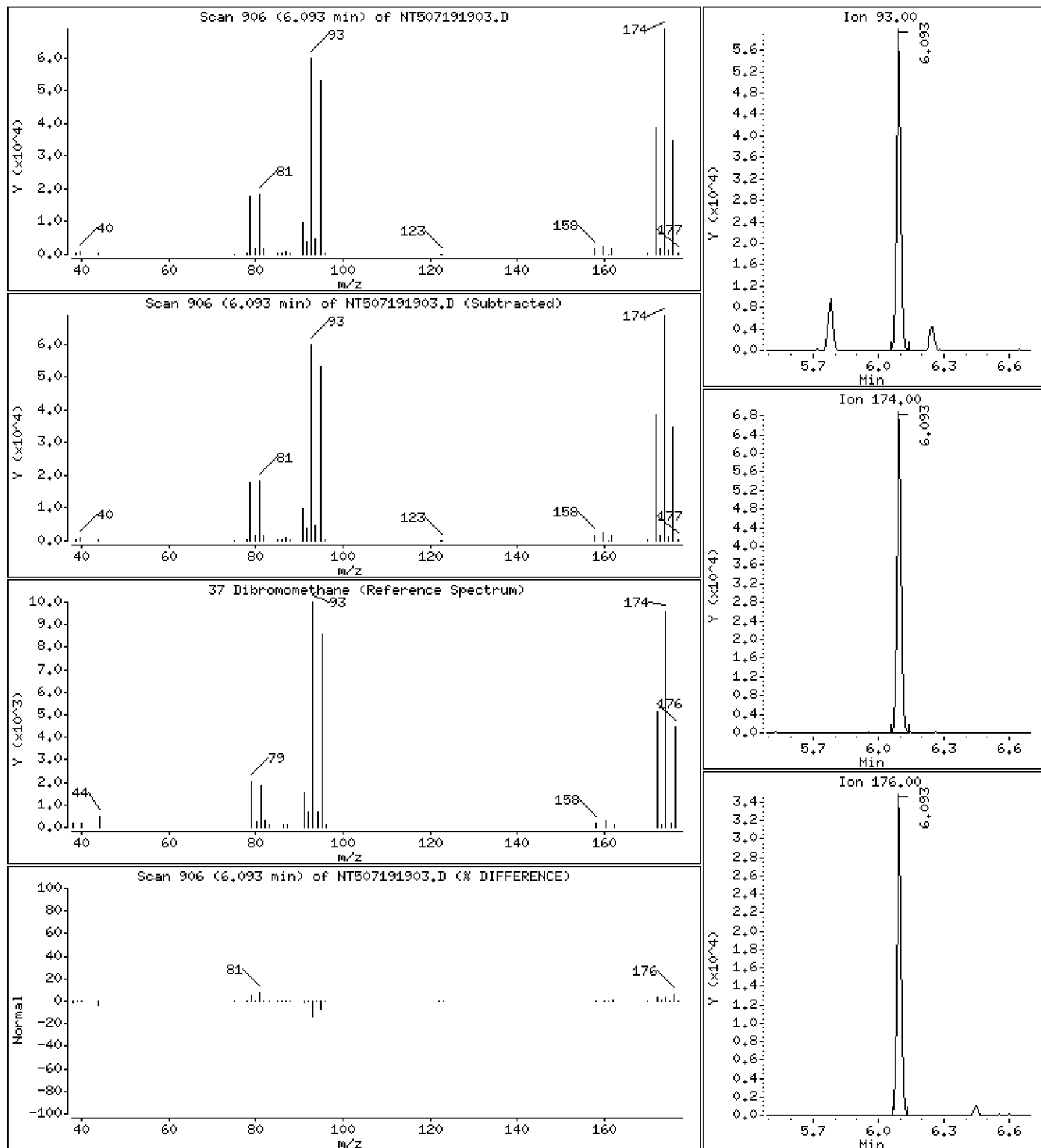
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 49,229 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

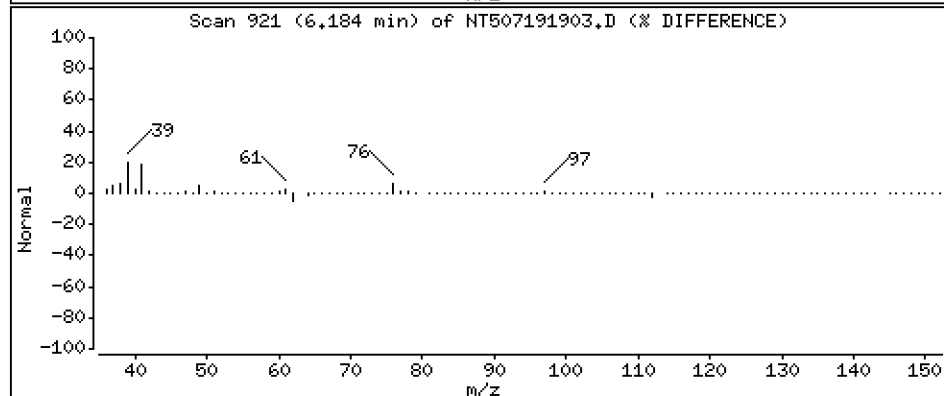
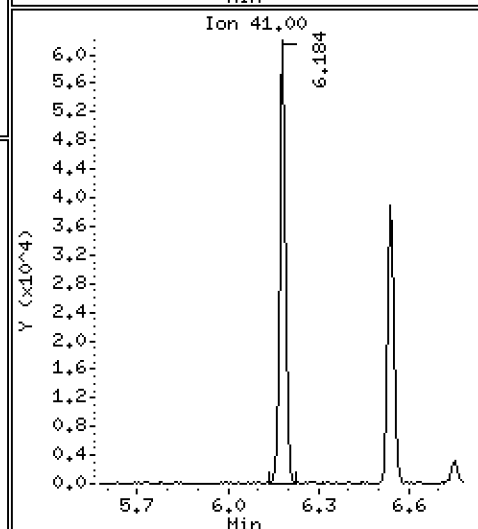
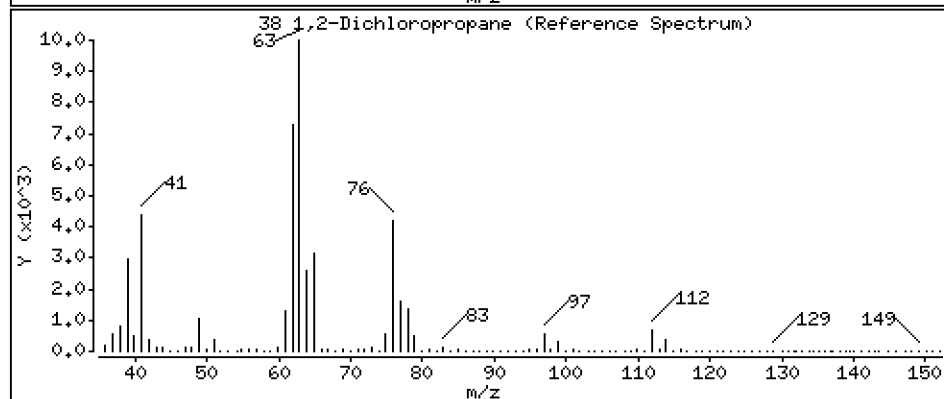
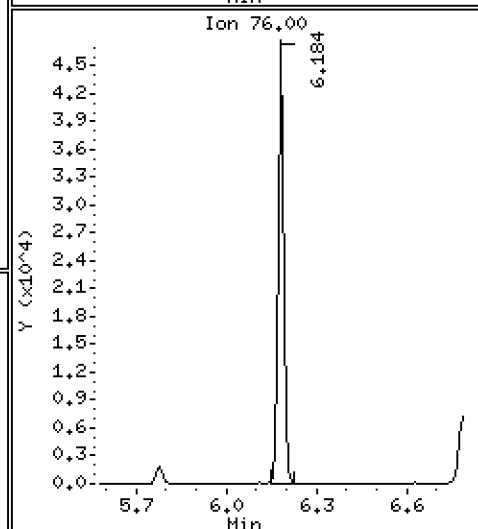
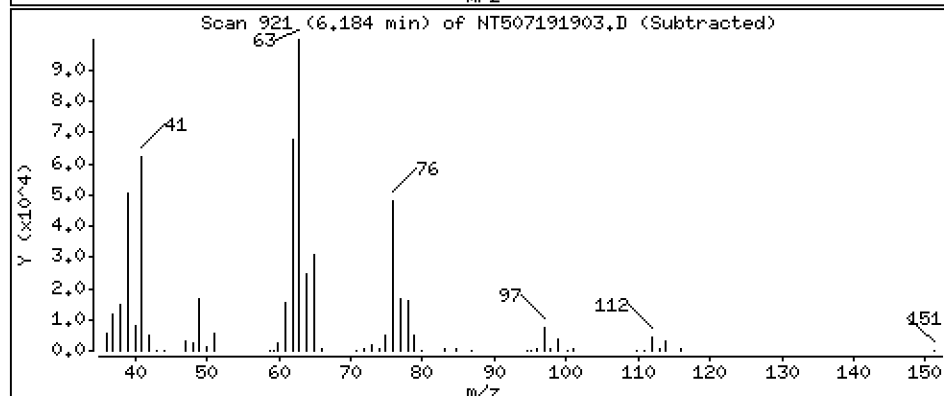
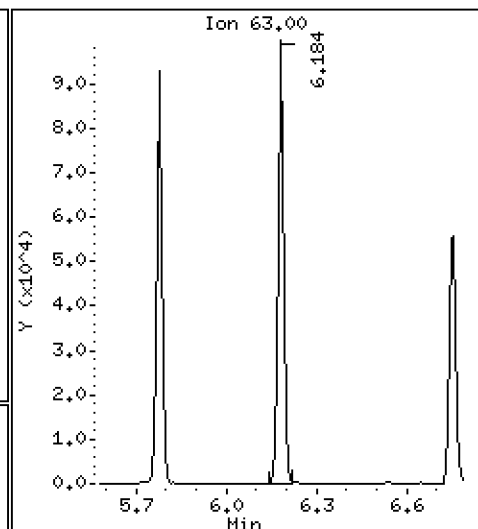
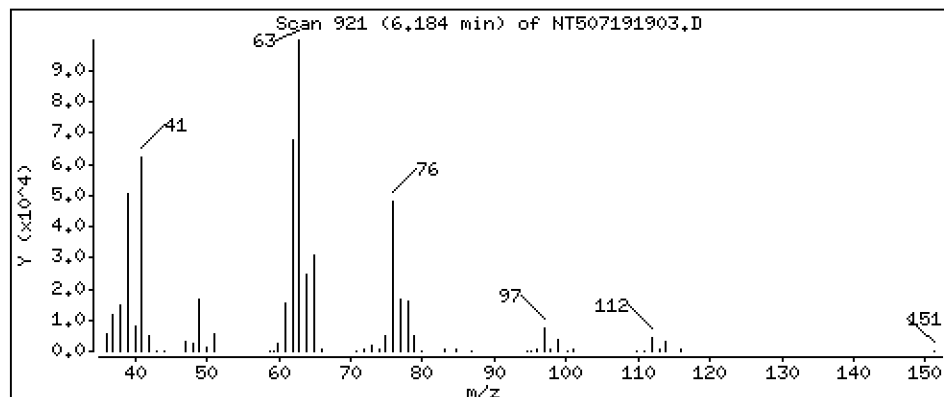
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 50.839 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

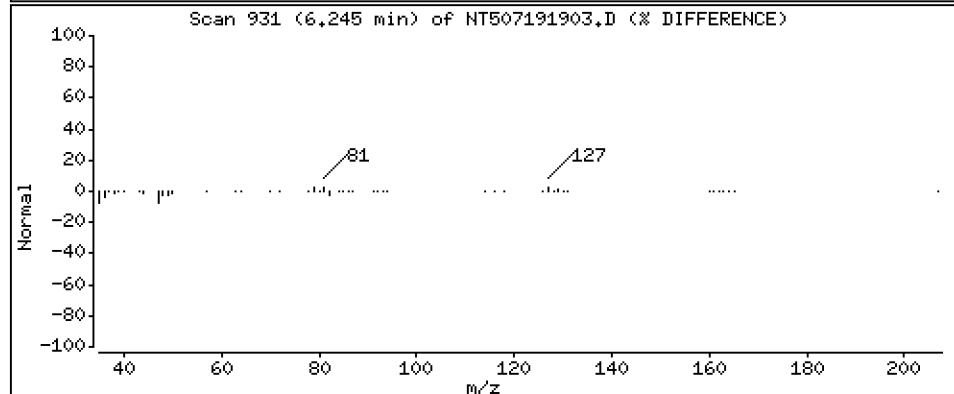
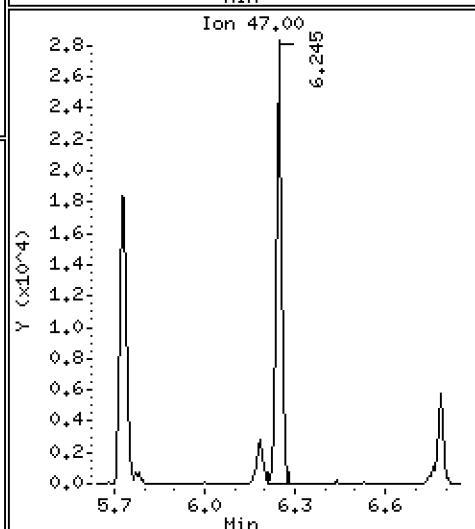
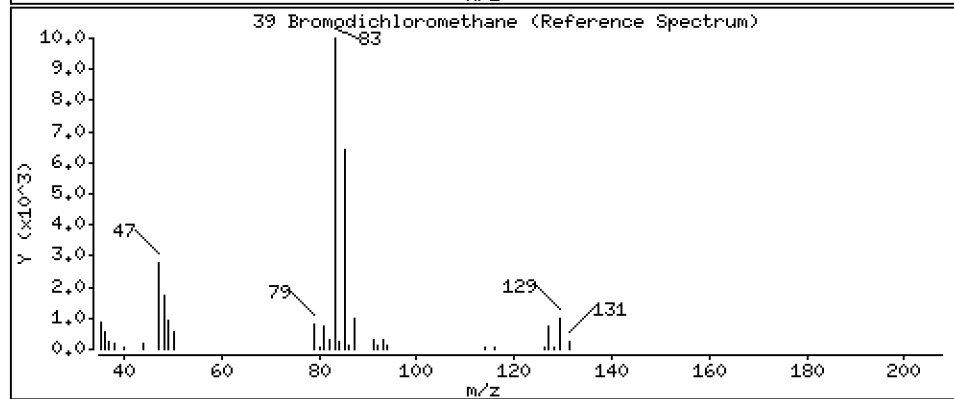
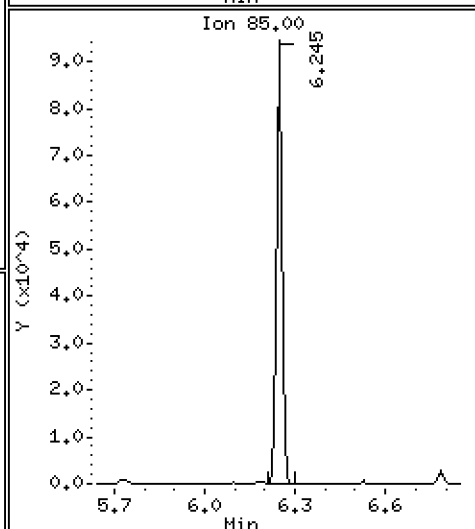
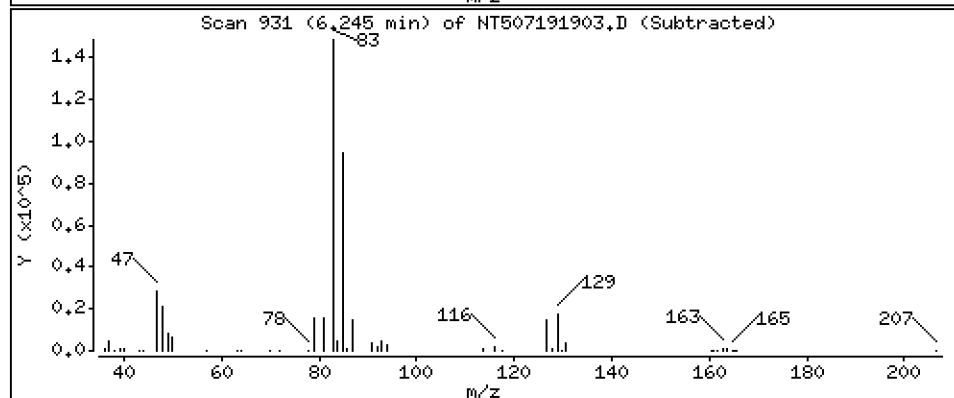
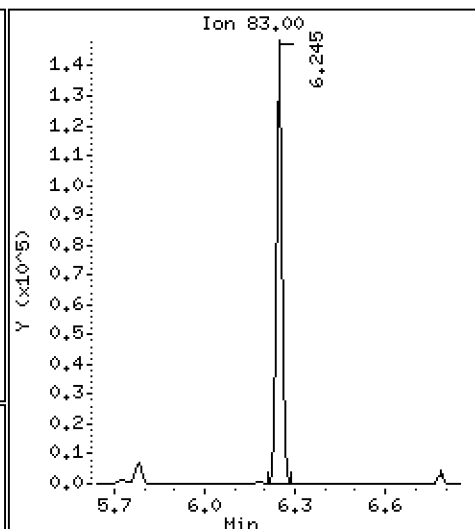
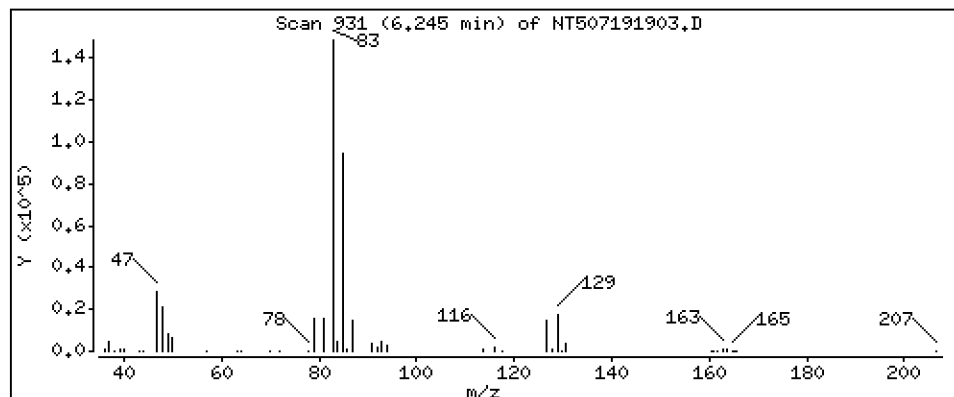
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 51,509 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

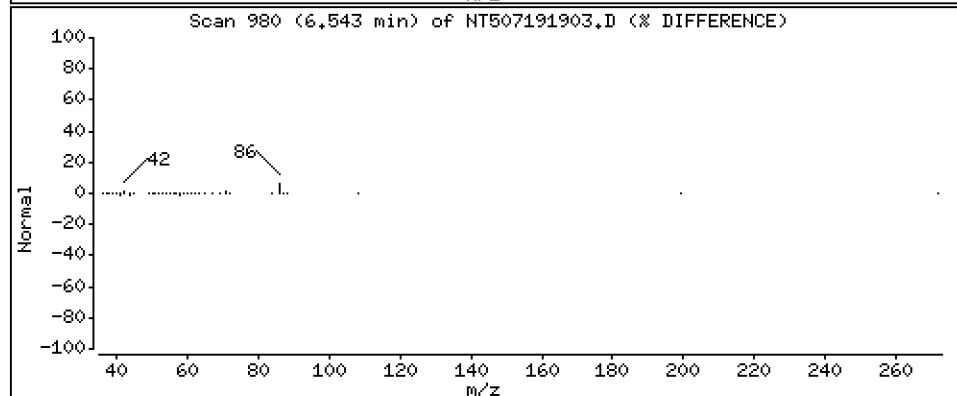
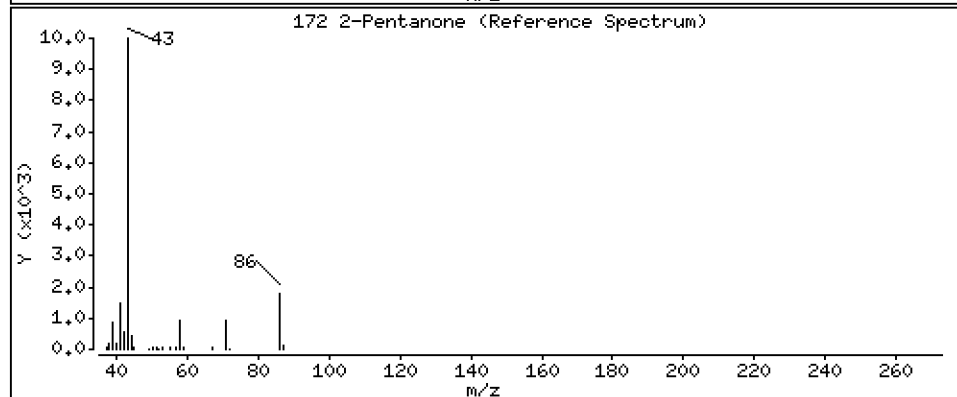
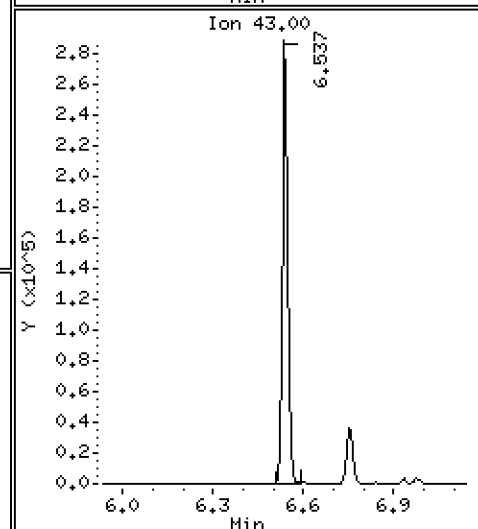
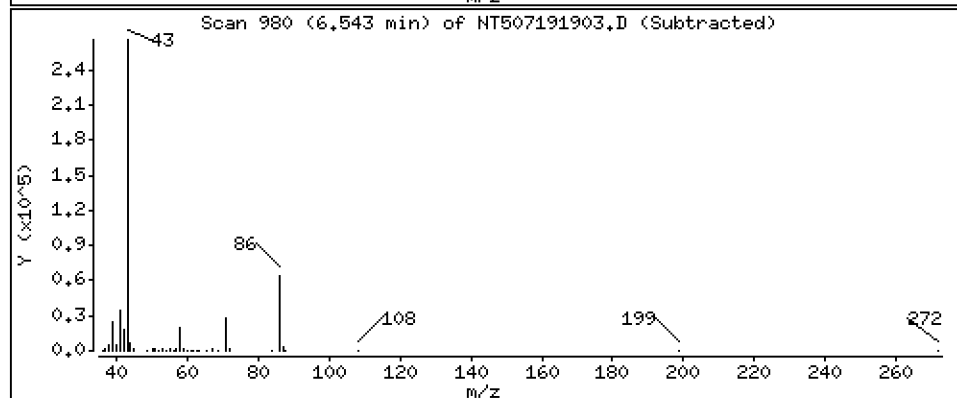
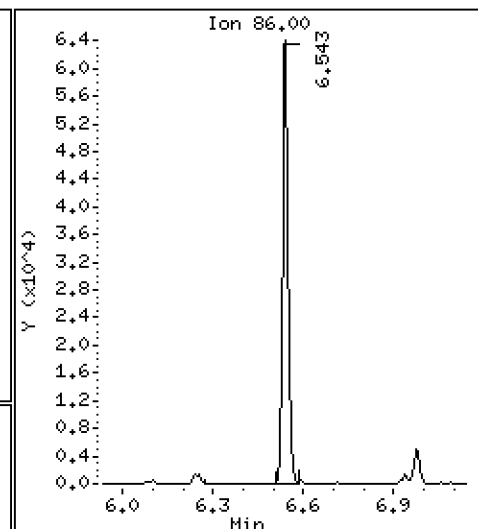
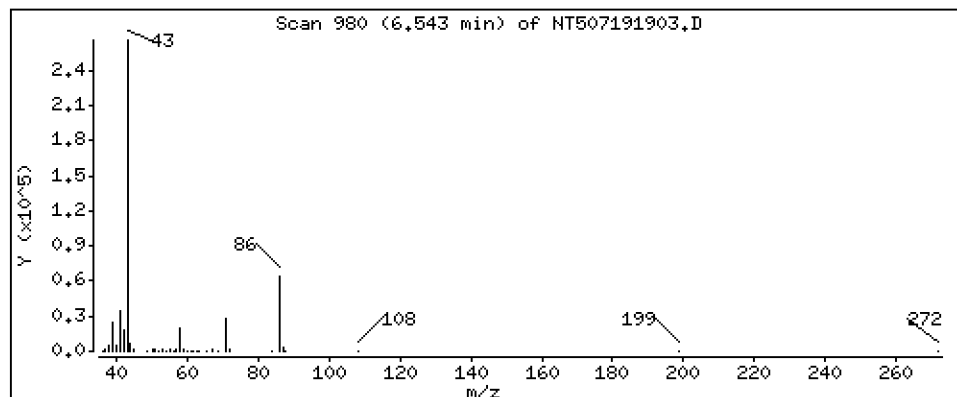
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 241.06 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

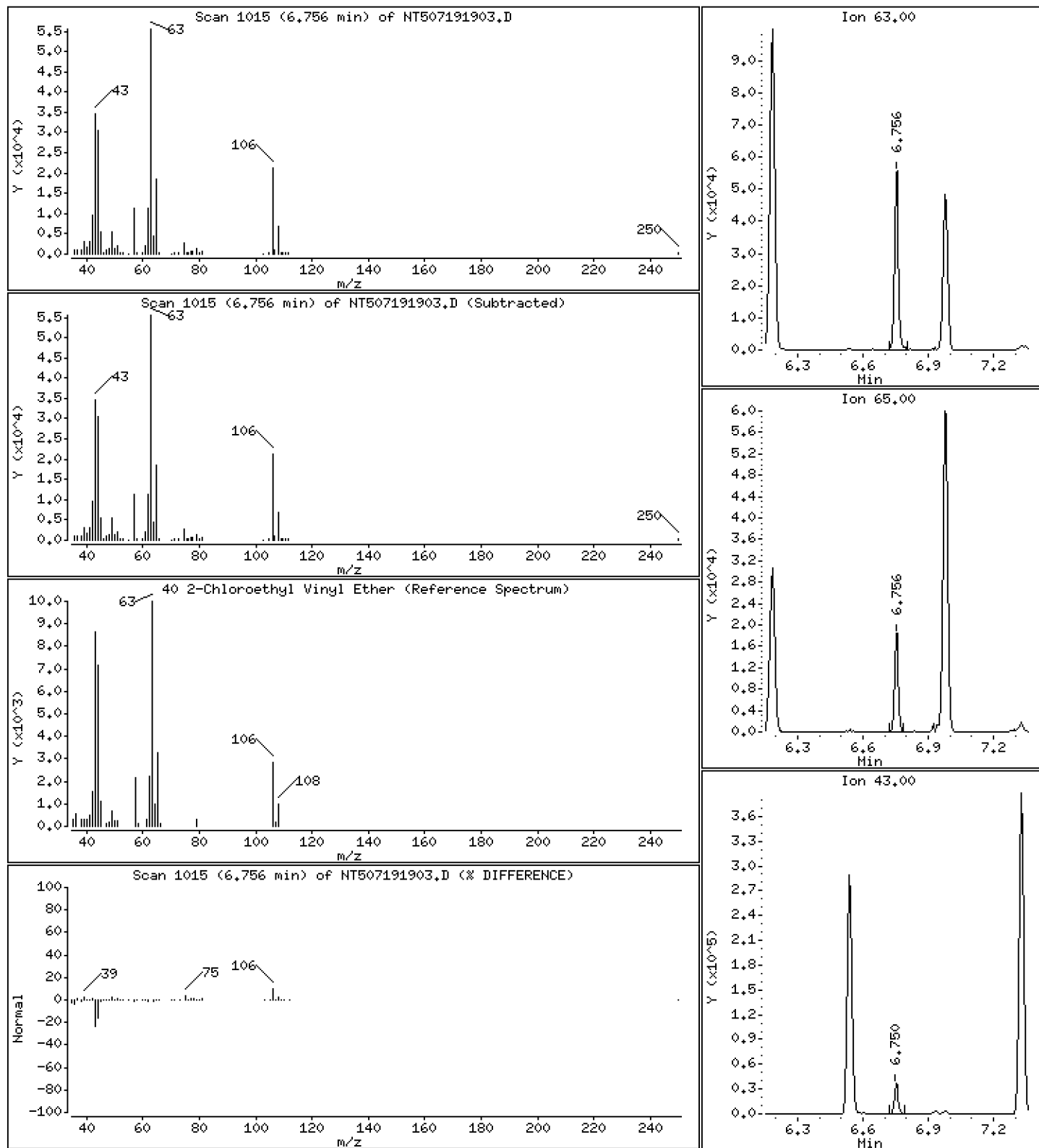
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

40 2-Chloroethyl Vinyl Ether

Concentration: 46,540 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

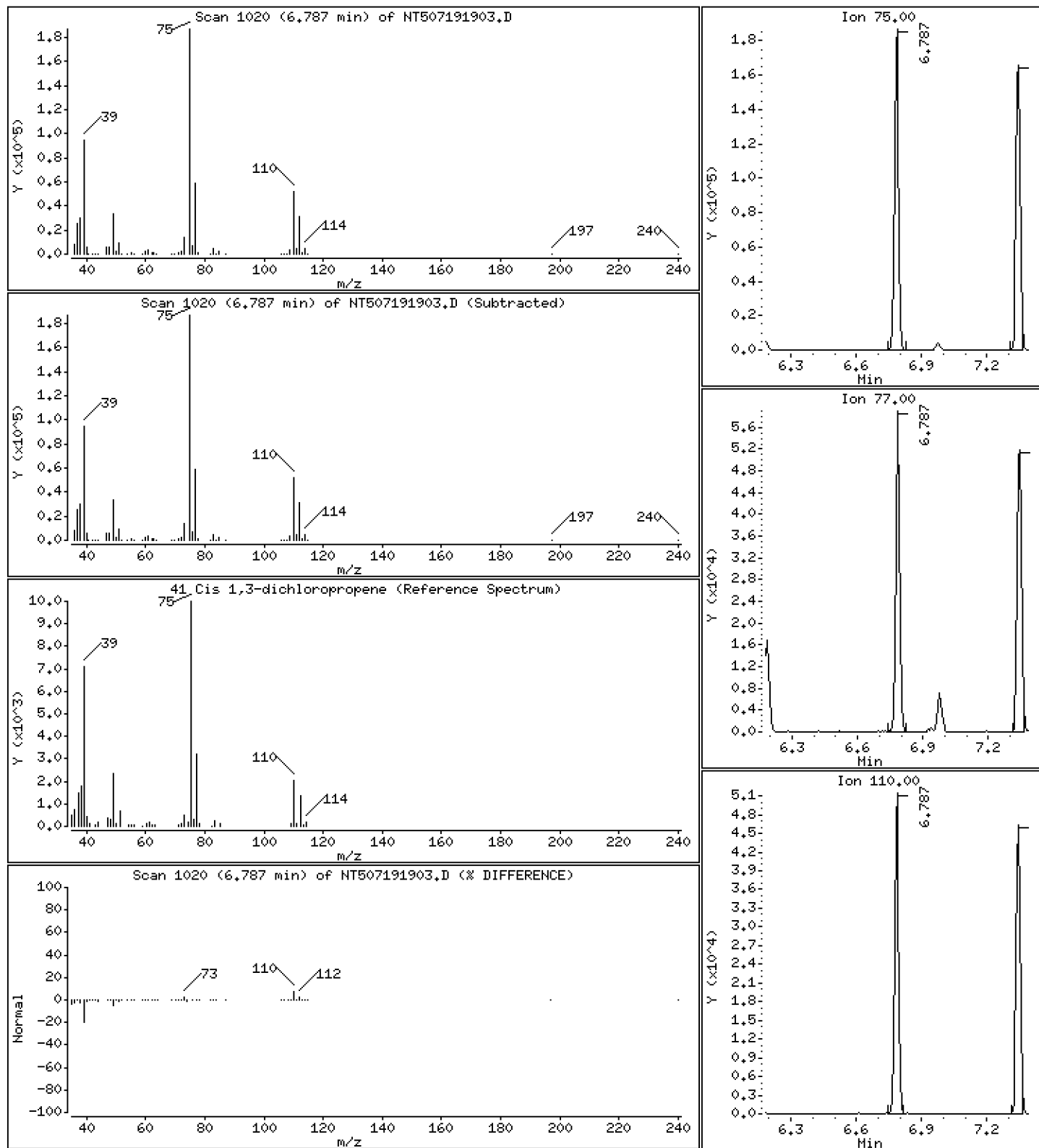
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

41 Cis 1,3-dichloropropene

Concentration: 52,225 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

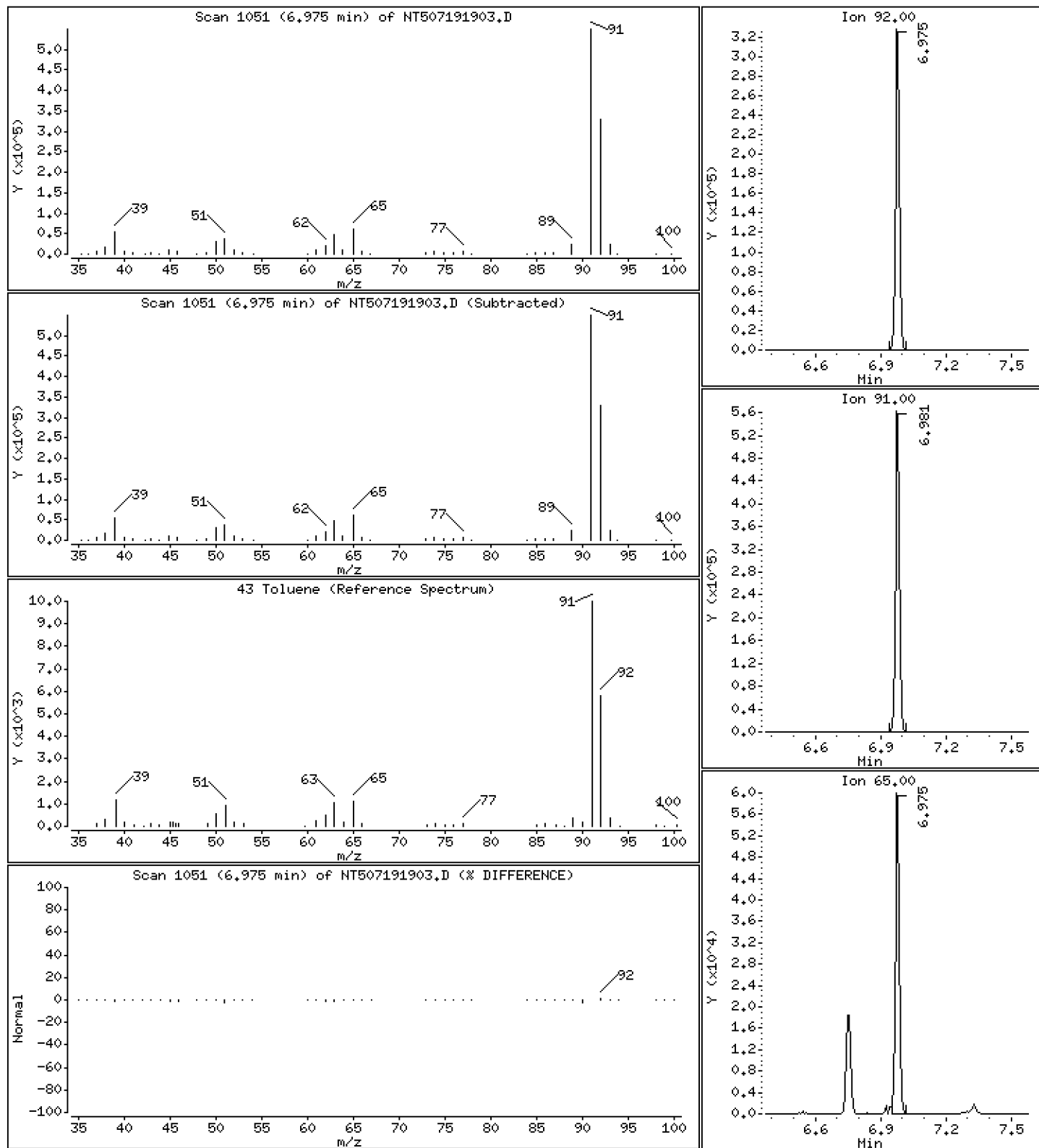
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 50.159 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

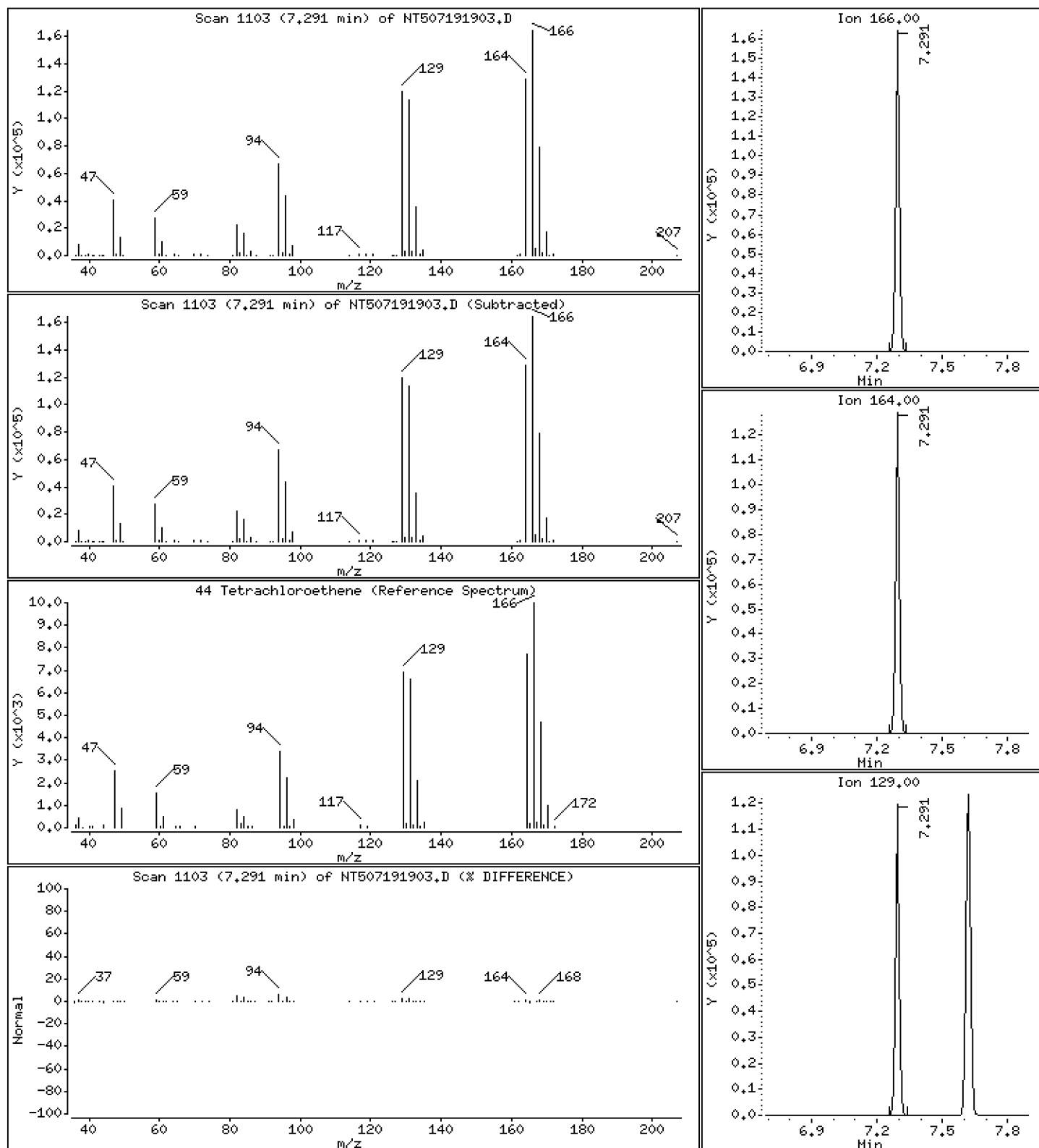
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 48,978 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

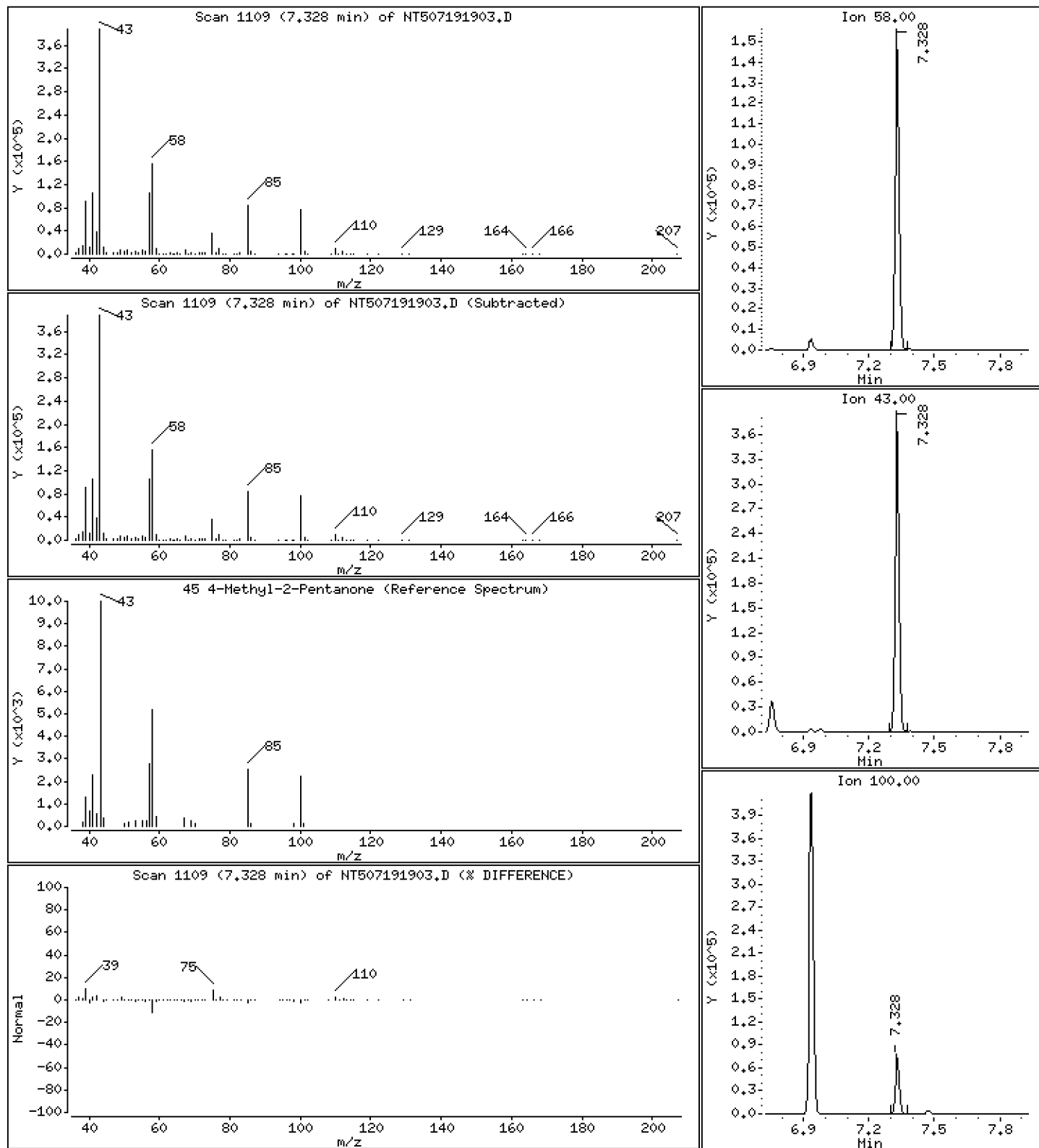
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 244.89 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

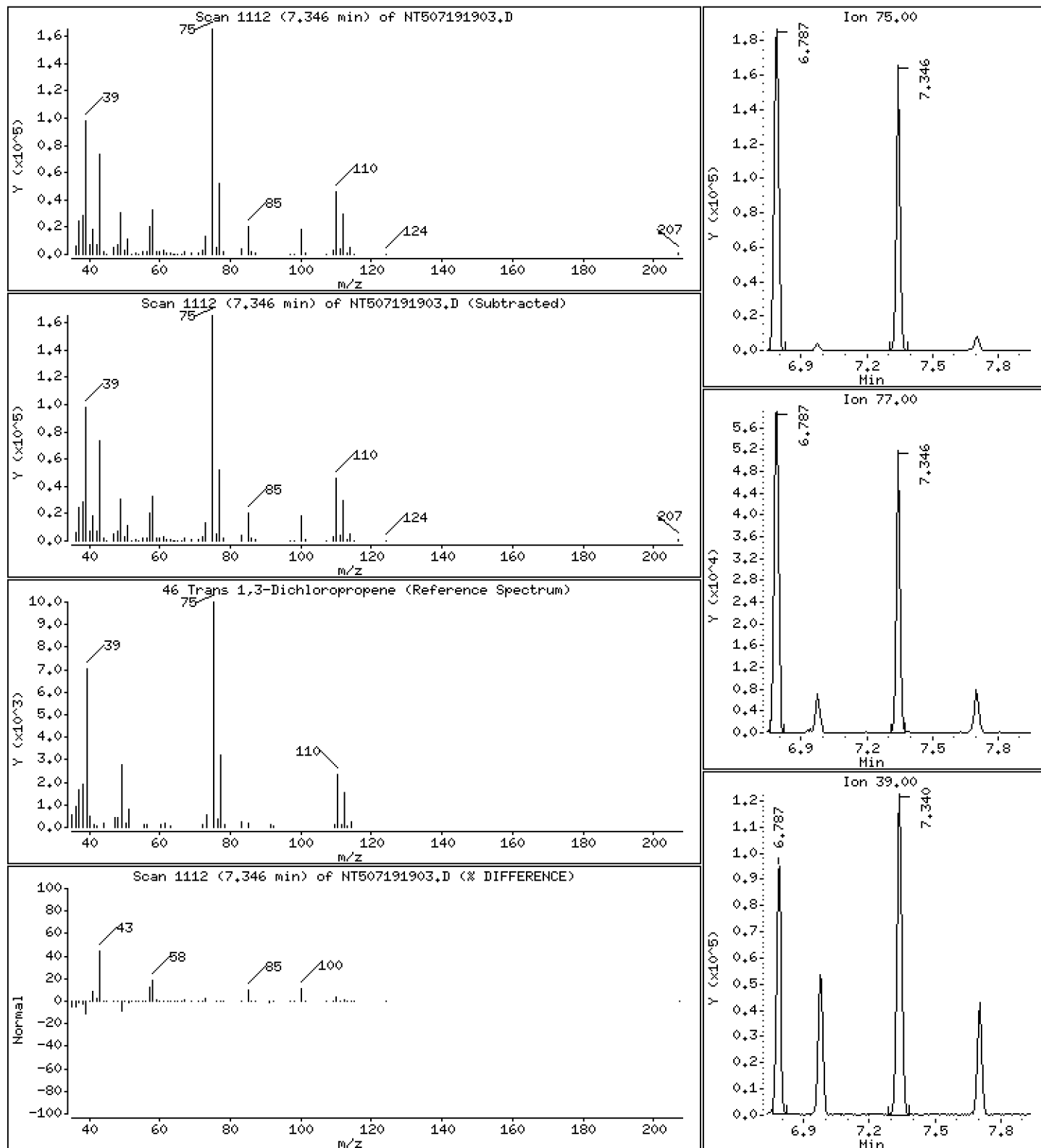
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 51,138 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

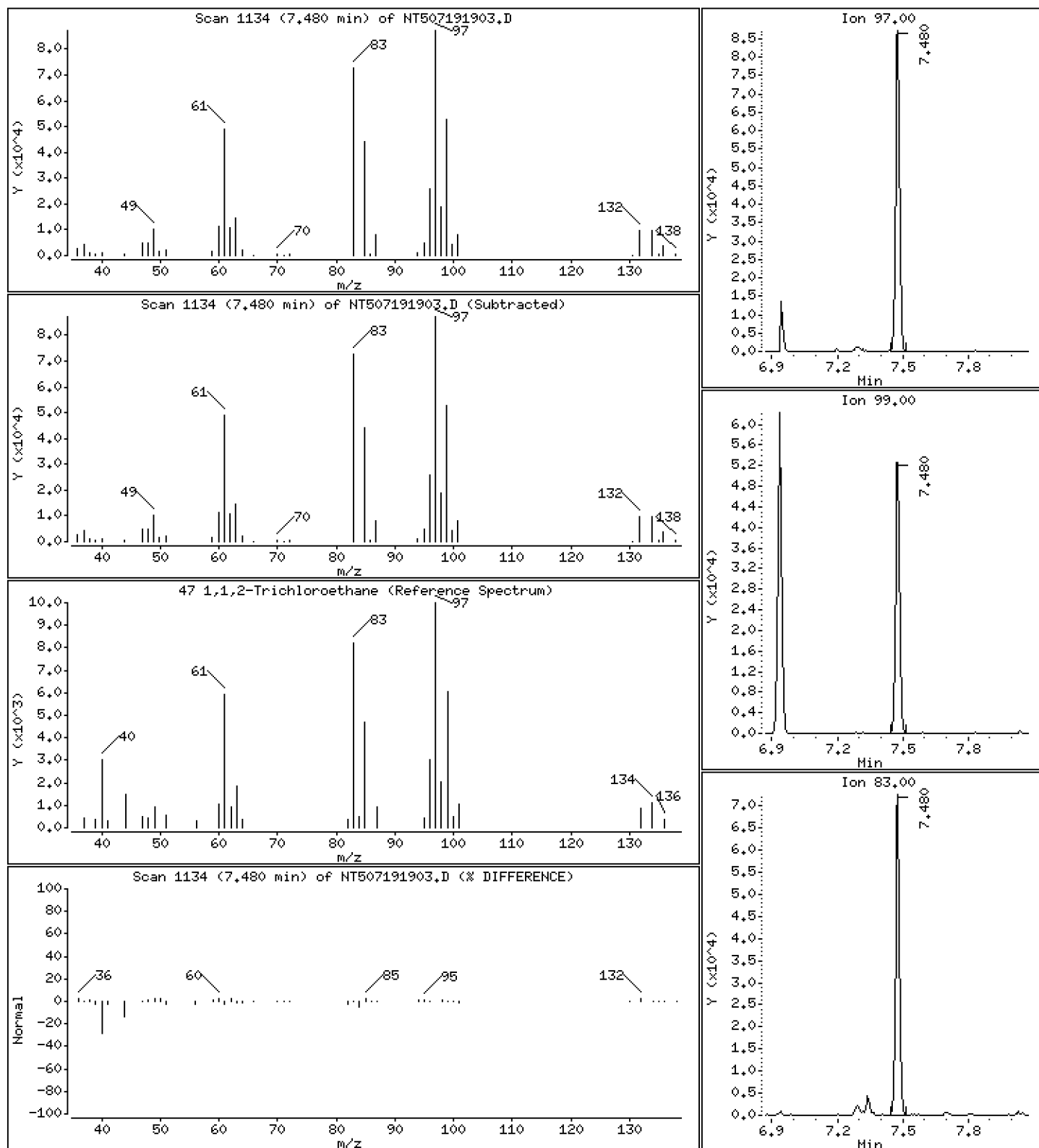
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 47,154 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

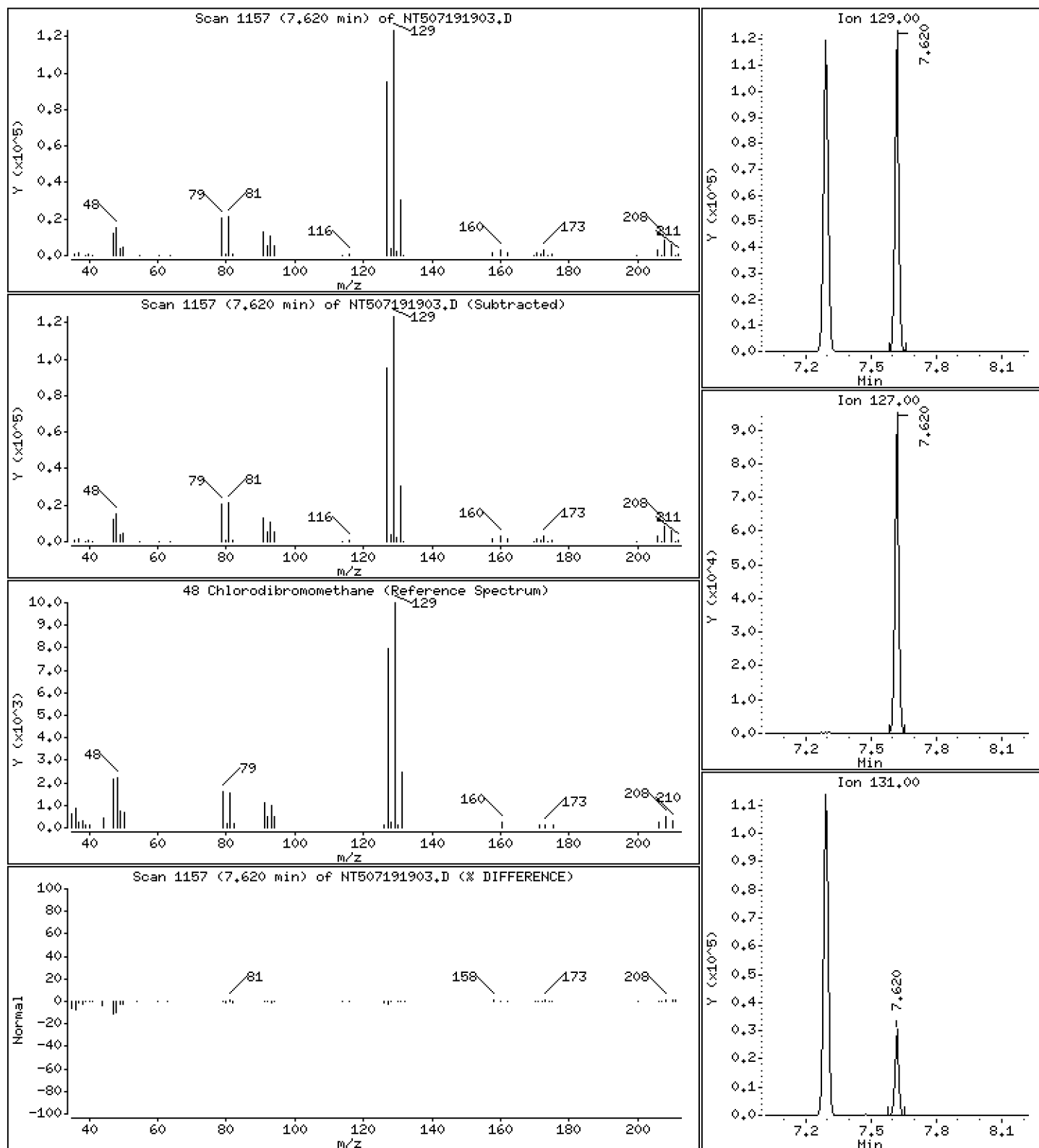
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 47,030 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

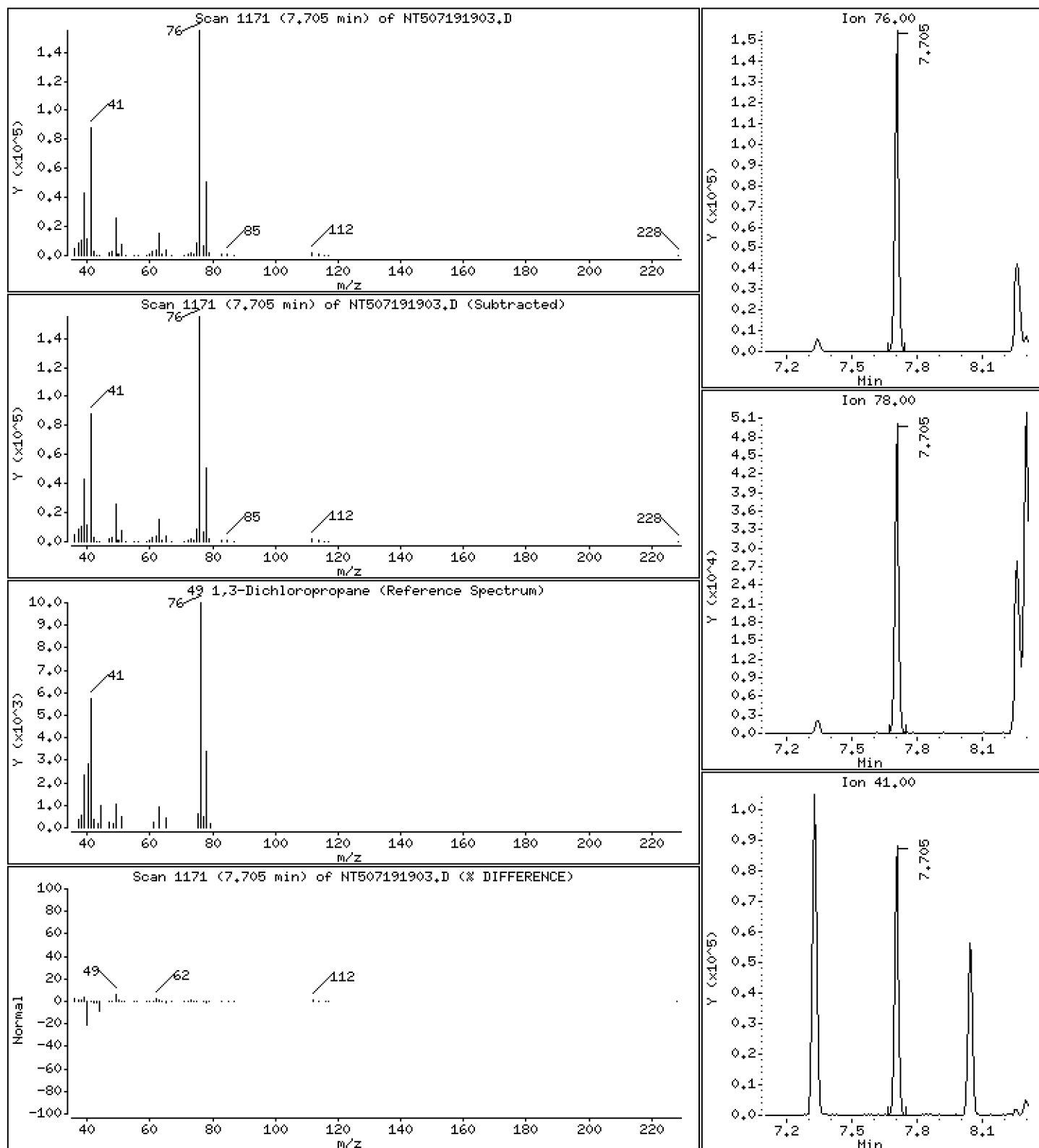
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 45,833 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

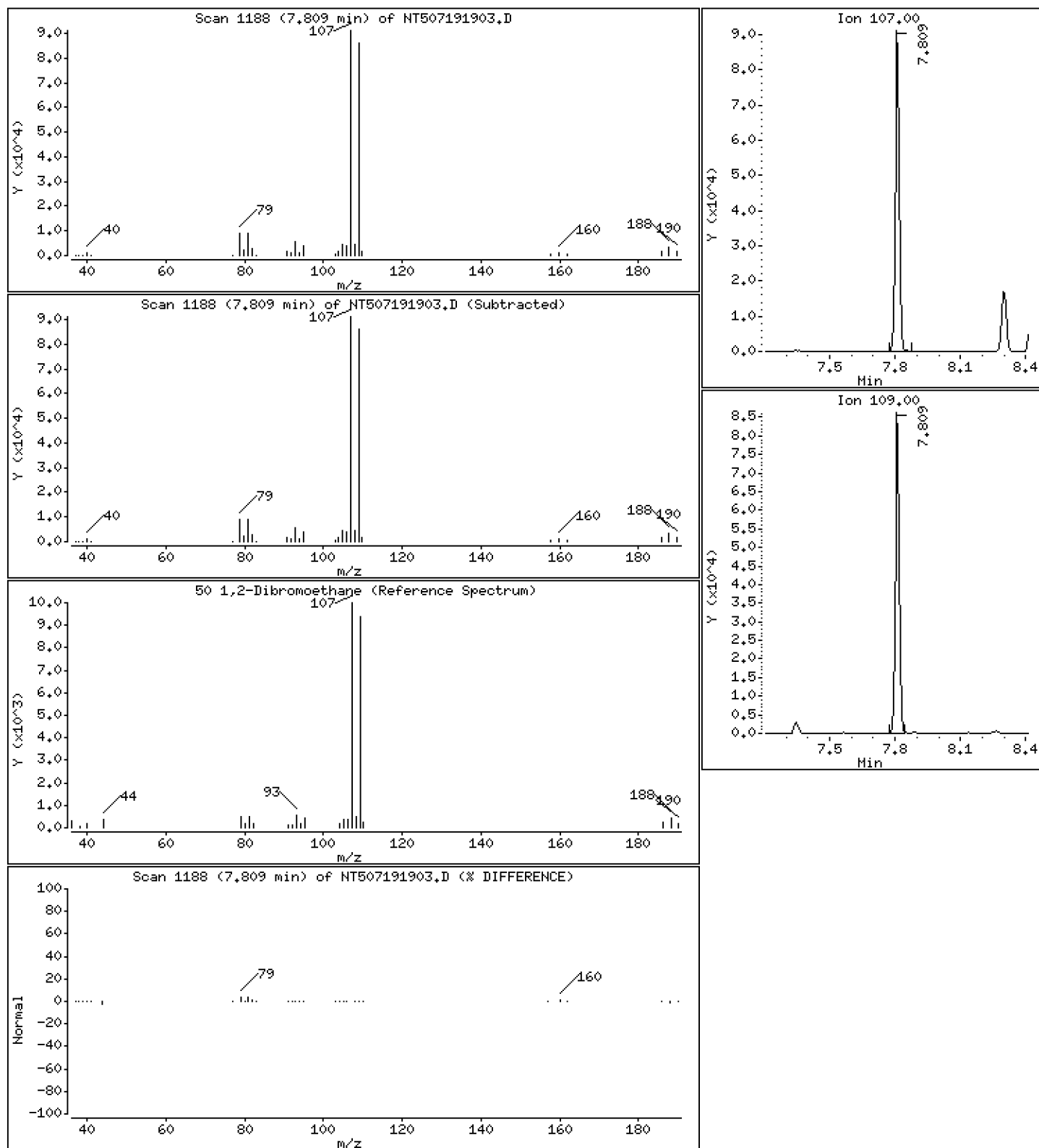
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 46.965 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

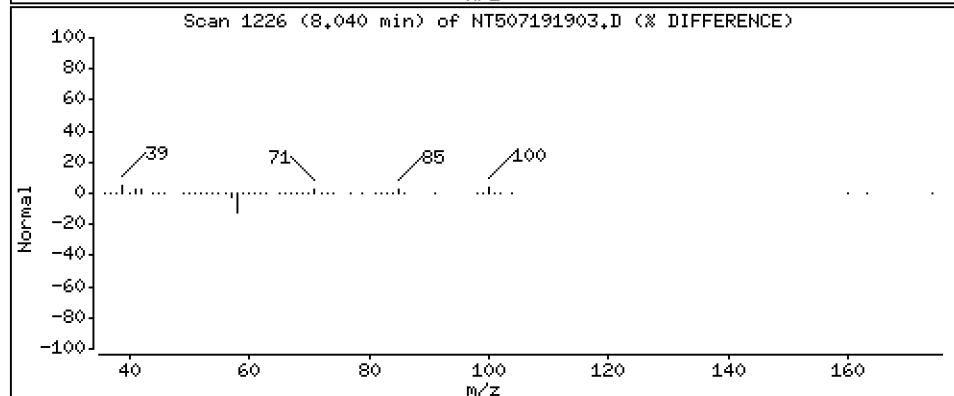
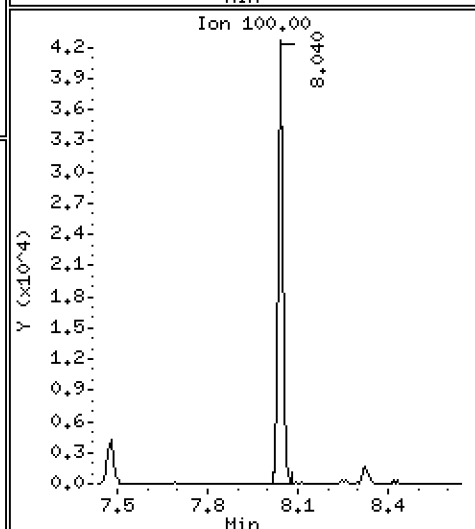
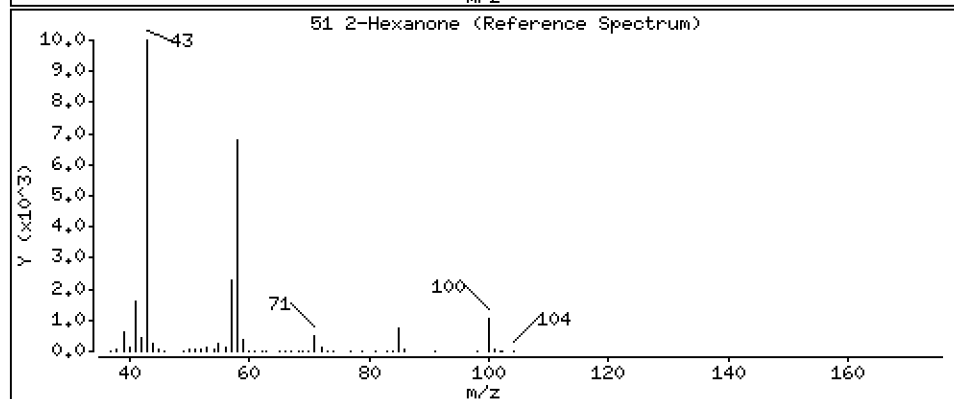
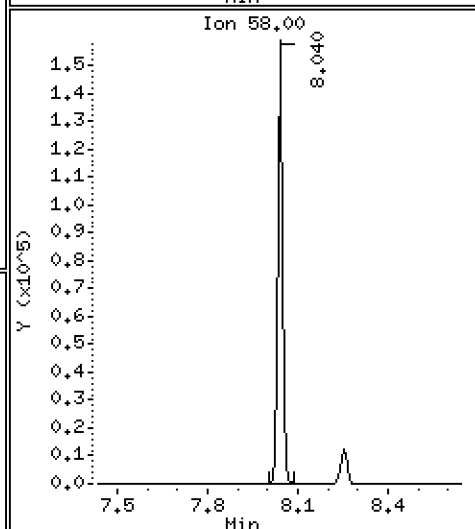
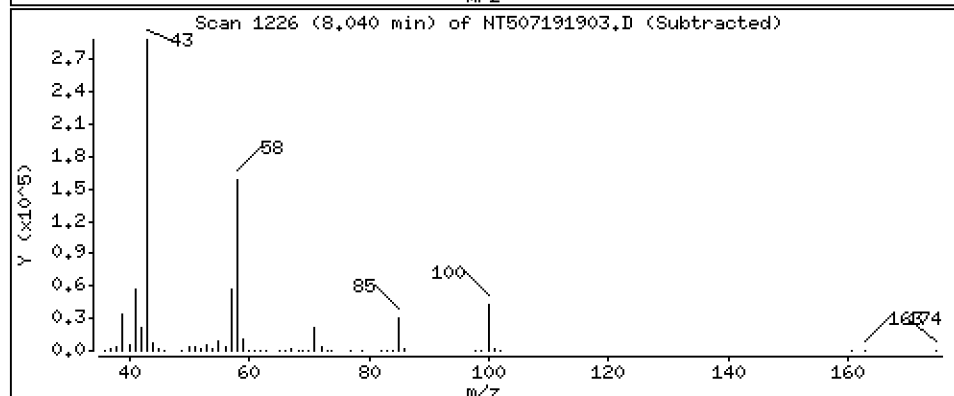
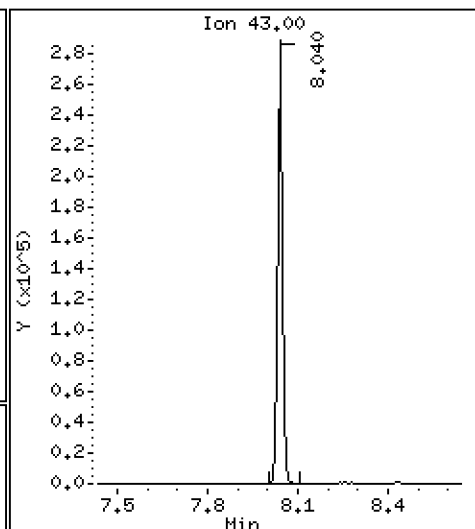
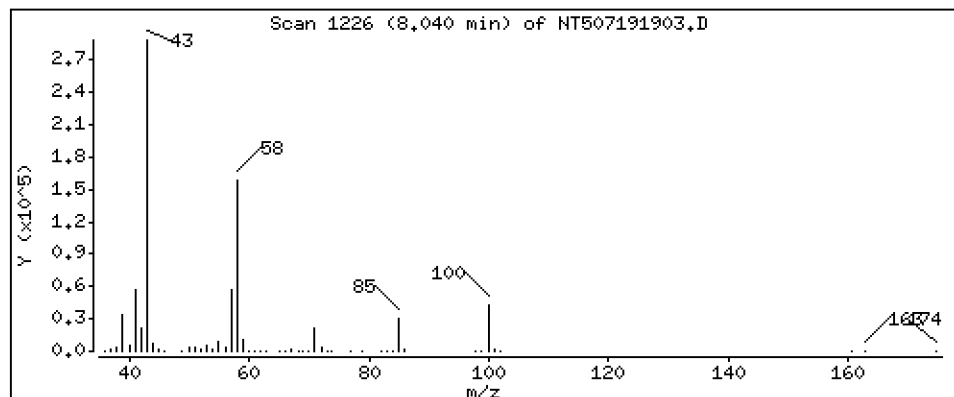
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 237.93 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

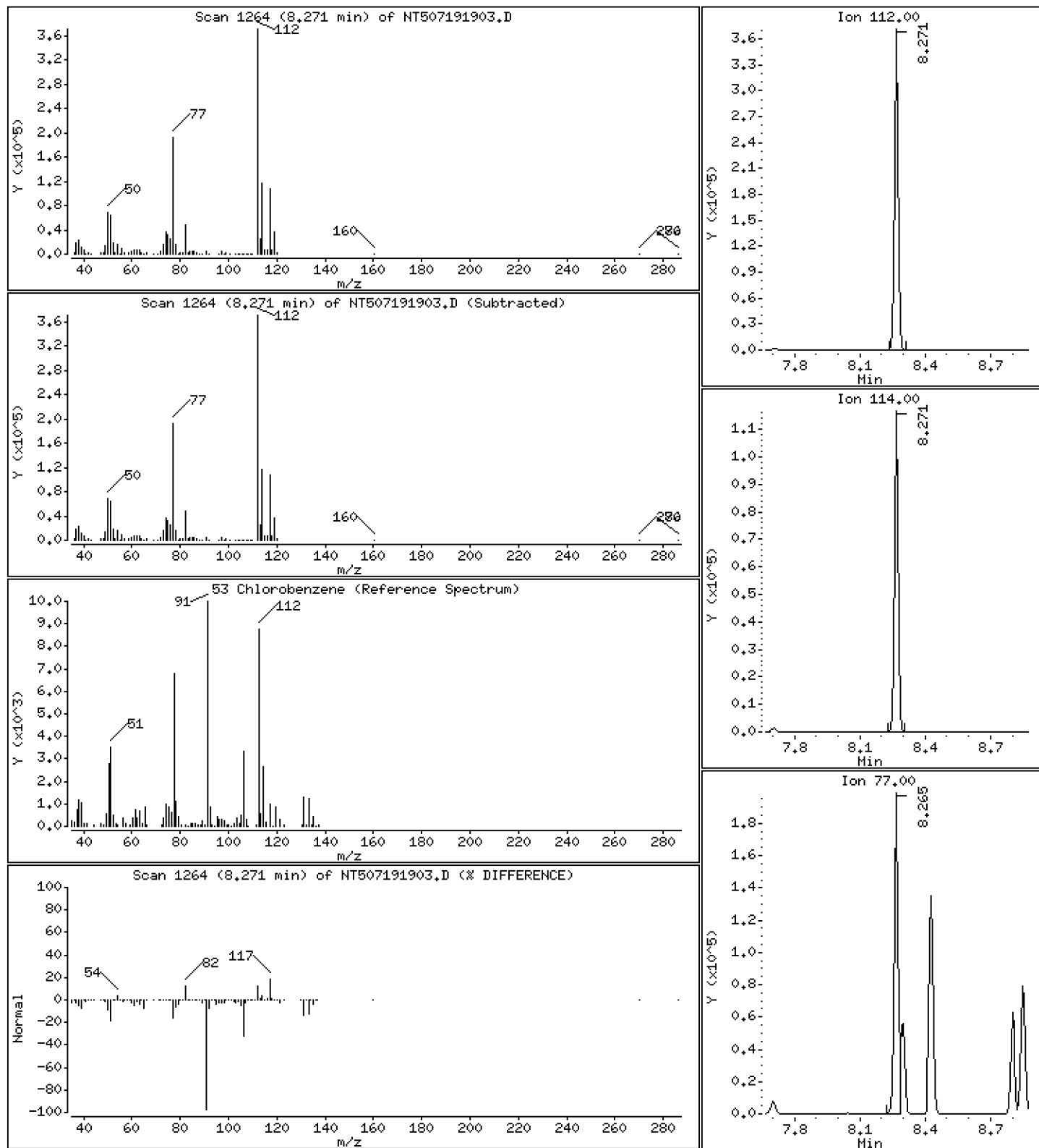
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 46,930 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

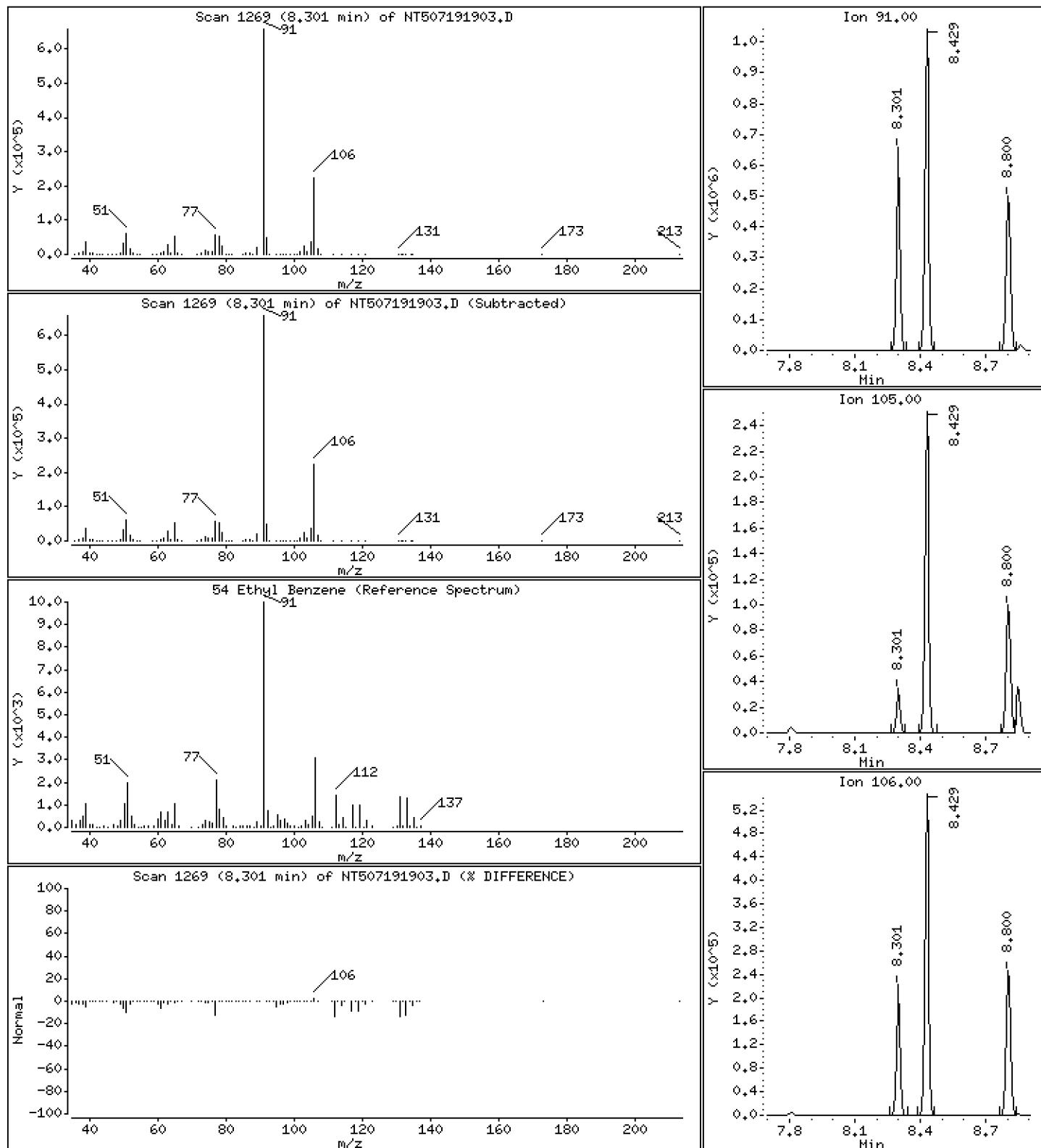
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 48,568 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

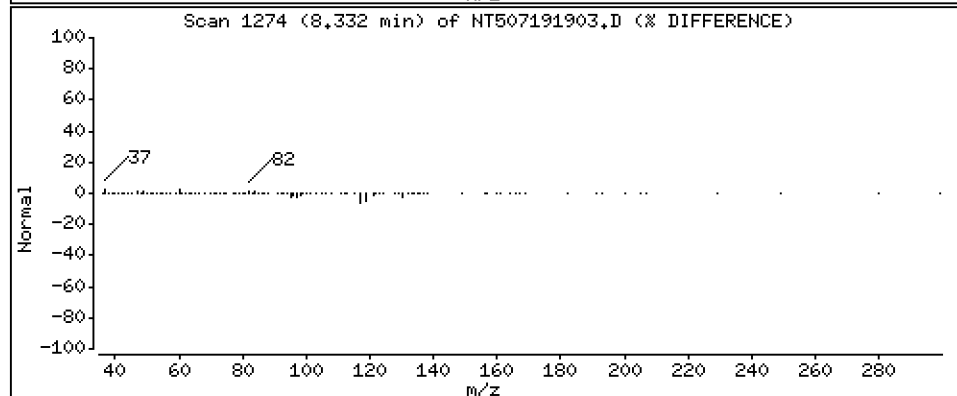
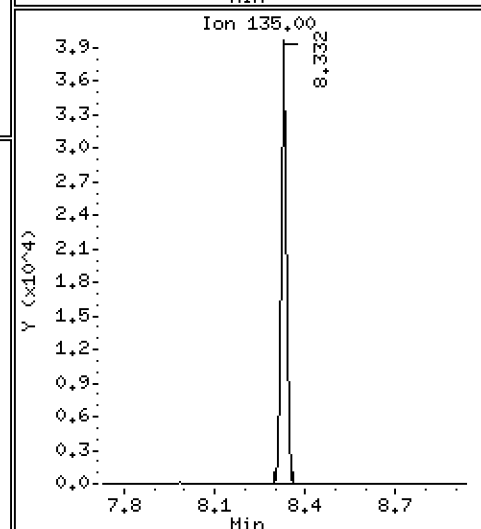
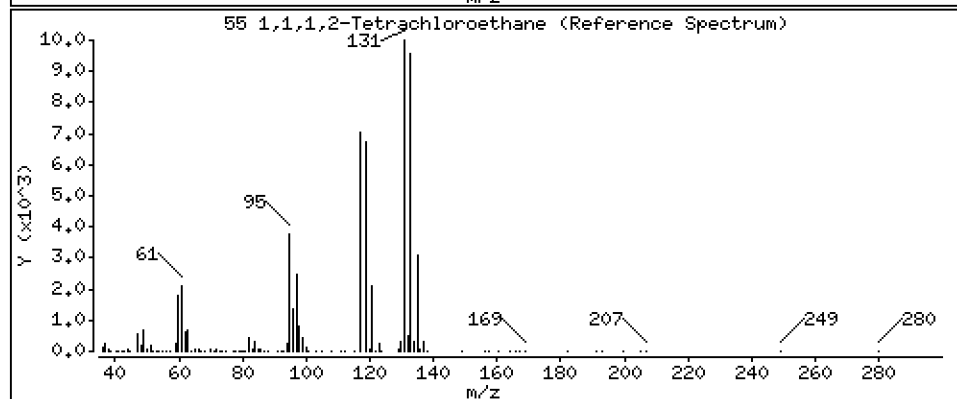
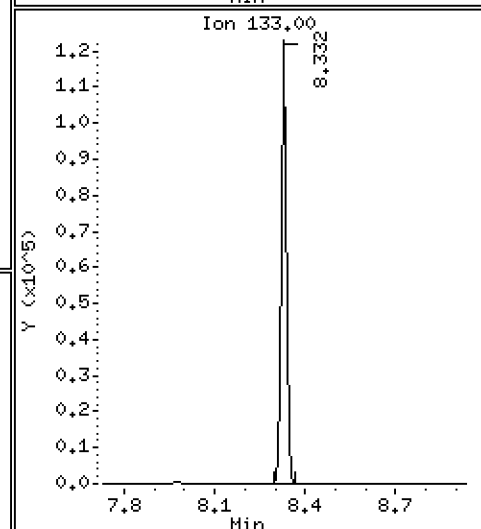
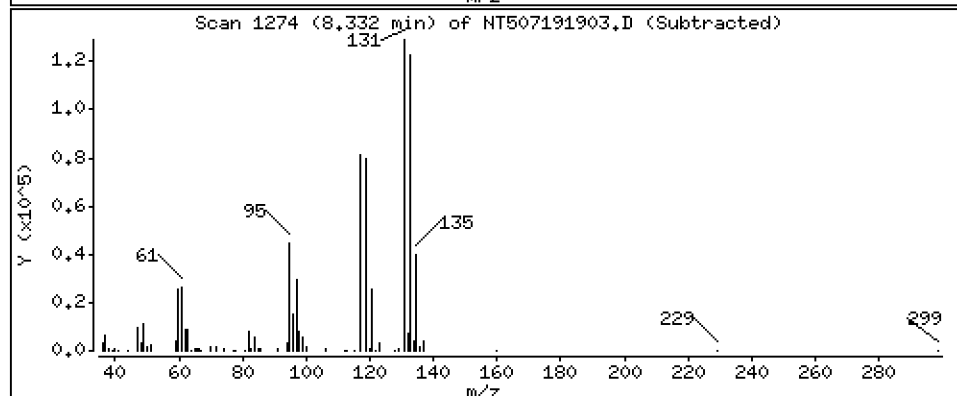
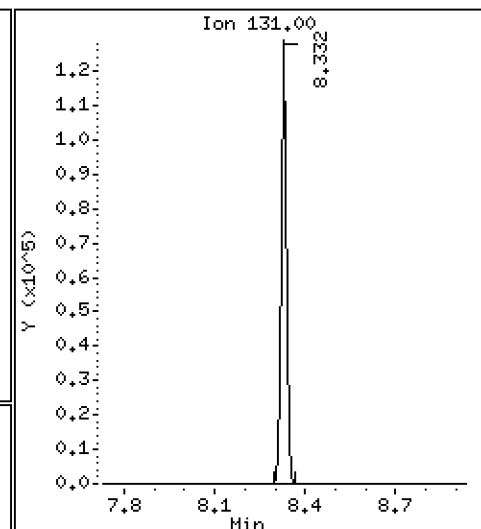
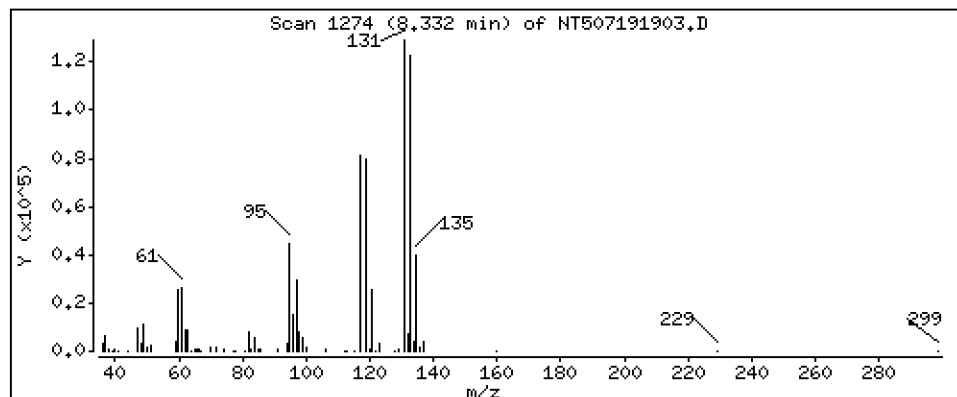
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 47,746 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

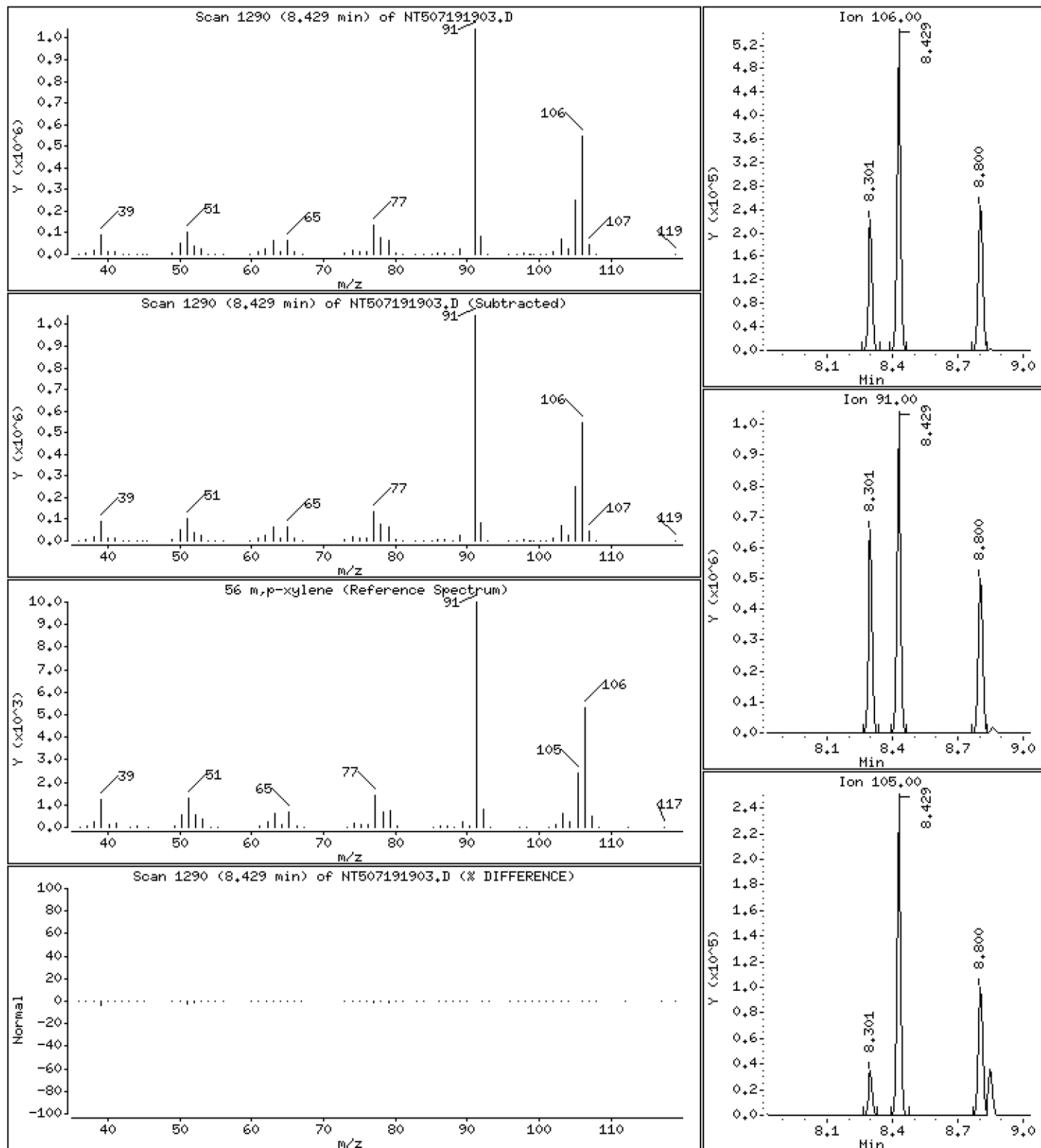
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 97,142 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

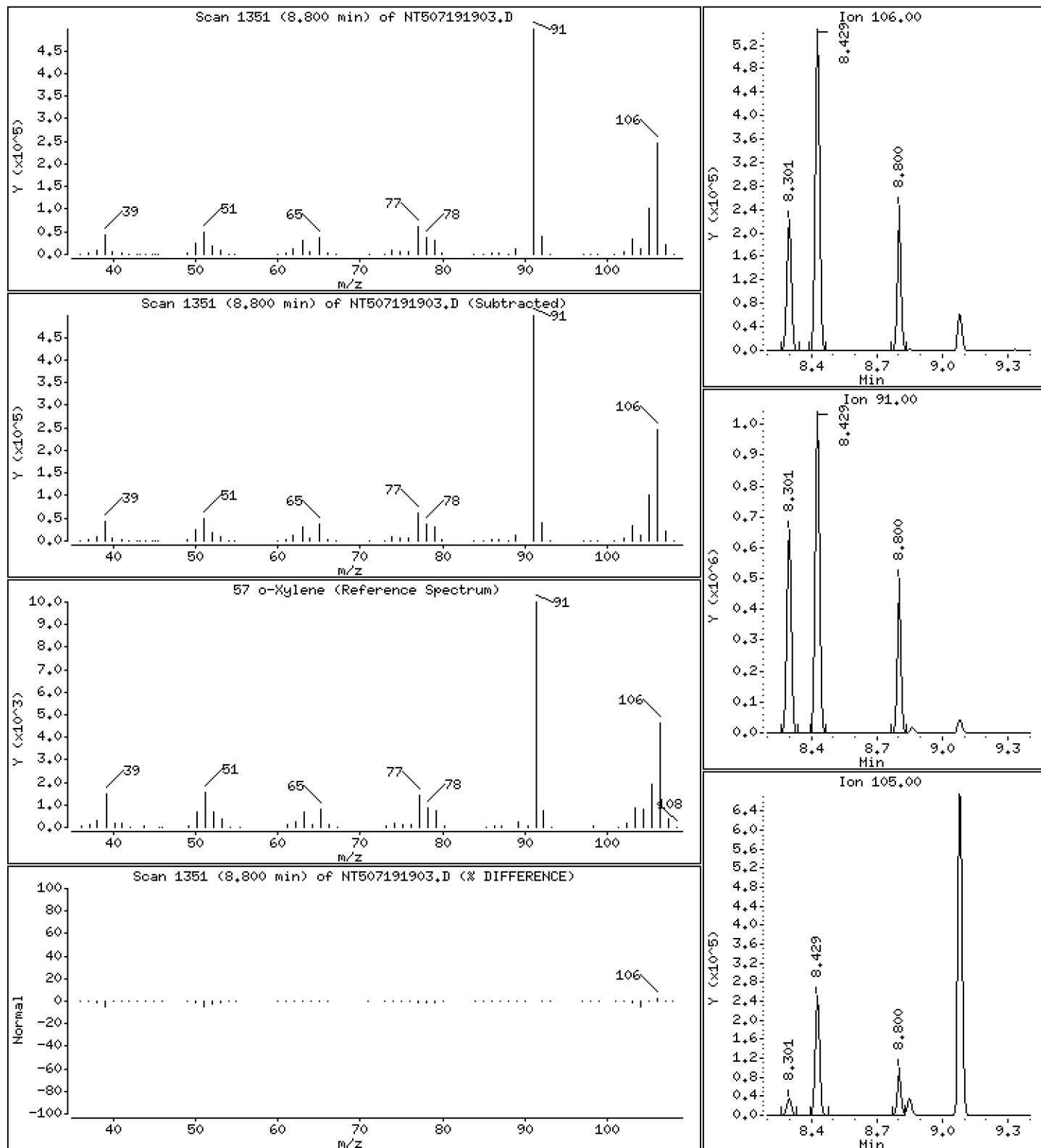
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 47.456 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

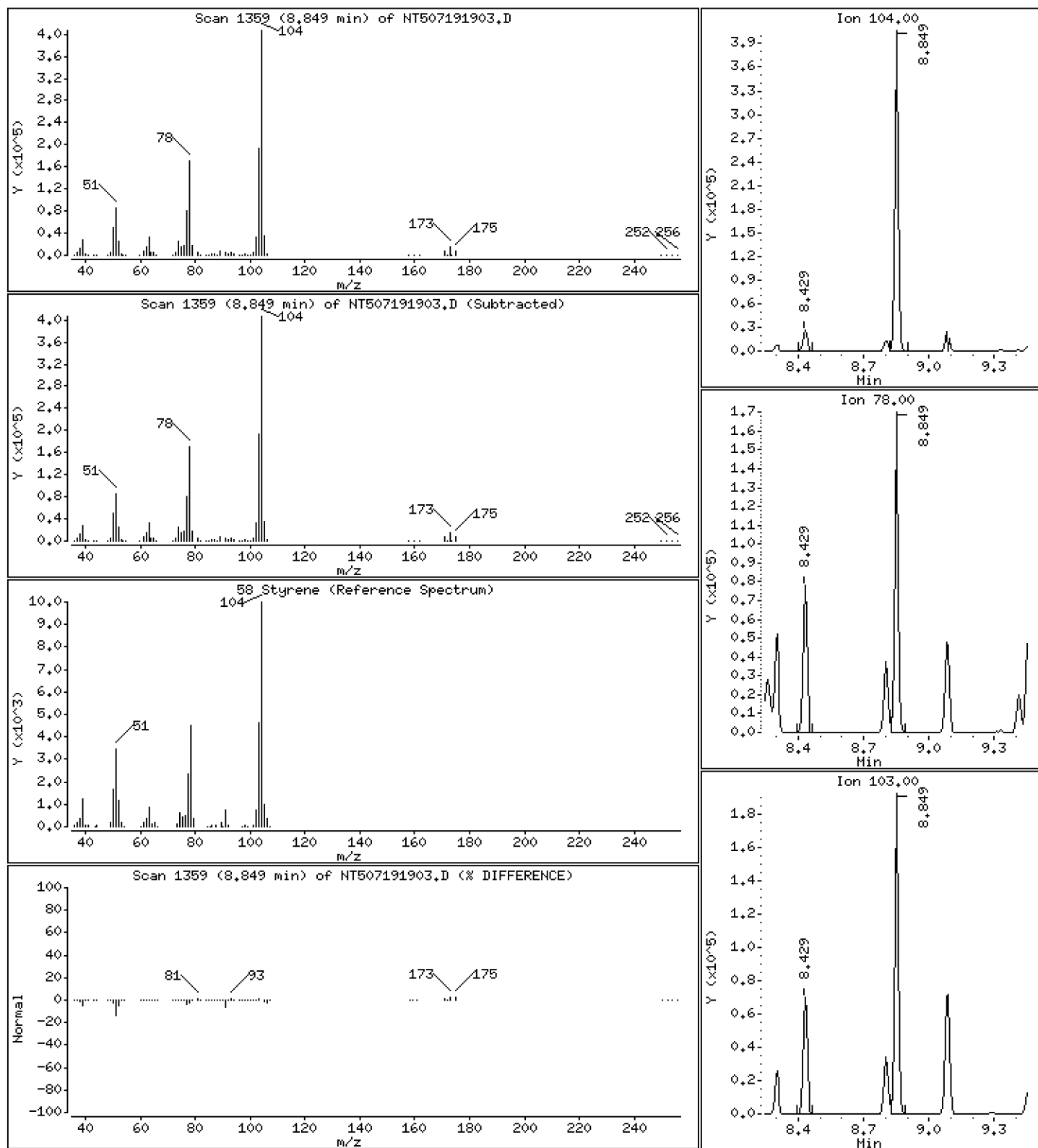
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 48,176 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

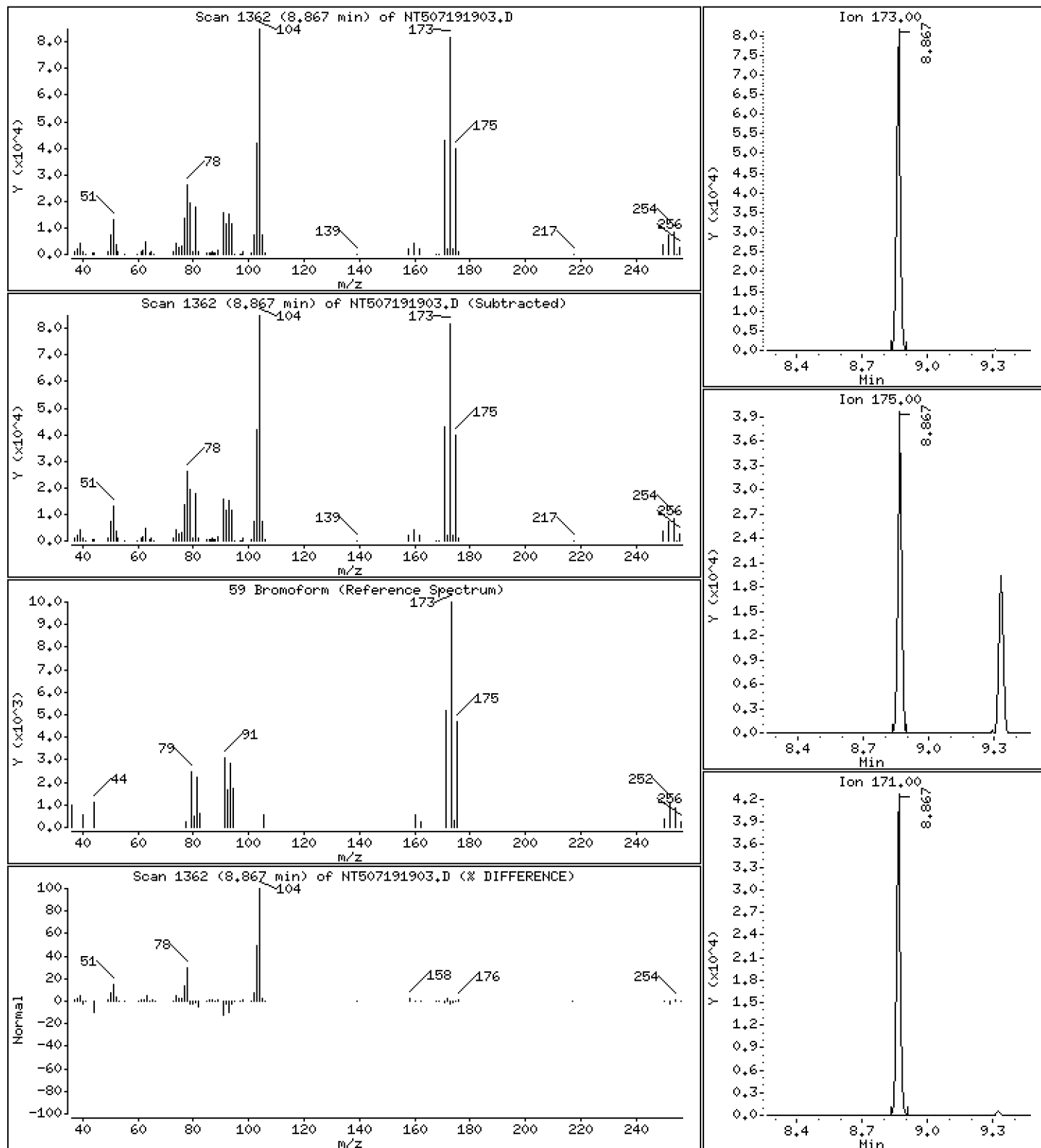
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59 Bromoform

Concentration: 43,917 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

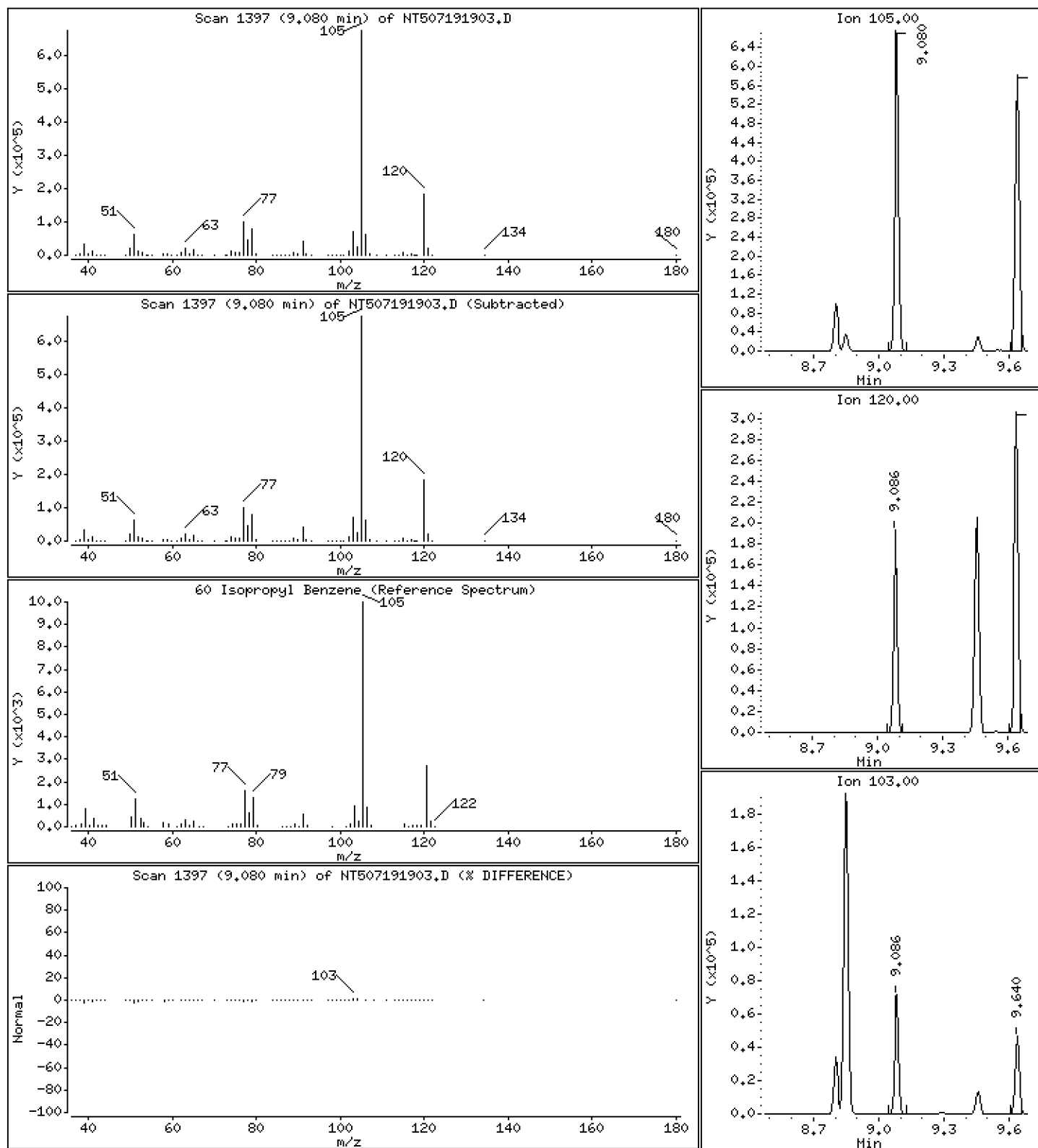
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 49,141 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

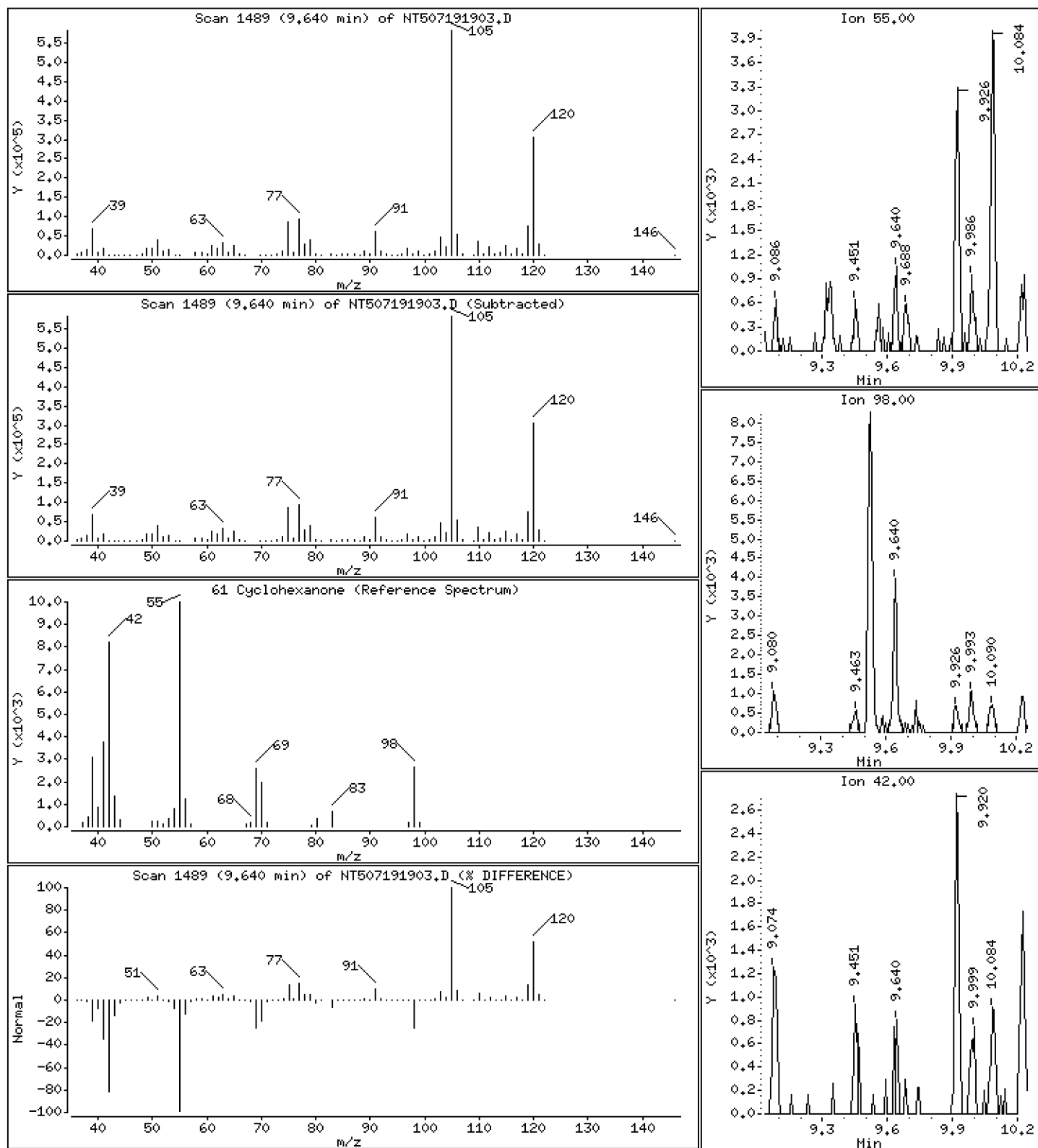
Sample Info: BSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

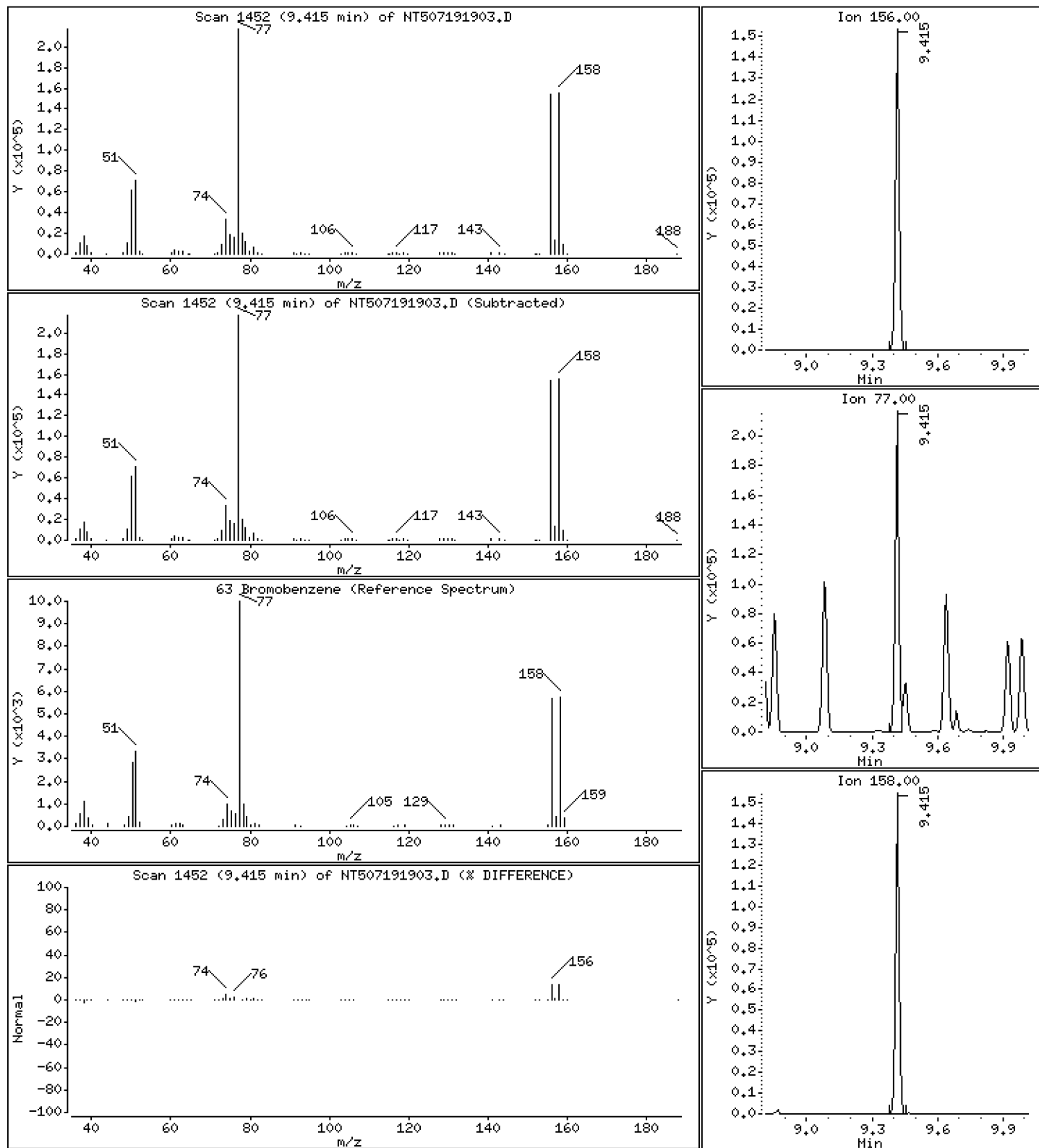
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 44,783 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

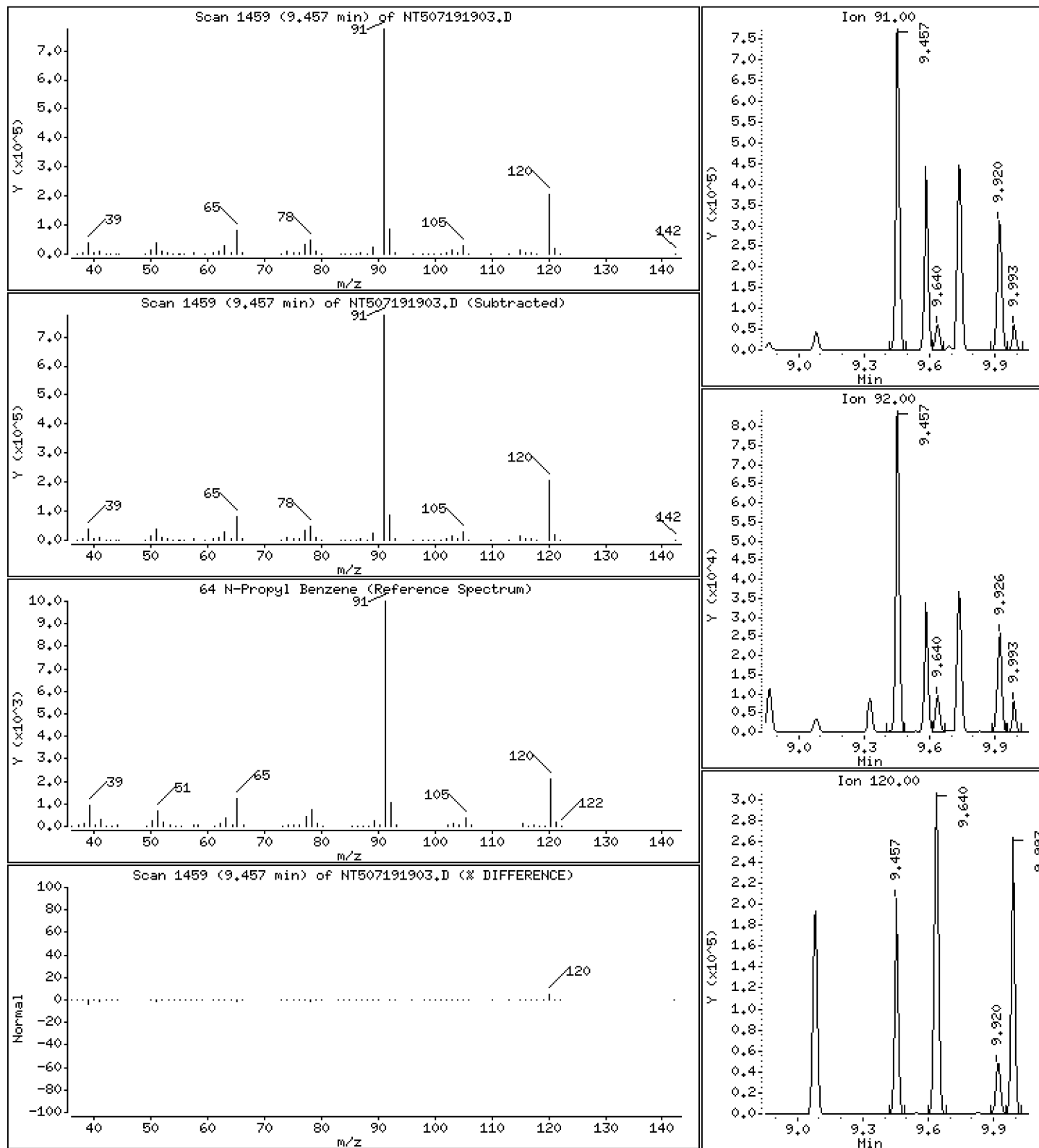
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 49,593 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

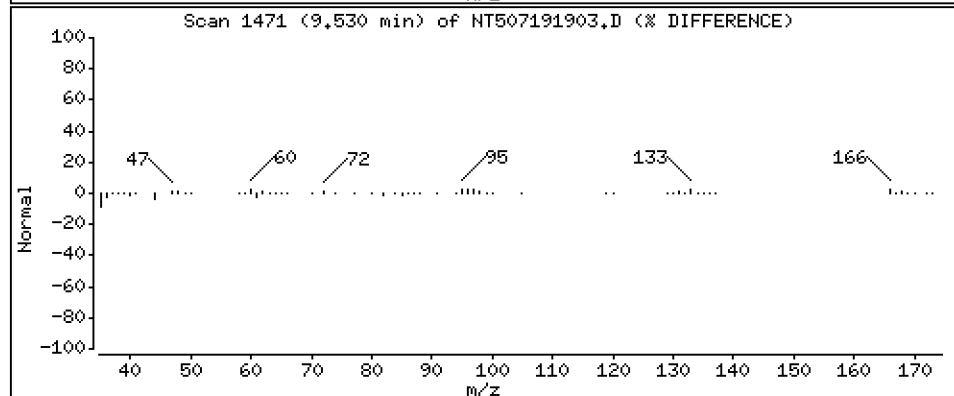
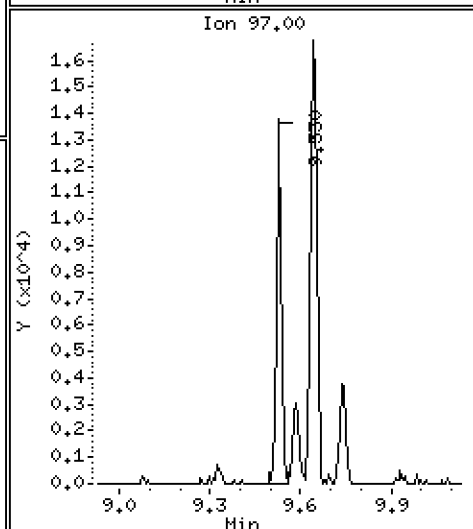
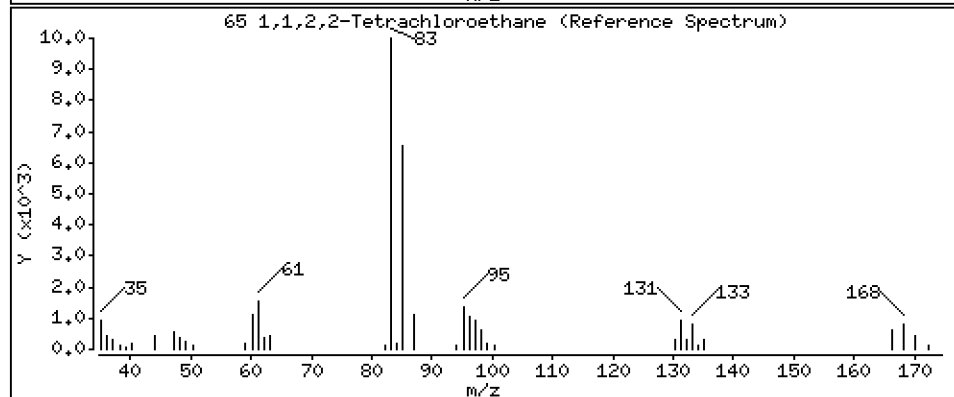
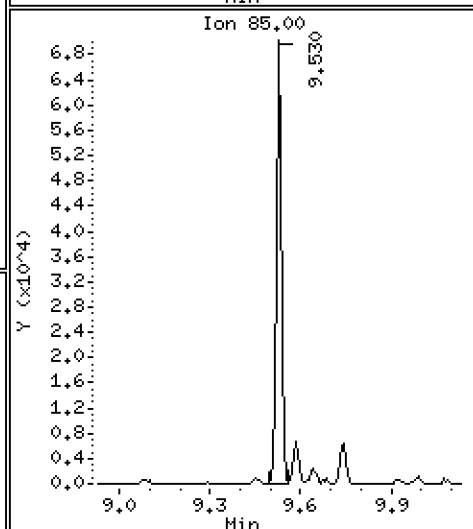
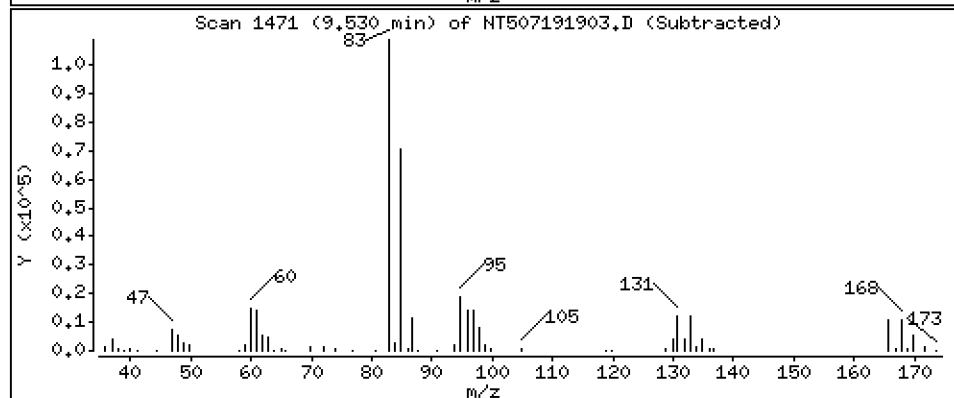
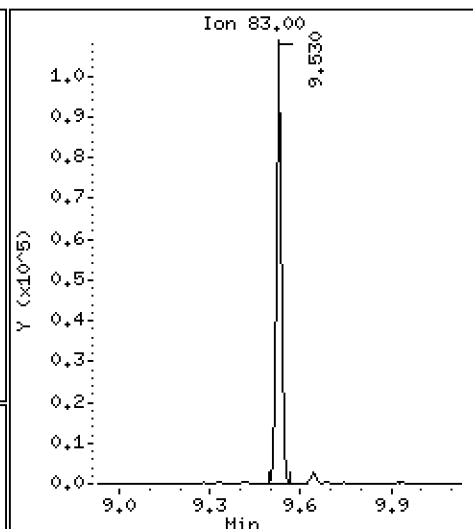
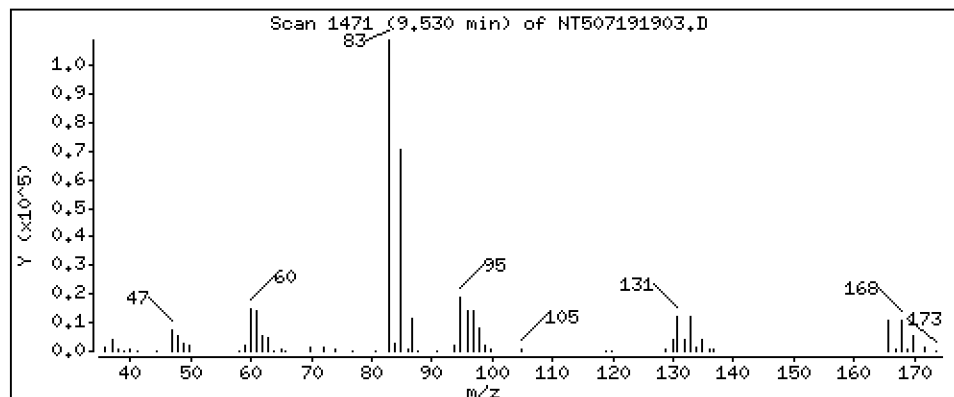
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 44,131 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

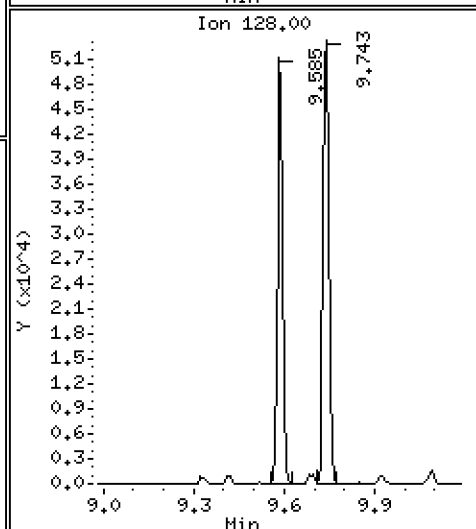
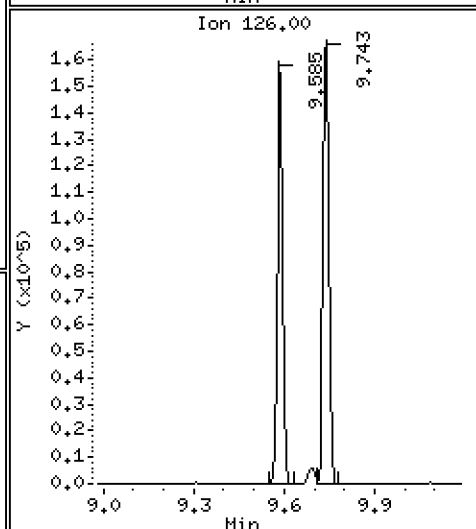
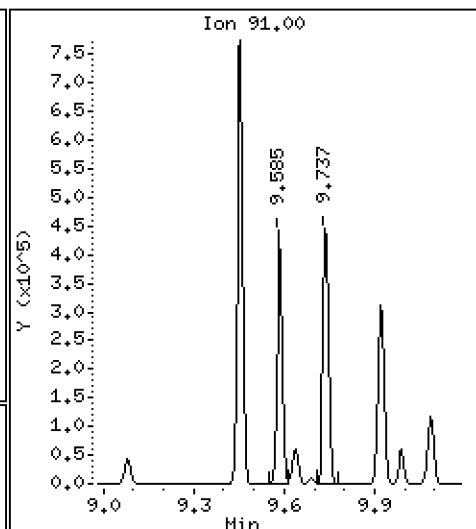
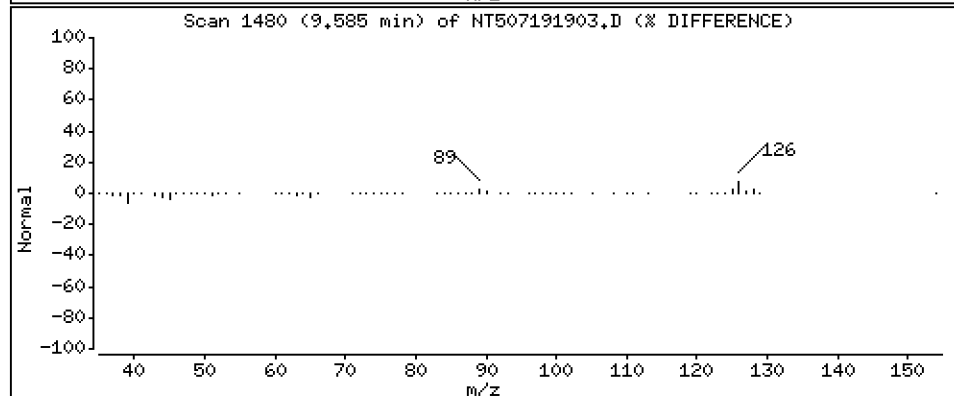
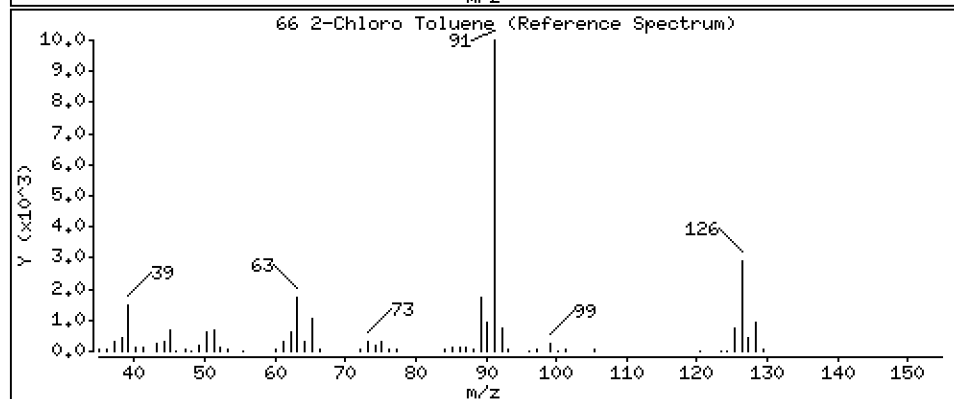
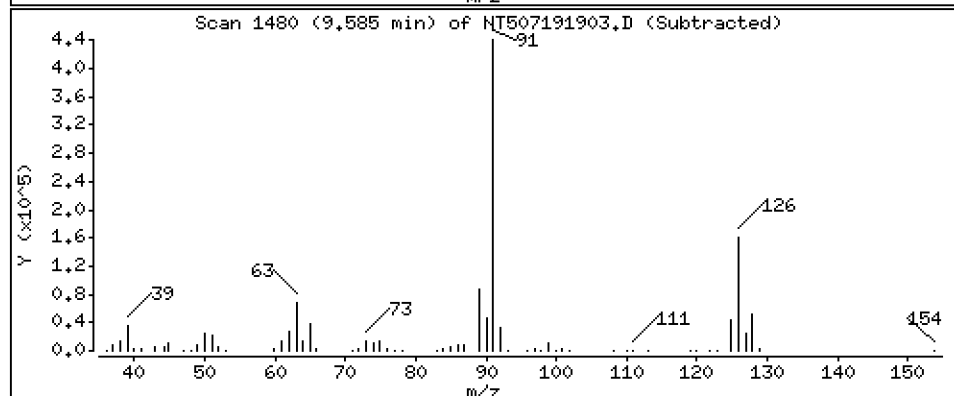
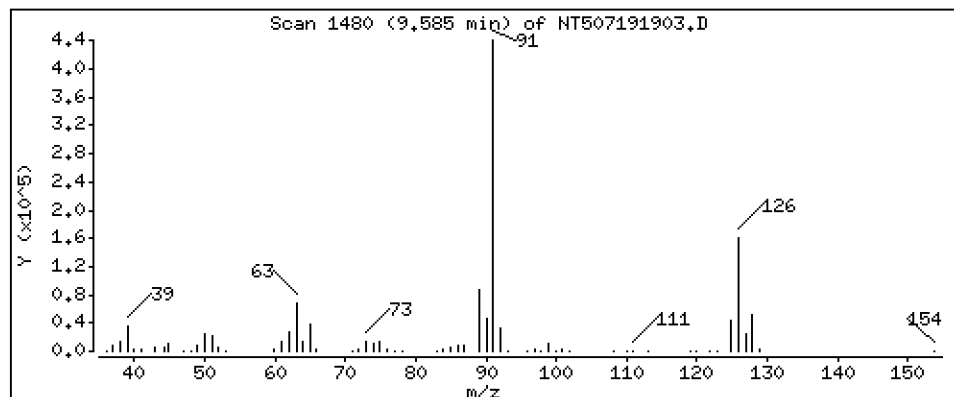
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 47,916 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

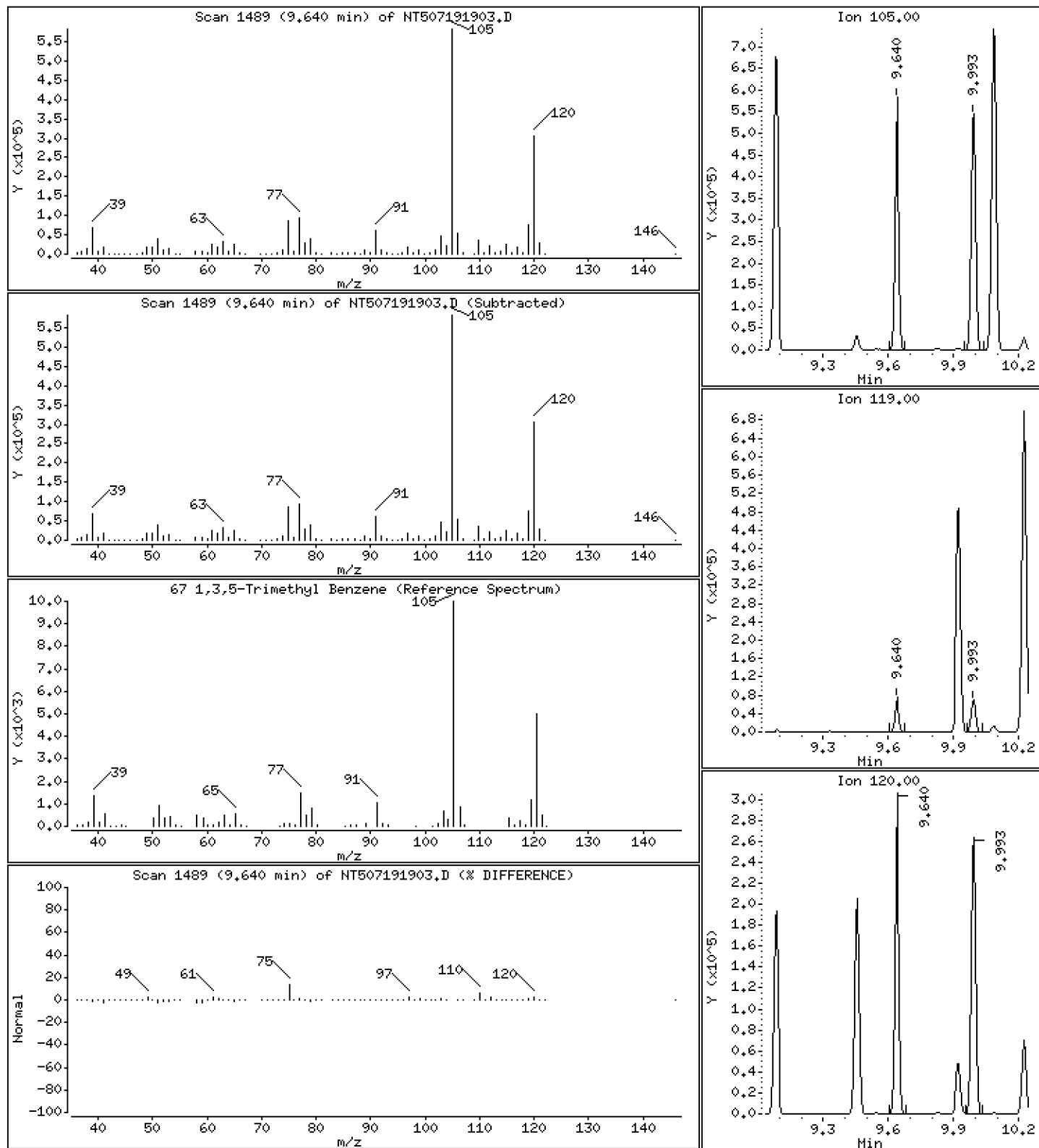
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 48,344 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

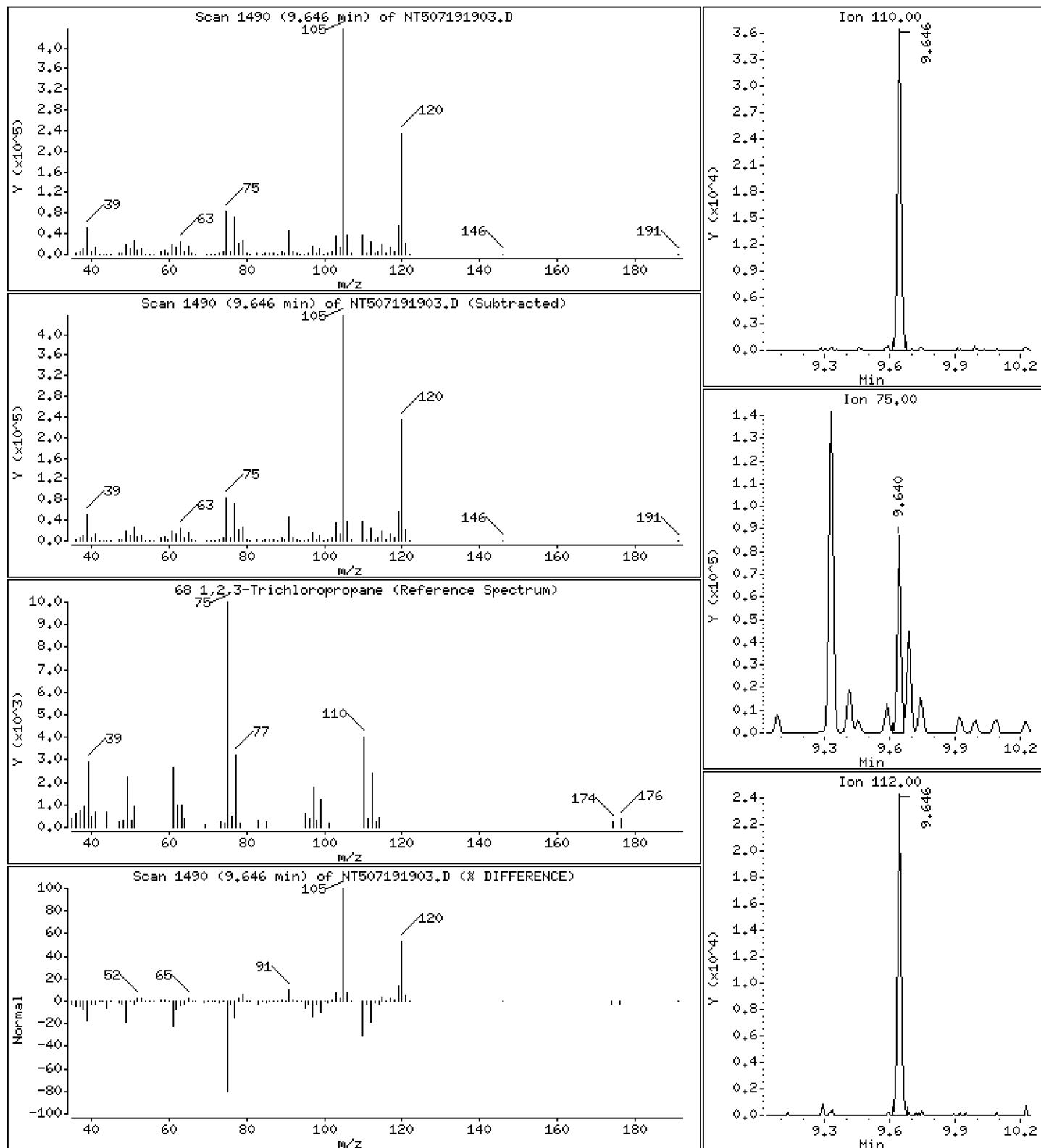
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 45,314 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

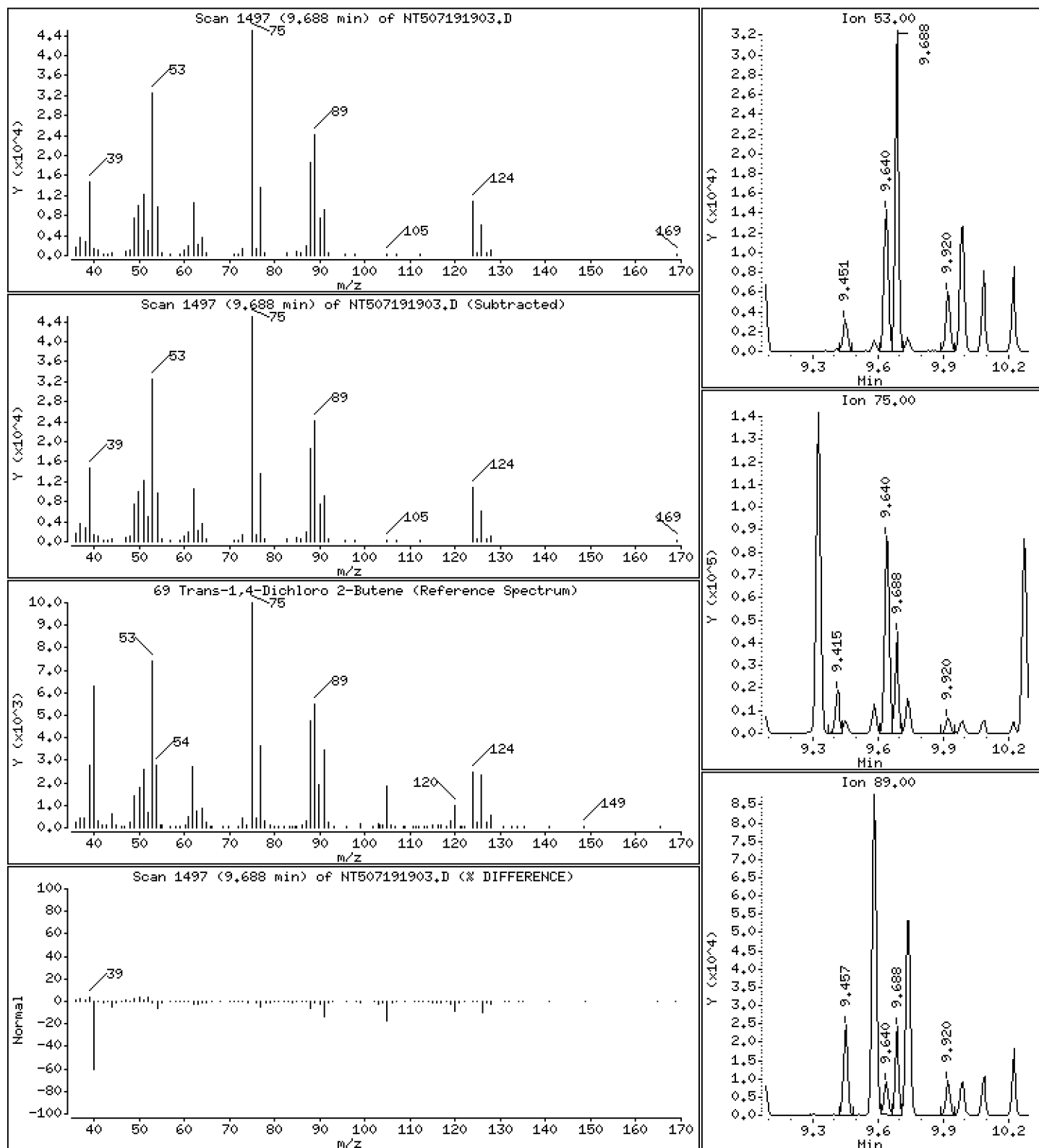
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 46.896 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

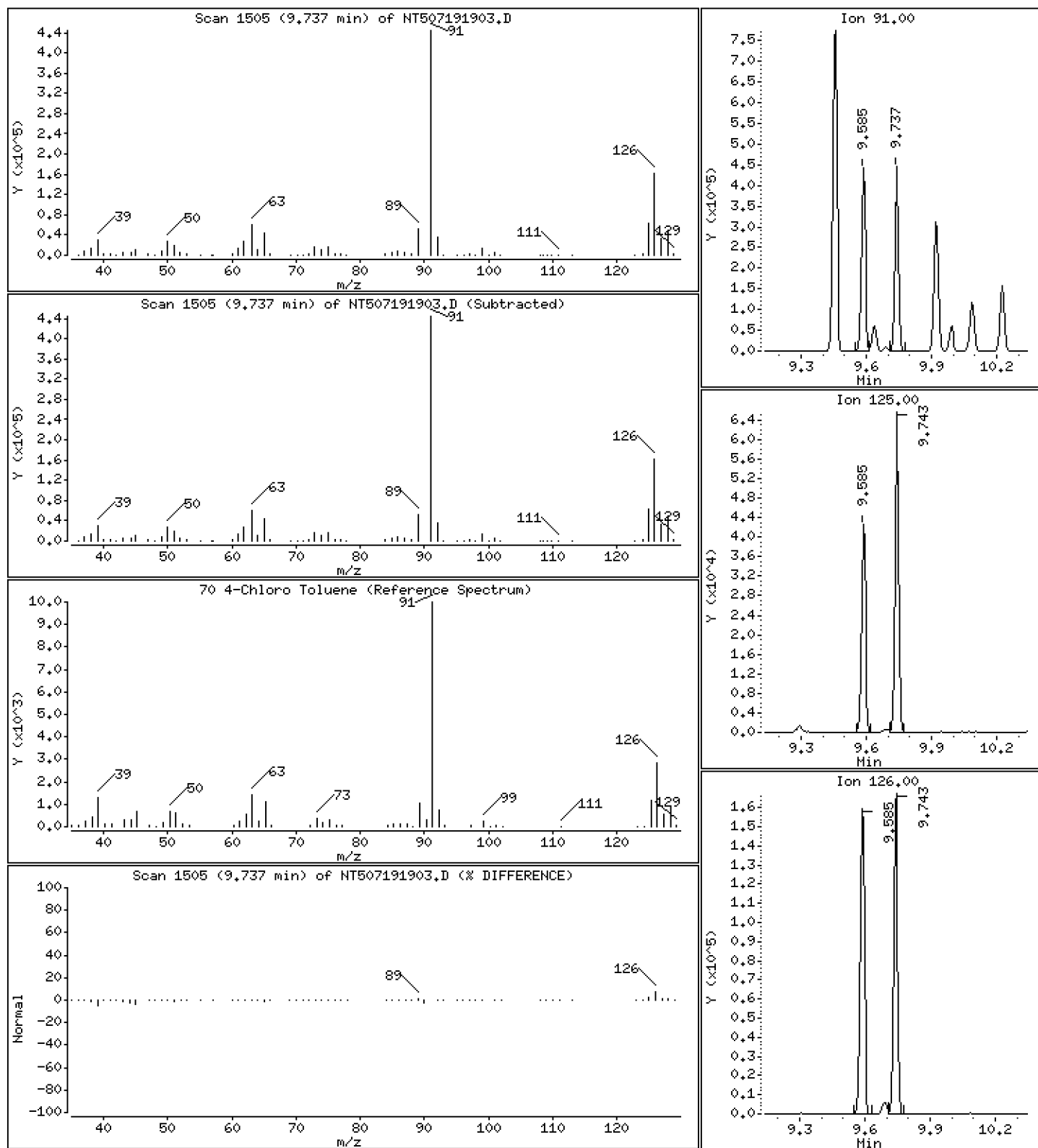
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 48,190 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

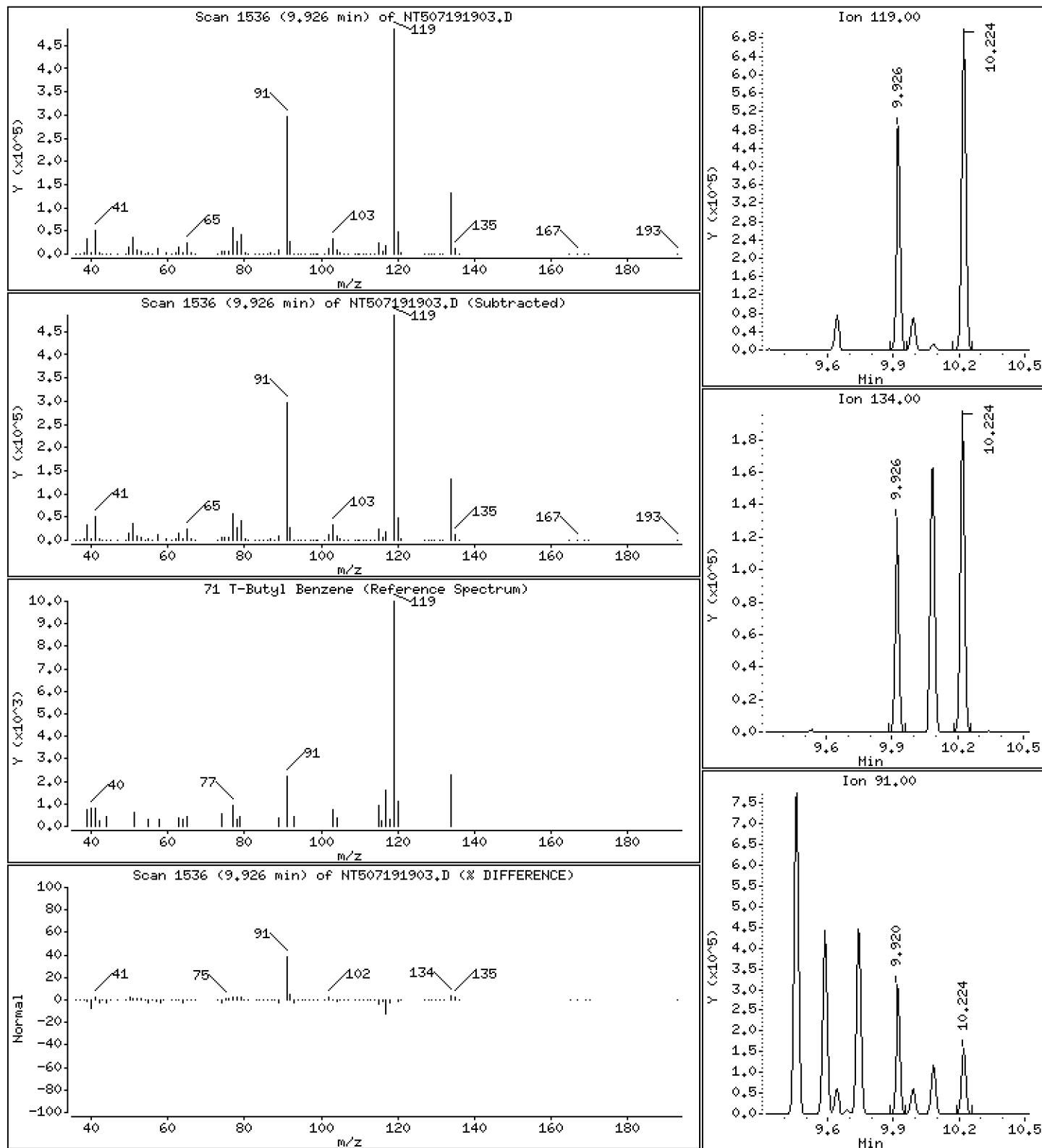
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 47.451 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

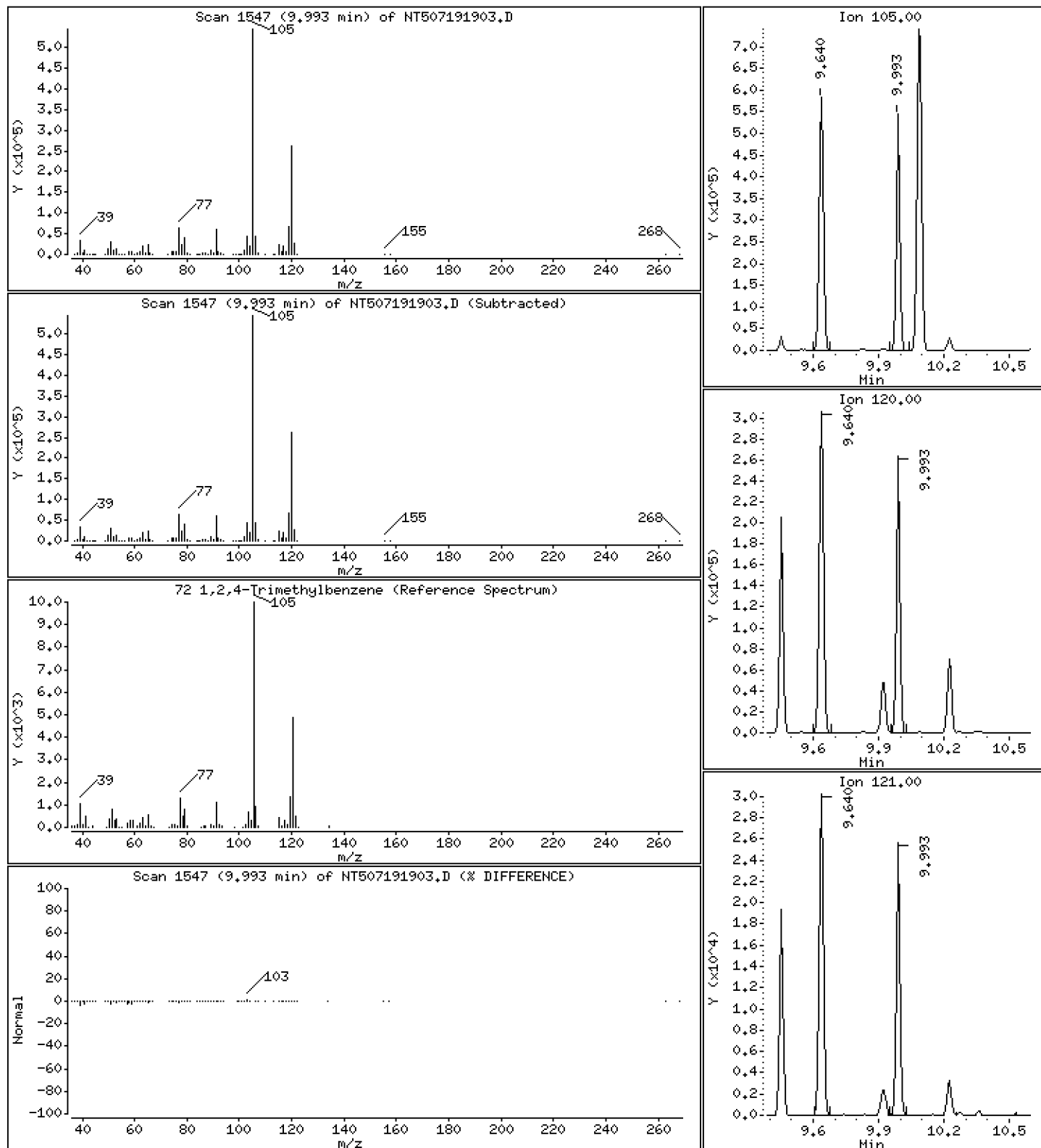
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 49.012 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

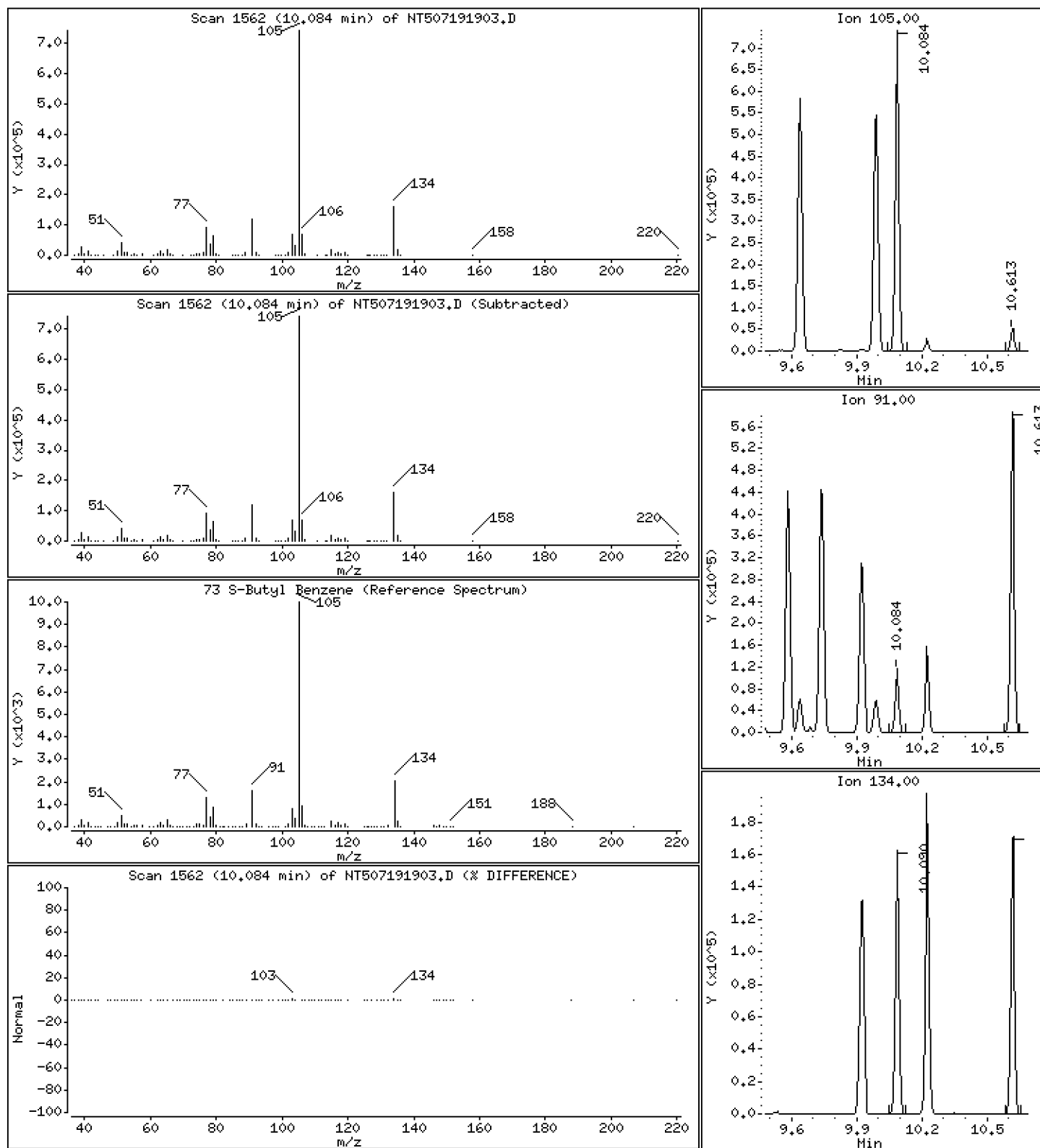
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 48,995 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

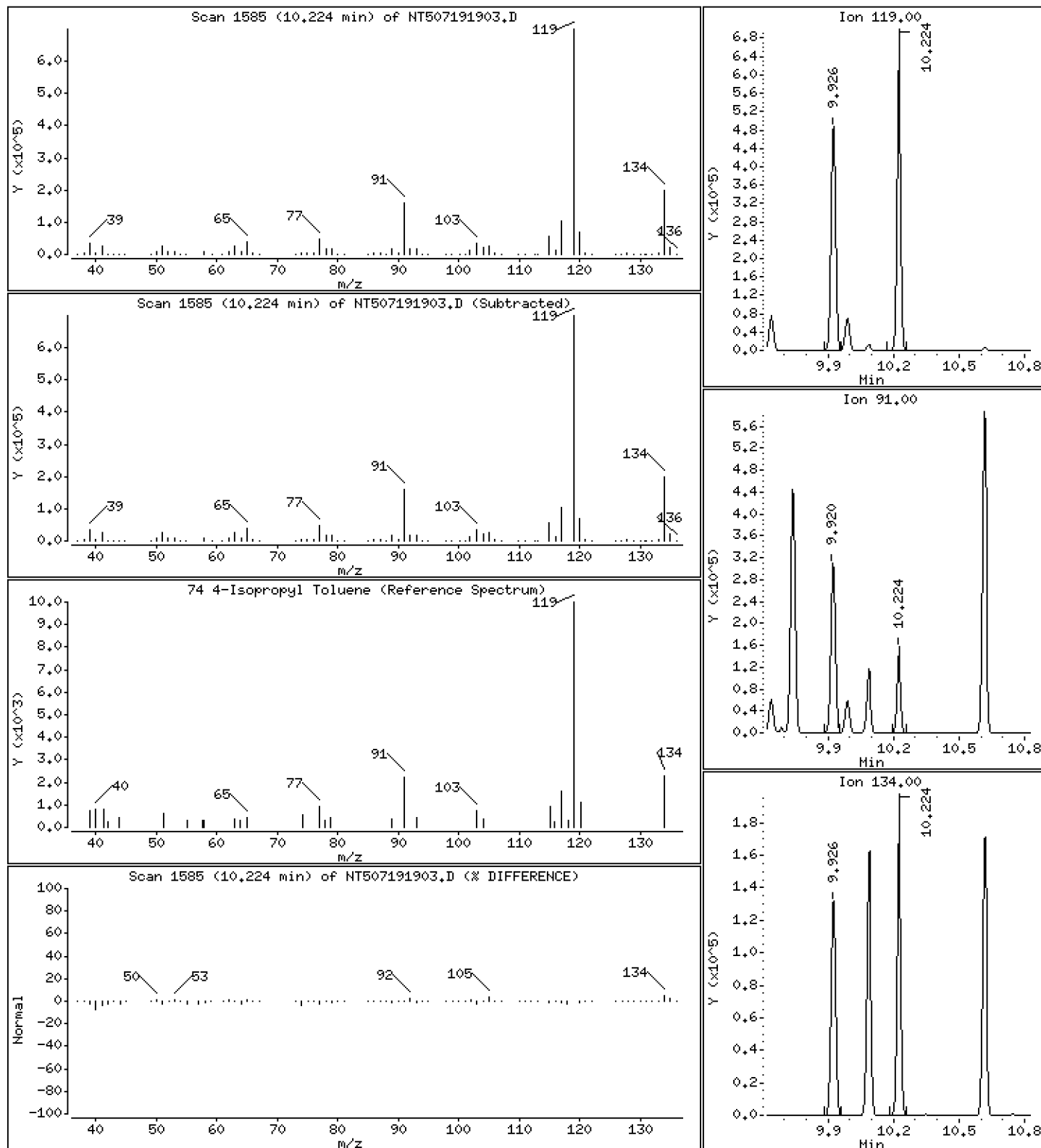
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 49,699 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

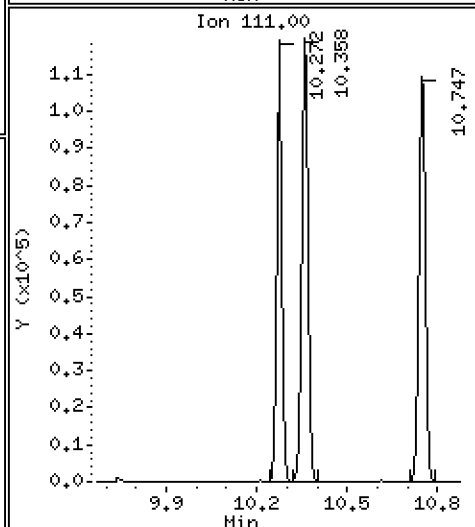
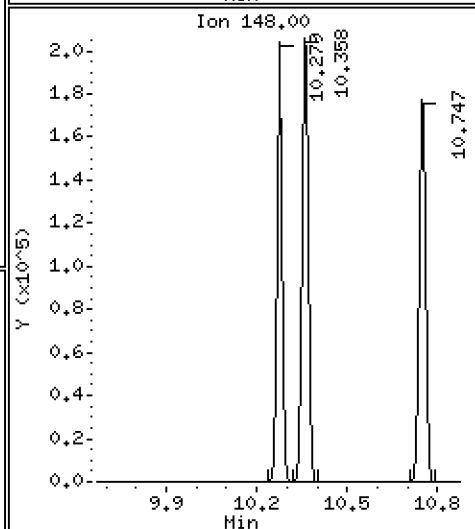
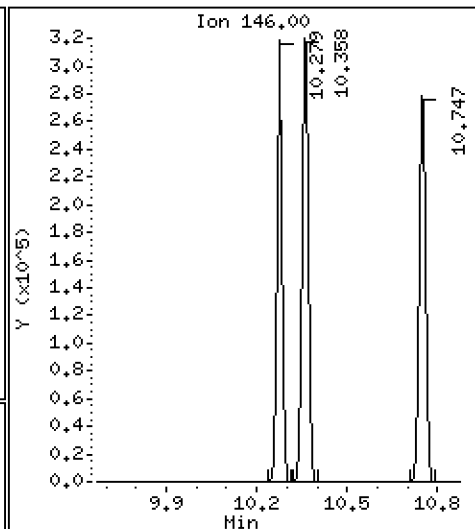
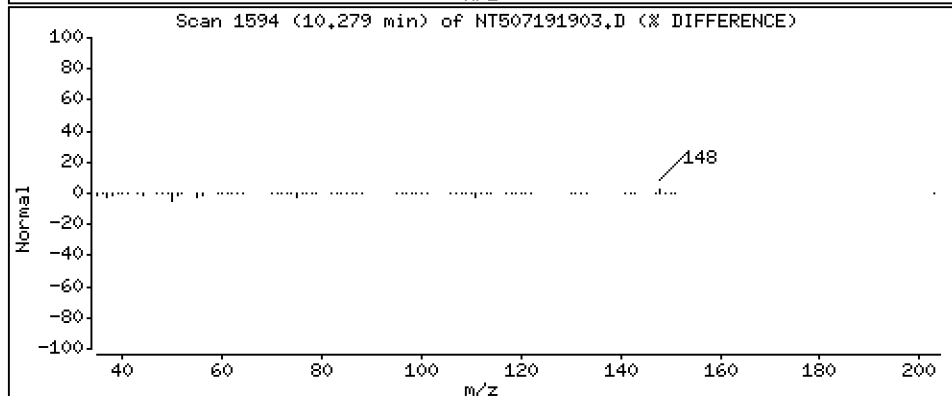
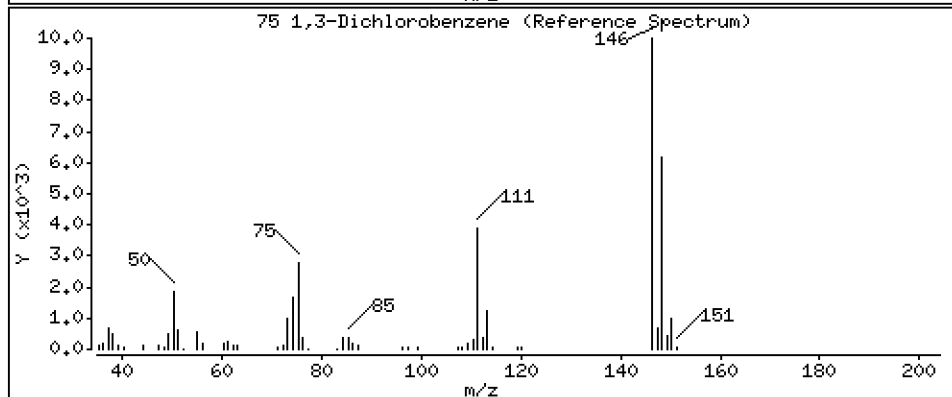
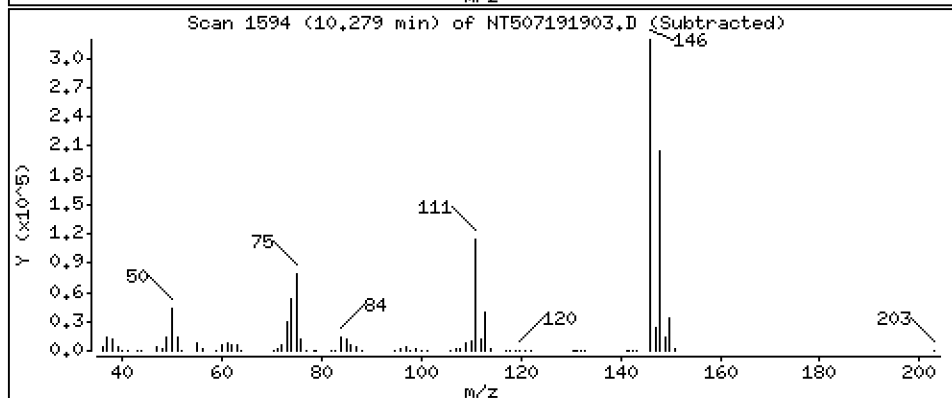
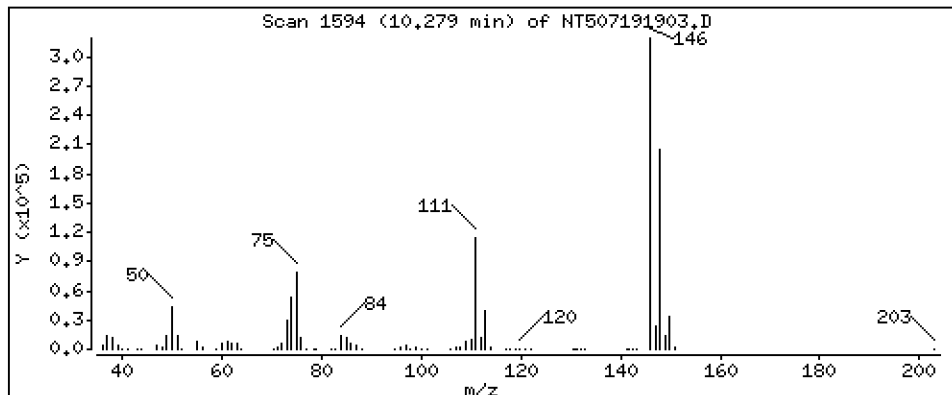
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 46,141 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

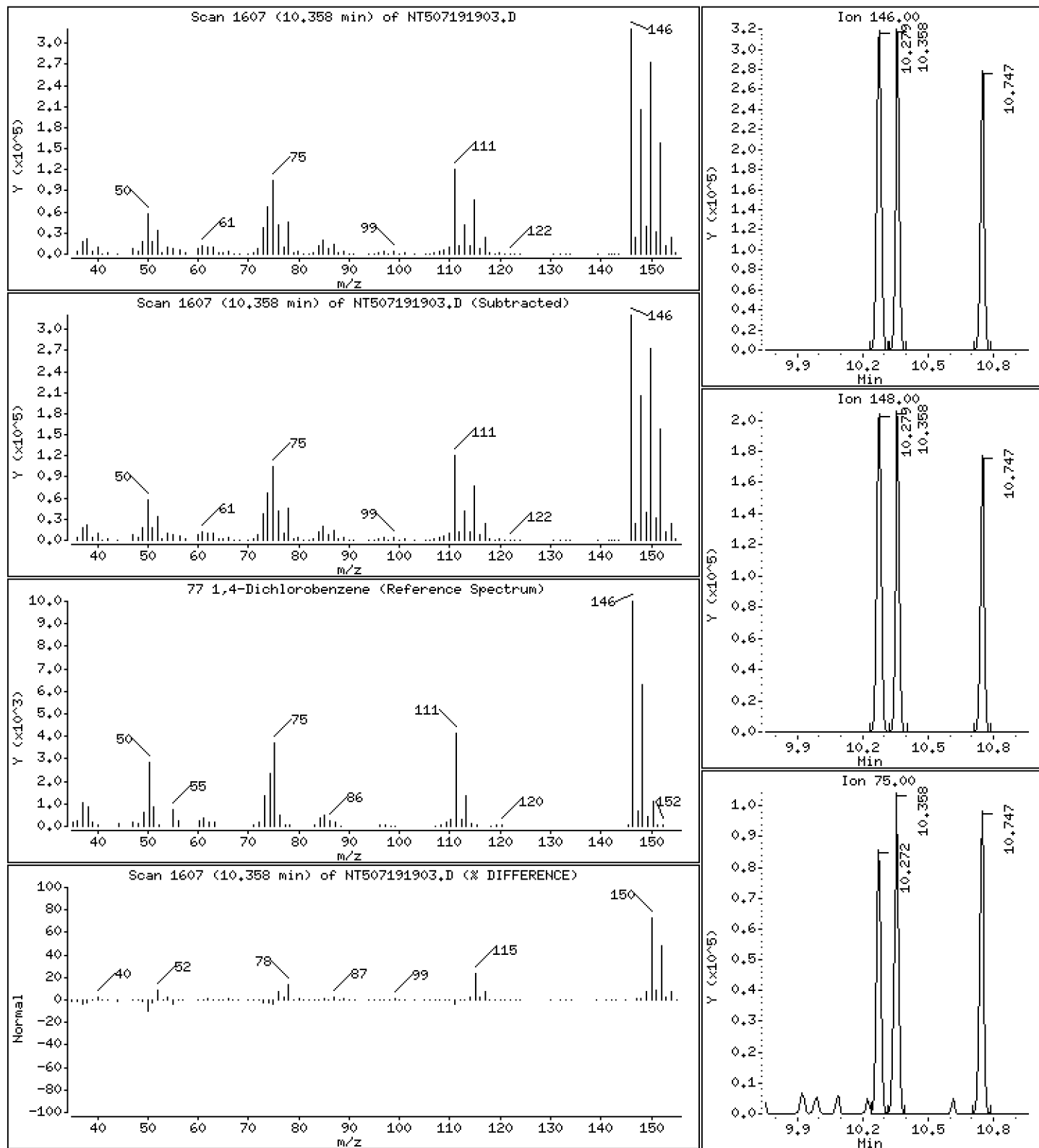
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 46,345 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

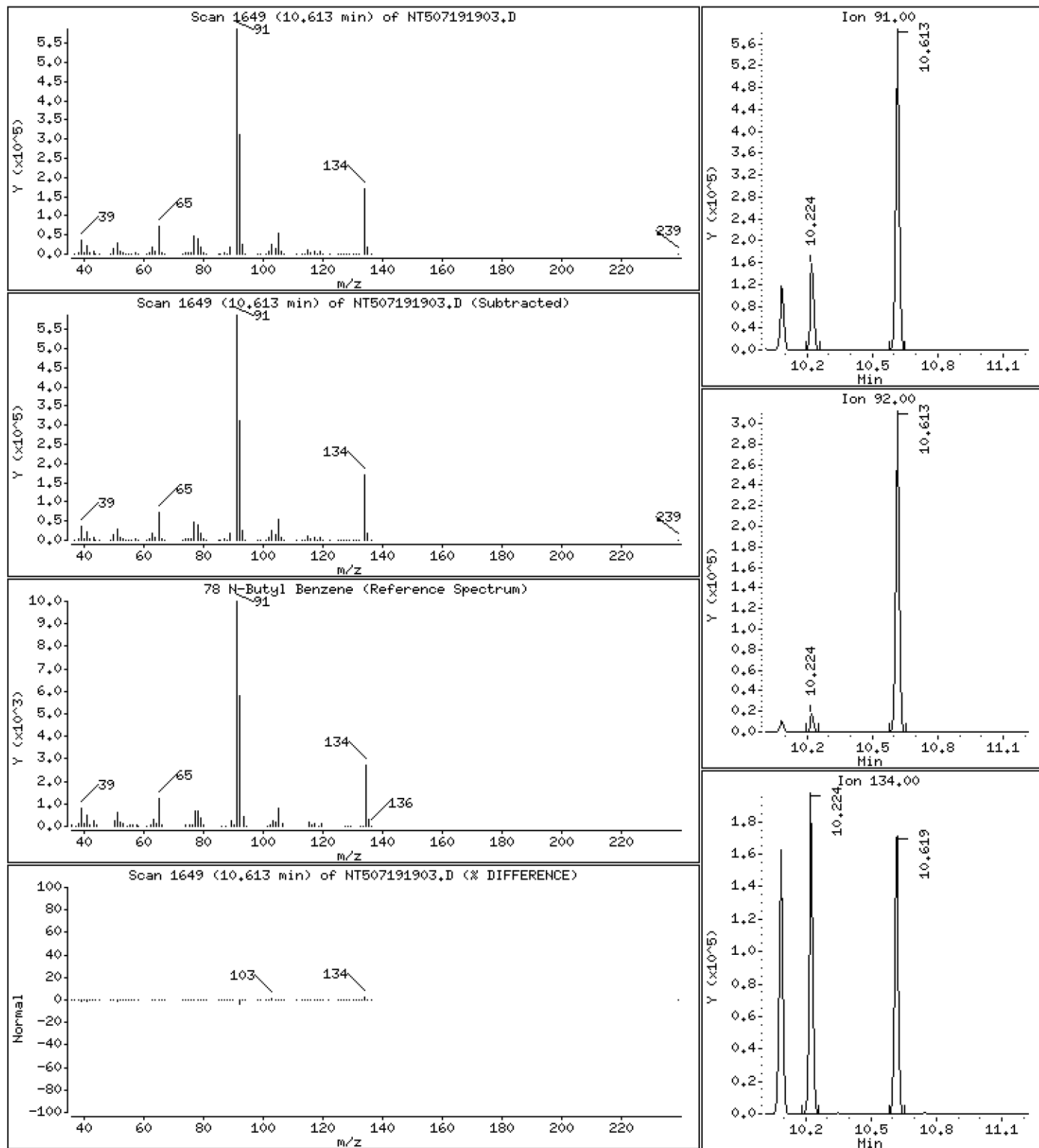
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 50.321 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

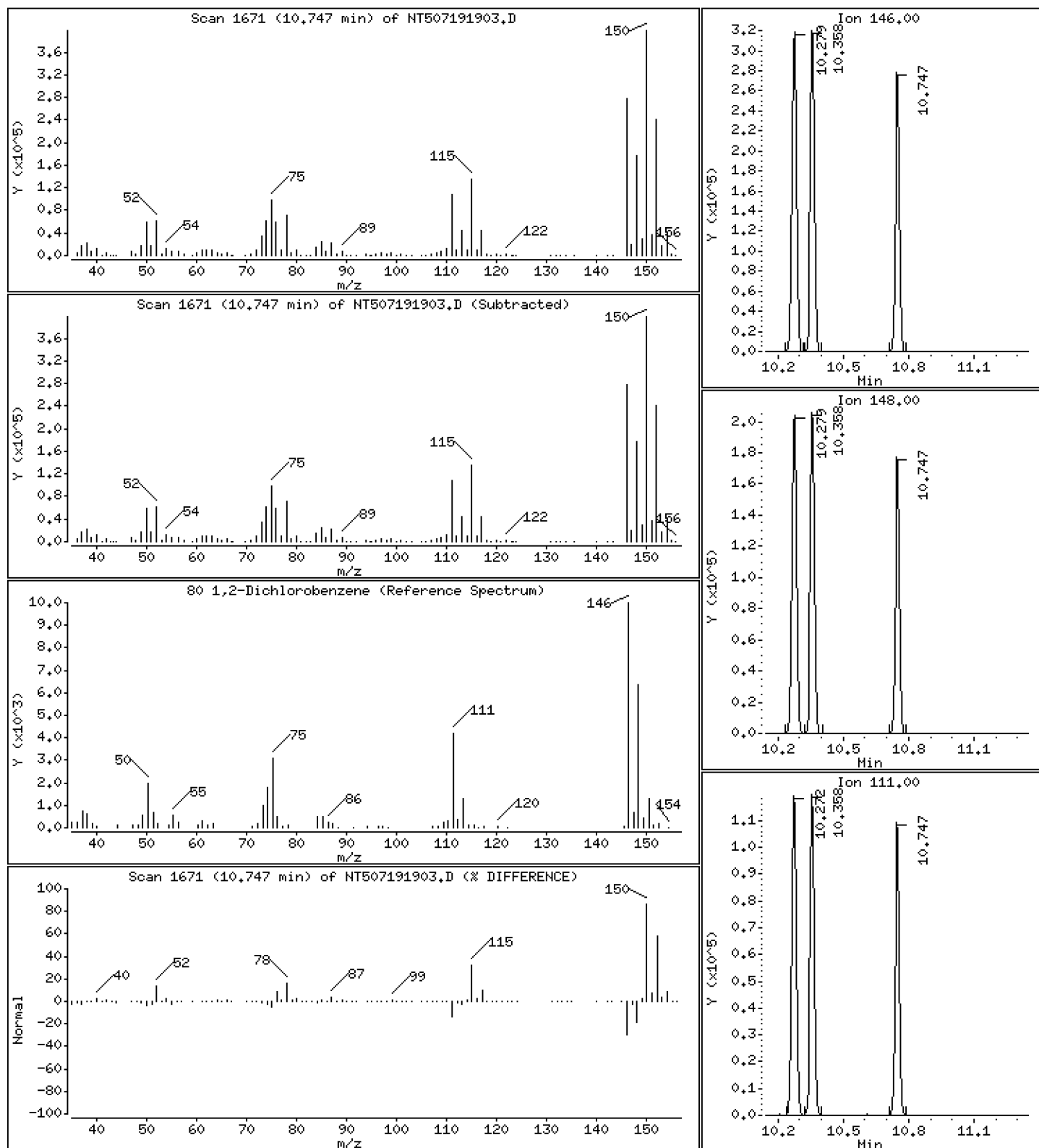
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 45,517 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

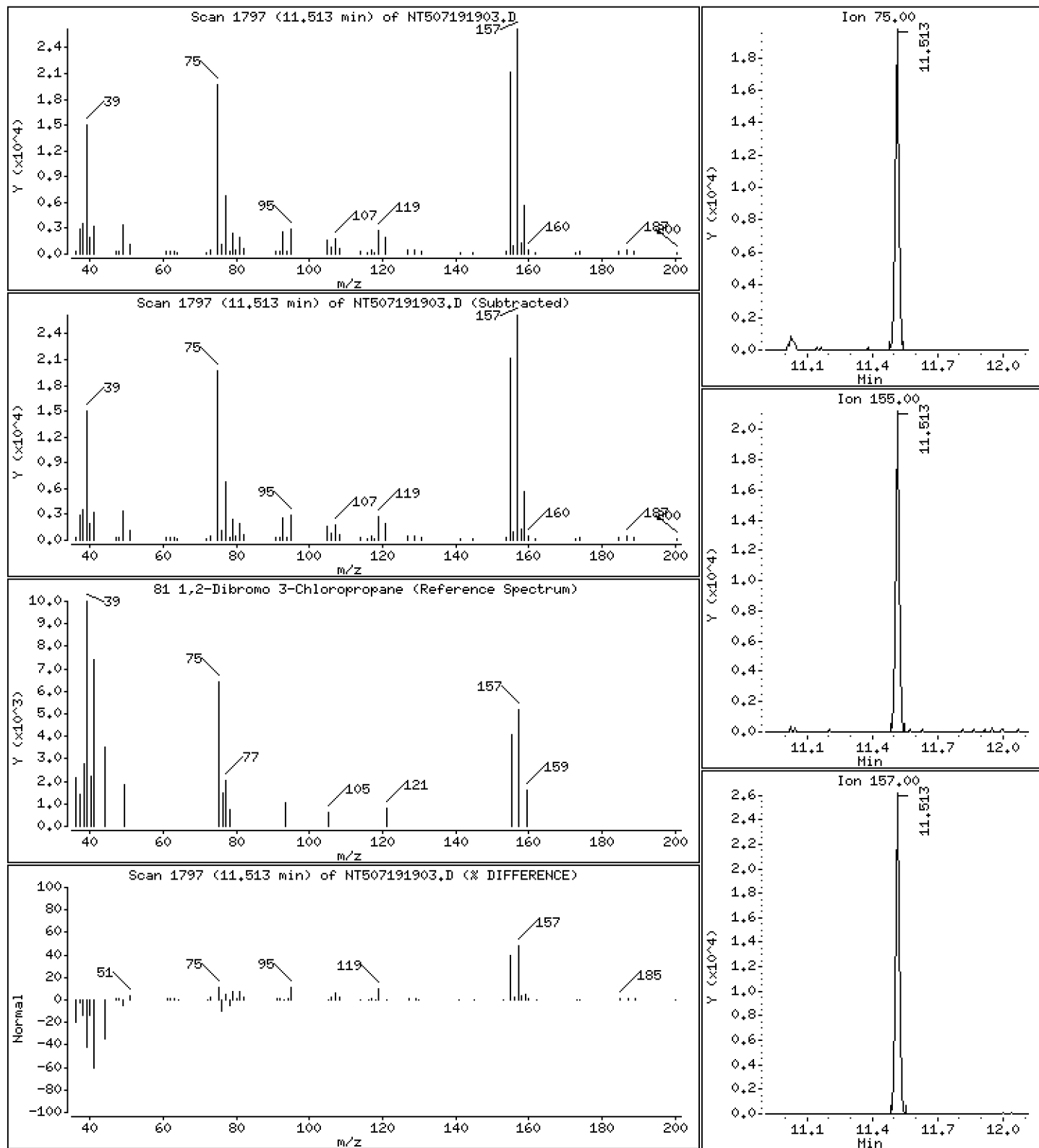
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 43,647 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

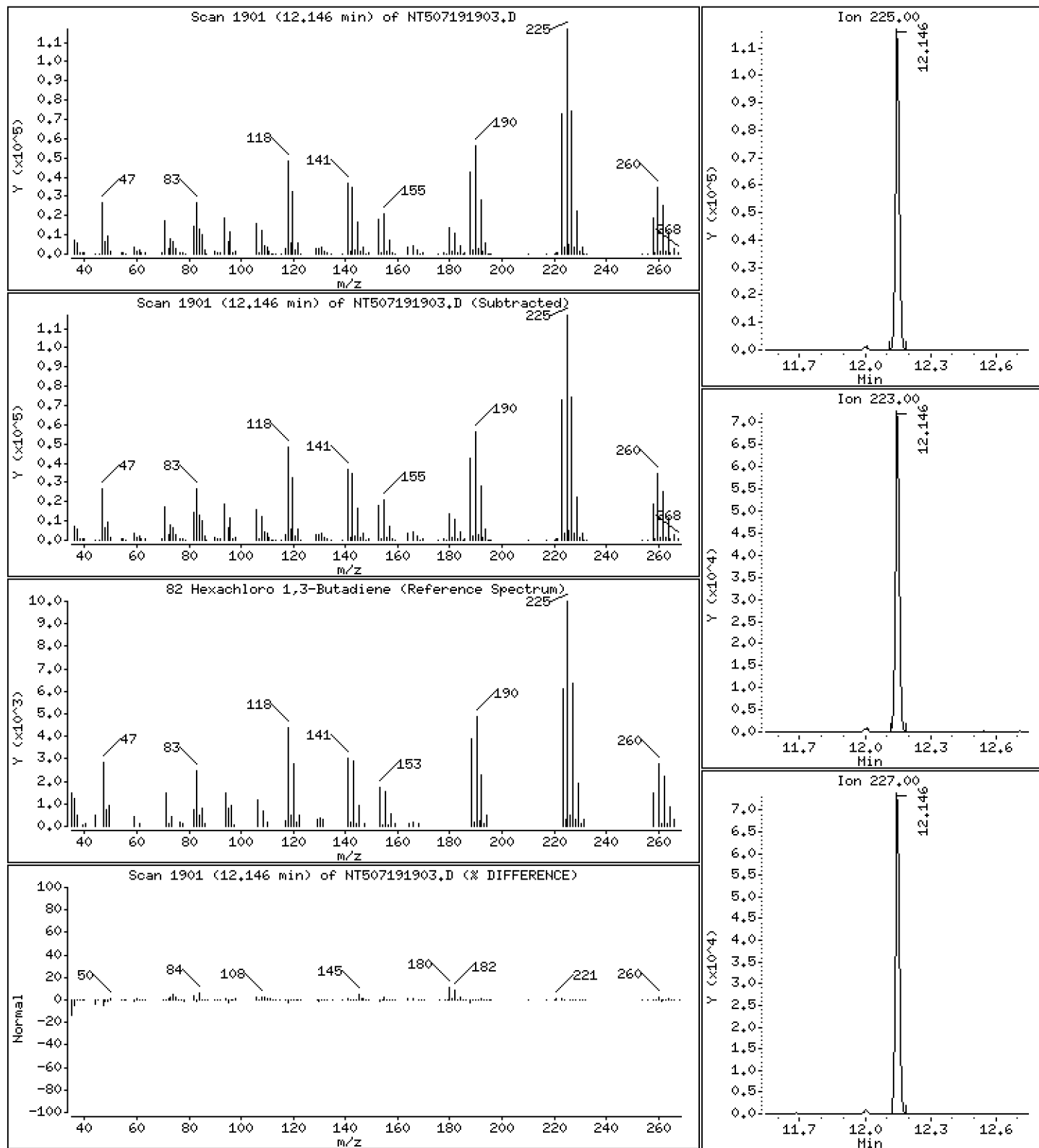
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 46,911 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

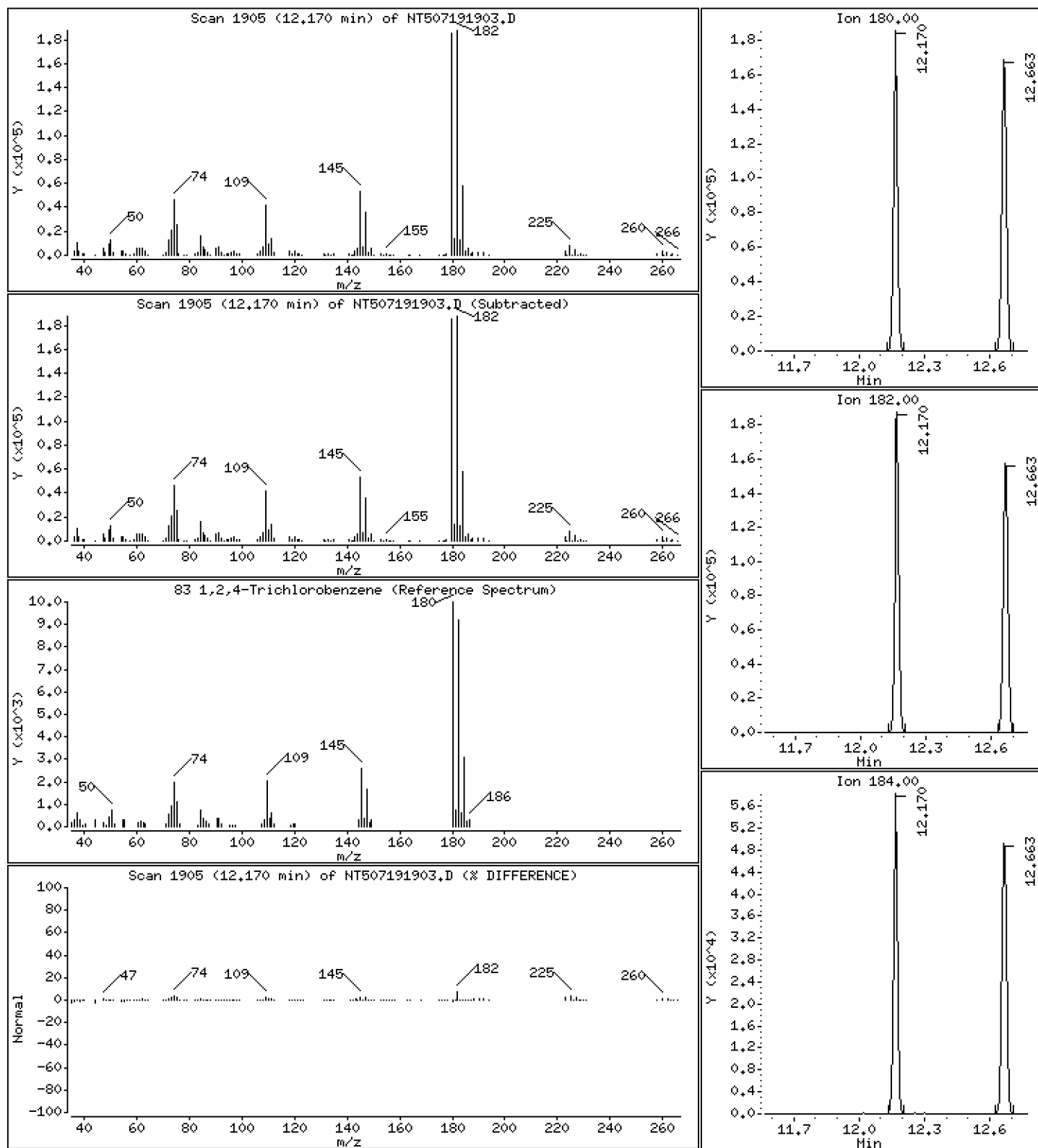
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 46,193 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

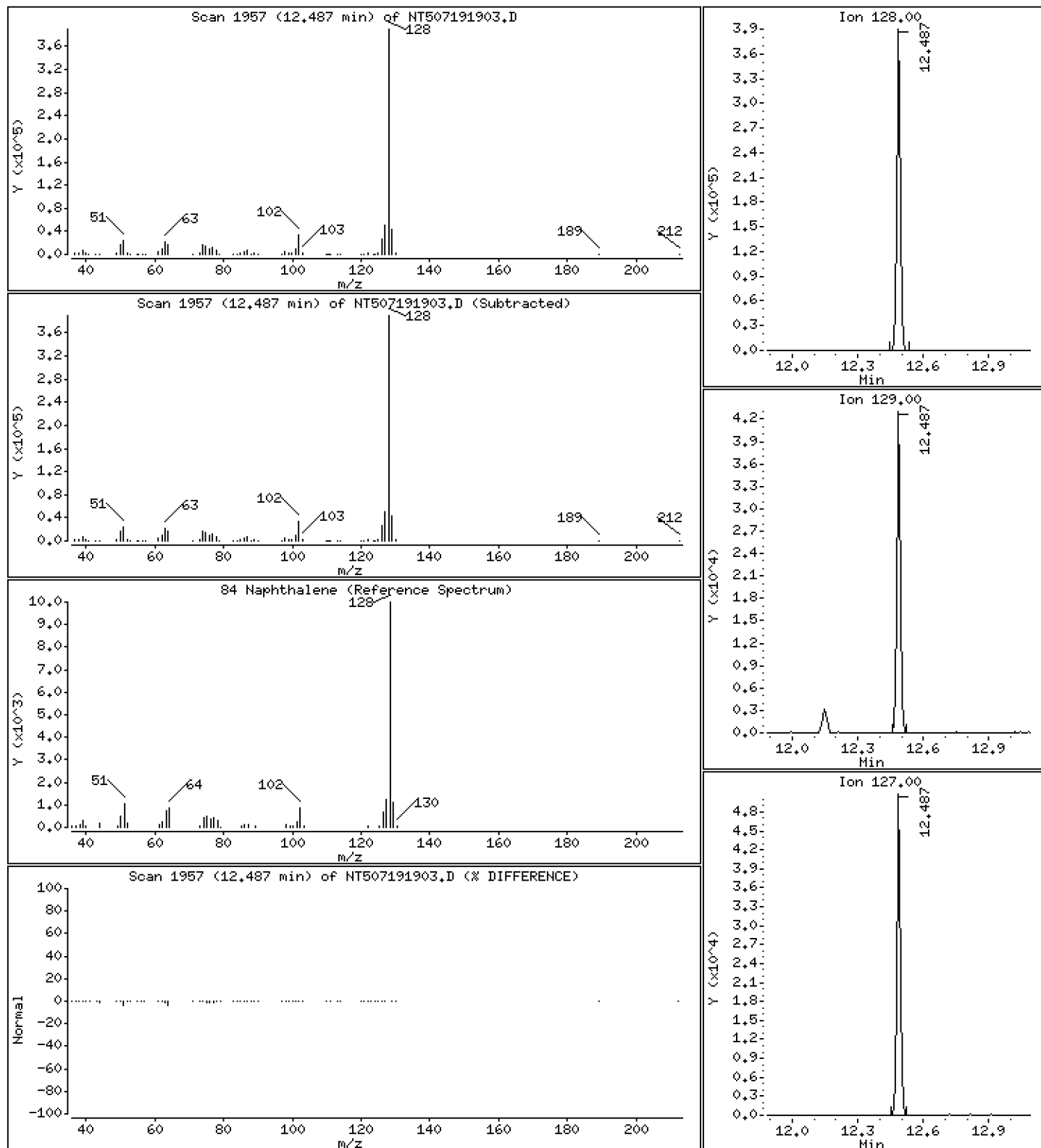
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 43,229 ug/Kg



Date : 19-JUL-2019 14:08

Client ID:

Instrument: nt5.i

Sample Info: BSD1

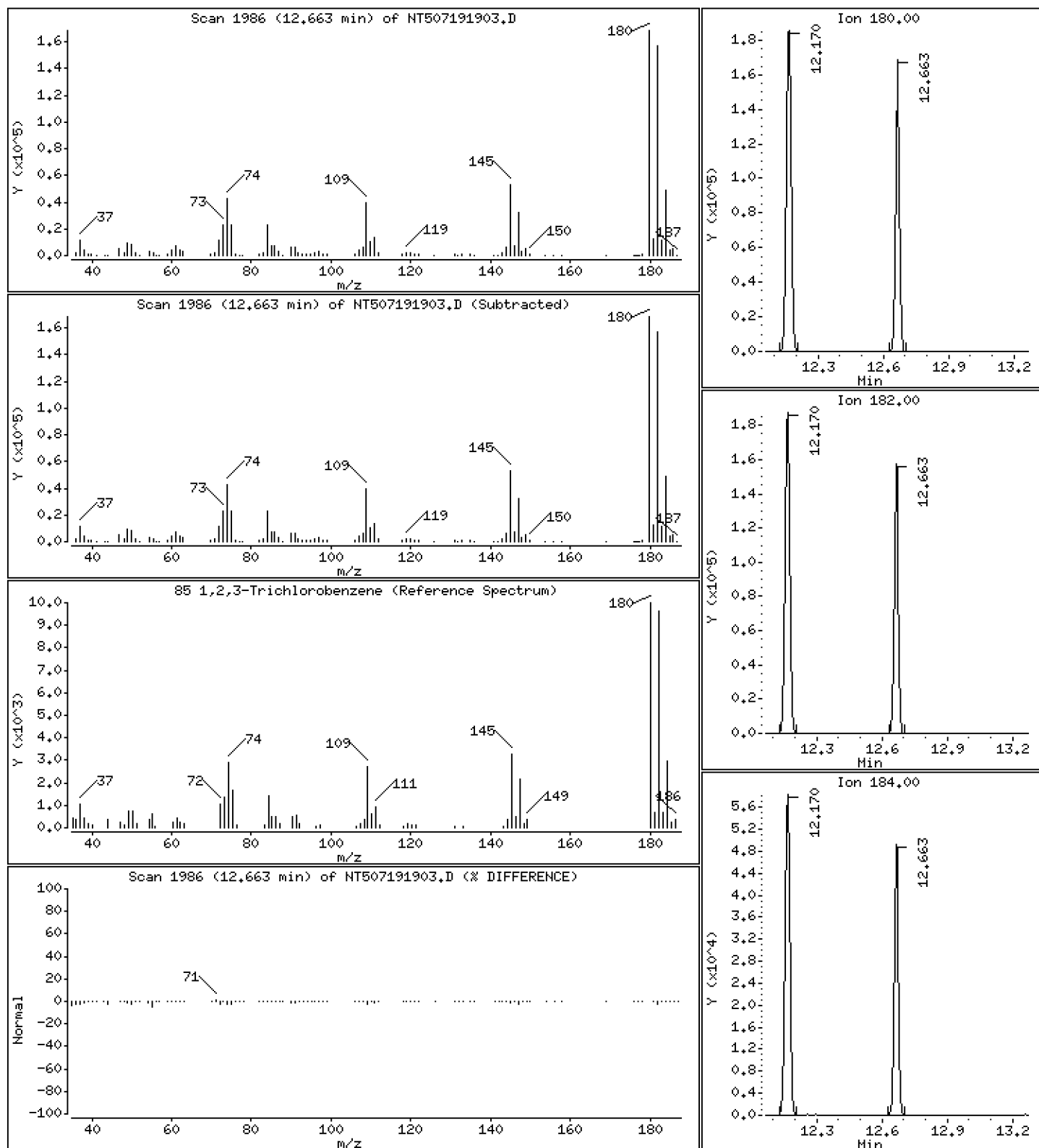
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 44,059 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190719.b\NT507191903.D
 Lab Smp Id: bhg0418-BSD1
 Inj Date : 19-JUL-2019 14:08
 Operator : PB Inst ID: nt5.i
 Smp Info : BSD1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Meth Date : 22-Jul-2019 15:50 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE		ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====	=====	=====	=====	=====	=====		=====	=====
1 Dichlorodifluoromethane	85		1.329	1.329	(0.249)	170894		42.6996	42.700
2 Chloromethane	50		1.481	1.487	(0.278)	167715		50.5447	50.545
3 Vinyl Chloride	62		1.554	1.554	(0.292)	174939		52.2281	52.228
4 Bromomethane	94		1.834	1.834	(0.344)	134986		54.8618	54.862
5 Chloroethane	64		1.944	1.943	(0.365)	149361		56.4653	56.465
6 Trichlorofluoromethane	101		2.059	2.059	(0.386)	331426		51.9295	51.929
7 1,1-Dichloroethene	96		2.534	2.534	(0.475)	177417		54.1957	54.196
8 Carbon Disulfide	76		2.534	2.540	(0.475)	490978		53.7496	53.750
9 112Trichloro122Trifluoroethane	101		2.582	2.582	(0.484)	165343		55.3365	55.337
10 Iodomethane	142		2.661	2.661	(0.499)	204516		47.8903	47.890
11 Bromoethane	108		2.789	2.795	(0.523)	115380		52.3557	52.356
12 Acrolein	56		2.911	2.911	(0.546)	85520		257.094	257.09
13 Methylene Chloride	84		3.148	3.148	(0.590)	156997		48.2982	48.298
14 Acetone	43		3.251	3.258	(0.610)	148810		254.273	254.27
15 Trans-1,2-Dichloroethene	96		3.306	3.306	(0.620)	187751		53.3703	53.370
16 Methyl tert butyl ether	73		3.483	3.483	(0.653)	385951		50.6198	50.620
173 n-Hexane	41		3.483	3.483	(0.653)	74417			
17 1,1-Dichloroethane	63		3.939	3.939	(0.739)	286896		54.3549	54.355
18 Acrylonitrile	53		4.024	4.024	(0.755)	34350		49.4017	49.402
19 Vinyl Acetate	43		4.237	4.237	(0.795)	252265		52.1269	52.127
20 Cis-1,2-Dichloroethane	96		4.456	4.456	(0.836)	197264		54.5657	54.566
22 2,2-Dichloropropane	77		4.547	4.547	(0.853)	304181		59.8042	59.804
23 Bromochloromethane	128		4.639	4.638	(0.870)	90178		50.8056	50.806
24 Chloroform	83		4.730	4.724	(0.887)	312856		56.2686	56.269
25 Carbon Tetrachloride	117		4.809	4.815	(0.832)	307907		54.0066	54.007
\$ 27 Dibromofluoromethane	111		4.888	4.888	(0.917)	238183		54.8404	54.840 (R)
26 1,1,1-Trichloroethane	97		4.882	4.882	(0.916)	319303		58.5584	58.558
28 1,1-Dichloropropene	75		4.997	4.997	(0.864)	258080		56.0493	56.049
29 2-Butanone	72		5.040	5.040	(0.945)	74531		270.980	270.98
30 Benzene	78		5.216	5.216	(0.902)	701219		51.0680	51.068
* 31 Pentafluorobenzene	168		5.332	5.332	(1.000)	397146		50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.350	5.350	(1.003)	203477		56.0050	56.005 (R)
33 1,2-Dichloroethane	62		5.411	5.405	(0.936)	196610		49.8514	49.851

Compounds	QUANT SIG MASS					CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130	5.734	5.734	(0.992)	220237	51.4005	51.400
* 35 1,4-Difluorobenzene	114	5.782	5.782	(1.000)	774640	50.0000	
37 Dibromomethane	93	6.093	6.092	(1.054)	92730	49.2288	49.229
38 1,2-Dichloropropane	63	6.184	6.184	(1.069)	152934	50.8387	50.839
39 Bromodichloromethane	83	6.245	6.245	(1.080)	230563	51.5094	51.509
172 2-Pentanone	86	6.543	6.537	(1.132)	94321	241.056	241.06
40 2-Chloroethyl Vinyl Ether	63	6.756	6.756	(1.168)	81146	46.5396	46.540
41 Cis 1,3-dichloropropene	75	6.786	6.786	(1.174)	273129	52.2251	52.225
\$ 42 d8-Toluene	98	6.938	6.932	(1.200)	941224	51.8855	51.886 (R)
43 Toluene	92	6.975	6.975	(1.206)	470222	50.1594	50.159
44 Tetrachloroethene	166	7.291	7.291	(0.884)	237053	48.9781	48.978
45 4-Methyl-2-Pentanone	58	7.327	7.327	(1.267)	222340	244.892	244.89
46 Trans 1,3-Dichloropropene	75	7.346	7.346	(1.270)	236435	51.1379	51.138
47 1,1,2-Trichloroethane	97	7.480	7.473	(1.294)	130224	47.1536	47.154
48 Chlorodibromomethane	129	7.619	7.619	(0.923)	176296	47.0297	47.030
49 1,3-Dichloropropane	76	7.705	7.705	(0.934)	215905	45.8330	45.833
50 1,2-Dibromoethane	107	7.808	7.808	(1.350)	131077	46.9653	46.965
51 2-Hexanone	43	8.039	8.039	(0.974)	389657	237.925	237.93
* 52 d5-Chlorobenzene	117	8.252	8.252	(1.000)	788454	50.0000	
53 Chlorobenzene	112	8.270	8.270	(1.002)	527214	46.9305	46.930
54 Ethyl Benzene	91	8.301	8.301	(1.006)	895490	48.5684	48.568
55 1,1,1,2-Tetrachloroethane	131	8.331	8.331	(1.010)	190684	47.7456	47.746
56 m,p-xylene	106	8.429	8.429	(1.021)	729722	97.1423	97.142
57 o-Xylene	106	8.800	8.800	(1.066)	338879	47.4563	47.456
58 Styrene	104	8.848	8.848	(1.072)	551306	48.1763	48.176
59 Bromoform	173	8.867	8.867	(0.857)	115824	43.9170	43.917
60 Isopropyl Benzene	105	9.080	9.079	(0.878)	939054	49.1409	49.141
61 Cyclohexanone	55	9.639	9.639	(1.168)	1388		
\$ 62 4-Bromofluorobenzene	174	9.329	9.329	(1.130)	332932	49.3238	49.324 (R)
63 Bromobenzene	156	9.414	9.414	(0.910)	220422	44.7827	44.783
64 N-Propyl Benzene	91	9.457	9.451	(0.914)	1074176	49.5932	49.593
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530	(0.921)	151767	44.1312	44.131
66 2-Chloro Toluene	91	9.584	9.584	(0.926)	591802	47.9165	47.916
67 1,3,5-Trimethyl Benzene	105	9.639	9.639	(0.932)	761509	48.3442	48.344
68 1,2,3-Trichloropropane	110	9.645	9.639	(0.932)	54085	45.3143	45.314
69 Trans-1,4-Dichloro 2-Butene	53	9.688	9.688	(0.936)	44054	46.8964	46.896
70 4-Chloro Toluene	91	9.737	9.737	(0.941)	616973	48.1905	48.190
71 T-Butyl Benzene	119	9.925	9.919	(0.959)	692779	47.4507	47.451
72 1,2,4-Trimethylbenzene	105	9.992	9.992	(0.966)	752327	49.0125	49.012
73 S-Butyl Benzene	105	10.083	10.083	(0.975)	1038885	48.9951	48.995
74 4-Isopropyl Toluene	119	10.223	10.223	(0.988)	903849	49.6986	49.699
75 1,3-Dichlorobenzene	146	10.278	10.272	(0.994)	449207	46.1410	46.141
* 76 d4-1,4-Dichlorobenzene	152	10.345	10.345	(1.000)	448040	50.0000	
77 1,4-Dichlorobenzene	146	10.357	10.357	(1.001)	443948	46.3451	46.345
78 N-Butyl Benzene	91	10.613	10.613	(1.026)	797932	50.3209	50.321
\$ 79 d4-1,2-Dichlorobenzene	152	10.740	10.740	(1.038)	388011	49.6563	49.656 (R)
80 1,2-Dichlorobenzene	146	10.746	10.746	(1.039)	400148	45.5169	45.517
81 1,2-Dibromo 3-Chloropropane	75	11.513	11.513	(1.113)	27820	43.6474	43.647
82 Hexachloro 1,3-Butadiene	225	12.146	12.146	(1.174)	167842	46.9107	46.911
83 1,2,4-Trichlorobenzene	180	12.170	12.170	(1.176)	278401	46.1933	46.193
84 Naphthalene	128	12.486	12.486	(1.207)	533196	43.2286	43.229
85 1,2,3-Trichlorobenzene	180	12.663	12.663	(1.224)	240297	44.0587	44.059

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 19-JUL-2019
 Lab File ID: NT507191903.D Calibration Time: 13:28
 Lab Smp Id: bhg0418-BSD1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	397146	-1.68
35 1,4-Difluorobenze	717664	358832	1435328	774640	7.94
52 d5-Chlorobenzene	696563	348282	1393126	788454	13.19
76 d4-1,4-Dichlorobe	380778	190389	761556	448040	17.66

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.33	4.83	5.83	5.33	0.00
35 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
52 d5-Chlorobenzene	8.25	7.75	8.75	8.25	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: bhg0418-BSD1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190719.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	42.700	85.40	
2 Chloromethane	50.000	50.545	101.09	
3 Vinyl Chloride	50.000	52.228	104.46	
4 Bromomethane	50.000	54.862	109.72	
5 Chloroethane	50.000	56.465	112.93	
6 Trichlorofluoromet	50.000	51.929	103.86	
12 Acrolein	250.00	257.09	102.84	
9 112Trichloro122Tri	50.000	55.337	110.67	
14 Acetone	250.00	254.27	101.71	
7 1,1-Dichloroethene	50.000	54.196	108.39	
11 Bromoethane	50.000	52.356	104.71	
10 Iodomethane	50.000	47.890	95.78	
13 Methylene Chloride	50.000	48.298	96.60	
8 Carbon Disulfide	50.000	53.750	107.50	
18 Acrylonitrile	50.000	49.402	98.80	
15 Trans-1,2-Dichloro	50.000	53.370	106.74	
19 Vinyl Acetate	50.000	52.127	104.25	
17 1,1-Dichloroethane	50.000	54.355	108.71	
29 2-Butanone	250.00	270.98	108.39	
22 2,2-Dichloropropan	50.000	59.804	119.61	
20 Cis-1,2-Dichloroet	50.000	54.566	109.13	
24 Chloroform	50.000	56.269	112.54	
23 Bromochloromethane	50.000	50.806	101.61	
26 1,1,1-Trichloroeth	50.000	58.558	117.12	
28 1,1-Dichloropropen	50.000	56.049	112.10	
25 Carbon Tetrachlori	50.000	54.007	108.01	
33 1,2-Dichloroethane	50.000	49.851	99.70	
30 Benzene	50.000	51.068	102.14	
34 Trichloroethene	50.000	51.400	102.80	
38 1,2-Dichloropropan	50.000	50.839	101.68	
39 Bromodichlorometha	50.000	51.509	103.02	
172 2-Pentanone	250.00	241.06	96.42	
37 Dibromomethane	50.000	49.229	98.46	
40 2-Chloroethyl Viny	50.000	46.540	93.08	
45 4-Methyl-2-Pentano	250.00	244.89	97.96	
41 Cis 1,3-dichloropr	50.000	52.225	104.45	
43 Toluene	50.000	50.159	100.32	
46 Trans 1,3-Dichloro	50.000	51.138	102.28	
51 2-Hexanone	250.00	237.93	95.17	
47 1,1,2-Trichloroeth	50.000	47.154	94.31	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	45.833	91.67	
44 Tetrachloroethene	50.000	48.978	97.96	
48 Chlorodibromometha	50.000	47.030	94.06	
50 1,2-Dibromoethane	50.000	46.965	93.93	
53 Chlorobenzene	50.000	46.930	93.86	
55 1,1,1,2-Tetrachlor	50.000	47.746	95.49	
54 Ethyl Benzene	50.000	48.568	97.14	
56 m,p-xylene	100.00	97.142	97.14	
57 o-Xylene	50.000	47.456	94.91	
58 Styrene	50.000	48.176	96.35	
60 Isopropyl Benzene	50.000	49.141	98.28	
59 Bromoform	50.000	43.917	87.83	
65 1,1,2,2-Tetrachlor	50.000	44.131	88.26	
68 1,2,3-Trichloropro	50.000	45.314	90.63	
69 Trans-1,4-Dichloro	50.000	46.896	93.79	
64 N-Propyl Benzene	50.000	49.593	99.19	
63 Bromobenzene	50.000	44.783	89.57	
67 1,3,5-Trimethyl Be	50.000	48.344	96.69	
66 2-Chloro Toluene	50.000	47.916	95.83	
70 4-Chloro Toluene	50.000	48.190	96.38	
71 T-Butyl Benzene	50.000	47.451	94.90	
72 1,2,4-Trimethylben	50.000	49.012	98.02	
73 S-Butyl Benzene	50.000	48.995	97.99	
74 4-Isopropyl Toluen	50.000	49.699	99.40	
75 1,3-Dichlorobenzen	50.000	46.141	92.28	
77 1,4-Dichlorobenzen	50.000	46.345	92.69	
78 N-Butyl Benzene	50.000	50.321	100.64	
80 1,2-Dichlorobenzen	50.000	45.517	91.03	
81 1,2-Dibromo 3-Chlo	50.000	43.647	87.29	
83 1,2,4-Trichloroben	50.000	46.193	92.39	
82 Hexachloro 1,3-But	50.000	46.911	93.82	
84 Naphthalene	50.000	43.229	86.46	
85 1,2,3-Trichloroben	50.000	44.059	88.12	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	54.840	109.68	
\$ 32 d4-1,2-Dichloroeth	50.000	56.005	112.01	
\$ 42 d8-Toluene	50.000	51.886	103.77	
\$ 62 4-Bromofluorobenze	50.000	49.324	98.65	
\$ 79 d4-1,2-Dichloroben	50.000	49.656	99.31	

REVIEW SUMMARY FOR FILE - NT507191903.D

Lab ID: bhg0418-BSD1
nt5.i, 20190719.b\VO122618S.m, 19-JUL-2019 14:08

RT	CO-ELUTION COMPOUNDS
3.483	n-Hexane and Methyl tert butyl ether
9.640	Cyclohexanone and 1,3,5-Trimethyl Benzene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507191902.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/18/19 10:09

Batch: BHG0439

Laboratory ID: BHG0439-BS1

Preparation: EPA 5030 (Purge and Trap)

Sequence Name: LCS

Initial/Final: 10 mL / 10 ml

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Chloromethane	10.0	9.93		99.3	60 - 138
Vinyl Chloride	10.0	9.96		99.6	66 - 133
Bromomethane	10.0	9.91		99.1	72 - 131
Chloroethane	10.0	9.76		97.6	60 - 155
Trichlorofluoromethane	10.0	10.4		104	80 - 129
Acrolein	50.0	36.0	Q	72.0	52 - 144
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.0	10.3		103	76 - 129
Acetone	50.0	50.0		99.9	58 - 142
1,1-Dichloroethene	10.0	9.92		99.2	69 - 135
Bromoethane	10.0	9.59		95.9	78 - 128
Iodomethane	10.0	9.85		98.5	56 - 147
Methylene Chloride	10.0	9.10		91.0	65 - 135
Acrylonitrile	10.0	8.51		85.1	64 - 134
Carbon Disulfide	10.0	9.60		96.0	78 - 125
trans-1,2-Dichloroethene	10.0	8.77		87.7	78 - 128
Vinyl Acetate	10.0	9.29		92.9	55 - 138
1,1-Dichloroethane	10.0	10.5		105	76 - 124
2-Butanone	50.0	58.0		116	61 - 140
2,2-Dichloropropane	10.0	12.1	Q	121	78 - 125
cis-1,2-Dichloroethene	10.0	9.59		95.9	80 - 121
Chloroform	10.0	9.69		96.9	80 - 122
Bromochloromethane	10.0	9.38		93.8	80 - 121
1,1,1-Trichloroethane	10.0	10.3		103	79 - 123
1,1-Dichloropropene	10.0	11.0		110	80 - 120
Carbon tetrachloride	10.0	10.8		108	53 - 137
1,2-Dichloroethane	10.0	10.1		101	75 - 123
Benzene	10.0	9.77		97.7	80 - 120
Trichloroethene	10.0	8.84		88.4	80 - 120
1,2-Dichloropropane	10.0	11.4		114	80 - 120
Bromodichloromethane	10.0	11.3		113	80 - 121
Dibromomethane	10.0	11.4		114	80 - 120
2-Chloroethyl vinyl ether	10.0	12.0		120	74 - 127
4-Methyl-2-Pentanone	50.0	57.6		115	67 - 133



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/18/19 10:09

Batch: BHG0439

Laboratory ID: BHG0439-BS1

Preparation: EPA 5030 (Purge and Trap)

Sequence Name: LCS

Initial/Final: 10 mL / 10 ml

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
cis-1,3-Dichloropropene	10.0	11.4		114	80 - 124
Toluene	10.0	10.8		108	80 - 120
trans-1,3-Dichloropropene	10.0	11.5		115	71 - 127
2-Hexanone	50.0	49.9		99.7	69 - 133
1,1,2-Trichloroethane	10.0	10.7		107	80 - 121
1,3-Dichloropropane	10.0	9.60		96.0	80 - 120
Tetrachloroethene	10.0	9.73		97.3	80 - 120
Dibromochloromethane	10.0	9.87		98.7	65 - 135
1,2-Dibromoethane	10.0	10.6		106	80 - 121
Chlorobenzene	10.0	9.90		99.0	80 - 120
Ethylbenzene	10.0	9.93		99.3	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.47		94.7	80 - 120
m,p-Xylene	20.0	20.1		101	80 - 121
o-Xylene	10.0	9.85		98.5	80 - 121
Styrene	10.0	10.4		104	80 - 124
Bromoform	10.0	8.73		87.3	51 - 134
1,1,1,2-Tetrachloroethane	10.0	8.86		88.6	77 - 123
1,2,3-Trichloropropane	10.0	8.77		87.7	76 - 125
trans-1,4-Dichloro 2-Butene	10.0	8.63		86.3	55 - 129
n-Propylbenzene	10.0	9.42		94.2	78 - 130
Bromobenzene	10.0	9.17		91.7	80 - 120
Xylenes, total	30.0	30.0		99.9	76 - 127
Isopropyl Benzene	10.0	9.65		96.5	80 - 128
2-Chlorotoluene	10.0	9.37		93.7	78 - 122
4-Chlorotoluene	10.0	9.53		95.3	80 - 121
t-Butylbenzene	10.0	9.21		92.1	78 - 125
1,3,5-Trimethylbenzene	10.0	9.60		96.0	80 - 129
1,2,4-Trimethylbenzene	10.0	9.91		99.1	80 - 127
s-Butylbenzene	10.0	9.45		94.5	78 - 129
4-Isopropyl Toluene	10.0	9.60		96.0	79 - 130
1,3-Dichlorobenzene	10.0	9.30		93.0	80 - 120
1,4-Dichlorobenzene	10.0	8.94		89.4	80 - 120
n-Butylbenzene	10.0	9.69		96.9	74 - 129



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/18/19 10:09

Batch: BHG0439

Laboratory ID: BHG0439-BS1

Preparation: EPA 5030 (Purge and Trap)

Sequence Name: LCS

Initial/Final: 10 mL / 10 ml

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	10.0	8.73		87.3	80 - 120
1,2-Dibromo-3-chloropropane	10.0	8.41		84.1	62 - 123
1,2,4-Trichlorobenzene	10.0	8.49		84.9	64 - 124
Hexachloro-1,3-Butadiene	10.0	9.41		94.1	58 - 123
Naphthalene	10.0	8.15		81.5	50 - 134
1,2,3-Trichlorobenzene	10.0	7.52	Q	75.2	49 - 133
Dichlorodifluoromethane	10.0	10.2		102	48 - 147
Methyl tert-butyl Ether	10.0	9.26		92.6	71 - 132
2-Pentanone	50.0	63.2	Q	126	69 - 134

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloromethane	10.0	8.74		87.4	12.7	30	60 - 138
Vinyl Chloride	10.0	8.96		89.6	10.6	30	66 - 133
Bromomethane	10.0	9.01		90.1	9.52	30	72 - 131
Chloroethane	10.0	9.20		92.0	5.87	30	60 - 155
Trichlorofluoromethane	10.0	9.27		92.7	11.2	30	80 - 129
Acrolein	50.0	55.2	*, Q	110	42.1 *	30	52 - 144
1,1,2-Trichloro-1,2,2-Trifluoroethane	10.0	9.82		98.2	4.88	30	76 - 129
Acetone	50.0	47.5		95.0	5.04	30	58 - 142
1,1-Dichloroethene	10.0	9.08		90.8	8.89	30	69 - 135
Bromoethane	10.0	9.03		90.3	5.96	30	78 - 128
Iodomethane	10.0	9.37		93.7	5.05	30	56 - 147
Methylene Chloride	10.0	9.96		99.6	8.99	30	65 - 135
Acrylonitrile	10.0	10.3		103	18.6	30	64 - 134
Carbon Disulfide	10.0	9.18		91.8	4.51	30	78 - 125
trans-1,2-Dichloroethene	10.0	8.98		89.8	2.31	30	78 - 128
Vinyl Acetate	10.0	9.50		95.0	2.30	30	55 - 138
1,1-Dichloroethane	10.0	9.13		91.3	14.2	30	76 - 124
2-Butanone	50.0	50.6		101	13.6	30	61 - 140
2,2-Dichloropropane	10.0	9.99	Q	99.9	18.9	30	78 - 125
cis-1,2-Dichloroethene	10.0	9.38		93.8	2.27	30	80 - 121

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/18/19 10:36

Batch: BHG0439

Laboratory ID: BHG0439-BSD1

Preparation: EPA 5030 (Purge and Trap)

Sequence Name: LCS Dup

Initial/Final: 10 mL / 10 ml

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloroform	10.0	9.24		92.4	4.75	30	80 - 122
Bromochloromethane	10.0	9.17		91.7	2.31	30	80 - 121
1,1,1-Trichloroethane	10.0	9.09		90.9	12.7	30	79 - 123
1,1-Dichloropropene	10.0	9.75		97.5	11.8	30	80 - 120
Carbon tetrachloride	10.0	9.21		92.1	15.7	30	53 - 137
1,2-Dichloroethane	10.0	9.21		92.1	9.70	30	75 - 123
Benzene	10.0	9.59		95.9	1.93	30	80 - 120
Trichloroethene	10.0	9.41		94.1	6.18	30	80 - 120
1,2-Dichloropropane	10.0	9.63		96.3	16.7	30	80 - 120
Bromodichloromethane	10.0	9.42		94.2	17.7	30	80 - 121
Dibromomethane	10.0	9.46		94.6	18.6	30	80 - 120
2-Chloroethyl vinyl ether	10.0	9.86		98.6	19.8	30	74 - 127
4-Methyl-2-Pentanone	50.0	50.3		101	13.5	30	67 - 133
cis-1,3-Dichloropropene	10.0	9.72		97.2	16.1	30	80 - 124
Toluene	10.0	9.49		94.9	12.7	30	80 - 120
trans-1,3-Dichloropropene	10.0	9.86		98.6	15.2	30	71 - 127
2-Hexanone	50.0	51.2		102	2.70	30	69 - 133
1,1,2-Trichloroethane	10.0	9.99		99.9	6.80	30	80 - 121
1,3-Dichloropropane	10.0	9.81		98.1	2.20	30	80 - 120
Tetrachloroethene	10.0	9.39		93.9	3.53	30	80 - 120
Dibromochloromethane	10.0	9.46		94.6	4.23	30	65 - 135
1,2-Dibromoethane	10.0	9.42		94.2	12.0	30	80 - 121
Chlorobenzene	10.0	9.58		95.8	3.33	30	80 - 120
Ethylbenzene	10.0	9.88		98.8	0.508	30	80 - 120
1,1,1,2-Tetrachloroethane	10.0	9.28		92.8	2.05	30	80 - 120
m,p-Xylene	20.0	19.9		99.4	1.19	30	80 - 121
o-Xylene	10.0	9.88		98.8	0.324	30	80 - 121
Styrene	10.0	10.3		103	1.47	30	80 - 124
Bromoform	10.0	9.54		95.4	8.96	30	51 - 134
1,1,2,2-Tetrachloroethane	10.0	9.22		92.2	3.96	30	77 - 123
1,2,3-Trichloropropane	10.0	9.66		96.6	9.72	30	76 - 125
trans-1,4-Dichloro 2-Butene	10.0	8.93		89.3	3.51	30	55 - 129
n-Propylbenzene	10.0	9.91		99.1	5.01	30	78 - 130

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/18/19 10:36

Batch: BHG0439

Laboratory ID: BHG0439-BSD1

Preparation: EPA 5030 (Purge and Trap)

Sequence Name: LCS Dup

Initial/Final: 10 mL / 10 ml

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Bromobenzene	10.0	9.60		96.0	4.51	30	80 - 120
Xylenes, total	30.0	29.7		99.2	0.689	30	76 - 127
Isopropyl Benzene	10.0	9.95		99.5	3.12	30	80 - 128
2-Chlorotoluene	10.0	9.74		97.4	3.81	30	78 - 122
4-Chlorotoluene	10.0	9.91		99.1	3.87	30	80 - 121
t-Butylbenzene	10.0	9.94		99.4	7.69	30	78 - 125
1,3,5-Trimethylbenzene	10.0	10.2		102	5.94	30	80 - 129
1,2,4-Trimethylbenzene	10.0	10.2		102	3.17	30	80 - 127
s-Butylbenzene	10.0	9.91		99.1	4.79	30	78 - 129
4-Isopropyl Toluene	10.0	10.1		101	4.71	30	79 - 130
1,3-Dichlorobenzene	10.0	9.60		96.0	3.22	30	80 - 120
1,4-Dichlorobenzene	10.0	9.30		93.0	3.94	30	80 - 120
n-Butylbenzene	10.0	10.3		103	5.88	30	74 - 129
1,2-Dichlorobenzene	10.0	9.64		96.4	9.88	30	80 - 120
1,2-Dibromo-3-chloropropane	10.0	9.63		96.3	13.6	30	62 - 123
1,2,4-Trichlorobenzene	10.0	10.2		102	18.5	30	64 - 124
Hexachloro-1,3-Butadiene	10.0	10.7		107	12.6	30	58 - 123
Naphthalene	10.0	10.3		103	23.6	30	50 - 134
1,2,3-Trichlorobenzene	10.0	9.72	Q	97.2	25.5	30	49 - 133
Dichlorodifluoromethane	10.0	9.00		90.0	12.8	30	48 - 147
Methyl tert-butyl Ether	10.0	9.21		92.1	0.545	30	71 - 132
2-Pentanone	50.0	53.0	Q	106	17.5	30	69 - 134

* Indicates values outside of QC limits

Data File: \\target\share\chem\nt3.1\20190718.b\W307181903GLCS.D

Date : 18-JUL-2019 10:09

Client ID:

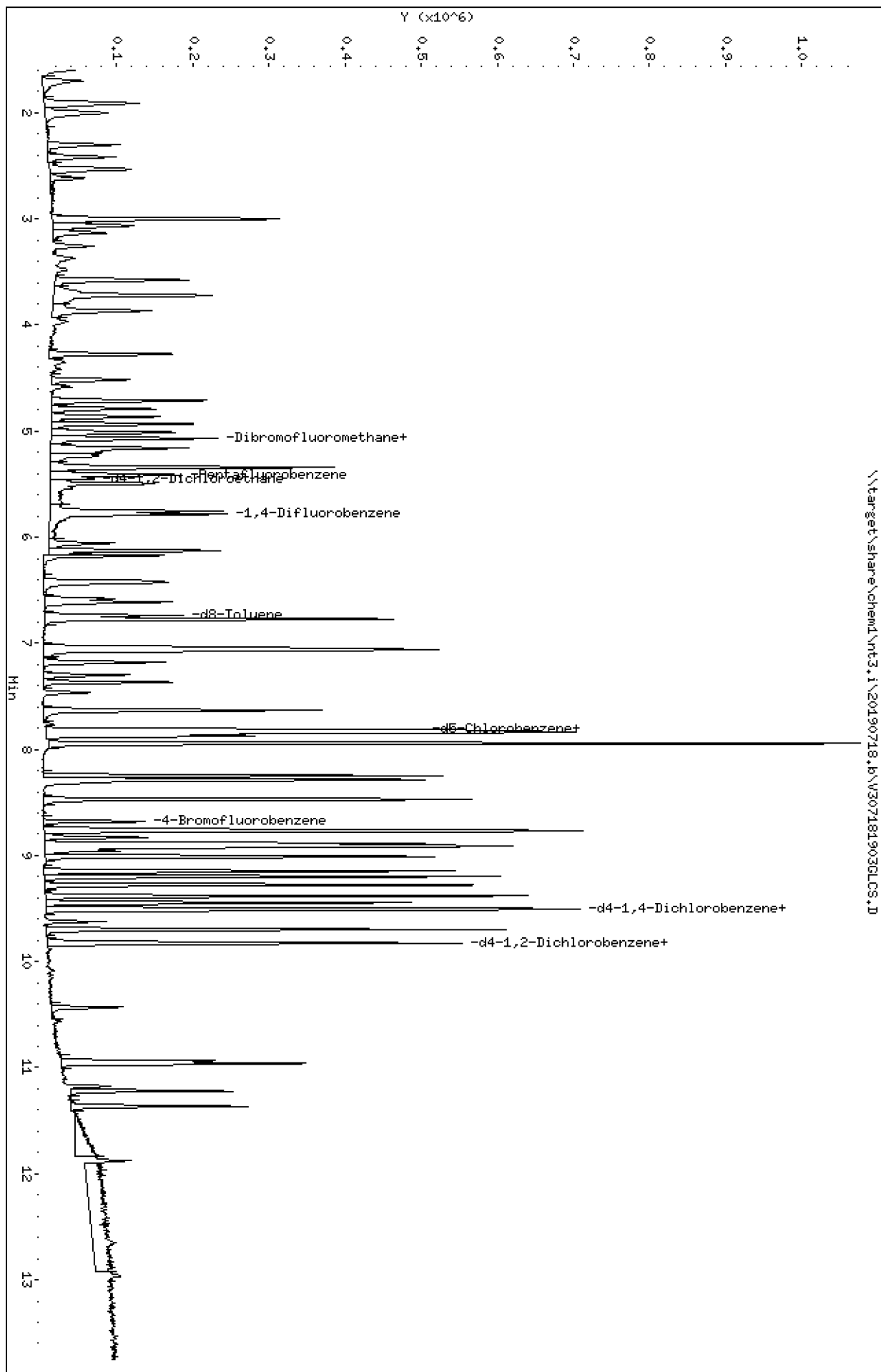
Sample Info: BHC0439-B51

Column phase: RTXWMS

Instrument: nt3.1

Operator: PKC

Column diameter: 0.18



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

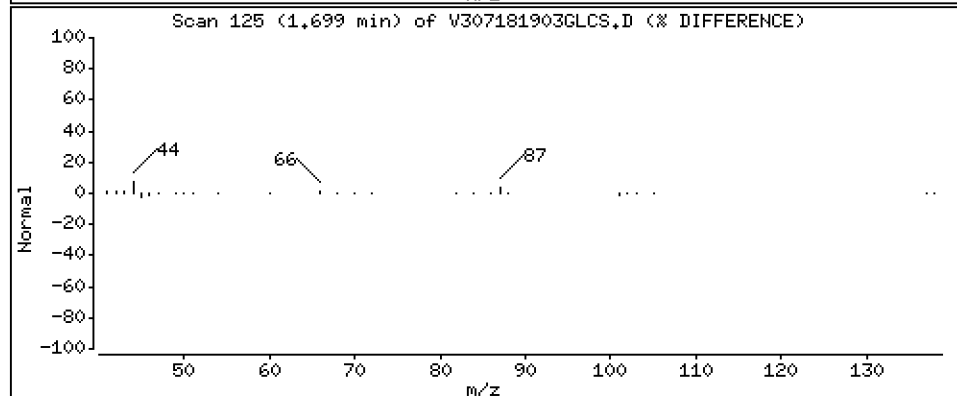
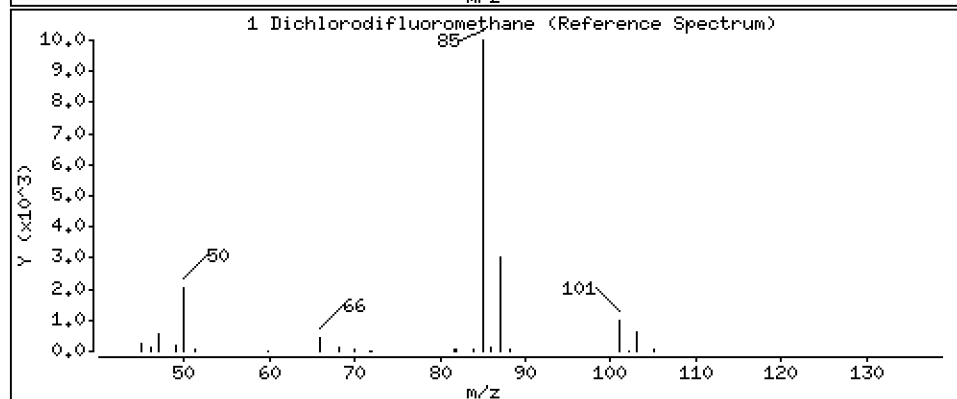
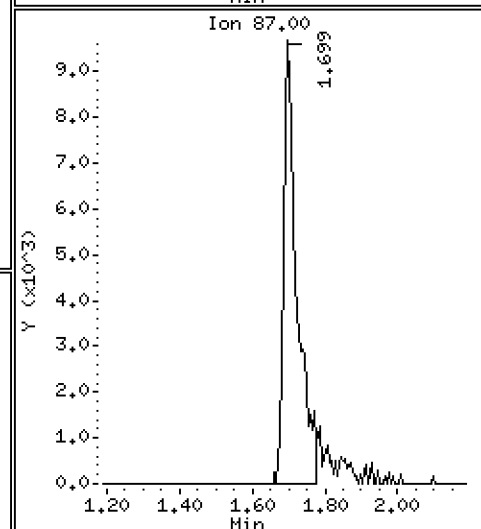
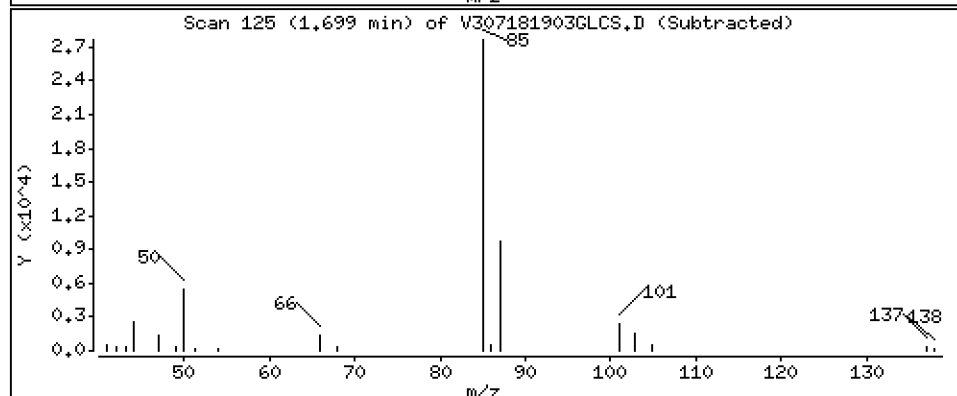
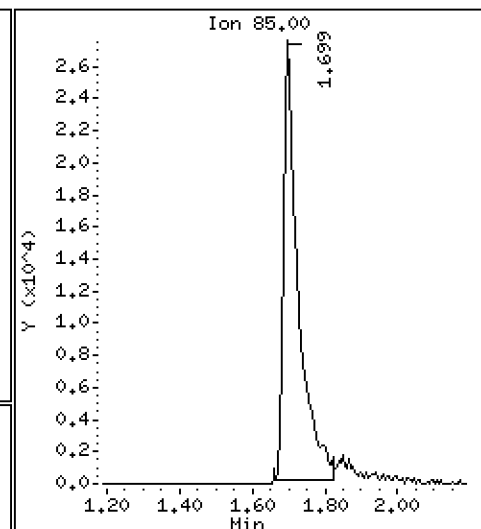
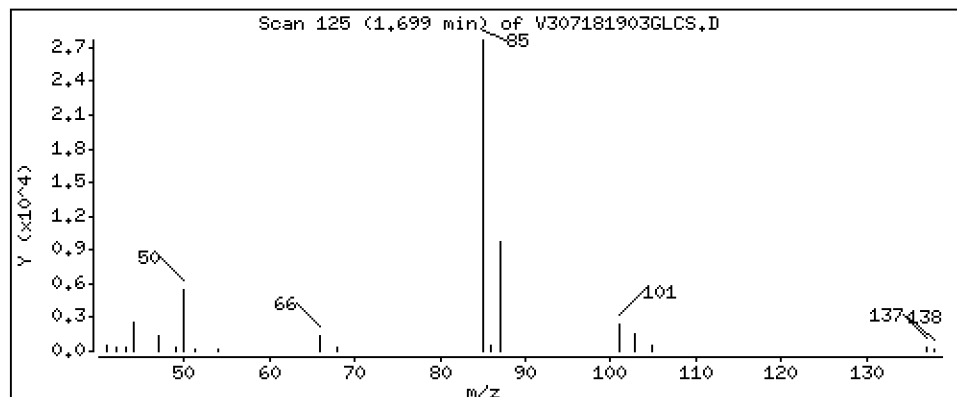
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 10,231 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

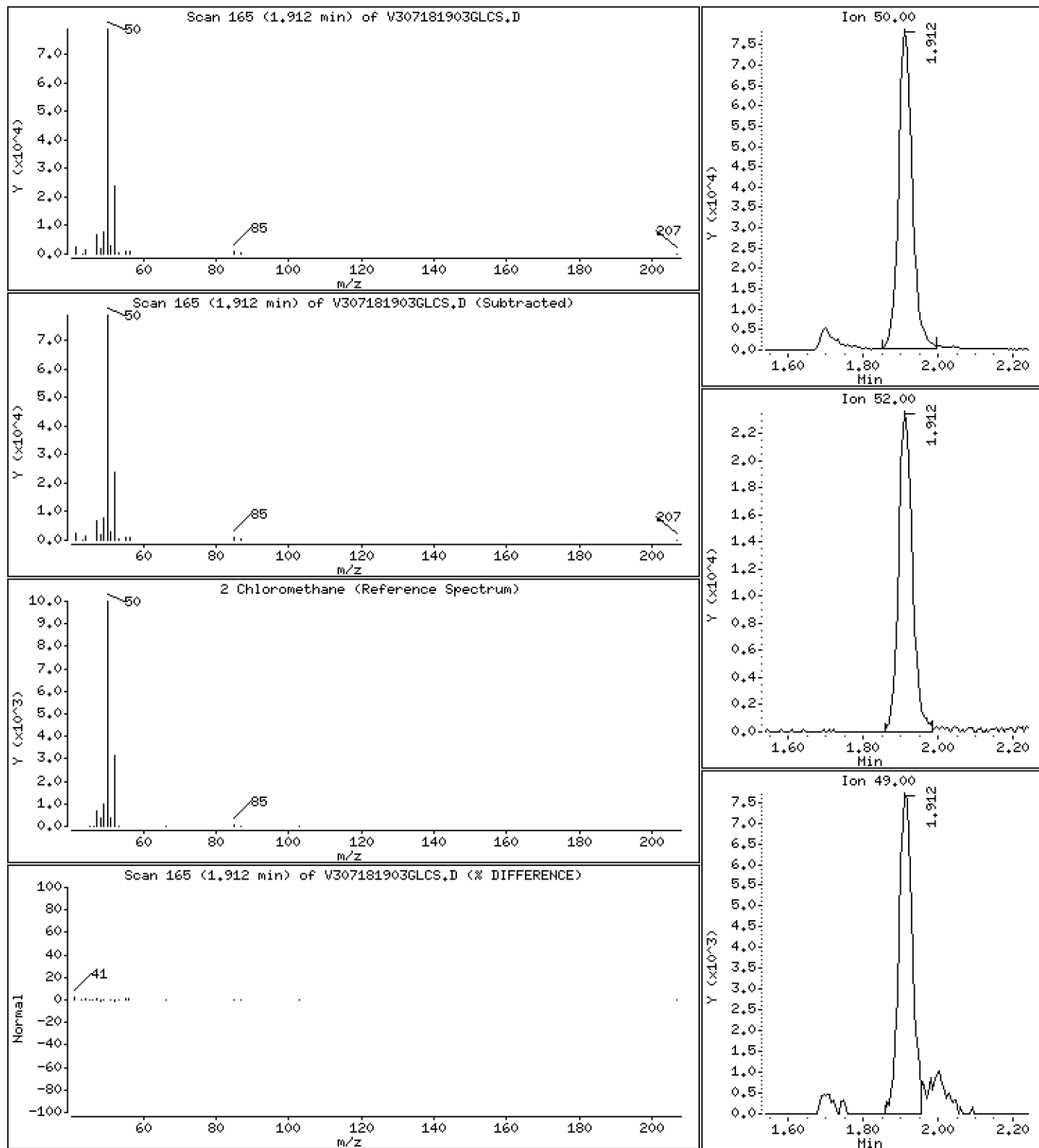
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 9.926 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

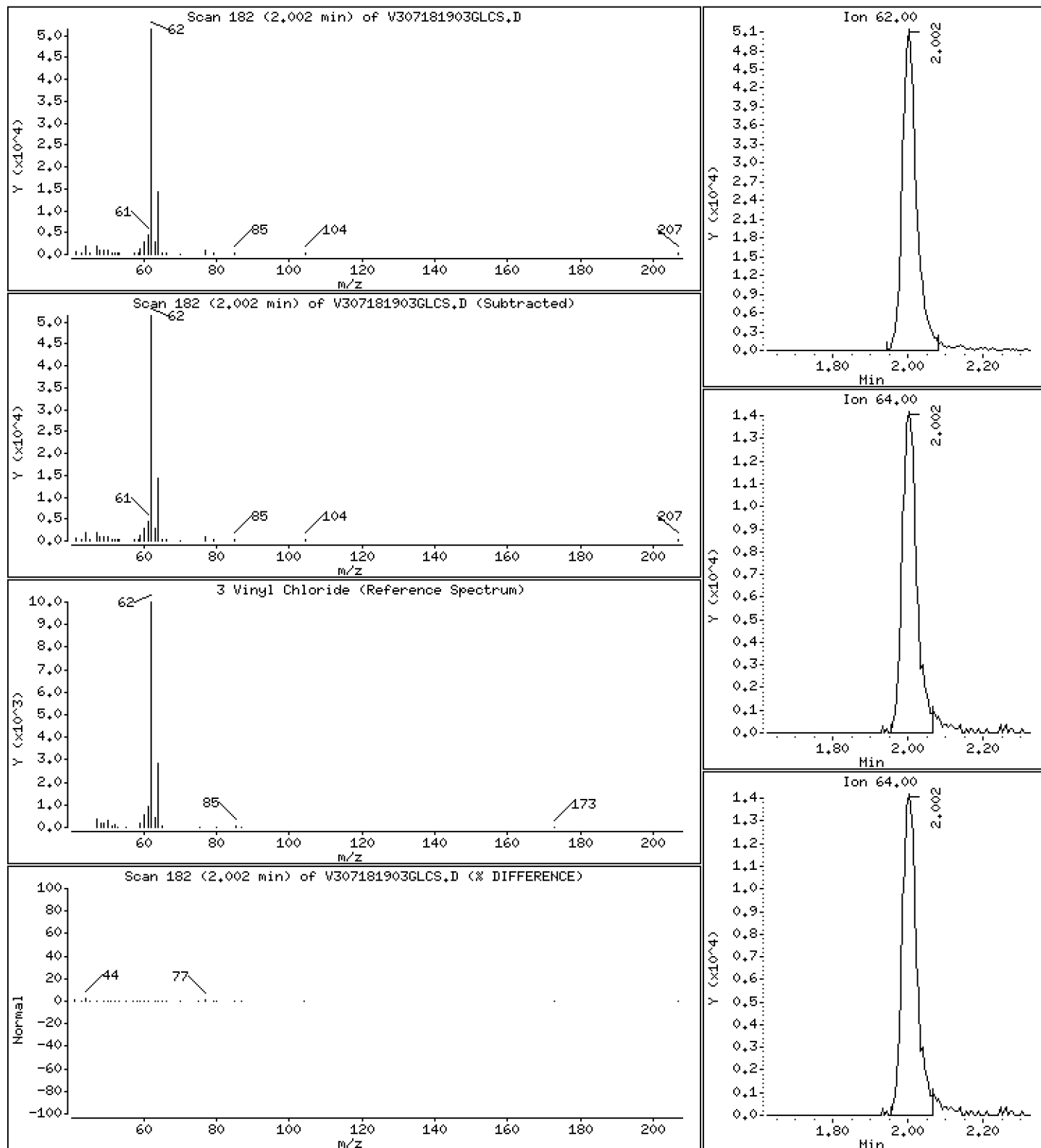
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 9.963 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

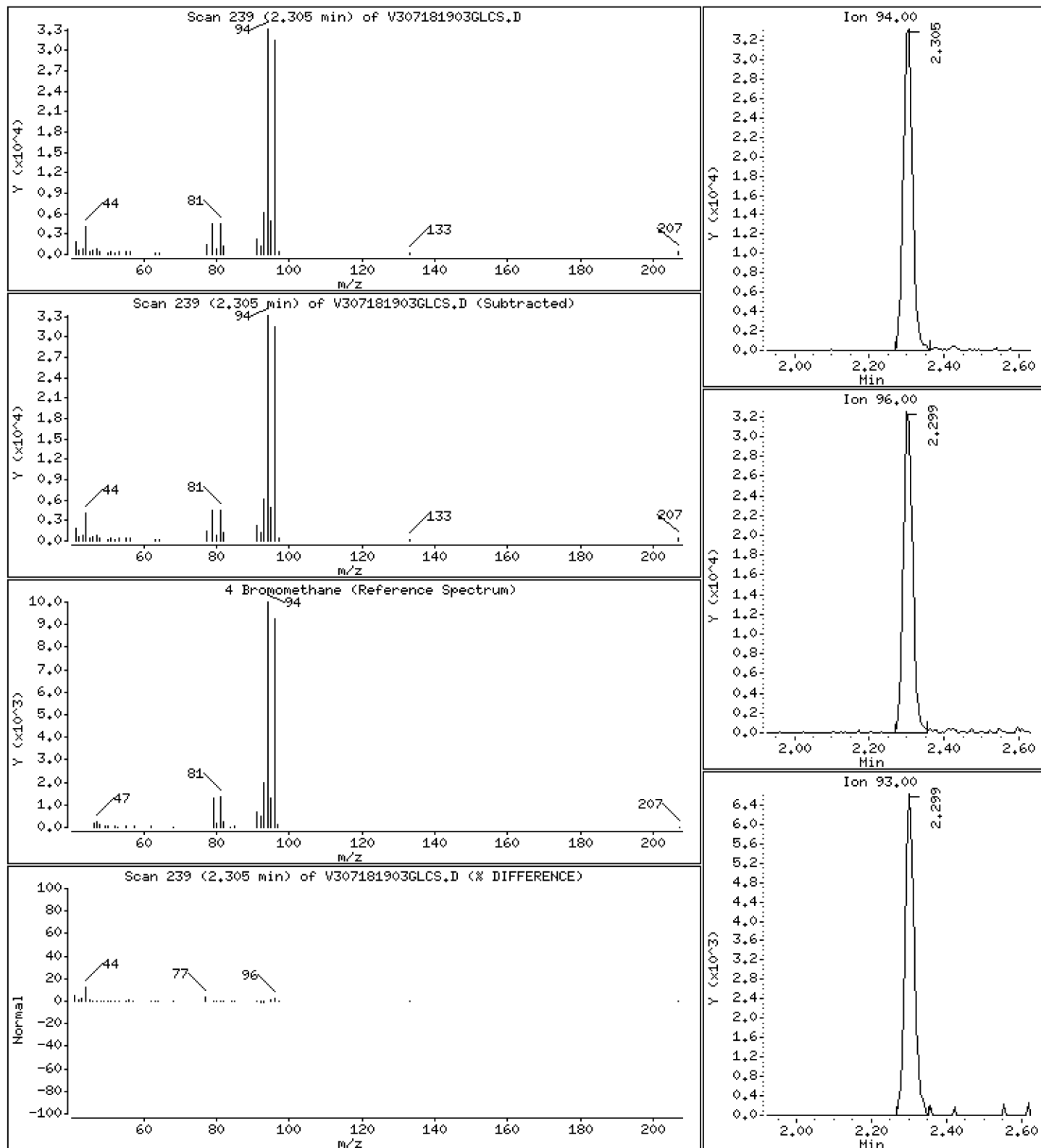
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 9.912 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

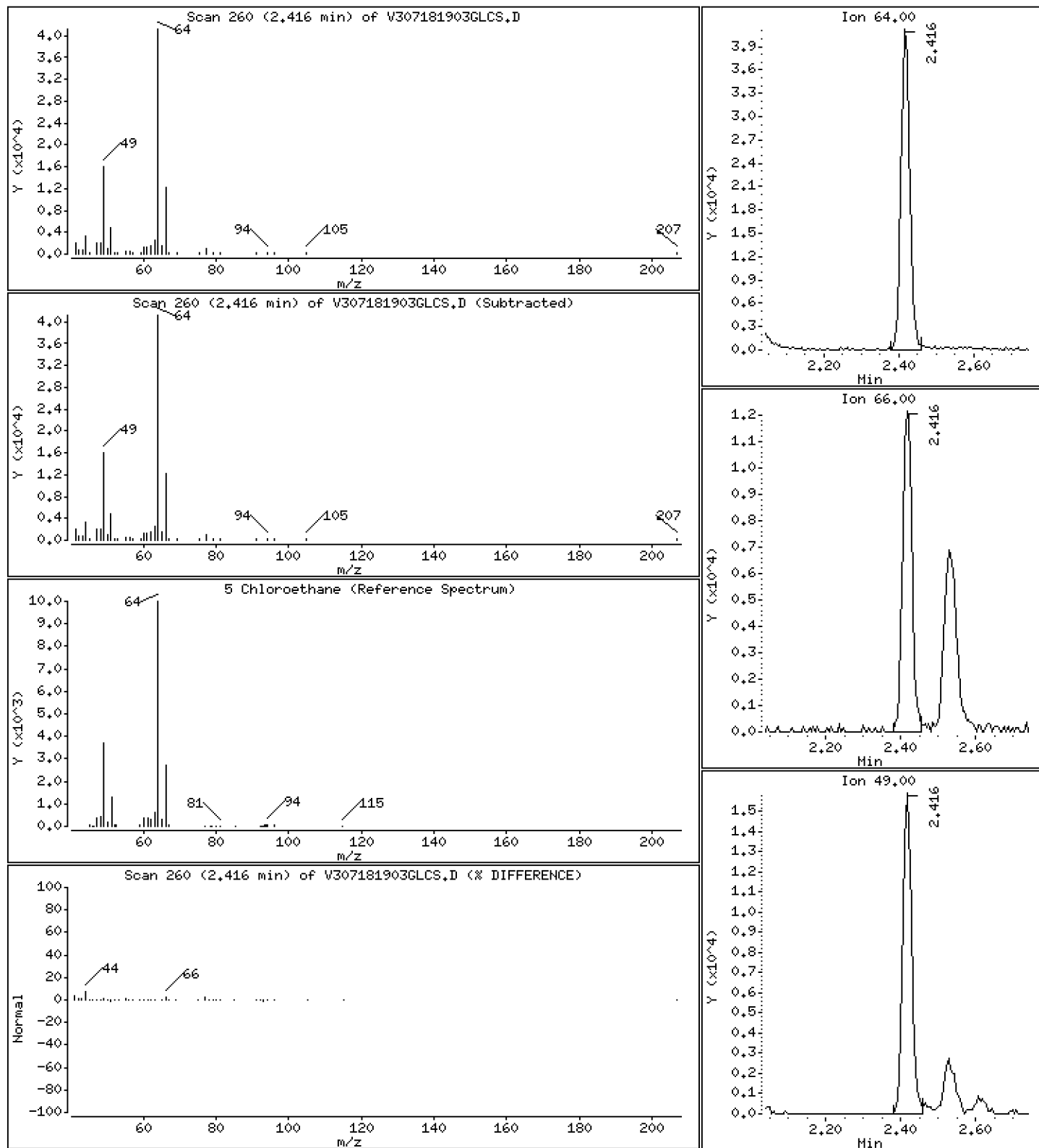
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 9.761 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

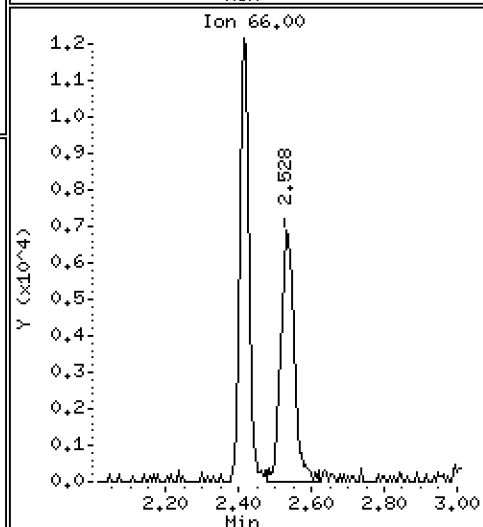
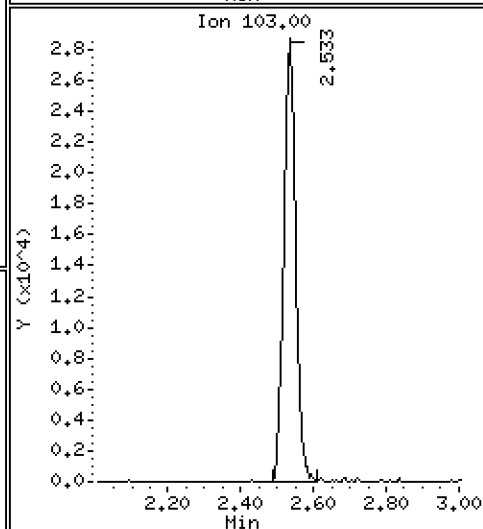
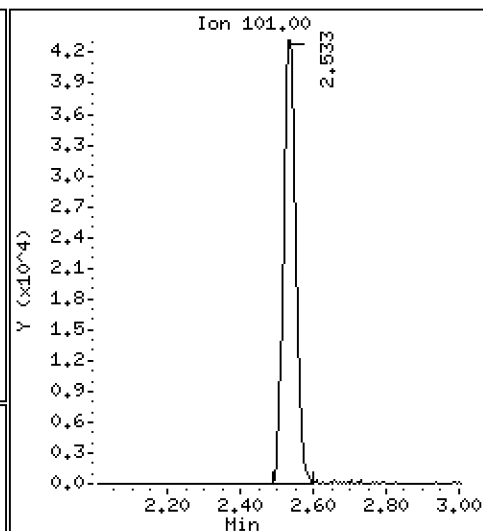
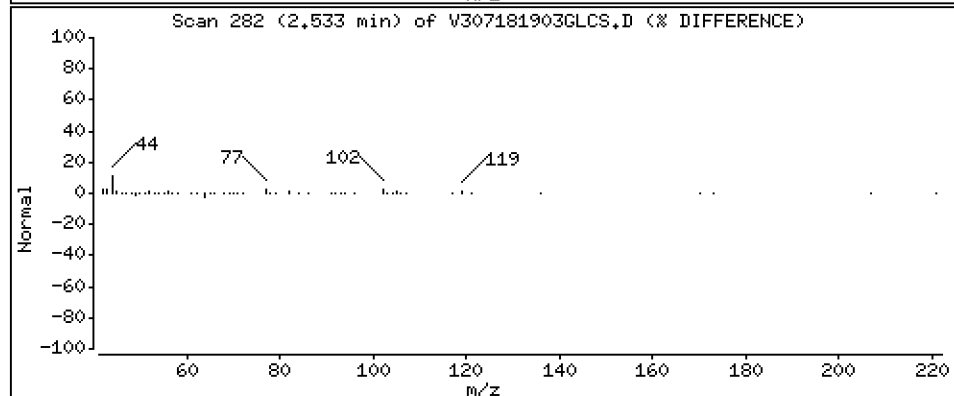
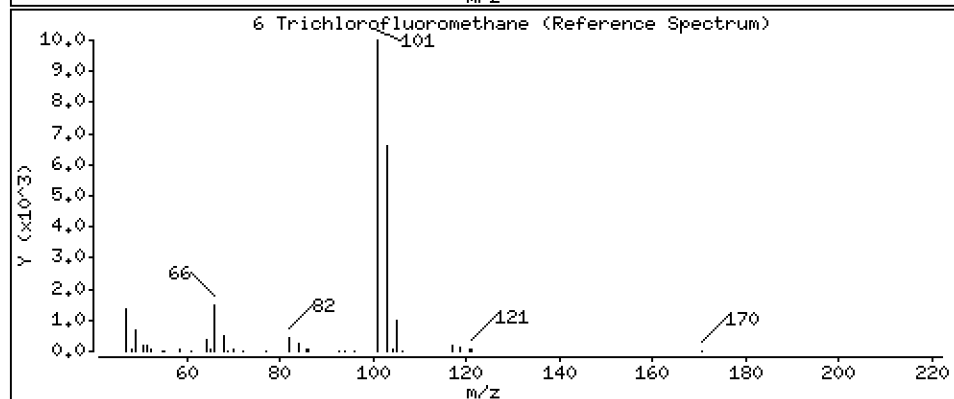
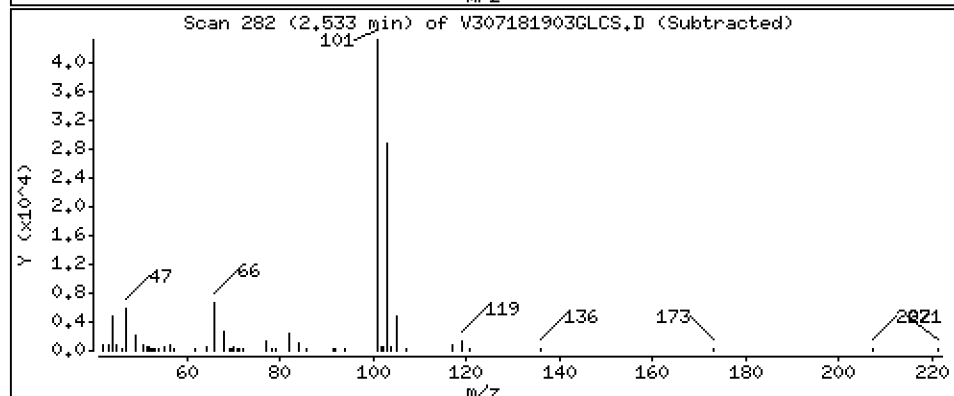
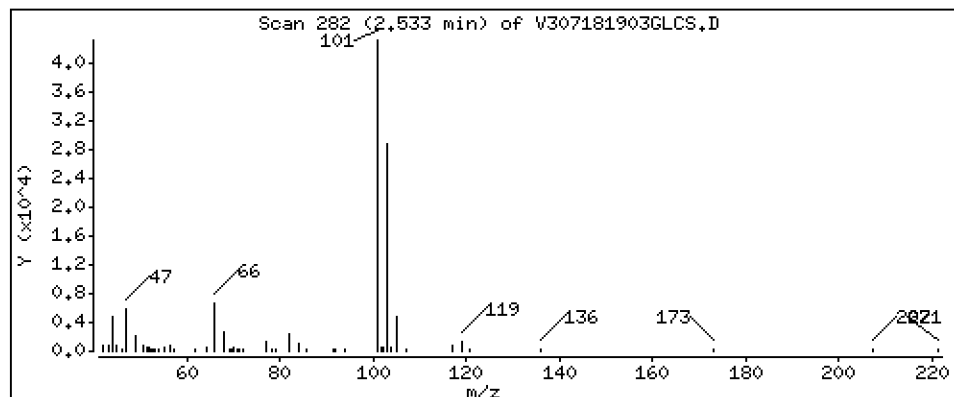
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 10,370 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

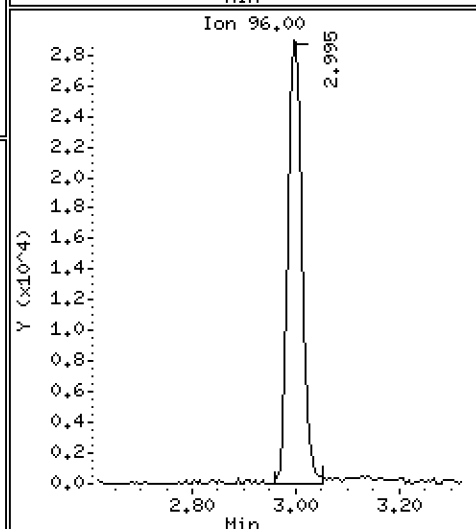
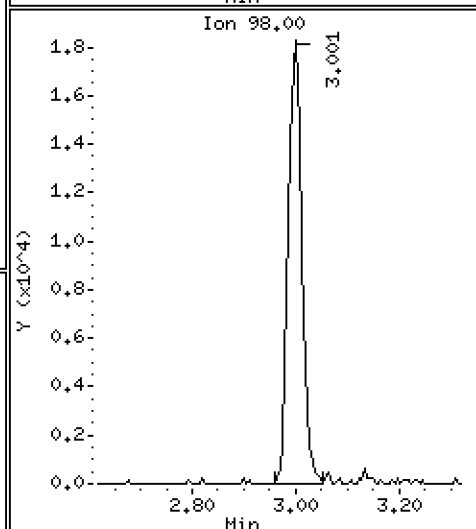
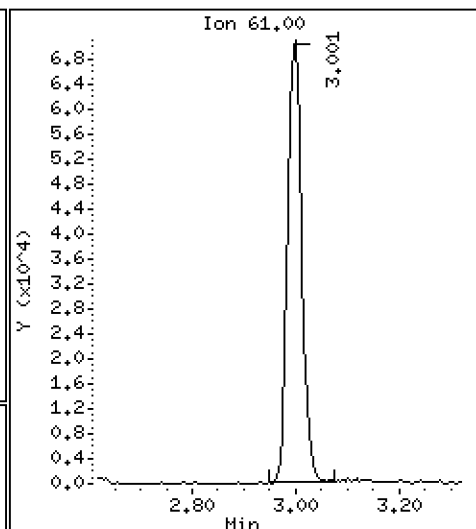
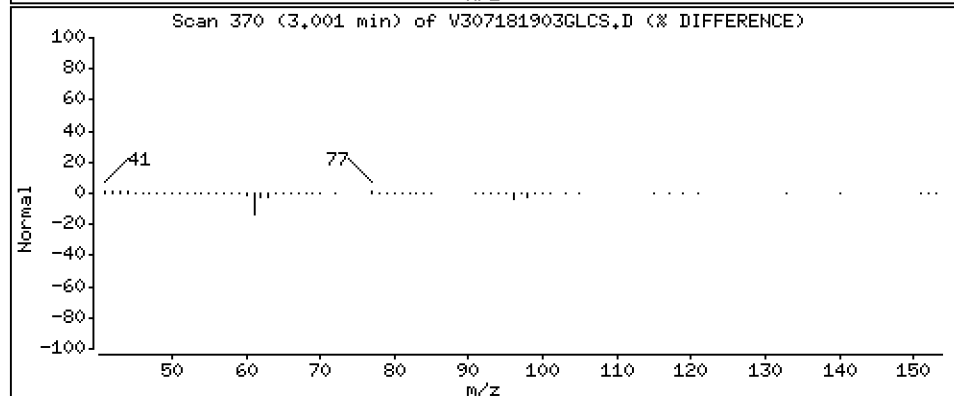
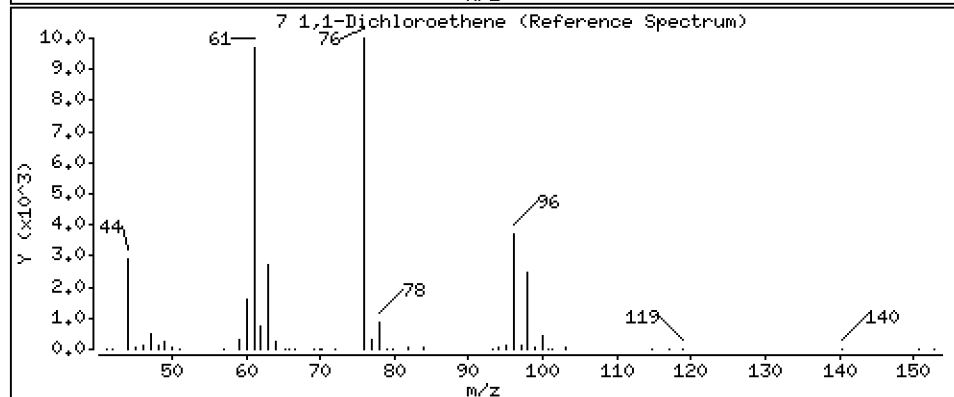
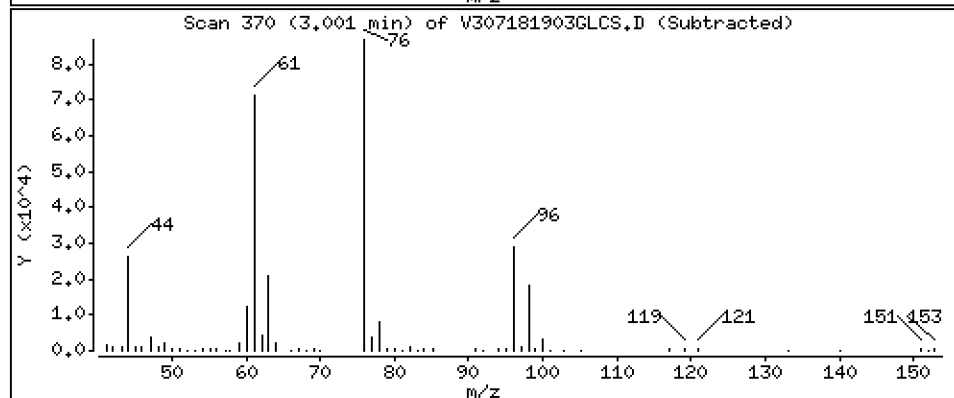
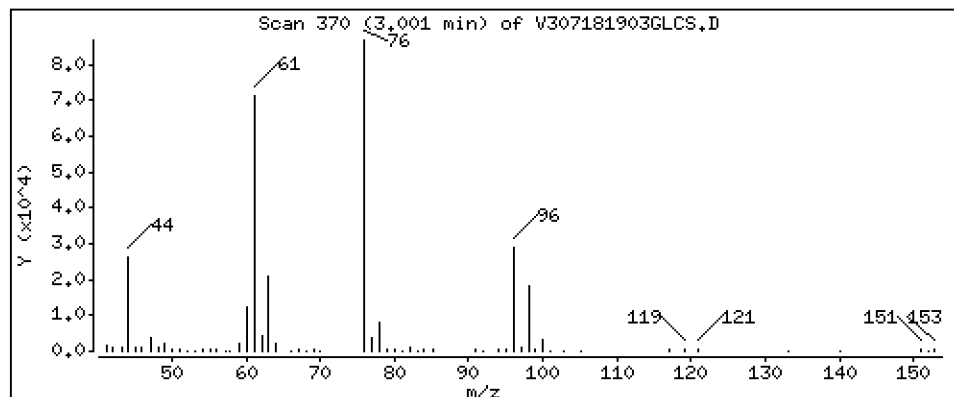
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 9.920 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

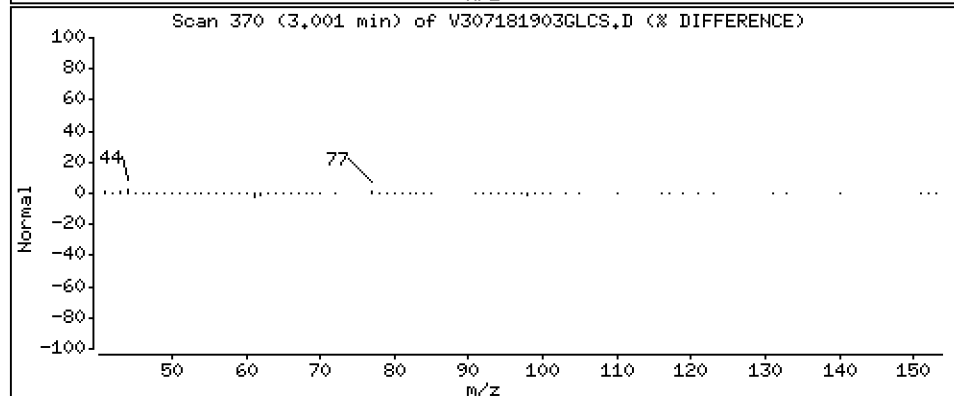
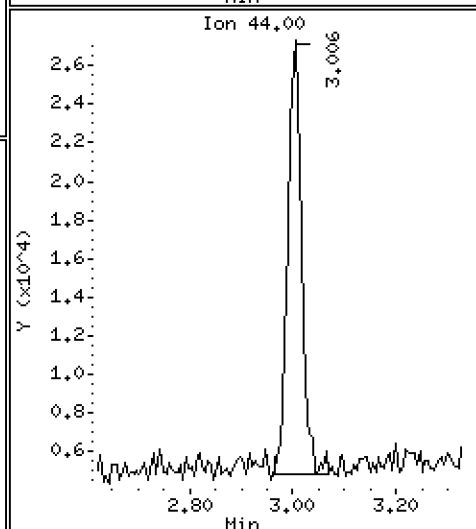
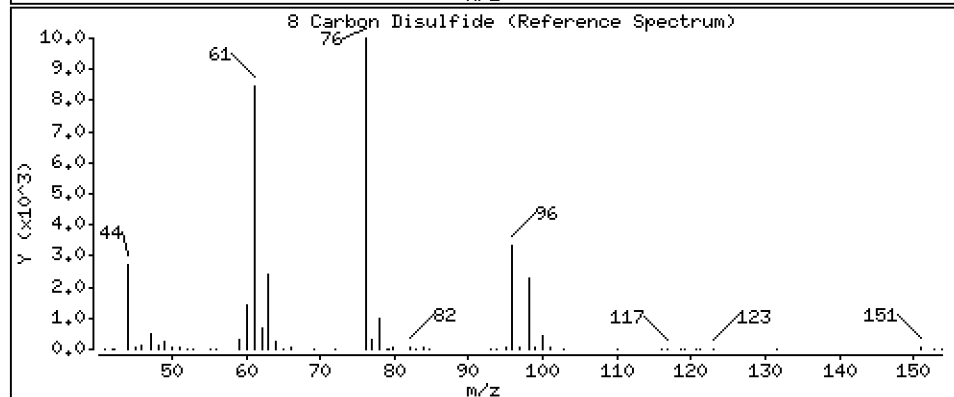
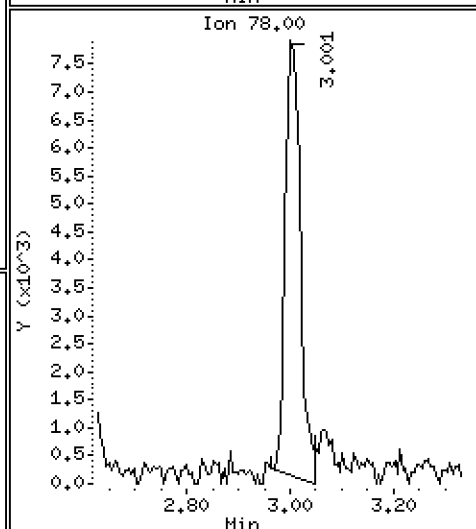
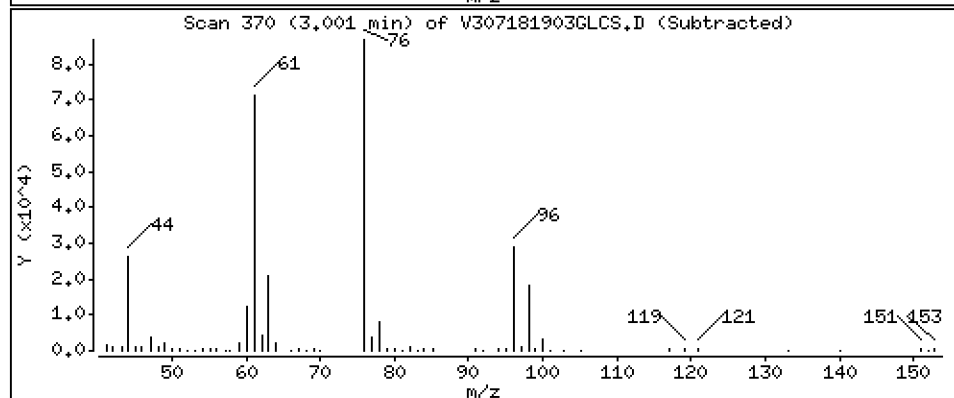
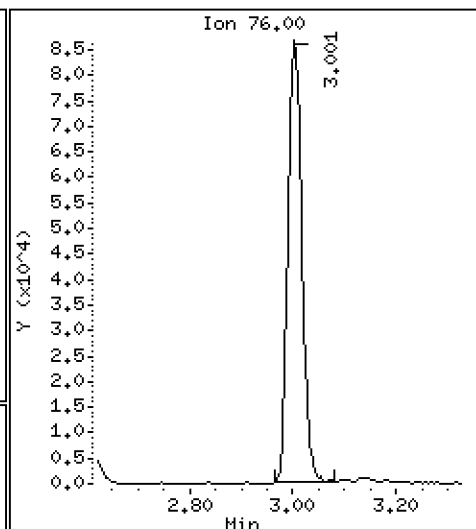
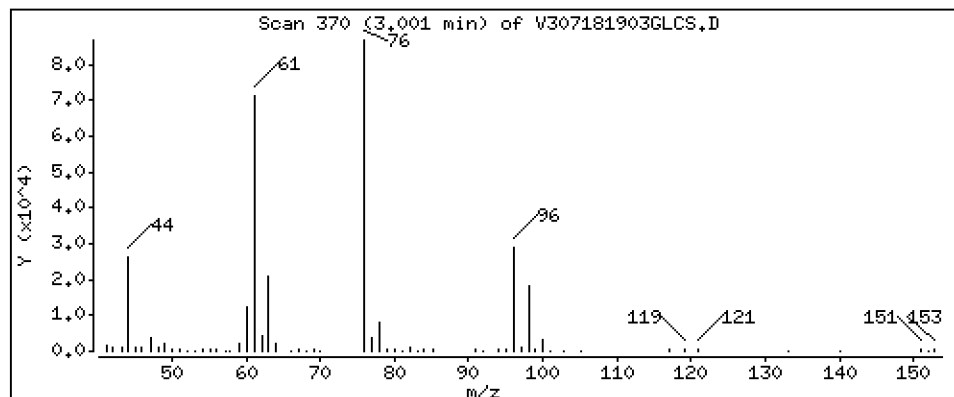
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 9.601 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

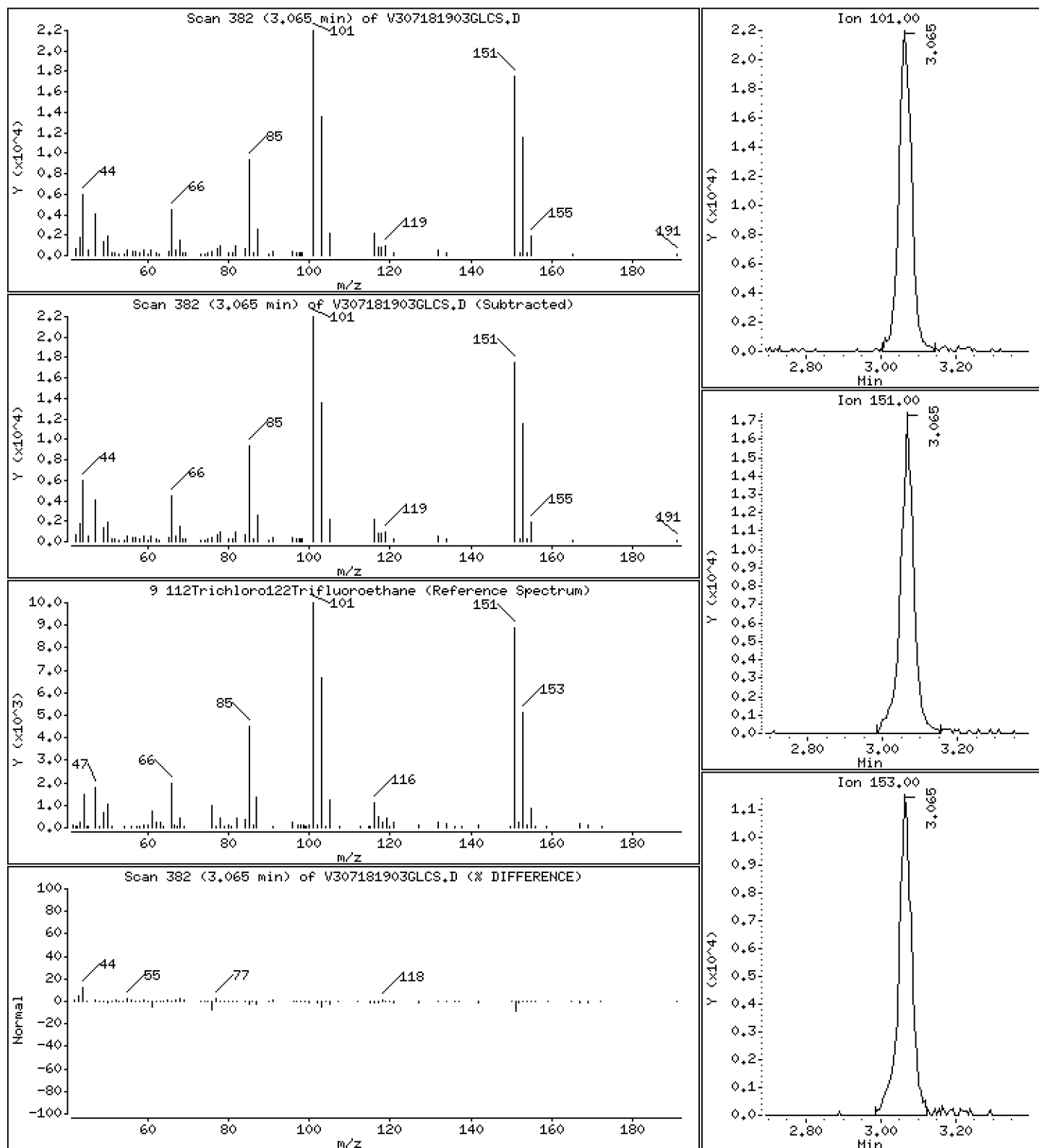
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 10,311 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

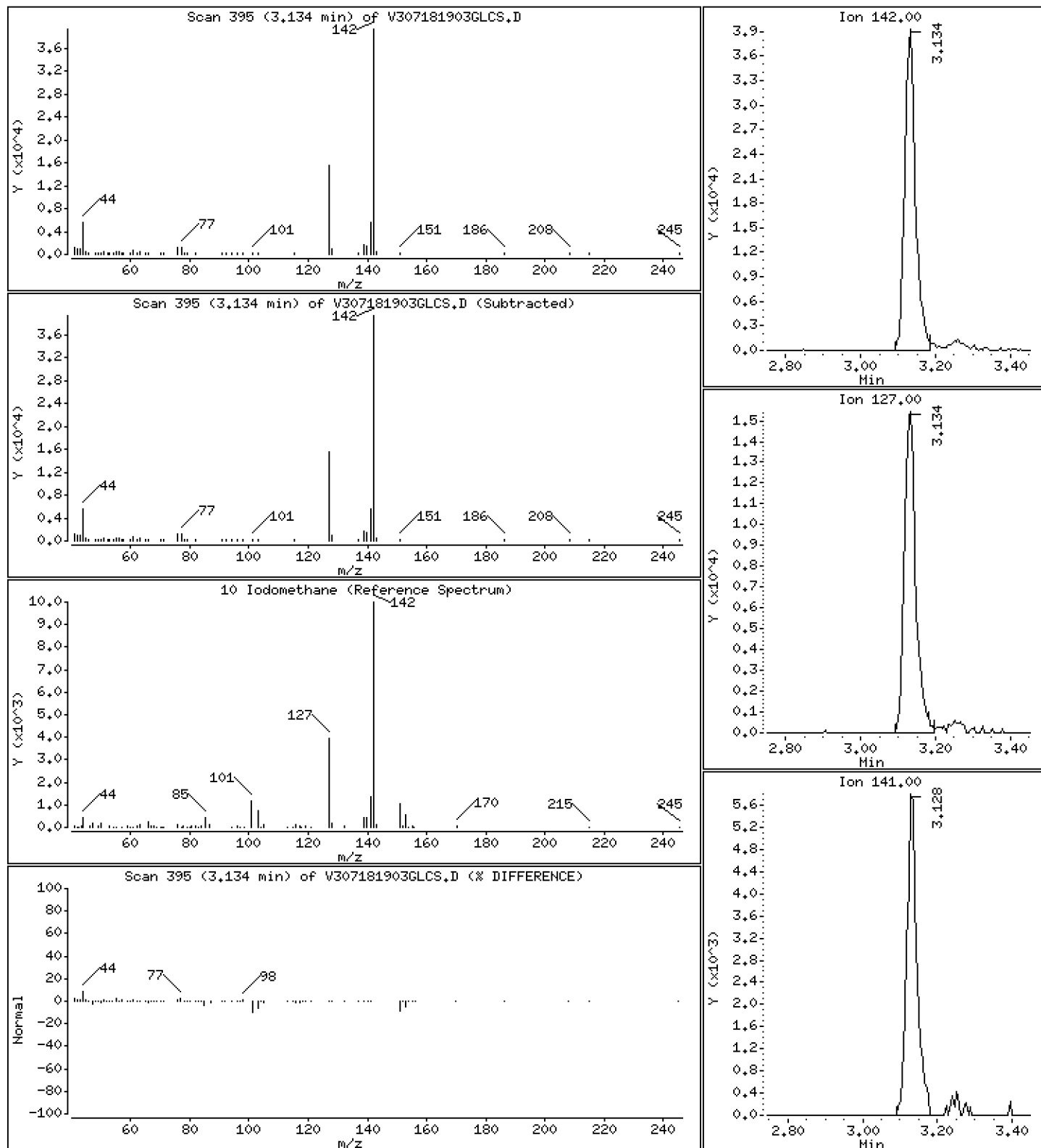
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 9.853 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

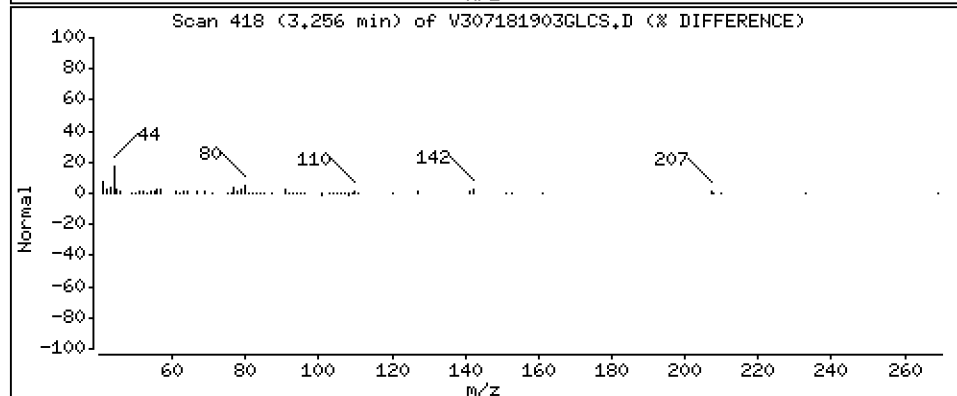
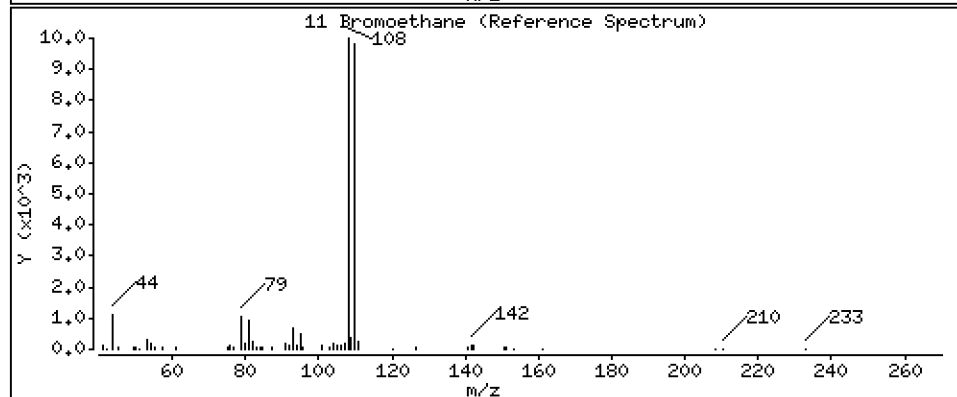
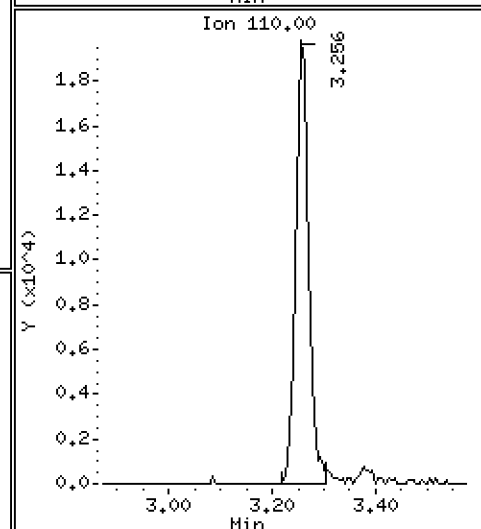
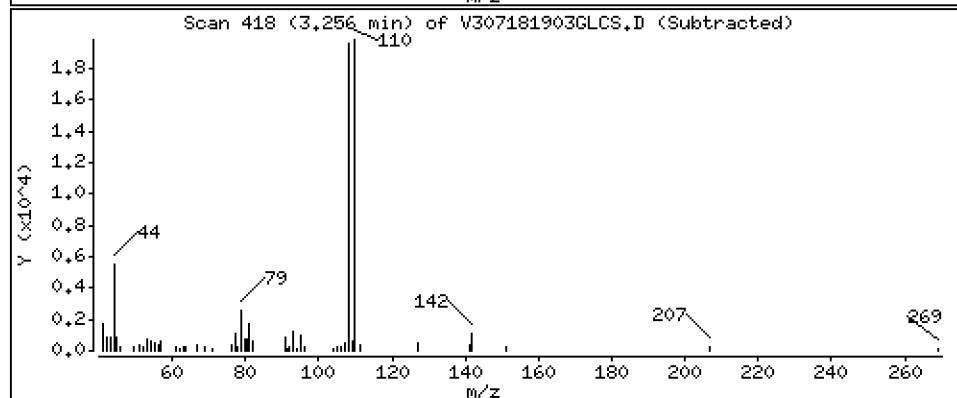
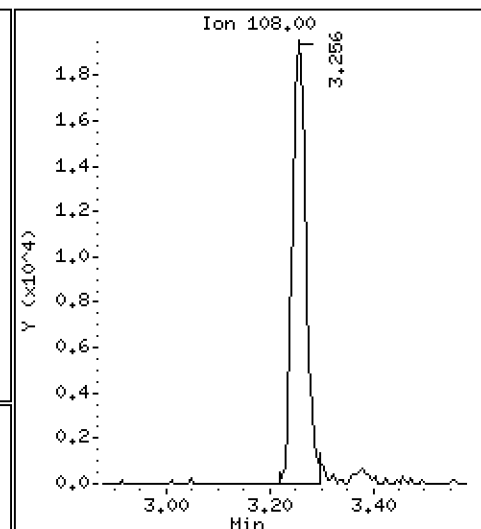
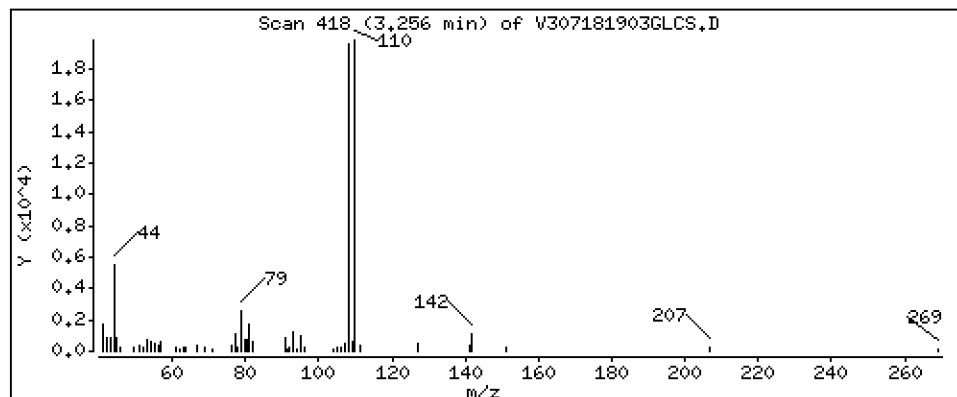
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 9.588 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

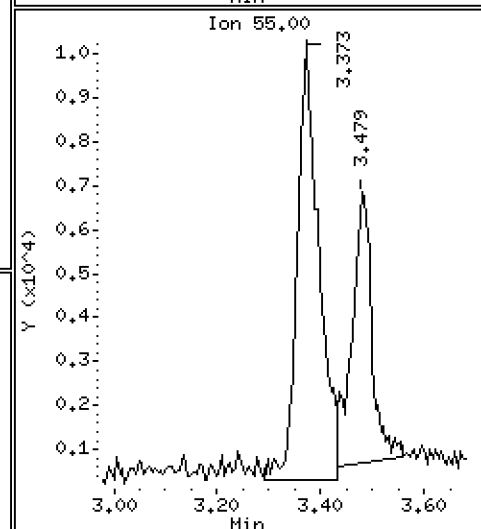
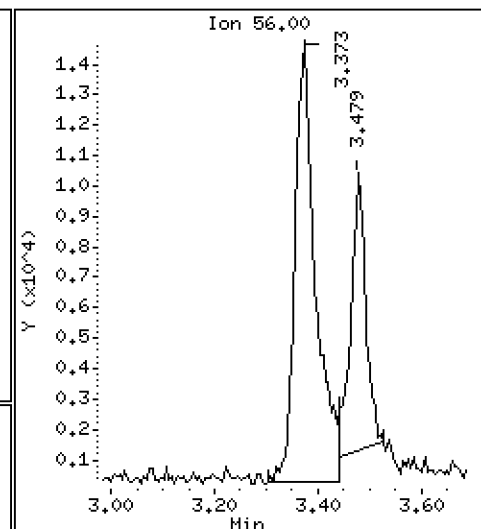
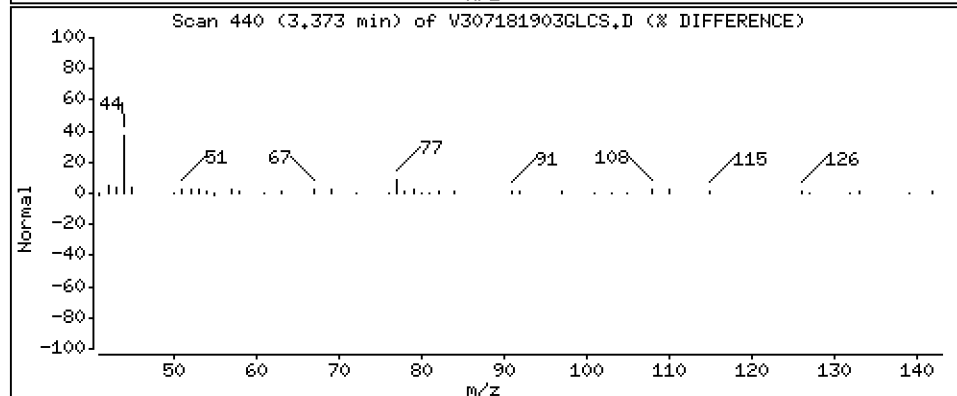
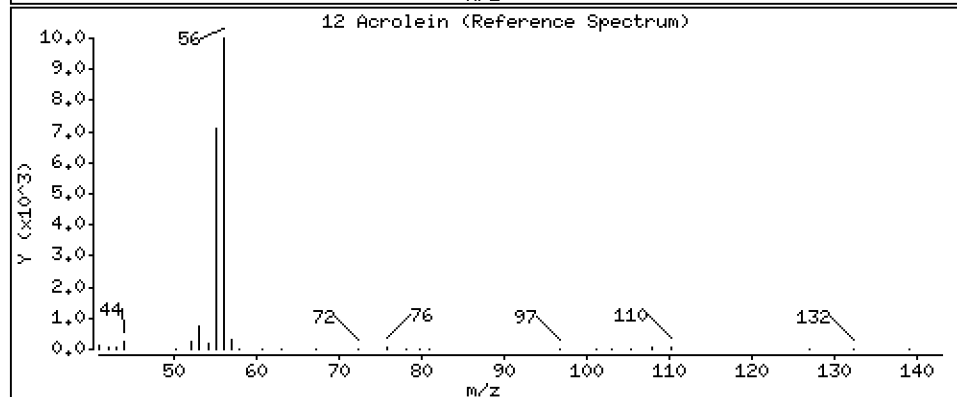
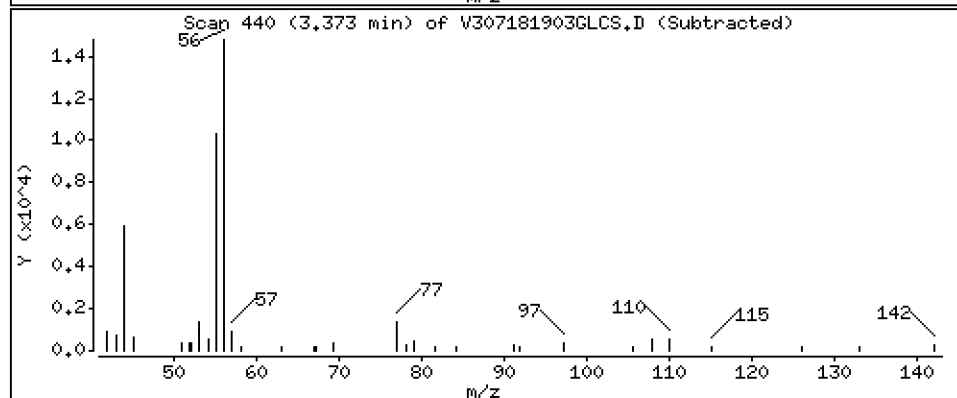
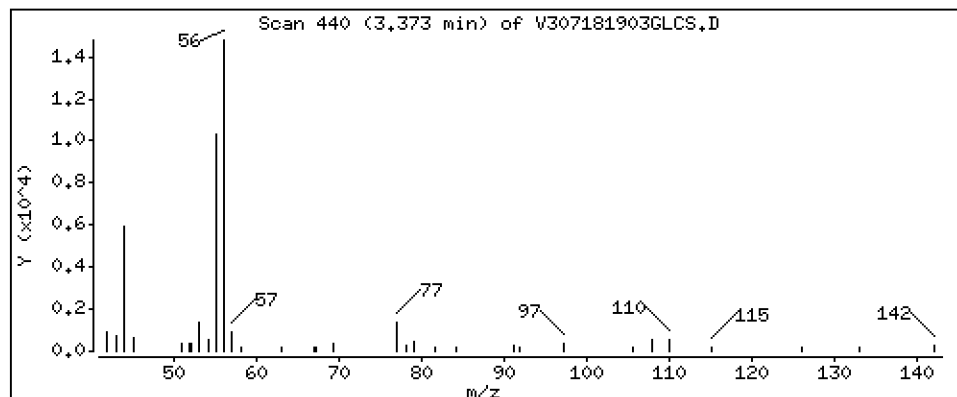
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 36,017 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

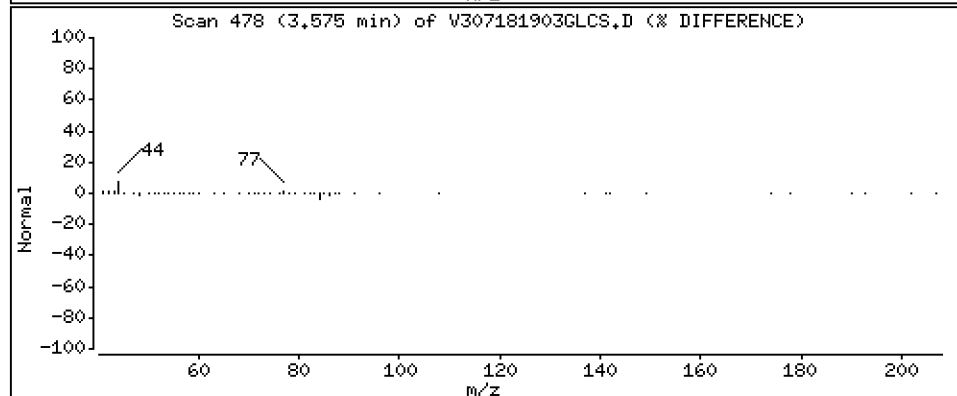
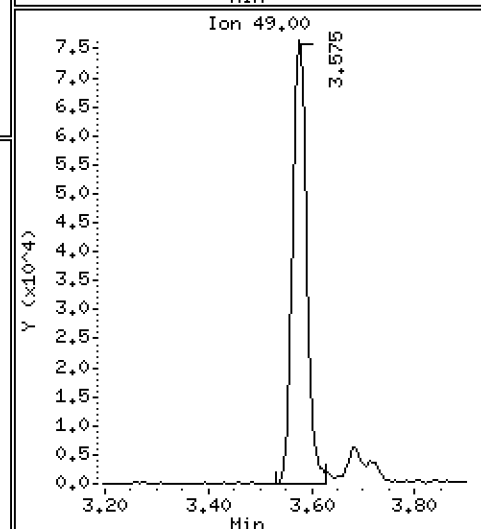
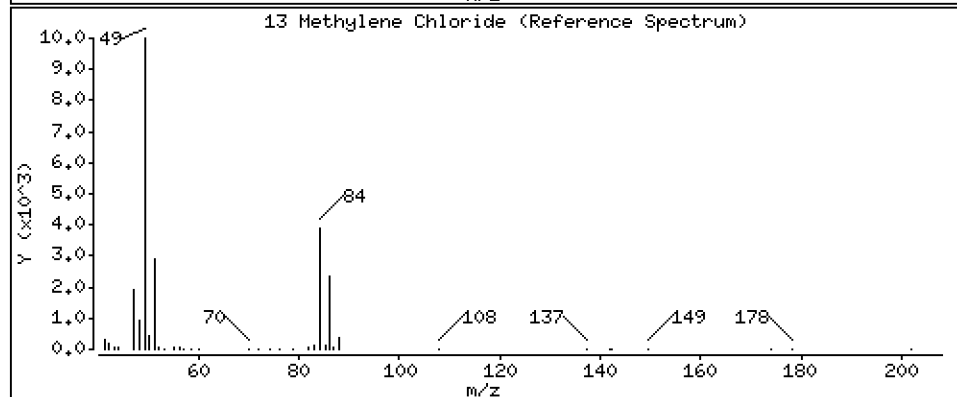
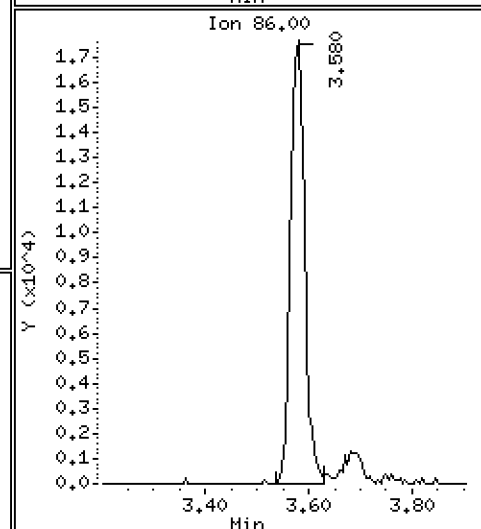
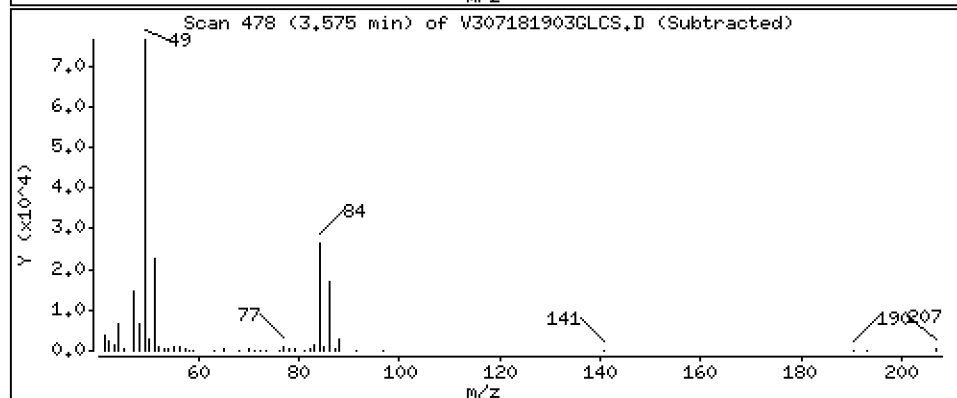
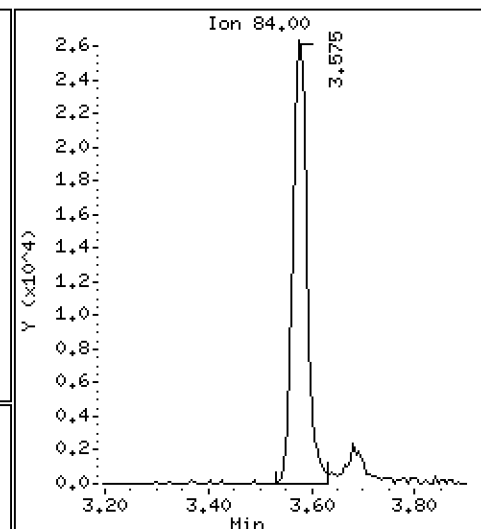
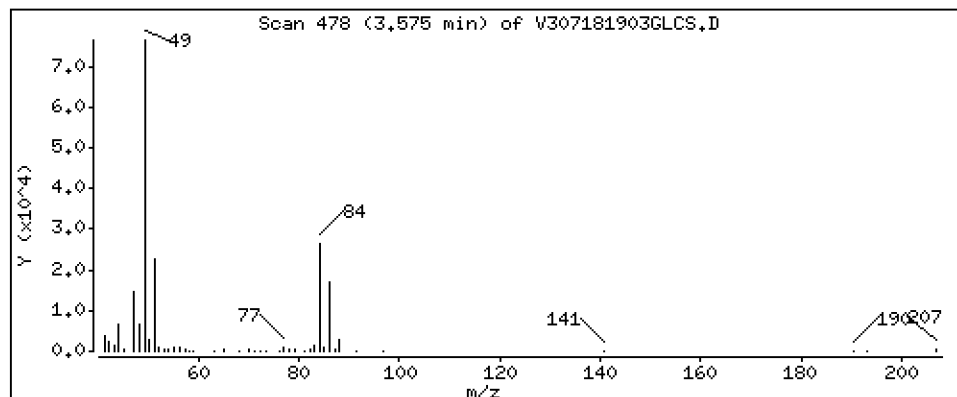
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 9.101 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

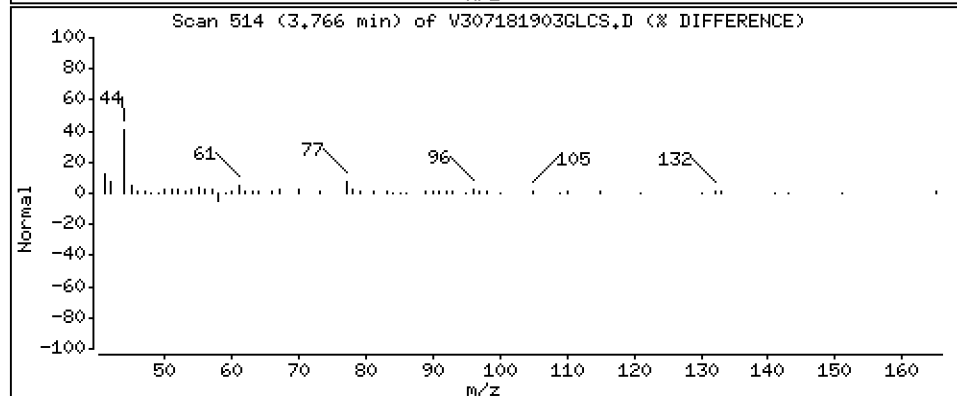
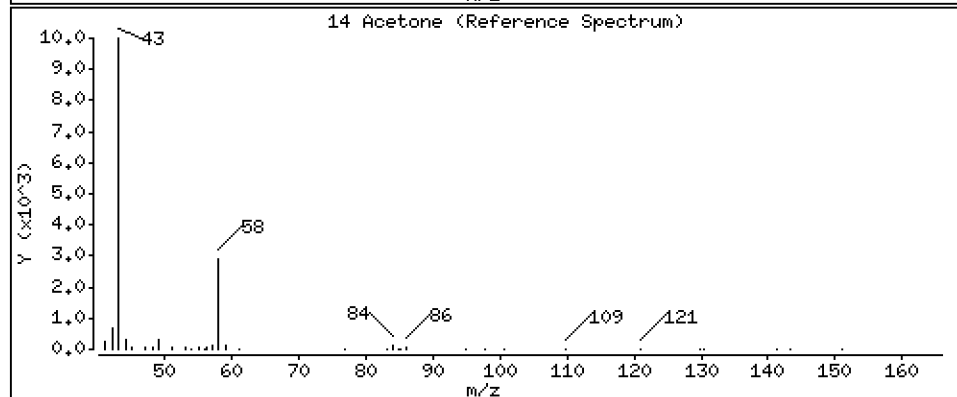
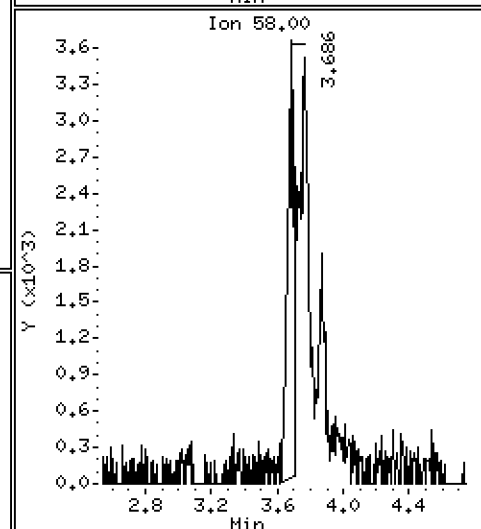
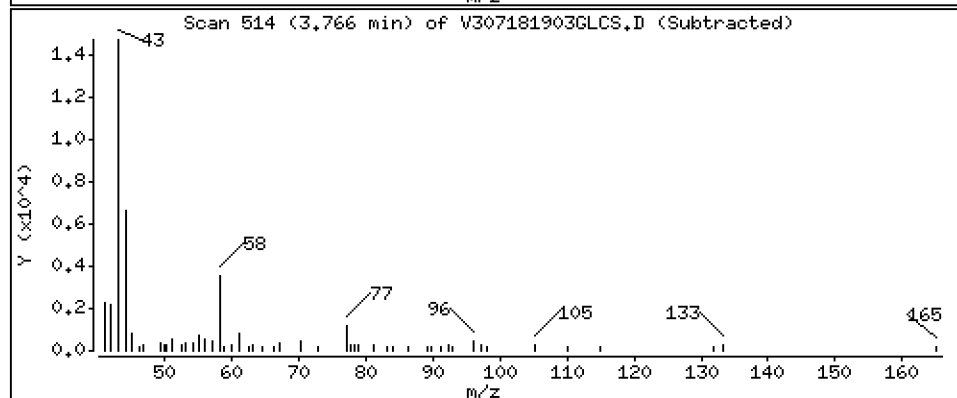
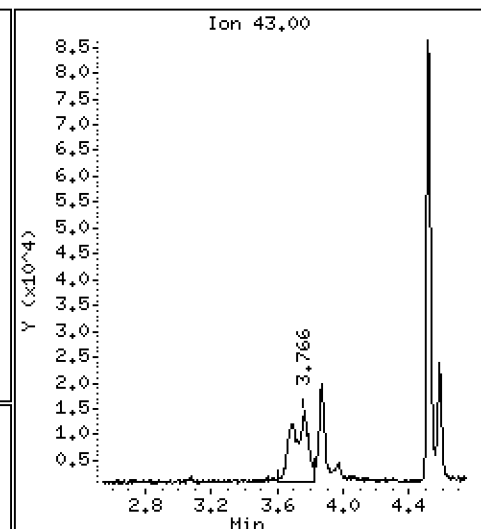
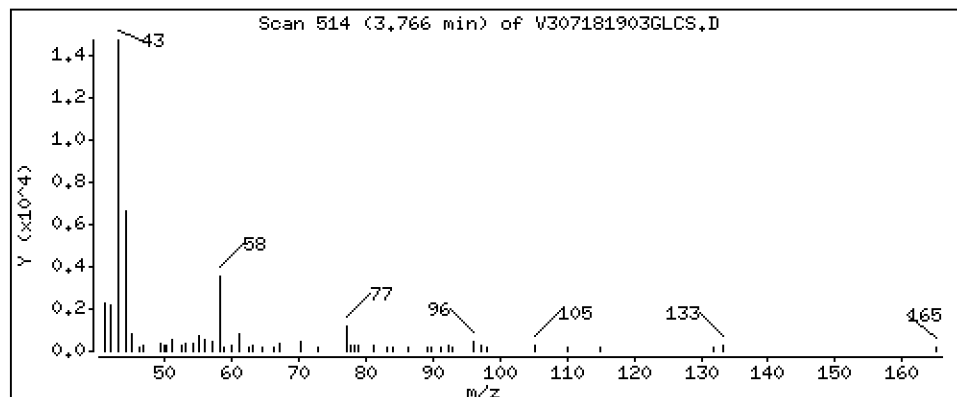
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 49,956 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

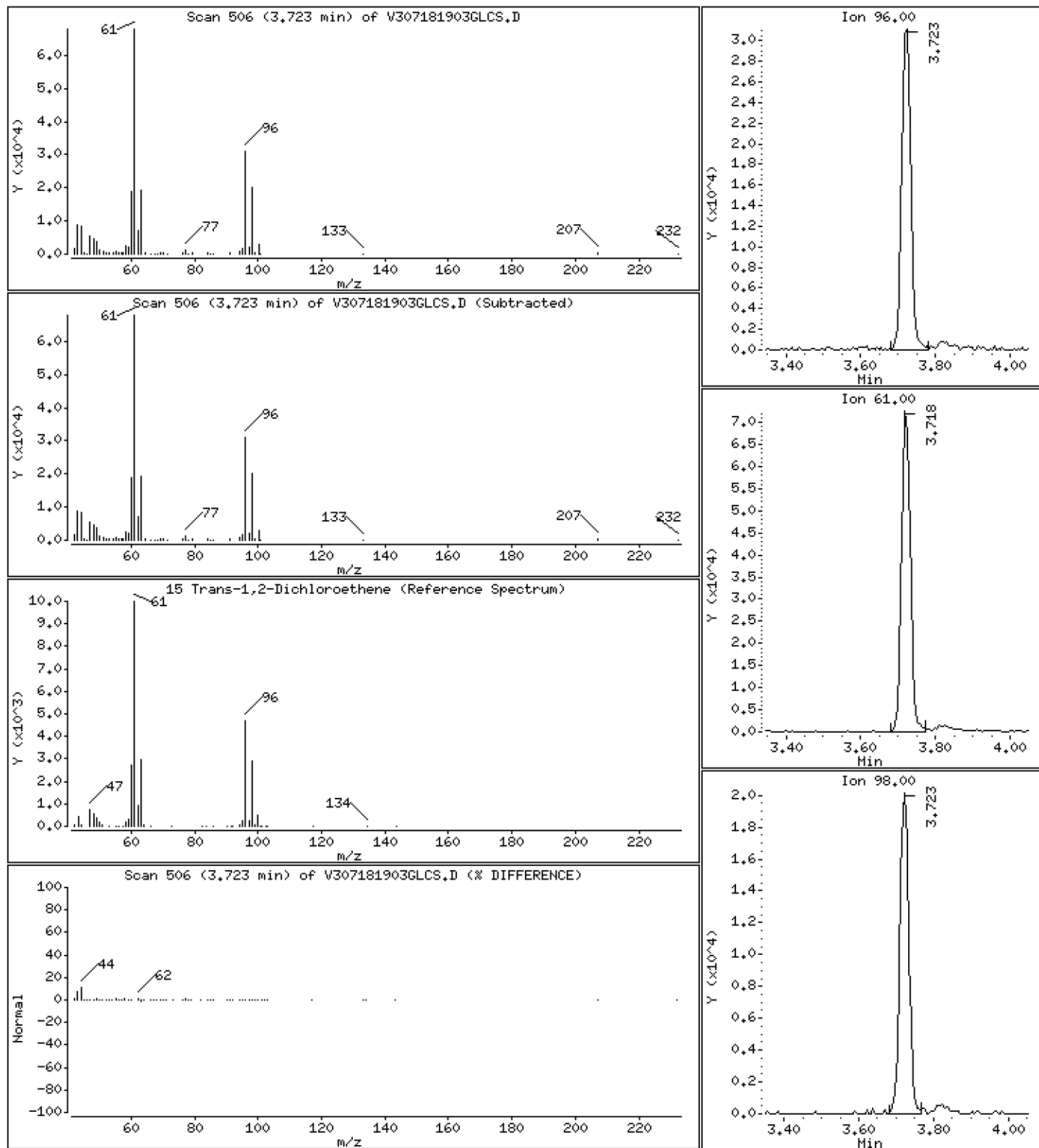
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 8.773 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

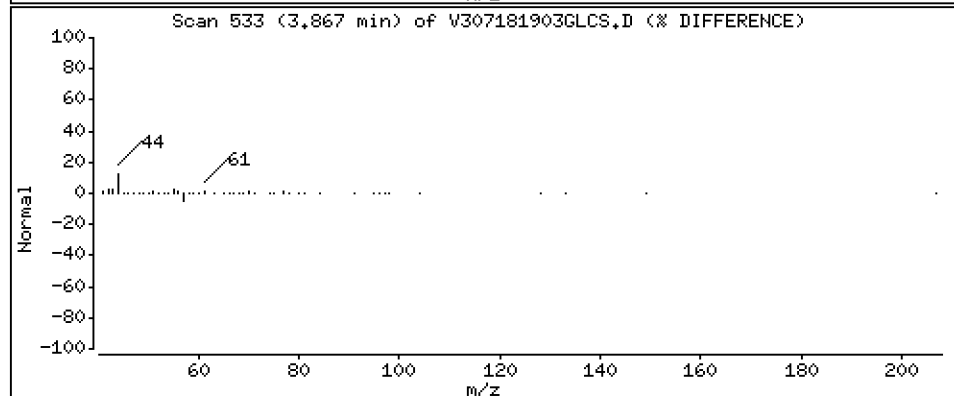
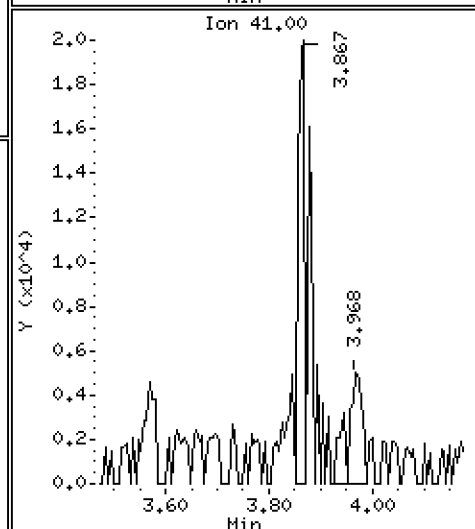
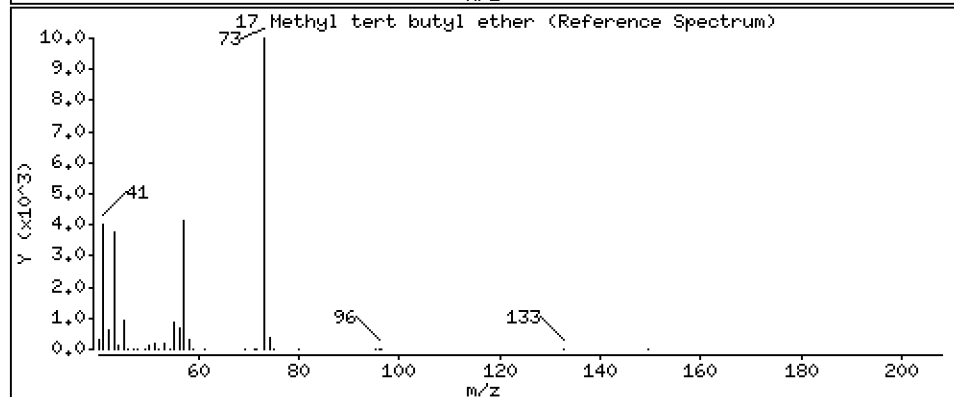
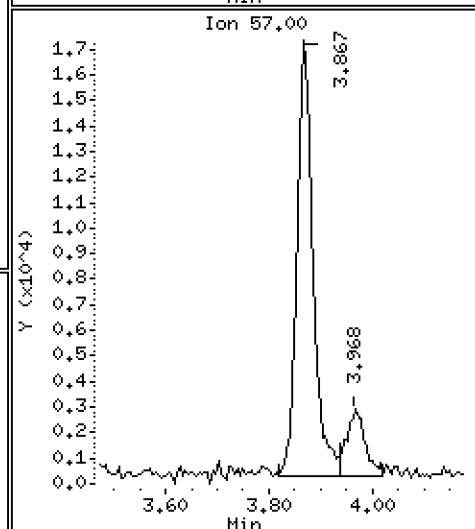
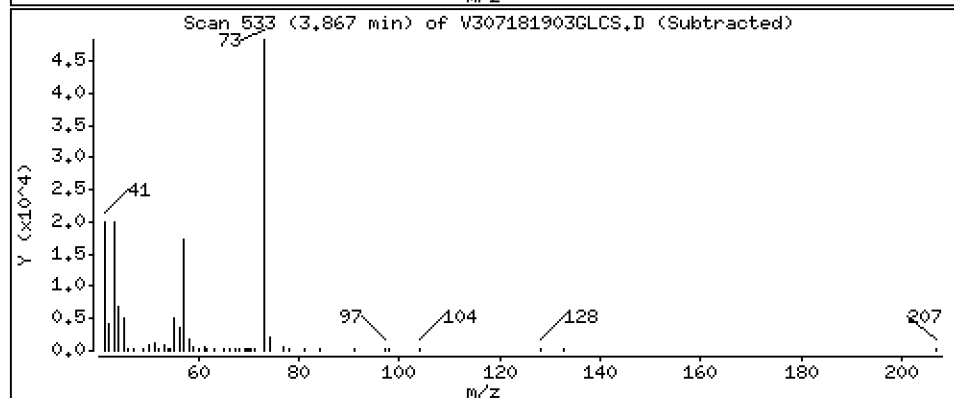
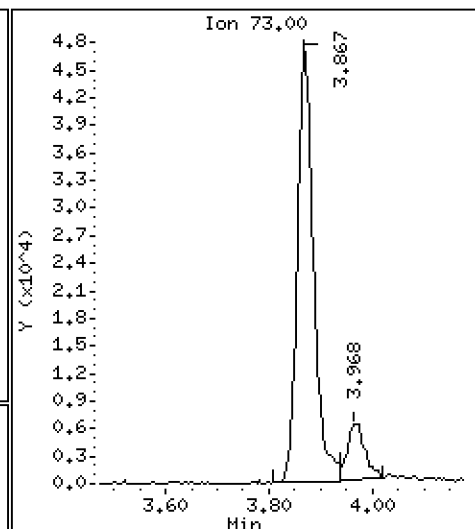
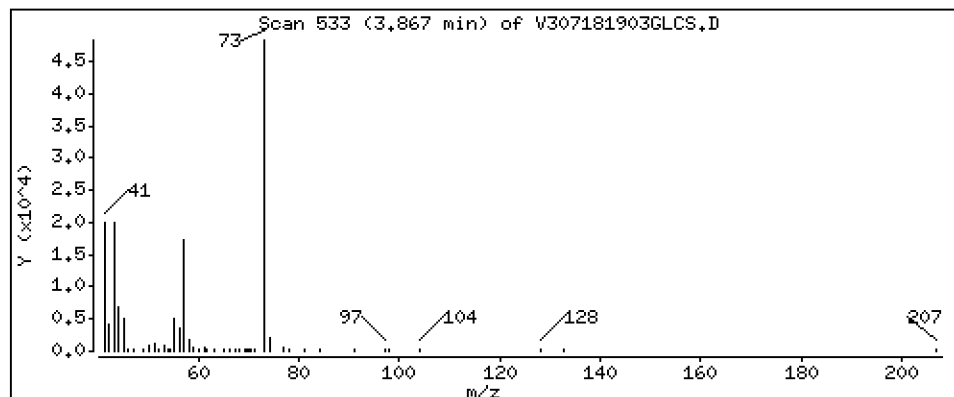
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

17 Methyl tert butyl ether

Concentration: 9.260 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

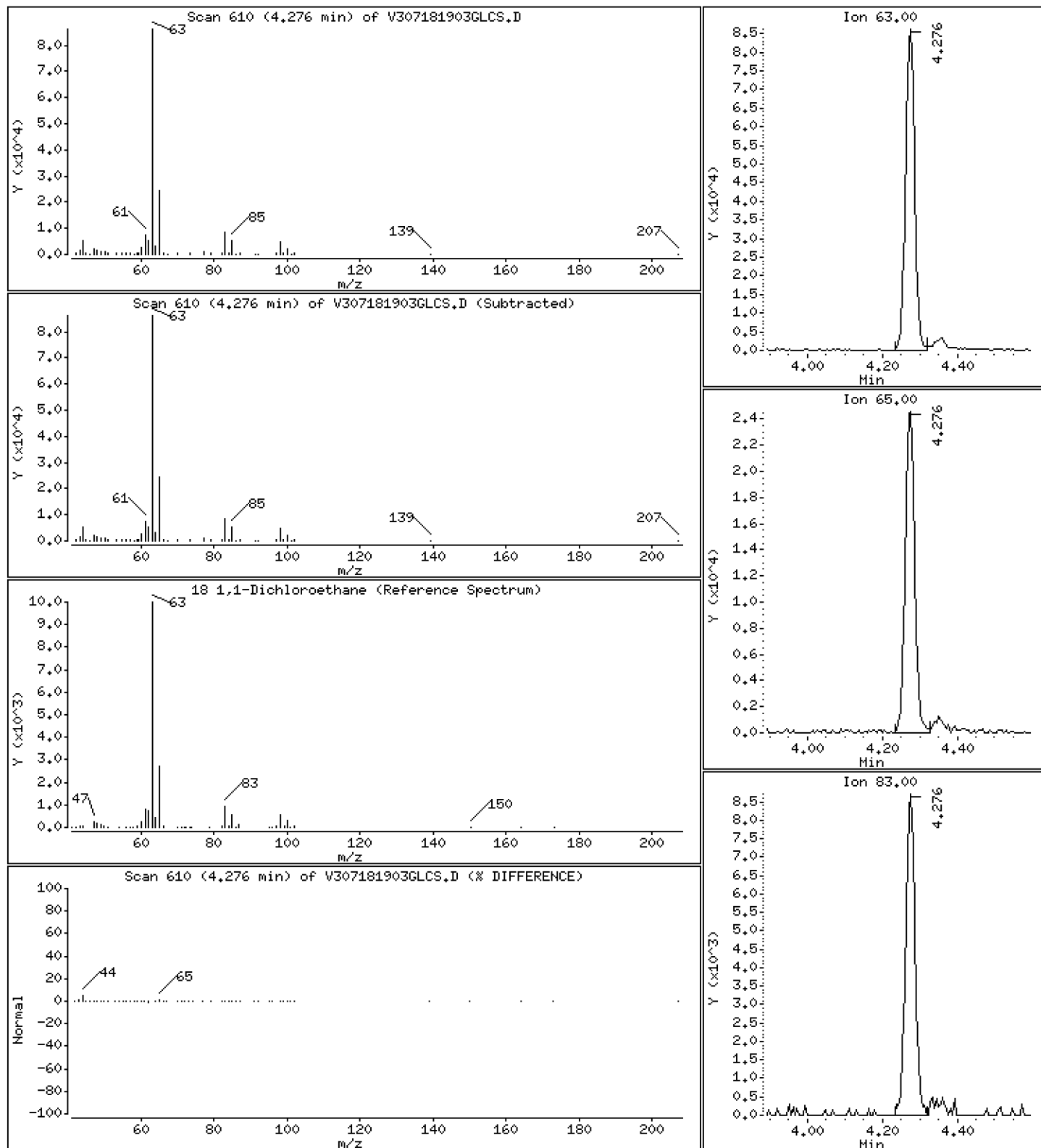
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

18 1,1-Dichloroethane

Concentration: 10,526 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

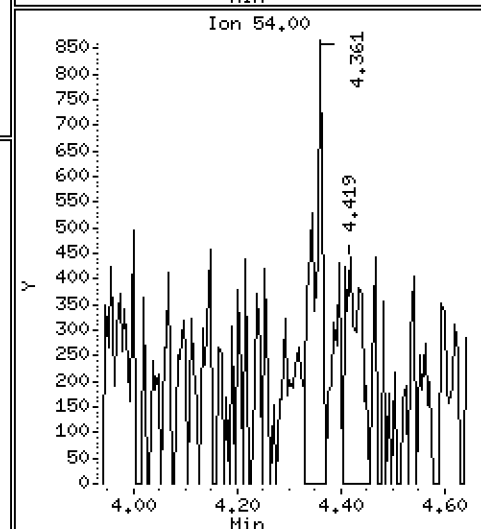
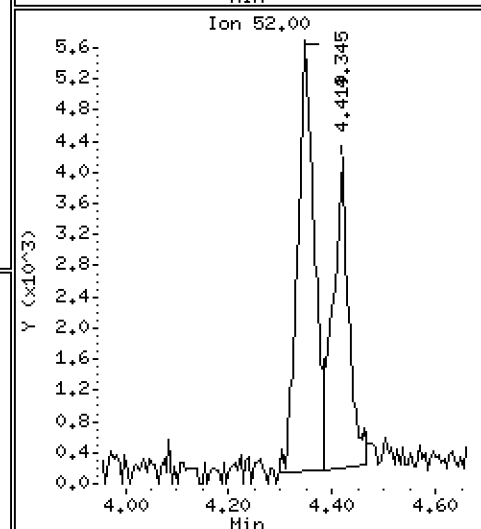
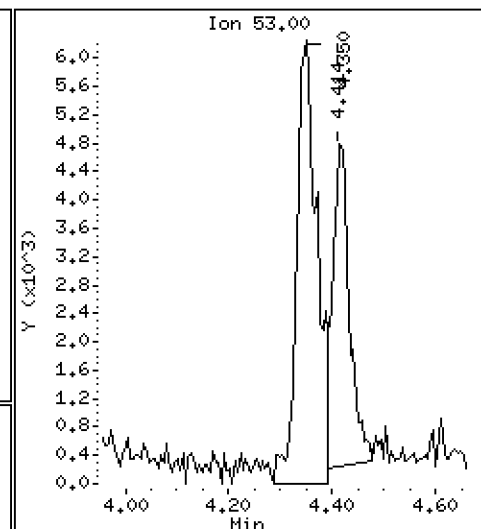
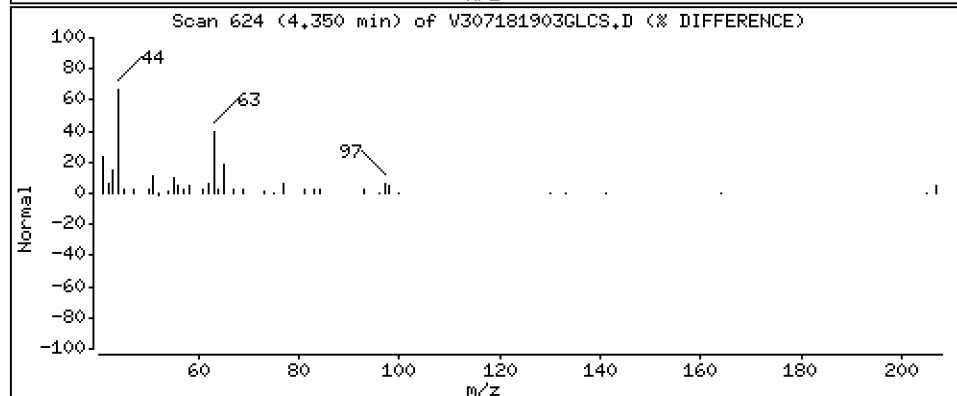
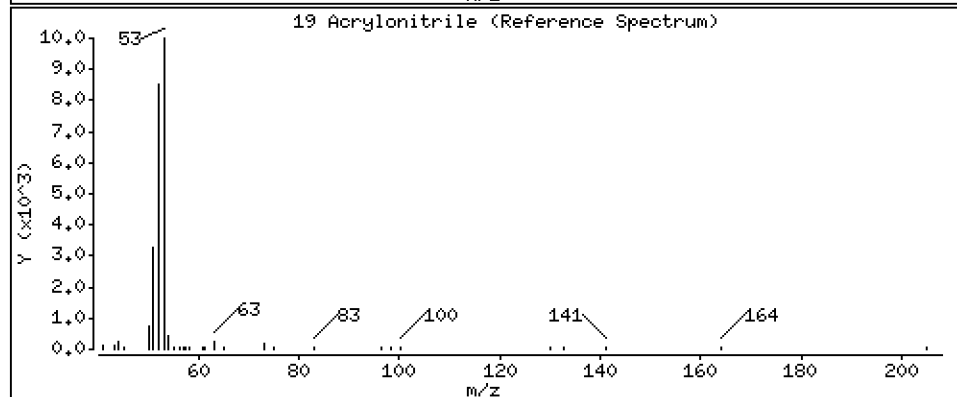
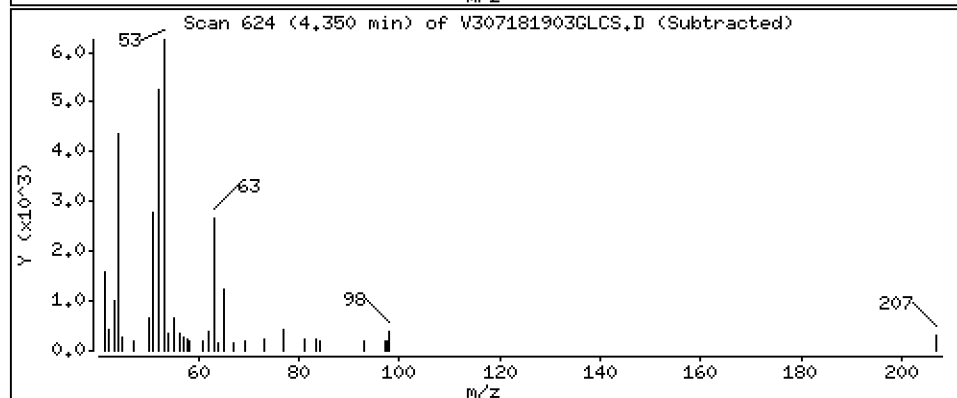
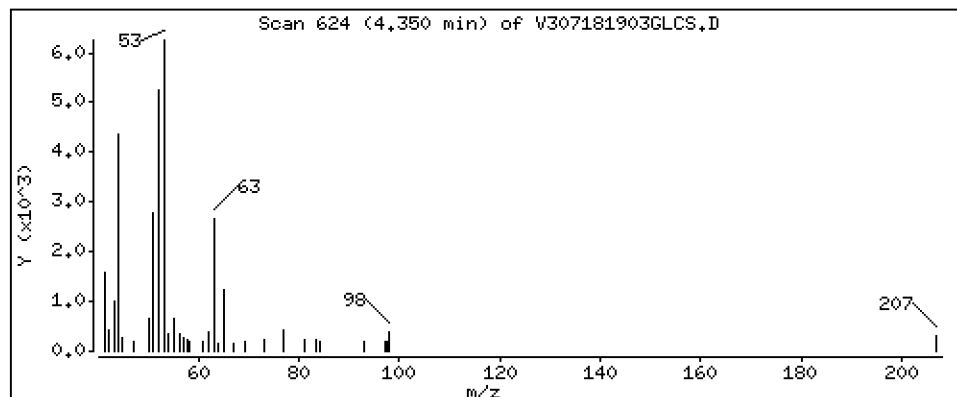
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

19 Acrylonitrile

Concentration: 8.512 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

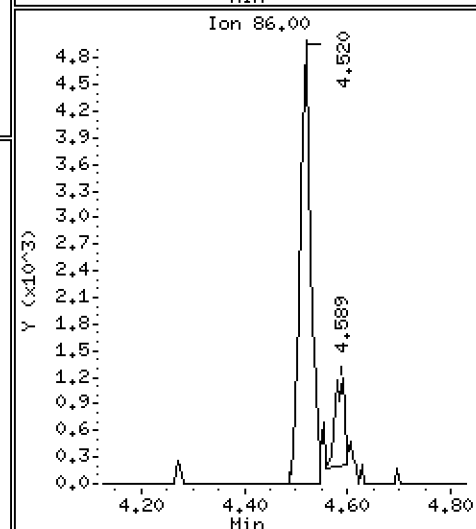
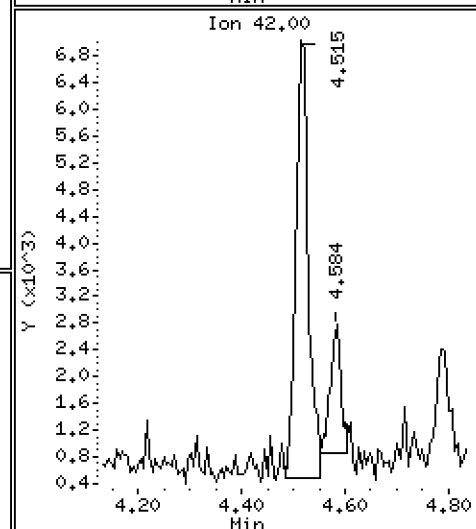
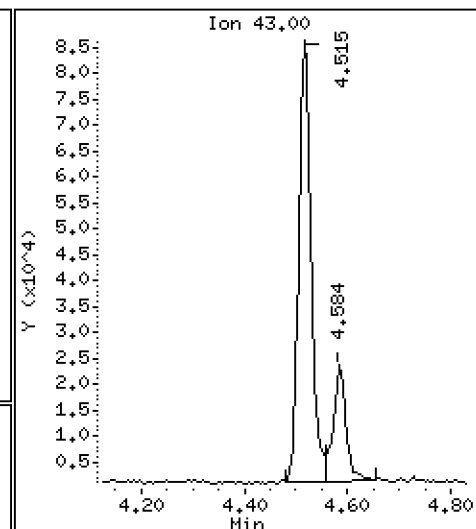
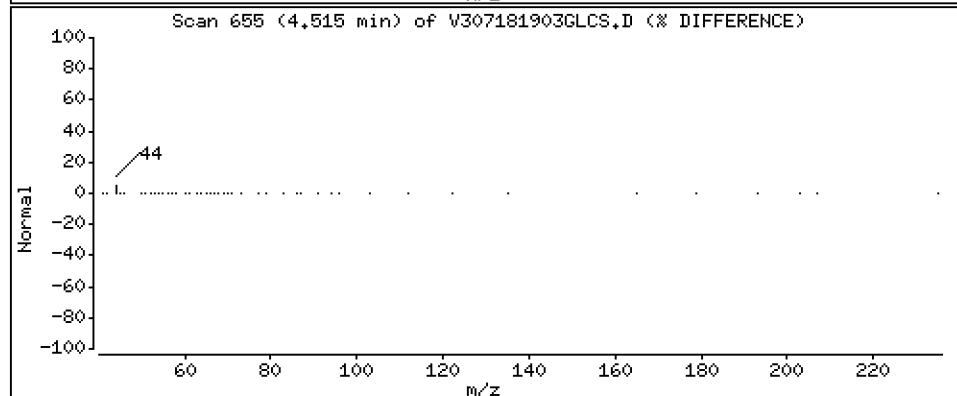
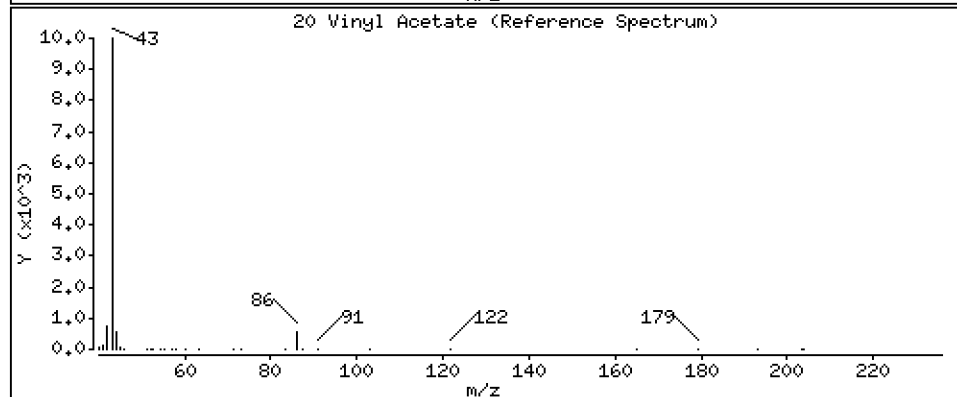
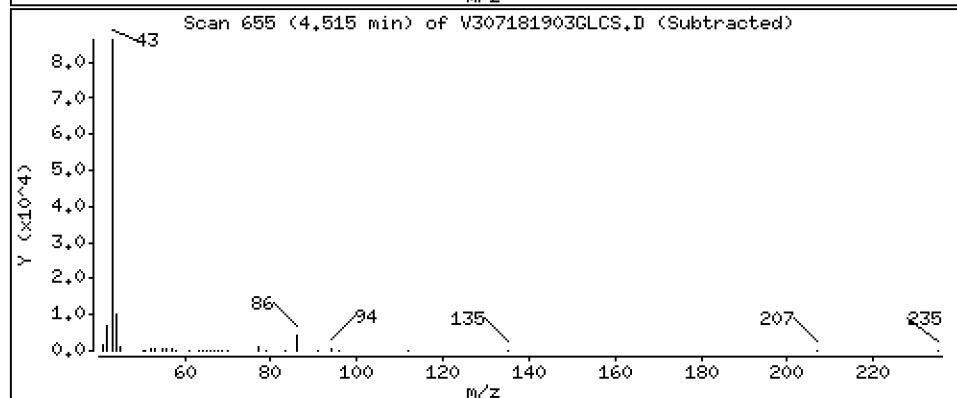
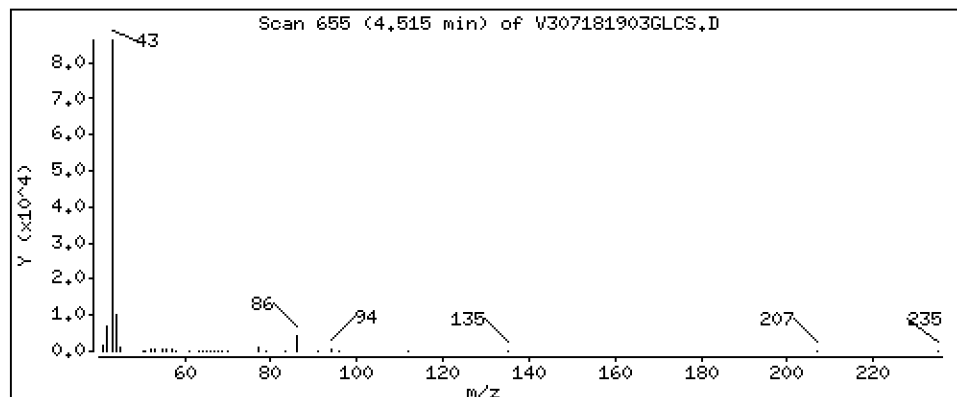
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

20 Vinyl Acetate

Concentration: 9.287 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

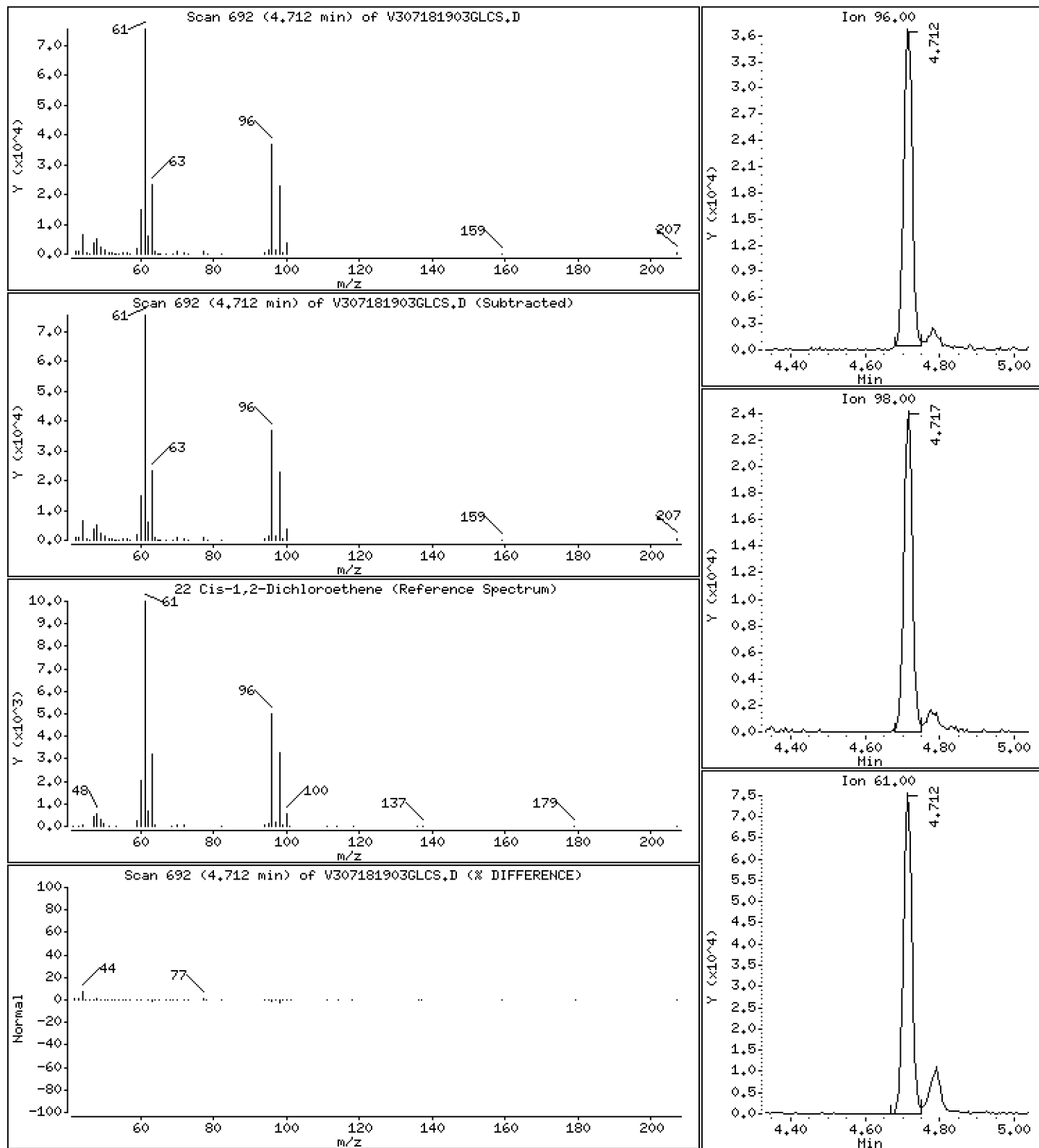
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

22 Cis-1,2-Dichloroethene

Concentration: 9.591 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

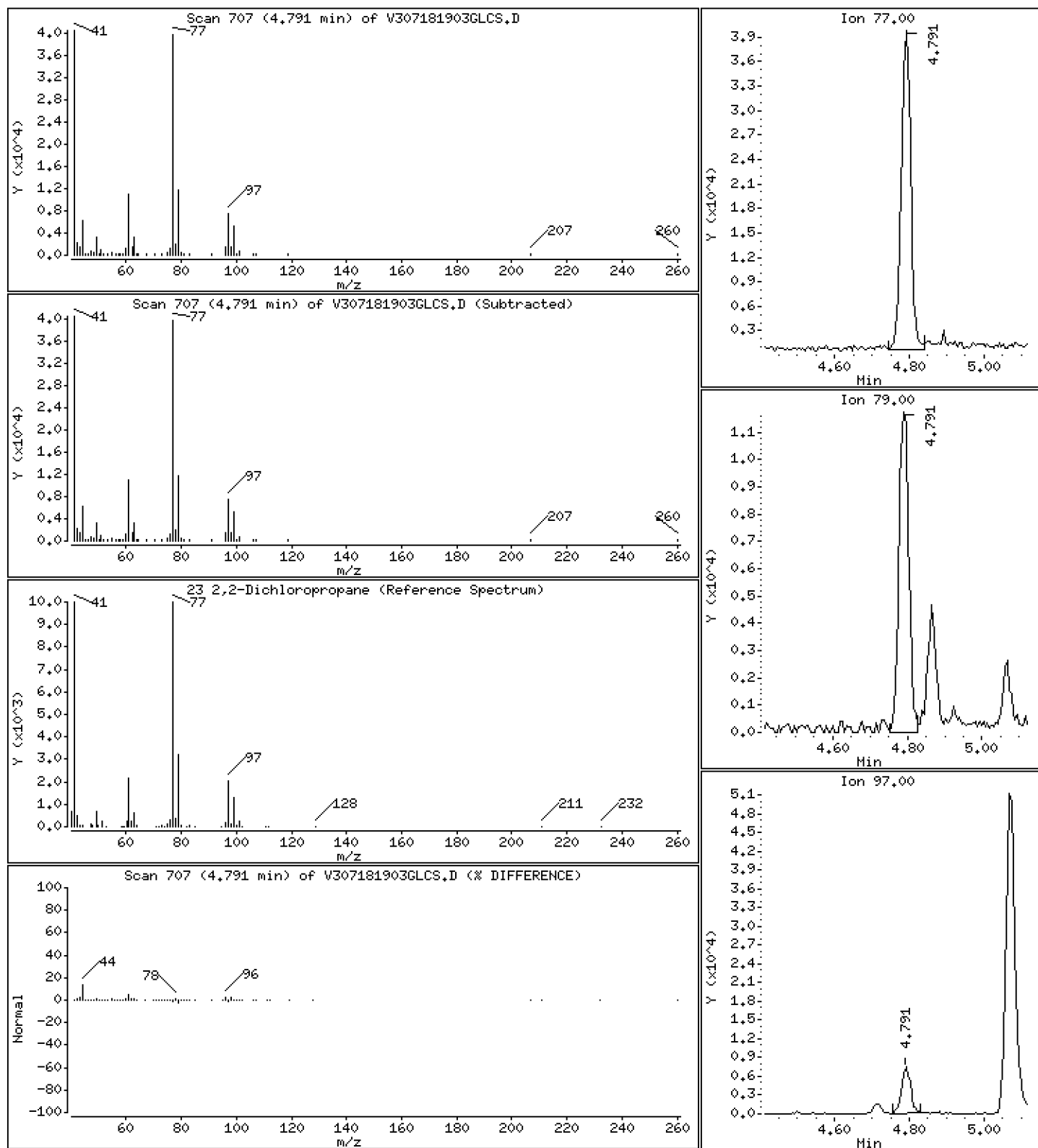
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

23 2,2-Dichloropropane

Concentration: 12.078 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

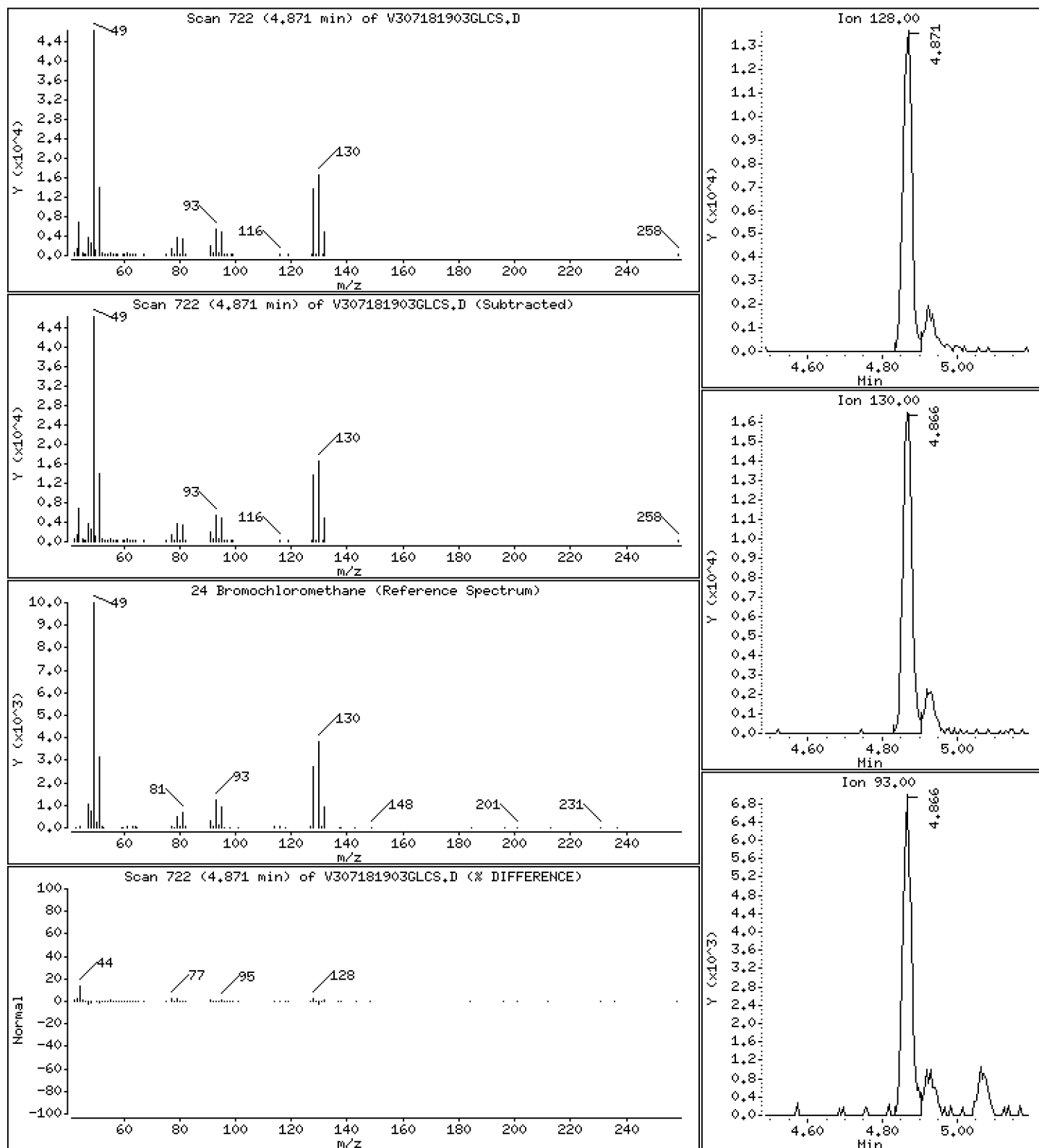
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

24 Bromochloromethane

Concentration: 9.384 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

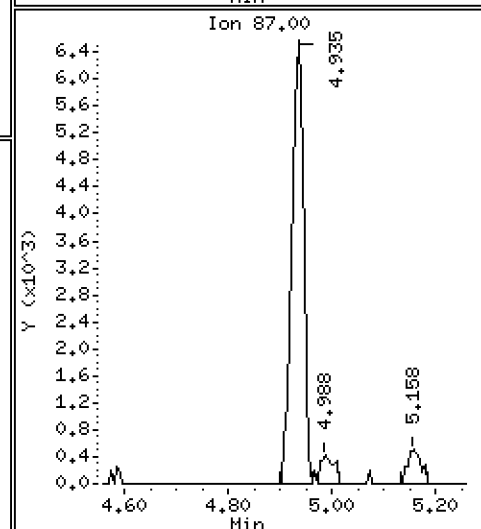
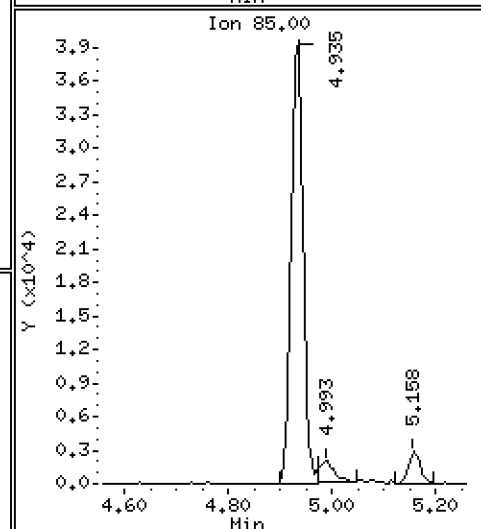
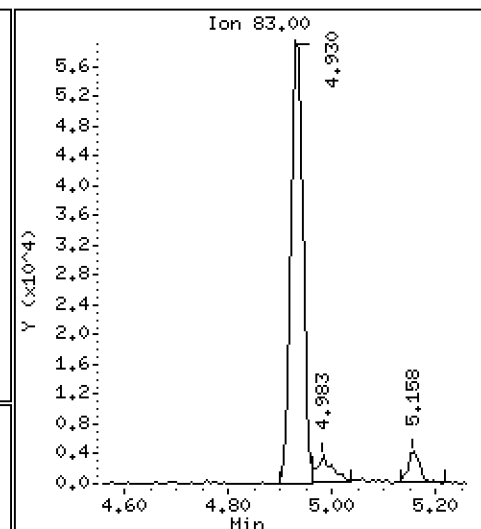
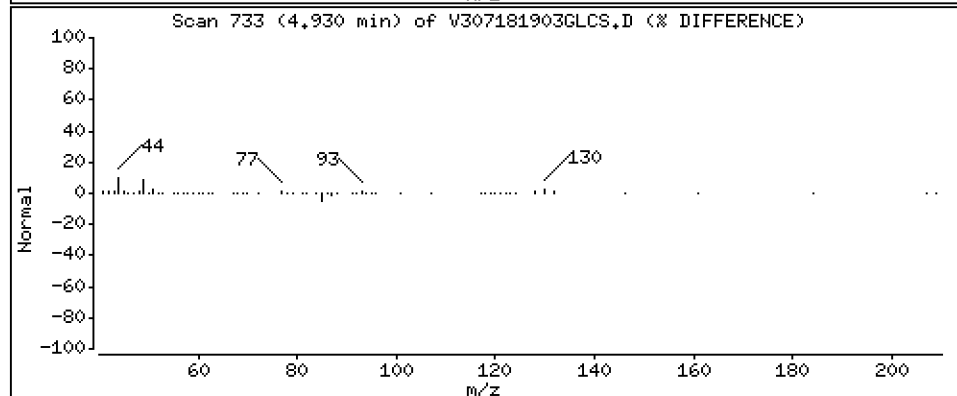
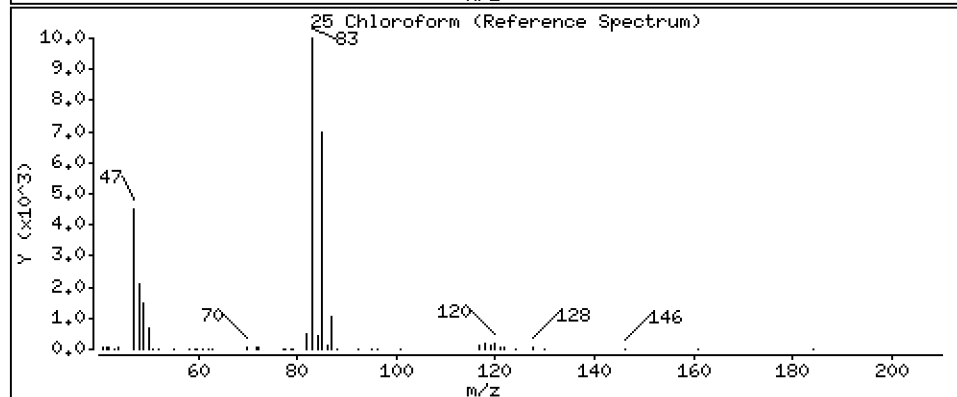
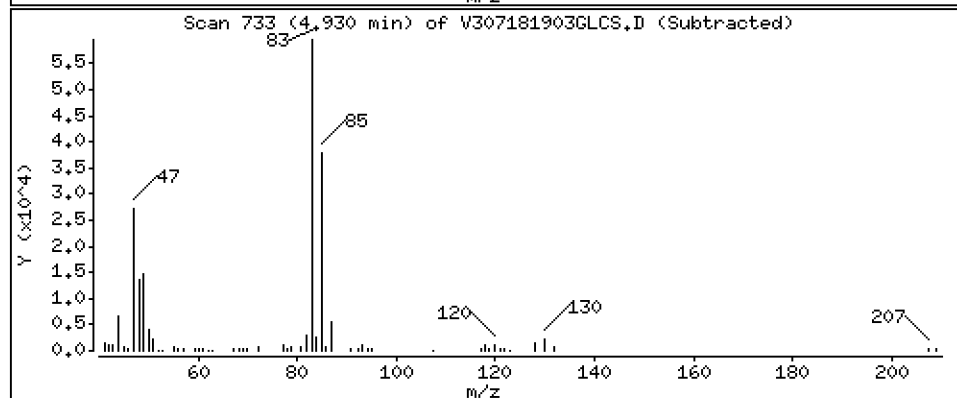
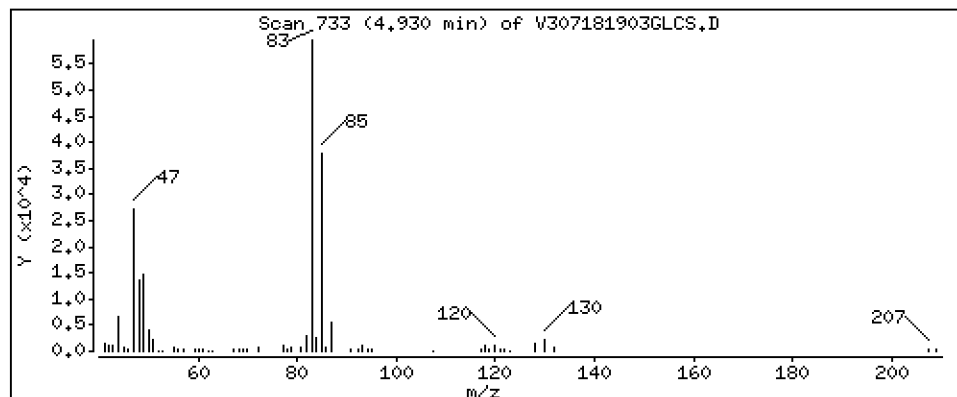
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

25 Chloroform

Concentration: 9.688 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

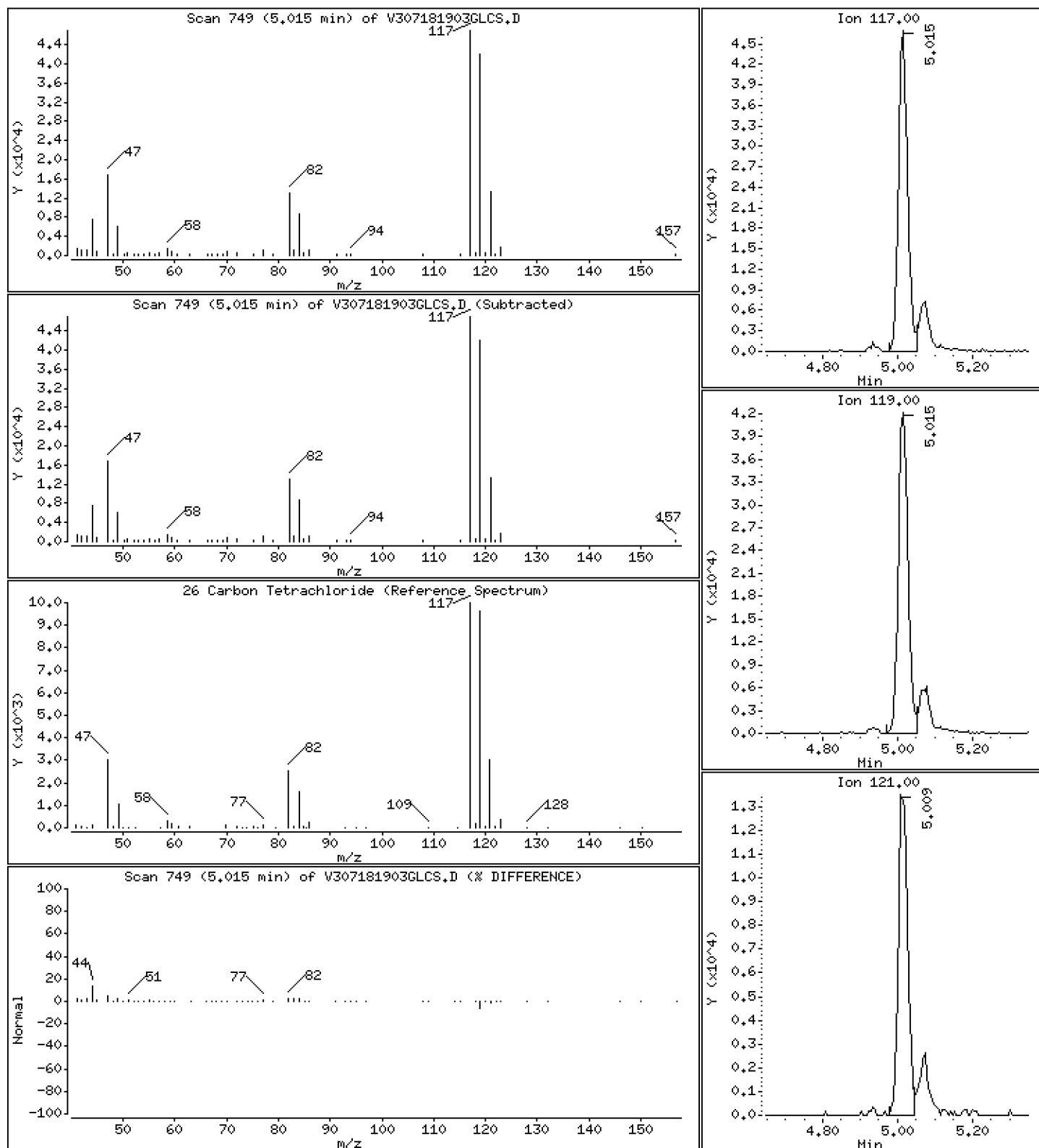
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

26 Carbon Tetrachloride

Concentration: 10.775 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

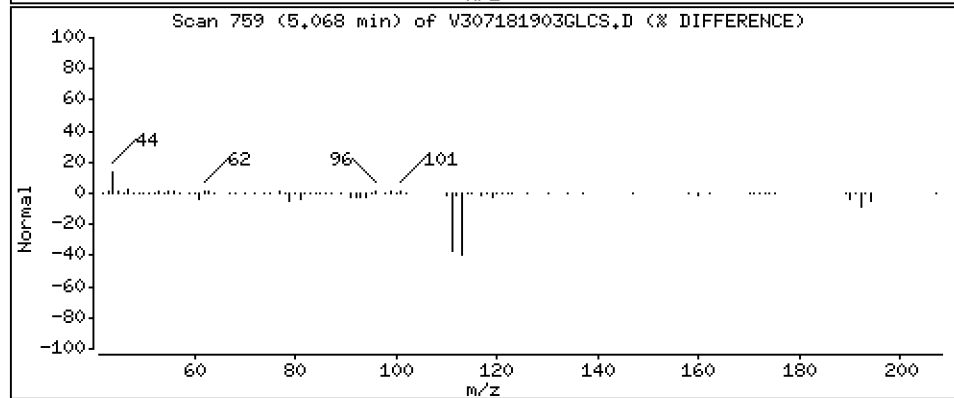
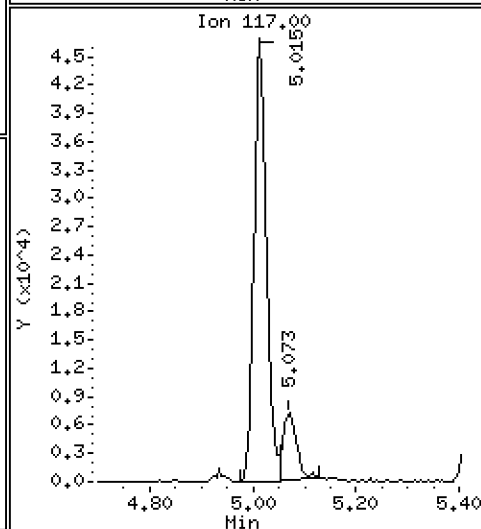
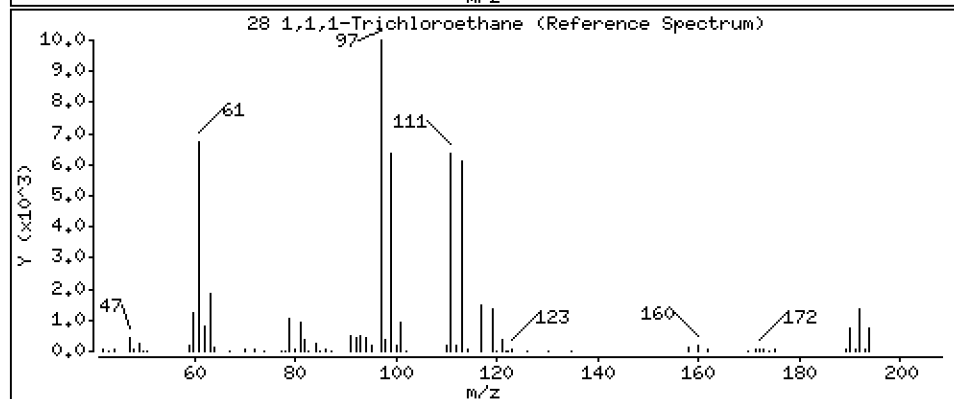
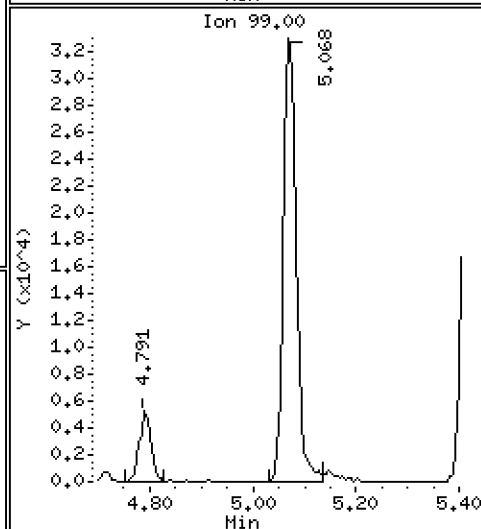
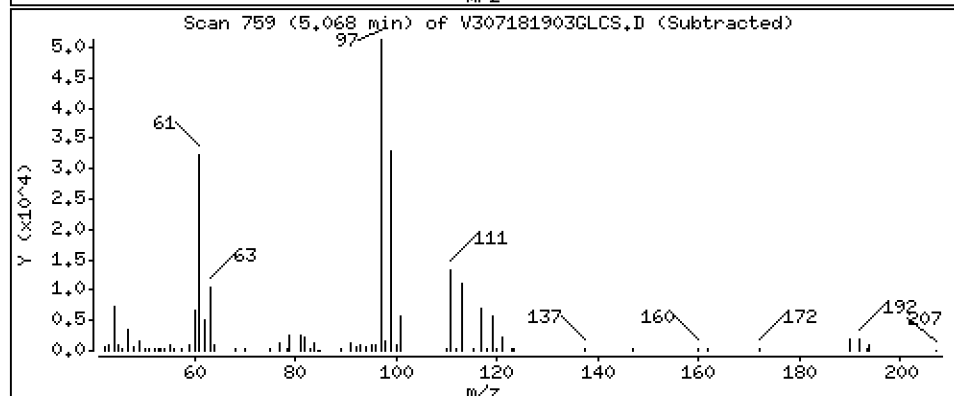
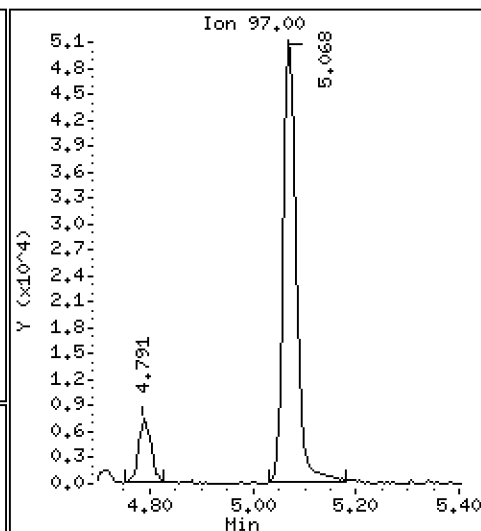
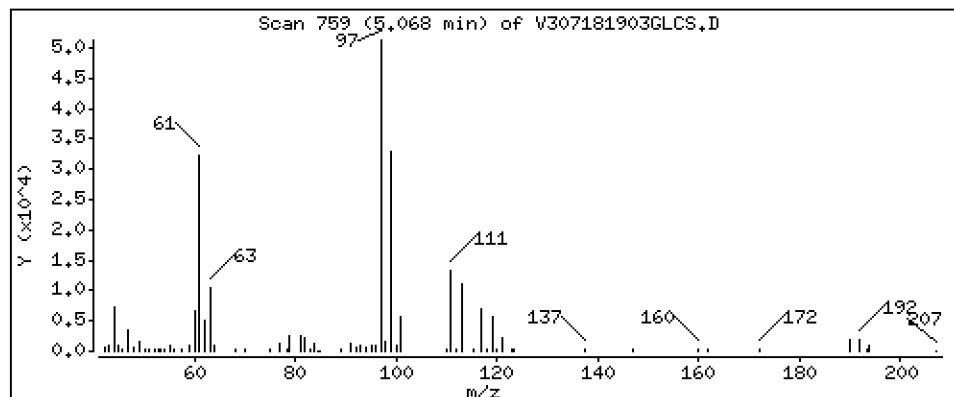
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

28 1,1,1-Trichloroethane

Concentration: 10,330 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

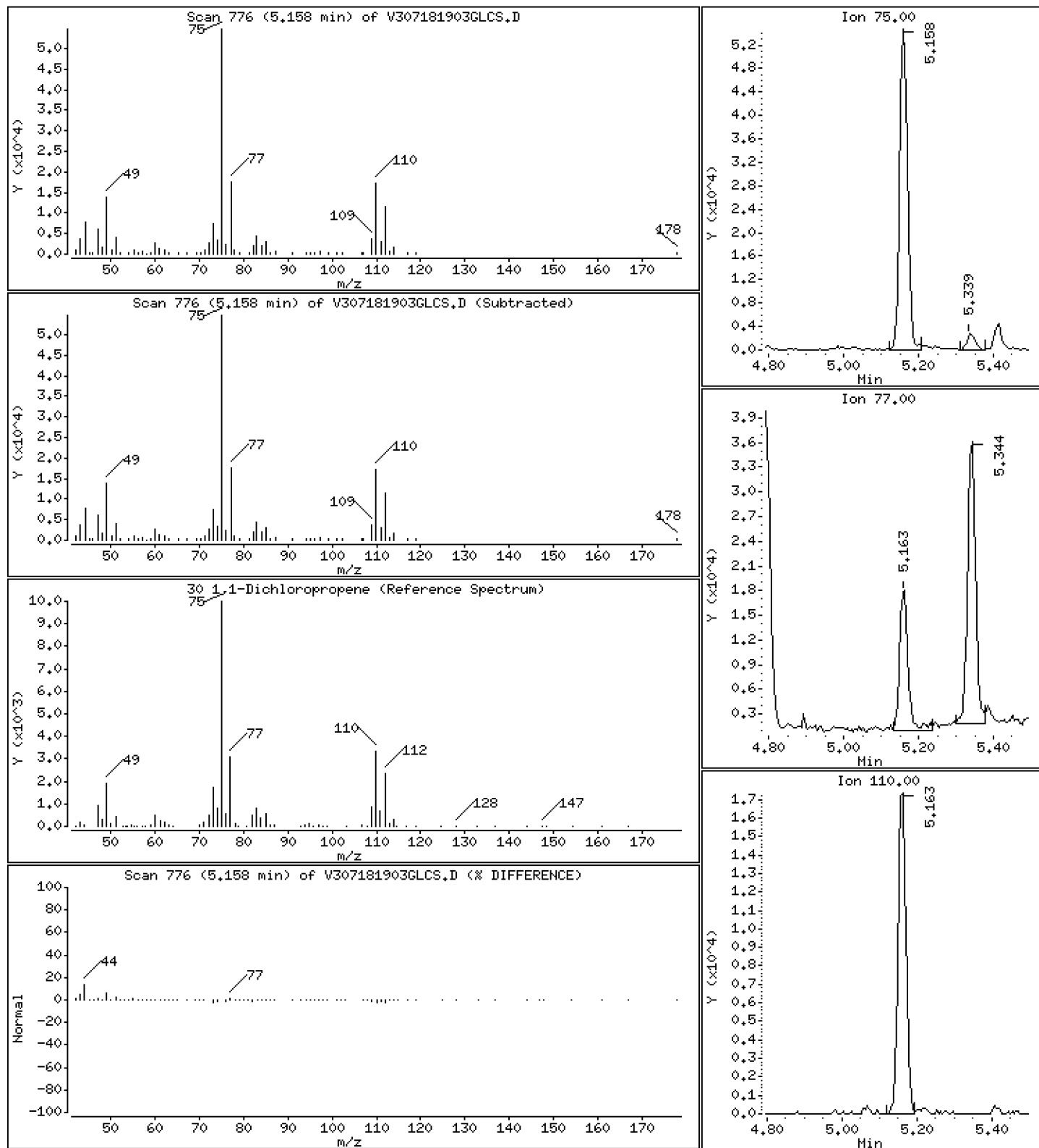
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

30 1,1-Dichloropropene

Concentration: 10.964 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

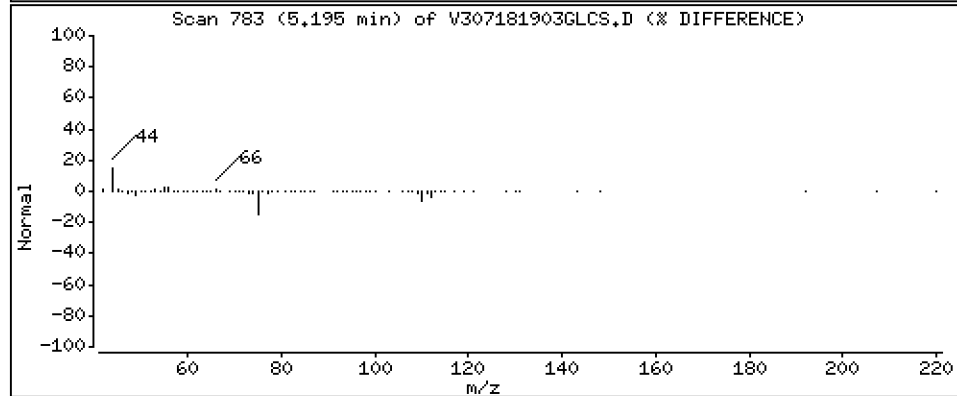
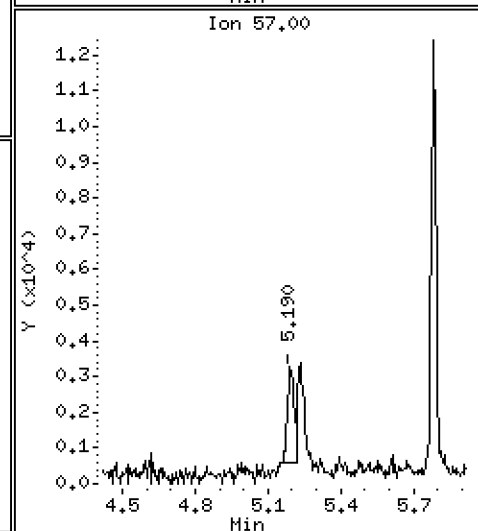
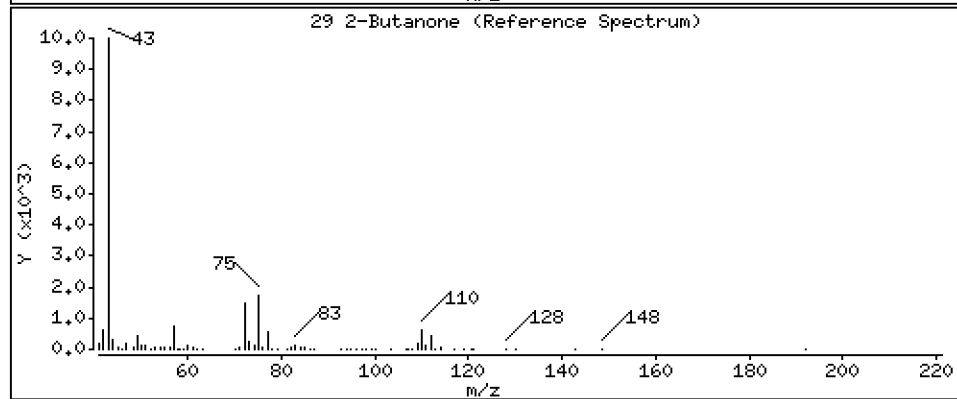
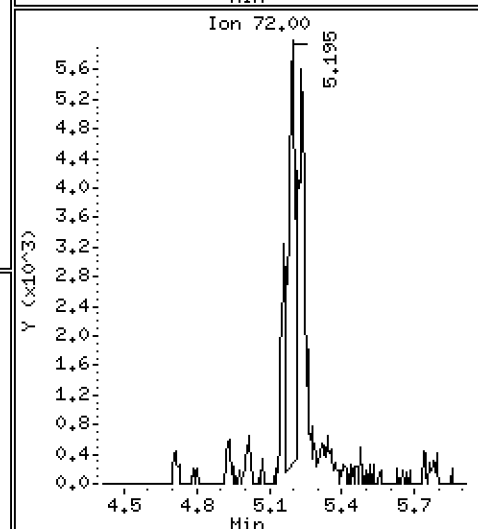
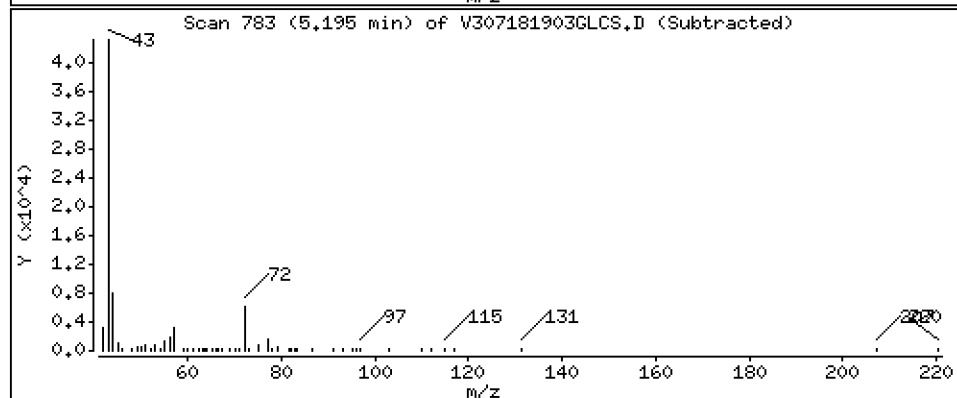
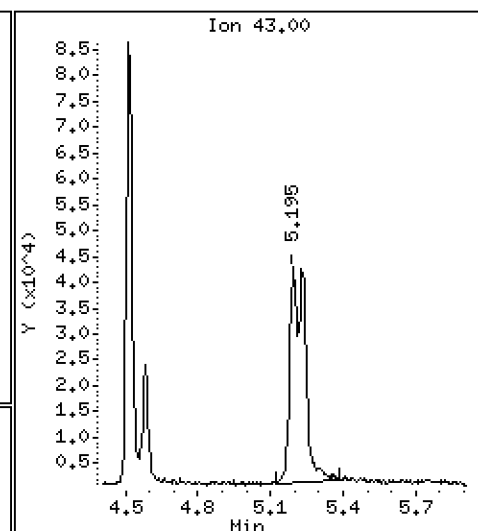
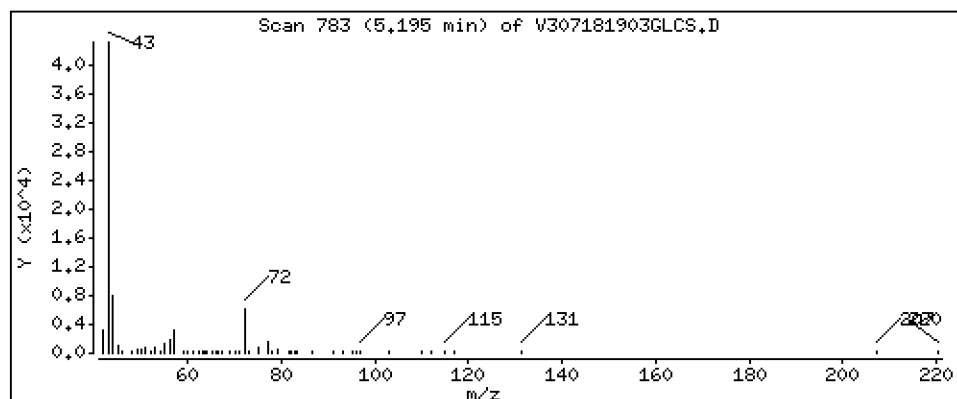
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 57,980 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

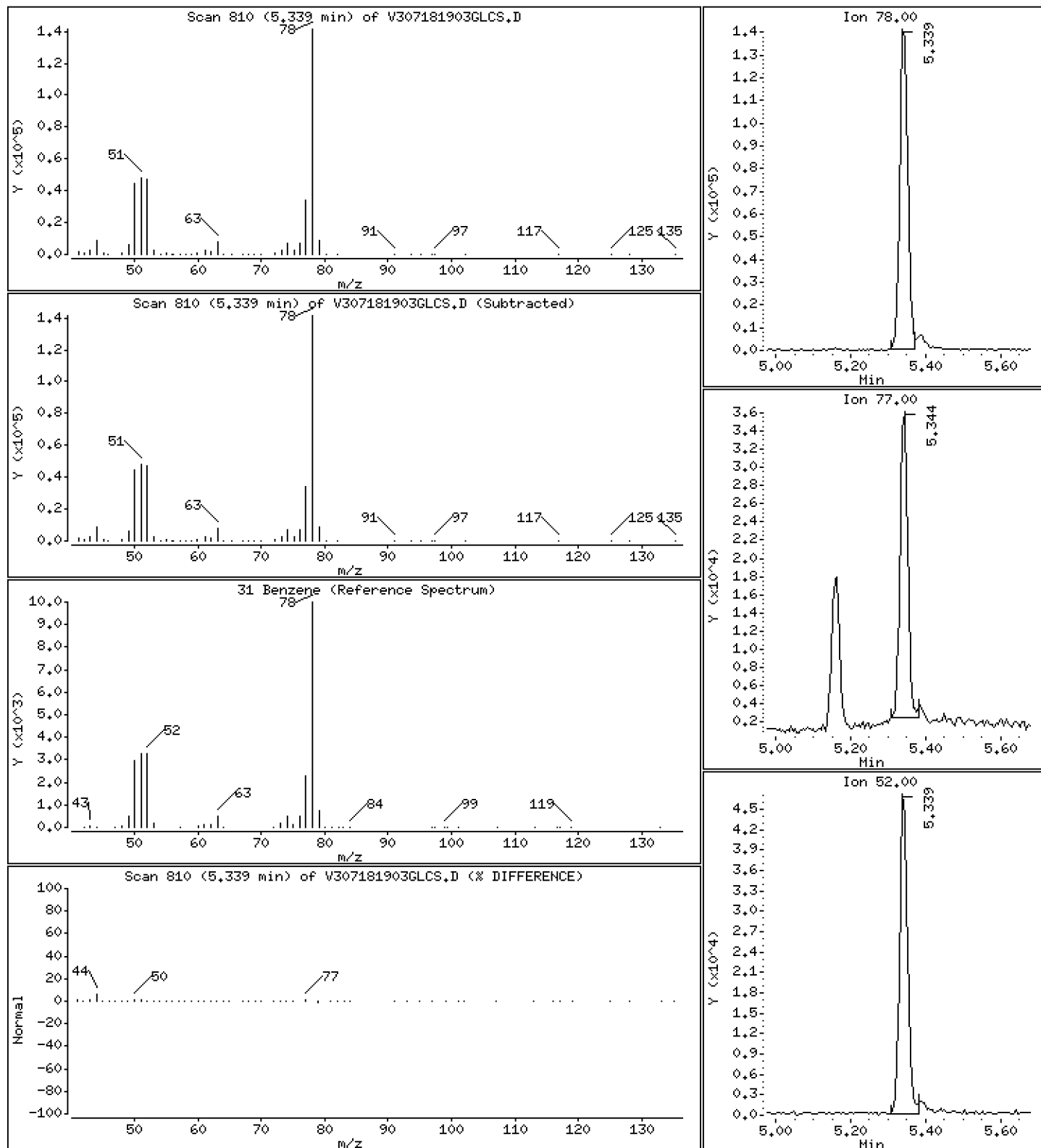
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

31 Benzene

Concentration: 9.775 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

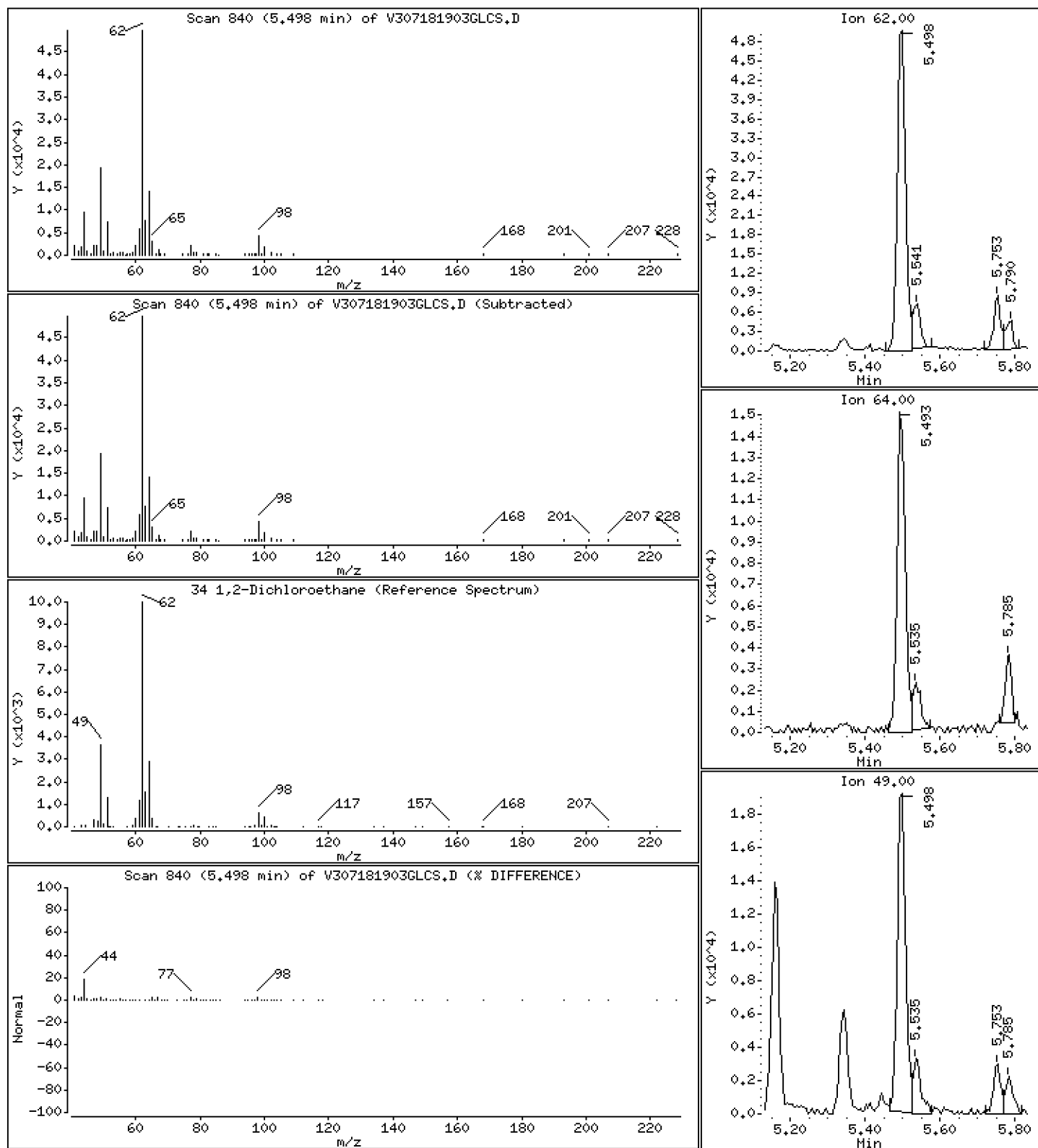
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

34 1,2-Dichloroethane

Concentration: 10,146 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

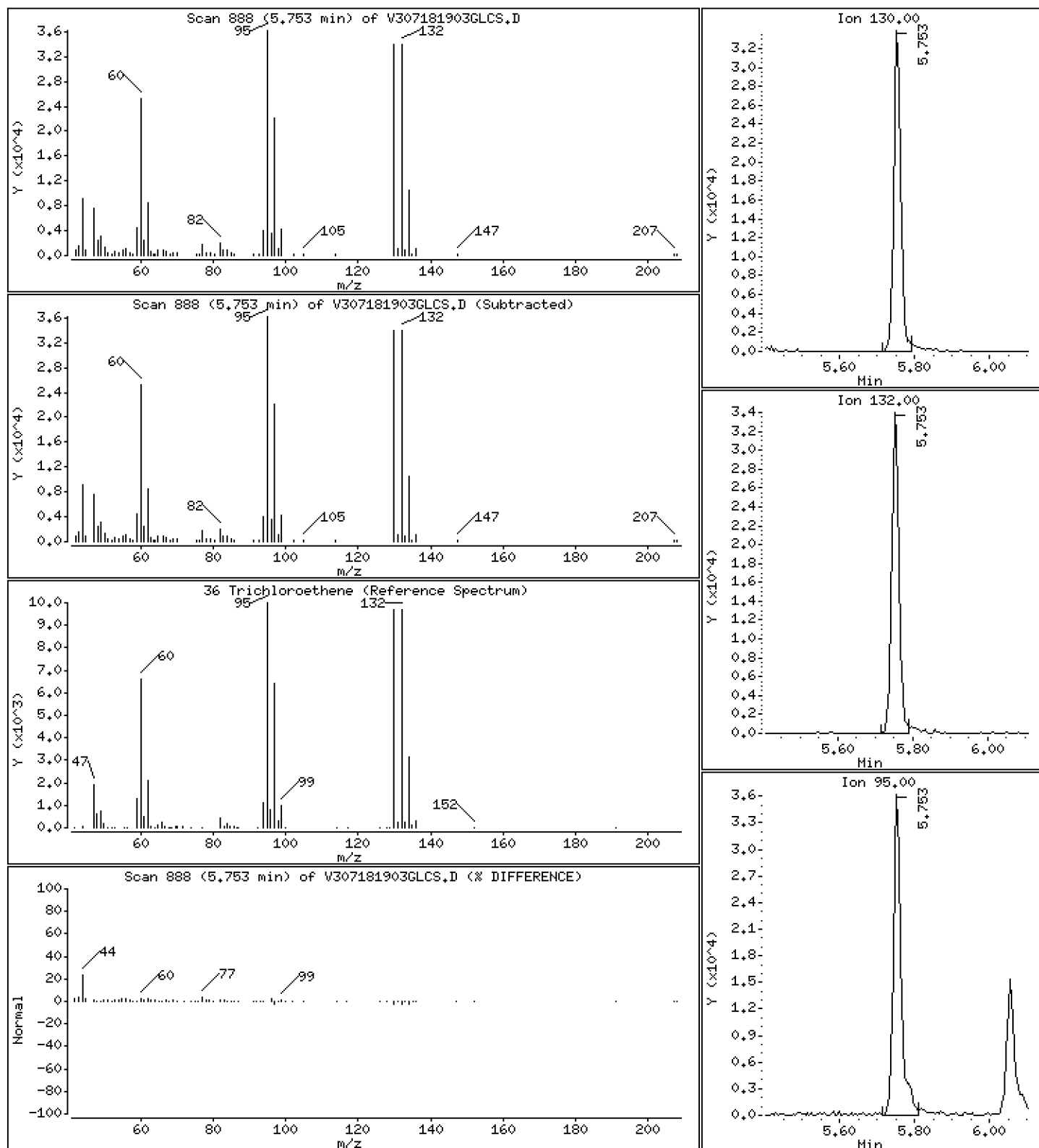
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

36 Trichloroethene

Concentration: 8.844 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

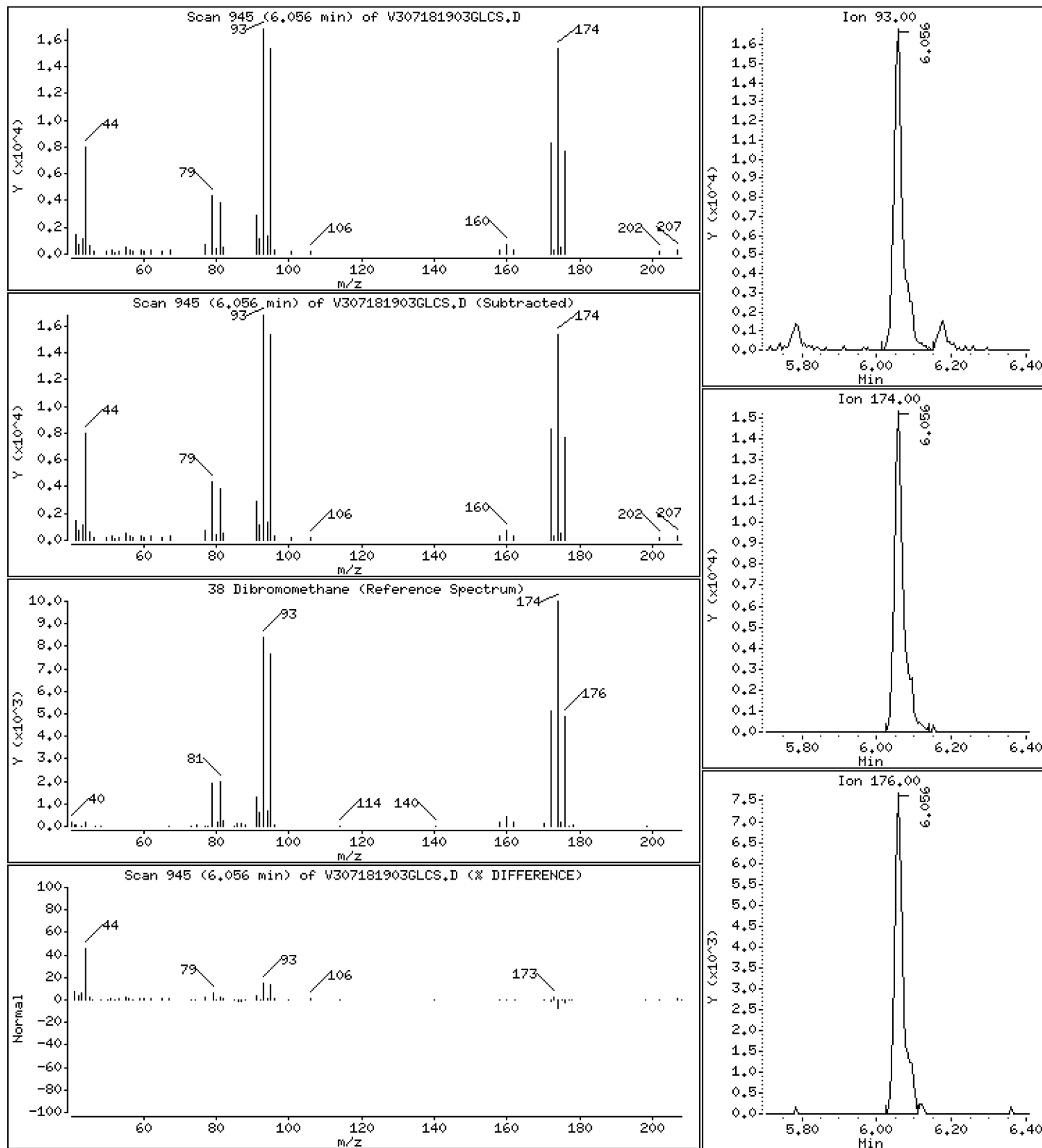
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

38 Dibromomethane

Concentration: 11,396 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

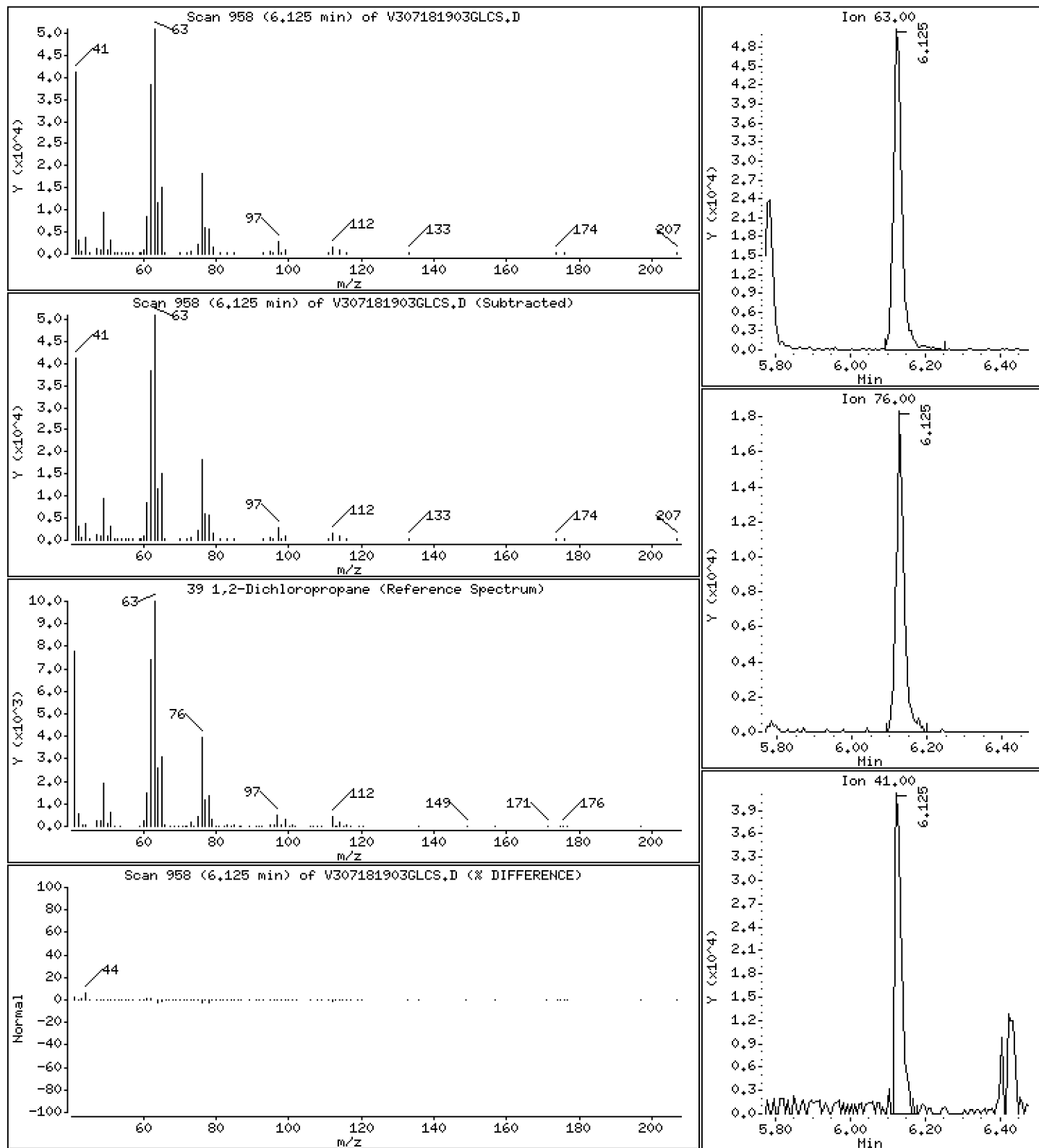
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

39 1,2-Dichloropropane

Concentration: 11,389 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

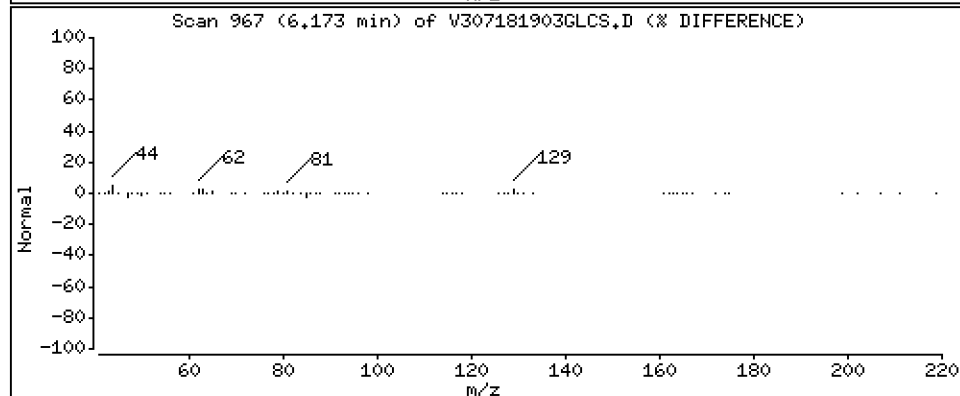
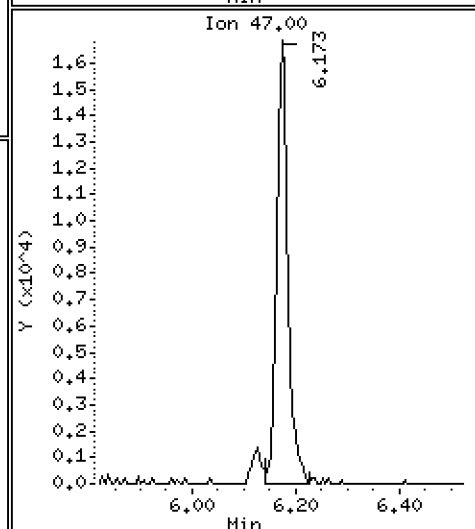
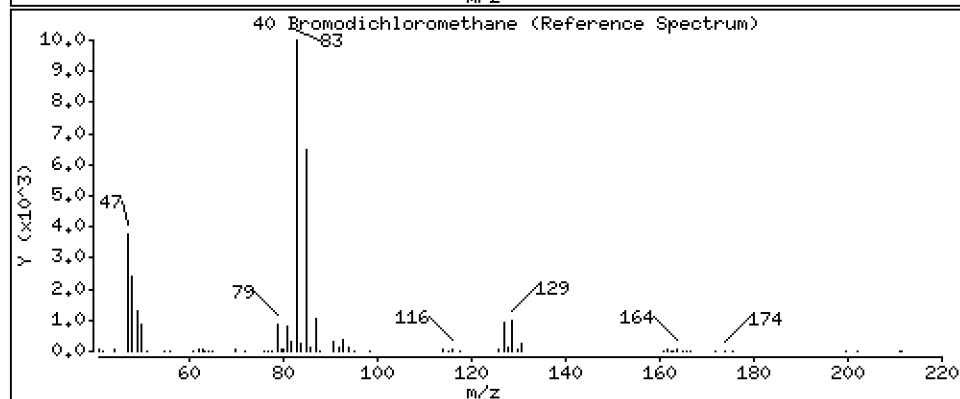
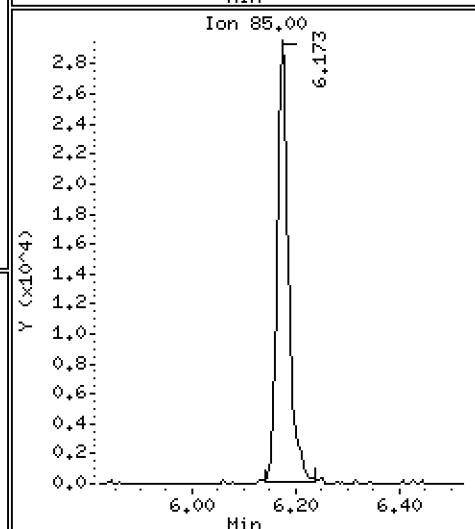
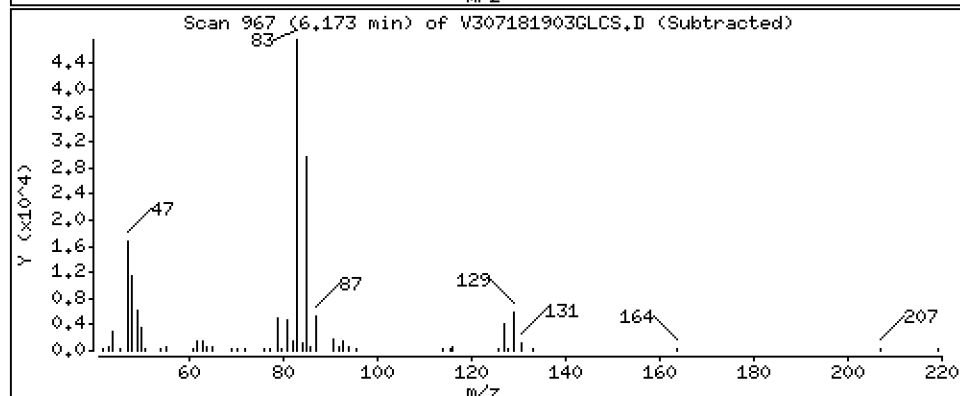
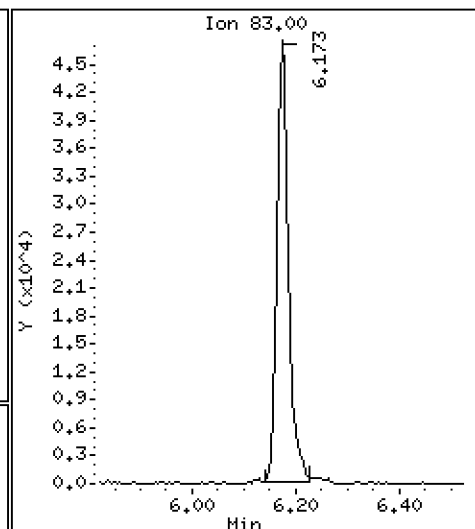
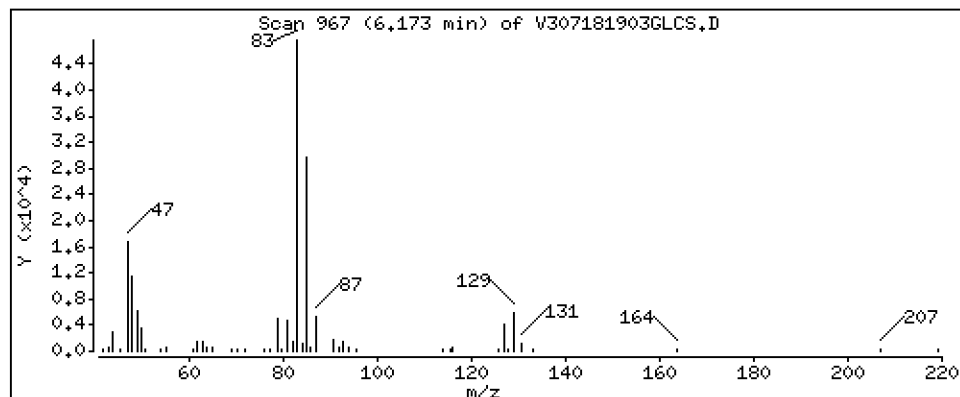
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

40 Bromodichloromethane

Concentration: 11,259 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

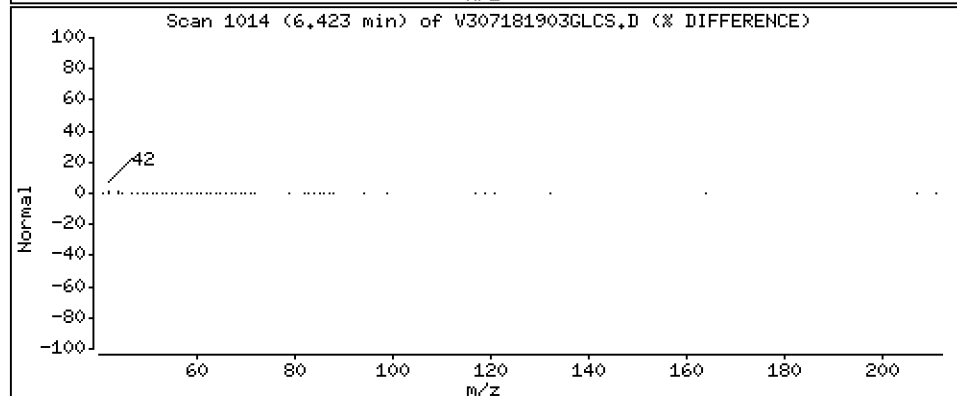
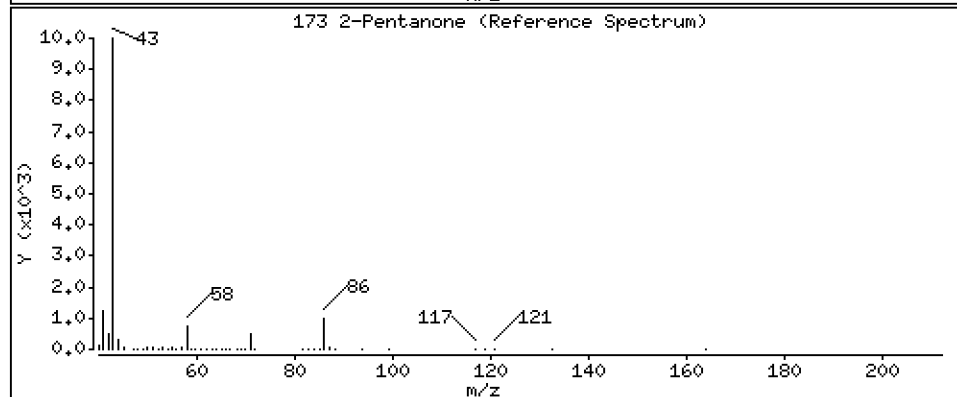
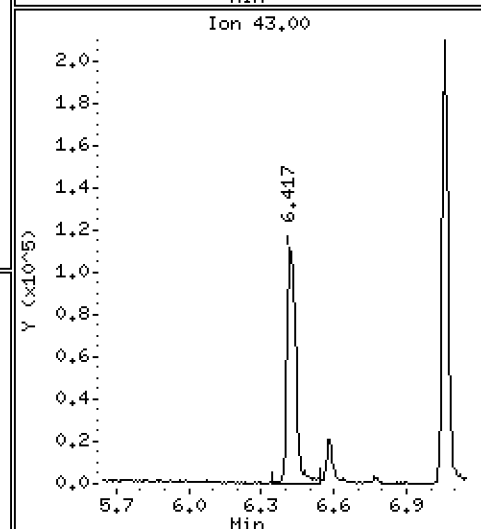
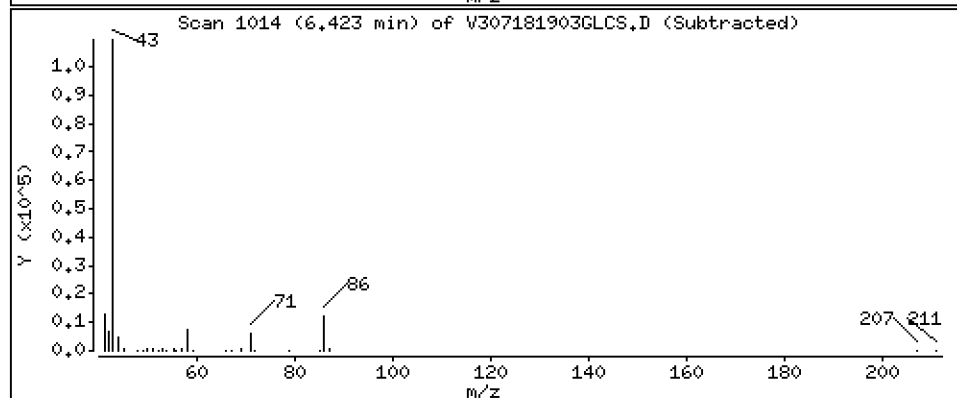
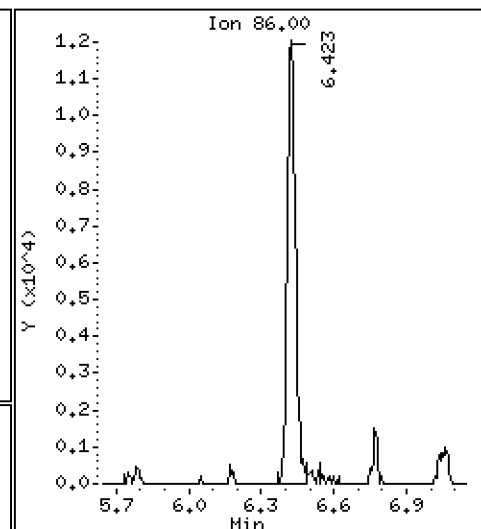
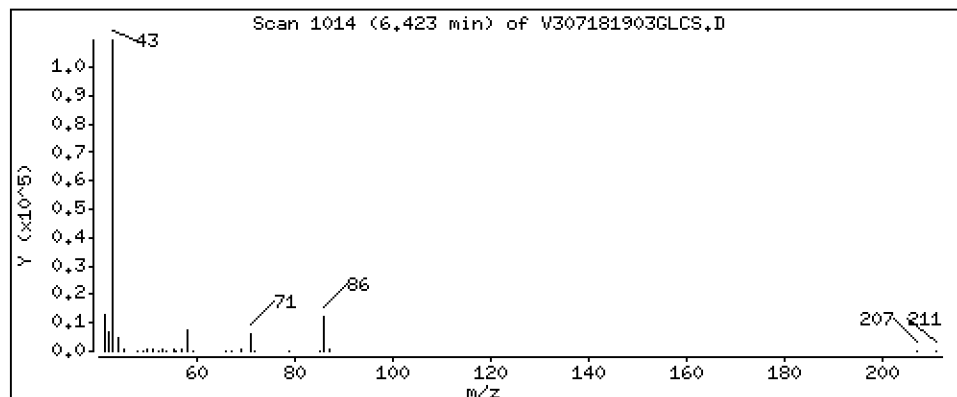
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

173 2-Pentanone

Concentration: 63,175 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

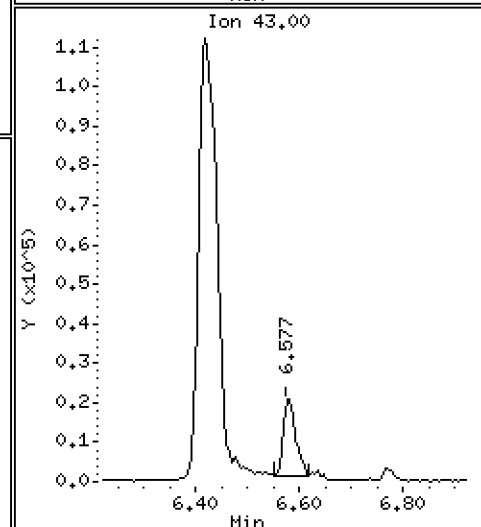
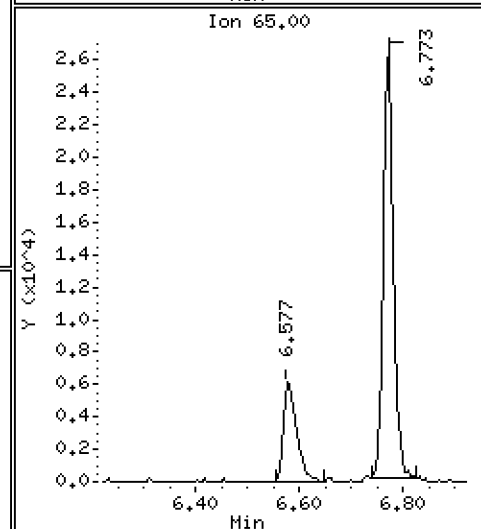
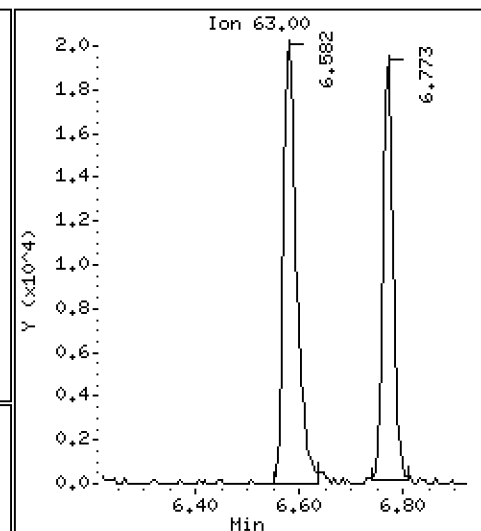
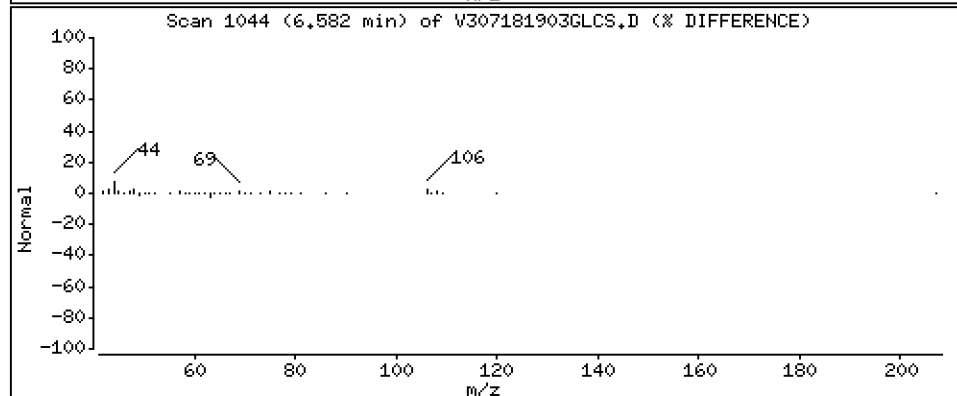
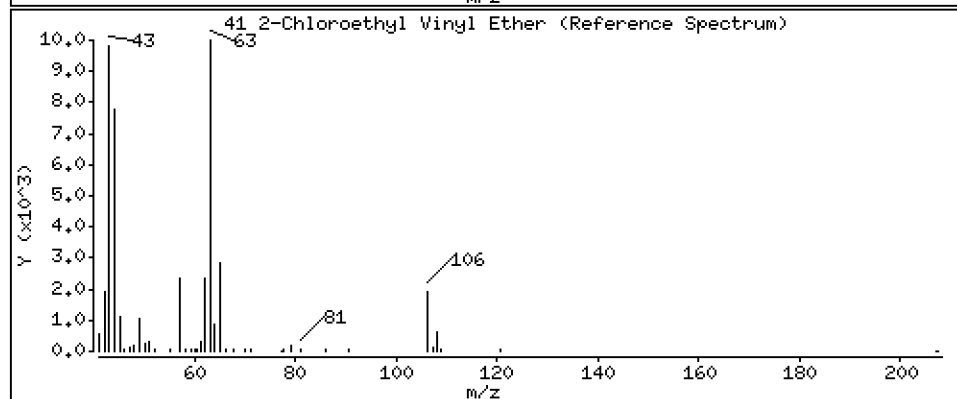
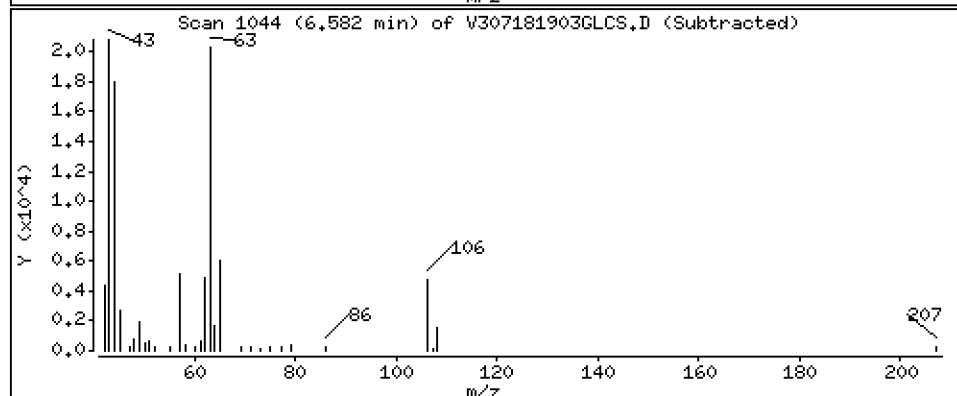
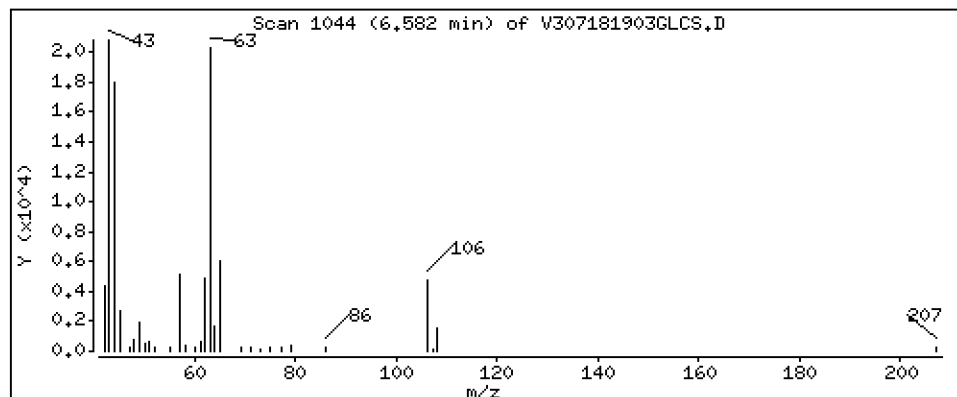
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

41 2-Chloroethyl Vinyl Ether

Concentration: 12.033 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

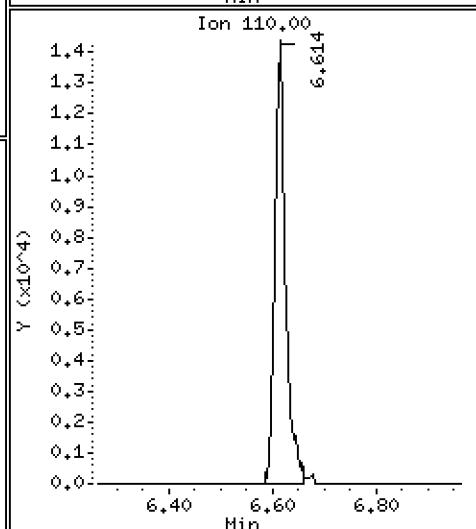
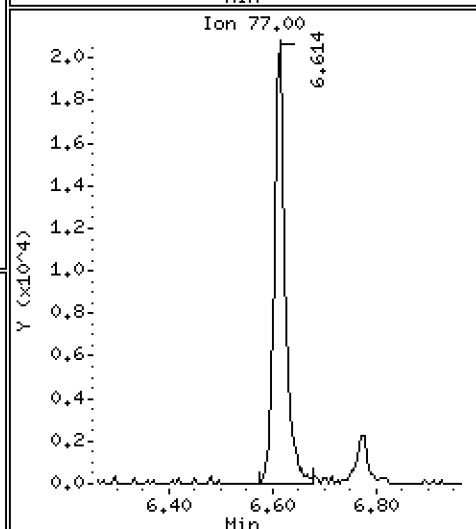
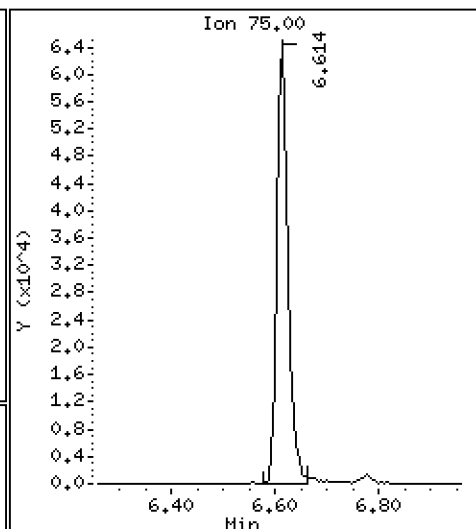
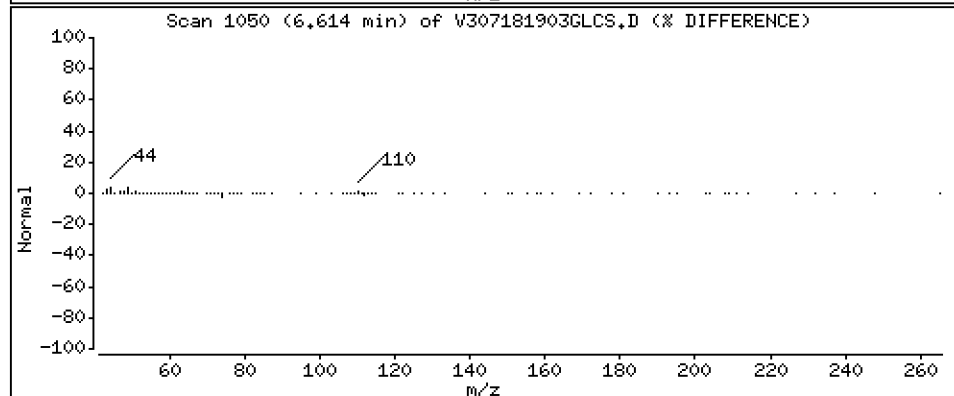
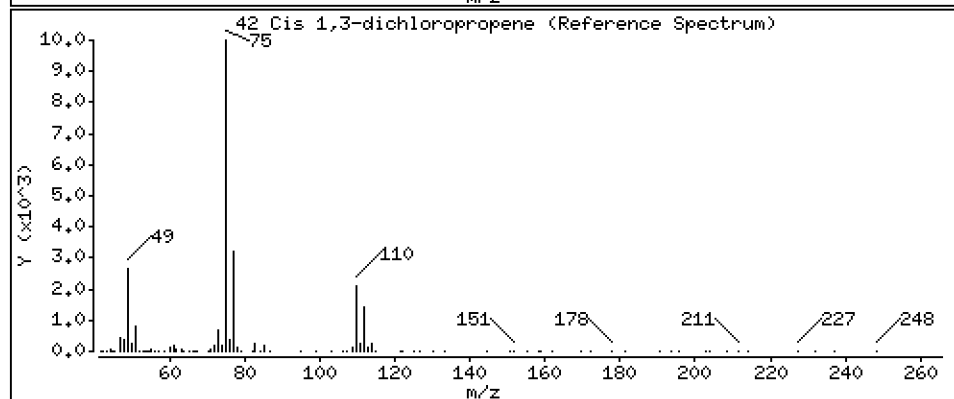
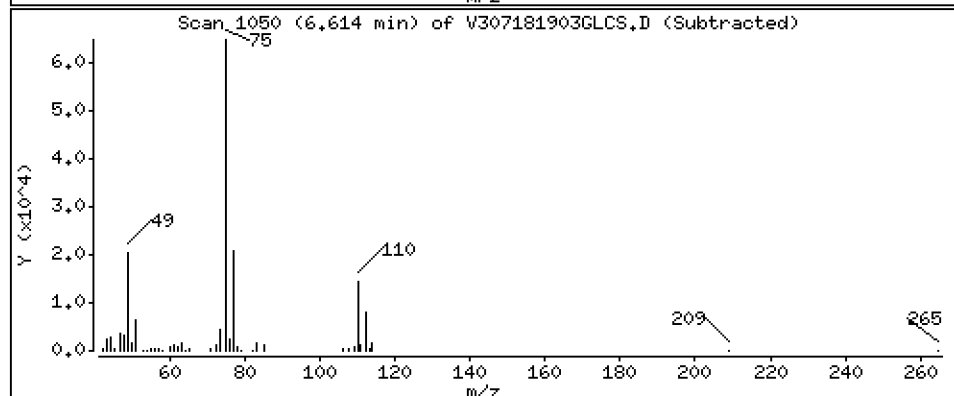
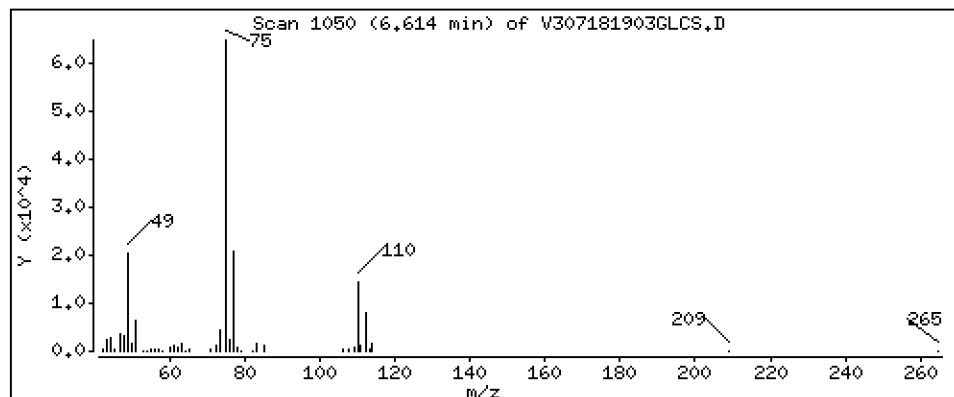
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

42 Cis 1,3-dichloropropene

Concentration: 11,419 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

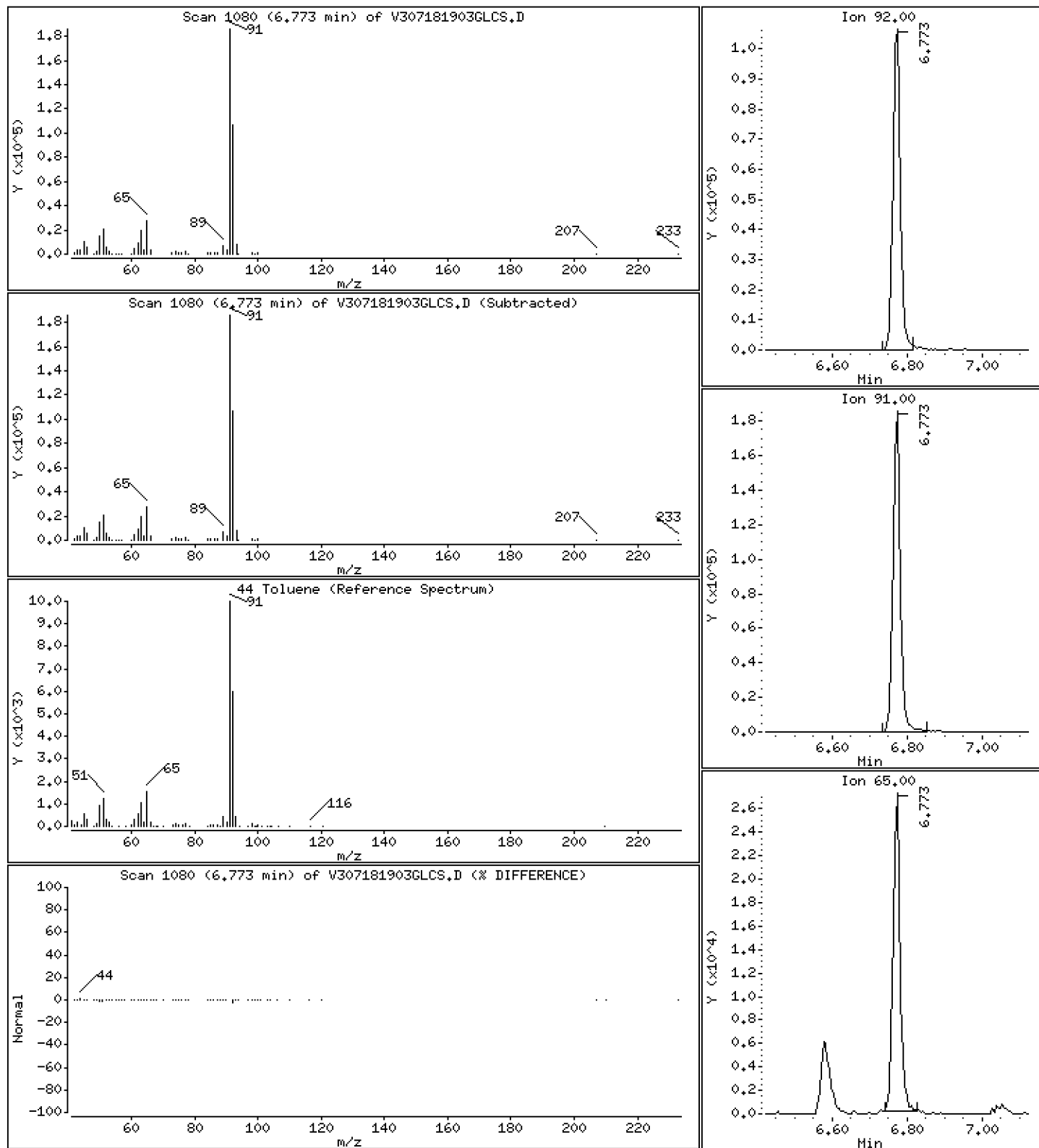
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

44 Toluene

Concentration: 10,784 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

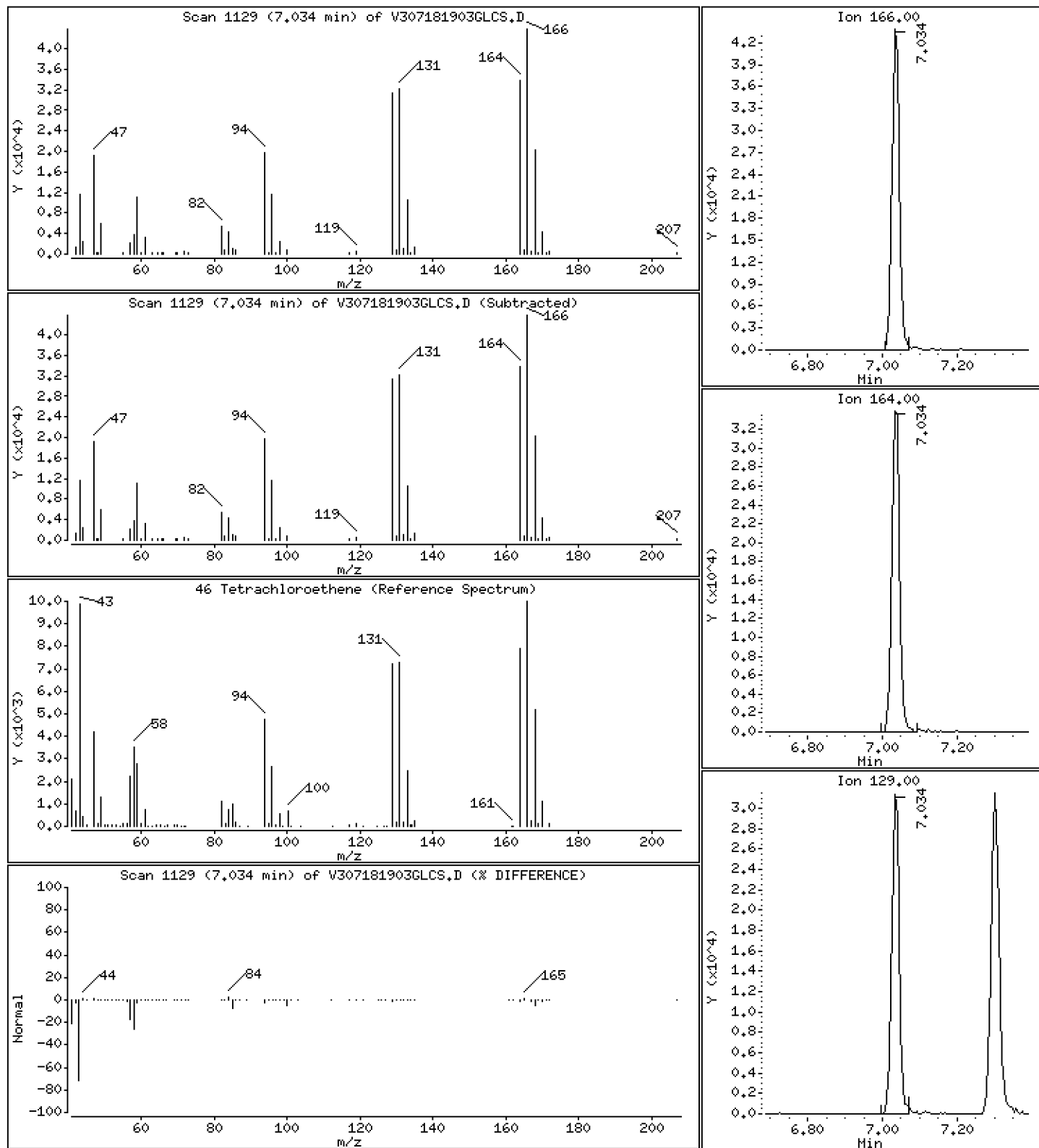
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

46 Tetrachloroethene

Concentration: 9.730 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

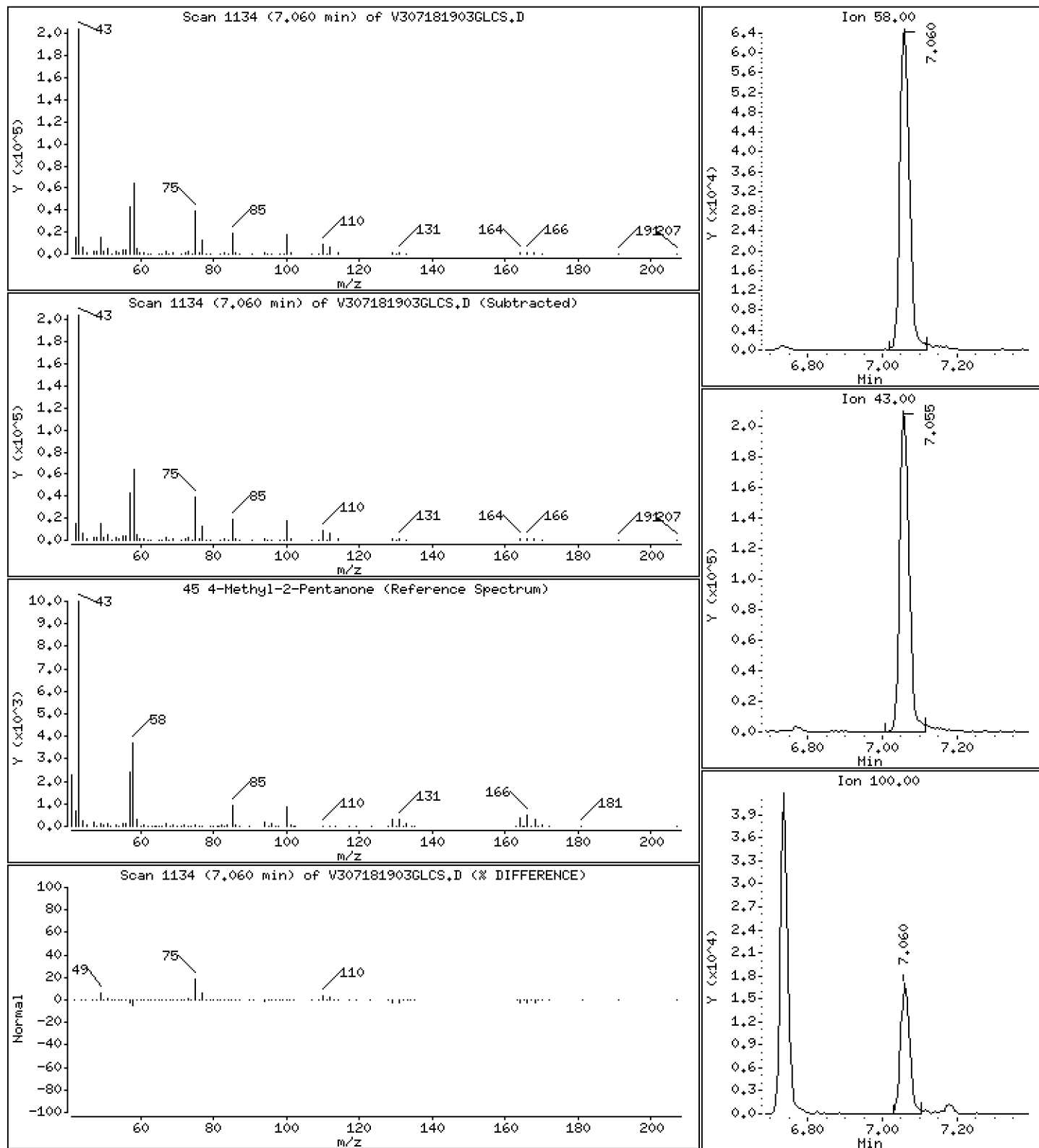
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 57,575 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

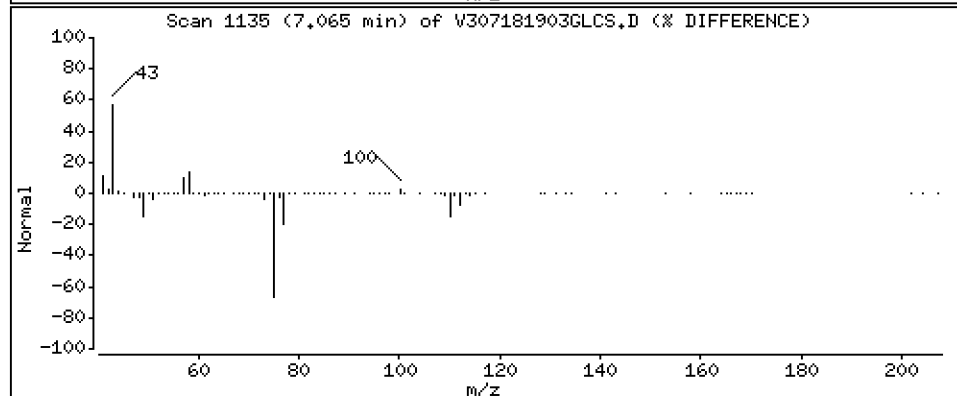
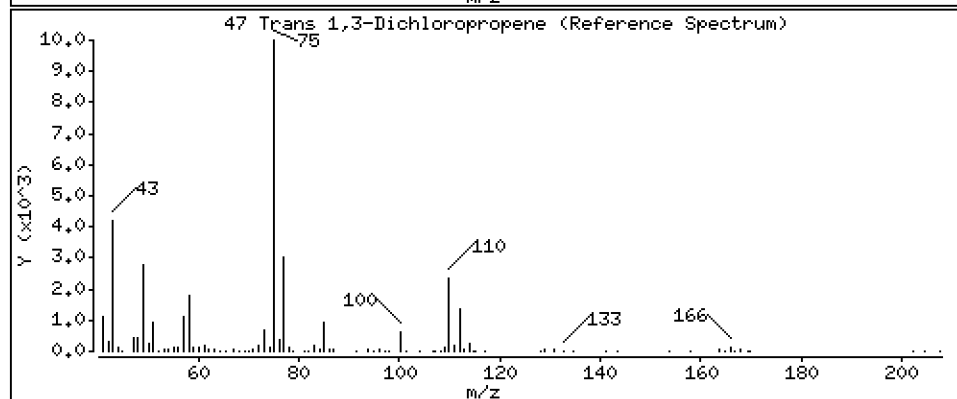
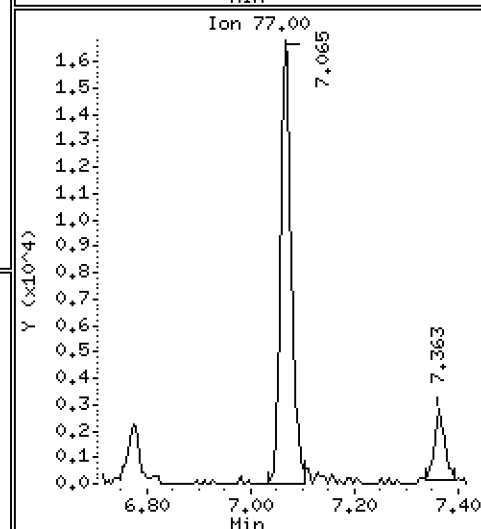
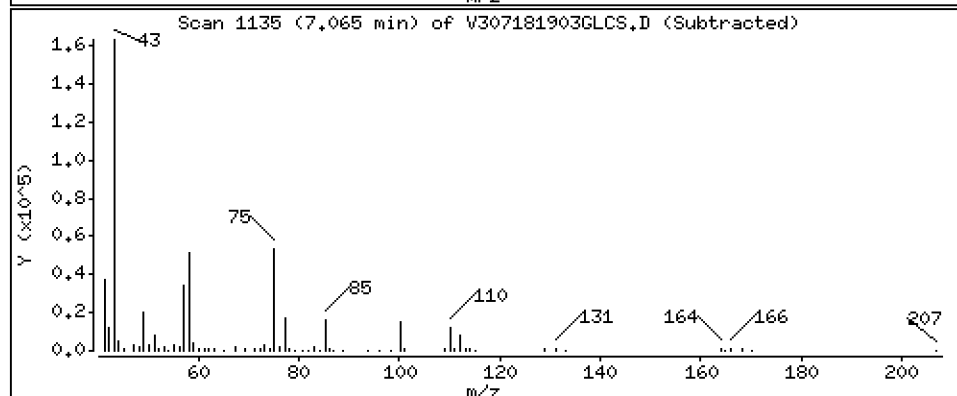
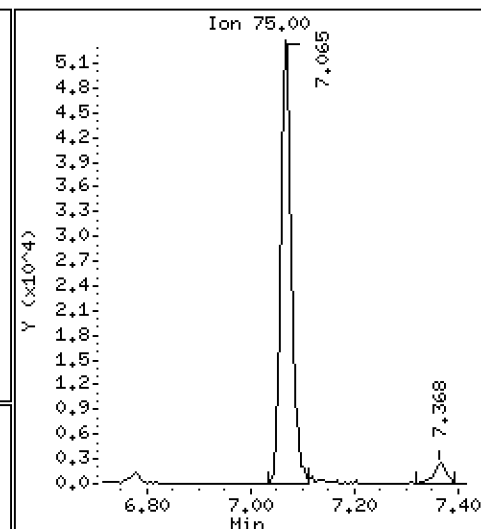
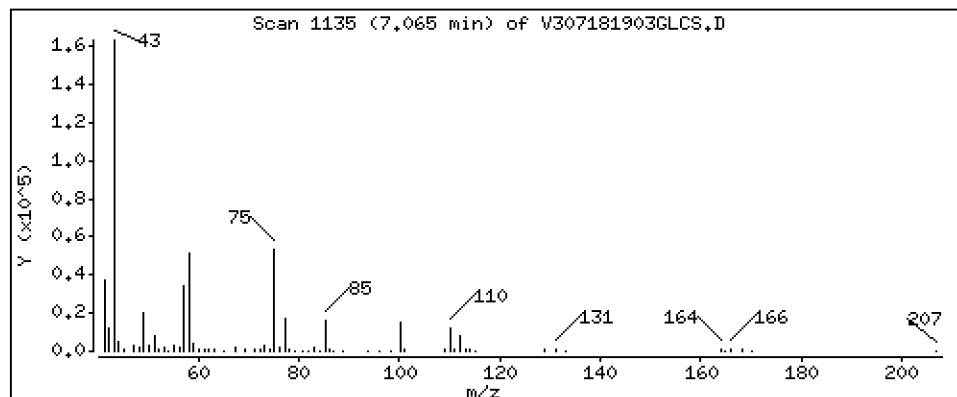
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

47 Trans 1,3-Dichloropropene

Concentration: 11,480 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

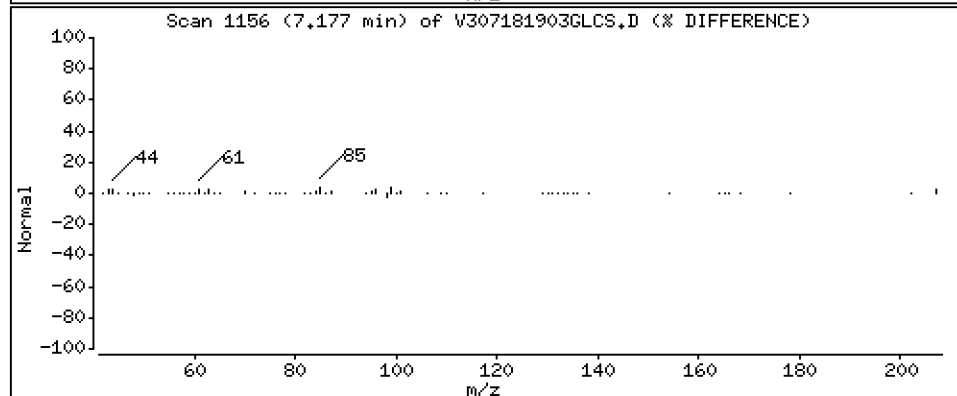
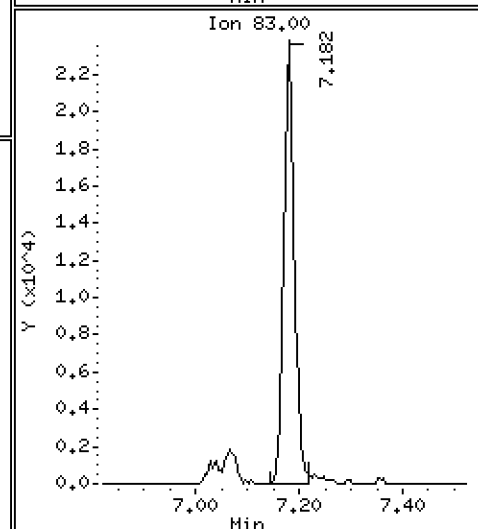
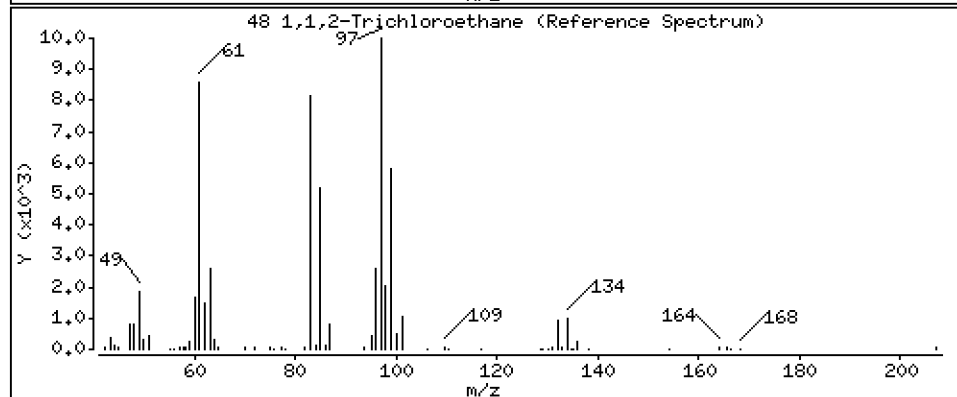
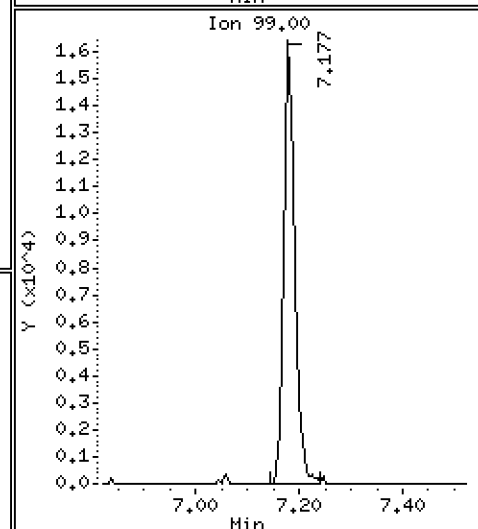
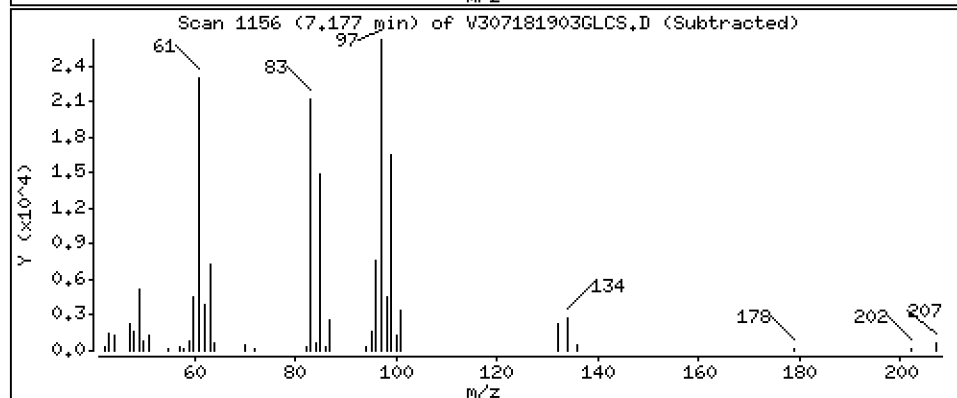
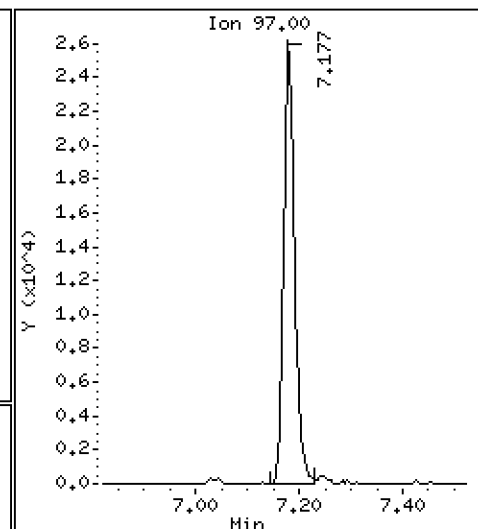
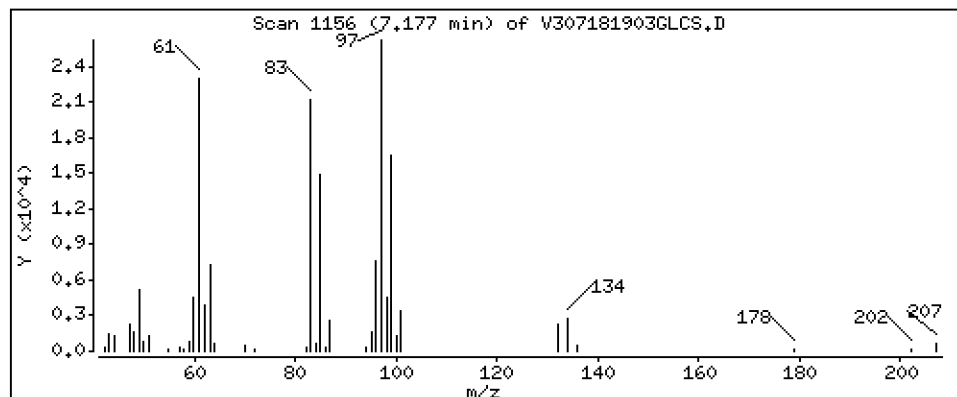
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

48 1,1,2-Trichloroethane

Concentration: 10,690 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

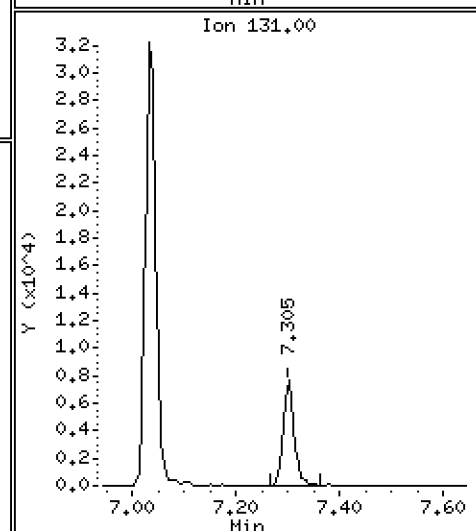
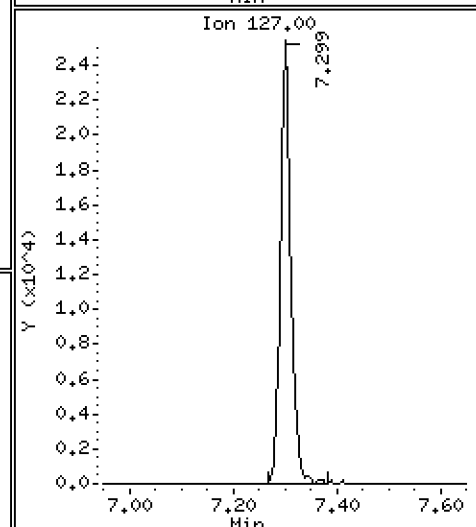
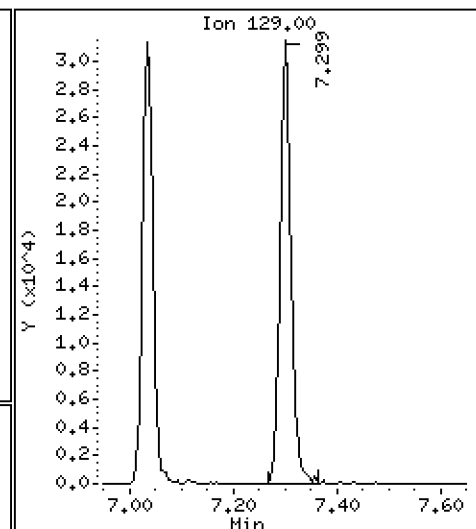
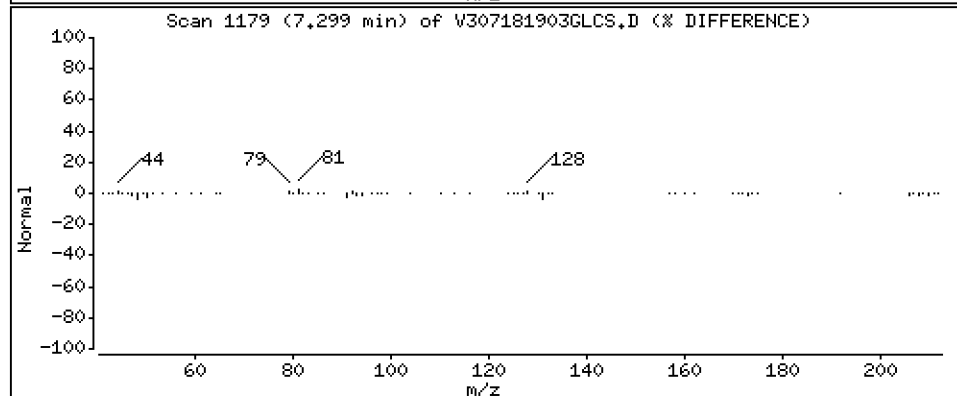
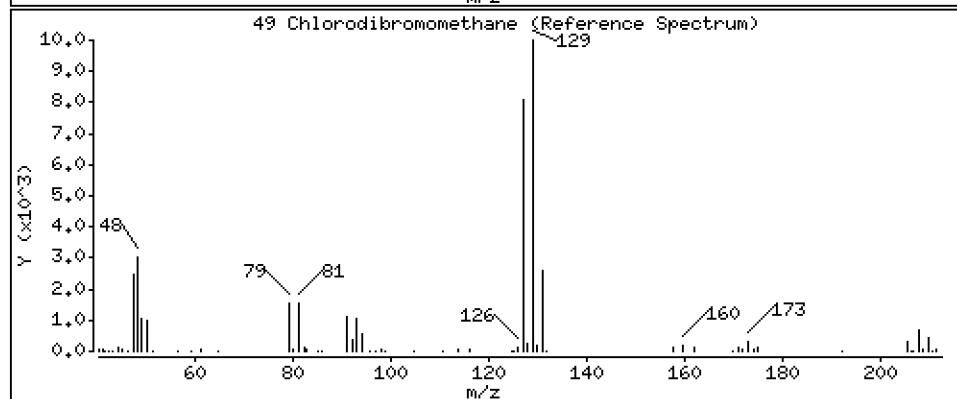
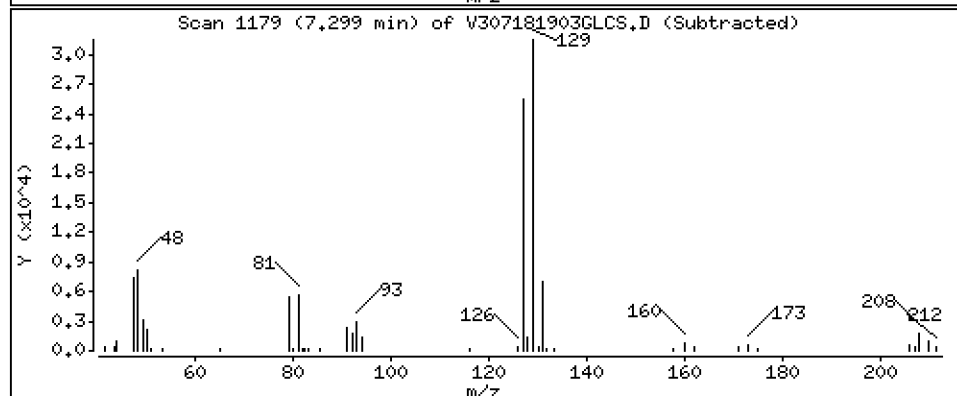
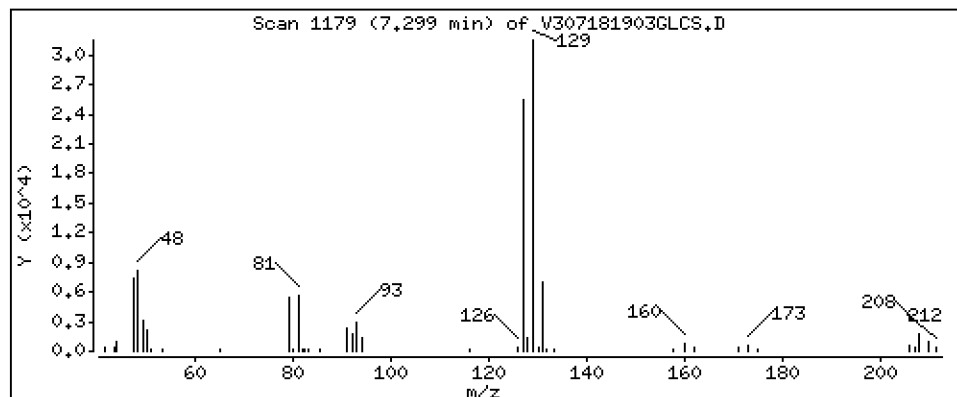
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

49 Chlorodibromomethane

Concentration: 9.868 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

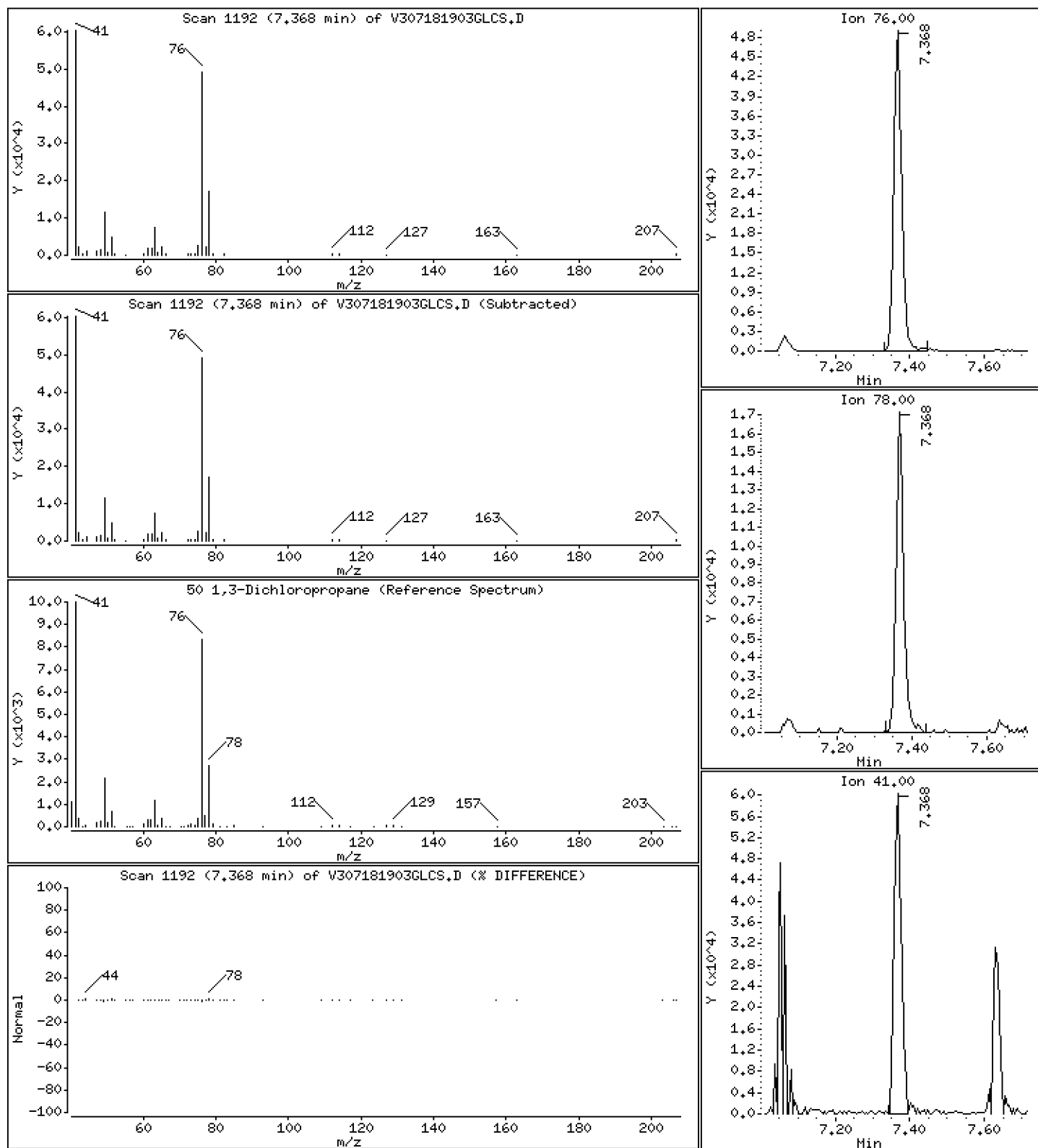
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

50 1,3-Dichloropropane

Concentration: 9.596 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

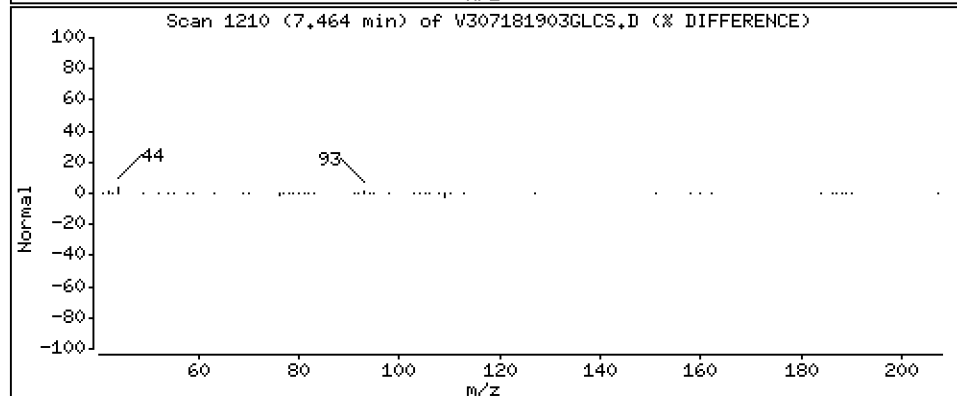
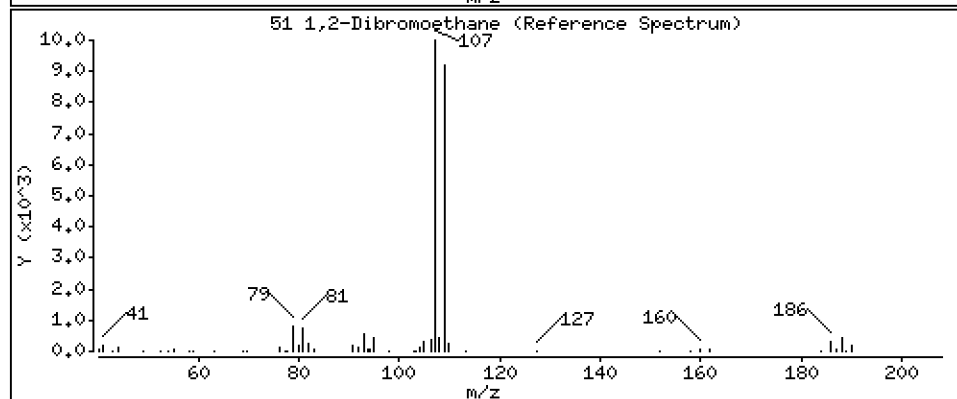
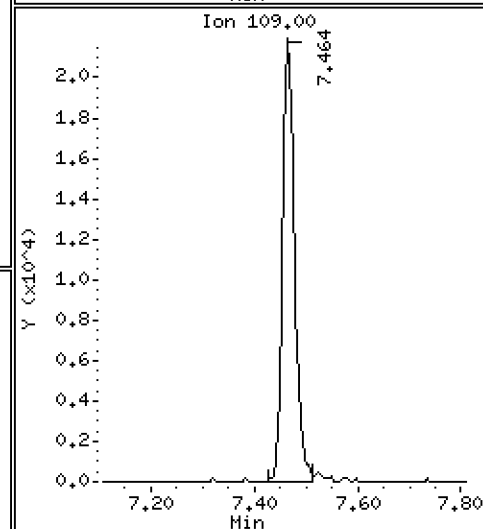
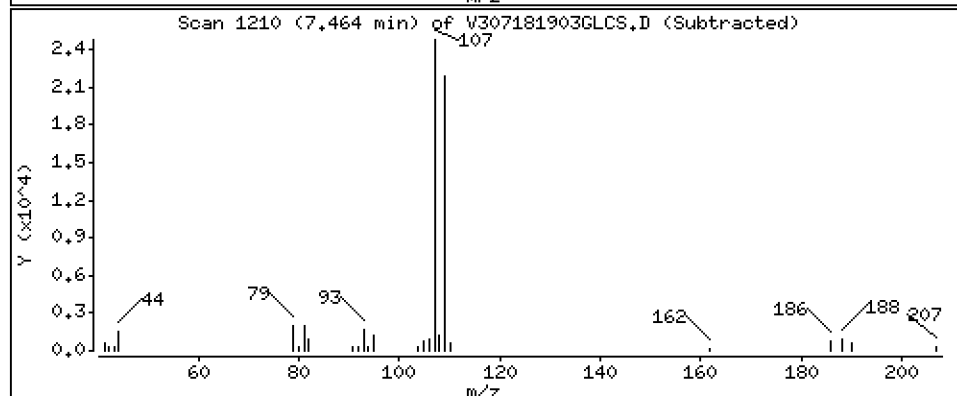
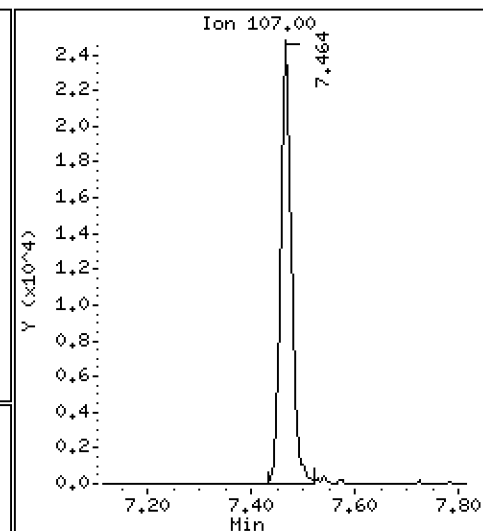
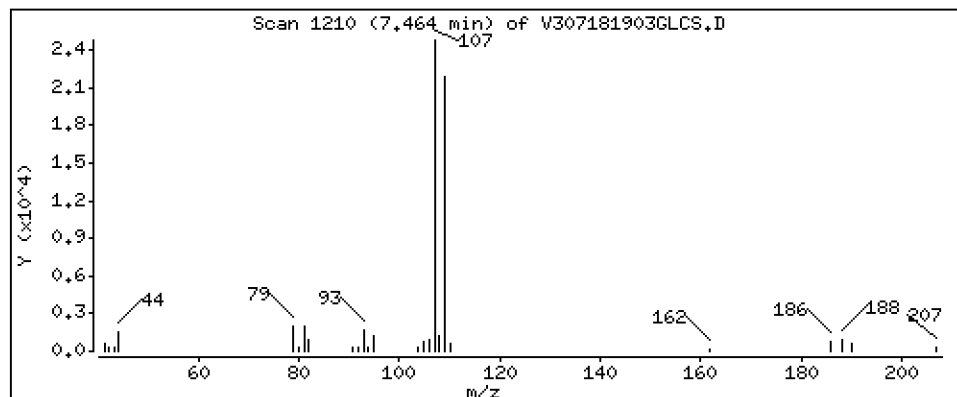
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

51 1,2-Dibromoethane

Concentration: 10.626 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

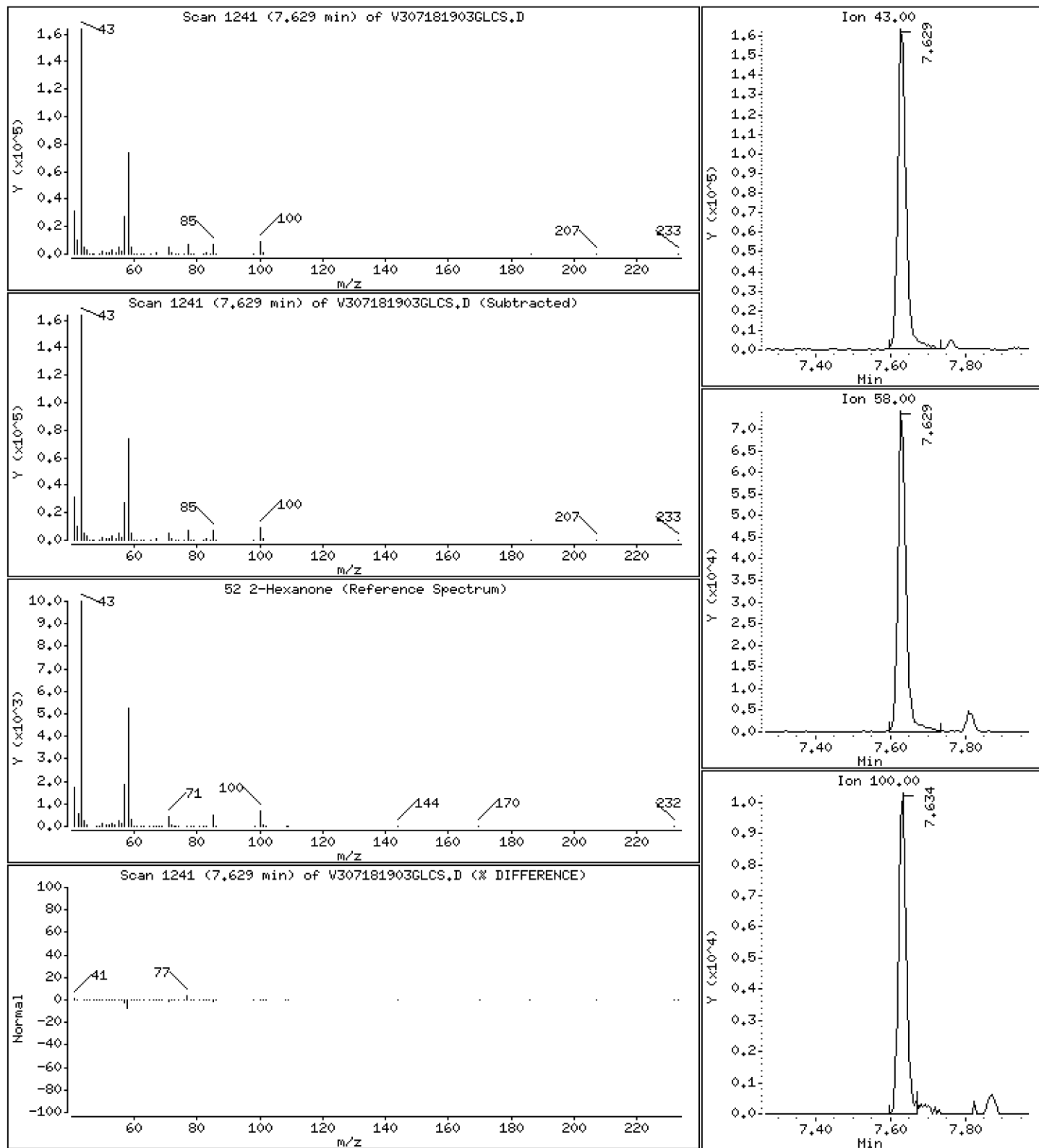
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

52 2-Hexanone

Concentration: 49,856 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

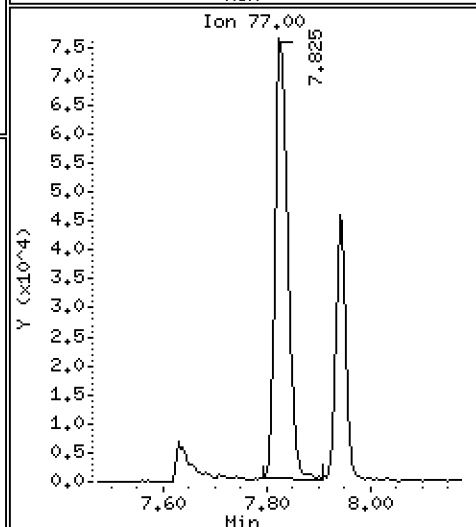
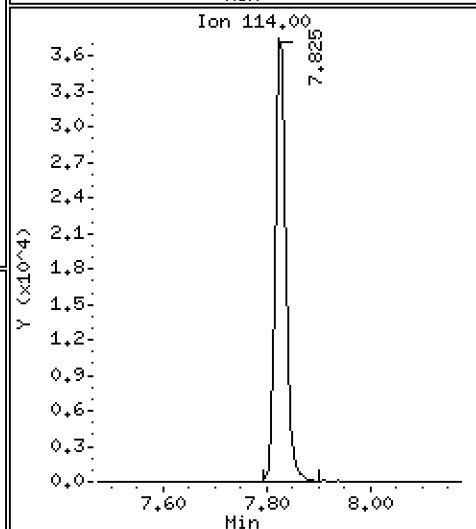
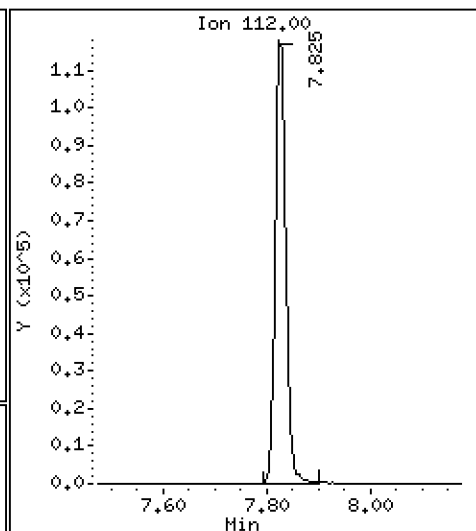
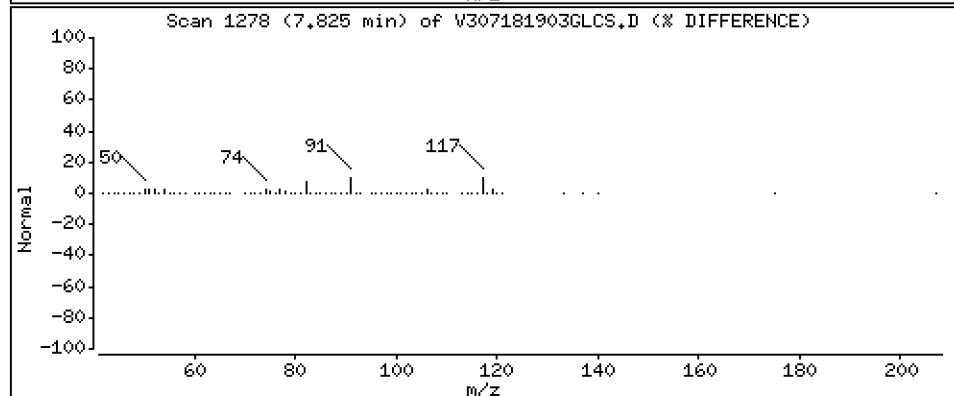
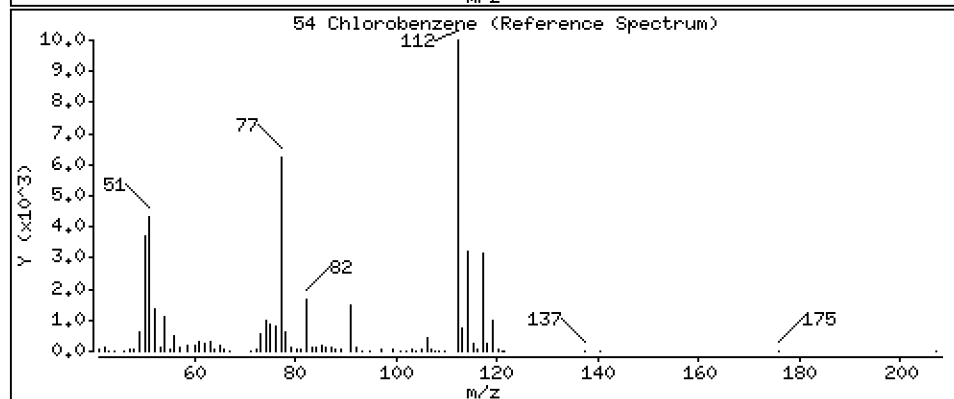
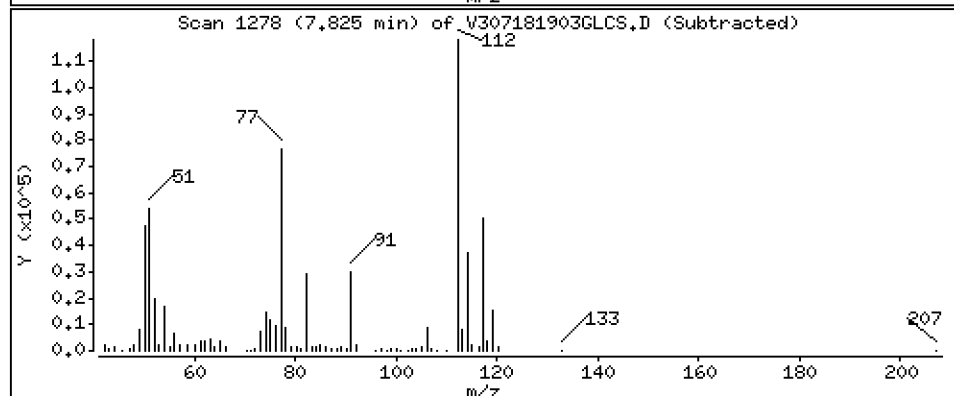
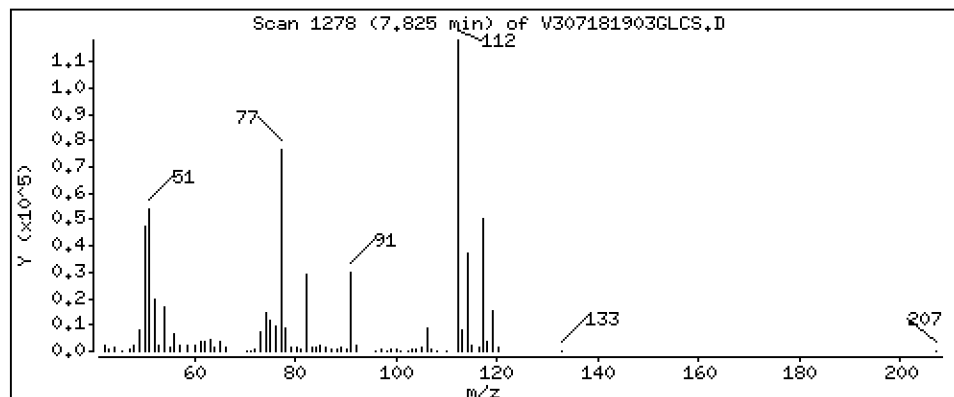
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

54 Chlorobenzene

Concentration: 9.901 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

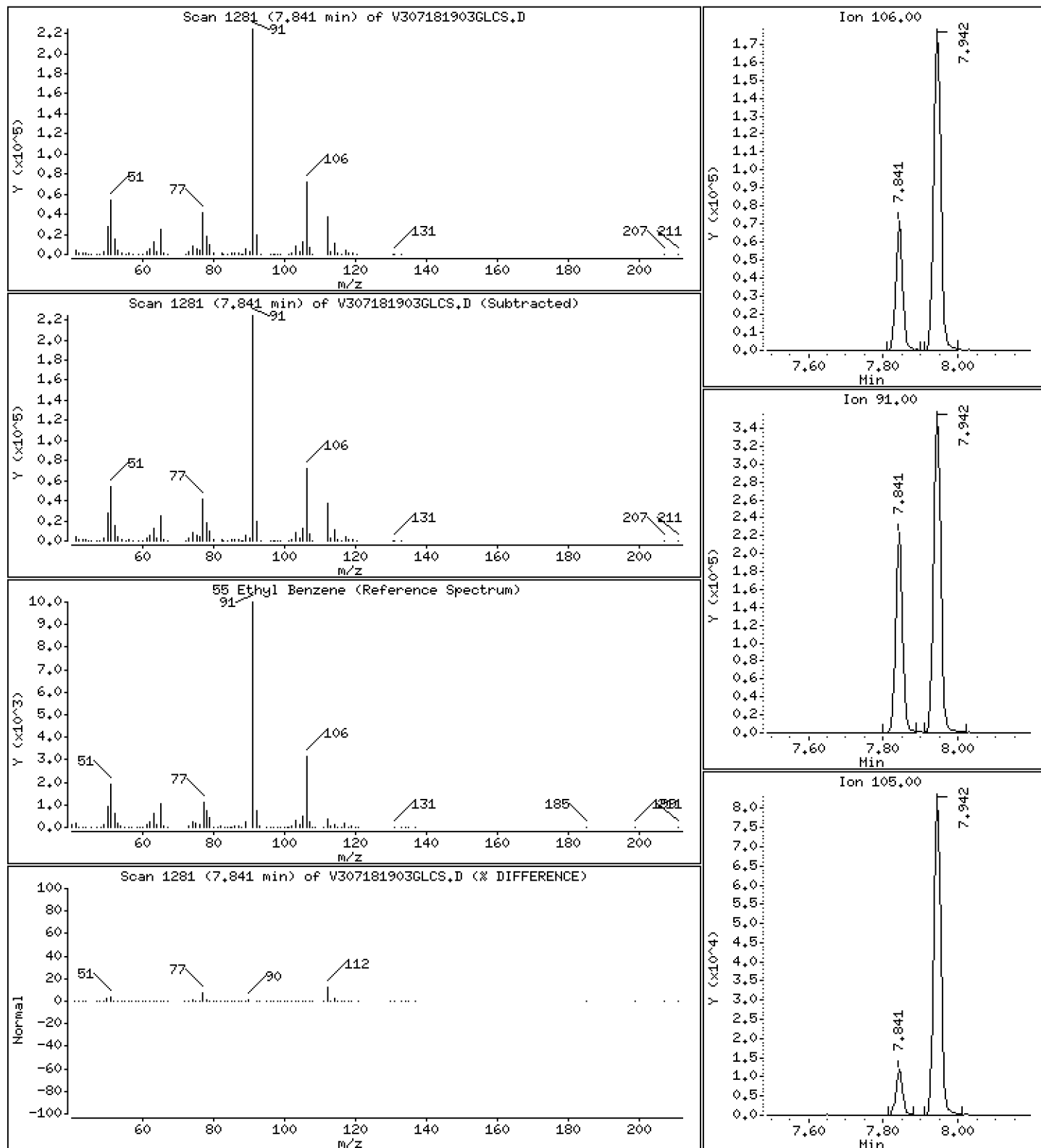
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

55 Ethyl Benzene

Concentration: 9.928 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

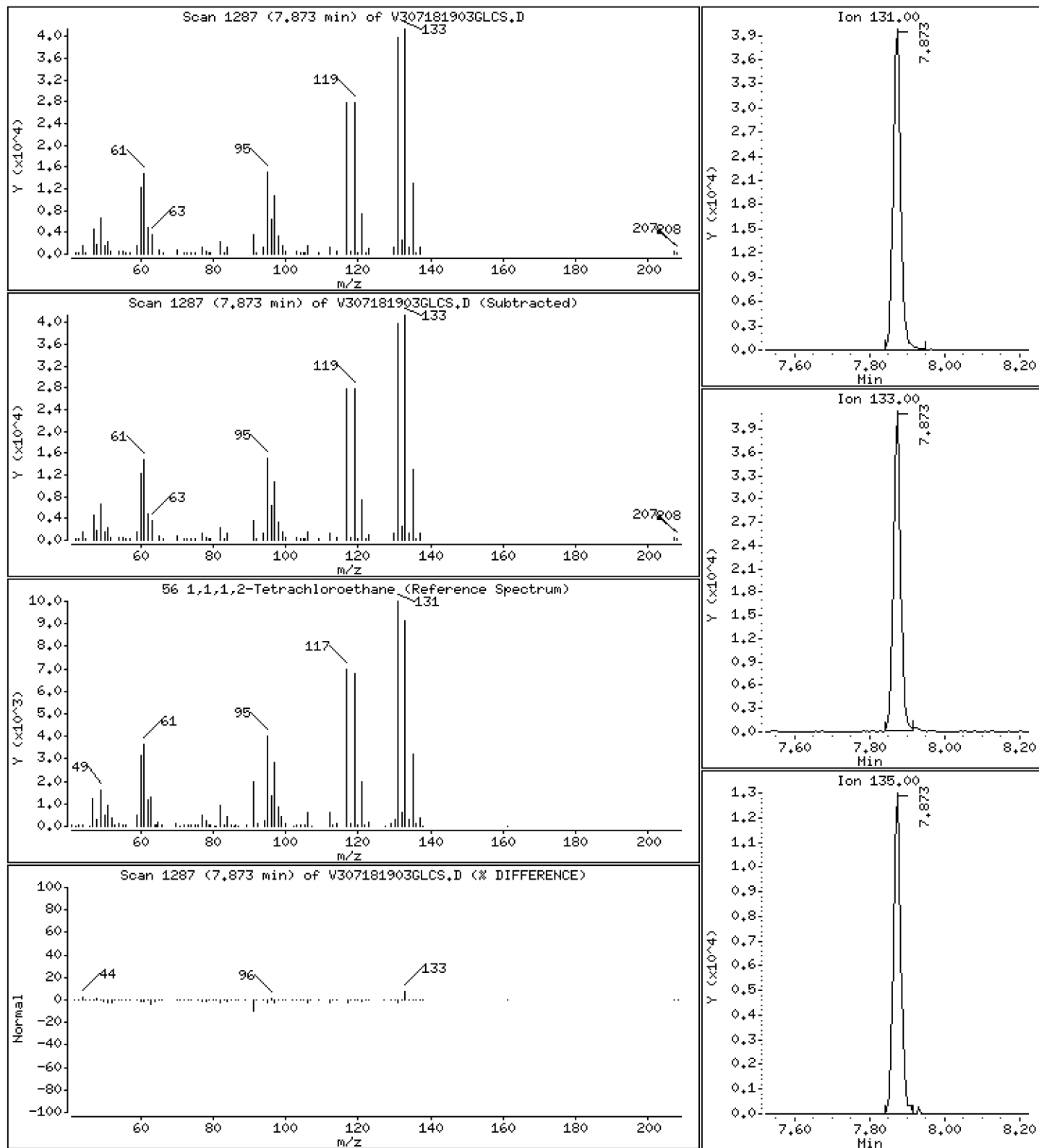
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

56 1,1,1,2-Tetrachloroethane

Concentration: 9.470 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

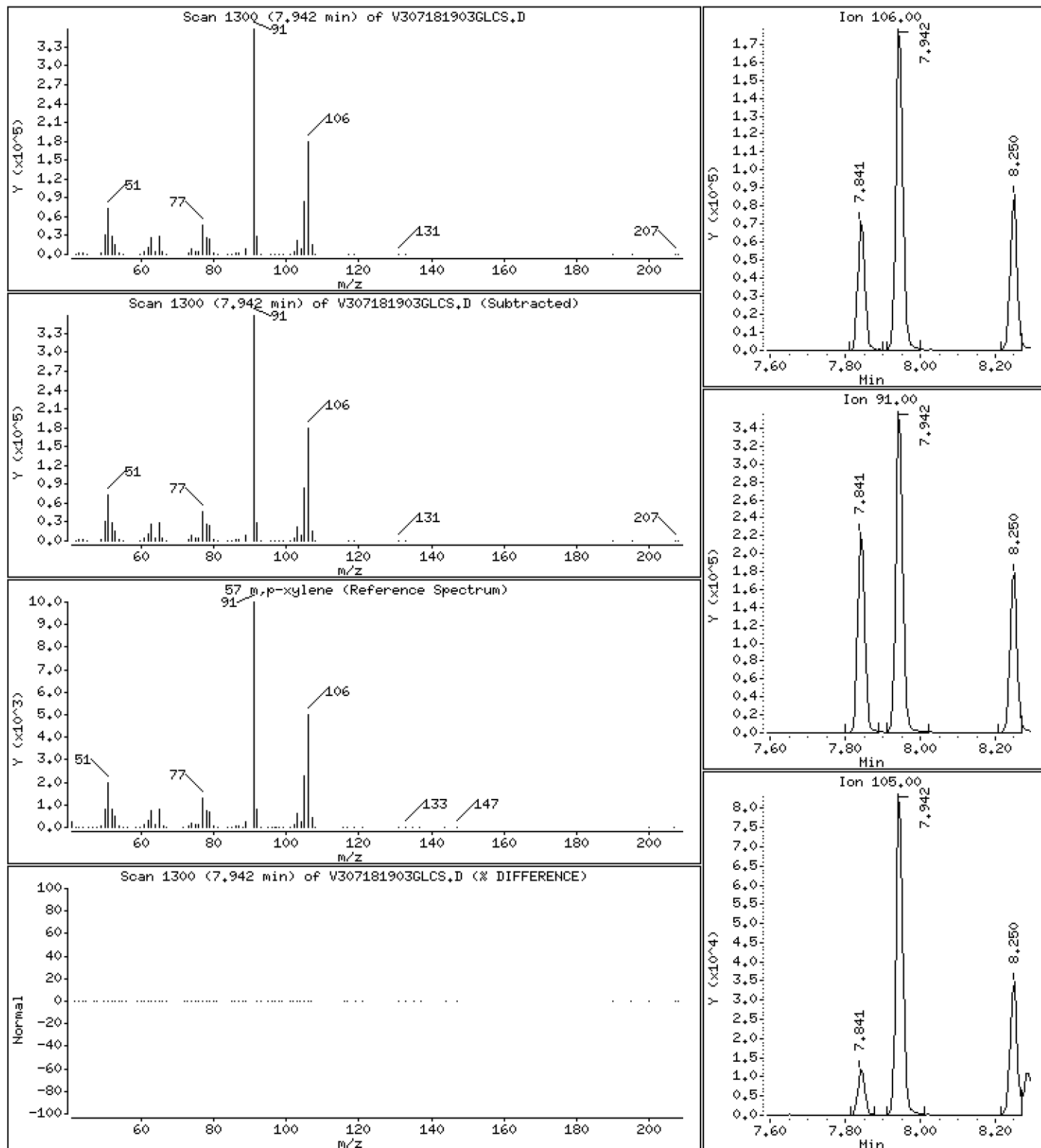
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

57 m,p-xylene

Concentration: 20,110 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

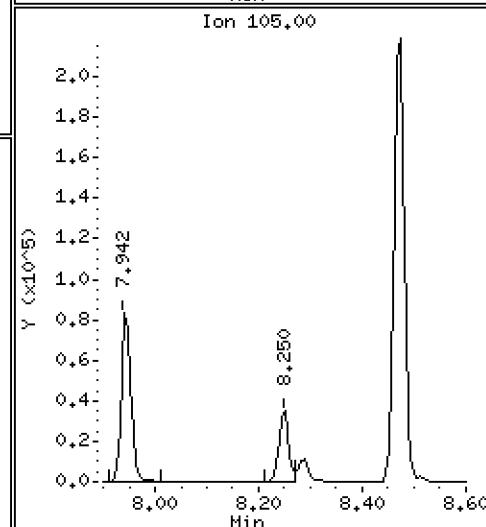
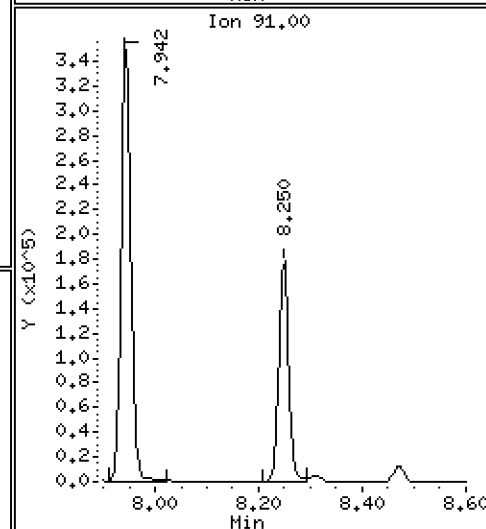
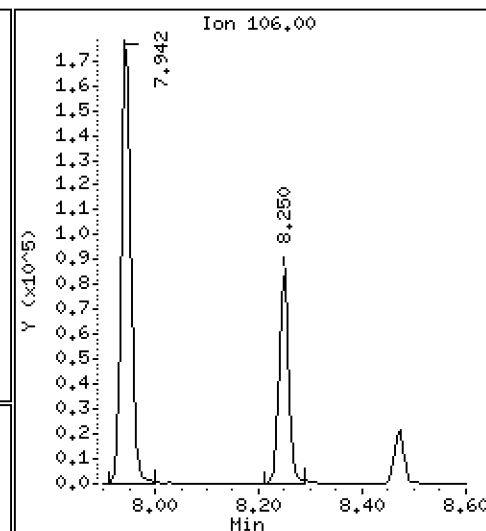
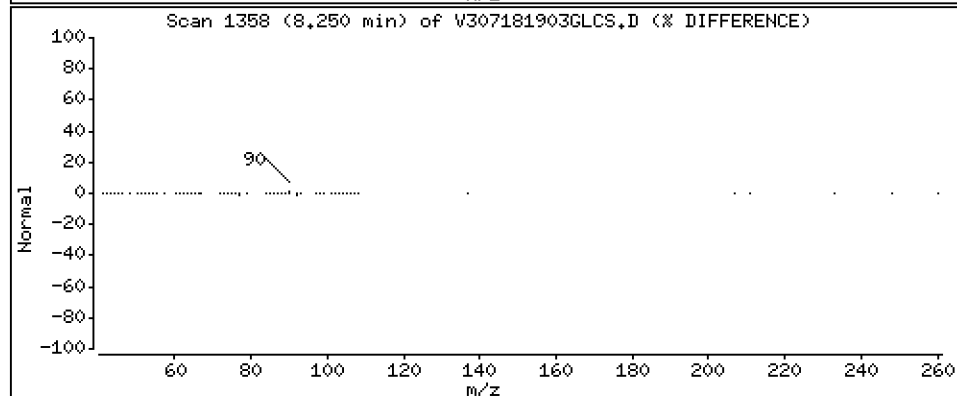
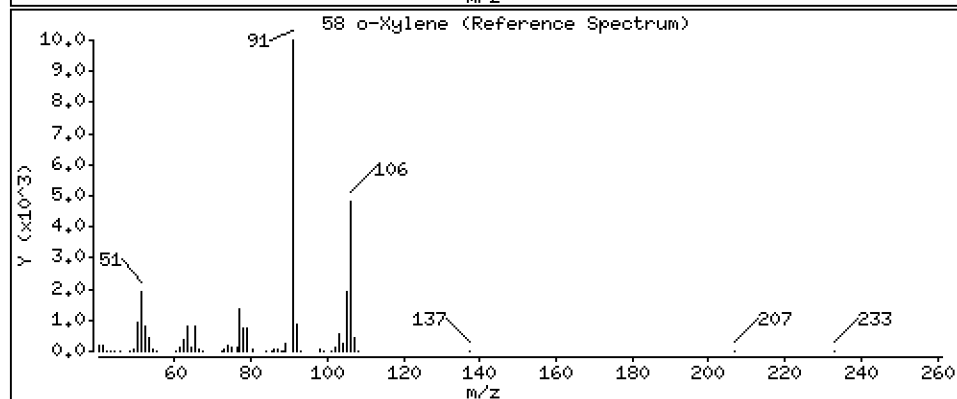
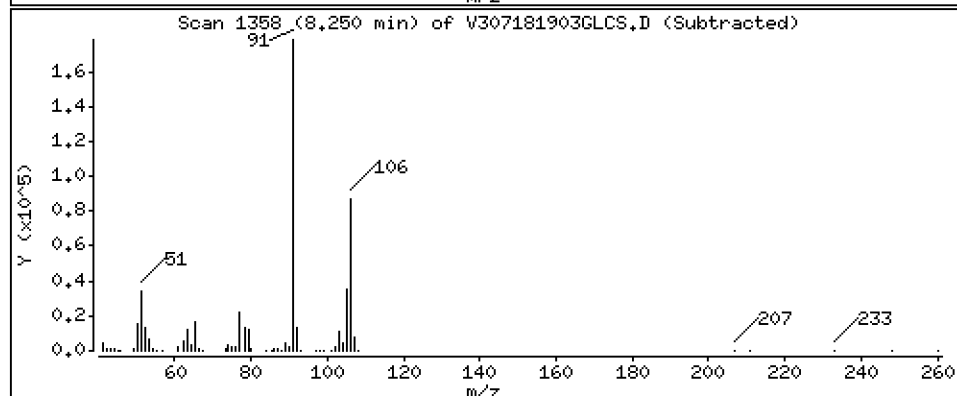
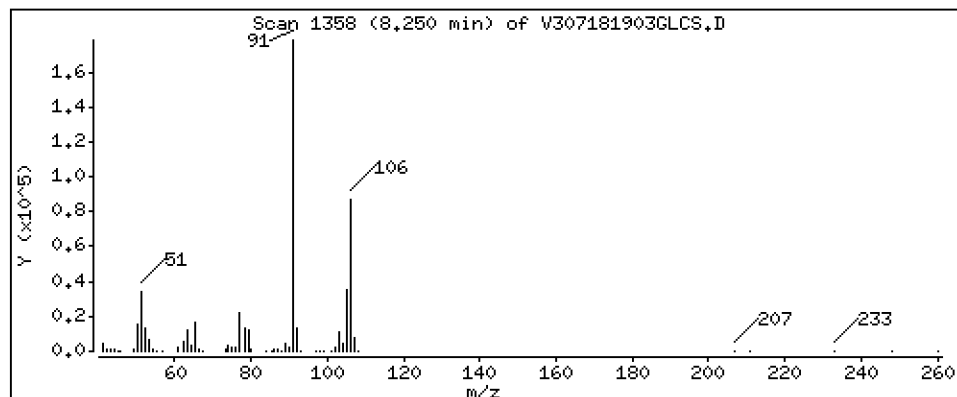
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

58 o-Xylene

Concentration: 9.845 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

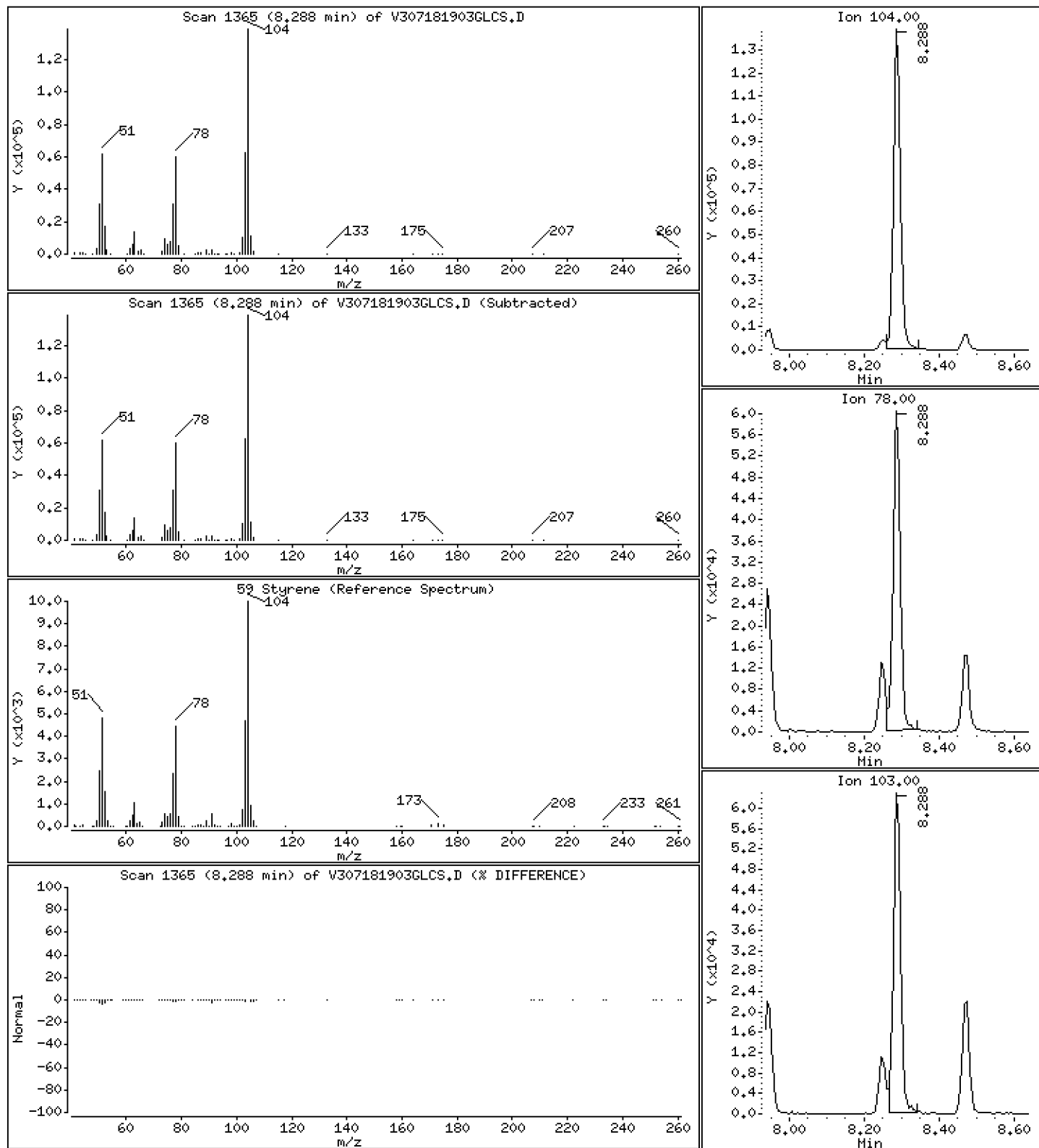
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

59 Styrene

Concentration: 10.423 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

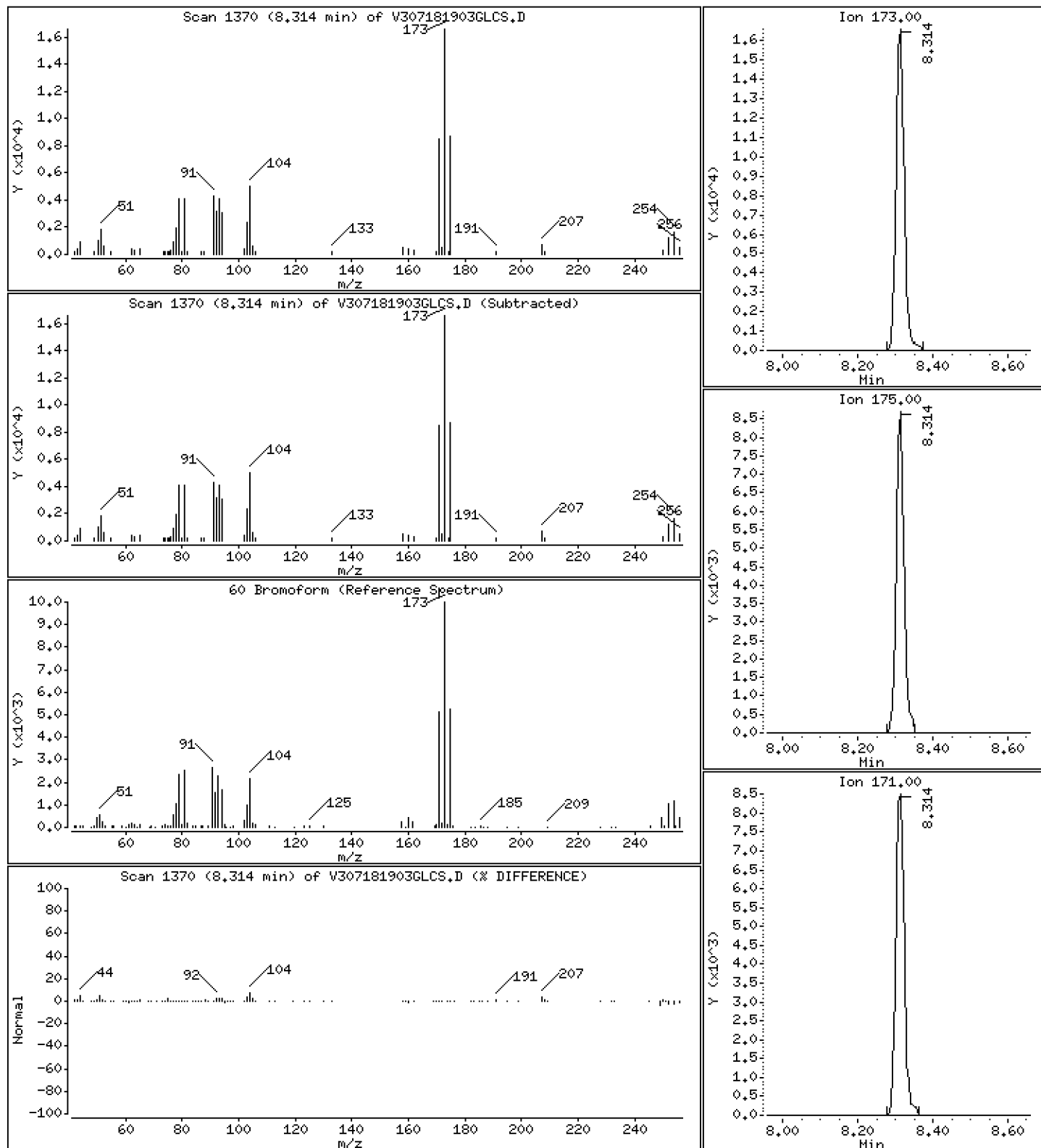
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

60 Bromoform

Concentration: 8.726 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHG0439-BS1

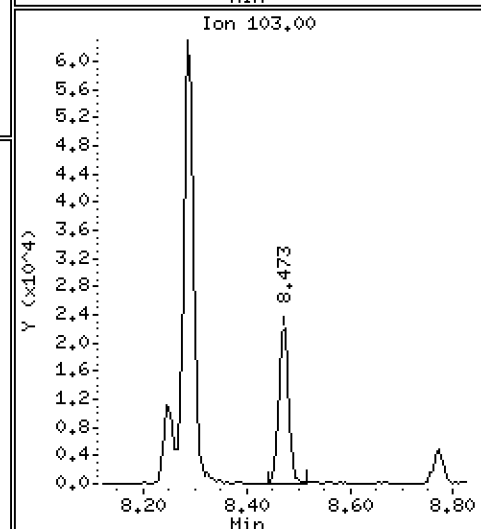
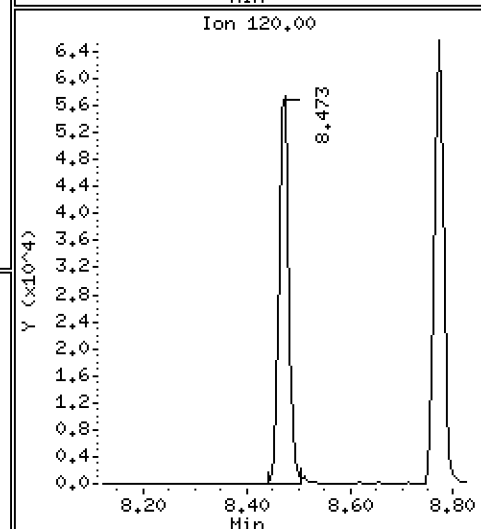
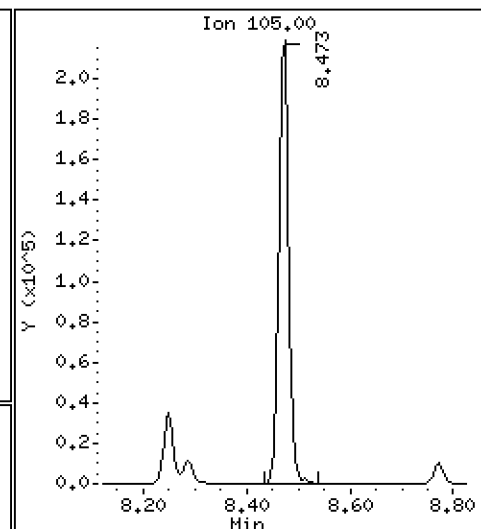
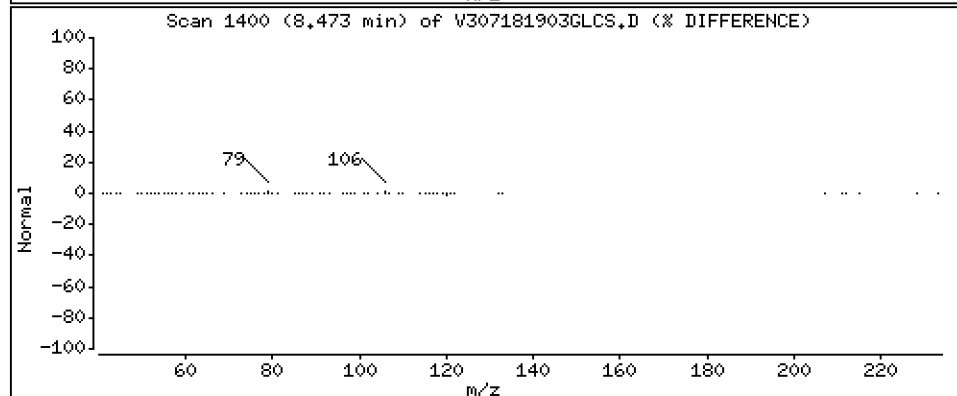
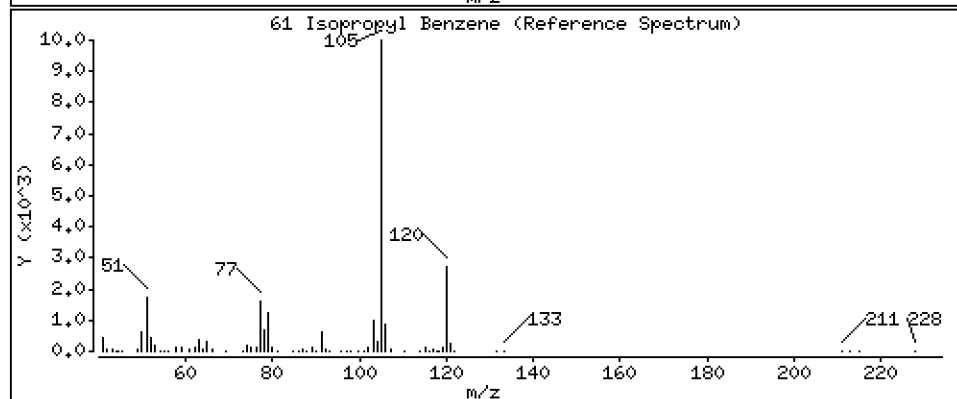
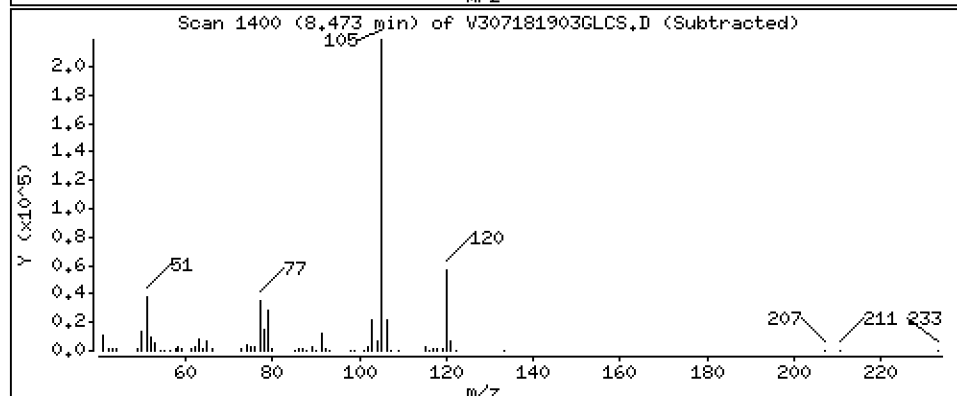
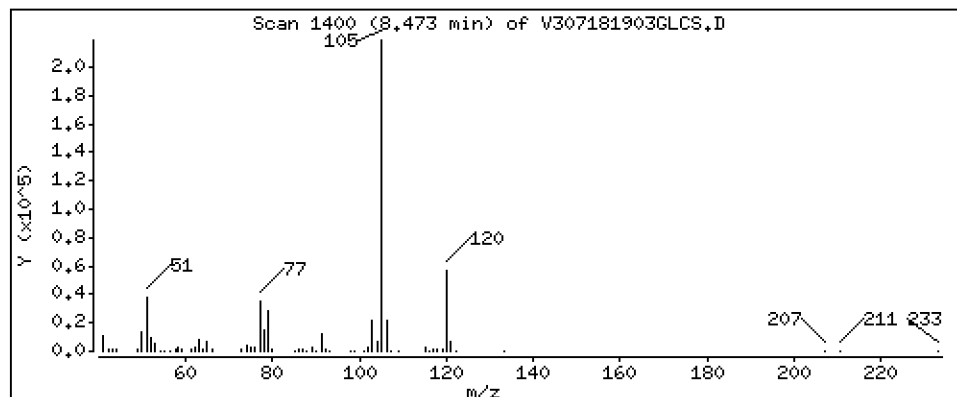
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

61 Isopropyl Benzene

Concentration: 9.649 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

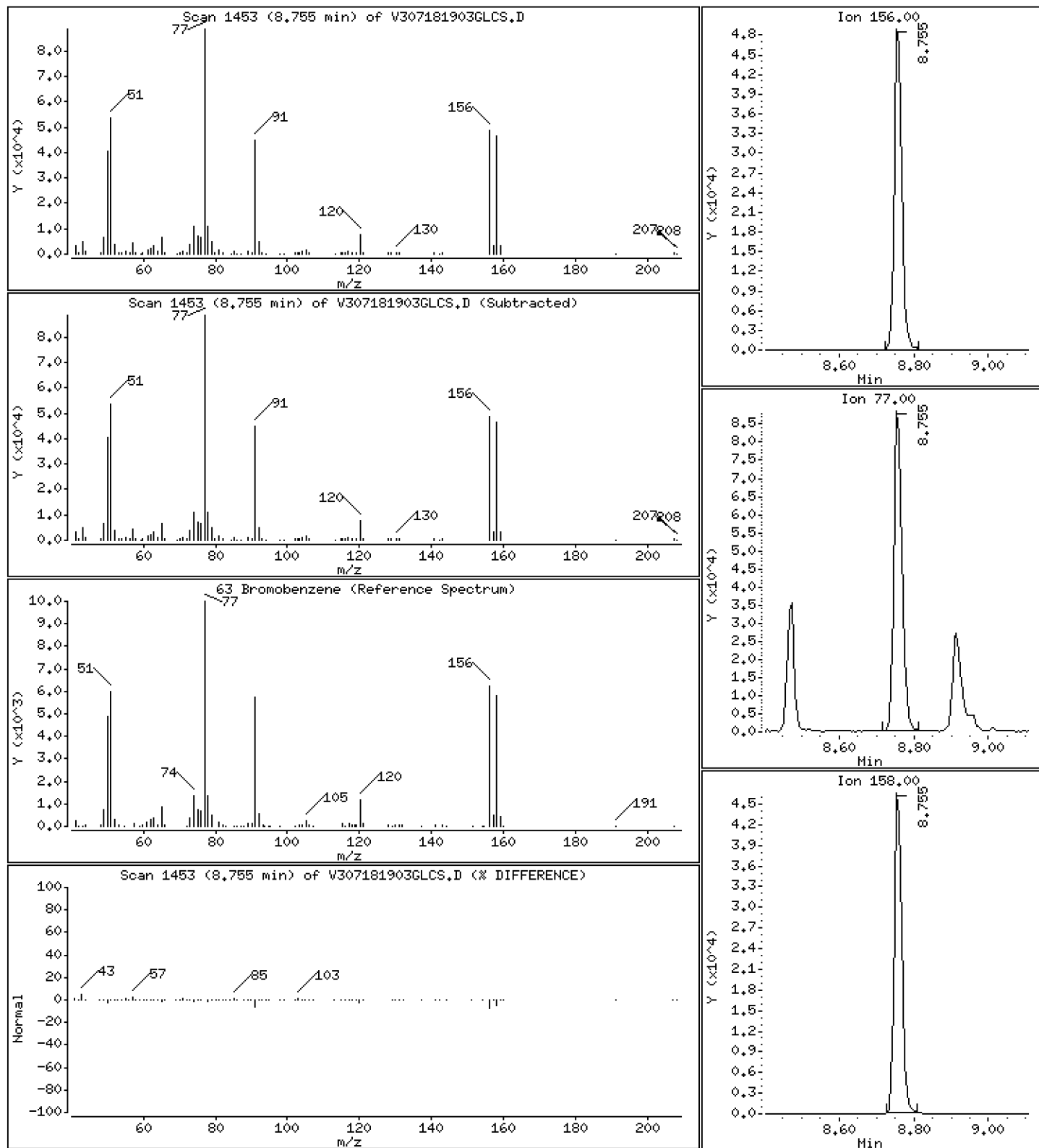
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 9.174 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

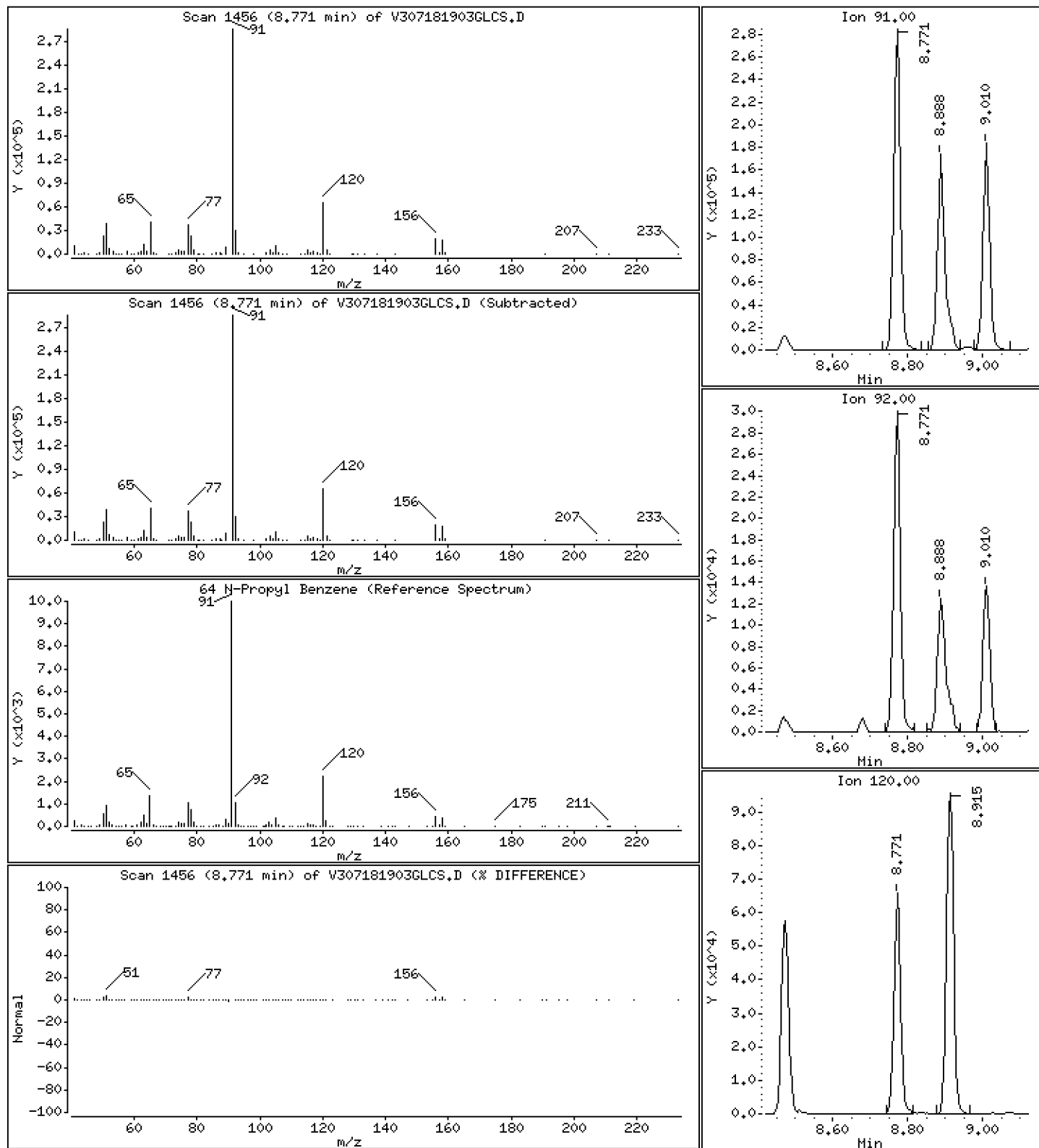
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 9.424 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

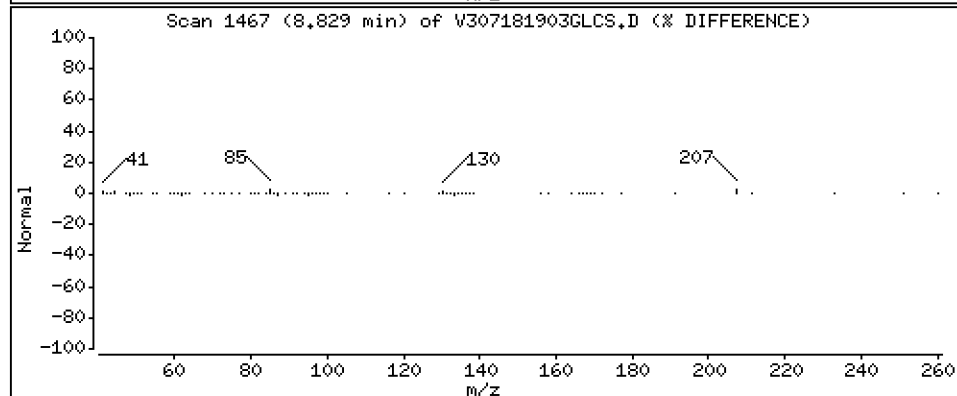
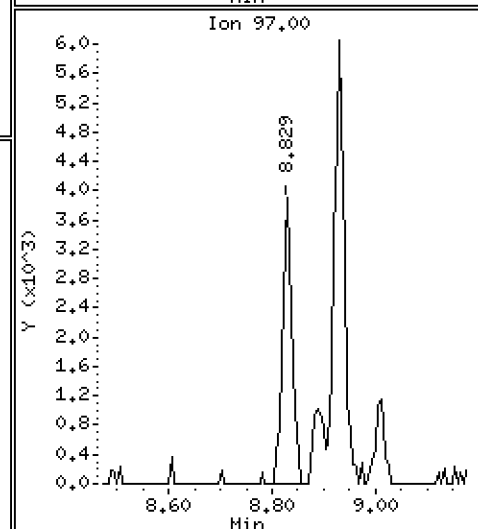
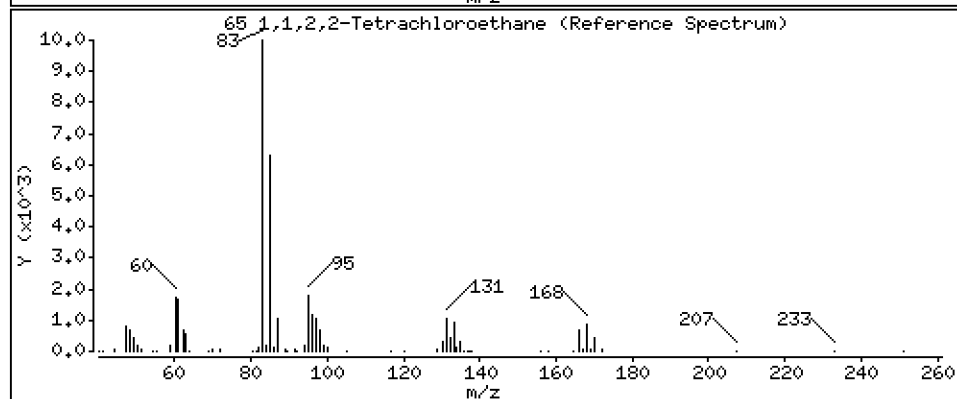
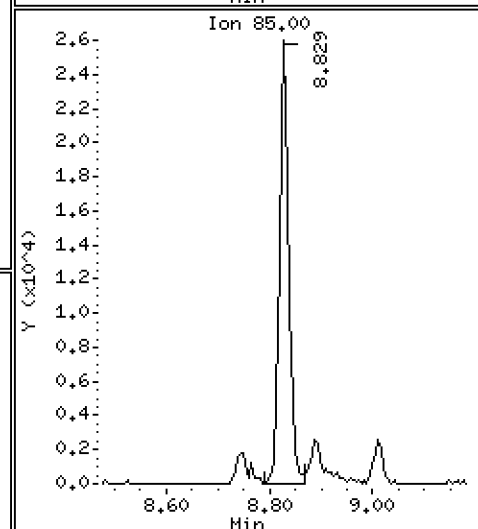
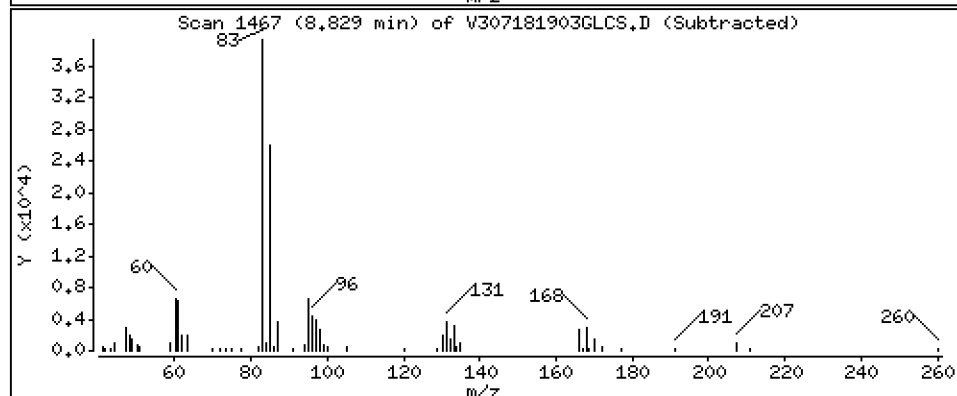
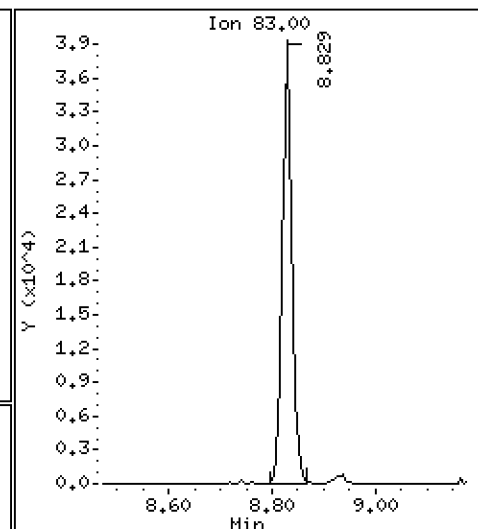
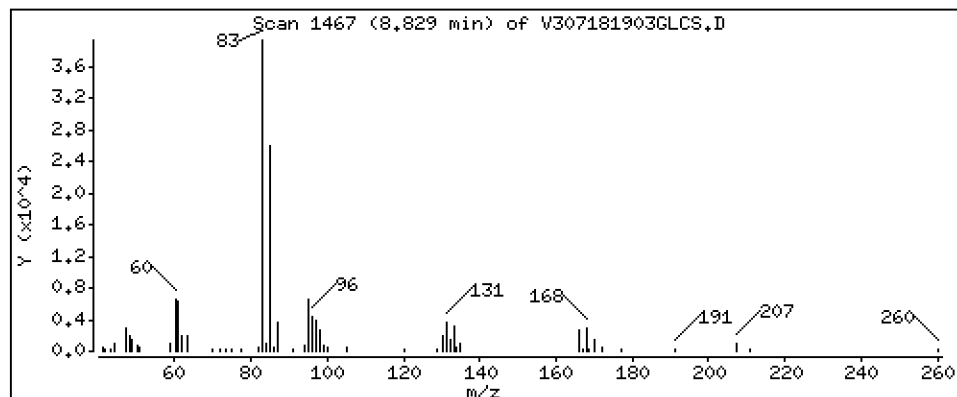
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 8.859 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

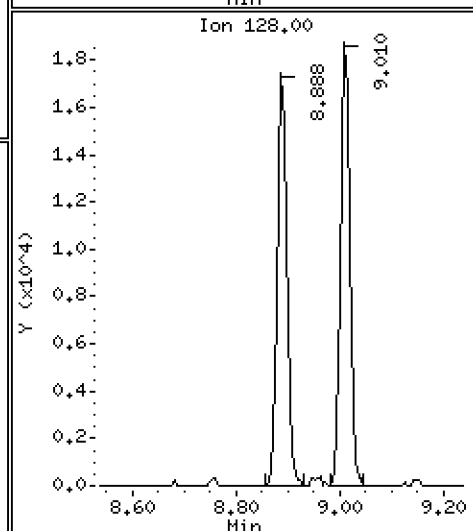
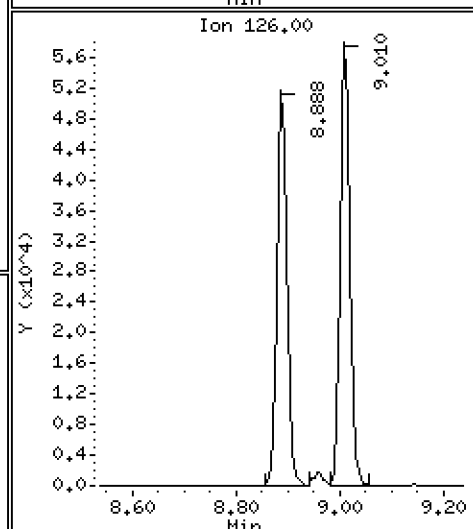
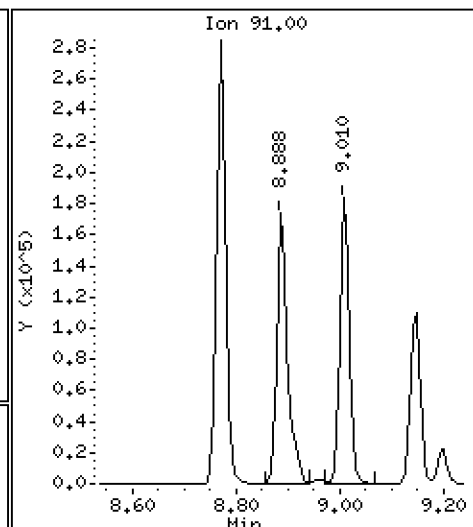
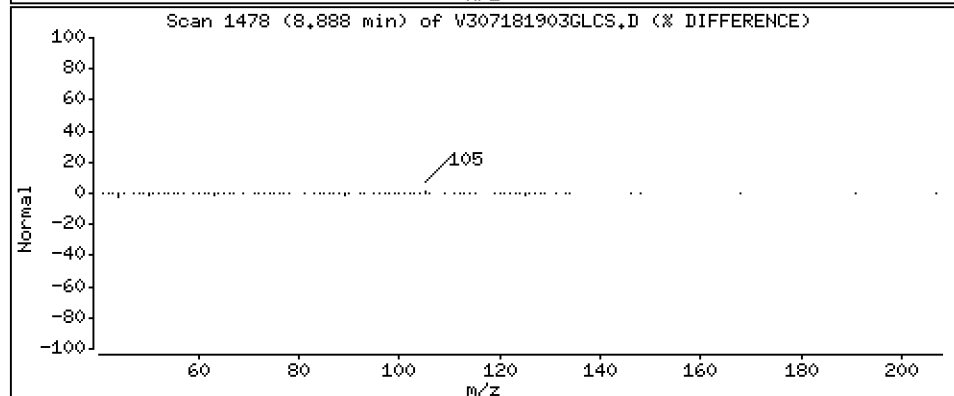
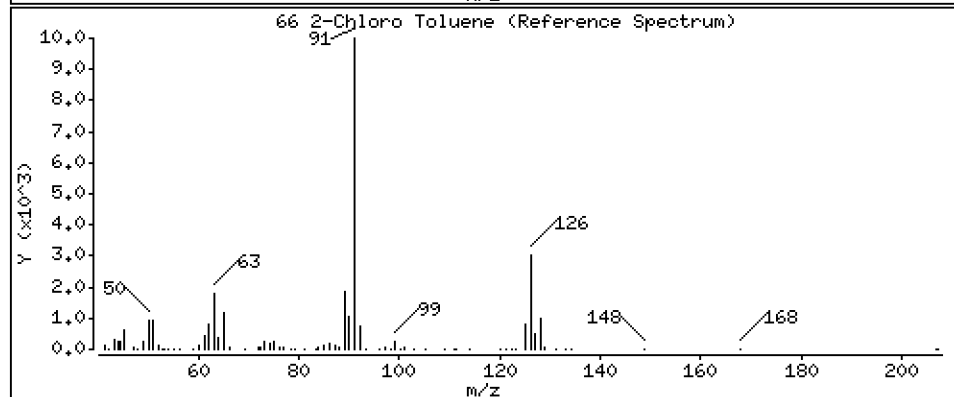
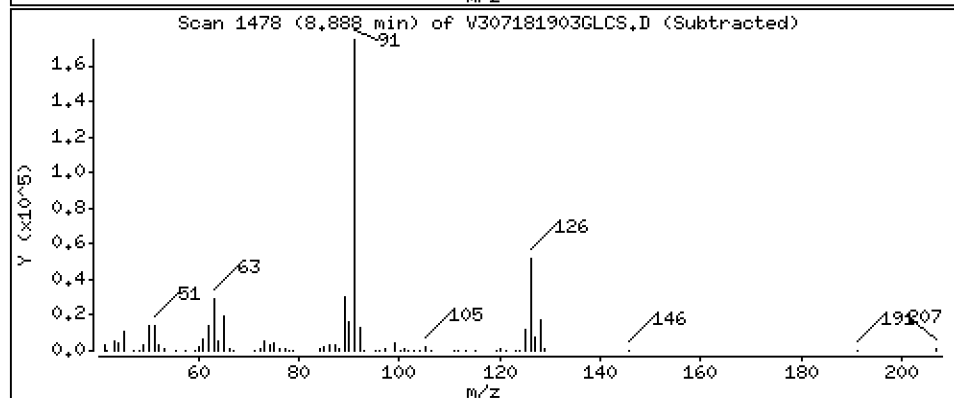
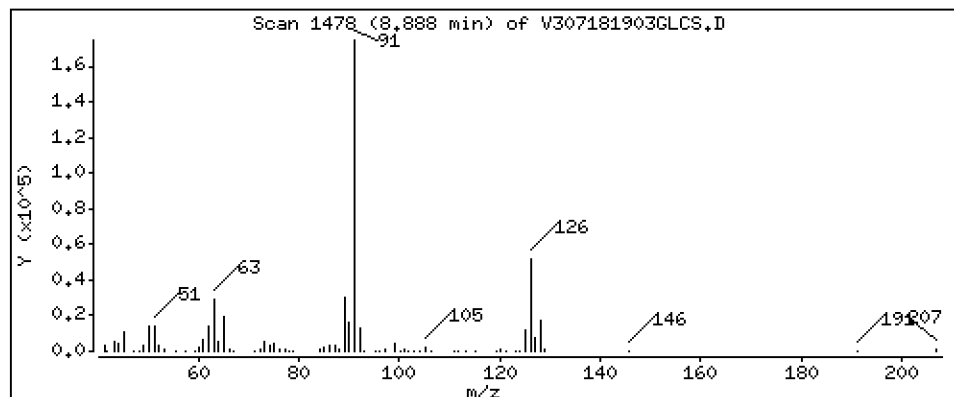
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 9.374 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

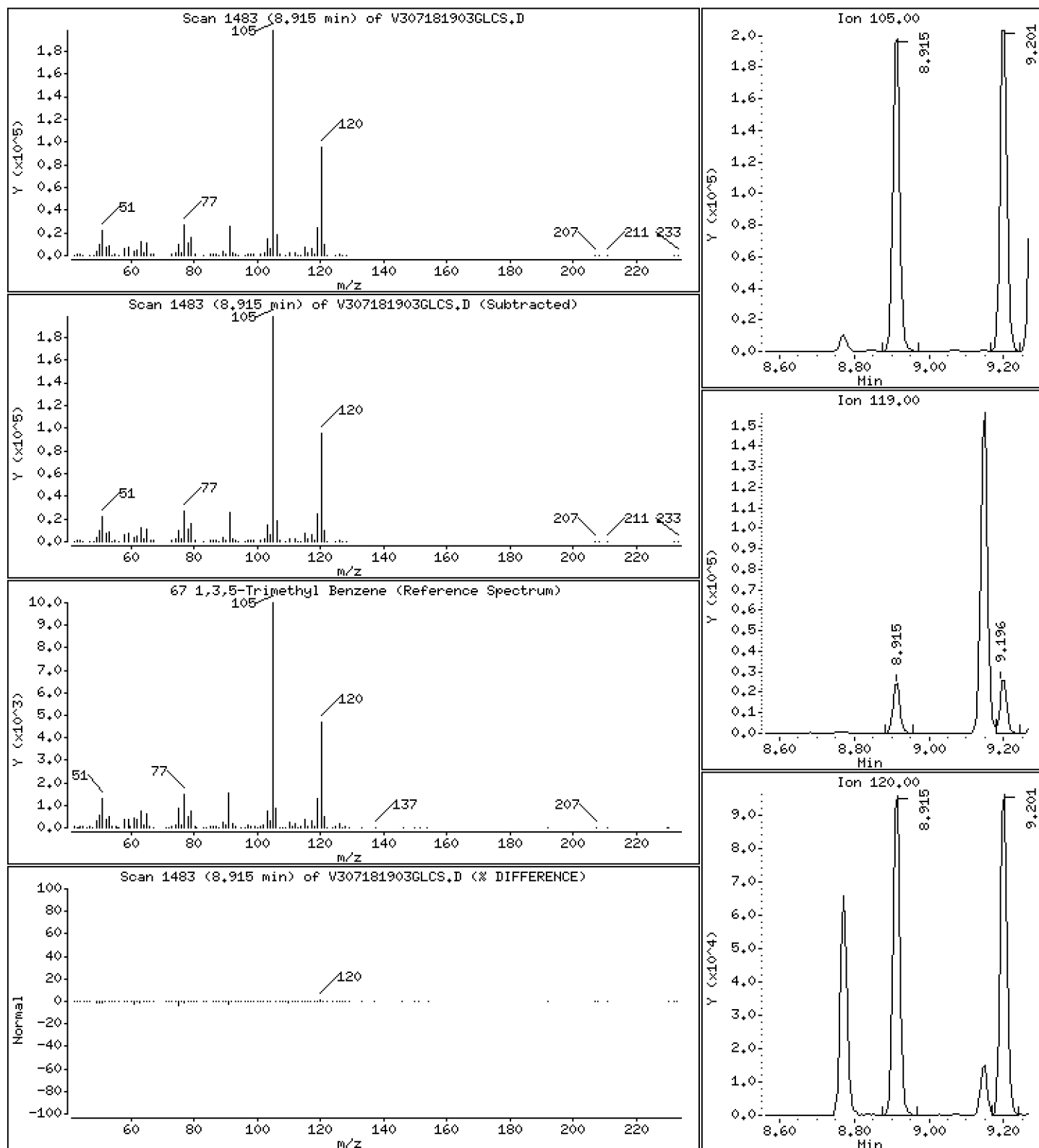
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 9.602 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

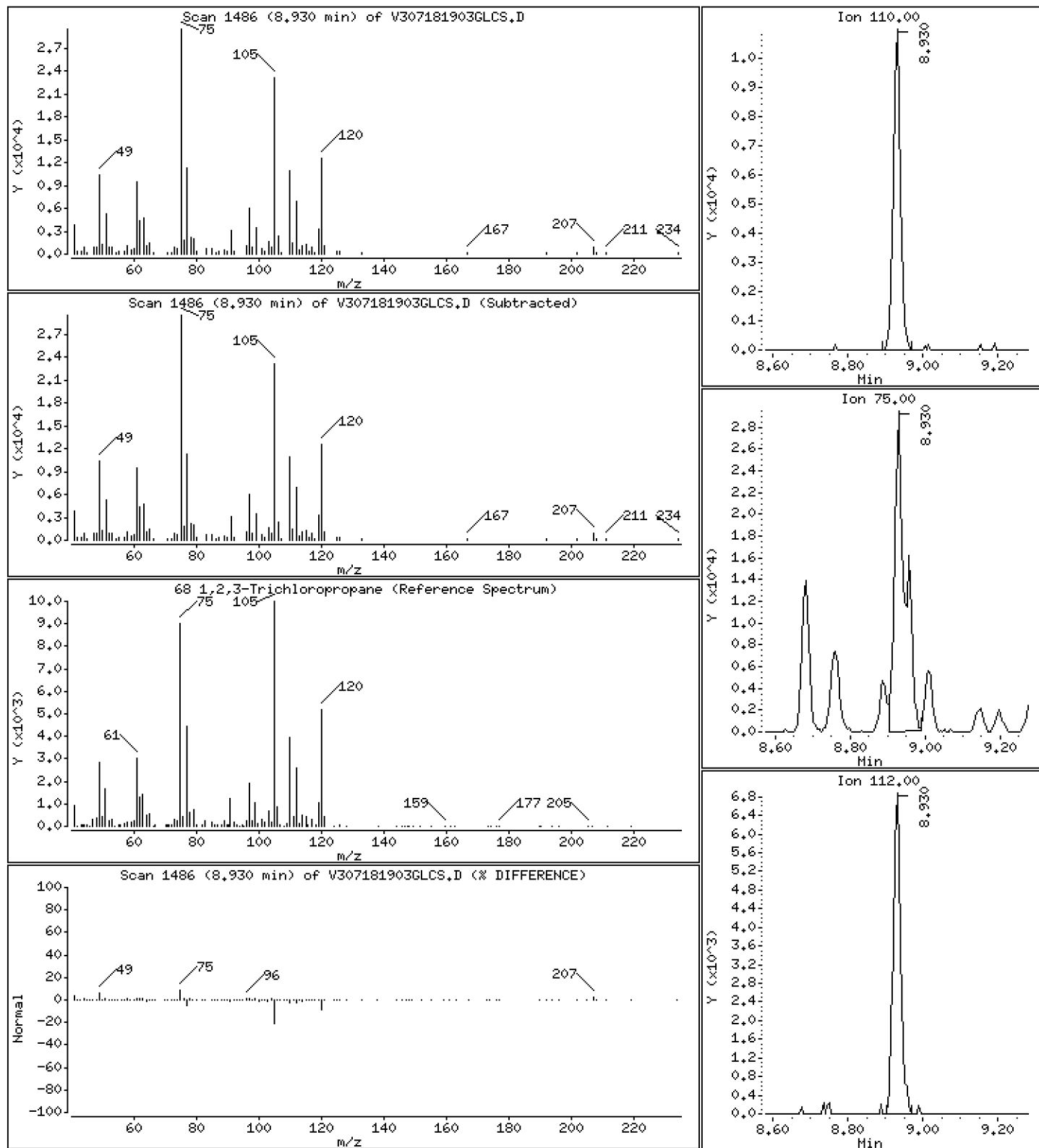
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 8.769 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

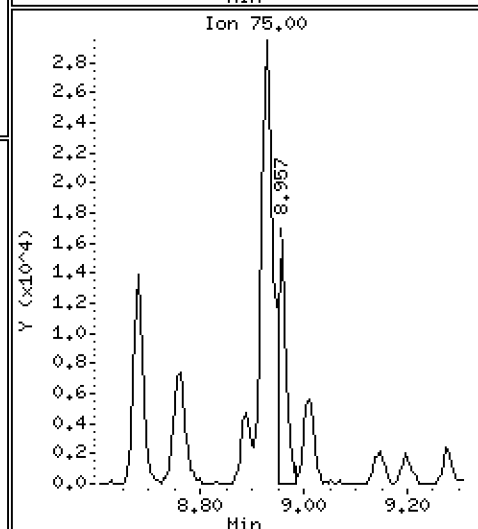
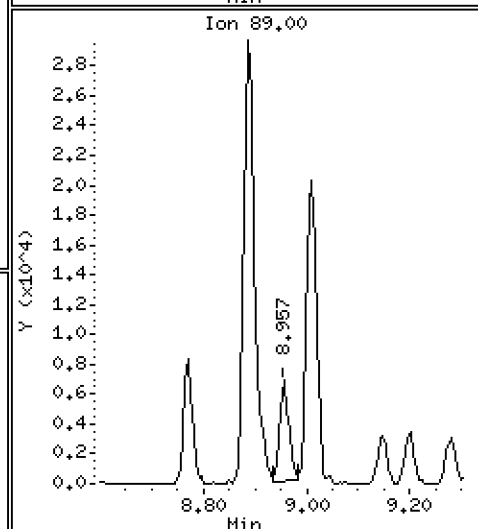
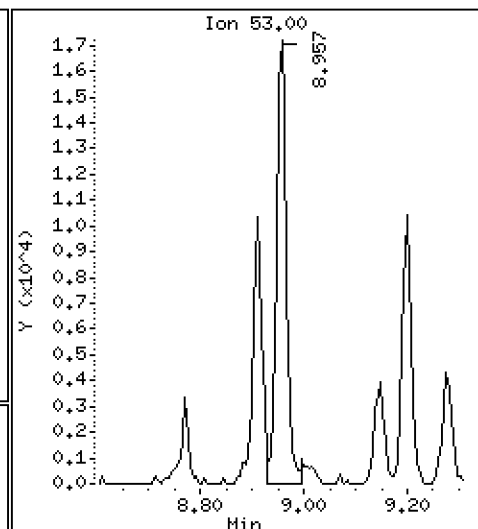
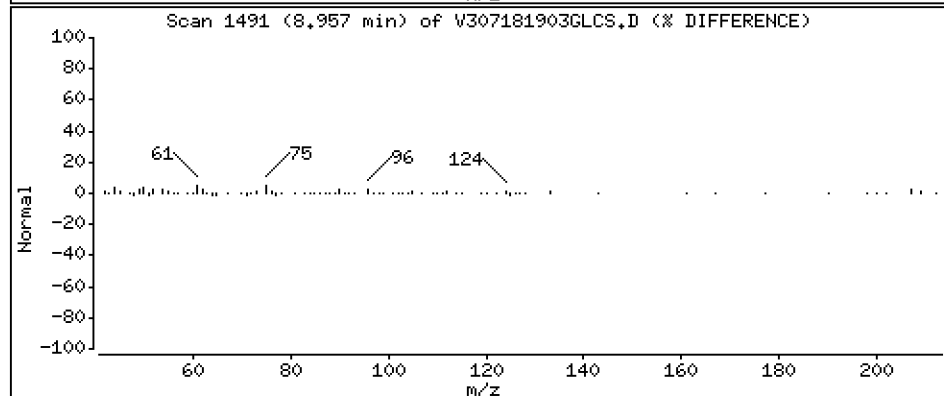
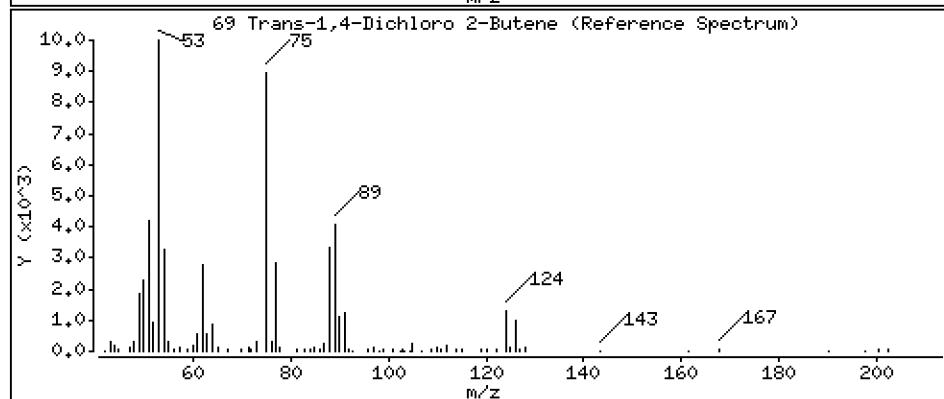
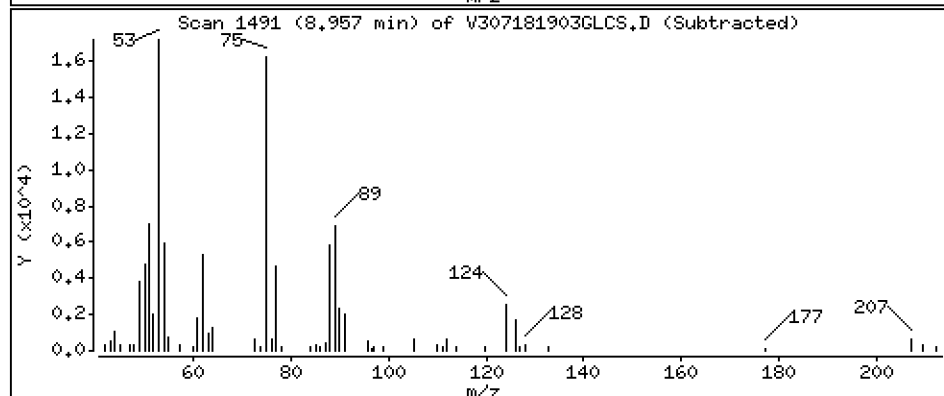
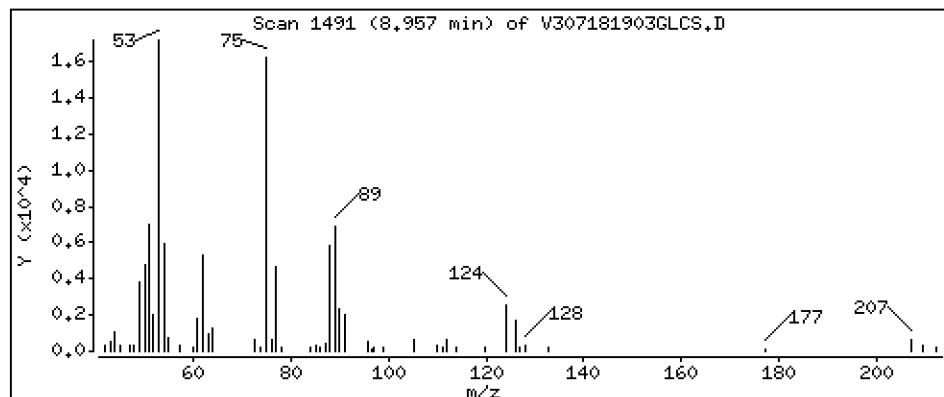
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 8.626 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

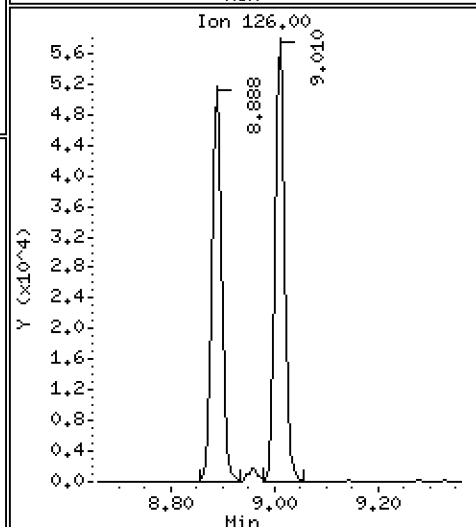
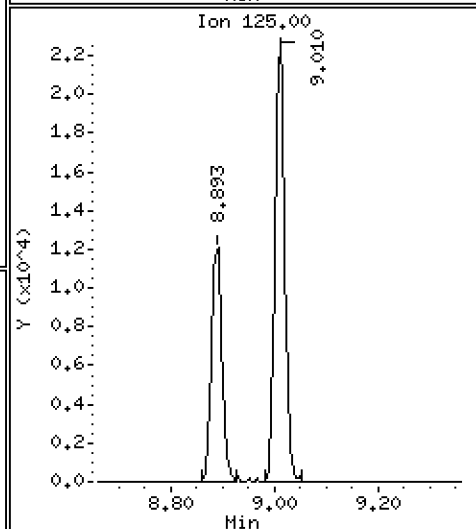
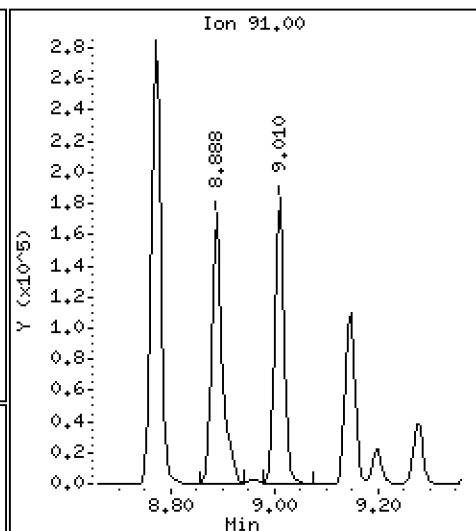
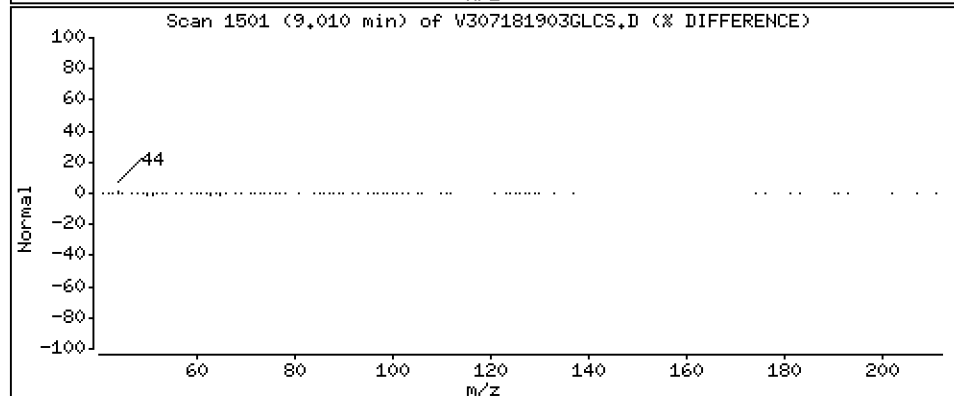
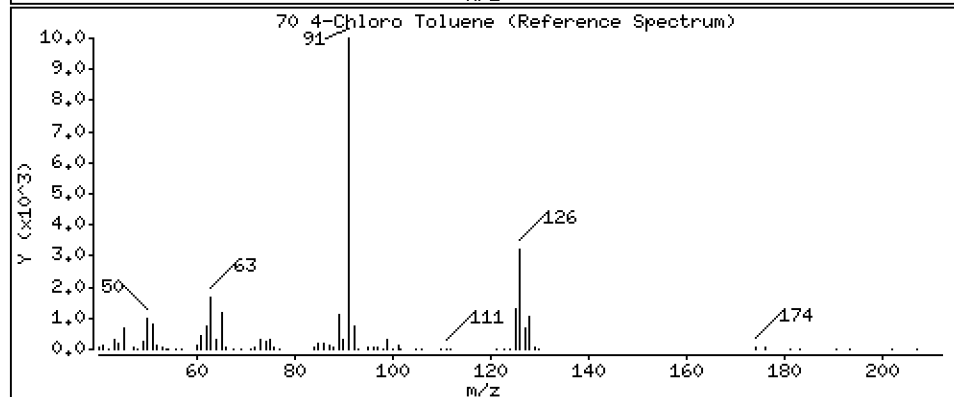
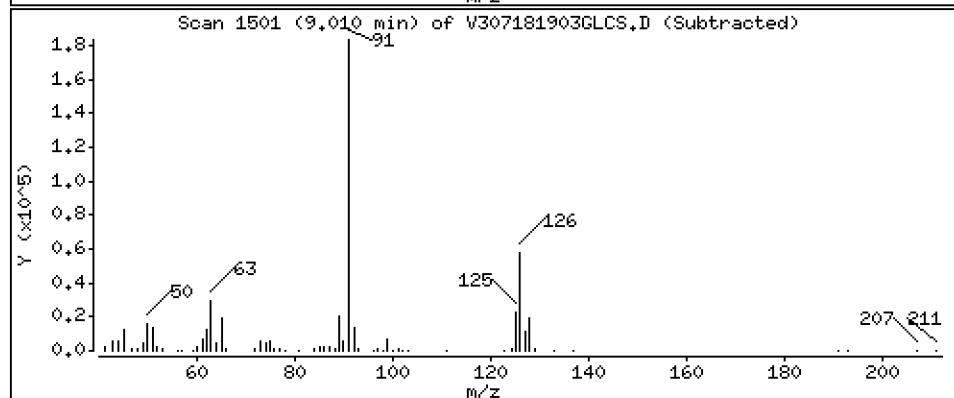
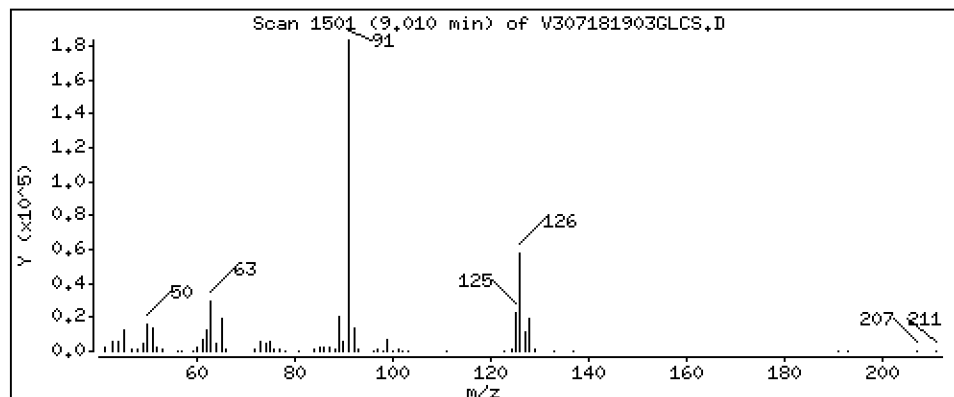
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 9.531 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

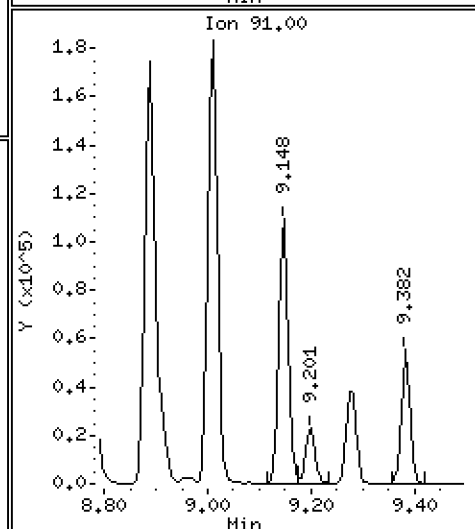
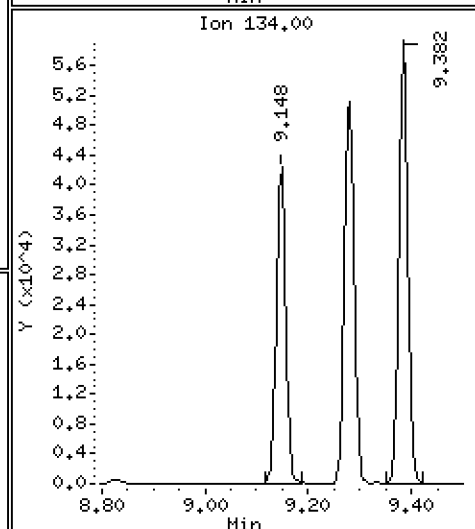
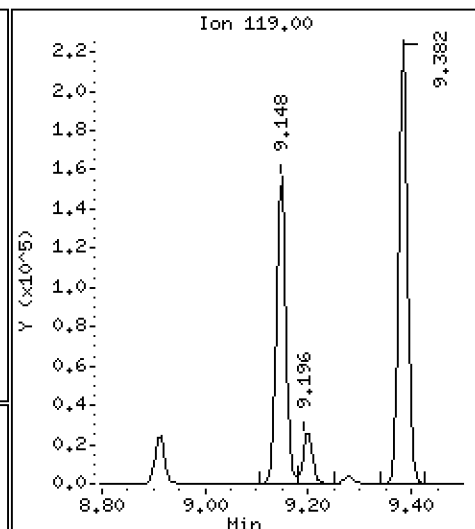
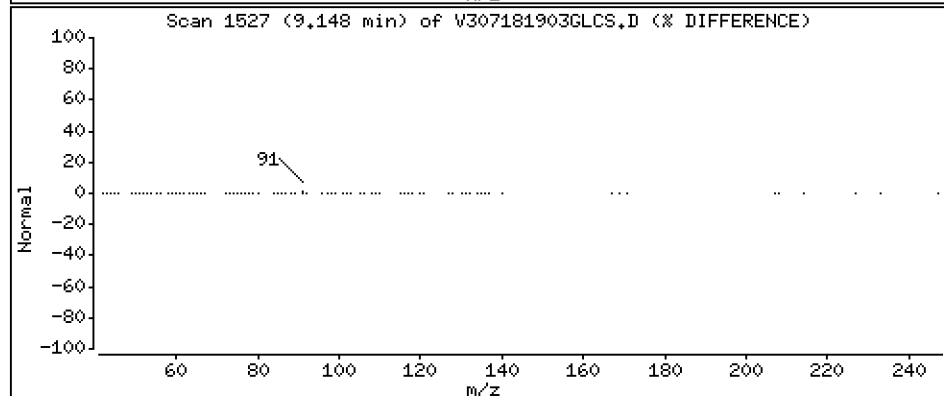
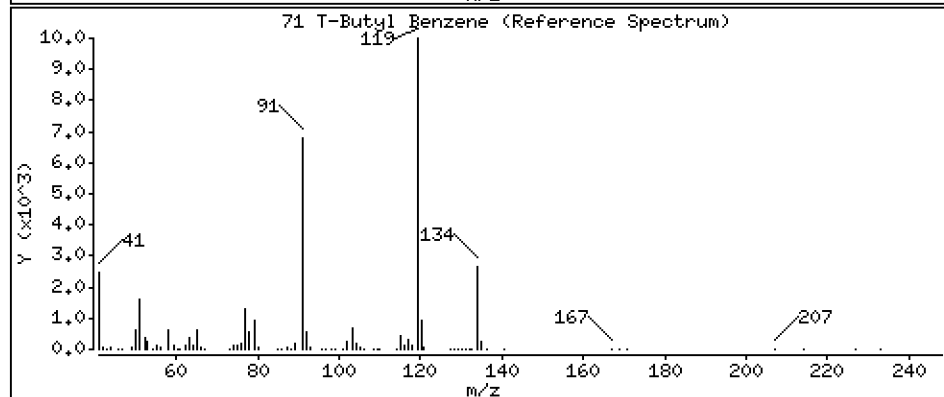
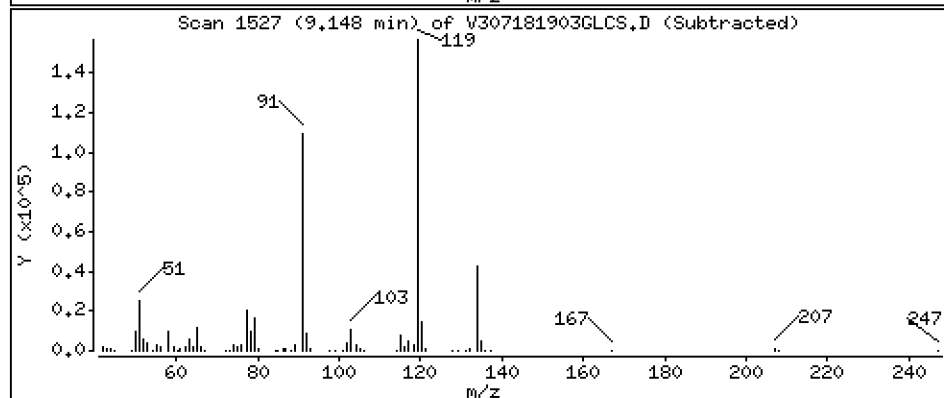
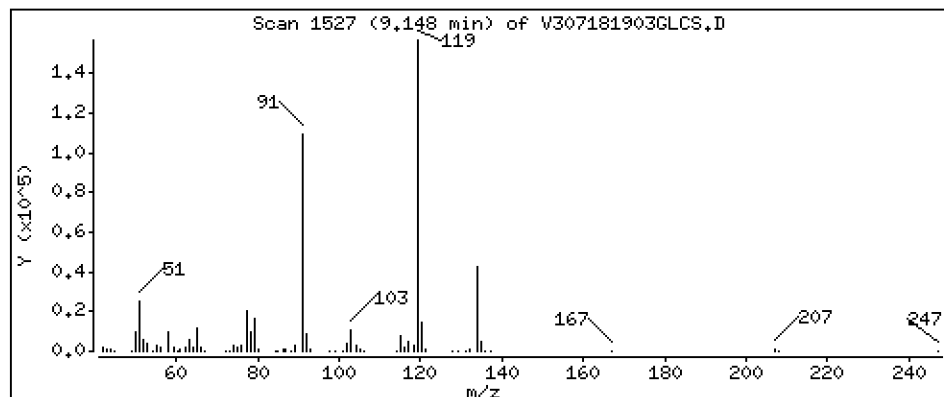
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 9.206 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

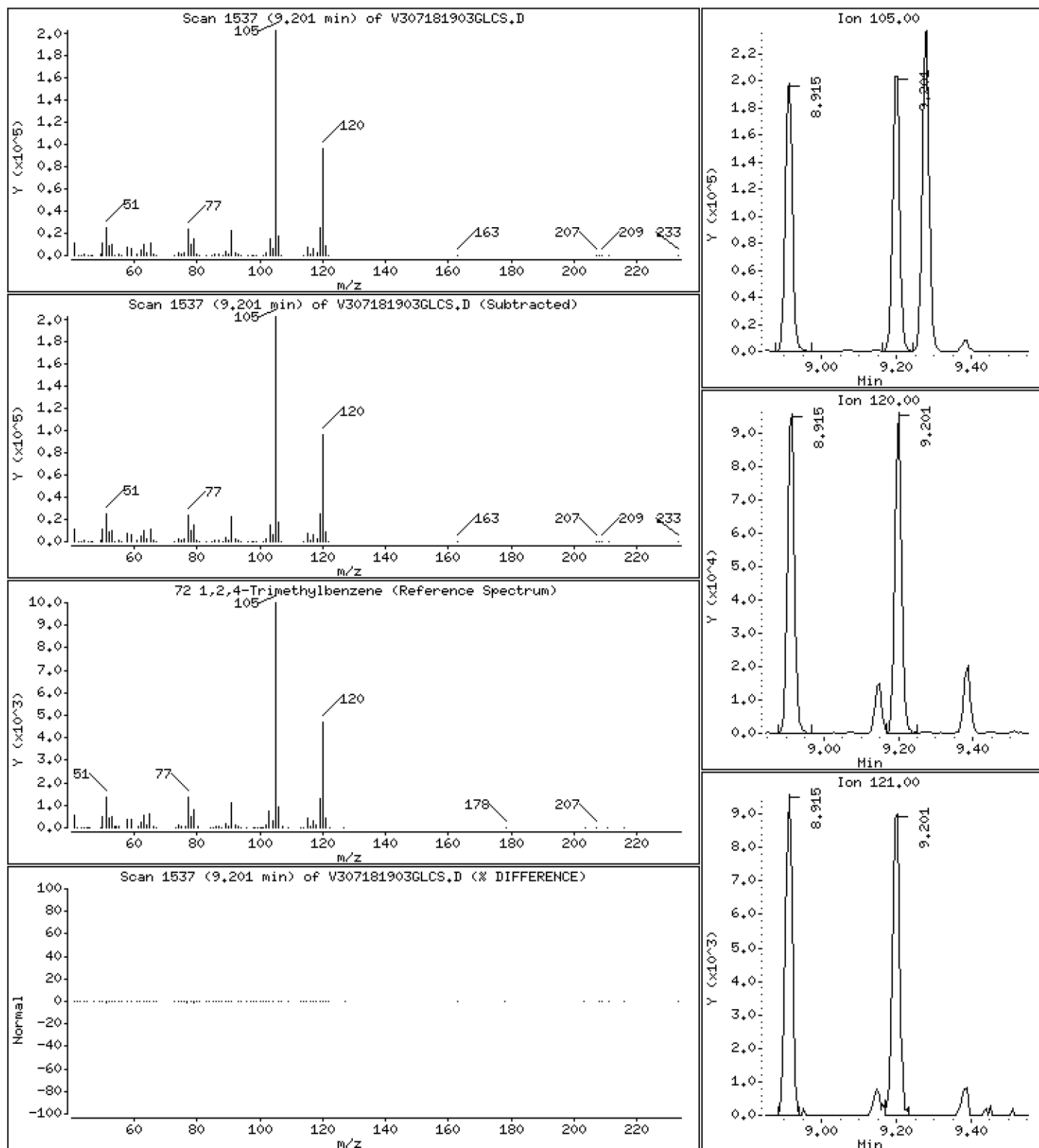
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 9.914 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

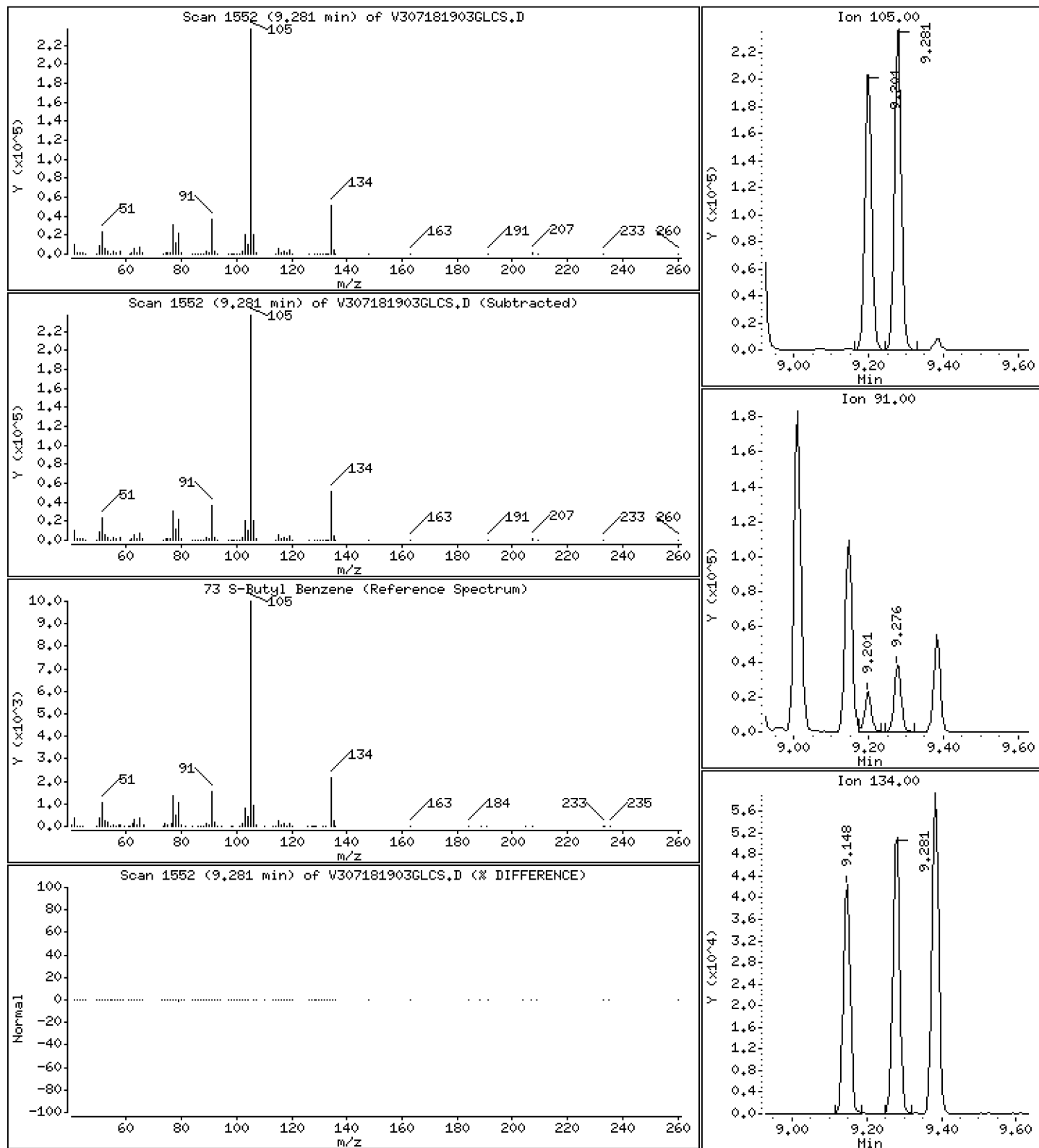
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 9.450 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

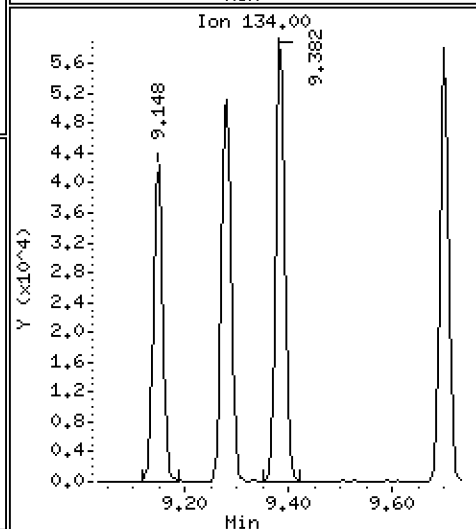
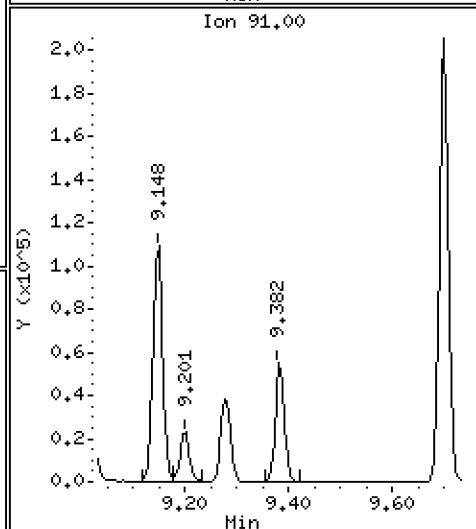
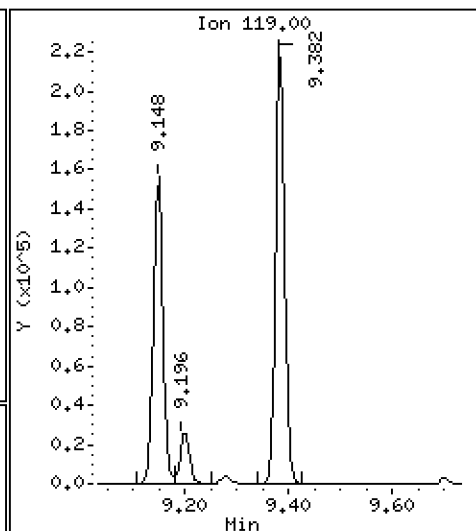
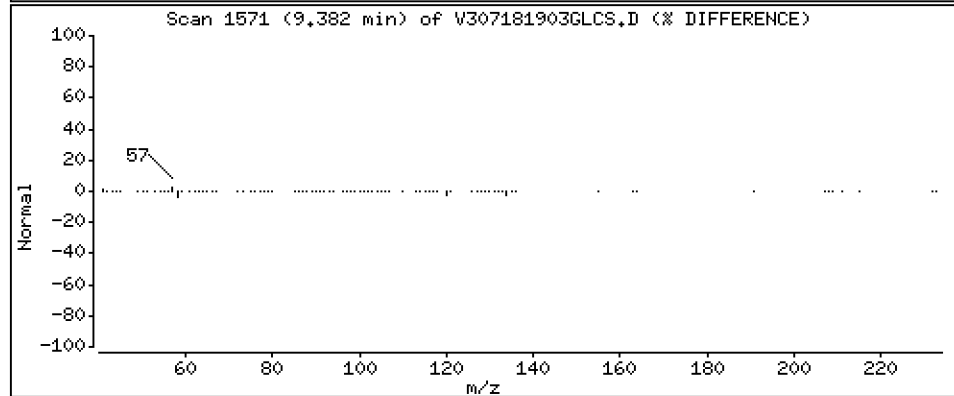
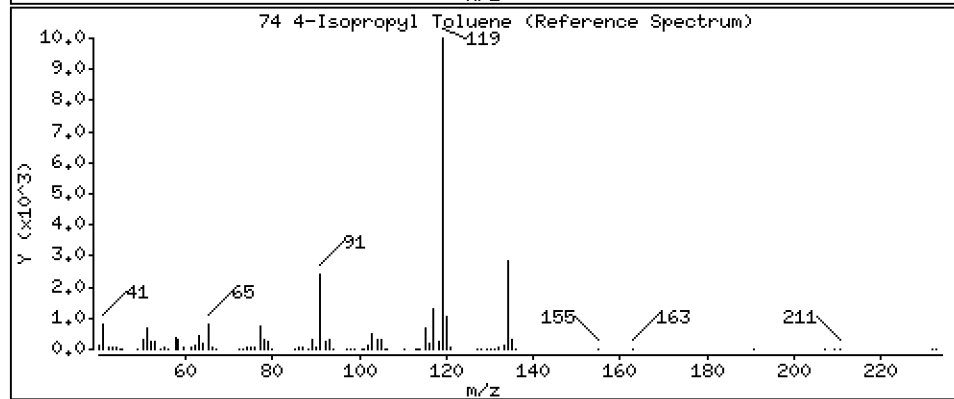
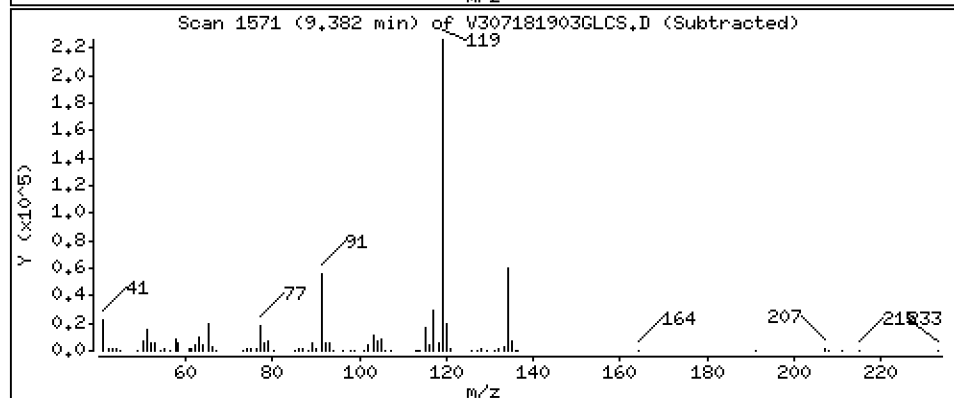
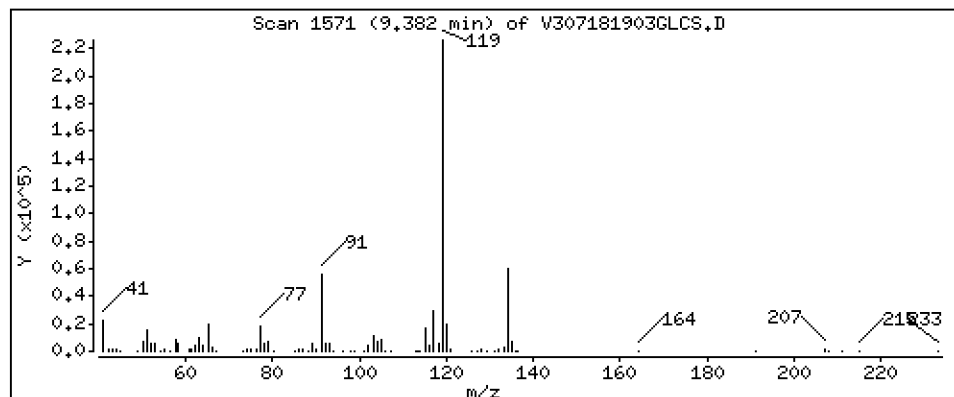
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 9.596 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

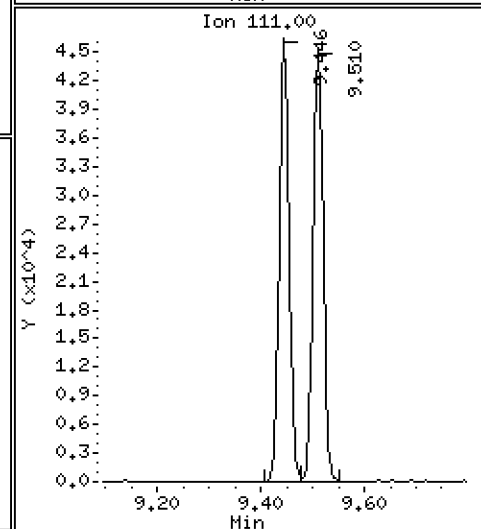
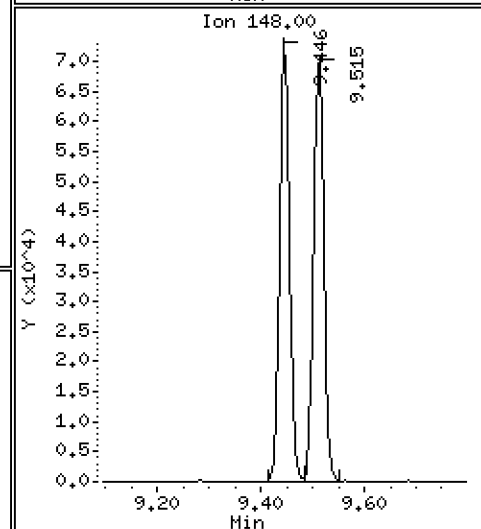
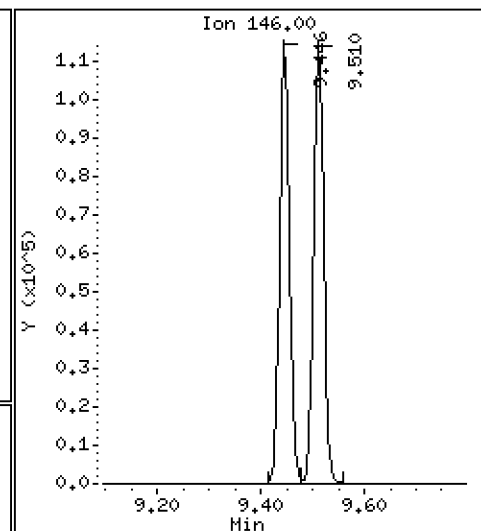
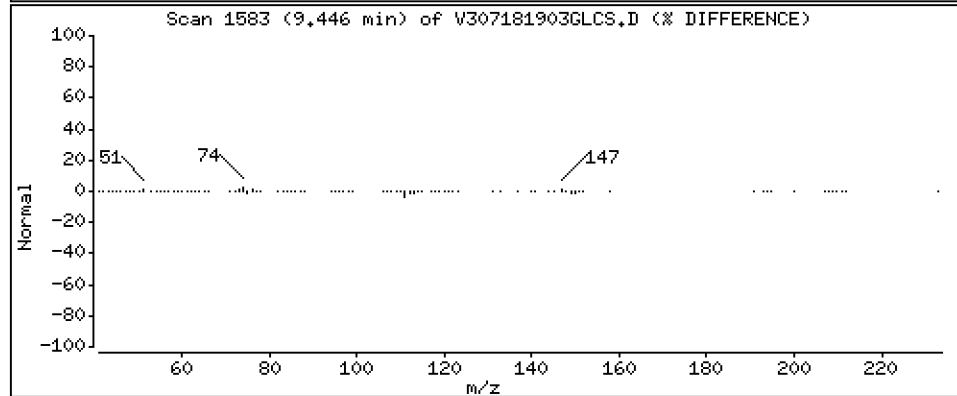
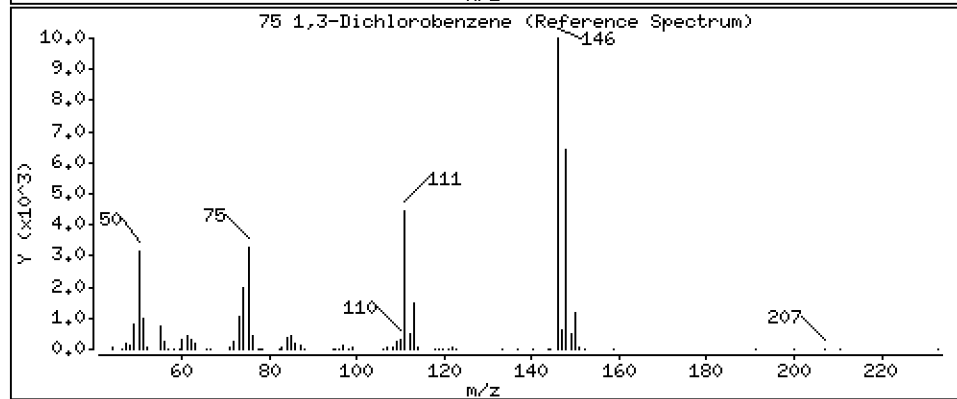
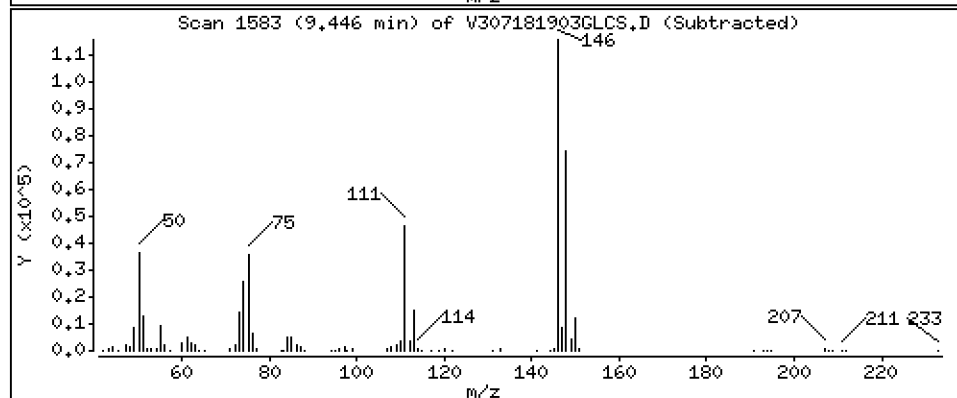
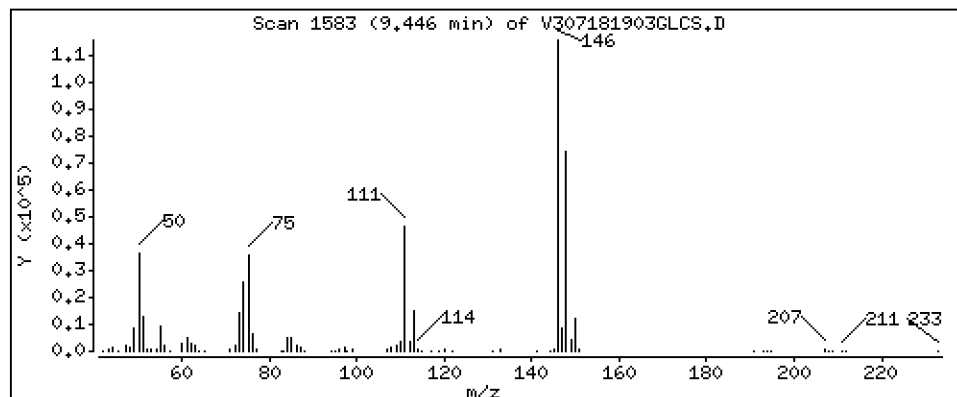
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 9.299 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

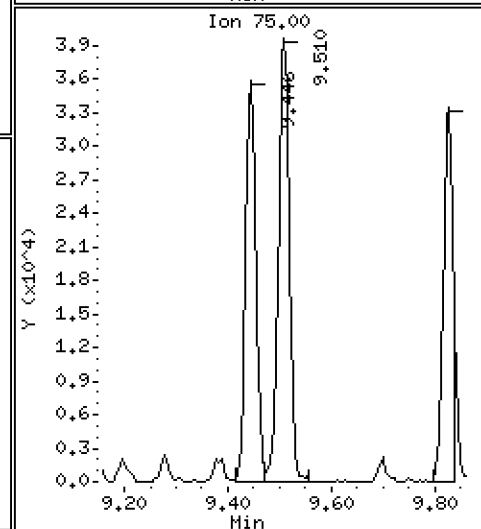
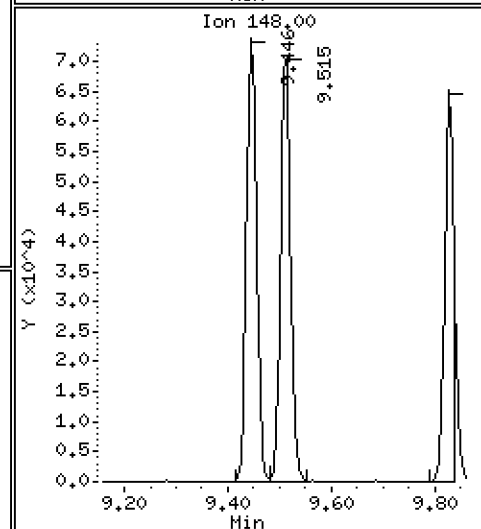
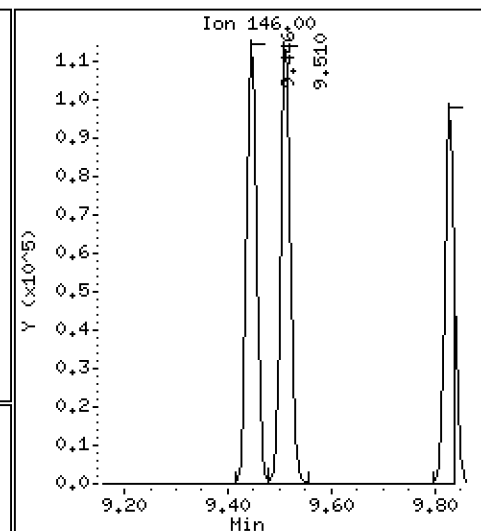
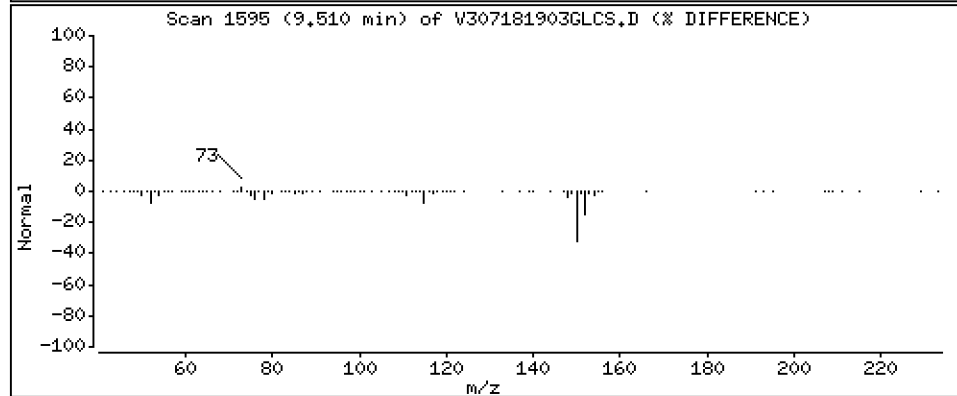
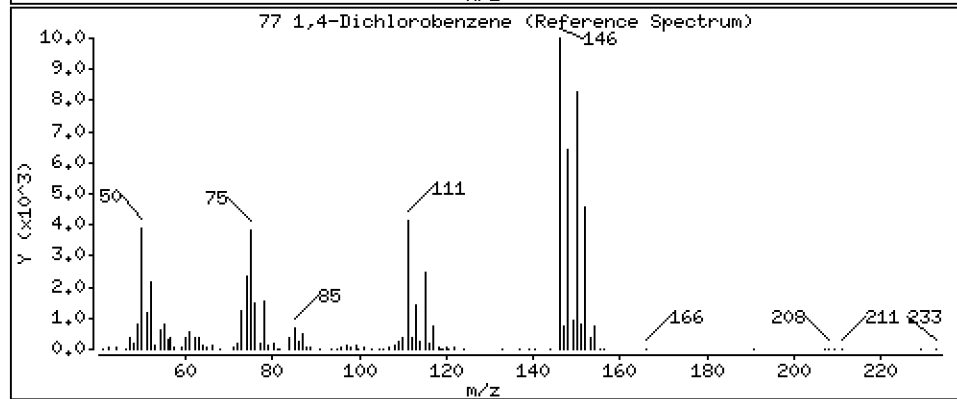
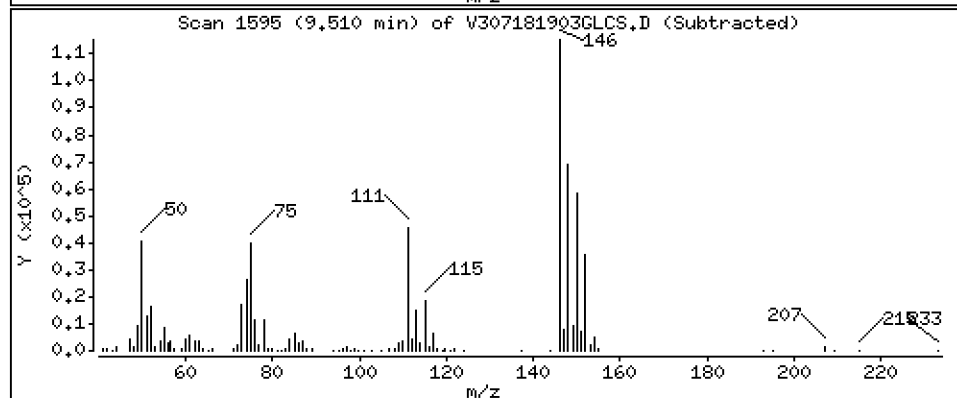
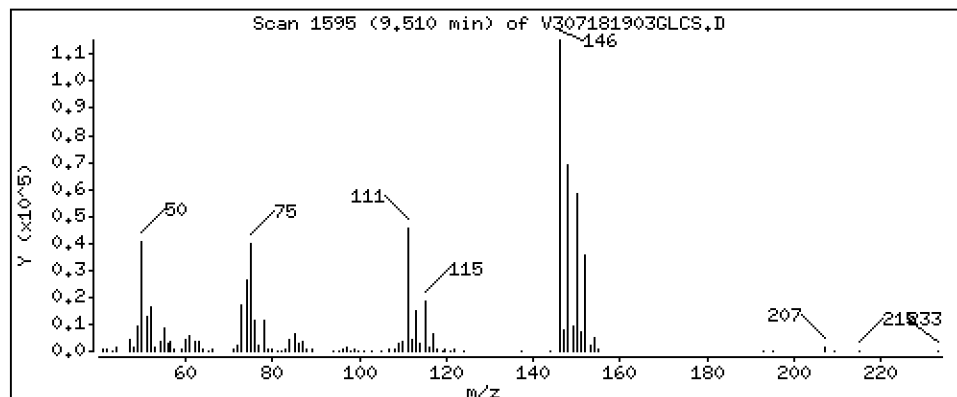
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 8.941 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

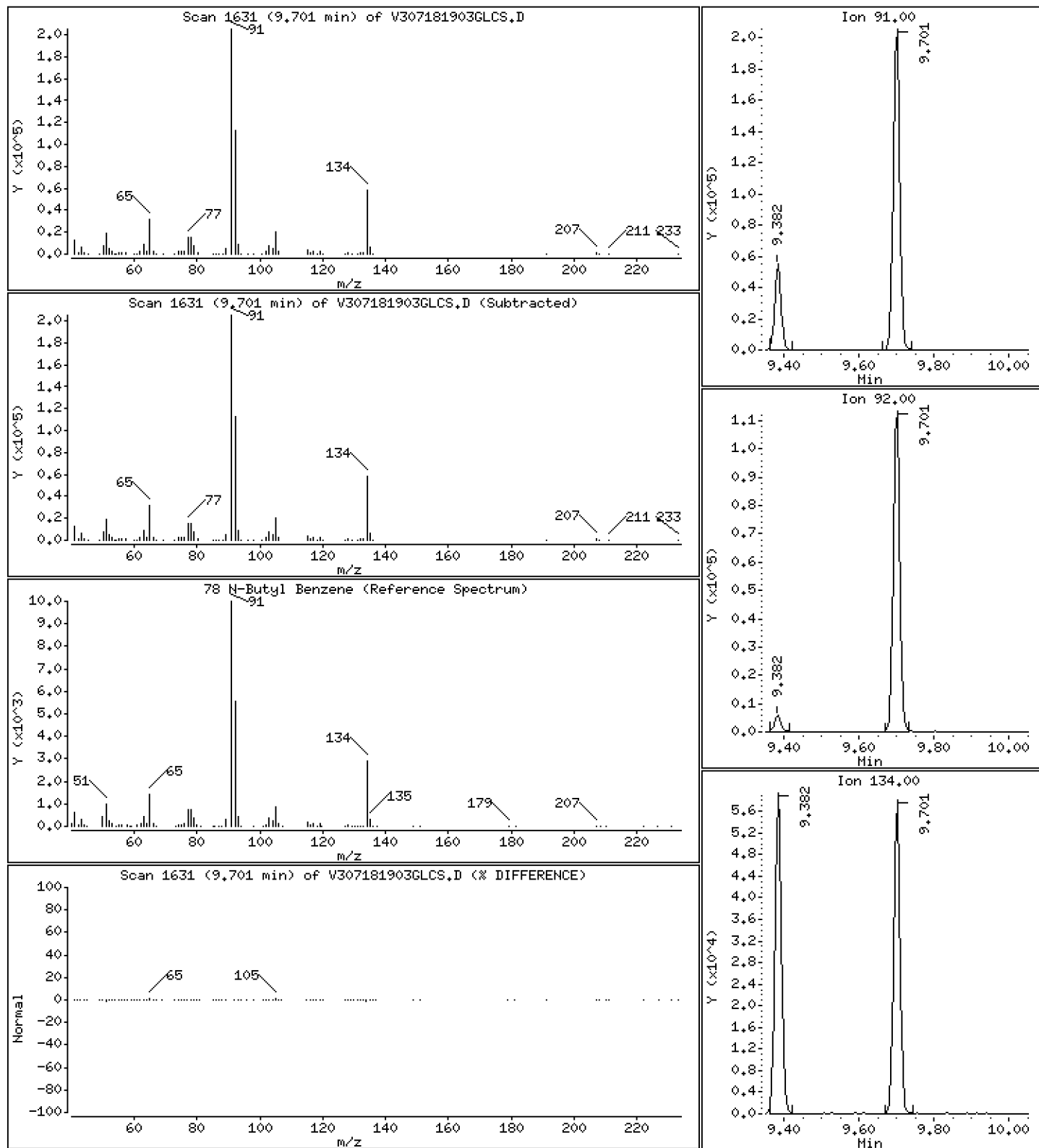
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 9.692 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

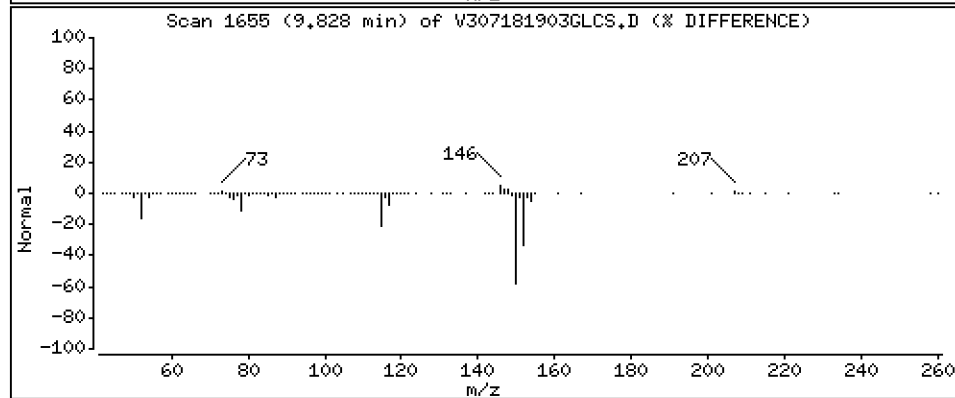
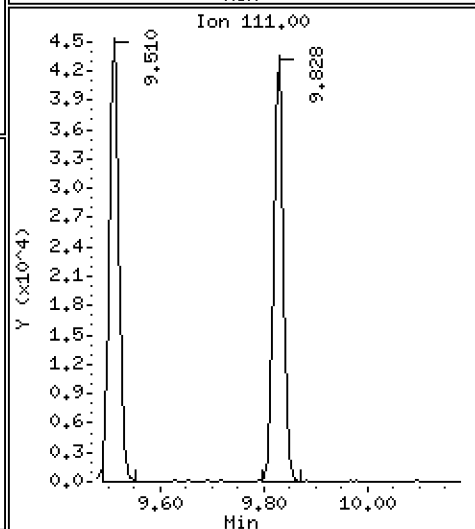
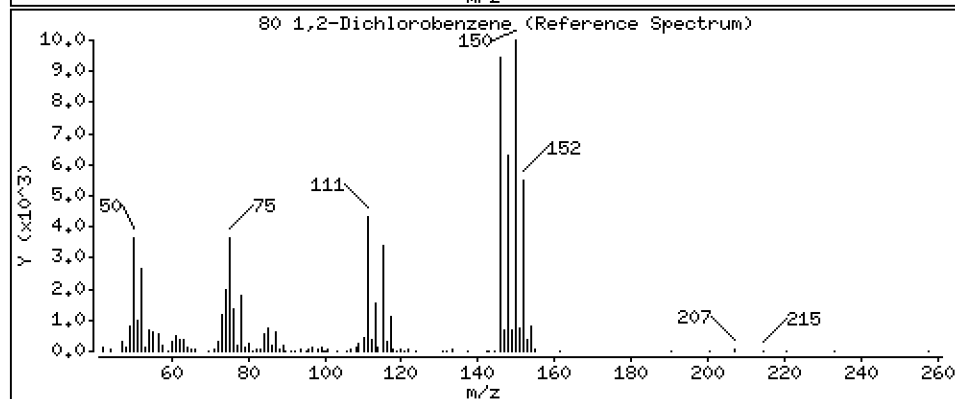
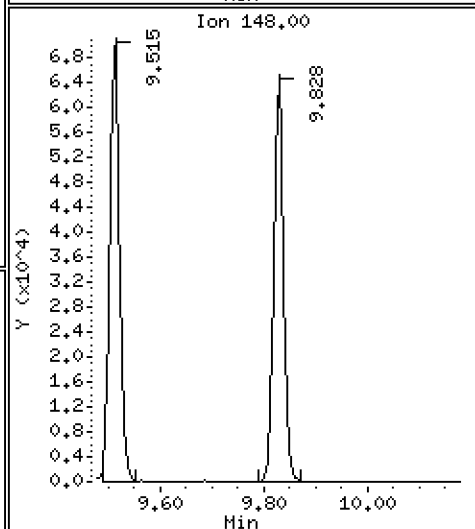
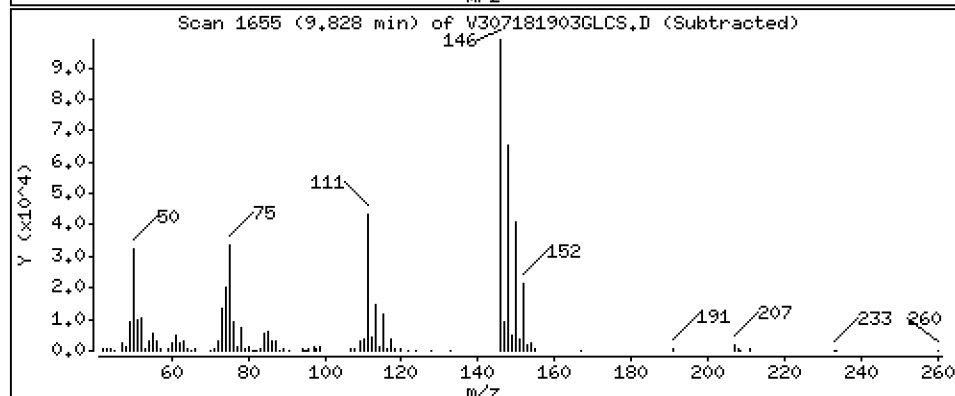
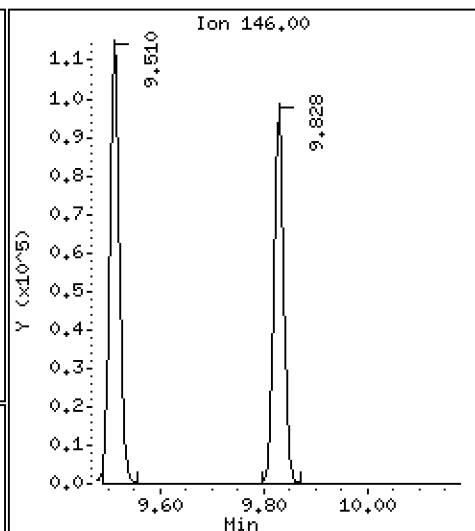
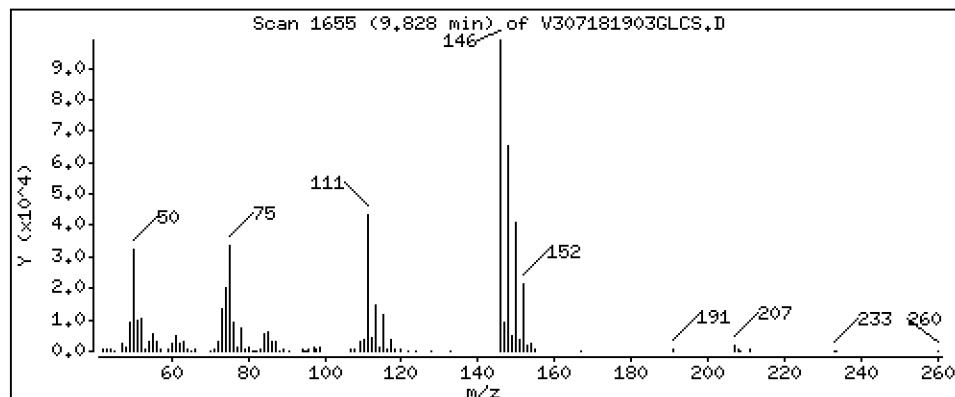
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 8.729 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

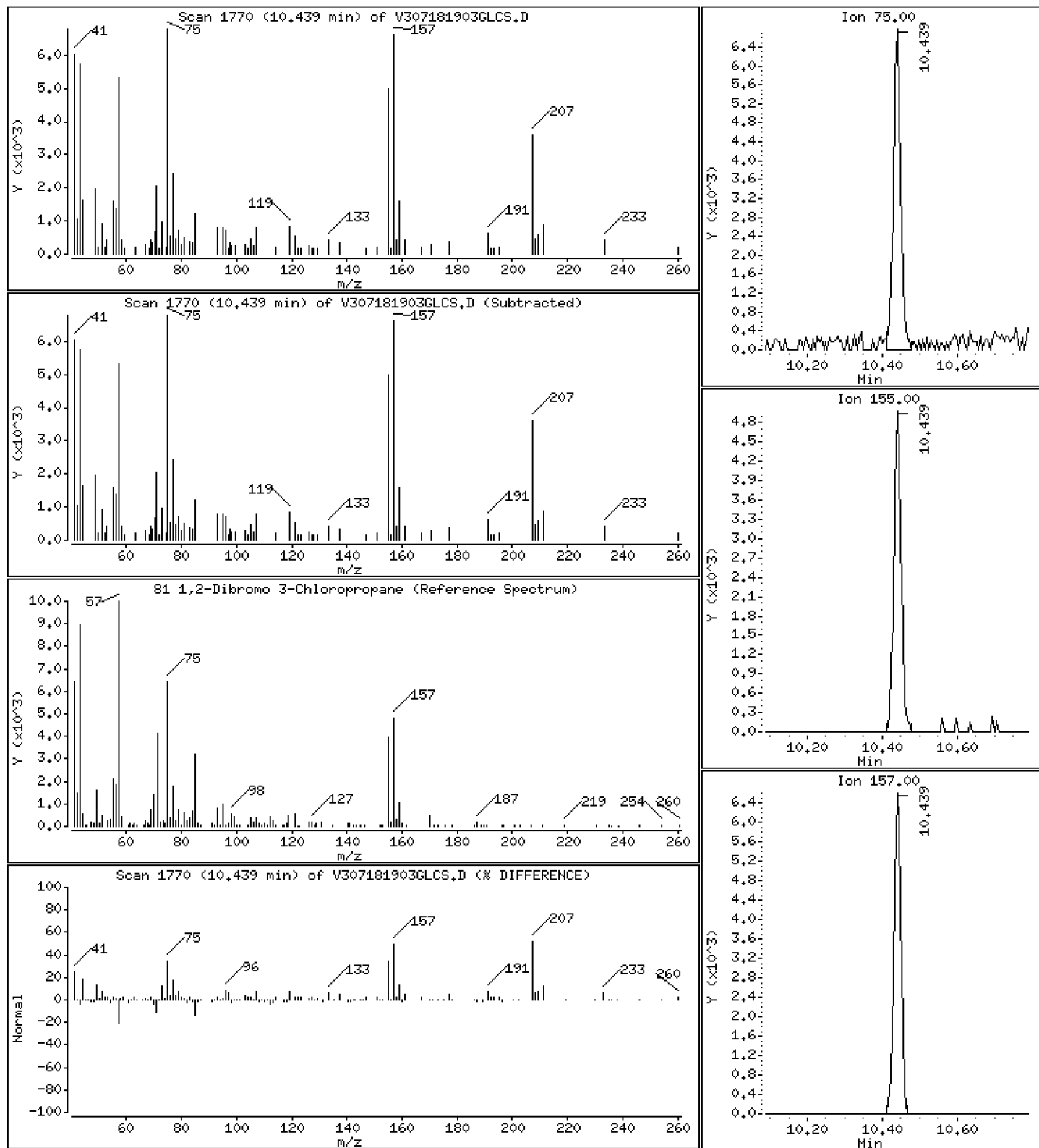
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 8.408 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

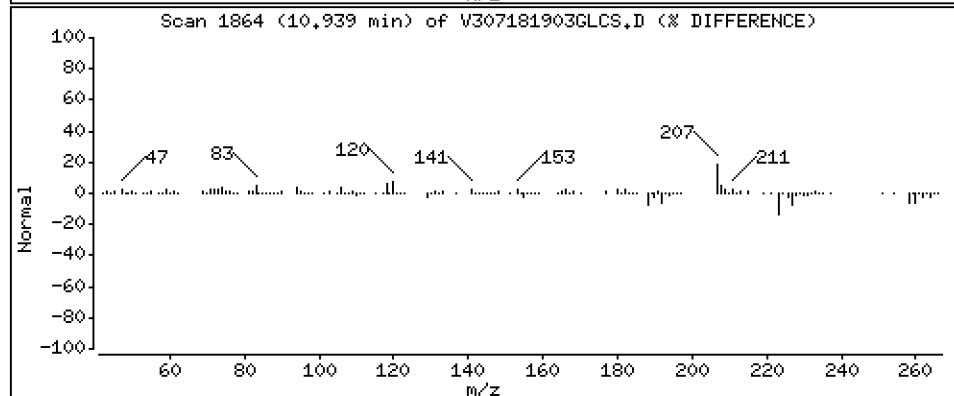
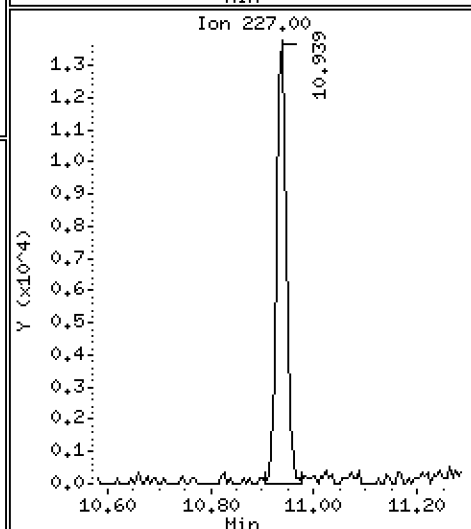
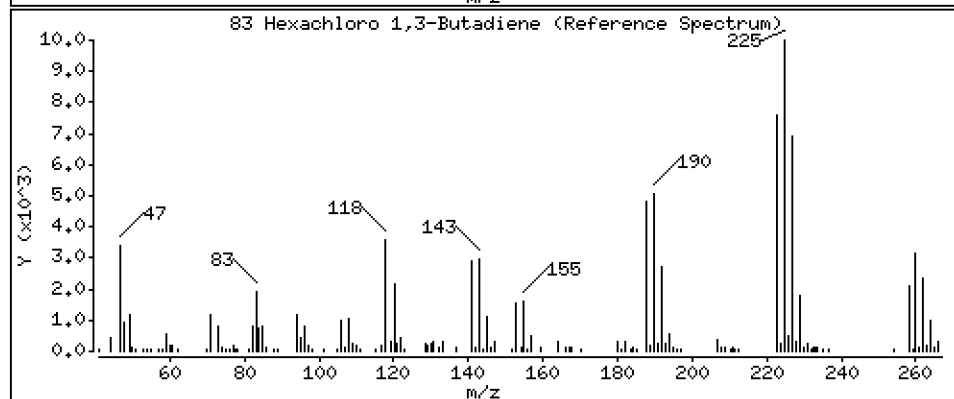
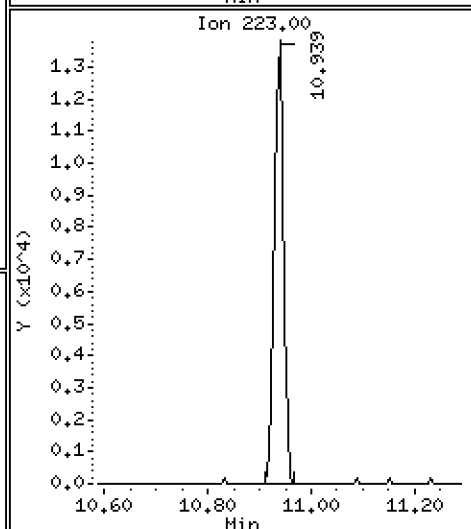
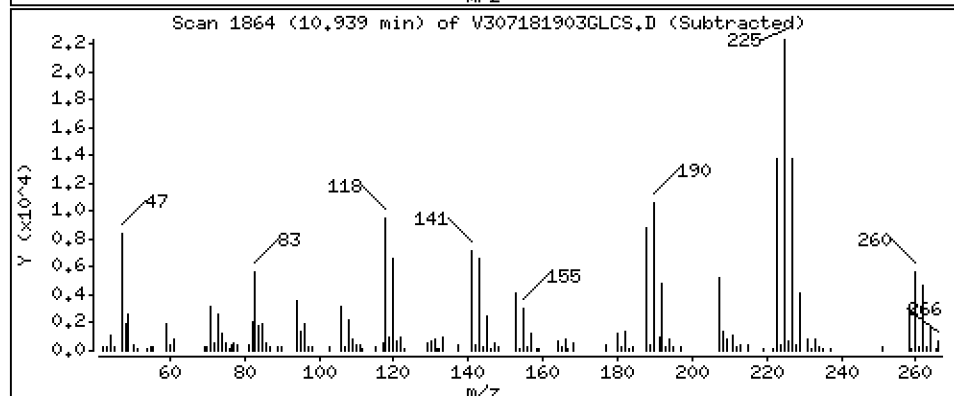
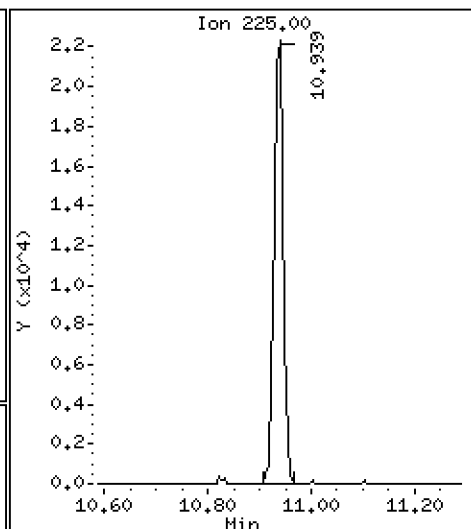
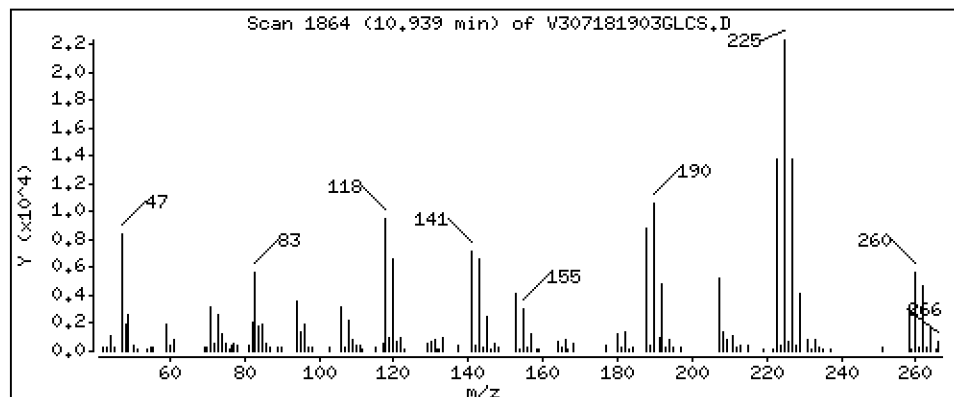
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

83 Hexachloro 1,3-Butadiene

Concentration: 9.407 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

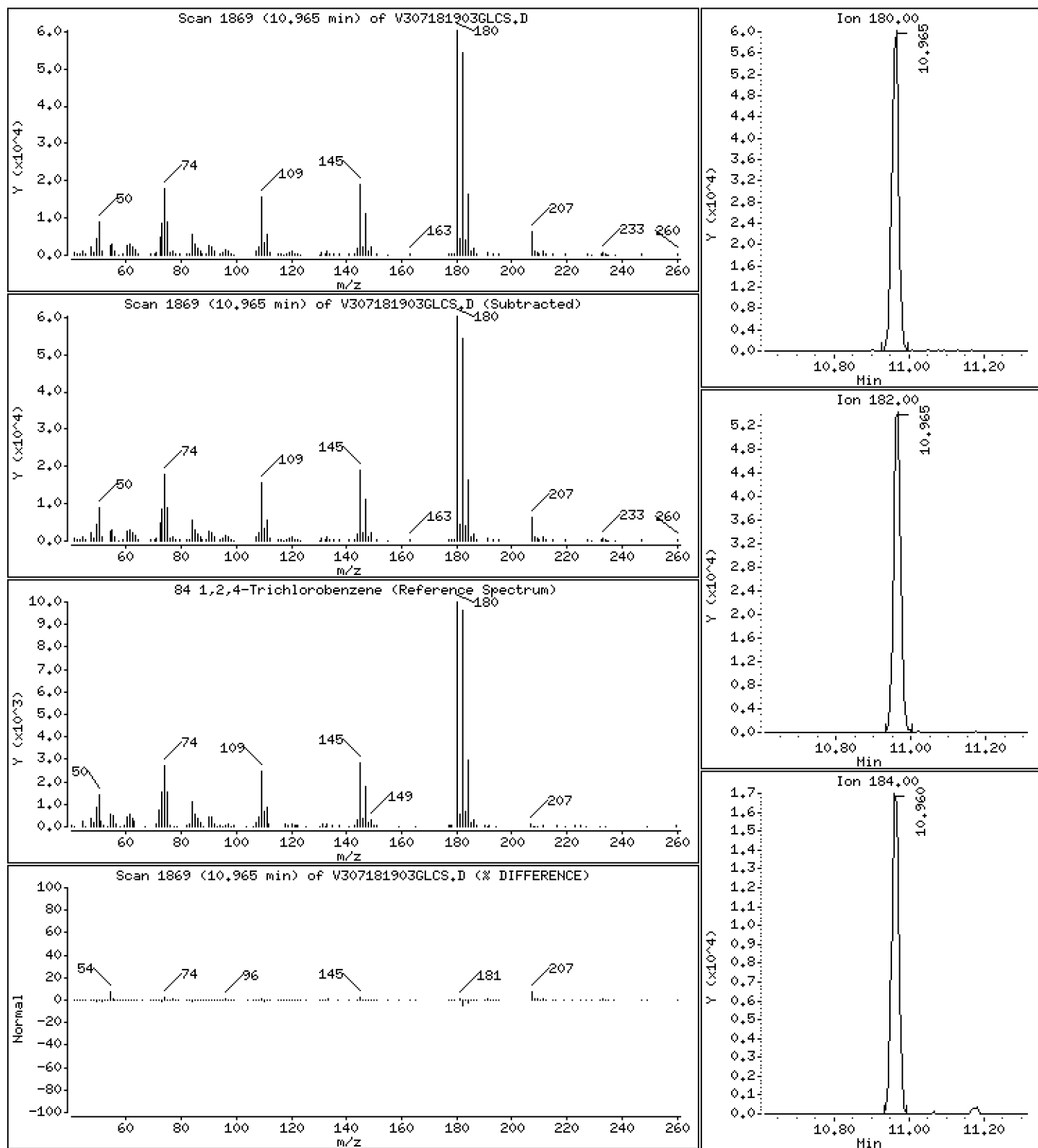
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

84 1,2,4-Trichlorobenzene

Concentration: 8.492 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

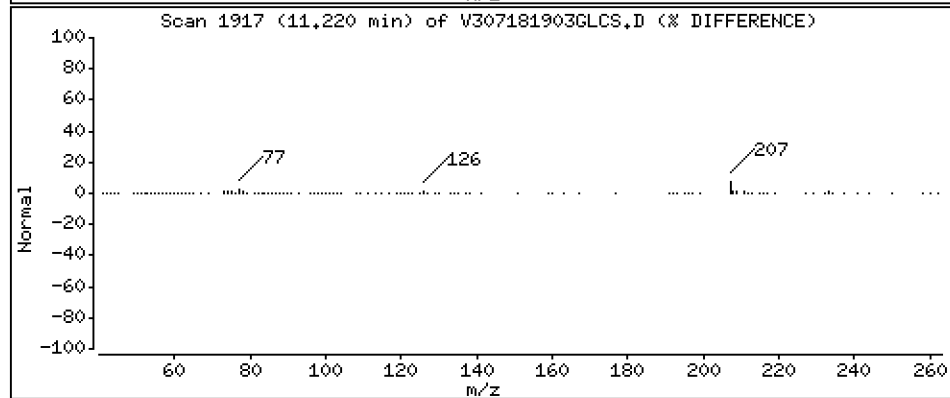
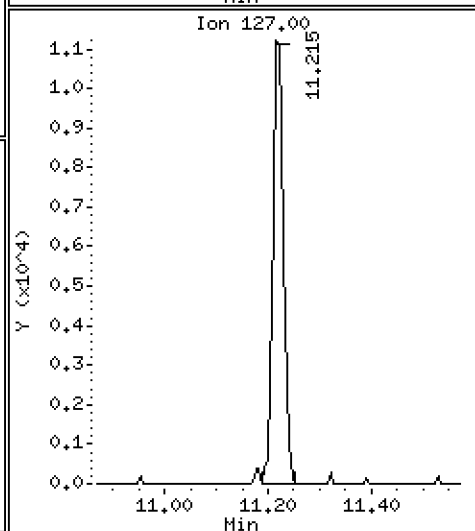
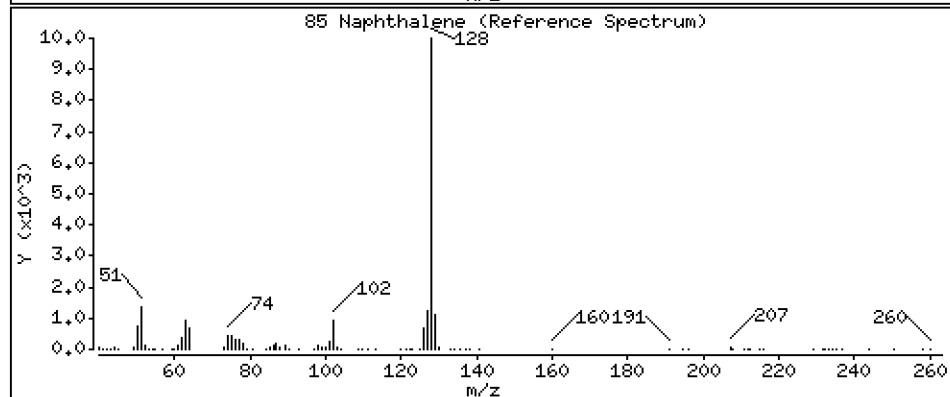
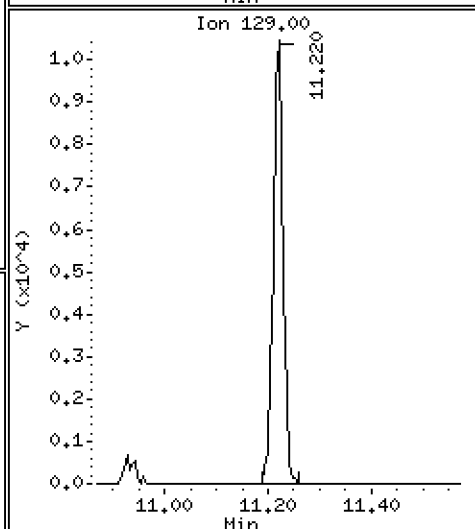
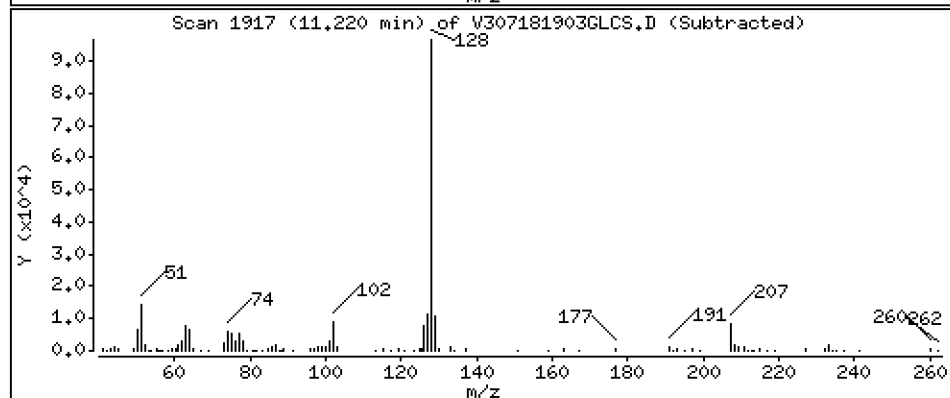
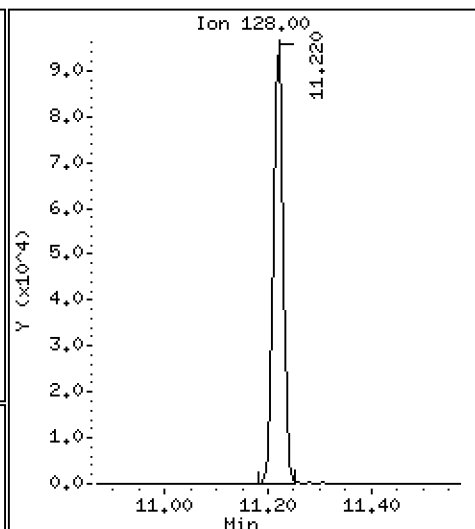
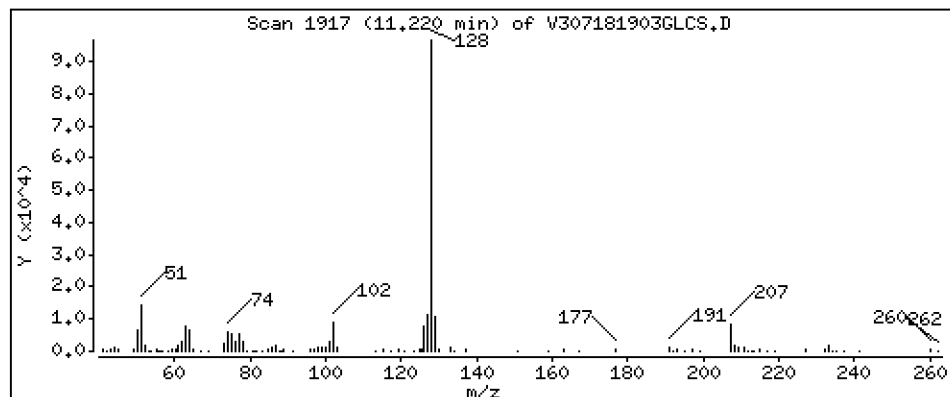
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

85 Naphthalene

Concentration: 8.151 ug/L



Date : 18-JUL-2019 10:09

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BS1

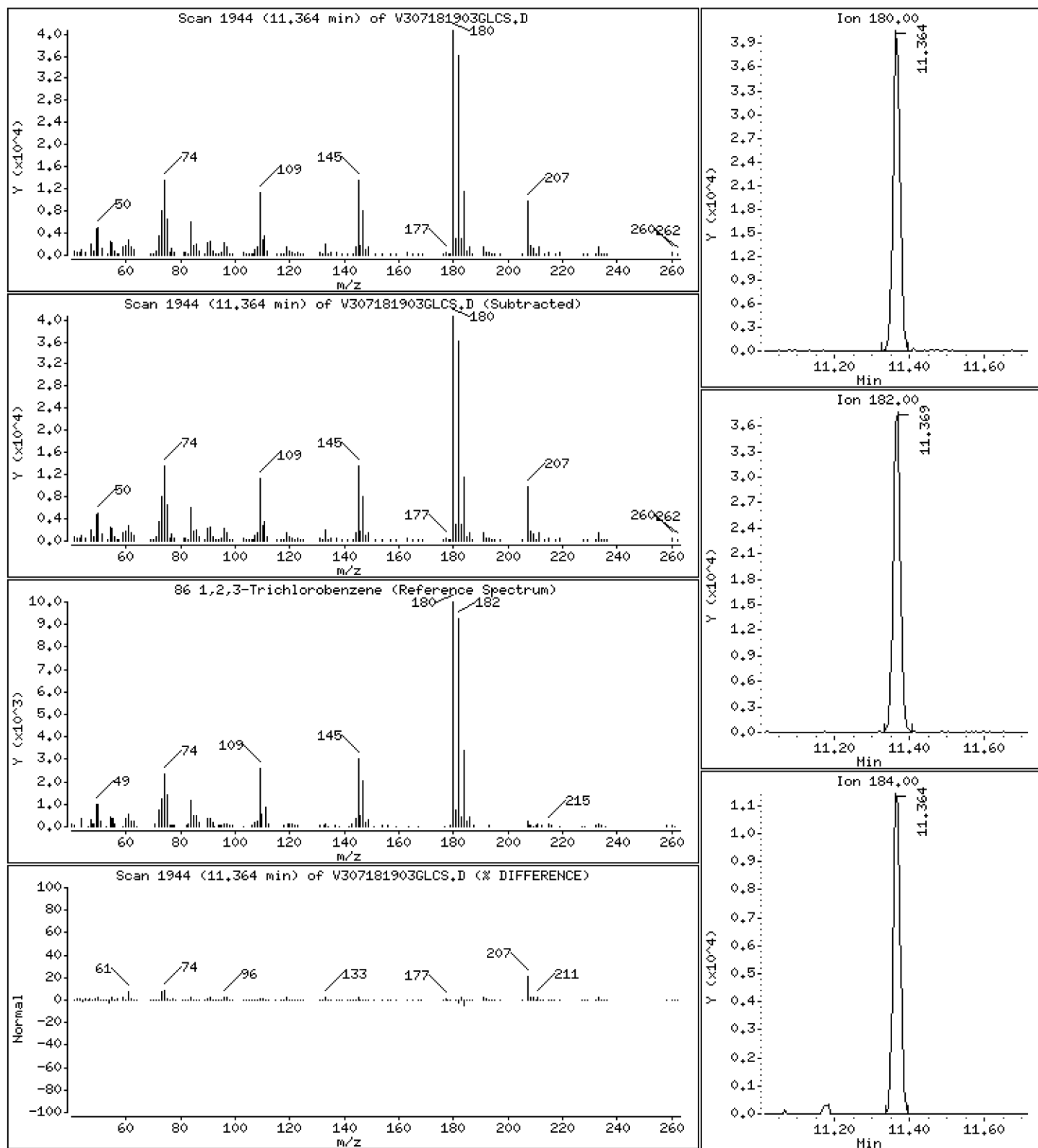
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

86 1,2,3-Trichlorobenzene

Concentration: 7.522 ug/L



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718.b\V307181903GLCS.D
Lab Smp Id: BHG0439-BS1
Inj Date : 18-JUL-2019 10:09
Operator : PKC
Smp Info : BHG0439-BS1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i
Cal Date : 16-JUL-2019 20:19
Als bottle: 56
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i

Quant Type: ISTD

Cal File: V307161926.D

QC Sample: LCS

Compound Sublist: mdl.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)
							FINAL (ug/L)
1 Dichlorodifluoromethane	85		1.698	1.688 (0.314)		76835	10.2307
2 Chloromethane	50		1.911	1.890 (0.353)		200454	9.92610
3 Vinyl Chloride	62		2.001	1.975 (0.370)		135378	9.96289
4 Bromomethane	94		2.304	2.278 (0.426)		55767	9.91160
5 Chloroethane	64		2.416	2.394 (0.446)		66599	9.76061
6 Trichlorofluoromethane	101		2.533	2.506 (0.468)		99149	10.3699
7 1,1-Dichloroethene	61		3.000	2.968 (0.554)		135446	9.92025
8 Carbon Disulfide	76		3.000	2.974 (0.554)		162630	9.60104
9 112Trichloro122Trifluoroethane	101		3.064	3.043 (0.566)		52311	10.3106
10 Iodomethane	142		3.133	3.101 (0.579)		77779	9.85301
11 Bromoethane	108		3.255	3.229 (0.601)		36096	9.58780
12 Acrolein	56		3.372	3.335 (0.623)		41050	36.0175
13 Methylene Chloride	84		3.574	3.547 (0.660)		50491	9.10118
14 Acetone	43		3.765	3.643 (0.696)		91776	49.9558
15 Trans-1,2-Dichloroethene	96		3.723	3.696 (0.688)		52683	8.77316
17 Methyl tert butyl ether	73		3.866	3.824 (0.714)		104344	9.25986
18 1,1-Dichloroethane	63		4.275	4.243 (0.790)		144409	10.5258
19 Acrylonitrile	53		4.350	4.307 (0.804)		17729	8.51240
20 Vinyl Acetate	43		4.515	4.477 (0.834)		143688	9.28712
22 Cis-1,2-Dichloroethene	96		4.711	4.684 (0.870)		57680	9.59068
23 2,2-Dichloropropane	77		4.791	4.764 (0.885)		67435	12.0781
24 Bromochloromethane	128		4.871	4.839 (0.900)		22683	9.38423
25 Chloroform	83		4.929	4.908 (0.911)		95314	9.68797
26 Carbon Tetrachloride	117		5.014	4.998 (0.867)		79463	10.7750
\$ 27 Dibromofluoromethane	111		5.067	5.046 (0.936)		19126	5.36810
28 1,1,1-Trichloroethane	97		5.067	5.051 (0.936)		89991	10.3300
30 1,1-Dichloropropene	75		5.157	5.141 (0.892)		80717	10.9643
29 2-Butanone	43		5.195	5.157 (0.960)		184630	57.9802
31 Benzene	78		5.338	5.327 (0.923)		215396	9.77475
* 32 Pentafluorobenzene	168		5.413	5.402 (1.000)		69628	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.450	5.434 (1.007)		22256	4.74353
34 1,2-Dichloroethane	62		5.498	5.481 (0.950)		78286	10.1460
36 Trichloroethene	130		5.753	5.752 (0.994)		45055	8.84390
* 37 1,4-Difluorobenzene	114		5.784	5.784 (1.000)		108714	10.0000

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
38 Dibromomethane	93	6.055	6.055	(1.047)	28863	11.3958	11.396
39 1,2-Dichloropropane	63	6.124	6.124	(1.059)	81097	11.3887	11.389
40 Bromodichloromethane	83	6.172	6.172	(1.067)	75036	11.2594	11.259
173 2-Pentanone	86	6.422	6.395	(1.110)	28897	63.1749	63.175
41 2-Chloroethyl Vinyl Ether	63	6.581	6.571	(1.138)	35376	12.0332	12.033
42 Cis 1,3-dichloropropene	75	6.613	6.608	(1.143)	96326	11.4190	11.419
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	82956	5.81610	5.816 (R)
44 Toluene	92	6.773	6.773	(1.171)	148980	10.7841	10.784
46 Tetrachloroethene	166	7.033	7.038	(0.900)	60388	9.73012	9.730
45 4-Methyl-2-Pentanone	58	7.060	7.038	(1.220)	115077	57.5753	57.575
47 Trans 1,3-Dichloropropene	75	7.065	7.065	(1.221)	79942	11.4804	11.480
48 1,1,2-Trichloroethane	97	7.177	7.171	(1.241)	39492	10.6896	10.690
49 Chlorodibromomethane	129	7.299	7.299	(0.934)	47253	9.86768	9.868
50 1,3-Dichloropropane	76	7.368	7.362	(0.943)	75341	9.59616	9.596
51 1,2-Dibromoethane	107	7.463	7.463	(1.290)	36829	10.6265	10.626
52 2-Hexanone	43	7.628	7.617	(0.976)	252999	49.8556	49.856
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	127328	10.0000	
54 Chlorobenzene	112	7.825	7.825	(1.001)	171995	9.90078	9.901
55 Ethyl Benzene	106	7.841	7.841	(1.003)	92044	9.92796	9.928
56 1,1,1,2-Tetrachloroethane	131	7.873	7.872	(1.007)	57302	9.47031	9.470
57 m,p-xylene	106	7.942	7.942	(1.016)	233397	20.1098	20.110
58 o-Xylene	106	8.250	8.250	(1.056)	112027	9.84525	9.845
59 Styrene	104	8.287	8.287	(1.061)	180647	10.4230	10.423
60 Bromoform	173	8.314	8.308	(0.875)	25352	8.72575	8.726
61 Isopropyl Benzene	105	8.473	8.473	(0.892)	294707	9.64879	9.649
\$ 62 4-Bromofluorobenzene	174	8.686	8.680	(1.112)	26713	5.28356	5.284 (R)
63 Bromobenzene	156	8.755	8.755	(0.922)	69111	9.17437	9.174
64 N-Propyl Benzene	91	8.771	8.770	(0.923)	360925	9.42363	9.424
65 1,1,2,2-Tetrachloroethane	83	8.829	8.824	(0.930)	52112	8.85852	8.859
66 2-Chloro Toluene	91	8.887	8.887	(0.936)	249219	9.37358	9.374
67 1,3,5-Trimethyl Benzene	105	8.914	8.914	(0.938)	259289	9.60178	9.602
68 1,2,3-Trichloropropane	110	8.930	8.930	(0.940)	14847	8.76853	8.769
69 Trans-1,4-Dichloro 2-Butene	53	8.957	8.956	(0.943)	23603	8.62587	8.626 (M)
70 4-Chloro Toluene	91	9.010	9.010	(0.949)	235530	9.53146	9.531
71 T-Butyl Benzene	119	9.148	9.148	(0.963)	204705	9.20616	9.206
72 1,2,4-Trimethylbenzene	105	9.201	9.201	(0.969)	271004	9.91351	9.914
73 S-Butyl Benzene	105	9.281	9.275	(0.977)	314119	9.44985	9.450
74 4-Isopropyl Toluene	119	9.382	9.381	(0.988)	273258	9.59603	9.596
75 1,3-Dichlorobenzene	146	9.445	9.445	(0.994)	154774	9.29935	9.299
* 76 d4-1,4-Dichlorobenzene	152	9.498	9.498	(1.000)	81014	10.0000	
77 1,4-Dichlorobenzene	146	9.509	9.509	(1.001)	153632	8.94107	8.941
78 N-Butyl Benzene	91	9.700	9.700	(1.021)	252139	9.69156	9.692
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	36170	4.75916	4.759 (R)
80 1,2-Dichlorobenzene	146	9.828	9.828	(1.035)	132187	8.72935	8.729
81 1,2-Dibromo 3-Chloropropane	75	10.439	10.439	(1.099)	9330	8.40823	8.408
83 Hexachloro 1,3-Butadiene	225	10.938	10.938	(1.152)	28276	9.40742	9.407
84 1,2,4-Trichlorobenzene	180	10.965	10.965	(1.154)	78489	8.49165	8.492
85 Naphthalene	128	11.220	11.220	(1.181)	130485	8.15085	8.151
86 1,2,3-Trichlorobenzene	180	11.363	11.363	(1.196)	54004	7.52168	7.522

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181903GLCS.D Calibration Time: 22:11
 Lab Smp Id: BHG0439-BS1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	69628	-5.51
37 1,4-Difluorobenze	116116	58058	232232	108714	-6.37
53 d5-Chlorobenzene	124912	62456	249824	127328	1.93
76 d4-1,4-Dichlorobe	77169	38585	154338	81014	4.98

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.41	0.20
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: BHG0439-BS1
 Level: Operator: PKC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: allspike.spk Quant Type: ISTD
 Sublist File: mdl.sub
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
1 Dichlorodifluorome	10.000	10.231	102.31	
2 Chloromethane	10.000	9.926	99.26	
3 Vinyl Chloride	10.000	9.963	99.63	
4 Bromomethane	10.000	9.912	99.12	
5 Chloroethane	10.000	9.761	97.61	
6 Trichlorofluoromet	10.000	10.370	103.70	
7 1,1-Dichloroethene	10.000	9.920	99.20	
8 Carbon Disulfide	10.000	9.601	96.01	
9 112Trichloro122Tri	10.000	10.311	103.11	
10 Iodomethane	10.000	9.853	98.53	
11 Bromoethane	10.000	9.588	95.88	
12 Acrolein	50.000	36.017	72.03	
13 Methylene Chloride	10.000	9.101	91.01	
14 Acetone	50.000	49.956	99.91	
15 Trans-1,2-Dichloro	10.000	8.773	87.73	
17 Methyl tert butyl	10.000	9.260	92.60	
18 1,1-Dichloroethane	10.000	10.526	105.26	
19 Acrylonitrile	10.000	8.512	85.12	
20 Vinyl Acetate	10.000	9.287	92.87	
22 Cis-1,2-Dichloroet	10.000	9.591	95.91	
23 2,2-Dichloropropan	10.000	12.078	120.78	
24 Bromochloromethane	10.000	9.384	93.84	
25 Chloroform	10.000	9.688	96.88	
26 Carbon Tetrachlori	10.000	10.775	107.75	
28 1,1,1-Trichloroeth	10.000	10.330	103.30	
30 1,1-Dichloropropen	10.000	10.964	109.64	
29 2-Butanone	50.000	57.980	115.96	
31 Benzene	10.000	9.775	97.75	
34 1,2-Dichloroethane	10.000	10.146	101.46	
36 Trichloroethene	10.000	8.844	88.44	
38 Dibromomethane	10.000	11.396	113.96	
39 1,2-Dichloropropan	10.000	11.389	113.89	
40 Bromodichlorometha	10.000	11.259	112.59	
173 2-Pentanone	50.000	63.175	126.35	
41 2-Chloroethyl Viny	10.000	12.033	120.33	
42 Cis 1,3-dichloropr	10.000	11.419	114.19	
44 Toluene	10.000	10.784	107.84	
46 Tetrachloroethene	10.000	9.730	97.30	
45 4-Methyl-2-Pentano	50.000	57.575	115.15	
47 Trans 1,3-Dichloro	10.000	11.480	114.80	

SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
48 1,1,2-Trichloroeth	10.000	10.690	106.90	
49 Chlorodibromometha	10.000	9.868	98.68	
50 1,3-Dichloropropan	10.000	9.596	95.96	
51 1,2-Dibromoethane	10.000	10.626	106.26	
52 2-Hexanone	50.000	49.856	99.71	
54 Chlorobenzene	10.000	9.901	99.01	
55 Ethyl Benzene	10.000	9.928	99.28	
56 1,1,1,2-Tetrachlor	10.000	9.470	94.70	
57 m,p-xylene	20.000	20.110	100.55	
58 o-Xylene	10.000	9.845	98.45	
59 Styrene	10.000	10.423	104.23	
60 Bromoform	10.000	8.726	87.26	
61 Isopropyl Benzene	10.000	9.649	96.49	
63 Bromobenzene	10.000	9.174	91.74	
64 N-Propyl Benzene	10.000	9.424	94.24	
65 1,1,2,2-Tetrachlor	10.000	8.859	88.59	
66 2-Chloro Toluene	10.000	9.374	93.74	
67 1,3,5-Trimethyl Be	10.000	9.602	96.02	
68 1,2,3-Trichloropro	10.000	8.769	87.69	
69 Trans-1,4-Dichloro	10.000	8.626	86.26	
70 4-Chloro Toluene	10.000	9.531	95.31	
71 T-Butyl Benzene	10.000	9.206	92.06	
72 1,2,4-Trimethylben	10.000	9.914	99.14	
73 S-Butyl Benzene	10.000	9.450	94.50	
74 4-Isopropyl Toluen	10.000	9.596	95.96	
75 1,3-Dichlorobenzen	10.000	9.299	92.99	
77 1,4-Dichlorobenzen	10.000	8.941	89.41	
78 N-Butyl Benzene	10.000	9.692	96.92	
80 1,2-Dichlorobenzen	10.000	8.729	87.29	
81 1,2-Dibromo 3-Chlo	10.000	8.408	84.08	
83 Hexachloro 1,3-But	10.000	9.407	94.07	
84 1,2,4-Trichloroben	10.000	8.492	84.92	
85 Naphthalene	10.000	8.151	81.51	
86 1,2,3-Trichloroben	10.000	7.522	75.22	

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.368	107.36	
\$ 33 d4-1,2-Dichloroeth	5.000	4.744	94.87	
\$ 43 d8-Toluene	5.000	5.816	116.32	
\$ 62 4-Bromofluorobenze	5.000	5.284	105.67	
\$ 79 d4-1,2-Dichloroben	5.000	4.759	95.18	

REVIEW SUMMARY FOR FILE - V307181903GLCS.D

Lab ID: BHG0439-BS1

nt3.i, 20190718.b\8260C071619.m, 18-JUL-2019 10:09

RT	CO-ELUTION COMPOUNDS
5.068	Dibromofluoromethane and 1,1,1-Trichloroethane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.623	0.617	0.0057	Acrolein
0.696	0.674	0.0213	Acetone
0.714	0.708	0.0065	Methyl tert butyl ether
0.804	0.797	0.0063	Acrylonitrile
0.834	0.829	0.0052	Vinyl Acetate
0.960	0.955	0.0050	2-Butanone

RRT check based on Ccal File: V307181930G.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

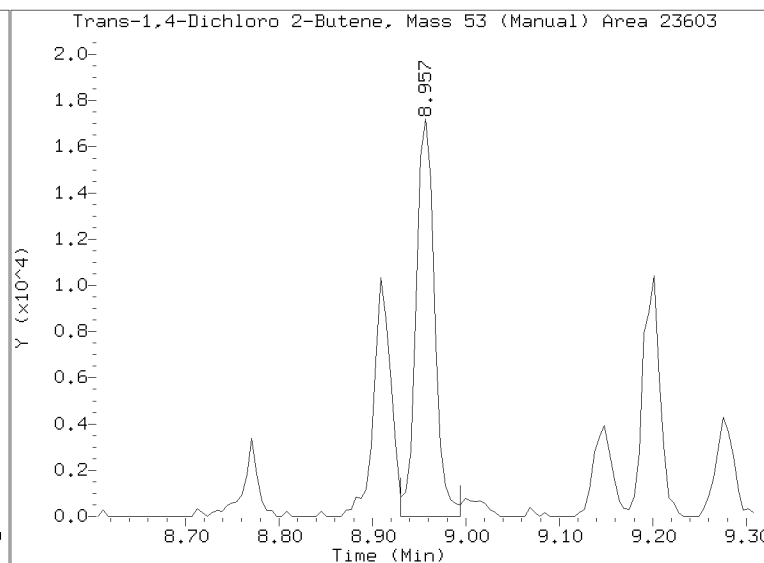
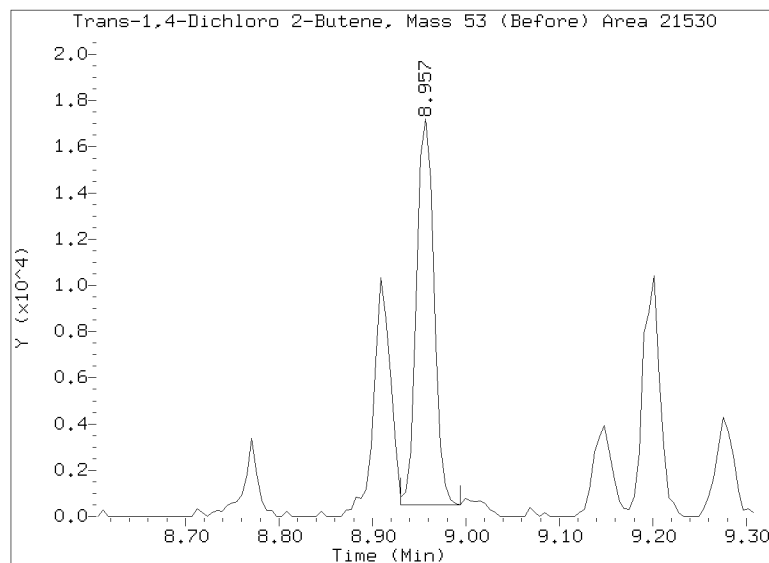
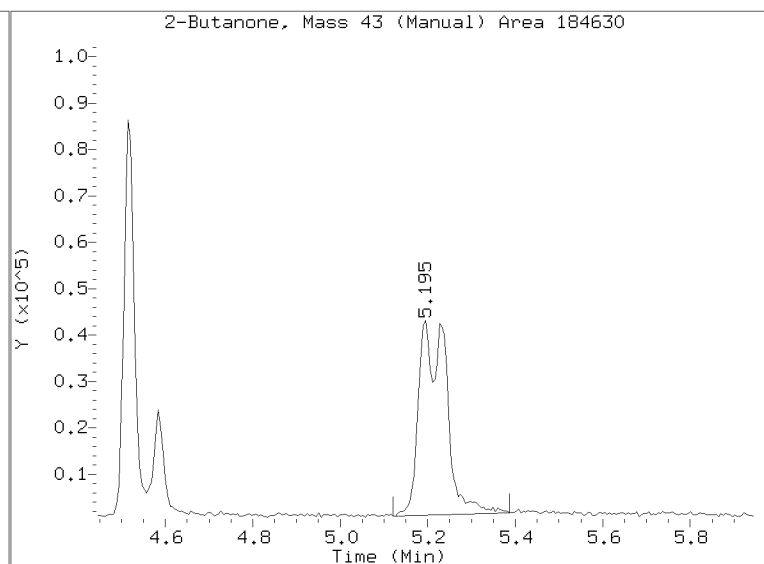
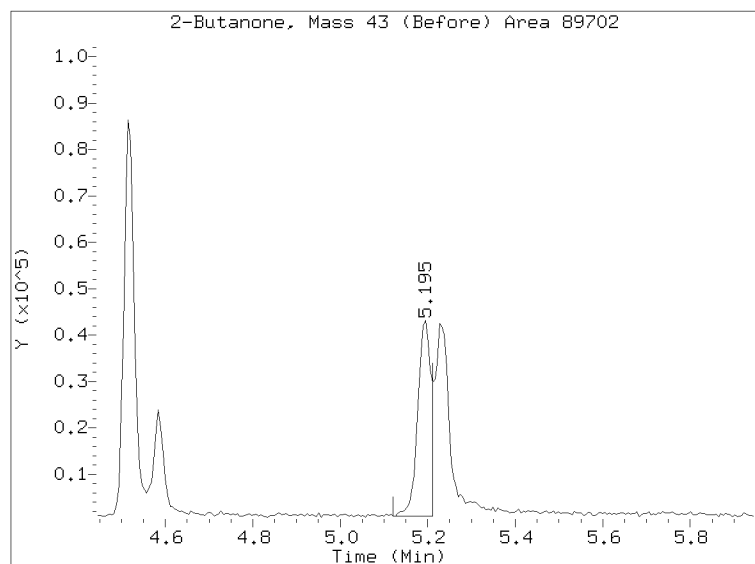
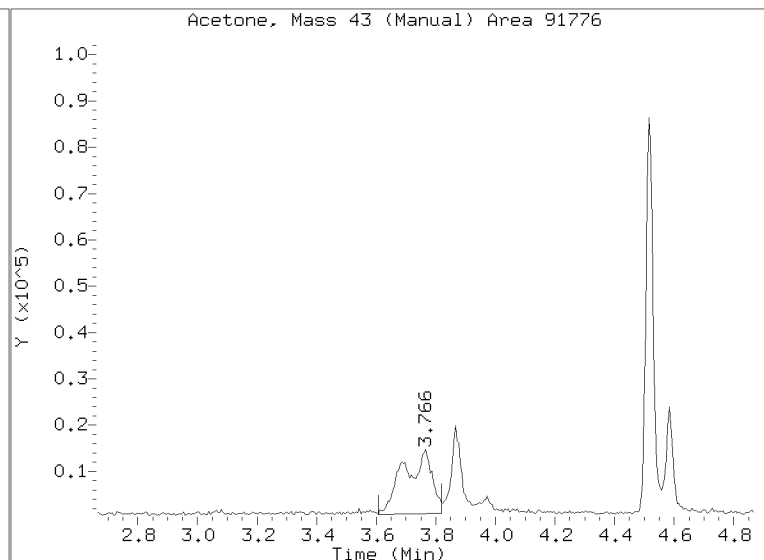
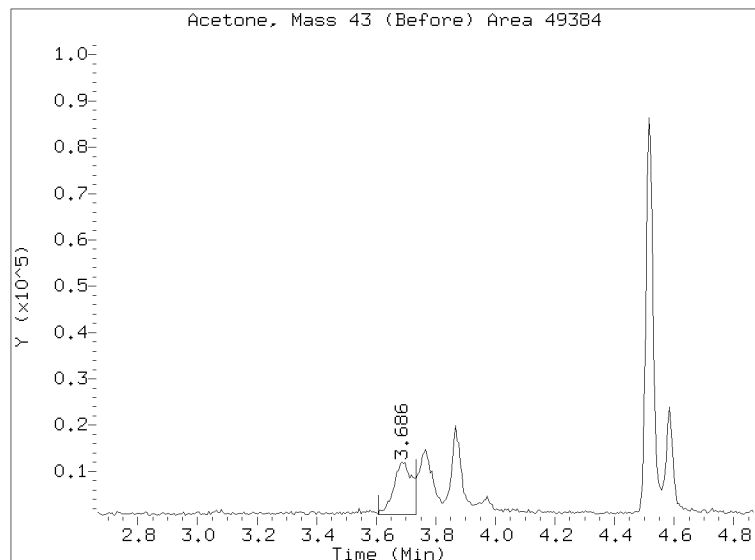
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190718.b/V307181903.D

Injection Date: 18-JUL-2019 10:09

Lab ID:SHG0-ICV1 Client ID:

Report Date: 07/18/2019 10:42



Data File: \\target\share\chemd\nt3.i\20190718.b\W307181904G.D

Date : 18-JUL-2019 10:36

Client ID:

Sample Info: BHC0439-BSD1

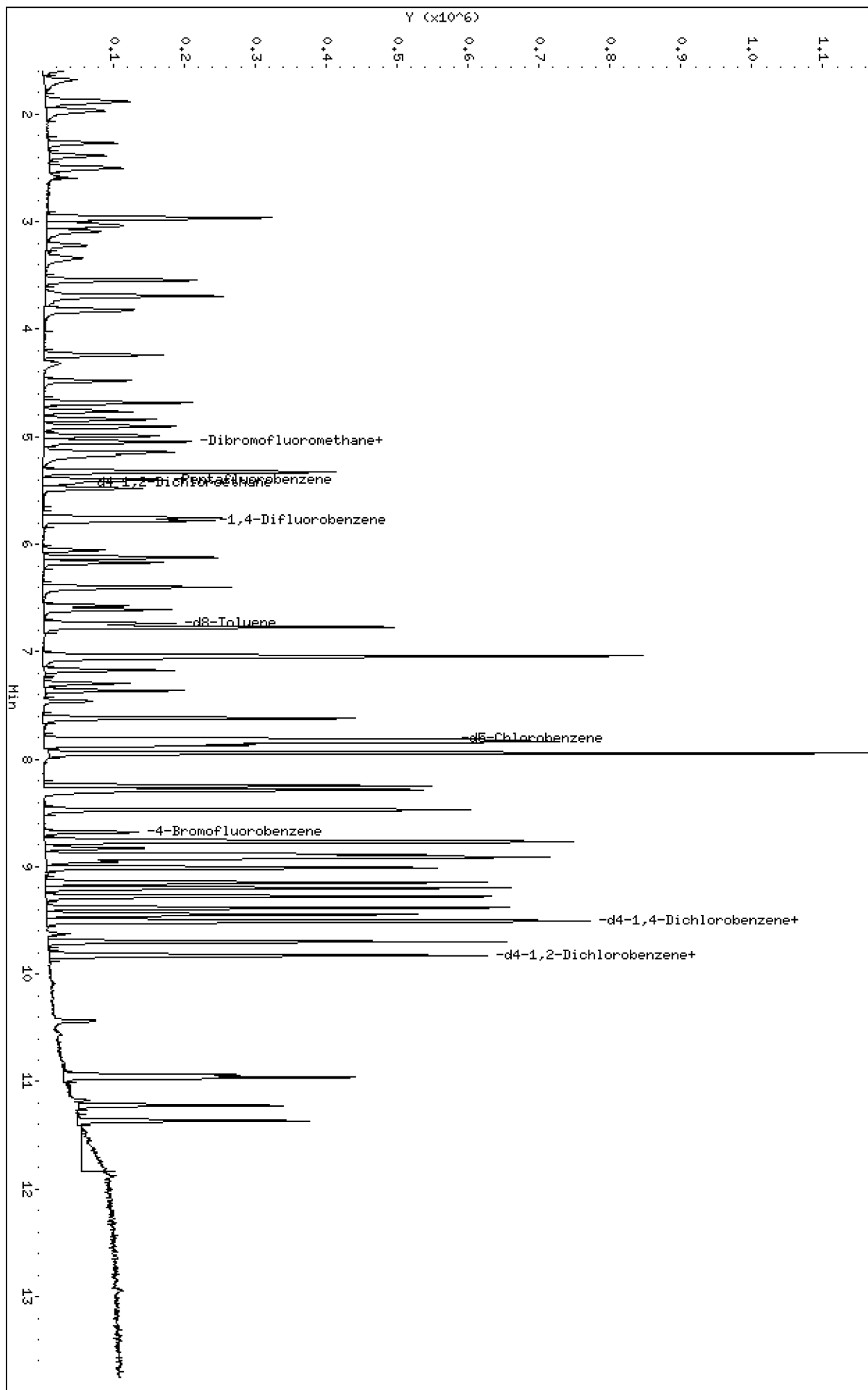
Column phase: RTXVMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190718.b\W307181904G.D



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

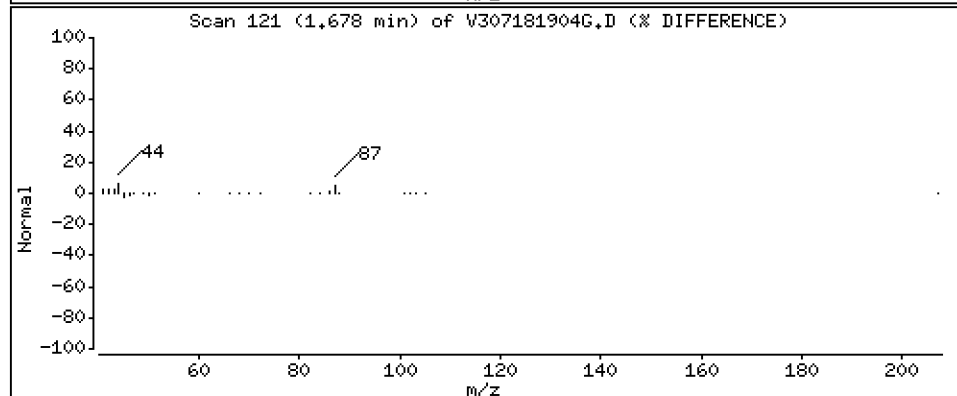
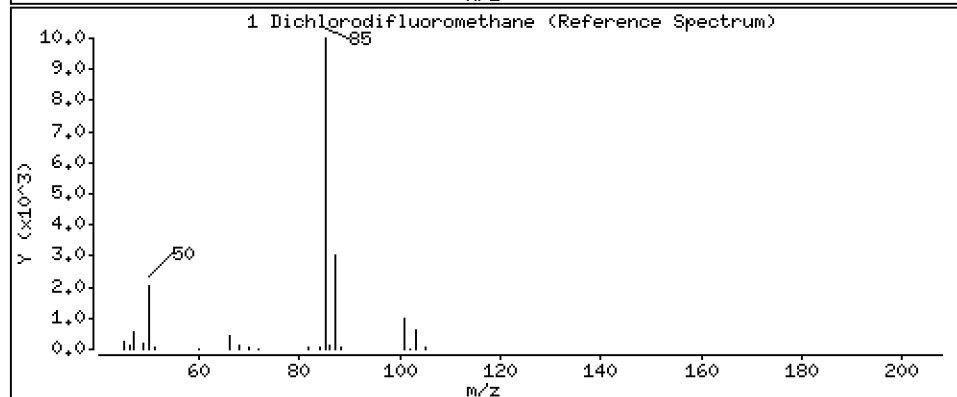
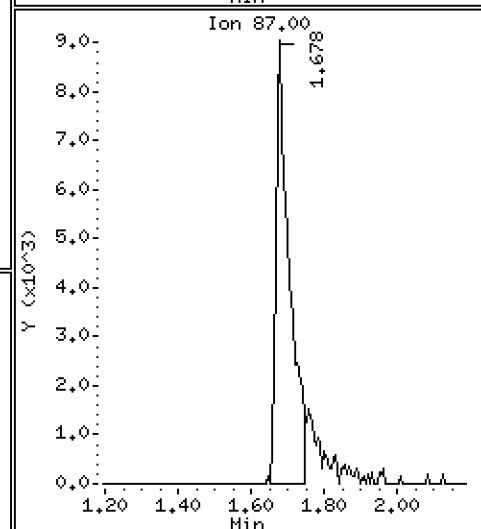
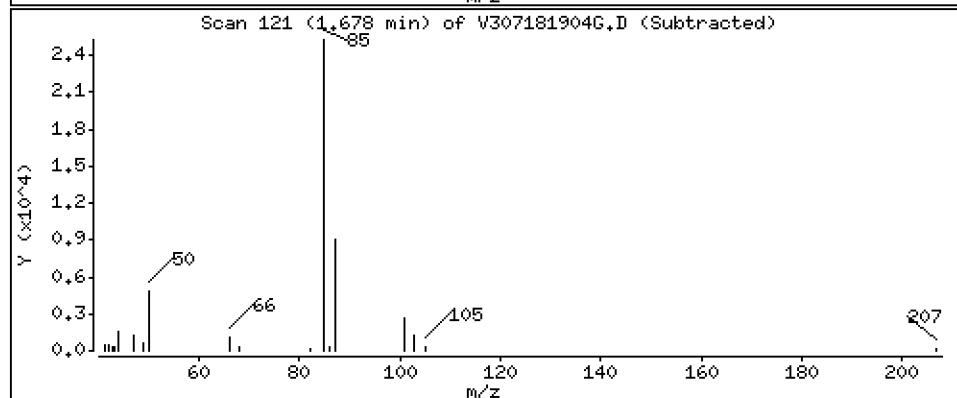
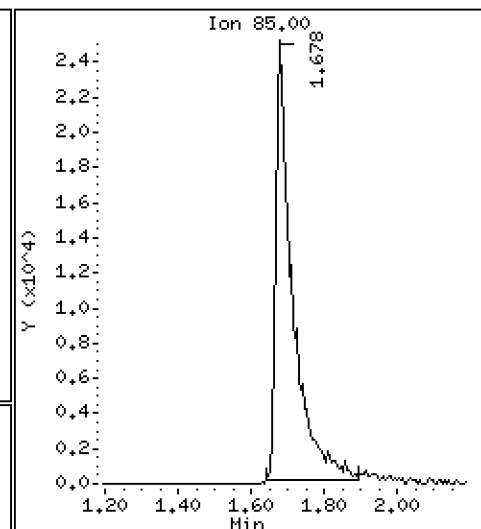
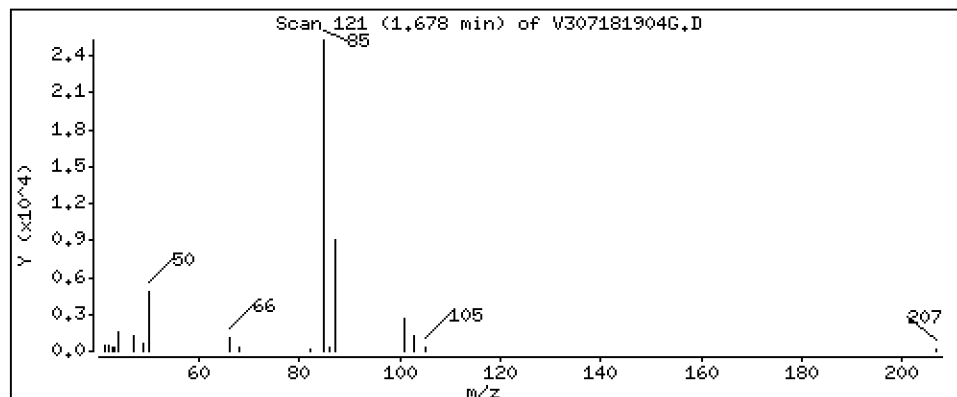
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 9.004 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

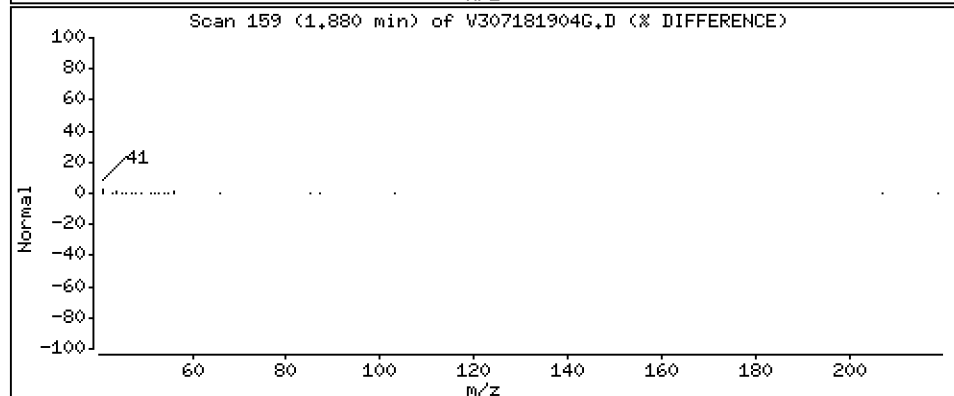
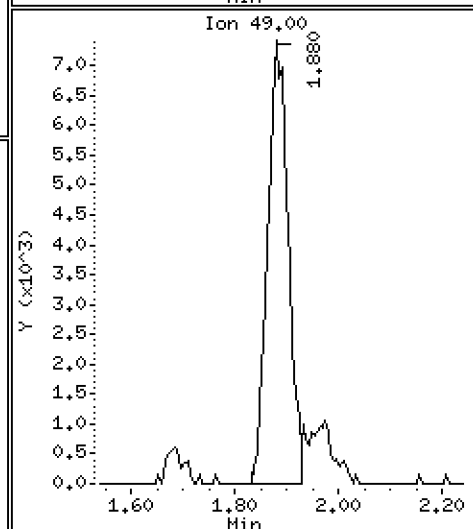
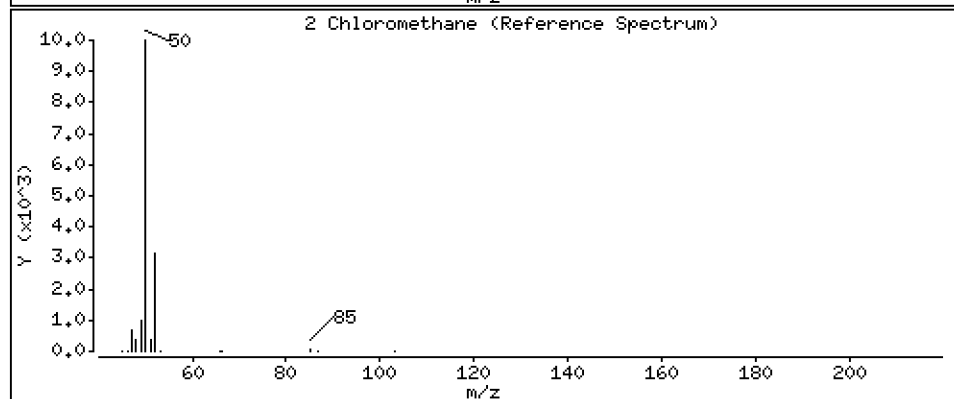
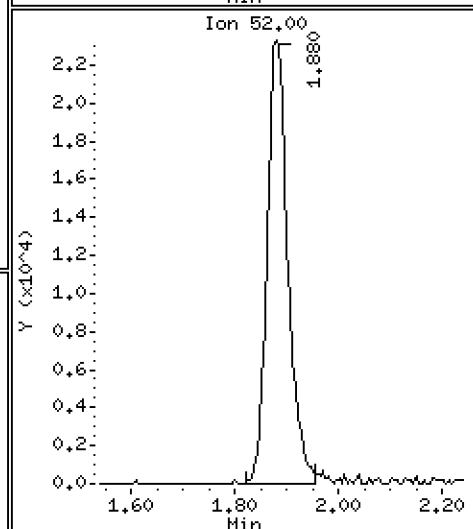
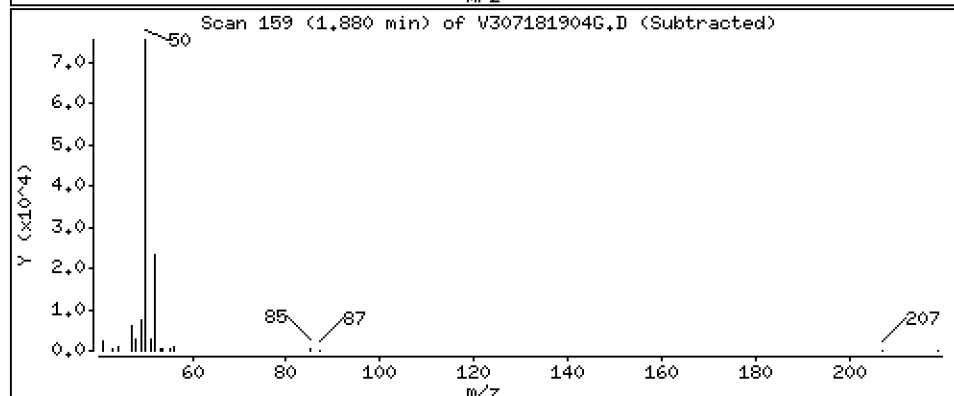
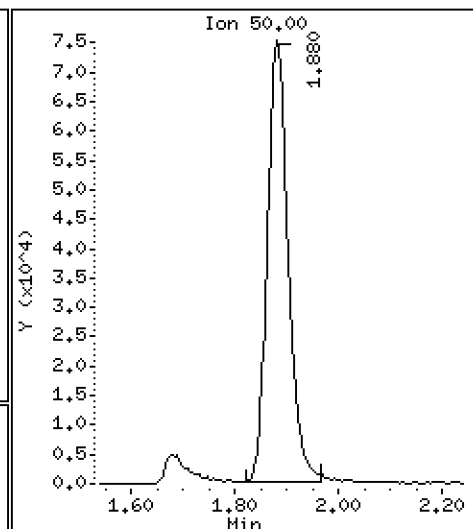
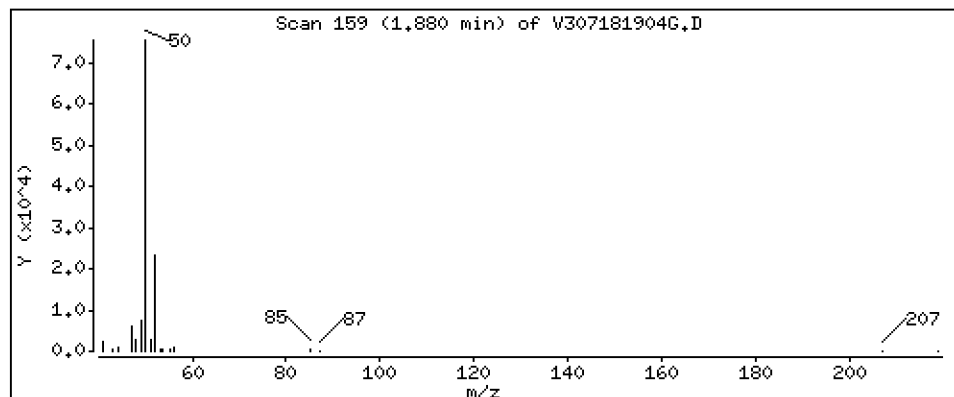
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 8.743 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

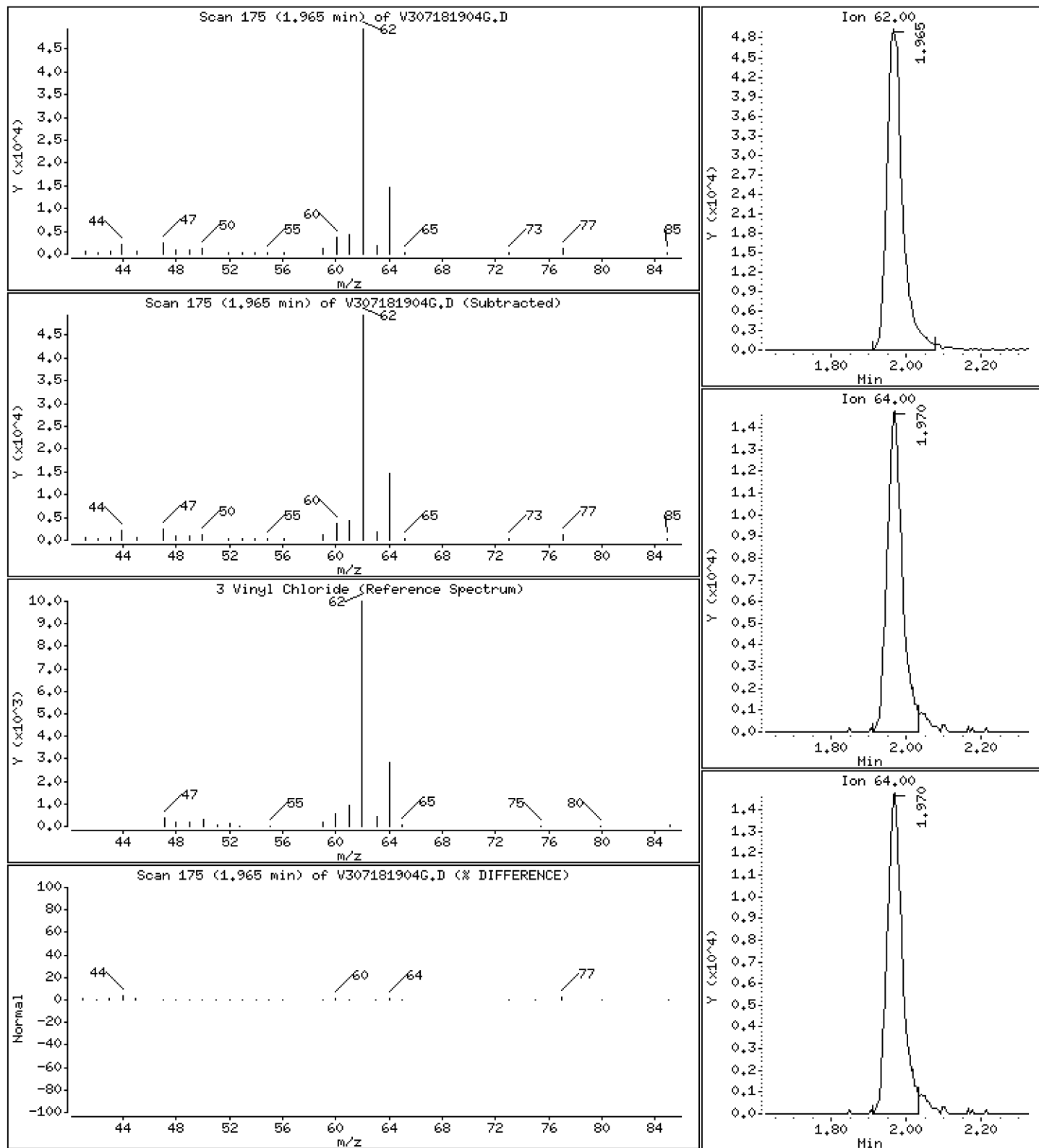
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 8.956 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

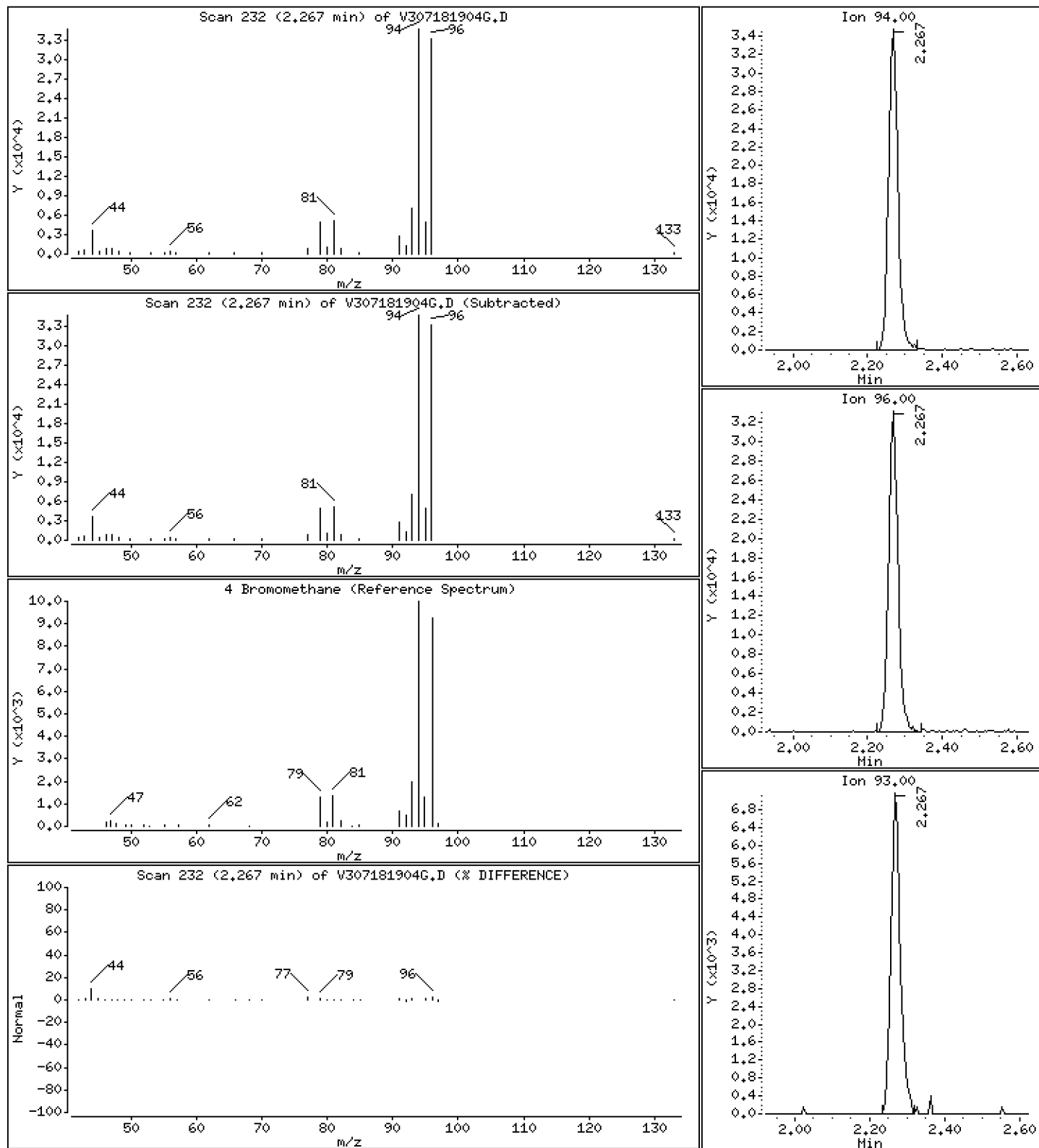
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 9.011 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

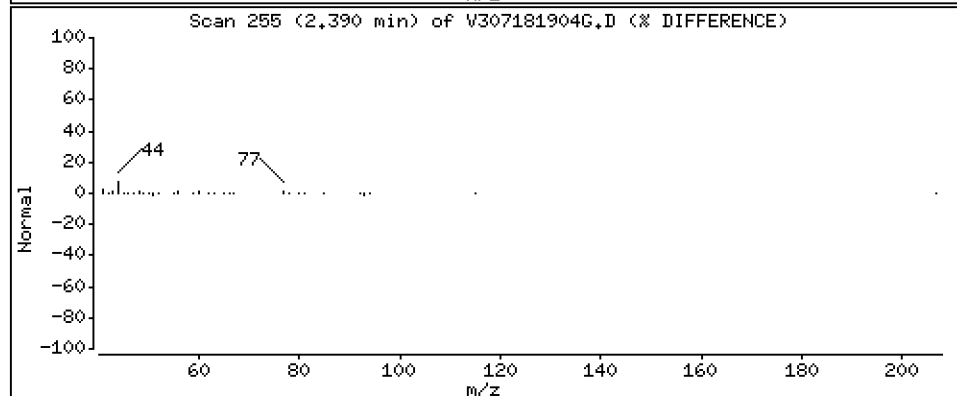
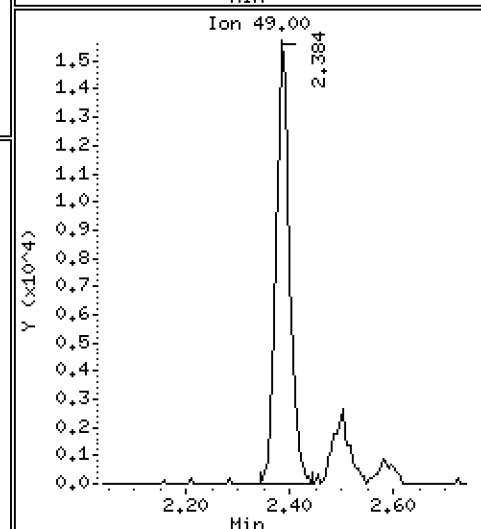
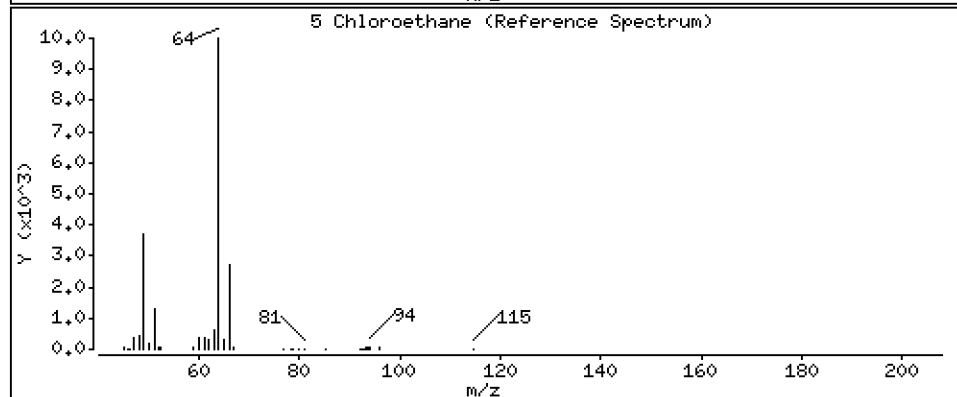
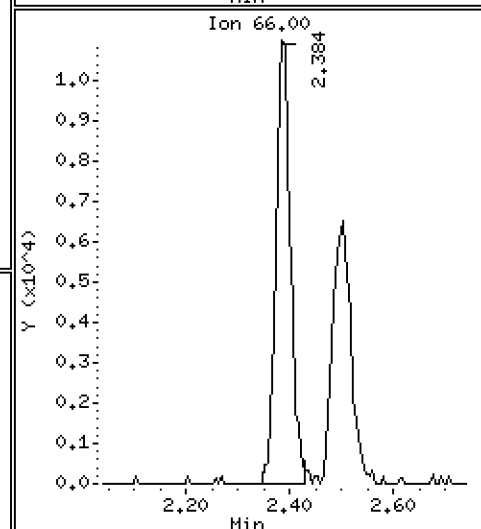
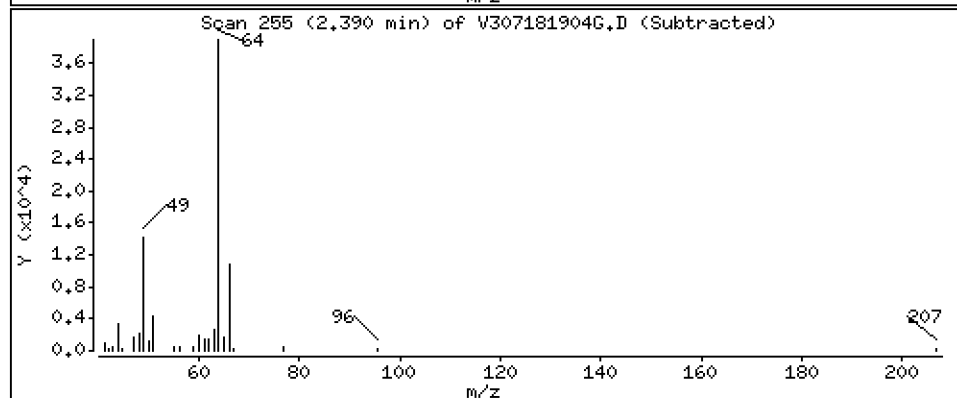
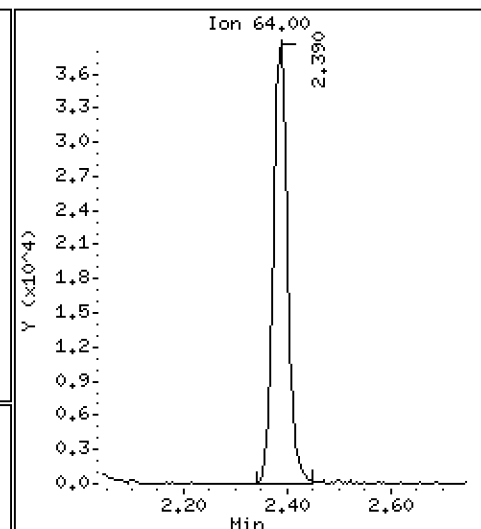
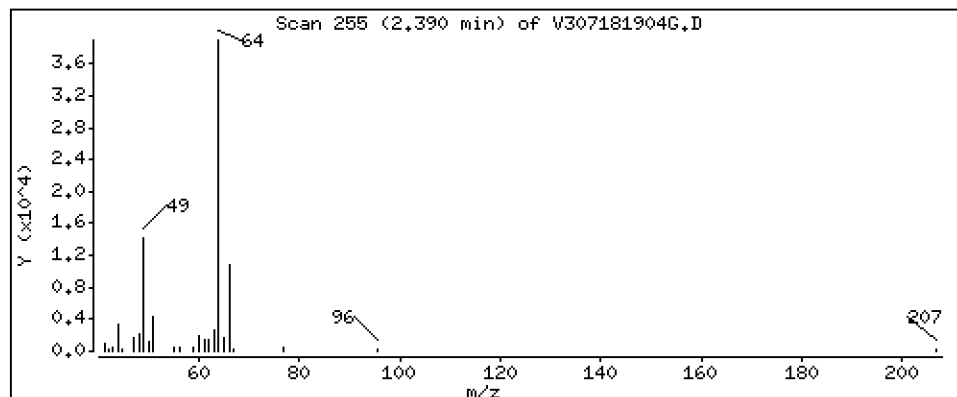
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 9.204 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

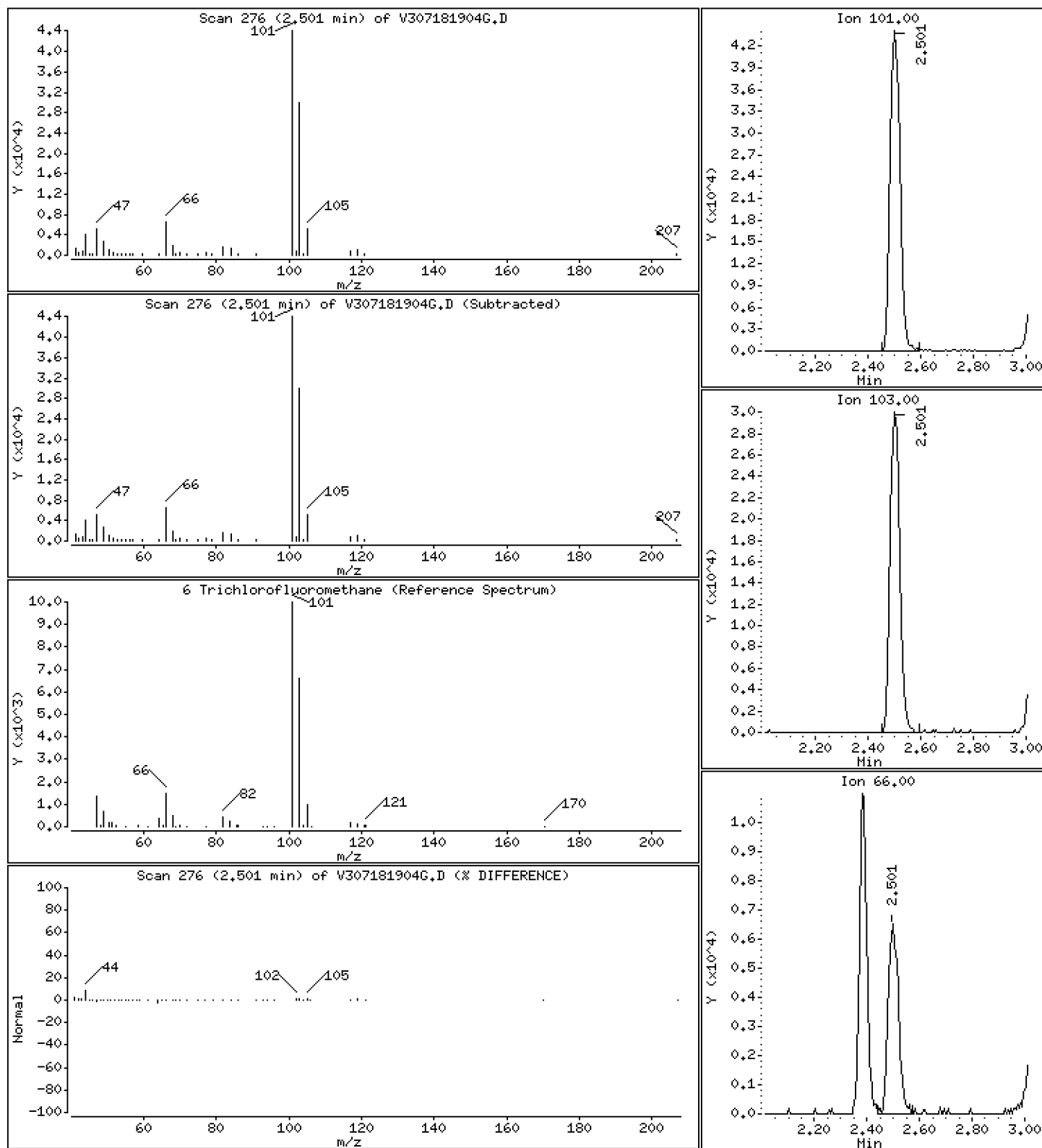
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 9.268 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

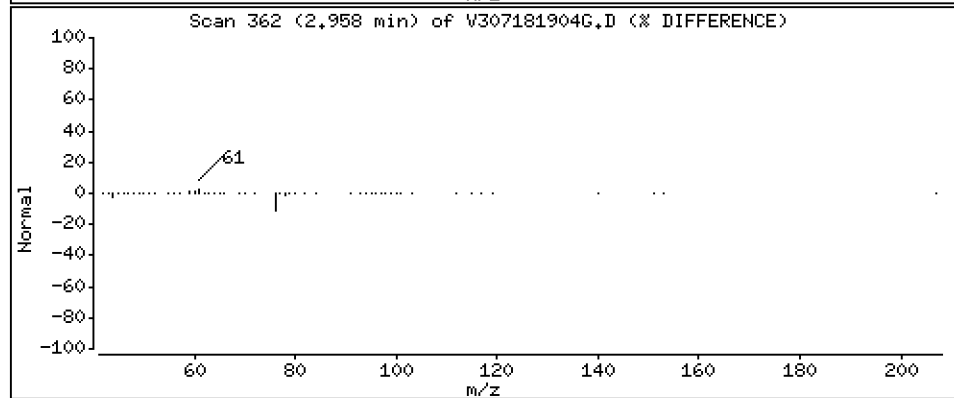
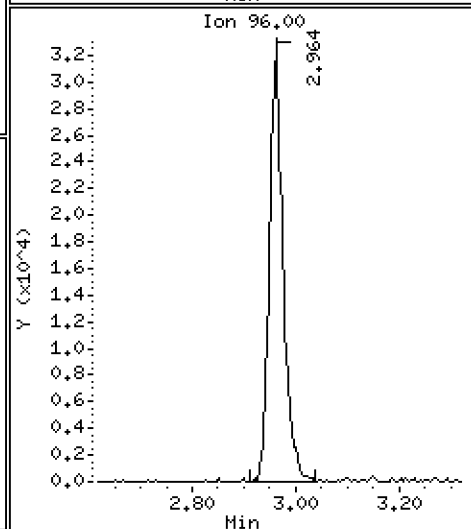
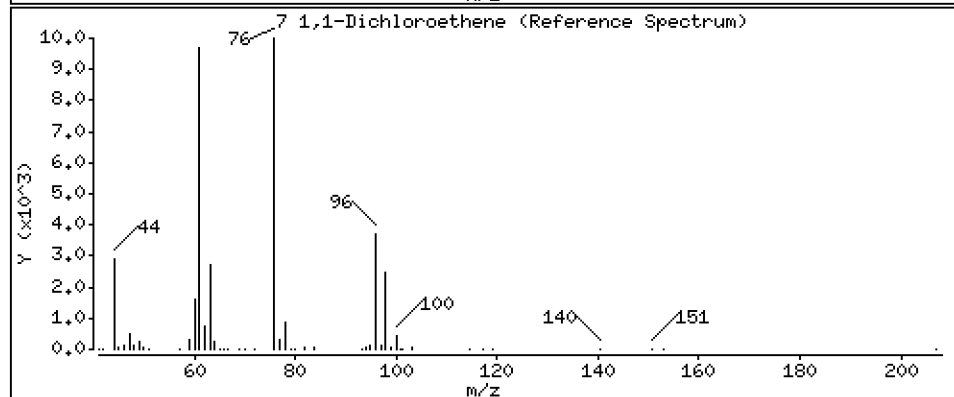
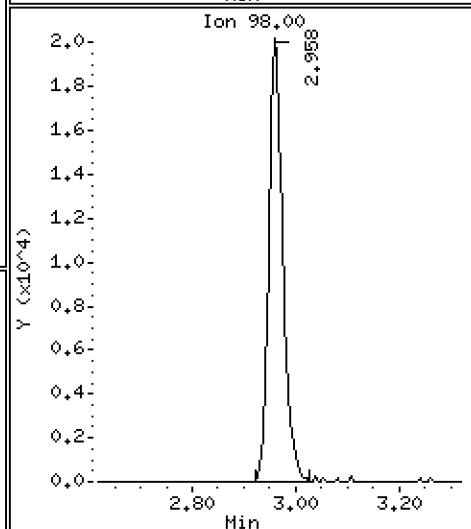
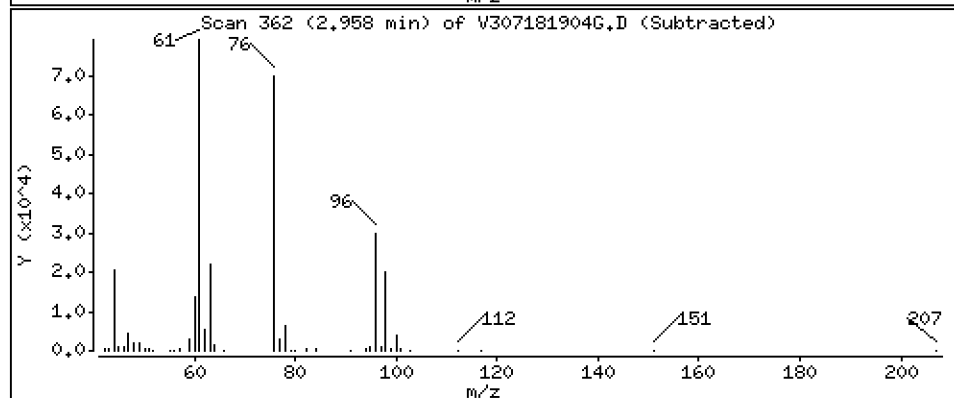
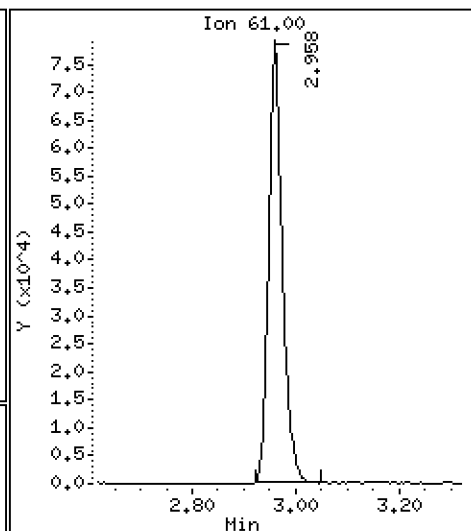
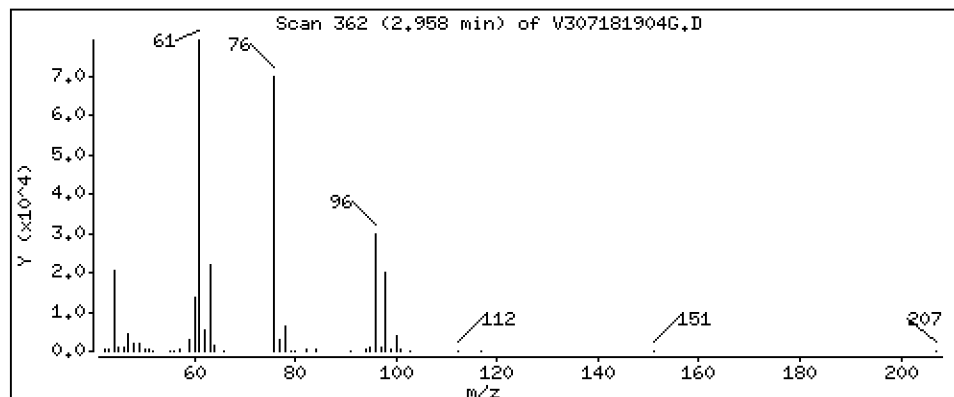
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 9.076 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHG0439-BSD1

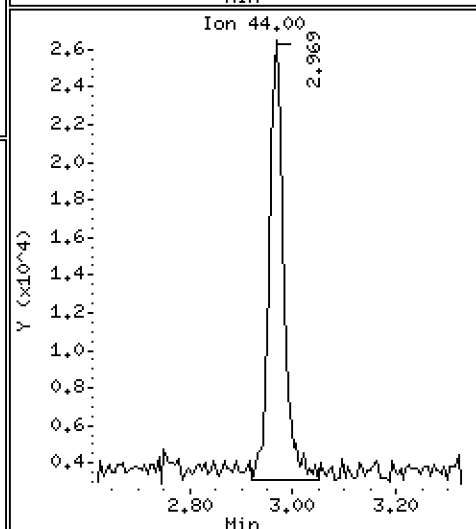
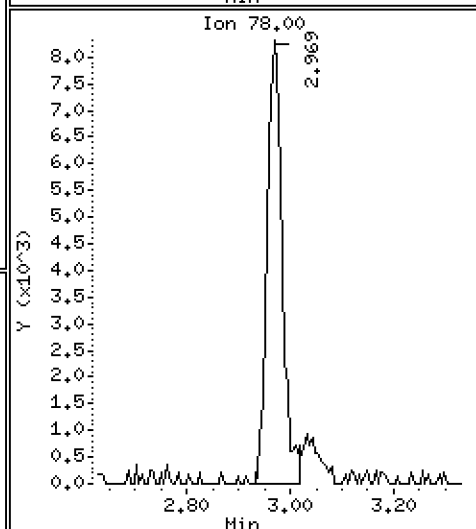
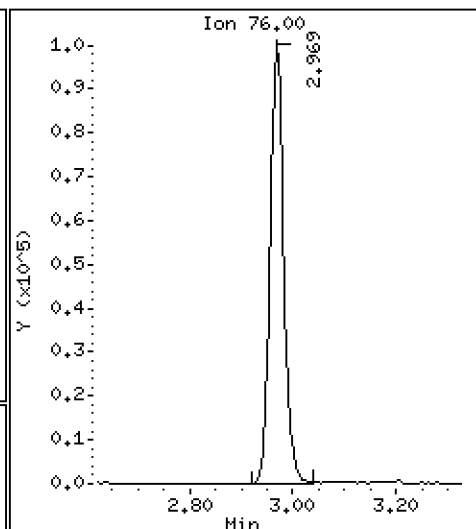
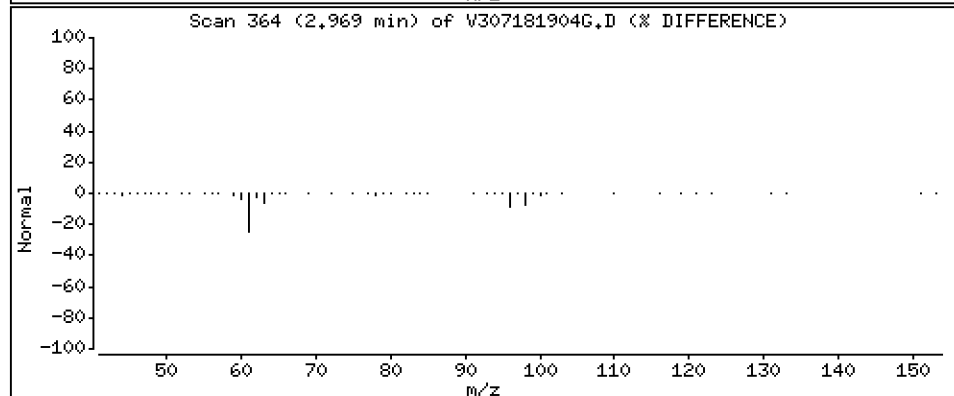
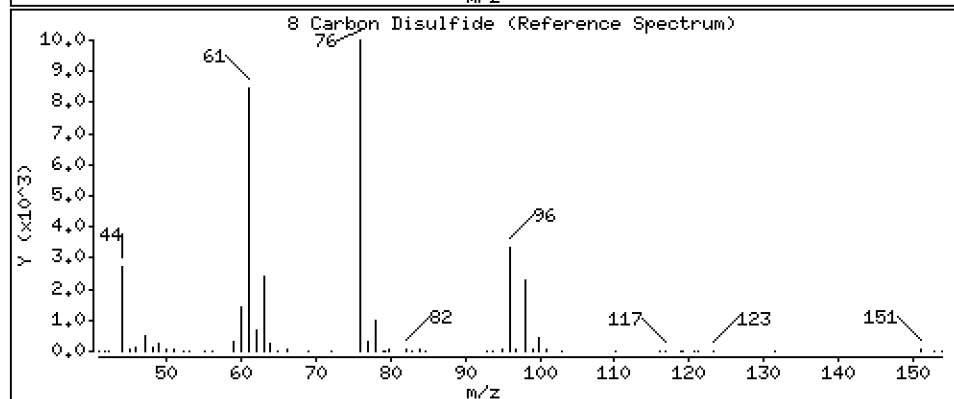
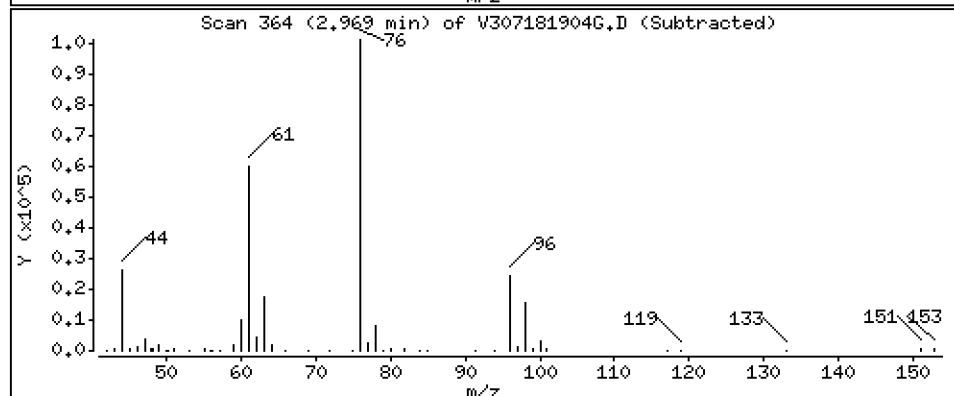
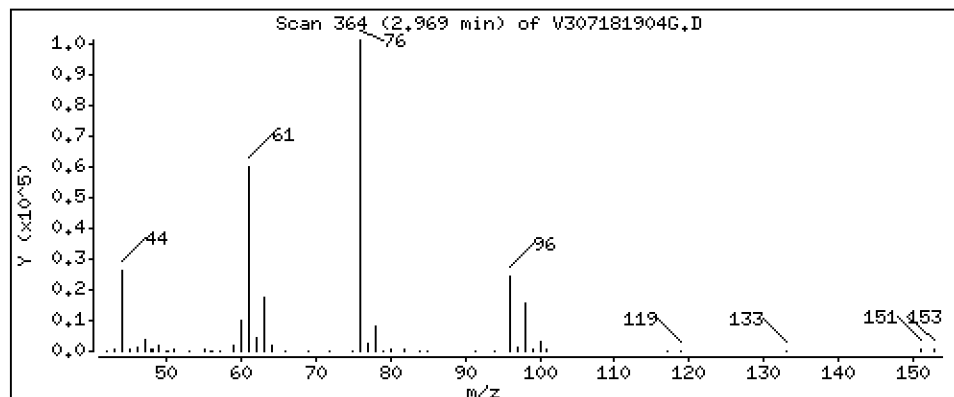
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 9.178 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

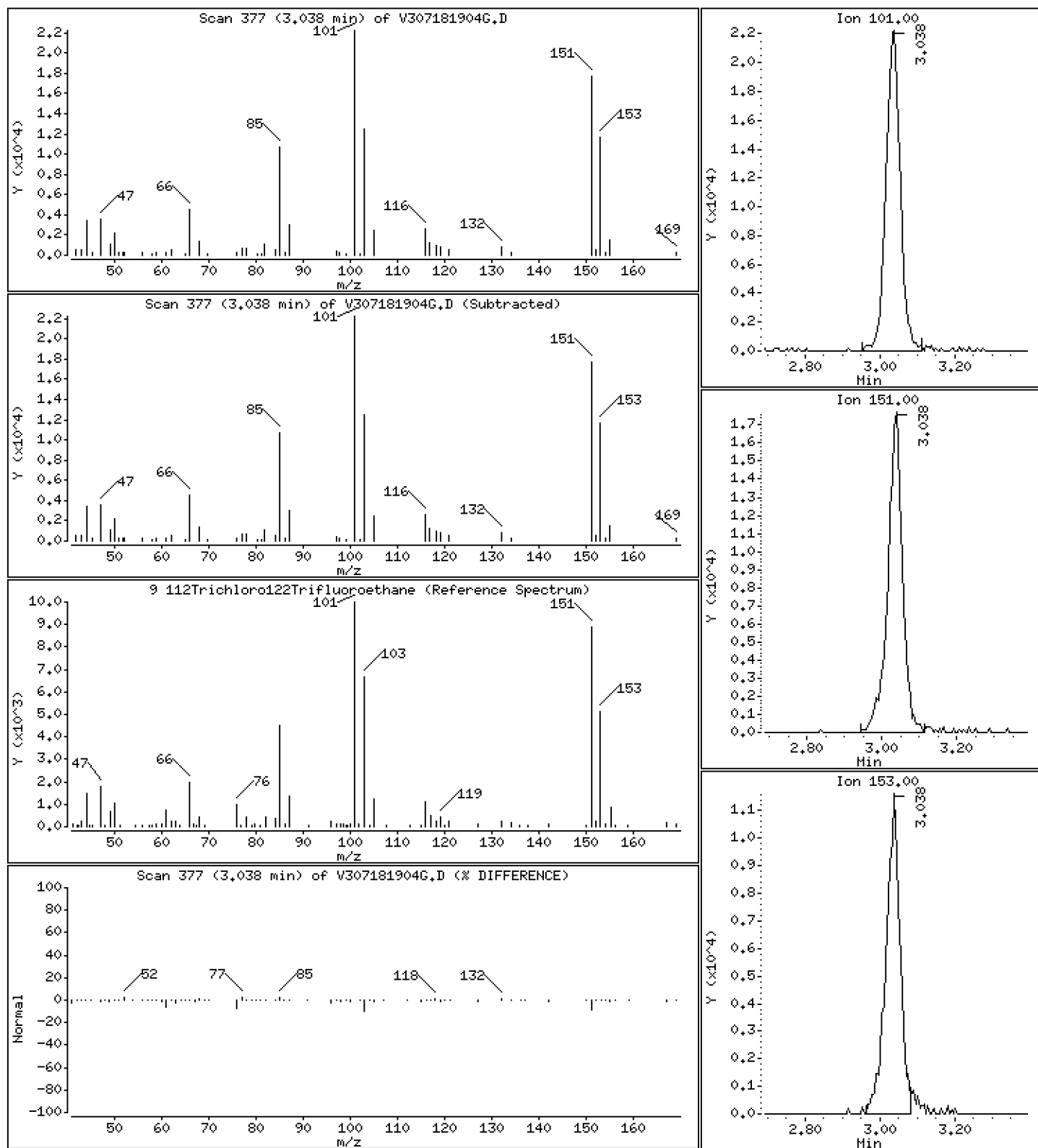
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 9.820 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

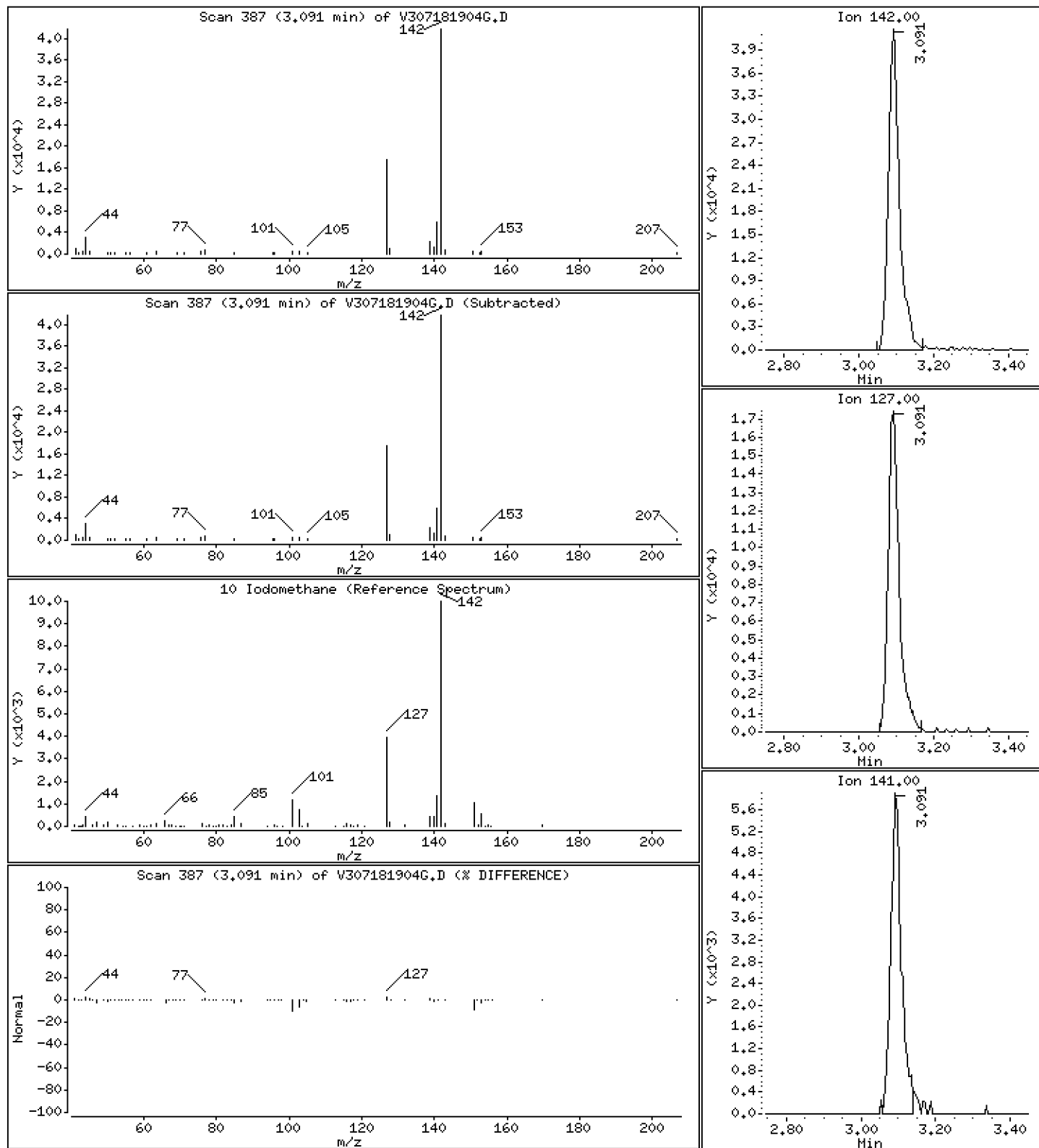
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 9.367 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHG0439-BSD1

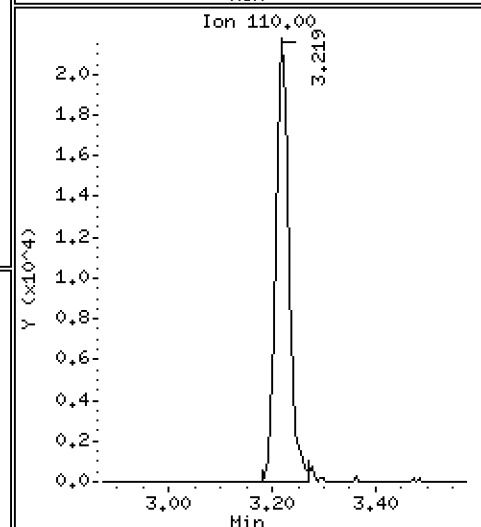
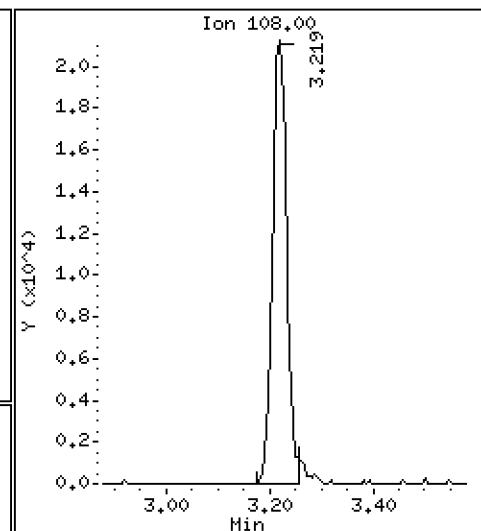
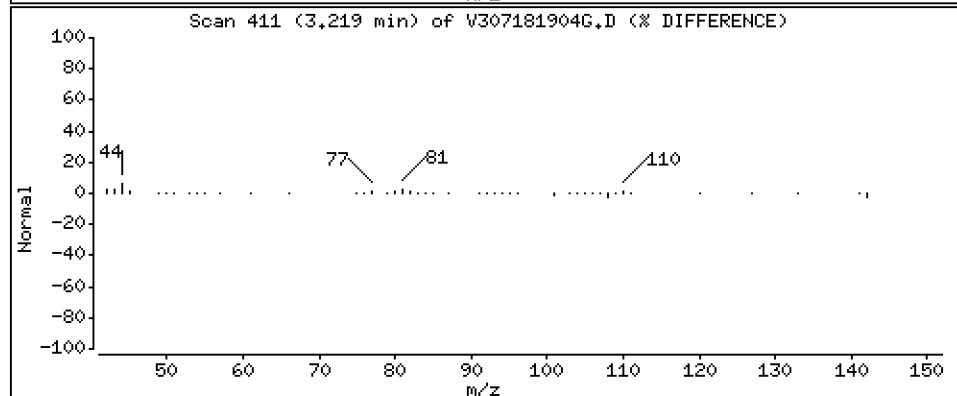
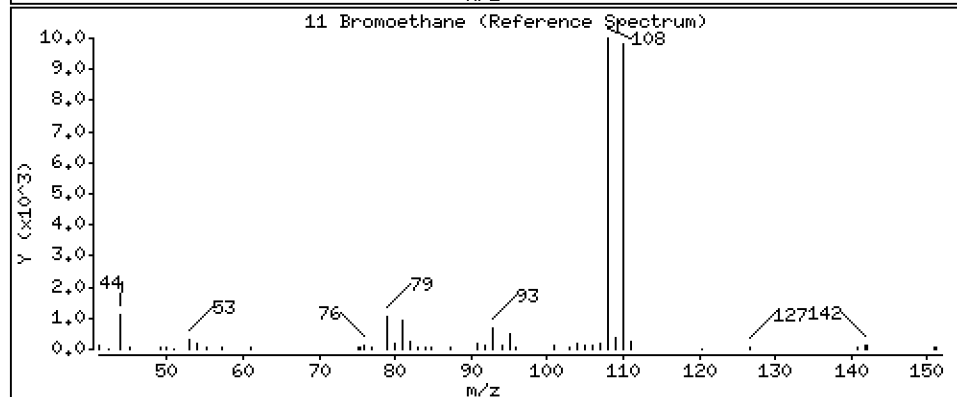
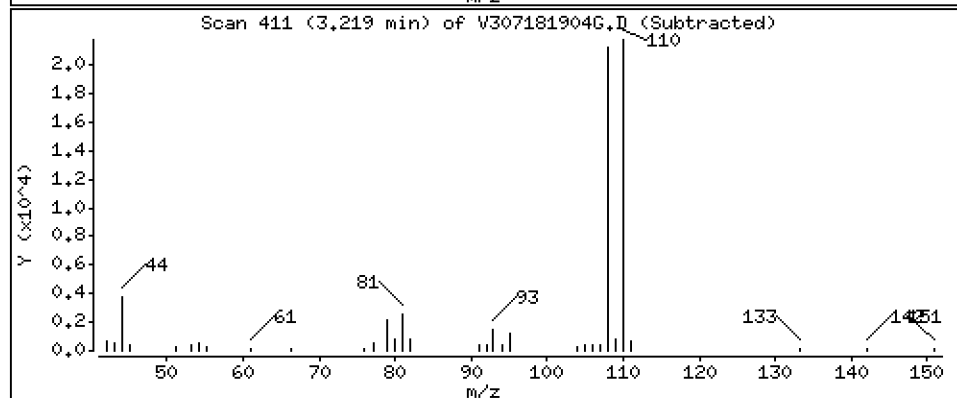
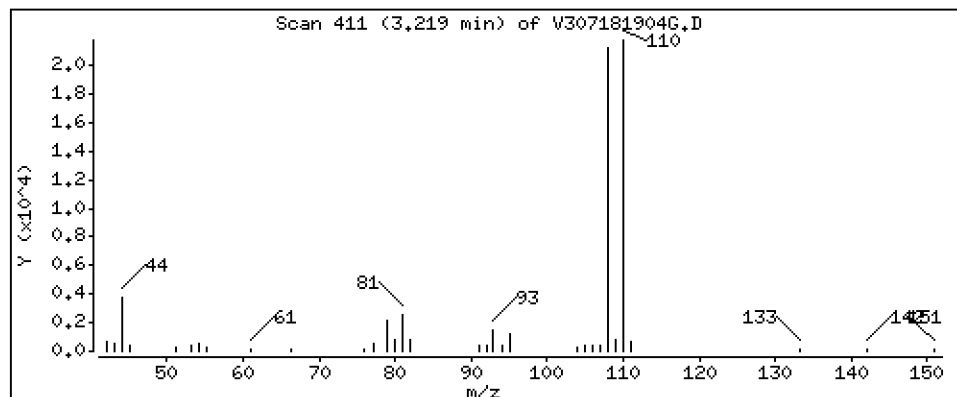
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 9.033 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

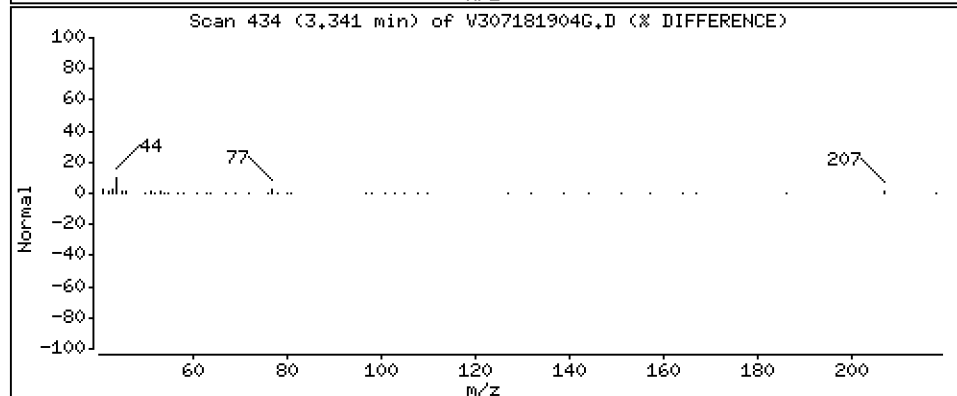
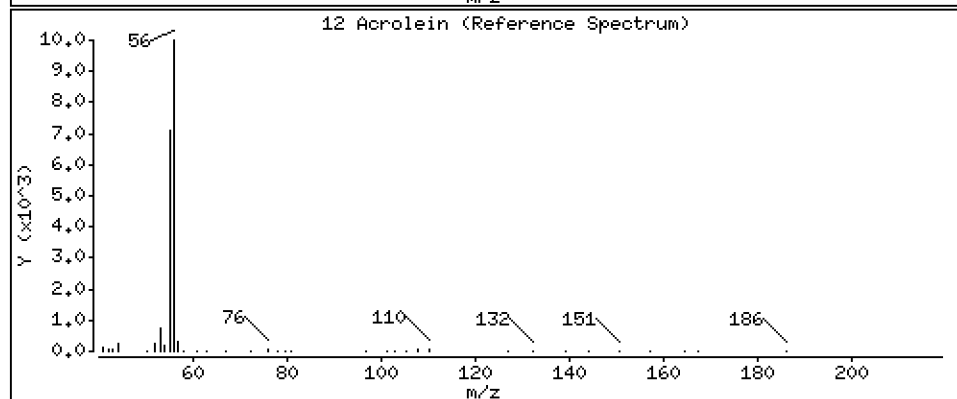
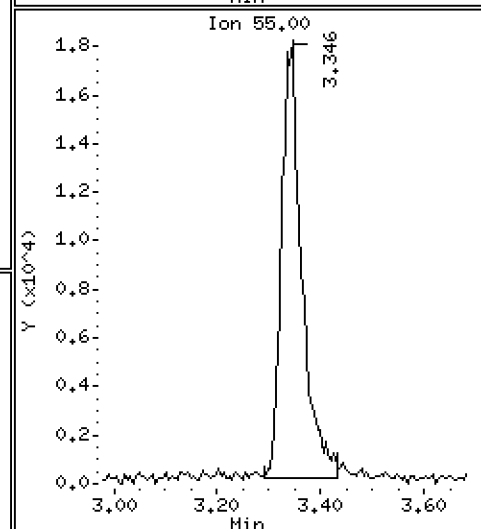
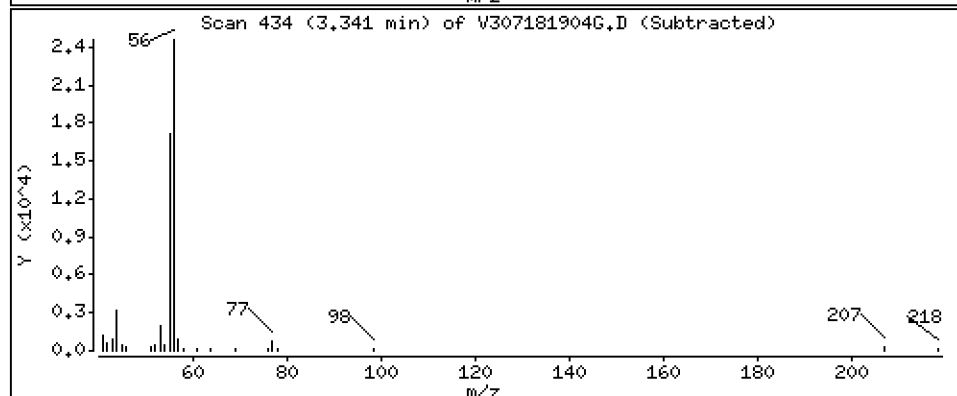
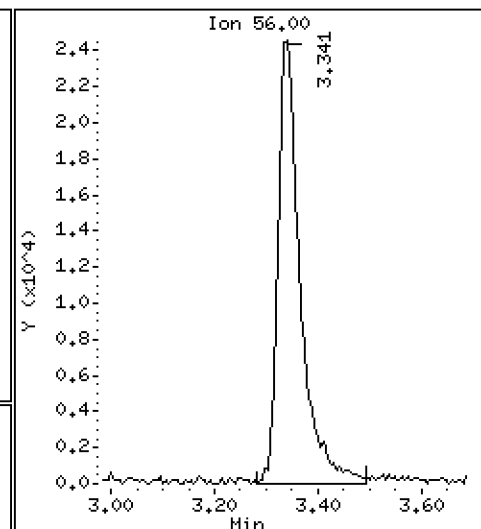
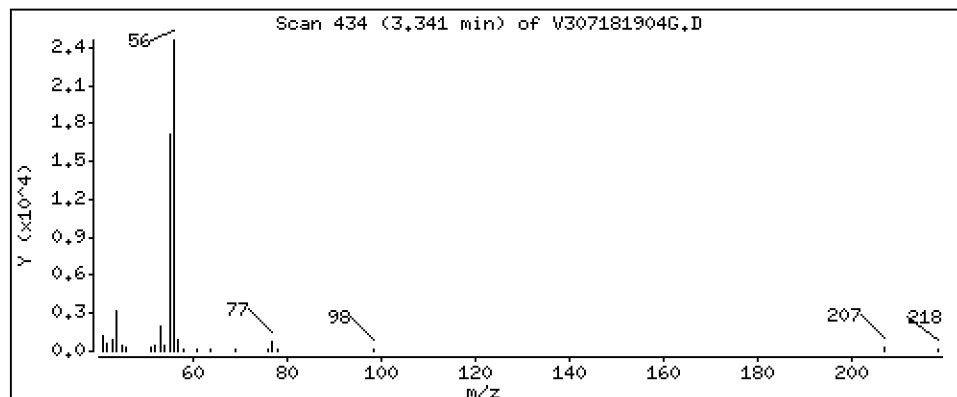
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 55,212 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

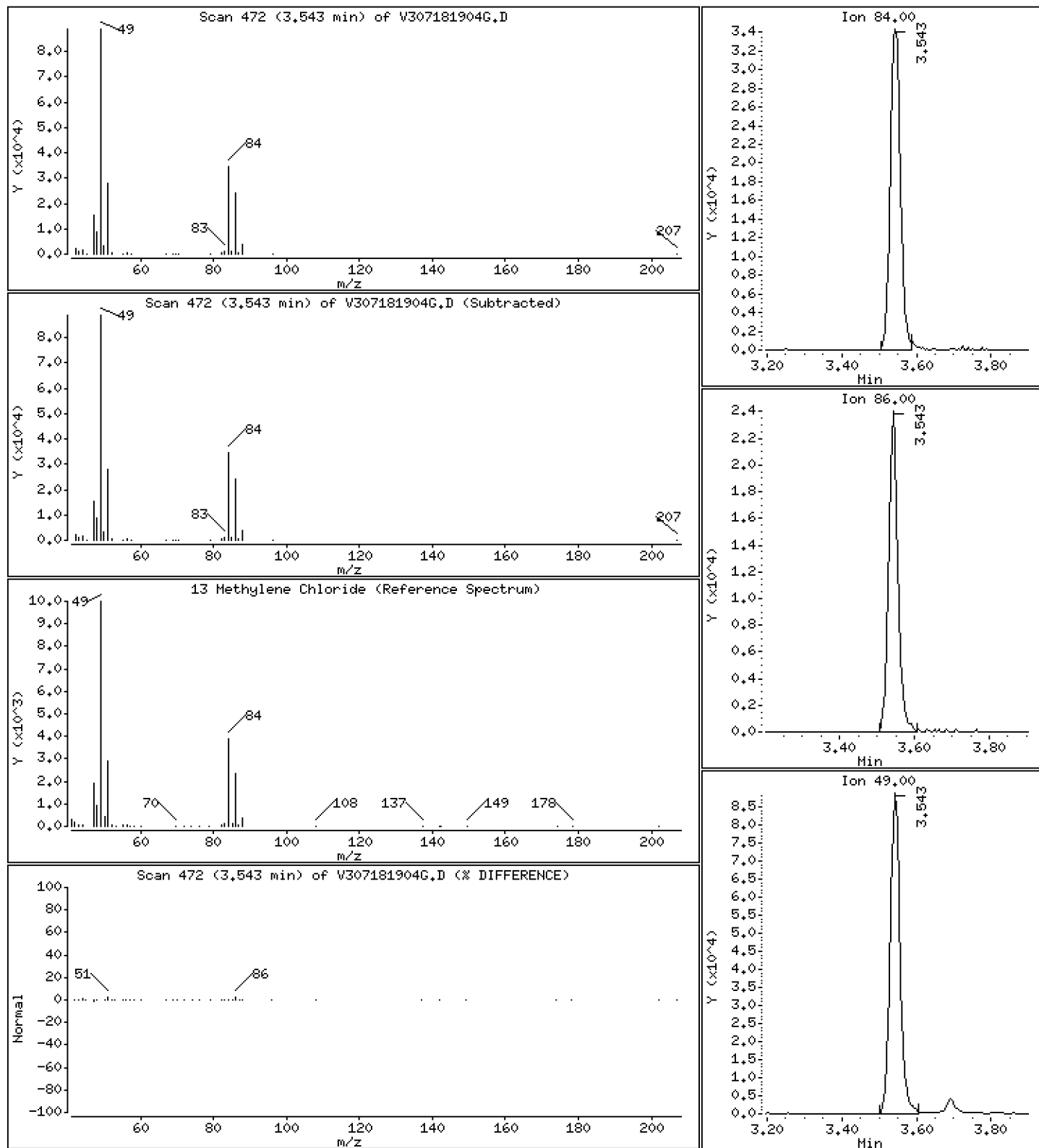
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 9.958 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

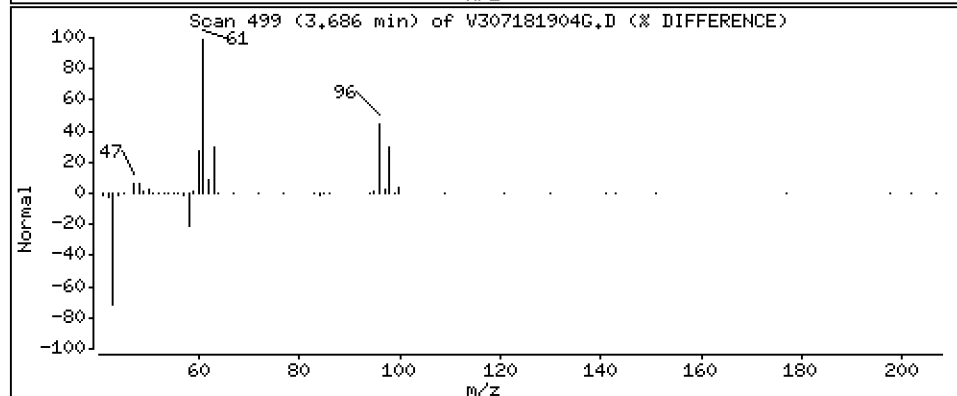
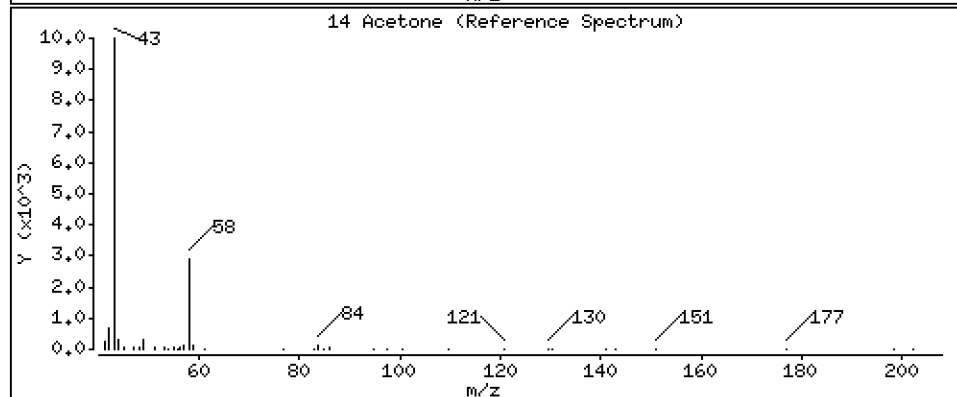
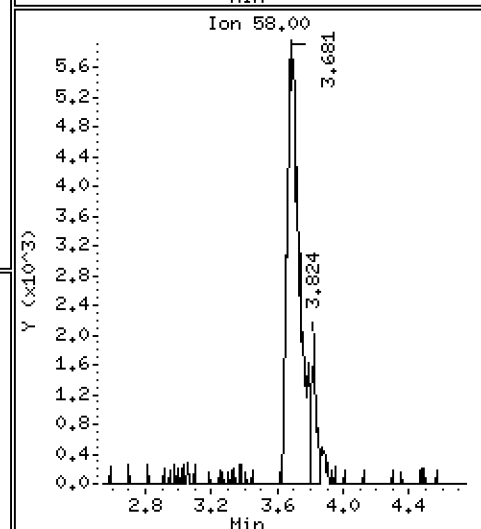
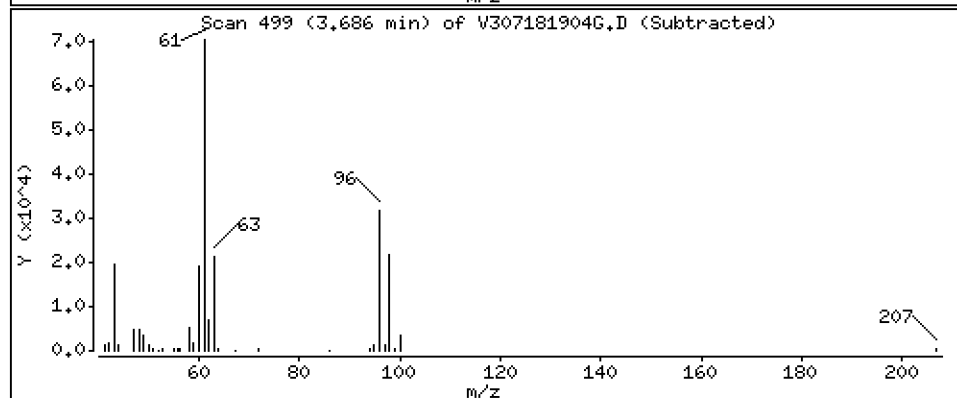
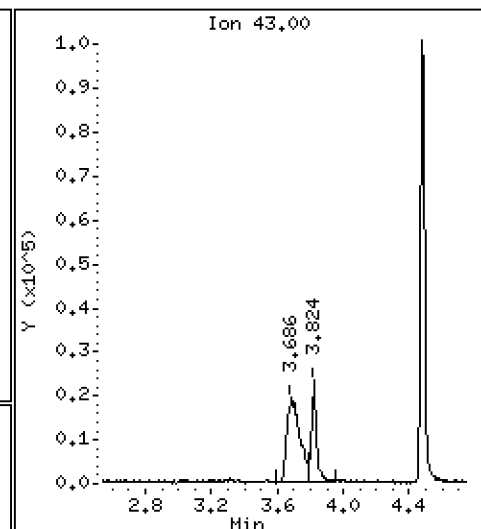
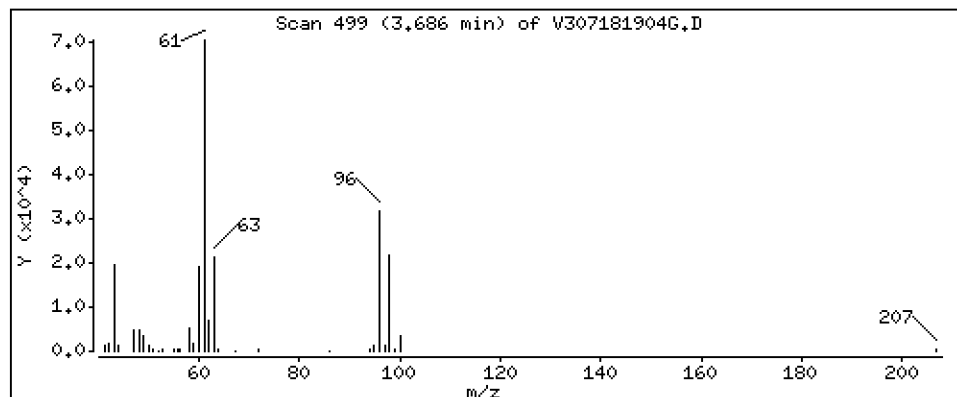
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 47,501 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

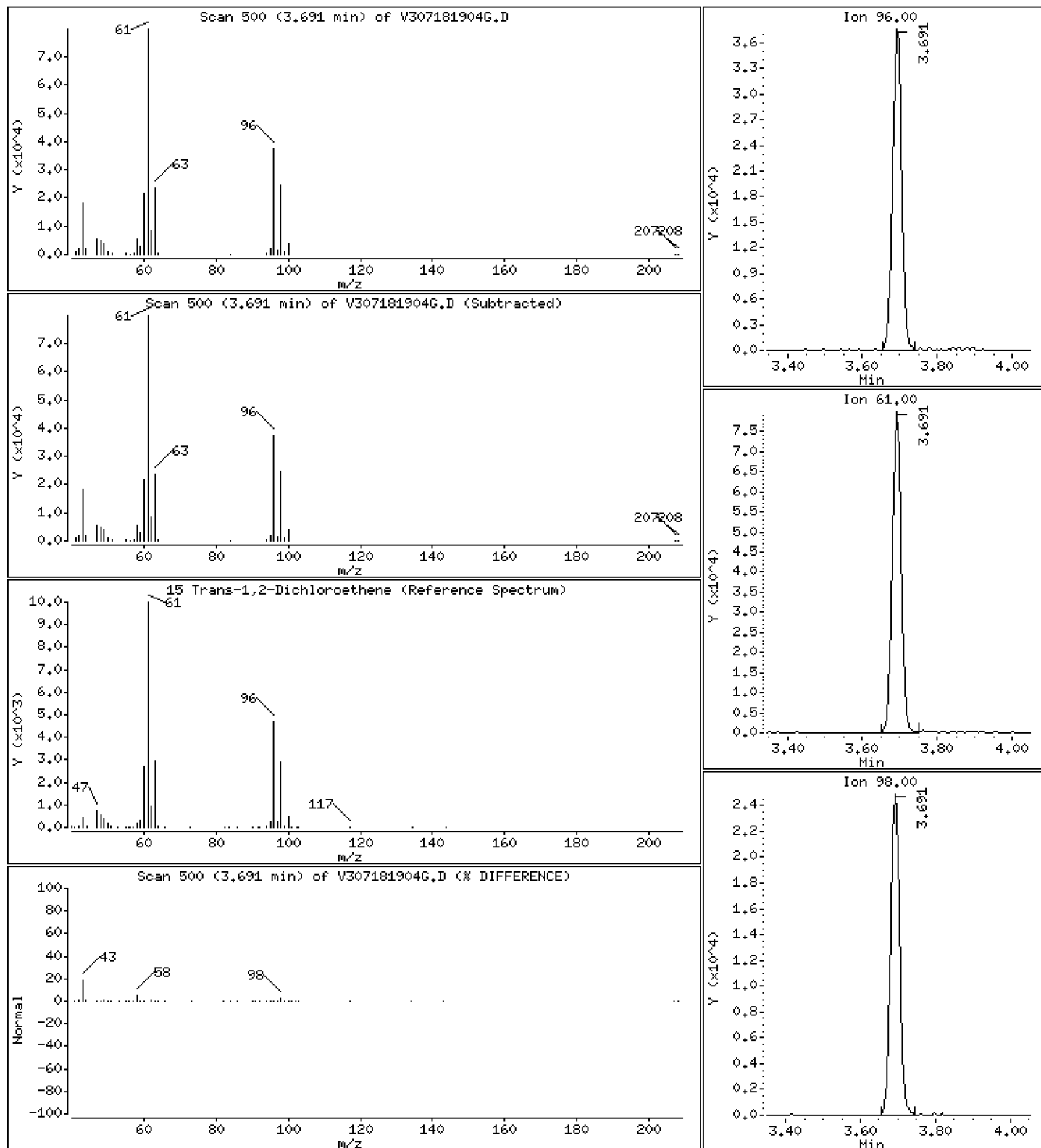
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 8.978 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

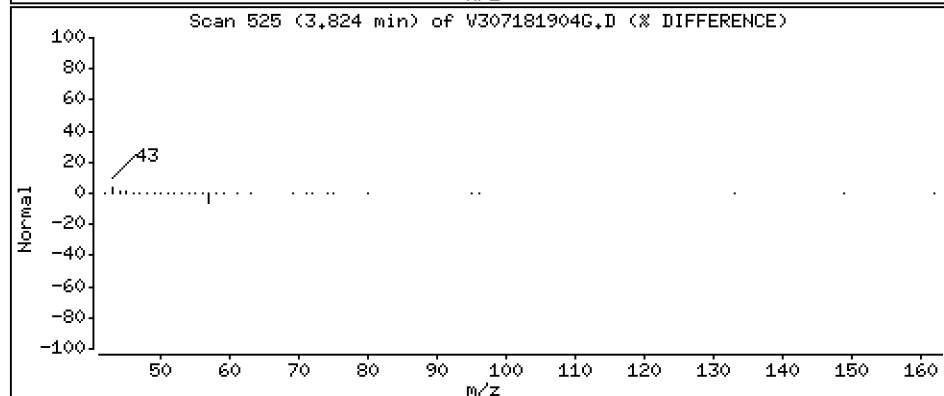
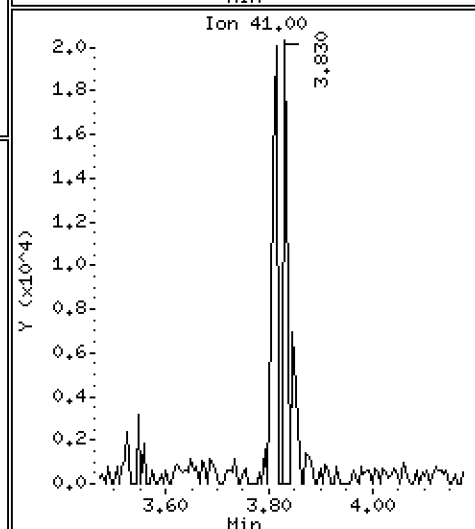
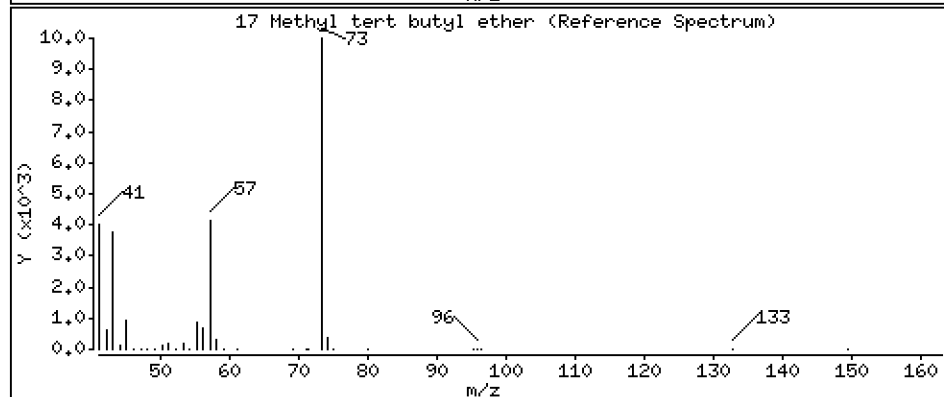
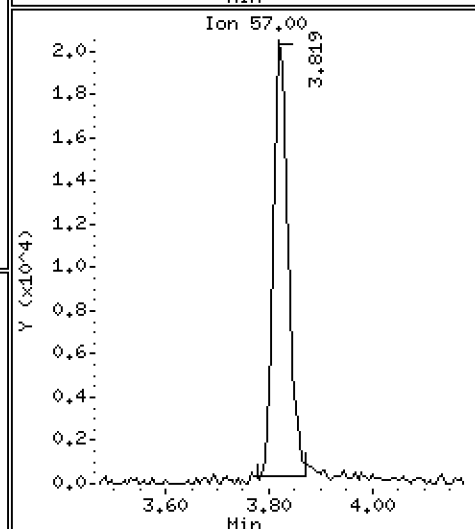
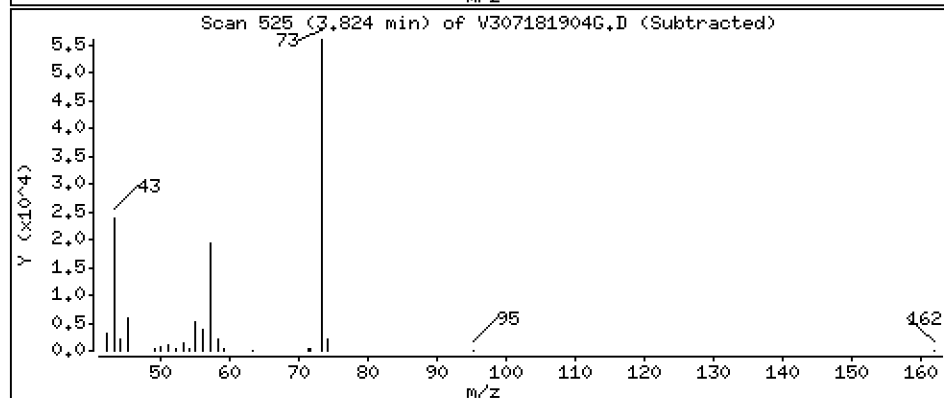
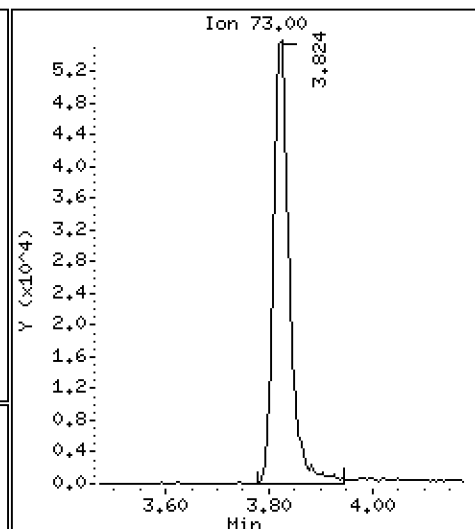
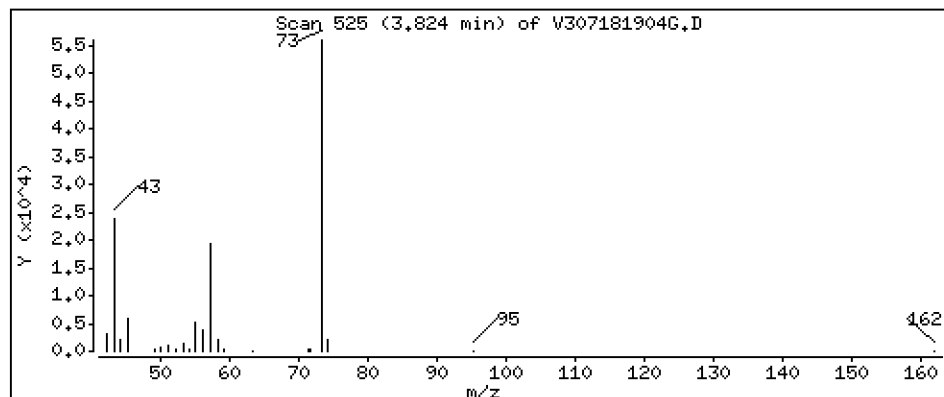
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

17 Methyl tert butyl ether

Concentration: 9.209 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

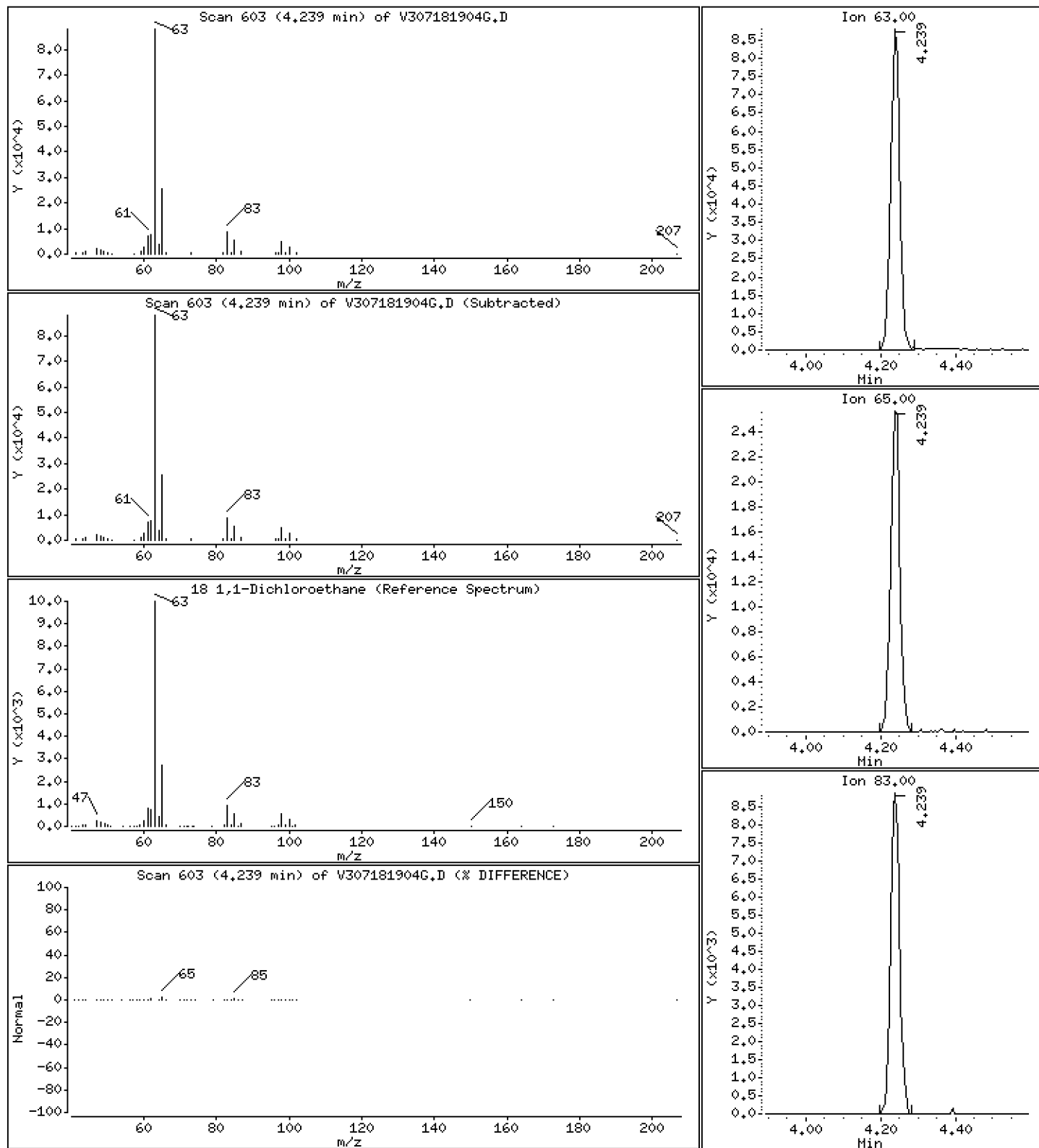
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

18 1,1-Dichloroethane

Concentration: 9.133 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

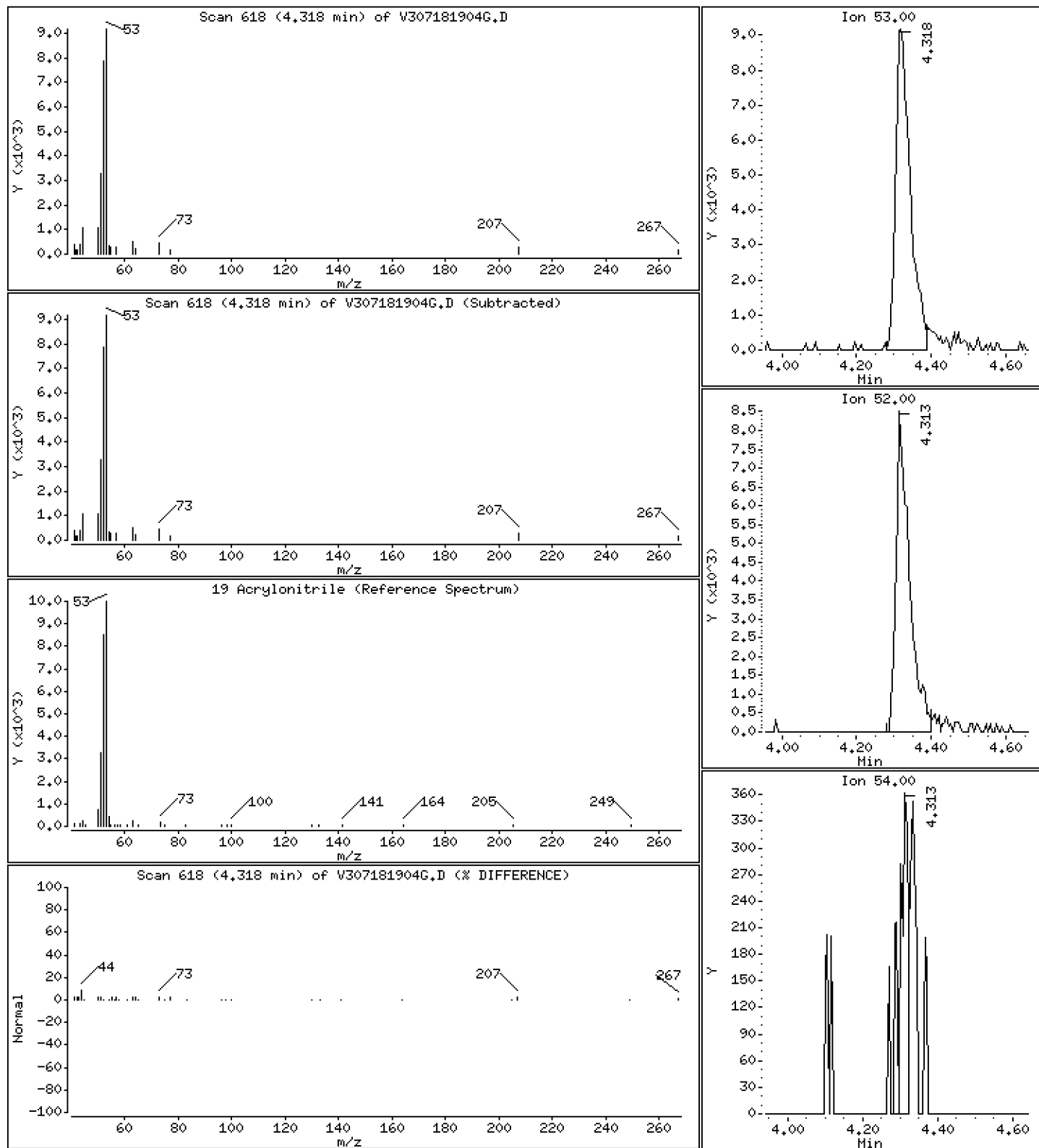
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

19 Acrylonitrile

Concentration: 10,256 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

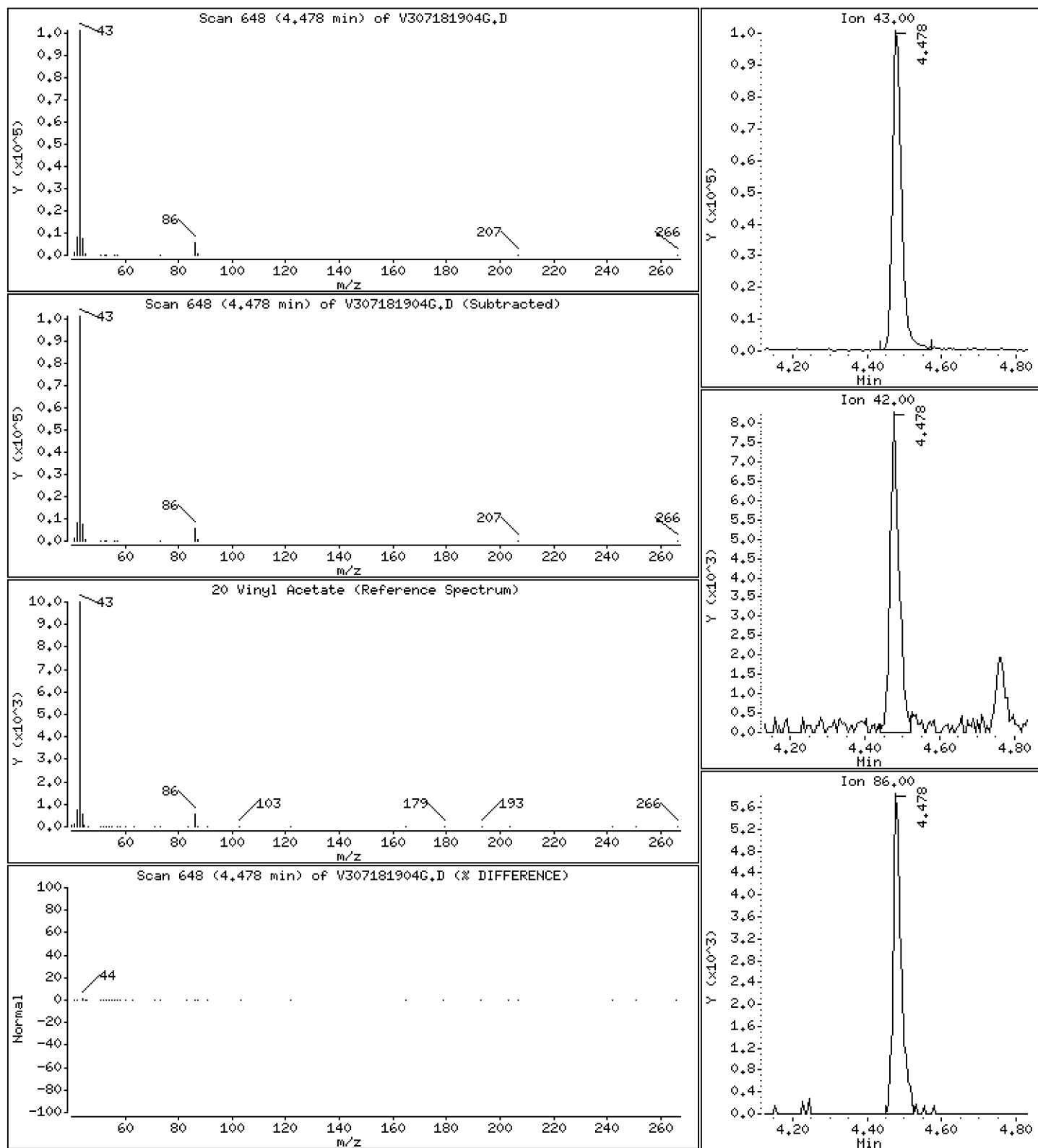
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

20 Vinyl Acetate

Concentration: 9.503 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

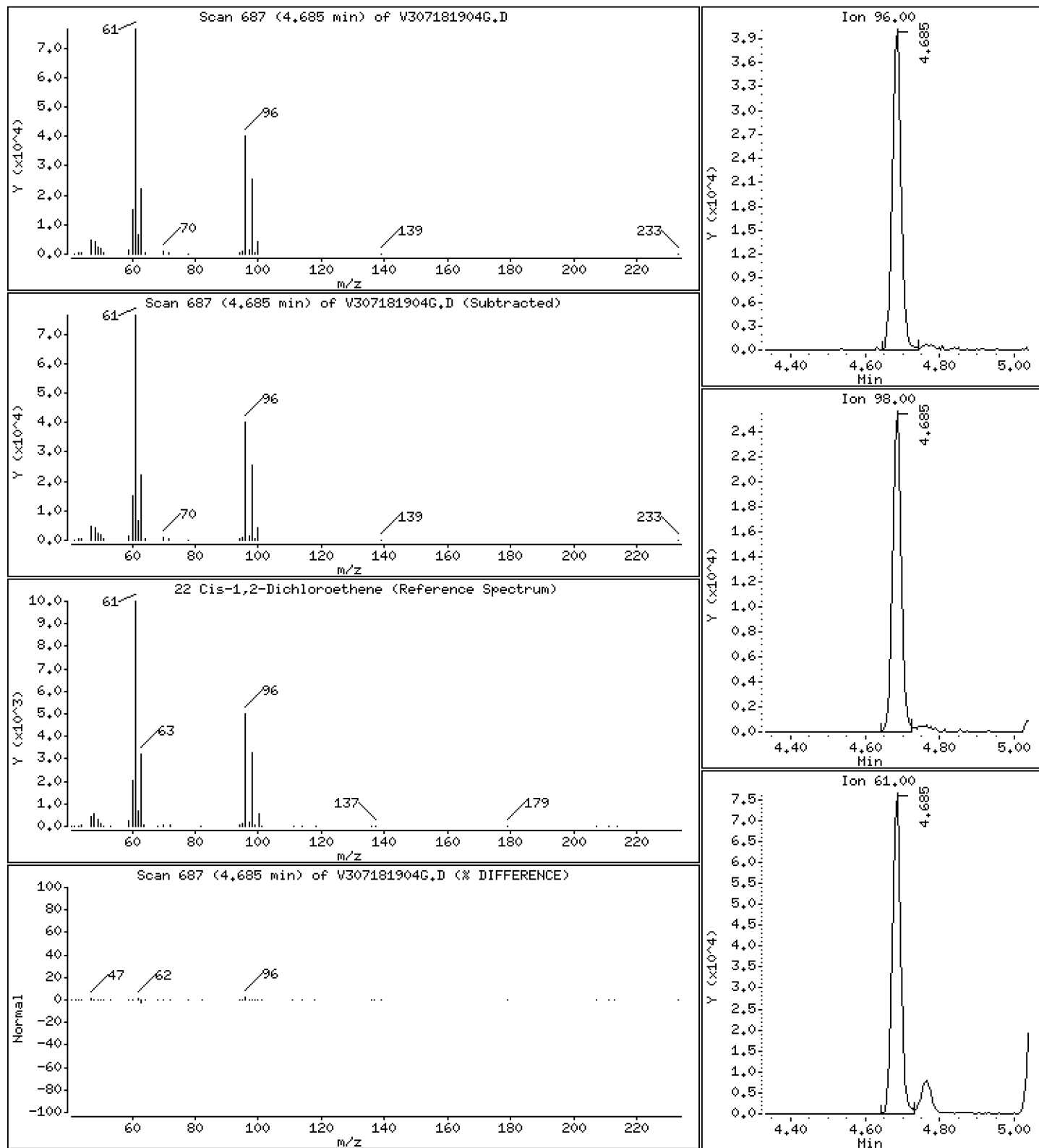
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

22 Cis-1,2-Dichloroethene

Concentration: 9.376 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

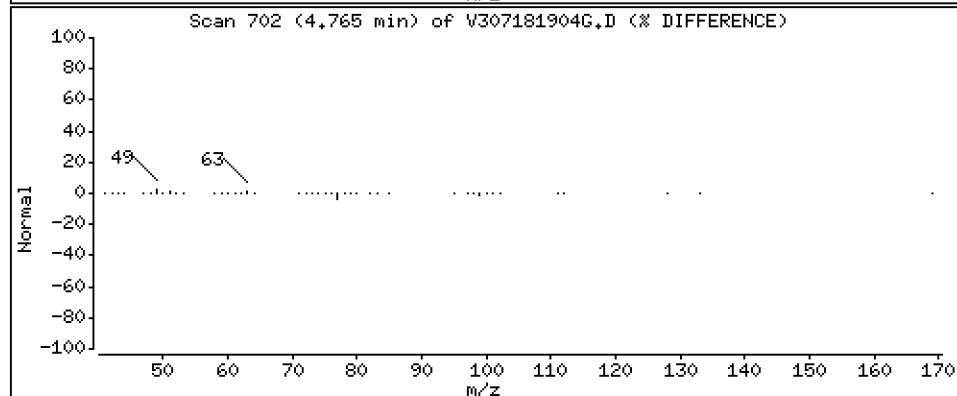
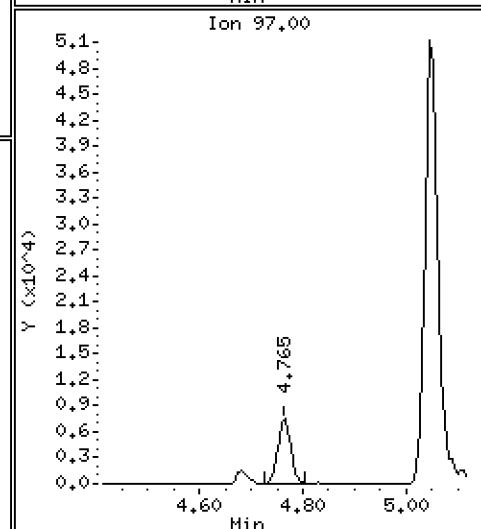
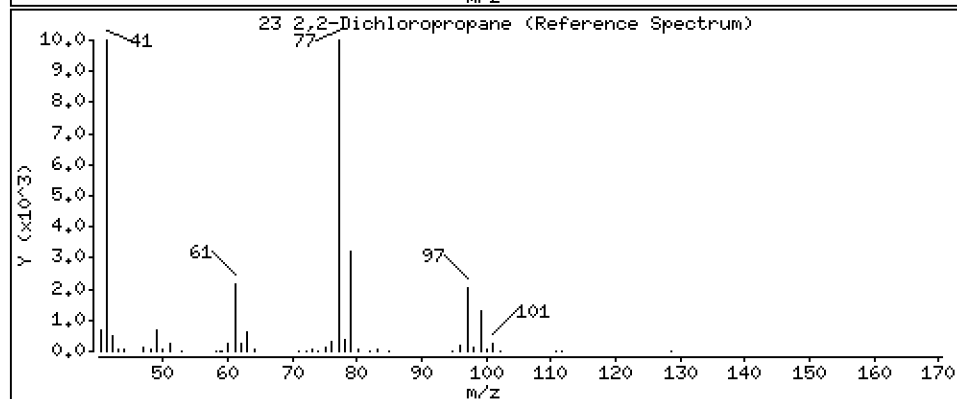
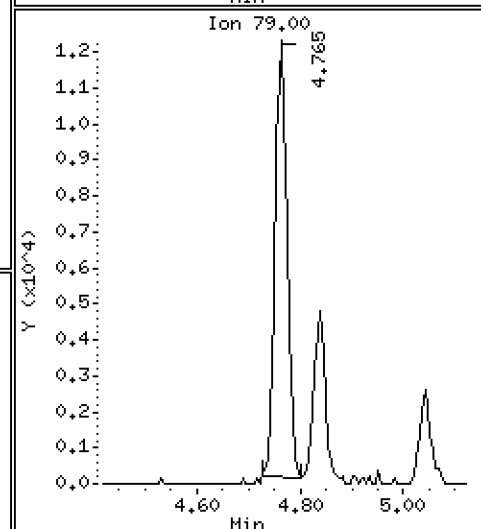
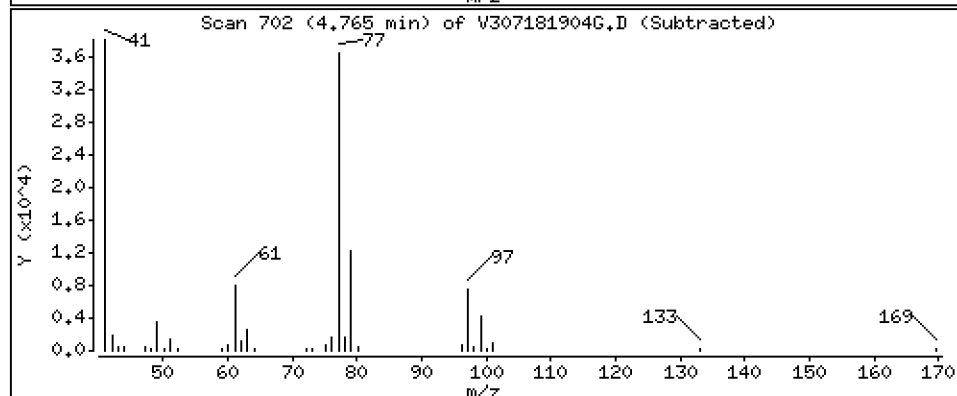
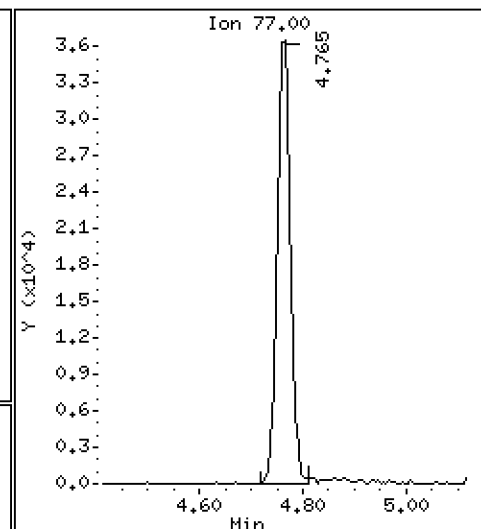
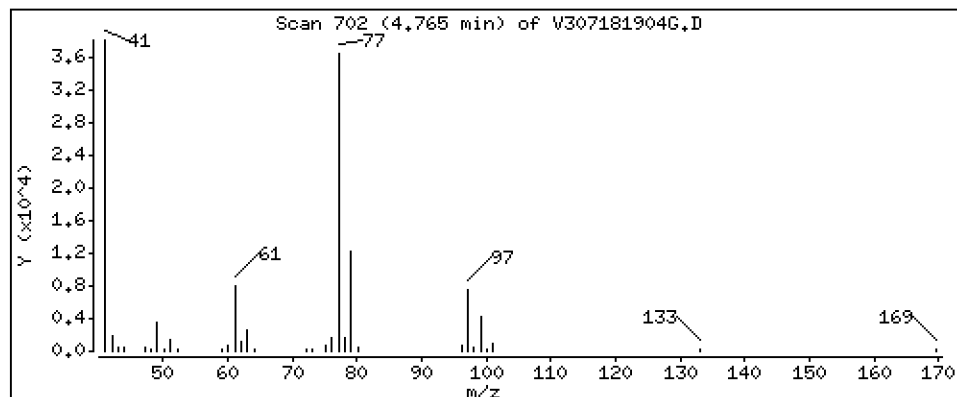
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

23 2,2-Dichloropropane

Concentration: 9.991 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

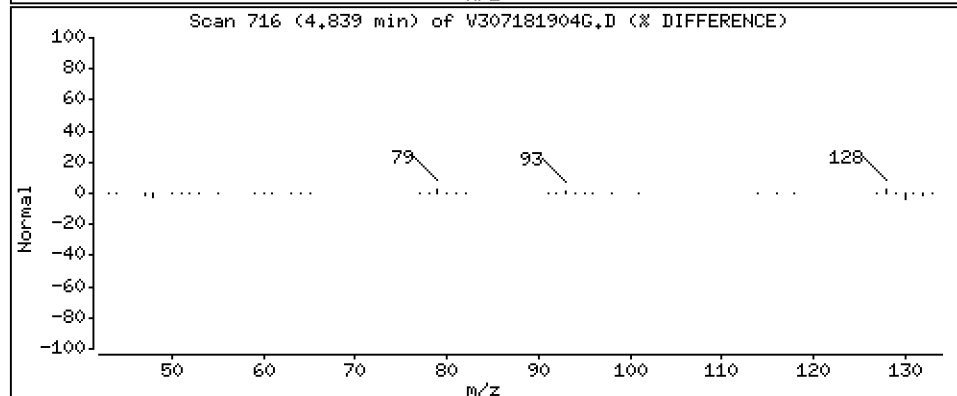
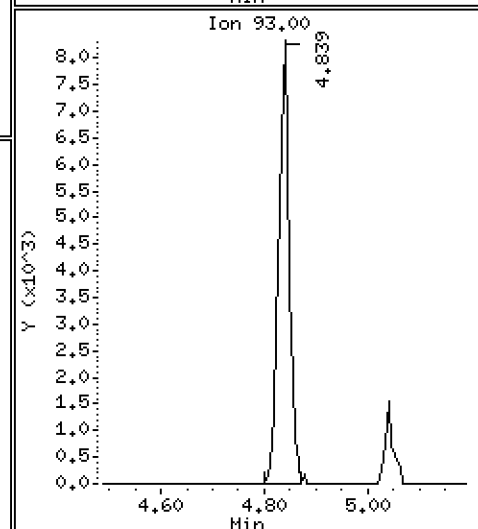
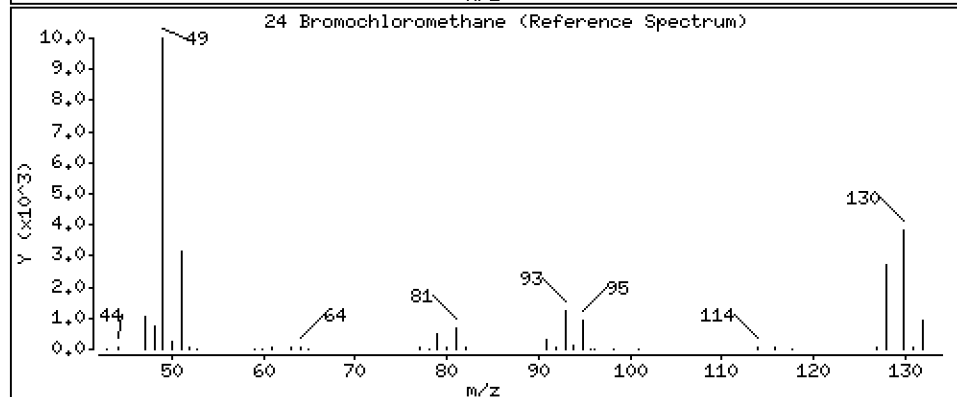
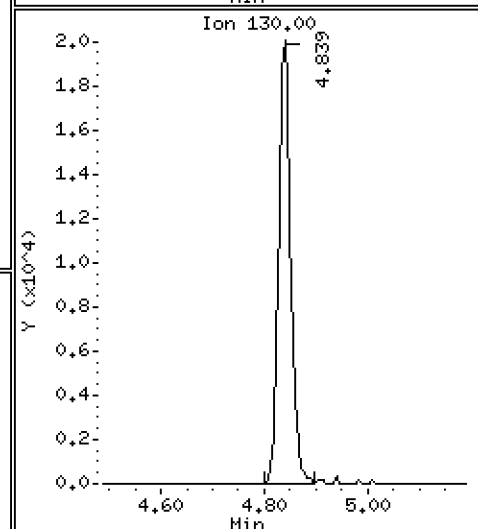
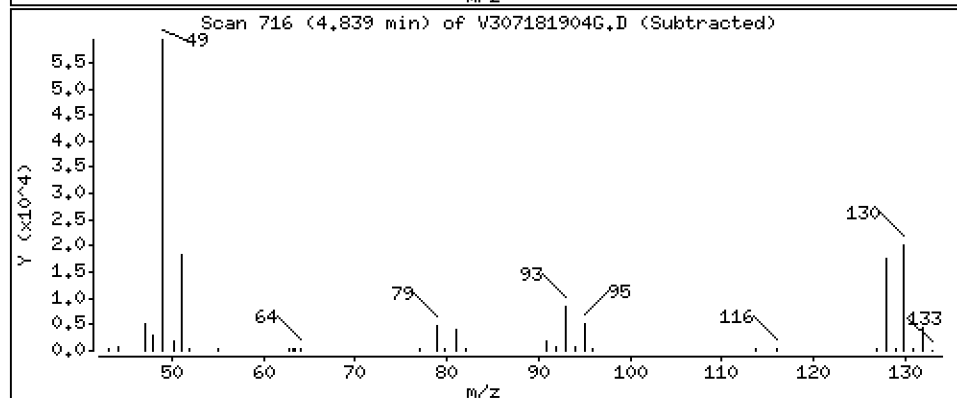
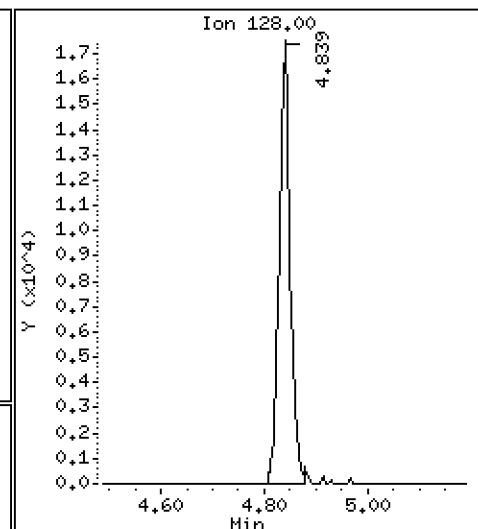
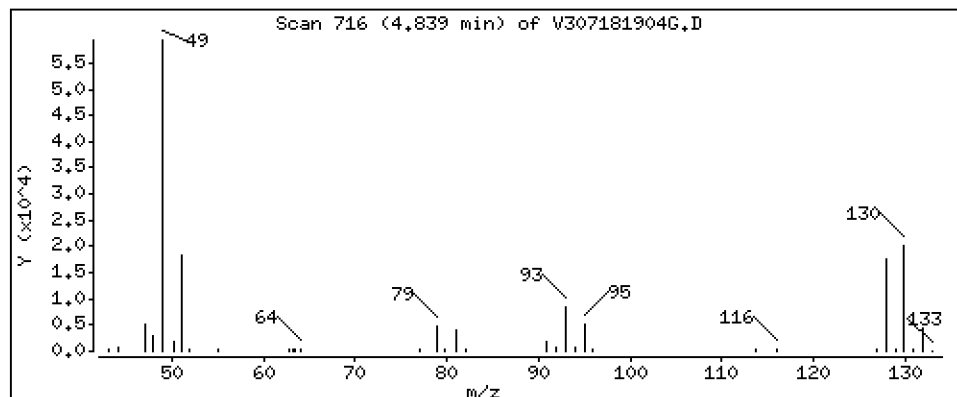
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

24 Bromochloromethane

Concentration: 9.170 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

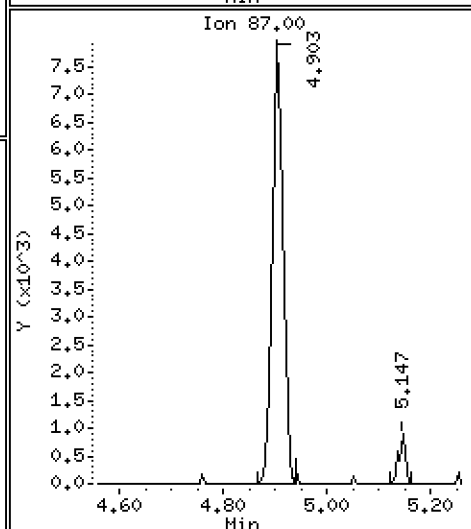
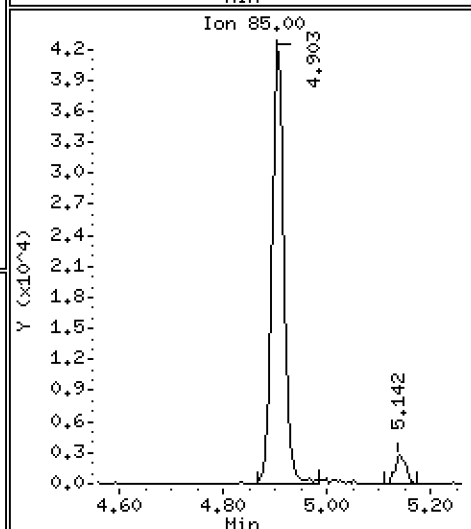
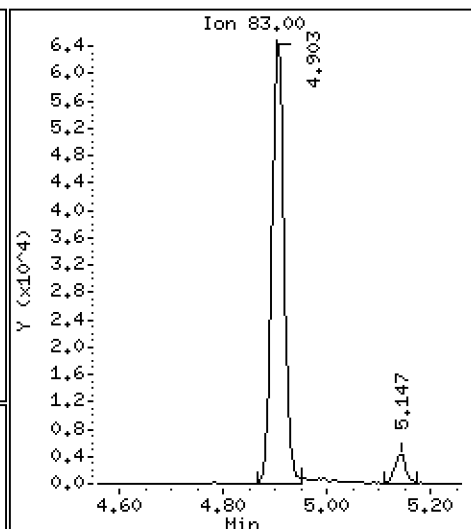
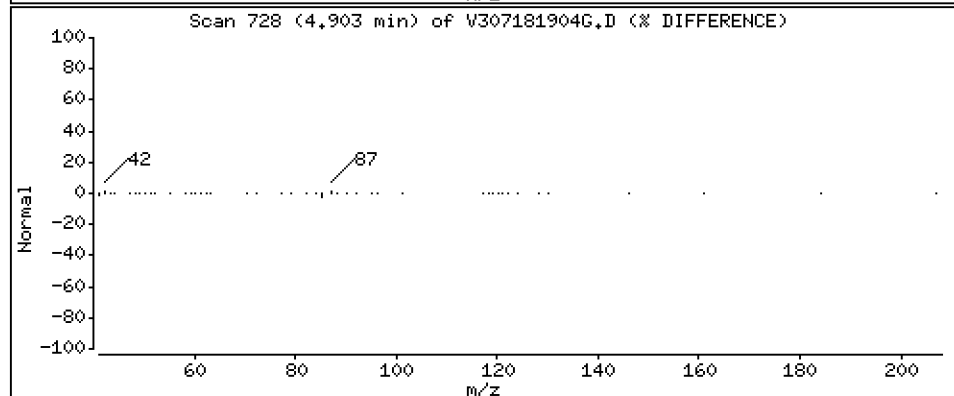
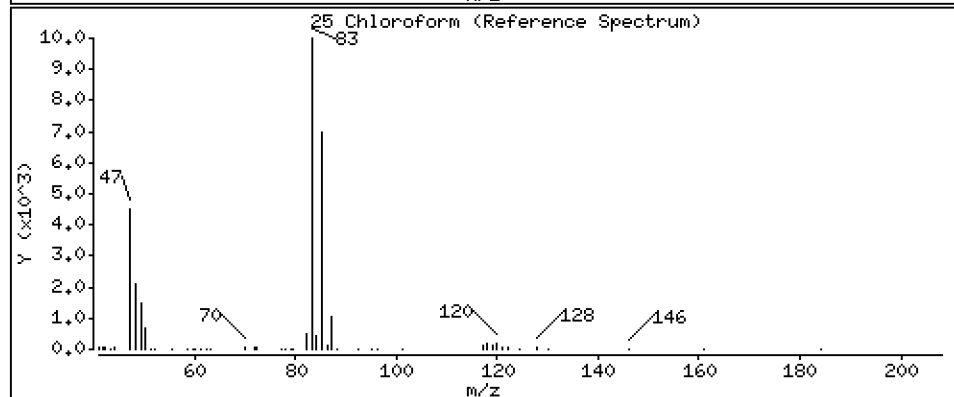
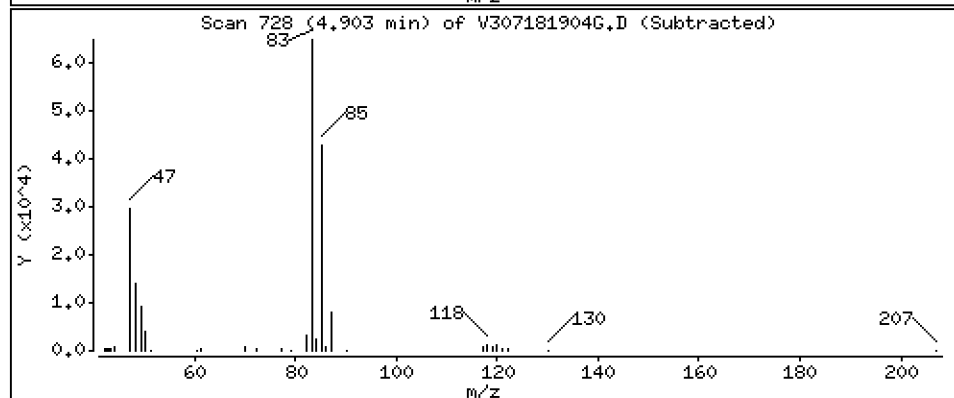
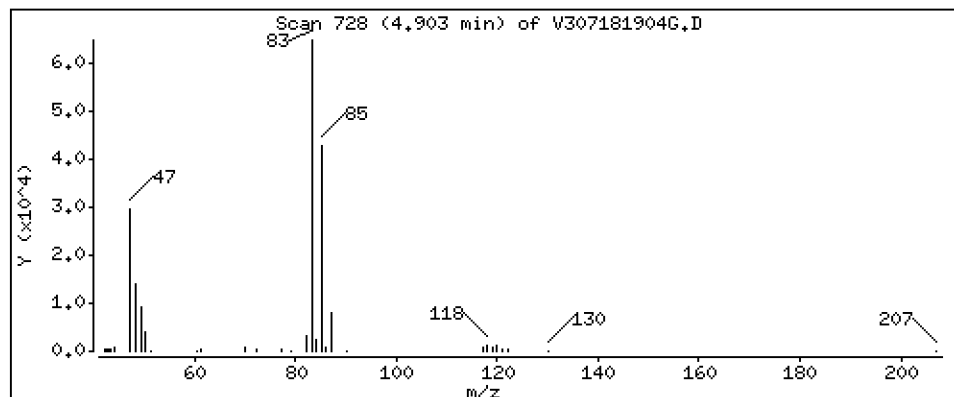
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

25 Chloroform

Concentration: 9.238 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

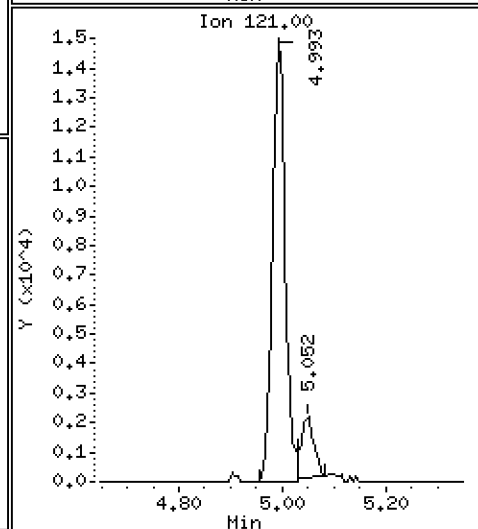
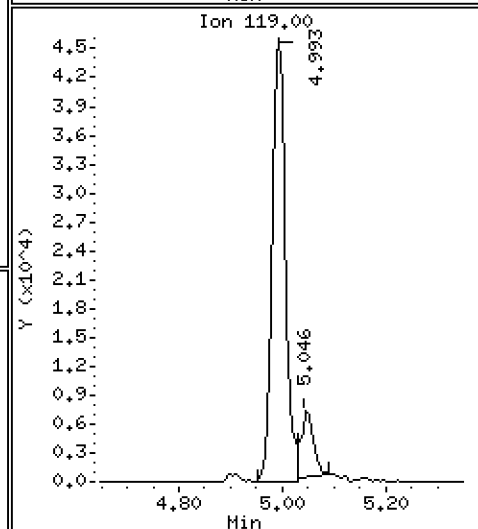
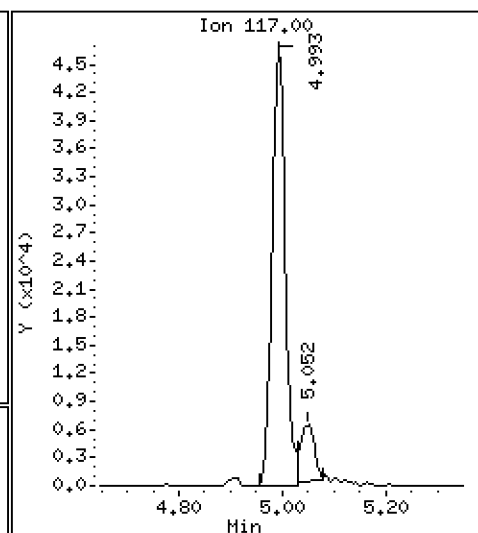
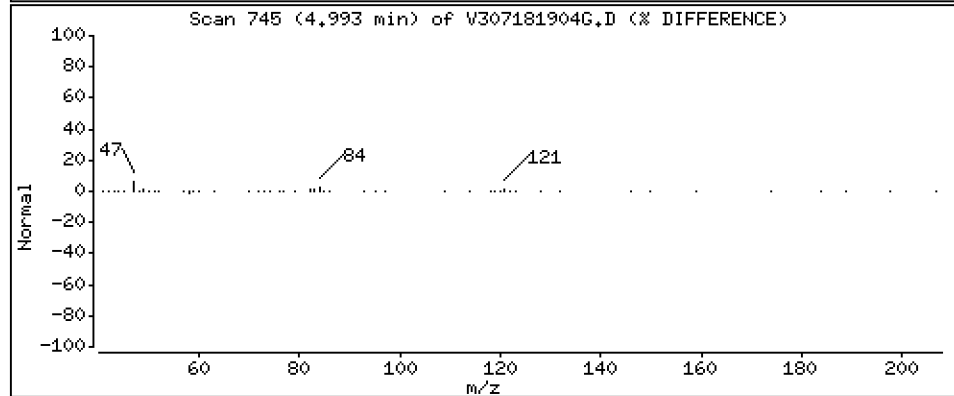
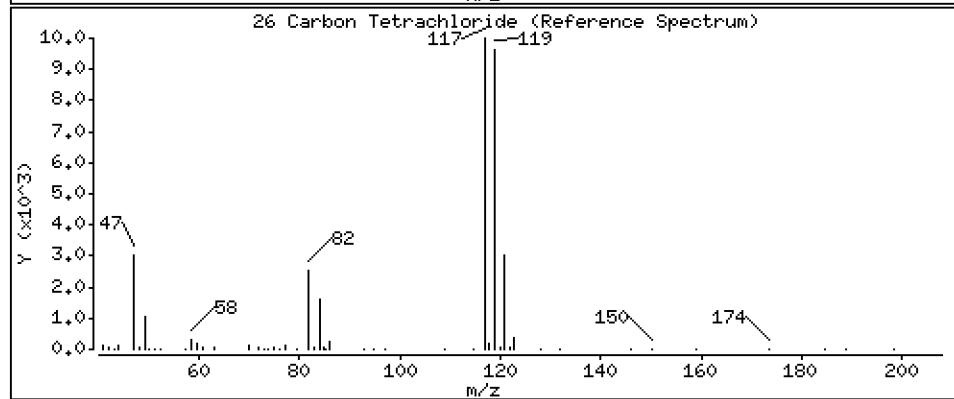
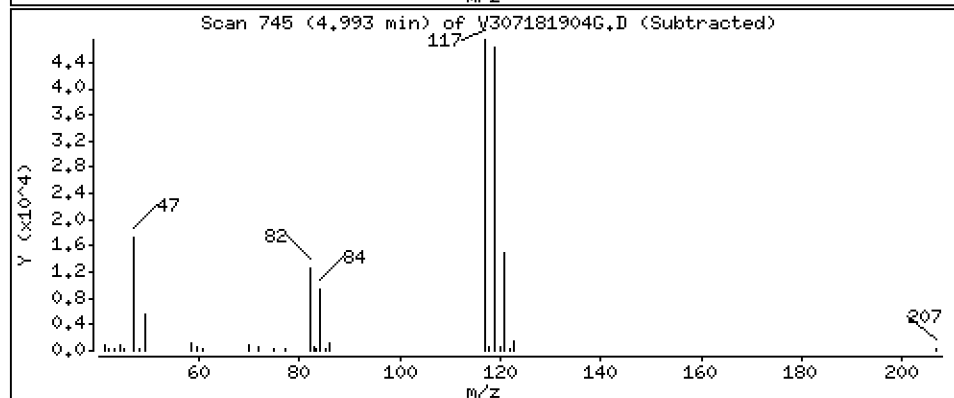
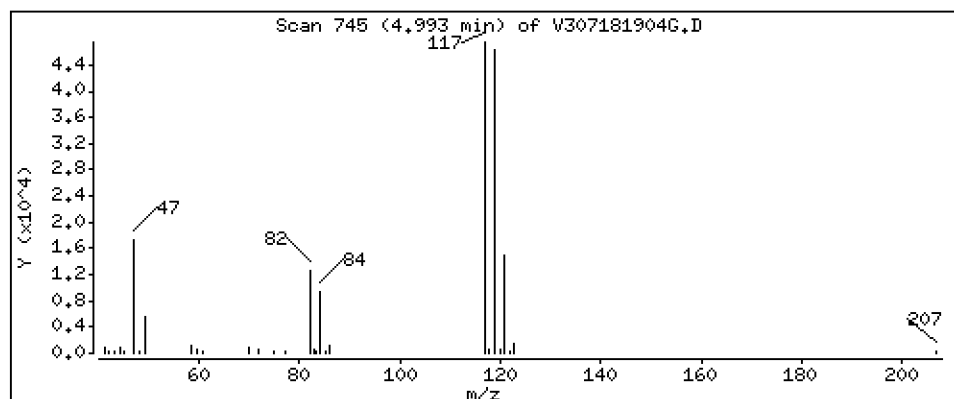
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

26 Carbon Tetrachloride

Concentration: 9.207 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

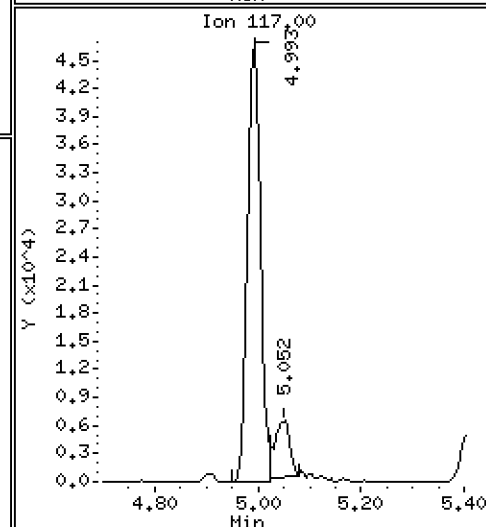
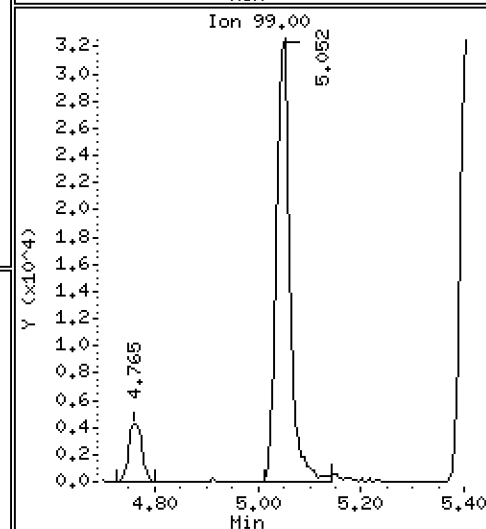
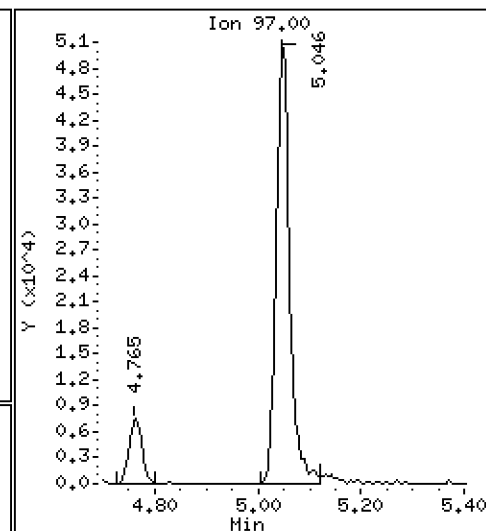
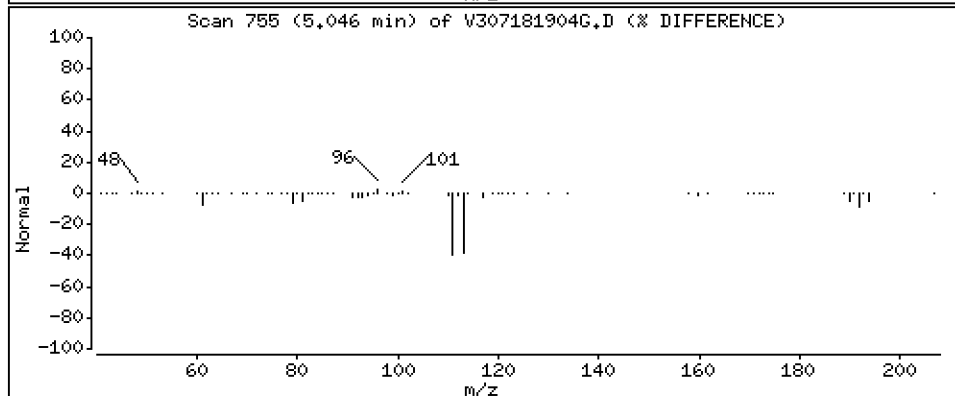
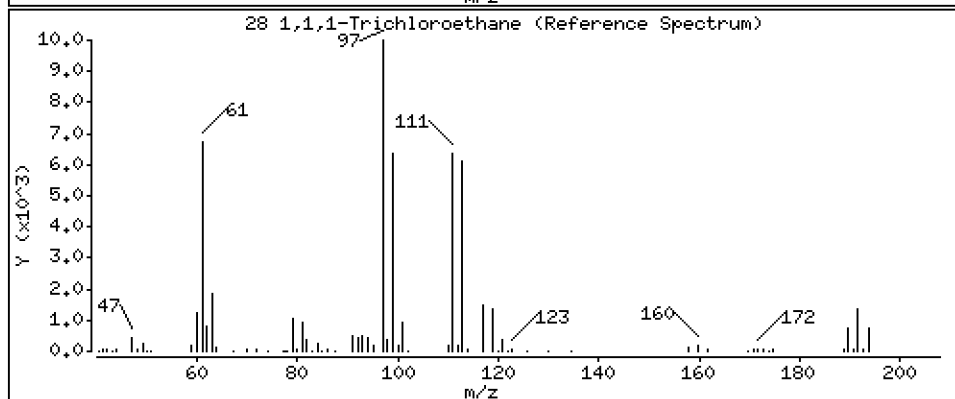
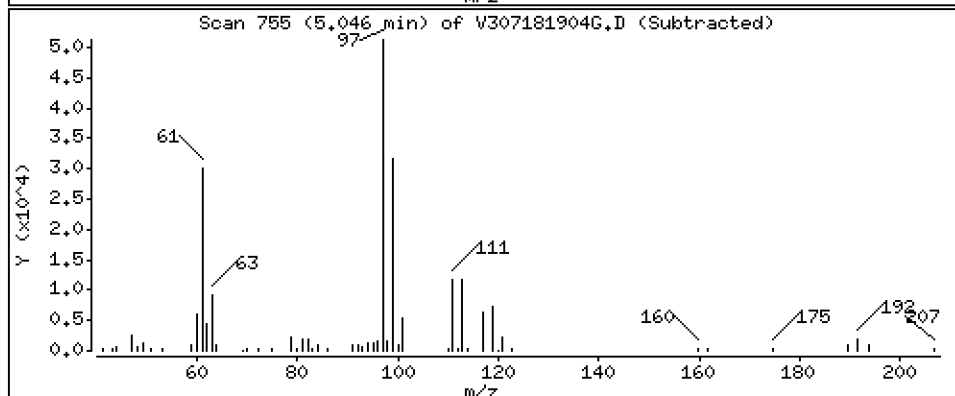
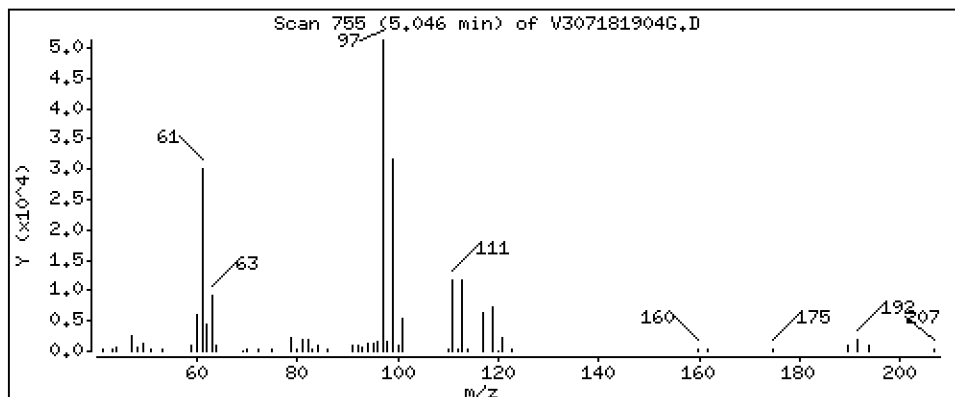
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

28 1,1,1-Trichloroethane

Concentration: 9.092 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

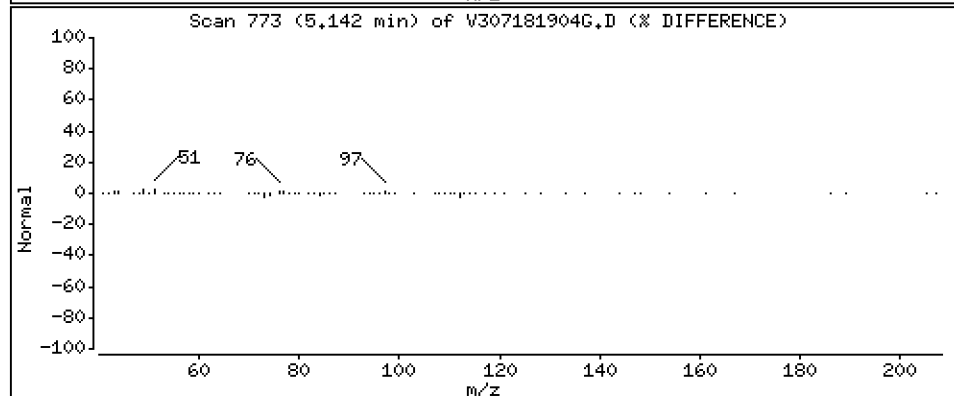
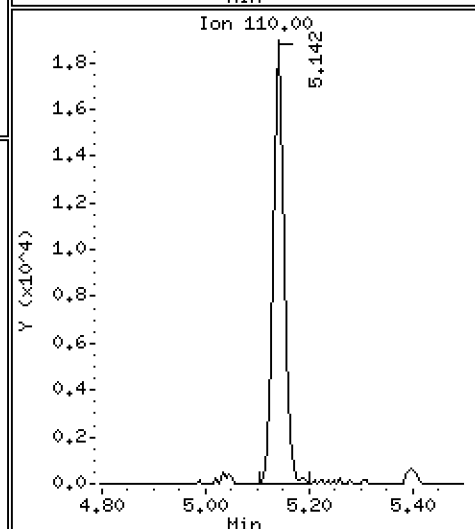
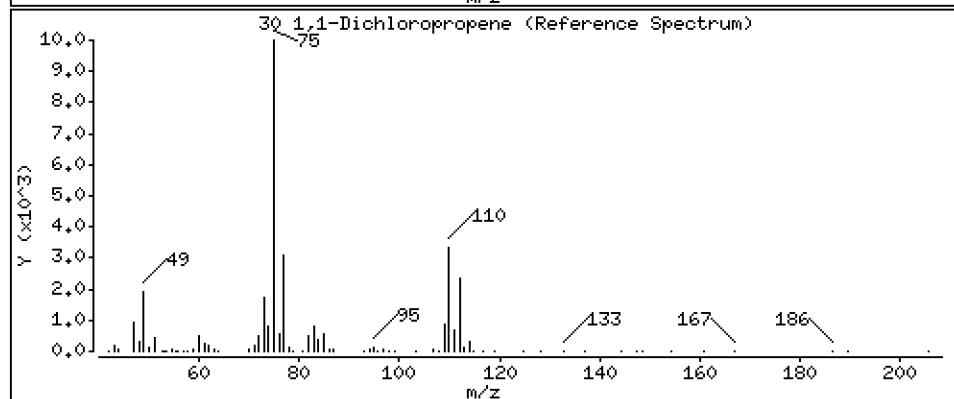
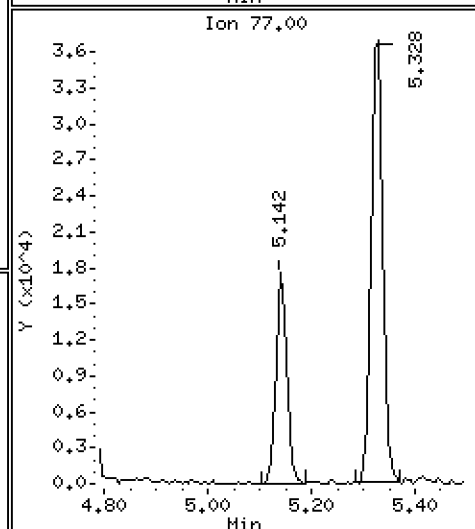
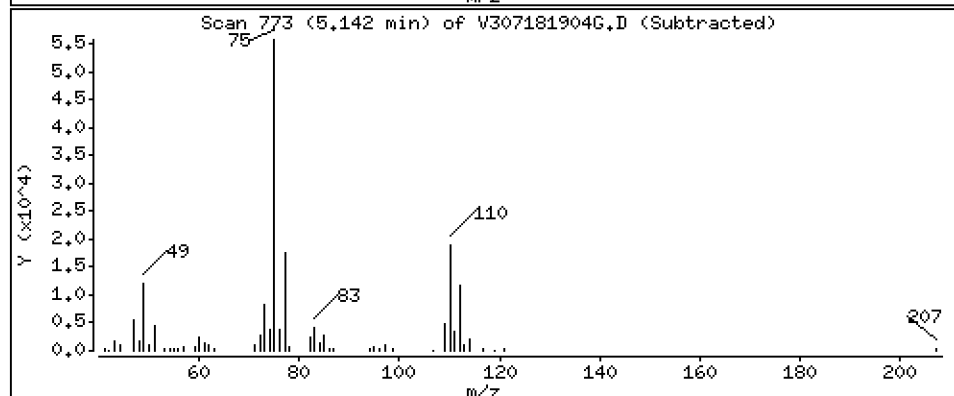
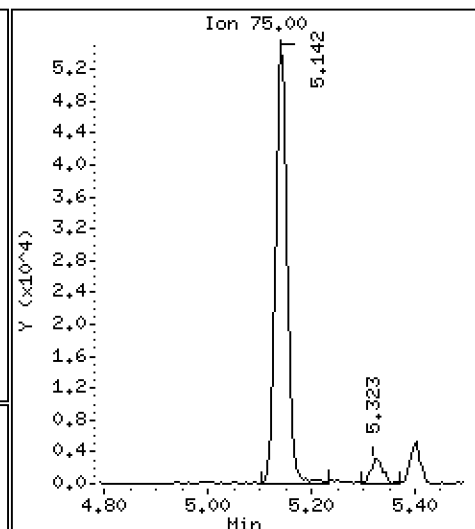
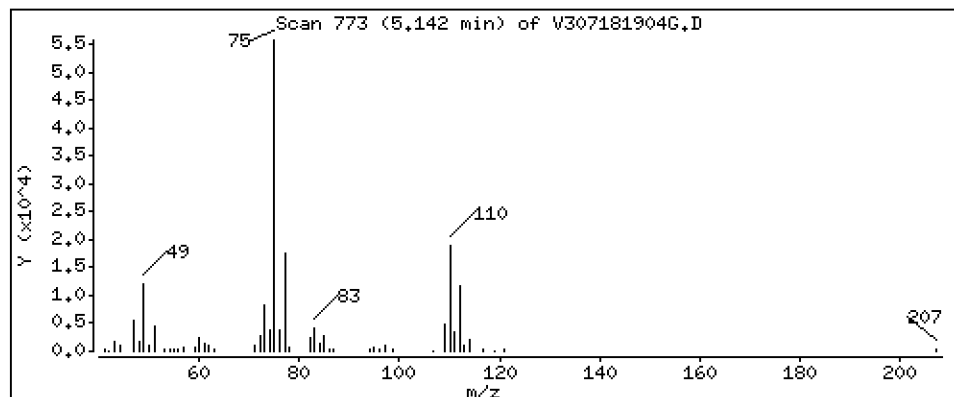
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

30 1,1-Dichloropropene

Concentration: 9.746 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

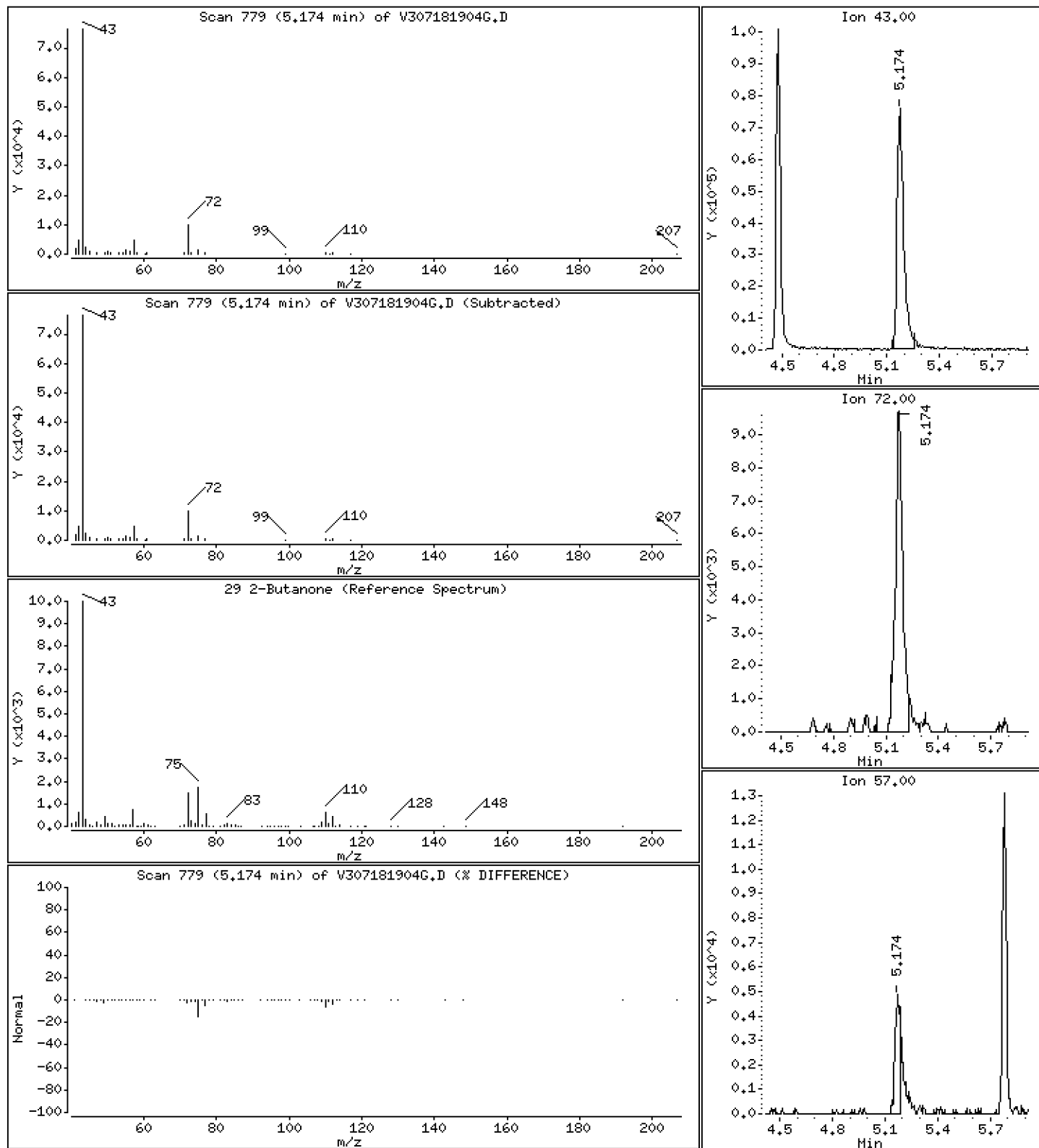
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 50.615 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

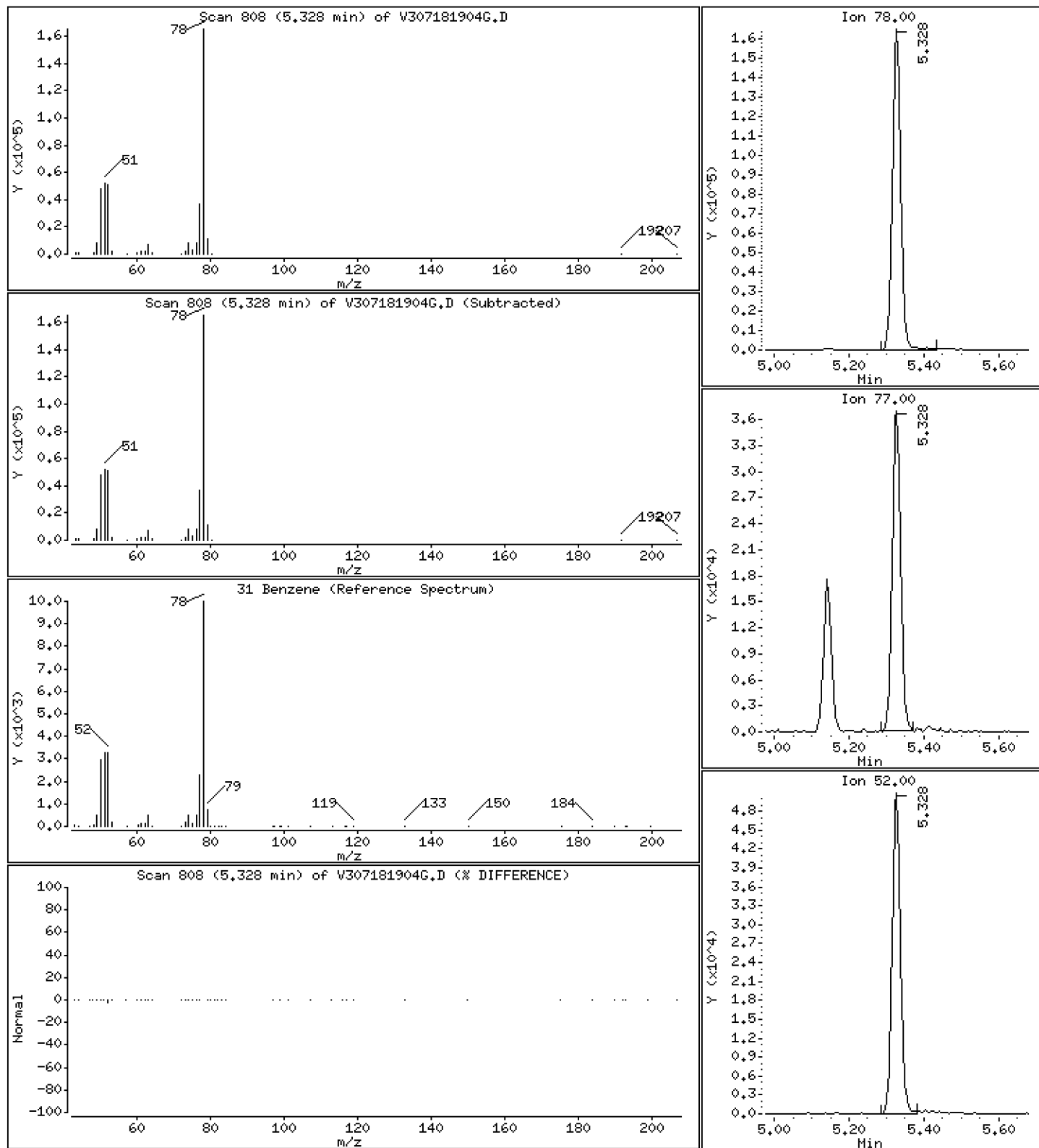
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

31 Benzene

Concentration: 9.588 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

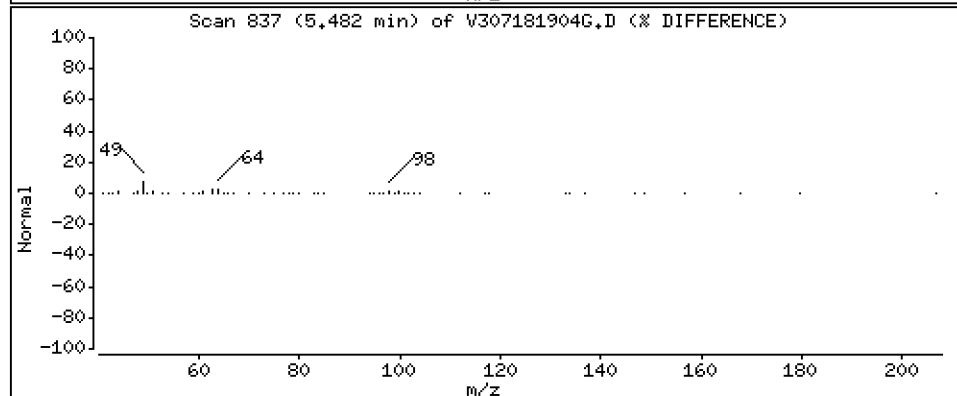
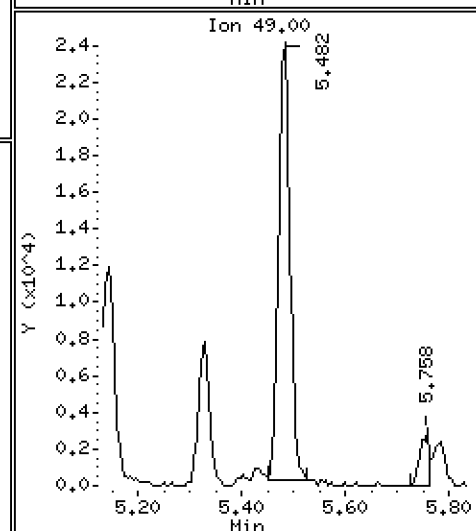
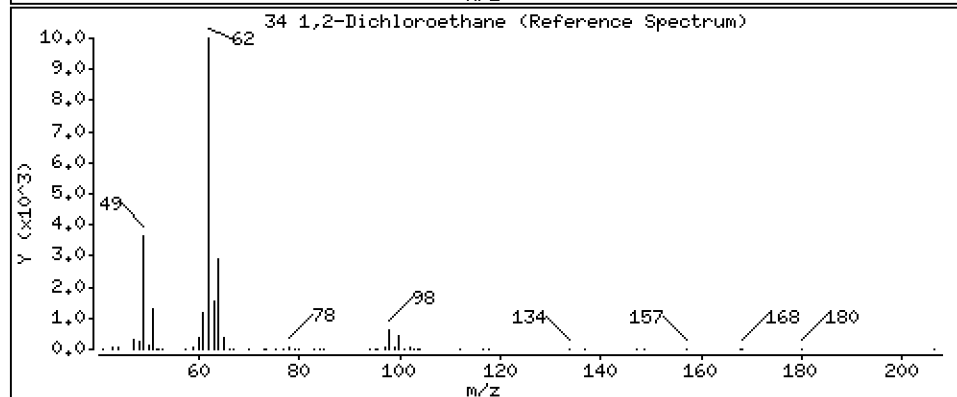
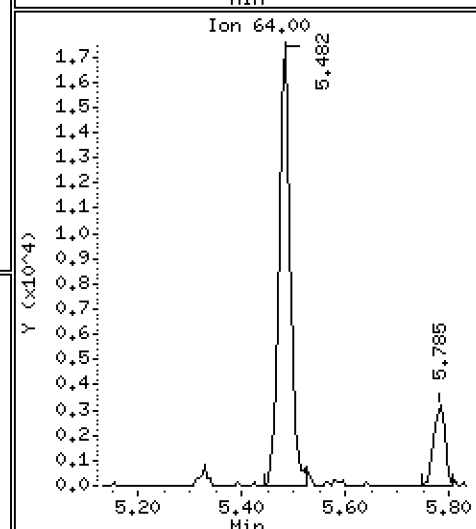
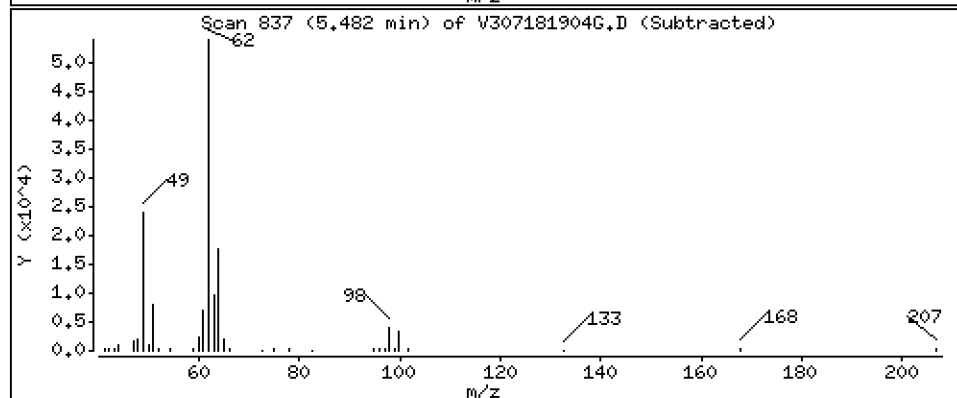
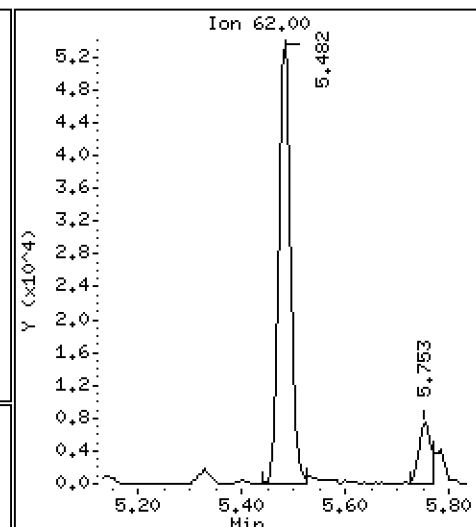
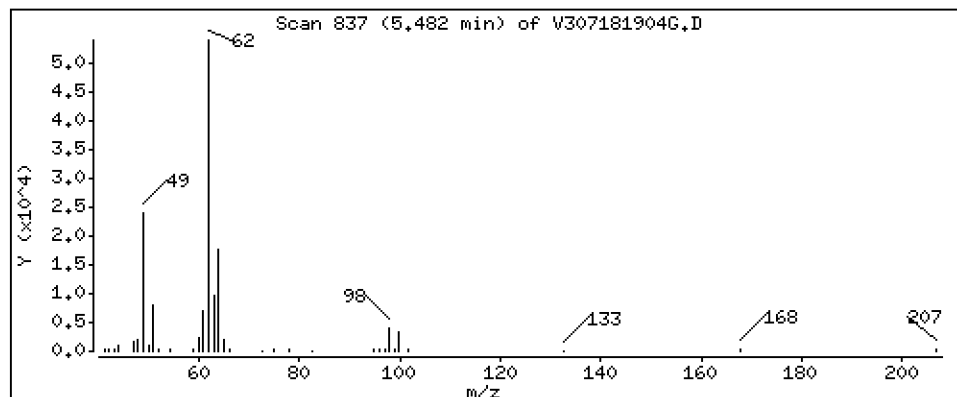
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

34 1,2-Dichloroethane

Concentration: 9.207 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

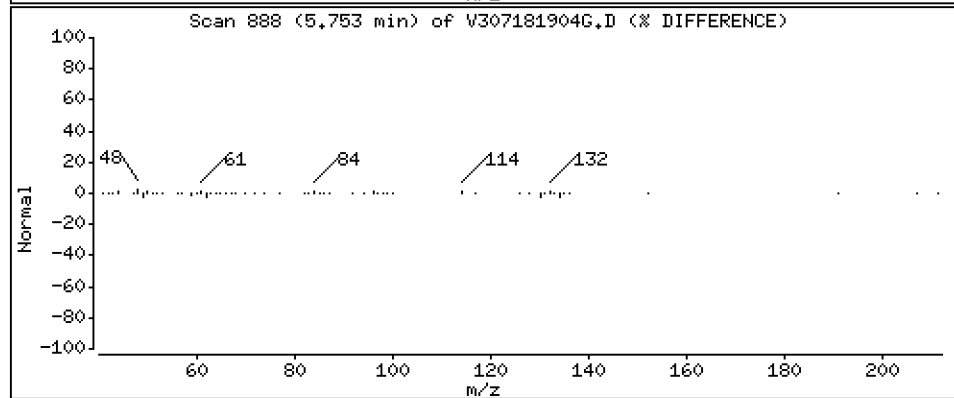
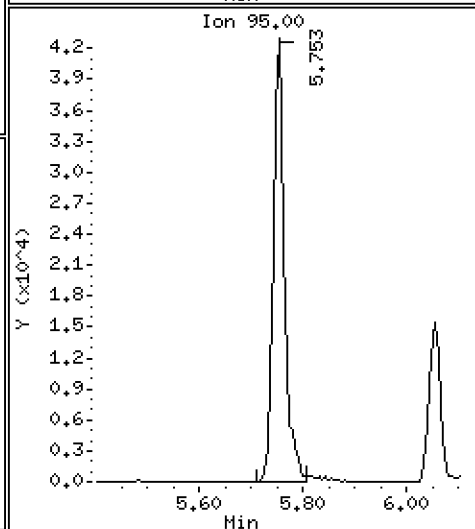
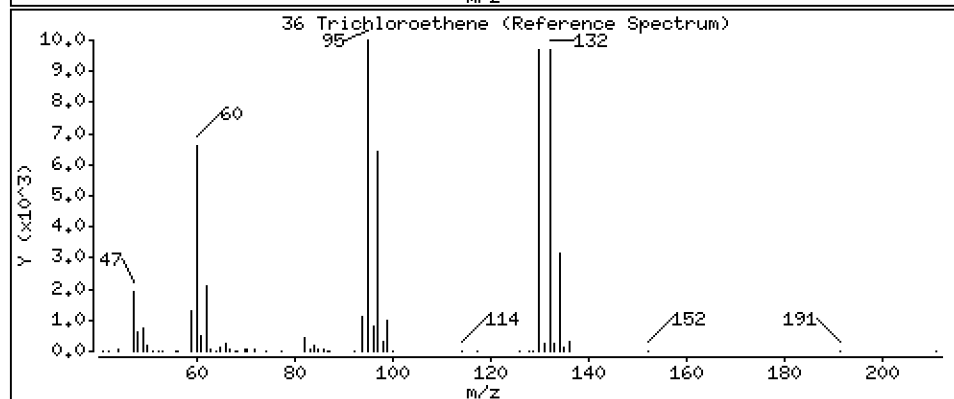
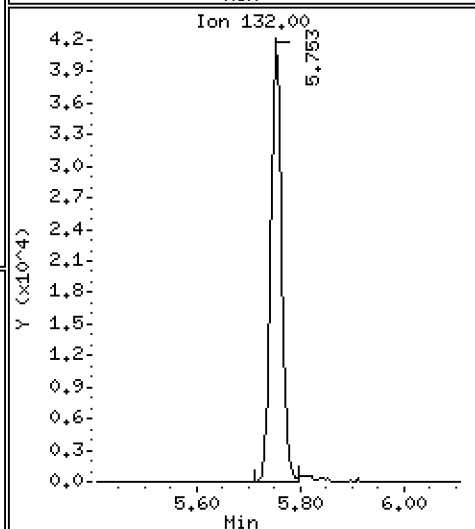
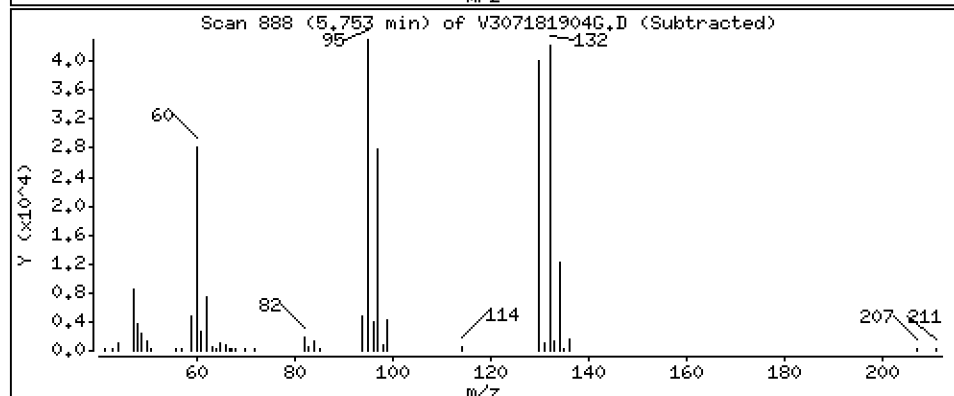
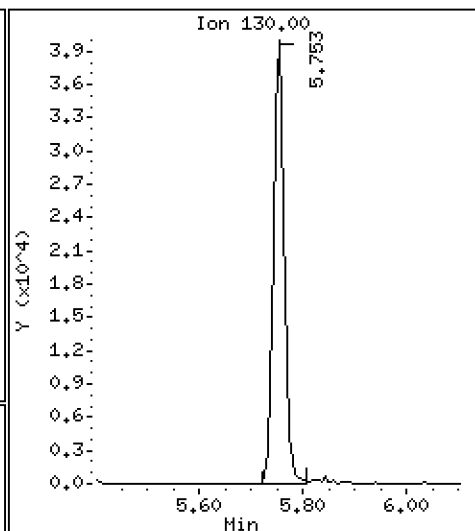
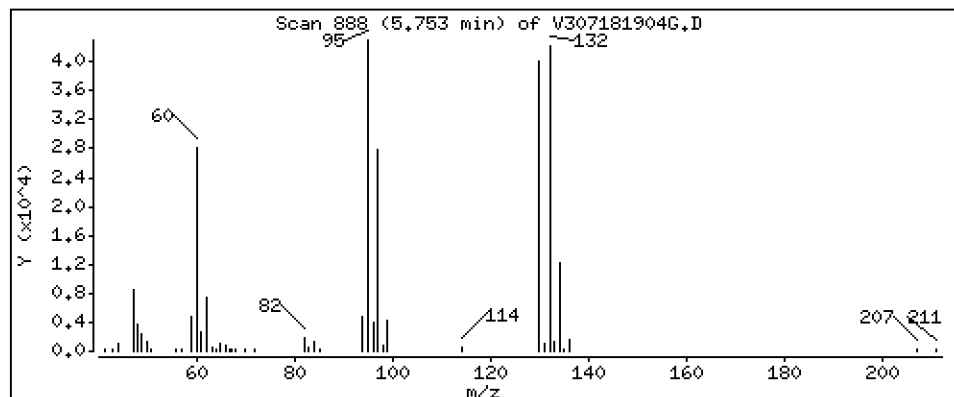
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

36 Trichloroethene

Concentration: 9.408 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

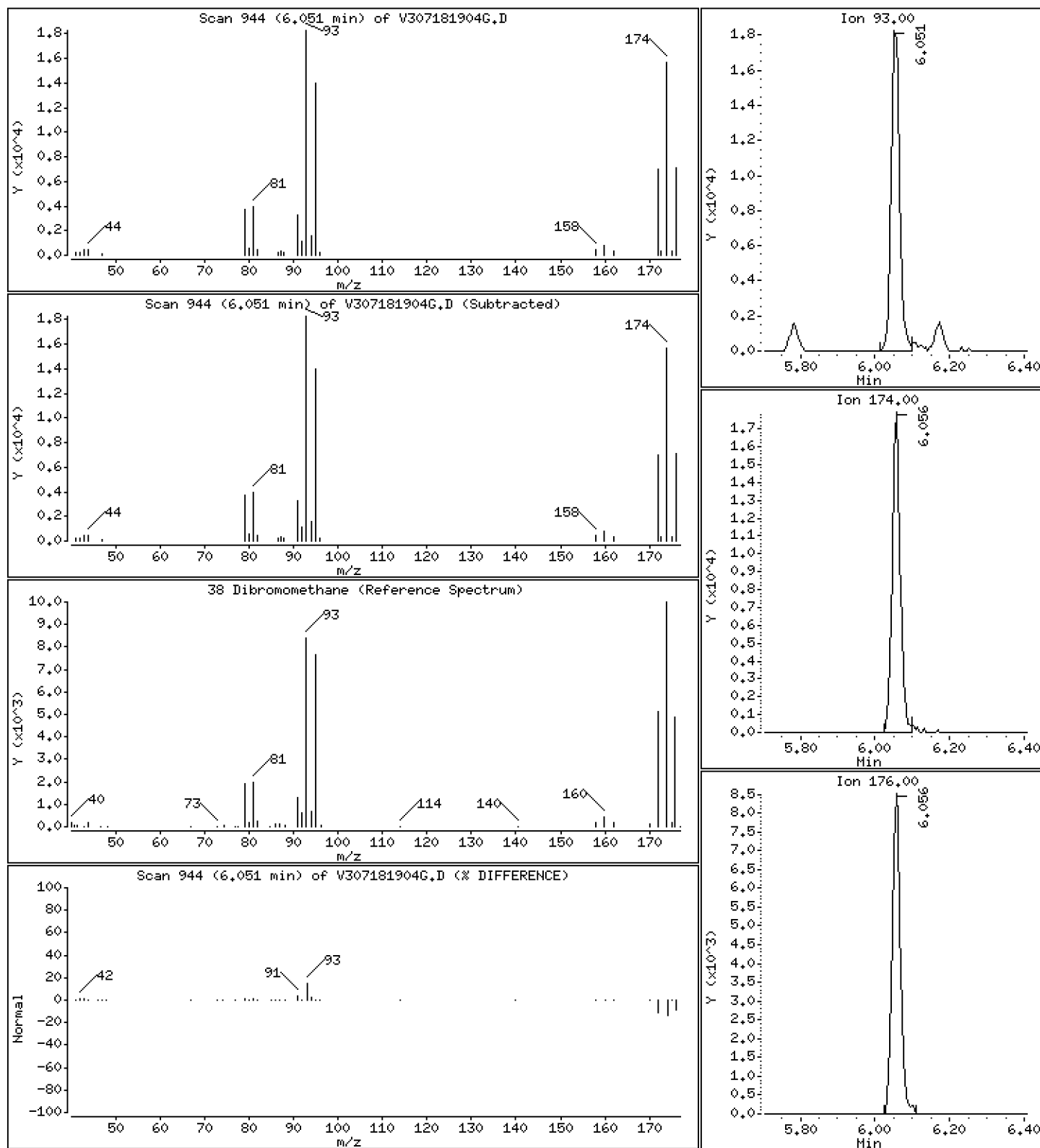
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

38 Dibromomethane

Concentration: 9.457 ug/L

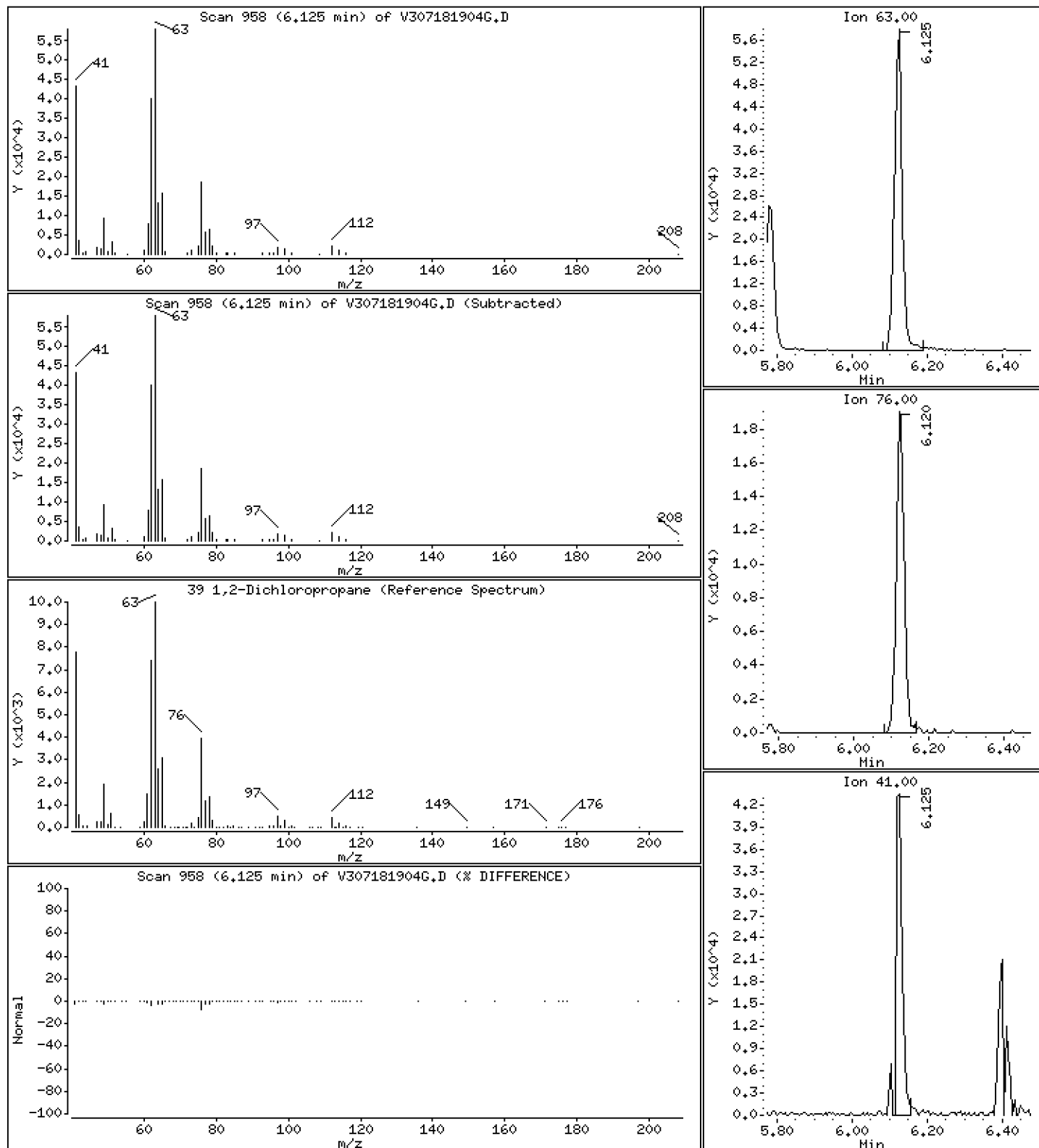


Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Concentration: 9.630 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

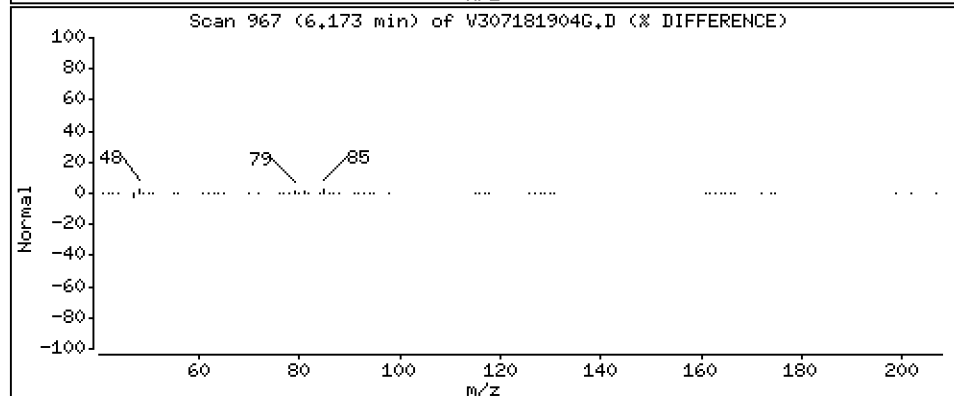
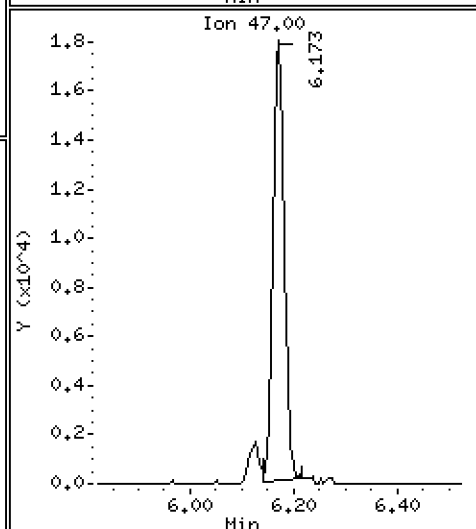
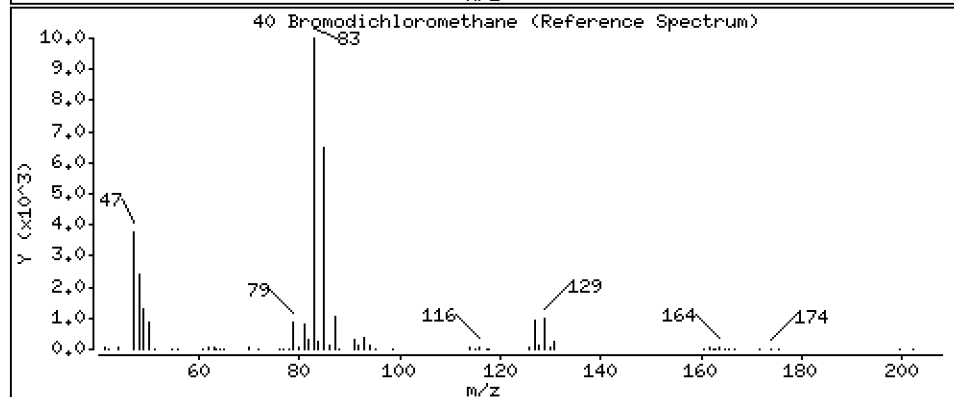
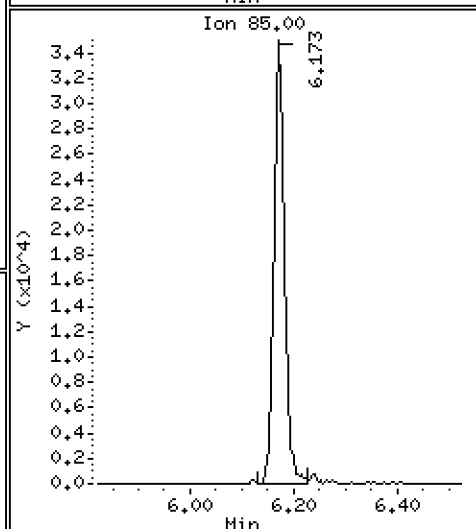
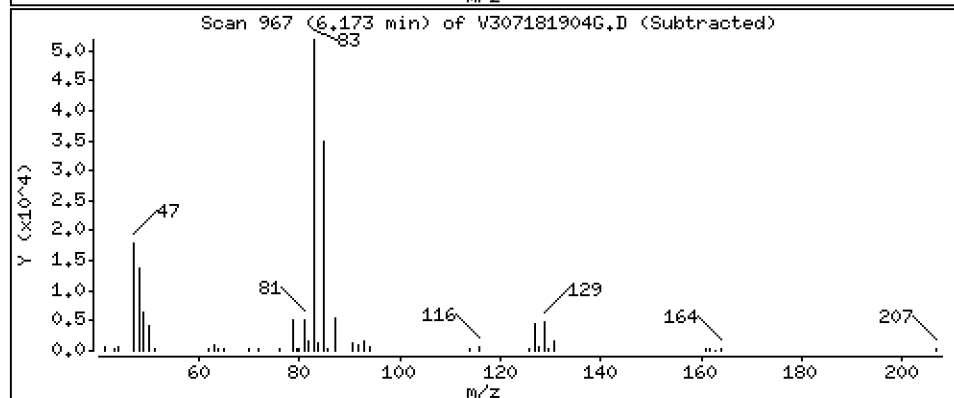
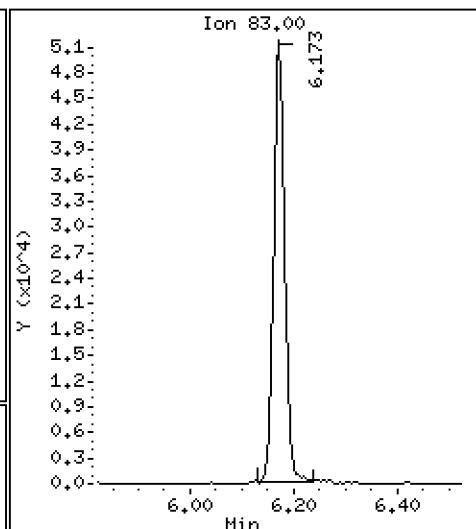
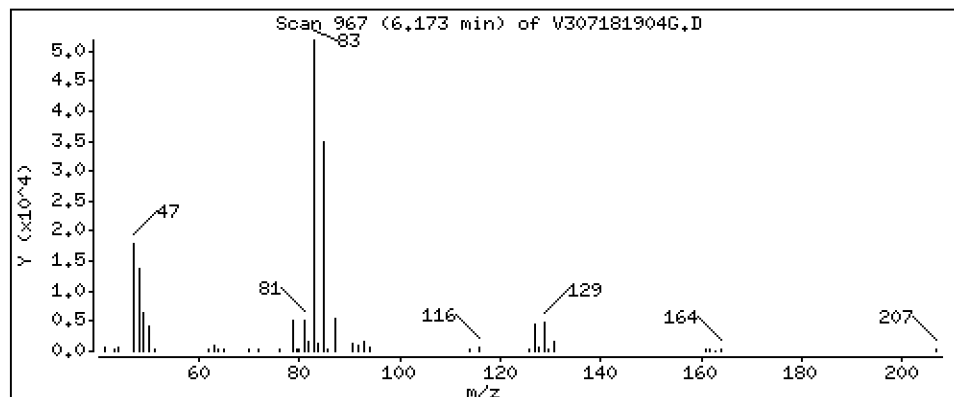
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

40 Bromodichloromethane

Concentration: 9.424 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

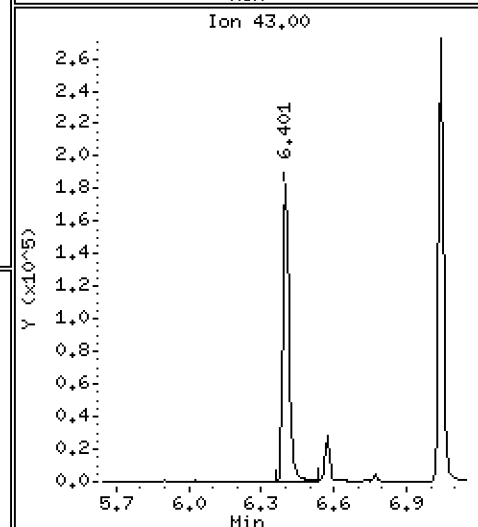
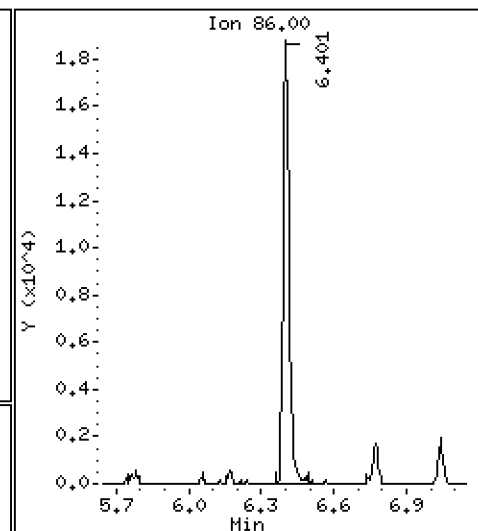
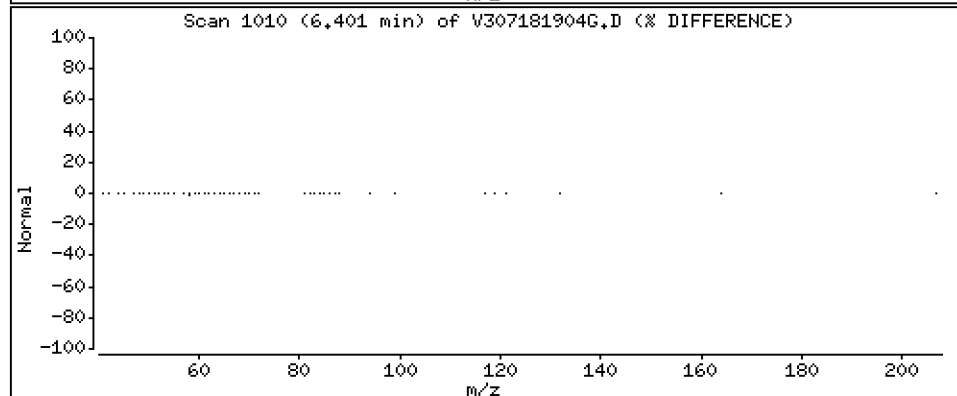
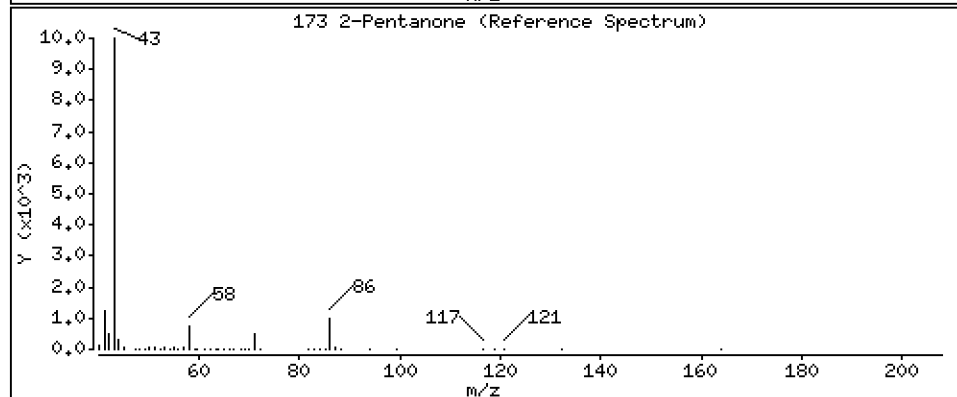
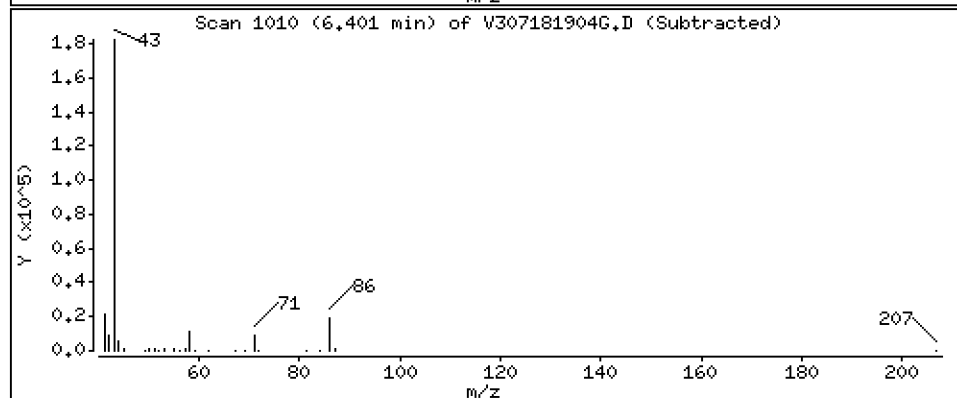
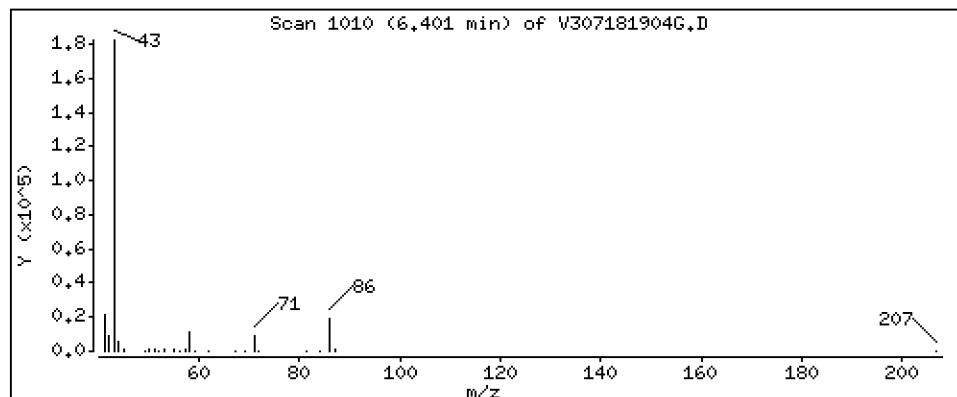
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

173 2-Pentanone

Concentration: 53,009 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

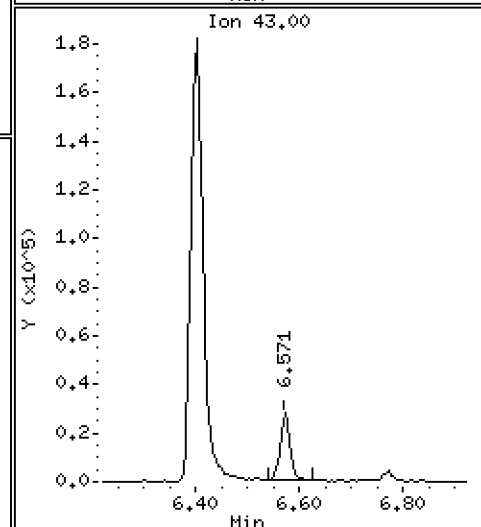
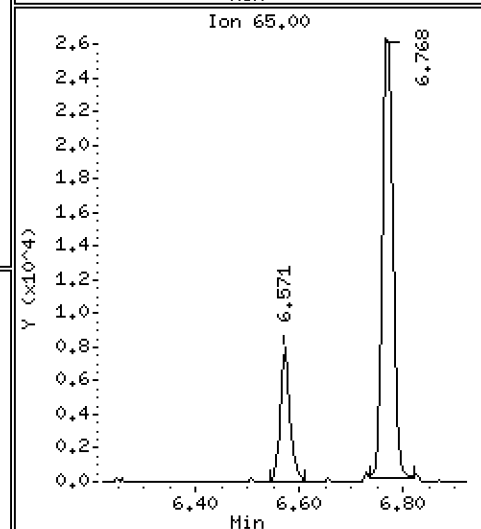
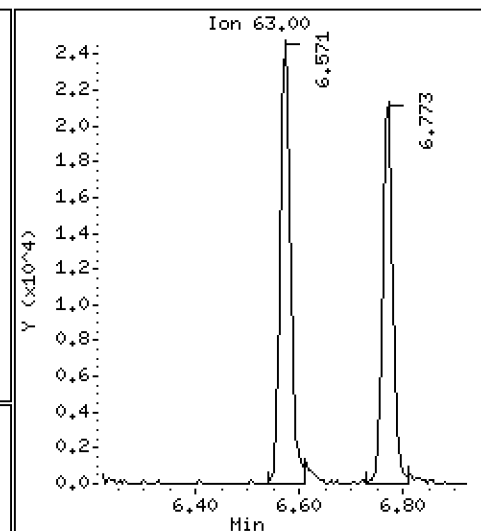
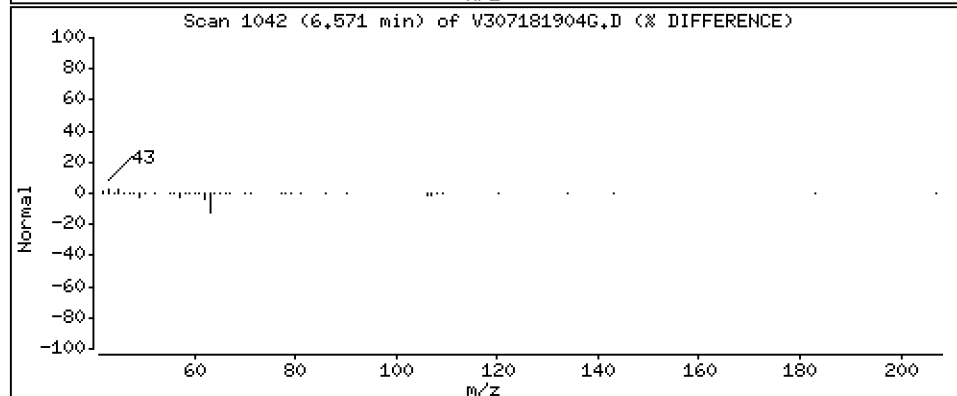
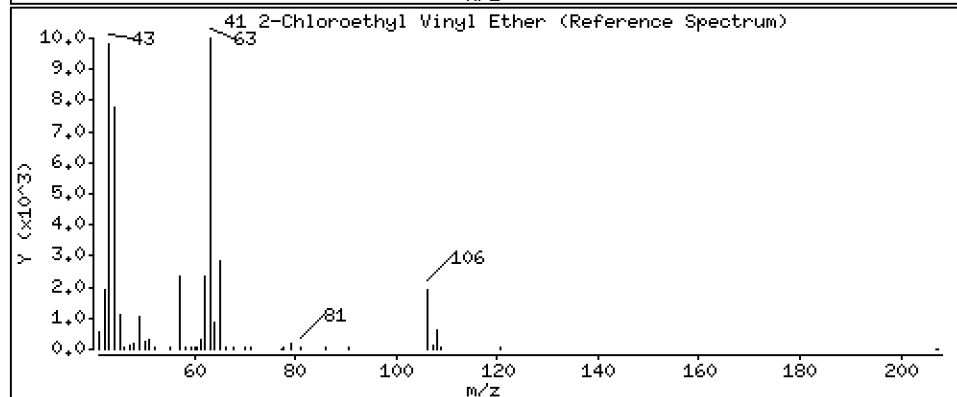
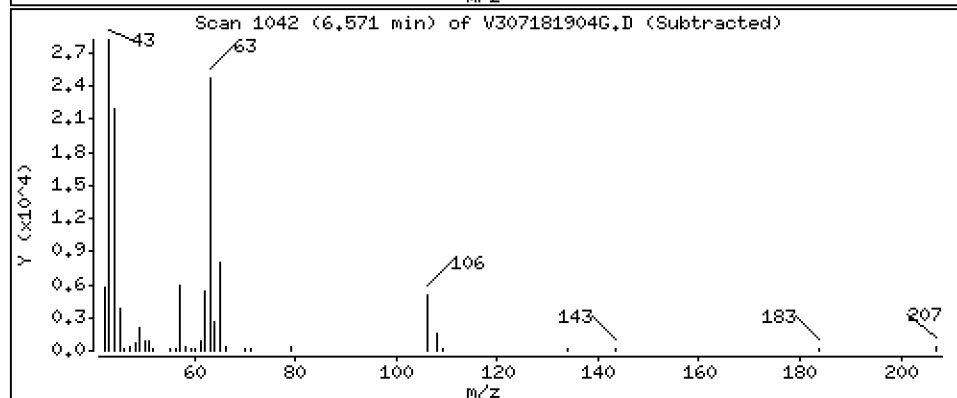
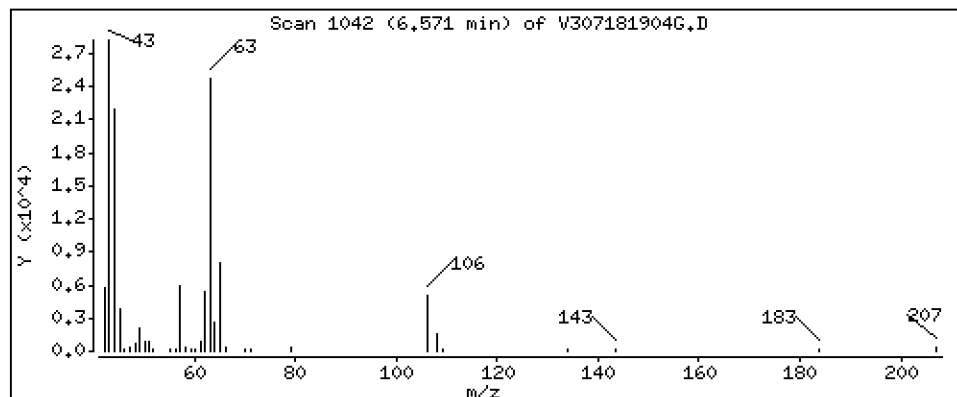
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

41 2-Chloroethyl Vinyl Ether

Concentration: 9.865 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

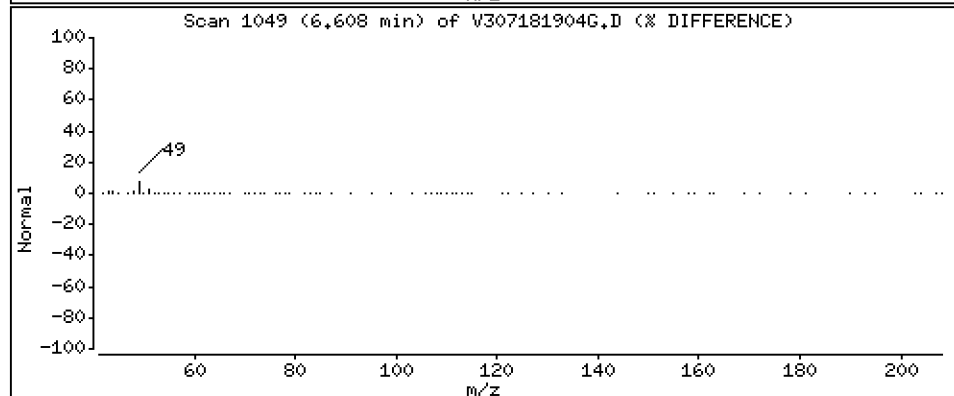
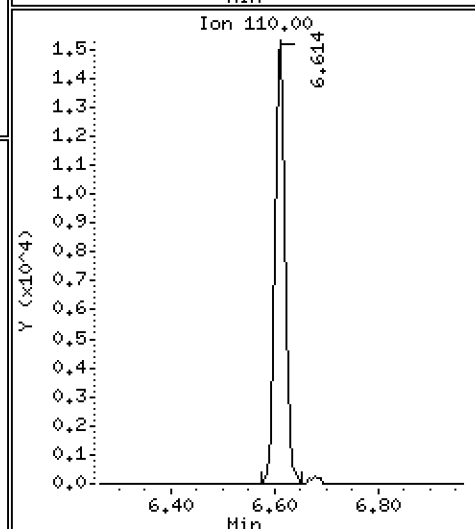
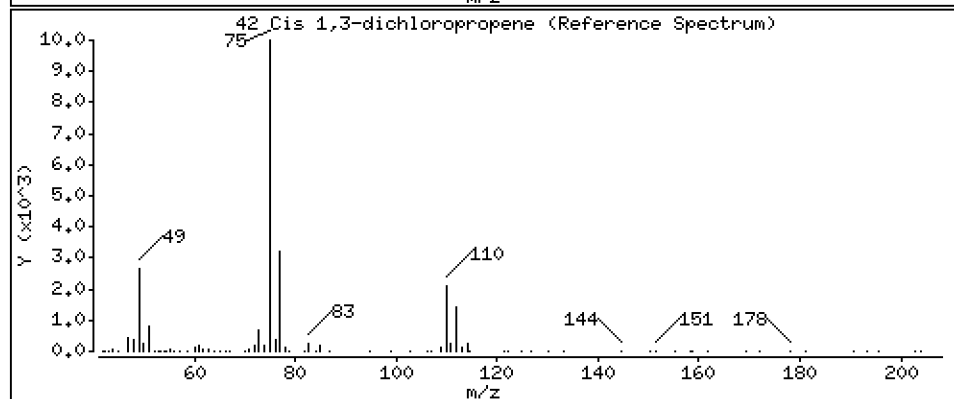
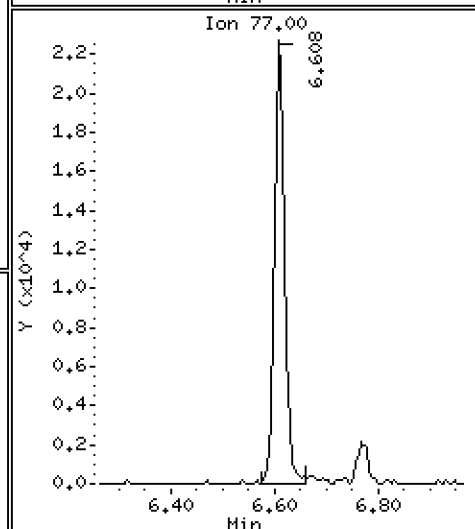
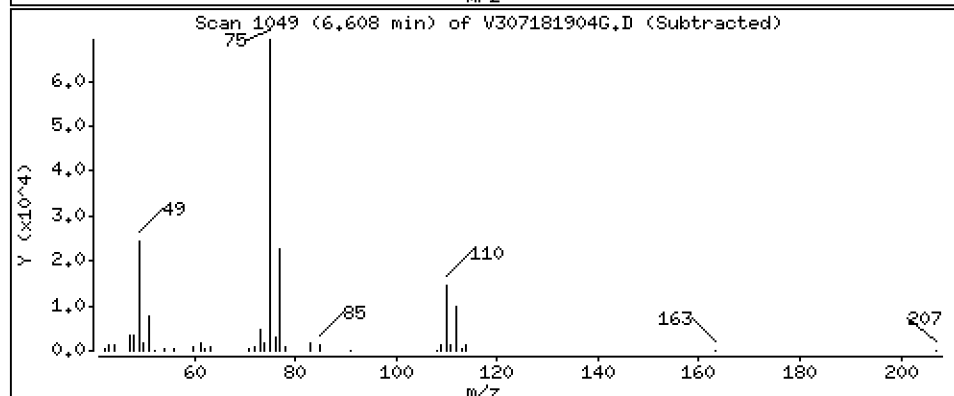
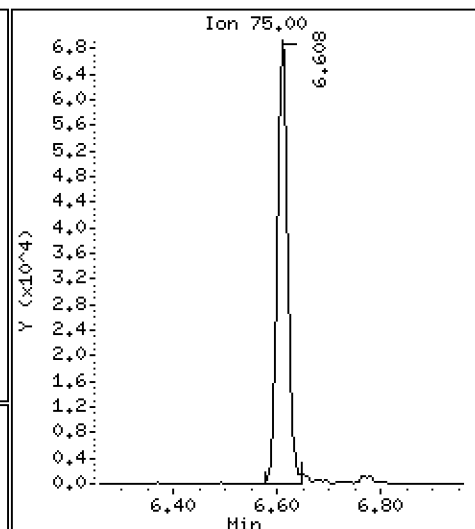
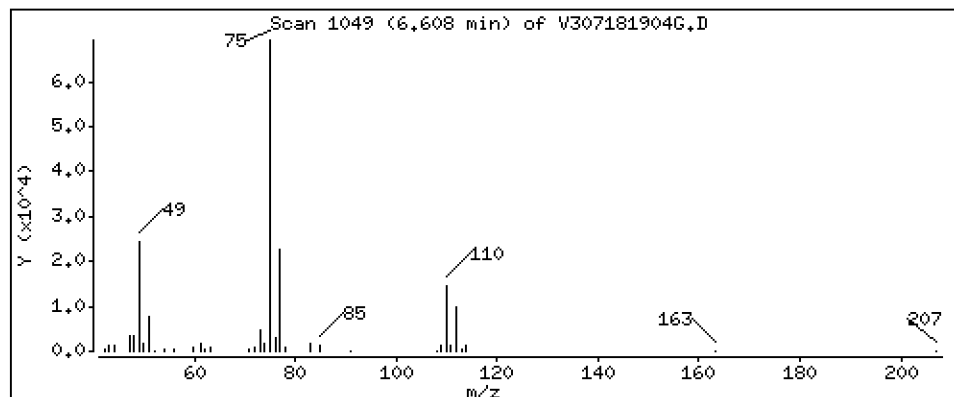
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

42 Cis 1,3-dichloropropene

Concentration: 9.721 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

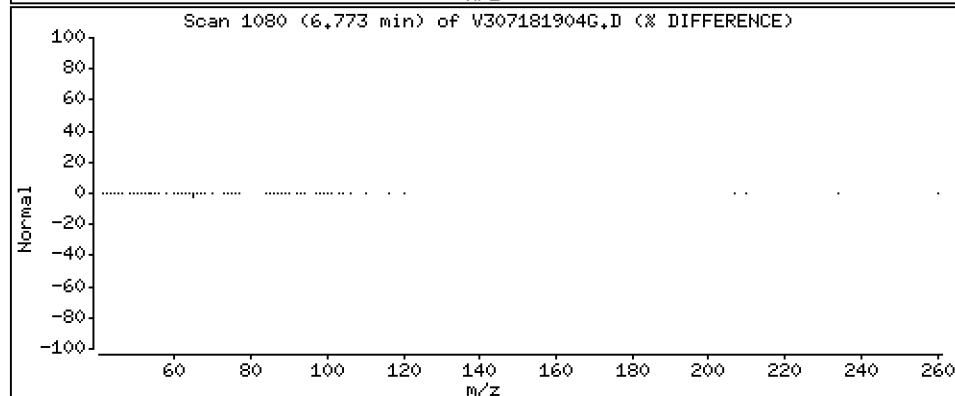
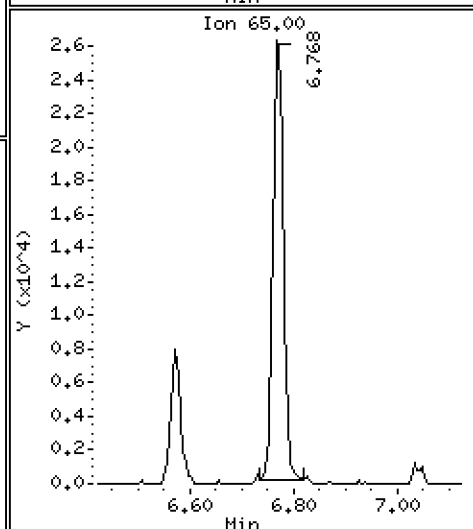
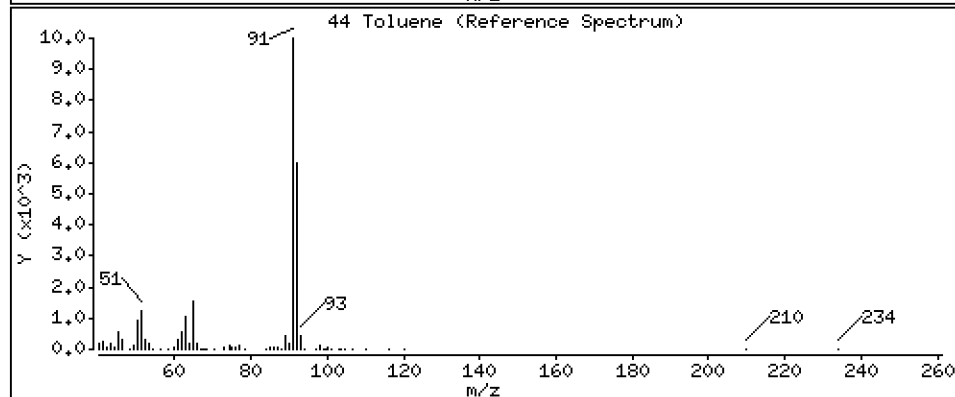
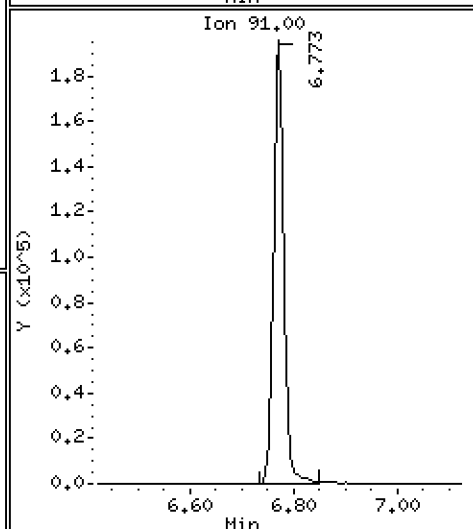
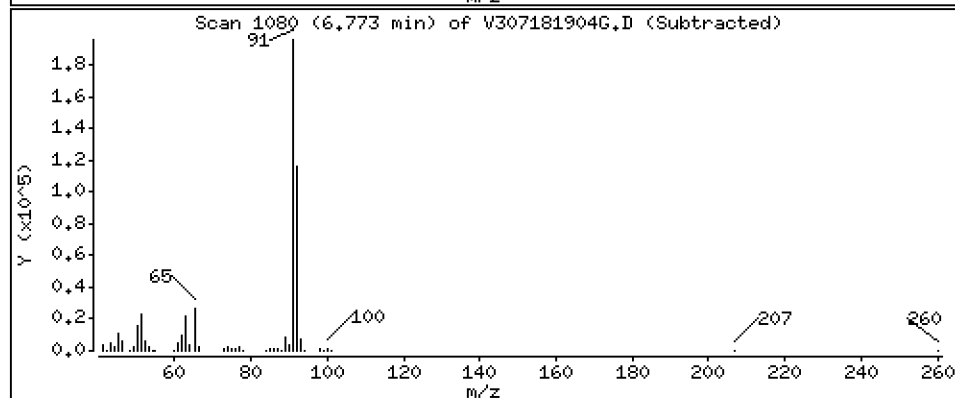
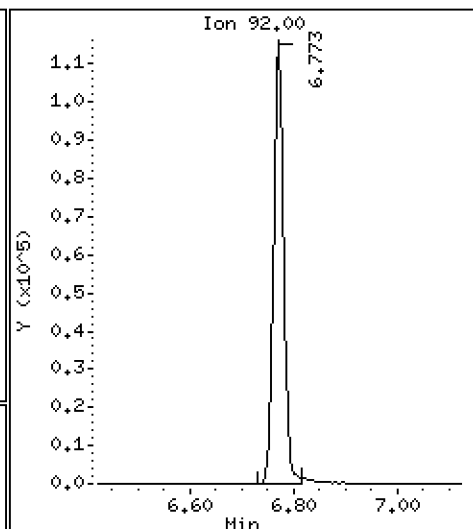
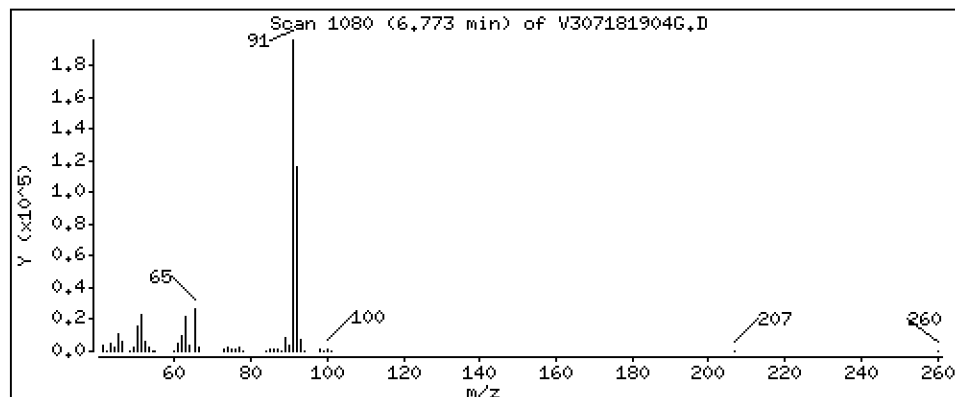
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

44 Toluene

Concentration: 9.493 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

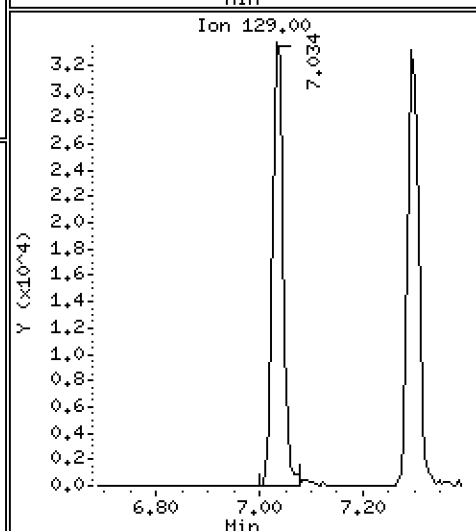
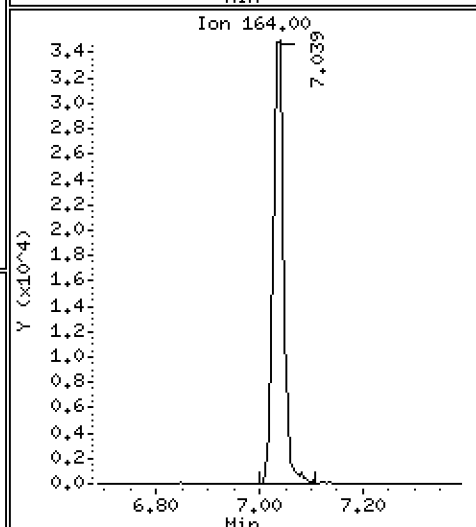
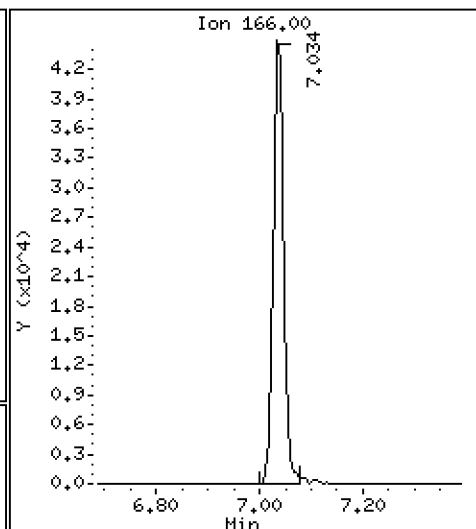
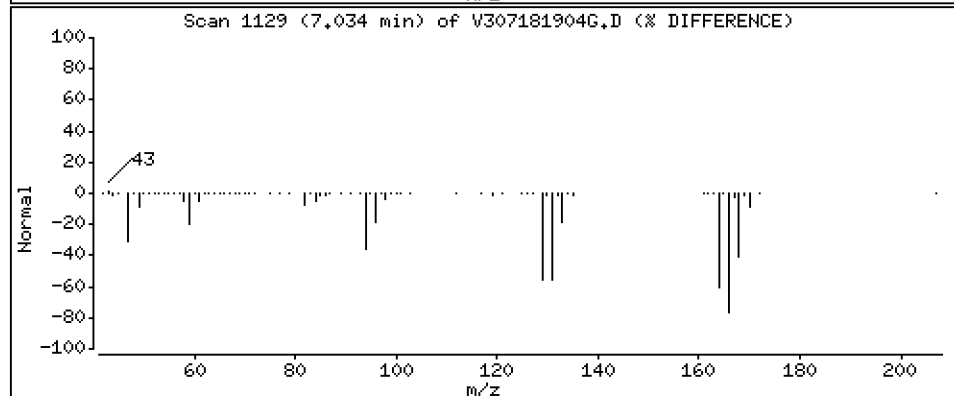
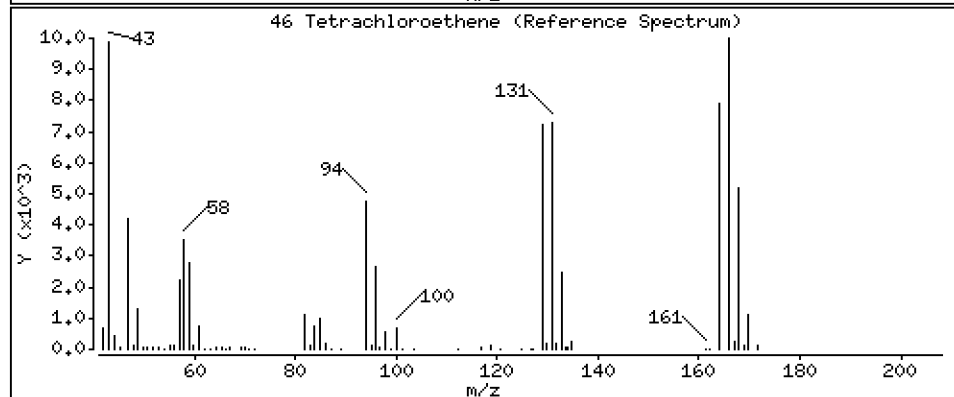
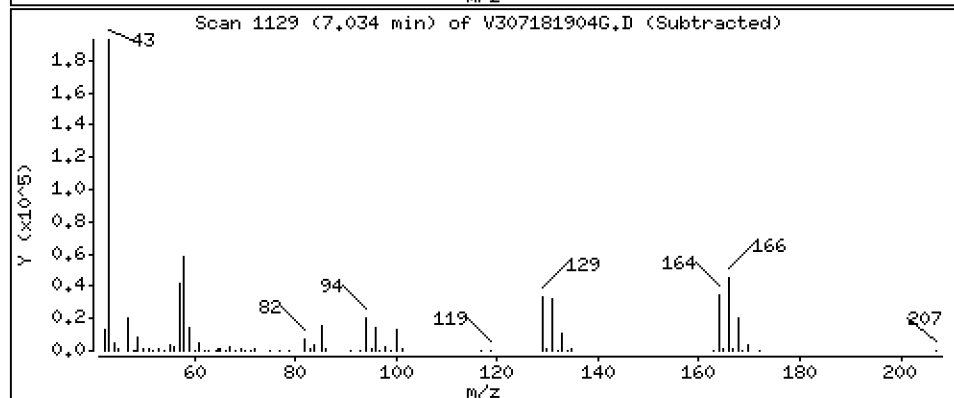
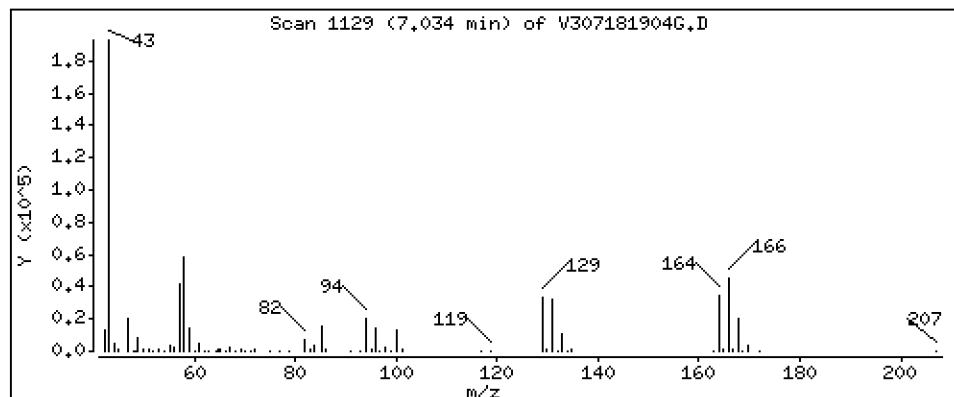
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

46 Tetrachloroethene

Concentration: 9.392 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

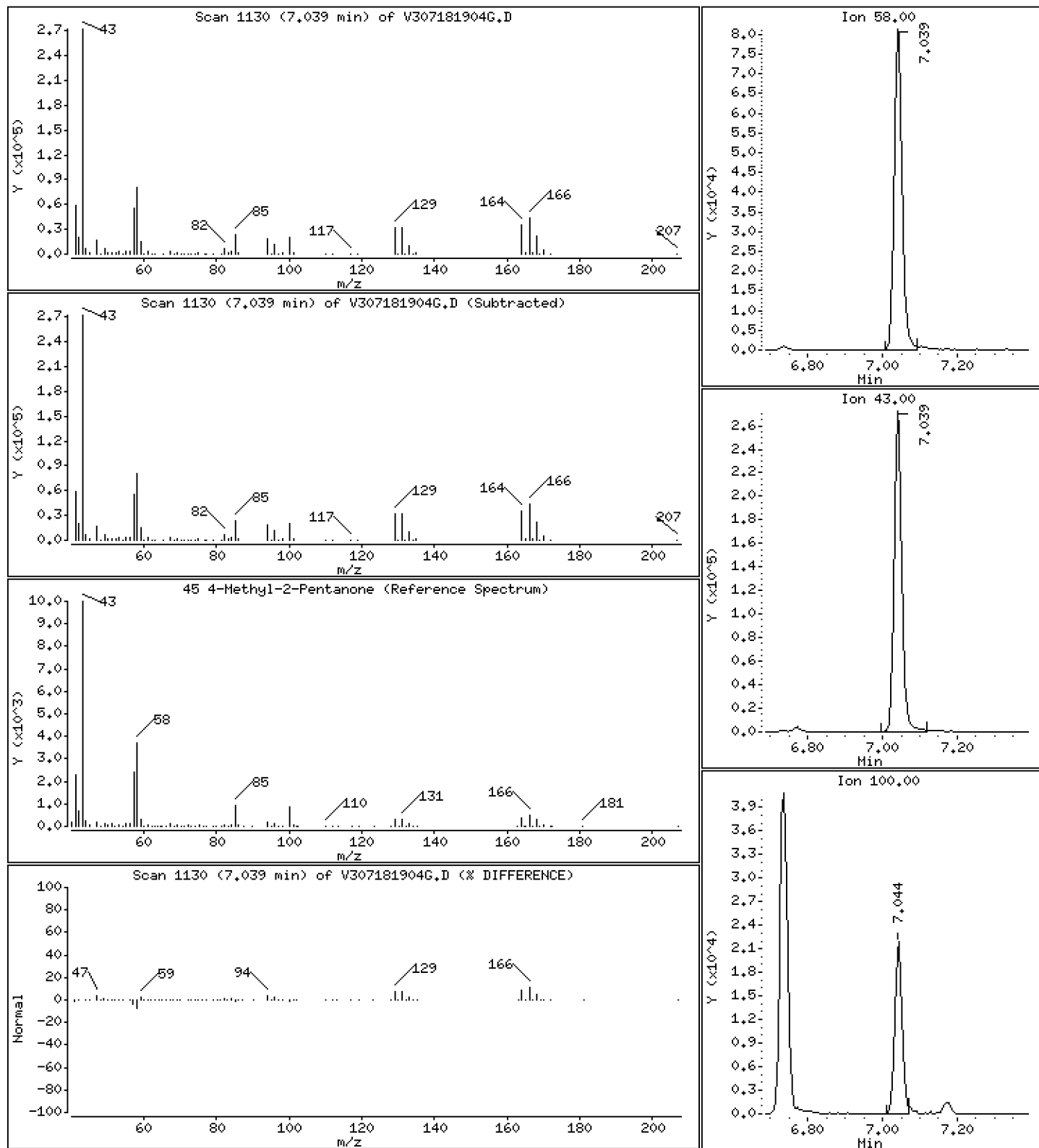
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 50,279 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BH00439-BSD1

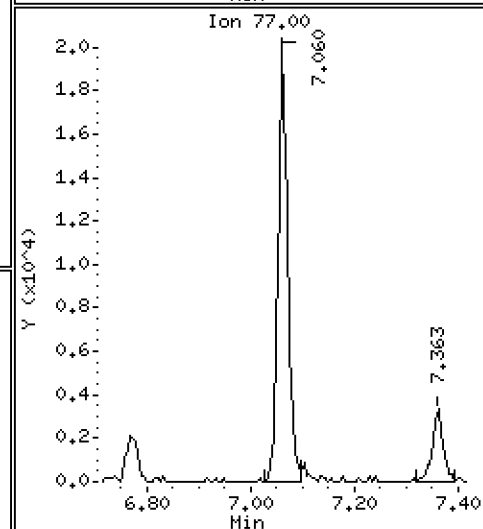
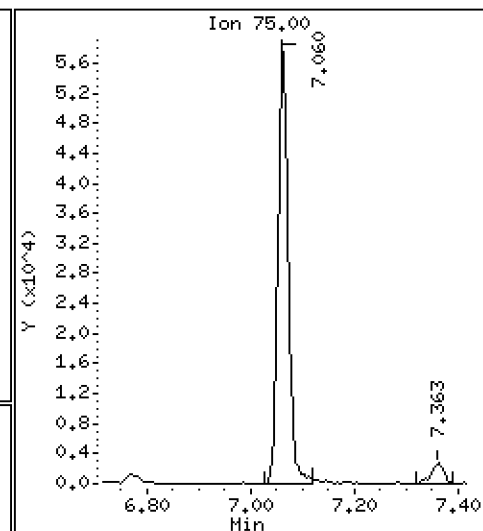
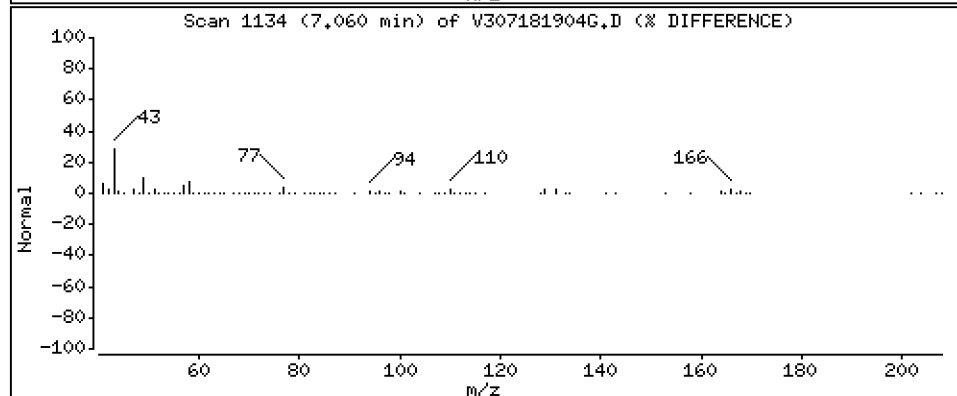
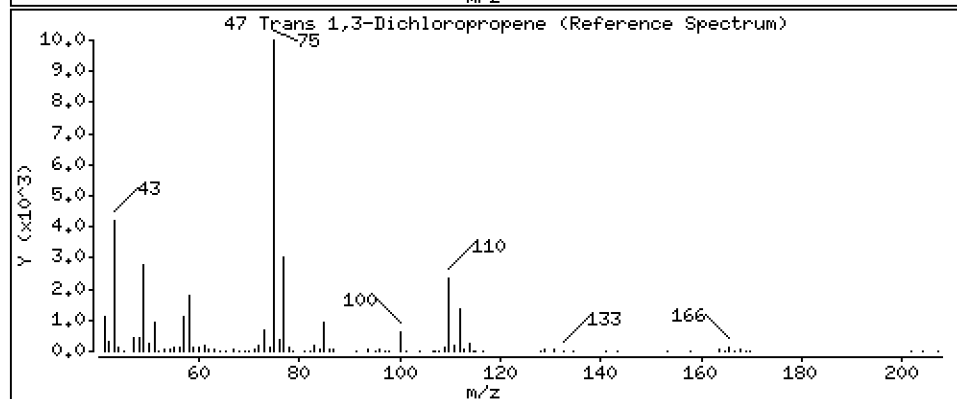
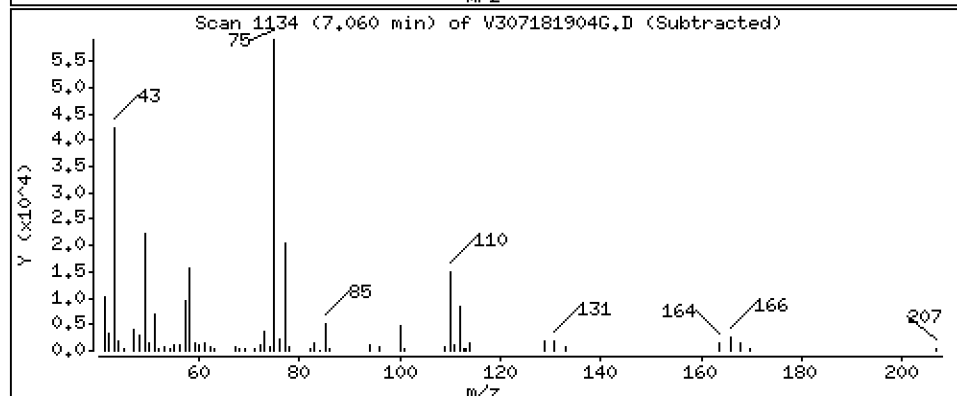
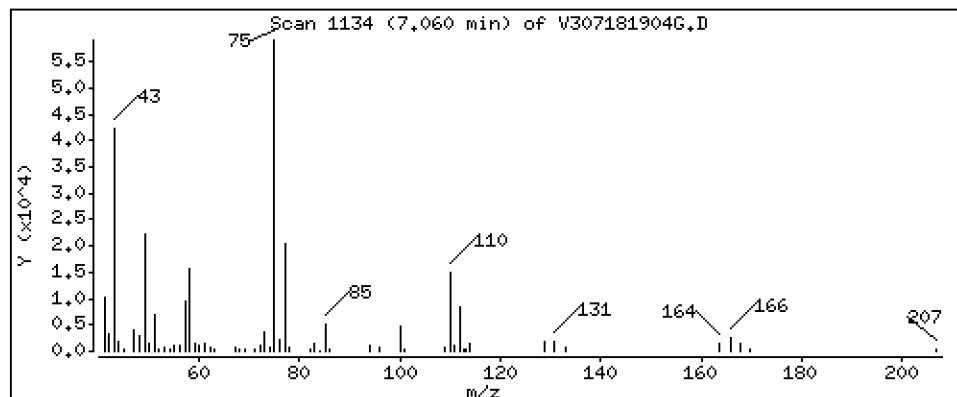
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

47 Trans 1,3-Dichloropropene

Concentration: 9.856 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

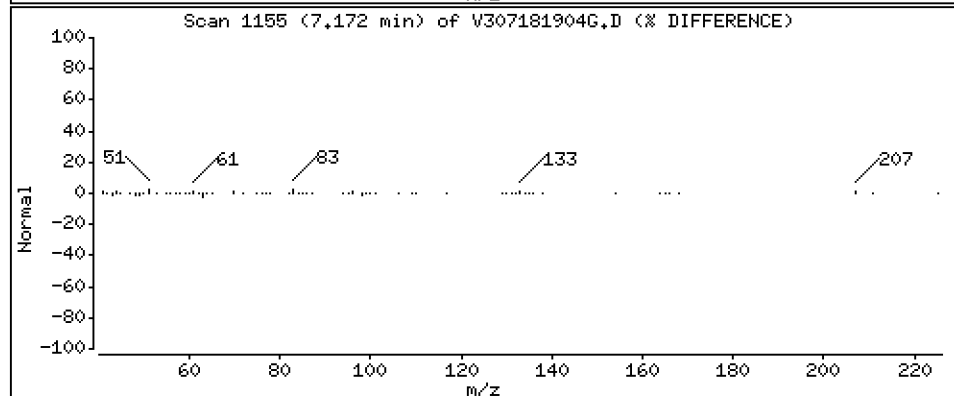
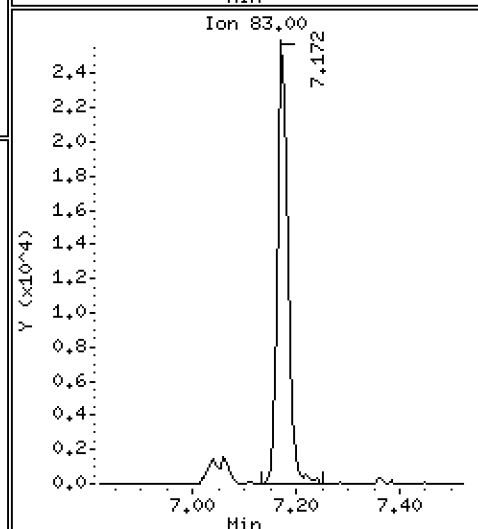
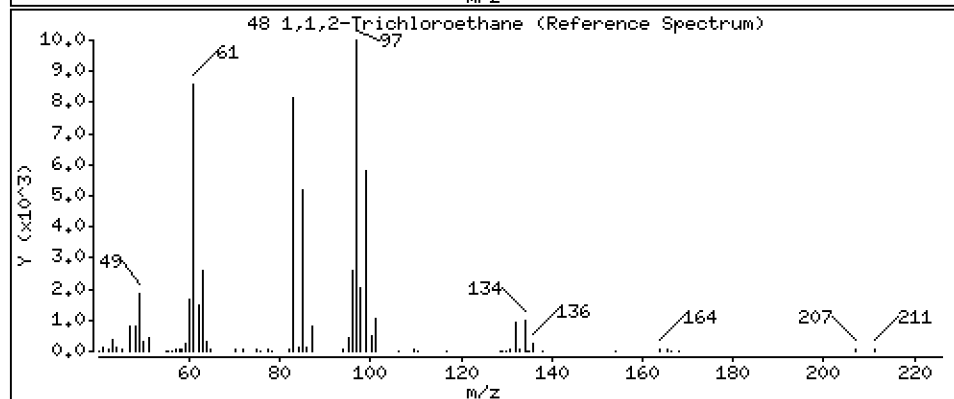
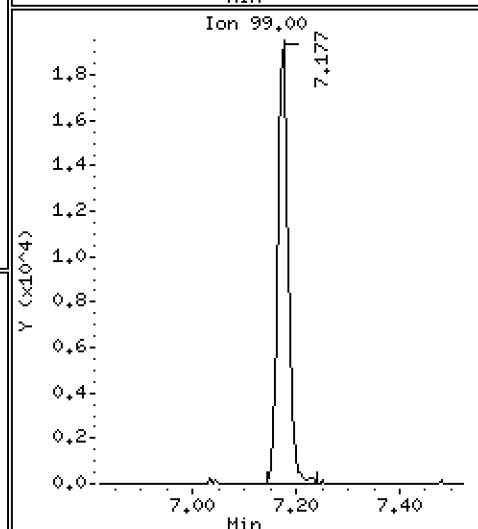
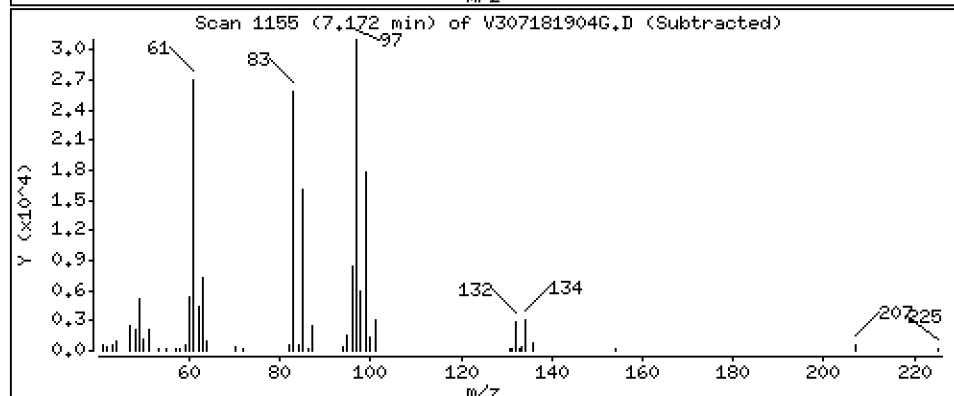
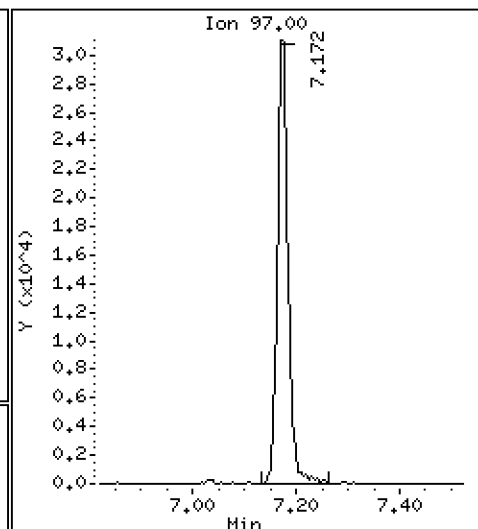
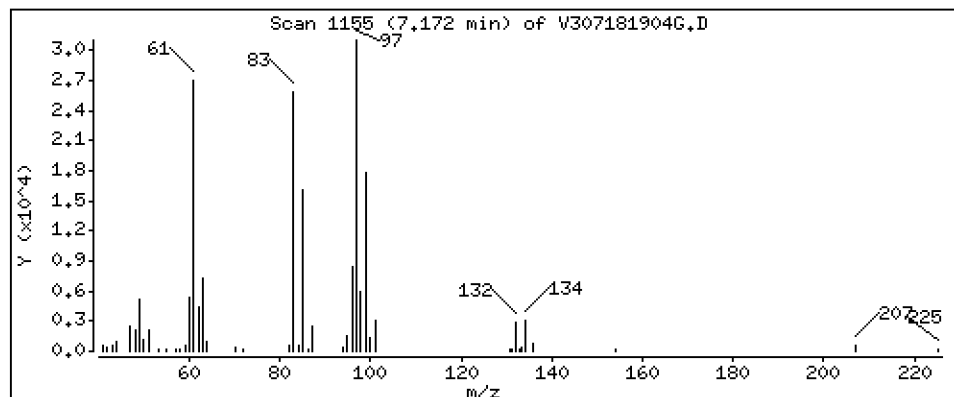
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

48 1,1,2-Trichloroethane

Concentration: 9.986 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

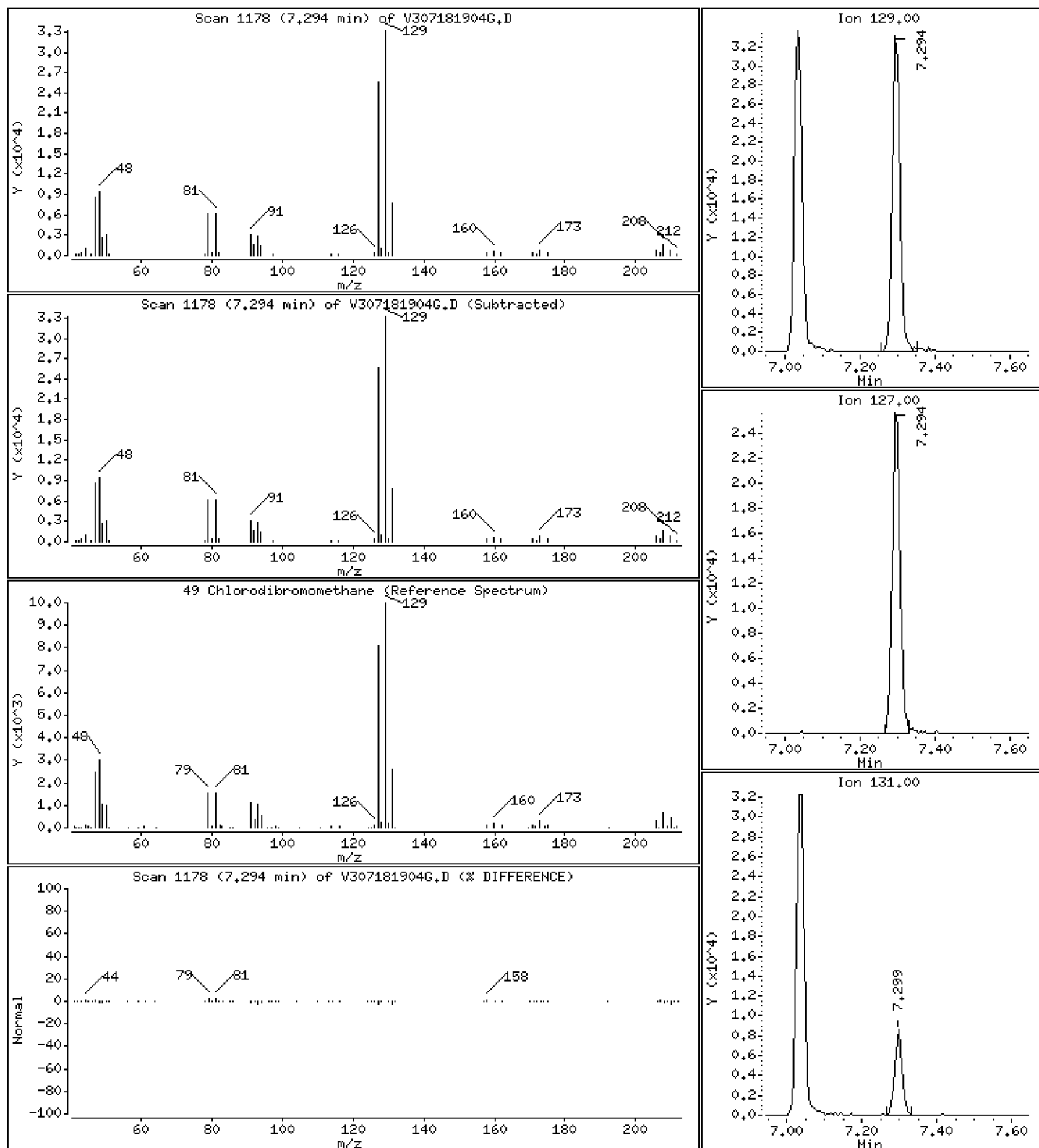
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

49 Chlorodibromomethane

Concentration: 9.459 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

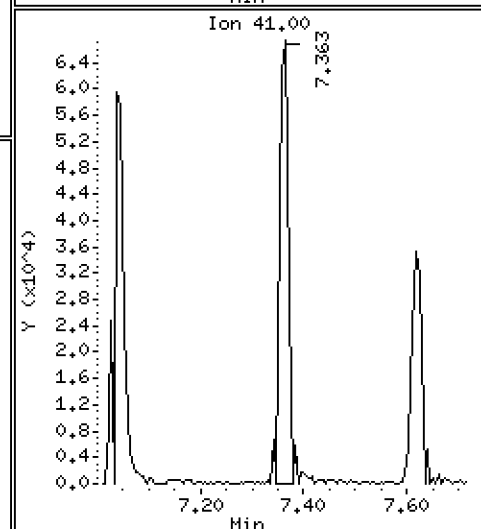
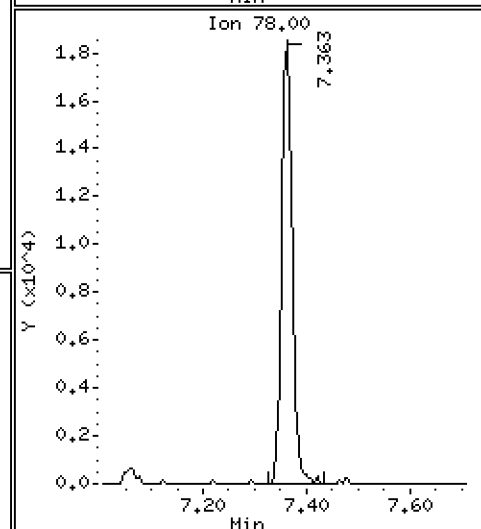
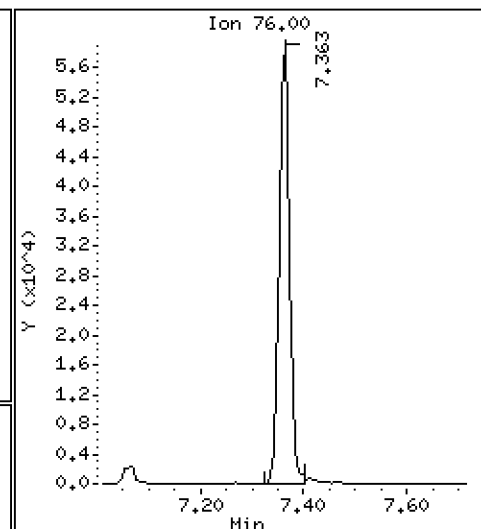
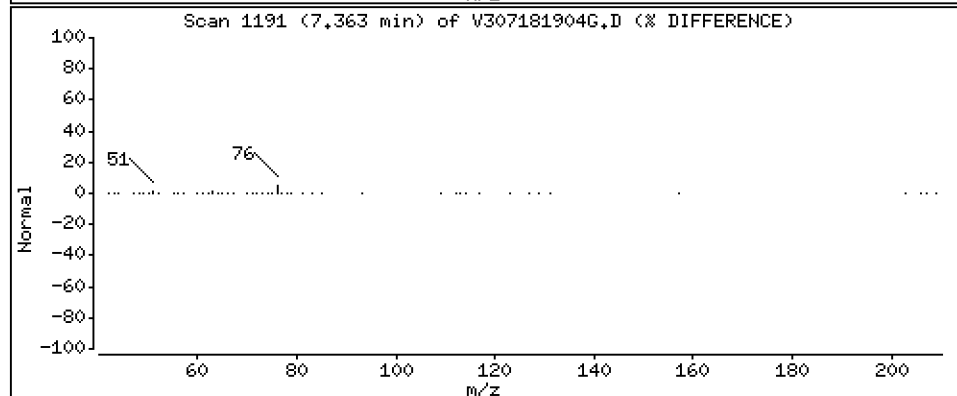
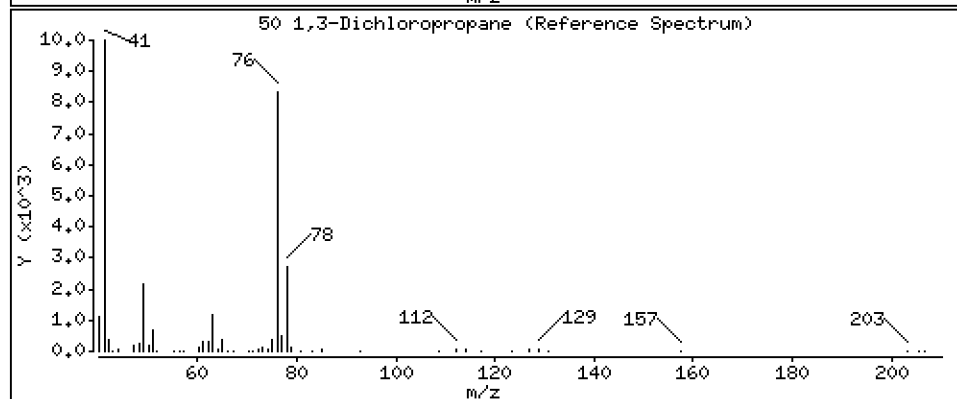
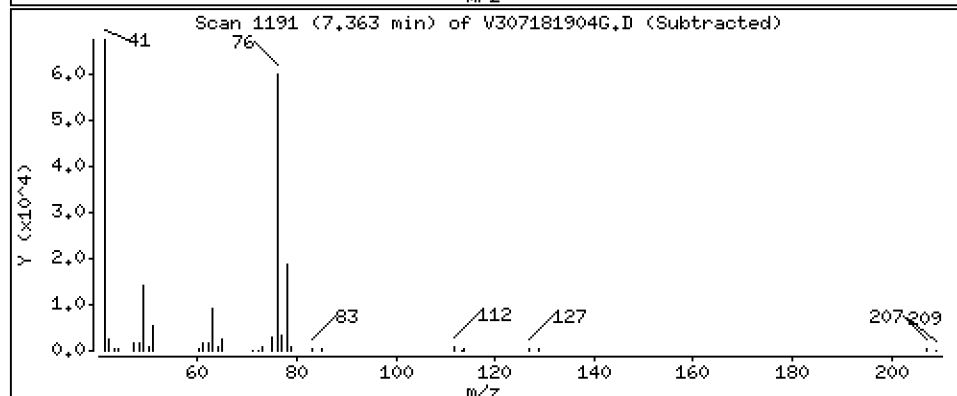
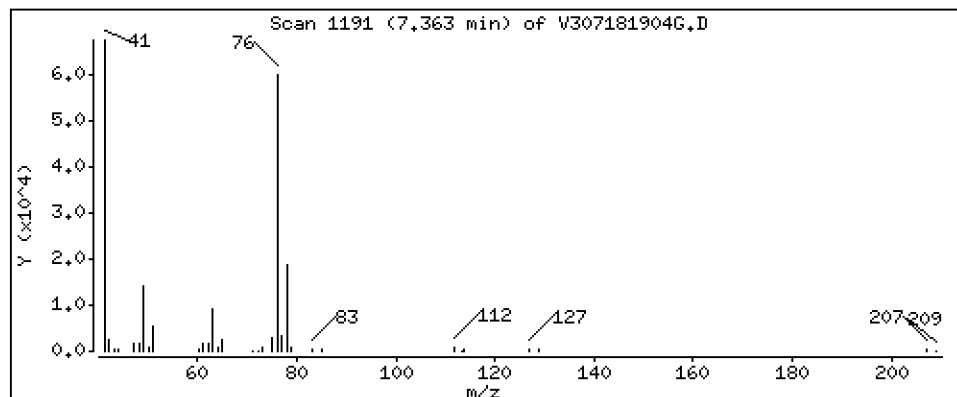
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

50 1,3-Dichloropropane

Concentration: 9.809 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

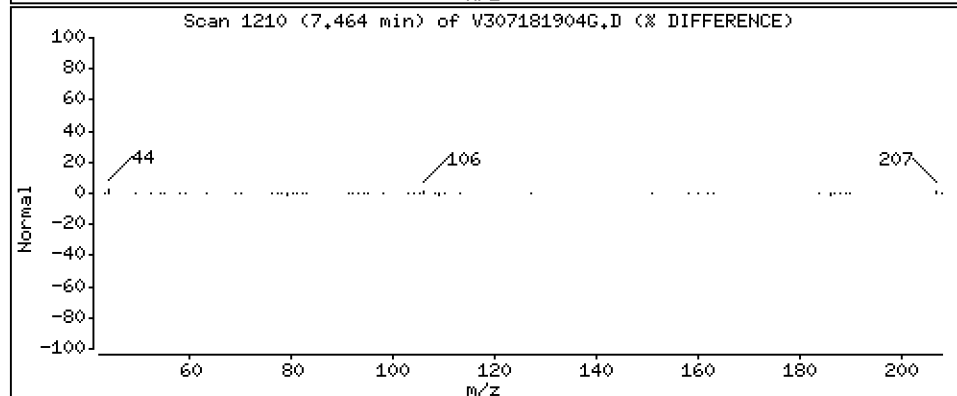
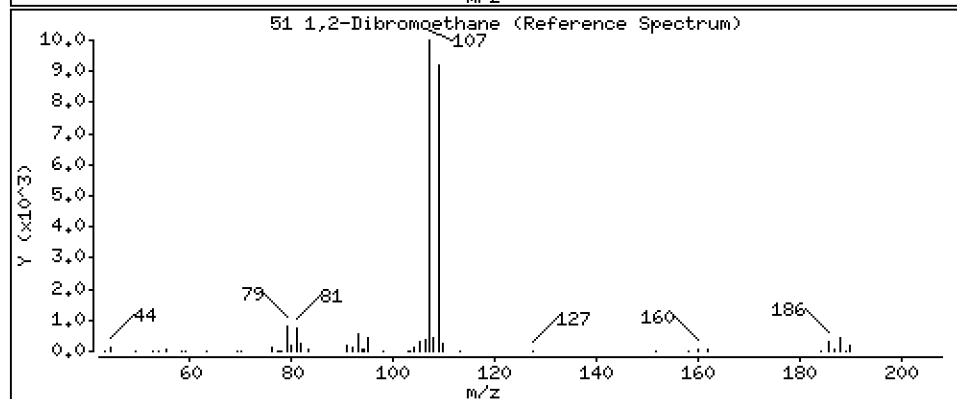
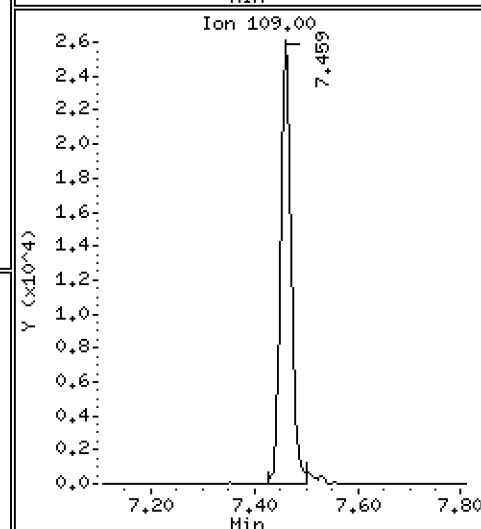
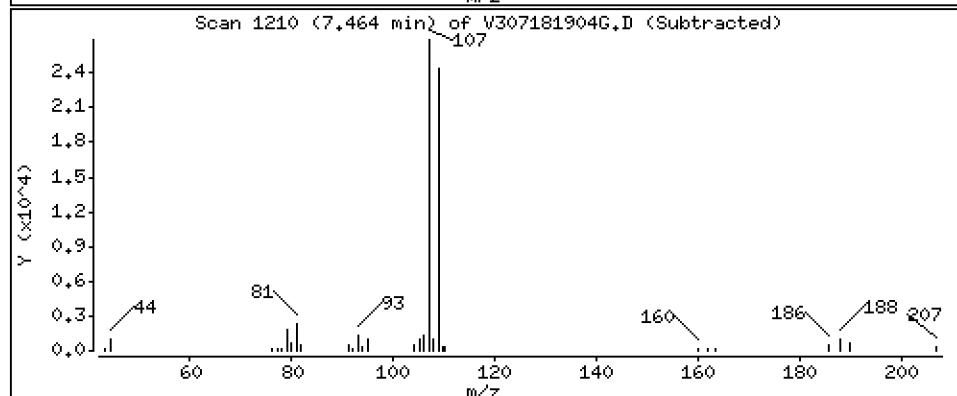
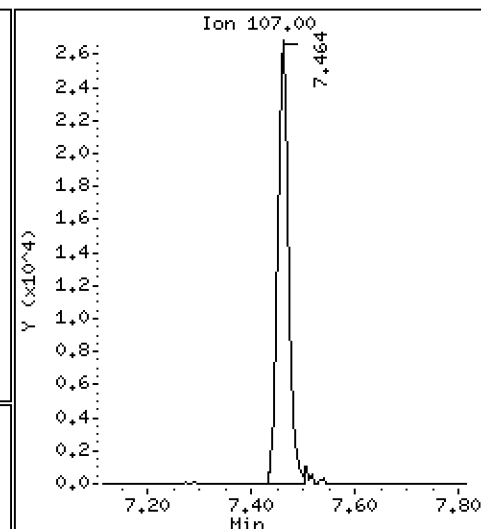
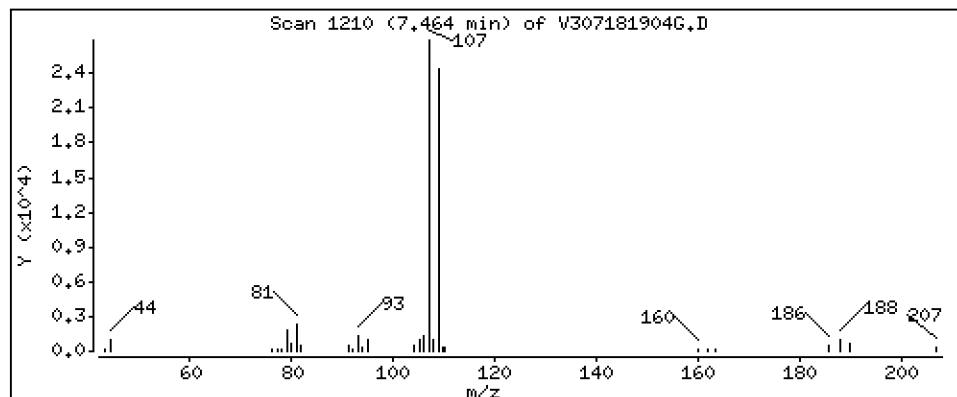
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

51 1,2-Dibromoethane

Concentration: 9.425 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

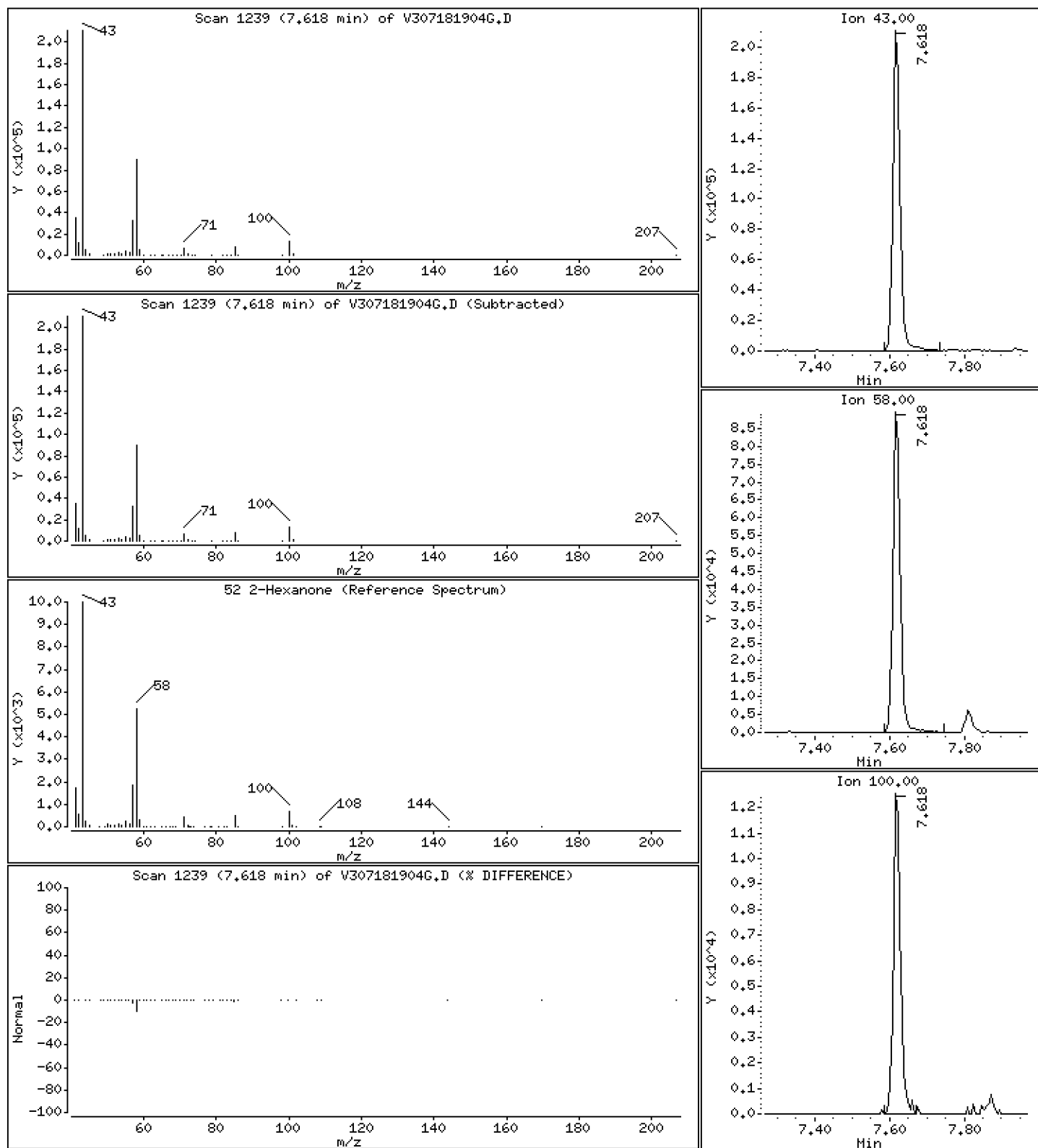
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

52 2-Hexanone

Concentration: 51,221 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

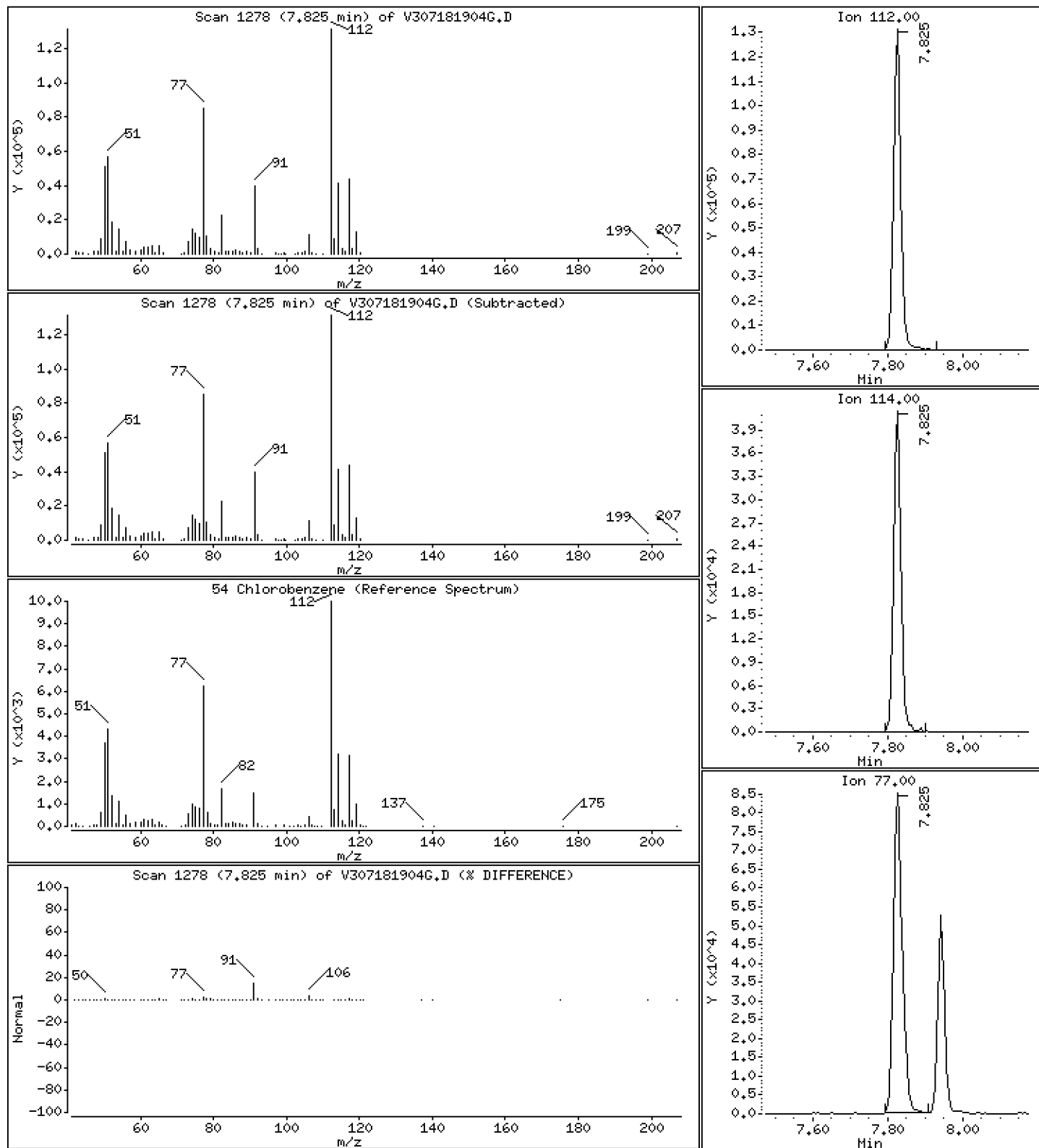
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

54 Chlorobenzene

Concentration: 9.576 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

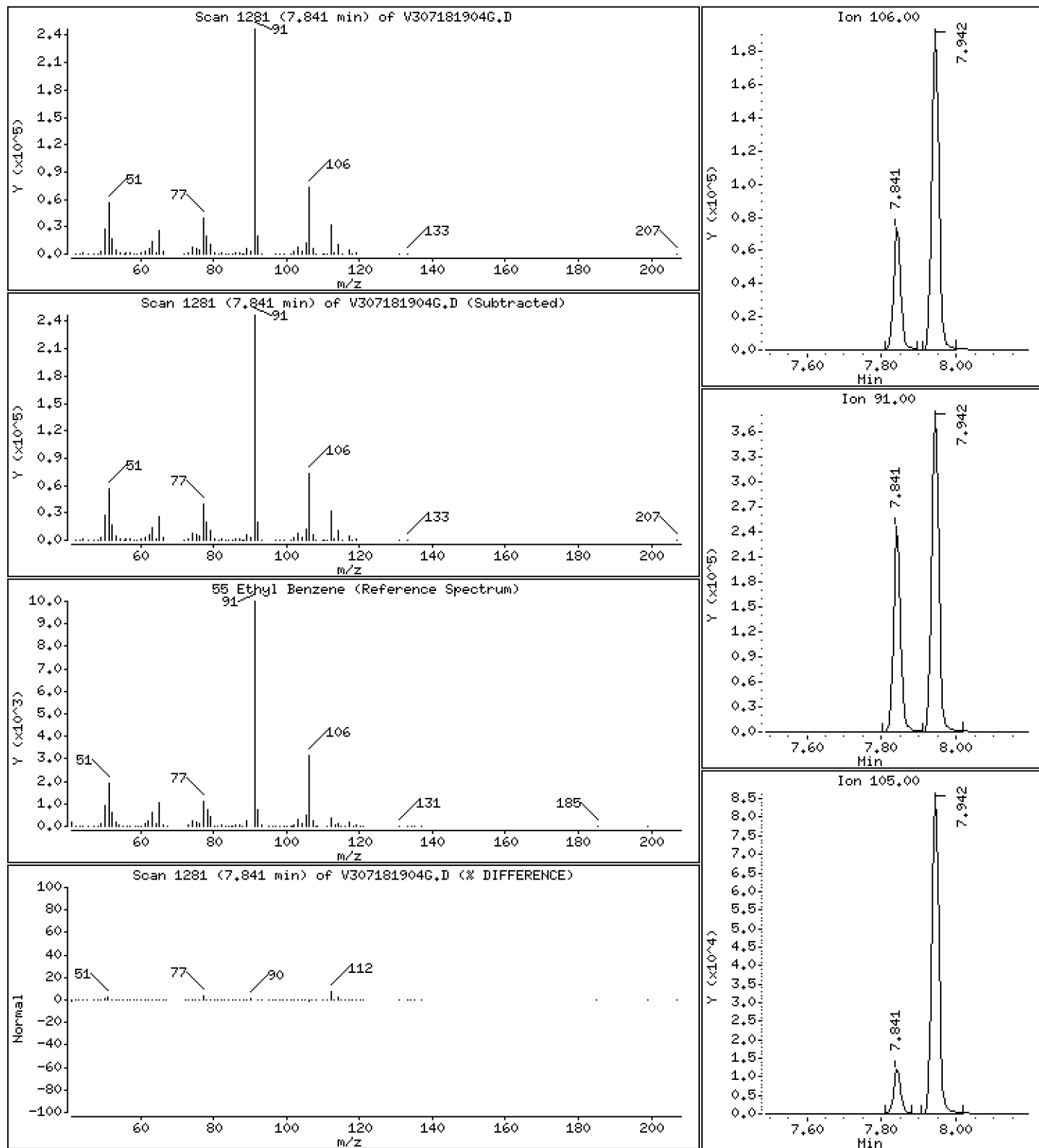
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

55 Ethyl Benzene

Concentration: 9.878 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

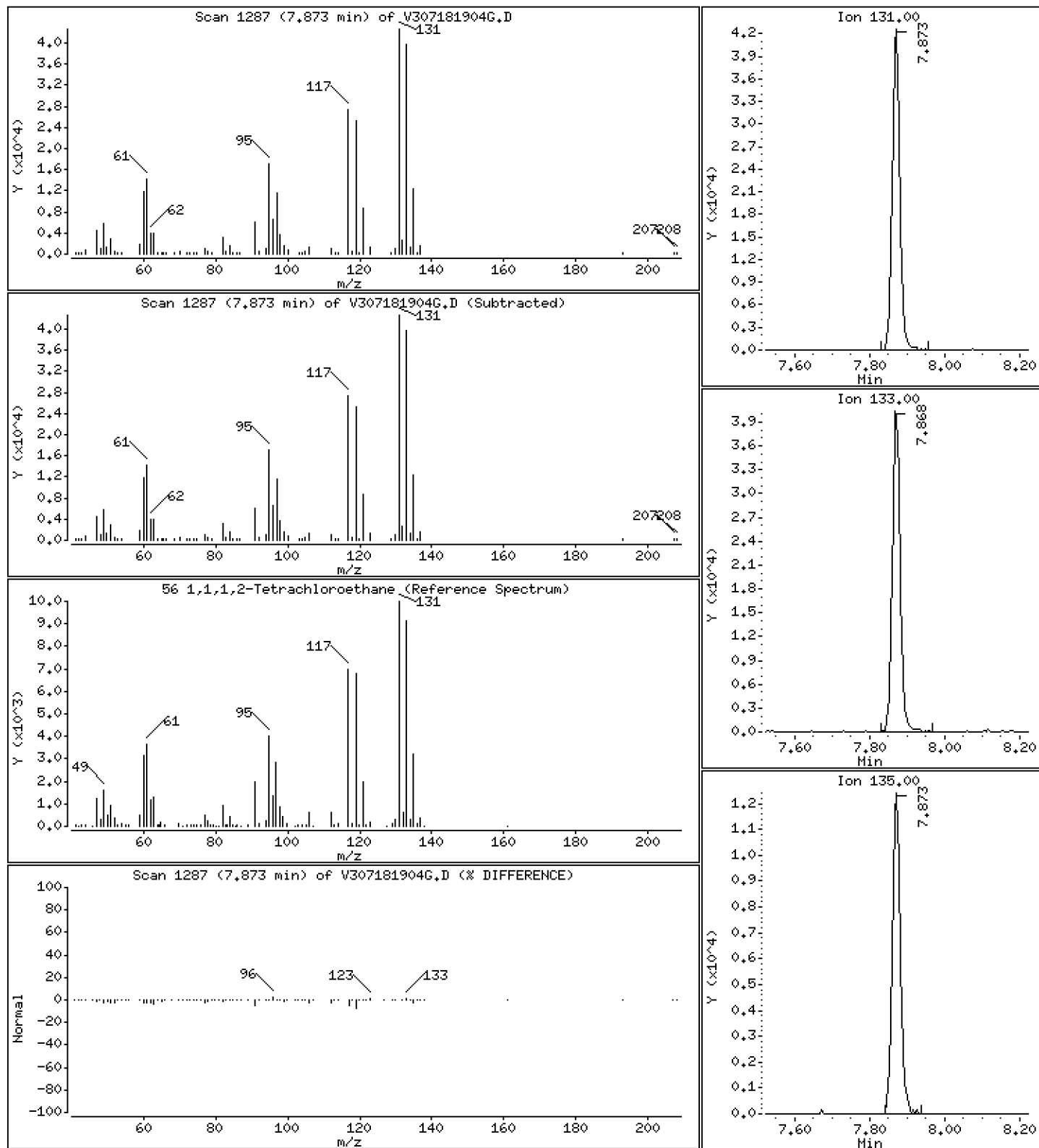
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

56 1,1,1,2-Tetrachloroethane

Concentration: 9.278 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

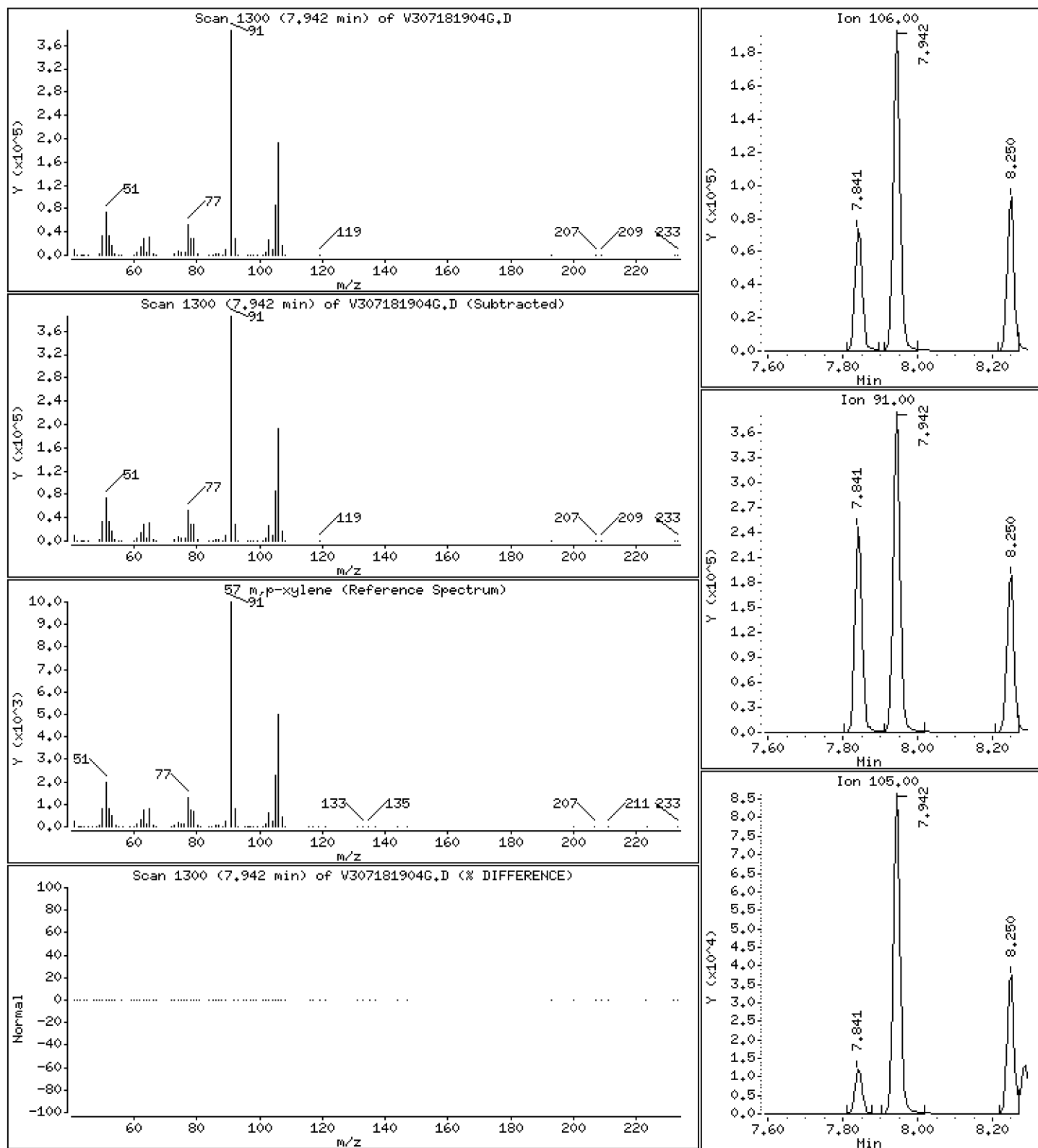
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

57 m,p-xylene

Concentration: 19,872 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHG0439-BSD1

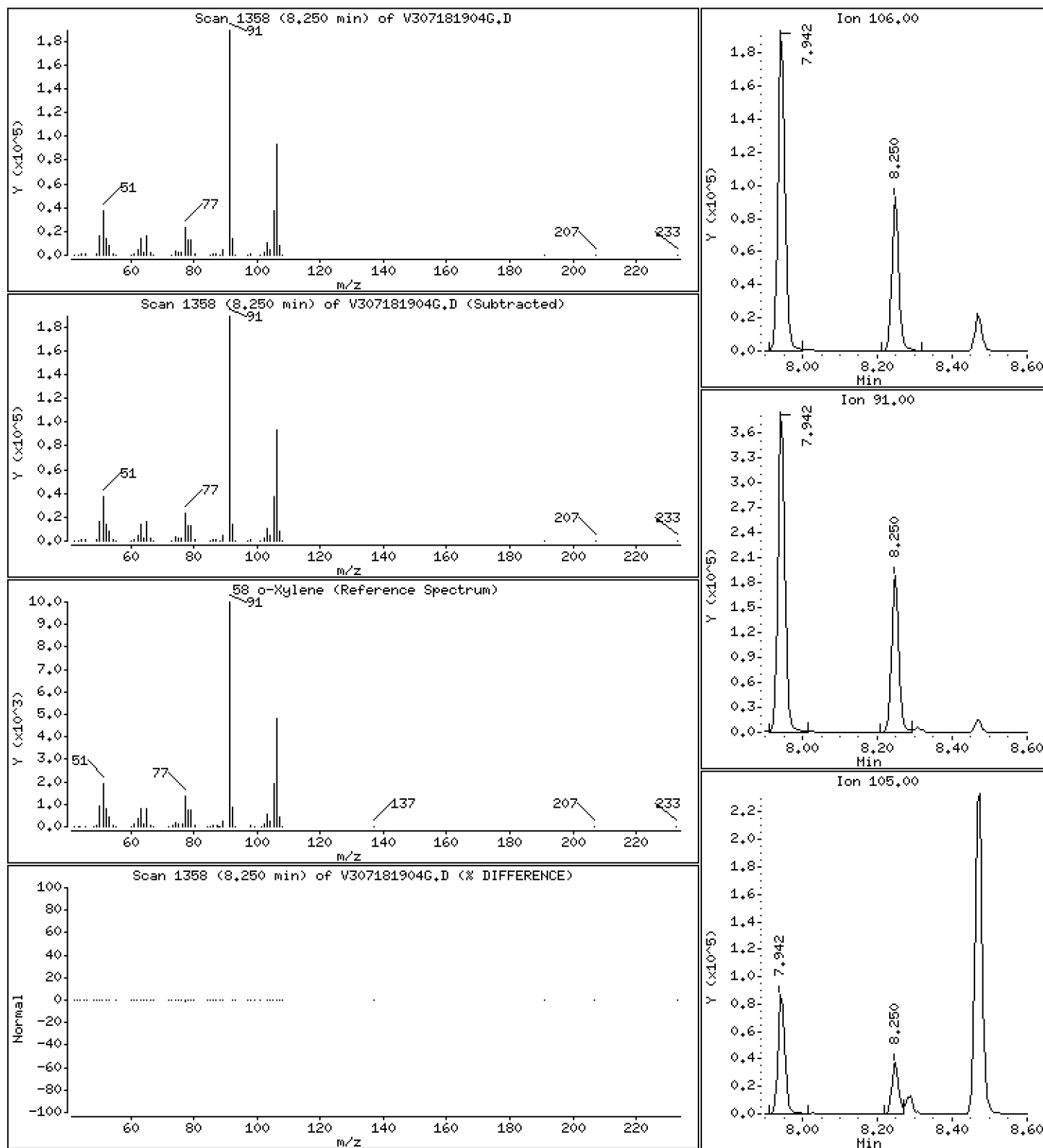
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

58 o-Xylene

Concentration: 9.877 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

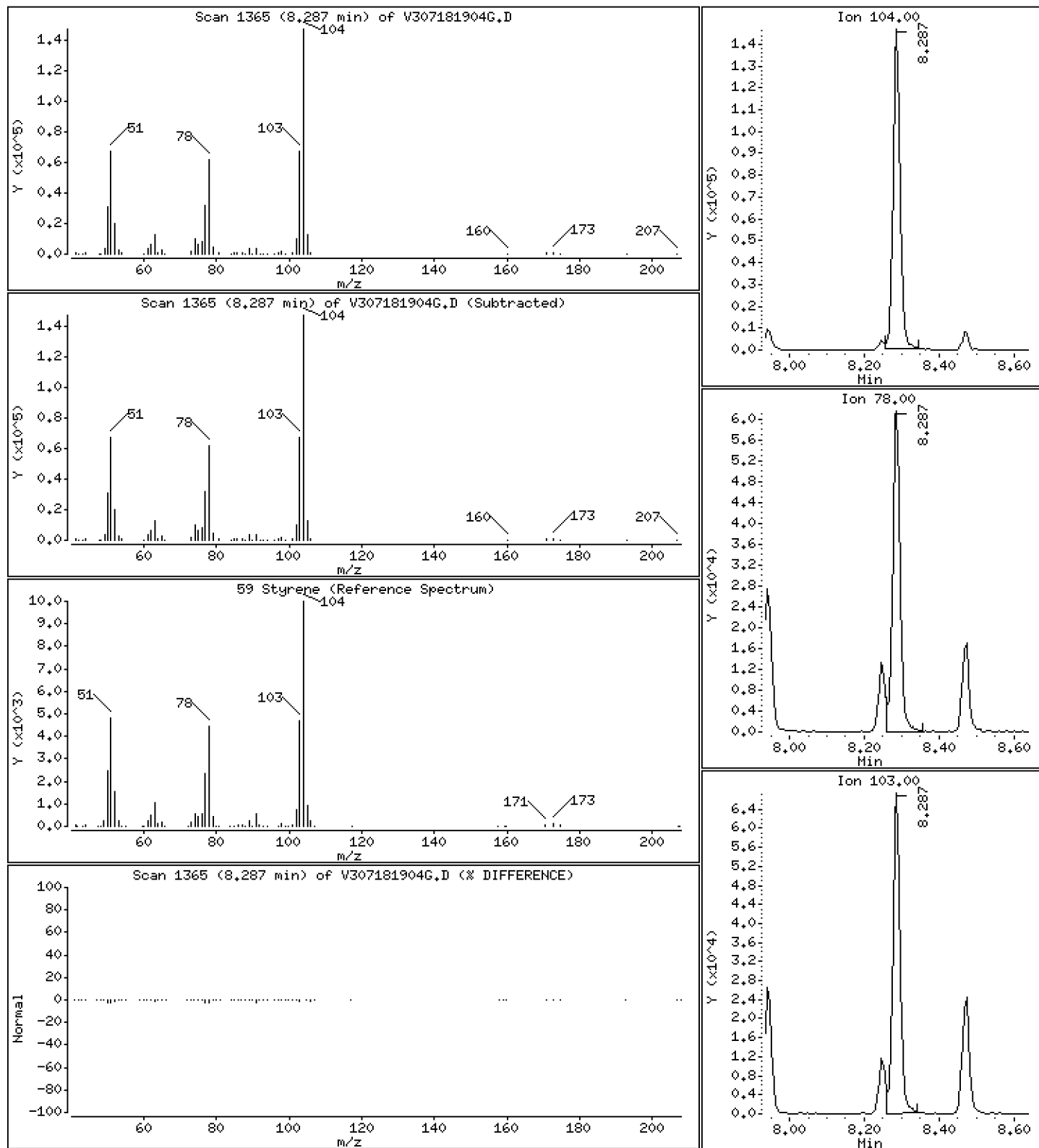
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

59 Styrene

Concentration: 10,271 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

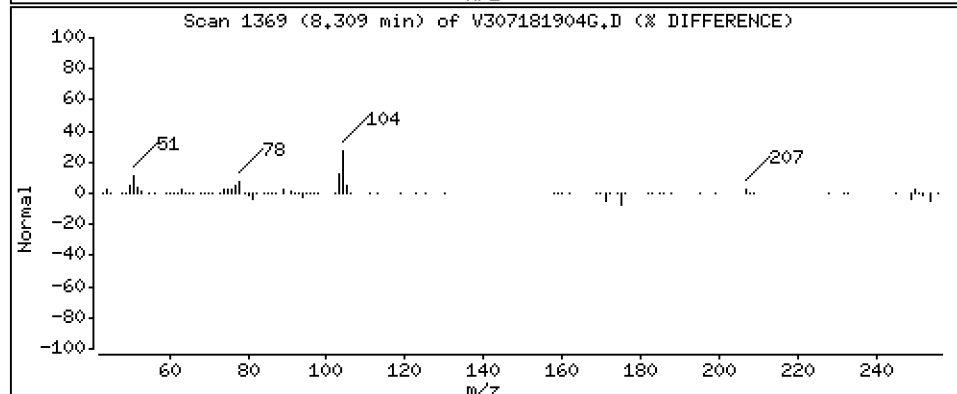
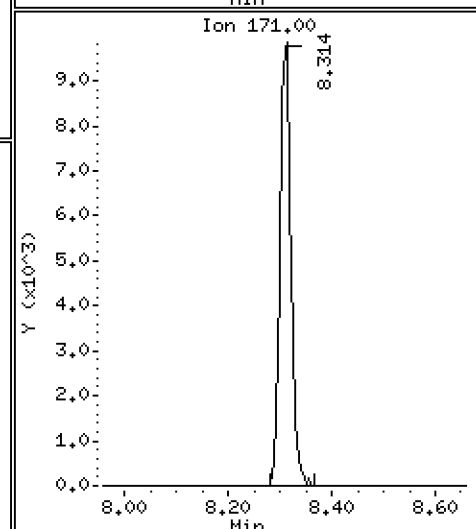
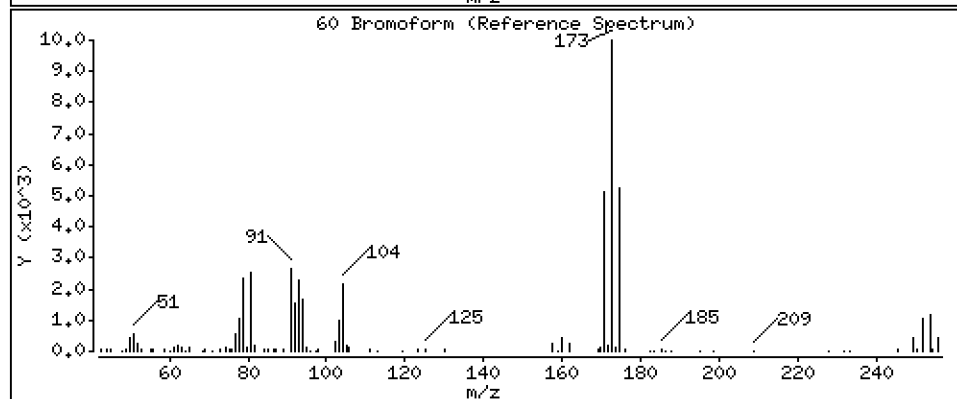
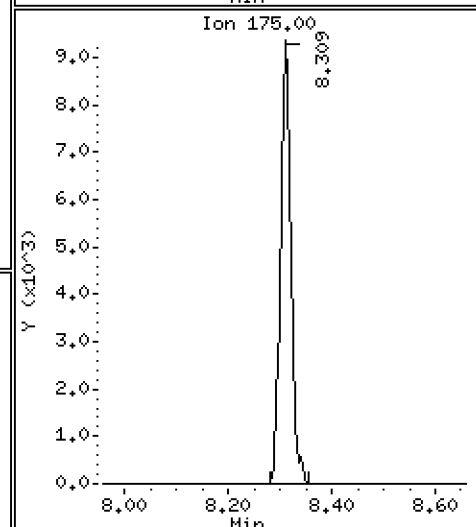
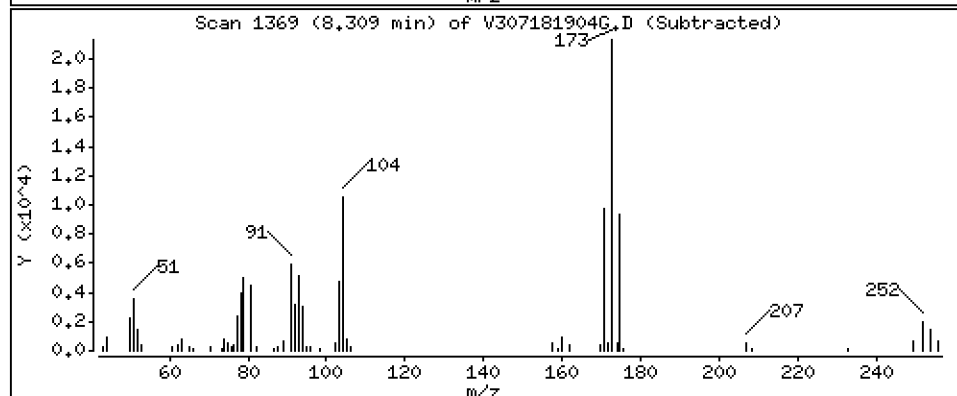
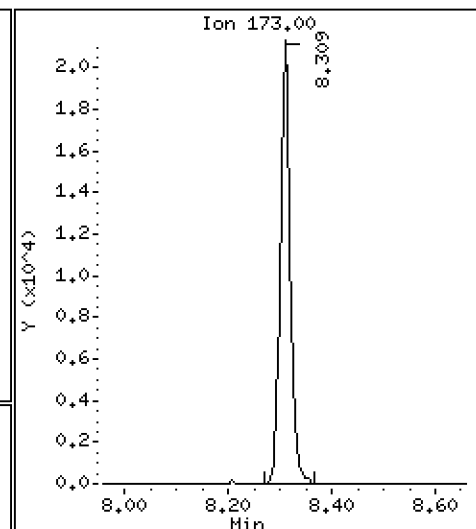
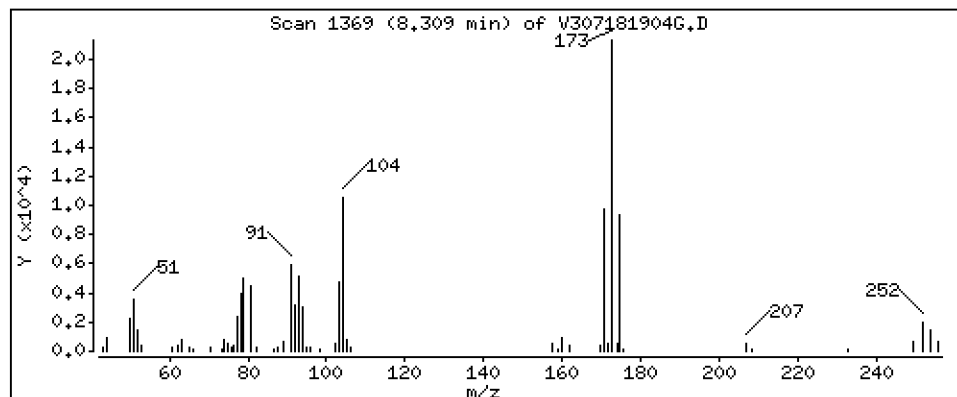
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

60 Bromoform

Concentration: 9.544 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

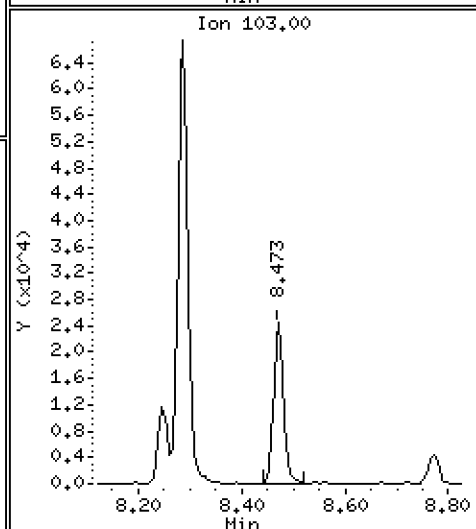
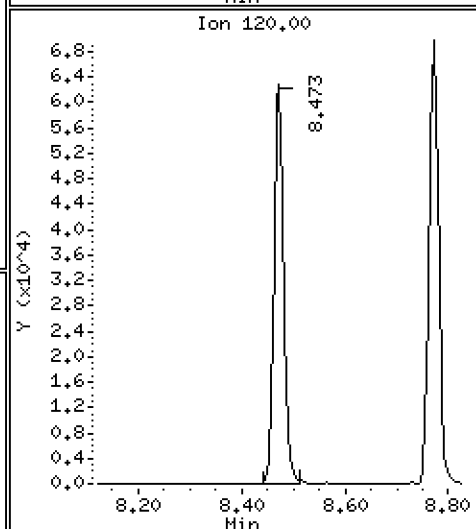
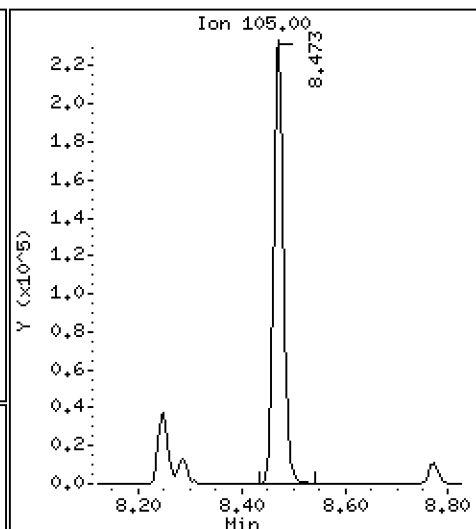
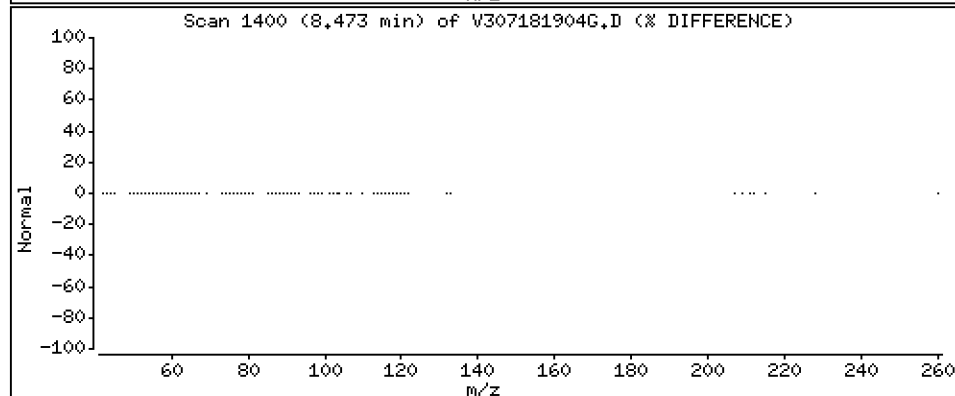
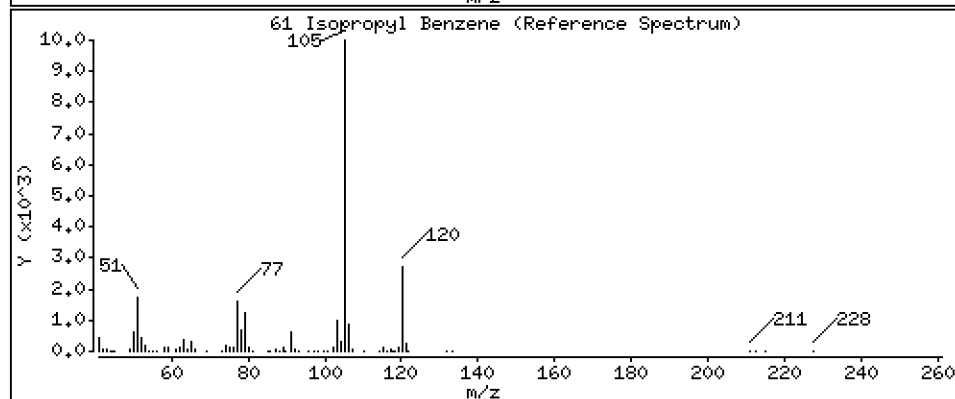
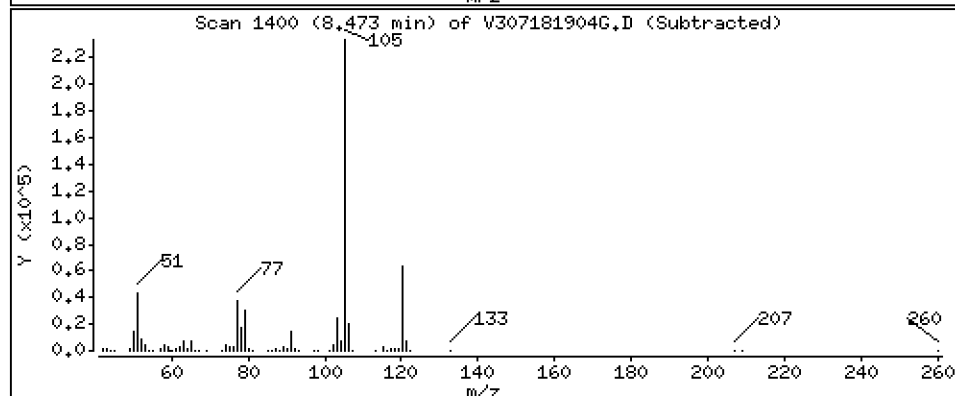
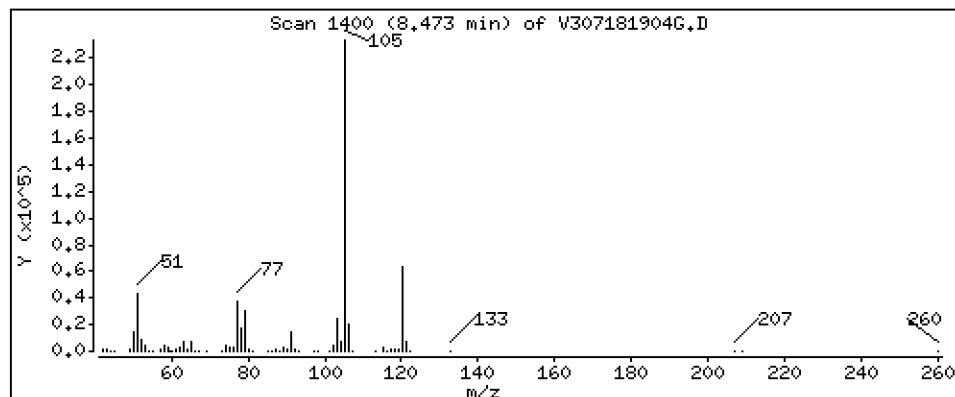
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

61 Isopropyl Benzene

Concentration: 9.955 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

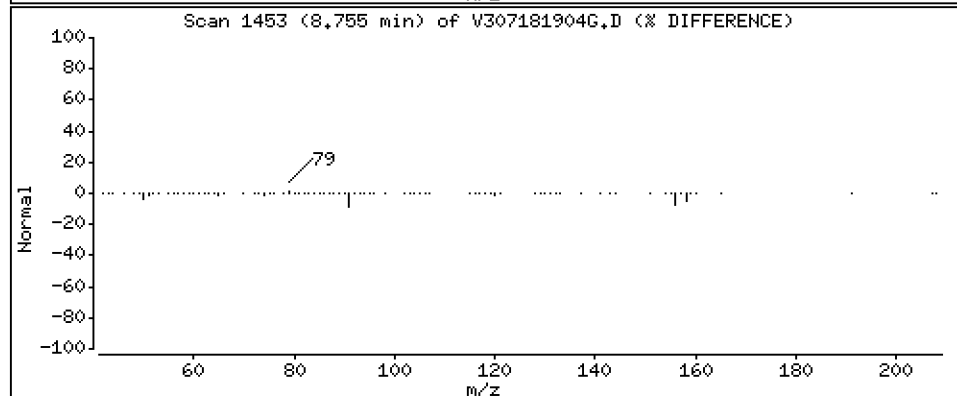
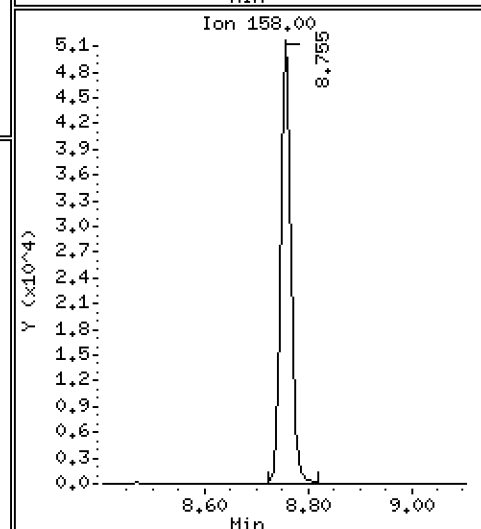
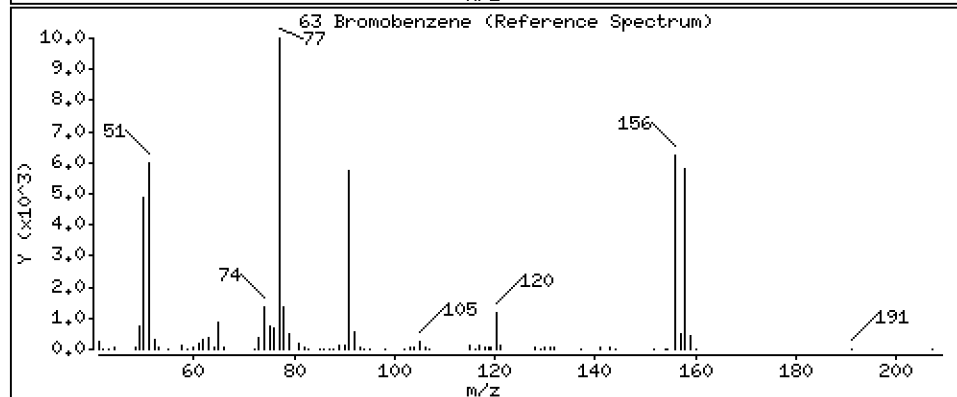
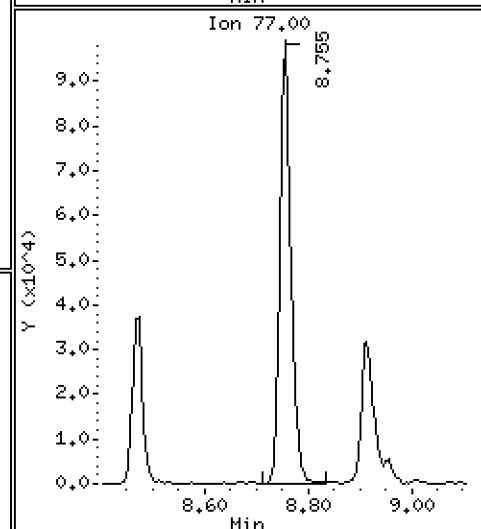
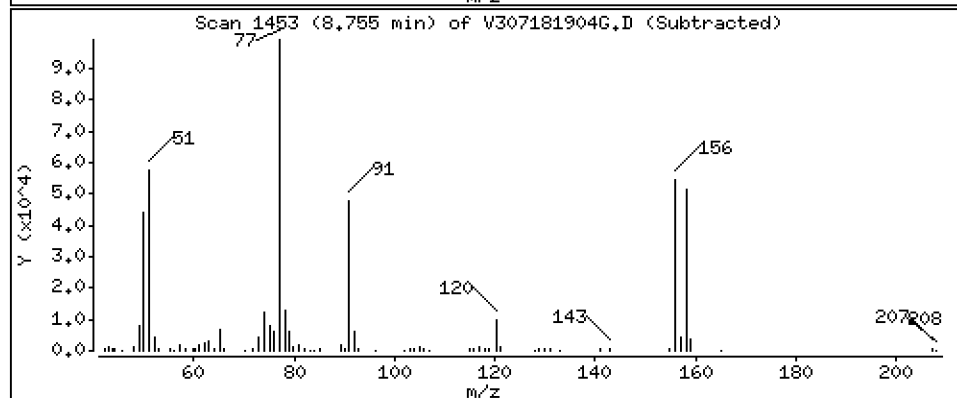
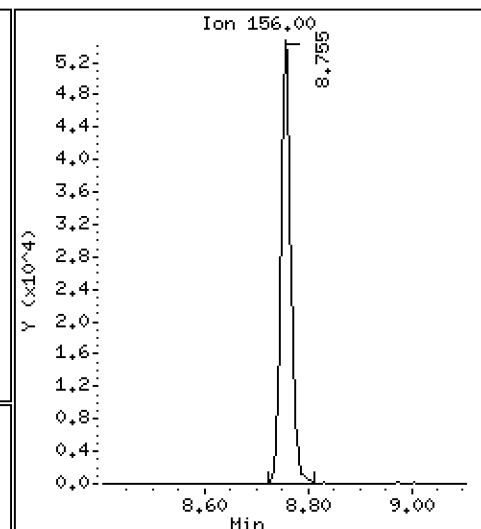
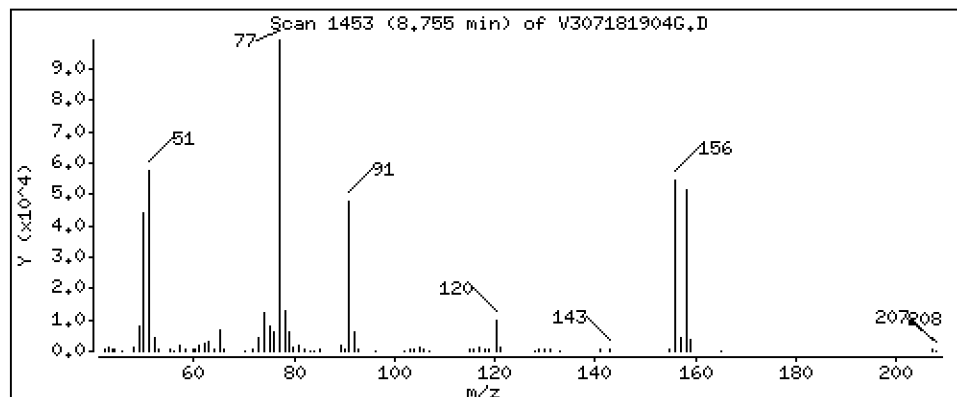
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 9.598 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

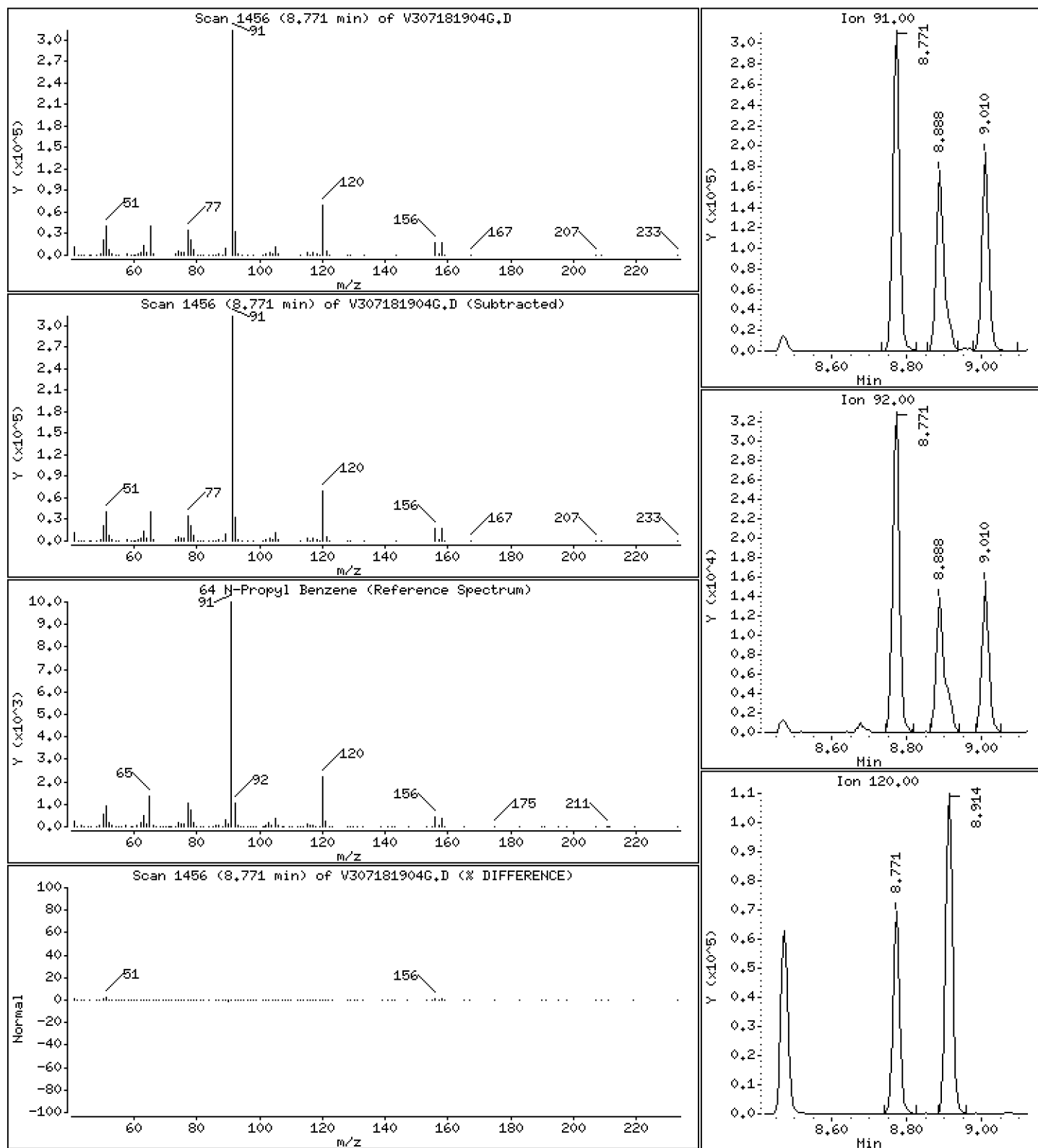
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 9.908 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

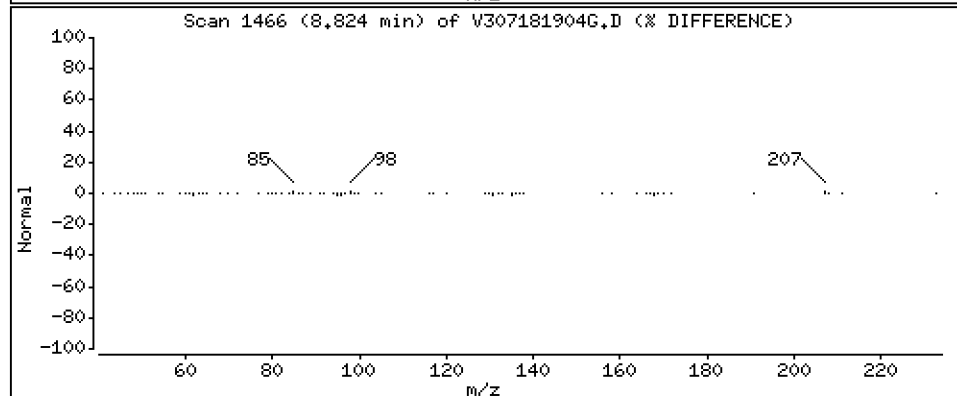
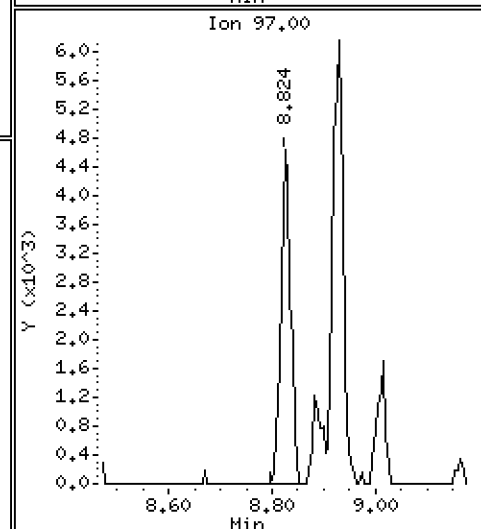
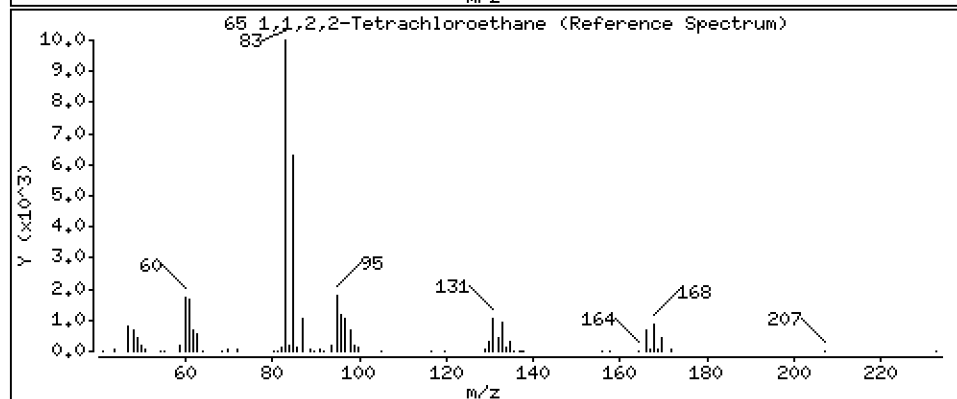
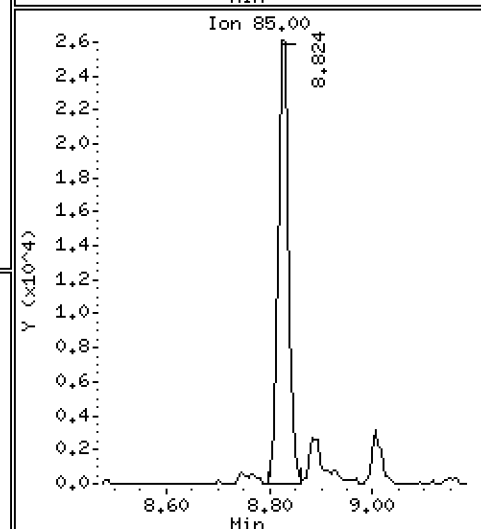
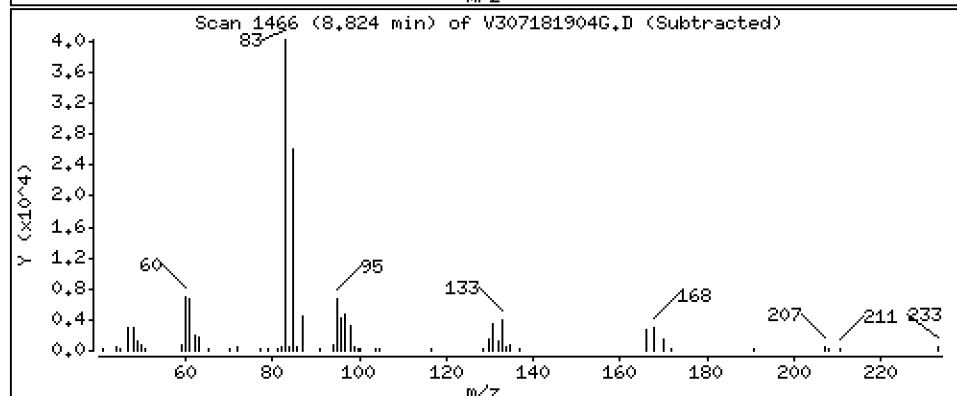
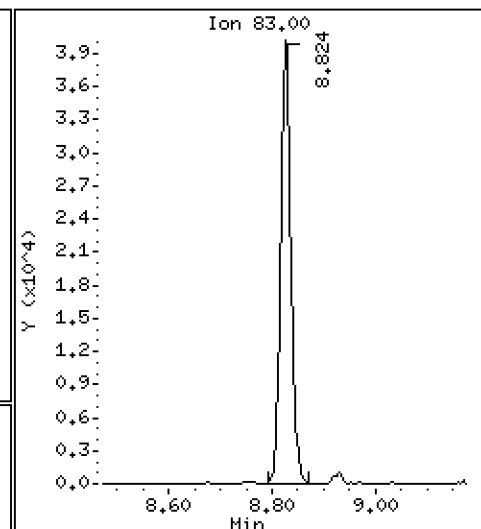
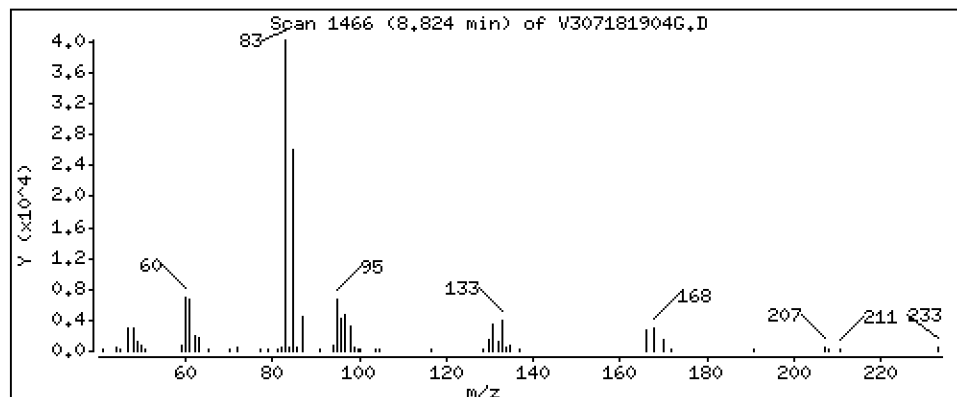
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 9.216 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

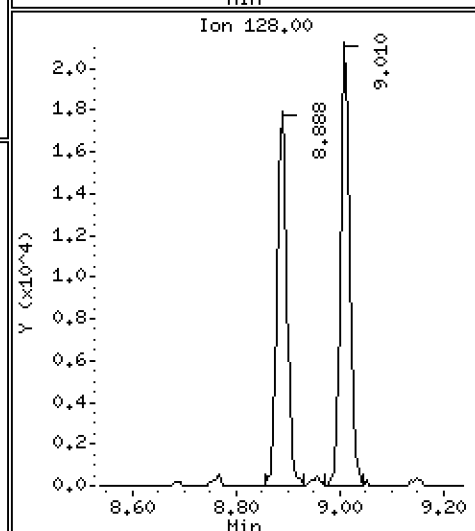
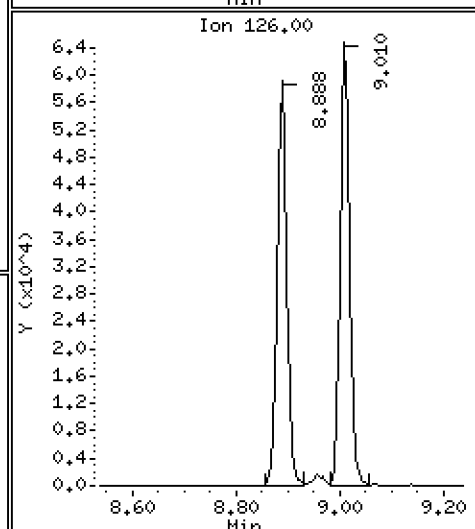
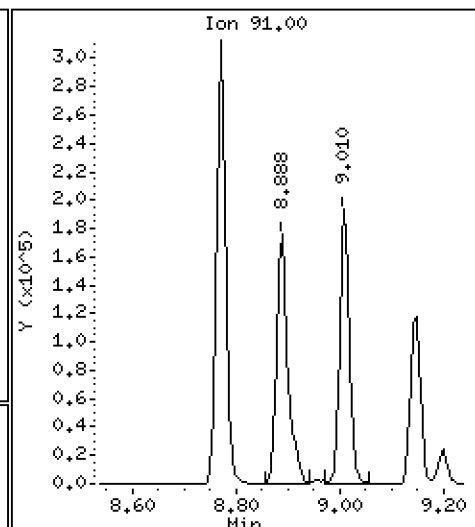
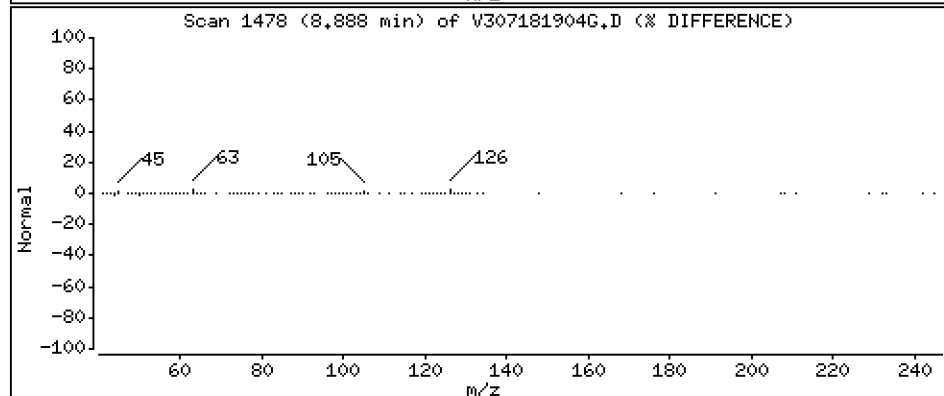
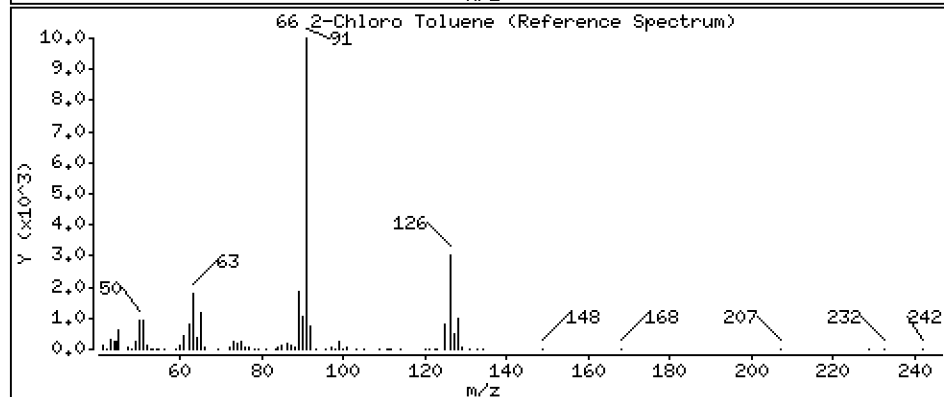
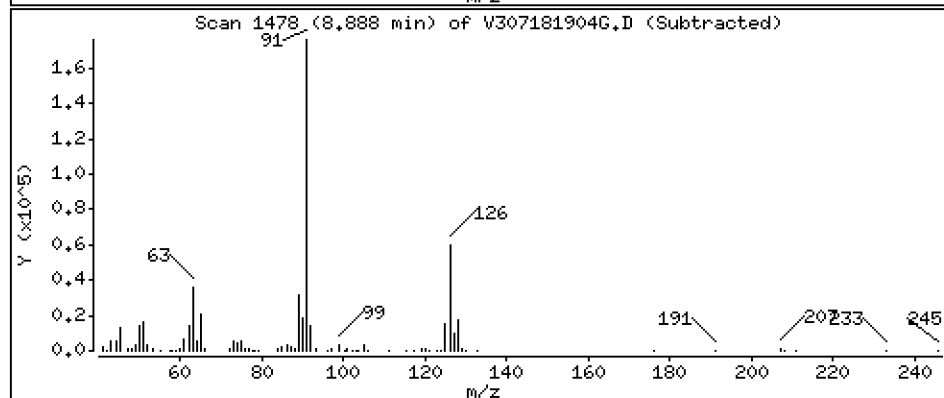
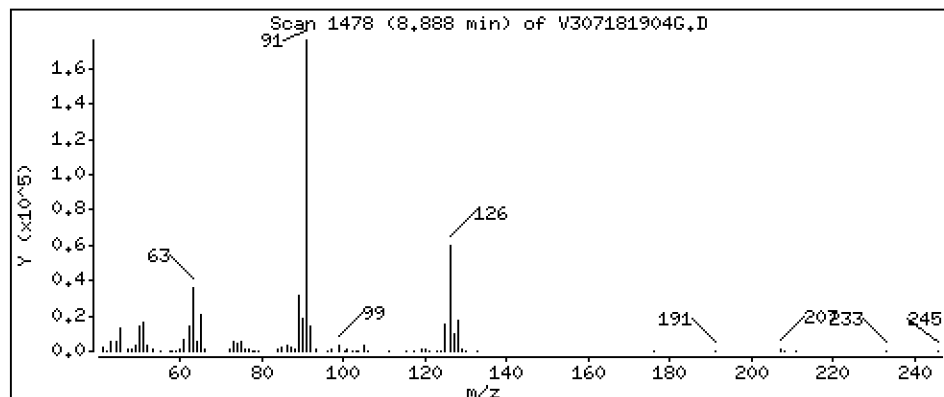
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 9.738 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

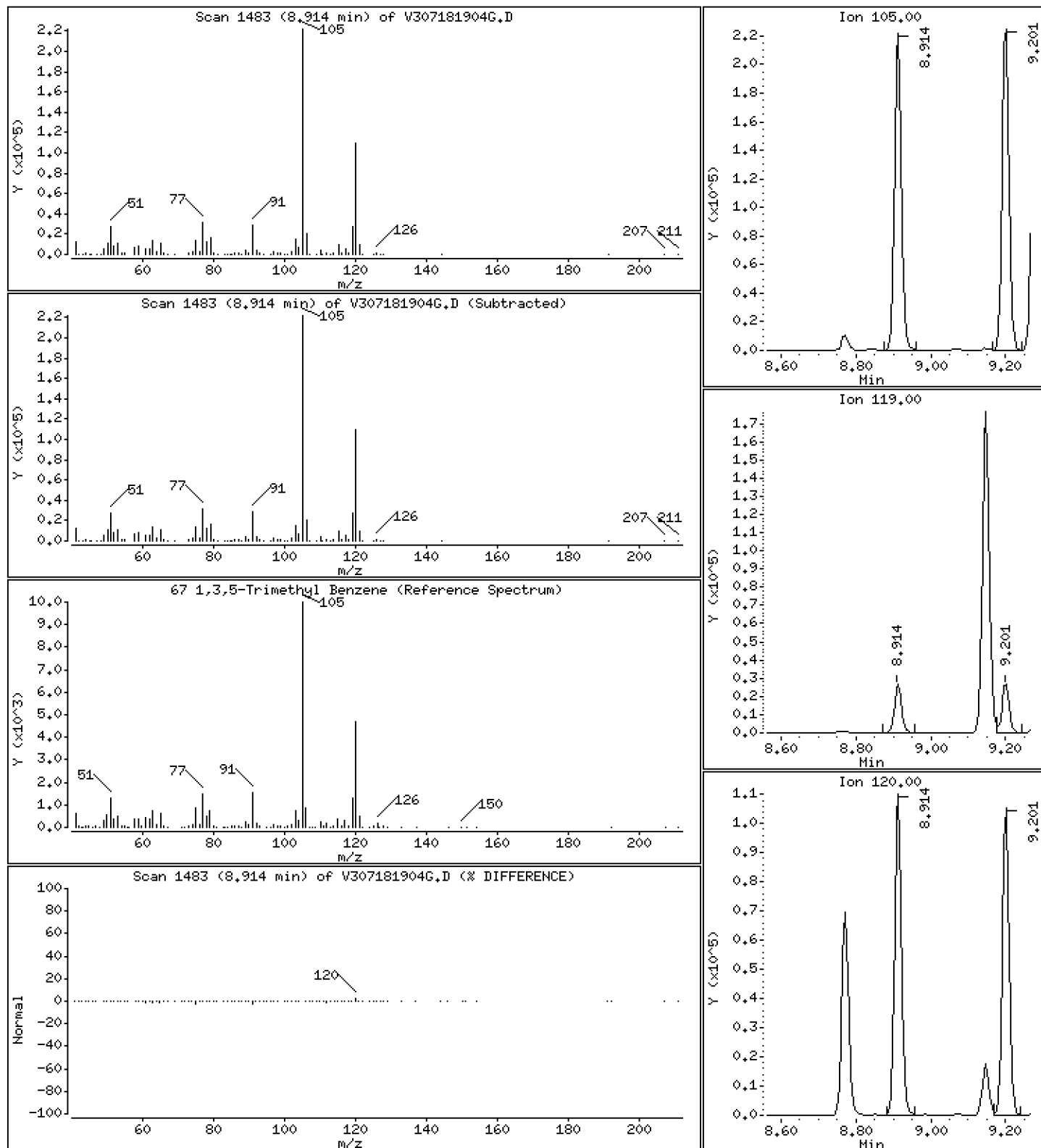
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 10,189 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

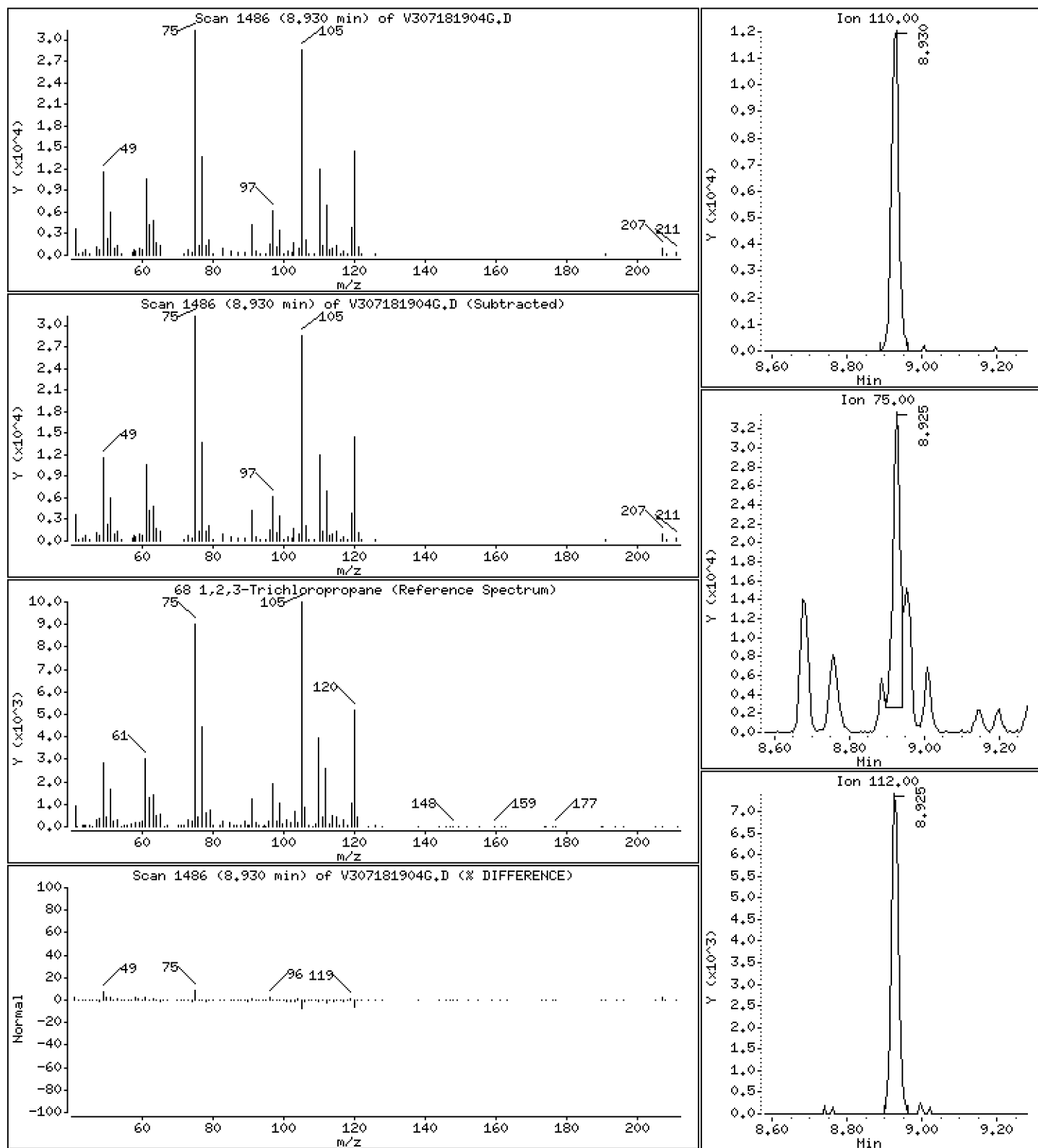
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 9.664 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

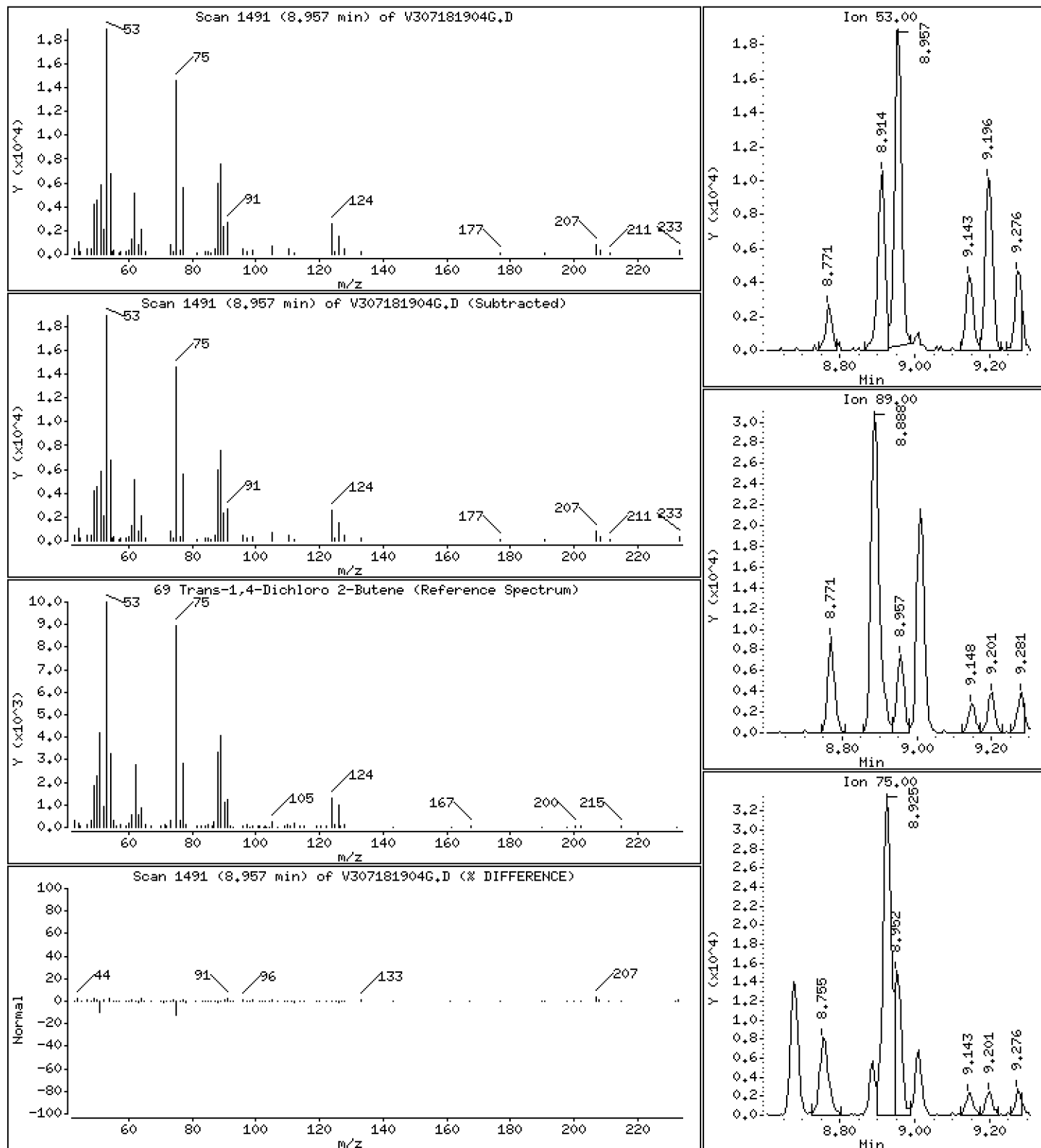
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 8.934 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

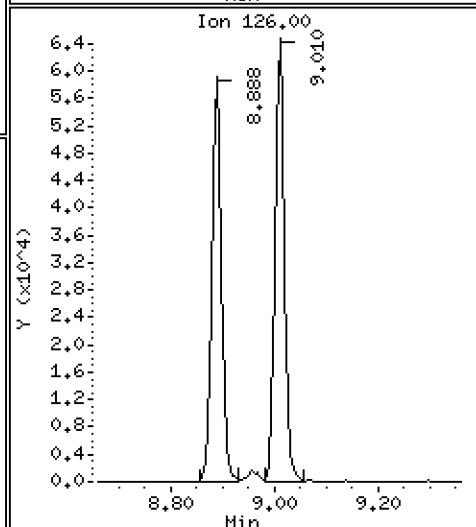
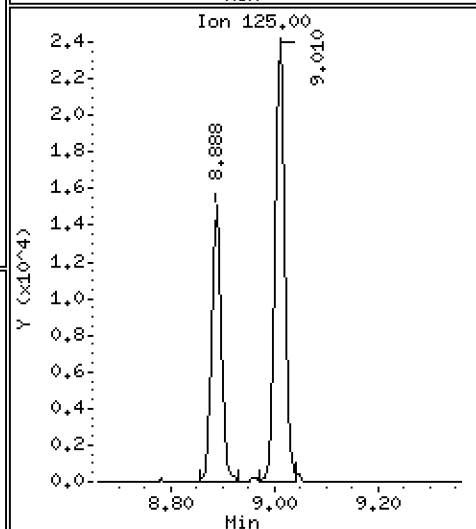
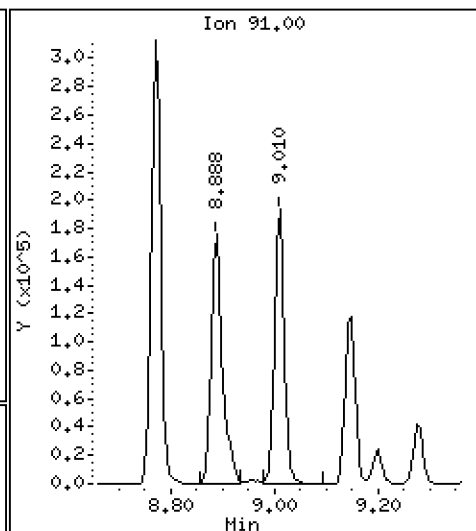
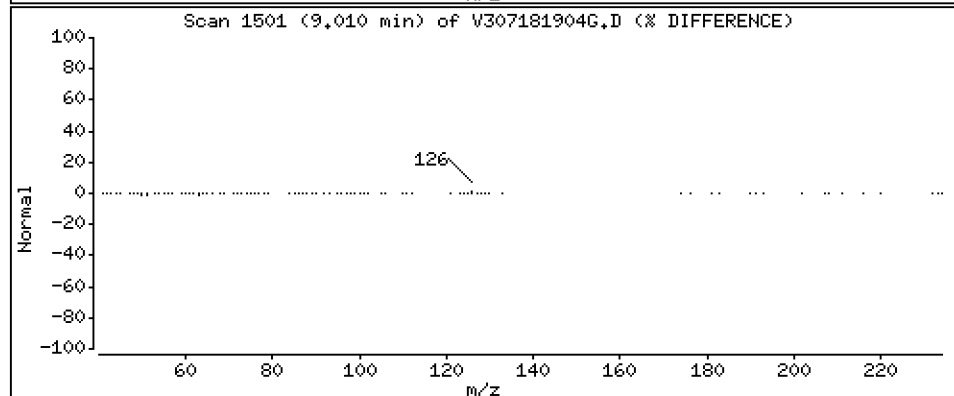
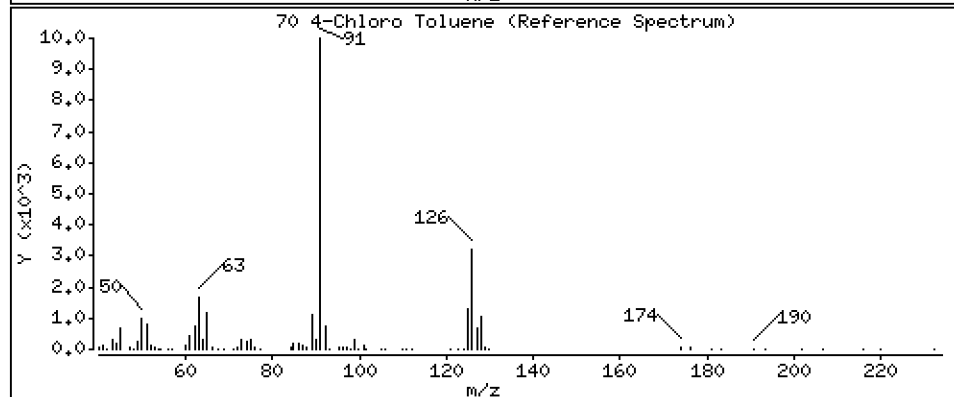
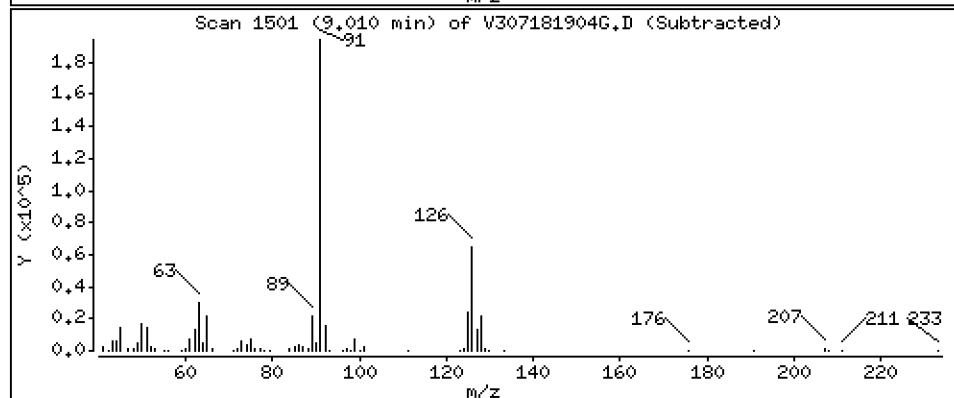
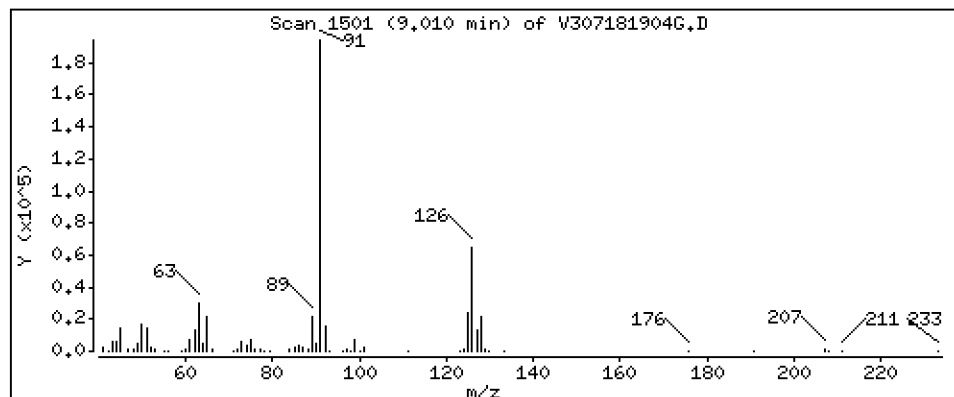
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 9.908 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

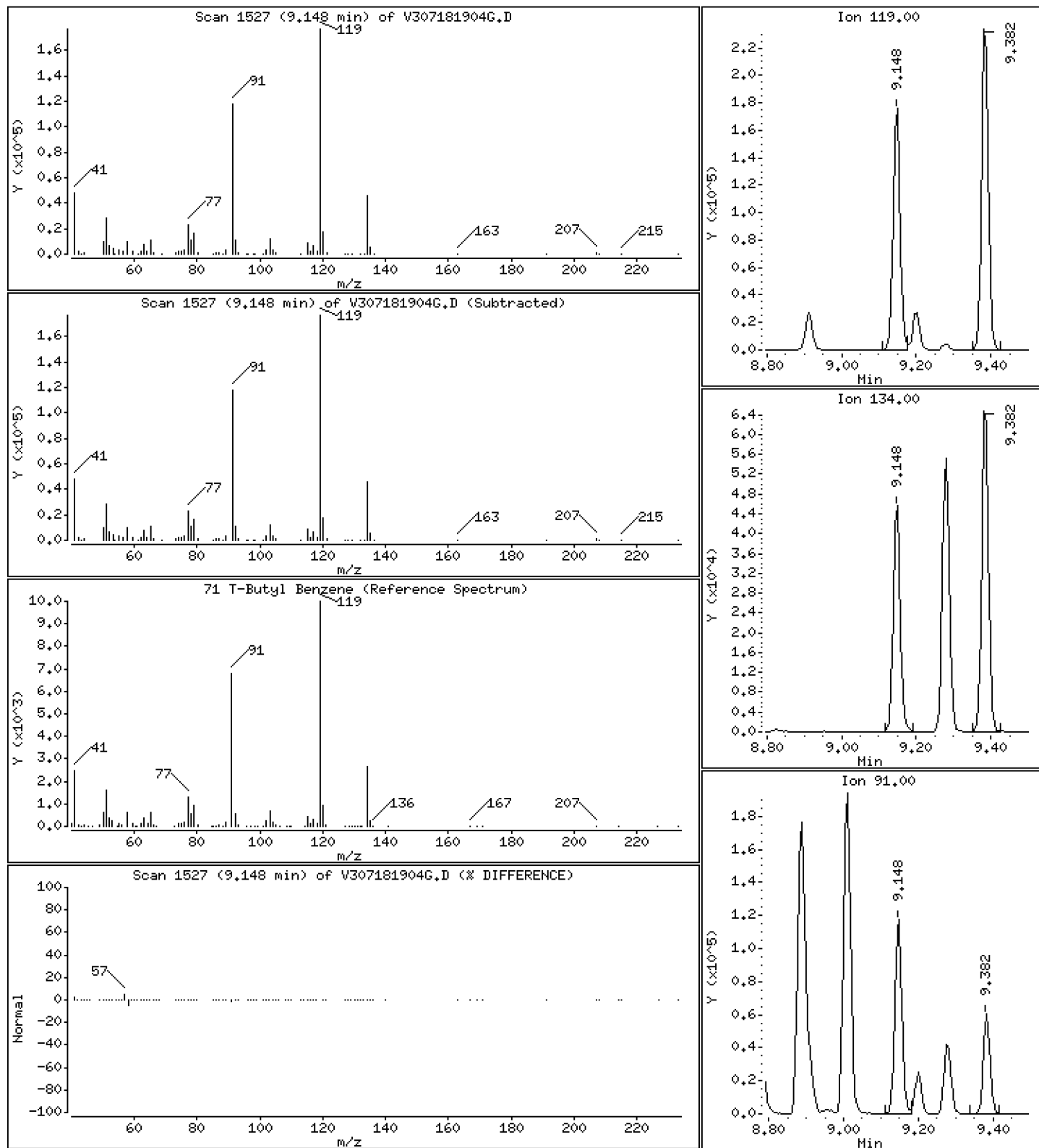
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 9.942 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

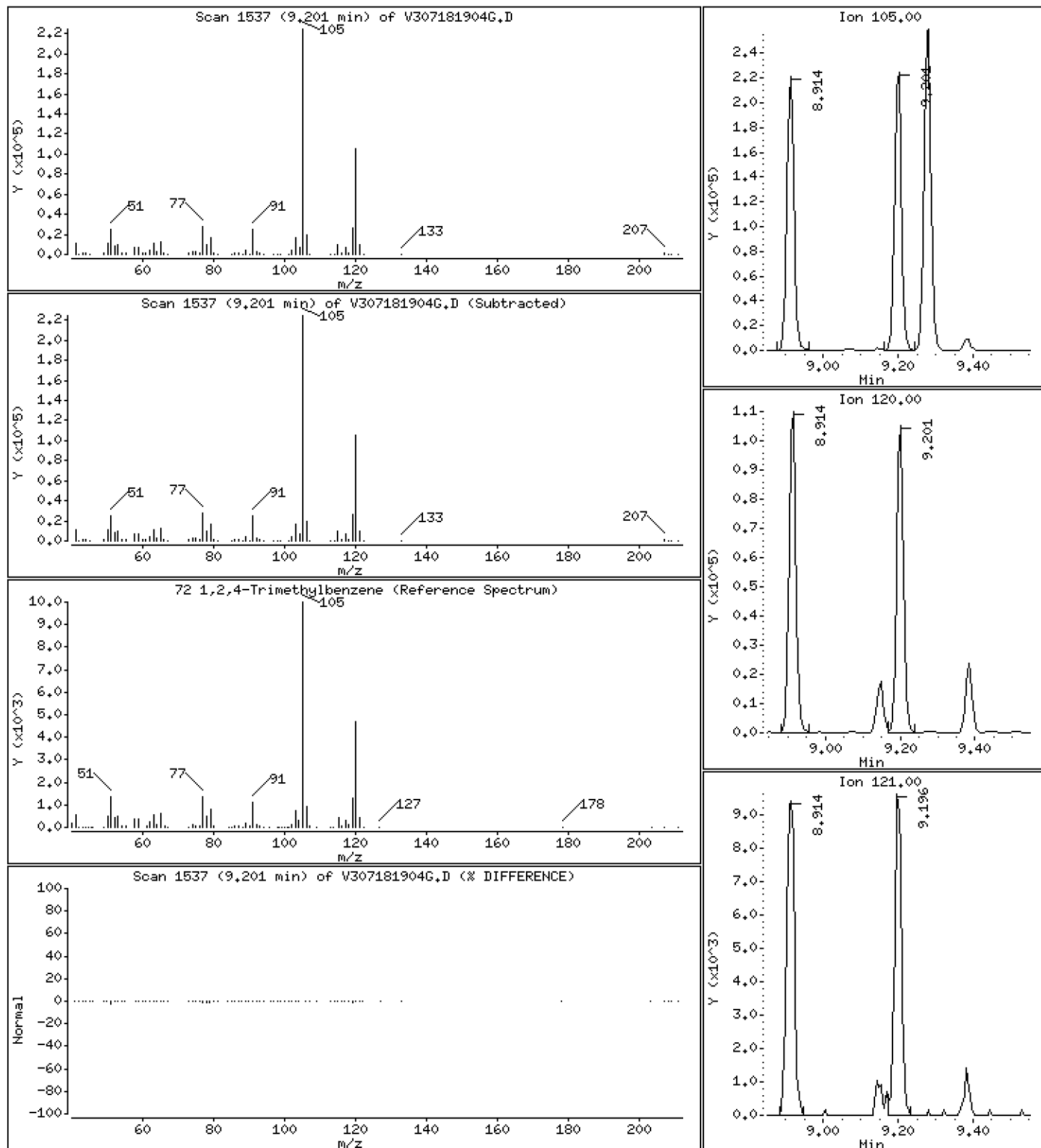
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 10,233 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

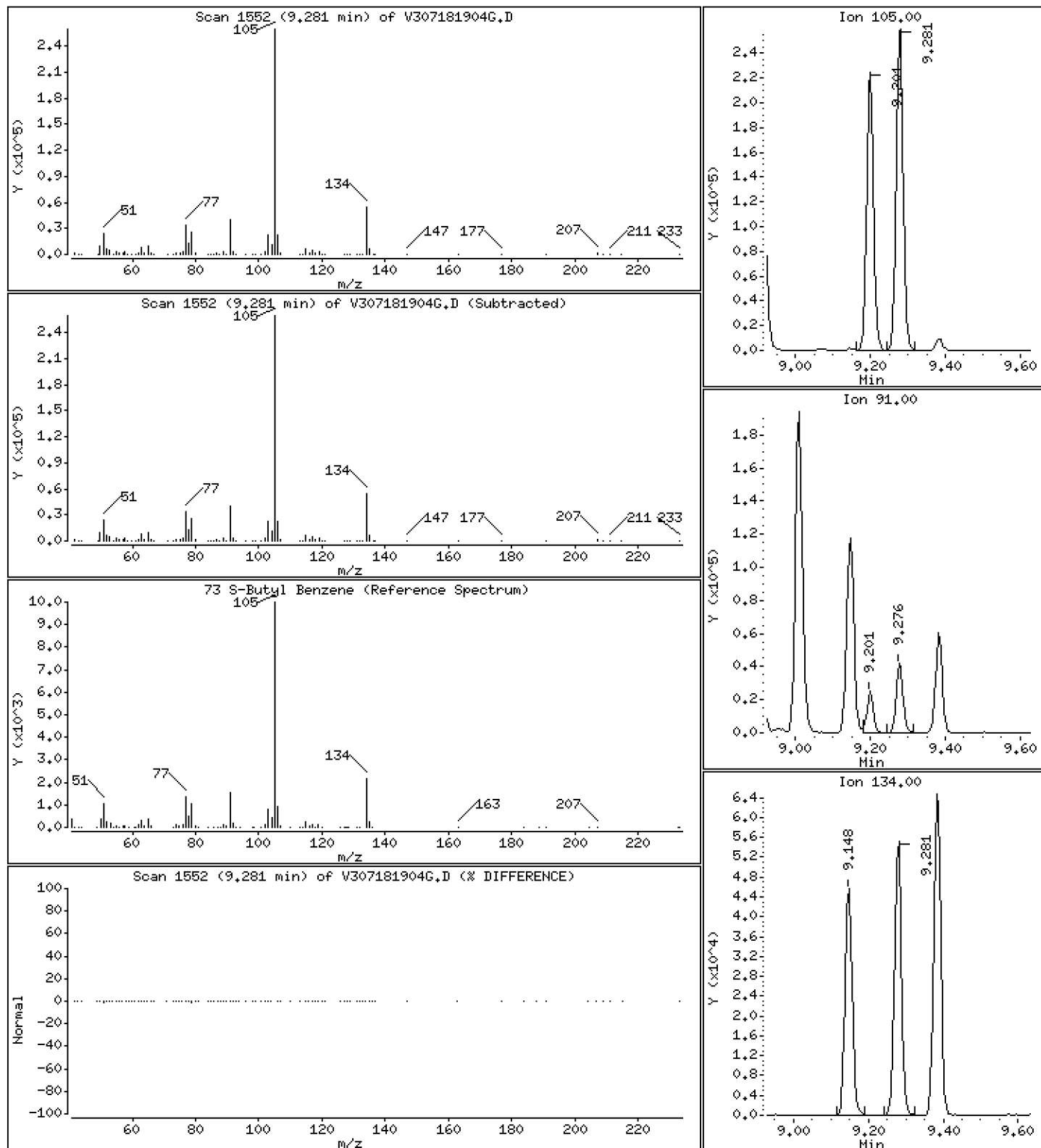
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 9.913 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHG0439-BSD1

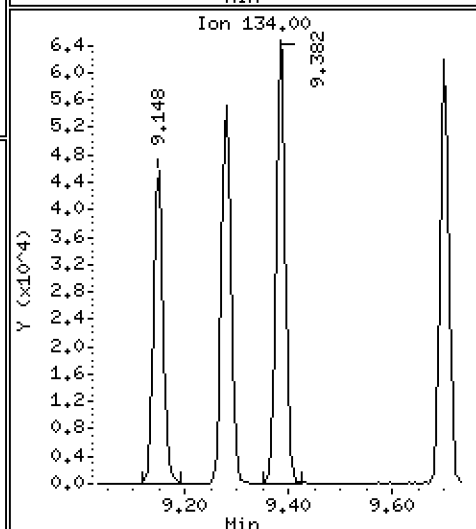
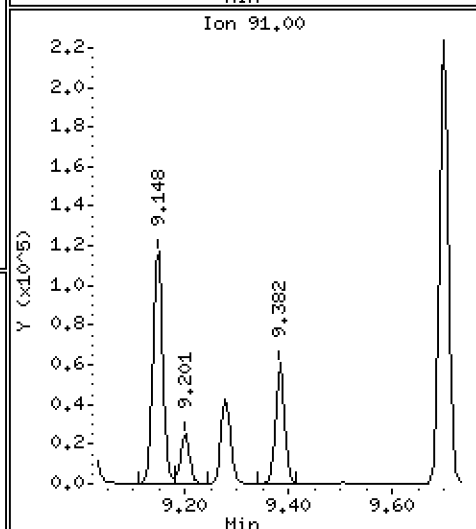
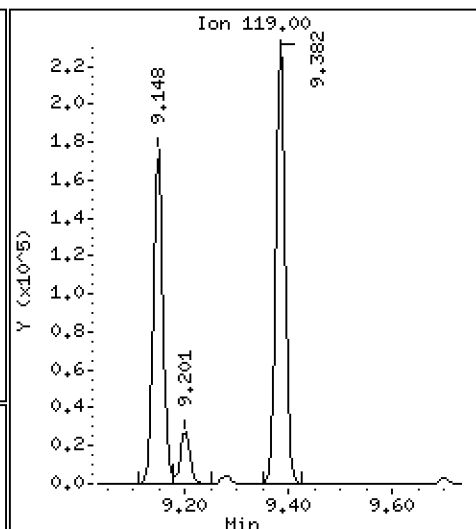
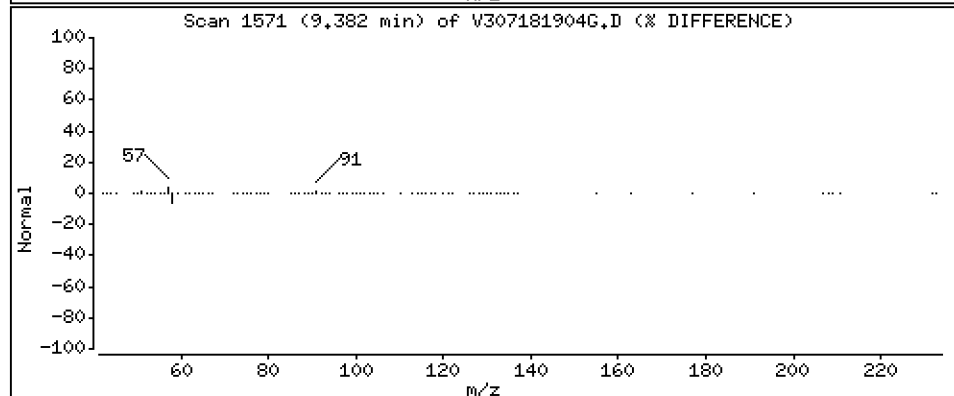
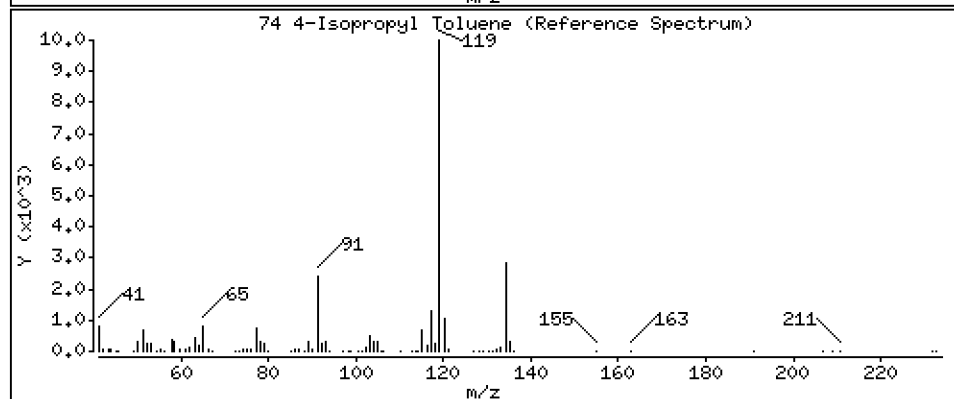
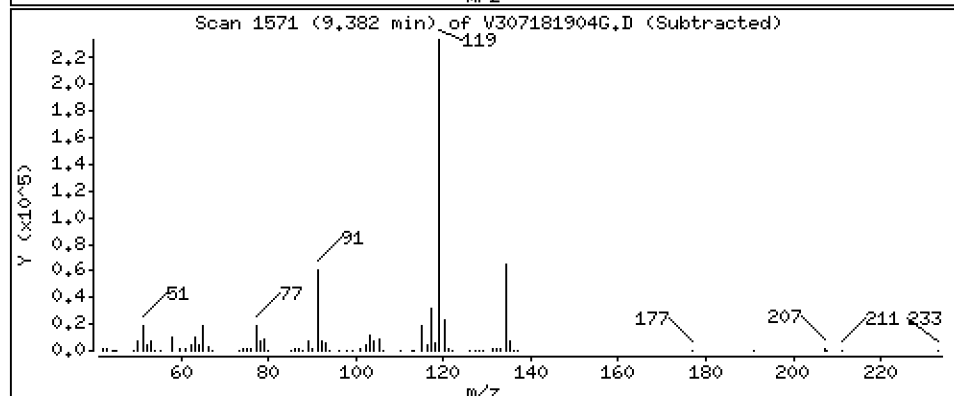
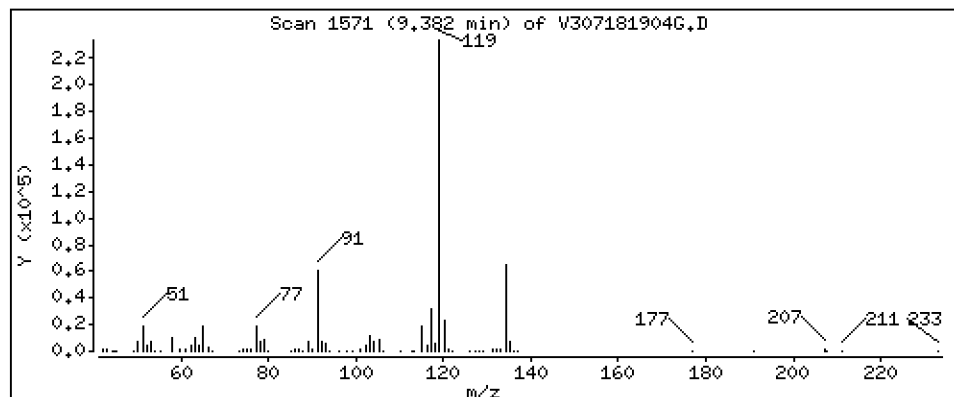
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 10.058 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

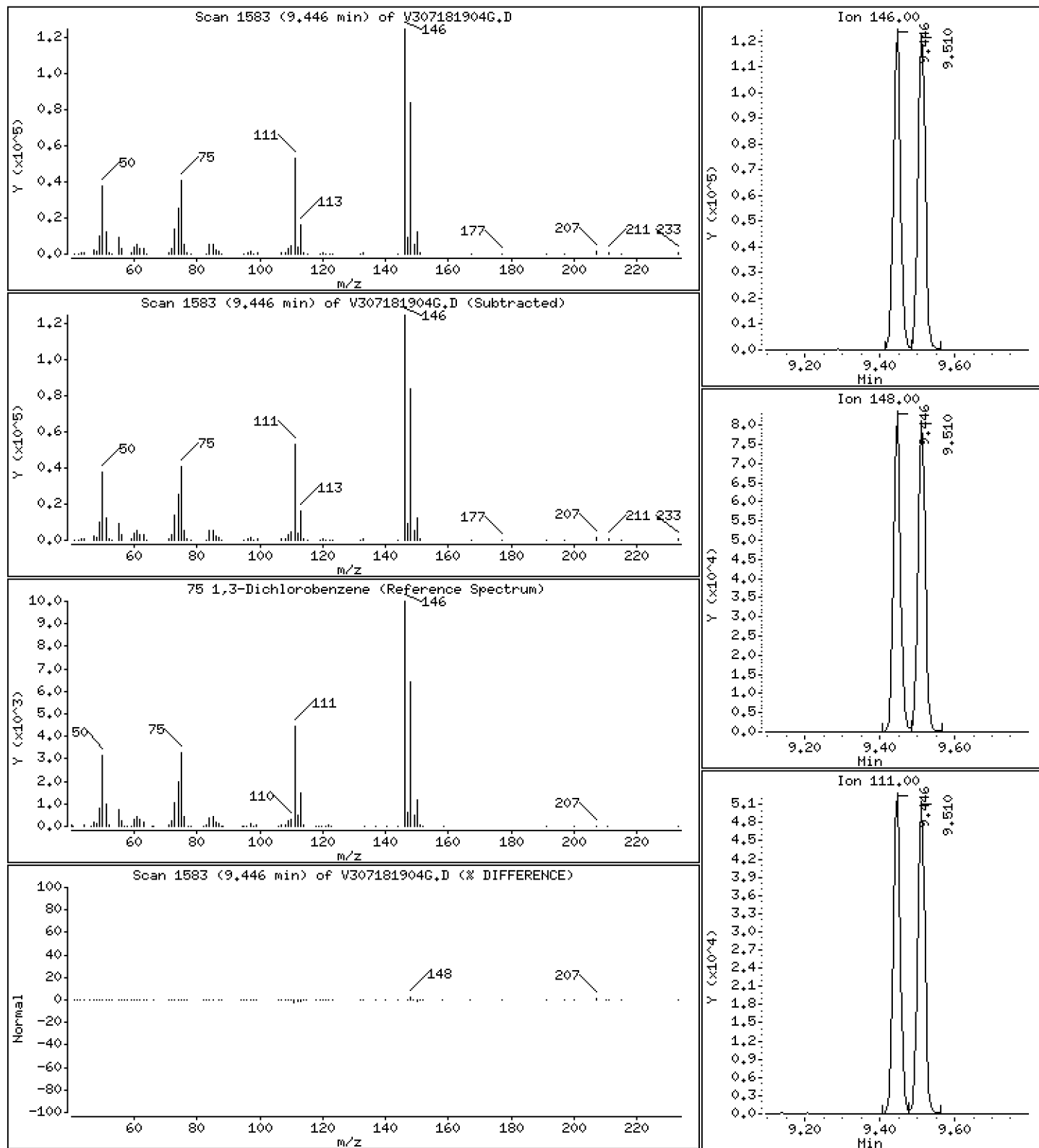
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 9.604 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

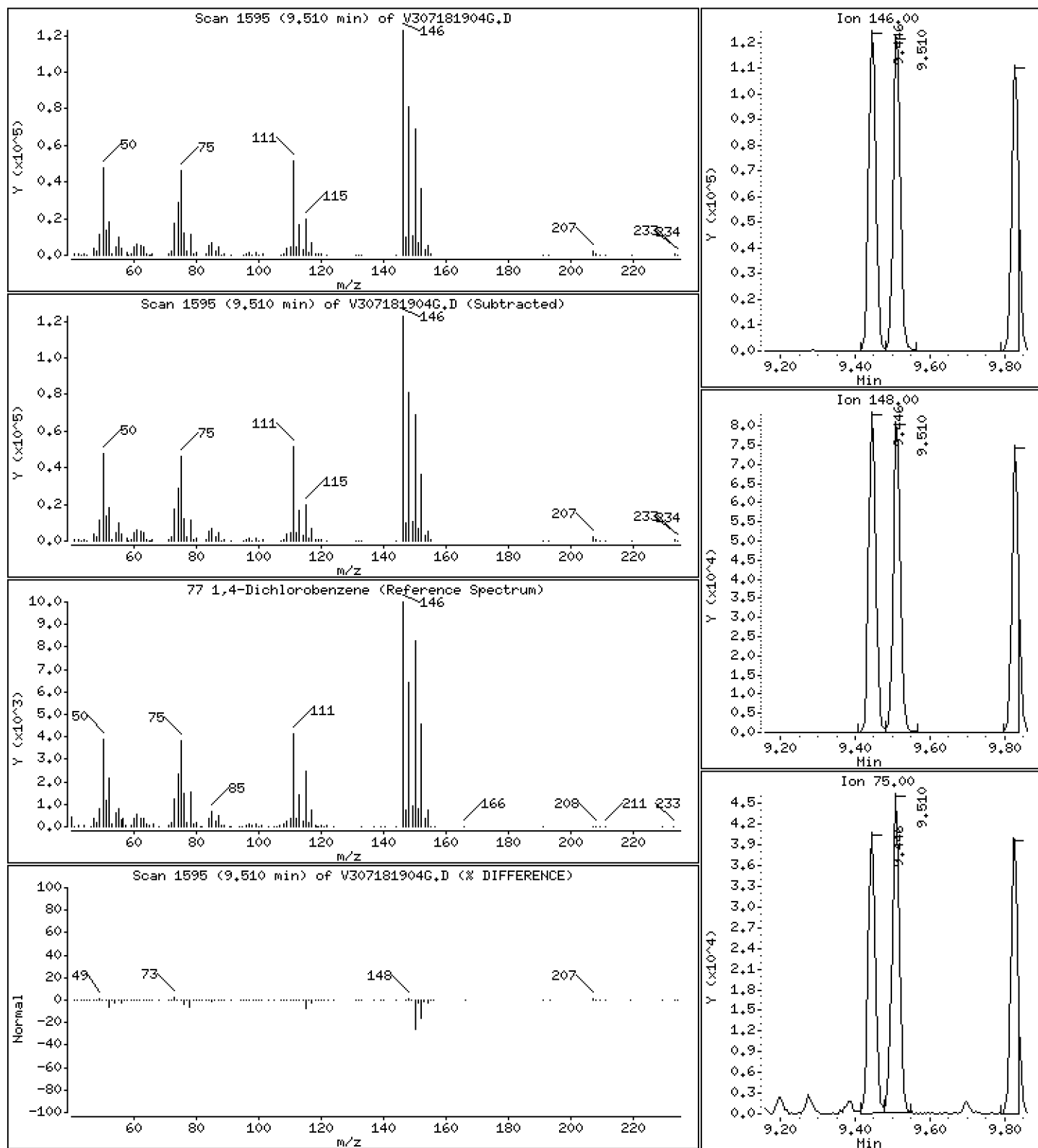
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 9.301 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

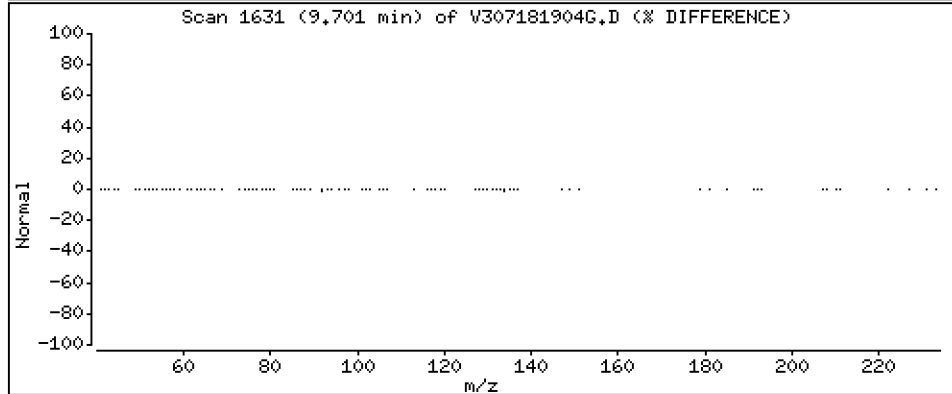
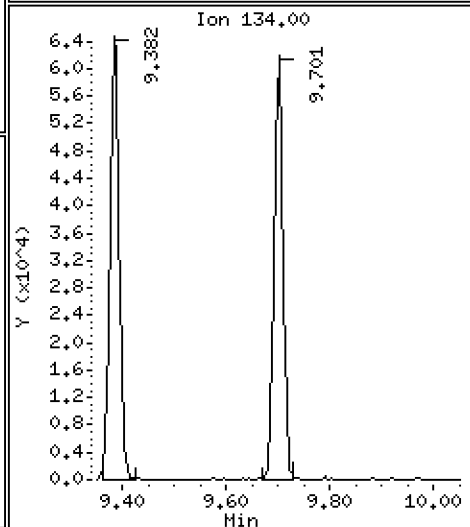
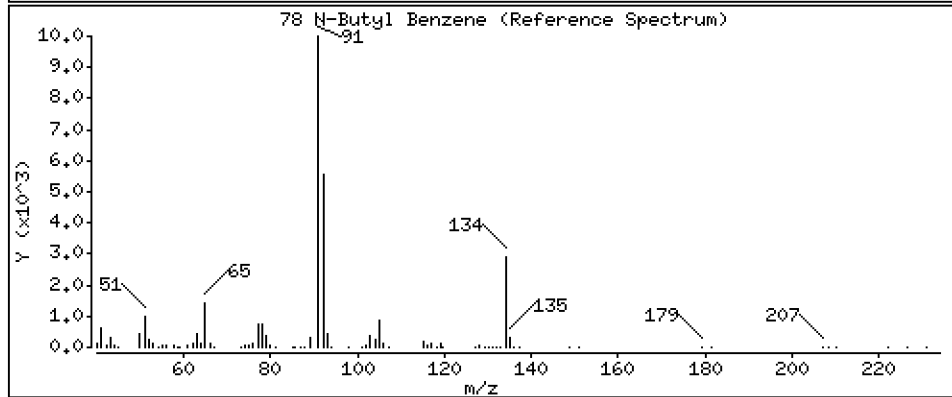
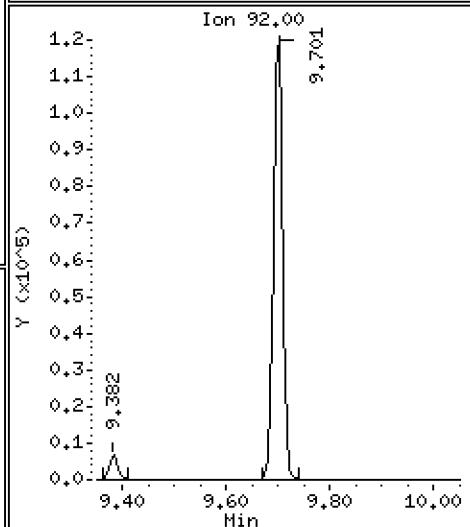
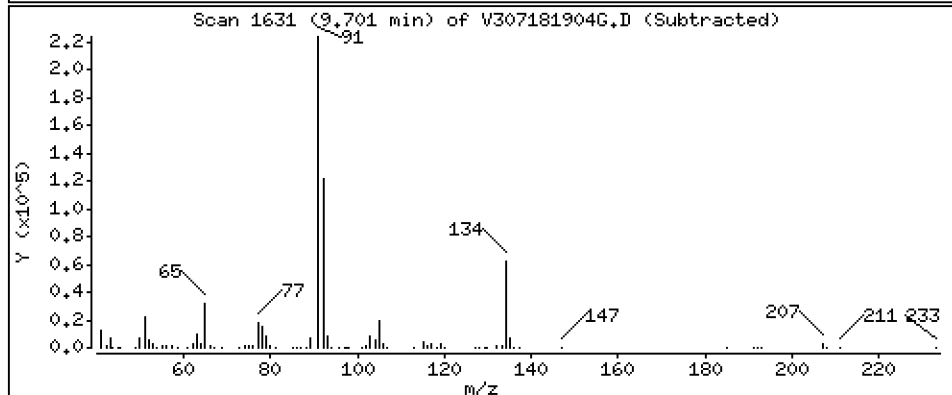
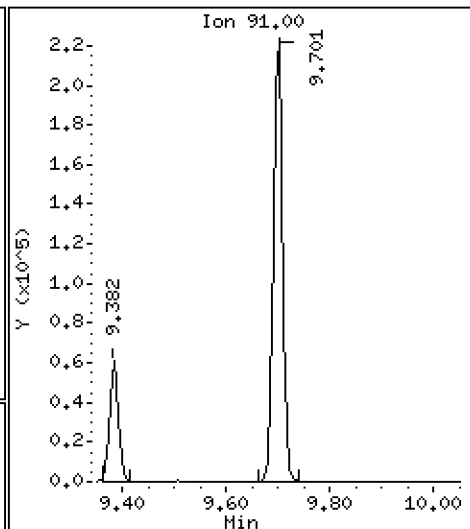
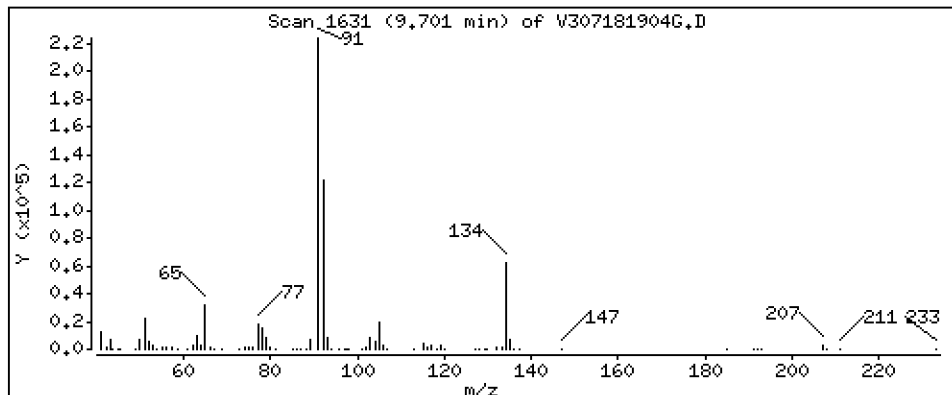
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 10,279 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

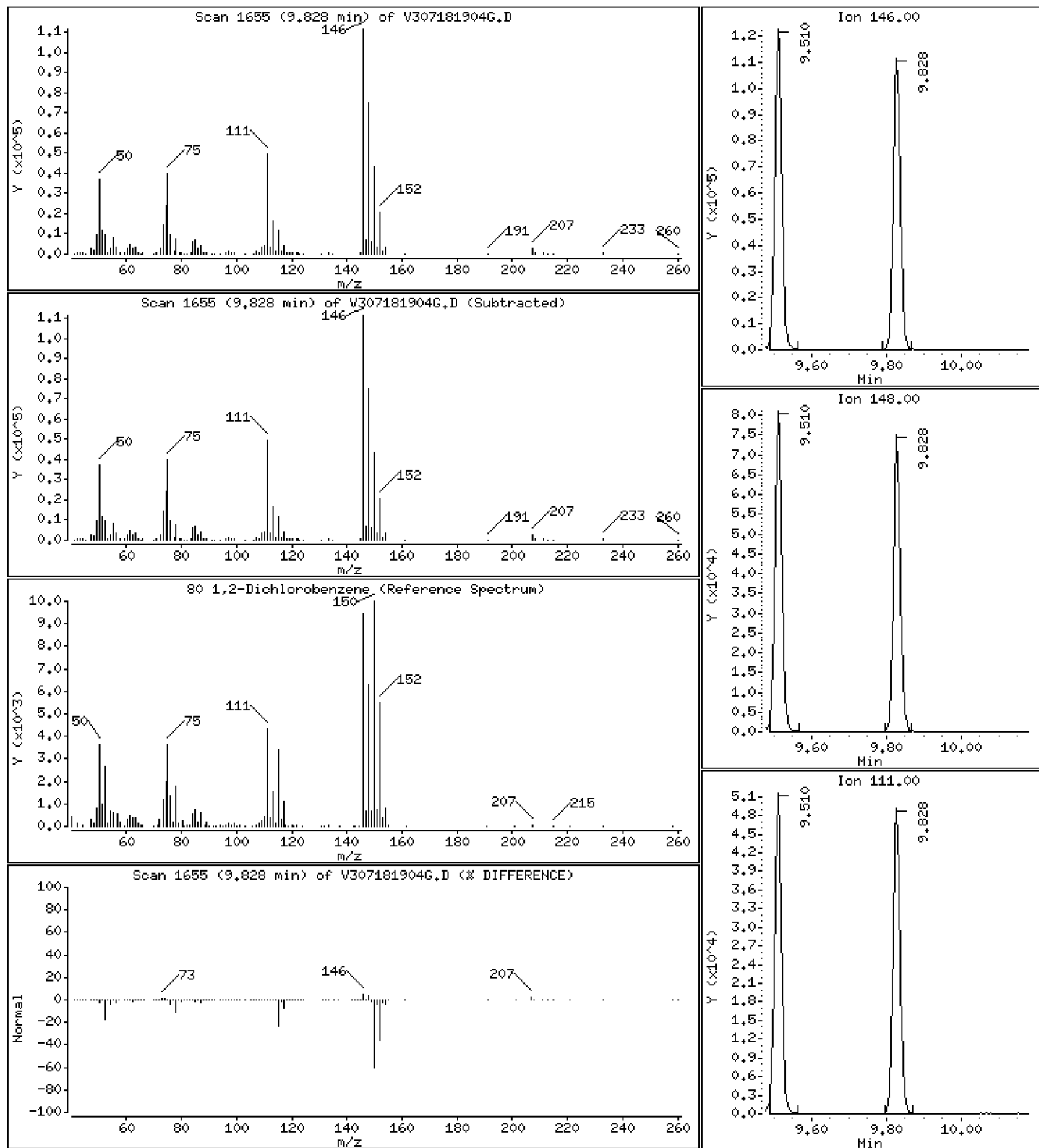
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 9.637 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

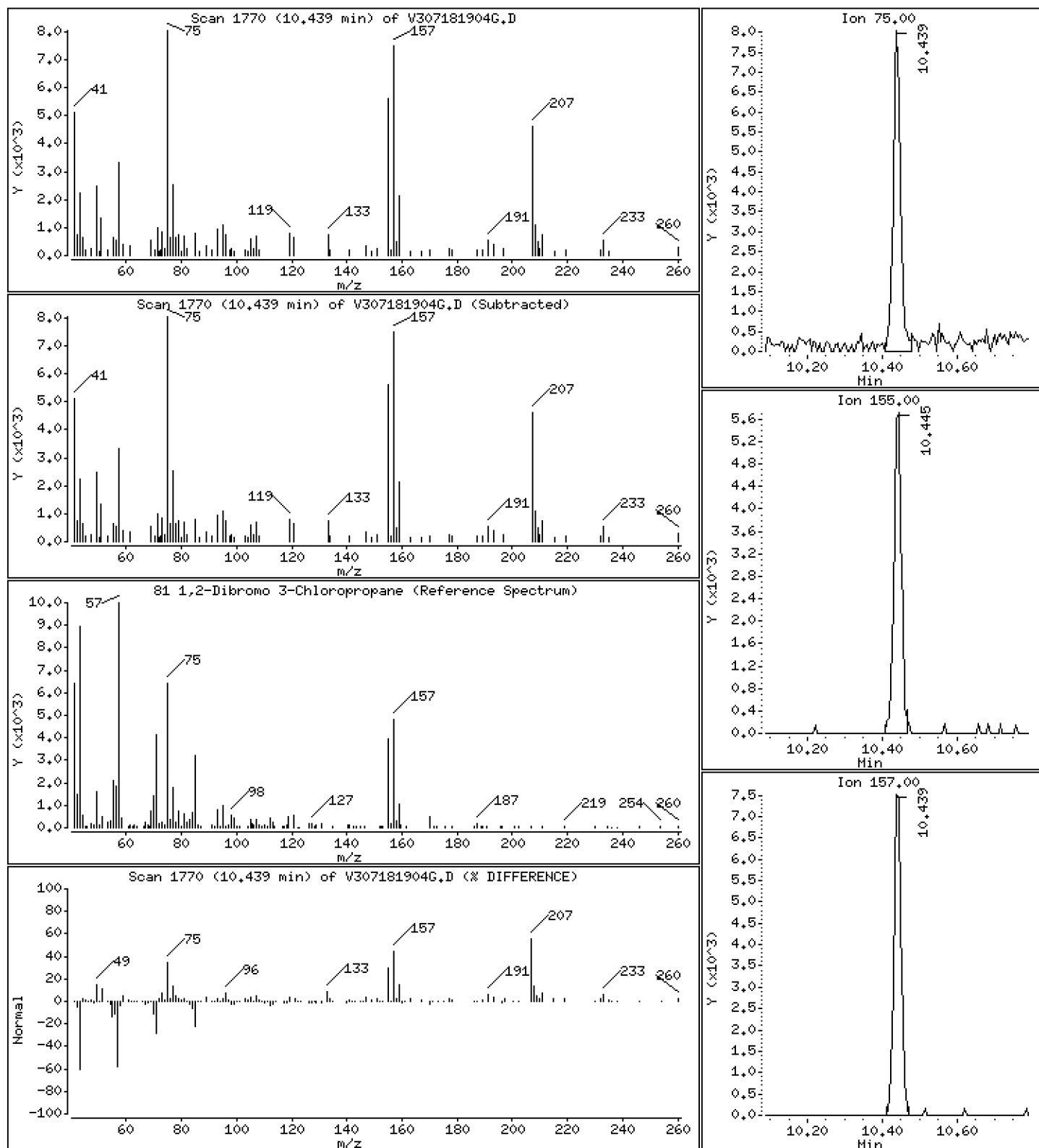
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 9.634 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

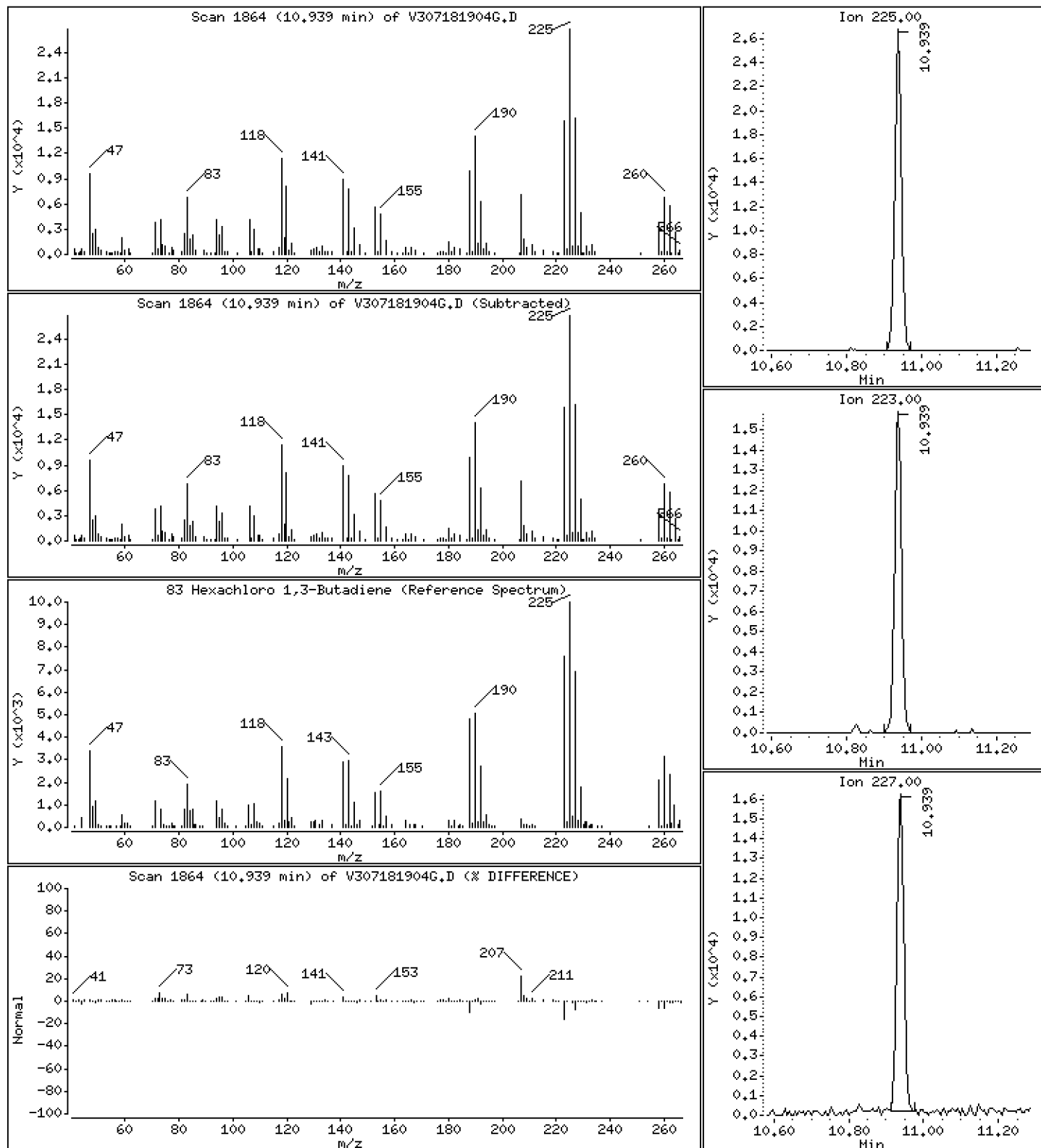
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

83 Hexachloro 1,3-Butadiene

Concentration: 10,672 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

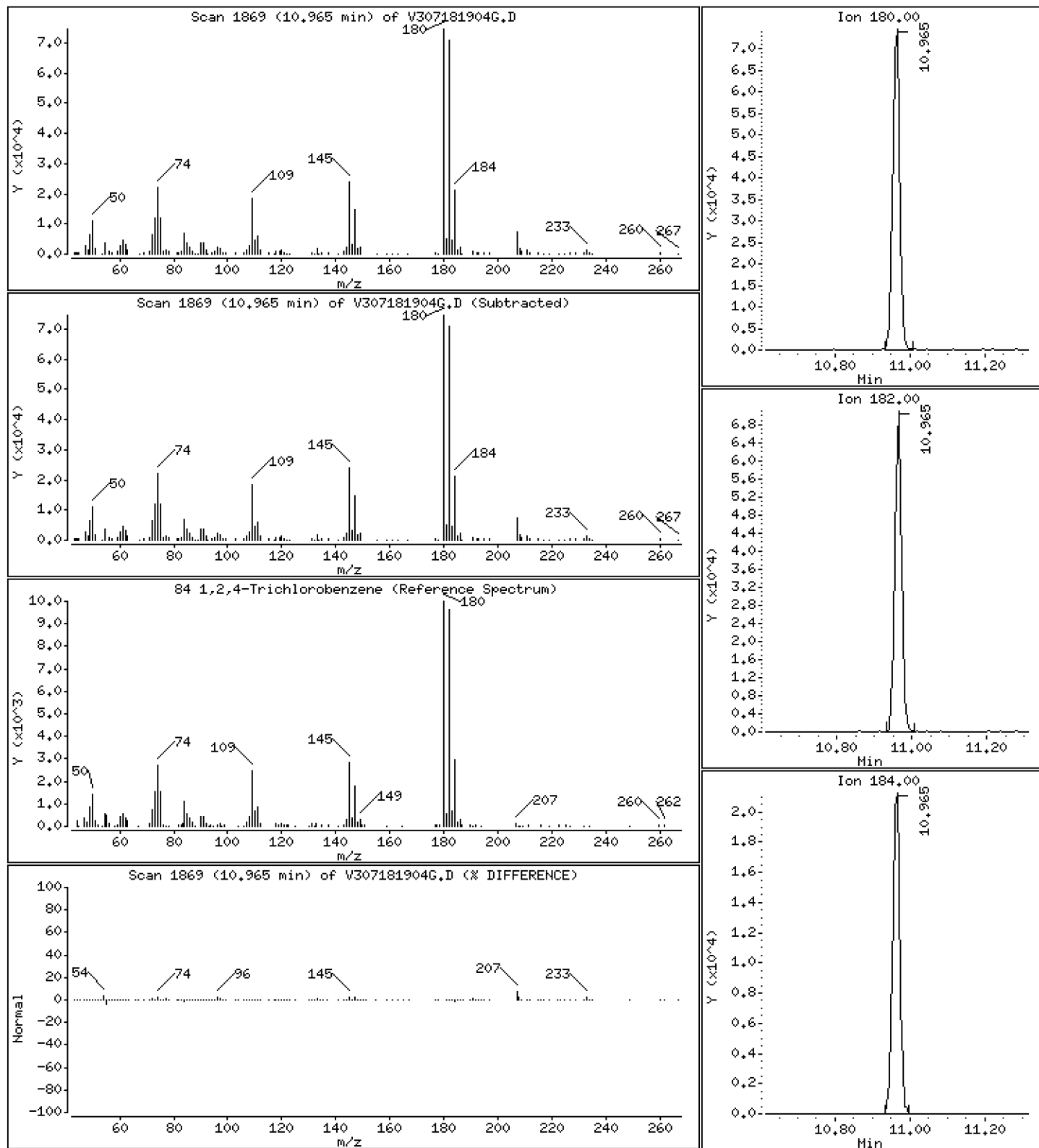
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

84 1,2,4-Trichlorobenzene

Concentration: 10,221 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

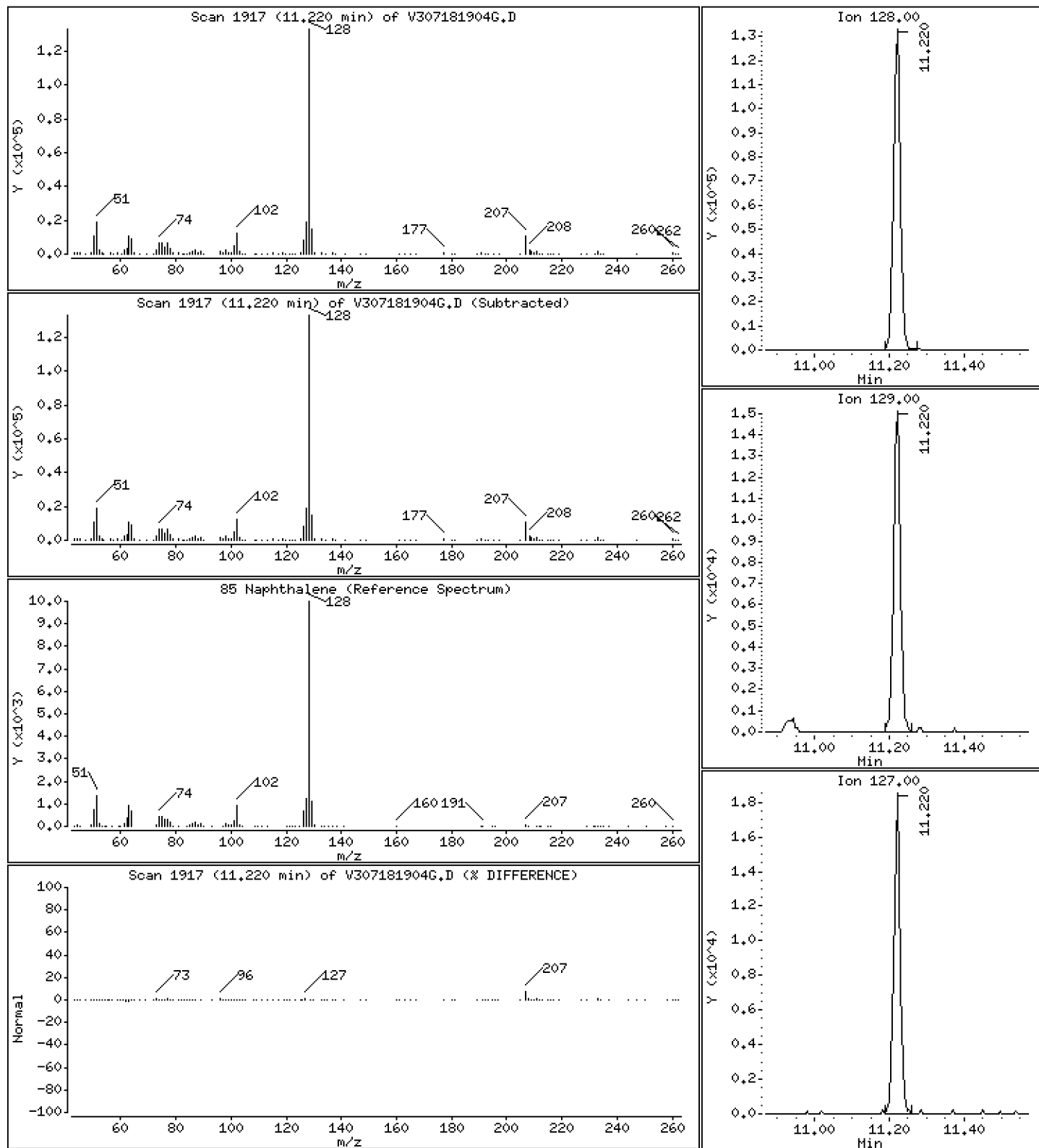
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

85 Naphthalene

Concentration: 10,334 ug/L



Date : 18-JUL-2019 10:36

Client ID:

Instrument: nt3.i

Sample Info: BHC0439-BSD1

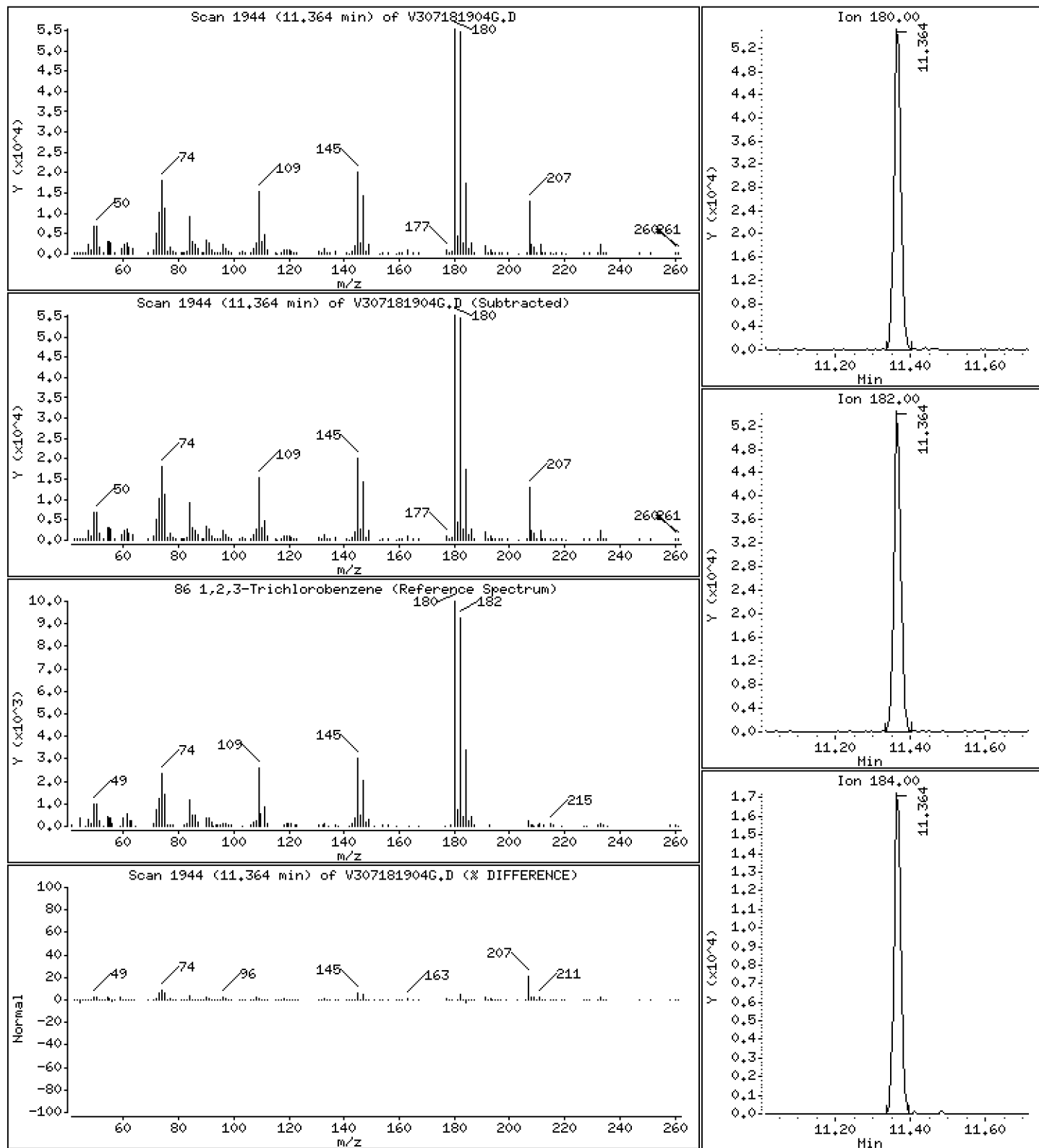
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

86 1,2,3-Trichlorobenzene

Concentration: 9.721 ug/L



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718.b\V307181904G.D
Lab Smp Id: BHG0439-BSD1
Inj Date : 18-JUL-2019 10:36
Operator : PKC
Smp Info : BHG0439-BSD1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i
Cal Date : 16-JUL-2019 20:19
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i

Quant Type: ISTD

Cal File: V307161926.D

QC Sample: LCS

Compound Sublist: mdl.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)
1 Dichlorodifluoromethane	85	1.677	1.688	(0.311)	79548	9.00391	9.004
2 Chloromethane	50	1.879	1.890	(0.348)	207704	8.74312	8.743
3 Vinyl Chloride	62	1.964	1.975	(0.364)	143153	8.95561	8.956
4 Bromomethane	94	2.267	2.278	(0.420)	59643	9.01122	9.011
5 Chloroethane	64	2.389	2.394	(0.442)	73875	9.20374	9.204
6 Trichlorofluoromethane	101	2.501	2.506	(0.463)	104243	9.26813	9.268
7 1,1-Dichloroethene	61	2.958	2.968	(0.548)	145769	9.07568	9.076
8 Carbon Disulfide	76	2.968	2.974	(0.550)	182883	9.17801	9.178
9 112Trichloro122Trifluoroethane	101	3.037	3.043	(0.562)	58608	9.81989	9.820
10 Iodomethane	142	3.091	3.101	(0.572)	86988	9.36750	9.367
11 Bromoethane	108	3.218	3.229	(0.596)	40003	9.03254	9.033
12 Acrolein	56	3.340	3.335	(0.618)	74024	55.2116	55.212
13 Methylene Chloride	84	3.542	3.547	(0.656)	64987	9.95790	9.958
14 Acetone	43	3.686	3.643	(0.682)	102656	47.5006	47.501 (H)
15 Trans-1,2-Dichloroethene	96	3.691	3.696	(0.683)	63422	8.97807	8.978
17 Methyl tert butyl ether	73	3.824	3.824	(0.708)	122079	9.20949	9.209
18 1,1-Dichloroethane	63	4.238	4.243	(0.785)	147406	9.13342	9.133
19 Acrylonitrile	53	4.318	4.307	(0.799)	25128	10.2561	10.256
20 Vinyl Acetate	43	4.477	4.477	(0.829)	172959	9.50302	9.503
22 Cis-1,2-Dichloroethene	96	4.685	4.684	(0.867)	66331	9.37559	9.376
23 2,2-Dichloropropane	77	4.764	4.764	(0.882)	65617	9.99050	9.991
24 Bromochloromethane	128	4.839	4.839	(0.896)	26074	9.16987	9.170
25 Chloroform	83	4.902	4.908	(0.908)	106922	9.23848	9.238
26 Carbon Tetrachloride	117	4.993	4.998	(0.863)	83315	9.20677	9.207
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.933)	19865	4.73961	4.740 (R)
28 1,1,1-Trichloroethane	97	5.046	5.051	(0.934)	93175	9.09201	9.092
30 1,1-Dichloropropene	75	5.141	5.141	(0.889)	88037	9.74564	9.746
29 2-Butanone	43	5.173	5.157	(0.958)	189603	50.6151	50.615
31 Benzene	78	5.327	5.327	(0.921)	259255	9.58793	9.588
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	81908	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.434	5.434	(1.006)	26283	4.76198	4.762 (R)
34 1,2-Dichloroethane	62	5.482	5.481	(0.948)	87176	9.20737	9.207
36 Trichloroethene	130	5.753	5.752	(0.994)	58810	9.40766	9.408
* 37 1,4-Difluorobenzene	114	5.784	5.784	(1.000)	133400	10.0000	

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
38 Dibromomethane	93	6.050	6.055	(1.046)	29391	9.45685	9.457		
39 1,2-Dichloropropane	63	6.124	6.124	(1.059)	84144	9.62993	9.630		
40 Bromodichloromethane	83	6.172	6.172	(1.067)	77067	9.42417	9.424		
173 2-Pentanone	86	6.401	6.395	(1.107)	29753	53.0093	53.009		
41 2-Chloroethyl Vinyl Ether	63	6.571	6.571	(1.136)	35587	9.86488	9.865		
42 Cis 1,3-dichloropropene	75	6.608	6.608	(1.142)	100621	9.72080	9.721		
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	88389	5.05023	5.050 (R)		
44 Toluene	92	6.773	6.773	(1.171)	160930	9.49338	9.493		
46 Tetrachloroethene	166	7.033	7.038	(0.900)	63385	9.39231	9.392		
45 4-Methyl-2-Pentanone	58	7.038	7.038	(1.217)	123313	50.2789	50.279		
47 Trans 1,3-Dichloropropene	75	7.060	7.065	(1.220)	84213	9.85576	9.856		
48 1,1,2-Trichloroethane	97	7.171	7.171	(1.240)	45271	9.98622	9.986		
49 Chlorodibromomethane	129	7.293	7.299	(0.933)	49253	9.45882	9.459		
50 1,3-Dichloropropane	76	7.362	7.362	(0.942)	83745	9.80942	9.809		
51 1,2-Dibromoethane	107	7.463	7.463	(1.290)	40082	9.42492	9.425		
52 2-Hexanone	43	7.618	7.617	(0.975)	282638	51.2205	51.221		
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	138454	10.0000			
54 Chlorobenzene	112	7.825	7.825	(1.001)	180891	9.57611	9.576		
55 Ethyl Benzene	106	7.841	7.841	(1.003)	99580	9.87769	9.878		
56 1,1,1,2-Tetrachloroethane	131	7.873	7.872	(1.007)	61045	9.27818	9.278		
57 m,p-xylene	106	7.942	7.942	(1.016)	250794	19.8723	19.872		
58 o-Xylene	106	8.250	8.250	(1.056)	122211	9.87718	9.877		
59 Styrene	104	8.287	8.287	(1.061)	193567	10.2710	10.271		
60 Bromoform	173	8.308	8.308	(0.875)	28967	9.54422	9.544		
61 Isopropyl Benzene	105	8.473	8.473	(0.892)	317609	9.95454	9.955		
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	27778	5.05269	5.053 (R)		
63 Bromobenzene	156	8.755	8.755	(0.922)	75527	9.59792	9.598		
64 N-Propyl Benzene	91	8.771	8.770	(0.923)	396401	9.90791	9.908		
65 1,1,2,2-Tetrachloroethane	83	8.824	8.824	(0.929)	56636	9.21642	9.216		
66 2-Chloro Toluene	91	8.887	8.887	(0.936)	270444	9.73750	9.738		
67 1,3,5-Trimethyl Benzene	105	8.914	8.914	(0.938)	287424	10.1891	10.189		
68 1,2,3-Trichloropropane	110	8.930	8.930	(0.940)	17093	9.66390	9.664		
69 Trans-1,4-Dichloro 2-Butene	53	8.956	8.956	(0.943)	25536	8.93376	8.934		
70 4-Chloro Toluene	91	9.010	9.010	(0.949)	255753	9.90786	9.908		
71 T-Butyl Benzene	119	9.148	9.148	(0.963)	230938	9.94240	9.942		
72 1,2,4-Trimethylbenzene	105	9.201	9.201	(0.969)	292221	10.2331	10.233		
73 S-Butyl Benzene	105	9.281	9.275	(0.977)	344228	9.91341	9.913		
74 4-Isopropyl Toluene	119	9.382	9.381	(0.988)	299204	10.0585	10.058		
75 1,3-Dichlorobenzene	146	9.445	9.445	(0.994)	166973	9.60388	9.604		
* 76 d4-1,4-Dichlorobenzene	152	9.498	9.498	(1.000)	84628	10.0000			
77 1,4-Dichlorobenzene	146	9.509	9.509	(1.001)	166944	9.30089	9.301		
78 N-Butyl Benzene	91	9.700	9.700	(1.021)	279355	10.2791	10.279		
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	38918	4.90205	4.902 (R)		
80 1,2-Dichlorobenzene	146	9.828	9.828	(1.035)	152441	9.63698	9.637		
81 1,2-Dibromo 3-Chloropropane	75	10.439	10.439	(1.099)	11167	9.63398	9.634		
83 Hexachloro 1,3-Butadiene	225	10.938	10.938	(1.152)	33509	10.6724	10.672		
84 1,2,4-Trichlorobenzene	180	10.965	10.965	(1.154)	98687	10.2209	10.221		
85 Naphthalene	128	11.220	11.220	(1.181)	172818	10.3342	10.334		
86 1,2,3-Trichlorobenzene	180	11.363	11.363	(1.196)	72911	9.72138	9.721		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
H - Operator selected an alternate compound hit.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181904G.D Calibration Time: 22:11
 Lab Smp Id: BHG0439-BSD1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	81908	11.16
37 1,4-Difluorobenze	116116	58058	232232	133400	14.89
53 d5-Chlorobenzene	124912	62456	249824	138454	10.84
76 d4-1,4-Dichlorobe	77169	38585	154338	84628	9.67

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: BHG0439-BSD1
 Level: Operator: PKC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: allspike.spk Quant Type: ISTD
 Sublist File: mdl.sub
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
1 Dichlorodifluorome	10.000	9.004	90.04	
2 Chloromethane	10.000	8.743	87.43	
3 Vinyl Chloride	10.000	8.956	89.56	
4 Bromomethane	10.000	9.011	90.11	
5 Chloroethane	10.000	9.204	92.04	
6 Trichlorofluoromet	10.000	9.268	92.68	
7 1,1-Dichloroethene	10.000	9.076	90.76	
8 Carbon Disulfide	10.000	9.178	91.78	
9 112Trichloro122Tri	10.000	9.820	98.20	
10 Iodomethane	10.000	9.367	93.67	
11 Bromoethane	10.000	9.033	90.33	
12 Acrolein	50.000	55.212	110.42	
13 Methylene Chloride	10.000	9.958	99.58	
14 Acetone	50.000	47.501	95.00	
15 Trans-1,2-Dichloro	10.000	8.978	89.78	
17 Methyl tert butyl	10.000	9.209	92.09	
18 1,1-Dichloroethane	10.000	9.133	91.33	
19 Acrylonitrile	10.000	10.256	102.56	
20 Vinyl Acetate	10.000	9.503	95.03	
22 Cis-1,2-Dichloroet	10.000	9.376	93.76	
23 2,2-Dichloropropan	10.000	9.991	99.91	
24 Bromochloromethane	10.000	9.170	91.70	
25 Chloroform	10.000	9.238	92.38	
26 Carbon Tetrachlori	10.000	9.207	92.07	
28 1,1,1-Trichloroeth	10.000	9.092	90.92	
30 1,1-Dichloropropen	10.000	9.746	97.46	
29 2-Butanone	50.000	50.615	101.23	
31 Benzene	10.000	9.588	95.88	
34 1,2-Dichloroethane	10.000	9.207	92.07	
36 Trichloroethene	10.000	9.408	94.08	
38 Dibromomethane	10.000	9.457	94.57	
39 1,2-Dichloropropan	10.000	9.630	96.30	
40 Bromodichlorometha	10.000	9.424	94.24	
173 2-Pentanone	50.000	53.009	106.02	
41 2-Chloroethyl Viny	10.000	9.865	98.65	
42 Cis 1,3-dichloropr	10.000	9.721	97.21	
44 Toluene	10.000	9.493	94.93	
46 Tetrachloroethene	10.000	9.392	93.92	
45 4-Methyl-2-Pentano	50.000	50.279	100.56	
47 Trans 1,3-Dichloro	10.000	9.856	98.56	

SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
48 1,1,2-Trichloroeth	10.000	9.986	99.86	
49 Chlorodibromometha	10.000	9.459	94.59	
50 1,3-Dichloropropan	10.000	9.809	98.09	
51 1,2-Dibromoethane	10.000	9.425	94.25	
52 2-Hexanone	50.000	51.221	102.44	
54 Chlorobenzene	10.000	9.576	95.76	
55 Ethyl Benzene	10.000	9.878	98.78	
56 1,1,1,2-Tetrachlor	10.000	9.278	92.78	
57 m,p-xylene	20.000	19.872	99.36	
58 o-Xylene	10.000	9.877	98.77	
59 Styrene	10.000	10.271	102.71	
60 Bromoform	10.000	9.544	95.44	
61 Isopropyl Benzene	10.000	9.955	99.55	
63 Bromobenzene	10.000	9.598	95.98	
64 N-Propyl Benzene	10.000	9.908	99.08	
65 1,1,2,2-Tetrachlor	10.000	9.216	92.16	
66 2-Chloro Toluene	10.000	9.738	97.38	
67 1,3,5-Trimethyl Be	10.000	10.189	101.89	
68 1,2,3-Trichloropro	10.000	9.664	96.64	
69 Trans-1,4-Dichloro	10.000	8.934	89.34	
70 4-Chloro Toluene	10.000	9.908	99.08	
71 T-Butyl Benzene	10.000	9.942	99.42	
72 1,2,4-Trimethylben	10.000	10.233	102.33	
73 S-Butyl Benzene	10.000	9.913	99.13	
74 4-Isopropyl Toluen	10.000	10.058	100.58	
75 1,3-Dichlorobenzen	10.000	9.604	96.04	
77 1,4-Dichlorobenzen	10.000	9.301	93.01	
78 N-Butyl Benzene	10.000	10.279	102.79	
80 1,2-Dichlorobenzen	10.000	9.637	96.37	
81 1,2-Dibromo 3-Chlo	10.000	9.634	96.34	
83 Hexachloro 1,3-But	10.000	10.672	106.72	
84 1,2,4-Trichloroben	10.000	10.221	102.21	
85 Naphthalene	10.000	10.334	103.34	
86 1,2,3-Trichloroben	10.000	9.721	97.21	

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.740	94.79	
\$ 33 d4-1,2-Dichloroeth	5.000	4.762	95.24	
\$ 43 d8-Toluene	5.000	5.050	101.00	
\$ 62 4-Bromofluorobenze	5.000	5.053	101.05	
\$ 79 d4-1,2-Dichloroben	5.000	4.902	98.04	

REVIEW SUMMARY FOR FILE - V307181904G.D

Lab ID: BHG0439-BSD1
nt3.i, 20190718.b\8260C071619.m, 18-JUL-2019 10:36

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

0.682	0.674	0.0079	Acetone
-------	-------	--------	---------

RRT check based on Ccal File: V307181930G.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *



MS / MS DUPLICATE RECOVERY
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 22:10

Batch: BHG0316

Laboratory ID: BHG0316-MS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: Matrix Spike

Initial/Final: 3.49 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	Q	MS CONCENTRATION (ug/L)	Q	MS % REC. #	QC LIMITS REC.
Chloromethane	50.0	ND	U	47.0		94.0	64 - 132
Vinyl Chloride	50.0	ND	U	47.6		95.3	74 - 135
Bromomethane	50.0	ND	U	49.2		98.4	53 - 144
Chloroethane	50.0	ND	U	51.9		104	55 - 149
Trichlorofluoromethane	50.0	ND	U	52.4		105	61 - 164
Acrolein	250	ND	U	61.7	*	24.7 *	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	ND	U	48.8		97.5	74 - 143
Acetone	250	150		411	*	144 *	48 - 137
1,1-Dichloroethene	50.0	ND	U	45.8		91.6	77 - 134
Bromoethane	50.0	ND	U	44.5		89.0	65 - 145
Iodomethane	50.0	ND	U	45.0		89.9	31 - 162
Methylene Chloride	50.0	3.27	J	45.6		89.0	69 - 129
Acrylonitrile	50.0	ND	U	50.0		100	69 - 134
Carbon Disulfide	50.0	ND	U	46.3		91.5	71 - 137
trans-1,2-Dichloroethene	50.0	ND	U	45.9		91.9	79 - 130
Vinyl Acetate	50.0	ND	U	25.9	*	51.8 *	66 - 141
1,1-Dichloroethane	50.0	ND	U	49.6		99.1	80 - 126
2-Butanone	250	13.7	J	288		113	70 - 132
2,2-Dichloropropane	50.0	ND	U	51.0		102	77 - 138
cis-1,2-Dichloroethene	50.0	ND	U	47.4		94.9	80 - 125
Chloroform	50.0	ND	U	48.9		97.8	80 - 126
Bromochloromethane	50.0	ND	U	48.0		96.0	80 - 129
1,1,1-Trichloroethane	50.0	ND	U	49.0		98.1	78 - 133
1,1-Dichloropropene	50.0	ND	U	44.2		88.4	79 - 120
Carbon tetrachloride	50.0	ND	U	43.1		86.1	71 - 129
1,2-Dichloroethane	50.0	ND	U	44.5		89.0	76 - 120
Benzene	50.0	ND	U	41.4		82.8	80 - 120
Trichloroethene	50.0	ND	U	38.7	*	77.4 *	80 - 120
1,2-Dichloropropane	50.0	ND	U	42.3		84.5	79 - 120
Bromodichloromethane	50.0	ND	U	40.5		80.9	80 - 122



MS / MS DUPLICATE RECOVERY
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 22:10

Batch: BHG0316

Laboratory ID: BHG0316-MS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: Matrix Spike

Initial/Final: 3.49 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	Q	MS CONCENTRATION (ug/L)	Q	MS % REC. #	QC LIMITS REC.
Dibromomethane	50.0	ND	U	40.7		81.3	80 - 120
2-Chloroethyl vinyl ether	50.0	ND	U	0.00	*, U	*	51 - 129
4-Methyl-2-Pentanone	250	ND	U	224		89.6	73 - 121
cis-1,3-Dichloropropene	50.0	ND	U	38.1	*	76.3 *	80 - 120
Toluene	50.0	2.53	J	35.6	*	69.5 *	75 - 120
trans-1,3-Dichloropropene	50.0	ND	U	35.4	*	70.7 *	80 - 124
2-Hexanone	250	ND	U	226		90.2	68 - 122
1,1,2-Trichloroethane	50.0	ND	U	34.4	*	68.8 *	79 - 120
1,3-Dichloropropane	50.0	ND	U	36.6	*	73.2 *	78 - 120
Tetrachloroethene	50.0	ND	U	34.4	*	68.9 *	74 - 124
Dibromochloromethane	50.0	ND	U	32.4	*	64.8 *	74 - 125
1,2-Dibromoethane	50.0	ND	U	33.5	*	67.0 *	80 - 120
Chlorobenzene	50.0	ND	U	27.5	*	55.0 *	78 - 120
Ethylbenzene	50.0	ND	U	31.7	*	63.4 *	80 - 125
1,1,1,2-Tetrachloroethane	50.0	ND	U	31.6	*	63.2 *	80 - 120
m,p-Xylene	100	ND	U	58.4	*	58.4 *	76 - 121
o-Xylene	50.0	ND	U	28.0	*	55.9 *	67 - 132
Xylenes, total	150	ND	U	86.3	*	57.6 *	67 - 132
Styrene	50.0	ND	U	11.3	*	22.5 *	80 - 120
Bromoform	50.0	ND	U	30.9	*	61.8 *	64 - 128
1,1,2,2-Tetrachloroethane	50.0	ND	U	30.6	*	61.1 *	74 - 120
1,2,3-Trichloropropane	50.0	ND	U	32.3	*	64.6 *	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	ND	U	31.7	*	63.4 *	65 - 125
n-Propylbenzene	50.0	ND	U	33.8	*	67.5 *	72 - 124
Bromobenzene	50.0	ND	U	25.4	*	50.8 *	76 - 120
Isopropyl Benzene	50.0	ND	U	37.2		74.5	74 - 121
2-Chlorotoluene	50.0	ND	U	28.3	*	56.5 *	75 - 120
4-Chlorotoluene	50.0	ND	U	25.4	*	50.8 *	69 - 124
t-Butylbenzene	50.0	ND	U	32.8	*	65.7 *	72 - 122
1,3,5-Trimethylbenzene	50.0	ND	U	29.4	*	58.8 *	74 - 122



MS / MS DUPLICATE RECOVERY
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 22:10

Batch: BHG0316

Laboratory ID: BHG0316-MS1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: Matrix Spike

Initial/Final: 3.49 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	Q	MS CONCENTRATION (ug/L)	Q	MS % REC. #	QC LIMITS REC.
1,2,4-Trimethylbenzene	50.0	ND	U	26.4	*	52.9 *	75 - 121
s-Butylbenzene	50.0	ND	U	30.5	*	60.9 *	70 - 128
4-Isopropyl Toluene	50.0	ND	U	30.1	*	60.2 *	75 - 125
1,3-Dichlorobenzene	50.0	ND	U	18.9	*	37.9 *	75 - 120
1,4-Dichlorobenzene	50.0	ND	U	18.6	*	37.2 *	73 - 120
n-Butylbenzene	50.0	ND	U	24.5	*	48.9 *	73 - 130
1,2-Dichlorobenzene	50.0	ND	U	17.3	*	34.6 *	76 - 120
1,2-Dibromo-3-chloropropane	50.0	ND	U	21.6	*	43.3 *	65 - 126
1,2,4-Trichlorobenzene	50.0	ND	U	8.16	*	15.4 *	66 - 140
Hexachloro-1,3-Butadiene	50.0	ND	U	16.6	*	33.1 *	67 - 133
Naphthalene	50.0	ND	U	6.15	*	11.3 *	69 - 125
1,2,3-Trichlorobenzene	50.0	1.45	J	6.66	*	12.3 *	68 - 132
Dichlorodifluoromethane	50.0	ND	U	39.2		78.4	67 - 142
Methyl tert-butyl Ether	50.0	ND	U	53.8		108	79 - 127
2-Pentanone	250	ND	U	240		96.1	77 - 120

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 22:32

Batch: BHG0316

Laboratory ID: BHG0316-MSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: Matrix Spike Dup

Initial/Final: 2.72 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Chloromethane	50.0	40.2		80.4	15.6	30	64 - 132
Vinyl Chloride	50.0	41.9		83.8	12.8	30	74 - 135
Bromomethane	50.0	44.1		88.3	10.9	30	53 - 144
Chloroethane	50.0	33.7	*	67.4	42.6 *	30	55 - 149
Trichlorofluoromethane	50.0	39.5		79.0	28.1	30	61 - 164
Acrolein	250	53.5	*	21.4 *	14.3	30	59 - 140
1,1,2-Trichloro-1,2,2-Trifluoroethane	50.0	42.4		84.8	14.0	30	74 - 143
Acetone	250	408	*	148 *	0.552	30	48 - 137
1,1-Dichloroethene	50.0	41.8		83.6	9.11	30	77 - 134
Bromoethane	50.0	41.0		81.9	8.26	30	65 - 145
Iodomethane	50.0	39.5		78.9	13.1	30	31 - 162
Methylene Chloride	50.0	42.5		83.4	6.98	30	69 - 129
Acrylonitrile	50.0	44.8		89.6	11.1	30	69 - 134
Carbon Disulfide	50.0	40.9		81.0	12.4	30	71 - 137
trans-1,2-Dichloroethene	50.0	41.1		82.2	11.2	30	79 - 130
Vinyl Acetate	50.0	20.4	*	40.8 *	23.6	30	66 - 141
1,1-Dichloroethane	50.0	44.7		89.5	10.2	30	80 - 126
2-Butanone	250	295		117	2.25	30	70 - 132
2,2-Dichloropropane	50.0	47.7		95.3	6.77	30	77 - 138
cis-1,2-Dichloroethene	50.0	42.4		84.8	11.2	30	80 - 125
Chloroform	50.0	47.5		95.0	2.93	30	80 - 126
Bromochloromethane	50.0	45.0		89.9	6.52	30	80 - 129
1,1,1-Trichloroethane	50.0	50.3		101	2.49	30	78 - 133
1,1-Dichloropropene	50.0	51.9		104	16.0	30	79 - 120
Carbon tetrachloride	50.0	48.6		97.2	12.1	30	71 - 129
1,2-Dichloroethane	50.0	49.6		99.2	10.8	30	76 - 120
Benzene	50.0	52.2		104	23.0	30	80 - 120
Trichloroethene	50.0	40.5		81.0	4.51	30	80 - 120
1,2-Dichloropropane	50.0	45.7		91.4	7.84	30	79 - 120
Bromodichloromethane	50.0	44.3		88.6	9.05	30	80 - 122
Dibromomethane	50.0	45.4		90.8	11.0	30	80 - 120



MS / MS DUPLICATE RECOVERY
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 22:32

Batch: BHG0316

Laboratory ID: BHG0316-MSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: Matrix Spike Dup

Initial/Final: 2.72 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
2-Chloroethyl vinyl ether	50.0	0.00	*, U	*		30	51 - 129
4-Methyl-2-Pentanone	250	248		99.4	10.4	30	73 - 121
cis-1,3-Dichloropropene	50.0	41.9		83.9	9.47	30	80 - 120
Toluene	50.0	38.1	*	74.9	*	30	75 - 120
trans-1,3-Dichloropropene	50.0	40.1		80.1	12.5	30	80 - 124
2-Hexanone	250	359	*	144	*	30	68 - 122
1,1,2-Trichloroethane	50.0	39.5		79.1	14.0	30	79 - 120
1,3-Dichloropropane	50.0	43.4		86.8	17.0	30	78 - 120
Tetrachloroethene	50.0	37.2		74.3	7.58	30	74 - 124
Dibromochloromethane	50.0	39.1		78.2	18.7	30	74 - 125
1,2-Dibromoethane	50.0	37.8	*	75.6	*	30	80 - 120
Chlorobenzene	50.0	31.9	*	63.9	*	30	78 - 120
Ethylbenzene	50.0	35.9	*	71.8	*	30	80 - 125
1,1,1,2-Tetrachloroethane	50.0	37.0	*	73.9	*	30	80 - 120
m,p-Xylene	100	64.3	*	64.3	*	30	76 - 121
o-Xylene	50.0	31.3	*	62.6	*	30	67 - 132
Xylenes, total	150	95.6	*	63.8	*	30	67 - 132
Styrene	50.0	11.3	*	22.6	*	30	80 - 120
Bromoform	50.0	39.9		79.9	25.5	30	64 - 128
1,1,1,2-Tetrachloroethane	50.0	42.4	*	84.8	32.4	30	74 - 120
1,2,3-Trichloropropane	50.0	45.0	*	90.0	33.0	30	73 - 120
trans-1,4-Dichloro 2-Butene	50.0	44.0	*	88.0	32.4	30	65 - 125
n-Propylbenzene	50.0	39.3		78.5	15.0	30	72 - 124
Bromobenzene	50.0	33.2	*	66.4	*	30	76 - 120
Isopropyl Benzene	50.0	44.3		88.7	17.4	30	74 - 121
2-Chlorotoluene	50.0	34.1	*	68.1	*	30	75 - 120
4-Chlorotoluene	50.0	30.9	*	61.9	*	30	69 - 124
t-Butylbenzene	50.0	37.5		75.0	13.3	30	72 - 122
1,3,5-Trimethylbenzene	50.0	33.6	*	67.3	*	30	74 - 122
1,2,4-Trimethylbenzene	50.0	31.4	*	62.8	*	30	75 - 121
s-Butylbenzene	50.0	33.3	*	66.5	*	30	70 - 128



MS / MS DUPLICATE RECOVERY
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/12/19 22:32

Batch: BHG0316

Laboratory ID: BHG0316-MSD1

Preparation: EPA 5035 (Sodium Bisulfate)

Sequence Name: Matrix Spike Dup

Initial/Final: 2.72 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
4-Isopropyl Toluene	50.0	35.3	*	70.6 *	16.0	30	75 - 125
1,3-Dichlorobenzene	50.0	23.4	*	46.9 *	21.2	30	75 - 120
1,4-Dichlorobenzene	50.0	23.4	*	46.8 *	22.9	30	73 - 120
n-Butylbenzene	50.0	26.0	*	52.1 *	6.32	30	73 - 130
1,2-Dichlorobenzene	50.0	21.2	*	42.4 *	20.2	30	76 - 120
1,2-Dibromo-3-chloropropane	50.0	33.2	*	66.4	42.2 *	30	65 - 126
1,2,4-Trichlorobenzene	50.0	9.72	*	18.7 *	17.4	30	66 - 140
Hexachloro-1,3-Butadiene	50.0	14.6	*	29.3 *	12.3	30	67 - 133
Naphthalene	50.0	7.47	*	14.2 *	19.3	30	69 - 125
1,2,3-Trichlorobenzene	50.0	8.23	*	15.7 *	21.1	30	68 - 132
Dichlorodifluoromethane	50.0	37.5		75.1	4.32	30	67 - 142
Methyl tert-butyl Ether	50.0	49.0		98.1	9.19	30	79 - 127
2-Pentanone	250	266		107	10.2	30	77 - 120

* Values outside of QC limits

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121925.D

Date : 12-JUL-2019 22:10

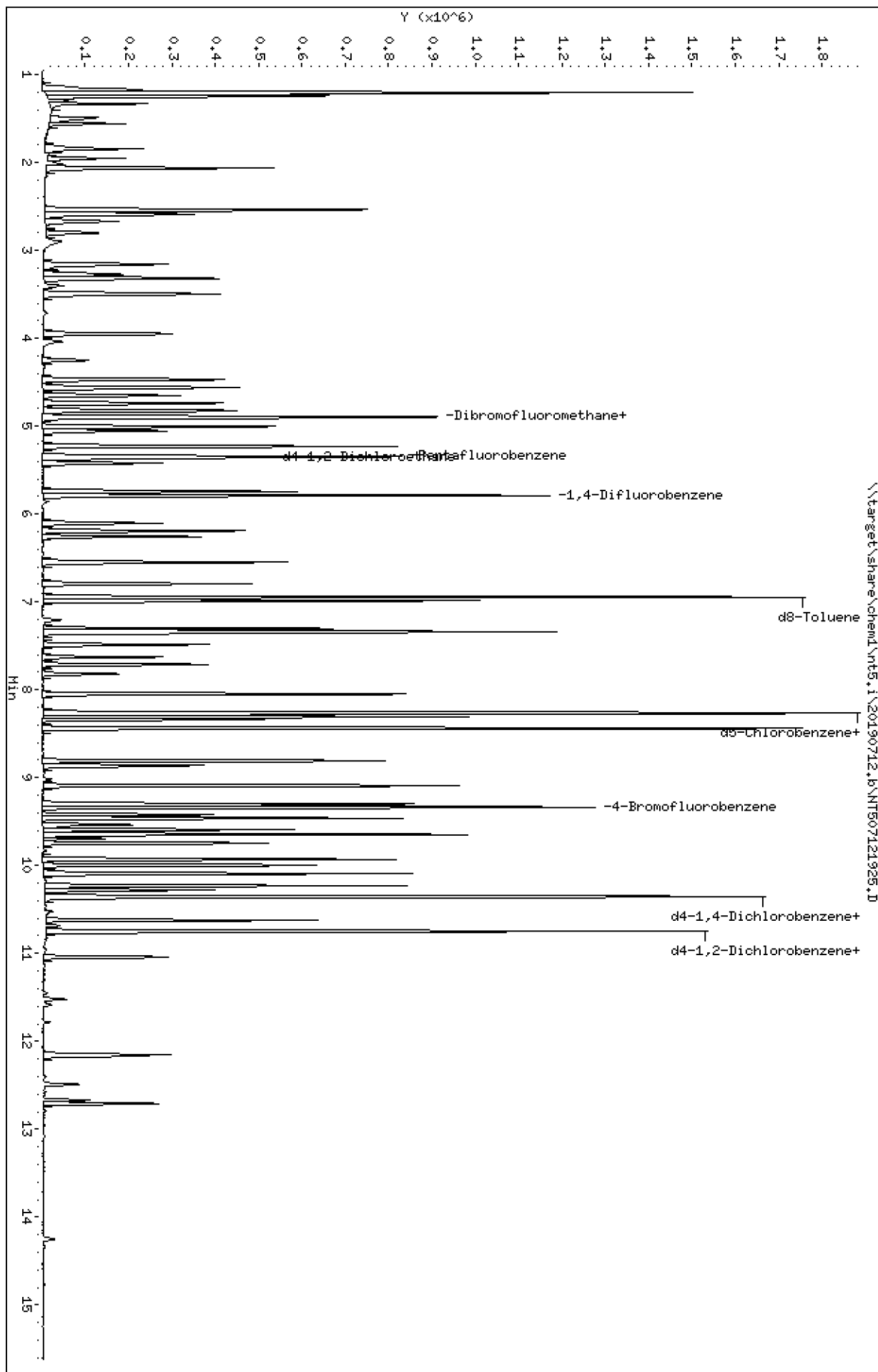
Client ID:

Sample Info: BHC0316-MS1

Page 1

Column phase: RTXWMS

Instrument: nt5.i
Operator: PB
Column diameter: 0.18



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

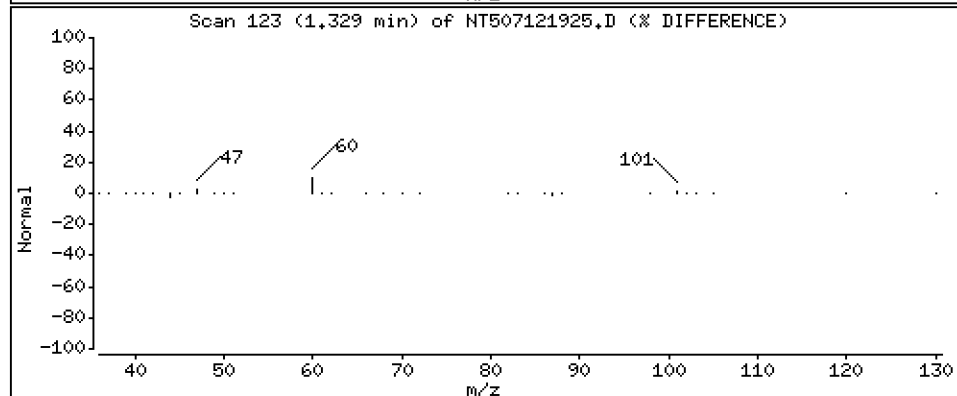
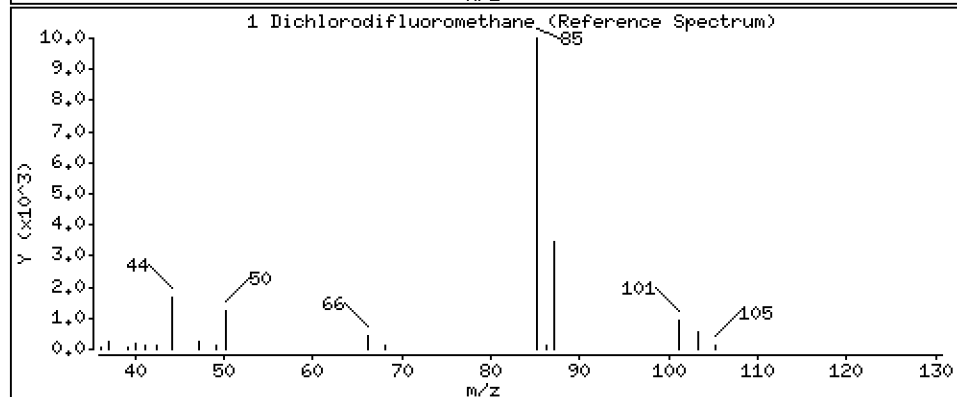
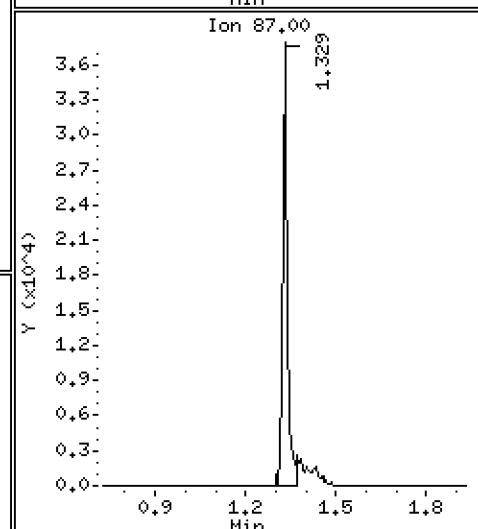
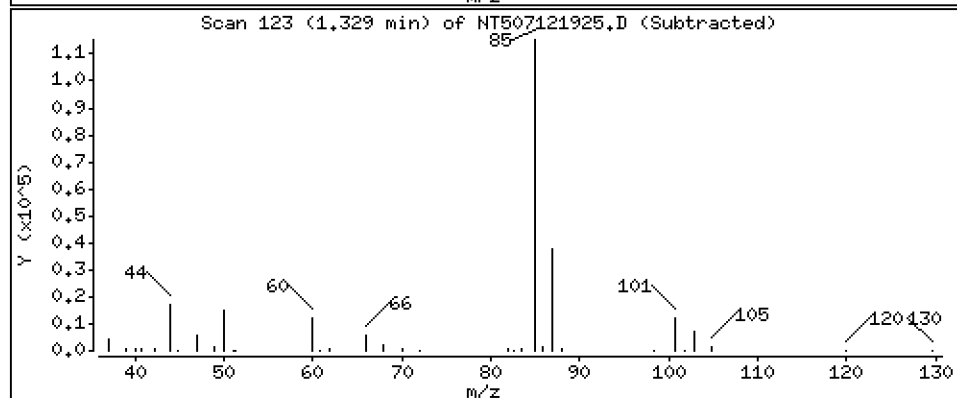
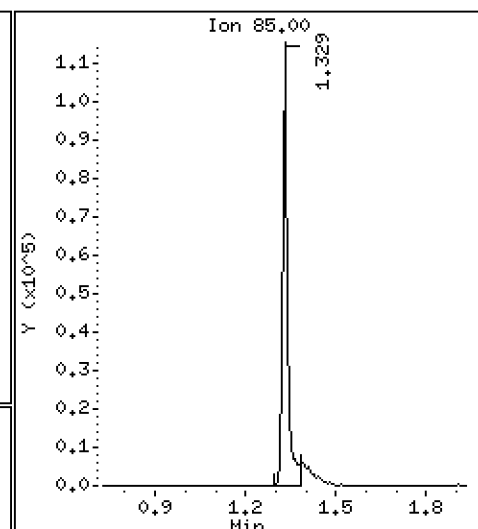
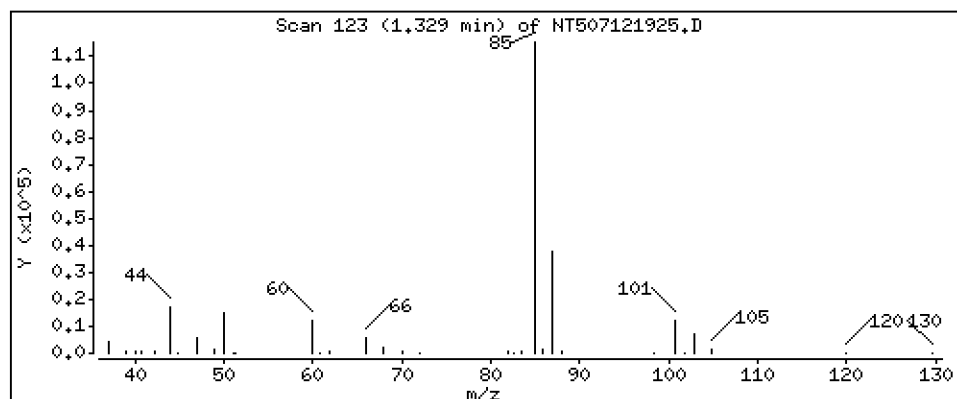
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 39,191 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

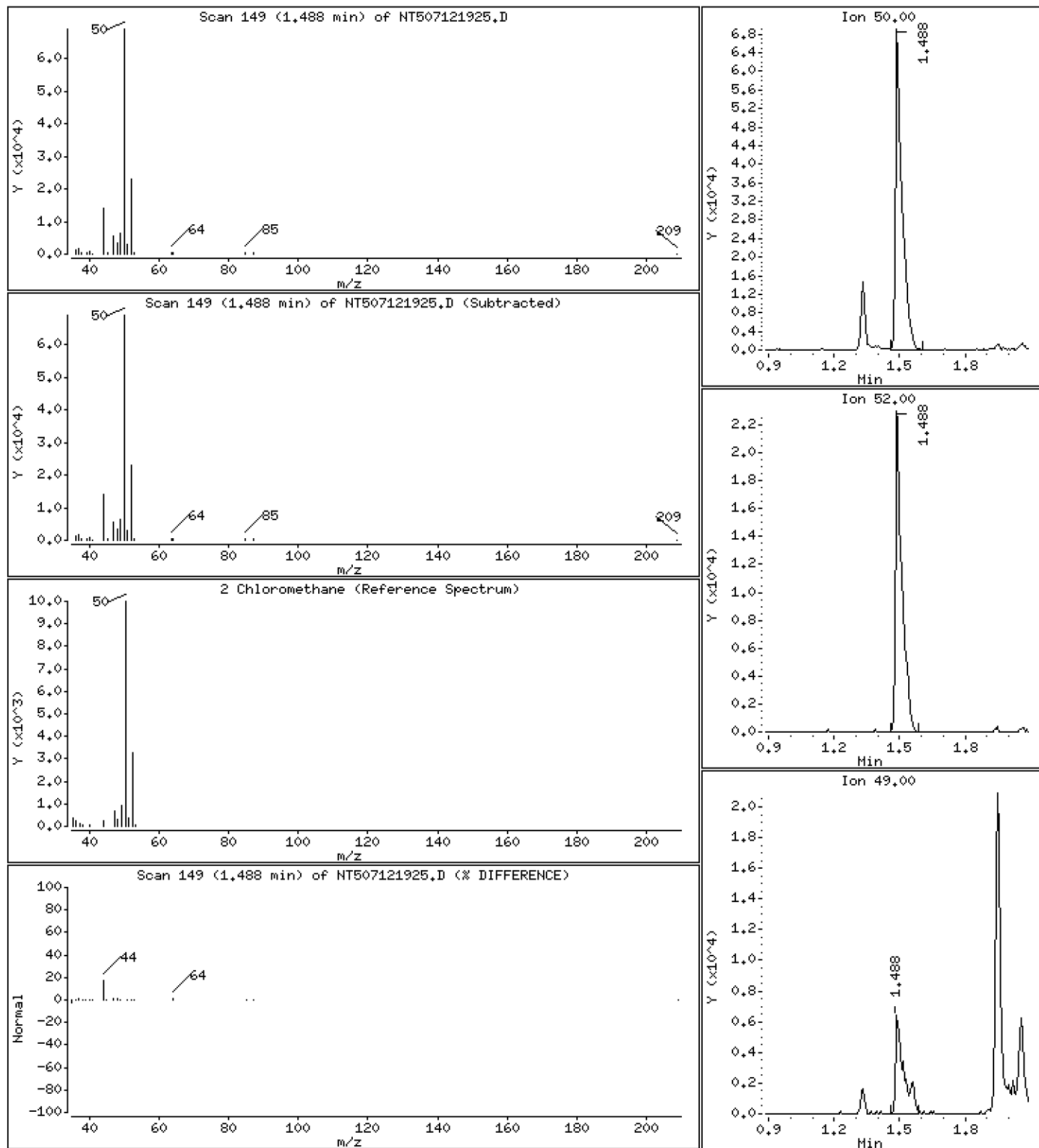
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 46,988 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

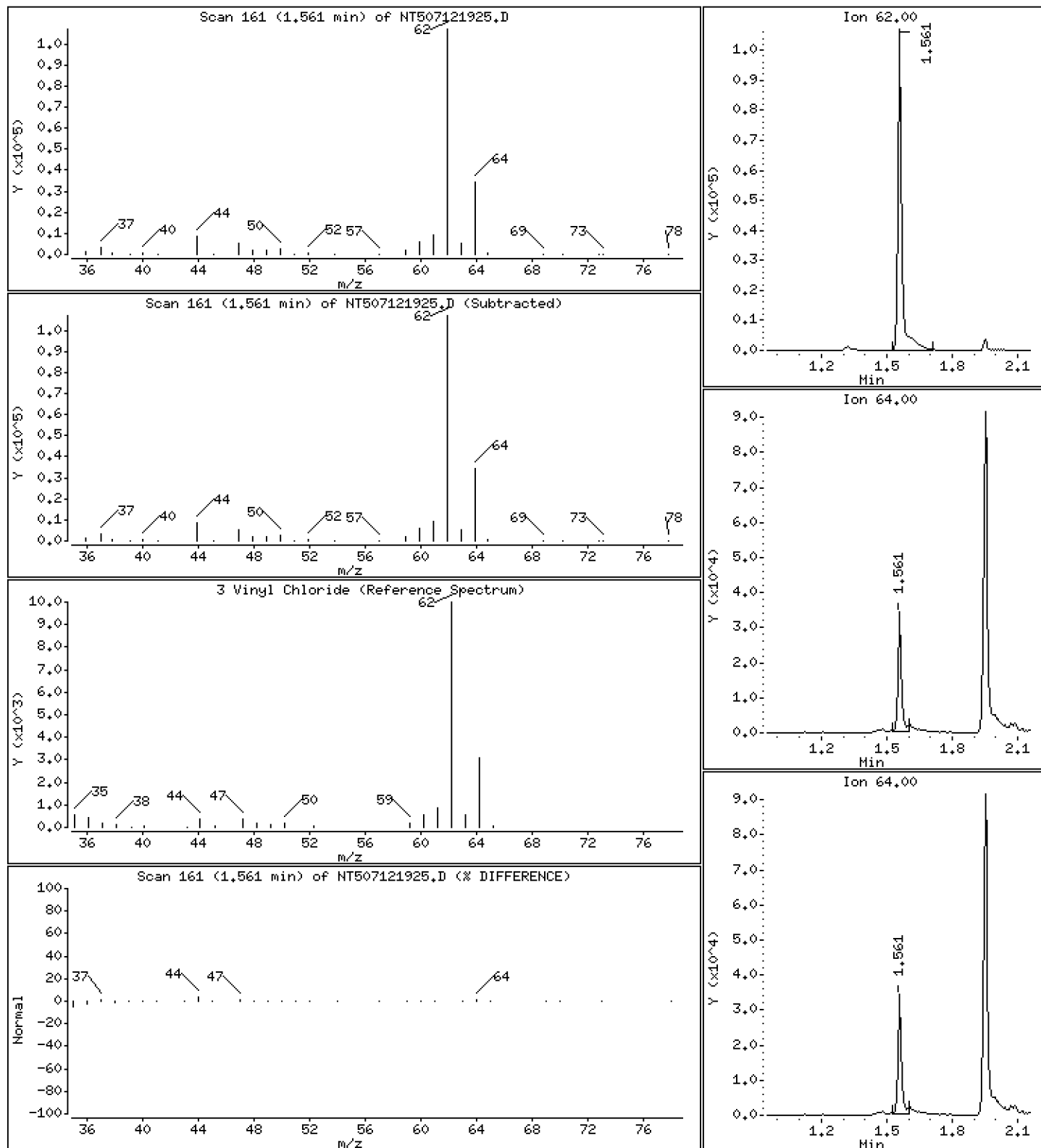
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 47.631 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

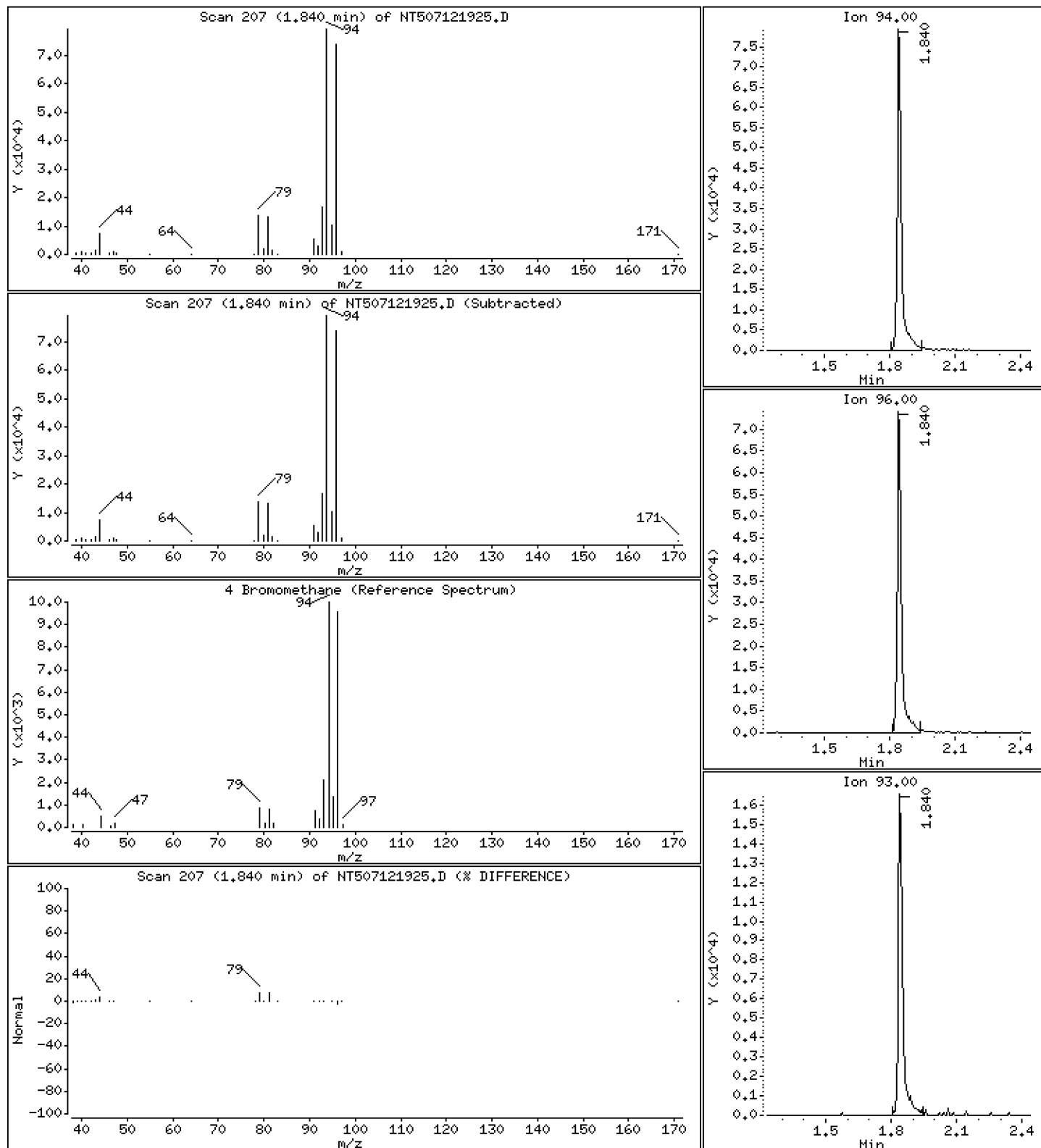
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 49,221 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

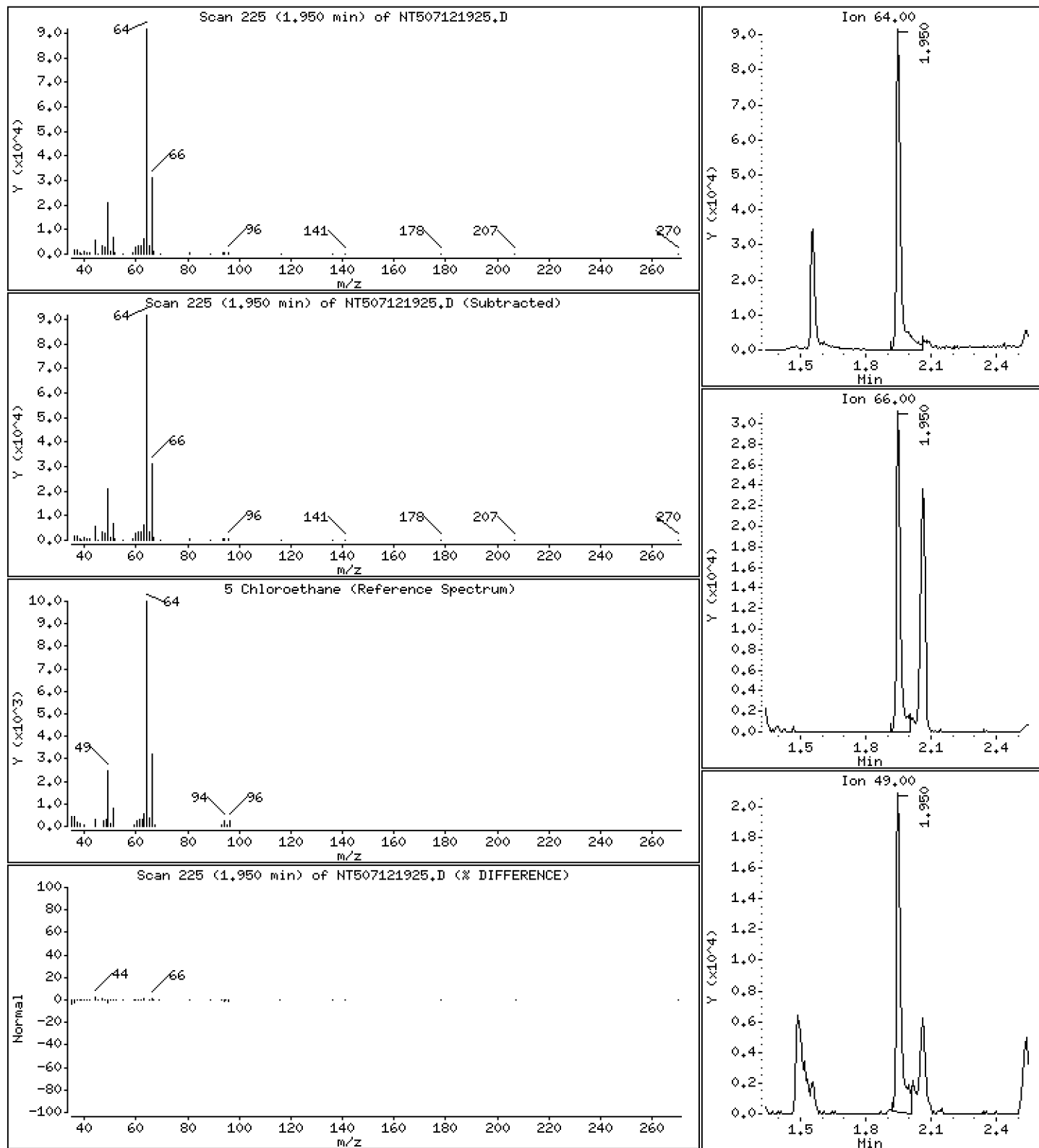
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 51.931 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

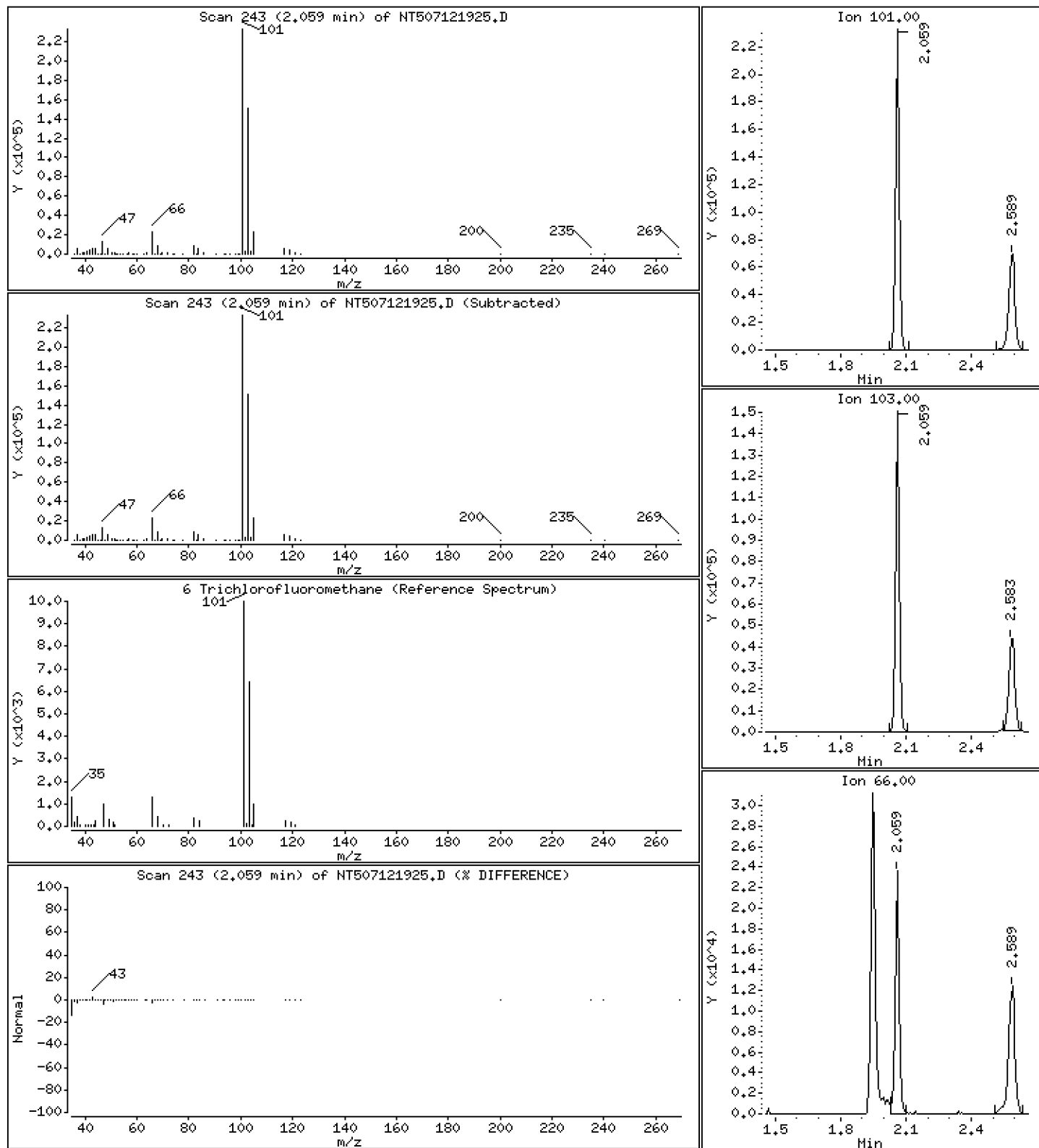
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 52,420 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

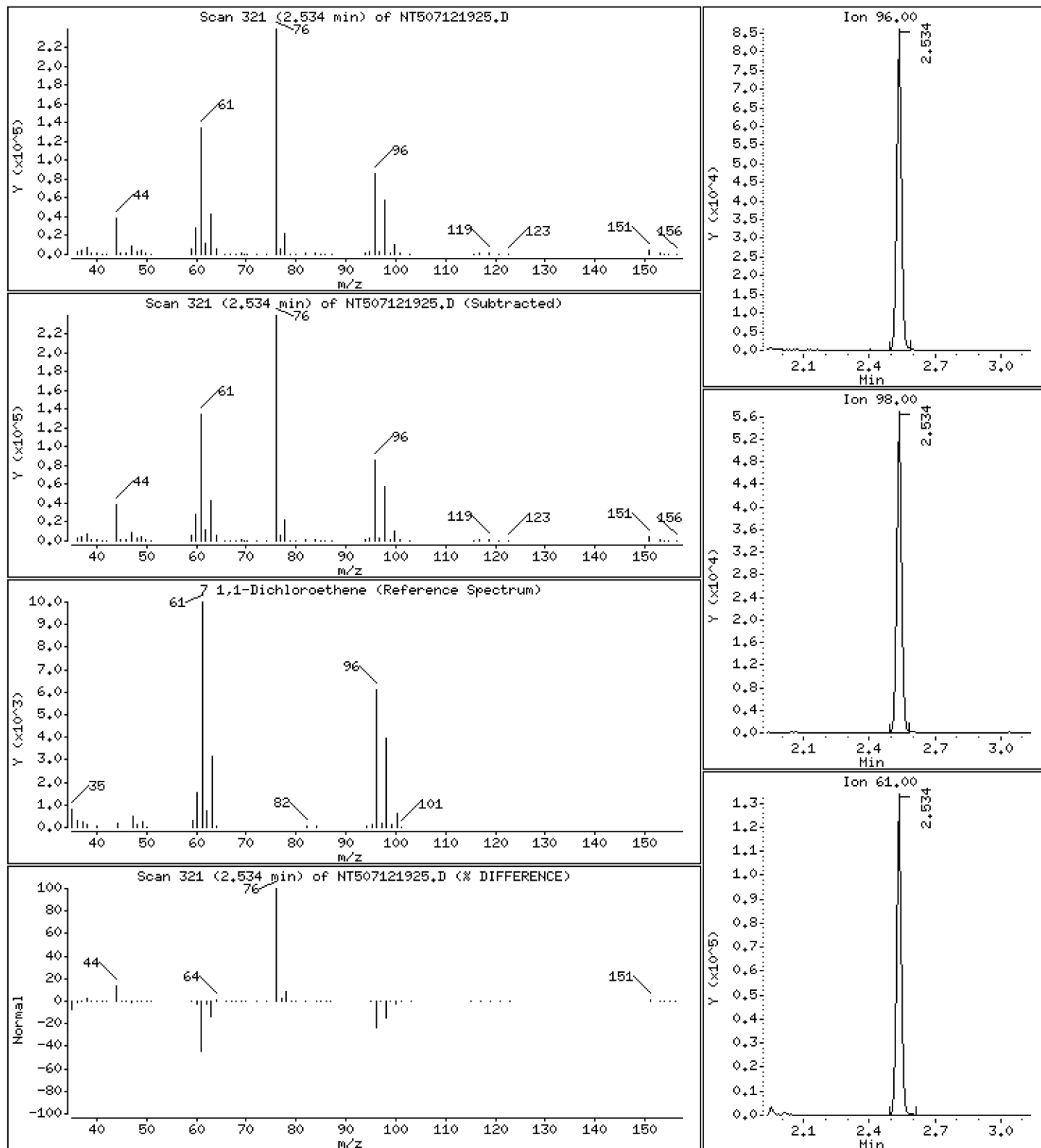
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 45.803 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

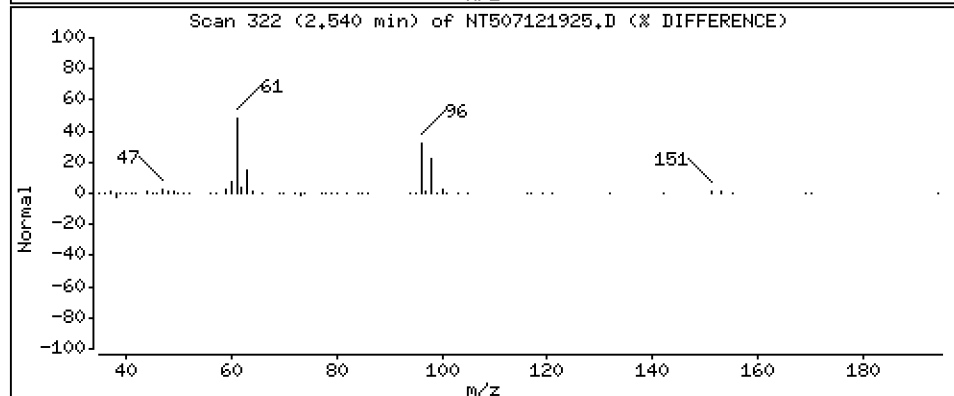
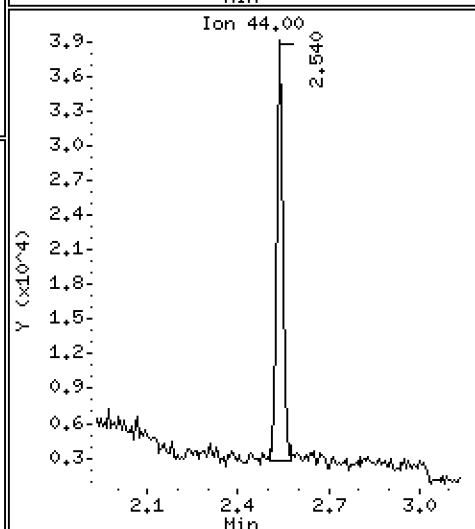
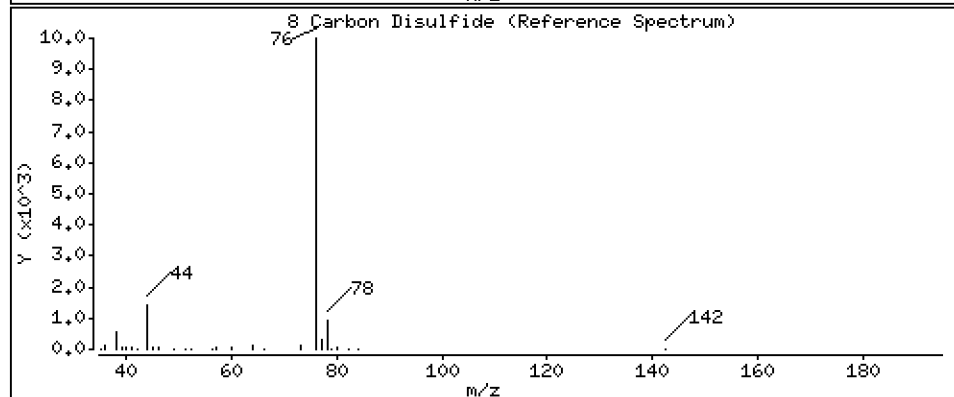
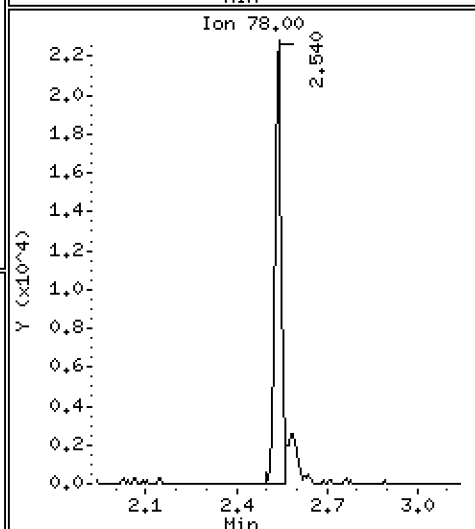
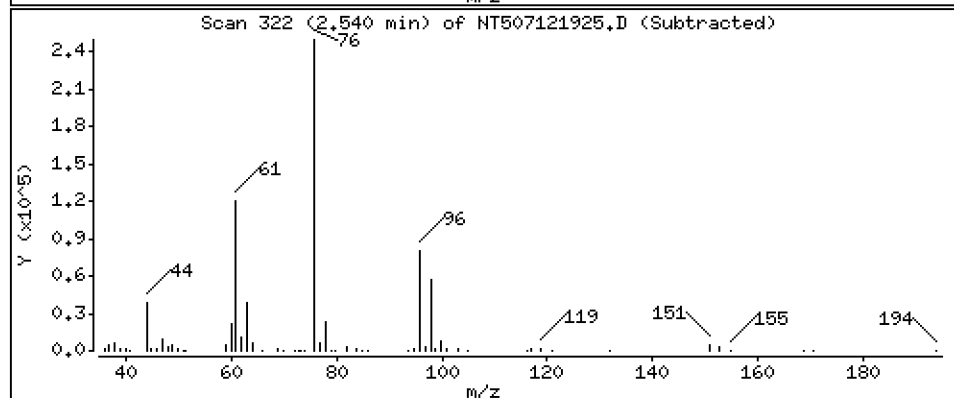
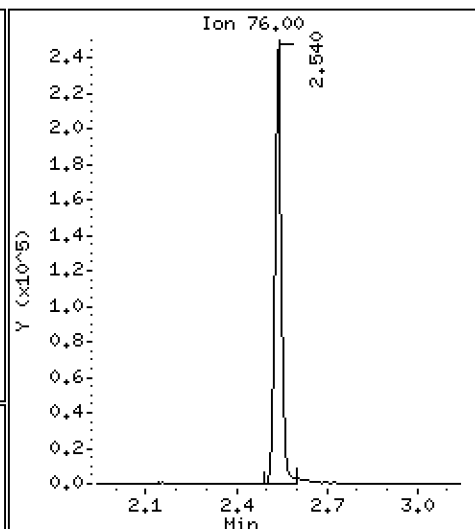
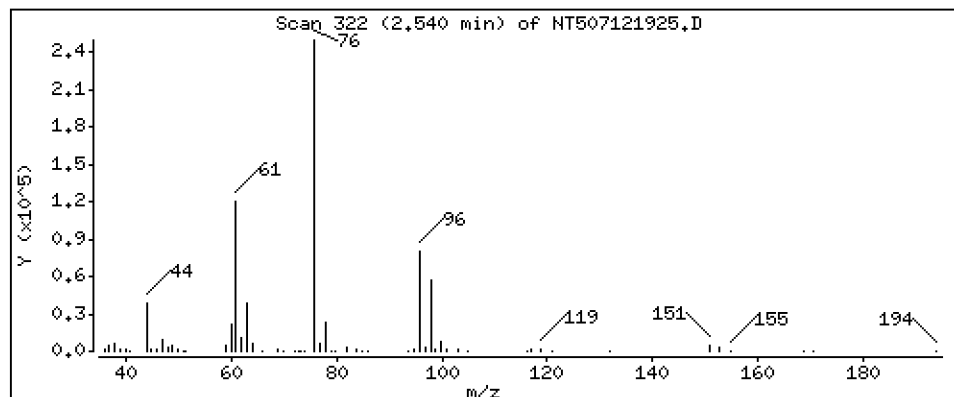
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 46,336 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

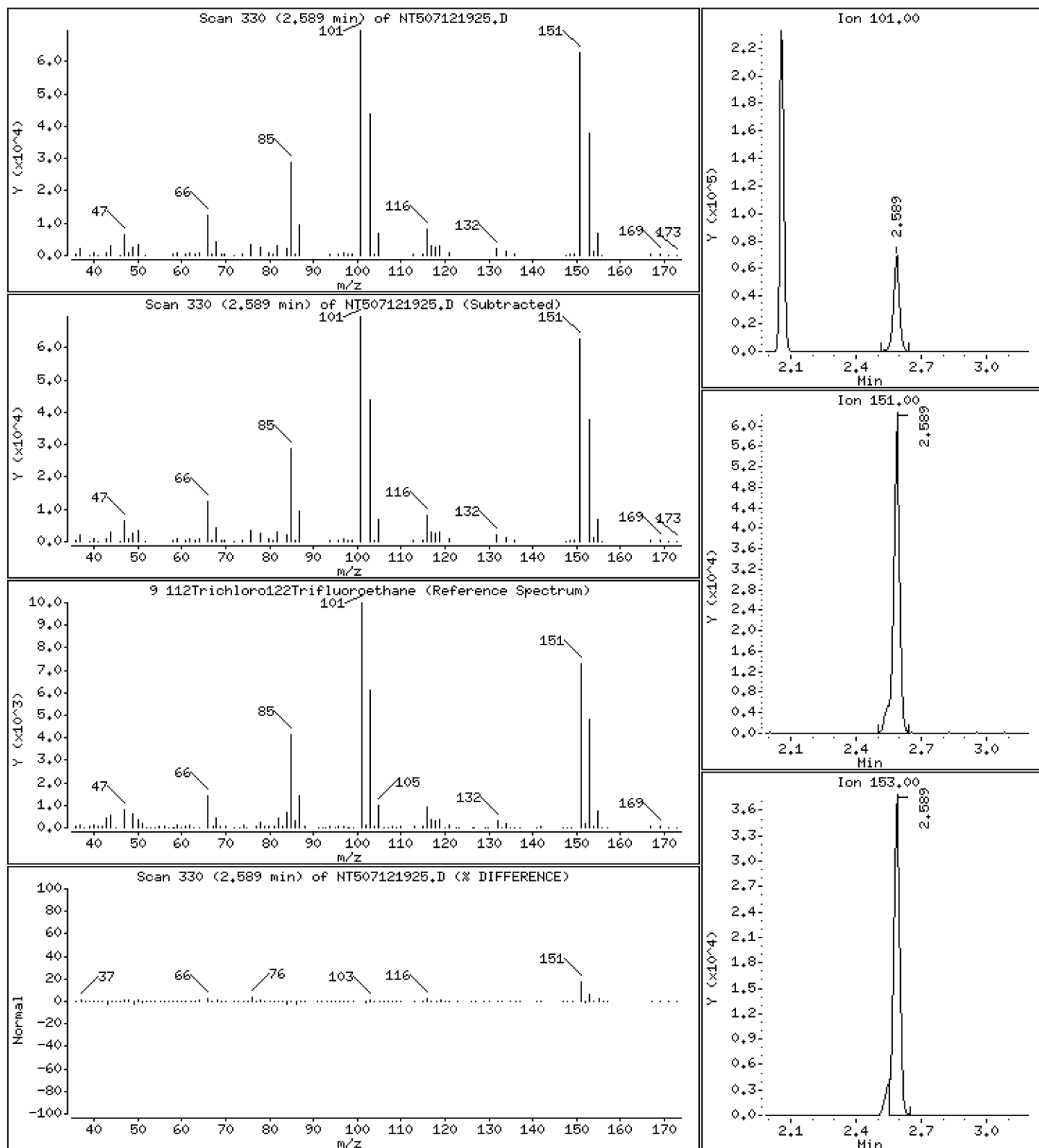
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 48,765 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

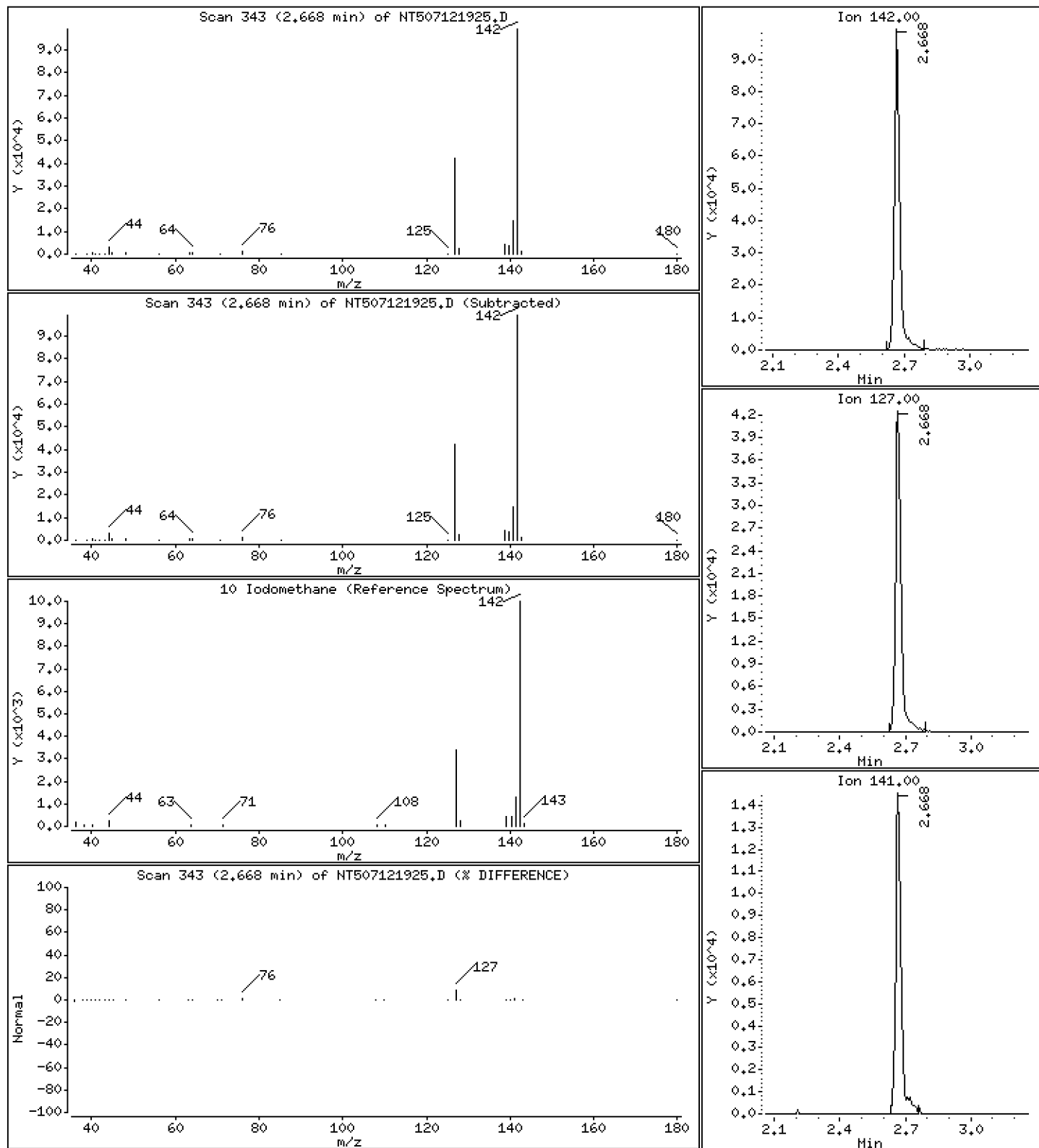
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 44,973 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

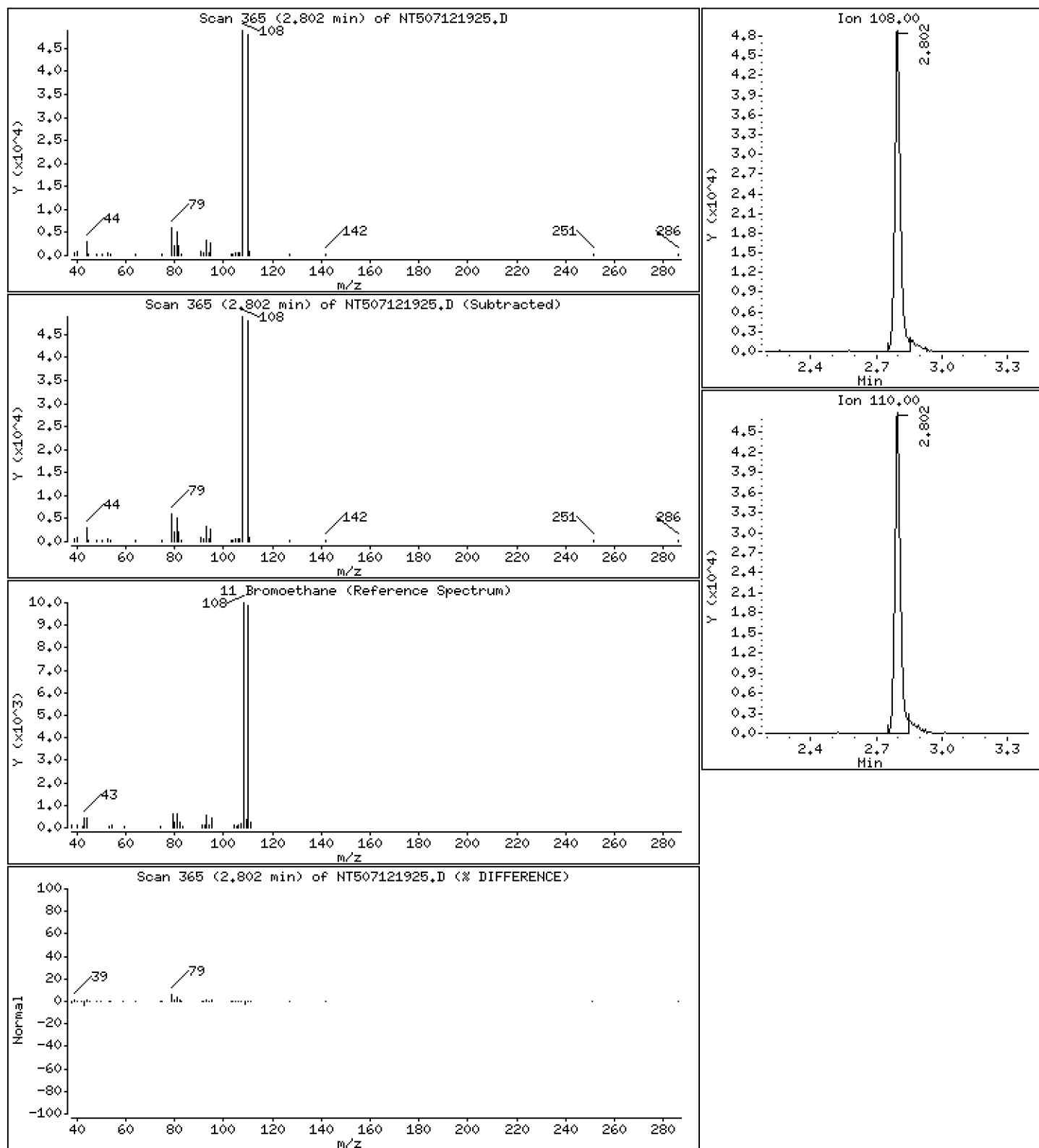
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 44,493 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

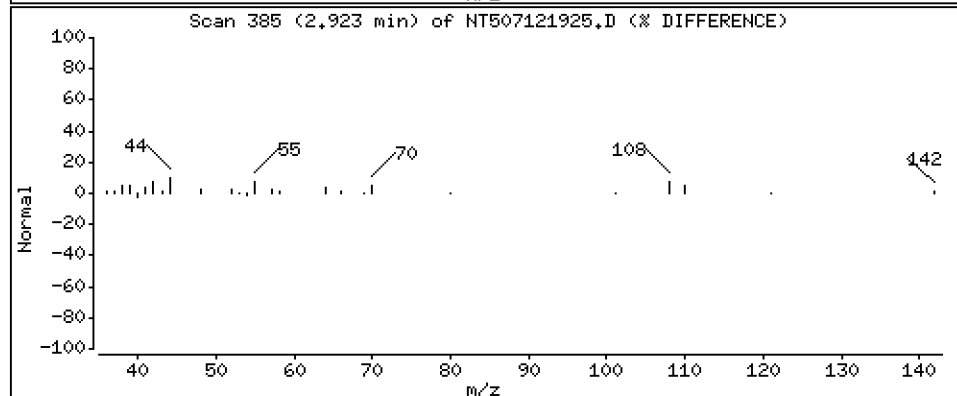
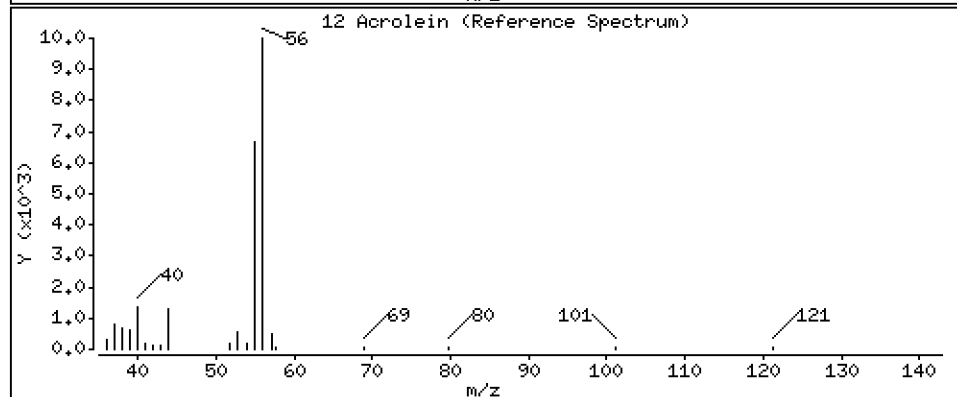
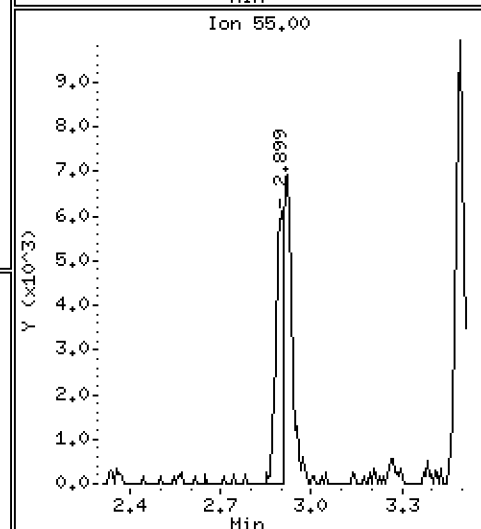
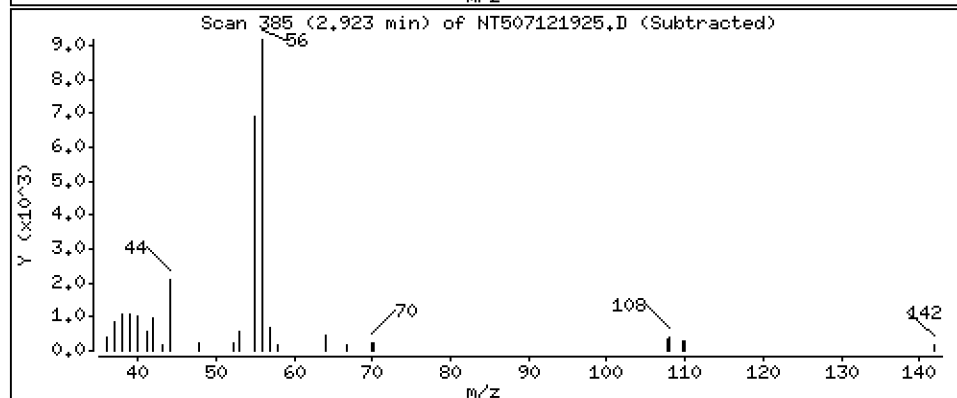
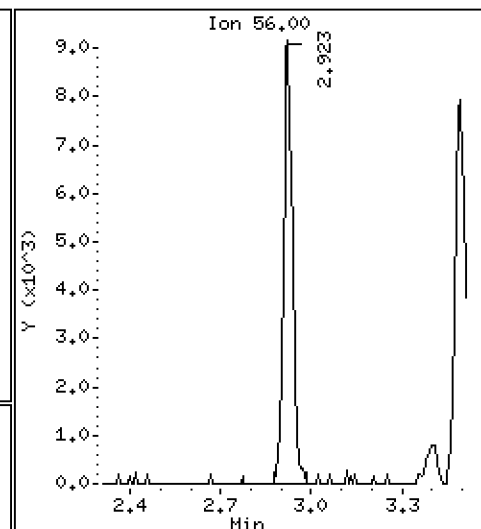
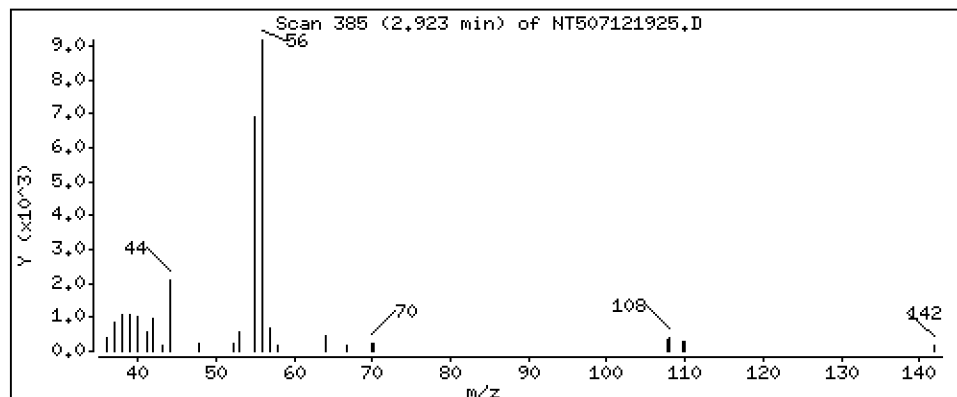
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 61.693 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

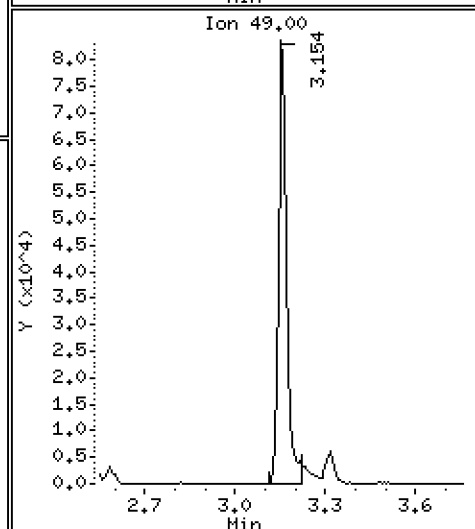
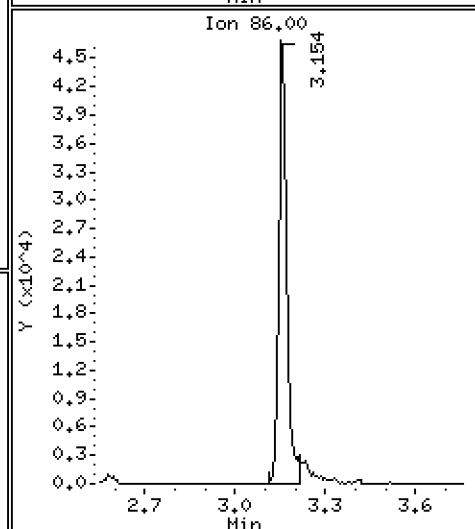
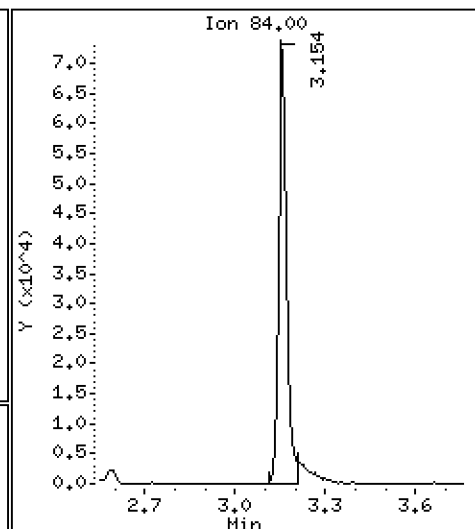
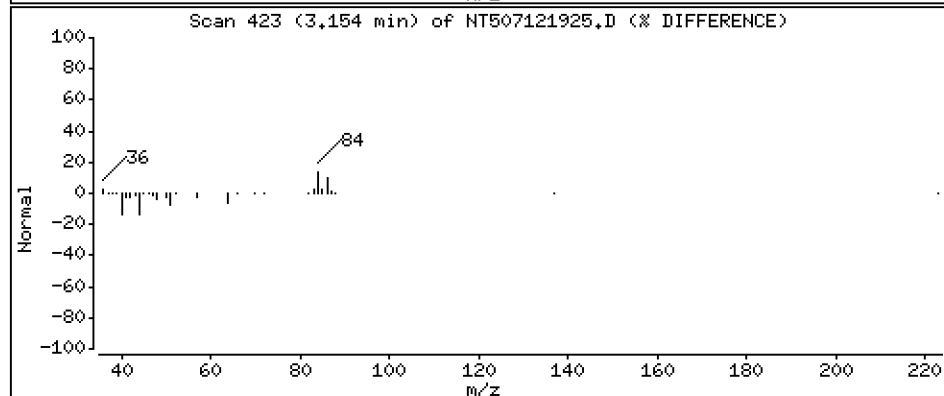
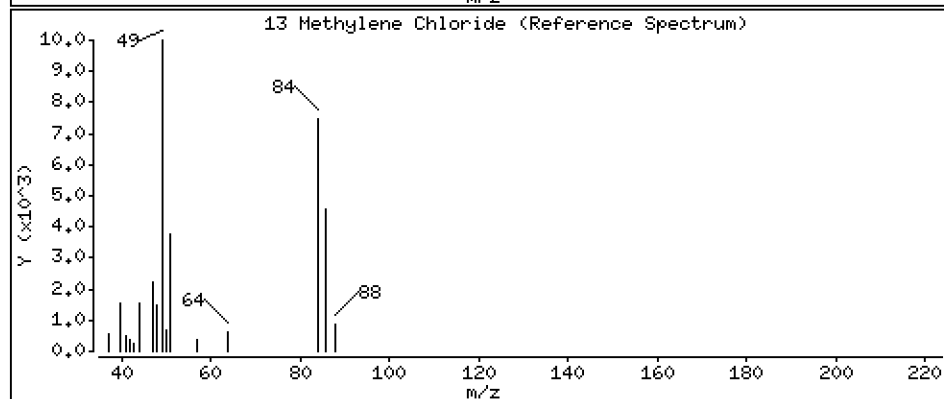
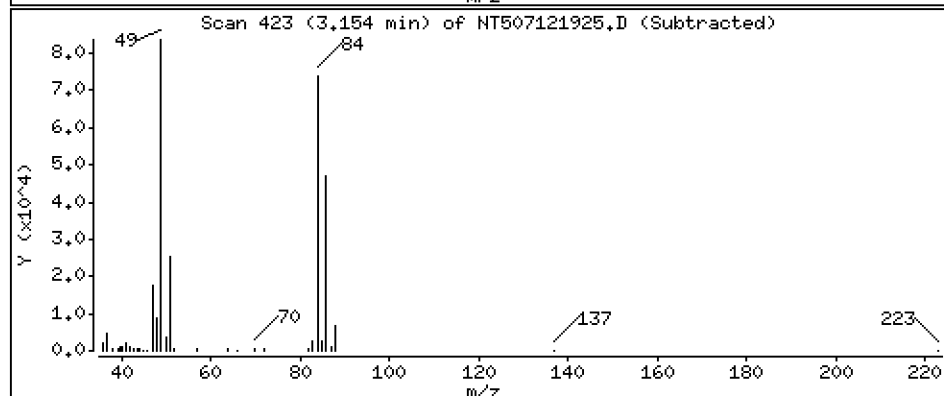
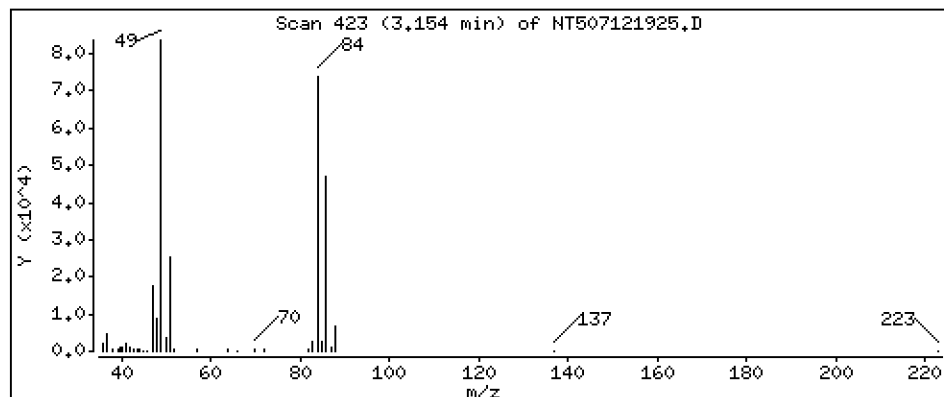
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 45,621 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

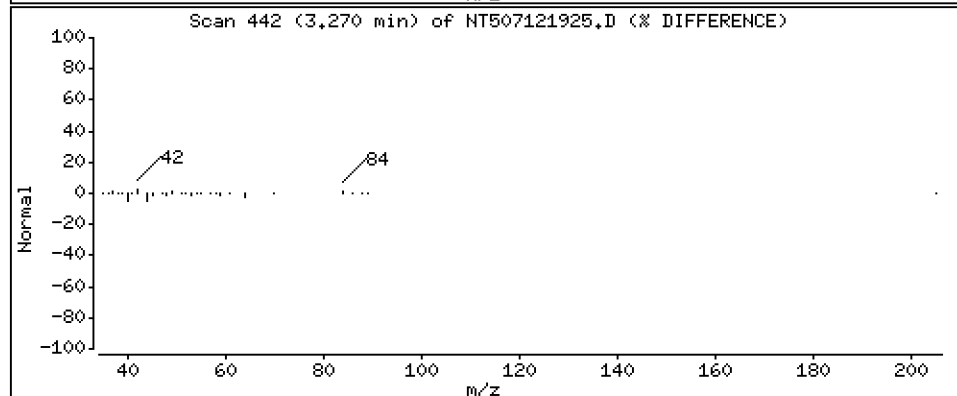
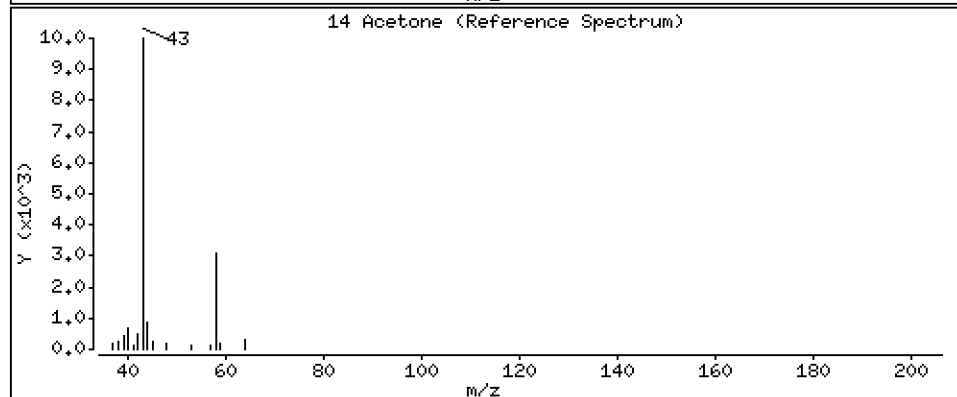
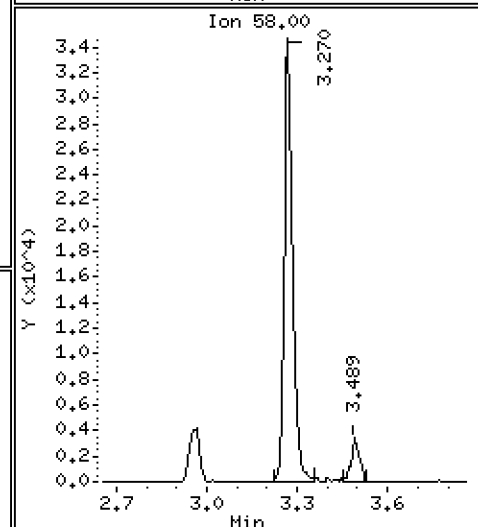
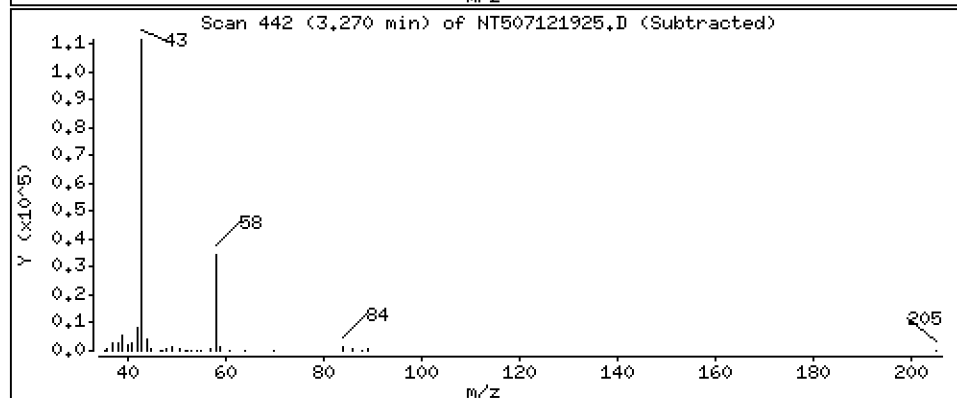
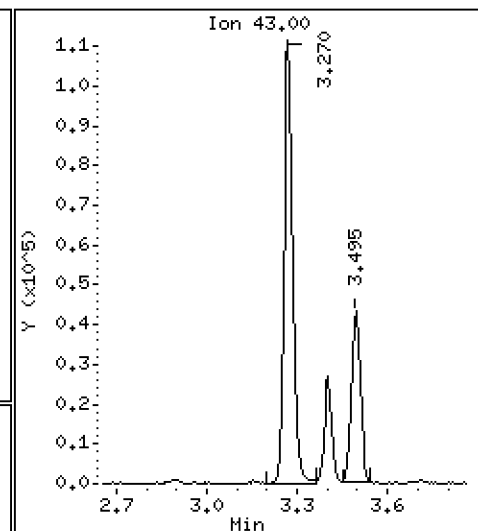
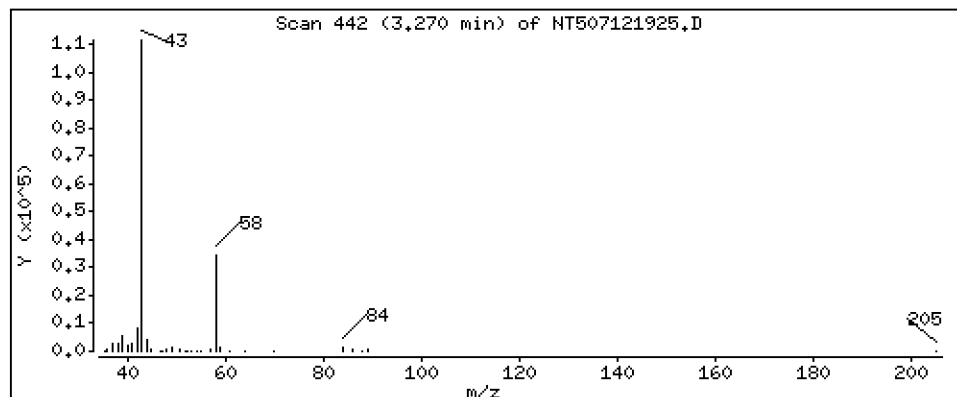
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 410.69 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

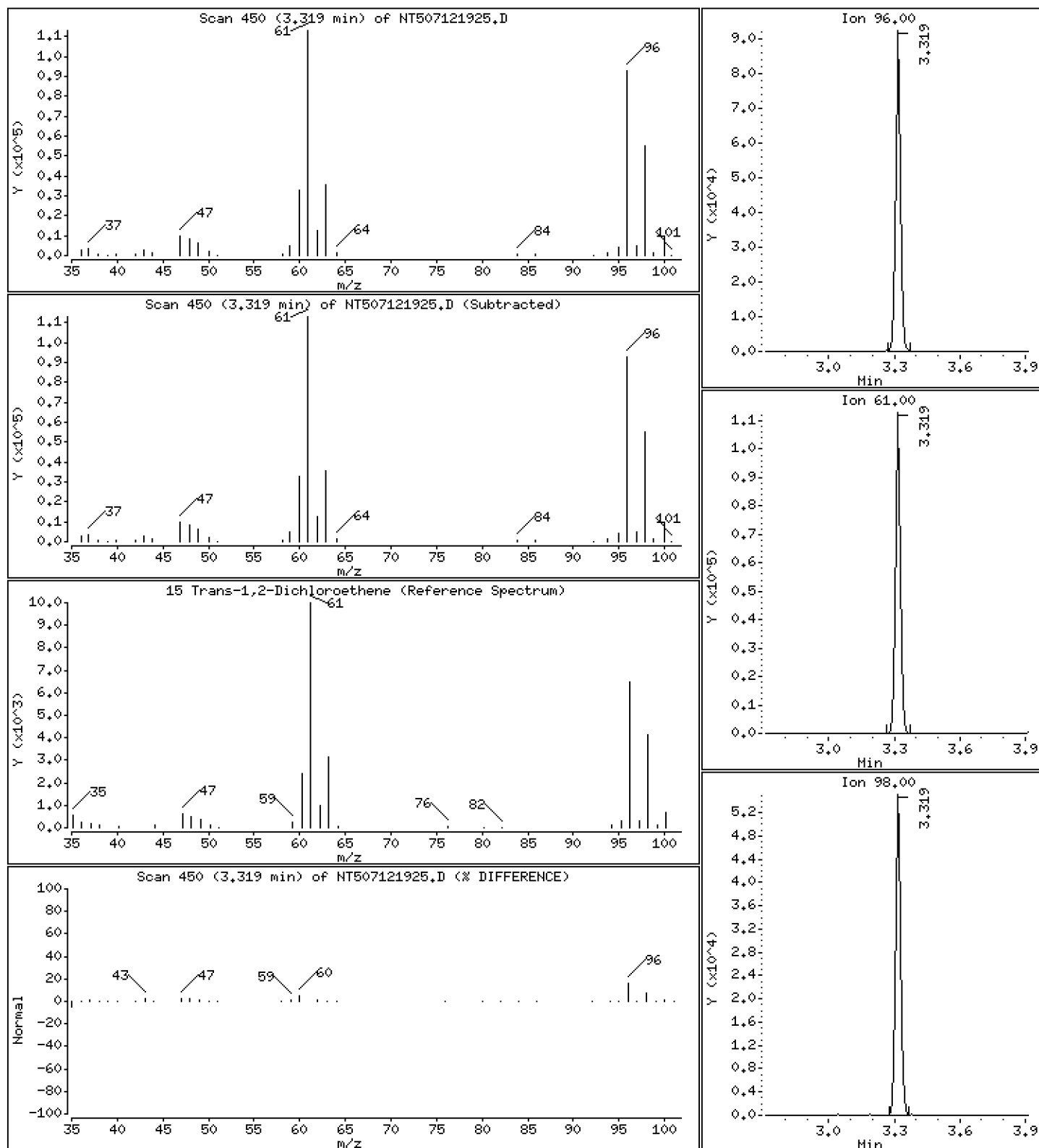
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 45.947 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

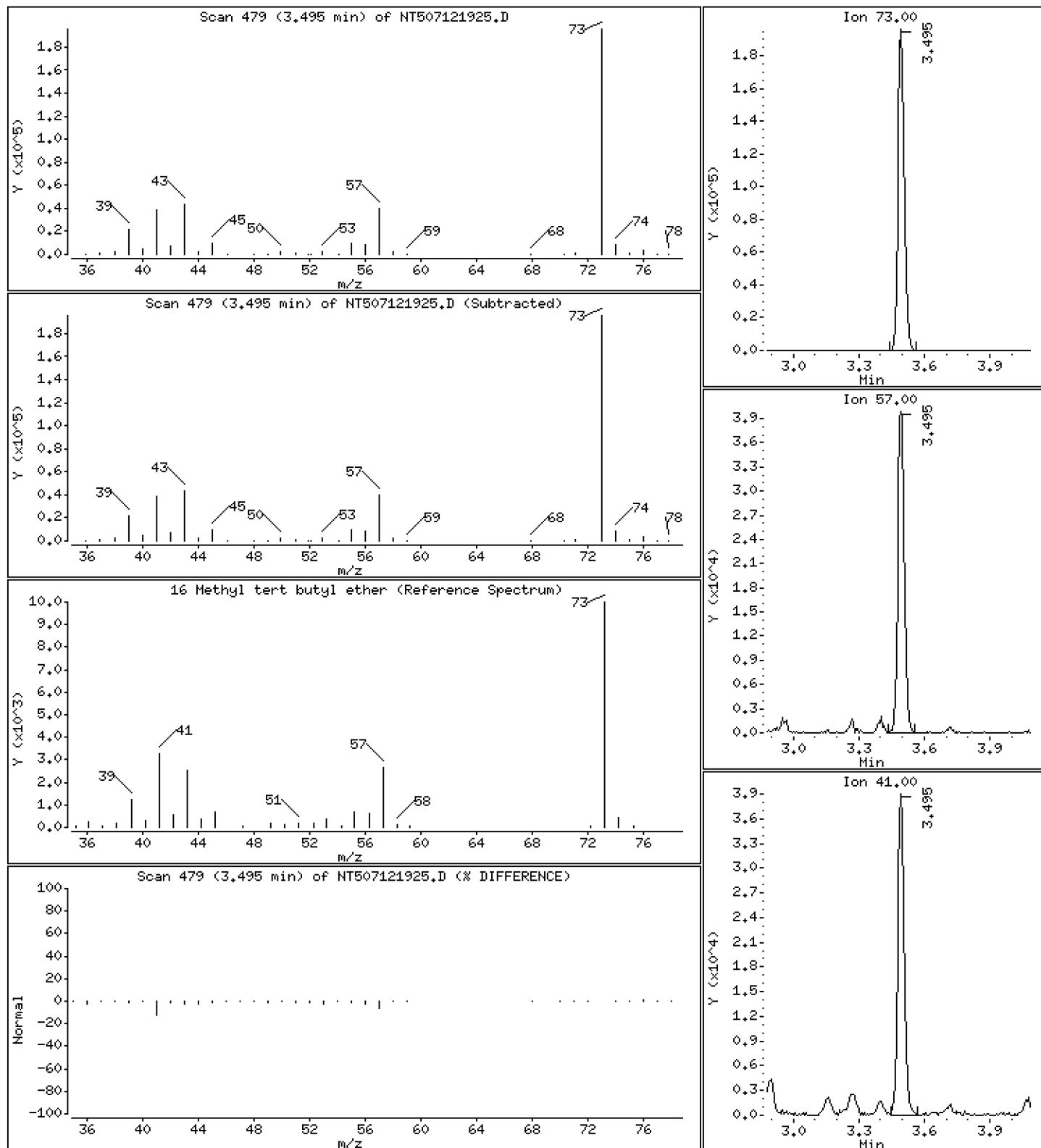
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 53.759 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

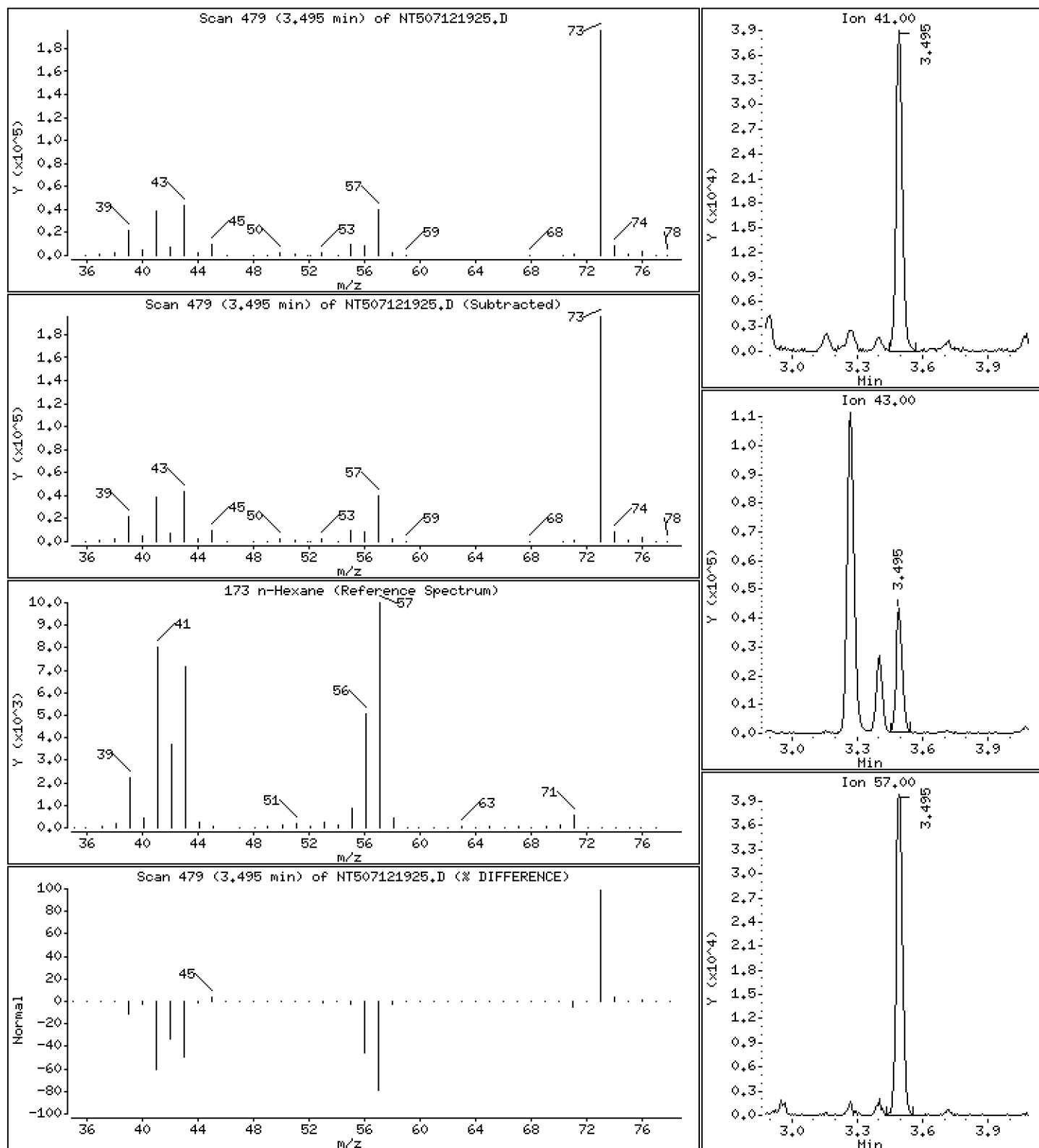
Sample Info: BHC0316-MS1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

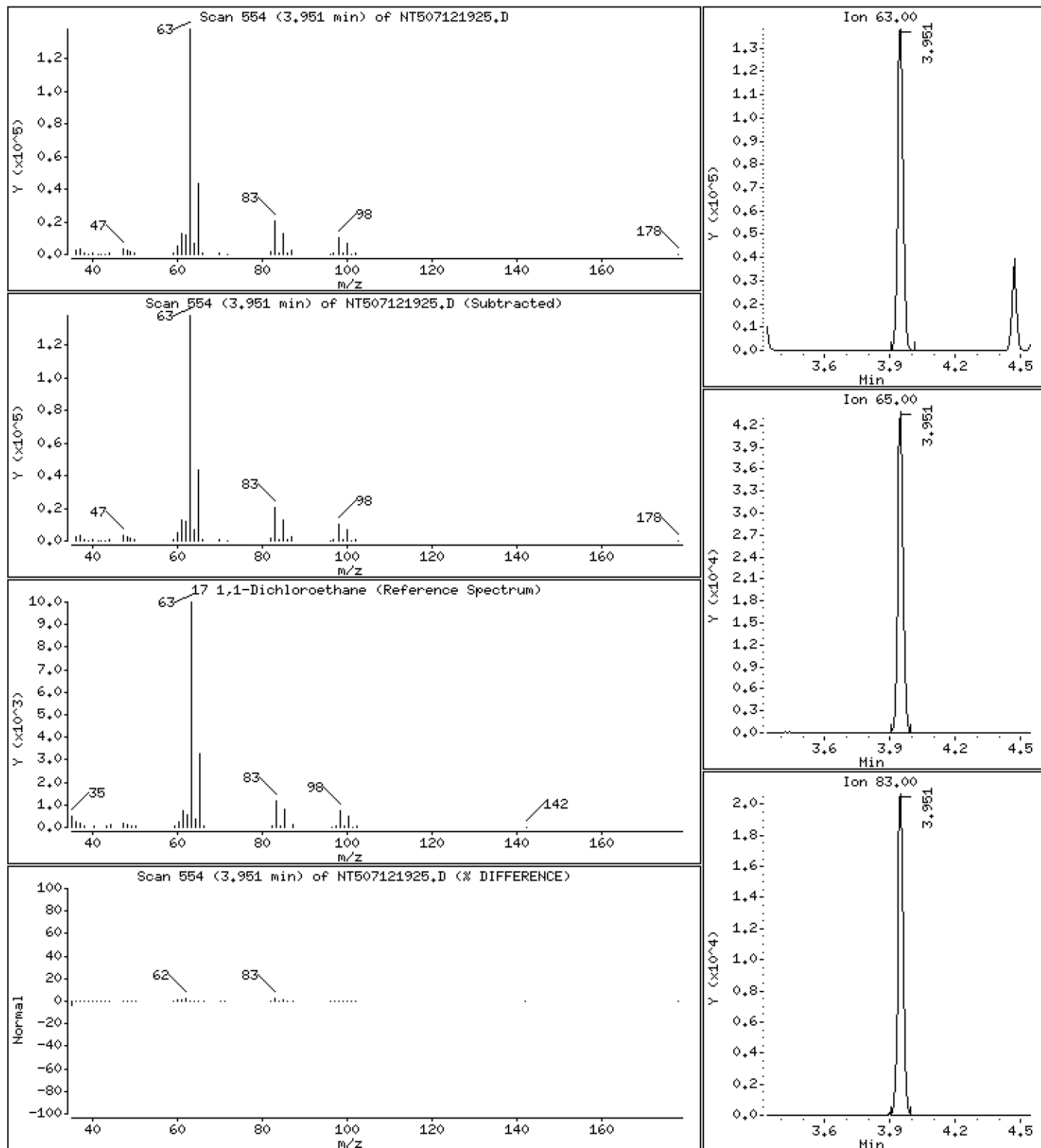
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 49,560 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

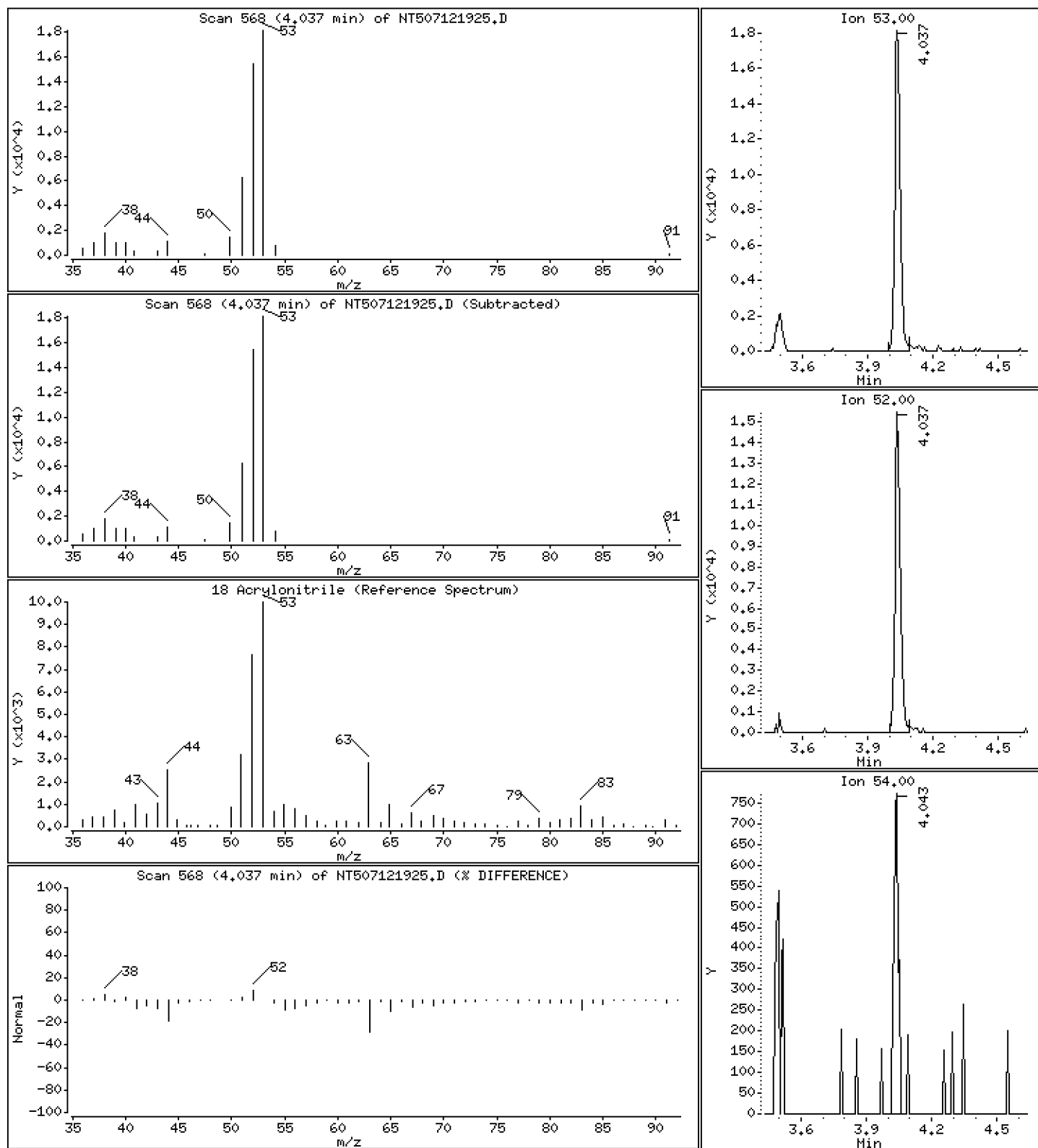
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 50.022 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

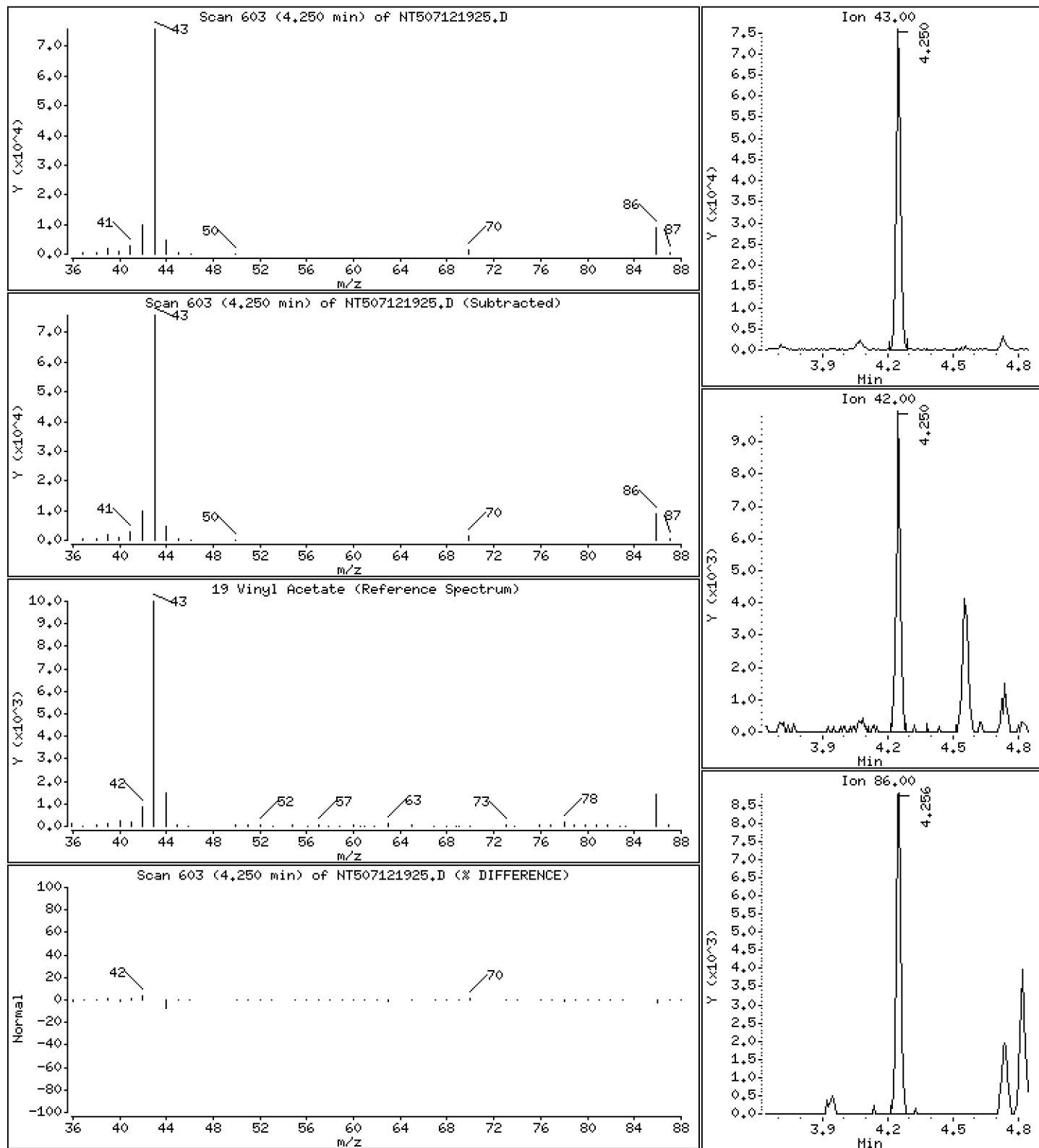
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 25.883 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

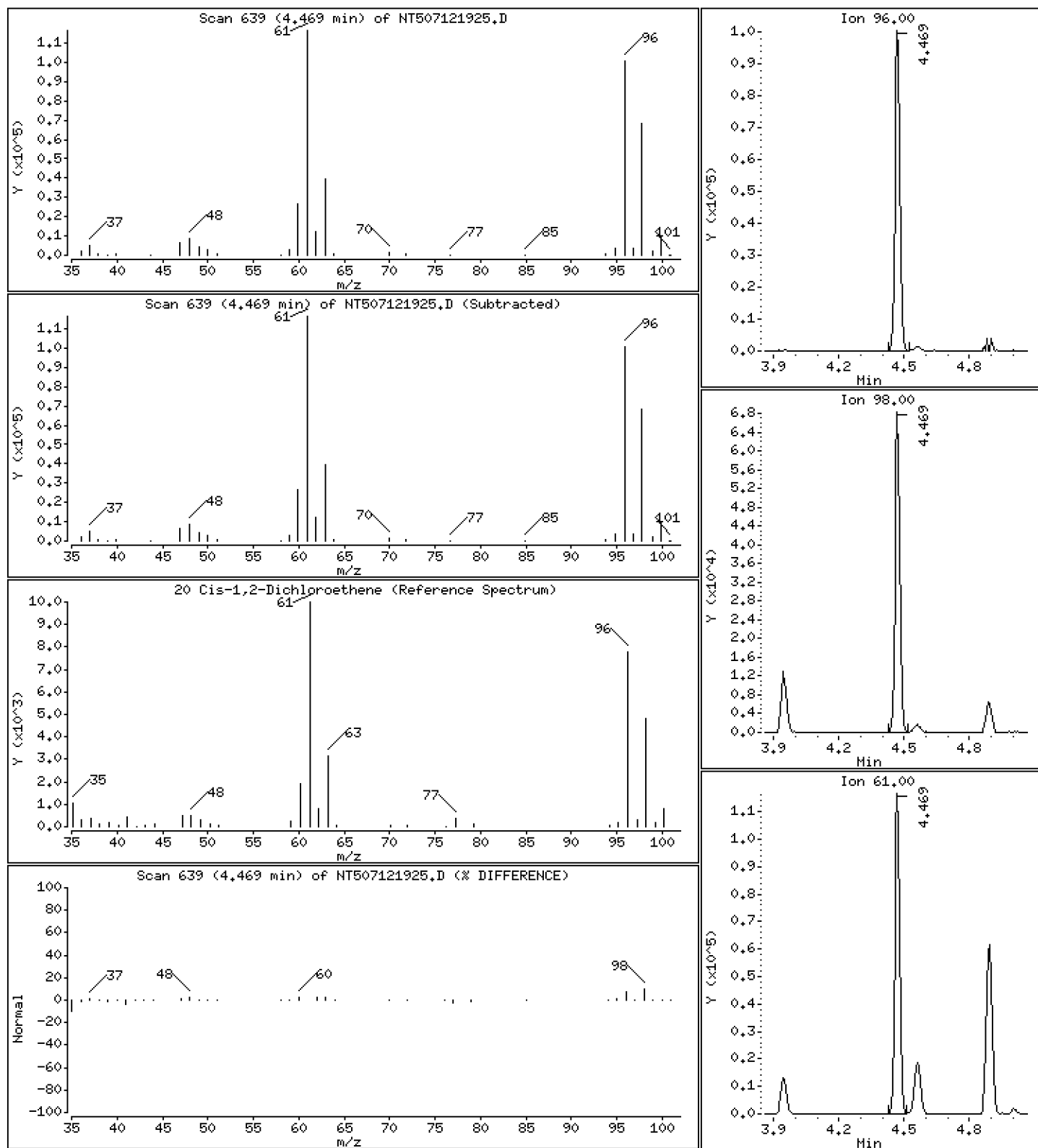
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 47.437 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

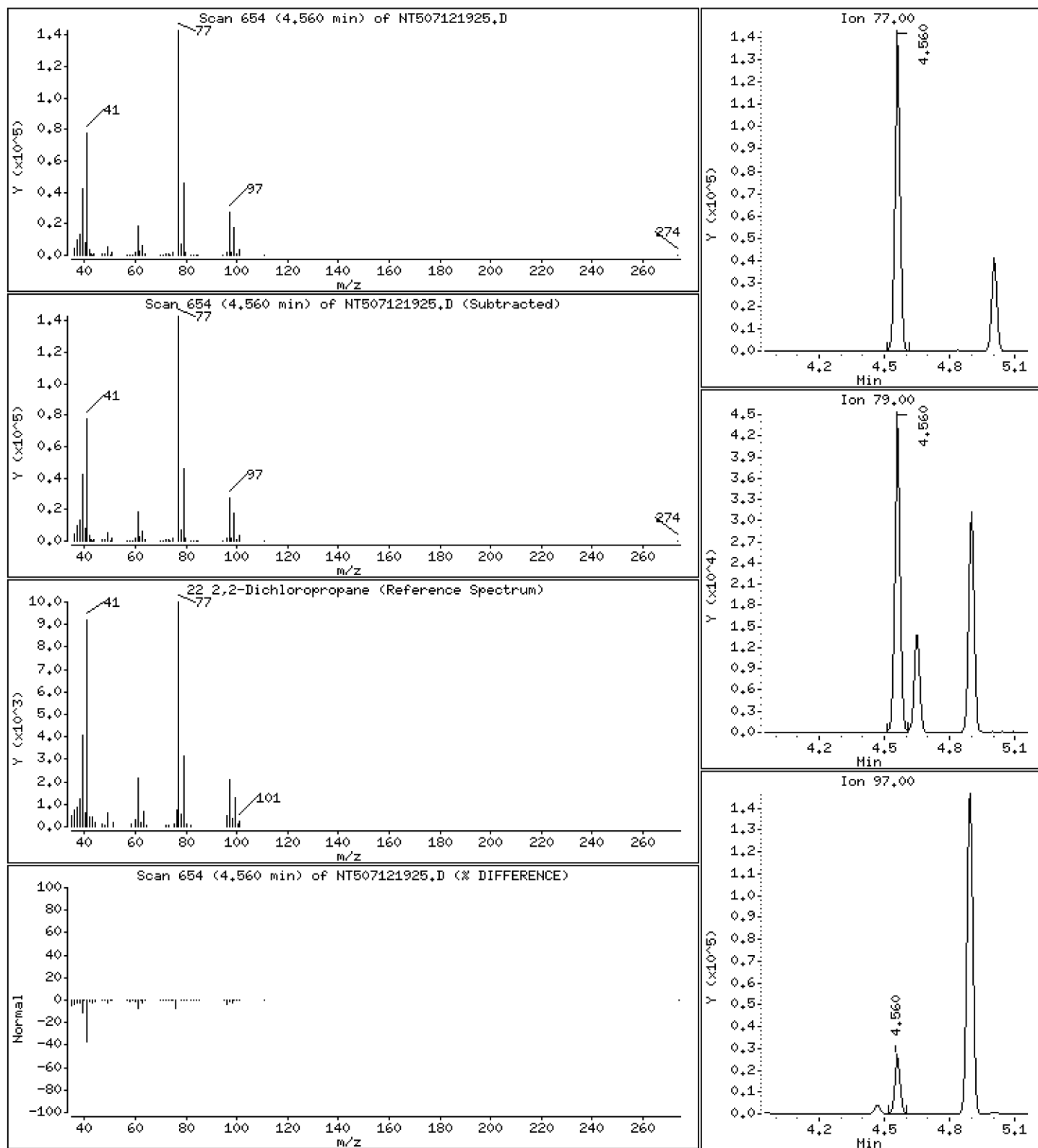
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22,2-Dichloropropane

Concentration: 50,990 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

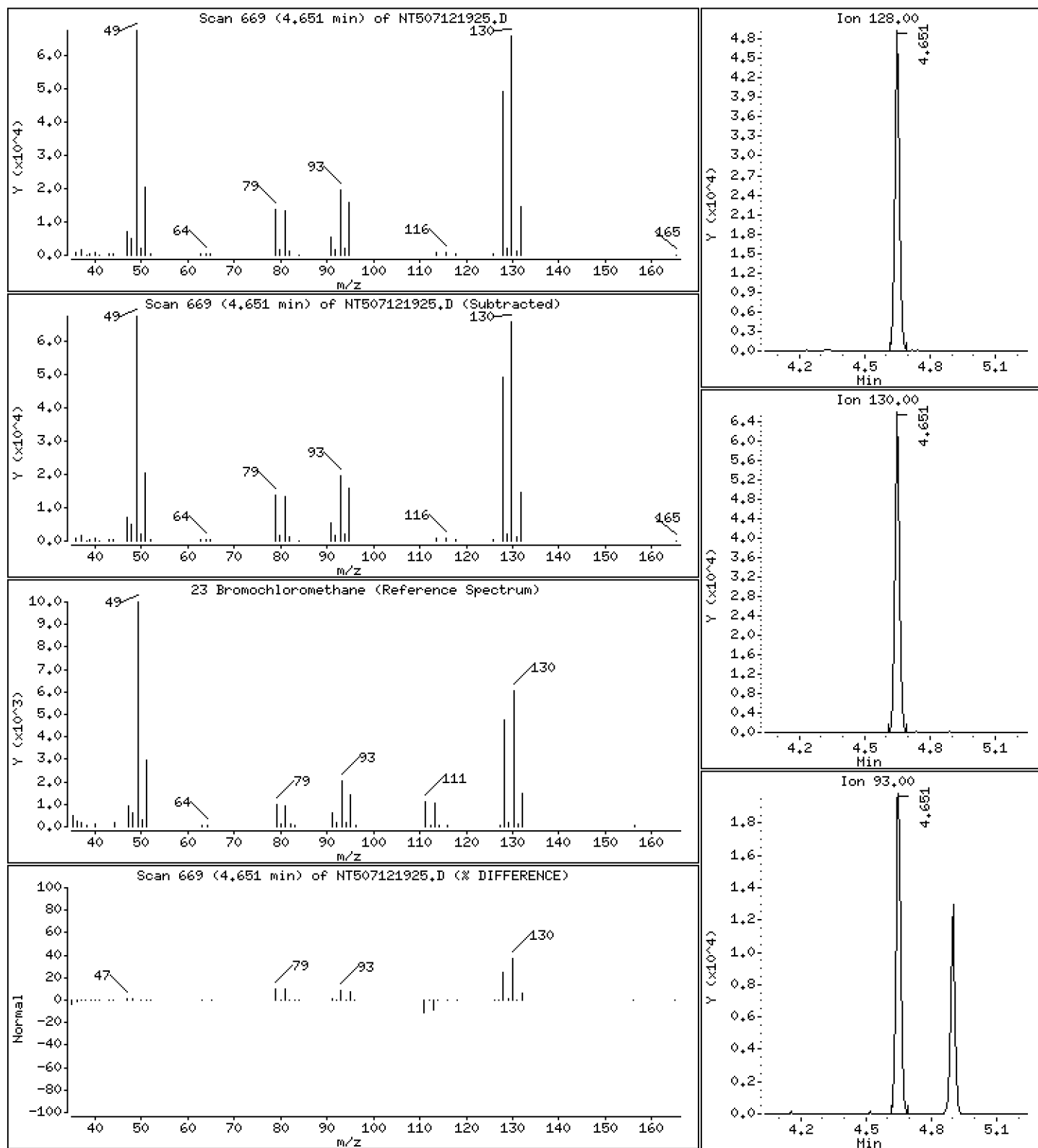
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

23 Bromochloromethane

Concentration: 48,004 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

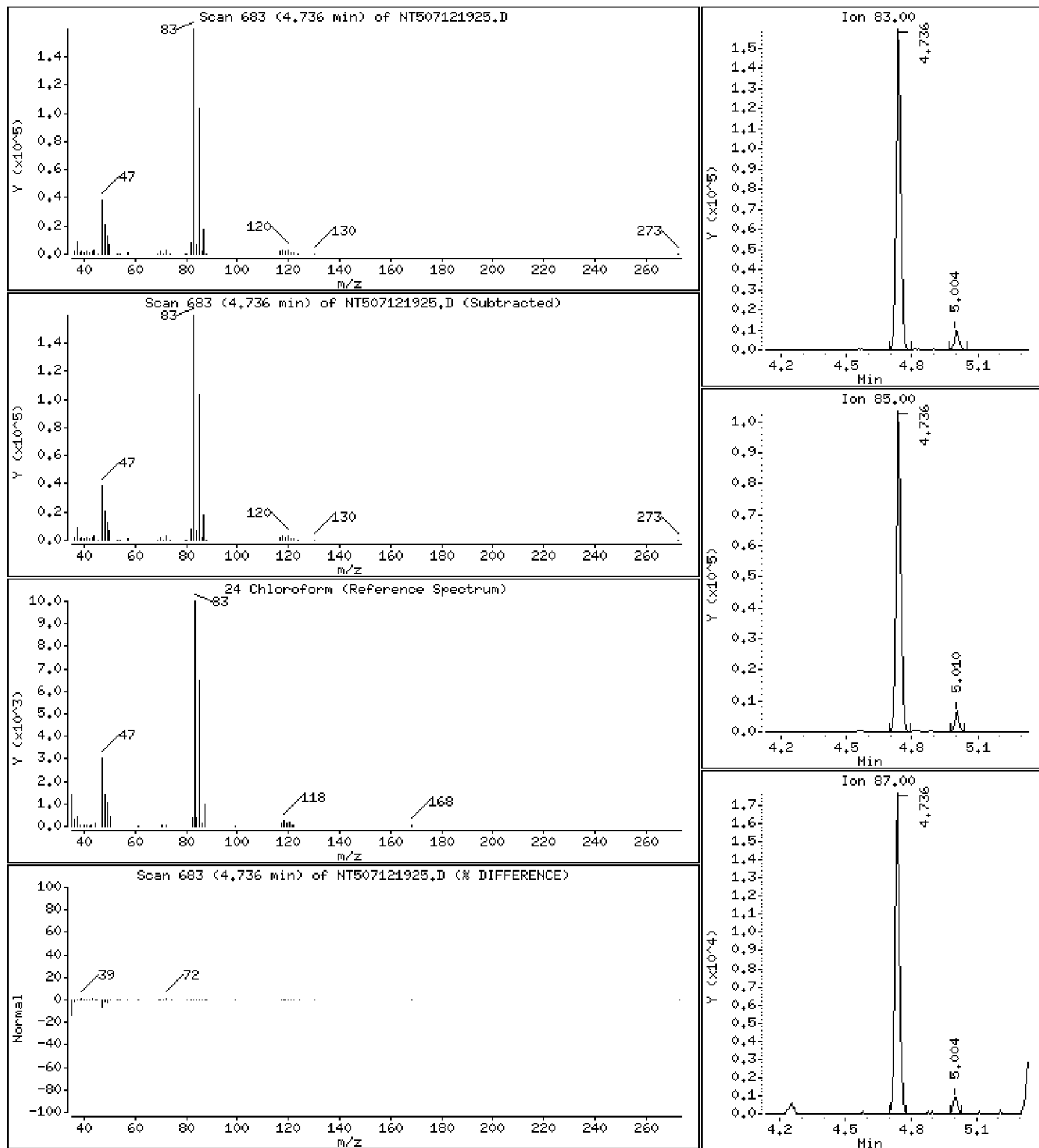
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 48,904 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

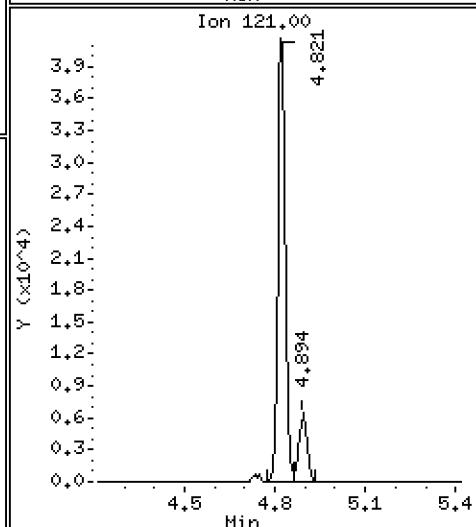
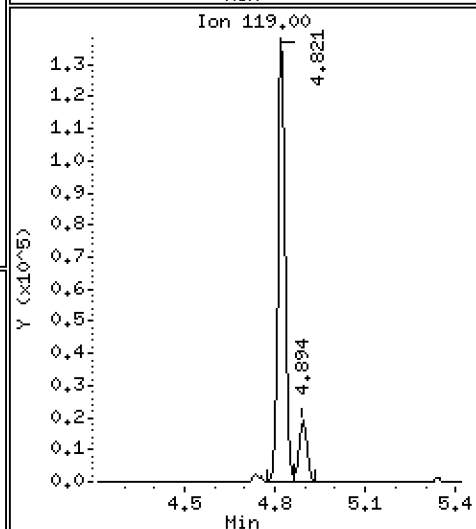
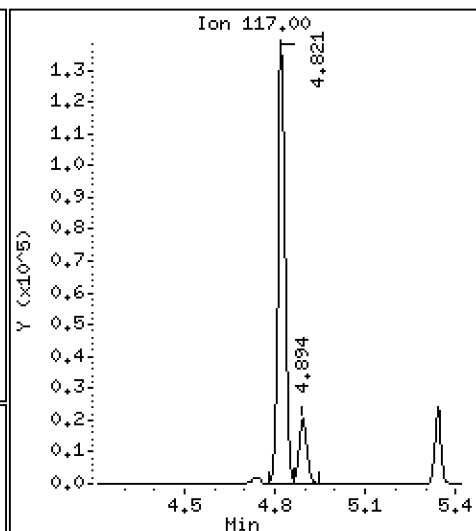
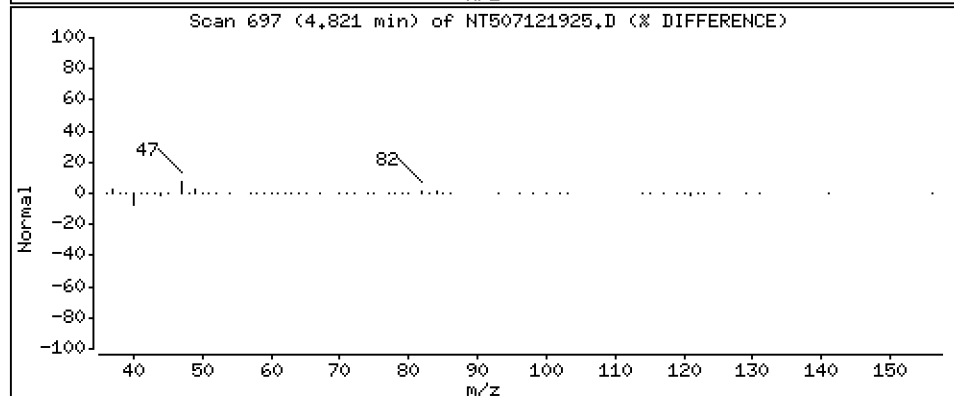
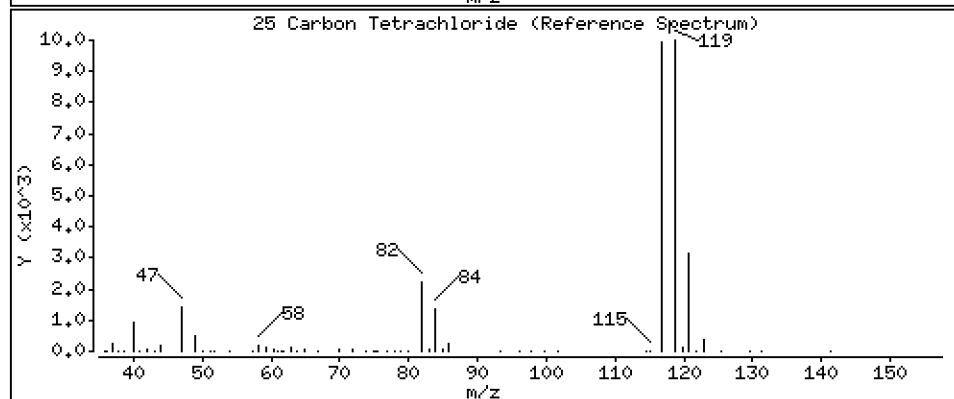
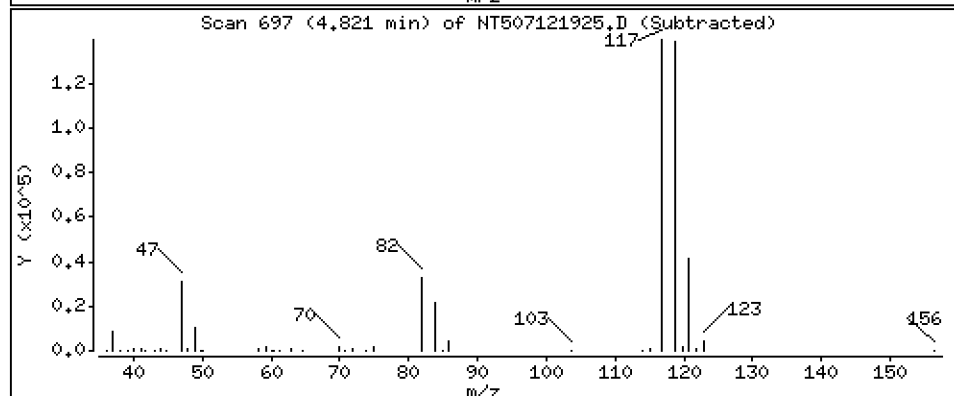
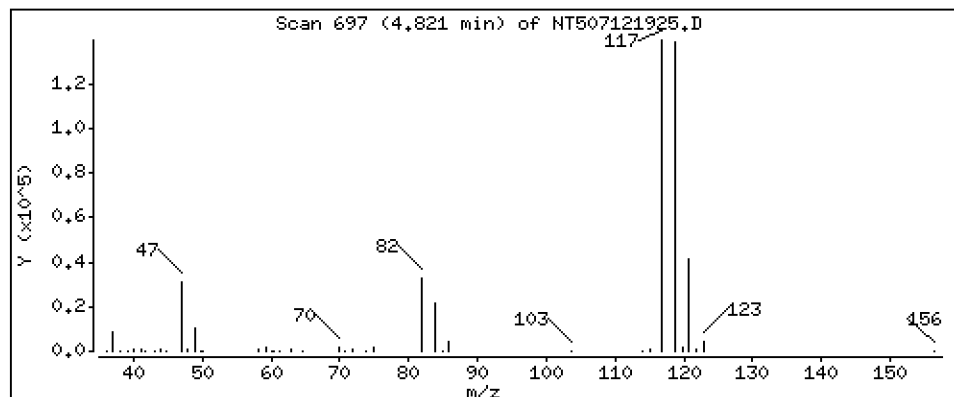
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 43,070 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

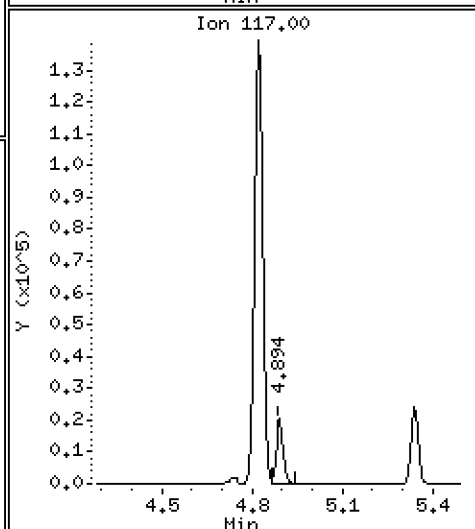
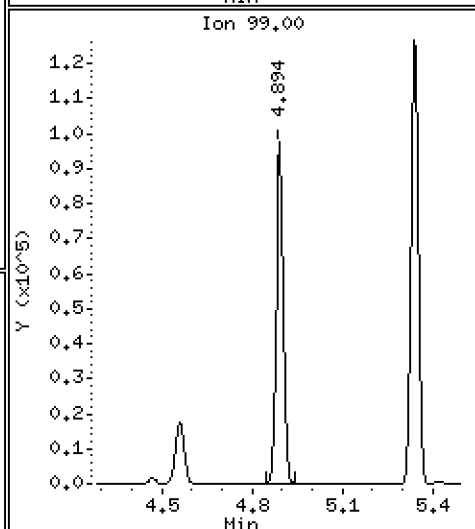
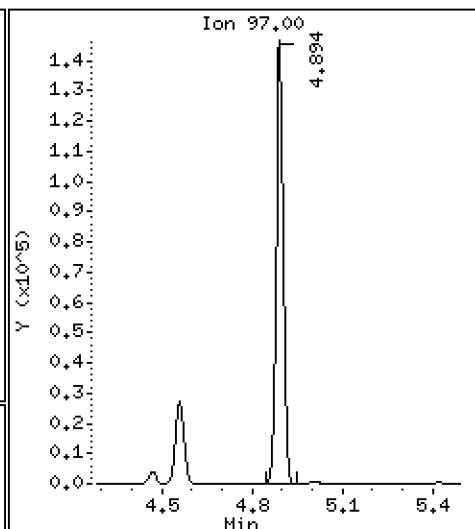
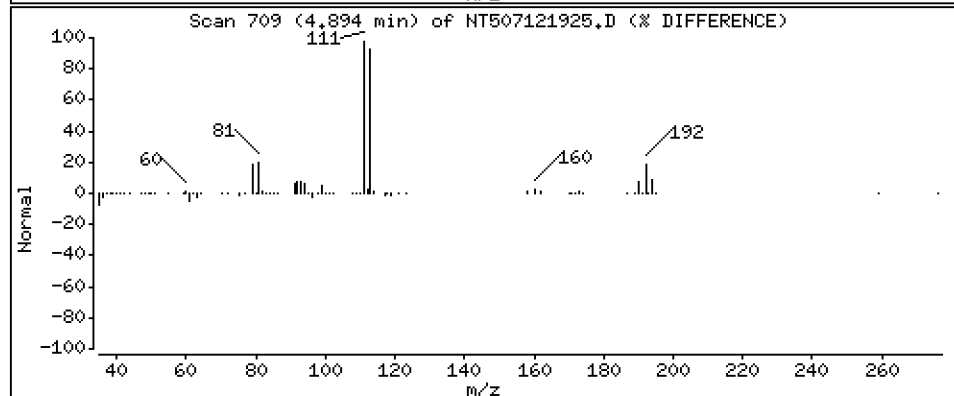
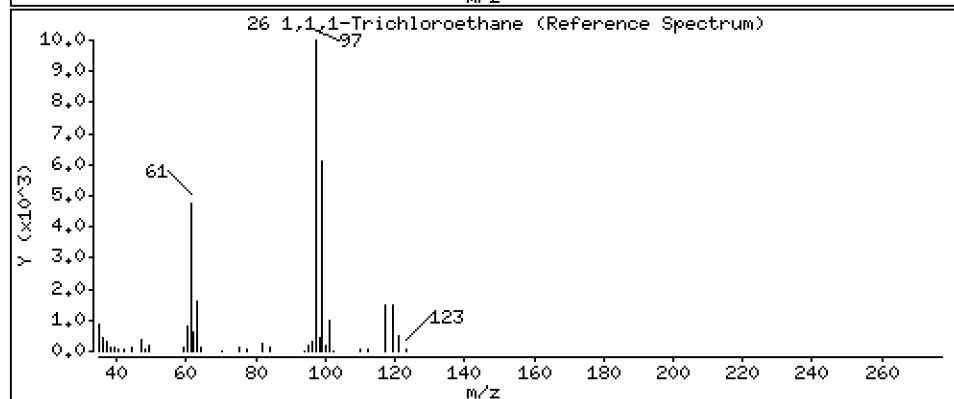
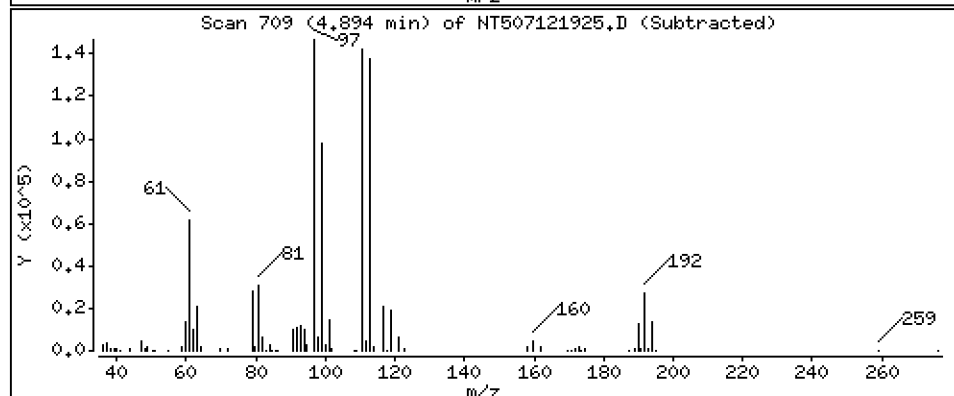
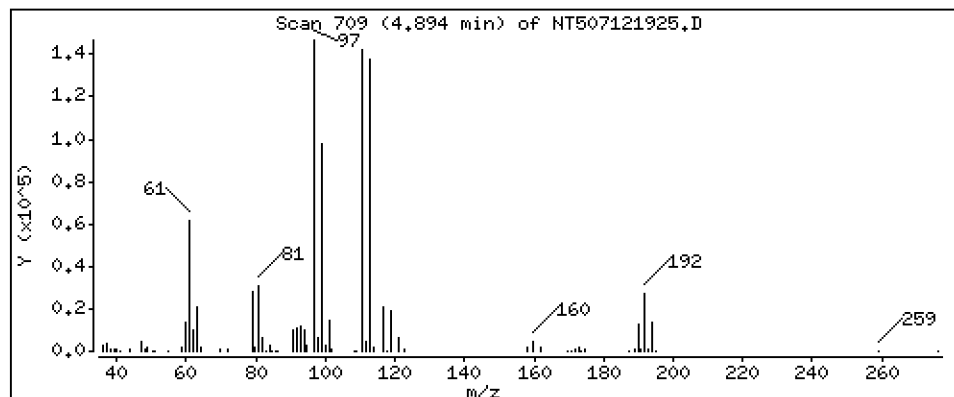
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 49.043 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

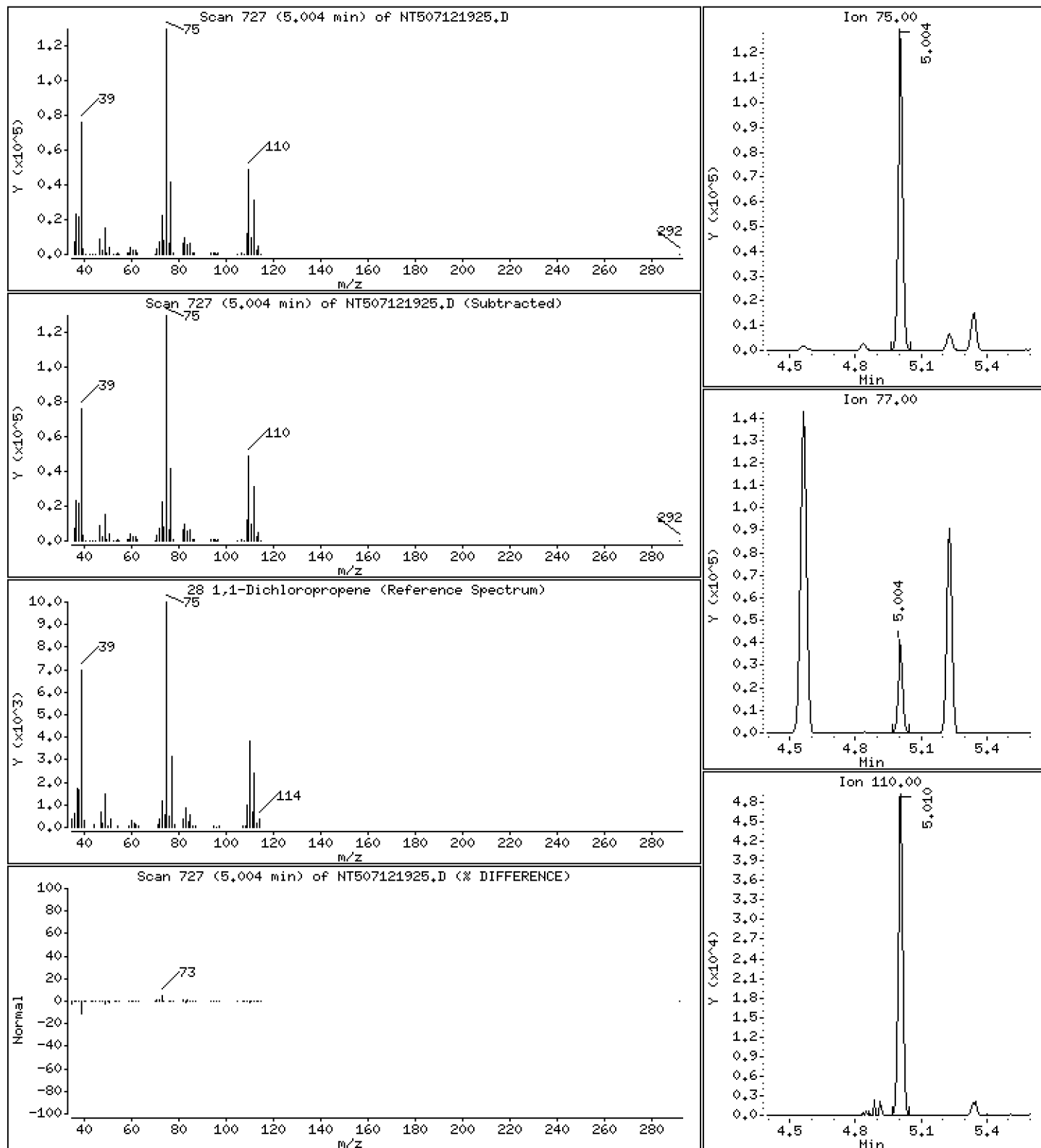
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 44,220 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

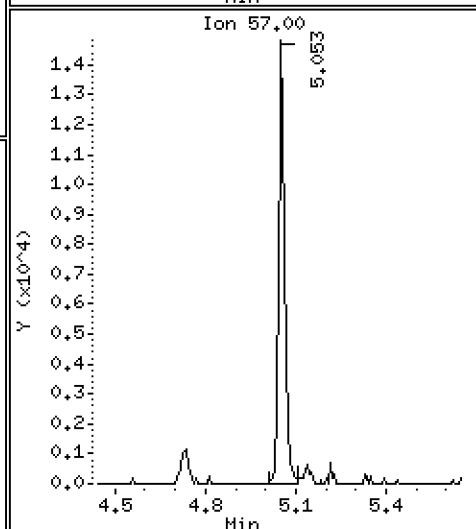
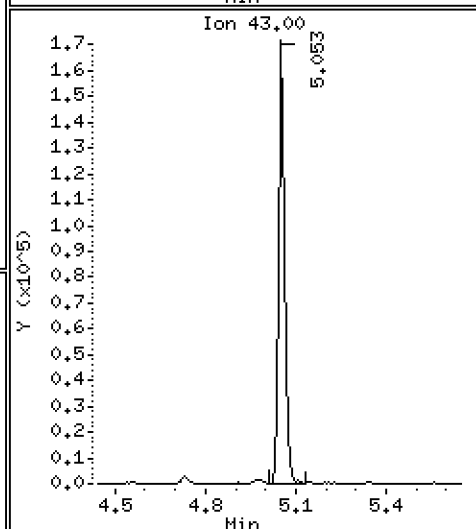
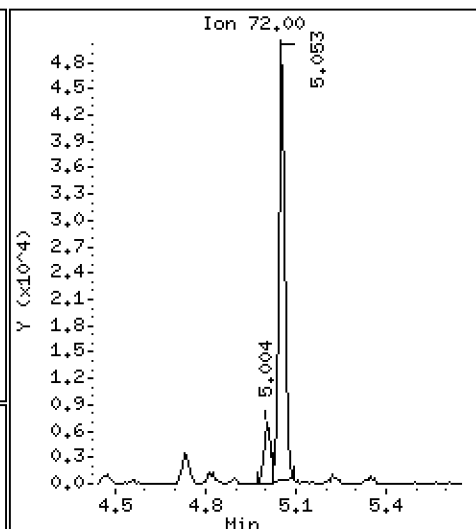
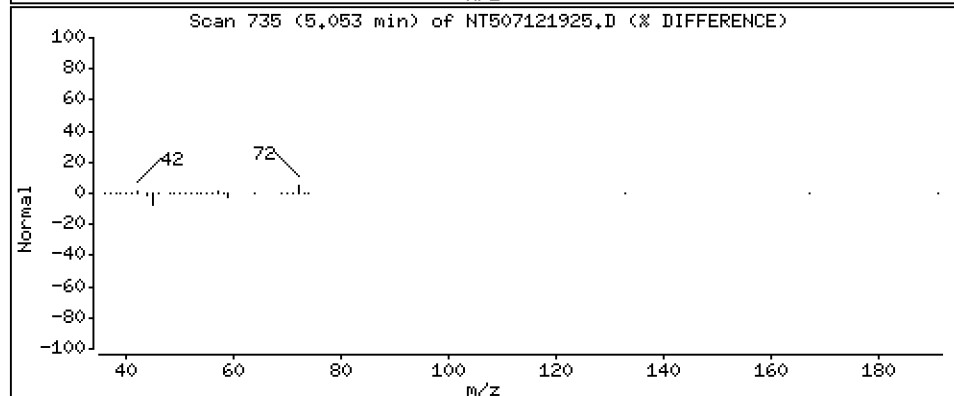
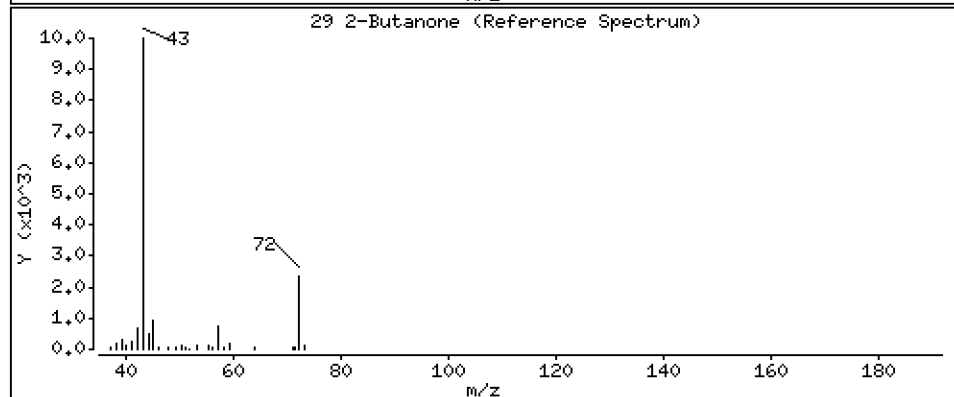
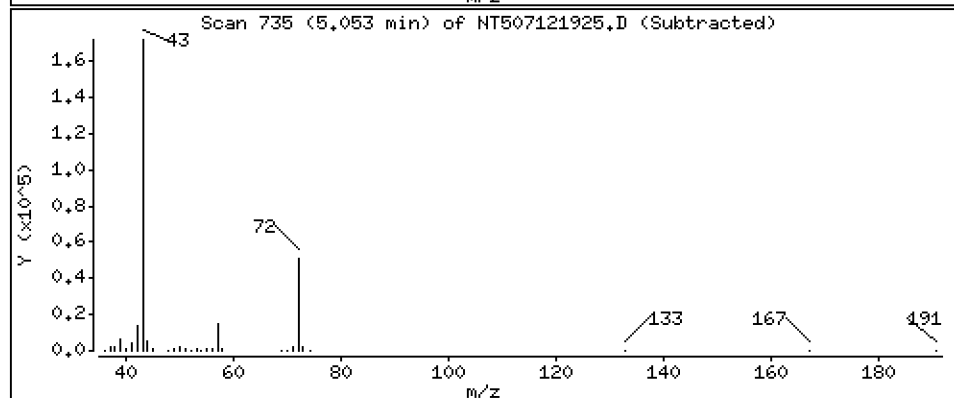
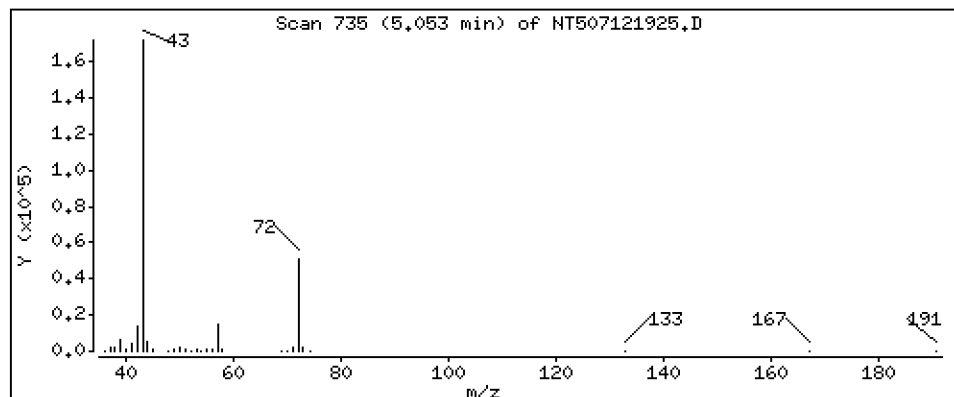
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 288.37 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

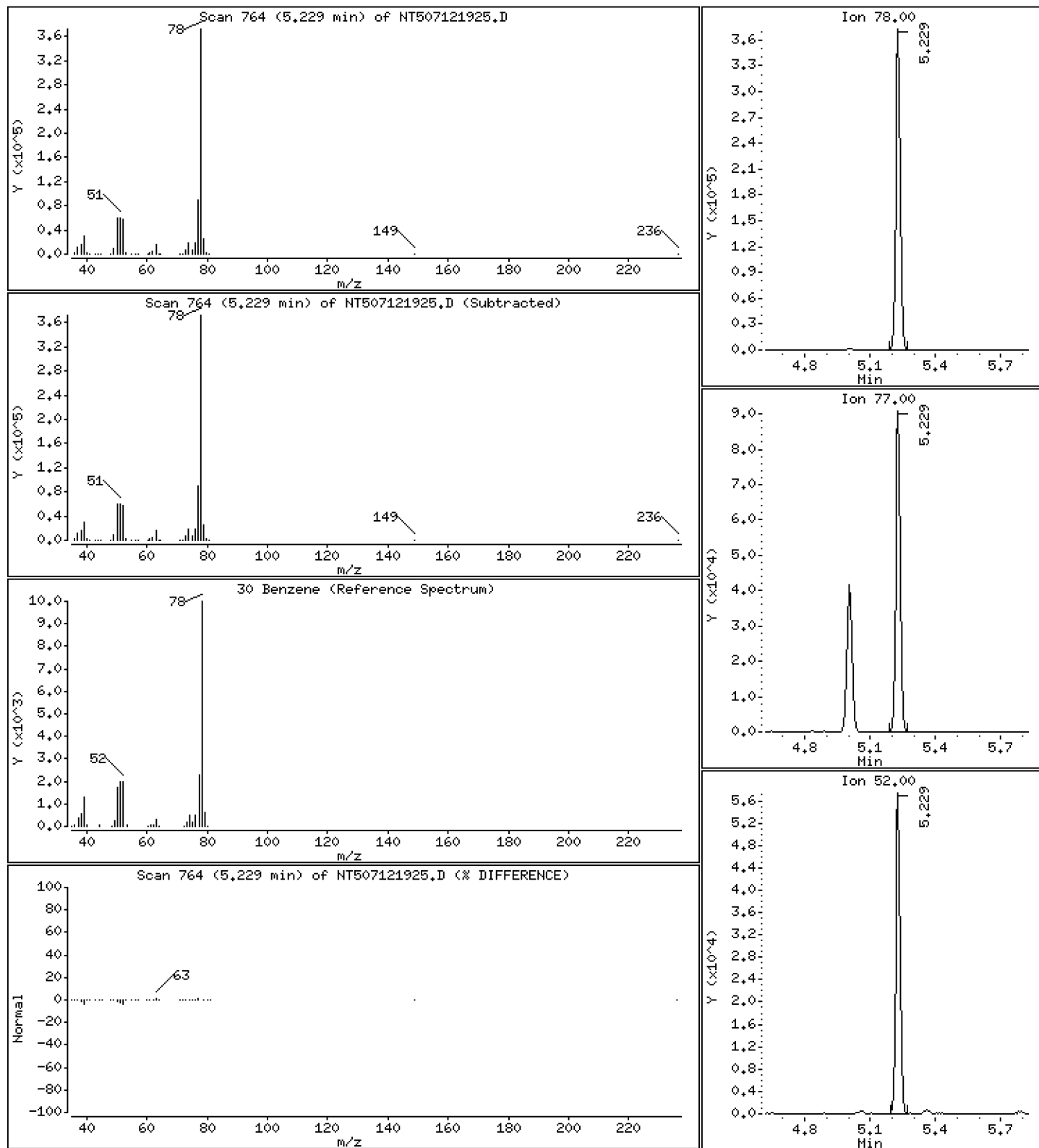
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 41,400 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

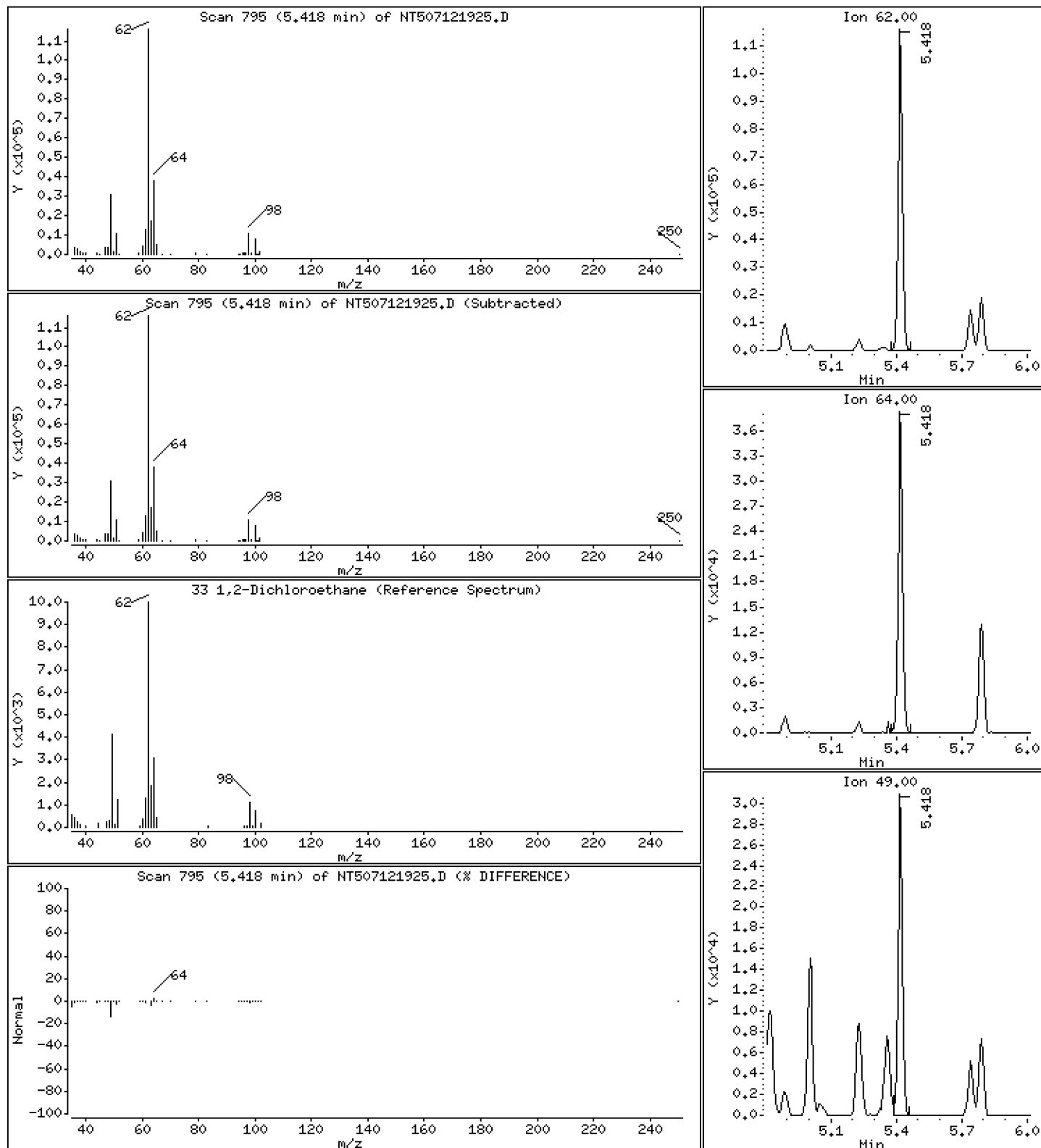
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 44,511 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

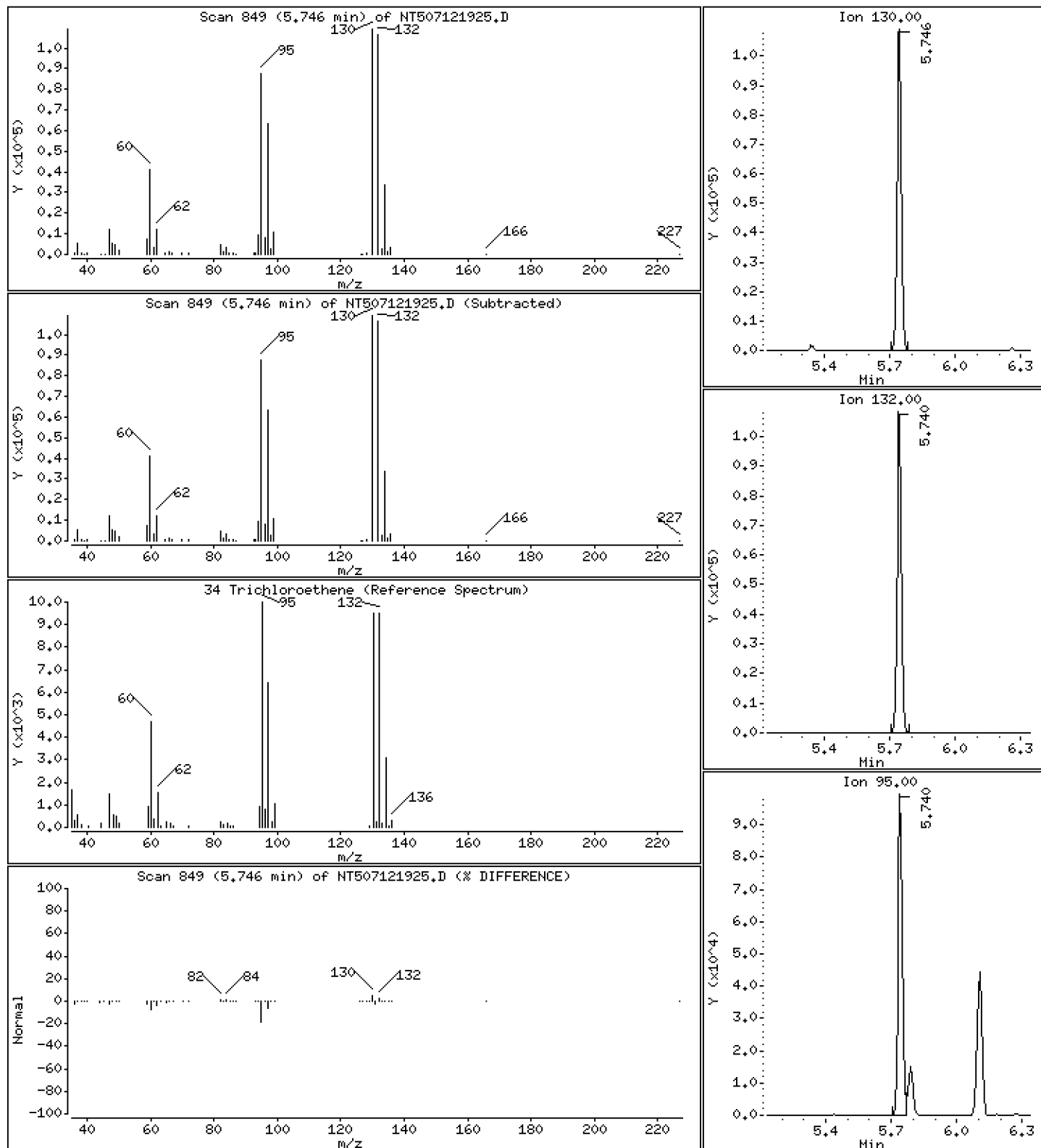
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 38,691 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

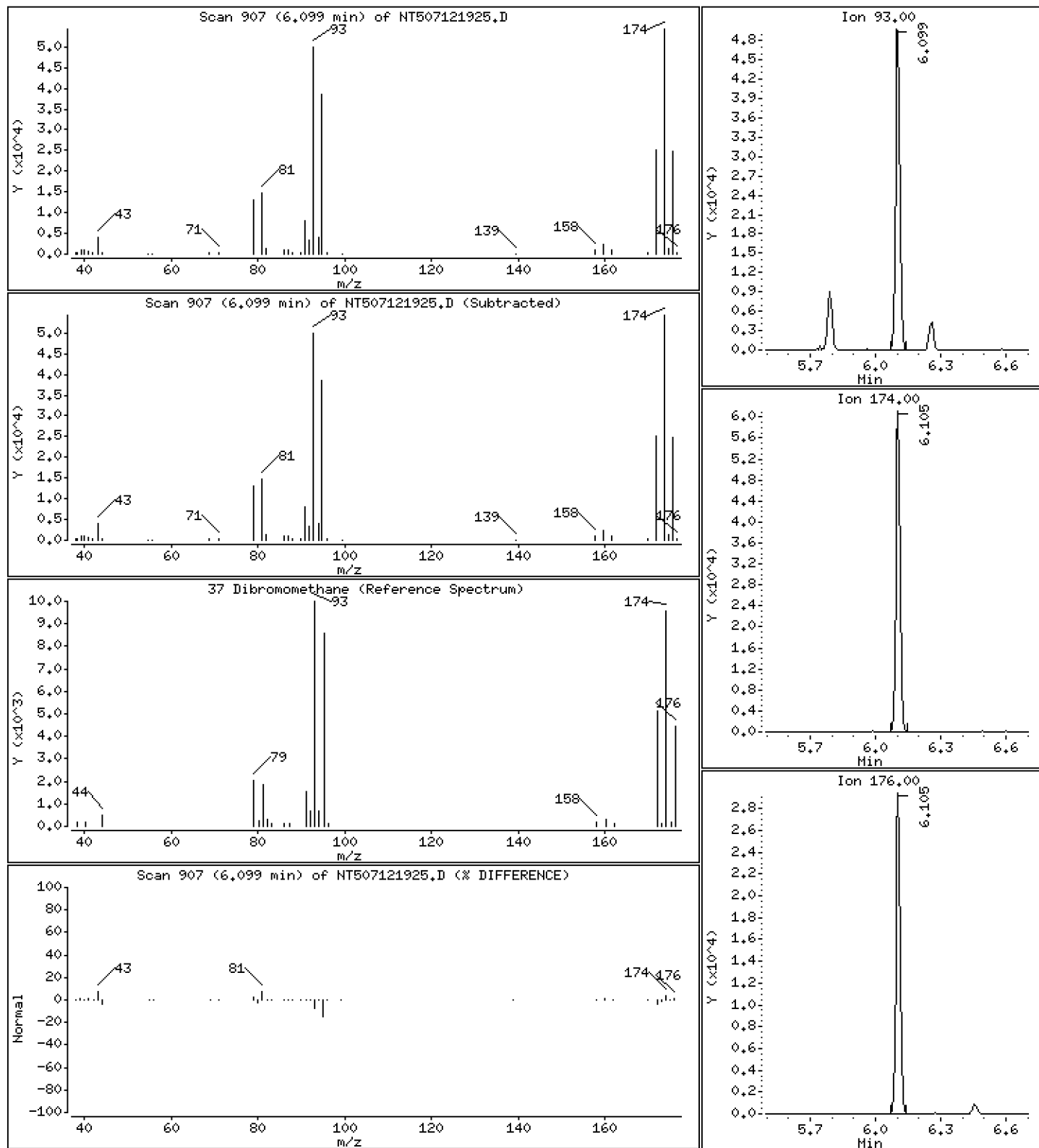
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 40,660 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MS1

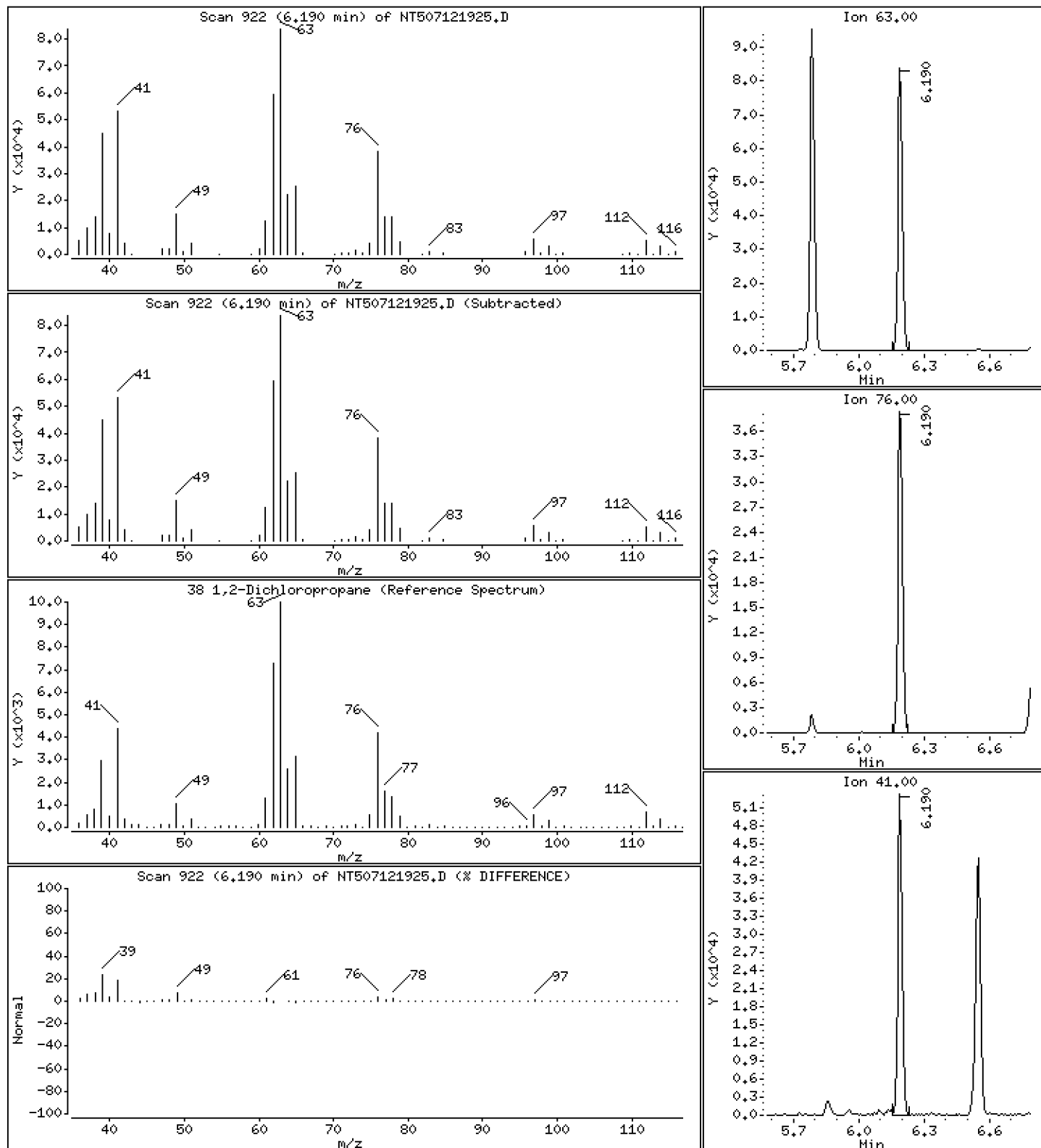
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 42,263 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

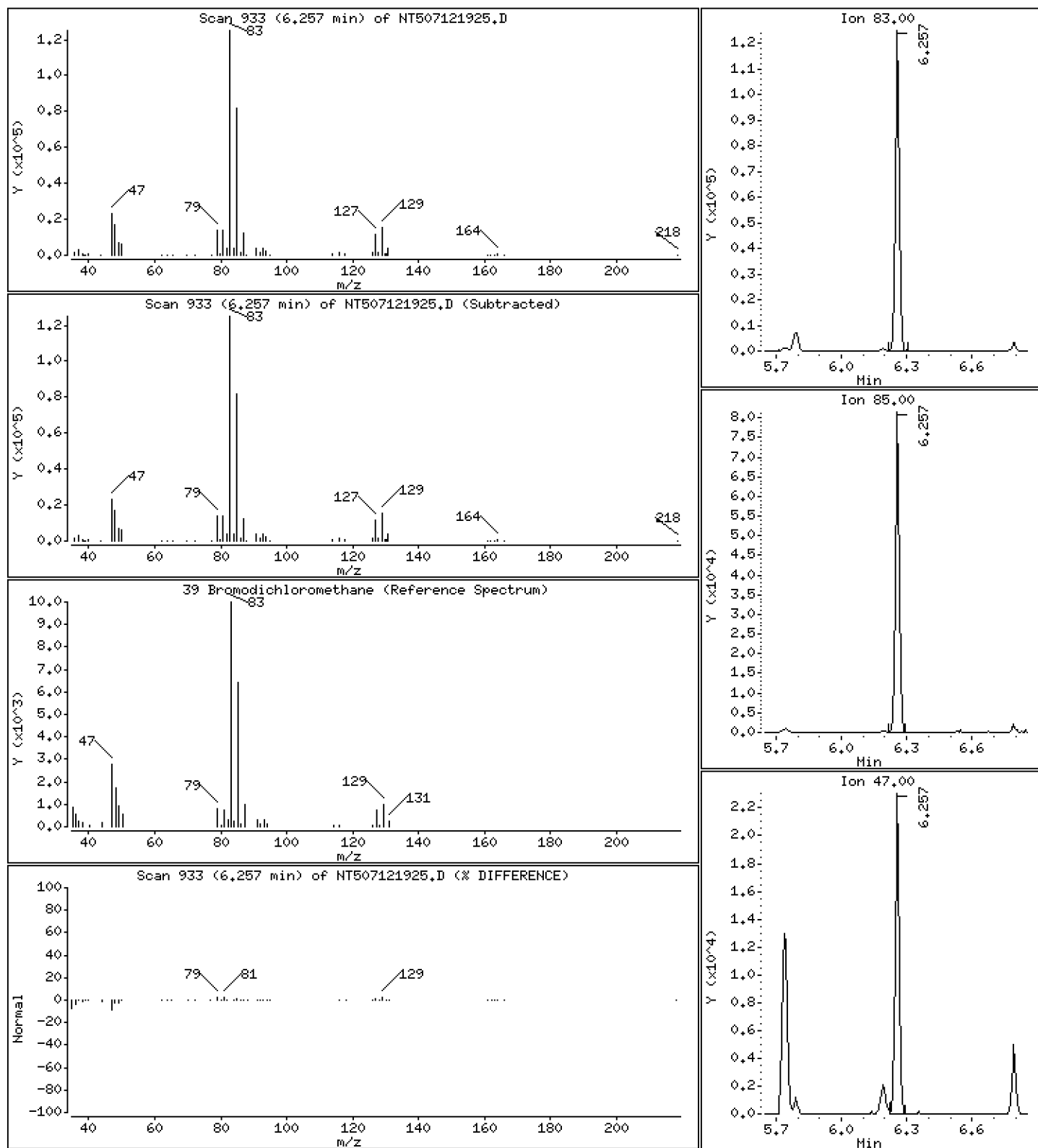
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 40.473 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

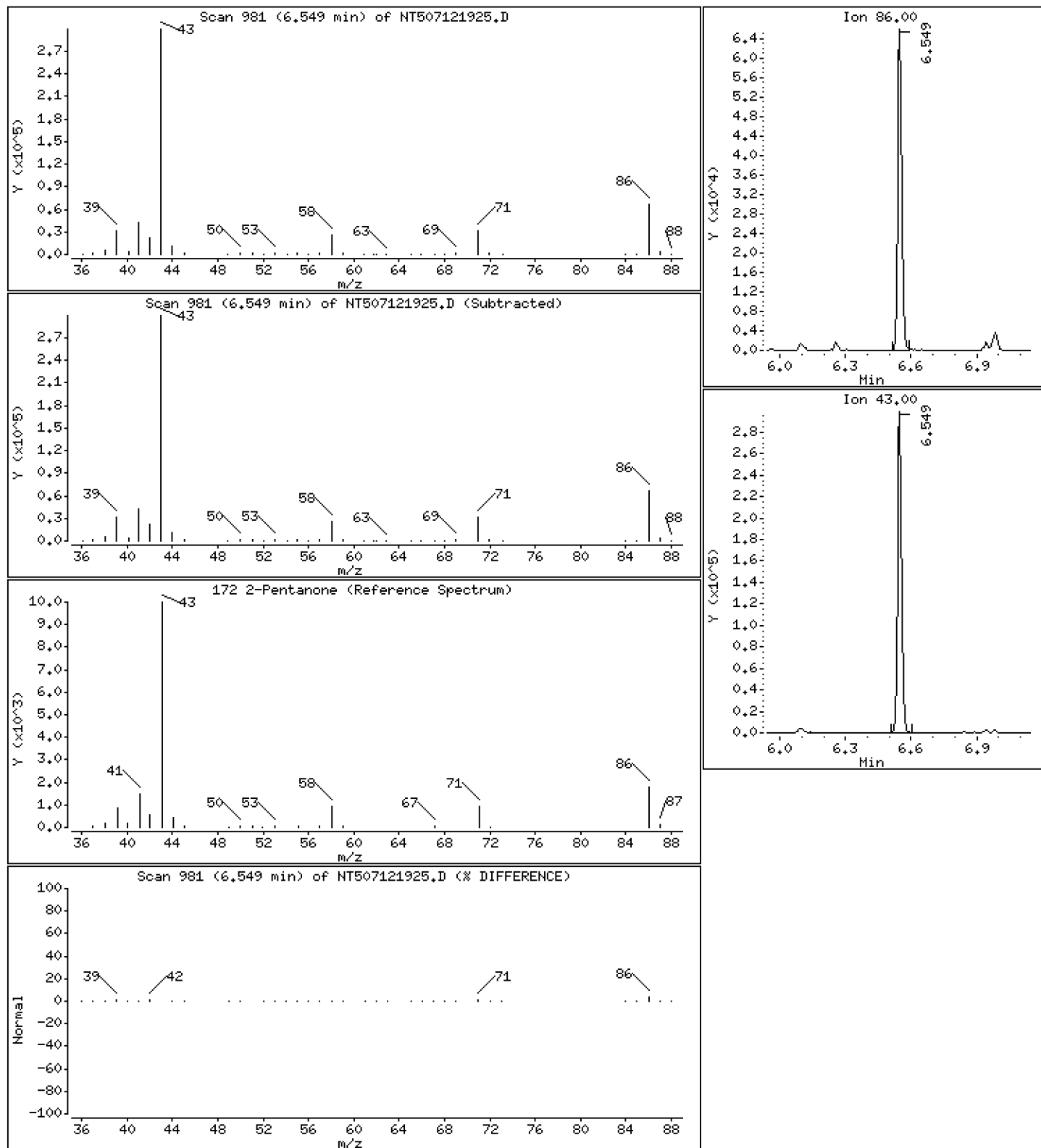
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 240.35 ug/Kg

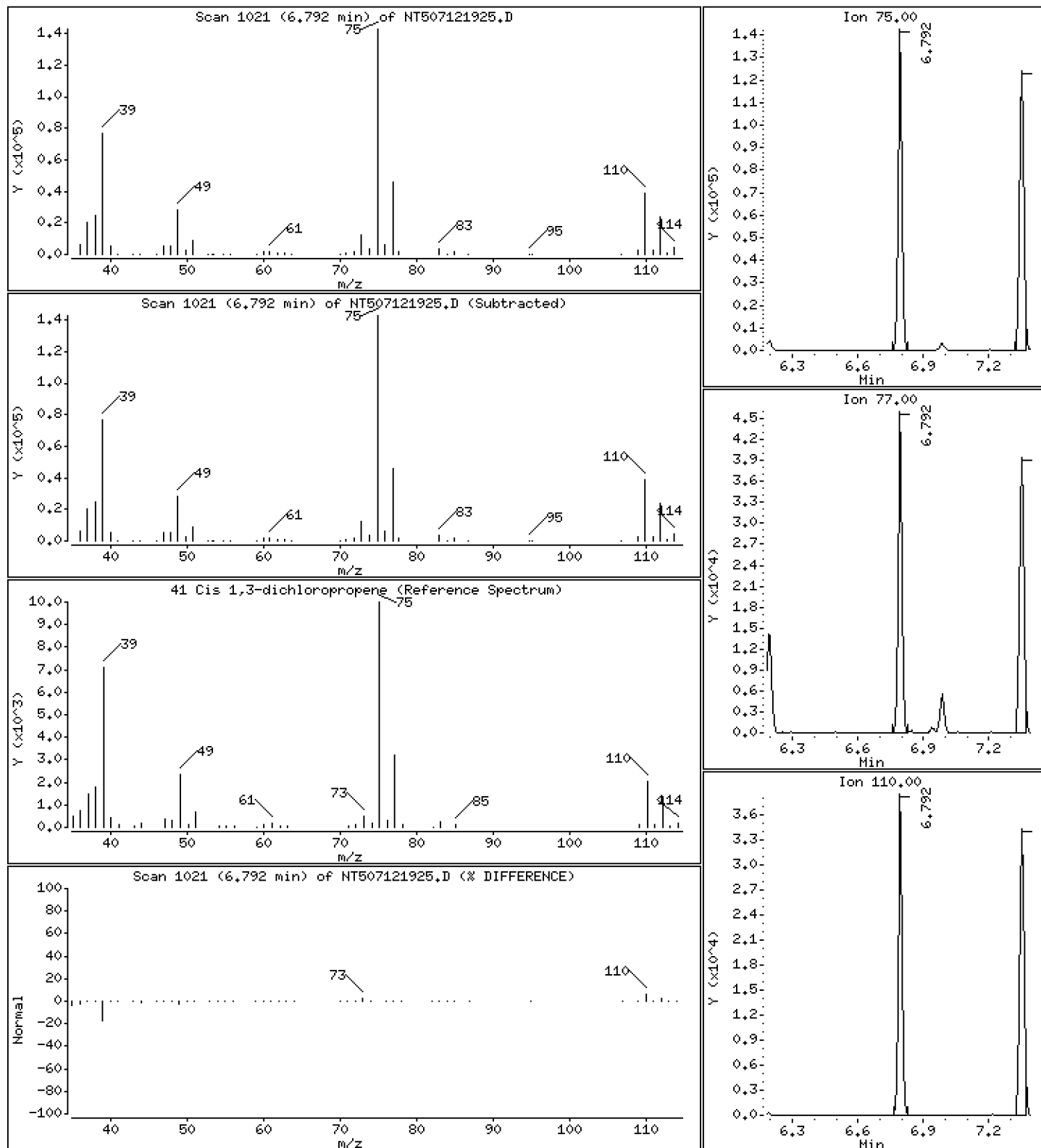


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 38,150 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

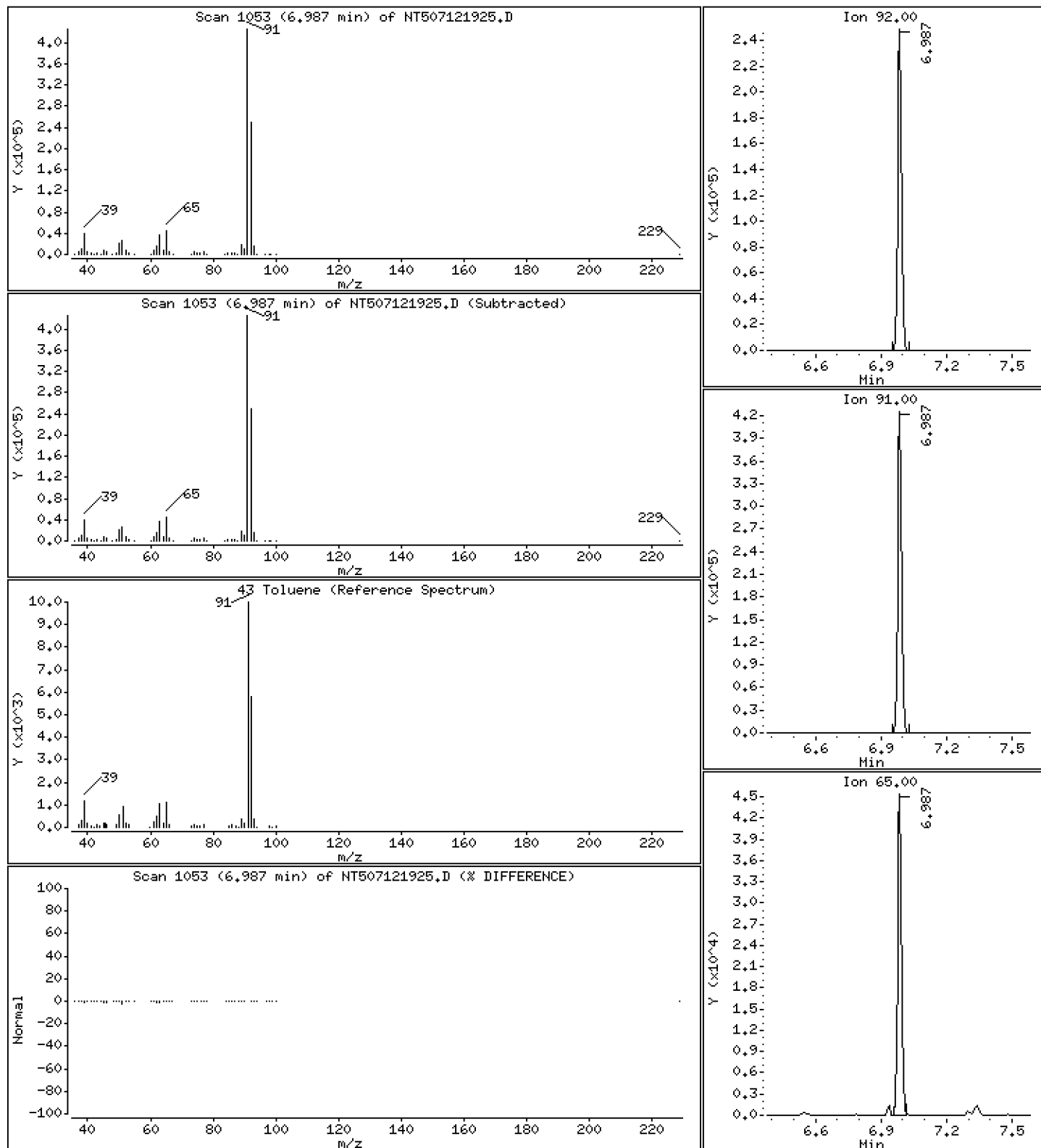
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

43 Toluene

Concentration: 35,617 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

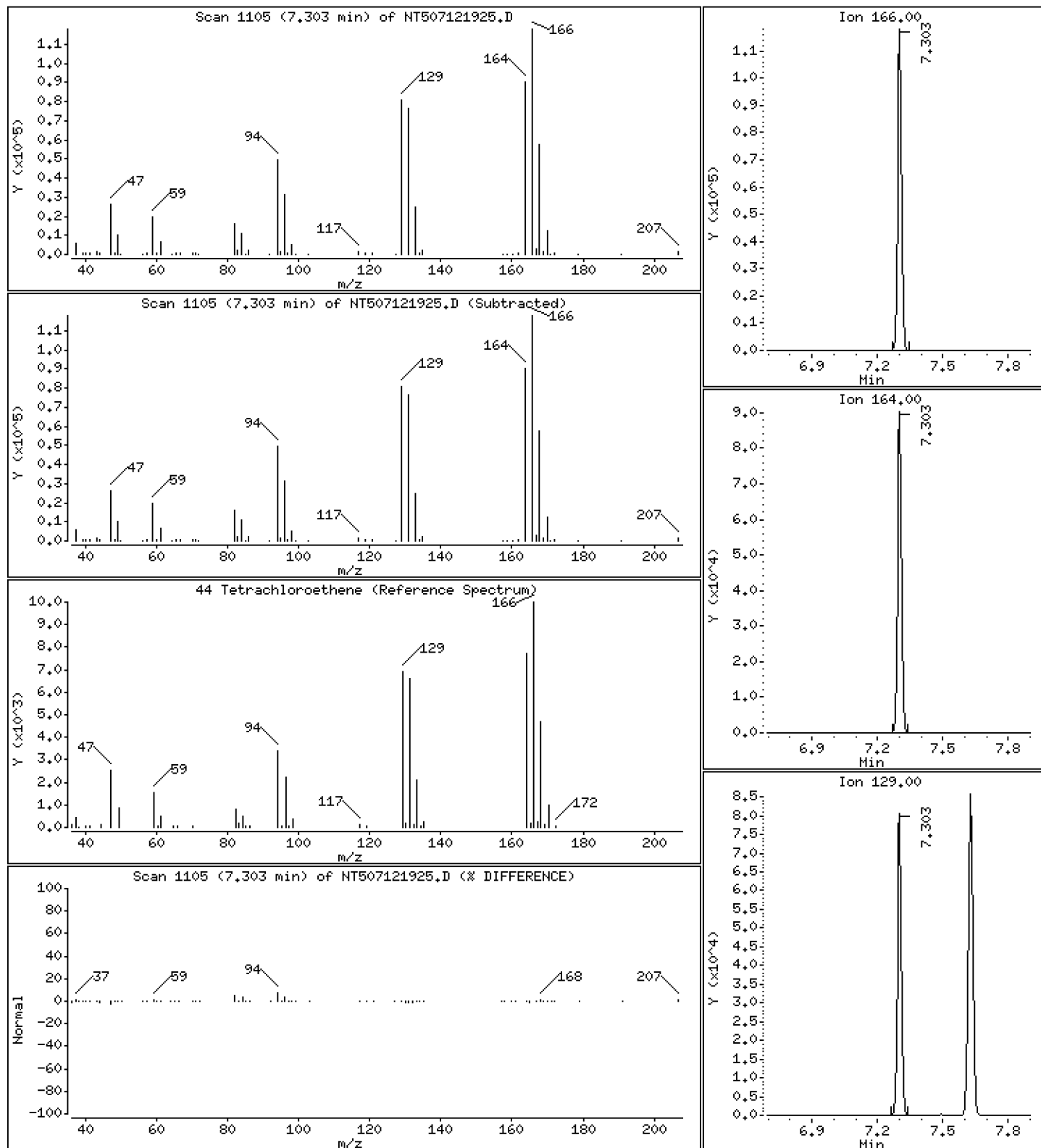
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 34,441 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

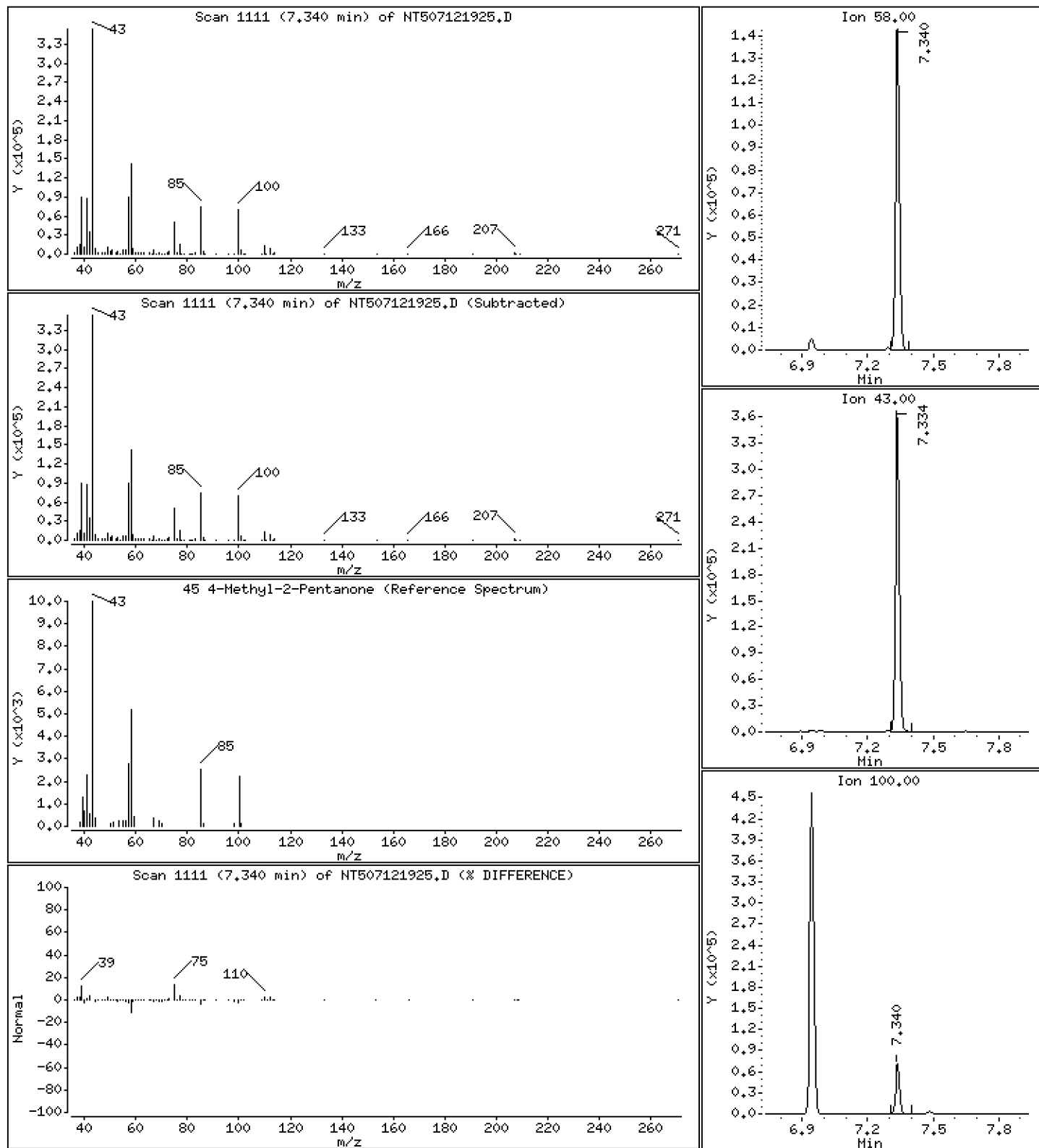
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 223.94 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

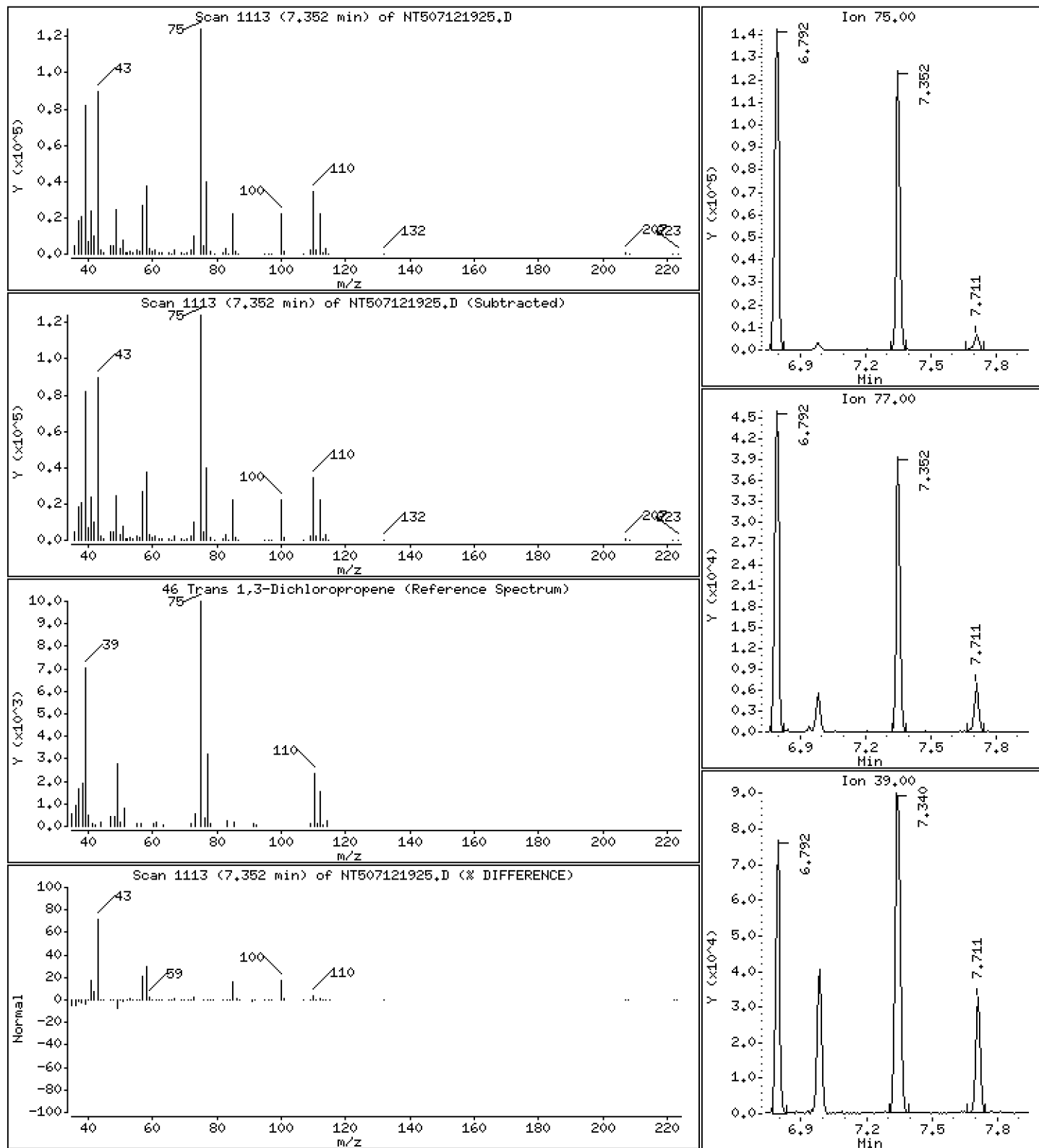
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 35,373 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

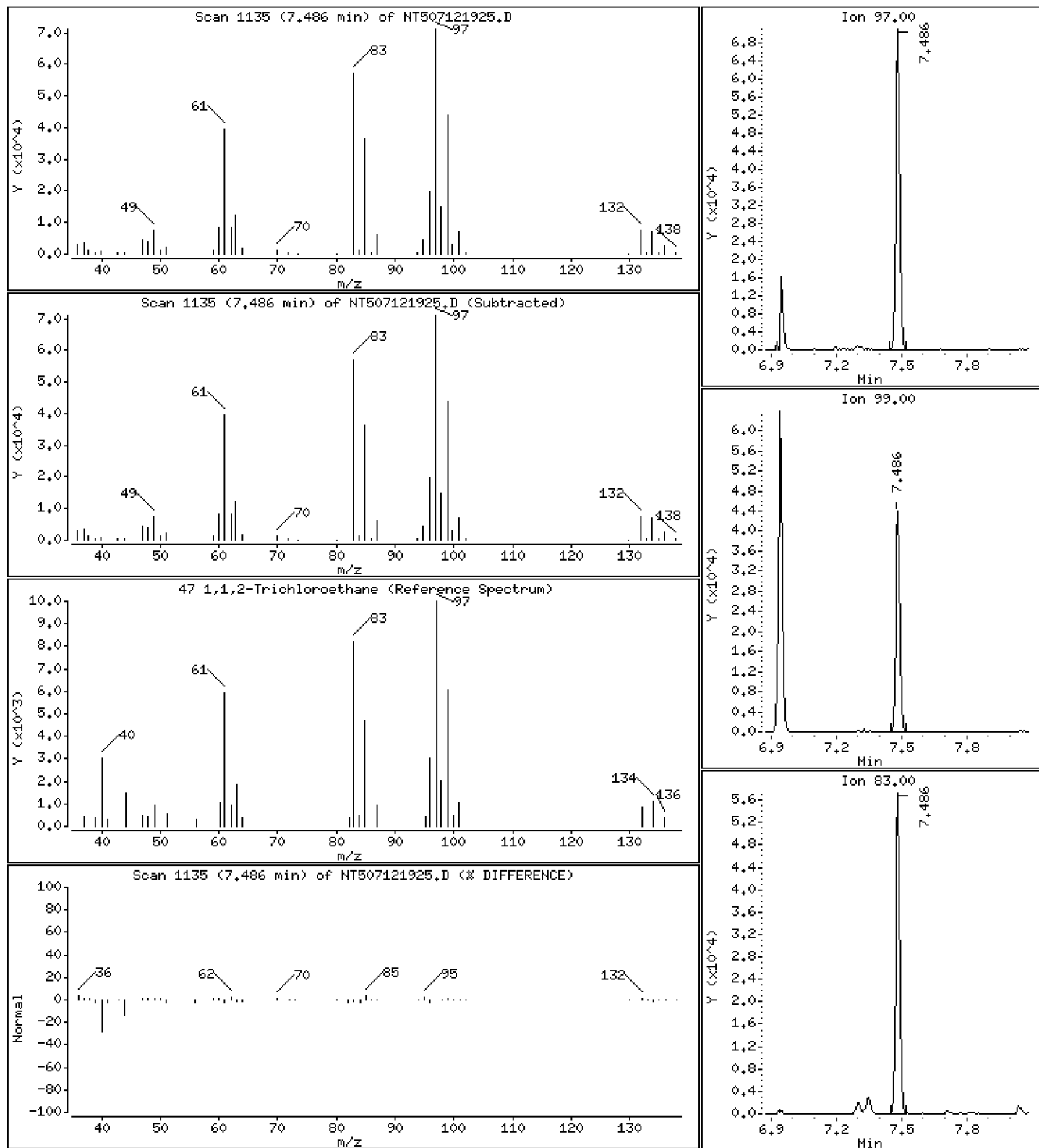
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 34,375 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

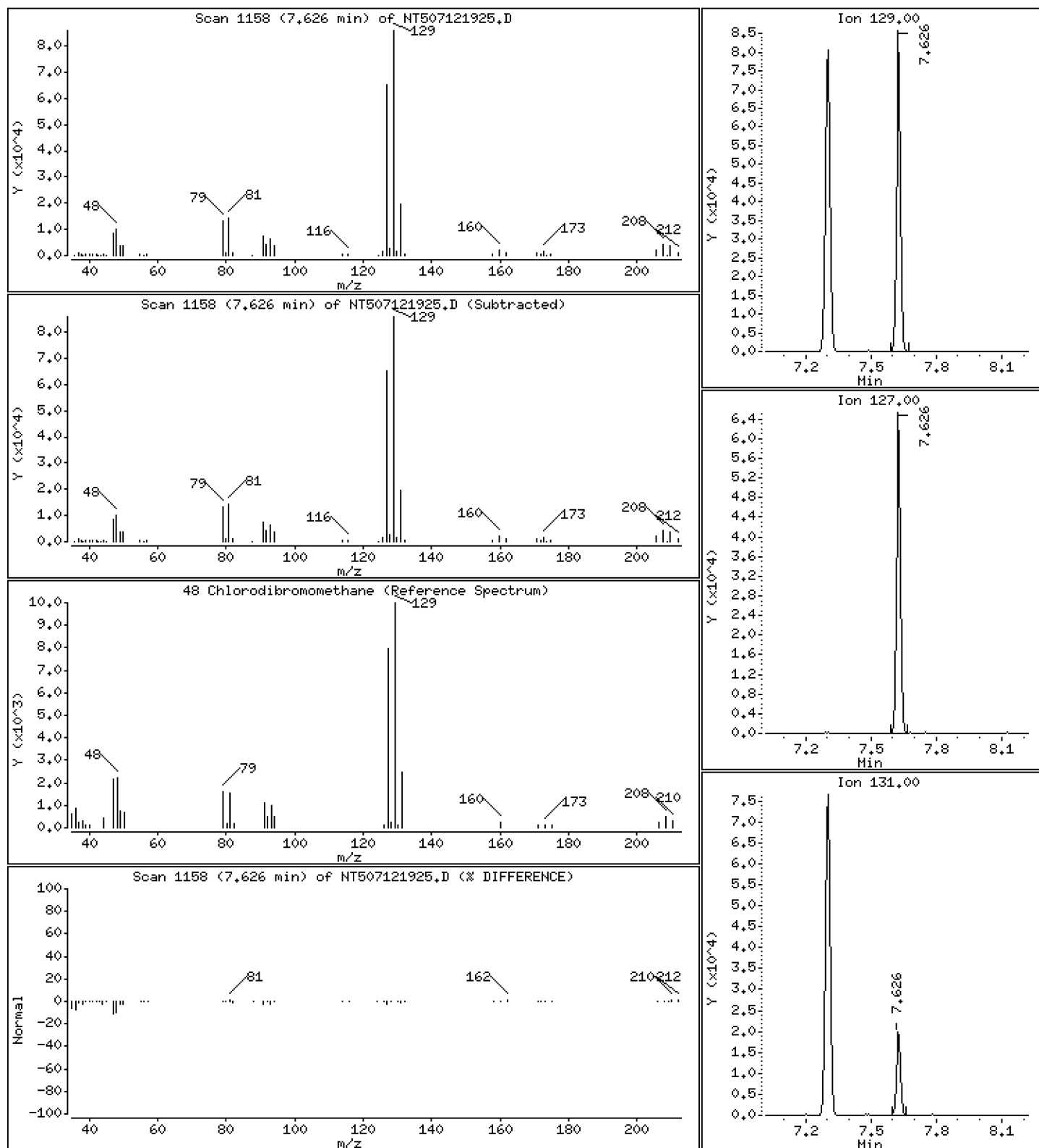
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 32,409 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

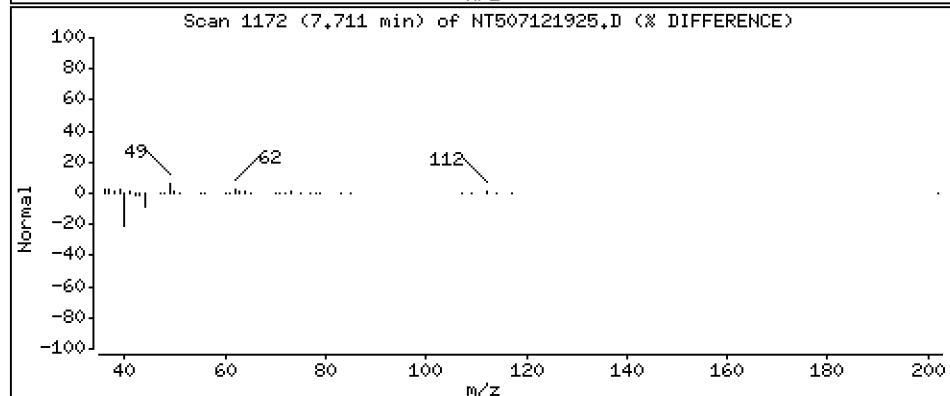
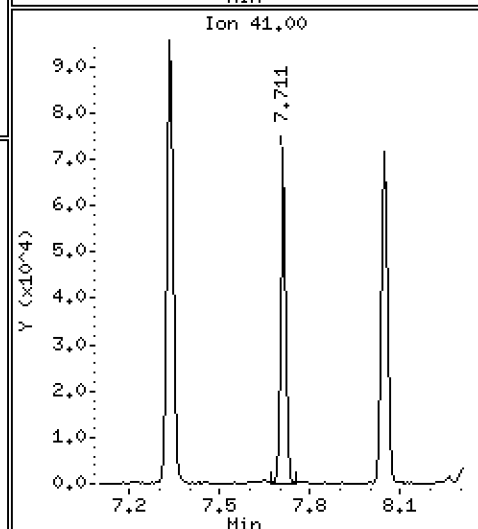
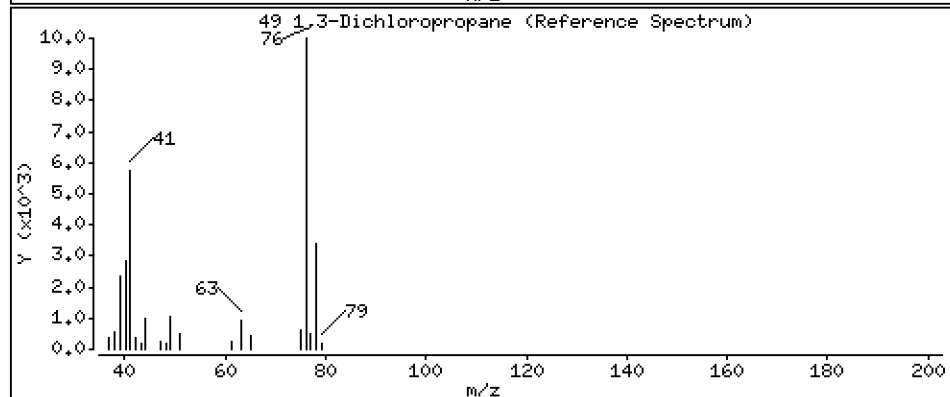
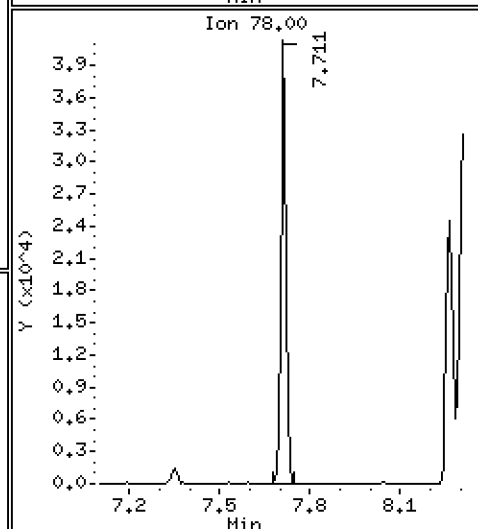
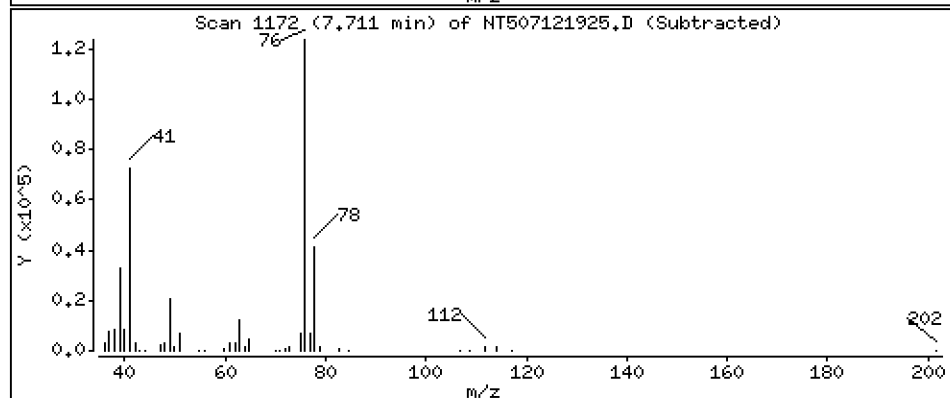
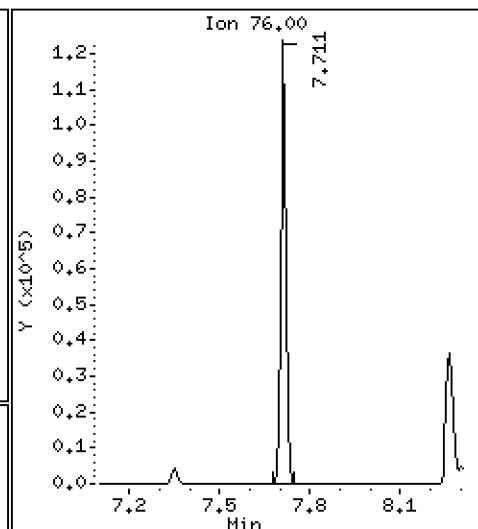
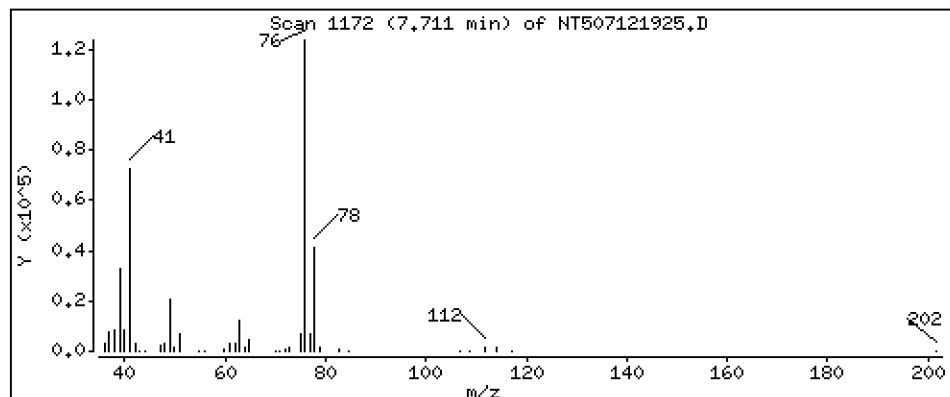
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 36,588 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

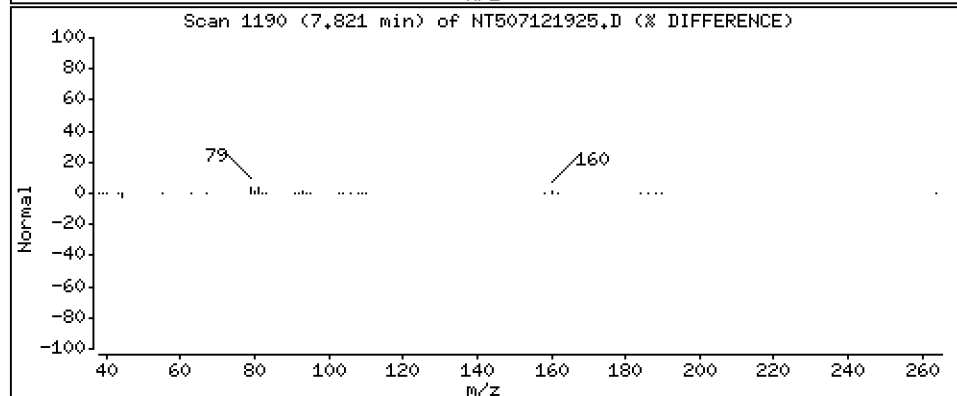
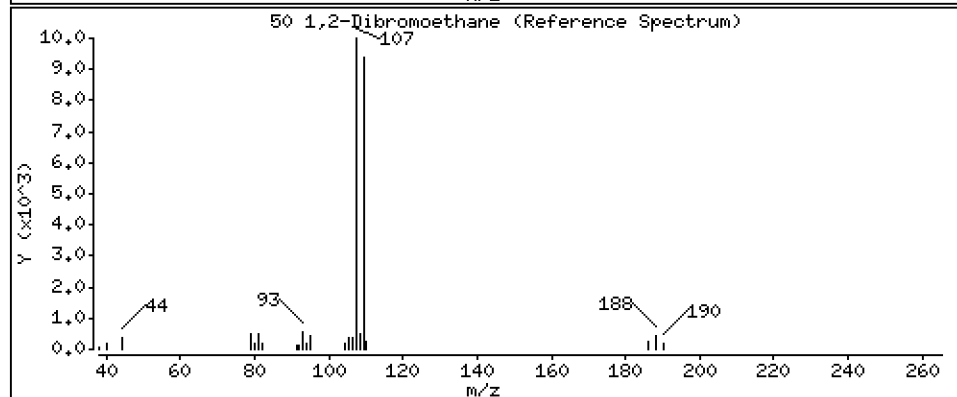
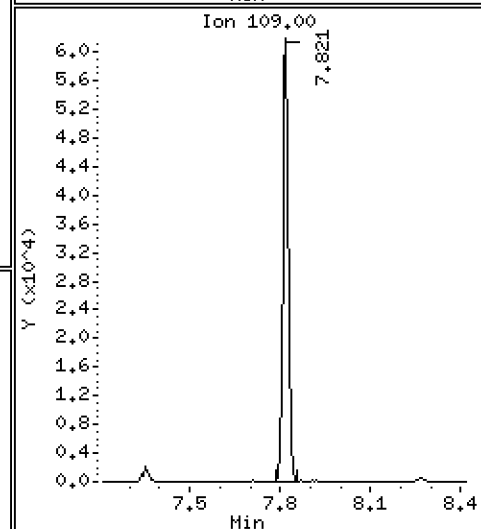
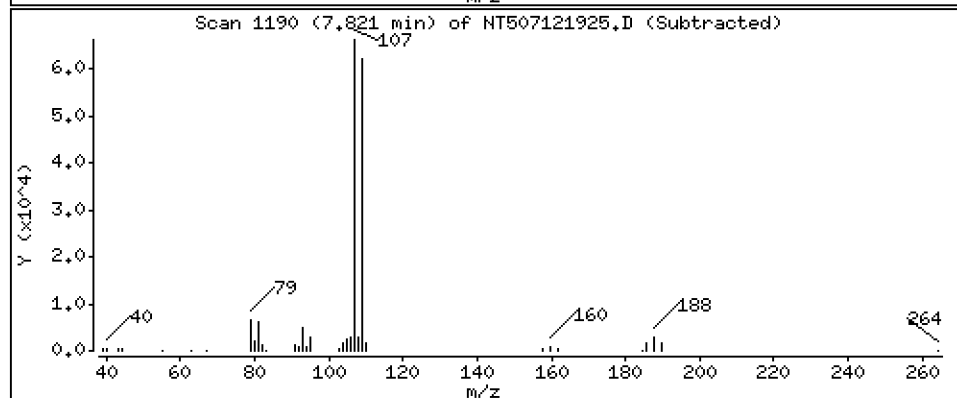
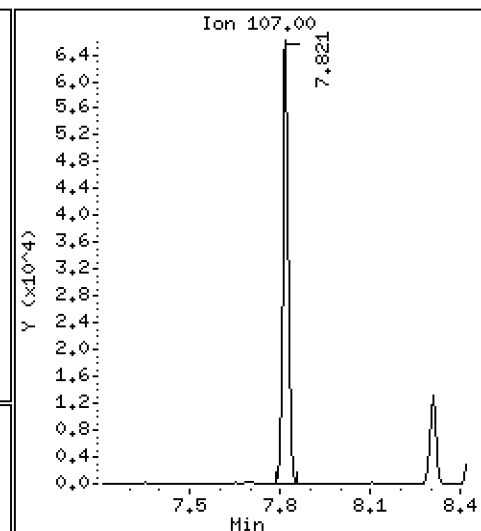
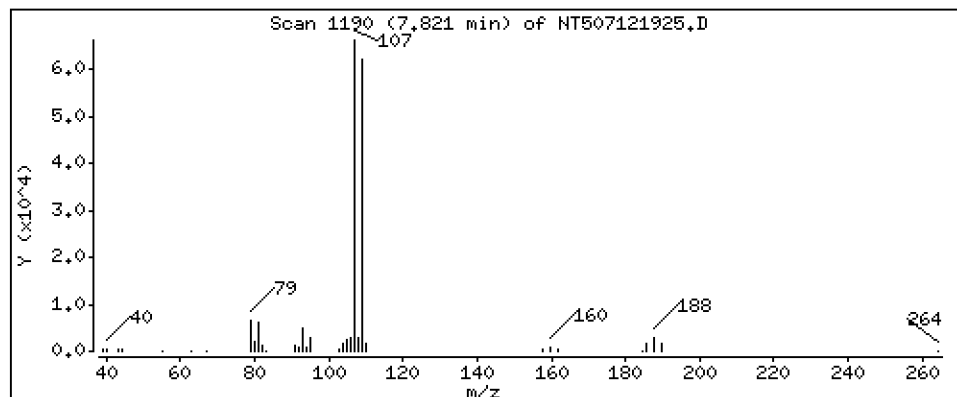
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 33,520 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

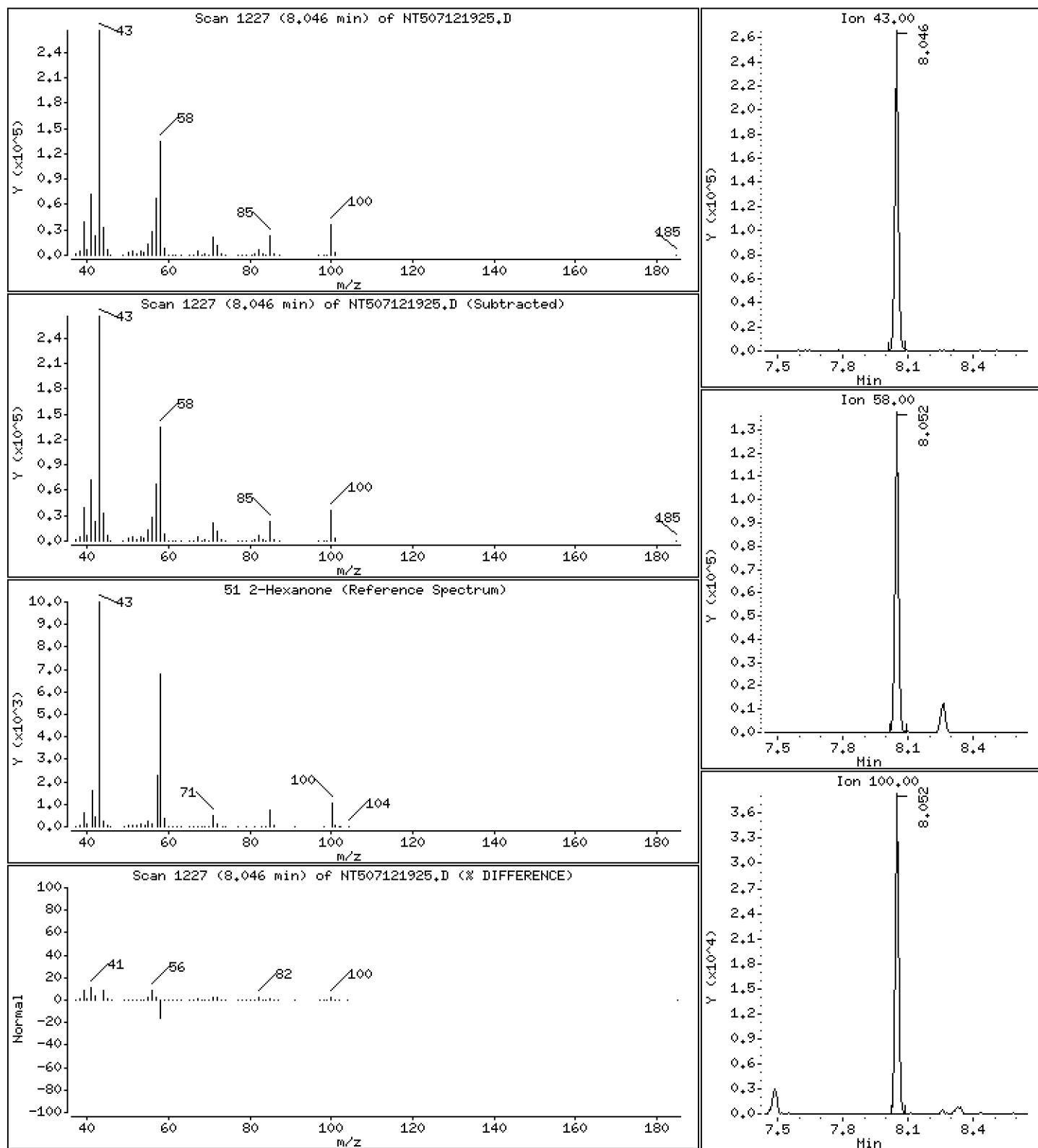
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 225.60 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

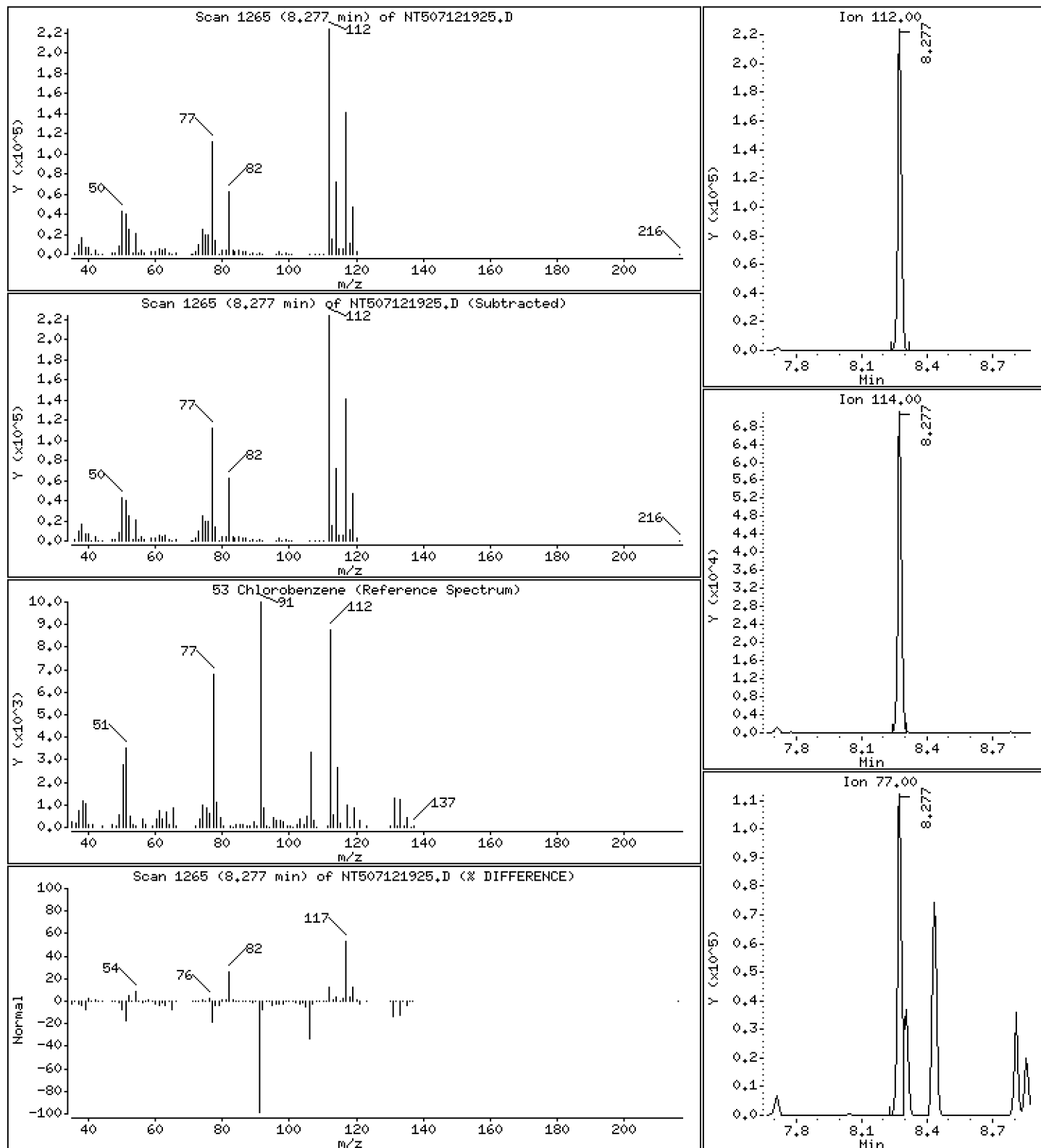
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 27,522 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

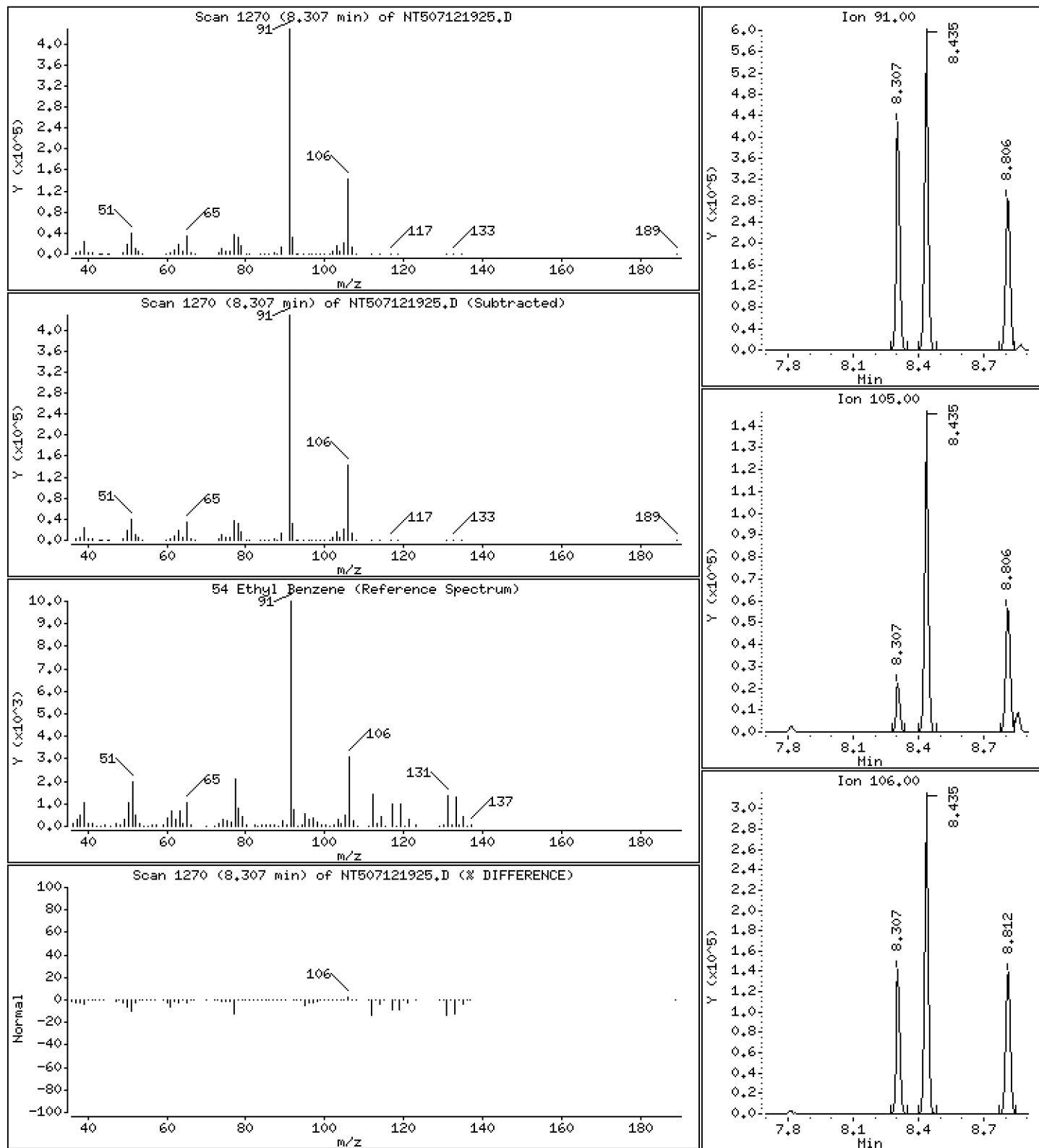
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 31.713 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

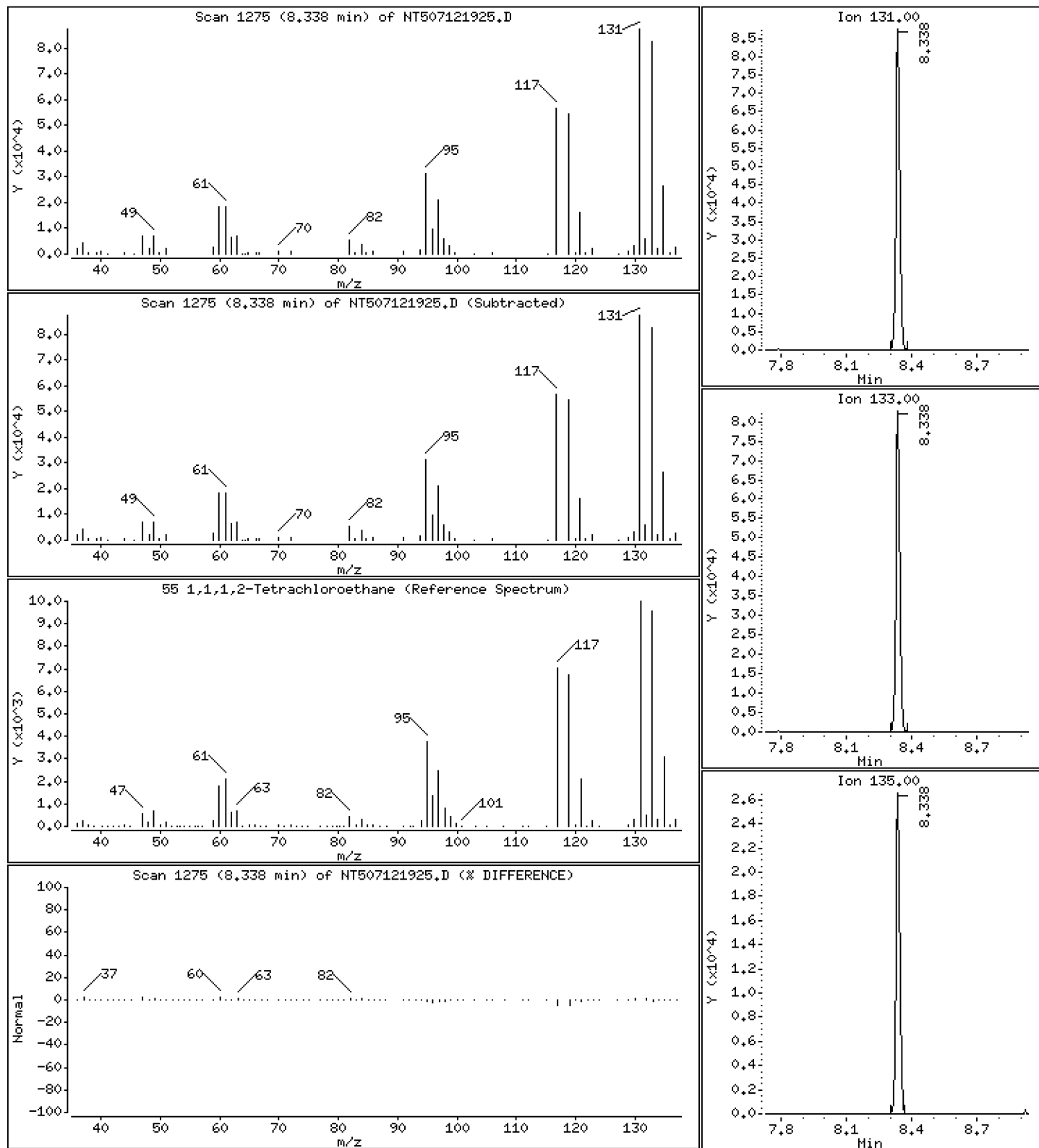
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 31,591 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MS1

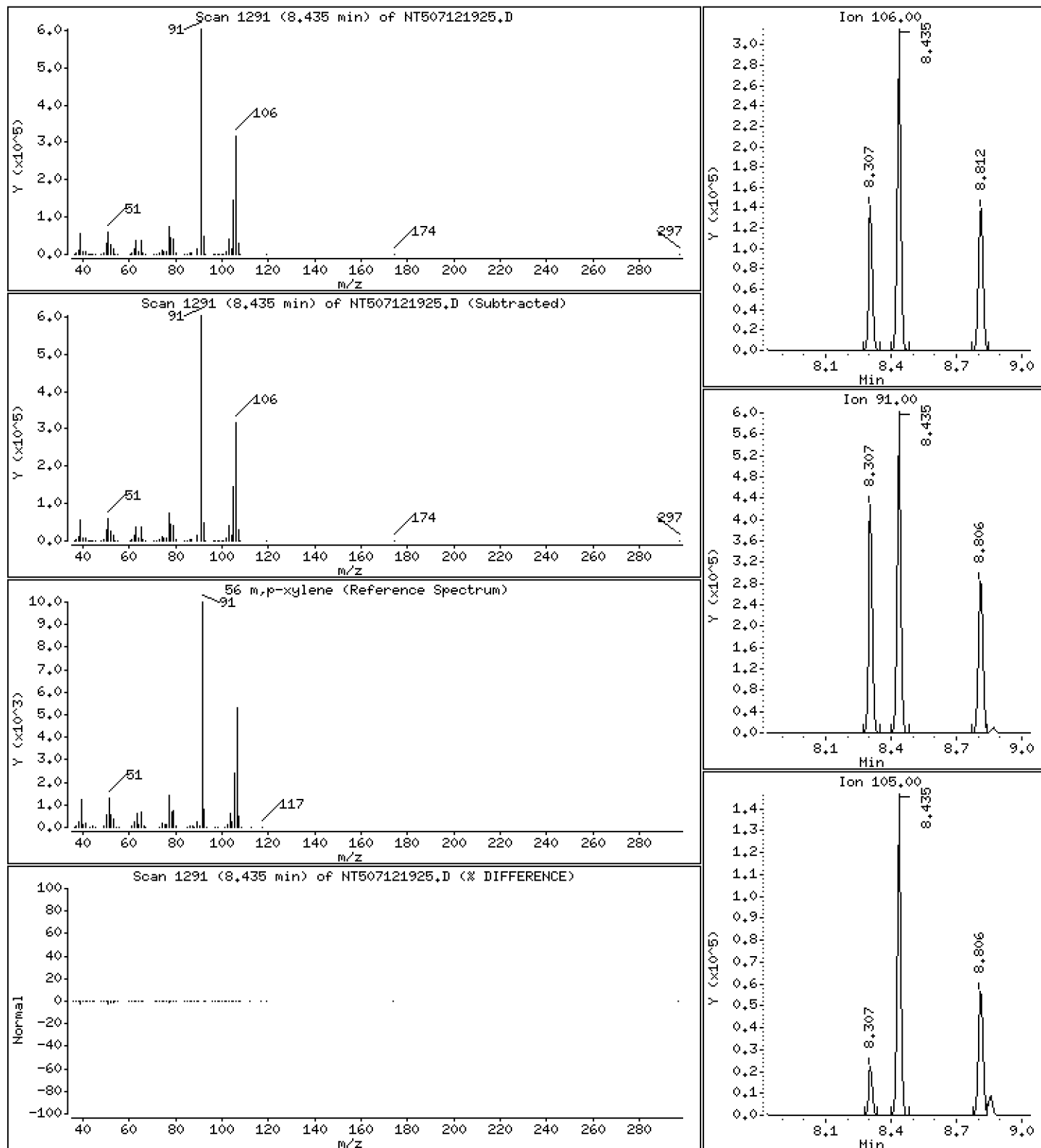
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

56 m,p-xylene

Concentration: 58,375 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MS1

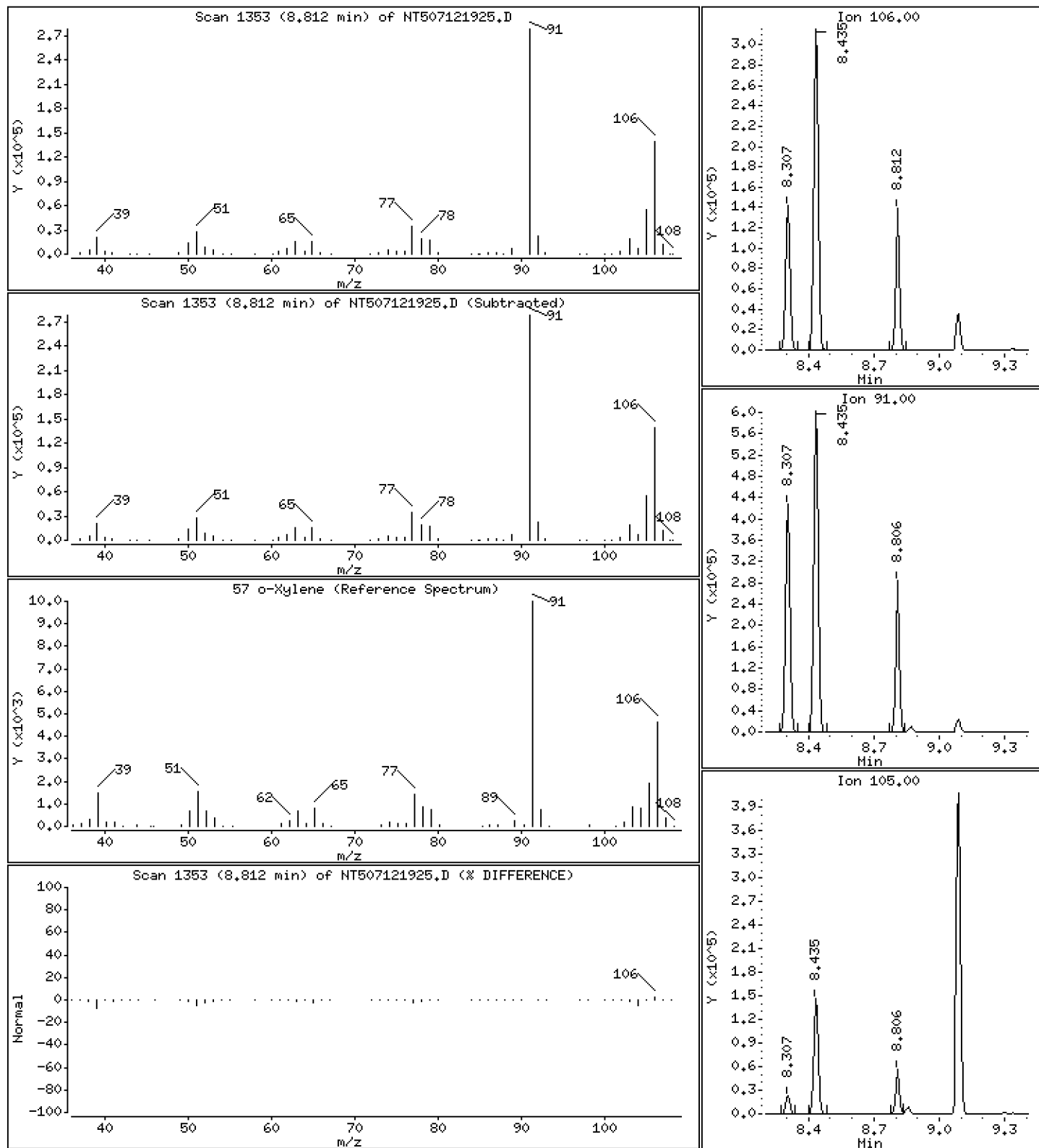
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 27.958 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

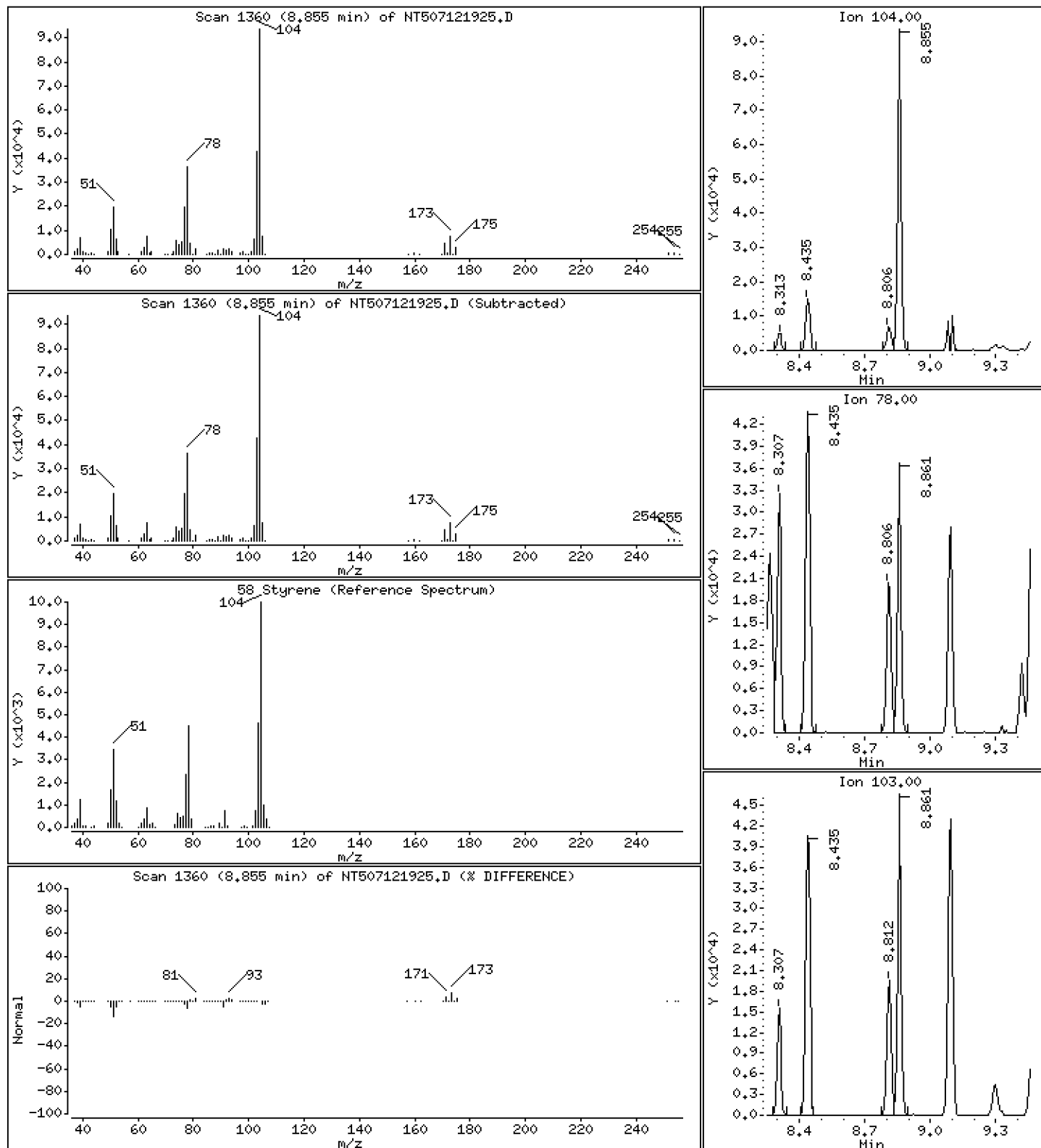
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 11,274 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

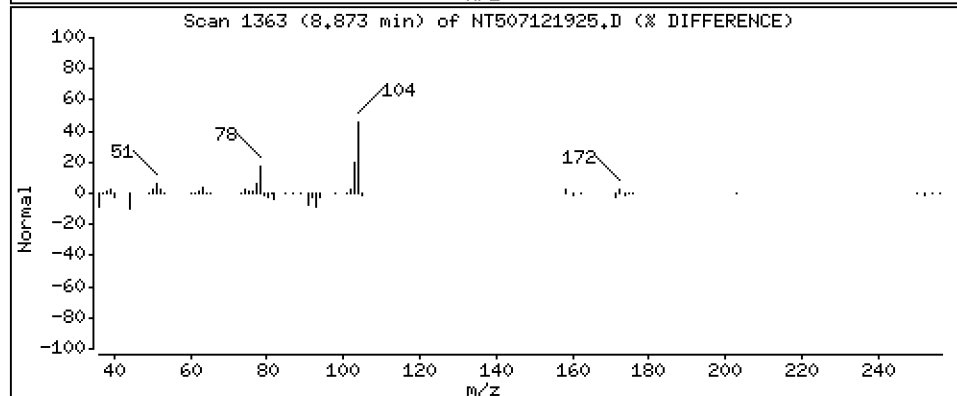
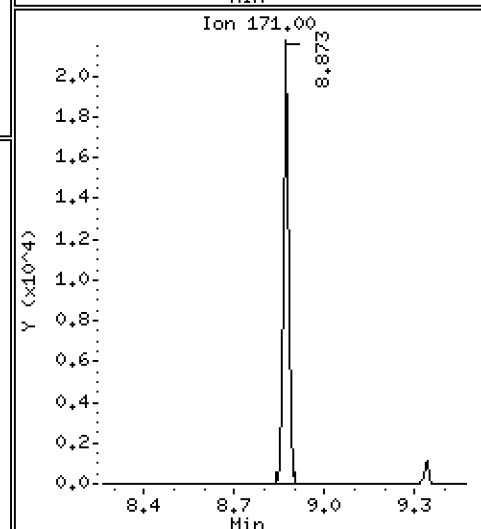
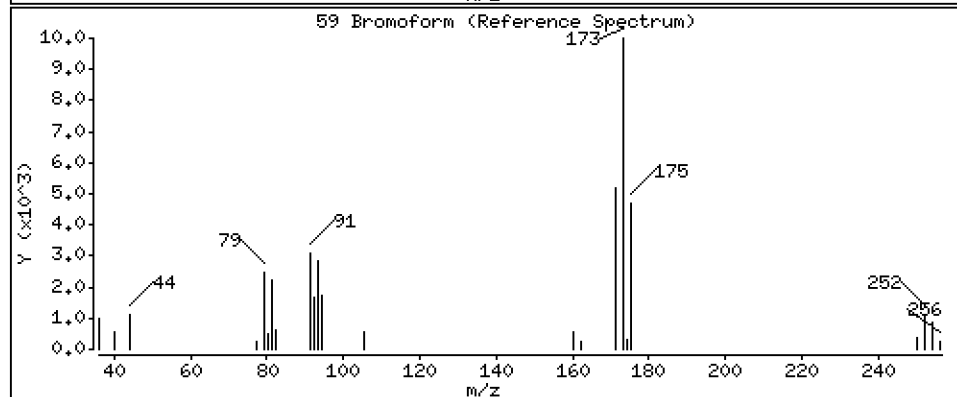
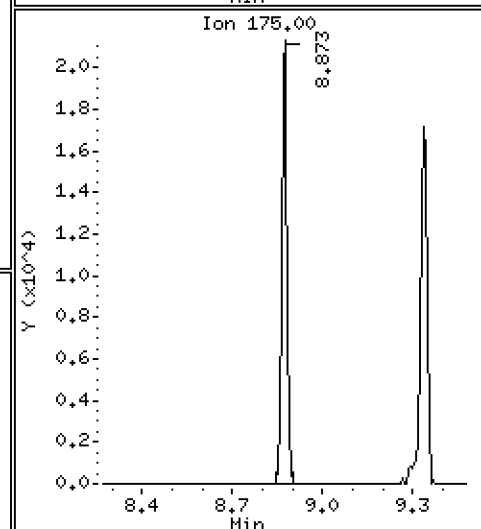
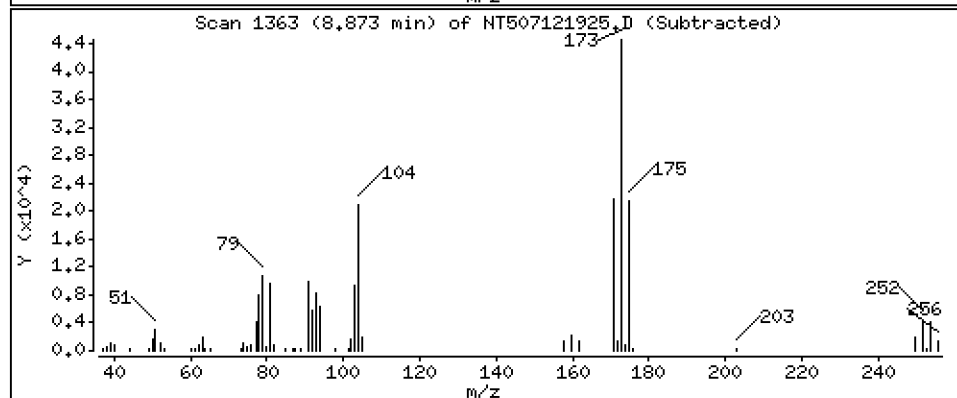
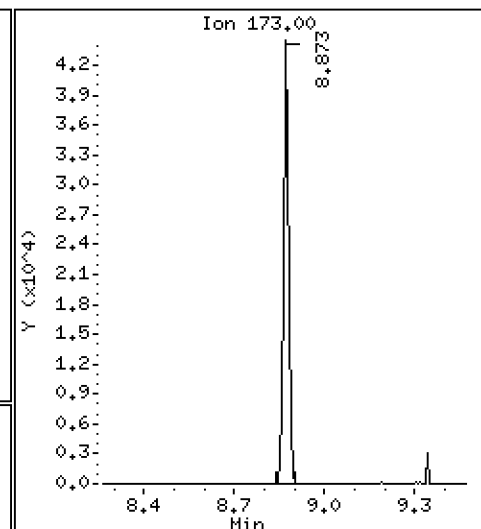
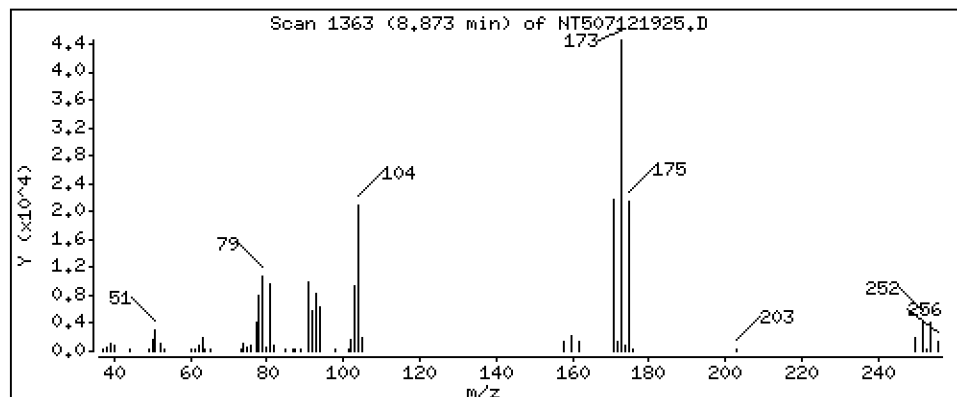
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59 Bromoform

Concentration: 30.892 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

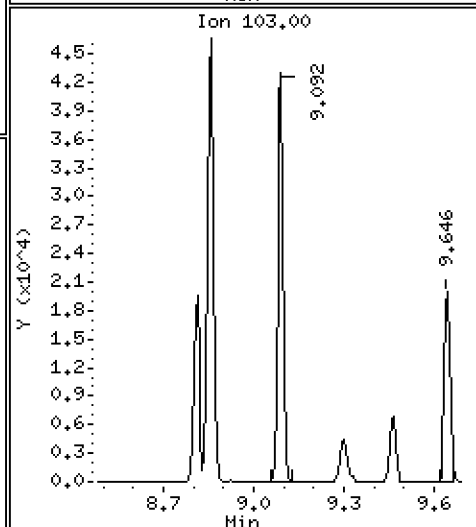
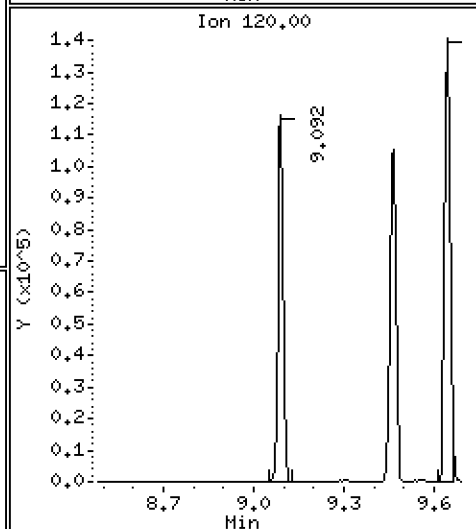
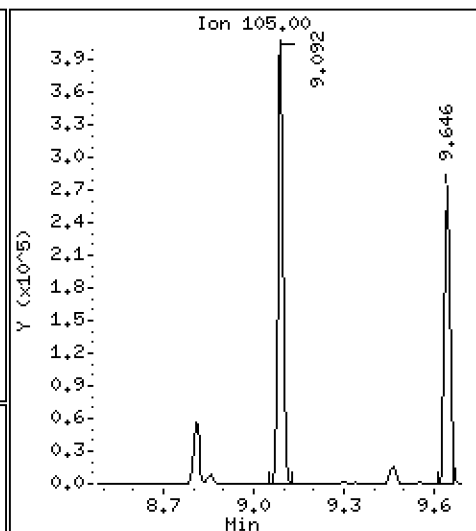
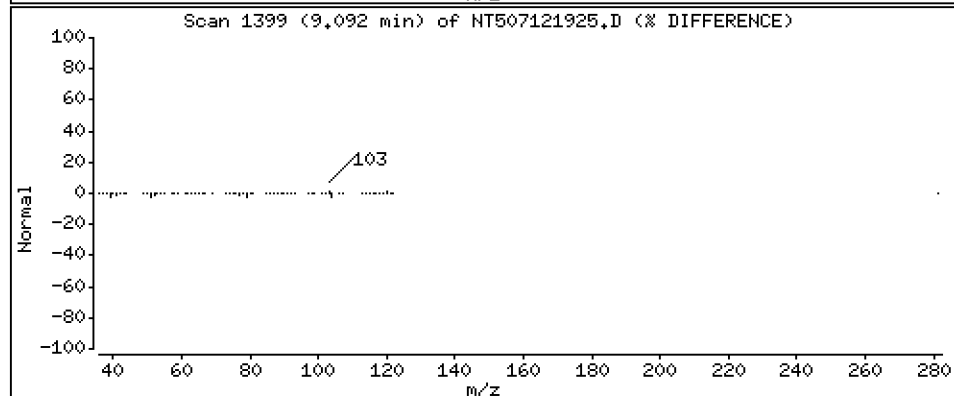
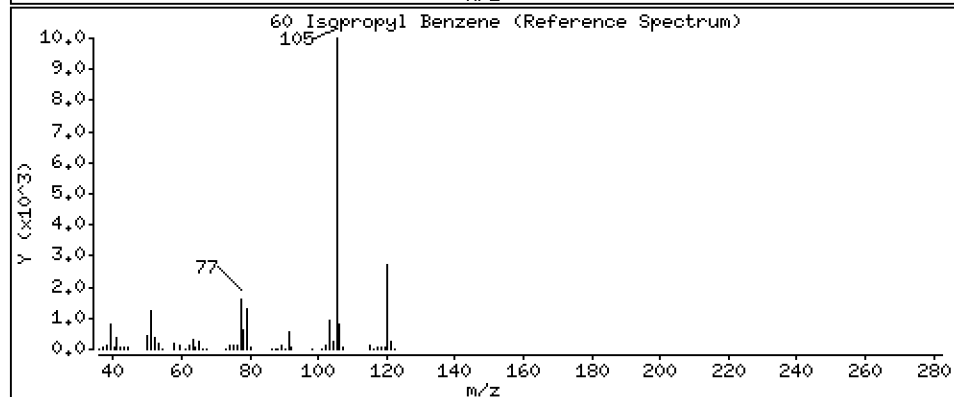
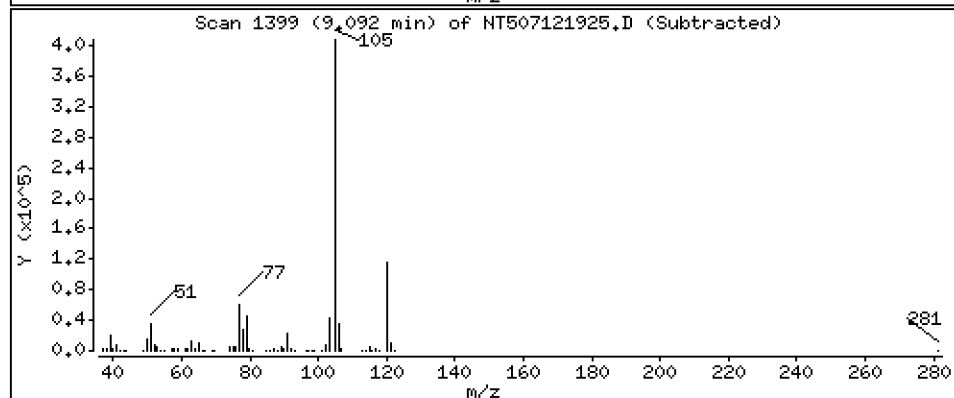
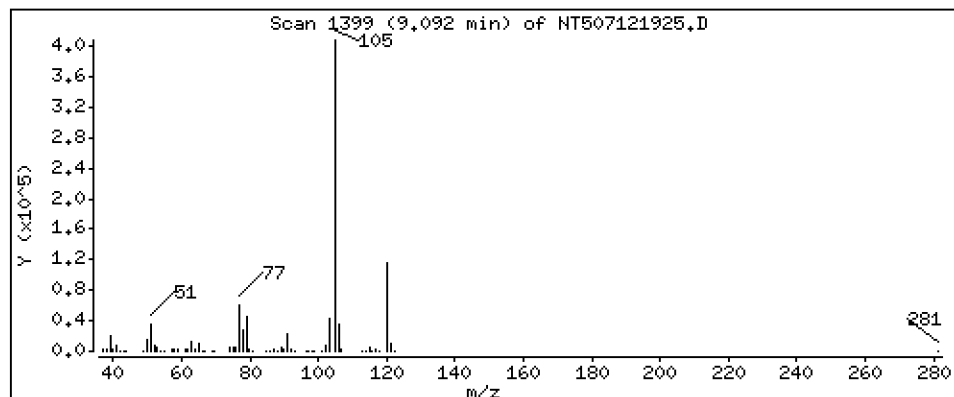
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 37,229 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

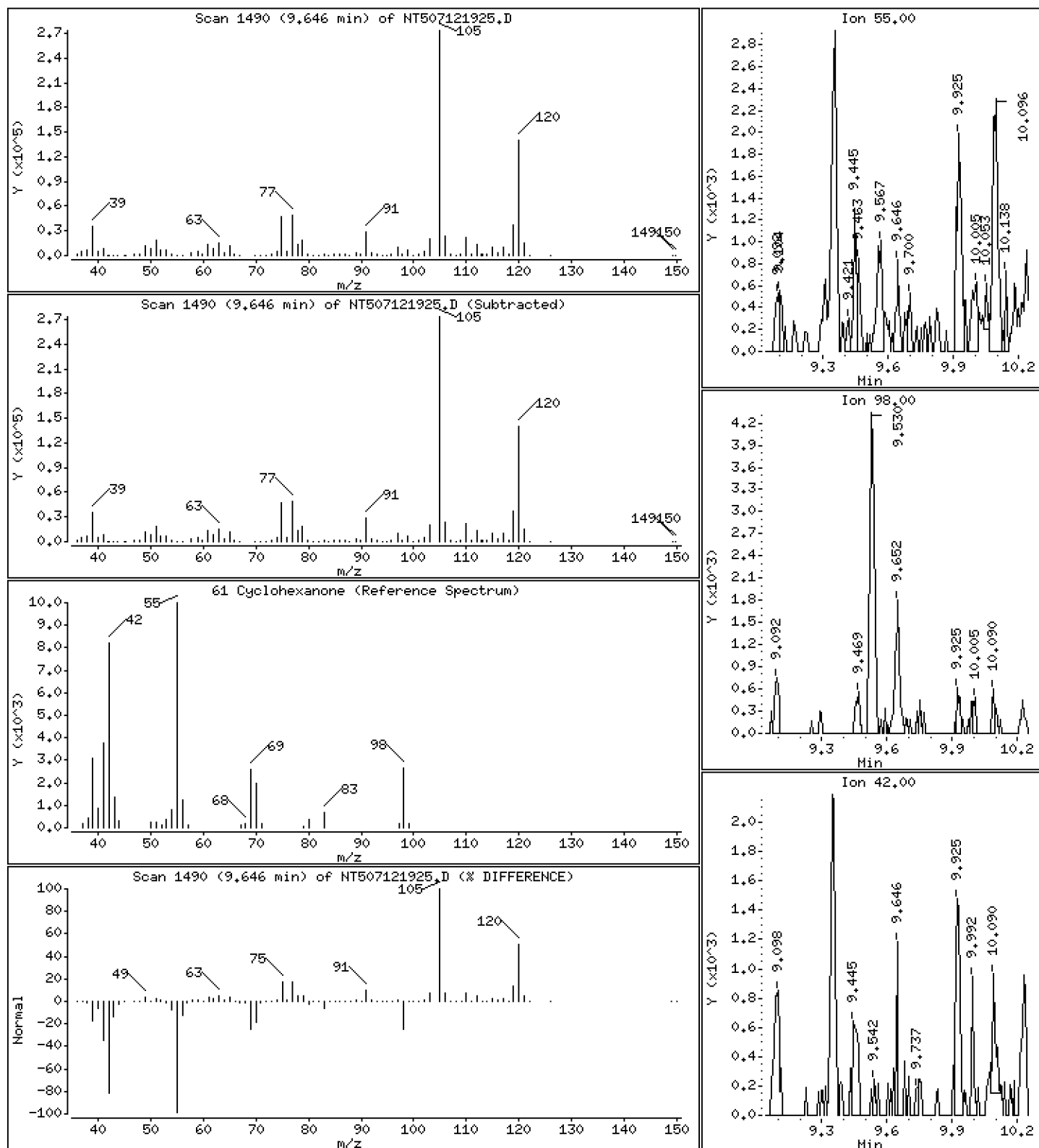
Sample Info: BHC0316-MS1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

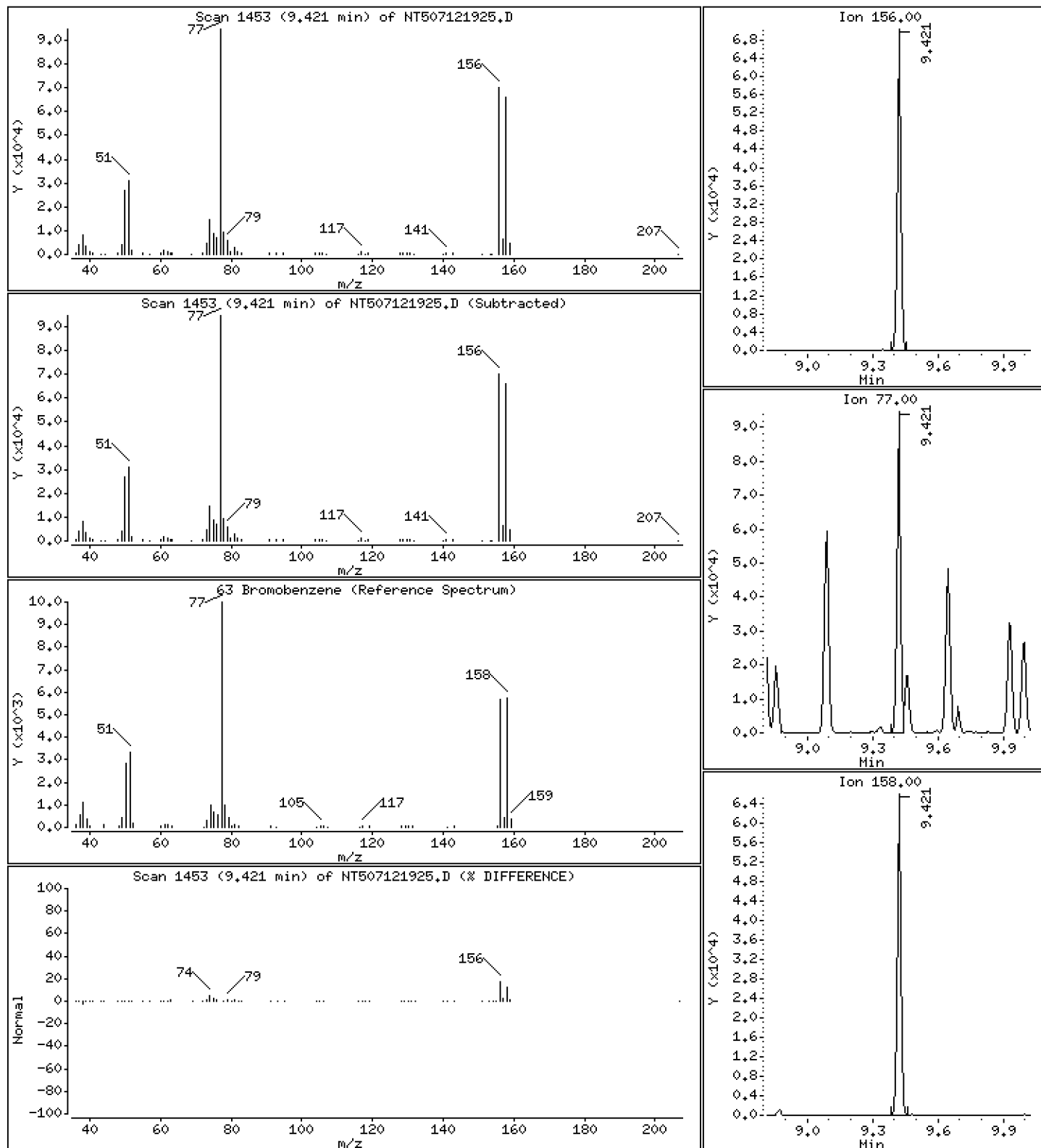
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 25,398 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MS1

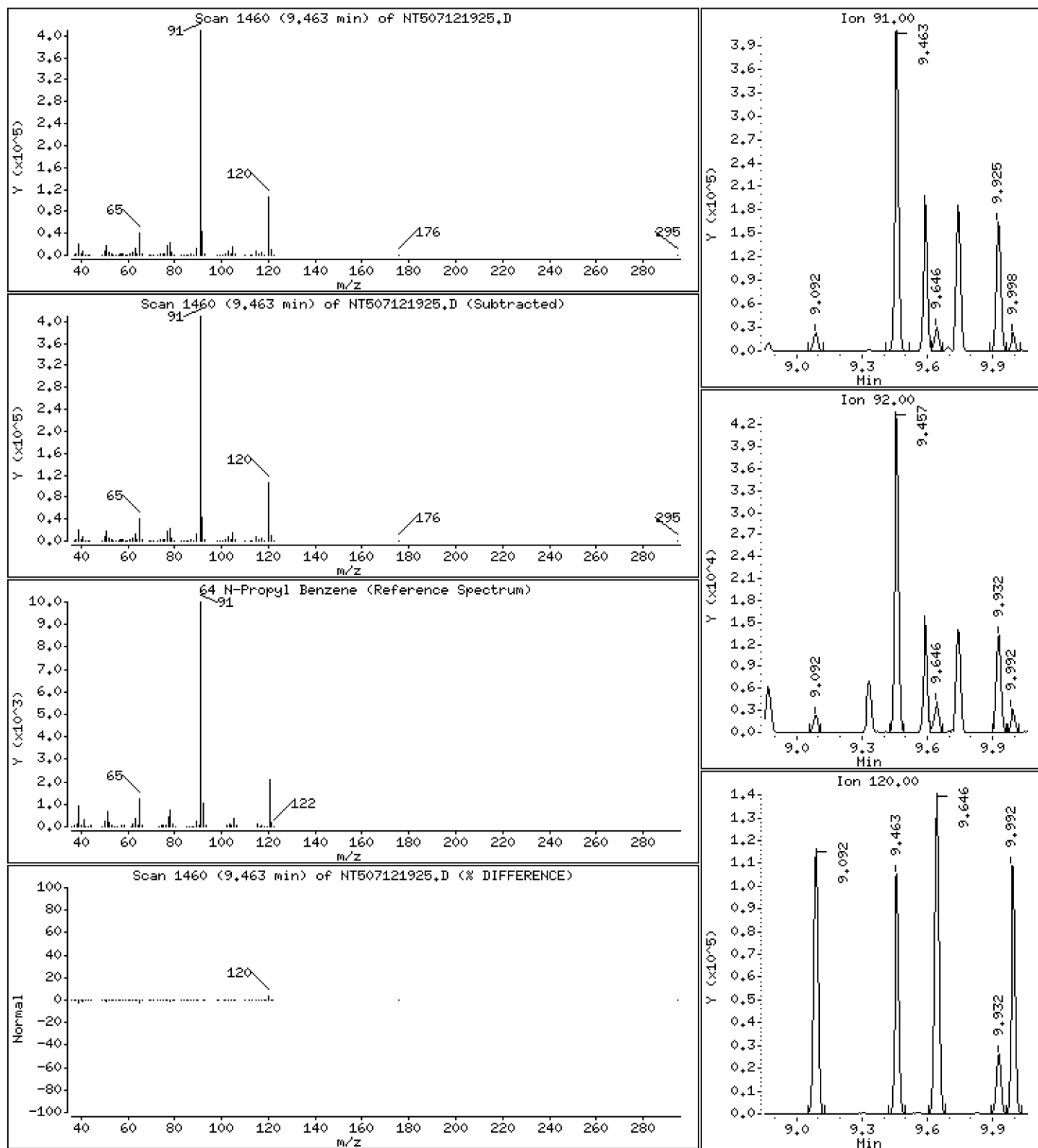
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 33,771 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

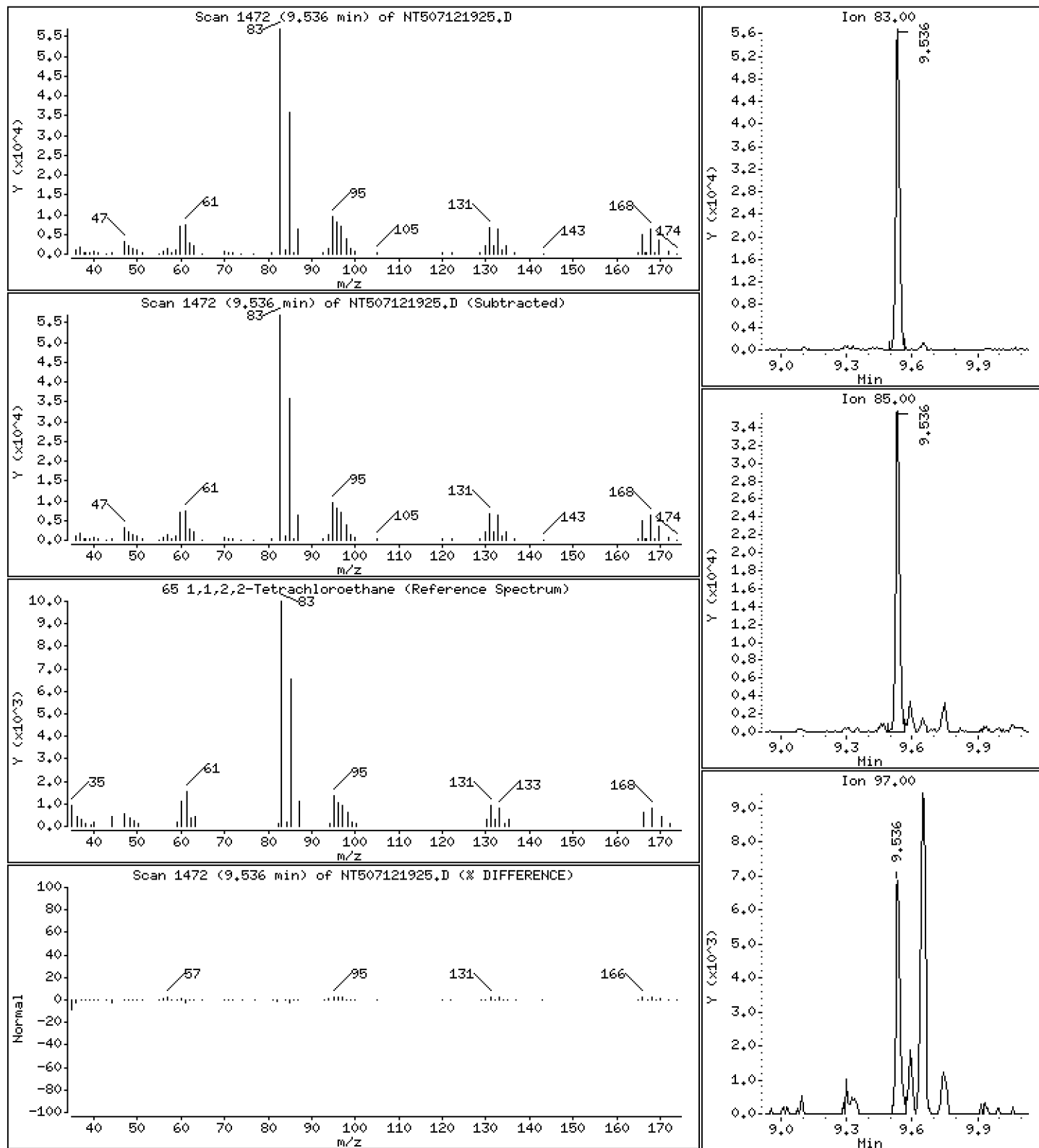
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 30,573 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

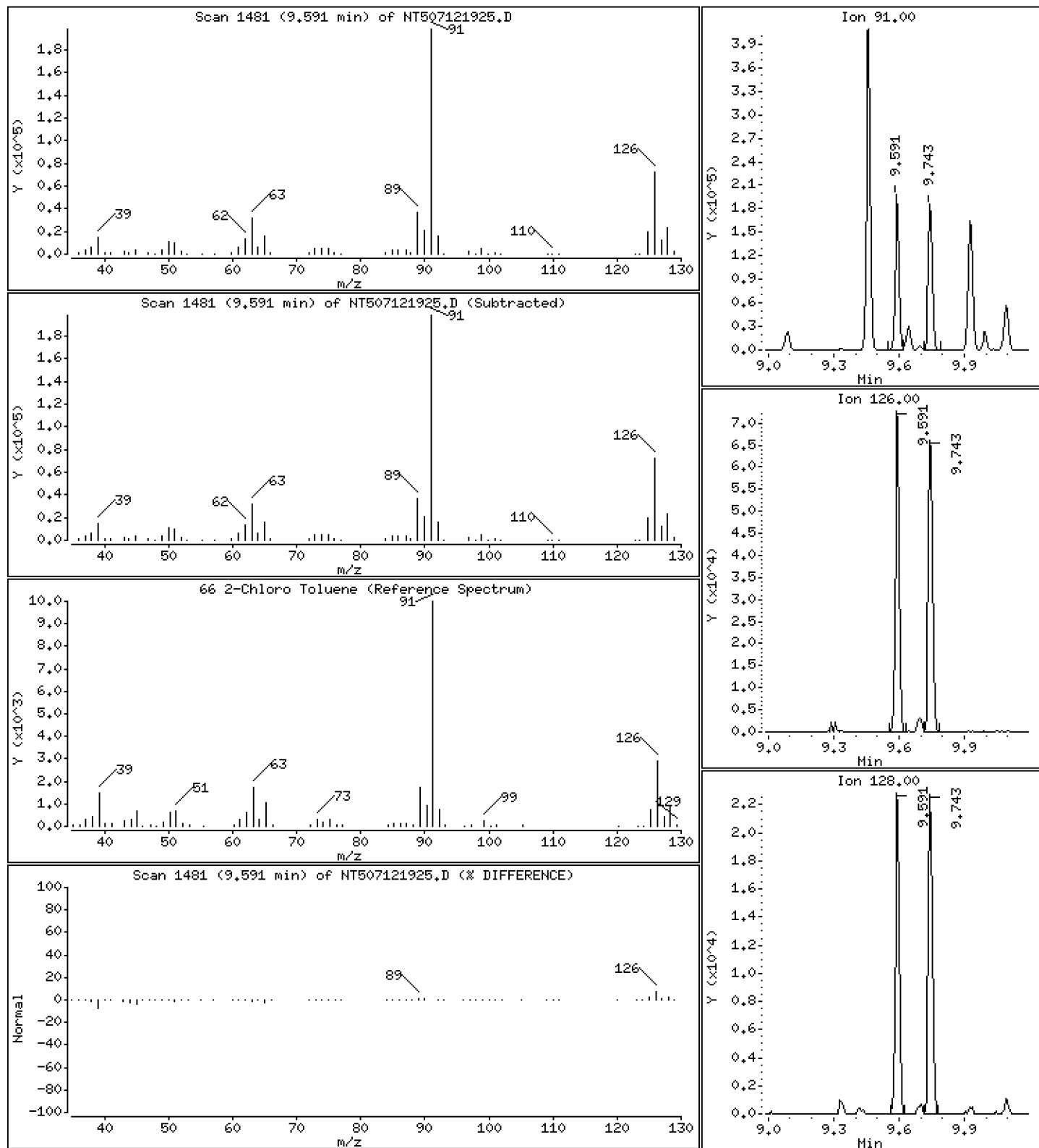
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 28,260 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

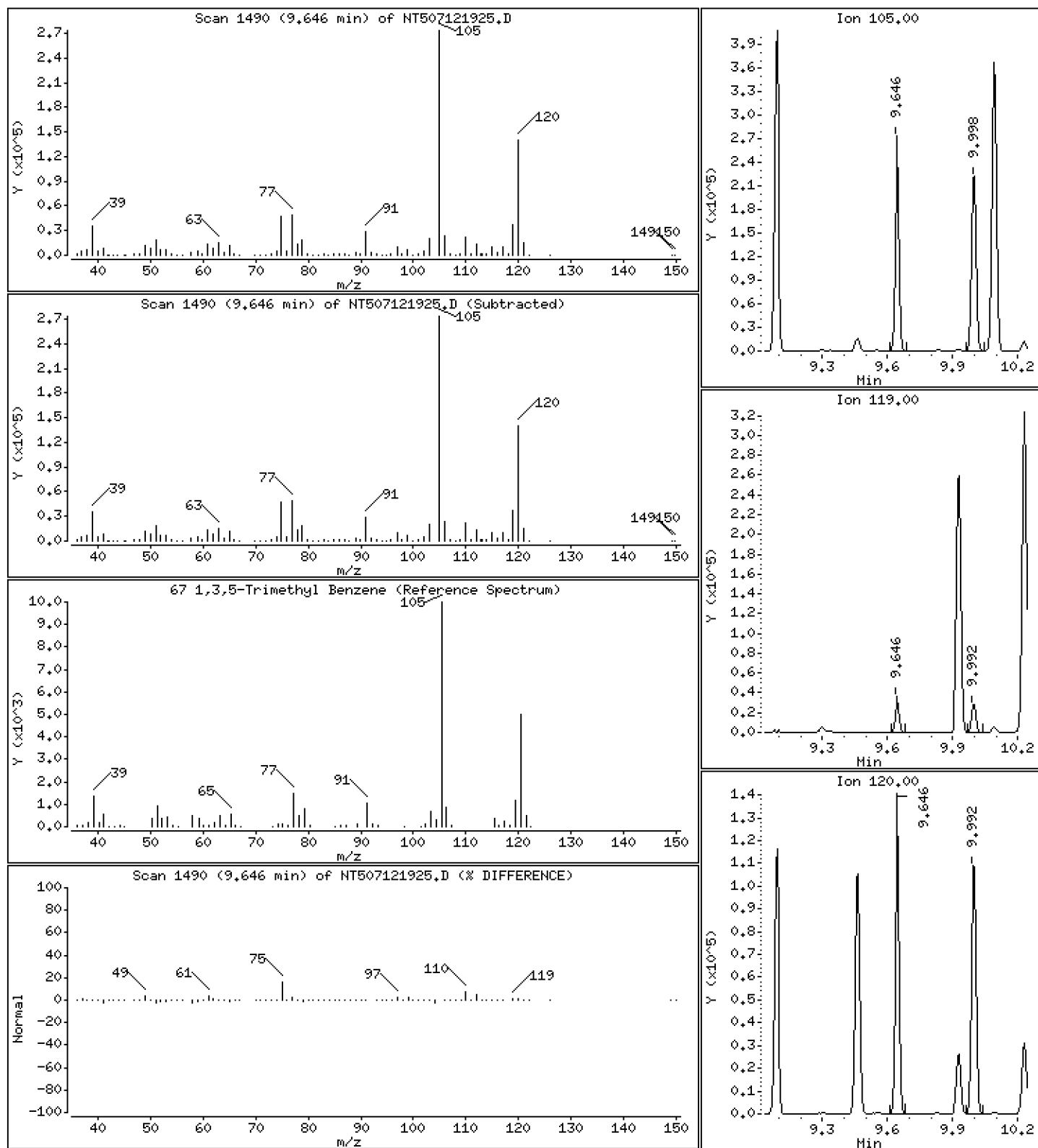
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 29,399 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

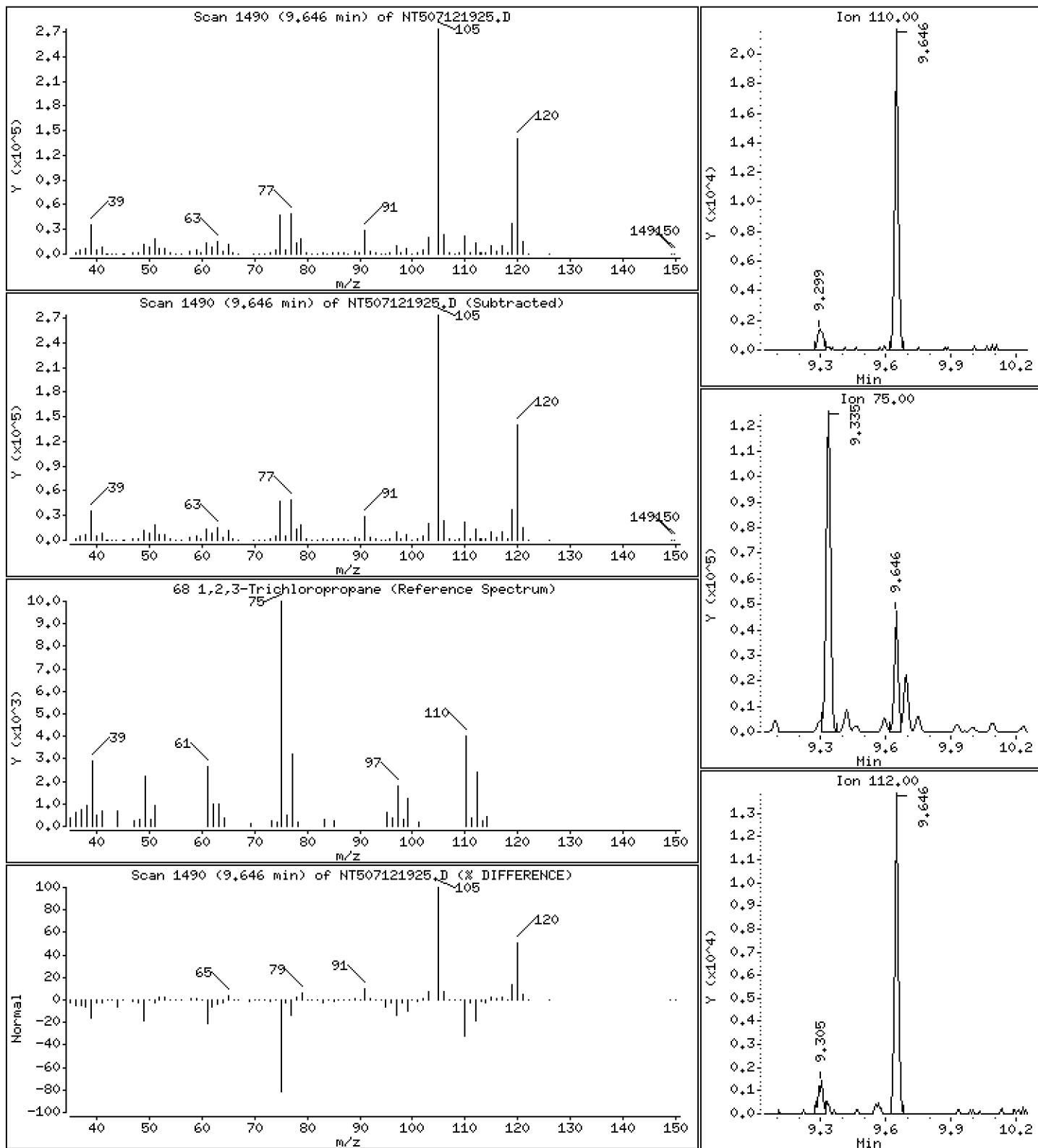
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 32,280 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

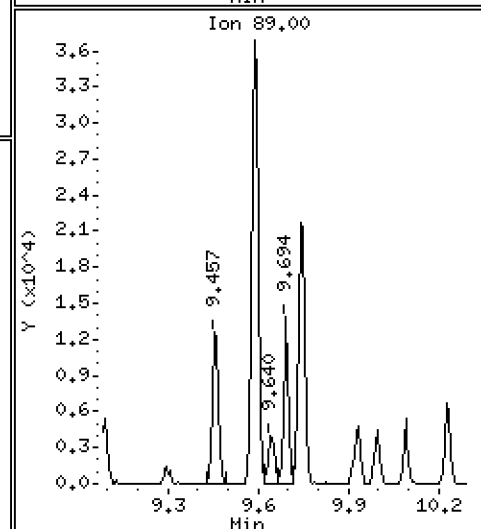
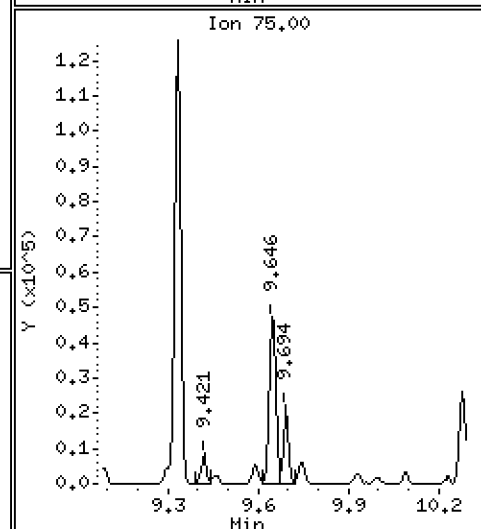
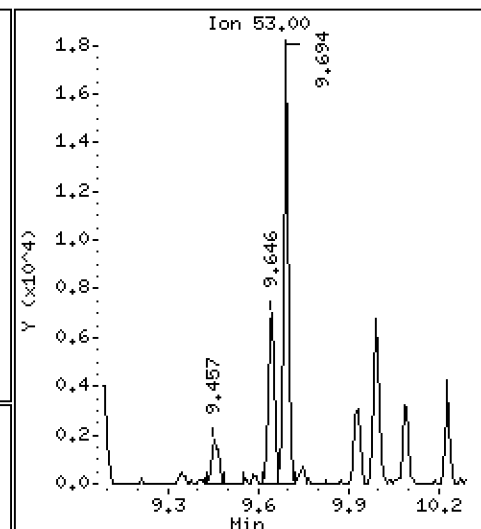
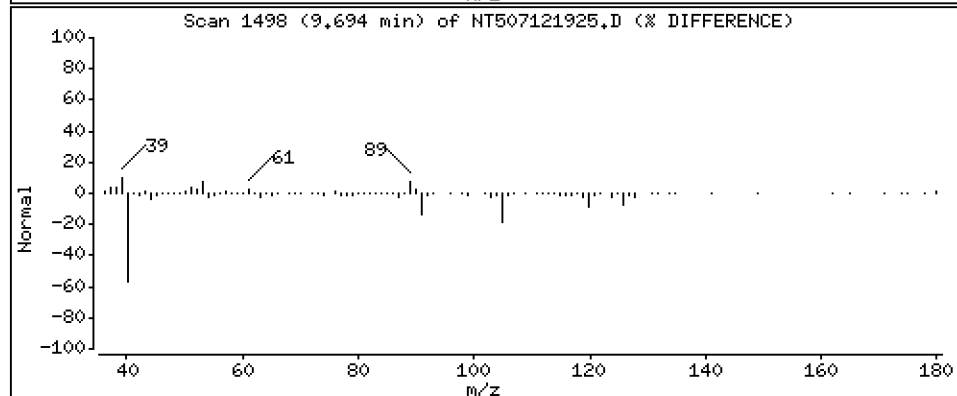
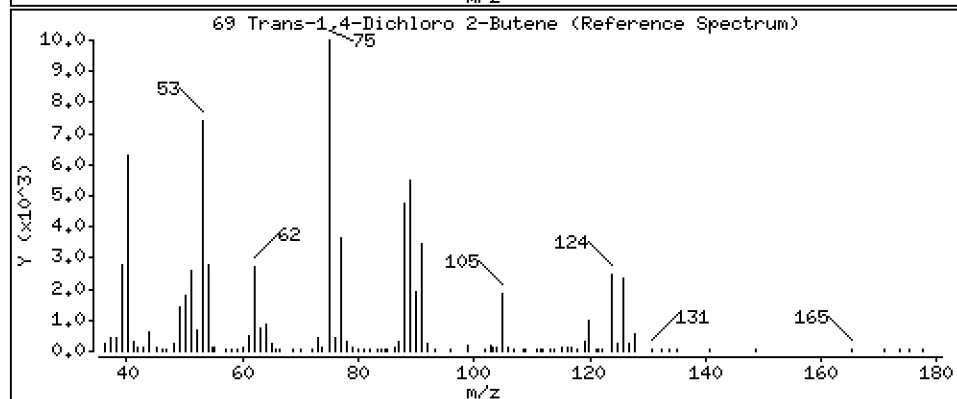
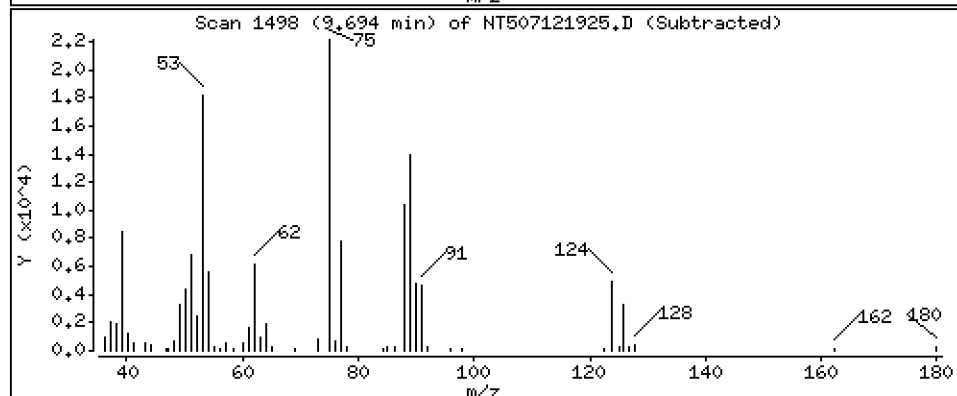
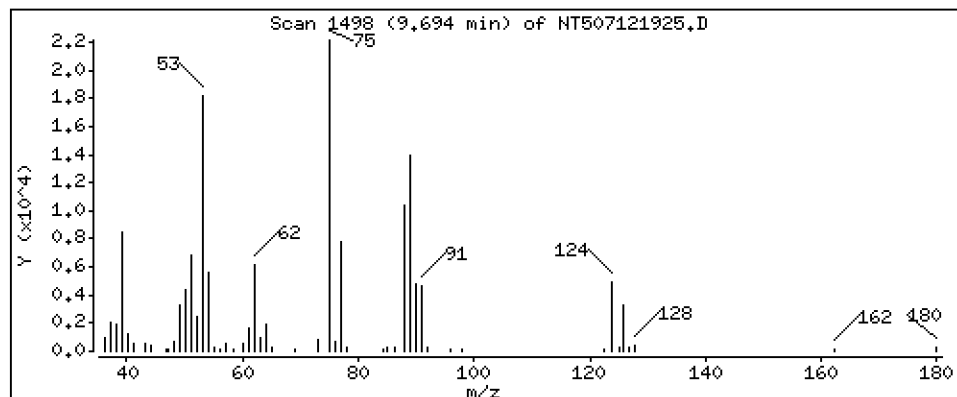
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 31,714 ug/Kg

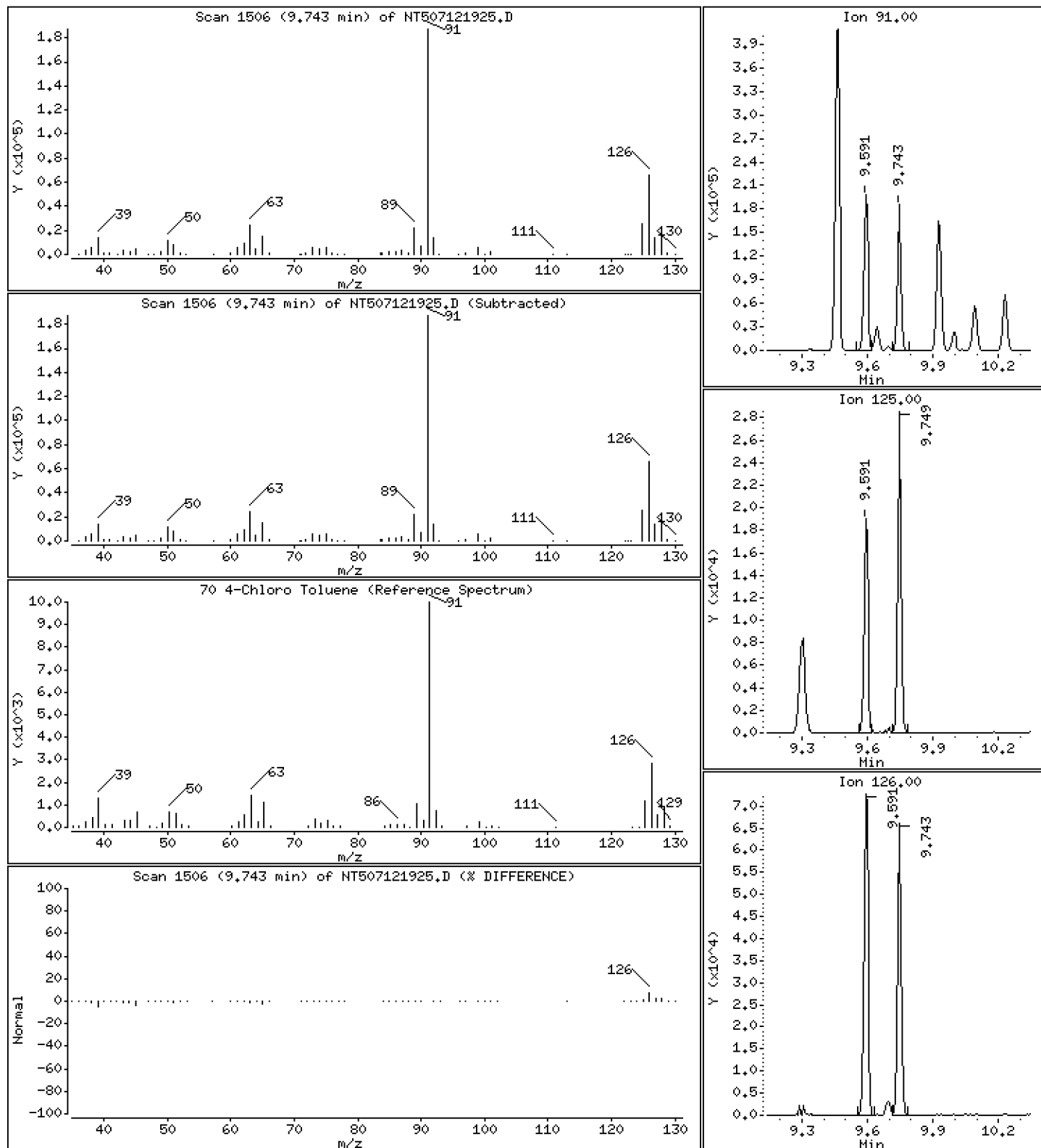


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 25,381 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

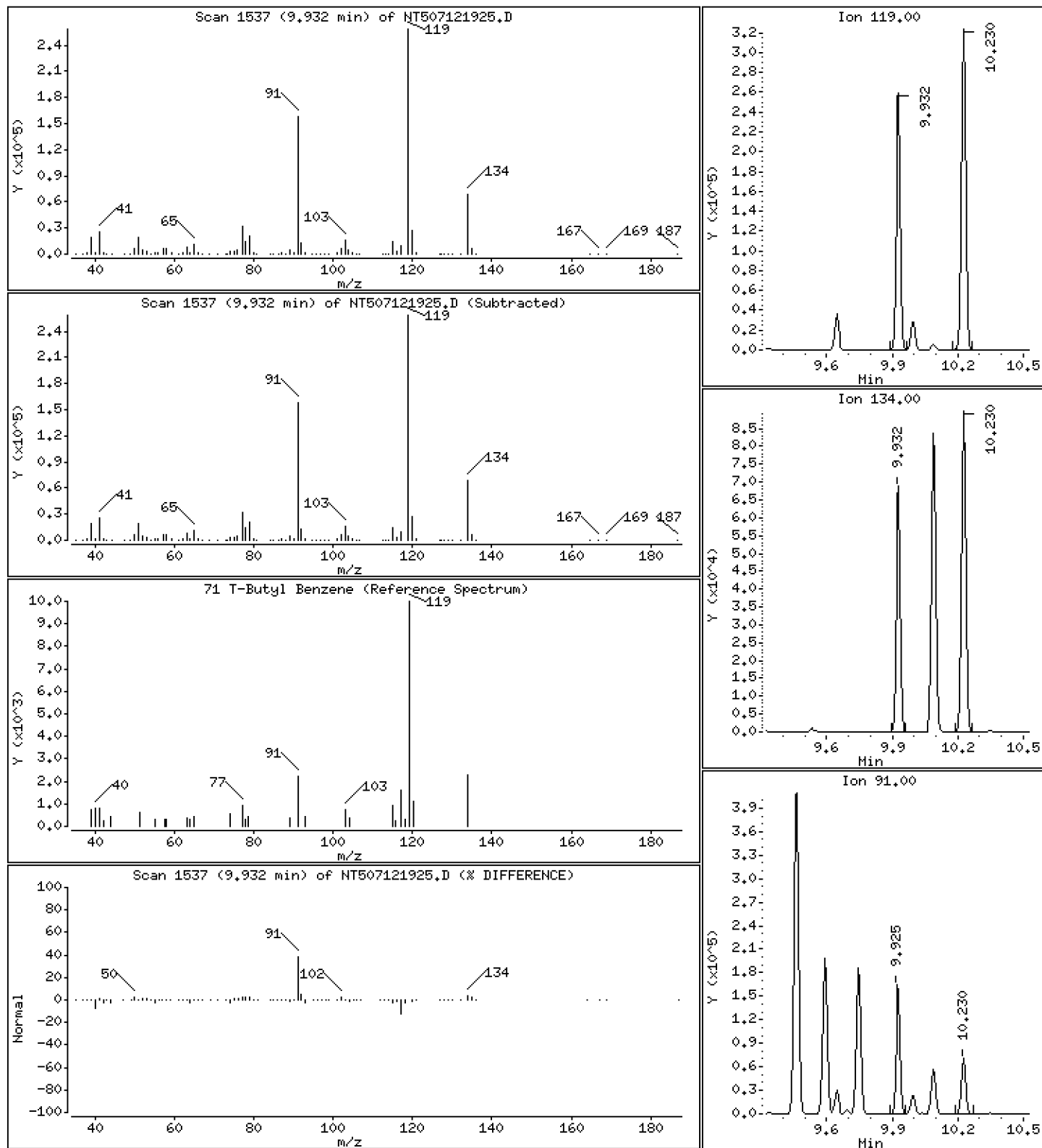
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 32,828 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

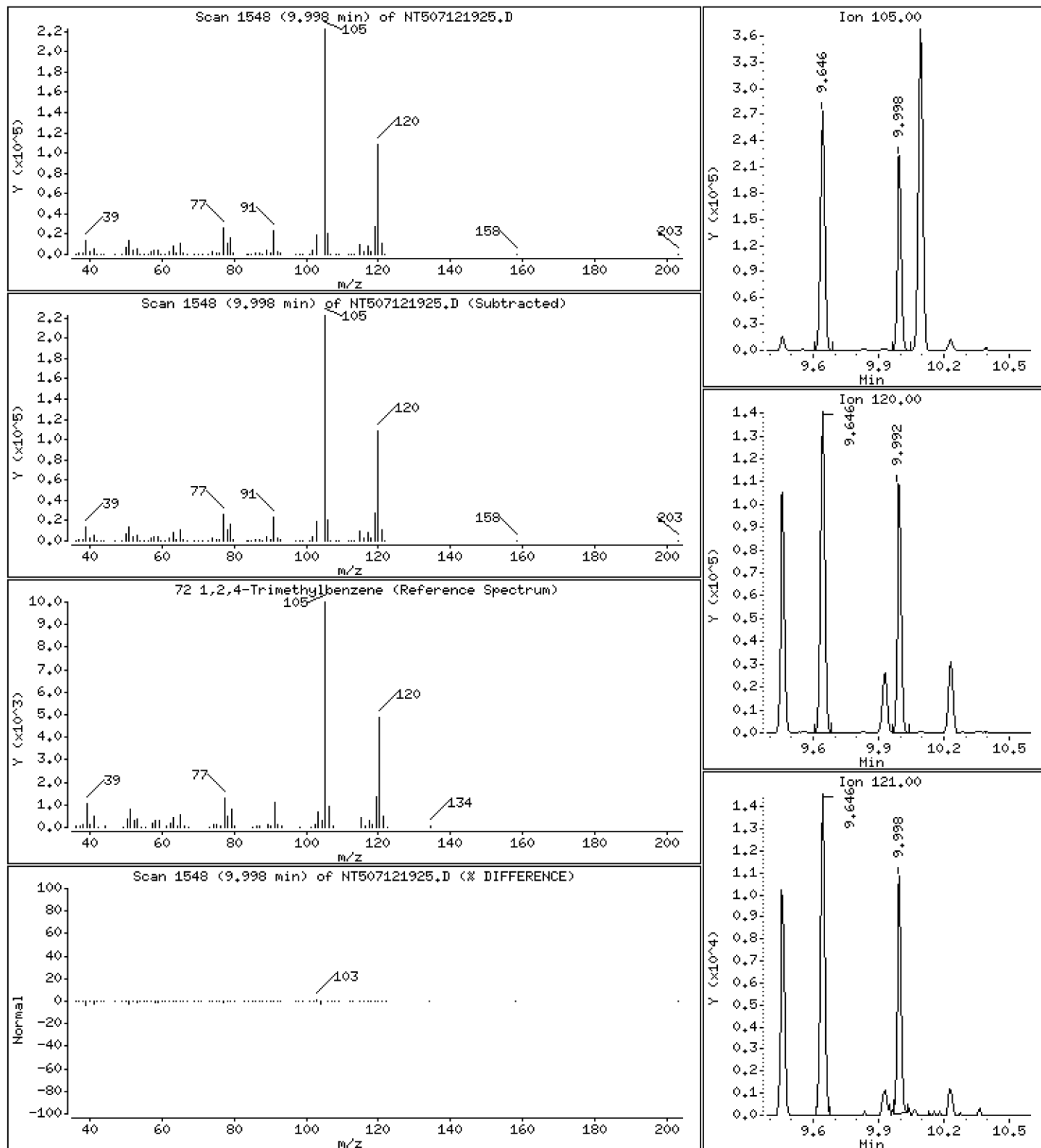
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 26.429 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

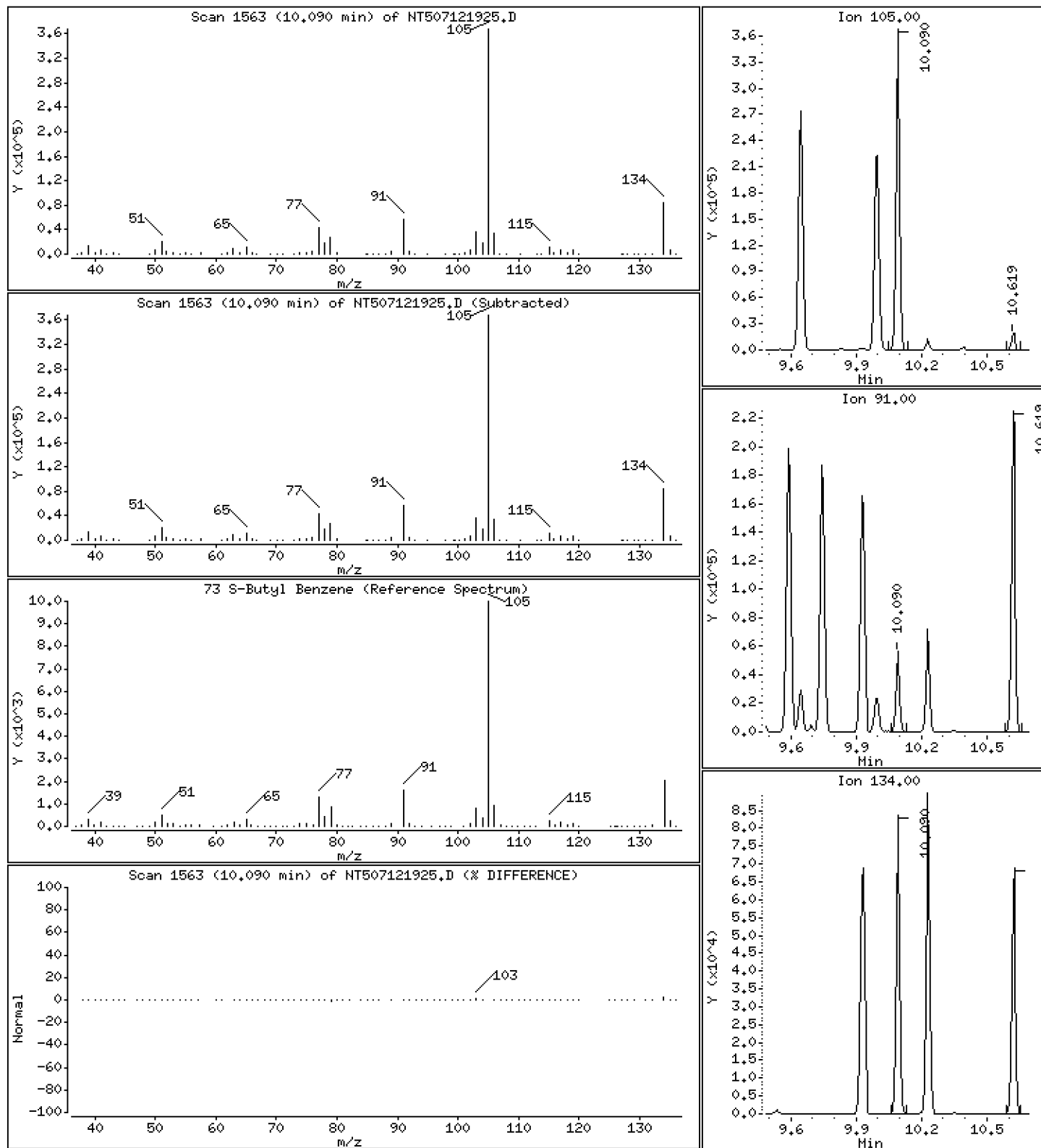
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 30.451 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

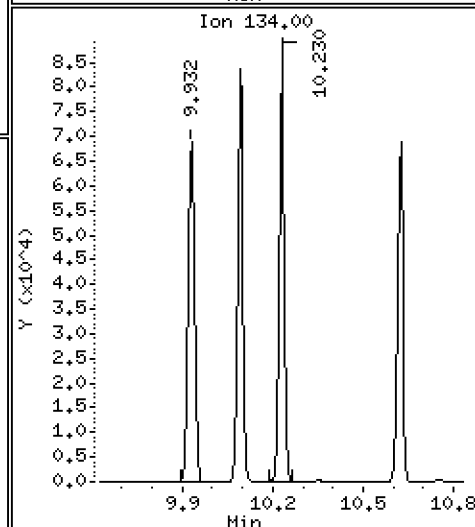
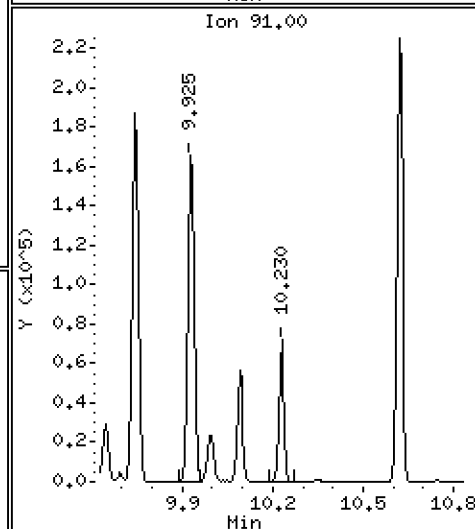
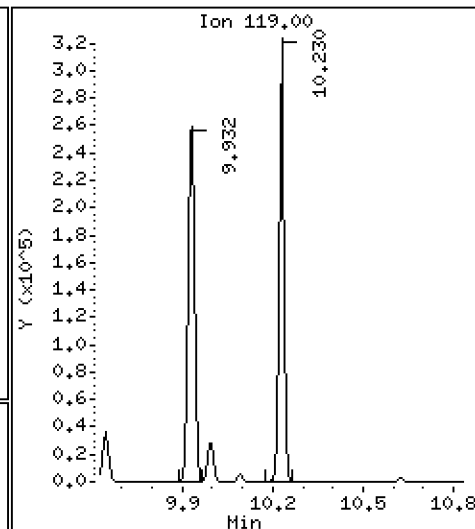
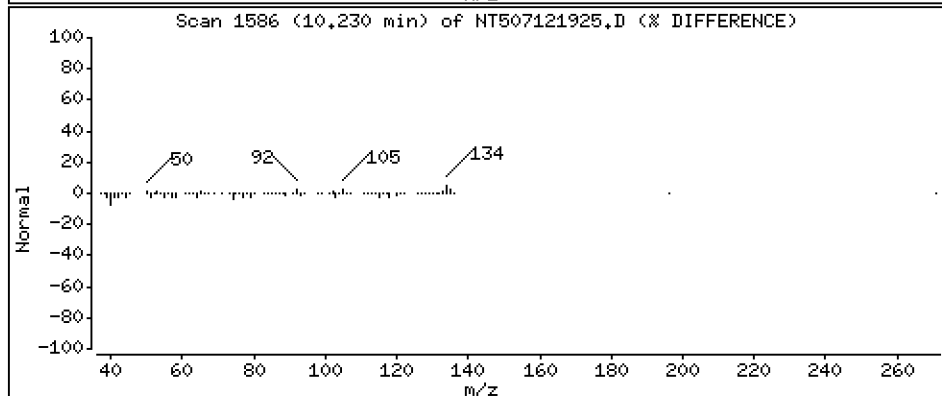
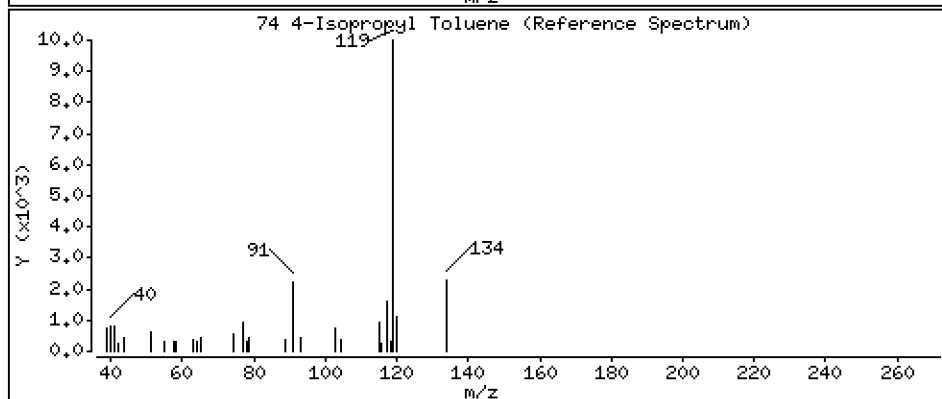
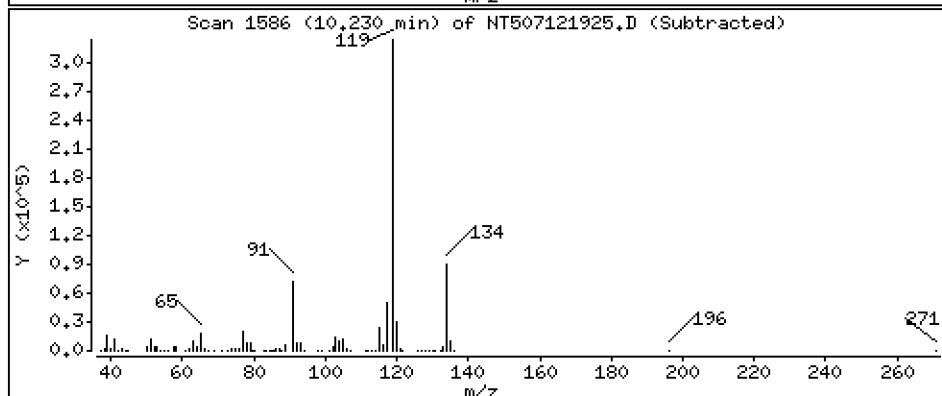
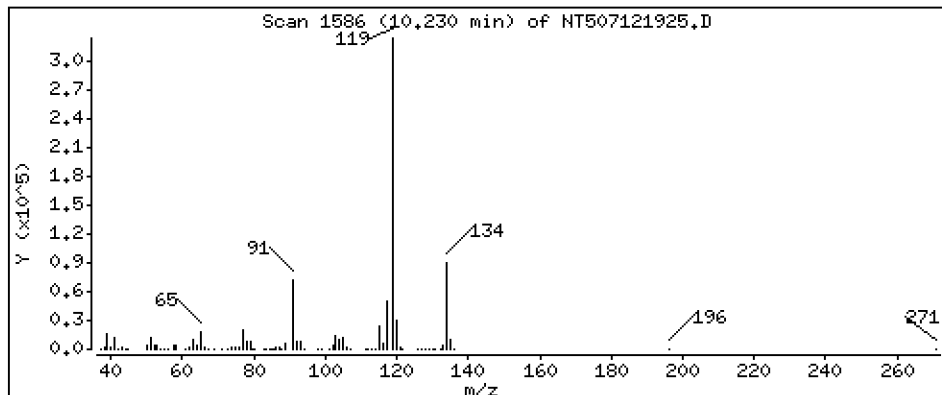
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 30.075 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

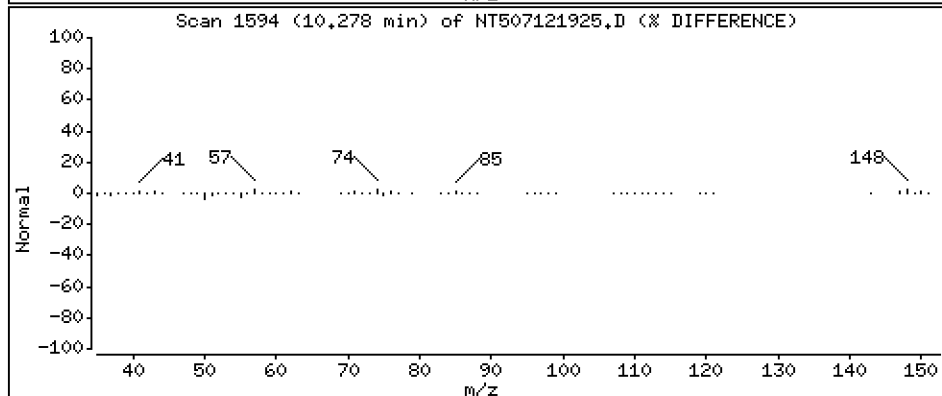
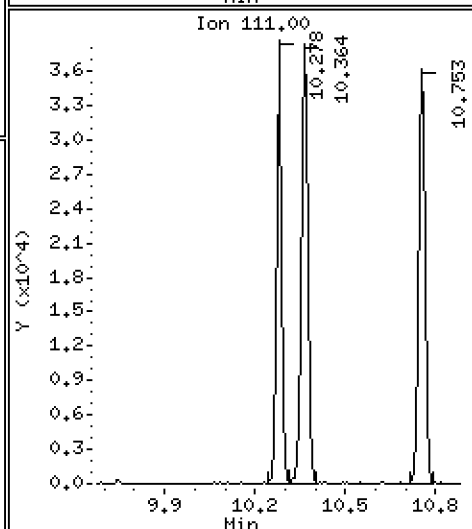
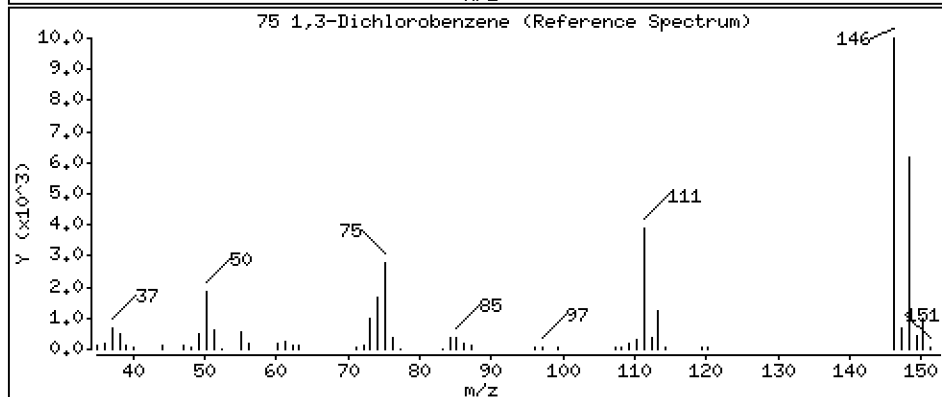
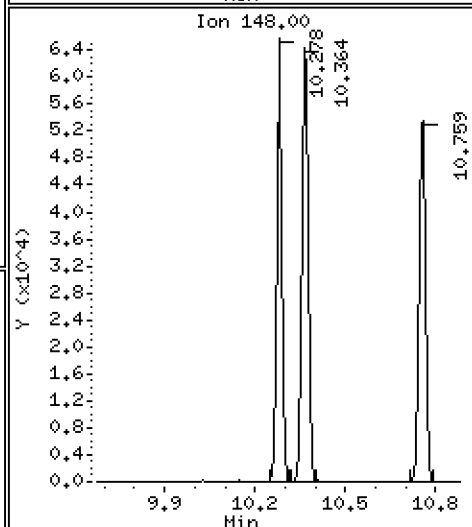
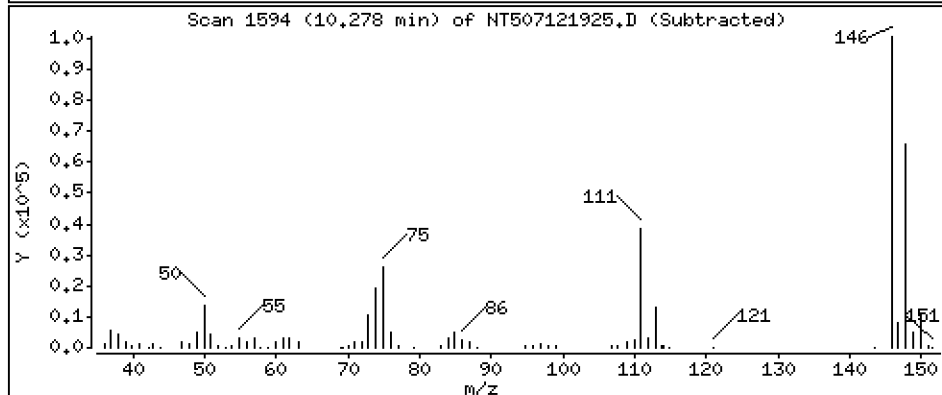
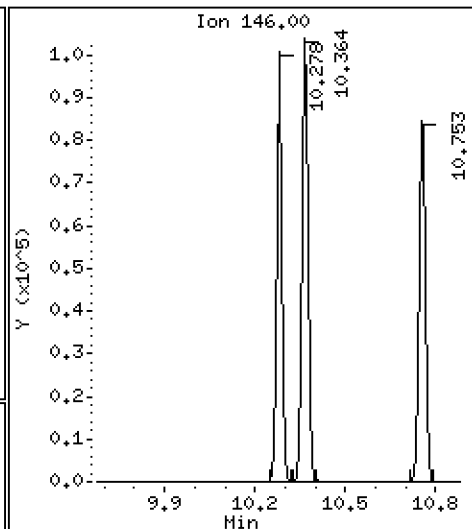
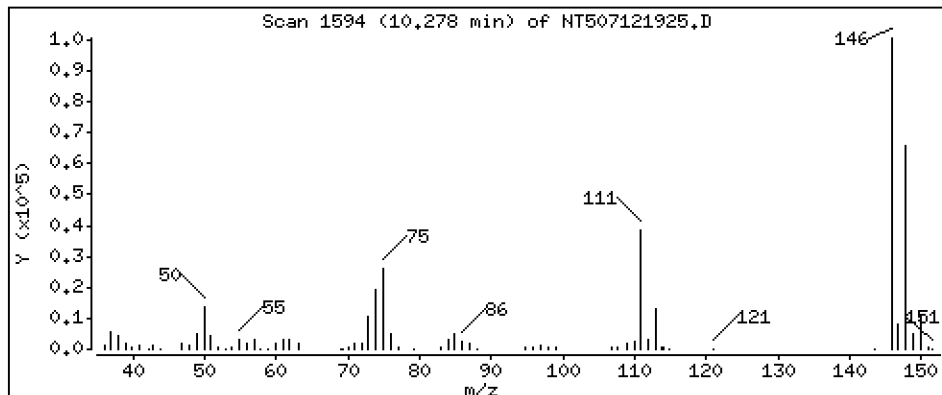
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 18,941 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

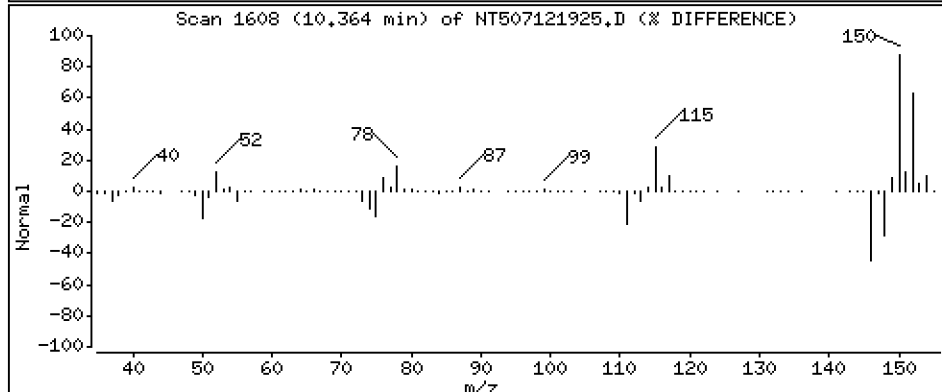
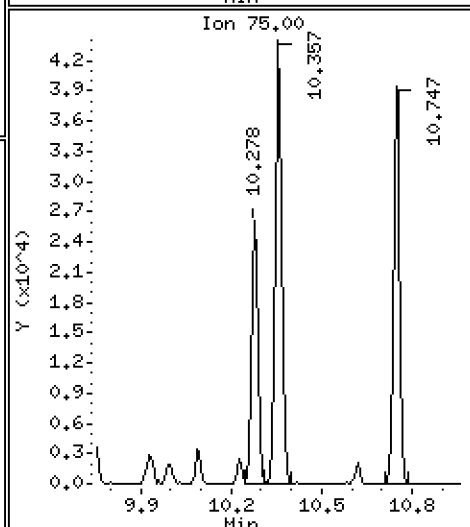
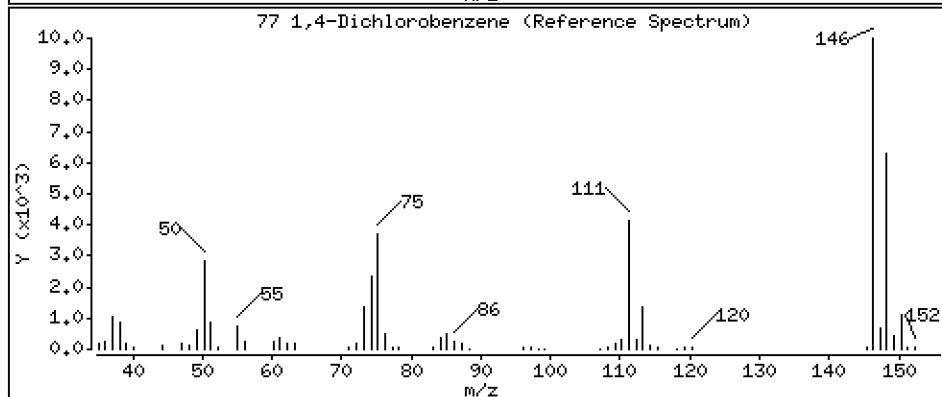
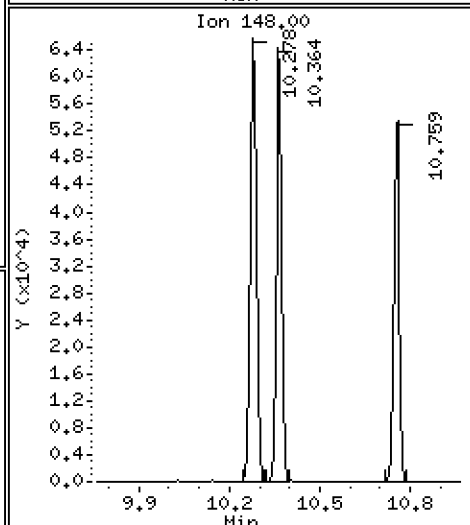
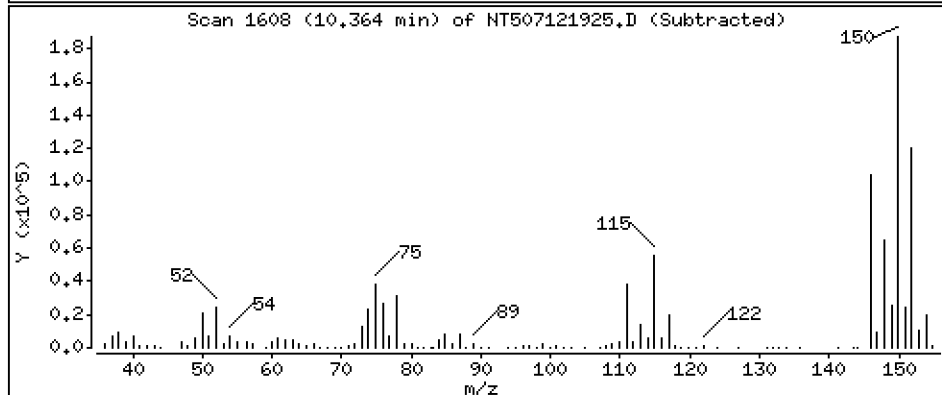
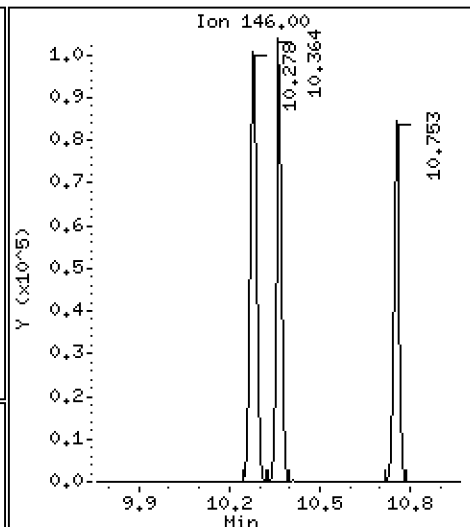
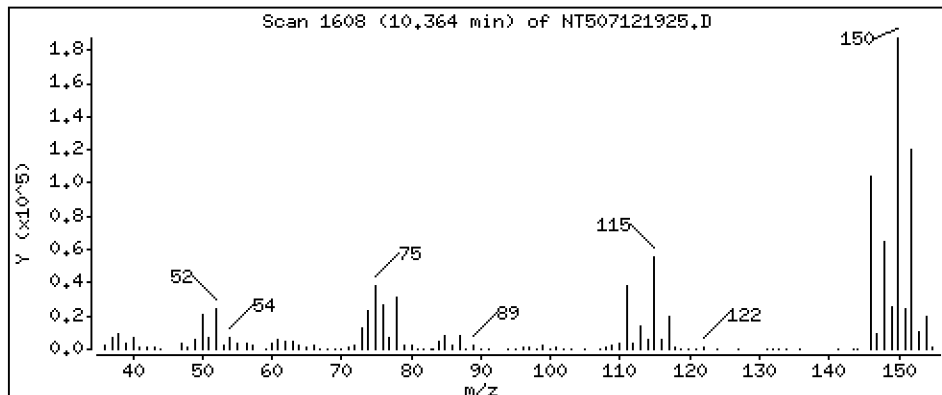
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 18,581 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

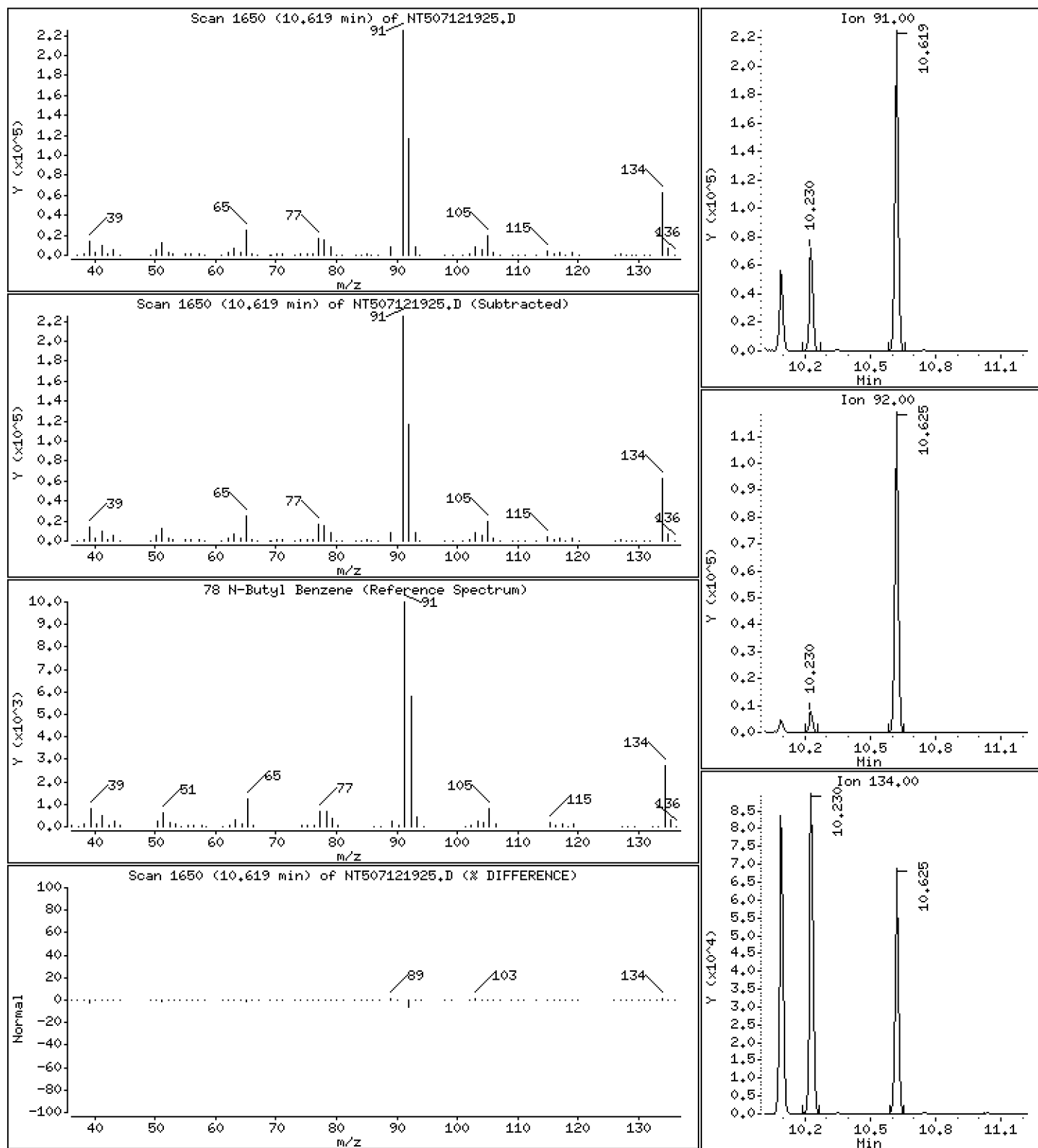
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 24,453 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

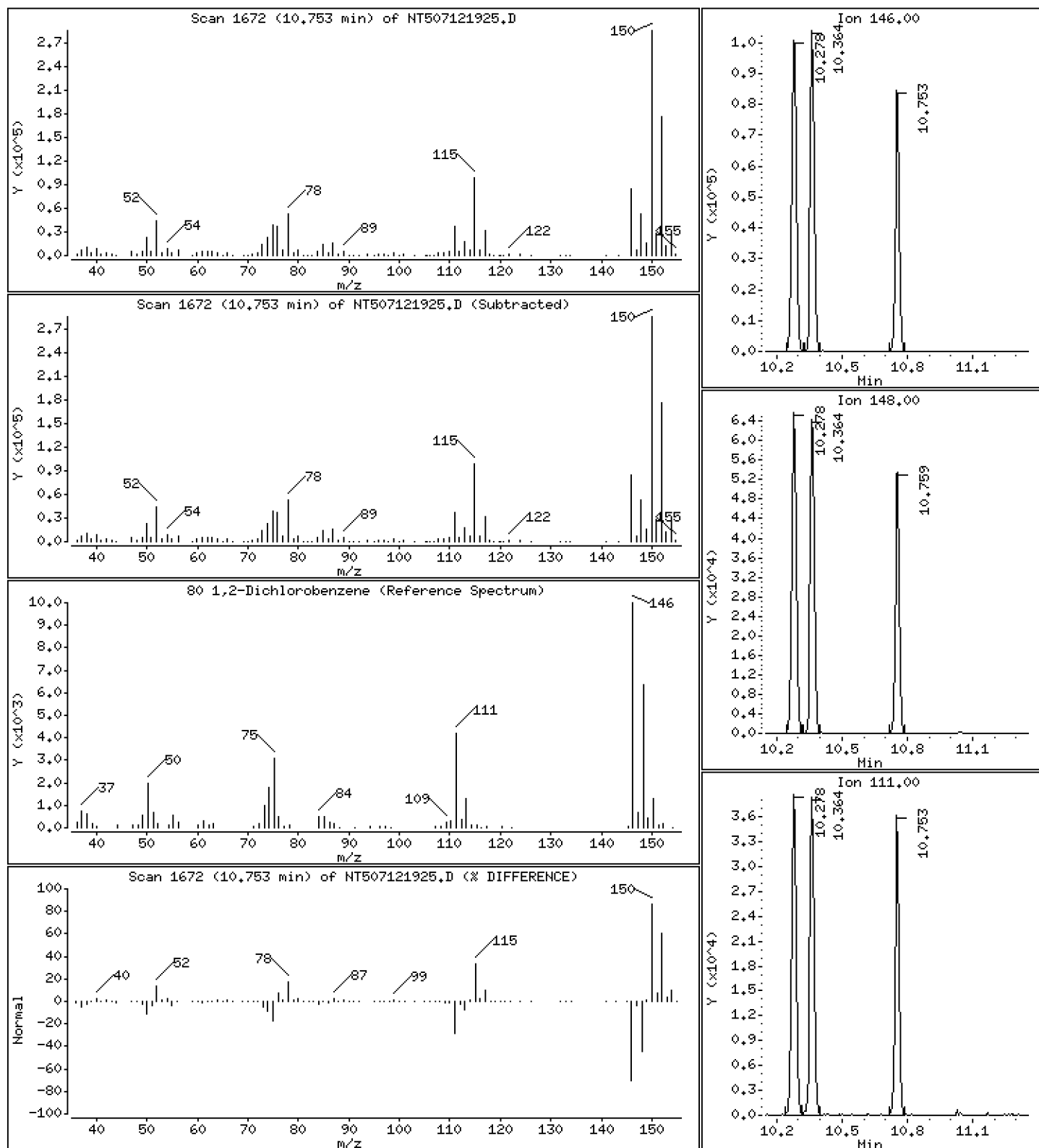
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 17,291 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

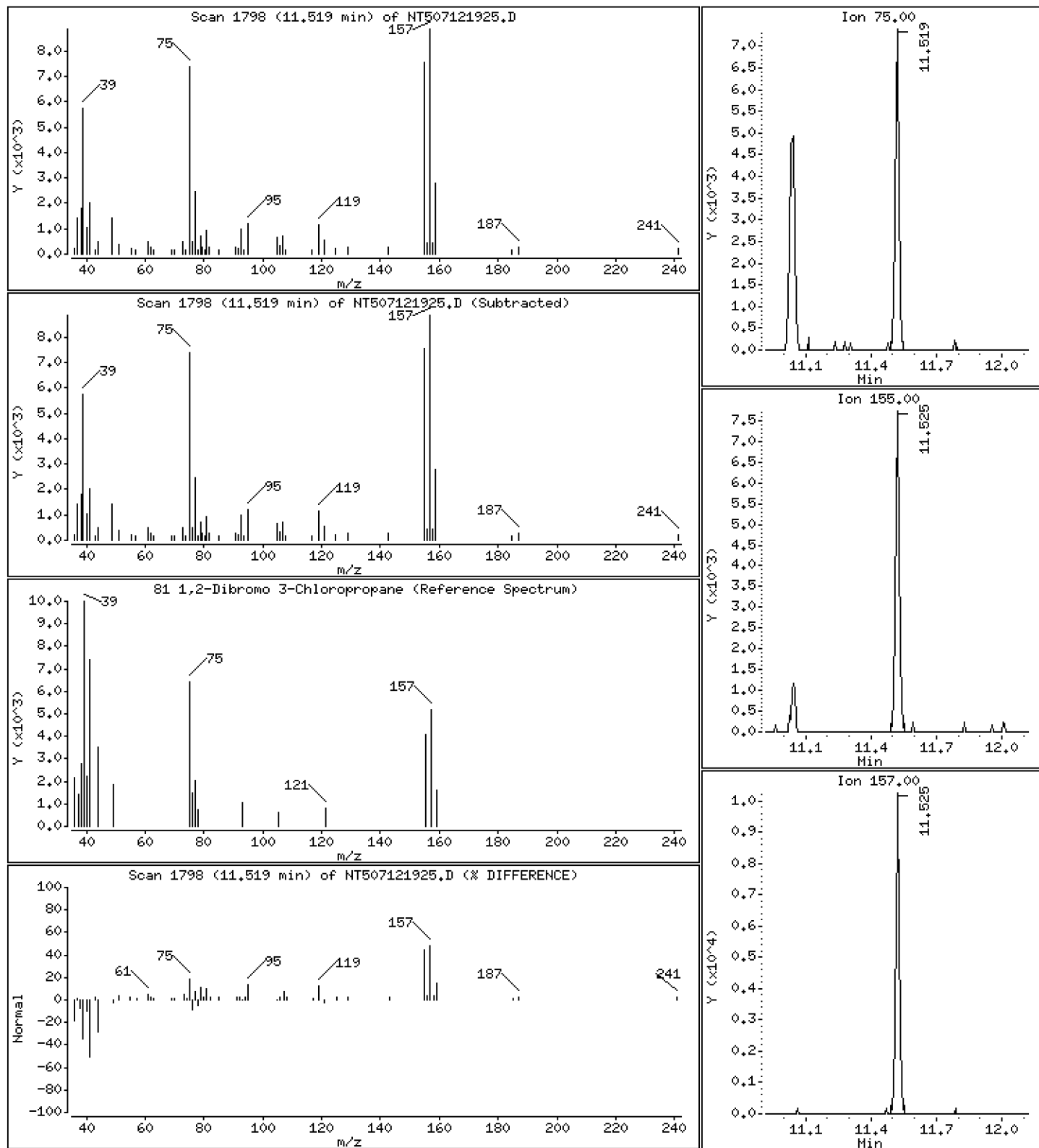
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 21.638 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

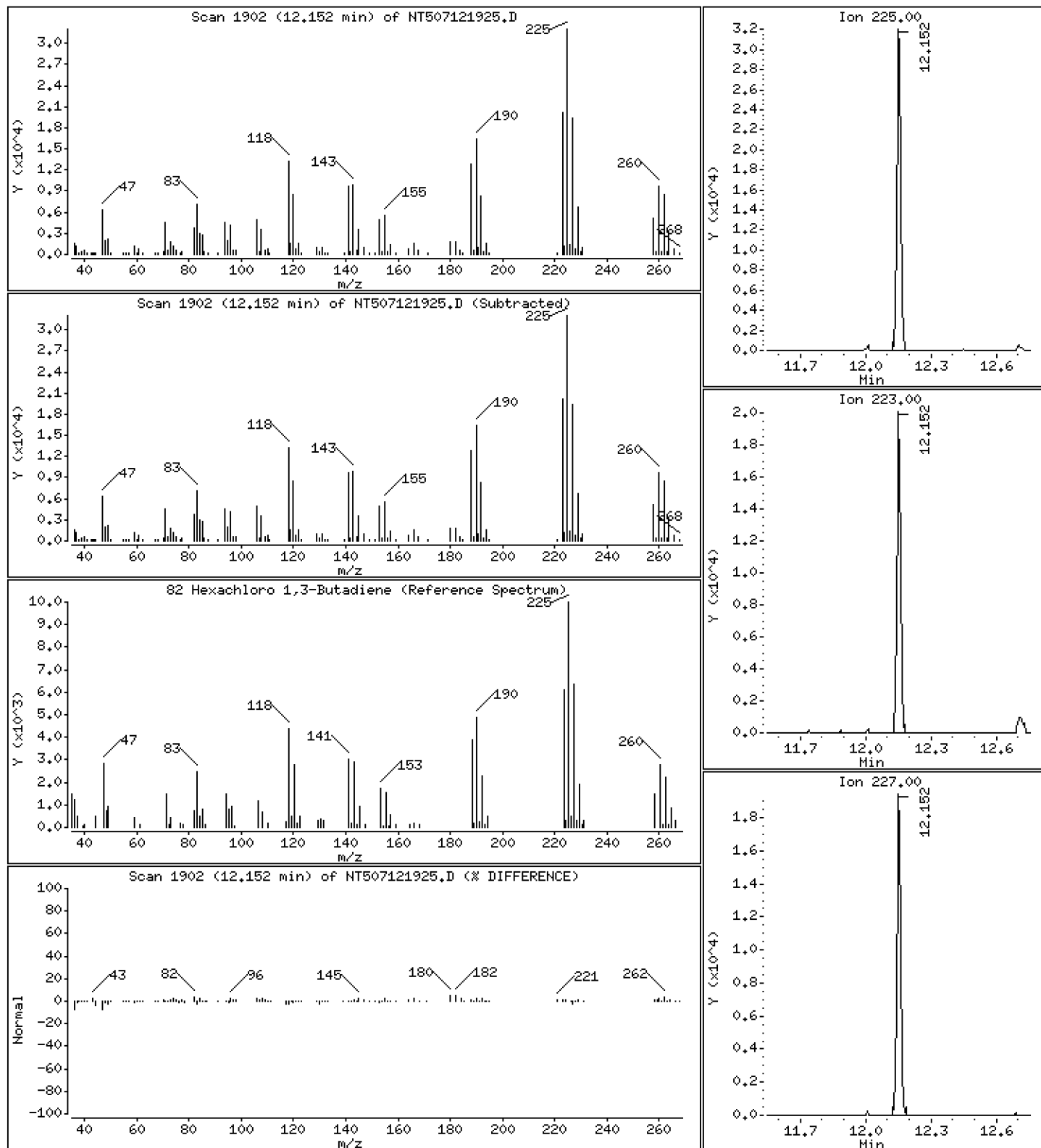
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 16,563 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

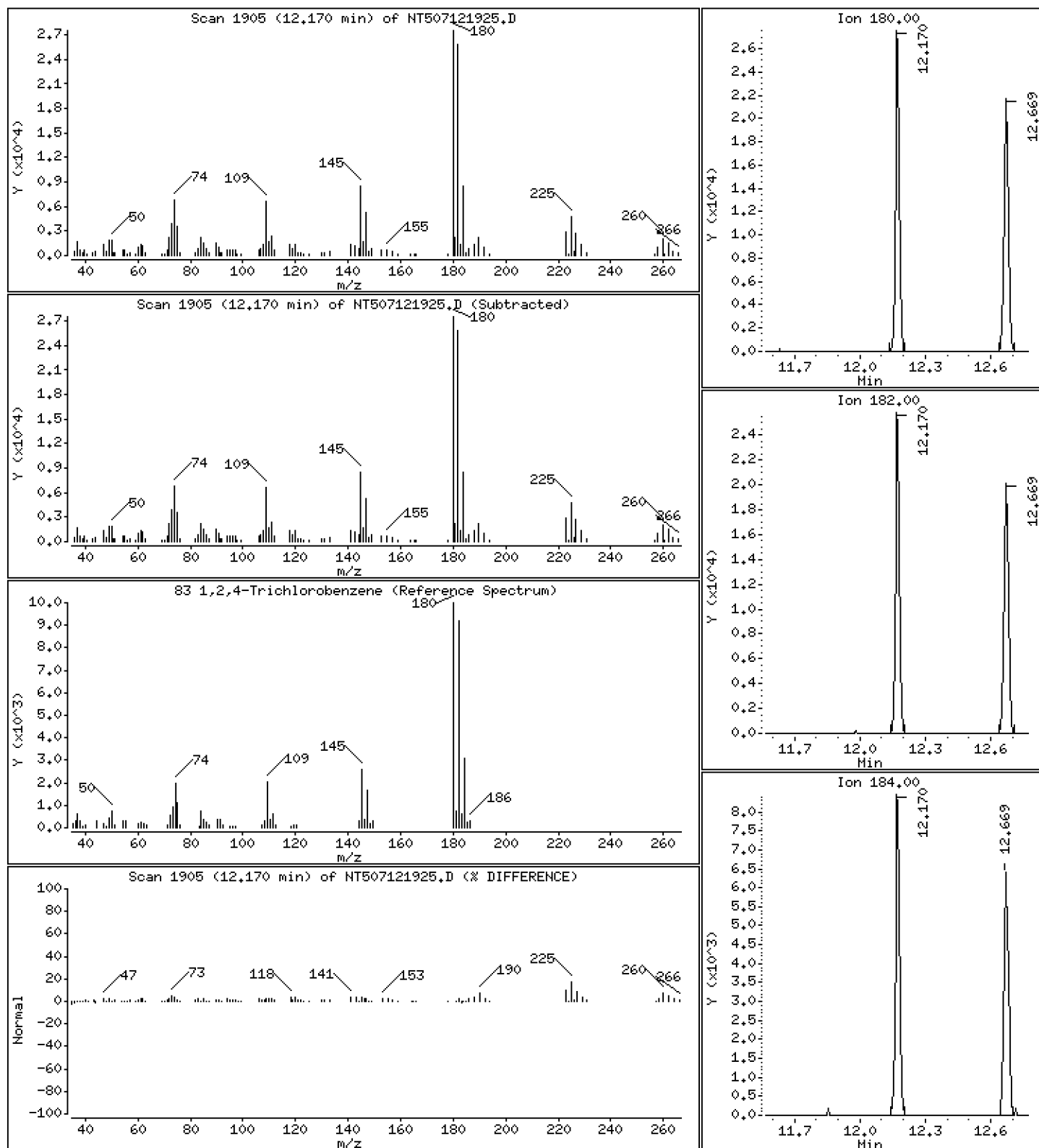
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 8.162 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

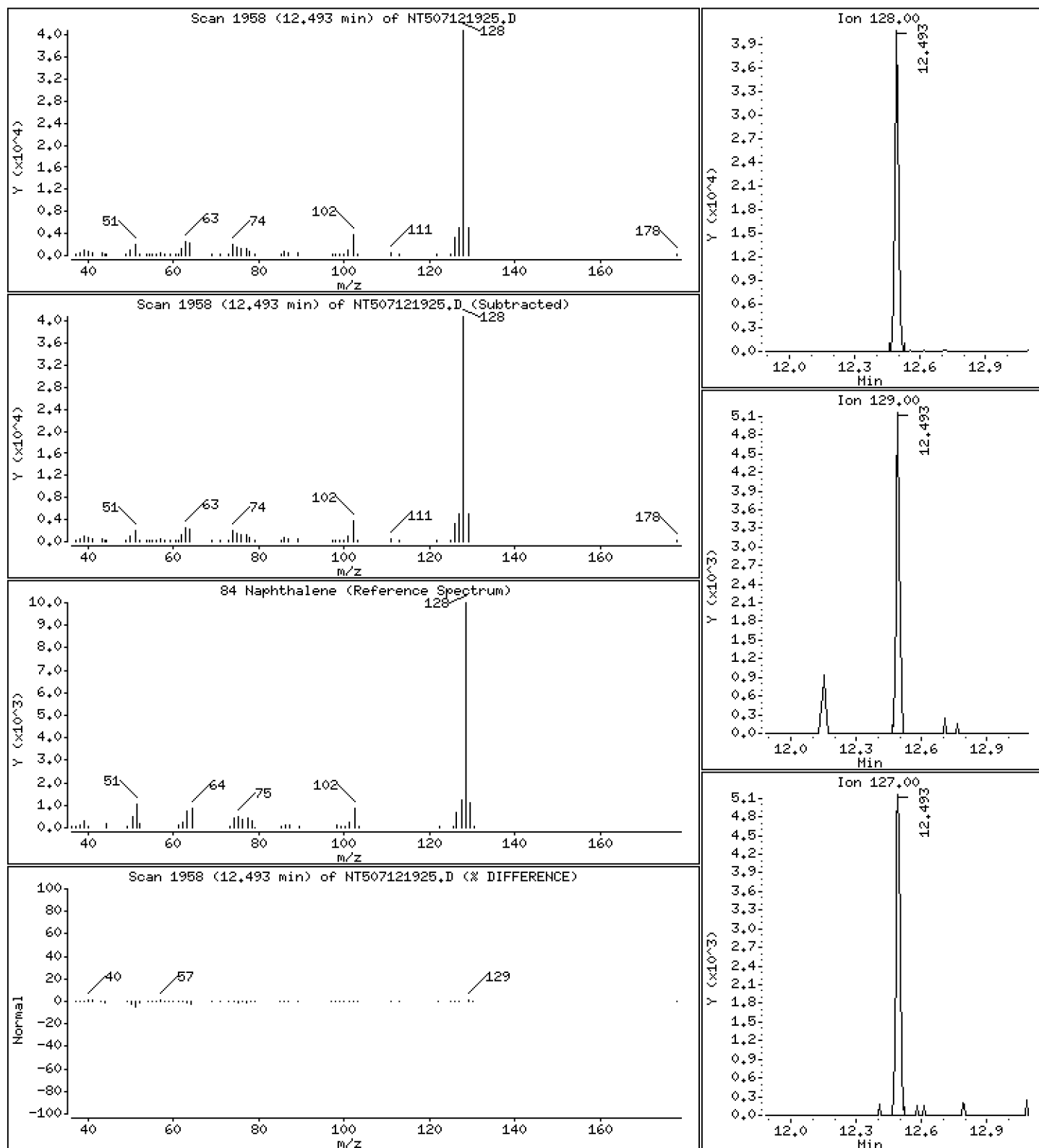
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 6.150 ug/Kg



Date : 12-JUL-2019 22:10

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MS1

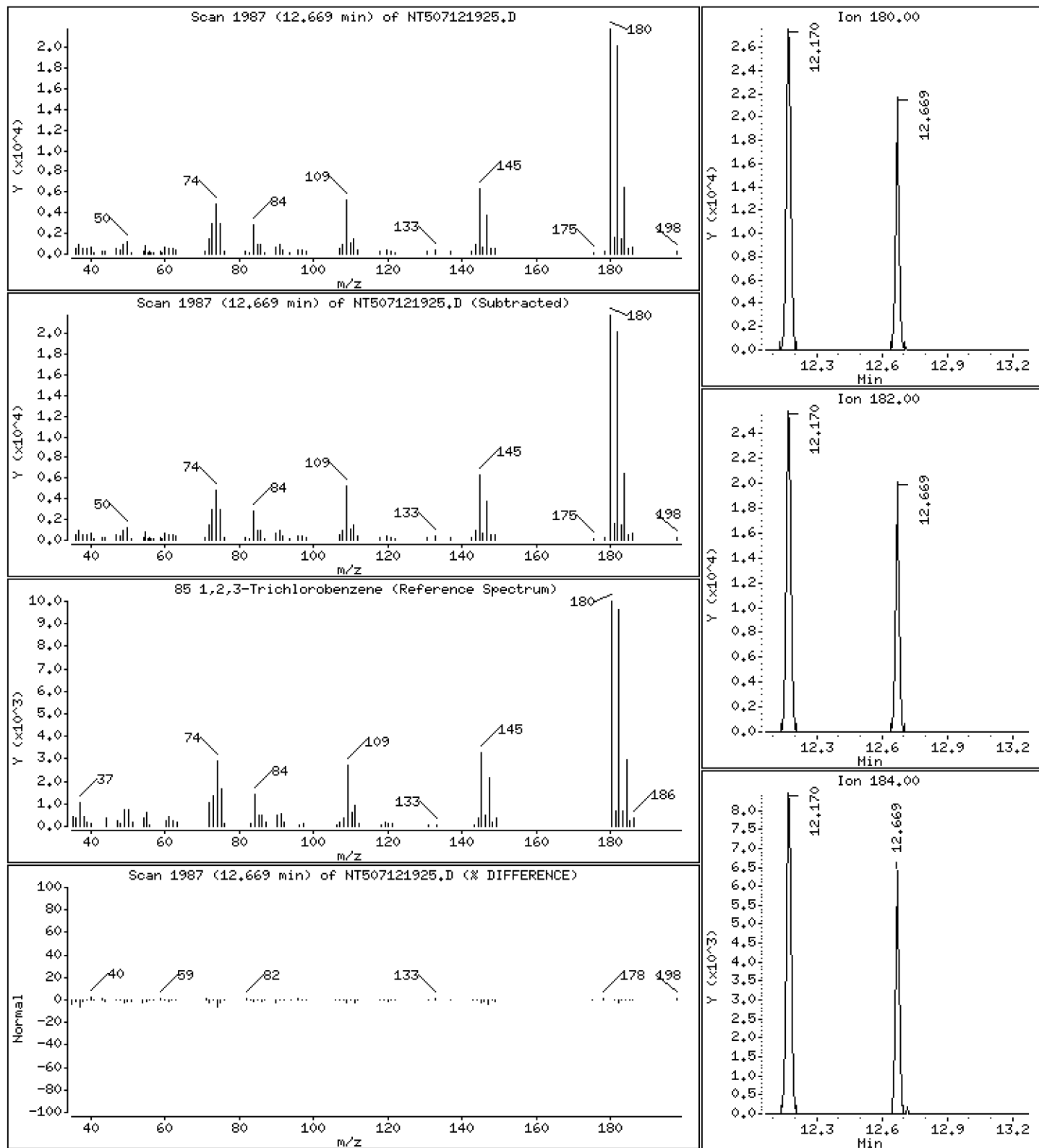
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 6.659 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121925.D
 Lab Smp Id: BHG0316-MS1
 Inj Date : 12-JUL-2019 22:10
 Operator : PB Inst ID: nt5.i
 Smp Info : BHG0316-MS1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/Kg)	(ug/Kg)	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
1 Dichlorodifluoromethane	85	1.329	1.329	(0.249)	157858	39.1913	39.191		
2 Chloromethane	50	1.487	1.487	(0.278)	156911	46.9876	46.988		
3 Vinyl Chloride	62	1.560	1.554	(0.292)	160564	47.6312	47.631		
4 Bromomethane	94	1.840	1.840	(0.344)	121883	49.2210	49.221		
5 Chloroethane	64	1.949	1.943	(0.365)	138247	51.9309	51.931		
6 Trichlorofluoromethane	101	2.059	2.059	(0.385)	336698	52.4196	52.420		
7 1,1-Dichloroethene	96	2.533	2.534	(0.474)	150902	45.8026	45.803		
8 Carbon Disulfide	76	2.540	2.540	(0.475)	425966	46.3355	46.336		
9 112Trichloro122Trifluoroethane	101	2.588	2.588	(0.484)	146640	48.7645	48.765		
10 Iodomethane	142	2.667	2.667	(0.499)	193288	44.9729	44.973		
11 Bromoethane	108	2.801	2.795	(0.524)	98681	44.4931	44.493		
12 Acrolein	56	2.923	2.911	(0.547)	20653	61.6927	61.693 (R)		
13 Methylene Chloride	84	3.154	3.154	(0.590)	149245	45.6211	45.621		
14 Acetone	43	3.270	3.257	(0.612)	241893	410.694	410.69 (R)		
15 Trans-1,2-Dichloroethene	96	3.318	3.312	(0.621)	162671	45.9466	45.947		
16 Methyl tert butyl ether	73	3.495	3.483	(0.654)	412511	53.7588	53.759		
173 n-Hexane	41	3.495	3.483	(0.654)	84930				
17 1,1-Dichloroethane	63	3.951	3.939	(0.739)	263264	49.5600	49.560		
18 Acrylonitrile	53	4.036	4.030	(0.755)	35004	50.0217	50.022		
19 Vinyl Acetate	43	4.249	4.243	(0.795)	126061	25.8828	25.883 (R)		
20 Cis-1,2-Dichloroethane	96	4.468	4.462	(0.836)	172591	47.4369	47.437		
22 2,2-Dichloropropane	77	4.559	4.553	(0.853)	261014	50.9905	50.990		
23 Bromochloromethane	128	4.651	4.645	(0.870)	85751	48.0038	48.004		
24 Chloroform	83	4.736	4.730	(0.886)	273649	48.9037	48.904		
25 Carbon Tetrachloride	117	4.821	4.815	(0.833)	252644	43.0696	43.070		
\$ 27 Dibromofluoromethane	111	4.900	4.894	(0.917)	267932	61.2971	61.297 (R)		
26 1,1,1-Trichloroethane	97	4.894	4.888	(0.916)	269134	49.0434	49.043		
28 1,1-Dichloropropene	75	5.003	4.997	(0.864)	209493	44.2201	44.220		
29 2-Butanone	72	5.052	5.046	(0.945)	79821	288.365	288.37		
30 Benzene	78	5.228	5.222	(0.903)	584883	41.3999	41.400		
* 31 Pentafluorobenzene	168	5.344	5.338	(1.000)	399691	50.0000			
\$ 32 d4-1,2-Dichloroethane	65	5.362	5.350	(1.003)	245211	67.0621	67.062 (R)		
33 1,2-Dichloroethane	62	5.417	5.411	(0.936)	180618	44.5110	44.511		

Compounds	QUANT	SIG						CONCENTRATIONS	
			MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	=====		=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130		5.746	5.740	(0.993)		170569	38.6911	38.691 (R)
* 35 1,4-Difluorobenzene	114		5.788	5.782	(1.000)		797013	50.0000	
37 Dibromomethane	93		6.098	6.098	(1.054)		78802	40.6603	40.660
38 1,2-Dichloropropane	63		6.190	6.184	(1.069)		130807	42.2625	42.263
39 Bromodichloromethane	83		6.257	6.251	(1.081)		186394	40.4728	40.473
172 2-Pentanone	86		6.549	6.543	(1.131)		96760	240.348	240.35
40 2-Chloroethyl Vinyl Ether	63		Compound Not Detected.						
41 Cis 1,3-dichloropropene	75		6.792	6.786	(1.173)		205280	38.1498	38.150 (R)
\$ 42 d8-Toluene	98		6.944	6.938	(1.200)		951109	50.9587	50.959 (R)
43 Toluene	92		6.987	6.981	(1.207)		343537	35.6170	35.617 (R)
44 Tetrachloroethene	166		7.303	7.297	(0.884)		163974	34.4413	34.441 (R)
45 4-Methyl-2-Pentanone	58		7.339	7.333	(1.268)		209190	223.941	223.94
46 Trans 1,3-Dichloropropene	75		7.352	7.346	(1.270)		168269	35.3728	35.373 (R)
47 1,1,2-Trichloroethane	97		7.485	7.479	(1.293)		97676	34.3753	34.375 (R)
48 Chlorodibromomethane	129		7.625	7.619	(0.923)		119504	32.4086	32.409 (R)
49 1,3-Dichloropropane	76		7.711	7.705	(0.933)		169540	36.5878	36.588 (R)
50 1,2-Dibromoethane	107		7.820	7.814	(1.351)		96253	33.5197	33.520 (R)
51 2-Hexanone	43		8.045	8.045	(0.974)		363433	225.596	225.60
* 52 d5-Chlorobenzene	117		8.264	8.258	(1.000)		775582	50.0000	
53 Chlorobenzene	112		8.276	8.270	(1.001)		304137	27.5224	27.522 (R)
54 Ethyl Benzene	91		8.307	8.301	(1.005)		575167	31.7129	31.713 (R)
55 1,1,1,2-Tetrachloroethane	131		8.337	8.331	(1.009)		124105	31.5905	31.591 (R)
56 m,p-xylene	106		8.435	8.435	(1.021)		431348	58.3751	58.375 (R)
57 o-Xylene	106		8.812	8.806	(1.066)		196387	27.9583	27.958 (R)
58 Styrene	104		8.854	8.854	(1.071)		126907	11.2739	11.274 (R)
59 Bromoform	173		8.873	8.867	(0.857)		63653	30.8921	30.892 (R)
60 Isopropyl Benzene	105		9.092	9.086	(0.878)		555825	37.2293	37.229 (R)
61 Cyclohexanone	55		9.645	9.639	(1.167)		965		
\$ 62 4-Bromofluorobenzene	174		9.335	9.335	(1.130)		298643	44.9782	44.978 (R)
63 Bromobenzene	156		9.420	9.420	(0.910)		97669	25.3984	25.398 (R)
64 N-Propyl Benzene	91		9.463	9.457	(0.914)		571476	33.7706	33.771 (R)
65 1,1,2,2-Tetrachloroethane	83		9.536	9.530	(0.921)		82143	30.5727	30.573 (R)
66 2-Chloro Toluene	91		9.590	9.590	(0.927)		272692	28.2602	28.260 (R)
67 1,3,5-Trimethyl Benzene	105		9.645	9.639	(0.932)		361801	29.3991	29.399 (R)
68 1,2,3-Trichloropropane	110		9.645	9.645	(0.932)		30101	32.2800	32.280 (R)
69 Trans-1,4-Dichloro 2-Butene	53		9.694	9.688	(0.937)		23276	31.7144	31.714
70 4-Chloro Toluene	91		9.742	9.743	(0.941)		253879	25.3814	25.381 (R)
71 T-Butyl Benzene	119		9.931	9.925	(0.959)		374454	32.8277	32.828 (R)
72 1,2,4-Trimethylbenzene	105		9.998	9.992	(0.966)		316944	26.4288	26.429 (R)
73 S-Butyl Benzene	105		10.089	10.089	(0.975)		504454	30.4509	30.451 (R)
74 4-Isopropyl Toluene	119		10.229	10.229	(0.988)		427335	30.0754	30.075 (R)
75 1,3-Dichlorobenzene	146		10.278	10.278	(0.993)		144072	18.9415	18.941 (R)
* 76 d4-1,4-Dichlorobenzene	152		10.351	10.351	(1.000)		350044	50.0000	
77 1,4-Dichlorobenzene	146		10.363	10.363	(1.001)		139062	18.5812	18.581 (R)
78 N-Butyl Benzene	91		10.619	10.619	(1.026)		302933	24.4525	24.453 (R)
\$ 79 d4-1,2-Dichlorobenzene	152		10.746	10.746	(1.038)		296557	48.5773	48.577 (R)
80 1,2-Dichlorobenzene	146		10.752	10.752	(1.039)		118762	17.2911	17.291 (R)
81 1,2-Dibromo 3-Chloropropane	75		11.519	11.519	(1.113)		10775	21.6378	21.638 (R)
82 Hexachloro 1,3-Butadiene	225		12.152	12.152	(1.174)		46298	16.5626	16.563 (R)
83 1,2,4-Trichlorobenzene	180		12.170	12.170	(1.176)		38432	8.16198	8.162 (R)
84 Naphthalene	128		12.492	12.492	(1.207)		59261	6.14961	6.150 (R)
85 1,2,3-Trichlorobenzene	180		12.669	12.669	(1.224)		28374	6.65883	6.659 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121925.D Calibration Time: 12:25
 Lab Smp Id: BHG0316-MS1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	399691	-1.05
35 1,4-Difluorobenze	717664	358832	1435328	797013	11.06
52 d5-Chlorobenzene	696563	348282	1393126	775582	11.34
76 d4-1,4-Dichlorobe	380778	190389	761556	350044	-8.07

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: BHG0316-MS1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	39.191	78.38	
2 Chloromethane	50.000	46.988	93.98	
3 Vinyl Chloride	50.000	47.631	95.26	
4 Bromomethane	50.000	49.221	98.44	
5 Chloroethane	50.000	51.931	103.86	
6 Trichlorofluoromet	50.000	52.420	104.84	
12 Acrolein	250.00	61.693	24.68*	
9 112Trichloro122Tri	50.000	48.765	97.53	
14 Acetone	250.00	410.69	164.28*	
7 1,1-Dichloroethene	50.000	45.803	91.61	
11 Bromoethane	50.000	44.493	88.99	
10 Iodomethane	50.000	44.973	89.95	
13 Methylene Chloride	50.000	45.621	91.24	
8 Carbon Disulfide	50.000	46.336	92.67	
18 Acrylonitrile	50.000	50.022	100.04	
15 Trans-1,2-Dichloro	50.000	45.947	91.89	
19 Vinyl Acetate	50.000	25.883	51.77*	
17 1,1-Dichloroethane	50.000	49.560	99.12	
29 2-Butanone	250.00	288.37	115.35	
22 2,2-Dichloropropan	50.000	50.990	101.98	
20 Cis-1,2-Dichloroet	50.000	47.437	94.87	
24 Chloroform	50.000	48.904	97.81	
23 Bromochloromethane	50.000	48.004	96.01	
26 1,1,1-Trichloroeth	50.000	49.043	98.09	
28 1,1-Dichloropropen	50.000	44.220	88.44	
25 Carbon Tetrachlori	50.000	43.070	86.14	
33 1,2-Dichloroethane	50.000	44.511	89.02	
30 Benzene	50.000	41.400	82.80	
34 Trichloroethene	50.000	38.691	77.38*	
38 1,2-Dichloropropan	50.000	42.263	84.53	
39 Bromodichlorometha	50.000	40.473	80.95	
172 2-Pentanone	250.00	240.35	96.14	
37 Dibromomethane	50.000	40.660	81.32	
40 2-Chloroethyl Vin	50.000	0.0000	*	
45 4-Methyl-2-Pentano	250.00	223.94	89.58	
41 Cis 1,3-dichloropr	50.000	38.150	76.30*	
43 Toluene	50.000	35.617	71.23*	
46 Trans 1,3-Dichloro	50.000	35.373	70.75*	
51 2-Hexanone	250.00	225.60	90.24	
47 1,1,2-Trichloroeth	50.000	34.375	68.75*	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	36.588	73.18*	
44 Tetrachloroethene	50.000	34.441	68.88*	
48 Chlorodibromometha	50.000	32.409	64.82*	
50 1,2-Dibromoethane	50.000	33.520	67.04*	
53 Chlorobenzene	50.000	27.522	55.04*	
55 1,1,1,2-Tetrachlor	50.000	31.591	63.18*	
54 Ethyl Benzene	50.000	31.713	63.43*	
56 m,p-xylene	100.00	58.375	58.38*	
57 o-Xylene	50.000	27.958	55.92*	
58 Styrene	50.000	11.274	22.55*	
60 Isopropyl Benzene	50.000	37.229	74.46*	
59 Bromoform	50.000	30.892	61.78*	
65 1,1,2,2-Tetrachlor	50.000	30.573	61.15*	
68 1,2,3-Trichloropro	50.000	32.280	64.56*	
69 Trans-1,4-Dichloro	50.000	31.714	63.43	
64 N-Propyl Benzene	50.000	33.771	67.54*	
63 Bromobenzene	50.000	25.398	50.80*	
67 1,3,5-Trimethyl Be	50.000	29.399	58.80*	
66 2-Chloro Toluene	50.000	28.260	56.52*	
70 4-Chloro Toluene	50.000	25.381	50.76*	
71 T-Butyl Benzene	50.000	32.828	65.66*	
72 1,2,4-Trimethylben	50.000	26.429	52.86*	
73 S-Butyl Benzene	50.000	30.451	60.90*	
74 4-Isopropyl Toluen	50.000	30.075	60.15*	
75 1,3-Dichlorobenzen	50.000	18.941	37.88*	
77 1,4-Dichlorobenzen	50.000	18.581	37.16*	
78 N-Butyl Benzene	50.000	24.453	48.91*	
80 1,2-Dichlorobenzen	50.000	17.291	34.58*	
81 1,2-Dibromo 3-Chlo	50.000	21.638	43.28*	
83 1,2,4-Trichloroben	50.000	8.162	16.32*	
82 Hexachloro 1,3-But	50.000	16.563	33.13*	
84 Naphthalene	50.000	6.150	12.30*	
85 1,2,3-Trichloroben	50.000	6.659	13.32*	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	61.297	122.59	
\$ 32 d4-1,2-Dichloroeth	50.000	67.062	134.12	
\$ 42 d8-Toluene	50.000	50.959	101.92	
\$ 62 4-Bromofluorobenze	50.000	44.978	89.96	
\$ 79 d4-1,2-Dichloroben	50.000	48.577	97.15	

REVIEW SUMMARY FOR FILE - NT507121925.D

Lab ID: BHG0316-MS1
 nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 22:10

RT	CO-ELUTION COMPOUNDS
9.646	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.646	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane
3.495	n-Hexane and Methyl tert butyl ether
9.646	Cyclohexanone and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500

Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121926.D

Date : 12-JUL-2019 22:32

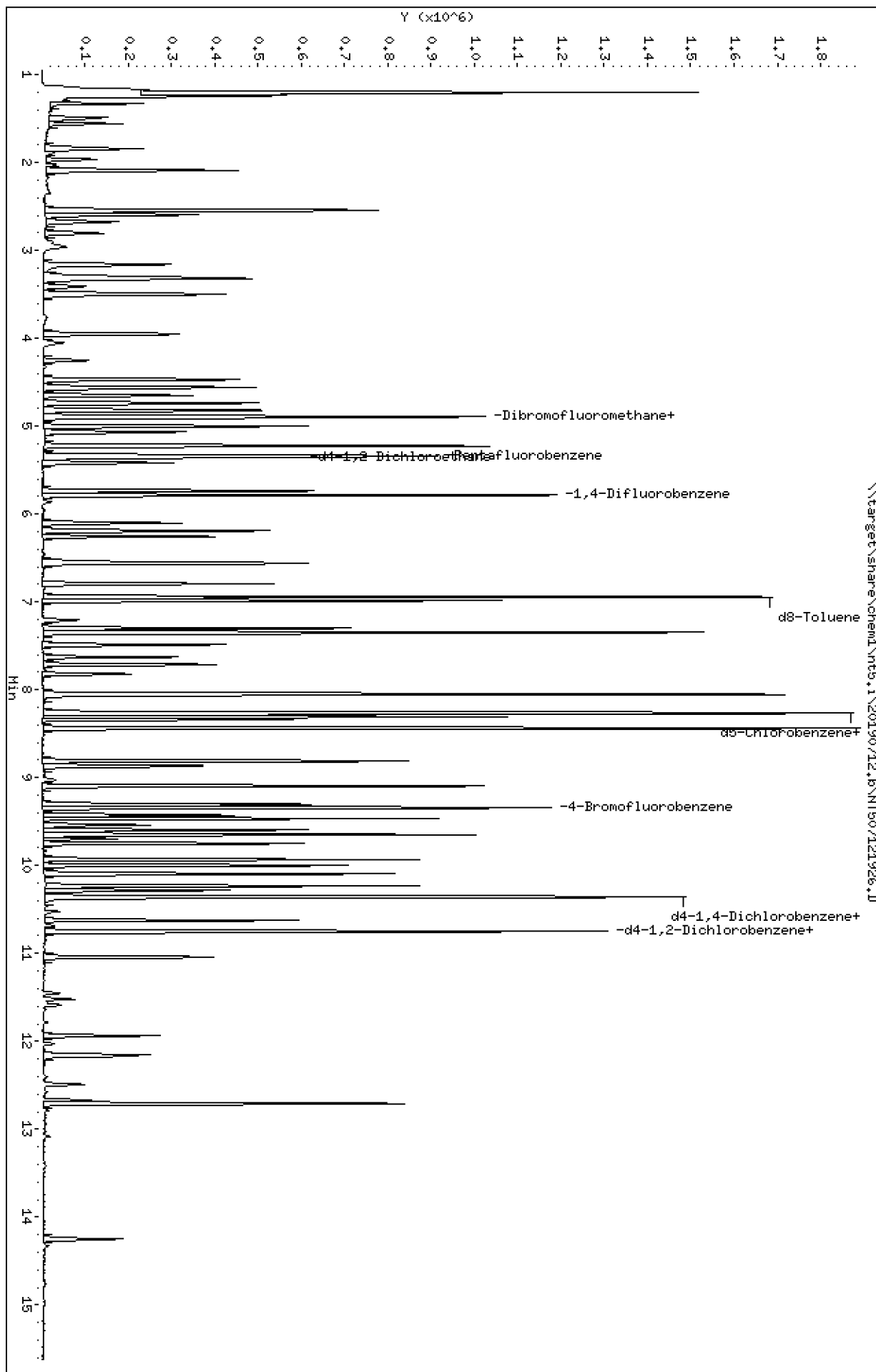
Client ID:

Sample Info: BHC0316-MSD1

Page 1

Column phase: RTXWMS

Instrument: nt5.i
Operator: PB
Column diameter: 0.18



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

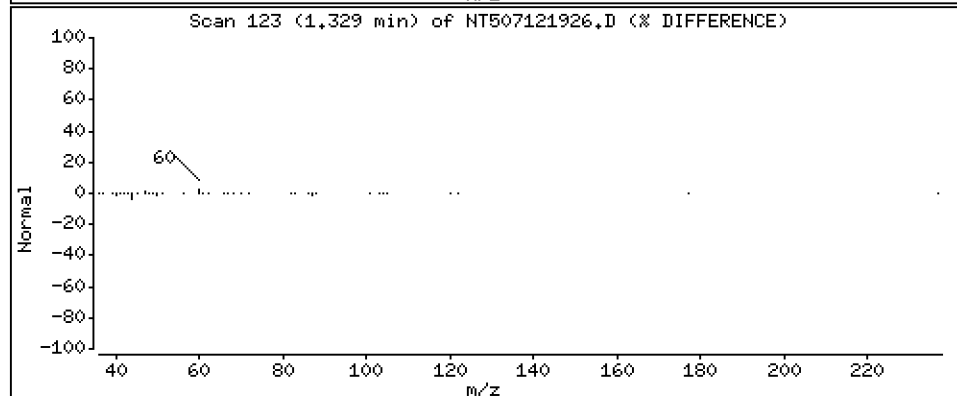
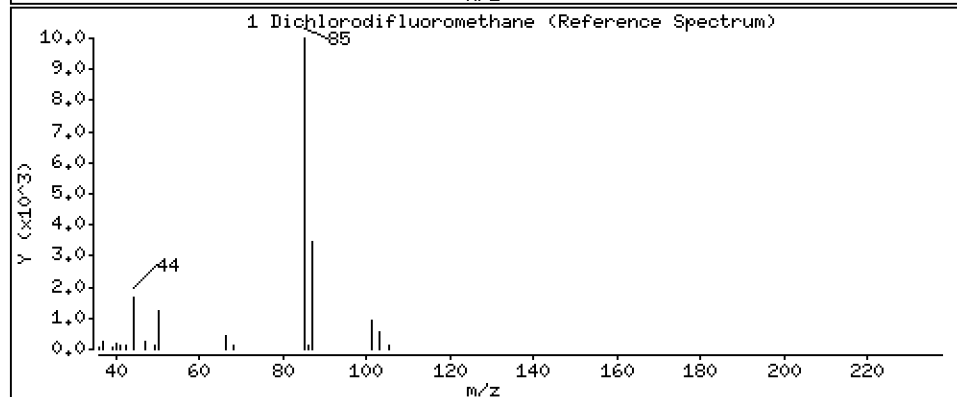
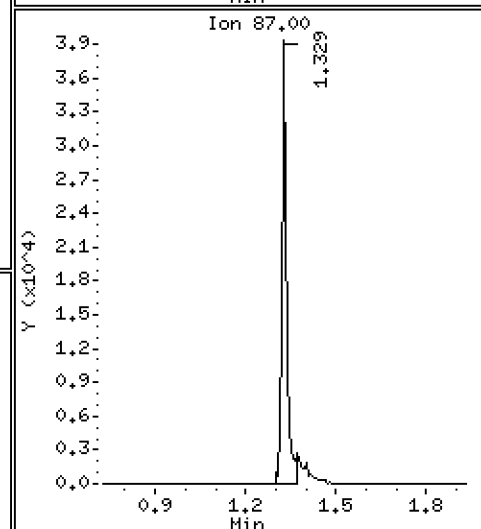
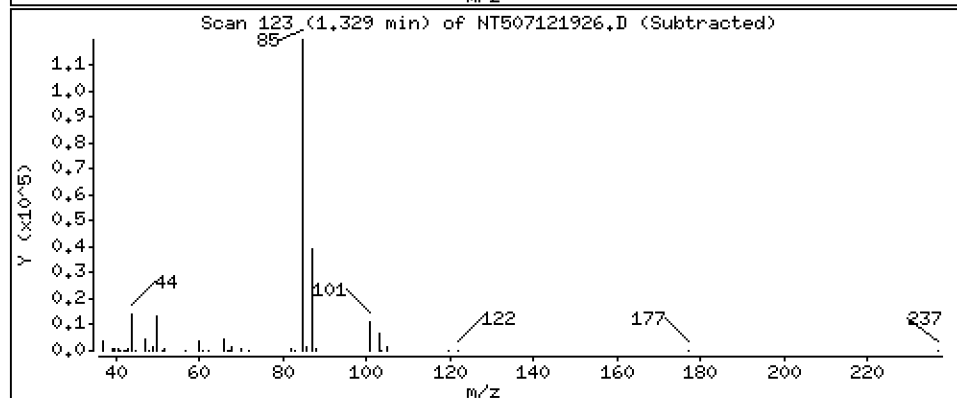
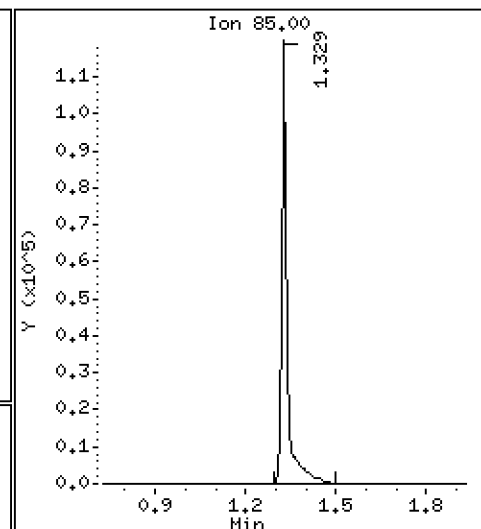
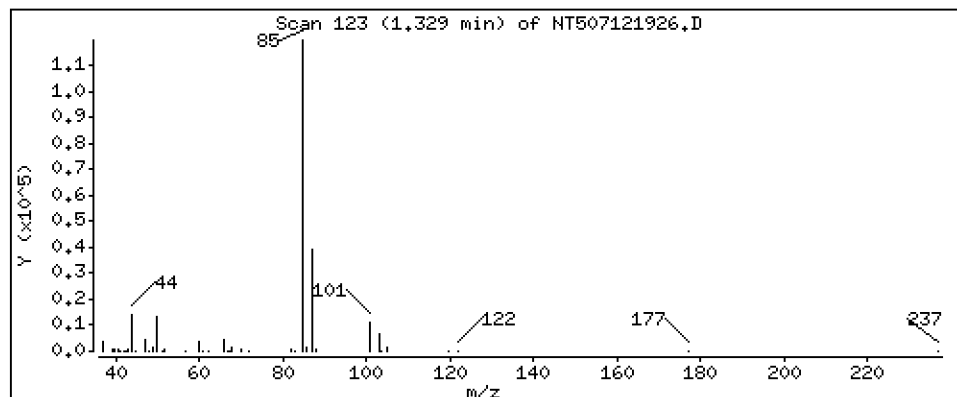
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 37,534 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

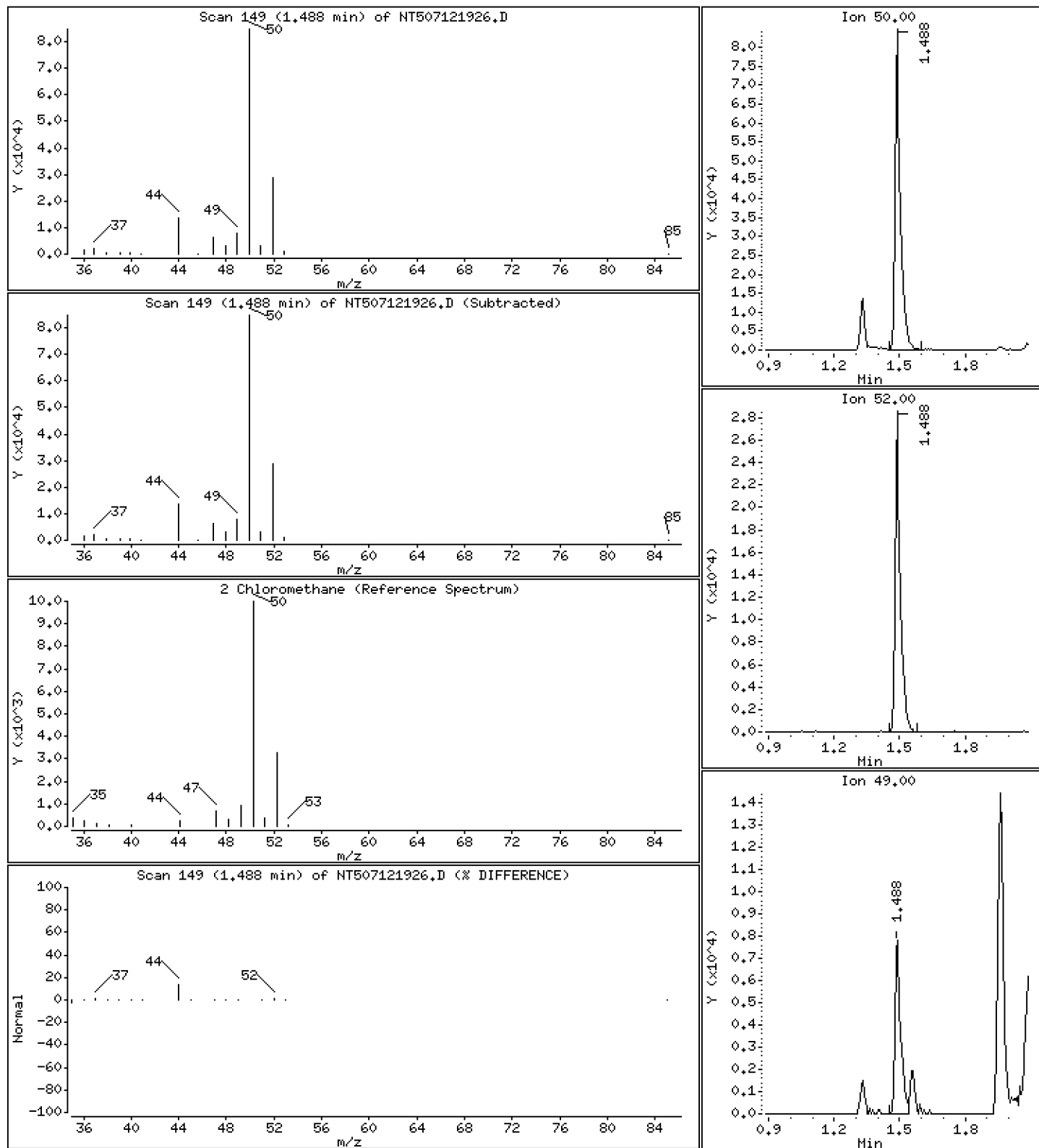
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 40,204 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

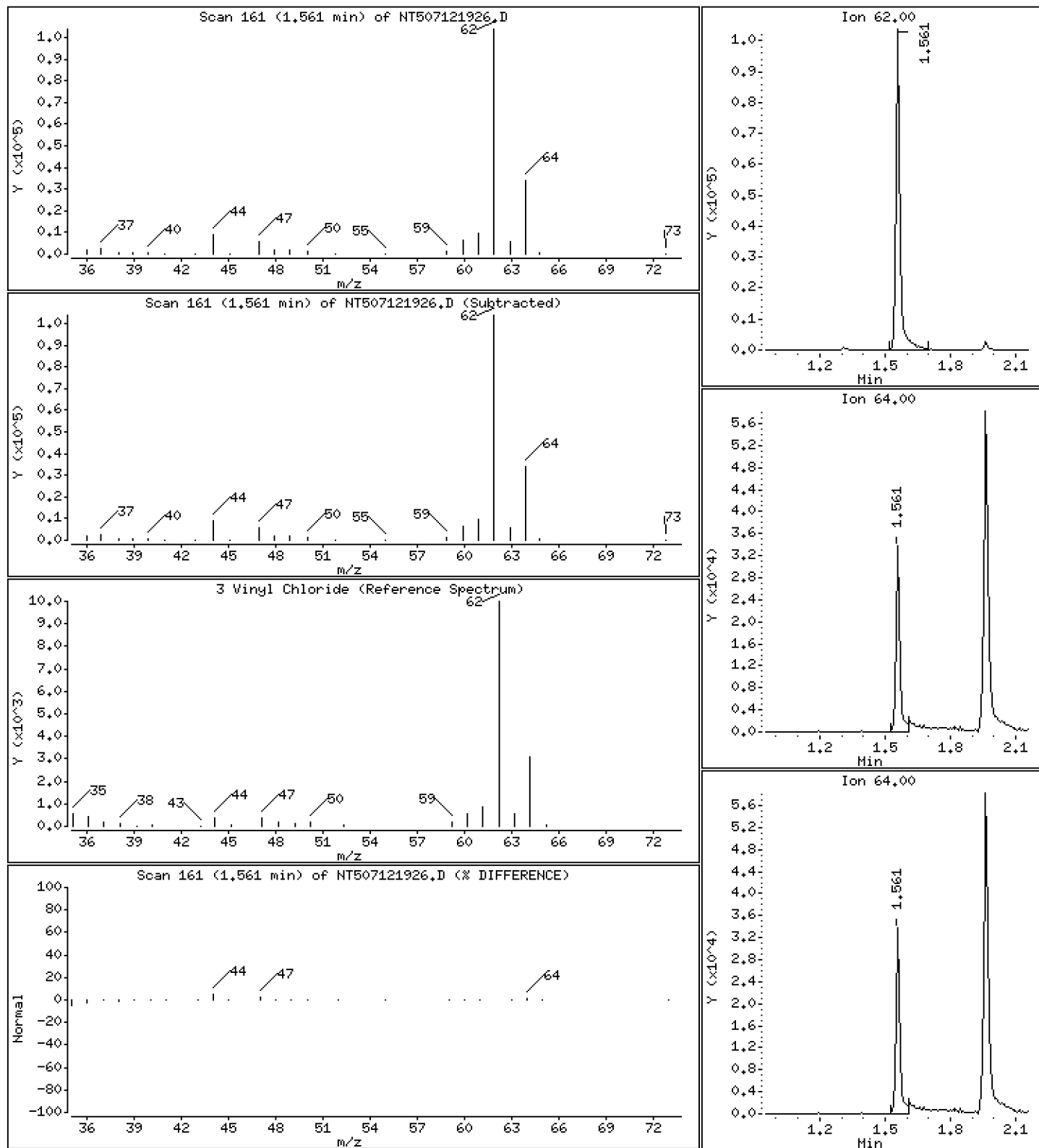
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 41.918 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

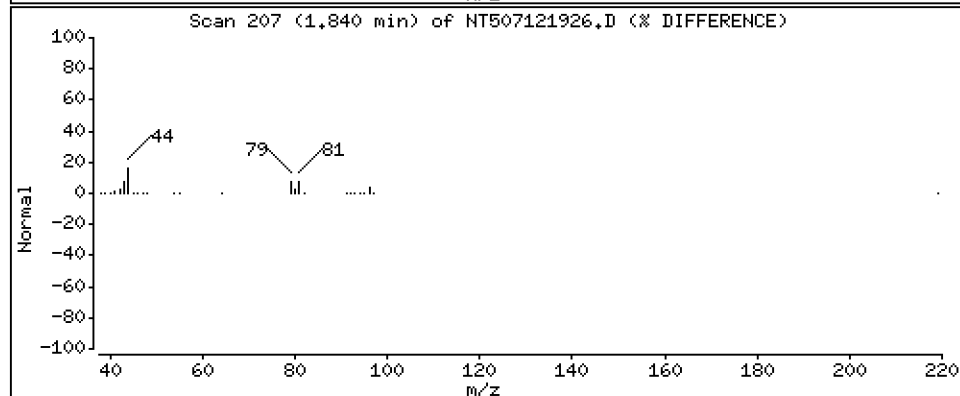
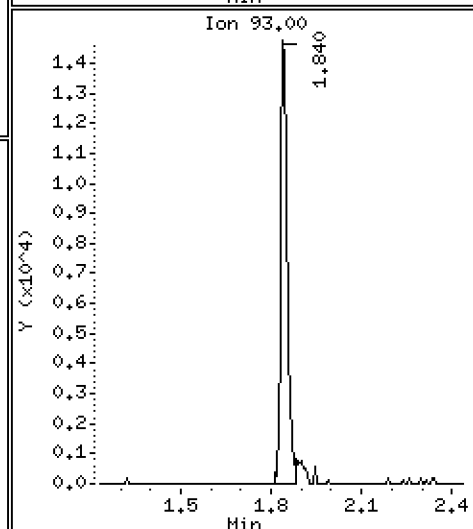
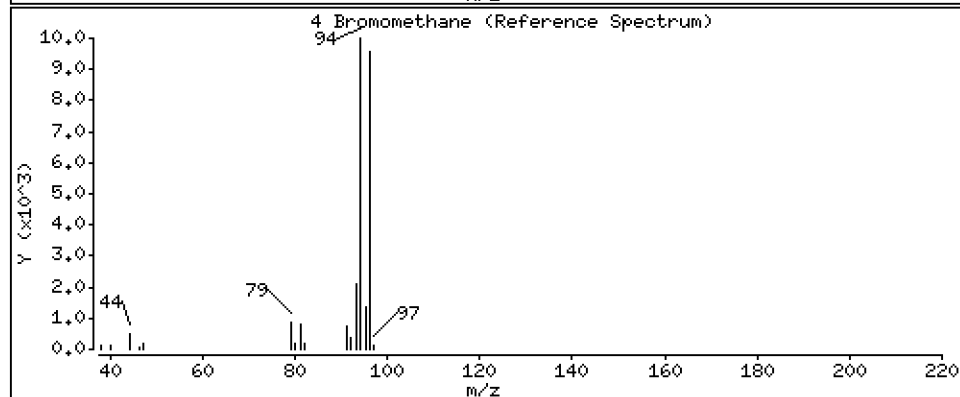
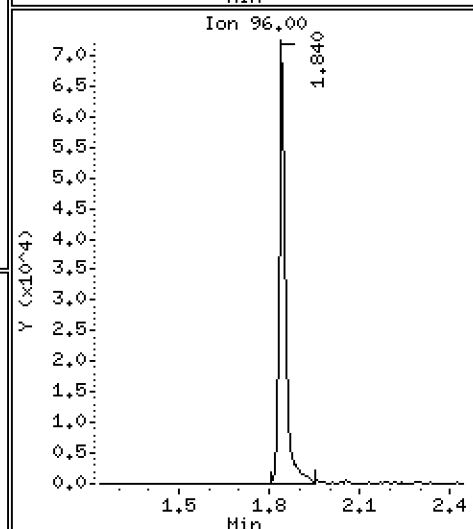
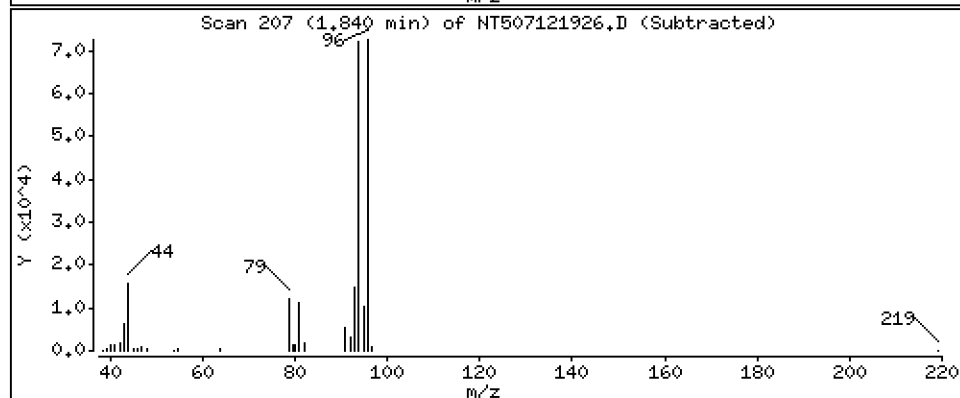
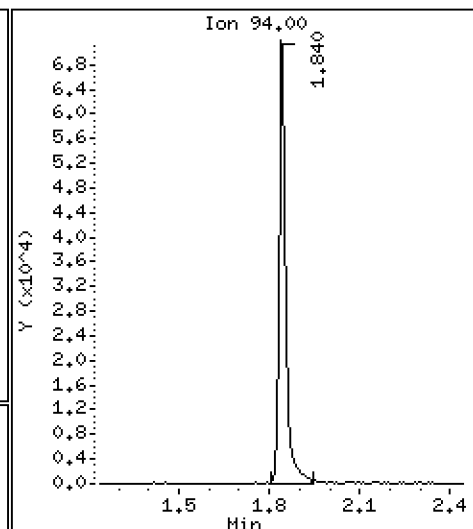
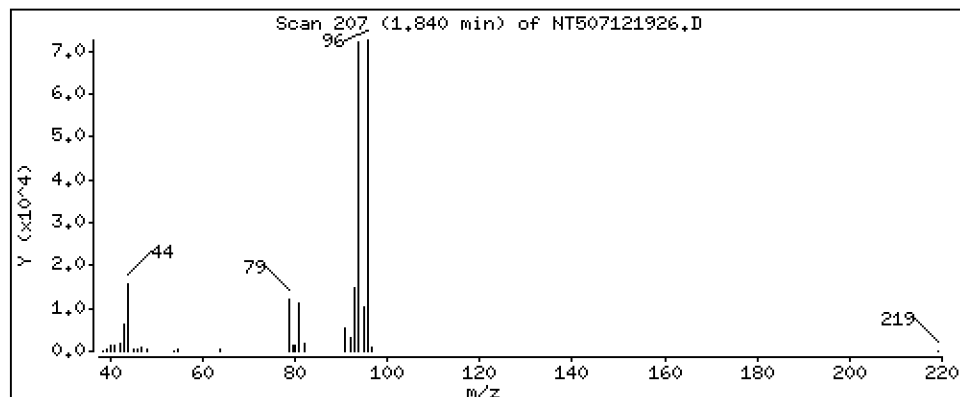
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 44,138 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

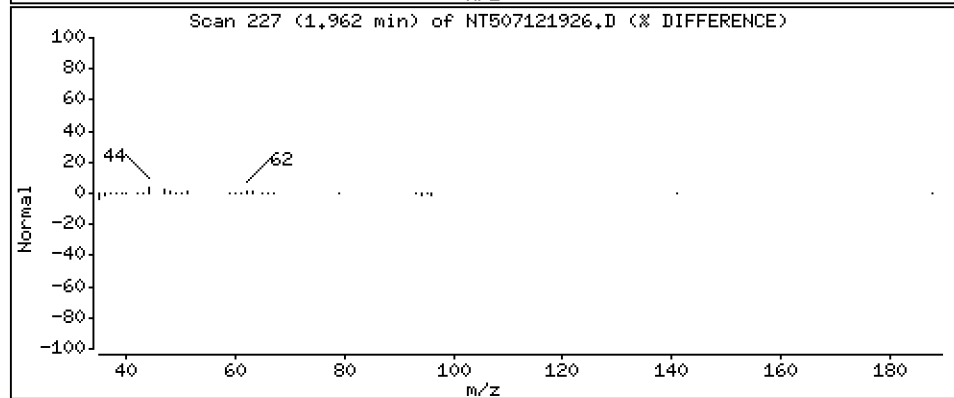
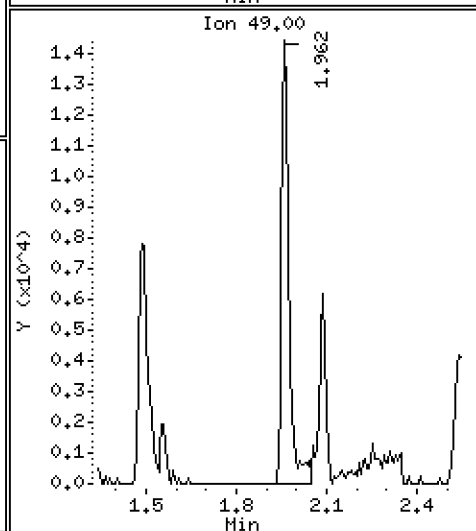
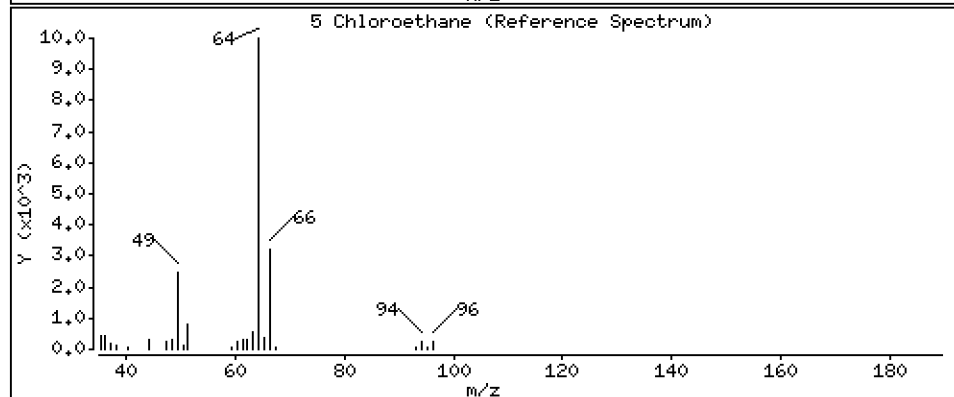
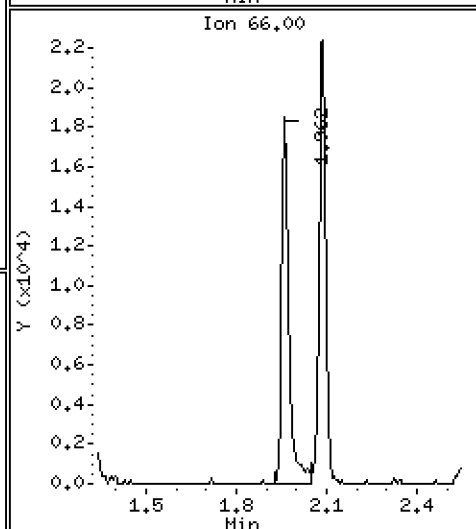
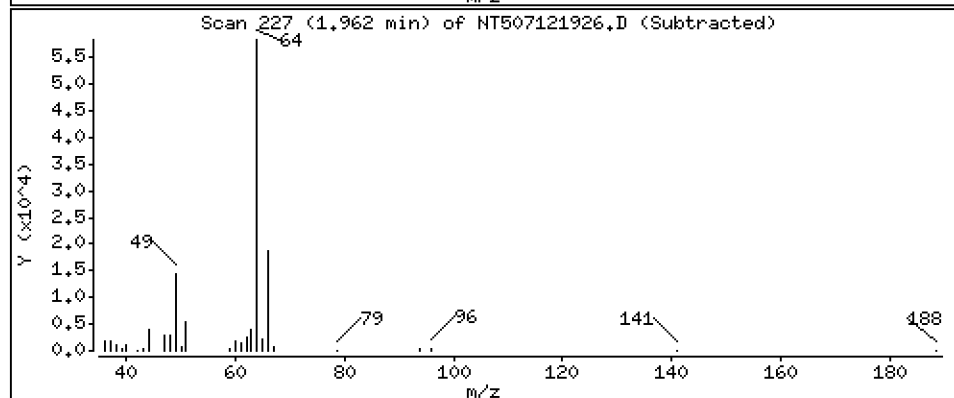
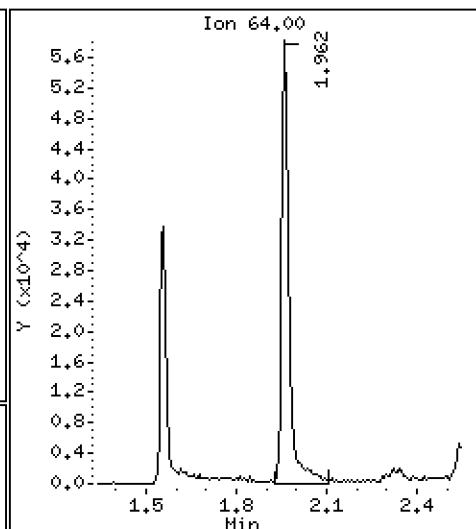
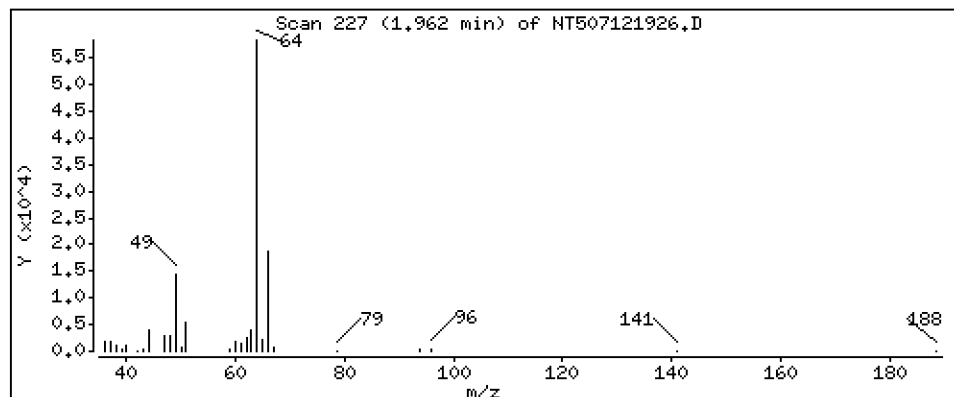
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 33,681 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

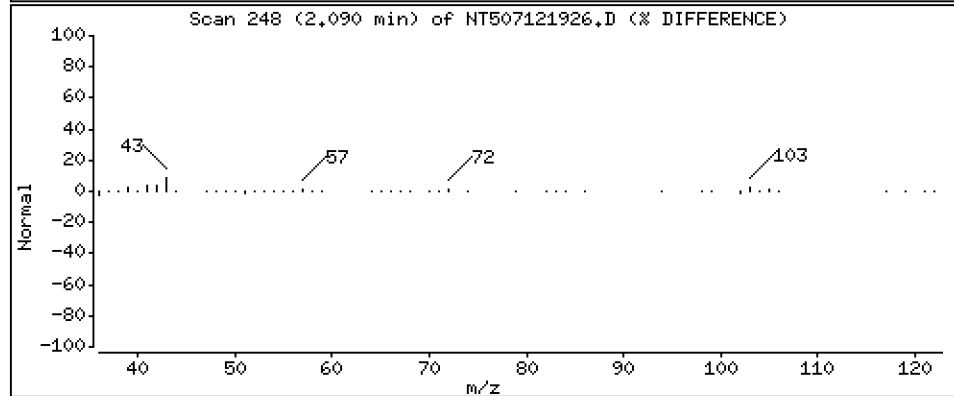
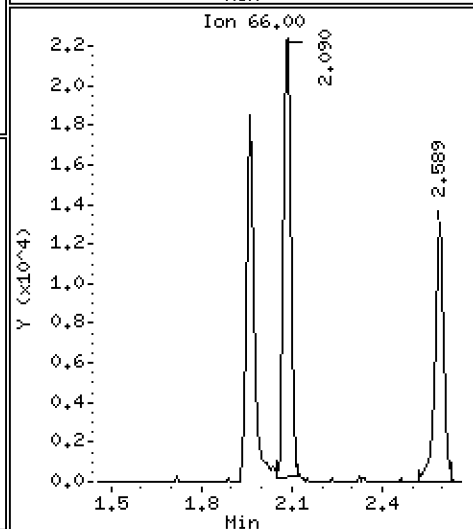
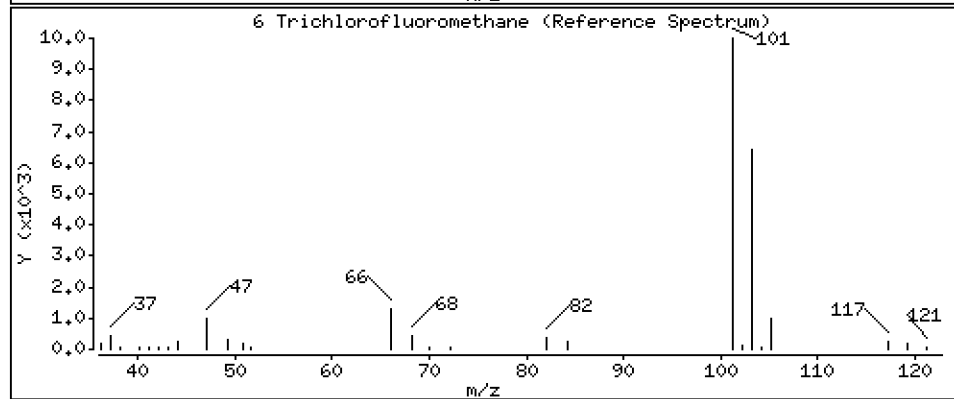
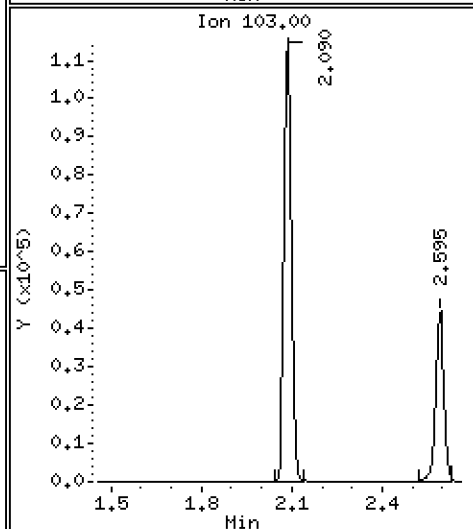
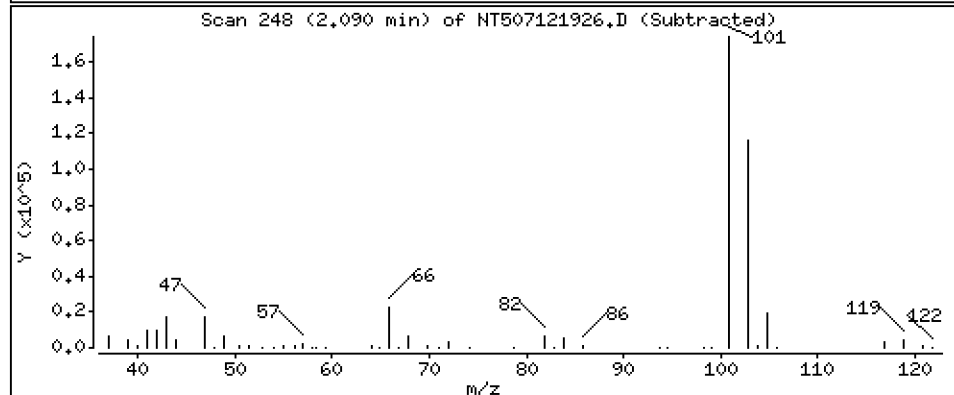
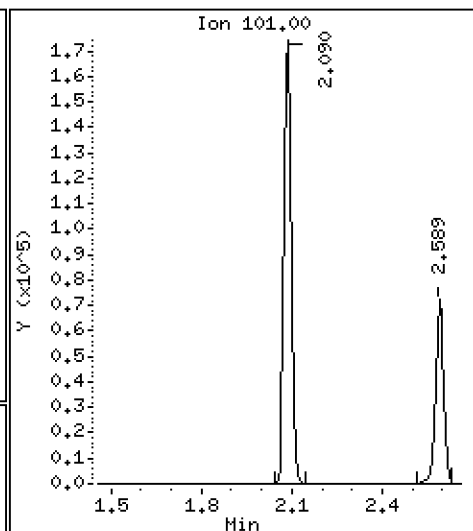
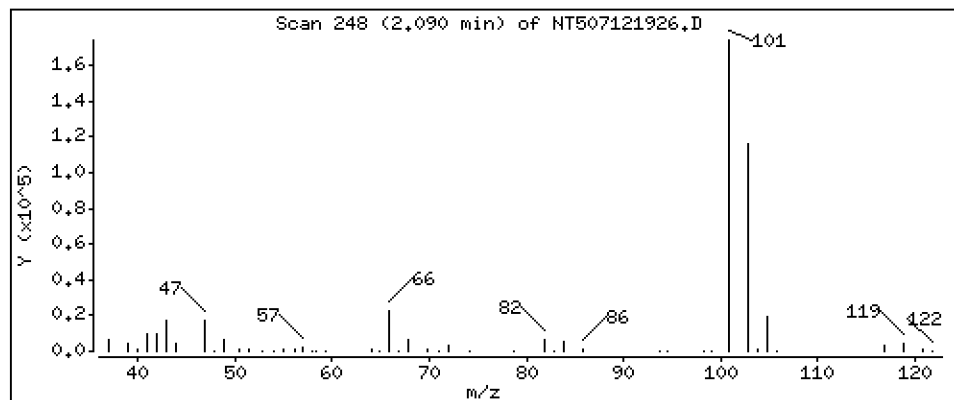
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 39,523 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

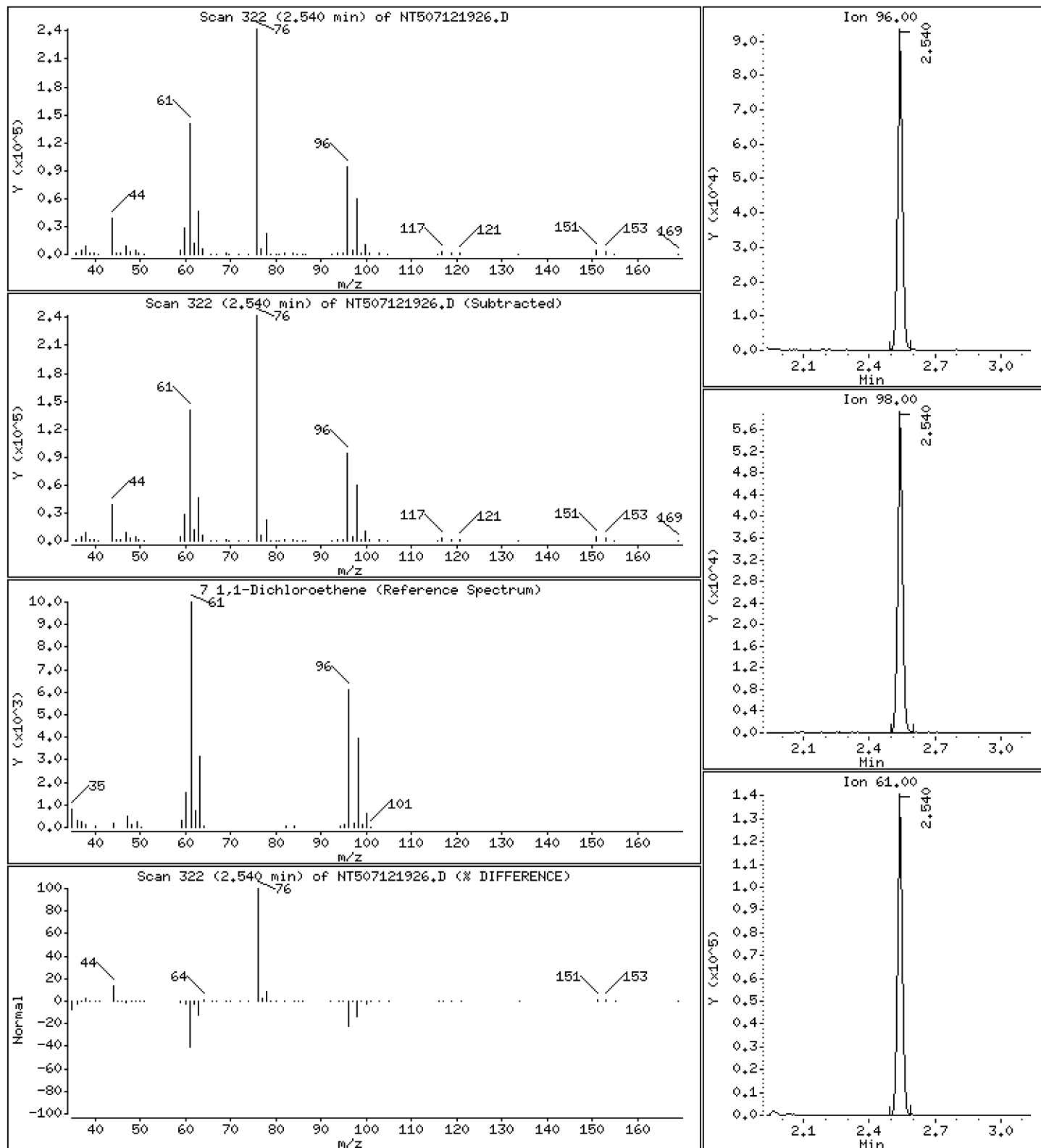
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 41.811 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

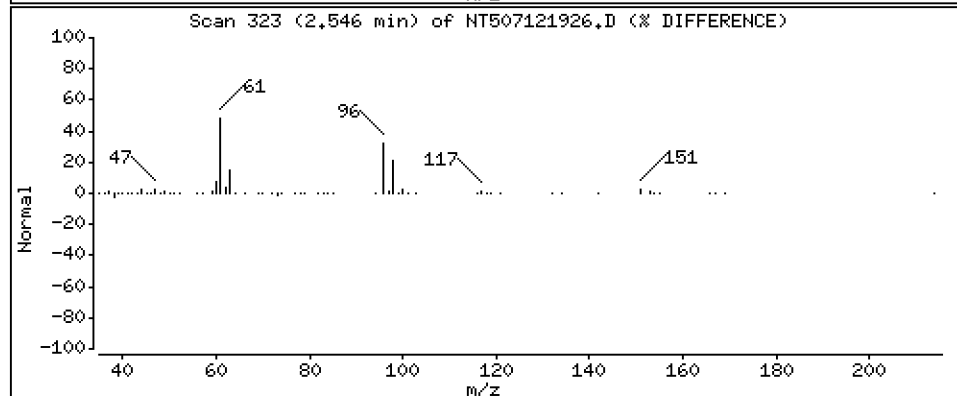
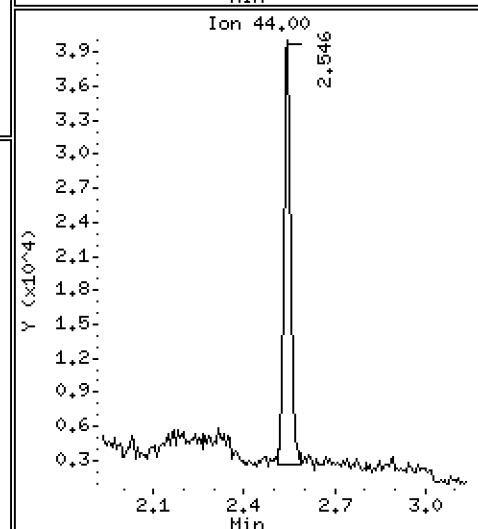
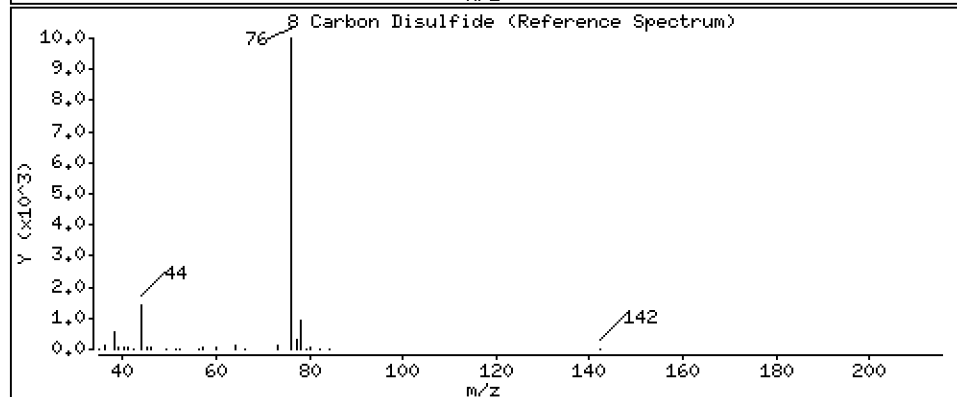
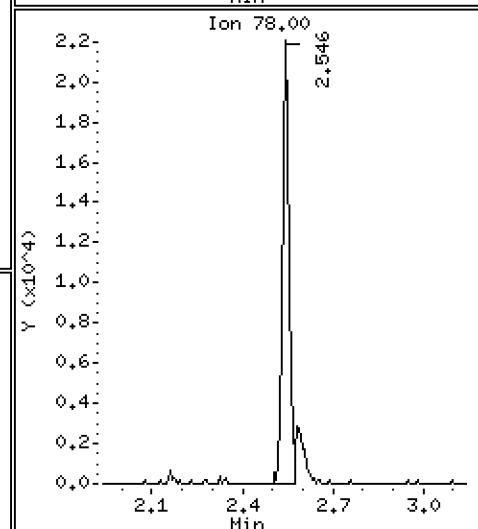
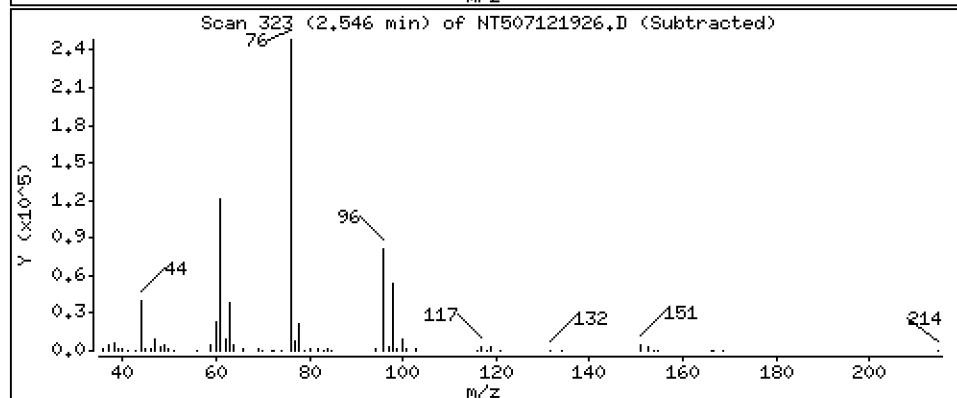
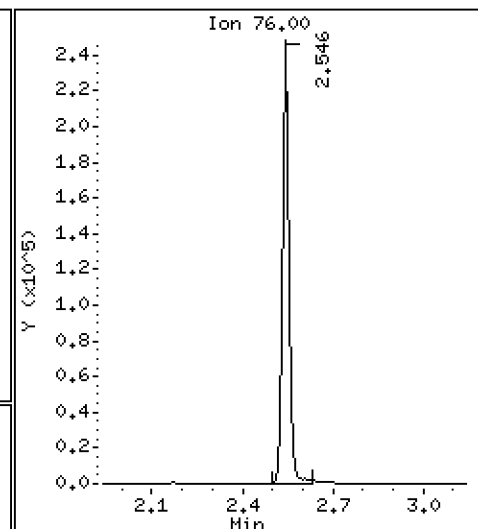
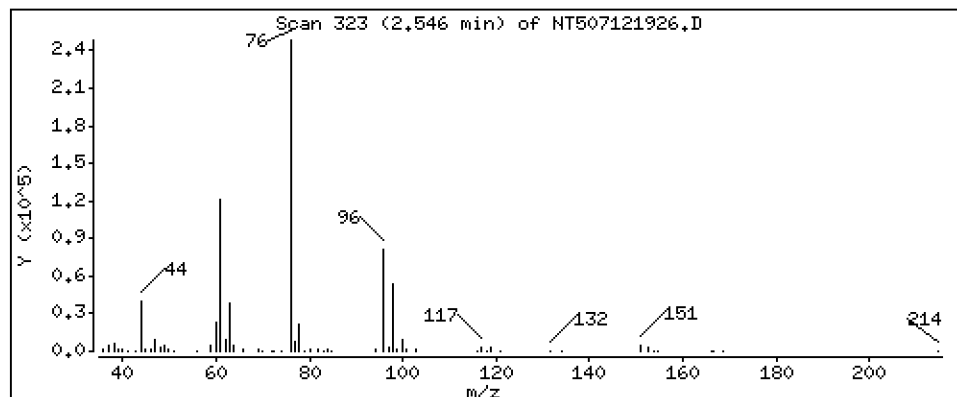
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

8 Carbon Disulfide

Concentration: 40,942 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

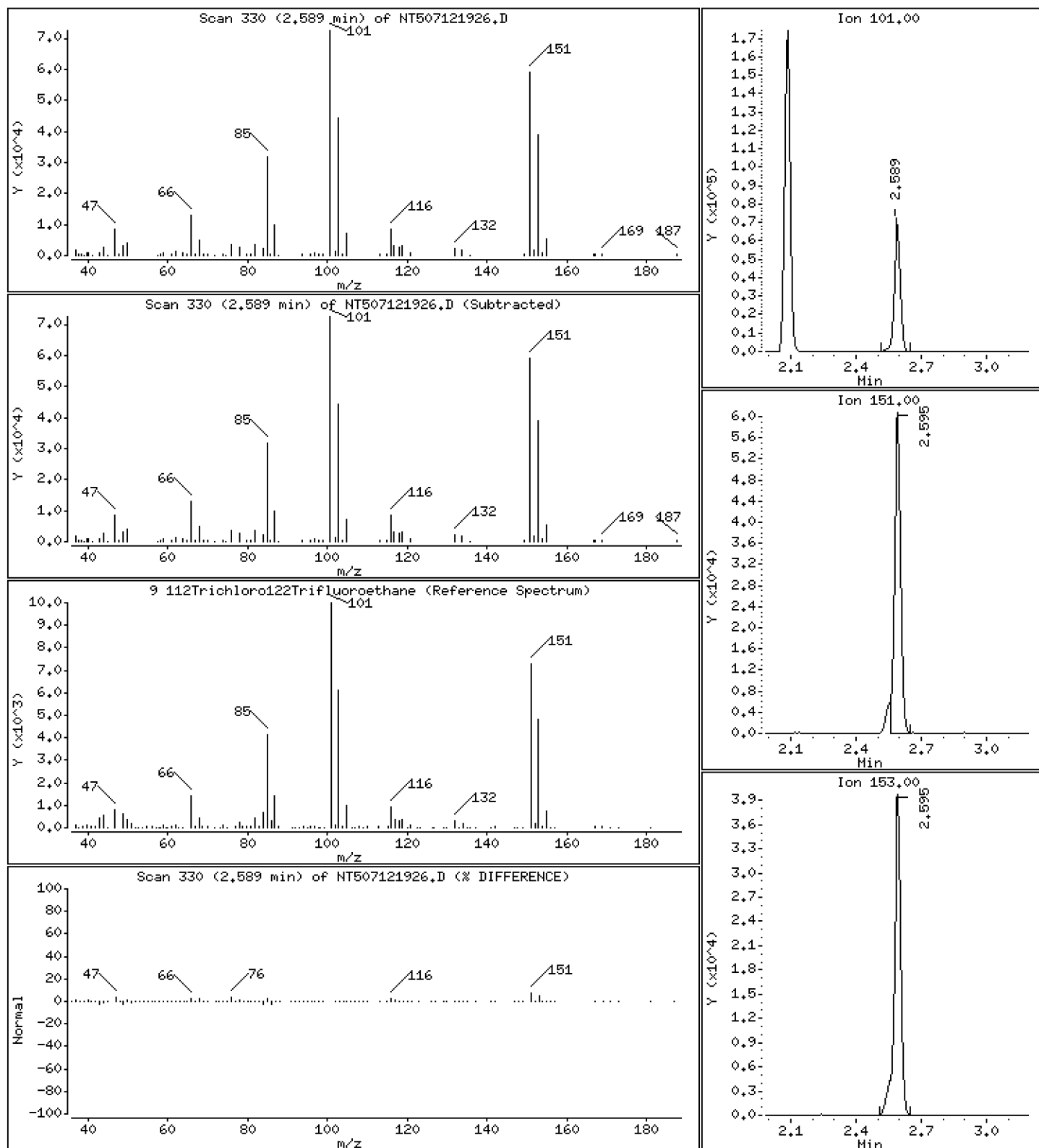
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 42,383 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

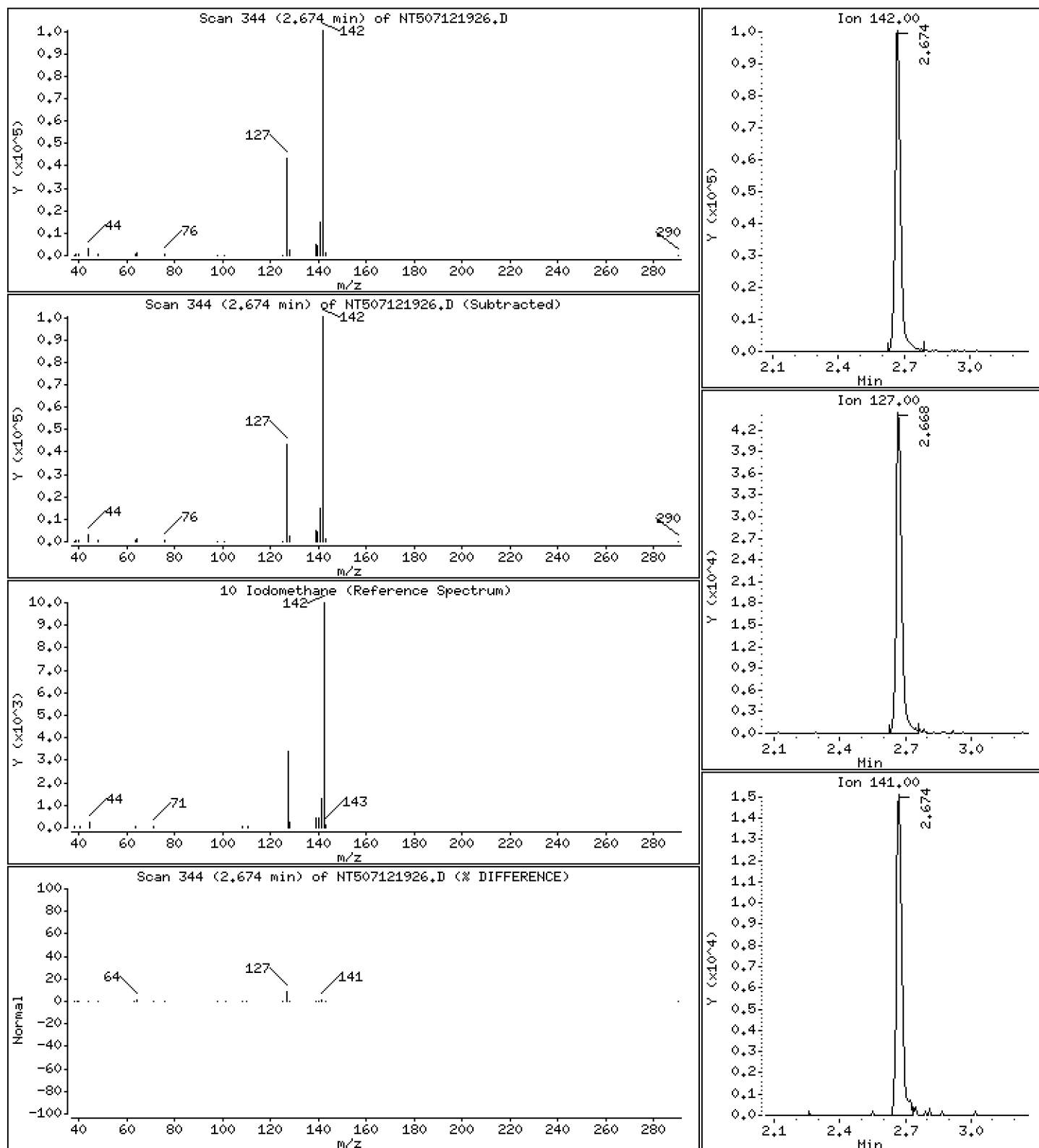
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 39,453 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

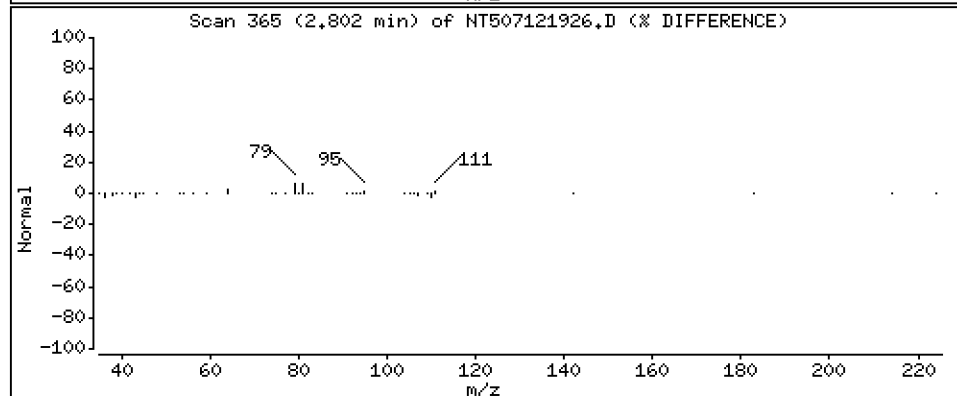
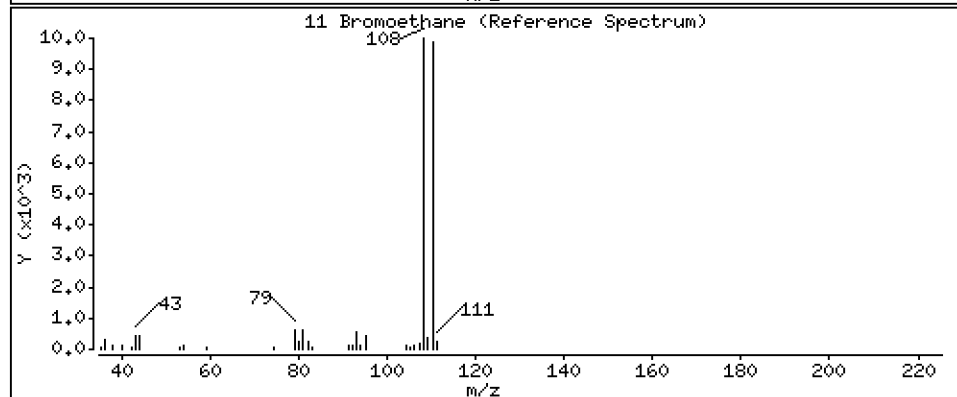
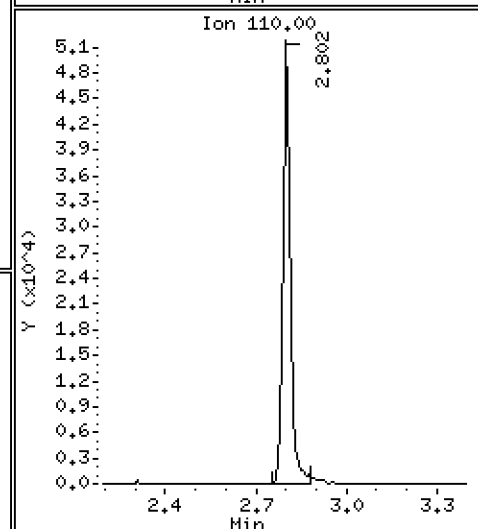
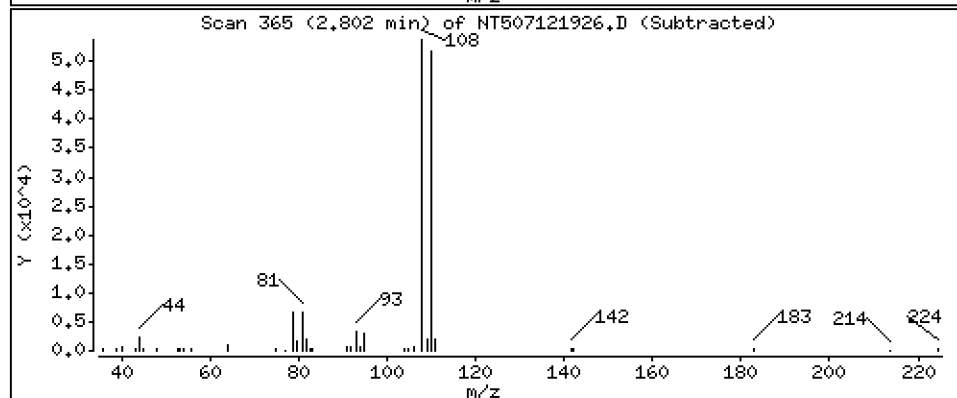
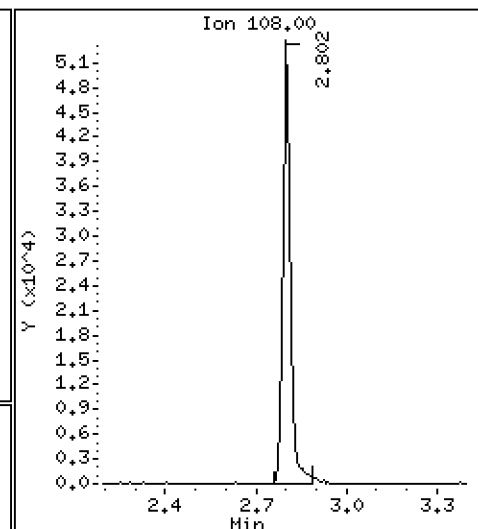
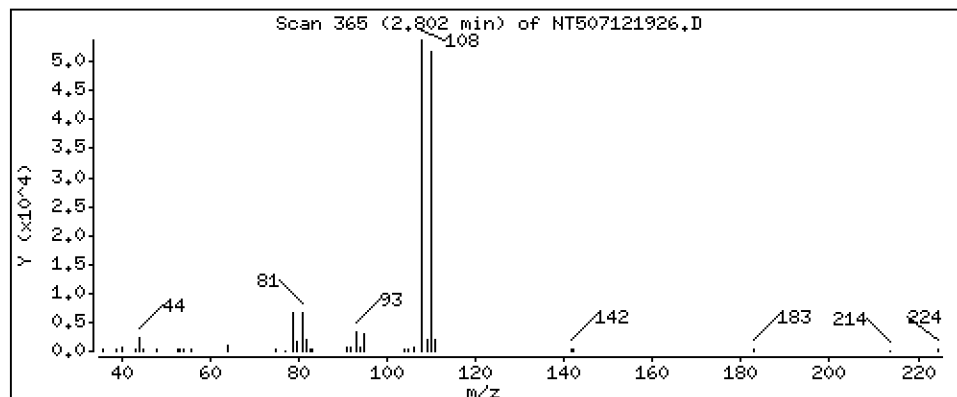
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 40.963 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

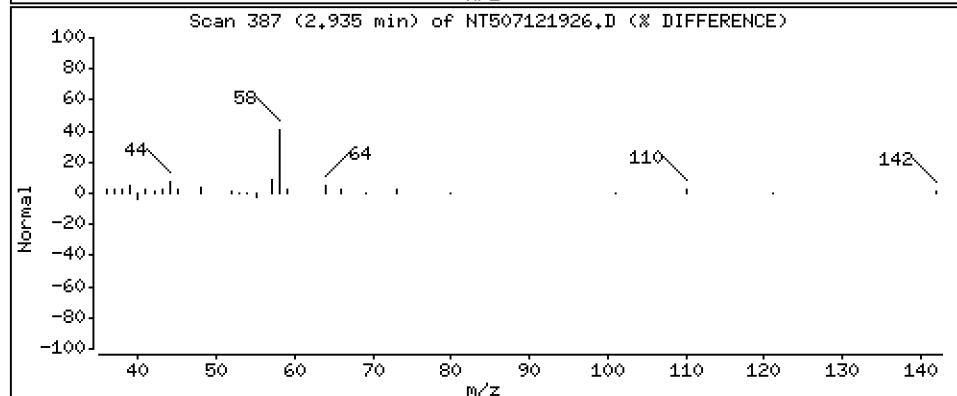
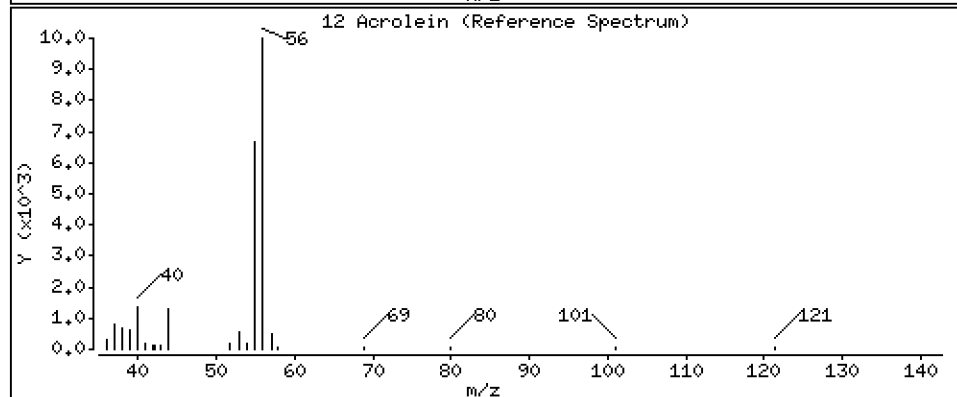
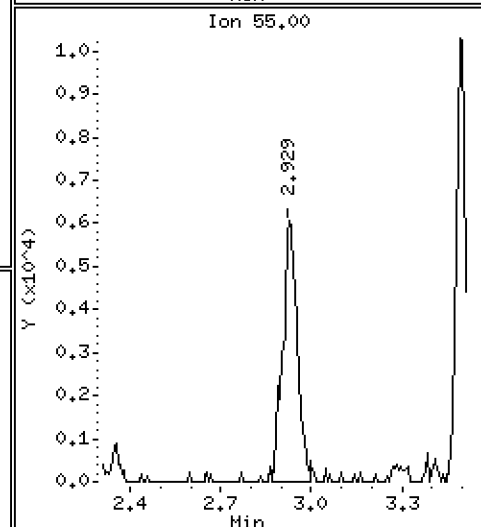
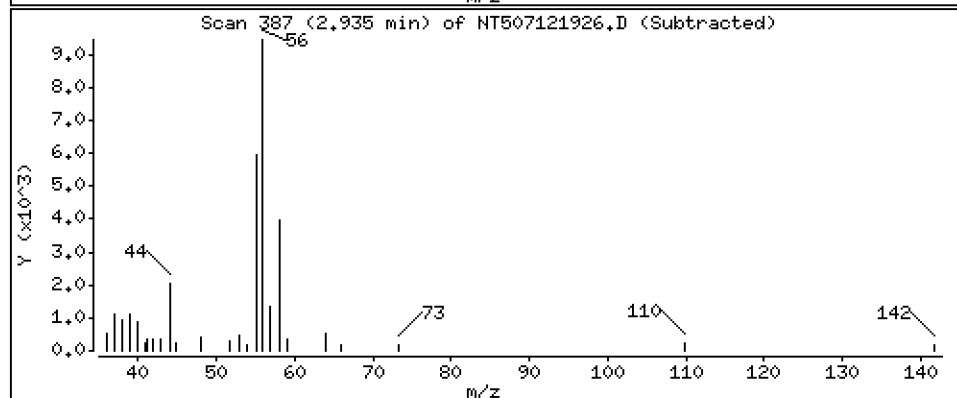
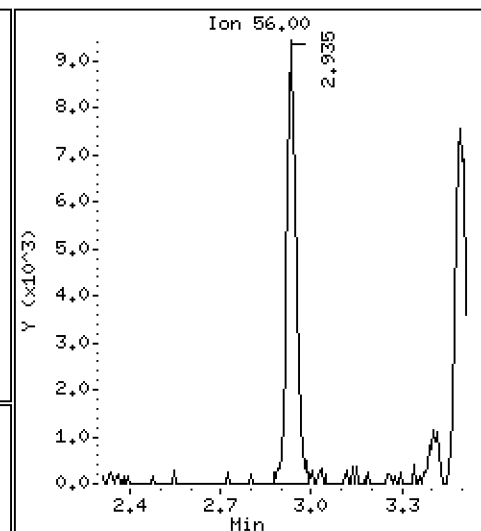
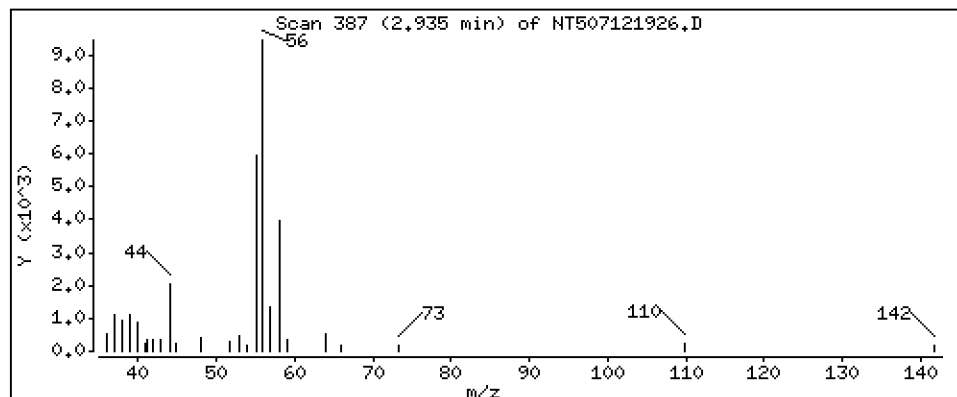
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 53,486 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

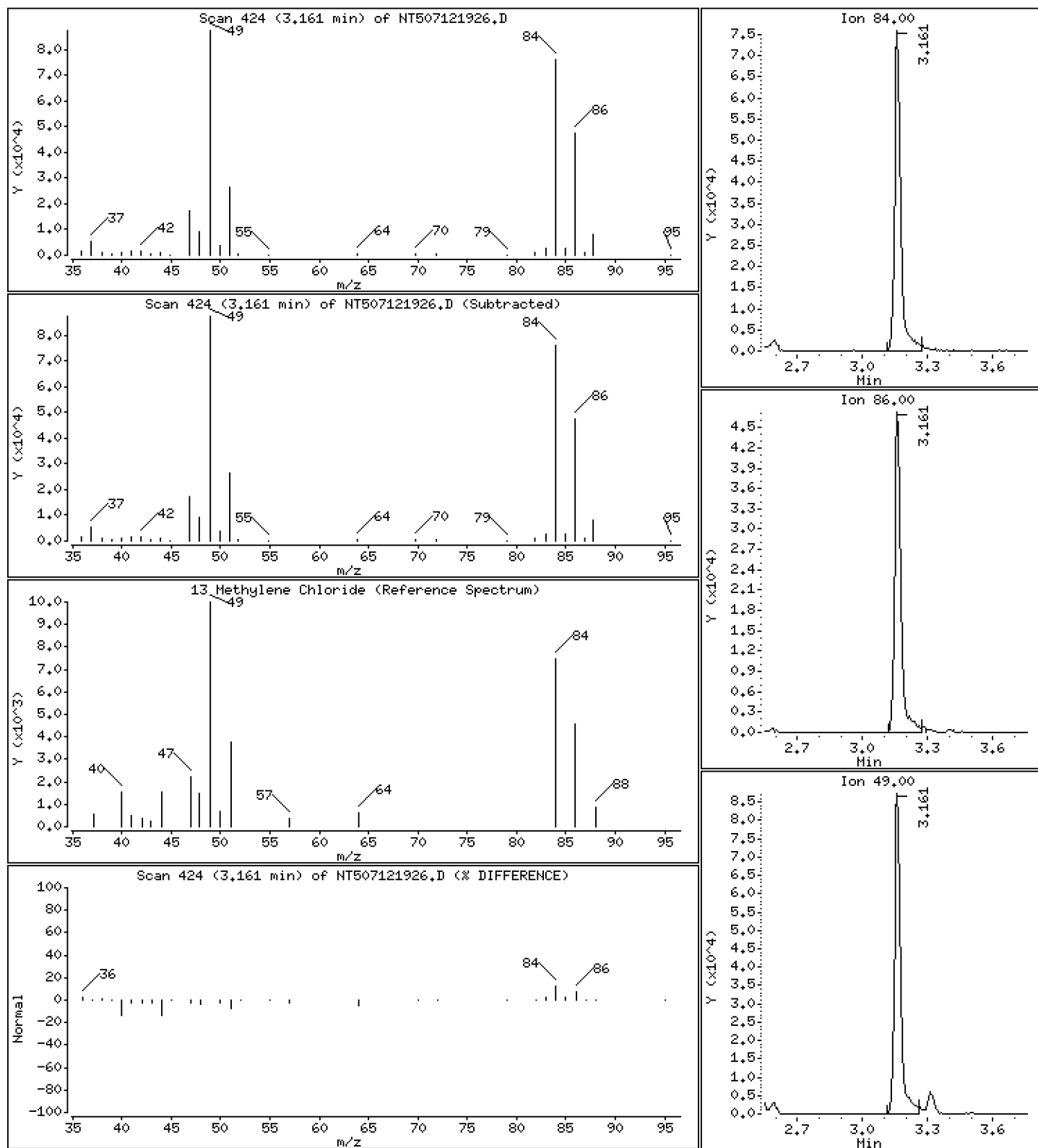
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 42,544 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

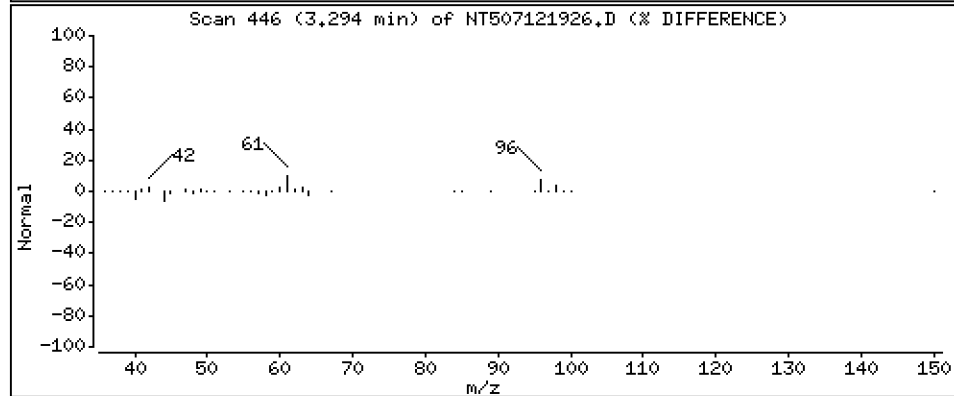
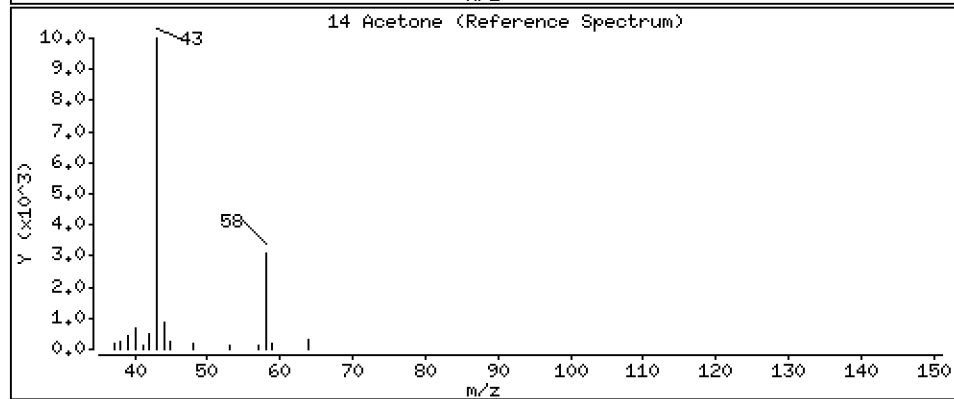
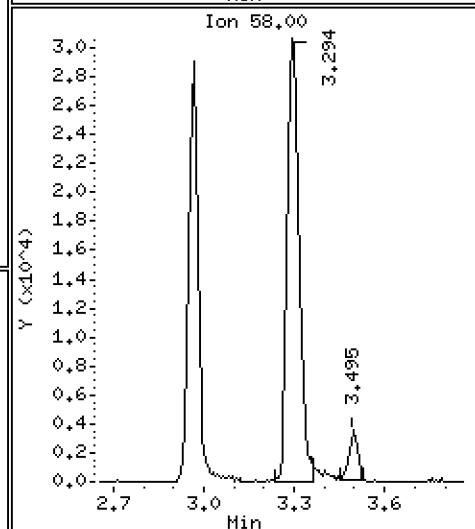
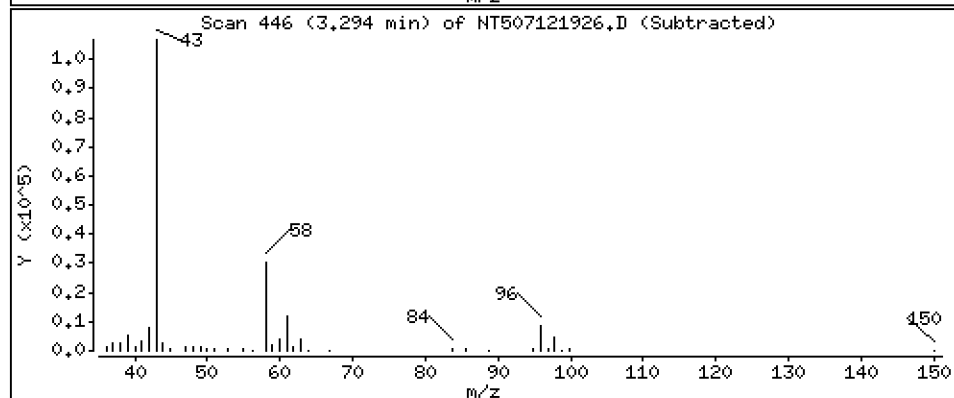
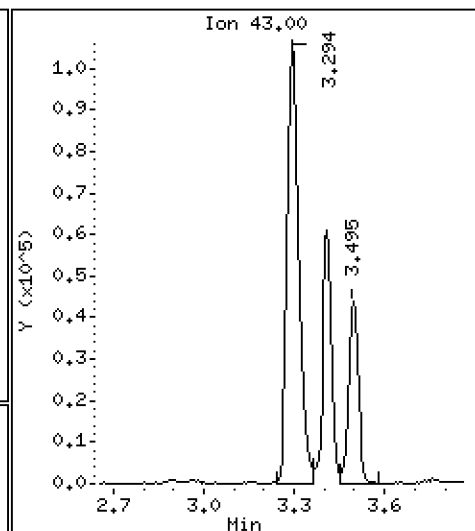
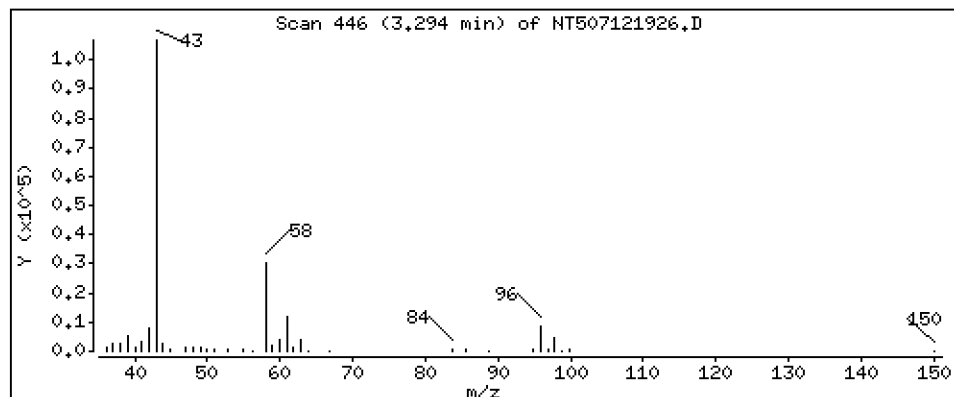
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 408.43 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

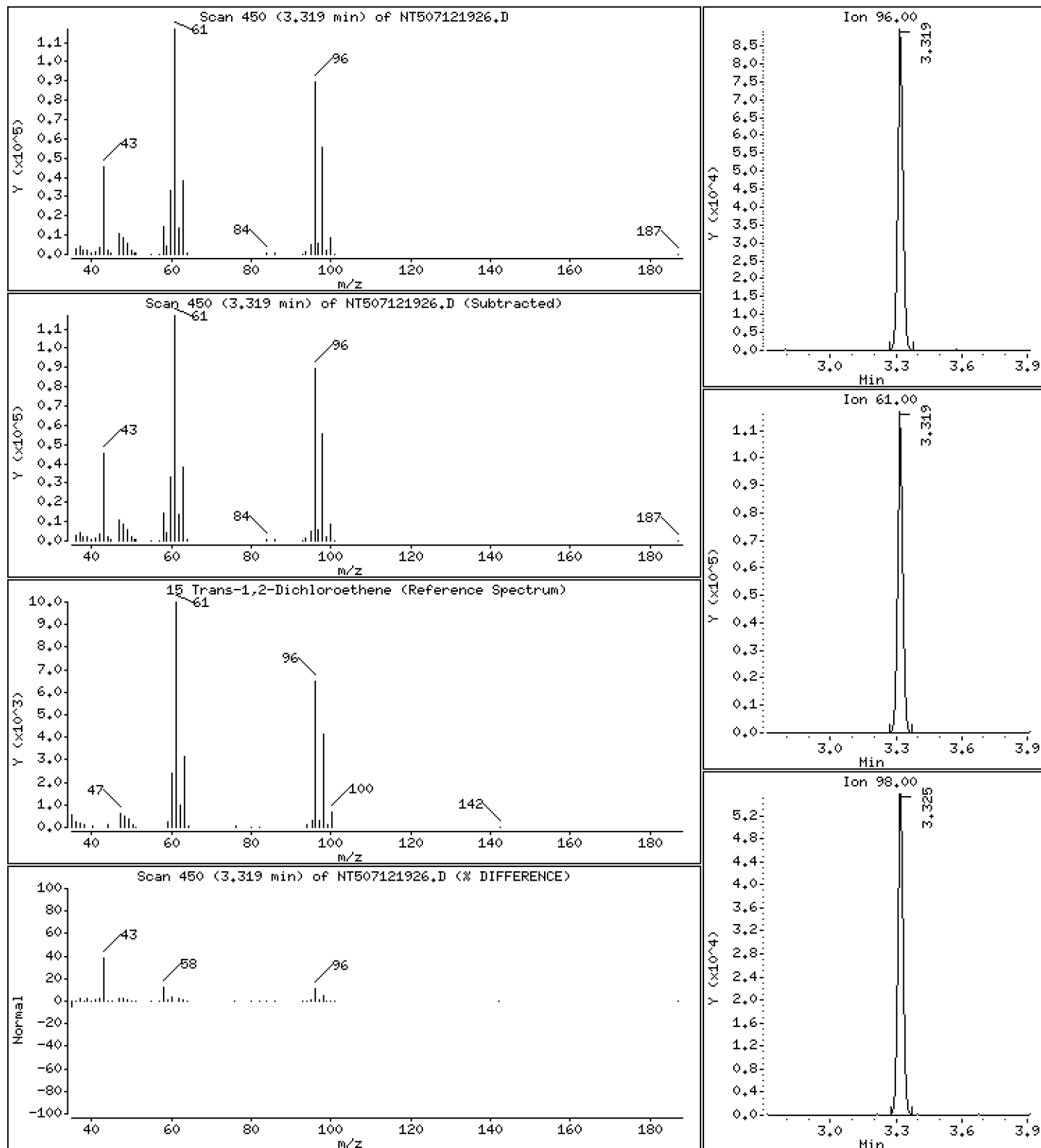
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 41.081 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

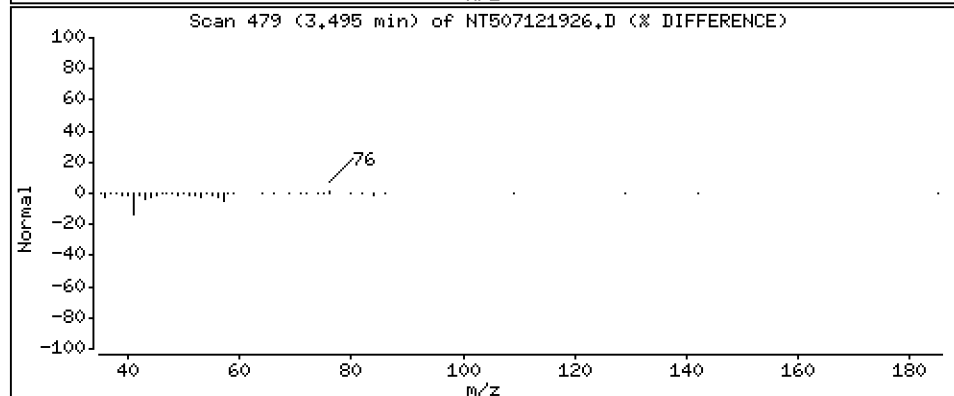
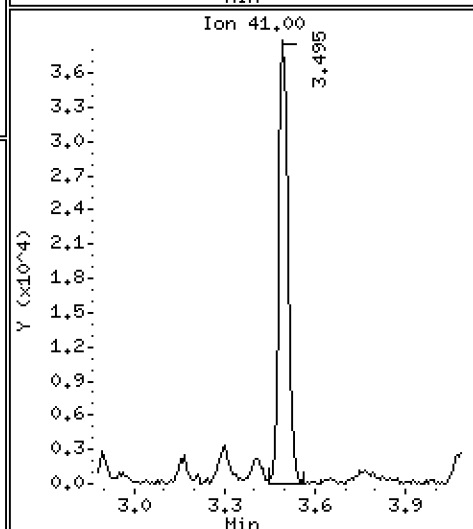
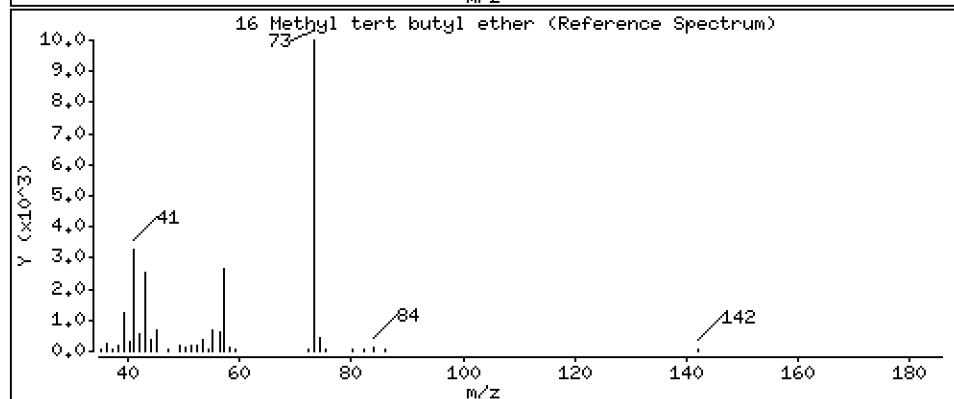
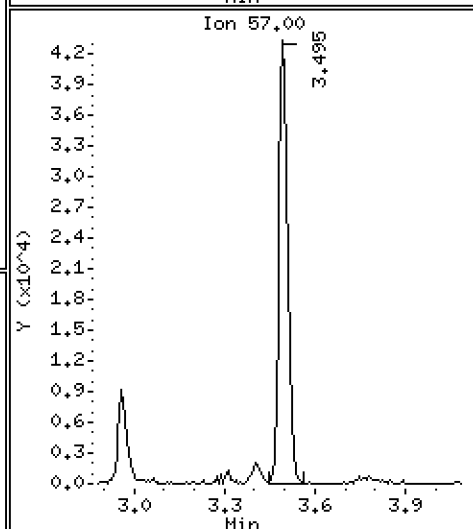
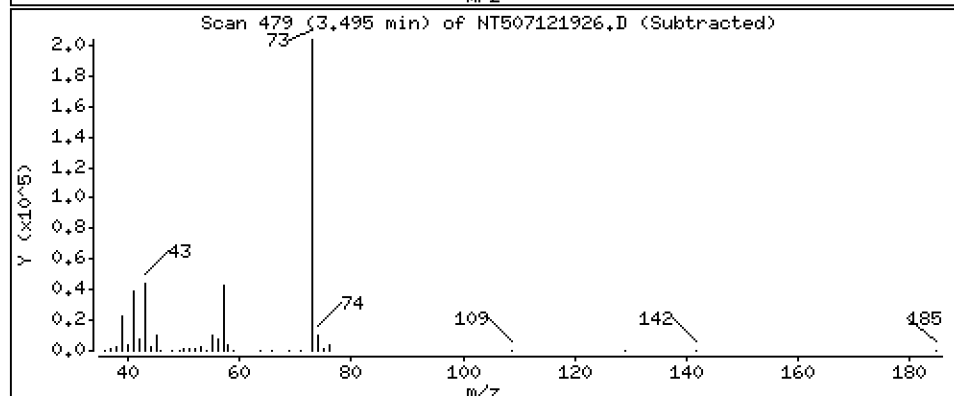
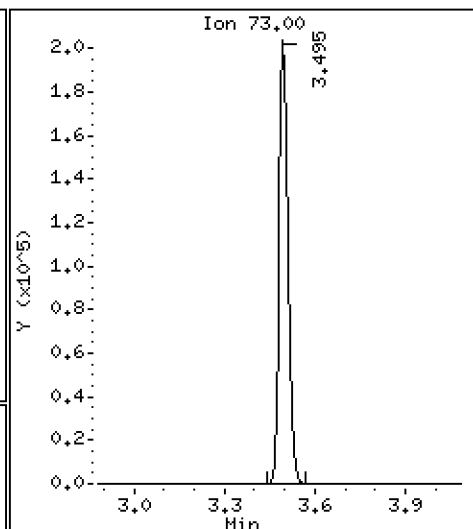
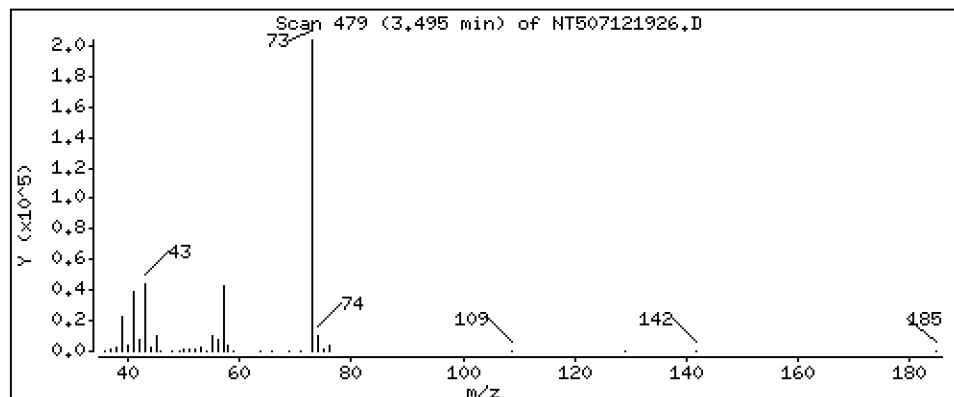
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

16 Methyl tert butyl ether

Concentration: 49.033 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

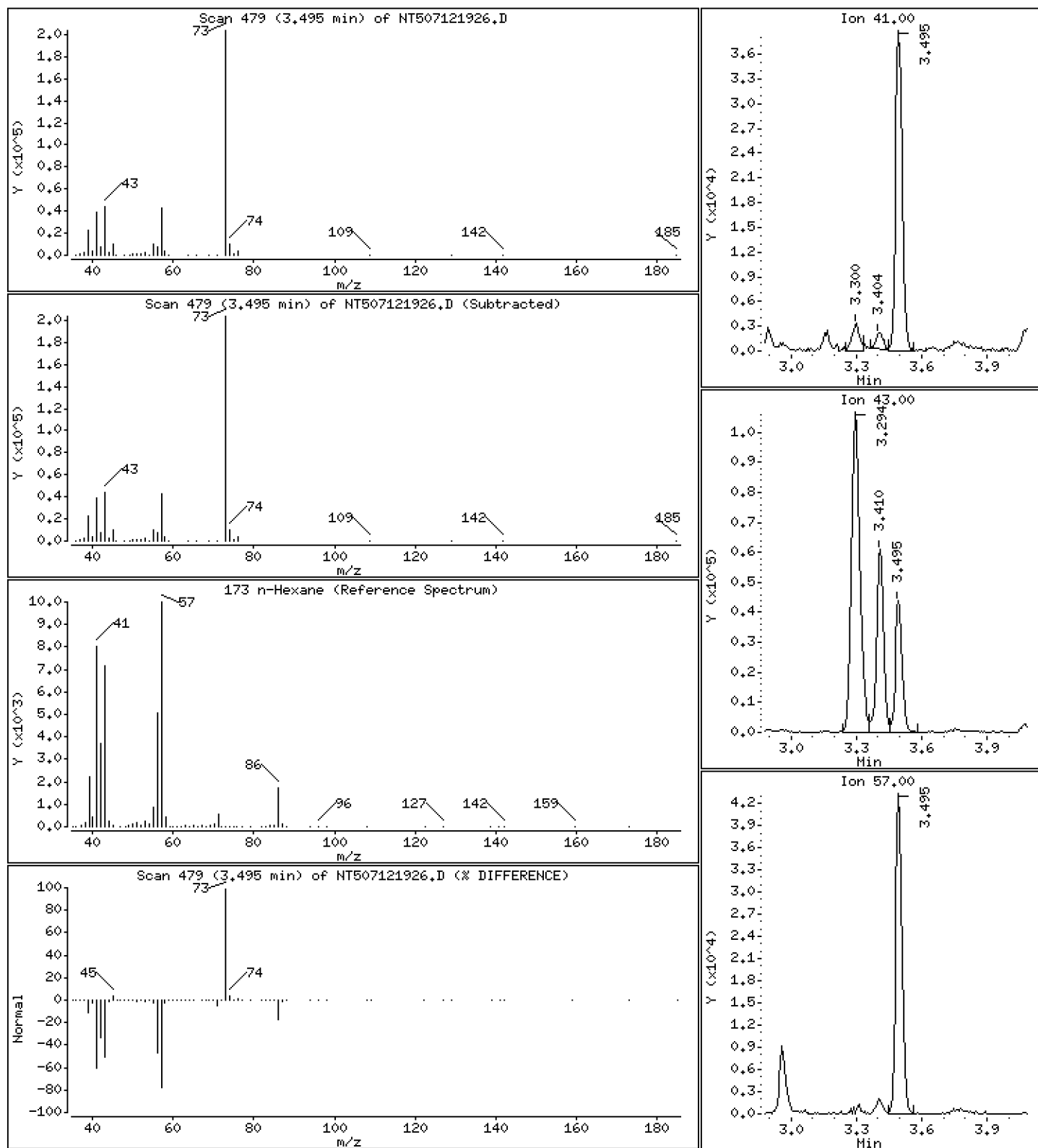
Sample Info: BHC0316-MSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

173 n-Hexane



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

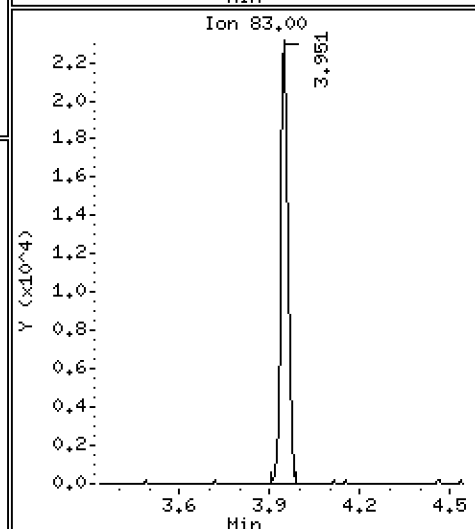
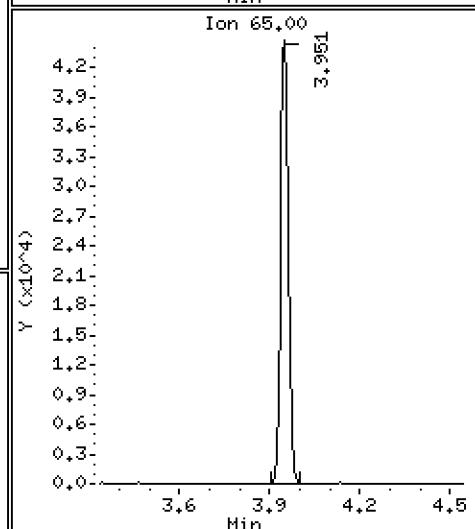
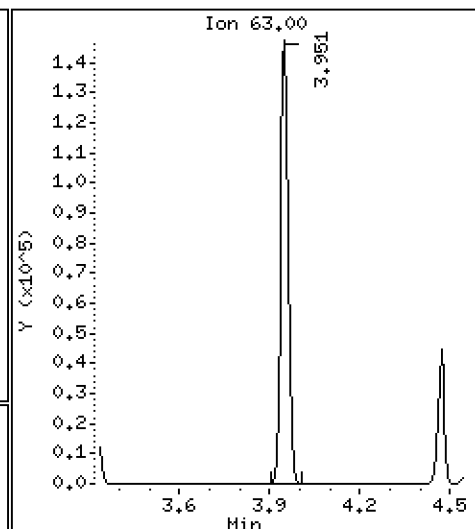
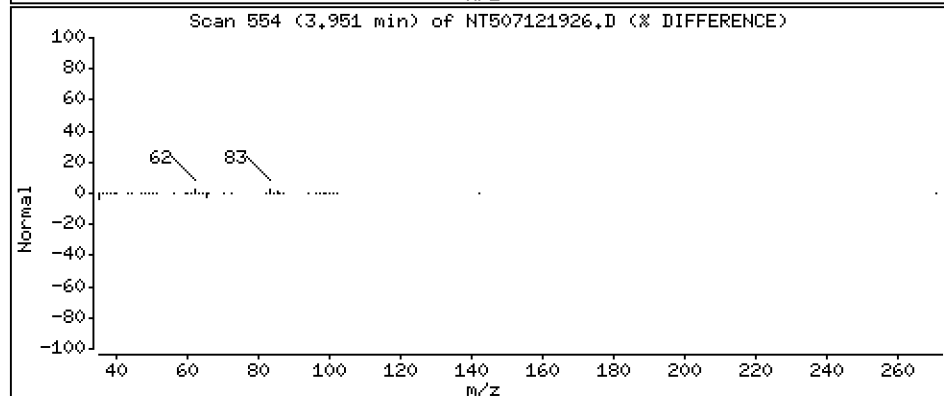
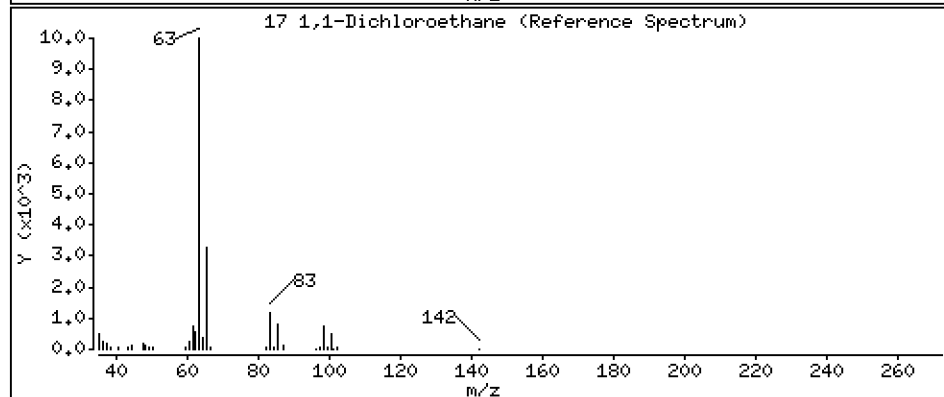
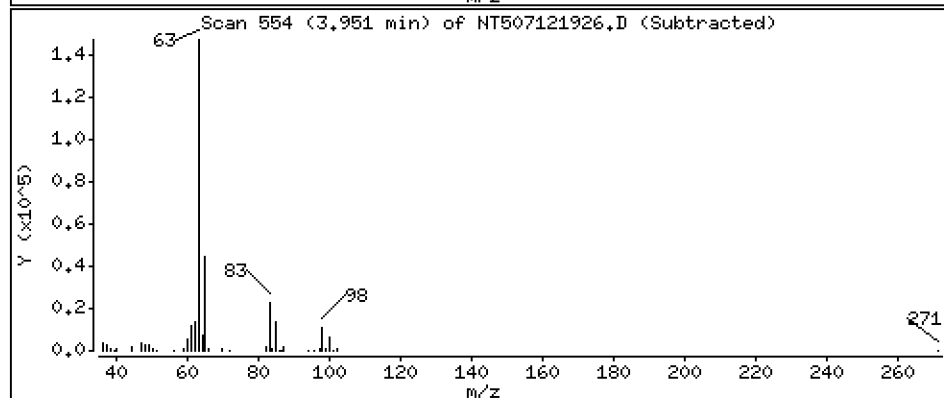
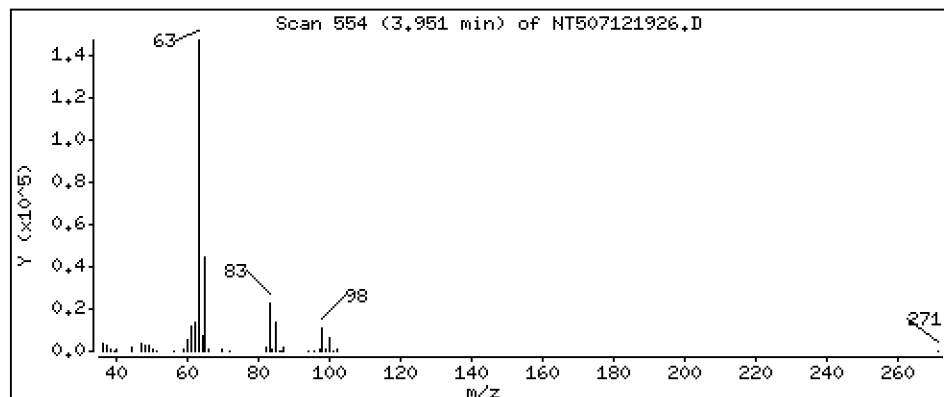
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

17 1,1-Dichloroethane

Concentration: 44,736 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

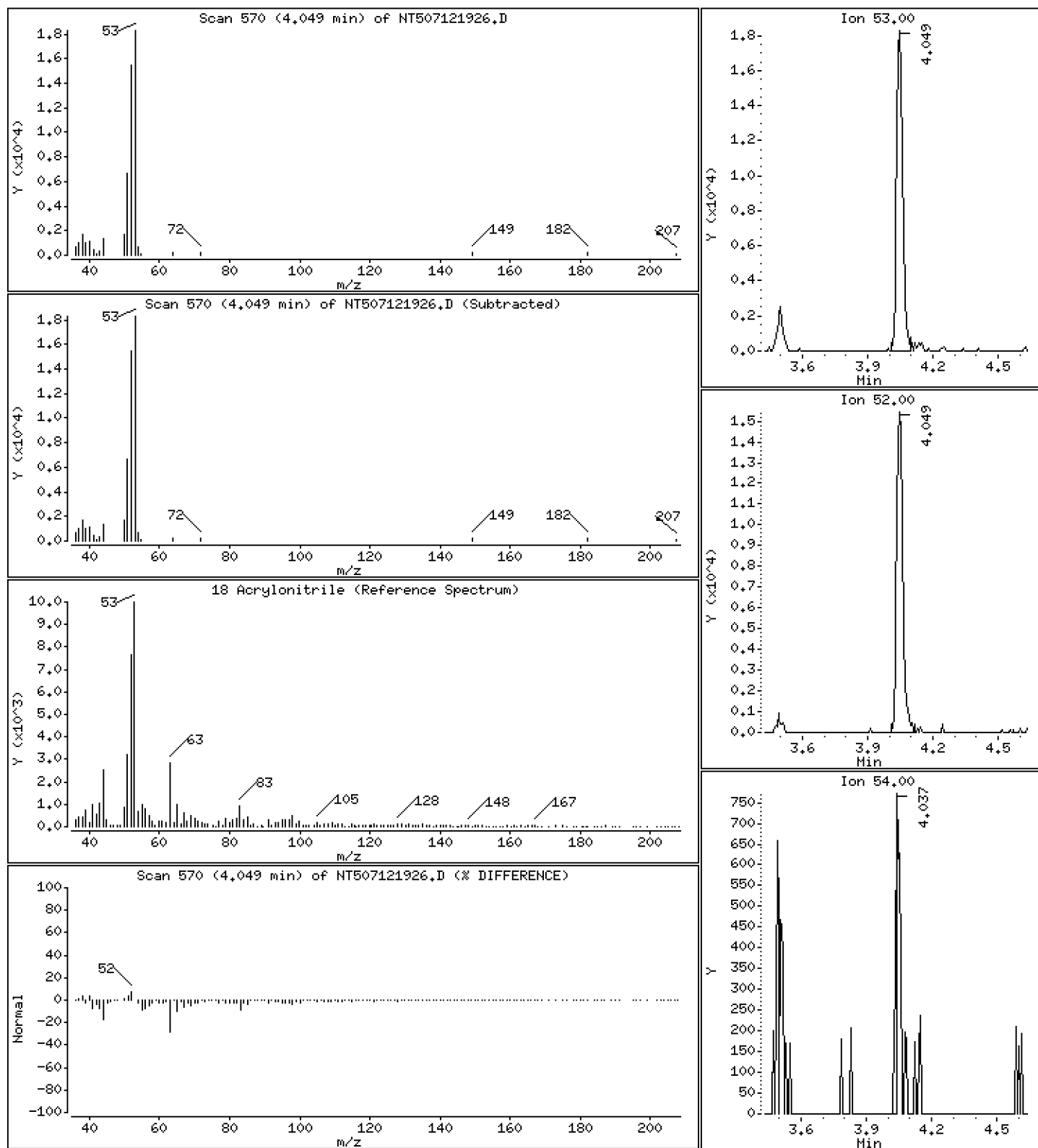
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

18 Acrylonitrile

Concentration: 44,776 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

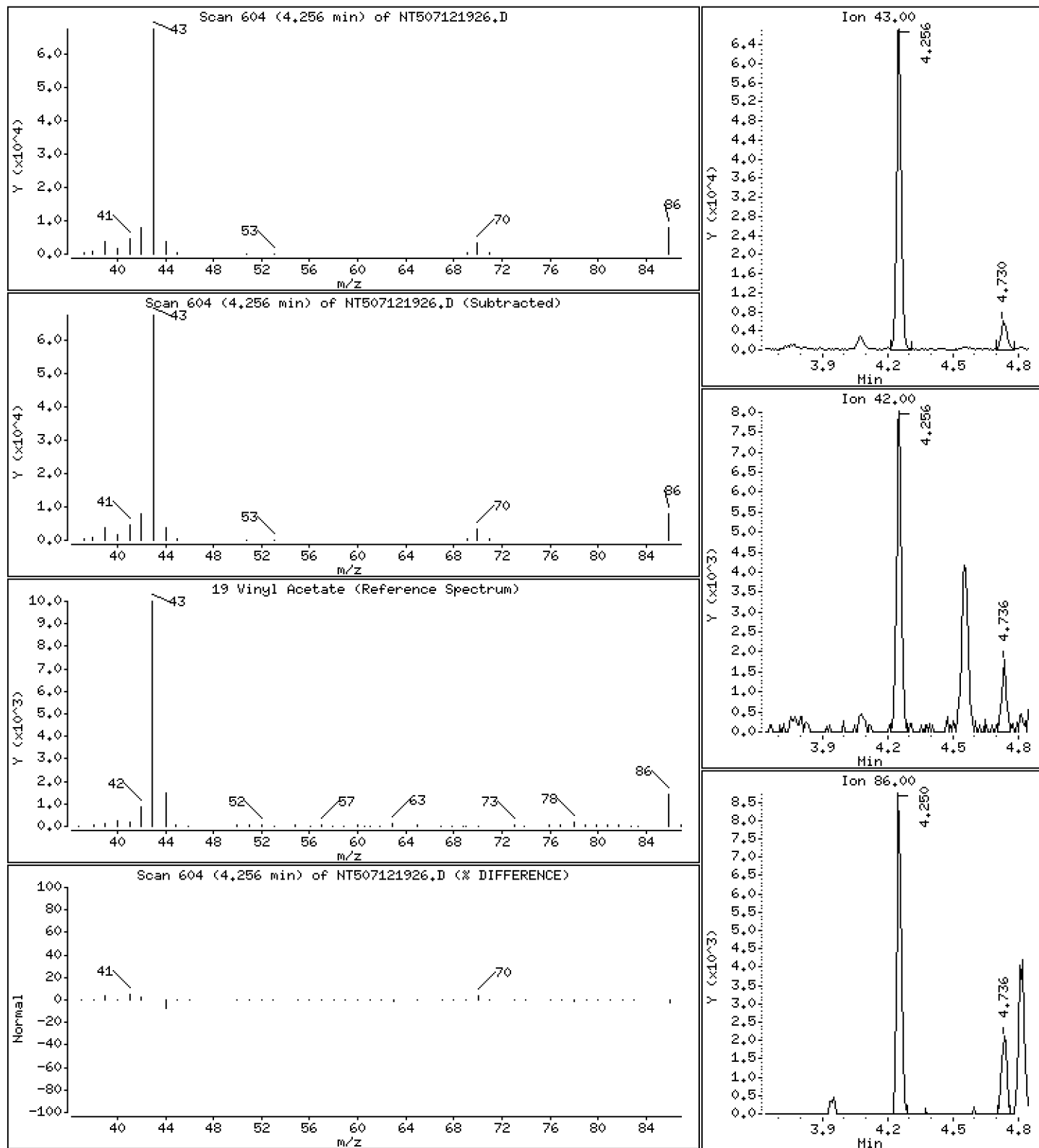
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

19 Vinyl Acetate

Concentration: 20,415 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

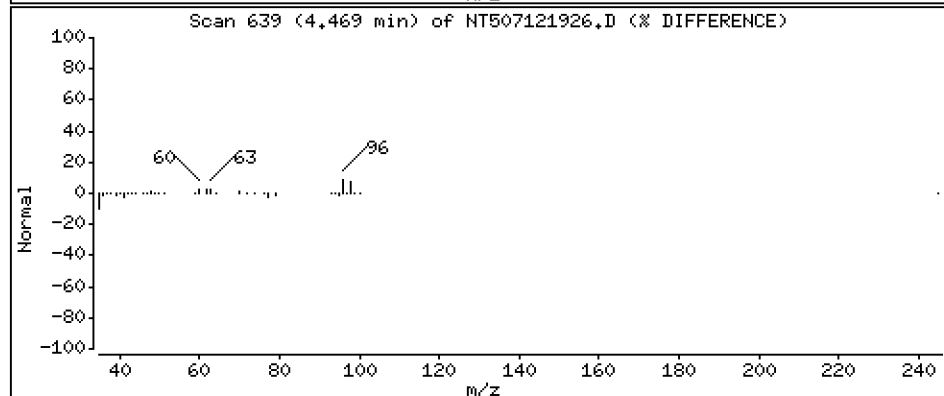
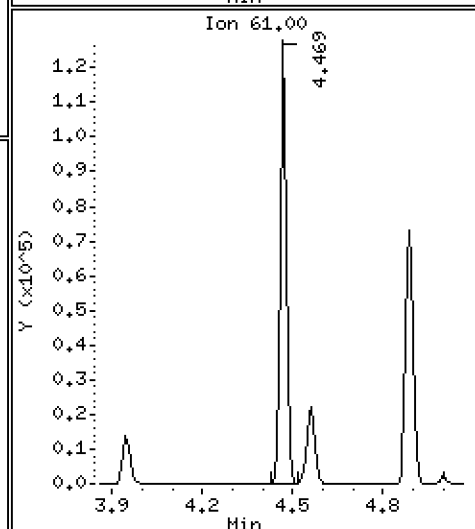
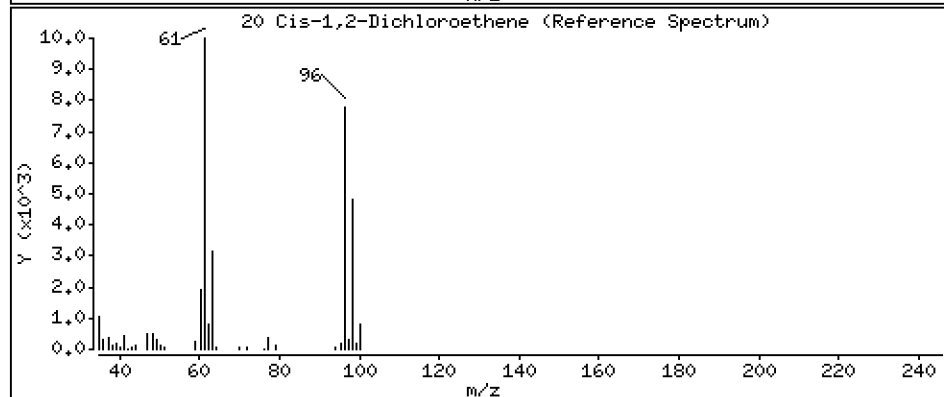
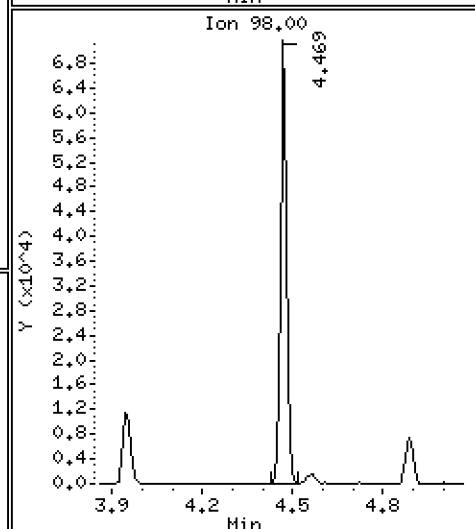
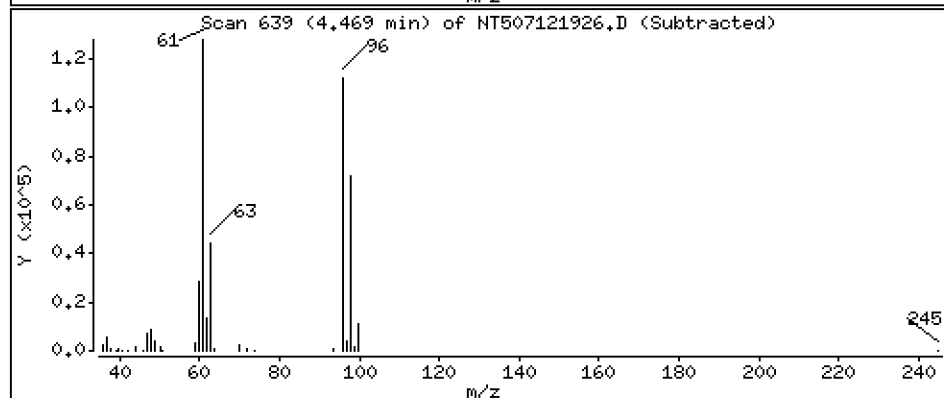
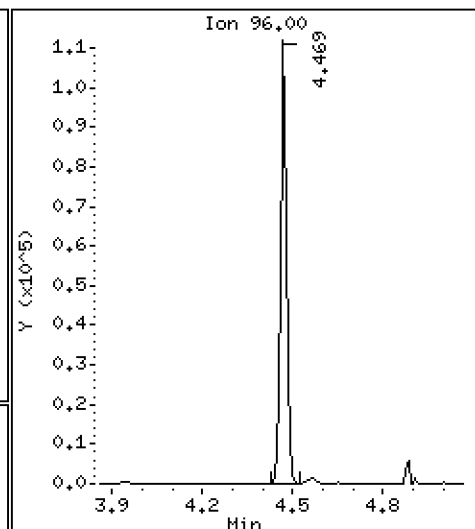
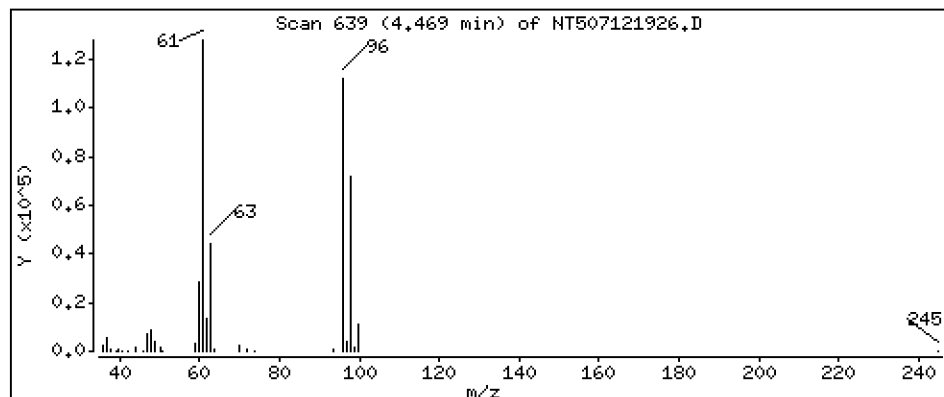
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

20 Cis-1,2-Dichloroethene

Concentration: 42,404 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

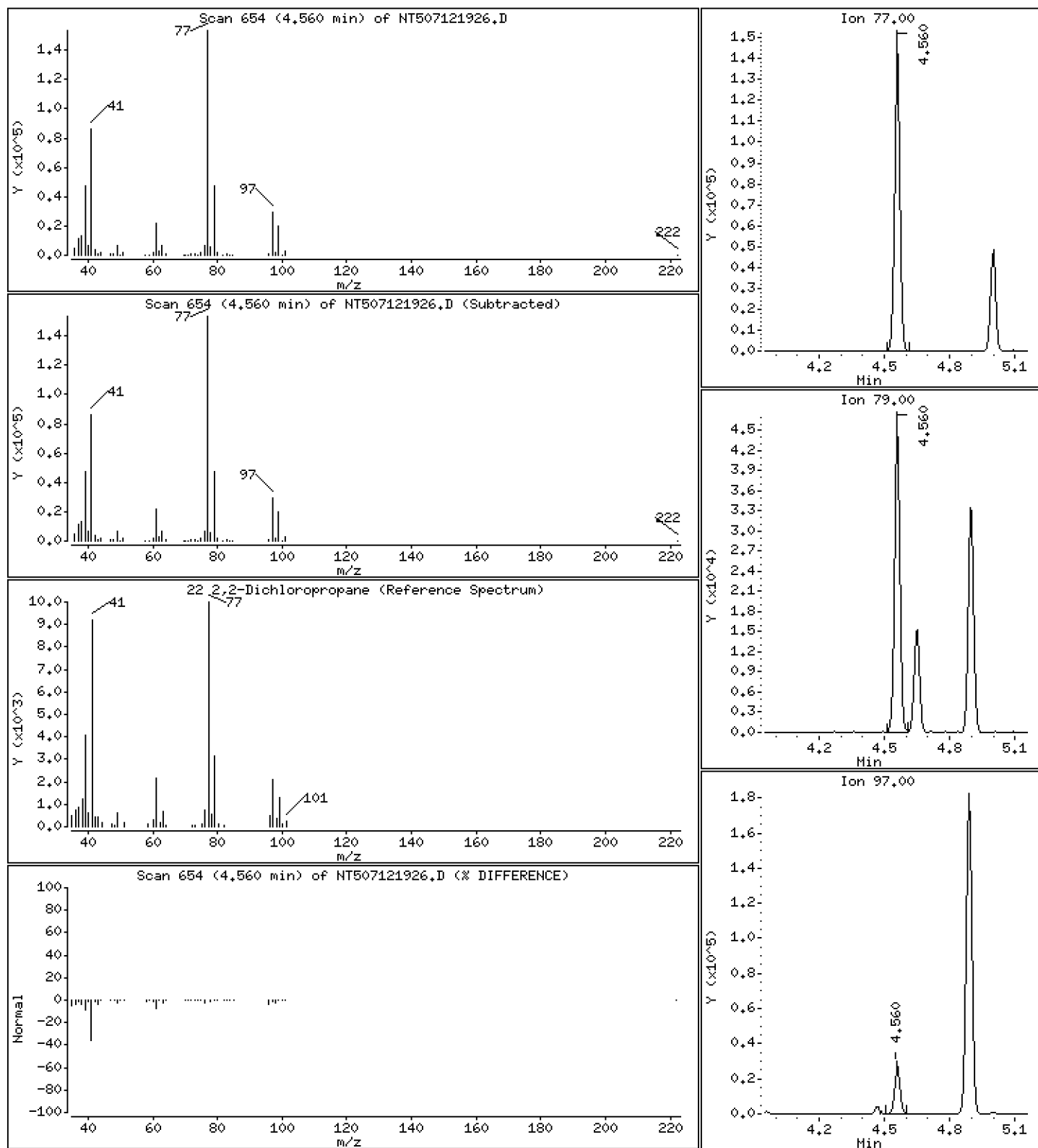
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

22 2,2-Dichloropropane

Concentration: 47,651 ug/Kg

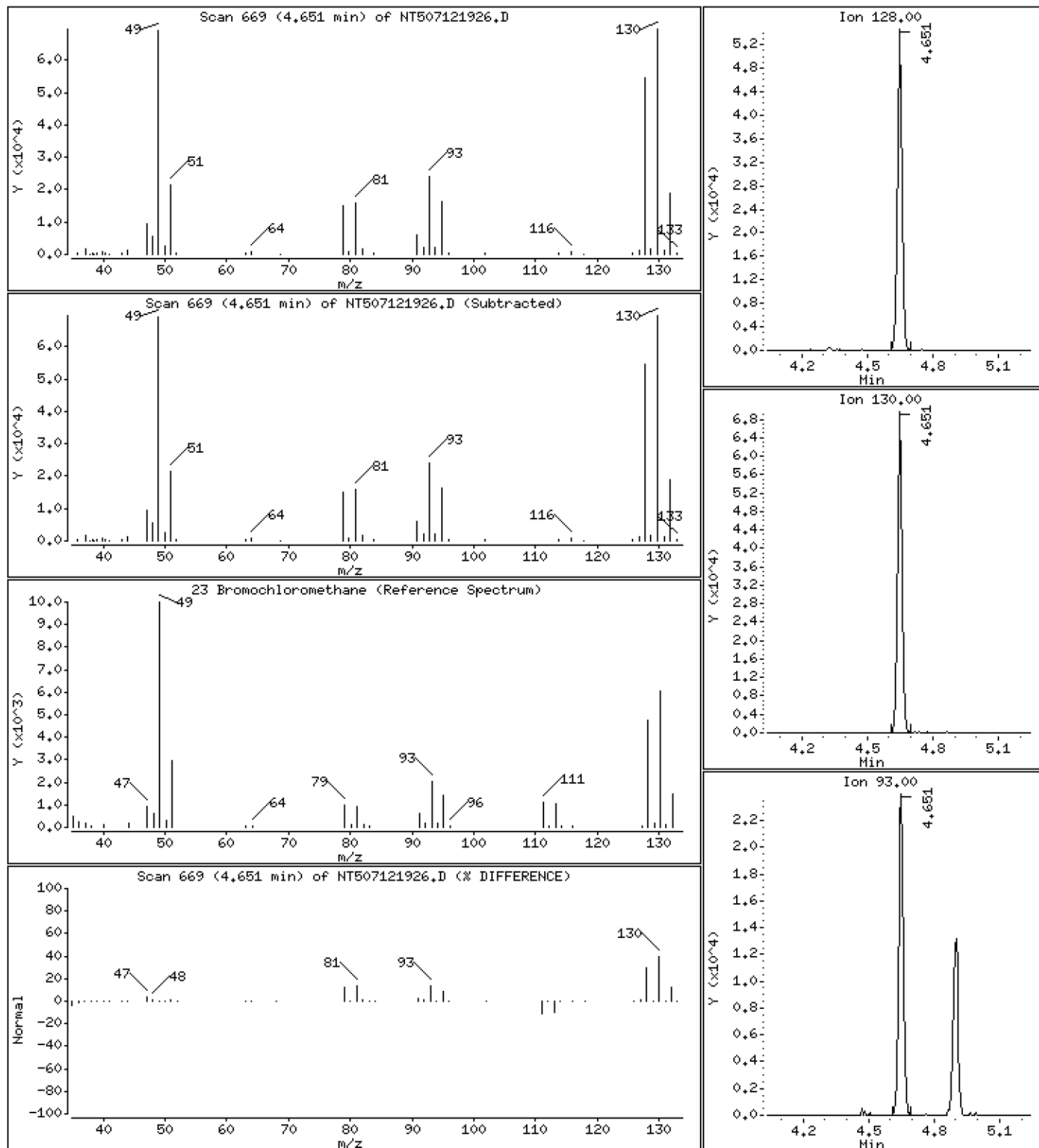


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 44.975 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

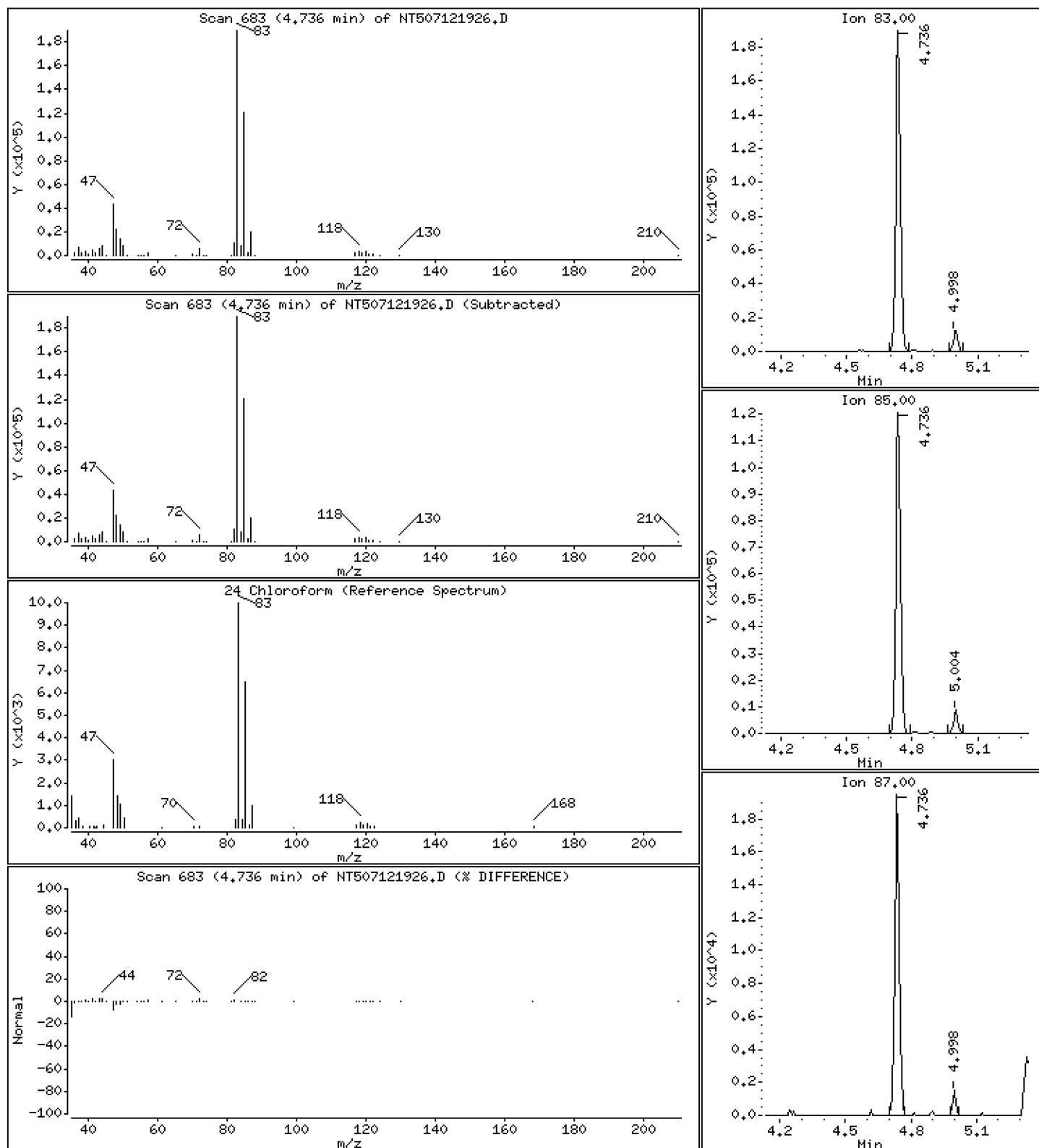
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

24 Chloroform

Concentration: 47.493 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

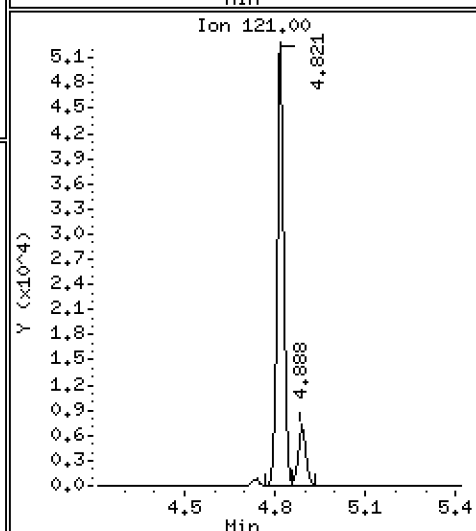
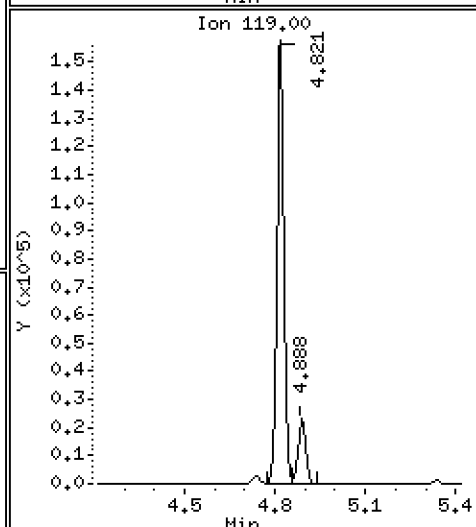
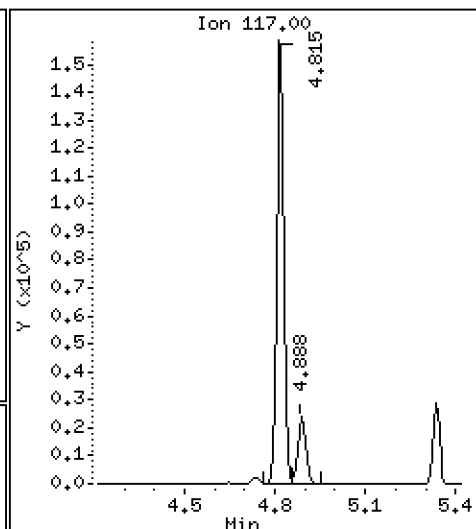
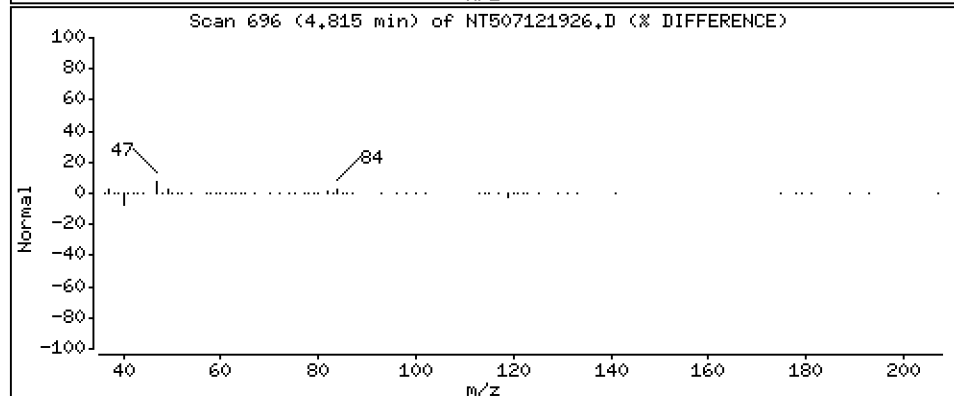
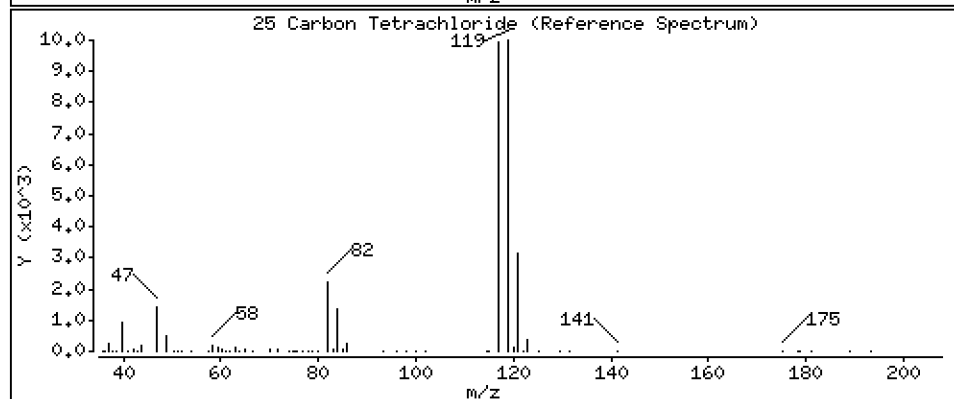
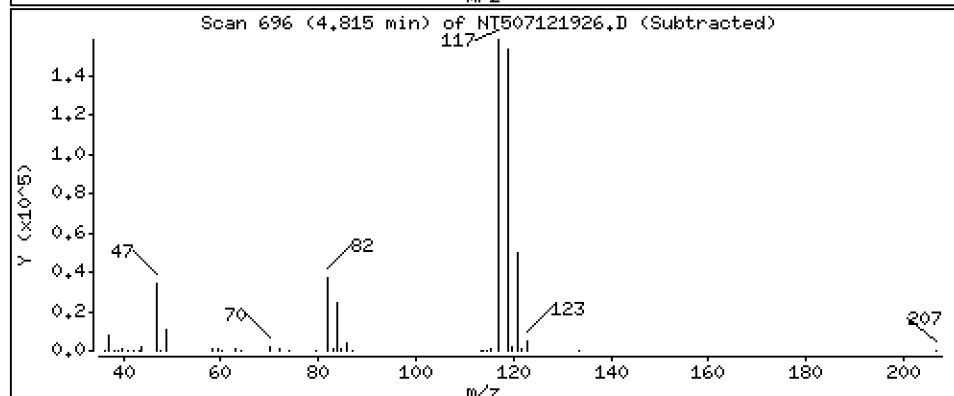
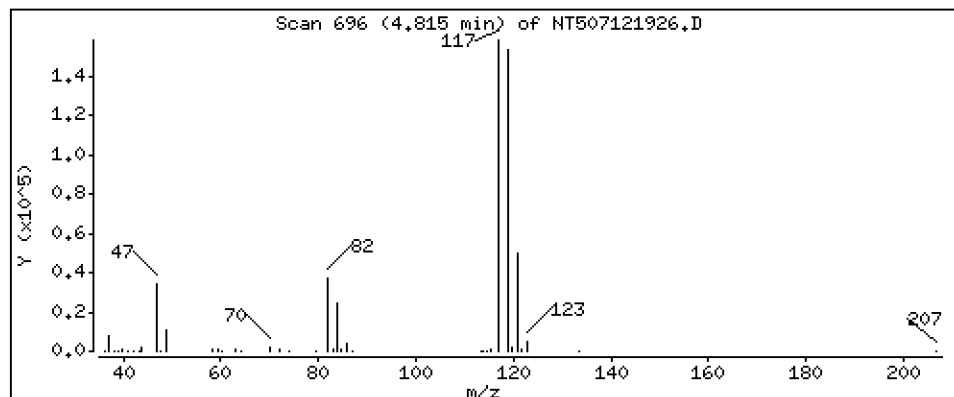
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

25 Carbon Tetrachloride

Concentration: 48,625 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

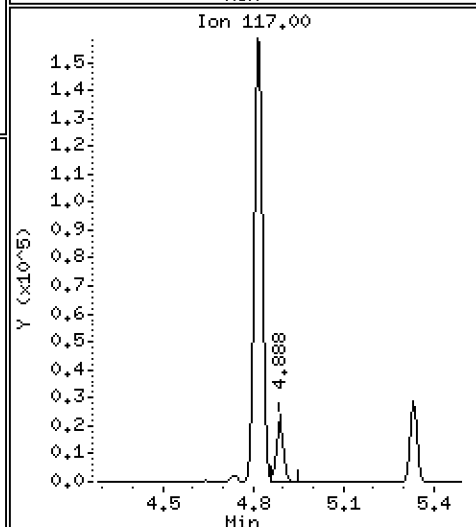
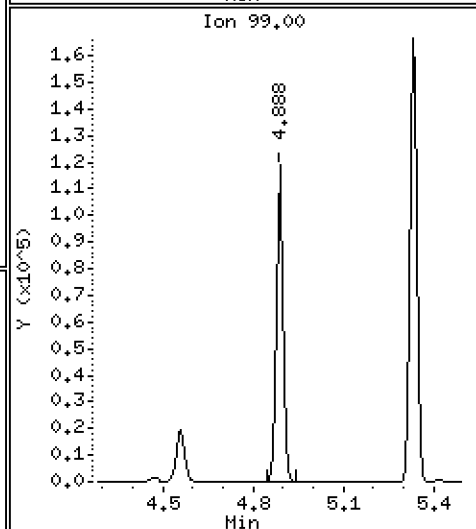
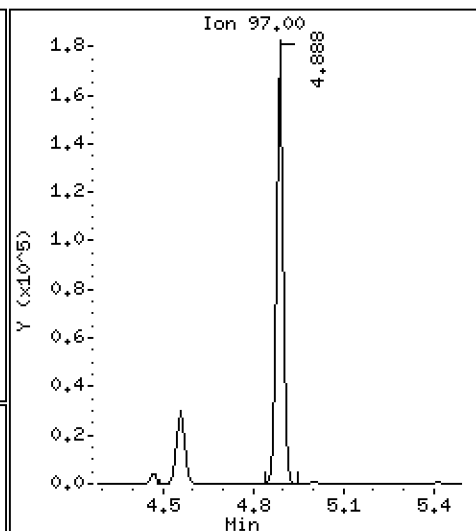
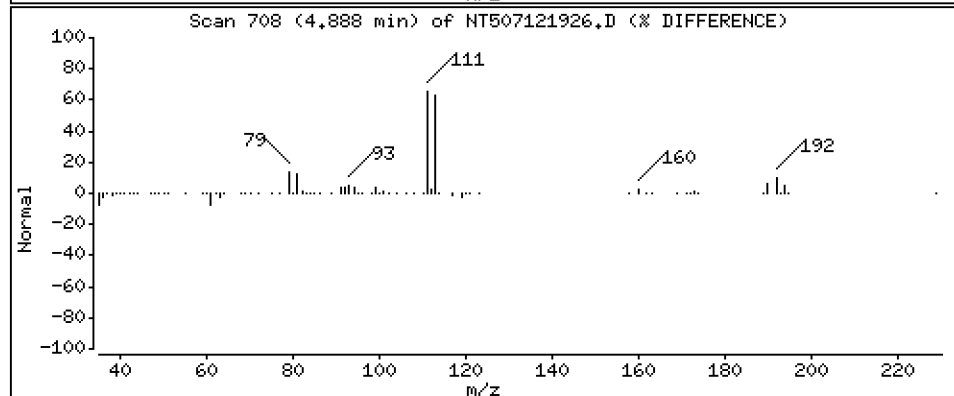
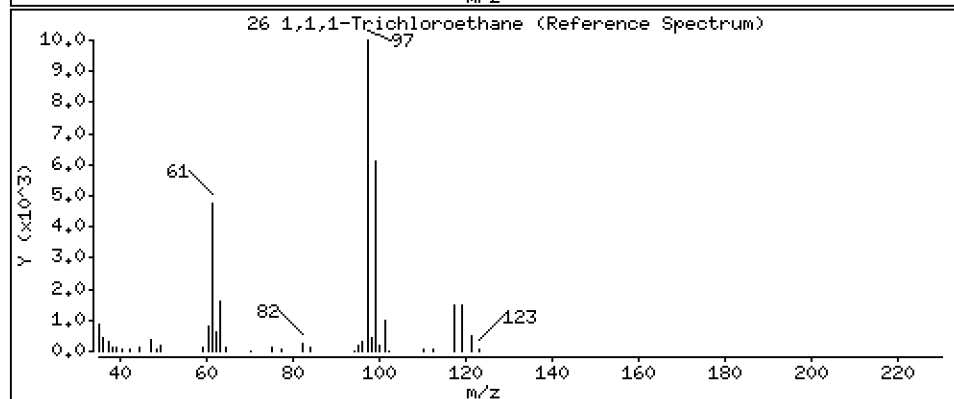
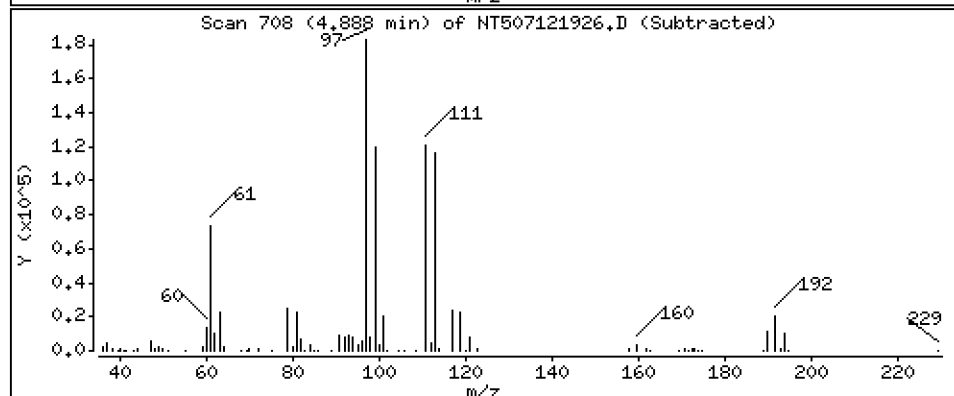
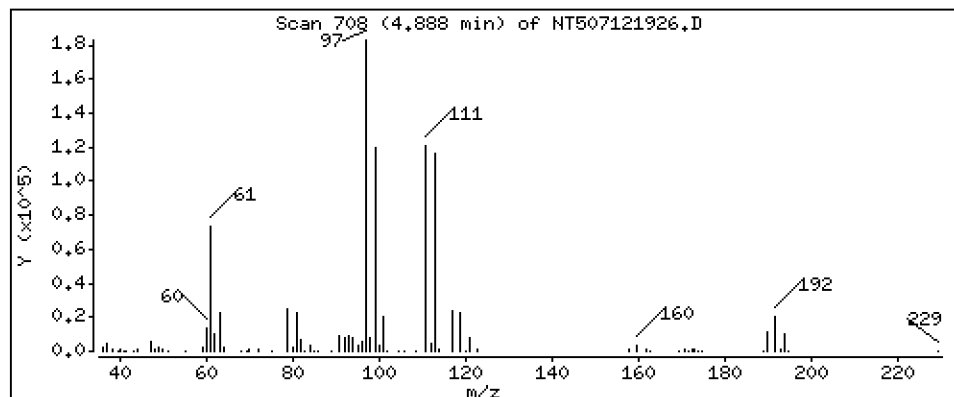
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

26 1,1,1-Trichloroethane

Concentration: 50,282 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

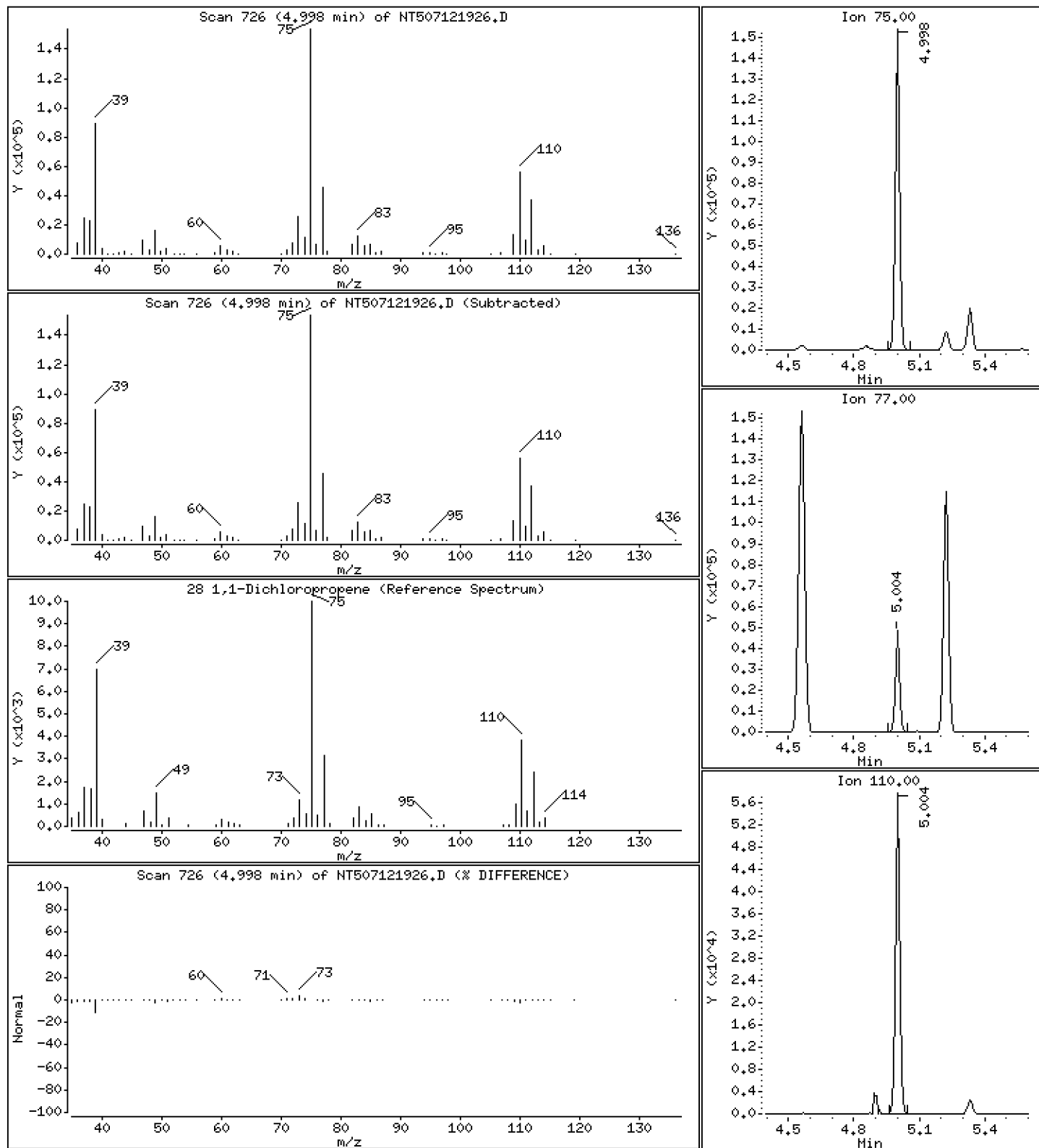
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

28 1,1-Dichloropropene

Concentration: 51.892 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

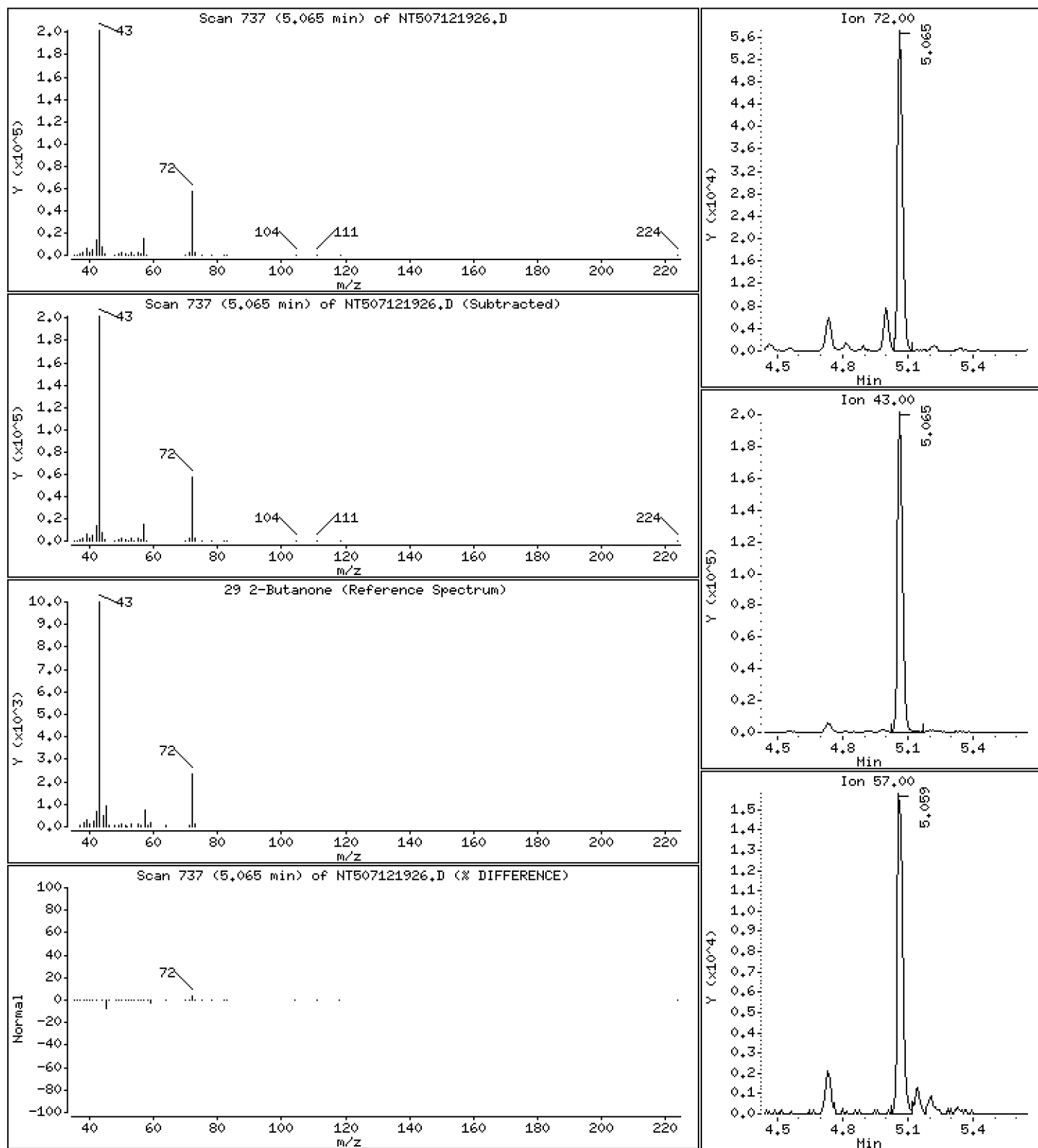
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 294.94 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

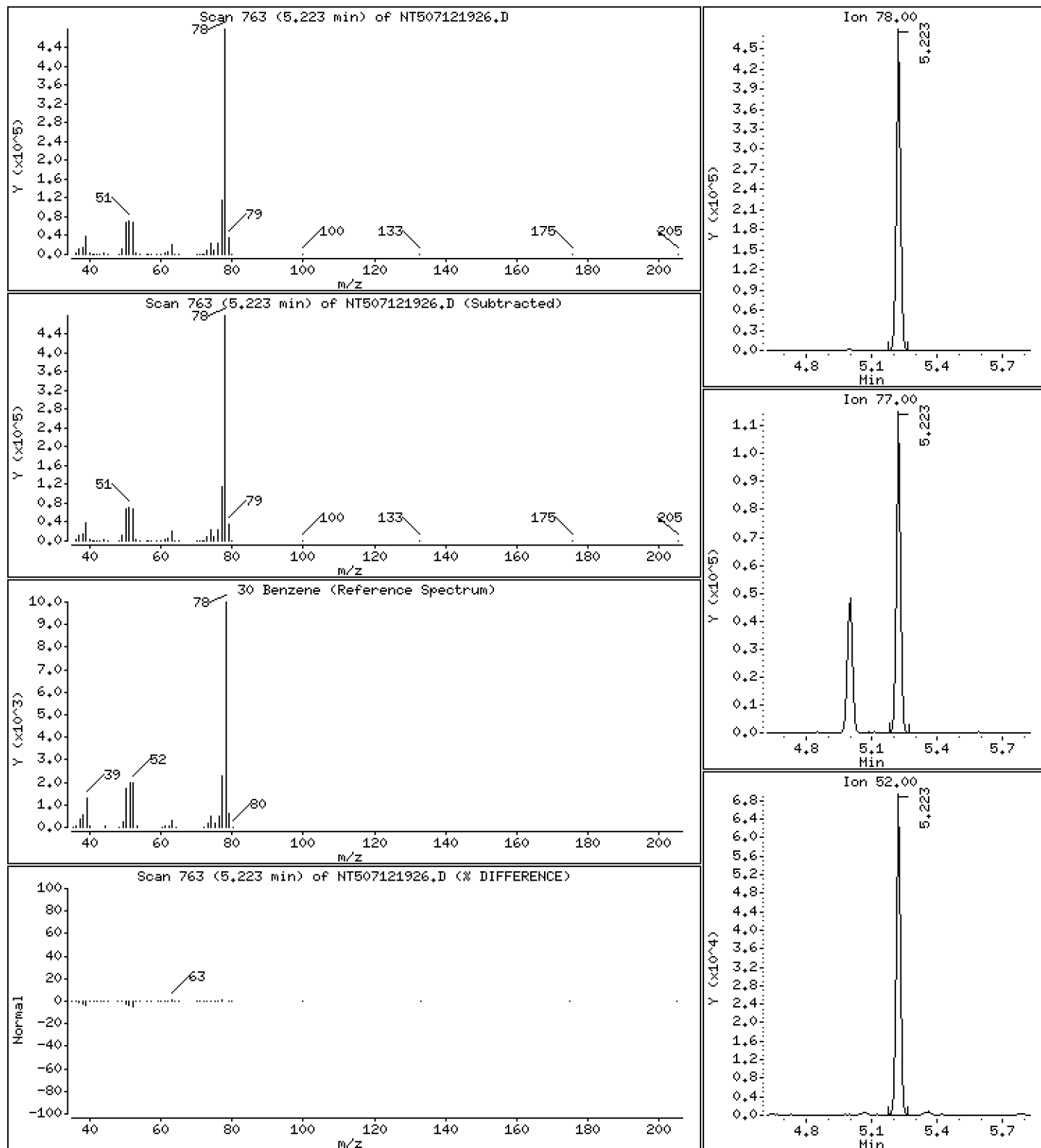
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

30 Benzene

Concentration: 52,167 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

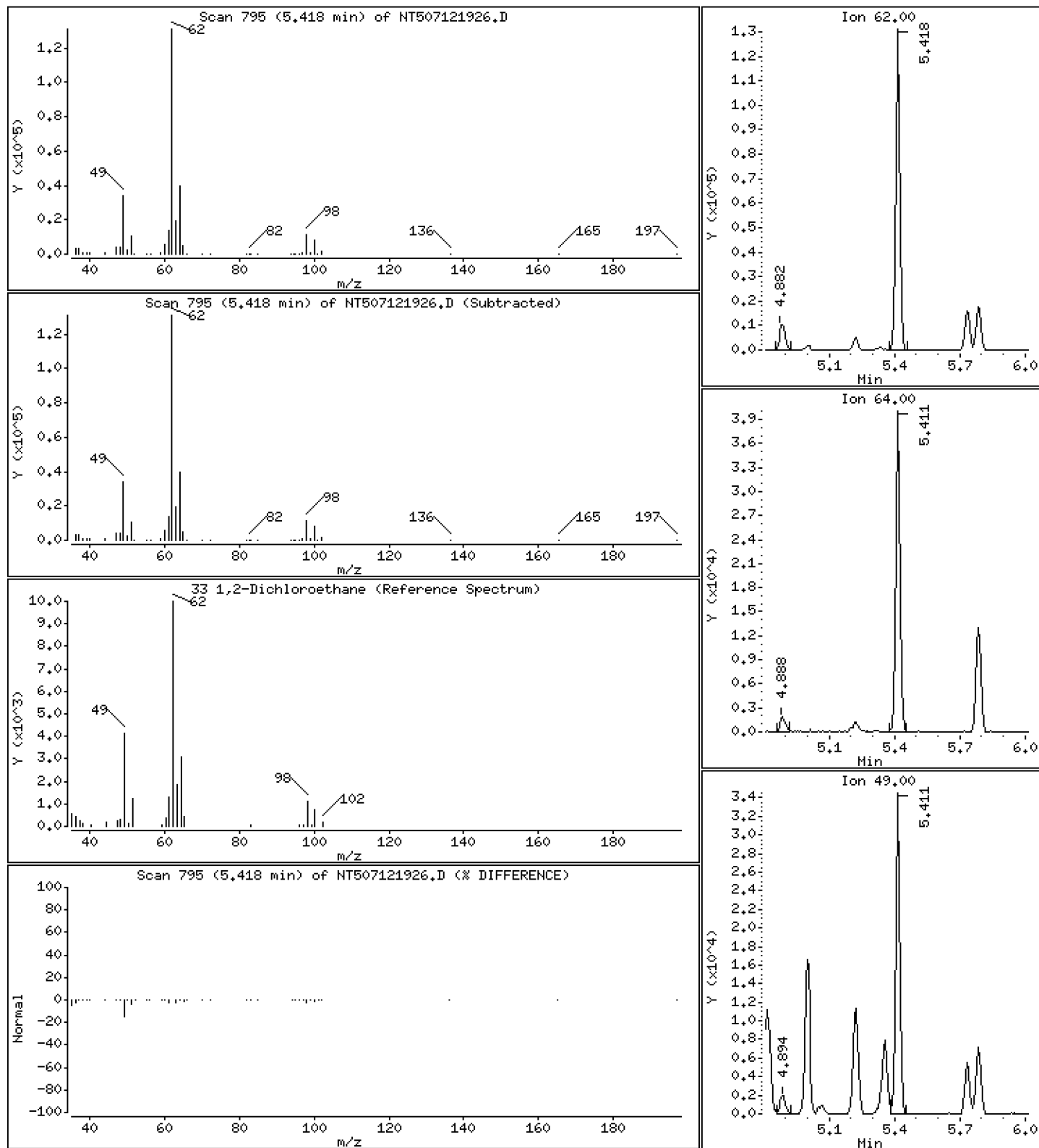
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

33 1,2-Dichloroethane

Concentration: 49.603 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

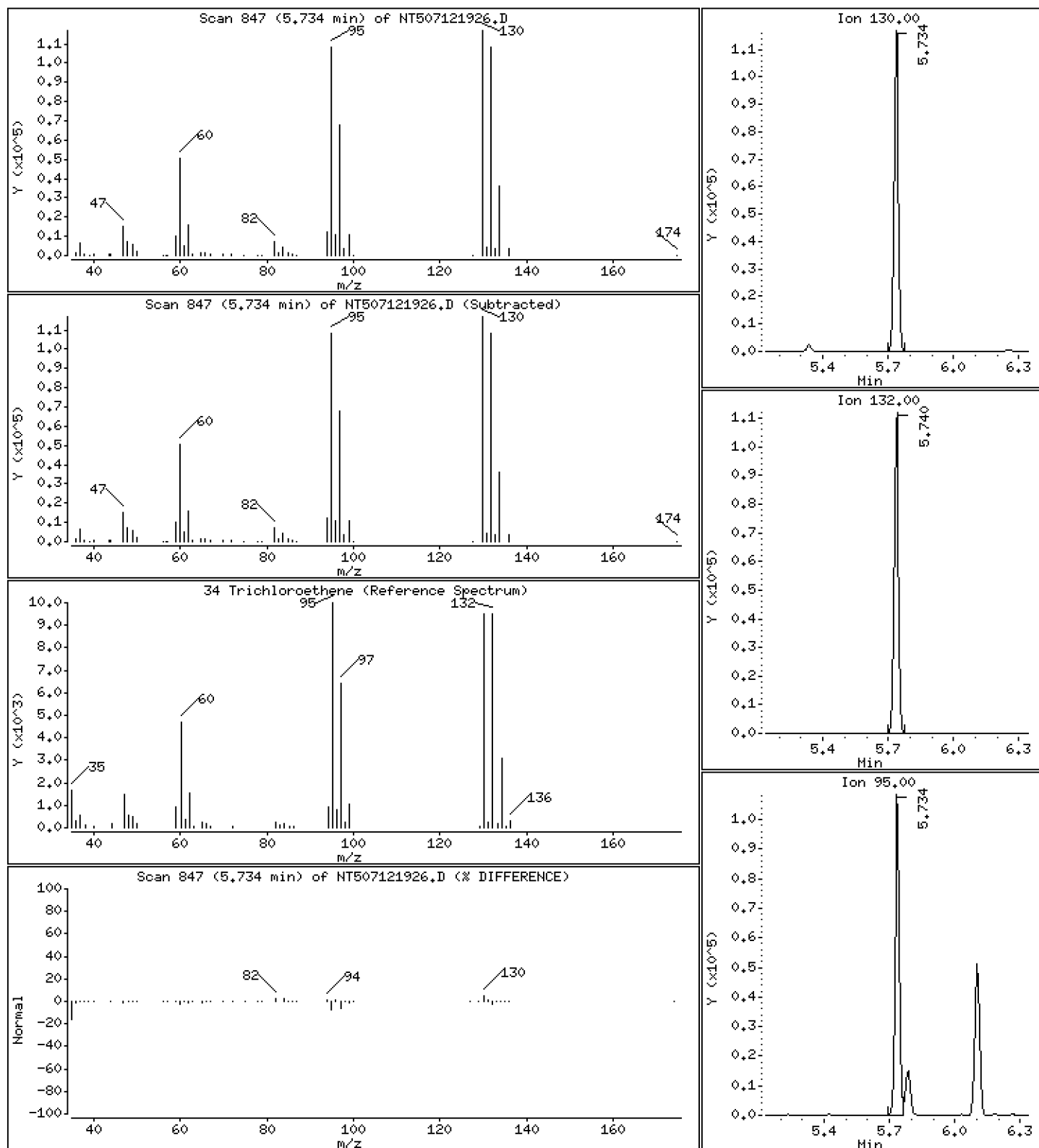
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

34 Trichloroethene

Concentration: 40.476 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

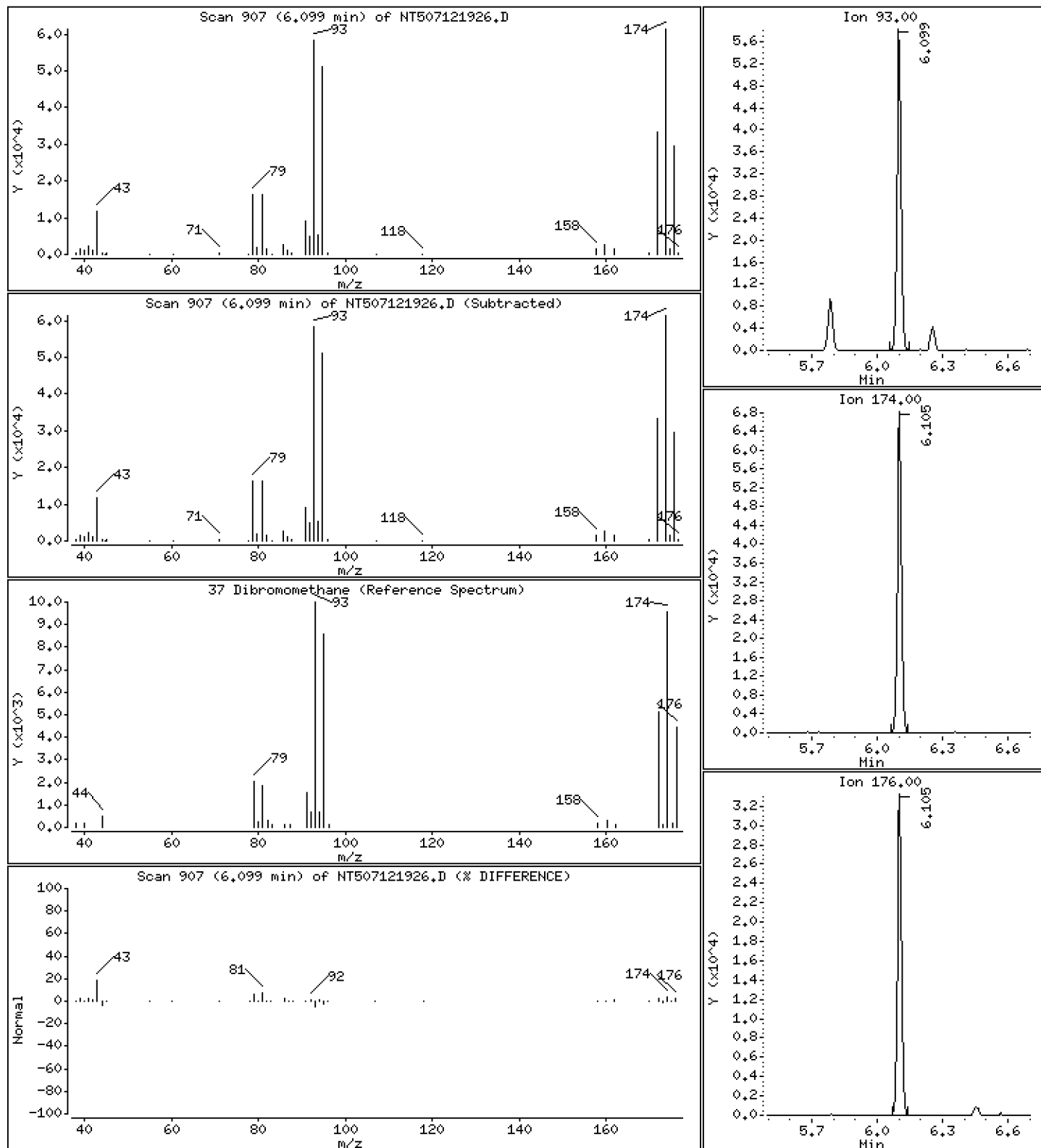
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

37 Dibromomethane

Concentration: 45,387 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

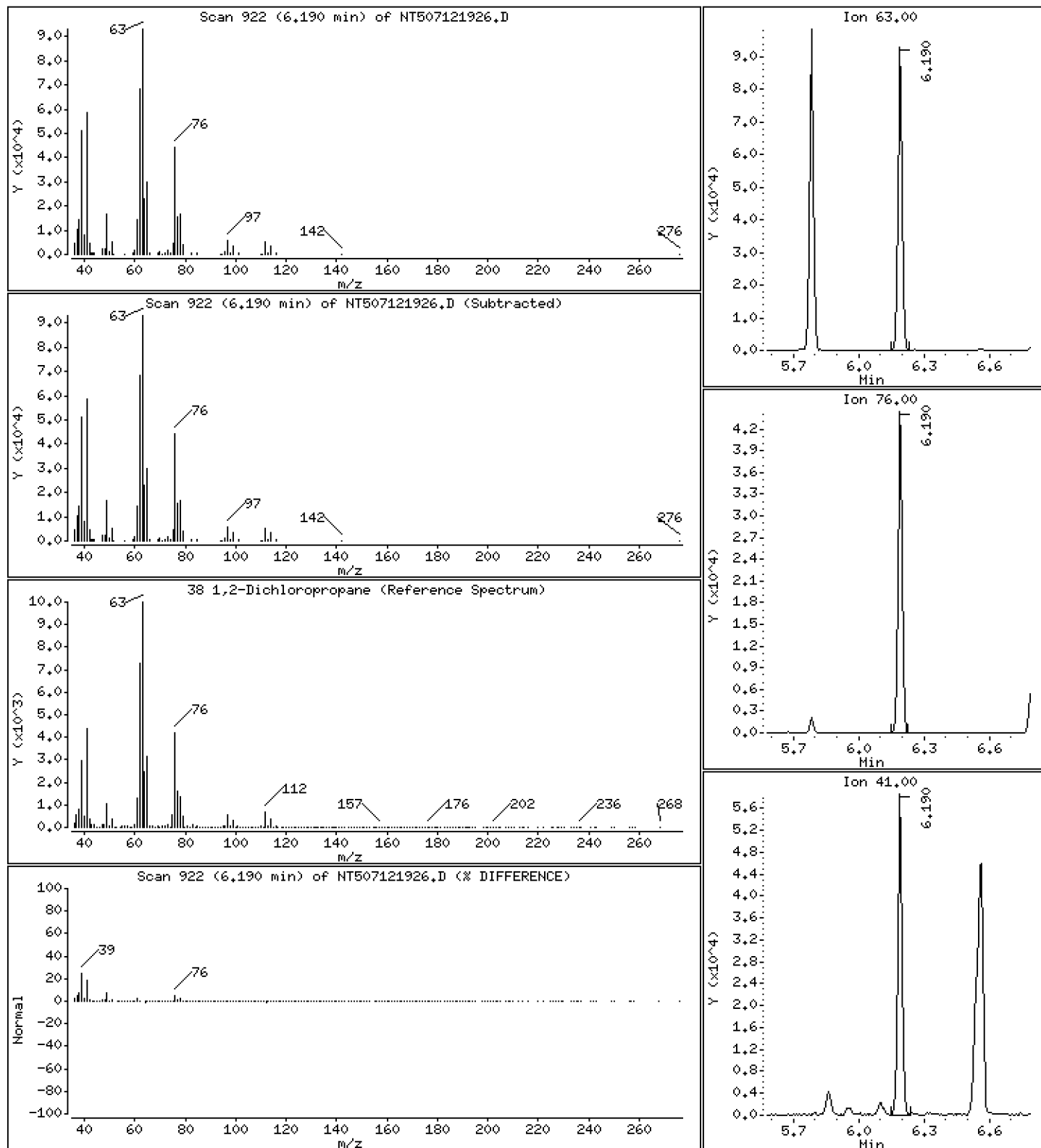
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

38 1,2-Dichloropropane

Concentration: 45,712 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

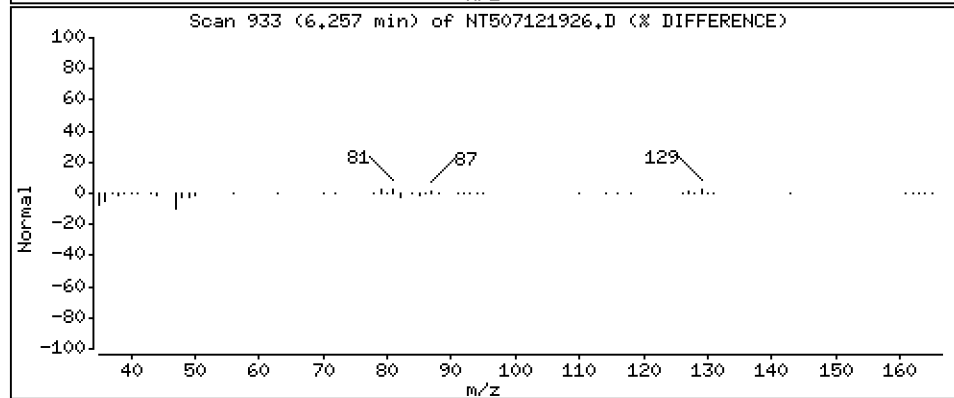
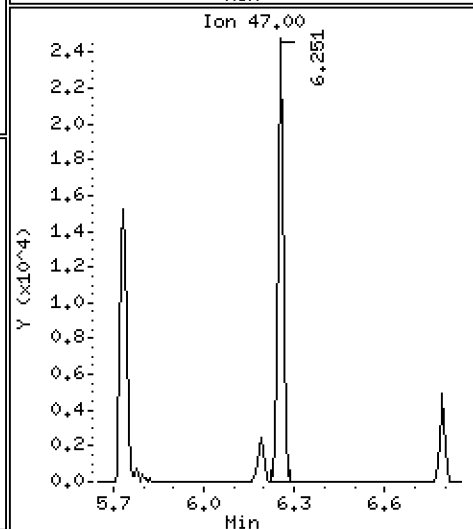
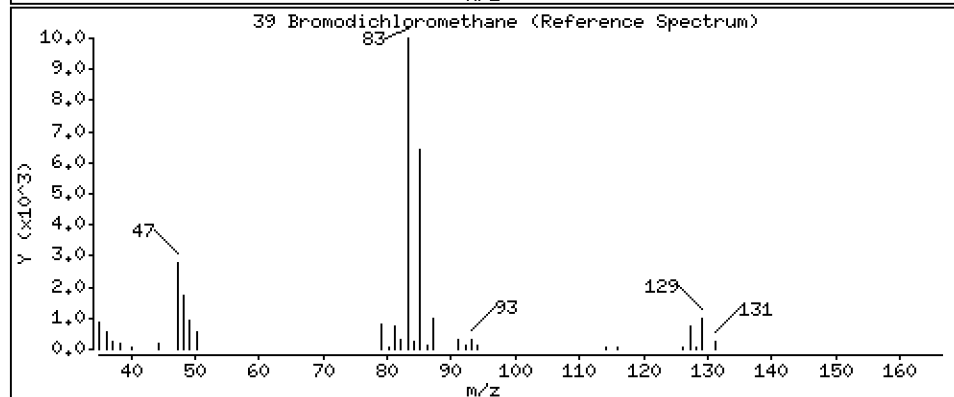
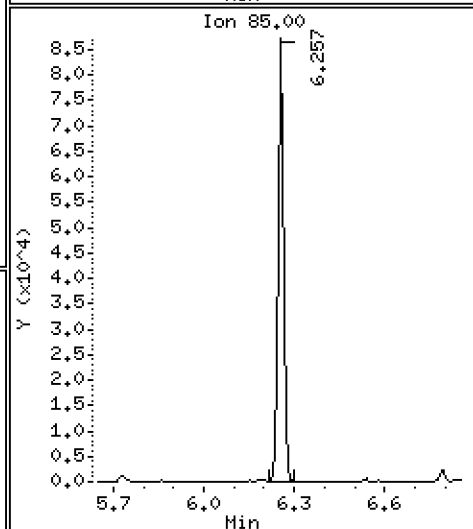
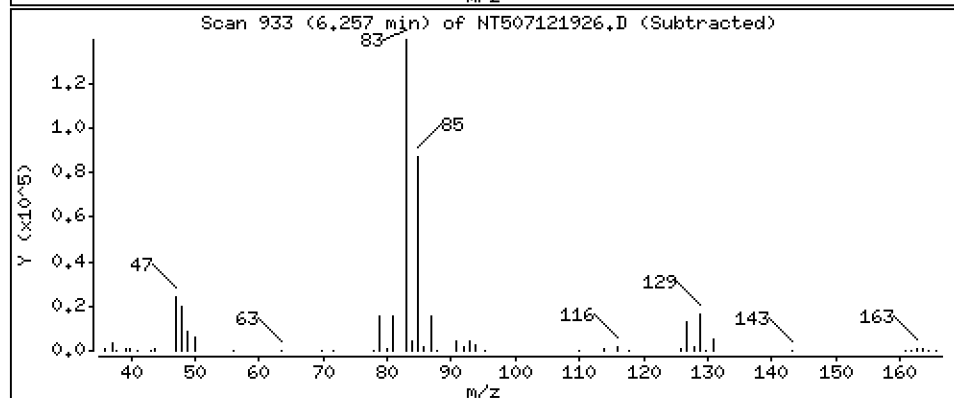
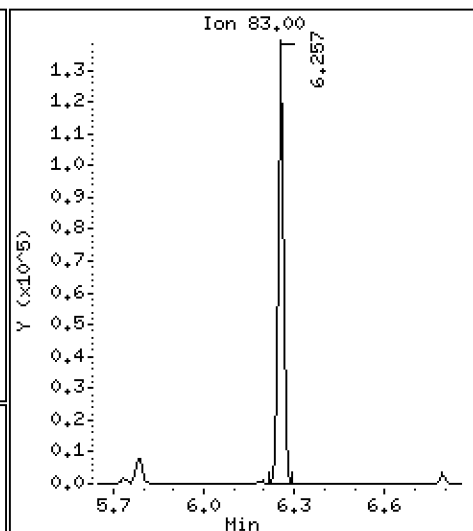
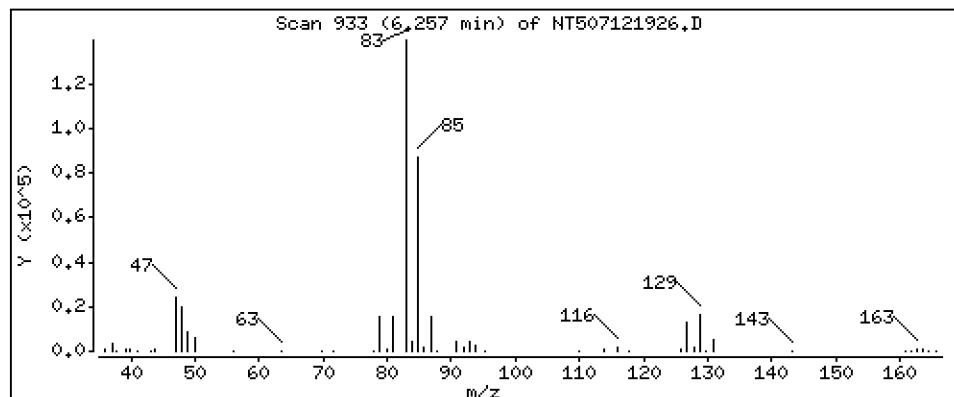
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

39 Bromodichloromethane

Concentration: 44,311 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

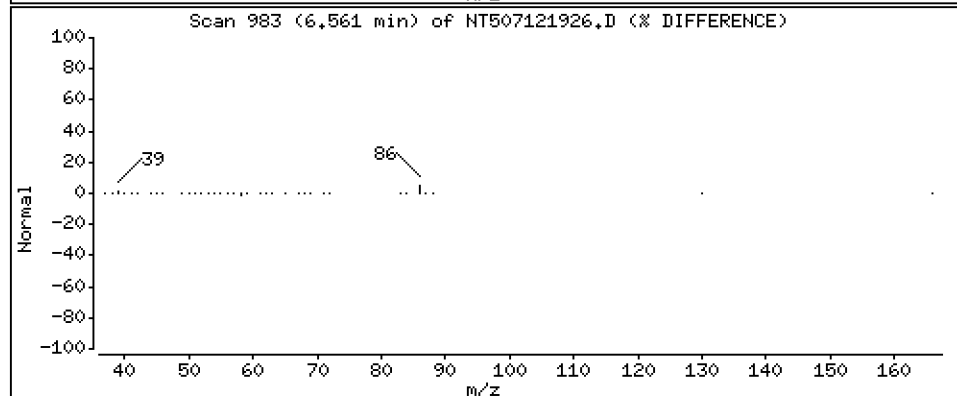
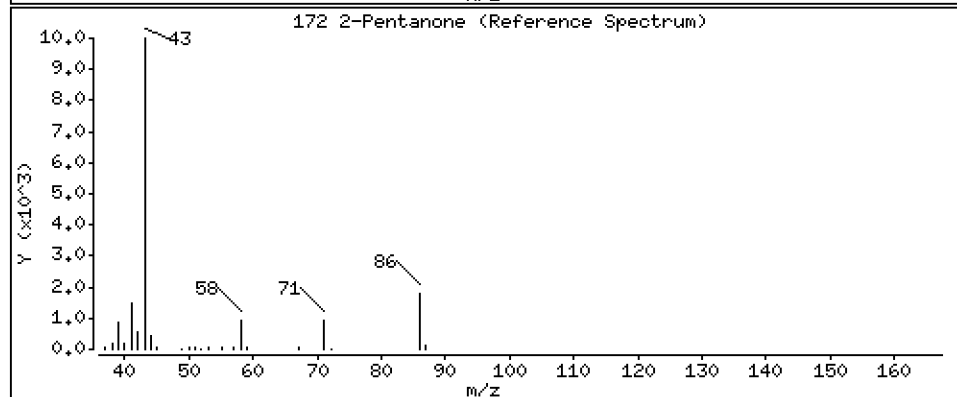
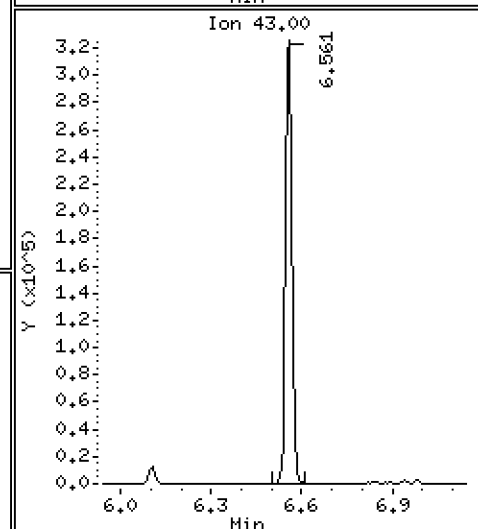
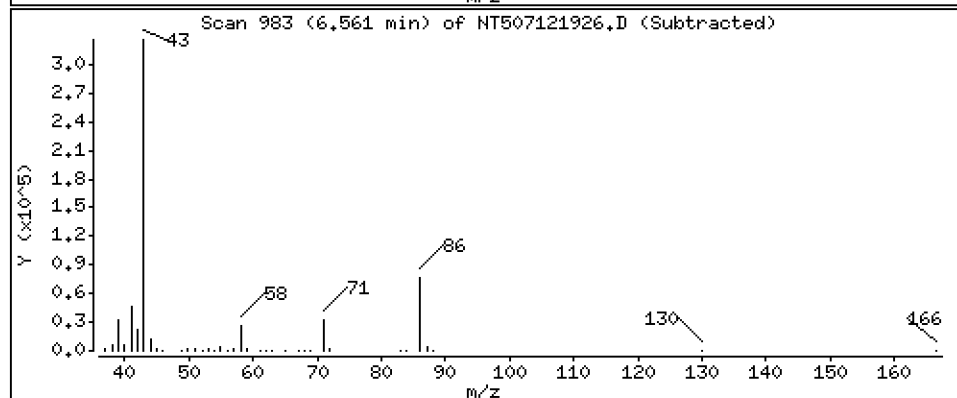
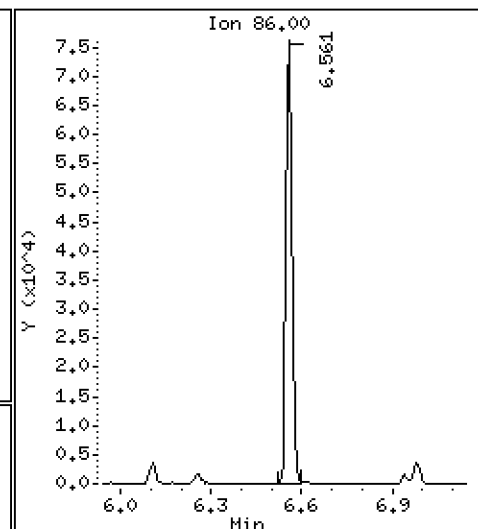
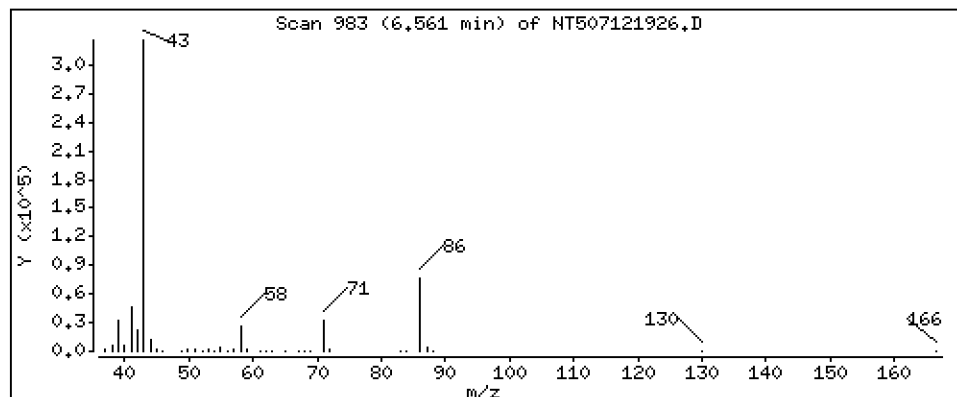
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

172 2-Pentanone

Concentration: 266.26 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

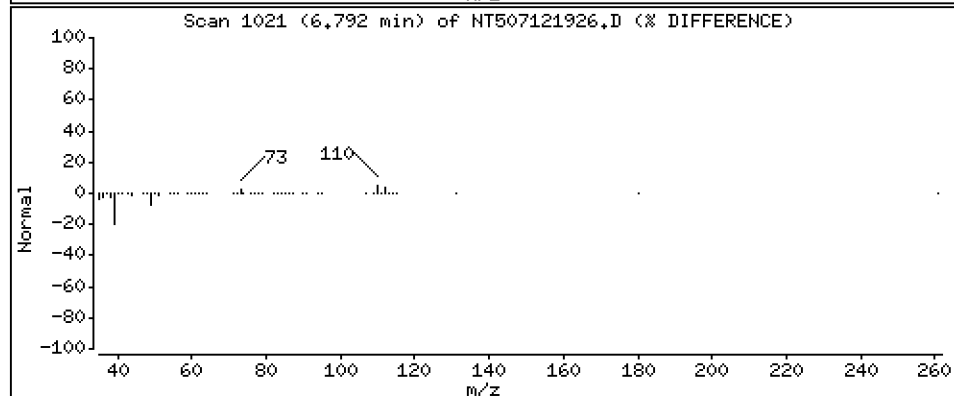
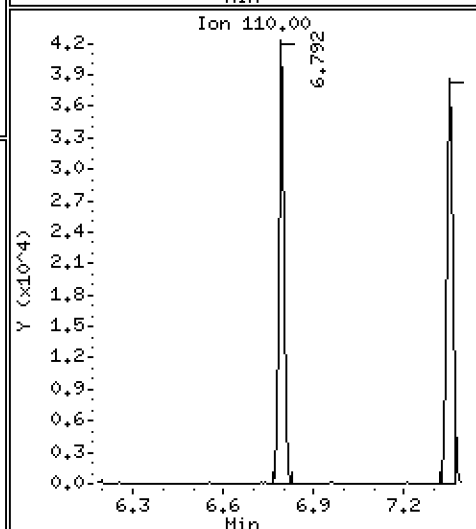
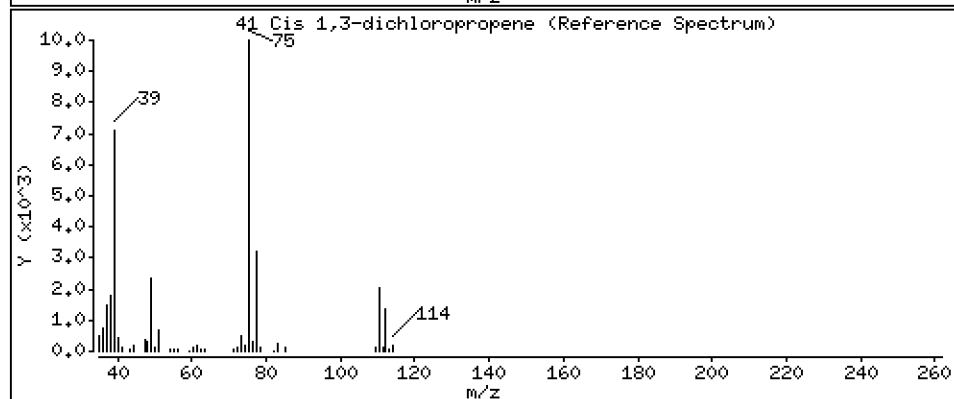
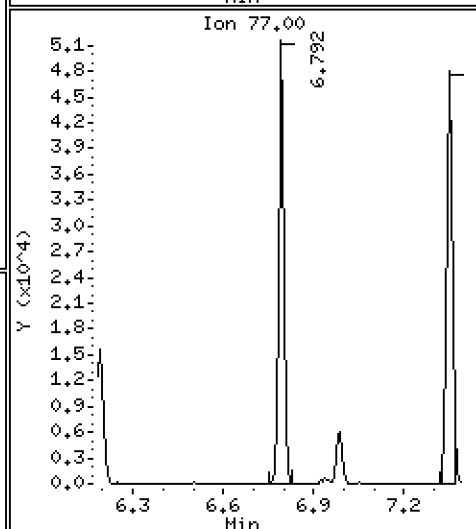
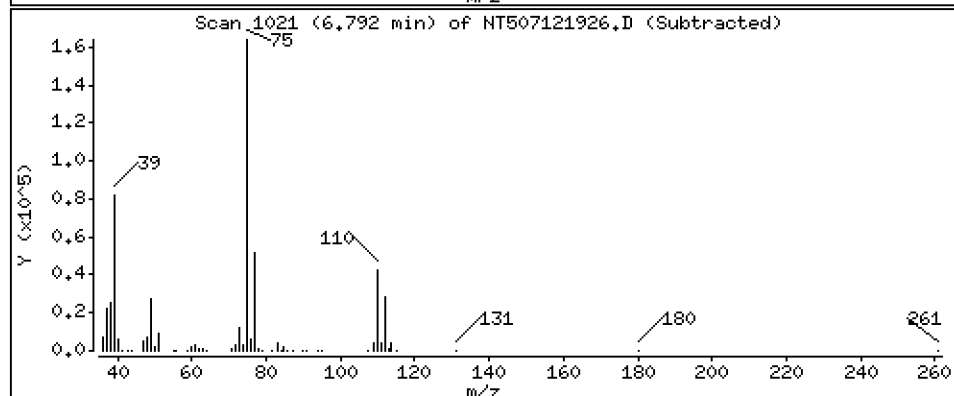
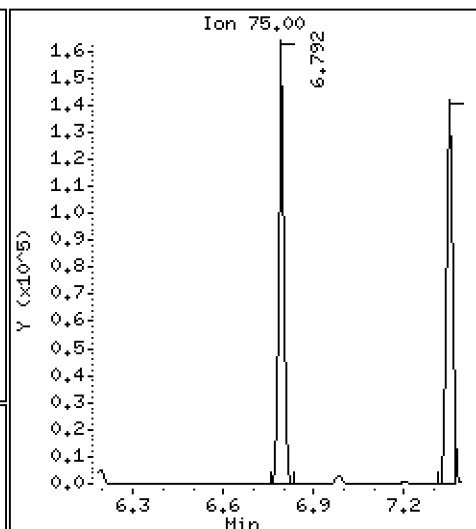
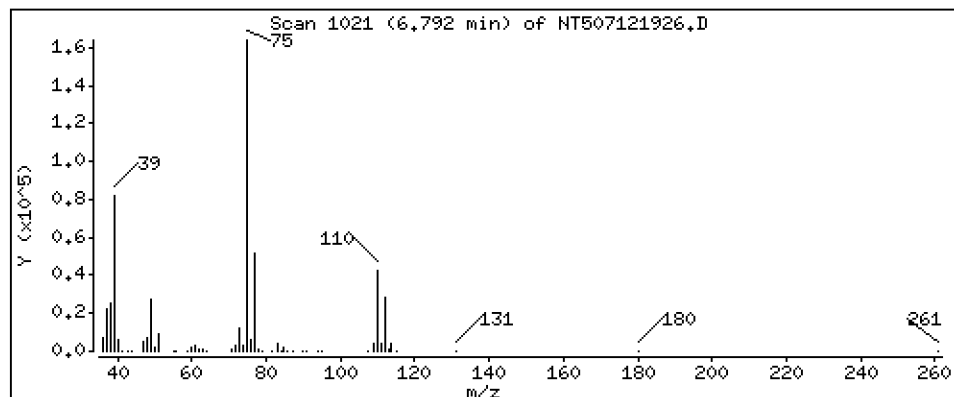
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

41 Cis 1,3-dichloropropene

Concentration: 41.942 ug/Kg

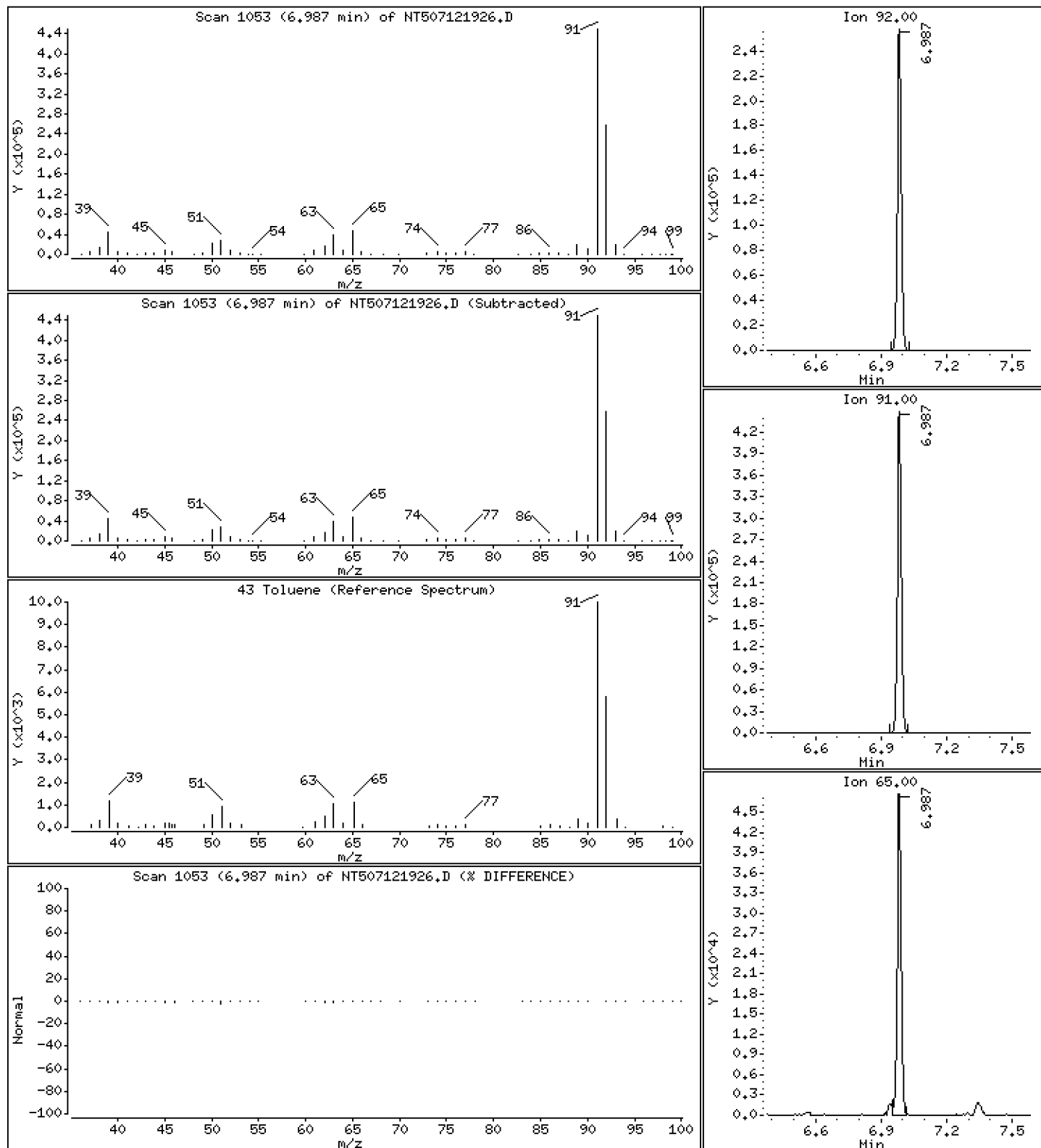


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 38,104 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

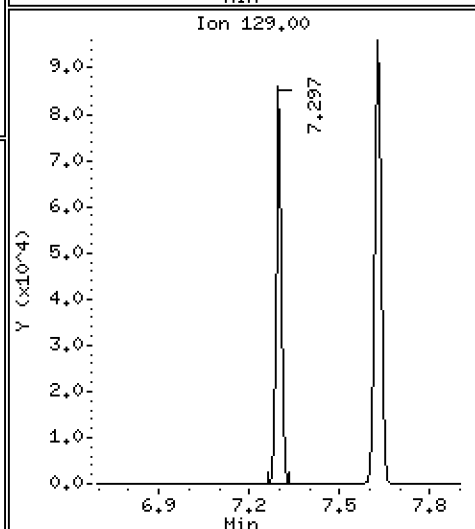
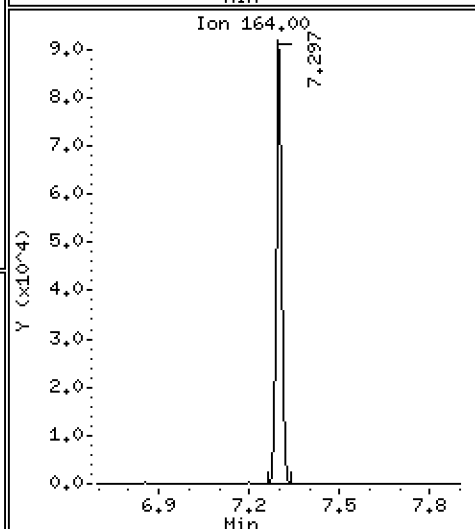
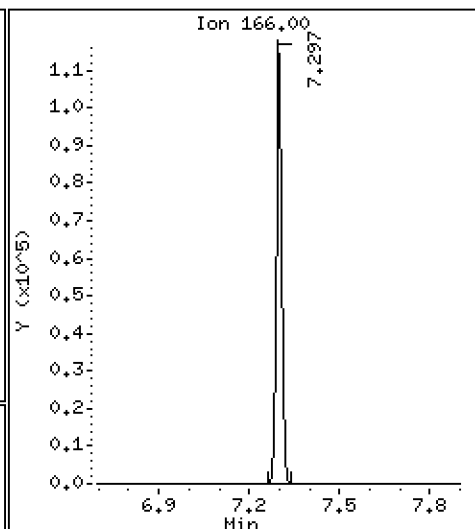
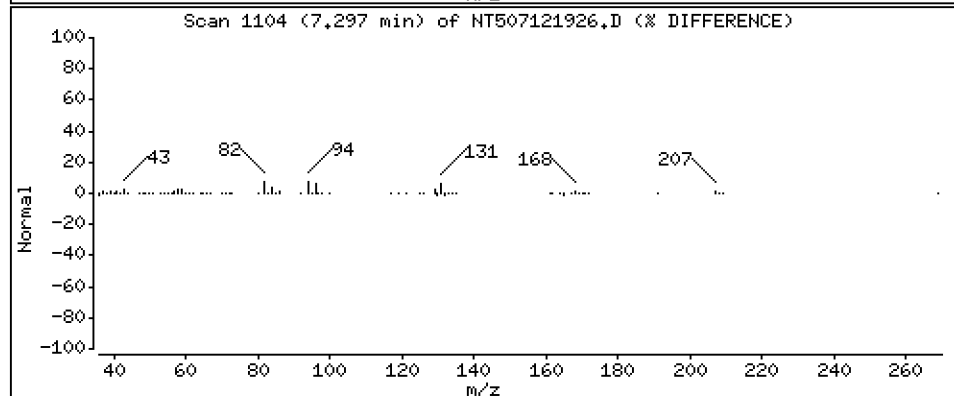
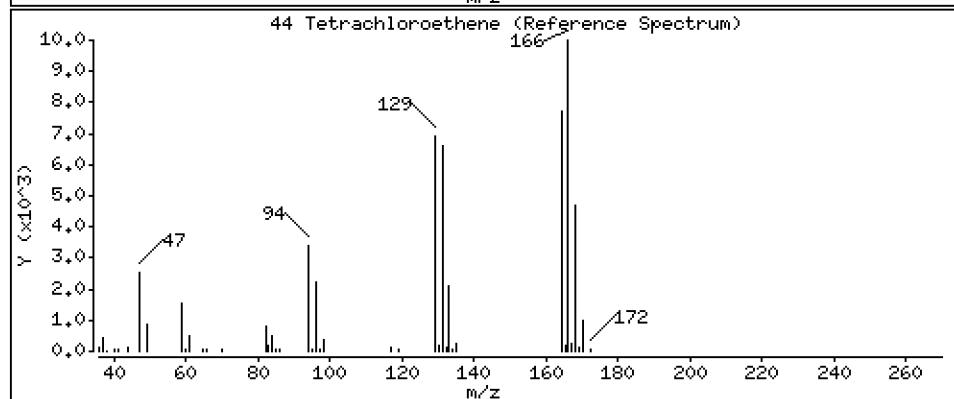
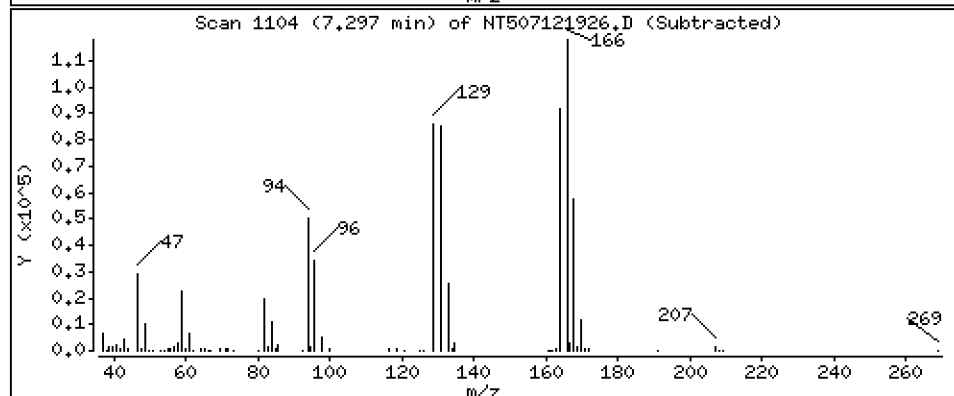
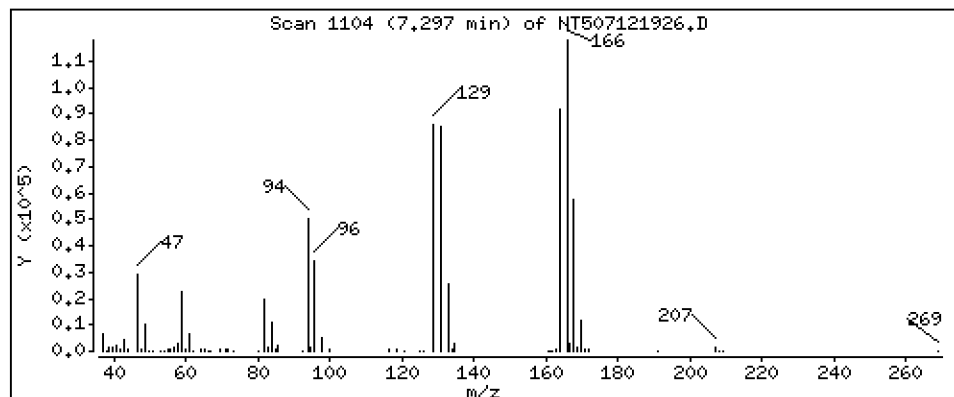
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

44 Tetrachloroethene

Concentration: 37,154 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

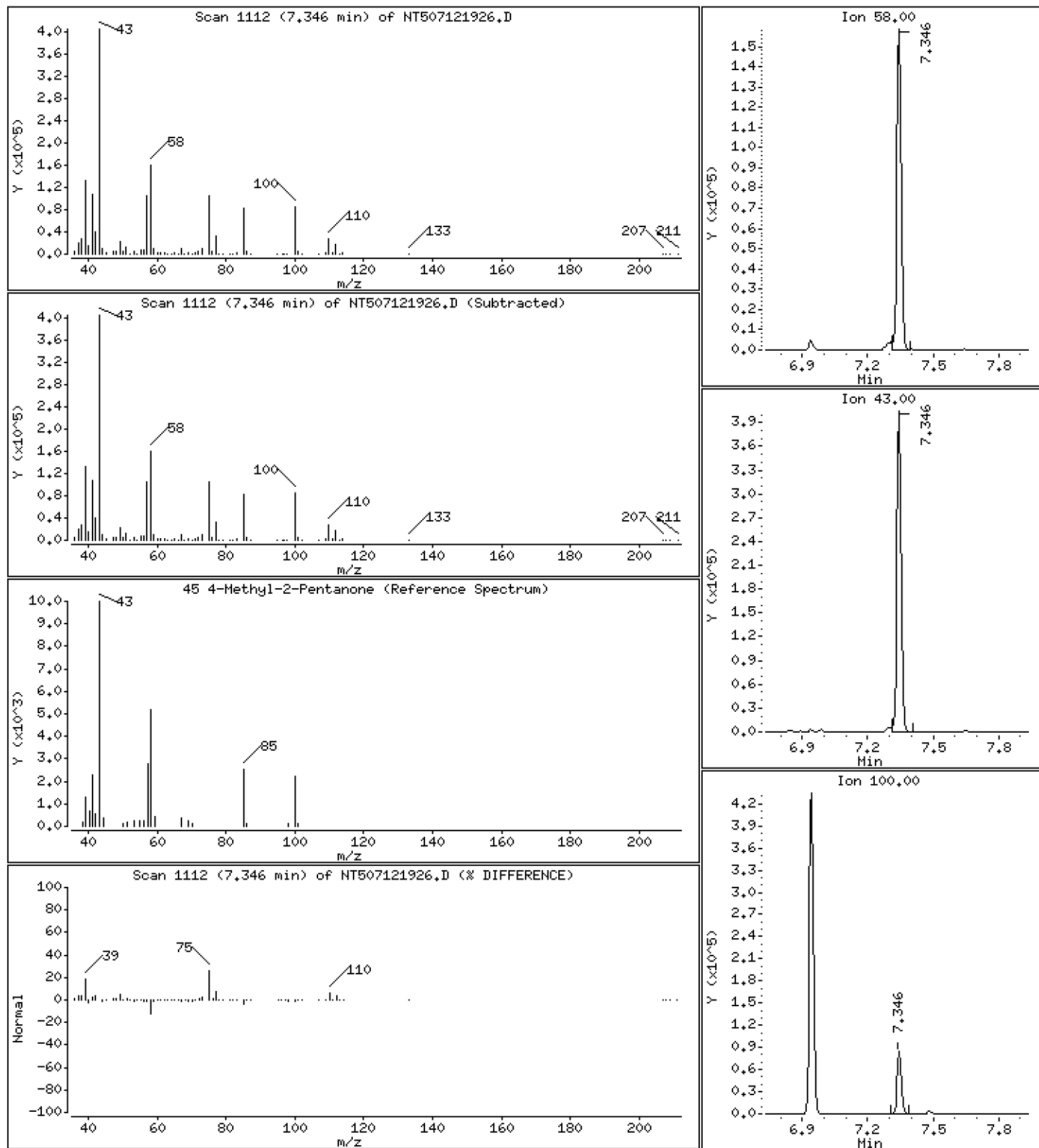
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 248.46 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

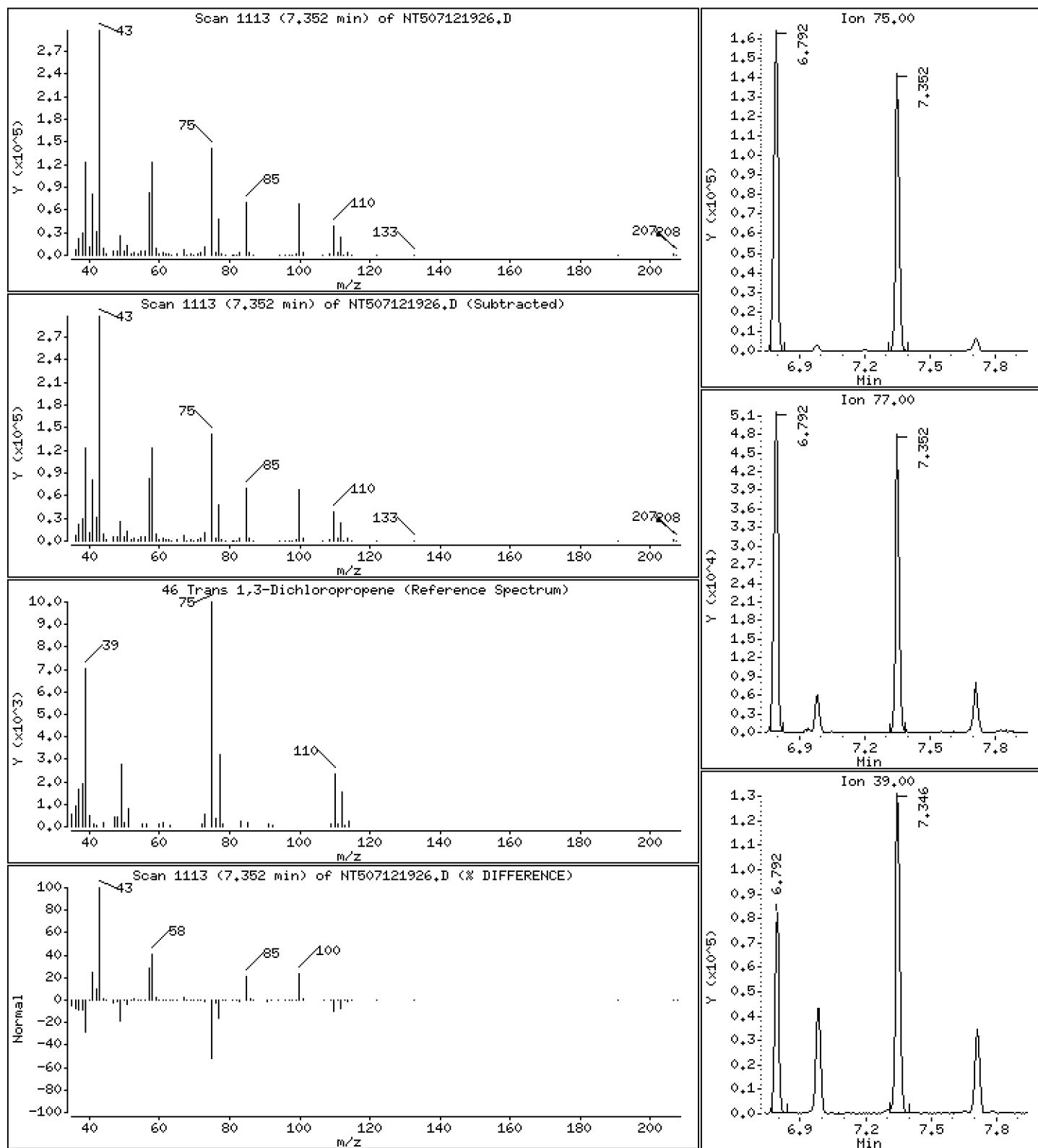
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

46 Trans 1,3-Dichloropropene

Concentration: 40,070 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

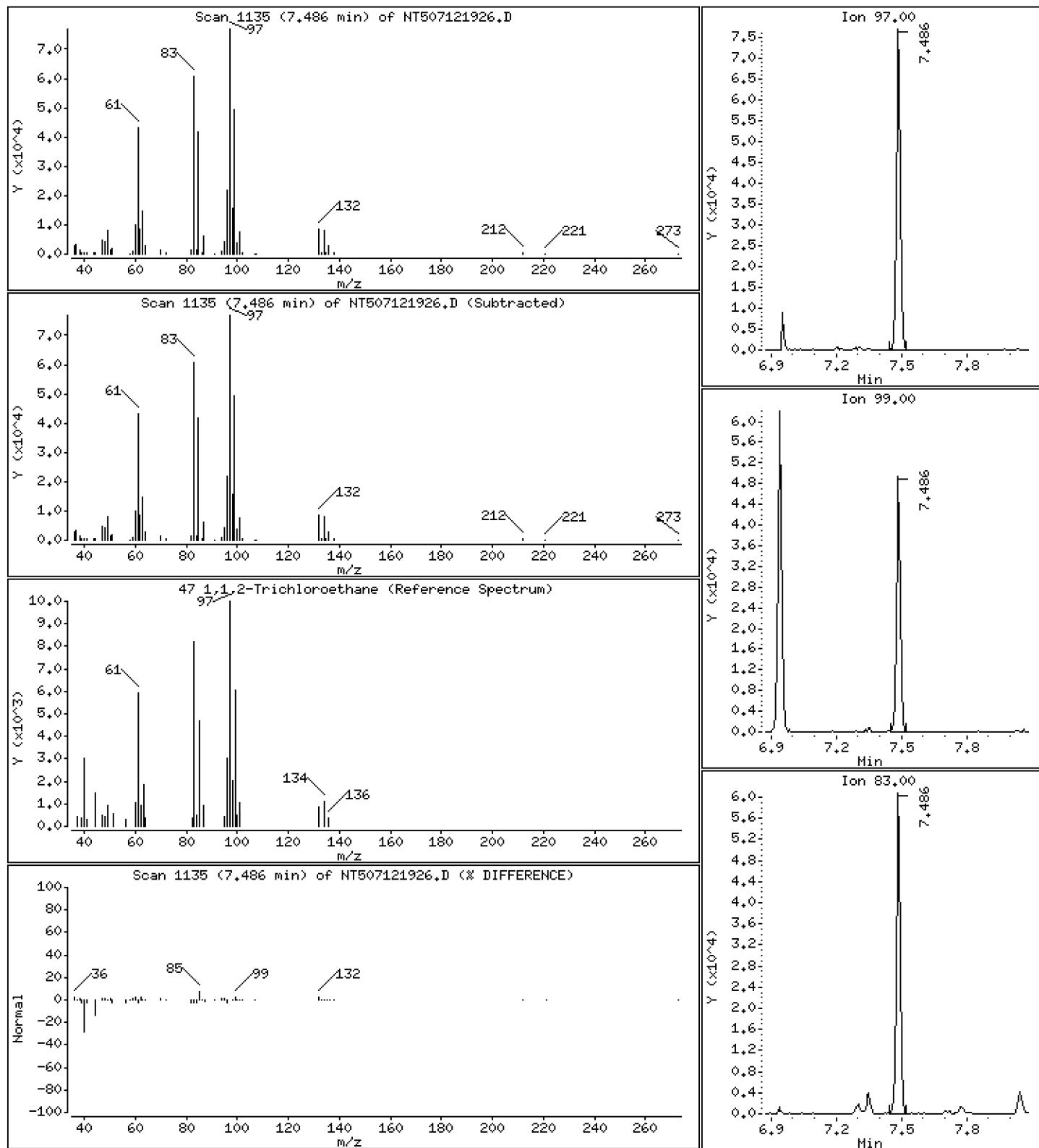
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

47 1,1,2-Trichloroethane

Concentration: 39,541 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

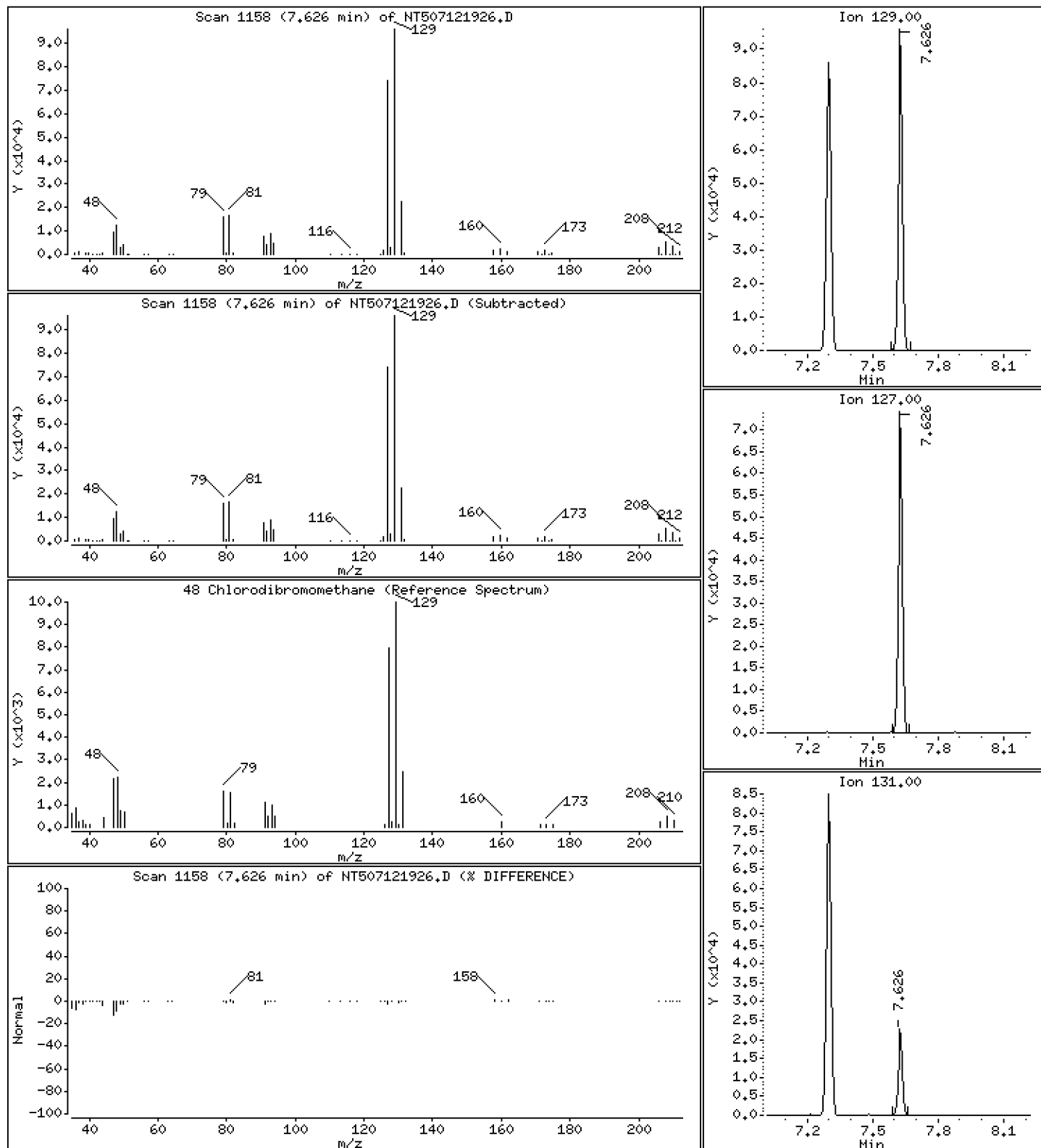
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

48 Chlorodibromomethane

Concentration: 39,079 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

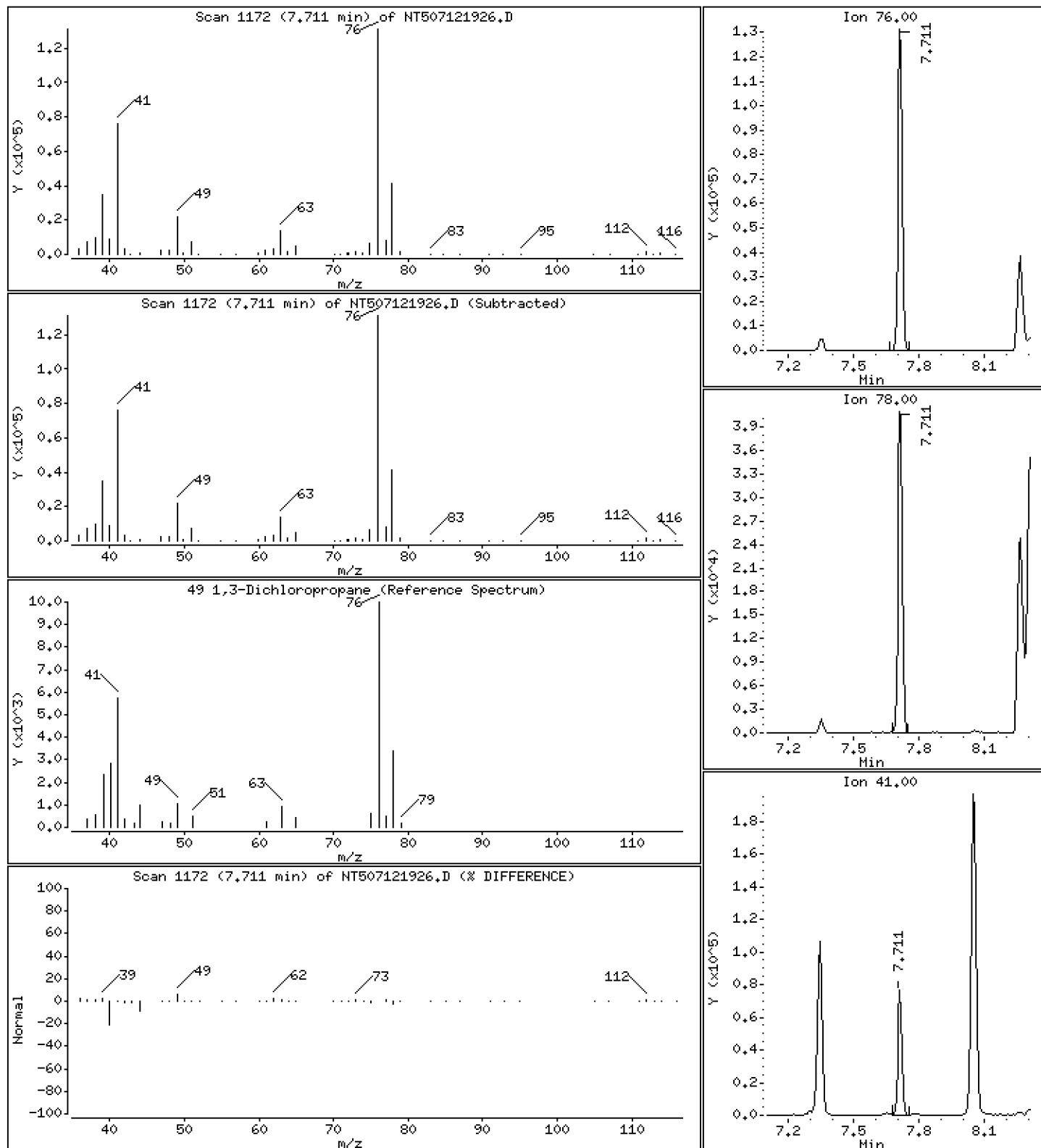
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

49 1,3-Dichloropropane

Concentration: 43,400 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

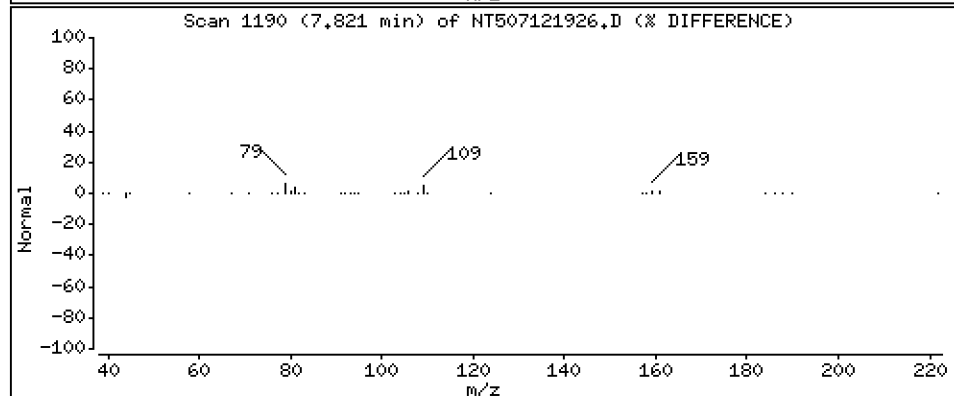
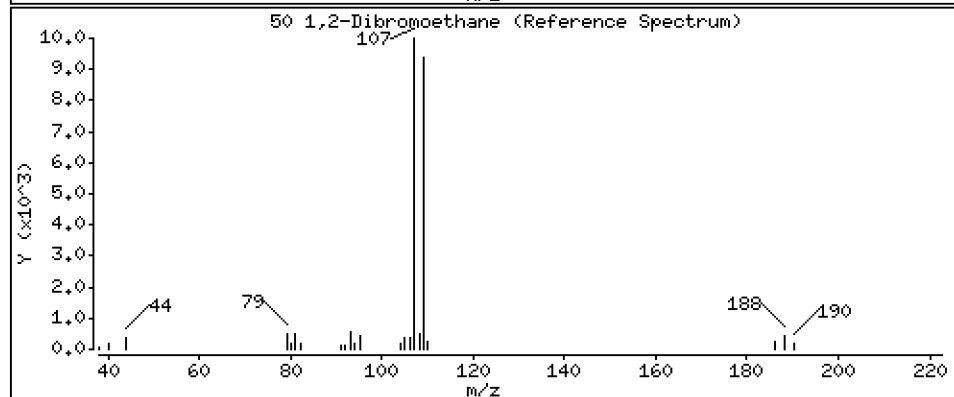
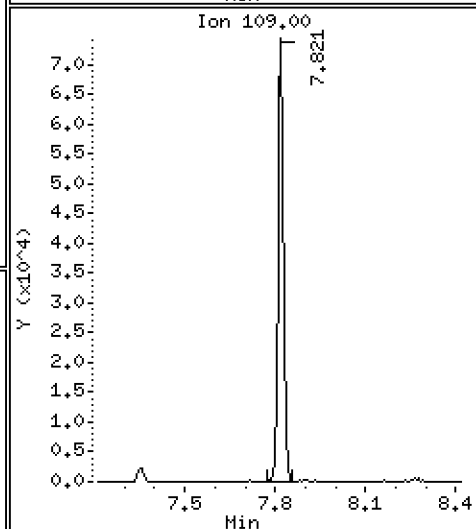
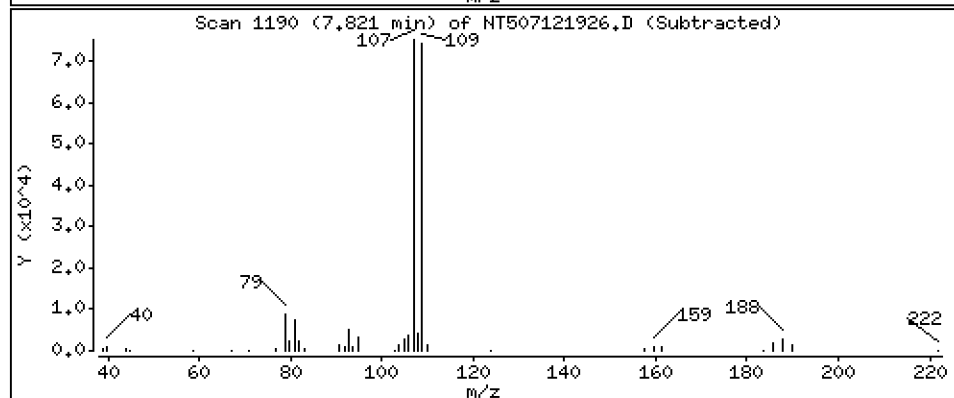
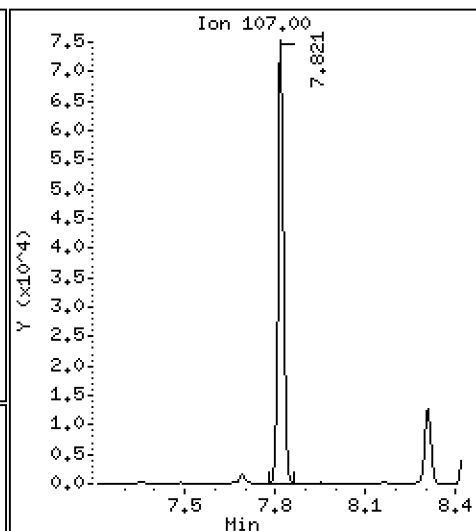
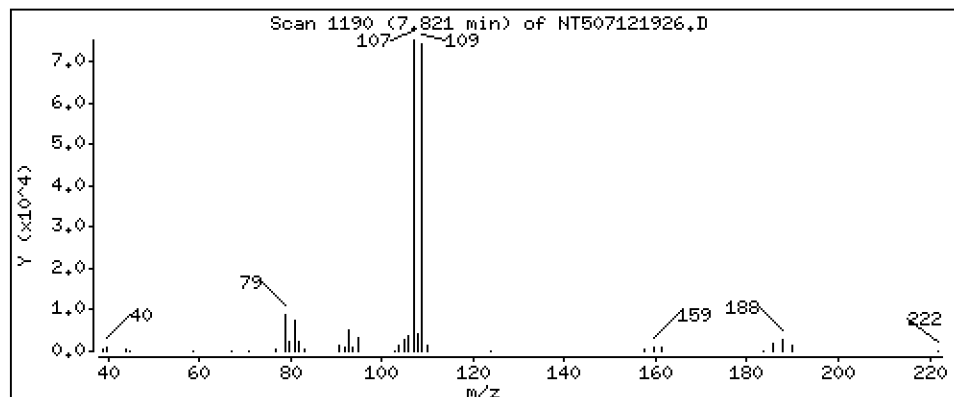
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

50 1,2-Dibromoethane

Concentration: 37,817 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

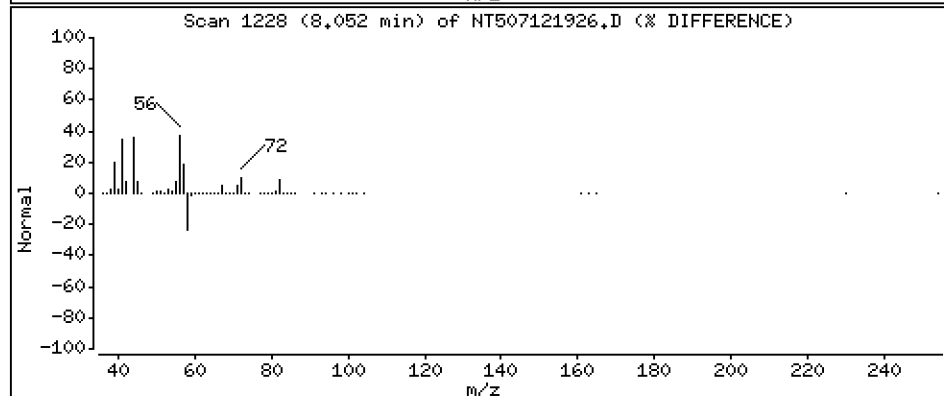
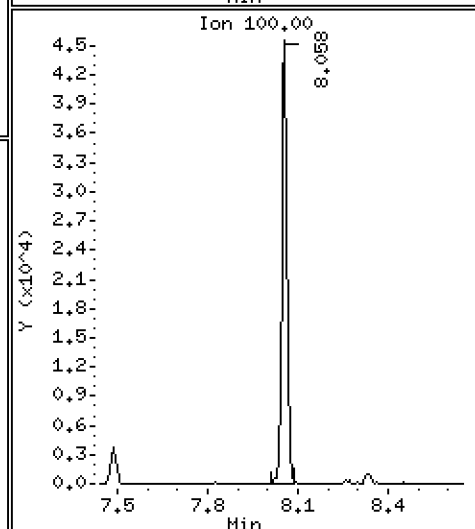
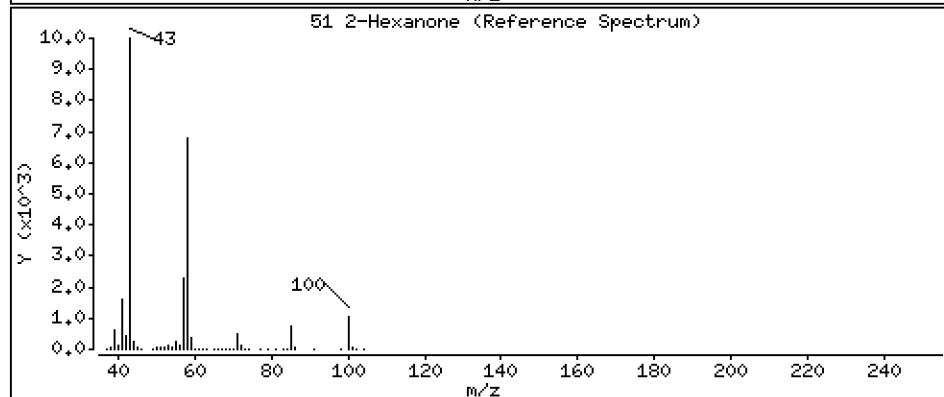
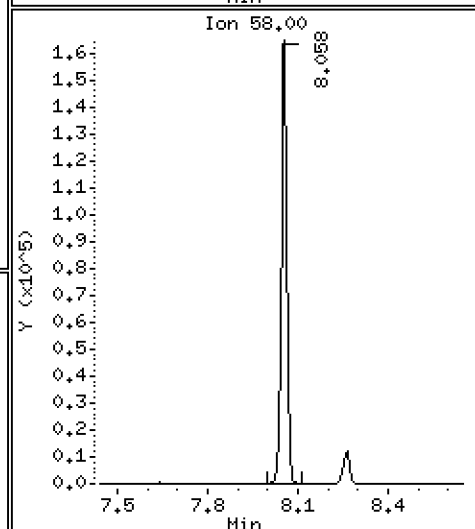
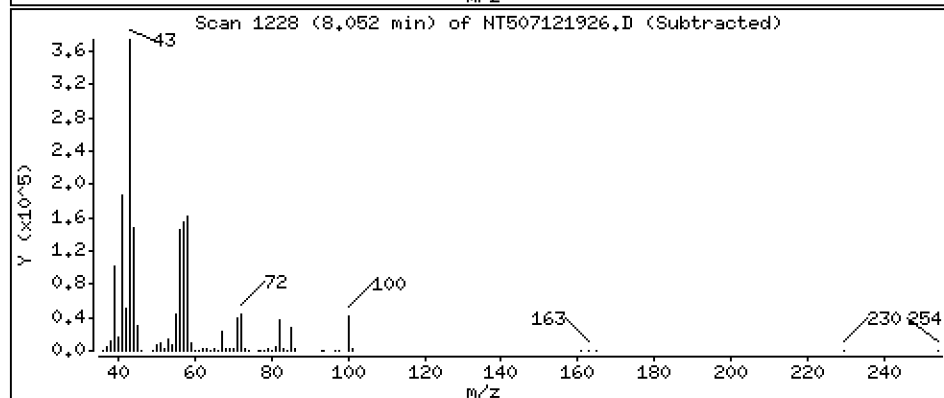
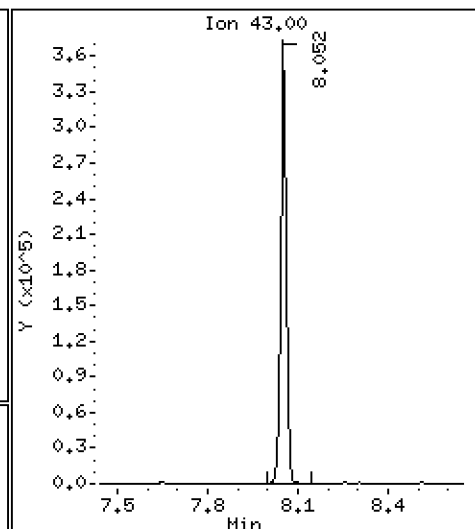
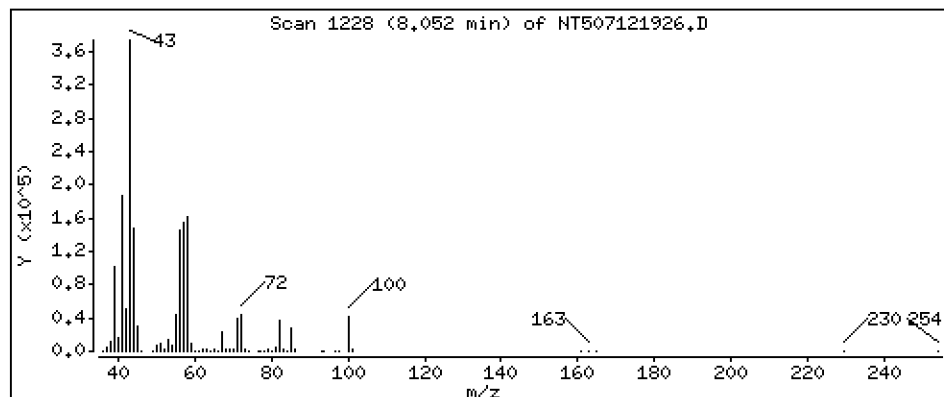
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

51 2-Hexanone

Concentration: 359.07 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

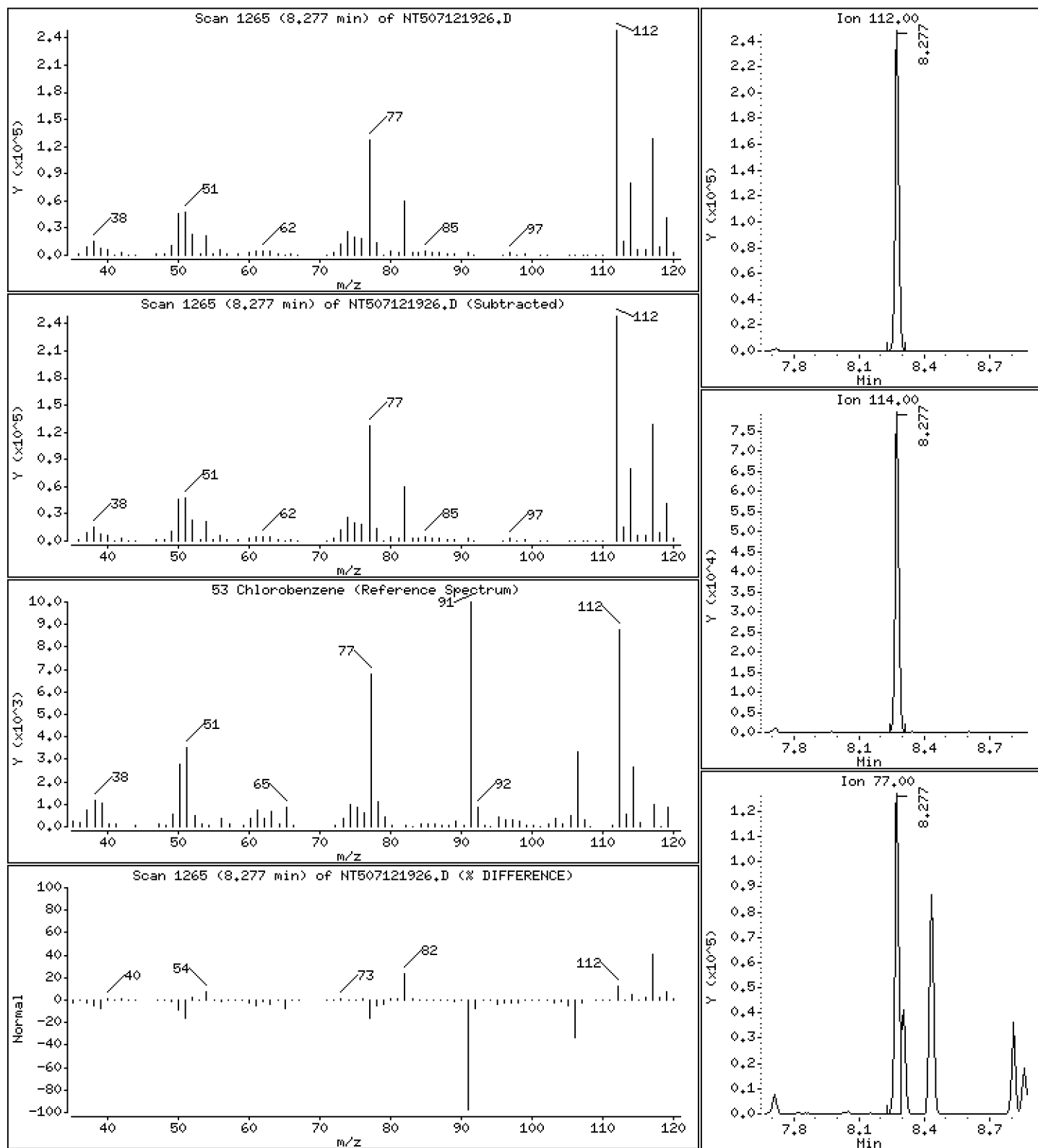
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

53 Chlorobenzene

Concentration: 31.944 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

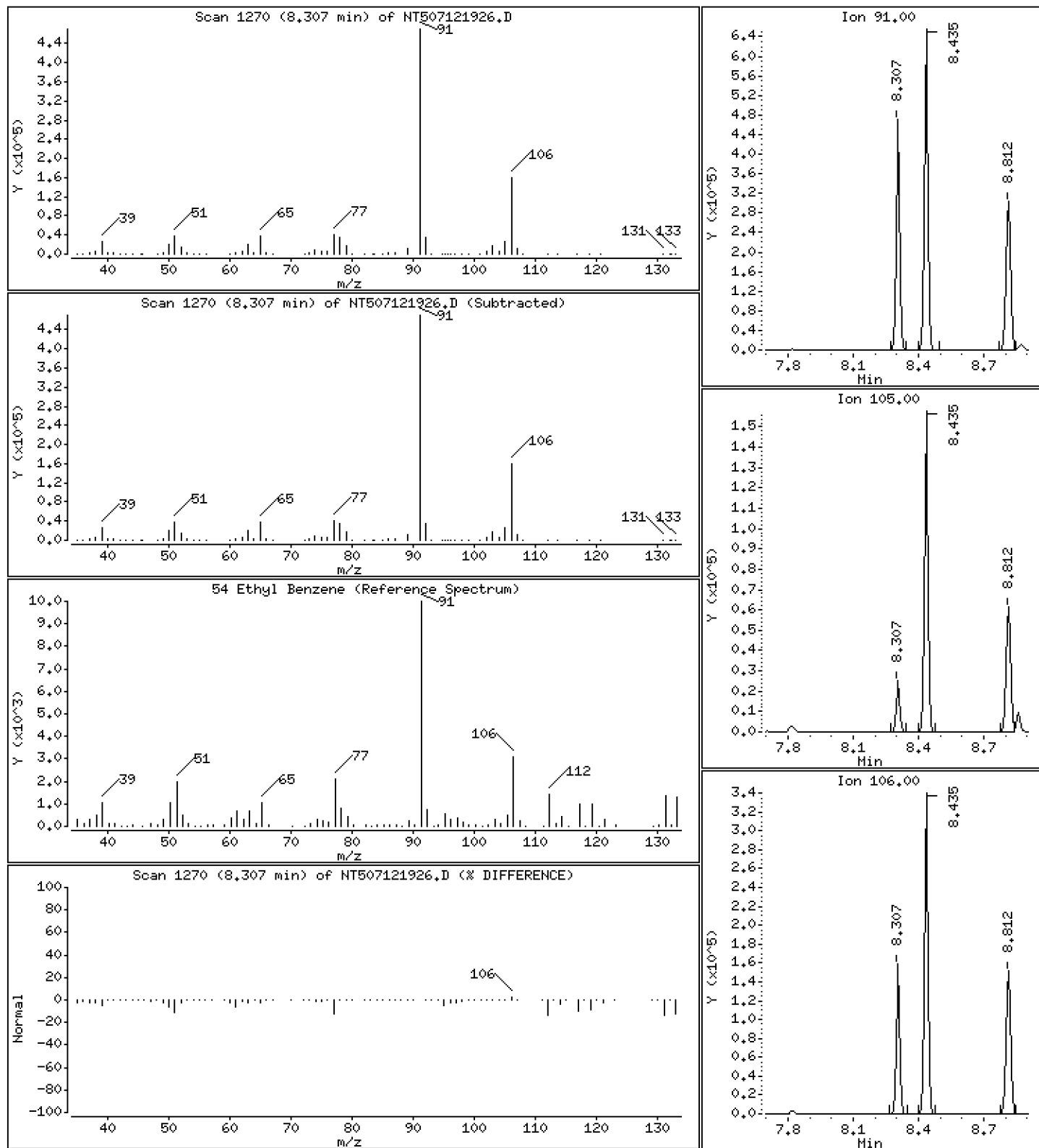
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

54 Ethyl Benzene

Concentration: 35,894 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

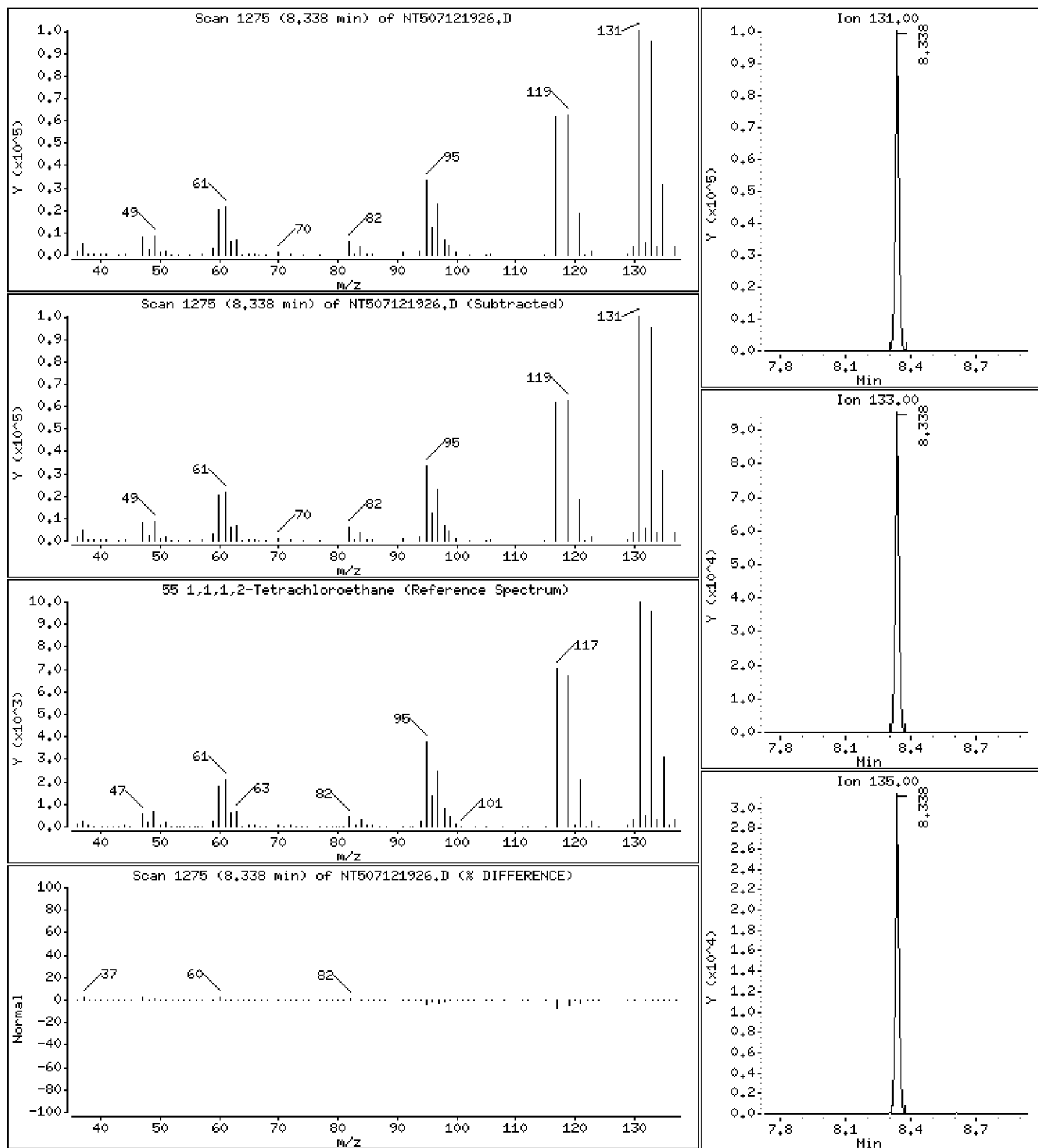
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

55 1,1,1,2-Tetrachloroethane

Concentration: 36,975 ug/Kg

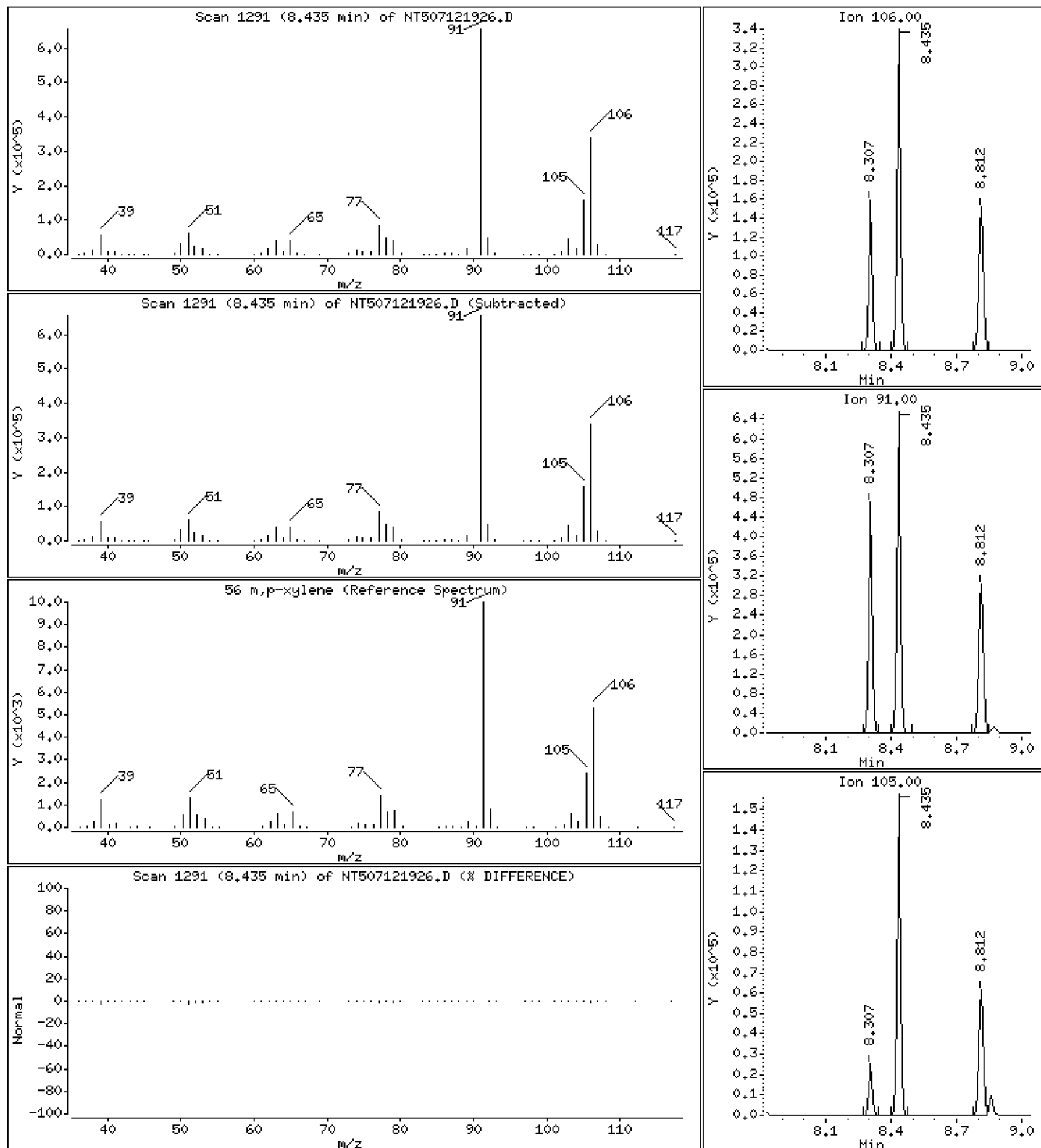


Instrument: nt5.i

Operator: PB

Column diameter: 0.18

Concentration: 64.332 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

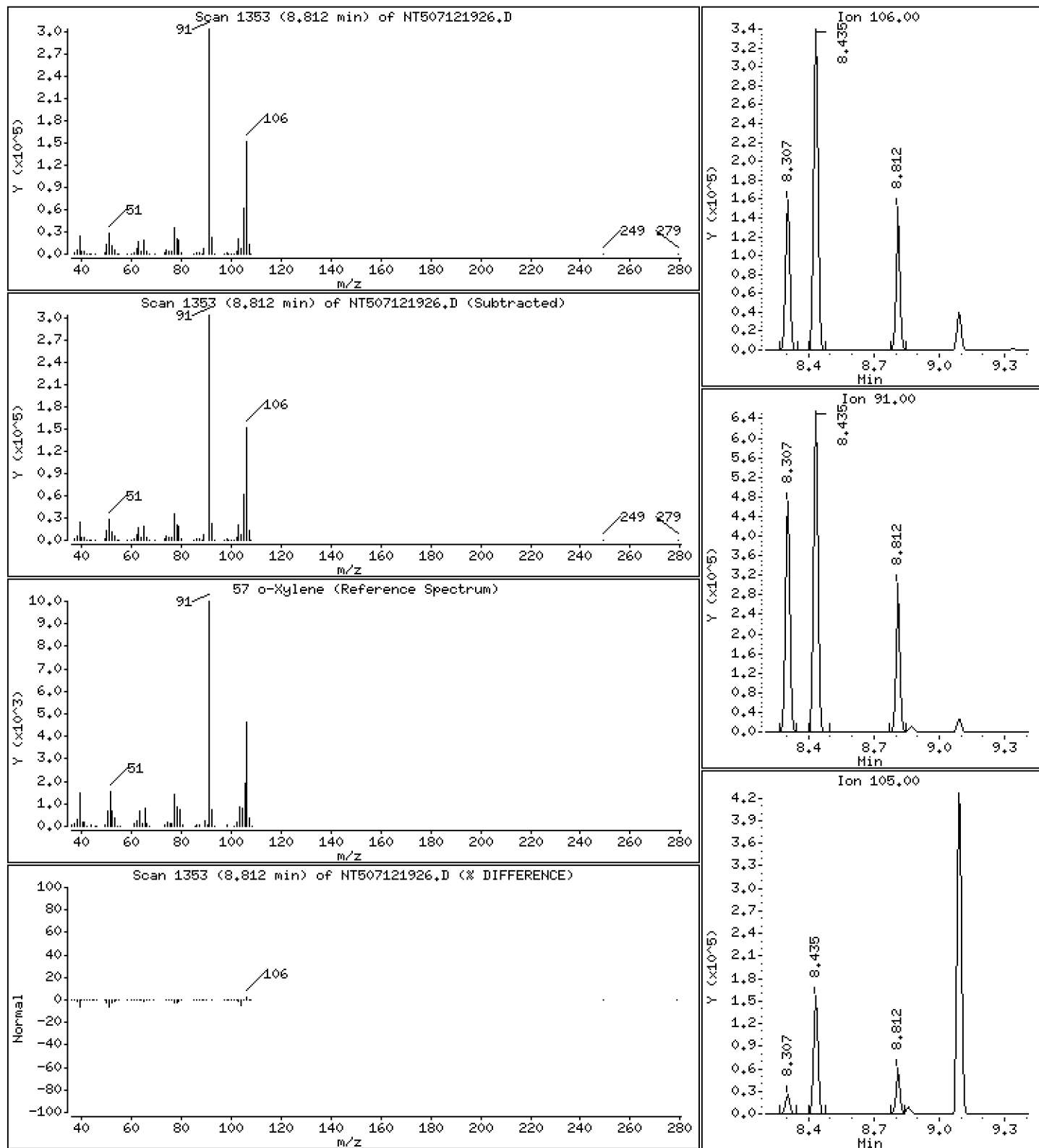
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

57 o-Xylene

Concentration: 31.305 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

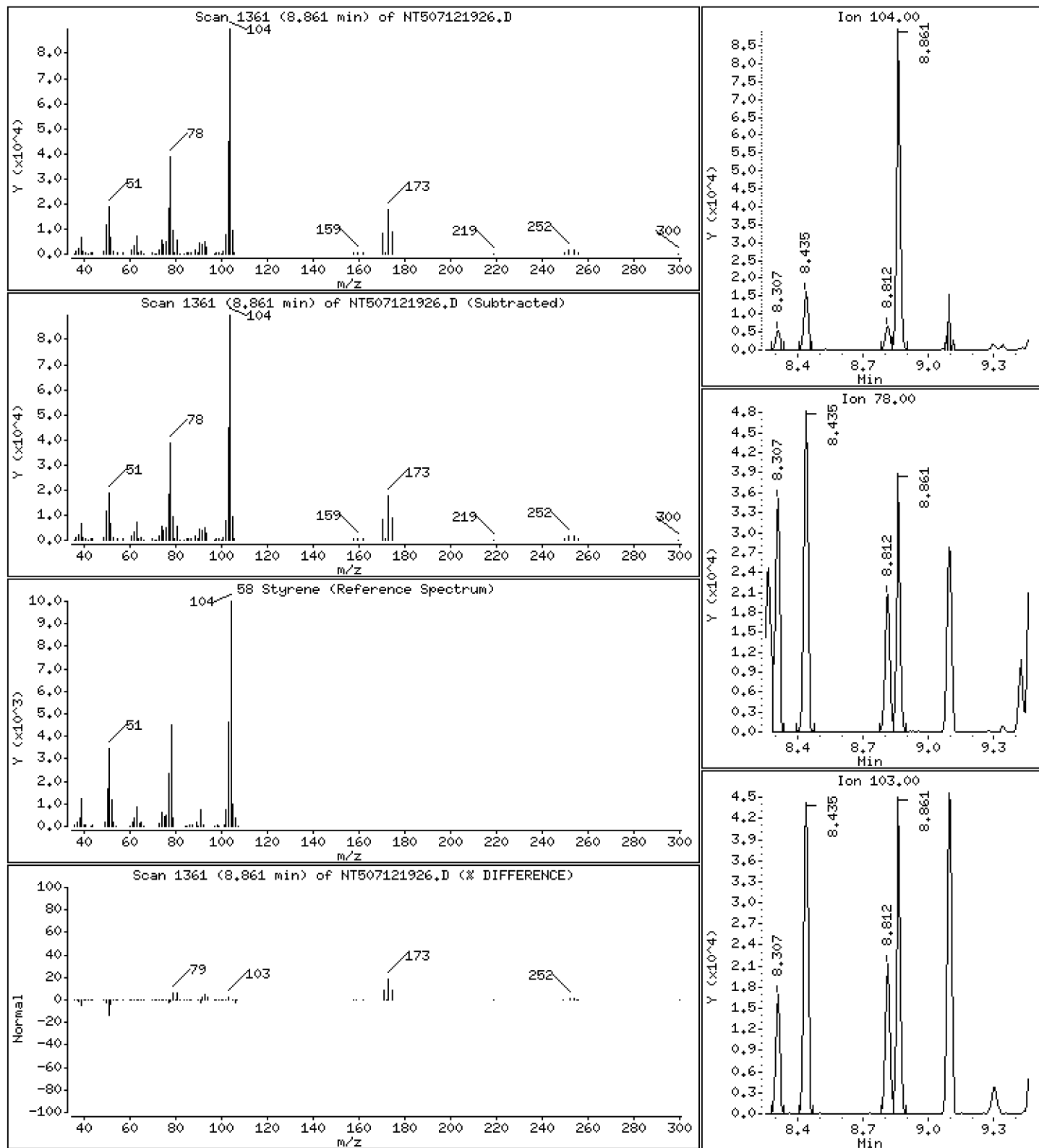
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

58 Styrene

Concentration: 11,303 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

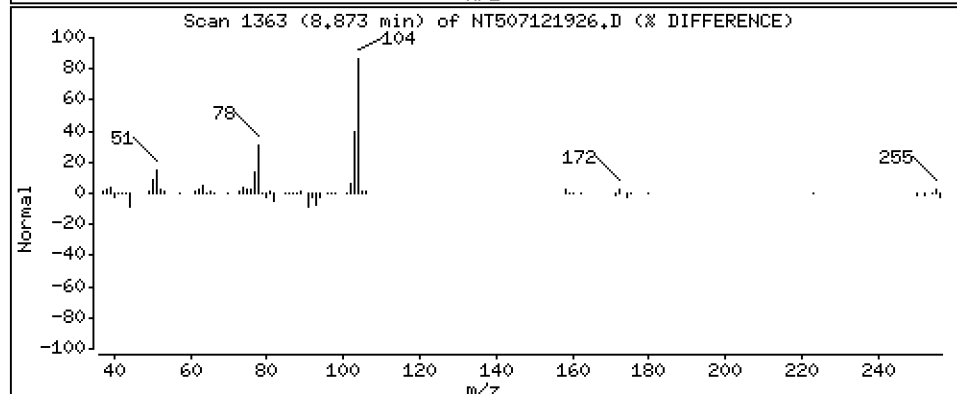
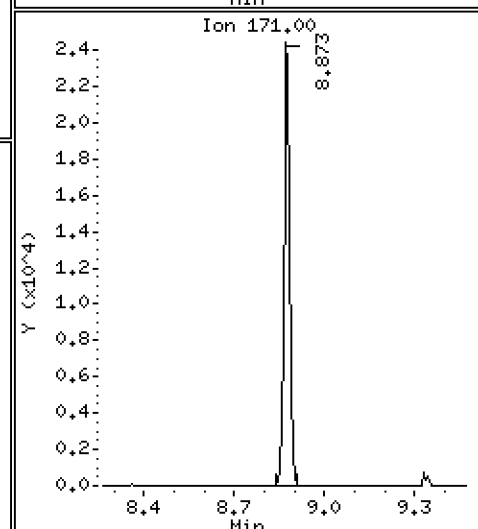
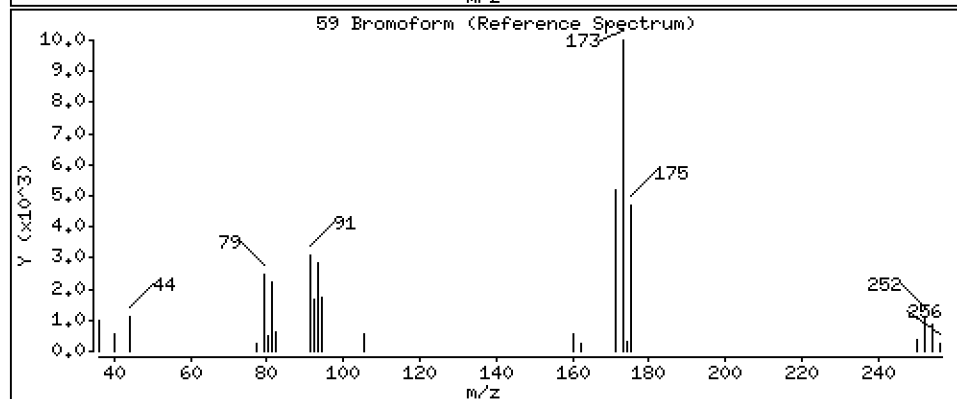
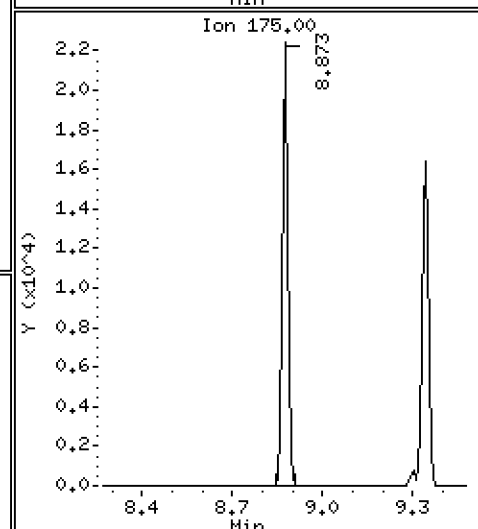
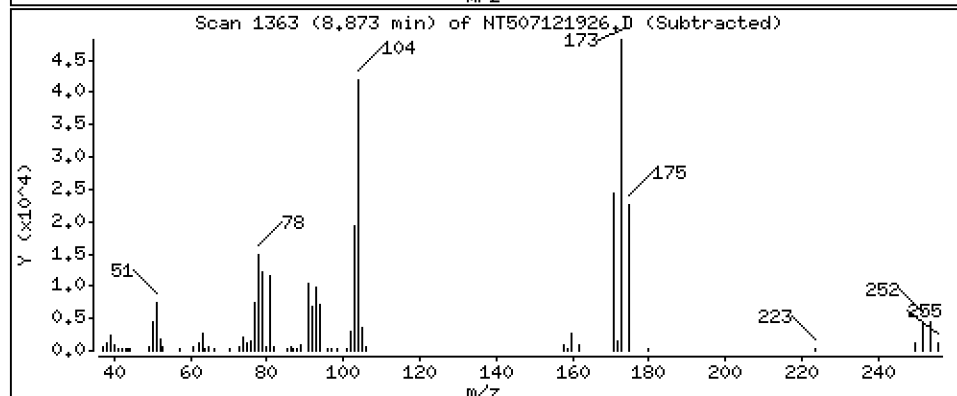
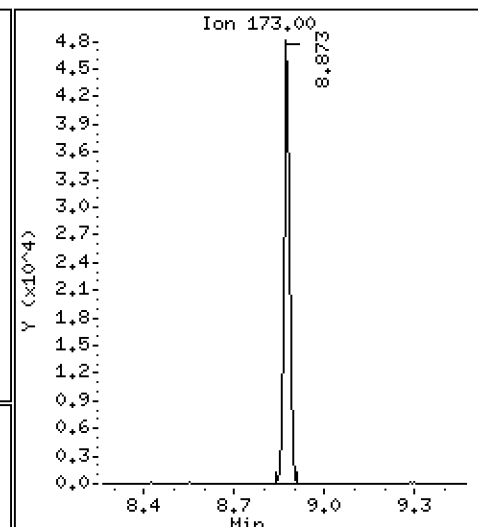
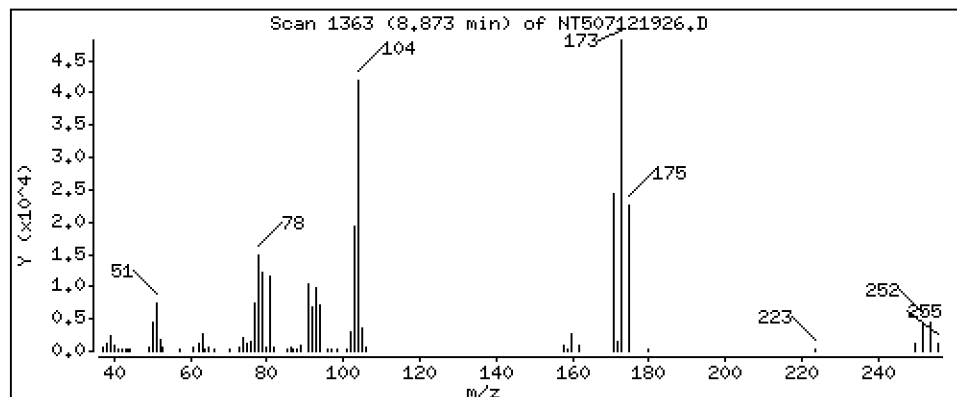
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

59 Bromoform

Concentration: 39.926 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

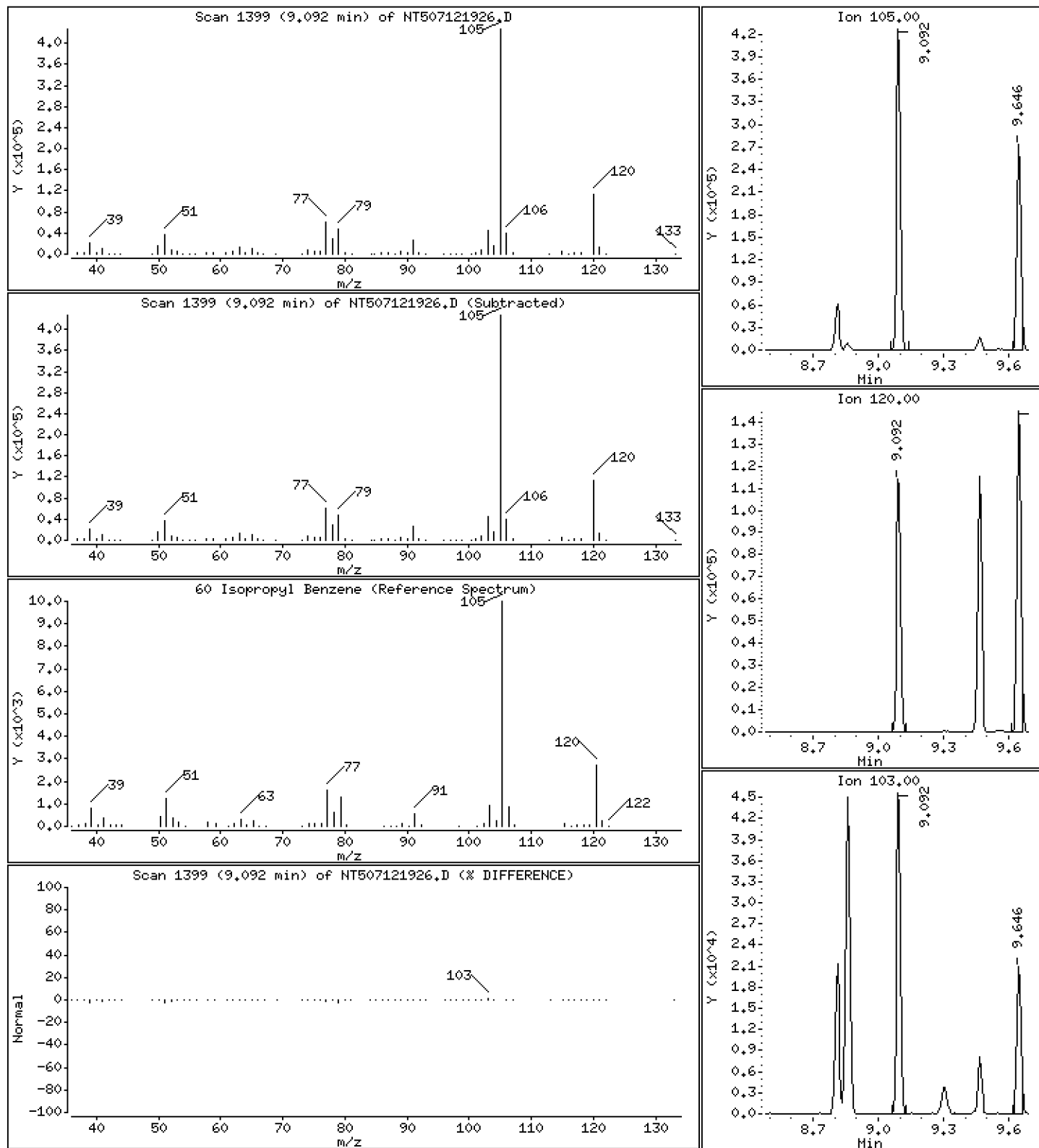
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

60 Isopropyl Benzene

Concentration: 44,335 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

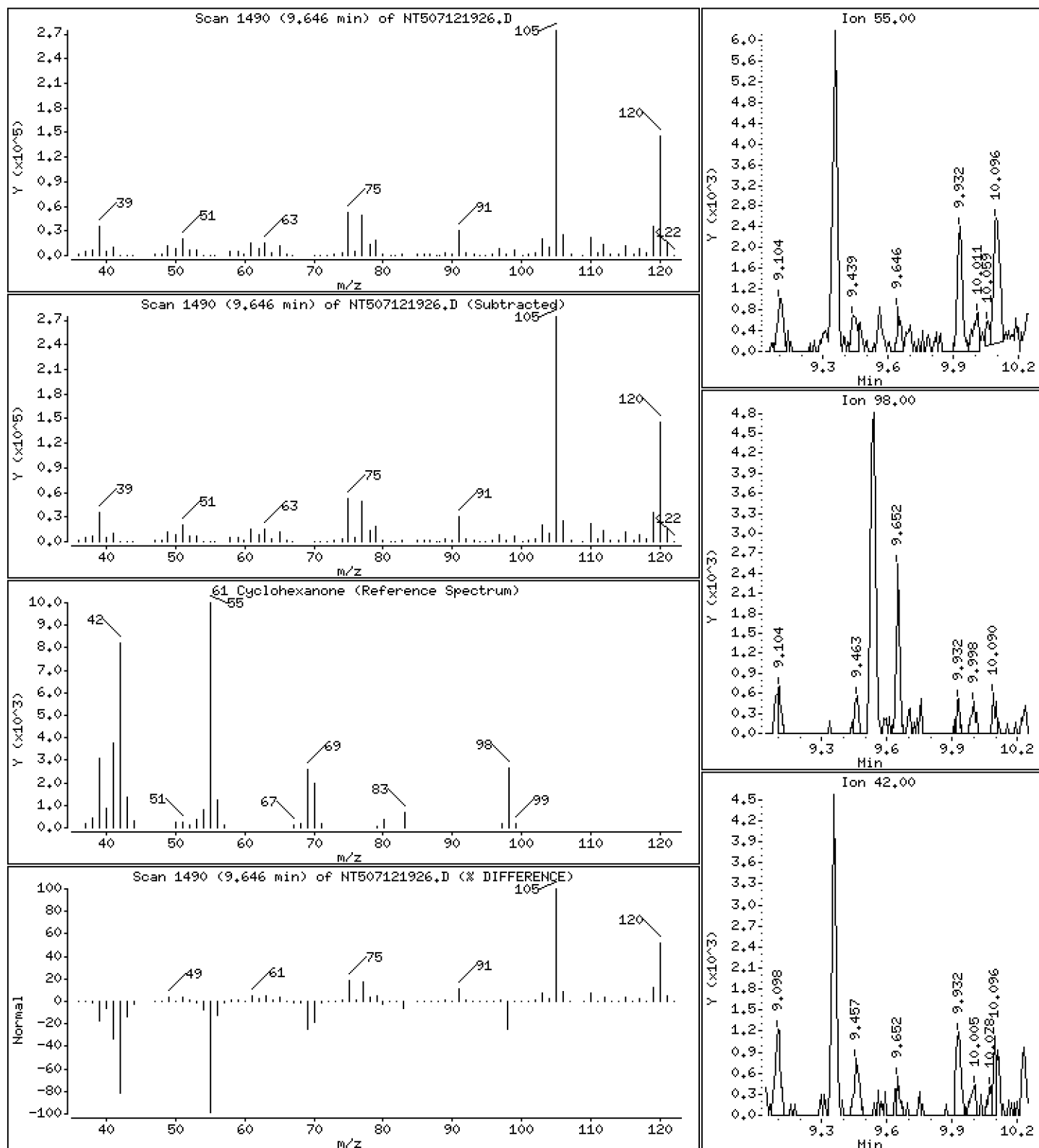
Sample Info: BHC0316-MSD1

Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

61 Cyclohexanone



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

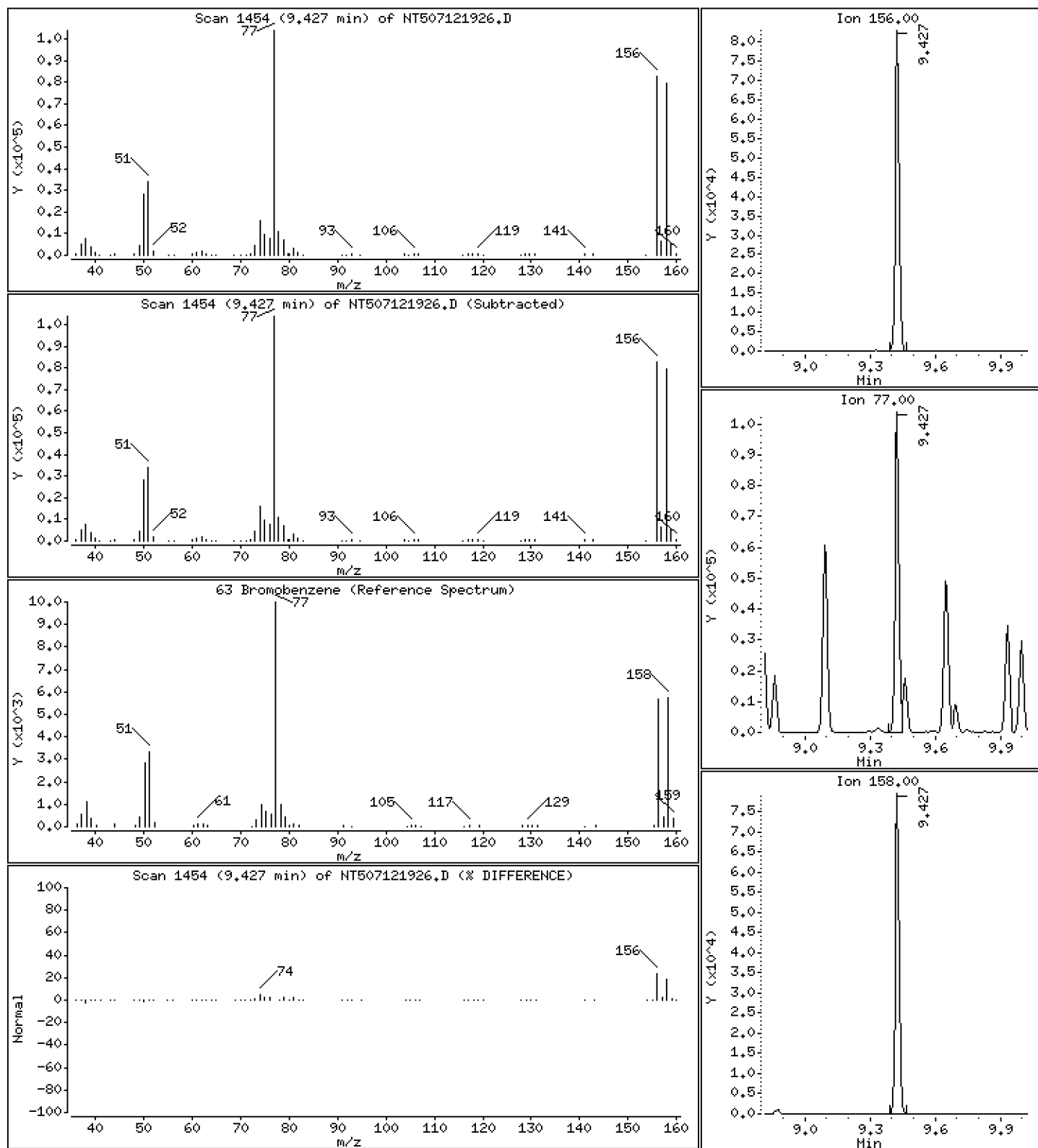
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 33,202 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

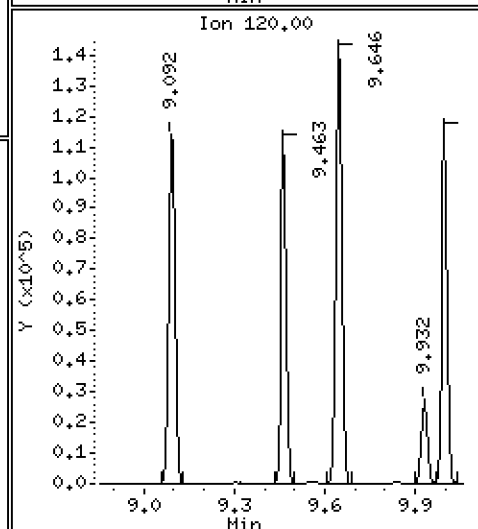
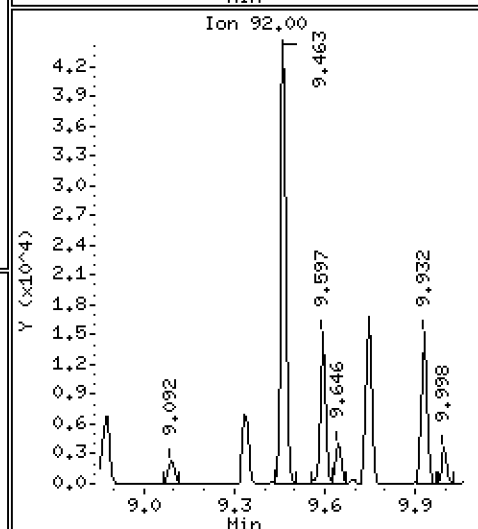
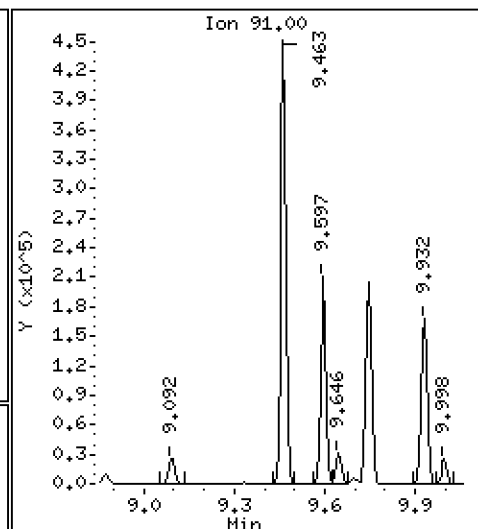
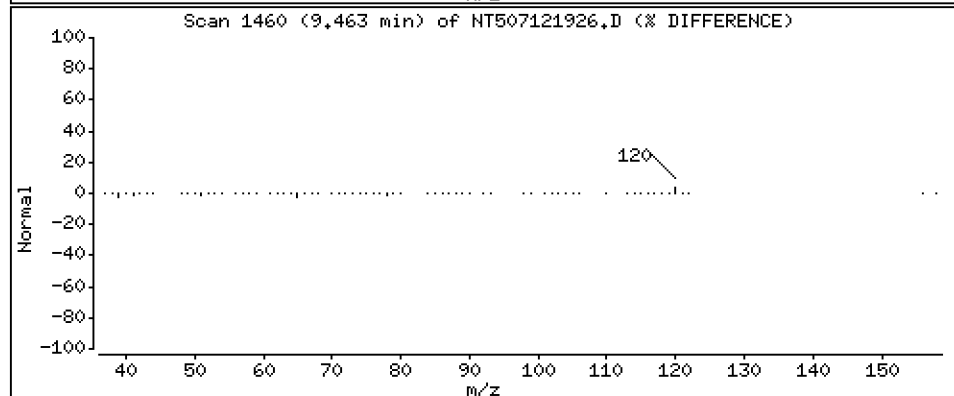
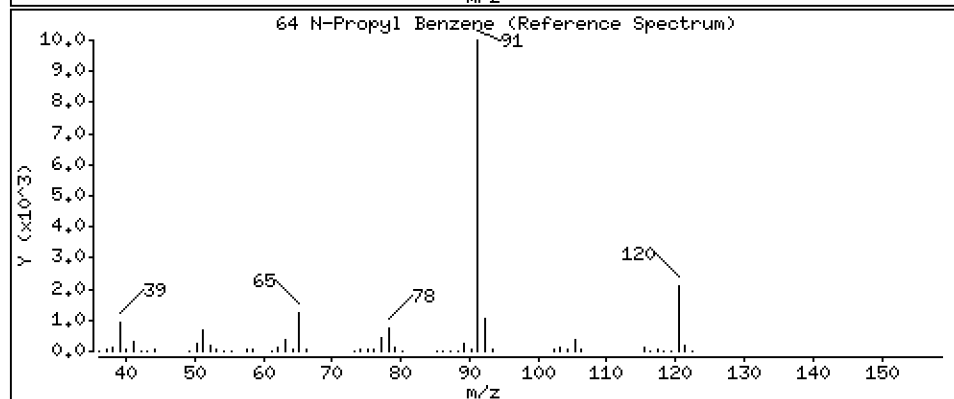
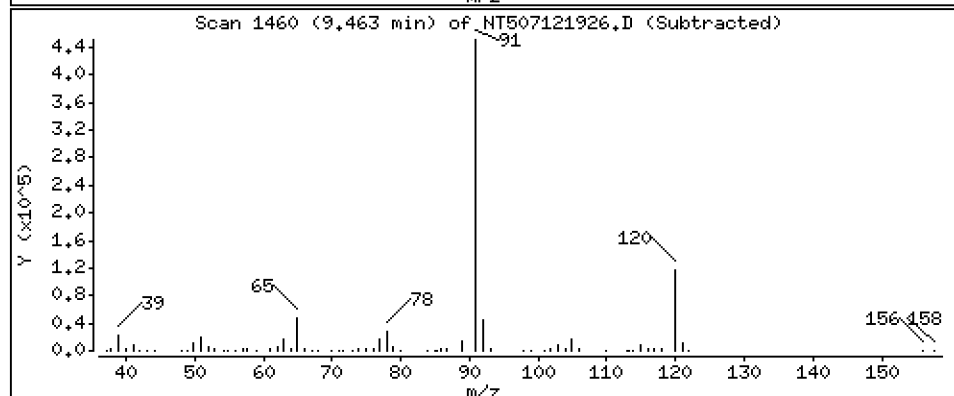
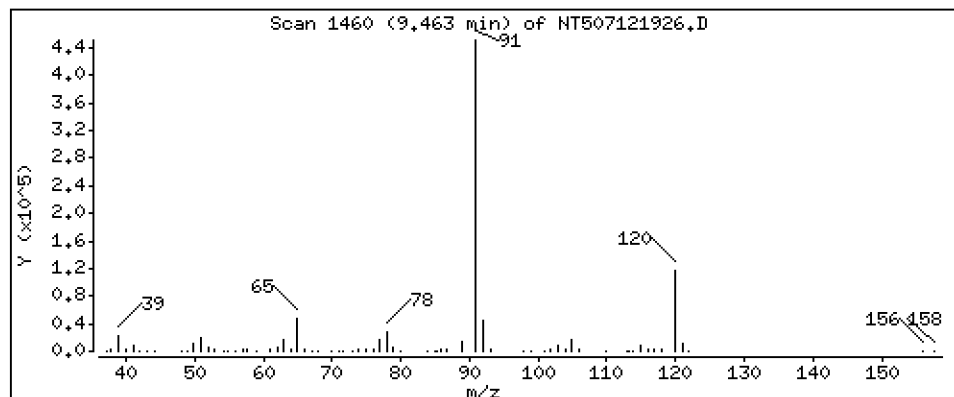
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 39,254 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

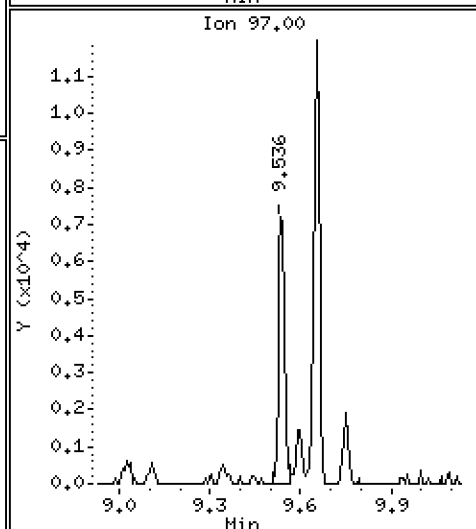
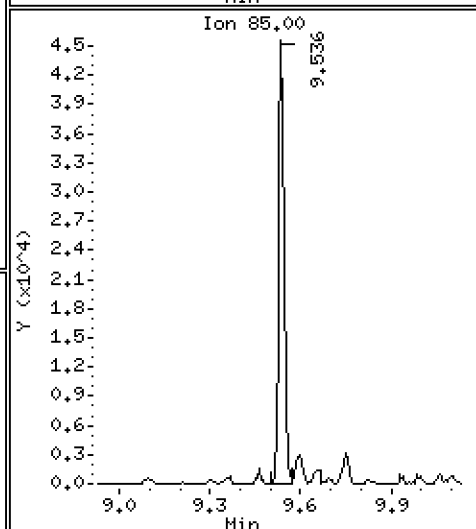
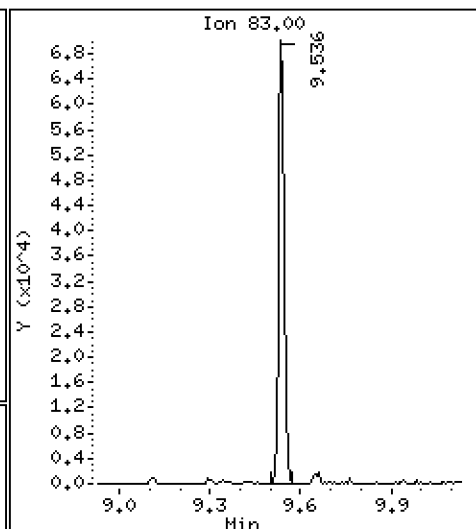
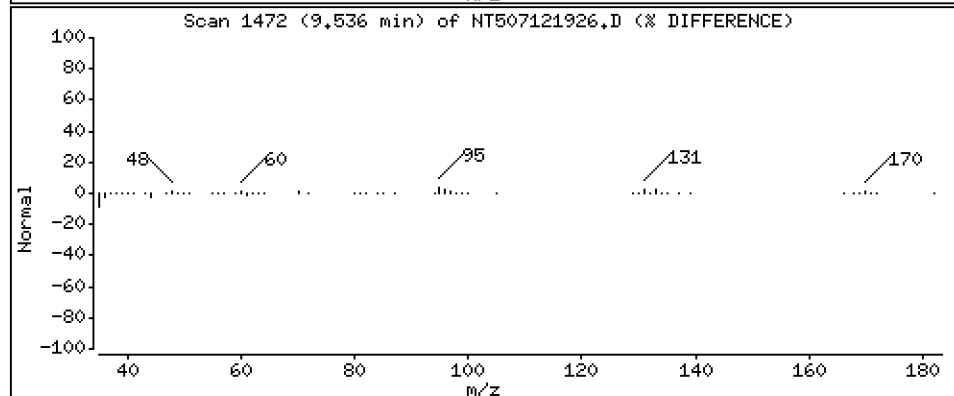
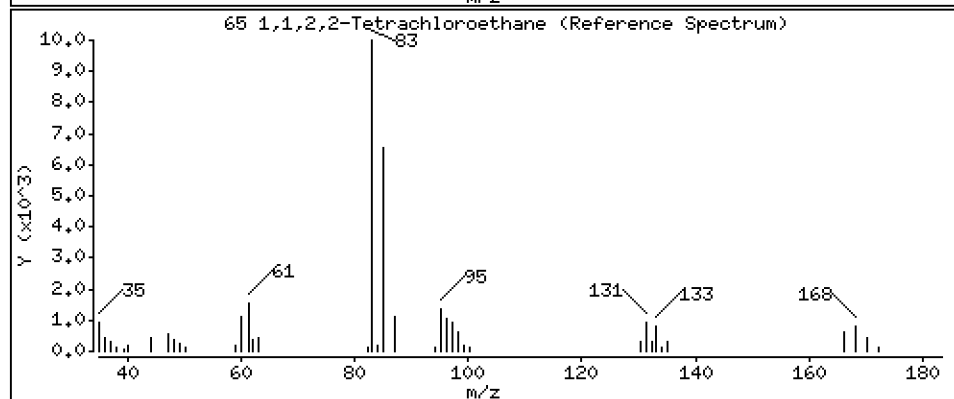
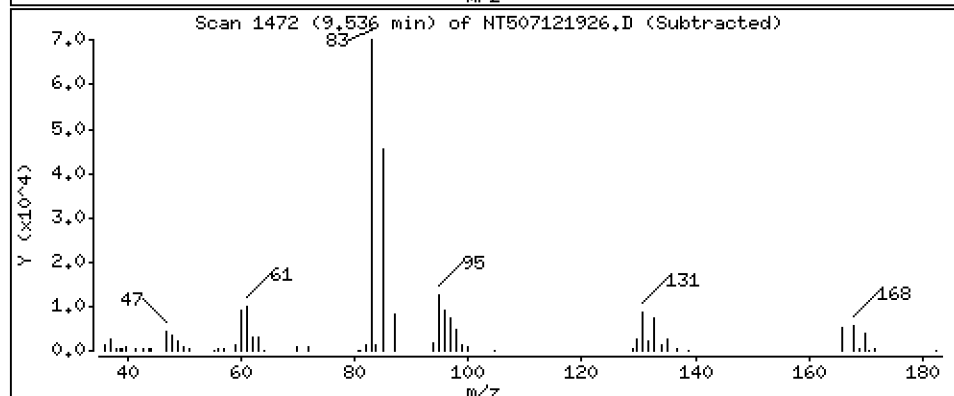
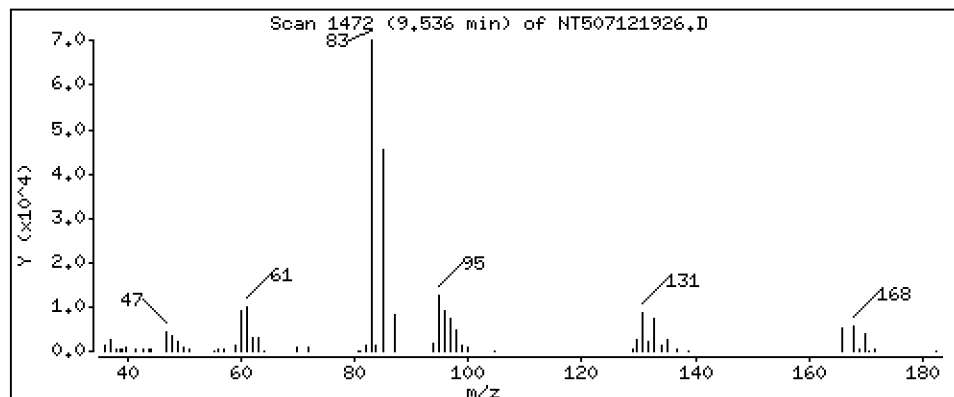
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 42,387 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

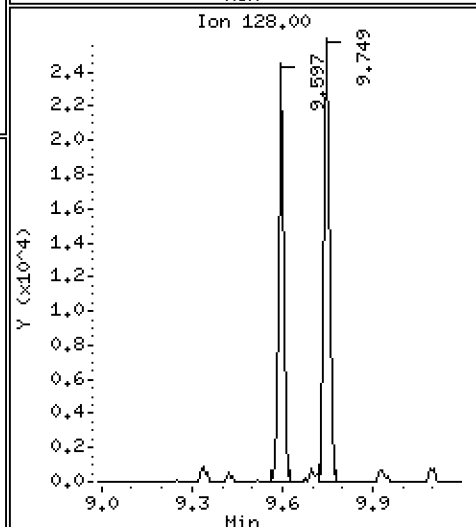
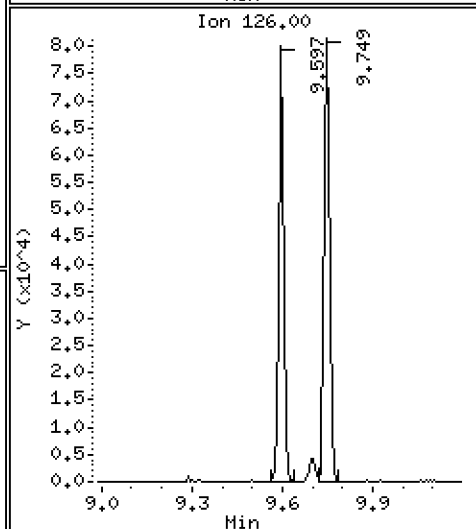
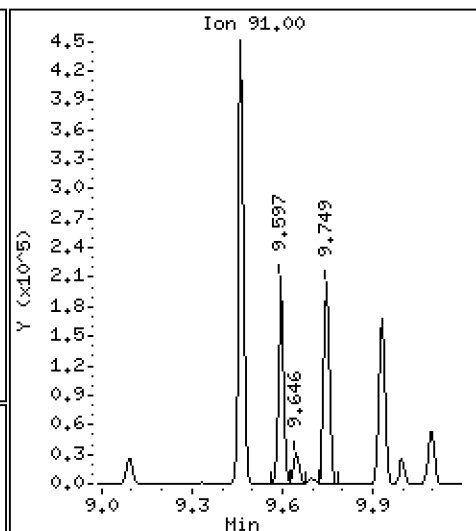
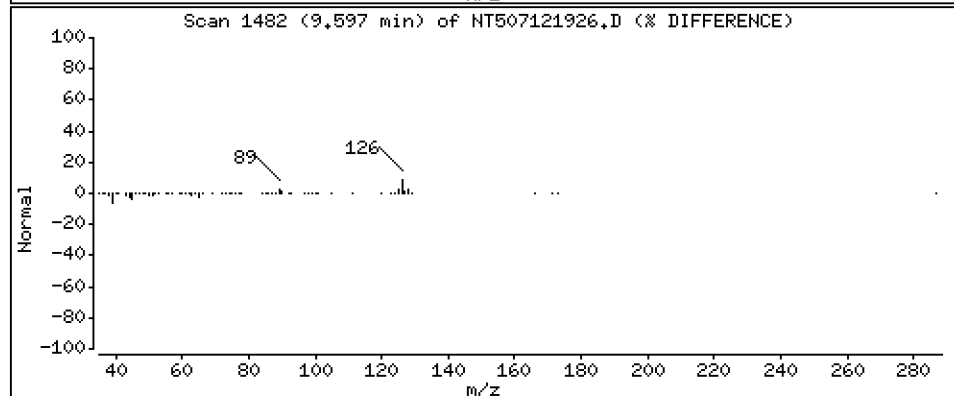
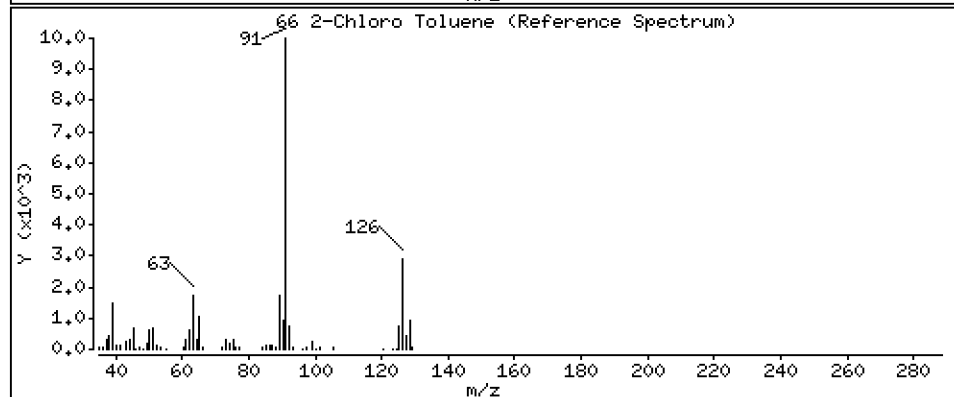
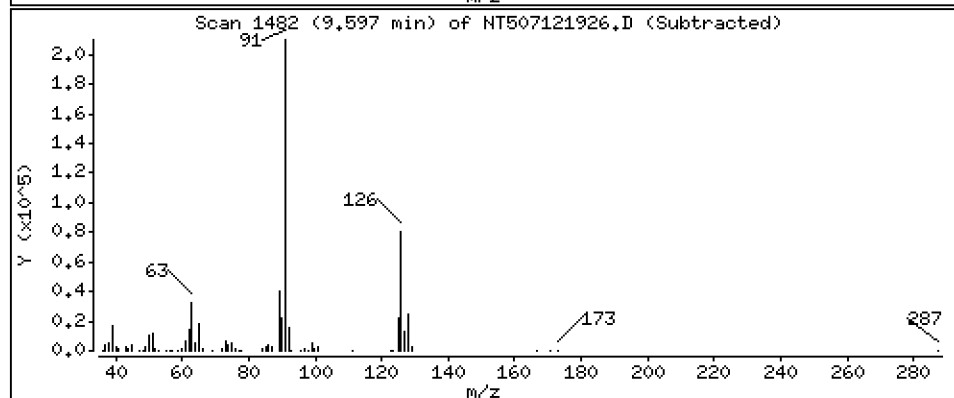
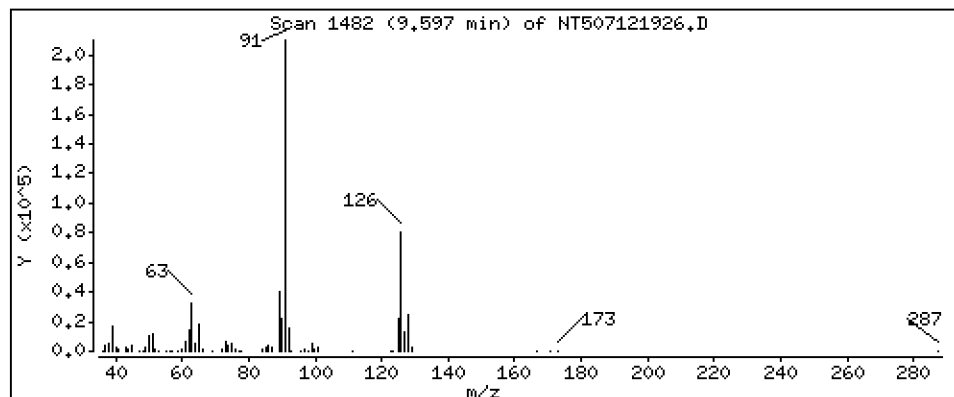
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 34,062 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

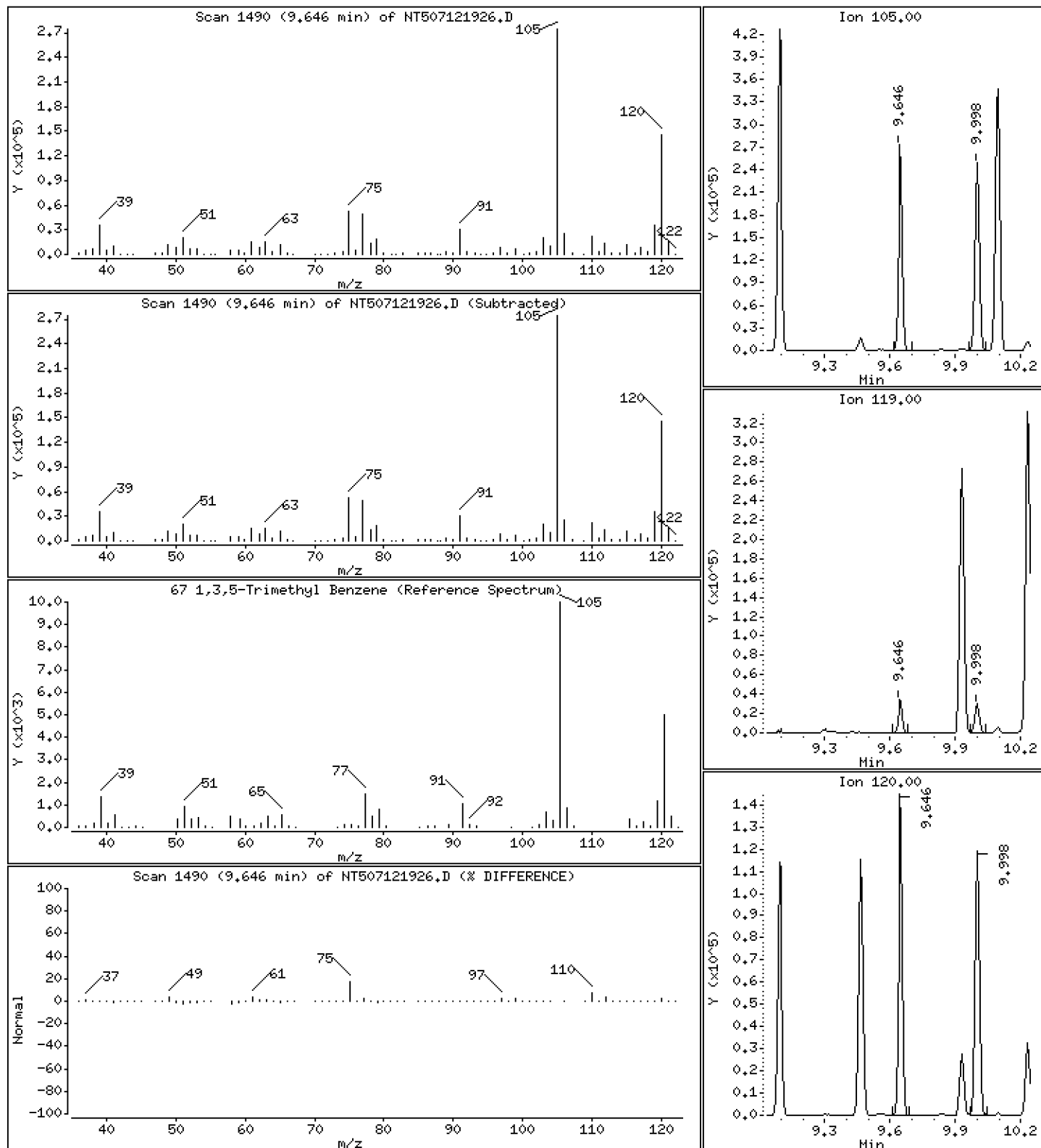
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 33,625 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

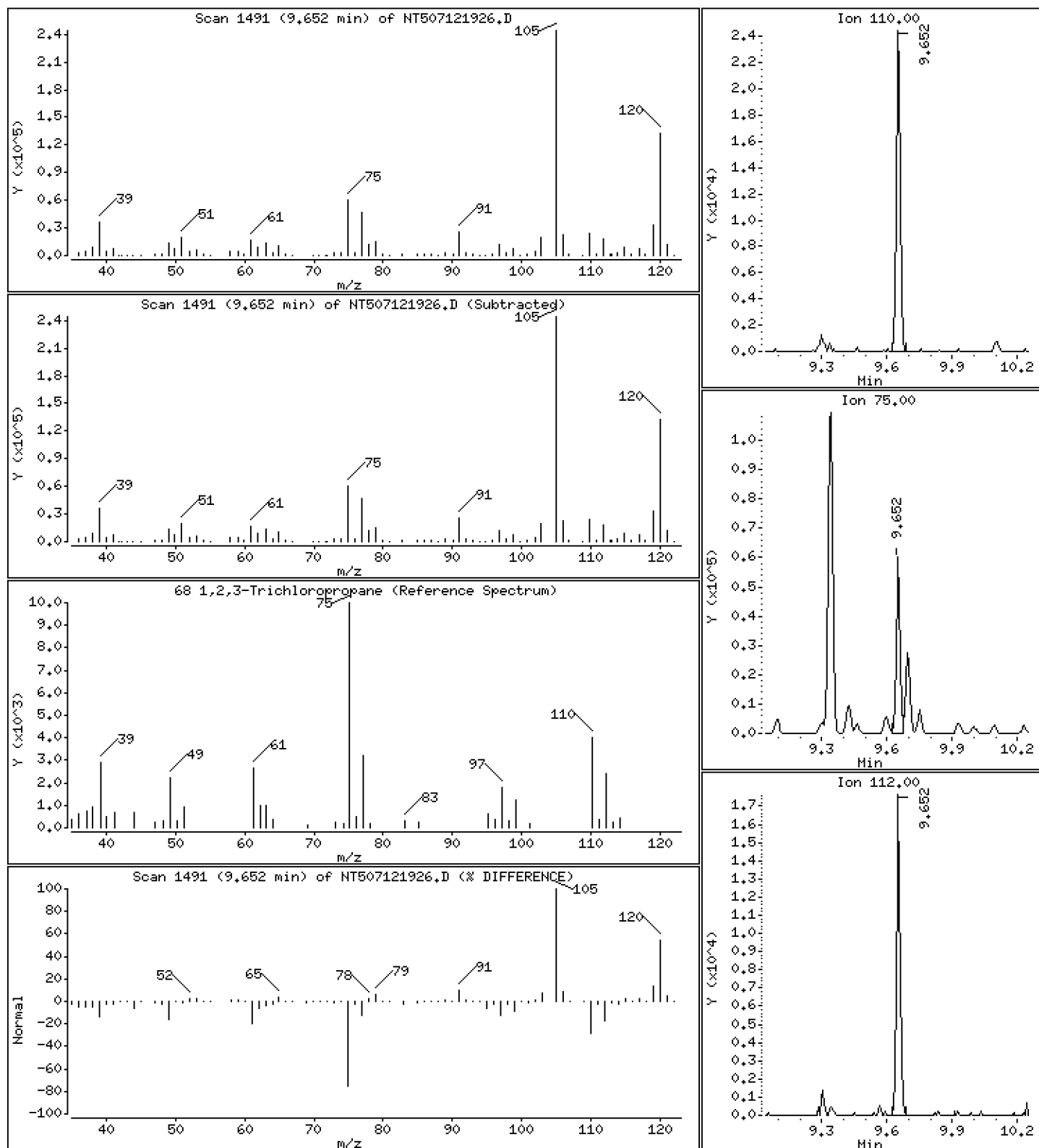
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 45.015 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

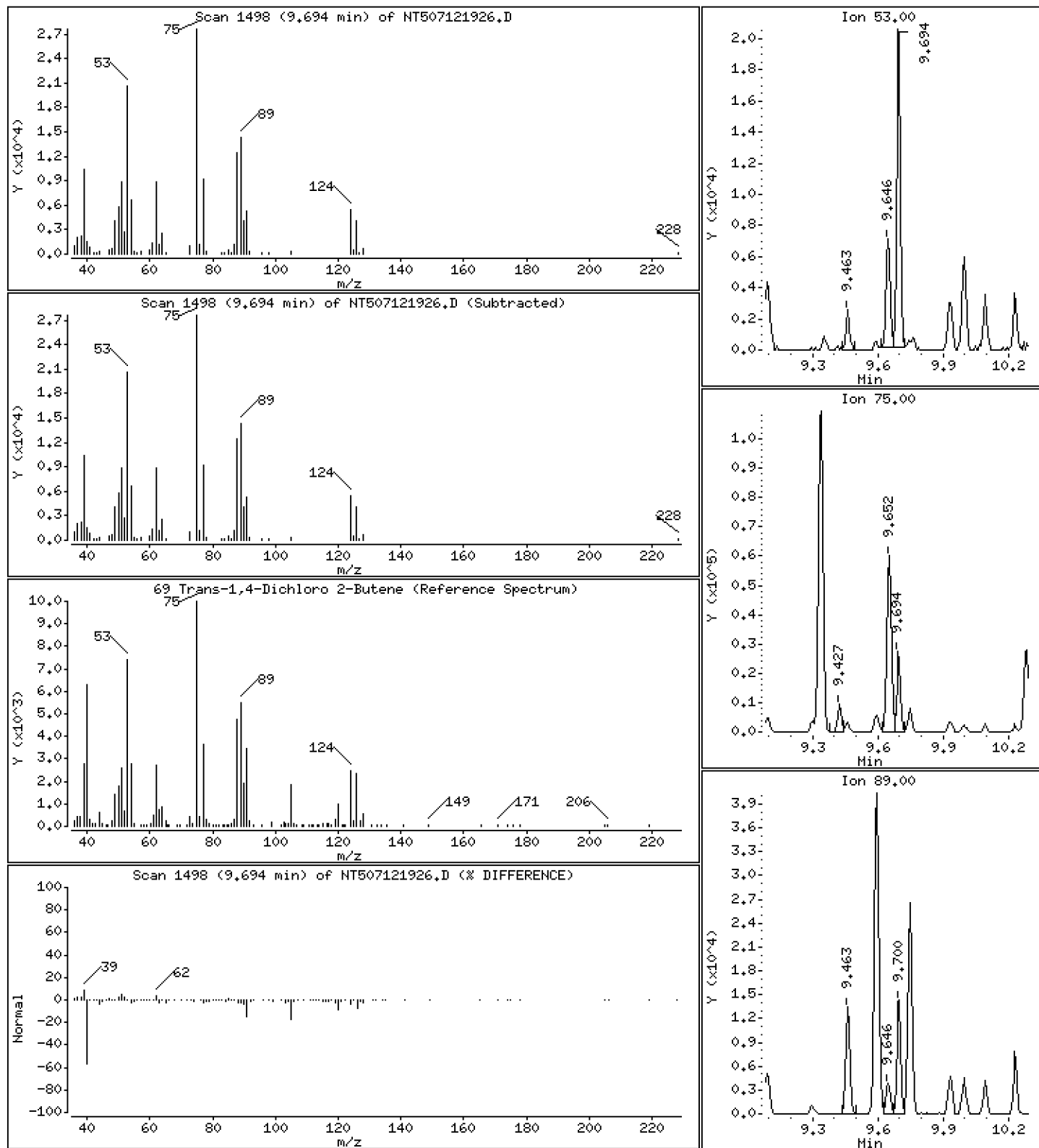
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 43,997 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

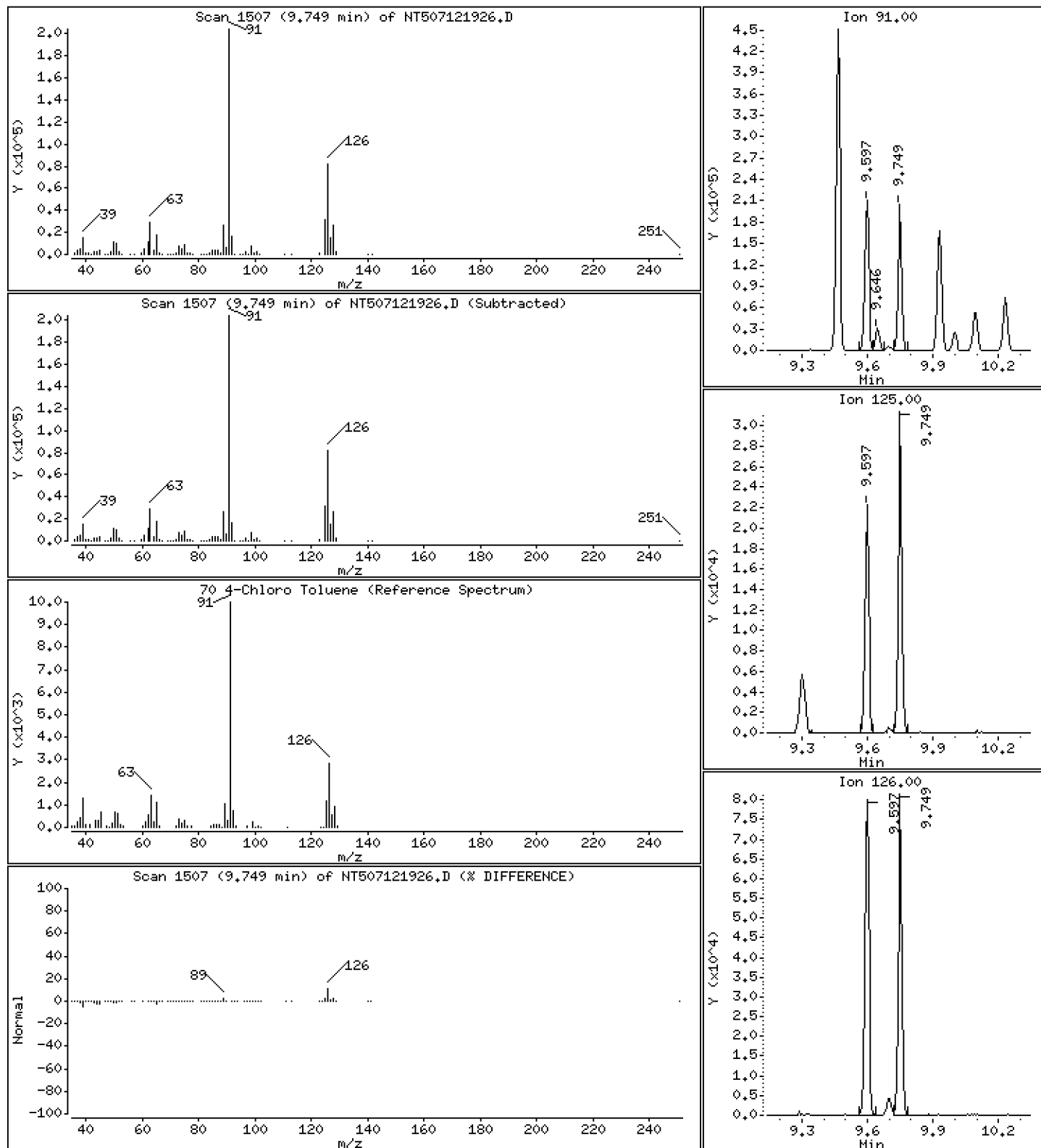
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 30.945 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

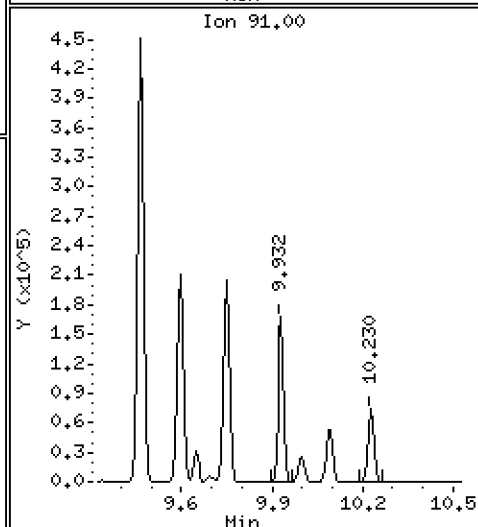
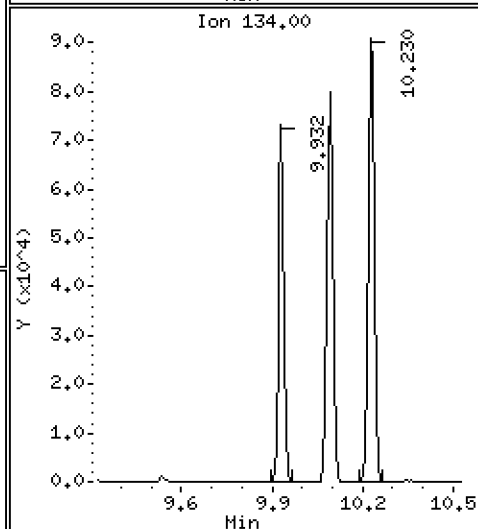
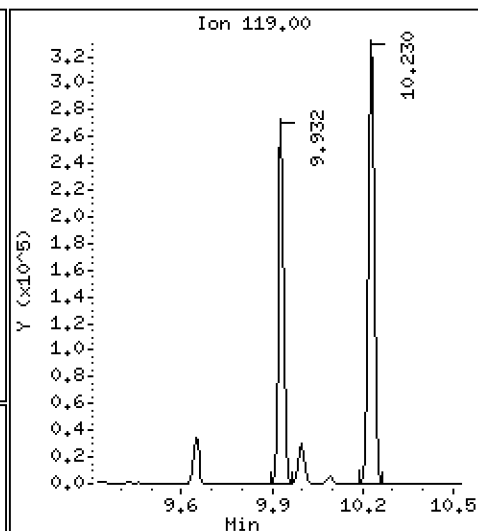
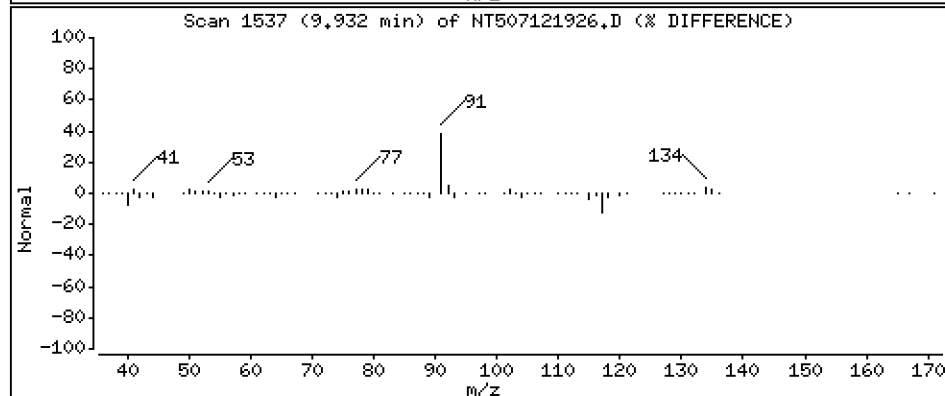
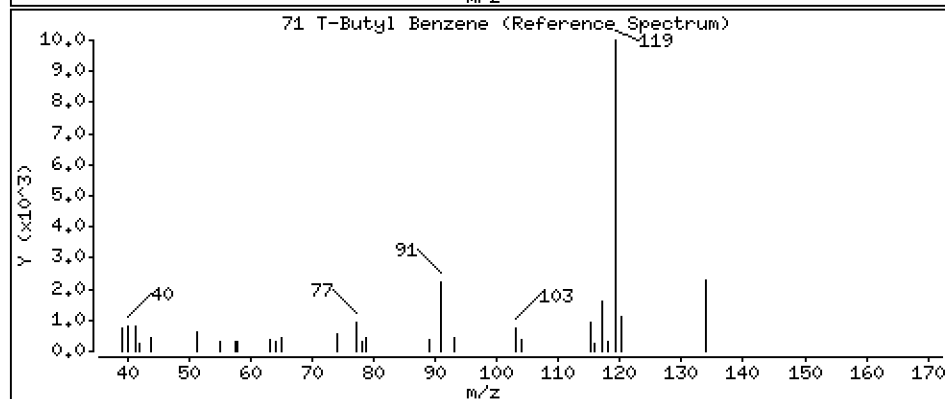
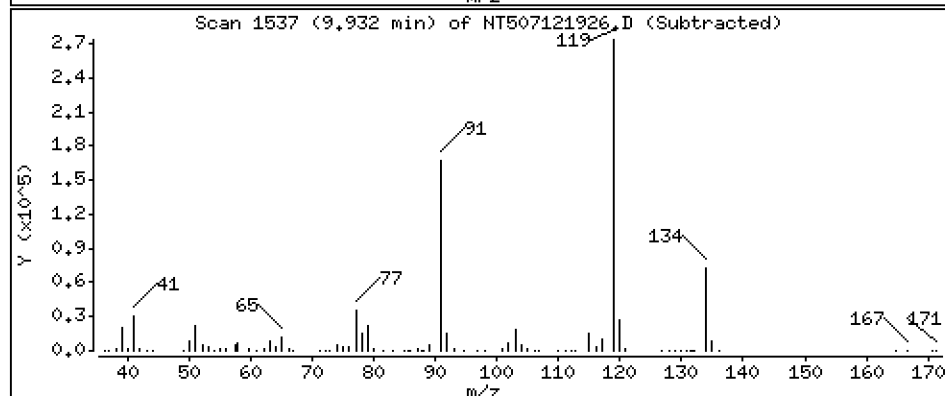
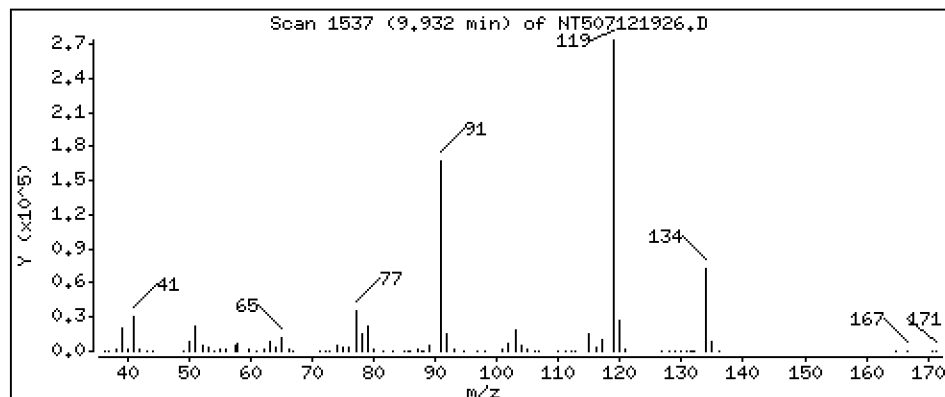
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 37,486 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

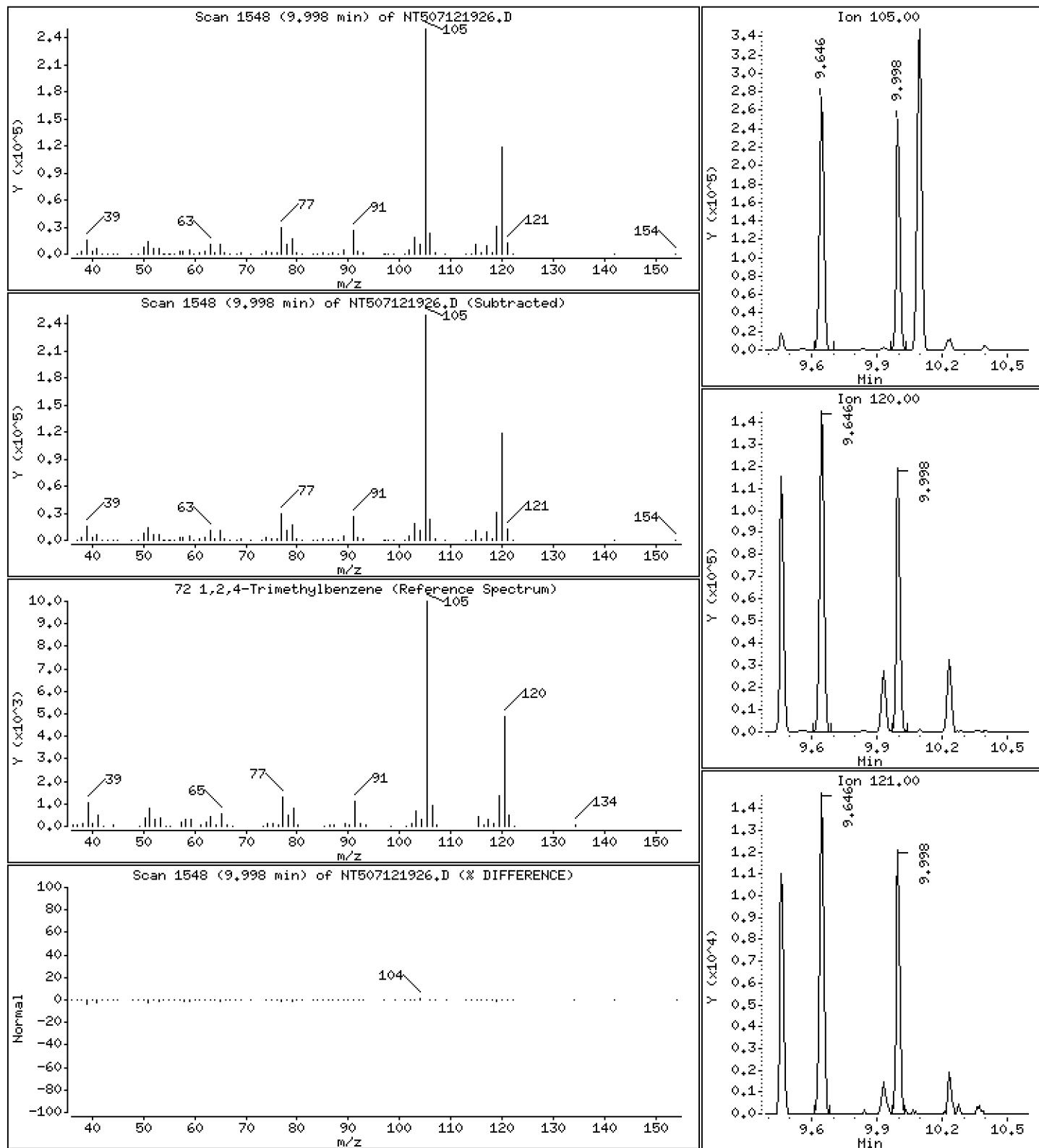
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 31.421 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

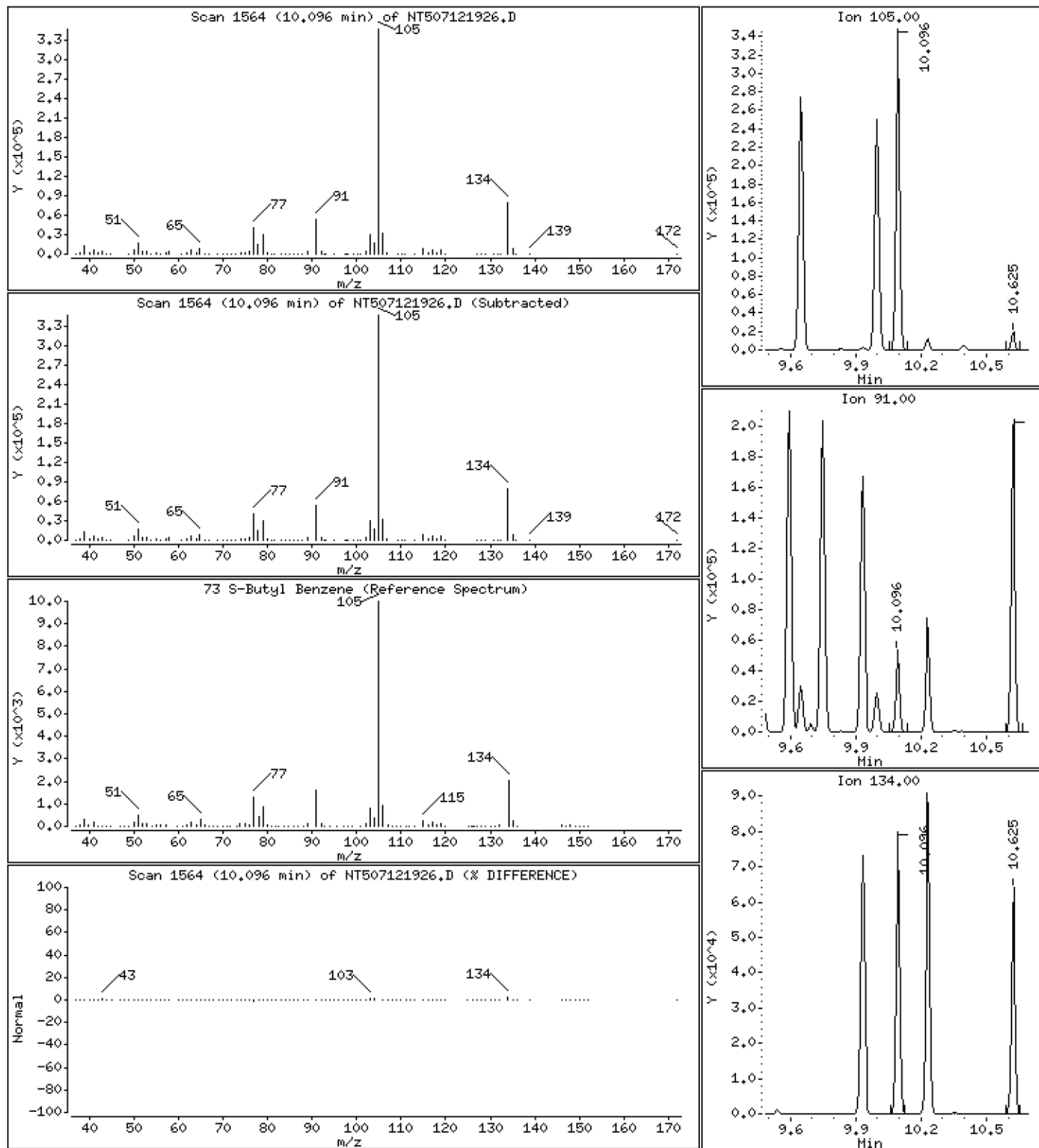
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 33,262 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

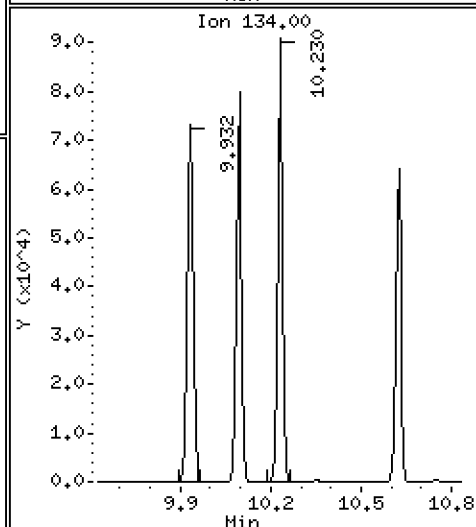
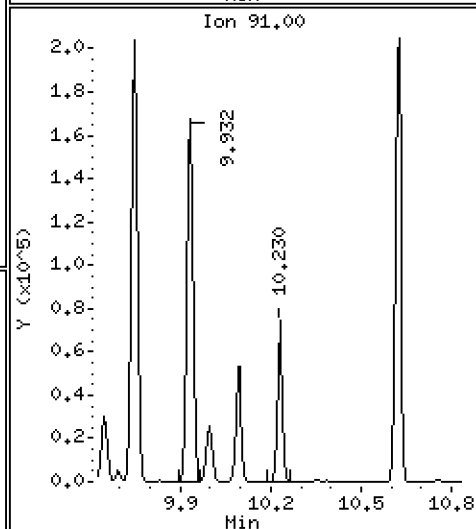
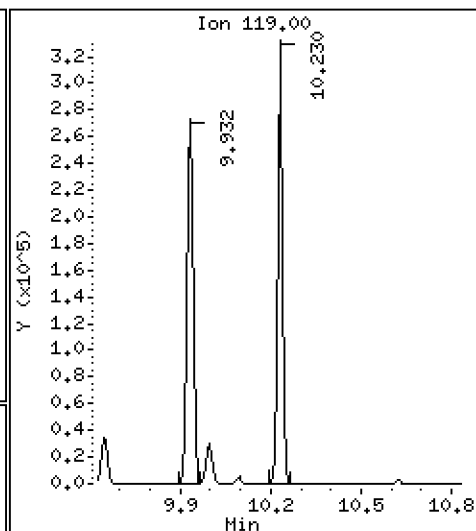
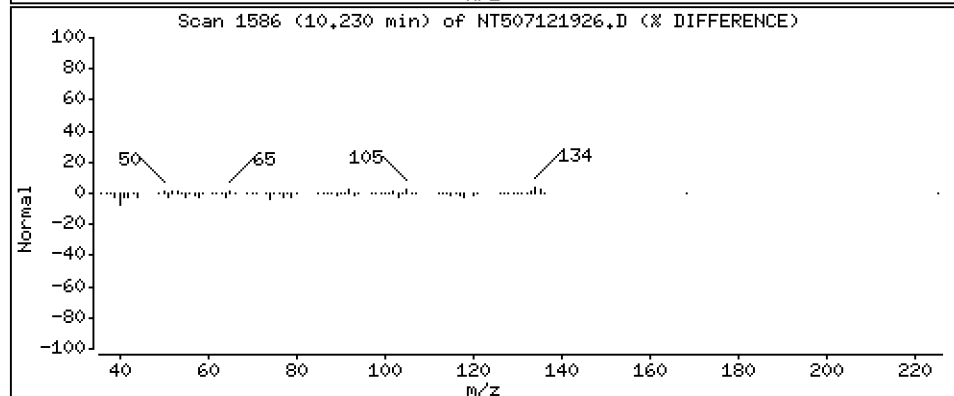
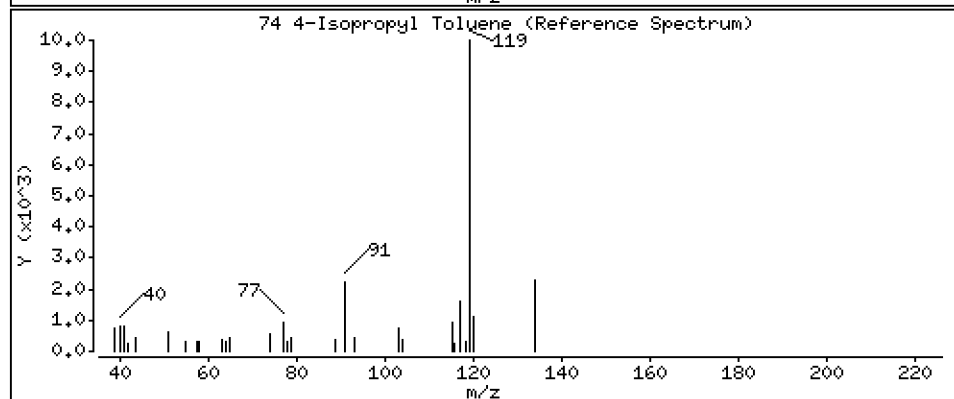
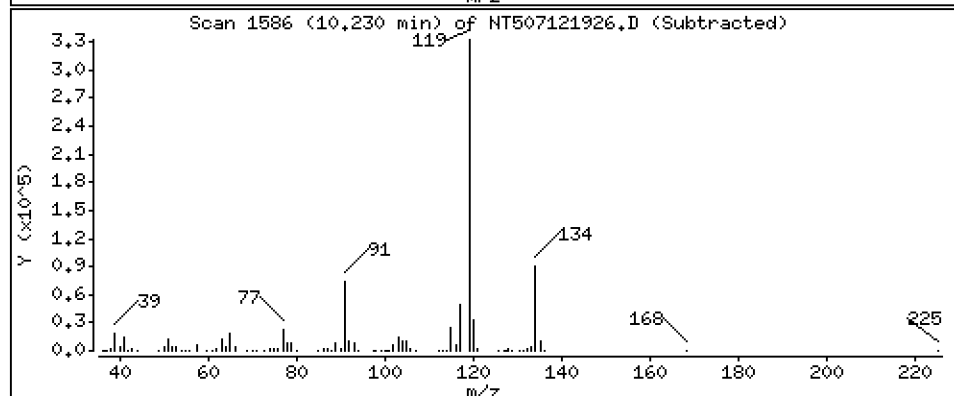
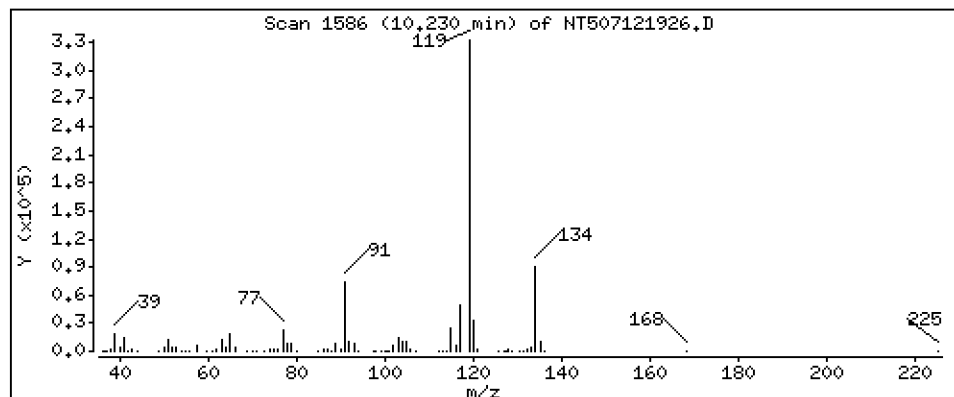
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 35,321 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

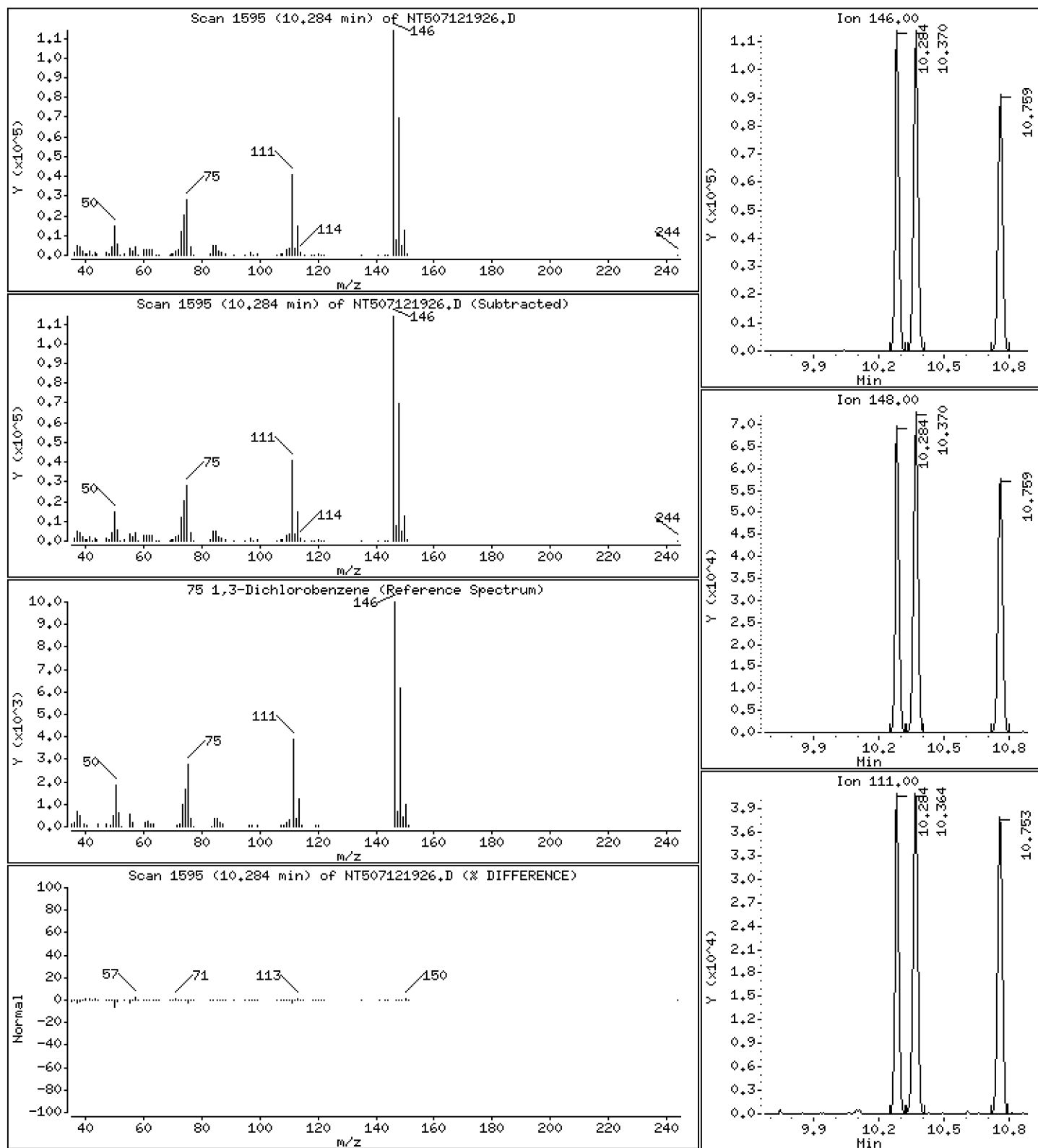
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 23,435 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

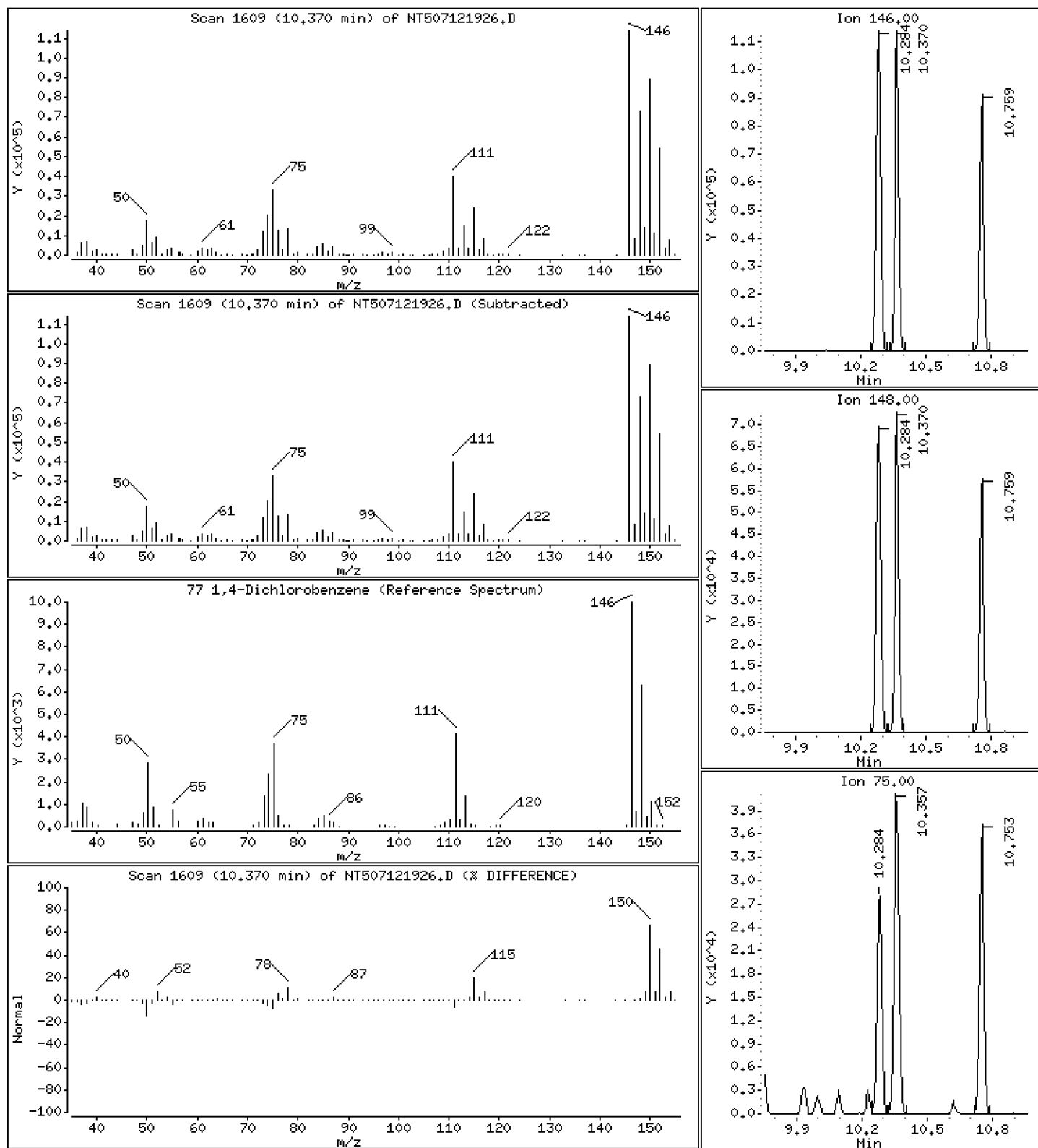
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 23,395 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

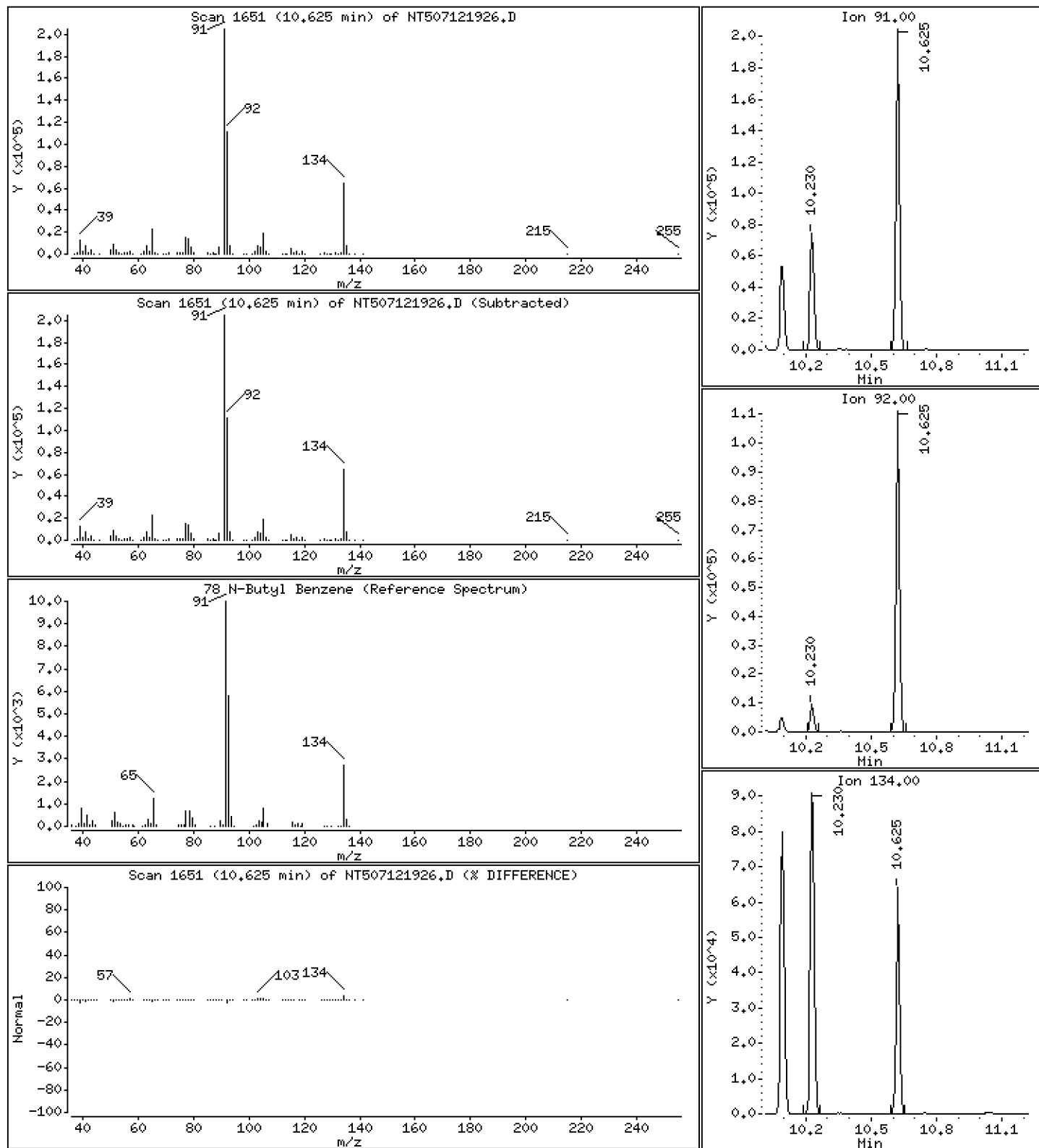
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 26,047 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

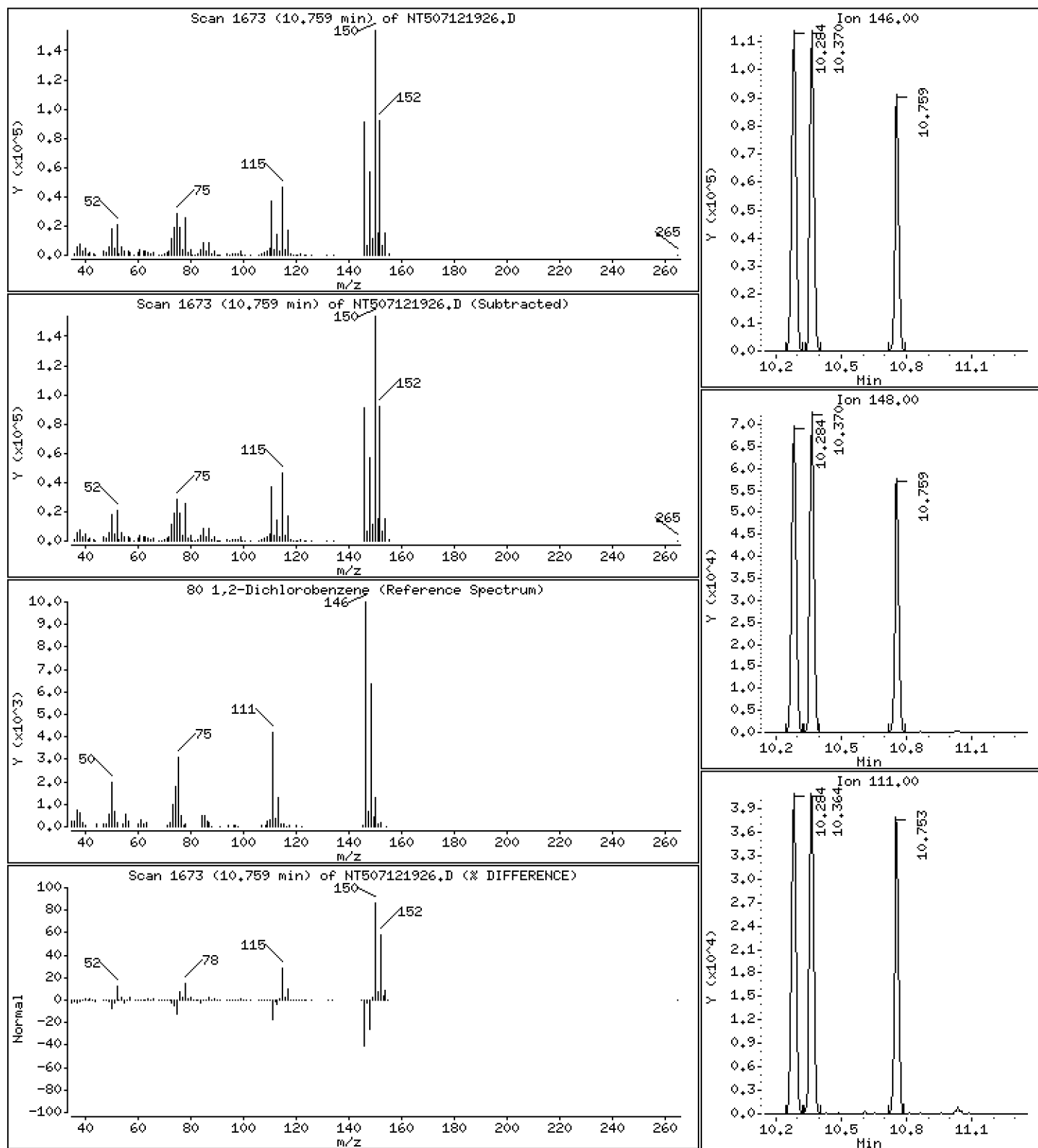
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 21,183 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

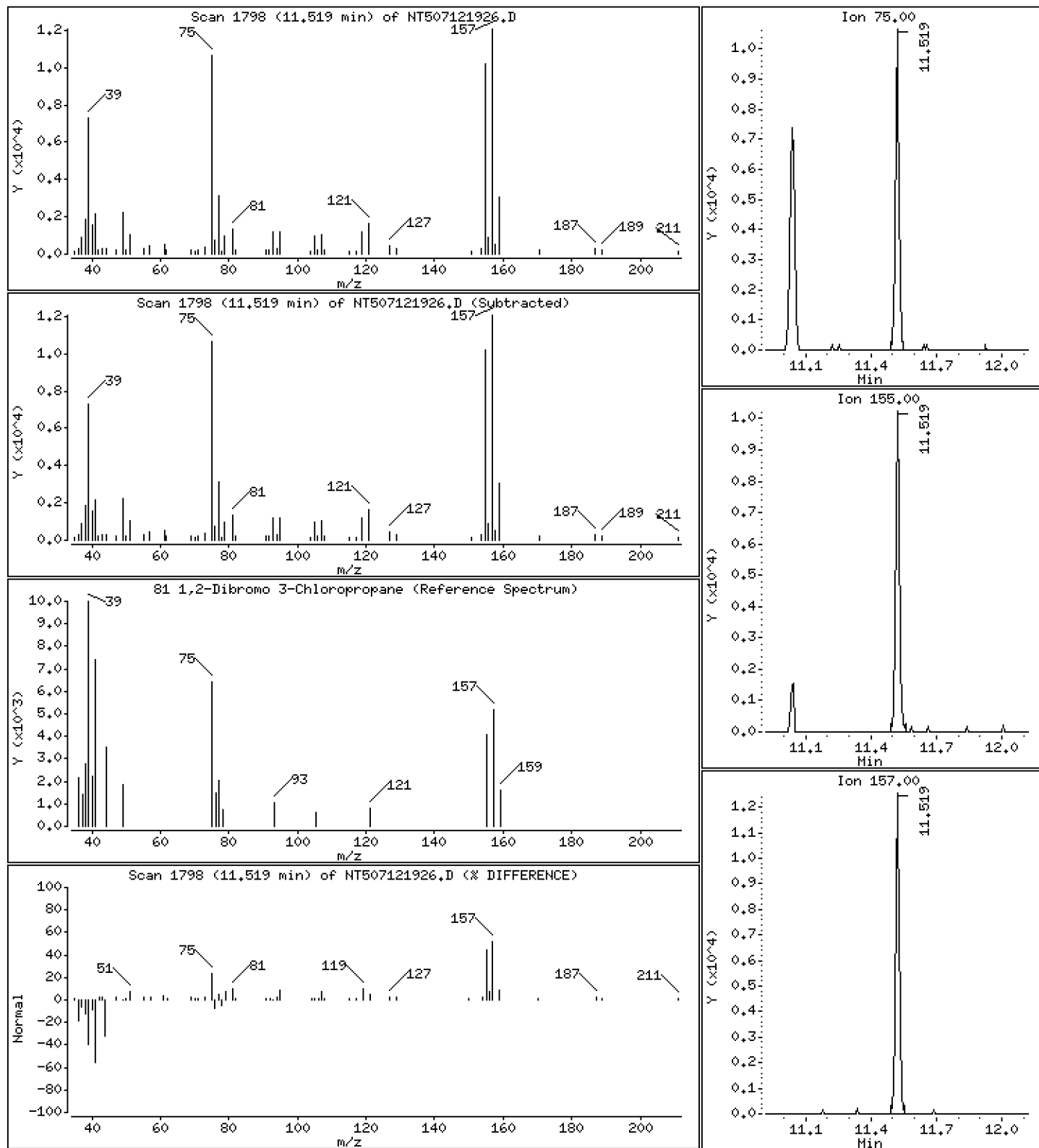
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 33,217 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHC0316-MSD1

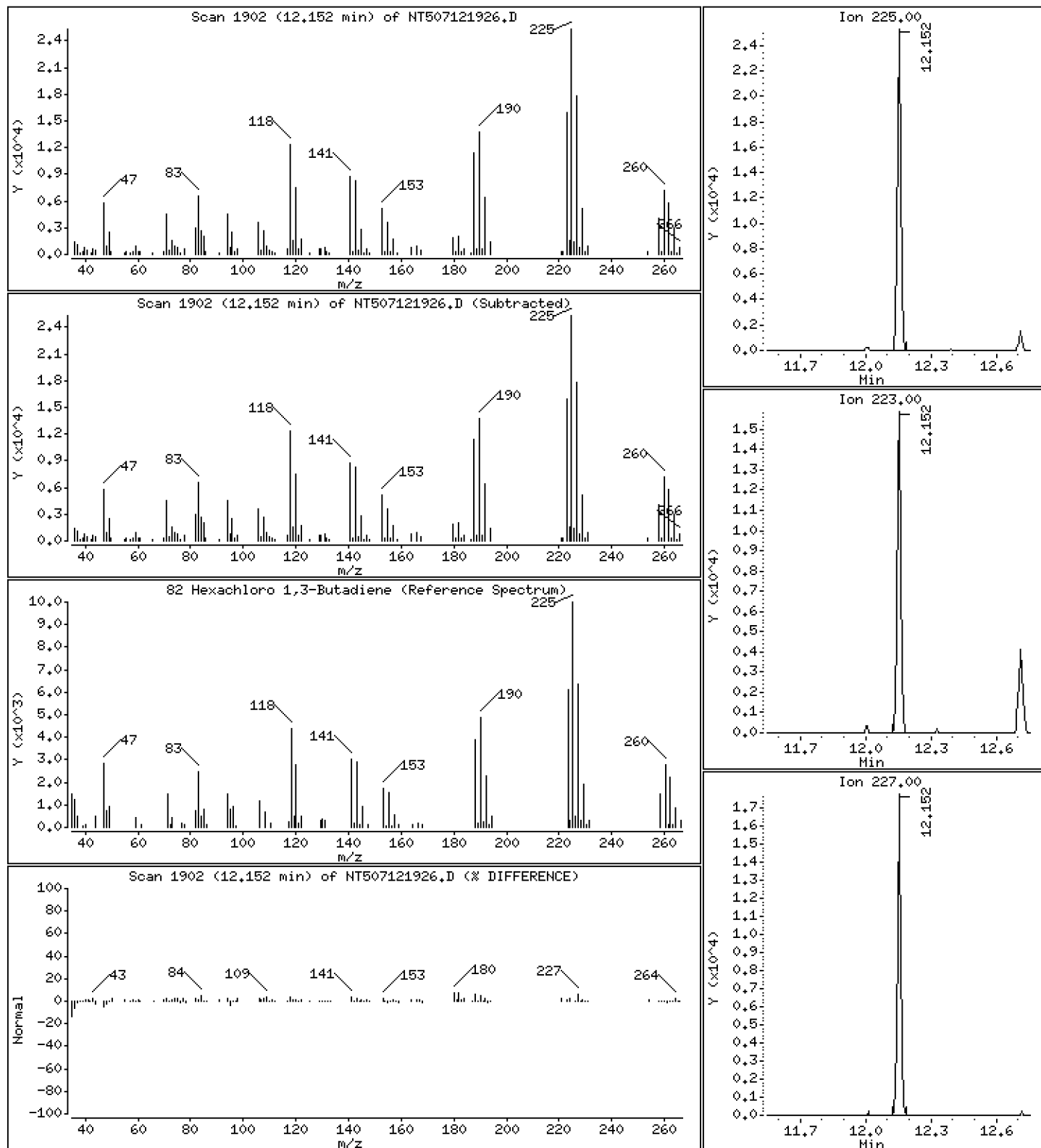
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

82 Hexachloro 1,3-Butadiene

Concentration: 14,644 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

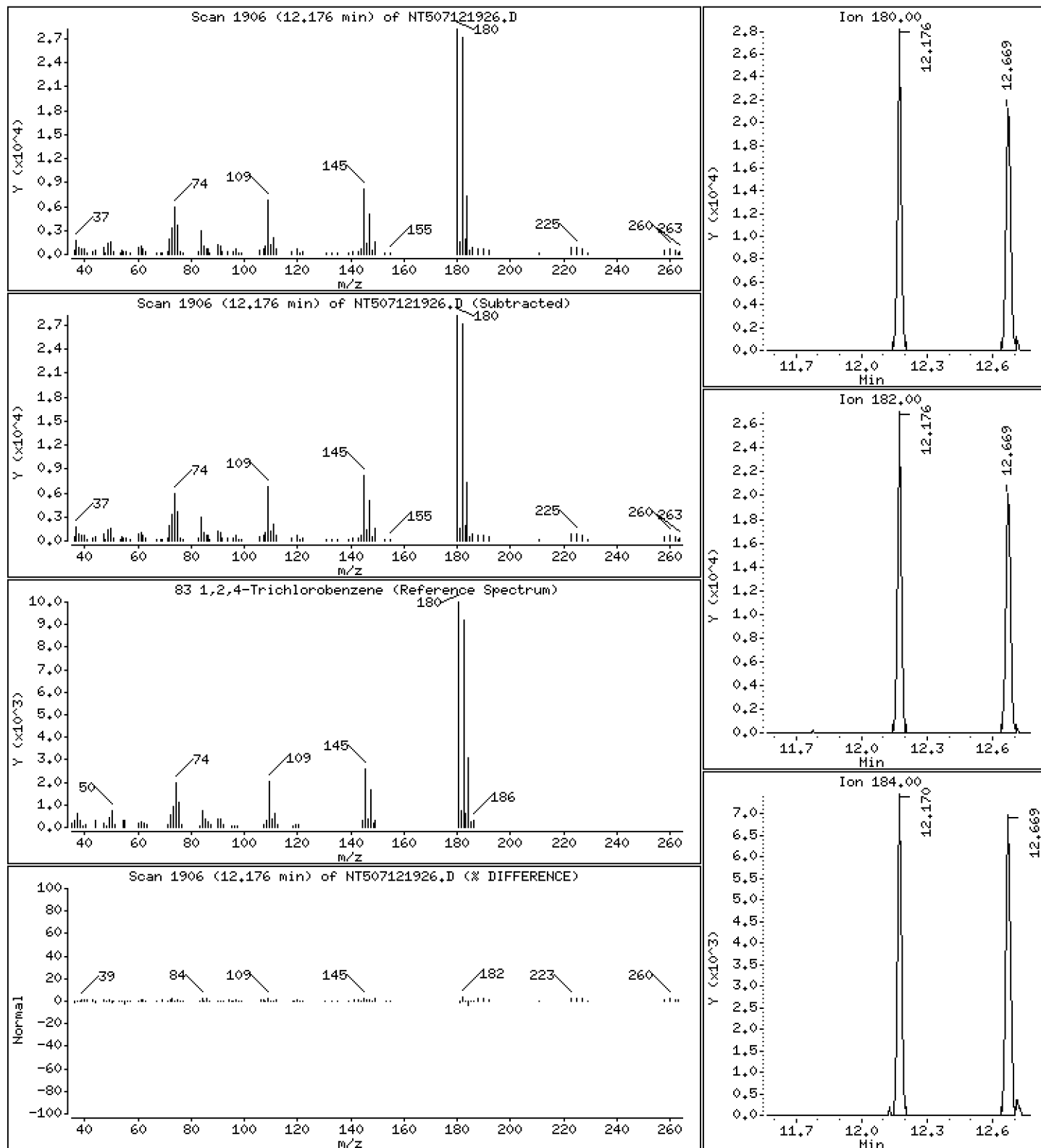
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

83 1,2,4-Trichlorobenzene

Concentration: 9.715 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

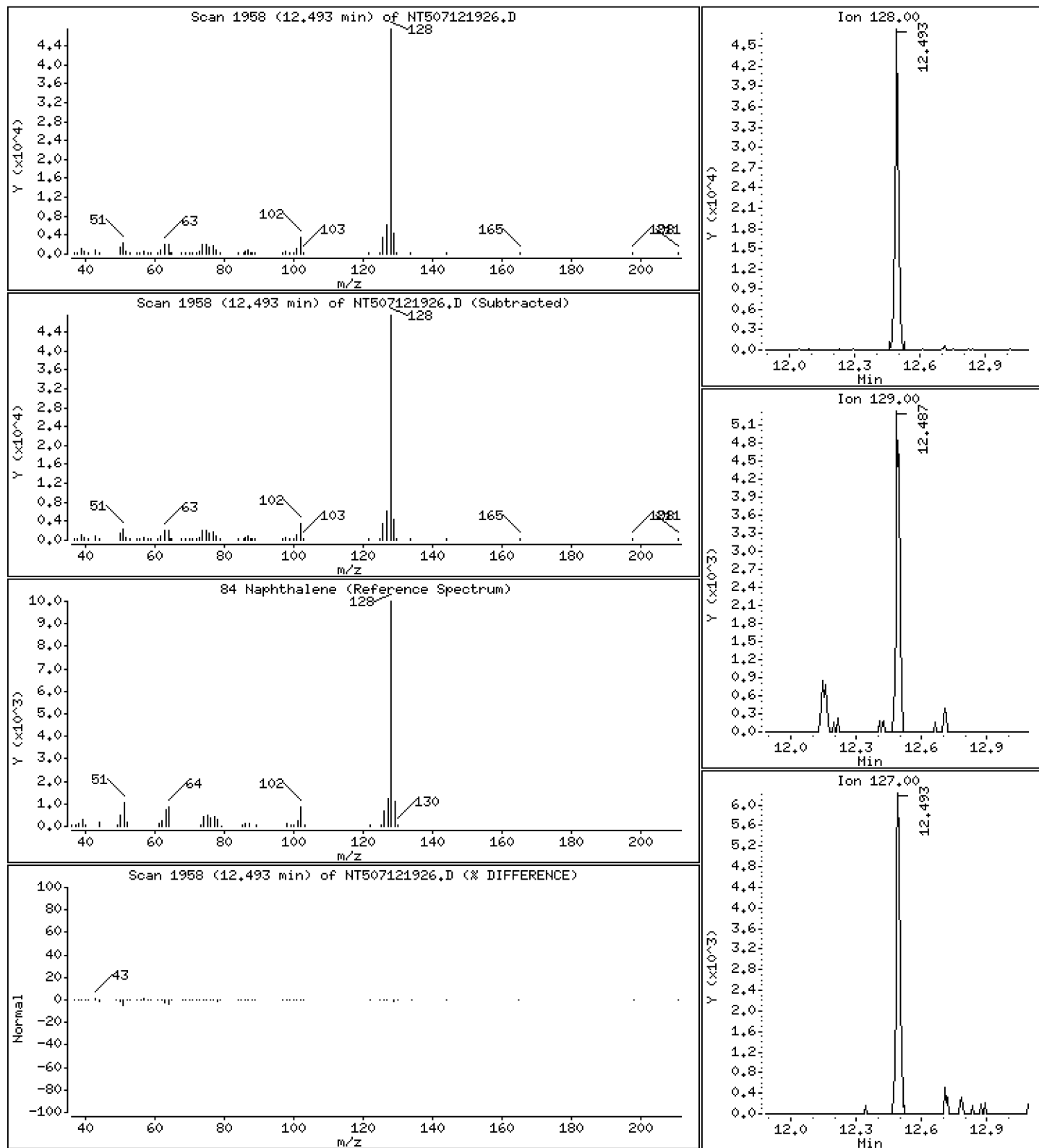
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

84 Naphthalene

Concentration: 7.465 ug/Kg



Date : 12-JUL-2019 22:32

Client ID:

Instrument: nt5.i

Sample Info: BHG0316-MSD1

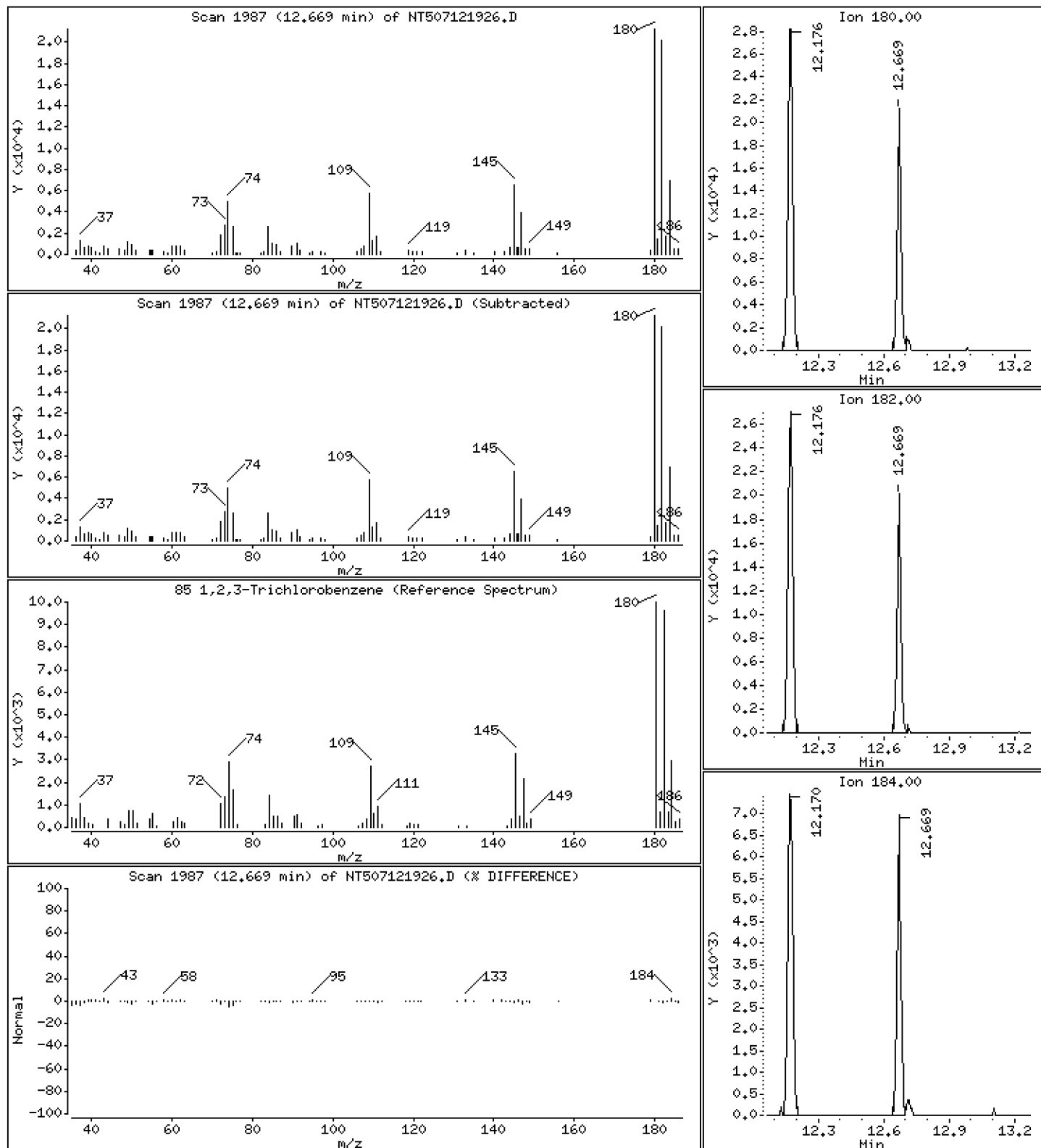
Operator: PB

Column phase: RTXVMS

Column diameter: 0.18

85 1,2,3-Trichlorobenzene

Concentration: 8.231 ug/Kg



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121926.D
 Lab Smp Id: BHG0316-MSD1
 Inj Date : 12-JUL-2019 22:32
 Operator : PB Inst ID: nt5.i
 Smp Info : BHG0316-MSD1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4 QC Sample: LCS
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE		ON-COLUMN	FINAL
								(ug/Kg)	(ug/Kg)
=====	====		====	=====	=====	=====		=====	=====
1 Dichlorodifluoromethane	85		1.329	1.329	(0.249)	175807		37.5341	37.534
2 Chloromethane	50		1.487	1.487	(0.279)	156124		40.2037	40.204
3 Vinyl Chloride	62		1.560	1.554	(0.293)	164320		41.9180	41.918
4 Bromomethane	94		1.840	1.840	(0.345)	127099		44.1383	44.138
5 Chloroethane	64		1.962	1.943	(0.368)	104267		33.6809	33.681
6 Trichlorofluoromethane	101		2.089	2.059	(0.392)	295210		39.5231	39.523
7 1,1-Dichloroethene	96		2.540	2.534	(0.476)	160186		41.8106	41.811
8 Carbon Disulfide	76		2.546	2.540	(0.477)	437688		40.9421	40.942
9 112Trichloro122Trifluoroethane	101		2.588	2.588	(0.485)	148208		42.3828	42.383
10 Iodomethane	142		2.673	2.667	(0.501)	197182		39.4530	39.453
11 Bromoethane	108		2.801	2.795	(0.525)	105650		40.9633	40.963
12 Acrolein	56		2.935	2.911	(0.550)	20822		53.4860	53.486 (R)
13 Methylene Chloride	84		3.160	3.154	(0.593)	161849		42.5444	42.544
14 Acetone	43		3.294	3.257	(0.618)	279744		408.434	408.43 (R)
15 Trans-1,2-Dichloroethene	96		3.318	3.312	(0.622)	169136		41.0814	41.081
16 Methyl tert butyl ether	73		3.495	3.483	(0.655)	437530		49.0331	49.033
173 n-Hexane	41		3.495	3.483	(0.655)	88256			
17 1,1-Dichloroethane	63		3.951	3.939	(0.741)	276345		44.7361	44.736
18 Acrylonitrile	53		4.048	4.030	(0.759)	36437		44.7765	44.776
19 Vinyl Acetate	43		4.255	4.243	(0.798)	115624		20.4148	20.415 (R)
20 Cis-1,2-Dichloroethene	96		4.468	4.462	(0.838)	179410		42.4044	42.404
22 2,2-Dichloropropane	77		4.559	4.553	(0.855)	283648		47.6510	47.651
23 Bromochloromethane	128		4.651	4.645	(0.872)	93425		44.9745	44.975
24 Chloroform	83		4.736	4.730	(0.888)	309038		47.4926	47.493
25 Carbon Tetrachloride	117		4.815	4.815	(0.832)	288350		48.6246	48.625
\$ 27 Dibromofluoromethane	111		4.900	4.894	(0.919)	292491		57.5433	57.543 (R)
26 1,1,1-Trichloroethane	97		4.888	4.888	(0.917)	320872		50.2818	50.282
28 1,1-Dichloropropene	75		4.997	4.997	(0.863)	248529		51.8921	51.892
29 2-Butanone	72		5.064	5.046	(0.950)	94938		294.939	294.94
30 Benzene	78		5.222	5.222	(0.902)	745060		52.1669	52.167
* 31 Pentafluorobenzene	168		5.332	5.338	(1.000)	464791		50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.350	(1.005)	298370		70.1713	70.171 (R)
33 1,2-Dichloroethane	62		5.417	5.411	(0.936)	203482		49.6028	49.603

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130	5.733	5.740	(0.991)	180391	40.4763	40.476
* 35 1,4-Difluorobenzene	114	5.788	5.782	(1.000)	805733	50.0000	
37 Dibromomethane	93	6.098	6.098	(1.054)	88925	45.3870	45.387
38 1,2-Dichloropropane	63	6.190	6.184	(1.069)	143031	45.7119	45.712
39 Bromodichloromethane	83	6.257	6.251	(1.081)	206302	44.3107	44.311
172 2-Pentanone	86	6.561	6.543	(1.133)	108366	266.263	266.26
40 2-Chloroethyl Vinyl Ether	63	Compound Not Detected.					
41 Cis 1,3-dichloropropene	75	6.792	6.786	(1.173)	228157	41.9425	41.942
\$ 42 d8-Toluene	98	6.944	6.938	(1.200)	950795	50.3905	50.391 (R)
43 Toluene	92	6.987	6.981	(1.207)	371542	38.1036	38.104 (R)
44 Tetrachloroethene	166	7.297	7.297	(0.884)	170550	37.1538	37.154 (R)
45 4-Methyl-2-Pentanone	58	7.346	7.333	(1.269)	234636	248.462	248.46
46 Trans 1,3-Dichloropropene	75	7.352	7.346	(1.270)	192699	40.0700	40.070
47 1,1,2-Trichloroethane	97	7.485	7.479	(1.293)	113582	39.5405	39.541
48 Chlorodibromomethane	129	7.625	7.619	(0.923)	138938	39.0793	39.079
49 1,3-Dichloropropane	76	7.711	7.705	(0.934)	193902	43.4004	43.400
50 1,2-Dibromoethane	107	7.820	7.814	(1.351)	109780	37.8166	37.817 (R)
51 2-Hexanone	43	8.051	8.045	(0.975)	557739	359.074	359.07 (R)
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	747792	50.0000	
53 Chlorobenzene	112	8.276	8.270	(1.002)	340348	31.9438	31.944 (R)
54 Ethyl Benzene	91	8.307	8.301	(1.006)	627669	35.8938	35.894 (R)
55 1,1,1,2-Tetrachloroethane	131	8.337	8.331	(1.010)	140052	36.9746	36.975 (R)
56 m,p-xylene	106	8.435	8.435	(1.021)	458330	64.3316	64.332 (R)
57 o-Xylene	106	8.812	8.806	(1.067)	212014	31.3047	31.305 (R)
58 Styrene	104	8.860	8.854	(1.073)	122675	11.3030	11.303 (R)
59 Bromoform	173	8.873	8.867	(0.857)	72341	39.9264	39.926
60 Isopropyl Benzene	105	9.092	9.086	(0.878)	582046	44.3354	44.335
61 Cyclohexanone	55	9.645	9.639	(1.168)	1063		
\$ 62 4-Bromofluorobenzene	174	9.341	9.335	(1.131)	280672	43.8426	43.843 (R)
63 Bromobenzene	156	9.426	9.420	(0.910)	112272	33.2023	33.202 (R)
64 N-Propyl Benzene	91	9.463	9.457	(0.914)	584109	39.2538	39.254
65 1,1,2,2-Tetrachloroethane	83	9.536	9.530	(0.921)	100144	42.3872	42.387
66 2-Chloro Toluene	91	9.596	9.590	(0.927)	289018	34.0623	34.062 (R)
67 1,3,5-Trimethyl Benzene	105	9.645	9.639	(0.931)	363875	33.6250	33.625 (R)
68 1,2,3-Trichloropropane	110	9.651	9.645	(0.932)	36911	45.0148	45.015
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.688	(0.936)	28394	43.9969	43.997
70 4-Chloro Toluene	91	9.749	9.743	(0.941)	272180	30.9451	30.945 (R)
71 T-Butyl Benzene	119	9.931	9.925	(0.959)	375994	37.4861	37.486 (R)
72 1,2,4-Trimethylbenzene	105	9.998	9.992	(0.965)	331344	31.4210	31.421 (R)
73 S-Butyl Benzene	105	10.095	10.089	(0.975)	484532	33.2620	33.262 (R)
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	441305	35.3206	35.321 (R)
75 1,3-Dichlorobenzene	146	10.284	10.278	(0.993)	156744	23.4354	23.435 (R)
* 76 d4-1,4-Dichlorobenzene	152	10.357	10.351	(1.000)	307805	50.0000	
77 1,4-Dichlorobenzene	146	10.369	10.363	(1.001)	153961	23.3950	23.395 (R)
78 N-Butyl Benzene	91	10.625	10.619	(1.026)	283750	26.0471	26.047 (R)
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	254860	47.4759	47.476 (R)
80 1,2-Dichlorobenzene	146	10.758	10.752	(1.039)	127937	21.1831	21.183 (R)
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.112)	14545	33.2166	33.217
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.173)	35995	14.6438	14.644 (R)
83 1,2,4-Trichlorobenzene	180	12.176	12.170	(1.176)	40226	9.71530	9.715 (R)
84 Naphthalene	128	12.492	12.492	(1.206)	63258	7.46519	7.465 (R)
85 1,2,3-Trichlorobenzene	180	12.669	12.669	(1.223)	30842	8.23127	8.231 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507121926.D Calibration Time: 12:25
 Lab Smp Id: BHG0316-MSD1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	464791	15.07
35 1,4-Difluorobenze	717664	358832	1435328	805733	12.27
52 d5-Chlorobenzene	696563	348282	1393126	747792	7.35
76 d4-1,4-Dichlorobe	380778	190389	761556	307805	-19.16

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.33	-0.11
35 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.36	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: BHG0316-MSD1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: voasoil.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	37.534	75.07	
2 Chloromethane	50.000	40.204	80.41	
3 Vinyl Chloride	50.000	41.918	83.84	
4 Bromomethane	50.000	44.138	88.28	
5 Chloroethane	50.000	33.681	67.36	
6 Trichlorofluoromet	50.000	39.523	79.05	
12 Acrolein	250.00	53.486	21.39*	
9 112Trichloro122Tri	50.000	42.383	84.77	
14 Acetone	250.00	408.43	163.37*	
7 1,1-Dichloroethene	50.000	41.811	83.62	
11 Bromoethane	50.000	40.963	81.93	
10 Iodomethane	50.000	39.453	78.91	
13 Methylene Chloride	50.000	42.544	85.09	
8 Carbon Disulfide	50.000	40.942	81.88	
18 Acrylonitrile	50.000	44.776	89.55	
15 Trans-1,2-Dichloro	50.000	41.081	82.16	
19 Vinyl Acetate	50.000	20.415	40.83*	
17 1,1-Dichloroethane	50.000	44.736	89.47	
29 2-Butanone	250.00	294.94	117.98	
22 2,2-Dichloropropan	50.000	47.651	95.30	
20 Cis-1,2-Dichloroet	50.000	42.404	84.81	
24 Chloroform	50.000	47.493	94.99	
23 Bromochloromethane	50.000	44.975	89.95	
26 1,1,1-Trichloroeth	50.000	50.282	100.56	
28 1,1-Dichloropropen	50.000	51.892	103.78	
25 Carbon Tetrachlori	50.000	48.625	97.25	
33 1,2-Dichloroethane	50.000	49.603	99.21	
30 Benzene	50.000	52.167	104.33	
34 Trichloroethene	50.000	40.476	80.95	
38 1,2-Dichloropropan	50.000	45.712	91.42	
39 Bromodichlorometha	50.000	44.311	88.62	
172 2-Pentanone	250.00	266.26	106.51	
37 Dibromomethane	50.000	45.387	90.77	
40 2-Chloroethyl Vin	50.000	0.0000	*	
45 4-Methyl-2-Pentano	250.00	248.46	99.38	
41 Cis 1,3-dichloropr	50.000	41.942	83.88	
43 Toluene	50.000	38.104	76.21*	
46 Trans 1,3-Dichloro	50.000	40.070	80.14	
51 2-Hexanone	250.00	359.07	143.63*	
47 1,1,2-Trichloroeth	50.000	39.541	79.08	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
49 1,3-Dichloropropan	50.000	43.400	86.80	
44 Tetrachloroethene	50.000	37.154	74.31*	
48 Chlorodibromometha	50.000	39.079	78.16	
50 1,2-Dibromoethane	50.000	37.817	75.63*	
53 Chlorobenzene	50.000	31.944	63.89*	
55 1,1,1,2-Tetrachlor	50.000	36.975	73.95*	
54 Ethyl Benzene	50.000	35.894	71.79*	
56 m,p-xylene	100.00	64.332	64.33*	
57 o-Xylene	50.000	31.305	62.61*	
58 Styrene	50.000	11.303	22.61*	
60 Isopropyl Benzene	50.000	44.335	88.67	
59 Bromoform	50.000	39.926	79.85	
65 1,1,2,2-Tetrachlor	50.000	42.387	84.77	
68 1,2,3-Trichloropro	50.000	45.015	90.03	
69 Trans-1,4-Dichloro	50.000	43.997	87.99	
64 N-Propyl Benzene	50.000	39.254	78.51	
63 Bromobenzene	50.000	33.202	66.40*	
67 1,3,5-Trimethyl Be	50.000	33.625	67.25*	
66 2-Chloro Toluene	50.000	34.062	68.12*	
70 4-Chloro Toluene	50.000	30.945	61.89*	
71 T-Butyl Benzene	50.000	37.486	74.97*	
72 1,2,4-Trimethylben	50.000	31.421	62.84*	
73 S-Butyl Benzene	50.000	33.262	66.52*	
74 4-Isopropyl Toluen	50.000	35.321	70.64*	
75 1,3-Dichlorobenzen	50.000	23.435	46.87*	
77 1,4-Dichlorobenzen	50.000	23.395	46.79*	
78 N-Butyl Benzene	50.000	26.047	52.09*	
80 1,2-Dichlorobenzen	50.000	21.183	42.37*	
81 1,2-Dibromo 3-Chlo	50.000	33.217	66.43	
83 1,2,4-Trichloroben	50.000	9.715	19.43*	
82 Hexachloro 1,3-But	50.000	14.644	29.29*	
84 Naphthalene	50.000	7.465	14.93*	
85 1,2,3-Trichloroben	50.000	8.231	16.46*	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	57.543	115.09	
\$ 32 d4-1,2-Dichloroeth	50.000	70.171	140.34	
\$ 42 d8-Toluene	50.000	50.391	100.78	
\$ 62 4-Bromofluorobenze	50.000	43.843	87.69	
\$ 79 d4-1,2-Dichloroben	50.000	47.476	94.95	

REVIEW SUMMARY FOR FILE - NT507121926.D

Lab ID: BHG0316-MSD1
 nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 22:32

RT	CO-ELUTION COMPOUNDS
3.495	n-Hexane and Methyl tert butyl ether
9.646	Cyclohexanone and 1,3,5-Trimethyl Benzene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.392	0.386	0.0061	Trichlorofluoromethane
0.550	0.545	0.0052	Acrolein
0.618	0.610	0.0075	Acetone

RRT check based on Ccal File: NT507121903.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500

Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
EPA 8260C**

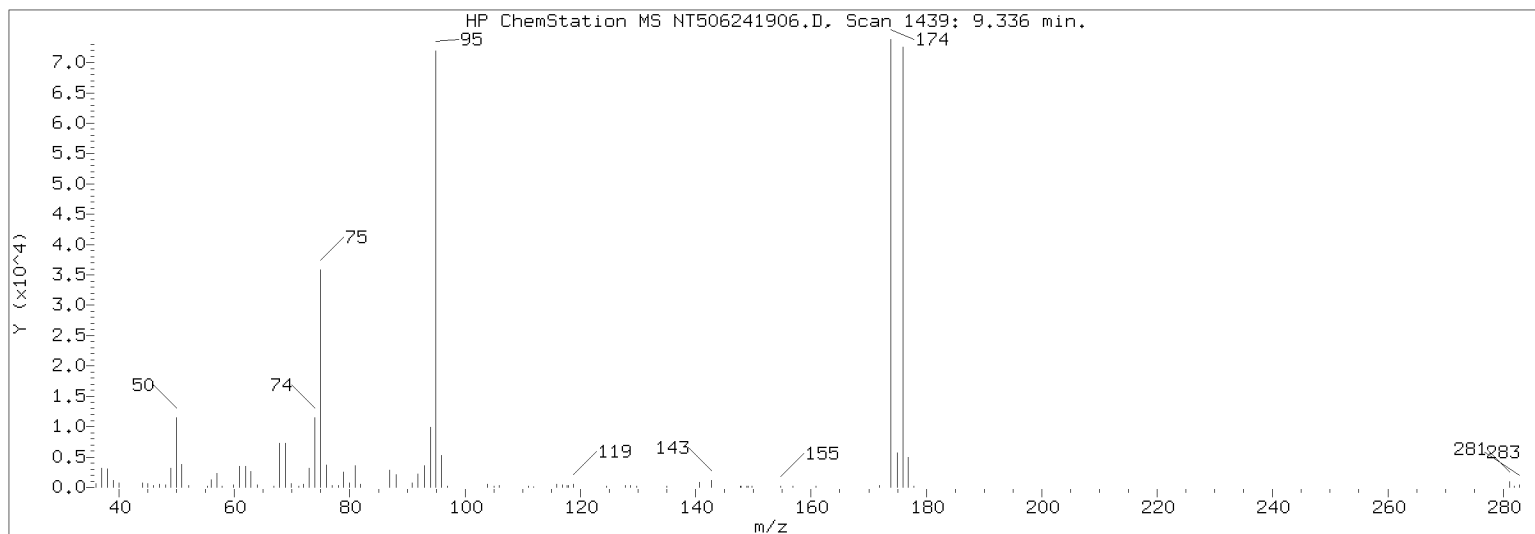
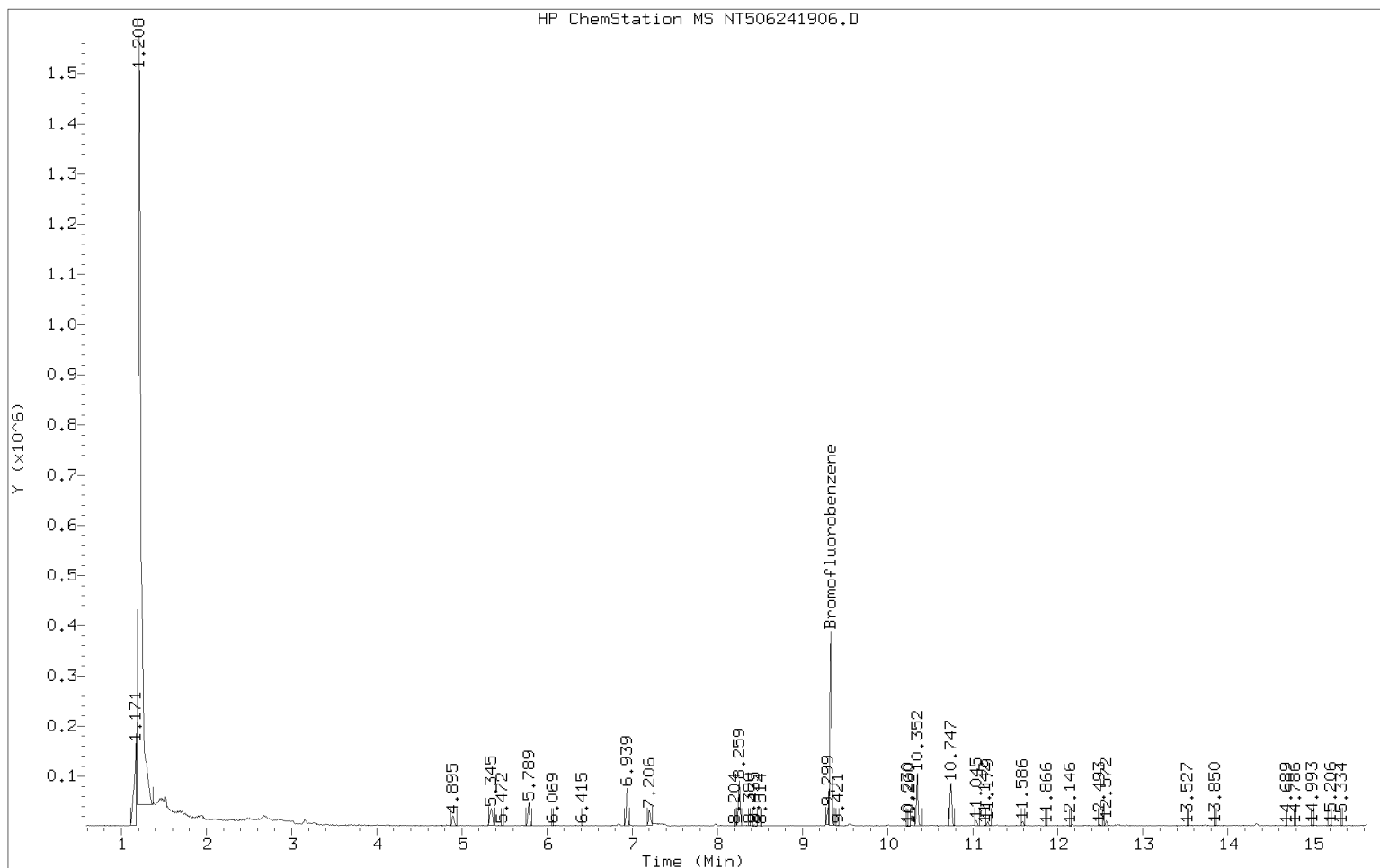
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: NT506241906.D Injection Date: 06/24/19
Instrument ID: NT5 Injection Time: 15:18
Sequence: SHF0324 Lab Sample ID: SHF0324-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	16.5	PASS
75	30 - 80% of 95	48.9	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.64	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	98.9	PASS
175	5 - 9% of 174	8.03	PASS
176	95 - 101% of 174	99	PASS
177	5 - 9% of 176	6.38	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHF0324-TUN1	NT506241906.D	06/24/2019	15:18
Cal Standard	SHF0324-CAL1	NT506241907.D	06/24/2019	16:30
Cal Standard	SHF0324-CAL2	NT506241908.D	06/24/2019	16:52
Cal Standard	SHF0324-CAL3	NT506241909.D	06/24/2019	17:14
Cal Standard	SHF0324-CAL4	NT506241910.D	06/24/2019	17:37
Cal Standard	SHF0324-CAL5	NT506241911.D	06/24/2019	17:59
Cal Standard	SHF0324-CAL6	NT506241912.D	06/24/2019	18:22
Cal Standard	SHF0324-CAL7	NT506241913.D	06/24/2019	18:44
Cal Standard	SHF0324-CAL8	NT506241914.D	06/24/2019	19:06
Secondary Cal Check	SHF0324-SCV1	NT506241915.D	06/24/2019	19:28

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190624.b/NT506241906.D
 Method Used: \20190624.b\bfb8260.m Inst: nt5
 Injection Date: 24-JUN-2019 15:18 Operator: PB
 Sample Info: shf0324-TUN1 TUN1
 Report Date: 06/26/2019 14:50



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.51
75	30.00 - 60.00% of mass 95	48.87
96	5.00 - 9.00% of mass 95	6.64
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	98.88
175	5.00 - 9.00% of mass 174	7.94 (8.03)
176	95.00 - 101.00% of mass 174	97.86 (98.96)
177	5.00 - 9.00% of mass 176	6.24 (6.38)

Data File: NT506241906.D

Spectrum: Avg. Scans 1438-1440 (9.34), Background Scan 1434

Location of Maximum: 95.00

Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	384	63.00	2197	92.00	1932	141.00	799
37.00	2144	64.00	297	93.00	2805	143.00	946
38.00	2557	65.00	88	94.00	8141	146.00	55
39.00	971	67.00	85	95.00	62384	148.00	202
40.00	28	68.00	5971	96.00	4145	149.00	130
43.00	55	69.00	6238	97.00	224	150.00	71
44.00	470	70.00	556	104.00	412	155.00	131
45.00	561	71.00	56	105.00	71	157.00	186
46.00	163	72.00	492	106.00	322	159.00	52
47.00	558	73.00	1854	107.00	51	167.00	73
48.00	413	74.00	10019	112.00	50	168.00	58
49.00	2377	75.00	30488	115.00	101	171.00	130
50.00	10299	76.00	2806	116.00	185	172.00	386
51.00	3416	77.00	298	117.00	372	174.00	61688
52.00	176	78.00	195	118.00	456	175.00	4954
55.00	149	79.00	2314	119.00	453	176.00	61048
56.00	1209	80.00	851	123.00	69	177.00	3894
57.00	1757	81.00	2607	124.00	111	178.00	63
58.00	53	82.00	768	128.00	253		
60.00	498	87.00	2326	129.00	121		
61.00	2933	88.00	1981	130.00	295		
62.00	2623	91.00	465	139.00	53		



MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK EPA 8260C

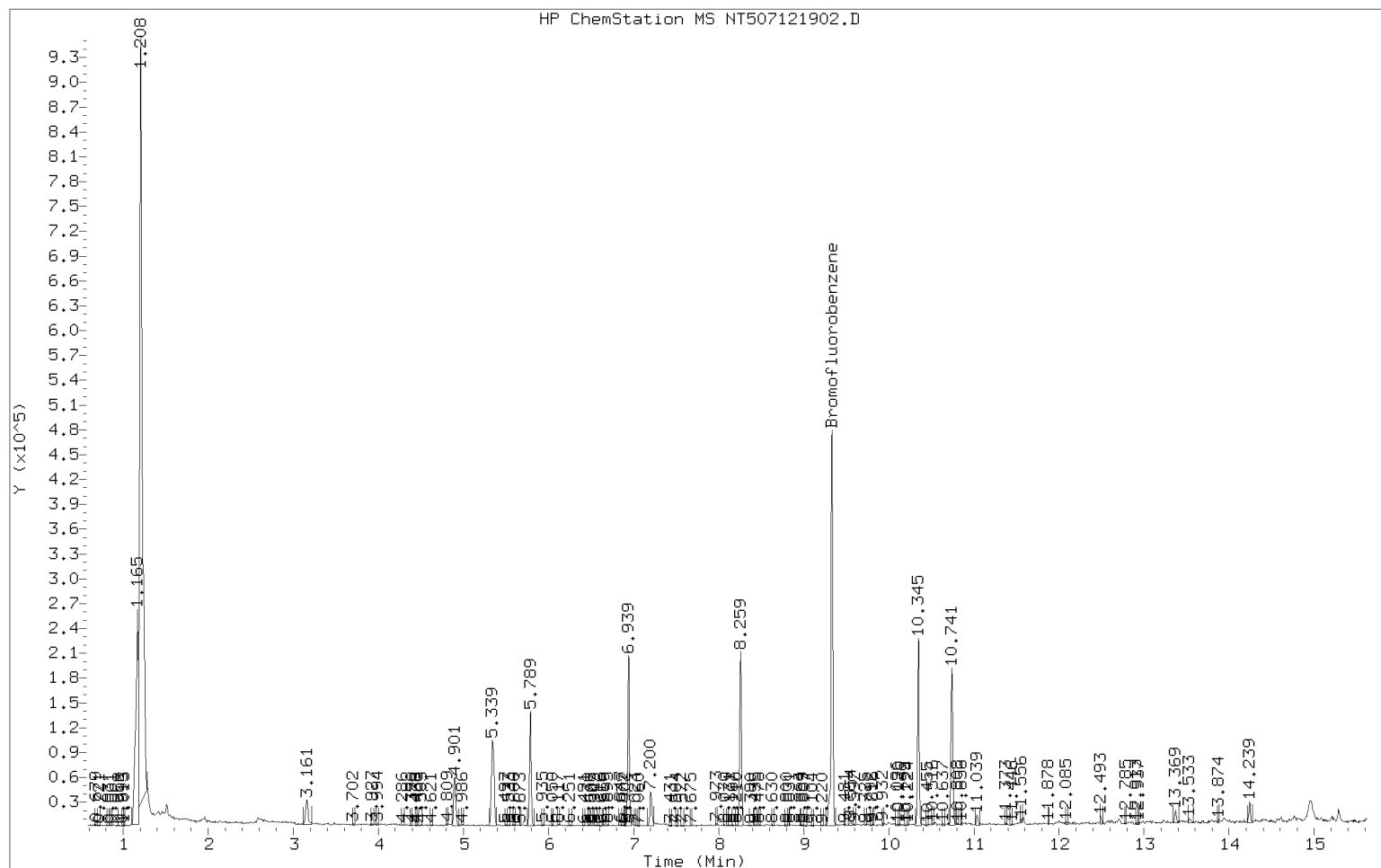
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: NT507121902.D Injection Date: 07/12/19
Instrument ID: NT5 Injection Time: 11:46
Sequence: SHG0192 Lab Sample ID: SHG0192-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	17	PASS
75	30 - 80% of 95	48.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.33	PASS
173	Less than 2% of 174	0.876	PASS
174	50 - 120% of 95	94.6	PASS
175	5 - 9% of 174	7.98	PASS
176	95 - 101% of 174	100	PASS
177	5 - 9% of 176	6.66	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHG0192-TUN1	NT507121902.D	07/12/2019	11:46
LCS	BHG0316-BS1	NT507121903A.D	07/12/2019	12:25
Initial Cal Check	SHG0192-ICV1	NT507121903.D	07/12/2019	12:25
LCS Dup	BHG0316-BSD1	NT507121904A.D	07/12/2019	13:05
Blank	BHG0316-BLK1	NT507121905.D	07/12/2019	13:27
SO-01-190711	19G0163-02	NT507121906.D	07/12/2019	14:54
ZZZZZ	19G0111-01RE1	NT507121907.D	07/12/2019	15:16
ZZZZZ	19G0109-01RE1	NT507121908.D	07/12/2019	15:39
ZZZZZ	19G0165-02	NT507121909.D	07/12/2019	16:11
ZZZZZ	19G0165-03	NT507121910.D	07/12/2019	16:34
ZZZZZ	19G0165-04	NT507121911.D	07/12/2019	16:56
ZZZZZ	19G0165-05	NT507121912.D	07/12/2019	17:18
ZZZZZ	19G0165-06	NT507121913.D	07/12/2019	17:41
ZZZZZ	19G0165-07	NT507121914.D	07/12/2019	18:03
ZZZZZ	19G0165-08	NT507121915.D	07/12/2019	18:26
ZZZZZ	19G0165-09	NT507121916.D	07/12/2019	18:48
SO-02-190711	19G0163-03	NT507121917.D	07/12/2019	19:11
SO-03-190711	19G0163-04	NT507121918.D	07/12/2019	19:33
SO-04-190711	19G0163-05	NT507121919.D	07/12/2019	19:56
SO-05-190711	19G0163-06	NT507121920.D	07/12/2019	20:18
SO-06-190711	19G0163-07	NT507121921.D	07/12/2019	20:41
SO-07-190711	19G0163-08	NT507121922.D	07/12/2019	21:03
SO-08-190711	19G0163-09	NT507121923.D	07/12/2019	21:25
SO-09-190711	19G0163-10	NT507121924.D	07/12/2019	21:47
Matrix Spike	BHG0316-MS1	NT507121925.D	07/12/2019	22:10
Matrix Spike Dup	BHG0316-MSD1	NT507121926.D	07/12/2019	22:32
ZZZZZ	19G0109-01	NT507121927.D	07/12/2019	22:55
ZZZZZ	19G0111-01	NT507121928.D	07/12/2019	23:17
Calibration Check	SHG0192-CCV1	NT507121929.D	07/12/2019	23:40

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190712.b/NT507121902.D
 Method Used: \20190712.b\bfb8260.m Inst: nt5
 Injection Date: 12-JUL-2019 11:46 Operator: PB
 Sample Info: shg0192-TUN1 TUN1
 Report Date: 07/15/2019 13:35



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.97
75	30.00 - 60.00% of mass 95	48.50
96	5.00 - 9.00% of mass 95	6.33
173	Less than 2.00% of mass 174	0.83 (0.88)
174	50.00 - 100.00% of mass 95	94.65
175	5.00 - 9.00% of mass 174	7.55 (7.98)
176	95.00 - 101.00% of mass 174	94.84 (100.20)
177	5.00 - 9.00% of mass 176	6.32 (6.66)

Data File: NT507121902.D

Spectrum: Avg. Scans 1438-1440 (9.34), Background Scan 1426

Location of Maximum: 95.00

Number of points: 105

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	716	67.00	122	102.00	53	148.00	219
37.00	3918	68.00	7280	104.00	595	150.00	61
38.00	3331	69.00	7737	105.00	153	153.00	51
39.00	1098	70.00	714	106.00	532	154.00	52
40.00	44	71.00	51	107.00	69	155.00	252
41.00	190	72.00	773	109.00	87	157.00	243
43.00	70	73.00	3474	110.00	62	159.00	108
44.00	707	74.00	13802	115.00	139	161.00	84
45.00	869	75.00	38648	116.00	346	170.00	87
47.00	697	76.00	3167	117.00	524	171.00	199
48.00	619	77.00	729	118.00	395	172.00	290
49.00	2940	78.00	309	119.00	568	173.00	661
50.00	13521	79.00	3018	123.00	54	174.00	75416
51.00	3796	80.00	835	128.00	340	175.00	6018
52.00	225	81.00	3296	129.00	109	176.00	75568
55.00	326	82.00	816	130.00	505	177.00	5035
56.00	1548	86.00	64	131.00	78	178.00	90
57.00	2184	87.00	3019	133.00	63	193.00	75
58.00	72	88.00	3127	135.00	160	205.00	54
59.00	50	89.00	62	137.00	221	249.00	64
60.00	553	91.00	304	140.00	69	281.00	738
61.00	3798	92.00	2565	141.00	991	282.00	79
62.00	3614	93.00	3869	142.00	175	283.00	99
63.00	2774	94.00	10073	143.00	1125	284.00	83
64.00	361	95.00	79680	145.00	194		
65.00	61	96.00	5047	146.00	53		
66.00	98	97.00	250	147.00	144		



**MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
EPA 8260C**

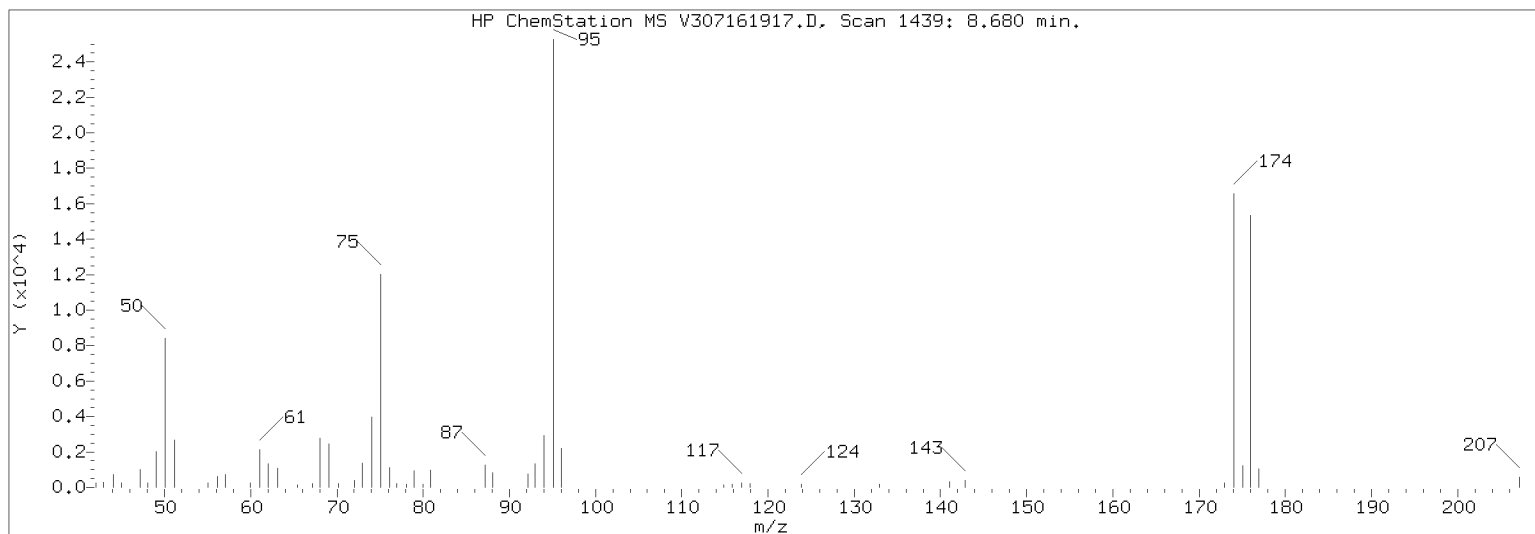
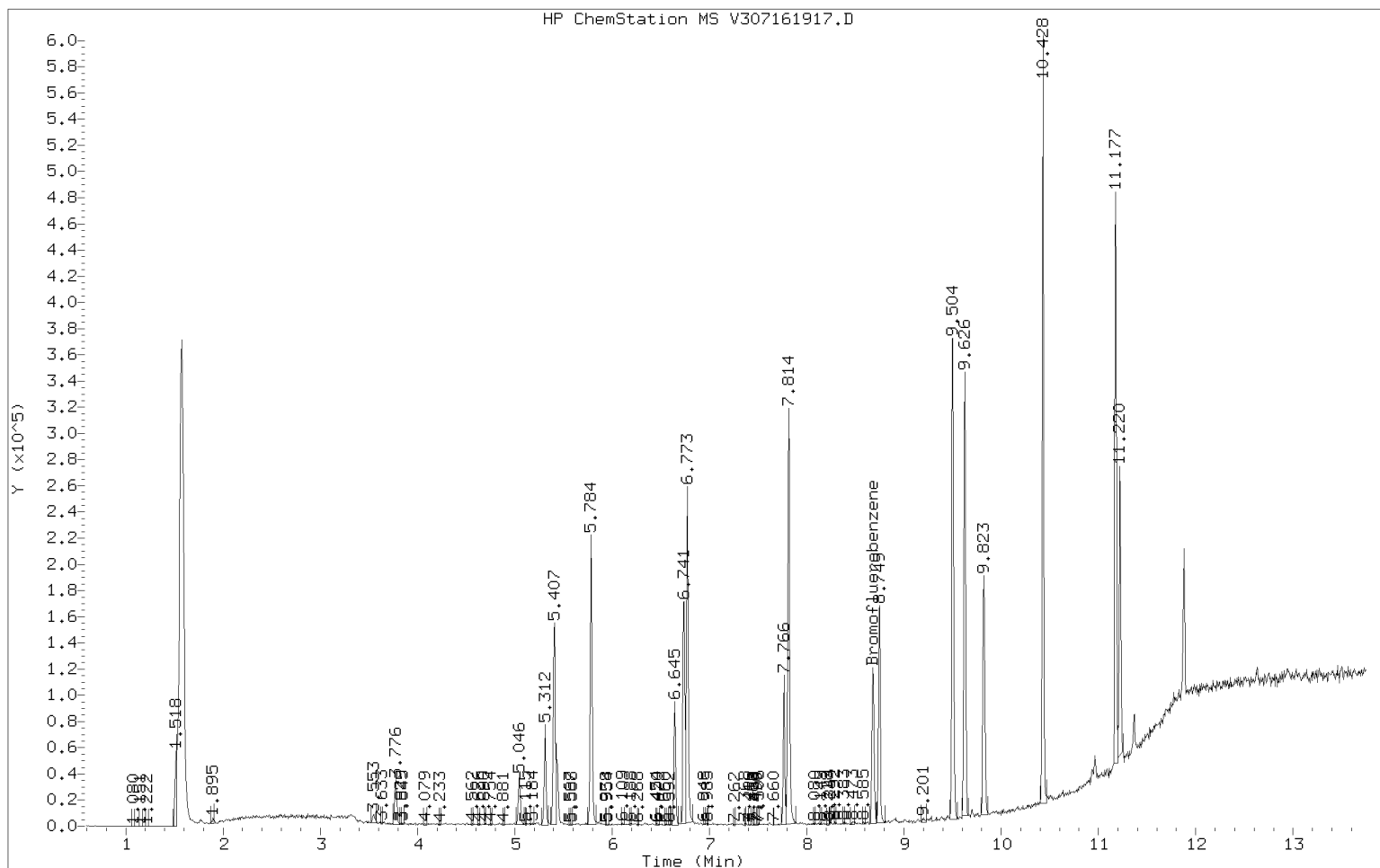
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V307161917.D Injection Date: 07/16/19
Instrument ID: NT3 Injection Time: 15:54
Sequence: SHG0218 Lab Sample ID: SHG0218-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	34.4	PASS
75	30 - 80% of 95	54.4	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	8.29	PASS
173	Less than 2% of 174	1.43	PASS
174	50 - 120% of 95	70.2	PASS
175	5 - 9% of 174	6.03	PASS
176	95 - 101% of 174	95.2	PASS
177	5 - 9% of 176	6.7	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHG0218-TUN1	V307161917.D	07/16/2019	15:54
Cal Standard	SHG0218-CAL1	V307161919.D	07/16/2019	17:13
Cal Standard	SHG0218-CAL2	V307161920.D	07/16/2019	17:40
Cal Standard	SHG0218-CAL3	V307161921.D	07/16/2019	18:06
Cal Standard	SHG0218-CAL4	V307161922.D	07/16/2019	18:33
Cal Standard	SHG0218-CAL5	V307161923.D	07/16/2019	18:59
Cal Standard	SHG0218-CAL6	V307161924.D	07/16/2019	19:26
Cal Standard	SHG0218-CAL7	V307161925.D	07/16/2019	19:53
Cal Standard	SHG0218-CAL8	V307161926.D	07/16/2019	20:19
Initial Cal Blank	SHG0218-ICB1	V307161927.D	07/16/2019	20:46
Secondary Cal Check	SHG0218-SCV1	V307161928.D	07/16/2019	21:12

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190716x.b/V307161917.D
 Method Used: \20190716x.b\bfb8260.m Inst: nt3
 Injection Date: 16-JUL-2019 15:54 Operator: PKC
 Sample Info: SHG0218-TUN1 SHG0218-TUN1
 Report Date: 07/17/2019 08:16



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	34.40
75	30.00 - 60.00% of mass 95	54.38
96	5.00 - 9.00% of mass 95	8.29
173	Less than 2.00% of mass 174	1.00 (1.43)
174	50.00 - 100.00% of mass 95	70.20
175	5.00 - 9.00% of mass 174	4.23 (6.03)
176	95.00 - 101.00% of mass 174	66.80 (95.16)
177	5.00 - 9.00% of mass 176	4.48 (6.70)

Data File: V307161917.D

Spectrum: Avg. Scans 1438-1440 (8.68), Background Scan 1432

Location of Maximum: 95.00

Number of points: 68

m/z	Y	m/z	Y	m/z	Y	m/z	Y
42.00	300	64.00	163	89.00	62	143.00	370
43.00	247	65.00	112	91.00	60	153.00	52
44.00	285	67.00	143	92.00	617	172.00	163
45.00	405	68.00	2396	93.00	1070	173.00	216
46.00	66	69.00	2363	94.00	2609	174.00	15090
47.00	670	70.00	312	95.00	21496	175.00	910
48.00	259	72.00	126	96.00	1781	176.00	14360
49.00	1946	73.00	1167	104.00	84	177.00	962
50.00	7394	74.00	3749	115.00	50	191.00	70
51.00	2355	75.00	11689	116.00	119	207.00	100
53.00	59	76.00	1029	117.00	178	208.00	52
55.00	191	77.00	230	118.00	70	209.00	52
56.00	495	78.00	134	119.00	89	211.00	57
57.00	900	79.00	762	124.00	64	233.00	56
60.00	302	80.00	228	133.00	63		
61.00	1661	81.00	762	135.00	80		
62.00	1094	87.00	1154	137.00	80		
63.00	870	88.00	810	141.00	221		



Analytical Resources, Incorporated
Analytical Chemists and Consultants

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK EPA 8260C

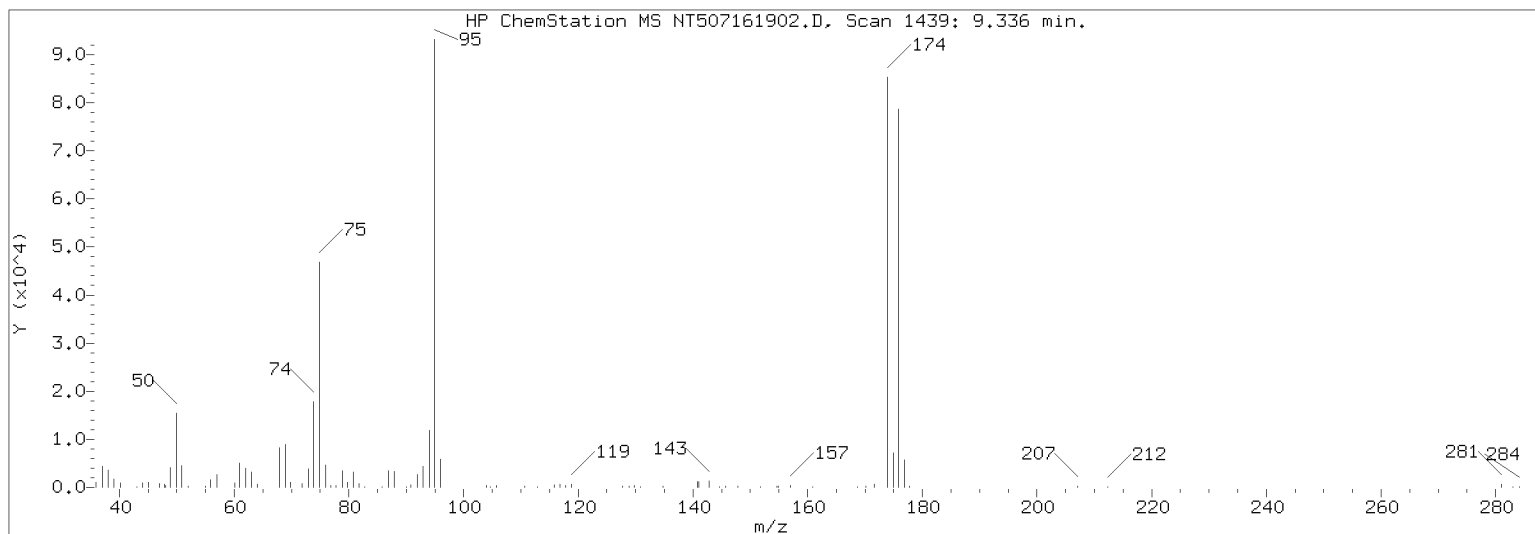
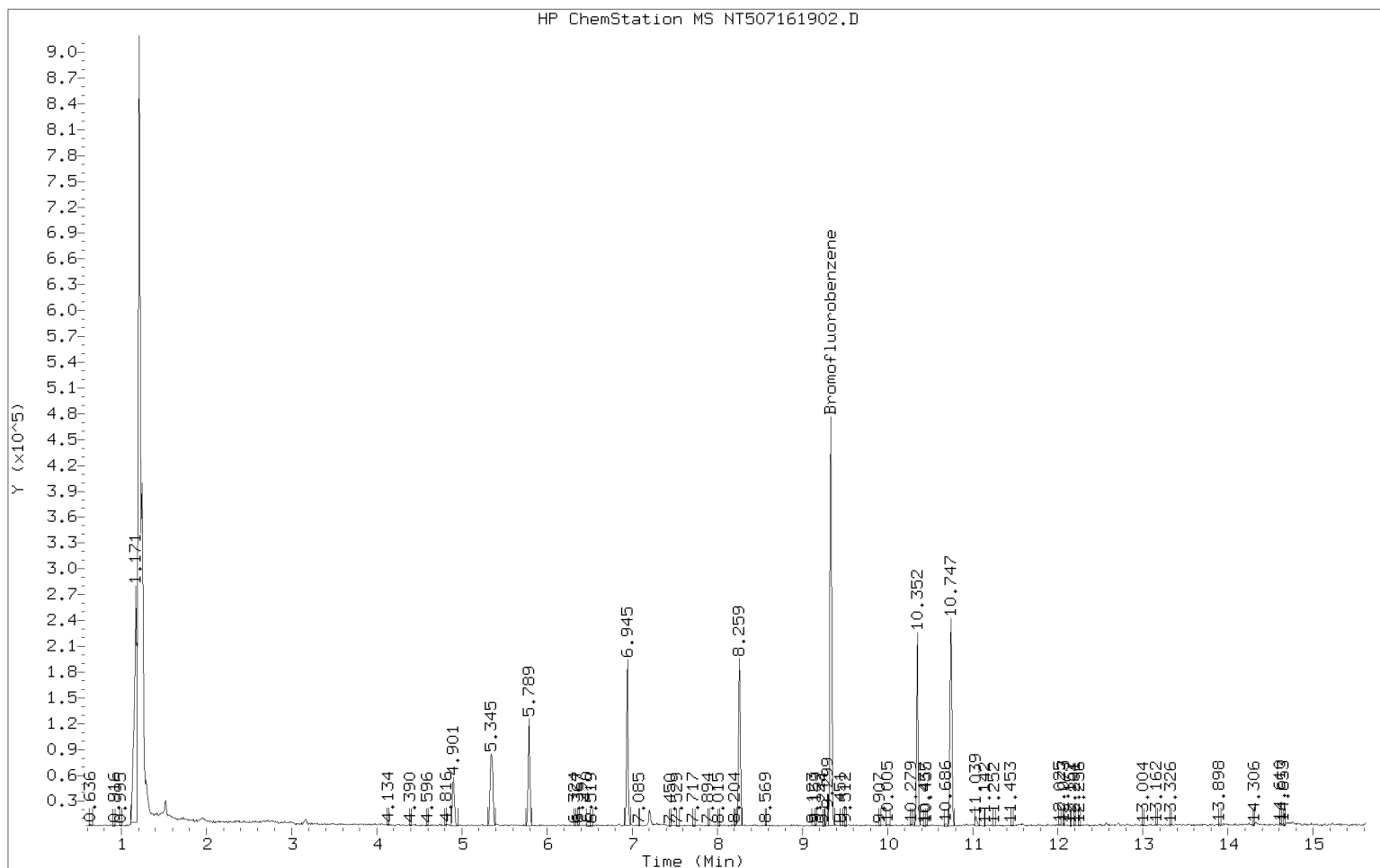
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: NT507161902X.D Injection Date: 07/16/19
Instrument ID: NT5 Injection Time: 14:19
Sequence: SHG0229 Lab Sample ID: SHG0229-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	17.1	PASS
75	30 - 80% of 95	50.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.48	PASS
173	Less than 2% of 174	0.504	PASS
174	50 - 120% of 95	91.6	PASS
175	5 - 9% of 174	8.14	PASS
176	95 - 101% of 174	95.8	PASS
177	5 - 9% of 176	6.77	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHG0229-TUN1	NT507161902X.D	07/16/2019	14:19
LCS	BHG0391-BS1	NT507161903AX.D	07/16/2019	14:57
LCS	BHG0392-BS1	NT507161903BX.D	07/16/2019	14:57
Initial Cal Check	SHG0229-ICV1	NT507161903X.D	07/16/2019	14:57
LCS Dup	BHG0391-BSD1	NT507161904.D	07/16/2019	15:46
LCS Dup	BHG0392-BSD1	NT507161904A.D	07/16/2019	15:46
Blank	BHG0391-BLK1	NT507161905.D	07/16/2019	16:08
Blank	BHG0392-BLK1	NT507161905A.D	07/16/2019	16:08
ZZZZZ	19G0197-02	NT507161906.D	07/16/2019	16:44
SO-10-190711	19G0163-11	NT507161907.D	07/16/2019	17:06
SO-10-190711D	19G0163-12	NT507161908.D	07/16/2019	17:28
SO-11-190711	19G0163-13	NT507161909.D	07/16/2019	17:50
SO-12-190711	19G0163-14	NT507161910.D	07/16/2019	18:12
SO-13-190711	19G0163-15	NT507161911.D	07/16/2019	18:35
ZZZZZ	19G0196-01	NT507161912.D	07/16/2019	18:57
Calibration Check	SHG0229-CCV1	NT507161916.D	07/16/2019	20:27

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190716.b/NT507161902.D
 Method Used: \20190716.b\bfb8260.m Inst: nt5
 Injection Date: 16-JUL-2019 14:19 Operator: PB
 Sample Info: shg0229-TUN1 TUN1
 Report Date: 07/17/2019 13:39



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.13
75	30.00 - 60.00% of mass 95	50.47
96	5.00 - 9.00% of mass 95	6.48
173	Less than 2.00% of mass 174	0.46 (0.50)
174	50.00 - 100.00% of mass 95	91.59
175	5.00 - 9.00% of mass 174	7.45 (8.14)
176	95.00 - 101.00% of mass 174	87.76 (95.82)
177	5.00 - 9.00% of mass 176	5.94 (6.77)

Data File: NT507161902.D

Spectrum: Avg. Scans 1438-1440 (9.34), Background Scan 1433

Location of Maximum: 95.00

Number of points: 93

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	949	69.00	7794	97.00	77	152.00	65
37.00	4198	70.00	805	103.00	62	154.00	80
38.00	3400	72.00	587	104.00	518	155.00	120
39.00	1156	73.00	2789	105.00	52	156.00	76
43.00	62	74.00	13967	106.00	526	157.00	291
44.00	184	75.00	40368	107.00	83	159.00	75
45.00	543	76.00	3601	110.00	61	161.00	107
46.00	174	77.00	569	111.00	126	165.00	51
47.00	761	78.00	257	113.00	238	169.00	115
48.00	736	79.00	3194	116.00	421	170.00	139
49.00	3255	80.00	835	117.00	548	171.00	274
50.00	13700	81.00	2991	118.00	404	172.00	358
51.00	4204	82.00	613	119.00	529	173.00	369
52.00	251	83.00	61	128.00	345	174.00	73264
55.00	295	86.00	50	129.00	119	175.00	5963
56.00	1445	87.00	3539	130.00	265	176.00	70200
57.00	2140	88.00	2754	131.00	192	177.00	4752
60.00	717	90.00	51	137.00	67	178.00	138
61.00	3890	91.00	425	141.00	1334	183.00	52
62.00	3875	92.00	2277	143.00	1142	212.00	55
63.00	2864	93.00	3959	144.00	52	284.00	62
64.00	498	94.00	10594	146.00	133		
67.00	92	95.00	79992	148.00	274		
68.00	7807	96.00	5186	150.00	84		



Analytical Resources, Incorporated
Analytical Chemists and Consultants

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK EPA 8260C

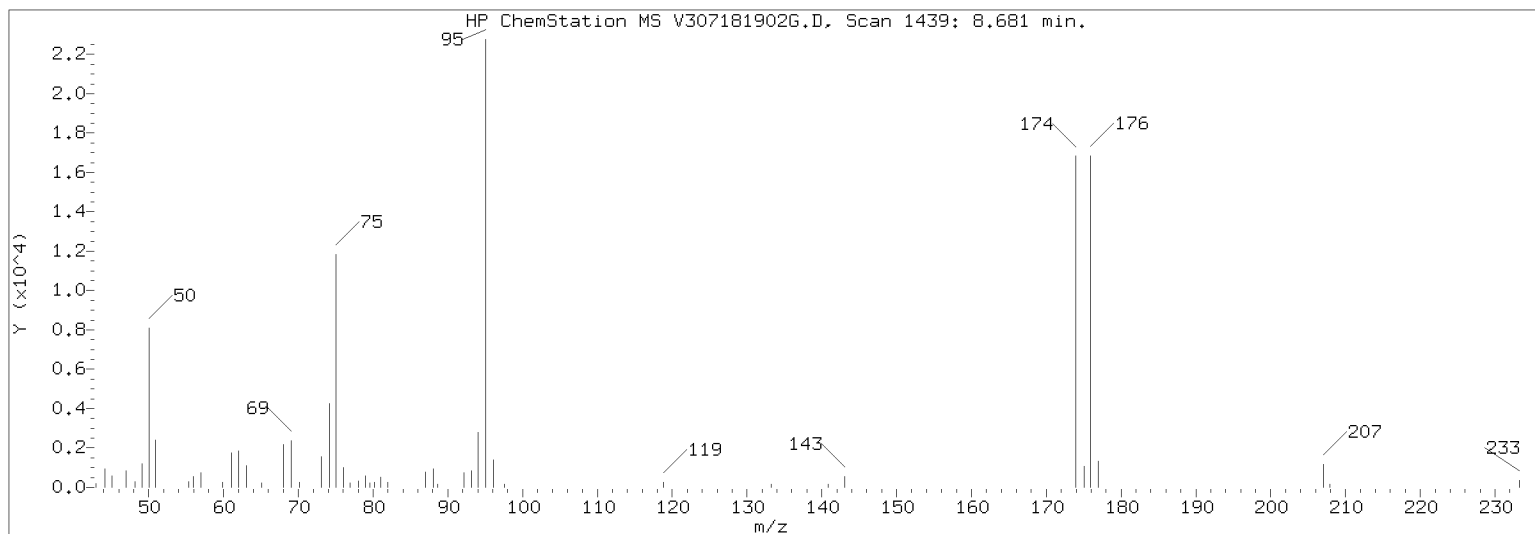
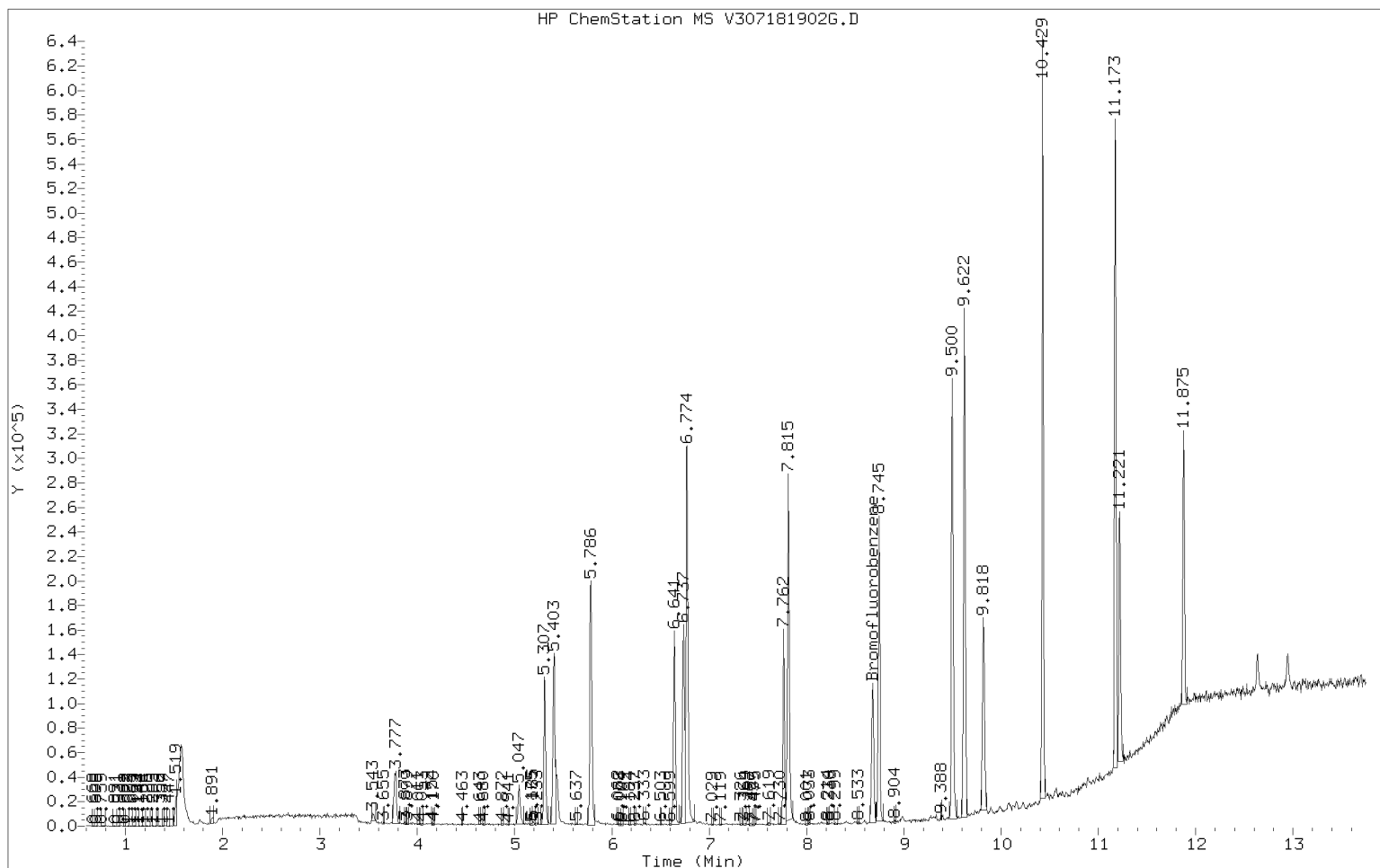
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V307181902G.D Injection Date: 07/18/19
Instrument ID: NT3 Injection Time: 09:31
Sequence: SHG0265 Lab Sample ID: SHG0265-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	33.2	PASS
75	30 - 80% of 95	50.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	5.9	PASS
173	Less than 2% of 174	0.929	PASS
174	50 - 120% of 95	72.1	PASS
175	5 - 9% of 174	6.28	PASS
176	95 - 101% of 174	99.8	PASS
177	5 - 9% of 176	5.98	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHG0265-TUN1	V307181902G.D	07/18/2019	9:31
LCS	BHG0439-BS1	V307181903GLCS.D	07/18/2019	10:09
Initial Cal Check	SHG0265-ICV1	V307181903G.D	07/18/2019	10:09
LCS Dup	BHG0439-BSD1	V307181904G.D	07/18/2019	10:36
Low Cal Check	SHG0265-LCV1	V307181907G.D	07/18/2019	11:56
Low Cal Check	SHG0265-LCV2	V307181908G.D	07/18/2019	12:22
Blank	BHG0439-BLK1	V307181909G.D	07/18/2019	12:49
ZZZZZ	19G0106-01	V307181910G.D	07/18/2019	13:15
TB-SO-190711	19G0163-16	V307181911G.D	07/18/2019	13:42
ZZZZZ	19G0224-01	V307181912G.D	07/18/2019	14:08
ZZZZZ	19G0157-17	V307181913G.D	07/18/2019	14:35
ZZZZZ	19G0157-18	V307181914G.D	07/18/2019	15:04
ZZZZZ	19G0118-11RE1	V307181915G.D	07/18/2019	15:32
ZZZZZ	19G0224-02	V307181916G.D	07/18/2019	15:58
ZZZZZ	19G0224-03	V307181917G.D	07/18/2019	16:25
ZZZZZ	19G0224-04	V307181918G.D	07/18/2019	16:51
Calibration Check	SHG0265-CCV1	V307181930G.D	07/18/2019	22:11

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190718.b/V307181902G.D
 Method Used: \20190718.b\bfb8260.m Inst: nt3
 Injection Date: 18-JUL-2019 09:31 Operator: PKC
 Sample Info: SHG0265-TUN1 SHG0265-TUN1
 Report Date: 07/19/2019 09:43



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	33.23
75	30.00 - 60.00% of mass 95	50.52
96	5.00 - 9.00% of mass 95	5.90
173	Less than 2.00% of mass 174	0.67 (0.93)
174	50.00 - 100.00% of mass 95	72.14
175	5.00 - 9.00% of mass 174	4.53 (6.28)
176	95.00 - 101.00% of mass 174	72.02 (99.83)
177	5.00 - 9.00% of mass 176	4.31 (5.98)

Data File: V307181902G.D

Spectrum: Avg. Scans 1438-1440 (8.68), Background Scan 1432

Location of Maximum: 95.00

Number of points: 60

m/z	Y	m/z	Y	m/z	Y	m/z	Y
43.00	43	64.00	54	87.00	935	141.00	135
44.00	290	65.00	75	88.00	815	143.00	338
45.00	372	68.00	2015	89.00	63	173.00	139
47.00	613	69.00	2156	92.00	727	174.00	14959
48.00	374	70.00	300	93.00	727	175.00	940
49.00	1141	72.00	77	94.00	2475	176.00	14934
50.00	6891	73.00	912	95.00	20736	177.00	893
51.00	2140	74.00	3894	96.00	1223	207.00	267
55.00	235	75.00	10475	97.00	51	208.00	55
56.00	572	76.00	996	106.00	80	211.00	72
57.00	906	77.00	222	116.00	62	233.00	121
59.00	51	78.00	219	117.00	184	260.00	54
60.00	409	79.00	616	118.00	62		
61.00	1375	80.00	181	119.00	242		
62.00	1320	81.00	689	131.00	52		
63.00	996	82.00	183	137.00	131		



Analytical Resources, Incorporated
Analytical Chemists and Consultants

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK EPA 8260C

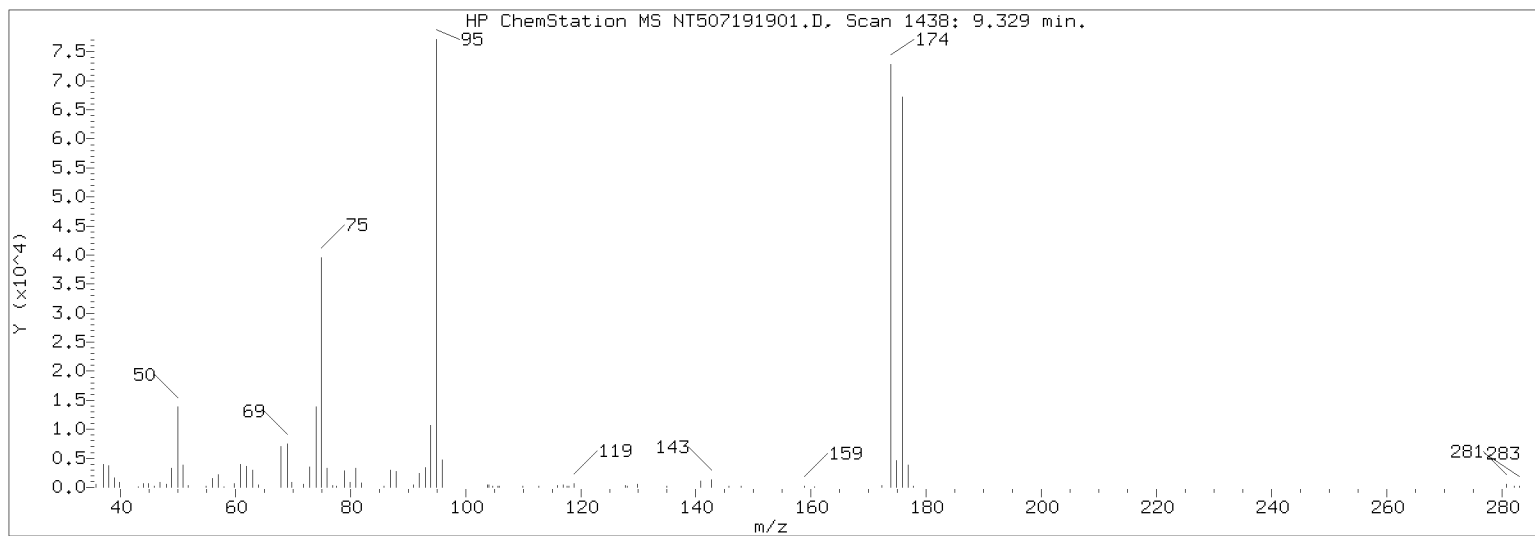
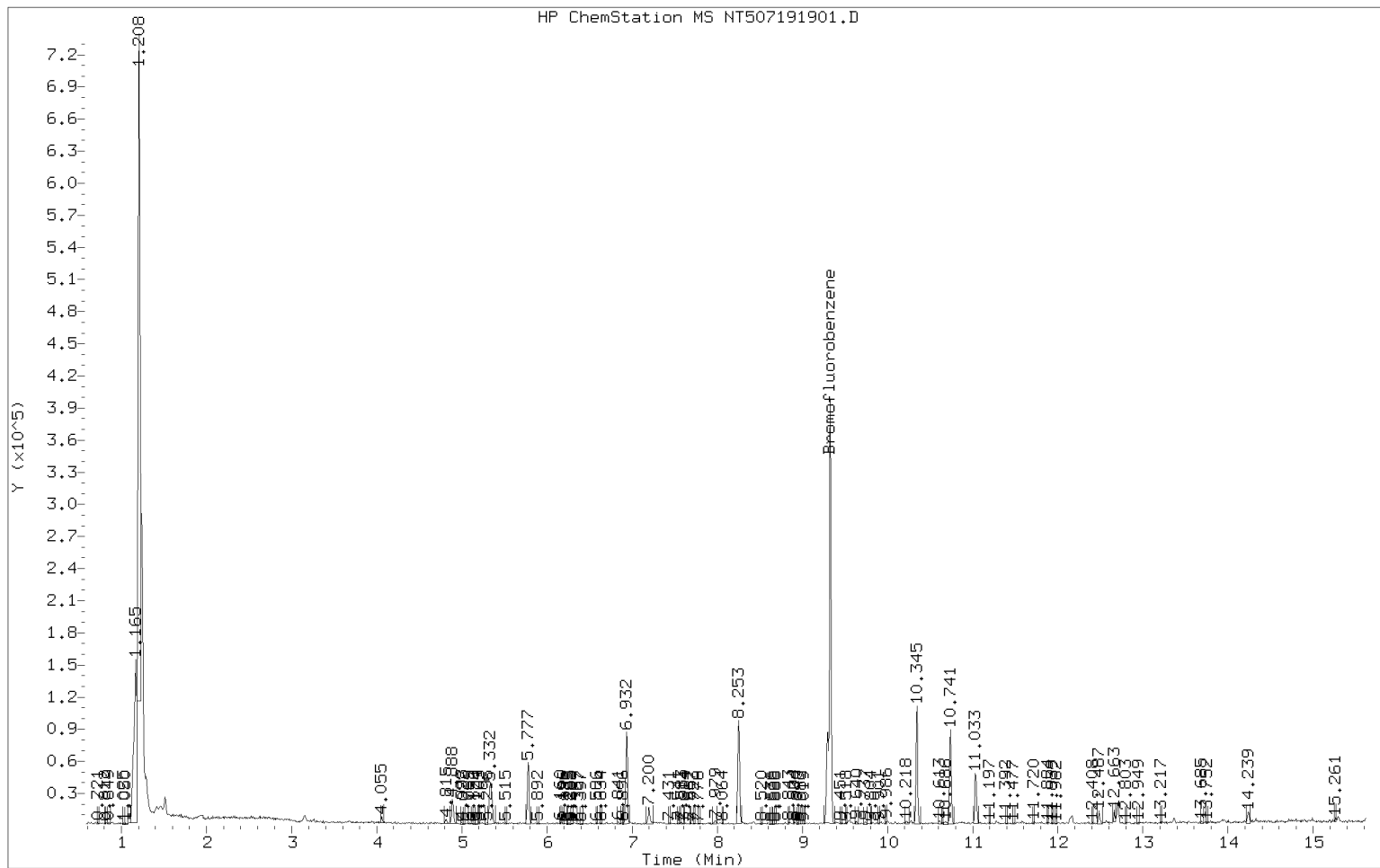
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: NT507191901.D Injection Date: 07/19/19
Instrument ID: NT5 Injection Time: 12:51
Sequence: SHG0298 Lab Sample ID: SHG0298-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	17.6	PASS
75	30 - 80% of 95	49.2	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.23	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	91.9	PASS
175	5 - 9% of 174	7.89	PASS
176	95 - 101% of 174	96.2	PASS
177	5 - 9% of 176	6.12	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHG0298-TUN1	NT507191901.D	07/19/2019	12:51
LCS	BHG0490-BS1	NT507191902B.D	07/19/2019	13:28
LCS	BHG0418-BS1	NT507191902A.D	07/19/2019	13:28
LCS Dup	BHG0490-BSD1	NT507191903A.D	07/19/2019	14:08
LCS Dup	BHG0418-BSD1	NT507191903.D	07/19/2019	14:08
Blank	BHG0490-BLK1	NT507191904A.D	07/19/2019	14:31
Blank	BHG0418-BLK1	NT507191904.D	07/19/2019	14:31
SO-03-190711	19G0163-04RE1	NT507191905.D	07/19/2019	15:40
SO-10-190711D	19G0163-12RE1	NT507191906.D	07/19/2019	16:02
ZZZZZ	19G0232-01	NT507191907.D	07/19/2019	16:24
ZZZZZ	19G0242-01	NT507191908.D	07/19/2019	17:02
ZZZZZ	19G0243-01	NT507191911.D	07/19/2019	17:47
ZZZZZ	19G0243-01	NT507191911.D	07/19/2019	18:09
ZZZZZ	19G0253-01	NT507191912.D	07/19/2019	18:32

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190719.b/NT507191901.D
Method Used: \20190719.b\bfb8260.m Inst: nt5
Injection Date: 19-JUL-2019 12:51 Operator: PB
Sample Info: shg0298-TUN1 TUN1
Report Date: 07/22/2019 15:47



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.58
75	30.00 - 60.00% of mass 95	49.21
96	5.00 - 9.00% of mass 95	6.23
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	91.89
175	5.00 - 9.00% of mass 174	7.25 (7.89)
176	95.00 - 101.00% of mass 174	88.40 (96.20)
177	5.00 - 9.00% of mass 176	5.41 (6.12)

Data File: NT507191901.D

Spectrum: Average Spectrum: 9.323 to 9.335 min. (SUB)

Location of Maximum: 95.00

Number of points: 90

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	646	64.00	216	94.00	8731	143.00	958
37.00	3361	67.00	144	95.00	67488	146.00	80
38.00	3113	68.00	6010	96.00	4204	147.00	51
39.00	1412	69.00	6284	97.00	159	148.00	253
42.00	64	70.00	634	104.00	527	155.00	172
43.00	54	72.00	517	105.00	216	159.00	67
44.00	242	73.00	3148	106.00	322	160.00	54
45.00	555	74.00	11225	110.00	61	169.00	60
46.00	60	75.00	33208	113.00	80	172.00	205
47.00	685	76.00	2721	116.00	329	174.00	62016
48.00	450	77.00	542	117.00	490	175.00	4893
49.00	2492	78.00	54	118.00	179	176.00	59656
50.00	11866	79.00	2534	119.00	483	177.00	3650
51.00	3139	80.00	849	124.00	67	178.00	129
52.00	184	81.00	2687	127.00	206	193.00	78
55.00	138	82.00	608	128.00	261	194.00	52
56.00	1185	83.00	206	129.00	51	215.00	55
57.00	1778	86.00	79	130.00	376	249.00	78
58.00	132	87.00	2558	133.00	58	281.00	832
60.00	624	88.00	2442	135.00	68	282.00	185
61.00	3564	91.00	372	136.00	52	283.00	143
62.00	2827	92.00	2051	137.00	137		
63.00	2830	93.00	3128	141.00	914		



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CF00067

Instrument: NT5

Calibration Date: 06/24/2019 0:52

Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Chloromethane	1	0.4987294	2	0.4620369	5	0.4281559	10	0.4103184	50	0.3283093	100	0.3691166
Vinyl Chloride	1	0.4187997	2	0.4893069	5	0.3998217	10	0.4462935	50	0.3499494	100	0.3791106
Bromomethane	1	0.3450625	2	0.3469305	5	0.287259	10	0.3047399	50	0.2506493	100	0.2810034
Chloroethane	1	0.4510238	2	0.3851203	5	0.3612375	10	0.3254196	50	0.2726359	100	0.310572
Trichlorofluoromethane	1	0.7643208	2	0.8029406	5	0.8973355	10	0.8797694	50	0.6438762	100	0.7424982
Acrolein	5	4.348544E-02	10	3.661447E-02	25	4.137543E-02	50	4.411355E-02	250	4.142432E-02	500	4.158904E-02
1,1,2-Trichloro-1,2,2-Trifluoroethane			2	0.4193121	5	0.3960454	10	0.4070664	50	0.2913348	100	0.3254203
Acetone	5	0.1235987	10	9.948444E-02	25	8.101515E-02	50	8.185403E-02	250	7.345535E-02	500	7.130518E-02
1,1-Dichloroethene	1	0.4355425	2	0.4404358	5	0.4325421	10	0.4389555	50	0.3149901	100	0.3616691
Bromoethane			2	0.3147078	5	0.2955857	10	0.286669	50	0.2241222	100	0.2454318
Iodomethane	1	0.5901268	2	0.5755919	5	0.5244875	10	0.530966	50	0.4386808	100	0.4977881
Methylene Chloride			2	0.5979091	5	0.4898438	10	0.4361442	50	0.3347783	100	0.3697309
Acrylonitrile					5	8.568279E-02	10	9.620356E-02	50	8.968947E-02	100	8.204279E-02
Carbon Disulfide	1	1.205712	2	1.267484	5	1.177159	10	1.175813	50	0.9173192	100	1.012129
trans-1,2-Dichloroethene	1	0.4971239	2	0.4766565	5	0.4494535	10	0.4537982	50	0.3561139	100	0.3898856
Vinyl Acetate					5	0.5956514	10	0.6197958	50	0.5650922	100	0.6030882
1,1-Dichloroethane	1	0.6878314	2	0.7154621	5	0.6550171	10	0.6743421	50	0.5531965	100	0.6168082
2-Butanone	5	3.490762E-02	10	2.847527E-02	25	3.680161E-02	50	3.590599E-02	250	3.538115E-02	500	3.459781E-02
2,2-Dichloropropane	1	0.663864	2	0.7110464	5	0.6575034	10	0.6712926	50	0.5053141	100	0.5728584
cis-1,2-Dichloroethene	1	0.430726	2	0.5097145	5	0.4682179	10	0.4747996	50	0.3795389	100	0.4218214
Chloroform	1	0.7470046	2	0.7562178	5	0.7215603	10	0.7139266	50	0.5710413	100	0.6370543
Bromochloromethane	1	0.2308444	2	0.2445938	5	0.2188629	10	0.2287634	50	0.189507	100	0.2141469
1,1,1-Trichloroethane	1	0.7452845	2	0.7612302	5	0.6818502	10	0.7055285	50	0.5422935	100	0.6140094
1,1-Dichloropropene	1	0.5448191	2	0.3617646	5	0.3427564	10	0.3318644	50	0.2478332	100	0.2736203
Carbon tetrachloride	1	0.3901821	2	0.4187203	5	0.3582614	10	0.3857493	50	0.2951423	100	0.323211
1,2-Dichloroethane	1	0.2774351	2	0.2797958	5	0.2552723	10	0.2480006	50	0.2203009	100	0.2343974
Benzene	1	0.8921125	2	0.9457752	5	0.8961488	10	0.9208418	50	0.7505086	100	0.8180469



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CF00067

Instrument: NT5

Calibration Date: 06/24/2019 0:52

Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Trichloroethene	1	0.2835532	2	0.3048748	5	0.2973867	10	0.2894281	50	0.2232103	100	0.2441367
1,2-Dichloropropane	1	0.1974634	2	0.2160754	5	0.1862012	10	0.1885407	50	0.1639514	100	0.1832834
Bromodichloromethane	1	0.3009709	2	0.2815448	5	0.2893575	10	0.2940407	50	0.2461542	100	0.2799604
Dibromomethane	1	0.1235473	2	0.1318627	5	0.114428	10	0.1226165	50	0.1087431	100	0.1187077
2-Chloroethyl vinyl ether					5	0.1107737	10	0.1107763	50	0.1054477	100	0.1116416
4-Methyl-2-Pentanone	5	5.221574E-02	10	5.347767E-02	25	5.552968E-02	50	6.458888E-02	250	6.077134E-02	500	5.975993E-02
cis-1,3-Dichloropropene	1	0.3175771	2	0.3478721	5	0.3322439	10	0.3316785	50	0.2982203	100	0.336359
Toluene	1	0.6374015	2	0.6720182	5	0.6118352	10	0.6395771	50	0.49502	100	0.5405774
trans-1,3-Dichloropropene	1	0.296913	2	0.2848116	5	0.2865525	10	0.2970804	50	0.2695468	100	0.3011026
2-Hexanone	5	9.756004E-02	10	9.707938E-02	25	9.530654E-02	50	0.1089084	250	0.1078289	500	0.1052817
1,1,2-Trichloroethane	1	0.1969015	2	0.1875645	5	0.1763578	10	0.1714906	50	0.1567321	100	0.1726823
1,3-Dichloropropane	1	0.3182978	2	0.2968642	5	0.2859408	10	0.3045829	50	0.2744533	100	0.2866623
Tetrachloroethene	1	0.3291321	2	0.3461527	5	0.3199826	10	0.331774	50	0.2374688	100	0.2626976
Dibromochloromethane	1	0.2358545	2	0.2361724	5	0.2320324	10	0.2411158	50	0.2123067	100	0.2335931
1,2-Dibromoethane	1	0.1890979	2	0.1890495	5	0.1743505	10	0.18499	50	0.1640266	100	0.1732362
Chlorobenzene	1	0.7598118	2	0.7749108	5	0.7196962	10	0.7592143	50	0.5978813	100	0.6394745
Ethylbenzene	1	1.262998	2	1.255396	5	1.189677	10	1.260921	50	0.9534184	100	1.032017
1,1,1,2-Tetrachloroethane	1	0.2781019	2	0.2637877	5	0.2361354	10	0.2554414	50	0.2166064	100	0.2368215
m,p-Xylene	2	0.4836331	4	0.5105048	10	0.4755665	20	0.5160988	100	0.3885255	200	0.4233809
o-Xylene	1	0.4756837	2	0.4687041	5	0.4502337	10	0.4771037	50	0.3765733	100	0.4129183
Xylenes, total	3	0.4809833	6	0.4965712	15	0.4671222	30	0.5031005	150	0.3845414	300	0.4198934
Styrene	1	0.7069224	2	0.7072121	5	0.7186506	10	0.7617818	50	0.6251394	100	0.6826314
Bromoform	1	0.3409609	2	0.295832	5	0.2987321	10	0.2836411	50	0.2709505	100	0.2800722
1,1,2,2-Tetrachloroethane	1	0.390422	2	0.4009302	5	0.3757137	10	0.3950039	50	0.3716076	100	0.3787523
1,2,3-Trichloropropane			2	0.1330365	5	0.1257619	10	0.1446018	50	0.1276912	100	0.1304293
trans-1,4-Dichloro 2-Butene					5	0.1036821	10	0.1048834	50	0.104964	100	0.1026461
n-Propylbenzene	1	2.592012	2	2.594808	5	2.383355	10	2.588128	50	2.050457	100	2.167201
Bromobenzene	1	0.610478	2	0.5825605	5	0.5529474	10	0.5538156	50	0.4814984	100	0.5012932



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CF00067

Instrument: NT5

Calibration Date: 06/24/2019 0:52

Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Isopropyl Benzene	1	2.203422	2	2.297658	5	2.157412	10	2.261671	50	1.821324	100	1.918837
2-Chlorotoluene	1	1.418342	2	1.491779	5	1.403912	10	1.410698	50	1.180005	100	1.262517
4-Chlorotoluene	1	1.528714	2	1.449526	5	1.431447	10	1.491101	50	1.232952	100	1.33045
t-Butylbenzene	1	1.790789	2	1.746991	5	1.651411	10	1.676883	50	1.372416	100	1.445007
1,3,5-Trimethylbenzene	1	1.825595	2	1.865901	5	1.740802	10	1.830071	50	1.496678	100	1.605335
1,2,4-Trimethylbenzene	1	1.757815	2	1.733304	5	1.723152	10	1.772302	50	1.4704	100	1.599579
s-Butylbenzene	1	2.455651	2	2.512312	5	2.430944	10	2.528253	50	1.98496	100	2.119323
4-Isopropyl Toluene	1	2.081716	2	2.005969	5	2.044417	10	2.163626	50	1.742971	100	1.869354
1,3-Dichlorobenzene	1	1.181685	2	1.178494	5	1.083267	10	1.112698	50	0.9212717	100	0.9823539
1,4-Dichlorobenzene	1	1.149169	2	1.102715	5	1.118542	10	1.105587	50	0.9114917	100	0.9719368
n-Butylbenzene	1	1.804413	2	1.81354	5	1.749686	10	1.88385	50	1.508808	100	1.622455
1,2-Dichlorobenzene	1	1.062955	2	0.982235	5	0.9962343	10	1.019299	50	0.8556692	100	0.9068616
1,2-Dibromo-3-chloropropane					5	7.395657E-02	10	7.315574E-02	50	7.042949E-02	100	6.966363E-02
1,2,4-Trichlorobenzene					5	0.6742791	10	0.7126769	50	0.615159	100	0.6487969
Hexachloro-1,3-Butadiene					5	0.3900762	10	0.4509887	50	0.3429242	100	0.3705447
Naphthalene					5	1.282748	10	1.438176	50	1.37536	100	1.390196
1,2,3-Trichlorobenzene					5	0.6090639	10	0.6245556	50	0.5729349	100	0.5998326
Dichlorodifluoromethane	1	0.5002202	2	0.5574518	5	0.477084	10	0.500137	50	0.4284908	100	0.4627966
Methyl tert-butyl Ether	1	1.043329	2	0.9278929	5	0.9372801	10	0.9231777	50	0.8639185	100	0.9555192
2-Pentanone	5	2.288652E-02	10	2.288789E-02	25	2.372197E-02	50	2.759619E-02	250	2.652996E-02	500	2.596462E-02
1,2-Dichloroethane-d4	50	0.4752138	50	0.4576236	50	0.4642046	50	0.4522187	50	0.4490019	50	0.4558869
Toluene-d8	50	1.176431	50	1.156496	50	1.169703	50	1.155267	50	1.175255	50	1.18474
4-Bromofluorobenzene	50	0.4339441	50	0.4251173	50	0.4204749	50	0.426038	50	0.4251992	50	0.4312798
1,2-Dichlorobenzene-d4	50	0.8852457	50	0.8674432	50	0.8646559	50	0.8563595	50	0.8739843	50	0.892528



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CF00067

Instrument: NT5

Calibration Date: 06/24/2019 0:52

Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Chloromethane	150	0.4025475	200	0.4427813								
Vinyl Chloride	150	0.4220165	200	0.4682941								
Bromomethane	150	0.3150658	200	0.3474446								
Chloroethane	150	0.3472006										
Trichlorofluoromethane	150	0.8147328	200	0.8826226								
Acrolein	750	4.170376E-02	1000	4.472494E-02								
1,1,2-Trichloro-1,2,2-Trifluoroethane			200	0.4206124								
Acetone	750	7.140857E-02	1000	7.543229E-02								
1,1-Dichloroethene			200	0.4617252								
Bromoethane	150	0.2744962	200	0.3011445								
Iodomethane	150	0.5501595	200	0.5933967								
Methylene Chloride	150	0.398551	200	0.4269074								
Acrylonitrile	150	8.231955E-02	200	8.929987E-02								
Carbon Disulfide	150	1.15322	200	1.291352								
trans-1,2-Dichloroethene	150	0.4378312	200	0.4823125								
Vinyl Acetate	150	0.6208689	200	0.6511679								
1,1-Dichloroethane	150	0.6796695	200	0.7338021								
2-Butanone	750	3.439324E-02	1000	3.655656E-02								
2,2-Dichloropropane	150	0.640053	200	0.700901								
cis-1,2-Dichloroethene	150	0.4586996	200	0.4976252								
Chloroform	150	0.6995839	200	0.7536126								
Bromochloromethane	150	0.2238997	200	0.2370993								
1,1,1-Trichloroethane	150	0.6827026	200	0.7590119								
1,1-Dichloropropene	150	0.3105629	200	0.3394332								
Carbon tetrachloride	150	0.3699028	200	0.4027982								
1,2-Dichloroethane	150	0.2520905	200	0.2692263								
Benzene	150	0.9032165	200	0.9636526								



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CF00067

Instrument: NT5

Calibration Date: 06/24/2019 0:52

Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Trichloroethene	150	0.2722741	200	0.2976352								
1,2-Dichloropropane	150	0.2035629	200	0.2142742								
Bromodichloromethane	150	0.3018505	200	0.3174583								
Dibromomethane	150	0.1229864	200	0.1297687								
2-Chloroethyl vinyl ether	150	0.1154485	200	0.1211638								
4-Methyl-2-Pentanone	750	5.985859E-02	1000	6.261459E-02								
cis-1,3-Dichloropropene	150	0.3602415	200	0.3763346								
Toluene	150	0.6009827	200	0.6433142								
trans-1,3-Dichloropropene	150	0.3181124	200	0.3333004								
2-Hexanone	750	0.1061338	1000	0.1127577								
1,1,2-Trichloroethane	150	0.1788698	200	0.1854558								
1,3-Dichloropropane	150	0.3028159	200	0.320218								
Tetrachloroethene	150	0.2993807	200	0.3288413								
Dibromochloromethane	150	0.2484016	200	0.2622754								
1,2-Dibromoethane	150	0.1799361	200	0.1864637								
Chlorobenzene	150	0.6969096	200	0.7513235								
Ethylbenzene	150	1.148517	200	1.250907								
1,1,1,2-Tetrachloroethane	150	0.2602599	200	0.2789643								
m,p-Xylene	300	0.4798616	400	0.5333745								
o-Xylene	150	0.4623756	200	0.4991221								
Xylenes, total	450	0.4740329	600	0.521957								
Styrene	150	0.7630515	200	0.8401602								
Bromoform	150	0.2843296	200	0.3000355								
1,1,2,2-Tetrachloroethane	150	0.3699309	200	0.3878966								
1,2,3-Trichloropropane	150	0.12963	200	0.1412291								
trans-1,4-Dichloro 2-Butene	150	0.1022705	200	0.1105528								
n-Propylbenzene	150	2.375298	200	2.586091								
Bromobenzene	150	0.5358997	200	0.5757854								



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CF00067	Instrument:	NT5
Calibration Date:	06/24/2019 0:52	Column (1):	RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Isopropyl Benzene	150	2.102425	200	2.297724								
2-Chlorotoluene	150	1.368029	200	1.491148								
4-Chlorotoluene	150	1.42928	200	1.536585								
t-Butylbenzene	150	1.596615	200	1.754416								
1,3,5-Trimethylbenzene	150	1.747065	200	1.951418								
1,2,4-Trimethylbenzene	150	1.736623	200	1.910693								
s-Butylbenzene	150	2.326943	200	2.571946								
4-Isopropyl Toluene	150	2.061193	200	2.267339								
1,3-Dichlorobenzene	150	1.066773	200	1.165118								
1,4-Dichlorobenzene	150	1.053923	200	1.138703								
n-Butylbenzene	150	1.792888	200	1.98101								
1,2-Dichlorobenzene	150	0.9797175	200	1.045615								
1,2-Dibromo-3-chloropropane	150	6.823529E-02	200	7.133892E-02								
1,2,4-Trichlorobenzene	150	0.6856337	200	0.698944								
Hexachloro-1,3-Butadiene	150	0.4026861	200	0.4384856								
Naphthalene	150	1.374375	200	1.398008								
1,2,3-Trichlorobenzene	150	0.6164067	200	0.6291244								
Dichlorodifluoromethane	150	0.5232769	200	0.5815409								
Methyl tert-butyl Ether	150	0.9861869	200	1.041988								
2-Pentanone	750	2.566723E-02	1000	2.679189E-02								
1,2-Dichloroethane-d4	50	0.4478339	50	0.4573184								
Toluene-d8	50	1.181014	50	1.168231								
4-Bromofluorobenzene	50	0.4309463	50	0.4313829								
1,2-Dichlorobenzene-d4	50	0.8562501	50	0.8796295								



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CF00067	Instrument:	NT5
Calibration Date:	06/24/2019 0:52	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Chloromethane	0.4177494	12.8			RSD (15)	
Vinyl Chloride	0.4216991	10.9			RSD (15)	
Bromomethane	0.3097694	11.5			RSD (15)	
Chloroethane	0.3504585	16.4	0.9918		LCOD (0.99)	
Trichlorofluoromethane	0.803512	10.7			RSD (15)	
Acrolein	4.187887E-02	6.0			RSD (15)	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.3766319	14.5			RSD (15)	
Acetone	8.469421E-02	21.5	0.9986		LCOD (0.99)	
1,1-Dichloroethene	0.4122658	12.9			RSD (15)	
Bromoethane	0.277451	11.6			RSD (15)	
Iodomethane	0.5376497	9.7			RSD (15)	
Methylene Chloride	0.4362664	19.9	0.9927		LCOD (0.99)	
Acrylonitrile	8.753967E-02	6.1			RSD (15)	
Carbon Disulfide	1.150024	11.0			RSD (15)	
trans-1,2-Dichloroethene	0.4428969	10.8			RSD (15)	
Vinyl Acetate	0.6092774	4.7			RSD (15)	
1,1-Dichloroethane	0.6645161	8.6			RSD (15)	
2-Butanone	3.462741E-02	7.6			RSD (15)	
2,2-Dichloropropane	0.6403541	10.8			RSD (15)	
cis-1,2-Dichloroethene	0.4551429	9.4			RSD (15)	
Chloroform	0.7000002	9.3			RSD (15)	
Bromochloromethane	0.2234647	7.5			RSD (15)	
1,1,1-Trichloroethane	0.6864888	11.1			RSD (15)	
1,1-Dichloropropene	0.3440818	26.0	0.9879		LCOD (0.99)	*
Carbon tetrachloride	0.3679959	11.3			RSD (15)	
1,2-Dichloroethane	0.2545649	8.1			RSD (15)	
Benzene	0.8862879	7.9			RSD (15)	
Trichloroethene	0.2765624	10.4			RSD (15)	
1,2-Dichloropropane	0.1941691	8.9			RSD (15)	
Bromodichloromethane	0.2889172	7.3			RSD (15)	
Dibromomethane	0.1215825	6.2			RSD (15)	



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CF00067	Instrument:	NT5
Calibration Date:	06/24/2019 0:52	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
2-Chloroethyl vinyl ether	0.1125419	4.7			RSD (15)	
4-Methyl-2-Pentanone	5.860205E-02	7.5			RSD (15)	
cis-1,3-Dichloropropene	0.3375659	7.2			RSD (15)	
Toluene	0.6050908	9.8			RSD (15)	
trans-1,3-Dichloropropene	0.2984275	6.7			RSD (15)	
2-Hexanone	0.1038571	6.2			RSD (15)	
1,1,2-Trichloroethane	0.1782568	6.8			RSD (15)	
1,3-Dichloropropane	0.2987294	5.4			RSD (15)	
Tetrachloroethene	0.3069287	12.4			RSD (15)	
Dibromochloromethane	0.237719	6.0			RSD (15)	
1,2-Dibromoethane	0.1801438	5.0			RSD (15)	
Chlorobenzene	0.7124028	9.0			RSD (15)	
Ethylbenzene	1.169231	10.1			RSD (15)	
1,1,1,2-Tetrachloroethane	0.2532648	8.6			RSD (15)	
m,p-Xylene	0.4763682	10.2			RSD (15)	
o-Xylene	0.4528393	8.8			RSD (15)	
Xylenes, total	0.4685252	9.7			RSD (15)	
Styrene	0.7256937	8.8			RSD (15)	
Bromoform	0.2943192	7.3			RSD (15)	
1,1,2,2-Tetrachloroethane	0.3837821	3.0			RSD (15)	
1,2,3-Trichloropropane	0.1331971	5.3			RSD (15)	
trans-1,4-Dichloro 2-Butene	0.1048332	2.9			RSD (15)	
n-Propylbenzene	2.417169	8.8			RSD (15)	
Bromobenzene	0.5492848	7.7			RSD (15)	
Isopropyl Benzene	2.132559	8.3			RSD (15)	
2-Chlorotoluene	1.378304	7.8			RSD (15)	
4-Chlorotoluene	1.428757	7.2			RSD (15)	
t-Butylbenzene	1.629316	9.3			RSD (15)	
1,3,5-Trimethylbenzene	1.757858	8.4			RSD (15)	
1,2,4-Trimethylbenzene	1.712984	7.6			RSD (15)	
s-Butylbenzene	2.366291	8.9			RSD (15)	



INITIAL CALIBRATION DATA EPA 8260C

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CF00067	Instrument:	NT5
Calibration Date:	06/24/2019 0:52	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
4-Isopropyl Toluene	2.029573	8.0			RSD (15)	
1,3-Dichlorobenzene	1.086458	8.7			RSD (15)	
1,4-Dichlorobenzene	1.069008	8.0			RSD (15)	
n-Butylbenzene	1.769581	8.3			RSD (15)	
1,2-Dichlorobenzene	0.9810733	7.1			RSD (15)	
1,2-Dibromo-3-chloropropane	7.112994E-02	3.0			RSD (15)	
1,2,4-Trichlorobenzene	0.6725816	5.3			RSD (15)	
Hexachloro-1,3-Butadiene	0.3992842	10.2			RSD (15)	
Naphthalene	1.376477	3.7			RSD (15)	
1,2,3-Trichlorobenzene	0.608653	3.4			RSD (15)	
Dichlorodifluoromethane	0.5038748	9.9			RSD (15)	
Methyl tert-butyl Ether	0.9599115	6.4			RSD (15)	
2-Pentanone	2.525578E-02	7.3			RSD (15)	
1,2-Dichloroethane-d4	0.4574127	1.9			RSD (15)	
Toluene-d8	1.170892	0.9			RSD (15)	
4-Bromofluorobenzene	0.4280478	1.1			RSD (15)	
1,2-Dichlorobenzene-d4	0.872012	1.5			RSD (15)	



ANALYSIS SEQUENCE

SHF0324

Instrument: NT5 Element Column ID: RTXVMS
Calibration ID: CF00067 Tune File: bfb.u
EM Voltage: 2000

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHF0324-TUN1	MS Tune	QC		1	H005698	H000166	
SHF0324-CAL1	8260C 0.2	QC		2	H006204	H000166	
SHF0324-CAL2	8260C 0.5	QC		3	H006205	H000166	
SHF0324-CAL3	8260C 1	QC		4	H006206	H000166	
SHF0324-CAL4	8260C 2	QC		5	H006207	H000166	
SHF0324-CAL5	8260C 10	QC		6	H006208	H000166	
SHF0324-CAL6	8260C 20	QC		7	H006209	H000166	
SHF0324-CAL7	8260C 40	QC		8	H006211	H000166	
SHF0324-CAL8	8260C 80	QC		9	H006212	H000166	
SHF0324-SCV1	8260C SCV	QC		10	H006213	H000166	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190624.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
------	----------	-------	----------	-------	----	----

1	1127	NT506241901.D		1	5.33	523203 5.78	950885 8.25	900892 10.35	493175
---	------	---------------	--	---	------	---------------	---------------	---------------	--------

2	1149	NT506241902.D	ICVTST	1	5.34	288212 5.79	496632 8.26	483473 10.35	265064
---	------	---------------	--------	---	------	---------------	---------------	---------------	--------

3	1318	NT506241903.D		1	5.34	282505 5.78	499396 8.26	480171 10.35	262517
---	------	---------------	--	---	------	---------------	---------------	---------------	--------

4	1340	NT506241904.D		1	5.34	267943 5.79	465085 8.26	442128 10.35	244307
---	------	---------------	--	---	------	---------------	---------------	---------------	--------

5	1443	NT506241905.D	TUN1	1					
---	------	---------------	------	---	--	--	--	--	--

6	1518	NT506241906.D	shf0324-TUN1	1					
---	------	---------------	--------------	---	--	--	--	--	--

7	1630	NT506241907.D	shf0324-CAL1	1	5.34	436008 5.78	800908 8.26	779930 10.35	436707
---	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

8	1652	NT506241908.D	shf0324-CAL2	1	5.34	418960 5.79	757606 8.26	727858 10.35	398199
---	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

9	1714	NT506241909.D	shf0324-CAL3	1	5.34	426340 5.79	777170 8.26	755541 10.35	419841
---	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

10	1737	NT506241910.D	shf0324-CAL4	1	5.34	419735 5.79	753365 8.26	708871 10.35	403591
----	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

11	1759	NT506241911.D	shf0324-CAL5	1	5.34	403927 5.79	717664 8.26	696563 10.35	380778
----	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

12	1822	NT506241912.D	shf0324-CAL6	1	5.34	437863 5.79	784452 8.26	770363 10.36	433806
----	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

13	1844	NT506241913.D	shf0324-CAL7	1	5.34	454979 5.79	806894 8.26	790356 10.36	461169
----	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

14	1906	NT506241914.D	shf0324-CAL8	1	5.34	428990 5.79	772118 8.26	747248 10.36	439003
----	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

15	1928	NT506241915.D	shf0324-SCV1	1	5.34	425497 5.79	760389 8.26	731839 10.35	411421
----	------	---------------	--------------	---	------	---------------	---------------	---------------	--------

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190624.b

ARI Job No.: shf0 Method: bfb8260.m Instrument: nt5.i Date: 24-JUN-2019

Time	Filename	LabID	ClientID	DF	Manually Integrated Compounds
1518	NT506241906.D	shf0324-TUN1		1	NO MANUAL INTEGRATION
1630	NT506241907.D	shf0324-CAL1		1	2,2-Dichloropropane, 1,1,1-Trichloroethane, 1,2-Dichloropropane, 4-Methyl-2-Pentanone, 1,1,2-Trichloroethane, 1,2,3-Trichloropropane, Trans-1,4-Dichloro 2-Butene, 1,2-Dibromo 3-Chloropropane,
1652	NT506241908.D	shf0324-CAL2		1	1,1,1-Trichloroethane, 4-Methyl-2-Pentanone, 1,1,2-Trichloroethane, 1,2,3-Trichloropropane, Trans-1,4-Dichloro 2-Butene,
1714	NT506241909.D	shf0324-CAL3		1	4-Methyl-2-Pentanone, Dichlorodifluoromethane,
1737	NT506241910.D	shf0324-CAL4		1	Vinyl Chloride, 4-Methyl-2-Pentanone, Dichlorodifluoromethane,
1759	NT506241911.D	shf0324-CAL5		1	NO MANUAL INTEGRATION
1822	NT506241912.D	shf0324-CAL6		1	NO MANUAL INTEGRATION
1844	NT506241913.D	shf0324-CAL7		1	NO MANUAL INTEGRATION
1906	NT506241914.D	shf0324-CAL8		1	NO MANUAL INTEGRATION
1928	NT506241915.D	shf0324-SCV1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 26-Jun-2019 15:16

NT506241901.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241902.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241903.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241904.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241905.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241906.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241907.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241908.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241909.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241910.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241911.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241912.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241913.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241914.D	Data Locked	patrickb,	26-Jun-2019	15:16
NT506241915.D	Data Locked	patrickb,	26-Jun-2019	15:16

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Calibration File Names:

Level 1: \\target\share\chem1\nt5.i\20190624.b\NT506241907.D
 Level 2: \\target\share\chem1\nt5.i\20190624.b\NT506241908.D
 Level 3: \\target\share\chem1\nt5.i\20190624.b\NT506241909.D
 Level 4: \\target\share\chem1\nt5.i\20190624.b\NT506241910.D
 Level 5: \\target\share\chem1\nt5.i\20190624.b\NT506241911.D
 Level 6: \\target\share\chem1\nt5.i\20190624.b\NT506241912.D
 Level 7: \\target\share\chem1\nt5.i\20190624.b\NT506241913.D
 Level 8: \\target\share\chem1\nt5.i\20190624.b\NT506241914.D

Compound	1.0000		2.0000		5.0000		10.0000		50.0000		100.0000		Coefficients		m2		%RSD	
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Curve	b	m1	m2	or R ²							
1 Dichlorodifluoromethane	0.50022	0.55745	0.47708	0.50014	0.42849	0.46280	AVRG		0.50387		9.89306							
	0.52328	0.58154																
2 Chloromethane	0.49873	0.46204	0.42816	0.41032	0.32831	0.36912	AVRG		0.41775		12.76487							
	0.40255	0.44278																
3 Vinyl Chloride	0.41880	0.48931	0.39982	0.44629	0.34995	0.37911	AVRG		0.42170		10.90226							
	0.42202	0.46829																

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R^2
4 Bromomethane	0.34506 0.31507	0.34693 0.34744	0.28726	0.30474	0.25065	0.28100	AVRG		0.30977		11.52940
5 Chloroethane	3933 473907	6454 ++++	15401	27318	110125	271976	LINR	0.000e+000	0.33302		0.99183
6 Trichlorofluoromethane	0.76432 0.81473	0.80294 0.88262	0.89734	0.87977	0.64388	0.74250	AVRG		0.80351		10.70022
7 1,1-Dichloroethene	0.43554 0.41130	0.44044 0.46173	0.43254	0.43896	0.31499	0.36167	AVRG		0.41215		11.93190
8 Carbon Disulfide	1.20571 1.15322	1.26748 1.29135	1.17716	1.17581	0.91732	1.01213	AVRG		1.15002		10.97194
9 112Trichloro122Trifluoroethan	++++ 0.37346	0.41931 0.42061	0.39605	0.40707	0.29133	0.32542	AVRG		0.37618		13.27644
10 Iodomethane	0.59013 0.55016	0.57559 0.59340	0.52449	0.53097	0.43868	0.49779	AVRG		0.53765		9.70524

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
11 Bromoethane	++++ 0.27450	0.31471 0.30114	0.29559	0.28667	0.22412	0.24543	AVRG		0.27745		11.62446
12 Acrolein	0.04349 0.04170	0.03661 0.04472	0.04138 0.04142	0.04411	0.04142	0.04159	AVRG		0.04188		5.98415
13 Methylene Chloride	++++ 543997	10020 732556	20854	36613	135226	323783	LINR	0.000e+000	0.40924		0.99274
14 Acetone	5389 487341	8336 647194	17270	34357	148353	312219	LINR	0.000e+000	0.07368		0.99863
15 Trans-1,2-Dichloroethene	0.49712 0.43783	0.47666 0.48231	0.44945	0.45380	0.35611	0.38989	AVRG		0.44290		10.84944
16 Methyl tert butyl ether	1.04333 0.98619	0.92789 1.04199	0.93728	0.92318	0.86392	0.95552	AVRG		0.95991		6.41052
173 n-Hexane	++++ ++++	++++ ++++	++++	++++	++++	++++	AVRG		0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
17 1,1-Dichloroethane	0.68783 0.67967	0.71546 0.73380	0.65502	0.67434	0.55320	0.61681	AVRG		0.66452		8.63053
18 Acrylonitrile	++++ 0.08232	++++ 0.08930	0.08568	0.09620	0.08969	0.08204	AVRG		0.08754		6.12397
19 Vinyl Acetate	++++ 0.62087	++++ 0.65117	0.59565	0.61980	0.56509	0.60309	AVRG		0.60928		4.74336
20 Cis-1,2-Dichloroethane	0.43073 0.45870	0.50971 0.49763	0.46822	0.47480	0.37954	0.42182	AVRG		0.45514		9.38617
21 Allyl Chloride	++++ ++++	++++ ++++	++++	++++	++++	++++	AVRG		0.000e+000		0.000e+000
22 2,2-Dichloropropane	0.66386 0.64005	0.71105 0.70090	0.65750	0.67129	0.50531	0.57286	AVRG		0.64035		10.76427
23 Bromochloromethane	0.23084 0.22390	0.24459 0.23710	0.21866	0.22876	0.18951	0.21415	AVRG		0.22346		7.51893

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R^2
24 Chloroform	0.74700 0.69958	0.75622 0.75361	0.72156 0.75361	0.71393 0.75361	0.57104 0.75361	0.63705 0.75361	AVRG AVRG		0.70000 0.70000		9.27325 9.27325
25 Carbon Tetrachloride	0.39018 0.36990	0.41872 0.40280	0.35826 0.40280	0.38575 0.40280	0.29514 0.40280	0.32321 0.40280	AVRG AVRG		0.36800 0.36800		11.25275 11.25275
26 1,1,1-Trichloroethane	0.74528 0.68270	0.76123 0.75901	0.68165 0.75901	0.70553 0.75901	0.54229 0.75901	0.61401 0.75901	AVRG AVRG		0.68649 0.68649		11.11383 11.11383
28 1,1-Dichloropropene	8727 751774	10963 ++++	26638 ++++	50003 ++++	177861 ++++	429284 ++++	LINR LINR	0.000e+000 0.000e+000	0.29720 0.29720		0.99129 0.99129
29 2-Butanone	0.03491 0.03439	0.02848 0.03656	0.03660 0.03656	0.03591 0.03656	0.03538 0.03656	0.03460 0.03656	AVRG AVRG		0.03463 0.03463		7.61209 7.61209
30 Benzene	0.89211 0.90322	0.94578 0.96365	0.89615 0.96365	0.92084 0.96365	0.75051 0.96365	0.81805 0.96365	AVRG AVRG		0.88629 0.88629		7.88989 7.88989
33 1,2-Dichloroethane	0.27744 0.25209	0.27980 0.26923	0.25527 0.26923	0.24800 0.26923	0.22030 0.26923	0.23440 0.26923	AVRG AVRG		0.25456 0.25456		8.13916 8.13916

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
150.0000 Level 7	200.0000 Level 8										
34 Trichloroethene	0.28355 0.27227	0.30487 0.29764	0.29739	0.28943	0.22321	0.24414	AVRG		0.27656		10.41705
36 Methyl Methacrylate	++++ ++++	++++ ++++	++++	++++	++++	++++	AVRG		0.000e+000		0.000e+000 <-
37 Dibromomethane	0.12355 0.12299	0.13186 0.12977	0.11443	0.12262	0.10874	0.11871	AVRG		0.12158		6.24765
38 1,2-Dichloropropane	0.19746 0.20356	0.21608 0.21427	0.18620	0.18854	0.16395	0.18328	AVRG		0.19417		8.94148
39 Bromodichloromethane	0.30097 0.30185	0.28154 0.31746	0.28936	0.29404	0.24615	0.27996	AVRG		0.28892		7.30358
172 2-Pentanone	0.02289 0.02567	0.02289 0.02679	0.02372	0.02760	0.02653	0.02596	AVRG		0.02526		7.28640
40 2-Chloroethyl Vinyl Ether	++++ 0.11545	++++ 0.12116	0.11077	0.11078	0.10545	0.11164	AVRG		0.11254		4.70462

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
41 Cis 1,3-dichloropropene	0.31758 0.36024	0.34787 0.37633	0.33224 0.37633	0.33168 0.37633	0.29822 0.37633	0.33636 0.37633	AVRG AVRG		0.33757 0.33757		7.20038 7.20038
43 Toluene	0.63740 0.60098	0.67202 0.64331	0.61164 0.64331	0.63958 0.64331	0.49502 0.64331	0.54058 0.64331	AVRG AVRG		0.60509 0.60509		9.77988 9.77988
44 Tetrachloroethene	0.32913 0.29938	0.34615 0.32884	0.31998 0.32884	0.33177 0.32884	0.23747 0.32884	0.26270 0.32884	AVRG AVRG		0.30693 0.30693		12.39872 12.39872
45 4-Methyl-2-Pentanone	0.05222 0.05986	0.05348 0.06261	0.05553 0.06261	0.06459 0.06261	0.06077 0.06261	0.05976 0.06261	AVRG AVRG		0.05860 0.05860		7.52299 <- 7.52299 <-
46 Trans 1,3-Dichloropropene	0.29691 0.31811	0.28481 0.33330	0.28655 0.33330	0.29708 0.33330	0.26955 0.33330	0.30110 0.33330	AVRG AVRG		0.29843 0.29843		6.67227 6.67227
47 1,1,2-Trichloroethane	0.19690 0.17887	0.18756 0.18546	0.17636 0.18546	0.17149 0.18546	0.15673 0.18546	0.17268 0.18546	AVRG AVRG		0.17826 0.17826		6.80570 6.80570
48 Chlorodibromomethane	0.23585 0.24840	0.23617 0.26228	0.23203 0.26228	0.24112 0.26228	0.21231 0.26228	0.23359 0.26228	AVRG AVRG		0.23772 0.23772		6.01184 6.01184

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
49 1,3-Dichloropropane	0.31830 0.30282	0.29686 0.32022	0.28594	0.30458	0.27445	0.28666	AVRG		0.29873		5.36441
50 1,2-Dibromoethane	0.18910 0.17994	0.18905 0.18646	0.17435	0.18499	0.16403	0.17324	AVRG		0.18014		4.98276
51 2-Hexanone	0.09756 0.10613	0.09708 0.11276	0.09531	0.10891	0.10783	0.10528	AVRG		0.10386		6.15917
53 Chlorobenzene	0.75981 0.69691	0.77491 0.75132	0.71970	0.75921	0.59788	0.63947	AVRG		0.71240		8.97050
54 Ethyl Benzene	1.26300 1.14852	1.25540 1.25091	1.18968	1.26092	0.95342	1.03202	AVRG		1.16923		10.09606
55 1,1,1,2-Tetrachloroethane	0.27810 0.26026	0.26379 0.27896	0.23614	0.25544	0.21661	0.23682	AVRG		0.25326		8.63691
56 m,p-xylene	0.48363 0.47986	0.51050 0.53337	0.47557	0.51610	0.38853	0.42338	AVRG		0.47637		10.21743

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R^2
	150.0000 Level 7	200.0000 Level 8									
57 o-Xylene	0.47568 0.46238	0.46870 0.49912	0.45023	0.47710	0.37657	0.41292	AVRG		0.45284		8.75884
58 Styrene	0.70692 0.76305	0.70721 0.84016	0.71865	0.76178	0.62514	0.68263	AVRG		0.72569		8.79413
59 Bromoform	0.34096 0.28433	0.29583 0.30004	0.29873	0.28364	0.27095	0.28007	AVRG		0.29432		7.25632
60 Isopropyl Benzene	2.20342 2.10243	2.29766 2.29772	2.15741	2.26167	1.82132	1.91884	AVRG		2.13256		8.31871
61 Cyclohexanone	++++ ++++	++++ ++++	++++	++++	++++	++++	AVRG		0.000e+000		0.000e+000
63 Bromobenzene	0.61048 0.53590	0.58256 0.57579	0.55295	0.55382	0.48150	0.50129	AVRG		0.54928		7.74397
64 N-Propyl Benzene	2.59201 2.37530	2.59481 2.58609	2.38335	2.58813	2.05046	2.16720	AVRG		2.41717		8.84191

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
65 1,1,2,2-Tetrachloroethane	0.39042 0.36993	0.40093 0.38790	0.37571 0.37571	0.39500 0.37161	0.37161 0.37875	0.37875 0.37875	AVRG		0.38378		2.97330
66 2-Chloro Toluene	1.41834 1.36803	1.49178 1.49115	1.40391 1.40391	1.41070 1.41070	1.18001 1.18001	1.26252 1.26252	AVRG		1.37830		7.84077
67 1,3,5-Trimethyl Benzene	1.82559 1.74707	1.86590 1.95142	1.74060 1.74060	1.83007 1.83007	1.49668 1.49668	1.60534 1.60534	AVRG		1.75786		8.35040
68 1,2,3-Trichloropropane	++++ 0.12963	0.13304 0.14123	0.12576 0.12576	0.14460 0.14460	0.12769 0.12769	0.13043 0.13043	AVRG		0.13320		5.31394
69 Trans-1,4-Dichloro 2-Butene	++++ 0.10227	++++ 0.11055	0.10368 0.10368	0.10488 0.10488	0.10496 0.10496	0.10265 0.10265	AVRG		0.10483		2.87466
70 4-Chloro Toluene	1.52871 1.42928	1.44953 1.53659	1.43145 1.43145	1.49110 1.49110	1.23295 1.23295	1.33045 1.33045	AVRG		1.42876		7.19375
71 T-Butyl Benzene	1.79079 1.59661	1.74699 1.75442	1.65141 1.65141	1.67688 1.67688	1.37242 1.37242	1.44501 1.44501	AVRG		1.62932		9.26047

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
72 1,2,4-Trimethylbenzene	1.75781 1.73662	1.73330 1.91069	1.72315	1.77230	1.47040	1.59958	AVRG		1.71298		7.56018
73 S-Butyl Benzene	2.45565 2.32694	2.51231 2.57195	2.43094	2.52825	1.98496	2.11932	AVRG		2.36629		8.89285
74 4-Isopropyl Toluene	2.08172 2.06119	2.00597 2.26734	2.04442	2.16363	1.74297	1.86935	AVRG		2.02957		8.04908
75 1,3-Dichlorobenzene	1.18168 1.06677	1.17849 1.16512	1.08327	1.11270	0.92127	0.98235	AVRG		1.08646		8.72749
77 1,4-Dichlorobenzene	1.14917 1.05392	1.10271 1.13870	1.11854	1.10559	0.91149	0.97194	AVRG		1.06901		7.95897
78 N-Butyl Benzene	1.80441 1.79289	1.81354 1.98101	1.74969	1.88385	1.50881	1.62245	AVRG		1.76958		8.31336
80 1,2-Dichlorobenzene	1.06296 0.97972	0.98224 1.04562	0.99623	1.01930	0.85567	0.90686	AVRG		0.98107		7.08265

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000 Level 1	2.0000 Level 2	5.0000 Level 3	10.0000 Level 4	50.0000 Level 5	100.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R ²
81 1,2-Dibromo 3-Chloropropane	++++ 0.06824	++++ 0.07134	0.07396	0.07316	0.07043	0.06966	AVRG		0.07113		3.02555
82 Hexachloro 1,3-Butadiene	++++ 0.40269	++++ 0.43849	0.39068	0.45099	0.34292	0.37054	AVRG		0.39928		10.20949
83 1,2,4-Trichlorobenzene	++++ 0.68563	++++ 0.69894	0.67428	0.71268	0.61516	0.64880	AVRG		0.67258		5.29392
84 Naphthalene	++++ 1.37438	++++ 1.39801	1.28275	1.43818	1.37536	1.39020	AVRG		1.37648		3.73977
85 1,2,3-Trichlorobenzene	++++ 0.61641	++++ 0.62912	0.60906	0.62456	0.57293	0.59983	AVRG		0.60865		3.35572
27 Dibromofluoromethane	0.56148 0.55015	0.53895 0.54404	0.55349	0.53363	0.54332	0.54936	AVRG		0.54680		1.59561
32 d4-1,2-Dichloroethane	0.47521 0.44783	0.45762 0.45732	0.46420	0.45222	0.44900	0.45589	AVRG		0.45741		1.94642

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
 End Cal Date : 24-JUN-2019 19:06
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Last Edit : 26-Jun-2019 14:51 nt5.i

Compound	1.0000		2.0000		5.0000		10.0000		50.0000		100.0000		Curve		b		Coefficients		m2		%RSD	
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10	Level 11	Level 12	Level 13	Level 14	Level 15	Level 16	Level 17	Level 18	Level 19	Level 20	Level 21	Level 22
42 d8-Toluene	1.17643	1.15650	1.16970	1.15527	1.17525	1.18474	1.17643	1.15650	1.16970	1.15527	1.17525	1.18474	1.17643	1.15650	1.16970	1.15527	1.17525	1.18474	1.17643	1.15650	1.16970	1.15527
	1.18101	1.16823	1.16970	1.15527	1.17525	1.18474	1.17643	1.15650	1.16970	1.15527	1.17525	1.18474	1.17643	1.15650	1.16970	1.15527	1.17525	1.18474	1.17643	1.15650	1.16970	1.15527
62 4-Bromofluorobenzene	0.43394	0.42512	0.42047	0.42604	0.42520	0.43128	0.43394	0.42512	0.42047	0.42604	0.42520	0.43128	0.43394	0.42512	0.42047	0.42604	0.42520	0.43128	0.43394	0.42512	0.42047	0.42604
	0.43095	0.43138	0.42047	0.42604	0.42520	0.43128	0.43394	0.42512	0.42047	0.42604	0.42520	0.43128	0.43394	0.42512	0.42047	0.42604	0.42520	0.43128	0.43394	0.42512	0.42047	0.42604
79 d4-1,2-Dichlorobenzene	0.88525	0.86744	0.86466	0.85636	0.87398	0.89253	0.88525	0.86744	0.86466	0.85636	0.87398	0.89253	0.88525	0.86744	0.86466	0.85636	0.87398	0.89253	0.88525	0.86744	0.86466	0.85636
	0.85625	0.87963	0.86466	0.85636	0.87398	0.89253	0.88525	0.86744	0.86466	0.85636	0.87398	0.89253	0.88525	0.86744	0.86466	0.85636	0.87398	0.89253	0.88525	0.86744	0.86466	0.85636

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 24-JUN-2019 16:30
End Cal Date : 24-JUN-2019 19:06
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Last Edit : 26-Jun-2019 14:51 nt5.i

Curve	Formula	Units
Averaged	Amt = Resp/ml	Response
Linear	Amt = b + Resp/ml	Response

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Batch File: \\target\share\chem1\nt5.i\20190624.b
Inst ID: nt5.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08			
FILENAME:	NT506241907	NT506241908	NT506241909	NT506241910	NT506241911	NT506241912	NT506241913	NT506241914			
INJ. DATE:	24-JUN-2019	24-JUN-2019	24-JUN-2019	24-JUN-2019	24-JUN-2019	24-JUN-2019	24-JUN-2019	24-JUN-2019			
INJ. TIME:	16:30	16:52	17:14	17:37	17:59	18:22	18:44	19:06			
Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	AVG RT	STD DEV	
1 Dichlorodifluoromethan	1.329	1.329	1.329	1.323	1.329	1.323	1.323	1.329	1.222-1.436	1.327	0.003
2 Chloromethane	1.494	1.488	1.488	1.488	1.488	1.488	1.488	1.488	1.381-1.594	1.488	0.002
3 Vinyl Chloride	1.555	1.555	1.555	1.554	1.561	1.555	1.555	1.555	1.454-1.667	1.555	0.002
4 Bromomethane	1.840	1.840	1.841	1.840	1.840	1.840	1.840	1.841	1.733-1.947	1.840	0.000
5 Chloroethane	1.950	1.944	1.950	1.944	1.950	1.950	1.944	1.944	1.843-2.057	1.947	0.003
6 Trichlorofluoromethane	2.078	2.072	2.059	2.053	2.065	2.059	2.059	2.060	1.958-2.172	2.063	0.008
7 1,1-Dichloroethene	2.546	2.546	2.528	2.516	2.540	2.528	2.522	2.522	2.433-2.647	2.531	0.012
8 Carbon Disulfide	2.546	2.540	2.534	2.516	2.540	2.534	2.528	2.522	2.433-2.647	2.532	0.010
9 1,1,2-Trichloro-1,2,2-Trifluo	2.589	2.589	2.583	2.570	2.589	2.583	2.571	2.571	2.482-2.696	2.580	0.009
10 Iodomethane	2.662	2.674	2.662	2.656	2.668	2.662	2.656	2.656	2.561-2.775	2.662	0.006
11 Bromoethane	2.802	2.802	2.796	2.783	2.802	2.796	2.790	2.790	2.695-2.908	2.795	0.007
12 Acrolein	2.917	2.917	2.923	2.929	2.917	2.923	2.923	2.930	2.810-3.024	2.923	0.005
13 Methylene Chloride	3.161	3.155	3.148	3.148	3.161	3.154	3.155	3.155	3.054-3.267	3.155	0.005
14 Acetone	3.258	3.270	3.276	3.288	3.264	3.270	3.276	3.282	3.157-3.371	3.273	0.010
15 Trans-1,2-Dichloroethe	3.319	3.319	3.313	3.307	3.319	3.319	3.313	3.313	3.212-3.426	3.315	0.005
16 Methyl tert butyl ethe	3.489	3.495	3.495	3.507	3.489	3.495	3.501	3.501	3.382-3.596	3.497	0.006
173 n-Hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.388-3.602	+++++	+++++

Reviewer 1

Date:

Reviewer 2

Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Batch File: \\target\share\chem1\nt5.i\20190624.b
Inst ID: nt5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT1	RT WINDOW	AVG RT	STD DEV
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
17 1,1-Dichloroethane	3.945	3.951	3.945	3.945	3.951	3.945	3.945	3.946	3.951	3.844-4.058	3.947	0.003
18 Acrylonitrile	4.037	4.031	4.037	4.049	4.037	4.037	4.043	4.049	4.037	3.930-4.143	4.040	0.007
19 Vinyl Acetate	4.243	4.250	4.250	4.249	4.249	4.250	4.250	4.256	4.249	4.143-4.356	4.250	0.003
20 Cis-1,2-Dichloroethene	4.469	4.469	4.469	4.468	4.468	4.469	4.469	4.469	4.468	4.362-4.575	4.469	0.000
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
21 Allyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.560	4.453-4.667	+++++	+++++
22 2,2-Dichloropropane	4.560	4.566	4.554	4.554	4.560	4.560	4.560	4.560	4.560	4.453-4.667	4.559	0.004
23 Bromochloromethane	4.645	4.651	4.651	4.651	4.651	4.651	4.651	4.651	4.651	4.544-4.758	4.650	0.002
24 Chloroform	4.730	4.736	4.736	4.736	4.736	4.736	4.736	4.736	4.736	4.629-4.843	4.735	0.002
25 Carbon Tetrachloride	4.821	4.821	4.815	4.821	4.821	4.821	4.821	4.822	4.821	4.705-4.937	4.821	0.002
26 1,1,1-Trichloroethane	4.888	4.894	4.888	4.888	4.894	4.894	4.888	4.895	4.894	4.787-5.001	4.891	0.003
27 Dibromofluoromethane	4.894	4.900	4.901	4.900	4.900	4.900	4.901	4.901	4.900	4.793-5.007	4.900	0.002
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
28 1,1-Dichloropropene	4.998	5.004	5.004	5.004	5.004	5.004	5.004	5.004	5.004	4.888-5.120	5.003	0.002
29 2-Butanone	5.053	5.059	5.059	5.059	5.053	5.053	5.059	5.059	5.053	4.946-5.159	5.056	0.003
30 Benzene	5.229	5.229	5.223	5.223	5.229	5.229	5.229	5.229	5.229	5.113-5.345	5.227	0.003
* 31 Pentafluorobenzene	5.339	5.345	5.339	5.338	5.345	5.345	5.345	5.345	5.345	5.238-5.451	5.342	0.003
\$ 32 d4-1,2-Dichloroethane	5.357	5.357	5.357	5.357	5.363	5.357	5.357	5.363	5.363	5.256-5.470	5.358	0.003
33 1,2-Dichloroethane	5.418	5.418	5.418	5.418	5.418	5.418	5.418	5.424	5.418	5.302-5.533	5.418	0.002
34 Trichloroethene	5.740	5.746	5.740	5.740	5.746	5.740	5.740	5.740	5.746	5.630-5.862	5.742	0.003
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
* 35 1,4-Difluorobenzene	5.783	5.789	5.789	5.789	5.789	5.789	5.789	5.789	5.789	5.673-5.904	5.788	0.002
36 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	5.693	5.577-5.809	+++++	+++++
37 Dibromomethane	6.105	6.105	6.099	6.105	6.105	6.105	6.105	6.105	6.105	5.989-6.221	6.104	0.002
38 1,2-Dichloropropane	6.190	6.190	6.190	6.190	6.190	6.190	6.190	6.196	6.190	6.074-6.306	6.191	0.002
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Batch File: \\target\share\chem1\nt5.i\20190624.b
Inst ID: nt5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT1	RT WINDOW	AVG RT	STD DEV
39 Bromodichloromethane	6.251	6.257	6.257	6.257	6.257	6.257	6.257	6.257	6.257	6.141-6.373	6.256	0.002
172 2-Pentanone	6.549	6.555	6.555	6.555	6.549	6.549	6.549	6.555	6.549	6.433-6.665	6.552	0.003
40 2-Chloroethyl Vinyl Et	6.756	6.762	6.762	6.762	6.762	6.762	6.762	6.768	6.762	6.646-6.878	6.762	0.003
41 Cis 1,3-dichloropropen	6.786	6.792	6.793	6.792	6.792	6.792	6.793	6.793	6.792	6.677-6.908	6.792	0.002
42 d8-Toluene	6.945	6.945	6.945	6.945	6.945	6.945	6.945	6.945	6.945	6.829-7.060	6.945	0.000
43 Toluene	6.981	6.987	6.987	6.987	6.987	6.987	6.987	6.987	6.987	6.871-7.103	6.986	0.002
44 Tetrachloroethene	7.297	7.304	7.304	7.303	7.303	7.303	7.304	7.304	7.303	7.138-7.469	7.303	0.002
45 4-Methyl-2-Pentanone	7.340	7.340	7.334	7.340	7.340	7.340	7.340	7.346	7.340	7.224-7.456	7.340	0.003
46 Trans 1,3-Dichloroprop	7.352	7.346	7.352	7.352	7.352	7.352	7.352	7.358	7.352	7.236-7.468	7.352	0.003
47 1,1,2-Trichloroethane	7.486	7.486	7.486	7.486	7.486	7.486	7.486	7.482	7.486	7.370-7.602	7.487	0.002
48 Chlorodibromomethane	7.626	7.626	7.626	7.626	7.626	7.626	7.632	7.632	7.626	7.460-7.791	7.627	0.003
49 1,3-Dichloropropane	7.705	7.711	7.711	7.711	7.711	7.711	7.711	7.717	7.711	7.546-7.876	7.711	0.003
50 1,2-Dibromoethane	7.815	7.815	7.821	7.821	7.821	7.821	7.821	7.821	7.821	7.705-7.936	7.819	0.003
51 2-Hexanone	8.046	8.046	8.052	8.052	8.046	8.052	8.052	8.052	8.046	7.880-8.211	8.050	0.003
* 52 d5-Chlorobenzene	8.259	8.259	8.259	8.259	8.265	8.265	8.265	8.265	8.265	8.099-8.430	8.262	0.003
53 Chlorobenzene	8.271	8.277	8.277	8.277	8.277	8.277	8.277	8.283	8.277	8.111-8.442	8.277	0.003
54 Ethyl Benzene	8.301	8.307	8.307	8.307	8.307	8.307	8.313	8.314	8.307	8.142-8.472	8.308	0.004
55 1,1,1,2-Tetrachloroeth	8.332	8.338	8.332	8.338	8.338	8.338	8.338	8.344	8.338	8.172-8.503	8.337	0.004
56 m,p-xylene	8.435	8.435	8.435	8.435	8.435	8.441	8.441	8.441	8.435	8.270-8.600	8.437	0.003
57 o-Xylene	8.806	8.806	8.812	8.812	8.812	8.812	8.812	8.812	8.812	8.647-8.977	8.811	0.003
58 Styrene	8.855	8.855	8.855	8.861	8.861	8.861	8.861	8.867	8.861	8.695-9.026	8.859	0.004
59 Bromoform	8.873	8.873	8.873	8.873	8.873	8.873	8.873	8.879	8.873	8.666-9.080	8.874	0.002
60 Isopropyl Benzene	9.086	9.086	9.092	9.092	9.092	9.092	9.092	9.092	9.092	8.885-9.299	9.091	0.003
61 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.640	9.474-9.805	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Batch File: \\target\share\chem1\nt5.i\20190624.b
Inst ID: nt5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT1	RT WINDOW	AVG RT	STD DEV
62 4-Bromofluorobenzene	9.335	9.335	9.335	9.335	9.335	9.335	9.342	9.342	9.335	9.170-9.501	9.337	0.003
63 Bromobenzene	9.421	9.421	9.421	9.421	9.421	9.427	9.427	9.427	9.421	9.213-9.627	9.423	0.003
64 N-Propyl Benzene	9.457	9.463	9.463	9.463	9.463	9.463	9.463	9.463	9.463	9.256-9.670	9.463	0.003
65 1,1,2,2-Tetrachloroeth	9.530	9.536	9.536	9.536	9.536	9.536	9.536	9.536	9.536	9.329-9.743	9.535	0.002
66 2-Chloro Toluene	9.591	9.591	9.591	9.591	9.591	9.597	9.597	9.597	9.591	9.384-9.798	9.593	0.003
67 1,3,5-Trimethyl Benzen	9.640	9.646	9.646	9.646	9.646	9.646	9.652	9.652	9.646	9.438-9.853	9.646	0.004
68 1,2,3-Trichloropropane	9.640	9.646	9.646	9.652	9.652	9.652	9.652	9.652	9.652	9.445-9.859	9.649	0.005
69 Trans-1,4-Dichloro 2-B	9.688	9.694	9.694	9.694	9.694	9.694	9.694	9.701	9.694	9.487-9.901	9.694	0.003
70 4-Chloro Toluene	9.743	9.743	9.743	9.743	9.749	9.749	9.749	9.755	9.749	9.542-9.956	9.747	0.005
71 T-Butyl Benzene	9.926	9.926	9.932	9.932	9.932	9.932	9.932	9.932	9.932	9.724-10.138	9.929	0.003
72 1,2,4-Trimethylbenzene	9.992	9.992	9.999	9.999	9.998	9.998	9.999	9.999	9.998	9.791-10.205	9.997	0.003
73 S-Butyl Benzene	10.090	10.090	10.090	10.090	10.096	10.096	10.096	10.096	10.096	9.889-10.303	10.093	0.003
74 4-Isopropyl Toluene	10.230	10.230	10.230	10.230	10.230	10.230	10.236	10.236	10.230	10.022-10.437	10.231	0.003
75 1,3-Dichlorobenzene	10.278	10.278	10.284	10.284	10.284	10.284	10.284	10.291	10.284	10.077-10.491	10.283	0.004
* 76 d4-1,4-Dichlorobenzene	10.351	10.351	10.351	10.351	10.351	10.357	10.357	10.358	10.351	10.144-10.558	10.354	0.003
77 1,4-Dichlorobenzene	10.364	10.364	10.364	10.364	10.370	10.370	10.370	10.376	10.370	10.162-10.576	10.367	0.005
78 N-Butyl Benzene	10.619	10.619	10.619	10.619	10.625	10.625	10.625	10.625	10.625	10.418-10.832	10.622	0.003
79 d4-1,2-Dichlorobenzene	10.747	10.747	10.747	10.747	10.747	10.747	10.753	10.753	10.747	10.540-10.954	10.748	0.003
80 1,2-Dichlorobenzene	10.753	10.753	10.759	10.753	10.759	10.759	10.759	10.759	10.759	10.552-10.966	10.757	0.003
81 1,2-Dibromo 3-Chloropr	11.526	11.519	11.519	11.519	11.519	11.519	11.519	11.520	11.519	11.312-11.726	11.520	0.002
82 Hexachloro 1,3-Butadie	12.152	12.152	12.152	12.152	12.152	12.152	12.158	12.158	12.152	11.945-12.359	12.154	0.003
83 1,2,4-Trichlorobenzene	12.170	12.170	12.170	12.176	12.176	12.176	12.176	12.177	12.176	11.969-12.383	12.174	0.003
84 Naphthalene	12.493	12.493	12.493	12.493	12.493	12.493	12.493	12.499	12.493	12.286-12.700	12.494	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m

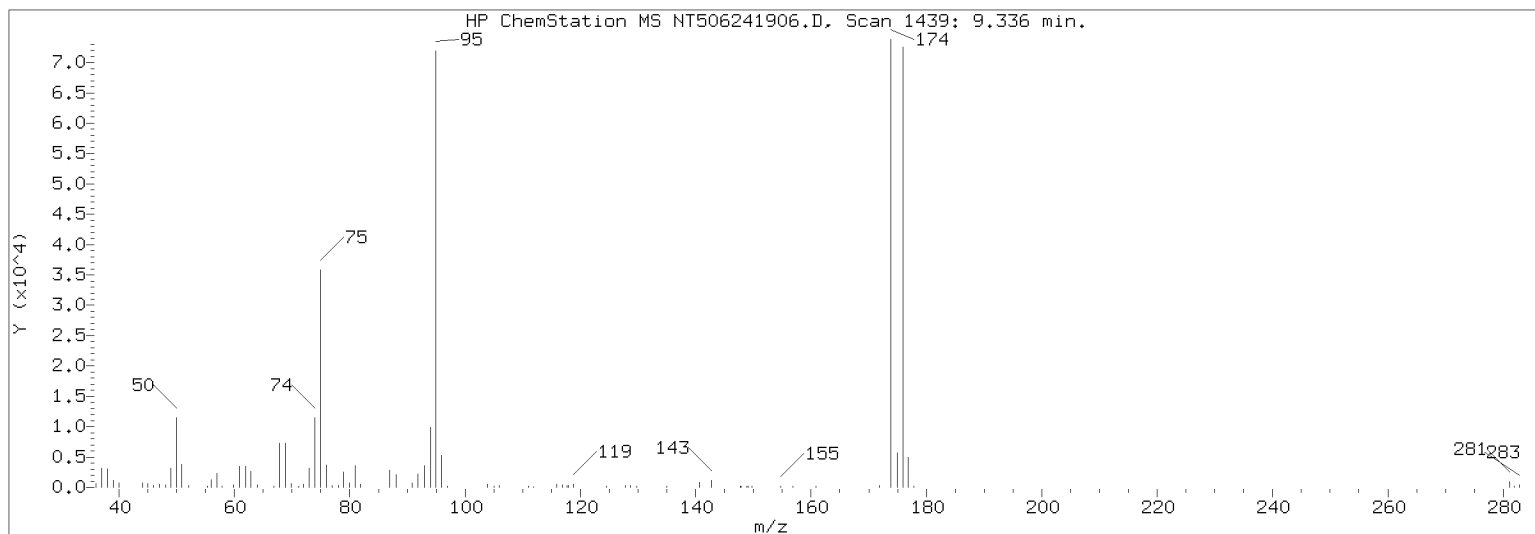
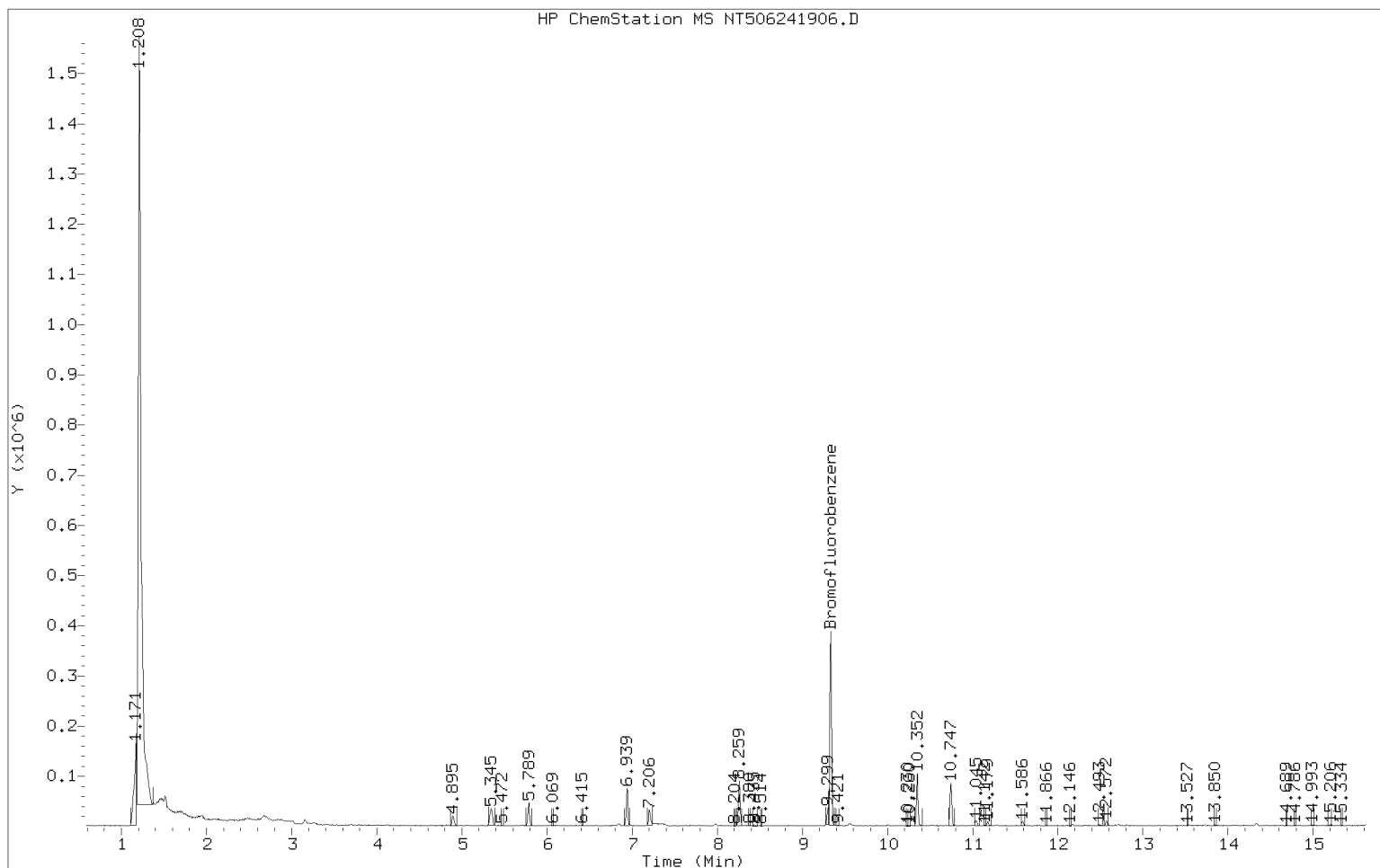
Batch File: \\target\share\chem1\nt5.i\20190624.b

Inst ID: nt5.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
85 1,2,3-Trichlorobenzene	12.669	12.675	12.669	12.675	12.675	12.675	12.675	12.675	12.675	12.468-12.882	12.674	0.003

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190624.b/NT506241906.D
 Method Used: \20190624.b\bfb8260.m Inst: nt5
 Injection Date: 24-JUN-2019 15:18 Operator: PB
 Sample Info: shf0324-TUN1 TUN1
 Report Date: 06/26/2019 14:50



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	16.51
75	30.00 - 60.00% of mass 95	48.87
96	5.00 - 9.00% of mass 95	6.64
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 100.00% of mass 95	98.88
175	5.00 - 9.00% of mass 174	7.94 (8.03)
176	95.00 - 101.00% of mass 174	97.86 (98.96)
177	5.00 - 9.00% of mass 176	6.24 (6.38)

Data File: NT506241906.D

Spectrum: Avg. Scans 1438-1440 (9.34), Background Scan 1434

Location of Maximum: 95.00

Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	384	63.00	2197	92.00	1932	141.00	799
37.00	2144	64.00	297	93.00	2805	143.00	946
38.00	2557	65.00	88	94.00	8141	146.00	55
39.00	971	67.00	85	95.00	62384	148.00	202
40.00	28	68.00	5971	96.00	4145	149.00	130
43.00	55	69.00	6238	97.00	224	150.00	71
44.00	470	70.00	556	104.00	412	155.00	131
45.00	561	71.00	56	105.00	71	157.00	186
46.00	163	72.00	492	106.00	322	159.00	52
47.00	558	73.00	1854	107.00	51	167.00	73
48.00	413	74.00	10019	112.00	50	168.00	58
49.00	2377	75.00	30488	115.00	101	171.00	130
50.00	10299	76.00	2806	116.00	185	172.00	386
51.00	3416	77.00	298	117.00	372	174.00	61688
52.00	176	78.00	195	118.00	456	175.00	4954
55.00	149	79.00	2314	119.00	453	176.00	61048
56.00	1209	80.00	851	123.00	69	177.00	3894
57.00	1757	81.00	2607	124.00	111	178.00	63
58.00	53	82.00	768	128.00	253		
60.00	498	87.00	2326	129.00	121		
61.00	2933	88.00	1981	130.00	295		
62.00	2623	91.00	465	139.00	53		

Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241907.D

Date : 24-JUN-2019 16:30

Client ID:

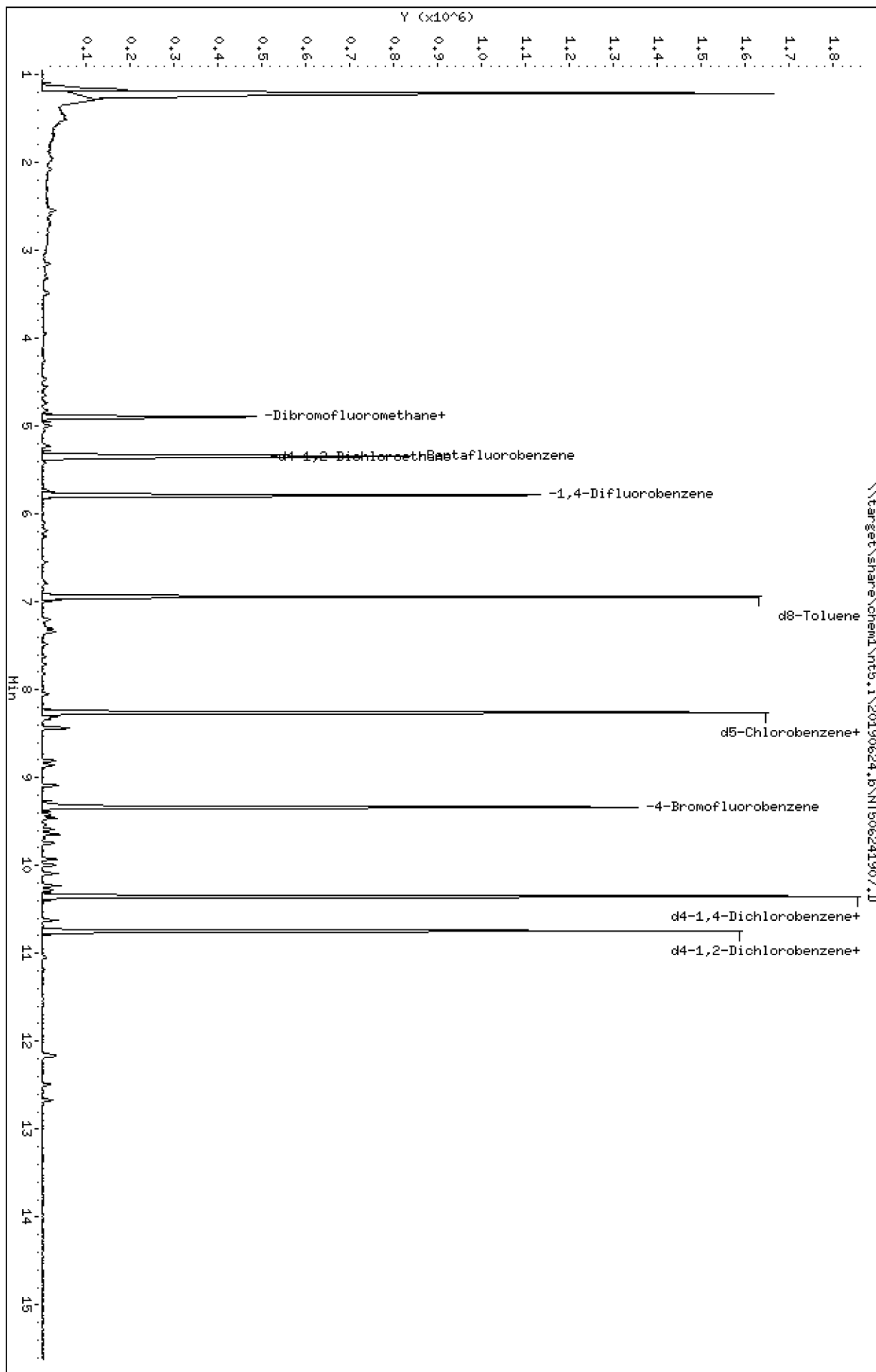
Sample Info: CQL1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241907.D
 Lab Smp Id: shf0324-CAL1
 Inj Date : 24-JUN-2019 16:30
 Operator : PB Inst ID: nt5.i
 Smp Info : CAL1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Meth Date : 26-Jun-2019 14:50 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4 Calibration Sample, Level: 1
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						AMOUNTS	
			RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
	MASS						(ug/Kg)	(ug/Kg)	
=====	=====		=====	=====	=====	=====	=====	=====	
1 Dichlorodifluoromethane	85		1.329	1.329 (0.249)		4362	1.00000	0.9927	
2 Chloromethane	50		1.493	1.487 (0.280)		4349	1.00000	1.194 (T)	
3 Vinyl Chloride	62		1.554	1.560 (0.291)		3652	1.00000	0.9931	
4 Bromomethane	94		1.840	1.840 (0.345)		3009	1.00000	1.114	
5 Chloroethane	64		1.949	1.949 (0.365)		3933	1.00000	1.354	
6 Trichlorofluoromethane	101		2.077	2.065 (0.389)		6665	1.00000	0.9512	
7 1,1-Dichloroethene	96		2.546	2.539 (0.477)		3798	1.00000	1.057	
8 Carbon Disulfide	76		2.546	2.539 (0.477)		10514	1.00000	1.048	
9 112Trichloro122Trifluoroethane	101		2.588	2.588 (0.485)		3513	1.00000	1.071	
10 Iodomethane	142		2.661	2.667 (0.499)		5146	1.00000	1.098	
11 Bromoethane	108		2.801	2.801 (0.525)		2468	1.00000	1.020	
12 Acrolein	56		2.917	2.917 (0.546)		1896	5.00000	5.192	
13 Methylene Chloride	84		3.160	3.160 (0.592)		6804	1.00000	1.907	
14 Acetone	43		3.257	3.263 (0.610)		5389	5.00000	8.388	
15 Trans-1,2-Dichloroethene	96		3.318	3.318 (0.622)		4335	1.00000	1.122	
16 Methyl tert butyl ether	73		3.489	3.489 (0.654)		9098	1.00000	1.087	
173 n-Hexane	41		Compound Not Detected.						
17 1,1-Dichloroethane	63		3.945	3.951 (0.739)		5998	1.00000	1.035	
18 Acrylonitrile	53		4.036	4.036 (0.756)		788	1.00000	1.032 (T)	
19 Vinyl Acetate	43		4.243	4.249 (0.795)		5255	1.00000	0.9891	
20 Cis-1,2-Dichloroethene	96		4.468	4.468 (0.837)		3756	1.00000	0.9464	
22 2,2-Dichloropropane	77		4.559	4.559 (0.854)		5789	1.00000	1.037 (M)	
23 Bromochloromethane	128		4.645	4.650 (0.870)		2013	1.00000	1.033	
24 Chloroform	83		4.730	4.736 (0.886)		6514	1.00000	1.067	
25 Carbon Tetrachloride	117		4.821	4.821 (0.834)		6250	1.00000	1.060	
\$ 27 Dibromofluoromethane	111		4.894	4.900 (0.917)		244809	50.0000	51.342	
26 1,1,1-Trichloroethane	97		4.888	4.894 (0.916)		6499	1.00000	1.086 (M)	
28 1,1-Dichloropropene	75		4.997	5.003 (0.864)		8727	1.00000	1.833	
29 2-Butanone	72		5.052	5.052 (0.946)		1522	5.00000	5.040	
30 Benzene	78		5.229	5.228 (0.904)		14290	1.00000	1.007	
* 31 Pentafluorobenzene	168		5.338	5.344 (1.000)		436008	50.0000		
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.362 (1.003)		207197	50.0000	51.946	
33 1,2-Dichloroethane	62		5.417	5.417 (0.937)		4444	1.00000	1.090	

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====	=====	=====	=====	=====		=====	=====
34 Trichloroethene	130	5.740	5.746	(0.993)	4542		1.00000	1.025
* 35 1,4-Difluorobenzene	114	5.782	5.788	(1.000)	800908		50.0000	
37 Dibromomethane	93	6.105	6.104	(1.056)	1979		1.00000	1.016
38 1,2-Dichloropropane	63	6.190	6.190	(1.070)	3163		1.00000	1.017 (M)
39 Bromodichloromethane	83	6.251	6.257	(1.081)	4821		1.00000	1.042
172 2-Pentanone	86	6.549	6.549	(1.133)	1833		5.00000	4.531
40 2-Chloroethyl Vinyl Ether	63	6.756	6.761	(1.168)	1369		1.00000	0.7594
41 Cis 1,3-dichloropropene	75	6.786	6.792	(1.174)	5087		1.00000	0.9408
\$ 42 d8-Toluene	98	6.944	6.944	(1.201)	942213		50.0000	50.237
43 Toluene	92	6.981	6.987	(1.207)	10210		1.00000	1.053
44 Tetrachloroethene	166	7.297	7.303	(0.884)	5134		1.00000	1.072
45 4-Methyl-2-Pentanone	58	7.340	7.339	(1.269)	4182		5.00000	4.455 (TM)
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.271)	4756		1.00000	0.9949
47 1,1,2-Trichloroethane	97	7.486	7.485	(1.295)	3154		1.00000	1.105 (TM)
48 Chlorodibromomethane	129	7.625	7.625	(0.923)	3679		1.00000	0.9922
49 1,3-Dichloropropane	76	7.705	7.711	(0.933)	4965		1.00000	1.066
50 1,2-Dibromoethane	107	7.814	7.820	(1.351)	3029		1.00000	1.050
51 2-Hexanone	43	8.045	8.045	(0.974)	7609		5.00000	4.697
* 52 d5-Chlorobenzene	117	8.258	8.264	(1.000)	779930		50.0000	
53 Chlorobenzene	112	8.270	8.276	(1.001)	11852		1.00000	1.067
54 Ethyl Benzene	91	8.301	8.307	(1.005)	19701		1.00000	1.080
55 1,1,1,2-Tetrachloroethane	131	8.331	8.337	(1.009)	4338		1.00000	1.098
56 m,p-xylene	106	8.435	8.434	(1.021)	15088		2.00000	2.031
57 o-Xylene	106	8.806	8.812	(1.066)	7420		1.00000	1.050
58 Styrene	104	8.854	8.860	(1.072)	11027		1.00000	0.9741
59 Bromoform	173	8.873	8.872	(0.857)	2978		1.00000	1.158
60 Isopropyl Benzene	105	9.086	9.092	(0.878)	19245		1.00000	1.033
61 Cyclohexanone	55	Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	338446		50.0000	50.689
63 Bromobenzene	156	9.420	9.420	(0.910)	5332		1.00000	1.111
64 N-Propyl Benzene	91	9.457	9.463	(0.914)	22639		1.00000	1.072
65 1,1,2,2-Tetrachloroethane	83	9.530	9.536	(0.921)	3410		1.00000	1.017
66 2-Chloro Toluene	91	9.590	9.590	(0.927)	12388		1.00000	1.029
67 1,3,5-Trimethyl Benzene	105	9.639	9.645	(0.931)	15945		1.00000	1.039
68 1,2,3-Trichloropropane	110	9.639	9.651	(0.931)	1309		1.00000	1.125 (TM)
69 Trans-1,4-Dichloro 2-Butene	53	9.688	9.694	(0.936)	967		1.00000	1.056 (M)
70 4-Chloro Toluene	91	9.743	9.749	(0.941)	13352		1.00000	1.070
71 T-Butyl Benzene	119	9.925	9.931	(0.959)	15641		1.00000	1.099
72 1,2,4-Trimethylbenzene	105	9.992	9.998	(0.965)	15353		1.00000	1.026
73 S-Butyl Benzene	105	10.089	10.095	(0.975)	21448		1.00000	1.038
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	18182		1.00000	1.026
75 1,3-Dichlorobenzene	146	10.278	10.284	(0.993)	10321		1.00000	1.088
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	436707		50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.369	(1.001)	10037		1.00000	1.075
78 N-Butyl Benzene	91	10.619	10.625	(1.026)	15760		1.00000	1.020
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	386593		50.0000	50.759
80 1,2-Dichlorobenzene	146	10.752	10.758	(1.039)	9284		1.00000	1.083
81 1,2-Dibromo 3-Chloropropane	75	11.525	11.519	(1.113)	661		1.00000	1.064 (M)
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.174)	4307		1.00000	1.235
83 1,2,4-Trichlorobenzene	180	12.170	12.176	(1.176)	7387		1.00000	1.257
84 Naphthalene	128	12.492	12.492	(1.207)	12664		1.00000	1.053
85 1,2,3-Trichlorobenzene	180	12.669	12.675	(1.224)	6758		1.00000	1.271

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241907.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	436008	7.94
35 1,4-Difluorobenze	717664	358832	1435328	800908	11.60
52 d5-Chlorobenzene	696563	348282	1393126	779930	11.97
76 d4-1,4-Dichlorobe	380778	190389	761556	436707	14.69

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	-0.11
35 1,4-Difluorobenze	5.79	5.29	6.29	5.78	-0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241907.D

Lab ID: shf0324-CAL1
 nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 16:30

RT	CO-ELUTION COMPOUNDS
9.640	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.640	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.477	0.472	0.0051	1,1-Dichloroethene
0.477	0.472	0.0051	Carbon Disulfide

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500

Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

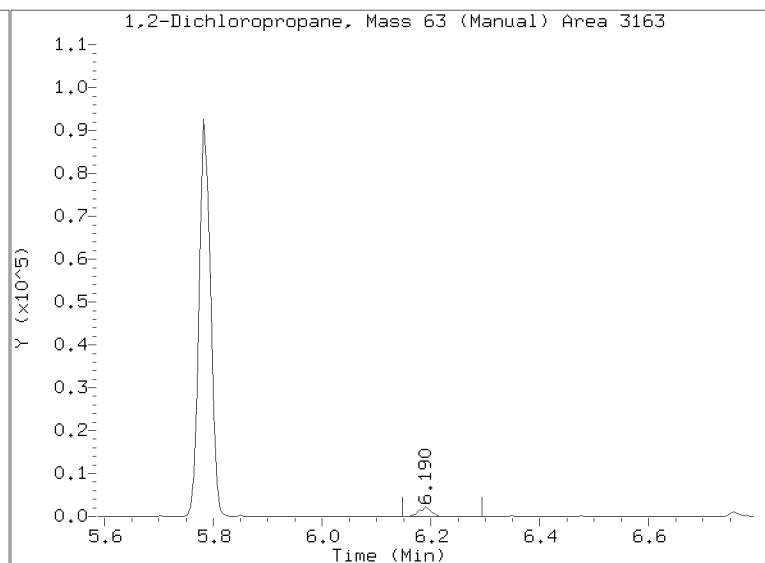
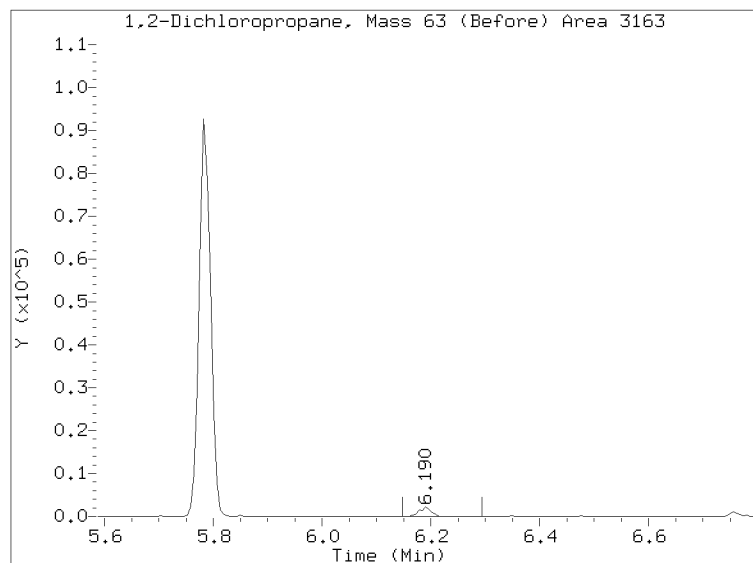
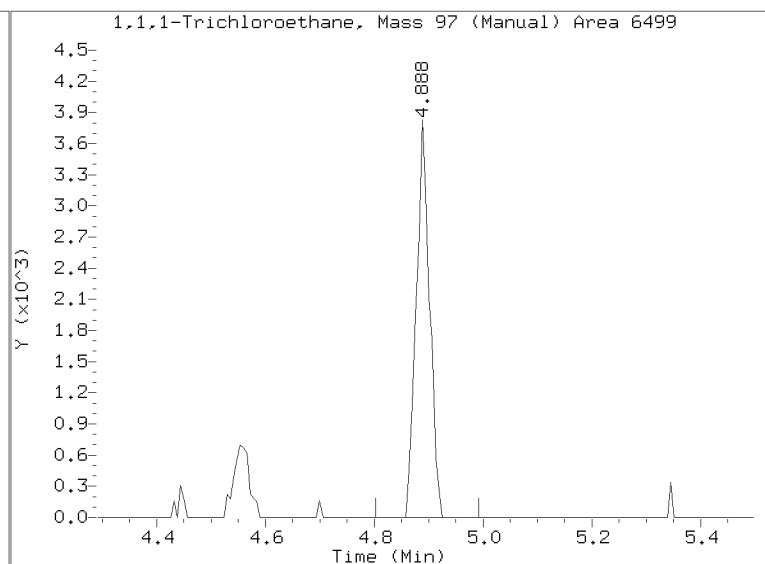
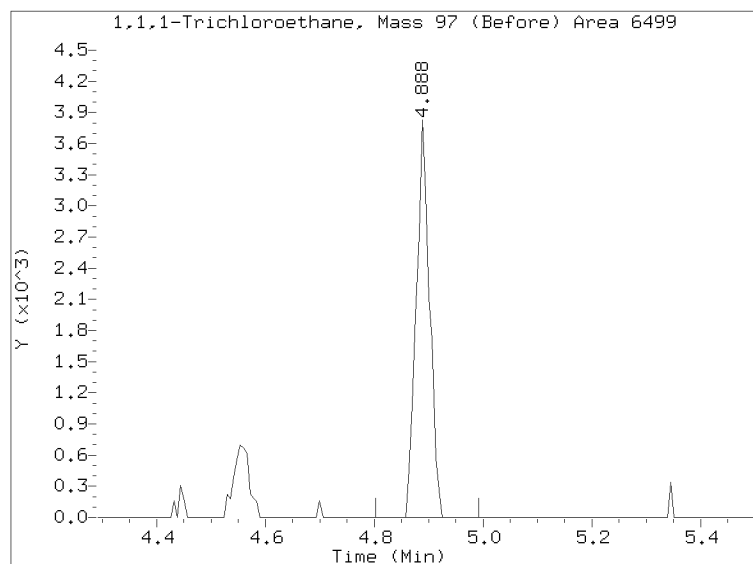
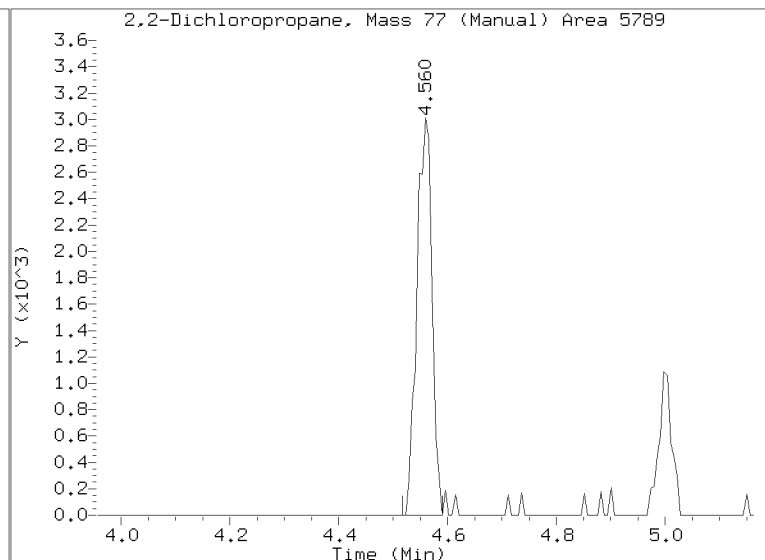
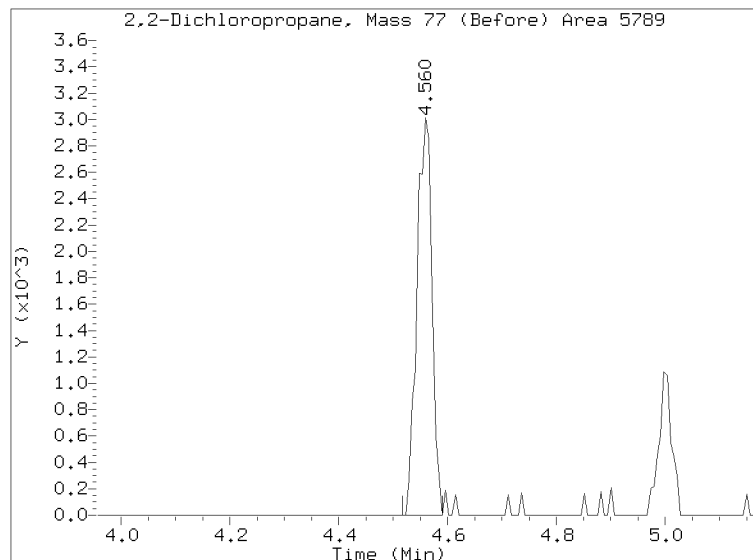
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190624.b/NT506241907.D

Injection Date: 24-JUN-2019 16:30

Lab ID:shf0324-CAL1 Client ID:

Report Date: 06/26/2019 14:50



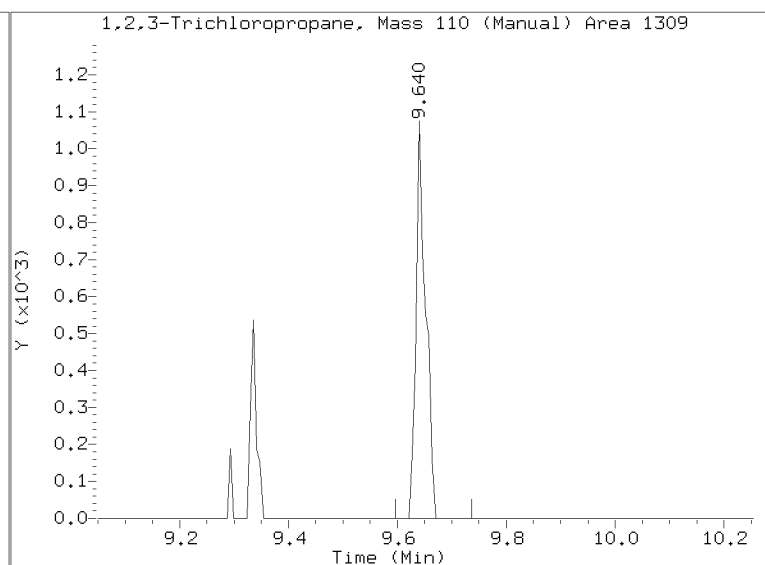
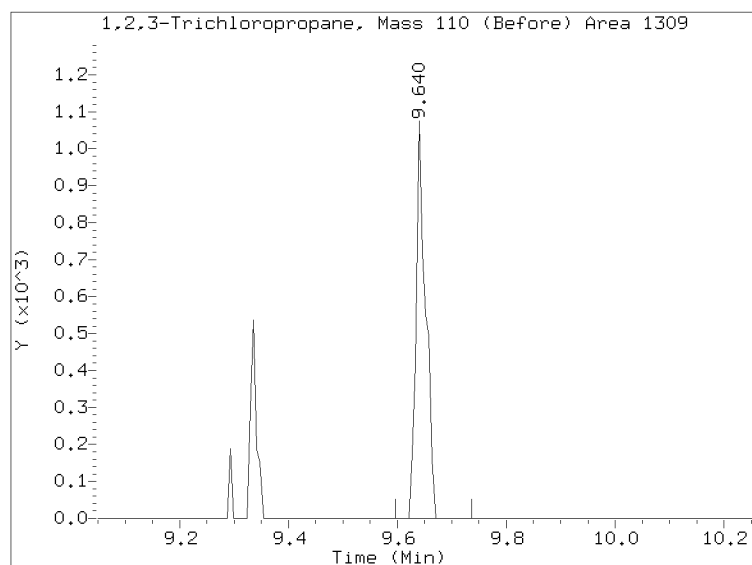
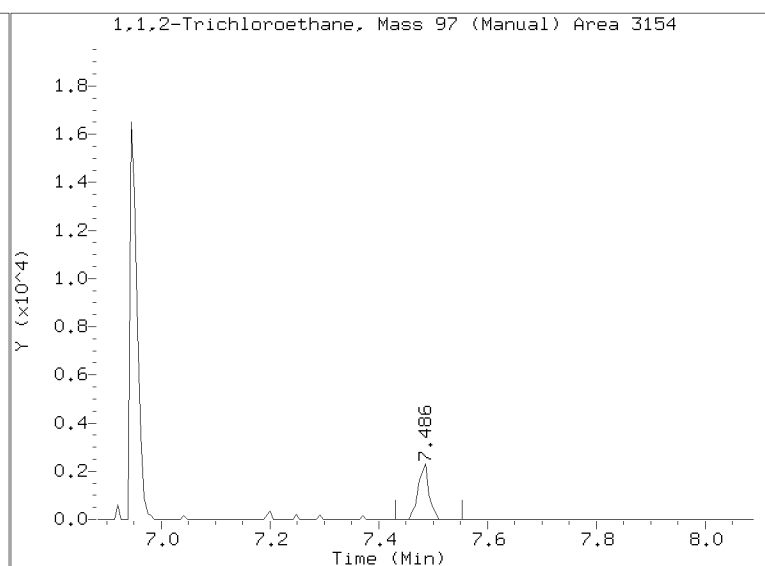
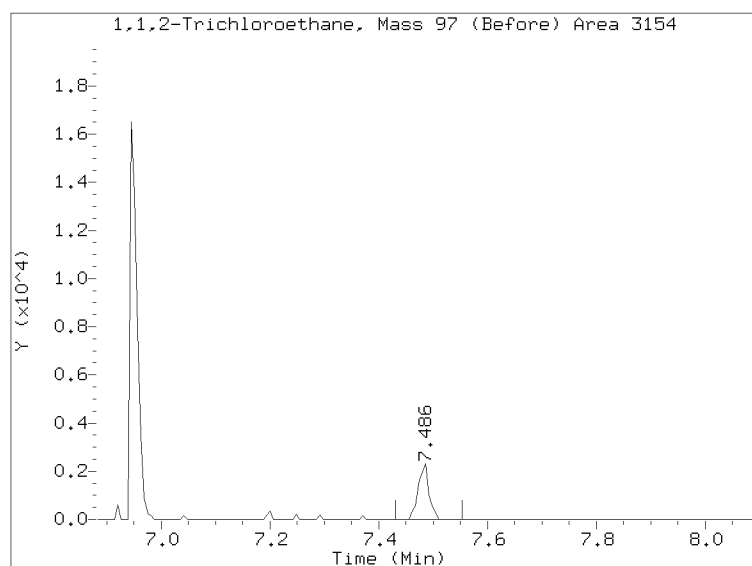
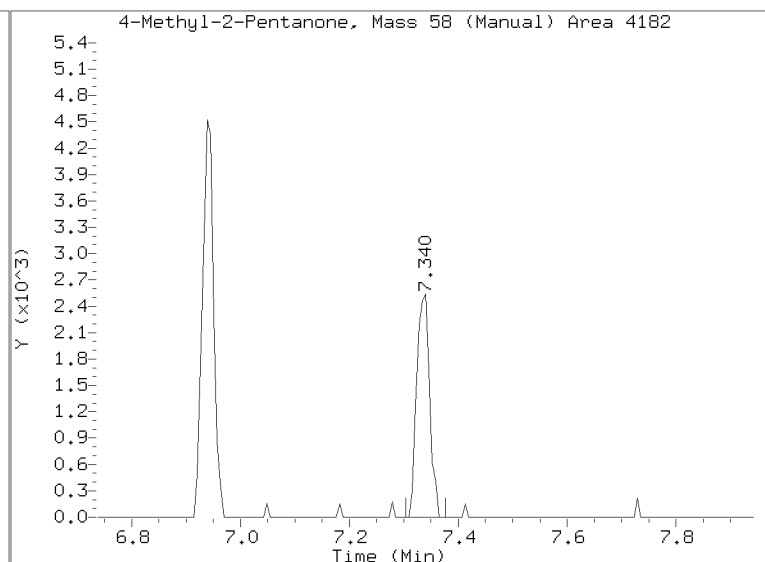
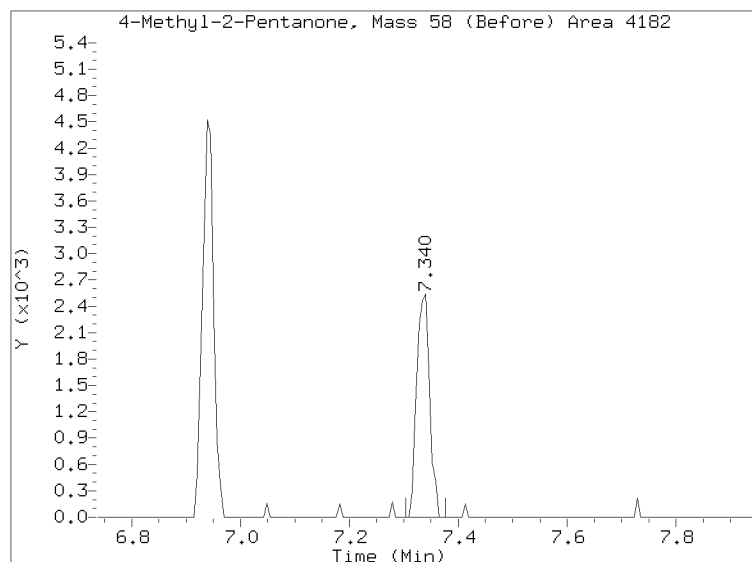
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190624.b/NT506241907.D

Injection Date: 24-JUN-2019 16:30

Lab ID:shf0324-CAL1 Client ID:

Report Date: 06/26/2019 14:50



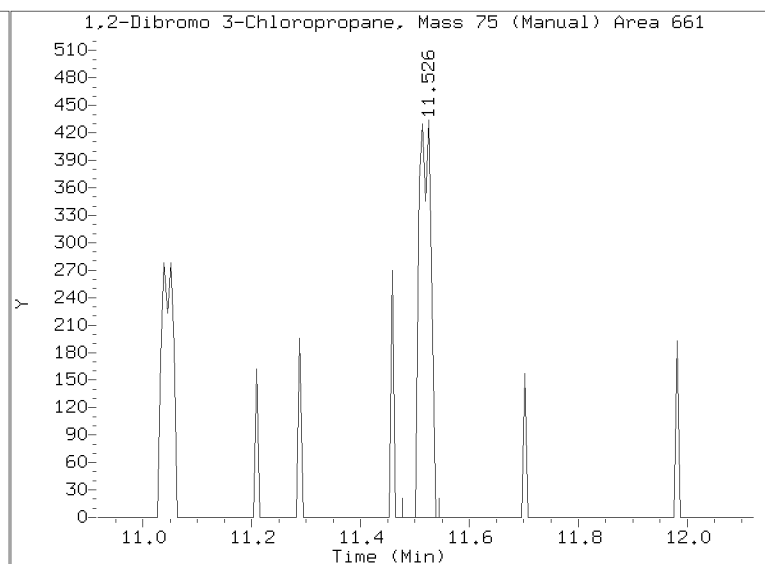
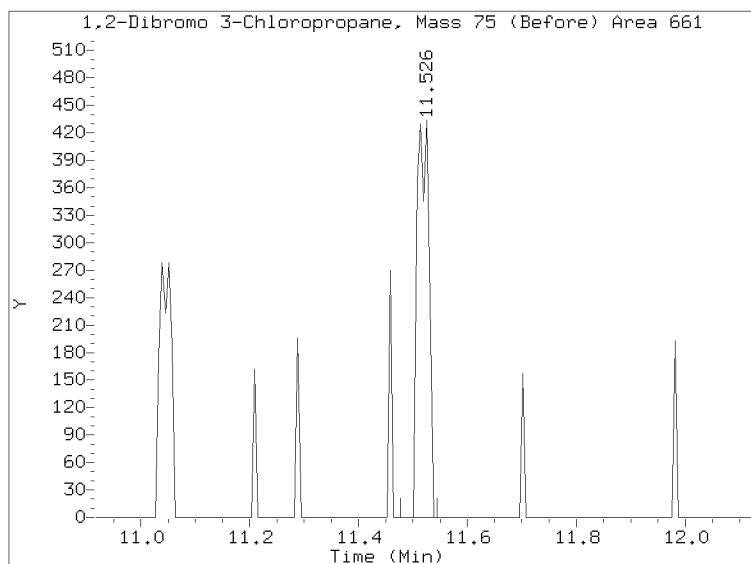
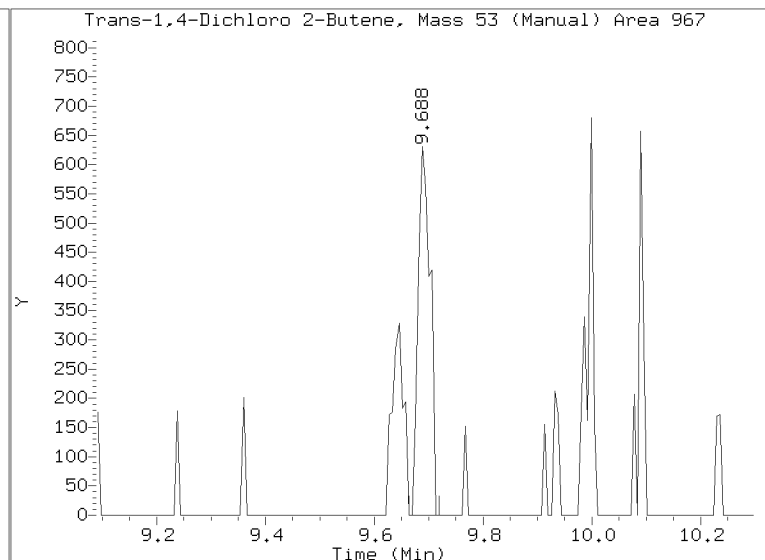
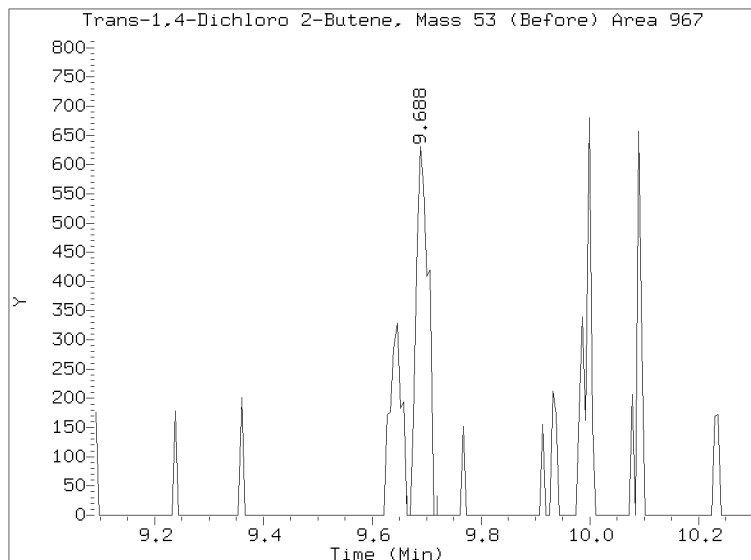
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190624.b/NT506241907.D

Injection Date: 24-JUN-2019 16:30

Lab ID:shf0324-CAL1 Client ID:

Report Date: 06/26/2019 14:50



Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241908.D

Date : 24-JUN-2019 16:52

Client ID:

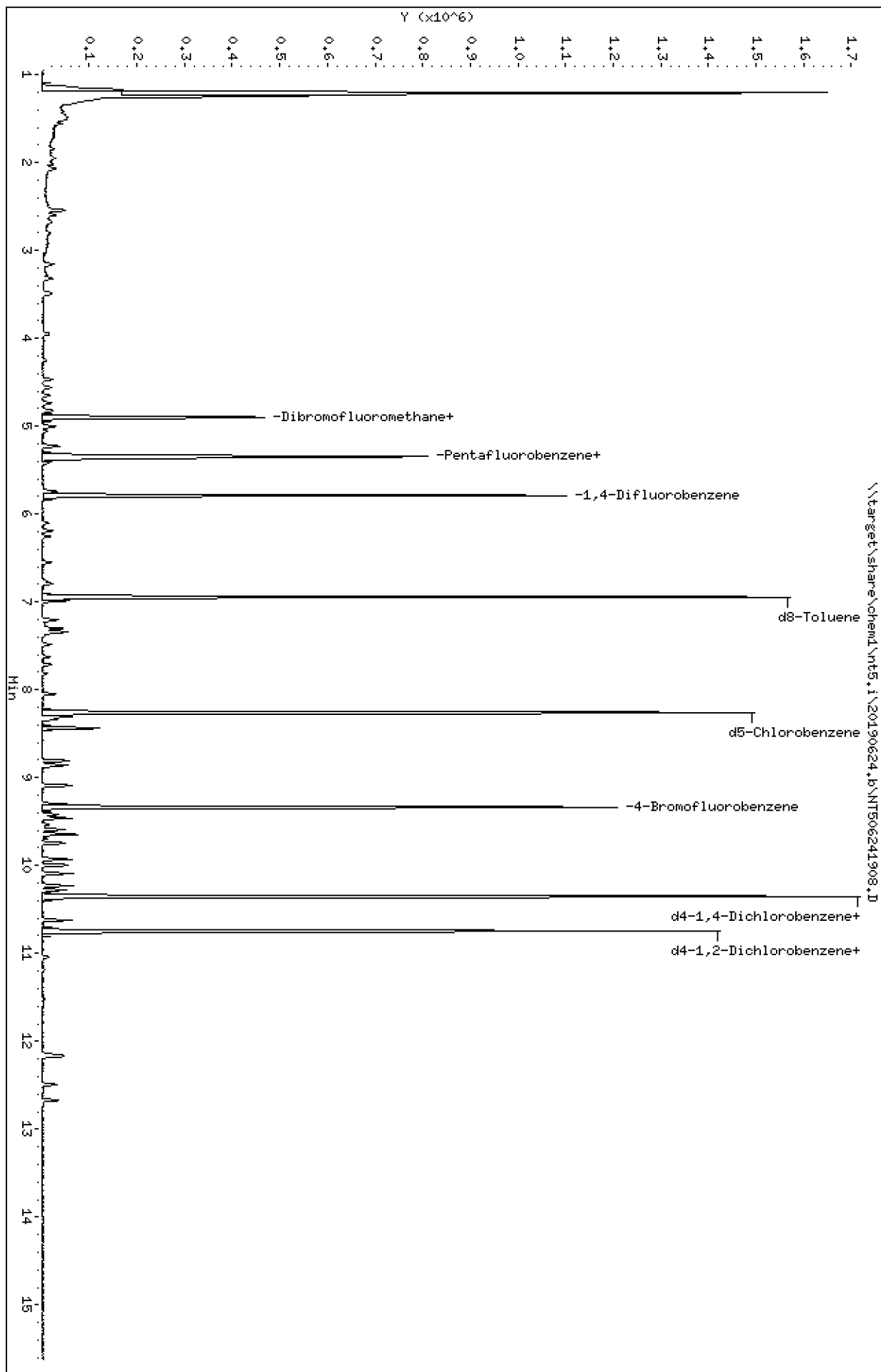
Sample Info: CAL2

Instrument: nt5.i

Page 1

Column phase: RTXWMS

Operator: PB
Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241908.D
 Lab Smp Id: shf0324-CAL2
 Inj Date : 24-JUN-2019 16:52
 Operator : PB Inst ID: nt5.i
 Smp Info : CAL2
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Meth Date : 26-Jun-2019 14:50 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 16:30 Cal File: NT506241907.D
 Als bottle: 4 Calibration Sample, Level: 2
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamd1.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
								(ug/Kg)	(ug/Kg)
=====	=====								
1 Dichlorodifluoromethane	85		1.329	1.329	(0.249)		9342	2.00000	2.213
2 Chloromethane	50		1.487	1.487	(0.278)		7743	2.00000	2.212 (T)
3 Vinyl Chloride	62		1.554	1.560	(0.291)		8200	2.00000	2.321
4 Bromomethane	94		1.840	1.840	(0.344)		5814	2.00000	2.240
5 Chloroethane	64		1.943	1.949	(0.364)		6454	2.00000	2.313
6 Trichlorofluoromethane	101		2.071	2.065	(0.388)		13456	2.00000	1.999
7 1,1-Dichloroethene	96		2.546	2.539	(0.476)		7381	2.00000	2.137
8 Carbon Disulfide	76		2.540	2.539	(0.475)		21241	2.00000	2.204
9 112Trichloro122Trifluoroethane	101		2.588	2.588	(0.484)		7027	2.00000	2.229
10 Iodomethane	142		2.673	2.667	(0.500)		9646	2.00000	2.141
11 Bromoethane	108		2.801	2.801	(0.524)		5274	2.00000	2.269
12 Acrolein	56		2.917	2.917	(0.546)		3068	10.0000	8.743
13 Methylene Chloride	84		3.154	3.160	(0.590)		10020	2.00000	2.922
14 Acetone	43		3.270	3.263	(0.612)		8336	10.0000	13.502
15 Trans-1,2-Dichloroethene	96		3.318	3.318	(0.621)		7988	2.00000	2.152
16 Methyl tert butyl ether	73		3.495	3.489	(0.654)		15550	2.00000	1.933
173 n-Hexane	41		Compound Not Detected.						
17 1,1-Dichloroethane	63		3.951	3.951	(0.739)		11990	2.00000	2.153
18 Acrylonitrile	53		4.030	4.036	(0.754)		1484	2.00000	2.023 (T)
19 Vinyl Acetate	43		4.249	4.249	(0.795)		10606	2.00000	2.077
20 Cis-1,2-Dichloroethene	96		4.468	4.468	(0.836)		8542	2.00000	2.240
22 2,2-Dichloropropane	77		4.565	4.559	(0.854)		11916	2.00000	2.221
23 Bromochloromethane	128		4.651	4.650	(0.870)		4099	2.00000	2.189
24 Chloroform	83		4.736	4.736	(0.886)		12673	2.00000	2.161
25 Carbon Tetrachloride	117		4.821	4.821	(0.833)		12689	2.00000	2.276
\$ 27 Dibromofluoromethane	111		4.900	4.900	(0.917)		225798	50.0000	49.282
26 1,1,1-Trichloroethane	97		4.894	4.894	(0.916)		12757	2.00000	2.218 (M)
28 1,1-Dichloropropene	75		5.003	5.003	(0.864)		10963	2.00000	2.434
29 2-Butanone	72		5.058	5.052	(0.947)		2386	10.0000	8.223
30 Benzene	78		5.229	5.228	(0.903)		28661	2.00000	2.134
* 31 Pentafluorobenzene	168		5.344	5.344	(1.000)		418960	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.362	(1.002)		191726	50.0000	50.023
33 1,2-Dichloroethane	62		5.417	5.417	(0.936)		8479	2.00000	2.198

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====		=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130			5.746	5.746	(0.993)	9239	2.00000	2.205
* 35 1,4-Difluorobenzene	114			5.788	5.788	(1.000)	757606	50.0000	
37 Dibromomethane	93			6.105	6.104	(1.055)	3996	2.00000	2.169
38 1,2-Dichloropropane	63			6.190	6.190	(1.069)	6548	2.00000	2.226
39 Bromodichloromethane	83			6.257	6.257	(1.081)	8532	2.00000	1.949
172 2-Pentanone	86			6.555	6.549	(1.132)	3468	10.0000	9.062
40 2-Chloroethyl Vinyl Ether	63			6.762	6.761	(1.168)	3160	2.00000	1.853
41 Cis 1,3-dichloropropene	75			6.792	6.792	(1.173)	10542	2.00000	2.061
\$ 42 d8-Toluene	98			6.944	6.944	(1.200)	876168	50.0000	49.385
43 Toluene	92			6.987	6.987	(1.207)	20365	2.00000	2.221
44 Tetrachloroethene	166			7.303	7.303	(0.884)	10078	2.00000	2.256
45 4-Methyl-2-Pentanone	58			7.340	7.339	(1.268)	8103	10.0000	9.126 (TM)
46 Trans 1,3-Dichloropropene	75			7.346	7.352	(1.269)	8631	2.00000	1.909
47 1,1,2-Trichloroethane	97			7.486	7.485	(1.293)	5684	2.00000	2.104 (TM)
48 Chlorodibromomethane	129			7.625	7.625	(0.923)	6876	2.00000	1.987
49 1,3-Dichloropropane	76			7.711	7.711	(0.934)	8643	2.00000	1.988
50 1,2-Dibromoethane	107			7.814	7.820	(1.350)	5729	2.00000	2.099
51 2-Hexanone	43			8.045	8.045	(0.974)	14132	10.0000	9.347
* 52 d5-Chlorobenzene	117			8.258	8.264	(1.000)	727858	50.0000	
53 Chlorobenzene	112			8.276	8.276	(1.002)	22561	2.00000	2.175
54 Ethyl Benzene	91			8.307	8.307	(1.006)	36550	2.00000	2.147
55 1,1,1,2-Tetrachloroethane	131			8.337	8.337	(1.010)	7680	2.00000	2.083
56 m,p-xylene	106			8.435	8.434	(1.021)	29726	4.00000	4.287
57 o-Xylene	106			8.806	8.812	(1.066)	13646	2.00000	2.070
58 Styrene	104			8.854	8.860	(1.072)	20590	2.00000	1.949
59 Bromoform	173			8.873	8.872	(0.857)	4712	2.00000	2.010
60 Isopropyl Benzene	105			9.085	9.092	(0.878)	36597	2.00000	2.155
61 Cyclohexanone	55		Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174			9.335	9.335	(1.130)	309425	50.0000	49.658
63 Bromobenzene	156			9.420	9.420	(0.910)	9279	2.00000	2.121
64 N-Propyl Benzene	91			9.463	9.463	(0.914)	41330	2.00000	2.147
65 1,1,2,2-Tetrachloroethane	83			9.536	9.536	(0.921)	6386	2.00000	2.089
66 2-Chloro Toluene	91			9.590	9.590	(0.927)	23761	2.00000	2.165
67 1,3,5-Trimethyl Benzene	105			9.645	9.645	(0.932)	29720	2.00000	2.123
68 1,2,3-Trichloropropane	110			9.645	9.651	(0.932)	2119	2.00000	1.998 (M)
69 Trans-1,4-Dichloro 2-Butene	53			9.694	9.694	(0.937)	1720	2.00000	2.060 (M)
70 4-Chloro Toluene	91			9.743	9.749	(0.941)	23088	2.00000	2.029
71 T-Butyl Benzene	119			9.925	9.931	(0.959)	27826	2.00000	2.144
72 1,2,4-Trimethylbenzene	105			9.992	9.998	(0.965)	27608	2.00000	2.024
73 S-Butyl Benzene	105			10.089	10.095	(0.975)	40016	2.00000	2.123
74 4-Isopropyl Toluene	119			10.229	10.229	(0.988)	31951	2.00000	1.977
75 1,3-Dichlorobenzene	146			10.278	10.284	(0.993)	18771	2.00000	2.169
* 76 d4-1,4-Dichlorobenzene	152			10.351	10.351	(1.000)	398199	50.0000	
77 1,4-Dichlorobenzene	146			10.363	10.369	(1.001)	17564	2.00000	2.063
78 N-Butyl Benzene	91			10.619	10.625	(1.026)	28886	2.00000	2.050
\$ 79 d4-1,2-Dichlorobenzene	152			10.746	10.746	(1.038)	345415	50.0000	49.738
80 1,2-Dichlorobenzene	146			10.752	10.758	(1.039)	15645	2.00000	2.002
81 1,2-Dibromo 3-Chloropropane	75			11.519	11.519	(1.113)	1201	2.00000	2.120
82 Hexachloro 1,3-Butadiene	225			12.152	12.152	(1.174)	5939	2.00000	1.868
83 1,2,4-Trichlorobenzene	180			12.170	12.176	(1.176)	11531	2.00000	2.153
84 Naphthalene	128			12.492	12.492	(1.207)	21117	2.00000	1.926
85 1,2,3-Trichlorobenzene	180			12.675	12.675	(1.225)	9210	2.00000	1.900

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241908.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL2
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	418960	3.72
35 1,4-Difluorobenze	717664	358832	1435328	757606	5.57
52 d5-Chlorobenzene	696563	348282	1393126	727858	4.49
76 d4-1,4-Dichlorobe	380778	190389	761556	398199	4.58

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241908.D

Lab ID: shf0324-CAL2

nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 16:52

RT	CO-ELUTION COMPOUNDS
9.646	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.646	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

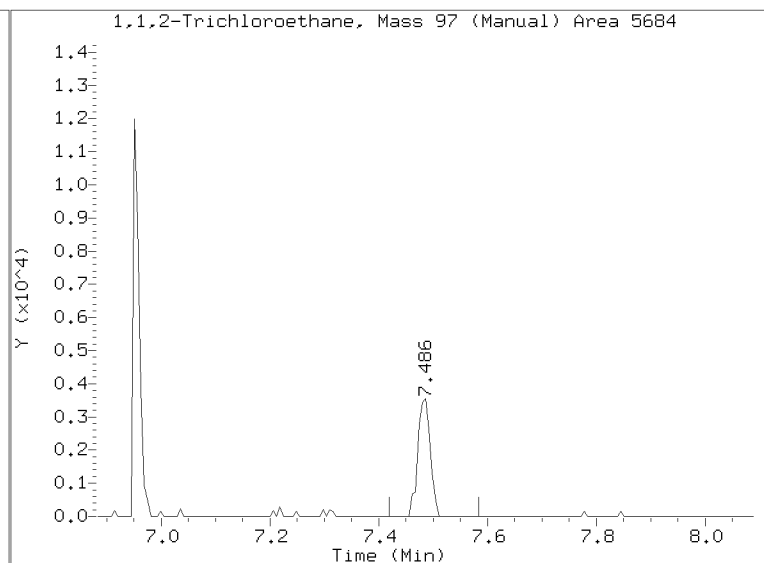
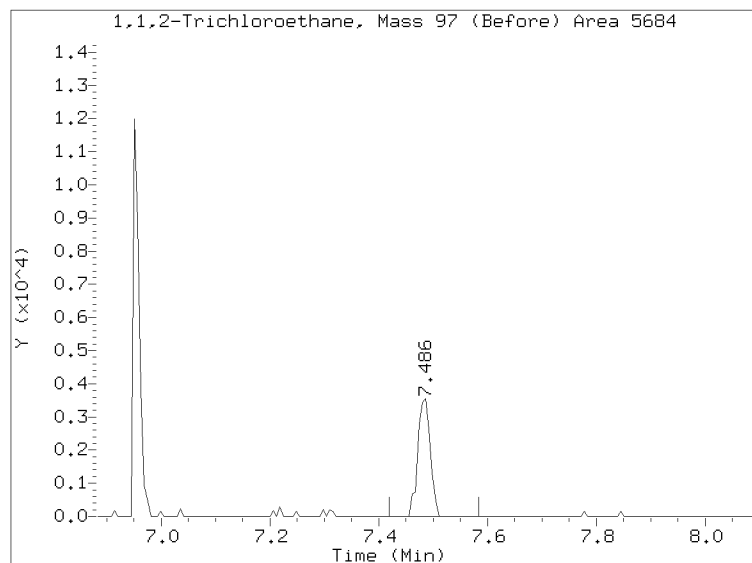
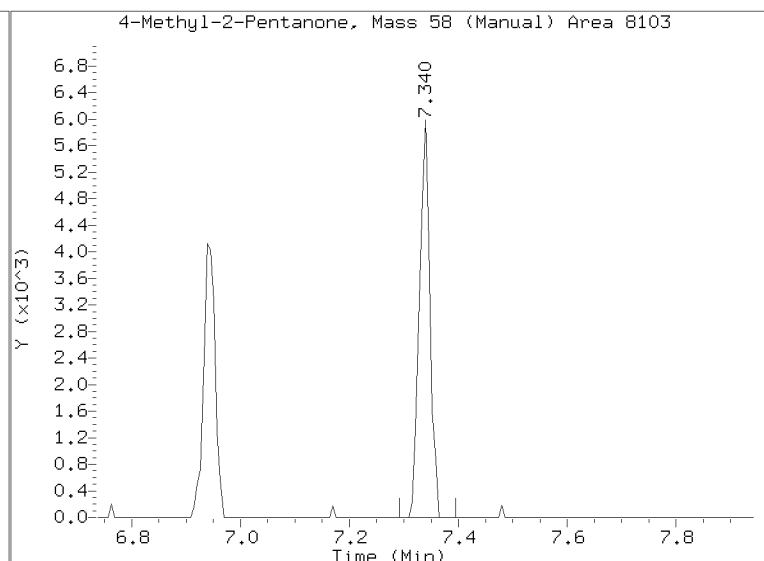
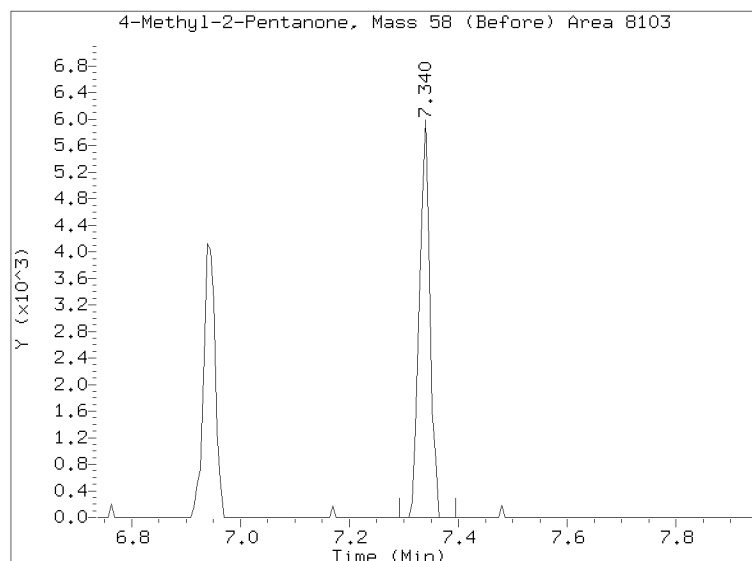
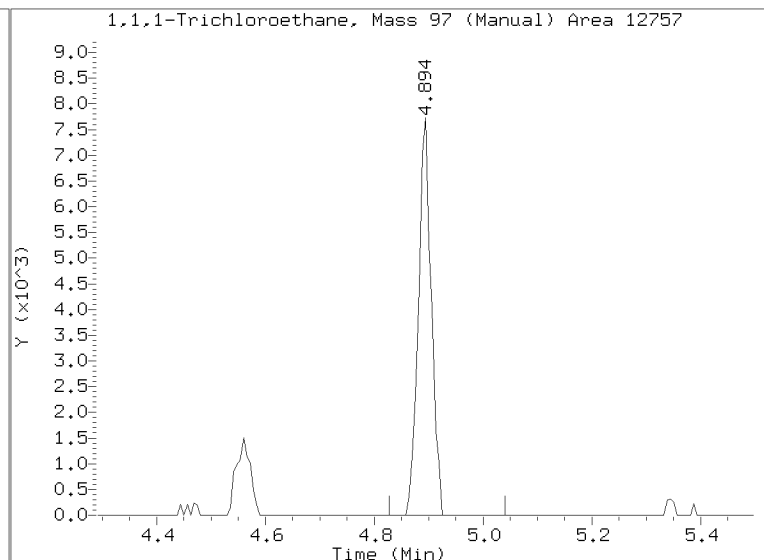
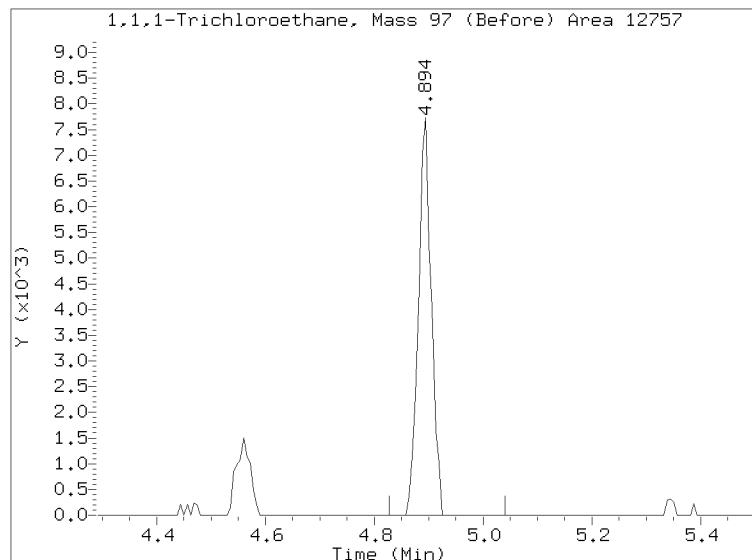
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190624.b/NT506241908.D

Injection Date: 24-JUN-2019 16:52

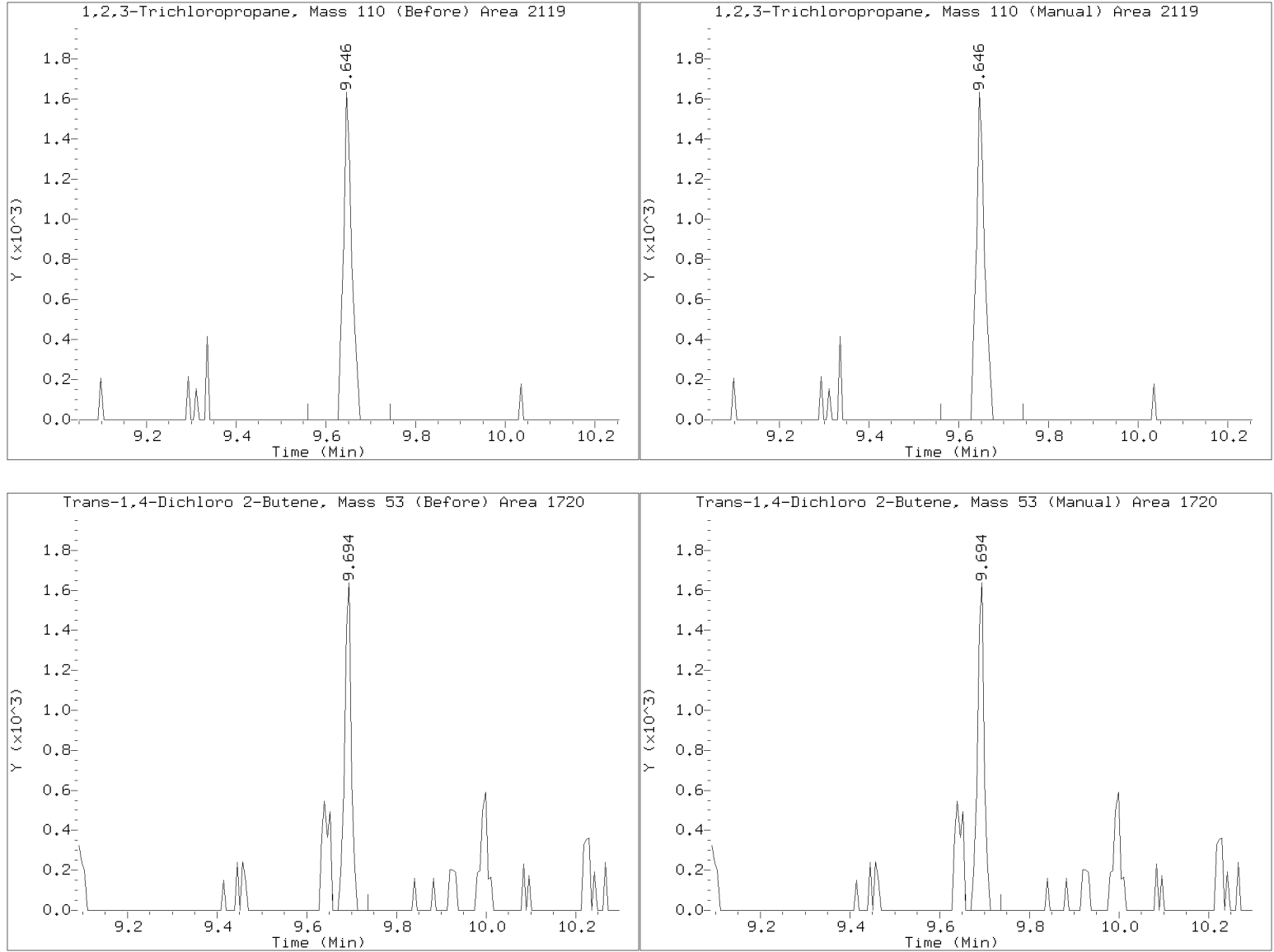
Lab ID:shf0324-CAL2 Client ID:

Report Date: 06/26/2019 14:51



Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190624.b/NT506241908.D
Injection Date: 24-JUN-2019 16:52
Lab ID: shf0324-CAL2 Client ID:
Report Date: 06/26/2019 14:51



Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241909.D

Date : 24-JUN-2019 17:14

Client ID:

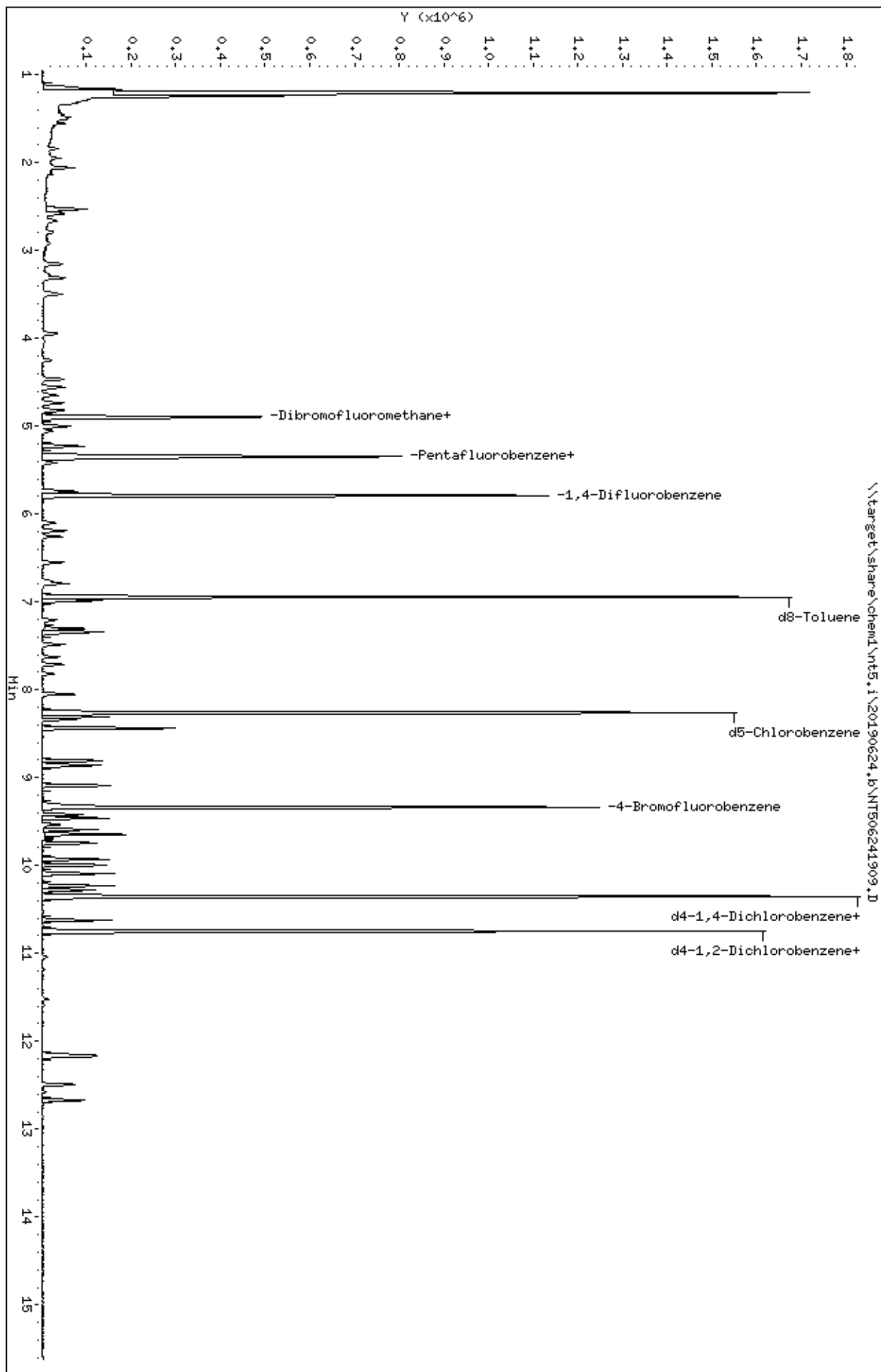
Sample Info: CQL3

Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241909.D
 Lab Smp Id: shf0324-CAL3
 Inj Date : 24-JUN-2019 17:14
 Operator : PB Inst ID: nt5.i
 Smp Info : CAL3
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Meth Date : 26-Jun-2019 14:51 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 16:52 Cal File: NT506241908.D
 Als bottle: 4 Calibration Sample, Level: 3
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
								(ug/Kg)	(ug/Kg)
=====	=====								
1 Dichlorodifluoromethane	85		1.329	1.329	(0.249)		20340	5.00000	4.734 (M)
2 Chloromethane	50		1.487	1.487	(0.279)		18254	5.00000	5.125
3 Vinyl Chloride	62		1.554	1.560	(0.291)		17046	5.00000	4.741
4 Bromomethane	94		1.840	1.840	(0.345)		12247	5.00000	4.637
5 Chloroethane	64		1.950	1.949	(0.365)		15401	5.00000	5.424
6 Trichlorofluoromethane	101		2.059	2.065	(0.386)		38257	5.00000	5.584
7 1,1-Dichloroethene	96		2.527	2.539	(0.474)		18441	5.00000	5.247
8 Carbon Disulfide	76		2.534	2.539	(0.475)		50187	5.00000	5.118
9 112Trichloro122Trifluoroethane	101		2.582	2.588	(0.484)		16885	5.00000	5.264
10 Iodomethane	142		2.661	2.667	(0.499)		22361	5.00000	4.878
11 Bromoethane	108		2.795	2.801	(0.524)		12602	5.00000	5.327
12 Acrolein	56		2.923	2.917	(0.548)		8820	25.0000	24.699
13 Methylene Chloride	84		3.148	3.160	(0.590)		20884	5.00000	5.985
14 Acetone	43		3.276	3.263	(0.614)		17270	25.0000	27.489
15 Trans-1,2-Dichloroethene	96		3.312	3.318	(0.621)		19162	5.00000	5.074
16 Methyl tert butyl ether	73		3.495	3.489	(0.655)		39960	5.00000	4.882
173 n-Hexane	41		Compound Not Detected.						
17 1,1-Dichloroethane	63		3.945	3.951	(0.739)		27926	5.00000	4.929
18 Acrylonitrile	53		4.036	4.036	(0.756)		3653	5.00000	4.894 (T)
19 Vinyl Acetate	43		4.249	4.249	(0.796)		25395	5.00000	4.888
20 Cis-1,2-Dichloroethane	96		4.468	4.468	(0.837)		19962	5.00000	5.144
22 2,2-Dichloropropane	77		4.553	4.559	(0.853)		28032	5.00000	5.134
23 Bromochloromethane	128		4.651	4.650	(0.871)		9331	5.00000	4.897
24 Chloroform	83		4.736	4.736	(0.887)		30763	5.00000	5.154
25 Carbon Tetrachloride	117		4.815	4.821	(0.832)		27843	5.00000	4.868
\$ 27 Dibromofluoromethane	111		4.900	4.900	(0.918)		235975	50.0000	50.612
26 1,1,1-Trichloroethane	97		4.888	4.894	(0.916)		29070	5.00000	4.966
28 1,1-Dichloropropene	75		5.003	5.003	(0.864)		26638	5.00000	5.766
29 2-Butanone	72		5.058	5.052	(0.948)		7845	25.0000	26.570
30 Benzene	78		5.222	5.228	(0.902)		69646	5.00000	5.056
* 31 Pentafluorobenzene	168		5.338	5.344	(1.000)		426340	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.362	(1.003)		197909	50.0000	50.742
33 1,2-Dichloroethane	62		5.417	5.417	(0.936)		19839	5.00000	5.014

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
								(ug/Kg)	(ug/Kg)
=====	=====		=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130			5.740	5.746 (0.992)		23112	5.00000	5.376
* 35 1,4-Difluorobenzene	114			5.788	5.788 (1.000)		777170	50.0000	
37 Dibromomethane	93			6.099	6.104 (1.054)		8893	5.00000	4.706
38 1,2-Dichloropropane	63			6.190	6.190 (1.069)		14471	5.00000	4.795
39 Bromodichloromethane	83			6.257	6.257 (1.081)		22488	5.00000	5.008
172 2-Pentanone	86			6.555	6.549 (1.132)		9218	25.0000	23.482
40 2-Chloroethyl Vinyl Ether	63			6.762	6.761 (1.168)		8609	5.00000	4.921
41 Cis 1,3-dichloropropene	75			6.792	6.792 (1.173)		25821	5.00000	4.921
\$ 42 d8-Toluene	98			6.944	6.944 (1.200)		909058	50.0000	49.949
43 Toluene	92			6.987	6.987 (1.207)		47550	5.00000	5.056
44 Tetrachloroethene	166			7.303	7.303 (0.884)		24176	5.00000	5.213
45 4-Methyl-2-Pentanone	58			7.333	7.339 (1.267)		21578	25.0000	23.689 (TM)
46 Trans 1,3-Dichloropropene	75			7.352	7.352 (1.270)		22270	5.00000	4.801
47 1,1,2-Trichloroethane	97			7.486	7.485 (1.293)		13706	5.00000	4.947
48 Chlorodibromomethane	129			7.625	7.625 (0.923)		17531	5.00000	4.880
49 1,3-Dichloropropane	76			7.711	7.711 (0.934)		21604	5.00000	4.786
50 1,2-Dibromoethane	107			7.820	7.820 (1.351)		13550	5.00000	4.839
51 2-Hexanone	43			8.051	8.045 (0.975)		36004	25.0000	22.942
* 52 d5-Chlorobenzene	117			8.258	8.264 (1.000)		755541	50.0000	
53 Chlorobenzene	112			8.276	8.276 (1.002)		54376	5.00000	5.051
54 Ethyl Benzene	91			8.307	8.307 (1.006)		89885	5.00000	5.087
55 1,1,1,2-Tetrachloroethane	131			8.331	8.337 (1.009)		17841	5.00000	4.662
56 m,p-xylene	106			8.435	8.434 (1.021)		71862	10.0000	9.983
57 o-Xylene	106			8.812	8.812 (1.067)		34017	5.00000	4.971
58 Styrene	104			8.854	8.860 (1.072)		54297	5.00000	4.951
59 Bromoform	173			8.873	8.872 (0.857)		12542	5.00000	5.075
60 Isopropyl Benzene	105			9.092	9.092 (0.878)		90577	5.00000	5.058
61 Cyclohexanone	55			Compound Not Detected.					
\$ 62 4-Bromofluorobenzene	174			9.335	9.335 (1.130)		317686	50.0000	49.115
63 Bromobenzene	156			9.420	9.420 (0.910)		23215	5.00000	5.033
64 N-Propyl Benzene	91			9.463	9.463 (0.914)		100063	5.00000	4.930
65 1,1,2,2-Tetrachloroethane	83			9.536	9.536 (0.921)		15774	5.00000	4.895
66 2-Chloro Toluene	91			9.590	9.590 (0.927)		58942	5.00000	5.093
67 1,3,5-Trimethyl Benzene	105			9.645	9.645 (0.932)		73086	5.00000	4.951
68 1,2,3-Trichloropropane	110			9.645	9.651 (0.932)		5280	5.00000	4.721
69 Trans-1,4-Dichloro 2-Butene	53			9.694	9.694 (0.937)		4353	5.00000	4.945
70 4-Chloro Toluene	91			9.743	9.749 (0.941)		60098	5.00000	5.009
71 T-Butyl Benzene	119			9.931	9.931 (0.959)		69333	5.00000	5.068
72 1,2,4-Trimethylbenzene	105			9.998	9.998 (0.966)		72345	5.00000	5.030
73 S-Butyl Benzene	105			10.089	10.095 (0.975)		102061	5.00000	5.137
74 4-Isopropyl Toluene	119			10.229	10.229 (0.988)		85833	5.00000	5.037
75 1,3-Dichlorobenzene	146			10.284	10.284 (0.994)		45480	5.00000	4.985
* 76 d4-1,4-Dichlorobenzene	152			10.351	10.351 (1.000)		419841	50.0000	
77 1,4-Dichlorobenzene	146			10.363	10.369 (1.001)		46961	5.00000	5.232
78 N-Butyl Benzene	91			10.619	10.625 (1.026)		73459	5.00000	4.944
\$ 79 d4-1,2-Dichlorobenzene	152			10.746	10.746 (1.038)		363018	50.0000	49.578
80 1,2-Dichlorobenzene	146			10.759	10.758 (1.039)		41826	5.00000	5.077
81 1,2-Dibromo 3-Chloropropane	75			11.519	11.519 (1.113)		3105	5.00000	5.199
82 Hexachloro 1,3-Butadiene	225			12.152	12.152 (1.174)		16377	5.00000	4.885
83 1,2,4-Trichlorobenzene	180			12.170	12.176 (1.176)		28309	5.00000	5.013
84 Naphthalene	128			12.492	12.492 (1.207)		53855	5.00000	4.660
85 1,2,3-Trichlorobenzene	180			12.669	12.675 (1.224)		25571	5.00000	5.003

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241909.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL3
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	426340	5.55
35 1,4-Difluorobenze	717664	358832	1435328	777170	8.29
52 d5-Chlorobenzene	696563	348282	1393126	755541	8.47
76 d4-1,4-Dichlorobe	380778	190389	761556	419841	10.26

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	-0.11
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241909.D

Lab ID: shf0324-CAL3

nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 17:14

RT	CO-ELUTION COMPOUNDS
9.646	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.646	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

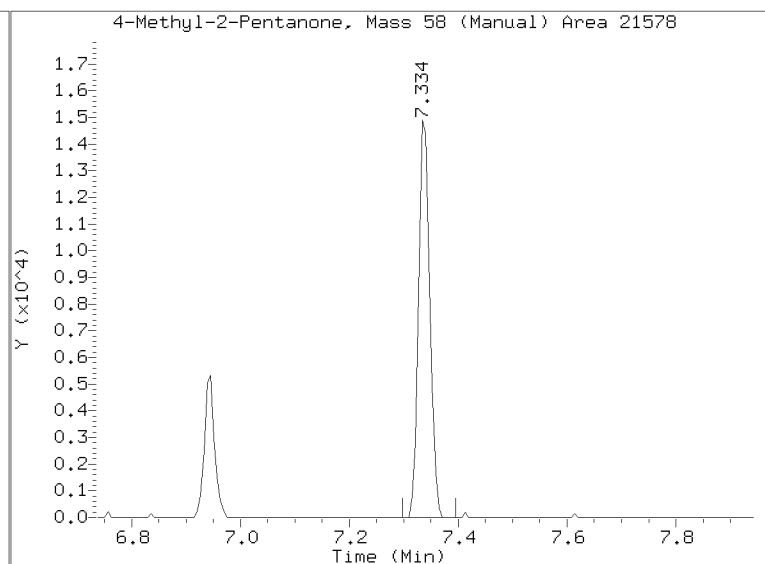
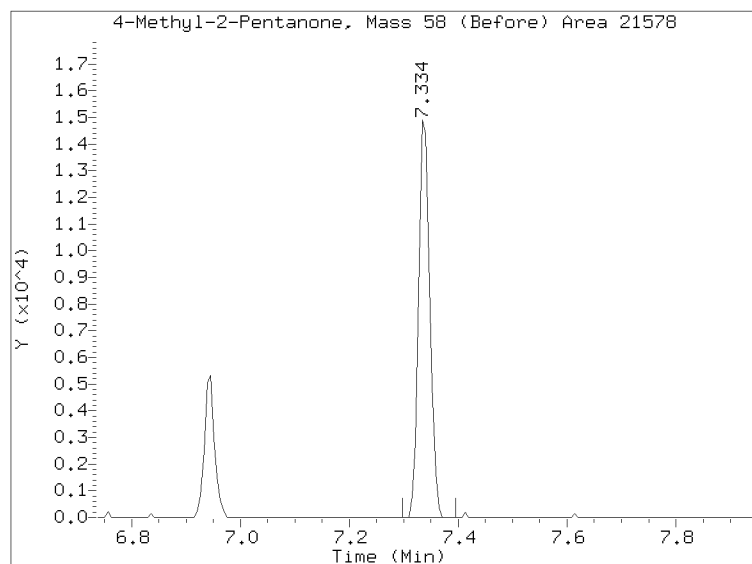
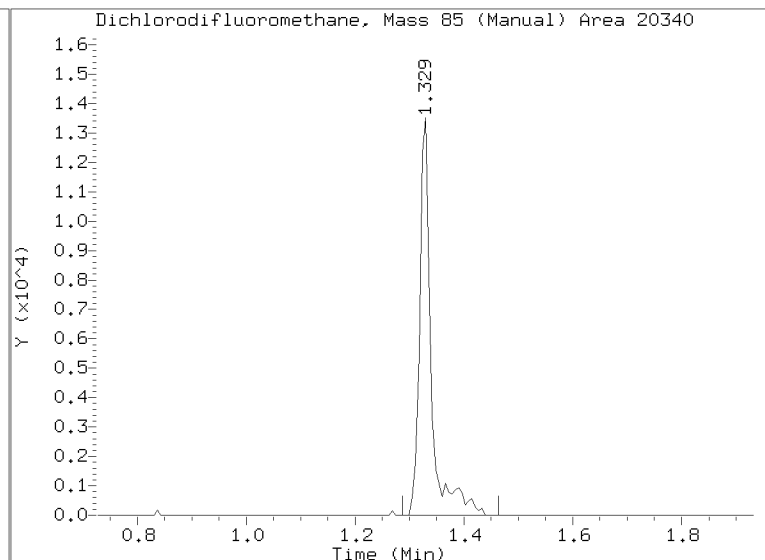
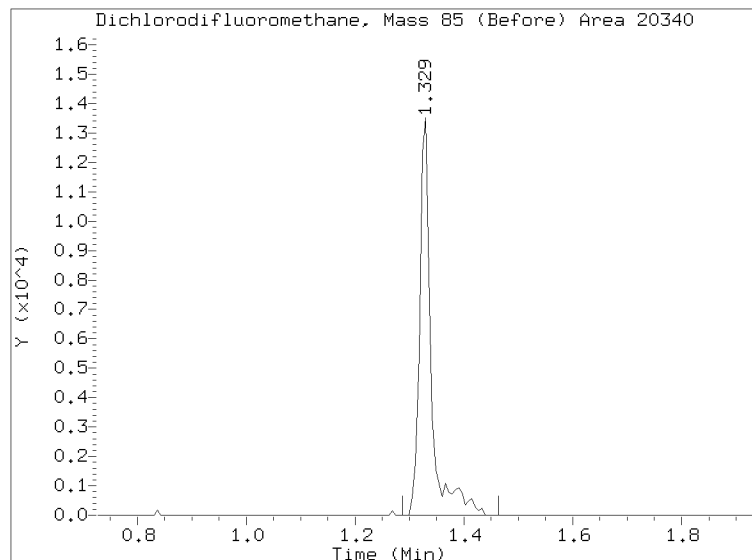
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190624.b/NT506241909.D

Injection Date: 24-JUN-2019 17:14

Lab ID:shf0324-CAL3 Client ID:

Report Date: 06/26/2019 14:51



Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241910.D

Date : 24-JUN-2019 17:37

Client ID:

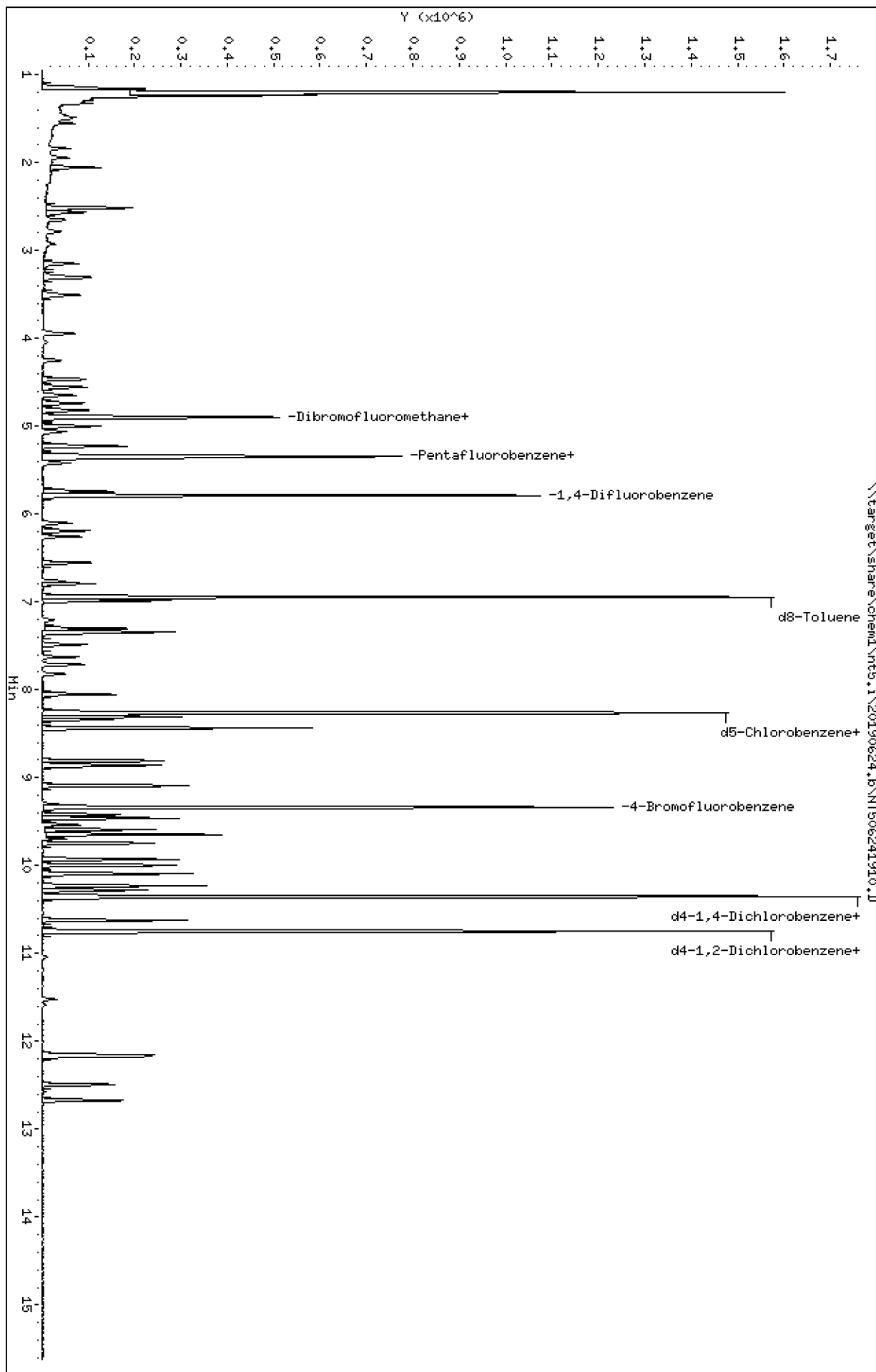
Sample Info: CQL4

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241910.D
 Lab Smp Id: shf0324-CAL4
 Inj Date : 24-JUN-2019 17:37
 Operator : PB Inst ID: nt5.i
 Smp Info : CAL4
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Meth Date : 26-Jun-2019 14:51 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 17:14 Cal File: NT506241909.D
 Als bottle: 4 Calibration Sample, Level: 4
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						AMOUNTS	
			RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
	MASS						(ug/Kg)	(ug/Kg)	
=====	=====		=====	=====	=====	=====	=====	=====	
1 Dichlorodifluoromethane	85		1.323	1.329 (0.248)		41985	10.0000	9.926 (M)	
2 Chloromethane	50		1.487	1.487 (0.279)		34445	10.0000	9.822	
3 Vinyl Chloride	62		1.554	1.560 (0.291)		37465	10.0000	10.583 (M)	
4 Bromomethane	94		1.840	1.840 (0.345)		25582	10.0000	9.838	
5 Chloroethane	64		1.943	1.949 (0.364)		27318	10.0000	9.772	
6 Trichlorofluoromethane	101		2.053	2.065 (0.385)		73854	10.0000	10.949	
7 1,1-Dichloroethene	96		2.515	2.539 (0.471)		36849	10.0000	10.651	
8 Carbon Disulfide	76		2.515	2.539 (0.471)		98706	10.0000	10.224	
9 112Trichloro122Trifluoroethane	101		2.570	2.588 (0.481)		34172	10.0000	10.821	
10 Iodomethane	142		2.655	2.667 (0.497)		44573	10.0000	9.876	
11 Bromoethane	108		2.783	2.801 (0.521)		24065	10.0000	10.332	
12 Acrolein	56		2.929	2.917 (0.549)		18516	50.0000	52.668	
13 Methylene Chloride	84		3.148	3.160 (0.590)		36613	10.0000	10.657	
14 Acetone	43		3.288	3.263 (0.616)		34357	50.0000	55.547	
15 Trans-1,2-Dichloroethene	96		3.306	3.318 (0.619)		38095	10.0000	10.246	
16 Methyl tert butyl ether	73		3.507	3.489 (0.657)		77498	10.0000	9.617	
173 n-Hexane	41		Compound Not Detected.						
17 1,1-Dichloroethane	63		3.945	3.951 (0.739)		56609	10.0000	10.148	
18 Acrylonitrile	53		4.048	4.036 (0.758)		8076	10.0000	10.990	
19 Vinyl Acetate	43		4.249	4.249 (0.796)		52030	10.0000	10.173	
20 Cis-1,2-Dichloroethene	96		4.468	4.468 (0.837)		39858	10.0000	10.432	
22 2,2-Dichloropropane	77		4.553	4.559 (0.853)		56353	10.0000	10.483	
23 Bromochloromethane	128		4.650	4.650 (0.871)		19204	10.0000	10.237	
24 Chloroform	83		4.736	4.736 (0.887)		59932	10.0000	10.199	
25 Carbon Tetrachloride	117		4.821	4.821 (0.833)		58122	10.0000	10.482	
\$ 27 Dibromofluoromethane	111		4.900	4.900 (0.918)		223982	50.0000	48.795	
26 1,1,1-Trichloroethane	97		4.888	4.894 (0.916)		59227	10.0000	10.277	
28 1,1-Dichloropropene	75		5.003	5.003 (0.864)		50003	10.0000	11.166	
29 2-Butanone	72		5.058	5.052 (0.948)		15071	50.0000	51.846	
30 Benzene	78		5.222	5.228 (0.902)		138746	10.0000	10.390	
* 31 Pentafluorobenzene	168		5.338	5.344 (1.000)		419735	50.0000		
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.362 (1.003)		189812	50.0000	49.432	
33 1,2-Dichloroethane	62		5.417	5.417 (0.936)		37367	10.0000	9.742	

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====	=====	=====	=====	=====		=====	=====
34 Trichloroethene	130	5.739	5.746	(0.992)	43609		10.0000	10.465
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	753365		50.0000	
37 Dibromomethane	93	6.104	6.104	(1.055)	18475		10.0000	10.085
38 1,2-Dichloropropane	63	6.190	6.190	(1.069)	28408		10.0000	9.710
39 Bromodichloromethane	83	6.257	6.257	(1.081)	44304		10.0000	10.177
172 2-Pentanone	86	6.555	6.549	(1.132)	20790		50.0000	54.633
40 2-Chloroethyl Vinyl Ether	63	6.761	6.761	(1.168)	16691		10.0000	9.843
41 Cis 1,3-dichloropropene	75	6.792	6.792	(1.173)	49975		10.0000	9.826
\$ 42 d8-Toluene	98	6.944	6.944	(1.200)	870338		50.0000	49.333
43 Toluene	92	6.987	6.987	(1.207)	96367		10.0000	10.570
44 Tetrachloroethene	166	7.303	7.303	(0.884)	47037		10.0000	10.809
45 4-Methyl-2-Pentanone	58	7.339	7.339	(1.268)	48659		50.0000	55.108 (M)
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.270)	44762		10.0000	9.955
47 1,1,2-Trichloroethane	97	7.485	7.485	(1.293)	25839		10.0000	9.620
48 Chlorodibromomethane	129	7.625	7.625	(0.923)	34184		10.0000	10.143
49 1,3-Dichloropropane	76	7.711	7.711	(0.934)	43182		10.0000	10.196
50 1,2-Dibromoethane	107	7.820	7.820	(1.351)	27873		10.0000	10.269
51 2-Hexanone	43	8.051	8.045	(0.975)	77202		50.0000	52.432
* 52 d5-Chlorobenzene	117	8.258	8.264	(1.000)	708871		50.0000	
53 Chlorobenzene	112	8.276	8.276	(1.002)	107637		10.0000	10.657
54 Ethyl Benzene	91	8.307	8.307	(1.006)	178766		10.0000	10.784
55 1,1,1,2-Tetrachloroethane	131	8.337	8.337	(1.010)	36215		10.0000	10.086
56 m,p-xylene	106	8.434	8.434	(1.021)	146339		20.0000	21.668
57 o-Xylene	106	8.812	8.812	(1.067)	67641		10.0000	10.536
58 Styrene	104	8.860	8.860	(1.073)	108001		10.0000	10.497
59 Bromoform	173	8.872	8.872	(0.857)	22895		10.0000	9.637
60 Isopropyl Benzene	105	9.091	9.092	(0.878)	182558		10.0000	10.605
61 Cyclohexanone	55	Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	302006		50.0000	49.765
63 Bromobenzene	156	9.420	9.420	(0.910)	44703		10.0000	10.082
64 N-Propyl Benzene	91	9.463	9.463	(0.914)	208909		10.0000	10.707
65 1,1,2,2-Tetrachloroethane	83	9.536	9.536	(0.921)	31884		10.0000	10.292
66 2-Chloro Toluene	91	9.590	9.590	(0.927)	113869		10.0000	10.235
67 1,3,5-Trimethyl Benzene	105	9.645	9.645	(0.932)	147720		10.0000	10.411
68 1,2,3-Trichloropropane	110	9.651	9.651	(0.932)	11672		10.0000	10.856
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.694	(0.937)	8466		10.0000	10.005
70 4-Chloro Toluene	91	9.742	9.749	(0.941)	120359		10.0000	10.436
71 T-Butyl Benzene	119	9.925	9.931	(0.959)	135355		10.0000	10.292
72 1,2,4-Trimethylbenzene	105	9.998	9.998	(0.966)	143057		10.0000	10.346
73 S-Butyl Benzene	105	10.089	10.095	(0.975)	204076		10.0000	10.684
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	174644		10.0000	10.660
75 1,3-Dichlorobenzene	146	10.278	10.284	(0.993)	89815		10.0000	10.242
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	403591		50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.369	(1.001)	89241		10.0000	10.342
78 N-Butyl Benzene	91	10.618	10.625	(1.026)	152061		10.0000	10.646
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	345619		50.0000	49.103
80 1,2-Dichlorobenzene	146	10.752	10.758	(1.039)	82276		10.0000	10.390
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.113)	5905		10.0000	10.285
82 Hexachloro 1,3-Butadiene	225	12.158	12.152	(1.175)	36403		10.0000	11.295
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	57526		10.0000	10.596
84 Naphthalene	128	12.492	12.492	(1.207)	116087		10.0000	10.448
85 1,2,3-Trichlorobenzene	180	12.675	12.675	(1.225)	50413		10.0000	10.261

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241910.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL4
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	419735	3.91
35 1,4-Difluorobenze	717664	358832	1435328	753365	4.97
52 d5-Chlorobenzene	696563	348282	1393126	708871	1.77
76 d4-1,4-Dichlorobe	380778	190389	761556	403591	5.99

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	-0.11
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241910.D

Lab ID: shf0324-CAL4
nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 17:37

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

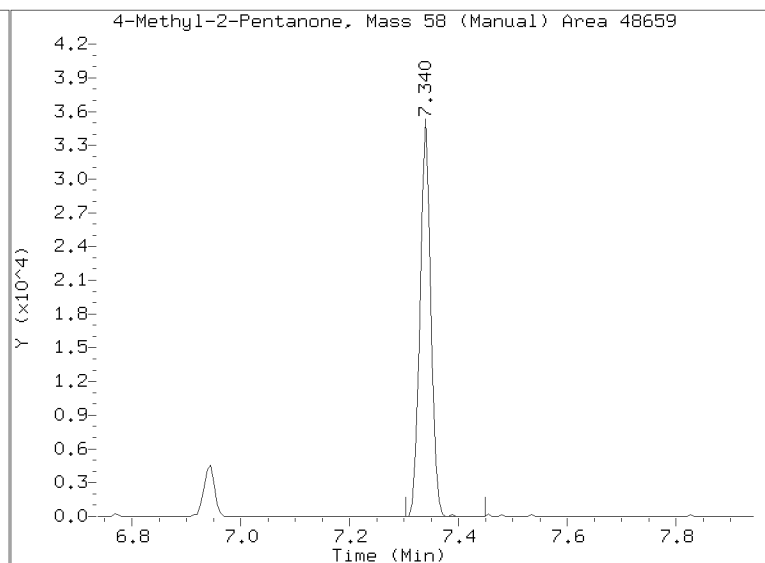
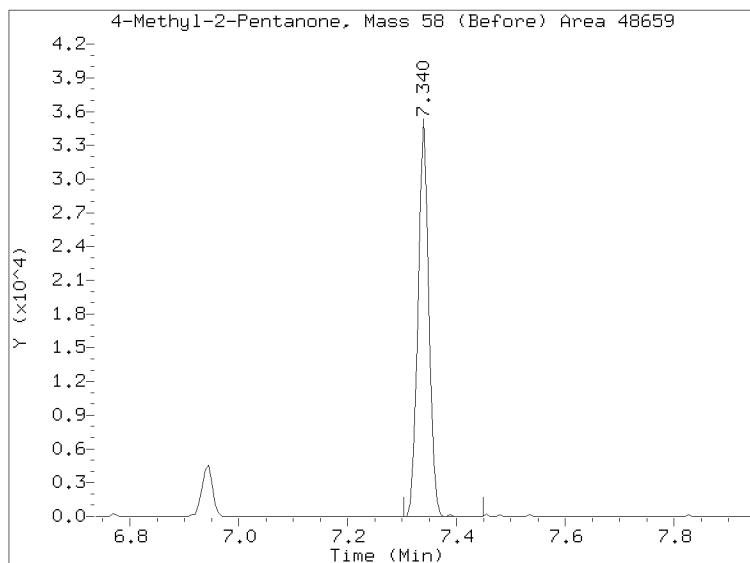
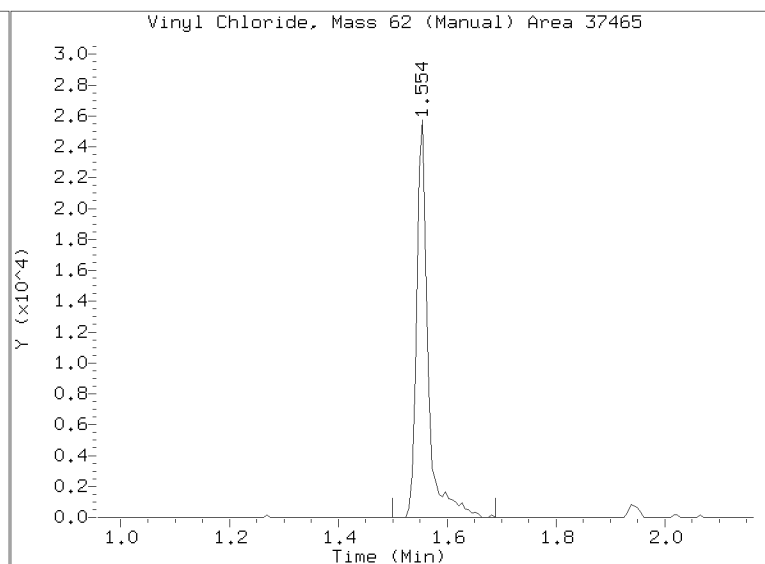
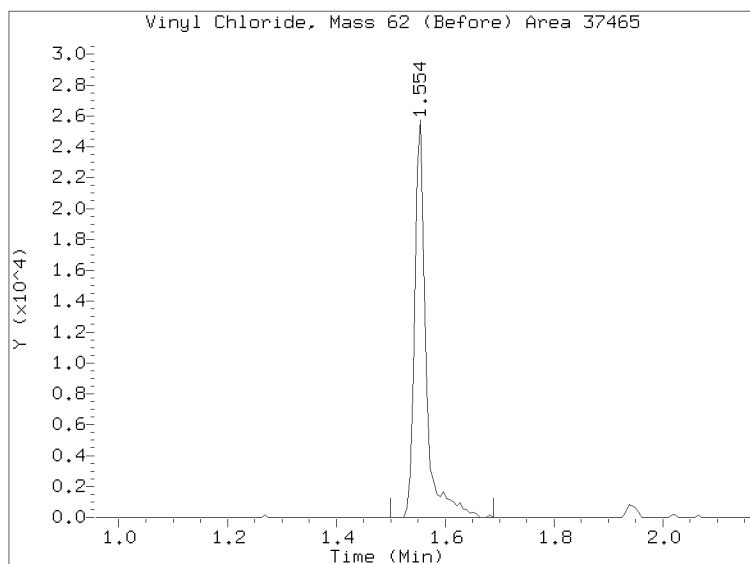
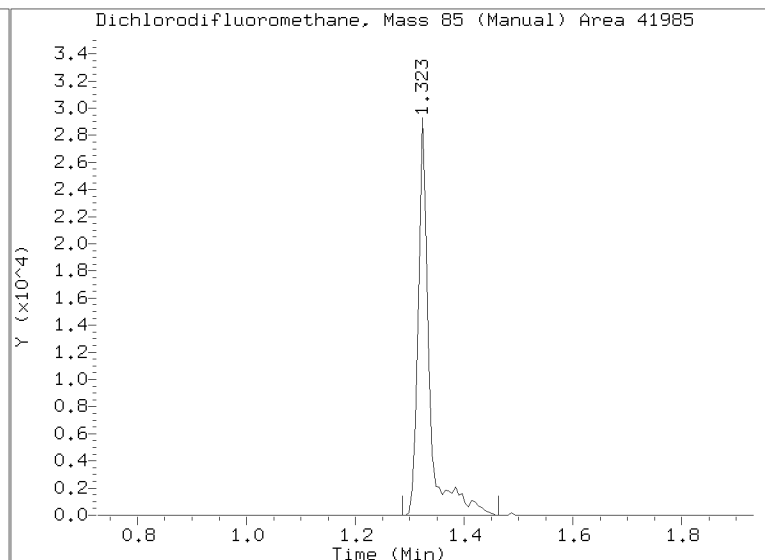
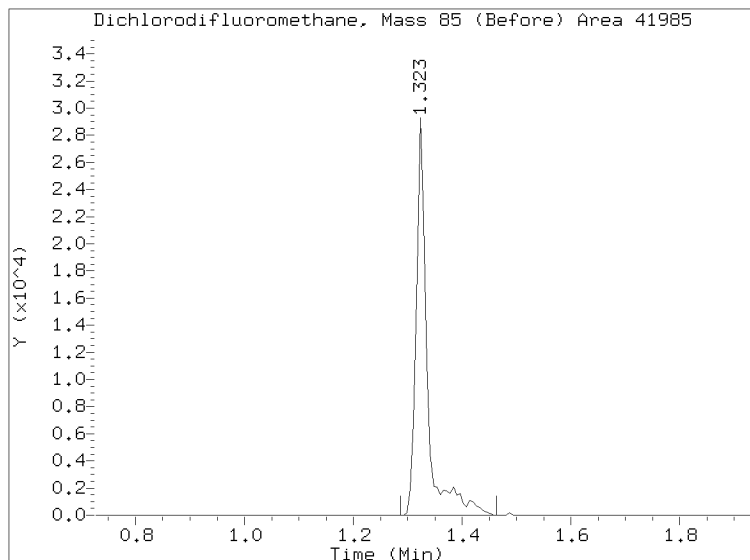
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt5.i/20190624.b/NT506241910.D

Injection Date: 24-JUN-2019 17:37

Lab ID:shf0324-CAL4 Client ID:

Report Date: 06/26/2019 14:51



Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241911.D

Date : 24-JUN-2019 17:59

Client ID:

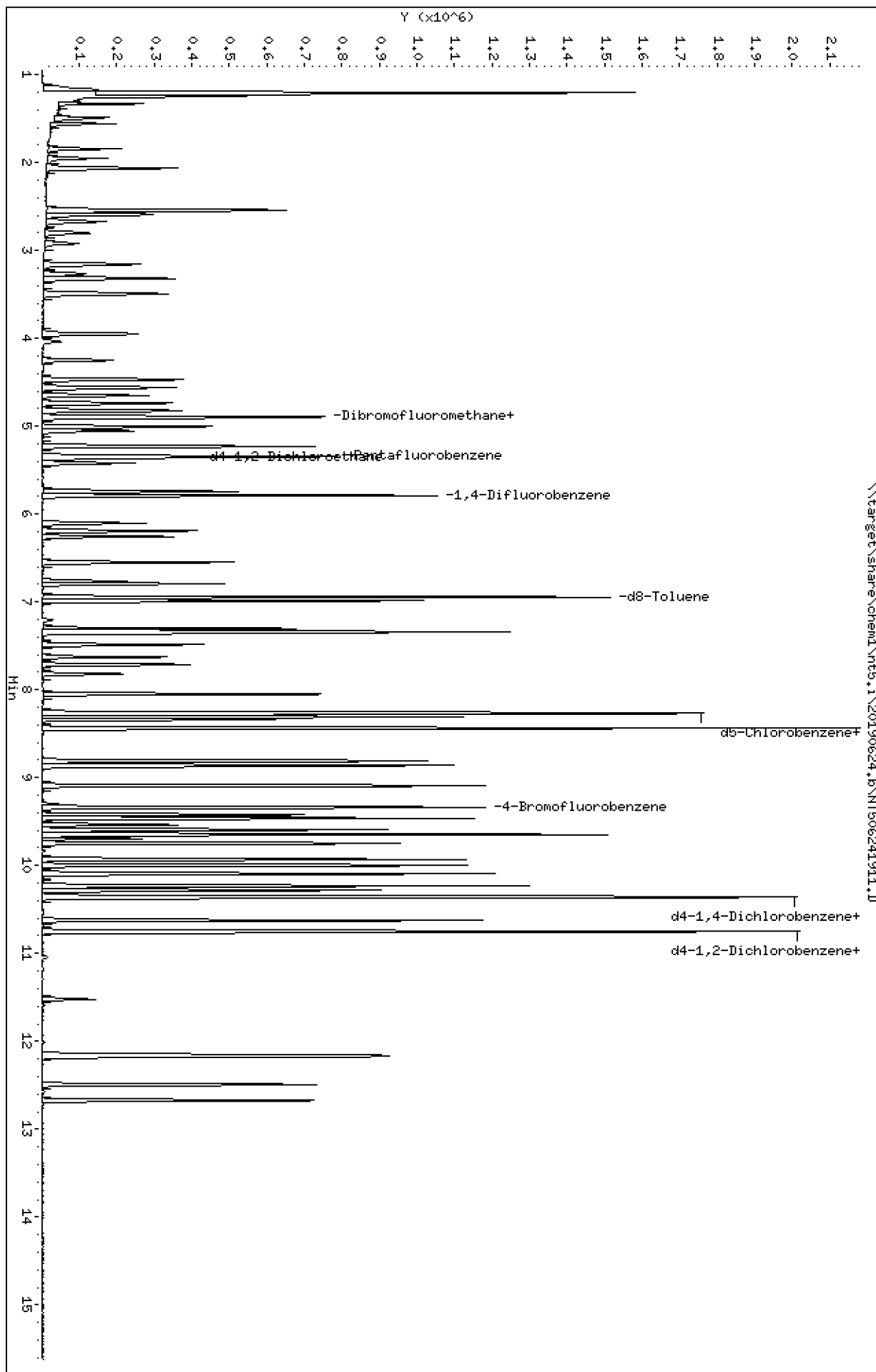
Sample Info: CAL5

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241911.D
Lab Smp Id: shf0324-CAL5
Inj Date : 24-JUN-2019 17:59
Operator : PB Inst ID: nt5.i
Smp Info : CAL5
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Meth Date : 26-Jun-2019 14:51 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 17:37 Cal File: NT506241910.D
Als bottle: 4 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamd1.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG						AMOUNTS	
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	====		====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		1.329	1.329 (0.249)		173079	50.0000	42.520
2 Chloromethane	50		1.487	1.487 (0.278)		132613	50.0000	39.295
3 Vinyl Chloride	62		1.560	1.560 (0.292)		141354	50.0000	41.493
4 Bromomethane	94		1.840	1.840 (0.344)		101244	50.0000	40.457
5 Chloroethane	64		1.949	1.949 (0.365)		110125	50.0000	40.933
6 Trichlorofluoromethane	101		2.065	2.065 (0.386)		260079	50.0000	40.066
7 1,1-Dichloroethene	96		2.539	2.539 (0.475)		127233	50.0000	38.213
8 Carbon Disulfide	76		2.539	2.539 (0.475)		370530	50.0000	39.883
9 112Trichloro122Trifluoroethane	101		2.588	2.588 (0.484)		117678	50.0000	38.723
10 Iodomethane	142		2.667	2.667 (0.499)		177195	50.0000	40.796
11 Bromoethane	108		2.801	2.801 (0.524)		90529	50.0000	40.390
12 Acrolein	56		2.917	2.917 (0.546)		83662	250.000	247.29
13 Methylene Chloride	84		3.160	3.160 (0.591)		135226	50.0000	40.902
14 Acetone	43		3.263	3.263 (0.611)		148353	250.000	249.24
15 Trans-1,2-Dichloroethene	96		3.318	3.318 (0.621)		143844	50.0000	40.203
16 Methyl tert butyl ether	73		3.489	3.489 (0.653)		348960	50.0000	45.000
173 n-Hexane	41		Compound Not Detected.					
17 1,1-Dichloroethane	63		3.951	3.951 (0.739)		223451	50.0000	41.624
18 Acrylonitrile	53		4.036	4.036 (0.755)		36228	50.0000	51.228
19 Vinyl Acetate	43		4.249	4.249 (0.795)		228256	50.0000	46.374
20 Cis-1,2-Dichloroethene	96		4.468	4.468 (0.836)		153306	50.0000	41.694
22 2,2-Dichloropropane	77		4.559	4.559 (0.853)		204110	50.0000	39.456
23 Bromochloromethane	128		4.650	4.650 (0.870)		76547	50.0000	42.402
24 Chloroform	83		4.736	4.736 (0.886)		230659	50.0000	40.789
25 Carbon Tetrachloride	117		4.821	4.821 (0.833)		211813	50.0000	40.101
\$ 27 Dibromofluoromethane	111		4.900	4.900 (0.917)		219462	50.0000	49.682
26 1,1,1-Trichloroethane	97		4.894	4.894 (0.916)		219047	50.0000	39.498
28 1,1-Dichloropropene	75		5.003	5.003 (0.864)		177861	50.0000	41.694
29 2-Butanone	72		5.052	5.052 (0.945)		71457	250.000	255.44
30 Benzene	78		5.228	5.228 (0.903)		538613	50.0000	42.340
* 31 Pentafluorobenzene	168		5.344	5.344 (1.000)		403927	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.362 (1.003)		181364	50.0000	49.081
33 1,2-Dichloroethane	62		5.417	5.417 (0.936)		158102	50.0000	43.270

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
								(ug/Kg)	(ug/Kg)
=====	=====		=====	=====	=====	=====	=====	=====	=====
34 Trichloroethene	130			5.746	5.746	(0.993)	160190	50.0000	40.354
* 35 1,4-Difluorobenzene	114			5.788	5.788	(1.000)	717664	50.0000	
37 Dibromomethane	93			6.104	6.104	(1.055)	78041	50.0000	44.720
38 1,2-Dichloropropane	63			6.190	6.190	(1.069)	117662	50.0000	42.219
39 Bromodichloromethane	83			6.257	6.257	(1.081)	176656	50.0000	42.599
172 2-Pentanone	86			6.549	6.549	(1.131)	95198	250.000	262.61
40 2-Chloroethyl Vinyl Ether	63			6.761	6.761	(1.168)	75676	50.0000	46.848
41 Cis 1,3-dichloropropene	75			6.792	6.792	(1.173)	214022	50.0000	44.172
\$ 42 d8-Toluene	98			6.944	6.944	(1.200)	843438	50.0000	50.186
43 Toluene	92			6.987	6.987	(1.207)	355258	50.0000	40.905
44 Tetrachloroethene	166			7.303	7.303	(0.884)	165412	50.0000	38.685
45 4-Methyl-2-Pentanone	58			7.339	7.339	(1.268)	218067	250.000	259.25
46 Trans 1,3-Dichloropropene	75			7.352	7.352	(1.270)	193444	50.0000	45.161
47 1,1,2-Trichloroethane	97			7.485	7.485	(1.293)	112481	50.0000	43.962
48 Chlorodibromomethane	129			7.625	7.625	(0.923)	147885	50.0000	44.655
49 1,3-Dichloropropane	76			7.711	7.711	(0.933)	191174	50.0000	45.937
50 1,2-Dibromoethane	107			7.820	7.820	(1.351)	117716	50.0000	45.527
51 2-Hexanone	43			8.045	8.045	(0.973)	375548	250.000	259.56
* 52 d5-Chlorobenzene	117			8.264	8.264	(1.000)	696563	50.0000	
53 Chlorobenzene	112			8.276	8.276	(1.001)	416462	50.0000	41.962
54 Ethyl Benzene	91			8.307	8.307	(1.005)	664116	50.0000	40.771
55 1,1,1,2-Tetrachloroethane	131			8.337	8.337	(1.009)	150880	50.0000	42.763
56 m,p-xylene	106			8.434	8.434	(1.021)	541265	100.000	81.560
57 o-Xylene	106			8.812	8.812	(1.066)	262307	50.0000	41.579
58 Styrene	104			8.860	8.860	(1.072)	435449	50.0000	43.072
59 Bromoform	173			8.872	8.872	(0.857)	103172	50.0000	46.030
60 Isopropyl Benzene	105			9.092	9.092	(0.878)	693520	50.0000	42.703
61 Cyclohexanone	55		Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174			9.335	9.335	(1.130)	296178	50.0000	49.667
63 Bromobenzene	156			9.420	9.420	(0.910)	183344	50.0000	43.830
64 N-Propyl Benzene	91			9.463	9.463	(0.914)	780769	50.0000	42.414
65 1,1,2,2-Tetrachloroethane	83			9.536	9.536	(0.921)	141500	50.0000	48.414
66 2-Chloro Toluene	91			9.590	9.590	(0.927)	449320	50.0000	42.806
67 1,3,5-Trimethyl Benzene	105			9.645	9.645	(0.932)	569902	50.0000	42.571
68 1,2,3-Trichloropropane	110			9.651	9.651	(0.932)	48622	50.0000	47.933
69 Trans-1,4-Dichloro 2-Butene	53			9.694	9.694	(0.937)	39968	50.0000	50.062
70 4-Chloro Toluene	91			9.749	9.749	(0.942)	469481	50.0000	43.148
71 T-Butyl Benzene	119			9.931	9.931	(0.959)	522586	50.0000	42.116
72 1,2,4-Trimethylbenzene	105			9.998	9.998	(0.966)	559896	50.0000	42.919
73 S-Butyl Benzene	105			10.095	10.095	(0.975)	755829	50.0000	41.942
74 4-Isopropyl Toluene	119			10.229	10.229	(0.988)	663685	50.0000	42.939
75 1,3-Dichlorobenzene	146			10.284	10.284	(0.994)	350800	50.0000	42.398
* 76 d4-1,4-Dichlorobenzene	152			10.351	10.351	(1.000)	380778	50.0000	
77 1,4-Dichlorobenzene	146			10.369	10.369	(1.002)	347076	50.0000	42.633
78 N-Butyl Benzene	91			10.625	10.625	(1.026)	574521	50.0000	42.632
\$ 79 d4-1,2-Dichlorobenzene	152			10.746	10.746	(1.038)	332794	50.0000	50.113
80 1,2-Dichlorobenzene	146			10.758	10.758	(1.039)	325820	50.0000	43.609
81 1,2-Dibromo 3-Chloropropane	75			11.519	11.519	(1.113)	26818	50.0000	49.508
82 Hexachloro 1,3-Butadiene	225			12.152	12.152	(1.174)	130578	50.0000	42.942
83 1,2,4-Trichlorobenzene	180			12.176	12.176	(1.176)	234239	50.0000	45.731
84 Naphthalene	128			12.492	12.492	(1.207)	523707	50.0000	49.959
85 1,2,3-Trichlorobenzene	180			12.675	12.675	(1.225)	218161	50.0000	47.066

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241911.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL5
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	403927	0.00
35 1,4-Difluorobenze	717664	358832	1435328	717664	0.00
52 d5-Chlorobenzene	696563	348282	1393126	696563	0.00
76 d4-1,4-Dichlorobe	380778	190389	761556	380778	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241911.D

Lab ID: shf0324-CAL5
nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 17:59

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241912.D

Date : 24-JUN-2019 18:22

Client ID:

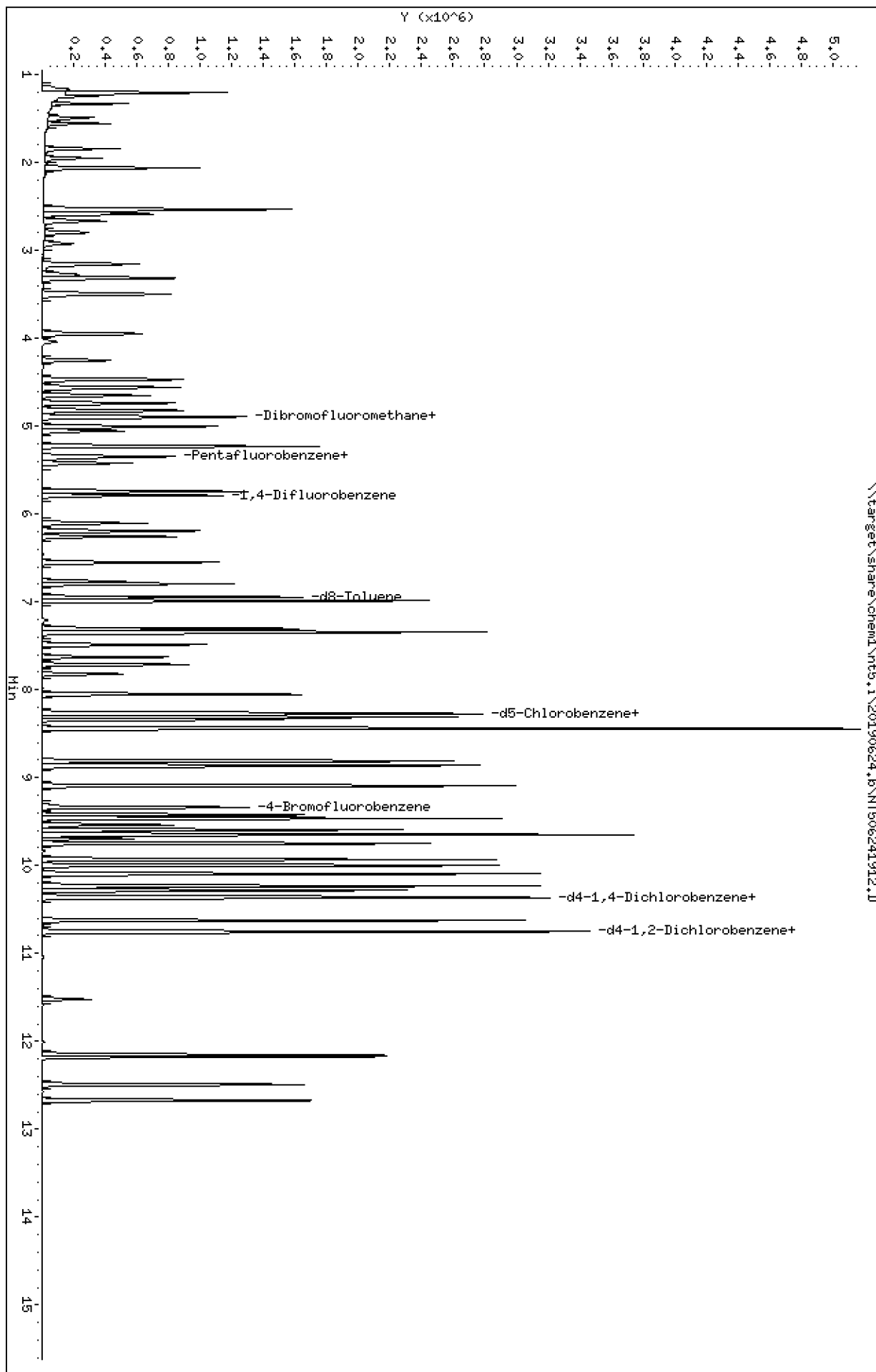
Sample Info: QAL6

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241912.D
 Lab Smp Id: shf0324-CAL6
 Inj Date : 24-JUN-2019 18:22
 Operator : PB Inst ID: nt5.i
 Smp Info : CAL6
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Meth Date : 26-Jun-2019 14:51 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 17:59 Cal File: NT506241911.D
 Als bottle: 4 Calibration Sample, Level: 6
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamd1.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG					AMOUNTS	
			RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====		=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		1.329	1.329	(0.249)	405283	100.000	91.848
2 Chloromethane	50		1.487	1.487	(0.278)	323245	100.000	88.358
3 Vinyl Chloride	62		1.554	1.560	(0.291)	331997	100.000	89.901
4 Bromomethane	94		1.840	1.840	(0.344)	246082	100.000	90.714
5 Chloroethane	64		1.949	1.949	(0.365)	271976	100.000	93.258
6 Trichlorofluoromethane	101		2.059	2.065	(0.385)	650225	100.000	92.407
7 1,1-Dichloroethene	96		2.527	2.539	(0.473)	316723	100.000	87.753
8 Carbon Disulfide	76		2.533	2.539	(0.474)	886348	100.000	88.009
9 112Trichloro122Trifluoroethane	101		2.582	2.588	(0.483)	284979	100.000	86.507
10 Iodomethane	142		2.661	2.667	(0.498)	435926	100.000	92.586
11 Bromoethane	108		2.795	2.801	(0.523)	214931	100.000	88.459
12 Acrolein	56		2.923	2.917	(0.547)	182103	500.000	496.54
13 Methylene Chloride	84		3.154	3.160	(0.590)	323783	100.000	90.345
14 Acetone	43		3.270	3.263	(0.612)	312219	500.000	483.88
15 Trans-1,2-Dichloroethene	96		3.318	3.318	(0.621)	341433	100.000	88.031
16 Methyl tert butyl ether	73		3.495	3.489	(0.654)	836773	100.000	99.542
173 n-Hexane	41		Compound Not Detected.					
17 1,1-Dichloroethane	63		3.945	3.951	(0.738)	540155	100.000	92.821
18 Acrylonitrile	53		4.036	4.036	(0.755)	71847	100.000	93.721
19 Vinyl Acetate	43		4.249	4.249	(0.795)	528140	100.000	98.984
20 Cis-1,2-Dichloroethene	96		4.468	4.468	(0.836)	369400	100.000	92.679
22 2,2-Dichloropropane	77		4.559	4.559	(0.853)	501667	100.000	89.460
23 Bromochloromethane	128		4.651	4.650	(0.870)	187534	100.000	95.830
24 Chloroform	83		4.736	4.736	(0.886)	557885	100.000	91.008
25 Carbon Tetrachloride	117		4.821	4.821	(0.833)	507087	100.000	87.830
\$ 27 Dibromofluoromethane	111		4.900	4.900	(0.917)	240543	50.0000	50.234
26 1,1,1-Trichloroethane	97		4.894	4.894	(0.916)	537704	100.000	89.442
28 1,1-Dichloropropene	75		5.003	5.003	(0.864)	429284	100.000	92.065
29 2-Butanone	72		5.052	5.052	(0.945)	151491	500.000	499.57
30 Benzene	78		5.228	5.228	(0.903)	1283437	100.000	92.300
* 31 Pentafluorobenzene	168		5.344	5.344	(1.000)	437863	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.362	(1.002)	199616	50.0000	49.833
33 1,2-Dichloroethane	62		5.417	5.417	(0.936)	367747	100.000	92.078

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====	=====	=====	=====	=====		=====	=====
34 Trichloroethene	130	5.740	5.746	(0.992)	383027		100.000	88.275
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	784452		50.0000	
37 Dibromomethane	93	6.105	6.104	(1.055)	186241		100.000	97.635
38 1,2-Dichloropropane	63	6.190	6.190	(1.069)	287554		100.000	94.394
39 Bromodichloromethane	83	6.257	6.257	(1.081)	439231		100.000	96.900
172 2-Pentanone	86	6.549	6.549	(1.131)	203680		500.000	514.03
40 2-Chloroethyl Vinyl Ether	63	6.762	6.761	(1.168)	175155		100.000	99.200
41 Cis 1,3-dichloropropene	75	6.792	6.792	(1.173)	527715		100.000	99.642
\$ 42 d8-Toluene	98	6.944	6.944	(1.200)	929372		50.0000	50.591
43 Toluene	92	6.987	6.987	(1.207)	848114		100.000	89.338
44 Tetrachloroethene	166	7.303	7.303	(0.884)	404745		100.000	85.589
45 4-Methyl-2-Pentanone	58	7.339	7.339	(1.268)	468788		500.000	509.88
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.270)	472401		100.000	100.90
47 1,1,2-Trichloroethane	97	7.485	7.485	(1.293)	270922		100.000	96.873
48 Chlorodibromomethane	129	7.625	7.625	(0.923)	359903		100.000	98.264
49 1,3-Dichloropropane	76	7.711	7.711	(0.933)	441668		100.000	95.961
50 1,2-Dibromoethane	107	7.820	7.820	(1.351)	271791		100.000	96.166
51 2-Hexanone	43	8.051	8.045	(0.974)	811051		500.000	506.86
* 52 d5-Chlorobenzene	117	8.264	8.264	(1.000)	770363		50.0000	
53 Chlorobenzene	112	8.276	8.276	(1.001)	985255		100.000	89.763
54 Ethyl Benzene	91	8.307	8.307	(1.005)	1590055		100.000	88.265
55 1,1,1,2-Tetrachloroethane	131	8.337	8.337	(1.009)	364877		100.000	93.507
56 m,p-xylene	106	8.441	8.434	(1.021)	1304628		200.000	177.75
57 o-Xylene	106	8.812	8.812	(1.066)	636194		100.000	91.184
58 Styrene	104	8.860	8.860	(1.072)	1051748		100.000	94.066
59 Bromoform	173	8.873	8.872	(0.857)	242994		100.000	95.159
60 Isopropyl Benzene	105	9.092	9.092	(0.878)	1664806		100.000	89.978
61 Cyclohexanone	55	Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	332242		50.0000	50.378
63 Bromobenzene	156	9.426	9.420	(0.910)	434928		100.000	91.263
64 N-Propyl Benzene	91	9.463	9.463	(0.914)	1880290		100.000	89.659
65 1,1,2,2-Tetrachloroethane	83	9.536	9.536	(0.921)	328610		100.000	98.689
66 2-Chloro Toluene	91	9.596	9.590	(0.927)	1095375		100.000	91.599
67 1,3,5-Trimethyl Benzene	105	9.645	9.645	(0.931)	1392808		100.000	91.323
68 1,2,3-Trichloropropane	110	9.651	9.651	(0.932)	113162		100.000	97.922
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.694	(0.936)	89057		100.000	97.914
70 4-Chloro Toluene	91	9.749	9.749	(0.941)	1154314		100.000	93.119
71 T-Butyl Benzene	119	9.931	9.931	(0.959)	1253705		100.000	88.688
72 1,2,4-Trimethylbenzene	105	9.998	9.998	(0.965)	1387814		100.000	93.380
73 S-Butyl Benzene	105	10.095	10.095	(0.975)	1838750		100.000	89.563
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	1621874		100.000	92.106
75 1,3-Dichlorobenzene	146	10.284	10.284	(0.993)	852302		100.000	90.418
* 76 d4-1,4-Dichlorobenzene	152	10.357	10.351	(1.000)	433806		50.0000	
77 1,4-Dichlorobenzene	146	10.369	10.369	(1.001)	843264		100.000	90.919
78 N-Butyl Benzene	91	10.625	10.625	(1.026)	1407661		100.000	91.686
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	387184		50.0000	51.176
80 1,2-Dichlorobenzene	146	10.758	10.758	(1.039)	786804		100.000	92.436
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.112)	60441		100.000	97.939
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.173)	321489		100.000	92.802
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	562904		100.000	96.464
84 Naphthalene	128	12.492	12.492	(1.206)	1206151		100.000	101.00
85 1,2,3-Trichlorobenzene	180	12.675	12.675	(1.224)	520422		100.000	98.551

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241912.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL6
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	437863	8.40
35 1,4-Difluorobenze	717664	358832	1435328	784452	9.31
52 d5-Chlorobenzene	696563	348282	1393126	770363	10.59
76 d4-1,4-Dichlorobe	380778	190389	761556	433806	13.93

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.36	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241912.D

Lab ID: shf0324-CAL6
nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 18:22

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241913.D

Date : 24-JUN-2019 18:44

Client ID:

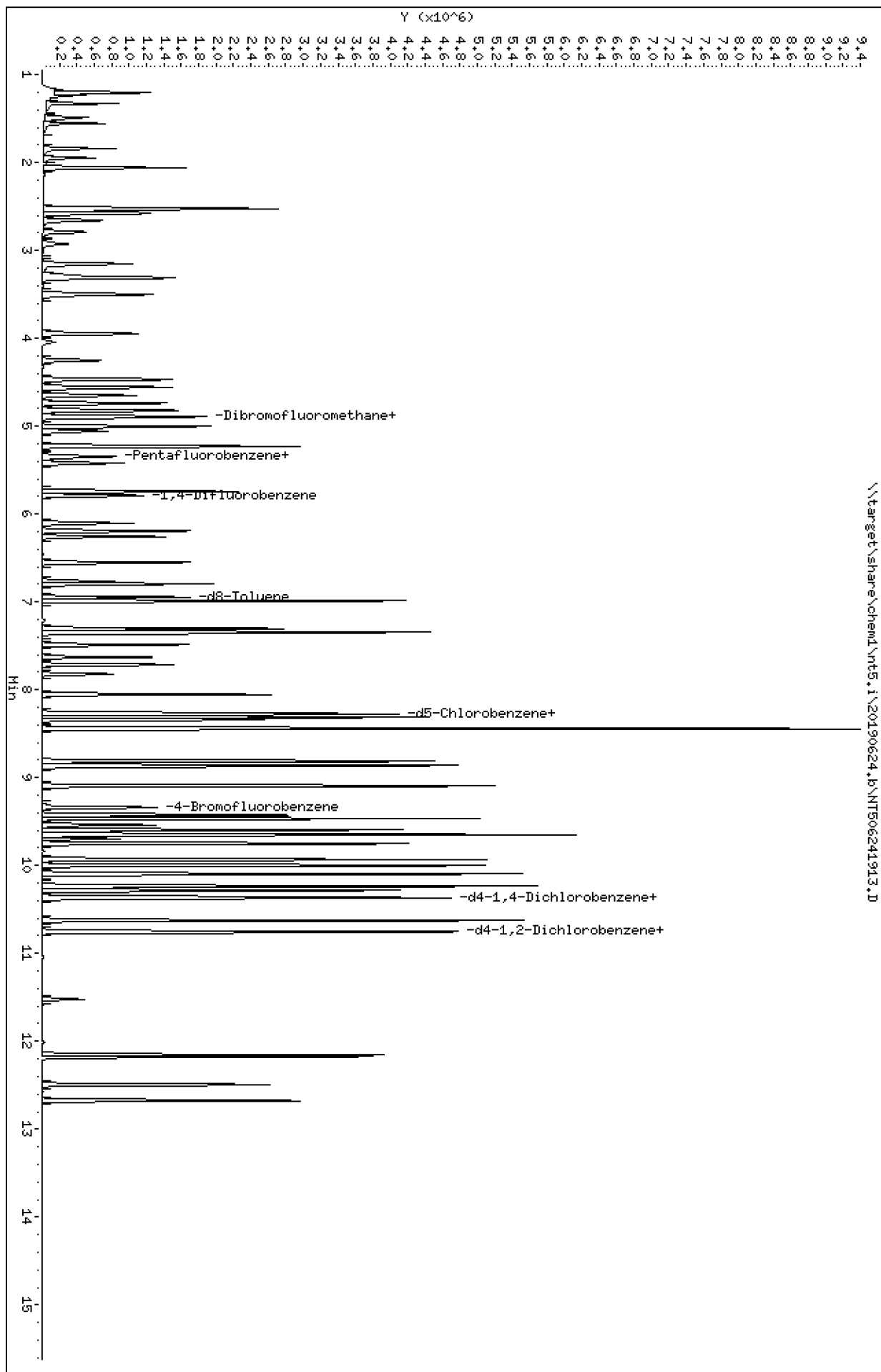
Sample Info: CAL7

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241913.D
 Lab Smp Id: shf0324-CAL7
 Inj Date : 24-JUN-2019 18:44
 Operator : PB Inst ID: nt5.i
 Smp Info : CAL7
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Meth Date : 26-Jun-2019 14:51 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 18:22 Cal File: NT506241912.D
 Als bottle: 4 Calibration Sample, Level: 7
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamd1.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
								(ug/Kg)	(ug/Kg)
=====	=====								
1 Dichlorodifluoromethane	85		1.323	1.329	(0.248)		714240	150.000	155.78
2 Chloromethane	50		1.487	1.487	(0.278)		549452	150.000	144.54
3 Vinyl Chloride	62		1.554	1.560	(0.291)		576026	150.000	150.11
4 Bromomethane	94		1.840	1.840	(0.344)		430045	150.000	152.56
5 Chloroethane	64		1.943	1.949	(0.364)		473907	150.000	156.39
6 Trichlorofluoromethane	101		2.059	2.065	(0.385)		1112059	150.000	152.09
7 1,1-Dichloroethene	96		2.521	2.539	(0.472)		561401	150.000	149.69
8 Carbon Disulfide	76		2.527	2.539	(0.473)		1574072	150.000	150.42
9 112Trichloro122Trifluoroethane	101		2.570	2.588	(0.481)		509746	150.000	148.92
10 Iodomethane	142		2.655	2.667	(0.497)		750933	150.000	153.49
11 Bromoethane	108		2.789	2.801	(0.522)		374670	150.000	148.40
12 Acrolein	56		2.923	2.917	(0.547)		284615	750.000	746.86
13 Methylene Chloride	84		3.154	3.160	(0.590)		543997	150.000	146.08
14 Acetone	43		3.276	3.263	(0.613)		487341	750.000	726.88
15 Trans-1,2-Dichloroethene	96		3.312	3.318	(0.620)		597612	150.000	148.28
16 Methyl tert butyl ether	73		3.501	3.489	(0.655)		1346083	150.000	154.11
173 n-Hexane	41		Compound Not Detected.						
17 1,1-Dichloroethane	63		3.945	3.951	(0.738)		927706	150.000	153.42
18 Acrylonitrile	53		4.042	4.036	(0.756)		112361	150.000	141.06
19 Vinyl Acetate	43		4.249	4.249	(0.795)		847447	150.000	152.85
20 Cis-1,2-Dichloroethene	96		4.468	4.468	(0.836)		626096	150.000	151.17
22 2,2-Dichloropropane	77		4.559	4.559	(0.853)		873632	150.000	149.93
23 Bromochloromethane	128		4.651	4.650	(0.870)		305609	150.000	150.29
24 Chloroform	83		4.736	4.736	(0.886)		954888	150.000	149.91
25 Carbon Tetrachloride	117		4.821	4.821	(0.833)		895417	150.000	150.78
\$ 27 Dibromofluoromethane	111		4.900	4.900	(0.917)		250308	50.0000	50.306
26 1,1,1-Trichloroethane	97		4.888	4.894	(0.915)		931846	150.000	149.17
28 1,1-Dichloropropene	75		5.003	5.003	(0.864)		751774	150.000	156.74
29 2-Butanone	72		5.058	5.052	(0.947)		234723	750.000	744.93
30 Benzene	78		5.229	5.228	(0.903)		2186400	150.000	152.87
* 31 Pentafluorobenzene	168		5.344	5.344	(1.000)		454979	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.362	(1.002)		203755	50.0000	48.953
33 1,2-Dichloroethane	62		5.417	5.417	(0.936)		610231	150.000	148.54

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====	=====	=====	=====	=====		=====	=====
34 Trichloroethene	130	5.740	5.746	(0.992)	659089		150.000	147.67
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	806894		50.0000	
37 Dibromomethane	93	6.105	6.104	(1.055)	297711		150.000	151.73
38 1,2-Dichloropropane	63	6.190	6.190	(1.069)	492761		150.000	157.26
39 Bromodichloromethane	83	6.257	6.257	(1.081)	730684		150.000	156.71
172 2-Pentanone	86	6.549	6.549	(1.131)	310661		750.000	762.22
40 2-Chloroethyl Vinyl Ether	63	6.762	6.761	(1.168)	279464		150.000	153.87
41 Cis 1,3-dichloropropene	75	6.792	6.792	(1.173)	872030		150.000	160.08
\$ 42 d8-Toluene	98	6.944	6.944	(1.200)	952953		50.0000	50.432
43 Toluene	92	6.987	6.987	(1.207)	1454788		150.000	148.98
44 Tetrachloroethene	166	7.303	7.303	(0.884)	709852		150.000	146.31
45 4-Methyl-2-Pentanone	58	7.340	7.339	(1.268)	724493		750.000	766.08
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.270)	770049		150.000	159.89
47 1,1,2-Trichloroethane	97	7.486	7.485	(1.293)	432987		150.000	150.52
48 Chlorodibromomethane	129	7.632	7.625	(0.923)	588977		150.000	156.74
49 1,3-Dichloropropane	76	7.711	7.711	(0.933)	717997		150.000	152.05
50 1,2-Dibromoethane	107	7.820	7.820	(1.351)	435568		150.000	149.83
51 2-Hexanone	43	8.051	8.045	(0.974)	1258252		750.000	766.44
* 52 d5-Chlorobenzene	117	8.264	8.264	(1.000)	790356		50.0000	
53 Chlorobenzene	112	8.276	8.276	(1.001)	1652420		150.000	146.74
54 Ethyl Benzene	91	8.313	8.307	(1.006)	2723212		150.000	147.34
55 1,1,1,2-Tetrachloroethane	131	8.337	8.337	(1.009)	617094		150.000	154.14
56 m,p-xylene	106	8.441	8.434	(1.021)	2275569		300.000	302.20
57 o-Xylene	106	8.812	8.812	(1.066)	1096324		150.000	153.16
58 Styrene	104	8.860	8.860	(1.072)	1809247		150.000	157.72
59 Bromoform	173	8.873	8.872	(0.857)	393372		150.000	144.91
60 Isopropyl Benzene	105	9.092	9.092	(0.878)	2908720		150.000	147.88
61 Cyclohexanone	55	Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174	9.341	9.335	(1.130)	340601		50.0000	50.339
63 Bromobenzene	156	9.426	9.420	(0.910)	741421		150.000	146.34
64 N-Propyl Benzene	91	9.463	9.463	(0.914)	3286241		150.000	147.40
65 1,1,2,2-Tetrachloroethane	83	9.536	9.536	(0.921)	511802		150.000	144.59
66 2-Chloro Toluene	91	9.597	9.590	(0.927)	1892678		150.000	148.88
67 1,3,5-Trimethyl Benzene	105	9.651	9.645	(0.932)	2417077		150.000	149.08
68 1,2,3-Trichloropropane	110	9.651	9.651	(0.932)	179344		150.000	145.98
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.694	(0.936)	141492		150.000	146.33
70 4-Chloro Toluene	91	9.749	9.749	(0.941)	1977419		150.000	150.05
71 T-Butyl Benzene	119	9.931	9.931	(0.959)	2208928		150.000	146.99
72 1,2,4-Trimethylbenzene	105	9.998	9.998	(0.965)	2402630		150.000	152.07
73 S-Butyl Benzene	105	10.095	10.095	(0.975)	3219342		150.000	147.51
74 4-Isopropyl Toluene	119	10.235	10.229	(0.988)	2851675		150.000	152.34
75 1,3-Dichlorobenzene	146	10.284	10.284	(0.993)	1475888		150.000	147.28
* 76 d4-1,4-Dichlorobenzene	152	10.357	10.351	(1.000)	461169		50.0000	
77 1,4-Dichlorobenzene	146	10.369	10.369	(1.001)	1458110		150.000	147.88
78 N-Butyl Benzene	91	10.625	10.625	(1.026)	2480473		150.000	151.98
\$ 79 d4-1,2-Dichlorobenzene	152	10.752	10.746	(1.038)	394876		50.0000	49.096
80 1,2-Dichlorobenzene	146	10.758	10.758	(1.039)	1355446		150.000	149.79
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.112)	94404		150.000	143.90
82 Hexachloro 1,3-Butadiene	225	12.158	12.152	(1.174)	557119		150.000	151.28
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	948579		150.000	152.91
84 Naphthalene	128	12.492	12.492	(1.206)	1901458		150.000	149.77
85 1,2,3-Trichlorobenzene	180	12.675	12.675	(1.224)	852803		150.000	151.91

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241913.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL7
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	454979	12.64
35 1,4-Difluorobenze	717664	358832	1435328	806894	12.43
52 d5-Chlorobenzene	696563	348282	1393126	790356	13.47
76 d4-1,4-Dichlorobe	380778	190389	761556	461169	21.11

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.36	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241913.D

Lab ID: shf0324-CAL7

nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 18:44

RT	CO-ELUTION COMPOUNDS
9.652	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.652	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241914.D

Date : 24-JUN-2019 19:06

Client ID:

Sample Info: CQL8

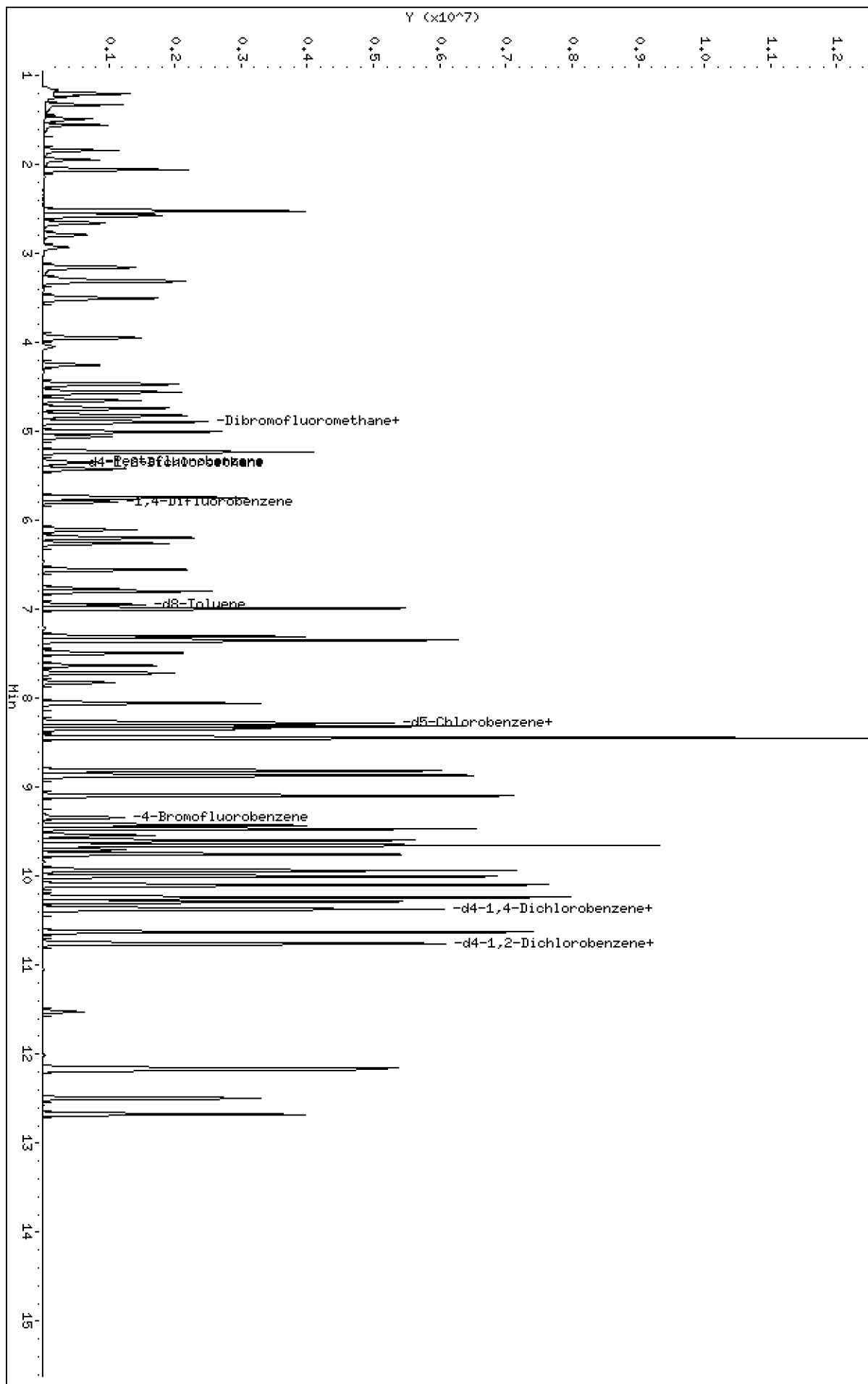
Column phase: RTXWMS

Instrument: nt5.i

Operator: PB

Column diameter: 0.18

\\target\share\chemd\nt5.i\20190624,b\NT506241914.D



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241914.D
Lab Smp Id: shf0324-CAL8
Inj Date : 24-JUN-2019 19:06
Operator : PB Inst ID: nt5.i
Smp Info : CAL8
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Meth Date : 26-Jun-2019 14:51 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 18:44 Cal File: NT506241913.D
Als bottle: 4 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamd1.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG	AMOUNTS					
		CAL-AMT	ON-COL		RESPONSE		
	MASS	RT	EXP RT	REL RT		(ug/Kg)	(ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	1.323	1.329 (0.248)		997901	200.000	230.83
2 Chloromethane	50	1.487	1.487 (0.278)		759795	200.000	211.98
3 Vinyl Chloride	62	1.554	1.560 (0.291)		803574	200.000	222.10
4 Bromomethane	94	1.840	1.840 (0.344)		596201	200.000	224.32
5 Chloroethane	64	1.944	1.949 (0.364)		652642	200.000	228.41
6 Trichlorofluoromethane	101	2.059	2.065 (0.385)		1514545	200.000	219.69
7 1,1-Dichloroethene	96	2.521	2.539 (0.472)		792302	200.000	224.06
8 Carbon Disulfide	76	2.521	2.539 (0.472)		2215908	200.000	224.58
9 112Trichloro122Trifluoroethane	101	2.570	2.588 (0.481)		721754	200.000	223.62
10 Iodomethane	142	2.655	2.667 (0.497)		1018245	200.000	220.74
11 Bromoethane	108	2.789	2.801 (0.522)		516752	200.000	217.08
12 Acrolein	56	2.929	2.917 (0.548)		383731	1000.00	1068.0
13 Methylene Chloride	84	3.154	3.160 (0.590)		732556	200.000	208.63
14 Acetone	43	3.282	3.263 (0.614)		647194	1000.00	1023.8
15 Trans-1,2-Dichloroethene	96	3.312	3.318 (0.620)		827629	200.000	217.80
16 Methyl tert butyl ether	73	3.501	3.489 (0.655)		1788009	200.000	217.10
173 n-Hexane	41	Compound Not Detected.					
17 1,1-Dichloroethane	63	3.945	3.951 (0.738)		1259175	200.000	220.85
18 Acrylonitrile	53	4.048	4.036 (0.758)		153235	200.000	204.02
19 Vinyl Acetate	43	4.255	4.249 (0.796)		1117378	200.000	213.75
20 Cis-1,2-Dichloroethene	96	4.468	4.468 (0.836)		853905	200.000	218.67
22 2,2-Dichloropropane	77	4.559	4.559 (0.853)		1202718	200.000	218.91
23 Bromochloromethane	128	4.651	4.650 (0.870)		406853	200.000	212.20
24 Chloroform	83	4.736	4.736 (0.886)		1293169	200.000	215.32
25 Carbon Tetrachloride	117	4.821	4.821 (0.833)		1244031	200.000	218.91
\$ 27 Dibromofluoromethane	111	4.900	4.900 (0.917)		233389	50.0000	49.748
26 1,1,1-Trichloroethane	97	4.894	4.894 (0.916)		1302434	200.000	221.13
28 1,1-Dichloropropene	75	5.004	5.003 (0.864)		1048330	200.000	228.42
29 2-Butanone	72	5.058	5.052 (0.947)		313648	1000.00	1055.7
30 Benzene	78	5.229	5.228 (0.903)		2976214	200.000	217.46
* 31 Pentafluorobenzene	168	5.344	5.344 (1.000)		428990	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.362	5.362 (1.003)		196185	50.0000	49.990
33 1,2-Dichloroethane	62	5.423	5.417 (0.937)		831498	200.000	211.52

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====	=====	=====	=====	=====		=====	=====
34 Trichloroethene	130	5.740	5.746	(0.992)	919238		200.000	215.24
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	772118		50.0000	
37 Dibromomethane	93	6.105	6.104	(1.055)	400787		200.000	213.47
38 1,2-Dichloropropane	63	6.196	6.190	(1.070)	661780		200.000	220.71
39 Bromodichloromethane	83	6.257	6.257	(1.081)	980461		200.000	219.76
172 2-Pentanone	86	6.555	6.549	(1.132)	413730		1000.00	1060.8
40 2-Chloroethyl Vinyl Ether	63	6.768	6.761	(1.169)	374211		200.000	215.32
41 Cis 1,3-dichloropropene	75	6.792	6.792	(1.173)	1162299		200.000	222.97
\$ 42 d8-Toluene	98	6.944	6.944	(1.200)	902012		50.0000	49.886
43 Toluene	92	6.987	6.987	(1.207)	1986858		200.000	212.63
44 Tetrachloroethene	166	7.303	7.303	(0.884)	982904		200.000	214.28
45 4-Methyl-2-Pentanone	58	7.346	7.339	(1.269)	966917		1000.00	1068.5
46 Trans 1,3-Dichloropropene	75	7.358	7.352	(1.271)	1029389		200.000	223.37
47 1,1,2-Trichloroethane	97	7.492	7.485	(1.294)	572775		200.000	208.08
48 Chlorodibromomethane	129	7.632	7.625	(0.923)	783939		200.000	220.66
49 1,3-Dichloropropane	76	7.717	7.711	(0.934)	957129		200.000	214.39
50 1,2-Dibromoethane	107	7.820	7.820	(1.351)	575888		200.000	207.02
51 2-Hexanone	43	8.051	8.045	(0.974)	1685160		1000.00	1085.7
* 52 d5-Chlorobenzene	117	8.264	8.264	(1.000)	747248		50.0000	
53 Chlorobenzene	112	8.283	8.276	(1.002)	2245700		200.000	210.93
54 Ethyl Benzene	91	8.313	8.307	(1.006)	3738952		200.000	213.97
55 1,1,1,2-Tetrachloroethane	131	8.343	8.337	(1.010)	833822		200.000	220.29
56 m,p-xylene	106	8.441	8.434	(1.021)	3188504		400.000	447.87
57 o-Xylene	106	8.812	8.812	(1.066)	1491872		200.000	220.44
58 Styrene	104	8.867	8.860	(1.073)	2511232		200.000	231.55
59 Bromoform	173	8.879	8.872	(0.857)	526866		200.000	203.88
60 Isopropyl Benzene	105	9.092	9.092	(0.878)	4034831		200.000	215.49
61 Cyclohexanone	55	Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174	9.341	9.335	(1.130)	322350		50.0000	50.390
63 Bromobenzene	156	9.426	9.420	(0.910)	1011086		200.000	209.65
64 N-Propyl Benzene	91	9.469	9.463	(0.914)	4541206		200.000	213.98
65 1,1,2,2-Tetrachloroethane	83	9.536	9.536	(0.921)	681151		200.000	202.14
66 2-Chloro Toluene	91	9.597	9.590	(0.927)	2618474		200.000	216.37
67 1,3,5-Trimethyl Benzene	105	9.651	9.645	(0.932)	3426714		200.000	222.02
68 1,2,3-Trichloropropane	110	9.651	9.651	(0.932)	248000		200.000	212.06
69 Trans-1,4-Dichloro 2-Butene	53	9.700	9.694	(0.937)	194132		200.000	210.91
70 4-Chloro Toluene	91	9.755	9.749	(0.942)	2698262		200.000	215.09
71 T-Butyl Benzene	119	9.931	9.931	(0.959)	3080776		200.000	215.36
72 1,2,4-Trimethylbenzene	105	9.998	9.998	(0.965)	3355200		200.000	223.08
73 S-Butyl Benzene	105	10.095	10.095	(0.975)	4516368		200.000	217.38
74 4-Isopropyl Toluene	119	10.235	10.229	(0.988)	3981474		200.000	223.43
75 1,3-Dichlorobenzene	146	10.290	10.284	(0.994)	2045961		200.000	214.48
* 76 d4-1,4-Dichlorobenzene	152	10.357	10.351	(1.000)	439003		50.0000	
77 1,4-Dichlorobenzene	146	10.375	10.369	(1.002)	1999576		200.000	213.04
78 N-Butyl Benzene	91	10.625	10.625	(1.026)	3478677		200.000	223.90
\$ 79 d4-1,2-Dichlorobenzene	152	10.753	10.746	(1.038)	386160		50.0000	50.437
80 1,2-Dichlorobenzene	146	10.759	10.758	(1.039)	1836113		200.000	213.16
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.112)	125272		200.000	200.59
82 Hexachloro 1,3-Butadiene	225	12.158	12.152	(1.174)	769986		200.000	219.64
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	1227354		200.000	207.84
84 Naphthalene	128	12.499	12.492	(1.207)	2454919		200.000	203.13
85 1,2,3-Trichlorobenzene	180	12.675	12.675	(1.224)	1104750		200.000	206.73

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241914.D Calibration Time: 17:59
 Lab Smp Id: shf0324-CAL8
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	428990	6.20
35 1,4-Difluorobenze	717664	358832	1435328	772118	7.59
52 d5-Chlorobenzene	696563	348282	1393126	747248	7.28
76 d4-1,4-Dichlorobe	380778	190389	761556	439003	15.29

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.36	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT506241914.D

Lab ID: shf0324-CAL8
 nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 19:06

RT	CO-ELUTION COMPOUNDS
9.652	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.652	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt5.i\20190624,b\NT506241915.D

Date : 24-JUN-2019 19:28

Client ID:

Sample Info: SCV1

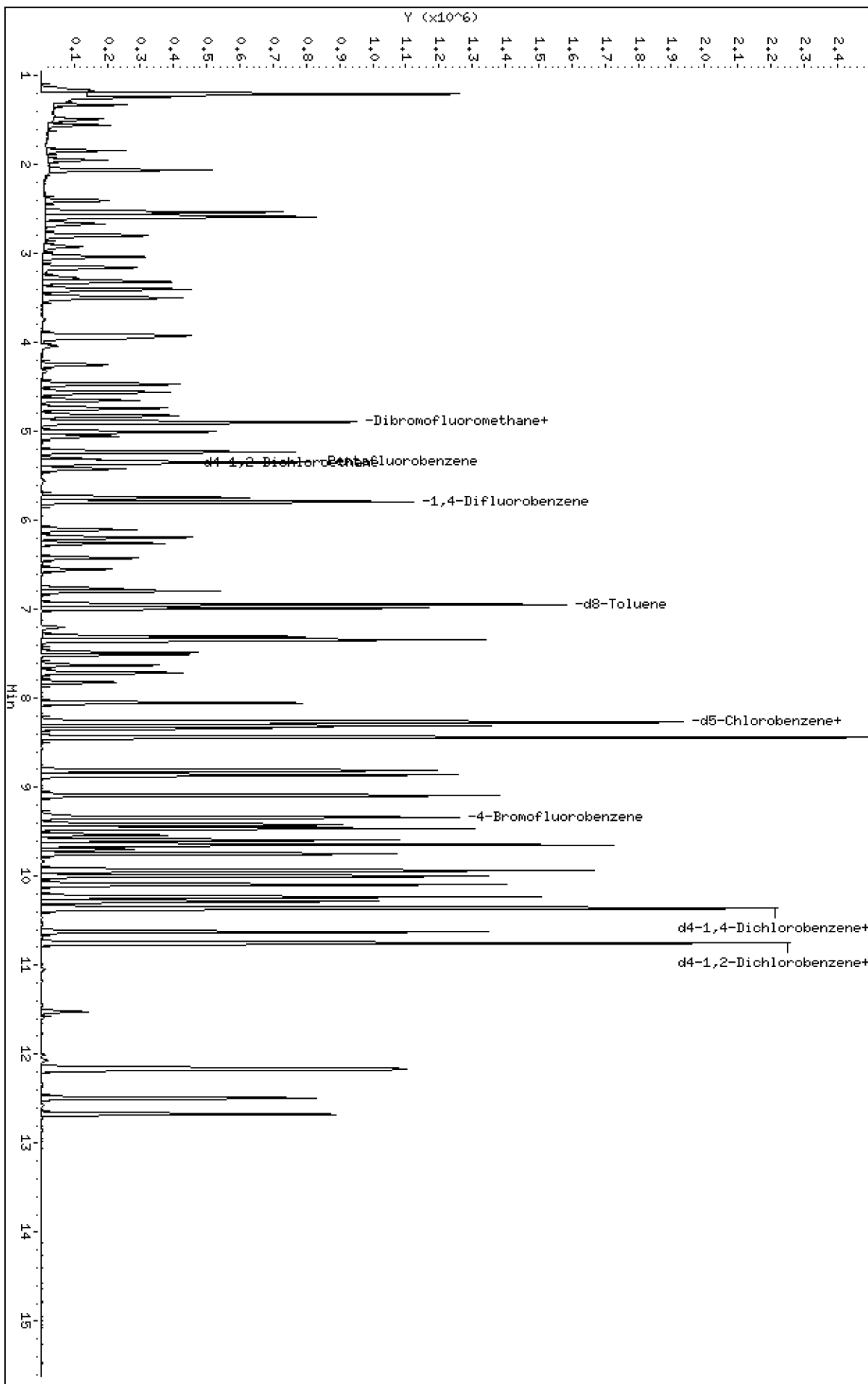
Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18

\\target\share\chemd\nt5.i\20190624,b\NT506241915.D



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190624.b\NT506241915.D
Lab Smp Id: shf0324-SCV1
Inj Date : 24-JUN-2019 19:28
Operator : PB Inst ID: nt5.i
Smp Info : SCV1
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
Meth Date : 26-Jun-2019 14:51 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamdl.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG						CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/Kg)	FINAL (ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		1.329	1.329	(0.249)	172902	40.3228	40.323
2 Chloromethane	50		1.487	1.487	(0.278)	152269	42.8321	42.832
3 Vinyl Chloride	62		1.554	1.560	(0.291)	158526	44.1745	44.174
4 Bromomethane	94		1.840	1.840	(0.344)	126667	48.0506	48.051
5 Chloroethane	64		1.950	1.949	(0.365)	133223	47.0086	47.009
6 Trichlorofluoromethane	101		2.059	2.065	(0.385)	330495	48.3333	48.333
7 1,1-Dichloroethene	96		2.534	2.539	(0.474)	143479	40.9083	40.908
8 Carbon Disulfide	76		2.534	2.539	(0.474)	426634	43.5936	43.594
9 112Trichloro122Trifluoroethane	101		2.582	2.588	(0.483)	332945	104.005	104.00
10 Iodomethane	142		2.667	2.667	(0.499)	201101	43.9530	43.953
11 Bromoethane	108		2.795	2.801	(0.523)	240279	101.766	101.77
12 Acrolein	56		2.923	2.917	(0.547)	106488	298.799	298.80
13 Methylene Chloride	84		3.154	3.160	(0.590)	143227	41.1262	41.126
14 Acetone	43		3.270	3.263	(0.612)	147931	235.929	235.93
15 Trans-1,2-Dichloroethene	96		3.318	3.318	(0.621)	158039	41.9310	41.931
16 Methyl tert butyl ether	73		3.495	3.489	(0.654)	435449	53.3064	53.306
173 n-Hexane	41		Compound Not Detected.					
17 1,1-Dichloroethane	63		3.945	3.951	(0.738)	254739	45.0467	45.047
18 Acrylonitrile	53		4.036	4.036	(0.755)	34984	46.9611	46.961
19 Vinyl Acetate	43		4.249	4.249	(0.795)	245872	47.4207	47.421
20 Cis-1,2-Dichloroethene	96		4.468	4.468	(0.836)	169301	43.7104	43.710
22 2,2-Dichloropropane	77		4.559	4.559	(0.853)	228156	41.8683	41.868
23 Bromochloromethane	128		4.651	4.650	(0.870)	81125	42.6599	42.660
24 Chloroform	83		4.736	4.736	(0.886)	252563	42.3980	42.398
25 Carbon Tetrachloride	117		4.821	4.821	(0.833)	232506	41.5456	41.546
\$ 27 Dibromofluoromethane	111		4.900	4.900	(0.917)	231083	49.6605	49.661 (R)
26 1,1,1-Trichloroethane	97		4.894	4.894	(0.916)	253191	43.3399	43.340
28 1,1-Dichloropropene	75		5.004	5.003	(0.864)	209583	46.3699	46.370
29 2-Butanone	72		5.052	5.052	(0.945)	69753	236.710	236.71
30 Benzene	78		5.229	5.228	(0.903)	573602	42.5569	42.557
* 31 Pentafluorobenzene	168		5.344	5.344	(1.000)	425497	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.362	5.362	(1.003)	192579	49.4737	49.474 (R)
33 1,2-Dichloroethane	62		5.417	5.417	(0.936)	165966	42.8701	42.870

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
							(ug/Kg)	(ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====	
34 Trichloroethene	130	5.740	5.746	(0.992)	184210	43.7980	43.798	
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	760389	50.0000		
37 Dibromomethane	93	6.105	6.104	(1.055)	83574	45.1995	45.200	
38 1,2-Dichloropropane	63	6.190	6.190	(1.069)	131564	44.5545	44.554	
39 Bromodichloromethane	83	6.257	6.257	(1.081)	191215	43.5194	43.519	
172 2-Pentanone	86	6.549	6.549	(1.131)	39267	102.235	102.24	
40 2-Chloroethyl Vinyl Ether	63	6.762	6.761	(1.168)	82240	48.0511	48.051	
41 Cis 1,3-dichloropropene	75	6.792	6.792	(1.173)	235029	45.7822	45.782	
\$ 42 d8-Toluene	98	6.944	6.944	(1.200)	886795	49.8013	49.801 (R)	
43 Toluene	92	6.987	6.987	(1.207)	404174	43.9220	43.922	
44 Tetrachloroethene	166	7.303	7.303	(0.884)	198933	44.2816	44.282	
45 4-Methyl-2-Pentanone	58	7.340	7.339	(1.268)	224614	252.033	252.03	
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.270)	212895	46.9095	46.910	
47 1,1,2-Trichloroethane	97	7.486	7.485	(1.293)	120979	44.6270	44.627	
48 Chlorodibromomethane	129	7.626	7.625	(0.923)	159380	45.8062	45.806	
49 1,3-Dichloropropane	76	7.711	7.711	(0.933)	201188	46.0128	46.013	
50 1,2-Dibromoethane	107	7.820	7.820	(1.351)	124272	45.3616	45.362	
51 2-Hexanone	43	8.051	8.045	(0.974)	391147	257.311	257.31	
* 52 d5-Chlorobenzene	117	8.264	8.264	(1.000)	731839	50.0000		
53 Chlorobenzene	112	8.276	8.276	(1.001)	460728	44.1849	44.185	
54 Ethyl Benzene	91	8.307	8.307	(1.005)	792663	46.3172	46.317	
55 1,1,1,2-Tetrachloroethane	131	8.337	8.337	(1.009)	169475	45.7178	45.718	
56 m,p-xylene	106	8.441	8.434	(1.021)	628354	90.1189	90.119	
57 o-Xylene	106	8.812	8.812	(1.066)	301179	45.4397	45.440	
58 Styrene	104	8.861	8.860	(1.072)	495517	46.6509	46.651	
59 Bromoform	173	8.873	8.872	(0.857)	104585	43.1851	43.185	
60 Isopropyl Benzene	105	9.092	9.092	(0.878)	794552	45.2798	45.280	
61 Cyclohexanone	55	Compound Not Detected.						
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	317849	50.7321	50.732 (R)	
63 Bromobenzene	156	9.426	9.420	(0.911)	206524	45.6937	45.694	
64 N-Propyl Benzene	91	9.463	9.463	(0.914)	886239	44.5582	44.558	
65 1,1,2,2-Tetrachloroethane	83	9.536	9.536	(0.921)	149255	47.2637	47.264	
66 2-Chloro Toluene	91	9.591	9.590	(0.927)	520586	45.9019	45.902	
67 1,3,5-Trimethyl Benzene	105	9.645	9.645	(0.932)	662591	45.8084	45.808	
68 1,2,3-Trichloropropane	110	9.651	9.651	(0.932)	50757	46.3111	46.311	
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.694	(0.937)	42948	49.7884	49.788	
70 4-Chloro Toluene	91	9.749	9.749	(0.942)	519432	44.1829	44.183	
71 T-Butyl Benzene	119	9.931	9.931	(0.959)	704809	52.5714	52.571	
72 1,2,4-Trimethylbenzene	105	9.998	9.998	(0.966)	663129	47.0466	47.047	
73 S-Butyl Benzene	105	10.095	10.095	(0.975)	890639	45.7422	45.742	
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	770692	46.1487	46.149	
75 1,3-Dichlorobenzene	146	10.284	10.284	(0.994)	396679	44.3721	44.372	
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	411421	50.0000		
77 1,4-Dichlorobenzene	146	10.369	10.369	(1.002)	389901	44.3258	44.326	
78 N-Butyl Benzene	91	10.625	10.625	(1.026)	664413	45.6301	45.630	
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	362016	50.4532	50.453 (R)	
80 1,2-Dichlorobenzene	146	10.759	10.758	(1.039)	370852	45.9391	45.939	
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.113)	27700	47.3272	47.327	
82 Hexachloro 1,3-Butadiene	225	12.158	12.152	(1.175)	159931	48.6781	48.678	
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	279648	50.5301	50.530	
84 Naphthalene	128	12.492	12.492	(1.207)	609595	53.8215	53.822	
85 1,2,3-Trichlorobenzene	180	12.675	12.675	(1.225)	261925	52.2987	52.299	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 24-JUN-2019
 Lab File ID: NT506241915.D Calibration Time: 17:59
 Lab Smp Id: shf0324-SCV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	425497	5.34
35 1,4-Difluorobenze	717664	358832	1435328	760389	5.95
52 d5-Chlorobenzene	696563	348282	1393126	731839	5.06
76 d4-1,4-Dichlorobe	380778	190389	761556	411421	8.05

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	0.00
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	0.00
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151013
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: shf0324-SCV1
 Level: Operator: PB
 Data Type: MS DATA SampleType: LCS
 SpikeList File: icv3.spk Quant Type: ISTD
 Sublist File: voamdl.sub
 Method File: \\target\share\chem1\nt5.i\20190624.b\VO122618S.m
 Misc Info:

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
1 Dichlorodifluorome	50.000	40.323	80.65	
2 Chloromethane	50.000	42.832	85.66	
3 Vinyl Chloride	50.000	44.174	88.35	
4 Bromomethane	50.000	48.051	96.10	
5 Chloroethane	50.000	47.009	94.02	
6 Trichlorofluoromet	50.000	48.333	96.67	
7 1,1-Dichloroethene	50.000	40.908	81.82	
8 Carbon Disulfide	50.000	43.594	87.19	
9 112Trichloro122Tri	100.00	104.00	104.00	
10 Iodomethane	50.000	43.953	87.91	
11 Bromoethane	100.00	101.77	101.77	
12 Acrolein	250.00	298.80	119.52	
13 Methylene Chloride	50.000	41.126	82.25	
14 Acetone	250.00	235.93	94.37	
15 Trans-1,2-Dichloro	50.000	41.931	83.86	
16 Methyl tert butyl	50.000	53.306	106.61	
17 1,1-Dichloroethane	50.000	45.047	90.09	
18 Acrylonitrile	50.000	46.961	93.92	
19 Vinyl Acetate	50.000	47.421	94.84	
20 Cis-1,2-Dichloroet	50.000	43.710	87.42	
22 2,2-Dichloropropan	50.000	41.868	83.74	
23 Bromochloromethane	50.000	42.660	85.32	
24 Chloroform	50.000	42.398	84.80	
25 Carbon Tetrachlori	50.000	41.546	83.09	
26 1,1,1-Trichloroeth	50.000	43.340	86.68	
28 1,1-Dichloropropen	50.000	46.370	92.74	
29 2-Butanone	250.00	236.71	94.68	
30 Benzene	50.000	42.557	85.11	
33 1,2-Dichloroethane	50.000	42.870	85.74	
34 Trichloroethene	50.000	43.798	87.60	
37 Dibromomethane	50.000	45.200	90.40	
38 1,2-Dichloropropan	50.000	44.554	89.11	
39 Bromodichlorometha	50.000	43.519	87.04	
172 2-Pentanone	100.00	102.24	102.24	
40 2-Chloroethyl Viny	50.000	48.051	96.10	
41 Cis 1,3-dichloropr	50.000	45.782	91.56	
43 Toluene	50.000	43.922	87.84	
44 Tetrachloroethene	50.000	44.282	88.56	
45 4-Methyl-2-Pentano	250.00	252.03	100.81	
46 Trans 1,3-Dichloro	50.000	46.910	93.82	

SPIKE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
47 1,1,2-Trichloroeth	50.000	44.627	89.25	
48 Chlorodibromometha	50.000	45.806	91.61	
49 1,3-Dichloropropan	50.000	46.013	92.03	
50 1,2-Dibromoethane	50.000	45.362	90.72	
51 2-Hexanone	250.00	257.31	102.92	
53 Chlorobenzene	50.000	44.185	88.37	
54 Ethyl Benzene	50.000	46.317	92.63	
55 1,1,1,2-Tetrachlor	50.000	45.718	91.44	
56 m,p-xylene	100.00	90.119	90.12	
57 o-Xylene	50.000	45.440	90.88	
58 Styrene	50.000	46.651	93.30	
59 Bromoform	50.000	43.185	86.37	
60 Isopropyl Benzene	50.000	45.280	90.56	
63 Bromobenzene	50.000	45.694	91.39	
64 N-Propyl Benzene	50.000	44.558	89.12	
65 1,1,2,2-Tetrachlor	50.000	47.264	94.53	
66 2-Chloro Toluene	50.000	45.902	91.80	
68 1,2,3-Trichloropro	50.000	46.311	92.62	
67 1,3,5-Trimethyl Be	50.000	45.808	91.62	
69 Trans-1,4-Dichloro	50.000	49.788	99.58	
70 4-Chloro Toluene	50.000	44.183	88.37	
71 T-Butyl Benzene	50.000	52.571	105.14	
72 1,2,4-Trimethylben	50.000	47.047	94.09	
73 S-Butyl Benzene	50.000	45.742	91.48	
74 4-Isopropyl Toluen	50.000	46.149	92.30	
75 1,3-Dichlorobenzen	50.000	44.372	88.74	
77 1,4-Dichlorobenzen	50.000	44.326	88.65	
78 N-Butyl Benzene	50.000	45.630	91.26	
80 1,2-Dichlorobenzen	50.000	45.939	91.88	
81 1,2-Dibromo 3-Chlo	50.000	47.327	94.65	
82 Hexachloro 1,3-But	50.000	48.678	97.36	
83 1,2,4-Trichloroben	50.000	50.530	101.06	
84 Naphthalene	50.000	53.822	107.64	
85 1,2,3-Trichloroben	50.000	52.299	104.60	

SURROGATE COMPOUND	AMOUNT ADDED ug/Kg	AMOUNT RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	50.000	49.661	99.32	
\$ 32 d4-1,2-Dichloroeth	50.000	49.474	98.95	
\$ 42 d8-Toluene	50.000	49.801	99.60	
\$ 62 4-Bromofluorobenze	50.000	50.732	101.46	
\$ 79 d4-1,2-Dichloroben	50.000	50.453	100.91	

REVIEW SUMMARY FOR FILE - NT506241915.D

Lab ID: shf0324-SCV1
nt5.i, 20190624.b\VO122618S.m, 24-JUN-2019 19:28

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: NT506241914.D

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
Exception: Chloroethane 0.2500
Exception: Trichlorofluoromethane 0.2500
Exception: Acrolein 2.5000
Exception: 112Trichloro122Trifluoroethane 0.2500
Exception: Acetone 2.5000
Exception: 1,1-Dichloroethene 0.2500
Exception: Bromoethane 0.2500
Exception: Iodomethane 0.1000
Exception: Acrylonitrile 0.2500
Exception: Carbon Disulfide 0.2500
Exception: Trans-1,2-Dichloroethene 0.1000
Exception: Vinyl Acetate 0.2500
Exception: 1,1-Dichloroethane 0.2500
Exception: 2-Butanone 0.2500
Exception: 2,2-Dichloropropane 0.2500
Exception: Cis-1,2-Dichloroethene 0.2500
Exception: Chloroform 0.2500
Exception: Bromochloromethane 0.2500
Exception: 1,1,1-Trichloroethane 0.2500
Exception: 1,1-Dichloropropene 0.2500
Exception: Carbon Tetrachloride 0.2500
Exception: 1,2-Dichloroethane 0.2500
Exception: Benzene 0.2500
Exception: Trichloroethene 0.2500
Exception: 1,2-Dichloropropane 0.2500
Exception: Bromodichloromethane 0.2500
Exception: Dibromomethane 0.2500
Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500

Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *



INITIAL CALIBRATION DATA EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00042

Instrument: NT3

Calibration Date: 07/16/2019 8:26

Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Chloromethane			0.5	3.322368	1	2.940261	2	3.111418	10	2.74526	20	2.667253
Vinyl Chloride	0.2	2.15507	0.5	1.999831	1	1.911759	2	2.05819	10	1.866584	20	1.809471
Bromomethane					1	0.8936307	2	0.9278967	10	0.746156	20	0.7463848
Chloroethane	0.2	1.106979	0.5	1.016644	1	0.9369523	2	1.085219	10	0.9344661	20	0.8939088
Trichlorofluoromethane	0.2	1.33261	0.5	1.323099	1	1.440408	2	1.609519	10	1.322459	20	1.287837
Acrolein					5	0.1963071	10	0.2356001	50	0.1478144	100	0.1586005
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.2	0.6219728	0.5	0.7011921	1	0.7622639	2	0.8493953	10	0.7230312	20	0.6791564
Acetone					5	0.3506666	10	0.3821521	50	0.2250302	100	0.2533876
1,1-Dichloroethene	0.2	1.904957	0.5	1.925607	1	2.021114	2	2.199796	10	1.890469	20	1.813306
Bromoethane	0.2	0.5372787	0.5	0.5220985	1	0.6116898	2	0.6243418	10	0.4970076	20	0.4984209
Iodomethane					1	1.094957	2	1.28969	10	1.07977	20	1.065221
Methylene Chloride					1	1.095518	2	1.085937	10	0.8112829	20	0.8033716
Acrylonitrile					1	0.4606951	2	0.3584421	10	0.2653521	20	0.2879838
Carbon Disulfide	0.2	2.356218	0.5	2.421559	1	2.529477	2	2.807225	10	2.312674	20	2.277595
trans-1,2-Dichloroethene	0.2	0.7966546	0.5	0.9851552	1	0.9108753	2	0.9698599	10	0.8034932	20	0.7809707
Vinyl Acetate	0.2	1.996268	0.5	2.45614	1	2.526533	2	2.326882	10	1.930815	20	2.028481
1,1-Dichloroethane	0.2	1.983696	0.5	2.048471	1	2.07481	2	2.179133	10	1.873248	20	1.806619
2-Butanone					5	0.5446745	10	0.4925966	50	0.3805475	100	0.4128051
2,2-Dichloropropane	0.2	0.9792764	0.5	1.612404	1	1.170805	2	0.9883684	10	0.7782513	20	0.7601488
cis-1,2-Dichloroethene	0.2	0.8608369	0.5	0.8949055	1	0.8962945	2	0.9594888	10	0.8035881	20	0.7964225
Chloroform	0.2	1.481486	0.5	1.522436	1	1.477421	2	1.527109	10	1.321984	20	1.282115
Bromochloromethane	0.2	0.3493635	0.5	0.3334458	1	0.3624154	2	0.4060695	10	0.3226078	20	0.3315135
1,1,1-Trichloroethane	0.2	1.263796	0.5	1.330691	1	1.222819	2	1.430577	10	1.174522	20	1.164133
1,1-Dichloropropene	0.2	0.616239	0.5	0.718699	1	0.6386903	2	0.7597637	10	0.6724827	20	0.655229
Carbon tetrachloride	0.2	0.6364111	0.5	0.7393797	1	0.6831329	2	0.7504297	10	0.6794671	20	0.6343741
1,2-Dichloroethane	0.2	0.7325254	0.5	0.7508311	1	0.7673871	2	0.7947295	10	0.6647232	20	0.6486311
Benzene	0.2	1.9919	0.5	2.185153	1	1.876097	2	2.312775	10	2.048228	20	1.911474



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00042

Instrument: NT3

Calibration Date: 07/16/2019 8:26

Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Trichloroethene	0.2	0.3733823	0.5	0.5358196	1	0.471157	2	0.5310049	10	0.4683248	20	0.4495583
1,2-Dichloropropane	0.2	0.6209853	0.5	0.7038294	1	0.6269093	2	0.759418	10	0.653562	20	0.6090867
Bromodichloromethane	0.2	0.6083283	0.5	0.6028184	1	0.620572	2	0.7165011	10	0.5906249	20	0.5843671
Dibromomethane	0.2	0.2199158	0.5	0.2657734	1	0.2597498	2	0.2461429	10	0.213657	20	0.2201234
2-Chloroethyl vinyl ether					1	0.2427689	2	0.2742933	10	0.258681	20	0.2728714
4-Methyl-2-Pentanone					5	0.1729769	10	0.2011122	50	0.1730063	100	0.1790981
cis-1,3-Dichloropropene	0.2	0.65421	0.5	0.7679226	1	0.7700682	2	0.8901938	10	0.777662	20	0.764441
Toluene	0.2	1.290226	0.5	1.294171	1	1.191664	2	1.381146	10	1.256442	20	1.229545
trans-1,3-Dichloropropene	0.2	0.4971838	0.5	0.5865814	1	0.5970913	2	0.7286996	10	0.6942368	20	0.657226
2-Hexanone					5	0.3786638	10	0.4518184	50	0.359048	100	0.3907002
1,1,2-Trichloroethane	0.2	0.2610512	0.5	0.3943017	1	0.3192233	2	0.3929199	10	0.3568414	20	0.3281372
1,3-Dichloropropane	0.2	0.6041222	0.5	0.6119442	1	0.596807	2	0.7059395	10	0.5860206	20	0.6015692
Tetrachloroethene	0.2	0.4778539	0.5	0.4933947	1	0.5058612	2	0.5377158	10	0.4674491	20	0.4700519
Dibromochloromethane	0.2	0.3984636	0.5	0.3834334	1	0.3390085	2	0.4069651	10	0.3509431	20	0.3658064
1,2-Dibromoethane	0.2	0.2867608	0.5	0.3387542	1	0.3147546	2	0.3700539	10	0.3190861	20	0.2976576
Chlorobenzene	0.2	1.206732	0.5	1.39986	1	1.321999	2	1.591435	10	1.336141	20	1.343193
Ethylbenzene	0.2	0.6751955	0.5	0.7341983	1	0.6557753	2	0.7470788	10	0.7282967	20	0.7448343
1,1,1,2-Tetrachloroethane	0.2	0.5084759	0.5	0.4568532	1	0.4616943	2	0.5246693	10	0.4471308	20	0.4603238
m,p-Xylene	0.4	0.849287	1	0.8679874	2	0.8349362	4	0.9760116	20	0.9088318	40	0.9375611
o-Xylene	0.2	0.8007077	0.5	0.8488747	1	0.7776696	2	1.000486	10	0.8893541	20	0.9221709
Styrene	0.2	1.111464	0.5	1.283668	1	1.066021	2	1.429401	10	1.420144	20	1.463237
Bromoform	0.2	0.3087969	0.5	0.3933223	1	0.3405212	2	0.4095019	10	0.3399811	20	0.3539736
1,1,2,2-Tetrachloroethane	0.2	0.6954362	0.5	0.7351686	1	0.7735547	2	0.8390781	10	0.6902901	20	0.6952091
1,2,3-Trichloropropane			0.5	0.221546	1	0.2127919	2	0.2257201	10	0.2087108	20	0.2011527
trans-1,4-Dichloro 2-Butene					1	0.3393022	2	0.4112136	10	0.3163706	20	0.3184235
n-Propylbenzene	0.2	4.743248	0.5	4.581366	1	4.441811	2	5.241904	10	4.651829	20	4.782625
Bromobenzene	0.2	0.8813577	0.5	1.019567	1	0.8580755	2	1.044568	10	0.9249699	20	0.927229
Xylenes, total	0.6	0.8330939	1.5	0.8616165	3	0.8158473	6	0.9841696	30	0.9023392	60	0.932431



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00042

Instrument: NT3

Calibration Date: 07/16/2019 8:26

Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Isopropyl Benzene	0.2	3.263597	0.5	3.628918	1	3.615566	2	4.296541	10	3.782775	20	3.911224
2-Chlorotoluene	0.2	3.26617	0.5	3.315227	1	3.118194	2	3.65097	10	3.168798	20	3.238945
4-Chlorotoluene	0.2	2.912984	0.5	2.929583	1	2.864767	2	3.446103	10	3.017598	20	3.088664
t-Butylbenzene	0.2	2.485815	0.5	2.744724	1	2.568944	2	2.924169	10	2.737576	20	2.800332
1,3,5-Trimethylbenzene	0.2	3.147798	0.5	3.045902	1	2.963916	2	3.70707	10	3.392152	20	3.454028
1,2,4-Trimethylbenzene	0.2	3.043579	0.5	3.101359	1	3.033537	2	3.717107	10	3.45009	20	3.528843
s-Butylbenzene	0.2	3.847737	0.5	3.988112	1	3.83066	2	4.532843	10	4.123703	20	4.138443
4-Isopropyl Toluene	0.2	3.515781	0.5	3.239577	1	3.033673	2	3.908047	10	3.490067	20	3.567641
1,3-Dichlorobenzene	0.2	1.94156	0.5	2.103976	1	2.01387	2	2.310499	10	2.014928	20	1.989125
1,4-Dichlorobenzene	0.2	2.117188	0.5	2.334623	1	2.078073	2	2.410327	10	2.029947	20	1.983983
n-Butylbenzene	0.2	2.897544	0.5	2.969968	1	2.959717	2	3.616657	10	3.213376	20	3.272638
1,2-Dichlorobenzene	0.2	1.901031	0.5	1.845174	1	1.839817	2	2.133876	10	1.800166	20	1.793177
1,2-Dibromo-3-chloropropane			0.5	0.2821227	1	0.1993823	2	0.1609841	10	0.1303503	20	0.129922
1,2,4-Trichlorobenzene			0.5	1.27069	1	0.9939318	2	1.41291	10	1.034897	20	1.023222
Hexachloro-1,3-Butadiene			0.5	0.3688641	1	0.3621932	2	0.44506	10	0.3551685	20	0.3429558
Naphthalene			0.5	2.072123	1	1.790378	2	2.3701	10	1.762495	20	1.827019
1,2,3-Trichlorobenzene			0.5	0.8904499	1	0.8351845	2	1.098178	10	0.7576488	20	0.7583224
Dichlorodifluoromethane	0.2	0.7582775	0.5	1.072312	1	1.178796	2	1.23193	10	1.079702	20	1.082182
Methyl tert-butyl Ether			0.5	1.688596	1	1.769596	2	1.839678	10	1.425394	20	1.469896
2-Pentanone					5	4.237894E-02	10	4.607771E-02	50	3.742809E-02	100	3.995395E-02
1,2-Dichloroethane-d4	5	0.6678136	5	0.6632085	5	0.751048	5	0.6618055	5	0.667309	5	0.6452545
1,2-Dichlorobenzene-d4	5	0.9764414	5	0.9332518	5	0.9425421	5	0.9506855	5	0.909277	5	0.917944
Toluene-d8	5	1.279578	5	1.307913	5	1.285132	5	1.315778	5	1.337869	5	1.297074
4-Bromofluorobenzene	5	0.3850656	5	0.384107	5	0.377429	5	0.3992229	5	0.3811483	5	0.4195174



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00042

Instrument: NT3

Calibration Date: 07/16/2019 8:26

Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Chloromethane	40	2.938342	80	2.577625								
Vinyl Chloride	40	2.011641	80	1.799831								
Bromomethane	40	0.8167905	80	0.7175686								
Chloroethane	40	0.9920718	80	0.8734135								
Trichlorofluoromethane	40	1.408716	80	1.260814								
Acrolein	200	0.1738415	400	0.1614215								
1,1,2-Trichloro-1,2,2-Trifluoroethane	40	0.7845534	80	0.7077048								
Acetone	200	0.2747854	400	0.2620118								
1,1-Dichloroethene	40	2.073986	80	1.858117								
Bromoethane	40	0.5491353	80	0.4856257								
Iodomethane	40	1.214891	80	1.05785								
Methylene Chloride	40	0.8567752	80	0.7792967								
Acrylonitrile	40	0.3212286	80	0.2941596								
Carbon Disulfide	40	2.543027	80	2.214273								
trans-1,2-Dichloroethene	40	0.8689853	80	0.7835537								
Vinyl Acetate	40	2.344853	80	2.166492								
1,1-Dichloroethane	40	2.003876	80	1.793387								
2-Butanone	200	0.4743187	400	0.4390933								
2,2-Dichloropropane	40	0.8118905										
cis-1,2-Dichloroethene	40	0.8882171	80	0.8103066								
Chloroform	40	1.416388	80	1.275006								
Bromochloromethane	40	0.3473295	80	0.324461								
1,1,1-Trichloroethane	40	1.256963	80	1.165787								
1,1-Dichloropropene	40	0.7073097	80	0.6489651								
Carbon tetrachloride	40	0.6873266	80	0.6163584								
1,2-Dichloroethane	40	0.6936705	80	0.6255013								
Benzene	40	2.05979	80	1.830308								



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00042

Instrument: NT3

Calibration Date: 07/16/2019 8:26

Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Trichloroethene	40	0.481379	80	0.4382726								
1,2-Dichloropropane	40	0.6609832	80	0.6052585								
Bromodichloromethane	40	0.6188088	80	0.562081								
Dibromomethane	40	0.2323015	80	0.2061484								
2-Chloroethyl vinyl ether	40	0.2949232	80	0.2789999								
4-Methyl-2-Pentanone	200	0.1965412	400	0.1803738								
cis-1,3-Dichloropropene	40	0.8300953	80	0.7529677								
Toluene	40	1.328845	80	1.193969								
trans-1,3-Dichloropropene	40	0.7214937	80	0.6416529								
2-Hexanone	200	0.4266121	400	0.384448								
1,1,2-Trichloroethane	40	0.350842	80	0.3153325								
1,3-Dichloropropane	40	0.646617	80	0.5798522								
Tetrachloroethene	40	0.4982367	80	0.4488426								
Dibromochloromethane	40	0.4018199	80	0.3622705								
1,2-Dibromoethane	40	0.3255242	80	0.2977951								
Chlorobenzene	40	1.43389	80	1.281465								
Ethylbenzene	40	0.8104458	80	0.7292488								
1,1,1,2-Tetrachloroethane	40	0.4963269	80	0.4461727								
m,p-Xylene	80	1.012516	160	0.9049799								
o-Xylene	40	0.9973718	80	0.9126405								
Styrene	40	1.627304	80	1.488123								
Bromoform	40	0.3764971	80	0.3464626								
1,1,2,2-Tetrachloroethane	40	0.7298225	80	0.650508								
1,2,3-Trichloropropane	40	0.2059426	80	0.1871539								
trans-1,4-Dichloro 2-Butene	40	0.3420664	80	0.2991654								
n-Propylbenzene	40	4.953335	80	4.424513								
Bromobenzene	40	0.9333364	80	0.849663								
Xylenes, total	120	1.007468	240	0.9075334								



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00042

Instrument: NT3

Calibration Date: 07/16/2019 8:26

Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Isopropyl Benzene	40	4.026078	80	3.636413								
2-Chlorotoluene	40	3.390957	80	3.105362								
4-Chlorotoluene	40	3.210526	80	2.931288								
t-Butylbenzene	40	2.990787	80	2.705006								
1,3,5-Trimethylbenzene	40	3.659958	80	3.295447								
1,2,4-Trimethylbenzene	40	3.757654	80	3.362514								
s-Butylbenzene	40	4.382497	80	3.980572								
4-Isopropyl Toluene	40	3.878911	80	3.486025								
1,3-Dichlorobenzene	40	2.146842	80	1.914416								
1,4-Dichlorobenzene	40	2.124008	80	1.889523								
n-Butylbenzene	40	3.558654	80	3.202162								
1,2-Dichlorobenzene	40	1.94672	80	1.693325								
1,2-Dibromo-3-chloropropane	40	0.1388321										
1,2,4-Trichlorobenzene	40	1.256134	80	0.994679								
Hexachloro-1,3-Butadiene	40	0.3818956	80	0.3409425								
Naphthalene	40	2.246933	80	1.763285								
1,2,3-Trichlorobenzene	40	0.9776521										
Dichlorodifluoromethane	40	1.151924	80	1.073901								
Methyl tert-butyl Ether	40	1.635269	80	1.500191								
2-Pentanone	200	0.0451069	400	4.150344E-02								
1,2-Dichloroethane-d4	5	0.6752049	5	0.6591339								
1,2-Dichlorobenzene-d4	5	0.9710499	5	0.9037672								
Toluene-d8	5	1.375384	5	1.2972								
4-Bromofluorobenzene	5	0.423055	5	0.4070542								



INITIAL CALIBRATION DATA

EPA 8260C

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00042	Instrument:	NT3
Calibration Date:	07/16/2019 8:26	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Chloromethane	2.900361	9.0			RSD (15)	
Vinyl Chloride	1.951547	6.4			RSD (15)	
Bromomethane	0.8080712	10.7			RSD (15)	
Chloroethane	0.9799568	8.7			RSD (15)	
Trichlorofluoromethane	1.373183	8.2			RSD (15)	
Acrolein	0.1789308	18.1	0.9979		LCOD (0.99)	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.7286587	9.5			RSD (15)	
Acetone	0.291339	21.0	0.9985		LCOD (0.99)	
1,1-Dichloroethene	1.960919	6.5			RSD (15)	
Bromoethane	0.5406998	9.7			RSD (15)	
Iodomethane	1.13373	8.4			RSD (15)	
Methylene Chloride	0.9053636	16.1	0.9972		LCOD (0.99)	
Acrylonitrile	0.3313102	21.4	0.9972		LCOD (0.99)	
Carbon Disulfide	2.432756	7.8			RSD (15)	
trans-1,2-Dichloroethene	0.8624435	9.8			RSD (15)	
Vinyl Acetate	2.222058	10.1			RSD (15)	
1,1-Dichloroethane	1.970405	6.9			RSD (15)	
2-Butanone	0.4573393	12.9			RSD (15)	
2,2-Dichloropropane	1.014449	29.7	0.9984		LCOD (0.99)	
cis-1,2-Dichloroethene	0.8637575	6.6			RSD (15)	
Chloroform	1.412993	7.5			RSD (15)	
Bromochloromethane	0.3471507	7.9			RSD (15)	
1,1,1-Trichloroethane	1.251161	7.4			RSD (15)	
1,1-Dichloropropene	0.6771723	7.0			RSD (15)	
Carbon tetrachloride	0.6783599	7.2			RSD (15)	
1,2-Dichloroethane	0.7097499	8.6			RSD (15)	
Benzene	2.026966	8.0			RSD (15)	
Trichloroethene	0.4686123	11.1			RSD (15)	
1,2-Dichloropropane	0.6550041	8.1			RSD (15)	
Bromodichloromethane	0.6130127	7.5			RSD (15)	
Dibromomethane	0.2329765	9.5			RSD (15)	



INITIAL CALIBRATION DATA EPA 8260C

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00042	Instrument:	NT3
Calibration Date:	07/16/2019 8:26	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
2-Chloroethyl vinyl ether	0.2704229	6.6			RSD (15)	
4-Methyl-2-Pentanone	0.1838514	6.6			RSD (15)	
cis-1,3-Dichloropropene	0.7759451	8.7			RSD (15)	
Toluene	1.270751	5.2			RSD (15)	
trans-1,3-Dichloropropene	0.6405207	12.2			RSD (15)	
2-Hexanone	0.3985484	8.6			RSD (15)	
1,1,2-Trichloroethane	0.3398312	13.0			RSD (15)	
1,3-Dichloropropane	0.616609	6.7			RSD (15)	
Tetrachloroethene	0.4874257	5.6			RSD (15)	
Dibromochloromethane	0.3760888	6.7			RSD (15)	
1,2-Dibromoethane	0.3187983	8.4			RSD (15)	
Chlorobenzene	1.364339	8.4			RSD (15)	
Ethylbenzene	0.7281342	6.5			RSD (15)	
1,1,1,2-Tetrachloroethane	0.4752059	6.3			RSD (15)	
m,p-Xylene	0.9115139	6.8			RSD (15)	
o-Xylene	0.8936594	9.2			RSD (15)	
Styrene	1.36117	14.2			RSD (15)	
Bromoform	0.3586321	9.1			RSD (15)	
1,1,2,2-Tetrachloroethane	0.7261334	8.1			RSD (15)	
1,2,3-Trichloropropane	0.2090026	6.2			RSD (15)	
trans-1,4-Dichloro 2-Butene	0.337757	11.6			RSD (15)	
n-Propylbenzene	4.727579	5.8			RSD (15)	
Bromobenzene	0.9298458	7.6			RSD (15)	
Xylenes, total	0.9055624	7.5			RSD (15)	
Isopropyl Benzene	3.770139	8.3			RSD (15)	
2-Chlorotoluene	3.281828	5.4			RSD (15)	
4-Chlorotoluene	3.050189	6.4			RSD (15)	
t-Butylbenzene	2.744669	6.1			RSD (15)	
1,3,5-Trimethylbenzene	3.333284	8.2			RSD (15)	
1,2,4-Trimethylbenzene	3.374335	8.6			RSD (15)	
s-Butylbenzene	4.103071	6.1			RSD (15)	



INITIAL CALIBRATION DATA
EPA 8260C

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00042	Instrument:	NT3
Calibration Date:	07/16/2019 8:26	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
4-Isopropyl Toluene	3.514965	8.3			RSD (15)	
1,3-Dichlorobenzene	2.054402	6.3			RSD (15)	
1,4-Dichlorobenzene	2.120959	8.2			RSD (15)	
n-Butylbenzene	3.21134	8.4			RSD (15)	
1,2-Dichlorobenzene	1.869161	7.0			RSD (15)	
1,2-Dibromo-3-chloropropane	0.1735989	34.2	0.9982		LCOD (0.99)	
1,2,4-Trichlorobenzene	1.140923	14.8			RSD (15)	
Hexachloro-1,3-Butadiene	0.3710114	9.6		0.9983	QCOD (0.99)	
Naphthalene	1.976048	12.8			RSD (15)	
1,2,3-Trichlorobenzene	0.8862393	15.0			RSD (15)	
Dichlorodifluoromethane	1.078628	13.2			RSD (15)	
Methyl tert-butyl Ether	1.618374	9.8			RSD (15)	
2-Pentanone	4.207484E-02	7.6			RSD (15)	
1,2-Dichloroethane-d4	0.6738472	4.8			RSD (15)	
1,2-Dichlorobenzene-d4	0.9381199	2.9			RSD (15)	
Toluene-d8	1.311991	2.4			RSD (15)	
4-Bromofluorobenzene	0.3970749	4.5			RSD (15)	



ANALYSIS SEQUENCE

SHG0218

Instrument: NT3 Element Column ID: 1300725RTXV
Calibration ID: CG00042 Tune File: bfb.u
EM Voltage: 1929

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0218-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0218-CAL1	8260C 0.2	QC		2	H006796	H001679	
SHG0218-CAL2	8260C 0.5	QC		3	H006797	H001679	
SHG0218-CAL3	8260C 1	QC		4	H006798	H001679	
SHG0218-CAL4	8260C 2	QC		5	H006799	H001679	
SHG0218-CAL5	8260C 10	QC		6	H006800	H001679	
SHG0218-CAL6	8260C 20	QC		7	H006801	H001679	
SHG0218-CAL7	8260C 40	QC		8	H006802	H001679	
SHG0218-CAL8	8260C 80	QC		9	H006803	H001679	
SHG0218-ICB1	Initial Cal Blank	QC		10		H001679	
SHG0218-SCV1	8260C SCV	QC		11	H006804	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190716x.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1	1554	V307161917.D	SHG0218-TUN1			1
2	1647	V307161918.D	RINSE			
3	1713	V307161919.D	SHG0218-CAL1			
4	1740	V307161920.D	SHG0218-CAL2			
5	1806	V307161921.D	SHG0218-CAL3			
6	1833	V307161922.D	SHG0218-CAL4			
7	1859	V307161923.D	SHG0218-CAL5			
8	1926	V307161924.D	SHG0218-CAL6			
9	1953	V307161925.D	SHG0218-CAL7			
10	2019	V307161926.D	SHG0218-CAL8			
11	2046	V307161927.D	SHG0218-ICB1			
12	2112	V307161928.D	SHG0218-SCV1			

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190716x.b

Instrument: nt3.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1713	V307161919.D	SHG0218-CAL1	1	Vinyl Chloride, Bromoethane, Acrolein, Acetone, Carbon Tetrachloride, 1,1,1-Trichloroethane, 1,2-Dichloroethane, Bromoform,
1740	V307161920.D	SHG0218-CAL2	1	Chloromethane, Iodomethane, Methylene Chloride, 1,2-Dibromo 3-Chloropropane,
1806	V307161921.D	SHG0218-CAL3	1	Acrolein, Acetone, 1,2-Dibromo 3-Chloropropane,
1833	V307161922.D	SHG0218-CAL4	1	NO MANUAL INTEGRATION
1859	V307161923.D	SHG0218-CAL5	1	Vinyl Chloride, Bromoethane, Trans-1,4-Dichloro 2-Butene,
1926	V307161924.D	SHG0218-CAL6	1	NO MANUAL INTEGRATION
1953	V307161925.D	SHG0218-CAL7	1	NO MANUAL INTEGRATION
2019	V307161926.D	SHG0218-CAL8	1	Pentafluorobenzene,
2046	V307161927.D	SHG0218-ICB1	1	NO MANUAL INTEGRATION
2112	V307161928.D	SHG0218-SCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 17-Jul-2019 08:39

V307161917.D	Data Locked	paul,	17-Jul-2019	08:39
V307161918.D	Data Locked	paul,	17-Jul-2019	08:39
V307161919.D	Data Locked	paul,	17-Jul-2019	08:39
V307161920.D	Data Locked	paul,	17-Jul-2019	08:39
V307161921.D	Data Locked	paul,	17-Jul-2019	08:39
V307161922.D	Data Locked	paul,	17-Jul-2019	08:39
V307161923.D	Data Locked	paul,	17-Jul-2019	08:39
V307161924.D	Data Locked	paul,	17-Jul-2019	08:39
V307161925.D	Data Locked	paul,	17-Jul-2019	08:39
V307161926.D	Data Locked	paul,	17-Jul-2019	08:39
V307161927.D	Data Locked	paul,	17-Jul-2019	08:39
V307161928.D	Data Locked	paul,	17-Jul-2019	08:39

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
4 Bromomethane	+++++	+++++	0.89363	0.92790	0.74616	0.74638	AVRG			0.80807		10.72920
	0.81679	0.71757										
5 Chloroethane	1.10698	1.01664	0.93695	1.08522	0.93447	0.89391	AVRG			0.97996		8.74278
	0.99207	0.87341										
6 Trichlorofluoromethane	1.33261	1.32310	1.44041	1.60952	1.32246	1.28784	AVRG			1.37318		8.17790
	1.40872	1.26081										
7 1,1-Dichloroethene	1.90496	1.92561	2.02111	2.19980	1.89047	1.81331	AVRG			1.96092		6.54123
	2.07399	1.85812										
8 Carbon Disulfide	2.35622	2.42156	2.52948	2.80722	2.31267	2.27760	AVRG			2.43276		7.82943
	2.54303	2.21427										
9 112Trichloro122Trifluoroethane	0.62197	0.70119	0.76226	0.84940	0.72303	0.67916	AVRG			0.72866		9.54887
	0.78455	0.70770										
10 Iodomethane	+++++	+++++	1.09496	1.28969	1.07977	1.06522	AVRG			1.13373		8.43972
	1.21489	1.05785										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
11 Bromoethane	0.53728	0.52210	0.61169	0.62434	0.49701	0.49842	AVRG		0.54070			9.68453
	0.54914	0.48563										
12 Acrolein	++++	++++	7001	14766	54460	124043	LINR	0.000e+000	0.16369			0.99793
	250297	528591										
13 Methylene Chloride	++++	++++	7814	13612	59781	125665						
	246717	510377					LINR	0.000e+000	0.79677			0.99720
14 Acetone	++++	++++	12506	23951	82909	198177	LINR	0.000e+000	0.26385			0.99853
	395636	857984										
15 Trans-1,2-Dichloroethene	0.79665	0.98516	0.91088	0.96986	0.80349	0.78097	AVRG		0.86244			9.76514
	0.86899	0.78355										
16 n-hexane	++++	++++	++++	++++	++++	++++	AVRG		0.000e+000			0.000e+000
	++++	++++										
17 Methyl tert butyl ether	++++	1.68860	1.76960	1.83968	1.42539	1.46990	AVRG		1.61837			9.78017
	1.63527	1.50019										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
18 1,1-Dichloroethane	1.98370	2.04847	2.07481	2.17913	1.87325	1.80662	AVRG			1.97041		6.90181
	2.00388	1.79339										
19 Acrylonitrile	++++	++++	3266	4493	19553	45047	LINR	0.000e+000	0.29912			0.99722
	92501	192651										
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	AVRG		0.000e+000			0.000e+000
	++++	++++										
20 Vinyl Acetate	1.99627	2.45614	2.52653	2.32688	1.93082	2.02848	AVRG			2.22206		10.06203
	2.34485	2.16649										
22 Cis-1,2-Dichloroethene	0.86084	0.89491	0.89629	0.95949	0.80359	0.79642	AVRG			0.86376		6.60900
	0.88822	0.81031										
23 2,2-Dichloropropane	1480	5735	8351	12389	57347	118904	LINR	0.000e+000	0.80187			0.99842
	233792	++++										
24 Bromochloromethane	0.34936	0.33345	0.36242	0.40607	0.32261	0.33151	AVRG			0.34715		7.89550
	0.34733	0.32446										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
	40.0000	80.0000										
	Level 7	Level 8										
25 Chloroform	1.48149	1.52244	1.47742	1.52711	1.32198	1.28212	AVRG			1.41299		7.48529
	1.41639	1.27501										
26 Carbon Tetrachloride	0.63641	0.73938	0.68313	0.75043	0.67947	0.63437	AVRG			0.67836		7.17014
	0.68733	0.61636										
28 1,1,1-Trichloroethane	1.26380	1.33069	1.22282	1.43058	1.17452	1.16413	AVRG			1.25116		7.41496
	1.25696	1.16579										
30 1,1-Dichloropropene	0.61624	0.71870	0.63869	0.75976	0.67248	0.65523	AVRG			0.67717		7.04840
	0.70731	0.64897										
29 2-Butanone	+++++	+++++	0.54467	0.49260	0.38055	0.41281	AVRG			0.45734		12.88848
	0.47432	0.43909										
31 Benzene	1.99190	2.18515	1.87610	2.31278	2.04823	1.91147	AVRG			2.02697		8.00388
	2.05979	1.83031										
35 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++	AVRG			0.000e+000		0.000e+000
	+++++	+++++										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R ²
34 1,2-Dichloroethane	0.73253	0.75083	0.76739	0.79473	0.66472	0.64863	AVRG			0.70975		8.56520
	0.69367	0.62550										
36 Trichloroethene	0.37338	0.53582	0.47116	0.53100	0.46832	0.44956	AVRG			0.46861		11.09762
	0.48138	0.43827										
38 Dibromomethane	0.21992	0.26577	0.25975	0.24614	0.21366	0.22012	AVRG			0.23298		9.45279
	0.23230	0.20615										
39 1,2-Dichloropropane	0.62099	0.70383	0.62691	0.75942	0.65356	0.60909	AVRG			0.65500		8.13068
	0.66098	0.60526										
40 Bromodichloromethane	0.60833	0.60282	0.62057	0.71650	0.59062	0.58437	AVRG			0.61301		7.51159
	0.61881	0.56208										
173 2-Pentanone	++++	++++	0.04238	0.04608	0.03743	0.03995	AVRG			0.04207		7.64445
	0.04511	0.04150										
42 Cis 1,3-dichloropropene	0.65421	0.76792	0.77007	0.89019	0.77766	0.76444	AVRG			0.77595		8.65434
	0.83010	0.75297										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
41 2-Chloroethyl Vinyl Ether	+++++	+++++	0.24277	0.27429	0.25868	0.27287	AVRG			0.27042		6.60969
	0.29492	0.27900										
44 Toluene	1.29023	1.29417	1.19166	1.38115	1.25644	1.22954	AVRG			1.27075		5.19810
	1.32884	1.19397										
45 4-Methyl-2-Pentanone	+++++	+++++	0.17298	0.20111	0.17301	0.17910	AVRG			0.18385		6.57003
	0.19654	0.18037										
46 Tetrachloroethene	0.47785	0.49339	0.50586	0.53772	0.46745	0.47005	AVRG			0.48743		5.64663
	0.49824	0.44884										
47 Trans 1,3-Dichloropropene	0.49718	0.58658	0.59709	0.72870	0.69424	0.65723	AVRG			0.64052		12.21341
	0.72149	0.64165										
48 1,1,2-Trichloroethane	0.26105	0.39430	0.31922	0.39292	0.35684	0.32814	AVRG			0.33983		12.95331
	0.35084	0.31533										
49 Chlorodibromomethane	0.39846	0.38343	0.33901	0.40697	0.35094	0.36581	AVRG			0.37609		6.72211
	0.40182	0.36227										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
50 1,3-Dichloropropane	0.60412	0.61194	0.59681	0.70594	0.58602	0.60157	AVRG			0.61661		6.70446
	0.64662	0.57985										
51 1,2-Dibromoethane	0.28676	0.33875	0.31475	0.37005	0.31909	0.29766	AVRG			0.31880		8.38467
	0.32552	0.29780										
52 2-Hexanone	++++	++++	0.37866	0.45182	0.35905	0.39070	AVRG			0.39855		8.57613
	0.42661	0.38445										
54 Chlorobenzene	1.20673	1.39986	1.32200	1.59144	1.33614	1.34319	AVRG			1.36434		8.42169
	1.43389	1.28147										
55 Ethyl Benzene	0.67520	0.73420	0.65578	0.74708	0.72830	0.74483	AVRG			0.72813		6.46035
	0.81045	0.72925										
56 1,1,1,2-Tetrachloroethane	0.50848	0.45685	0.46169	0.52467	0.44713	0.46032	AVRG			0.47521		6.34884
	0.49633	0.44617										
57 m,p-xylene	0.84929	0.86799	0.83494	0.97601	0.90883	0.93756	AVRG			0.91151		6.77816
	1.01252	0.90498										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R ²
	40.0000	80.0000										
	Level 7	Level 8										
58 o-Xylene	0.80071	0.84887	0.77787	1.00049	0.88935	0.92217	AVRG			0.89366		9.21380
	0.99737	0.91264										
59 Styrene	1.11146	1.28367	1.06602	1.42940	1.42014	1.46324	AVRG			1.36117		14.18509
	1.62730	1.48812										
60 Bromoform	0.30880	0.39332	0.34052	0.40950	0.33998	0.35397	AVRG			0.35863		9.09022
	0.37650	0.34646										
61 Isopropyl Benzene	3.26360	3.62892	3.61557	4.29654	3.78278	3.91122	AVRG			3.77014		8.27291
	4.02608	3.63641										
63 Bromobenzene	0.88136	1.01957	0.85808	1.04457	0.92497	0.92723	AVRG			0.92985		7.62465
	0.93334	0.84966										
64 N-Propyl Benzene	4.74325	4.58137	4.44181	5.24190	4.65183	4.78262	AVRG			4.72758		5.76187
	4.95333	4.42451										
82 Cyclohexanone	++++	++++	++++	++++	++++	++++				0.000e+000		0.000e+000
	++++	++++					AVRG					

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
65 1,1,2,2-Tetrachloroethane	0.69544	0.73517	0.77355	0.83908	0.69029	0.69521	AVRG			0.72613		8.06433
	0.72982	0.65051										
66 2-Chloro Toluene	3.26617	3.31523	3.11819	3.65097	3.16880	3.23894	AVRG			3.28183		5.42721
	3.39096	3.10536										
67 1,3,5-Trimethyl Benzene	3.14780	3.04590	2.96392	3.70707	3.39215	3.45403	AVRG			3.33328		8.17151
	3.65996	3.29545										
68 1,2,3-Trichloropropane	++++	0.22155	0.21279	0.22572	0.20871	0.20115	AVRG			0.20900		6.17571
	0.20594	0.18715										
69 Trans-1,4-Dichloro 2-Butene	++++	++++	0.33930	0.41121	0.31637	0.31842	AVRG			0.33776		11.64678
	0.34207	0.29917										
70 4-Chloro Toluene	2.91298	2.92958	2.86477	3.44610	3.01760	3.08866	AVRG			3.05019		6.40161
	3.21053	2.93129										
71 T-Butyl Benzene	2.48581	2.74472	2.56894	2.92417	2.73758	2.80033	AVRG			2.74467		6.08729
	2.99079	2.70501										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
72 1,2,4-Trimethylbenzene	3.04358	3.10136	3.03354	3.71711	3.45009	3.52884	AVRG			3.37434		8.63459
	3.75765	3.36251										
73 S-Butyl Benzene	3.84774	3.98811	3.83066	4.53284	4.12370	4.13844	AVRG			4.10307		6.05517
	4.38250	3.98057										
74 4-Isopropyl Toluene	3.51578	3.23958	3.03367	3.90805	3.49007	3.56764	AVRG			3.51497		8.32010
	3.87891	3.48603										
75 1,3-Dichlorobenzene	1.94156	2.10398	2.01387	2.31050	2.01493	1.98913	AVRG			2.05440		6.27631
	2.11484	1.91442										
77 1,4-Dichlorobenzene	2.11719	2.33462	2.07807	2.41033	2.02995	1.98398	AVRG			2.12096		8.20238
	2.12401	1.88952										
78 N-Butyl Benzene	2.89754	2.96997	2.95972	3.61666	3.21338	3.27264	AVRG			3.21134		8.39532
	3.55865	3.20216										
80 1,2-Dichlorobenzene	1.90103	1.84517	1.83982	2.13388	1.80017	1.79318	AVRG			1.86916		7.00461
	1.94672	1.69332										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
	-----	-----	-----	-----	-----	-----						
	40.0000	80.0000										
	Level 7	Level 8										
	-----	-----	-----	-----	-----	-----						
81 1,2-Dibromo 3-Chloropropane	+++++	992	1472	2069	10059	20919						
	45673	++++					LINEAR	0.000e+000	0.13697			0.99817
	-----	-----	-----	-----	-----	-----						
83 Hexachloro 1,3-Butadiene	++++	0.36886	0.36219	0.44506	0.35517	0.34296						
	0.38190	0.34094					AVRG		0.37101			9.60934
	-----	-----	-----	-----	-----	-----						
84 1,2,4-Trichlorobenzene	++++	1.27069	0.99393	1.41291	1.03490	1.02322						
	1.25613	0.99468					AVRG		1.14092			14.84764
	-----	-----	-----	-----	-----	-----						
85 Naphthalene	++++	2.07212	1.79038	2.37010	1.76250	1.82702						
	2.24693	1.76329					AVRG		1.97605			12.82645
	-----	-----	-----	-----	-----	-----						
86 1,2,3-Trichlorobenzene	++++	0.89045	0.83518	1.09818	0.75765	0.75832						
	0.97765	++++					AVRG		0.88624			15.03705
	-----	-----	-----	-----	-----	-----						
27 Dibromofluoromethane	0.50306	0.50380	0.52303	0.52414	0.49463	0.51757						
	0.51432	0.51309					AVRG		0.51170			2.02940
	-----	-----	-----	-----	-----	-----						
33 d4-1,2-Dichloroethane	0.66781	0.66321	0.75105	0.66181	0.66731	0.64525						
	0.67520	0.65913					AVRG		0.67385			4.80325
	-----	-----	-----	-----	-----	-----						

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
End Cal Date : 16-JUL-2019 20:19
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Last Edit : 17-Jul-2019 07:49 paul

Curve	Formula	Units
Averaged	Ant = Resp/ml	Response
Linear	Ant = b + Resp/ml	Response

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09			
FILENAME:	V307161919	V307161920	V307161921	V307161922	V307161923	V307161924	V307161925	V307161926	V307161928			
INJ.DATE:	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019			
INJ.TIME:	17:13	17:40	18:06	18:33	18:59	19:26	19:53	20:19	21:12			
Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Dichlorodifluoromethan	1.694	1.694	1.694	1.689	1.694	1.689	1.689	1.688	1.689	1.585-1.802	1.691	0.003
2 Chloromethane	1.896	1.885	1.886	1.891	1.895	1.896	1.891	1.890	1.891	1.787-2.004	1.891	0.004
3 Vinyl Chloride	1.987	1.975	1.971	1.976	1.980	1.981	1.982	1.975	1.981	1.872-2.089	1.979	0.005
4 Bromomethane	2.284	2.273	2.268	2.279	2.278	2.278	2.279	2.273	2.273	2.170-2.386	2.276	0.005
5 Chloroethane	2.396	2.390	2.391	2.385	2.395	2.395	2.396	2.390	2.390	2.287-2.503	2.392	0.004
6 Trichlorofluoromethane	2.502	2.512	2.502	2.507	2.507	2.507	2.513	2.507	2.507	2.398-2.615	2.507	0.004
7 1,1-Dichloroethene	2.970	2.969	2.964	2.970	2.969	2.969	2.970	2.958	2.969	2.861-3.077	2.968	0.004
8 Carbon Disulfide	2.980	2.969	2.970	2.975	2.979	2.974	2.975	2.969	2.975	2.871-3.087	2.974	0.004
9 112Trichloro122Trifluo	3.044	3.043	3.033	3.039	3.043	3.038	3.039	3.033	3.033	2.935-3.151	3.038	0.005
10 Iodomethane	3.102	3.102	3.097	3.102	3.102	3.097	3.103	3.091	3.097	2.993-3.210	3.099	0.004
11 Bromoethane	3.230	3.235	3.219	3.225	3.224	3.224	3.225	3.218	3.224	3.116-3.332	3.225	0.005
12 Acrolein	3.341	3.341	3.347	3.336	3.330	3.336	3.331	3.330	3.331	3.222-3.438	3.336	0.006
13 Methylene Chloride	3.549	3.548	3.549	3.549	3.553	3.548	3.549	3.543	3.549	3.445-3.661	3.548	0.003
14 Acetone	3.644	3.660	3.692	3.666	3.633	3.649	3.634	3.649	3.639	3.525-3.741	3.652	0.019
15 Trans-1,2-Dichloroethe	3.703	3.691	3.692	3.698	3.702	3.697	3.698	3.691	3.697	3.594-3.810	3.697	0.004
16 n-hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.655-3.871	+++++	+++++
17 Methyl tert butyl ethe	3.830	3.840	3.841	3.830	3.830	3.830	3.825	3.830	3.830	3.721-3.938	3.832	0.005

Reviewer 1
Reviewer 2

Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 1,1-Dichloroethane	4.239	4.244	4.240	4.245	4.244	4.244	4.245	4.239	4.245	4.244	4.136-4.352	4.243	0.003
19 Acrylonitrile	++++	4.313	4.325	4.325	4.308	4.313	4.309	4.308	4.308	4.308	4.200-4.416	4.314	0.007
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	++++	++++	++++	4.560	4.452-4.668	++++	++++
20 Vinyl Acetate	4.494	4.483	4.489	4.484	4.483	4.483	4.479	4.483	4.484	4.483	4.375-4.591	4.485	0.005
22 Cis-1,2-Dichloroethene	4.691	4.685	4.686	4.686	4.690	4.691	4.686	4.685	4.691	4.690	4.582-4.798	4.688	0.003
23 2,2-Dichloropropane	4.765	4.759	4.766	4.766	4.770	4.765	4.766	4.765	4.765	4.770	4.662-4.878	4.765	0.003
24 Bromochloromethane	4.845	4.839	4.835	4.840	4.844	4.845	4.840	4.839	4.840	4.844	4.736-4.952	4.841	0.003
25 Chloroform	4.909	4.908	4.904	4.909	4.908	4.908	4.909	4.908	4.909	4.908	4.800-5.016	4.908	0.002
26 Carbon Tetrachloride	4.999	4.988	4.989	4.994	4.998	4.993	4.994	4.993	4.994	4.998	4.883-5.114	4.994	0.004
27 Dibromofluoromethane	5.047	5.041	5.042	5.047	5.046	5.047	5.047	5.041	5.042	5.046	4.938-5.154	5.044	0.003
28 1,1,1-Trichloroethane	5.058	5.046	5.042	5.047	5.052	5.052	5.053	5.046	5.052	5.052	4.943-5.160	5.050	0.005
30 1,1-Dichloropropene	5.143	5.142	5.138	5.148	5.147	5.142	5.143	5.142	5.143	5.147	5.031-5.263	5.143	0.003
29 2-Butanone	5.169	5.174	5.180	5.169	5.158	5.163	5.154	5.163	5.159	5.158	5.050-5.266	5.165	0.008
31 Benzene	5.329	5.323	5.318	5.329	5.333	5.328	5.329	5.328	5.329	5.333	5.217-5.449	5.327	0.004
* 32 Pentafluorobenzene	5.408	5.402	5.398	5.408	5.408	5.403	5.403	5.402	5.408	5.408	5.300-5.516	5.405	0.004
33 d4-1,2-Dichloroethane	5.435	5.434	5.430	5.435	5.439	5.440	5.435	5.434	5.435	5.439	5.332-5.548	5.435	0.003
35 Methyl Methacrylate	++++	++++	++++	++++	++++	++++	++++	++++	++++	5.693	5.577-5.809	++++	++++
34 1,2-Dichloroethane	5.493	5.487	5.478	5.488	5.487	5.488	5.483	5.482	5.483	5.487	5.371-5.603	5.485	0.005
36 Trichloroethene	5.759	5.758	5.749	5.759	5.753	5.759	5.759	5.753	5.754	5.753	5.637-5.869	5.756	0.004
* 37 1,4-Difluorobenzene	5.786	5.785	5.775	5.786	5.785	5.785	5.786	5.785	5.785	5.785	5.669-5.901	5.784	0.003
38 Dibromomethane	6.062	6.056	6.046	6.057	6.061	6.056	6.057	6.056	6.056	6.061	5.946-6.177	6.056	0.004
39 1,2-Dichloropropane	6.131	6.130	6.126	6.126	6.125	6.125	6.126	6.125	6.126	6.125	6.009-6.241	6.127	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 Bromodichloromethane	6.168	6.178	6.168	6.174	6.173	6.173	6.174	6.173	6.173	6.173	6.057-6.289	6.173	0.003
173 2-Pentanone	6.402	6.417	6.402	6.402	6.396	6.401	6.397	6.396	6.397	6.396	6.280-6.512	6.401	0.007
42 Cis 1,3-dichloropropen	6.620	6.614	6.615	6.615	6.614	6.614	6.609	6.614	6.614	6.614	6.498-6.730	6.614	0.003
43 d8-Toluene	6.737	6.736	6.737	6.737	6.736	6.736	6.737	6.736	6.737	6.736	6.620-6.852	6.736	0.000
41 2-Chloroethyl Vinyl Et	6.583	6.571	6.577	6.577	6.577	6.577	6.572	6.571	6.572	6.577	6.461-6.692	6.575	0.004
44 Toluene	6.774	6.773	6.774	6.774	6.773	6.773	6.774	6.773	6.774	6.774	6.658-6.889	6.774	0.000
45 4-Methyl-2-Pentanone	7.050	7.049	7.050	7.045	7.044	7.044	7.040	7.044	7.039	7.044	6.929-7.160	7.045	0.004
46 Tetrachloroethene	7.040	7.039	7.034	7.040	7.039	7.039	7.040	7.039	7.039	7.039	6.882-7.195	7.039	0.002
47 Trans 1,3-Dichloroprop	7.071	7.065	7.066	7.061	7.065	7.066	7.066	7.065	7.066	7.065	6.950-7.181	7.066	0.003
48 1,1,2-Trichloroethane	7.172	7.182	7.178	7.173	7.177	7.177	7.177	7.177	7.178	7.177	7.061-7.293	7.177	0.003
49 Chlorodibromomethane	7.295	7.299	7.300	7.295	7.299	7.294	7.300	7.299	7.300	7.299	7.143-7.455	7.298	0.003
50 1,3-Dichloropropane	7.358	7.363	7.369	7.364	7.363	7.363	7.364	7.363	7.364	7.363	7.207-7.519	7.363	0.003
51 1,2-Dibromoethane	7.470	7.469	7.459	7.465	7.459	7.464	7.460	7.464	7.459	7.459	7.343-7.574	7.463	0.004
52 2-Hexanone	7.619	7.629	7.624	7.619	7.618	7.618	7.619	7.618	7.619	7.618	7.462-7.774	7.620	0.004
* 53 d5-Chlorobenzene	7.815	7.815	7.815	7.815	7.815	7.815	7.816	7.815	7.815	7.815	7.659-7.971	7.815	0.000
54 Chlorobenzene	7.826	7.825	7.826	7.826	7.825	7.825	7.826	7.825	7.826	7.826	7.669-7.982	7.826	0.000
55 Ethyl Benzene	7.842	7.846	7.837	7.842	7.841	7.841	7.842	7.841	7.842	7.841	7.685-7.998	7.842	0.002
56 1,1,1,2-Tetrachloroeth	7.879	7.873	7.869	7.869	7.873	7.873	7.874	7.873	7.874	7.873	7.717-8.030	7.873	0.003
57 m,p-xylene	7.948	7.947	7.943	7.943	7.947	7.942	7.943	7.947	7.943	7.947	7.791-8.104	7.945	0.003
58 o-Xylene	8.246	8.250	8.246	8.251	8.250	8.251	8.251	8.250	8.251	8.250	8.094-8.407	8.250	0.002
59 Styrene	8.294	8.287	8.288	8.288	8.287	8.288	8.288	8.287	8.288	8.287	8.132-8.444	8.289	0.002
60 Bromoform	8.315	8.314	8.315	8.315	8.309	8.309	8.310	8.309	8.309	8.309	8.119-8.499	8.312	0.003
61 Isopropyl Benzene	8.469	8.473	8.474	8.474	8.473	8.474	8.474	8.473	8.474	8.473	8.283-8.663	8.473	0.002
62 4-Bromofluorobenzene	8.681	8.686	8.682	8.681	8.681	8.681	8.682	8.681	8.681	8.681	8.525-8.837	8.682	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
63 Bromobenzene	8.761	8.760	8.761	8.761	8.760	8.761	8.756	8.760	8.761	8.760	8.570-8.950	8.760	0.002
64 N-Propyl Benzene	8.777	8.771	8.772	8.772	8.771	8.771	8.772	8.771	8.772	8.771	8.581-8.961	8.772	0.002
82 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.074	8.917-9.231	+++++	+++++
65 1,1,2,2-Tetrachloroeth	8.830	8.829	8.825	8.825	8.824	8.830	8.825	8.829	8.825	8.824	8.634-9.014	8.827	0.003
66 2-Chloro Toluene	8.894	8.893	8.889	8.889	8.888	8.888	8.889	8.888	8.888	8.888	8.698-9.078	8.890	0.002
67 1,3,5-Trimethyl Benzen	8.915	8.914	8.910	8.915	8.914	8.915	8.915	8.914	8.915	8.914	8.724-9.104	8.914	0.002
68 1,2,3-Trichloropropane	8.926	8.930	8.931	8.931	8.930	8.931	8.926	8.930	8.931	8.930	8.740-9.120	8.930	0.002
69 Trans-1,4-Dichloro 2-B	8.963	8.962	8.958	8.958	8.957	8.957	8.958	8.957	8.958	8.957	8.767-9.147	8.959	0.002
70 4-Chloro Toluene	9.016	9.010	9.006	9.011	9.010	9.010	9.011	9.010	9.011	9.010	8.820-9.200	9.011	0.003
71 T-Butyl Benzene	9.144	9.148	9.149	9.149	9.148	9.148	9.149	9.148	9.149	9.148	8.958-9.338	9.148	0.002
72 1,2,4-Trimethylbenzene	9.202	9.196	9.202	9.202	9.201	9.202	9.202	9.201	9.202	9.201	9.011-9.391	9.201	0.002
73 S-Butyl Benzene	9.282	9.281	9.277	9.277	9.281	9.281	9.277	9.281	9.276	9.281	9.091-9.471	9.279	0.002
74 4-Isopropyl Toluene	9.388	9.382	9.383	9.383	9.382	9.382	9.383	9.387	9.383	9.382	9.192-9.572	9.384	0.002
75 1,3-Dichlorobenzene	9.447	9.451	9.447	9.447	9.446	9.446	9.447	9.446	9.446	9.446	9.256-9.636	9.447	0.002
* 76 d4-1,4-Dichlorobenzene	9.500	9.504	9.500	9.500	9.499	9.504	9.500	9.504	9.500	9.499	9.309-9.689	9.501	0.002
77 1,4-Dichlorobenzene	9.516	9.515	9.516	9.516	9.515	9.510	9.511	9.515	9.510	9.515	9.325-9.705	9.513	0.003
78 N-Butyl Benzene	9.702	9.701	9.702	9.702	9.701	9.701	9.702	9.701	9.701	9.701	9.511-9.891	9.701	0.000
\$ 79 d4-1,2-Dichlorobenzene	9.818	9.823	9.824	9.824	9.823	9.818	9.819	9.823	9.824	9.823	9.633-10.013	9.822	0.003
80 1,2-Dichlorobenzene	9.829	9.828	9.829	9.829	9.828	9.829	9.829	9.828	9.829	9.828	9.638-10.018	9.829	0.000
81 1,2-Dibromo 3-Chloropr	10.435	10.429	10.440	10.440	10.439	10.440	10.440	10.439	10.440	10.439	10.249-10.629	10.437	0.004
83 Hexachloro 1,3-Butadie	10.940	10.939	10.940	10.940	10.939	10.939	10.940	10.939	10.939	10.939	10.749-11.129	10.939	0.000
84 1,2,4-Trichlorobenzene	10.966	10.965	10.961	10.966	10.960	10.966	10.966	10.965	10.966	10.960	10.770-11.150	10.965	0.002
85 Naphthalene	11.221	11.220	11.221	11.221	11.220	11.221	11.221	11.220	11.221	11.220	11.031-11.411	11.221	0.000

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m

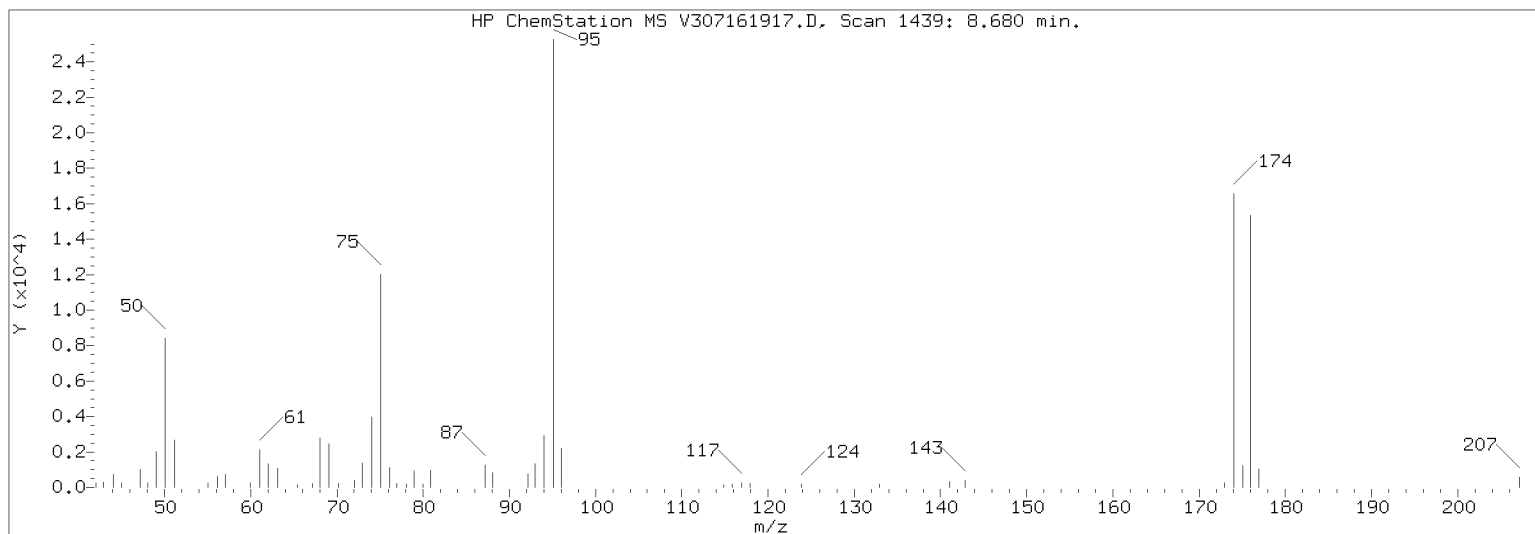
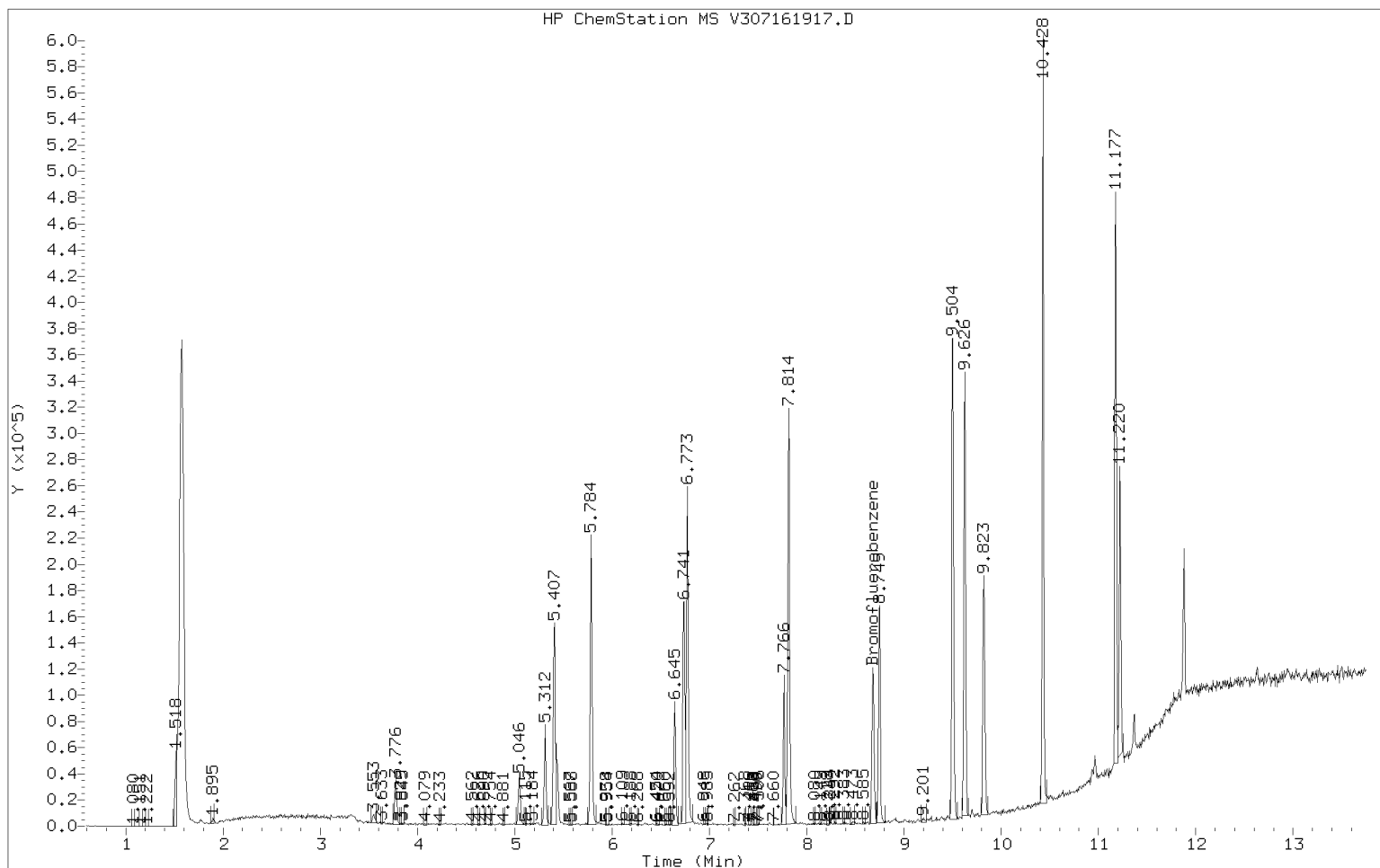
Batch File: \\target\share\chem1\nt3.i\20190716x.b

Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
86 1,2,3-Trichlorobenzene	11.370	11.364	11.365	11.365	11.364	11.364	11.364	11.365	11.364	11.364	11.174-11.554	11.365	0.002

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190716x.b/V307161917.D
 Method Used: \20190716x.b\bfb8260.m Inst: nt3
 Injection Date: 16-JUL-2019 15:54 Operator: PKC
 Sample Info: SHG0218-TUN1 SHG0218-TUN1
 Report Date: 07/17/2019 08:16



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	34.40
75	30.00 - 60.00% of mass 95	54.38
96	5.00 - 9.00% of mass 95	8.29
173	Less than 2.00% of mass 174	1.00 (1.43)
174	50.00 - 100.00% of mass 95	70.20
175	5.00 - 9.00% of mass 174	4.23 (6.03)
176	95.00 - 101.00% of mass 174	66.80 (95.16)
177	5.00 - 9.00% of mass 176	4.48 (6.70)

Data File: V307161917.D

Spectrum: Avg. Scans 1438-1440 (8.68), Background Scan 1432

Location of Maximum: 95.00

Number of points: 68

m/z	Y	m/z	Y	m/z	Y	m/z	Y
42.00	300	64.00	163	89.00	62	143.00	370
43.00	247	65.00	112	91.00	60	153.00	52
44.00	285	67.00	143	92.00	617	172.00	163
45.00	405	68.00	2396	93.00	1070	173.00	216
46.00	66	69.00	2363	94.00	2609	174.00	15090
47.00	670	70.00	312	95.00	21496	175.00	910
48.00	259	72.00	126	96.00	1781	176.00	14360
49.00	1946	73.00	1167	104.00	84	177.00	962
50.00	7394	74.00	3749	115.00	50	191.00	70
51.00	2355	75.00	11689	116.00	119	207.00	100
53.00	59	76.00	1029	117.00	178	208.00	52
55.00	191	77.00	230	118.00	70	209.00	52
56.00	495	78.00	134	119.00	89	211.00	57
57.00	900	79.00	762	124.00	64	233.00	56
60.00	302	80.00	228	133.00	63		
61.00	1661	81.00	762	135.00	80		
62.00	1094	87.00	1154	137.00	80		
63.00	870	88.00	810	141.00	221		

Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161919.D

Date : 16-JUL-2019 17:13

Client ID:

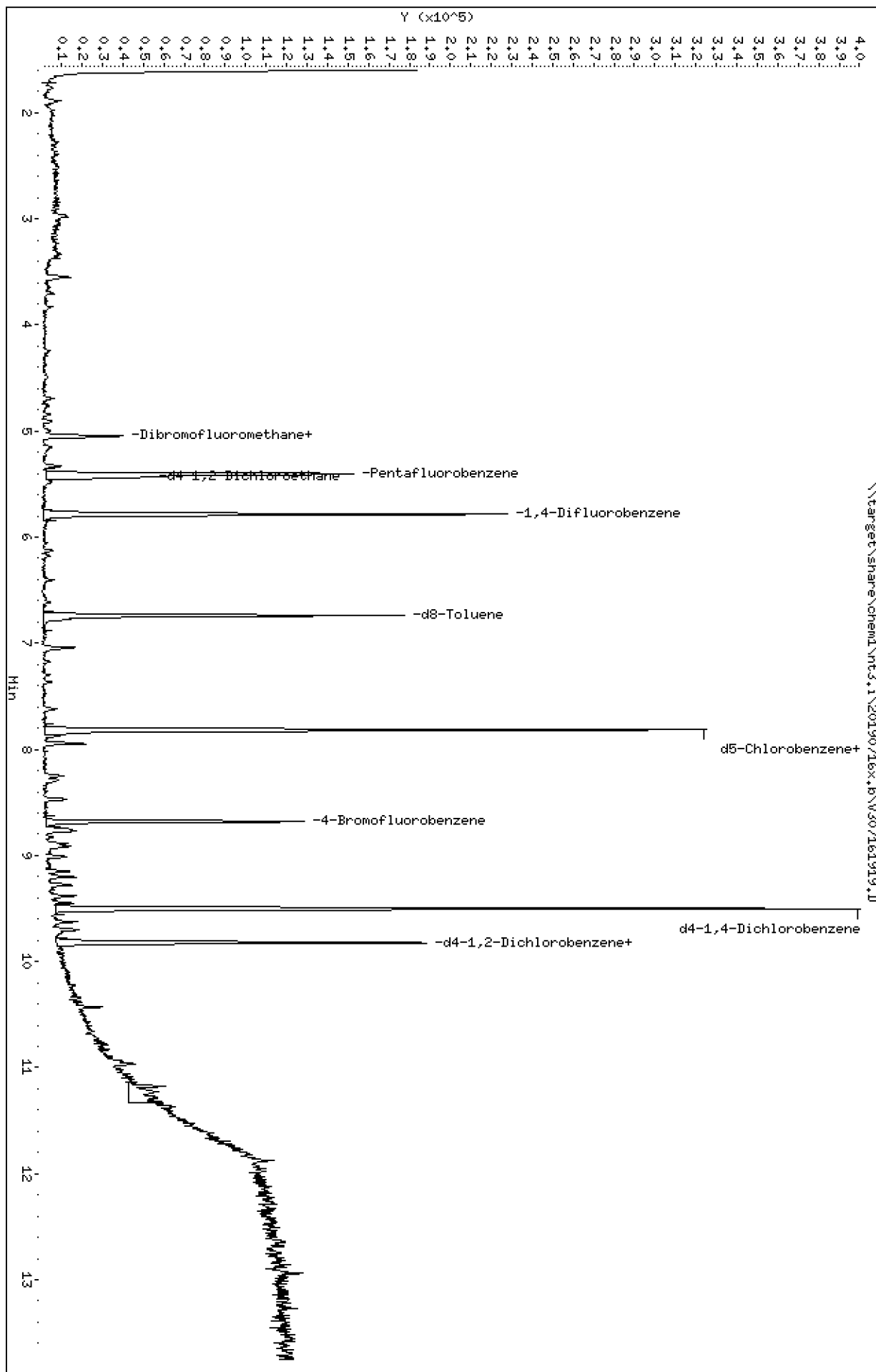
Sample Info: SHC0218-CAL1

Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161919.D
Lab Smp Id: SHG0218-CAL1
Inj Date : 16-JUL-2019 17:13
Operator : PKC
Smp Info : SHG0218-CAL1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Meth Date : 17-Jul-2019 07:49 paul
Cal Date : 16-JUL-2019 17:13
Als bottle: 56
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i
Quant Type: ISTD
Cal File: V307161919.D
Calibration Sample, Level: 1
Compound Sublist: mdl.sub

Compounds	QUANT SIG	AMOUNTS					
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)
							ON-COL (ug/L)
1 Dichlorodifluoromethane	85		1.694	1.693 (0.313)		1146	0.20000
2 Chloromethane	50		1.896	1.895 (0.351)		4467	0.20000
3 Vinyl Chloride	62		1.986	1.980 (0.367)		3257	0.20000
4 Bromomethane	94		2.284	2.278 (0.422)		1248	0.20000
5 Chloroethane	64		2.395	2.394 (0.443)		1673	0.20000
6 Trichlorofluoromethane	101		2.501	2.506 (0.463)		2014	0.20000
7 1,1-Dichloroethene	61		2.969	2.968 (0.549)		2879	0.20000
8 Carbon Disulfide	76		2.980	2.979 (0.551)		3561	0.20000
9 112Trichloro122Trifluoroethane	101		3.043	3.043 (0.563)		940	0.20000
10 Iodomethane	142		3.102	3.101 (0.574)		1505	0.20000
11 Bromoethane	108		3.229	3.223 (0.597)		812	0.20000
12 Acrolein	56		3.341	3.330 (0.618)		2027	1.00000
13 Methylene Chloride	84		3.548	3.553 (0.656)		3314	0.20000
14 Acetone	43		3.644	3.633 (0.674)		1859	1.00000
15 Trans-1,2-Dichloroethene	96		3.702	3.702 (0.685)		1204	0.20000
17 Methyl tert butyl ether	73		3.830	3.829 (0.708)		2127	0.20000
18 1,1-Dichloroethane	63		4.239	4.243 (0.784)		2998	0.20000
19 Acrylonitrile	53		Compound Not Detected.				
20 Vinyl Acetate	43		4.494	4.483 (0.831)		3017	0.20000
22 Cis-1,2-Dichloroethene	96		4.691	4.690 (0.867)		1301	0.20000
23 2,2-Dichloropropane	77		4.765	4.770 (0.881)		1480	0.20000
24 Bromochloromethane	128		4.845	4.844 (0.896)		528	0.20000
25 Chloroform	83		4.908	4.908 (0.908)		2239	0.20000
26 Carbon Tetrachloride	117		4.999	4.998 (0.864)		1609	0.20000
\$ 27 Dibromofluoromethane	111		5.047	5.046 (0.933)		19007	5.00000
28 1,1,1-Trichloroethane	97		5.057	5.052 (0.935)		1910	0.20000
30 1,1-Dichloropropene	75		5.142	5.147 (0.889)		1558	0.20000
29 2-Butanone	43		5.169	5.158 (0.956)		3397	1.00000
31 Benzene	78		5.328	5.333 (0.921)		5036	0.20000
* 32 Pentafluorobenzene	168		5.408	5.408 (1.000)		75566	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.434	5.439 (1.005)		25232	5.00000
34 1,2-Dichloroethane	62		5.493	5.487 (0.949)		1852	0.20000
36 Trichloroethene	130		5.759	5.753 (0.995)		944	0.20000
* 37 1,4-Difluorobenzene	114		5.785	5.785 (1.000)		126412	10.0000

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.061	6.061	(1.048)	556		0.20000	0.1888 (T)
39 1,2-Dichloropropane	63	6.131	6.125	(1.060)	1570		0.20000	0.1896
40 Bromodichloromethane	83	6.168	6.173	(1.066)	1538		0.20000	0.1985
173 2-Pentanone	86	6.401	6.396	(1.107)	378		1.00000	0.7107
41 2-Chloroethyl Vinyl Ether	63	6.582	6.577	(1.138)	489		0.20000	0.1430
42 Cis 1,3-dichloropropene	75	6.619	6.614	(1.144)	1654		0.20000	0.1686
\$ 43 d8-Toluene	98	6.736	6.736	(1.164)	80877		5.00000	4.876
44 Toluene	92	6.773	6.773	(1.171)	3262		0.20000	0.2031
46 Tetrachloroethene	166	7.039	7.039	(0.901)	1264		0.20000	0.1961
45 4-Methyl-2-Pentanone	58	7.050	7.044	(1.219)	2006		1.00000	0.8631 (T)
47 Trans 1,3-Dichloropropene	75	7.071	7.065	(1.222)	1257		0.20000	0.1552
48 1,1,2-Trichloroethane	97	7.172	7.177	(1.240)	660		0.20000	0.1536
49 Chlorodibromomethane	129	7.294	7.299	(0.933)	1054		0.20000	0.2119 (T)
50 1,3-Dichloropropane	76	7.358	7.363	(0.942)	1598		0.20000	0.1959
51 1,2-Dibromoethane	107	7.469	7.459	(1.291)	725		0.20000	0.1799
52 2-Hexanone	43	7.618	7.618	(0.975)	4951		1.00000	0.9393
* 53 d5-Chlorobenzene	117	7.815	7.815	(1.000)	132258		10.0000	
54 Chlorobenzene	112	7.825	7.825	(1.001)	3192		0.20000	0.1769
55 Ethyl Benzene	106	7.841	7.841	(1.003)	1786		0.20000	0.1855
56 1,1,1,2-Tetrachloroethane	131	7.879	7.873	(1.008)	1345		0.20000	0.2140
57 m,p-xylene	106	7.948	7.947	(1.017)	4493		0.40000	0.3727
58 o-Xylene	106	8.245	8.250	(1.055)	2118		0.20000	0.1792
59 Styrene	104	8.293	8.287	(1.061)	2940		0.20000	0.1633
60 Bromoform	173	8.314	8.308	(0.875)	480		0.20000	0.1722 (M)
61 Isopropyl Benzene	105	8.468	8.473	(0.891)	5073		0.20000	0.1731
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	25464		5.00000	4.849
63 Bromobenzene	156	8.761	8.760	(0.922)	1370		0.20000	0.1896
64 N-Propyl Benzene	91	8.777	8.771	(0.924)	7373		0.20000	0.2007
65 1,1,2,2-Tetrachloroethane	83	8.830	8.824	(0.930)	1081		0.20000	0.1915
66 2-Chloro Toluene	91	8.893	8.888	(0.936)	5077		0.20000	0.1990
67 1,3,5-Trimethyl Benzene	105	8.915	8.914	(0.938)	4893		0.20000	0.1889
68 1,2,3-Trichloropropane	110	8.925	8.930	(0.940)	362		0.20000	0.2229
69 Trans-1,4-Dichloro 2-Butene	53	8.963	8.957	(0.944)	470		0.20000	0.1790
70 4-Chloro Toluene	91	9.016	9.010	(0.949)	4528		0.20000	0.1910
71 T-Butyl Benzene	119	9.143	9.148	(0.963)	3864		0.20000	0.1811
72 1,2,4-Trimethylbenzene	105	9.202	9.201	(0.969)	4731		0.20000	0.1804
73 S-Butyl Benzene	105	9.281	9.281	(0.977)	5981		0.20000	0.1876
74 4-Isopropyl Toluene	119	9.388	9.382	(0.988)	5465		0.20000	0.2000
75 1,3-Dichlorobenzene	146	9.446	9.446	(0.994)	3018		0.20000	0.1890
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499	(1.000)	77721		10.0000	
77 1,4-Dichlorobenzene	146	9.515	9.515	(1.002)	3291		0.20000	0.1996
78 N-Butyl Benzene	91	9.701	9.701	(1.021)	4504		0.20000	0.1805
\$ 79 d4-1,2-Dichlorobenzene	152	9.818	9.823	(1.034)	37945		5.00000	5.204
80 1,2-Dichlorobenzene	146	9.829	9.828	(1.035)	2955		0.20000	0.2034
81 1,2-Dibromo 3-Chloropropane	75	10.434	10.439	(1.098)	651		0.20000	0.6115
83 Hexachloro 1,3-Butadiene	225	10.939	10.939	(1.152)	726		0.20000	0.2518
84 1,2,4-Trichlorobenzene	180	10.966	10.960	(1.154)	2239		0.20000	0.2525
85 Naphthalene	128	11.221	11.220	(1.181)	4630		0.20000	0.3015
86 1,2,3-Trichlorobenzene	180	11.369	11.364	(1.197)	2048		0.20000	0.2973

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161919.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	75566	2.55
37 1,4-Difluorobenze	116116	58058	232232	126412	8.87
53 d5-Chlorobenzene	124912	62456	249824	132258	5.88
76 d4-1,4-Dichlorobe	77169	38585	154338	77721	0.72

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.01
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161919.D

Lab ID: SHG0218-CAL1
 nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 17:13

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.313	1.000	-0.6867	Dichlorodifluoromethane
0.351	1.000	-0.6494	Chloromethane
0.367	1.000	-0.6327	Vinyl Chloride
0.422	1.000	-0.5777	Bromomethane
0.443	1.000	-0.5571	Chloroethane
0.463	1.000	-0.5374	Trichlorofluoromethane
0.549	1.000	-0.4509	1,1-Dichloroethene
0.551	1.000	-0.4490	Carbon Disulfide
0.563	1.000	-0.4372	1,1,2-Trichloro-1,2,2-Trifluoroethane
0.574	1.000	-0.4264	Iodomethane
0.597	1.000	-0.4028	Bromoethane
0.618	1.000	-0.3822	Acrolein
0.656	1.000	-0.3438	Methylene Chloride
0.674	1.000	-0.3262	Acetone
0.685	1.000	-0.3154	Trans-1,2-Dichloroethene
0.708	1.000	-0.2918	Methyl tert butyl ether
0.784	1.000	-0.2161	1,1-Dichloroethane
0.831	1.000	-0.1690	Vinyl Acetate
0.867	1.000	-0.1326	Cis-1,2-Dichloroethene
0.881	1.000	-0.1189	2,2-Dichloropropane
0.896	1.000	-0.1041	Bromochloromethane
0.908	1.000	-0.0924	Chloroform
0.935	1.000	-0.0648	1,1,1-Trichloroethane
0.956	1.000	-0.0442	2-Butanone
0.933	1.000	-0.0668	Dibromofluoromethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

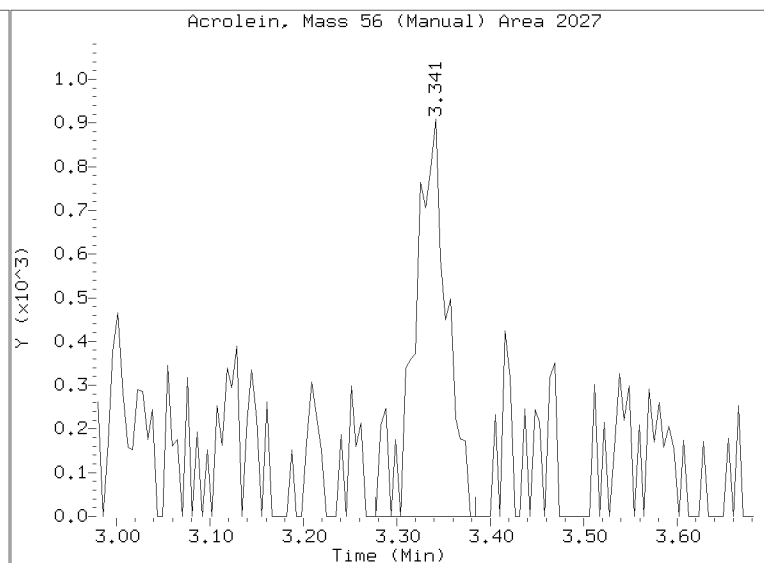
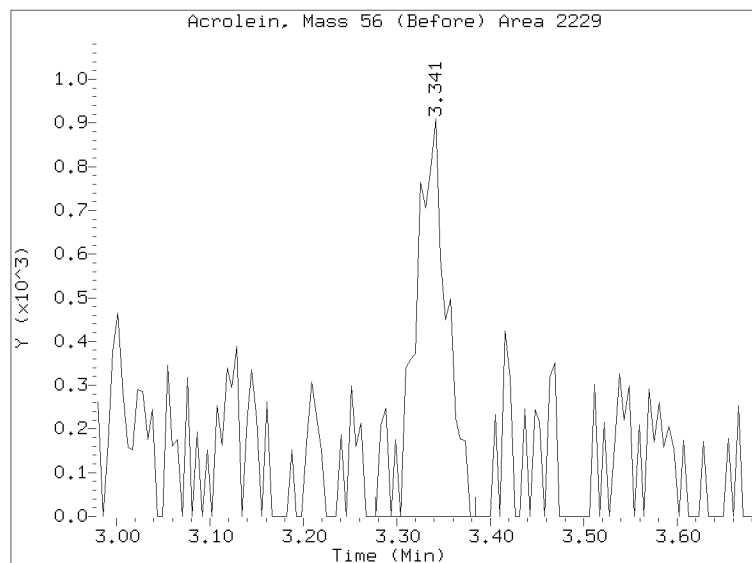
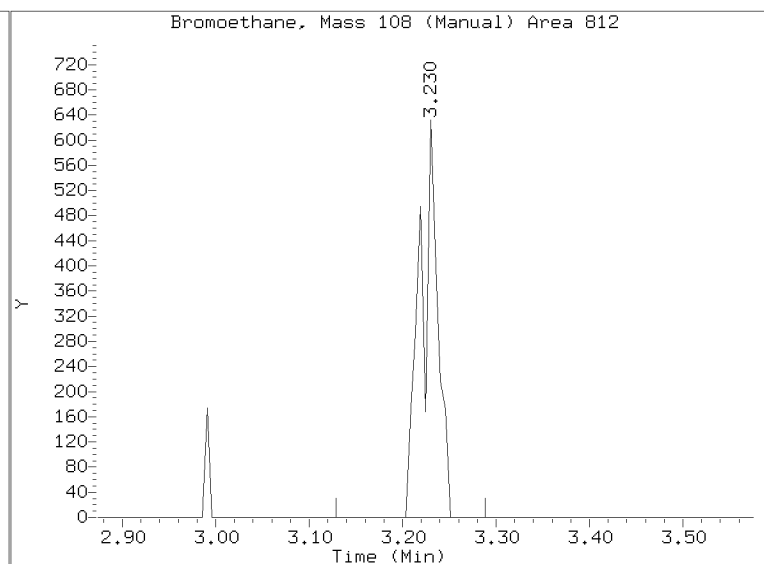
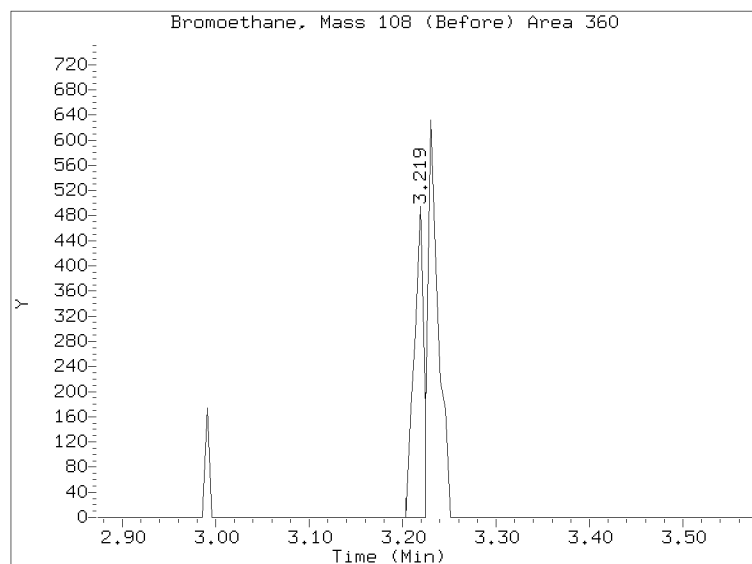
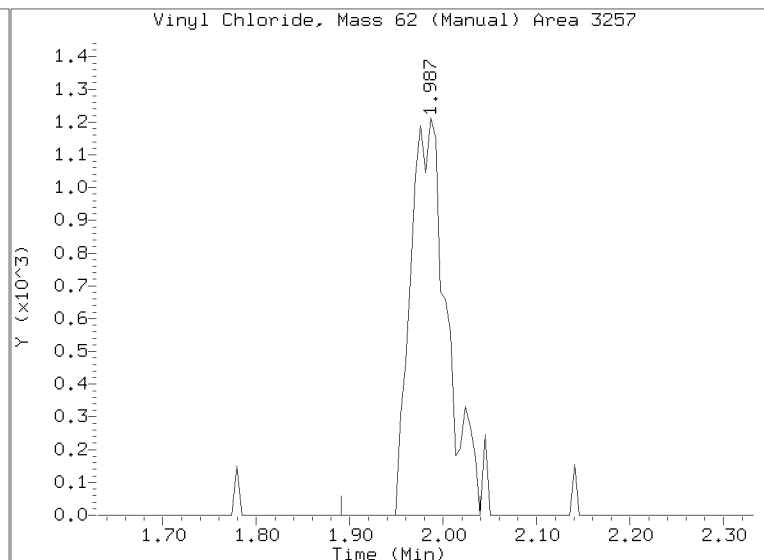
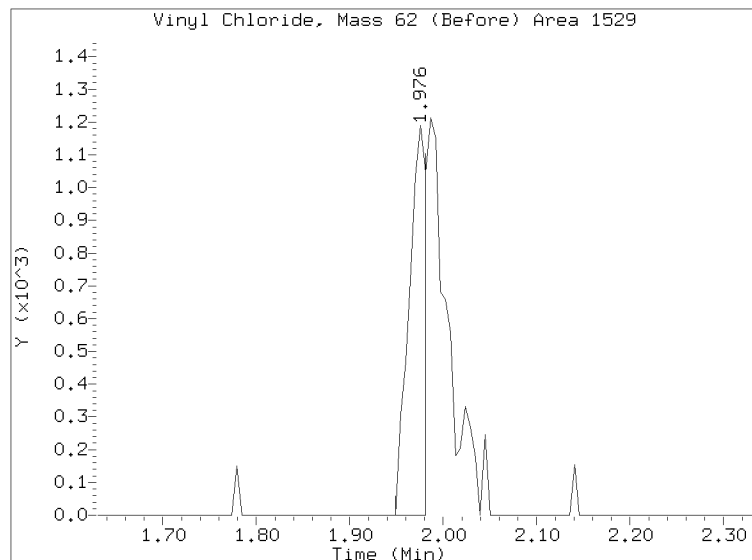
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161919.D

Injection Date: 16-JUL-2019 17:13

Lab ID: SHG0218-CAL1 Client ID:

Report Date: 07/17/2019 08:20



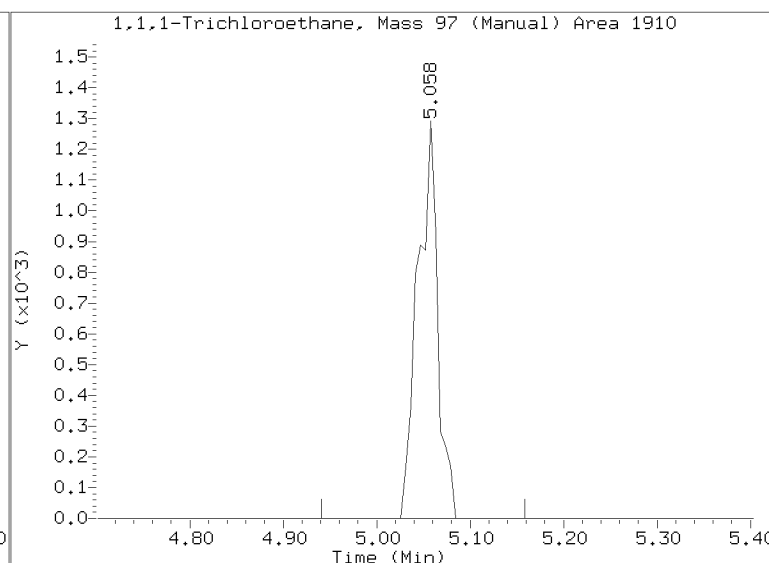
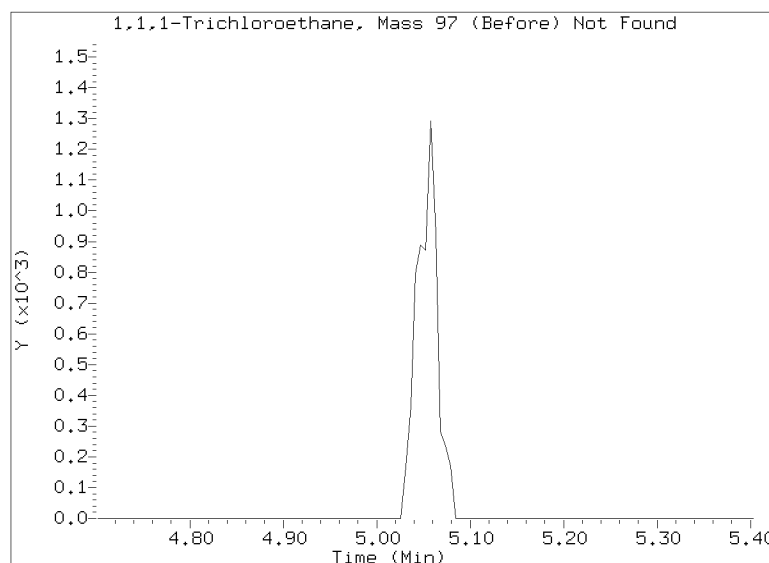
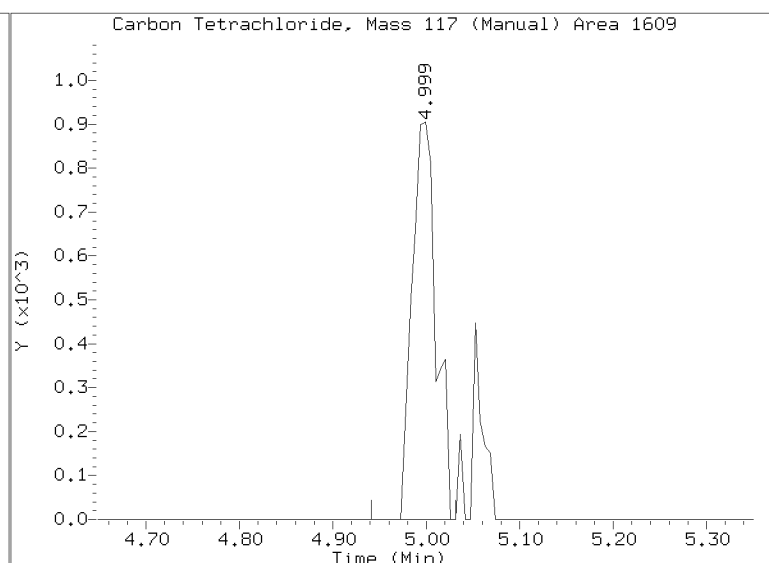
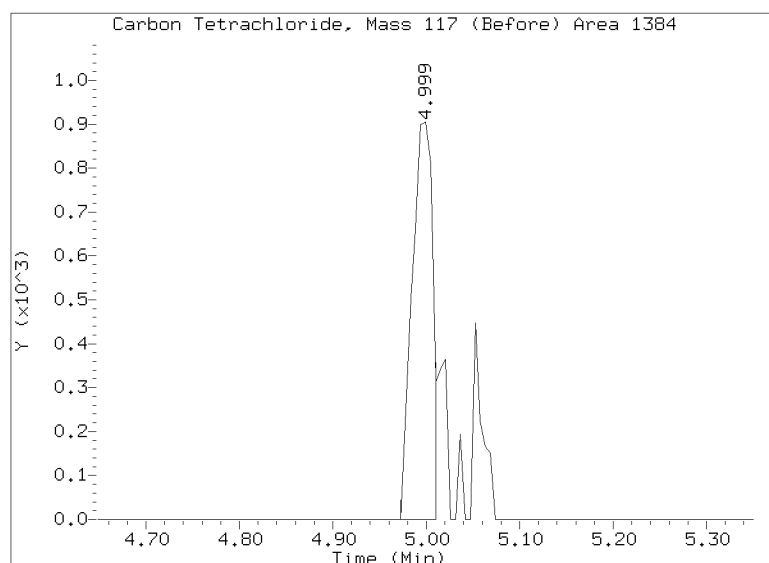
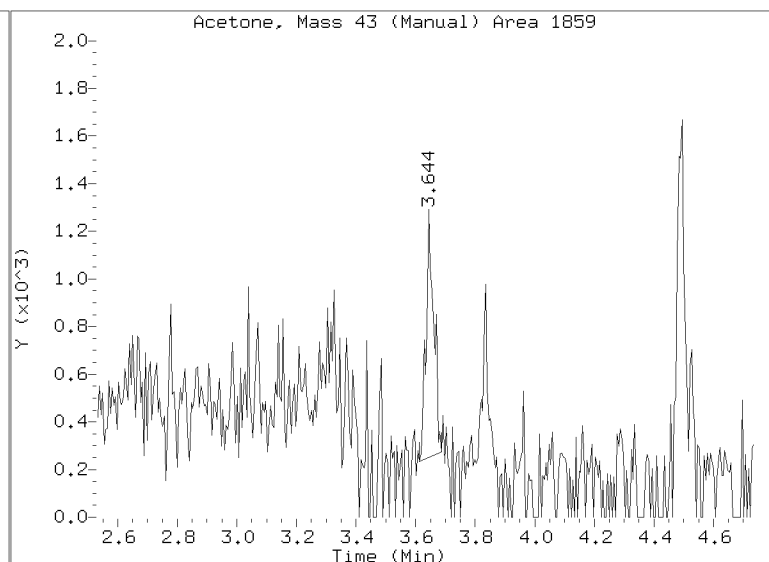
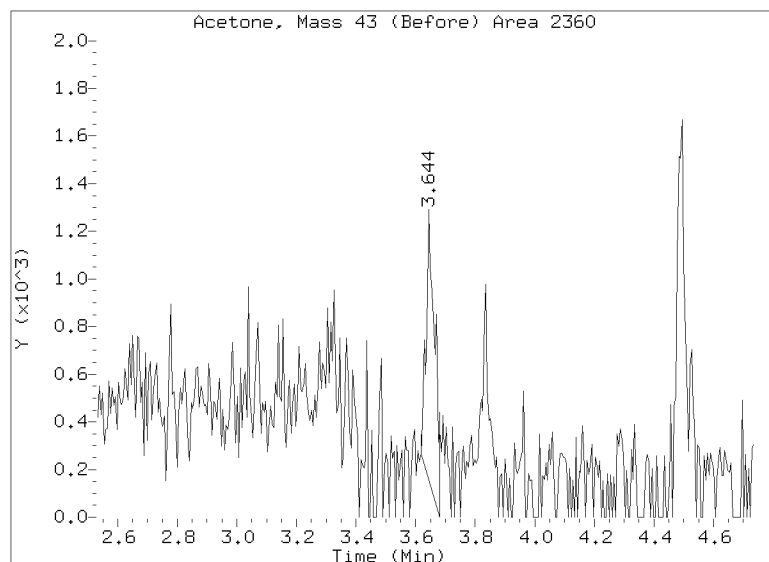
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161919.D

Injection Date: 16-JUL-2019 17:13

Lab ID:SHG0218-CAL1 Client ID:

Report Date: 07/17/2019 08:20



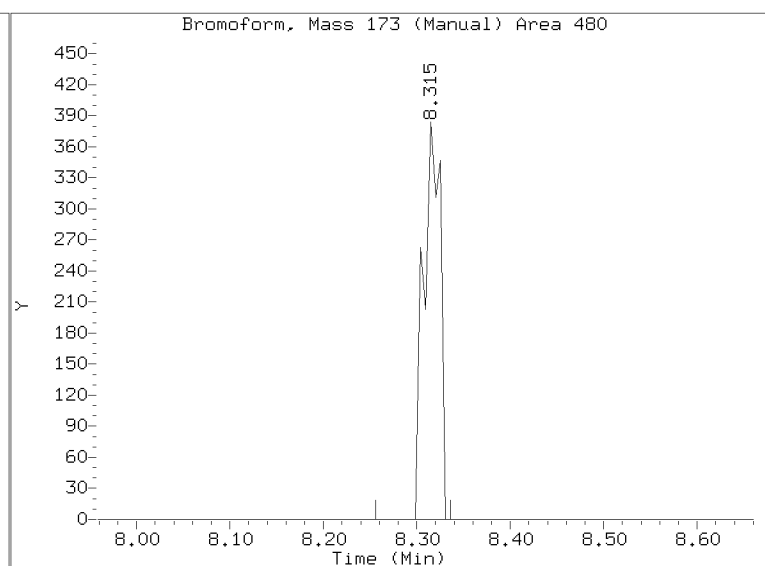
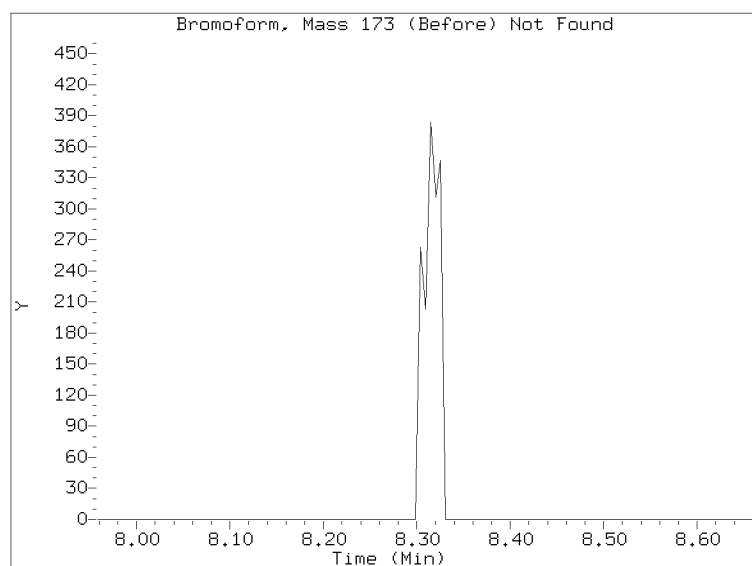
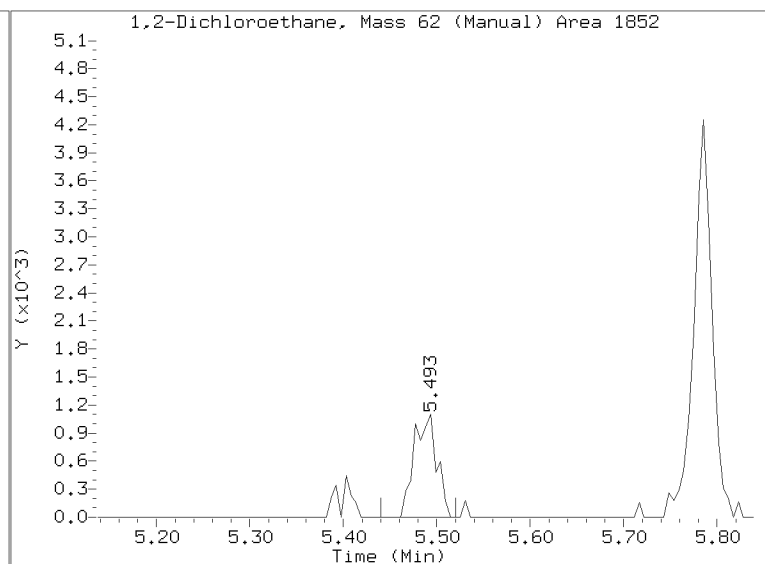
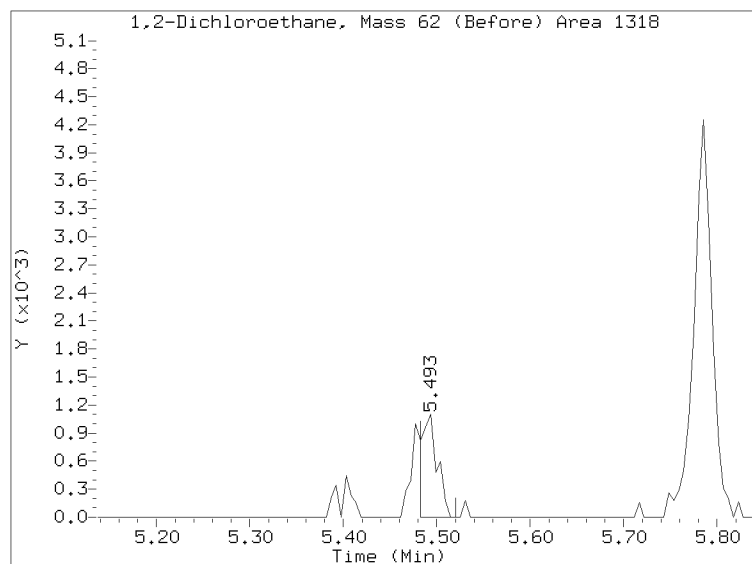
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161919.D

Injection Date: 16-JUL-2019 17:13

Lab ID: SHG0218-CAL1 Client ID:

Report Date: 07/17/2019 08:20



Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161920.D

Date : 16-JUL-2019 17:40

Client ID:

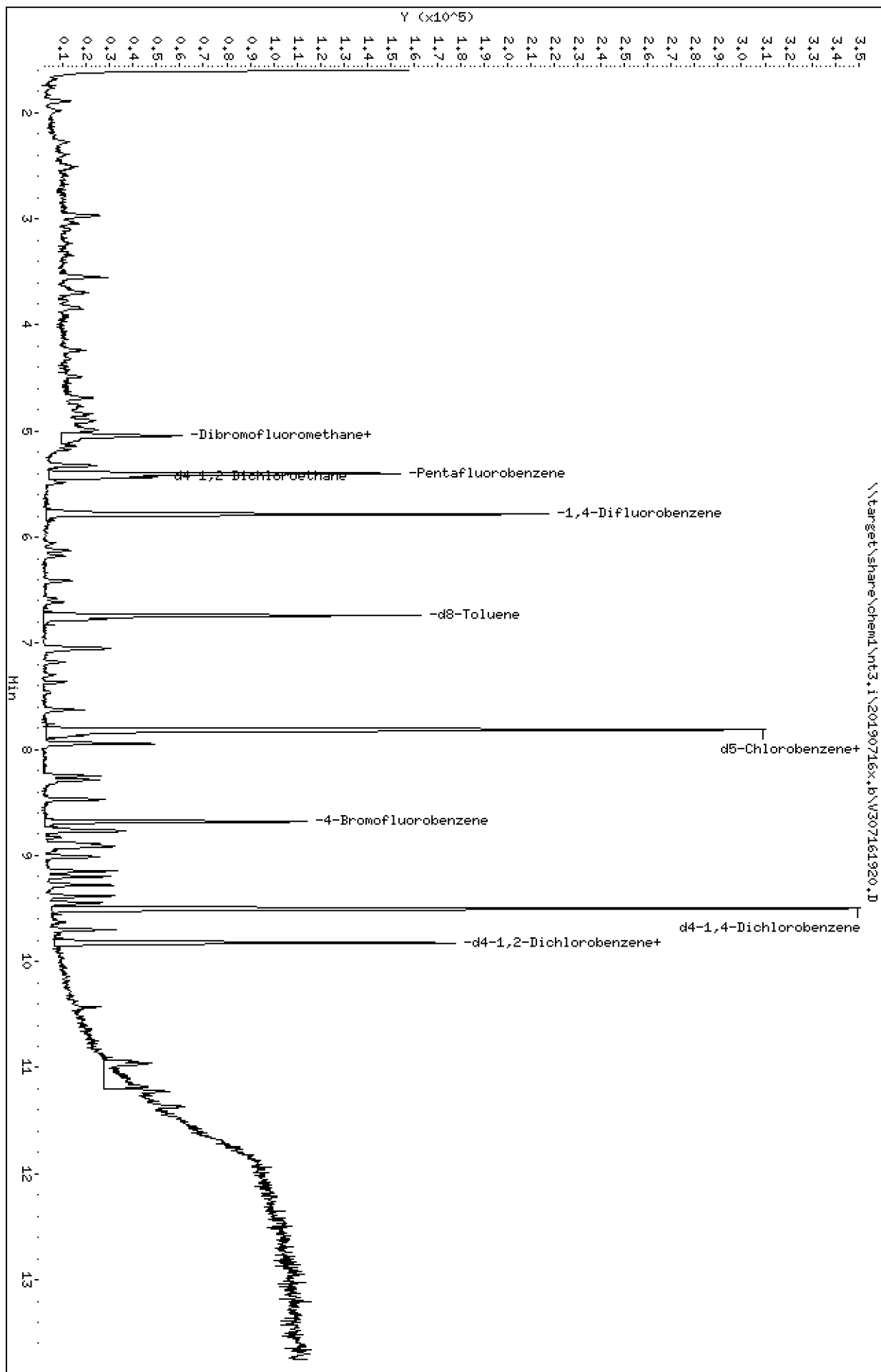
Sample Info: SHC0218-CAL2

Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161920.D
Lab Smp Id: SHG0218-CAL2
Inj Date : 16-JUL-2019 17:40
Operator : PKC
Smp Info : SHG0218-CAL2
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Meth Date : 17-Jul-2019 07:49 paul
Cal Date : 16-JUL-2019 17:40
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i
Quant Type: ISTD
Cal File: V307161920.D
Calibration Sample, Level: 2
Compound Sublist: mdl.sub

Compounds	QUANT SIG	AMOUNTS					
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)
							ON-COL (ug/L)
1 Dichlorodifluoromethane	85		1.693	1.693 (0.314)		3814	0.50000
2 Chloromethane	50		1.884	1.895 (0.349)		11817	0.50000
3 Vinyl Chloride	62		1.975	1.980 (0.366)		7113	0.50000
4 Bromomethane	94		2.272	2.278 (0.421)		2799	0.50000
5 Chloroethane	64		2.389	2.394 (0.442)		3616	0.50000
6 Trichlorofluoromethane	101		2.511	2.506 (0.465)		4706	0.50000
7 1,1-Dichloroethene	61		2.968	2.968 (0.550)		6849	0.50000
8 Carbon Disulfide	76		2.968	2.979 (0.550)		8613	0.50000
9 112Trichloro122Trifluoroethane	101		3.043	3.043 (0.563)		2494	0.50000
10 Iodomethane	142		3.101	3.101 (0.574)		4377	0.50000
11 Bromoethane	108		3.234	3.223 (0.599)		1857	0.50000
12 Acrolein	56		3.340	3.330 (0.618)		4142	2.50000
13 Methylene Chloride	84		3.547	3.553 (0.657)		5046	0.50000
14 Acetone	43		3.659	3.633 (0.677)		7183	2.50000
15 Trans-1,2-Dichloroethene	96		3.691	3.702 (0.683)		3504	0.50000
17 Methyl tert butyl ether	73		3.840	3.829 (0.711)		6006	0.50000
18 1,1-Dichloroethane	63		4.244	4.243 (0.786)		7286	0.50000
19 Acrylonitrile	53		4.313	4.308 (0.798)		2969	0.50000
20 Vinyl Acetate	43		4.483	4.483 (0.830)		8736	0.50000
22 Cis-1,2-Dichloroethene	96		4.685	4.690 (0.867)		3183	0.50000
23 2,2-Dichloropropane	77		4.759	4.770 (0.881)		5735	0.50000
24 Bromochloromethane	128		4.839	4.844 (0.896)		1186	0.50000
25 Chloroform	83		4.908	4.908 (0.909)		5415	0.50000
26 Carbon Tetrachloride	117		4.987	4.998 (0.862)		4326	0.50000
\$ 27 Dibromofluoromethane	111		5.041	5.046 (0.933)		17919	5.00000
28 1,1,1-Trichloroethane	97		5.046	5.052 (0.934)		4733	0.50000
30 1,1-Dichloropropene	75		5.141	5.147 (0.889)		4205	0.50000
29 2-Butanone	43		5.173	5.158 (0.958)		11138	2.50000
31 Benzene	78		5.322	5.333 (0.920)		12785	0.50000
* 32 Pentafluorobenzene	168		5.402	5.408 (1.000)		71136	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.434	5.439 (1.006)		23589	5.00000
34 1,2-Dichloroethane	62		5.487	5.487 (0.949)		4393	0.50000
36 Trichloroethene	130		5.758	5.753 (0.995)		3135	0.50000
* 37 1,4-Difluorobenzene	114		5.784	5.785 (1.000)		117017	10.0000

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.055	6.061	(1.047)	1555		0.50000	0.5704
39 1,2-Dichloropropane	63	6.130	6.125	(1.060)	4118		0.50000	0.5373
40 Bromodichloromethane	83	6.178	6.173	(1.068)	3527		0.50000	0.4917
173 2-Pentanone	86	6.417	6.396	(1.109)	1345		2.50000	2.732
41 2-Chloroethyl Vinyl Ether	63	6.571	6.577	(1.136)	1223		0.50000	0.3865
42 Cis 1,3-dichloropropene	75	6.613	6.614	(1.143)	4493		0.50000	0.4948
\$ 43 d8-Toluene	98	6.735	6.736	(1.164)	76524		5.00000	4.984
44 Toluene	92	6.773	6.773	(1.171)	7572		0.50000	0.5092
46 Tetrachloroethene	166	7.038	7.039	(0.901)	2930		0.50000	0.5061
45 4-Methyl-2-Pentanone	58	7.049	7.044	(1.219)	4709		2.50000	2.189 (T)
47 Trans 1,3-Dichloropropene	75	7.065	7.065	(1.221)	3432		0.50000	0.4579
48 1,1,2-Trichloroethane	97	7.182	7.177	(1.242)	2307		0.50000	0.5801
49 Chlorodibromomethane	129	7.299	7.299	(0.934)	2277		0.50000	0.5098
50 1,3-Dichloropropane	76	7.362	7.363	(0.942)	3634		0.50000	0.4962
51 1,2-Dibromoethane	107	7.469	7.459	(1.291)	1982		0.50000	0.5313
52 2-Hexanone	43	7.628	7.618	(0.976)	11027		2.50000	2.330
* 53 d5-Chlorobenzene	117	7.814	7.815	(1.000)	118769		10.0000	
54 Chlorobenzene	112	7.825	7.825	(1.001)	8313		0.50000	0.5130
55 Ethyl Benzene	106	7.846	7.841	(1.004)	4360		0.50000	0.5042
56 1,1,1,2-Tetrachloroethane	131	7.873	7.873	(1.007)	2713		0.50000	0.4807
57 m,p-xylene	106	7.947	7.947	(1.017)	10309		1.00000	0.9522
58 o-Xylene	106	8.250	8.250	(1.056)	5041		0.50000	0.4749
59 Styrene	104	8.287	8.287	(1.061)	7623		0.50000	0.4715
60 Bromoform	173	8.314	8.308	(0.875)	1383		0.50000	0.5484
61 Isopropyl Benzene	105	8.473	8.473	(0.892)	12760		0.50000	0.4813
\$ 62 4-Bromofluorobenzene	174	8.685	8.680	(1.112)	22810		5.00000	4.837
63 Bromobenzene	156	8.760	8.760	(0.922)	3585		0.50000	0.5482
64 N-Propyl Benzene	91	8.770	8.771	(0.923)	16109		0.50000	0.4845
65 1,1,2,2-Tetrachloroethane	83	8.829	8.824	(0.929)	2585		0.50000	0.5062
66 2-Chloro Toluene	91	8.893	8.888	(0.936)	11657		0.50000	0.5051
67 1,3,5-Trimethyl Benzene	105	8.914	8.914	(0.938)	10710		0.50000	0.4569
68 1,2,3-Trichloropropane	110	8.930	8.930	(0.940)	779		0.50000	0.5300
69 Trans-1,4-Dichloro 2-Butene	53	8.962	8.957	(0.943)	1160		0.50000	0.4884
70 4-Chloro Toluene	91	9.010	9.010	(0.948)	10301		0.50000	0.4802
71 T-Butyl Benzene	119	9.148	9.148	(0.963)	9651		0.50000	0.5000
72 1,2,4-Trimethylbenzene	105	9.196	9.201	(0.968)	10905		0.50000	0.4596
73 S-Butyl Benzene	105	9.281	9.281	(0.977)	14023		0.50000	0.4860
74 4-Isopropyl Toluene	119	9.382	9.382	(0.987)	11391		0.50000	0.4608
75 1,3-Dichlorobenzene	146	9.451	9.446	(0.994)	7398		0.50000	0.5121
* 76 d4-1,4-Dichlorobenzene	152	9.504	9.499	(1.000)	70324		10.0000	
77 1,4-Dichlorobenzene	146	9.514	9.515	(1.001)	8209		0.50000	0.5504
78 N-Butyl Benzene	91	9.700	9.701	(1.021)	10443		0.50000	0.4624
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.823	(1.034)	32815		5.00000	4.974
80 1,2-Dichlorobenzene	146	9.828	9.828	(1.034)	6488		0.50000	0.4936
81 1,2-Dibromo 3-Chloropropane	75	10.428	10.439	(1.097)	992		0.50000	1.030 (M)
83 Hexachloro 1,3-Butadiene	225	10.938	10.939	(1.151)	1297		0.50000	0.4971
84 1,2,4-Trichlorobenzene	180	10.965	10.960	(1.154)	4468		0.50000	0.5569
85 Naphthalene	128	11.220	11.220	(1.181)	7286		0.50000	0.5243
86 1,2,3-Trichlorobenzene	180	11.363	11.364	(1.196)	3131		0.50000	0.5024

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161920.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL2
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	71136	-3.46
37 1,4-Difluorobenze	116116	58058	232232	117017	0.78
53 d5-Chlorobenzene	124912	62456	249824	118769	-4.92
76 d4-1,4-Dichlorobe	77169	38585	154338	70324	-8.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.10
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161920.D

Lab ID: SHG0218-CAL2

nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 17:40

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.314	1.000	-0.6865	Dichlorodifluoromethane
0.349	1.000	-0.6511	Chloromethane
0.366	1.000	-0.6344	Vinyl Chloride
0.421	1.000	-0.5793	Bromomethane
0.442	1.000	-0.5577	Chloroethane
0.465	1.000	-0.5351	Trichlorofluoromethane
0.550	1.000	-0.4505	1,1-Dichloroethene
0.550	1.000	-0.4505	Carbon Disulfide
0.563	1.000	-0.4367	112Trichloro122Trifluoroethane
0.574	1.000	-0.4259	Iodomethane
0.599	1.000	-0.4013	Bromoethane
0.618	1.000	-0.3816	Acrolein
0.657	1.000	-0.3433	Methylene Chloride
0.677	1.000	-0.3226	Acetone
0.683	1.000	-0.3167	Trans-1,2-Dichloroethene
0.711	1.000	-0.2892	Methyl tert butyl ether
0.786	1.000	-0.2144	1,1-Dichloroethane
0.798	1.000	-0.2016	Acrylonitrile
0.830	1.000	-0.1702	Vinyl Acetate
0.867	1.000	-0.1328	Cis-1,2-Dichloroethene
0.881	1.000	-0.1190	2,2-Dichloropropane
0.896	1.000	-0.1043	Bromochloromethane
0.909	1.000	-0.0915	Chloroform
0.934	1.000	-0.0659	1,1,1-Trichloroethane
0.958	1.000	-0.0423	2-Butanone
0.933	1.000	-0.0669	Dibromofluoromethane
1.006	1.000	0.0059	d4-1,2-Dichloroethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

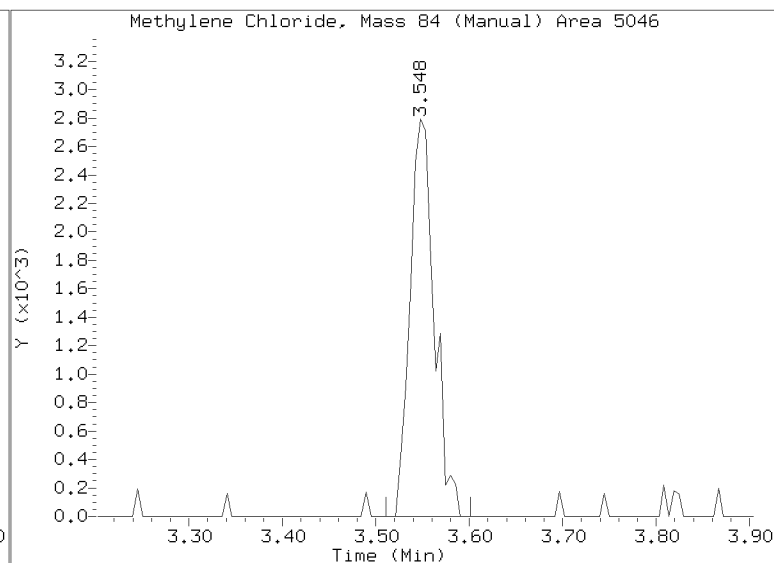
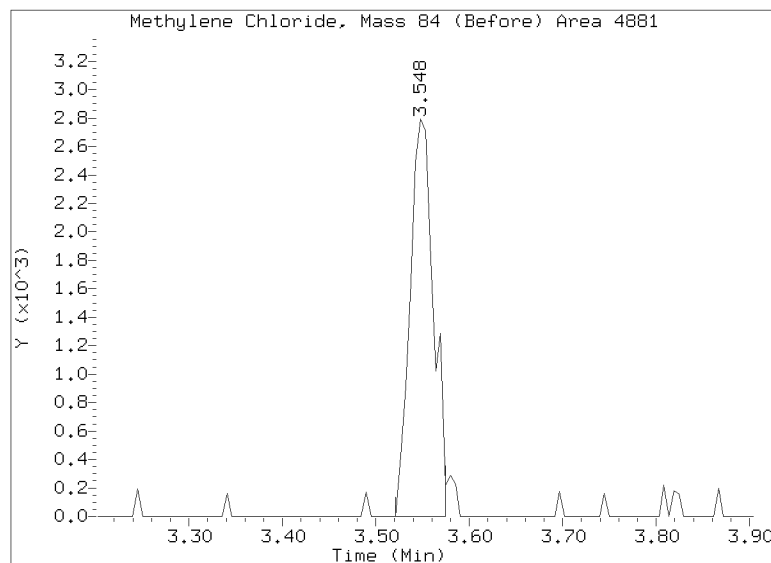
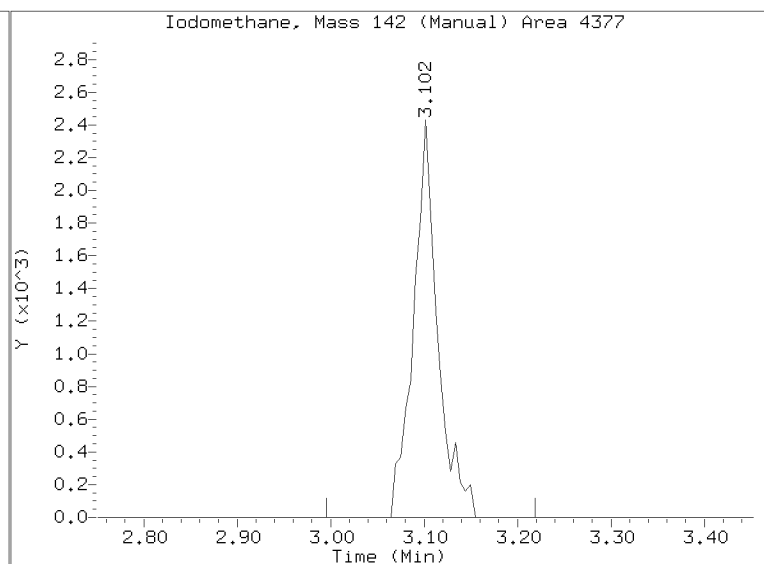
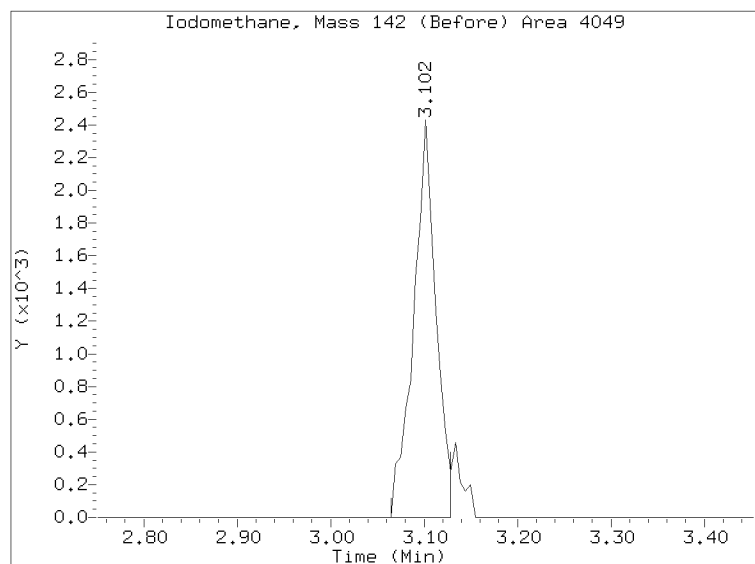
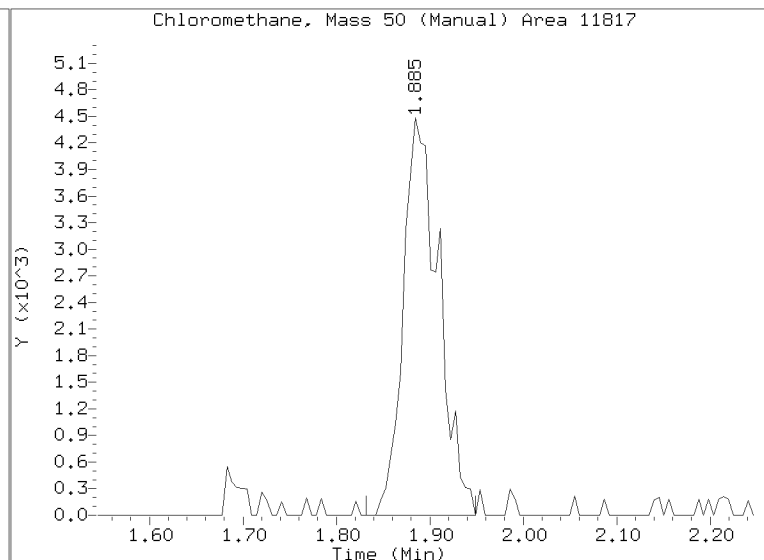
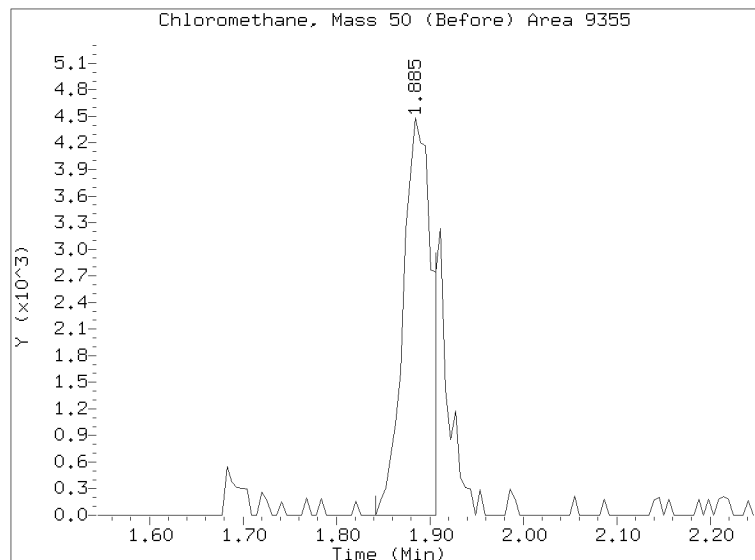
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161920.D

Injection Date: 16-JUL-2019 17:40

Lab ID: SHG0218-CAL2 Client ID:

Report Date: 07/17/2019 08:20



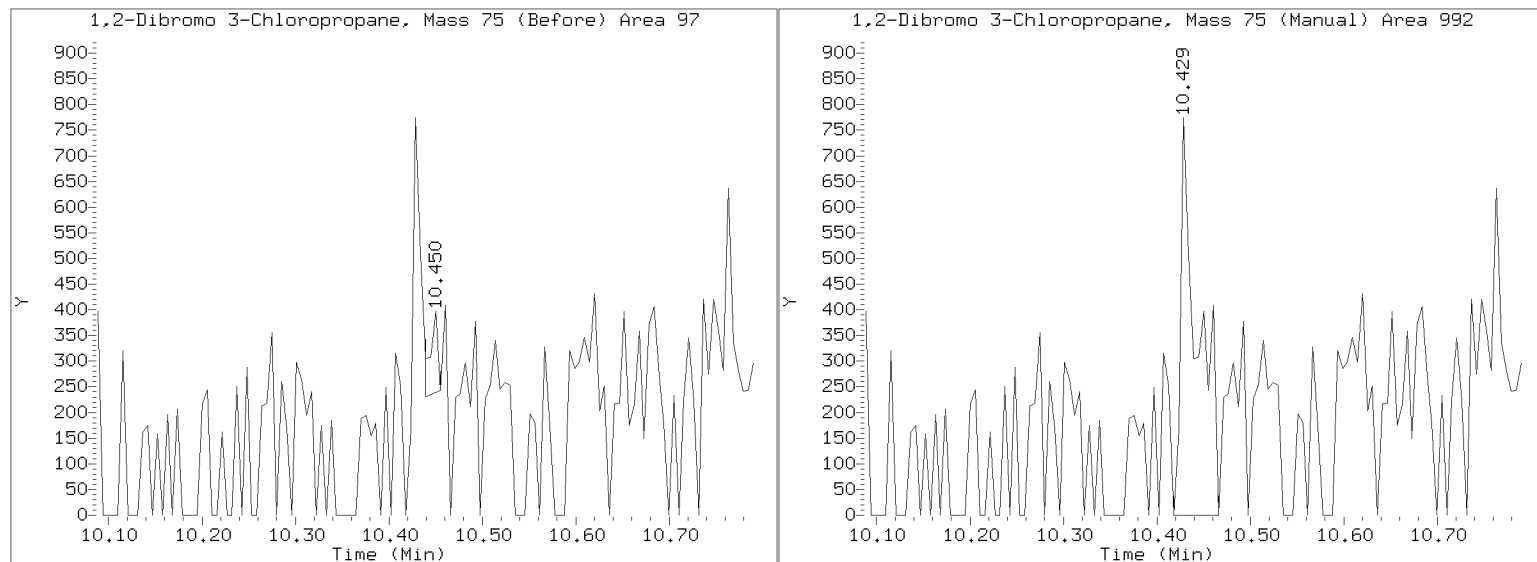
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161920.D

Injection Date: 16-JUL-2019 17:40

Lab ID: SHG0218-CAL2 Client ID:

Report Date: 07/17/2019 08:20



Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161921.D

Date : 16-JUL-2019 18:06

Client ID:

Sample Info: SHC0218-CAL3

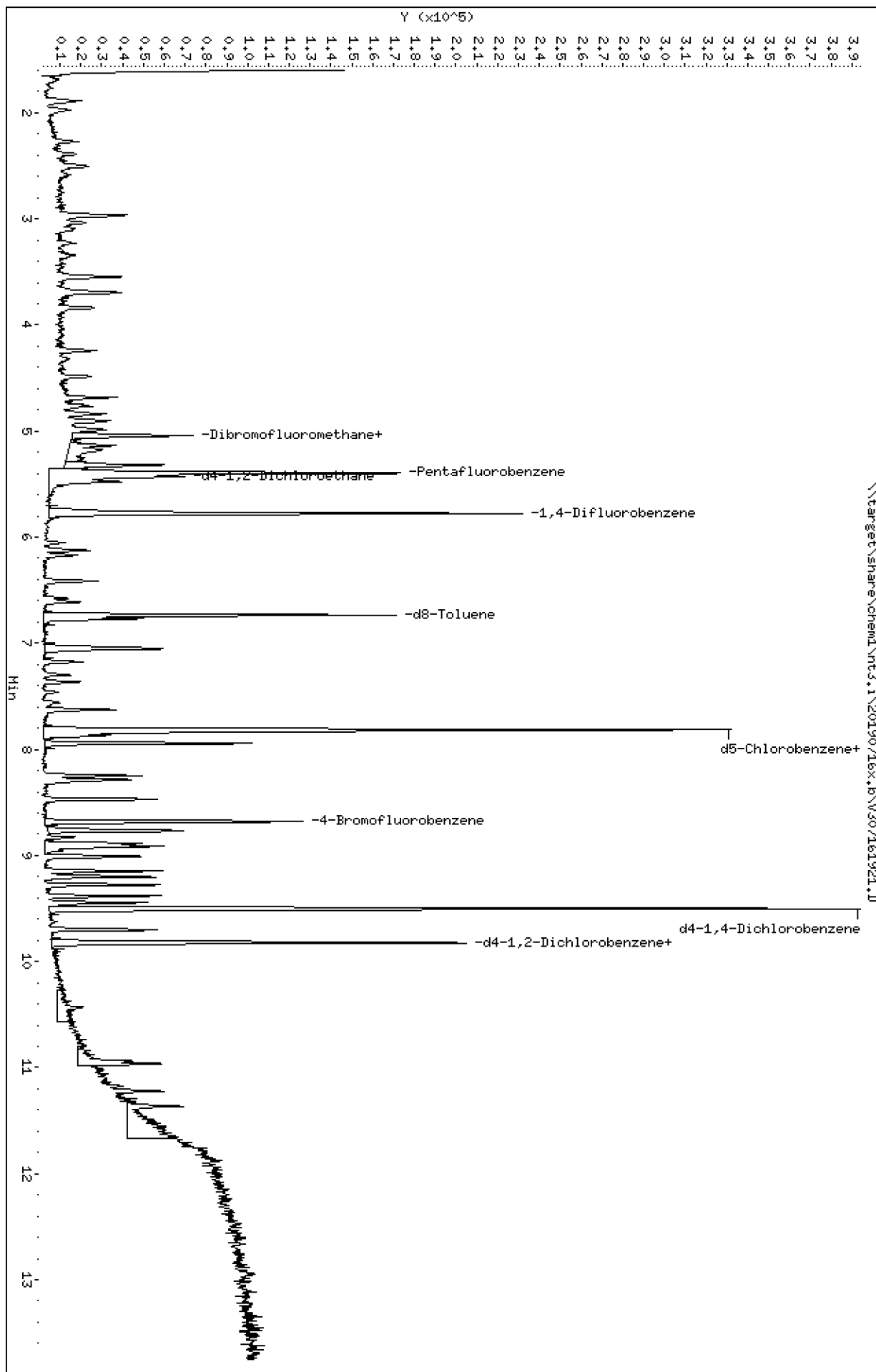
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161921.D
Lab Smp Id: SHG0218-CAL3
Inj Date : 16-JUL-2019 18:06
Operator : PKC
Smp Info : SHG0218-CAL3
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Meth Date : 17-Jul-2019 07:49 paul
Cal Date : 16-JUL-2019 18:06
Als bottle: 58
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i
Quant Type: ISTD
Cal File: V307161921.D
Calibration Sample, Level: 3
Compound Sublist: mdl.sub

Compounds	QUANT SIG	AMOUNTS					
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)
							ON-COL (ug/L)
1 Dichlorodifluoromethane	85		1.694	1.693 (0.314)		8408	1.00000
2 Chloromethane	50		1.885	1.895 (0.349)		20972	1.00000
3 Vinyl Chloride	62		1.970	1.980 (0.365)		13636	1.00000
4 Bromomethane	94		2.268	2.278 (0.420)		6374	1.00000
5 Chloroethane	64		2.390	2.394 (0.443)		6683	1.00000
6 Trichlorofluoromethane	101		2.502	2.506 (0.464)		10274	1.00000
7 1,1-Dichloroethene	61		2.964	2.968 (0.549)		14416	1.00000
8 Carbon Disulfide	76		2.969	2.979 (0.550)		18042	1.00000
9 112Trichloro122Trifluoroethane	101		3.033	3.043 (0.562)		5437	1.00000
10 Iodomethane	142		3.097	3.101 (0.574)		7810	1.00000
11 Bromoethane	108		3.219	3.223 (0.596)		4363	1.00000
12 Acrolein	56		3.346	3.330 (0.620)		7001	5.00000
13 Methylene Chloride	84		3.548	3.553 (0.657)		7814	1.00000
14 Acetone	43		3.692	3.633 (0.684)		12506	5.00000
15 Trans-1,2-Dichloroethene	96		3.692	3.702 (0.684)		6497	1.00000
17 Methyl tert butyl ether	73		3.841	3.829 (0.712)		12622	1.00000
18 1,1-Dichloroethane	63		4.239	4.243 (0.785)		14799	1.00000
19 Acrylonitrile	53		4.324	4.308 (0.801)		3286	1.00000
20 Vinyl Acetate	43		4.489	4.483 (0.832)		18021	1.00000
22 Cis-1,2-Dichloroethene	96		4.685	4.690 (0.868)		6393	1.00000
23 2,2-Dichloropropane	77		4.765	4.770 (0.883)		8351	1.00000
24 Bromochloromethane	128		4.834	4.844 (0.896)		2585	1.00000
25 Chloroform	83		4.903	4.908 (0.908)		10538	1.00000
26 Carbon Tetrachloride	117		4.988	4.998 (0.864)		8408	1.00000
\$ 27 Dibromofluoromethane	111		5.041	5.046 (0.934)		18653	5.00000
28 1,1,1-Trichloroethane	97		5.041	5.052 (0.934)		8722	1.00000
30 1,1-Dichloropropene	75		5.137	5.147 (0.890)		7861	1.00000
29 2-Butanone	43		5.180	5.158 (0.960)		19425	5.00000
31 Benzene	78		5.318	5.333 (0.921)		23091	1.00000
* 32 Pentafluorobenzene	168		5.397	5.408 (1.000)		71327	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.429	5.439 (1.006)		26785	5.00000
34 1,2-Dichloroethane	62		5.477	5.487 (0.948)		9445	1.00000
36 Trichloroethene	130		5.748	5.753 (0.995)		5799	1.00000
* 37 1,4-Difluorobenzene	114		5.775	5.785 (1.000)		123080	10.0000

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.046	6.061	(1.047)	3197		1.00000	1.115
39 1,2-Dichloropropane	63	6.125	6.125	(1.061)	7716		1.00000	0.9571
40 Bromodichloromethane	83	6.168	6.173	(1.068)	7638		1.00000	1.012
173 2-Pentanone	86	6.402	6.396	(1.109)	2608		5.00000	5.036
41 2-Chloroethyl Vinyl Ether	63	6.577	6.577	(1.139)	2988		1.00000	0.8977
42 Cis 1,3-dichloropropene	75	6.614	6.614	(1.145)	9478		1.00000	0.9924
\$ 43 d8-Toluene	98	6.736	6.736	(1.167)	79087		5.00000	4.898
44 Toluene	92	6.774	6.773	(1.173)	14667		1.00000	0.9378
46 Tetrachloroethene	166	7.034	7.039	(0.900)	6391		1.00000	1.038
45 4-Methyl-2-Pentanone	58	7.050	7.044	(1.221)	10645		5.00000	4.704
47 Trans 1,3-Dichloropropene	75	7.066	7.065	(1.224)	7349		1.00000	0.9322
48 1,1,2-Trichloroethane	97	7.177	7.177	(1.243)	3929		1.00000	0.9394
49 Chlorodibromomethane	129	7.300	7.299	(0.934)	4283		1.00000	0.9014
50 1,3-Dichloropropane	76	7.369	7.363	(0.943)	7540		1.00000	0.9679
51 1,2-Dibromoethane	107	7.459	7.459	(1.292)	3874		1.00000	0.9873
52 2-Hexanone	43	7.624	7.618	(0.976)	23920		5.00000	4.751
* 53 d5-Chlorobenzene	117	7.815	7.815	(1.000)	126339		10.0000	
54 Chlorobenzene	112	7.826	7.825	(1.001)	16702		1.00000	0.9690
55 Ethyl Benzene	106	7.836	7.841	(1.003)	8285		1.00000	0.9006
56 1,1,1,2-Tetrachloroethane	131	7.868	7.873	(1.007)	5833		1.00000	0.9716
57 m,p-xylene	106	7.942	7.947	(1.016)	21097		2.00000	1.832
58 o-Xylene	106	8.245	8.250	(1.055)	9825		1.00000	0.8702
59 Styrene	104	8.288	8.287	(1.061)	13468		1.00000	0.7832
60 Bromoform	173	8.314	8.308	(0.875)	2514		1.00000	0.9495
61 Isopropyl Benzene	105	8.474	8.473	(0.892)	26693		1.00000	0.9590
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	23842		5.00000	4.753
63 Bromobenzene	156	8.761	8.760	(0.922)	6335		1.00000	0.9228
64 N-Propyl Benzene	91	8.771	8.771	(0.923)	32793		1.00000	0.9396
65 1,1,2,2-Tetrachloroethane	83	8.825	8.824	(0.929)	5711		1.00000	1.065
66 2-Chloro Toluene	91	8.888	8.888	(0.936)	23021		1.00000	0.9501
67 1,3,5-Trimethyl Benzene	105	8.910	8.914	(0.938)	21882		1.00000	0.8892
68 1,2,3-Trichloropropane	110	8.931	8.930	(0.940)	1571		1.00000	1.018
69 Trans-1,4-Dichloro 2-Butene	53	8.957	8.957	(0.943)	2505		1.00000	1.005
70 4-Chloro Toluene	91	9.005	9.010	(0.948)	21150		1.00000	0.9392
71 T-Butyl Benzene	119	9.149	9.148	(0.963)	18966		1.00000	0.9360
72 1,2,4-Trimethylbenzene	105	9.202	9.201	(0.969)	22396		1.00000	0.8990
73 S-Butyl Benzene	105	9.276	9.281	(0.977)	28281		1.00000	0.9336
74 4-Isopropyl Toluene	119	9.382	9.382	(0.988)	22397		1.00000	0.8631
75 1,3-Dichlorobenzene	146	9.446	9.446	(0.994)	14868		1.00000	0.9803
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499	(1.000)	73828		10.0000	
77 1,4-Dichlorobenzene	146	9.515	9.515	(1.002)	15342		1.00000	0.9798
78 N-Butyl Benzene	91	9.701	9.701	(1.021)	21851		1.00000	0.9216
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.823	(1.034)	34793		5.00000	5.024
80 1,2-Dichlorobenzene	146	9.829	9.828	(1.035)	13583		1.00000	0.9843
81 1,2-Dibromo 3-Chloropropane	75	10.440	10.439	(1.099)	1472		1.00000	1.456 (M)
83 Hexachloro 1,3-Butadiene	225	10.939	10.939	(1.152)	2674		1.00000	0.9762
84 1,2,4-Trichlorobenzene	180	10.960	10.960	(1.154)	7338		1.00000	0.8712
85 Naphthalene	128	11.221	11.220	(1.181)	13218		1.00000	0.9060
86 1,2,3-Trichlorobenzene	180	11.364	11.364	(1.196)	6166		1.00000	0.9424

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161921.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL3
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	71327	-3.20
37 1,4-Difluorobenze	116116	58058	232232	123080	6.00
53 d5-Chlorobenzene	124912	62456	249824	126339	1.14
76 d4-1,4-Dichlorobe	77169	38585	154338	73828	-4.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.18
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.17
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161921.D

Lab ID: SHG0218-CAL3

nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 18:06

RT	CO-ELUTION COMPOUNDS
3.692	Acetone and Trans-1,2-Dichloroethene
3.692	Trans-1,2-Dichloroethene and Acetone
5.042	Dibromofluoromethane and 1,1,1-Trichloroethane

Quant Method: ICAL

RRT CHECK			
RRT	CCV RRT	DELTA	COMPOUND
0.314	1.000	-0.6861	Dichlorodifluoromethane
0.349	1.000	-0.6506	Chloromethane
0.365	1.000	-0.6349	Vinyl Chloride
0.420	1.000	-0.5798	Bromomethane
0.443	1.000	-0.5571	Chloroethane
0.464	1.000	-0.5365	Trichlorofluoromethane
0.549	1.000	-0.4508	1,1-Dichloroethene
0.550	1.000	-0.4498	Carbon Disulfide
0.562	1.000	-0.4380	1,1,2-Trichloroethane
0.574	1.000	-0.4262	Iodomethane
0.596	1.000	-0.4036	Bromoethane
0.620	1.000	-0.3800	Acrolein
0.657	1.000	-0.3426	Methylene Chloride
0.684	1.000	-0.3160	Acetone
0.684	1.000	-0.3160	Trans-1,2-Dichloroethene
0.712	1.000	-0.2884	Methyl tert butyl ether
0.785	1.000	-0.2146	1,1-Dichloroethane
0.801	1.000	-0.1988	Acrylonitrile
0.832	1.000	-0.1683	Vinyl Acetate
0.868	1.000	-0.1319	Cis-1,2-Dichloroethene
0.883	1.000	-0.1171	2,2-Dichloropropane
0.896	1.000	-0.1044	Bromochloromethane
0.908	1.000	-0.0916	Chloroform
0.934	1.000	-0.0659	1,1,1-Trichloroethane
0.960	1.000	-0.0404	2-Butanone
0.934	1.000	-0.0659	Dibromofluoromethane
1.006	1.000	0.0059	d4-1,2-Dichloroethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

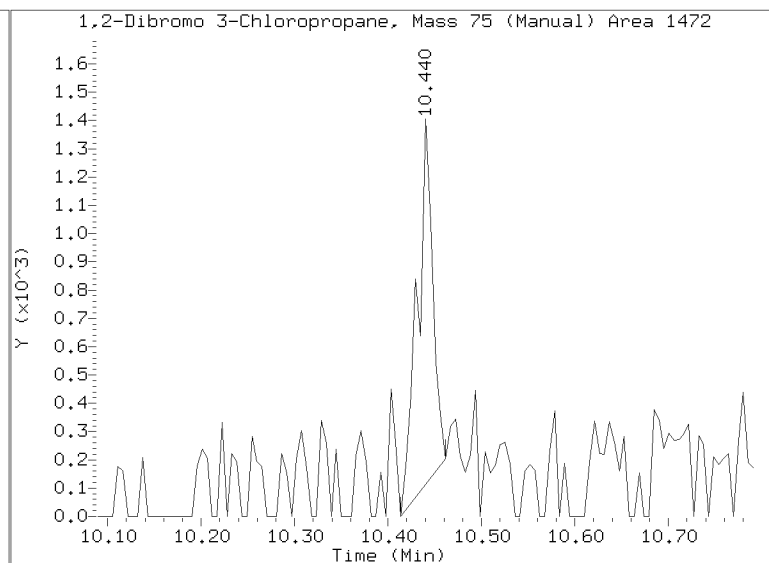
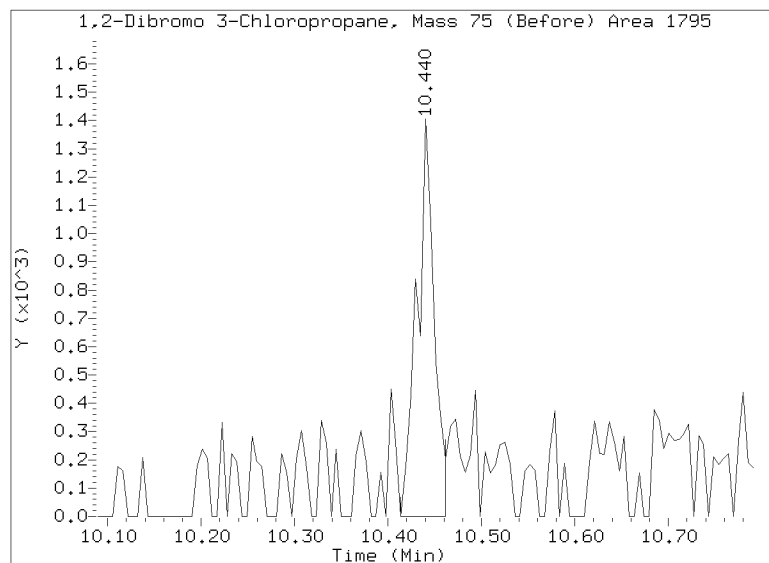
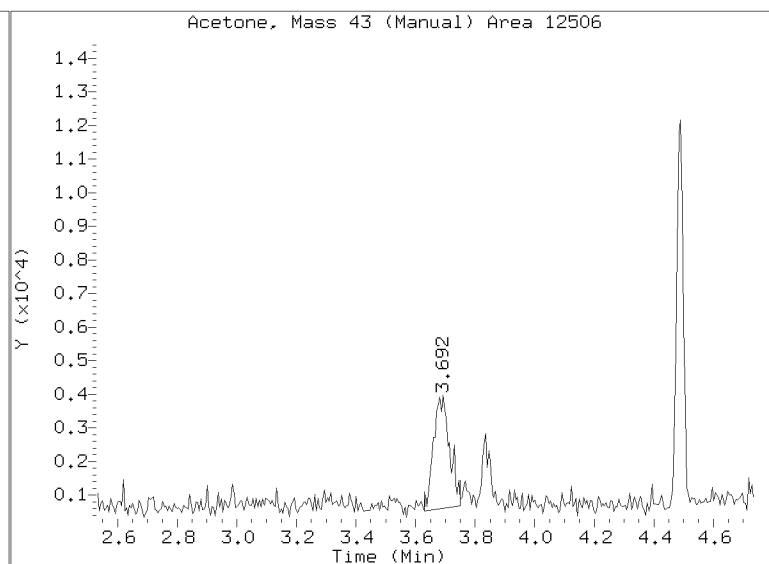
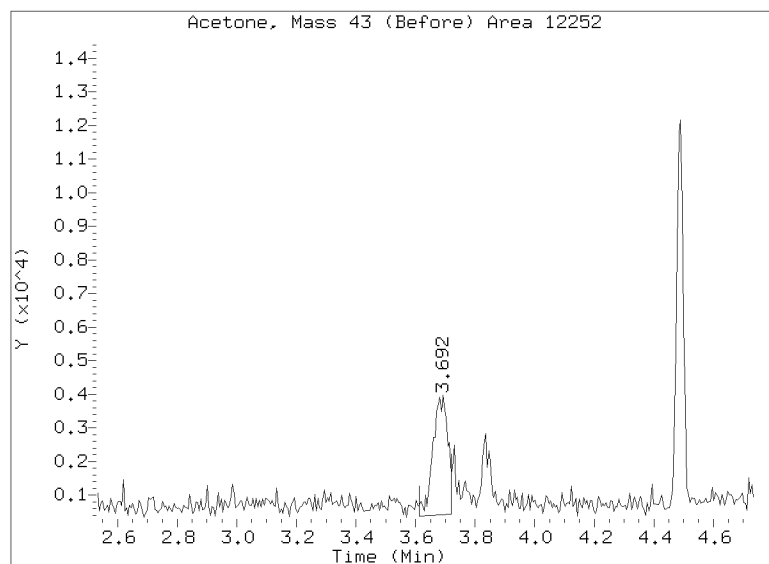
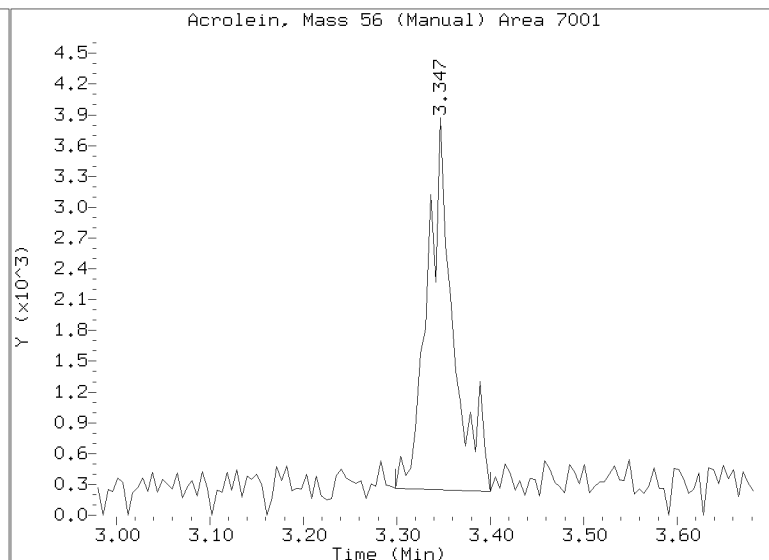
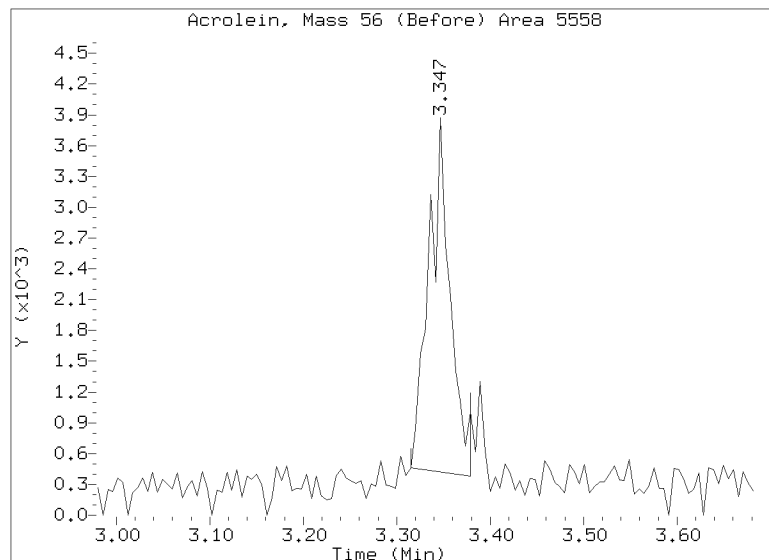
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161921.D

Injection Date: 16-JUL-2019 18:06

Lab ID: SHG0218-CAL3 Client ID:

Report Date: 07/17/2019 08:20



Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161922.D

Date : 16-JUL-2019 18:33

Client ID:

Sample Info: SHC0218-CAL4

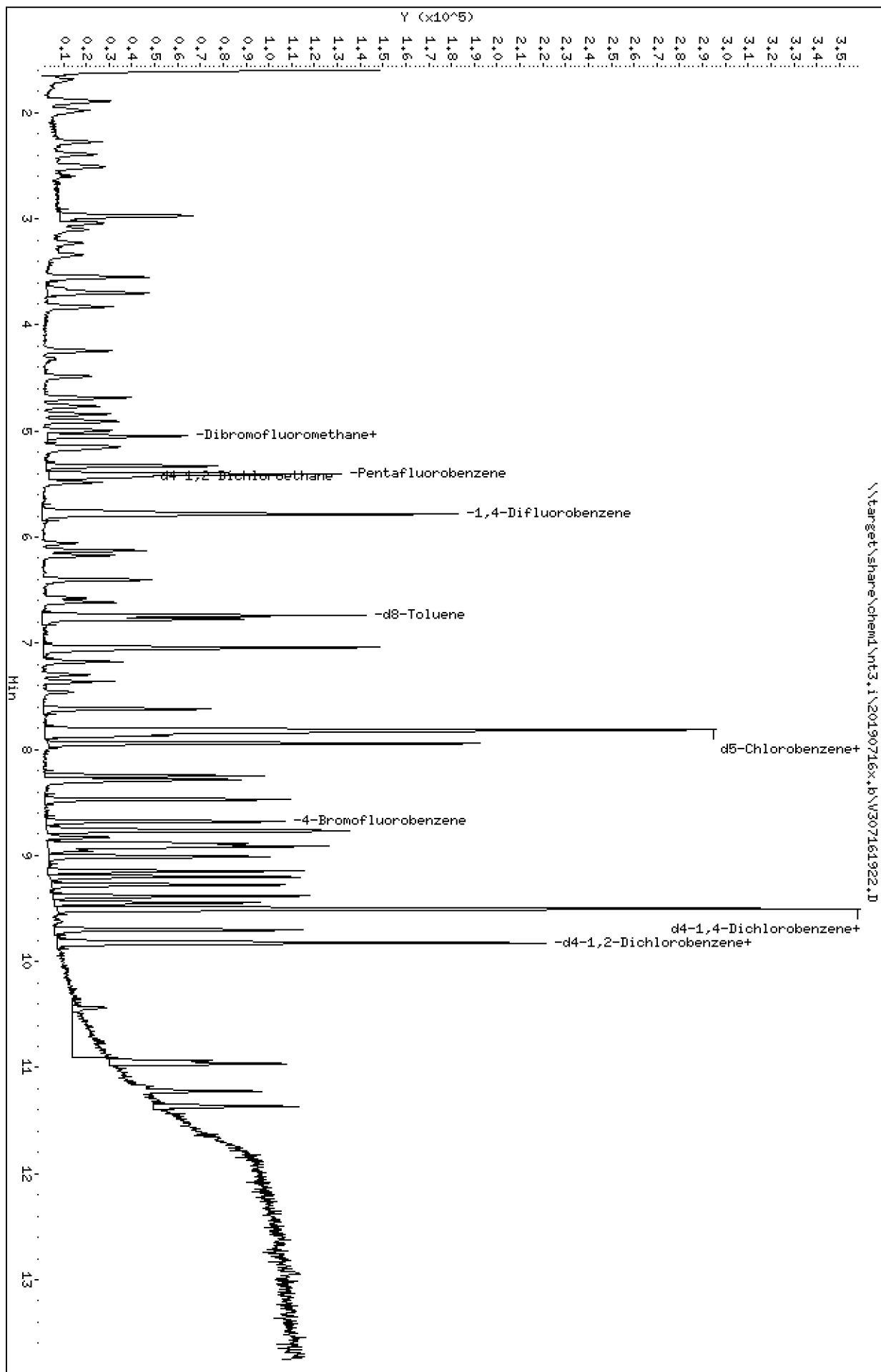
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161922.D
Lab Smp Id: SHG0218-CAL4
Inj Date : 16-JUL-2019 18:33
Operator : PKC
Smp Info : SHG0218-CAL4
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Meth Date : 17-Jul-2019 07:49 paul
Cal Date : 16-JUL-2019 18:33
Als bottle: 59
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i
Quant Type: ISTD
Cal File: V307161922.D
Calibration Sample, Level: 4
Compound Sublist: mdl.sub

						AMOUNTS	
QUANT SIG						CAL-AMT	ON-COL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	1.689	1.693	(0.312)	15442	2.00000	2.284
2 Chloromethane	50	1.891	1.895	(0.350)	39001	2.00000	2.146
3 Vinyl Chloride	62	1.976	1.980	(0.365)	25799	2.00000	2.109
4 Bromomethane	94	2.278	2.278	(0.421)	11631	2.00000	2.297
5 Chloroethane	64	2.385	2.394	(0.441)	13603	2.00000	2.215
6 Trichlorofluoromethane	101	2.507	2.506	(0.464)	20175	2.00000	2.344
7 1,1-Dichloroethene	61	2.969	2.968	(0.549)	27574	2.00000	2.244
8 Carbon Disulfide	76	2.974	2.979	(0.550)	35188	2.00000	2.308
9 112Trichloro122Trifluoroethane	101	3.038	3.043	(0.562)	10647	2.00000	2.331
10 Iodomethane	142	3.102	3.101	(0.574)	16166	2.00000	2.275
11 Bromoethane	108	3.224	3.223	(0.596)	7826	2.00000	2.309
12 Acrolein	56	3.336	3.330	(0.617)	14766	10.0000	14.393
13 Methylene Chloride	84	3.548	3.553	(0.656)	13612	2.00000	2.726
14 Acetone	43	3.665	3.633	(0.678)	23951	10.0000	14.484
15 Trans-1,2-Dichloroethene	96	3.697	3.702	(0.684)	12157	2.00000	2.249
17 Methyl tert butyl ether	73	3.830	3.829	(0.708)	23060	2.00000	2.273
18 1,1-Dichloroethane	63	4.244	4.243	(0.785)	27315	2.00000	2.212
19 Acrylonitrile	53	4.324	4.308	(0.800)	4493	2.00000	2.397 (T)
20 Vinyl Acetate	43	4.483	4.483	(0.829)	29167	2.00000	2.094
22 Cis-1,2-Dichloroethene	96	4.685	4.690	(0.866)	12027	2.00000	2.222
23 2,2-Dichloropropane	77	4.765	4.770	(0.881)	12389	2.00000	2.465
24 Bromochloromethane	128	4.839	4.844	(0.895)	5090	2.00000	2.339
25 Chloroform	83	4.909	4.908	(0.908)	19142	2.00000	2.162
26 Carbon Tetrachloride	117	4.994	4.998	(0.863)	15195	2.00000	2.212
\$ 27 Dibromofluoromethane	111	5.047	5.046	(0.933)	16425	5.00000	5.122
28 1,1,1-Trichloroethane	97	5.047	5.052	(0.933)	17932	2.00000	2.287
30 1,1-Dichloropropene	75	5.148	5.147	(0.890)	15384	2.00000	2.244
29 2-Butanone	43	5.169	5.158	(0.956)	30873	10.0000	10.771
31 Benzene	78	5.328	5.333	(0.921)	46830	2.00000	2.282
* 32 Pentafluorobenzene	168	5.408	5.408	(1.000)	62674	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.435	5.439	(1.005)	20739	5.00000	4.911
34 1,2-Dichloroethane	62	5.488	5.487	(0.949)	16092	2.00000	2.239
36 Trichloroethene	130	5.759	5.753	(0.995)	10752	2.00000	2.266
* 37 1,4-Difluorobenzene	114	5.785	5.785	(1.000)	101242	10.0000	

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.056	6.061 (1.047)		4984		2.00000	2.113
39 1,2-Dichloropropane	63	6.125	6.125 (1.059)		15377		2.00000	2.319
40 Bromodichloromethane	83	6.173	6.173 (1.067)		14508		2.00000	2.338
173 2-Pentanone	86	6.402	6.396 (1.107)		4665		10.0000	10.951
41 2-Chloroethyl Vinyl Ether	63	6.577	6.577 (1.137)		5554		2.00000	2.029
42 Cis 1,3-dichloropropene	75	6.614	6.614 (1.143)		18025		2.00000	2.294
\$ 43 d8-Toluene	98	6.736	6.736 (1.164)		66606		5.00000	5.014
44 Toluene	92	6.774	6.773 (1.171)		27966		2.00000	2.174
46 Tetrachloroethene	166	7.039	7.039 (0.901)		11293		2.00000	2.206
45 4-Methyl-2-Pentanone	58	7.044	7.044 (1.218)		20361		10.0000	10.939
47 Trans 1,3-Dichloropropene	75	7.060	7.065 (1.220)		14755		2.00000	2.275
48 1,1,2-Trichloroethane	97	7.172	7.177 (1.240)		7956		2.00000	2.312
49 Chlorodibromomethane	129	7.294	7.299 (0.933)		8547		2.00000	2.164
50 1,3-Dichloropropane	76	7.363	7.363 (0.942)		14826		2.00000	2.290
51 1,2-Dibromoethane	107	7.464	7.459 (1.290)		7493		2.00000	2.322
52 2-Hexanone	43	7.618	7.618 (0.975)		47445		10.0000	11.337
* 53 d5-Chlorobenzene	117	7.815	7.815 (1.000)		105009		10.0000	
54 Chlorobenzene	112	7.826	7.825 (1.001)		33423		2.00000	2.333
55 Ethyl Benzene	106	7.841	7.841 (1.003)		15690		2.00000	2.052
56 1,1,1,2-Tetrachloroethane	131	7.868	7.873 (1.007)		11019		2.00000	2.208
57 m,p-xylene	106	7.942	7.947 (1.016)		40996		4.00000	4.283
58 o-Xylene	106	8.251	8.250 (1.056)		21012		2.00000	2.239
59 Styrene	104	8.288	8.287 (1.061)		30020		2.00000	2.100
60 Bromoform	173	8.314	8.308 (0.875)		5263		2.00000	2.284
61 Isopropyl Benzene	105	8.474	8.473 (0.892)		55220		2.00000	2.279
\$ 62 4-Bromofluorobenzene	174	8.681	8.680 (1.111)		20961		5.00000	5.027
63 Bromobenzene	156	8.761	8.760 (0.922)		13425		2.00000	2.247
64 N-Propyl Benzene	91	8.771	8.771 (0.923)		67370		2.00000	2.218
65 1,1,2,2-Tetrachloroethane	83	8.824	8.824 (0.929)		10784		2.00000	2.311
66 2-Chloro Toluene	91	8.888	8.888 (0.936)		46923		2.00000	2.225
67 1,3,5-Trimethyl Benzene	105	8.915	8.914 (0.938)		47644		2.00000	2.224
68 1,2,3-Trichloropropane	110	8.931	8.930 (0.940)		2901		2.00000	2.160
69 Trans-1,4-Dichloro 2-Butene	53	8.957	8.957 (0.943)		5285		2.00000	2.435
70 4-Chloro Toluene	91	9.010	9.010 (0.949)		44290		2.00000	2.260
71 T-Butyl Benzene	119	9.149	9.148 (0.963)		37582		2.00000	2.131
72 1,2,4-Trimethylbenzene	105	9.202	9.201 (0.969)		47773		2.00000	2.203
73 S-Butyl Benzene	105	9.276	9.281 (0.977)		58257		2.00000	2.209
74 4-Isopropyl Toluene	119	9.382	9.382 (0.988)		50227		2.00000	2.224
75 1,3-Dichlorobenzene	146	9.446	9.446 (0.994)		29695		2.00000	2.249
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499 (1.000)		64261		10.0000	
77 1,4-Dichlorobenzene	146	9.510	9.515 (1.001)		30978		2.00000	2.273
78 N-Butyl Benzene	91	9.701	9.701 (1.021)		46482		2.00000	2.252
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.823 (1.034)		30546		5.00000	5.067
80 1,2-Dichlorobenzene	146	9.829	9.828 (1.035)		27425		2.00000	2.283
81 1,2-Dibromo 3-Chloropropane	75	10.434	10.439 (1.098)		2069		2.00000	2.351
83 Hexachloro 1,3-Butadiene	225	10.939	10.939 (1.152)		5720		2.00000	2.399
84 1,2,4-Trichlorobenzene	180	10.966	10.960 (1.154)		18159		2.00000	2.477
85 Naphthalene	128	11.221	11.220 (1.181)		30461		2.00000	2.399
86 1,2,3-Trichlorobenzene	180	11.364	11.364 (1.196)		14114		2.00000	2.478

QC Flag Legend

T - Target compound detected outside RT window.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161922.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL4
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	62674	-14.95
37 1,4-Difluorobenze	116116	58058	232232	101242	-12.81
53 d5-Chlorobenzene	124912	62456	249824	105009	-15.93
76 d4-1,4-Dichlorobe	77169	38585	154338	64261	-16.73

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.02
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161922.D

Lab ID: SHG0218-CAL4

nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 18:33

RT	CO-ELUTION COMPOUNDS
5.047	Dibromofluoromethane and 1,1,1-Trichloroethane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.312	1.000	-0.6877	Dichlorodifluoromethane
0.350	1.000	-0.6504	Chloromethane
0.365	1.000	-0.6346	Vinyl Chloride
0.421	1.000	-0.5787	Bromomethane
0.441	1.000	-0.5590	Chloroethane
0.464	1.000	-0.5364	Trichlorofluoromethane
0.549	1.000	-0.4509	1,1-Dichloroethene
0.550	1.000	-0.4499	Carbon Disulfide
0.562	1.000	-0.4382	1,1,2-Trichloro-2,2,2-trifluoroethane
0.574	1.000	-0.4264	Iodomethane
0.596	1.000	-0.4038	Bromoethane
0.617	1.000	-0.3831	Acrolein
0.656	1.000	-0.3438	Methylene Chloride
0.678	1.000	-0.3222	Acetone
0.684	1.000	-0.3164	Trans-1,2-Dichloroethene
0.708	1.000	-0.2918	Methyl tert butyl ether
0.785	1.000	-0.2151	1,1-Dichloroethane
0.800	1.000	-0.2004	Acrylonitrile
0.829	1.000	-0.1710	Vinyl Acetate
0.866	1.000	-0.1336	Cis-1,2-Dichloroethene
0.881	1.000	-0.1189	2,2-Dichloropropane
0.895	1.000	-0.1051	Bromochloromethane
0.908	1.000	-0.0924	Chloroform
0.933	1.000	-0.0668	1,1,1-Trichloroethane
0.956	1.000	-0.0442	2-Butanone
0.933	1.000	-0.0668	Dibromofluoromethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161923.D

Date : 16-JUL-2019 18:59

Client ID:

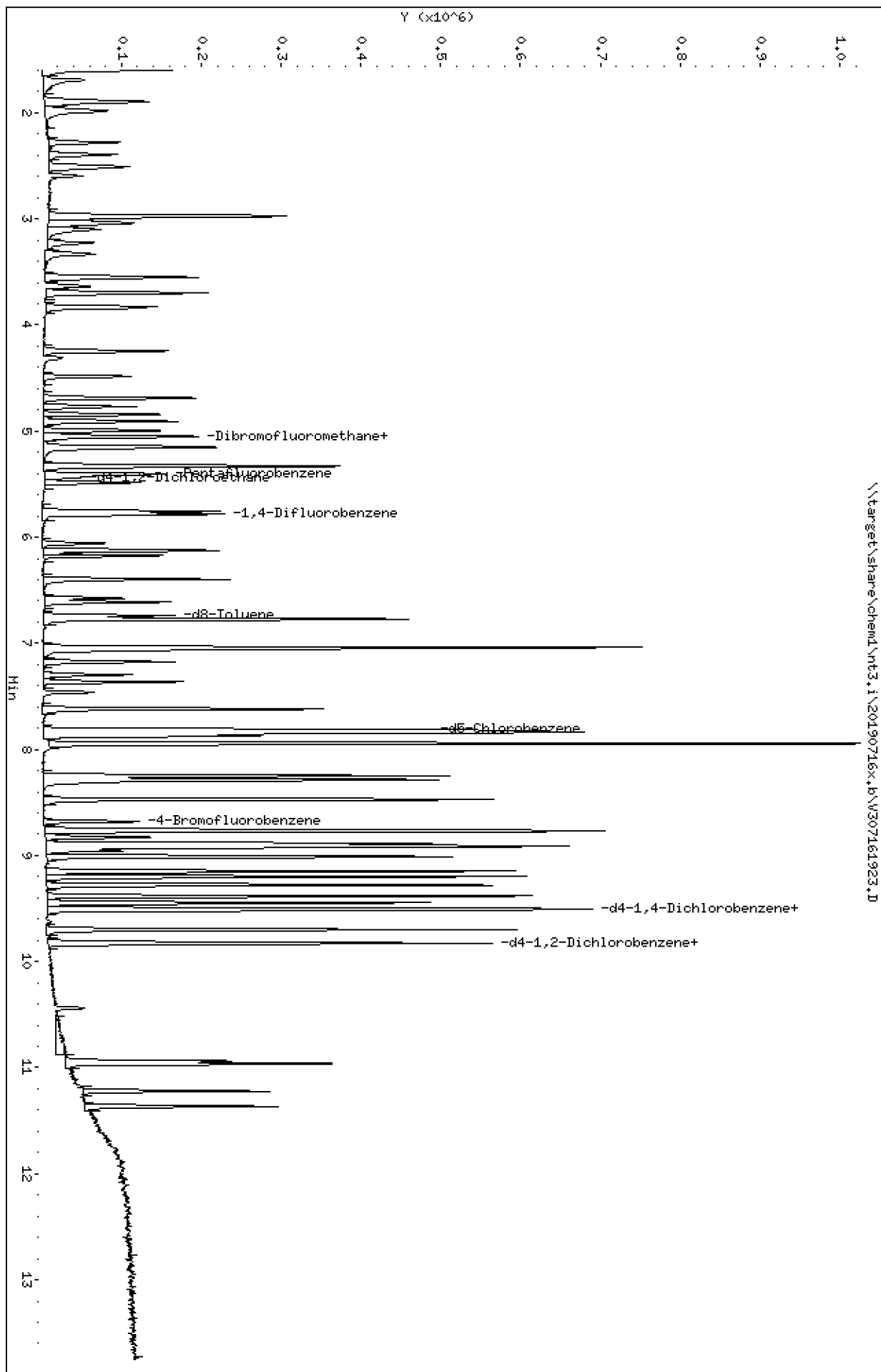
Sample Info: SHC0218-CAL5

Column phase: RTXVMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161923.D
Lab Smp Id: SHG0218-CAL5
Inj Date : 16-JUL-2019 18:59
Operator : PKC
Smp Info : SHG0218-CAL5
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Meth Date : 17-Jul-2019 07:49 paul
Cal Date : 16-JUL-2019 18:59
Als bottle: 60
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i

Quant Type: ISTD
Cal File: V307161923.D
Calibration Sample, Level: 5
Compound Sublist: mdl.sub

Compounds	QUANT SIG	AMOUNTS					
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)
							ON-COL (ug/L)
1 Dichlorodifluoromethane	85		1.693	1.693 (0.313)		79560	10.0000
2 Chloromethane	50		1.895	1.895 (0.351)		202290	9.465
3 Vinyl Chloride	62		1.980	1.980 (0.366)		137543	9.565 (M)
4 Bromomethane	94		2.278	2.278 (0.421)		54982	9.234
5 Chloroethane	64		2.394	2.394 (0.443)		68858	9.536
6 Trichlorofluoromethane	101		2.506	2.506 (0.464)		97448	9.631
7 1,1-Dichloroethene	61		2.968	2.968 (0.549)		139303	9.641
8 Carbon Disulfide	76		2.979	2.979 (0.551)		170414	9.506
9 112Trichloro122Trifluoroethane	101		3.043	3.043 (0.563)		53278	9.923
10 Iodomethane	142		3.101	3.101 (0.574)		79565	9.524
11 Bromoethane	108		3.223	3.223 (0.596)		36623	9.192 (M)
12 Acrolein	56		3.330	3.330 (0.616)		54460	45.151
13 Methylene Chloride	84		3.553	3.553 (0.657)		59781	10.182
14 Acetone	43		3.632	3.633 (0.672)		82909	42.643
15 Trans-1,2-Dichloroethene	96		3.702	3.702 (0.685)		59207	9.316
17 Methyl tert butyl ether	73		3.829	3.829 (0.708)		105033	8.808
18 1,1-Dichloroethane	63		4.243	4.243 (0.785)		138034	9.507
19 Acrylonitrile	53		4.307	4.308 (0.797)		19553	8.871
20 Vinyl Acetate	43		4.483	4.483 (0.829)		142276	8.689
22 Cis-1,2-Dichloroethene	96		4.690	4.690 (0.867)		59214	9.303
23 2,2-Dichloropropane	77		4.769	4.770 (0.882)		57347	9.705
24 Bromochloromethane	128		4.844	4.844 (0.896)		23772	9.293
25 Chloroform	83		4.908	4.908 (0.908)		97413	9.356
26 Carbon Tetrachloride	117		4.998	4.998 (0.864)		78897	10.016
\$ 27 Dibromofluoromethane	111		5.046	5.046 (0.933)		18224	4.833
28 1,1,1-Trichloroethane	97		5.051	5.052 (0.934)		86547	9.387
30 1,1-Dichloropropene	75		5.147	5.147 (0.890)		78086	9.931
29 2-Butanone	43		5.157	5.158 (0.954)		140207	41.605
31 Benzene	78		5.333	5.333 (0.922)		237832	10.105
* 32 Pentafluorobenzene	168		5.407	5.408 (1.000)		73687	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.439	5.439 (1.006)		24586	4.951
34 1,2-Dichloroethane	62		5.487	5.487 (0.949)		77185	9.366
36 Trichloroethene	130		5.752	5.753 (0.994)		54380	9.994
* 37 1,4-Difluorobenzene	114		5.784	5.785 (1.000)		116116	10.0000

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.061	6.061	(1.048)	24809		10.0000	9.171
39 1,2-Dichloropropane	63	6.124	6.125	(1.059)	75889		10.0000	9.978
40 Bromodichloromethane	83	6.172	6.173	(1.067)	68581		10.0000	9.635
173 2-Pentanone	86	6.395	6.396	(1.106)	21730		50.0000	44.478
41 2-Chloroethyl Vinyl Ether	63	6.576	6.577	(1.137)	30037		10.0000	9.566
42 Cis 1,3-dichloropropene	75	6.613	6.614	(1.143)	90299		10.0000	10.022
\$ 43 d8-Toluene	98	6.735	6.736	(1.164)	77674		5.00000	5.099
44 Toluene	92	6.773	6.773	(1.171)	145893		10.0000	9.887
46 Tetrachloroethene	166	7.038	7.039	(0.901)	58390		10.0000	9.590
45 4-Methyl-2-Pentanone	58	7.044	7.044	(1.218)	100444		50.0000	47.051
47 Trans 1,3-Dichloropropene	75	7.065	7.065	(1.221)	80612		10.0000	10.839
48 1,1,2-Trichloroethane	97	7.176	7.177	(1.241)	41435		10.0000	10.501
49 Chlorodibromomethane	129	7.299	7.299	(0.934)	43837		10.0000	9.331
50 1,3-Dichloropropane	76	7.362	7.363	(0.942)	73201		10.0000	9.504
51 1,2-Dibromoethane	107	7.458	7.459	(1.289)	37051		10.0000	10.009
52 2-Hexanone	43	7.617	7.618	(0.975)	224247		50.0000	45.044
* 53 d5-Chlorobenzene	117	7.814	7.815	(1.000)	124912		10.0000	
54 Chlorobenzene	112	7.825	7.825	(1.001)	166900		10.0000	9.793
55 Ethyl Benzene	106	7.841	7.841	(1.003)	90973		10.0000	10.002
56 1,1,1,2-Tetrachloroethane	131	7.872	7.873	(1.007)	55852		10.0000	9.409
57 m,p-xylene	106	7.947	7.947	(1.017)	227048		20.0000	19.941
58 o-Xylene	106	8.250	8.250	(1.056)	111091		10.0000	9.952
59 Styrene	104	8.287	8.287	(1.061)	177393		10.0000	10.433
60 Bromoform	173	8.308	8.308	(0.875)	26236		10.0000	9.480
61 Isopropyl Benzene	105	8.473	8.473	(0.892)	291913		10.0000	10.034
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	23805		5.00000	4.799
63 Bromobenzene	156	8.760	8.760	(0.922)	71379		10.0000	9.948
64 N-Propyl Benzene	91	8.770	8.771	(0.923)	358977		10.0000	9.840
65 1,1,2,2-Tetrachloroethane	83	8.824	8.824	(0.929)	53269		10.0000	9.506
66 2-Chloro Toluene	91	8.887	8.888	(0.936)	244533		10.0000	9.656
67 1,3,5-Trimethyl Benzene	105	8.914	8.914	(0.938)	261769		10.0000	10.177
68 1,2,3-Trichloropropane	110	8.930	8.930	(0.940)	16106		10.0000	9.986
69 Trans-1,4-Dichloro 2-Butene	53	8.956	8.957	(0.943)	24414		10.0000	9.367 (M)
70 4-Chloro Toluene	91	9.010	9.010	(0.949)	232865		10.0000	9.893
71 T-Butyl Benzene	119	9.148	9.148	(0.963)	211256		10.0000	9.974
72 1,2,4-Trimethylbenzene	105	9.201	9.201	(0.969)	266240		10.0000	10.225
73 S-Butyl Benzene	105	9.281	9.281	(0.977)	318222		10.0000	10.050
74 4-Isopropyl Toluene	119	9.381	9.382	(0.988)	269325		10.0000	9.929
75 1,3-Dichlorobenzene	146	9.445	9.446	(0.994)	155490		10.0000	9.808
* 76 d4-1,4-Dichlorobenzene	152	9.498	9.499	(1.000)	77169		10.0000	
77 1,4-Dichlorobenzene	146	9.514	9.515	(1.002)	156649		10.0000	9.571
78 N-Butyl Benzene	91	9.700	9.701	(1.021)	247973		10.0000	10.006
\$ 79 d4-1,2-Dichlorobenzene	152	9.822	9.823	(1.034)	35084		5.00000	4.846
80 1,2-Dichlorobenzene	146	9.828	9.828	(1.035)	138917		10.0000	9.631
81 1,2-Dibromo 3-Chloropropane	75	10.439	10.439	(1.099)	10059		10.0000	9.517
83 Hexachloro 1,3-Butadiene	225	10.938	10.939	(1.152)	27408		10.0000	9.573
84 1,2,4-Trichlorobenzene	180	10.960	10.960	(1.154)	79862		10.0000	9.071
85 Naphthalene	128	11.220	11.220	(1.181)	136010		10.0000	8.919
86 1,2,3-Trichlorobenzene	180	11.363	11.364	(1.196)	58467		10.0000	8.549

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161923.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL5
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	73687	0.00
37 1,4-Difluorobenze	116116	58058	232232	116116	0.00
53 d5-Chlorobenzene	124912	62456	249824	124912	0.00
76 d4-1,4-Dichlorobe	77169	38585	154338	77169	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161923.D

Lab ID: SHG0218-CAL5

nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 18:59

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.313	1.000	-0.6868	Dichlorodifluoromethane
0.351	1.000	-0.6495	Chloromethane
0.366	1.000	-0.6338	Vinyl Chloride
0.421	1.000	-0.5787	Bromomethane
0.443	1.000	-0.5571	Chloroethane
0.464	1.000	-0.5365	Trichlorofluoromethane
0.549	1.000	-0.4510	1,1-Dichloroethene
0.551	1.000	-0.4490	Carbon Disulfide
0.563	1.000	-0.4373	1,1,2-Trichloro-1,2,2-Trifluoroethane
0.574	1.000	-0.4265	Iodomethane
0.596	1.000	-0.4039	Bromoethane
0.616	1.000	-0.3842	Acrolein
0.657	1.000	-0.3429	Methylene Chloride
0.672	1.000	-0.3282	Acetone
0.685	1.000	-0.3154	Trans-1,2-Dichloroethene
0.708	1.000	-0.2918	Methyl tert butyl ether
0.785	1.000	-0.2152	1,1-Dichloroethane
0.797	1.000	-0.2034	Acrylonitrile
0.829	1.000	-0.1710	Vinyl Acetate
0.867	1.000	-0.1327	Cis-1,2-Dichloroethene
0.882	1.000	-0.1179	2,2-Dichloropropane
0.896	1.000	-0.1042	Bromochloromethane
0.908	1.000	-0.0924	Chloroform
0.934	1.000	-0.0658	1,1,1-Trichloroethane
0.954	1.000	-0.0462	2-Butanone
0.933	1.000	-0.0668	Dibromofluoromethane
1.006	1.000	0.0059	d4-1,2-Dichloroethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

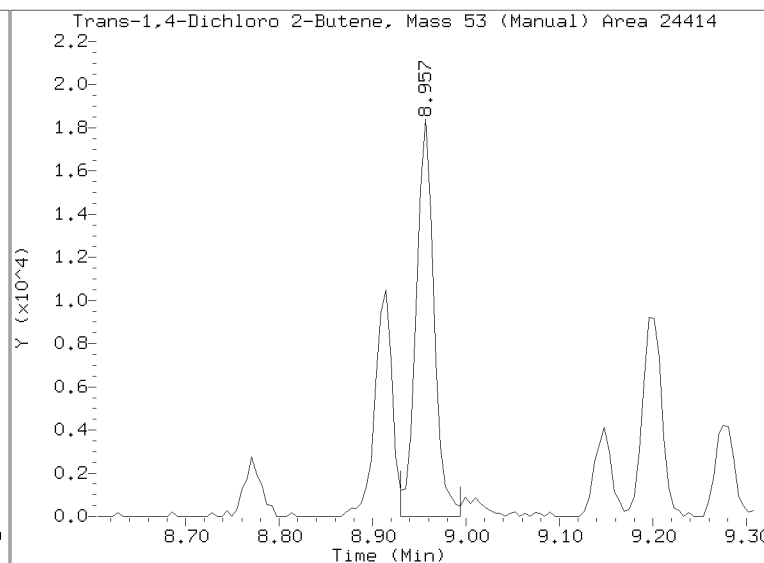
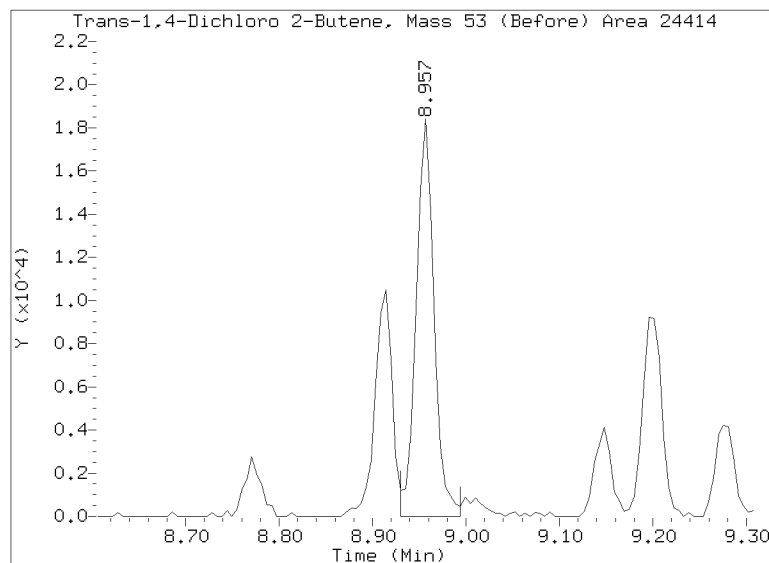
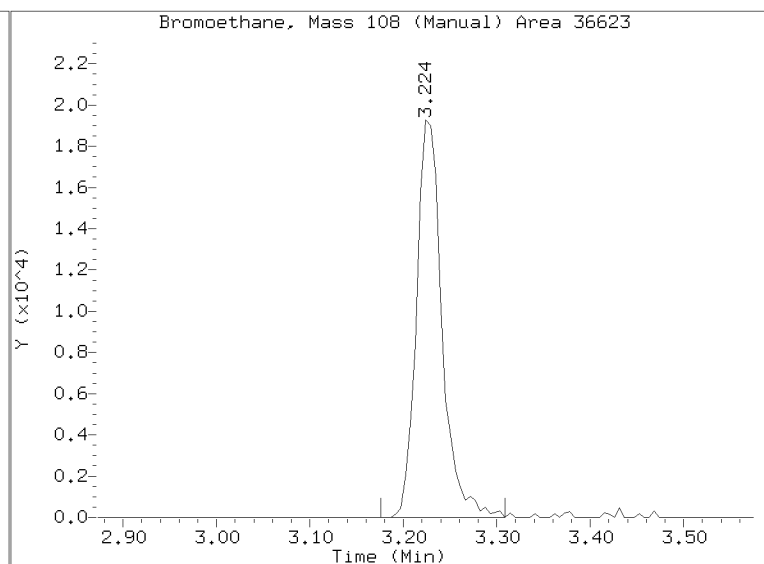
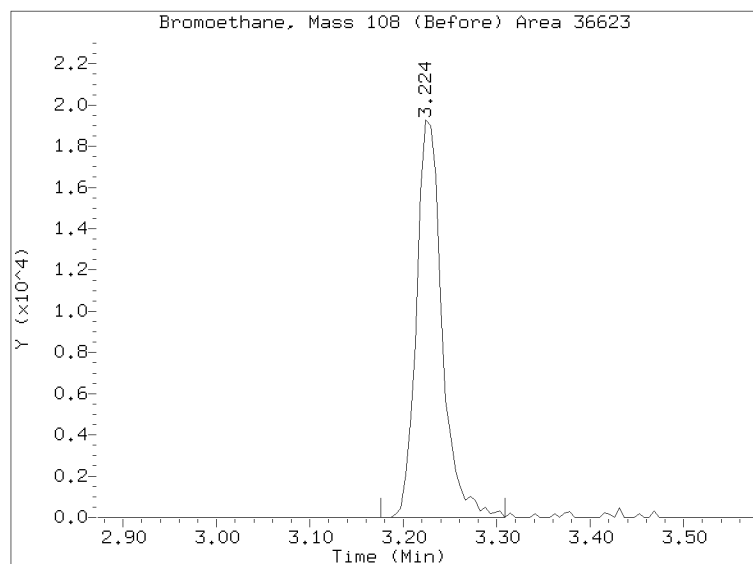
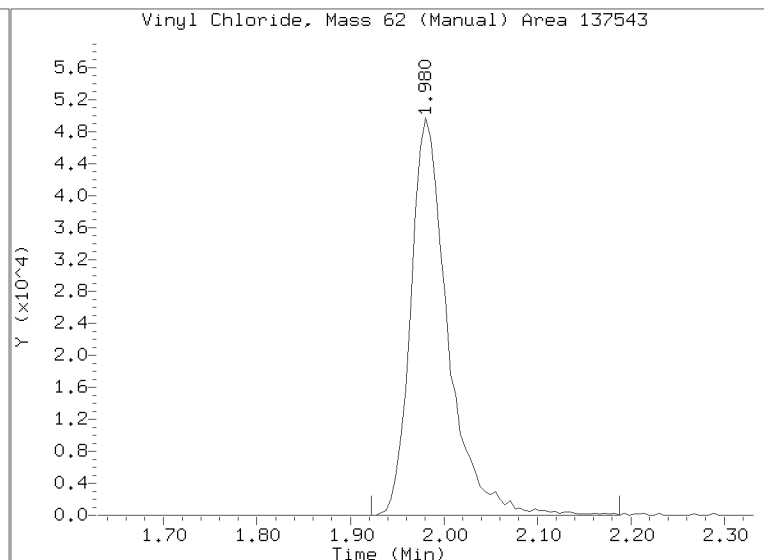
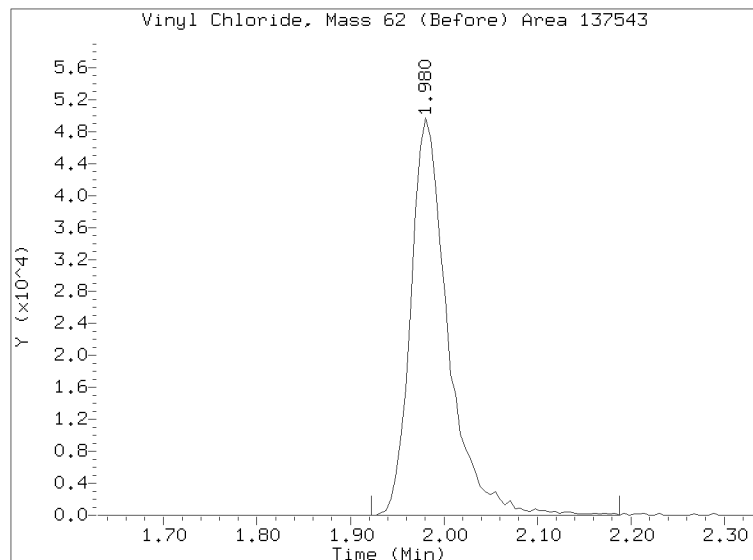
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161923.D

Injection Date: 16-JUL-2019 18:59

Lab ID: SHG0218-CAL5 Client ID:

Report Date: 07/17/2019 08:20



Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161924.D

Date : 16-JUL-2019 19:26

Client ID:

Sample Info: SHC0218-CAL6

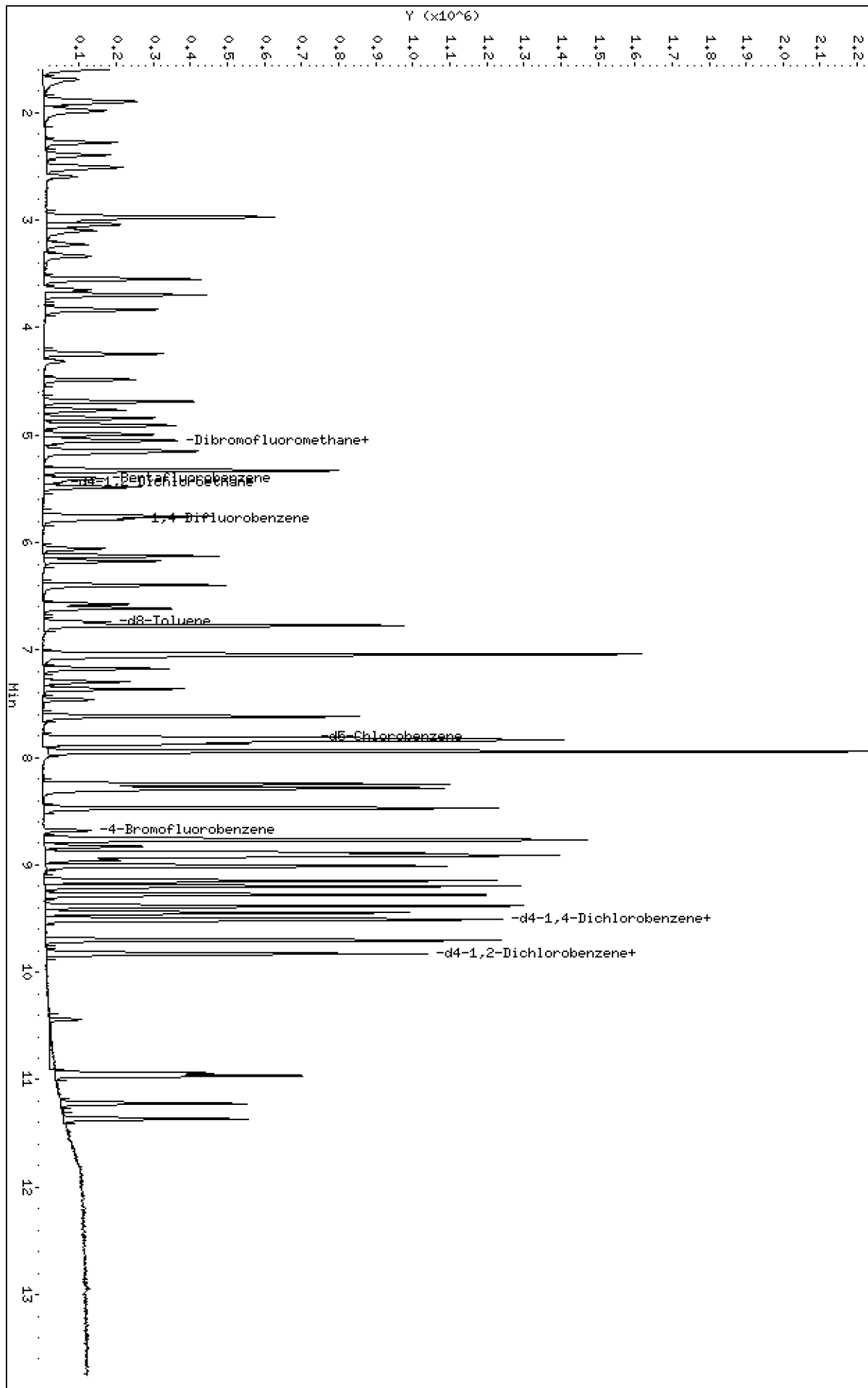
Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190716x.b\V307161924.D



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161924.D
 Lab Smp Id: SHG0218-CAL6
 Inj Date : 16-JUL-2019 19:26
 Operator : PKC Inst ID: nt3.i
 Smp Info : SHG0218-CAL6
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Meth Date : 17-Jul-2019 07:49 paul Quant Type: ISTD
 Cal Date : 16-JUL-2019 19:26 Cal File: V307161924.D
 Als bottle: 61 Calibration Sample, Level: 6
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: mdl.sub
 Target Version: 4.14

Compounds	QUANT SIG	AMOUNTS					
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)
							ON-COL (ug/L)
1 Dichlorodifluoromethane	85		1.688	1.693 (0.313)		169277	20.0000
2 Chloromethane	50		1.895	1.895 (0.351)		417217	18.393
3 Vinyl Chloride	62		1.980	1.980 (0.367)		283041	18.544
4 Bromomethane	94		2.278	2.278 (0.422)		116751	18.473
5 Chloroethane	64		2.395	2.394 (0.443)		139827	18.244
6 Trichlorofluoromethane	101		2.506	2.506 (0.464)		201446	18.757
7 1,1-Dichloroethene	61		2.969	2.968 (0.550)		283641	18.494
8 Carbon Disulfide	76		2.974	2.979 (0.551)		356266	18.724
9 112Trichloro122Trifluoroethane	101		3.038	3.043 (0.562)		106235	18.641
10 Iodomethane	142		3.096	3.101 (0.573)		166624	18.791
11 Bromoethane	108		3.224	3.223 (0.597)		77964	18.436
12 Acrolein	56		3.335	3.330 (0.617)		124043	96.892
13 Methylene Chloride	84		3.548	3.553 (0.657)		125665	20.166
14 Acetone	43		3.649	3.633 (0.675)		198177	96.034
15 Trans-1,2-Dichloroethene	96		3.697	3.702 (0.684)		122161	18.111
17 Methyl tert butyl ether	73		3.829	3.829 (0.709)		229924	18.165
18 1,1-Dichloroethane	63		4.244	4.243 (0.786)		282595	18.338
19 Acrylonitrile	53		4.313	4.308 (0.798)		45047	19.255
20 Vinyl Acetate	43		4.483	4.483 (0.830)		317299	18.258
22 Cis-1,2-Dichloroethene	96		4.690	4.690 (0.868)		124578	18.441
23 2,2-Dichloropropane	77		4.764	4.770 (0.882)		118904	18.959
24 Bromochloromethane	128		4.844	4.844 (0.897)		51856	19.099
25 Chloroform	83		4.908	4.908 (0.909)		200551	18.148
26 Carbon Tetrachloride	117		4.993	4.998 (0.863)		162009	18.703
\$ 27 Dibromofluoromethane	111		5.046	5.046 (0.934)		20240	5.0000
28 1,1,1-Trichloroethane	97		5.051	5.052 (0.935)		182096	18.609
30 1,1-Dichloropropene	75		5.142	5.147 (0.889)		167335	19.352
29 2-Butanone	43		5.163	5.158 (0.956)		322859	100.000
31 Benzene	78		5.328	5.333 (0.921)		488160	18.860
* 32 Pentafluorobenzene	168		5.402	5.408 (1.000)		78211	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.439	5.439 (1.007)		25233	5.0000
34 1,2-Dichloroethane	62		5.487	5.487 (0.949)		165650	20.0000
36 Trichloroethene	130		5.758	5.753 (0.995)		114810	20.0000
* 37 1,4-Difluorobenzene	114		5.785	5.785 (1.000)		127692	10.0000

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.056	6.061 (1.047)		56216		20.0000	18.897
39 1,2-Dichloropropane	63	6.125	6.125 (1.059)		155551		20.0000	18.598
40 Bromodichloromethane	83	6.173	6.173 (1.067)		149238		20.0000	19.065
173 2-Pentanone	86	6.401	6.396 (1.107)		51018		100.000	94.959
41 2-Chloroethyl Vinyl Ether	63	6.576	6.577 (1.137)		69687		20.0000	20.181
42 Cis 1,3-dichloropropene	75	6.614	6.614 (1.143)		195226		20.0000	19.703
\$ 43 d8-Toluene	98	6.736	6.736 (1.164)		82813		5.00000	4.943
44 Toluene	92	6.773	6.773 (1.171)		314006		20.0000	19.351
46 Tetrachloroethene	166	7.039	7.039 (0.901)		123116		20.0000	19.287
45 4-Methyl-2-Pentanone	58	7.044	7.044 (1.218)		228694		100.000	97.415
47 Trans 1,3-Dichloropropene	75	7.065	7.065 (1.221)		167845		20.0000	20.522
48 1,1,2-Trichloroethane	97	7.177	7.177 (1.241)		83801		20.0000	19.312
49 Chlorodibromomethane	129	7.294	7.299 (0.933)		95812		20.0000	19.453
50 1,3-Dichloropropane	76	7.363	7.363 (0.942)		157563		20.0000	19.512
51 1,2-Dibromoethane	107	7.464	7.459 (1.290)		76017		20.0000	18.674
52 2-Hexanone	43	7.618	7.618 (0.975)		511661		100.000	98.031
* 53 d5-Chlorobenzene	117	7.814	7.815 (1.000)		130960		10.0000	
54 Chlorobenzene	112	7.825	7.825 (1.001)		351809		20.0000	19.690
55 Ethyl Benzene	106	7.841	7.841 (1.003)		195087		20.0000	20.459
56 1,1,1,2-Tetrachloroethane	131	7.873	7.873 (1.007)		120568		20.0000	19.374
57 m,p-xylene	106	7.942	7.947 (1.016)		491132		40.0000	41.143
58 o-Xylene	106	8.250	8.250 (1.056)		241535		20.0000	20.638
59 Styrene	104	8.287	8.287 (1.061)		383251		20.0000	21.500
60 Bromoform	173	8.308	8.308 (0.874)		56994		20.0000	19.740
61 Isopropyl Benzene	105	8.473	8.473 (0.892)		629754		20.0000	20.748
\$ 62 4-Bromofluorobenzene	174	8.680	8.680 (1.111)		27470		5.00000	5.283
63 Bromobenzene	156	8.760	8.760 (0.922)		149295		20.0000	19.944
64 N-Propyl Benzene	91	8.771	8.771 (0.923)		770060		20.0000	20.233
65 1,1,2,2-Tetrachloroethane	83	8.829	8.824 (0.929)		111937		20.0000	19.148
66 2-Chloro Toluene	91	8.888	8.888 (0.935)		521509		20.0000	19.739
67 1,3,5-Trimethyl Benzene	105	8.914	8.914 (0.938)		556140		20.0000	20.724
68 1,2,3-Trichloropropane	110	8.930	8.930 (0.940)		32388		20.0000	19.249
69 Trans-1,4-Dichloro 2-Butene	53	8.957	8.957 (0.942)		51270		20.0000	18.855
70 4-Chloro Toluene	91	9.010	9.010 (0.948)		497312		20.0000	20.252
71 T-Butyl Benzene	119	9.148	9.148 (0.963)		450887		20.0000	20.406
72 1,2,4-Trimethylbenzene	105	9.201	9.201 (0.968)		568186		20.0000	20.916
73 S-Butyl Benzene	105	9.281	9.281 (0.977)		666339		20.0000	20.172
74 4-Isopropyl Toluene	119	9.382	9.382 (0.987)		574433		20.0000	20.300
75 1,3-Dichlorobenzene	146	9.446	9.446 (0.994)		320273		20.0000	19.365
* 76 d4-1,4-Dichlorobenzene	152	9.504	9.499 (1.000)		80506		10.0000	
77 1,4-Dichlorobenzene	146	9.509	9.515 (1.001)		319445		20.0000	18.708
78 N-Butyl Benzene	91	9.701	9.701 (1.021)		526934		20.0000	20.382
\$ 79 d4-1,2-Dichlorobenzene	152	9.817	9.823 (1.033)		36950		5.00000	4.892
80 1,2-Dichlorobenzene	146	9.828	9.828 (1.034)		288723		20.0000	19.187
81 1,2-Dibromo 3-Chloropropane	75	10.439	10.439 (1.098)		20919		20.0000	18.971
83 Hexachloro 1,3-Butadiene	225	10.939	10.939 (1.151)		55220		20.0000	18.488
84 1,2,4-Trichlorobenzene	180	10.965	10.960 (1.154)		164751		20.0000	17.937
85 Naphthalene	128	11.220	11.220 (1.181)		294172		20.0000	18.492
86 1,2,3-Trichlorobenzene	180	11.364	11.364 (1.196)		122099		20.0000	17.113

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161924.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL6
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	78211	6.14
37 1,4-Difluorobenze	116116	58058	232232	127692	9.97
53 d5-Chlorobenzene	124912	62456	249824	130960	4.84
76 d4-1,4-Dichlorobe	77169	38585	154338	80506	4.32

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.09
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.01
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161924.D

Lab ID: SHG0218-CAL6

nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 19:26

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.313	1.000	-0.6875	Dichlorodifluoromethane
0.351	1.000	-0.6491	Chloromethane
0.367	1.000	-0.6334	Vinyl Chloride
0.422	1.000	-0.5783	Bromomethane
0.443	1.000	-0.5567	Chloroethane
0.464	1.000	-0.5360	Trichlorofluoromethane
0.550	1.000	-0.4505	1,1-Dichloroethene
0.551	1.000	-0.4495	Carbon Disulfide
0.562	1.000	-0.4376	1,1,2-Trichloro-1,2,2-Trifluoroethane
0.573	1.000	-0.4268	Iodomethane
0.597	1.000	-0.4032	Bromoethane
0.617	1.000	-0.3826	Acrolein
0.657	1.000	-0.3433	Methylene Chloride
0.675	1.000	-0.3246	Acetone
0.684	1.000	-0.3157	Trans-1,2-Dichloroethene
0.709	1.000	-0.2911	Methyl tert butyl ether
0.786	1.000	-0.2144	1,1-Dichloroethane
0.798	1.000	-0.2016	Acrylonitrile
0.830	1.000	-0.1702	Vinyl Acetate
0.868	1.000	-0.1318	Cis-1,2-Dichloroethene
0.882	1.000	-0.1180	2,2-Dichloropropane
0.897	1.000	-0.1033	Bromochloromethane
0.909	1.000	-0.0915	Chloroform
0.935	1.000	-0.0649	1,1,1-Trichloroethane
0.956	1.000	-0.0443	2-Butanone
0.934	1.000	-0.0659	Dibromofluoromethane
1.007	1.000	0.0069	d4-1,2-Dichloroethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161925.D
Lab Smp Id: SHG0218-CAL7
Inj Date : 16-JUL-2019 19:53
Operator : PKC
Smp Info : SHG0218-CAL7
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Meth Date : 17-Jul-2019 07:49 paul
Cal Date : 16-JUL-2019 19:53
Als bottle: 62
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i
Quant Type: ISTD
Cal File: V307161925.D
Calibration Sample, Level: 7
Compound Sublist: mdl.sub

Compounds	QUANT SIG	AMOUNTS						
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL
							(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====	
1 Dichlorodifluoromethane	85	1.689	1.693	(0.313)	331708	40.0000	42.718	
2 Chloromethane	50	1.891	1.895	(0.350)	846125	40.0000	40.524	
3 Vinyl Chloride	62	1.981	1.980	(0.367)	579272	40.0000	41.233	
4 Bromomethane	94	2.279	2.278	(0.422)	235203	40.0000	40.432	
5 Chloroethane	64	2.395	2.394	(0.443)	285677	40.0000	40.495	
6 Trichlorofluoromethane	101	2.512	2.506	(0.465)	405654	40.0000	41.035	
7 1,1-Dichloroethene	61	2.969	2.968	(0.550)	597225	40.0000	42.306	
8 Carbon Disulfide	76	2.975	2.979	(0.551)	732290	40.0000	41.813	
9 112Trichloro122Trifluoroethane	101	3.038	3.043	(0.562)	225920	40.0000	43.068	
10 Iodomethane	142	3.102	3.101	(0.574)	349840	40.0000	42.864	
11 Bromoethane	108	3.224	3.223	(0.597)	158129	40.0000	40.624	
12 Acrolein	56	3.331	3.330	(0.616)	250297	200.000	212.41	
13 Methylene Chloride	84	3.548	3.553	(0.657)	246717	40.0000	43.012	
14 Acetone	43	3.633	3.633	(0.673)	395636	200.000	208.29	
15 Trans-1,2-Dichloroethene	96	3.697	3.702	(0.684)	250233	40.0000	40.303	
17 Methyl tert butyl ether	73	3.825	3.829	(0.708)	470892	40.0000	40.418	
18 1,1-Dichloroethane	63	4.245	4.243	(0.786)	577036	40.0000	40.679	
19 Acrylonitrile	53	4.308	4.308	(0.797)	92501	40.0000	42.956	
20 Vinyl Acetate	43	4.478	4.483	(0.829)	675224	40.0000	42.210	
22 Cis-1,2-Dichloroethene	96	4.686	4.690	(0.867)	255771	40.0000	41.133	
23 2,2-Dichloropropane	77	4.765	4.770	(0.882)	233792	40.0000	40.500	
24 Bromochloromethane	128	4.840	4.844	(0.896)	100017	40.0000	40.021	
25 Chloroform	83	4.909	4.908	(0.909)	407863	40.0000	40.096	
26 Carbon Tetrachloride	117	4.994	4.998	(0.863)	333051	40.0000	40.529	
\$ 27 Dibromofluoromethane	111	5.047	5.046	(0.934)	18513	5.00000	5.026	
28 1,1,1-Trichloroethane	97	5.052	5.052	(0.935)	361955	40.0000	40.185	
30 1,1-Dichloropropene	75	5.142	5.147	(0.889)	342734	40.0000	41.780	
29 2-Butanone	43	5.153	5.158	(0.954)	682924	200.000	207.43	
31 Benzene	78	5.328	5.333	(0.921)	998092	40.0000	40.648	
* 32 Pentafluorobenzene	168	5.403	5.408	(1.000)	71990	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.435	5.439	(1.006)	24304	5.00000	5.010	
34 1,2-Dichloroethane	62	5.483	5.487	(0.948)	336125	40.0000	39.094	
36 Trichloroethene	130	5.759	5.753	(0.995)	233257	40.0000	41.090	
* 37 1,4-Difluorobenzene	114	5.785	5.785	(1.000)	121140	10.0000		

Compounds	QUANT SIG MASS					AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
38 Dibromomethane	93	6.056	6.061 (1.047)		112564	40.0000	39.884
39 1,2-Dichloropropane	63	6.125	6.125 (1.059)		320286	40.0000	40.365
40 Bromodichloromethane	83	6.173	6.173 (1.067)		299850	40.0000	40.378
173 2-Pentanone	86	6.396	6.396 (1.106)		109285	200.000	214.41
41 2-Chloroethyl Vinyl Ether	63	6.572	6.577 (1.136)		142908	40.0000	43.624
42 Cis 1,3-dichloropropene	75	6.609	6.614 (1.142)		402231	40.0000	42.791
\$ 43 d8-Toluene	98	6.736	6.736 (1.164)		83307	5.00000	5.242
44 Toluene	92	6.774	6.773 (1.171)		643905	40.0000	41.829
46 Tetrachloroethene	166	7.039	7.039 (0.901)		251757	40.0000	40.887
45 4-Methyl-2-Pentanone	58	7.039	7.044 (1.217)		476180	200.000	213.80
47 Trans 1,3-Dichloropropene	75	7.066	7.065 (1.221)		349607	40.0000	45.057
48 1,1,2-Trichloroethane	97	7.177	7.177 (1.241)		170004	40.0000	41.296
49 Chlorodibromomethane	129	7.300	7.299 (0.934)		203038	40.0000	42.737
50 1,3-Dichloropropane	76	7.363	7.363 (0.942)		326733	40.0000	41.947
51 1,2-Dibromoethane	107	7.459	7.459 (1.289)		157736	40.0000	40.844
52 2-Hexanone	43	7.618	7.618 (0.975)		1077827	200.000	214.08
* 53 d5-Chlorobenzene	117	7.815	7.815 (1.000)		126324	10.0000	
54 Chlorobenzene	112	7.826	7.825 (1.001)		724539	40.0000	42.039
55 Ethyl Benzene	106	7.842	7.841 (1.003)		409515	40.0000	44.522
56 1,1,1,2-Tetrachloroethane	131	7.874	7.873 (1.007)		250792	40.0000	41.778
57 m,p-xylene	106	7.943	7.947 (1.016)		1023241	80.0000	88.865
58 o-Xylene	106	8.251	8.250 (1.056)		503968	40.0000	44.642
59 Styrene	104	8.288	8.287 (1.061)		822270	40.0000	47.821
60 Bromoform	173	8.309	8.308 (0.875)		123860	40.0000	41.993
61 Isopropyl Benzene	105	8.474	8.473 (0.892)		1324499	40.0000	42.715
\$ 62 4-Bromofluorobenzene	174	8.681	8.680 (1.111)		26721	5.00000	5.327
63 Bromobenzene	156	8.756	8.760 (0.922)		307049	40.0000	40.150
64 N-Propyl Benzene	91	8.771	8.771 (0.923)		1629548	40.0000	41.910
65 1,1,2,2-Tetrachloroethane	83	8.825	8.824 (0.929)		240097	40.0000	40.203
66 2-Chloro Toluene	91	8.888	8.888 (0.936)		1115557	40.0000	41.330
67 1,3,5-Trimethyl Benzene	105	8.915	8.914 (0.938)		1204053	40.0000	43.920
68 1,2,3-Trichloropropane	110	8.926	8.930 (0.940)		67751	40.0000	39.414
69 Trans-1,4-Dichloro 2-Butene	53	8.957	8.957 (0.943)		112533	40.0000	40.510
70 4-Chloro Toluene	91	9.011	9.010 (0.949)		1056199	40.0000	42.103
71 T-Butyl Benzene	119	9.149	9.148 (0.963)		983909	40.0000	43.587
72 1,2,4-Trimethylbenzene	105	9.202	9.201 (0.969)		1236193	40.0000	44.544
73 S-Butyl Benzene	105	9.276	9.281 (0.977)		1441754	40.0000	42.724
74 4-Isopropyl Toluene	119	9.383	9.382 (0.988)		1276084	40.0000	44.142
75 1,3-Dichlorobenzene	146	9.446	9.446 (0.994)		706268	40.0000	41.800
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499 (1.000)		82245	10.0000	
77 1,4-Dichlorobenzene	146	9.510	9.515 (1.001)		698756	40.0000	40.057
78 N-Butyl Benzene	91	9.701	9.701 (1.021)		1170726	40.0000	44.326
\$ 79 d4-1,2-Dichlorobenzene	152	9.818	9.823 (1.034)		39932	5.00000	5.176
80 1,2-Dichlorobenzene	146	9.829	9.828 (1.035)		640432	40.0000	41.660
81 1,2-Dibromo 3-Chloropropane	75	10.440	10.439 (1.099)		45673	40.0000	40.545
83 Hexachloro 1,3-Butadiene	225	10.939	10.939 (1.152)		125636	40.0000	41.173
84 1,2,4-Trichlorobenzene	180	10.966	10.960 (1.154)		413243	40.0000	44.039
85 Naphthalene	128	11.221	11.220 (1.181)		739196	40.0000	45.483
86 1,2,3-Trichlorobenzene	180	11.364	11.364 (1.196)		321628	40.0000	44.126

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161925.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL7
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	71990	-2.30
37 1,4-Difluorobenze	116116	58058	232232	121140	4.33
53 d5-Chlorobenzene	124912	62456	249824	126324	1.13
76 d4-1,4-Dichlorobe	77169	38585	154338	82245	6.58

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.08
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.02
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161925.D

Lab ID: SHG0218-CAL7

nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 19:53

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.313	1.000	-0.6874	Dichlorodifluoromethane
0.350	1.000	-0.6500	Chloromethane
0.367	1.000	-0.6333	Vinyl Chloride
0.422	1.000	-0.5782	Bromomethane
0.443	1.000	-0.5566	Chloroethane
0.465	1.000	-0.5350	Trichlorofluoromethane
0.550	1.000	-0.4504	1,1-Dichloroethene
0.551	1.000	-0.4494	Carbon Disulfide
0.562	1.000	-0.4376	112Trichloro122Trifluoroethane
0.574	1.000	-0.4258	Iodomethane
0.597	1.000	-0.4032	Bromoethane
0.616	1.000	-0.3835	Acrolein
0.657	1.000	-0.3432	Methylene Chloride
0.673	1.000	-0.3275	Acetone
0.684	1.000	-0.3157	Trans-1,2-Dichloroethene
0.708	1.000	-0.2921	Methyl tert butyl ether
0.786	1.000	-0.2144	1,1-Dichloroethane
0.797	1.000	-0.2026	Acrylonitrile
0.829	1.000	-0.1711	Vinyl Acetate
0.867	1.000	-0.1328	Cis-1,2-Dichloroethene
0.882	1.000	-0.1180	2,2-Dichloropropane
0.896	1.000	-0.1042	Bromochloromethane
0.909	1.000	-0.0915	Chloroform
0.935	1.000	-0.0649	1,1,1-Trichloroethane
0.954	1.000	-0.0462	2-Butanone
0.934	1.000	-0.0659	Dibromofluoromethane
1.006	1.000	0.0059	d4-1,2-Dichloroethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161926.D

Date : 16-JUL-2019 20:19

Client ID:

Sample Info: SHC0218-CAL8

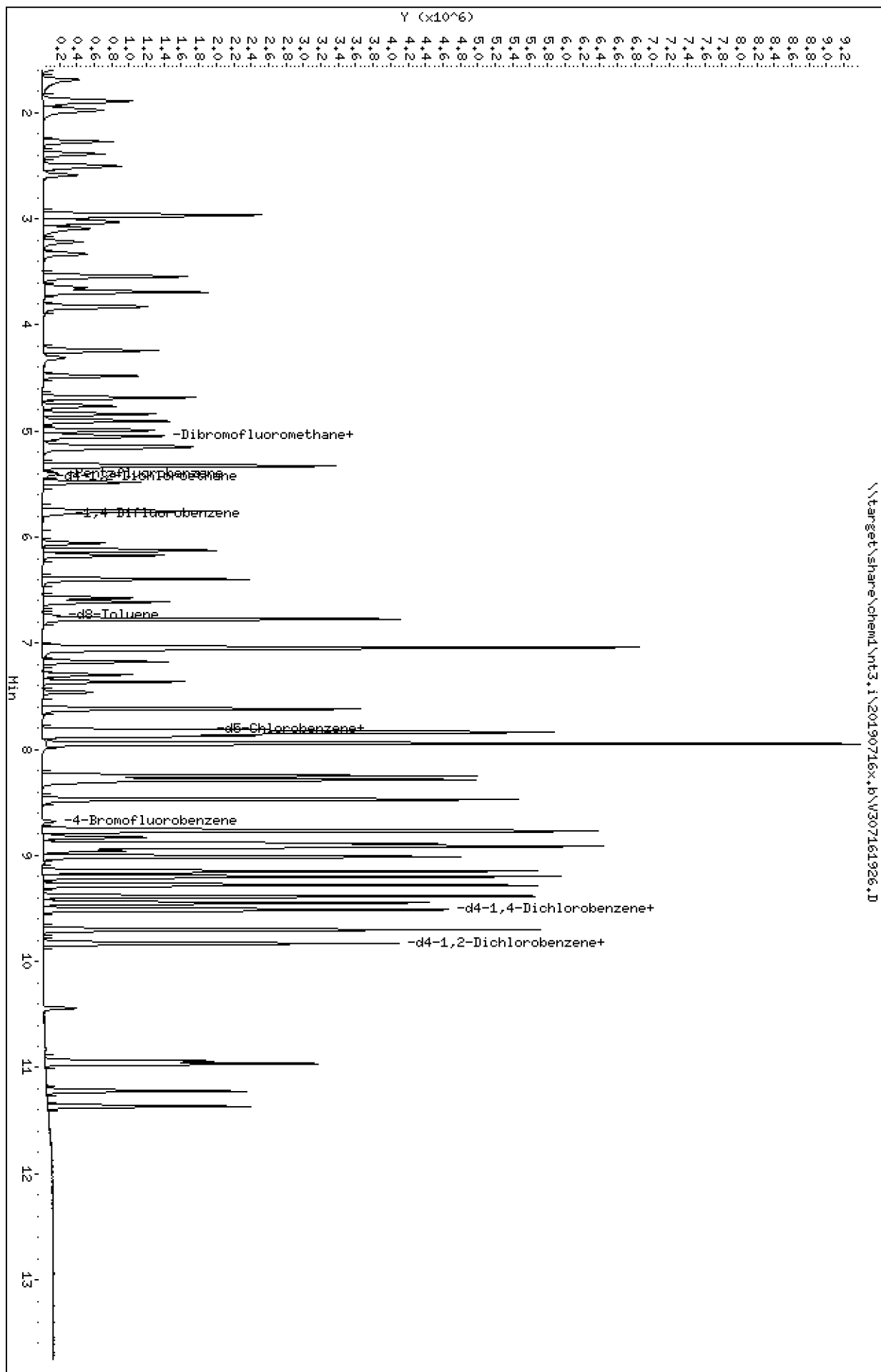
Page 1

Instrument: nt3.i

Column phase: RTXVMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161926.D
 Lab Smp Id: SHG0218-CAL8
 Inj Date : 16-JUL-2019 20:19
 Operator : PKC
 Smp Info : SHG0218-CAL8
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Meth Date : 17-Jul-2019 07:49 paul
 Cal Date : 16-JUL-2019 20:19
 Als bottle: 63
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 4.14

Inst ID: nt3.i
 Quant Type: ISTD
 Cal File: V307161926.D
 Calibration Sample, Level: 8
 Compound Sublist: mdl.sub

Compounds	QUANT	SIG						AMOUNTS	
			MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
1 Dichlorodifluoromethane	85			1.688	1.693 (1.000)		703319	80.0000	79.649
2 Chloromethane	50			1.890	1.895 (1.000)		1688138	80.0000	71.098
3 Vinyl Chloride	62			1.975	1.980 (1.000)		1178745	80.0000	73.781
4 Bromomethane	94			2.272	2.278 (1.000)		469950	80.0000	71.040
5 Chloroethane	64			2.389	2.394 (1.000)		572016	80.0000	71.302
6 Trichlorofluoromethane	101			2.506	2.506 (1.000)		825732	80.0000	73.454
7 1,1-Dichloroethene	61			2.958	2.968 (1.000)		1216918	80.0000	75.806
8 Carbon Disulfide	76			2.968	2.979 (1.000)		1450172	80.0000	72.815
9 112Trichloro122Trifluoroethane	101			3.032	3.043 (1.000)		463490	80.0000	77.699
10 Iodomethane	142			3.090	3.101 (1.000)		692807	80.0000	74.646
11 Bromoethane	108			3.218	3.223 (1.000)		318046	80.0000	71.851
12 Acrolein	56			3.330	3.330 (1.000)		528591	400.000	394.46
13 Methylene Chloride	84			3.542	3.553 (1.000)		510377	80.0000	78.246
14 Acetone	43			3.648	3.633 (1.000)		857984	400.000	397.21
15 Trans-1,2-Dichloroethene	96			3.691	3.702 (1.000)		513165	80.0000	72.682
17 Methyl tert butyl ether	73			3.829	3.829 (1.000)		982505	80.0000	74.158
18 1,1-Dichloroethane	63			4.238	4.243 (1.000)		1174525	80.0000	72.813
19 Acrylonitrile	53			4.307	4.308 (1.000)		192651	80.0000	78.673
20 Vinyl Acetate	43			4.483	4.483 (1.000)		1418879	80.0000	77.999
22 Cis-1,2-Dichloroethene	96			4.684	4.690 (1.000)		530686	80.0000	75.049
23 2,2-Dichloropropane	77			4.764	4.770 (1.000)		447793	80.0000	68.214
24 Bromochloromethane	128			4.839	4.844 (1.000)		212496	80.0000	74.771
25 Chloroform	83			4.908	4.908 (1.000)		835027	80.0000	72.188
26 Carbon Tetrachloride	117			4.993	4.998 (0.863)		688497	80.0000	72.688
\$ 27 Dibromofluoromethane	111			5.040	5.046 (1.000)		21002	5.00000	5.014
28 1,1,1-Trichloroethane	97			5.046	5.052 (1.000)		763497	80.0000	74.541
30 1,1-Dichloropropene	75			5.141	5.147 (0.889)		724920	80.0000	76.668
29 2-Butanone	43			5.163	5.158 (1.000)		1437855	400.000	384.04
31 Benzene	78			5.327	5.333 (0.921)		2044527	80.0000	72.238
* 32 Pentafluorobenzene	168			5.402	5.408 (1.000)		81865	10.0000	(M)
\$ 33 d4-1,2-Dichloroethane	65			5.434	5.439 (1.000)		26980	5.00000	4.891
34 1,2-Dichloroethane	62			5.481	5.487 (0.948)		698710	80.0000	70.504
36 Trichloroethene	130			5.752	5.753 (0.994)		489568	80.0000	74.820
* 37 1,4-Difluorobenzene	114			5.784	5.785 (1.000)		139630	10.0000	

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.055	6.061	(1.047)	230276		80.0000	70.788
39 1,2-Dichloropropane	63	6.124	6.125	(1.059)	676098		80.0000	73.924
40 Bromodichloromethane	83	6.172	6.173	(1.067)	627867		80.0000	73.353
173 2-Pentanone	86	6.395	6.396	(1.106)	231805		400.000	394.57
41 2-Chloroethyl Vinyl Ether	63	6.571	6.577	(1.136)	311654		80.0000	82.537
42 Cis 1,3-dichloropropene	75	6.613	6.614	(1.143)	841095		80.0000	77.631
\$ 43 d8-Toluene	98	6.735	6.736	(1.164)	90564		5.00000	4.944
44 Toluene	92	6.773	6.773	(1.171)	1333711		80.0000	75.166
46 Tetrachloroethene	166	7.038	7.039	(0.901)	522661		80.0000	73.667
45 4-Methyl-2-Pentanone	58	7.044	7.044	(1.218)	1007424		400.000	392.43
47 Trans 1,3-Dichloropropene	75	7.065	7.065	(1.221)	716752		80.0000	80.141
48 1,1,2-Trichloroethane	97	7.176	7.177	(1.241)	352239		80.0000	74.233
49 Chlorodibromomethane	129	7.299	7.299	(0.934)	421851		80.0000	77.061
50 1,3-Dichloropropane	76	7.362	7.363	(0.942)	675217		80.0000	75.231
51 1,2-Dibromoethane	107	7.463	7.459	(1.290)	332649		80.0000	74.729
52 2-Hexanone	43	7.617	7.618	(0.975)	2238379		400.000	385.85
* 53 d5-Chlorobenzene	117	7.814	7.815	(1.000)	145558		10.0000	
54 Chlorobenzene	112	7.825	7.825	(1.001)	1492220		80.0000	75.141
55 Ethyl Benzene	106	7.841	7.841	(1.003)	849184		80.0000	80.122
56 1,1,1,2-Tetrachloroethane	131	7.872	7.873	(1.007)	519552		80.0000	75.112
57 m,p-xylene	106	7.947	7.947	(1.017)	2107633		160.000	158.85
58 o-Xylene	106	8.250	8.250	(1.056)	1062737		80.0000	81.699
59 Styrene	104	8.287	8.287	(1.061)	1732866		80.0000	87.461
60 Bromoform	173	8.308	8.308	(0.874)	259276		80.0000	77.285
61 Isopropyl Benzene	105	8.473	8.473	(0.892)	2721317		80.0000	77.162
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	29625		5.00000	5.126
63 Bromobenzene	156	8.760	8.760	(0.922)	635847		80.0000	73.101
64 N-Propyl Benzene	91	8.770	8.771	(0.923)	3311093		80.0000	74.872
65 1,1,2,2-Tetrachloroethane	83	8.829	8.824	(0.929)	486809		80.0000	71.668
66 2-Chloro Toluene	91	8.887	8.888	(0.935)	2323904		80.0000	75.698
67 1,3,5-Trimethyl Benzene	105	8.914	8.914	(0.938)	2466154		80.0000	79.092
68 1,2,3-Trichloropropane	110	8.930	8.930	(0.940)	140057		80.0000	71.637
69 Trans-1,4-Dichloro 2-Butene	53	8.956	8.957	(0.942)	223881		80.0000	70.859
70 4-Chloro Toluene	91	9.010	9.010	(0.948)	2193635		80.0000	76.881
71 T-Butyl Benzene	119	9.148	9.148	(0.963)	2024297		80.0000	78.844
72 1,2,4-Trimethylbenzene	105	9.201	9.201	(0.968)	2516344		80.0000	79.720
73 S-Butyl Benzene	105	9.281	9.281	(0.977)	2978869		80.0000	77.612
74 4-Isopropyl Toluene	119	9.387	9.382	(0.988)	2608774		80.0000	79.341
75 1,3-Dichlorobenzene	146	9.445	9.446	(0.994)	1432657		80.0000	74.549
* 76 d4-1,4-Dichlorobenzene	152	9.504	9.499	(1.000)	93544		10.0000	
77 1,4-Dichlorobenzene	146	9.514	9.515	(1.001)	1414028		80.0000	71.271
78 N-Butyl Benzene	91	9.700	9.701	(1.021)	2396344		80.0000	79.771
\$ 79 d4-1,2-Dichlorobenzene	152	9.822	9.823	(1.034)	42271		5.00000	4.817
80 1,2-Dichlorobenzene	146	9.828	9.828	(1.034)	1267203		80.0000	72.474
81 1,2-Dibromo 3-Chloropropane	75	10.439	10.439	(1.098)	87076		80.0000	67.962
83 Hexachloro 1,3-Butadiene	225	10.938	10.939	(1.151)	255145		80.0000	73.516
84 1,2,4-Trichlorobenzene	180	10.965	10.960	(1.154)	744370		80.0000	69.746
85 Naphthalene	128	11.220	11.220	(1.181)	1319558		80.0000	71.386
86 1,2,3-Trichlorobenzene	180	11.363	11.364	(1.196)	556864		80.0000	67.171

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161926.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-CAL8
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	81865	11.10
37 1,4-Difluorobenze	116116	58058	232232	139630	20.25
53 d5-Chlorobenzene	124912	62456	249824	145558	16.53
76 d4-1,4-Dichlorobe	77169	38585	154338	93544	21.22

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.10
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307161926.D

Lab ID: SHG0218-CAL8

nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 20:19

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

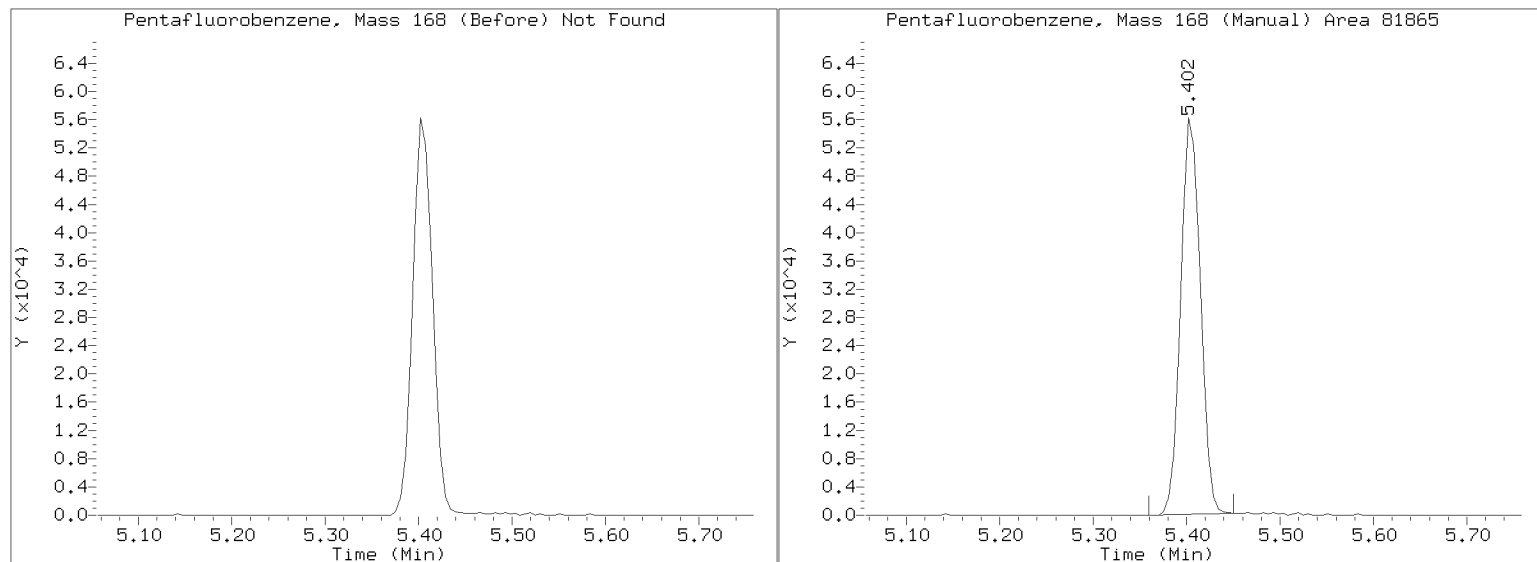
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161926.D

Injection Date: 16-JUL-2019 20:19

Lab ID: SHG0218-CAL8 Client ID:

Report Date: 07/17/2019 08:20



Data File: \\target\share\chemd\nt3.i\20190716x.b\V307161928.D

Date : 16-JUL-2019 21:12

Client ID:

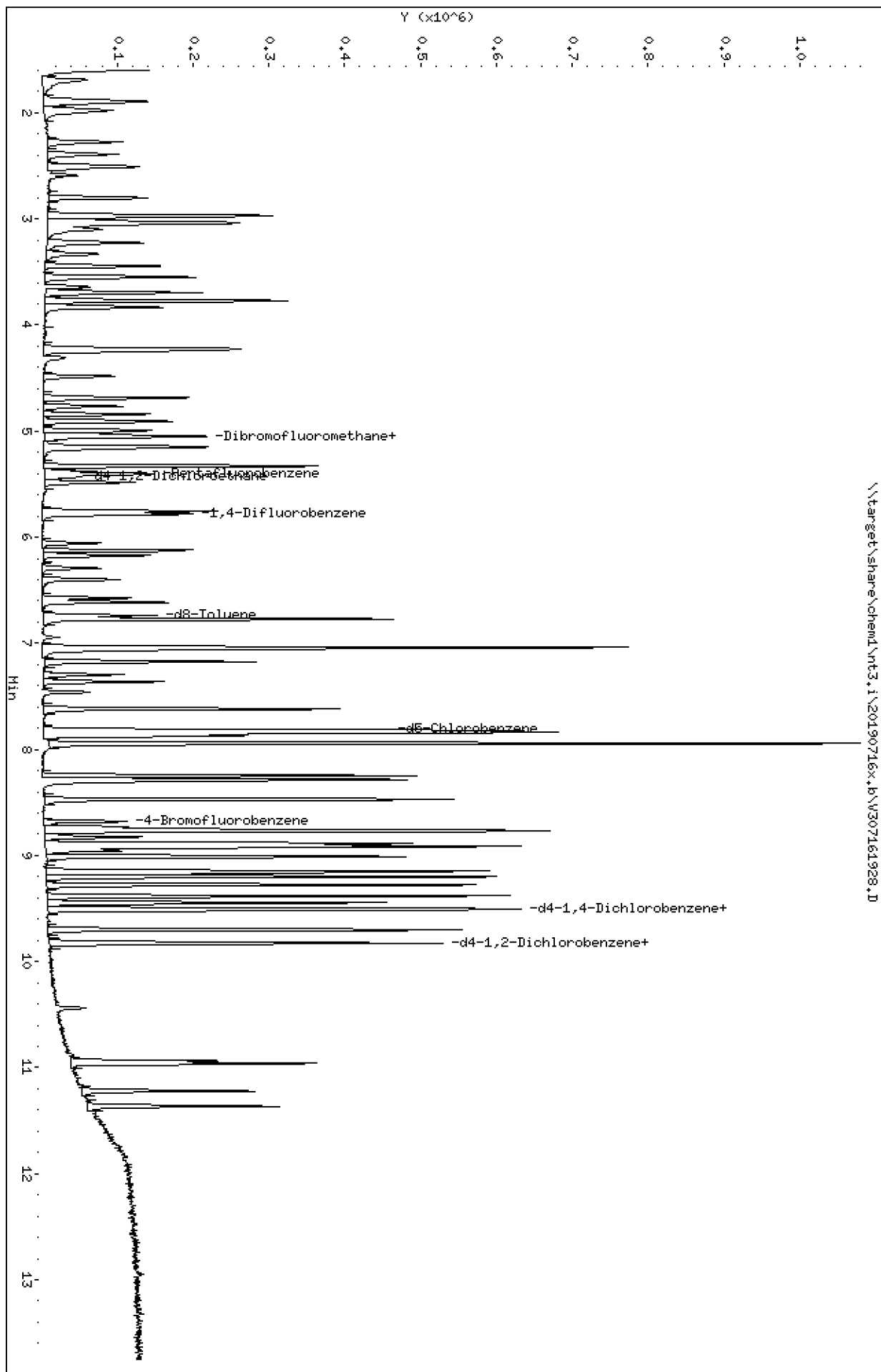
Sample Info: SHC0218-SCV1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

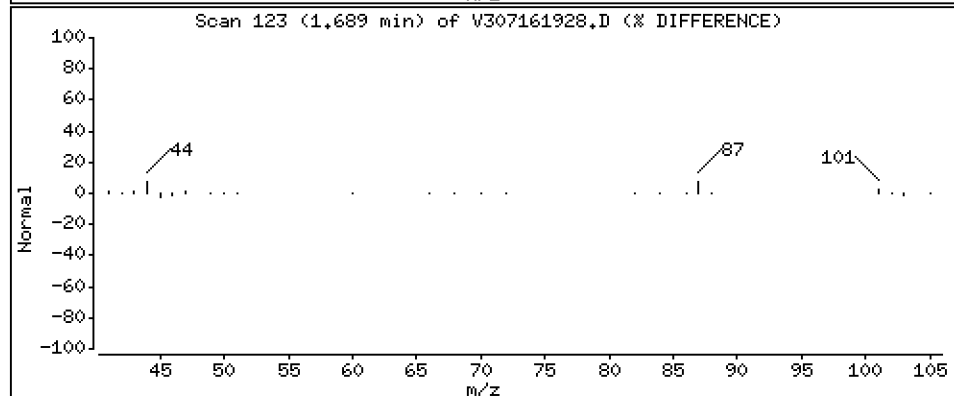
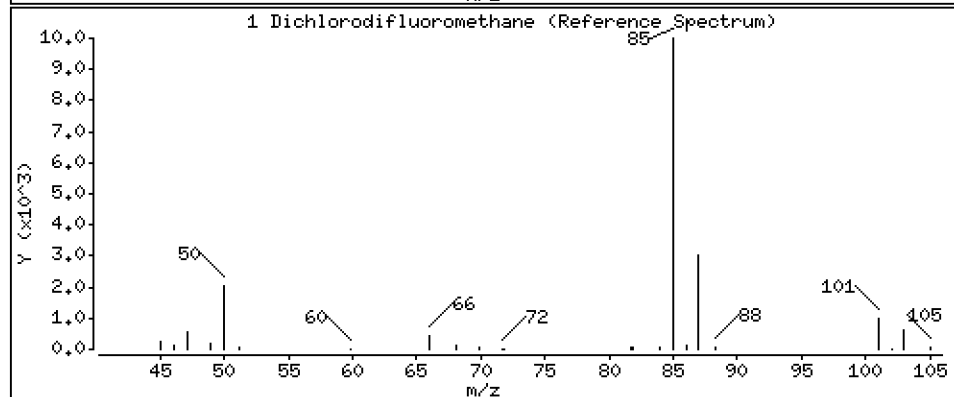
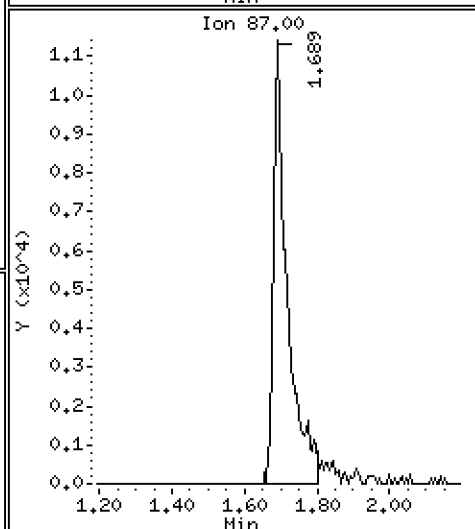
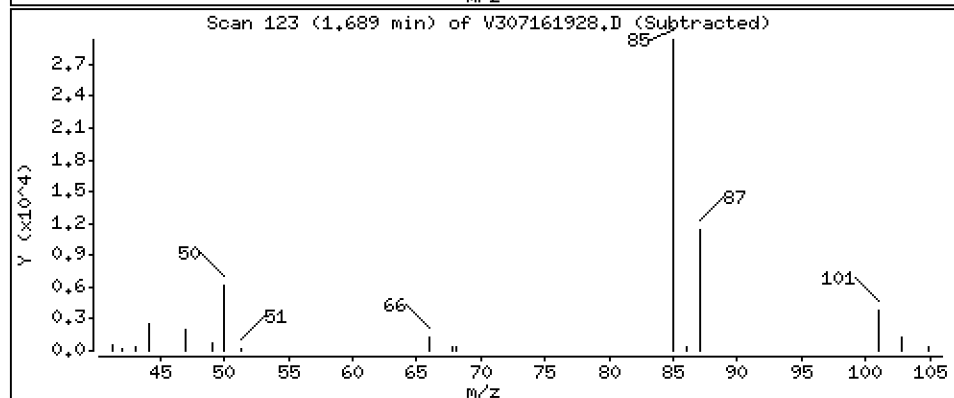
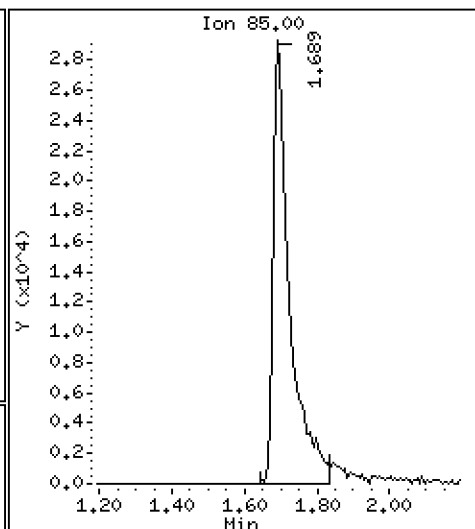
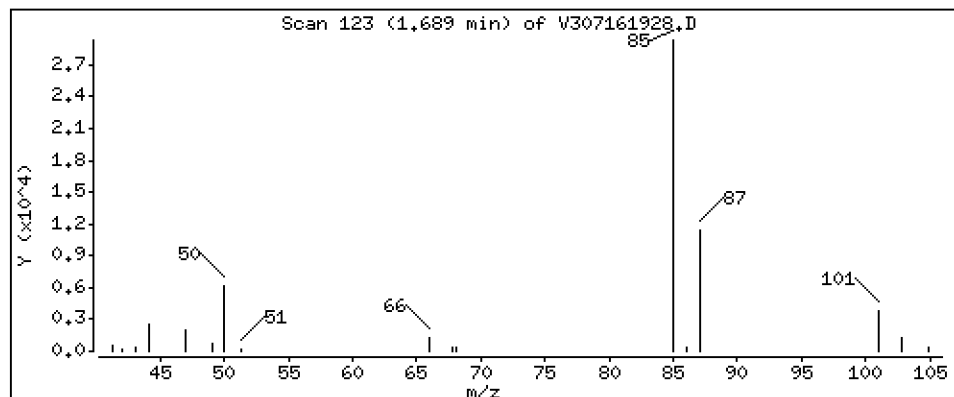
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

1 Dichlorodifluoromethane

Concentration: 13,297 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

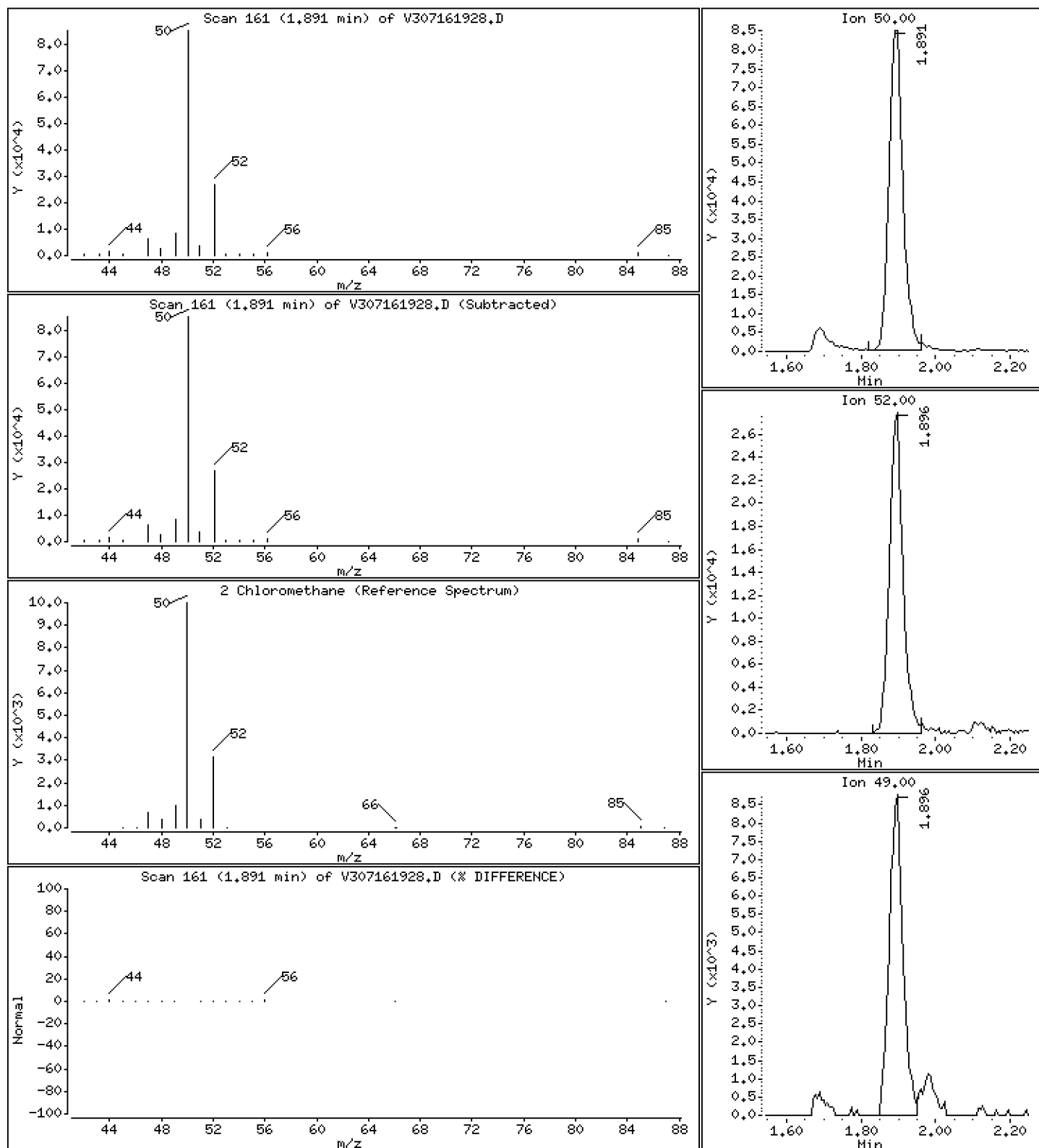
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

2 Chloromethane

Concentration: 11,790 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

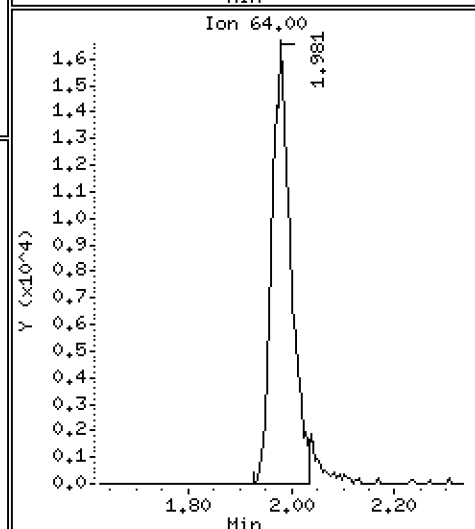
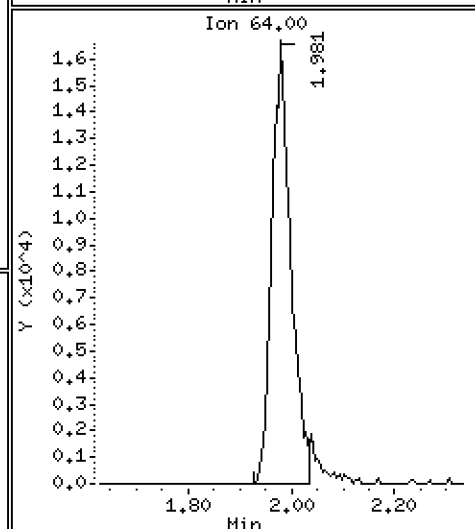
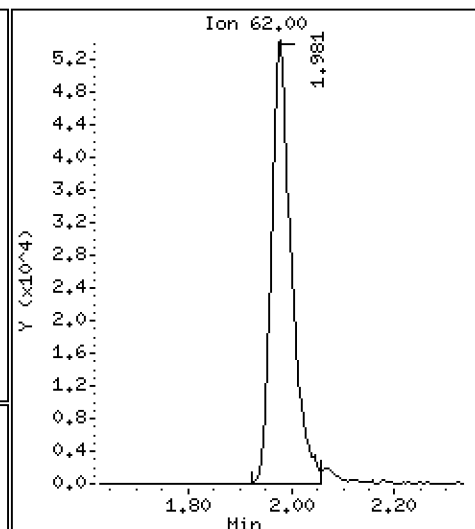
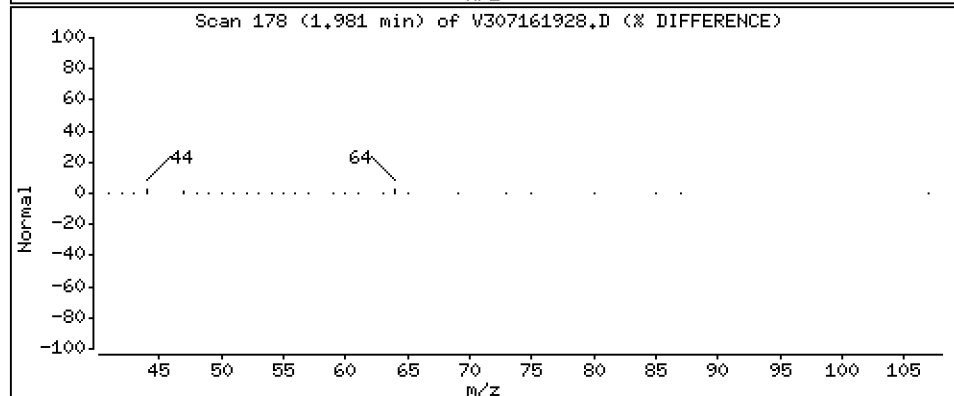
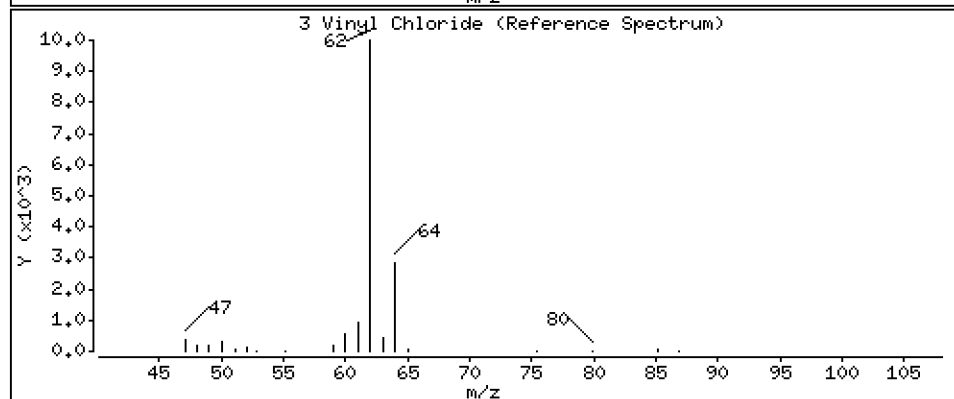
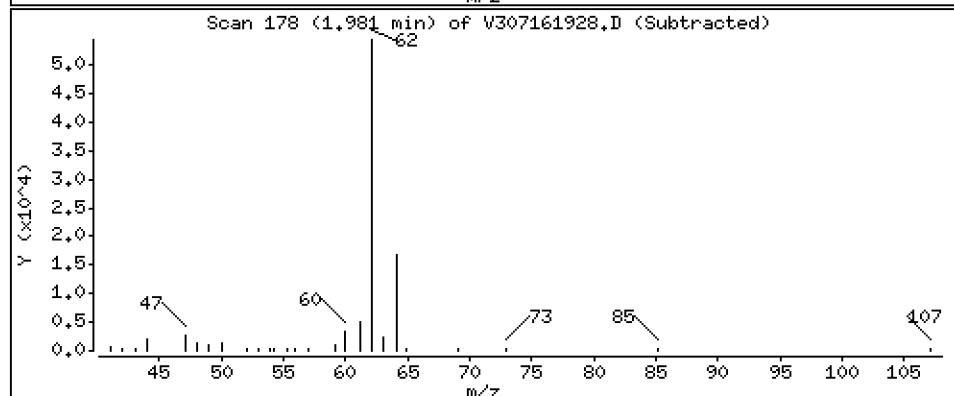
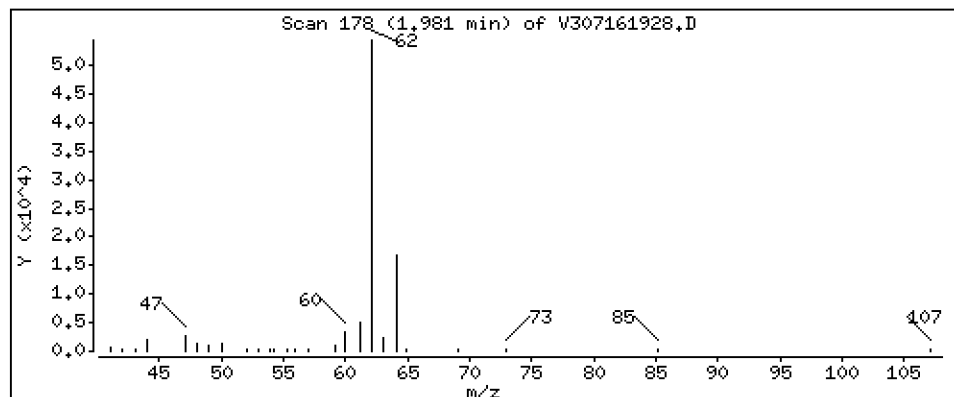
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

3 Vinyl Chloride

Concentration: 11,535 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

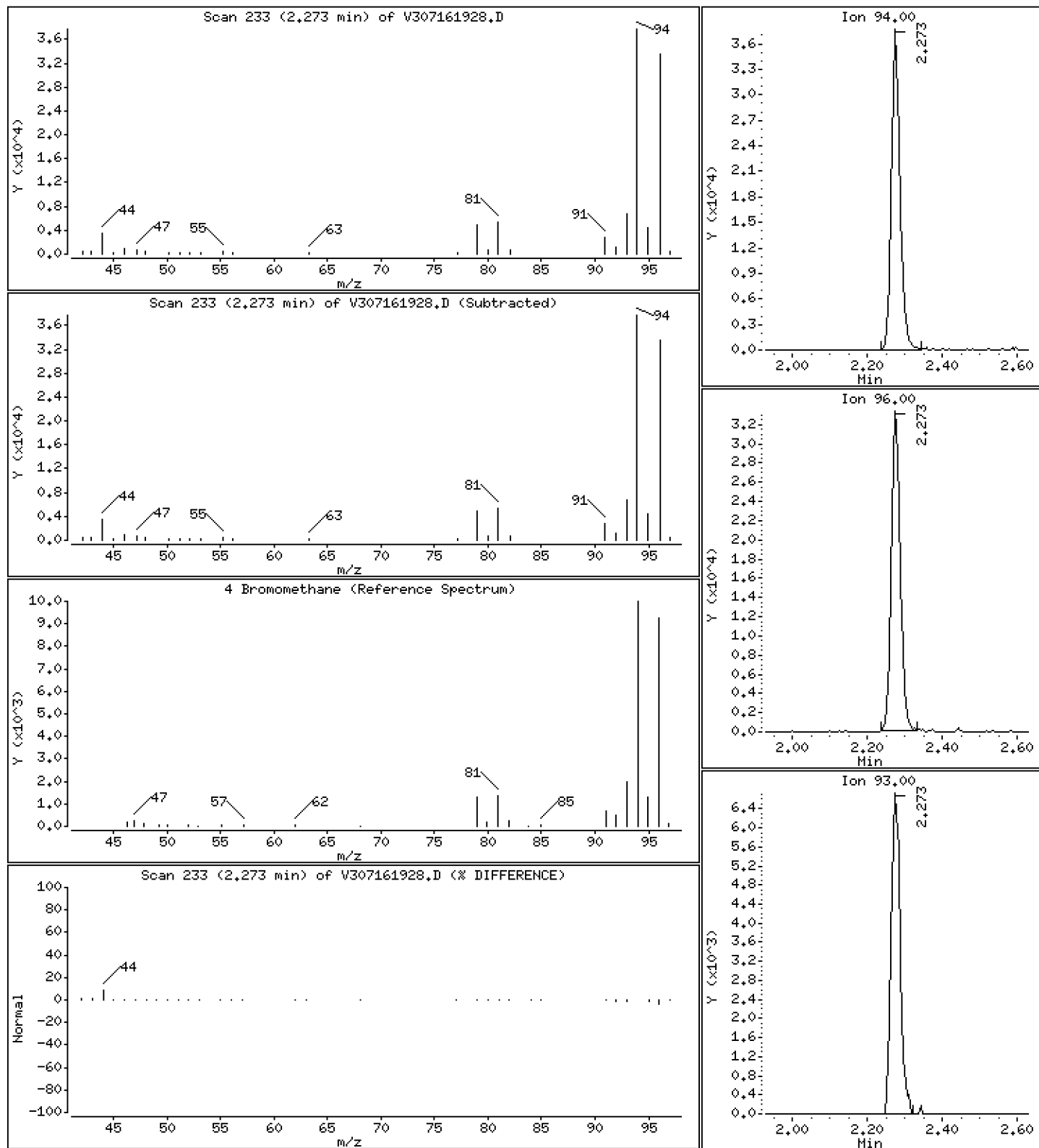
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 11,632 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

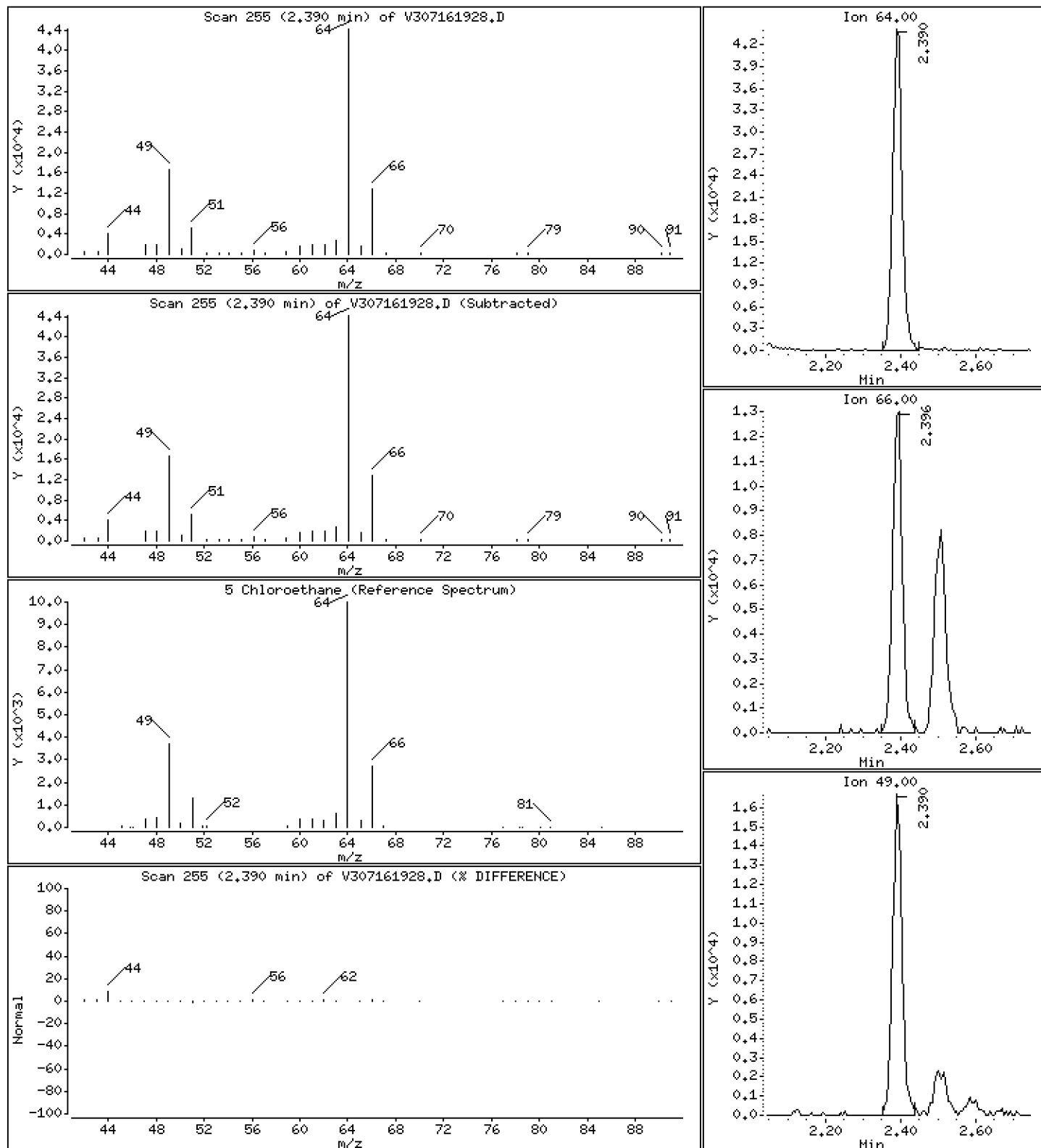
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 12,036 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

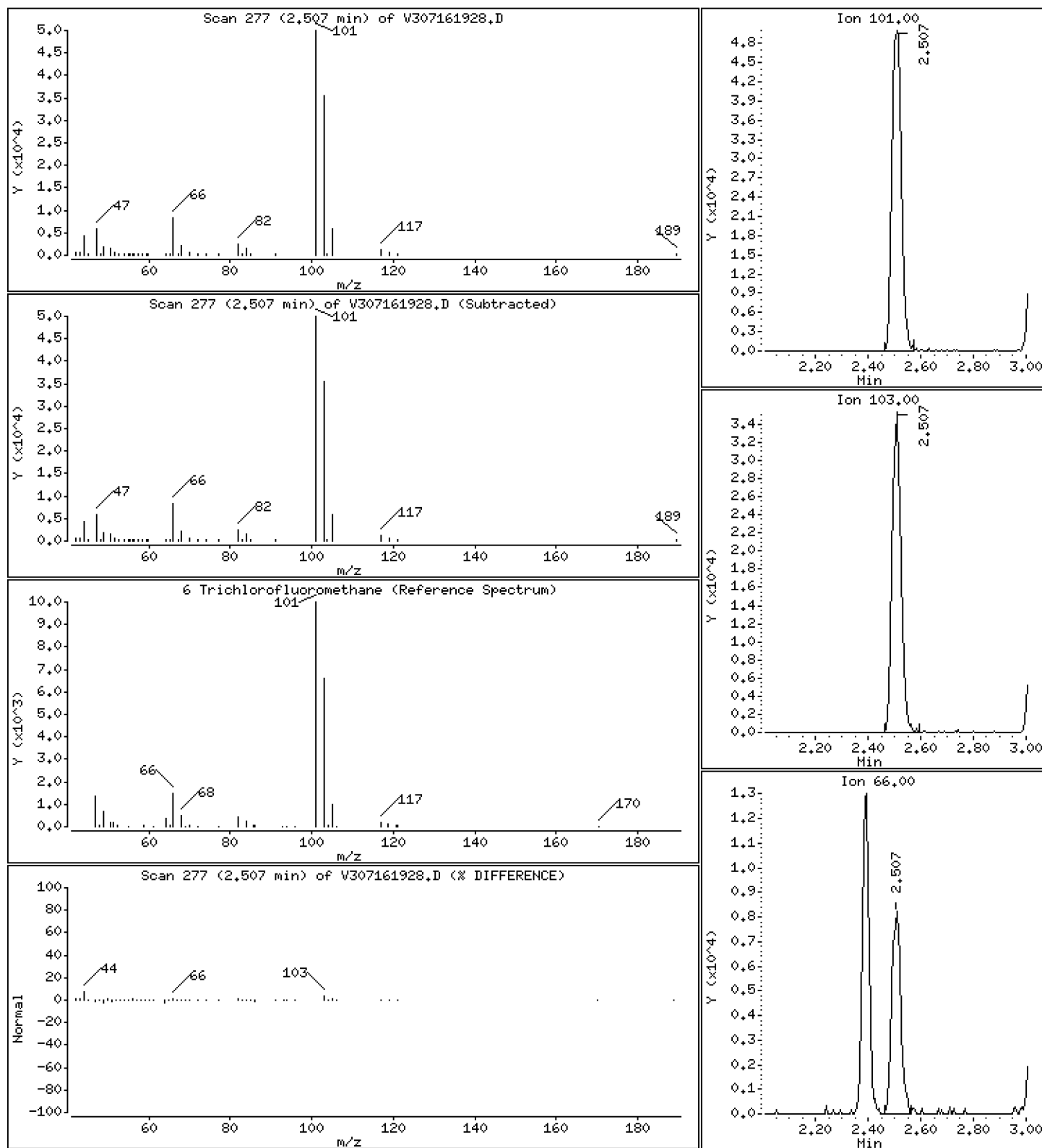
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

6 Trichlorofluoromethane

Concentration: 12,569 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

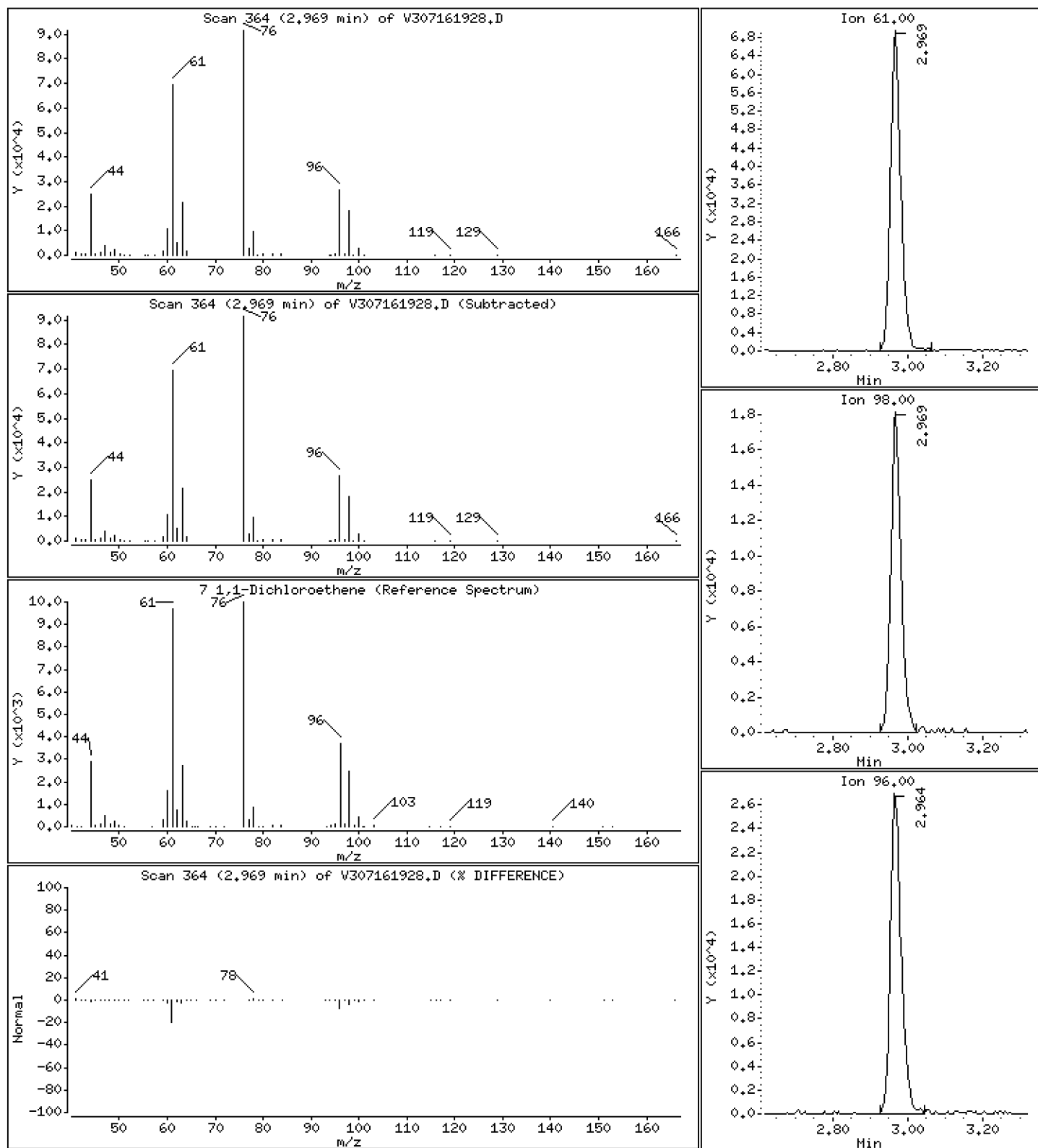
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

7 1,1-Dichloroethene

Concentration: 10,573 ug/L

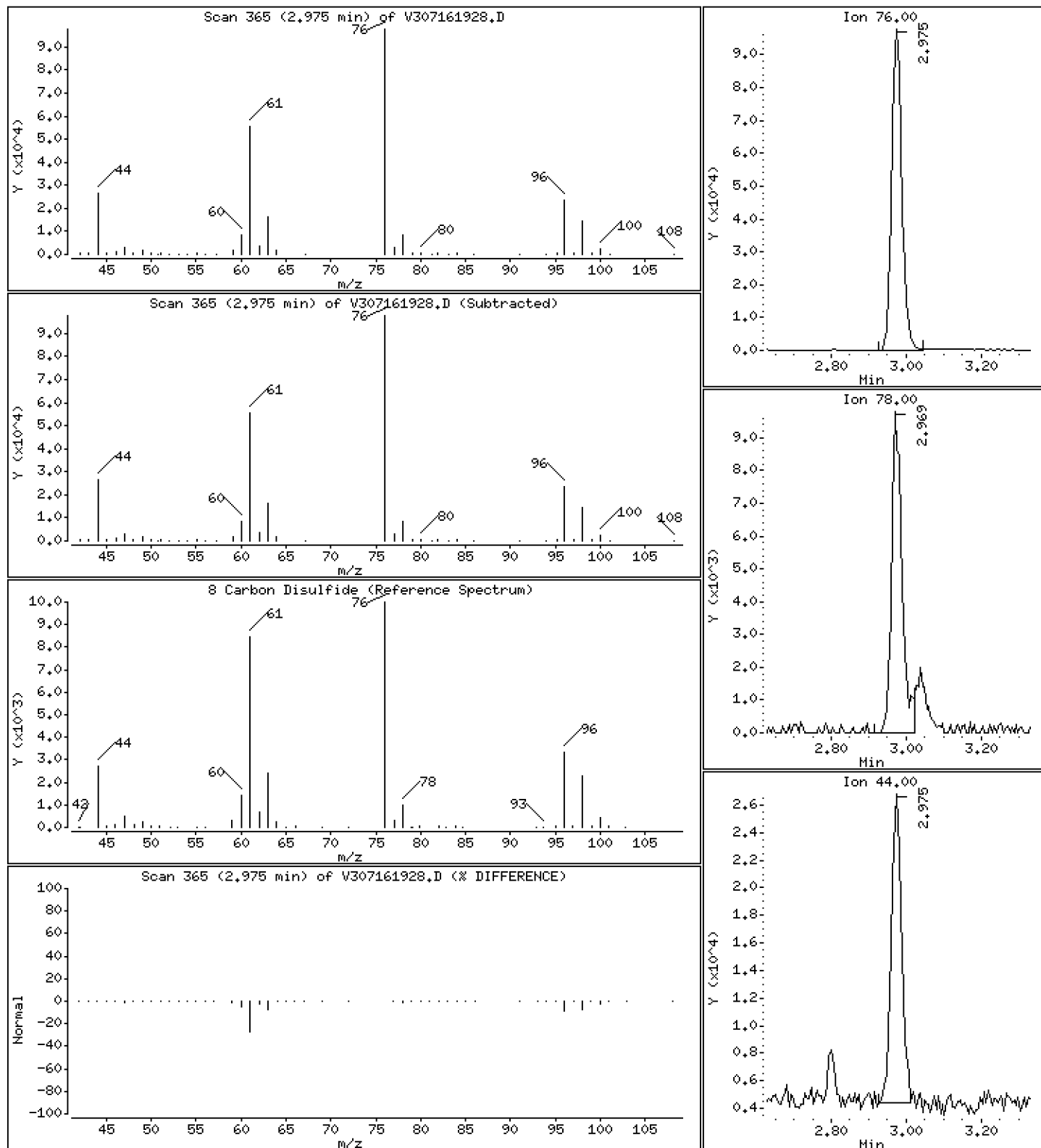


Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Concentration: 11,618 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

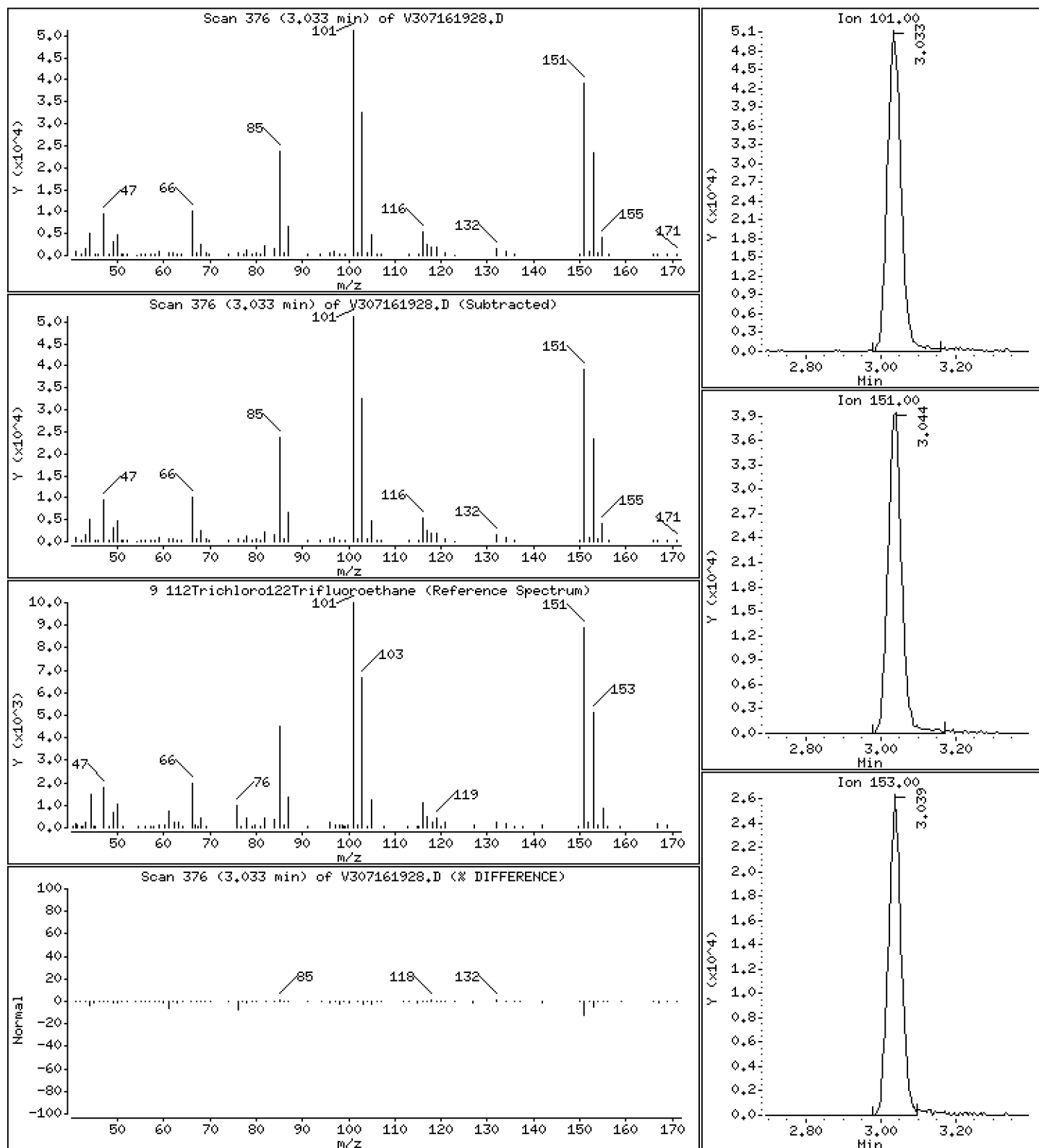
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

9 112Trichloro122Trifluoroethane

Concentration: 27,572 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

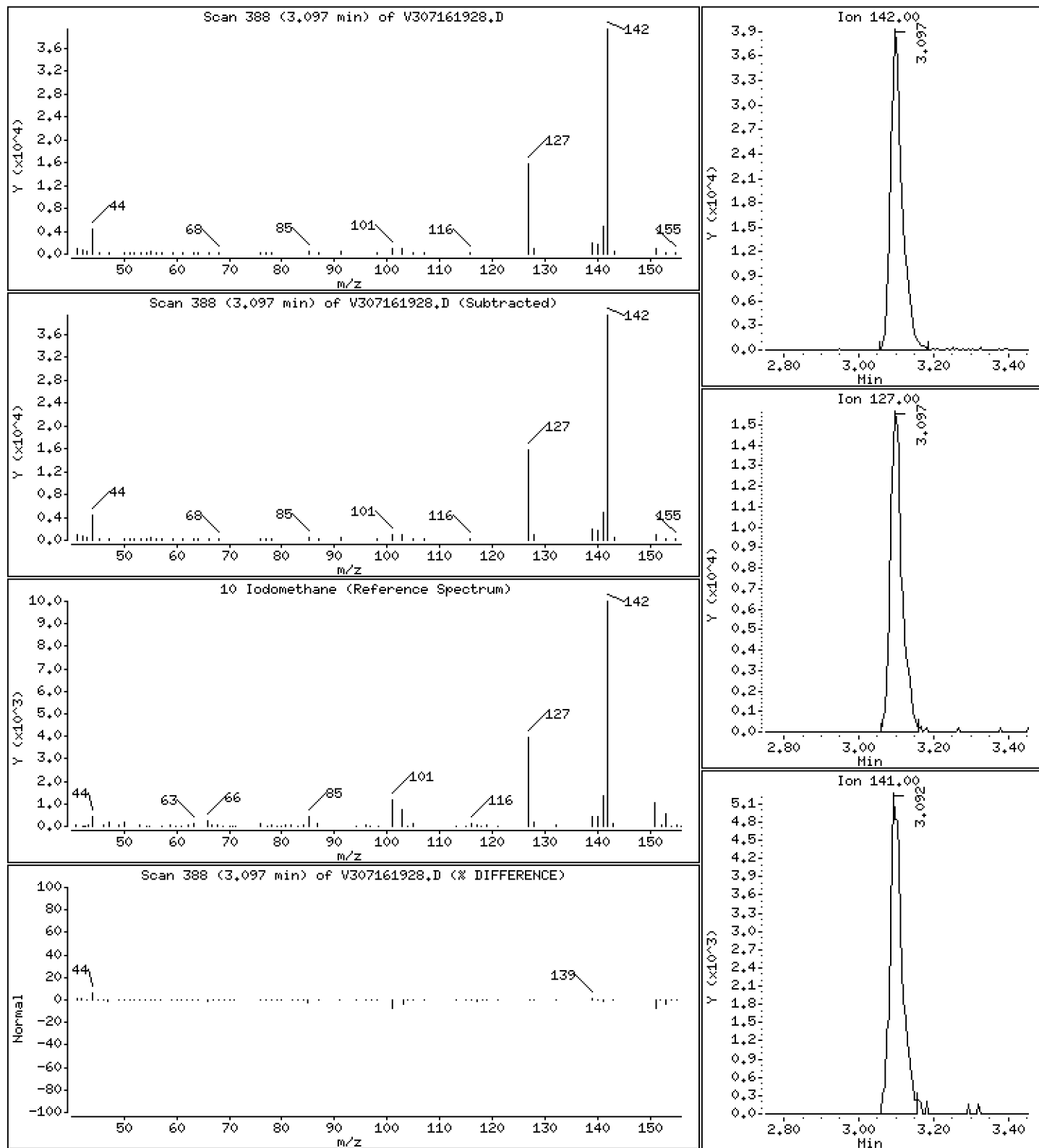
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

10 Iodomethane

Concentration: 11,431 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

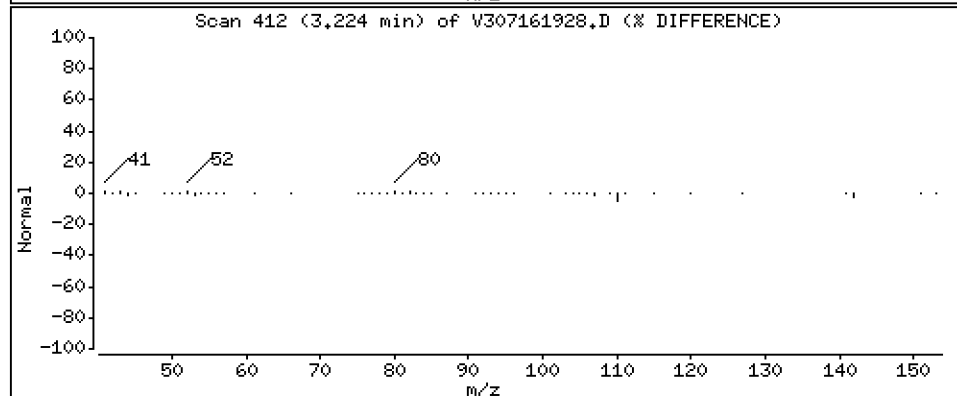
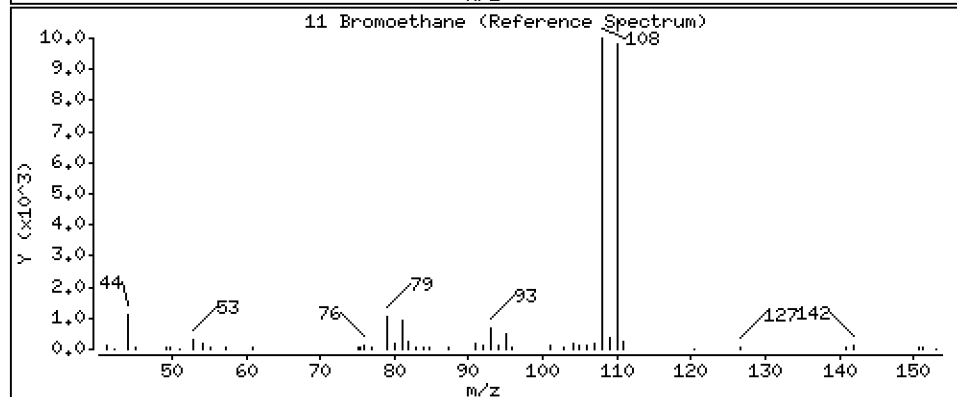
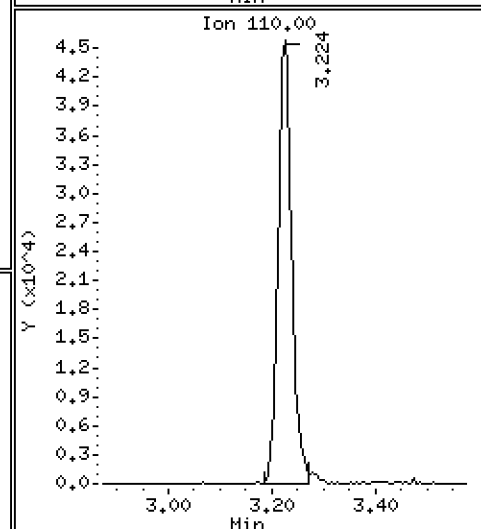
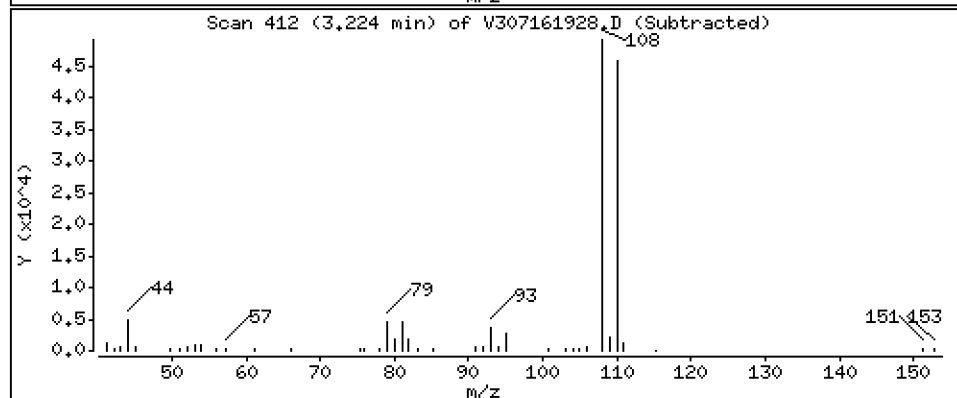
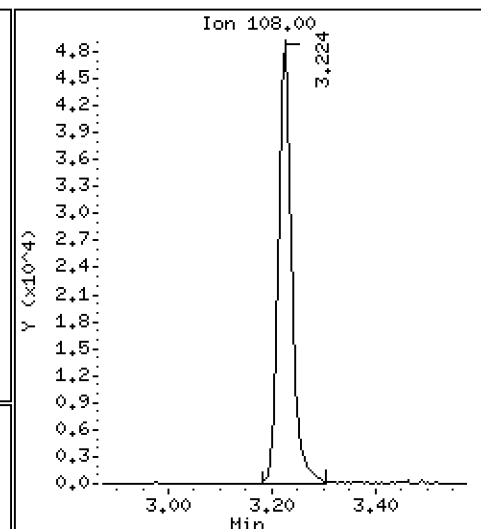
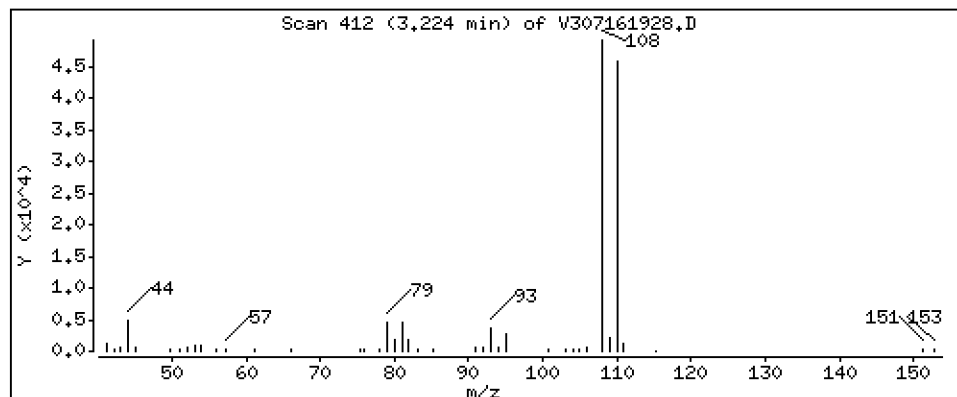
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

11 Bromoethane

Concentration: 25,301 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

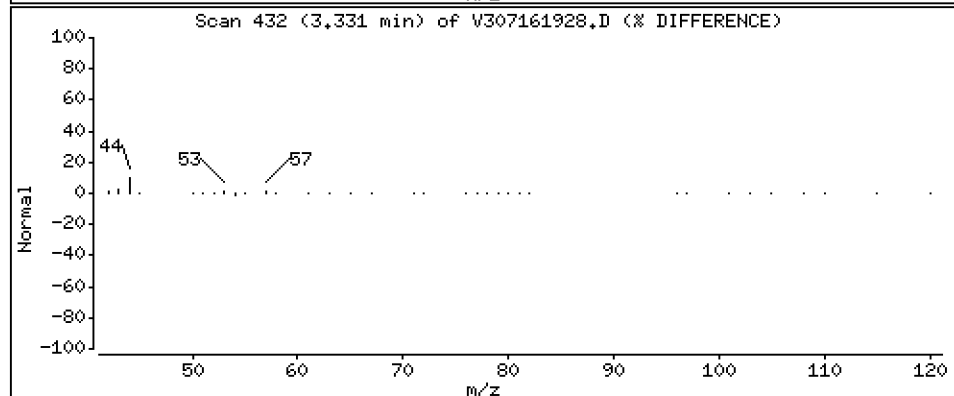
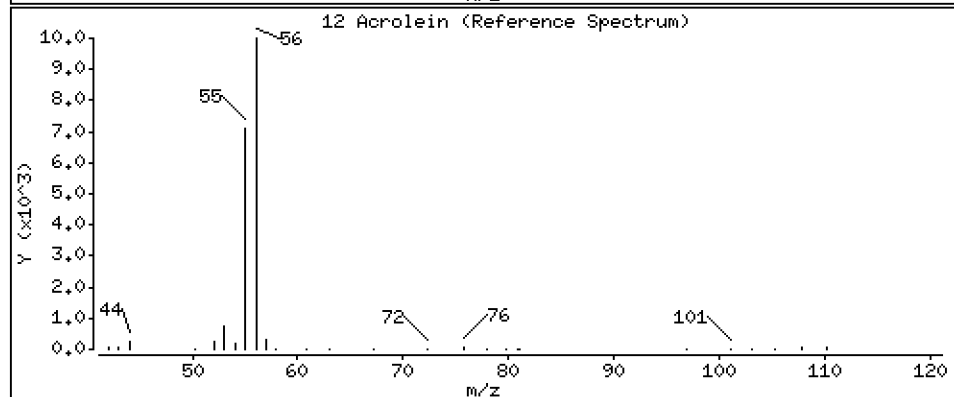
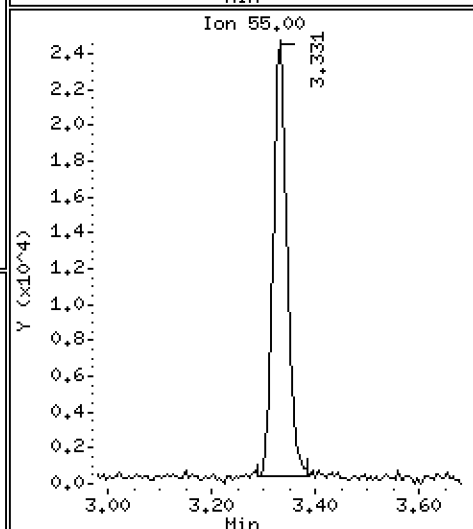
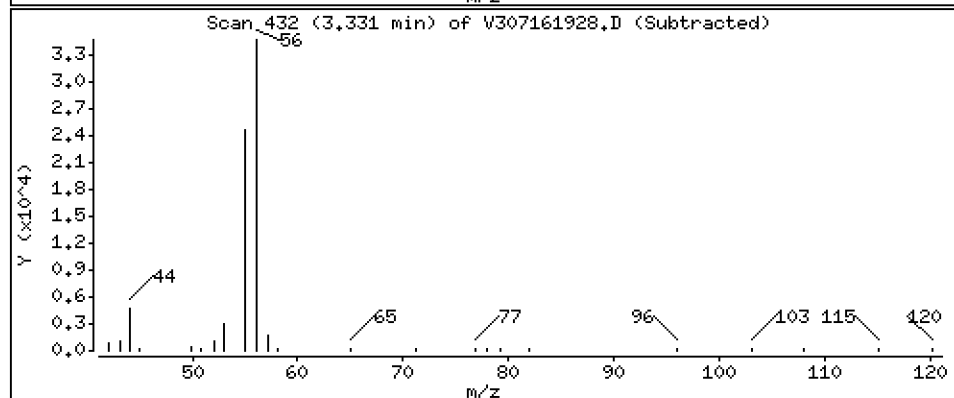
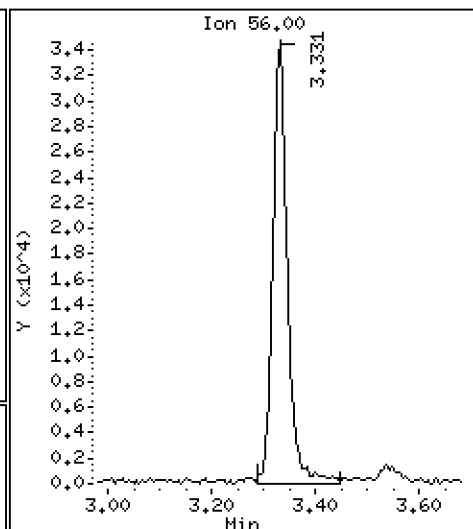
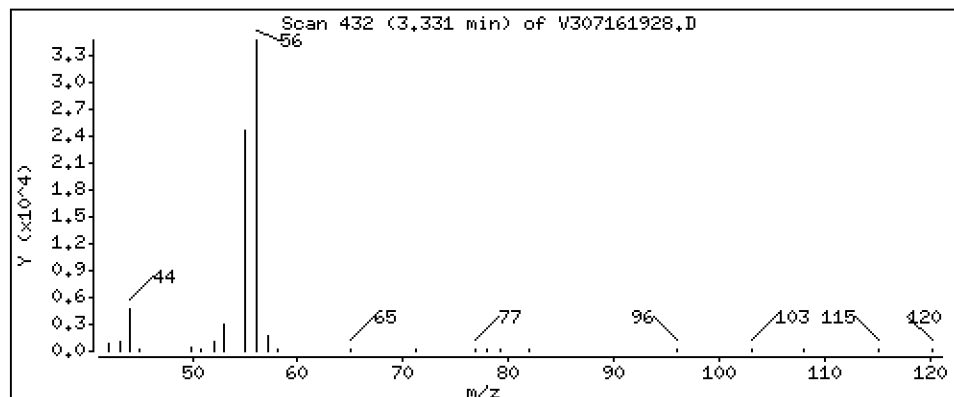
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 64,473 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

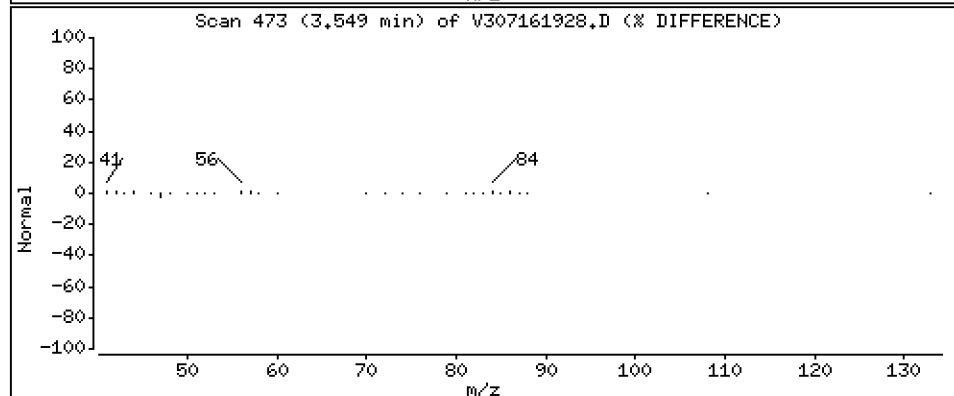
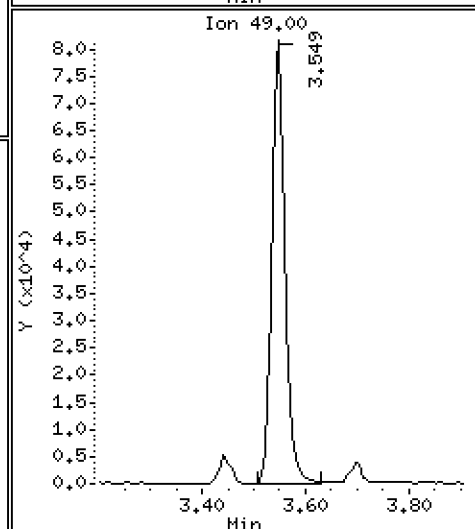
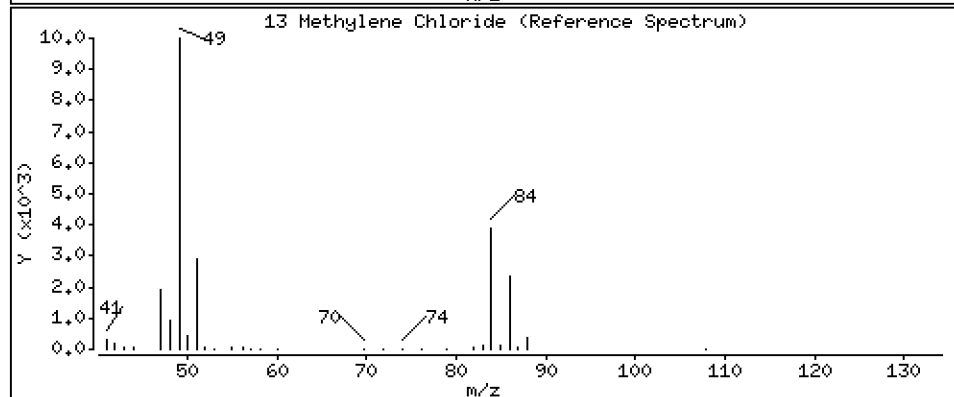
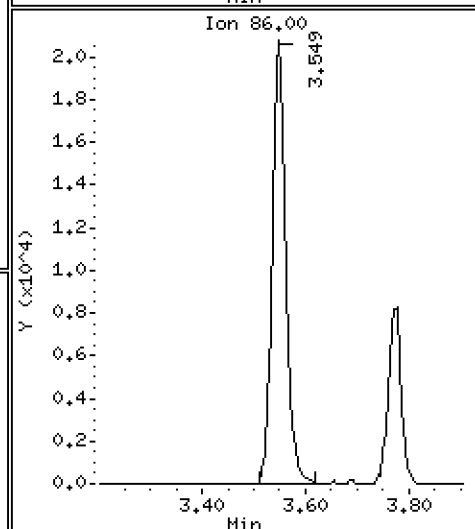
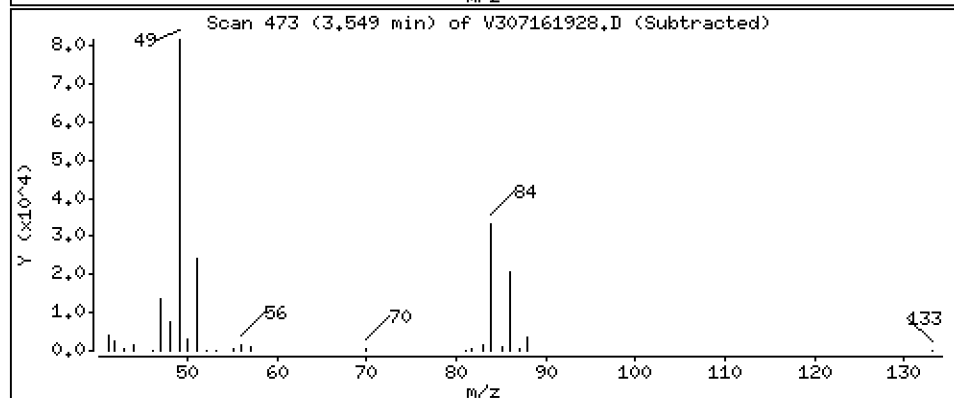
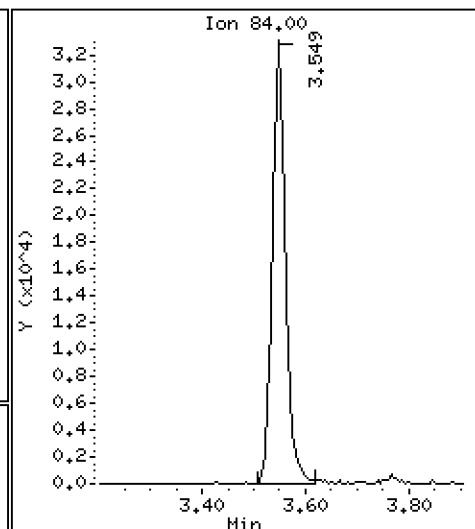
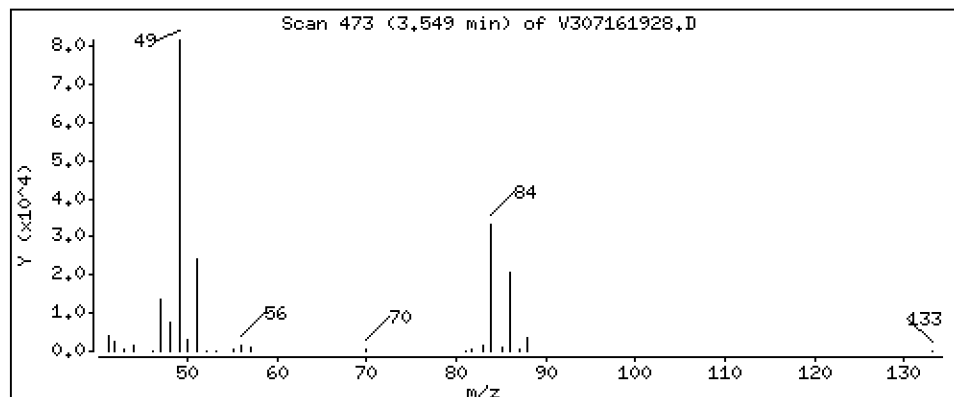
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 11,410 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

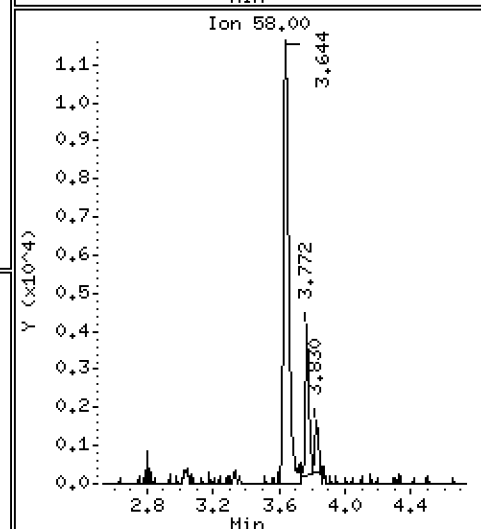
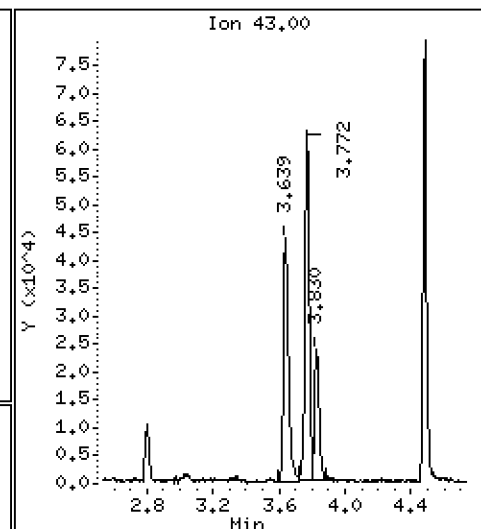
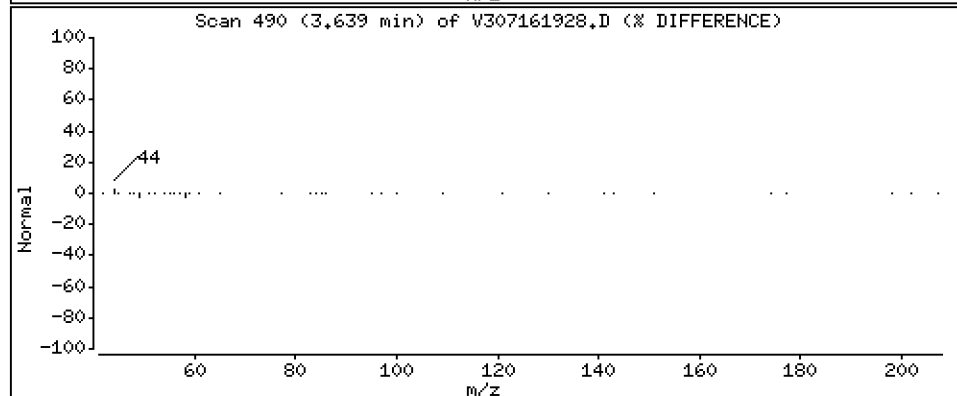
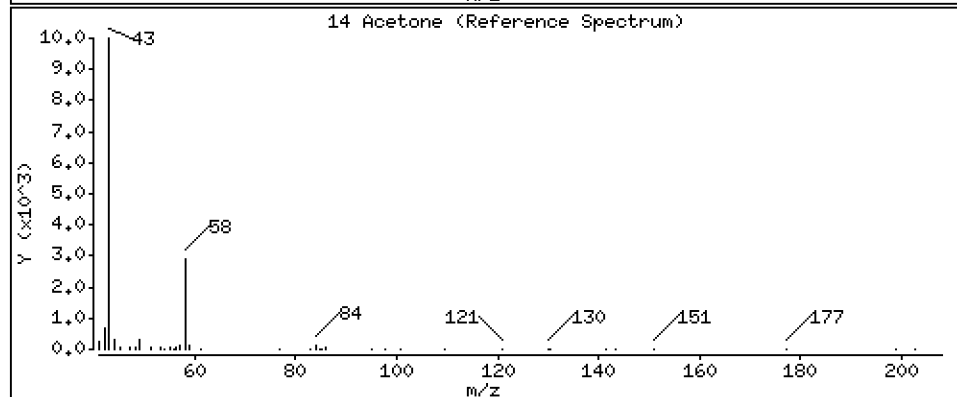
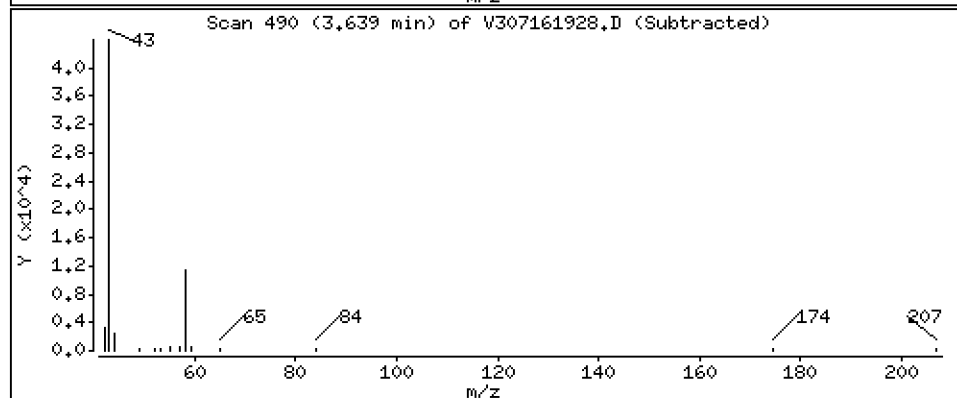
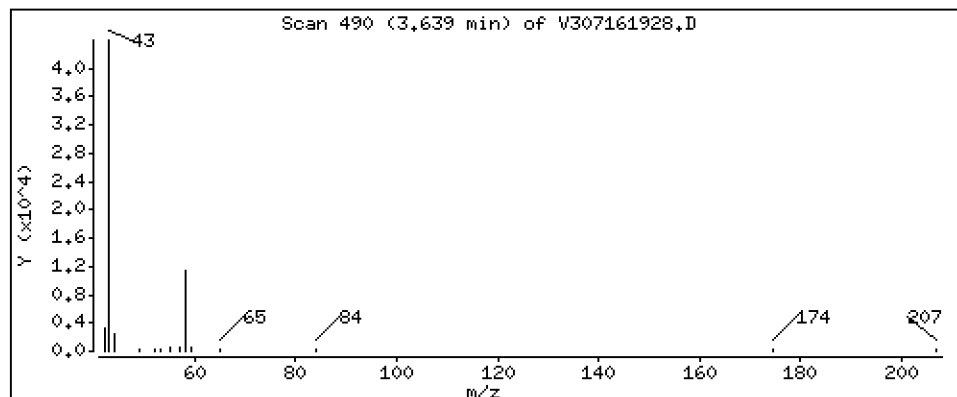
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 54,595 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

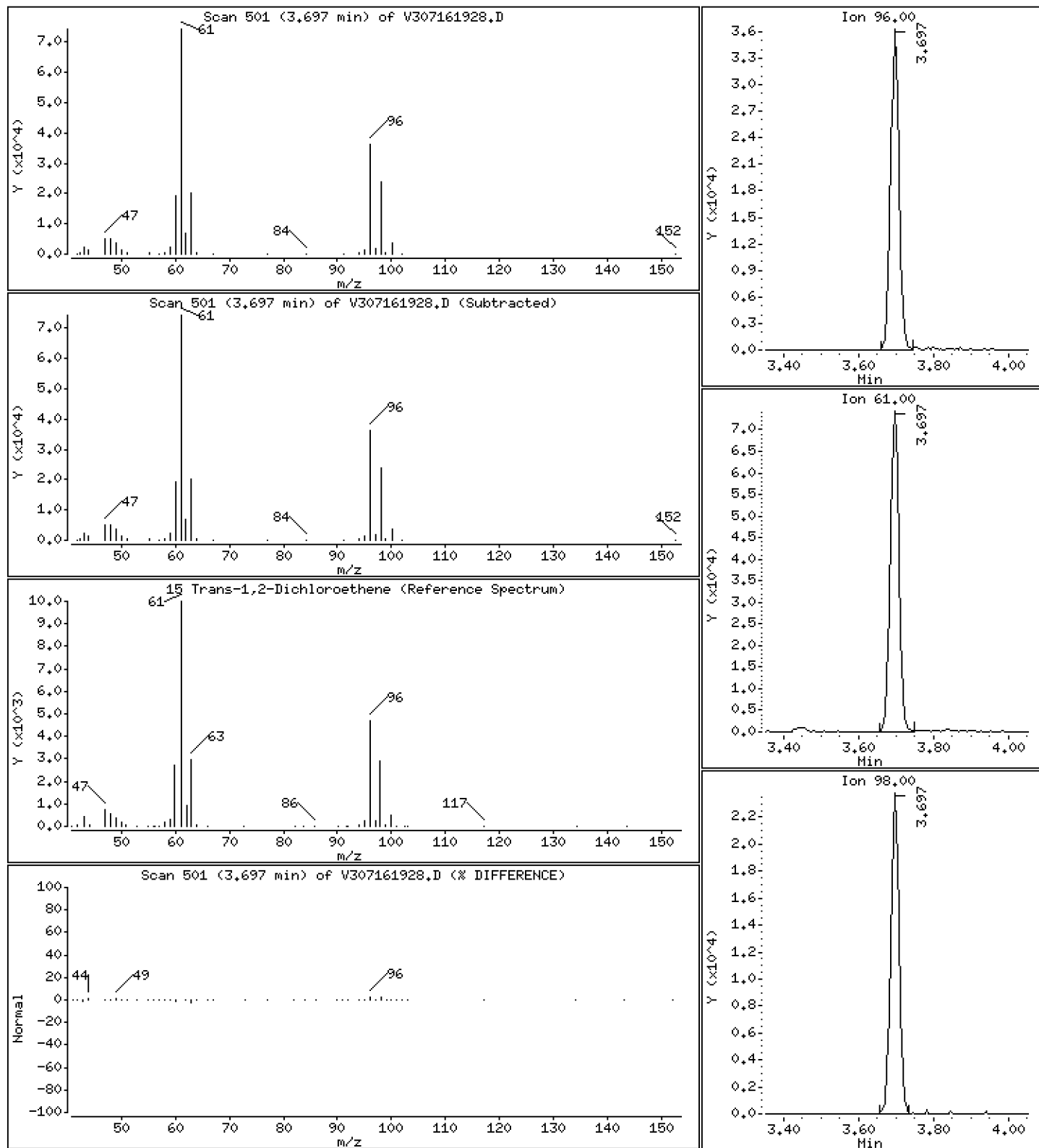
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 10,123 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

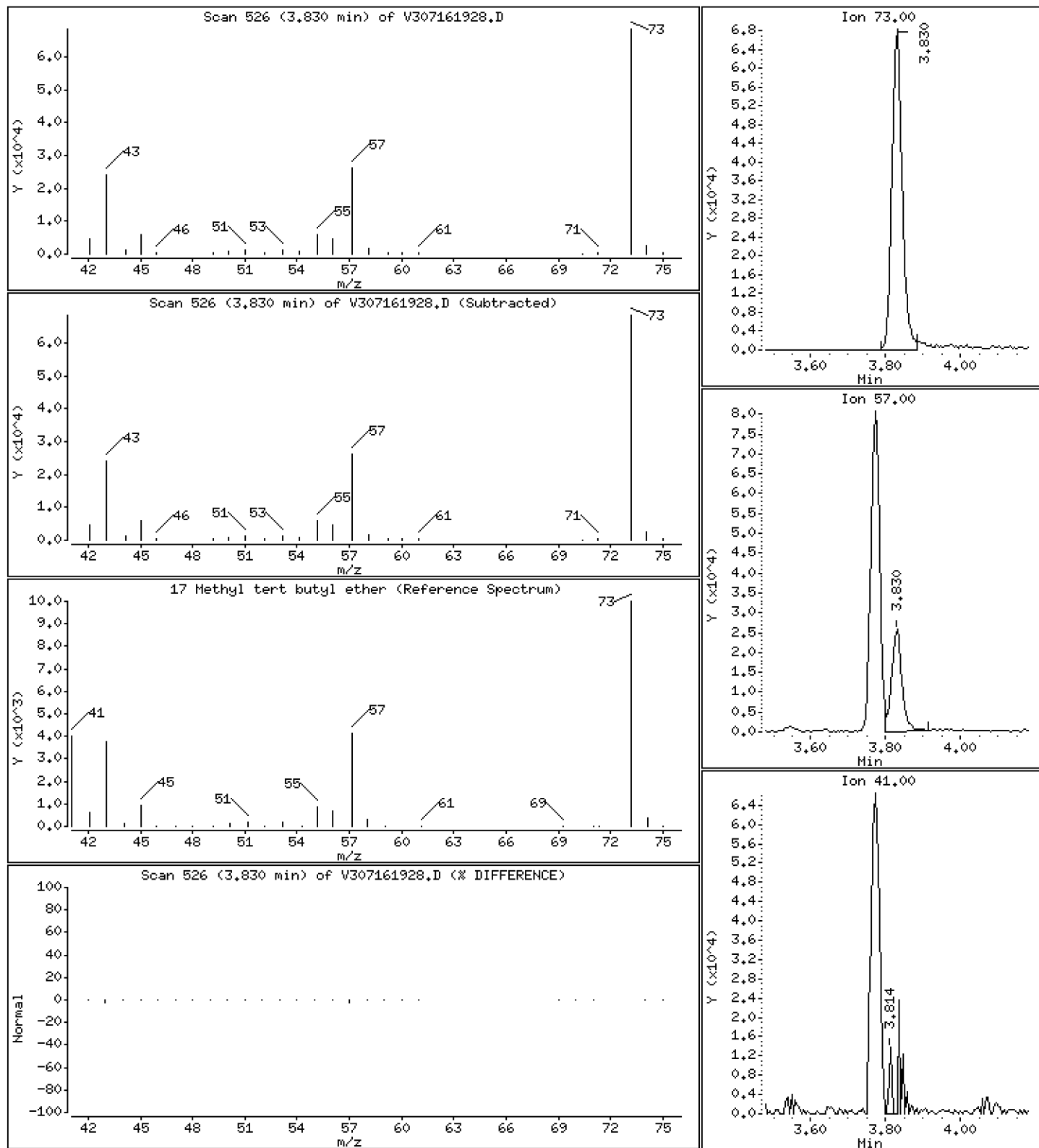
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

17 Methyl tert butyl ether

Concentration: 12,397 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

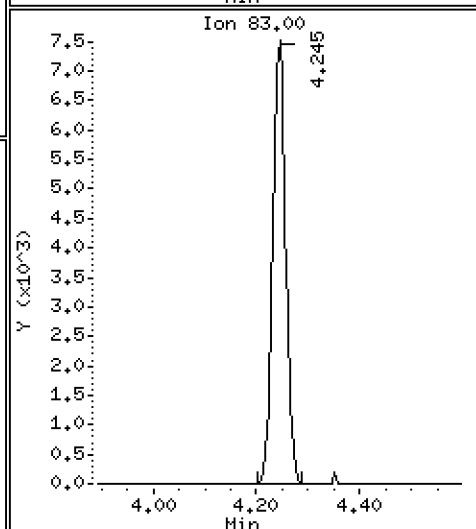
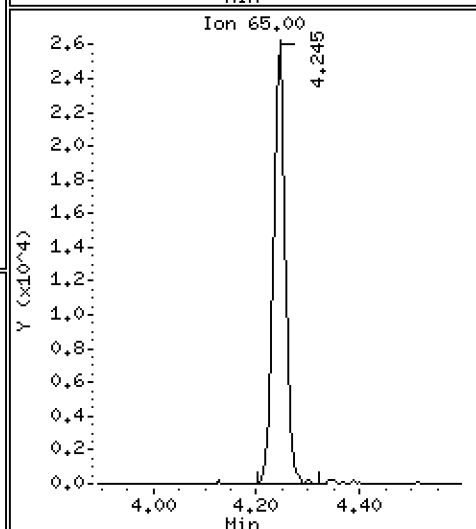
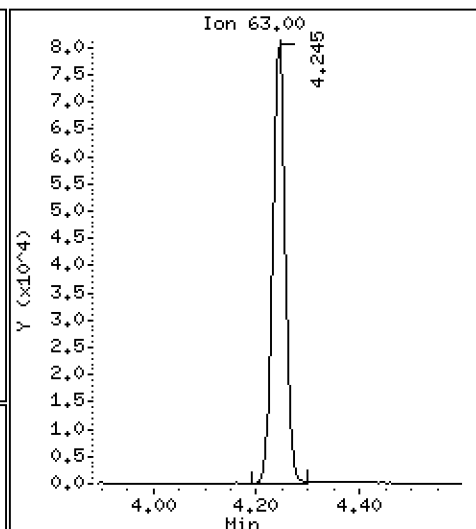
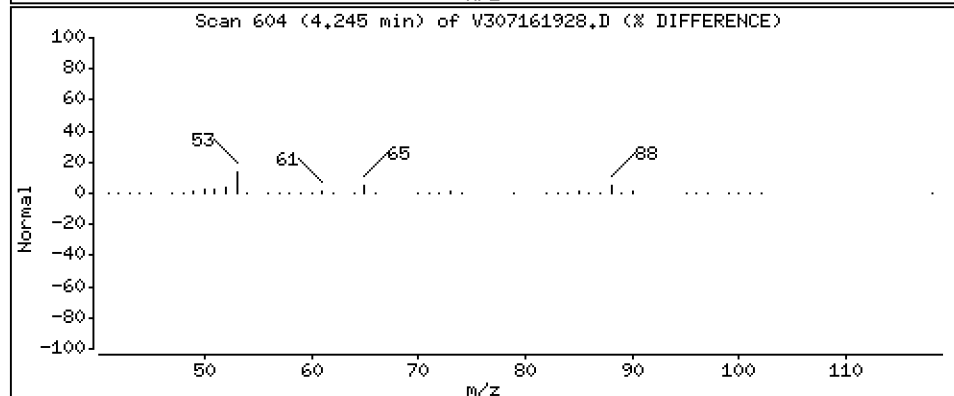
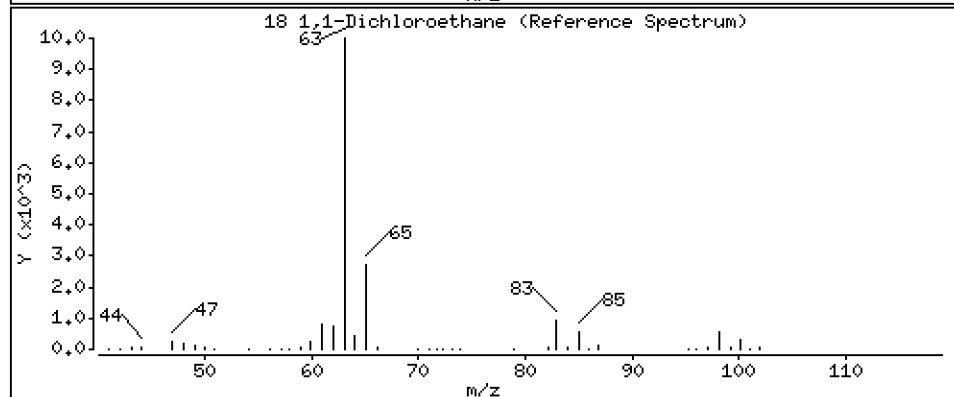
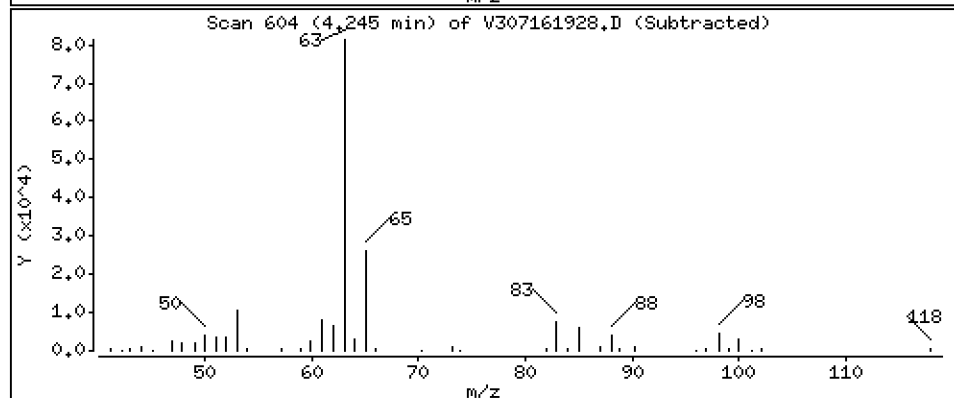
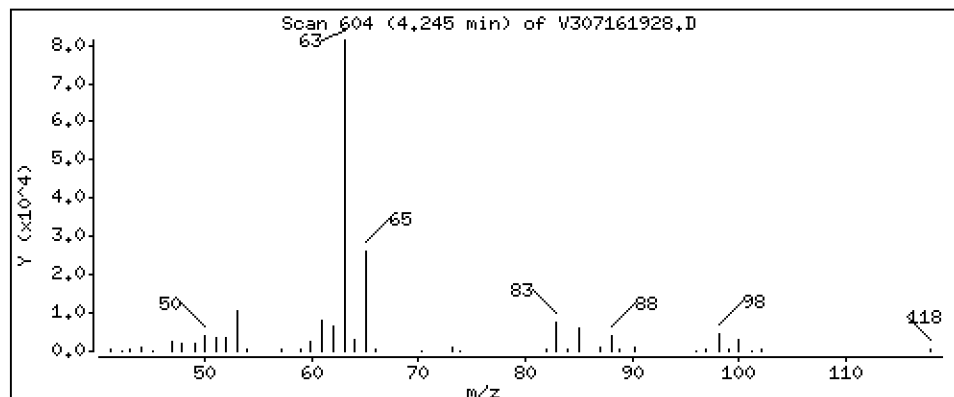
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

18 1,1-Dichloroethane

Concentration: 10,786 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

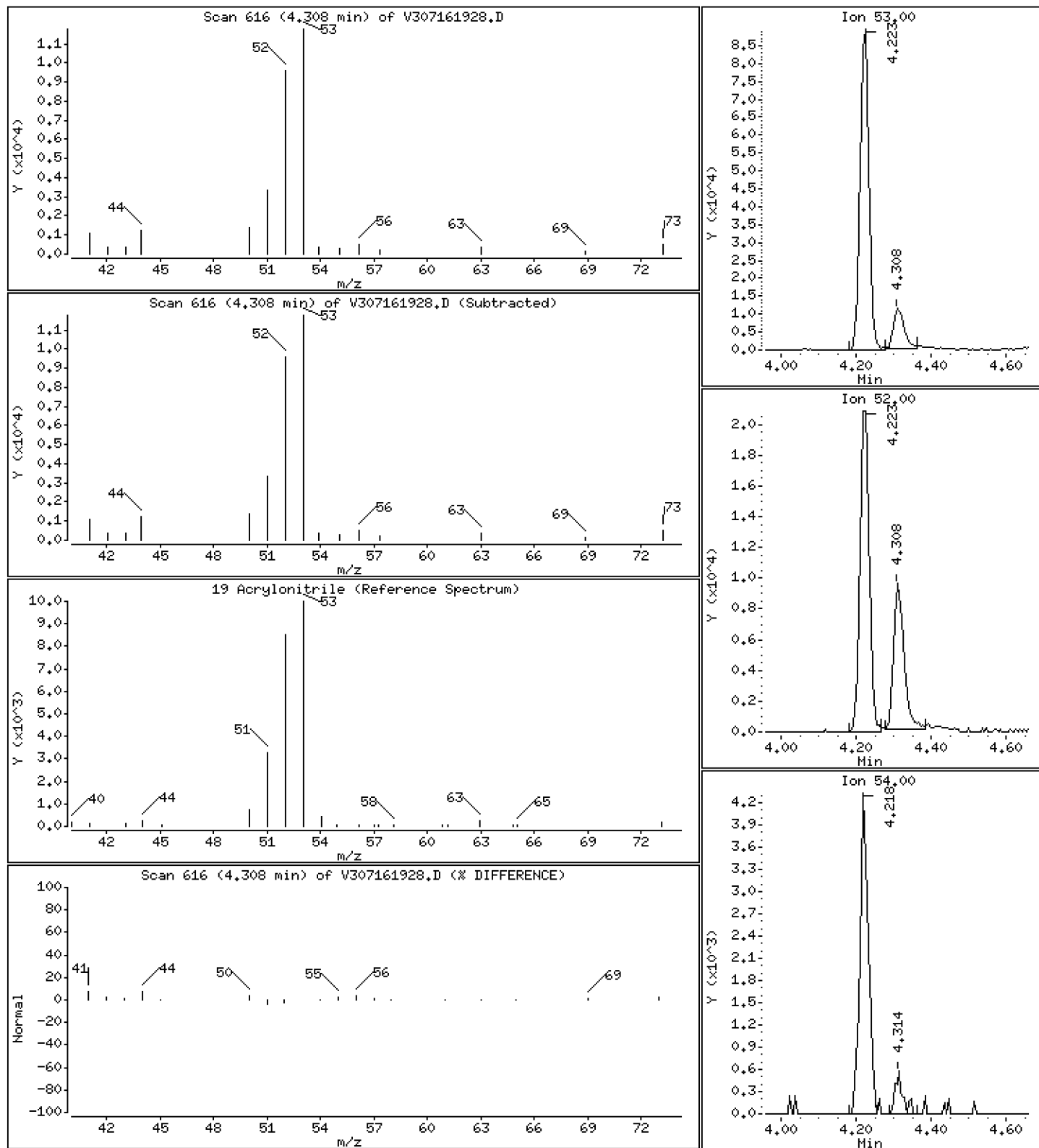
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

19 Acrylonitrile

Concentration: 11,589 ug/L

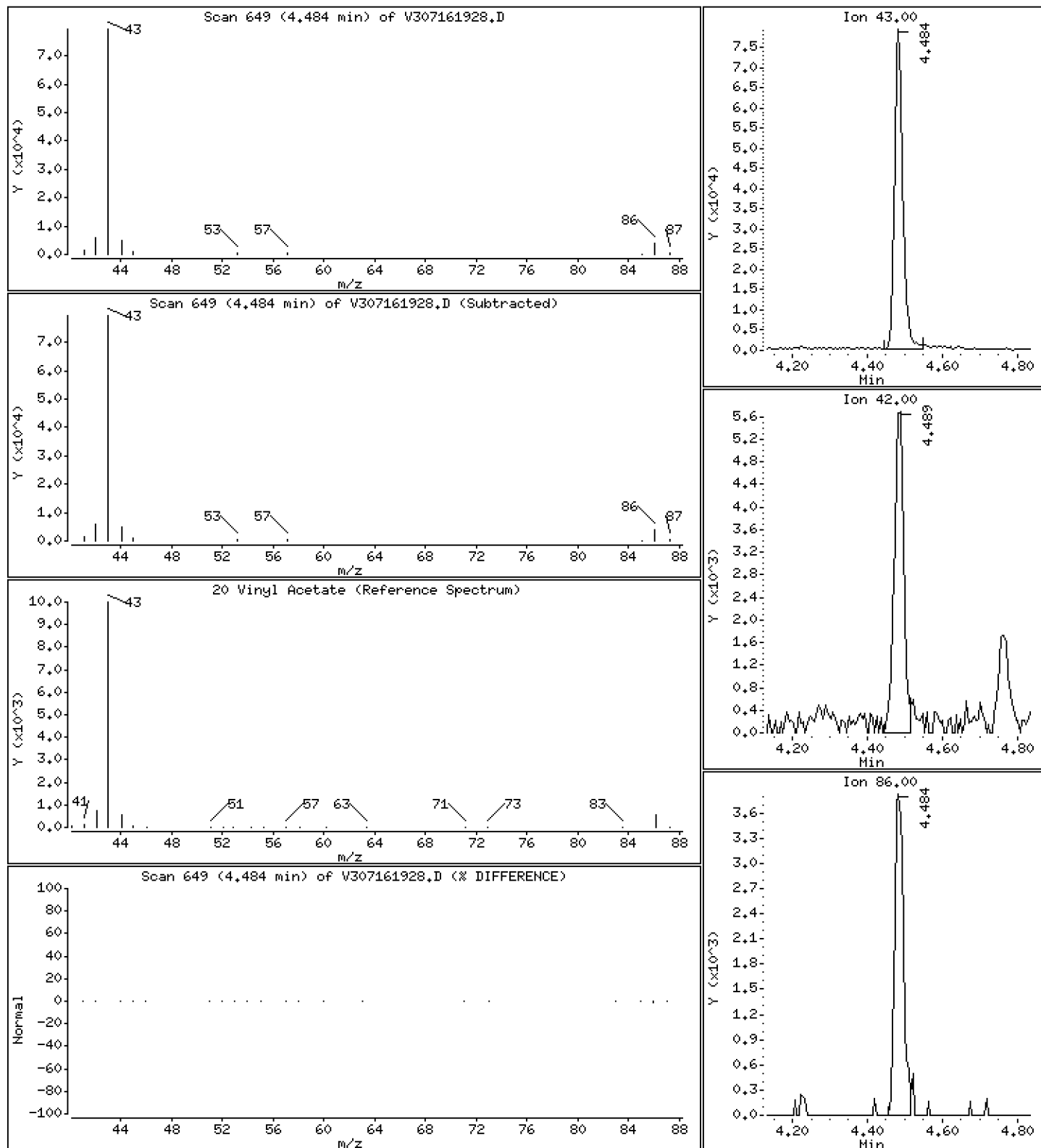


Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Concentration: 8,571 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

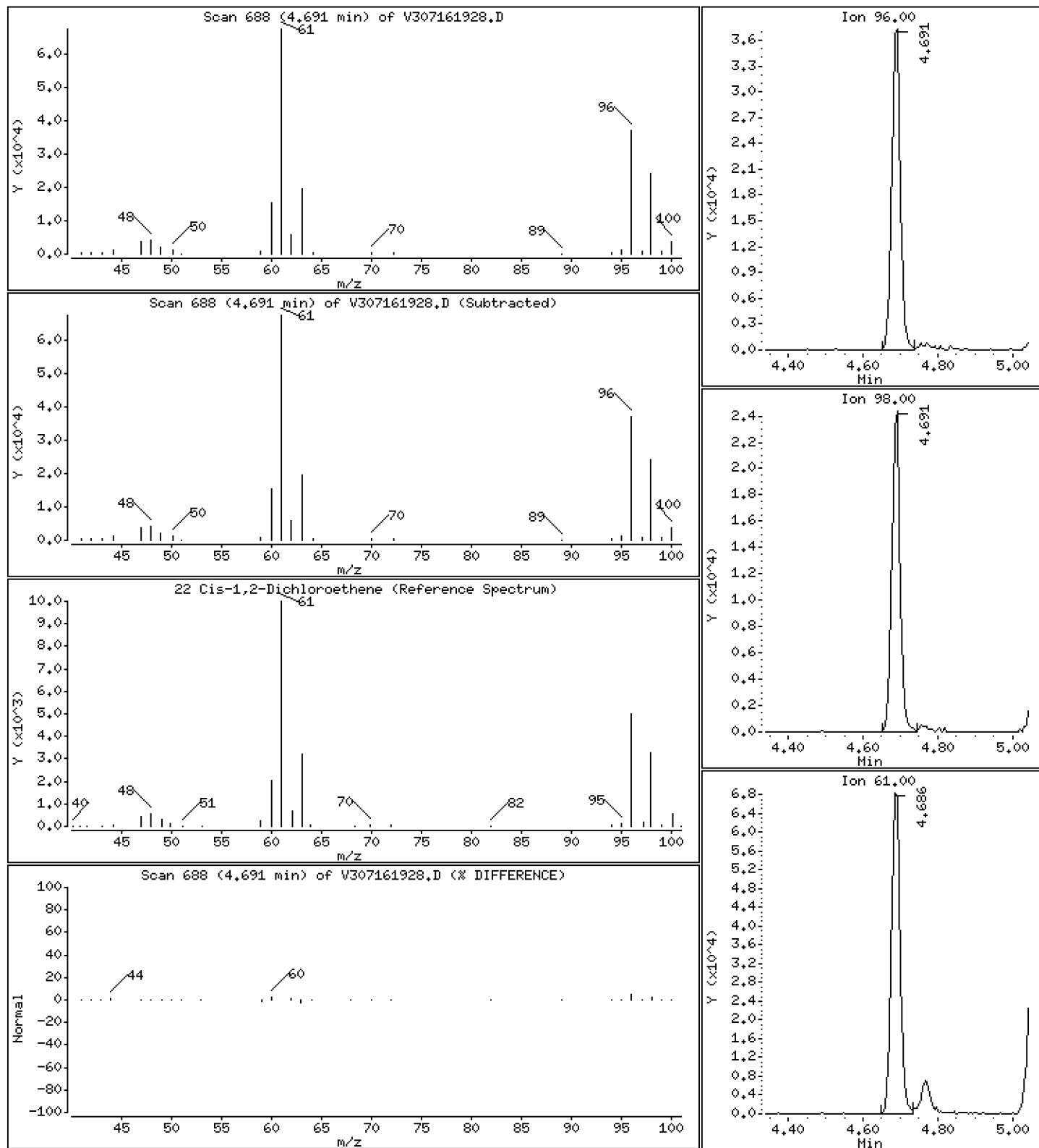
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

22 Cis-1,2-Dichloroethene

Concentration: 10,614 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

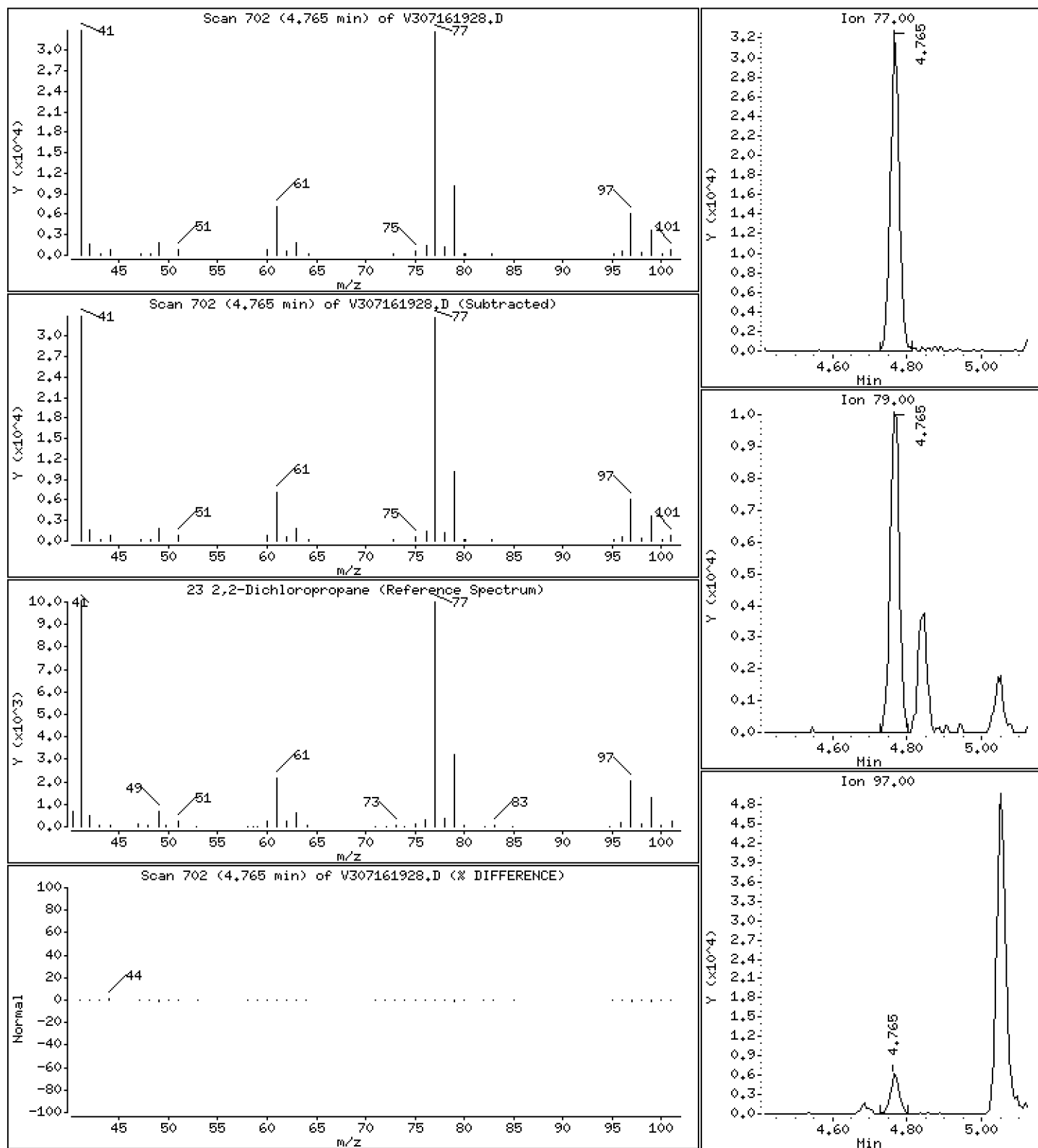
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

23 2,2-Dichloropropane

Concentration: 10,212 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

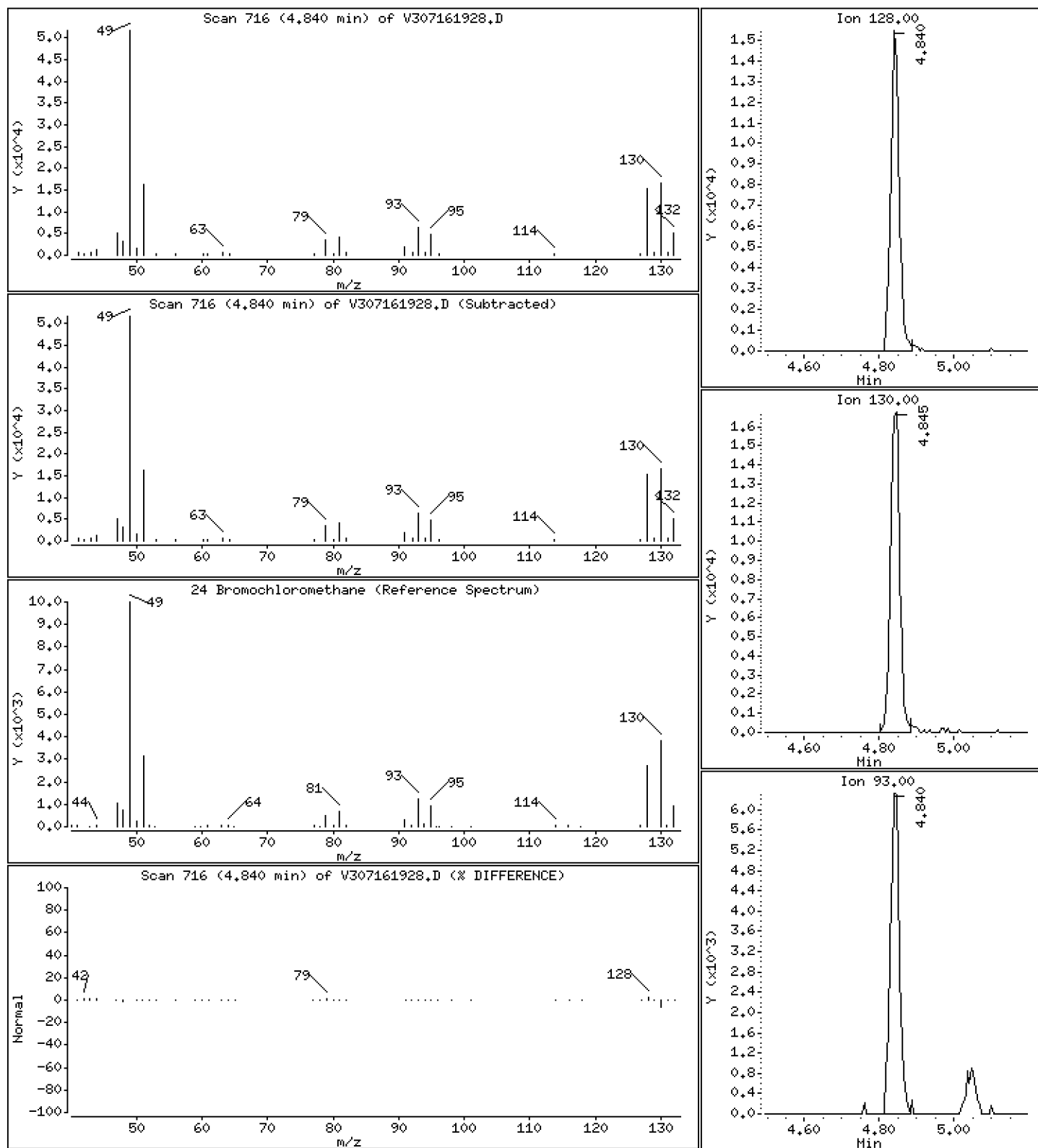
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

24 Bromochloromethane

Concentration: 10.665 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

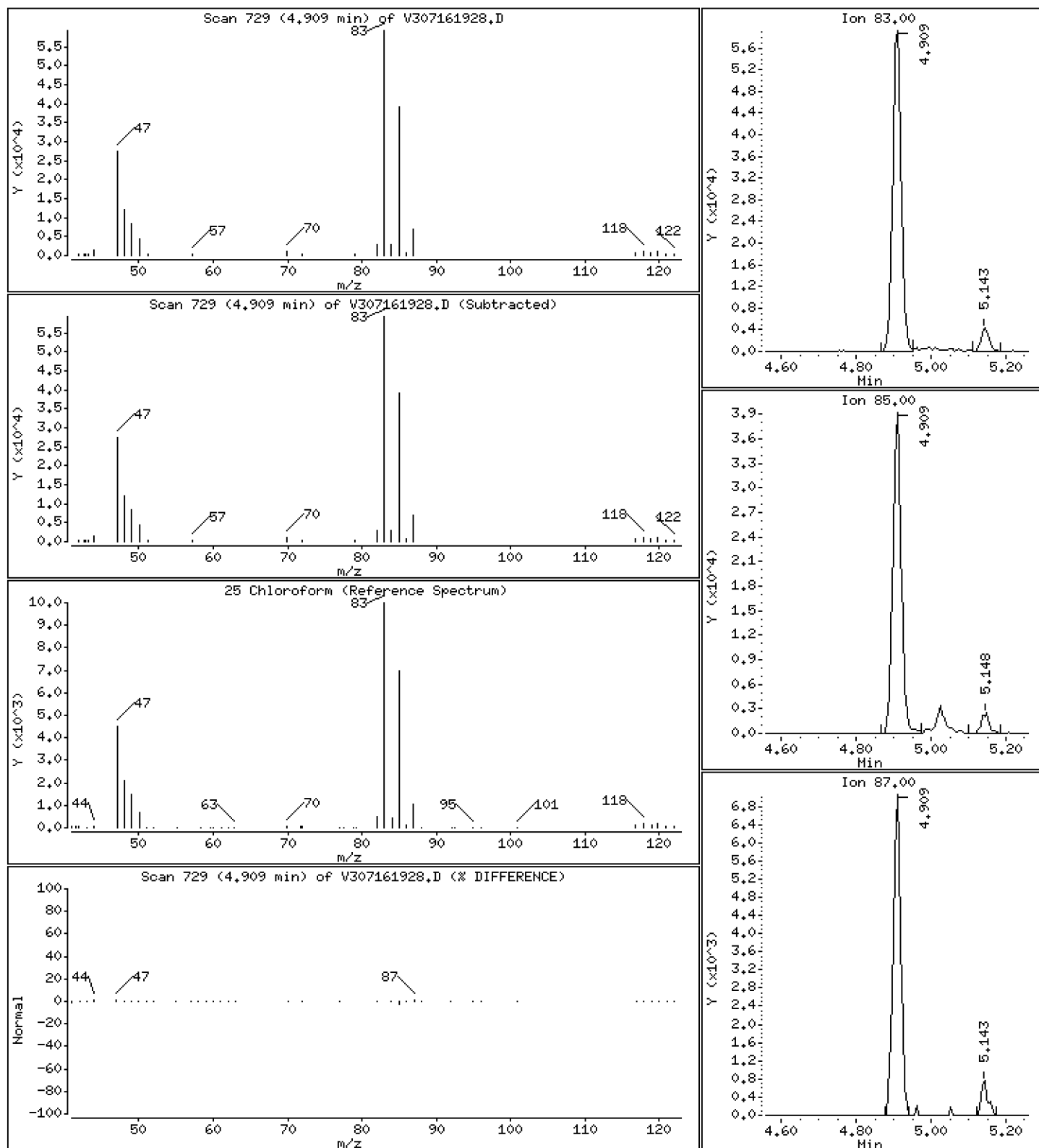
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

25 Chloroform

Concentration: 10,397 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

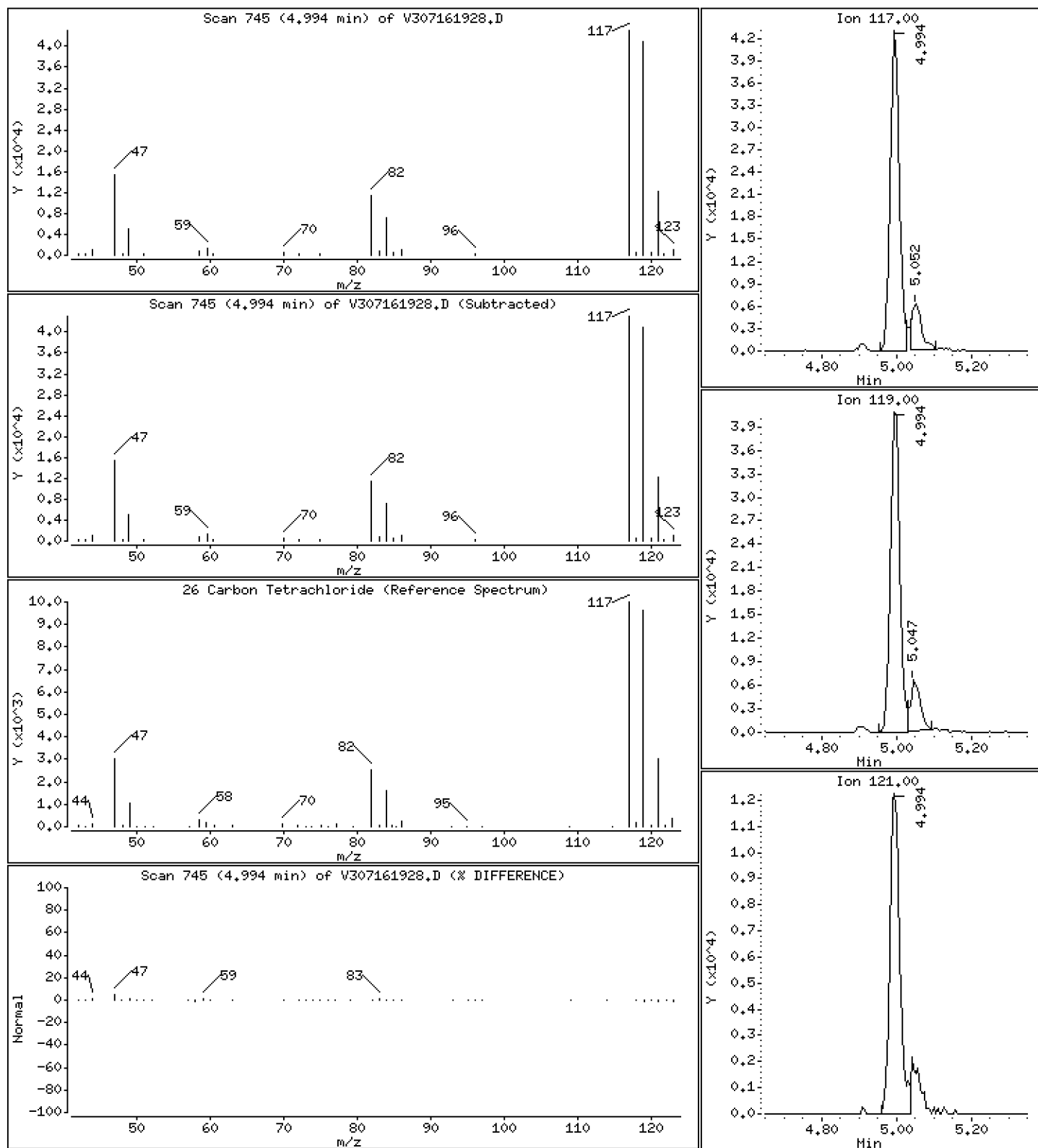
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

26 Carbon Tetrachloride

Concentration: 9.981 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

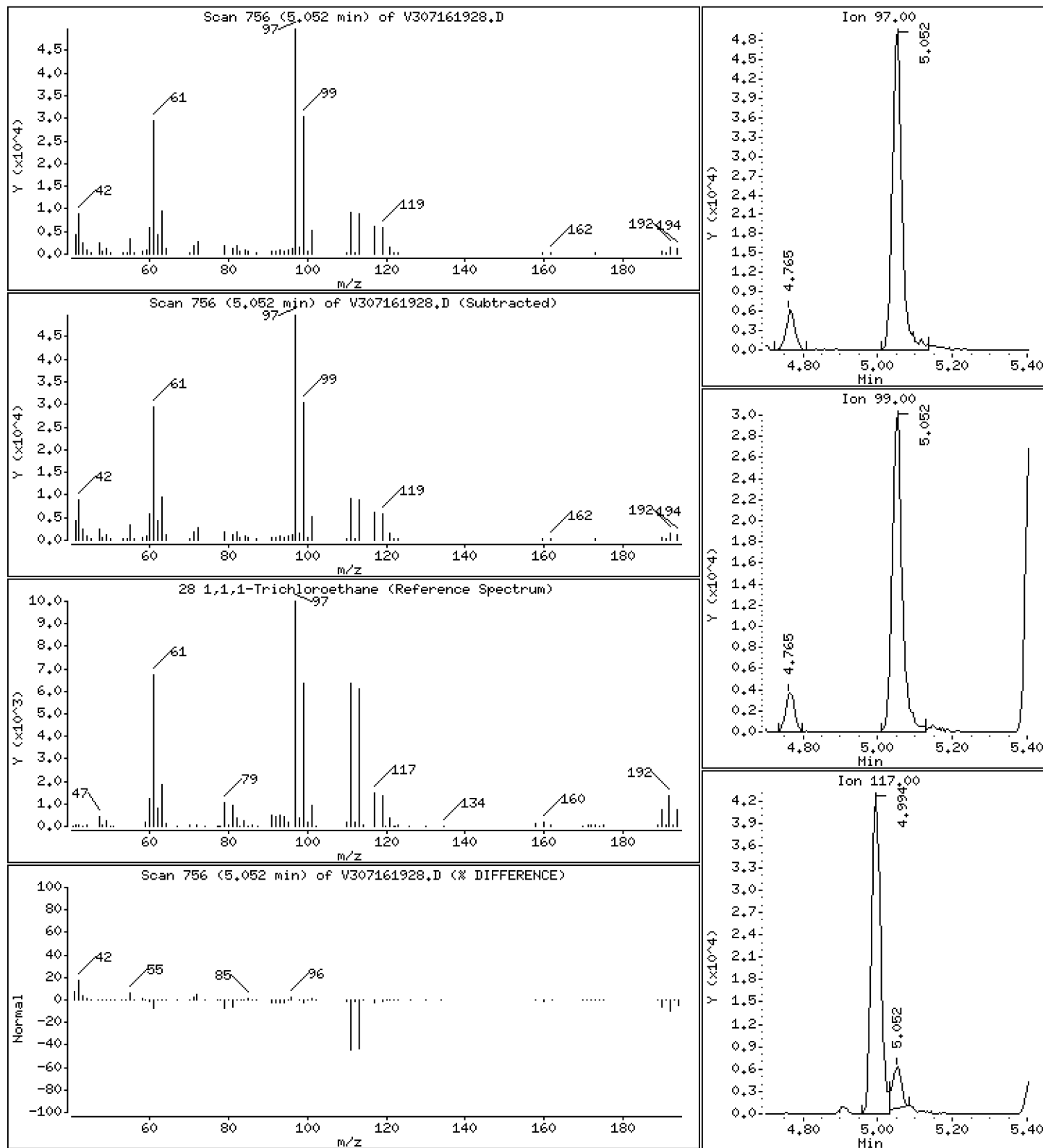
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

28 1,1,1-Trichloroethane

Concentration: 10.976 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

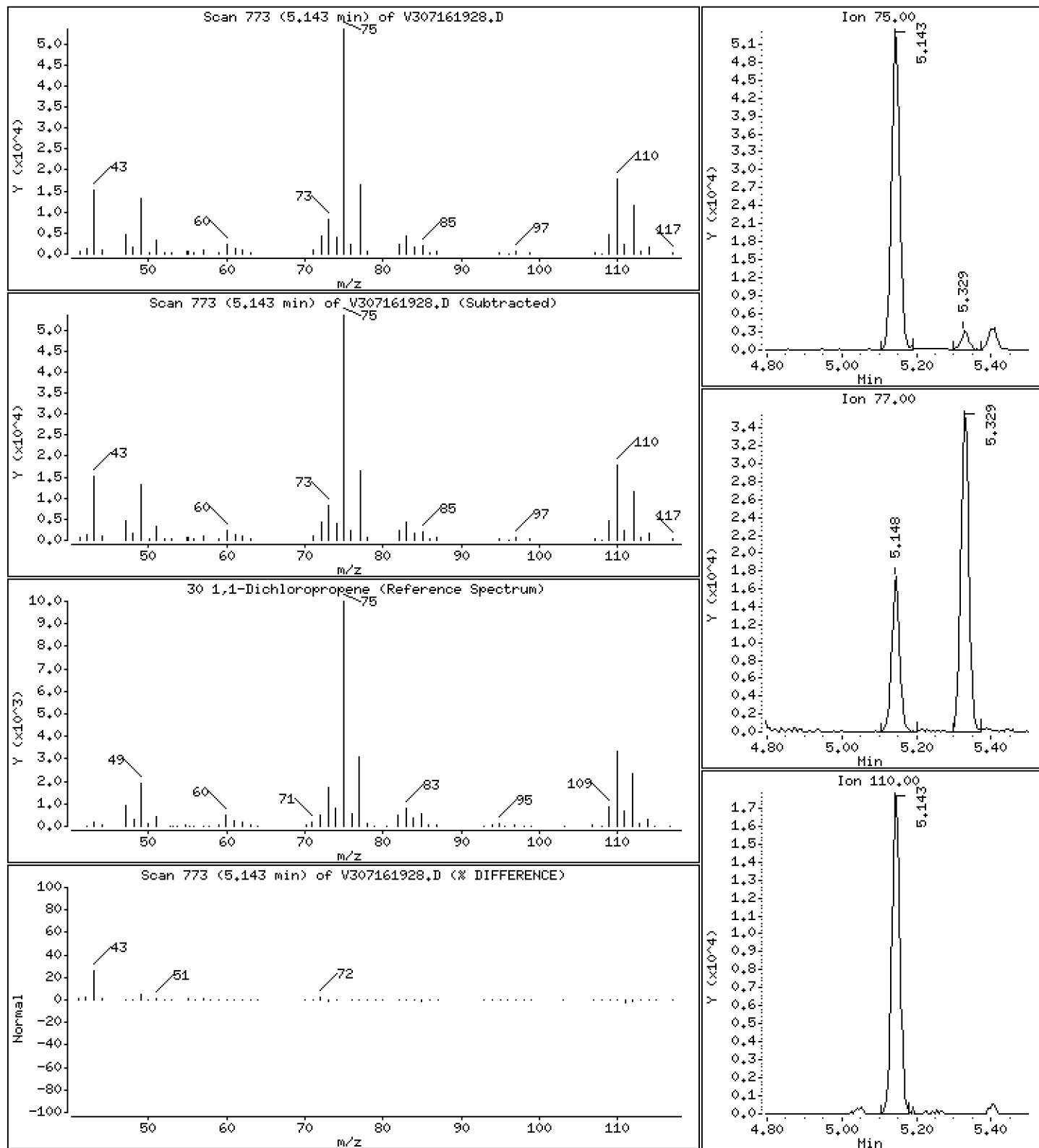
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

30 1,1-Dichloropropene

Concentration: 11,359 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

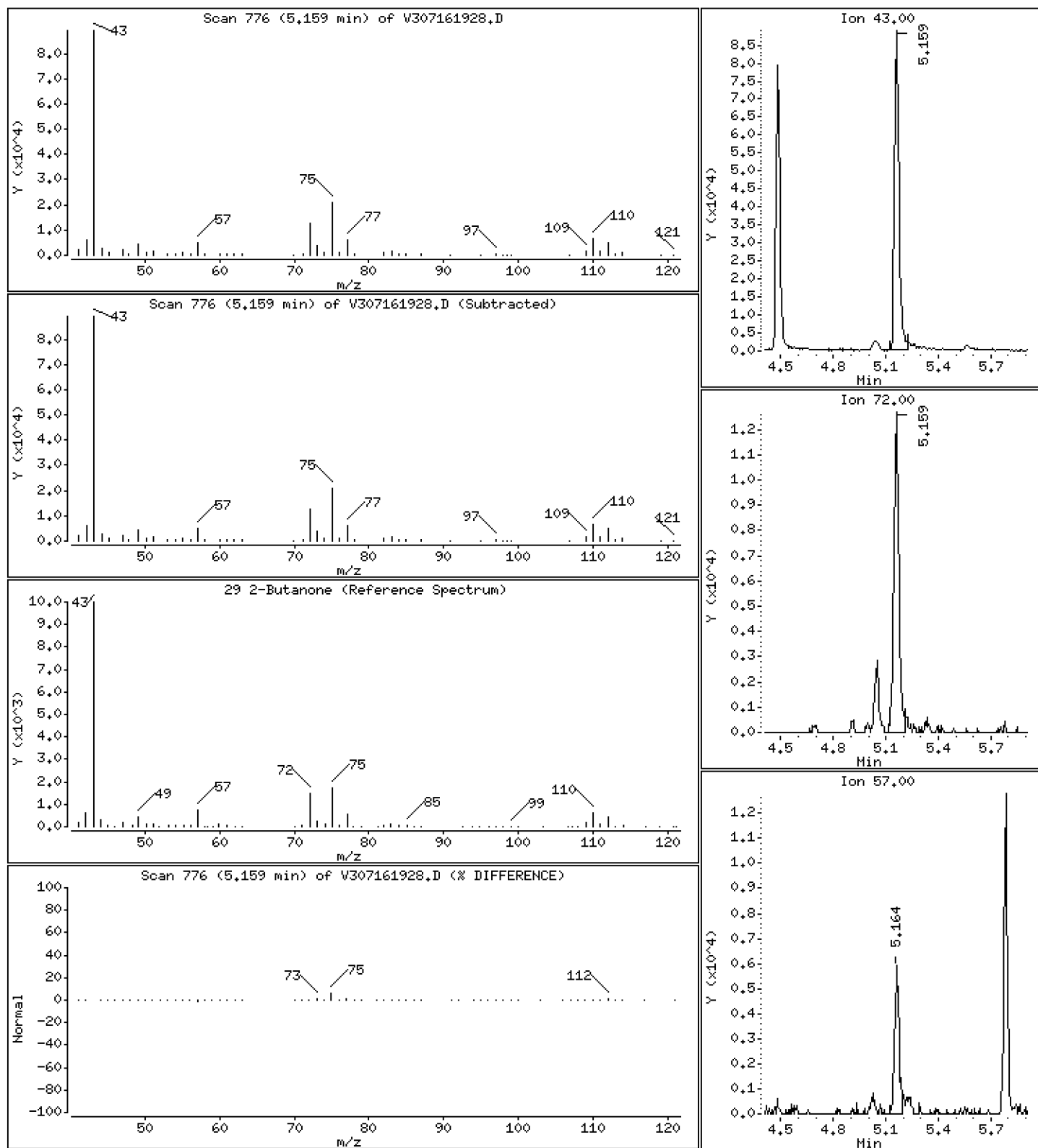
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 51.650 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

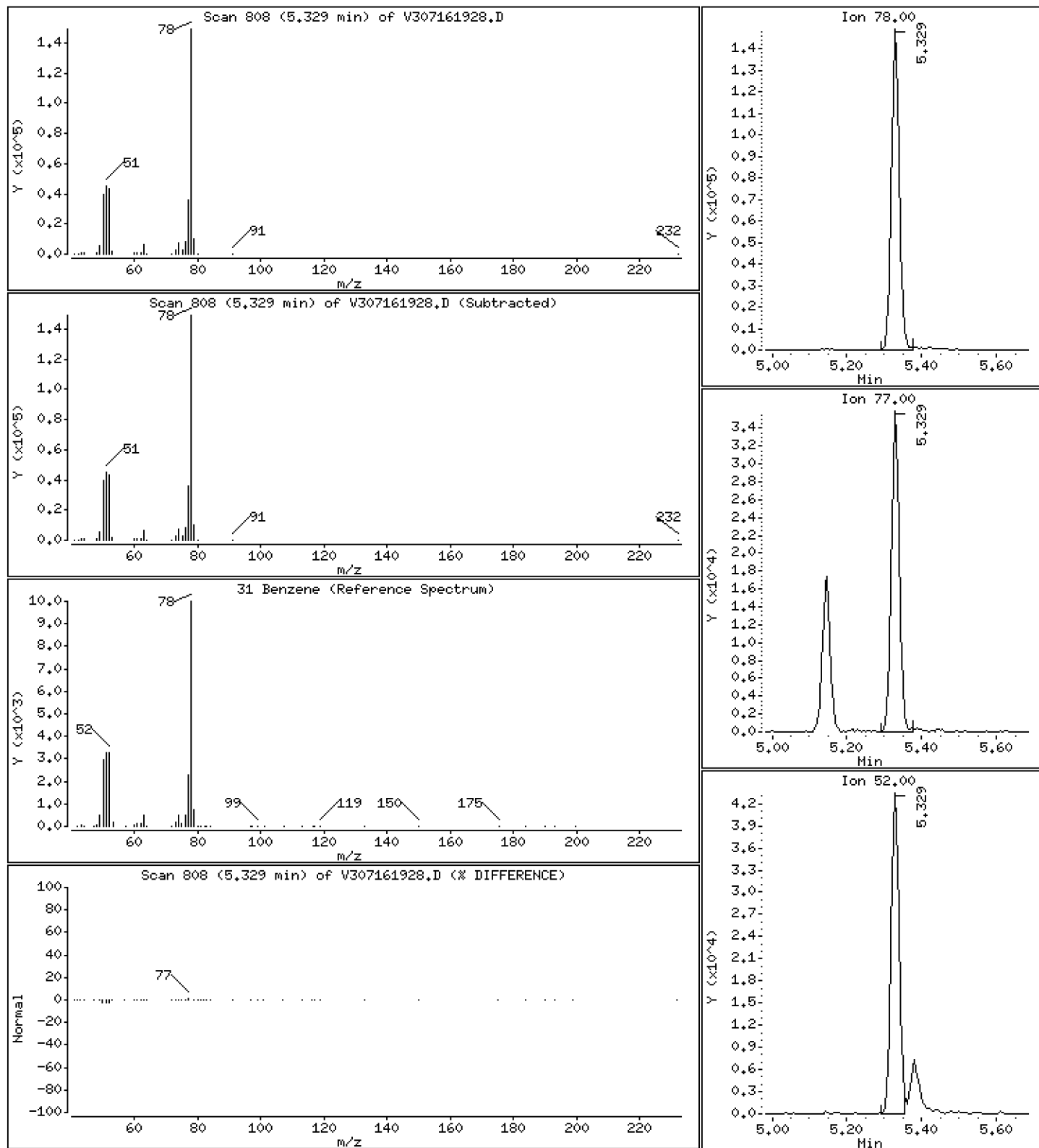
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

31 Benzene

Concentration: 10,209 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

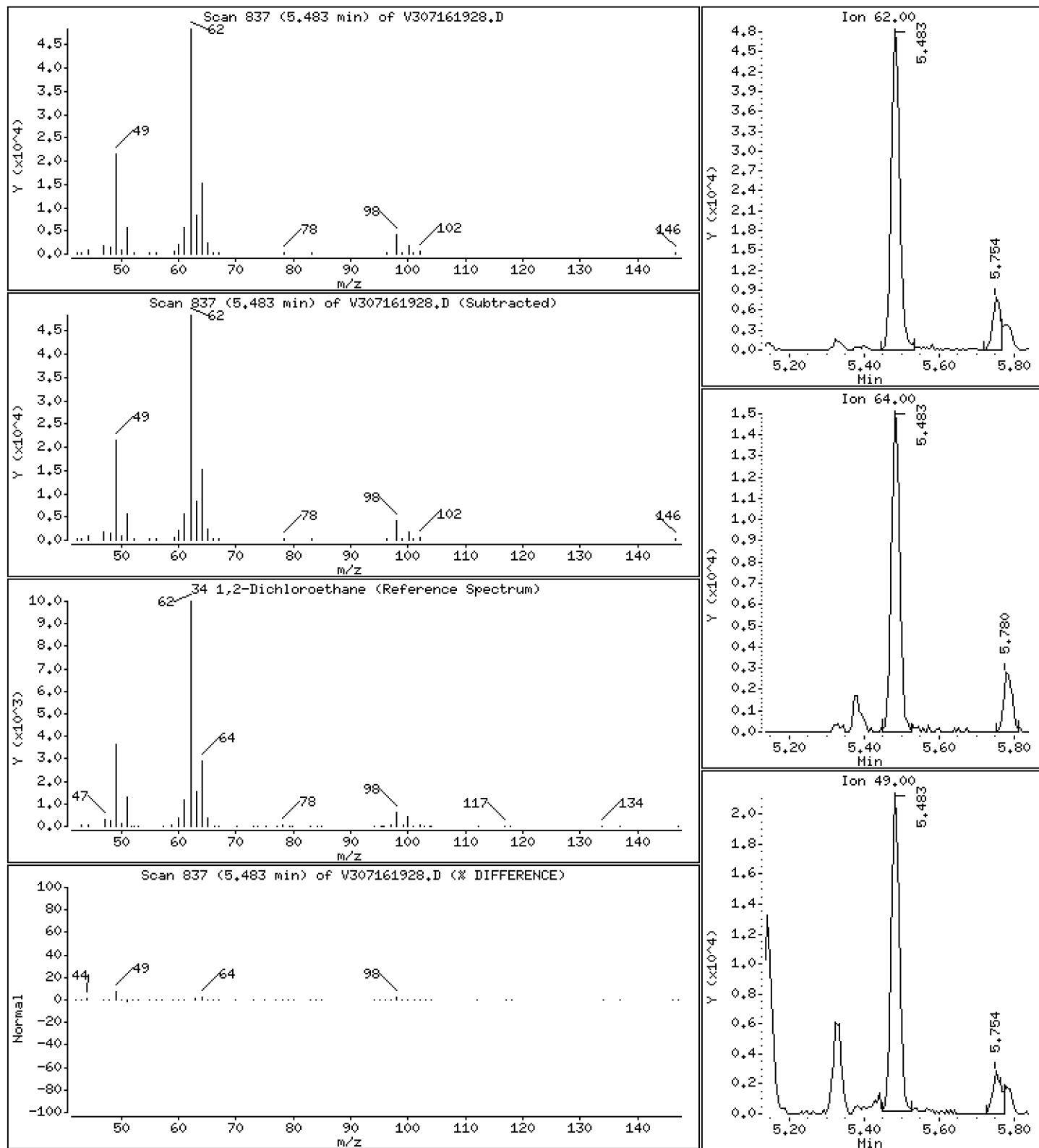
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

34 1,2-Dichloroethane

Concentration: 10,243 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

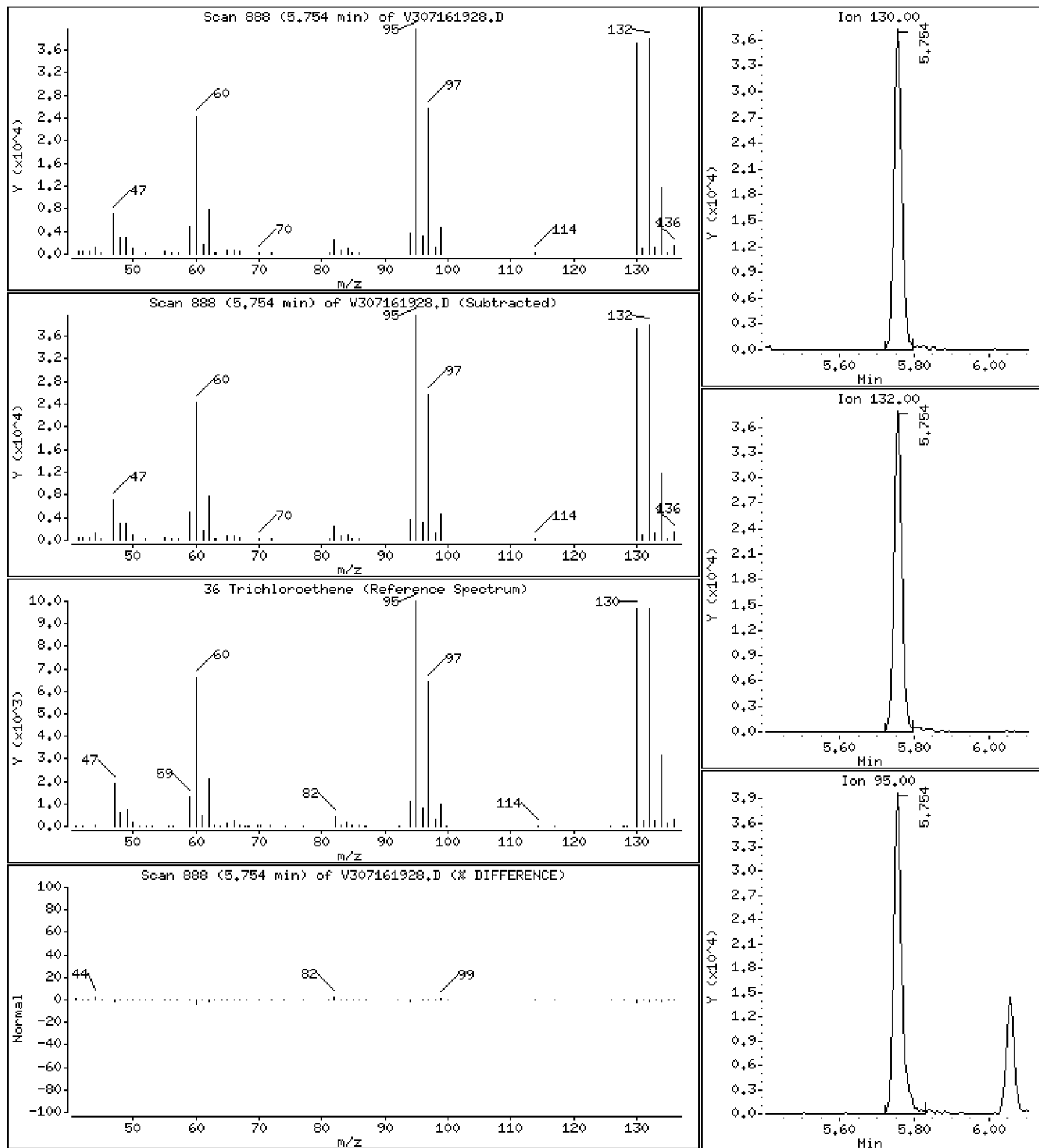
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

36 Trichloroethene

Concentration: 11,039 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

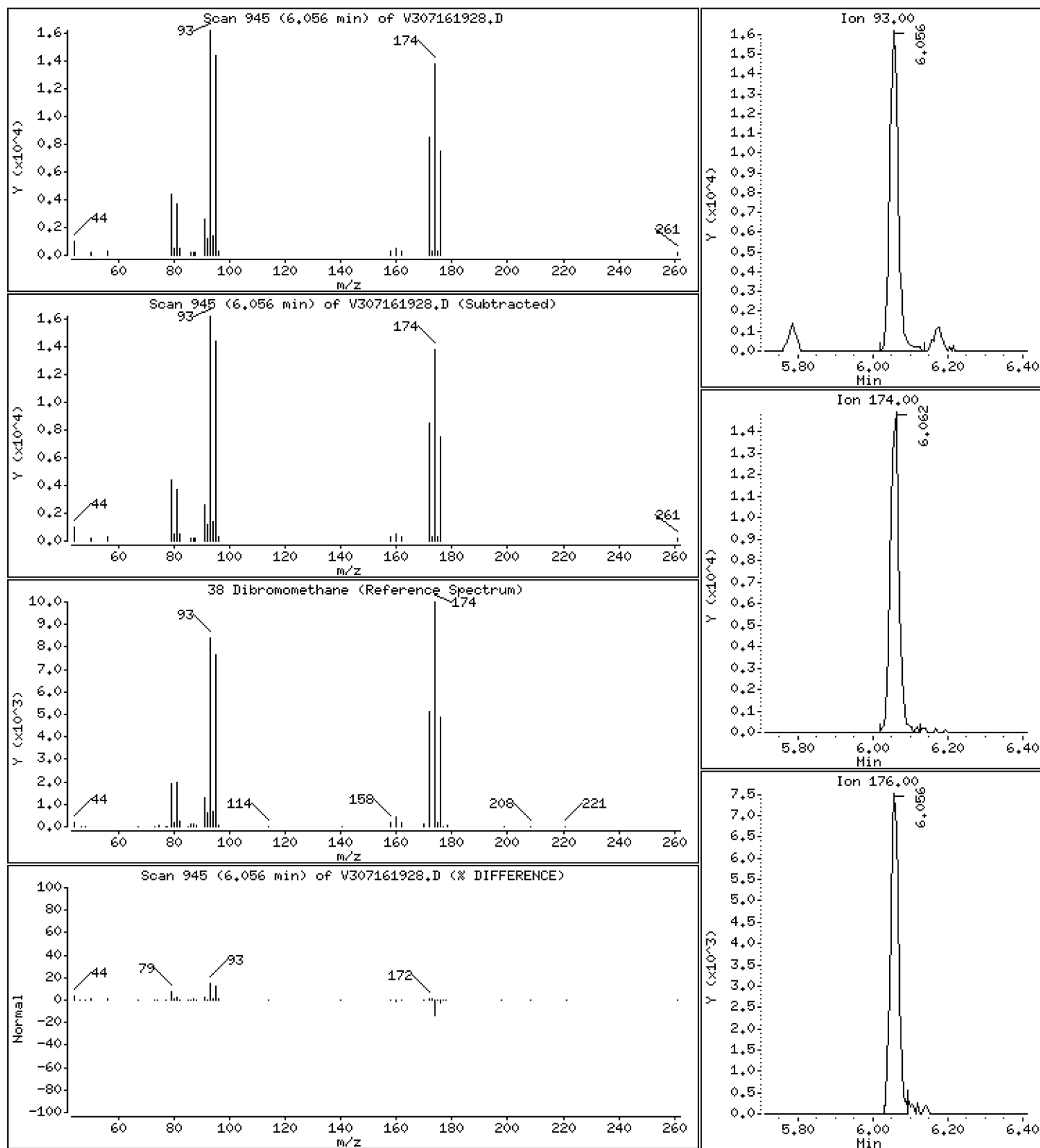
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

38 Dibromomethane

Concentration: 10,260 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

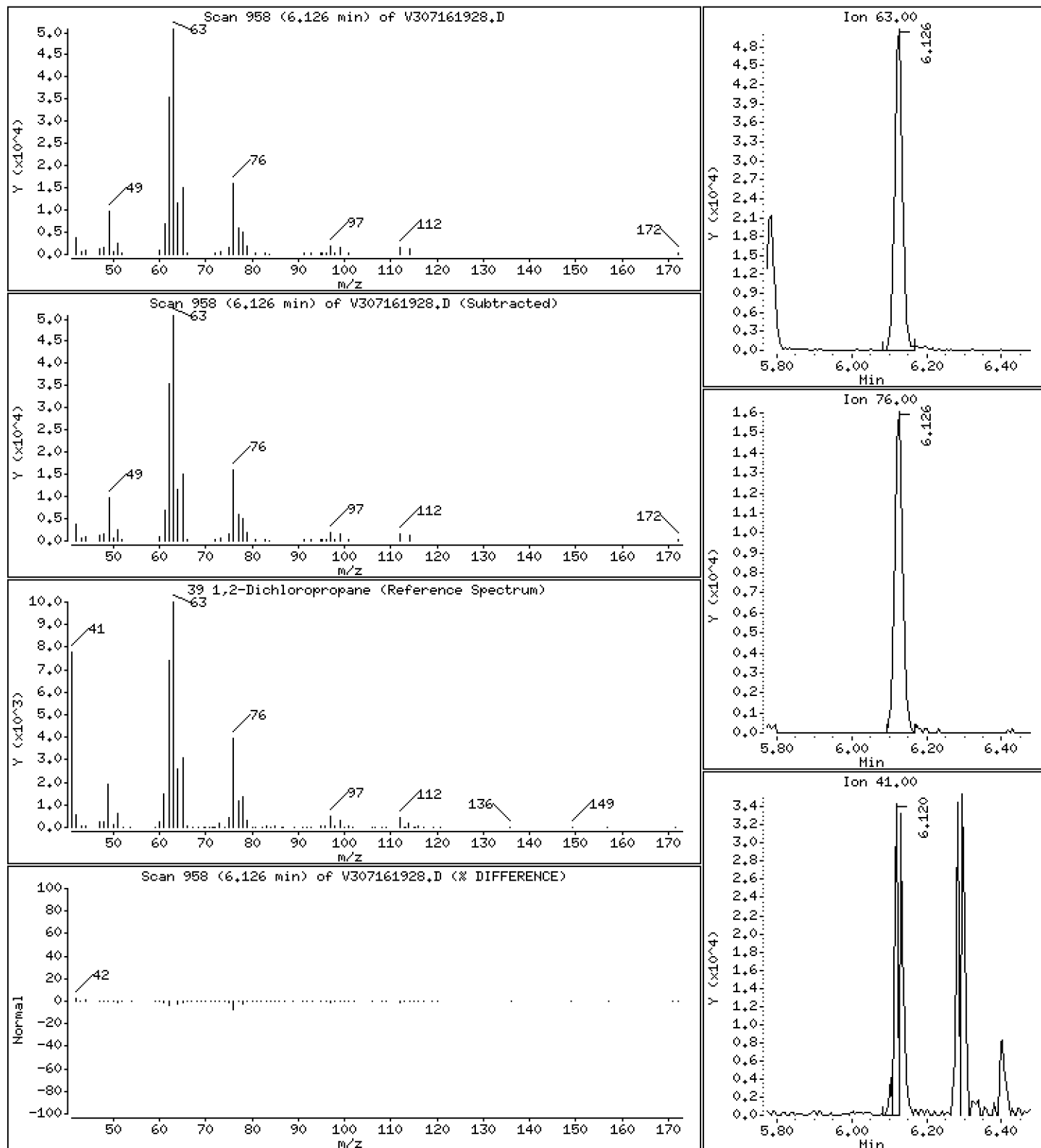
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

39 1,2-Dichloropropane

Concentration: 10,643 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

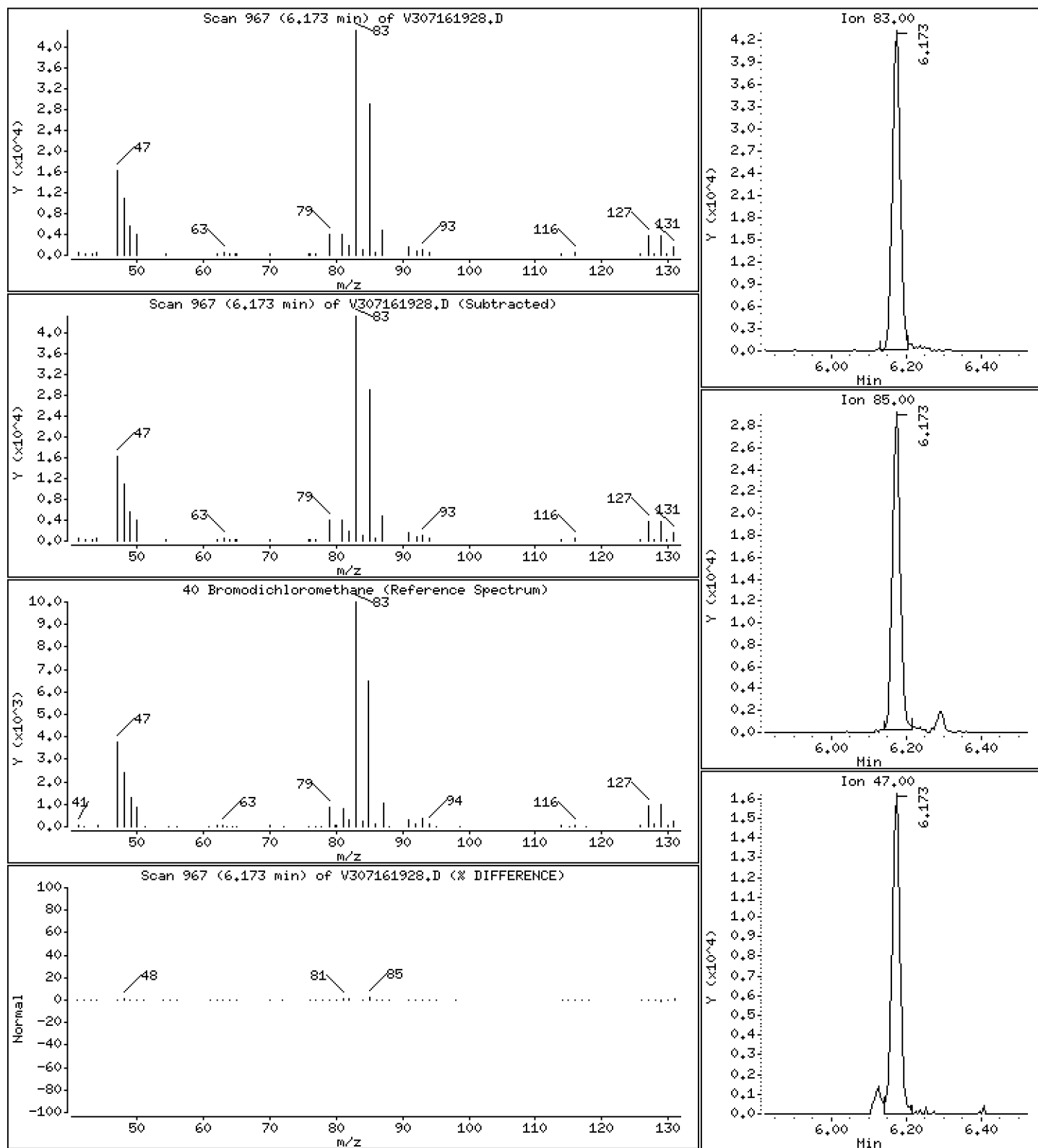
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

40 Bromodichloromethane

Concentration: 9.879 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

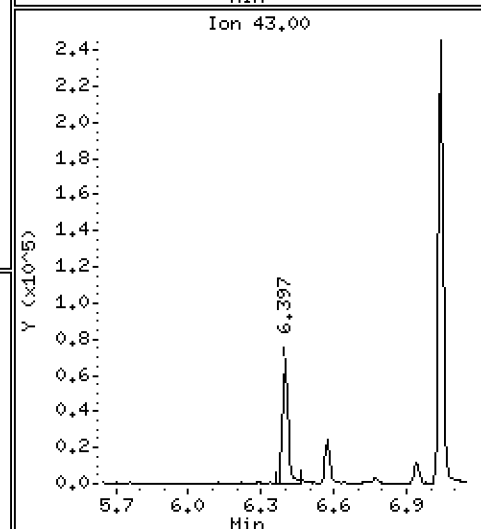
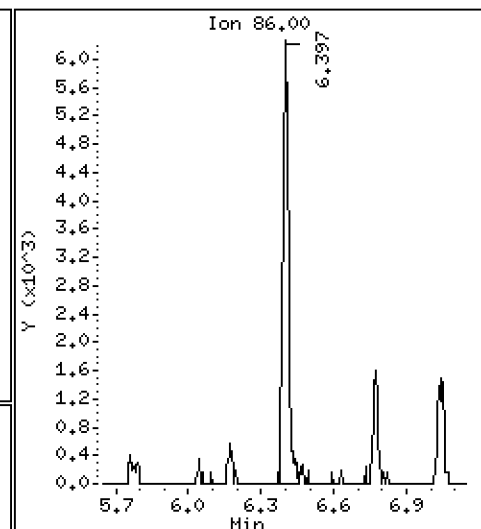
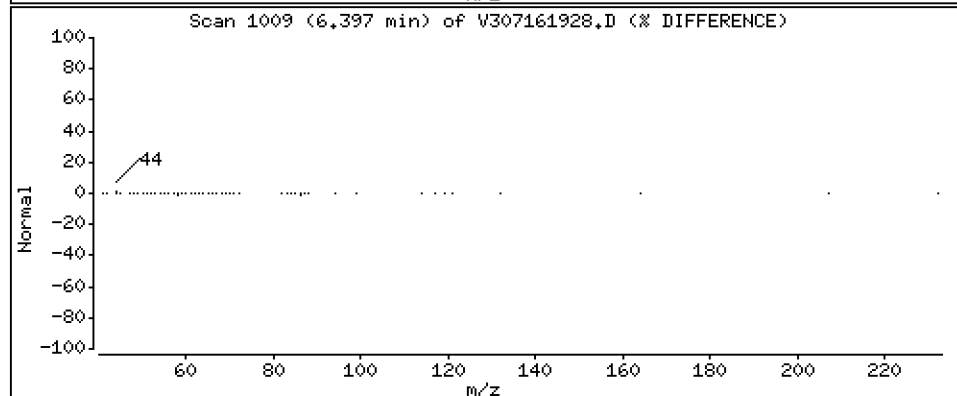
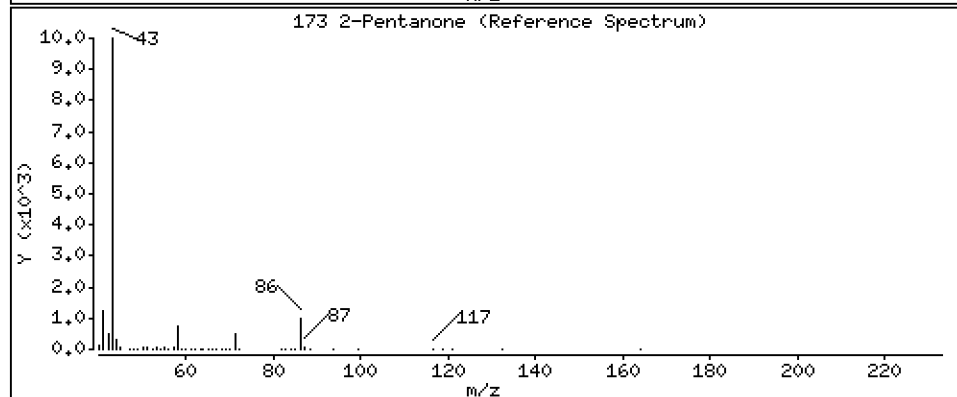
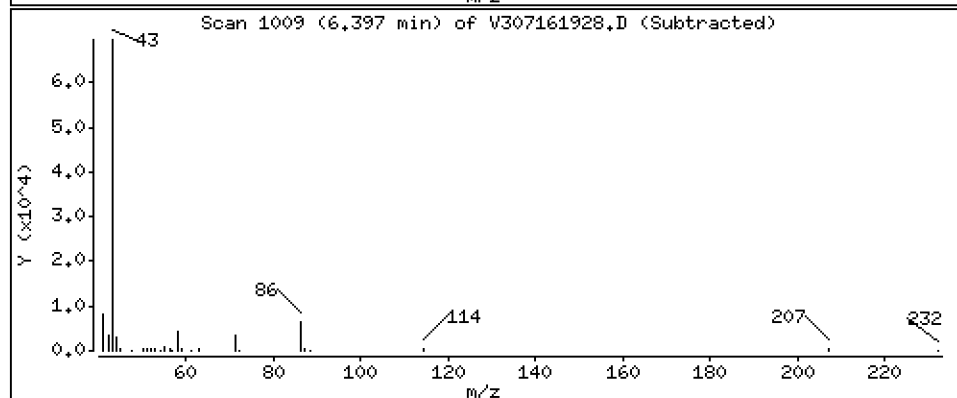
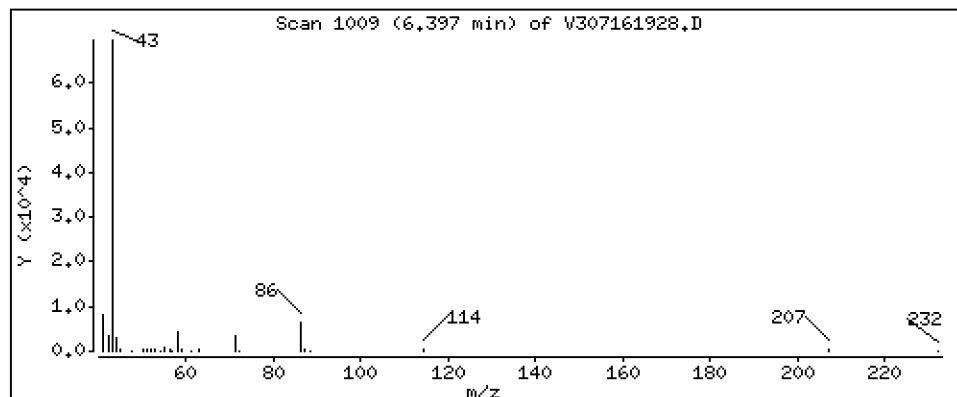
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

173 2-Pentanone

Concentration: 21,740 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

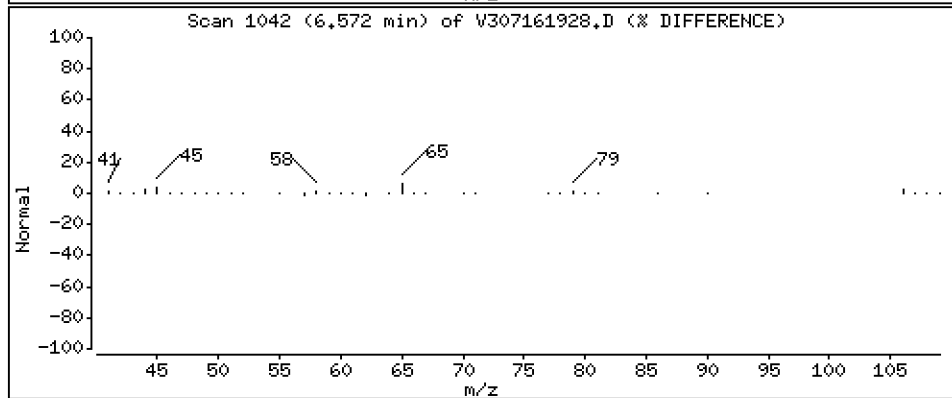
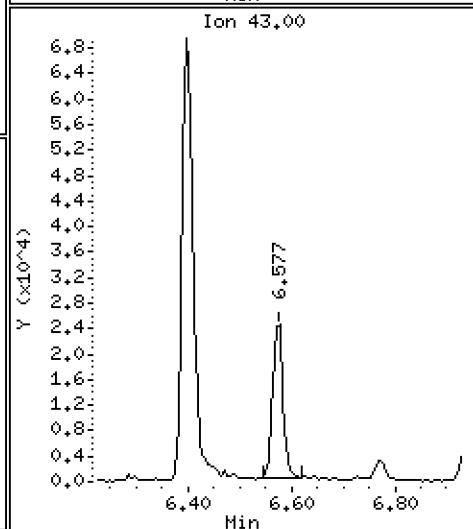
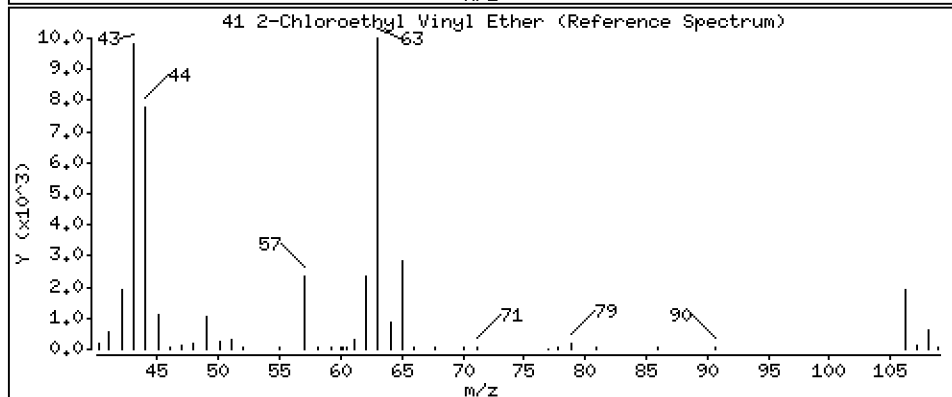
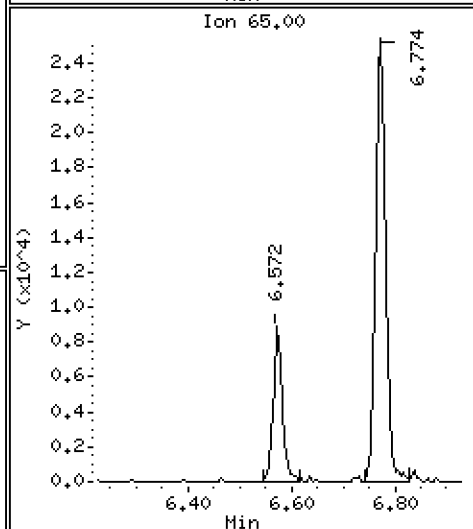
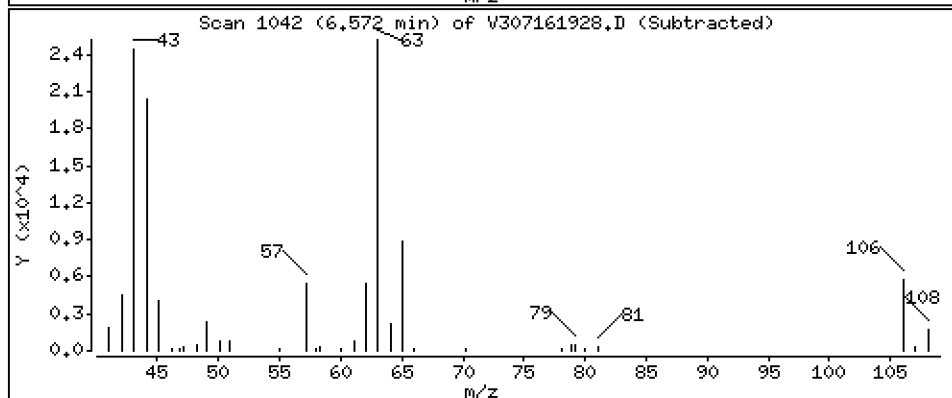
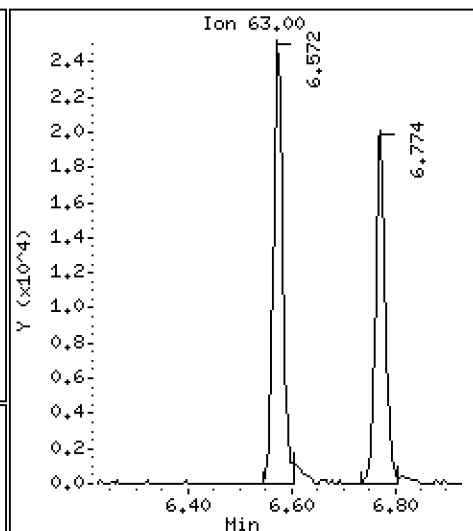
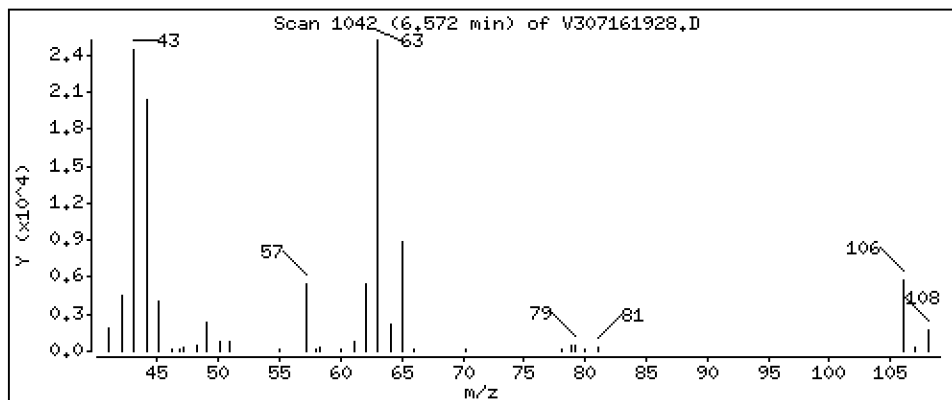
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

41 2-Chloroethyl Vinyl Ether

Concentration: 11,094 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

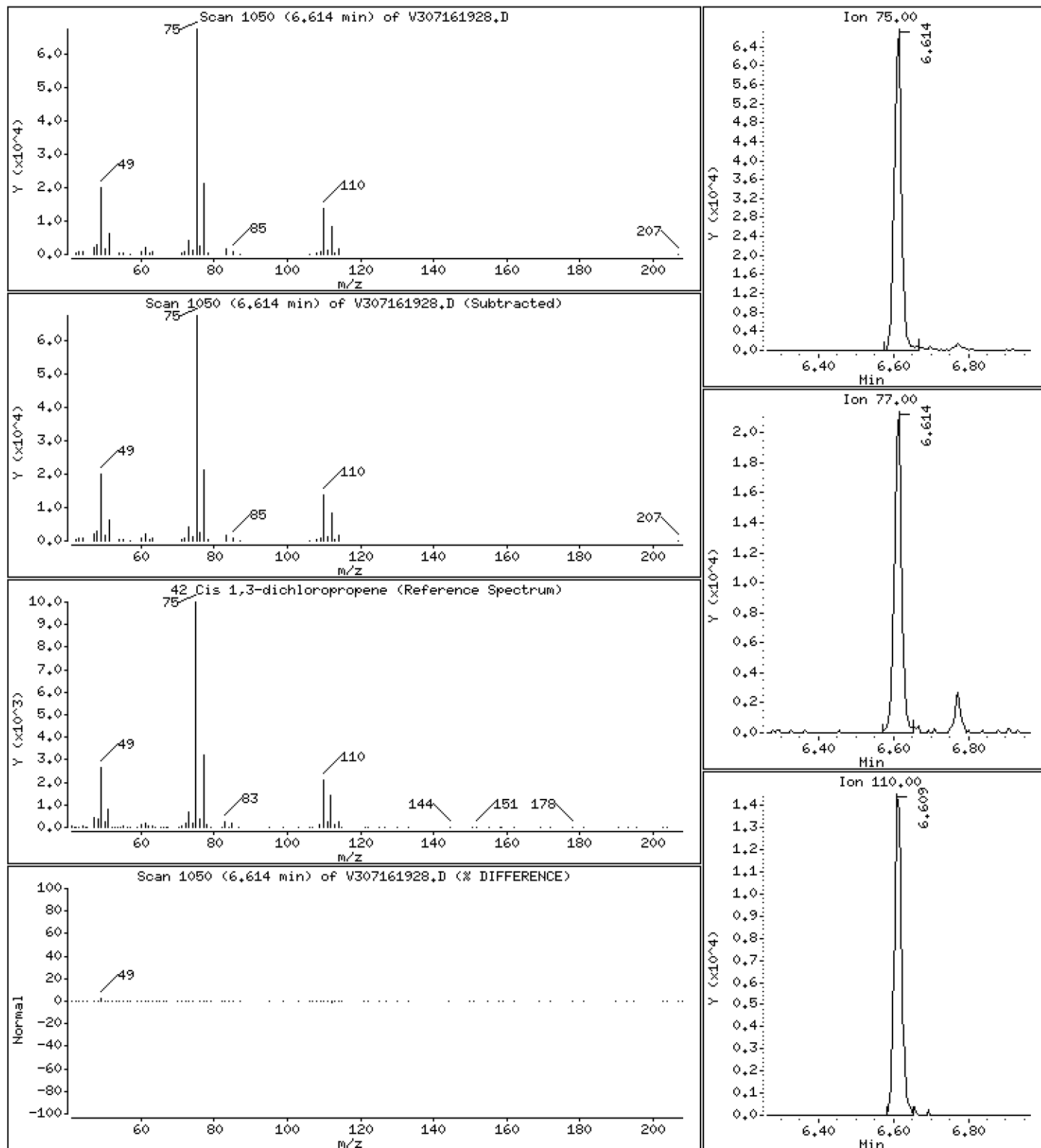
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

42 Cis 1,3-dichloropropene

Concentration: 10,960 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

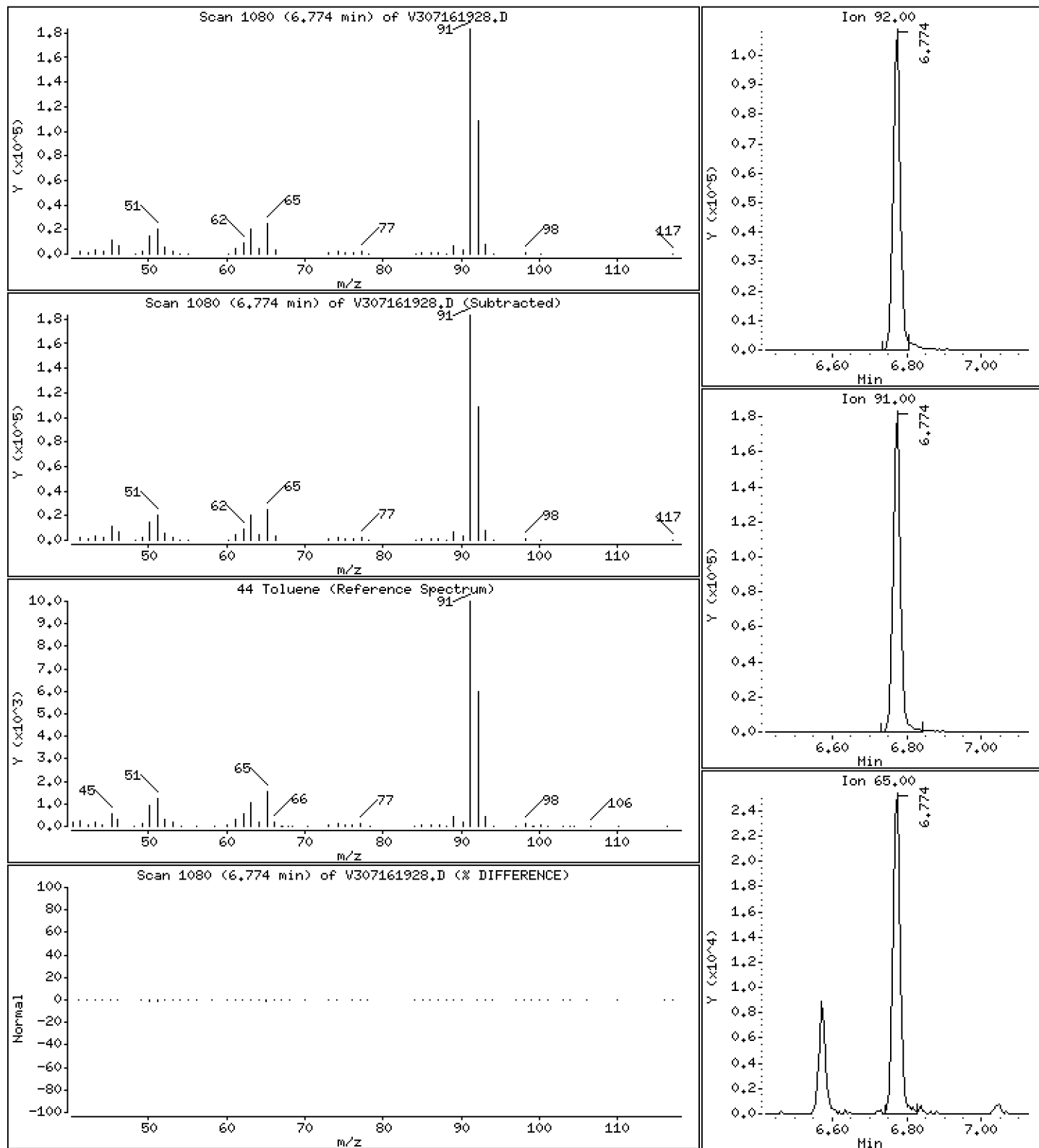
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

44 Toluene

Concentration: 10.673 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

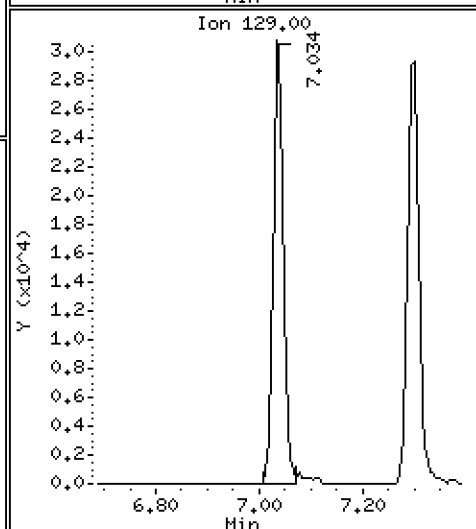
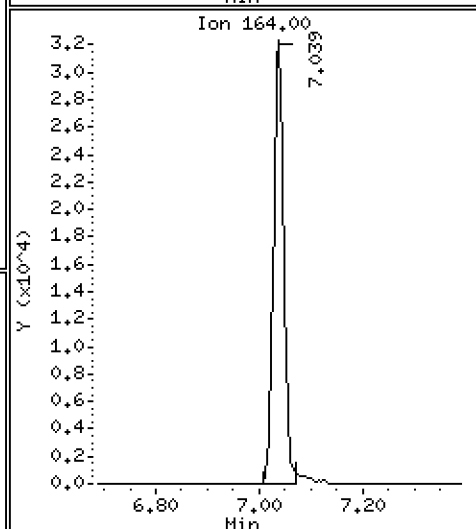
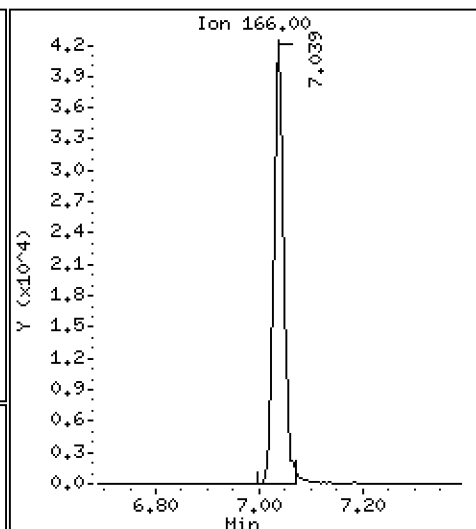
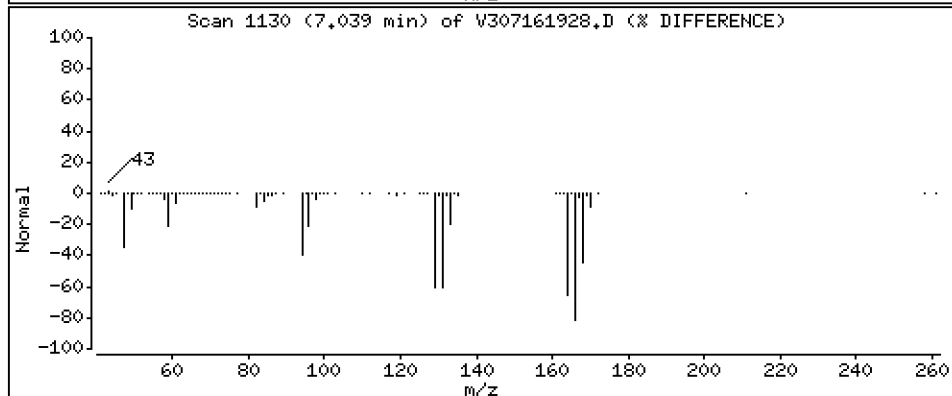
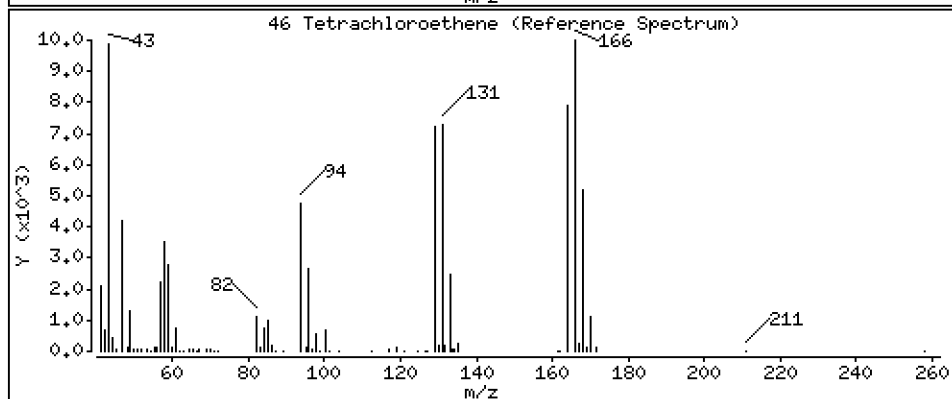
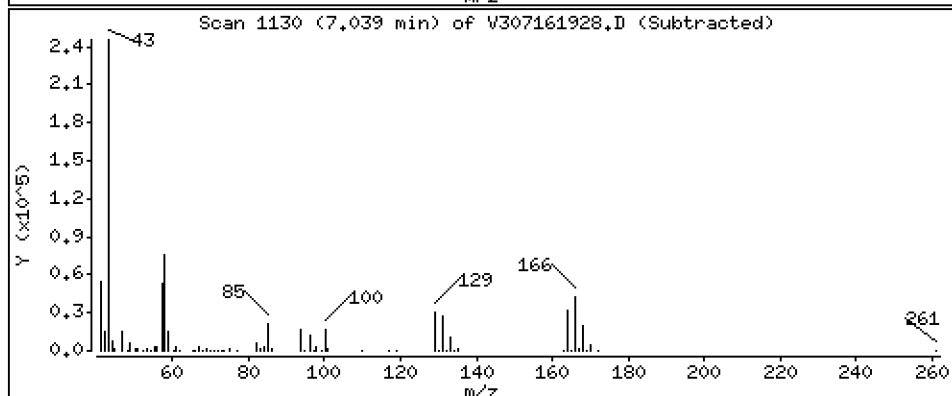
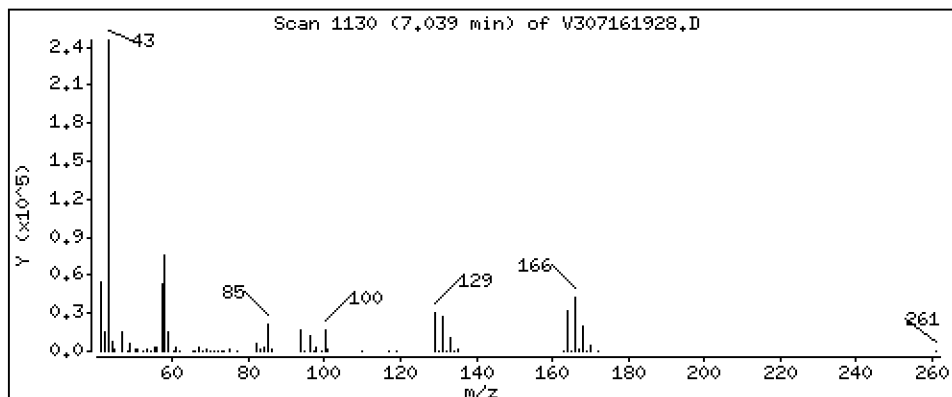
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

46 Tetrachloroethene

Concentration: 10,853 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

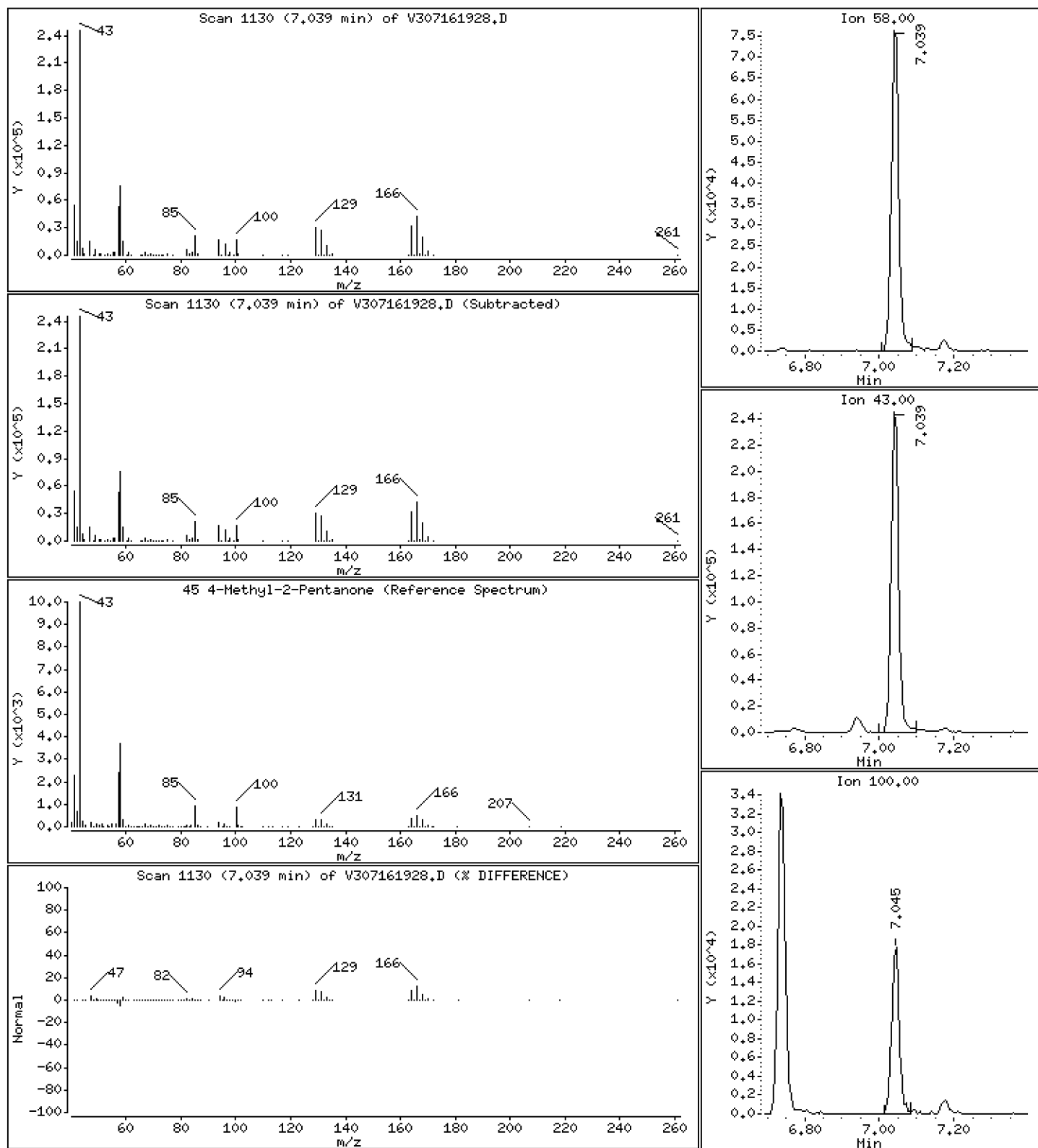
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 53,686 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

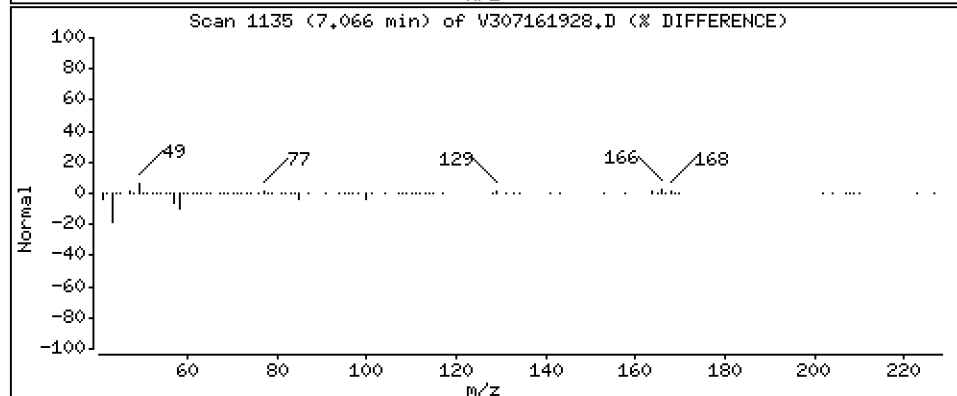
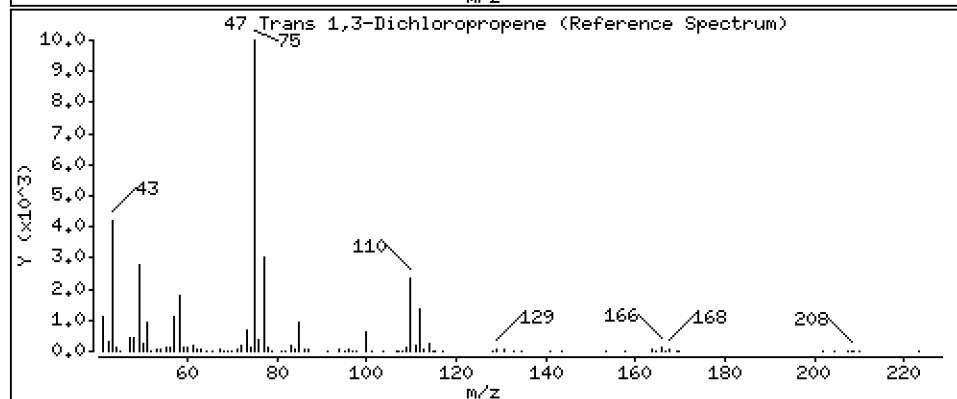
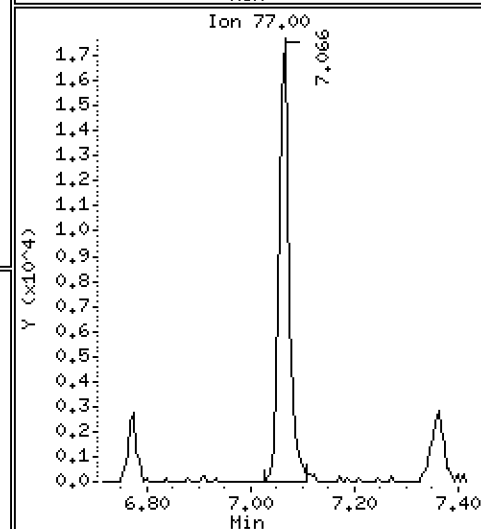
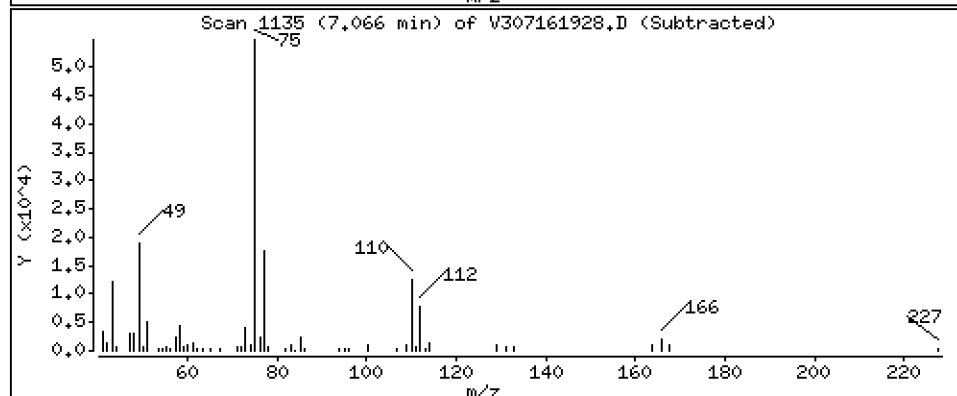
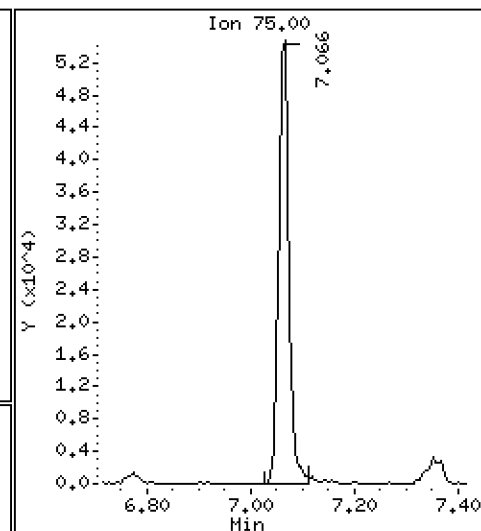
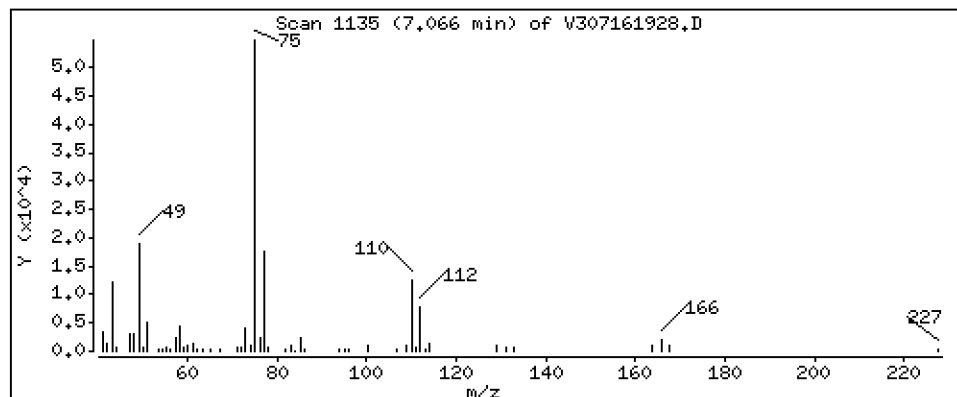
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

47 Trans 1,3-Dichloropropene

Concentration: 11,208 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

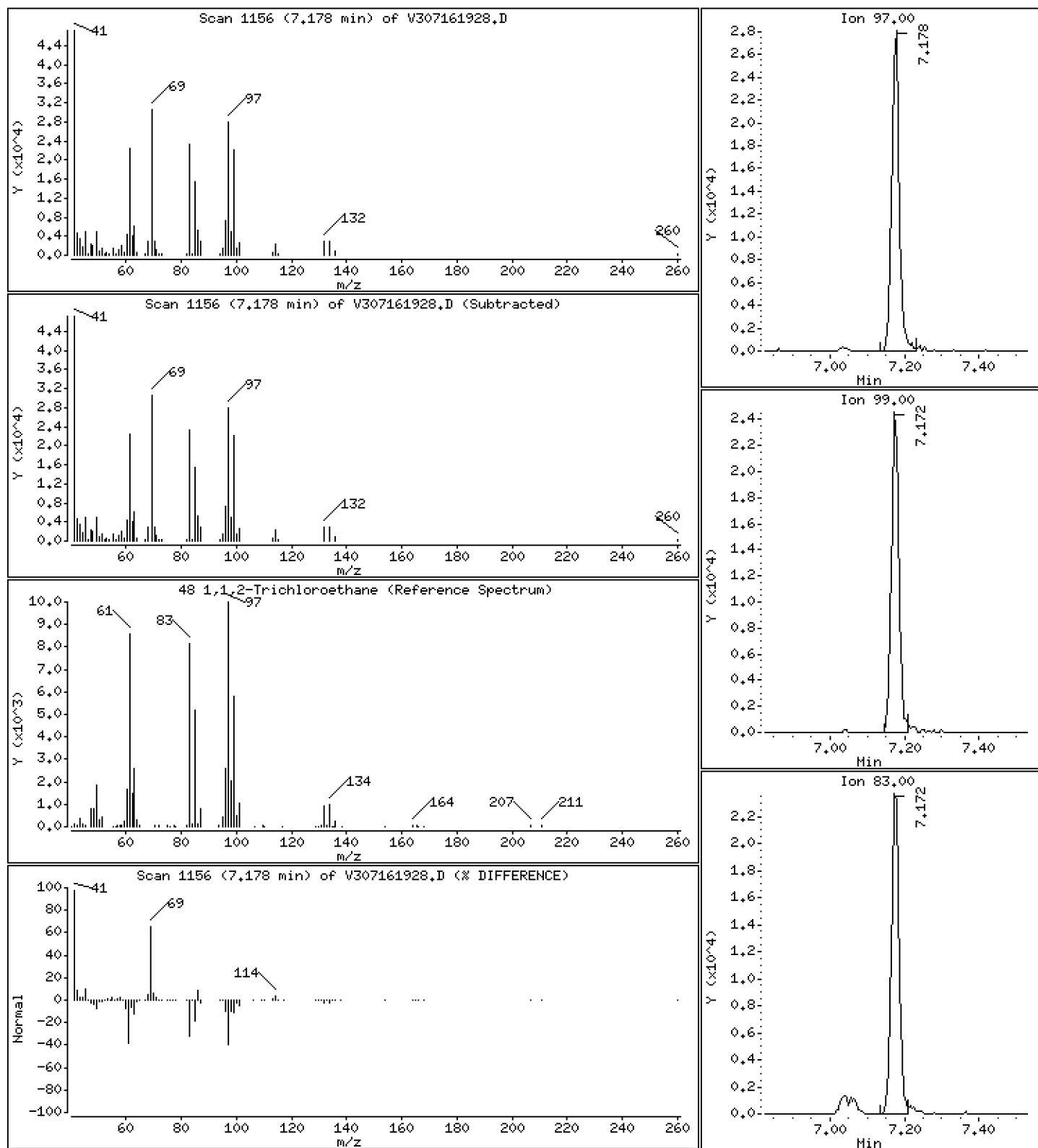
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

48 1,1,2-Trichloroethane

Concentration: 10,845 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

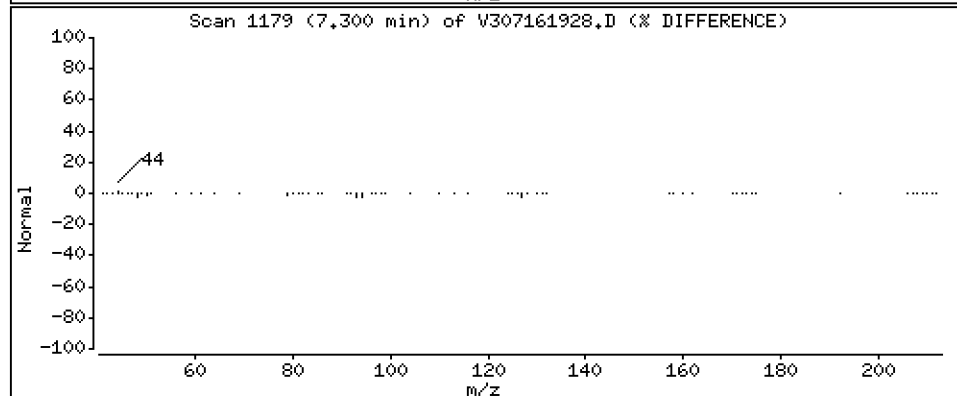
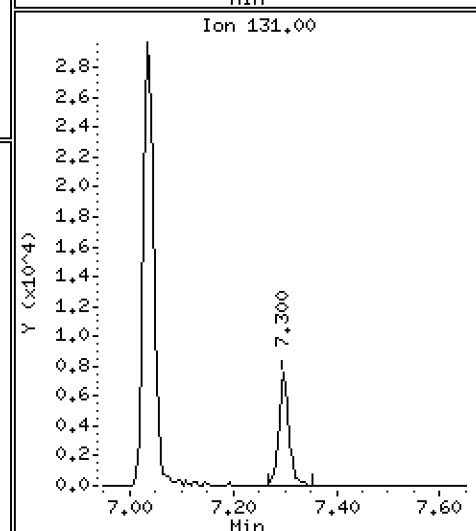
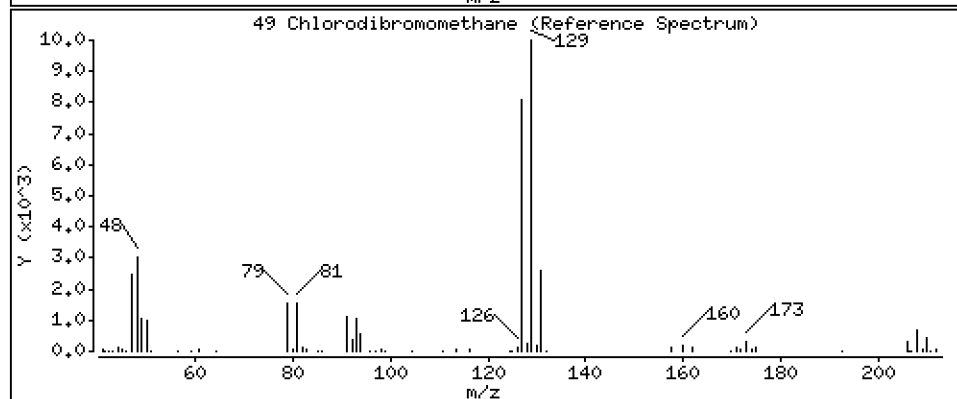
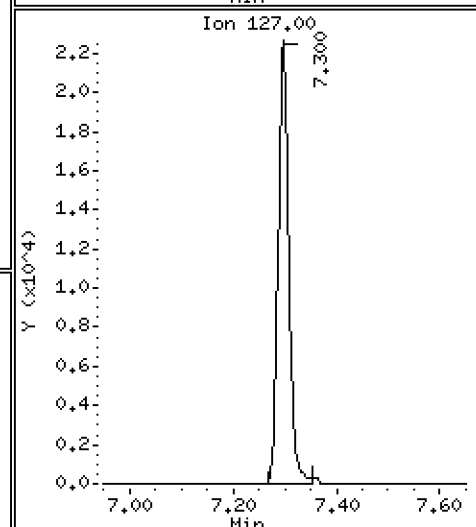
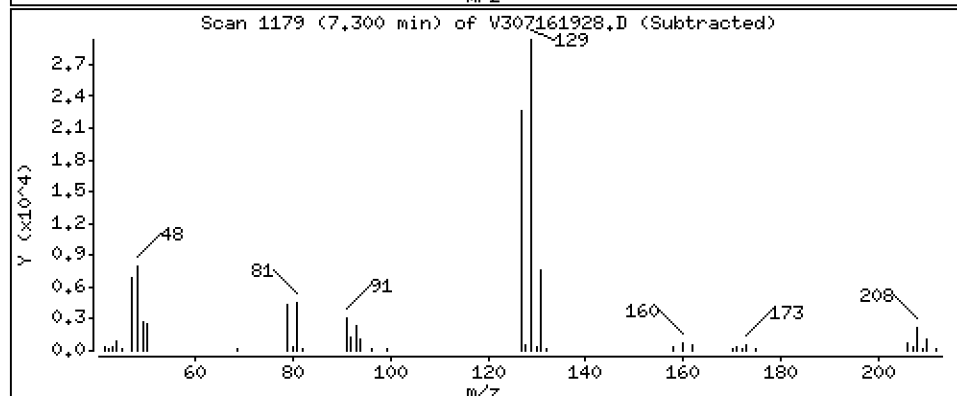
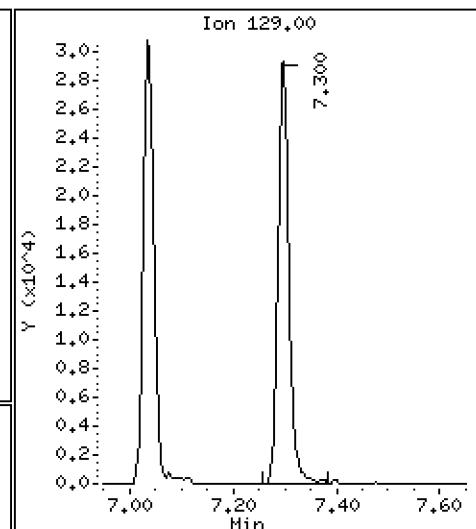
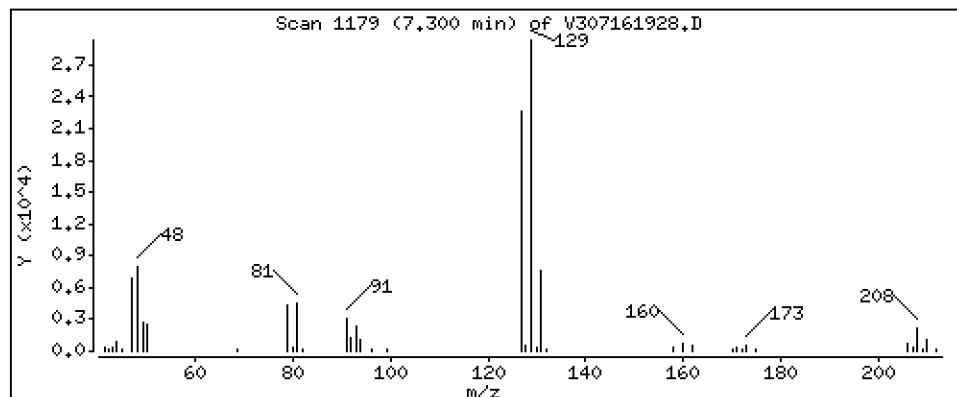
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

49 Chlorodibromomethane

Concentration: 10,784 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

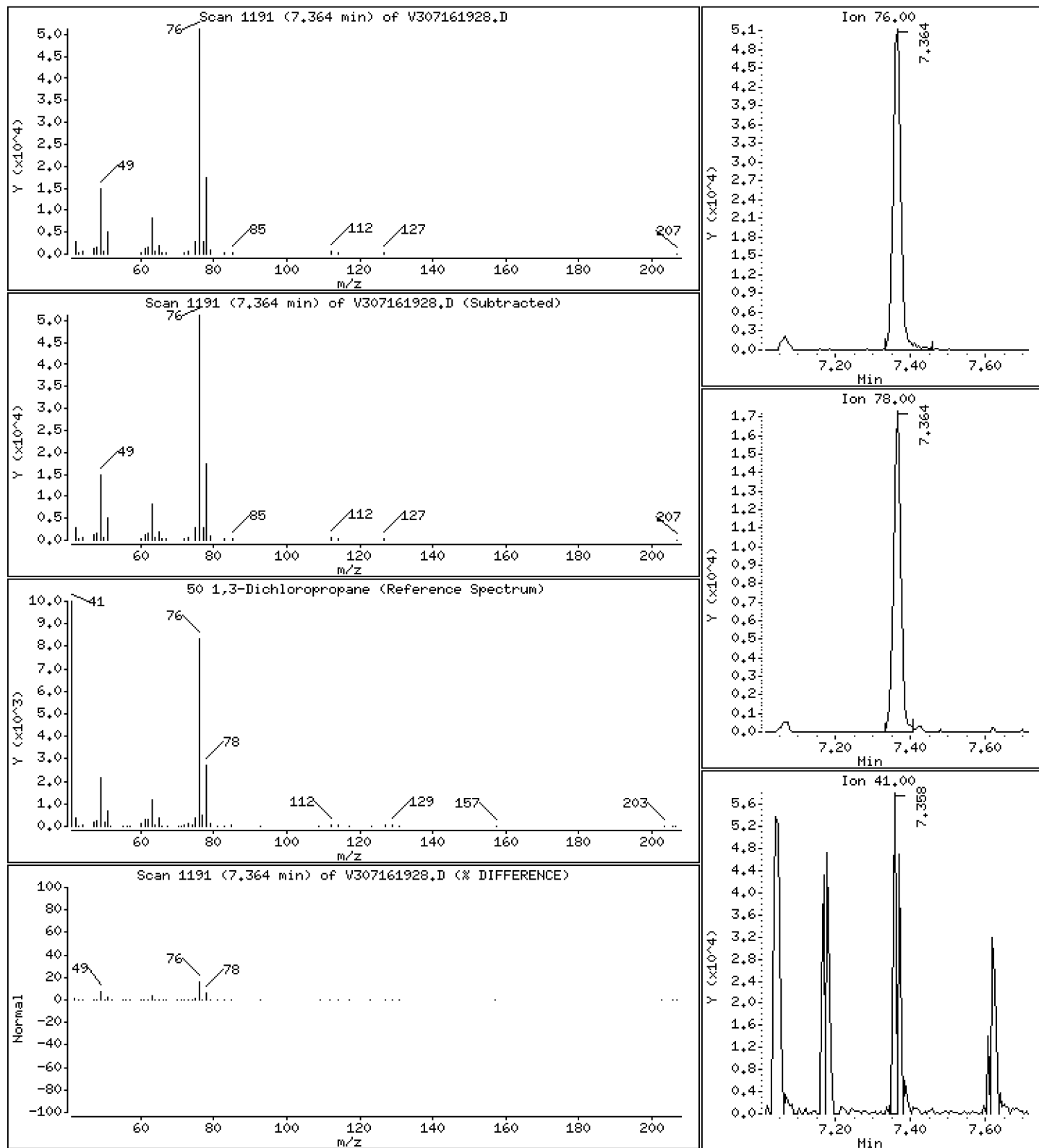
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

50 1,3-Dichloropropane

Concentration: 11,301 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

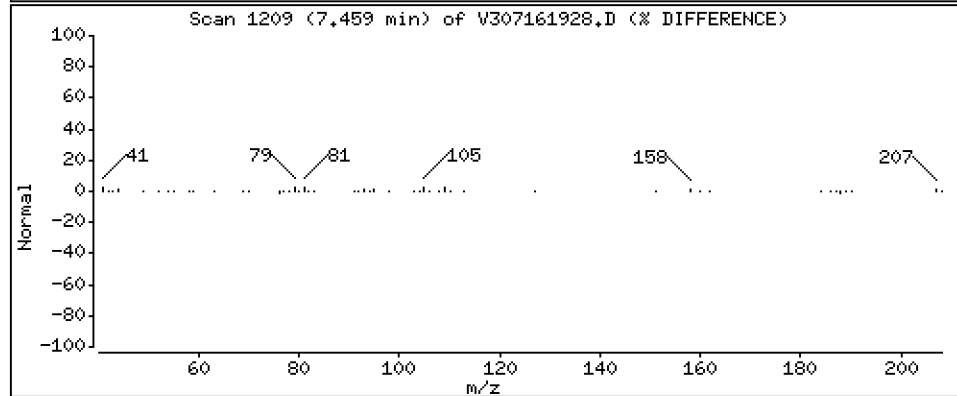
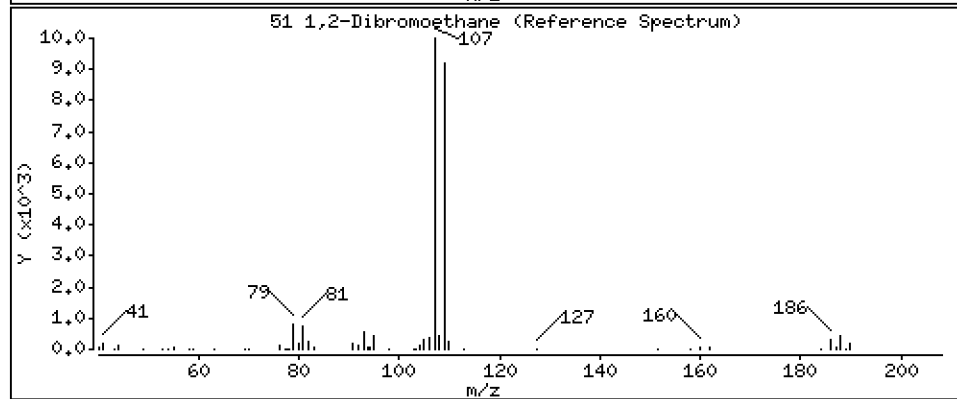
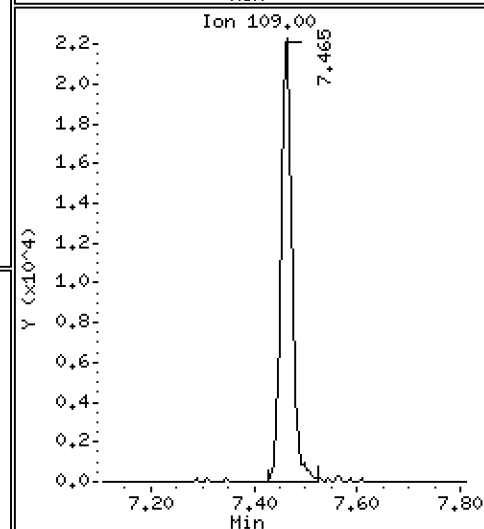
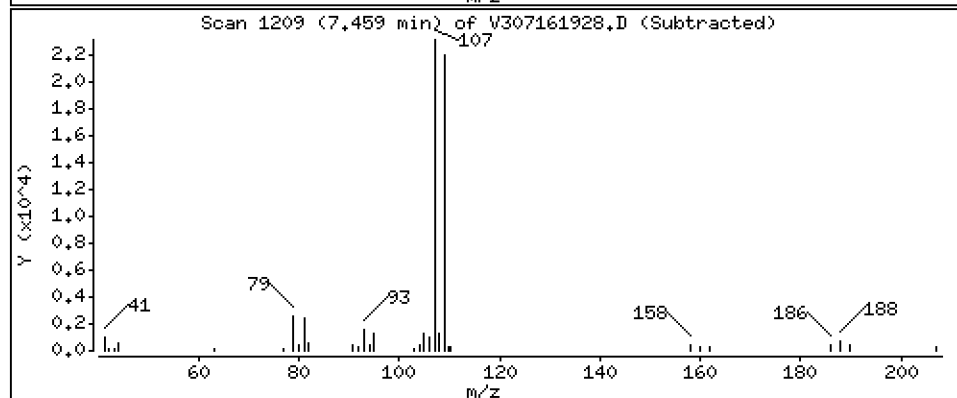
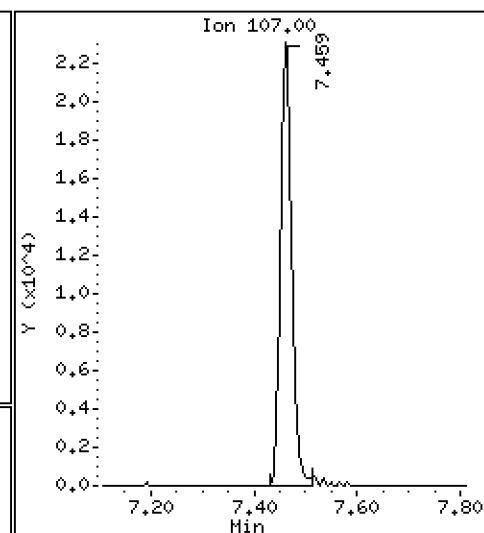
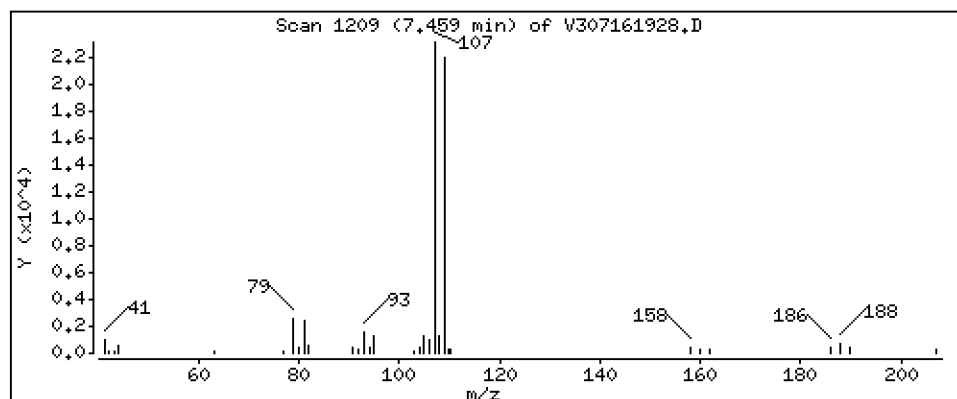
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

51 1,2-Dibromoethane

Concentration: 10,531 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

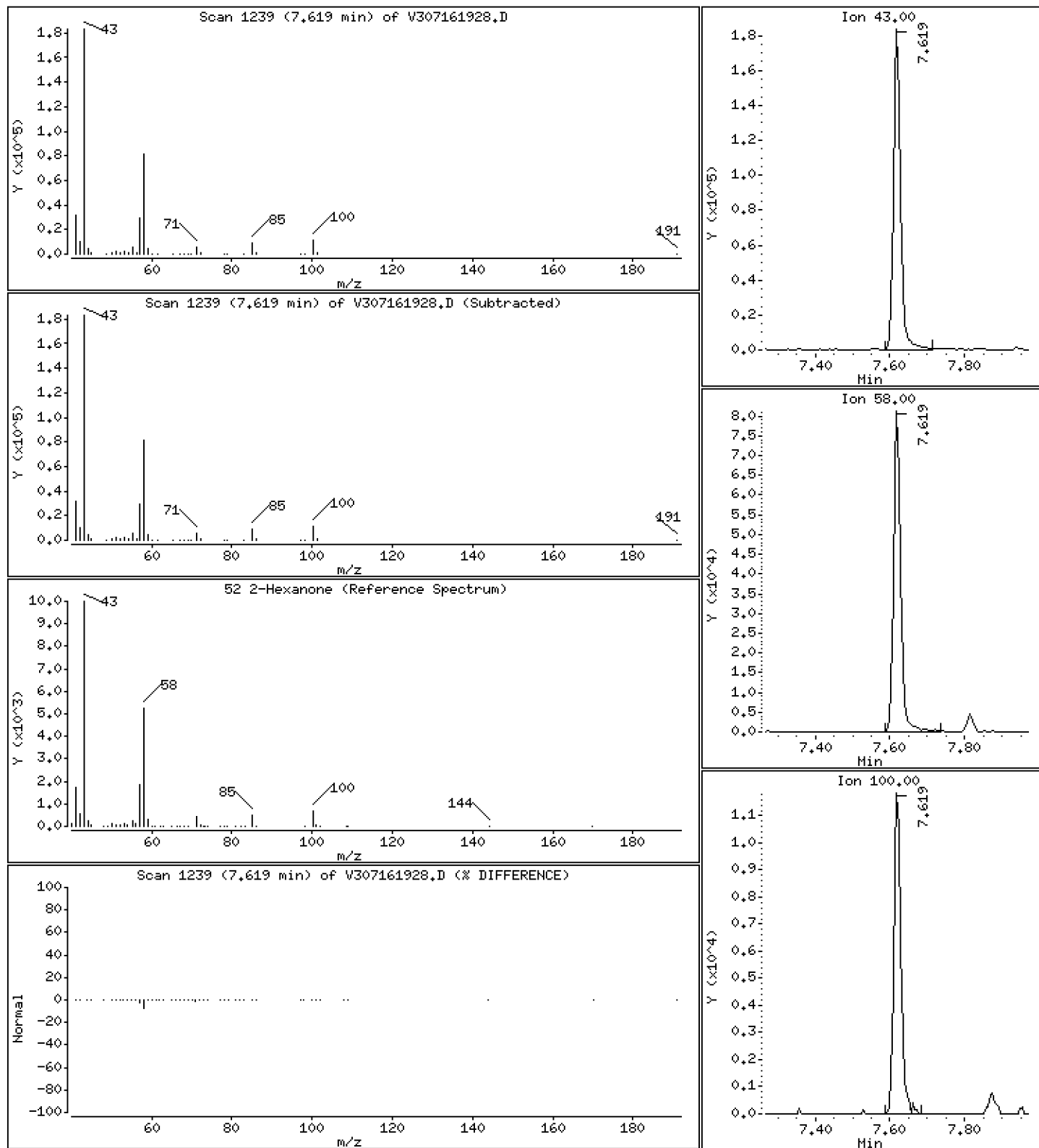
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

52 2-Hexanone

Concentration: 55,889 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

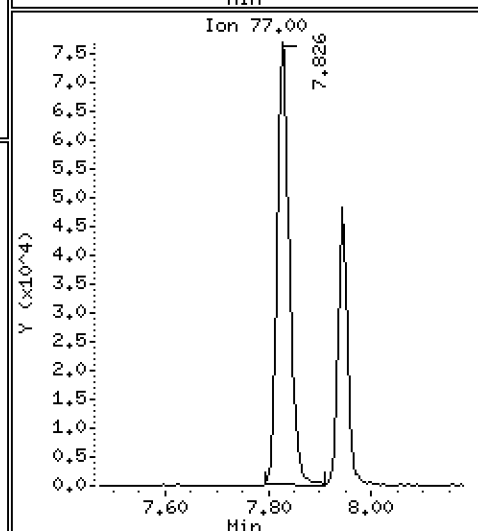
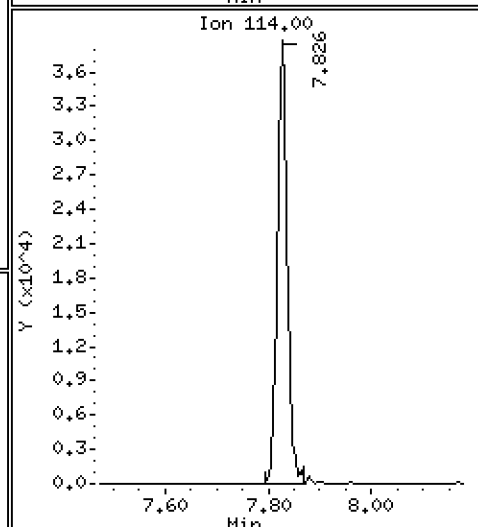
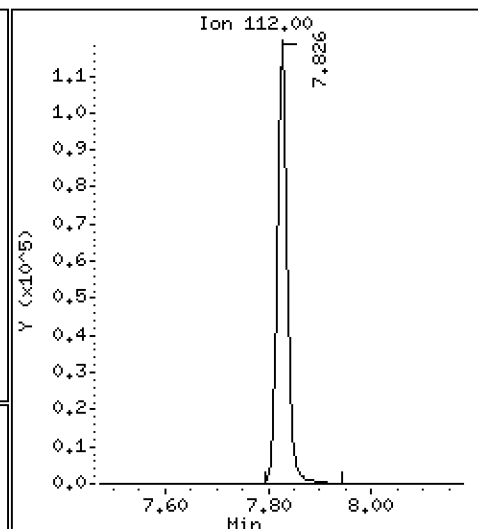
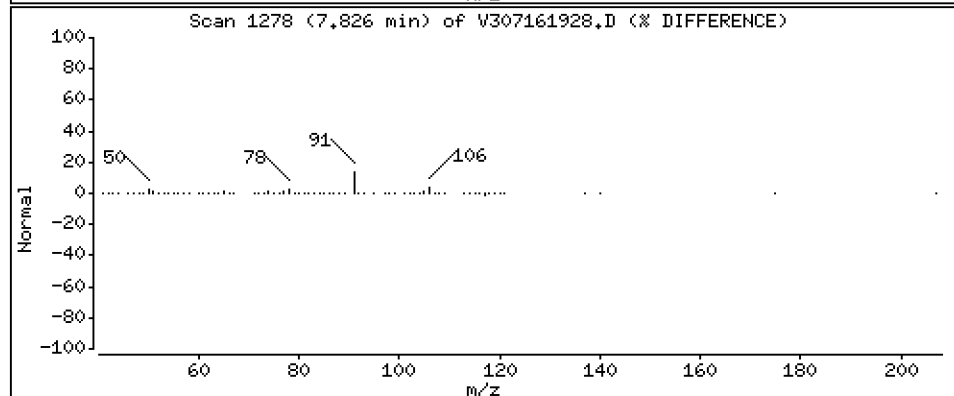
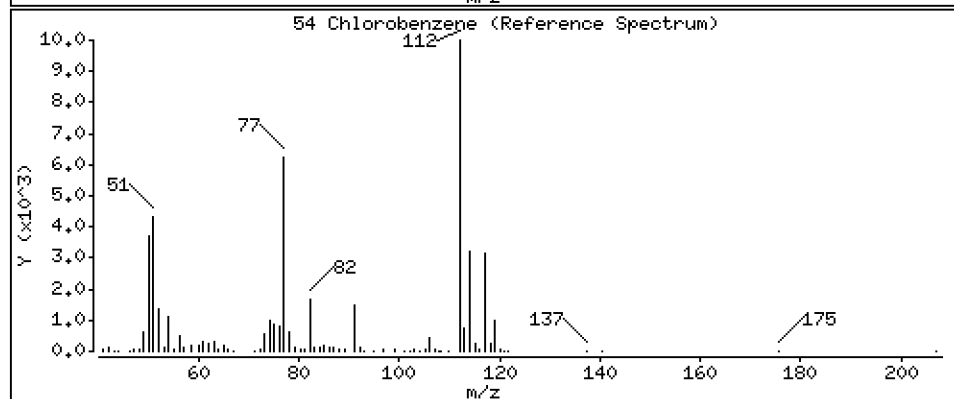
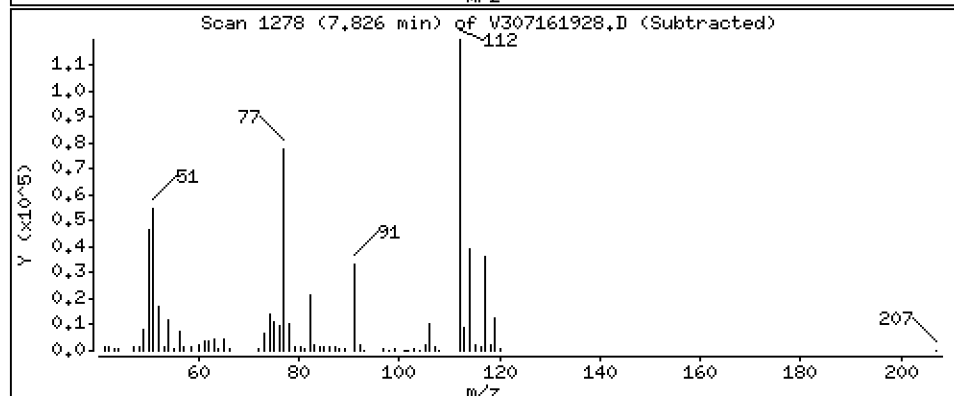
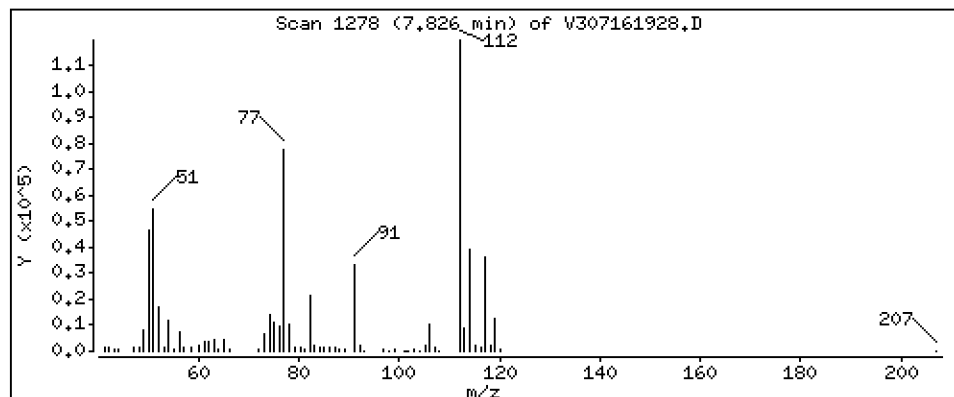
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

54 Chlorobenzene

Concentration: 10,991 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

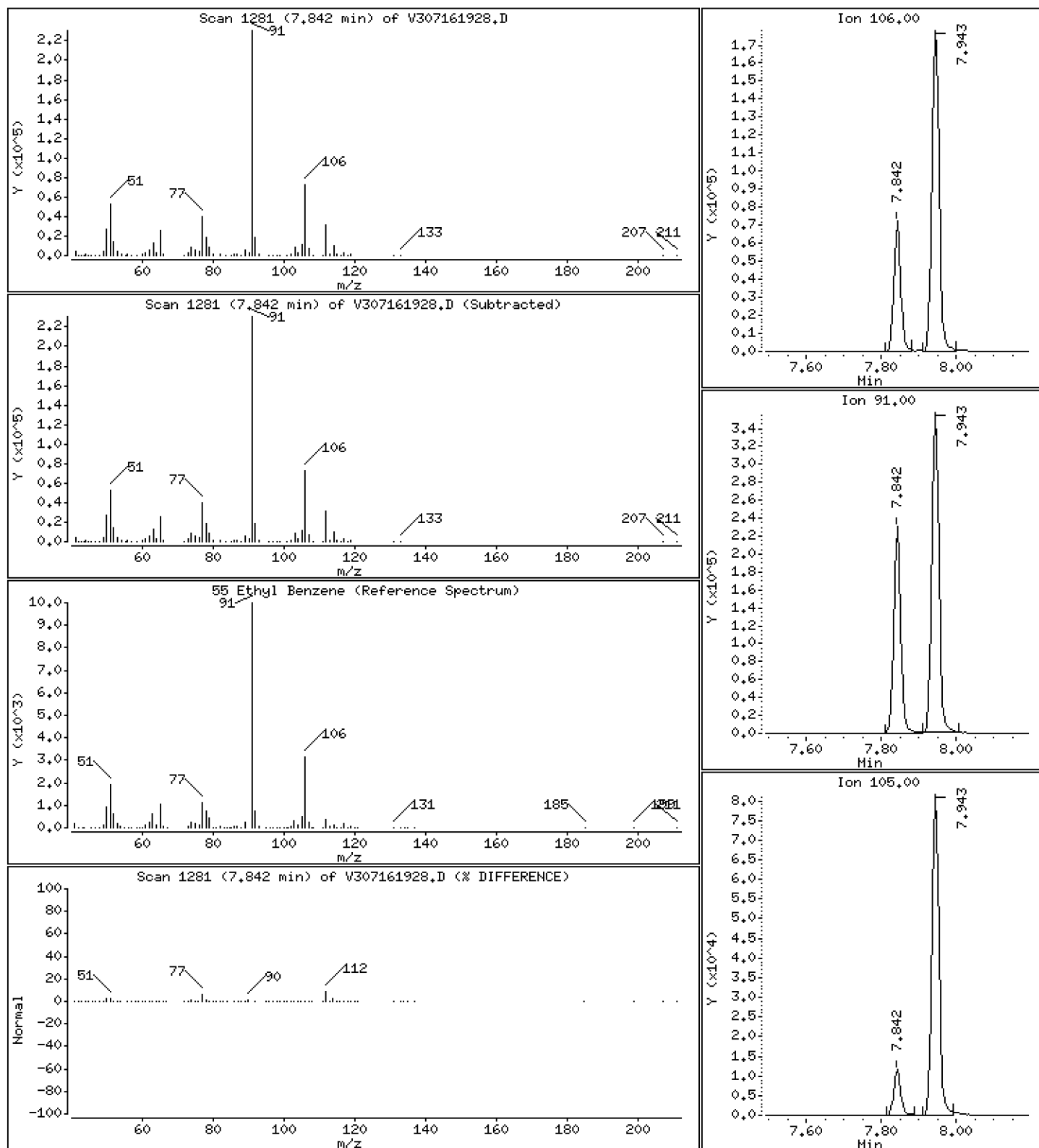
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

55 Ethyl Benzene

Concentration: 11.698 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

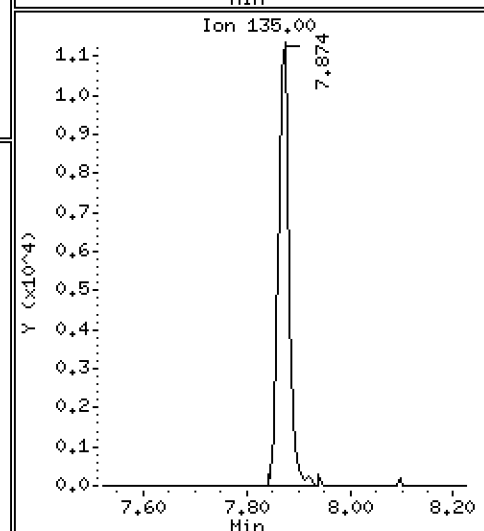
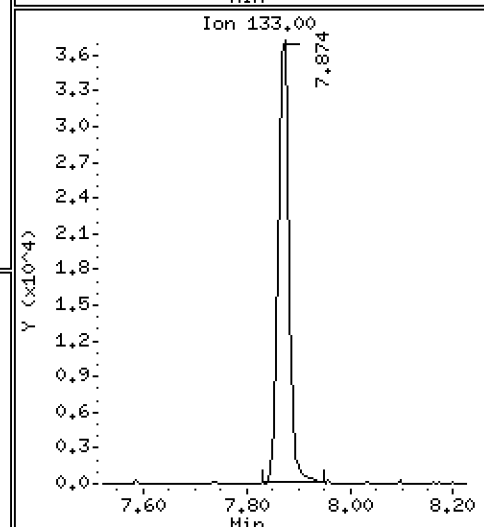
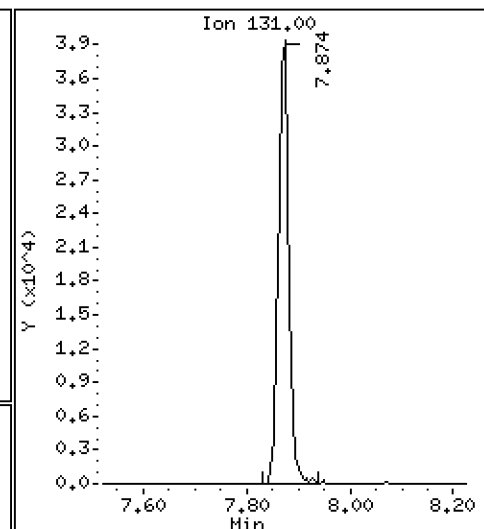
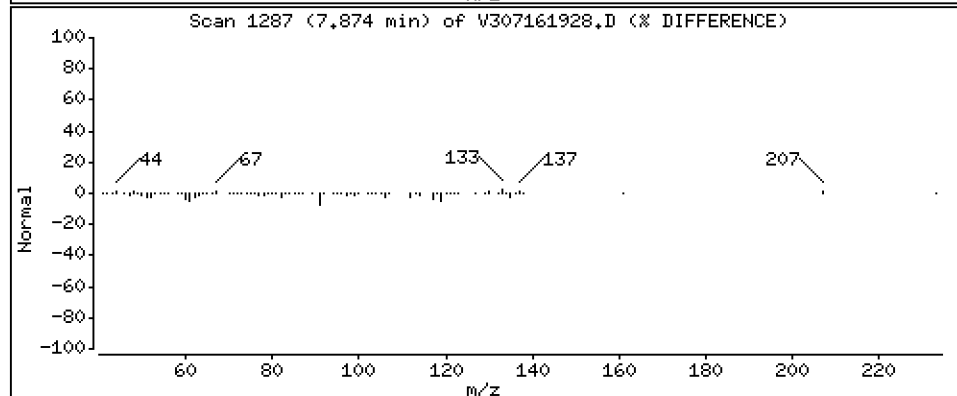
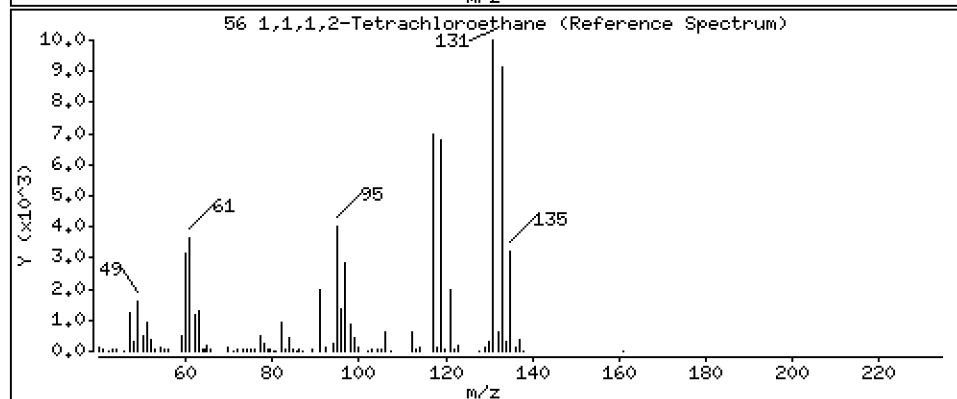
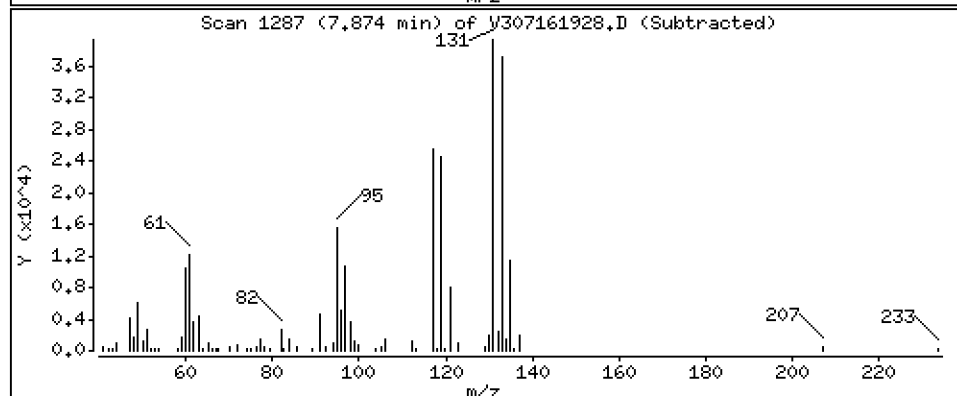
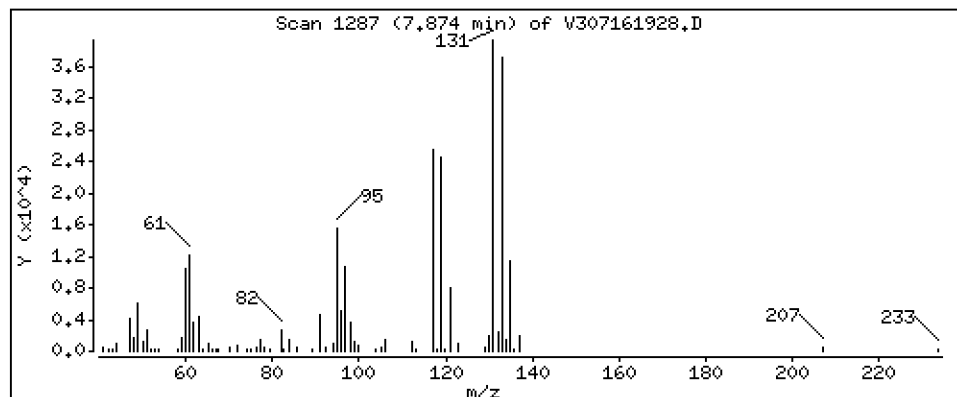
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

56 1,1,1,2-Tetrachloroethane

Concentration: 10,742 ug/L

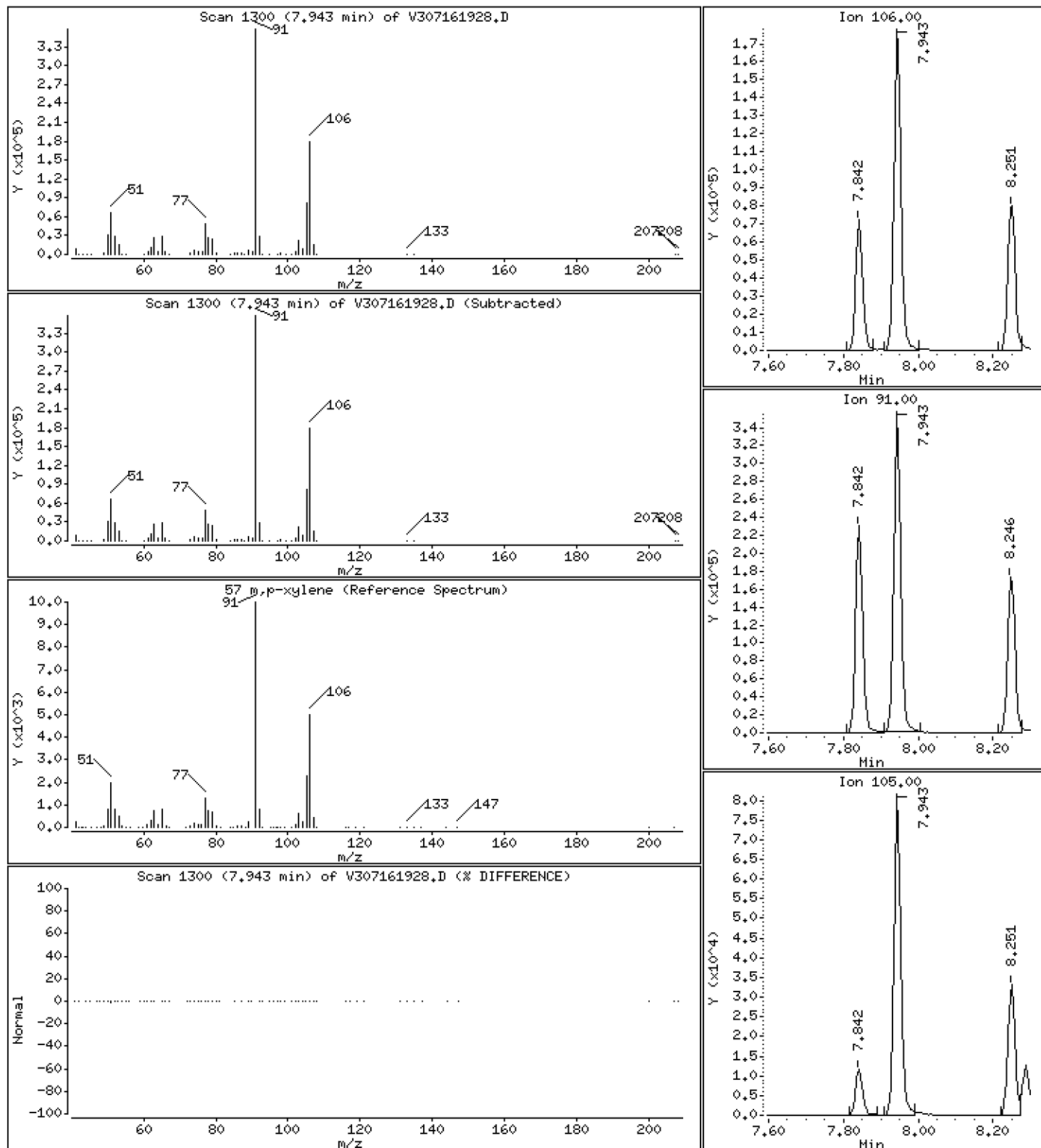


Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Concentration: 23,494 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

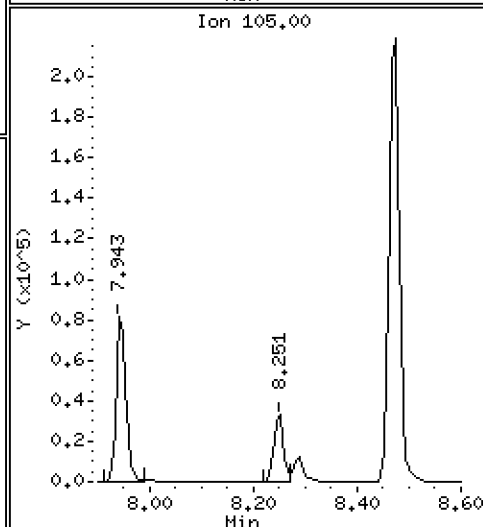
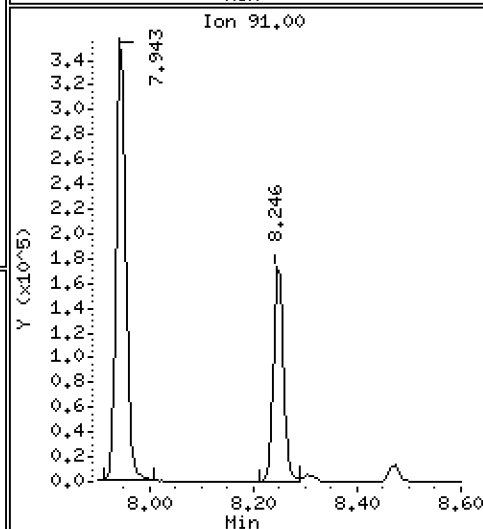
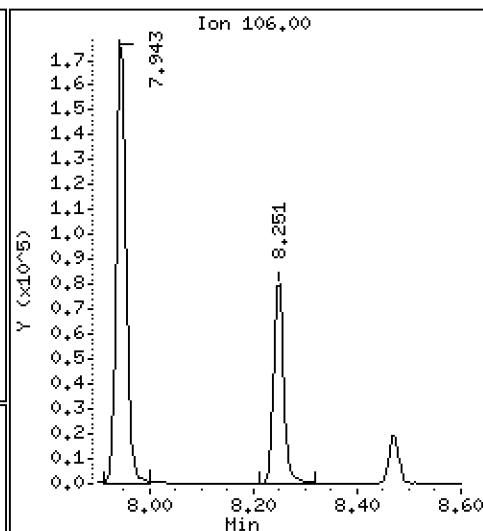
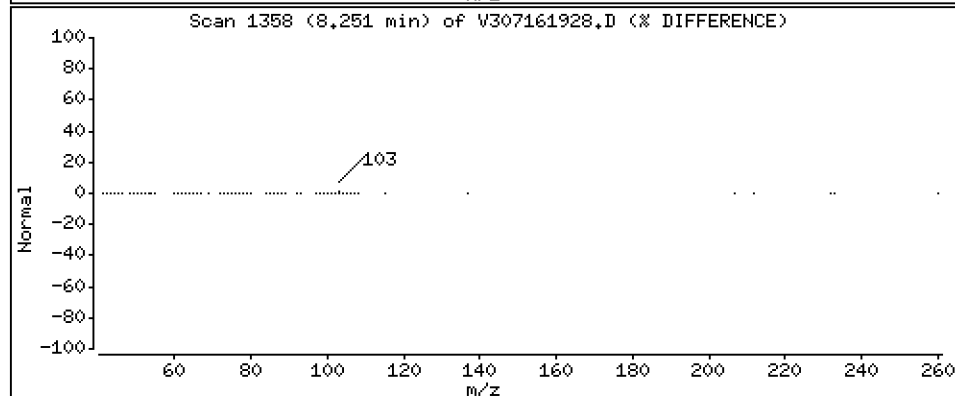
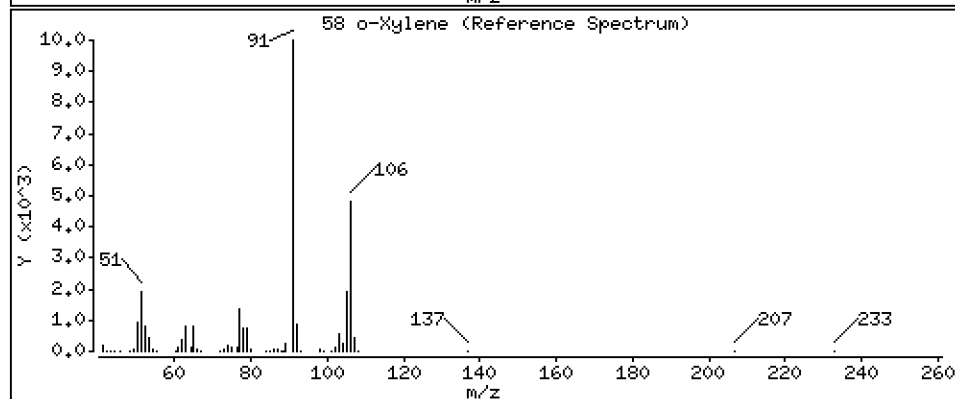
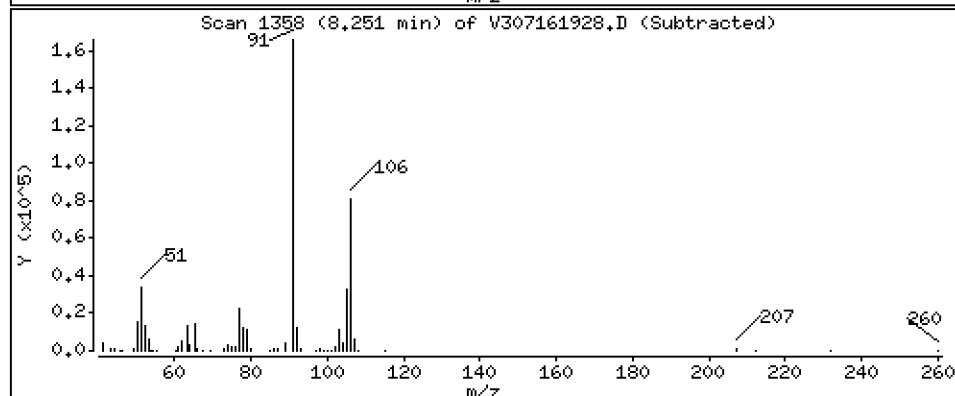
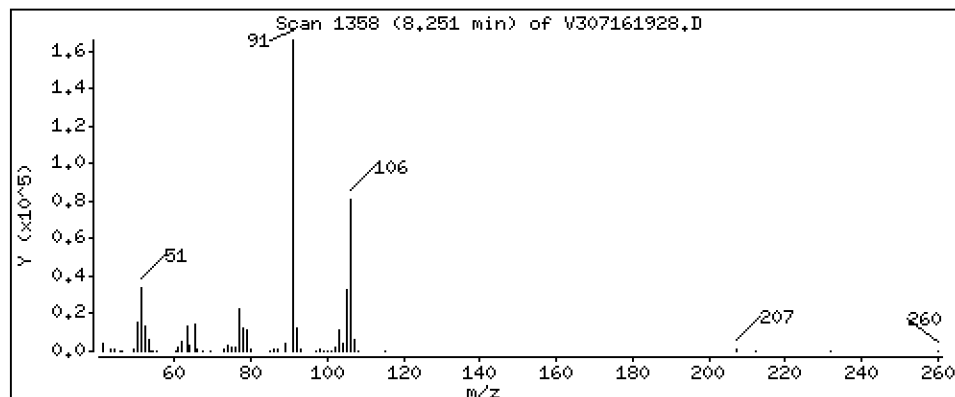
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

58 o-Xylene

Concentration: 11.465 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

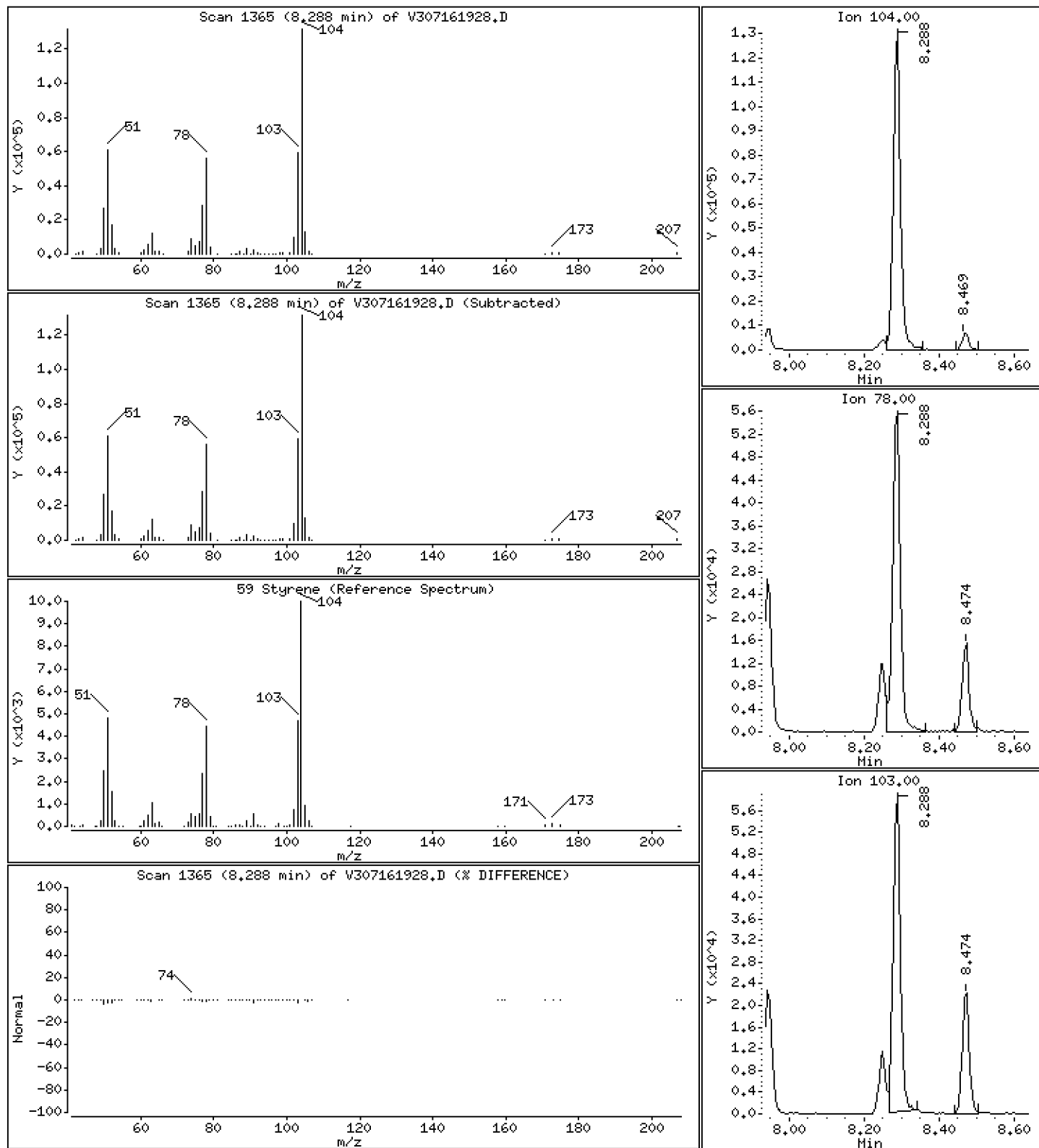
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

59 Styrene

Concentration: 11,764 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

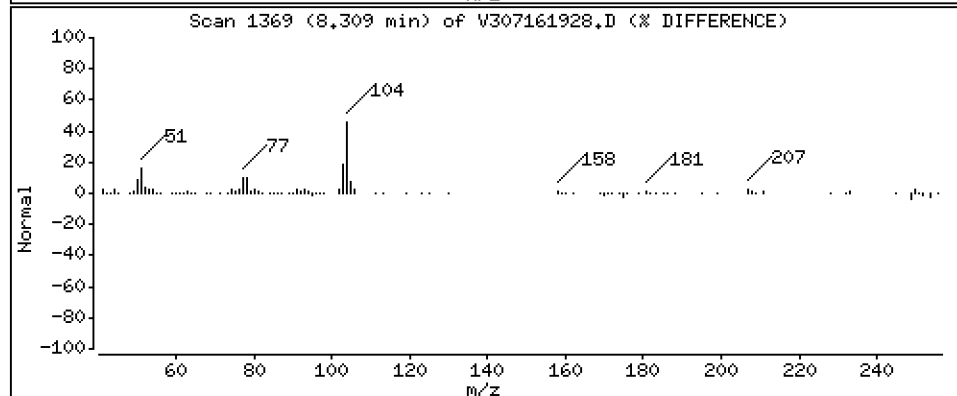
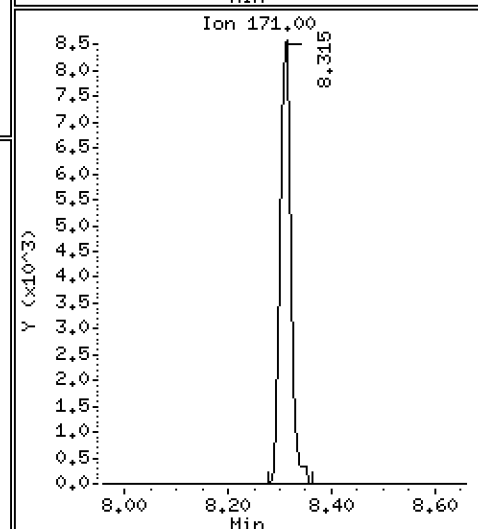
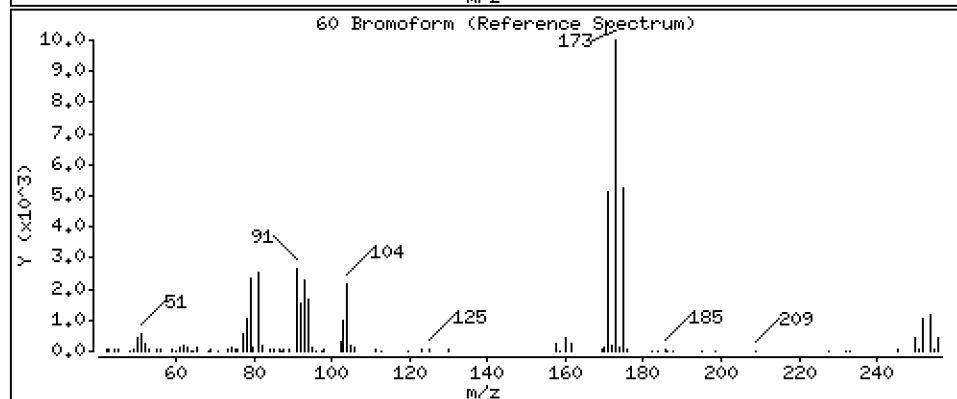
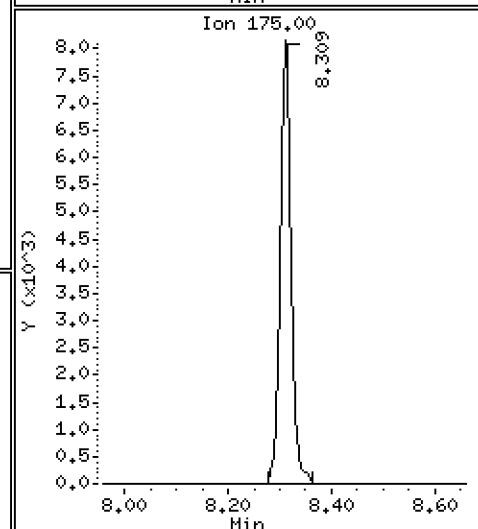
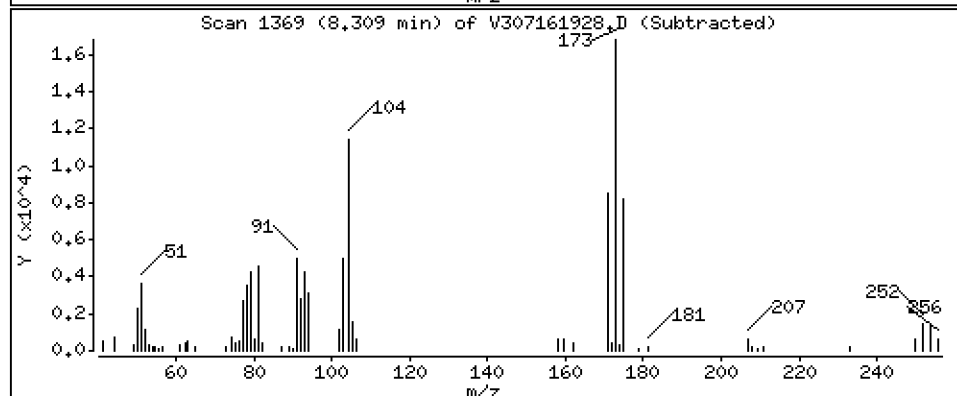
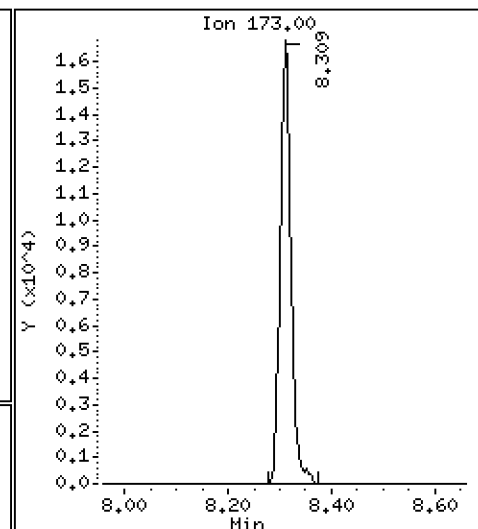
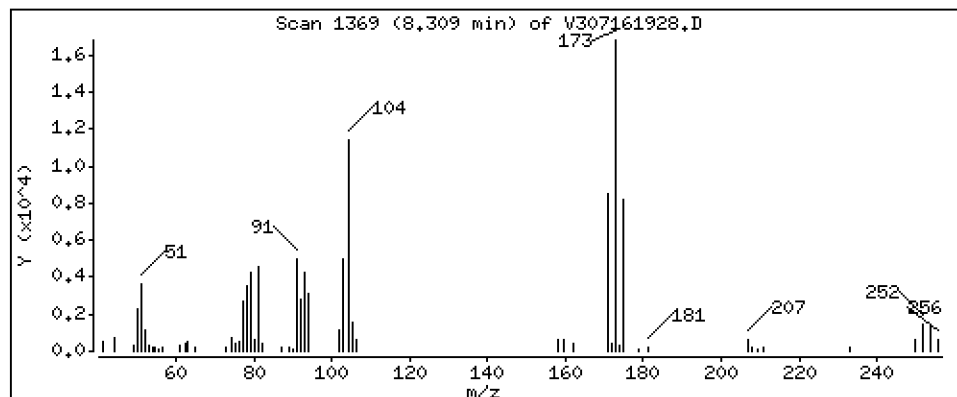
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

60 Bromoform

Concentration: 10.967 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

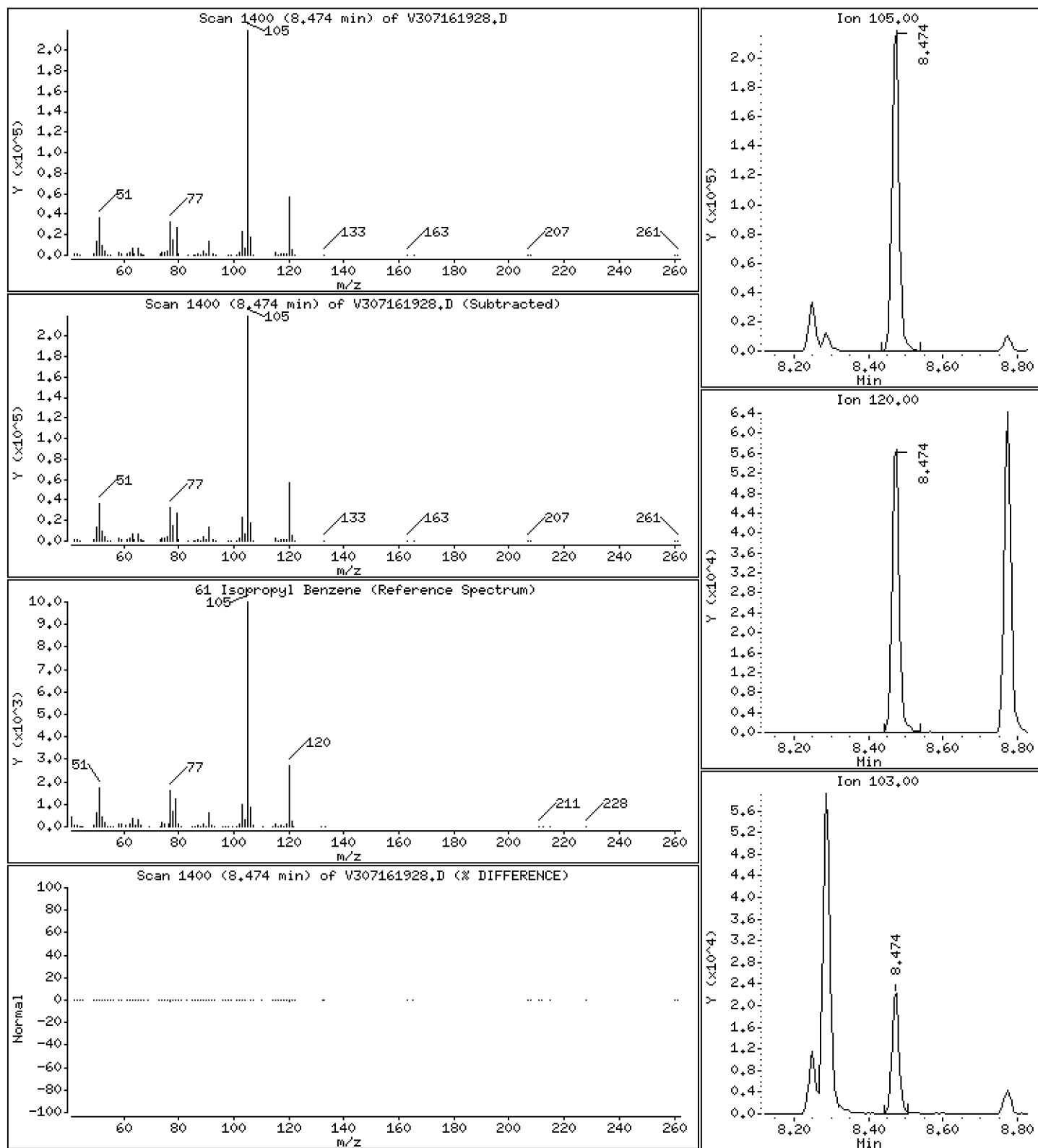
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

61 Isopropyl Benzene

Concentration: 12,310 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

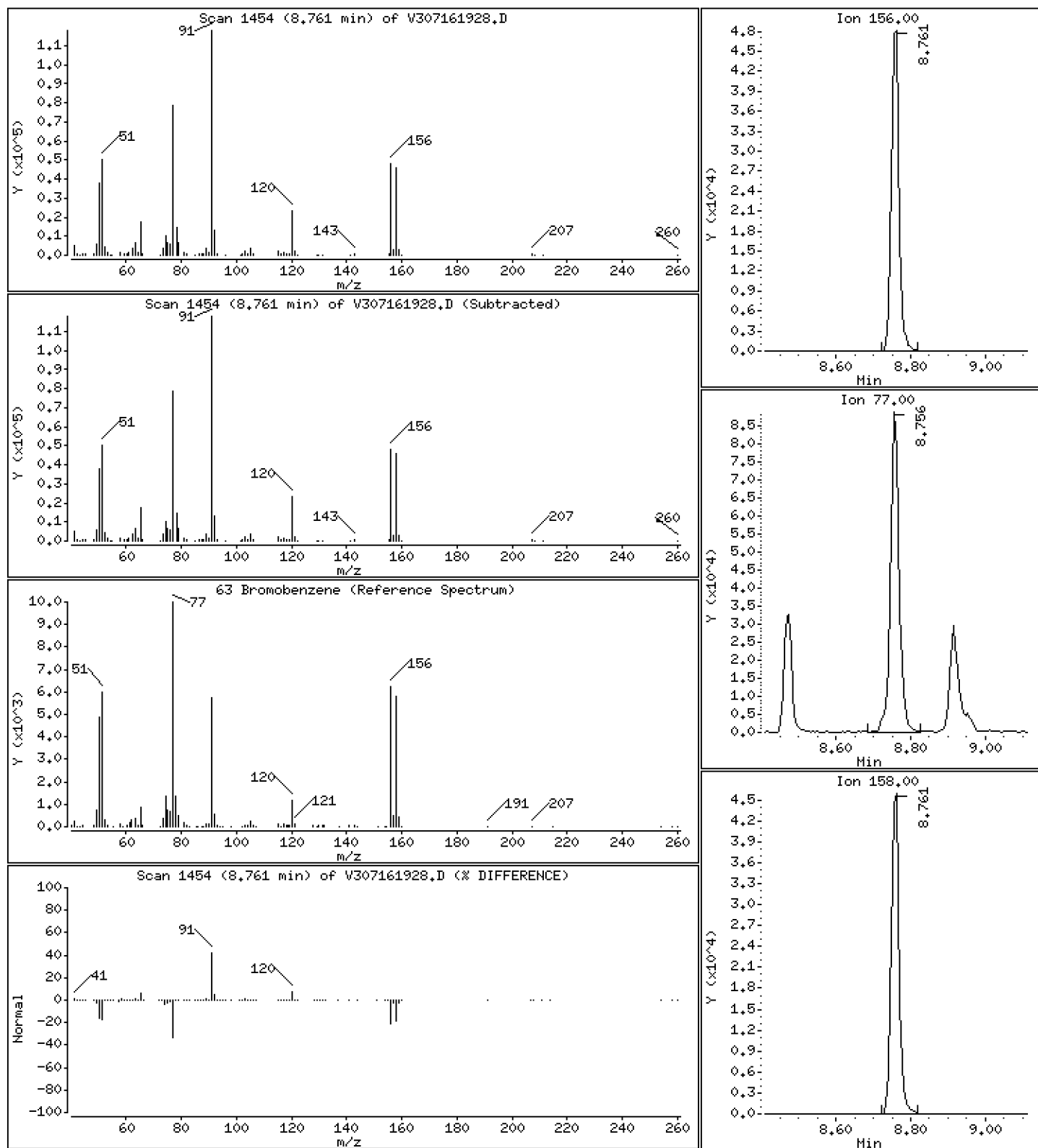
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

63 Bromobenzene

Concentration: 11,758 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

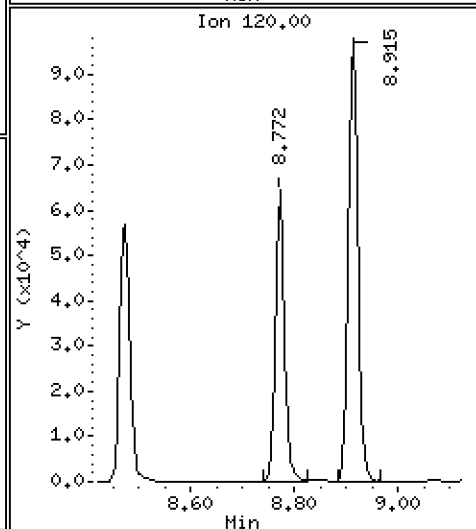
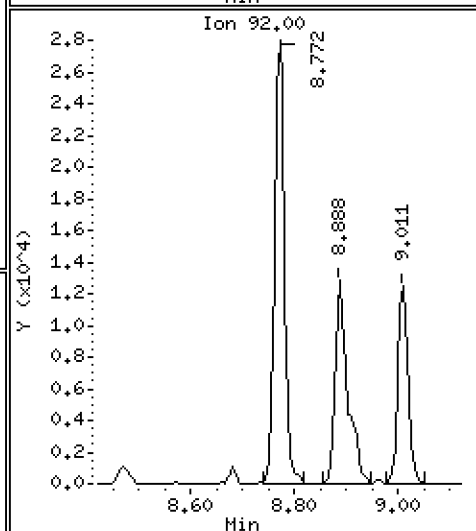
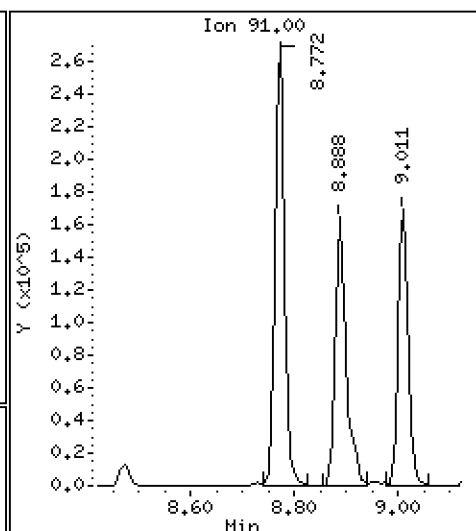
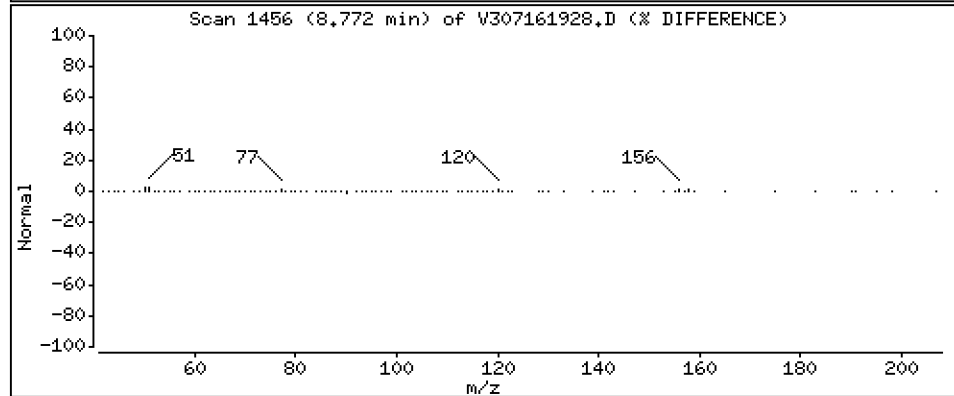
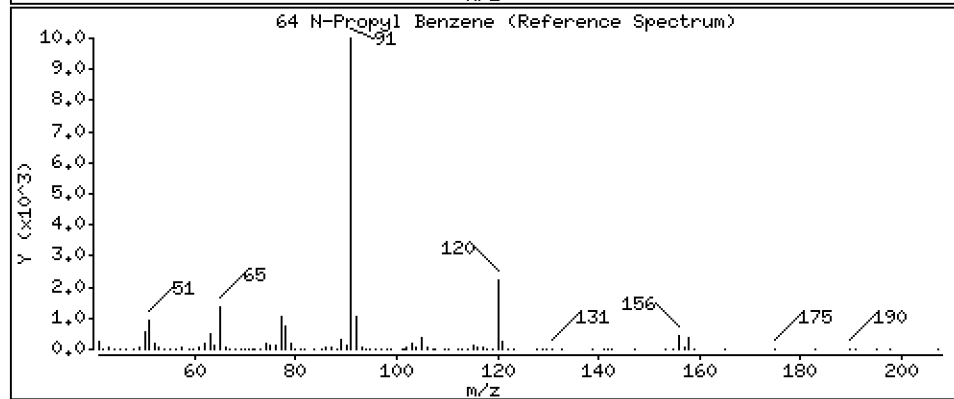
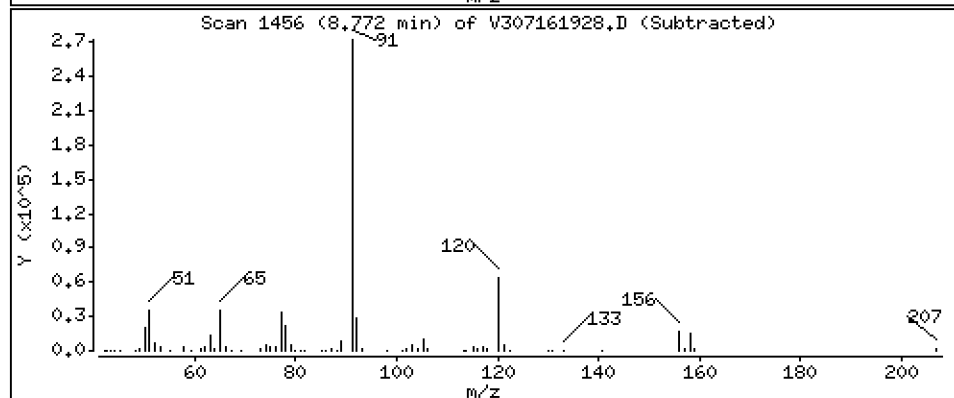
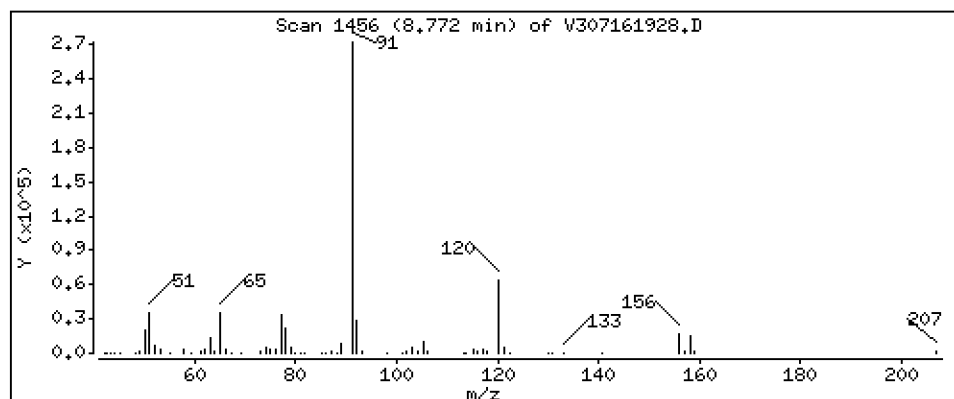
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

64 N-Propyl Benzene

Concentration: 11,670 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

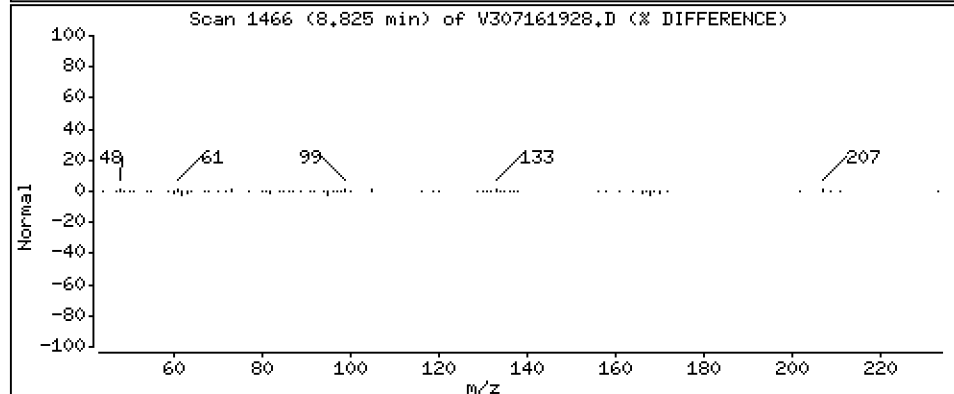
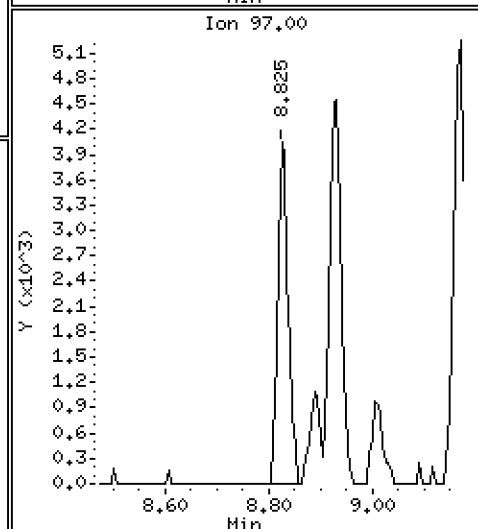
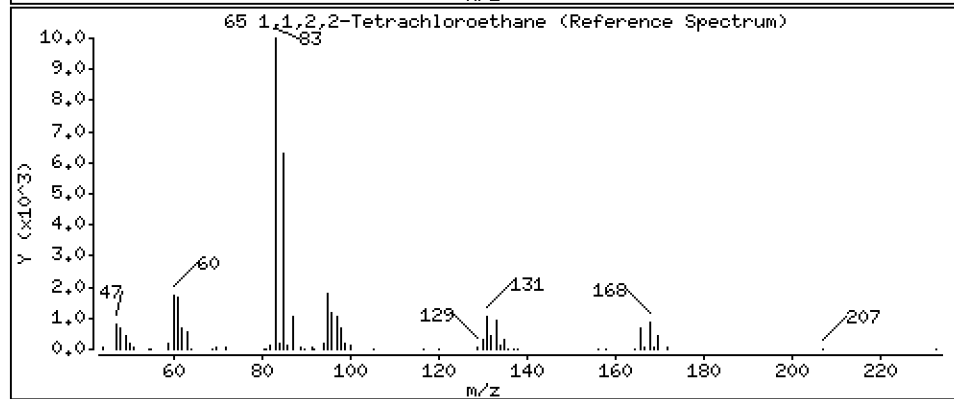
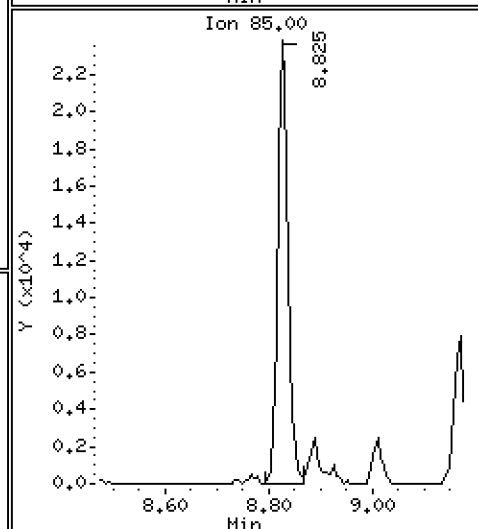
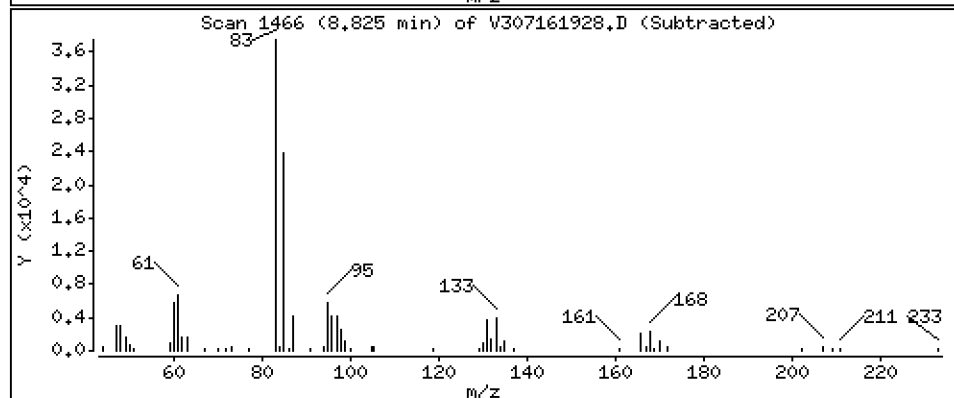
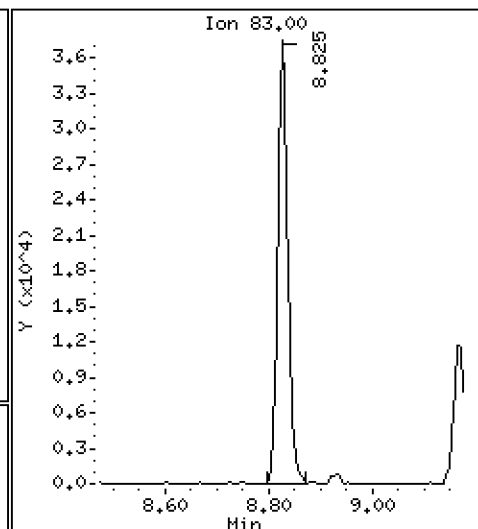
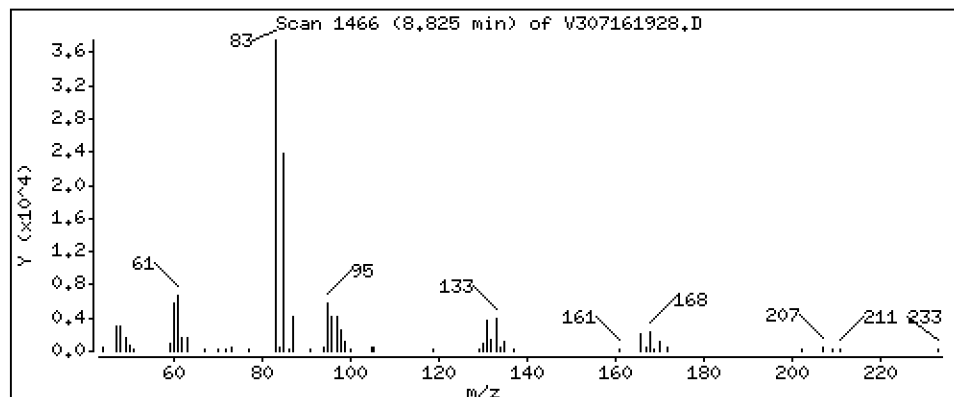
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

65 1,1,2,2-Tetrachloroethane

Concentration: 11,265 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

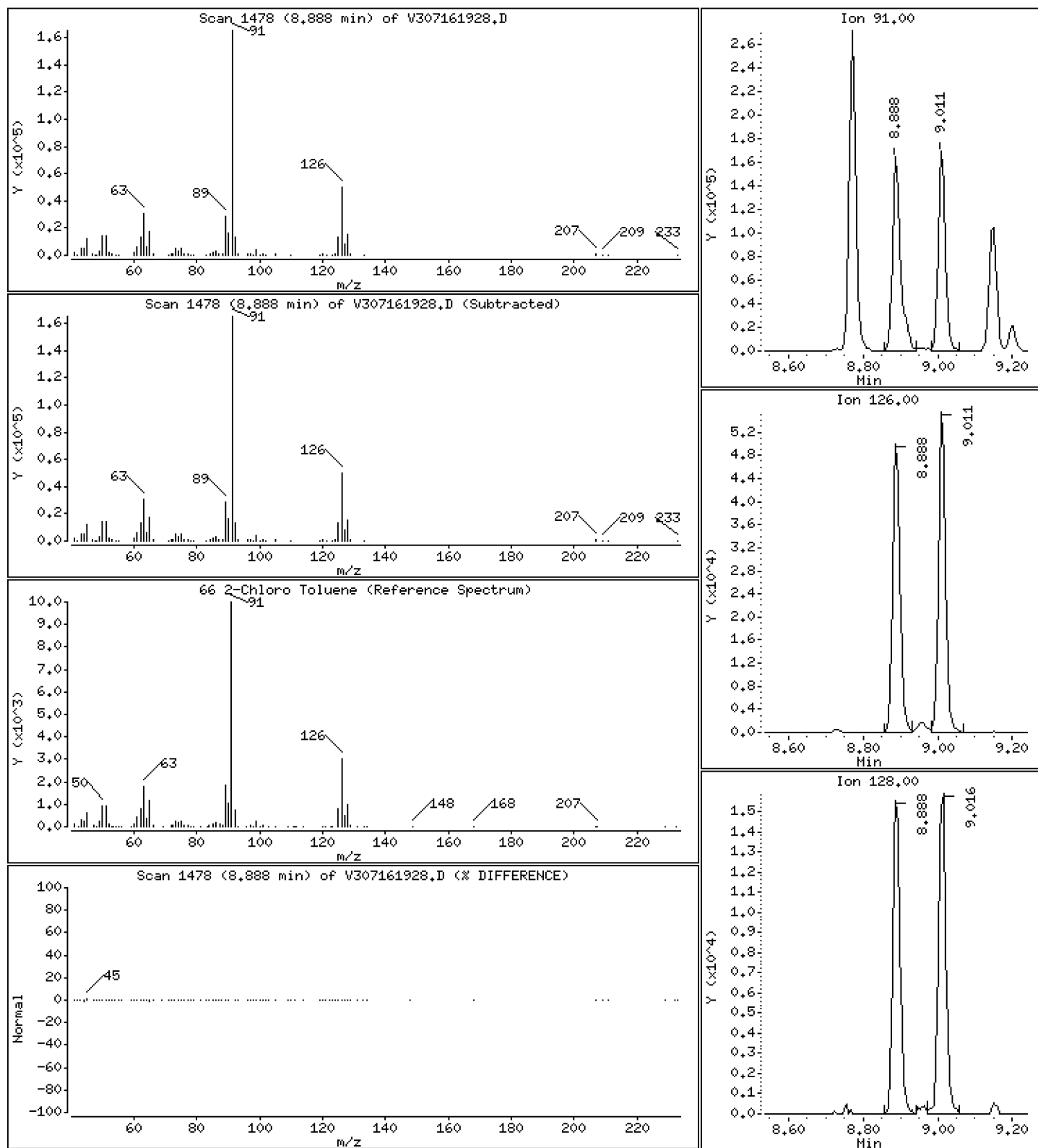
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

66 2-Chloro Toluene

Concentration: 11,908 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

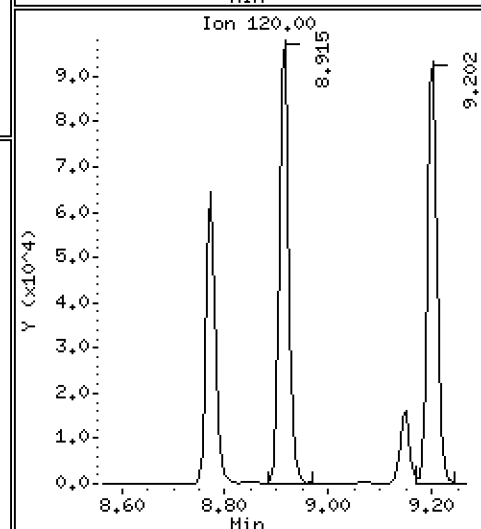
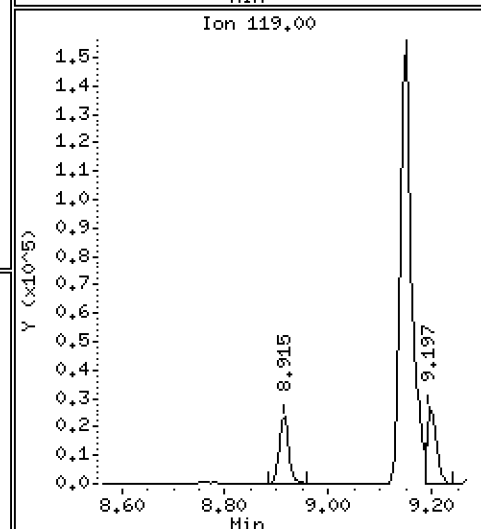
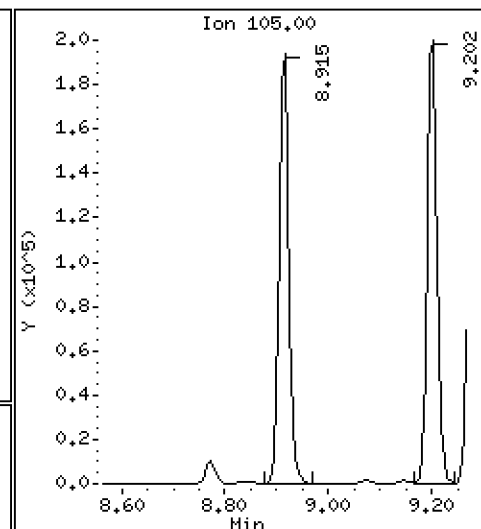
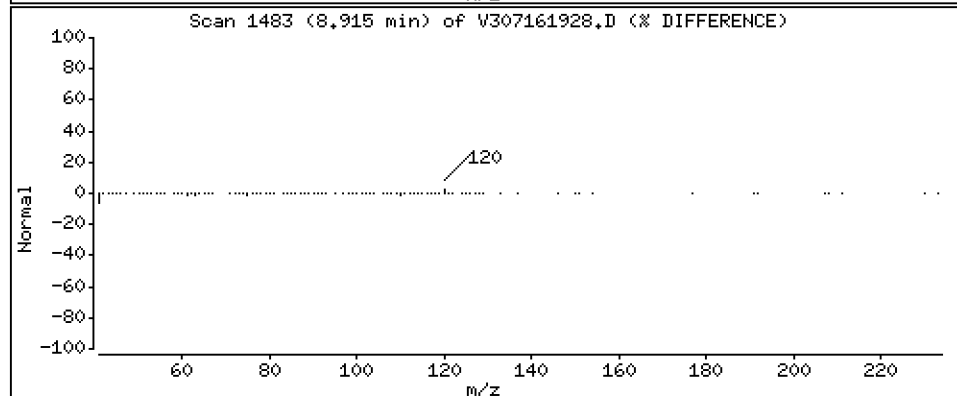
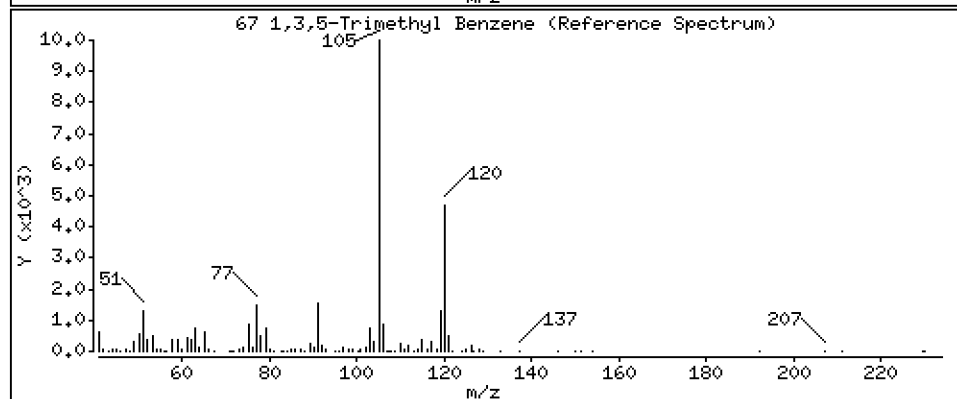
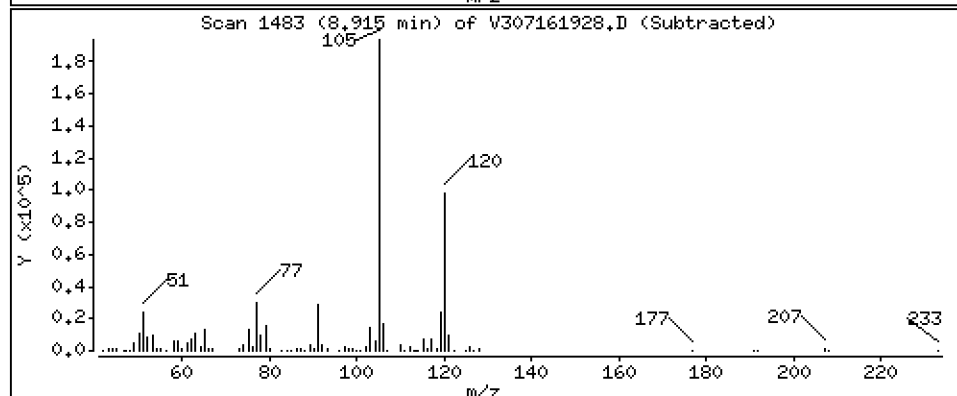
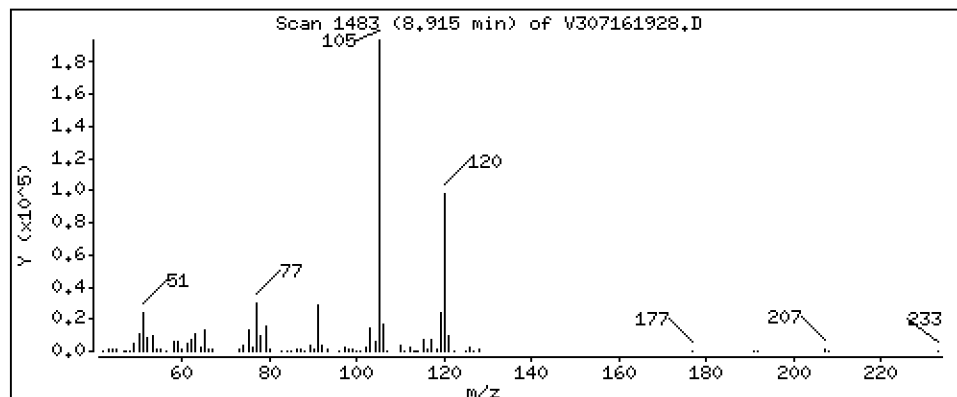
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

67 1,3,5-Trimethyl Benzene

Concentration: 12.057 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

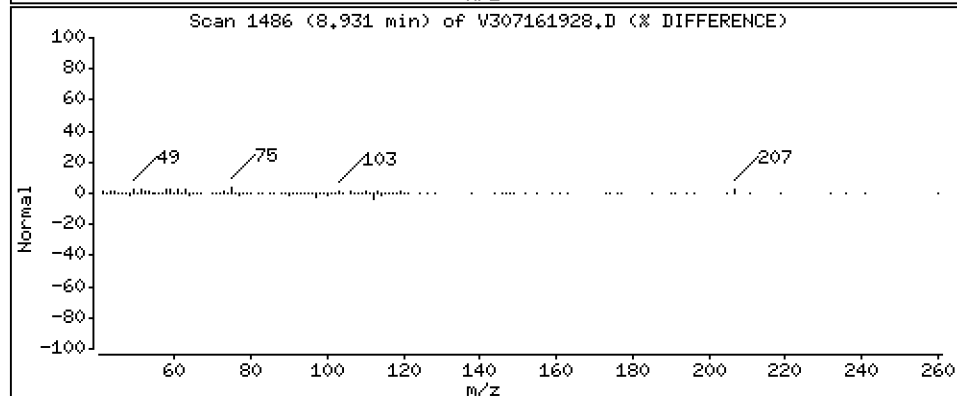
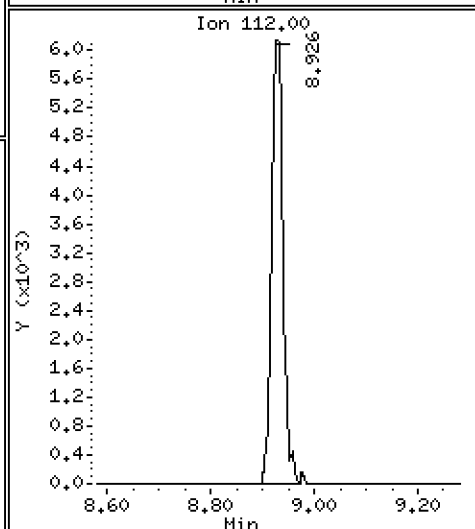
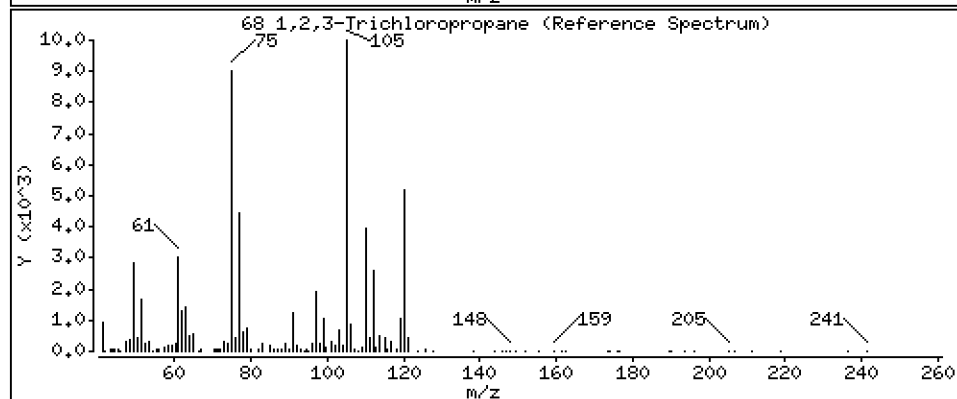
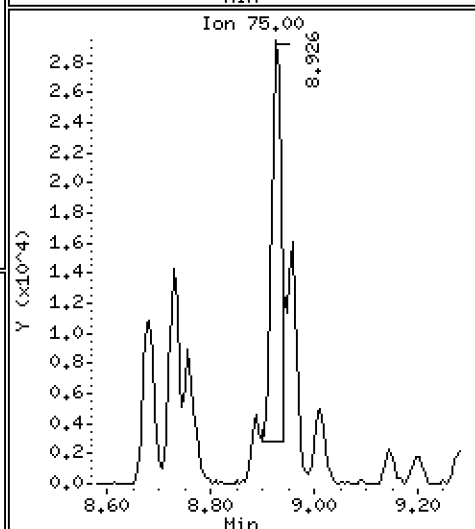
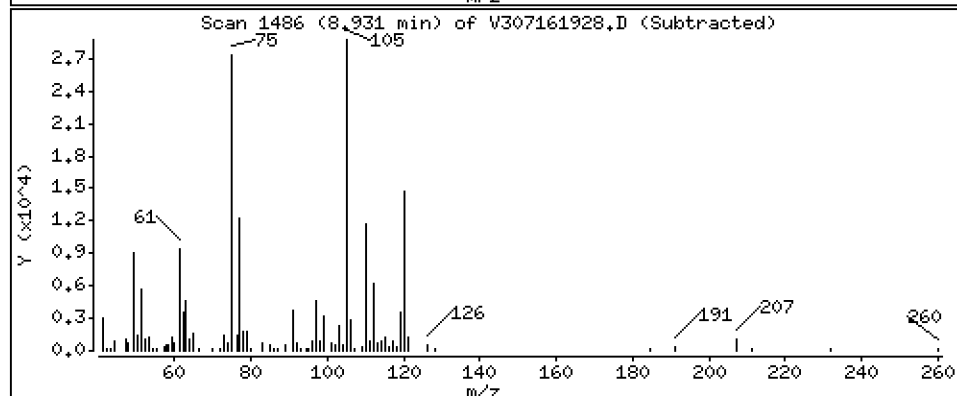
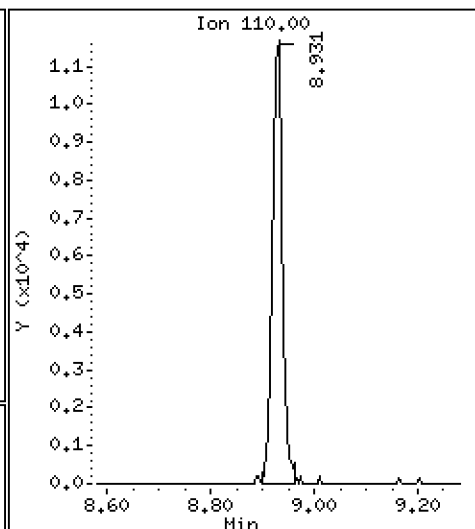
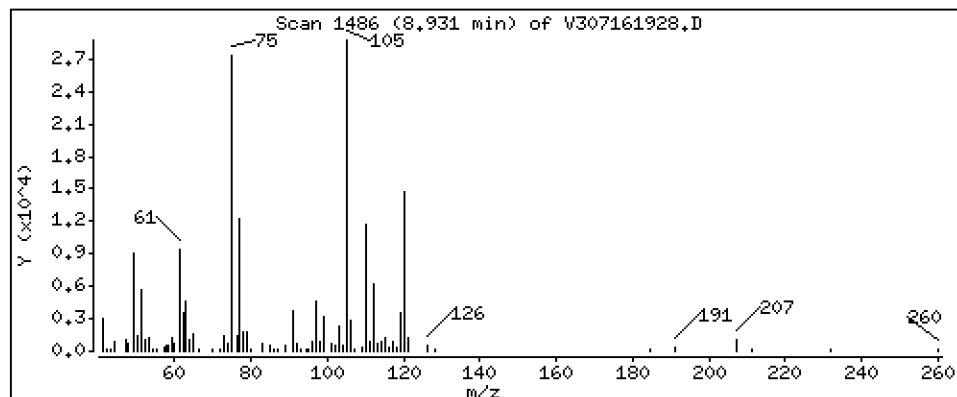
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

68 1,2,3-Trichloropropane

Concentration: 12,064 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

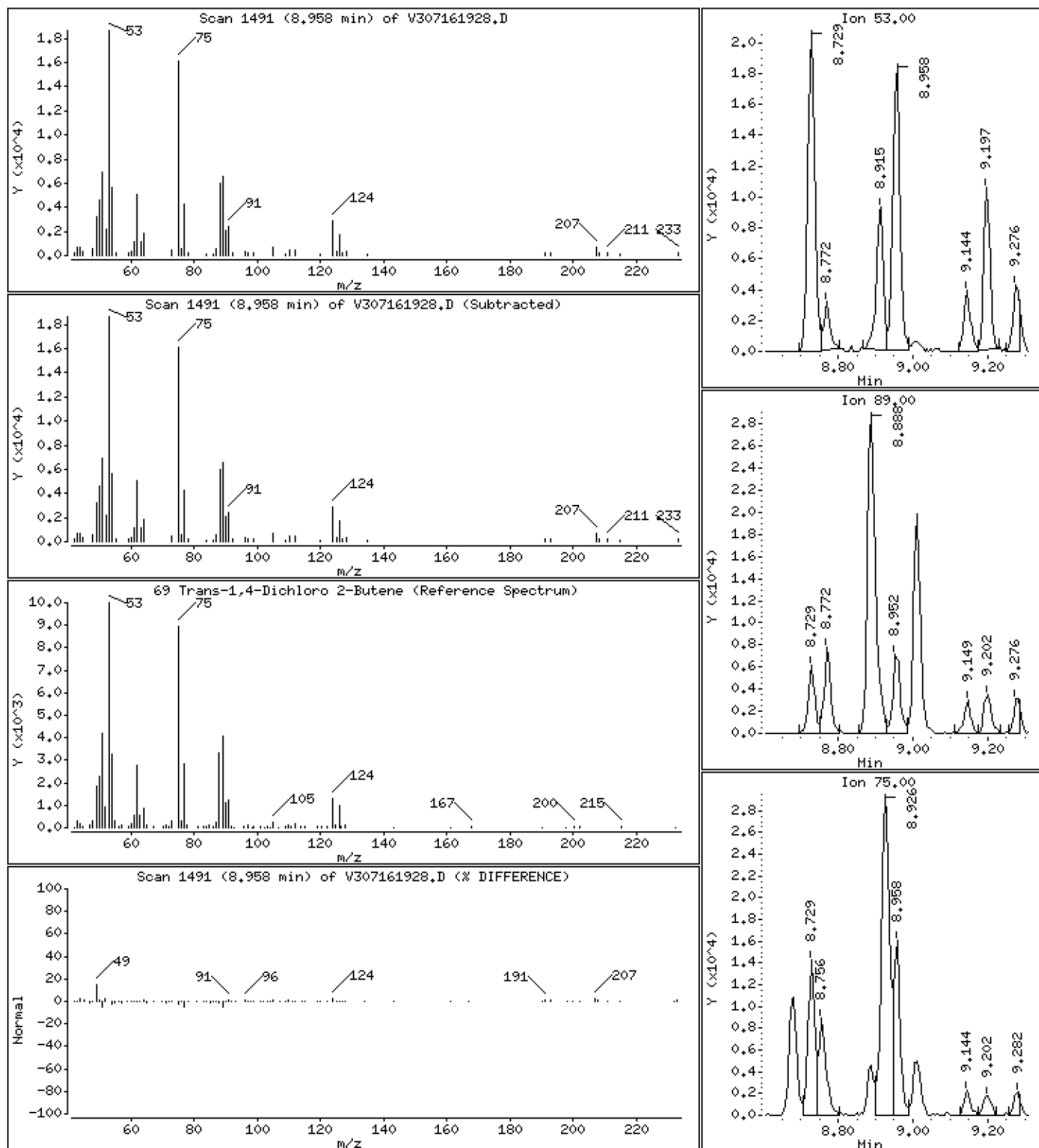
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

69 Trans-1,4-Dichloro 2-Butene

Concentration: 11.691 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

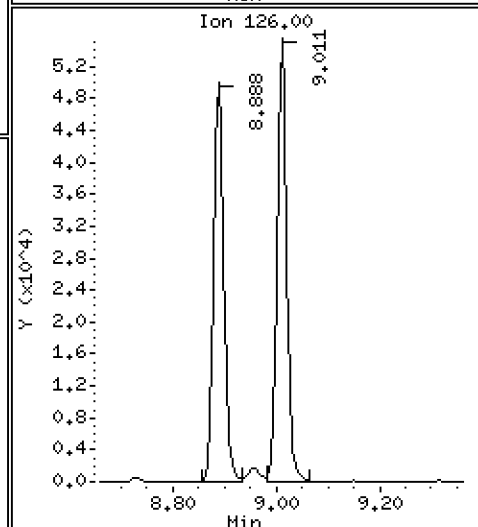
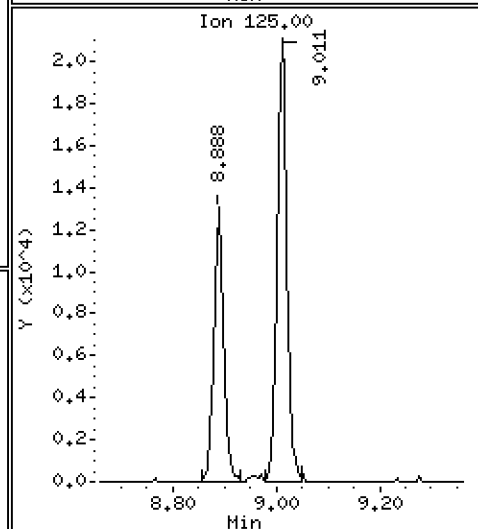
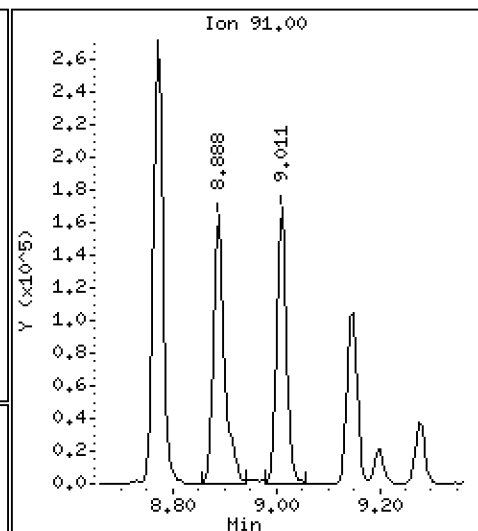
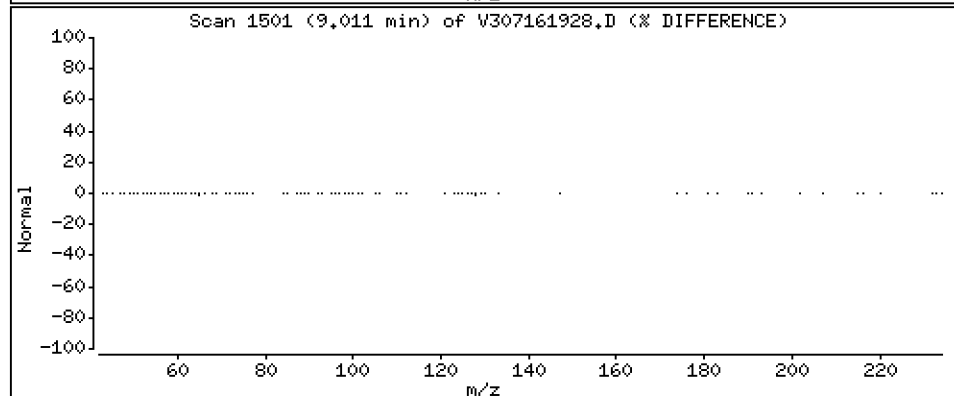
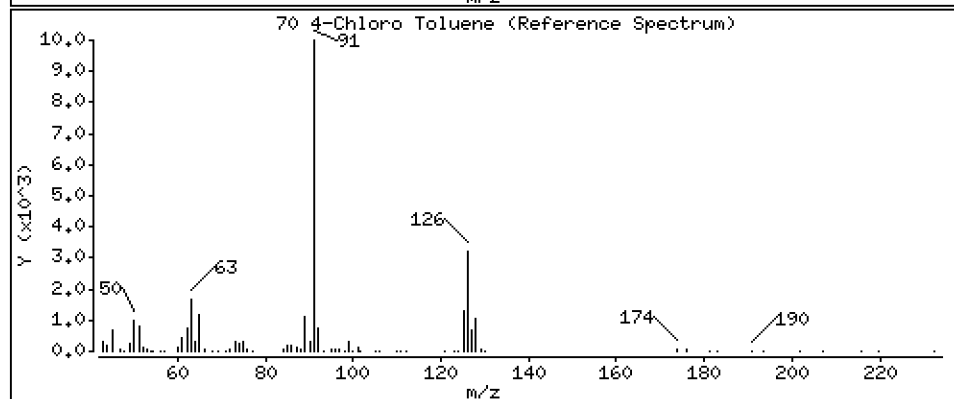
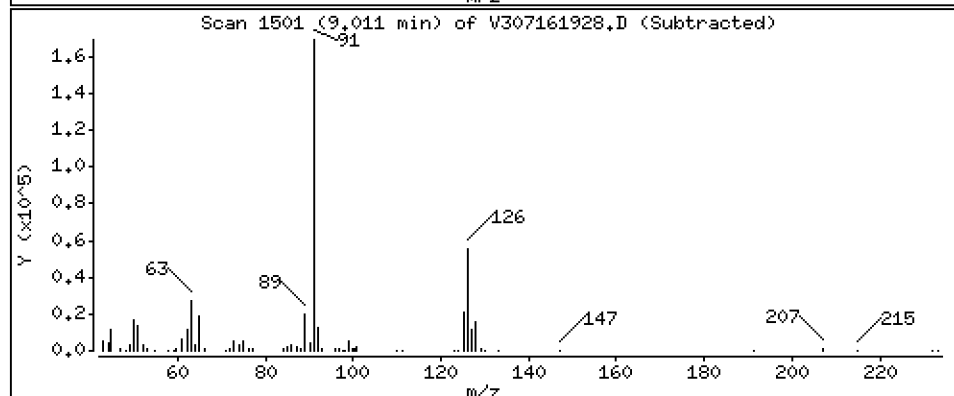
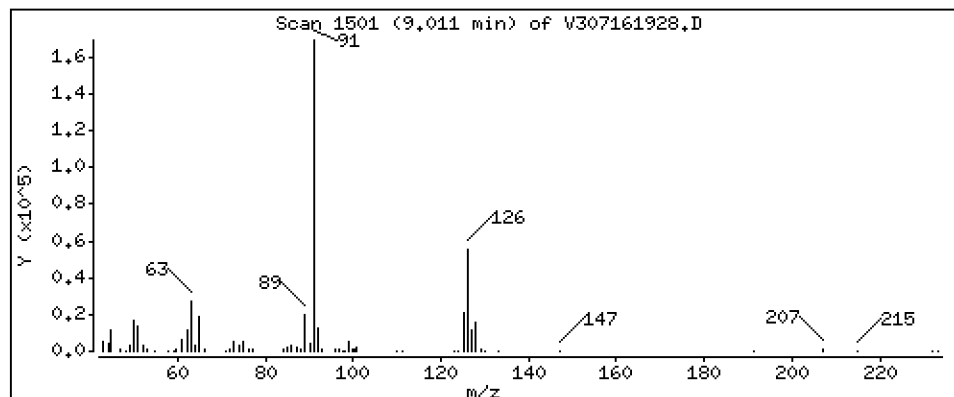
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

70 4-Chloro Toluene

Concentration: 11,747 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

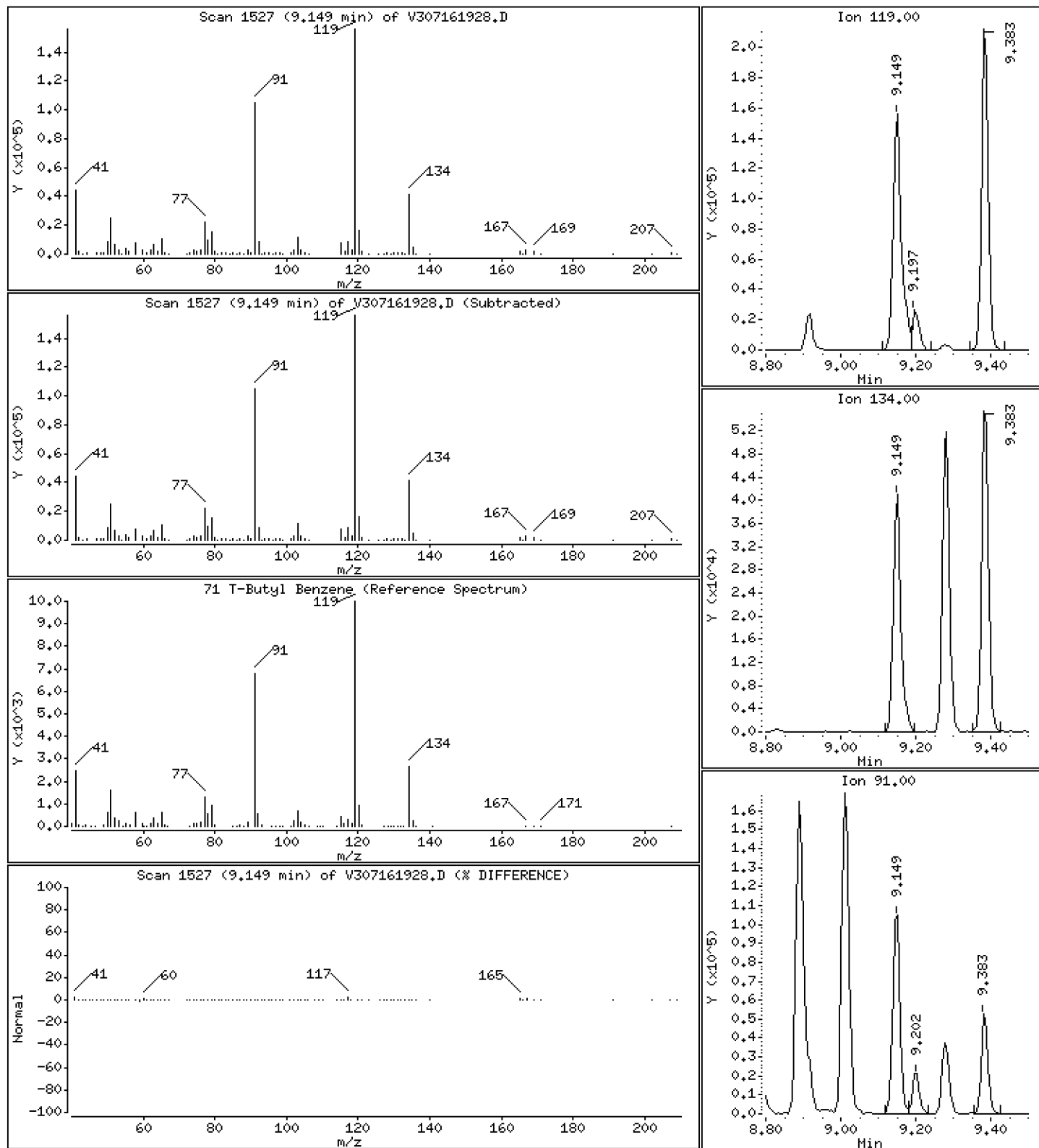
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

71 T-Butyl Benzene

Concentration: 14,028 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

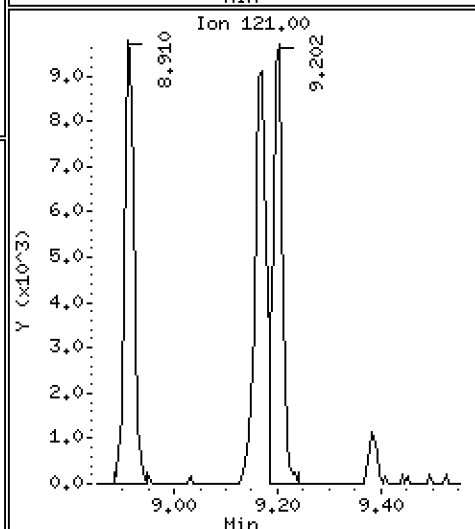
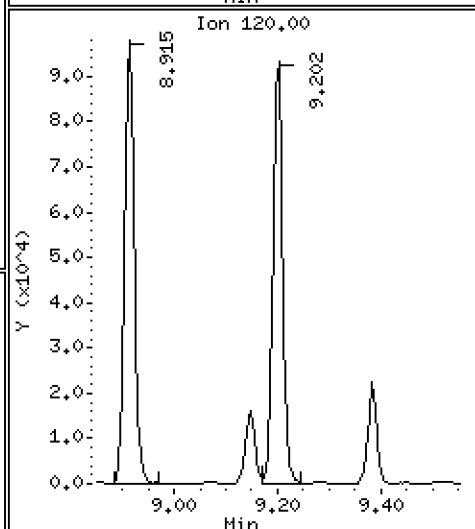
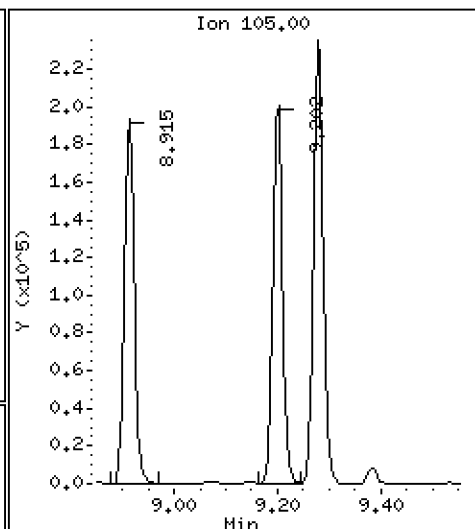
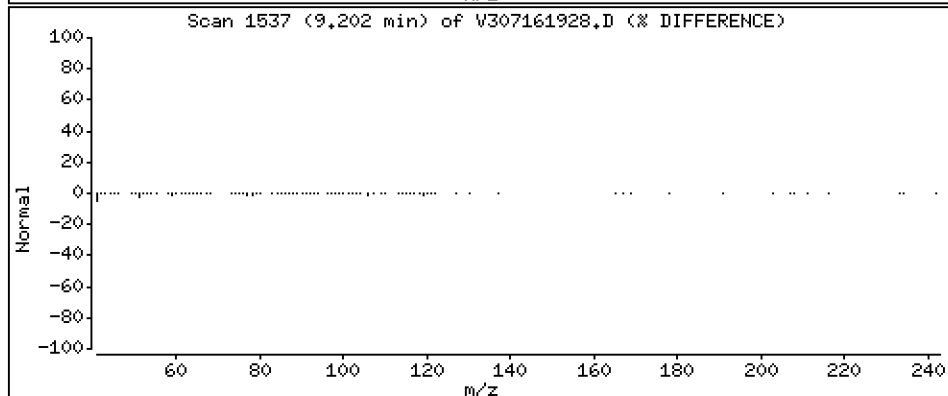
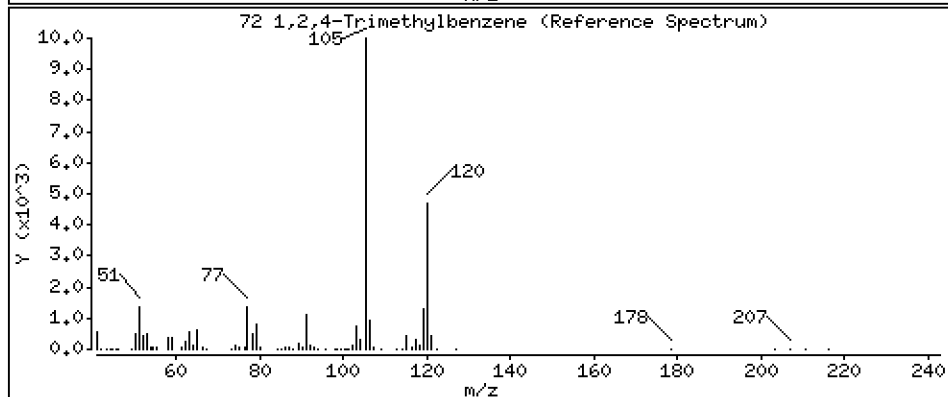
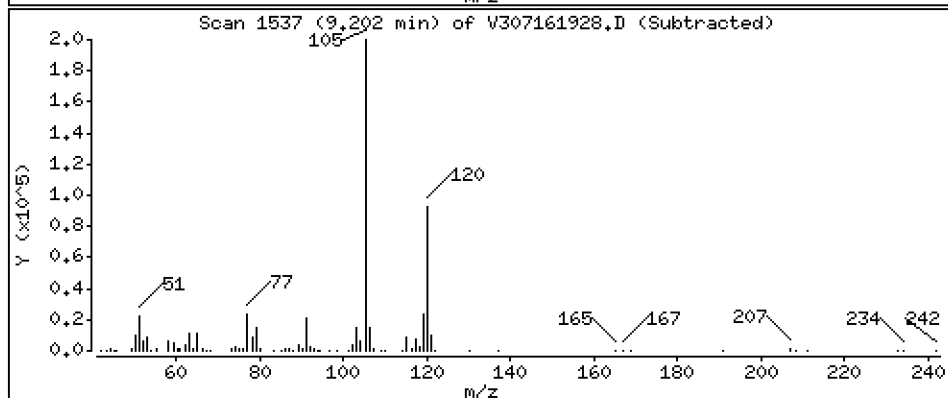
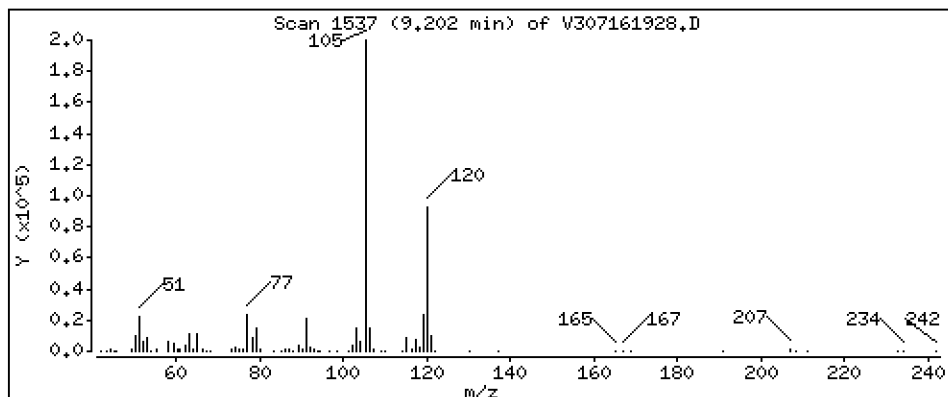
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 12,289 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

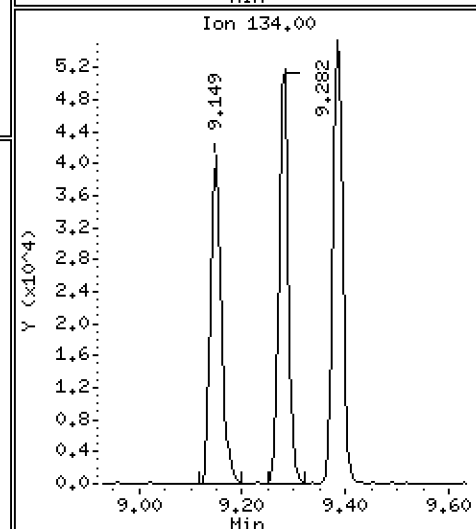
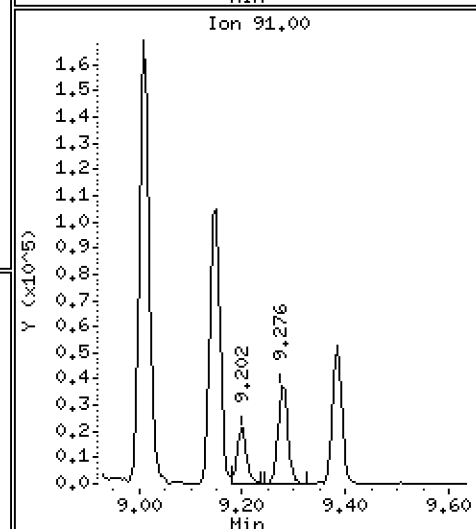
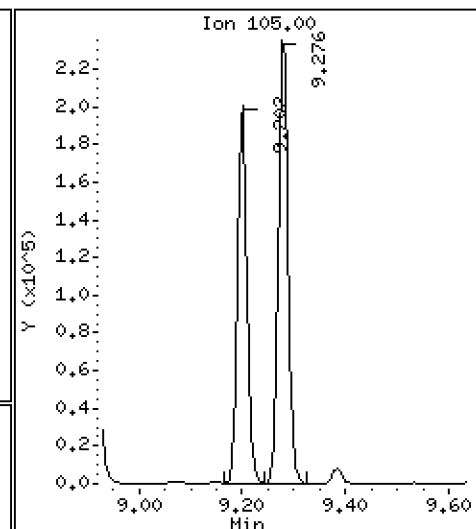
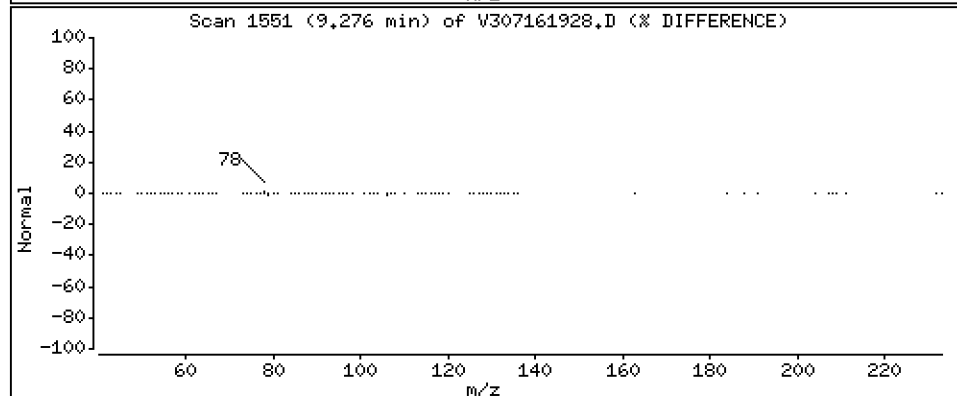
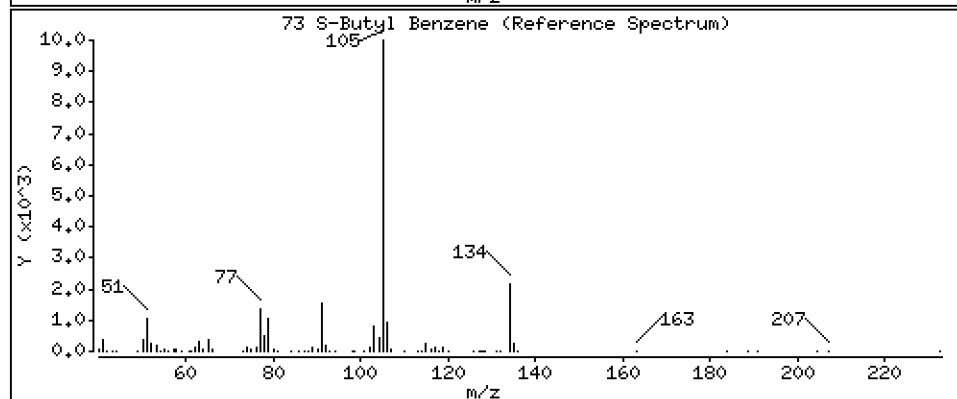
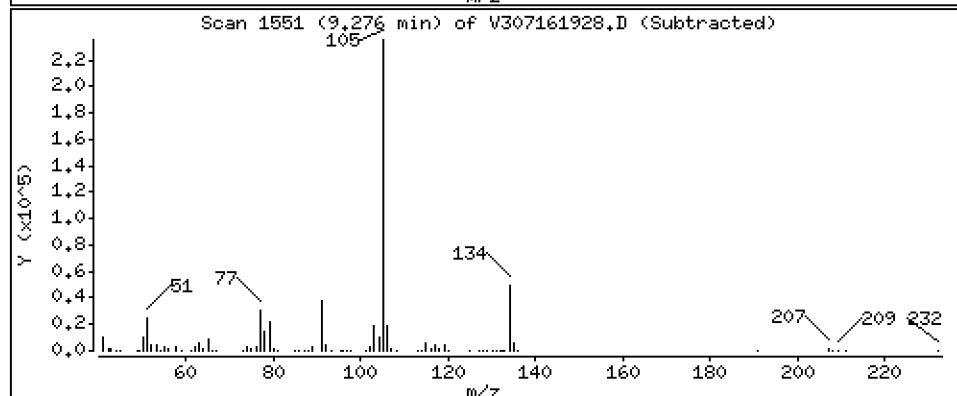
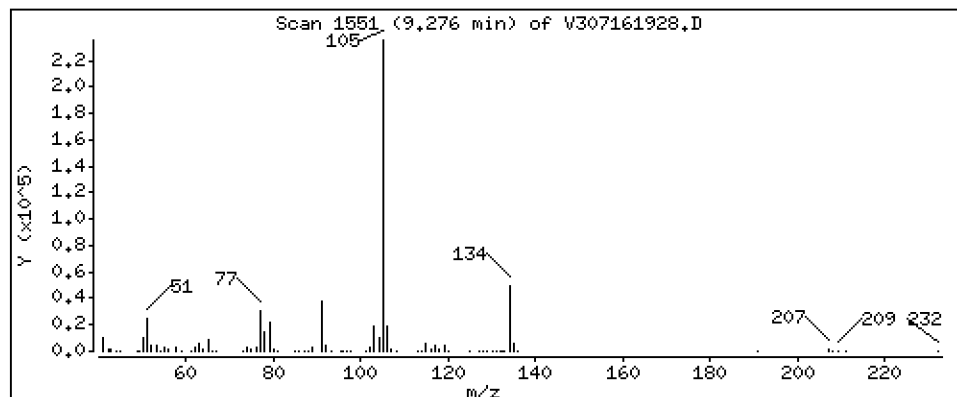
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

73 S-Butyl Benzene

Concentration: 11,936 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

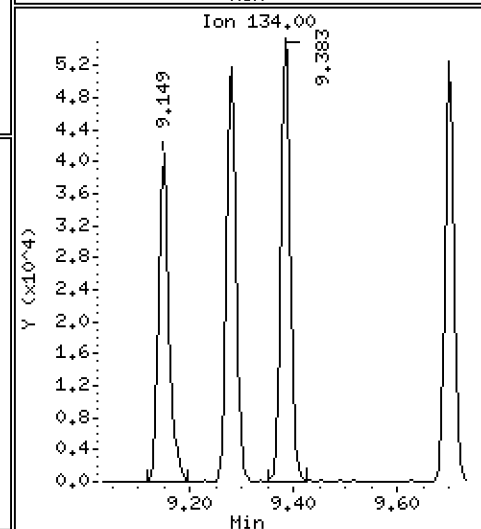
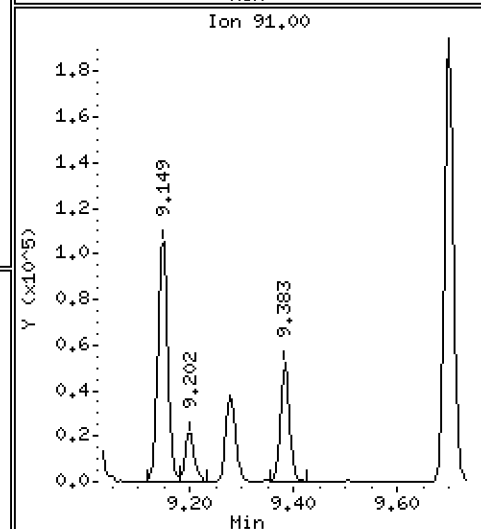
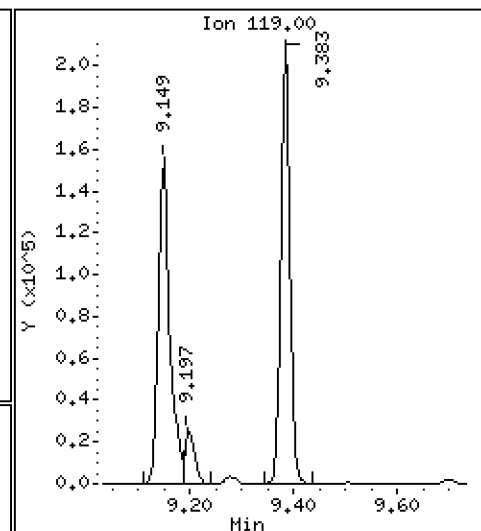
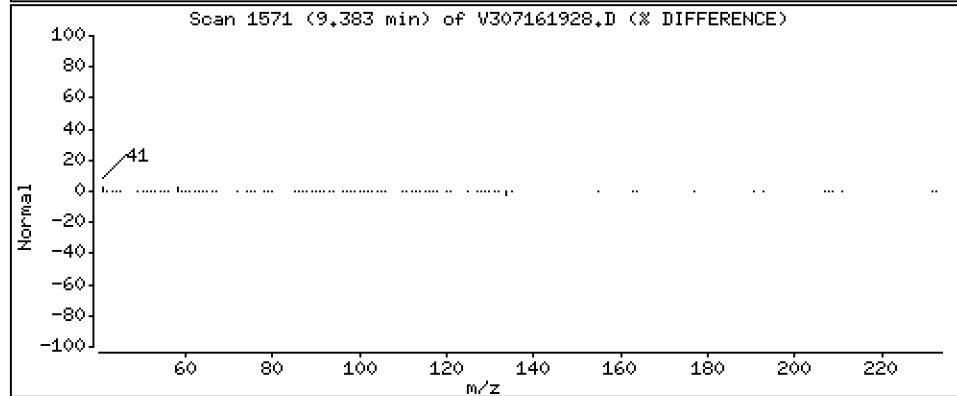
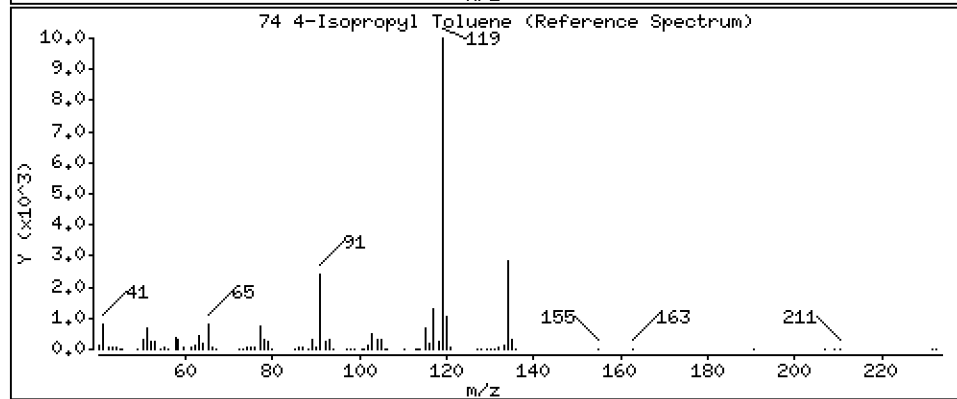
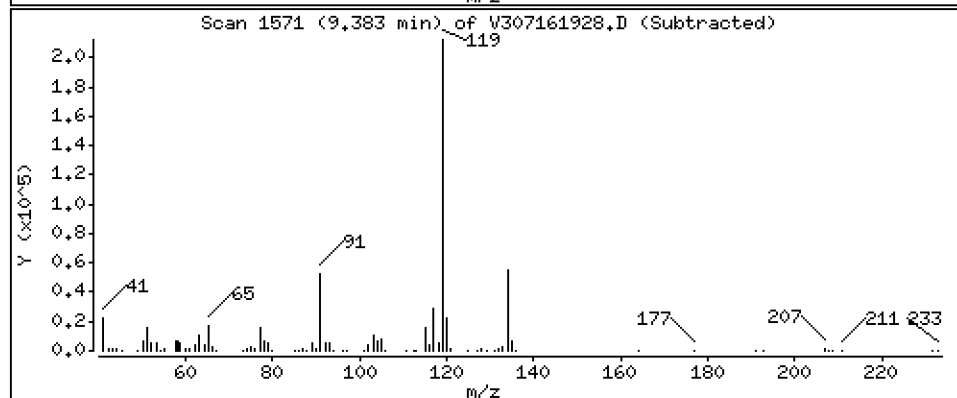
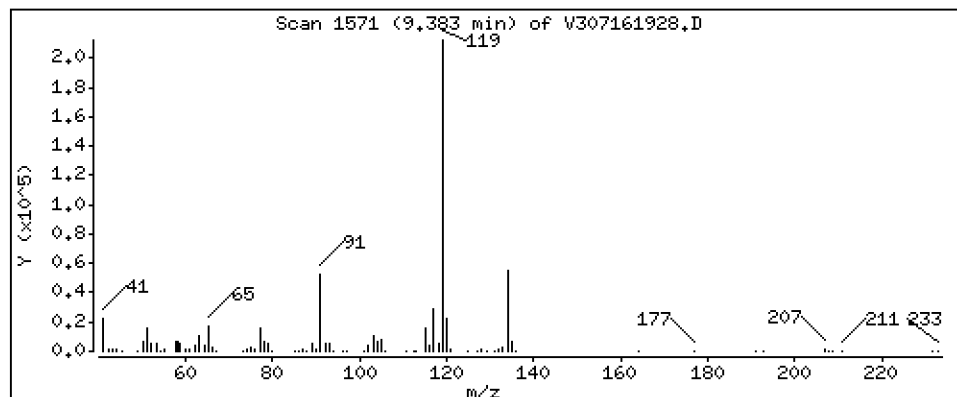
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

74 4-Isopropyl Toluene

Concentration: 11.781 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

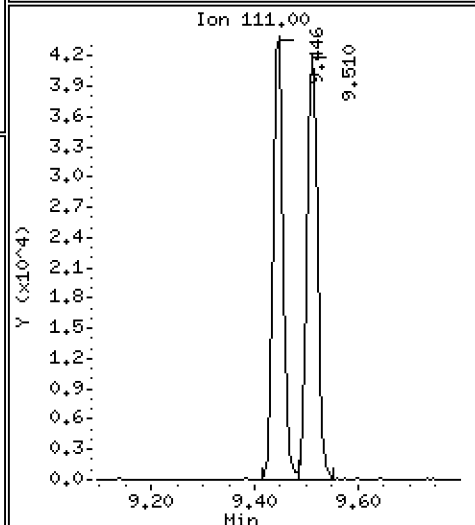
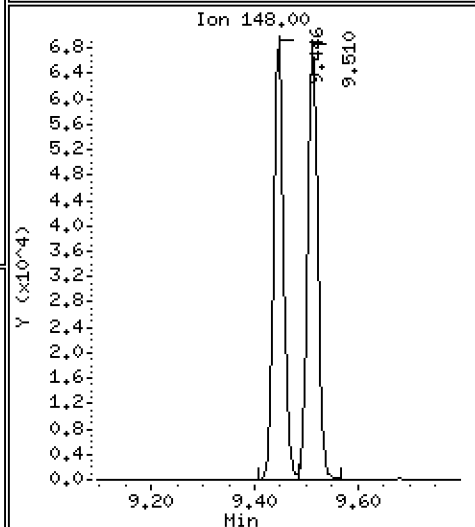
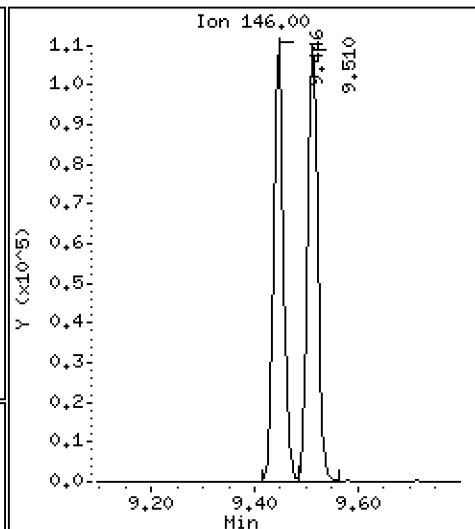
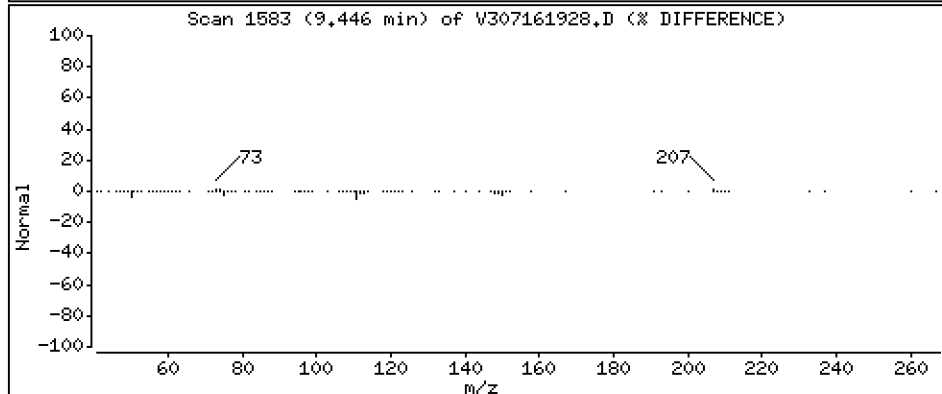
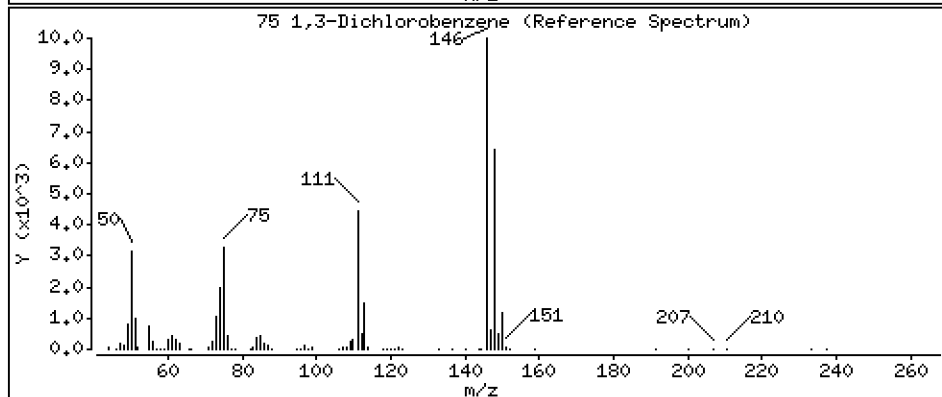
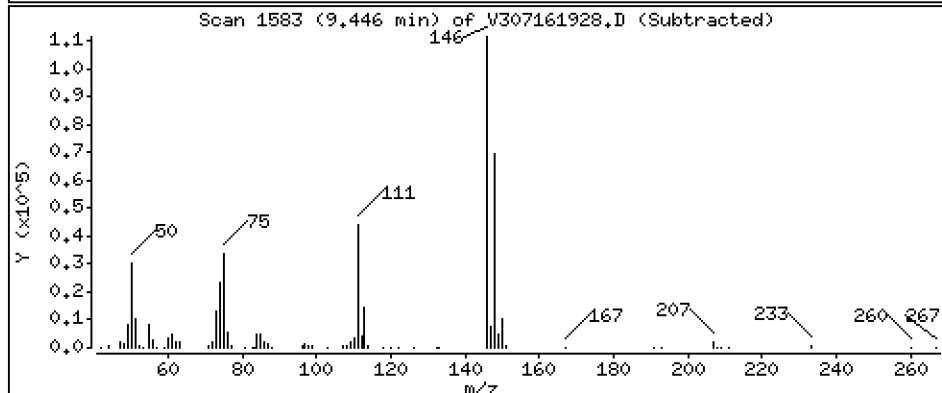
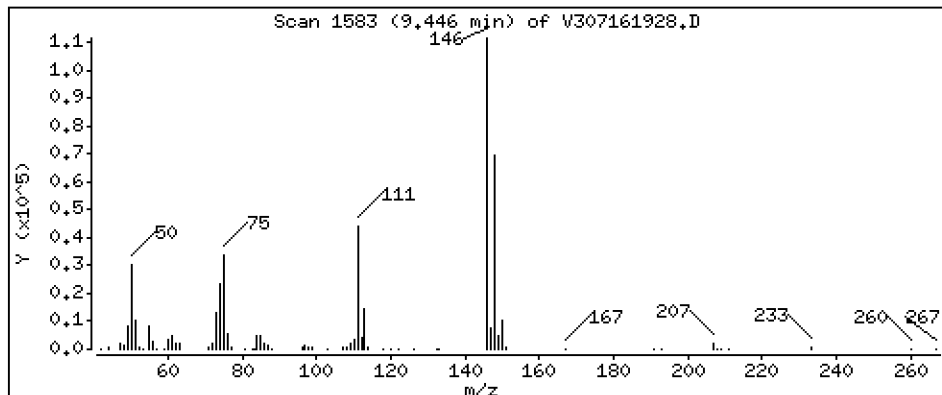
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

75 1,3-Dichlorobenzene

Concentration: 11.421 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

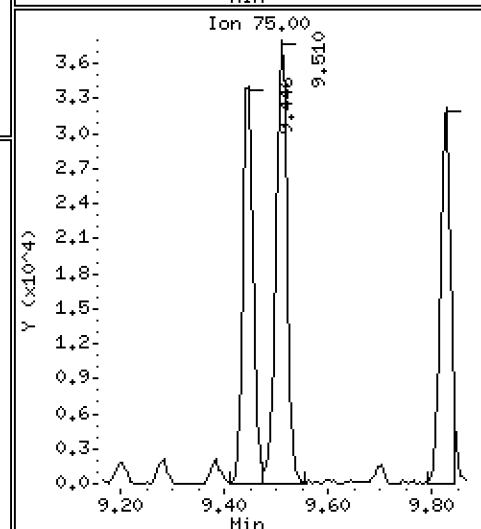
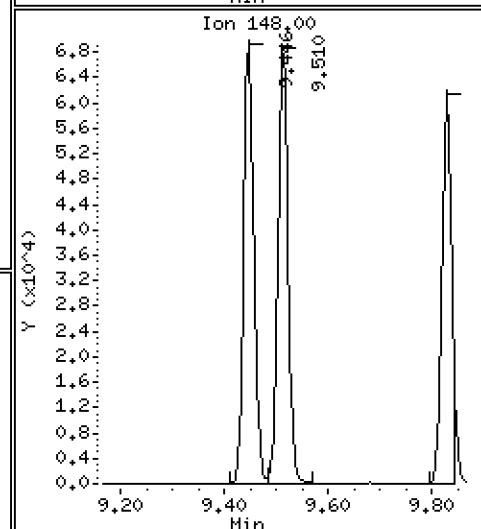
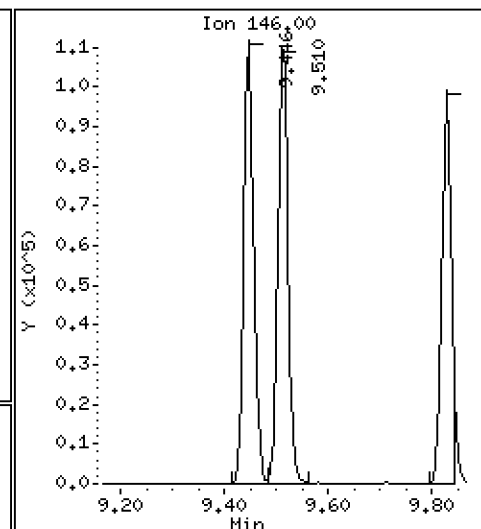
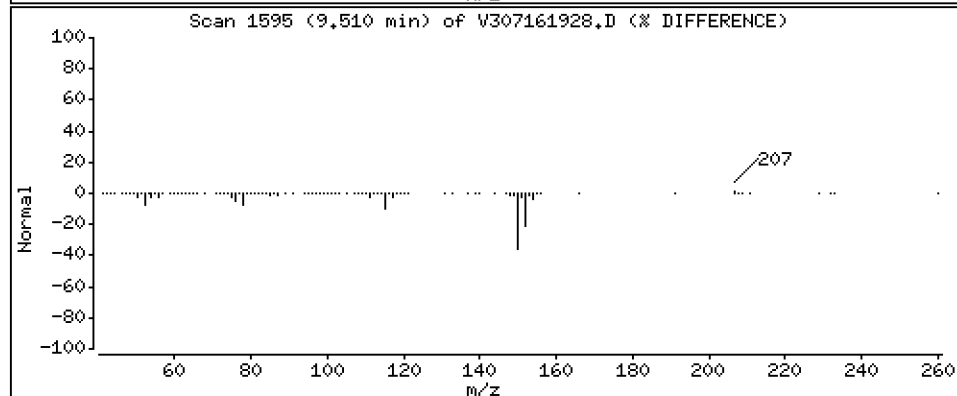
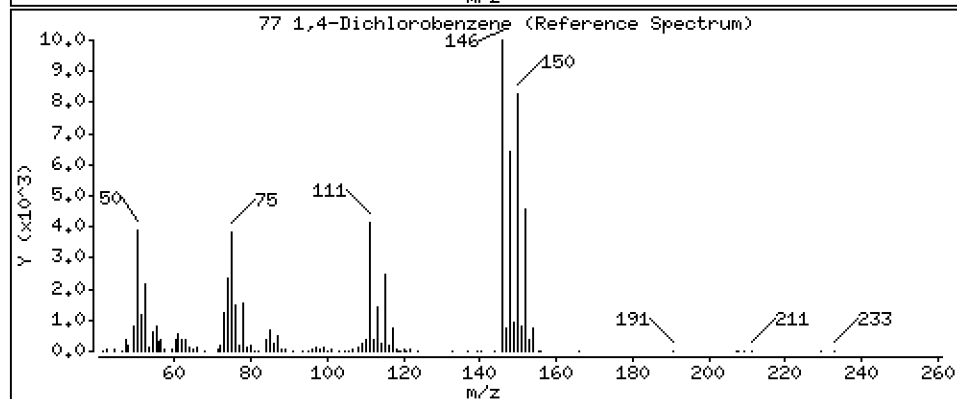
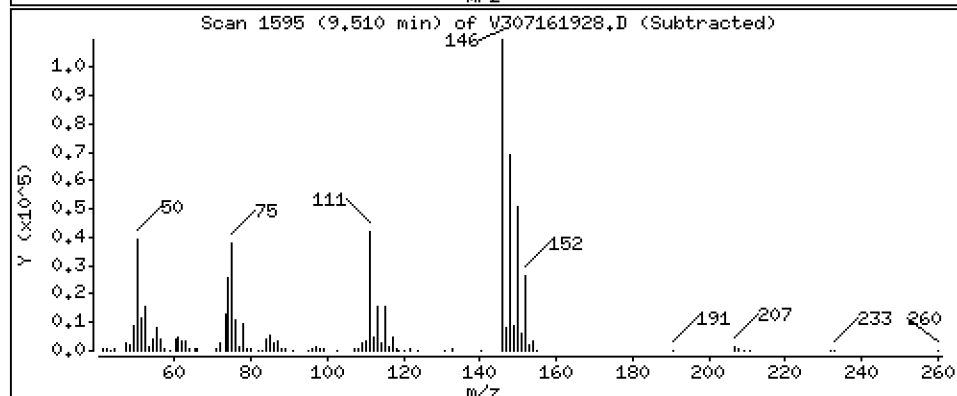
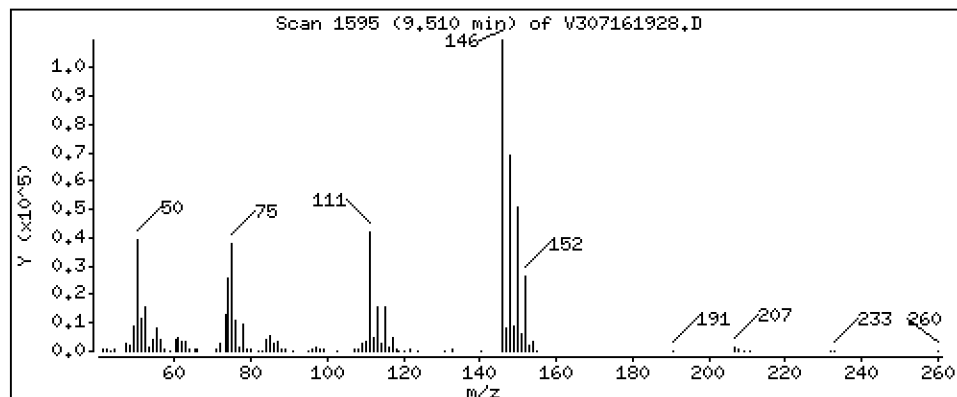
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

77 1,4-Dichlorobenzene

Concentration: 11,159 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

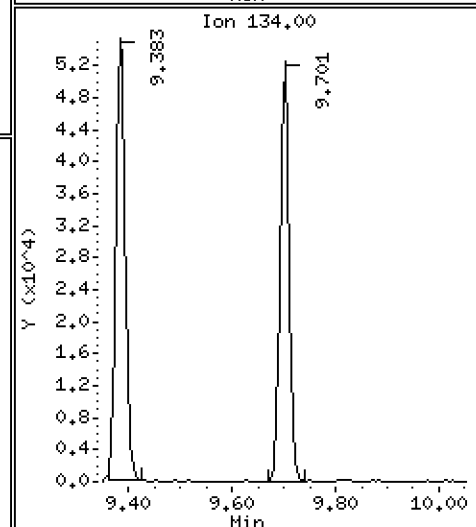
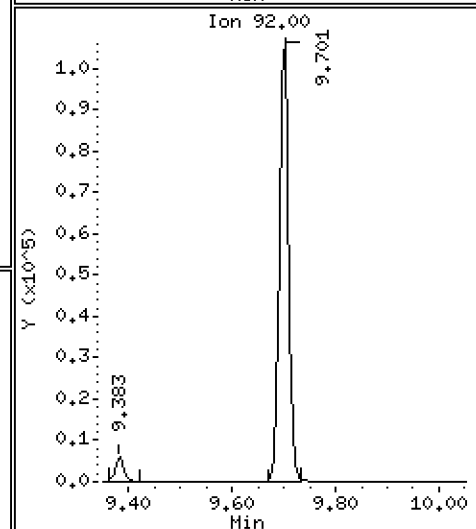
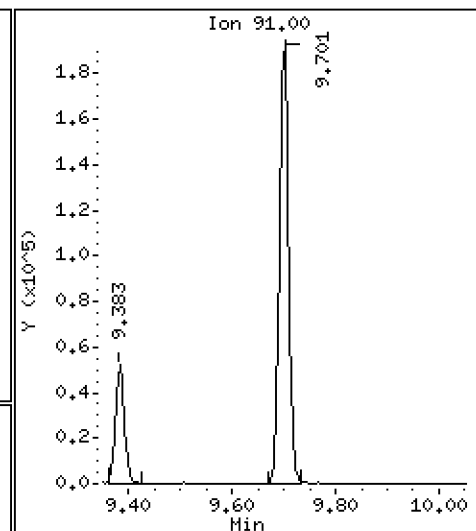
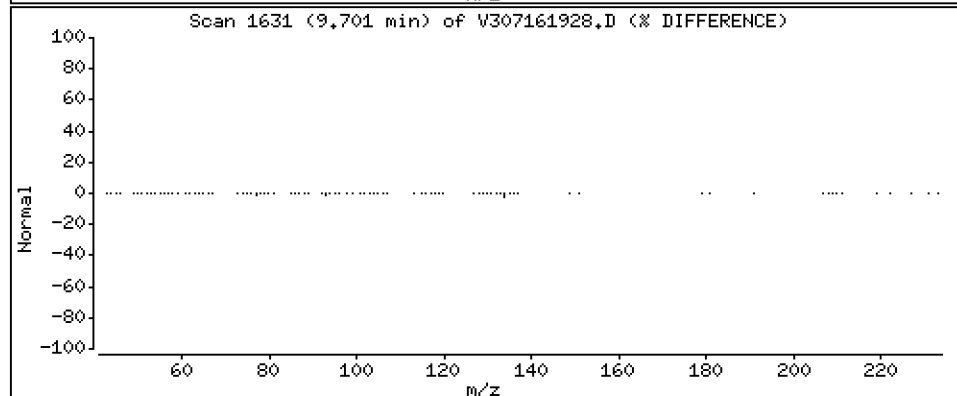
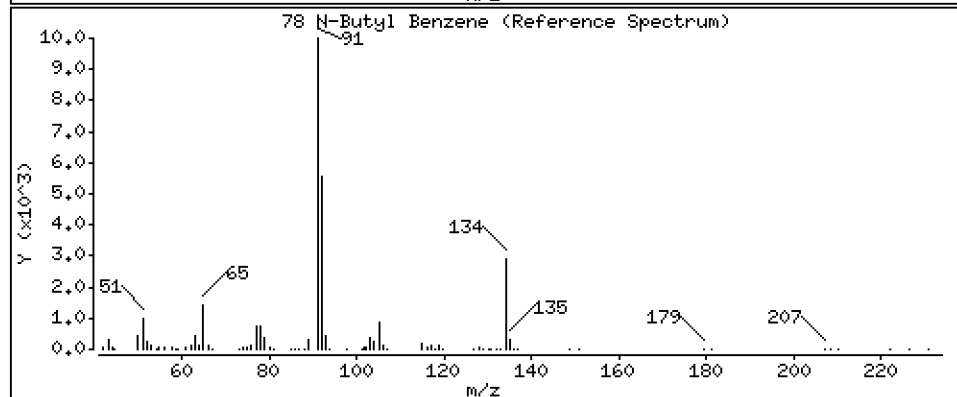
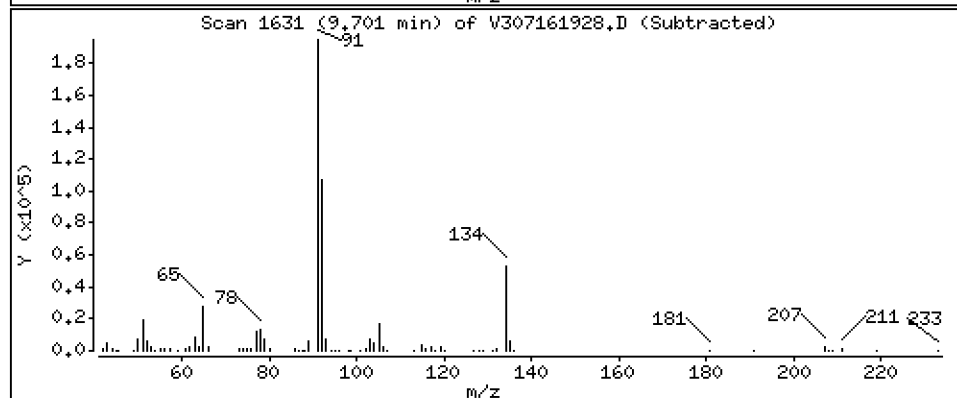
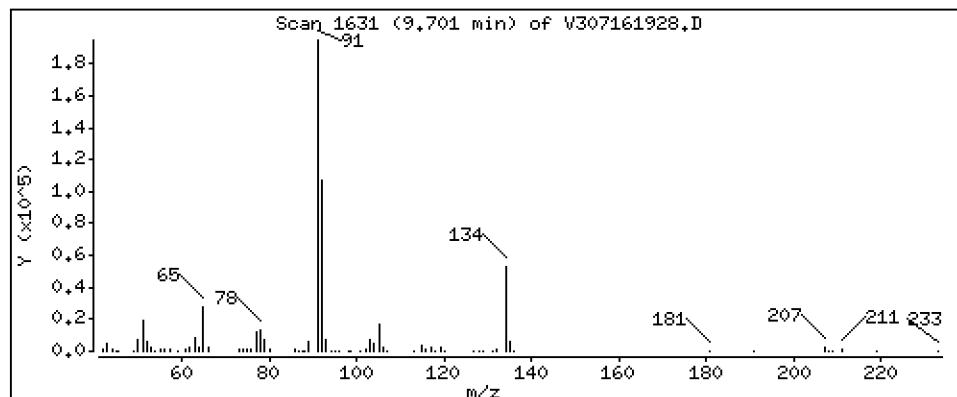
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

78 N-Butyl Benzene

Concentration: 11,851 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

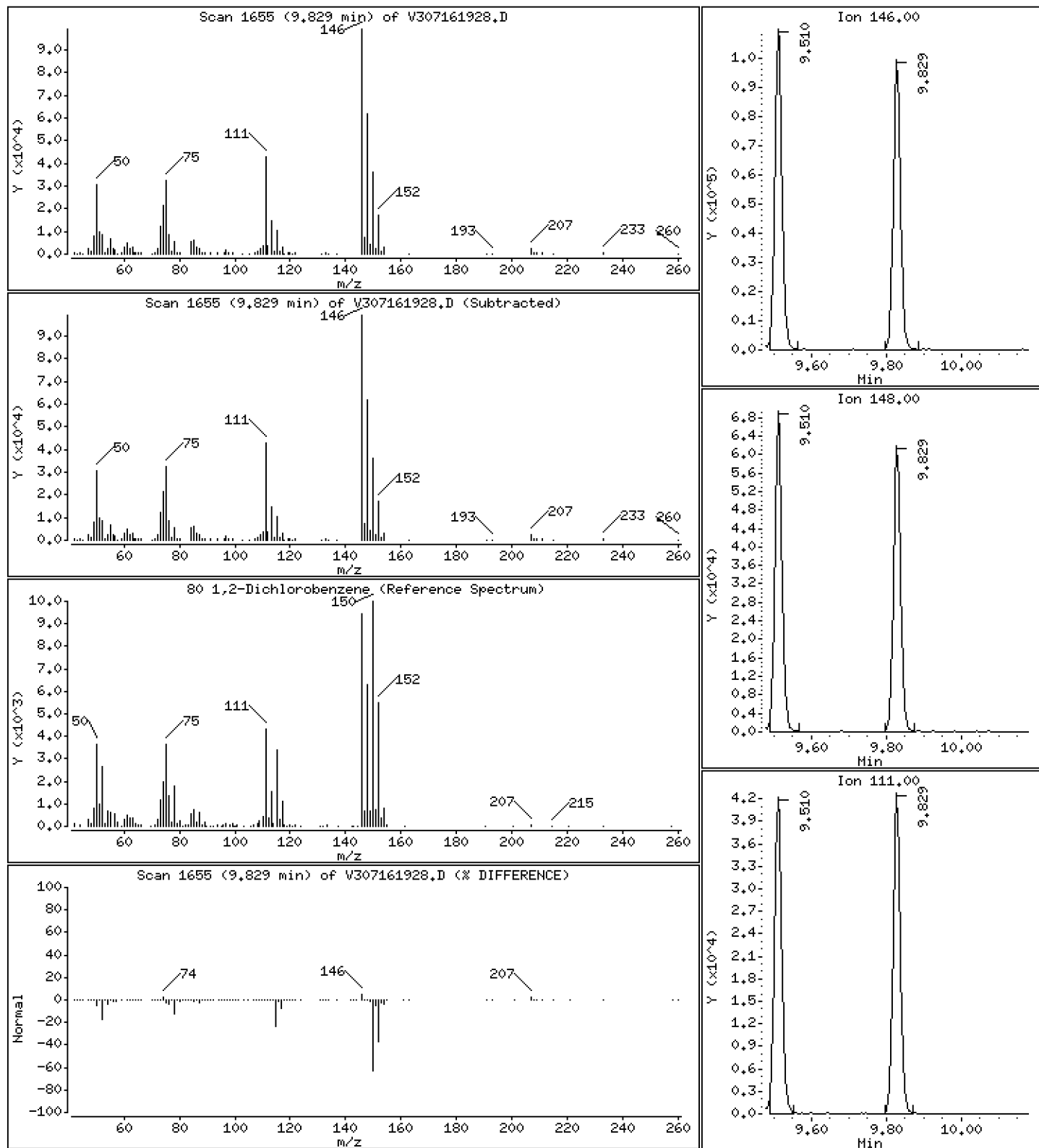
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

80 1,2-Dichlorobenzene

Concentration: 11.417 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

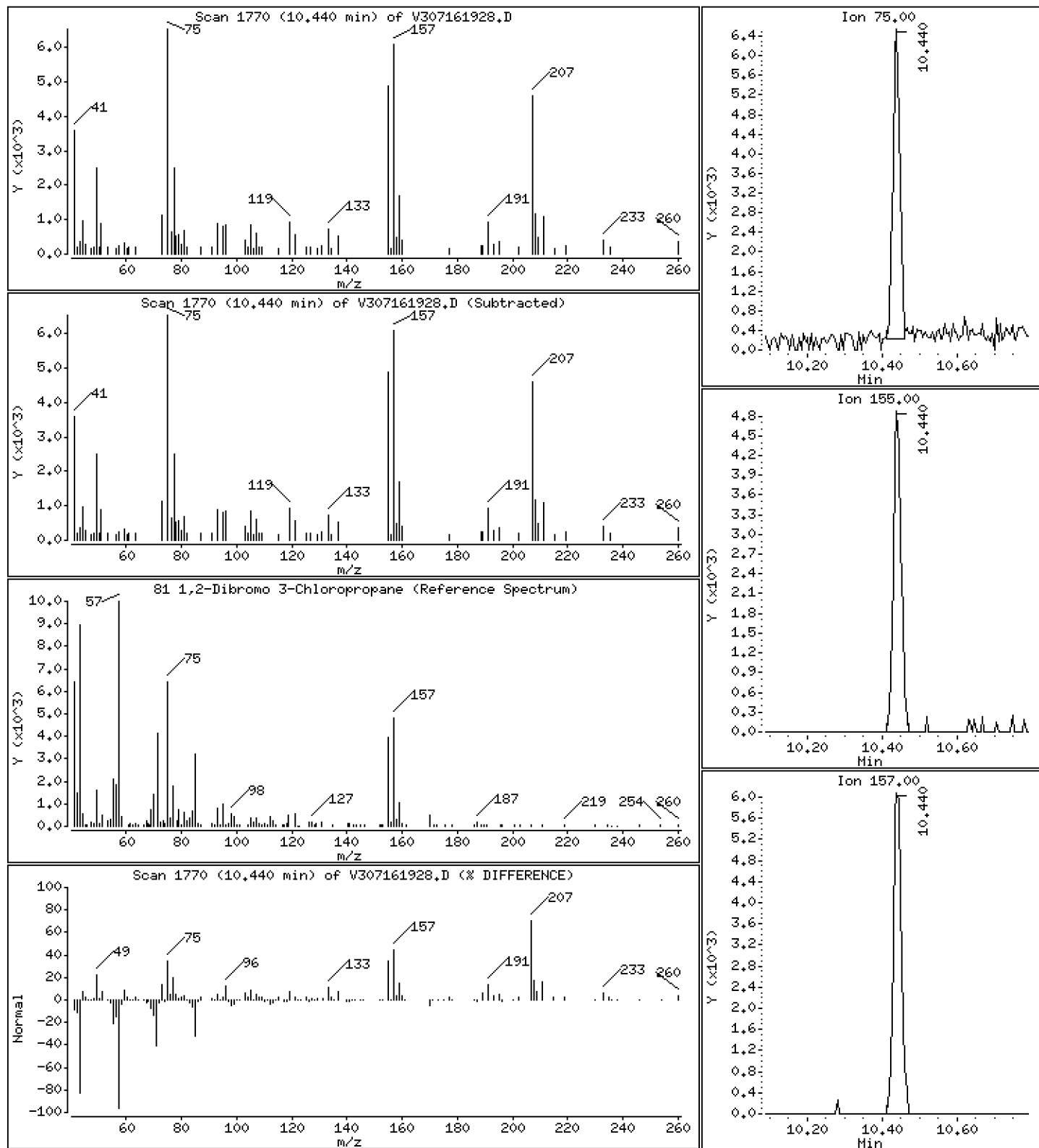
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

81 1,2-Dibromo 3-Chloropropane

Concentration: 9.720 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

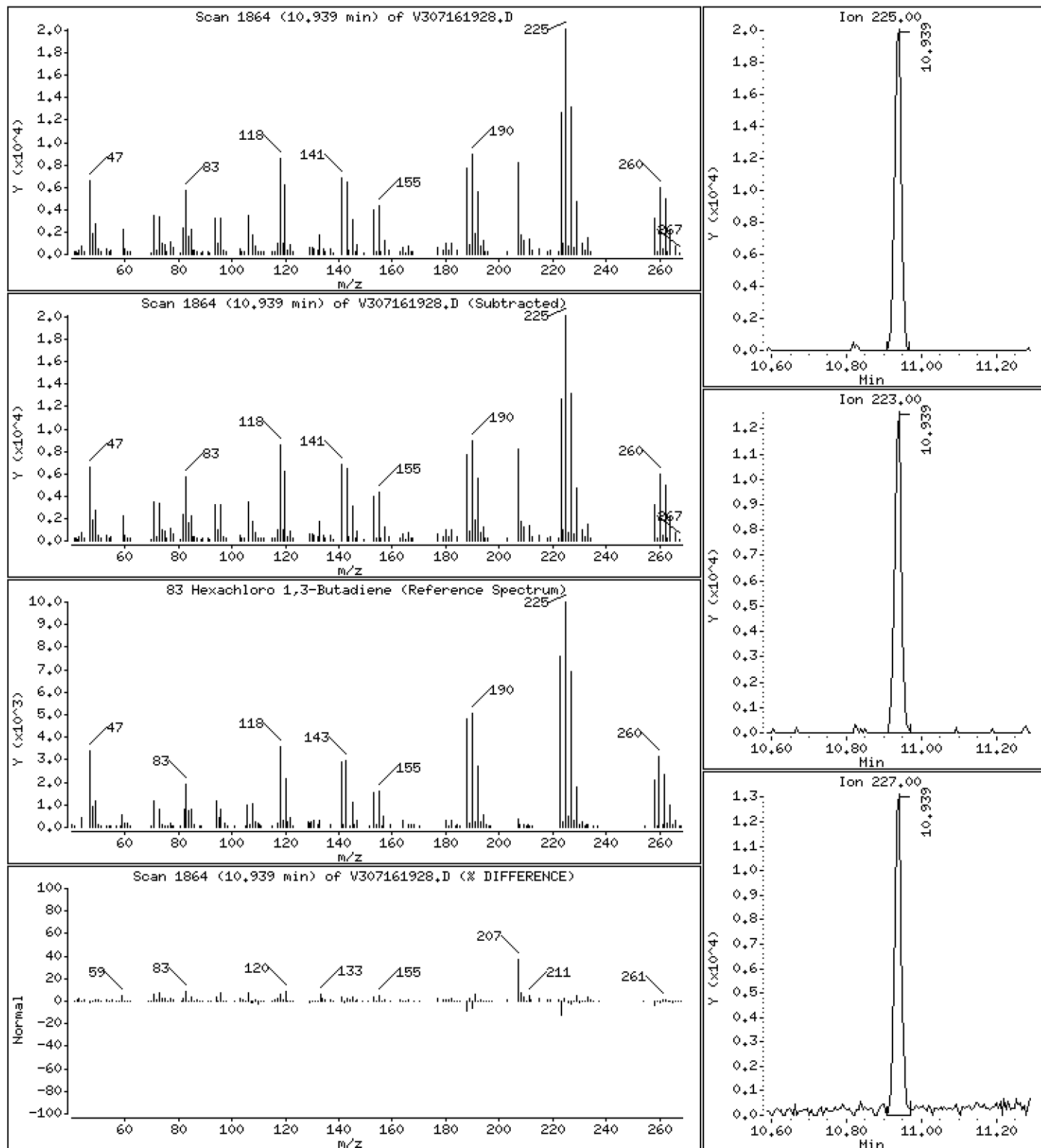
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

83 Hexachloro 1,3-Butadiene

Concentration: 11,062 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

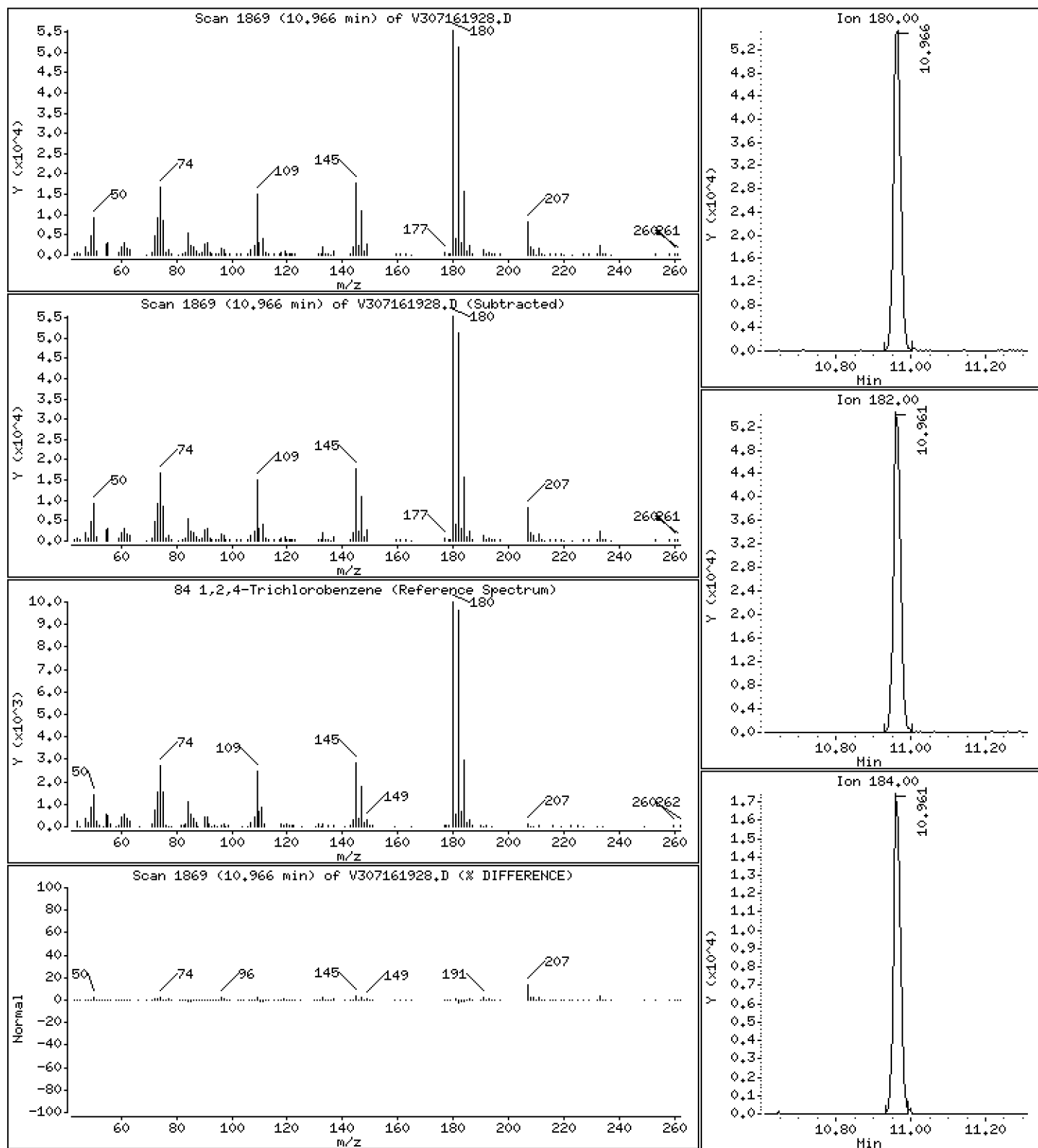
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

84 1,2,4-Trichlorobenzene

Concentration: 10,603 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

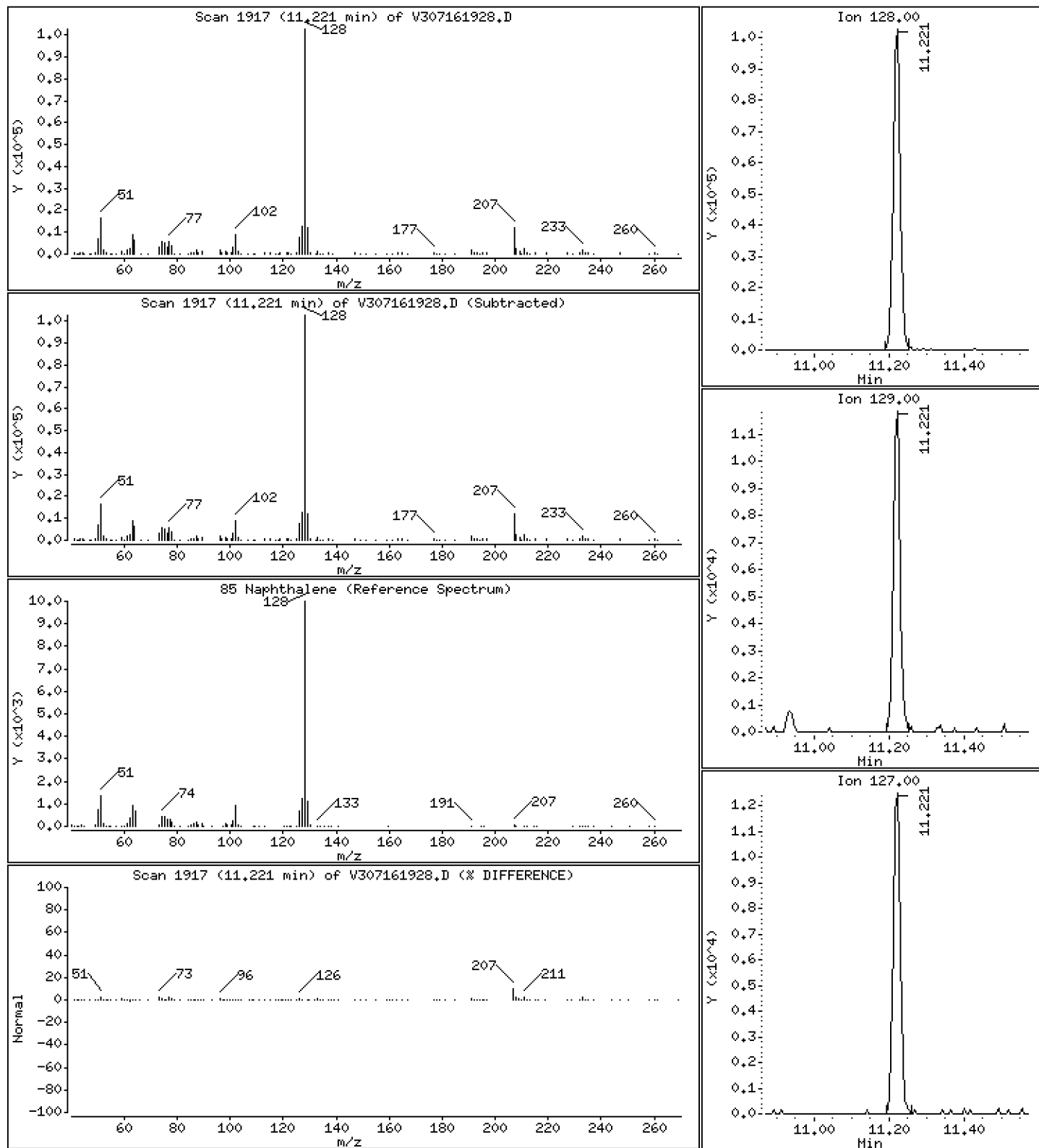
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

85 Naphthalene

Concentration: 10,908 ug/L



Date : 16-JUL-2019 21:12

Client ID:

Instrument: nt3.i

Sample Info: SHG0218-SCV1

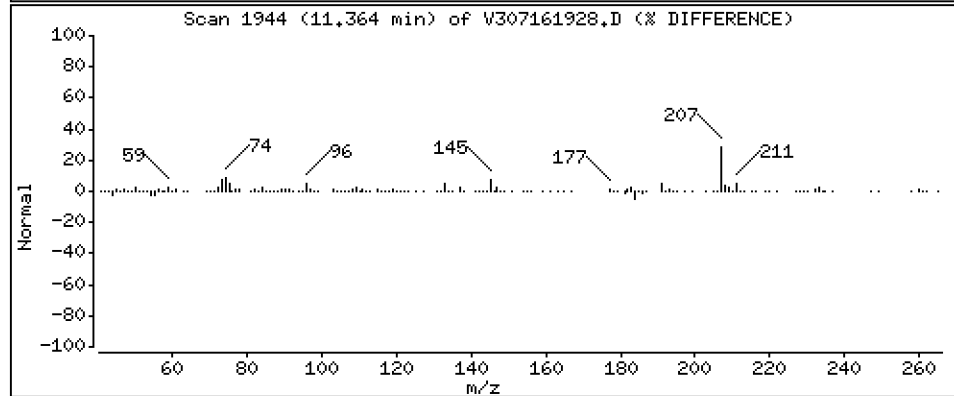
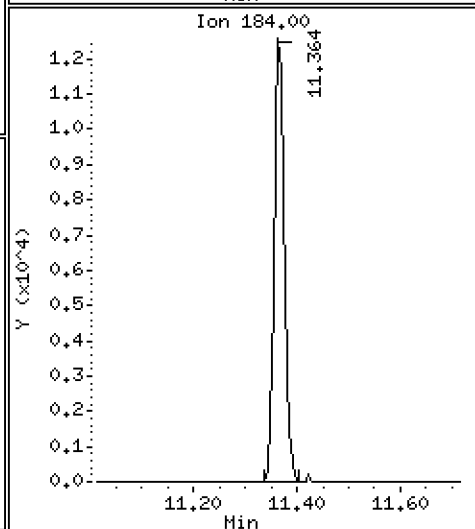
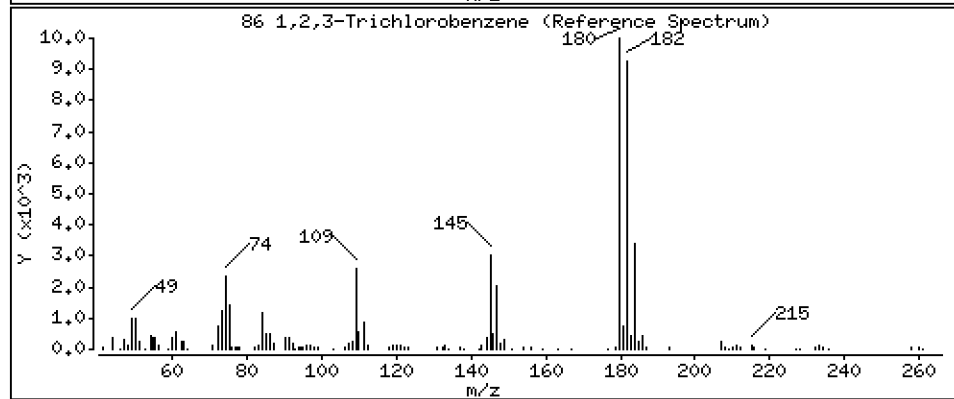
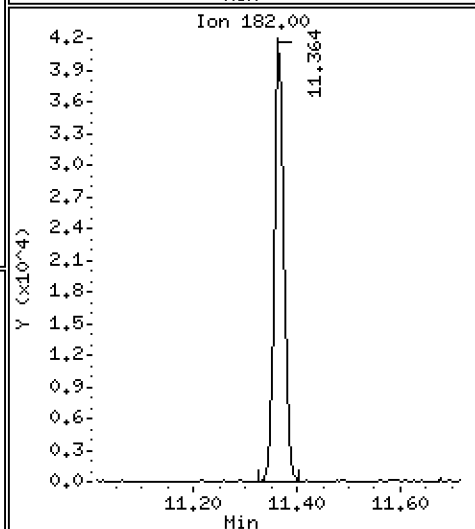
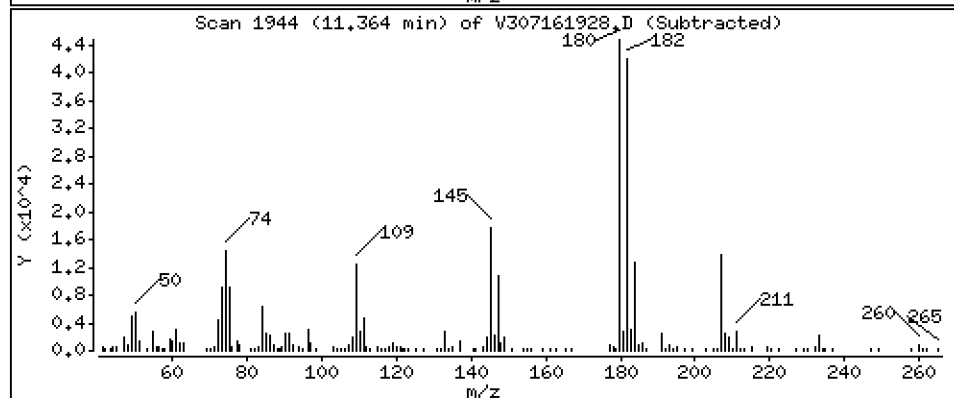
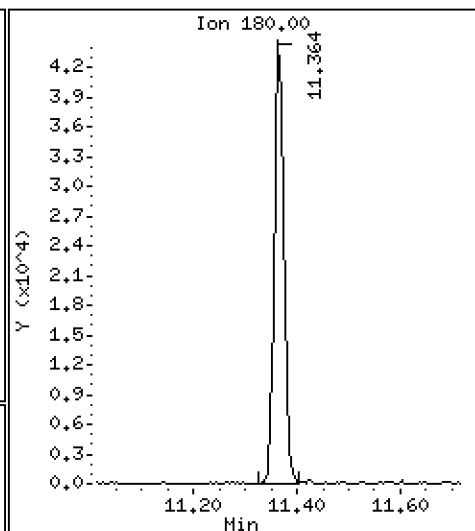
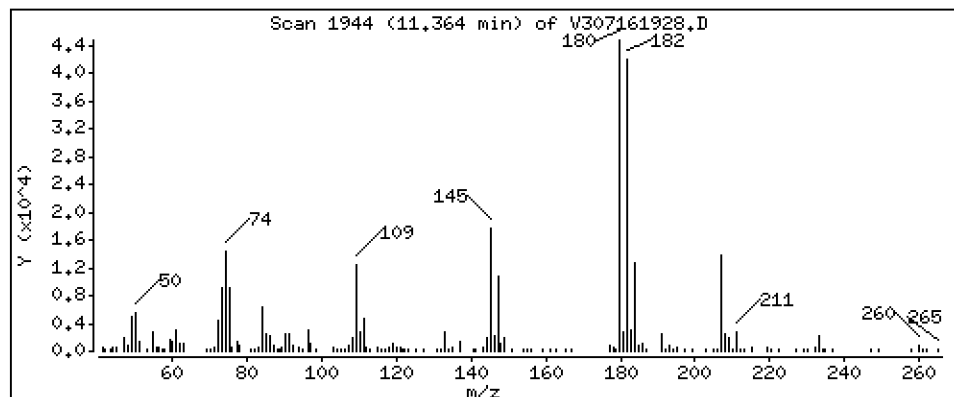
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

86 1,2,3-Trichlorobenzene

Concentration: 10,482 ug/L



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190716x.b\V307161928.D
Lab Smp Id: SHG0218-SCV1
Inj Date : 16-JUL-2019 21:12
Operator : PKC
Smp Info : SHG0218-SCV1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Meth Date : 17-Jul-2019 07:49 paul
Cal Date : 16-JUL-2019 20:19
Als bottle: 56
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i

Quant Type: ISTD

Cal File: V307161926.D

QC Sample: LCS

Compound Sublist: mdl.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)
							FINAL (ug/L)
1 Dichlorodifluoromethane	85		1.688	1.693 (0.312)		93314	13.2966
2 Chloromethane	50		1.890	1.895 (0.350)		222489	11.7902
3 Vinyl Chloride	62		1.981	1.980 (0.366)		146458	11.5345
4 Bromomethane	94		2.273	2.278 (0.420)		61157	11.6322
5 Chloroethane	64		2.390	2.394 (0.442)		76740	12.0360
6 Trichlorofluoromethane	101		2.507	2.506 (0.464)		112298	12.5693
7 1,1-Dichloroethene	61		2.969	2.968 (0.549)		134899	10.5734
8 Carbon Disulfide	76		2.974	2.979 (0.550)		183892	11.6180
9 112Trichloro122Trifluoroethane	101		3.033	3.043 (0.561)		130713	27.5715
10 Iodomethane	142		3.096	3.101 (0.573)		84321	11.4312
11 Bromoethane	108		3.224	3.223 (0.596)		89009	25.3013
12 Acrolein	56		3.330	3.330 (0.616)		68664	64.4732
13 Methylene Chloride	84		3.548	3.553 (0.656)		59150	11.4101
14 Acetone	43		3.638	3.633 (0.673)		93723	54.5950
15 Trans-1,2-Dichloroethene	96		3.697	3.702 (0.684)		56801	10.1226
17 Methyl tert butyl ether	73		3.830	3.829 (0.708)		130532	12.3966
18 1,1-Dichloroethane	63		4.244	4.243 (0.785)		138271	10.7855
19 Acrylonitrile	53		4.308	4.308 (0.797)		22555	11.5894
20 Vinyl Acetate	43		4.483	4.483 (0.829)		123917	8.57120
22 Cis-1,2-Dichloroethene	96		4.690	4.690 (0.867)		59648	10.6138
23 2,2-Dichloropropane	77		4.765	4.770 (0.881)		53277	10.2118
24 Bromochloromethane	128		4.839	4.844 (0.895)		24088	10.6647
25 Chloroform	83		4.908	4.908 (0.908)		95583	10.3970
26 Carbon Tetrachloride	117		4.993	4.998 (0.863)		72642	9.98068
\$ 27 Dibromofluoromethane	111		5.041	5.046 (0.932)		17215	5.17075
28 1,1,1-Trichloroethane	97		5.052	5.052 (0.934)		89347	10.9757
30 1,1-Dichloropropene	75		5.142	5.147 (0.889)		82526	11.3586
29 2-Butanone	43		5.158	5.158 (0.954)		153688	51.6496
31 Benzene	78		5.328	5.333 (0.921)		222027	10.2092
* 32 Pentafluorobenzene	168		5.408	5.408 (1.000)		65063	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.434	5.439 (1.005)		21621	4.93151
34 1,2-Dichloroethane	62		5.482	5.487 (0.948)		78002	10.2431
36 Trichloroethene	130		5.753	5.753 (0.994)		55500	11.0385
* 37 1,4-Difluorobenzene	114		5.785	5.785 (1.000)		107292	10.0000

Compounds	QUANT SIG						CONCENTRATIONS	
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
=====	=====	=====	=====	=====	=====	(ug/L)	(ug/L)	
38 Dibromomethane	93	6.056	6.061	(1.047)	25647	10.2602	10.260	
39 1,2-Dichloropropane	63	6.125	6.125	(1.059)	74797	10.6432	10.643	
40 Bromodichloromethane	83	6.173	6.173	(1.067)	64977	9.87922	9.879	
173 2-Pentanone	86	6.396	6.396	(1.106)	9814	21.7398	21.740	
41 2-Chloroethyl Vinyl Ether	63	6.571	6.577	(1.136)	32187	11.0935	11.094	
42 Cis 1,3-dichloropropene	75	6.614	6.614	(1.143)	91245	10.9600	10.960	
\$ 43 d8-Toluene	98	6.736	6.736	(1.164)	68715	4.88150	4.882 (R)	
44 Toluene	92	6.773	6.773	(1.171)	145515	10.6728	10.673	
46 Tetrachloroethene	166	7.039	7.039	(0.901)	58056	10.8528	10.853	
45 4-Methyl-2-Pentanone	58	7.039	7.044	(1.217)	105900	53.6861	53.686	
47 Trans 1,3-Dichloropropene	75	7.066	7.065	(1.221)	77023	11.2078	11.208	
48 1,1,2-Trichloroethane	97	7.177	7.177	(1.241)	39543	10.8452	10.845	
49 Chlorodibromomethane	129	7.299	7.299	(0.934)	44509	10.7835	10.784	
50 1,3-Dichloropropane	76	7.363	7.363	(0.942)	76474	11.3008	11.301	
51 1,2-Dibromoethane	107	7.459	7.459	(1.289)	36021	10.5311	10.531	
52 2-Hexanone	43	7.618	7.618	(0.975)	244459	55.8893	55.889	
* 53 d5-Chlorobenzene	117	7.815	7.815	(1.000)	109748	10.0000		
54 Chlorobenzene	112	7.825	7.825	(1.001)	164567	10.9907	10.991	
55 Ethyl Benzene	106	7.841	7.841	(1.003)	93478	11.6977	11.698	
56 1,1,1,2-Tetrachloroethane	131	7.873	7.873	(1.007)	56025	10.7425	10.742	
57 m,p-xylene	106	7.942	7.947	(1.016)	235024	23.4937	23.494	
58 o-Xylene	106	8.250	8.250	(1.056)	112448	11.4652	11.465	
59 Styrene	104	8.288	8.287	(1.061)	175741	11.7642	11.764	
60 Bromoform	173	8.309	8.308	(0.875)	24965	10.9668	10.967	
61 Isopropyl Benzene	105	8.474	8.473	(0.892)	294591	12.3100	12.310 (R)	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	22307	5.11885	5.119 (R)	
63 Bromobenzene	156	8.760	8.760	(0.922)	69396	11.7577	11.758	
64 N-Propyl Benzene	91	8.771	8.771	(0.923)	350203	11.6702	11.670	
65 1,1,2,2-Tetrachloroethane	83	8.824	8.824	(0.929)	51923	11.2652	11.265	
66 2-Chloro Toluene	91	8.888	8.888	(0.936)	248055	11.9077	11.908	
67 1,3,5-Trimethyl Benzene	105	8.915	8.914	(0.938)	255099	12.0568	12.057 (R)	
68 1,2,3-Trichloropropane	110	8.930	8.930	(0.940)	16004	12.0635	12.064 (R)	
69 Trans-1,4-Dichloro 2-Butene	53	8.957	8.957	(0.943)	25064	11.6908	11.691	
70 4-Chloro Toluene	91	9.010	9.010	(0.949)	227439	11.7472	11.747	
71 T-Butyl Benzene	119	9.148	9.148	(0.963)	244398	14.0283	14.028 (R)	
72 1,2,4-Trimethylbenzene	105	9.201	9.201	(0.969)	263206	12.2887	12.289 (R)	
73 S-Butyl Benzene	105	9.276	9.281	(0.977)	310855	11.9357	11.936	
74 4-Isopropyl Toluene	119	9.382	9.382	(0.988)	262840	11.7806	11.781	
75 1,3-Dichlorobenzene	146	9.446	9.446	(0.994)	148938	11.4213	11.421	
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499	(1.000)	63475	10.0000		
77 1,4-Dichlorobenzene	146	9.510	9.515	(1.001)	150225	11.1585	11.159	
78 N-Butyl Benzene	91	9.701	9.701	(1.021)	241569	11.8509	11.851	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.823	(1.034)	29594	4.96984	4.970 (R)	
80 1,2-Dichlorobenzene	146	9.828	9.828	(1.035)	135462	11.4174	11.417	
81 1,2-Dibromo 3-Chloropropane	75	10.439	10.439	(1.099)	8451	9.72050	9.720	
83 Hexachloro 1,3-Butadiene	225	10.939	10.939	(1.152)	26052	11.0624	11.062	
84 1,2,4-Trichlorobenzene	180	10.965	10.960	(1.154)	76790	10.6034	10.603	
85 Naphthalene	128	11.221	11.220	(1.181)	136822	10.9083	10.908	
86 1,2,3-Trichlorobenzene	180	11.364	11.364	(1.196)	58963	10.4816	10.482	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161928.D Calibration Time: 18:59
 Lab Smp Id: SHG0218-SCV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	65063	-11.70
37 1,4-Difluorobenze	116116	58058	232232	107292	-7.60
53 d5-Chlorobenzene	124912	62456	249824	109748	-12.14
76 d4-1,4-Dichlorobe	77169	38585	154338	63475	-17.75

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.01
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.01
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
 Sample Matrix: NONE Fraction: VOA
 Lab Smp Id: SHG0218-SCV1
 Level: Operator: PKC
 Data Type: MS DATA SampleType: LCS
 SpikeList File: o2siicv.spk Quant Type: ISTD
 Sublist File: mdl.sub
 Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Misc Info: 16-

SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
1 Dichlorodifluorome	10.000	13.297	132.97*	
2 Chloromethane	10.000	11.790	117.90	
3 Vinyl Chloride	10.000	11.535	115.35	
4 Bromomethane	10.000	11.632	116.32	
5 Chloroethane	10.000	12.036	120.36*	
6 Trichlorofluoromet	10.000	12.569	125.69*	
7 1,1-Dichloroethene	10.000	10.573	105.73	
8 Carbon Disulfide	10.000	11.618	116.18	
9 112Trichloro122Tri	20.000	27.572	137.86*	
10 Iodomethane	10.000	11.431	114.31	
11 Bromoethane	20.000	25.301	126.51*	
12 Acrolein	50.000	64.473	128.95*	
13 Methylene Chloride	10.000	11.410	114.10	
14 Acetone	50.000	54.595	109.19	
15 Trans-1,2-Dichloro	10.000	10.123	101.23	
16 n-hexane	10.000	0.0000	*	
17 Methyl tert butyl	10.000	12.397	123.97*	
18 1,1-Dichloroethane	10.000	10.786	107.86	
19 Acrylonitrile	10.000	11.589	115.89	
20 Vinyl Acetate	10.000	8.571	85.71	
22 Cis-1,2-Dichloroet	10.000	10.614	106.14	
23 2,2-Dichloropropan	10.000	10.212	102.12	
24 Bromochloromethane	10.000	10.665	106.65	
25 Chloroform	10.000	10.397	103.97	
26 Carbon Tetrachlori	10.000	9.981	99.81	
28 1,1,1-Trichloroeth	10.000	10.976	109.76	
30 1,1-Dichloropropen	10.000	11.359	113.59	
29 2-Butanone	50.000	51.650	103.30	
31 Benzene	10.000	10.209	102.09	
34 1,2-Dichloroethane	10.000	10.243	102.43	
36 Trichloroethene	10.000	11.039	110.39	
38 Dibromomethane	10.000	10.260	102.60	
39 1,2-Dichloropropan	10.000	10.643	106.43	
40 Bromodichlorometha	10.000	9.879	98.79	
173 2-Pentanone	20.000	21.740	108.70	
42 Cis 1,3-dichloropr	10.000	10.960	109.60	
41 2-Chloroethyl Viny	10.000	11.094	110.94	
44 Toluene	10.000	10.673	106.73	
45 4-Methyl-2-Pentano	50.000	53.686	107.37	
46 Tetrachloroethene	10.000	10.853	108.53	

SPIKE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
47 Trans 1,3-Dichloro	10.000	11.208	112.08	
48 1,1,2-Trichloroeth	10.000	10.845	108.45	
49 Chlorodibromometha	10.000	10.784	107.84	
50 1,3-Dichloropropan	10.000	11.301	113.01	
51 1,2-Dibromoethane	10.000	10.531	105.31	
52 2-Hexanone	50.000	55.889	111.78	
54 Chlorobenzene	10.000	10.991	109.91	
55 Ethyl Benzene	10.000	11.698	116.98	
56 1,1,1,2-Tetrachlor	10.000	10.742	107.42	
57 m,p-xylene	20.000	23.494	117.47	
58 o-Xylene	10.000	11.465	114.65	
59 Styrene	10.000	11.764	117.64	
60 Bromoform	10.000	10.967	109.67	
61 Isopropyl Benzene	10.000	12.310	123.10*	
63 Bromobenzene	10.000	11.758	117.58	
64 N-Propyl Benzene	10.000	11.670	116.70	
65 1,1,2,2-Tetrachlor	10.000	11.265	112.65	
66 2-Chloro Toluene	10.000	11.908	119.08	
67 1,3,5-Trimethyl Be	10.000	12.057	120.57*	
68 1,2,3-Trichloropro	10.000	12.064	120.64*	
69 Trans-1,4-Dichloro	10.000	11.691	116.91	
70 4-Chloro Toluene	10.000	11.747	117.47	
71 T-Butyl Benzene	10.000	14.028	140.28*	
72 1,2,4-Trimethylben	10.000	12.289	122.89*	
73 S-Butyl Benzene	10.000	11.936	119.36	
74 4-Isopropyl Toluen	10.000	11.781	117.81	
75 1,3-Dichlorobenzen	10.000	11.421	114.21	
77 1,4-Dichlorobenzen	10.000	11.159	111.59	
78 N-Butyl Benzene	10.000	11.851	118.51	
80 1,2-Dichlorobenzen	10.000	11.417	114.17	
81 1,2-Dibromo 3-Chlo	10.000	9.720	97.20	
83 Hexachloro 1,3-But	10.000	11.062	110.62	
84 1,2,4-Trichloroben	10.000	10.603	106.03	
85 Naphthalene	10.000	10.908	109.08	
86 1,2,3-Trichloroben	10.000	10.482	104.82	

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.171	103.41	
\$ 33 d4-1,2-Dichloroeth	5.000	4.932	98.63	
\$ 43 d8-Toluene	5.000	4.882	97.63	
\$ 62 4-Bromofluorobenze	5.000	5.119	102.38	
\$ 79 d4-1,2-Dichloroben	5.000	4.970	99.40	

REVIEW SUMMARY FOR FILE - V307161928.D

Lab ID: SHG0218-SCV1
 nt3.i, 20190716x.b\8260C071619.m, 16-JUL-2019 21:12

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.312	1.000	-0.6877	Dichlorodifluoromethane
0.350	1.000	-0.6504	Chloromethane
0.366	1.000	-0.6337	Vinyl Chloride
0.420	1.000	-0.5797	Bromomethane
0.442	1.000	-0.5580	Chloroethane
0.464	1.000	-0.5364	Trichlorofluoromethane
0.549	1.000	-0.4509	1,1-Dichloroethene
0.550	1.000	-0.4500	Carbon Disulfide
0.561	1.000	-0.4392	112Trichloro122Trifluoroethane
0.573	1.000	-0.4274	Iodomethane
0.596	1.000	-0.4038	Bromoethane
0.616	1.000	-0.3841	Acrolein
0.656	1.000	-0.3439	Methylene Chloride
0.673	1.000	-0.3272	Acetone
0.684	1.000	-0.3164	Trans-1,2-Dichloroethene
0.708	1.000	-0.2918	Methyl tert butyl ether
0.785	1.000	-0.2152	1,1-Dichloroethane
0.797	1.000	-0.2034	Acrylonitrile
0.829	1.000	-0.1710	Vinyl Acetate
0.867	1.000	-0.1326	Cis-1,2-Dichloroethene
0.881	1.000	-0.1189	2,2-Dichloropropane
0.895	1.000	-0.1051	Bromochloromethane
0.908	1.000	-0.0924	Chloroform
0.934	1.000	-0.0658	1,1,1-Trichloroethane
0.954	1.000	-0.0462	2-Butanone
0.932	1.000	-0.0678	Dibromofluoromethane

RRT check based on Ccal File: V307161926.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: <u>Analytical Resources, Inc.</u>	SDG: <u>19G0163</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>King County Closed Landfills - Vashon</u>
Instrument ID: <u>NT5</u>	Calibration: <u>CF00067</u>
Lab File ID: <u>NT507121903.D</u>	Calibration Date: <u>06/24/19 00:52</u>
Sequence: <u>SHG0192</u>	Injection Date: <u>07/12/19</u>
Lab Sample ID: <u>SHG0192-ICV1</u>	Injection Time: <u>12:25</u>
Sequence Name: <u>VOA 10</u>	

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Chloromethane	A	50.000	48.3	0.4177494	0.4032158		-3.5	20
Vinyl Chloride	A	50.000	50.5	0.4216991	0.4256989		0.9	20
Bromomethane	A	50.000	52.2	0.3097694	0.3232922		4.4	20
Chloroethane	A	50.000	53.5	0.3504585	0.3560736		6.9	20
Trichlorofluoromethane	A	50.000	50.1	0.8035120	0.8044455		0.1	20
Acrolein	A	250.00	238	0.0418789	0.0398338		-4.9	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	A	50.000	52.1	0.3766319	0.3916469		4.1	20
Acetone	A	250.00	256	0.0846942	0.0755249		2.5	20
1,1-Dichloroethene	A	50.000	50.7	0.4122658	0.4180001		1.4	20
Bromoethane	A	50.000	50.1	0.2774510	0.2778489		0.1	20
Iodomethane	A	50.000	46.2	0.5376497	0.4969867		-7.6	20
Methylene Chloride	A	50.000	46.9	0.4362664	0.3841452		-6.1	20
Acrylonitrile	A	50.000	47.6	0.0875397	0.0833435		-4.8	20
Carbon Disulfide	A	50.000	51.2	1.1500240	1.1783850		2.5	20
trans-1,2-Dichloroethene	A	50.000	50.3	0.4428969	0.4455874		0.6	20
Vinyl Acetate	A	50.000	51.8	0.6092774	0.6314763		3.6	20
1,1-Dichloroethane	A	50.000	50.3	0.6645161	0.6688922		0.7	20
2-Butanone	A	250.00	270	0.0346274	0.0374416		8.1	20
2,2-Dichloropropane	A	50.000	54.4	0.6403541	0.6969638		8.8	20
cis-1,2-Dichloroethene	A	50.000	51.5	0.4551429	0.4686546		3.0	20
Chloroform	A	50.000	51.3	0.7000002	0.7187970		2.7	20
Bromochloromethane	A	50.000	48.8	0.2234647	0.2182469		-2.3	20
1,1,1-Trichloroethane	A	50.000	52.6	0.6864888	0.7228326		5.3	20
1,1-Dichloropropene	A	50.000	50.6	0.3440818	0.3009542		1.3	20
Carbon tetrachloride	A	50.000	47.0	0.3679959	0.3462577		-5.9	20
1,2-Dichloroethane	A	50.000	43.2	0.2545649	0.2198692		-13.6	20
Benzene	A	50.000	46.7	0.8862879	0.8279470		-6.6	20
Trichloroethene	A	50.000	46.0	0.2765624	0.2542769		-8.1	20
1,2-Dichloropropane	A	50.000	45.8	0.1941691	0.1778540		-8.4	20
Bromodichloromethane	A	50.000	46.1	0.2889172	0.2666071		-7.7	20
Dibromomethane	A	50.000	46.0	0.1215825	0.1117586		-8.1	20

* Values outside of QC limits



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: <u>Analytical Resources, Inc.</u>	SDG: <u>19G0163</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>King County Closed Landfills - Vashon</u>
Instrument ID: <u>NT5</u>	Calibration: <u>CF00067</u>
Lab File ID: <u>NT507121903.D</u>	Calibration Date: <u>06/24/19 00:52</u>
Sequence: <u>SHG0192</u>	Injection Date: <u>07/12/19</u>
Lab Sample ID: <u>SHG0192-ICV1</u>	Injection Time: <u>12:25</u>
Sequence Name: <u>VOA 10</u>	

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2-Chloroethyl vinyl ether	A	50.000	44.8	0.1125419	0.1008387		-10.4	20
4-Methyl-2-Pentanone	A	250.00	236	0.0586021	0.0552687		-5.7	20
cis-1,3-Dichloropropene	A	50.000	46.9	0.3375659	0.3167872		-6.2	20
Toluene	A	50.000	45.2	0.6050908	0.5470214		-9.6	20
trans-1,3-Dichloropropene	A	50.000	46.8	0.2984275	0.2796050		-6.3	20
2-Hexanone	A	250.00	228	0.1038571	0.0948439		-8.7	20
1,1,2-Trichloroethane	A	50.000	44.8	0.1782568	0.1597094		-10.4	20
1,3-Dichloropropane	A	50.000	42.9	0.2987294	0.2565645		-14.1	20
Tetrachloroethene	A	50.000	44.0	0.3069287	0.2698989		-12.1	20
Dibromochloromethane	A	50.000	44.0	0.2377190	0.2092180		-12.0	20
1,2-Dibromoethane	A	50.000	45.1	0.1801438	0.1623373		-9.9	20
Chlorobenzene	A	50.000	42.6	0.7124028	0.6071392		-14.8	20
Ethylbenzene	A	50.000	44.3	1.1692310	1.0364600		-11.4	20
1,1,1,2-Tetrachloroethane	A	50.000	43.8	0.2532648	0.2216766		-12.5	20
m,p-Xylene	A	100.00	87.5	0.4763682	0.4167173		-12.5	20
o-Xylene	A	50.000	43.5	0.4528393	0.3937687		-13.0	20
Xylenes, total	A	150.00	131	0.4685252	0.4090678		-12.7	20
Styrene	A	50.000	43.7	0.7256937	0.6346323		-12.5	20
Bromoform	A	50.000	42.3	0.2943192	0.2490472		-15.4	20
1,1,2,2-Tetrachloroethane	A	50.000	44.0	0.3837821	0.3377399		-12.0	20
1,2,3-Trichloropropane	A	50.000	43.0	0.1331971	0.1145694		-14.0	20
trans-1,4-Dichloro 2-Butene	A	50.000	45.4	0.1048332	0.0952886		-9.1	20
n-Propylbenzene	A	50.000	46.0	2.4171690	2.2237460		-8.0	20
Bromobenzene	A	50.000	42.7	0.5492848	0.4686264		-14.7	20
Isopropyl Benzene	A	50.000	45.8	2.1325590	1.9520730		-8.5	20
2-Chlorotoluene	A	50.000	44.8	1.3783040	1.2341880		-10.5	20
4-Chlorotoluene	A	50.000	45.0	1.4287570	1.2869660		-9.9	20
t-Butylbenzene	A	50.000	44.6	1.6293160	1.4521130		-10.9	20
1,3,5-Trimethylbenzene	A	50.000	45.0	1.7578580	1.5826330		-10.0	20
1,2,4-Trimethylbenzene	A	50.000	45.2	1.7129840	1.5471840		-9.7	20
s-Butylbenzene	A	50.000	45.4	2.3662910	2.1484440		-9.2	20

* Values outside of QC limits



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: NT5 Calibration: CF00067
Lab File ID: NT507121903.D Calibration Date: 06/24/19 00:52
Sequence: SHG0192 Injection Date: 07/12/19
Lab Sample ID: SHG0192-ICV1 Injection Time: 12:25
Sequence Name: VOA 10

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
4-Isopropyl Toluene	A	50.000	45.8	2.0295730	1.8599770		-8.4	20
1,3-Dichlorobenzene	A	50.000	42.7	1.0864580	0.9273548		-14.6	20
1,4-Dichlorobenzene	A	50.000	42.6	1.0690080	0.9099182		-14.9	20
n-Butylbenzene	A	50.000	46.7	1.7695810	1.6533070		-6.6	20
1,2-Dichlorobenzene	A	50.000	42.4	0.9810733	0.8323746		-15.2	20
1,2-Dibromo-3-chloropropane	A	50.000	45.0	0.0711299	0.0640154		-10.0	20
1,2,4-Trichlorobenzene	A	50.000	44.5	0.6725816	0.5986502		-11.0	20
Hexachloro-1,3-Butadiene	A	50.000	44.6	0.3992842	0.3558797		-10.9	20
Naphthalene	A	50.000	44.2	1.3764770	1.2171810		-11.6	20
1,2,3-Trichlorobenzene	A	50.000	43.4	0.6086530	0.5285307		-13.2	20
Dichlorodifluoromethane	A	50.000	43.3	0.5038748	0.4360362		-13.5	20
Methyl tert-butyl Ether	A	50.000	48.1	0.9599115	0.9228219		-3.9	20
2-Pentanone	A	250.00	246	0.0252558	0.0248832		-1.5	20
1,2-Dichloroethane-d4	A	50.000	59.4	0.4574127	0.5433305		18.8	20
Toluene-d8	A	50.000	51.1	1.1708920	1.1973050		2.3	20
4-Bromofluorobenzene	A	50.000	49.7	0.4280478	0.4253965		-0.6	20
1,2-Dichlorobenzene-d4	A	50.000	51.0	0.8720120	0.8899429		2.1	20

* Values outside of QC limits

Data File: \\target\share\chemd\nt5.i\20190712.b\NT507121903.D

Date : 12-JUL-2019 12:25

Client ID:

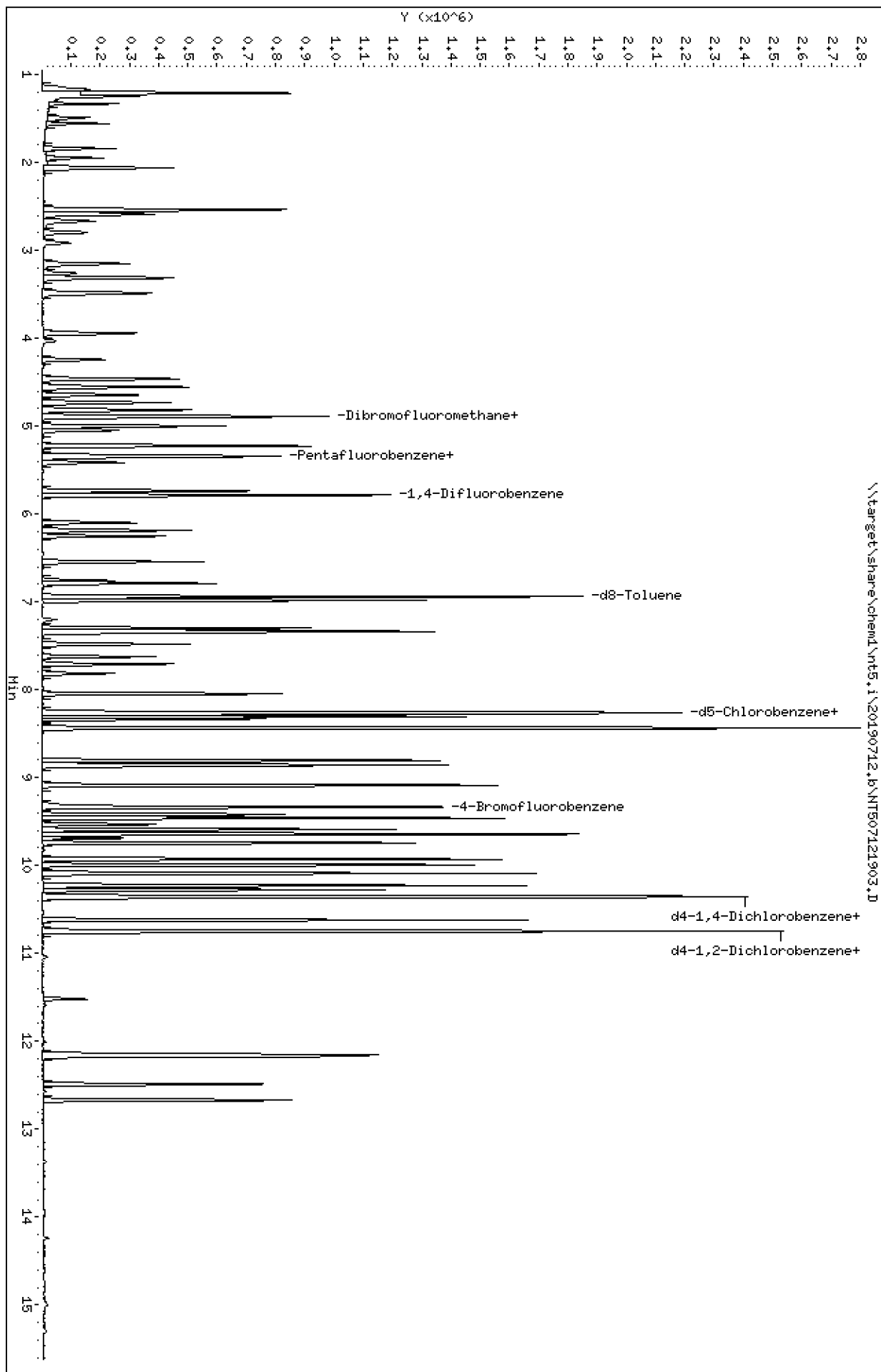
Sample Info: ICW1

Instrument: nt5.i

Page 1

Column phase: RTXWMS

Operator: PB
Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190712.b\NT507121903.D
 Lab Smp Id: shg0192-ICV1
 Inj Date : 12-JUL-2019 12:25
 Operator : PB Inst ID: nt5.i
 Smp Info : ICV1
 Misc Info :
 Comment :
 Method : \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Meth Date : 15-Jul-2019 13:36 nt5.i Quant Type: ISTD
 Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
 Als bottle: 4 Continuing Calibration Sample
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: voamd1.sub
 Target Version: 4.14
 Processing Host: ORGDATA21

Compounds	QUANT SIG	AMOUNTS					
		CAL-AMT	ON-COL				
	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/Kg)	(ug/Kg)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	1.329	1.329	(0.249)	179142	50.0000	43.268
2 Chloromethane	50	1.487	1.487	(0.279)	165658	50.0000	48.260
3 Vinyl Chloride	62	1.554	1.554	(0.291)	174895	50.0000	50.474
4 Bromomethane	94	1.840	1.840	(0.345)	132822	50.0000	52.183
5 Chloroethane	64	1.943	1.943	(0.364)	146290	50.0000	53.461
6 Trichlorofluoromethane	101	2.059	2.059	(0.386)	330500	50.0000	50.058
7 1,1-Dichloroethene	96	2.534	2.534	(0.475)	171732	50.0000	50.710
8 Carbon Disulfide	76	2.540	2.540	(0.476)	484130	50.0000	51.233
9 112Trichloro122Trifluoroethane	101	2.588	2.588	(0.485)	160905	50.0000	52.056
10 Iodomethane	142	2.667	2.667	(0.500)	204183	50.0000	46.218
11 Bromoethane	108	2.795	2.795	(0.524)	114152	50.0000	50.072
12 Acrolein	56	2.911	2.911	(0.545)	81827	250.000	237.79
13 Methylene Chloride	84	3.154	3.154	(0.591)	157823	50.0000	46.934
14 Acetone	43	3.257	3.257	(0.610)	155144	250.000	256.26
15 Trans-1,2-Dichloroethene	96	3.312	3.312	(0.621)	183066	50.0000	50.304
16 Methyl tert butyl ether	73	3.483	3.483	(0.652)	379134	50.0000	48.068
173 n-Hexane	41	3.483	3.483	(0.652)	74205	50.0000	
17 1,1-Dichloroethane	63	3.939	3.939	(0.738)	274809	50.0000	50.329
18 Acrylonitrile	53	4.030	4.030	(0.755)	34241	50.0000	47.603
19 Vinyl Acetate	43	4.243	4.243	(0.795)	259437	50.0000	51.822
20 Cis-1,2-Dichloroethene	96	4.462	4.462	(0.836)	192543	50.0000	51.484
22 2,2-Dichloropropane	77	4.553	4.553	(0.853)	286342	50.0000	54.420
23 Bromochloromethane	128	4.645	4.645	(0.870)	89665	50.0000	48.833
24 Chloroform	83	4.730	4.730	(0.886)	295312	50.0000	51.343
25 Carbon Tetrachloride	117	4.815	4.815	(0.833)	285790	50.0000	47.046
\$ 27 Dibromofluoromethane	111	4.894	4.894	(0.917)	261887	50.0000	58.288
26 1,1,1-Trichloroethane	97	4.888	4.888	(0.916)	296970	50.0000	52.647
28 1,1-Dichloropropene	75	4.997	4.997	(0.864)	248398	50.0000	50.631
29 2-Butanone	72	5.046	5.046	(0.945)	76913	250.000	270.32
30 Benzene	78	5.222	5.222	(0.903)	683361	50.0000	46.709
* 31 Pentafluorobenzene	168	5.338	5.338	(1.000)	410842	50.0000	
\$ 32 d4-1,2-Dichloroethane	65	5.350	5.350	(1.002)	223223	50.0000	59.392
33 1,2-Dichloroethane	62	5.411	5.411	(0.936)	181473	50.0000	43.185

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====	=====	=====	=====	=====		=====	=====
34 Trichloroethene	130	5.740	5.740	(0.993)	209872		50.0000	45.971
* 35 1,4-Difluorobenzene	114	5.782	5.782	(1.000)	825368		50.0000	
37 Dibromomethane	93	6.098	6.098	(1.055)	92242		50.0000	45.960
38 1,2-Dichloropropane	63	6.184	6.184	(1.069)	146795		50.0000	45.799
39 Bromodichloromethane	83	6.251	6.251	(1.081)	220049		50.0000	46.139
172 2-Pentanone	86	6.543	6.543	(1.132)	102689		250.000	246.31
40 2-Chloroethyl Vinyl Ether	63	6.756	6.756	(1.168)	83229		50.0000	44.800
41 Cis 1,3-dichloropropene	75	6.786	6.786	(1.174)	261466		50.0000	46.922
\$ 42 d8-Toluene	98	6.938	6.938	(1.200)	988217		50.0000	51.128
43 Toluene	92	6.981	6.981	(1.207)	451494		50.0000	45.202
44 Tetrachloroethene	166	7.297	7.297	(0.884)	226840		50.0000	43.968
45 4-Methyl-2-Pentanone	58	7.333	7.333	(1.268)	228085		250.000	235.78
46 Trans 1,3-Dichloropropene	75	7.346	7.346	(1.270)	230777		50.0000	46.846
47 1,1,2-Trichloroethane	97	7.479	7.479	(1.294)	131819		50.0000	44.798
48 Chlorodibromomethane	129	7.619	7.619	(0.923)	175840		50.0000	44.005
49 1,3-Dichloropropane	76	7.705	7.705	(0.933)	215633		50.0000	42.943
50 1,2-Dibromoethane	107	7.814	7.814	(1.351)	133988		50.0000	45.058
51 2-Hexanone	43	8.045	8.045	(0.974)	398564		250.000	228.30
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	840463		50.0000	
53 Chlorobenzene	112	8.270	8.270	(1.001)	510278		50.0000	42.612
54 Ethyl Benzene	91	8.301	8.301	(1.005)	871106		50.0000	44.322
55 1,1,1,2-Tetrachloroethane	131	8.331	8.331	(1.009)	186311		50.0000	43.764
56 m,p-xylene	106	8.435	8.435	(1.021)	700471		100.000	87.478
57 o-Xylene	106	8.806	8.806	(1.066)	330948		50.0000	43.478
58 Styrene	104	8.854	8.854	(1.072)	533385		50.0000	43.726
59 Bromoform	173	8.867	8.867	(0.857)	115464		50.0000	42.309
60 Isopropyl Benzene	105	9.086	9.086	(0.878)	905026		50.0000	45.768
61 Cyclohexanone	55	9.639	9.639	(1.167)	1319		400.000	
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	357530		50.0000	49.690
63 Bromobenzene	156	9.420	9.420	(0.910)	217266		50.0000	42.658
64 N-Propyl Benzene	91	9.457	9.457	(0.914)	1030980		50.0000	45.999
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530	(0.921)	156584		50.0000	44.002
66 2-Chloro Toluene	91	9.590	9.590	(0.927)	572198		50.0000	44.772
67 1,3,5-Trimethyl Benzene	105	9.639	9.639	(0.931)	733745		50.0000	45.016
68 1,2,3-Trichloropropane	110	9.645	9.645	(0.932)	53117		50.0000	43.007
69 Trans-1,4-Dichloro 2-Butene	53	9.688	9.688	(0.936)	44178		50.0000	45.448
70 4-Chloro Toluene	91	9.743	9.743	(0.941)	596667		50.0000	45.038
71 T-Butyl Benzene	119	9.925	9.925	(0.959)	673233		50.0000	44.562
72 1,2,4-Trimethylbenzene	105	9.992	9.992	(0.965)	717310		50.0000	45.160
73 S-Butyl Benzene	105	10.089	10.089	(0.975)	996068		50.0000	45.397
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	862328		50.0000	45.822
75 1,3-Dichlorobenzene	146	10.278	10.278	(0.993)	429943		50.0000	42.678
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	463623		50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.363	(1.001)	421859		50.0000	42.559
78 N-Butyl Benzene	91	10.619	10.619	(1.026)	766511		50.0000	46.715
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	412598		50.0000	51.028
80 1,2-Dichlorobenzene	146	10.752	10.752	(1.039)	385908		50.0000	42.422
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.113)	29679		50.0000	44.999
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.174)	164994		50.0000	44.565
83 1,2,4-Trichlorobenzene	180	12.170	12.170	(1.176)	277548		50.0000	44.504
84 Naphthalene	128	12.492	12.492	(1.207)	564313		50.0000	44.214
85 1,2,3-Trichlorobenzene	180	12.669	12.669	(1.224)	245039		50.0000	43.418

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 11-JUL-2019
 Lab File ID: NT507121903.D Calibration Time: 12:31
 Lab Smp Id: shg0192-ICV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190712.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	410842	1.71
35 1,4-Difluorobenze	717664	358832	1435328	825368	15.01
52 d5-Chlorobenzene	696563	348282	1393126	840463	20.66
76 d4-1,4-Dichlorobe	380778	190389	761556	463623	21.76

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	-0.11
35 1,4-Difluorobenze	5.79	5.29	6.29	5.78	-0.10
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT507121903.D

Lab ID: shg0192-ICV1
 nt5.i, 20190712.b\VO122618S.m, 12-JUL-2019 12:25

RT	CO-ELUTION COMPOUNDS
3.483	n-Hexane and Methyl tert butyl ether
9.640	Cyclohexanone and 1,3,5-Trimethyl Benzene

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

No RRT check. Ccal file.

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190712.b

Instrument: nt5.i Date: 12-JUL-2019 Method: VO122618S.m

INITIAL CAL: 24-JUN-2019

Compound	%RSD or R^2
n-Hexane	ND
Cyclohexanone	ND

ICV CAL: NT507121903.D 12-JUL-2019 12:25

Compound	%D
NO Q-FLAGS	



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: <u>Analytical Resources, Inc.</u>	SDG: <u>19G0163</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>King County Closed Landfills - Vashon</u>
Instrument ID: <u>NT5</u>	Calibration: <u>CF00067</u>
Lab File ID: <u>NT507161903X.D</u>	Calibration Date: <u>06/24/19 00:52</u>
Sequence: <u>SHG0229</u>	Injection Date: <u>07/16/19</u>
Lab Sample ID: <u>SHG0229-ICV1</u>	Injection Time: <u>14:57</u>
Sequence Name: <u>VOA 10</u>	

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Chloromethane	A	50.000	44.6	0.4177494	0.3725708		-10.8	20
Vinyl Chloride	A	50.000	46.5	0.4216991	0.3923471		-7.0	20
Bromomethane	A	50.000	50.0	0.3097694	0.3098462		0.02	20
Chloroethane	A	50.000	49.5	0.3504585	0.3294502		-1.1	20
Trichlorofluoromethane	A	50.000	47.5	0.8035120	0.7633143		-5.0	20
Acrolein	A	250.00	233	0.0418789	0.0390968		-6.6	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	A	50.000	49.5	0.3766319	0.3723961		-1.0	20
Acetone	A	250.00	215	0.0846942	0.0633624		-14.0	20
1,1-Dichloroethene	A	50.000	47.2	0.4122658	0.3889789		-5.6	20
Bromoethane	A	50.000	45.7	0.2774510	0.2534318		-8.7	20
Iodomethane	A	50.000	43.7	0.5376497	0.4694951		-12.7	20
Methylene Chloride	A	50.000	45.2	0.4362664	0.3696062		-9.7	20
Acrylonitrile	A	50.000	44.5	0.0875397	0.0778829		-11.0	20
Carbon Disulfide	A	50.000	47.8	1.1500240	1.0999460		-4.4	20
trans-1,2-Dichloroethene	A	50.000	48.5	0.4428969	0.4295341		-3.0	20
Vinyl Acetate	A	50.000	50.2	0.6092774	0.6117515		0.4	20
1,1-Dichloroethane	A	50.000	49.5	0.6645161	0.6581496		-1.0	20
2-Butanone	A	250.00	244	0.0346274	0.0338133		-2.4	20
2,2-Dichloropropane	A	50.000	53.1	0.6403541	0.6805208		6.3	20
cis-1,2-Dichloroethene	A	50.000	50.8	0.4551429	0.4621779		1.5	20
Chloroform	A	50.000	51.3	0.7000002	0.7187806		2.7	20
Bromochloromethane	A	50.000	49.0	0.2234647	0.2191367		-1.9	20
1,1,1-Trichloroethane	A	50.000	51.9	0.6864888	0.7119851		3.7	20
1,1-Dichloropropene	A	50.000	48.9	0.3440818	0.2906378		-2.2	20
Carbon tetrachloride	A	50.000	46.6	0.3679959	0.3429506		-6.8	20
1,2-Dichloroethane	A	50.000	46.1	0.2545649	0.2347347		-7.8	20
Benzene	A	50.000	46.3	0.8862879	0.8199450		-7.5	20
Trichloroethene	A	50.000	45.8	0.2765624	0.2532183		-8.4	20
1,2-Dichloropropane	A	50.000	46.9	0.1941691	0.1822399		-6.1	20
Bromodichloromethane	A	50.000	47.5	0.2889172	0.2745209		-5.0	20
Dibromomethane	A	50.000	45.9	0.1215825	0.1116975		-8.1	20

* Values outside of QC limits



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: NT5

Calibration: CF00067

Lab File ID: NT507161903X.D

Calibration Date: 06/24/19 00:52

Sequence: SHG0229

Injection Date: 07/16/19

Lab Sample ID: SHG0229-ICV1

Injection Time: 14:57

Sequence Name: VOA 10

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2-Chloroethyl vinyl ether	A	50.000	43.6	0.1125419	0.0980299		-12.9	20
4-Methyl-2-Pentanone	A	250.00	221	0.0586021	0.0518040		-11.6	20
cis-1,3-Dichloropropene	A	50.000	48.5	0.3375659	0.3277241		-2.9	20
Toluene	A	50.000	45.5	0.6050908	0.5505228		-9.0	20
trans-1,3-Dichloropropene	A	50.000	48.2	0.2984275	0.2874011		-3.7	20
2-Hexanone	A	250.00	219	0.1038571	0.0911352		-12.2	20
1,1,2-Trichloroethane	A	50.000	43.3	0.1782568	0.1543187		-13.4	20
1,3-Dichloropropane	A	50.000	45.2	0.2987294	0.2698594		-9.7	20
Tetrachloroethene	A	50.000	44.2	0.3069287	0.2711926		-11.6	20
Dibromochloromethane	A	50.000	46.1	0.2377190	0.2193201		-7.7	20
1,2-Dibromoethane	A	50.000	44.2	0.1801438	0.1591668		-11.6	20
Chlorobenzene	A	50.000	44.6	0.7124028	0.6358582		-10.7	20
Ethylbenzene	A	50.000	45.0	1.1692310	1.0534250		-9.9	20
1,1,1,2-Tetrachloroethane	A	50.000	45.9	0.2532648	0.2324721		-8.2	20
m,p-Xylene	A	100.00	89.6	0.4763682	0.4267017		-10.4	20
o-Xylene	A	50.000	44.7	0.4528393	0.4048799		-10.6	20
Xylenes, total	A	150.00	134	0.4685252	0.4194278		-10.5	20
Styrene	A	50.000	45.2	0.7256937	0.6556757		-9.6	20
Bromoform	A	50.000	43.9	0.2943192	0.2581909		-12.3	20
1,1,2,2-Tetrachloroethane	A	50.000	43.8	0.3837821	0.3359195		-12.5	20
1,2,3-Trichloropropane	A	50.000	42.2	0.1331971	0.1123526		-15.7	20
trans-1,4-Dichloro 2-Butene	A	50.000	47.9	0.1048332	0.1004783		-4.2	20
n-Propylbenzene	A	50.000	47.2	2.4171690	2.2841250		-5.5	20
Bromobenzene	A	50.000	45.3	0.5492848	0.4973213		-9.5	20
Isopropyl Benzene	A	50.000	46.9	2.1325590	2.0005050		-6.2	20
2-Chlorotoluene	A	50.000	47.1	1.3783040	1.2977270		-5.8	20
4-Chlorotoluene	A	50.000	46.9	1.4287570	1.3400060		-6.2	20
t-Butylbenzene	A	50.000	46.3	1.6293160	1.5103490		-7.3	20
1,3,5-Trimethylbenzene	A	50.000	47.7	1.7578580	1.6757650		-4.7	20
1,2,4-Trimethylbenzene	A	50.000	47.5	1.7129840	1.6276190		-5.0	20
s-Butylbenzene	A	50.000	46.9	2.3662910	2.2218250		-6.1	20

* Values outside of QC limits



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: NT5 Calibration: CF00067
Lab File ID: NT507161903X.D Calibration Date: 06/24/19 00:52
Sequence: SHG0229 Injection Date: 07/16/19
Lab Sample ID: SHG0229-ICV1 Injection Time: 14:57
Sequence Name: VOA 10

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
4-Isopropyl Toluene	A	50.000	48.0	2.0295730	1.9475780		-4.0	20
1,3-Dichlorobenzene	A	50.000	45.6	1.0864580	0.9910737		-8.8	20
1,4-Dichlorobenzene	A	50.000	45.9	1.0690080	0.9819679		-8.1	20
n-Butylbenzene	A	50.000	48.1	1.7695810	1.7031180		-3.8	20
1,2-Dichlorobenzene	A	50.000	45.5	0.9810733	0.8921032		-9.1	20
1,2-Dibromo-3-chloropropane	A	50.000	43.1	0.0711299	0.0612444		-13.9	20
1,2,4-Trichlorobenzene	A	50.000	48.0	0.6725816	0.6461012		-3.9	20
Hexachloro-1,3-Butadiene	A	50.000	48.0	0.3992842	0.3834482		-4.0	20
Naphthalene	A	50.000	44.7	1.3764770	1.2303980		-10.6	20
1,2,3-Trichlorobenzene	A	50.000	46.7	0.6086530	0.5690124		-6.5	20
Dichlorodifluoromethane	A	50.000	39.0	0.5038748	0.3925422		-22.1	20 *
Methyl tert-butyl Ether	A	50.000	48.3	0.9599115	0.9278534		-3.3	20
2-Pentanone	A	250.00	220	0.0252558	0.0222221		-12.0	20
1,2-Dichloroethane-d4	A	50.000	56.5	0.4574127	0.5169252		13.0	20
Toluene-d8	A	50.000	50.4	1.1708920	1.1796780		0.8	20
4-Bromofluorobenzene	A	50.000	49.4	0.4280478	0.4228278		-1.2	20
1,2-Dichlorobenzene-d4	A	50.000	51.0	0.8720120	0.8891277		2.0	20

* Values outside of QC limits

Data File: \\target\share\chemd\nt5.i\20190716.b\NT507161903.D

Date : 16-JUL-2019 14:57

Client ID:

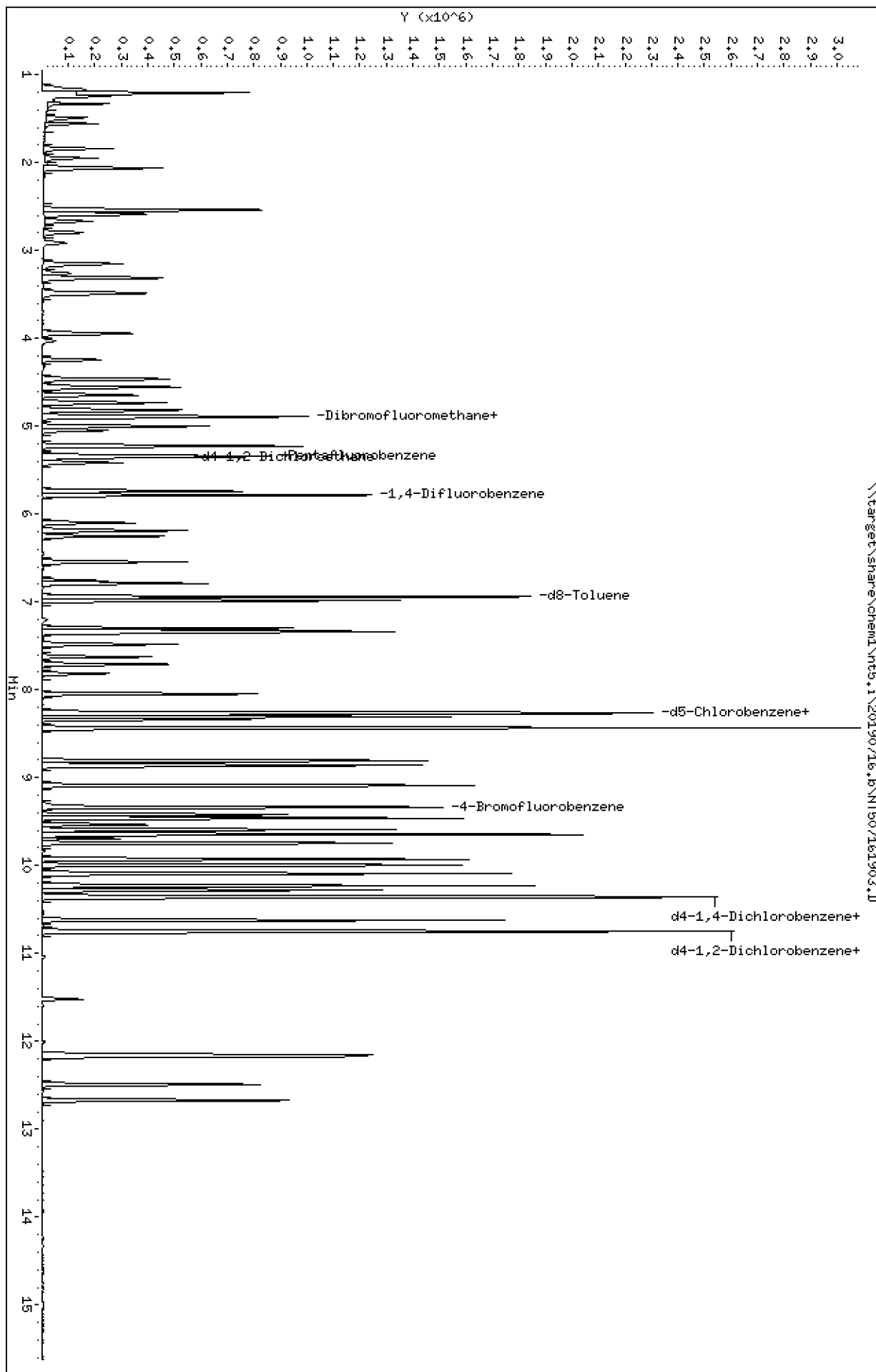
Sample Info: ICW1

Instrument: nt5.i

Column phase: RTXWMS

Operator: PB

Column diameter: 0.18



ARI Labs, Inc.

8260C

Data file : \\target\share\chem1\nt5.i\20190716.b\NT507161903.D
Lab Smp Id: shg0229-ICV1
Inj Date : 16-JUL-2019 14:57
Operator : PB Inst ID: nt5.i
Smp Info : ICV1
Misc Info :
Comment :
Method : \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
Meth Date : 17-Jul-2019 13:41 nt5.i Quant Type: ISTD
Cal Date : 24-JUN-2019 19:06 Cal File: NT506241914.D
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: voamd1.sub
Target Version: 4.14
Processing Host: ORGDATA21

Compounds	QUANT SIG						AMOUNTS	
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	====		====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85		1.329	1.329	(0.249)	173064	50.0000	38.952
2 Chloromethane	50		1.487	1.487	(0.279)	164259	50.0000	44.593
3 Vinyl Chloride	62		1.560	1.560	(0.292)	172978	50.0000	46.520
4 Bromomethane	94		1.840	1.840	(0.345)	136605	50.0000	50.012
5 Chloroethane	64		1.949	1.949	(0.365)	145248	50.0000	49.463
6 Trichlorofluoromethane	101		2.059	2.059	(0.386)	336530	50.0000	47.499
7 1,1-Dichloroethene	96		2.533	2.533	(0.475)	171493	50.0000	47.190
8 Carbon Disulfide	76		2.539	2.539	(0.476)	484944	50.0000	47.823
9 112Trichloro122Trifluoroethane	101		2.588	2.588	(0.485)	164182	50.0000	49.497
10 Iodomethane	142		2.667	2.667	(0.500)	206991	50.0000	43.662
11 Bromoethane	108		2.795	2.795	(0.524)	111733	50.0000	45.671
12 Acrolein	56		2.911	2.911	(0.545)	86185	250.000	233.39
13 Methylene Chloride	84		3.154	3.154	(0.591)	162952	50.0000	45.157
14 Acetone	43		3.257	3.257	(0.610)	139676	250.000	214.99
15 Trans-1,2-Dichloroethene	96		3.312	3.312	(0.621)	189373	50.0000	48.491
16 Methyl tert butyl ether	73		3.482	3.482	(0.652)	409072	50.0000	48.330
173 n-Hexane	41		3.489	3.489	(0.654)	81996	50.0000	
17 1,1-Dichloroethane	63		3.945	3.945	(0.739)	290165	50.0000	49.521
18 Acrylonitrile	53		4.030	4.030	(0.755)	34337	50.0000	44.484
19 Vinyl Acetate	43		4.243	4.243	(0.795)	269709	50.0000	50.203
20 Cis-1,2-Dichloroethene	96		4.462	4.462	(0.836)	203765	50.0000	50.773
22 2,2-Dichloropropane	77		4.553	4.553	(0.853)	300028	50.0000	53.136
23 Bromochloromethane	128		4.644	4.644	(0.870)	96613	50.0000	49.032
24 Chloroform	83		4.730	4.730	(0.886)	316896	50.0000	51.341
25 Carbon Tetrachloride	117		4.815	4.815	(0.832)	299651	50.0000	46.597
\$ 27 Dibromofluoromethane	111		4.894	4.894	(0.917)	270588	50.0000	56.121
26 1,1,1-Trichloroethane	97		4.888	4.888	(0.916)	313900	50.0000	51.857
28 1,1-Dichloropropene	75		5.003	5.003	(0.864)	253943	50.0000	48.895
29 2-Butanone	72		5.046	5.046	(0.945)	74538	250.000	244.12
30 Benzene	78		5.222	5.222	(0.902)	716422	50.0000	46.257
* 31 Pentafluorobenzene	168		5.338	5.338	(1.000)	440880	50.0000	
\$ 32 d4-1,2-Dichloroethane	65		5.356	5.356	(1.003)	227902	50.0000	56.505
33 1,2-Dichloroethane	62		5.417	5.417	(0.936)	205098	50.0000	46.105

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/Kg)	ON-COL (ug/Kg)
=====	=====	=====	=====	=====	=====		=====	=====
34 Trichloroethene	130	5.739	5.739	(0.992)	221248		50.0000	45.780
* 35 1,4-Difluorobenzene	114	5.788	5.788	(1.000)	873744		50.0000	
37 Dibromomethane	93	6.098	6.098	(1.054)	97595		50.0000	45.935
38 1,2-Dichloropropane	63	6.190	6.190	(1.069)	159231		50.0000	46.928
39 Bromodichloromethane	83	6.250	6.250	(1.080)	239861		50.0000	47.509
172 2-Pentanone	86	6.542	6.542	(1.130)	97082		250.000	219.97
40 2-Chloroethyl Vinyl Ether	63	6.755	6.755	(1.167)	85653		50.0000	43.553
41 Cis 1,3-dichloropropene	75	6.786	6.786	(1.172)	286347		50.0000	48.542
\$ 42 d8-Toluene	98	6.938	6.938	(1.199)	1030737		50.0000	50.375
43 Toluene	92	6.981	6.981	(1.206)	481016		50.0000	45.491
44 Tetrachloroethene	166	7.297	7.297	(0.884)	234552		50.0000	44.178
45 4-Methyl-2-Pentanone	58	7.333	7.333	(1.267)	226317		250.000	221.00
46 Trans 1,3-Dichloropropene	75	7.352	7.352	(1.270)	251115		50.0000	48.153
47 1,1,2-Trichloroethane	97	7.479	7.479	(1.292)	134835		50.0000	43.285
48 Chlorodibromomethane	129	7.625	7.625	(0.923)	189688		50.0000	46.130
49 1,3-Dichloropropane	76	7.711	7.711	(0.934)	233399		50.0000	45.168
50 1,2-Dibromoethane	107	7.814	7.814	(1.350)	139071		50.0000	44.178
51 2-Hexanone	43	8.045	8.045	(0.974)	394110		250.000	219.38
* 52 d5-Chlorobenzene	117	8.258	8.258	(1.000)	864891		50.0000	
53 Chlorobenzene	112	8.276	8.276	(1.002)	549948		50.0000	44.628
54 Ethyl Benzene	91	8.307	8.307	(1.006)	911098		50.0000	45.048
55 1,1,1,2-Tetrachloroethane	131	8.337	8.337	(1.010)	201063		50.0000	45.895
56 m,p-xylene	106	8.434	8.434	(1.021)	738101		100.000	89.574
57 o-Xylene	106	8.806	8.806	(1.066)	350177		50.0000	44.705
58 Styrene	104	8.854	8.854	(1.072)	567088		50.0000	45.176
59 Bromoform	173	8.872	8.872	(0.857)	122265		50.0000	43.862
60 Isopropyl Benzene	105	9.085	9.085	(0.878)	947329		50.0000	46.904
61 Cyclohexanone	55	9.639	9.639	(1.167)	1623		400.000	
\$ 62 4-Bromofluorobenzene	174	9.335	9.335	(1.130)	365700		50.0000	49.390
63 Bromobenzene	156	9.420	9.420	(0.910)	235504		50.0000	45.270
64 N-Propyl Benzene	91	9.457	9.457	(0.914)	1081636		50.0000	47.248
65 1,1,2,2-Tetrachloroethane	83	9.530	9.530	(0.921)	159073		50.0000	43.764
66 2-Chloro Toluene	91	9.590	9.590	(0.927)	614532		50.0000	47.077
67 1,3,5-Trimethyl Benzene	105	9.645	9.645	(0.932)	793550		50.0000	47.665
68 1,2,3-Trichloropropane	110	9.645	9.645	(0.932)	53204		50.0000	42.175
69 Trans-1,4-Dichloro 2-Butene	53	9.694	9.694	(0.937)	47581		50.0000	47.923
70 4-Chloro Toluene	91	9.742	9.742	(0.941)	634553		50.0000	46.894
71 T-Butyl Benzene	119	9.925	9.925	(0.959)	715218		50.0000	46.349
72 1,2,4-Trimethylbenzene	105	9.992	9.992	(0.965)	770751		50.0000	47.508
73 S-Butyl Benzene	105	10.089	10.089	(0.975)	1052134		50.0000	46.947
74 4-Isopropyl Toluene	119	10.229	10.229	(0.988)	922266		50.0000	47.980
75 1,3-Dichlorobenzene	146	10.278	10.278	(0.993)	469318		50.0000	45.610
* 76 d4-1,4-Dichlorobenzene	152	10.351	10.351	(1.000)	473545		50.0000	
77 1,4-Dichlorobenzene	146	10.363	10.363	(1.001)	465006		50.0000	45.929
78 N-Butyl Benzene	91	10.618	10.618	(1.026)	806503		50.0000	48.122
\$ 79 d4-1,2-Dichlorobenzene	152	10.746	10.746	(1.038)	421042		50.0000	50.981
80 1,2-Dichlorobenzene	146	10.752	10.752	(1.039)	422451		50.0000	45.466
81 1,2-Dibromo 3-Chloropropane	75	11.519	11.519	(1.113)	29002		50.0000	43.051
82 Hexachloro 1,3-Butadiene	225	12.152	12.152	(1.174)	181580		50.0000	48.017
83 1,2,4-Trichlorobenzene	180	12.176	12.176	(1.176)	305958		50.0000	48.031
84 Naphthalene	128	12.492	12.492	(1.207)	582649		50.0000	44.694
85 1,2,3-Trichlorobenzene	180	12.669	12.669	(1.224)	269453		50.0000	46.744

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt5.i Calibration Date: 12-JUL-2019
 Lab File ID: NT507161903.D Calibration Time: 12:25
 Lab Smp Id: shg0229-ICV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PB
 Method File: \\target\share\chem1\nt5.i\20190716.b\VO122618S.m
 Misc Info:

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	403927	201964	807854	440880	9.15
35 1,4-Difluorobenze	717664	358832	1435328	873744	21.75
52 d5-Chlorobenzene	696563	348282	1393126	864891	24.17
76 d4-1,4-Dichlorobe	380778	190389	761556	473545	24.36

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
31 Pentafluorobenzen	5.34	4.84	5.84	5.34	-0.11
35 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
52 d5-Chlorobenzene	8.26	7.76	8.76	8.26	-0.07
76 d4-1,4-Dichlorobe	10.35	9.85	10.85	10.35	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - NT507161903.D

Lab ID: shg0229-ICV1
 nt5.i, 20190716.b\VO122618S.m, 16-JUL-2019 14:57

RT	CO-ELUTION COMPOUNDS
9.646	1,2,3-Trichloropropane and 1,3,5-Trimethyl Benzene
9.646	1,3,5-Trimethyl Benzene and 1,2,3-Trichloropropane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
-----	---------	-------	----------

NONE

No RRT check. Ccal file.

On Column LOD for nt5.i, VO122618S.m, voamdl.sub = 0.5000

Exception: Bromomethane 0.2500
 Exception: Chloroethane 0.2500
 Exception: Trichlorofluoromethane 0.2500
 Exception: Acrolein 2.5000
 Exception: 112Trichloro122Trifluoroethane 0.2500
 Exception: Acetone 2.5000
 Exception: 1,1-Dichloroethene 0.2500
 Exception: Bromoethane 0.2500
 Exception: Iodomethane 0.1000
 Exception: Acrylonitrile 0.2500
 Exception: Carbon Disulfide 0.2500
 Exception: Trans-1,2-Dichloroethene 0.1000
 Exception: Vinyl Acetate 0.2500
 Exception: 1,1-Dichloroethane 0.2500
 Exception: 2-Butanone 0.2500
 Exception: 2,2-Dichloropropane 0.2500
 Exception: Cis-1,2-Dichloroethene 0.2500
 Exception: Chloroform 0.2500
 Exception: Bromochloromethane 0.2500
 Exception: 1,1,1-Trichloroethane 0.2500
 Exception: 1,1-Dichloropropene 0.2500
 Exception: Carbon Tetrachloride 0.2500
 Exception: 1,2-Dichloroethane 0.2500
 Exception: Benzene 0.2500
 Exception: Trichloroethene 0.2500
 Exception: 1,2-Dichloropropane 0.2500
 Exception: Bromodichloromethane 0.2500
 Exception: Dibromomethane 0.2500

Exception: 2-Chloroethyl Vinyl Ether 0.2500
Exception: 4-Methyl-2-Pentanone 0.2500
Exception: Cis 1,3-dichloropropene 0.2500
Exception: Toluene 0.2500
Exception: Trans 1,3-Dichloropropene 0.2500
Exception: 2-Hexanone 0.2500
Exception: 1,1,2-Trichloroethane 0.2500
Exception: 1,3-Dichloropropane 0.2500
Exception: Tetrachloroethene 0.2500
Exception: Chlorodibromomethane 0.2500
Exception: 1,2-Dibromoethane 0.2500
Exception: Chlorobenzene 0.2500
Exception: Ethyl Benzene 0.2500
Exception: 1,1,1,2-Tetrachloroethane 0.2500
Exception: m,p-xylene 0.2500
Exception: o-Xylene 0.2500
Exception: Styrene 0.2500
Exception: Bromoform 0.2500
Exception: 1,1,2,2-Tetrachloroethane 0.2500
Exception: 1,2,3-Trichloropropane 0.2500
Exception: Trans-1,4-Dichloro 2-Butene 0.2500
Exception: N-Propyl Benzene 0.2500
Exception: Bromobenzene 0.2500
Exception: Isopropyl Benzene 0.2500
Exception: 2-Chloro Toluene 0.2500
Exception: 4-Chloro Toluene 0.2500
Exception: T-Butyl Benzene 0.2500
Exception: 1,3,5-Trimethyl Benzene 0.2500
Exception: 1,2,4-Trimethylbenzene 0.2500
Exception: S-Butyl Benzene 0.2500
Exception: 4-Isopropyl Toluene 0.2500
Exception: 1,3-Dichlorobenzene 0.2500
Exception: 1,4-Dichlorobenzene 0.2500
Exception: N-Butyl Benzene 0.2500
Exception: 1,2-Dichlorobenzene 0.2500
Exception: 1,2-Dibromo 3-Chloropropane 0.2500
Exception: 1,2,4-Trichlorobenzene 0.2500
Exception: Hexachloro 1,3-Butadiene 0.2500
Exception: Naphthalene 0.2500
Exception: 1,2,3-Trichlorobenzene 0.2500
Exception: Dichlorodifluoromethane 0.2500
Exception: Methyl tert butyl ether 0.1000
Exception: 2-Pentanone 0.0000
Exception: n-Hexane 0.0000
Exception: Cyclohexanone 0.0000
Exception: d4-1,2-Dichloroethane (Surr) 0.2500
Exception: d8-Toluene (Surr) 0.2500
Exception: 4-Bromofluorobenzene (Surr) 0.2500
Exception: d4-1,2-Dichlorobenzene (Surr) 0.2500
Exception: Dibromofluoromethane (Surr) 0.2500

* Only compounds listed in the work order have been verified by the analyst *

Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190716.b

Instrument: nt5.i Date: 16-JUL-2019 Method: VO122618S.m

INITIAL CAL: 24-JUN-2019

Compound	%RSD or R^2
n-Hexane	ND
Cyclohexanone	ND

ICV CAL: NT507161903.D 16-JUL-2019 14:57

Compound	%D
Dichlorodifluoromethane	-22.1



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: <u>Analytical Resources, Inc.</u>	SDG: <u>19G0163</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>King County Closed Landfills - Vashon</u>
Instrument ID: <u>NT3</u>	Calibration: <u>CG00042</u>
Lab File ID: <u>V307181903G.D</u>	Calibration Date: <u>07/16/19 08:26</u>
Sequence: <u>SHG0265</u>	Injection Date: <u>07/18/19</u>
Lab Sample ID: <u>SHG0265-ICV1</u>	Injection Time: <u>10:09</u>
Sequence Name: <u>VOA 10</u>	

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Chloromethane	A	10.000	9.93	2.9003610	2.8789280	0.1	-0.7	20
Vinyl Chloride	A	10.000	9.96	1.9515470	1.9443040	0.1	-0.4	20
Bromomethane	A	10.000	9.91	0.8080712	0.8009278	0.1	-0.9	20
Chloroethane	A	10.000	9.76	0.9799568	0.9564974	0.1	-2.4	20
Trichlorofluoromethane	A	10.000	10.4	1.3731830	1.4239820	0.1	3.7	20
Acrolein	A	50.000	36.0	0.1789308	0.1179123		-28.0	20 *
1,1,2-Trichloro-1,2,2-Trifluoroethane	A	10.000	10.3	0.7286587	0.7512926	0.1	3.1	20
Acetone	A	50.000	50.0	0.2913390	0.2636181	0.1	-0.09	20
1,1-Dichloroethene	A	10.000	9.92	1.9609190	1.9452810	0.1	-0.8	20
Bromoethane	A	10.000	9.59	0.5406998	0.5184121		-4.1	20
Iodomethane	A	10.000	9.85	1.1337300	1.1170650		-1.5	20
Methylene Chloride	A	10.000	9.10	0.9053636	0.7251537	0.1	-9.0	20
Acrylonitrile	A	10.000	8.51	0.3313102	0.2546246		-14.9	20
Carbon Disulfide	A	10.000	9.60	2.4327560	2.3356980	0.1	-4.0	20
trans-1,2-Dichloroethene	A	10.000	8.77	0.8624435	0.7566353	0.1	-12.3	20
Vinyl Acetate	A	10.000	9.29	2.2220580	2.0636530		-7.1	20
1,1-Dichloroethane	A	10.000	10.5	1.9704050	2.0740080	0.2	5.3	20
2-Butanone	A	50.000	58.0	0.4573393	0.5303326		16.0	20
2,2-Dichloropropane	A	10.000	12.1	1.0144490	0.9685041		20.8	20 *
cis-1,2-Dichloroethene	A	10.000	9.59	0.8637575	0.8284024	0.1	-4.1	20
Chloroform	A	10.000	9.69	1.4129930	1.3689030		-3.1	20
Bromochloromethane	A	10.000	9.38	0.3471507	0.3257741		-6.2	20
1,1,1-Trichloroethane	A	10.000	10.3	1.2511610	1.2924540		3.3	20
1,1-Dichloropropene	A	10.000	11.0	0.6771723	0.7424711		9.6	20
Carbon tetrachloride	A	10.000	10.8	0.6783599	0.7309362	0.1	7.8	20
1,2-Dichloroethane	A	10.000	10.1	0.7097499	0.7201096	0.1	1.5	20
Benzene	A	10.000	9.78	2.0269660	1.9813090	0.5	-2.3	20
Trichloroethene	A	10.000	8.84	0.4686123	0.4144360	0.2	-11.6	20
1,2-Dichloropropane	A	10.000	11.4	0.6550041	0.7459665	0.1	13.9	20
Bromodichloromethane	A	10.000	11.3	0.6130127	0.6902147	0.2	12.6	20
Dibromomethane	A	10.000	11.4	0.2329765	0.2654948		14.0	20

* Values outside of QC limits



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: NT3

Calibration: CG00042

Lab File ID: V307181903G.D

Calibration Date: 07/16/19 08:26

Sequence: SHG0265

Injection Date: 07/18/19

Lab Sample ID: SHG0265-ICV1

Injection Time: 10:09

Sequence Name: VOA 10

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
2-Chloroethyl vinyl ether	A	10.000	12.0	0.2704229	0.3254043		20.3	20
4-Methyl-2-Pentanone	A	50.000	57.6	0.1838514	0.2117059	0.1	15.2	20
cis-1,3-Dichloropropene	A	10.000	11.4	0.7759451	0.8860496	0.2	14.2	20
Toluene	A	10.000	10.8	1.2707510	1.3703850	0.4	7.8	20
trans-1,3-Dichloropropene	A	10.000	11.5	0.6405207	0.7353423	0.1	14.8	20
2-Hexanone	A	50.000	49.9	0.3985484	0.3973973	0.1	-0.3	20
1,1,2-Trichloroethane	A	10.000	10.7	0.3398312	0.3632651	0.1	6.9	20
1,3-Dichloropropane	A	10.000	9.60	0.6166090	0.5917080		-4.0	20
Tetrachloroethene	A	10.000	9.73	0.4874257	0.4742712	0.2	-2.7	20
Dibromochloromethane	A	10.000	9.87	0.3760888	0.3711124	0.1	-1.3	20
1,2-Dibromoethane	A	10.000	10.6	0.3187983	0.3387696	0.1	6.3	20
Chlorobenzene	A	10.000	9.90	1.3643390	1.3508030	0.5	-1.0	20
Ethylbenzene	A	10.000	9.93	0.7281342	0.7228889	0.1	-0.7	20
1,1,1,2-Tetrachloroethane	A	10.000	9.47	0.4752059	0.4500346		-5.3	20
m,p-Xylene	A	20.000	20.1	0.9115139	0.9165188	0.1	0.6	20
o-Xylene	A	10.000	9.85	0.8936594	0.8798300	0.3	-1.6	20
Xylenes, total	A	30.000	30.0	0.9055624	0.9042892		-0.2	20
Styrene	A	10.000	10.4	1.3611700	1.4187530	0.3	4.2	20
Bromoform	A	10.000	8.73	0.3586321	0.3129336	0.1	-12.7	20
1,1,2,2-Tetrachloroethane	A	10.000	8.86	0.7261334	0.6432468	0.3	-11.4	20
1,2,3-Trichloropropane	A	10.000	8.77	0.2090026	0.1832646		-12.3	20
trans-1,4-Dichloro 2-Butene	A	10.000	8.63	0.3377570	0.2913447		-13.7	20
n-Propylbenzene	A	10.000	9.42	4.7275790	4.4550940		-5.8	20
Bromobenzene	A	10.000	9.17	0.9298458	0.8530748		-8.3	20
Isopropyl Benzene	A	10.000	9.65	3.7701390	3.6377290	0.1	-3.5	20
2-Chlorotoluene	A	10.000	9.37	3.2818280	3.0762460		-6.3	20
4-Chlorotoluene	A	10.000	9.53	3.0501890	2.9072750		-4.7	20
t-Butylbenzene	A	10.000	9.21	2.7446690	2.5267850		-7.9	20
1,3,5-Trimethylbenzene	A	10.000	9.60	3.3332840	3.2005460		-4.0	20
1,2,4-Trimethylbenzene	A	10.000	9.91	3.3743350	3.3451500		-0.9	20
s-Butylbenzene	A	10.000	9.45	4.1030710	3.8773420		-5.5	20

* Values outside of QC limits



INITIAL CALIBRATION CHECK

EPA 8260C

Laboratory: <u>Analytical Resources, Inc.</u>	SDG: <u>19G0163</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>King County Closed Landfills - Vashon</u>
Instrument ID: <u>NT3</u>	Calibration: <u>CG00042</u>
Lab File ID: <u>V307181903G.D</u>	Calibration Date: <u>07/16/19 08:26</u>
Sequence: <u>SHG0265</u>	Injection Date: <u>07/18/19</u>
Lab Sample ID: <u>SHG0265-ICV1</u>	Injection Time: <u>10:09</u>
Sequence Name: <u>VOA 10</u>	

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
4-Isopropyl Toluene	A	10.000	9.60	3.5149650	3.3729730		-4.0	20
1,3-Dichlorobenzene	A	10.000	9.30	2.0544020	1.9104600	0.6	-7.0	20
1,4-Dichlorobenzene	A	10.000	8.94	2.1209590	1.8963640	0.5	-10.6	20
n-Butylbenzene	A	10.000	9.69	3.2113400	3.1122890		-3.1	20
1,2-Dichlorobenzene	A	10.000	8.73	1.8691610	1.6316560	0.4	-12.7	20
1,2-Dibromo-3-chloropropane	A	10.000	8.41	0.1735989	0.1151653	0.05	-15.9	20
1,2,4-Trichlorobenzene	A	10.000	8.49	1.1409230	0.9688325	0.2	-15.1	20
Hexachloro-1,3-Butadiene	A	10.000	9.41	0.3710114	0.3490261		-5.9	20
Naphthalene	A	10.000	8.15	1.9760480	1.6106480		-18.5	20
1,2,3-Trichlorobenzene	A	10.000	7.52	0.8862393	0.6666008		-24.8	20 *
Dichlorodifluoromethane	A	10.000	10.2	1.0786280	1.1035070	0.1	2.3	20
Methyl tert-butyl Ether	A	10.000	9.26	1.6183740	1.4985930	0.1	-7.4	20
2-Pentanone	A	50.000	63.2	0.0420748	0.0531615		26.4	20 *
1,2-Dichloroethane-d4	A	5.0000	4.74	0.6738472	0.6392830		-5.1	20
Toluene-d8	A	5.0000	5.82	1.3119910	1.5261330		16.3	20
4-Bromofluorobenzene	A	5.0000	5.28	0.3970749	0.4195935		5.7	20
1,2-Dichlorobenzene-d4	A	5.0000	4.76	0.9381199	0.8929321		-4.8	20

* Values outside of QC limits

Data File: \\target\share\chemd\nt3.i\20190718.b\W307181903G.D

Date : 18-JUL-2019 10:09

Client ID:

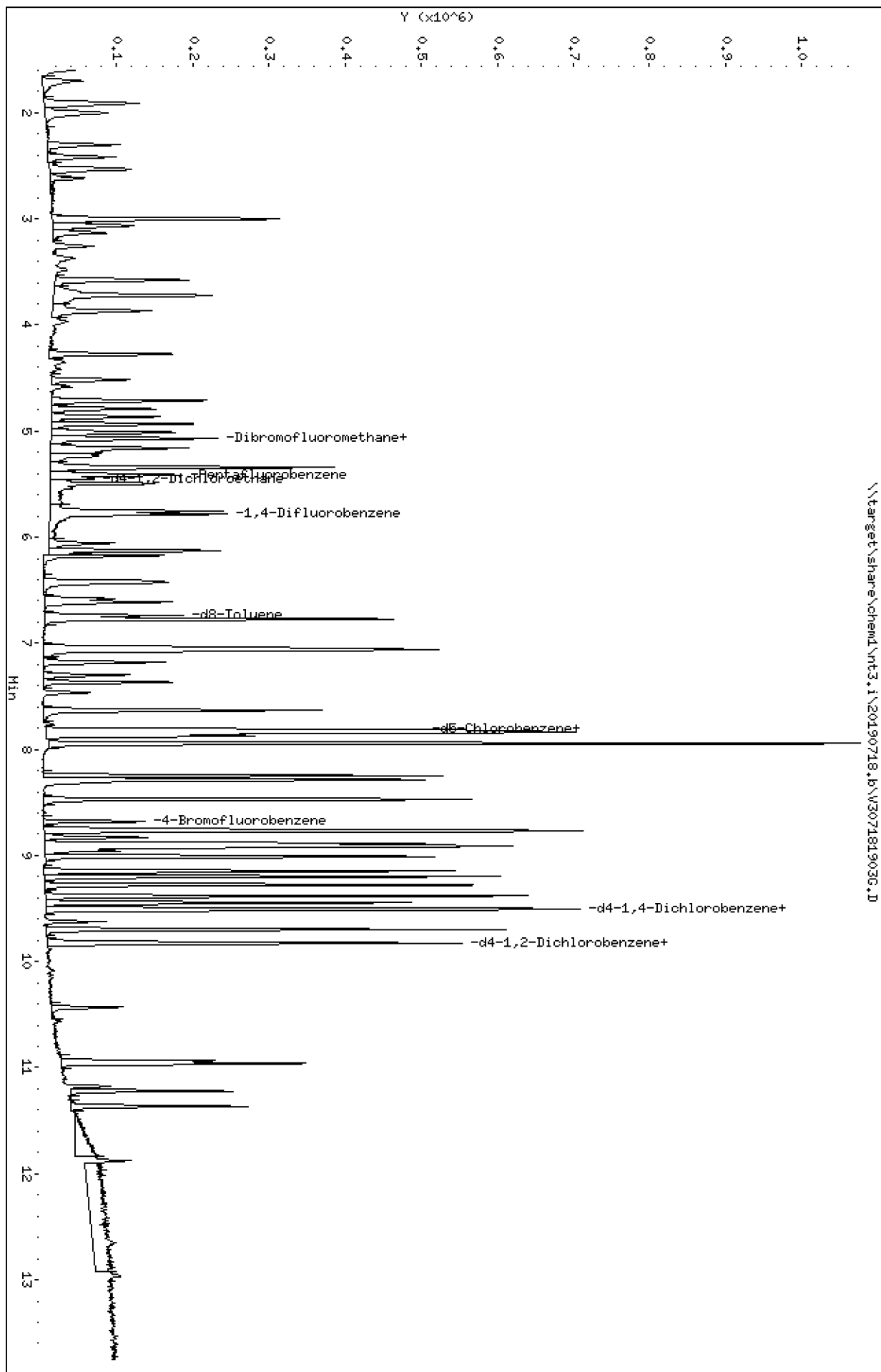
Sample Info: SHC0265-ICV1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718.b\V307181903G.D
Lab Smp Id: SHG0265-ICV1
Inj Date : 18-JUL-2019 10:09
Operator : PKC
Smp Info : SHG0265-ICV1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i
Cal Date : 16-JUL-2019 20:19
Als bottle: 56
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14

Inst ID: nt3.i

Quant Type: ISTD
Cal File: V307161926.D
Continuing Calibration Sample

Compound Sublist: mdl.sub

Compounds	QUANT SIG	AMOUNTS					
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COL
						(ug/L)	(ug/L)
1 Dichlorodifluoromethane	85		1.698	1.688 (0.314)		76835	10.231
2 Chloromethane	50		1.911	1.890 (0.353)		200454	9.926
3 Vinyl Chloride	62		2.001	1.975 (0.370)		135378	9.963
4 Bromomethane	94		2.304	2.278 (0.426)		55767	9.912
5 Chloroethane	64		2.416	2.394 (0.446)		66599	9.761
6 Trichlorofluoromethane	101		2.533	2.506 (0.468)		99149	10.370
7 1,1-Dichloroethene	61		3.000	2.968 (0.554)		135446	9.920
8 Carbon Disulfide	76		3.000	2.974 (0.554)		162630	9.601
9 112Trichloro122Trifluoroethane	101		3.064	3.043 (0.566)		52311	10.311
10 Iodomethane	142		3.133	3.101 (0.579)		77779	9.853
11 Bromoethane	108		3.255	3.229 (0.601)		36096	9.588
12 Acrolein	56		3.372	3.335 (0.623)		41050	36.017
13 Methylene Chloride	84		3.574	3.547 (0.660)		50491	9.101
14 Acetone	43		3.765	3.643 (0.696)		91776	49.956 (TM)
15 Trans-1,2-Dichloroethene	96		3.723	3.696 (0.688)		52683	8.773
17 Methyl tert butyl ether	73		3.866	3.824 (0.714)		104344	9.260
18 1,1-Dichloroethane	63		4.275	4.243 (0.790)		144409	10.526
19 Acrylonitrile	53		4.350	4.307 (0.804)		17729	8.512
20 Vinyl Acetate	43		4.515	4.477 (0.834)		143688	9.287
22 Cis-1,2-Dichloroethene	96		4.711	4.684 (0.870)		57680	9.591
23 2,2-Dichloropropane	77		4.791	4.764 (0.885)		67435	12.078
24 Bromochloromethane	128		4.871	4.839 (0.900)		22683	9.384
25 Chloroform	83		4.929	4.908 (0.911)		95314	9.688
26 Carbon Tetrachloride	117		5.014	4.998 (0.867)		79463	10.775
\$ 27 Dibromofluoromethane	111		5.067	5.046 (0.936)		19126	5.368
28 1,1,1-Trichloroethane	97		5.067	5.051 (0.936)		89991	10.330
30 1,1-Dichloropropene	75		5.157	5.141 (0.892)		80717	10.964
29 2-Butanone	43		5.195	5.157 (0.960)		184630	57.980 (M)
31 Benzene	78		5.338	5.327 (0.923)		215396	9.775
* 32 Pentafluorobenzene	168		5.413	5.402 (1.000)		69628	10.0000
\$ 33 d4-1,2-Dichloroethane	65		5.450	5.434 (1.007)		22256	5.00000
34 1,2-Dichloroethane	62		5.498	5.481 (0.950)		78286	10.0000
36 Trichloroethene	130		5.753	5.752 (0.994)		45055	10.0000
* 37 1,4-Difluorobenzene	114		5.784	5.784 (1.000)		108714	10.0000

Compounds	QUANT SIG						AMOUNTS	
	MASS	RT	EXP RT	REL RT	RESPONSE		CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====		=====	=====
38 Dibromomethane	93	6.055	6.055	(1.047)	28863		10.0000	11.396
39 1,2-Dichloropropane	63	6.124	6.124	(1.059)	81097		10.0000	11.389
40 Bromodichloromethane	83	6.172	6.172	(1.067)	75036		10.0000	11.259
173 2-Pentanone	86	6.422	6.395	(1.110)	28897		50.0000	63.175
41 2-Chloroethyl Vinyl Ether	63	6.581	6.571	(1.138)	35376		10.0000	12.033
42 Cis 1,3-dichloropropene	75	6.613	6.608	(1.143)	96326		10.0000	11.419
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	82956		5.00000	5.816
44 Toluene	92	6.773	6.773	(1.171)	148980		10.0000	10.784
46 Tetrachloroethene	166	7.033	7.038	(0.900)	60388		10.0000	9.730
45 4-Methyl-2-Pentanone	58	7.060	7.038	(1.220)	115077		50.0000	57.575
47 Trans 1,3-Dichloropropene	75	7.065	7.065	(1.221)	79942		10.0000	11.480
48 1,1,2-Trichloroethane	97	7.177	7.171	(1.241)	39492		10.0000	10.690
49 Chlorodibromomethane	129	7.299	7.299	(0.934)	47253		10.0000	9.868
50 1,3-Dichloropropane	76	7.368	7.362	(0.943)	75341		10.0000	9.596
51 1,2-Dibromoethane	107	7.463	7.463	(1.290)	36829		10.0000	10.626
52 2-Hexanone	43	7.628	7.617	(0.976)	252999		50.0000	49.856
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	127328		10.0000	
54 Chlorobenzene	112	7.825	7.825	(1.001)	171995		10.0000	9.901
55 Ethyl Benzene	106	7.841	7.841	(1.003)	92044		10.0000	9.928
56 1,1,1,2-Tetrachloroethane	131	7.873	7.872	(1.007)	57302		10.0000	9.470
57 m,p-xylene	106	7.942	7.942	(1.016)	233397		20.0000	20.110
58 o-Xylene	106	8.250	8.250	(1.056)	112027		10.0000	9.845
59 Styrene	104	8.287	8.287	(1.061)	180647		10.0000	10.423
60 Bromoform	173	8.314	8.308	(0.875)	25352		10.0000	8.726
61 Isopropyl Benzene	105	8.473	8.473	(0.892)	294707		10.0000	9.649
\$ 62 4-Bromofluorobenzene	174	8.686	8.680	(1.112)	26713		5.00000	5.284
63 Bromobenzene	156	8.755	8.755	(0.922)	69111		10.0000	9.174
64 N-Propyl Benzene	91	8.771	8.770	(0.923)	360925		10.0000	9.424
65 1,1,2,2-Tetrachloroethane	83	8.829	8.824	(0.930)	52112		10.0000	8.859
66 2-Chloro Toluene	91	8.887	8.887	(0.936)	249219		10.0000	9.374
67 1,3,5-Trimethyl Benzene	105	8.914	8.914	(0.938)	259289		10.0000	9.602
68 1,2,3-Trichloropropane	110	8.930	8.930	(0.940)	14847		10.0000	8.769
69 Trans-1,4-Dichloro 2-Butene	53	8.957	8.956	(0.943)	23603		10.0000	8.626 (M)
70 4-Chloro Toluene	91	9.010	9.010	(0.949)	235530		10.0000	9.531
71 T-Butyl Benzene	119	9.148	9.148	(0.963)	204705		10.0000	9.206
72 1,2,4-Trimethylbenzene	105	9.201	9.201	(0.969)	271004		10.0000	9.914
73 S-Butyl Benzene	105	9.281	9.275	(0.977)	314119		10.0000	9.450
74 4-Isopropyl Toluene	119	9.382	9.381	(0.988)	273258		10.0000	9.596
75 1,3-Dichlorobenzene	146	9.445	9.445	(0.994)	154774		10.0000	9.299
* 76 d4-1,4-Dichlorobenzene	152	9.498	9.498	(1.000)	81014		10.0000	
77 1,4-Dichlorobenzene	146	9.509	9.509	(1.001)	153632		10.0000	8.941
78 N-Butyl Benzene	91	9.700	9.700	(1.021)	252139		10.0000	9.692
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	36170		5.00000	4.759
80 1,2-Dichlorobenzene	146	9.828	9.828	(1.035)	132187		10.0000	8.729
81 1,2-Dibromo 3-Chloropropane	75	10.439	10.439	(1.099)	9330		10.0000	8.408
83 Hexachloro 1,3-Butadiene	225	10.938	10.938	(1.152)	28276		10.0000	9.407
84 1,2,4-Trichlorobenzene	180	10.965	10.965	(1.154)	78489		10.0000	8.492
85 Naphthalene	128	11.220	11.220	(1.181)	130485		10.0000	8.151
86 1,2,3-Trichlorobenzene	180	11.363	11.363	(1.196)	54004		10.0000	7.522

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181903G.D Calibration Time: 10:09
 Lab Smp Id: SHG0265-ICV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	69628	-5.51
37 1,4-Difluorobenze	116116	58058	232232	108714	-6.37
53 d5-Chlorobenzene	124912	62456	249824	127328	1.93
76 d4-1,4-Dichlorobe	77169	38585	154338	81014	4.98

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.10
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V307181903G.D

Lab ID: SHG0265-ICV1

nt3.i, 20190718.b\8260C071619.m, 18-JUL-2019 10:09

RT	CO-ELUTION COMPOUNDS
5.068	Dibromofluoromethane and 1,1,1-Trichloroethane

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.623	0.617	0.0057	Acrolein
0.696	0.674	0.0213	Acetone
0.714	0.708	0.0065	Methyl tert butyl ether
0.804	0.797	0.0063	Acrylonitrile
0.834	0.829	0.0052	Vinyl Acetate
0.960	0.955	0.0050	2-Butanone

No RRT check. Ccal file.

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

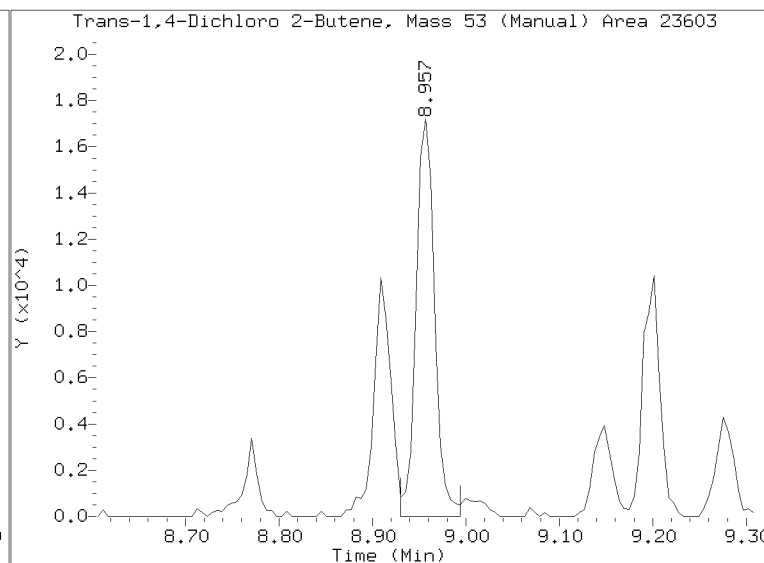
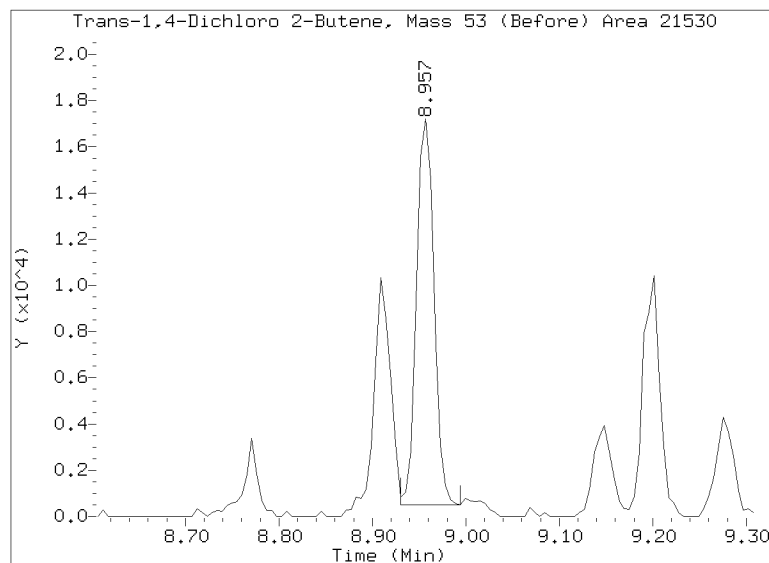
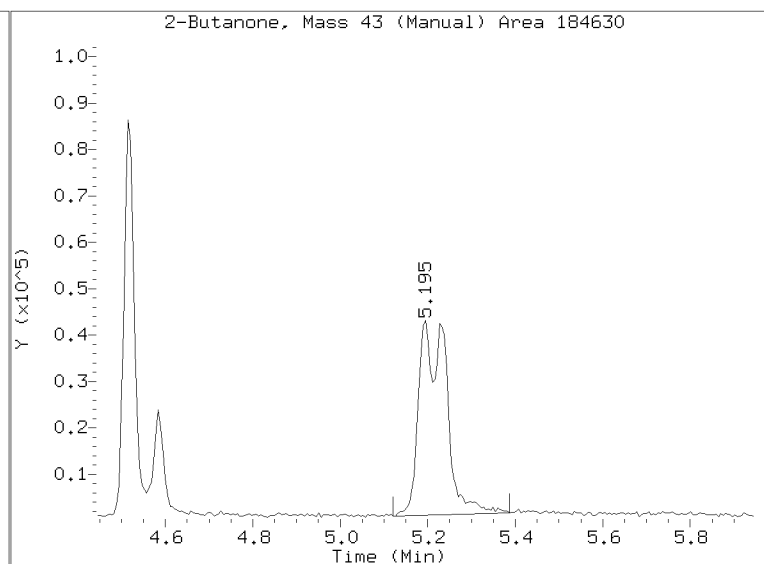
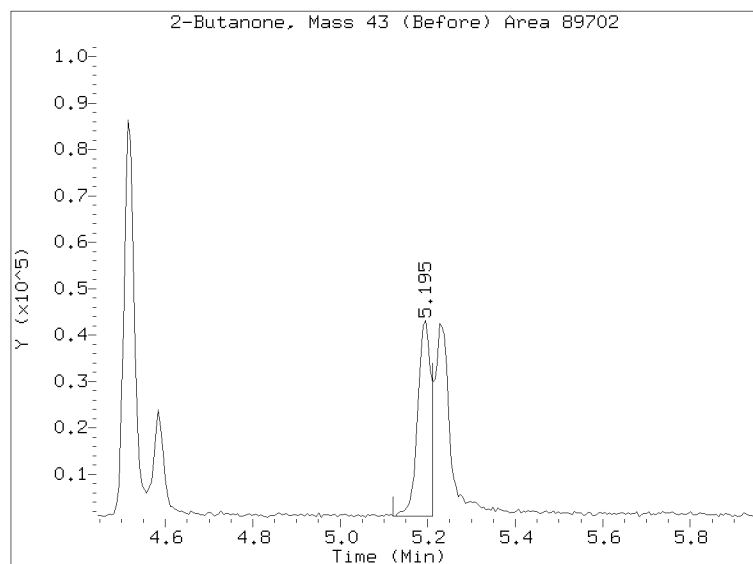
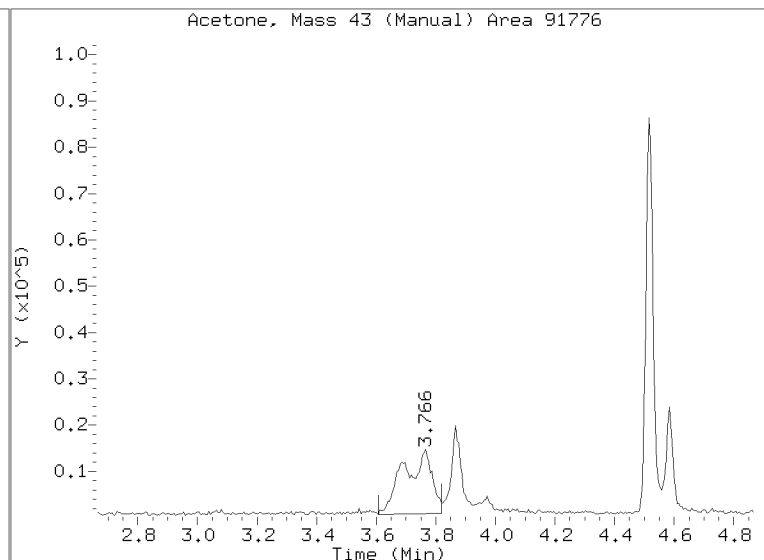
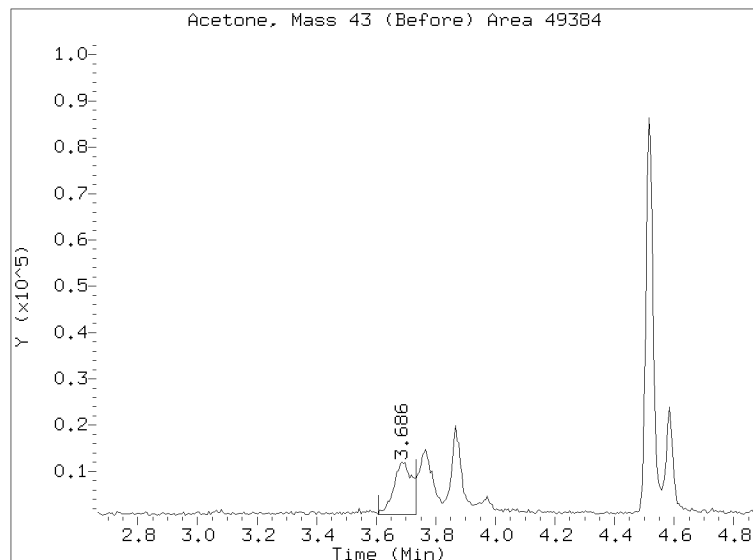
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190718.b/V307181903.D

Injection Date: 18-JUL-2019 10:09

Lab ID:SHG0-ICV1 Client ID:

Report Date: 07/18/2019 10:42



Q-FLAG SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190718.b

Instrument: nt3.i Date: 18-JUL-2019 Method: 8260C071619.m

INITIAL CAL: 16-JUL-2019

Compound	%RSD or R^2

NO Q-FLAGS	

ICV CAL: V307181903G.D 18-JUL-2019 10:09

Compound	%D

Acrolein	-28.0
2,2-Dichloropropane	20.8
1,2,3-Trichlorobenzene	-24.8
2-Pentanone	26.3



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHF0324

Instrument: NT5

Calibration: CF00067

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHF0324-TUN1	NT506241906.D	NA	06/24/19 15:18
8260C 0.2	SHF0324-CAL1	NT506241907.D	NA	06/24/19 16:30
8260C 0.5	SHF0324-CAL2	NT506241908.D	NA	06/24/19 16:52
8260C 1	SHF0324-CAL3	NT506241909.D	NA	06/24/19 17:14
8260C 2	SHF0324-CAL4	NT506241910.D	NA	06/24/19 17:37
8260C 10	SHF0324-CAL5	NT506241911.D	NA	06/24/19 17:59
8260C 20	SHF0324-CAL6	NT506241912.D	NA	06/24/19 18:22
8260C 40	SHF0324-CAL7	NT506241913.D	NA	06/24/19 18:44
8260C 80	SHF0324-CAL8	NT506241914.D	NA	06/24/19 19:06
8260C SCV	SHF0324-SCV1	NT506241915.D	NA	06/24/19 19:28



ANALYSIS SEQUENCE

SHF0324

Instrument: NT5 Element Column ID: RTXVMS
Calibration ID: CF00067 Tune File: bfb.u
EM Voltage: 2000

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHF0324-TUN1	MS Tune	QC		1	H005698	H000166	
SHF0324-CAL1	8260C 0.2	QC		2	H006204	H000166	
SHF0324-CAL2	8260C 0.5	QC		3	H006205	H000166	
SHF0324-CAL3	8260C 1	QC		4	H006206	H000166	
SHF0324-CAL4	8260C 2	QC		5	H006207	H000166	
SHF0324-CAL5	8260C 10	QC		6	H006208	H000166	
SHF0324-CAL6	8260C 20	QC		7	H006209	H000166	
SHF0324-CAL7	8260C 40	QC		8	H006211	H000166	
SHF0324-CAL8	8260C 80	QC		9	H006212	H000166	
SHF0324-SCV1	8260C SCV	QC		10	H006213	H000166	



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0192

Instrument: NT5

Calibration: CF00067

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0192-TUN1	NT507121902.D	NA	07/12/19 11:46
VOA 10	SHG0192-ICV1	NT507121903.D	NA	07/12/19 12:25
LCS	BHG0316-BS1	NT507121903A.D	Solid	07/12/19 12:25
LCS Dup	BHG0316-BSD1	NT507121904A.D	Solid	07/12/19 13:05
Blank	BHG0316-BLK1	NT507121905.D	Solid	07/12/19 13:27
SO-01-190711	19G0163-02	NT507121906.D	Solid	07/12/19 14:54
ZZZZZ	19G0111-01RE1	NT507121907.D	Solid	07/12/19 15:16
ZZZZZ	19G0109-01RE1	NT507121908.D	Solid	07/12/19 15:39
ZZZZZ	19G0165-02	NT507121909.D	Solid	07/12/19 16:11
ZZZZZ	19G0165-03	NT507121910.D	Solid	07/12/19 16:34
ZZZZZ	19G0165-04	NT507121911.D	Solid	07/12/19 16:56
ZZZZZ	19G0165-05	NT507121912.D	Solid	07/12/19 17:18
ZZZZZ	19G0165-06	NT507121913.D	Solid	07/12/19 17:41
ZZZZZ	19G0165-07	NT507121914.D	Solid	07/12/19 18:03
ZZZZZ	19G0165-08	NT507121915.D	Solid	07/12/19 18:26
ZZZZZ	19G0165-09	NT507121916.D	Solid	07/12/19 18:48
SO-02-190711	19G0163-03	NT507121917.D	Solid	07/12/19 19:11
SO-03-190711	19G0163-04	NT507121918.D	Solid	07/12/19 19:33
SO-04-190711	19G0163-05	NT507121919.D	Solid	07/12/19 19:56
SO-05-190711	19G0163-06	NT507121920.D	Solid	07/12/19 20:18
SO-06-190711	19G0163-07	NT507121921.D	Solid	07/12/19 20:41
SO-07-190711	19G0163-08	NT507121922.D	Solid	07/12/19 21:03
SO-08-190711	19G0163-09	NT507121923.D	Solid	07/12/19 21:25
SO-09-190711	19G0163-10	NT507121924.D	Solid	07/12/19 21:47
SO-01-190711	BHG0316-MS1	NT507121925.D	Solid	07/12/19 22:10
SO-01-190711	BHG0316-MSD1	NT507121926.D	Solid	07/12/19 22:32
ZZZZZ	19G0109-01	NT507121927.D	Solid	07/12/19 22:55
ZZZZZ	19G0111-01	NT507121928.D	Solid	07/12/19 23:17
CCV	SHG0192-CCV1	NT507121929.D	NA	07/12/19 23:40

Checklist for SEQUENCE SHG0192

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
1 Samples have no Bubbles/Headspace of note for all Workorders	YES	PAB	07/15/2019
2 PH <=2 / 5035 Preserved for all Workorders Comments: <i>19G0109-01, 19G0111-01 unpreserved</i>	NO	PAB	07/15/2019
3 BFB abundance and time criteria met	YES	PAB	07/15/2019
4 Narrate all Internal Standard areas not within 50-200% for all affected Workorders Comments: <i>19G0163-04- IS d4 1,4DCB out low</i>	YES	PAB	07/17/2019
5 Retention times within windows and coelution summary checked for all Workorders	YES	PAB	07/15/2019
6 Rationale provided for all manual Integrations not done for baseline corrections per SOP 1021s	YES	PAB	07/15/2019
7 Narrate any Workorders where the Project specific requirements have not been met	NA	PAB	07/15/2019
8 Trip Blank, Field Blank and (or) Holding Blank are below MRL for all Analytes	NA	PAB	07/15/2019
9 Narrate Samples per Workorder that will require more than one analysis to be reported due to dilutions or re-analysis Comments: <i>19G0109-01, 19G0111-01 need further dilution for E flags- samples were not run low level due to strong odor and high background in med level runs</i> <i>19G0163-04 needs rerun for IS/SS low</i>	YES	PAB	07/15/2019
10 Verify that all samples requiring a dilution or re-analysis have been added to another batch or sequence Comments: <i>BHG0319</i> <i>BHG0418</i>	YES	PAB	07/15/2019
11 Extraction basis, sample prep, dilution factor, and total solids are correctly entered. Comments: <i>19G0109, 19G0111 run 50x and rerun 250x</i>	YES	PAB	07/15/2019
12 AUTOCHECK: Blank checked for exceedence of criteria	YES *	PAB	07/15/2019
13 AUTOCHECK: Check blank spike recovery	YES *	PAB	07/15/2019
14 AUTOCHECK: Check blank spike/blank spike duplicate RPD. If exceeded include outliers in exception report.	YES *	PAB	07/15/2019
15 AUTOCHECK: Compounds in method designated as blank spike compounds are present	YES *	PAB	07/15/2019
16 AUTOCHECK: Check %RPD between sample and sample duplicate	NA *	PAB	07/15/2019
17 AUTOCHECK: Matrix spike recoveries within limits Comments: <i>Matrix Spike Recovery for 1,1,1,2-Tetrachloroethane (63.2%) was outside acceptance limits (80-120) in BHG0316-MS1 for 8260C VOA</i> <i>Matrix Spike Recovery for 1,1,2,2-Tetrachloroethane (61.1%) was outside acceptance limits (74-120) in BHG0316-MS1 for 8260C VOA</i>	NO *	PAB	07/17/2019

* = Indicates Automated Response from Element DataSyst

Printed: 7/29/2019

Checklist for SEQUENCE SHG0192

Checklist: Analyst Checklist-VOA(rev3)

#	Checklist Item	Response	Analyst Initials	Date
	<i>Matrix Spike Recovery for 1,1,2-Trichloroethane (68.8%) was outside acceptance limits (79-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2,3-Trichlorobenzene (12.3%) was outside acceptance limits (68-132) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2,3-Trichloropropane (64.6%) was outside acceptance limits (73-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2,4-Trichlorobenzene (15.4%) was outside acceptance limits (66-140) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2,4-Trimethylbenzene (52.9%) was outside acceptance limits (75-121) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2-Dibromo-3-chloropropane (43.3%) was outside acceptance limits (65-126) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2-Dibromoethane (67.0%) was outside acceptance limits (80-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2-Dichlorobenzene (34.6%) was outside acceptance limits (76-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,3,5-Trimethylbenzene (58.8%) was outside acceptance limits (74-122) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,3-Dichlorobenzene (37.9%) was outside acceptance limits (75-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,3-Dichloropropane (73.2%) was outside acceptance limits (78-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,4-Dichlorobenzene (37.2%) was outside acceptance limits (73-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 2-Chlorotoluene (56.5%) was outside acceptance limits (75-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 4-Chlorotoluene (50.8%) was outside acceptance limits (69-124) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 4-Isopropyl Toluene (60.2%) was outside acceptance limits (75-125) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Acetone (144%) was outside acceptance limits (48-137) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Acrolein (24.7%) was outside acceptance limits (59-140) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Bromobenzene (50.8%) was outside acceptance limits (76-120) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Bromoform (61.8%) was outside acceptance limits (64-128) in BHG0316-MSI for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Chlorobenzene (55.0%) was outside acceptance limits (78-120) in BHG0316-MSI for 8260C</i>			

* = Indicates Automated Response from Element DataSyst

Printed: 7/29/2019

1610 of 3146

Checklist for SEQUENCE SHG0192

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
VOA			
<i>Matrix Spike Recovery for cis-1,3-Dichloropropene (76.3%) was outside acceptance limits (80-120) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Dibromochloromethane (64.8%) was outside acceptance limits (74-125) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Ethylbenzene (63.4%) was outside acceptance limits (80-125) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Hexachloro-1,3-Butadiene (33.1%) was outside acceptance limits (67-133) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for m,p-Xylene (58.4%) was outside acceptance limits (76-121) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Naphthalene (11.3%) was outside acceptance limits (69-125) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for n-Butylbenzene (48.9%) was outside acceptance limits (73-130) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for n-Propylbenzene (67.5%) was outside acceptance limits (72-124) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for o-Xylene (55.9%) was outside acceptance limits (67-132) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for s-Butylbenzene (60.9%) was outside acceptance limits (70-128) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Styrene (22.5%) was outside acceptance limits (80-120) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for t-Butylbenzene (65.7%) was outside acceptance limits (72-122) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Tetrachloroethene (68.9%) was outside acceptance limits (74-124) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Toluene (69.5%) was outside acceptance limits (75-120) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for trans-1,3-Dichloropropene (70.7%) was outside acceptance limits (80-124) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for trans-1,4-Dichloro 2-Butene (63.4%) was outside acceptance limits (65-125) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Trichloroethene (77.4%) was outside acceptance limits (80-120) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Vinyl Acetate (51.8%) was outside acceptance limits (66-141) in BHG0316-MSI for 8260C VOA</i>			
<i>Matrix Spike Recovery for Xylenes, total (57.6%) was outside acceptance limits (67-132) in BHG0316-MSI for 8260C VOA</i>			

* = Indicates Automated Response from Element DataSyst

Printed: 7/29/2019

Checklist for SEQUENCE SHG0192

Checklist: Analyst Checklist-VOA(rev3)

#	Checklist Item	Response	Analyst Initials	Date
	<i>Matrix Spike Recovery for 1,1,1,2-Tetrachloroethane (73.9%) was outside acceptance limits (80-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2,3-Trichlorobenzene (15.7%) was outside acceptance limits (68-132) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2,4-Trichlorobenzene (18.7%) was outside acceptance limits (66-140) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2,4-Trimethylbenzene (62.8%) was outside acceptance limits (75-121) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2-Dibromoethane (75.6%) was outside acceptance limits (80-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,2-Dichlorobenzene (42.4%) was outside acceptance limits (76-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,3,5-Trimethylbenzene (67.3%) was outside acceptance limits (74-122) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,3-Dichlorobenzene (46.9%) was outside acceptance limits (75-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 1,4-Dichlorobenzene (46.8%) was outside acceptance limits (73-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 2-Chlorotoluene (68.1%) was outside acceptance limits (75-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 2-Hexanone (144%) was outside acceptance limits (68-122) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 4-Chlorotoluene (61.9%) was outside acceptance limits (69-124) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for 4-Isopropyl Toluene (70.6%) was outside acceptance limits (75-125) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Acetone (148%) was outside acceptance limits (48-137) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Acrolein (21.4%) was outside acceptance limits (59-140) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Bromobenzene (66.4%) was outside acceptance limits (76-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Chlorobenzene (63.9%) was outside acceptance limits (78-120) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Ethylbenzene (71.8%) was outside acceptance limits (80-125) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for Hexachloro-1,3-Butadiene (29.3%) was outside acceptance limits (67-133) in BHG0316-MSD1 for 8260C VOA</i>			
	<i>Matrix Spike Recovery for m,p-Xylene (64.3%) was outside acceptance limits (76-121) in BHG0316-MSD1 for 8260C</i>			

* = Indicates Automated Response from Element DataSyst

Printed: 7/29/2019

1612 of 3146

Checklist for SEQUENCE SHG0192

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
VOA			
<i>Matrix Spike Recovery for Naphthalene (14.2%) was outside acceptance limits (69-125) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Recovery for n-Butylbenzene (52.1%) was outside acceptance limits (73-130) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Recovery for o-Xylene (62.6%) was outside acceptance limits (67-132) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Recovery for s-Butylbenzene (66.5%) was outside acceptance limits (70-128) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Recovery for Styrene (22.6%) was outside acceptance limits (80-120) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Recovery for Toluene (74.9%) was outside acceptance limits (75-120) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Recovery for Vinyl Acetate (40.8%) was outside acceptance limits (66-141) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Recovery for Xylenes, total (63.8%) was outside acceptance limits (67-132) in BHG0316-MSD1 for 8260C VOA</i>			
18 AUTOCHECK: Matrix spike/matrix spike duplicate RPD within limits	NO *	PAB	07/17/2019
Comments:			
<i>Matrix Spike Duplicate RPD for 1,1,2,2-Tetrachloroethane (32.4%) was above the acceptance limit (30) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Duplicate RPD for 1,2,3-Trichloropropane (33.0%) was above the acceptance limit (30) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Duplicate RPD for 1,2-Dibromo-3-chloropropane (42.2%) was above the acceptance limit (30) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Duplicate RPD for 2-Hexanone (45.7%) was above the acceptance limit (30) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Duplicate RPD for Chloroethane (42.6%) was above the acceptance limit (30) in BHG0316-MSD1 for 8260C VOA</i>			
<i>Matrix Spike Duplicate RPD for trans-1,4-Dichloro 2-Butene (32.4%) was above the acceptance limit (30) in BHG0316-MSD1 for 8260C VOA</i>			
19 AUTOCHECK: List of compounds listed as spiked are present	YES *	PAB	07/17/2019
20 AUTOCHECK: Check Surrogate recoveries	NO *	PAB	07/17/2019
Comments:			
<i>Surrogate Recovery for 4-Bromofluorobenzene (75.1%) was outside acceptance limits (80-120) in 19G0163-04 for 8260C VOA</i>			
<i>- Flagged value is not within established control limits.</i>			
<i>*SAMPLE RERUNNING ON NT5*</i>			
21 AUTOCHECK: Checks Surrogate spike list against Analysis	YES *	PAB	07/15/2019
22 Data locked, checklist completed and status is Analyzed (REVIEWER)	YES	BB	07/15/2019

* = Indicates Automated Response from Element DataSyst

Checklist for SEQUENCE SHG0192

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
23 Color warnings have been addressed, narrated and (or) qualified (REVIEWER)	YES	BB	07/15/2019
24 rev_DilutionCheck.rpt and rev_DilutionCheck.exe was run to verify multiple sample results are consistent (REVIEWER)	YES	BB	07/15/2019
25 List of samples in this sequence that will require additional runs-verify reshot created (ANALYST) Comments: 19G0109-01, 19G0111-01, 19G0163-04	YES	PAB	07/15/2019
26 List of samples in this sequence that are re-analysis or dilutions of samples (ANALYST) Comments: 19G0109-01, 19G0111-01	YES	PAB	07/15/2019
27 Additional Notes (ANALYST and REVIEWER)	NA	BB	07/15/2019



ANALYSIS SEQUENCE

SHG0192

Instrument: NT5 Element Column ID: RTXVMS
Calibration ID: CF00067 Tune File: bfb.u
EM Voltage: 2000

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0192-TUN1	MS Tune	QC		1	H005698	H006572	
SHG0192-ICV1	VOA 10	QC		2	H006406	H006572	
BHG0316-BS1	LCS	QC		3		H006572	
BHG0316-BSD1	LCS Dup	QC		4		H006572	
BHG0316-BLK1	Blank	QC		5		H006572	
19G0163-02	SO-01-190711	8260C VOA	F	6		H006572	
19G0165-02	BS-1-1	8260C VOA	D	7		H006572	BTEX only
19G0165-03	SW-1-6	8260C VOA	D	8		H006572	BTEX only
19G0165-04	SW-1-1	8260C VOA	E	9		H006572	BTEX only
19G0165-05	SW-1-2	8260C VOA	D	10		H006572	BTEX only
19G0165-06	SW-1-3	8260C VOA	E	11		H006572	BTEX only
19G0165-07	BS-1-2	8260C VOA	D	12		H006572	BTEX only
19G0165-08	SW-1-4	8260C VOA	D	13		H006572	BTEX only
19G0165-09	SW-1-5	8260C VOA	D	14		H006572	BTEX only
19G0163-03	SO-02-190711	8260C VOA	C	15		H006572	
19G0163-04	SO-03-190711	8260C VOA	C	16		H006572	
19G0163-05	SO-04-190711	8260C VOA	C	17		H006572	
19G0163-06	SO-05-190711	8260C VOA	C	18		H006572	
19G0163-07	SO-06-190711	8260C VOA	C	19		H006572	
19G0163-08	SO-07-190711	8260C VOA	C	20		H006572	
19G0163-09	SO-08-190711	8260C VOA	C	21		H006572	
19G0163-10	SO-09-190711	8260C VOA	C	22		H006572	



ANALYSIS SEQUENCE

SHG0192

Instrument: NT5 Element Column ID: RTXVMS
Calibration ID: CF00067 Tune File: bfb.u
EM Voltage: 2000

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
BHG0316-MS1	Matrix Spike	QC		23		H006572	
BHG0316-MSD1	Matrix Spike Dup	QC		24		H006572	
BHG0319-BS1	LCS	QC		25		H006572	
BHG0319-BSD1	LCS Dup	QC		26		H006572	
BHG0319-BLK1	Blank	QC		27		H006572	
19G0109-01	WWTP Sludge ID# R190051	8260C VOA Solid (MeOH)	B	28		H006572	Billed at 1/2 the analysis price For dilutions
19G0111-01	WWTP Sludge ID#R190050	8260C VOA Solid (MeOH)	B	29		H006572	Billed at 1/2 the analysis price For dilutions
19G0109-01RE1	WWTP Sludge ID# R190051	8260C VOA Solid (MeOH)	B	30		H006572	Billed at 1/2 the analysis price For dilutions
19G0111-01RE1	WWTP Sludge ID#R190050	8260C VOA Solid (MeOH)	B	31		H006572	Billed at 1/2 the analysis price For dilutions
SHG0192-CCV1	CCV	QC		32	H006406	H006572	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190712.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
------	----------	-------	----------	-------	----	----

1	1123	NT507121901.D				1
---	------	---------------	--	--	--	---

2	1146	NT507121902.D	TUN1			1
---	------	---------------	------	--	--	---

3	1225	NT507121903.D	ICV1	1 5.34	410842 5.78	825368 8.26	840463 10.35	463623
---	------	---------------	------	----------	---------------	---------------	---------------	--------

4	1305	NT507121904.D	BSD1	1 5.34	407650 5.78	813111 8.26	827618 10.35	459292
---	------	---------------	------	----------	---------------	---------------	---------------	--------

5	1327	NT507121905.D	BLK1	1 5.34	398855 5.79	792396 8.26	792670 10.35	443934
---	------	---------------	------	----------	---------------	---------------	---------------	--------

6	1454	NT507121906.D	19G0163-02	1 5.34	464385 5.78	958713 8.26	963284 10.35	429377
---	------	---------------	------------	----------	---------------	---------------	---------------	--------

7	1516	NT507121907.D	19G0111-01	1 5.34	443119 5.79	915783 8.26	950075 10.35	535563
---	------	---------------	------------	----------	---------------	---------------	---------------	--------

8	1539	NT507121908.D	19G0109-01	1 5.34	444665 5.79	903475 8.26	931078 10.35	517689
---	------	---------------	------------	----------	---------------	---------------	---------------	--------

9	1611	NT507121909.D	19G0165-02	1 5.34	428264 5.78	879528 8.26	946349 10.35	544943
---	------	---------------	------------	----------	---------------	---------------	---------------	--------

10	1634	NT507121910.D	19G0165-03	1 5.34	452393 5.79	928763 8.26	984182 10.35	562350
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

11	1656	NT507121911.D	19G0165-04	1 5.34	447099 5.79	923804 8.26	970315 10.35	553444
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

12	1718	NT507121912.D	19G0165-05	1 5.34	401077 5.79	841822 8.26	896896 10.35	512784
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

13	1741	NT507121913.D	19G0165-06	1 5.34	401126 5.79	825847 8.26	880088 10.35	502374
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

14	1803	NT507121914.D	19G0165-07	1 5.34	382664 5.79	805593 8.26	867990 10.35	493681
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

15	1826	NT507121915.D	19G0165-08	1 5.34	405447 5.79	839251 8.26	877227 10.35	503111
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

16	1848	NT507121916.D	19G0165-09	1 5.34	404197 5.79	845381 8.26	883837 10.35	502534
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

17	1911	NT507121917.D	19G0163-03	1 5.34	388039 5.79	800359 8.26	807242 10.35	380080
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

18	1933	NT507121918.D	19G0163-04	1 5.34	390614 5.79	776940 8.26	620210 10.35	187826
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

19	1956	NT507121919.D	19G0163-05	1 5.34	418012 5.79	853611 8.26	814297 10.35	343123
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

20	2018	NT507121920.D	19G0163-06	1 5.34	375933 5.79	751937 8.26	747181 10.35	356380
----	------	---------------	------------	----------	---------------	---------------	---------------	--------

21	2041	NT507121921.D	19G0163-07	1	5.34	394139	5.79	807615	8.26	781629	10.35	331296
22	2103	NT507121922.D	19G0163-08	1	5.34	376819	5.79	765748	8.26	770260	10.35	369041
23	2125	NT507121923.D	19G0163-09	1	5.34	391125	5.79	780807	8.26	756553	10.35	331798
24	2147	NT507121924.D	19G0163-10	1	5.34	382536	5.79	773658	8.26	756484	10.35	326779
25	2210	NT507121925.D	BHG0316-MS1	1	5.34	399691	5.79	797013	8.26	775582	10.35	350044
26	2232	NT507121926.D	BHG0316-MSD1	1	5.33	464791	5.79	805733	8.26	747792	10.36	307805
27	2255	NT507121927.D	19G0109-01	1	5.34	409462	5.79	823553	8.26	836417	10.35	493961
28	2317	NT507121928.D	19G0111-01	1	5.34	408708	5.79	810307	8.26	819620	10.35	480257
29	2340	NT507121929.D	CCV1	1	5.34	416115	5.79	818409	8.26	828891	10.35	473920

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190712.b

ARI Job No.: shg0 Method: bfb8260.m Instrument: nt5.i Date: 12-JUL-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1146	NT507121902.D	shg0192-TUN1		1	NO MANUAL INTEGRATION
1225	NT507121903.D	shg0192-ICV1		1	NO MANUAL INTEGRATION
1225	NT507121903A.D	bhg0316-bs1		1	NO MANUAL INTEGRATION
1225	NT507121903B.D	bhg0319-bs1		1	NO MANUAL INTEGRATION
1305	NT507121904.D	bhg0319-BSD1		1	NO MANUAL INTEGRATION
1305	NT507121904A.D	bhg0316-BSD1		1	NO MANUAL INTEGRATION
1327	NT507121905.D	bhg0316-BLK1		1	NO MANUAL INTEGRATION
1327	NT507121905A.D	bhg0319-BLK1		1	NO MANUAL INTEGRATION
1454	NT507121906.D	19G0163-02		1	NO MANUAL INTEGRATION
1516	NT507121907.D	19G0111-01RE1		1	Ethyl Benzene,
1539	NT507121908.D	19G0109-01RE1		1	Ethyl Benzene, 2-Pentanone,
1611	NT507121909.D	19G0165-02		1	NO MANUAL INTEGRATION
1634	NT507121910.D	19G0165-03		1	NO MANUAL INTEGRATION
1656	NT507121911.D	19G0165-04		1	NO MANUAL INTEGRATION
1718	NT507121912.D	19G0165-05		1	NO MANUAL INTEGRATION
174	NT507121913.D	19G0165-06		1	NO MANUAL INTEGRATION
180	NT507121914.D	19G0165-07		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190712.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1826	NT507121915.D	19G0165-08	1	Acetone,	
1848	NT507121916.D	19G0165-09	1	NO MANUAL INTEGRATION	
1911	NT507121917.D	19G0163-03	1	Methylene Chloride, 4-Methyl-2-Pentanone,	
1933	NT507121918.D	19G0163-04	1	NO MANUAL INTEGRATION	
1956	NT507121919.D	19G0163-05	1	NO MANUAL INTEGRATION	
2018	NT507121920.D	19G0163-06	1	NO MANUAL INTEGRATION	
2041	NT507121921.D	19G0163-07	1	NO MANUAL INTEGRATION	
2103	NT507121922.D	19G0163-08	1	NO MANUAL INTEGRATION	
2125	NT507121923.D	19G0163-09	1	NO MANUAL INTEGRATION	
2147	NT507121924.D	19G0163-10	1	NO MANUAL INTEGRATION	
2210	NT507121925.D	BHG0316-MS1	1	NO MANUAL INTEGRATION	
2232	NT507121926.D	BHG0316-MSD1	1	NO MANUAL INTEGRATION	
2255	NT507121927.D	19G0109-01	1	Ethyl Benzene, N-Propyl Benzene,	
2317	NT507121928.D	19G0111-01	1	Ethyl Benzene,	
2340	NT507121929.D	shg0192-CCV1	1	NO MANUAL INTEGRATION	

Security Status Report

Date: 15-Jul-2019 13:40

NT507121901.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121902.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121903.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121903A.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121903B.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121904.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121904A.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121905.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121905A.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121906.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121907.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121908.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121909.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121910.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121911.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121912.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121913.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121914.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121915.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121916.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121917.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121918.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121919.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121920.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121921.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121922.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121923.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121924.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121925.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121926.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121927.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121928.D	Data	Locked	patrickb,	15-Jul-2019	13:40
NT507121929.D	Data	Locked	patrickb,	15-Jul-2019	13:40



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0218

Instrument: NT3

Calibration: CG00042

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0218-TUN1	V307161917.D	NA	07/16/19 15:54
8260C 0.2	SHG0218-CAL1	V307161919.D	NA	07/16/19 17:13
8260C 0.5	SHG0218-CAL2	V307161920.D	NA	07/16/19 17:40
8260C 1	SHG0218-CAL3	V307161921.D	NA	07/16/19 18:06
8260C 2	SHG0218-CAL4	V307161922.D	NA	07/16/19 18:33
8260C 10	SHG0218-CAL5	V307161923.D	NA	07/16/19 18:59
8260C 20	SHG0218-CAL6	V307161924.D	NA	07/16/19 19:26
8260C 40	SHG0218-CAL7	V307161925.D	NA	07/16/19 19:53
8260C 80	SHG0218-CAL8	V307161926.D	NA	07/16/19 20:19
Initial Cal Blank	SHG0218-ICB1	V307161927.D	NA	07/16/19 20:46
8260C SCV	SHG0218-SCV1	V307161928.D	NA	07/16/19 21:12



ANALYSIS SEQUENCE

SHG0218

Instrument: NT3 Element Column ID: 1300725RTXV
Calibration ID: CG00042 Tune File: bfb.u
EM Voltage: 1929

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0218-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0218-CAL1	8260C 0.2	QC		2	H006796	H001679	
SHG0218-CAL2	8260C 0.5	QC		3	H006797	H001679	
SHG0218-CAL3	8260C 1	QC		4	H006798	H001679	
SHG0218-CAL4	8260C 2	QC		5	H006799	H001679	
SHG0218-CAL5	8260C 10	QC		6	H006800	H001679	
SHG0218-CAL6	8260C 20	QC		7	H006801	H001679	
SHG0218-CAL7	8260C 40	QC		8	H006802	H001679	
SHG0218-CAL8	8260C 80	QC		9	H006803	H001679	
SHG0218-ICB1	Initial Cal Blank	QC		10		H001679	
SHG0218-SCV1	8260C SCV	QC		11	H006804	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190716x.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1	1554	V307161917.D	SHG0218-TUN1			1
2	1647	V307161918.D	RINSE			
3	1713	V307161919.D	SHG0218-CAL1			
4	1740	V307161920.D	SHG0218-CAL2			
5	1806	V307161921.D	SHG0218-CAL3			
6	1833	V307161922.D	SHG0218-CAL4			
7	1859	V307161923.D	SHG0218-CAL5			
8	1926	V307161924.D	SHG0218-CAL6			
9	1953	V307161925.D	SHG0218-CAL7			
10	2019	V307161926.D	SHG0218-CAL8			
11	2046	V307161927.D	SHG0218-ICB1			
12	2112	V307161928.D	SHG0218-SCV1			

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190716x.b

Instrument: nt3.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1713	V307161919.D	SHG0218-CAL1	1	Vinyl Chloride, Bromoethane, Acrolein, Acetone, Carbon Tetrachloride, 1,1,1-Trichloroethane, 1,2-Dichloroethane, Bromoform,
1740	V307161920.D	SHG0218-CAL2	1	Chloromethane, Iodomethane, Methylene Chloride, 1,2-Dibromo 3-Chloropropane,
1806	V307161921.D	SHG0218-CAL3	1	Acrolein, Acetone, 1,2-Dibromo 3-Chloropropane,
1833	V307161922.D	SHG0218-CAL4	1	NO MANUAL INTEGRATION
1859	V307161923.D	SHG0218-CAL5	1	Vinyl Chloride, Bromoethane, Trans-1,4-Dichloro 2-Butene,
1926	V307161924.D	SHG0218-CAL6	1	NO MANUAL INTEGRATION
1953	V307161925.D	SHG0218-CAL7	1	NO MANUAL INTEGRATION
2019	V307161926.D	SHG0218-CAL8	1	Pentafluorobenzene,
2046	V307161927.D	SHG0218-ICB1	1	NO MANUAL INTEGRATION
2112	V307161928.D	SHG0218-SCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 17-Jul-2019 08:39

V307161917.D	Data Locked	paul,	17-Jul-2019	08:39
V307161918.D	Data Locked	paul,	17-Jul-2019	08:39
V307161919.D	Data Locked	paul,	17-Jul-2019	08:39
V307161920.D	Data Locked	paul,	17-Jul-2019	08:39
V307161921.D	Data Locked	paul,	17-Jul-2019	08:39
V307161922.D	Data Locked	paul,	17-Jul-2019	08:39
V307161923.D	Data Locked	paul,	17-Jul-2019	08:39
V307161924.D	Data Locked	paul,	17-Jul-2019	08:39
V307161925.D	Data Locked	paul,	17-Jul-2019	08:39
V307161926.D	Data Locked	paul,	17-Jul-2019	08:39
V307161927.D	Data Locked	paul,	17-Jul-2019	08:39
V307161928.D	Data Locked	paul,	17-Jul-2019	08:39



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0229

Instrument: NT5

Calibration: CF00067

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0229-TUN1	NT507161902X.D	NA	07/16/19 14:19
VOA 10	SHG0229-ICV1	NT507161903X.D	NA	07/16/19 14:57
LCS	BHG0391-BS1	NT507161903AX.D	Solid	07/16/19 14:57
ZZZZZ	BHG0392-BS1	NT507161903BX.D	Solid	07/16/19 14:57
LCS Dup	BHG0391-BSD1	NT507161904.D	Solid	07/16/19 15:46
ZZZZZ	BHG0392-BSD1	NT507161904A.D	Solid	07/16/19 15:46
Blank	BHG0391-BLK1	NT507161905.D	Solid	07/16/19 16:08
ZZZZZ	BHG0392-BLK1	NT507161905A.D	Solid	07/16/19 16:08
ZZZZZ	19G0197-02	NT507161906.D	Solid	07/16/19 16:44
SO-10-190711	19G0163-11	NT507161907.D	Solid	07/16/19 17:06
SO-10-190711D	19G0163-12	NT507161908.D	Solid	07/16/19 17:28
SO-11-190711	19G0163-13	NT507161909.D	Solid	07/16/19 17:50
SO-12-190711	19G0163-14	NT507161910.D	Solid	07/16/19 18:12
SO-13-190711	19G0163-15	NT507161911.D	Solid	07/16/19 18:35
ZZZZZ	19G0196-01	NT507161912.D	Solid	07/16/19 18:57
CCV	SHG0229-CCV1	NT507161916.D	NA	07/16/19 20:27

Checklist for SEQUENCE SHG0229

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
1 Samples have no Bubbles/Headspace of note for all Workorders	YES	PAB	07/17/2019
2 PH <=2 / 5035 Preserved for all Workorders Comments: <i>19G0196 unpreserved</i>	NO	PAB	07/17/2019
3 BFB abundance and time criteria met	YES	PAB	07/17/2019
4 Narrate all Internal Standard areas not within 50-200% for all affected Workorders Comments: <i>19G0163-12 - IS d4 1,4DCB out low-</i> <i>19G0163-11- IS d4 1,4DCB is flagged out low in DET table but is in control in raw data - IS basis double checked</i>	YES	PAB	07/17/2019
5 Retention times within windows and coelution summary checked for all Workorders	YES	PAB	07/17/2019
6 Rationale provided for all manual Integrations not done for baseline corrections per SOP 1021s	YES	PAB	07/17/2019
7 Narrate any Workorders where the Project specific requirements have not been met	NA	PAB	07/17/2019
8 Trip Blank, Field Blank and (or) Holding Blank are below MRL for all Analytes	NA	PAB	07/17/2019
9 Narrate Samples per Workorder that will require more than one analysis to be reported due to dilutions or re-analysis Comments: <i>19G0163-12 needs rerun for IS/SS out low</i>	YES	PAB	07/17/2019
10 Verify that all samples requiring a dilution or re-analysis have been added to another batch or sequence Comments: <i>BHG0418</i>	YES	PAB	07/17/2019
11 Extraction basis, sample prep, dilution factor, and total solids are correctly entered. Comments: <i>19G0185-02,03 run 5000x med level</i>	YES	PAB	07/17/2019
12 AUTOCHECK: Blank checked for exceedence of criteria	YES *	PAB	07/17/2019
13 AUTOCHECK: Check blank spike recovery	YES *	PAB	07/17/2019
14 AUTOCHECK: Check blank spike/blank spike duplicate RPD. If exceeded include outliers in exception report.	YES *	PAB	07/17/2019
15 AUTOCHECK: Compounds in method designated as blank spike compounds are present	YES *	PAB	07/17/2019
16 AUTOCHECK: Check %RPD between sample and sample duplicate	NA *	PAB	07/17/2019
17 AUTOCHECK: Matrix spike recoveries within limits	NA *	PAB	07/17/2019
18 AUTOCHECK: Matrix spike/matrix spike duplicate RPD within limits	NA *	PAB	07/17/2019
19 AUTOCHECK: List of compounds listed as spiked are present	NA *	PAB	07/17/2019
20 AUTOCHECK: Check Surrogate recoveries Comments: <i>Surrogate Recovery for 4-Bromofluorobenzene (76.4%) was outside acceptance limits (80-120) in 19G0163-12 for 8260C VOA</i> <i>- Flagged value is not within established control limits.</i>	NO *	PAB	07/17/2019

* = Indicates Automated Response from Element DataSyst

Printed: 7/29/2019

1628 of 3146

Checklist for SEQUENCE SHG0229
Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
<i>*RERUNNING ON NT5*</i>			
21 AUTOCHECK: Checks Surrogate spike list against Analysis	YES *	PAB	07/17/2019
22 Data locked, checklist completed and status is Analyzed (REVIEWER)	YES	BB	07/17/2019
23 Color warnings have been addressed, narrated and (or) qualified (REVIEWER)	YES	BB	07/17/2019
24 rev_DilutionCheck.rpt and rev_DilutionCheck.exe was run to verify multiple sample results are consistent (REVIEWER)	NA	BB	07/17/2019
25 List of samples in this sequence that will require additional runs-verify reshot created (ANALYST)	YES	PAB	07/17/2019
Comments: <i>19G0163-12</i>			
26 List of samples in this sequence that are re-analysis or dilutions of samples (ANALYST)	NA	PAB	07/17/2019
27 Additional Notes (ANALYST and REVIEWER)	NA	BB	07/17/2019



ANALYSIS SEQUENCE

SHG0229

Instrument: NT5 Element Column ID: RTXVMS
Calibration ID: CF00067 Tune File: bfb.u
EM Voltage: 2000

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0229-TUN1	MS Tune	QC		1	H005698	H006572	
SHG0229-ICV1	VOA 10	QC		2	H006406	H006572	
BHG0391-BS1	LCS	QC		3		H006572	
BHG0391-BSD1	LCS Dup	QC		4		H006572	
BHG0391-BLK1	Blank	QC		5		H006572	
19G0197-02	SW-2-4a	8260C VOA	E	6		H006572	BTEX only
19G0163-11	SO-10-190711	8260C VOA	D	7		H006572	
19G0163-12	SO-10-190711D	8260C VOA	C	8		H006572	
19G0163-13	SO-11-190711	8260C VOA	C	9		H006572	
19G0163-14	SO-12-190711	8260C VOA	C	10		H006572	
19G0163-15	SO-13-190711	8260C VOA	C	11		H006572	
BHG0392-BS1	LCS	QC		12		H006572	
BHG0392-BSD1	LCS Dup	QC		13		H006572	
BHG0392-BLK1	Blank	QC		14		H006572	
19G0196-01	N190028	8260C VOA	A	15		H006572	
BHG0393-BS1	LCS	QC		16		H006572	
BHG0393-BSD1	LCS Dup	QC		17		H006572	
BHG0393-BLK1	Blank	QC		18		H006572	
19G0185-02	TK 472 1	8260C VOA Solid (MeOH)	A	19		H006572	
19G0185-03	TK 472 2	8260C VOA Solid (MeOH)	A	20		H006572	
SHG0229-CCV1	CCV	QC		21	H006406	H006572	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190716.b

Time	Filename	LabID	ClientID	Vial#	pH	DF		
1 1357	NT507161901.D					1		
2 1419	NT507161902.D	TUN1				1		
3 1457	NT507161903.D	ICV1		1 5.34	440880 5.79	873744 8.26	864891 10.35	473545
4 1546	NT507161904.D	bgh0391-BSD1		1 5.34	420981 5.79	810064 8.26	794874 10.35	440087
5 1608	NT507161905.D	bhg0391-BLK1		1 5.34	378042 5.79	734085 8.26	713115 10.35	395090
6 1644	NT507161906.D	19G0197-02		1 5.34	409788 5.79	813264 8.26	825945 10.35	454388
7 1706	NT507161907.D	19G0163-11		1 5.34	377824 5.79	714797 8.26	583822 10.35	211590
8 1728	NT507161908.D	19G0163-12		1 5.34	371285 5.79	708943 8.26	553204 10.35	183280
9 1750	NT507161909.D	19G0163-13		1 5.34	377461 5.79	749665 8.26	676487 10.35	239088
10 1812	NT507161910.D	19G0163-14		1 5.34	377146 5.79	752490 8.26	726073 10.35	296903
11 1835	NT507161911.D	19G0163-15		1 5.34	372509 5.79	738042 8.26	721971 10.35	333845
12 1857	NT507161912.D	19G0196-01		1 5.34	348170 5.79	675922 8.26	601064 10.35	255396
13 1920	NT507161913.D	19G0196-01		1 5.34	406158 5.79	804470 8.26	824046 10.35	449605
14 1942	NT507161914.D	19G0185-02		1 5.34	364222 5.79	720264 8.26	722347 10.35	420723
15 2005	NT507161915.D	19G0185-03		1 5.34	354992 5.79	677068 8.26	668220 10.36	386272
16 2027	NT507161916.D	CCV1		1 5.34	373036 5.79	740863 8.26	741440 10.36	422109

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190716.b

ARI Job No.: shg0 Method: bfb8260.m Instrument: nt5.i Date: 16-JUL-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1419	NT507161902.D	shg0229-TUN1		1	NO MANUAL INTEGRATION
1457	NT507161903.D	shg0229-ICV1		1	NO MANUAL INTEGRATION
1457	NT507161903A.D	bhg0391-bs1		1	NO MANUAL INTEGRATION
1457	NT507161903B.D	bhg0392-bs1		1	NO MANUAL INTEGRATION
1457	NT507161903C.D	bhg0393-bs1		1	NO MANUAL INTEGRATION
1546	NT507161904.D	bgh0391-BSD1		1	NO MANUAL INTEGRATION
1546	NT507161904A.D	bgh0392-BSD1		1	NO MANUAL INTEGRATION
1546	NT507161904B.D	bgh0393-BSD1		1	NO MANUAL INTEGRATION
1608	NT507161905.D	bhg0391-BLK1		1	NO MANUAL INTEGRATION
1608	NT507161905A.D	bhg0392-BLK1		1	NO MANUAL INTEGRATION
1608	NT507161905B.D	bhg0393-BLK1		1	NO MANUAL INTEGRATION
1644	NT507161906.D	19G0197-02		1	NO MANUAL INTEGRATION
1706	NT507161907.D	19G0163-11		1	NO MANUAL INTEGRATION
1728	NT507161908.D	19G0163-12		1	NO MANUAL INTEGRATION
1750	NT507161909.D	19G0163-13		1	NO MANUAL INTEGRATION
1811	NT507161910.D	19G0163-14		1	NO MANUAL INTEGRATION
1833	NT507161911.D	19G0163-15		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190716.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1857	NT507161912.D	19G0196-01		1	NO MANUAL INTEGRATION
1942	NT507161914.D	19G0185-02		1	NO MANUAL INTEGRATION
2005	NT507161915.D	19G0185-03		1	NO MANUAL INTEGRATION
2027	NT507161916.D	shg0229-CCV1		1	NO MANUAL INTEGRATION

Security Status Report

Date: 17-Jul-2019 13:44

NT507161901.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161902.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161903.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161903A.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161903B.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161903C.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161904.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161904A.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161904B.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161905.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161905A.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161905B.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161906.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161907.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161908.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161909.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161910.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161911.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161912.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161913.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161914.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161915.D	Data	Locked	patrickb,	17-Jul-2019	13:44
NT507161916.D	Data	Locked	patrickb,	17-Jul-2019	13:44



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0265

Instrument: NT3

Calibration: CG00042

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0265-TUN1	V307181902G.D	NA	07/18/19 09:31
VOA 10	SHG0265-ICV1	V307181903G.D	NA	07/18/19 10:09
LCS	BHG0439-BS1	V307181903GLCS.D	Water	07/18/19 10:09
LCS Dup	BHG0439-BSD1	V307181904G.D	Water	07/18/19 10:36
VOA 0.5	SHG0265-LCV1	V307181907G.D	NA	07/18/19 11:56
VOA 1.0	SHG0265-LCV2	V307181908G.D	NA	07/18/19 12:22
Blank	BHG0439-BLK1	V307181909G.D	Water	07/18/19 12:49
ZZZZZ	19G0106-01	V307181910G.D	Water	07/18/19 13:15
TB-SO-190711	19G0163-16	V307181911G.D	Water	07/18/19 13:42
ZZZZZ	19G0224-01	V307181912G.D	Water	07/18/19 14:08
ZZZZZ	19G0157-17	V307181913G.D	Water	07/18/19 14:35
ZZZZZ	19G0157-18	V307181914G.D	Water	07/18/19 15:04
ZZZZZ	19G0118-11RE1	V307181915G.D	Water	07/18/19 15:32
ZZZZZ	19G0224-02	V307181916G.D	Water	07/18/19 15:58
ZZZZZ	19G0224-03	V307181917G.D	Water	07/18/19 16:25
ZZZZZ	19G0224-04	V307181918G.D	Water	07/18/19 16:51
CCV	SHG0265-CCV1	V307181930G.D	NA	07/18/19 22:11

Checklist for SEQUENCE SHG0265

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
1 Samples have no Bubbles/Headspace of note for all Workorders	YES	PKC	07/19/2019
2 PH <=2 / 5035 Preserved for all Workorders Comments: <i>19G0157 samples in unpreserved vials : pH 7.</i>	NO	PKC	07/19/2019
3 BFB abundance and time criteria met	YES	PKC	07/19/2019
4 Narrate all Internal Standard areas not within 50-200% for all affected Workorders	NA	PKC	07/19/2019
5 Retention times within windows and coelution summary checked for all Workorders	YES	PKC	07/19/2019
6 Rationale provided for all manual Integrations not done for baseline corrections per SOP 1021s Comments: <i>Manual integrations for partial integrations/split peaks and to detect compounds skipped or misidentified by automated integration.</i>	YES	PKC	07/19/2019
7 Narrate any Workorders where the Project specific requirements have not been met Comments: <i>d8 toluene 116.3% in BSI : exceeds project specific limits for 19G0224. Recovery between 80-120% meets method instrument control limits 18G0157-18 could not run at full strength even with antifoam agent : this was attempted and data was not useable due to RT shift and chromatographic interference. Analysis at 5x dilution did not have shifting or interference. This was the last day of holding due to sampling in unpreserved vials.</i>	YES	PKC	07/19/2019
8 Trip Blank, Field Blank and (or) Holding Blank are below MRL for all Analytes	YES	PKC	07/19/2019
9 Narrate Samples per Workorder that will require more than one analysis to be reported due to dilutions or re-analysis Comments: <i>19G0224 samples require reanalysis because BSI exceeds project specific surrogate limit for d8 toluene. BSI has 116.3% recovery, DoD limit is 89-112%. Instrument tolerance is 80-120%-BY 8260C</i>	YES	PKC	07/19/2019
10 Verify that all samples requiring a dilution or re-analysis have been added to another batch or sequence Comments: <i>Reruns in BHG0481</i>	YES	PKC	07/19/2019
11 Extraction basis, sample prep, dilution factor, and total solids are correctly entered.	YES	PKC	07/19/2019
12 AUTOCHECK: Blank checked for exceedence of criteria	YES *	PKC	07/19/2019
13 AUTOCHECK: Check blank spike recovery	YES *	PKC	07/19/2019
14 AUTOCHECK: Check blank spike/blank spike duplicate RPD. If exceeded include outliers in exception report. Comments: <i>LCS Duplicate RPD for Acrolein (42.1%) was above the acceptance limit (30) in BHG0439-BSDI for 8260C VOA - Flagged value is not within established control limits. - Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF) Poor performing analyte.</i>	NO *	PKC	07/19/2019
15 AUTOCHECK: Compounds in method designated as blank spike compounds are present	YES *	PKC	07/19/2019

* = Indicates Automated Response from Element DataSyst

Checklist for SEQUENCE SHG0265

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
16 AUTOCHECK: Check %RPD between sample and sample duplicate	NA *	PKC	07/19/2019
17 AUTOCHECK: Matrix spike recoveries within limits	NA *	PKC	07/19/2019
18 AUTOCHECK: Matrix spike/matrix spike duplicate RPD within limits	NA *	PKC	07/19/2019
19 AUTOCHECK: List of compounds listed as spiked are present	NA *	PKC	07/19/2019
20 AUTOCHECK: Check Surrogate recoveries	NO *	PKC	07/19/2019
Comments:			
<i>Surrogate Recovery for Toluene-d8 (116%) was outside acceptance limits (89-112) in BHG0439-BS1 for 8260C VOA</i>			
<i>Surrogate Recovery for Toluene-d8 (116%) was outside acceptance limits (89-112) in SHG0265-ICV1 for 8260C VOA</i>			
<i>Exceeds project limit. Meets instrument performance limit of 80-120%.</i>			
21 AUTOCHECK: Checks Surrogate spike list against Analysis	YES *	PKC	07/19/2019
22 Data locked, checklist completed and status is Analyzed (REVIEWER)	YES	BB	07/19/2019
23 Color warnings have been addressed, narrated and (or) qualified (REVIEWER)	YES	BB	07/19/2019
24 rev_DilutionCheck.rpt and rev_DilutionCheck.exe was run to verify multiple sample results are consistent (REVIEWER)	NA	BB	07/19/2019
25 List of samples in this sequence that will require additional runs-verify reshot created (ANALYST)	YES	PKC	07/19/2019
Comments:			
<i>19G0224 samples require reanalysis because BS1 exceeds project specific surrogate limit for d8 toluene. BS1 has 116.3% recovery, DoD limit is 89-112%. Instrument tolerance is 80-120%</i>			
26 List of samples in this sequence that are re-analysis or dilutions of samples (ANALYST)	YES	PKC	07/19/2019
Comments:			
<i>19G0157-18 is a reanalysis. Original data was not useable due to RT shifting and chromatographic interference caused by foaming. Antifoam agent was used in the original run and did not prevent the issue.</i>			
27 Additional Notes (ANALYST and REVIEWER)	YES	PKC	07/19/2019
Comments:			
<i>18G0157-18 could not run at full strength even with antifoam agent : this was attempted and data was not useable due to RT shift and chromatographic interference. Analysis at 5x dilution did not have shifting or interference. This was the last day of holding due to sampling in unpreserved vials.</i>			



ANALYSIS SEQUENCE

SHG0265

Instrument: NT3 Element Column ID: 1300725RTXV
Calibration ID: CG00042 Tune File: bfb.u
EM Voltage: 1929

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0265-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0265-ICV1	VOA 10	QC		2	H006800	H001679	
BHG0439-BS1	LCS	QC		3		H001679	
BHG0439-BSD1	LCS Dup	QC		4		H001679	
SHG0265-LCV1	VOA 0.5	QC		5	H006797	H001679	
SHG0265-LCV2	VOA 1.0	QC		6	H006798	H001679	
BHG0439-BLK1	Blank	QC		7		H001679	
19G0106-01	Storage Blank	8260C VOA	A	8		H001679	
19G0163-16	TB-SO-190711	8260C VOA	A	9		H001679	
19G0224-01	TB-071619	8260C VOA	B	10		H001679	
19G0157-17	EMF-IW-27-071119	8260C VOA	C	11		H001679	Dont use the version for this project
19G0157-18	EMF-IW-28-071119	8260C VOA	C	12		H001679	Dont use the version for this project
19G0118-11RE1	DUP01-070919	8260C VOA	C	13		H001679	From BHG0413 by LH on 18-Jul-2019
19G0224-02	SW-071619	8260C VOA	B	14		H001679	
19G0224-03	EF-071619	8260C VOA	A	15		H001679	
19G0224-04	IN-071619	8260C VOA	A	16		H001679	
SHG0265-CCV1	CCV	QC		17	H006800	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190718.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 0904	V307181901G.D	RINSE				1
2 0931	V307181902G.D	SHG0265-TUN1				1
3 1009	V307181903G.D	SHG0265-ICV1				1 5.41 69628 5.78 108714 7.81 127328 9.50 81014
4 1009	V307181903GLCS.D	BHG0439--BS1				1 5.41 69628 5.78 108714 7.81 127328 9.50 81014
5 1036	V307181904G.D	BHG0439--BSD1				1 5.40 81908 5.78 133400 7.81 138454 9.50 84628
6 1102	V307181905G.D	SHG0-ICV1 Gas				1 5.40 72062 5.79 115802 7.82 122483 9.50 73096
7 1129	V307181906G.D	BHG0-BSD1 Gas				1 5.40 64694 5.78 110050 7.81 112338 9.50 67652
8 1156	V307181907G.D	SHG0265-LCV1 0.5				1 5.40 76653 5.78 127042 7.81 128552 9.50 74365
9 1222	V307181908G.D	SHG0265-LCV2 1.0				1 5.40 74672 5.78 124201 7.81 127828 9.50 76139
10 1249	V307181909G.D	BHG0439-BLK1				1 5.40 75770 5.79 123016 7.81 123872 9.50 71515
11 1315	V307181910G.D	19G0106-01				1 5.41 71096 5.79 117488 7.82 121863 9.50 70200
12 1342	V307181911G.D	19G0163-16				1 5.40 60556 5.78 94130 7.81 96757 9.50 53470
13 1408	V307181912G.D	19G0224-01				1 5.40 70710 5.79 116322 7.82 119147 9.50 65968
14 1435	V307181913G.D	19G0157-17				1 5.40 68543 5.79 110936 7.82 117920 9.50 67640
15 1504	V307181914G.D	19G0157-18				1 5.40 67867 5.79 106858 7.82 112791 9.50 63205
16 1532	V307181915G.D	19G0118-11RE1				1 5.40 68710 5.78 113485 7.81 114934 9.50 64074
17 1558	V307181916G.D	19G0224-02				1 5.40 54588 5.79 89446 7.82 92847 9.50 52696
18 1625	V307181917G.D	19G0224-03				1 5.40 67635 5.79 106280 7.82 113118 9.50 63062
19 1651	V307181918G.D	19G0224-04				1 5.41 67891 5.79 111753 7.81 116224 9.50 68836
20 1718	V307181919G.D	19G0163-02				1 5.40 72752 5.78 114205 7.81 118065 9.50 70713
21 1745	V307181920G.D	BHG0-MS1				1 5.40 73616 5.78 121527 7.82 124194 9.50 74072
22 1811	V307181921G.D	BHG0-MSD1				1 5.40 75039 5.78 124165 7.81 125533 9.50 78653

23	1838	V307181922G.D	19G0163-03	1	5.40	66238	5.78	108967	7.82	110823	9.50	62766
24	1904	V307181923G.D	19G0163-04	1	5.40	74198	5.78	127346	7.82	126933	9.50	76325
25	1931	V307181924G.D	19G0163-05	1	5.40	79034	5.78	127938	7.82	131122	9.50	77544
26	1957	V307181925G.D	19G0163-06	1	5.40	80419	5.78	127165	7.82	132772	9.50	71500
27	2024	V307181926G.D	19G0163-07	1	5.40	73630	5.78	117787	7.82	122413	9.50	63892
28	2051	V307181927G.D	19G0163-08	1	5.40	77901	5.78	126581	7.82	132018	9.50	74924
29	2117	V307181928G.D	19G0163-09	1	5.40	73082	5.78	118734	7.81	119654	9.50	63511
30	2144	V307181929G.D	SHG0-CCV1 Gas	1	5.41	59267	5.79	98531	7.82	100406	9.50	59407
31	2211	V307181930G.D	SHG0265-CCV1	1	5.40	76628	5.78	128915	7.81	133871	9.50	81936

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190718.b

Instrument: nt3.i Date: 18-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1009	V307181903G.D	SHG0265-ICV1	1	Acetone, 2-Butanone, Trans-1,4-Dichloro 2-Butene,
1009	V307181903GLCS.D	BHG0439-BS1	1	Acetone, 2-Butanone, Trans-1,4-Dichloro 2-Butene,
1036	V307181904G.D	BHG0439-BSD1	1	NO MANUAL INTEGRATION
1156	V307181907G.D	SHG0265-LCV1	1	112Trichloro122Trifluoroethane, Iodomethane, 2,2-Dichloropropane, 2-Butanone,
1222	V307181908G.D	SHG0265-LCV2	1	Iodomethane, Acrylonitrile, Vinyl Acetate,
1249	V307181909G.D	BHG0439-BLK1	1	Methylene Chloride, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene,
1315	V307181910G.D	19G0106-01	1	NO MANUAL INTEGRATION
1342	V307181911G.D	19G0163-16	1	Methylene Chloride, Acetone,
1408	V307181912G.D	19G0224-01	1	Chloromethane, Trichlorofluoromethane,
1435	V307181913G.D	19G0157-17	1	Vinyl Chloride,
1504	V307181914G.D	19G0157-18	1	NO MANUAL INTEGRATION
1532	V307181915G.D	19G0118-11RE1	1	NO MANUAL INTEGRATION
1558	V307181916G.D	19G0224-02	1	NO MANUAL INTEGRATION
1625	V307181917G.D	19G0224-03	1	NO MANUAL INTEGRATION
1651	V307181918G.D	19G0224-04	1	Vinyl Chloride,
2211	V307181930G.D	SHG0265-CCV1	1	Dichlorodifluoromethane,

Security Status Report

Date: 19-Jul-2019 12:29

V307181901G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181902G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181903G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181903GLCS.D	Data Locked	paul,	19-Jul-2019	12:28
V307181904G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181905G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181906G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181907G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181908G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181909G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181910G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181911G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181912G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181913G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181914G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181915G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181916G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181917G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181918G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181919G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181920G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181921G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181922G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181923G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181924G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181925G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181926G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181927G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181928G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181929G.D	Data Locked	paul,	19-Jul-2019	12:28
V307181930G.D	Data Locked	paul,	19-Jul-2019	12:28



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0298

Instrument: NT5

Calibration: CF00067

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0298-TUN1	NT507191901.D	NA	07/19/19 12:51
LCS	BHG0418-BS1	NT507191902A.D	Solid	07/19/19 13:28
ZZZZZ	BHG0490-BS1	NT507191902B.D	Solid	07/19/19 13:28
LCS Dup	BHG0418-BSD1	NT507191903.D	Solid	07/19/19 14:08
ZZZZZ	BHG0490-BSD1	NT507191903A.D	Solid	07/19/19 14:08
Blank	BHG0418-BLK1	NT507191904.D	Solid	07/19/19 14:31
ZZZZZ	BHG0490-BLK1	NT507191904A.D	Solid	07/19/19 14:31
SO-03-190711	19G0163-04RE1	NT507191905.D	Solid	07/19/19 15:40
SO-10-190711D	19G0163-12RE1	NT507191906.D	Solid	07/19/19 16:02
ZZZZZ	19G0232-01	NT507191907.D	Solid	07/19/19 16:24
ZZZZZ	19G0242-01	NT507191908.D	Solid	07/19/19 17:02
ZZZZZ	19G0243-01	NT507191911.D	Solid	07/19/19 17:47
ZZZZZ	19G0243-01	NT507191911.D	Solid	07/19/19 18:09
ZZZZZ	19G0253-01	NT507191912.D	Solid	07/19/19 18:32

Checklist for SEQUENCE SHG0298
Checklist: Analyst Checklist-VOA(rev4)

# Checklist Item	Response	Analyst Initials	Date
1 Instrument maintenance is recorded in Element	NA	PAB	07/22/2019
2 Samples have no Bubbles/Headspace of note for all Workorders	YES	PAB	07/22/2019
3 PH <=2 / 5035 Preserved for all Workorders Comments: <i>19G0163, 19G0232 preserved; all others unpreserved</i>	NO	PAB	07/22/2019
4 BFB abundance and time criteria met (8260C only)	YES	PAB	07/22/2019
5 Narrate all Internal Standard areas not within 50-200% for all affected Workorders Comments: <i>IS d4 1,4DCB out low in 19G0163-04RE1, 19G0243-01 - 19G0243-01 rerun med level</i>	YES	PAB	07/22/2019
6 Retention times within windows and coelution summary checked for all Workorders	YES	PAB	07/22/2019
7 Rationale provided for all manual Integrations not done for baseline corrections per SOP 1021s	YES	PAB	07/22/2019
8 Narrate any Workorders where the Project specific requirements have not been met	NA	PAB	07/22/2019
9 Trip Blank, Field Blank and (or) Holding Blank are below MRL for all Analytes	NA	PAB	07/22/2019
10 Extraction basis, sample prep, dilution factor, and total solids are correctly entered. Comments: <i>19G0232-01, 19G0243-01, 19G0253-01 run 50x med level</i>	YES	PAB	07/22/2019
11 AUTOCHECK: Blank checked for exceedence of criteria	YES *	PAB	07/22/2019
12 AUTOCHECK: Check blank spike recovery	YES *	PAB	07/22/2019
13 AUTOCHECK: Check blank spike/blank spike duplicate RPD. If exceeded include outliers in exception report.	YES *	PAB	07/22/2019
14 AUTOCHECK: Compounds in method designated as blank spike compounds are present	YES *	PAB	07/22/2019
15 AUTOCHECK: Check %RPD between sample and sample duplicate	NA *	PAB	07/22/2019
16 AUTOCHECK: Matrix spike recoveries within limits	NA *	PAB	07/22/2019
17 AUTOCHECK: Matrix spike/matrix spike duplicate RPD within limits	NA *	PAB	07/22/2019
18 AUTOCHECK: List of compounds listed as spiked are present	NA *	PAB	07/22/2019
19 AUTOCHECK: Check Surrogate recoveries Comments: <i>Surrogate Recovery for 4-Bromofluorobenzene (73.4%) was outside acceptance limits (80-120) in 19G0163-04RE1 for 8260C VOA</i> <i>- Flagged value is not within established control limits.</i> <i>*BOTH RUNS WERE REPORTED *</i> <i>Surrogate Recovery for 4-Bromofluorobenzene (77.8%) was outside acceptance limits (80-120) in 19G0243-01 for 8260C VOA</i> <i>- Flagged value is not within established control limits.</i> <i>*SAMPLE WAS RERUN MED LEVEL AND REPORTED*</i>	NO *	PAB	07/22/2019
20 AUTOCHECK: Checks Surrogate spike list against Analysis	YES *	PAB	07/22/2019

* = Indicates Automated Response from Element DataSyst

Checklist for SEQUENCE SHG0298
Checklist: Analyst Checklist-VOA(rev4)

# Checklist Item	Response	Analyst Initials	Date
21 Data locked, checklist completed and status is Analyzed (REVIEWER)	YES	BB	07/23/2019
22 Color warnings have been addressed, narrated and (or) qualified (REVIEWER)	YES	BB	07/23/2019
23 rev_DilutionCheck.rpt and rev_DilutionCheck.exe was run to verify multiple sample results are consistent (REVIEWER)	YES	BB	07/23/2019
24 List samples by workorder or batch QC to be reanalyzed-verify rebatch created (ANALYST) Comments: 19G0243-01 - BHG0491	YES	PAB	07/22/2019
25 List samples by workorder or batch QC reanalyzed and samples reported from two or more analyses (ANALYST) Comments: 19G0243-01 19G0163-04,12	YES	PAB	07/22/2019
26 Additional Notes (ANALYST and REVIEWER)	NA	BB	07/23/2019



ANALYSIS SEQUENCE

SHG0298

Instrument: NT5 Element Column ID: RTXVMS
Calibration ID: CF00067 Tune File: bfb.u
EM Voltage: 2000

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0298-TUN1	MS Tune	QC		1	H005698	H006572	
SHG0298-ICV1	VOA 10	QC		2	H006406	H006572	
BHG0418-BS1	LCS	QC		3		H006572	
BHG0418-BSD1	LCS Dup	QC		4		H006572	
BHG0418-BLK1	Blank	QC		5		H006572	
19G0163-04RE1	SO-03-190711	8260C VOA	C	6		H006572	From BHG0316 by PAB on 17-Jul-2019
19G0163-12RE1	SO-10-190711D	8260C VOA	C	7		H006572	From BHG0391 by PAB on 17-Jul-2019
BHG0490-BS1	LCS	QC		8		H006572	
BHG0490-BSD1	LCS Dup	QC		9		H006572	
BHG0490-BLK1	Blank	QC		10		H006572	
19G0232-01	Yale-02	8260C VOA	C	11		H006572	
19G0242-01	EVT 45-06 WWTP	8260C VOA	C	12		H006572	
19G0243-01	EVT 45-06 WWTP	8260C VOA	C	13		H006572	
BHG0491-BS1	LCS	QC		14		H006572	
BHG0491-BSD1	LCS Dup	QC		15		H006572	
BHG0491-BLK1	Blank	QC		16		H006572	
19G0253-01	WWTP Sludge ID# 190052	8260C VOA Solid (MeOH)	B	17		H006572	Billed at 1/2 the analysis price For dilutions
SHG0298-CCV1	CCV	QC		18	H006406	H006572	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190719.b

ARI Job No.: shg0 Method: bfb8260.m Instrument: nt5.i Date: 19-JUL-2019

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1251	NT507191901.D	shg0298--TUN1		1	NO MANUAL INTEGRATION
1328	NT507191902.D	shg0298--ICV1		1	NO MANUAL INTEGRATION
1328	NT507191902A.D	bhg0418--bs1		1	NO MANUAL INTEGRATION
1328	NT507191902B.D	bhg0490--bs1		1	NO MANUAL INTEGRATION
1328	NT507191902C.D	bhg0491--bs1		1	NO MANUAL INTEGRATION
1408	NT507191903.D	bhg0418--BSD1		1	NO MANUAL INTEGRATION
1408	NT507191903A.D	bhg0490--BSD1		1	NO MANUAL INTEGRATION
1408	NT507191903B.D	bhg0491--BSD1		1	NO MANUAL INTEGRATION
1431	NT507191904.D	bhg0418--BLK1		1	NO MANUAL INTEGRATION
1431	NT507191904A.D	bhg0490--BLK1		1	NO MANUAL INTEGRATION
1431	NT507191904B.D	bhg0491--BLK1		1	NO MANUAL INTEGRATION
1540	NT507191905.D	19G0163--04RE1		1	NO MANUAL INTEGRATION
1602	NT507191906.D	19G0163--12RE1		1	NO MANUAL INTEGRATION
1624	NT507191907.D	19G0232--01		1	Ethyl Benzene, Isopropyl Benzene, S-Butyl Benzene,
1702	NT507191908.D	19G0242--01		1	Methylene Chloride,
174	NT507191910.D	19G0243--01		1	4-Methyl-2-Pentanone,
180	NT507191911.D	19G0243--01		1	NO MANUAL INTEGRATION

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190719.b

Time	Filename	LabID	ClientId	DF	Manually Integrated Compounds
1832	NT507191912.D	19G0253-01	1	Ethyl Benzene,	
1916	NT507191914.D	shg0298-CCV1	1	NO MANUAL INTEGRATION	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt5.i\20190719.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 1251	NT507191901.D	shg0298-TUN1				1
2 1328	NT507191902.D	shg0298-ICV1				1 5.33 375043 5.78 726541 8.25 728946 10.35 405621
3 1328	NT507191902A.D	bhg0418-bs1				1 5.33 375043 5.78 726541 8.25 728946 10.35 405621
4 1328	NT507191902B.D	bhg0490-bs1				1 5.33 375043 5.78 726541 8.25 728946 10.35 405621
5 1328	NT507191902C.D	bhg0491-bs1				1 5.33 375043 5.78 726541 8.25 728946 10.35 405621
6 1408	NT507191903.D	bhg0418-BSD1				1 5.33 397146 5.78 774640 8.25 788454 10.35 448040
7 1408	NT507191903A.D	bhg0490-BSD1				1 5.33 397146 5.78 774640 8.25 788454 10.35 448040
8 1408	NT507191903B.D	bhg0491-BSD1				1 5.33 397146 5.78 774640 8.25 788454 10.35 448040
9 1431	NT507191904.D	bhg0418-BLK1				1 5.34 371837 5.78 729245 8.25 750855 10.35 420033
10 1431	NT507191904A.D	bhg0490-BLK1				1 5.34 371837 5.78 729245 8.25 750855 10.35 420033
11 1431	NT507191904B.D	bhg0491-BLK1				1 5.34 371837 5.78 729245 8.25 750855 10.35 420033
12 1540	NT507191905.D	19G0163-04RE1				1 5.33 371196 5.78 726088 8.25 579697 10.35 173256
13 1602	NT507191906.D	19G0163-12RE1				1 5.34 359650 5.78 709973 8.25 634979 10.35 250323
14 1624	NT507191907.D	19G0232-01				1 5.33 410570 5.78 817119 8.26 842231 10.35 476975
15 1702	NT507191908.D	19G0242-01				1 5.33 333642 5.78 651197 8.25 569278 10.35 203499
16 1724	NT507191909.D	19G0242-01				1 5.33 405400 5.78 822116 8.25 858597 10.35 490562
17 1747	NT507191910.D	19G0243-01				1 5.34 333815 5.78 648296 8.25 536104 10.35 184050
18 1809	NT507191911.D	19G0243-01				1 5.33 413999 5.78 835367 8.26 867460 10.35 500169
19 1832	NT507191912.D	19G0253-01				1 5.33 448031 5.78 899710 8.25 933120 10.35 575649
20 1854	NT507191913.D	19G0253-01				1 5.34 417954 5.78 826105 8.26 866539 10.35 495223

Security Status Report

Date: 22-Jul-2019 15:52

NT507191901.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191902.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191902A.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191902B.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191902C.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191903.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191903A.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191903B.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191904.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191904A.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191904B.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191905.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191906.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191907.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191908.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191909.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191910.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191911.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191912.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191913.D	Data	Locked	patrickb,	22-Jul-2019	15:52
NT507191914.D	Data	Locked	patrickb,	22-Jul-2019	15:52



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHF0324 Instrument: NT5
Calibration: CF00067 Calibration Date: 06/24/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
SHF0324-SCV1 (Solid) Lab File ID: NT506241915.D Analyzed: 06/24/19 19:28				
1,2-Dichloroethane-d4	50.000	98.9	80 - 120	
Toluene-d8	50.000	99.6	80 - 120	
4-Bromofluorobenzene	50.000	101	80 - 120	
1,2-Dichlorobenzene-d4	50.000	101	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG/WO: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0192

Instrument: NT5

Calibration: CF00067

Calibration Date: 06/24/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0316-BS1 (Solid) Lab File ID: NT507121903A.D Analyzed: 07/12/19 12:25				
1,2-Dichloroethane-d4	50.000	119	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	99.4	80 - 120	
1,2-Dichlorobenzene-d4	50.000	102	80 - 120	
SHG0192-ICV1 (Solid) Lab File ID: NT507121903.D Analyzed: 07/12/19 12:25				
1,2-Dichloroethane-d4	50.000	119	80 - 120	
Toluene-d8	50.000	102	80 - 120	
4-Bromofluorobenzene	50.000	99.4	80 - 120	
1,2-Dichlorobenzene-d4	50.000	102	80 - 120	
BHG0316-BSD1 (Solid) Lab File ID: NT507121904A.D Analyzed: 07/12/19 13:05				
1,2-Dichloroethane-d4	50.000	115	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	99.7	80 - 120	
1,2-Dichlorobenzene-d4	50.000	101	80 - 120	
BHG0316-BLK1 (Solid) Lab File ID: NT507121905.D Analyzed: 07/12/19 13:27				
1,2-Dichloroethane-d4	50.000	117	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	98.0	80 - 120	
1,2-Dichlorobenzene-d4	50.000	101	80 - 120	
19G0163-02 (Solid) Lab File ID: NT507121906.D Analyzed: 07/12/19 14:54				
1,2-Dichloroethane-d4	50.000	133	80 - 149	
Toluene-d8	50.000	101	77 - 120	
4-Bromofluorobenzene	50.000	90.6	80 - 120	
1,2-Dichlorobenzene-d4	50.000	97.4	80 - 120	
19G0163-03 (Solid) Lab File ID: NT507121917.D Analyzed: 07/12/19 19:11				
1,2-Dichloroethane-d4	50.000	139	80 - 149	
Toluene-d8	50.000	103	77 - 120	
4-Bromofluorobenzene	50.000	93.5	80 - 120	
1,2-Dichlorobenzene-d4	50.000	98.1	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: <u>Analytical Resources, Inc.</u>	SDG/WO: <u>19G0163</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>King County Closed Landfills - Vashon</u>
Sequence: <u>SHG0192</u>	Instrument: <u>NT5</u>
Calibration: <u>CF00067</u>	Calibration Date: <u>06/24/2019</u>

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
19G0163-04 (Solid) Lab File ID: NT507121918.D Analyzed: 07/12/19 19:33				
1,2-Dichloroethane-d4	50.000	134	80 - 149	
Toluene-d8	50.000	97.3	77 - 120	
4-Bromofluorobenzene	50.000	75.1	80 - 120	*
1,2-Dichlorobenzene-d4	50.000	93.9	80 - 120	
19G0163-05 (Solid) Lab File ID: NT507121919.D Analyzed: 07/12/19 19:56				
1,2-Dichloroethane-d4	50.000	133	80 - 149	
Toluene-d8	50.000	100	77 - 120	
4-Bromofluorobenzene	50.000	89.1	80 - 120	
1,2-Dichlorobenzene-d4	50.000	95.9	80 - 120	
19G0163-06 (Solid) Lab File ID: NT507121920.D Analyzed: 07/12/19 20:18				
1,2-Dichloroethane-d4	50.000	133	80 - 149	
Toluene-d8	50.000	103	77 - 120	
4-Bromofluorobenzene	50.000	93.7	80 - 120	
1,2-Dichlorobenzene-d4	50.000	98.5	80 - 120	
19G0163-07 (Solid) Lab File ID: NT507121921.D Analyzed: 07/12/19 20:41				
1,2-Dichloroethane-d4	50.000	134	80 - 149	
Toluene-d8	50.000	101	77 - 120	
4-Bromofluorobenzene	50.000	88.0	80 - 120	
1,2-Dichlorobenzene-d4	50.000	96.0	80 - 120	
19G0163-08 (Solid) Lab File ID: NT507121922.D Analyzed: 07/12/19 21:03				
1,2-Dichloroethane-d4	50.000	134	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	93.9	80 - 120	
1,2-Dichlorobenzene-d4	50.000	98.4	80 - 120	
19G0163-09 (Solid) Lab File ID: NT507121923.D Analyzed: 07/12/19 21:25				
1,2-Dichloroethane-d4	50.000	135	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	90.1	80 - 120	
1,2-Dichlorobenzene-d4	50.000	95.5	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHG0192 Instrument: NT5
Calibration: CF00067 Calibration Date: 06/24/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
19G0163-10 (Solid) Lab File ID: NT507121924.D Analyzed: 07/12/19 21:47				
1,2-Dichloroethane-d4	50.000	139	80 - 149	
Toluene-d8	50.000	101	77 - 120	
4-Bromofluorobenzene	50.000	89.1	80 - 120	
1,2-Dichlorobenzene-d4	50.000	98.7	80 - 120	
BHG0316-MS1 (Solid) Lab File ID: NT507121925.D Analyzed: 07/12/19 22:10				
1,2-Dichloroethane-d4	50.000	134	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	90.0	80 - 120	
1,2-Dichlorobenzene-d4	50.000	97.2	80 - 120	
BHG0316-MSD1 (Solid) Lab File ID: NT507121926.D Analyzed: 07/12/19 22:32				
1,2-Dichloroethane-d4	50.000	140	80 - 149	
Toluene-d8	50.000	101	77 - 120	
4-Bromofluorobenzene	50.000	87.7	80 - 120	
1,2-Dichlorobenzene-d4	50.000	95.0	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHG0218 Instrument: NT3
Calibration: CG00042 Calibration Date: 07/16/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
SHG0218-ICB1 (Water) Lab File ID: V307161927.D Analyzed: 07/16/19 20:46				
1,2-Dichloroethane-d4			80 - 129	
1,2-Dichlorobenzene-d4			80 - 120	
Toluene-d8			80 - 120	
4-Bromofluorobenzene			80 - 120	
SHG0218-SCV1 (Water) Lab File ID: V307161928.D Analyzed: 07/16/19 21:12				
1,2-Dichloroethane-d4	5.0000	98.6	80 - 120	
1,2-Dichlorobenzene-d4	5.0000	99.4	80 - 120	
Toluene-d8	5.0000	97.6	80 - 120	
4-Bromofluorobenzene	5.0000	102	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG/WO: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0229

Instrument: NT5

Calibration: CF00067

Calibration Date: 06/24/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0391-BS1 (Solid) Lab File ID: NT507161903AX.D Analyzed: 07/16/19 14:57				
1,2-Dichloroethane-d4	50.000	113	80 - 149	
Toluene-d8	50.000	101	77 - 120	
4-Bromofluorobenzene	50.000	98.8	80 - 120	
1,2-Dichlorobenzene-d4	50.000	102	80 - 120	
SHG0229-ICV1 (Solid) Lab File ID: NT507161903X.D Analyzed: 07/16/19 14:57				
1,2-Dichloroethane-d4	50.000	113	80 - 120	
Toluene-d8	50.000	101	80 - 120	
4-Bromofluorobenzene	50.000	98.8	80 - 120	
1,2-Dichlorobenzene-d4	50.000	102	80 - 120	
BHG0391-BSD1 (Solid) Lab File ID: NT507161904.D Analyzed: 07/16/19 15:46				
1,2-Dichloroethane-d4	50.000	111	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	99.2	80 - 120	
1,2-Dichlorobenzene-d4	50.000	103	80 - 120	
BHG0391-BLK1 (Solid) Lab File ID: NT507161905.D Analyzed: 07/16/19 16:08				
1,2-Dichloroethane-d4	50.000	110	80 - 149	
Toluene-d8	50.000	101	77 - 120	
4-Bromofluorobenzene	50.000	98.2	80 - 120	
1,2-Dichlorobenzene-d4	50.000	103	80 - 120	
19G0163-11 (Solid) Lab File ID: NT507161907.D Analyzed: 07/16/19 17:06				
1,2-Dichloroethane-d4	50.000	125	80 - 149	
Toluene-d8	50.000	96.3	77 - 120	
4-Bromofluorobenzene	50.000	81.4	80 - 120	
1,2-Dichlorobenzene-d4	50.000	96.9	80 - 120	
19G0163-12 (Solid) Lab File ID: NT507161908.D Analyzed: 07/16/19 17:28				
1,2-Dichloroethane-d4	50.000	129	80 - 149	
Toluene-d8	50.000	95.7	77 - 120	
4-Bromofluorobenzene	50.000	76.4	80 - 120	*
1,2-Dichlorobenzene-d4	50.000	93.6	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG/WO: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0229

Instrument: NT5

Calibration: CF00067

Calibration Date: 06/24/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
19G0163-13 (Solid) Lab File ID: NT507161909.D Analyzed: 07/16/19 17:50				
1,2-Dichloroethane-d4	50.000	132	80 - 149	
Toluene-d8	50.000	101	77 - 120	
4-Bromofluorobenzene	50.000	81.9	80 - 120	
1,2-Dichlorobenzene-d4	50.000	96.1	80 - 120	
19G0163-14 (Solid) Lab File ID: NT507161910.D Analyzed: 07/16/19 18:12				
1,2-Dichloroethane-d4	50.000	133	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	87.9	80 - 120	
1,2-Dichlorobenzene-d4	50.000	95.0	80 - 120	
19G0163-15 (Solid) Lab File ID: NT507161911.D Analyzed: 07/16/19 18:35				
1,2-Dichloroethane-d4	50.000	139	80 - 149	
Toluene-d8	50.000	102	77 - 120	
4-Bromofluorobenzene	50.000	91.4	80 - 120	
1,2-Dichlorobenzene-d4	50.000	100	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: <u>Analytical Resources, Inc.</u>	SDG/WO: <u>19G0163</u>
Client: <u>Anchor QEA, LLC</u>	Project: <u>King County Closed Landfills - Vashon</u>
Sequence: <u>SHG0265</u>	Instrument: <u>NT3</u>
Calibration: <u>CG00042</u>	Calibration Date: <u>07/16/2019</u>

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0439-BS1 (Water) Lab File ID: V307181903GLCS.D Analyzed: 07/18/19 10:09				
1,2-Dichloroethane-d4	5.0000	94.9	80 - 129	
1,2-Dichlorobenzene-d4	5.0000	95.2	80 - 120	
Toluene-d8	5.0000	116	80 - 120	
4-Bromofluorobenzene	5.0000	106	80 - 120	
SHG0265-ICV1 (Water) Lab File ID: V307181903G.D Analyzed: 07/18/19 10:09				
1,2-Dichloroethane-d4	5.0000	94.9	80 - 120	
1,2-Dichlorobenzene-d4	5.0000	95.2	80 - 120	
Toluene-d8	5.0000	116	80 - 120	
4-Bromofluorobenzene	5.0000	106	80 - 120	
BHG0439-BSD1 (Water) Lab File ID: V307181904G.D Analyzed: 07/18/19 10:36				
1,2-Dichloroethane-d4	5.0000	95.2	80 - 129	
1,2-Dichlorobenzene-d4	5.0000	98.0	80 - 120	
Toluene-d8	5.0000	101	80 - 120	
4-Bromofluorobenzene	5.0000	101	80 - 120	
SHG0265-LCV1 (Water) Lab File ID: V307181907G.D Analyzed: 07/18/19 11:56				
1,2-Dichloroethane-d4	5.0000	102	0 - 200	
1,2-Dichlorobenzene-d4	5.0000	98.8	0 - 200	
Toluene-d8	5.0000	97.2	0 - 200	
4-Bromofluorobenzene	5.0000	100	0 - 200	
SHG0265-LCV2 (Water) Lab File ID: V307181908G.D Analyzed: 07/18/19 12:22				
1,2-Dichloroethane-d4	5.0000	96.9	0 - 200	
1,2-Dichlorobenzene-d4	5.0000	102	0 - 200	
Toluene-d8	5.0000	99.3	0 - 200	
4-Bromofluorobenzene	5.0000	98.0	0 - 200	
BHG0439-BLK1 (Water) Lab File ID: V307181909G.D Analyzed: 07/18/19 12:49				
1,2-Dichloroethane-d4	5.0000	92.6	80 - 129	
1,2-Dichlorobenzene-d4	5.0000	93.8	80 - 120	
Toluene-d8	5.0000	98.5	80 - 120	
4-Bromofluorobenzene	5.0000	91.9	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHG0265 Instrument: NT3
Calibration: CG00042 Calibration Date: 07/16/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
19G0163-16 (Water) Lab File ID: V307181911G.D Analyzed: 07/18/19 13:42				
1,2-Dichloroethane-d4	5.0000	98.1	80 - 129	
1,2-Dichlorobenzene-d4	5.0000	102	80 - 120	
Toluene-d8	5.0000	99.6	80 - 120	
4-Bromofluorobenzene	5.0000	98.8	80 - 120	



SURROGATE RECOVERY SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG/WO: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0298

Instrument: NT5

Calibration: CF00067

Calibration Date: 06/24/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0418-BS1 (Solid) Lab File ID: NT507191902A.D Analyzed: 07/19/19 13:28				
1,2-Dichloroethane-d4	50.000	111	80 - 149	
Toluene-d8	50.000	103	77 - 120	
4-Bromofluorobenzene	50.000	97.0	80 - 120	
1,2-Dichlorobenzene-d4	50.000	101	80 - 120	
BHG0418-BSD1 (Solid) Lab File ID: NT507191903.D Analyzed: 07/19/19 14:08				
1,2-Dichloroethane-d4	50.000	112	80 - 149	
Toluene-d8	50.000	104	77 - 120	
4-Bromofluorobenzene	50.000	98.6	80 - 120	
1,2-Dichlorobenzene-d4	50.000	99.3	80 - 120	
BHG0418-BLK1 (Solid) Lab File ID: NT507191904.D Analyzed: 07/19/19 14:31				
1,2-Dichloroethane-d4	50.000	116	80 - 149	
Toluene-d8	50.000	105	77 - 120	
4-Bromofluorobenzene	50.000	97.7	80 - 120	
1,2-Dichlorobenzene-d4	50.000	101	80 - 120	
19G0163-04RE1 (Solid) Lab File ID: NT507191905.D Analyzed: 07/19/19 15:40				
1,2-Dichloroethane-d4	50.000	126	80 - 149	
Toluene-d8	50.000	98.7	77 - 120	
4-Bromofluorobenzene	50.000	73.4	80 - 120	*
1,2-Dichlorobenzene-d4	50.000	95.4	80 - 120	
19G0163-12RE1 (Solid) Lab File ID: NT507191906.D Analyzed: 07/19/19 16:02				
1,2-Dichloroethane-d4	50.000	127	80 - 149	
Toluene-d8	50.000	100	77 - 120	
4-Bromofluorobenzene	50.000	85.8	80 - 120	
1,2-Dichlorobenzene-d4	50.000	94.3	80 - 120	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHF0324

Instrument: NT5

Calibration: CF00067

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (SHF0324-SCV1)		(Solid)	Lab File ID: NT506241915.D				Analyzed: 06/24/19 19:28		
Pentafluorobenzene	425497	5.344	403927	5.344	105	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	731839	8.264	696563	8.264	105	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	760389	5.788	717664	5.788	106	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	411421	10.351	380778	10.351	108	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0192

Instrument: NT5

Calibration: CF00067

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (BHG0316-BS1)		(Solid)	Lab File ID: NT507121903A.D				Analyzed: 07/12/19 12:25		
Pentafluorobenzene	410842	5.338	410842	5.338	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	840463	8.258	840463	8.258	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	825368	5.782	825368	5.782	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	463623	10.351	463623	10.351	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SHG0192-ICV1)		(Solid)	Lab File ID: NT507121903.D				Analyzed: 07/12/19 12:25		
Pentafluorobenzene	410842	5.338	410842	5.338	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	840463	8.258	840463	8.258	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	825368	5.782	825368	5.782	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	463623	10.351	463623	10.351	100	50 - 200	0.000	+/-0.50	
LCS Dup (BHG0316-BSD1)		(Solid)	Lab File ID: NT507121904A.D				Analyzed: 07/12/19 13:05		
Pentafluorobenzene	407650	5.338	410842	5.338	99	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	827618	8.258	840463	8.258	98	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	813111	5.782	825368	5.782	99	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	459292	10.351	463623	10.351	99	50 - 200	0.000	+/-0.50	
Blank (BHG0316-BLK1)		(Solid)	Lab File ID: NT507121905.D				Analyzed: 07/12/19 13:27		
Pentafluorobenzene	398855	5.338	410842	5.338	97	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	792670	8.258	840463	8.258	94	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	792396	5.788	825368	5.782	96	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	443934	10.351	463623	10.351	96	50 - 200	0.000	+/-0.50	
SO-01-190711 (19G0163-02)		(Solid)	Lab File ID: NT507121906.D				Analyzed: 07/12/19 14:54		
Pentafluorobenzene	464385	5.338	410842	5.338	113	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	963284	8.258	840463	8.258	115	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	958713	5.782	825368	5.782	116	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	429377	10.351	463623	10.351	93	50 - 200	0.000	+/-0.50	
SO-02-190711 (19G0163-03)		(Solid)	Lab File ID: NT507121917.D				Analyzed: 07/12/19 19:11		
Pentafluorobenzene	388039	5.344	410842	5.338	94	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	807242	8.258	840463	8.258	96	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	800359	5.788	825368	5.782	97	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	380080	10.351	463623	10.351	82	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0192

Instrument: NT5

Calibration: CF00067

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
SO-03-190711 (19G0163-04)		(Solid)	Lab File ID: NT507121918.D				Analyzed: 07/12/19 19:33		
Pentafluorobenzene	390614	5.344	410842	5.338	95	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	620210	8.258	840463	8.258	74	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	776940	5.788	825368	5.782	94	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	187826	10.351	463623	10.351	41	50 - 200	0.000	+/-0.50	*
SO-04-190711 (19G0163-05)		(Solid)	Lab File ID: NT507121919.D				Analyzed: 07/12/19 19:56		
Pentafluorobenzene	418012	5.344	410842	5.338	102	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	814297	8.264	840463	8.258	97	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	853611	5.788	825368	5.782	103	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	343123	10.351	463623	10.351	74	50 - 200	0.000	+/-0.50	
SO-05-190711 (19G0163-06)		(Solid)	Lab File ID: NT507121920.D				Analyzed: 07/12/19 20:18		
Pentafluorobenzene	375933	5.344	410842	5.338	92	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	747181	8.264	840463	8.258	89	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	751937	5.788	825368	5.782	91	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	356380	10.351	463623	10.351	77	50 - 200	0.000	+/-0.50	
SO-06-190711 (19G0163-07)		(Solid)	Lab File ID: NT507121921.D				Analyzed: 07/12/19 20:41		
Pentafluorobenzene	394139	5.344	410842	5.338	96	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	781629	8.258	840463	8.258	93	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	807615	5.788	825368	5.782	98	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	331296	10.351	463623	10.351	71	50 - 200	0.000	+/-0.50	
SO-07-190711 (19G0163-08)		(Solid)	Lab File ID: NT507121922.D				Analyzed: 07/12/19 21:03		
Pentafluorobenzene	376819	5.344	410842	5.338	92	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	770260	8.264	840463	8.258	92	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	765748	5.788	825368	5.782	93	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	369041	10.351	463623	10.351	80	50 - 200	0.000	+/-0.50	
SO-08-190711 (19G0163-09)		(Solid)	Lab File ID: NT507121923.D				Analyzed: 07/12/19 21:25		
Pentafluorobenzene	391125	5.344	410842	5.338	95	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	756553	8.264	840463	8.258	90	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	780807	5.788	825368	5.782	95	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	331798	10.351	463623	10.351	72	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0192

Instrument: NT5

Calibration: CF00067

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
SO-09-190711 (19G0163-10)		(Solid)	Lab File ID: NT507121924.D				Analyzed: 07/12/19 21:47		
Pentafluorobenzene	382536	5.344	410842	5.338	93	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	756484	8.264	840463	8.258	90	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	773658	5.788	825368	5.782	94	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	326779	10.351	463623	10.351	70	50 - 200	0.000	+/-0.50	
Matrix Spike (BHG0316-MS1)		(Solid)	Lab File ID: NT507121925.D				Analyzed: 07/12/19 22:10		
Pentafluorobenzene	399691	5.344	410842	5.338	97	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	775582	8.264	840463	8.258	92	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	797013	5.788	825368	5.782	97	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	350044	10.351	463623	10.351	76	50 - 200	0.000	+/-0.50	
Matrix Spike Dup (BHG0316-MSD1)		(Solid)	Lab File ID: NT507121926.D				Analyzed: 07/12/19 22:32		
Pentafluorobenzene	464791	5.332	410842	5.338	113	50 - 200	-0.006	+/-0.50	
Chlorobenzene-d5	747792	8.258	840463	8.258	89	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	805733	5.788	825368	5.782	98	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	307805	10.357	463623	10.351	66	50 - 200	0.006	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0218

Instrument: NT3

Calibration: CG00042

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Blank (SHG0218-ICB1)		(Water)	Lab File ID: V307161927.D				Analyzed: 07/16/19 20:46		
Pentafluorobenzene	74237	5.407	73687	5.407	101	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	130469	7.814	124912	7.814	104	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	123676	5.785	116116	5.784	107	50 - 200	0.001	+/-0.50	
1,4-Dichlorobenzene-d4	73322	9.499	77169	9.498	95	50 - 200	0.001	+/-0.50	
Secondary Cal Check (SHG0218-SCV1)		(Water)	Lab File ID: V307161928.D				Analyzed: 07/16/19 21:12		
Pentafluorobenzene	65063	5.408	73687	5.407	88	50 - 200	0.001	+/-0.50	
Chlorobenzene-d5	109748	7.815	124912	7.814	88	50 - 200	0.001	+/-0.50	
1,4-Difluorobenzene	107292	5.785	116116	5.784	92	50 - 200	0.001	+/-0.50	
1,4-Dichlorobenzene-d4	63475	9.499	77169	9.498	82	50 - 200	0.001	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0229

Instrument: NT5

Calibration: CF00067

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (BHG0391-BS1)		(Solid)	Lab File ID: NT507161903AX.D				Analyzed: 07/16/19 14:57		
Pentafluorobenzene	440880	5.338	440880	5.338	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	864891	8.258	864891	8.258	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	873744	5.788	873744	5.788	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	473545	10.351	473545	10.351	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SHG0229-ICV1)		(Solid)	Lab File ID: NT507161903X.D				Analyzed: 07/16/19 14:57		
Pentafluorobenzene	440880	5.338	440880	5.338	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	864891	8.258	864891	8.258	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	873744	5.788	873744	5.788	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	473545	10.351	473545	10.351	100	50 - 200	0.000	+/-0.50	
LCS Dup (BHG0391-BS1)		(Solid)	Lab File ID: NT507161904.D				Analyzed: 07/16/19 15:46		
Pentafluorobenzene	420981	5.338	440880	5.338	95	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	794874	8.258	864891	8.258	92	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	810064	5.788	873744	5.788	93	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	440087	10.351	473545	10.351	93	50 - 200	0.000	+/-0.50	
Blank (BHG0391-BLK1)		(Solid)	Lab File ID: NT507161905.D				Analyzed: 07/16/19 16:08		
Pentafluorobenzene	378042	5.344	440880	5.338	86	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	713115	8.258	864891	8.258	82	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	734085	5.788	873744	5.788	84	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	395090	10.351	473545	10.351	83	50 - 200	0.000	+/-0.50	
SO-10-190711 (19G0163-11)		(Solid)	Lab File ID: NT507161907.D				Analyzed: 07/16/19 17:06		
Pentafluorobenzene	377824	5.344	440880	5.338	86	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	583822	8.264	864891	8.258	68	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	714797	5.788	873744	5.788	82	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	211590	10.351	473545	10.351	45	50 - 200	0.000	+/-0.50	*
SO-10-190711D (19G0163-12)		(Solid)	Lab File ID: NT507161908.D				Analyzed: 07/16/19 17:28		
Pentafluorobenzene	371285	5.344	440880	5.338	84	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	553204	8.264	864891	8.258	64	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	708943	5.788	873744	5.788	81	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	183280	10.351	473545	10.351	39	50 - 200	0.000	+/-0.50	*



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0229

Instrument: NT5

Calibration: CF00067

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
SO-11-190711 (19G0163-13)		(Solid)	Lab File ID: NT507161909.D				Analyzed: 07/16/19 17:50		
Pentafluorobenzene	377461	5.344	440880	5.338	86	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	676487	8.264	864891	8.258	78	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	749665	5.794	873744	5.788	86	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	239088	10.351	473545	10.351	50	50 - 200	0.000	+/-0.50	
SO-12-190711 (19G0163-14)		(Solid)	Lab File ID: NT507161910.D				Analyzed: 07/16/19 18:12		
Pentafluorobenzene	377146	5.344	440880	5.338	86	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	726073	8.264	864891	8.258	84	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	752490	5.794	873744	5.788	86	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	296903	10.351	473545	10.351	63	50 - 200	0.000	+/-0.50	
SO-13-190711 (19G0163-15)		(Solid)	Lab File ID: NT507161911.D				Analyzed: 07/16/19 18:35		
Pentafluorobenzene	372509	5.344	440880	5.338	84	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	721971	8.264	864891	8.258	83	50 - 200	0.006	+/-0.50	
1,4-Difluorobenzene	738042	5.794	873744	5.788	84	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	333845	10.351	473545	10.351	70	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0265

Instrument: NT3

Calibration: CG00042

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (BHG0439-BS1)		(Water)	Lab File ID: V307181903GLCS.D				Analyzed: 07/18/19 10:09		
Pentafluorobenzene	69628	5.413	69628	5.413	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	127328	7.814	127328	7.814	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	108714	5.784	108714	5.784	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	81014	9.498	81014	9.498	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SHG0265-ICV1)		(Water)	Lab File ID: V307181903G.D				Analyzed: 07/18/19 10:09		
Pentafluorobenzene	69628	5.413	69628	5.413	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	127328	7.814	127328	7.814	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	108714	5.784	108714	5.784	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	81014	9.498	81014	9.498	100	50 - 200	0.000	+/-0.50	
LCS Dup (BHG0439-BS1)		(Water)	Lab File ID: V307181904G.D				Analyzed: 07/18/19 10:36		
Pentafluorobenzene	81908	5.402	69628	5.413	118	50 - 200	-0.011	+/-0.50	
Chlorobenzene-d5	138454	7.814	127328	7.814	109	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	133400	5.784	108714	5.784	123	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	84628	9.498	81014	9.498	104	50 - 200	0.000	+/-0.50	
Low Cal Check (SHG0265-LCV1)		(Water)	Lab File ID: V307181907G.D				Analyzed: 07/18/19 11:56		
Pentafluorobenzene	76653	5.402	69628	5.413	110	50 - 200	-0.011	+/-0.50	
Chlorobenzene-d5	128552	7.814	127328	7.814	101	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	127042	5.784	108714	5.784	117	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	74365	9.498	81014	9.498	92	50 - 200	0.000	+/-0.50	
Low Cal Check (SHG0265-LCV2)		(Water)	Lab File ID: V307181908G.D				Analyzed: 07/18/19 12:22		
Pentafluorobenzene	74672	5.402	69628	5.413	107	50 - 200	-0.011	+/-0.50	
Chlorobenzene-d5	127828	7.814	127328	7.814	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	124201	5.784	108714	5.784	114	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	76139	9.498	81014	9.498	94	50 - 200	0.000	+/-0.50	
Blank (BHG0439-BLK1)		(Water)	Lab File ID: V307181909G.D				Analyzed: 07/18/19 12:49		
Pentafluorobenzene	75770	5.402	69628	5.413	109	50 - 200	-0.011	+/-0.50	
Chlorobenzene-d5	123872	7.814	127328	7.814	97	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	123016	5.785	108714	5.784	113	50 - 200	0.001	+/-0.50	
1,4-Dichlorobenzene-d4	71515	9.499	81014	9.498	88	50 - 200	0.001	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0265

Instrument: NT3

Calibration: CG00042

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
TB-SO-190711 (19G0163-16)		(Water)	Lab File ID: V307181911G.D				Analyzed: 07/18/19 13:42		
Pentafluorobenzene	60556	5.397	69628	5.413	87	50 - 200	-0.016	+/-0.50	
Chlorobenzene-d5	96757	7.814	127328	7.814	76	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	94130	5.779	108714	5.784	87	50 - 200	-0.005	+/-0.50	
1,4-Dichlorobenzene-d4	53470	9.499	81014	9.498	66	50 - 200	0.001	+/-0.50	
Calibration Check (SHG0265-CCV1)		(Water)	Lab File ID: V307181930G.D				Analyzed: 07/18/19 22:11		
Pentafluorobenzene	76628	5.402	69628	5.413	110	50 - 200	-0.011	+/-0.50	
Chlorobenzene-d5	133871	7.814	127328	7.814	105	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	128915	5.784	108714	5.784	119	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	81936	9.498	81014	9.498	101	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0298

Instrument: NT5

Calibration: CF00067

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (BHG0418-BS1)		(Solid)	Lab File ID: NT507191902A.D				Analyzed: 07/19/19 13:28		
Pentafluorobenzene	375043	5.332	375043	5.332	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	728946	8.252	728946	8.252	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	726541	5.782	726541	5.782	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	405621	10.345	405621	10.345	100	50 - 200	0.000	+/-0.50	
LCS Dup (BHG0418-BSD1)		(Solid)	Lab File ID: NT507191903.D				Analyzed: 07/19/19 14:08		
Pentafluorobenzene	397146	5.332	375043	5.332	106	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	788454	8.252	728946	8.252	108	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	774640	5.782	726541	5.782	107	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	448040	10.345	405621	10.345	99	50 - 200	0.000	+/-0.50	
Blank (BHG0418-BLK1)		(Solid)	Lab File ID: NT507191904.D				Analyzed: 07/19/19 14:31		
Pentafluorobenzene	371837	5.338	375043	5.332	99	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	750855	8.252	728946	8.252	103	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	729245	5.782	726541	5.782	103	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	420033	10.345	405621	10.345	104	50 - 200	0.000	+/-0.50	
SO-03-190711 (19G0163-04RE1)		(Solid)	Lab File ID: NT507191905.D				Analyzed: 07/19/19 15:40		
Pentafluorobenzene	371196	5.332	375043	5.332	99	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	579697	8.252	728946	8.252	80	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	726088	5.776	726541	5.782	100	50 - 200	0.006	+/-0.50	
1,4-Dichlorobenzene-d4	173256	10.345	405621	10.345	42	50 - 200	0.000	+/-0.50	*
SO-10-190711D (19G0163-12RE1)		(Solid)	Lab File ID: NT507191906.D				Analyzed: 07/19/19 16:02		
Pentafluorobenzene	359650	5.338	375043	5.332	96	50 - 200	0.006	+/-0.50	
Chlorobenzene-d5	634979	8.252	728946	8.252	87	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	709973	5.782	726541	5.782	98	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	250323	10.345	405621	10.345	61	50 - 200	0.000	+/-0.50	



HOLDING TIME SUMMARY

Analysis: EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-01-190711 19G0163-02	07/11/19 11:05	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 14:54	1	14	
SO-02-190711 19G0163-03	07/11/19 10:50	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 19:11	1	14	
SO-03-190711 19G0163-04	07/11/19 08:35	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 19:33	1	14	
SO-03-190711 19G0163-04RE1	07/11/19 08:35	07/11/19 17:25	07/12/19 14:22	1	14	07/19/19 15:40	8	14	
SO-04-190711 19G0163-05	07/11/19 11:30	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 19:56	1	14	
SO-05-190711 19G0163-06	07/11/19 12:05	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 20:18	1	14	
SO-06-190711 19G0163-07	07/11/19 12:20	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 20:41	1	14	
SO-07-190711 19G0163-08	07/11/19 11:55	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 21:03	1	14	
SO-08-190711 19G0163-09	07/11/19 10:25	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 21:25	1	14	
SO-09-190711 19G0163-10	07/11/19 10:10	07/11/19 17:25	07/12/19 14:22	1	14	07/12/19 21:47	1	14	
SO-10-190711 19G0163-11	07/11/19 09:45	07/11/19 17:25	07/16/19 16:03	5	14	07/16/19 17:06	5	14	
SO-10-190711D 19G0163-12	07/11/19 09:50	07/11/19 17:25	07/16/19 16:03	5	14	07/16/19 17:28	5	14	
SO-10-190711D 19G0163-12RE1	07/11/19 09:50	07/11/19 17:25	07/17/19 13:53	6	14	07/19/19 16:02	8	14	
SO-11-190711 19G0163-13	07/11/19 09:10	07/11/19 17:25	07/16/19 16:03	5	14	07/16/19 17:50	5	14	
SO-12-190711 19G0163-14	07/11/19 09:25	07/11/19 17:25	07/16/19 16:03	5	14	07/16/19 18:12	5	14	
SO-13-190711 19G0163-15	07/11/19 12:35	07/11/19 17:25	07/16/19 16:03	5	14	07/16/19 18:35	5	14	
TB-SO-190711 19G0163-16	07/11/19 00:00	07/11/19 17:25	07/18/19 11:06	7	14	07/18/19 13:42	8	14	
Matrix Spike BHG0316-MS1	07/11/19 11:05	07/11/19 17:25	07/12/19 07:22	0	14	07/12/19 22:10	1	14	
Matrix Spike Dup BHG0316-MSD1	07/11/19 11:05	07/11/19 17:25	07/12/19 07:22	0	14	07/12/19 22:32	1	14	

* Indicates hold time exceedance.



**METHOD DETECTION
AND REPORTING LIMITS**
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: NT5

Analyte	MDL	RL	Units
Chloromethane	0.26	1.00	ug/kg
Vinyl Chloride	0.24	1.00	ug/kg
Bromomethane	0.19	1.00	ug/kg
Chloroethane	0.46	1.00	ug/kg
Trichlorofluoromethane	0.27	1.00	ug/kg
Acrolein	3.81	5.00	ug/kg
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.29	2.00	ug/kg
Acetone	0.48	5.00	ug/kg
1,1-Dichloroethene	0.34	1.00	ug/kg
Bromoethane	0.44	2.00	ug/kg
Iodomethane	0.22	1.00	ug/kg
Methylene Chloride	0.64	2.00	ug/kg
Acrylonitrile	1.03	5.00	ug/kg
Carbon Disulfide	0.56	1.00	ug/kg
trans-1,2-Dichloroethene	0.27	1.00	ug/kg
Vinyl Acetate	0.38	5.00	ug/kg
1,1-Dichloroethane	0.20	1.00	ug/kg
2-Butanone	0.51	5.00	ug/kg
2,2-Dichloropropane	0.29	1.00	ug/kg
cis-1,2-Dichloroethene	0.24	1.00	ug/kg
Chloroform	0.23	1.00	ug/kg
Bromochloromethane	0.32	1.00	ug/kg
1,1,1-Trichloroethane	0.23	1.00	ug/kg
1,1-Dichloropropene	0.31	1.00	ug/kg
Carbon tetrachloride	0.21	1.00	ug/kg
1,2-Dichloroethane	0.19	1.00	ug/kg
Benzene	0.30	1.00	ug/kg
Trichloroethene	0.21	1.00	ug/kg
1,2-Dichloropropane	0.16	1.00	ug/kg
Bromodichloromethane	0.25	1.00	ug/kg
Dibromomethane	0.15	1.00	ug/kg
2-Chloroethyl vinyl ether	0.28	5.00	ug/kg
4-Methyl-2-Pentanone	0.42	5.00	ug/kg
cis-1,3-Dichloropropene	0.23	1.00	ug/kg
Toluene	0.15	1.00	ug/kg
trans-1,3-Dichloropropene	0.22	1.00	ug/kg



**METHOD DETECTION
AND REPORTING LIMITS**
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: NT5

Analyte	MDL	RL	Units
2-Hexanone	0.44	5.00	ug/kg
1,1,2-Trichloroethane	0.29	1.00	ug/kg
1,3-Dichloropropane	0.21	1.00	ug/kg
Tetrachloroethene	0.26	1.00	ug/kg
Dibromochloromethane	0.27	1.00	ug/kg
1,2-Dibromoethane	0.18	1.00	ug/kg
Chlorobenzene	0.22	1.00	ug/kg
Ethylbenzene	0.20	1.00	ug/kg
1,1,1,2-Tetrachloroethane	0.23	1.00	ug/kg
m,p-Xylene	0.39	2.00	ug/kg
o-Xylene	0.22	1.00	ug/kg
Xylenes, total	0.62	2.00	ug/kg
Styrene	0.14	1.00	ug/kg
Bromoform	0.30	1.00	ug/kg
1,1,2,2-Tetrachloroethane	0.25	1.00	ug/kg
1,2,3-Trichloropropane	0.52	2.00	ug/kg
trans-1,4-Dichloro 2-Butene	0.44	5.00	ug/kg
n-Propylbenzene	0.27	1.00	ug/kg
Bromobenzene	0.15	1.00	ug/kg
Isopropyl Benzene	0.23	1.00	ug/kg
2-Chlorotoluene	0.30	1.00	ug/kg
4-Chlorotoluene	0.28	1.00	ug/kg
t-Butylbenzene	0.31	1.00	ug/kg
1,3,5-Trimethylbenzene	0.25	1.00	ug/kg
1,2,4-Trimethylbenzene	0.23	1.00	ug/kg
s-Butylbenzene	0.24	1.00	ug/kg
4-Isopropyl Toluene	0.24	1.00	ug/kg
1,3-Dichlorobenzene	0.23	1.00	ug/kg
1,4-Dichlorobenzene	0.23	1.00	ug/kg
n-Butylbenzene	0.26	1.00	ug/kg
1,2-Dichlorobenzene	0.29	1.00	ug/kg
1,2-Dibromo-3-chloropropane	0.59	5.00	ug/kg
1,2,4-Trichlorobenzene	0.33	5.00	ug/kg
Hexachloro-1,3-Butadiene	0.41	5.00	ug/kg
Naphthalene	0.43	5.00	ug/kg
1,2,3-Trichlorobenzene	0.31	5.00	ug/kg



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: NT5

Analyte	MDL	RL	Units
Dichlorodifluoromethane	0.21	1.00	ug/kg
Methyl tert-butyl Ether	0.23	1.00	ug/kg
2-Pentanone	5.00	5.00	ug/kg



**METHOD DETECTION
AND REPORTING LIMITS**
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: NT3

Analyte	MDL	RL	Units
Chloromethane	0.09	0.50	ug/L
Vinyl Chloride	0.06	0.20	ug/L
Bromomethane	0.25	1.00	ug/L
Chloroethane	0.09	0.20	ug/L
Trichlorofluoromethane	0.04	0.20	ug/L
Acrolein	2.48	5.00	ug/L
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.04	0.20	ug/L
Acetone	2.06	5.00	ug/L
1,1-Dichloroethene	0.05	0.20	ug/L
Bromoethane	0.04	0.20	ug/L
Iodomethane	0.23	1.00	ug/L
Methylene Chloride	0.49	1.00	ug/L
Acrylonitrile	0.60	1.00	ug/L
Carbon Disulfide	0.04	0.20	ug/L
trans-1,2-Dichloroethene	0.05	0.20	ug/L
Vinyl Acetate	0.07	0.20	ug/L
1,1-Dichloroethane	0.05	0.20	ug/L
2-Butanone	0.81	5.00	ug/L
2,2-Dichloropropane	0.05	0.20	ug/L
cis-1,2-Dichloroethene	0.04	0.20	ug/L
Chloroform	0.03	0.20	ug/L
Bromochloromethane	0.06	0.20	ug/L
1,1,1-Trichloroethane	0.04	0.20	ug/L
1,1-Dichloropropene	0.03	0.20	ug/L
Carbon tetrachloride	0.04	0.20	ug/L
1,2-Dichloroethane	0.07	0.20	ug/L
Benzene	0.03	0.20	ug/L
Trichloroethene	0.05	0.20	ug/L
1,2-Dichloropropane	0.04	0.20	ug/L
Bromodichloromethane	0.05	0.20	ug/L
Dibromomethane	0.15	0.20	ug/L
2-Chloroethyl vinyl ether	0.25	1.00	ug/L
4-Methyl-2-Pentanone	0.97	5.00	ug/L
cis-1,3-Dichloropropene	0.06	0.20	ug/L
Toluene	0.04	0.20	ug/L
trans-1,3-Dichloropropene	0.08	0.20	ug/L



**METHOD DETECTION
AND REPORTING LIMITS**
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: NT3

Analyte	MDL	RL	Units
2-Hexanone	0.90	5.00	ug/L
1,1,2-Trichloroethane	0.13	0.20	ug/L
1,3-Dichloropropane	0.06	0.20	ug/L
Tetrachloroethene	0.05	0.20	ug/L
Dibromochloromethane	0.05	0.20	ug/L
1,2-Dibromoethane	0.07	0.20	ug/L
Chlorobenzene	0.02	0.20	ug/L
Ethylbenzene	0.04	0.20	ug/L
1,1,1,2-Tetrachloroethane	0.04	0.20	ug/L
m,p-Xylene	0.05	0.40	ug/L
o-Xylene	0.03	0.20	ug/L
Xylenes, total	0.09	0.60	ug/L
Styrene	0.05	0.20	ug/L
Bromoform	0.06	0.20	ug/L
1,1,2,2-Tetrachloroethane	0.06	0.20	ug/L
1,2,3-Trichloropropane	0.13	0.50	ug/L
trans-1,4-Dichloro 2-Butene	0.32	1.00	ug/L
n-Propylbenzene	0.02	0.20	ug/L
Bromobenzene	0.06	0.20	ug/L
Isopropyl Benzene	0.02	0.20	ug/L
2-Chlorotoluene	0.02	0.20	ug/L
4-Chlorotoluene	0.02	0.20	ug/L
t-Butylbenzene	0.03	0.20	ug/L
1,3,5-Trimethylbenzene	0.02	0.20	ug/L
1,2,4-Trimethylbenzene	0.02	0.20	ug/L
s-Butylbenzene	0.02	0.20	ug/L
4-Isopropyl Toluene	0.03	0.20	ug/L
1,3-Dichlorobenzene	0.04	0.20	ug/L
1,4-Dichlorobenzene	0.04	0.20	ug/L
n-Butylbenzene	0.02	0.20	ug/L
1,2-Dichlorobenzene	0.04	0.20	ug/L
1,2-Dibromo-3-chloropropane	0.37	0.50	ug/L
1,2,4-Trichlorobenzene	0.11	0.50	ug/L
Hexachloro-1,3-Butadiene	0.07	0.50	ug/L
Naphthalene	0.12	0.50	ug/L
1,2,3-Trichlorobenzene	0.11	0.50	ug/L



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**METHOD DETECTION
AND REPORTING LIMITS**
EPA 8260C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: NT3

Analyte	MDL	RL	Units
Dichlorodifluoromethane	0.05	0.20	ug/L
Methyl tert-butyl Ether	0.07	0.50	ug/L
2-Pentanone	5.00	5.00	ug/L



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-02 J

SDG: 19G0163

Sampled: 07/11/19 11:05

Prepared: 07/18/19 14:28

File ID: V307181919.D

% Solids: 48.32

Preparation: EPA 5035 (Methanol Extraction)

Analyzed: 07/18/19 17:18

Batch: BHG0455

Sequence: SHG0273

Initial/Final: 3.361 g Wet / 5 mL

Instrument: NT3

Column: RTX-VMS

Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	20700	U	10400	20700

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	4.98	99.7	80 - 120	
4-Bromofluorobenzene	5.0000	4.73	94.6	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181919.D

Date : 18-JUL-2019 17:18

Client ID:

Sample Info: 19C0163-02

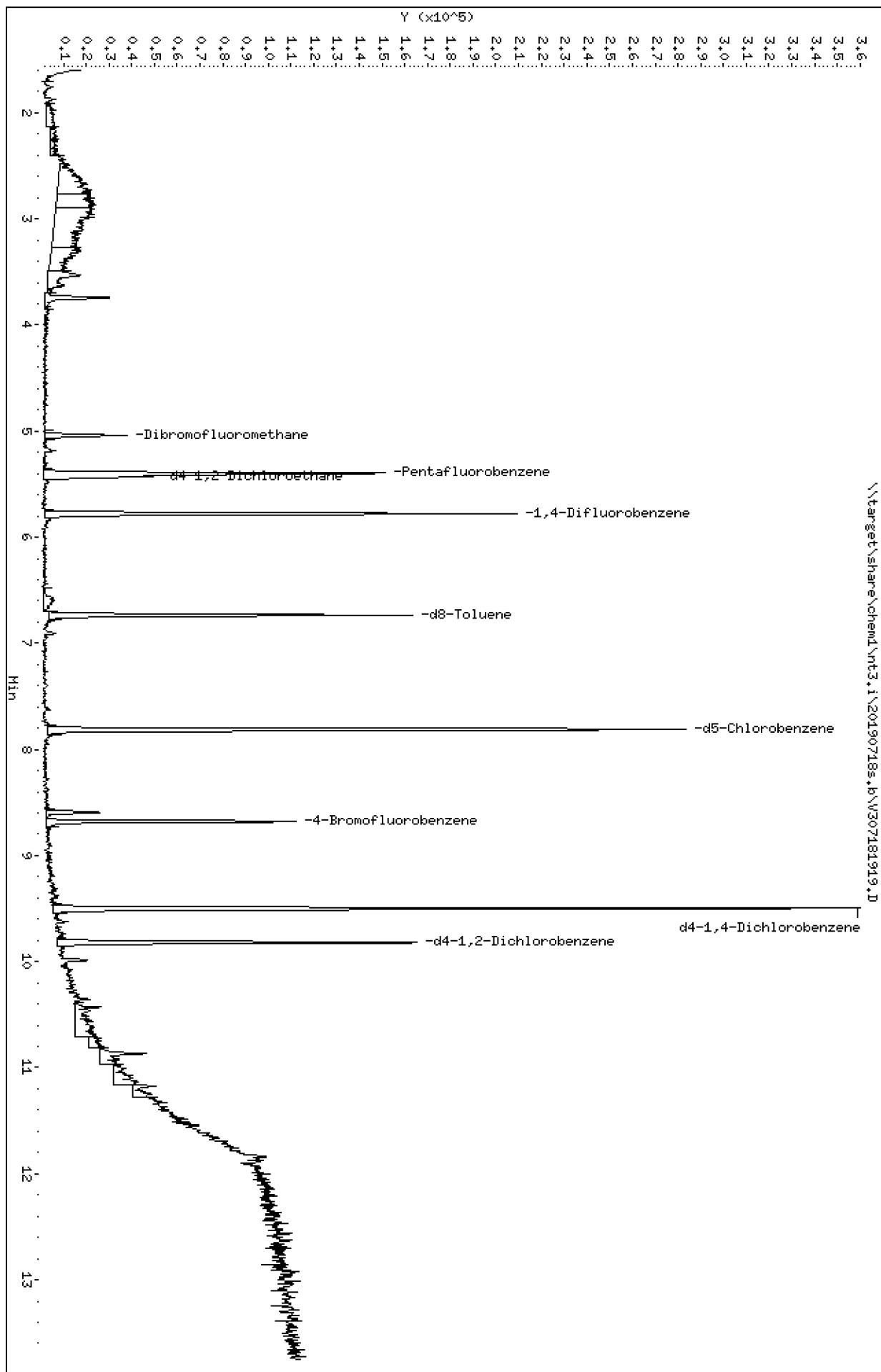
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181919.D
 Lab Smp Id: 19G0163-02
 Inj Date : 18-JUL-2019 17:18
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-02
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATAll

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.934)	17238	4.63044	4.630
* 32 Pentafluorobenzene	168	5.397	5.402	(1.000)	72752	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434	(1.006)	22981	4.68773	4.688
* 37 1,4-Difluorobenzene	114	5.779	5.784	(1.000)	114205	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735	(1.165)	74680	4.98412	4.984
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	118065	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	22168	4.72860	4.729
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	70713	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	32731	4.93403	4.934

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181919.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-02
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	72752	-1.27
37 1,4-Difluorobenze	116116	58058	232232	114205	-1.65
53 d5-Chlorobenzene	124912	62456	249824	118065	-5.48
76 d4-1,4-Dichlorobe	77169	38585	154338	70713	-8.37

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	-0.09
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.09
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-02
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.630	92.61	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	4.688	93.75	80-128
\$ 43 d8-Toluene	5.000	4.984	99.68	80-120
\$ 62 4-Bromofluorobenze	5.000	4.729	94.57	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.934	98.68	80-120

REVIEW SUMMARY FOR FILE - V307181919.D

Lab ID: 19G0163-02

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 17:18

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181919.D

Date : 18-JUL-2019 17:18

Client ID:

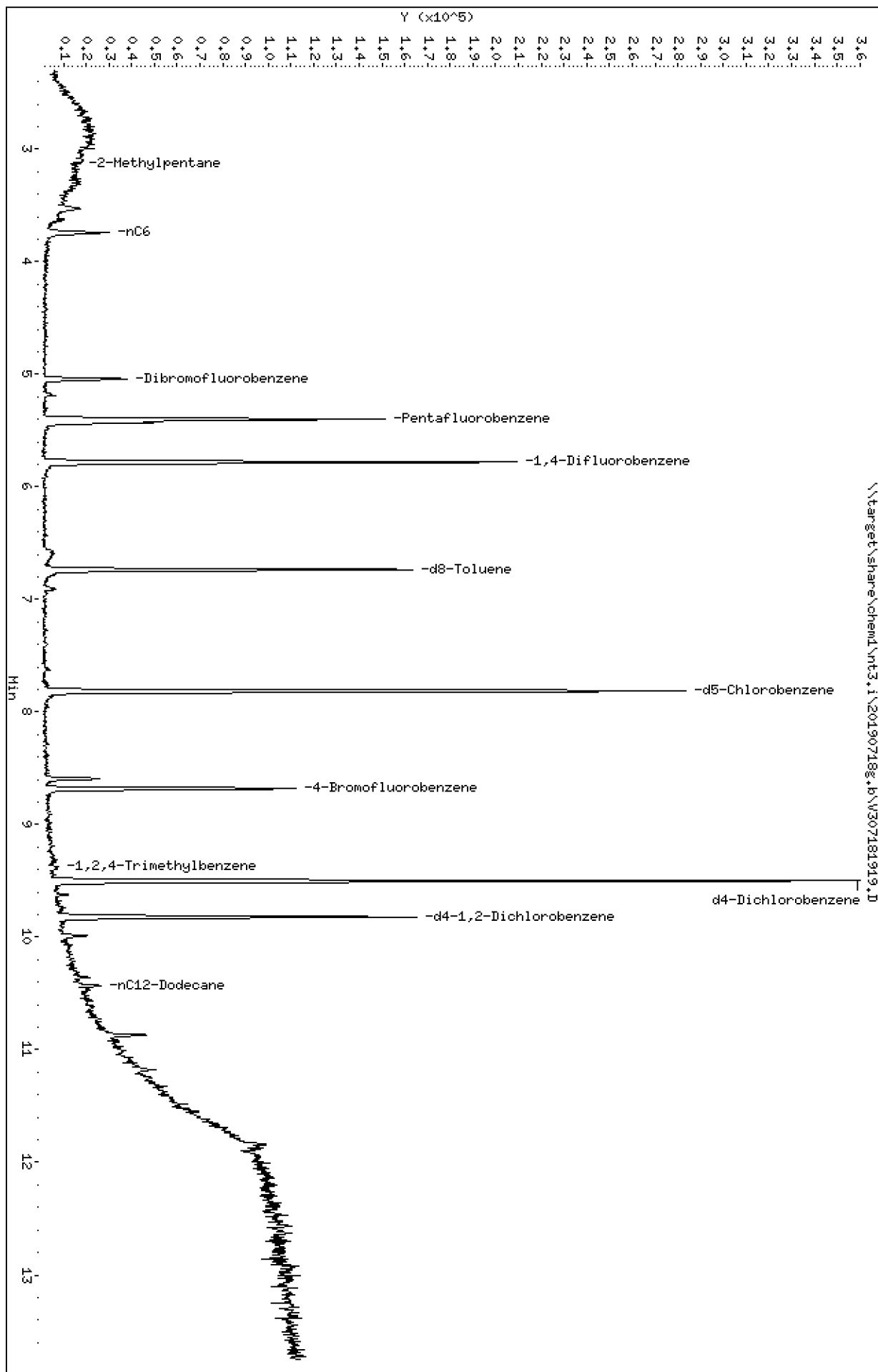
Sample Info: 19C0163-02

Instrument: nt3.i

Page 1

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181919.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 17:18

ARI ID: 19G0163-02
Client ID:
Matrix: WATER
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	155513	0.010
8015C 2MP-TMB (3.04 to 9.49)	30509602	317285	0.010
AK101 nC6-nC10 (3.67 to 8.65)	20565293	120293	0.006
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	248940	0.015
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	163314	0.007

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	424019	d5-Chlorobenzene
6.736	238760	d8-Toluene
9.499	498997	d4-Dichlorobenzene
8.681	164161	4-Bromofluorobenzene
9.818	237710	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 E SDG: 19G0163

Sampled: 07/11/19 10:50 Prepared: 07/18/19 14:28 File ID: V307181922.D

% Solids: 46.71 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/18/19 18:38

Batch: BHG0455 Sequence: SHG0273 Initial/Final: 3.75 g Wet / 5 mL

Instrument: NT3 Column: RTX-VMS Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	20000	U	9990	20000

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	4.91	98.1	80 - 120	
4-Bromofluorobenzene	5.0000	4.84	96.7	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181922.D

Date : 18-JUL-2019 18:38

Client ID:

Sample Info: 19C0163-03

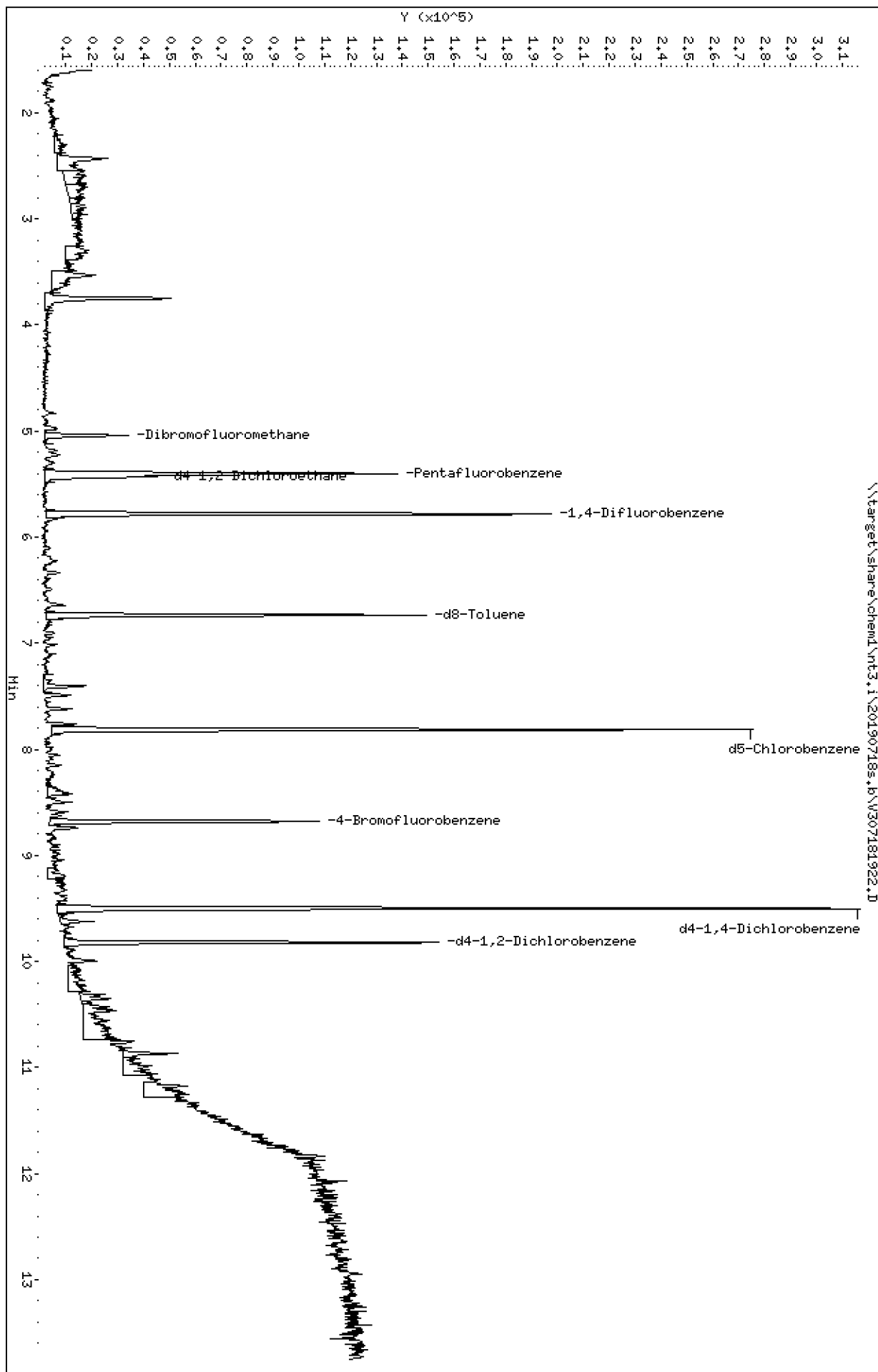
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181922.D
 Lab Smp Id: 19G0163-03
 Inj Date : 18-JUL-2019 18:38
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-03
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDAT11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.042	5.046	(0.933)	15787	4.65772	4.658
* 32 Pentafluorobenzene	168	5.403	5.402	(1.000)	66238	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.430	5.434	(1.005)	20873	4.67645	4.676
* 37 1,4-Difluorobenzene	114	5.781	5.784	(1.000)	108967	10.0000	
\$ 43 d8-Toluene	98	6.732	6.735	(1.165)	70158	4.90740	4.907
* 53 d5-Chlorobenzene	117	7.816	7.814	(1.000)	110823	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.682	8.680	(1.111)	21287	4.83740	4.837
* 76 d4-1,4-Dichlorobenzene	152	9.500	9.498	(1.000)	62766	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.819	9.817	(1.034)	28633	4.86277	4.863

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181922.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-03
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	66238	-10.11
37 1,4-Difluorobenze	116116	58058	232232	108967	-6.16
53 d5-Chlorobenzene	124912	62456	249824	110823	-11.28
76 d4-1,4-Dichlorobe	77169	38585	154338	62766	-18.66

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.03
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.06
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.02
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-03
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.658	93.15	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	4.676	93.53	80-128
\$ 43 d8-Toluene	5.000	4.907	98.15	80-120
\$ 62 4-Bromofluorobenze	5.000	4.837	96.75	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.863	97.26	80-120

REVIEW SUMMARY FOR FILE - V307181922.D

Lab ID: 19G0163-03

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 18:38

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181922.D

Date : 18-JUL-2019 18:38

Client ID:

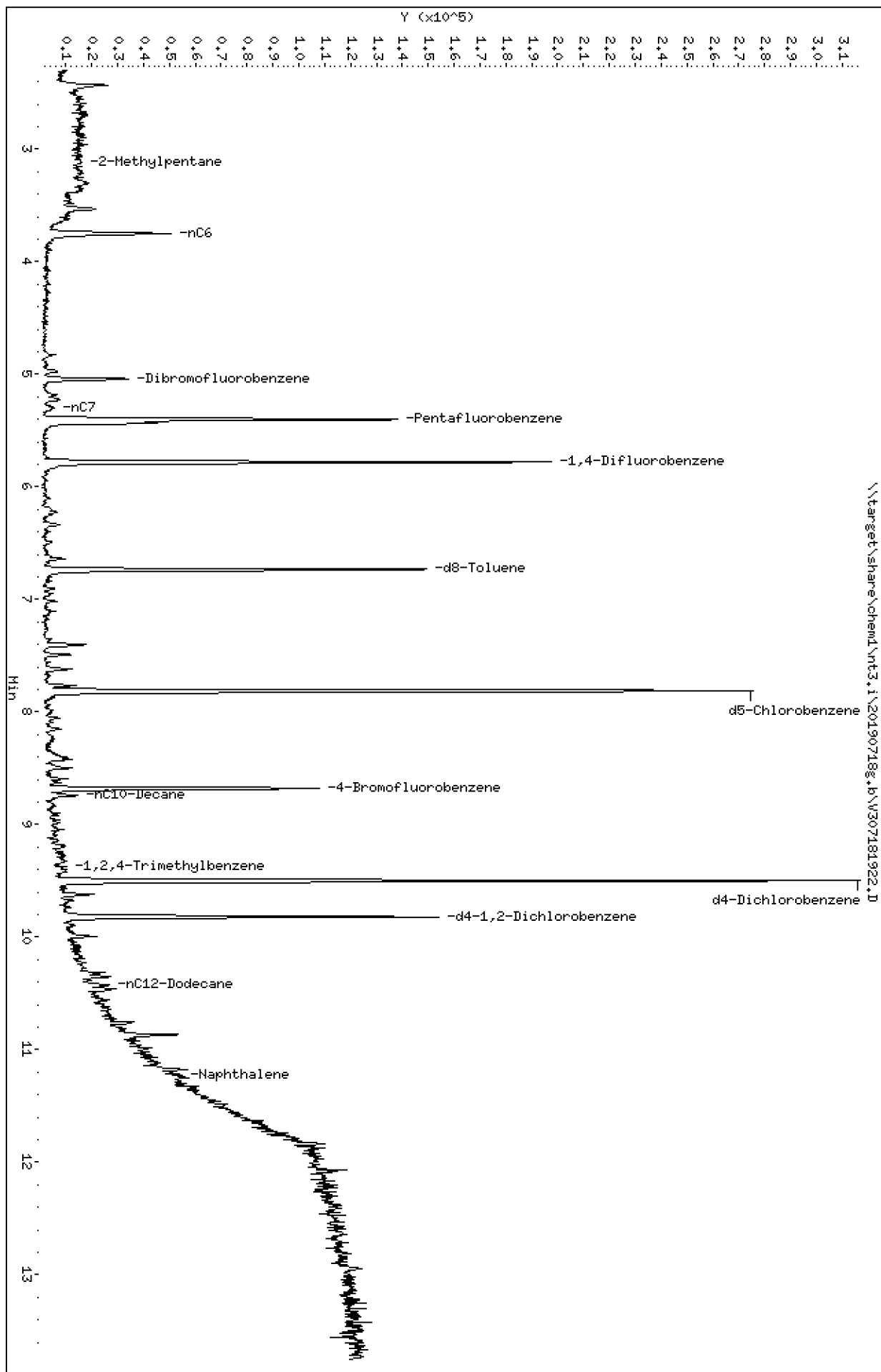
Sample Info: 19C0163-03

Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181922.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 18:38

ARI ID: 19G0163-03

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	361083	0.023
8015C 2MP-TMB (3.04 to 9.49)	30509602	689987	0.023
AK101 nC6-nC10 (3.67 to 8.65)	20565293	344404	0.017
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	497617	0.030
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	420028	0.018

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.811	403542	d5-Chlorobenzene
6.732	224817	d8-Toluene
9.500	451075	d4-Dichlorobenzene
8.682	150253	4-Bromofluorobenzene
9.819	214780	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04 E SDG: 19G0163

Sampled: 07/11/19 08:35 Prepared: 07/18/19 14:28 File ID: V307181923.D

% Solids: 23.52 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/18/19 19:04

Batch: BHG0455 Sequence: SHG0273 Initial/Final: 2.145 g Wet / 5 mL

Instrument: NT3 Column: RTX-VMS Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	65800	U	32900	65800

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	4.93	98.7	80 - 120	
4-Bromofluorobenzene	5.0000	4.96	99.3	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181923.D

Date : 18-JUL-2019 19:04

Client ID:

Sample Info: 19C0163-04

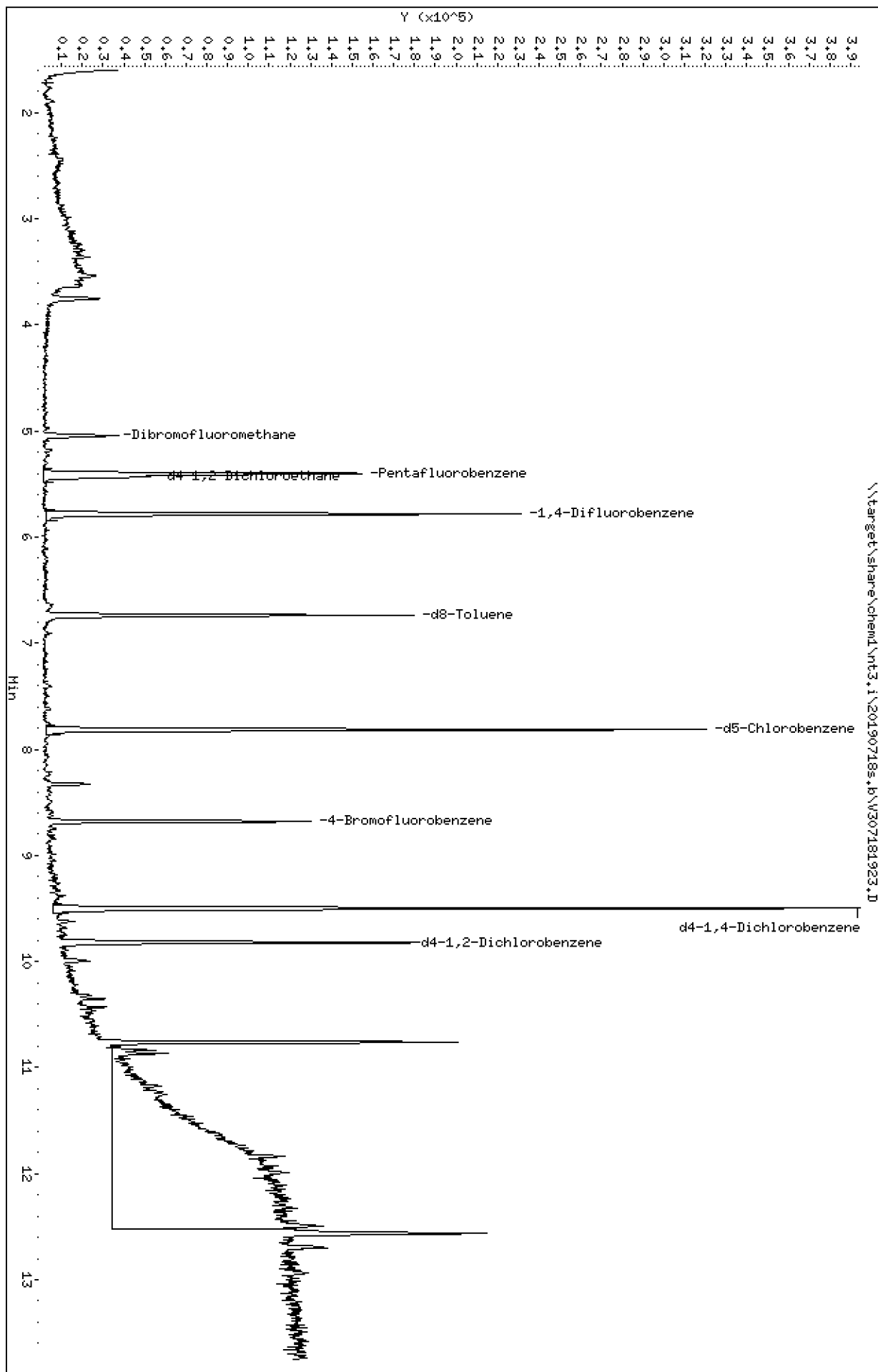
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181923.D
 Lab Smp Id: 19G0163-04
 Inj Date : 18-JUL-2019 19:04
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-04
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 58
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATAll

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.046	5.046	(0.934)	18746	4.93738	4.937
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	74198	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434	(1.005)	25867	5.17359	5.174
* 37 1,4-Difluorobenzene	114	5.780	5.784	(1.000)	127346	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735	(1.165)	82427	4.93348	4.933
* 53 d5-Chlorobenzene	117	7.815	7.814	(1.000)	126933	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	25022	4.96449	4.964
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	76325	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	36971	5.16340	5.163

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181923.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-04
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	74198	0.69
37 1,4-Difluorobenze	116116	58058	232232	127346	9.67
53 d5-Chlorobenzene	124912	62456	249824	126933	1.62
76 d4-1,4-Dichlorobe	77169	38585	154338	76325	-1.09

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.01
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.08
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-04
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.937	98.75	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	5.174	103.47	80-128
\$ 43 d8-Toluene	5.000	4.933	98.67	80-120
\$ 62 4-Bromofluorobenze	5.000	4.964	99.29	80-120
\$ 79 d4-1,2-Dichloroben	5.000	5.163	103.27	80-120

REVIEW SUMMARY FOR FILE - V307181923.D

Lab ID: 19G0163-04

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 19:04

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181923.D

Date: 18-JUL-2019 19:04

Client ID:

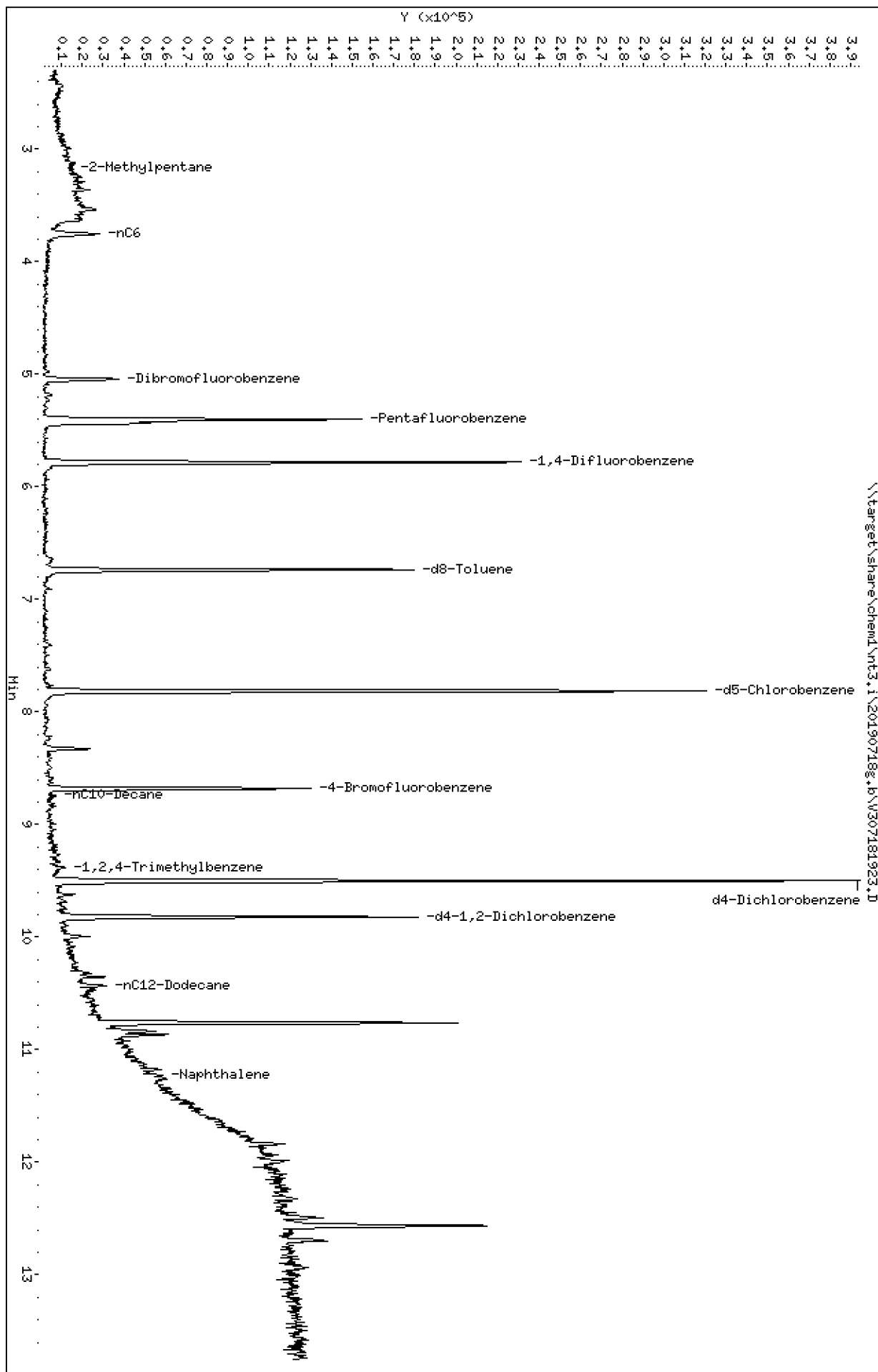
Sample Info: 19C0163-04

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181923.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 19:04

ARI ID: 19G0163-04

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	256096	0.016
8015C 2MP-TMB (3.04 to 9.49)	30509602	502988	0.016
AK101 nC6-nC10 (3.67 to 8.65)	20565293	145794	0.007
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	633530	0.038
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	274300	0.012

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	460271	d5-Chlorobenzene
6.737	259408	d8-Toluene
9.500	545754	d4-Dichlorobenzene
8.681	179931	4-Bromofluorobenzene
9.818	256178	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-05 E SDG: 19G0163

Sampled: 07/11/19 11:30 Prepared: 07/18/19 14:28 File ID: V307181924.D

% Solids: 22.49 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/18/19 19:31

Batch: BHG0455 Sequence: SHG0273 Initial/Final: 2.378 g Wet / 5 mL

Instrument: NT3 Column: RTX-VMS Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	64000	U	32000	64000

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.09	102	80 - 120	
4-Bromofluorobenzene	5.0000	4.86	97.3	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181924.D

Date : 18-JUL-2019 19:31

Client ID:

Sample Info: 19C0163-05

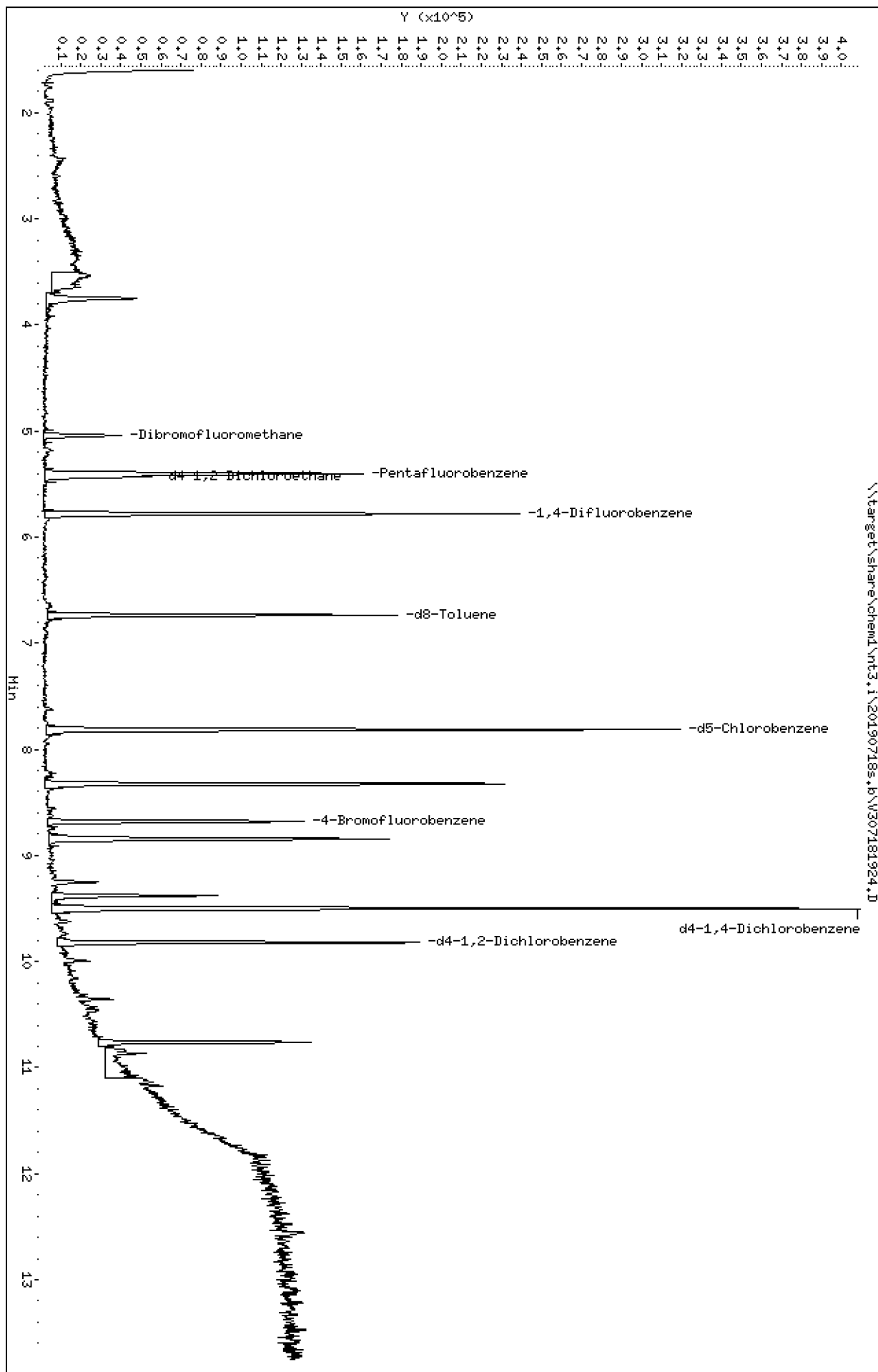
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWHS



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181924.D
 Lab Smp Id: 19G0163-05
 Inj Date : 18-JUL-2019 19:31
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-05
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 59
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATAll

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.036	5.046	(0.932)	20820	5.14810	5.148
* 32 Pentafluorobenzene	168	5.403	5.402	(1.000)	79034	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.430	5.434	(1.005)	25154	4.72315	4.723
* 37 1,4-Difluorobenzene	114	5.780	5.784	(1.000)	127938	10.0000	
\$ 43 d8-Toluene	98	6.737	6.735	(1.165)	85468	5.09182	5.092
* 53 d5-Chlorobenzene	117	7.815	7.814	(1.000)	131122	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	25321	4.86332	4.863
* 76 d4-1,4-Dichlorobenzene	152	9.500	9.498	(1.000)	77544	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.818	9.817	(1.034)	36773	5.05502	5.055

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181924.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-05
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	79034	7.26
37 1,4-Difluorobenze	116116	58058	232232	127938	10.18
53 d5-Chlorobenzene	124912	62456	249824	131122	4.97
76 d4-1,4-Dichlorobe	77169	38585	154338	77544	0.49

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.07
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.02
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-05
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.148	102.96	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	4.723	94.46	80-128
\$ 43 d8-Toluene	5.000	5.092	101.84	80-120
\$ 62 4-Bromofluorobenze	5.000	4.863	97.27	80-120
\$ 79 d4-1,2-Dichloroben	5.000	5.055	101.10	80-120

REVIEW SUMMARY FOR FILE - V307181924.D

Lab ID: 19G0163-05

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 19:31

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181924.D

Date: 18-JUL-2019 19:31

Client ID:

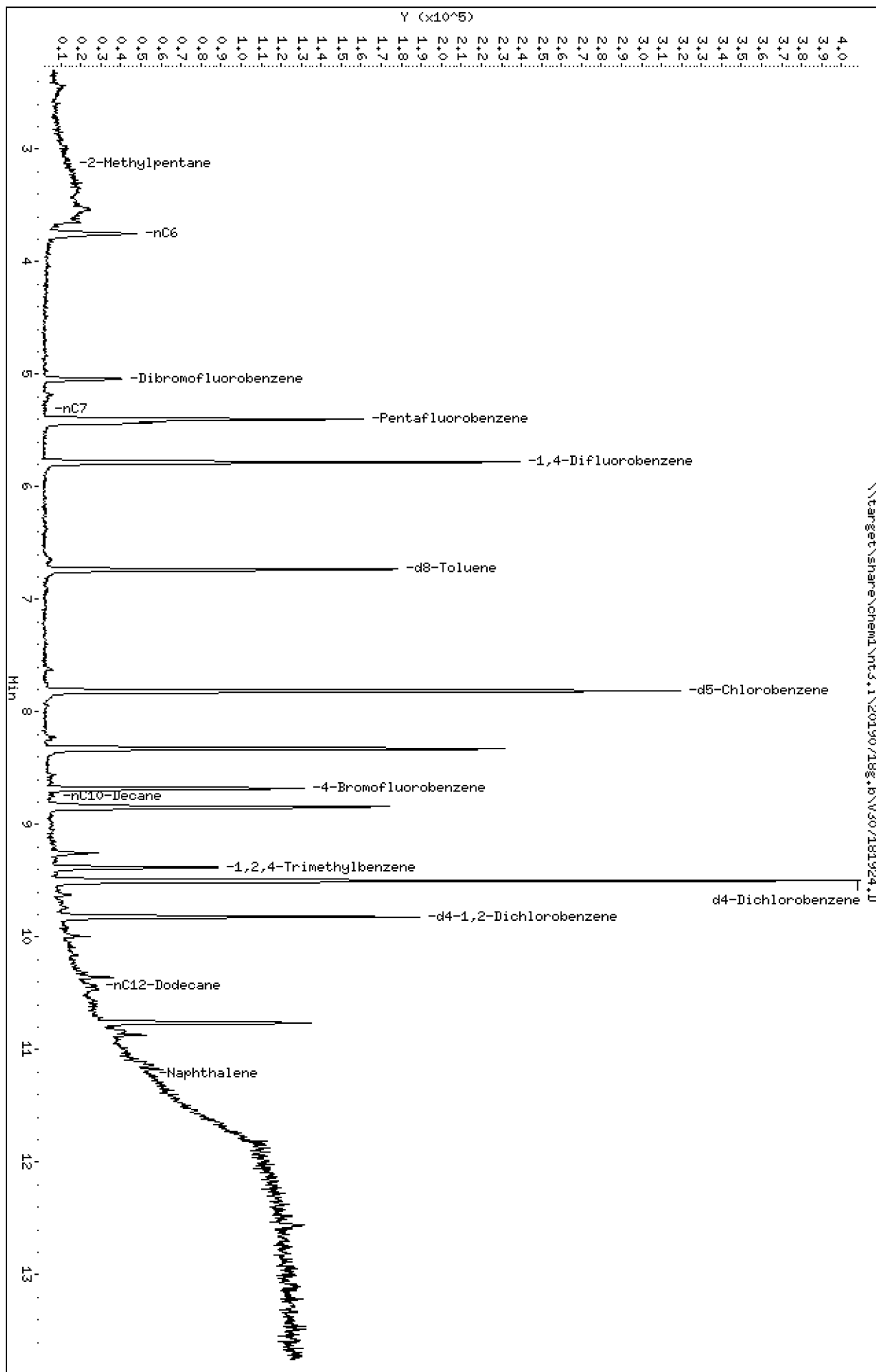
Sample Info: 19C0163-05

Instrument: nt3.i

Page 1

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181924.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 19:31

ARI ID: 19G0163-05

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	995153	0.064
8015C 2MP-TMB (3.04 to 9.49)	30509602	1304655	0.043
AK101 nC6-nC10 (3.67 to 8.65)	20565293	509594	0.025
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	1278135	0.076
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	997496	0.043

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.810	461993	d5-Chlorobenzene
6.732	255259	d8-Toluene
9.500	562787	d4-Dichlorobenzene
8.682	185047	4-Bromofluorobenzene
9.819	261086	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 E SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/18/19 14:28 File ID: V307181925.D

% Solids: 33.21 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/18/19 19:57

Batch: BHG0455 Sequence: SHG0273 Initial/Final: 2.085 g Wet / 5 mL

Instrument: NT3 Column: RTX-VMS Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	46200	U	23100	46200

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	4.96	99.2	80 - 120	
4-Bromofluorobenzene	5.0000	4.48	89.6	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181925.D

Date : 18-JUL-2019 19:57

Client ID:

Sample Info: 19C0163-06

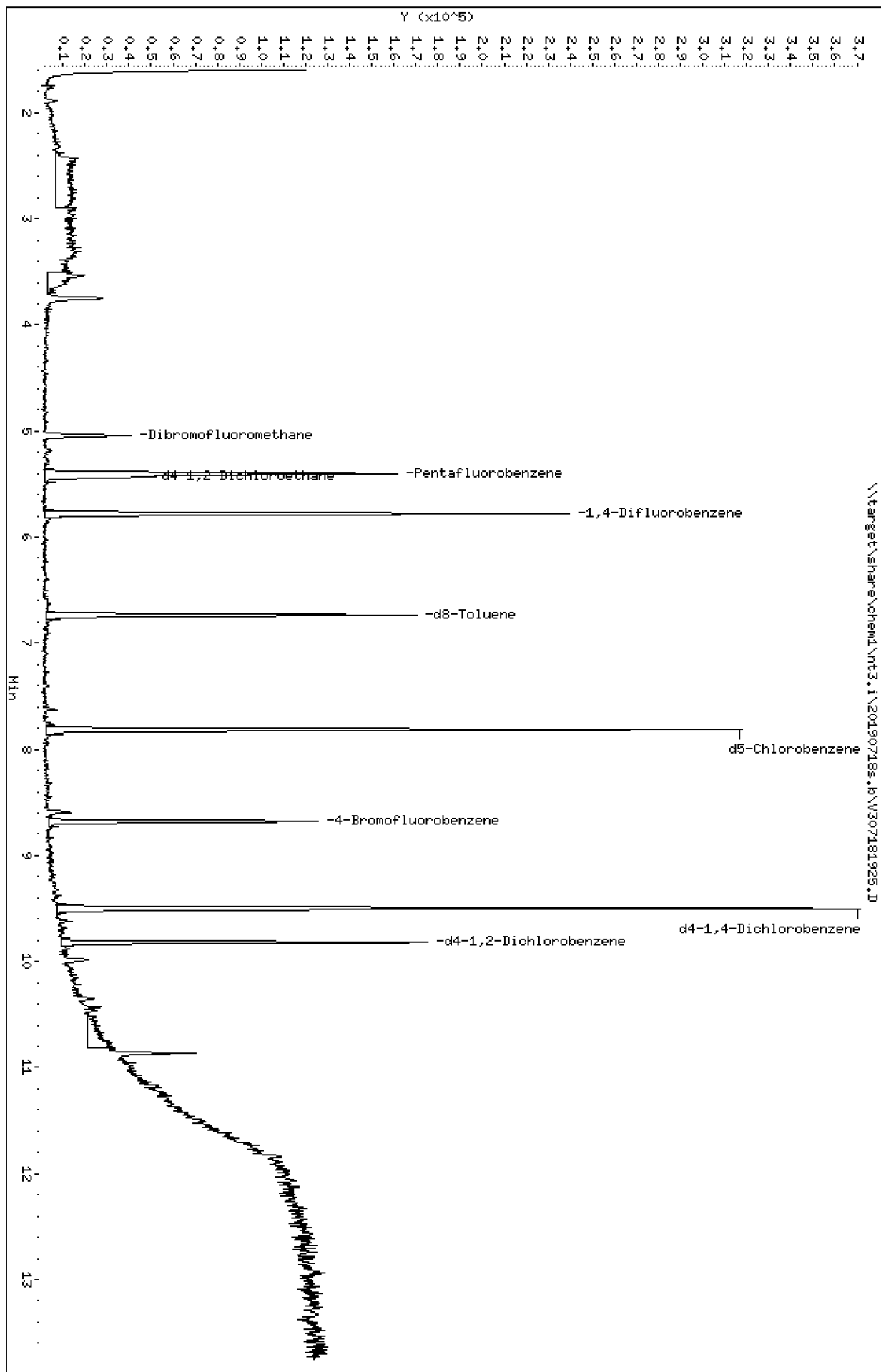
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
 Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181925.D
 Lab Smp Id: 19G0163-06
 Inj Date : 18-JUL-2019 19:57
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-06
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 60
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDAT11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.042	5.046	(0.933)	18359	4.46140	4.461
* 32 Pentafluorobenzene	168	5.403	5.402	(1.000)	80419	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.435	5.434	(1.006)	26329	4.85863	4.859
* 37 1,4-Difluorobenzene	114	5.780	5.784	(1.000)	127165	10.0000	
\$ 43 d8-Toluene	98	6.737	6.735	(1.165)	82727	4.95848	4.958
* 53 d5-Chlorobenzene	117	7.815	7.814	(1.000)	132772	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	23609	4.47815	4.478
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	71500	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.824	9.817	(1.034)	32686	4.87301	4.873

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181925.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-06
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	80419	9.14
37 1,4-Difluorobenze	116116	58058	232232	127165	9.52
53 d5-Chlorobenzene	124912	62456	249824	132772	6.29
76 d4-1,4-Dichlorobe	77169	38585	154338	71500	-7.35

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.07
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-06
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.461	89.23	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	4.859	97.17	80-128
\$ 43 d8-Toluene	5.000	4.958	99.17	80-120
\$ 62 4-Bromofluorobenze	5.000	4.478	89.56	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.873	97.46	80-120

REVIEW SUMMARY FOR FILE - V307181925.D

Lab ID: 19G0163-06

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 19:57

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181925.D

Date: 18-JUL-2019 19:57

Client ID:

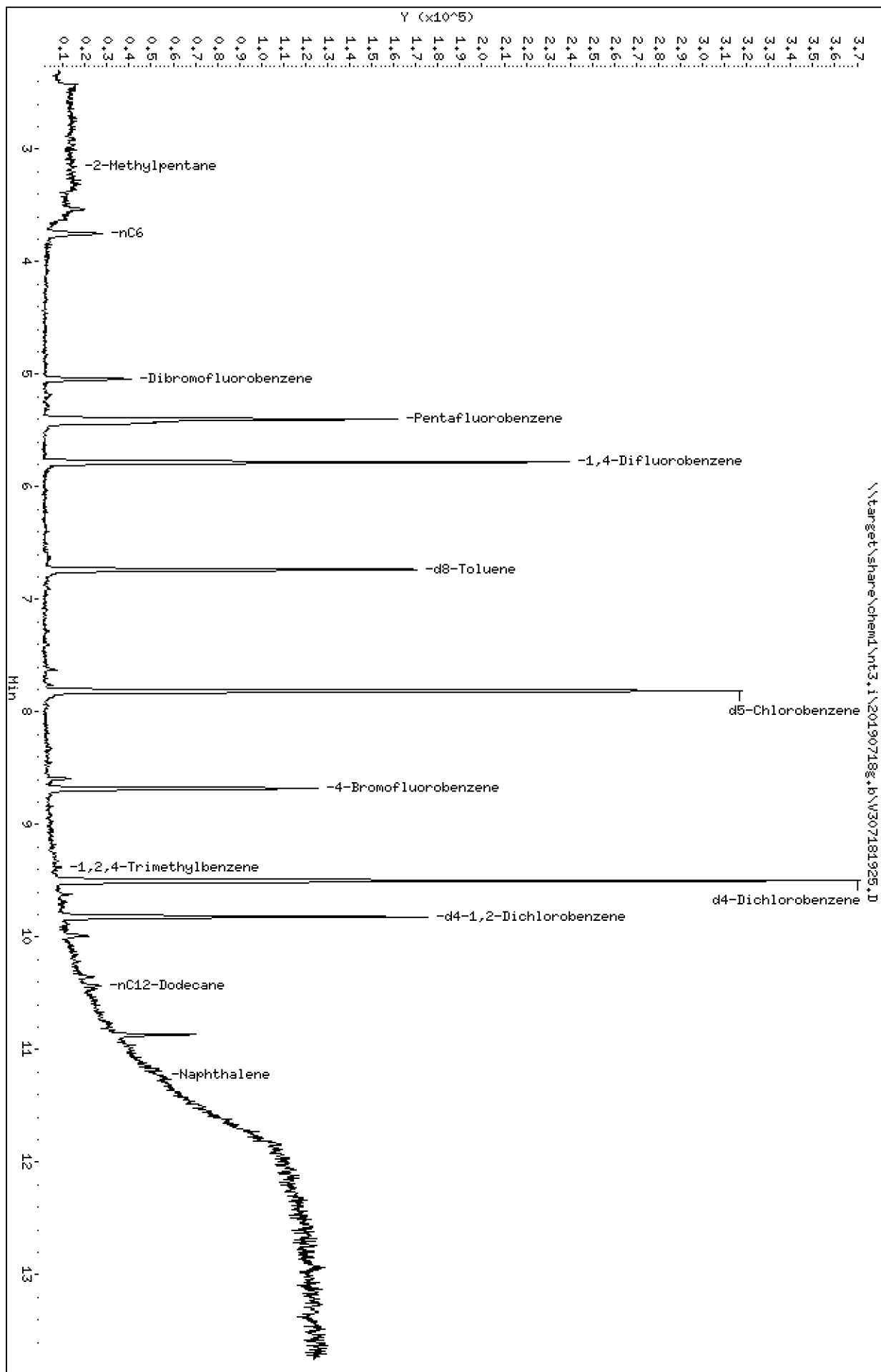
Sample Info: 19C0163-06

Instrument: nt3.i

Page 1

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181925.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 19:57

ARI ID: 19G0163-06

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	169215	0.011
8015C 2MP-TMB (3.04 to 9.49)	30509602	367141	0.012
AK101 nC6-nC10 (3.67 to 8.65)	20565293	113116	0.006
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	291632	0.017
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	169216	0.007

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.810	460324	d5-Chlorobenzene
6.737	253529	d8-Toluene
9.500	518545	d4-Dichlorobenzene
8.682	169971	4-Bromofluorobenzene
9.819	234001	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 E SDG: 19G0163

Sampled: 07/11/19 12:20 Prepared: 07/18/19 14:28 File ID: V307181926.D

% Solids: 50.14 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/18/19 20:24

Batch: BHG0455 Sequence: SHG0273 Initial/Final: 2.316 g Wet / 5 mL

Instrument: NT3 Column: RTX-VMS Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	26500	U	13300	26500

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.02	100	80 - 120	
4-Bromofluorobenzene	5.0000	4.51	90.3	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181926.D

Date : 18-JUL-2019 20:24

Client ID:

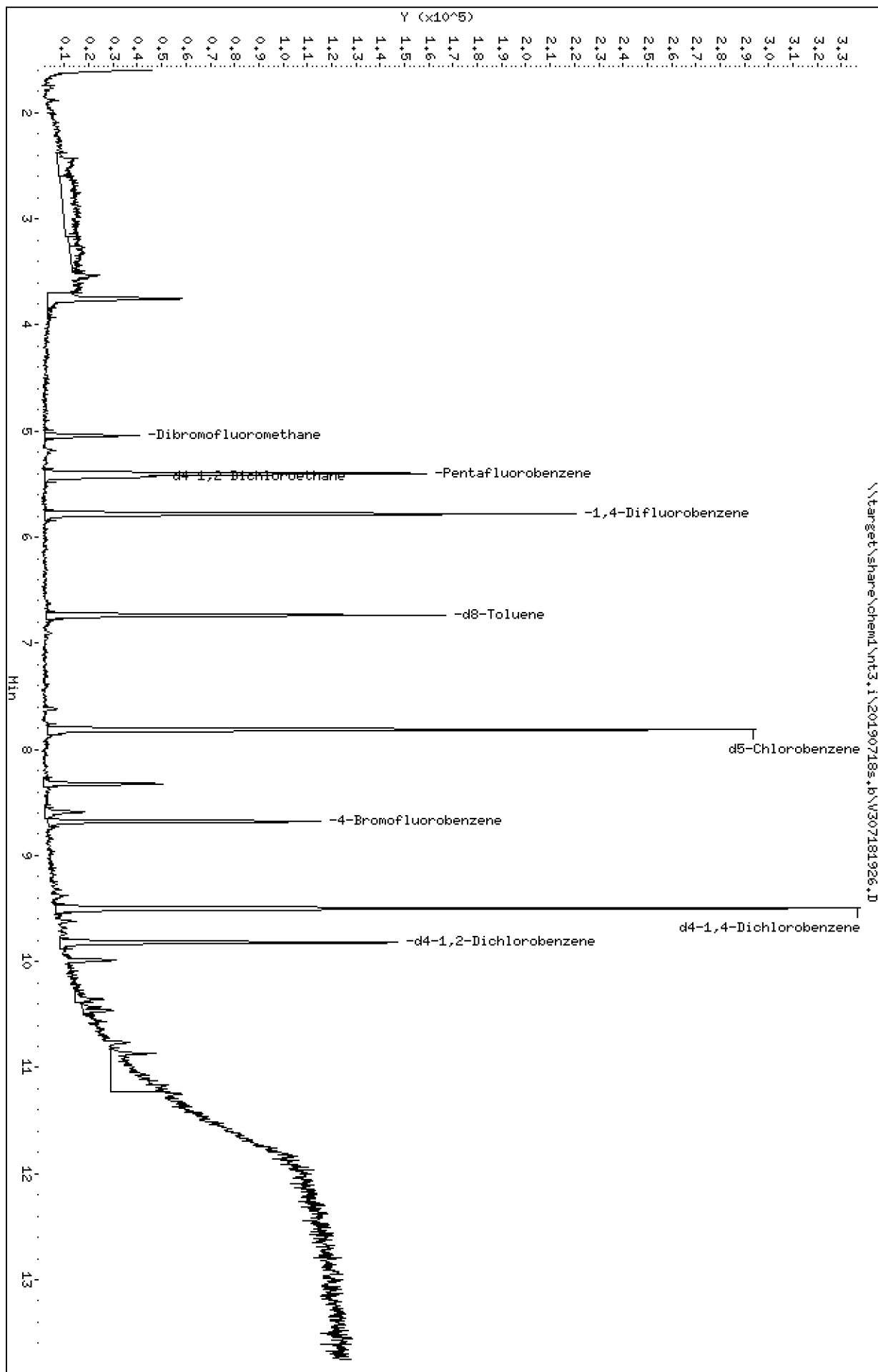
Sample Info: 19C0163-07

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
 Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181926.D
 Lab Smp Id: 19G0163-07
 Inj Date : 18-JUL-2019 20:24
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-07
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 61
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDAT11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG						CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111		5.041	5.046 (0.933)		18103	4.80481	4.805
* 32 Pentafluorobenzene	168		5.402	5.402 (1.000)		73630	10.0000	
\$ 33 d4-1,2-Dichloroethane	65		5.434	5.434 (1.006)		24370	4.91178	4.912
* 37 1,4-Difluorobenzene	114		5.780	5.784 (1.000)		117787	10.0000	
\$ 43 d8-Toluene	98		6.736	6.735 (1.165)		77576	5.01995	5.020
* 53 d5-Chlorobenzene	117		7.815	7.814 (1.000)		122413	10.0000	
\$ 62 4-Bromofluorobenzene	174		8.681	8.680 (1.111)		21934	4.51251	4.513
* 76 d4-1,4-Dichlorobenzene	152		9.499	9.498 (1.000)		63892	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152		9.823	9.817 (1.034)		29853	4.98062	4.981

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181926.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-07
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	73630	-0.08
37 1,4-Difluorobenze	116116	58058	232232	117787	1.44
53 d5-Chlorobenzene	124912	62456	249824	122413	-2.00
76 d4-1,4-Dichlorobe	77169	38585	154338	63892	-17.21

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.01
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.08
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-07
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.805	96.10	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	4.912	98.24	80-128
\$ 43 d8-Toluene	5.000	5.020	100.40	80-120
\$ 62 4-Bromofluorobenze	5.000	4.513	90.25	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.981	99.61	80-120

REVIEW SUMMARY FOR FILE - V307181926.D

Lab ID: 19G0163-07

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 20:24

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181926.D

Date : 18-JUL-2019 20:24

Client ID:

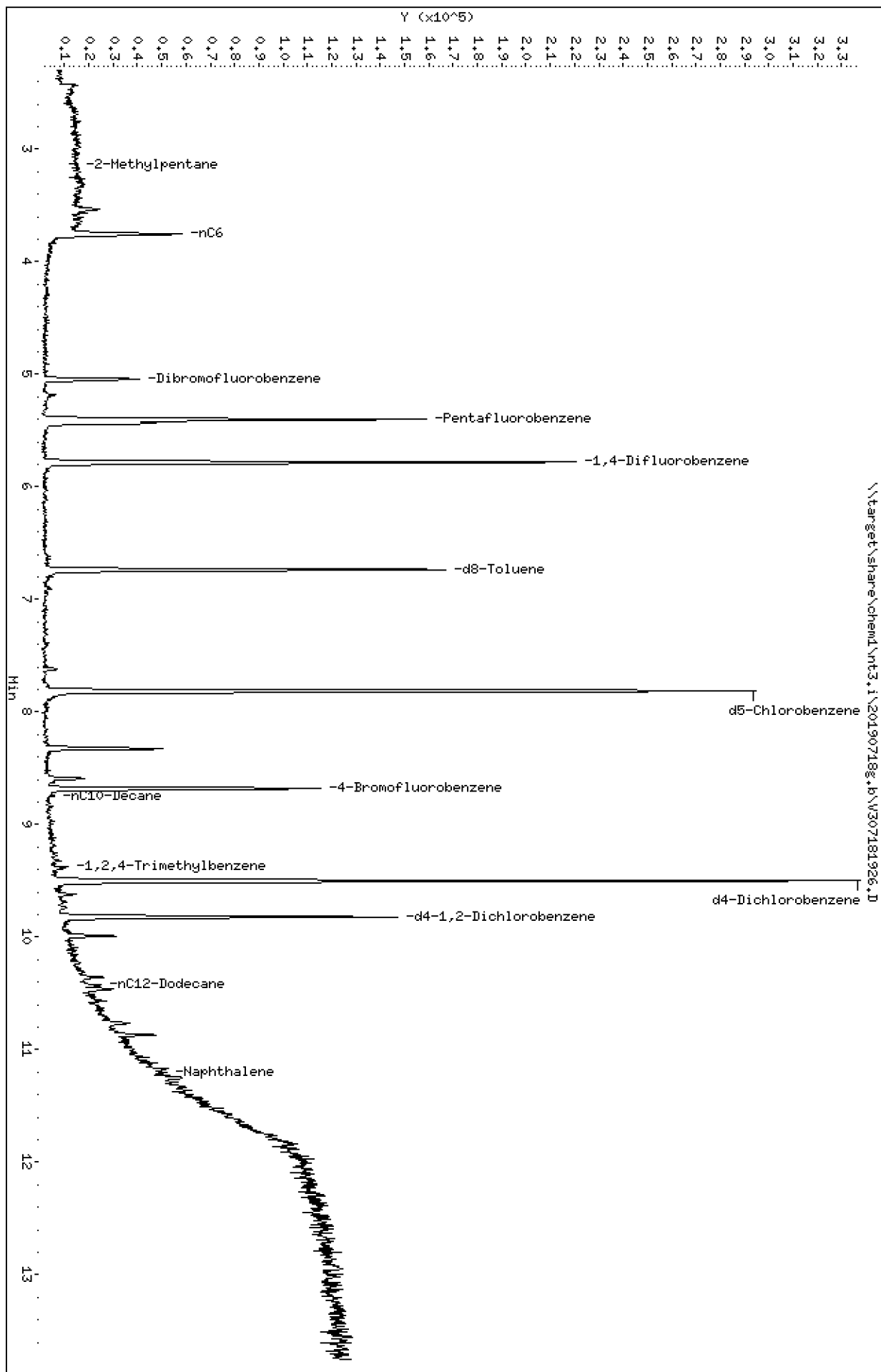
Sample Info: 19C0163-07

Instrument: nt3.i

Page 1

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181926.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 20:24

ARI ID: 19G0163-07

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	255603	0.016
8015C 2MP-TMB (3.04 to 9.49)	30509602	493492	0.016
AK101 nC6-nC10 (3.67 to 8.65)	20565293	256684	0.012
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	383317	0.023
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	258871	0.011

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.810	438874	d5-Chlorobenzene
6.737	244071	d8-Toluene
9.500	461817	d4-Dichlorobenzene
8.681	157974	4-Bromofluorobenzene
9.818	207766	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-08 E

SDG: 19G0163

Sampled: 07/11/19 11:55

Prepared: 07/18/19 14:28

File ID: V307181927.D

% Solids: 60.39

Preparation: EPA 5035 (Methanol Extraction)

Analyzed: 07/18/19 20:51

Batch: BHG0455

Sequence: SHG0273

Initial/Final: 5.045 g Wet / 5 mL

Instrument: NT3

Column: RTX-VMS

Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	11500	U	5740	11500

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.01	100	80 - 120	
4-Bromofluorobenzene	5.0000	4.91	98.2	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s,b\V307181927.D

Date : 18-JUL-2019 20:51

Client ID:

Sample Info: 19C0163-08

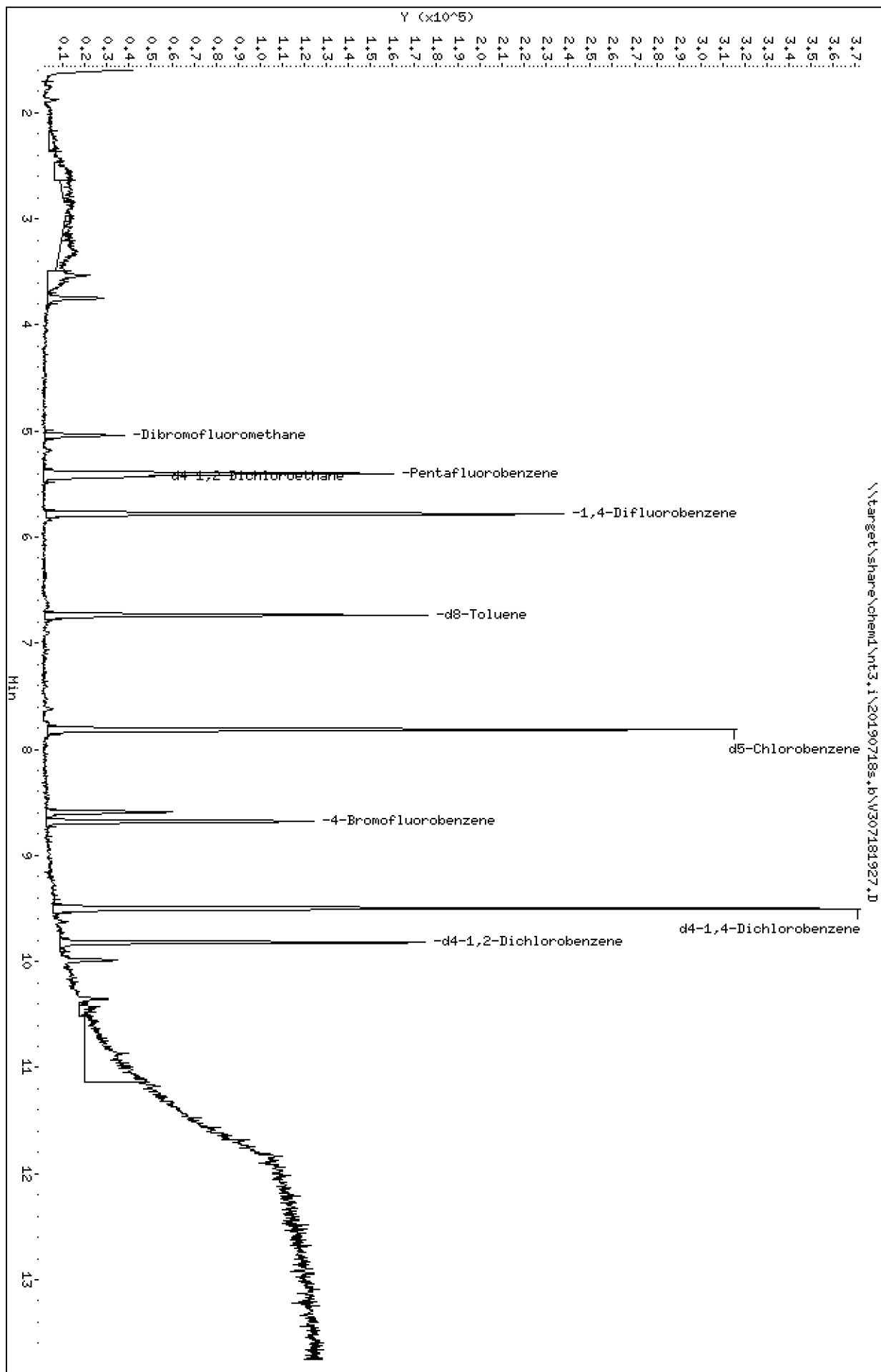
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181927.D
 Lab Smp Id: 19G0163-08
 Inj Date : 18-JUL-2019 20:51
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-08
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 62
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATAll

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.042	5.046	(0.933)	18127	4.54740	4.547
* 32 Pentafluorobenzene	168	5.403	5.402	(1.000)	77901	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.430	5.434	(1.005)	25170	4.79489	4.795
* 37 1,4-Difluorobenzene	114	5.780	5.784	(1.000)	126581	10.0000	
\$ 43 d8-Toluene	98	6.737	6.735	(1.165)	83204	5.01008	5.010
* 53 d5-Chlorobenzene	117	7.815	7.814	(1.000)	132018	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.682	8.680	(1.111)	25748	4.91177	4.912
* 76 d4-1,4-Dichlorobenzene	152	9.500	9.498	(1.000)	74924	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.819	9.817	(1.034)	33527	4.76997	4.770

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181927.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-08
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	77901	5.72
37 1,4-Difluorobenze	116116	58058	232232	126581	9.01
53 d5-Chlorobenzene	124912	62456	249824	132018	5.69
76 d4-1,4-Dichlorobe	77169	38585	154338	74924	-2.91

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.03
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.07
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.02
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-08
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.547	90.95	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	4.795	95.90	80-128
\$ 43 d8-Toluene	5.000	5.010	100.20	80-120
\$ 62 4-Bromofluorobenze	5.000	4.912	98.24	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.770	95.40	80-120

REVIEW SUMMARY FOR FILE - V307181927.D

Lab ID: 19G0163-08

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 20:51

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181927.D

Date : 18-JUL-2019 20:51

Client ID:

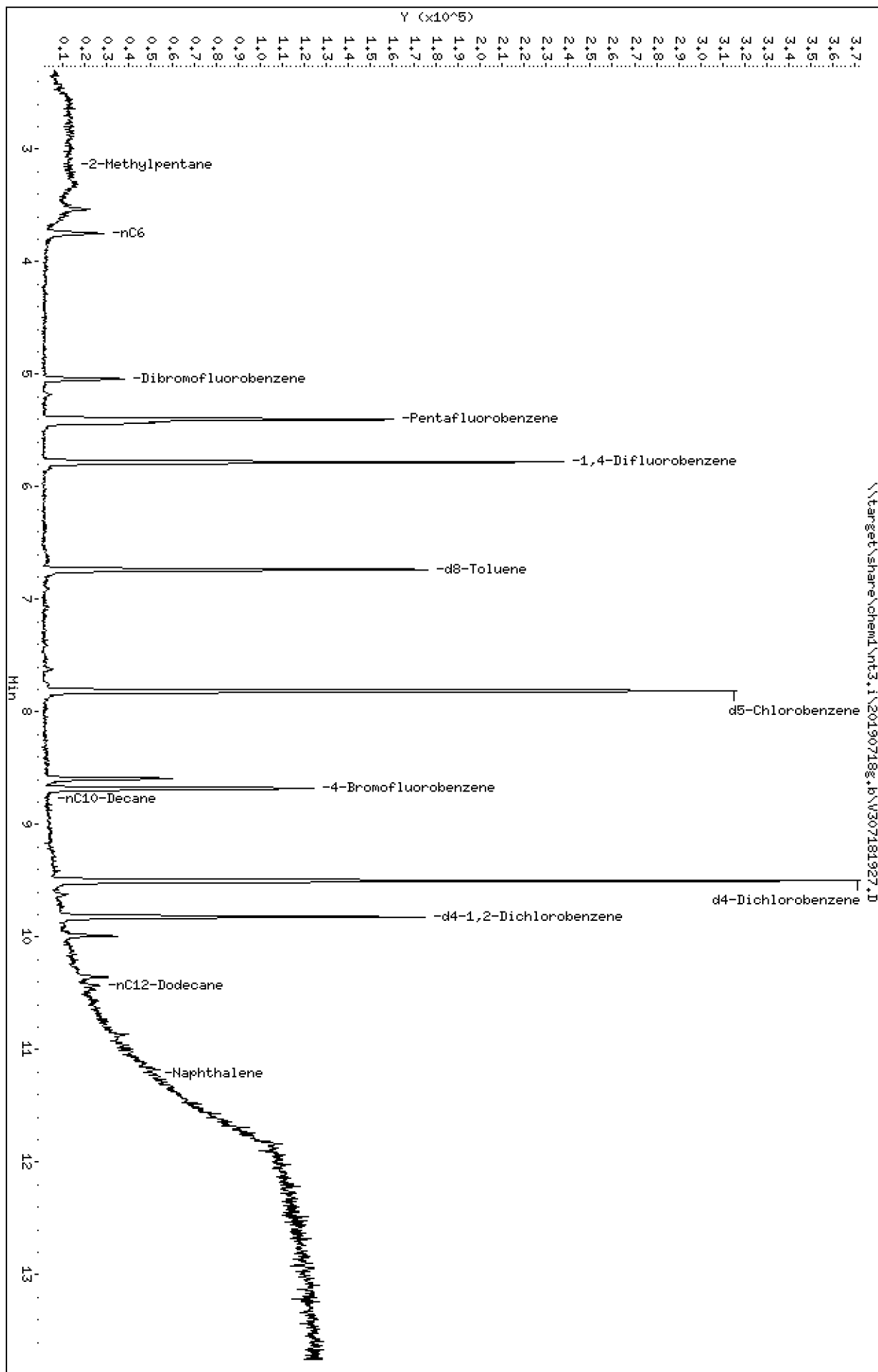
Sample Info: 19C0163-08

Instrument: nt3.i

Page 1

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181927.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 20:51

ARI ID: 19G0163-08
Client ID:
Matrix: WATER
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	223985	0.014
8015C 2MP-TMB (3.04 to 9.49)	30509602	373210	0.012
AK101 nC6-nC10 (3.67 to 8.65)	20565293	158228	0.008
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	311817	0.019
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	225990	0.010

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.811	469863	d5-Chlorobenzene
6.737	261288	d8-Toluene
9.500	528856	d4-Dichlorobenzene
8.682	186874	4-Bromofluorobenzene
9.819	239205	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 E SDG: 19G0163

Sampled: 07/11/19 10:25 Prepared: 07/18/19 14:28 File ID: V307181928.D

% Solids: 49.21 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/18/19 21:17

Batch: BHG0455 Sequence: SHG0273 Initial/Final: 2.86 g Wet / 5 mL

Instrument: NT3 Column: RTX-VMS Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	22900	U	11500	22900

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	4.96	99.2	80 - 120	
4-Bromofluorobenzene	5.0000	4.51	90.3	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181928.D

Date : 18-JUL-2019 21:17

Client ID:

Sample Info: 19C0163-09

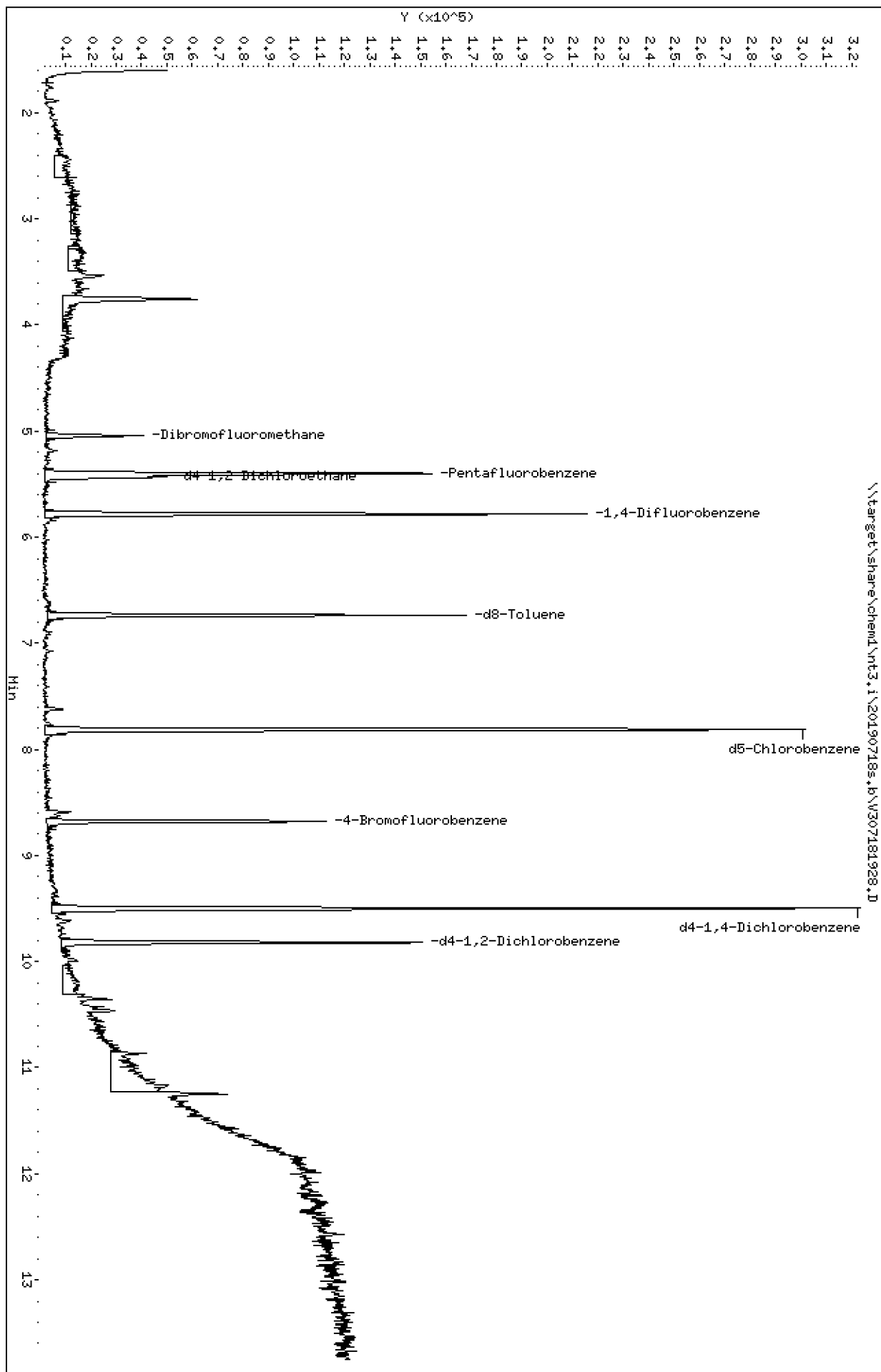
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181928.D
 Lab Smp Id: 19G0163-09
 Inj Date : 18-JUL-2019 21:17
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-09
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 63
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDAT11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.933)	18946	5.06626	5.066
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	73082	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.434	5.434	(1.006)	23681	4.80871	4.809
* 37 1,4-Difluorobenzene	114	5.779	5.784	(1.000)	118734	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735	(1.165)	77298	4.96206	4.962
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	119654	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	21449	4.51448	4.514
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	63511	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	29636	4.97407	4.974

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181928.D Calibration Time: 22:11
 Lab Smp Id: 19G0163-09
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	73082	-0.82
37 1,4-Difluorobenze	116116	58058	232232	118734	2.25
53 d5-Chlorobenzene	124912	62456	249824	119654	-4.21
76 d4-1,4-Dichlorobe	77169	38585	154338	63511	-17.70

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.09
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: 19G0163-09
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.066	101.33	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	4.809	96.17	80-128
\$ 43 d8-Toluene	5.000	4.962	99.24	80-120
\$ 62 4-Bromofluorobenze	5.000	4.514	90.29	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.974	99.48	80-120

REVIEW SUMMARY FOR FILE - V307181928.D

Lab ID: 19G0163-09

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 21:17

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181928.D

Date: 18-JUL-2019 21:17

Client ID:

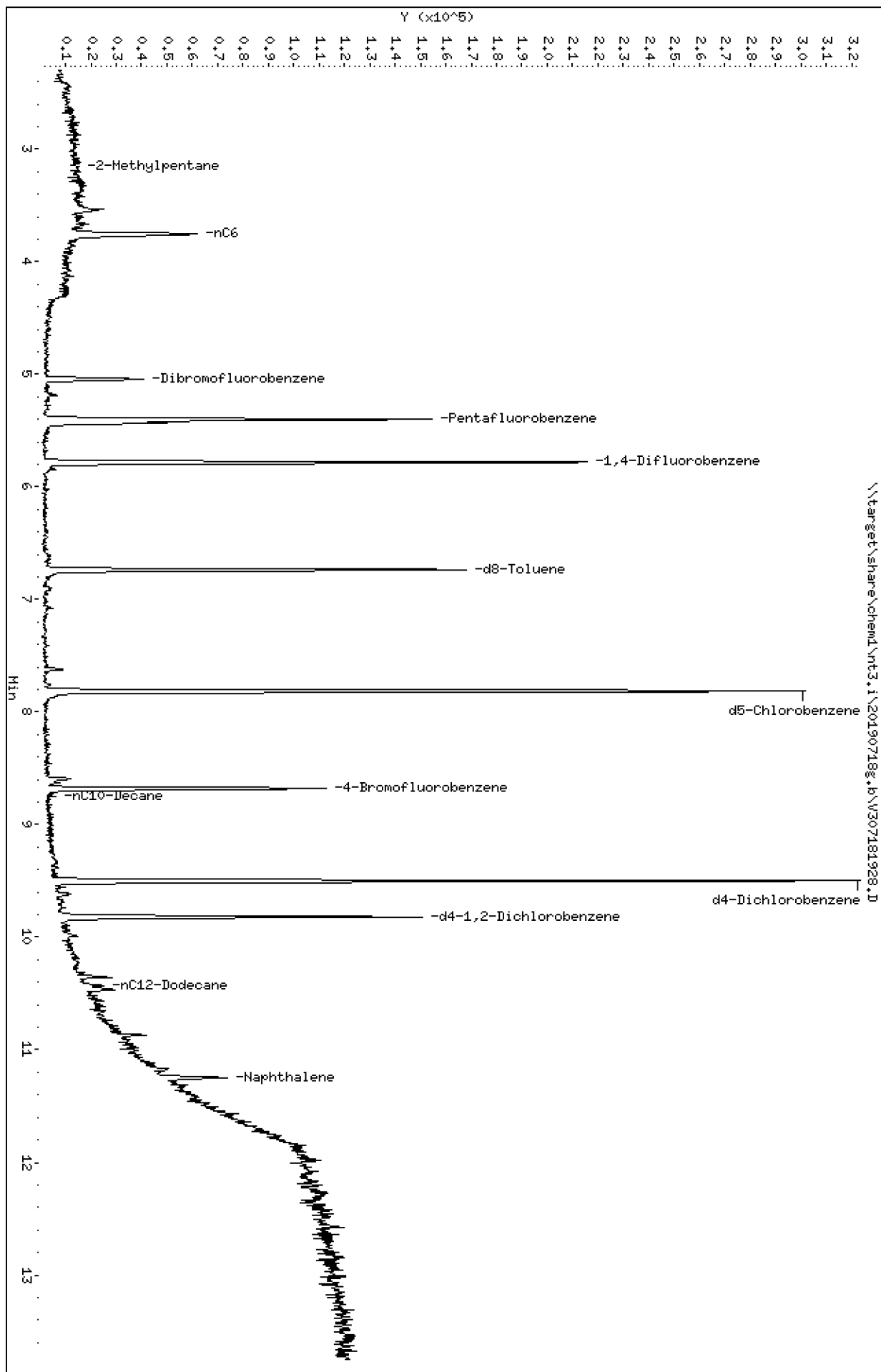
Sample Info: 19C0163-09

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181928.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 21:17

ARI ID: 19G0163-09
Client ID:
Matrix: WATER
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	145132	0.009
8015C 2MP-TMB (3.04 to 9.49)	30509602	563180	0.018
AK101 nC6-nC10 (3.67 to 8.65)	20565293	299102	0.015
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	274110	0.016
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	147719	0.006

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	432431	d5-Chlorobenzene
6.736	246861	d8-Toluene
9.499	454484	d4-Dichlorobenzene
8.681	166390	4-Bromofluorobenzene
9.818	210651	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-10 E SDG: 19G0163

Sampled: 07/11/19 10:10 Prepared: 07/19/19 09:38 File ID: V207191914G.D

% Solids: 66.29 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/19/19 11:09

Batch: BHG0474 Sequence: SHG0276 Initial/Final: 2.974 g Wet / 5 mL

Instrument: NT2 Column: RTX-VMS Calibration: CG00055

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	15200	U	7610	15200

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.03	101	80 - 120	
4-Bromofluorobenzene	5.0000	4.92	98.4	78 - 123	

Data File: \\target\share\chend\nt2.i\20190719s.b\20191914G.D

Date : 19-JUL-2019 11:09

Client ID:

Sample Info: 19C0163-10

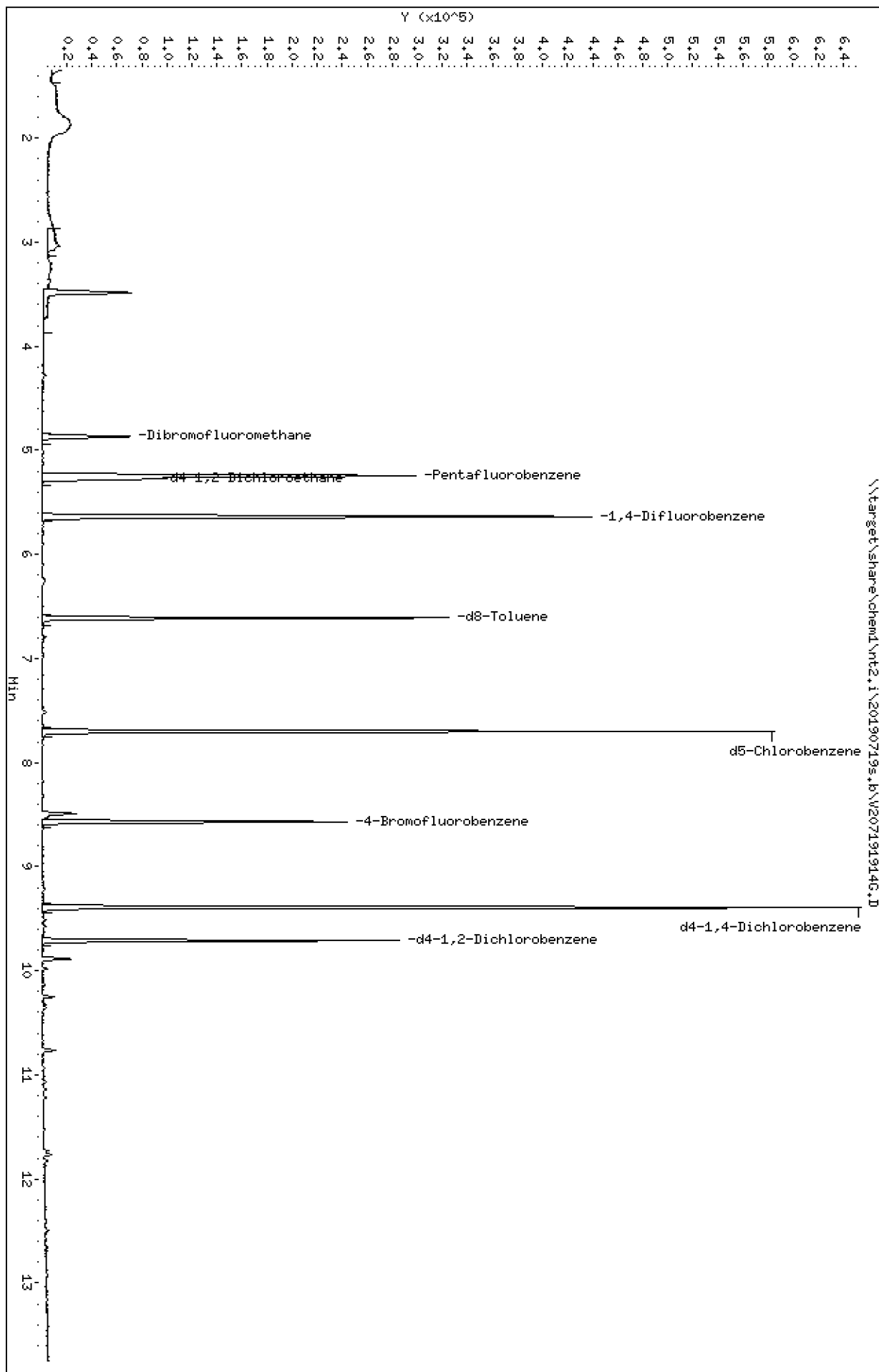
Page 1

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191914G.D
Lab Smp Id: 19G0163-10
Inj Date : 19-JUL-2019 11:09
Operator : LH Inst ID: nt2.i
Smp Info : 19G0163-10
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 45
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111		4.865	4.872 (0.927)		36011	4.78243	4.782	
* 32 Pentafluorobenzene	168		5.248	5.249 (1.000)		145681	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.272	5.274 (1.005)		47499	5.20970	5.210	
* 37 1,4-Difluorobenzene	114		5.637	5.639 (1.000)		260195	10.0000		
\$ 43 d8-Toluene	98		6.611	6.612 (1.173)		163645	5.03052	5.031	
* 53 d5-Chlorobenzene	117		7.700	7.701 (1.000)		247341	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.569	8.571 (1.113)		48017	4.91773	4.918	
* 76 d4-1,4-Dichlorobenzene	152		9.391	9.392 (1.000)		130146	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.713	9.708 (1.034)		60701	4.95182	4.952	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191914G.D Calibration Time: 17:11
 Lab Smp Id: 19G0163-10
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	145681	-14.11
37 1,4-Difluorobenze	298924	149462	597848	260195	-12.96
53 d5-Chlorobenzene	281842	140921	563684	247341	-12.24
76 d4-1,4-Dichlorobe	151581	75791	303162	130146	-14.14

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.03
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.02
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.02
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-10
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.782	95.65	
\$ 33 d4-1,2-Dichloroeth	5.000	5.210	104.19	
\$ 43 d8-Toluene	5.000	5.031	100.61	
\$ 62 4-Bromofluorobenze	5.000	4.918	98.35	
\$ 79 d4-1,2-Dichloroben	5.000	4.952	99.04	

REVIEW SUMMARY FOR FILE - V207191914G.D

Lab ID: 19G0163-10

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 11:09

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191914G.D

Date : 19-JUL-2019 11:09

Client ID:

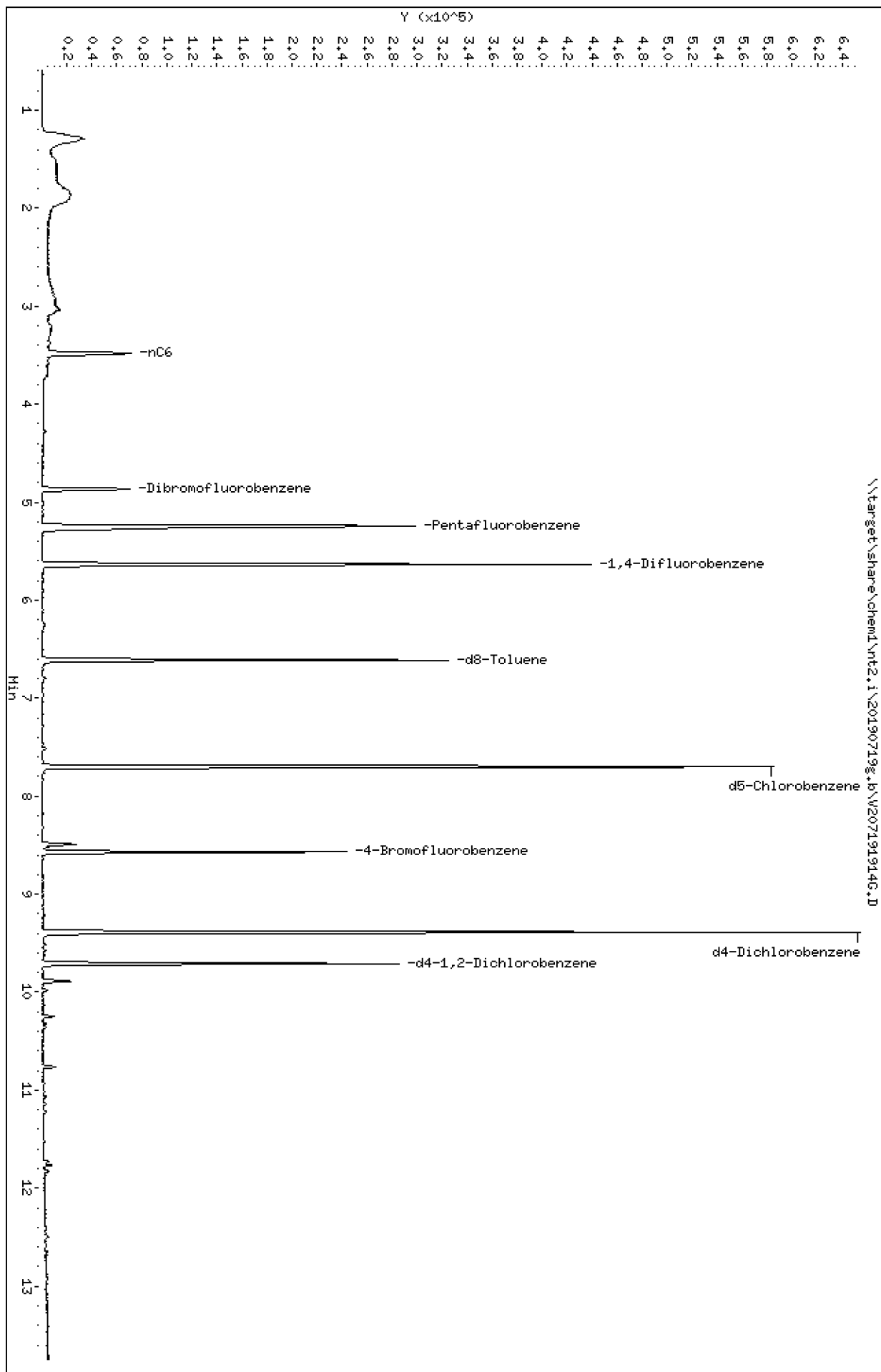
Sample Info: 19C0163-10

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191914G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 11:09

ARI ID: 19G0163-10

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	80403	0.003
8015C 2MP-TMB (3.04 to 9.27)	33333333	164179	0.005
AK101 nC6-nC10 (3.38 to 8.54)	31889318	164178	0.005
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	94143	0.004
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	80403	0.002

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.700	759596	d5-Chlorobenzene
8.570	301609	4-Bromofluorobenzene
6.611	428183	d8-Toluene
9.391	831633	d4-Dichlorobenzene
9.708	380280	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-11 E SDG: 19G0163

Sampled: 07/11/19 09:45 Prepared: 07/19/19 09:38 File ID: V207191915G.D

% Solids: 71.21 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/19/19 11:30

Batch: BHG0474 Sequence: SHG0276 Initial/Final: 1.953 g Wet / 5 mL

Instrument: NT2 Column: RTX-VMS Calibration: CG00055

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	20000	U	10000	20000

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.06	101	80 - 120	
4-Bromofluorobenzene	5.0000	4.82	96.5	78 - 123	

Data File: \\target\share\chend\nt2.i\20190719s.b\20191915G.D

Date : 19-JUL-2019 11:30

Client ID:

Sample Info: 19C0163-11

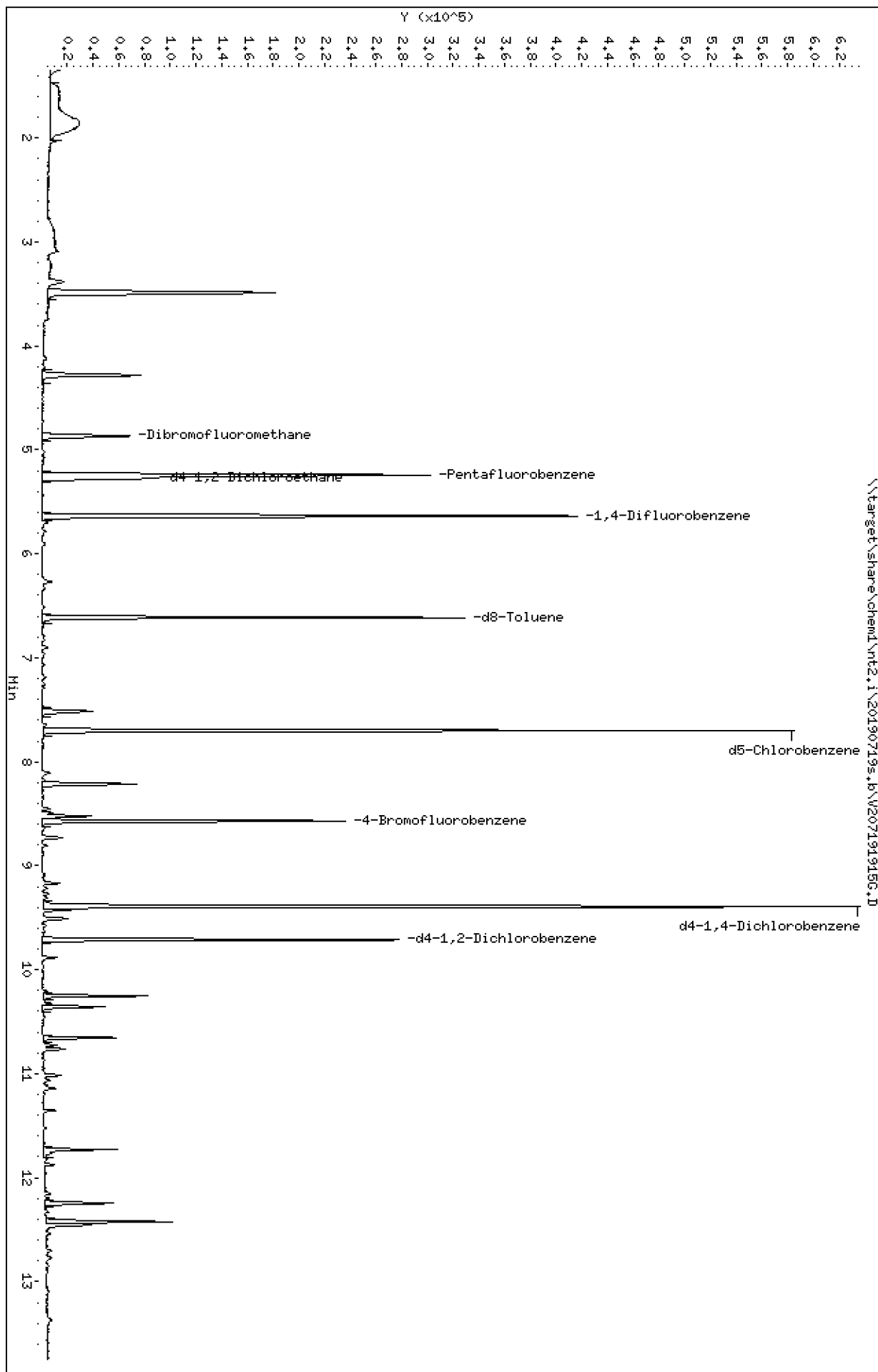
Page 1

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191915G.D
Lab Smp Id: 19G0163-11
Inj Date : 19-JUL-2019 11:30
Operator : LH
Smp Info : 19G0163-11
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i
Cal Date : 18-JUL-2019 15:05
Als bottle: 46
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11

Inst ID: nt2.i

Quant Type: ISTD
Cal File: V207181915a.D

Compound Sublist: gsurr.sub

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111		4.865	4.872	(0.928)	35013	4.71550	4.716	
* 32 Pentafluorobenzene	168		5.243	5.249	(1.000)	143654	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.273	5.274	(1.006)	46748	5.19968	5.200	
* 37 1,4-Difluorobenzene	114		5.638	5.639	(1.000)	256716	10.0000		
\$ 43 d8-Toluene	98		6.611	6.612	(1.173)	162390	5.05959	5.060	
* 53 d5-Chlorobenzene	117		7.700	7.701	(1.000)	245172	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.570	8.571	(1.113)	46686	4.82371	4.824	
* 76 d4-1,4-Dichlorobenzene	152		9.391	9.392	(1.000)	125630	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.714	9.708	(1.034)	59219	5.00458	5.005	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191915G.D Calibration Time: 17:11
 Lab Smp Id: 19G0163-11
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	143654	-15.30
37 1,4-Difluorobenze	298924	149462	597848	256716	-14.12
53 d5-Chlorobenzene	281842	140921	563684	245172	-13.01
76 d4-1,4-Dichlorobe	151581	75791	303162	125630	-17.12

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.24	-0.13
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.01
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.01
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-11
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.716	94.31	
\$ 33 d4-1,2-Dichloroeth	5.000	5.200	103.99	
\$ 43 d8-Toluene	5.000	5.060	101.19	
\$ 62 4-Bromofluorobenze	5.000	4.824	96.47	
\$ 79 d4-1,2-Dichloroben	5.000	5.005	100.09	

REVIEW SUMMARY FOR FILE - V207191915G.D

Lab ID: 19G0163-11

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 11:30

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191915G.D

Date: 19-JUL-2019 11:30

Client ID:

Sample Info: 19C0163-11

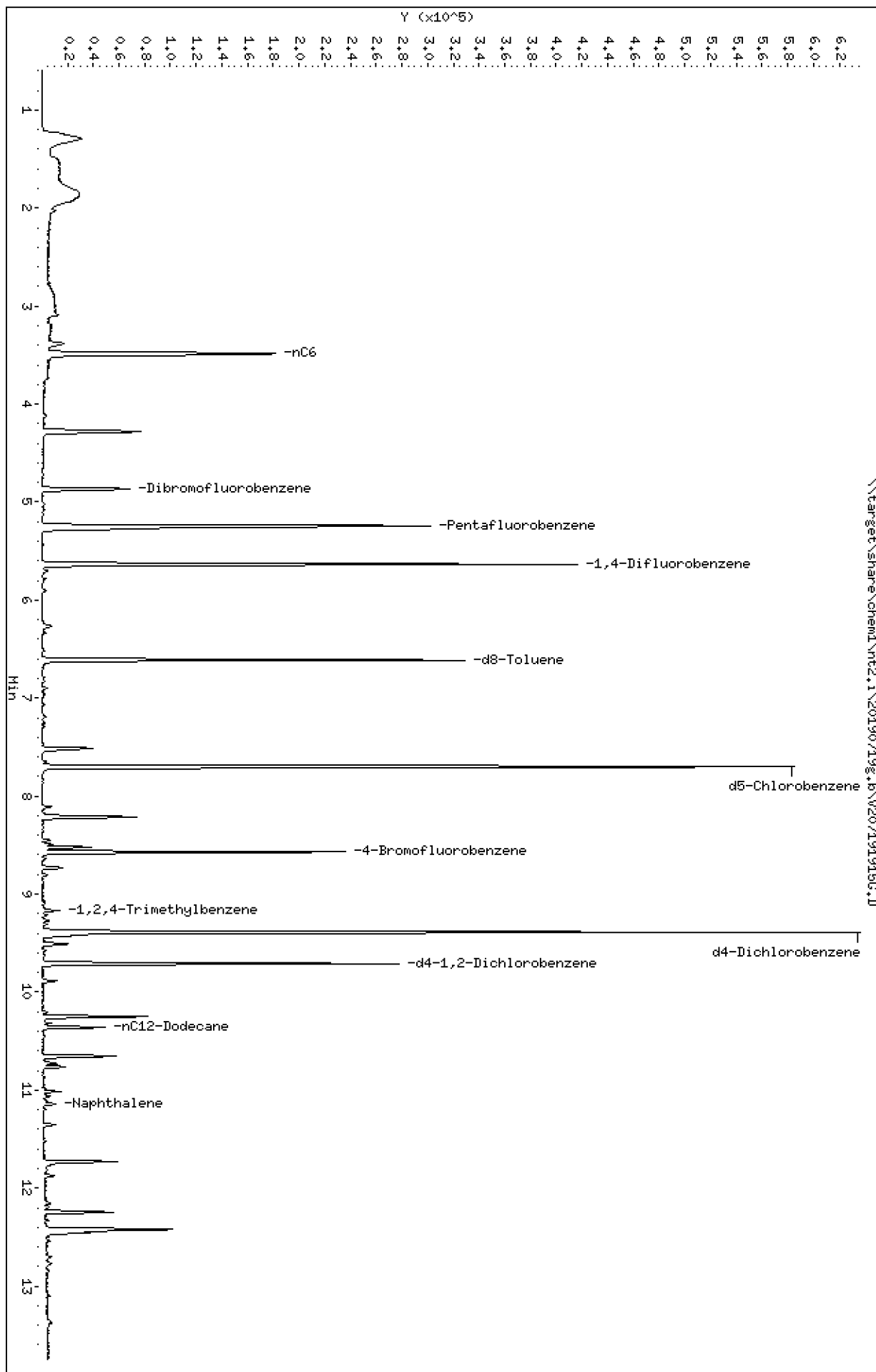
Page 1

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191915G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 11:30

ARI ID: 19G0163-11

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	444450	0.019
8015C 2MP-TMB (3.04 to 9.27)	33333333	742345	0.022
AK101 nC6-nC10 (3.38 to 8.54)	31889318	699907	0.022
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	568043	0.023
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	444451	0.013

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.701	751160	d5-Chlorobenzene
8.571	304199	4-Bromofluorobenzene
6.612	424662	d8-Toluene
9.392	845364	d4-Dichlorobenzene
9.708	371632	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12 E SDG: 19G0163

Sampled: 07/11/19 09:50 Prepared: 07/19/19 09:38 File ID: V207191916G.D

% Solids: 72.06 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/19/19 11:51

Batch: BHG0474 Sequence: SHG0276 Initial/Final: 2.593 g Wet / 5 mL

Instrument: NT2 Column: RTX-VMS Calibration: CG00055

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	15300	U	7660	15300

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.01	100	80 - 120	
4-Bromofluorobenzene	5.0000	4.84	96.9	78 - 123	

Data File: \\target\share\chend\nt2.i\20190719s.b\207191916G.D

Date : 19-JUL-2019 11:51

Client ID:

Sample Info: 19C0163-12

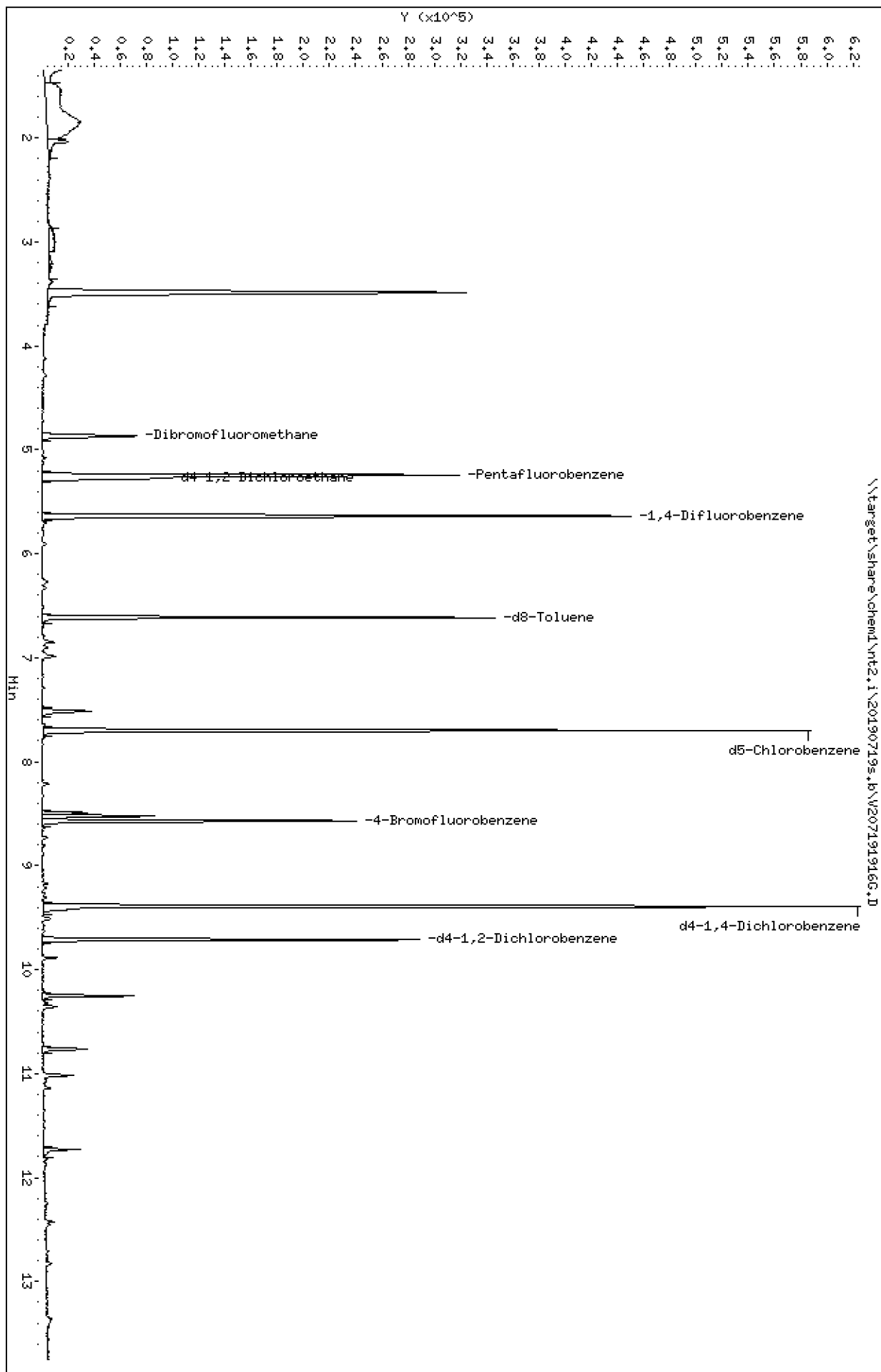
Page 1

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191916G.D
Lab Smp Id: 19G0163-12
Inj Date : 19-JUL-2019 11:51
Operator : LH Inst ID: nt2.i
Smp Info : 19G0163-12
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 47
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	4.866	4.872	(0.928)	37345	4.73379	4.734
* 32 Pentafluorobenzene	168	5.243	5.249	(1.000)	152630	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.274	5.274	(1.006)	49912	5.22512	5.225
* 37 1,4-Difluorobenzene	114	5.639	5.639	(1.000)	271805	10.0000	
\$ 43 d8-Toluene	98	6.612	6.612	(1.173)	170287	5.01110	5.011
* 53 d5-Chlorobenzene	117	7.701	7.701	(1.000)	253702	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.571	8.571	(1.113)	48505	4.84315	4.843
* 76 d4-1,4-Dichlorobenzene	152	9.392	9.392	(1.000)	127585	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.708	9.708	(1.034)	59201	4.92639	4.926

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191916G.D Calibration Time: 17:11
 Lab Smp Id: 19G0163-12
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	152630	-10.01
37 1,4-Difluorobenze	298924	149462	597848	271805	-9.07
53 d5-Chlorobenzene	281842	140921	563684	253702	-9.98
76 d4-1,4-Dichlorobe	151581	75791	303162	127585	-15.83

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.24	-0.11
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-12
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.734	94.68	
\$ 33 d4-1,2-Dichloroeth	5.000	5.225	104.50	
\$ 43 d8-Toluene	5.000	5.011	100.22	
\$ 62 4-Bromofluorobenze	5.000	4.843	96.86	
\$ 79 d4-1,2-Dichloroben	5.000	4.926	98.53	

REVIEW SUMMARY FOR FILE - V207191916G.D

Lab ID: 19G0163-12

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 11:51

RT CO-ELUTION COMPOUNDS

Data File: \\target\share\chend\nt2.i\20190719g.b\207191916G.D

Date : 19-JUL-2019 11:51

Client ID:

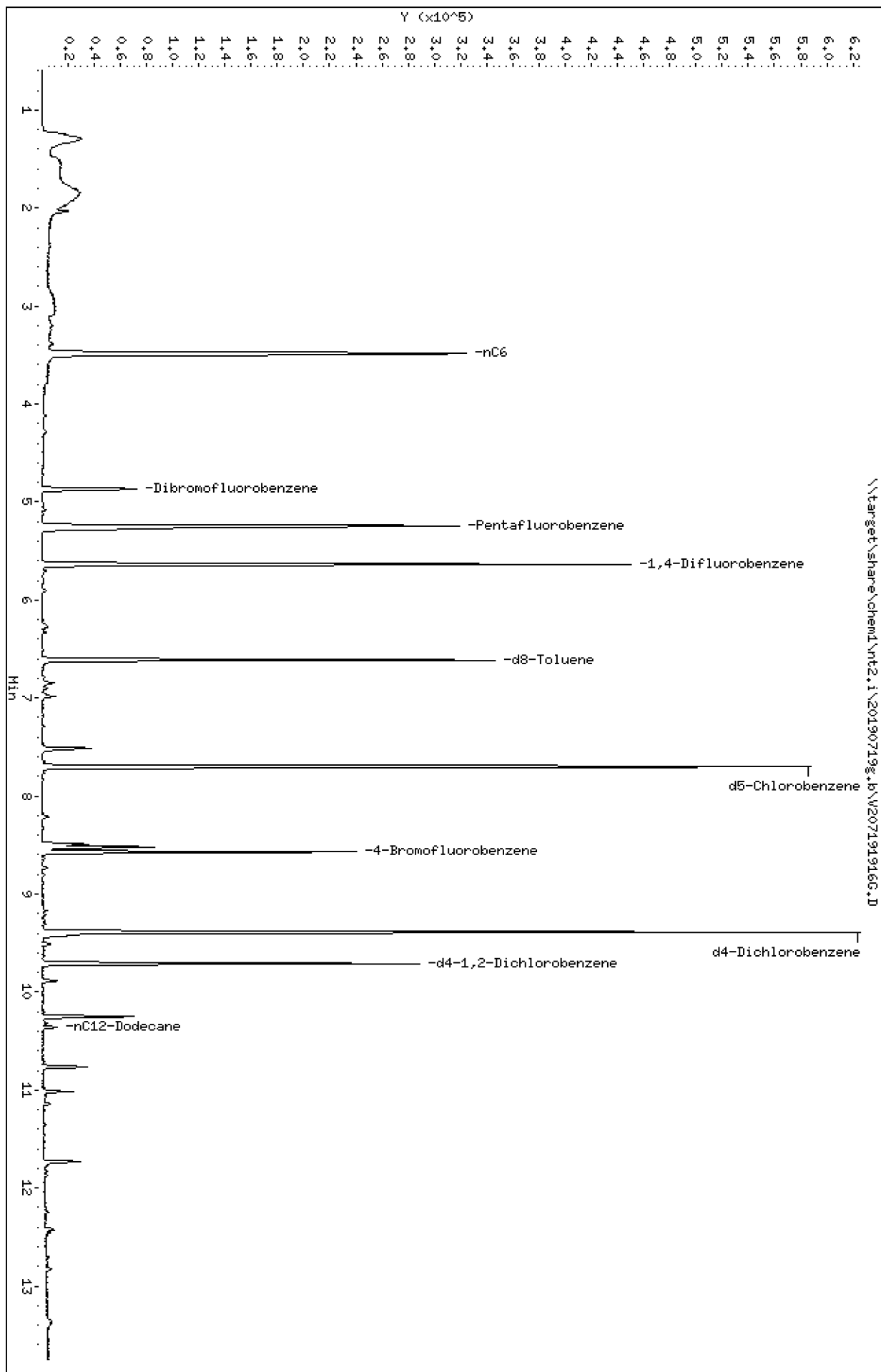
Sample Info: 19C0163-12

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191916G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 11:51

ARI ID: 19G0163-12

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	323814	0.013
8015C 2MP-TMB (3.04 to 9.27)	33333333	819842	0.025
AK101 nC6-nC10 (3.38 to 8.54)	31889318	819841	0.026
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	395020	0.016
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	323815	0.009

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.701	778174	d5-Chlorobenzene
8.571	309915	4-Bromofluorobenzene
6.612	445653	d8-Toluene
9.393	837603	d4-Dichlorobenzene
9.709	366012	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13 E SDG: 19G0163

Sampled: 07/11/19 09:10 Prepared: 07/19/19 09:38 File ID: V207191917G.D

% Solids: 21.61 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/19/19 12:12

Batch: BHG0474 Sequence: SHG0276 Initial/Final: 1.814 g Wet / 5 mL

Instrument: NT2 Column: RTX-VMS Calibration: CG00055

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	81900	U	41000	81900

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.10	102	80 - 120	
4-Bromofluorobenzene	5.0000	5.15	103	78 - 123	

Data File: \\target\share\chend\nt2.i\20190719s.b\207191917G.D

Date: 19-JUL-2019 12:12

Client ID:

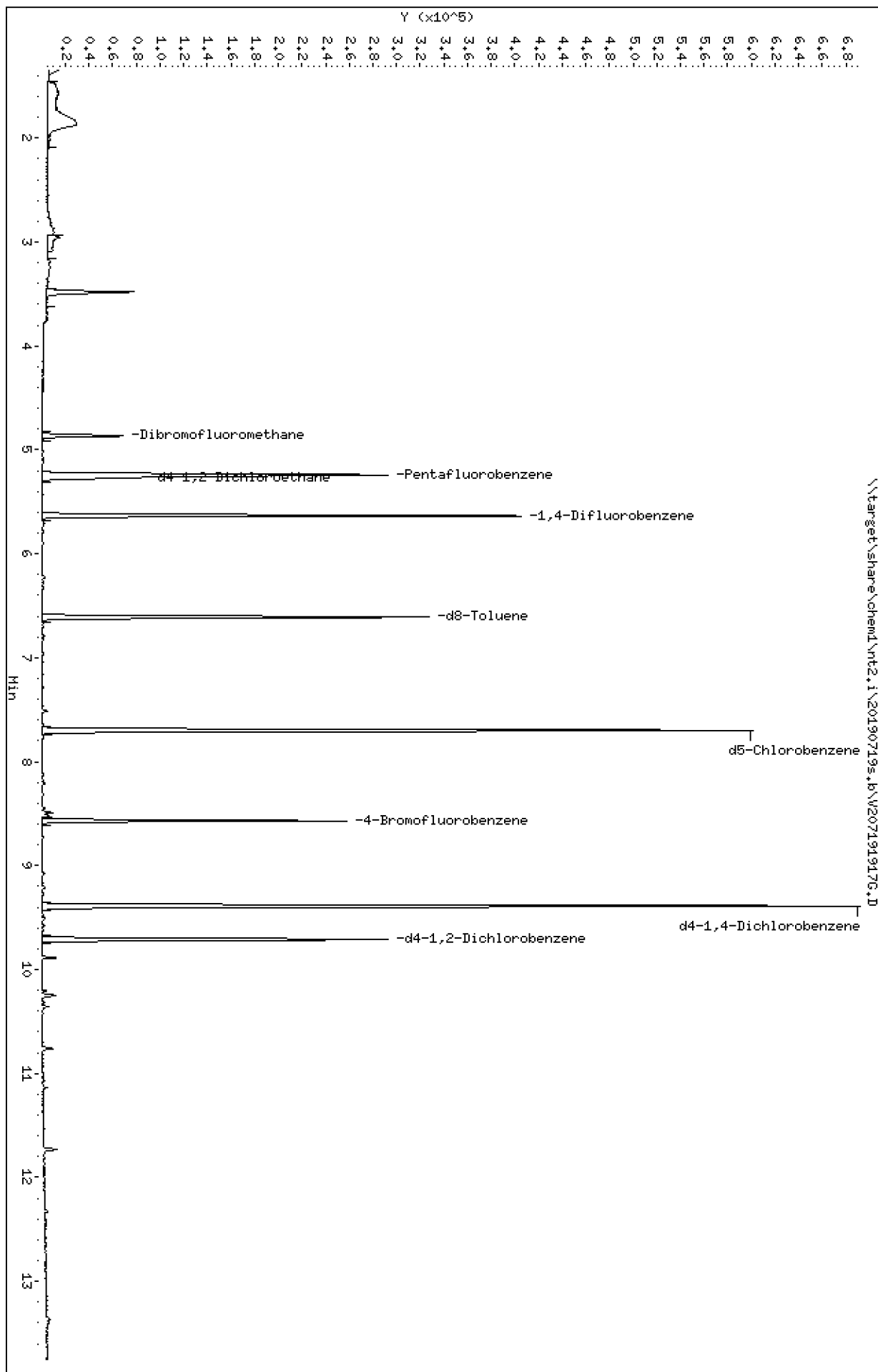
Sample Info: 19C0163-13

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191917G.D
Lab Smp Id: 19G0163-13
Inj Date : 19-JUL-2019 12:12
Operator : LH
Smp Info : 19G0163-13
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i
Cal Date : 18-JUL-2019 15:05
Als bottle: 48
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11

Inst ID: nt2.i
Quant Type: ISTD
Cal File: V207181915a.D
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	4.863	4.872	(0.928)	34653	4.80272	4.803
* 32 Pentafluorobenzene	168	5.240	5.249	(1.000)	139595	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.271	5.274	(1.006)	45929	5.25712	5.257
* 37 1,4-Difluorobenzene	114	5.636	5.639	(1.000)	249346	10.0000	
\$ 43 d8-Toluene	98	6.609	6.612	(1.173)	158864	5.09603	5.096
* 53 d5-Chlorobenzene	117	7.698	7.701	(1.000)	252265	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.568	8.571	(1.113)	51329	5.15432	5.154
* 76 d4-1,4-Dichlorobenzene	152	9.389	9.392	(1.000)	135805	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.708	(1.034)	61011	4.76971	4.770

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191917G.D Calibration Time: 17:11
 Lab Smp Id: 19G0163-13
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	139595	-17.69
37 1,4-Difluorobenze	298924	149462	597848	249346	-16.59
53 d5-Chlorobenzene	281842	140921	563684	252265	-10.49
76 d4-1,4-Dichlorobe	151581	75791	303162	135805	-10.41

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.24	-0.17
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.05
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.04
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-13
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.803	96.05	
\$ 33 d4-1,2-Dichloroeth	5.000	5.257	105.14	
\$ 43 d8-Toluene	5.000	5.096	101.92	
\$ 62 4-Bromofluorobenze	5.000	5.154	103.09	
\$ 79 d4-1,2-Dichloroben	5.000	4.770	95.39	

REVIEW SUMMARY FOR FILE - V207191917G.D

Lab ID: 19G0163-13

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 12:12

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191917G.D

Date : 19-JUL-2019 12:12

Client ID:

Sample Info: 19C0163-13

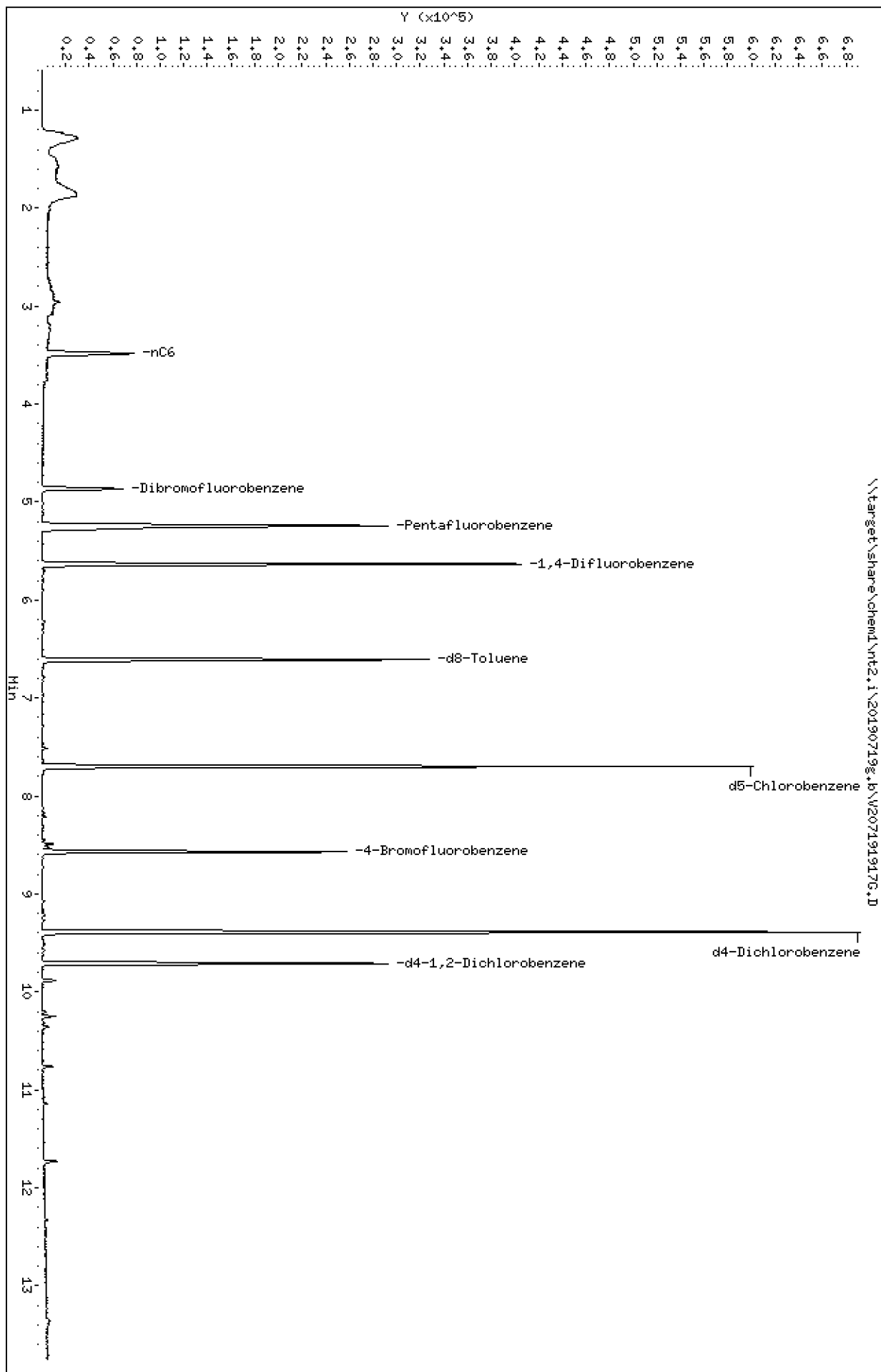
Page 1

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191917G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 12:12

ARI ID: 19G0163-13

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	38199	0.002
8015C 2MP-TMB (3.04 to 9.27)	33333333	144851	0.004
AK101 nC6-nC10 (3.38 to 8.54)	31889318	144851	0.005
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	38199	0.002
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	38201	0.001

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.699	776090	d5-Chlorobenzene
8.569	323016	4-Bromofluorobenzene
6.610	416515	d8-Toluene
9.390	871193	d4-Dichlorobenzene
9.712	382157	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-14 E

SDG: 19G0163

Sampled: 07/11/19 09:25

Prepared: 07/19/19 09:38

File ID: V207191918G.D

% Solids: 43.42

Preparation: EPA 5035 (Methanol Extraction)

Analyzed: 07/19/19 12:33

Batch: BHG0474

Sequence: SHG0276

Initial/Final: 2.317 g Wet / 5 mL

Instrument: NT2

Column: RTX-VMS

Calibration: CG00055

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	31400	U	15700	31400

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.07	101	80 - 120	
4-Bromofluorobenzene	5.0000	5.14	103	78 - 123	

Data File: \\target\share\chend\nt2.i\20190719s.b\2019071918G.D

Date : 19-JUL-2019 12:33

Client ID:

Sample Info: 19C0163-14

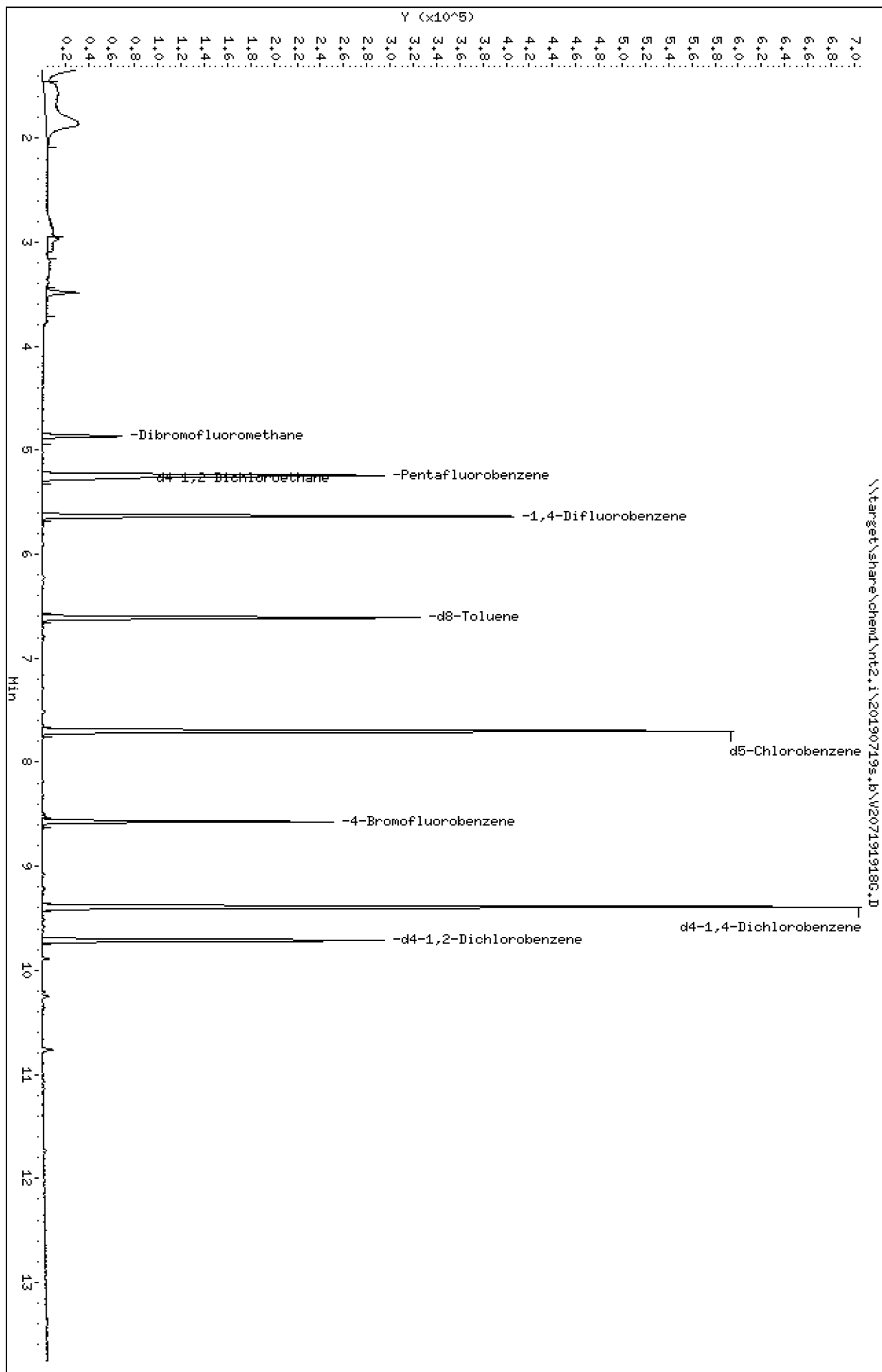
Page 1

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191918G.D
Lab Smp Id: 19G0163-14
Inj Date : 19-JUL-2019 12:33
Operator : LH Inst ID: nt2.i
Smp Info : 19G0163-14
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 49
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	4.863	4.872	(0.928)	34276	4.73021	4.730
* 32 Pentafluorobenzene	168	5.241	5.249	(1.000)	140193	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.271	5.274	(1.006)	46467	5.29602	5.296
* 37 1,4-Difluorobenzene	114	5.636	5.639	(1.000)	250325	10.0000	
\$ 43 d8-Toluene	98	6.609	6.612	(1.173)	158694	5.07067	5.071
* 53 d5-Chlorobenzene	117	7.698	7.701	(1.000)	253498	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.568	8.571	(1.113)	51429	5.13924	5.139
* 76 d4-1,4-Dichlorobenzene	152	9.390	9.392	(1.000)	138951	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.708	(1.034)	62817	4.79971	4.800

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191918G.D Calibration Time: 17:11
 Lab Smp Id: 19G0163-14
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	140193	-17.34
37 1,4-Difluorobenze	298924	149462	597848	250325	-16.26
53 d5-Chlorobenzene	281842	140921	563684	253498	-10.06
76 d4-1,4-Dichlorobe	151581	75791	303162	138951	-8.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.24	-0.16
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.04
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-14
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.730	94.60	
\$ 33 d4-1,2-Dichloroeth	5.000	5.296	105.92	
\$ 43 d8-Toluene	5.000	5.071	101.41	
\$ 62 4-Bromofluorobenze	5.000	5.139	102.78	
\$ 79 d4-1,2-Dichloroben	5.000	4.800	95.99	

REVIEW SUMMARY FOR FILE - V207191918G.D

Lab ID: 19G0163-14

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 12:33

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190719g.b\207191918.D

Date : 19-JUL-2019 12:33

Client ID:

Sample Info: 19C0163-14

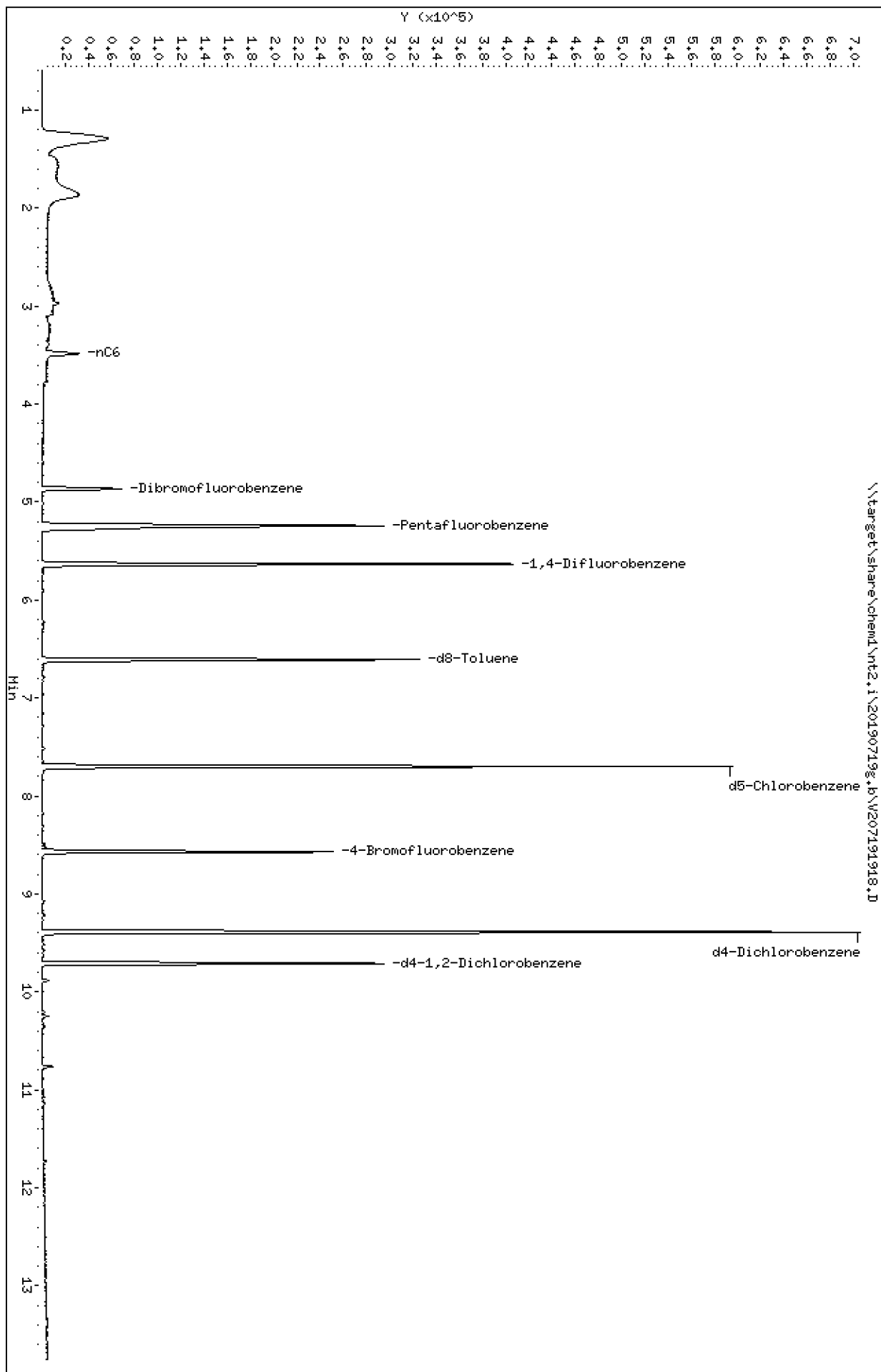
Page 1

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191918G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 12:33

ARI ID: 19G0163-14

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	1	0.000
8015C 2MP-TMB (3.04 to 9.27)	33333333	52508	0.002
AK101 nC6-nC10 (3.38 to 8.54)	31889318	52508	0.002
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	10694	0.000
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	2	0.000

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.699	777058	d5-Chlorobenzene
8.569	323858	4-Bromofluorobenzene
6.610	416341	d8-Toluene
9.390	885170	d4-Dichlorobenzene
9.713	391906	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 E SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/19/19 09:38 File ID: V207191919G.D

% Solids: 87.89 Preparation: EPA 5035 (Methanol Extraction) Analyzed: 07/19/19 12:54

Batch: BHG0474 Sequence: SHG0276 Initial/Final: 2.935 g Wet / 5 mL

Instrument: NT2 Column: RTX-VMS Calibration: CG00055

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	10400	U	5190	10400

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	5.06	101	80 - 120	
4-Bromofluorobenzene	5.0000	5.30	106	78 - 123	

Data File: \\target\share\chend\nt2.i\20190719s.b\207191919G.D

Date: 19-JUL-2019 12:54

Client ID:

Sample Info: 19C0163-15

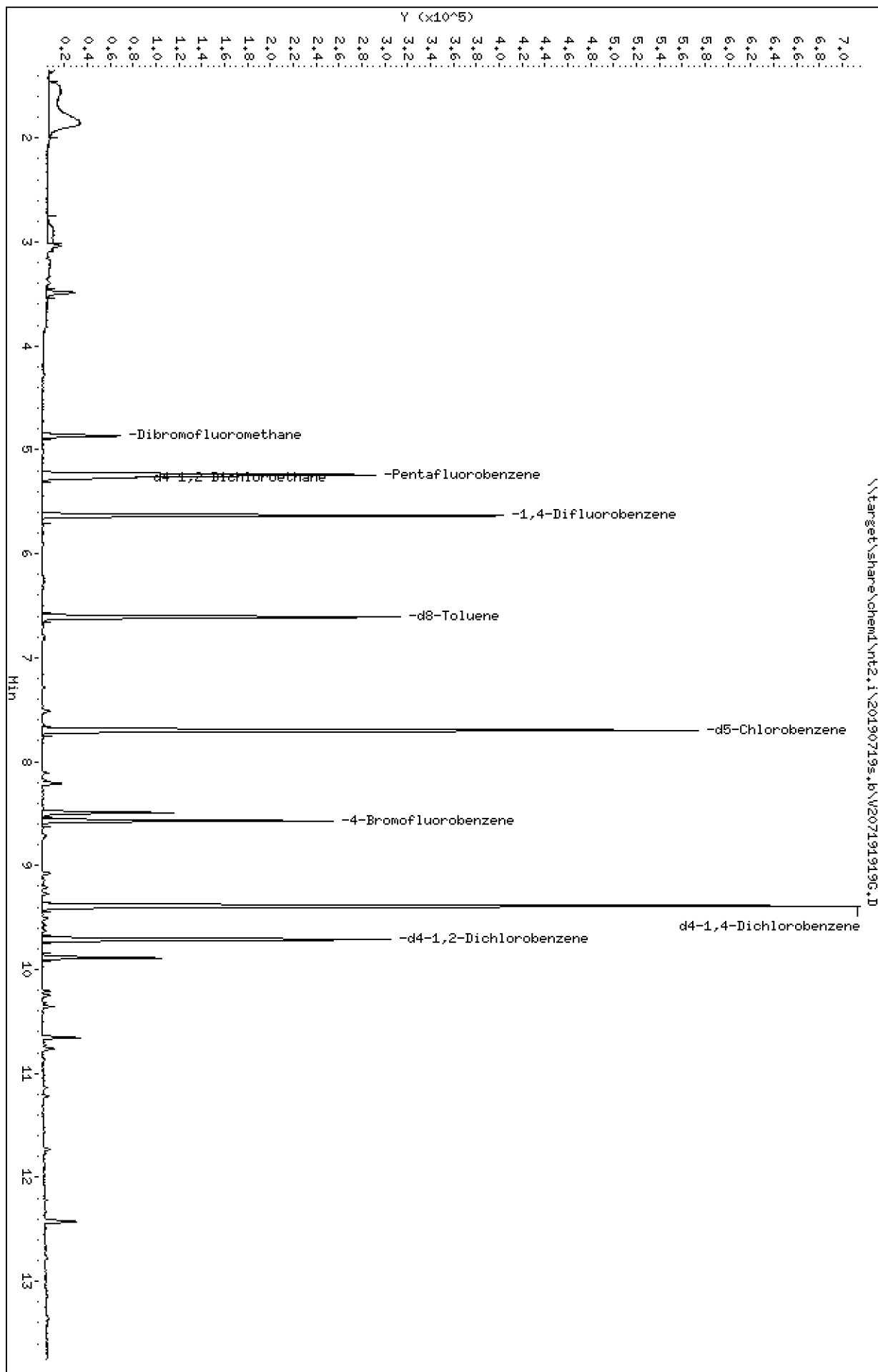
Page 1

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191919G.D
Lab Smp Id: 19G0163-15
Inj Date : 19-JUL-2019 12:54
Operator : LH Inst ID: nt2.i
Smp Info : 19G0163-15
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 50
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	4.863	4.872	(0.928)	33411	4.71658	4.717
* 32 Pentafluorobenzene	168	5.241	5.249	(1.000)	137050	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.271	5.274	(1.006)	45739	5.33259	5.333
* 37 1,4-Difluorobenzene	114	5.636	5.639	(1.000)	246393	10.0000	
\$ 43 d8-Toluene	98	6.609	6.612	(1.173)	155783	5.05709	5.057
* 53 d5-Chlorobenzene	117	7.698	7.701	(1.000)	246781	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.568	8.571	(1.113)	51630	5.29976	5.300
* 76 d4-1,4-Dichlorobenzene	152	9.389	9.392	(1.000)	139377	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.708	(1.034)	63671	4.85010	4.850

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191919G.D Calibration Time: 17:11
 Lab Smp Id: 19G0163-15
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	137050	-19.19
37 1,4-Difluorobenze	298924	149462	597848	246393	-17.57
53 d5-Chlorobenzene	281842	140921	563684	246781	-12.44
76 d4-1,4-Dichlorobe	151581	75791	303162	139377	-8.05

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.24	-0.17
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.05
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-15
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.717	94.33	
\$ 33 d4-1,2-Dichloroeth	5.000	5.333	106.65	
\$ 43 d8-Toluene	5.000	5.057	101.14	
\$ 62 4-Bromofluorobenze	5.000	5.300	106.00	
\$ 79 d4-1,2-Dichloroben	5.000	4.850	97.00	

REVIEW SUMMARY FOR FILE - V207191919G.D

Lab ID: 19G0163-15

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 12:54

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191919G.D

Date : 19-JUL-2019 12:54

Client ID:

Sample Info: 19C0163-15

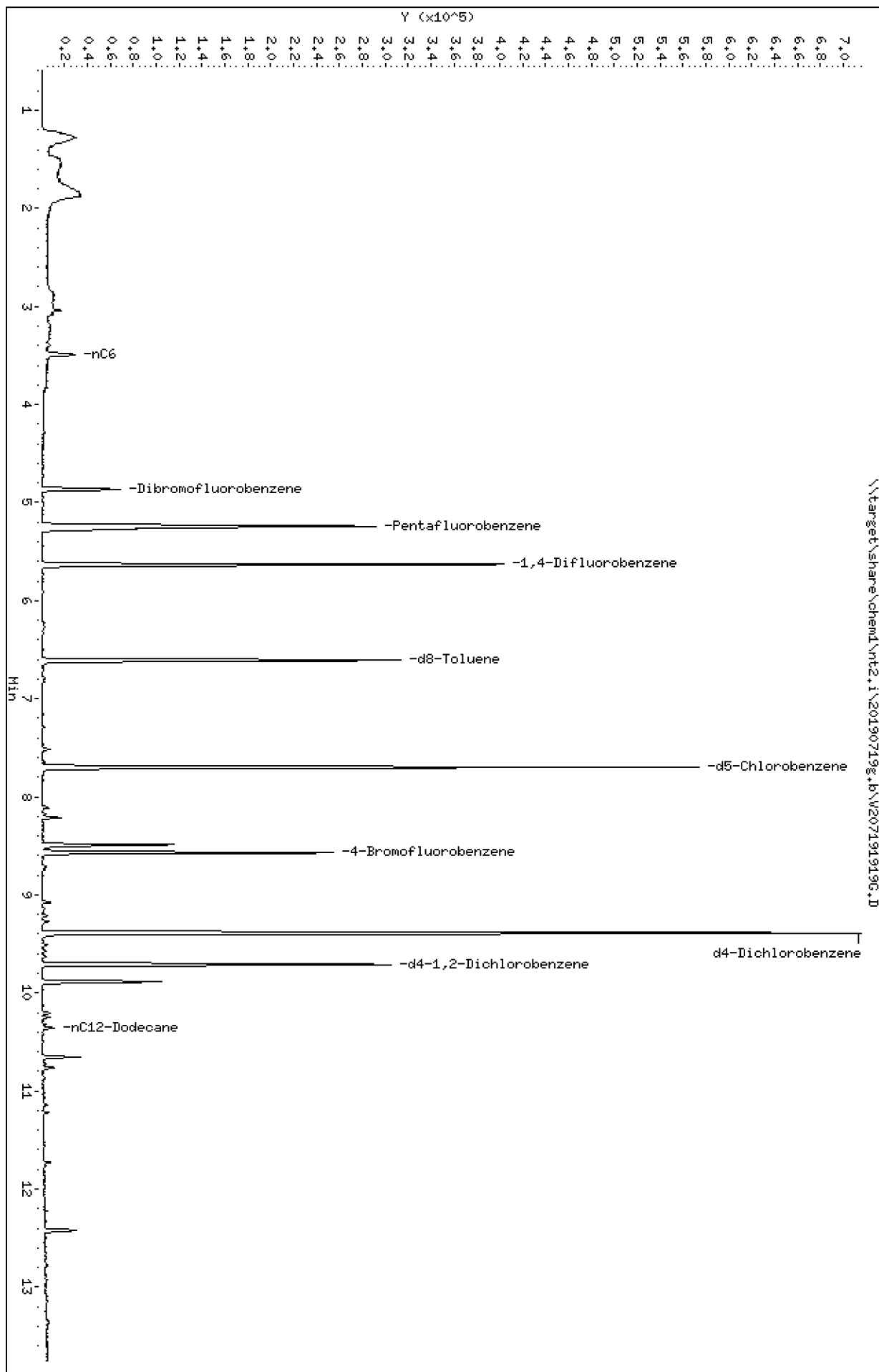
Page 1

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191919G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 12:54

ARI ID: 19G0163-15

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	324416	0.014
8015C 2MP-TMB (3.04 to 9.27)	33333333	227968	0.007
AK101 nC6-nC10 (3.38 to 8.54)	31889318	227968	0.007
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	380137	0.015
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	324418	0.009

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.699	755922	d5-Chlorobenzene
8.569	324032	4-Bromofluorobenzene
6.610	407488	d8-Toluene
9.390	911633	d4-Dichlorobenzene
9.712	396856	d4-1,2-Dichlorobenzene



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPHg
Gasoline Range Organics (GC/MS)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: 19G0163-16 A

SDG: 19G0163

Sampled: 07/11/19 00:00

Prepared: 07/18/19 11:06

File ID: V307181911.D

% Solids:

Preparation: EPA 5030 (Purge and Trap)

Analyzed: 07/18/19 13:42

Batch: BHG0439

Sequence: SHG0273

Initial/Final: 10 mL / 10 ml

Instrument: NT3

Column: RTX-VMS

Calibration: CG00045

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	1	100	U	13.6	100

SURROGATES	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8	5.0000	4.98	99.6	80 - 120	
4-Bromofluorobenzene	5.0000	4.94	98.8	80 - 120	

Data File: \\target\share\chemd\nt3.i\20190718.b\W307181911.D

Date : 18-JUL-2019 13:42

Client ID:

Sample Info: 19C0163-16

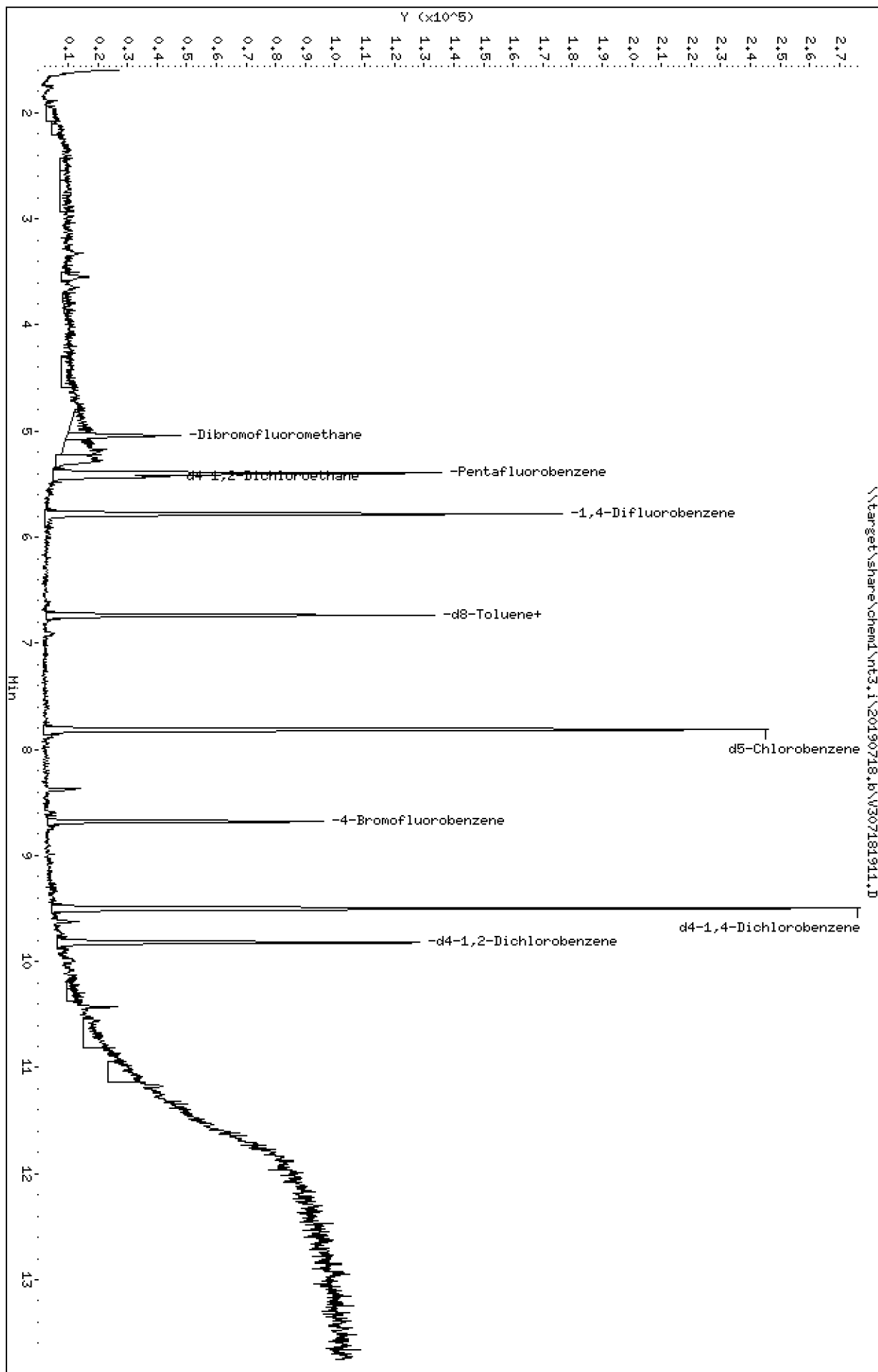
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

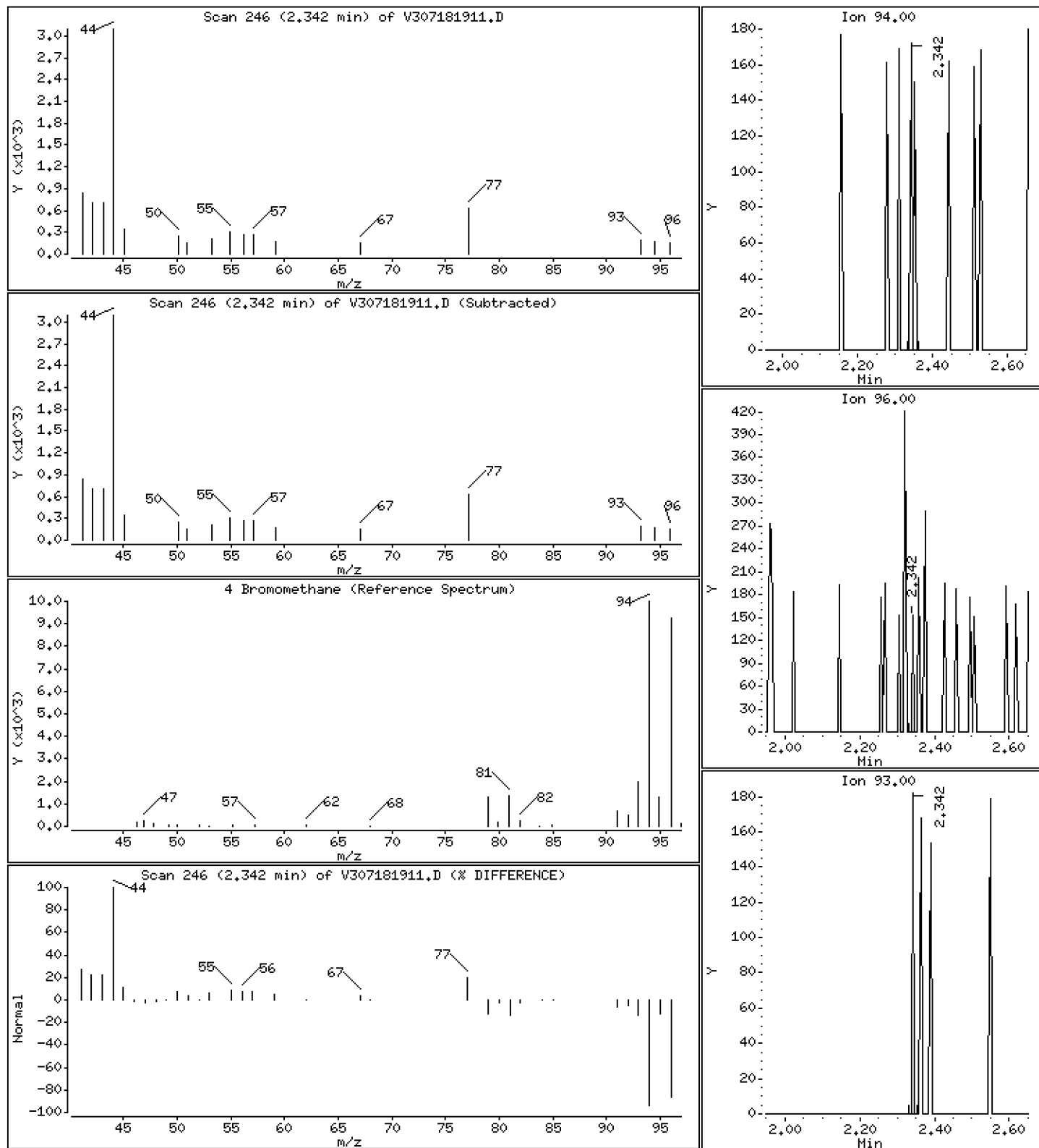
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

4 Bromomethane

Concentration: 0.02084 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

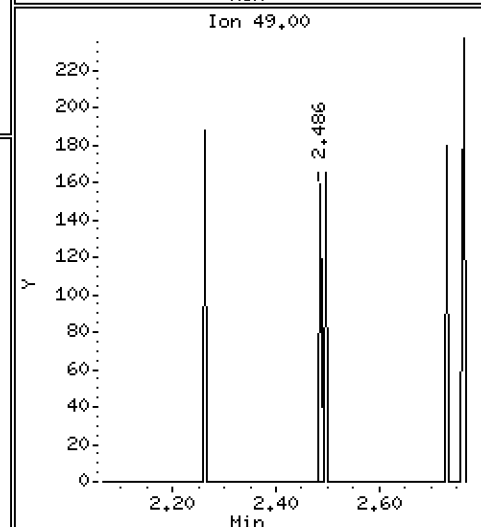
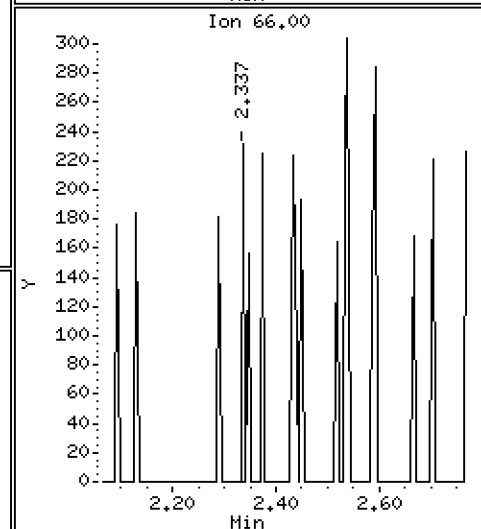
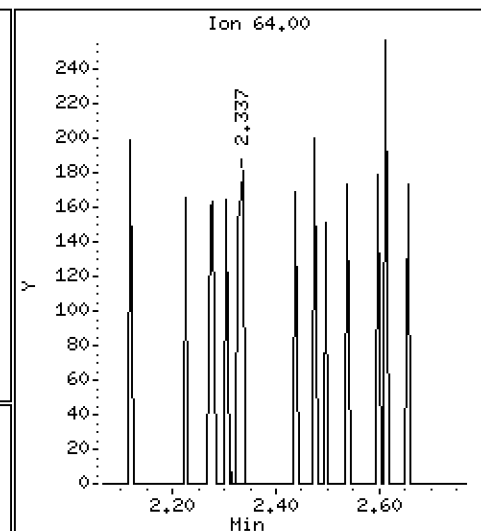
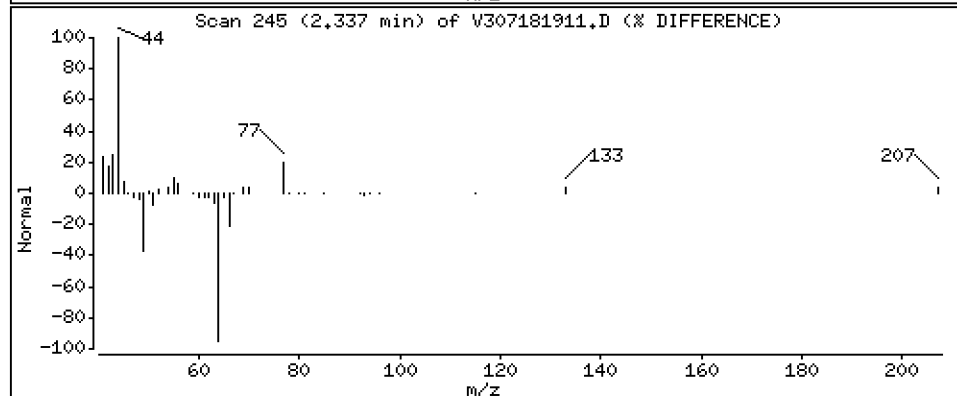
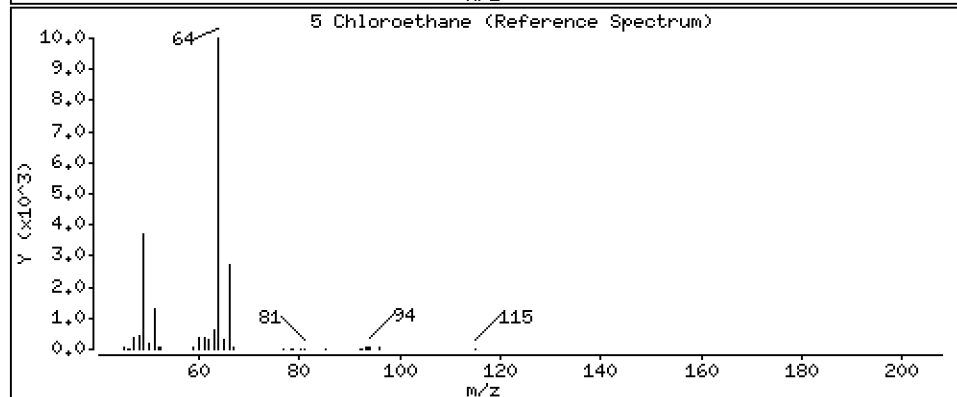
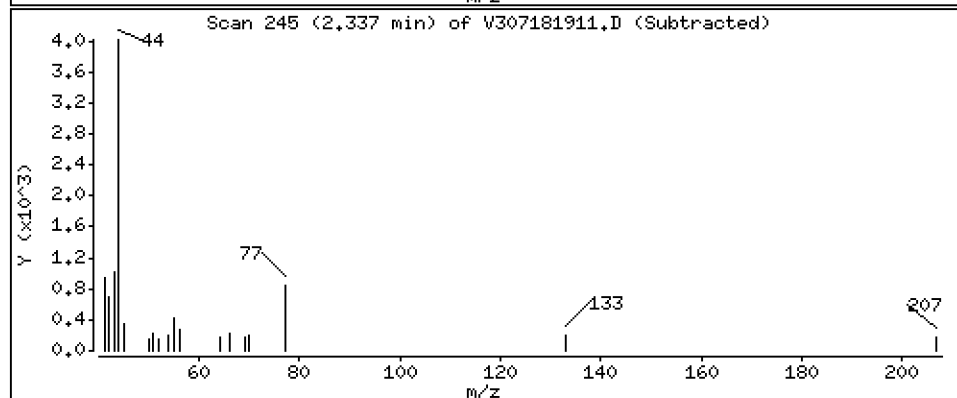
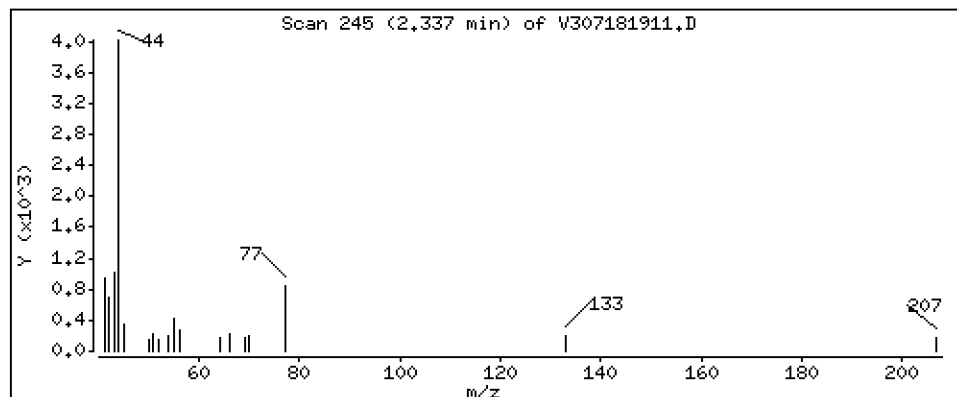
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

5 Chloroethane

Concentration: 0.02679 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

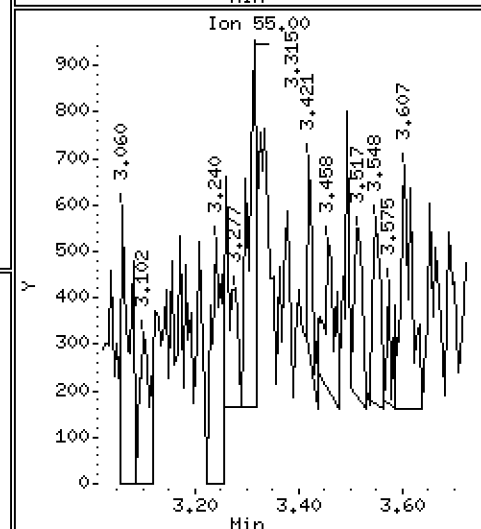
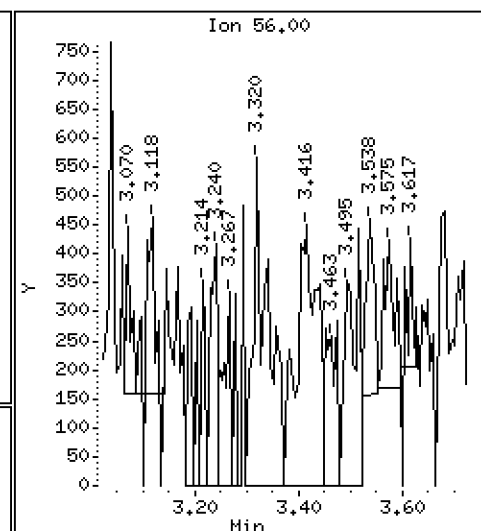
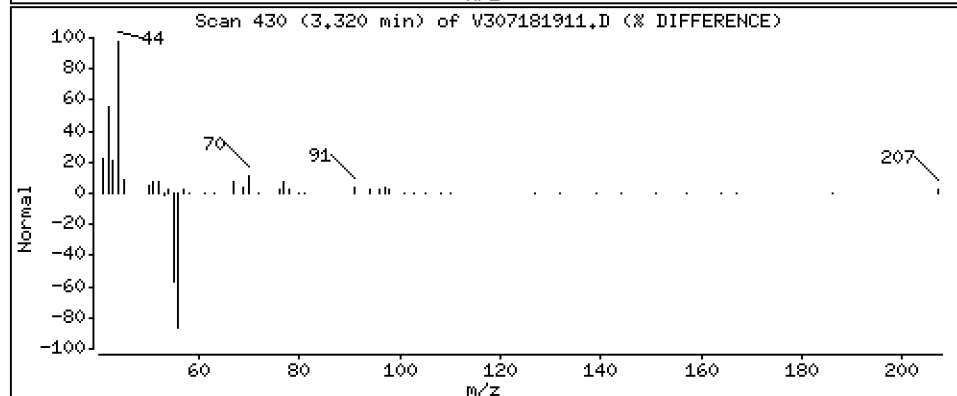
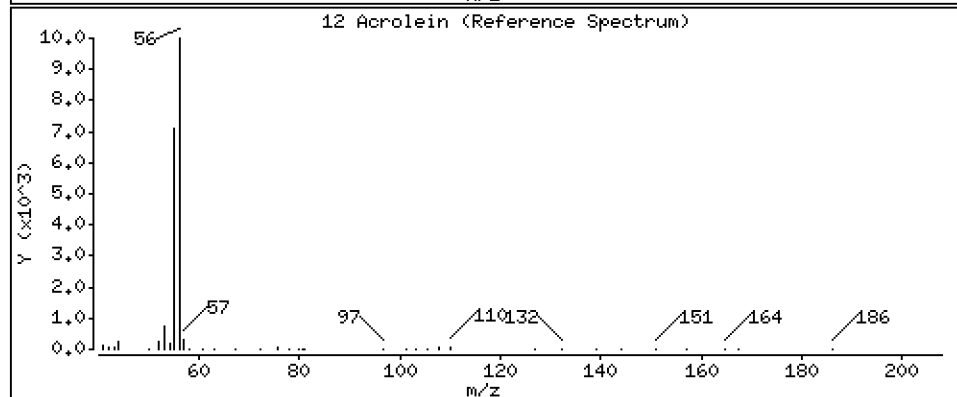
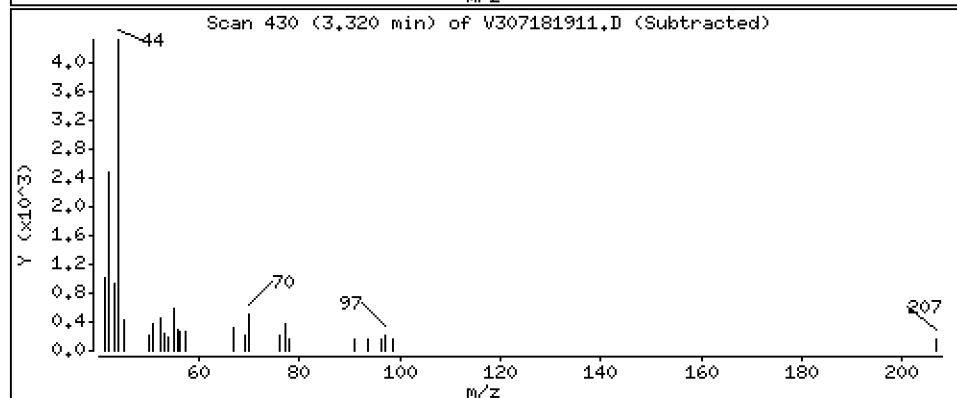
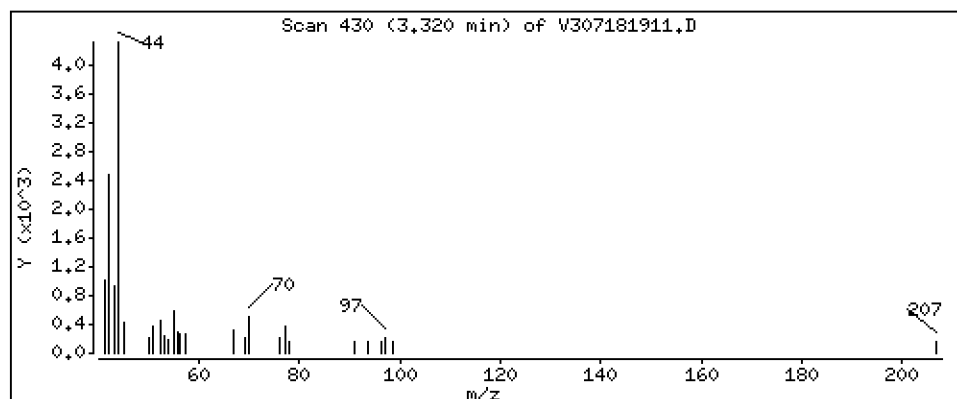
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

12 Acrolein

Concentration: 1.132 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

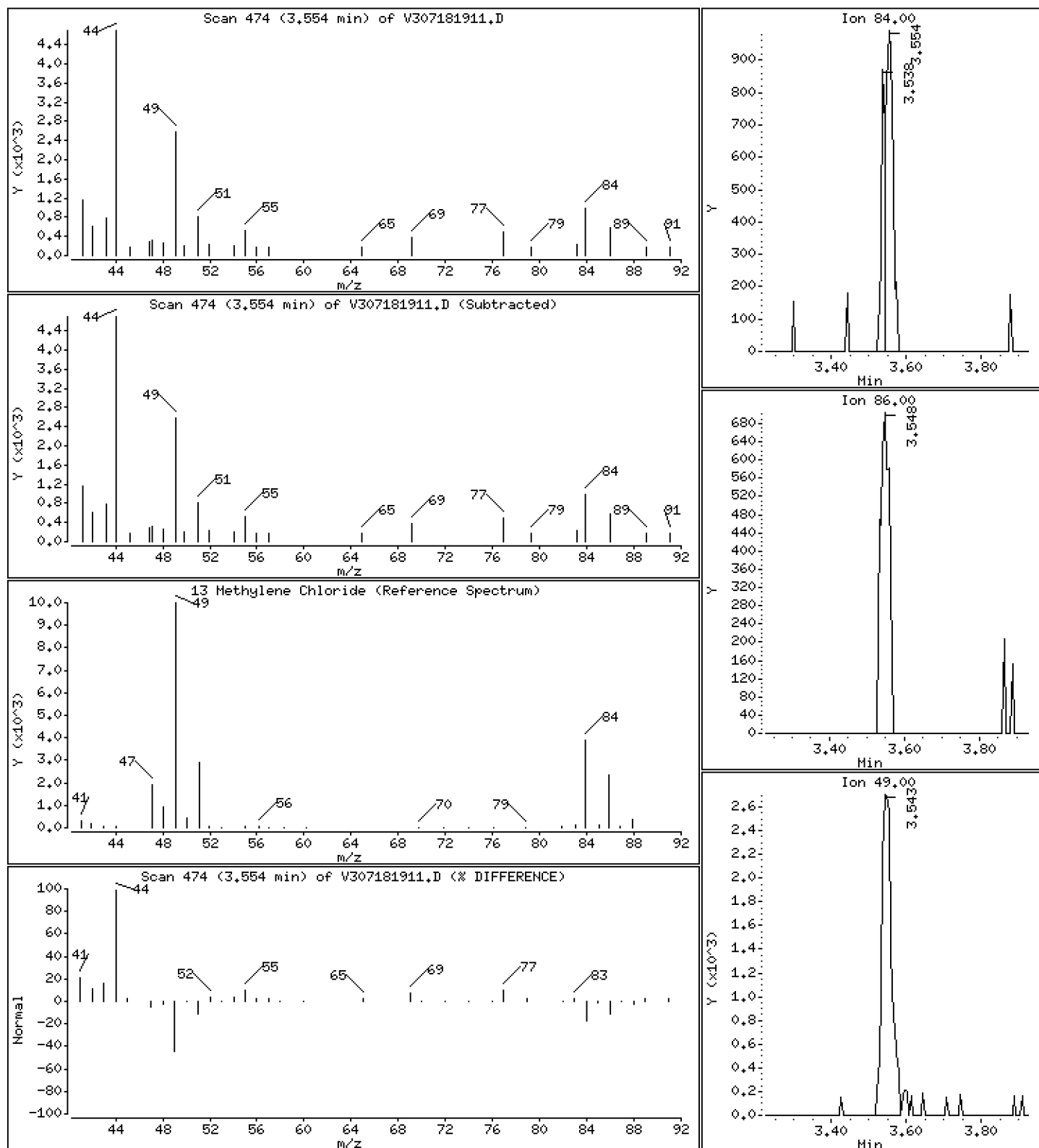
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

13 Methylene Chloride

Concentration: 0.2916 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

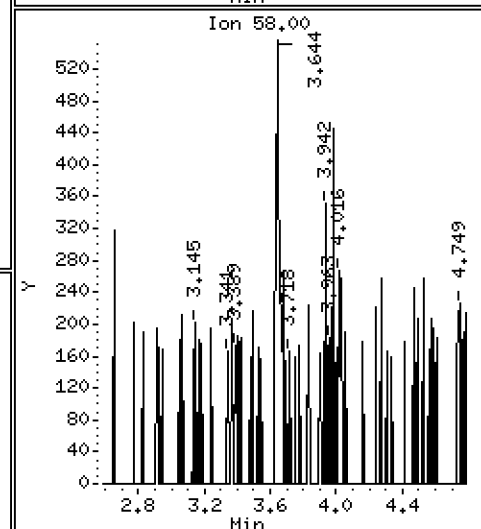
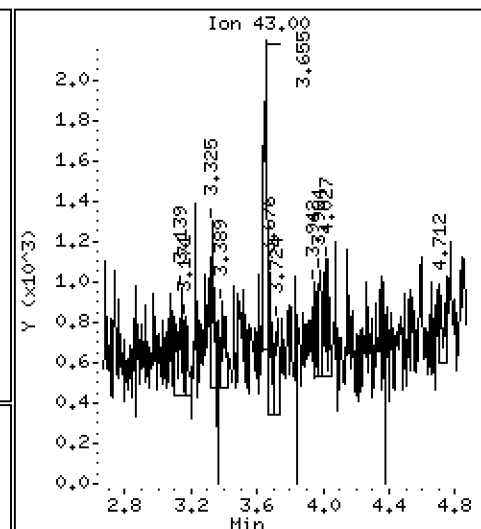
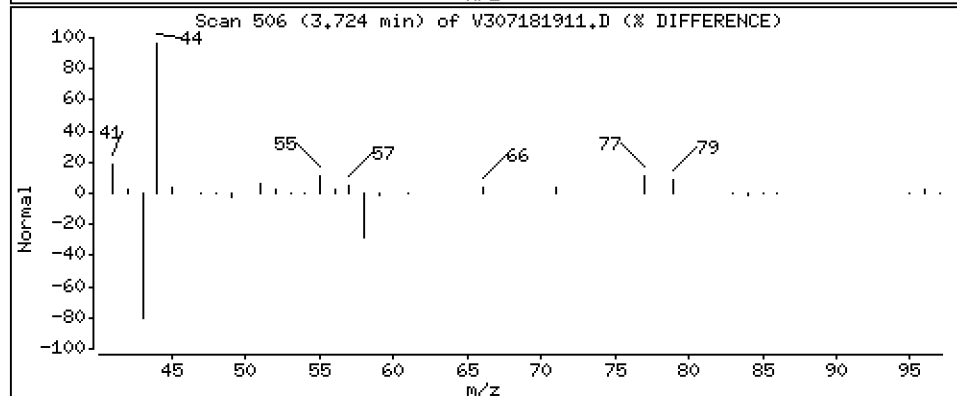
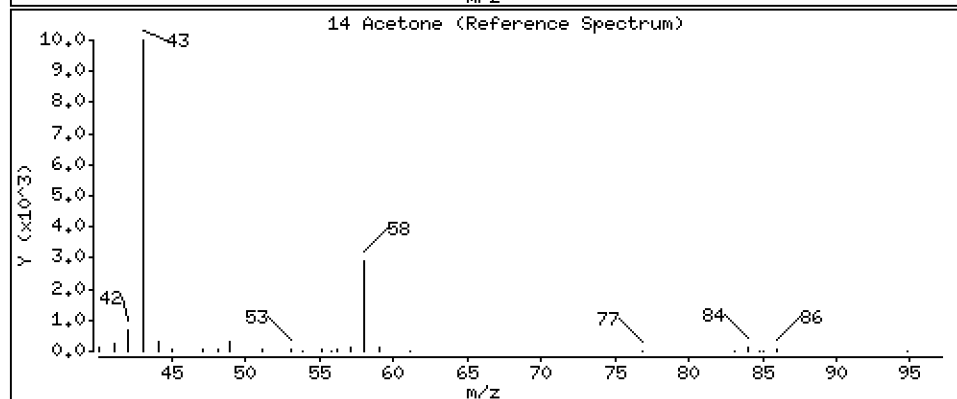
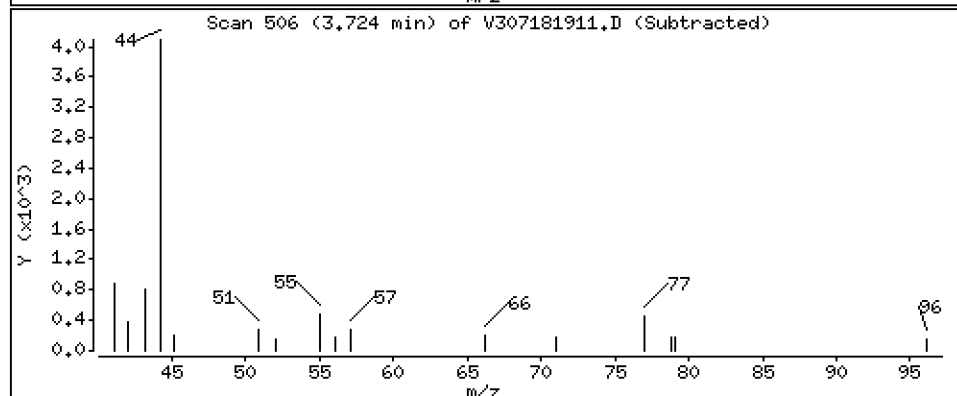
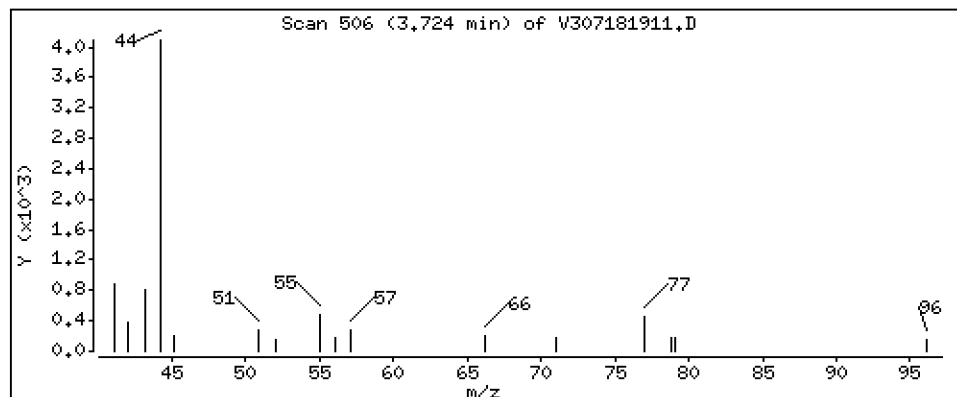
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

14 Acetone

Concentration: 0.5132 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

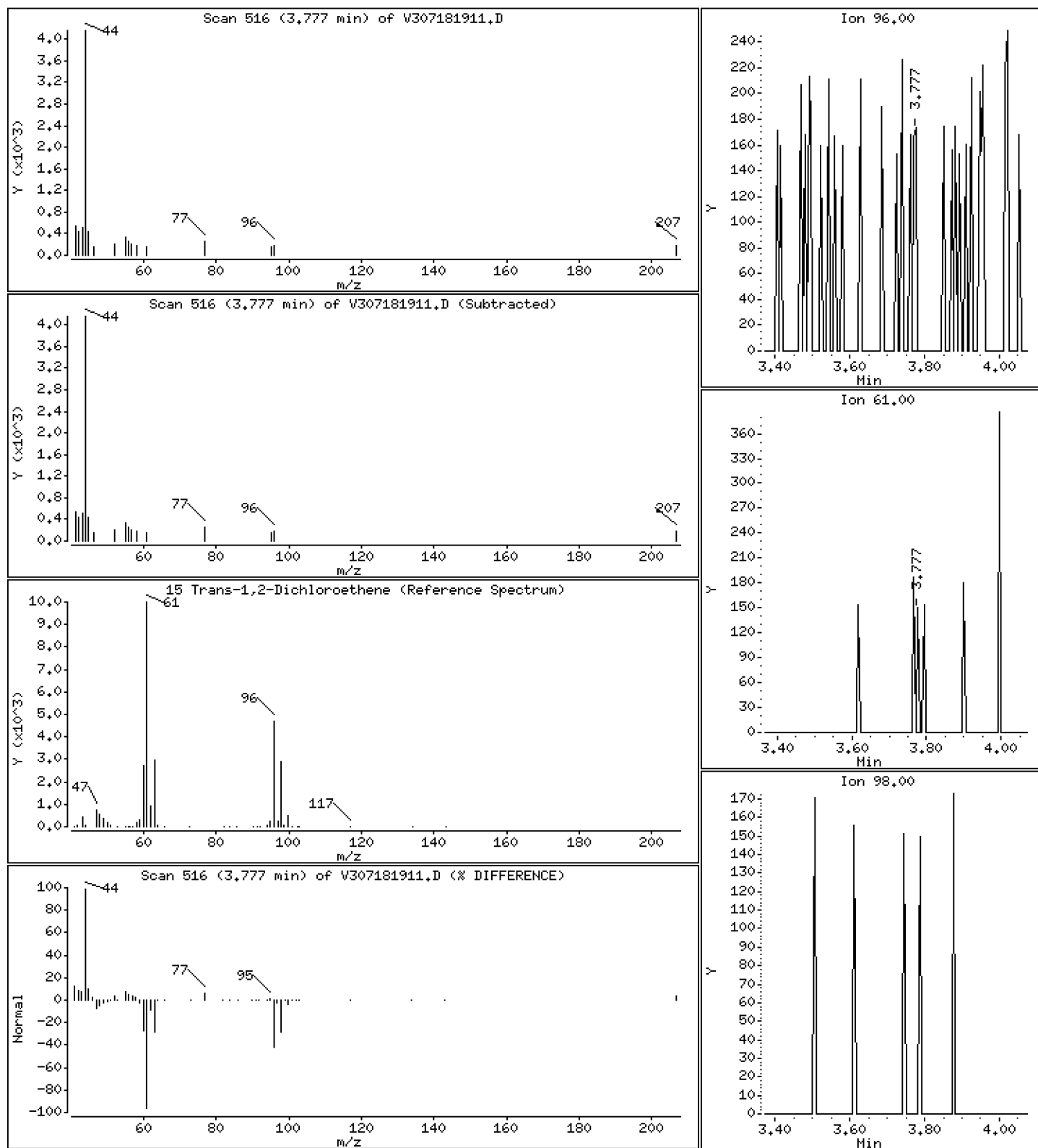
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

15 Trans-1,2-Dichloroethene

Concentration: 0.02068 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

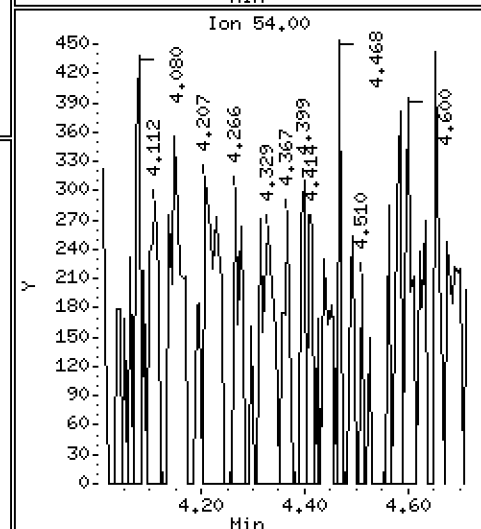
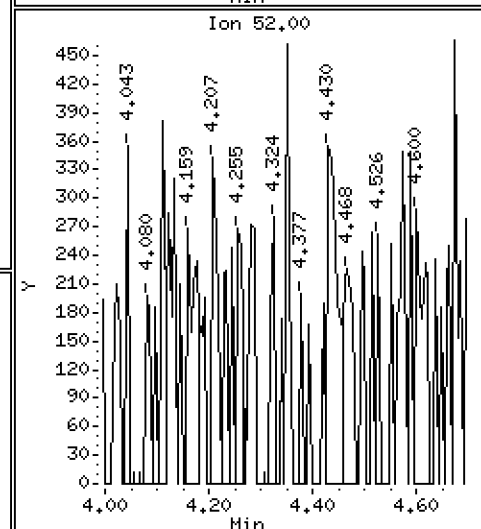
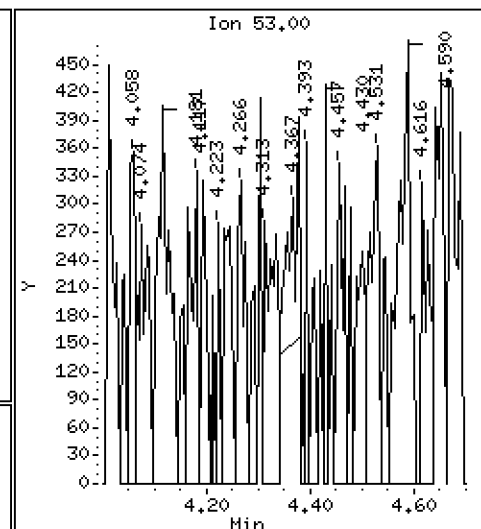
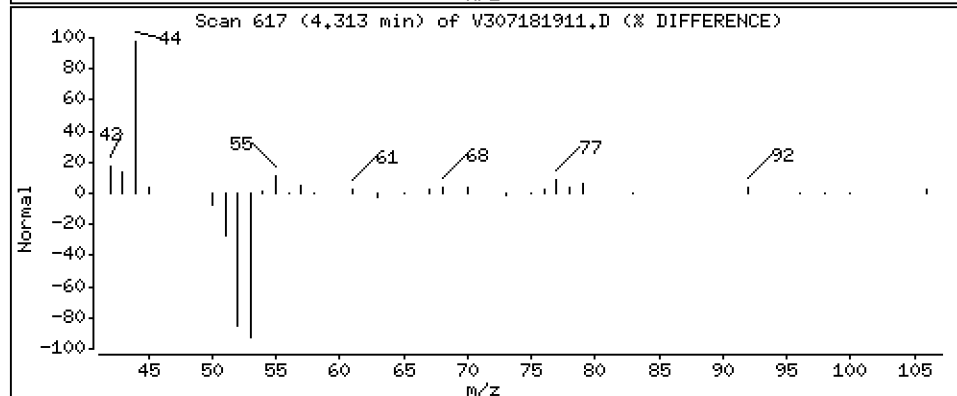
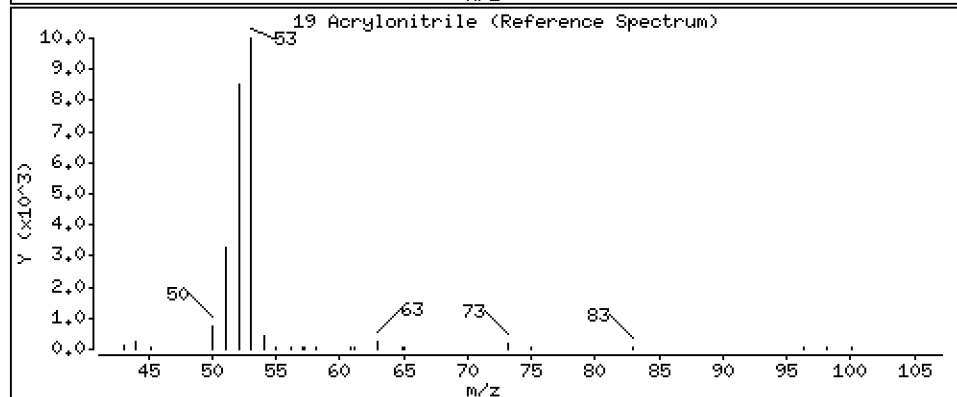
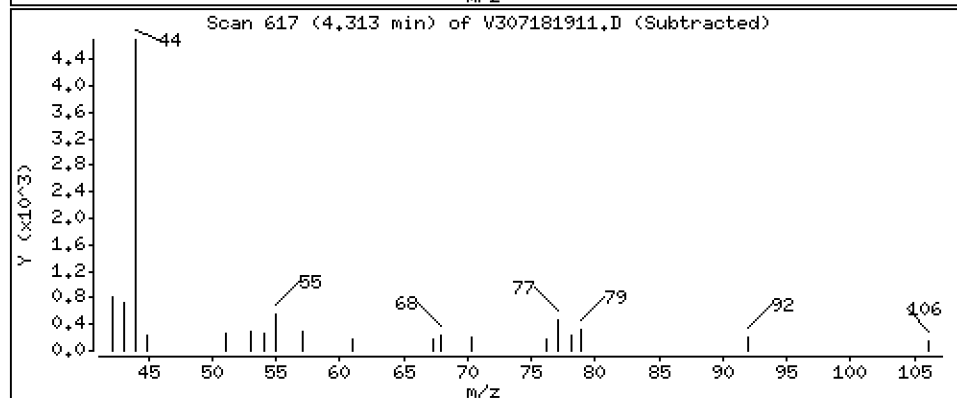
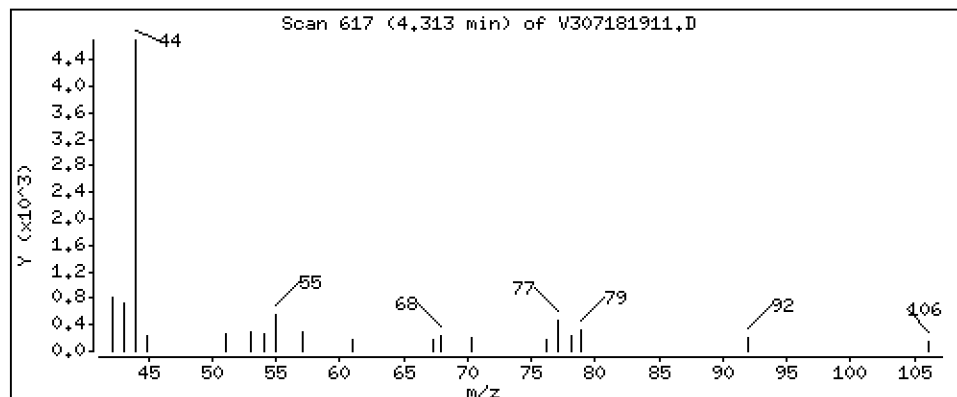
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

19 Acrylonitrile

Concentration: 0.2374 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

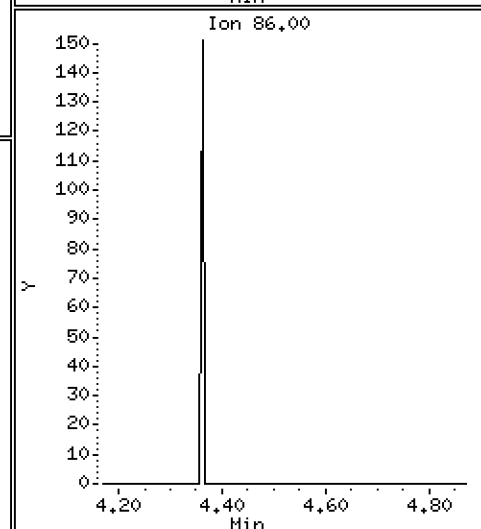
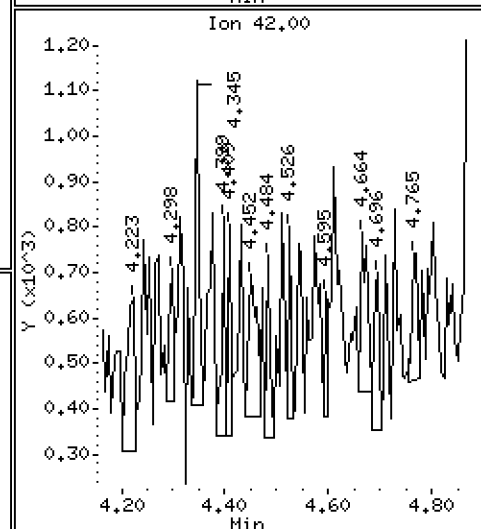
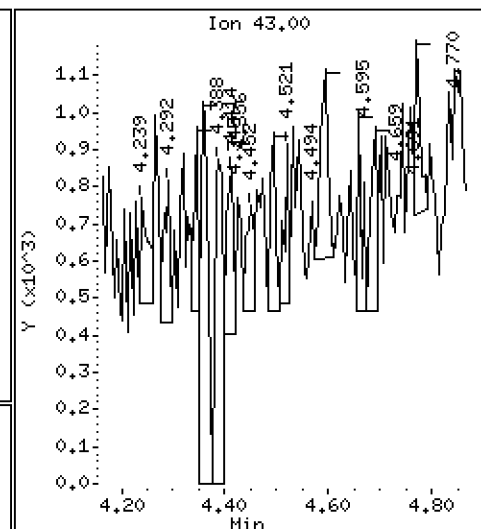
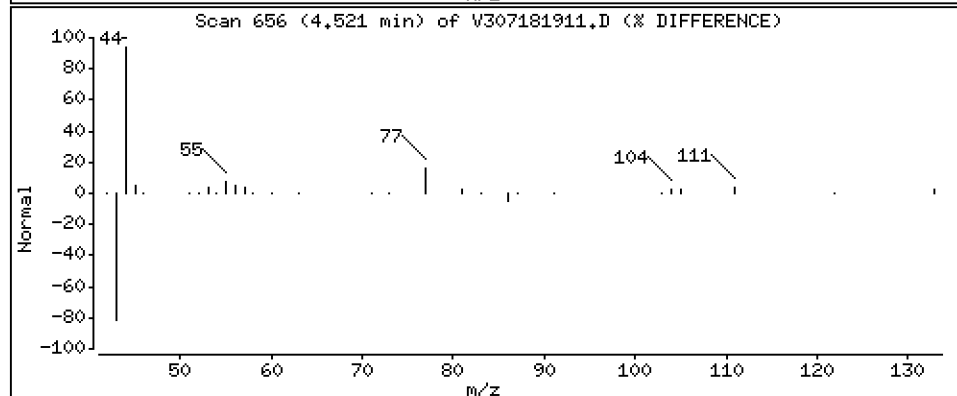
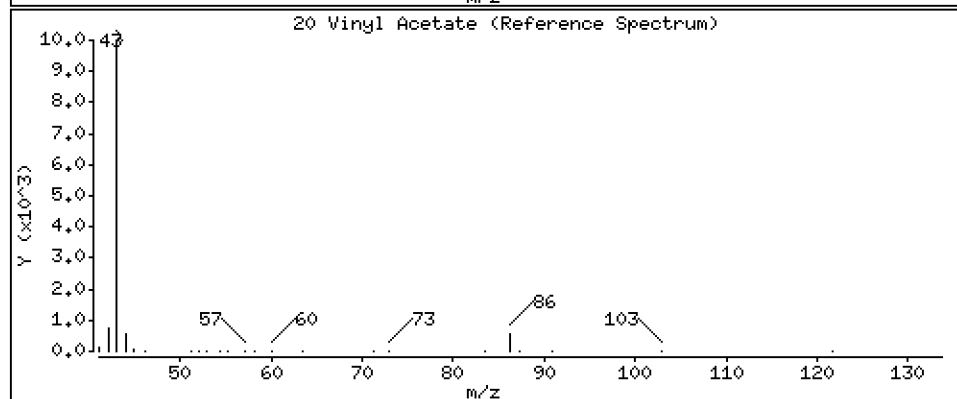
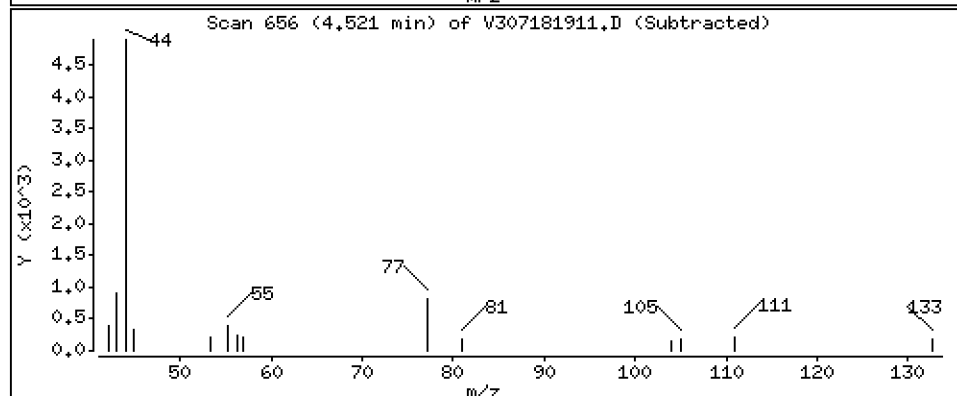
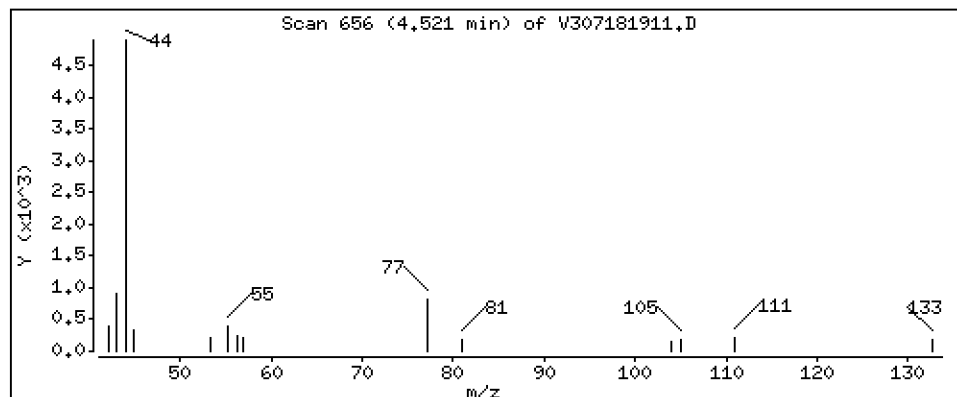
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

20 Vinyl Acetate

Concentration: 0.02044 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

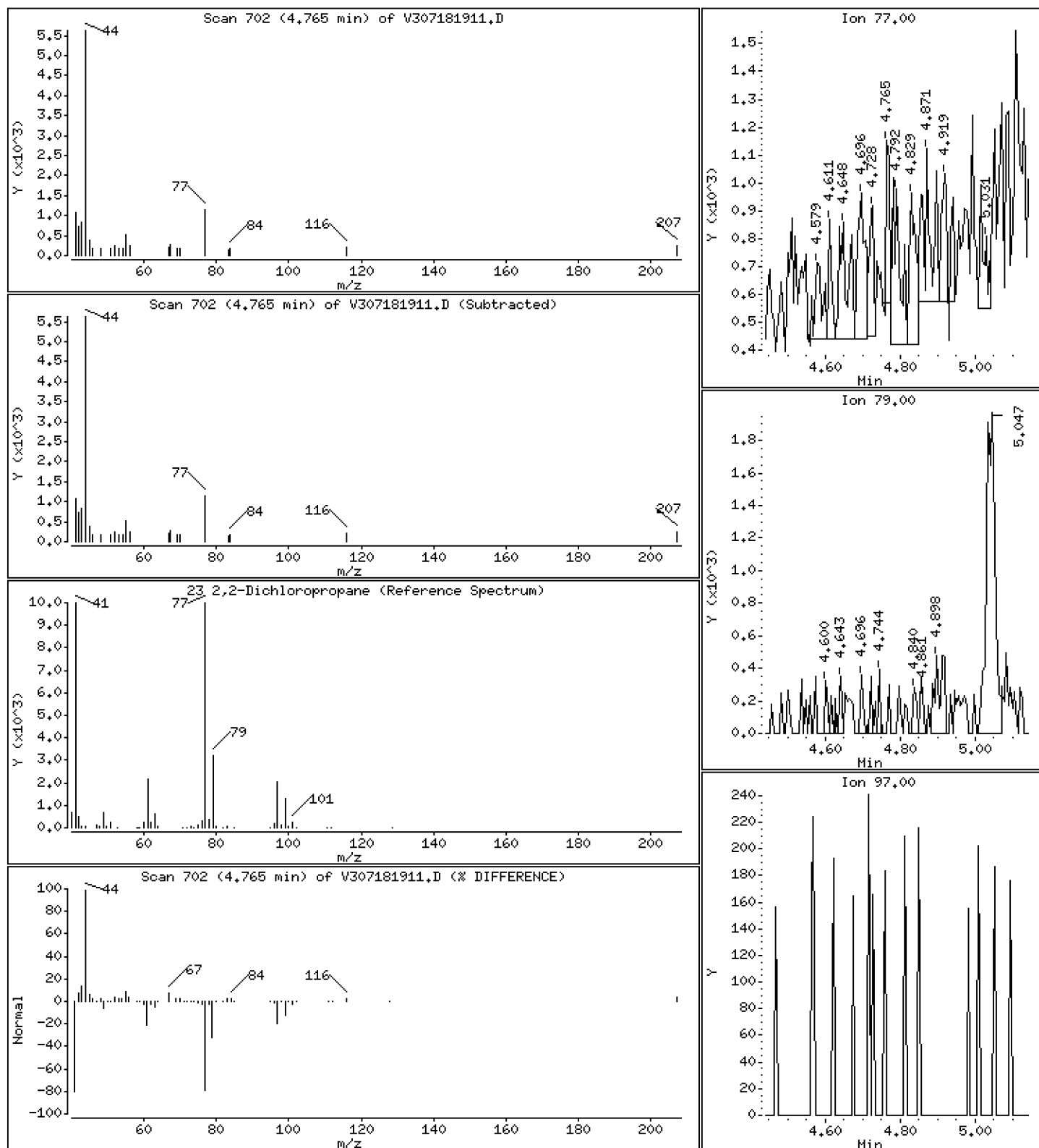
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

23 2,2-Dichloropropane

Concentration: 0.06961 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

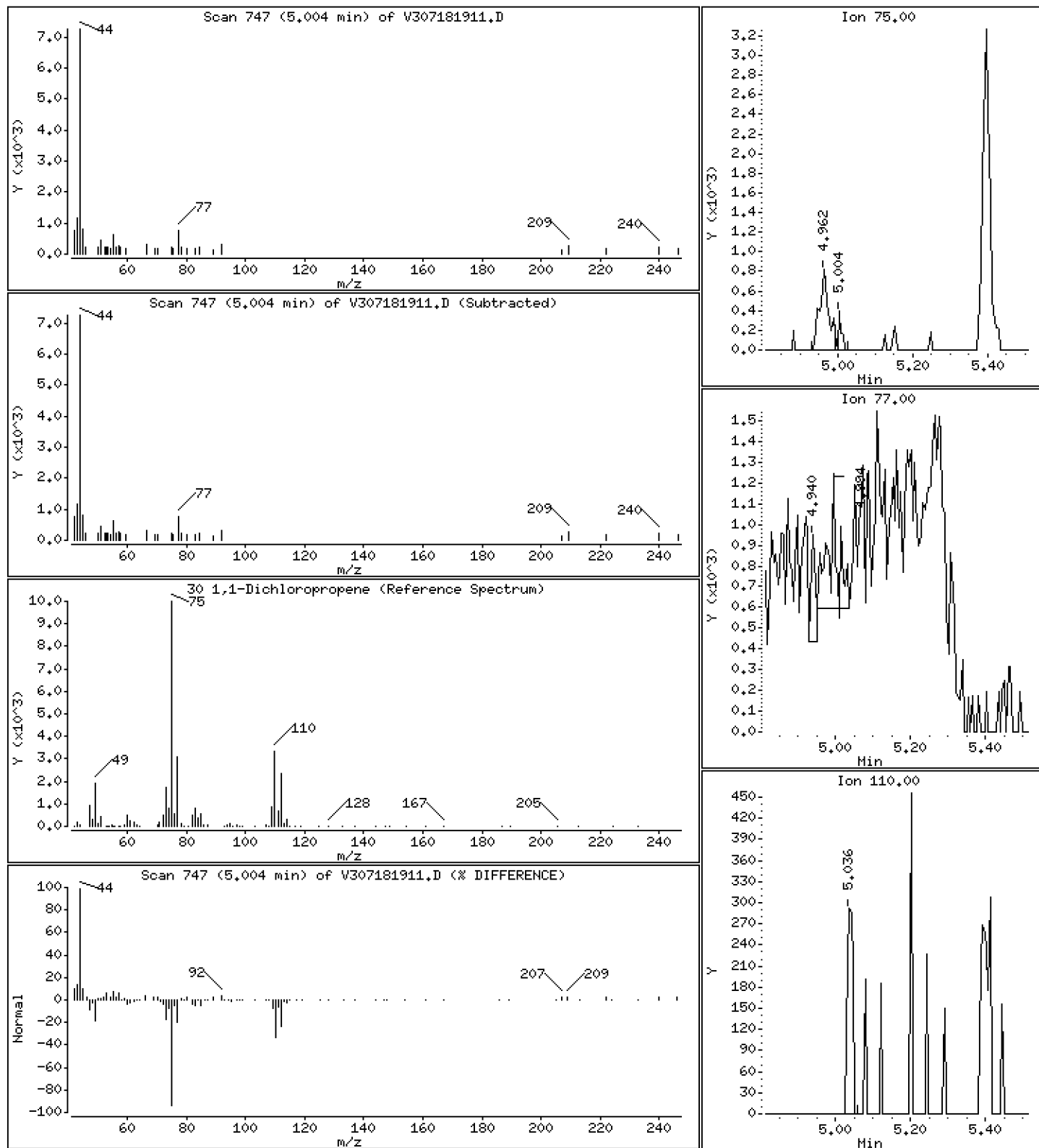
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

30 1,1-Dichloropropene

Concentration: 0.04393 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

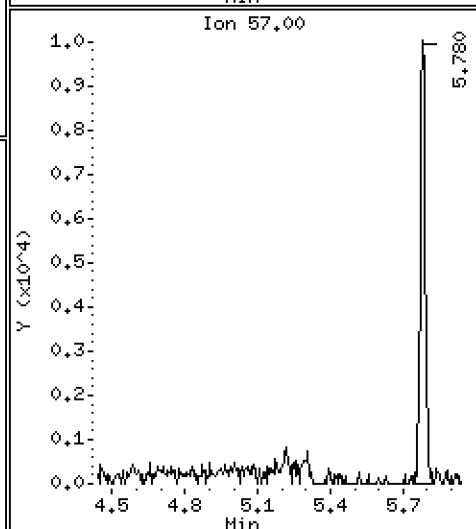
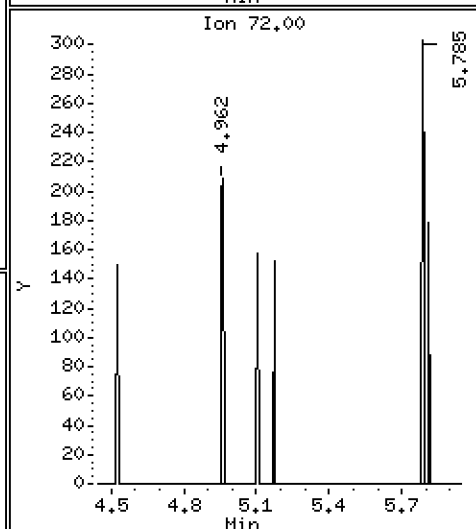
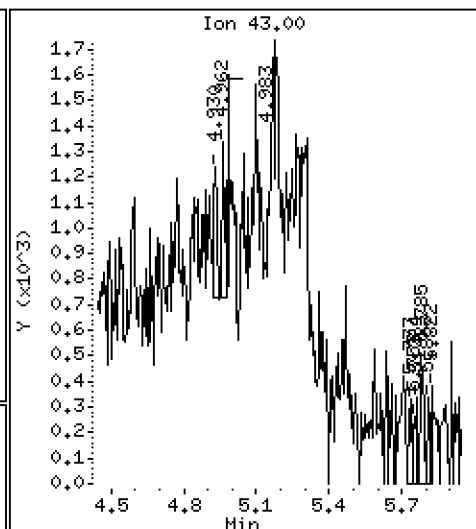
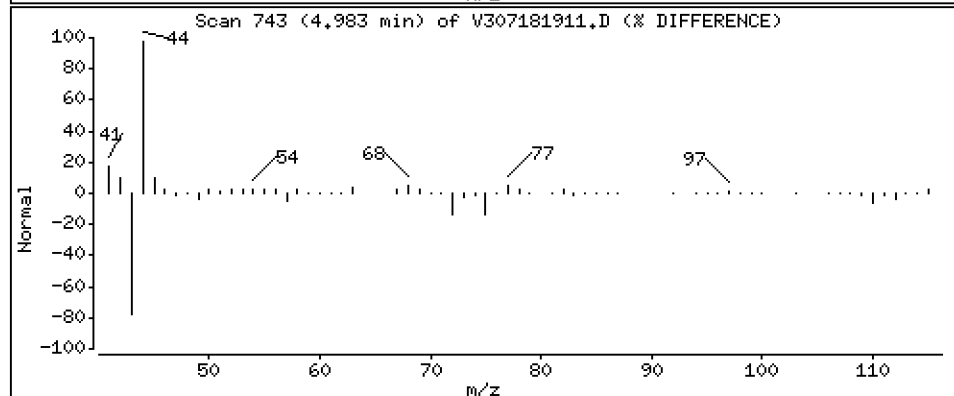
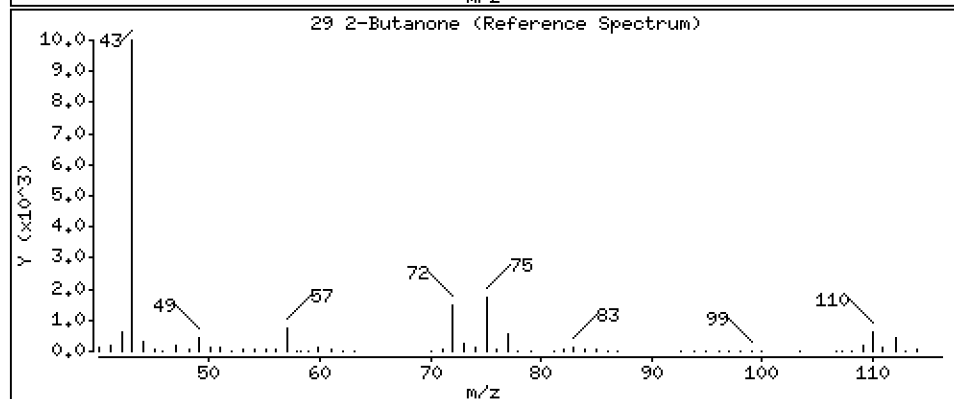
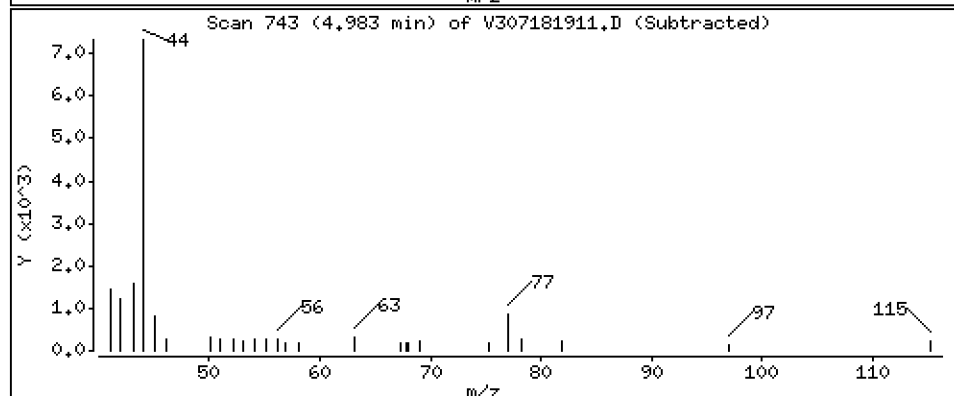
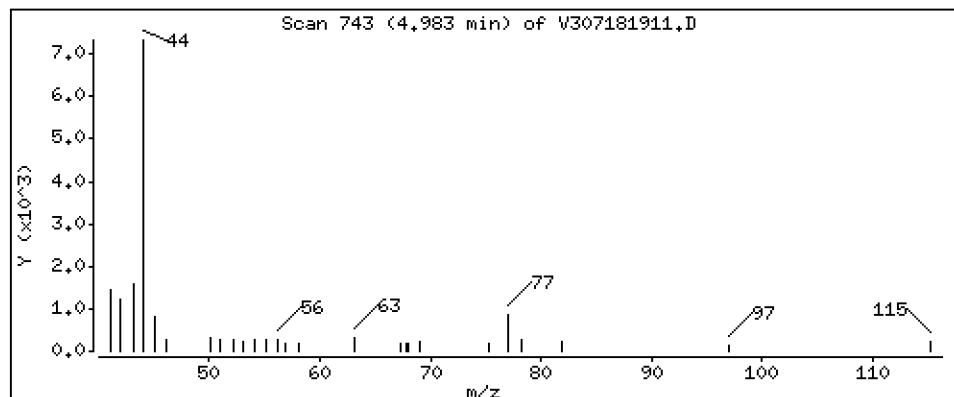
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

29 2-Butanone

Concentration: 0.1202 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

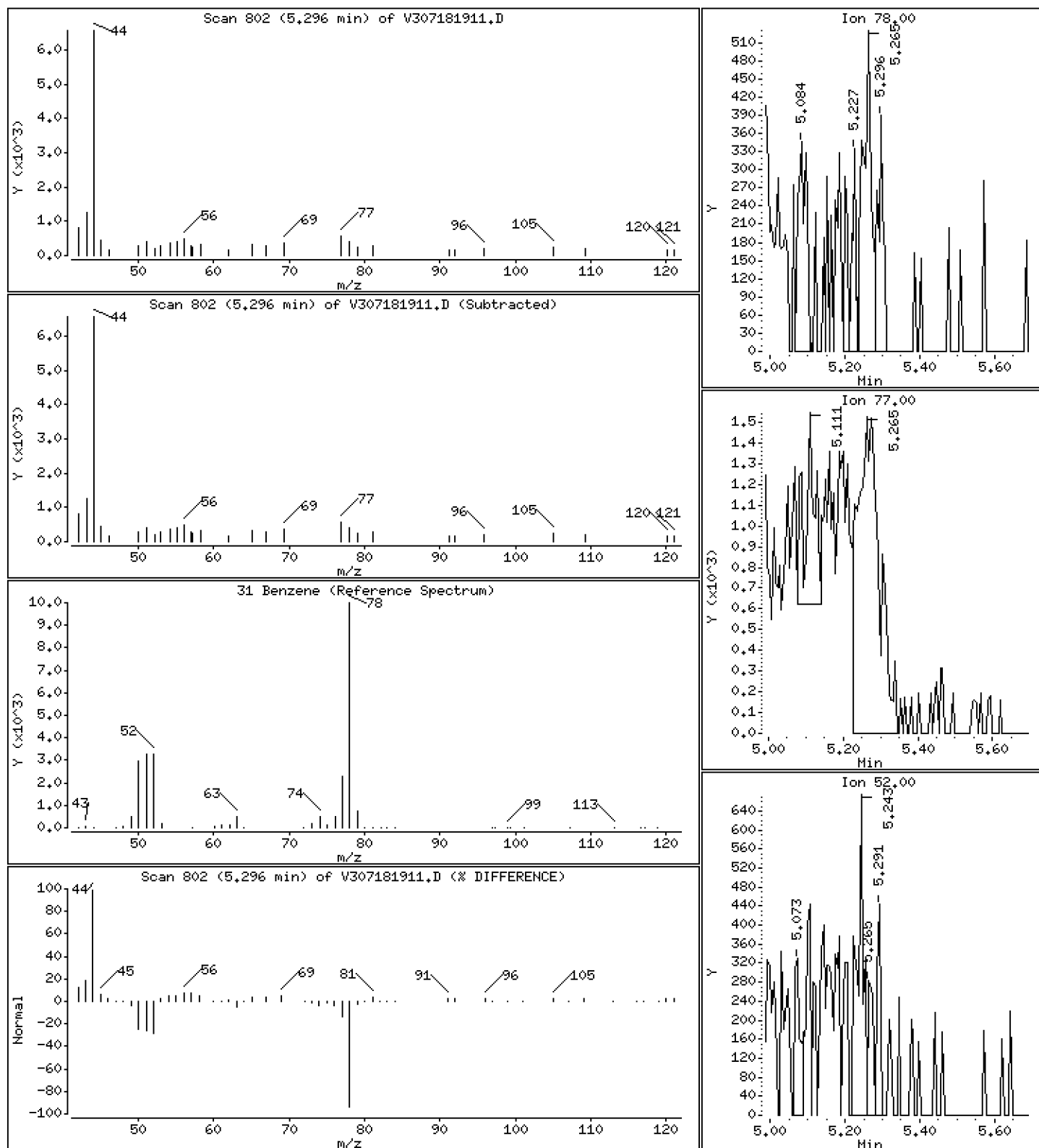
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

31 Benzene

Concentration: 0.02306 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

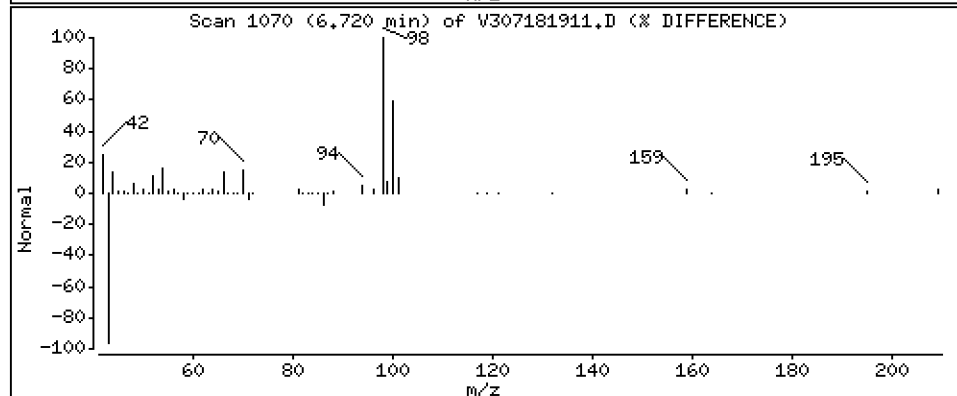
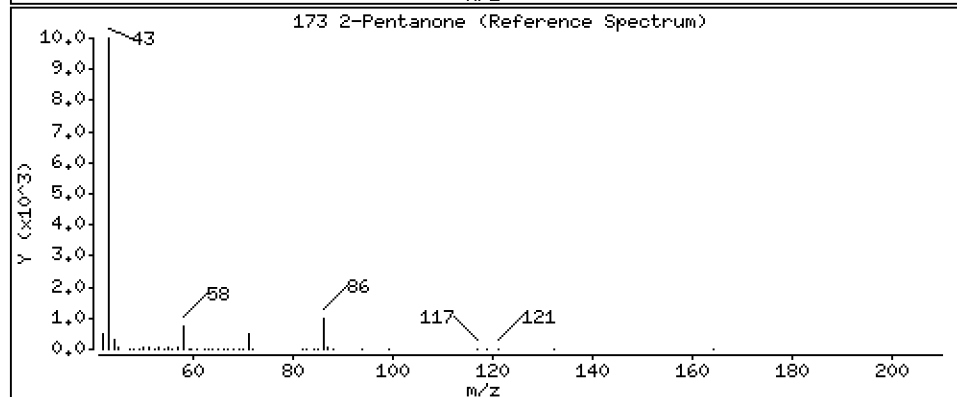
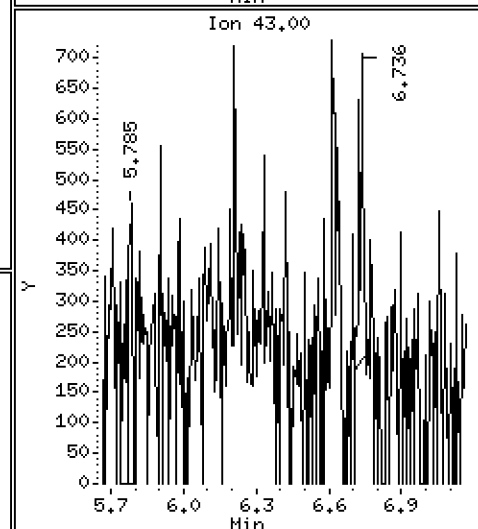
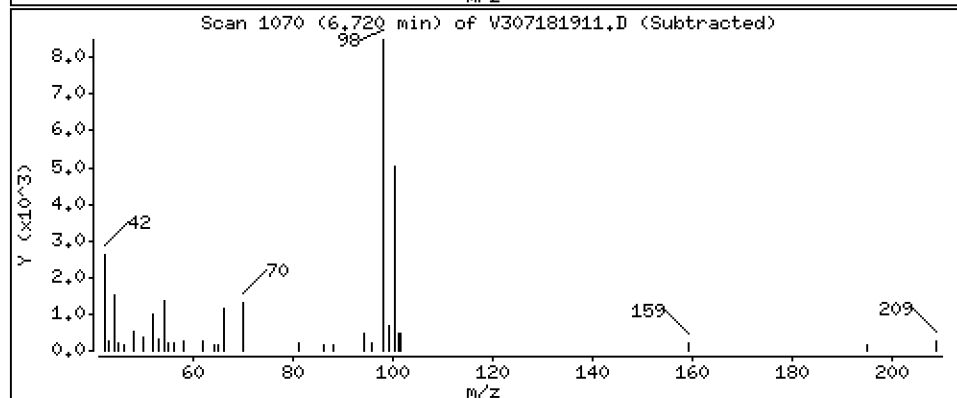
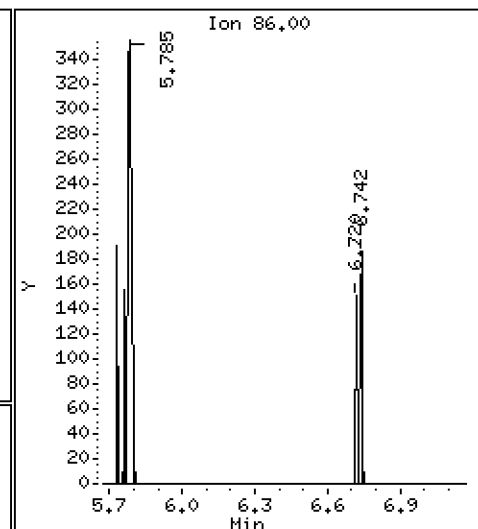
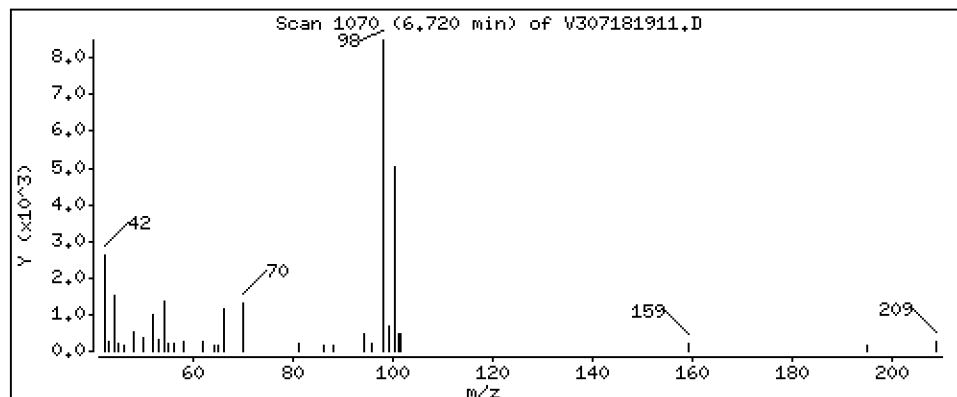
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

173 2-Pentanone

Concentration: 0.1212 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

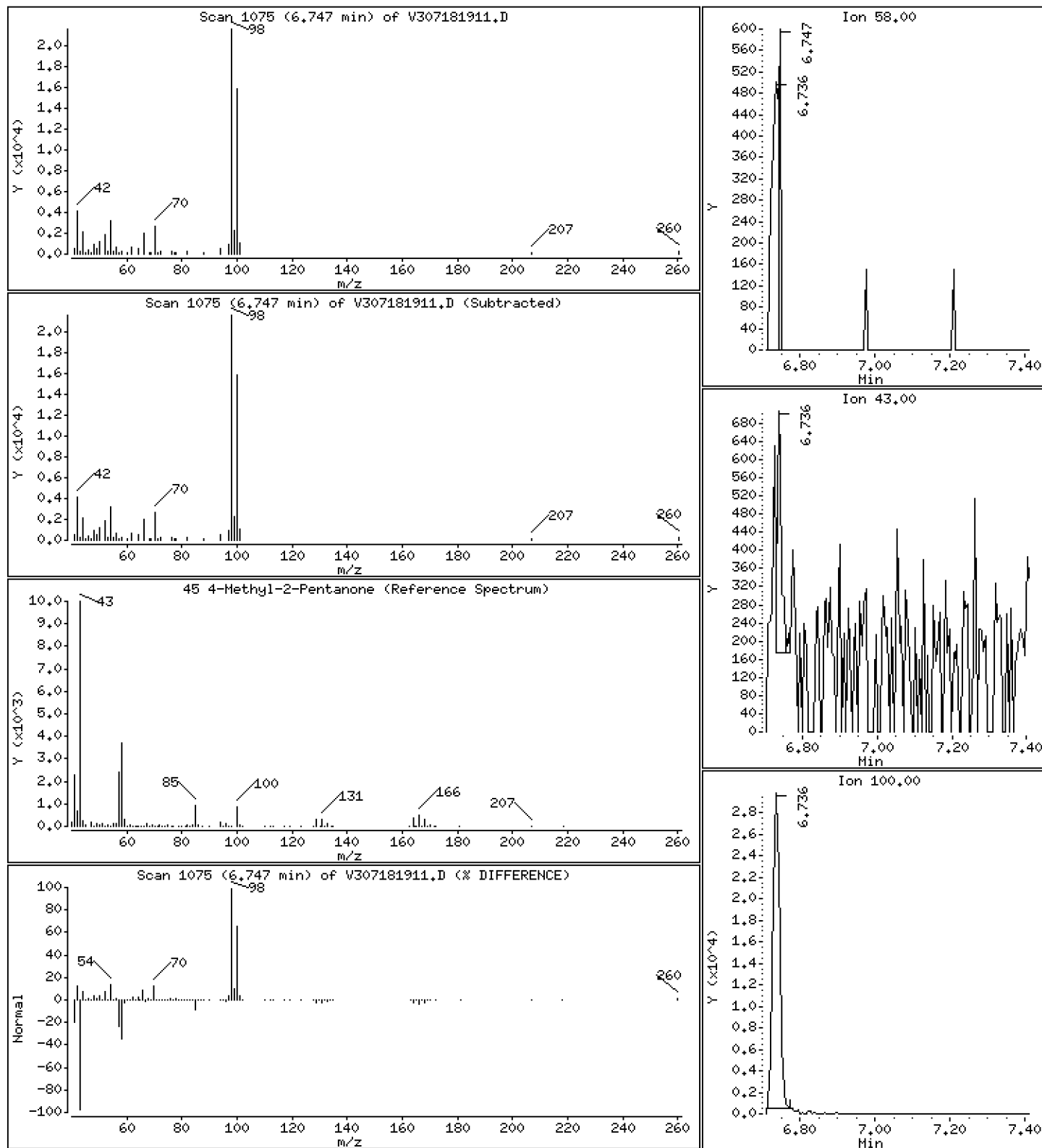
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

45 4-Methyl-2-Pentanone

Concentration: 0.1947 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

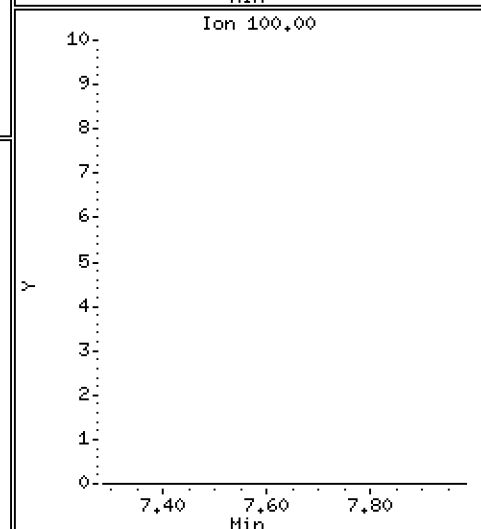
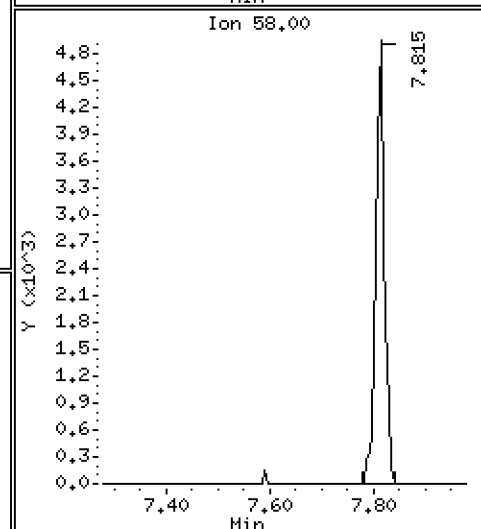
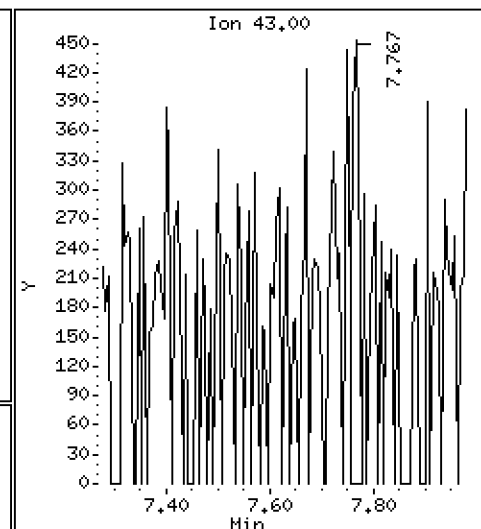
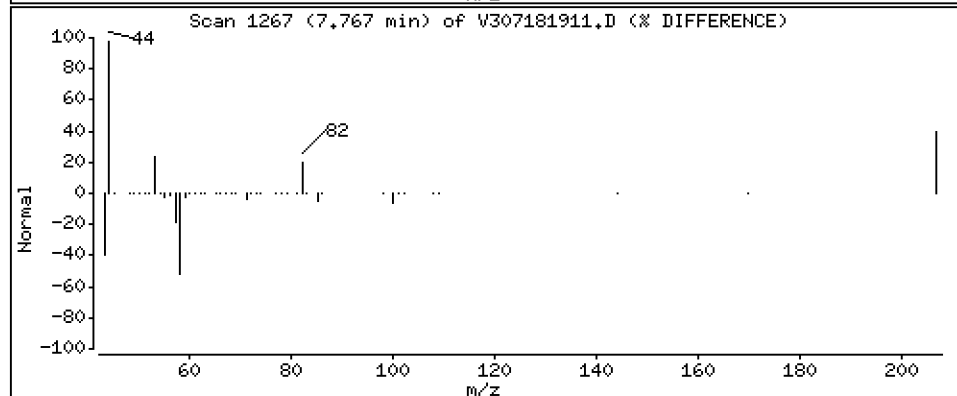
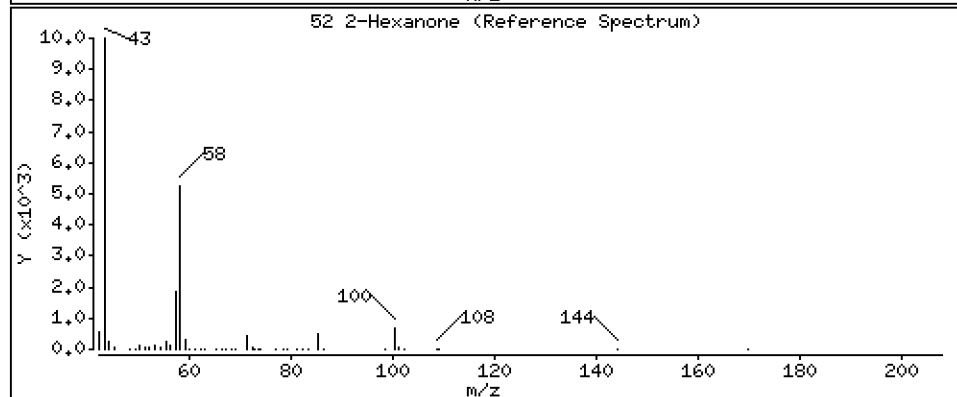
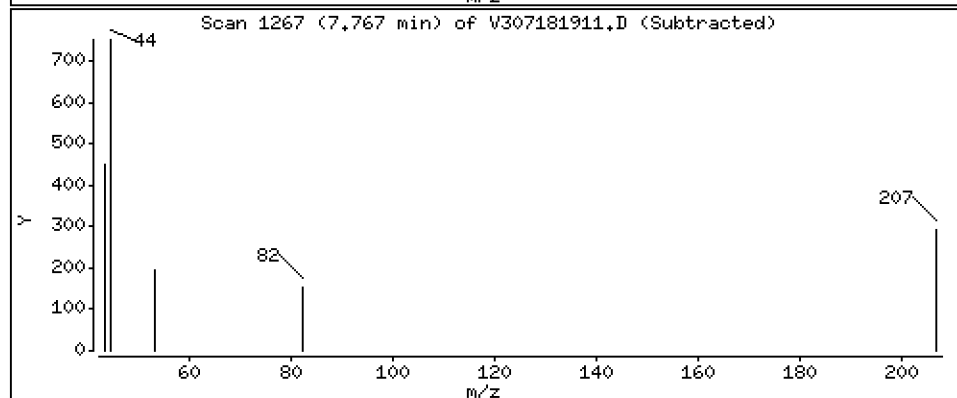
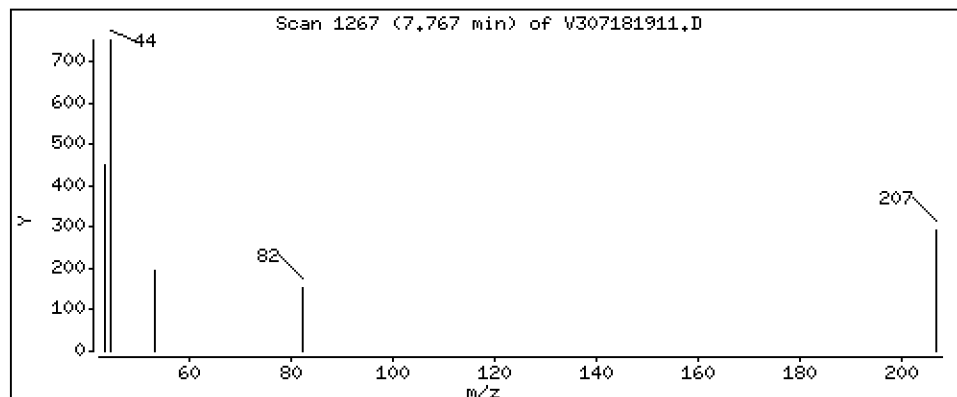
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

52 2-Hexanone

Concentration: 0.1131 ug/L



Date : 18-JUL-2019 13:42

Client ID:

Instrument: nt3.i

Sample Info: 19G0163-16

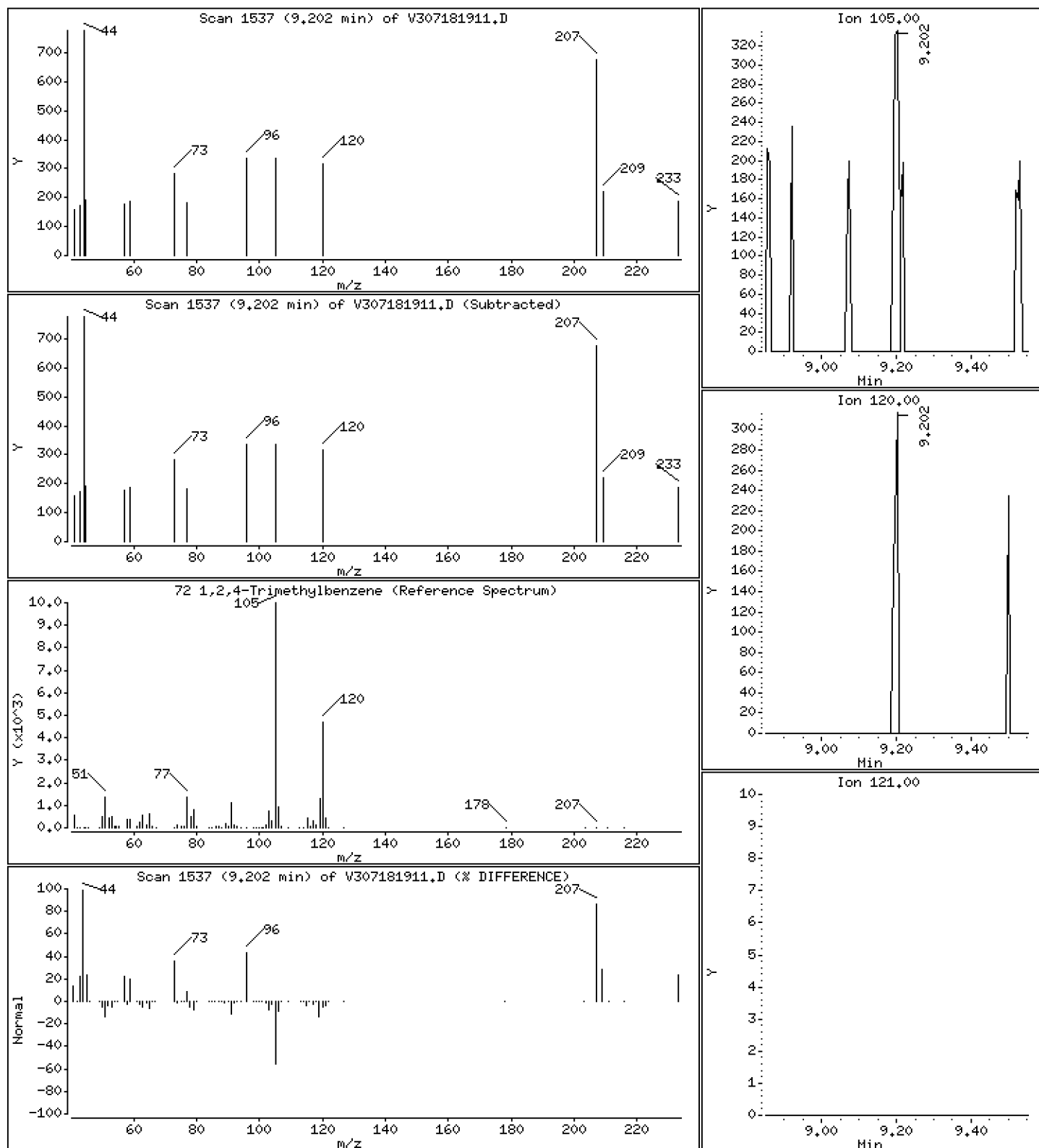
Operator: PKC

Column phase: RTXVMS

Column diameter: 0.18

72 1,2,4-Trimethylbenzene

Concentration: 0.02128 ug/L



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718.b\V307181911.D
 Lab Smp Id: 19G0163-16
 Inj Date : 18-JUL-2019 13:42
 Operator : PKC Inst ID: nt3.i
 Smp Info : 19G0163-16
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Meth Date : 18-Jul-2019 10:39 paul Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: mdl.sub
 Target Version: 4.14
 Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
3 Vinyl Chloride	62	Compound Not Detected.					
4 Bromomethane	94	2.342	2.304	(0.434)	102	0.02084	0.02084
5 Chloroethane	64	2.336	2.416	(0.433)	159	0.02679	0.02679
6 Trichlorofluoromethane	101	Compound Not Detected.					
7 1,1-Dichloroethene	61	Compound Not Detected.					
8 Carbon Disulfide	76	Compound Not Detected.					
9 112Trichloro122Trifluoroethane	101	Compound Not Detected.					
10 Iodomethane	142	Compound Not Detected.					
11 Bromoethane	108	Compound Not Detected.					
12 Acrolein	56	3.319	3.372	(0.615)	1122	1.13193	1.132
13 Methylene Chloride	84	3.553	3.574	(0.658)	1407	0.29161	0.2916
14 Acetone	43	3.723	3.765	(0.690)	820	0.51321	0.5132
15 Trans-1,2-Dichloroethene	96	3.776	3.723	(0.700)	108	0.02068	0.02068
17 Methyl tert butyl ether	73	Compound Not Detected.					
18 1,1-Dichloroethane	63	Compound Not Detected.					
19 Acrylonitrile	53	4.313	4.350	(0.799)	430	0.23739	0.2374
20 Vinyl Acetate	43	4.520	4.515	(0.838)	275	0.02044	0.02044
22 Cis-1,2-Dichloroethene	96	Compound Not Detected.					
23 2,2-Dichloropropane	77	4.765	4.791	(0.883)	338	0.06961	0.06961
24 Bromochloromethane	128	Compound Not Detected.					
25 Chloroform	83	Compound Not Detected.					
26 Carbon Tetrachloride	117	Compound Not Detected.					
\$ 27 Dibromofluoromethane	111	5.041	5.067	(0.934)	14975	4.83270	4.833 (R)
28 1,1,1-Trichloroethane	97	Compound Not Detected.					
30 1,1-Dichloropropene	75	5.004	5.157	(0.866)	280	0.04393	0.04393
29 2-Butanone	43	4.982	5.195	(0.923)	333	0.12024	0.1202
31 Benzene	78	5.296	5.338	(0.916)	440	0.02306	0.02306
* 32 Pentafluorobenzene	168	5.397	5.413	(1.000)	60556	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.450	(1.006)	20009	4.90351	4.904 (R)
34 1,2-Dichloroethane	62	Compound Not Detected.					
36 Trichloroethene	130	Compound Not Detected.					

							CONCENTRATIONS		
		QUANT	SIG				ON-COLUMN	FINAL	
Compounds		MASS		RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====		=====		=====	=====	=====	=====	=====	=====
*	37 1,4-Difluorobenzene	114		5.779	5.784	(1.000)	94130	10.0000	
	38 Dibromomethane	93		Compound Not Detected.					
	39 1,2-Dichloropropane	63		Compound Not Detected.					
	40 Bromodichloromethane	83		Compound Not Detected.					
	173 2-Pentanone	86		6.720	6.422	(1.163)	48	0.12120	0.1212
	41 2-Chloroethyl Vinyl Ether	63		Compound Not Detected.					
	42 Cis 1,3-dichloropropene	75		Compound Not Detected.					
\$	43 d8-Toluene	98		6.736	6.736	(1.165)	61485	4.97864	4.979 (R)
	44 Toluene	92		Compound Not Detected.					
	46 Tetrachloroethene	166		Compound Not Detected.					
	45 4-Methyl-2-Pentanone	58		6.747	7.060	(1.167)	337	0.19473	0.1947
	47 Trans 1,3-Dichloropropene	75		Compound Not Detected.					
	48 1,1,2-Trichloroethane	97		Compound Not Detected.					
	49 Chlorodibromomethane	129		Compound Not Detected.					
	50 1,3-Dichloropropane	76		Compound Not Detected.					
	51 1,2-Dibromoethane	107		Compound Not Detected.					
	52 2-Hexanone	43		7.767	7.628	(0.994)	436	0.11306	0.1131
*	53 d5-Chlorobenzene	117		7.814	7.814	(1.000)	96757	10.0000	
	54 Chlorobenzene	112		Compound Not Detected.					
	55 Ethyl Benzene	106		Compound Not Detected.					
	56 1,1,1,2-Tetrachloroethane	131		Compound Not Detected.					
	57 m,p-xylene	106		Compound Not Detected.					
	58 o-Xylene	106		Compound Not Detected.					
	59 Styrene	104		Compound Not Detected.					
	60 Bromoform	173		Compound Not Detected.					
	61 Isopropyl Benzene	105		Compound Not Detected.					
\$	62 4-Bromofluorobenzene	174		8.681	8.686	(1.111)	18970	4.93756	4.938 (R)
	63 Bromobenzene	156		Compound Not Detected.					
	64 N-Propyl Benzene	91		Compound Not Detected.					
	65 1,1,2,2-Tetrachloroethane	83		Compound Not Detected.					
	66 2-Chloro Toluene	91		Compound Not Detected.					
	67 1,3,5-Trimethyl Benzene	105		Compound Not Detected.					
	68 1,2,3-Trichloropropane	110		Compound Not Detected.					
	69 Trans-1,4-Dichloro 2-Butene	53		Compound Not Detected.					
	70 4-Chloro Toluene	91		Compound Not Detected.					
	71 T-Butyl Benzene	119		Compound Not Detected.					
	72 1,2,4-Trimethylbenzene	105		9.201	9.201	(0.969)	384	0.02128	0.02128
	73 S-Butyl Benzene	105		Compound Not Detected.					
	74 4-Isopropyl Toluene	119		Compound Not Detected.					
	75 1,3-Dichlorobenzene	146		Compound Not Detected.					
*	76 d4-1,4-Dichlorobenzene	152		9.499	9.498	(1.000)	53470	10.0000	
	77 1,4-Dichlorobenzene	146		Compound Not Detected.					
	78 N-Butyl Benzene	91		Compound Not Detected.					
\$	79 d4-1,2-Dichlorobenzene	152		9.818	9.823	(1.034)	25692	5.12188	5.122 (R)
	80 1,2-Dichlorobenzene	146		Compound Not Detected.					
	81 1,2-Dibromo 3-Chloropropane	75		Compound Not Detected.					
	83 Hexachloro 1,3-Butadiene	225		Compound Not Detected.					
	84 1,2,4-Trichlorobenzene	180		Compound Not Detected.					
	85 Naphthalene	128		Compound Not Detected.					
	86 1,2,3-Trichlorobenzene	180		Compound Not Detected.					

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181911.D Calibration Time: 10:09
 Lab Smp Id: 19G0163-16
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	60556	-17.82
37 1,4-Difluorobenze	116116	58058	232232	94130	-18.93
53 d5-Chlorobenzene	124912	62456	249824	96757	-22.54
76 d4-1,4-Dichlorobe	77169	38585	154338	53470	-30.71

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.29
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.09
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: 19G0163-16
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: mdl.sub
Method File: \\target\share\chem1\nt3.i\20190718.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.833	96.65	
\$ 33 d4-1,2-Dichloroeth	5.000	4.904	98.07	
\$ 43 d8-Toluene	5.000	4.979	99.57	
\$ 62 4-Bromofluorobenze	5.000	4.938	98.75	
\$ 79 d4-1,2-Dichloroben	5.000	5.122	102.44	

REVIEW SUMMARY FOR FILE - V307181911.D

Lab ID: 19G0163-16
nt3.i, 20190718.b\8260C071619.m, 18-JUL-2019 13:42

RT CO-ELUTION COMPOUNDS

NO CO-ELUTIONS

Quant Method: ICAL

RRT CHECK

RRT	CCV RRT	DELTA	COMPOUND
0.434	0.426	0.0082	Bromomethane
0.433	0.446	-0.0134	Chloroethane
0.615	0.623	-0.0080	Acrolein
0.690	0.696	-0.0058	Acetone
0.700	0.688	0.0119	Trans-1,2-Dichloroethene
0.923	0.960	-0.0365	2-Butanone
0.866	0.892	-0.0258	1,1-Dichloropropene
0.916	0.923	-0.0065	Benzene
1.167	1.220	-0.0531	4-Methyl-2-Pentanone
0.994	0.976	0.0177	2-Hexanone
1.163	1.110	0.0525	2-Pentanone

RRT check based on Ccal File: V307181903.D

On Column LOD for nt3.i, 8260C071619.m, mdl.sub = 0.0200

* Only compounds listed in the work order have been verified by the analyst *

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181911.D

Date : 18-JUL-2019 13:42

Client ID:

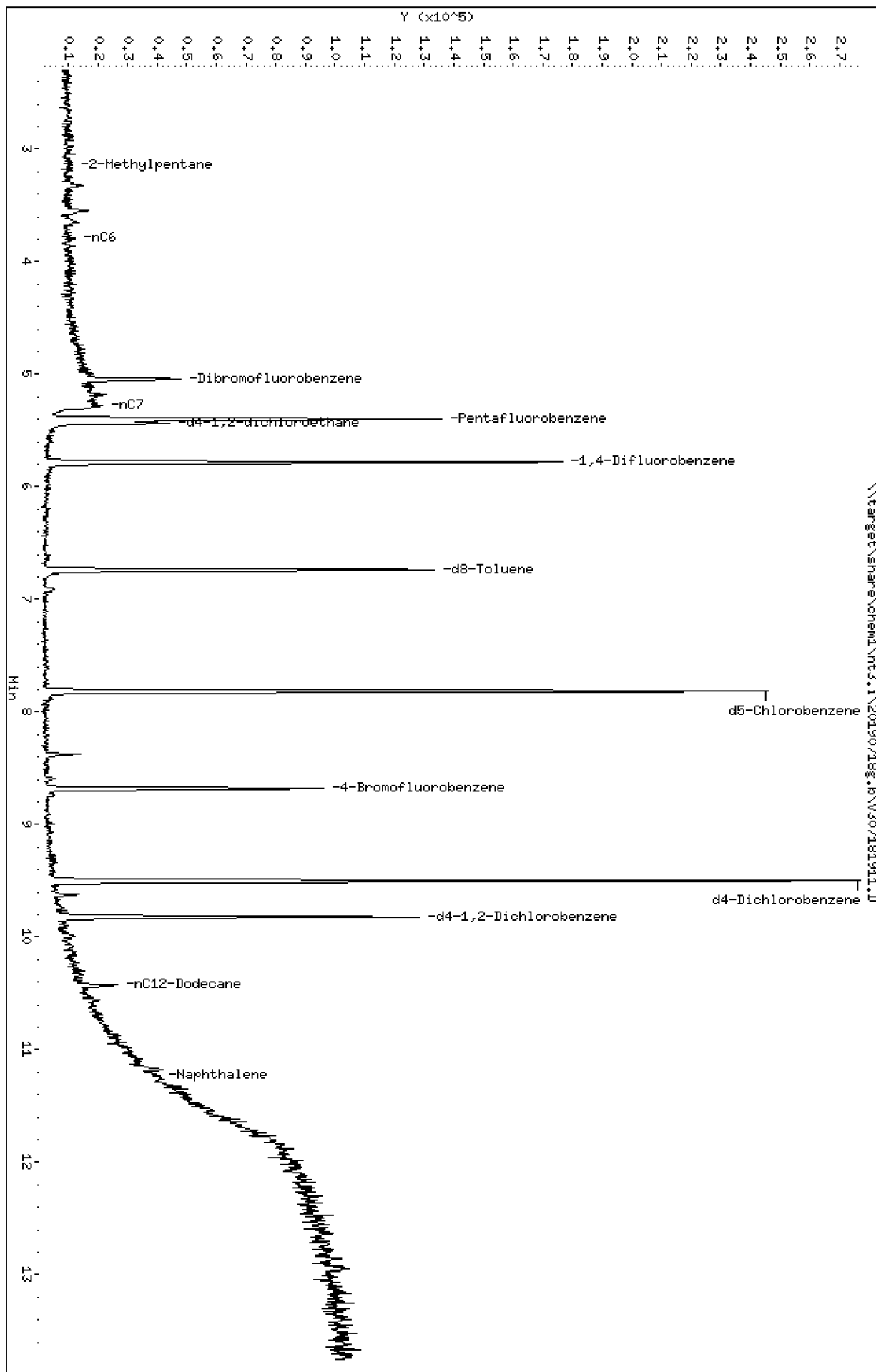
Sample Info: 19C0163-16

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181911.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 13:42

ARI ID: 19G0163-16
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	142720	0.009
8015C 2MP-TMB (3.04 to 9.49)	30509602	371703	0.012
AK101 nC6-nC10 (3.67 to 8.65)	20565293	309642	0.015
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	216479	0.013
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	180987	0.008

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	350844	d5-Chlorobenzene
6.736	188572	d8-Toluene
9.499	378522	d4-Dichlorobenzene
8.681	128389	4-Bromofluorobenzene
9.818	183450	d4-1,2-Dichlorobenzene



PREPARATION BATCH SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0439

Batch Matrix: Water

Preparation: EPA 5030 (Purge and Trap)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
TB-SO-190711	19G0163-16	V307181911.D	07/18/19 11:06	
Blank	BHG0439-BLK2	V307181909.D	07/18/19 07:56	
LCS	BHG0439-BS2	V307181905LCS.D	07/18/19 07:56	
LCS Dup	BHG0439-BSD2	V307181906.D	07/18/19 07:56	



PREPARATION BENCH SHEET

BHG0439

Printed: 7/19/2019 9:09:31AM

Matrix: Water

Prepared using: Volatiles - EPA 5030 (Purge and Trap)

Surrogate used: H001676

Lab Number	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	pH	Extraction Comments
19G0106-01 A	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0118-11RE1 C	8260C VOA	07/18/19@09:56	0.2	10				1	2	From BHG0413 by LH on 18-Jul-2019
19G0157-17 C	8260C VOA	07/18/19@10:22	10	10				1	7	Dont use the version for this project
19G0157-18 C	8260C VOA	07/18/19@11:06	2	10				1	7	Dont use the version for this project
19G0163-16 A	8260C Gas (NWTPH)	07/18/19@11:06	10	10				1	2	
19G0163-16 A	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-01 B	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-02 B	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-03 A	8260C VOA	07/18/19@11:06	10	10				1	2	
19G0224-04 A	8260C VOA	07/18/19@11:06	10	10				1	2	
BHG0439-BLK1	QC	07/18/19@07:56	10	10				1		
BHG0439-BLK2	QC	07/18/19@07:56	10	10				1		
BHG0439-BS1	QC	07/18/19@07:56	10	10	H006786		5	1		
BHG0439-BS2	QC	07/18/19@07:56	10	10	H005013		2	1		
BHG0439-BSD1	QC	07/18/19@07:56	10	10	H006786		5	1		
BHG0439-BSD2	QC	07/18/19@07:56	10	10	H005013		2	1		

From BHG0413 on 7/18/2019 by LH

1817 of 3146

Spiking Witnessed By

bch ARI with pH.rpt

Date

Preparation Reviewed By

Date

Extracts Received By

Date



PREPARATION BATCH SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0455 Batch Matrix: Solid

Preparation: EPA 5035 (Methanol Extraction)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02	V307181919.D	07/18/19 14:28	
SO-02-190711	19G0163-03	V307181922.D	07/18/19 14:28	
SO-03-190711	19G0163-04	V307181923.D	07/18/19 14:28	
SO-04-190711	19G0163-05	V307181924.D	07/18/19 14:28	
SO-05-190711	19G0163-06	V307181925.D	07/18/19 14:28	
SO-06-190711	19G0163-07	V307181926.D	07/18/19 14:28	
SO-07-190711	19G0163-08	V307181927.D	07/18/19 14:28	
SO-08-190711	19G0163-09	V307181928.D	07/18/19 14:28	
Blank	BHG0455-BLK1	V307181909A.D	07/18/19 07:28	
LCS	BHG0455-BS1	V307181905LCSA.D	07/18/19 07:28	
LCS Dup	BHG0455-BSD1	V307181906A.D	07/18/19 07:28	
SO-01-190711	BHG0455-MS1	V307181920.D	07/18/19 14:28	MS amount adjusted for TS
SO-01-190711	BHG0455-MSD1	V307181921.D	07/18/19 14:28	MS amount adjusted for TS



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

VOA Method 5035 Extraction Bench Sheet
(8260C, 8260C-SIM, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

Work Order(s)

1940163

Element Batch(es)

BH60455

Prep/Extraction Date

7/18/19

Analyst

JLC

	Lab ID	Vial No.	Method 5035 Sample Weight						Extract Split Basis		
			NaHSO ₃ Lot#	CH ₃ OH Lot#	Vial Weight (g)	Tare (from vial) (g)	Initial Weight (g)	Final Volume (mL)	MeOH Split Volume (μL)	Diluent Volume (mL)	Dilution
1	1940163-02	J		D4187	31.93	28.569	3.361	5	900	45	50
2	-03	E			32.41	28.660	3.75				
3	-04	E			30.80	28.655	2.145				
4	-05	E			30.93	28.552	2.378				
5	-06	E			30.54	28.485	2.085				
6	-07	E			30.86	28.544	2.316				
7	-08	E			33.68	28.635	5.045				
8	-09	E			31.49	28.630	2.86				
9											
10											
11											
12											
13											
14											
15											
			Balance ID: SLF302								



PREPARATION BENCH SHEET

BHG0455

Printed: 7/19/2019 1:05:00PM

Matrix: Solid

epared using: Volatiles - EPA 5035 (Methanol Extractio

Surrogate used: H001678

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	% Solids	Extraction Comments
19G0163-02 J	8260C Gas (NWTTPH)	07/18/19@14:28	3.361	5				100	48.32	
19G0163-03 E	8260C Gas (NWTTPH)	07/18/19@14:28	3.75	5				100	46.71	
19G0163-04 E	8260C Gas (NWTTPH)	07/18/19@14:28	2.145	5				100	23.52	
19G0163-05 E	8260C Gas (NWTTPH)	07/18/19@14:28	2.378	5				100	22.49	
19G0163-06 E	8260C Gas (NWTTPH)	07/18/19@14:28	2.085	5				100	33.21	
19G0163-07 E	8260C Gas (NWTTPH)	07/18/19@14:28	2.316	5				100	50.14	
19G0163-08 E	8260C Gas (NWTTPH)	07/18/19@14:28	5.045	5				100	60.39	
19G0163-09 E	8260C Gas (NWTTPH)	07/18/19@14:28	2.86	5				100	49.21	
BHG0455-BLK1	QC	07/18/19@07:28	5	5				100		
BHG0455-BS1	QC	07/18/19@07:28	5	5	H005013		50	100		
BHG0455-BSD1	QC	07/18/19@07:28	5	5	H005013		50	100		
BHG0455-MS1	QC	07/18/19@14:28	3.361	5	H005013	19G0163-02	61.74	100		MS amount adjusted for TS
BHG0455-MSD1	QC	07/18/19@14:28	3.361	5	H005013	19G0163-02	61.74	100		MS amount adjusted for TS

1820 of 3146

Spiking Witnessed By

bch ARI with Solids.rpt

Date

Preparation Reviewed By

Date

Extracts Received By

Date



PREPARATION BATCH SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0474

Batch Matrix: Solid

Preparation: EPA 5035 (Methanol Extraction)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-09-190711	19G0163-10	V207191914G.D	07/19/19 09:38	
SO-10-190711	19G0163-11	V207191915G.D	07/19/19 09:38	
SO-10-190711D	19G0163-12	V207191916G.D	07/19/19 09:38	
SO-11-190711	19G0163-13	V207191917G.D	07/19/19 09:38	
SO-12-190711	19G0163-14	V207191918G.D	07/19/19 09:38	
SO-13-190711	19G0163-15	V207191919G.D	07/19/19 09:38	
Blank	BHG0474-BLK1	V207191907G.D	07/19/19 08:38	
LCS	BHG0474-BS1	V207191903GLCS.D	07/19/19 07:15	
LCS Dup	BHG0474-BSD1	V207191905G.D	07/19/19 07:56	
SO-11-190711	BHG0474-MS1	V207191921G.D	07/19/19 09:38	Spiking amount adjusted for TS
SO-11-190711	BHG0474-MSD1	V207191922G.D	07/19/19 09:38	Spiking amount adjusted for TS



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

VOA Method 5035 Extraction Bench Sheet

(8260C, 8260C-SIM, NWTPH-Gx, AK-101, TPH-G, VPH, TCLP-ZHE)

Work Order(s)

Element Batch(es)

Prep/Extraction Date

Analyst

1960103, 1960232

6H60474

7/19/19

JUH

	Lab ID	Vial No.	Method 5035 Sample Weight					Extract Split Basis			
			NaHSO ₃ Lot#	CH ₃ OH Lot#	Vial Weight (g)	Tare (from vial) (g)	Initial Weight (g)	Final Volume (mL)	MeOH Split Volume (μL)	Diluent Volume (mL)	Dilution
1	1960103-10	E	T	DV187	31.81	28.836	2.974	5mL	900.1	45mL	50x
2	-11	E			30.63	28.677	1.953				
3	-12	E			31.38	28.787	2.593				
4	-13	E			30.39	28.576	1.814				
5	-14	E			31.00	28.682	2.317				
6	-15	E			31.54	28.605	2.935				
7	1960232-01	D			31.44	28.059	3.381				
8											
9											
10											
11											
12											
13											
14											
15											
			Balance ID: SLF302								



PREPARATION BENCH SHEET

BHG0474

Printed: 7/22/2019 12:22:07PM

Matrix: Solid

epared using: Volatiles - EPA 5035 (Methanol Extractio

Surrogate used: H001678

Lab Number	Analysis	Prepared	Initial (g)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	% Solids	Extraction Comments
19G0163-10 E	8260C Gas (NWTTPH)	07/19/19@09:38	2.974	5				100	66.29	
19G0163-11 E	8260C Gas (NWTTPH)	07/19/19@09:38	1.953	5				100	71.21	
19G0163-12 E	8260C Gas (NWTTPH)	07/19/19@09:38	2.593	5				100	72.06	
19G0163-13 E	8260C Gas (NWTTPH)	07/19/19@09:38	1.814	5				100	21.61	
19G0163-14 E	8260C Gas (NWTTPH)	07/19/19@09:38	2.317	5				100	43.42	
19G0163-15 E	8260C Gas (NWTTPH)	07/19/19@09:38	2.935	5				100	87.89	
19G0232-01 D	8260C Gas (NWTTPH)	07/19/19@09:38	3.381	5				100	86.4	
BHG0474-BLK1	QC	07/19/19@08:38	5	5				100		
BHG0474-BS1	QC	07/19/19@07:15	5	5	H005013		50	100		
BHG0474-BSD1	QC	07/19/19@07:56	5	5	H005013		50	100		
BHG0474-MS1	QC	07/19/19@09:38	1.814	5	H005013	19G0163-13	64.2	100		Spiking amount adjusted for TS
BHG0474-MSD1	QC	07/19/19@09:38	1.814	5	H005013	19G0163-13	64.2	100		Spiking amount adjusted for TS

1823 of 3146

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date



Form I
METHOD BLANK DATA SHEET
NWTPHg

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0455-BLK1 File ID: V307181909A.D
Sampled: N/A Prepared: 07/18/19 07:28 Analyzed: 07/18/19 12:49
Solids: Preparation: EPA 5035 (Methanol Extract Initial/Final: 5 g / 5 mL
Batch: BHG0455 Sequence: SHG0273 Calibration: CG00045
Instrument: NT3 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	5000	U	2500	5000
SURROGATES		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8		5.0000	4.93	98.5	80 - 120	
4-Bromofluorobenzene		5.0000	4.59	91.9	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\201907181909A.D

Date : 18-JUL-2019 12:49

Client ID:

Sample Info: BHC0455-BLK1

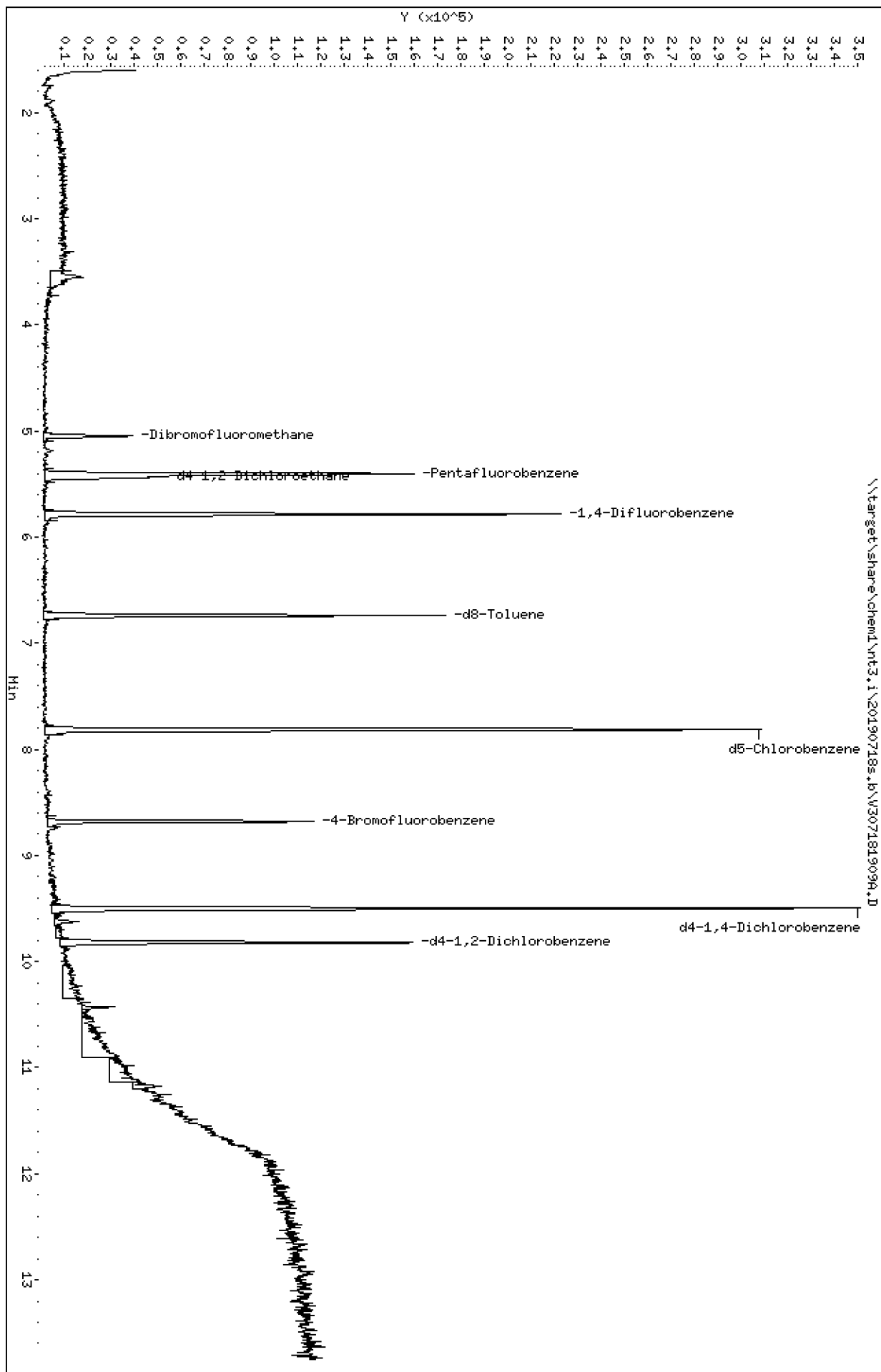
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181909A.D
Lab Smp Id: BHG0455-BLK1
Inj Date : 18-JUL-2019 12:49
Operator : PKC Inst ID: nt3.i
Smp Info : BHG0455-BLK1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
							(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111	5.046	5.046	(0.934)	18807	4.85068	4.851 (R)	
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	75770	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.434	5.434	(1.006)	23644	4.63087	4.631 (R)	
* 37 1,4-Difluorobenzene	114	5.785	5.784	(1.000)	123016	10.0000		
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	79519	4.92695	4.927 (R)	
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	123872	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	22589	4.59252	4.593 (R)	
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	71515	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	31464	4.68984	4.690 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181909A.D Calibration Time: 22:11
 Lab Smp Id: BHG0455-BLK1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	75770	2.83
37 1,4-Difluorobenze	116116	58058	232232	123016	5.94
53 d5-Chlorobenzene	124912	62456	249824	123872	-0.83
76 d4-1,4-Dichlorobe	77169	38585	154338	71515	-7.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0455-BLK1
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.851	97.01	
\$ 33 d4-1,2-Dichloroeth	5.000	4.631	92.62	
\$ 43 d8-Toluene	5.000	4.927	98.54	
\$ 62 4-Bromofluorobenze	5.000	4.593	91.85	
\$ 79 d4-1,2-Dichloroben	5.000	4.690	93.80	

REVIEW SUMMARY FOR FILE - V307181909A.D

Lab ID: BHG0455-BLK1

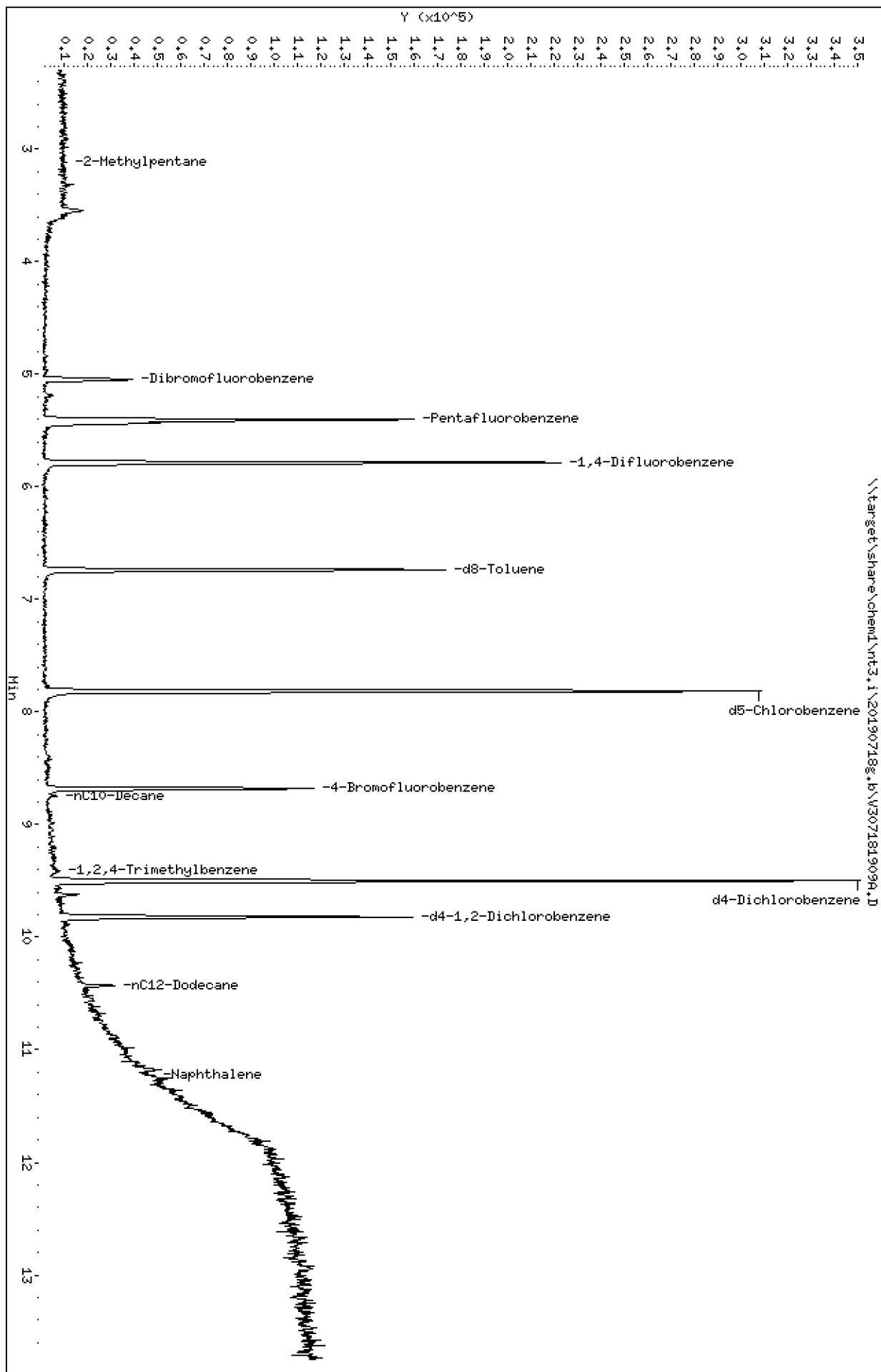
nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 12:49

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190718g.b\201907181909A.D
Date : 18-JUL-2019 12:49
Client ID:
Sample Info: BHC0455-BLK1

Column phase: RTXWMS

Instrument: nt3.i
Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181909A.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 12:49

ARI ID: BHG0455-BLK1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	106187	0.007
8015C 2MP-TMB (3.04 to 9.49)	30509602	189094	0.006
AK101 nC6-nC10 (3.67 to 8.65)	20565293	19507	0.001
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	196481	0.012
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	108573	0.005

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	451163	d5-Chlorobenzene
6.736	245513	d8-Toluene
9.499	490810	d4-Dichlorobenzene
8.681	172056	4-Bromofluorobenzene
9.818	227088	d4-1,2-Dichlorobenzene



Form I
METHOD BLANK DATA SHEET
NWTPHg

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0455-BLK1 File ID: V307181909A.D
Sampled: N/A Prepared: 07/18/19 07:28 Analyzed: 07/18/19 12:49
Solids: Preparation: EPA 5035 (Methanol Extract Initial/Final: 5 g / 5 mL
Batch: BHG0455 Sequence: SHG0273 Calibration: CG00045
Instrument: NT3 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	5000	U	2500	5000
SURROGATES		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8		5.0000	4.93	98.5	80 - 120	
4-Bromofluorobenzene		5.0000	4.59	91.9	78 - 123	

Data File: \\target\share\chemd\nt3.i\20190718s.b\201907181909A.D

Date : 18-JUL-2019 12:49

Client ID:

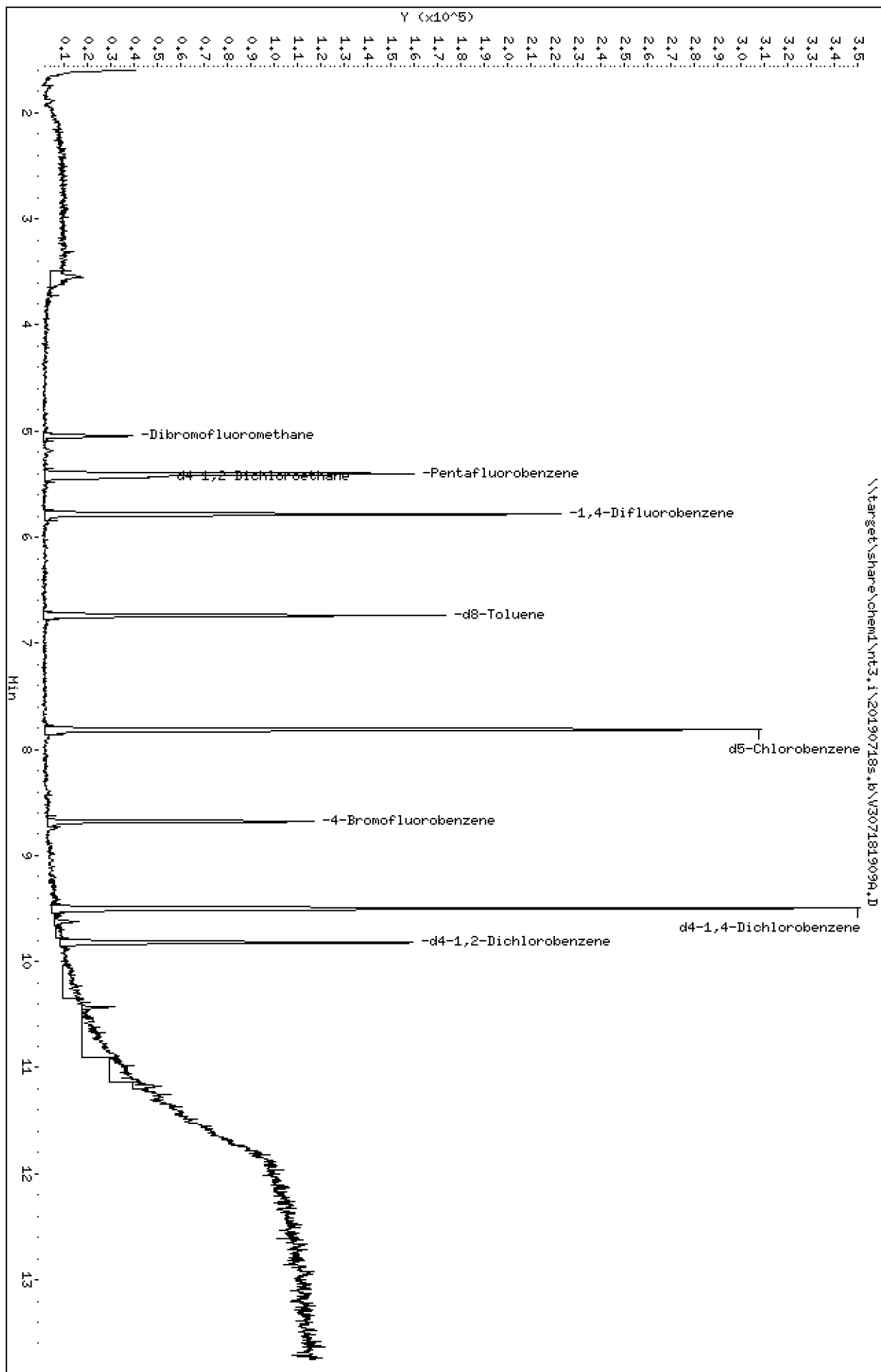
Sample Info: BHC0455-BLK1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181909A.D
Lab Smp Id: BHG0455-BLK1
Inj Date : 18-JUL-2019 12:49
Operator : PKC Inst ID: nt3.i
Smp Info : BHG0455-BLK1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
=====	=====								
\$ 27 Dibromofluoromethane	111		5.046	5.046 (0.934)		18807	4.85068	4.851 (R)	
* 32 Pentafluorobenzene	168		5.402	5.402 (1.000)		75770	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.434	5.434 (1.006)		23644	4.63087	4.631 (R)	
* 37 1,4-Difluorobenzene	114		5.785	5.784 (1.000)		123016	10.0000		
\$ 43 d8-Toluene	98		6.736	6.735 (1.164)		79519	4.92695	4.927 (R)	
* 53 d5-Chlorobenzene	117		7.814	7.814 (1.000)		123872	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.680	8.680 (1.111)		22589	4.59252	4.593 (R)	
* 76 d4-1,4-Dichlorobenzene	152		9.499	9.498 (1.000)		71515	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.823	9.817 (1.034)		31464	4.68984	4.690 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181909A.D Calibration Time: 22:11
 Lab Smp Id: BHG0455-BLK1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	75770	2.83
37 1,4-Difluorobenze	116116	58058	232232	123016	5.94
53 d5-Chlorobenzene	124912	62456	249824	123872	-0.83
76 d4-1,4-Dichlorobe	77169	38585	154338	71515	-7.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0455-BLK1
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.851	97.01	
\$ 33 d4-1,2-Dichloroeth	5.000	4.631	92.62	
\$ 43 d8-Toluene	5.000	4.927	98.54	
\$ 62 4-Bromofluorobenze	5.000	4.593	91.85	
\$ 79 d4-1,2-Dichloroben	5.000	4.690	93.80	

REVIEW SUMMARY FOR FILE - V307181909A.D

Lab ID: BHG0455-BLK1

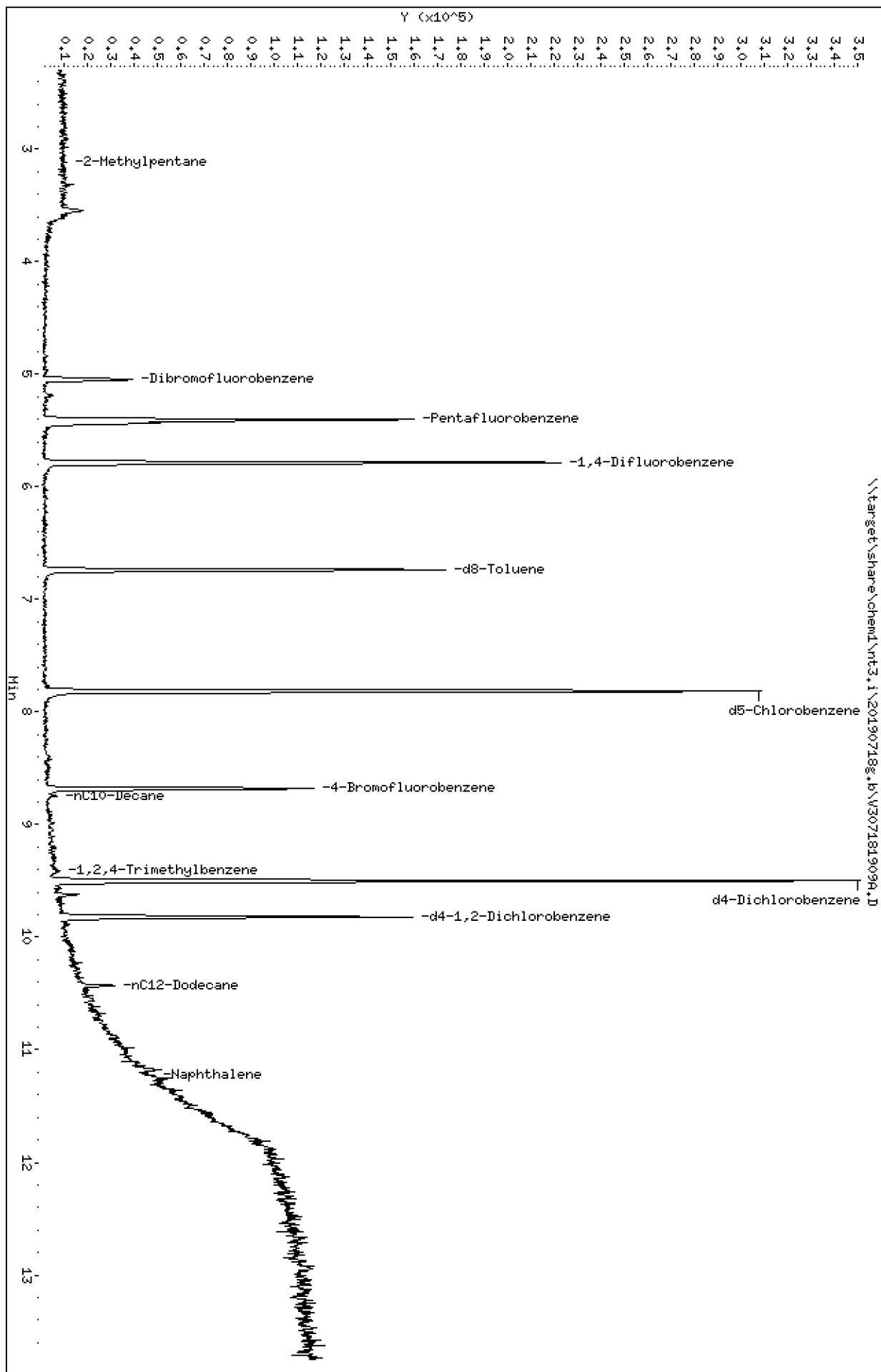
nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 12:49

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190718g.b\201907181909A.D
Date : 18-JUL-2019 12:49
Client ID:
Sample Info: BHC0455-BLK1

Column phase: RTXWMS

Instrument: nt3.i
Operator: PKC
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181909A.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 12:49

ARI ID: BHG0455-BLK1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	106187	0.007
8015C 2MP-TMB (3.04 to 9.49)	30509602	189094	0.006
AK101 nC6-nC10 (3.67 to 8.65)	20565293	19507	0.001
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	196481	0.012
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	108573	0.005

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	451163	d5-Chlorobenzene
6.736	245513	d8-Toluene
9.499	490810	d4-Dichlorobenzene
8.681	172056	4-Bromofluorobenzene
9.818	227088	d4-1,2-Dichlorobenzene



Form I
METHOD BLANK DATA SHEET
NWTPHg

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0474-BLK1 File ID: V207191907G.D
Sampled: N/A Prepared: 07/19/19 08:38 Analyzed: 07/19/19 08:38
Solids: Preparation: EPA 5035 (Methanol Extract Initial/Final: 5 g / 5 mL
Batch: BHG0474 Sequence: SHG0276 Calibration: CG00055
Instrument: NT2 Column: RTX-VMS

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg wet)	Q	DL	RL
GRO	Gasoline Range Organics (Tol-Nap)	50	5000	U	2500	5000
SURROGATES		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Toluene-d8		5.0000	5.03	101	80 - 120	
4-Bromofluorobenzene		5.0000	4.82	96.5	78 - 123	

Data File: \\target\share\chend\nt2.i\20190719s.b\2019191907G.D

Date : 19-JUL-2019 08:38

Client ID:

Sample Info: BHC0474-BLK1

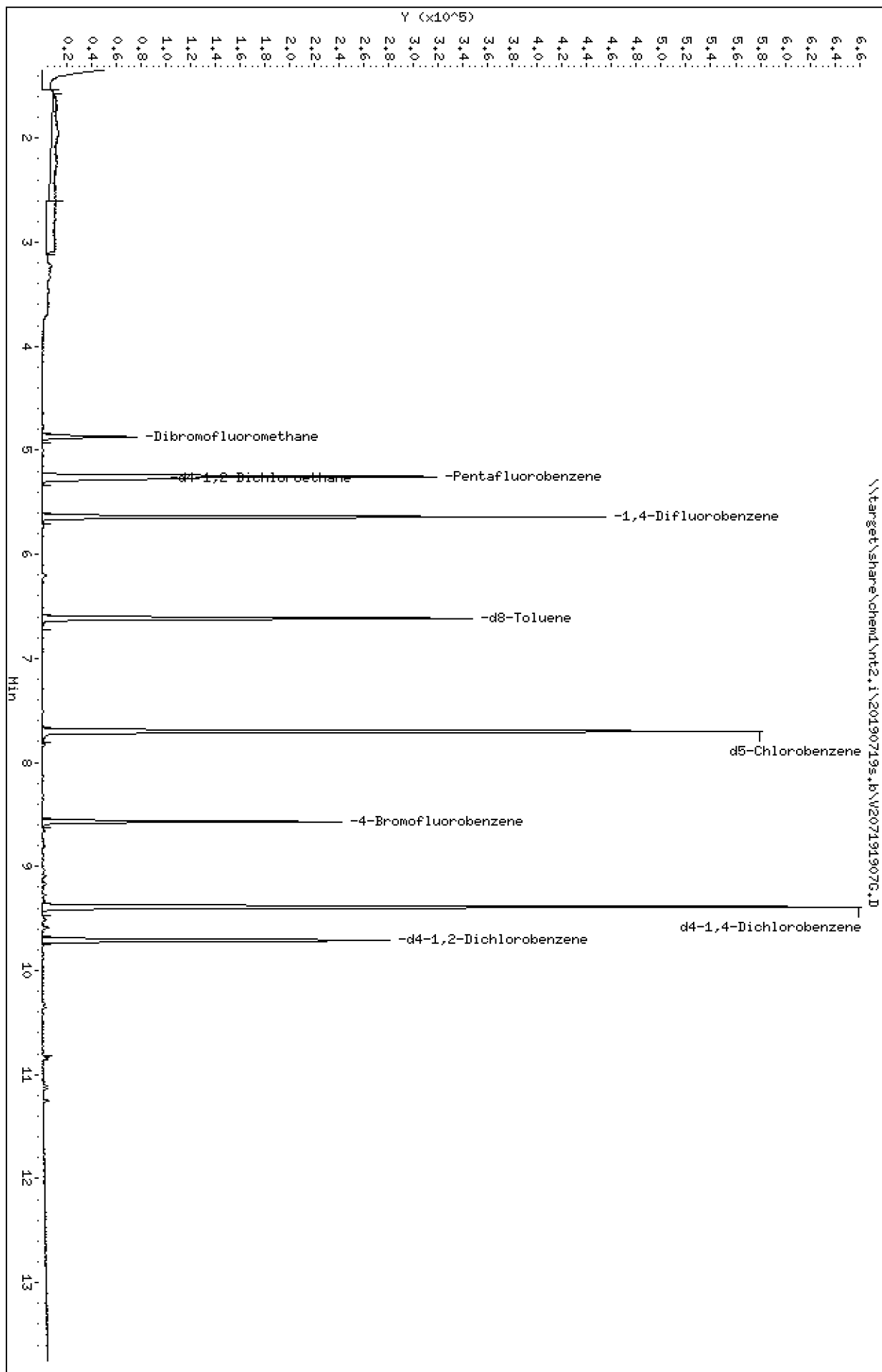
Page 1

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191907G.D
Lab Smp Id: BHG0474-BLK1
Inj Date : 19-JUL-2019 08:38
Operator : LH Inst ID: nt2.i
Smp Info : BHG0474-BLK1
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 38
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111		4.869	4.872 (0.927)		39193	4.90166	4.902	
* 32 Pentafluorobenzene	168		5.253	5.249 (1.000)		154697	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.277	5.274 (1.005)		49070	5.06833	5.068	
* 37 1,4-Difluorobenzene	114		5.642	5.639 (1.000)		273428	10.0000		
\$ 43 d8-Toluene	98		6.615	6.612 (1.173)		171897	5.02845	5.028	
* 53 d5-Chlorobenzene	117		7.698	7.701 (1.000)		261868	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.568	8.571 (1.113)		49853	4.82252	4.823	
* 76 d4-1,4-Dichlorobenzene	152		9.389	9.392 (1.000)		133581	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.712	9.708 (1.034)		62840	4.99449	4.994	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191907G.D Calibration Time: 17:11
 Lab Smp Id: BHG0474-BLK1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	154697	-8.79
37 1,4-Difluorobenze	298924	149462	597848	273428	-8.53
53 d5-Chlorobenzene	281842	140921	563684	261868	-7.09
76 d4-1,4-Dichlorobe	151581	75791	303162	133581	-11.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	0.07
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.06
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0474-BLK1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.902	98.03	
\$ 33 d4-1,2-Dichloroeth	5.000	5.068	101.37	
\$ 43 d8-Toluene	5.000	5.028	100.57	
\$ 62 4-Bromofluorobenze	5.000	4.823	96.45	
\$ 79 d4-1,2-Dichloroben	5.000	4.994	99.89	

REVIEW SUMMARY FOR FILE - V207191907G.D

Lab ID: BHG0474-BLK1

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 08:38

RT CO-ELUTION COMPOUNDS

Data File: \\target\share\chend\nt2.i\20190719g.b\2019071907G.D

Date : 19-JUL-2019 08:38

Client ID:

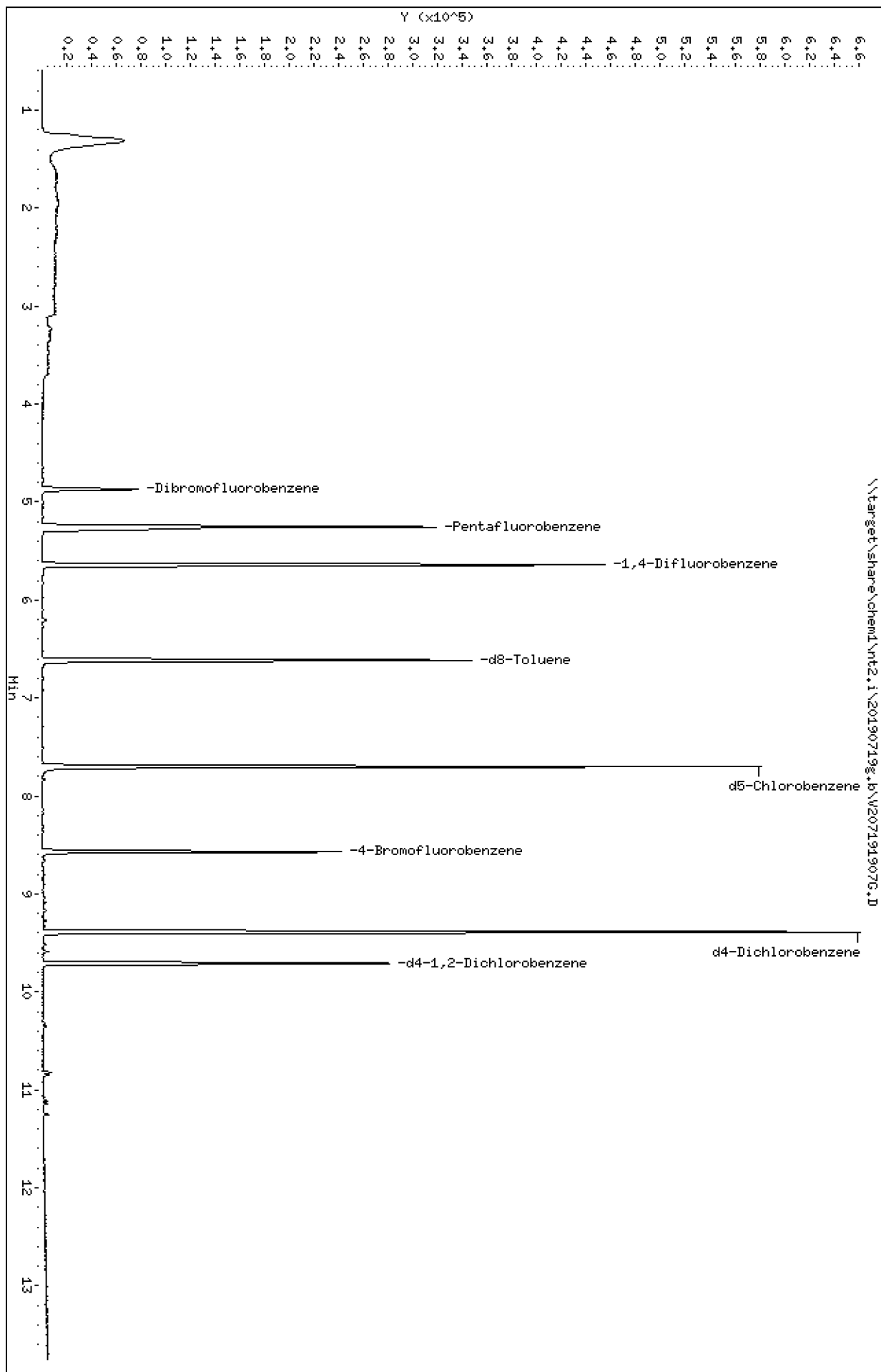
Sample Info: BHC0474-BLK1

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191907G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 08:38

ARI ID: BHG0474-BLK1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	4	0.000
8015C 2MP-TMB (3.04 to 9.27)	33333333	4	0.000
AK101 nC6-nC10 (3.38 to 8.54)	31889318	3	0.000
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	4	0.000
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	5	0.000

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.699	791688	d5-Chlorobenzene
8.569	309251	4-Bromofluorobenzene
6.616	447230	d8-Toluene
9.390	845748	d4-Dichlorobenzene
9.712	390004	d4-1,2-Dichlorobenzene



LCS / LCS DUPLICATE RECOVERY NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Water Analyzed: 07/18/19 11:02
Batch: BHG0439 Laboratory ID: BHG0439-BS2
Preparation: EPA 5030 (Purge and Trap) Sequence Name: LCS
Initial/Final: 10 mL / 10 ml

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Gasoline Range Organics (Tol-Nap)	1000	923		92.3	72 - 128

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Gasoline Range Organics (Tol-Nap)	1000	987		98.7	6.74	30	72 - 128

* Indicates values outside of QC limits

Data File: \\target\share\chem1\nt3.1\20190718s.b\W307181905LCS.D

Date : 18-JUL-2019 11:02

Client ID:

Sample Info: BHC0439-B52

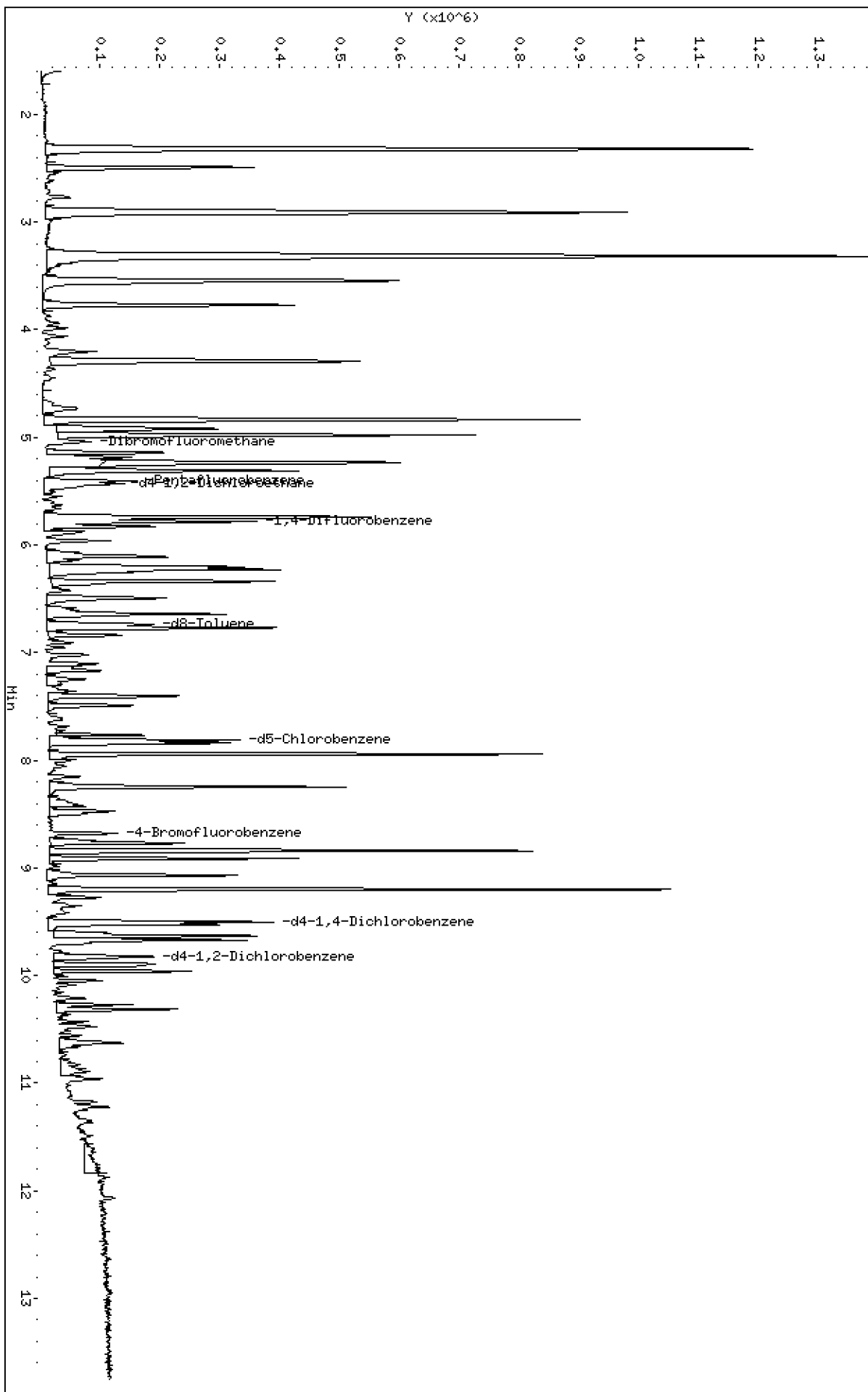
Column phase: RTXWMS

Instrument: nt3.1

Operator: PKC

Column diameter: 0.18

\\target\share\chem1\nt3.1\20190718s.b\W307181905LCS.D



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181905LCS.D

Lab Smp Id: BHG0439-BS2

Inj Date : 18-JUL-2019 11:02

Operator : PKC

Inst ID: nt3.i

Smp Info : BHG0439-BS2

Misc Info : 15-

Comment :

Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m

Meth Date : 19-Jul-2019 09:19 nt3.i

Quant Type: ISTD

Cal Date : 16-JUL-2019 20:19

Cal File: V307161926.D

Als bottle: 56

Dil Factor: 1.00000

Integrator: HP RTE

Compound Sublist: gsurr.sub

Target Version: 4.14

Processing Host: ORGDAT11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.933)	18168	4.92699	4.927
* 32 Pentafluorobenzene	168	5.403	5.402	(1.000)	72062	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434	(1.005)	25601	5.27217	5.272
* 37 1,4-Difluorobenzene	114	5.785	5.784	(1.000)	115802	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	79396	5.22579	5.226
* 53 d5-Chlorobenzene	117	7.815	7.814	(1.000)	122483	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	24233	4.98263	4.983
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	73096	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	33888	4.94190	4.942

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181905LCS.D Calibration Time: 22:11
 Lab Smp Id: BHG0439-BS2
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	72062	-2.21
37 1,4-Difluorobenze	116116	58058	232232	115802	-0.27
53 d5-Chlorobenzene	124912	62456	249824	122483	-1.94
76 d4-1,4-Dichlorobe	77169	38585	154338	73096	-5.28

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.02
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: BHG0439-BS2
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.927	98.54	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	5.272	105.44	80-128
\$ 43 d8-Toluene	5.000	5.226	104.52	80-120
\$ 62 4-Bromofluorobenze	5.000	4.983	99.65	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.942	98.84	80-120

REVIEW SUMMARY FOR FILE - V307181905LCS.D

Lab ID: BHG0439-BS2

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 11:02

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chem1\nt3.1\20190718g.b\W307181905LCS.D

Date : 18-JUL-2019 11:02

Client ID:

Sample Info: BHC0439-B52

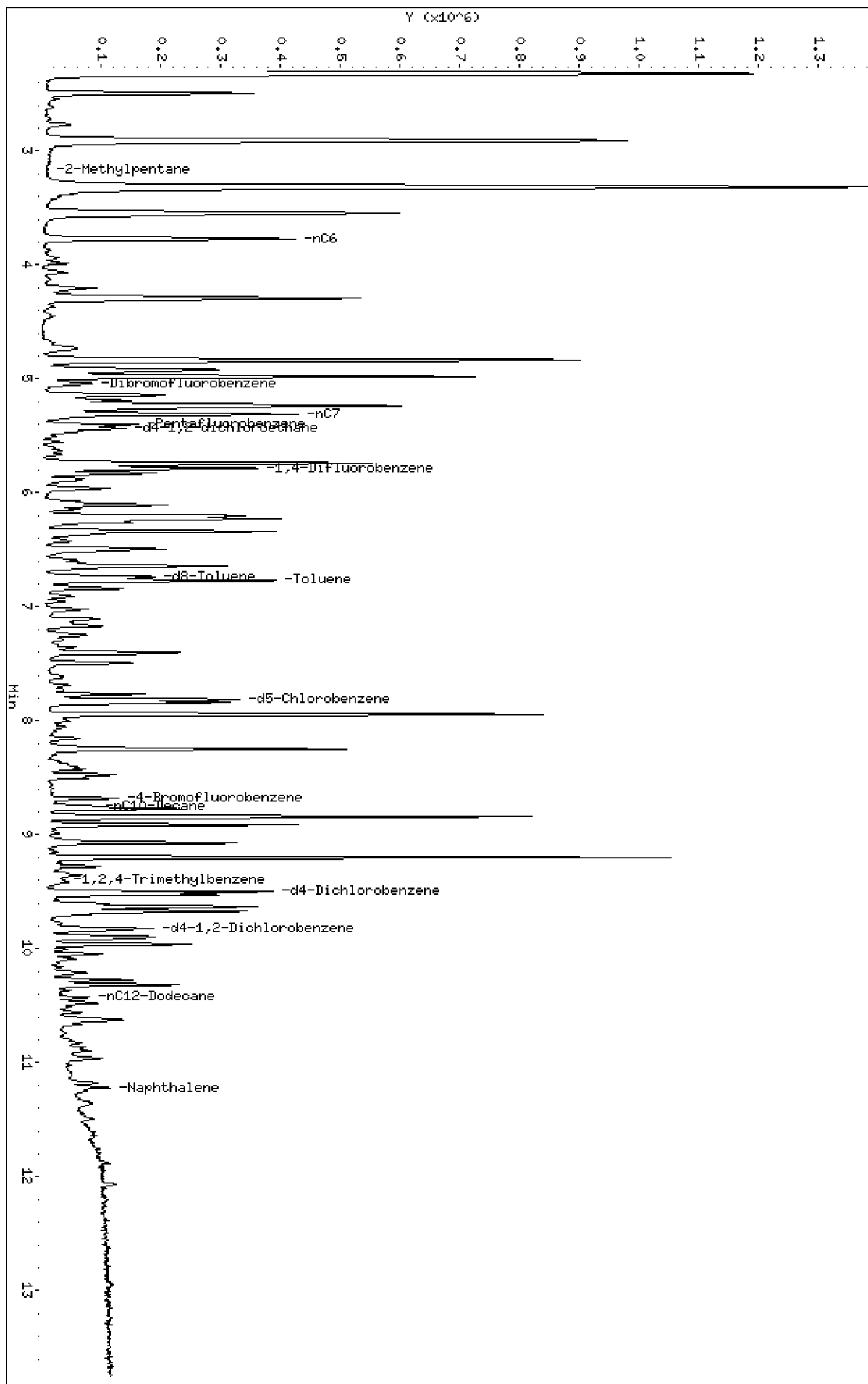
Column phase: RTXWMS

Instrument: nt3.1

Operator: PKC

Column diameter: 0.18

\\target\share\chem1\nt3.1\20190718g.b\W307181905LCS.D



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181905LCS.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 11:02

ARI ID: BHG0439-BS2

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	14506397	0.931
8015C 2MP-TMB (3.04 to 9.49)	30509602	30566031	1.002 M
AK101 nC6-nC10 (3.67 to 8.65)	20565293	20873358	1.015 M
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	15446203	0.923
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	22343880	0.959 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

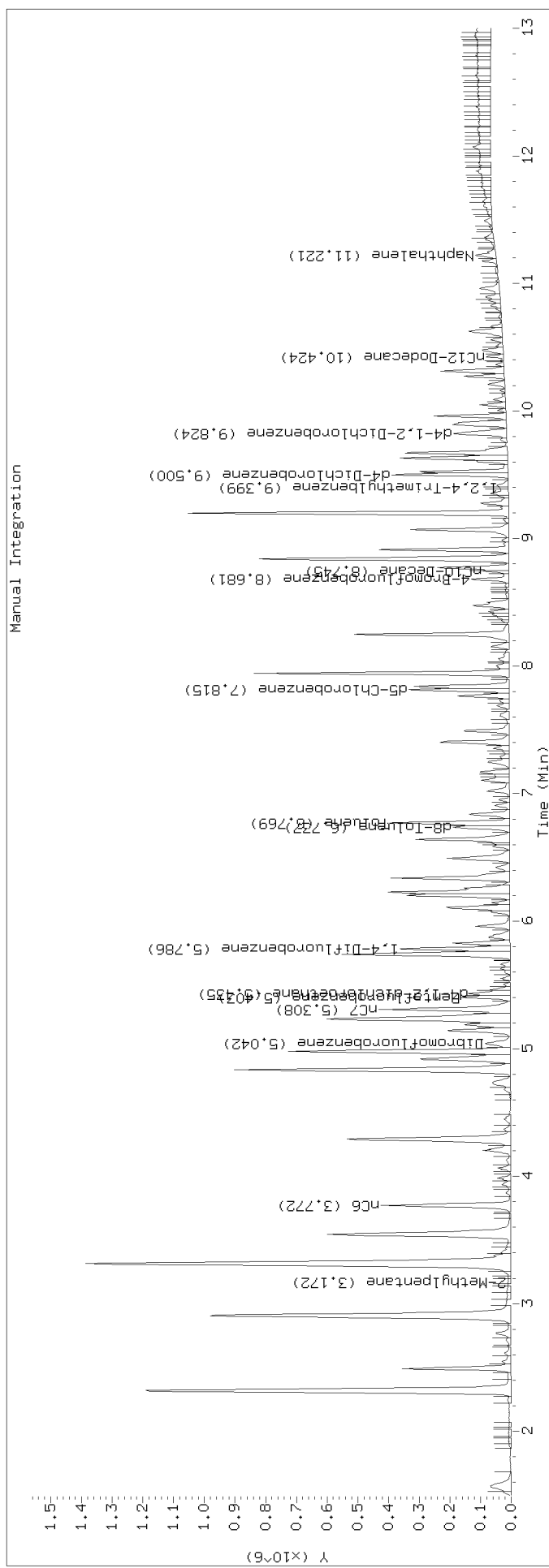
NW Gas Range Subtracted Peaks

7.815	479452	d5-Chlorobenzene
6.737	302030	d8-Toluene
9.500	556069	d4-Dichlorobenzene
8.681	196854	4-Bromofluorobenzene
9.824	364317	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

Datafile: NT3, 20190718g.b/V307181905LCS.D Injection: 18-JUL-2019 11:02

Lab ID: BHG0439-BS2



Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181906.D

Date: 18-JUL-2019 11:29

Client ID: Gas

Sample Info: BHC0439-BSD2

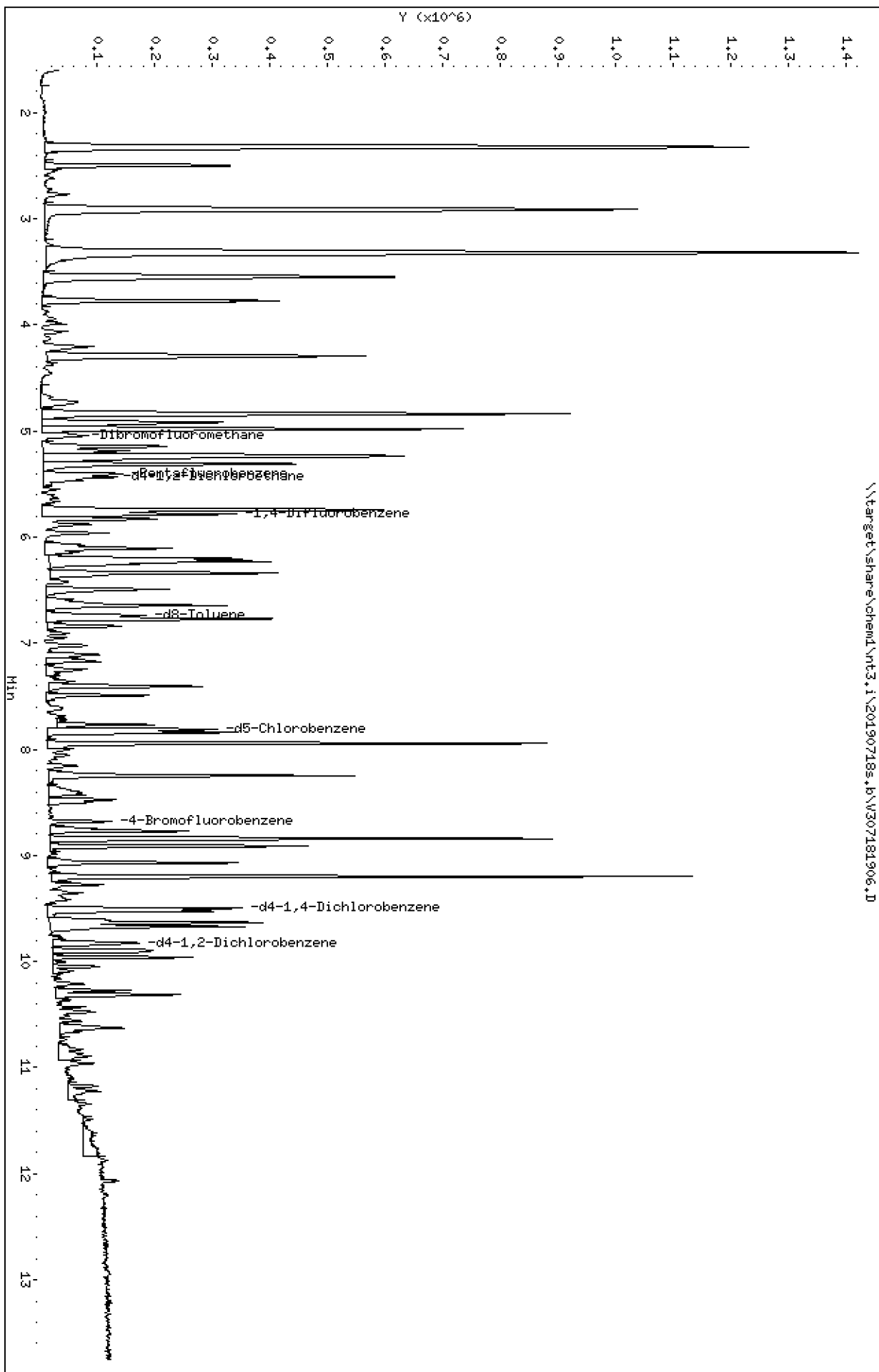
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181906.D
Lab Smp Id: BHG0439-BSD2 Client Smp ID: Gas
Inj Date : 18-JUL-2019 11:29
Operator : PKC Inst ID: nt3.i
Smp Info : BHG0439-BSD2
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS						
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
							(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111	5.046	5.046	(0.934)	16306	4.92565	4.926 (R)	
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	64694	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.428	5.434	(1.005)	22915	5.25647	5.256 (R)	
* 37 1,4-Difluorobenzene	114	5.784	5.784	(1.000)	110050	10.0000		
\$ 43 d8-Toluene	98	6.735	6.735	(1.164)	73820	5.11273	5.113 (R)	
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	112338	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	21905	4.91071	4.911 (R)	
* 76 d4-1,4-Dichlorobenzene	152	9.498	9.498	(1.000)	67652	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.817	9.817	(1.034)	31298	4.93148	4.931 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181906.D Calibration Time: 22:11
 Lab Smp Id: BHG0439-BSD2 Client Smp ID: Gas
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	64694	-12.20
37 1,4-Difluorobenze	116116	58058	232232	110050	-5.22
53 d5-Chlorobenzene	124912	62456	249824	112338	-10.07
76 d4-1,4-Dichlorobe	77169	38585	154338	67652	-12.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	-0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	-0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0439-BSD2 Client Smp ID: Gas
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.926	98.51	
\$ 33 d4-1,2-Dichloroeth	5.000	5.256	105.13	
\$ 43 d8-Toluene	5.000	5.113	102.25	
\$ 62 4-Bromofluorobenze	5.000	4.911	98.21	
\$ 79 d4-1,2-Dichloroben	5.000	4.931	98.63	

REVIEW SUMMARY FOR FILE - V307181906.D

Lab ID: BHG0439-BSD2

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 11:29

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181906.D

Date : 18-JUL-2019 11:29

Client ID: Gas

Sample Info: BHC0439-BSD2

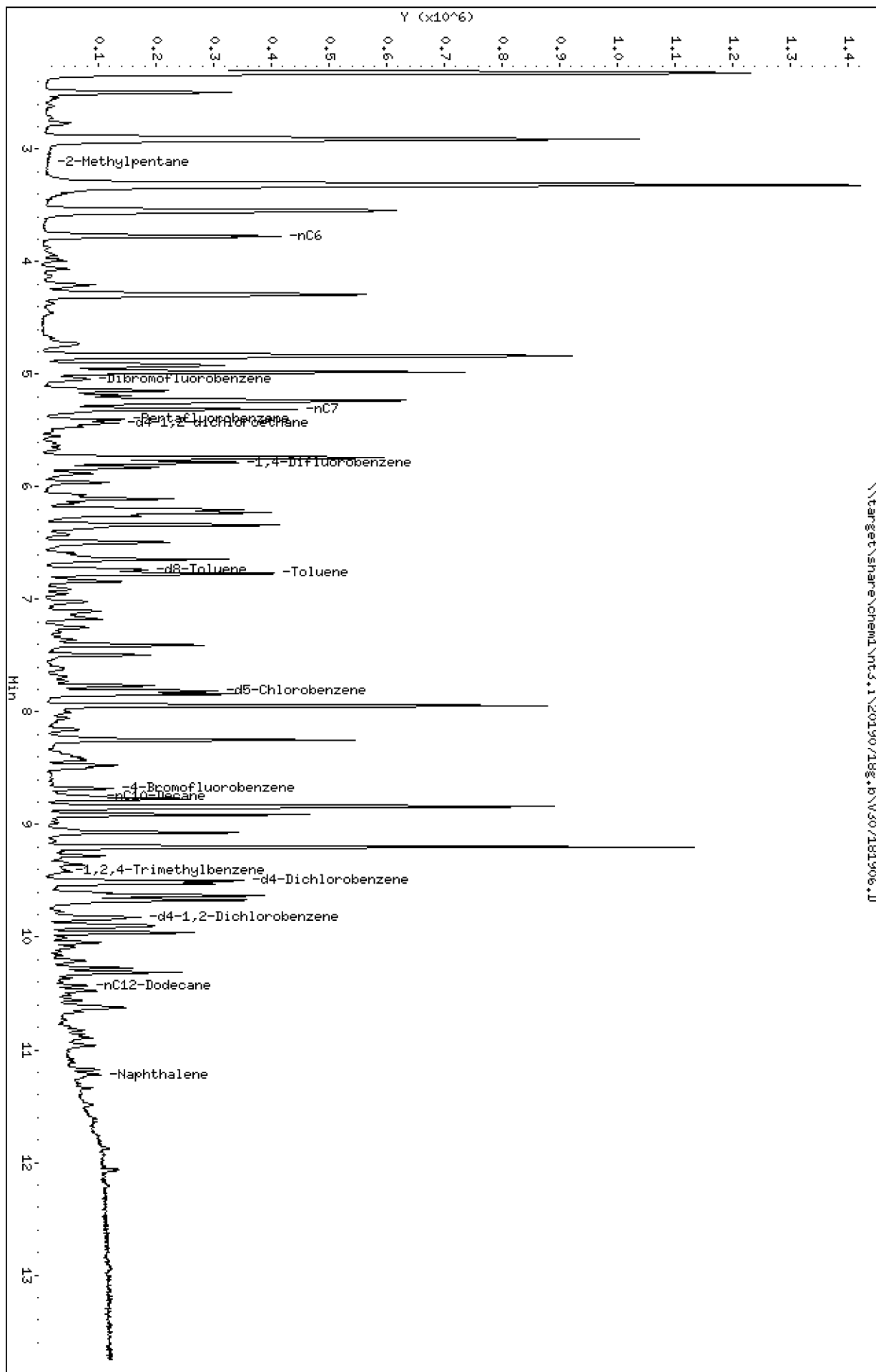
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181906.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 11:29

ARI ID: BHG0439-BSD2
Client ID: Gas
Matrix: NONE
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

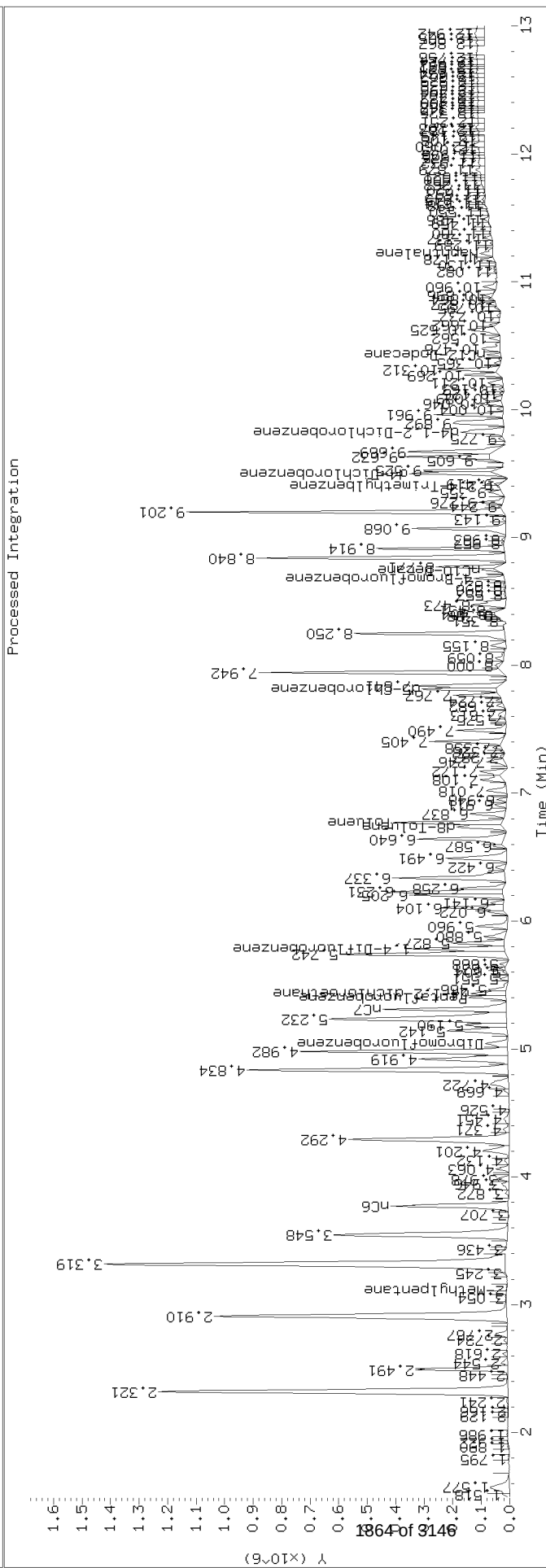
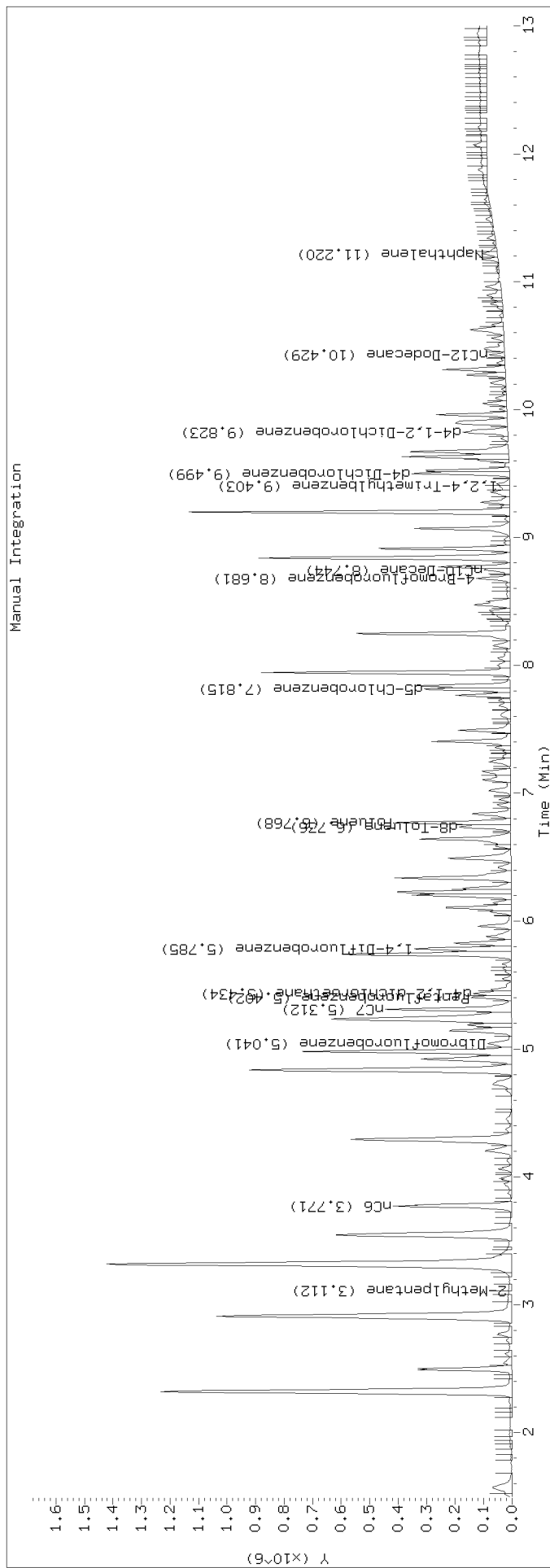
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	15529641	0.997
8015C 2MP-TMB (3.04 to 9.49)	30509602	32405851	1.062
AK101 nC6-nC10 (3.67 to 8.65)	20565293	22229632	1.081
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	16523499	0.987 M
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	23914155	1.026

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	449197	d5-Chlorobenzene
6.736	328208	d8-Toluene
9.499	518830	d4-Dichlorobenzene
8.681	177712	4-Bromofluorobenzene
9.823	347175	d4-1,2-Dichlorobenzene





LCS / LCS DUPLICATE RECOVERY NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/18/19 11:02
Batch: BHG0455 Laboratory ID: BHG0455-BS1
Preparation: EPA 5035 (Methanol Extraction) Sequence Name: LCS
Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/kg wet)	LCS CONCENTRATION (ug/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Gasoline Range Organics (Tol-Nap)	50000	46100		92.3	70 - 121

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/kg wet)	LCSD CONCENTRATION (ug/kg wet)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Gasoline Range Organics (Tol-Nap)	50000	49400		98.7	6.74	30	70 - 121

* Indicates values outside of QC limits

Data File: \\target\share\chemd\nt3.i\20190718s.b\201907181905LCSA.D

Date : 18-JUL-2019 11:02

Client ID:

Sample Info: BHC0455-B51

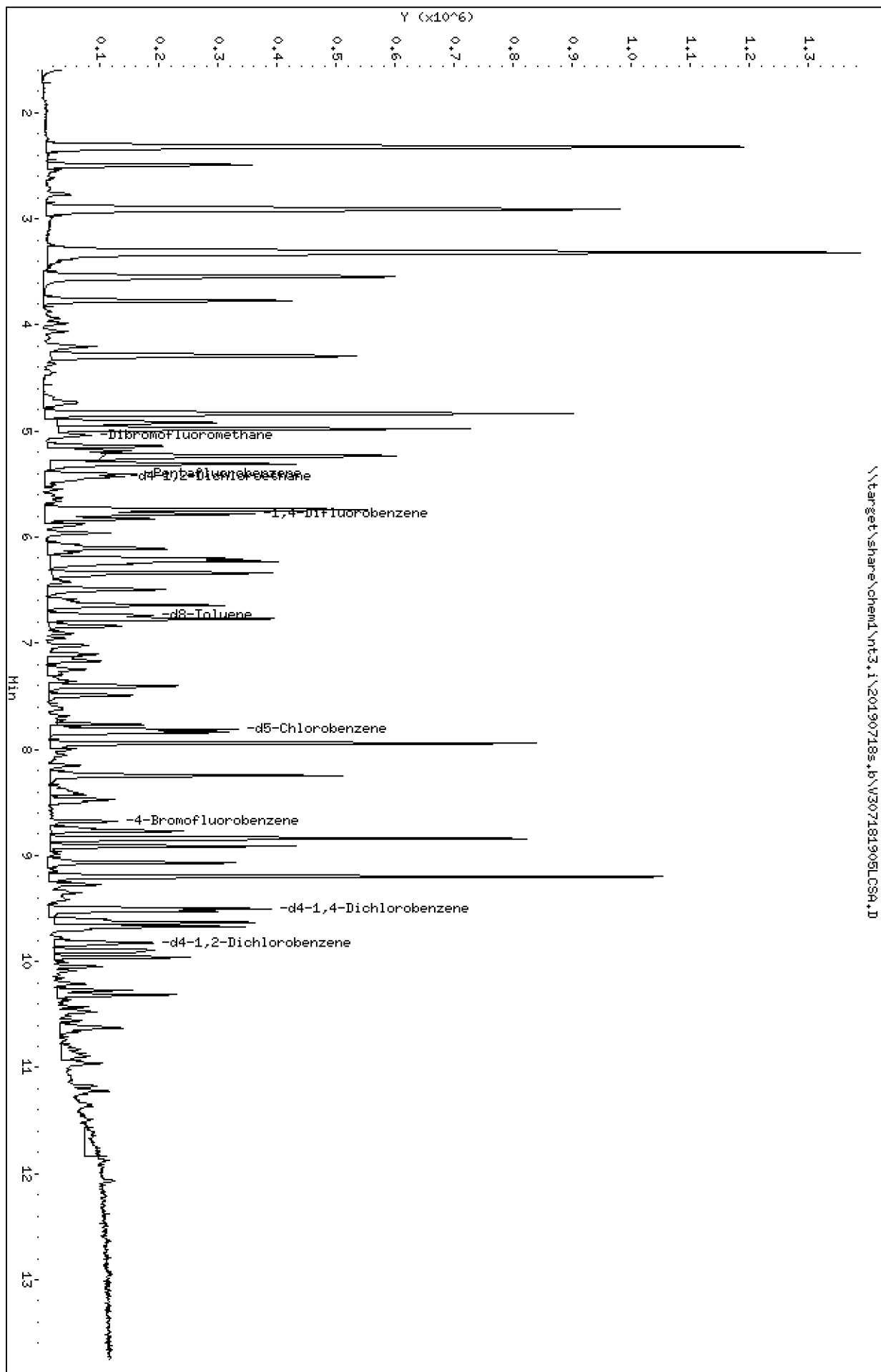
Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190718s.b\201907181905LCSA.D



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181905LCSA.D
 Lab Smp Id: BHG0455-BS1
 Inj Date : 18-JUL-2019 11:02
 Operator : PKC
 Smp Info : BHG0455-BS1
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i
 Cal Date : 16-JUL-2019 20:19
 Als bottle: 56
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 4.14
 Processing Host: ORGDATA11

Inst ID: nt3.i

Quant Type: ISTD

Cal File: V307161926.D

Compound Sublist: gsurr.sub

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.933)	18168	4.92699	4.927
* 32 Pentafluorobenzene	168	5.403	5.402	(1.000)	72062	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434	(1.005)	25601	5.27217	5.272
* 37 1,4-Difluorobenzene	114	5.785	5.784	(1.000)	115802	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	79396	5.22579	5.226
* 53 d5-Chlorobenzene	117	7.815	7.814	(1.000)	122483	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	24233	4.98263	4.983
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	73096	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	33888	4.94190	4.942

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181905LCSA.D Calibration Time: 22:11
 Lab Smp Id: BHG0455-BS1
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	72062	-2.21
37 1,4-Difluorobenze	116116	58058	232232	115802	-0.27
53 d5-Chlorobenzene	124912	62456	249824	122483	-1.94
76 d4-1,4-Dichlorobe	77169	38585	154338	73096	-5.28

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.02
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: BHG0455-BS1
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.927	98.54	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	5.272	105.44	80-128
\$ 43 d8-Toluene	5.000	5.226	104.52	80-120
\$ 62 4-Bromofluorobenze	5.000	4.983	99.65	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.942	98.84	80-120

REVIEW SUMMARY FOR FILE - V307181905LCSA.D

Lab ID: BHG0455-BS1

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 11:02

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\201907181905LCSA.D

Date : 18-JUL-2019 11:02

Client ID:

Sample Info: BHC0455-B51

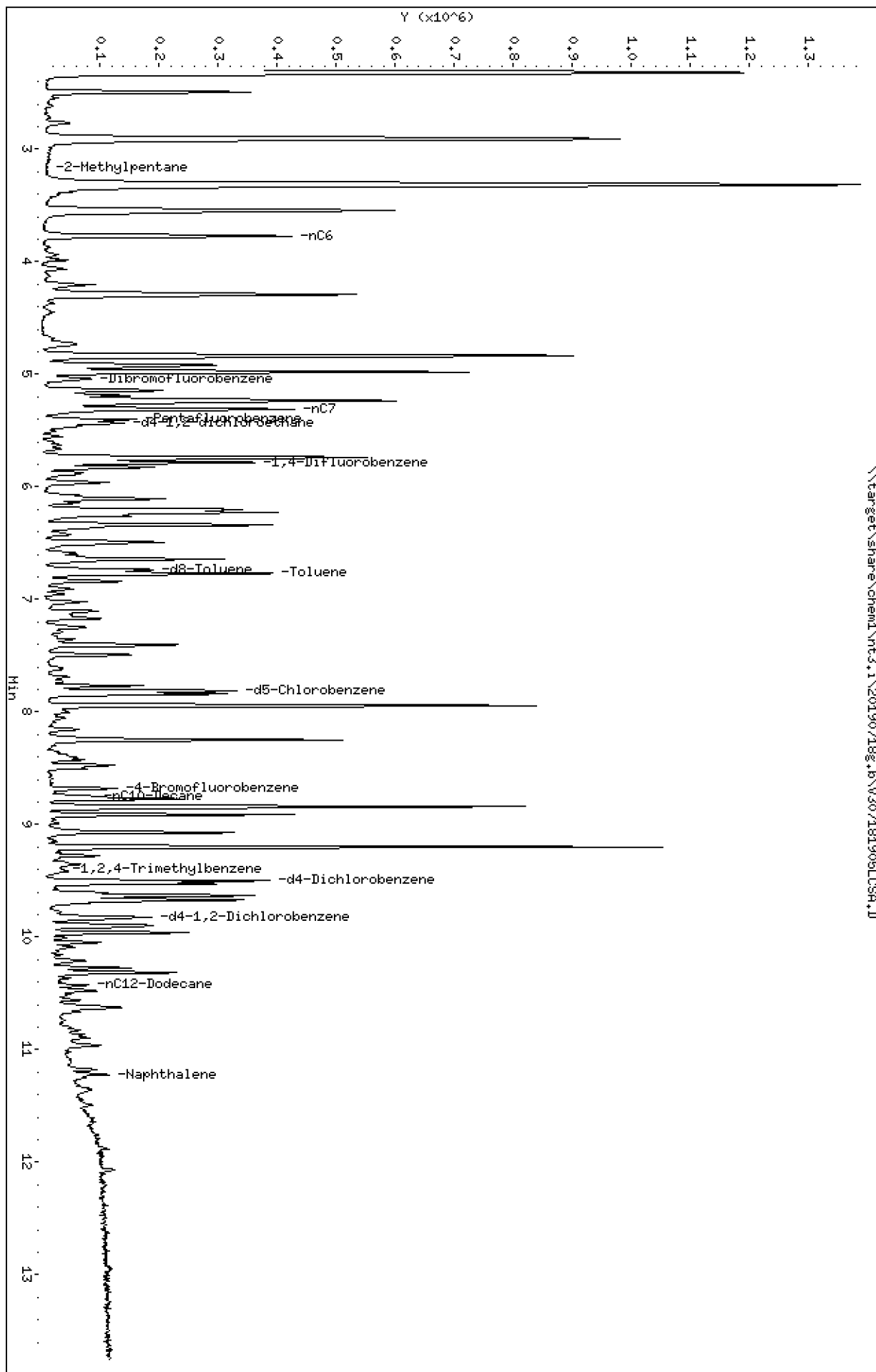
Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190718g.b\201907181905LCSA.D



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181905LCSA.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 11:02

ARI ID: BHG0455-BS1

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	14506397	0.931
8015C 2MP-TMB (3.04 to 9.49)	30509602	30566031	1.002 M
AK101 nC6-nC10 (3.67 to 8.65)	20565293	20873358	1.015 M
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	15446203	0.923
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	22343880	0.959 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

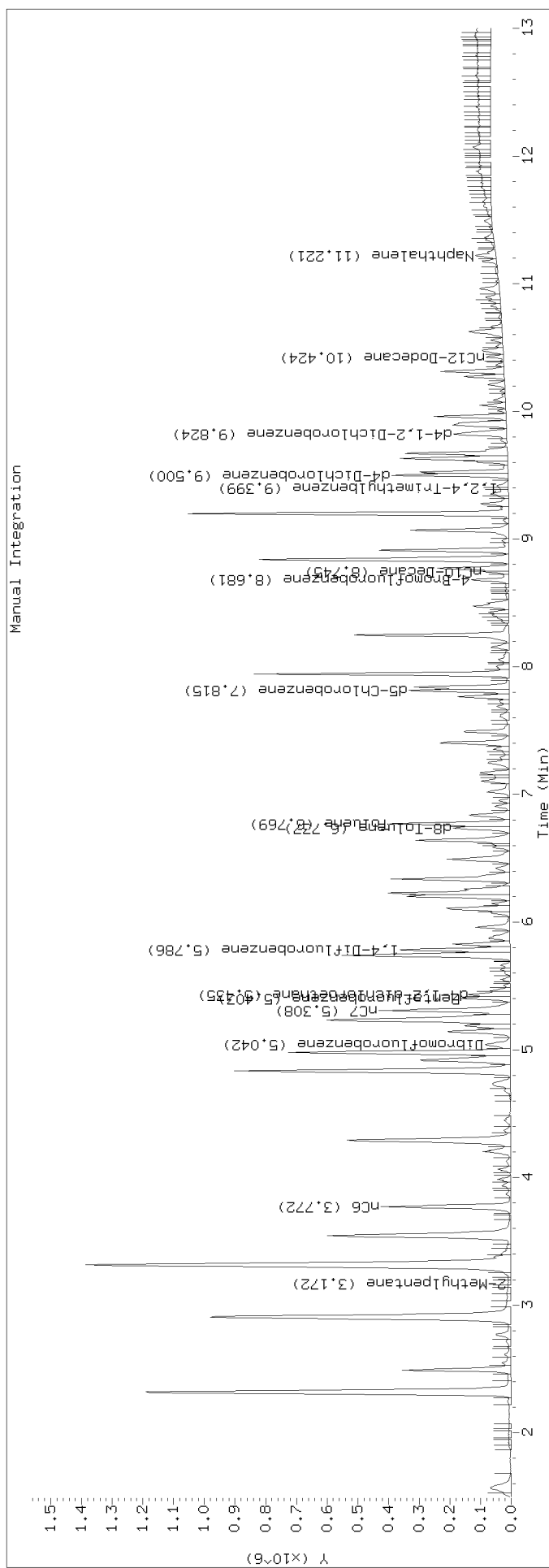
NW Gas Range Subtracted Peaks

7.815	479452	d5-Chlorobenzene
6.737	302030	d8-Toluene
9.500	556069	d4-Dichlorobenzene
8.681	196854	4-Bromofluorobenzene
9.824	364317	d4-1,2-Dichlorobenzene

Datafile: NT3, 20190718g.b/V307181905LCSA.D Injection: 18-JUL-2019 11:02

Injection: 18-JUL-2019 11:02

Lab ID: BHG0455-BS1



Data File: \\target\share\chemd\nt3.i\20190718s.b\201907181906A.D

Date : 18-JUL-2019 11:29

Client ID: Gas

Sample Info: BHC0455-BSD1

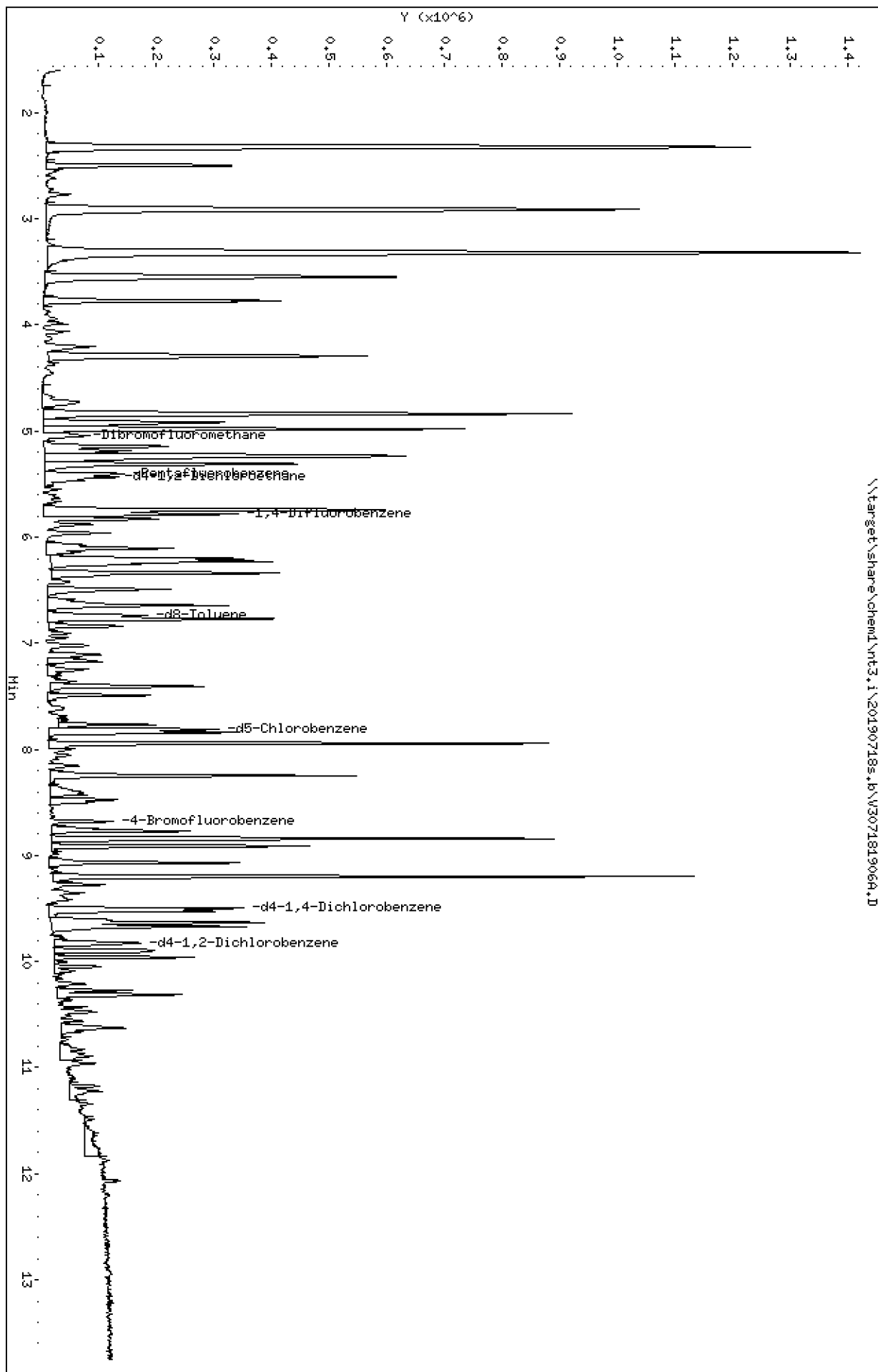
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181906A.D
Lab Smp Id: BHG0455-BSD1 Client Smp ID: Gas
Inj Date : 18-JUL-2019 11:29
Operator : PKC Inst ID: nt3.i
Smp Info : BHG0455-BSD1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG					CONCENTRATIONS	
	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL
						(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.046	5.046	(0.934)	16306	4.92565	4.926 (R)
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	64694	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.428	5.434	(1.005)	22915	5.25647	5.256 (R)
* 37 1,4-Difluorobenzene	114	5.784	5.784	(1.000)	110050	10.0000	
\$ 43 d8-Toluene	98	6.735	6.735	(1.164)	73820	5.11273	5.113 (R)
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	112338	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	21905	4.91071	4.911 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.498	9.498	(1.000)	67652	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.817	9.817	(1.034)	31298	4.93148	4.931 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181906A.D Calibration Time: 22:11
 Lab Smp Id: BHG0455-BSD1 Client Smp ID: Gas
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	64694	-12.20
37 1,4-Difluorobenze	116116	58058	232232	110050	-5.22
53 d5-Chlorobenzene	124912	62456	249824	112338	-10.07
76 d4-1,4-Dichlorobe	77169	38585	154338	67652	-12.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	-0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	-0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0455-BSD1 Client Smp ID: Gas
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.926	98.51	
\$ 33 d4-1,2-Dichloroeth	5.000	5.256	105.13	
\$ 43 d8-Toluene	5.000	5.113	102.25	
\$ 62 4-Bromofluorobenze	5.000	4.911	98.21	
\$ 79 d4-1,2-Dichloroben	5.000	4.931	98.63	

REVIEW SUMMARY FOR FILE - V307181906A.D

Lab ID: BHG0455-BSD1

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 11:29

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\W307181906A.D

Date : 18-JUL-2019 11:29

Client ID: Gas

Sample Info: BHC0455-BSD1

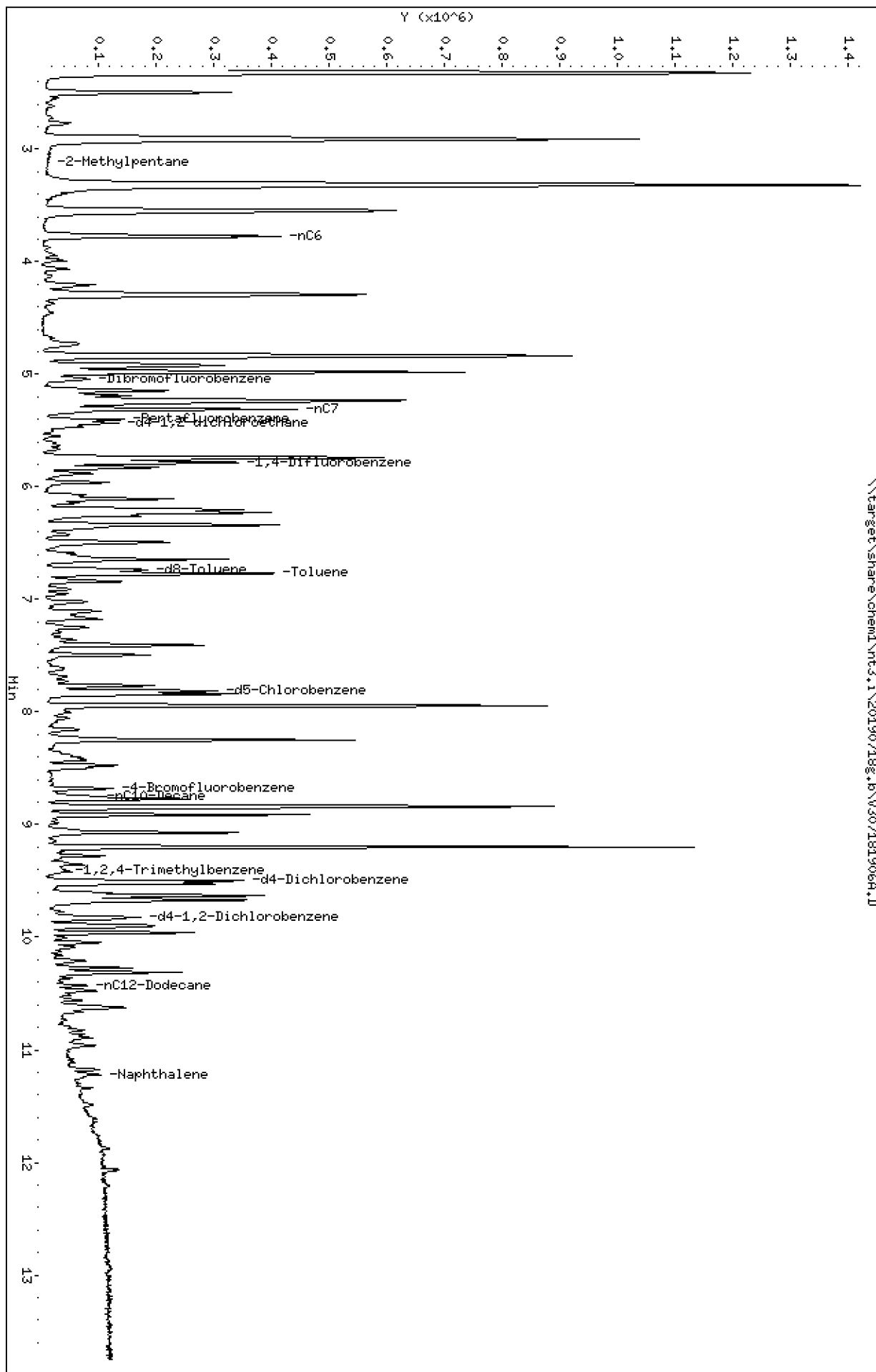
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181906A.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 11:29

ARI ID: BHG0455-BSD1

Client ID: Gas

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

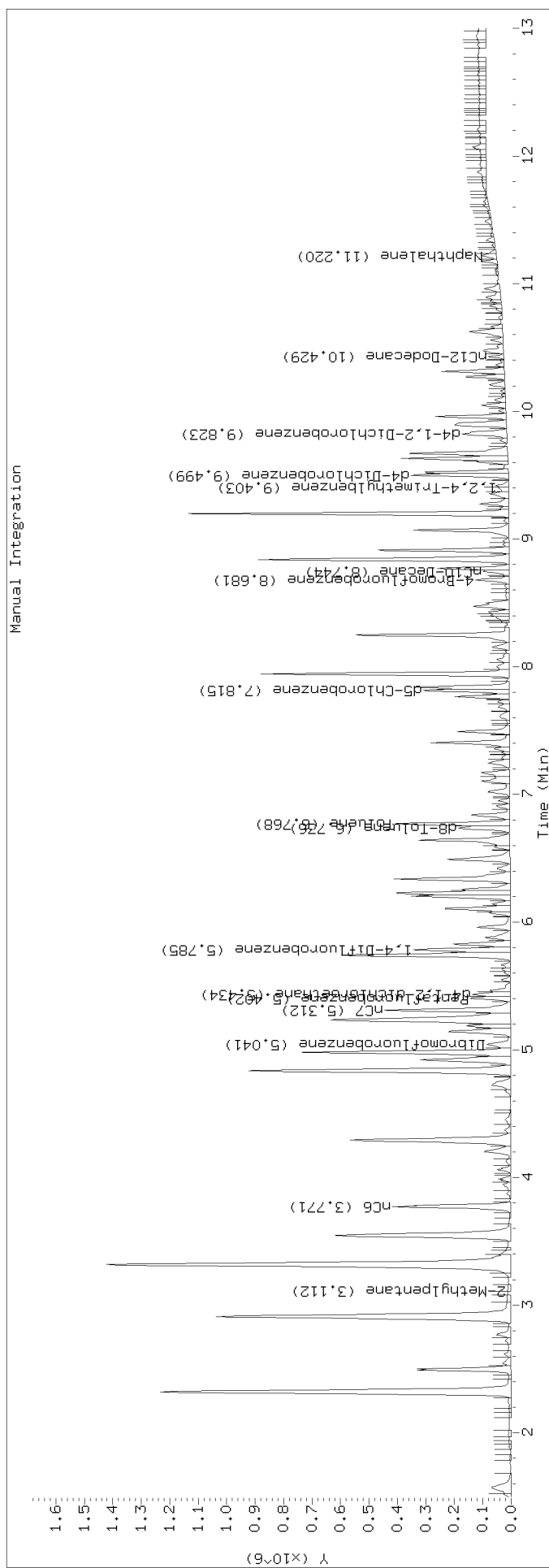
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	15529641	0.997
8015C 2MP-TMB (3.04 to 9.49)	30509602	32405851	1.062
AK101 nC6-nC10 (3.67 to 8.65)	20565293	22229632	1.081
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	16523499	0.987 M
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	23914155	1.026

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	449197	d5-Chlorobenzene
6.736	328208	d8-Toluene
9.499	518830	d4-Dichlorobenzene
8.681	177712	4-Bromofluorobenzene
9.823	347175	d4-1,2-Dichlorobenzene





LCS / LCS DUPLICATE RECOVERY

NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/19/19 07:15
Batch: BHG0474 Laboratory ID: BHG0474-BS1
Preparation: EPA 5035 (Methanol Extraction) Sequence Name: LCS
Initial/Final: 5 g / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	Q	LCS % REC. #	QC LIMITS REC.
Gasoline Range Organics (Tol-Nap)	50000	47200		94.5	70 - 121

* Indicates values outside of QC limits

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	Q	LCSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Gasoline Range Organics (Tol-Nap)	50000	46800		93.7	0.849	30	70 - 121

* Indicates values outside of QC limits

Data File: \\target\share\chemd\nt2.i\20190719s.b\2019071903GLCS.D

Date : 19-JUL-2019 07:15

Client ID:

Sample Info: BHC0474-B51

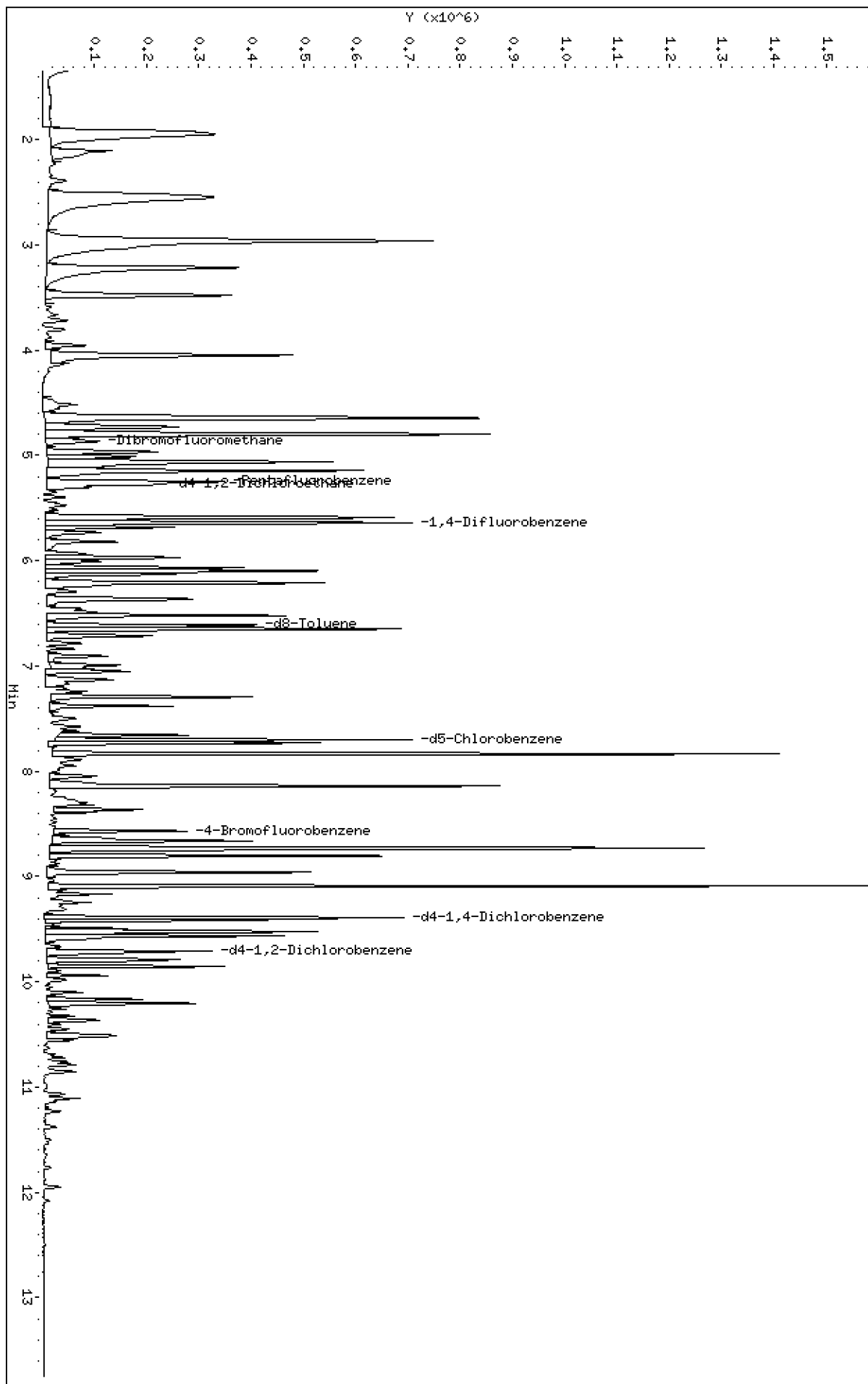
Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18

\\target\share\chemd\nt2.i\20190719s.b\2019071903GLCS.D



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191903GLCS.D
Lab Smp Id: BHG0474-BS1
Inj Date : 19-JUL-2019 07:15
Operator : LH
Smp Info : BHG0474-BS1
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i
Cal Date : 18-JUL-2019 15:05
Als bottle: 34
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11

Inst ID: nt2.i

Quant Type: ISTD
Cal File: V207181915a.D

Compound Sublist: gsurr.sub

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111		4.864	4.872	(0.927)	42500	5.02501	5.025	
* 32 Pentafluorobenzene	168		5.248	5.249	(1.000)	163632	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.272	5.274	(1.005)	52758	5.15171	5.152	
* 37 1,4-Difluorobenzene	114		5.637	5.639	(1.000)	295926	10.0000		
\$ 43 d8-Toluene	98		6.610	6.612	(1.173)	189407	5.11943	5.119	
* 53 d5-Chlorobenzene	117		7.699	7.701	(1.000)	280827	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.569	8.571	(1.113)	53344	4.81185	4.812	
* 76 d4-1,4-Dichlorobenzene	152		9.390	9.392	(1.000)	145352	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.707	9.708	(1.034)	67856	4.95641	4.956	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191903GLCS.D Calibration Time: 17:11
 Lab Smp Id: BHG0474-BS1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	163632	-3.52
37 1,4-Difluorobenze	298924	149462	597848	295926	-1.00
53 d5-Chlorobenzene	281842	140921	563684	280827	-0.36
76 d4-1,4-Dichlorobe	151581	75791	303162	145352	-4.11

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.03
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.03
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.02
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0474-BS1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.025	100.50	
\$ 33 d4-1,2-Dichloroeth	5.000	5.152	103.03	
\$ 43 d8-Toluene	5.000	5.119	102.39	
\$ 62 4-Bromofluorobenze	5.000	4.812	96.24	
\$ 79 d4-1,2-Dichloroben	5.000	4.956	99.13	

REVIEW SUMMARY FOR FILE - V207191903GLCS.D

Lab ID: BHG0474-BS1

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 07:15

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190719g.b\207191903GLCS.D

Date : 19-JUL-2019 07:15

Client ID:

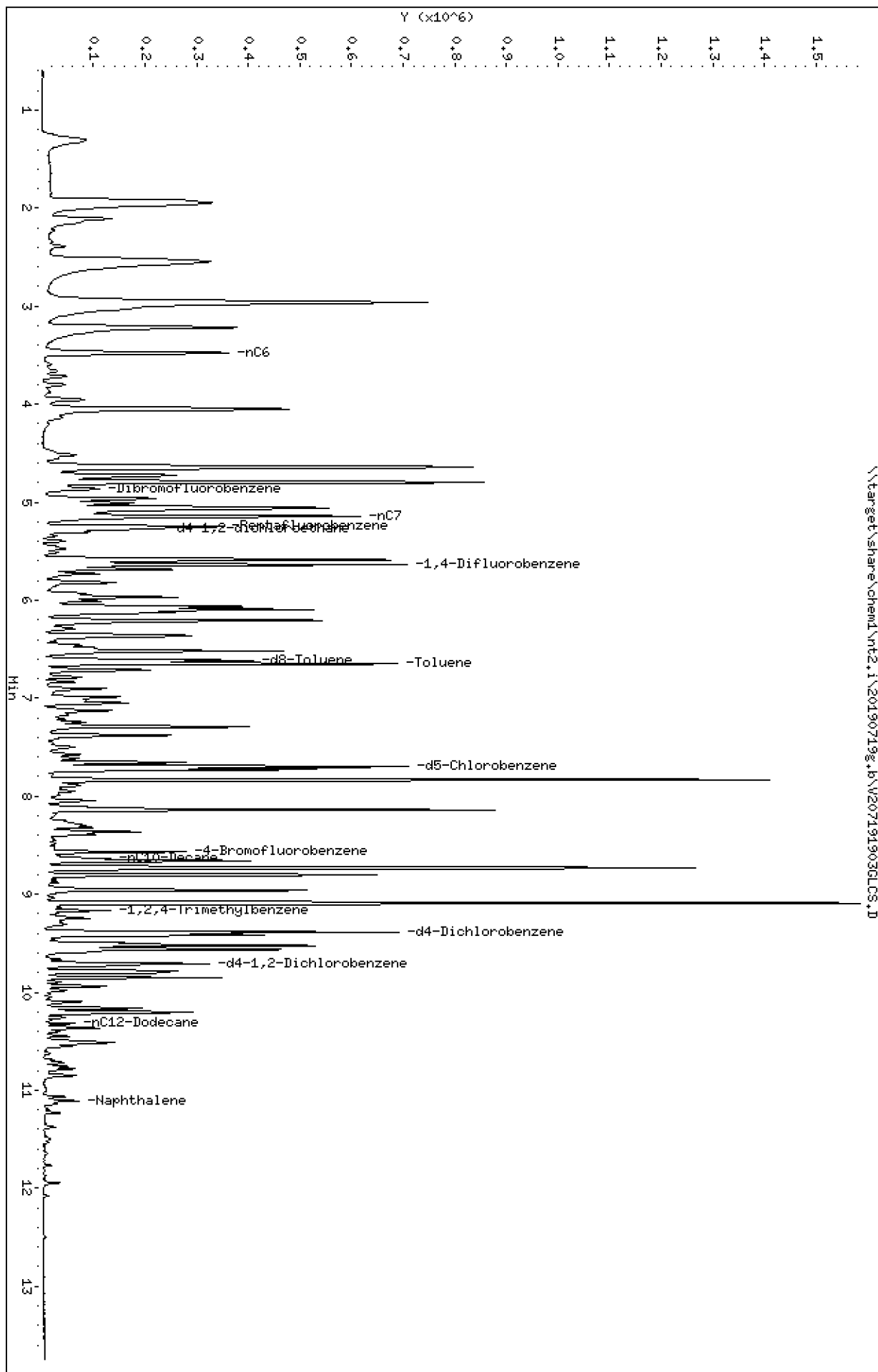
Sample Info: BHC0474-B51

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191903GLCS.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 07:15

ARI ID: BHG0474-BS1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

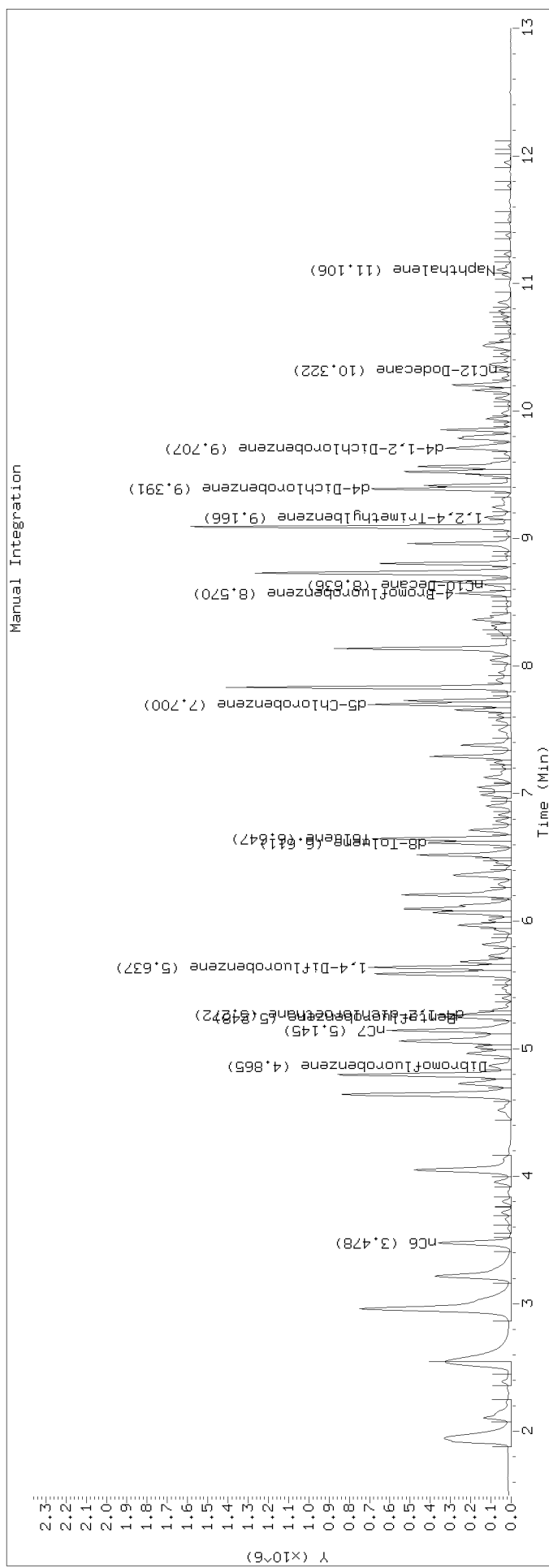
GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	22601123	0.942
8015C 2MP-TMB (3.04 to 9.27)	33333333	37272755	1.118 M
AK101 nC6-nC10 (3.38 to 8.54)	31889318	28792607	0.903 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	23715101	0.945
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	33431395	0.943 M

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.700	1059479	d5-Chlorobenzene
8.570	395066	4-Bromofluorobenzene
6.611	694869	d8-Toluene
9.391	963803	d4-Dichlorobenzene
9.707	610430	d4-1,2-Dichlorobenzene



Data File: \\target\share\chend\nt2.i\20190719s.b\2019071905G.D

Date : 19-JUL-2019 07:56

Client ID:

Sample Info: BHC0474-BSD1

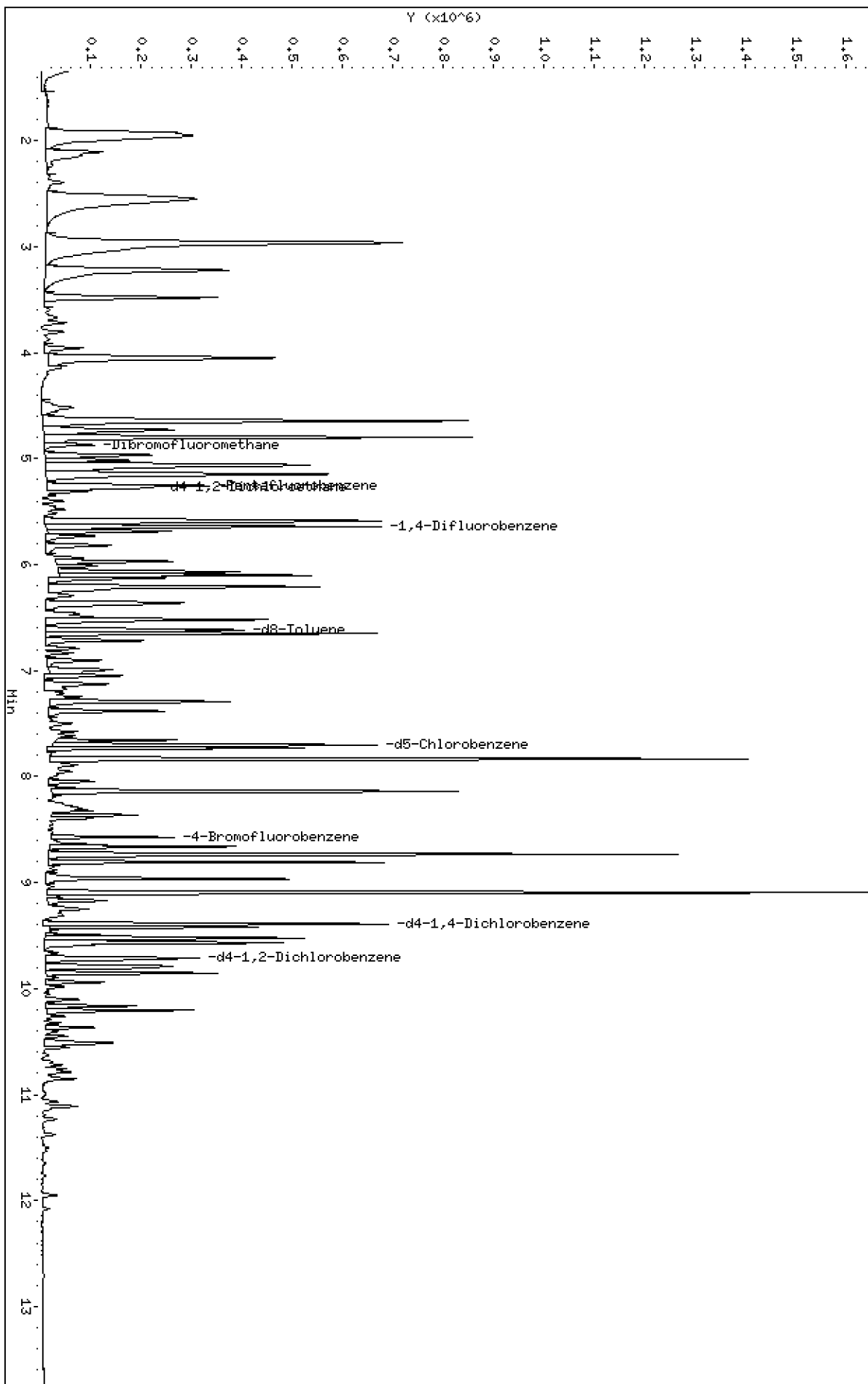
Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18

\\target\share\chend\nt2.i\20190719s.b\2019071905G.D



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191905G.D
Lab Smp Id: BHG0474-BSD1
Inj Date : 19-JUL-2019 07:56
Operator : LH Inst ID: nt2.i
Smp Info : BHG0474-BSD1
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 36
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	4.870	4.872	(0.927)	40374	4.92902	4.929
* 32 Pentafluorobenzene	168	5.253	5.249	(1.000)	158474	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.277	5.274	(1.005)	52992	5.34298	5.343
* 37 1,4-Difluorobenzene	114	5.642	5.639	(1.000)	285533	10.0000	
\$ 43 d8-Toluene	98	6.615	6.612	(1.172)	180211	5.04817	5.048
* 53 d5-Chlorobenzene	117	7.698	7.701	(1.000)	269273	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.568	8.571	(1.113)	51475	4.84249	4.842
* 76 d4-1,4-Dichlorobenzene	152	9.390	9.392	(1.000)	138597	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.708	(1.034)	65567	5.02263	5.023

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191905G.D Calibration Time: 17:11
 Lab Smp Id: BHG0474-BSD1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	158474	-6.56
37 1,4-Difluorobenze	298924	149462	597848	285533	-4.48
53 d5-Chlorobenzene	281842	140921	563684	269273	-4.46
76 d4-1,4-Dichlorobe	151581	75791	303162	138597	-8.57

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	0.07
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.06
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0474-BSD1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.929	98.58	
\$ 33 d4-1,2-Dichloroeth	5.000	5.343	106.86	
\$ 43 d8-Toluene	5.000	5.048	100.96	
\$ 62 4-Bromofluorobenze	5.000	4.842	96.85	
\$ 79 d4-1,2-Dichloroben	5.000	5.023	100.45	

REVIEW SUMMARY FOR FILE - V207191905G.D

Lab ID: BHG0474-BSD1

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 07:56

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191905G.D

Date : 19-JUL-2019 07:56

Client ID:

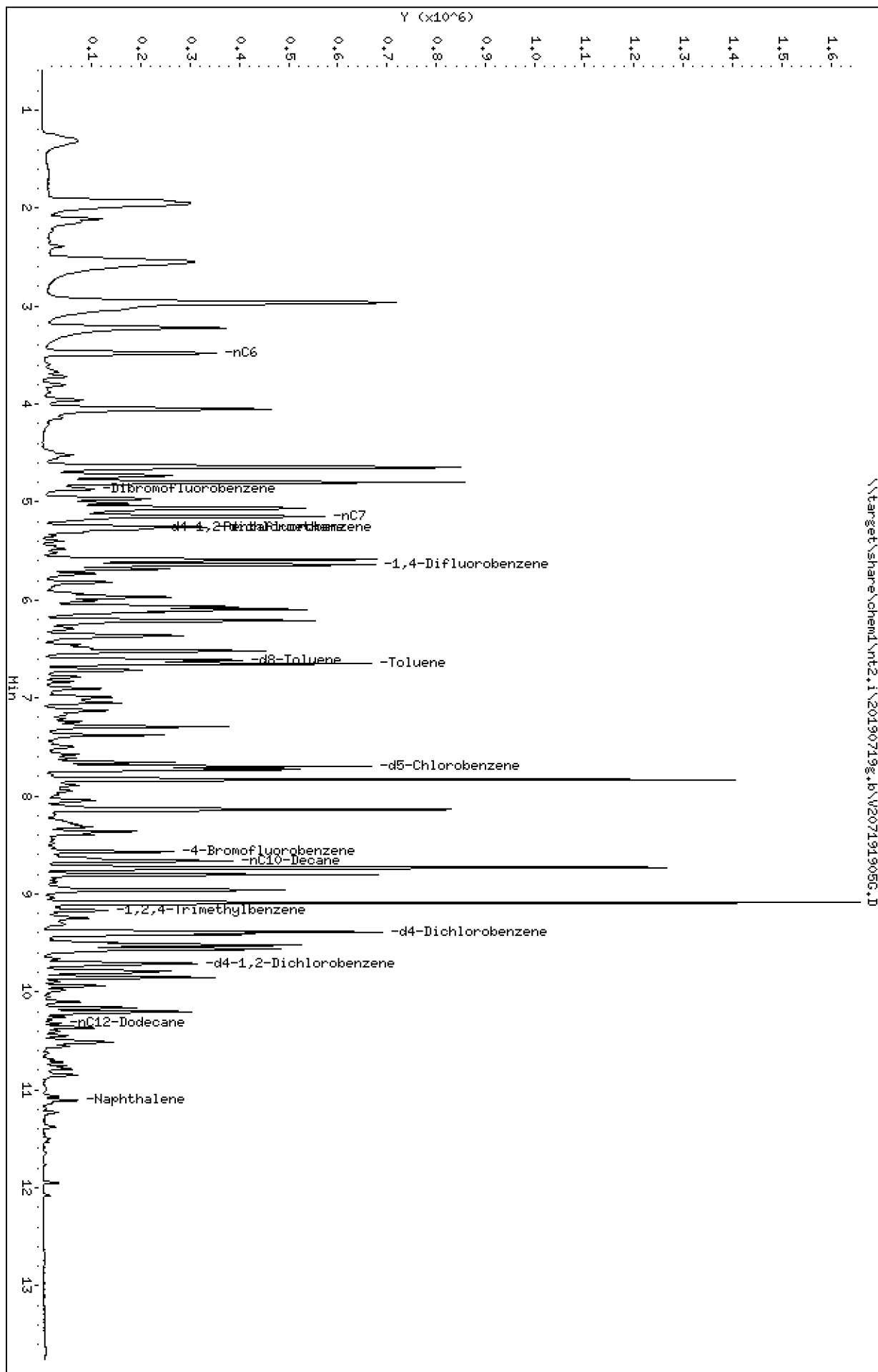
Sample Info: BHC0474-BSD1

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191905G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 07:56

ARI ID: BHG0474-BSD1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	22445910	0.935
8015C 2MP-TMB (3.04 to 9.27)	33333333	36837835	1.105 M
AK101 nC6-nC10 (3.38 to 8.54)	31889318	28531639	0.895 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	23514556	0.937
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	33177147	0.935 M

* Surrogate areas are subtracted from Total Area

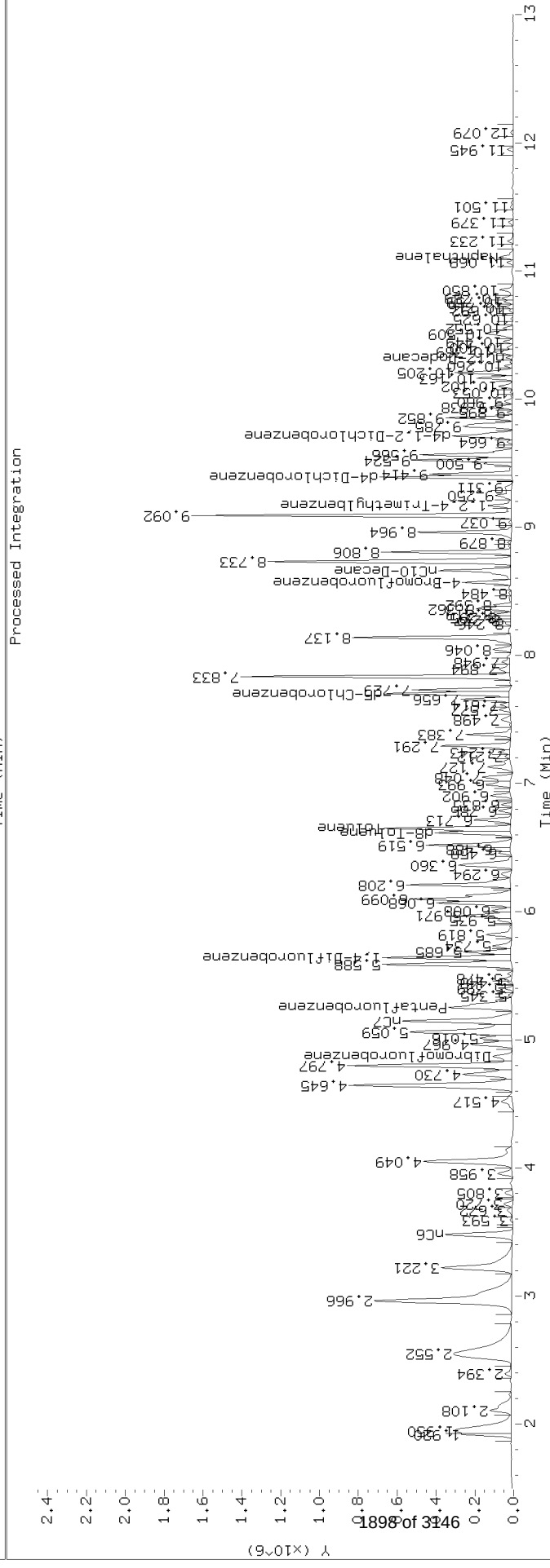
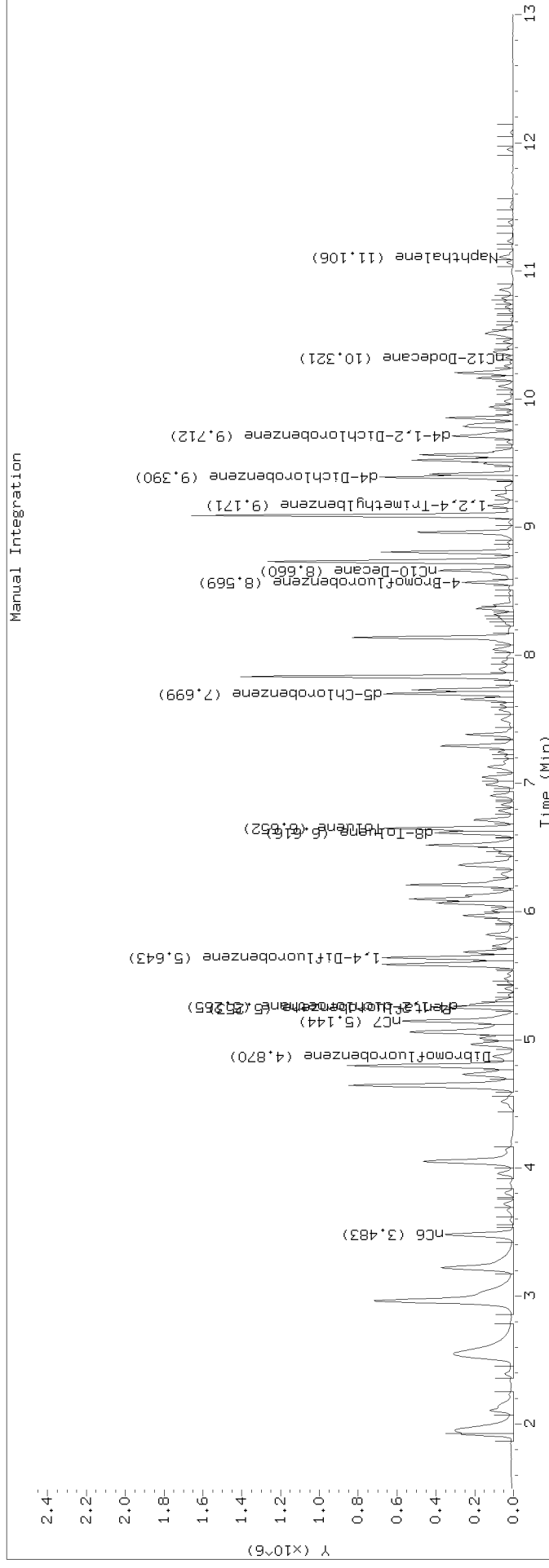
NW Gas Range Subtracted Peaks

7.699	991179	d5-Chlorobenzene
8.569	364924	4-Bromofluorobenzene
6.616	637444	d8-Toluene
9.390	902672	d4-Dichlorobenzene
9.712	598005	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report
Datafile: NT2, 20190719g.b/V207191905G.D Injection: 19-JUL-2019 07:56

Datafile: NT2, 20190719g.b/V207191905G.D Injection: 19-JUL-2019 07:56

Lab ID: BHG0474-BSD1





MS / MS DUPLICATE RECOVERY
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/18/19 17:45

Batch: BHG0455

Laboratory ID: BHG0455-MS1

Preparation: EPA 5035 (Methanol Extraction)

Sequence Name: Matrix Spike

Initial/Final: 3.361 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/kg dry)	SAMPLE CONCENTRATION (ug/kg dry)	Q	MS CONCENTRATION (ug/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Gasoline Range Organics (Tol-Nap)	190000	ND	U	179000		94.2	28 - 162

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/18/19 18:11

Batch: BHG0455

Laboratory ID: BHG0455-MSD1

Preparation: EPA 5035 (Methanol Extraction)

Sequence Name: Matrix Spike Dup

Initial/Final: 3.361 g / 5 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (ug/kg dry)	MSD CONCENTRATION (ug/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Gasoline Range Organics (Tol-Nap)	190000	188000		99.0	4.95	30	28 - 162

* Values outside of QC limits

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181920.D

Date : 18-JUL-2019 17:45

Client ID:

Sample Info: BHC0455-MS1

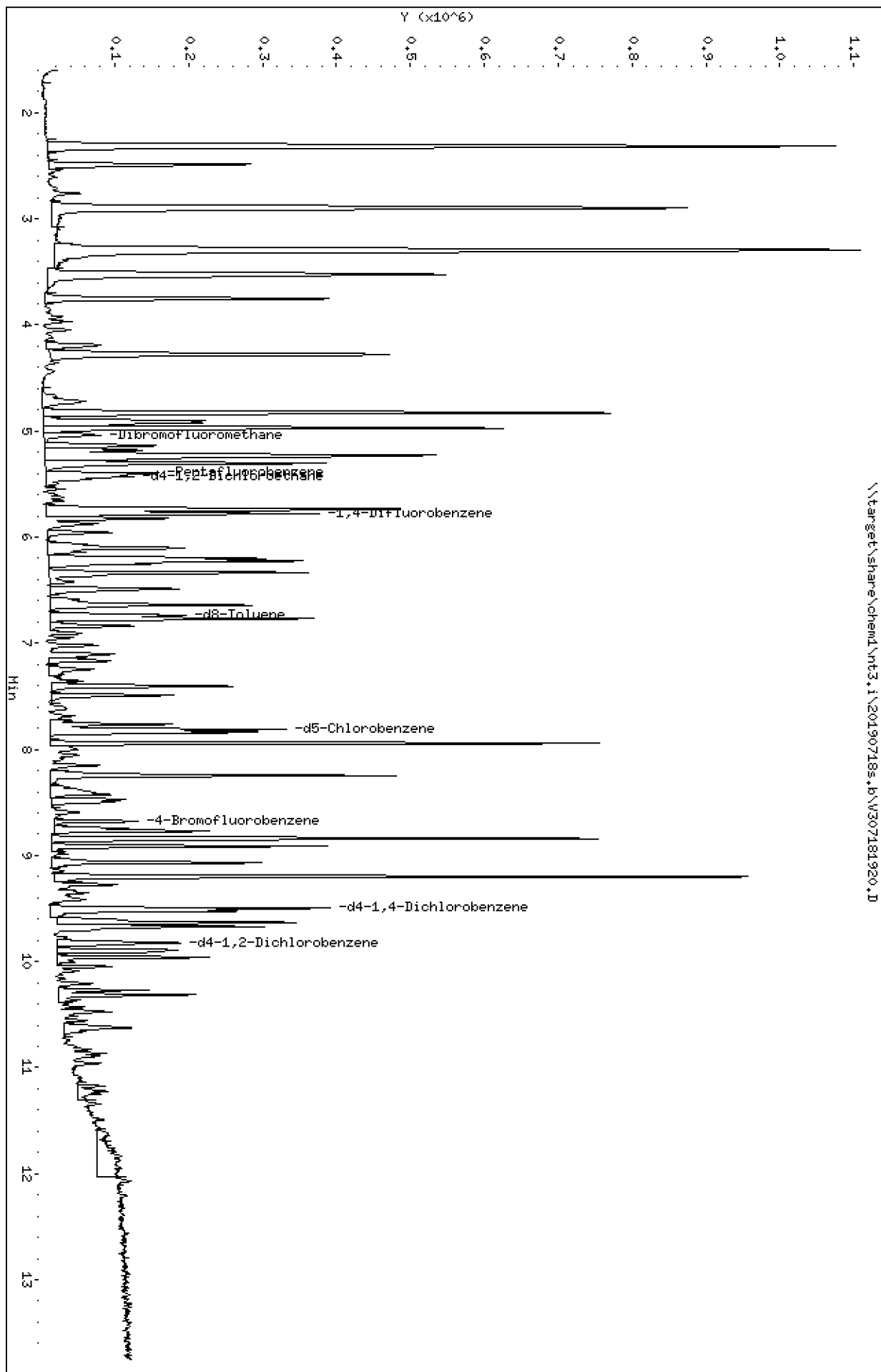
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181920.D
 Lab Smp Id: BHG0455-MS1
 Inj Date : 18-JUL-2019 17:45
 Operator : PKC Inst ID: nt3.i
 Smp Info : BHG0455-MS1
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046 (0.933)		18288	4.85484	4.855
* 32 Pentafluorobenzene	168	5.403	5.402 (1.000)		73616	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434 (1.005)		25272	5.09455	5.095
* 37 1,4-Difluorobenzene	114	5.780	5.784 (1.000)		121527	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735 (1.165)		81323	5.10047	5.100
* 53 d5-Chlorobenzene	117	7.815	7.814 (1.000)		124194	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680 (1.111)		24388	4.94542	4.945
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498 (1.000)		74072	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817 (1.034)		35733	5.14230	5.142

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181920.D Calibration Time: 22:11
 Lab Smp Id: BHG0455-MS1
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	73616	-0.10
37 1,4-Difluorobenze	116116	58058	232232	121527	4.66
53 d5-Chlorobenzene	124912	62456	249824	124194	-0.57
76 d4-1,4-Dichlorobe	77169	38585	154338	74072	-4.01

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.01
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.08
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: BHG0455-MS1
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.855	97.10	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	5.095	101.89	80-128
\$ 43 d8-Toluene	5.000	5.100	102.01	80-120
\$ 62 4-Bromofluorobenze	5.000	4.945	98.91	80-120
\$ 79 d4-1,2-Dichloroben	5.000	5.142	102.85	80-120

REVIEW SUMMARY FOR FILE - V307181920.D

Lab ID: BHG0455-MS1

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 17:45

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\201907181920.D

Date : 18-JUL-2019 17:45

Client ID:

Sample Info: BHC0455-MS1

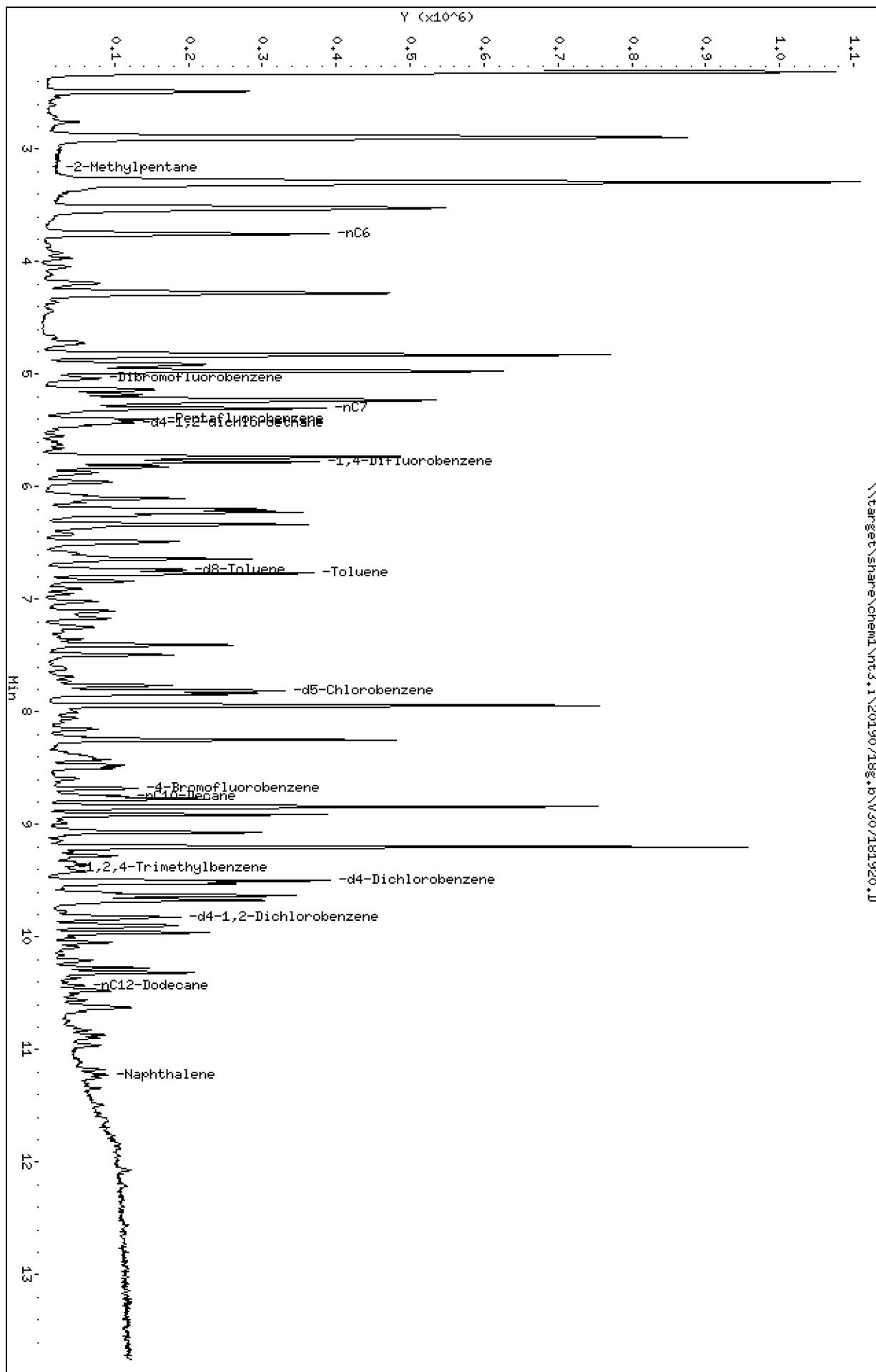
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181920.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 17:45

ARI ID: BHG0455-MS1
Client ID:
Matrix: WATER
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	13674486	0.878 M
8015C 2MP-TMB (3.04 to 9.49)	30509602	28598675	0.937
AK101 nC6-nC10 (3.67 to 8.65)	20565293	19469788	0.947
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	14456277	0.864 M
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	20949501	0.899 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

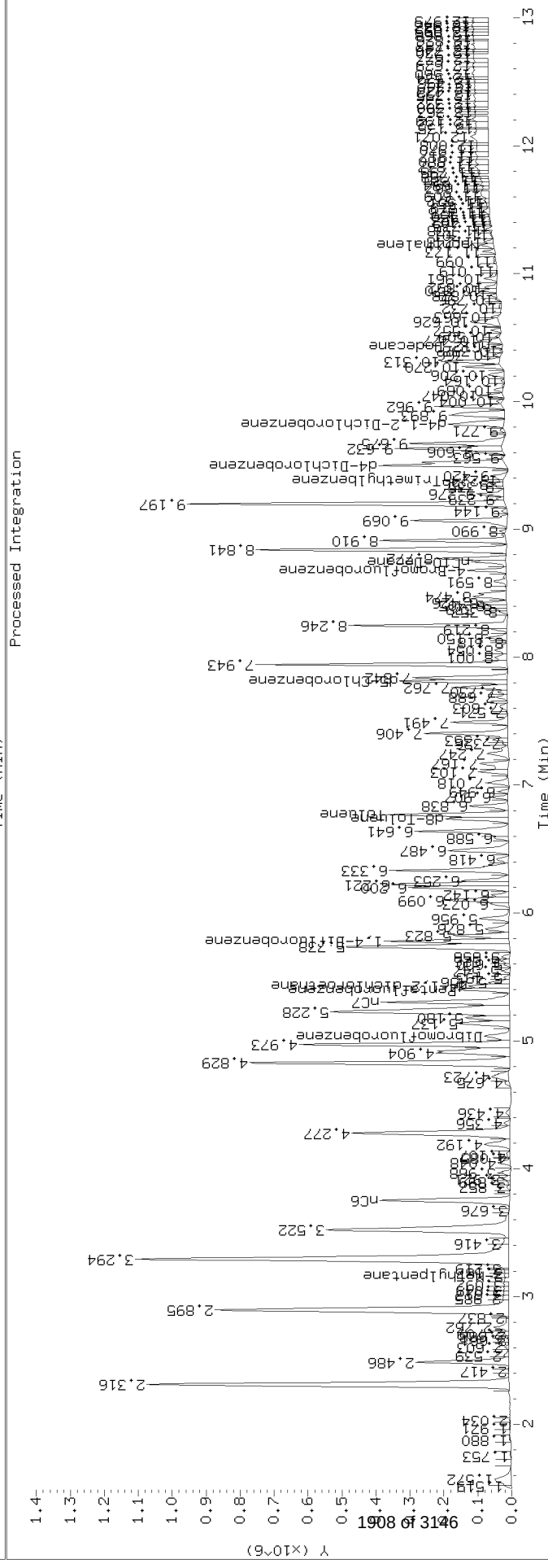
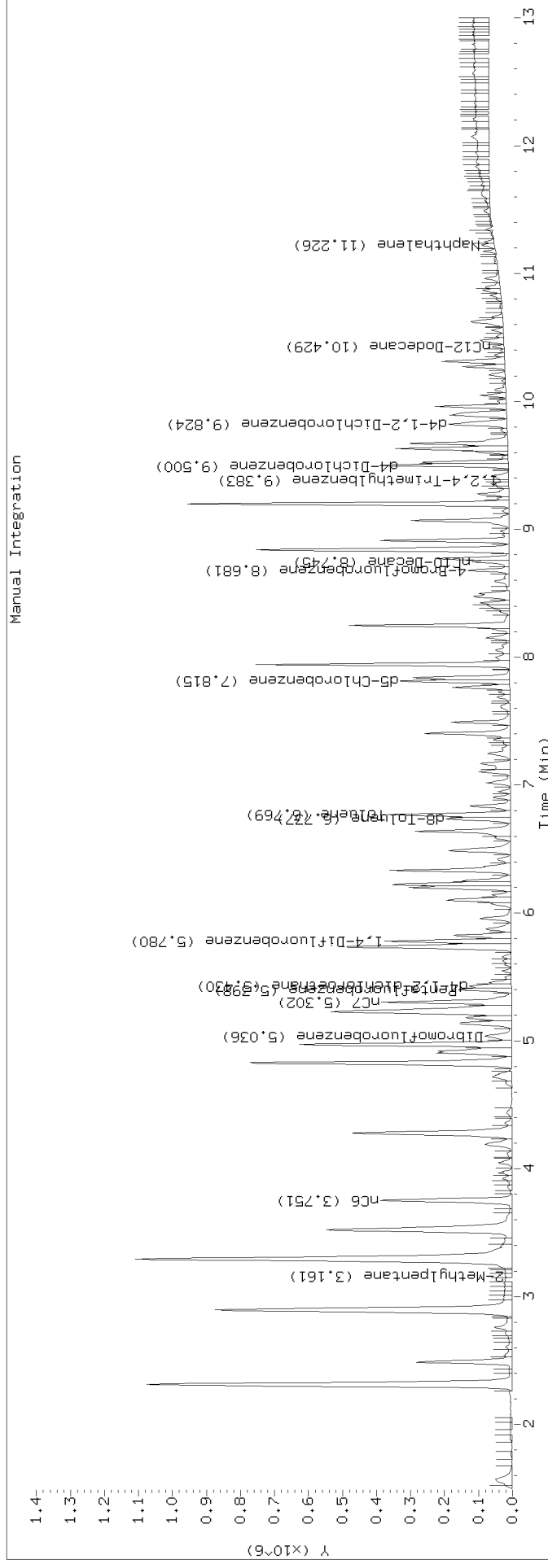
NW Gas Range Subtracted Peaks

7.815	486744	d5-Chlorobenzene
6.737	304997	d8-Toluene
9.500	560442	d4-Dichlorobenzene
8.681	182692	4-Bromofluorobenzene
9.824	348257	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

Datafile: NT3, 20190718g.b/V307181920.D Injection: 18-JUL-2019 17:45

Lab ID: BHG0455-MS1



Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181921.D

Date : 18-JUL-2019 18:11

Client ID:

Sample Info: BHC0455-MSD1

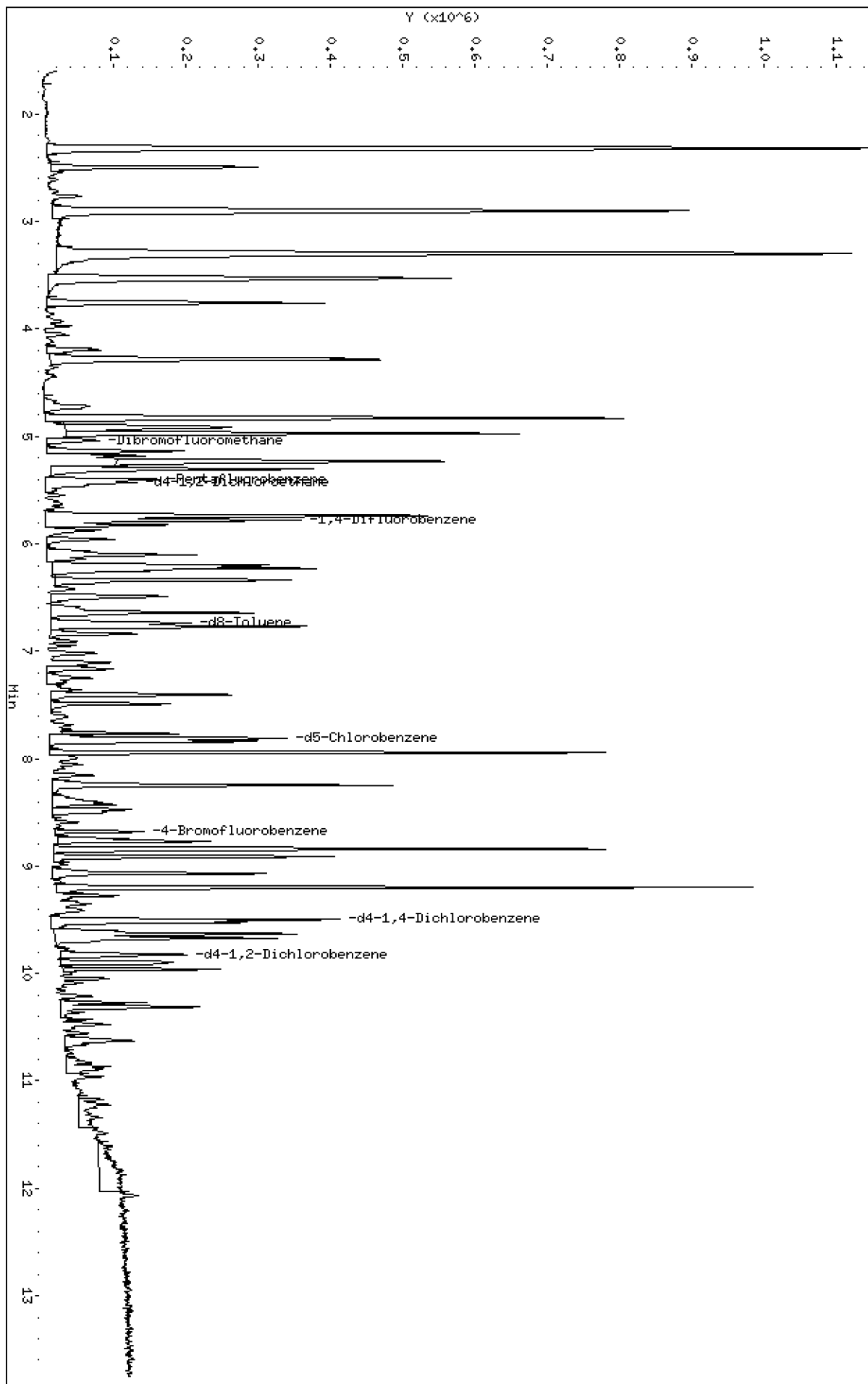
Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190718s.b\V307181921.D



ARI Labs, Inc.

8260C 10 ml purge
 Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181921.D
 Lab Smp Id: BHG0455-MSD1
 Inj Date : 18-JUL-2019 18:11
 Operator : PKC Inst ID: nt3.i
 Smp Info : BHG0455-MSD1
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.933)	17934	4.67058	4.671
* 32 Pentafluorobenzene	168	5.402	5.402	(1.000)	75039	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434	(1.005)	25345	5.01238	5.012
* 37 1,4-Difluorobenzene	114	5.779	5.784	(1.000)	124165	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735	(1.165)	83741	5.14053	5.141
* 53 d5-Chlorobenzene	117	7.814	7.814	(1.000)	125533	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	25014	5.01826	5.018
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	78653	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	36614	4.96219	4.962

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181921.D Calibration Time: 22:11
 Lab Smp Id: BHG0455-MSD1
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	75039	1.83
37 1,4-Difluorobenze	116116	58058	232232	124165	6.93
53 d5-Chlorobenzene	124912	62456	249824	125533	0.50
76 d4-1,4-Dichlorobe	77169	38585	154338	78653	1.92

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.09
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: BHG0455-MSD1
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.671	93.41	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	5.012	100.25	80-128
\$ 43 d8-Toluene	5.000	5.141	102.81	80-120
\$ 62 4-Bromofluorobenze	5.000	5.018	100.37	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.962	99.24	80-120

REVIEW SUMMARY FOR FILE - V307181921.D

Lab ID: BHG0455-MSD1

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 18:11

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181921.D

Date : 18-JUL-2019 18:11

Client ID:

Sample Info: BHC0455-MSD1

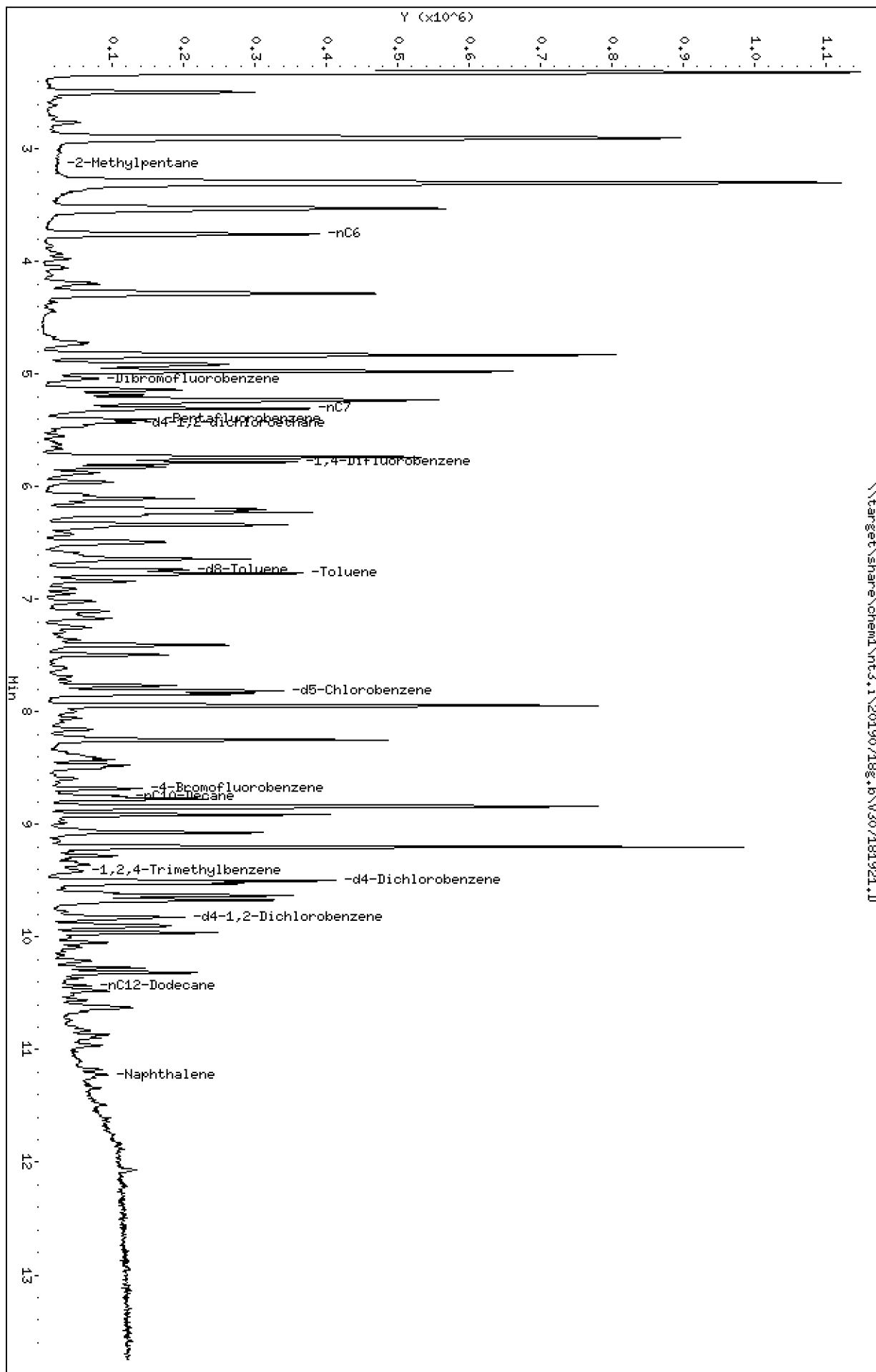
Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS

\\target\share\chemd\nt3.i\20190718g.b\V307181921.D



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181921.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 18:11

ARI ID: BHG0455-MSD1
Client ID:
Matrix: WATER
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	14313951	0.919 M
8015C 2MP-TMB (3.04 to 9.49)	30509602	29401301	0.964 M
AK101 nC6-nC10 (3.67 to 8.65)	20565293	20086771	0.977 M
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	15189989	0.908 M
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	21812102	0.936 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

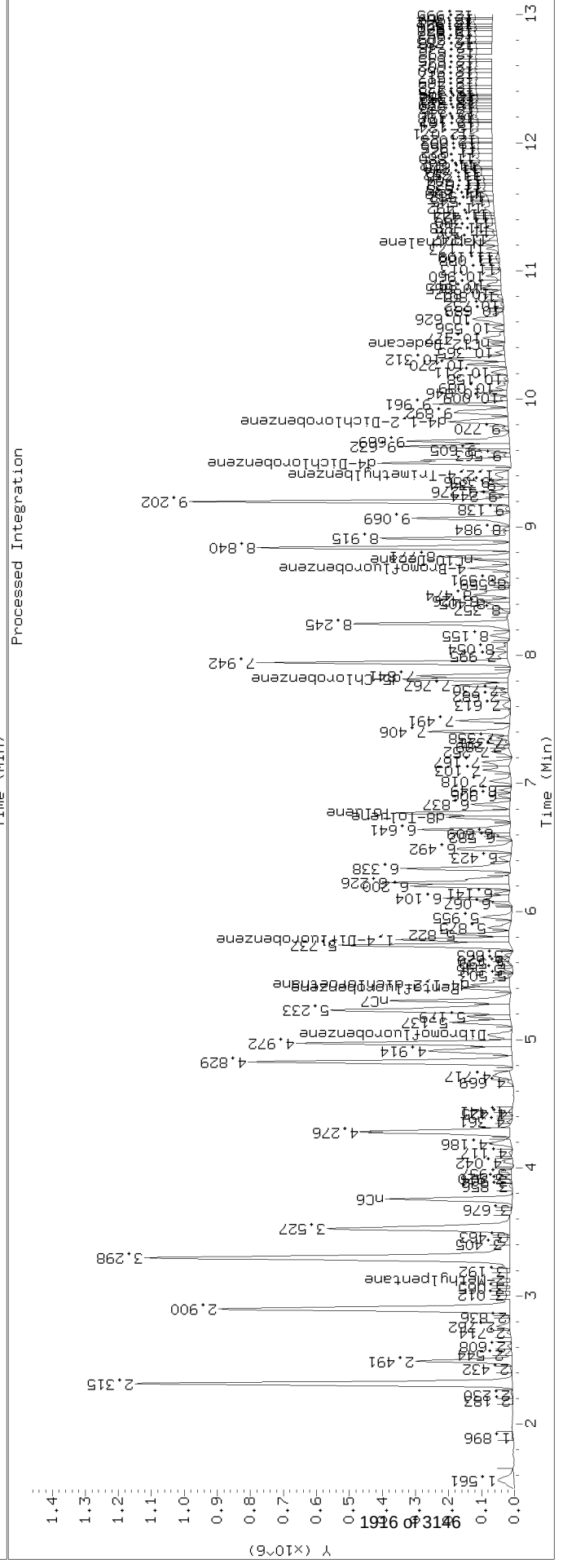
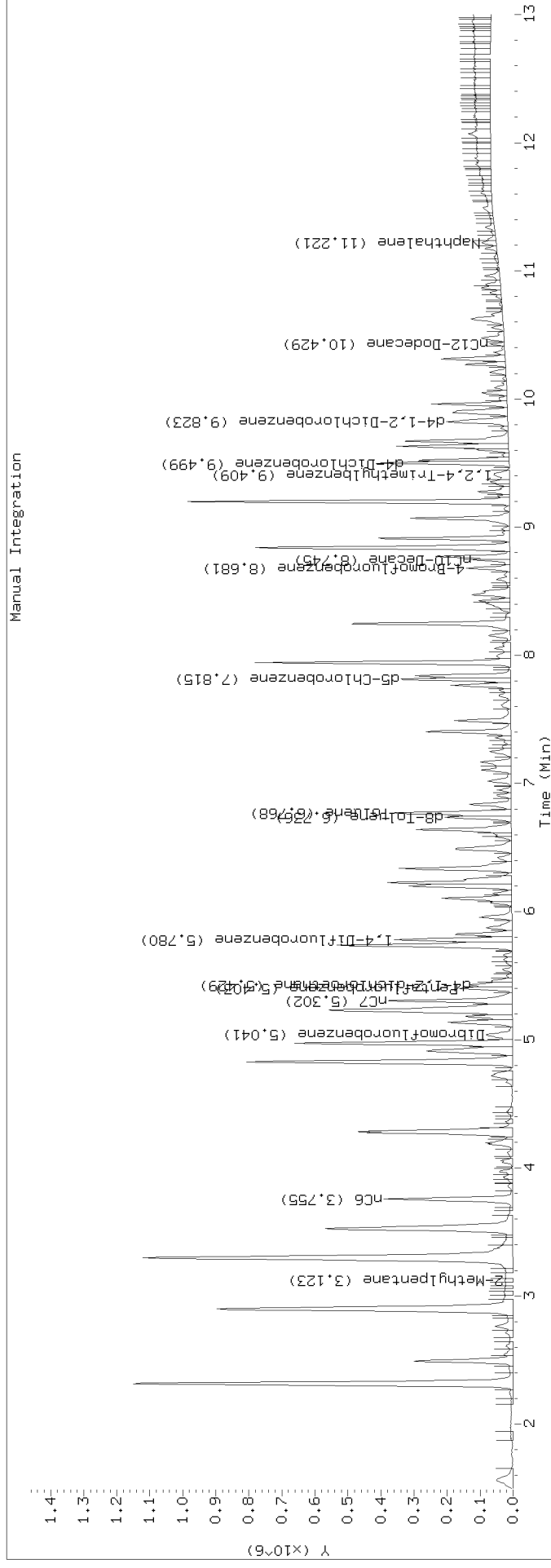
NW Gas Range Subtracted Peaks

7.815	492888	d5-Chlorobenzene
6.736	318776	d8-Toluene
9.499	584060	d4-Dichlorobenzene
8.681	193260	4-Bromofluorobenzene
9.823	372396	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report
Datafile: NT3, 20190718g.b/V307181921.D Injection: 18-JUL-2019 18:11

Injection: 18-JUL-2019 18:11

Lab ID: BHG0455-MSD1





MS / MS DUPLICATE RECOVERY
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 13:36

Batch: BHG0474

Laboratory ID: BHG0474-MS1

Preparation: EPA 5035 (Methanol Extraction)

Sequence Name: Matrix Spike

Initial/Final: 1.814 g / 5 mL

Source Sample: SO-11-190711

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	Q	MS CONCENTRATION (ug/L)	Q	MS % REC. #	QC LIMITS REC.
Gasoline Range Organics (Tol-Nap)	50000	ND	U	55400		111	28 - 162

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 13:57

Batch: BHG0474

Laboratory ID: BHG0474-MSD1

Preparation: EPA 5035 (Methanol Extraction)

Sequence Name: Matrix Spike Dup

Initial/Final: 1.814 g / 5 mL

Source Sample: SO-11-190711

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Gasoline Range Organics (Tol-Nap)	50000	52100		104	6.30	30	28 - 162

* Values outside of QC limits

Data File: \\target\share\chend\nt2.i\20190719s.b\207191921G.D

Date : 19-JUL-2019 13:36

Client ID:

Sample Info: BHC0474-MS1

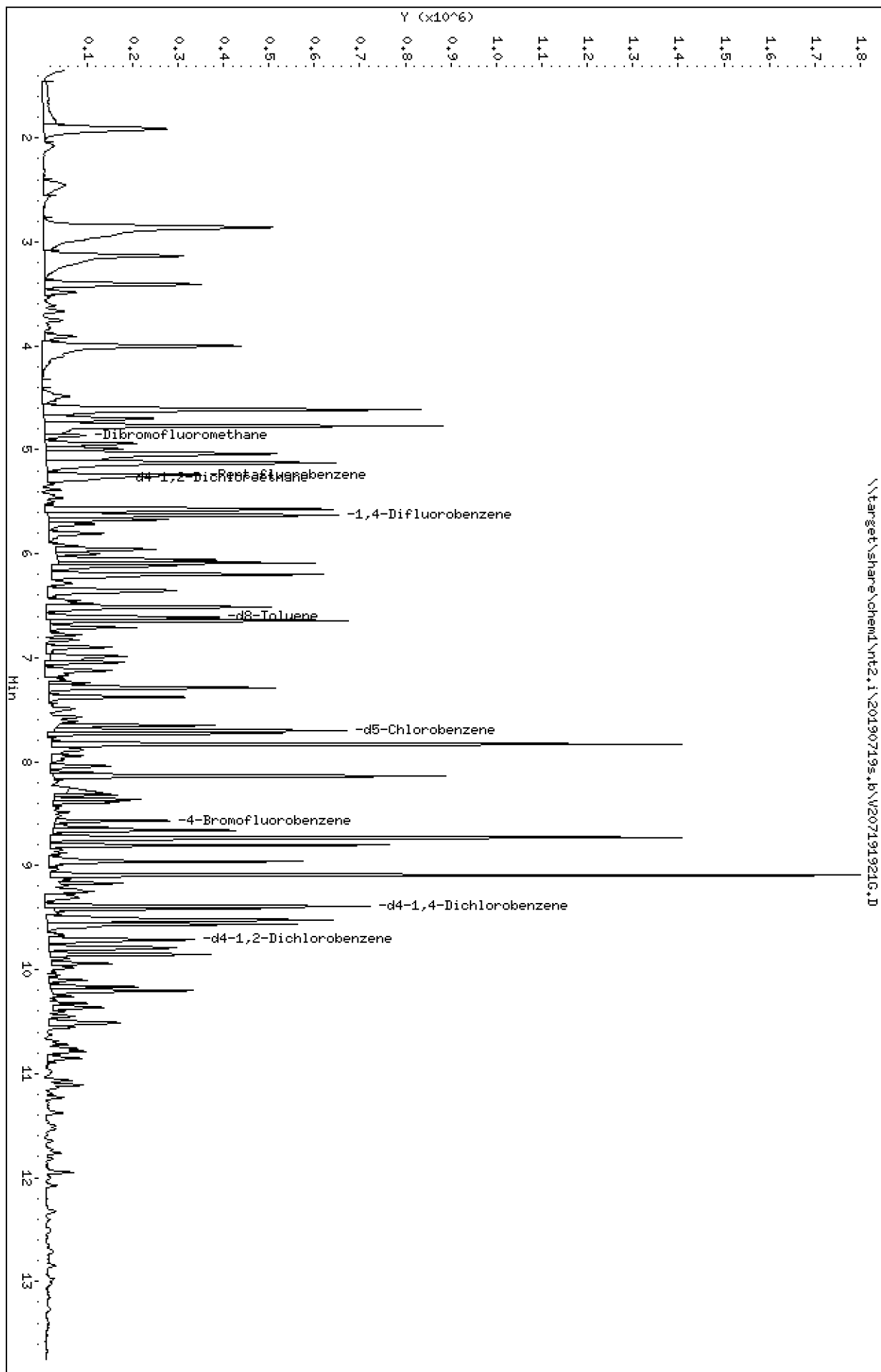
Page 1

Instrument: nt2.i

Column phase: RTXWMS

Operator: LH

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191921G.D
Lab Smp Id: BHG0474-MS1
Inj Date : 19-JUL-2019 13:36
Operator : LH Inst ID: nt2.i
Smp Info : BHG0474-MS1
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 52
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111		4.867	4.872 (0.929)		36404	4.59503	4.595	
* 32 Pentafluorobenzene	168		5.238	5.249 (1.000)		153277	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.268	5.274 (1.006)		51156	5.33274	5.333	
* 37 1,4-Difluorobenzene	114		5.633	5.639 (1.000)		274571	10.0000		
\$ 43 d8-Toluene	98		6.607	6.612 (1.173)		175136	5.10188	5.102	
* 53 d5-Chlorobenzene	117		7.702	7.701 (1.000)		270666	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.572	8.571 (1.113)		56344	5.27326	5.273	
* 76 d4-1,4-Dichlorobenzene	152		9.393	9.392 (1.000)		150455	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.709	9.708 (1.034)		68712	4.84870	4.849	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191921G.D Calibration Time: 17:11
 Lab Smp Id: BHG0474-MS1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	153277	-9.63
37 1,4-Difluorobenze	298924	149462	597848	274571	-8.15
53 d5-Chlorobenzene	281842	140921	563684	270666	-3.97
76 d4-1,4-Dichlorobe	151581	75791	303162	150455	-0.74

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.24	-0.22
37 1,4-Difluorobenze	5.64	5.14	6.14	5.63	-0.09
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	0.01
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0474-MS1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.595	91.90	
\$ 33 d4-1,2-Dichloroeth	5.000	5.333	106.65	
\$ 43 d8-Toluene	5.000	5.102	102.04	
\$ 62 4-Bromofluorobenze	5.000	5.273	105.47	
\$ 79 d4-1,2-Dichloroben	5.000	4.849	96.97	

REVIEW SUMMARY FOR FILE - V207191921G.D

Lab ID: BHG0474-MS1

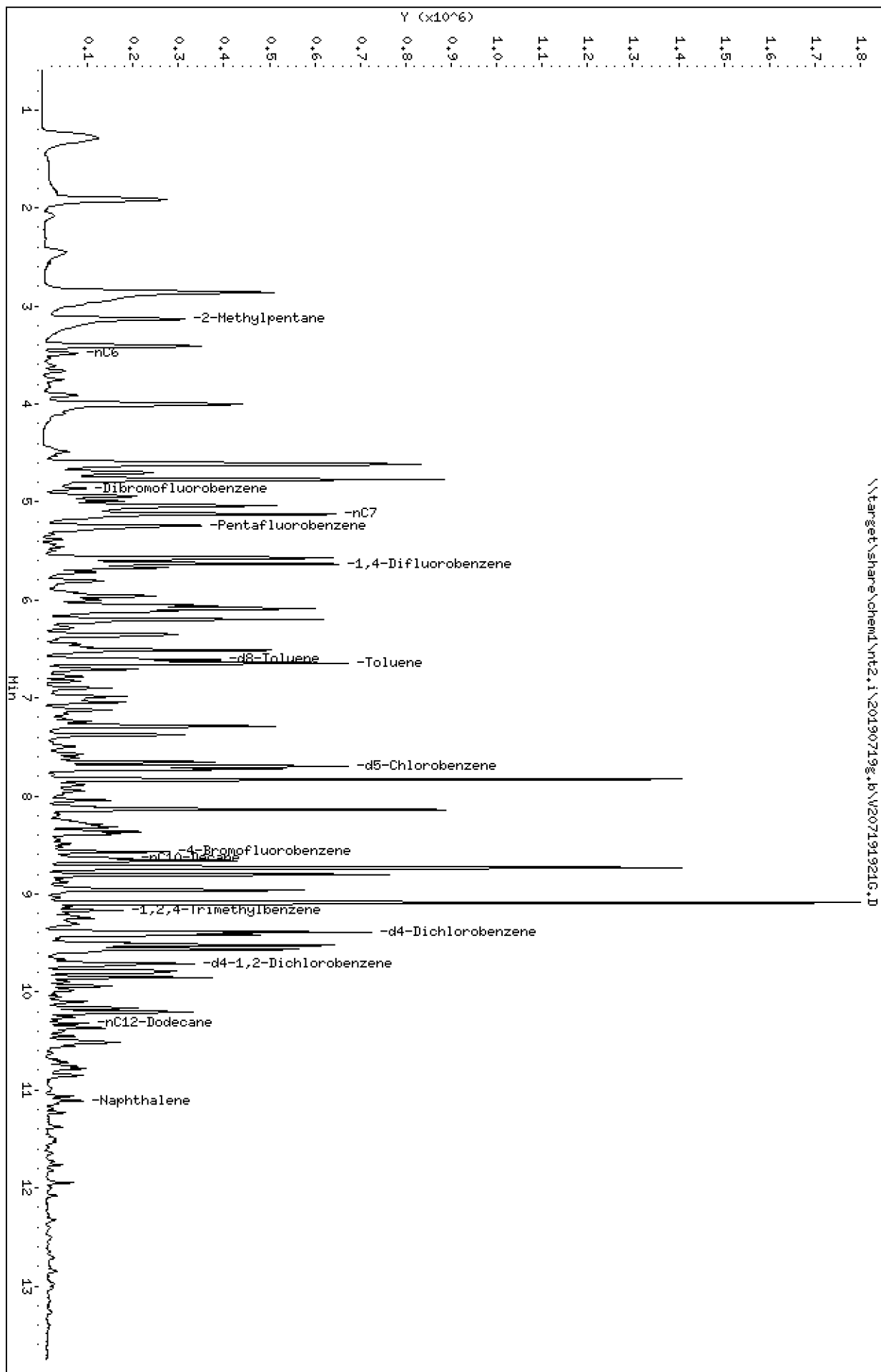
nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 13:36

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191921G.D
Date : 19-JUL-2019 13:36
Client ID:
Sample Info: BHC0474-MS1

Column phase: RTXWMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191921G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 13:36

ARI ID: BHG0474-MS1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

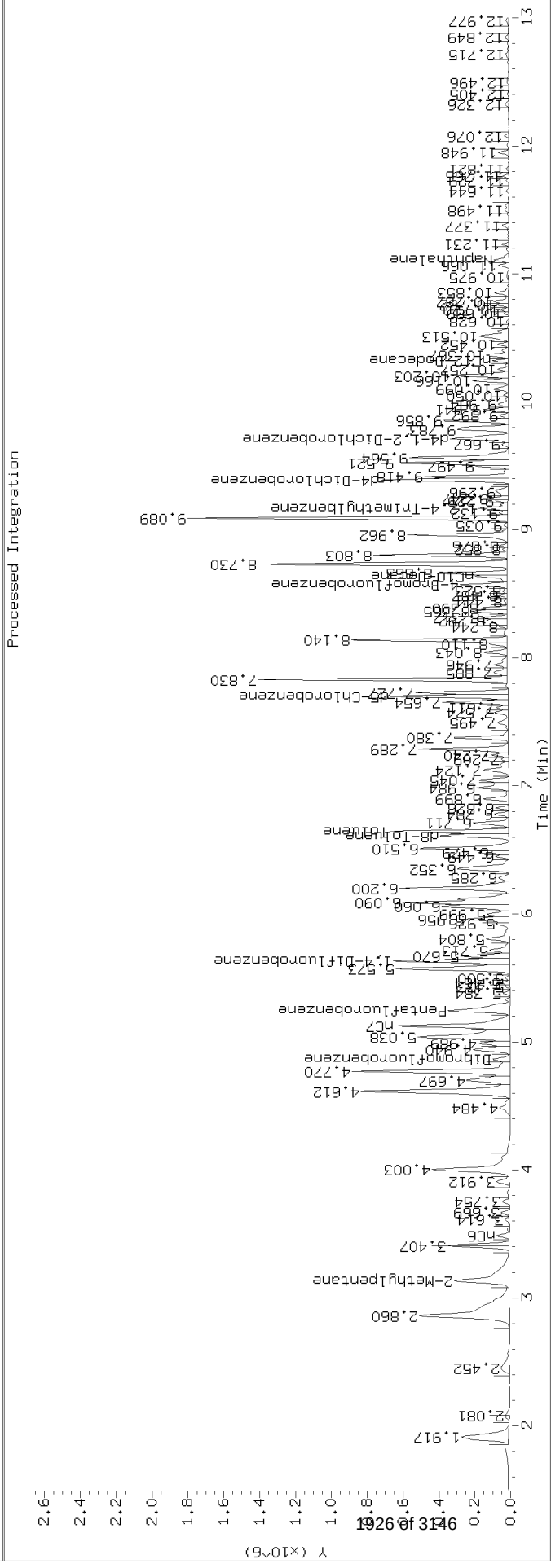
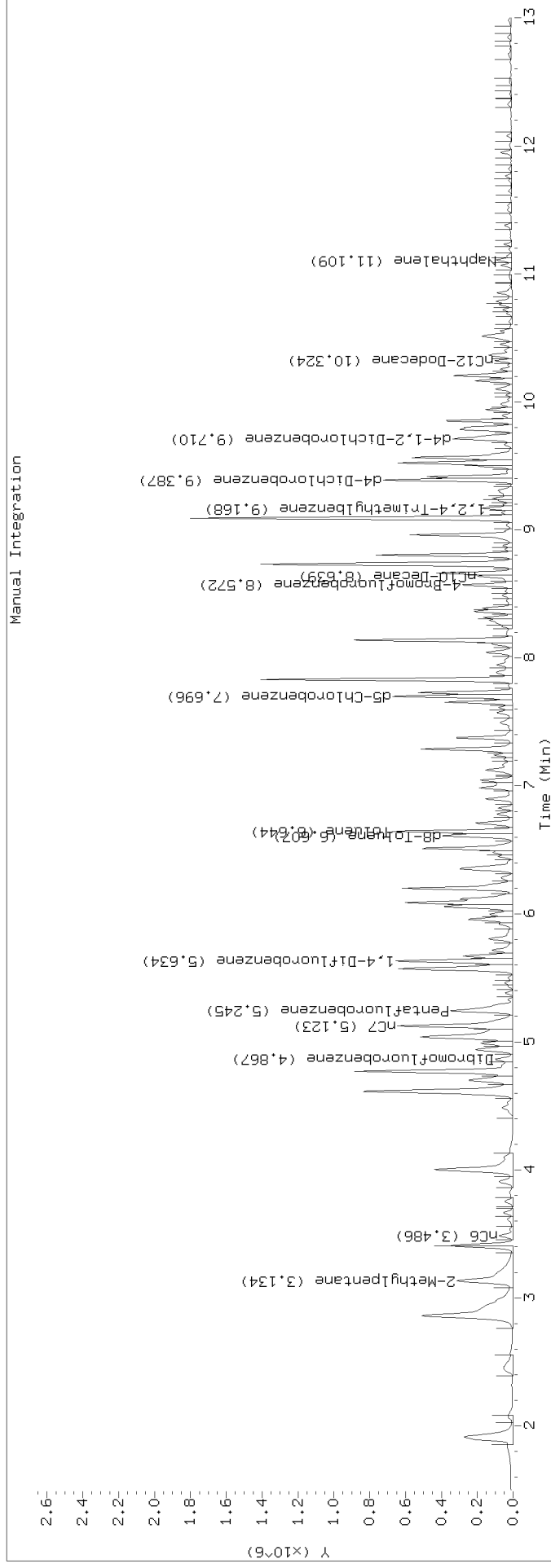
GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	26370416	1.099 M
8015C 2MP-TMB (3.04 to 9.27)	33333333	40382538	1.211 M
AK101 nC6-nC10 (3.38 to 8.54)	31889318	30918106	0.970
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	27840953	1.109 M
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	36426714	1.027 M

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.696	1010401	d5-Chlorobenzene
8.572	418751	4-Bromofluorobenzene
6.607	677602	d8-Toluene
9.387	1046404	d4-Dichlorobenzene
9.710	665261	d4-1,2-Dichlorobenzene

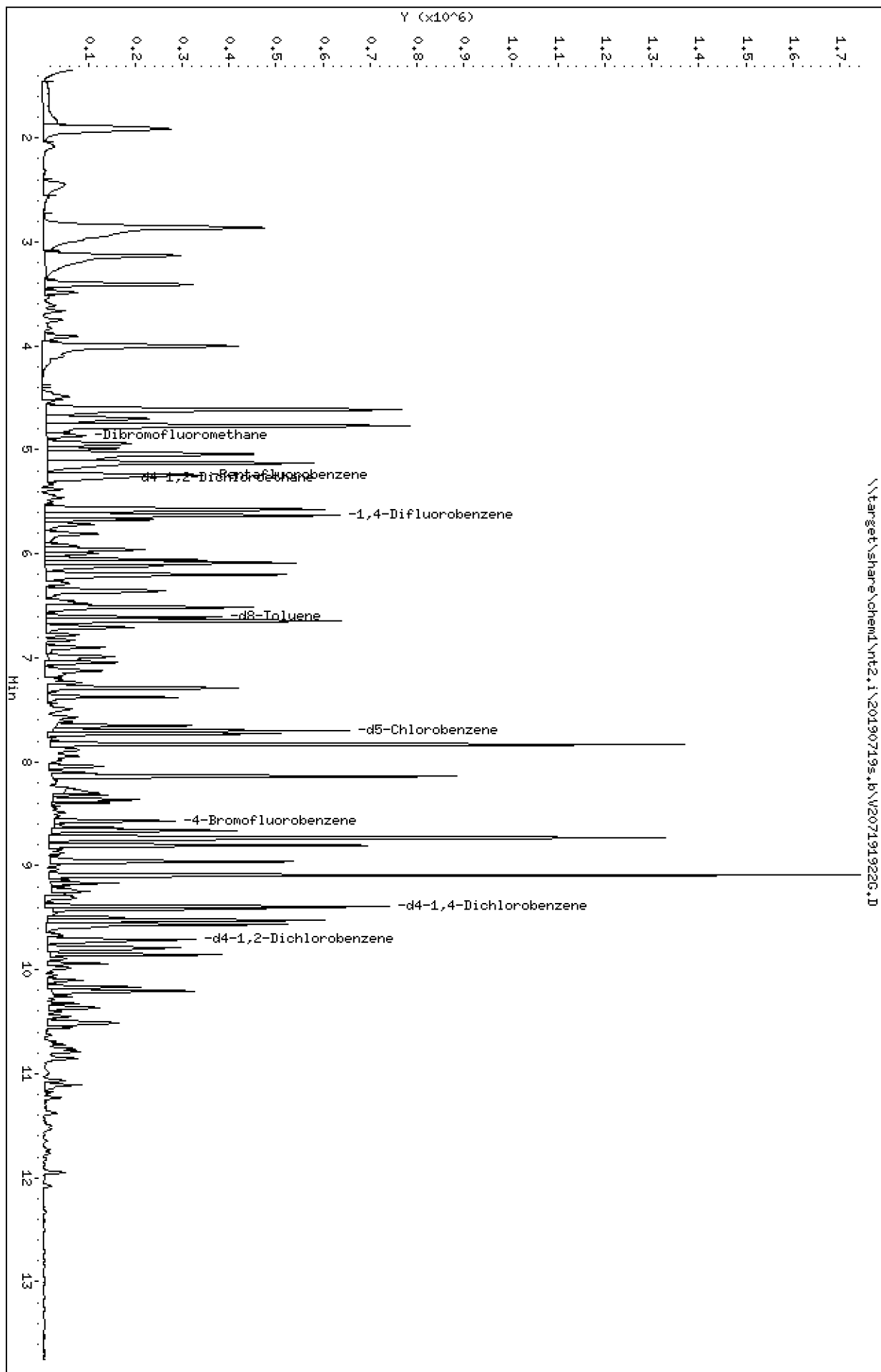


Data File: \\target\share\chend\nt2.i\20190719s.b\2019191922G.D
Date : 19-JUL-2019 13:57
Client ID:
Sample Info: BHC0404-MSD1

Page 1

Column phase: RTXWMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191922G.D
Lab Smp Id: BHG0404-MSD1
Inj Date : 19-JUL-2019 13:57
Operator : LH Inst ID: nt2.i
Smp Info : BHG0404-MSD1
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 53
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
=====	=====		=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111		4.864	4.872	(0.928)	34384	4.47970	4.480	
* 32 Pentafluorobenzene	168		5.242	5.249	(1.000)	148499	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.266	5.274	(1.005)	49436	5.31925	5.319	
* 37 1,4-Difluorobenzene	114		5.631	5.639	(1.000)	263495	10.0000		
\$ 43 d8-Toluene	98		6.610	6.612	(1.174)	167906	5.09686	5.097	
* 53 d5-Chlorobenzene	117		7.699	7.701	(1.000)	259846	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.569	8.571	(1.113)	55641	5.42431	5.424	
* 76 d4-1,4-Dichlorobenzene	152		9.390	9.392	(1.000)	149133	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.713	9.708	(1.034)	68634	4.88613	4.886	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191922G.D Calibration Time: 17:11
 Lab Smp Id: BHG0404-MSD1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	148499	-12.44
37 1,4-Difluorobenze	298924	149462	597848	263495	-11.85
53 d5-Chlorobenzene	281842	140921	563684	259846	-7.80
76 d4-1,4-Dichlorobe	151581	75791	303162	149133	-1.61

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.24	-0.15
37 1,4-Difluorobenze	5.64	5.14	6.14	5.63	-0.14
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.02
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: BHG0404-MSD1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.480	89.59	
\$ 33 d4-1,2-Dichloroeth	5.000	5.319	106.39	
\$ 43 d8-Toluene	5.000	5.097	101.94	
\$ 62 4-Bromofluorobenze	5.000	5.424	108.49	
\$ 79 d4-1,2-Dichloroben	5.000	4.886	97.72	

REVIEW SUMMARY FOR FILE - V207191922G.D

Lab ID: BHG0404-MSD1

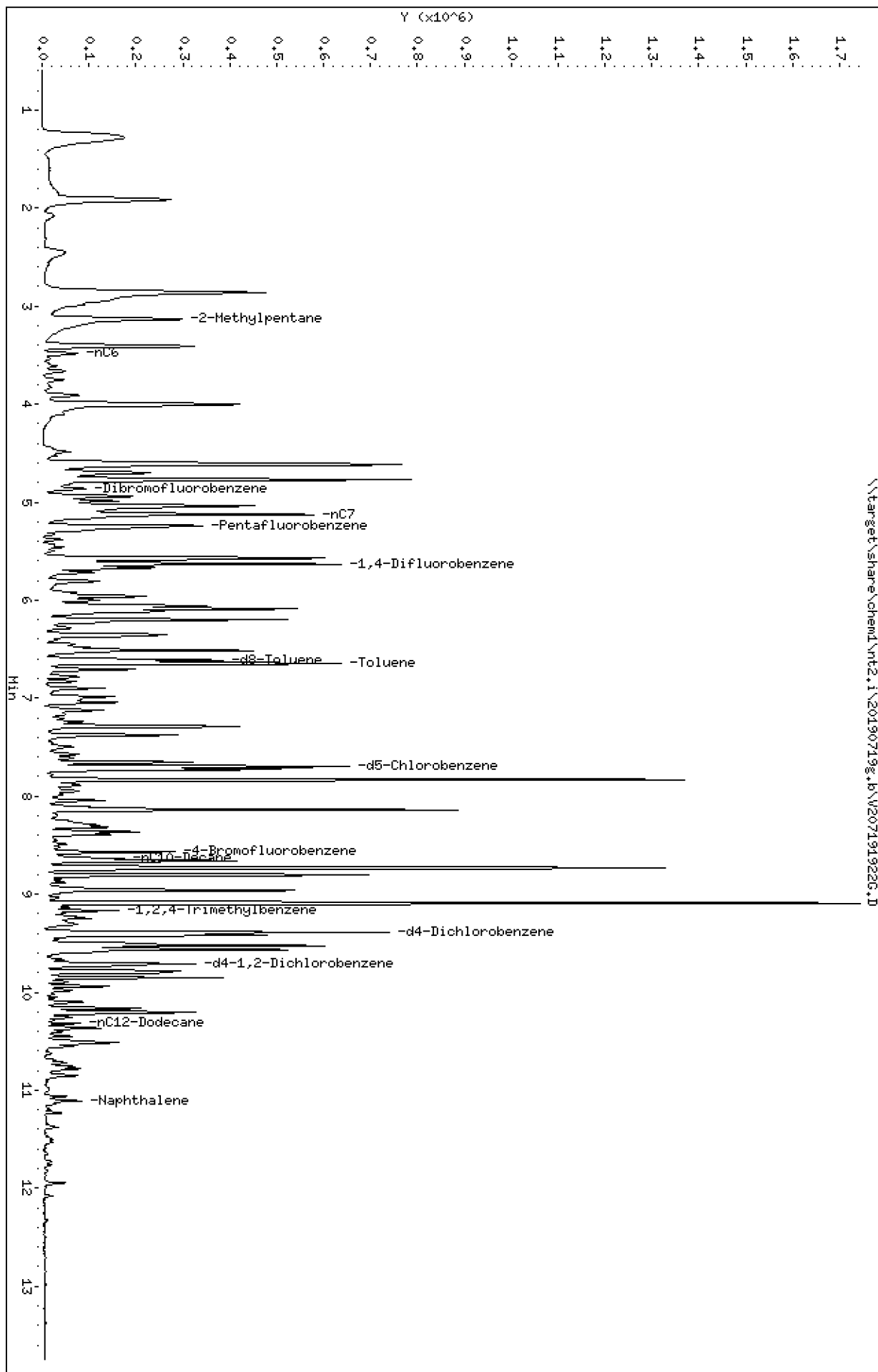
nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 13:57

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191922G.D
Date : 19-JUL-2019 13:57
Client ID:
Sample Info: BHC0404-MSD1

Column phase: RTXWMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191922G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 13:57

ARI ID: BHG0474-MSD1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

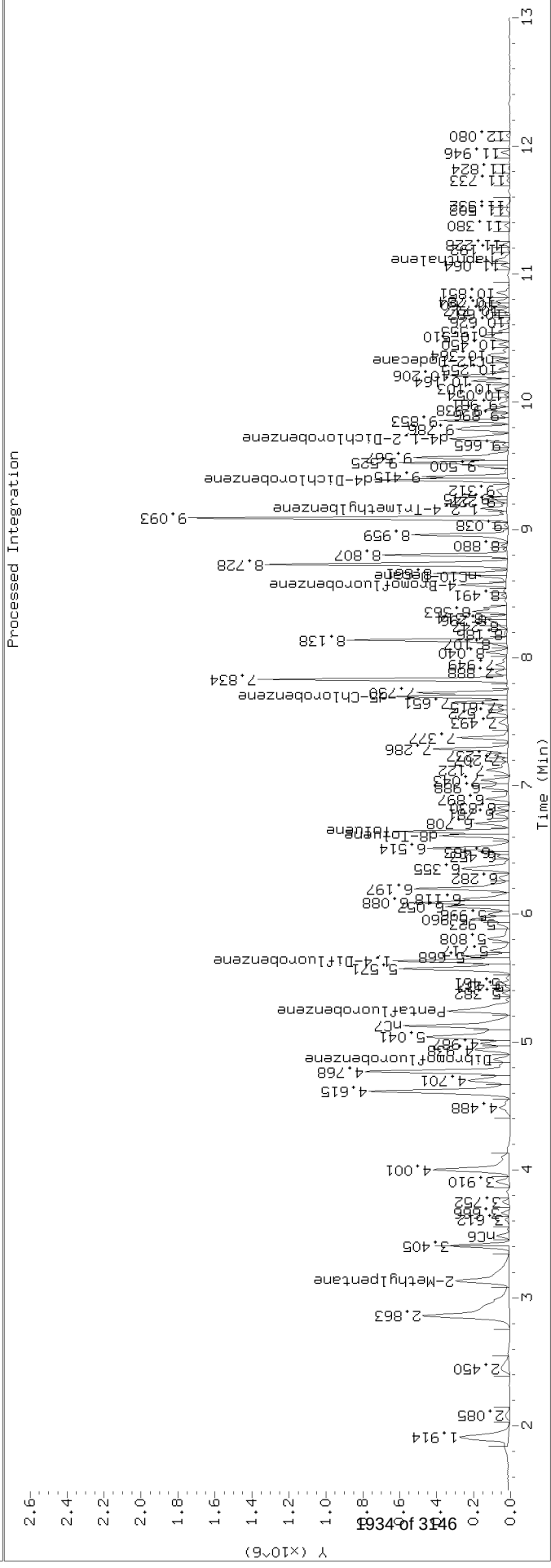
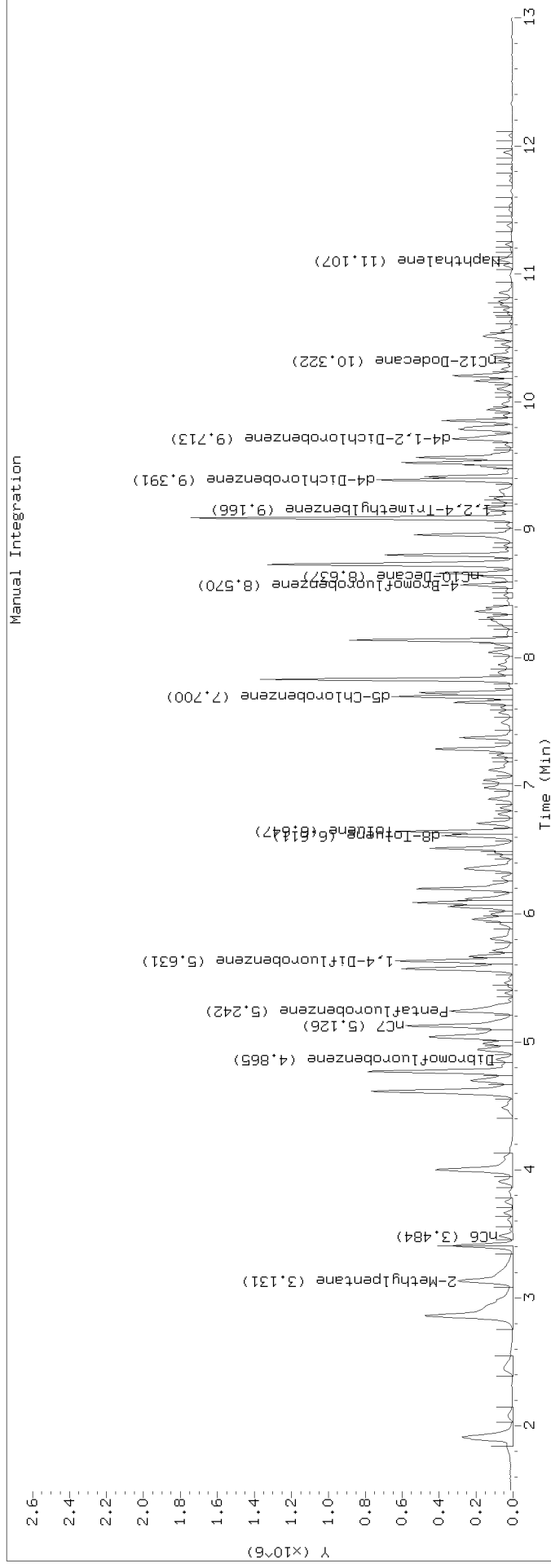
GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	24789556	1.033 M
8015C 2MP-TMB (3.04 to 9.27)	33333333	37349584	1.120 M
AK101 nC6-nC10 (3.38 to 8.54)	31889318	28337419	0.889
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	26141716	1.041 M
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	33906408	0.956 M

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.700	901168	d5-Chlorobenzene
8.570	401247	4-Bromofluorobenzene
6.611	609550	d8-Toluene
9.391	981165	d4-Dichlorobenzene
9.713	644690	d4-1,2-Dichlorobenzene





MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
NWTPHg

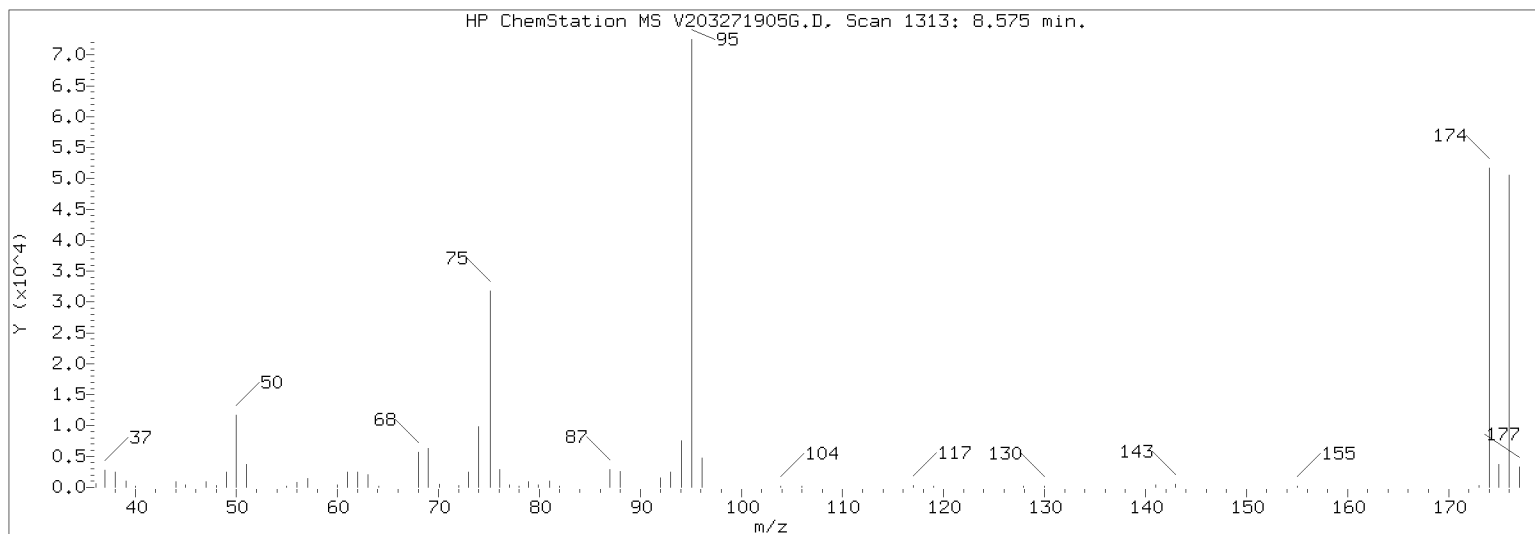
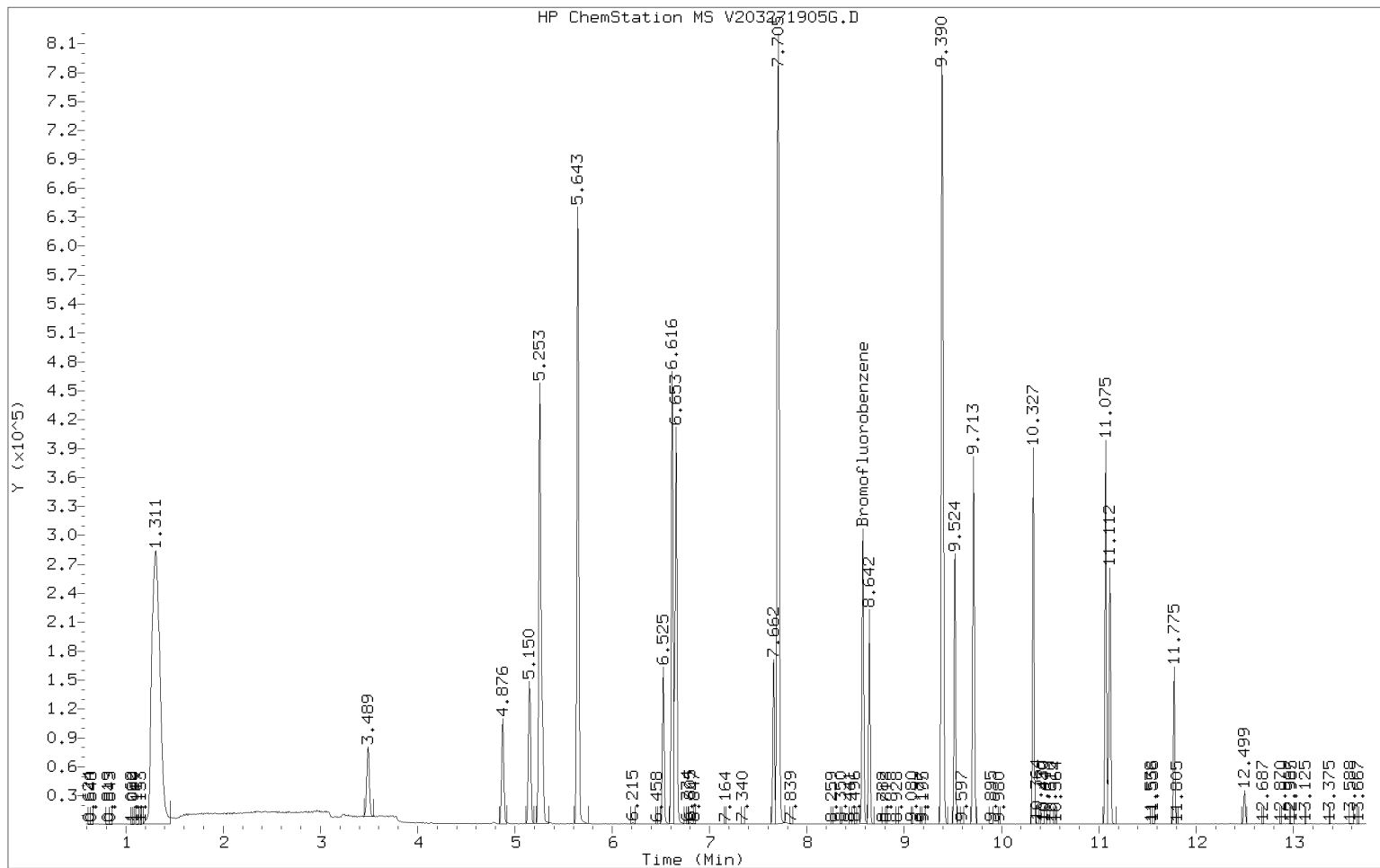
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V203271905G.D Injection Date: 03/27/19
Instrument ID: NT2 Injection Time: 08:56
Sequence: SHC0426 Lab Sample ID: SHC0426-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	15.6	PASS
75	30 - 80% of 95	44	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.65	PASS
173	Less than 2% of 174	0.558	PASS
174	50 - 120% of 95	71.1	PASS
175	5 - 9% of 174	6.97	PASS
176	95 - 101% of 174	96.4	PASS
177	5 - 9% of 176	6.4	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Cal Standard	SHC0426-CALE	V203271917G.D	03/27/2019	13:12
Cal Standard	SHC0426-CALD	V203271918G.D	03/27/2019	13:32
Cal Standard	SHC0426-CALC	V203271919G.D	03/27/2019	13:52
Cal Standard	SHC0426-CALB	V203271920G.D	03/27/2019	14:13
Cal Standard	SHC0426-CALA	V203271921G.D	03/27/2019	14:33
Cal Standard	SHC0426-CAL9	V203271922G.D	03/27/2019	14:53
Initial Cal Blank	SHC0426-ICB1	V203271923G.D	03/27/2019	15:13
Secondary Cal Check	SHC0426-SCV1	V203271924G.D	03/27/2019	15:34

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190327s.b/V203271905G.D
Method Used: \20190327s.b\bfb8260.m Inst: nt2
Injection Date: 27-MAR-2019 08:56 Operator: LH
Sample Info: SHC0426-TUN1 SHC0426-TUN1
Report Date: 03/28/2019 09:50



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.57
75	30.00 - 60.00% of mass 95	43.98
96	5.00 - 9.00% of mass 95	6.65
173	Less than 2.00% of mass 174	0.40 (0.56)
174	50.00 - 100.00% of mass 95	71.08
175	5.00 - 9.00% of mass 174	4.96 (6.97)
176	95.00 - 101.00% of mass 174	68.50 (96.37)
177	5.00 - 9.00% of mass 176	4.38 (6.40)

Data File: V203271905G.D

Spectrum: Avg. Scans 1312-1314 (8.57), Background Scan 1307

Location of Maximum: 95.00

Number of points: 56

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	475	60.00	441	79.00	871	119.00	242
37.00	2396	61.00	2139	80.00	295	128.00	122
38.00	2121	62.00	2224	81.00	913	130.00	68
39.00	837	63.00	1669	82.00	64	141.00	330
40.00	34	64.00	74	87.00	2384	143.00	388
44.00	253	68.00	5228	88.00	2288	155.00	63
45.00	424	69.00	5160	92.00	1384	173.00	247
47.00	757	70.00	482	93.00	2127	174.00	44240
48.00	224	72.00	272	94.00	6239	175.00	3085
49.00	2031	73.00	2113	95.00	62240	176.00	42632
50.00	9689	74.00	8142	96.00	4138	177.00	2728
51.00	3116	75.00	27376	104.00	149		
55.00	135	76.00	2426	106.00	156		
56.00	713	77.00	356	117.00	205		
57.00	1219	78.00	197	118.00	68		



**MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
NWTPHg**

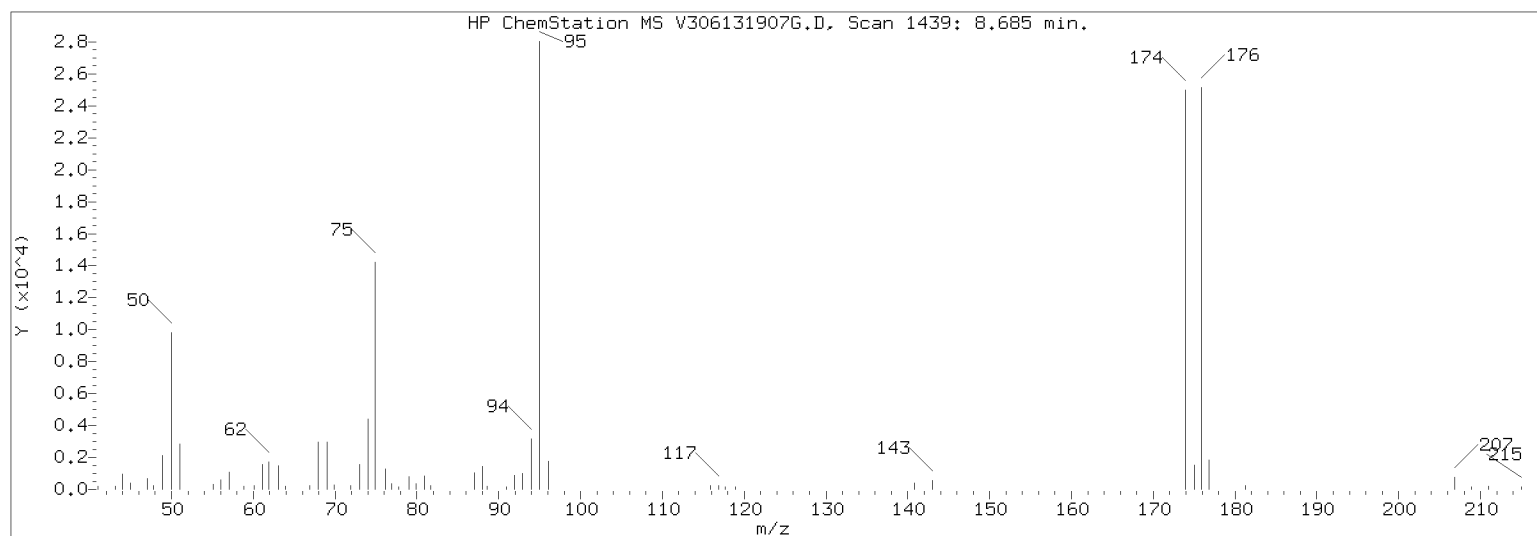
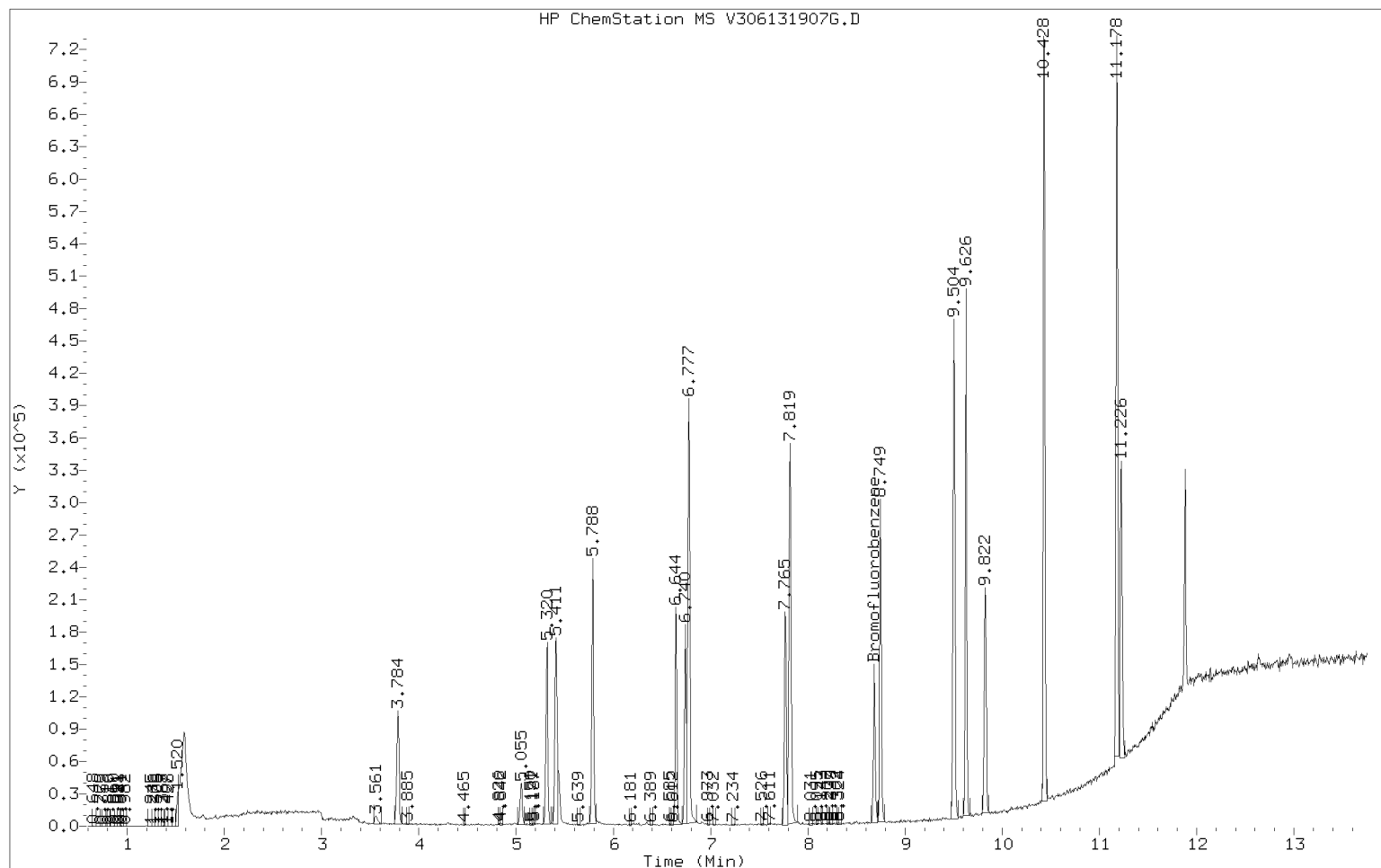
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V306131907G.D Injection Date: 06/13/19
Instrument ID: NT3 Injection Time: 13:34
Sequence: SHF0222 Lab Sample ID: SHF0222-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	33.2	PASS
75	30 - 80% of 95	49.6	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.09	PASS
173	Less than 2% of 174	0.369	PASS
174	50 - 120% of 95	89.8	PASS
175	5 - 9% of 174	6.37	PASS
176	95 - 101% of 174	98.9	PASS
177	5 - 9% of 176	5.74	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Cal Standard	SHF0222-CAL9	V306131920G.D	06/13/2019	19:39
Cal Standard	SHF0222-CALA	V306131921G.D	06/13/2019	20:06
Cal Standard	SHF0222-CALB	V306131922G.D	06/13/2019	20:32
Cal Standard	SHF0222-CALC	V306131923G.D	06/13/2019	20:59
Cal Standard	SHF0222-CALD	V306131924G.D	06/13/2019	21:26
Cal Standard	SHF0222-CALE	V306131925G.D	06/13/2019	21:53
Secondary Cal Check	SHF0222-SCV1	V306131927G.D	06/13/2019	22:46

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190613s.b/V306131907G.D
 Method Used: \20190613s.b\bfb8260.m Inst: nt3
 Injection Date: 13-JUN-2019 13:34 Operator: PKC
 Sample Info: SHF0222-TUN1 SHF0222-TUN1
 Report Date: 06/19/2019 10:37



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	33.25
75	30.00 - 60.00% of mass 95	49.58
96	5.00 - 9.00% of mass 95	7.09
173	Less than 2.00% of mass 174	0.33 (0.37)
174	50.00 - 100.00% of mass 95	89.78
175	5.00 - 9.00% of mass 174	5.72 (6.37)
176	95.00 - 101.00% of mass 174	88.79 (98.90)
177	5.00 - 9.00% of mass 176	5.09 (5.74)

Data File: V306131907G.D

Spectrum: Avg. Scans 1438-1440 (8.69), Background Scan 1432

Location of Maximum: 95.00

Number of points: 64

m/z	Y	m/z	Y	m/z	Y	m/z	Y
41.00	204	64.00	132	88.00	1038	141.00	389
42.00	63	67.00	150	91.00	56	143.00	373
44.00	76	68.00	2563	92.00	724	144.00	68
45.00	418	69.00	2633	93.00	1034	159.00	54
47.00	655	70.00	224	94.00	2856	172.00	120
48.00	333	72.00	137	95.00	25056	173.00	83
49.00	1892	73.00	1312	96.00	1776	174.00	22496
50.00	8331	74.00	4189	103.00	176	175.00	1432
51.00	2607	75.00	12424	104.00	54	176.00	22248
55.00	259	76.00	1126	106.00	51	177.00	1276
56.00	551	77.00	319	116.00	81	181.00	76
57.00	953	78.00	176	117.00	234	209.00	52
59.00	71	79.00	676	118.00	51	215.00	50
60.00	306	80.00	196	119.00	129		
61.00	1545	81.00	727	128.00	70		
62.00	1641	82.00	162	130.00	77		
63.00	1202	87.00	1003	133.00	157		

Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131907G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 13:34

ARI ID: SHF0222-TUN1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

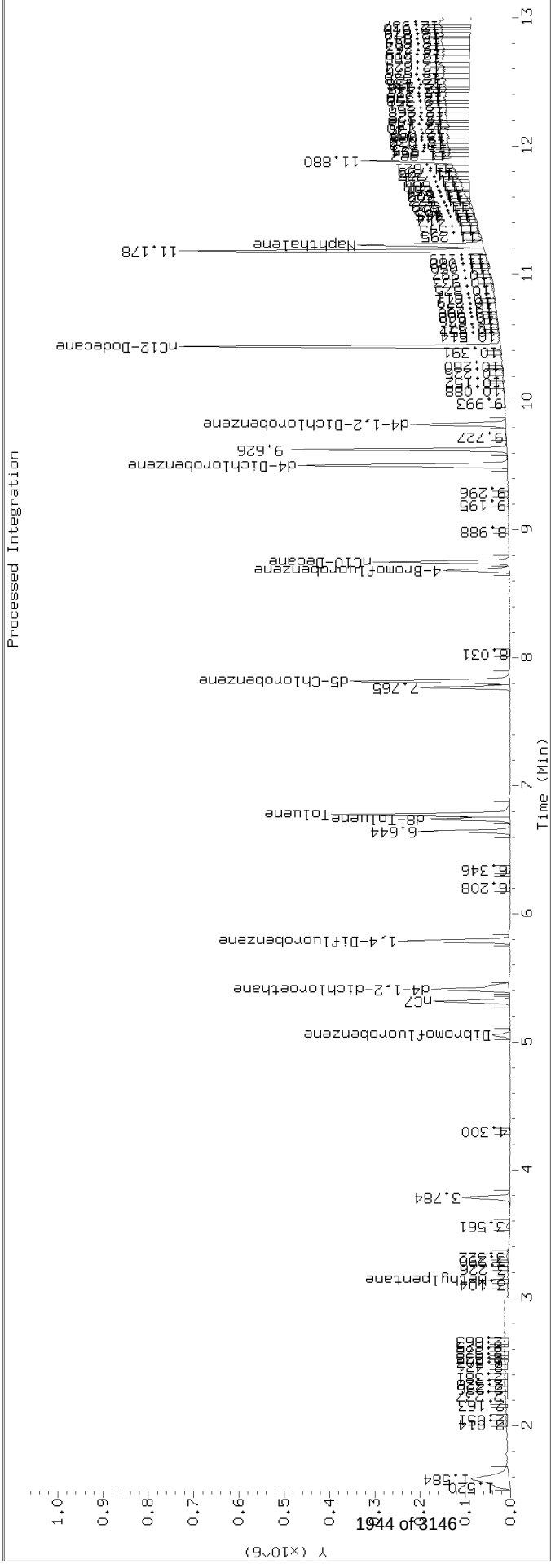
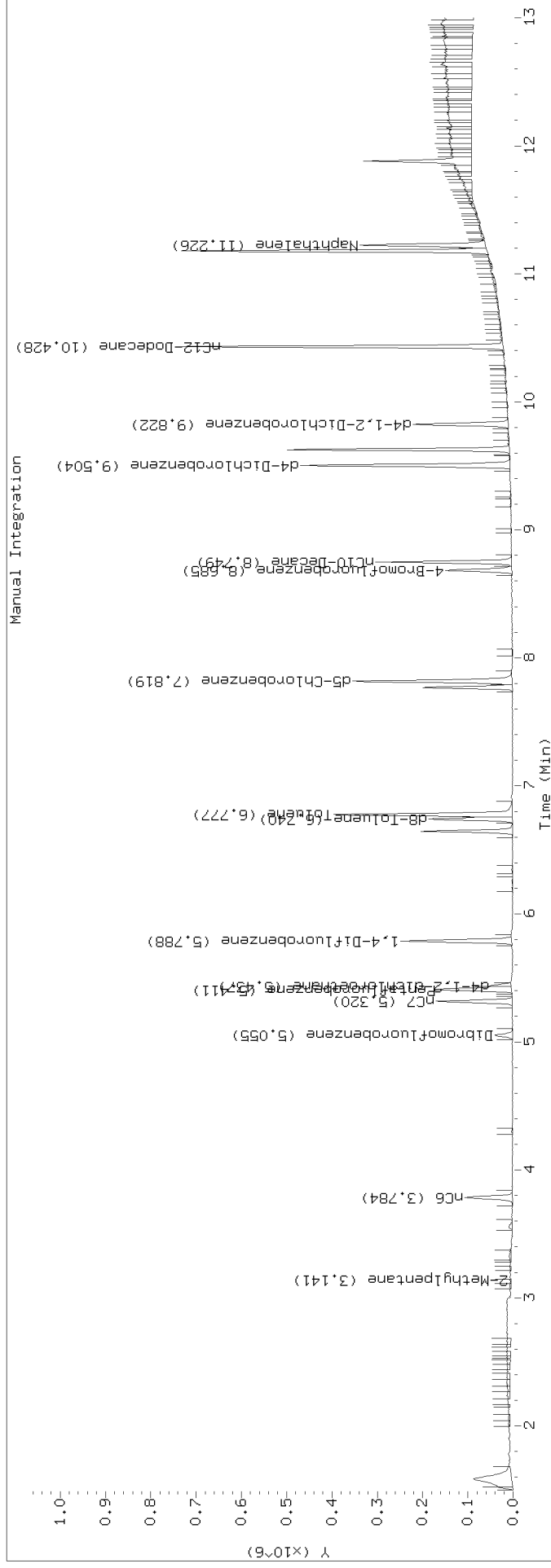
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	2700940	0.173
8015C 2MP-TMB (3.04 to 9.49)	30509602	1970394	0.065 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	1559760	0.076 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	3987761	0.238
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	3220203	0.138 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.819	523595	d5-Chlorobenzene
6.740	249450	d8-Toluene
9.504	645658	d4-Dichlorobenzene
8.685	212152	4-Bromofluorobenzene
9.822	305824	d4-1,2-Dichlorobenzene





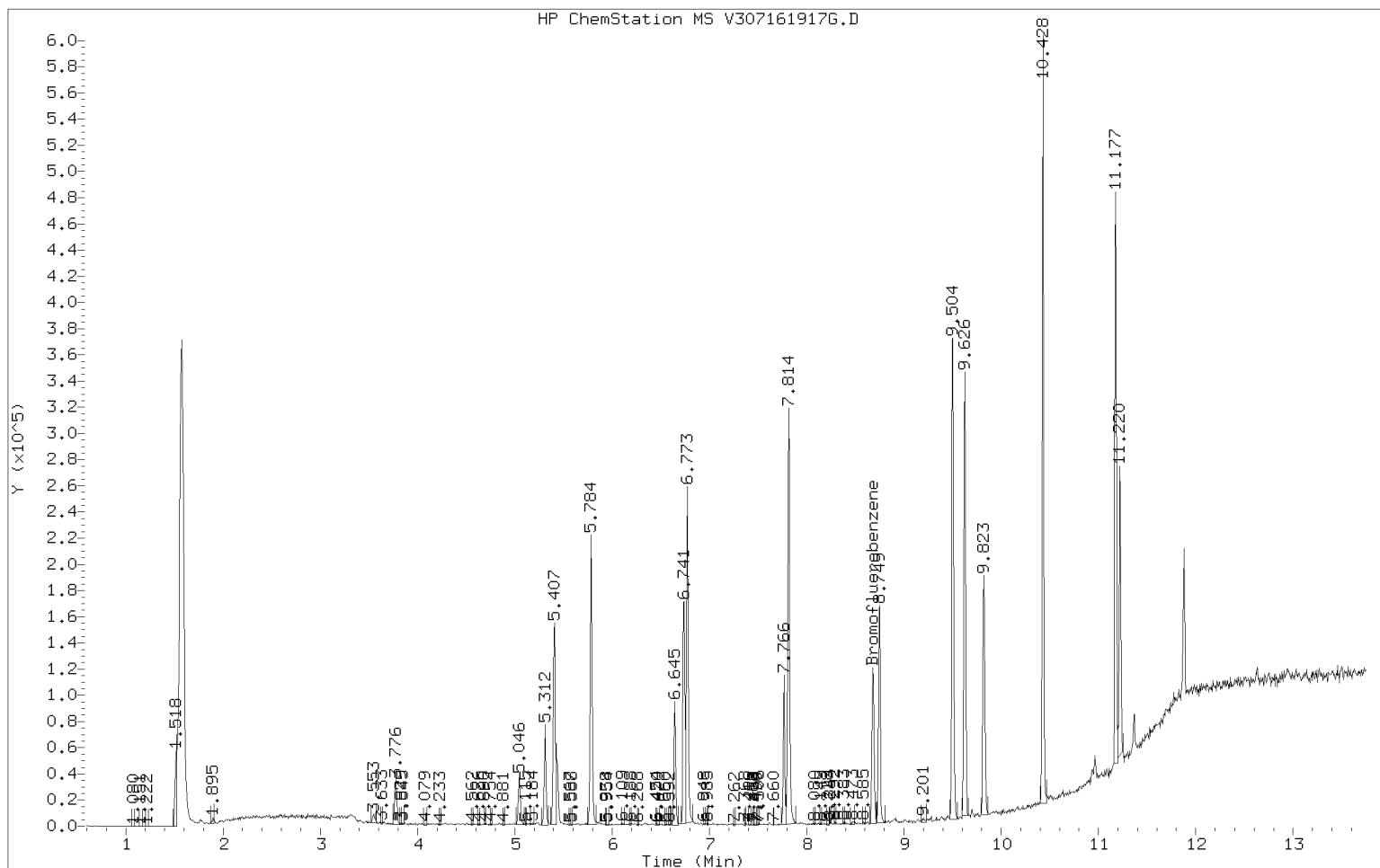
MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V307161917G.D Injection Date: 07/16/19
Instrument ID: NT3 Injection Time: 15:54
Sequence: SHG0220 Lab Sample ID: SHG0220-TUN1

m/z	ION ABUNDANCE CRITERIA			% RELATIVE ABUNDANCE		
50	15 - 40% of 95			34.4		PASS
75	30 - 80% of 95			54.4		PASS
95	Base peak, 100% relative abundance			100		PASS
96	5 - 9% of 95			8.29		PASS
173	Less than 2% of 174			1.43		PASS
174	50 - 120% of 95			70.2		PASS
175	5 - 9% of 174			6.03		PASS
176	95 - 101% of 174			95.2		PASS
177	5 - 9% of 176			6.7		PASS
	Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	
	MS Tune	SHG0220-TUN1	V307161917G.D	07/16/2019	15:54	

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190716y.b/V307161917G.D
 Method Used: \20190716y.b\bfb8260.m Inst: nt3
 Injection Date: 16-JUL-2019 15:54 Operator: PKC
 Sample Info: SHG0220-TUN1 SHG0220-TUN1
 Report Date: 07/17/2019 11:34



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	34.40
75	30.00 - 60.00% of mass 95	54.38
96	5.00 - 9.00% of mass 95	8.29
173	Less than 2.00% of mass 174	1.00 (1.43)
174	50.00 - 100.00% of mass 95	70.20
175	5.00 - 9.00% of mass 174	4.23 (6.03)
176	95.00 - 101.00% of mass 174	66.80 (95.16)
177	5.00 - 9.00% of mass 176	4.48 (6.70)

Data File: V307161917G.D

Spectrum: Avg. Scans 1438-1440 (8.68), Background Scan 1432

Location of Maximum: 95.00

Number of points: 68

m/z	Y	m/z	Y	m/z	Y	m/z	Y
42.00	300	64.00	163	89.00	62	143.00	370
43.00	247	65.00	112	91.00	60	153.00	52
44.00	285	67.00	143	92.00	617	172.00	163
45.00	405	68.00	2396	93.00	1070	173.00	216
46.00	66	69.00	2363	94.00	2609	174.00	15090
47.00	670	70.00	312	95.00	21496	175.00	910
48.00	259	72.00	126	96.00	1781	176.00	14360
49.00	1946	73.00	1167	104.00	84	177.00	962
50.00	7394	74.00	3749	115.00	50	191.00	70
51.00	2355	75.00	11689	116.00	119	207.00	100
53.00	59	76.00	1029	117.00	178	208.00	52
55.00	191	77.00	230	118.00	70	209.00	52
56.00	495	78.00	134	119.00	89	211.00	57
57.00	900	79.00	762	124.00	64	233.00	56
60.00	302	80.00	228	133.00	63		
61.00	1661	81.00	762	135.00	80		
62.00	1094	87.00	1154	137.00	80		
63.00	870	88.00	810	141.00	221		



**MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
NWTPHg**

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V207181906G.D Injection Date: 07/18/19
Instrument ID: NT2 Injection Time: 11:55
Sequence: SHG0268 Lab Sample ID: SHG0268-TUN1

m/z	ION ABUNDANCE CRITERIA			% RELATIVE ABUNDANCE		
50	15 - 40% of 95			17.6		PASS
75	30 - 80% of 95			47.4		PASS
95	Base peak, 100% relative abundance			100		PASS
96	5 - 9% of 95			6.86		PASS
173	Less than 2% of 174			0.437		PASS
174	50 - 120% of 95			74.8		PASS
175	5 - 9% of 174			7.09		PASS
176	95 - 101% of 174			96.3		PASS
177	5 - 9% of 176			6.57		PASS
	Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	
	MS Tune	SHG0268-TUN1	V207181906G.D	07/18/2019	11:55	



MASS SPECTROMETER
INSTRUMENT PERFORMANCE CHECK
NWTPHg

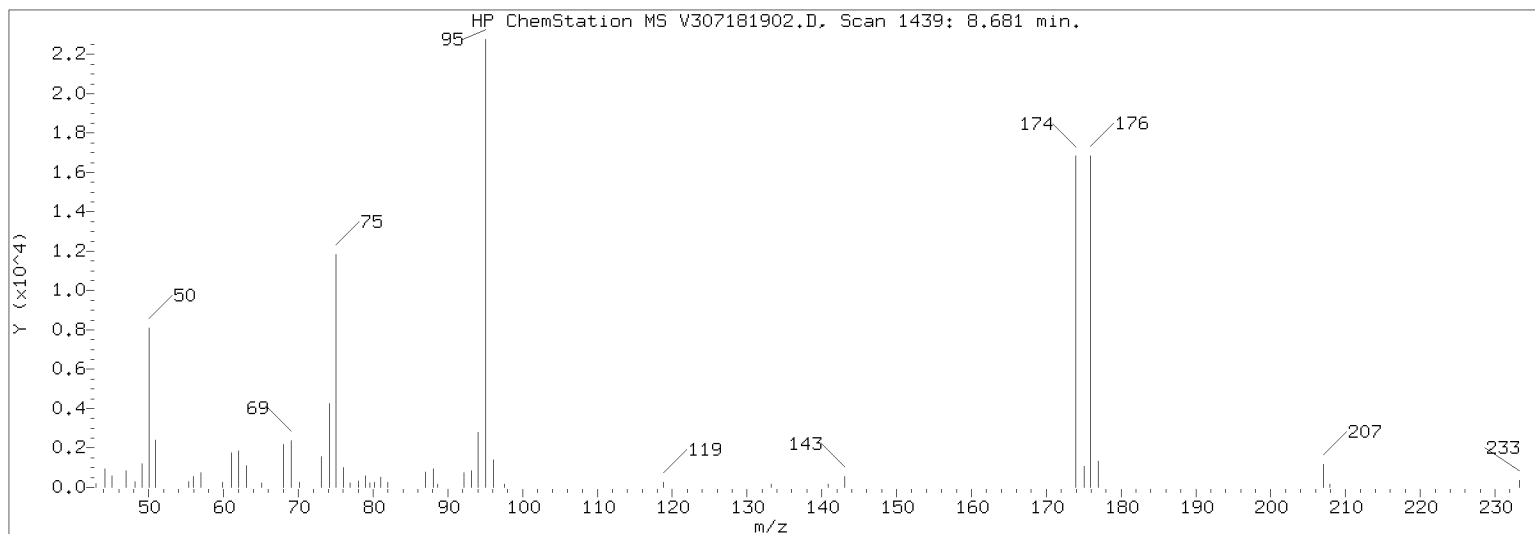
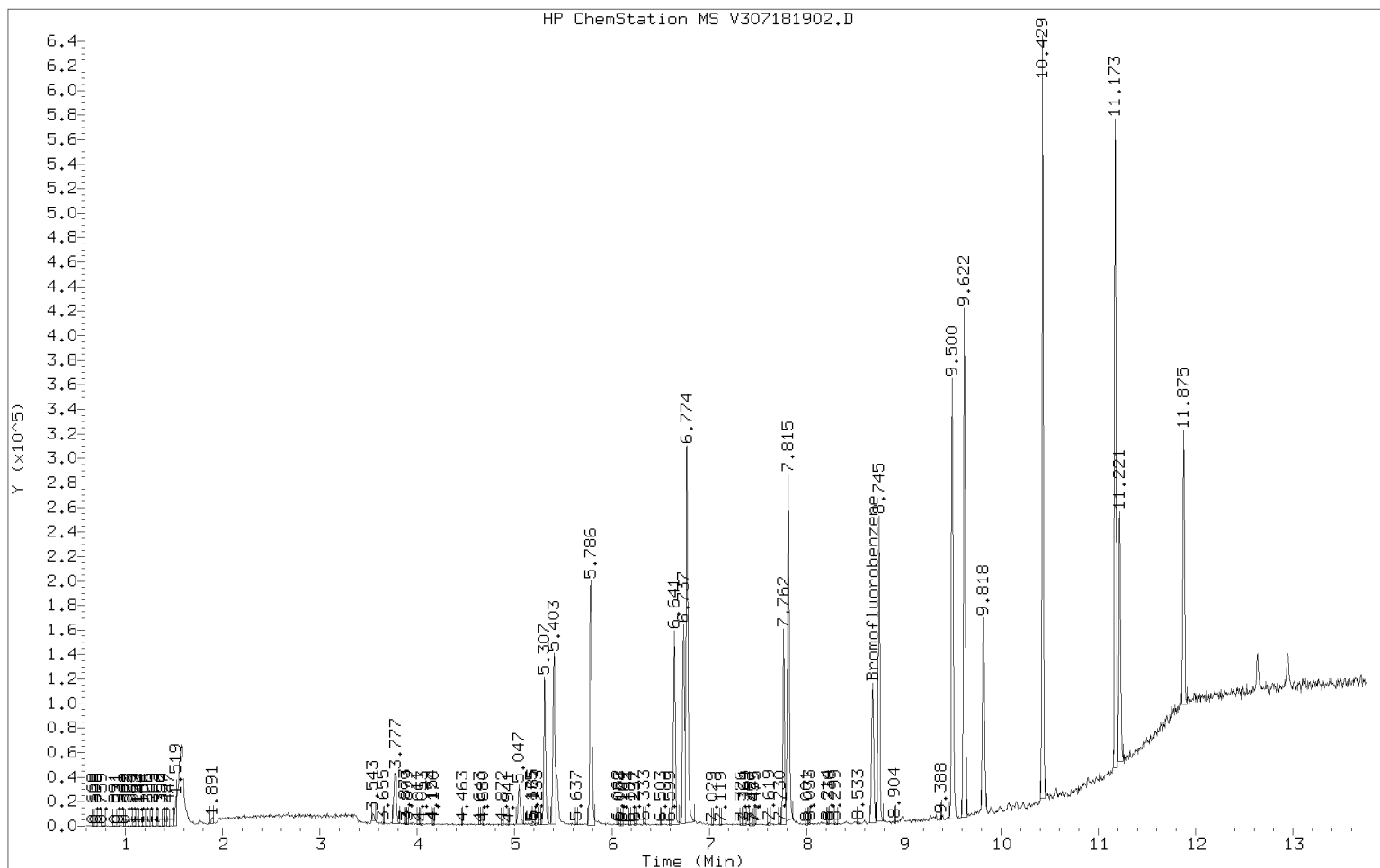
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V307181902.D Injection Date: 07/18/19
Instrument ID: NT3 Injection Time: 09:31
Sequence: SHG0273 Lab Sample ID: SHG0273-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	33.2	PASS
75	30 - 80% of 95	50.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	5.9	PASS
173	Less than 2% of 174	0.929	PASS
174	50 - 120% of 95	72.1	PASS
175	5 - 9% of 174	6.28	PASS
176	95 - 101% of 174	99.8	PASS
177	5 - 9% of 176	5.98	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHG0273-TUN1	V307181902.D	07/18/2019	9:31
LCS	BHG0455-BS1	V307181905LCSA.D	07/18/2019	11:02
LCS	BHG0439-BS2	V307181905LCS.D	07/18/2019	11:02
Initial Cal Check	SHG0273-ICV1	V307181905.D	07/18/2019	11:02
LCS Dup	BHG0455-BSD1	V307181906A.D	07/18/2019	11:29
LCS Dup	BHG0439-BSD2	V307181906.D	07/18/2019	11:29
Blank	BHG0455-BLK1	V307181909A.D	07/18/2019	12:49
Blank	BHG0439-BLK2	V307181909.D	07/18/2019	12:49
TB-SO-190711	19G0163-16	V307181911.D	07/18/2019	13:42
SO-01-190711	19G0163-02	V307181919.D	07/18/2019	17:18
Matrix Spike	BHG0455-MS1	V307181920.D	07/18/2019	17:45
Matrix Spike Dup	BHG0455-MSD1	V307181921.D	07/18/2019	18:11
SO-02-190711	19G0163-03	V307181922.D	07/18/2019	18:38
SO-03-190711	19G0163-04	V307181923.D	07/18/2019	19:04
SO-04-190711	19G0163-05	V307181924.D	07/18/2019	19:31
SO-05-190711	19G0163-06	V307181925.D	07/18/2019	19:57
SO-06-190711	19G0163-07	V307181926.D	07/18/2019	20:24
SO-07-190711	19G0163-08	V307181927.D	07/18/2019	20:51
SO-08-190711	19G0163-09	V307181928.D	07/18/2019	21:17
Calibration Check	SHG0273-CCV1	V307181929.D	07/18/2019	21:44

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190718s.b/V307181902.D
 Method Used: \20190718s.b\bfb8260.m Inst: nt3
 Injection Date: 18-JUL-2019 09:31 Operator: PKC
 Sample Info: SHG0273-TUN1 SHG0273-TUN1
 Report Date: 07/19/2019 12:48



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	33.23
75	30.00 - 60.00% of mass 95	50.52
96	5.00 - 9.00% of mass 95	5.90
173	Less than 2.00% of mass 174	0.67 (0.93)
174	50.00 - 100.00% of mass 95	72.14
175	5.00 - 9.00% of mass 174	4.53 (6.28)
176	95.00 - 101.00% of mass 174	72.02 (99.83)
177	5.00 - 9.00% of mass 176	4.31 (5.98)

Data File: V307181902.D

Spectrum: Avg. Scans 1438-1440 (8.68), Background Scan 1432

Location of Maximum: 95.00

Number of points: 60

m/z	Y	m/z	Y	m/z	Y	m/z	Y
43.00	43	64.00	54	87.00	935	141.00	135
44.00	290	65.00	75	88.00	815	143.00	338
45.00	372	68.00	2015	89.00	63	173.00	139
47.00	613	69.00	2156	92.00	727	174.00	14959
48.00	374	70.00	300	93.00	727	175.00	940
49.00	1141	72.00	77	94.00	2475	176.00	14934
50.00	6891	73.00	912	95.00	20736	177.00	893
51.00	2140	74.00	3894	96.00	1223	207.00	267
55.00	235	75.00	10475	97.00	51	208.00	55
56.00	572	76.00	996	106.00	80	211.00	72
57.00	906	77.00	222	116.00	62	233.00	121
59.00	51	78.00	219	117.00	184	260.00	54
60.00	409	79.00	616	118.00	62		
61.00	1375	80.00	181	119.00	242		
62.00	1320	81.00	689	131.00	52		
63.00	996	82.00	183	137.00	131		

Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181902.D
Method: \20190718g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 18-JUL-2019 09:31

ARI ID: SHG0273-TUN1
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	2290528	0.147
8015C 2MP-TMB (3.04 to 9.49)	30509602	1524757	0.050
AK101 nC6-nC10 (3.67 to 8.65)	20565293	1150867	0.056
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	3285006	0.196
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	2669511	0.115

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	435249	d5-Chlorobenzene
6.737	224380	d8-Toluene
9.500	503810	d4-Dichlorobenzene
8.681	166814	4-Bromofluorobenzene
9.818	235283	d4-1,2-Dichlorobenzene



Analytical Resources, Incorporated
Analytical Chemists and Consultants

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK NWTPHg

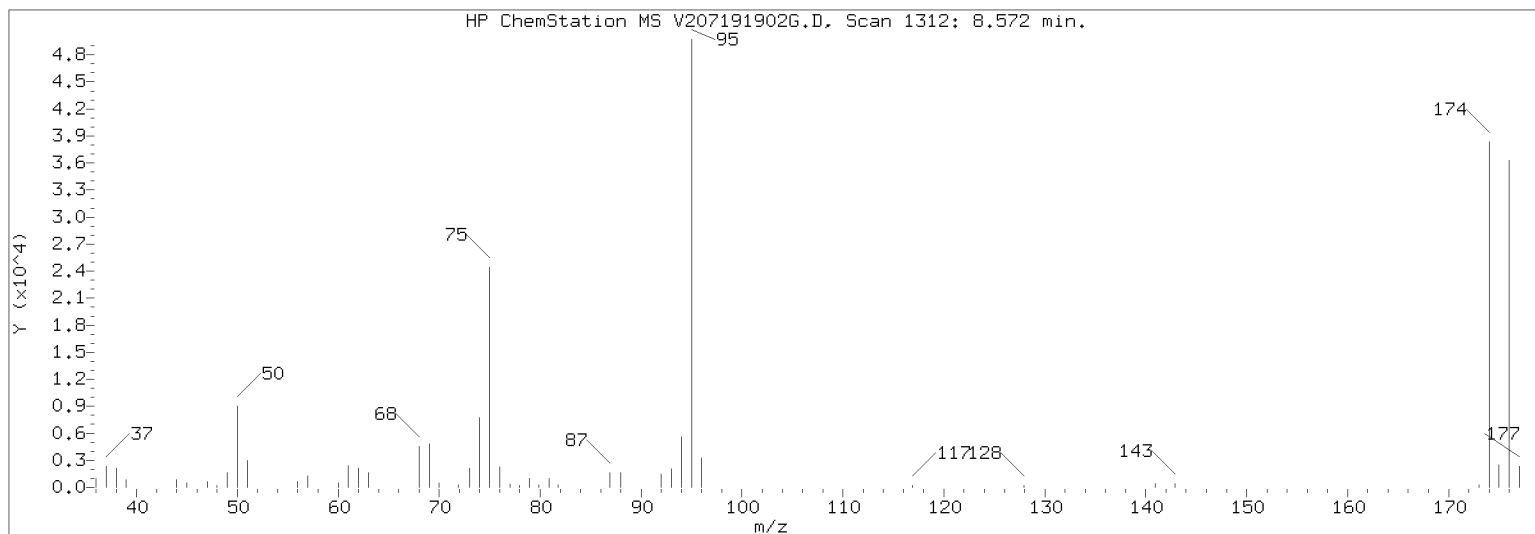
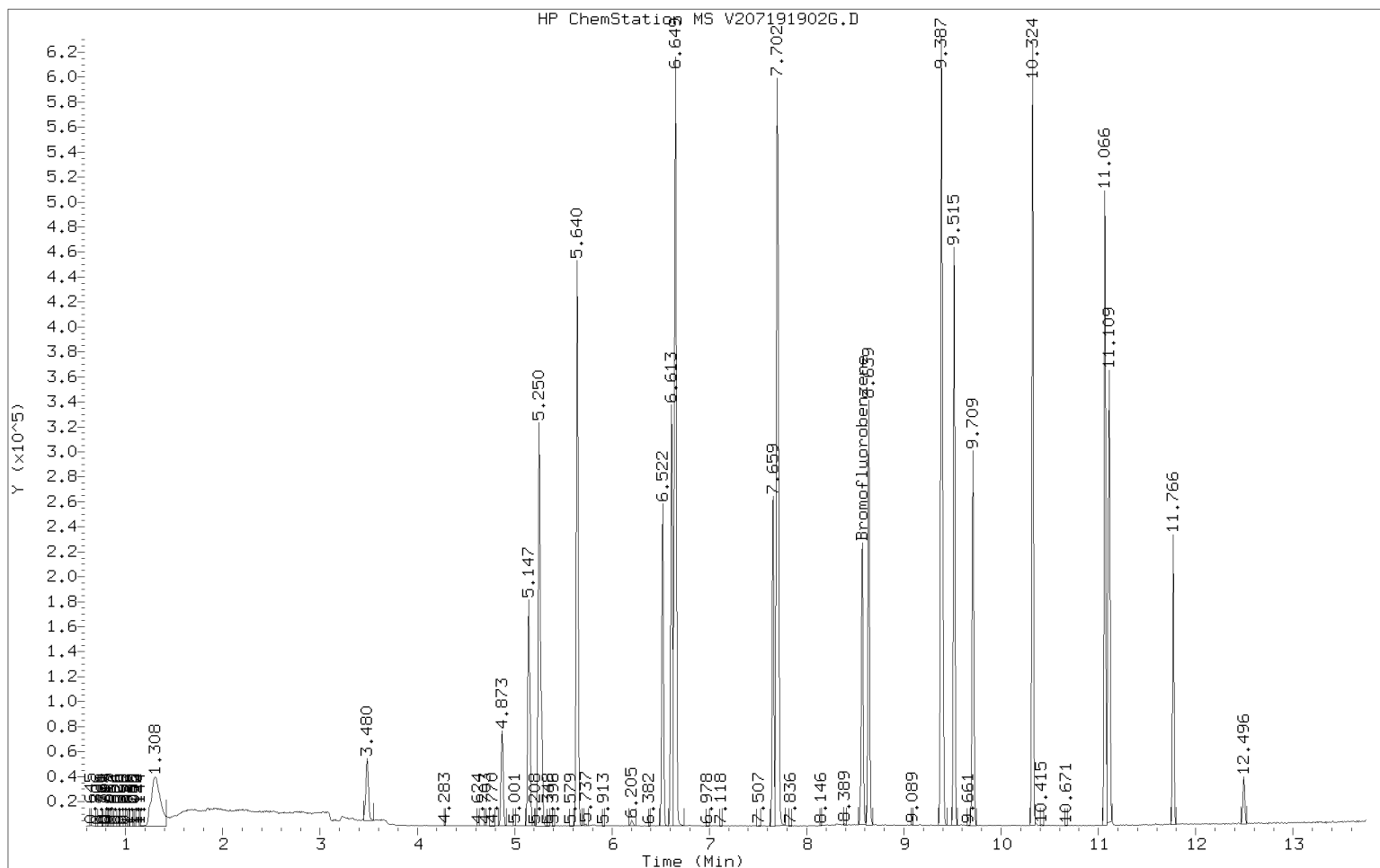
Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Lab File ID: V207191902G.D Injection Date: 07/19/19
Instrument ID: NT2 Injection Time: 06:42
Sequence: SHG0276 Lab Sample ID: SHG0276-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	18.6	PASS
75	30 - 80% of 95	50	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.56	PASS
173	Less than 2% of 174	0.281	PASS
174	50 - 120% of 95	75.2	PASS
175	5 - 9% of 174	6.73	PASS
176	95 - 101% of 174	96.8	PASS
177	5 - 9% of 176	6.38	PASS

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
MS Tune	SHG0276-TUN1	V207191902G.D	07/19/2019	6:42
Initial Cal Check	SHG0276-ICV1	V207191903G.D	07/19/2019	7:15
LCS	BHG0474-BS1	V207191903GLCS.D	07/19/2019	7:15
LCS Dup	BHG0474-BSD1	V207191905G.D	07/19/2019	7:56
Blank	BHG0474-BLK1	V207191907G.D	07/19/2019	8:38
SO-09-190711	19G0163-10	V207191914G.D	07/19/2019	11:09
SO-10-190711	19G0163-11	V207191915G.D	07/19/2019	11:30
SO-10-190711D	19G0163-12	V207191916G.D	07/19/2019	11:51
SO-11-190711	19G0163-13	V207191917G.D	07/19/2019	12:12
SO-12-190711	19G0163-14	V207191918G.D	07/19/2019	12:33
SO-13-190711	19G0163-15	V207191919G.D	07/19/2019	12:54
ZZZZZ	19G0232-01	V207191920G.D	07/19/2019	13:15
Matrix Spike	BHG0474-MS1	V207191921G.D	07/19/2019	13:36
Matrix Spike Dup	BHG0474-MSD1	V207191922G.D	07/19/2019	13:57
Calibration Check	SHG0276-CCV1	V207191923G.D	07/19/2019	14:18

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190719s.b/V207191902G.D
 Method Used: \20190719s.b\bfb8260.m Inst: nt2
 Injection Date: 19-JUL-2019 06:42 Operator: LH
 Sample Info: SHG0276-TUN1 SHG0276-TUN1
 Report Date: 07/22/2019 11:28



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.59
75	30.00 - 60.00% of mass 95	50.04
96	5.00 - 9.00% of mass 95	6.56
173	Less than 2.00% of mass 174	0.21 (0.28)
174	50.00 - 100.00% of mass 95	75.16
175	5.00 - 9.00% of mass 174	5.06 (6.73)
176	95.00 - 101.00% of mass 174	72.77 (96.83)
177	5.00 - 9.00% of mass 176	4.64 (6.38)

Data File: V207191902G.D

Spectrum: Avg. Scans 1311-1313 (8.57), Background Scan 1305

Location of Maximum: 95.00

Number of points: 52

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	396	60.00	385	78.00	62	117.00	205
37.00	2049	61.00	1870	79.00	857	119.00	73
38.00	1724	62.00	1844	80.00	284	128.00	131
39.00	711	63.00	1353	81.00	915	141.00	341
44.00	289	64.00	101	82.00	162	143.00	324
45.00	406	68.00	4188	87.00	1473	173.00	90
47.00	511	69.00	4186	88.00	1478	174.00	32000
48.00	261	70.00	414	92.00	1205	175.00	2154
49.00	1587	72.00	194	93.00	1772	176.00	30984
50.00	7915	73.00	1787	94.00	4823	177.00	1977
51.00	2450	74.00	6821	95.00	42576		
55.00	72	75.00	21304	96.00	2791		
56.00	572	76.00	1891	104.00	77		
57.00	1070	77.00	190	106.00	60		

Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191902G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 06:42

ARI ID: SHG0276-TUN1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	2727105	0.114
8015C 2MP-TMB (3.04 to 9.27)	33333333	2183122	0.065
AK101 nC6-nC10 (3.38 to 8.54)	31889318	1796152	0.056
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	3746690	0.149
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	3301621	0.093

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

8.572	299355	4-Bromofluorobenzene
6.613	443632	d8-Toluene
7.702	791648	d5-Chlorobenzene
9.387	829740	d4-Dichlorobenzene
9.709	381614	d4-1,2-Dichlorobenzene



INITIAL CALIBRATION DATA NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CC00079 Instrument: NT2
Calibration Date: 03/28/2019 10:07 Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Toluene-d8	5	1.199415	5	1.209117	5	1.200819	5	1.205616	5	1.206108	5	1.211815
4-Bromofluorobenzene	5	0.3545889	5	0.3563009	5	0.3541602	5	0.3548004	5	0.3589909	5	0.3599892



INITIAL CALIBRATION DATA NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CC00079 Instrument: NT2
Calibration Date: 03/28/2019 10:07 Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)					100	20841.01	250	23026.25	500	25038.78	1000	28016.71
Toluene-d8	5	1.215778	5	1.225008								
4-Bromofluorobenzene	5	0.3684644	5	0.3720251								



NWTPHg

SDG: 19G0163

Project: King County Closed Landfills - Vashon

Instrument: NT2

Column (1): RTX-VMS

	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
Compound		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)	2500	28319.17	5000	25400.42								



INITIAL CALIBRATION DATA

NWTPHg

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CC00079	Instrument:	NT2
Calibration Date:	03/28/2019 10:07	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Gasoline Range Organics (Tol-Nap)	25107.06	11.5			RSD (15)	
Toluene-d8	1.20921	0.7			RSD (15)	
4-Bromofluorobenzene	0.359915	1.9			RSD (15)	



ANALYSIS SEQUENCE

SHC0426

Instrument: NT2 Element Column ID: 1306512 RTXv
Calibration ID: CC00079 Tune File: bfb.u
EM Voltage: 1812

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHC0426-TUN1	MS Tune	QC		1	H002159	H001679	
SHC0426-CAL1	8260C 0.2	QC		2	H002992	H001679	
SHC0426-CAL2	8260C 0.5	QC		3	H002993	H001679	
SHC0426-CAL3	8260C 1	QC		4	H002994	H001679	
SHC0426-CAL4	8260C 2	QC		5	H002995	H001679	
SHC0426-CAL5	8260C 10	QC		6	H002996	H001679	
SHC0426-CAL6	8260C 20	QC		7	H002997	H001679	
SHC0426-CAL7	8260C 40	QC		8	H003000	H001679	
SHC0426-CAL8	8260C 80	QC		9	H003001	H001679	
SHC0426-CALE	Cal Standard	QC		10	H003084	H001679	
SHC0426-CALD	Cal Standard	QC		11	H003083	H001679	
SHC0426-CALC	Cal Standard	QC		12	H003082	H001679	
SHC0426-CALB	Cal Standard	QC		13	H003081	H001679	
SHC0426-CALA	Cal Standard	QC		14	H003080	H001679	
SHC0426-CAL9	Cal Standard	QC		15	H003079	H001679	
SHC0426-ICB1	Initial Cal Blank	QC		16		H001679	
SHC0426-SCV1	8260C SCV	QC		17	H003085	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190327.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 0626	V203271901.D	RINSE				1
2 0706	V203271902.D	SHCO-TUN1				1
3 0744	V203271903.D	SHCO-TUN1				1
4 0820	V203271904.D	SHCO-TUN1				1
5 0856	V203271905.D	SHC0416-TUN1				1
6 0929	V203271906.D	SHC0416-CAL1				1 5.25 249235 5.64 452819 7.71 409195 9.39 186697
7 0950	V203271907.D	SHC0416-CAL2				1 5.26 203569 5.65 367986 7.71 333078 9.40 151179
8 1010	V203271908.D	SHC0416-CAL3				1 5.26 195434 5.64 357183 7.71 319539 9.39 145927
9 1030	V203271909.D	SHC0416-CAL4				1 5.26 199196 5.65 366858 7.71 329870 9.39 152480
10 1050	V203271910.D	SHC0416-CAL5				1 5.26 199603 5.65 364397 7.71 328727 9.39 151591
11 1111	V203271911.D	SHC0416-CAL6				1 5.26 193736 5.65 356419 7.71 323593 9.39 150676
12 1131	V203271912.D	SHC0416-CAL7				1 5.26 198883 5.65 360824 7.71 328162 9.40 152756
13 1151	V203271913.D	SHC0416-CAL8				1 5.26 199230 5.65 364969 7.71 326064 9.40 149692
14 1211	V203271914.D	SHC0416-ICB1				1 5.26 198908 5.65 364658 7.71 328421 9.39 150843
15 1232	V203271915.D	SHC0416-SCV1				1 5.26 203632 5.65 373064 7.71 332782 9.39 154485
16 1252	V203271916.D	SHC0416-SCV2				1 5.26 197027 5.65 358554 7.71 326951 9.39 152709
17 1312	V203271917.D	SHCO-CALC				1 5.26 197788 5.65 365217 7.71 319791 9.39 151602
18 1332	V203271918.D	SHCO-CALD				1 5.26 204085 5.65 366187 7.71 327839 9.39 153247
19 1352	V203271919.D	SHCO-CALC				1 0.00 0 0.00 0 0.00 0 0.00 0
20 1413	V203271920.D	SHCO-CALB				1 0.00 0 0.00 0 0.00 0 0.00 0

21	1433	V203271921.D	SHCO-CALA	1		0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
22	1453	V203271922.D	SHCO-CAL9	1		0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
23	1513	V203271923.D	RINSE	1		0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
24	1534	V203271924.D	SHCO-SCV1	1		0.00	0	0.00	0	0.00	0	0.00	0	0.00	0

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190327g.b

Instrument: nt2.i Date: 27-MAR-2019

Time	Filename	LabID	DF	Manually Integrated Compounds			
0856	V203271905G.D	SHC0416-TUN1	1	NO	MANUAL INTEGRATION		
1312	V203271917G.D	SHC0426-CALC	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene, nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, d4-1,2-dichloroethane, d8-Toluene, d4-Dichlorobenzene, 1,4-Difluorobenzene, d4-1,2-Dichlorobenzene,		
1332	V203271918G.D	SHC0426-CALD	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene, nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d4-1,2-dichloroethane, d8-Toluene, d4-Dichlorobenzene, Dibromofluorobenzene, 1,4-Difluorobenzene, d4-1,2-Dichlorobenzene,		
1352	V203271919G.D	SHC0426-CALC	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene, nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, Dibromofluorobenzene, 1,4-Difluorobenzene, d4-1,2-Dichlorobenzene,		
1413	V203271920G.D	SHC0426-CALB	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene, nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, Dibromofluorobenzene, 1,4-Difluorobenzene, d4-1,2-Dichlorobenzene,		
1433	V203271921G.D	SHC0426-CALA	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene, nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, Dibromofluorobenzene, 1,4-Difluorobenzene, d4-1,2-Dichlorobenzene,		
1453	V203271922G.D	SHC0426-CAL9	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene, nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, Dibromofluorobenzene, 1,4-Difluorobenzene, d4-1,2-Dichlorobenzene,		
1513	V203271923G.D	SHC0426-ICB1	1	NO	MANUAL INTEGRATION		
1534	V203271924G.D	SHC0426-SCV1	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene, nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, Dibromofluorobenzene, 1,4-Difluorobenzene, d4-1,2-Dichlorobenzene,		

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190327s.b

Instrument: nt2.i Date: 27-MAR-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
0856	V203271905G.D	SHC0426-TUN1	1	NO MANUAL INTEGRATION
0929	V203271906G.D	SHC0426-CAL1	1	NO MANUAL INTEGRATION
0950	V203271907G.D	SHC0426-CAL2	1	NO MANUAL INTEGRATION
1010	V203271908G.D	SHC0426-CAL3	1	NO MANUAL INTEGRATION
1030	V203271909G.D	SHC0426-CAL4	1	NO MANUAL INTEGRATION
1050	V203271910G.D	SHC0426-CAL5	1	NO MANUAL INTEGRATION
1111	V203271911G.D	SHC0426-CAL6	1	NO MANUAL INTEGRATION
1131	V203271912G.D	SHC0426-CAL7	1	NO MANUAL INTEGRATION
1151	V203271913G.D	SHC0426-CAL8	1	Pentafluorobenzene,
1211	V203271914G.D	SHC0426-ICB1	1	NO MANUAL INTEGRATION
1513	V203271923G.D	SHC0426-ICB1	1	NO MANUAL INTEGRATION
1534	V203271924G.D	SHC0426-SCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 28-Mar-2019 10:19

V203271905G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271917G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271918G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271919G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271920G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271921G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271922G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271923G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271924G.D	Data Locked	lanih,	28-Mar-2019	10:19

Security Status Report

Date: 28-Mar-2019 10:20

V203271905G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271906G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271907G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271908G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271909G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271910G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271911G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271912G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271913G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271914G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271923G.D	Data Locked	lanih,	28-Mar-2019	10:20
V203271924G.D	Data Locked	lanih,	28-Mar-2019	10:20

6a
8260 GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20150930

Instrument: NT2.I

Project:

Calibration Date: 27-MAR-2019

SDG No.: 20150930

Gas Range	RF1 0.1	RF2 0.25	RF3 0.5	RF4 1.0	RF5 2.5	RF6 5	Ave RF	%RSD
WA Gas	20124942	22239023	24026907	26660216	26879121	24067086	23999549	10.8
AK Gas	30929978	30224499	31302680	34012137	33912542	30954071	31889318	5.2
NW Gas	20841011	23026251	25038783	28016709	28319179	25400418	25107058	11.5
8015Gas	40886187	39708815	40629525	44031875	43487631	39601265	41390883	4.6
8015mod	31595879	33219498	35317108	38907279	38900763	34861835	35467060	8.4

<- Indicates %RSD outside limits
Surrogate areas are not included in RF calculation.
Surrogate calibration is from BETX curve files.

Quant Ranges : WA Gas Toluene - nC12
 AK Gas nC6 - nC10
 NW Gas Toluene - Naphthalene
 8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene
 8015 mod nC7 - nC12

Gas Cal. Files	Analysis Time
V203271922G.D	27-MAR-2019 14:53
V203271921G.D	27-MAR-2019 14:33
V203271920G.D	27-MAR-2019 14:13
V203271919G.D	27-MAR-2019 13:52
V203271918G.D	27-MAR-2019 13:32
V203271917G.D	27-MAR-2019 13:12

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAR-2019 09:29
 End Cal Date : 27-MAR-2019 11:51
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt2.i\20190327.b\82600327919.m
 Last Edit : 27-Mar-2019 13:02 lanih

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
81 1,2-Dibromo 3-Chloropropane	++++ 79673	501 162652	1386	2869	17383	37965	LINR	0.000e+000	0.13416			0.99876
83 Hexachloro 1,3-Butadiene	++++ 0.25499	0.17278 0.23934	0.25054	0.22616	0.25509	0.24592	AVRG		0.23497			12.44709
84 1,2,4-Trichlorobenzene	++++ 0.95053	0.66464 0.89330	0.90353	0.88300	0.93263	0.94360	AVRG		0.88161			11.23764
85 Naphthalene	++++ 2.45995	1.83584 2.23466	2.30252	2.26128	2.46100	2.49377	AVRG		2.29272			9.91260
86 1,2,3-Trichlorobenzene	++++ 0.85752	0.63210 0.80936	0.84296	0.79315	0.84078	0.84897	AVRG		0.80355			9.83225
27 Dibromofluoromethane	0.49341 0.51250	0.49626 0.52471	0.49929	0.50524	0.50622	0.51019	AVRG		0.50598			1.98898
d4-1,2-Dichloroethane	0.53338 0.55695	0.55089 0.56178	0.54333	0.57030	0.55288	0.55509	AVRG		0.55308			2.02622

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-MAR-2019 09:29
 End Cal Date : 27-MAR-2019 11:51
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt2.i\20190327.b\82600327919.m
 Last Edit : 27-Mar-2019 13:02 lanih

Compound	0.200000		0.500000		1.0000		2.0000		10.0000		20.0000		Curve		b		Coefficients		m2		%RSD	
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10	Level 11	Level 12	Level 13	Level 14	Level 15	Level 16	Level 17	Level 18	Level 19	Level 20	Level 21	Level 22
43 d8-Toluene	1.19942	1.20912	1.20082	1.20562	1.20611	1.21182	1.21578	1.22501	1.23424	1.24347	1.25270	1.26193	1.27116	1.28039	1.28962	1.29885	1.30808	1.31731	1.32654	1.33577	1.34500	1.35423
	0.35459	0.35630	0.35416	0.35480	0.35899	0.35999	0.36846	0.37203	0.37560	0.37917	0.38274	0.38631	0.38988	0.39345	0.39702	0.40059	0.40416	0.40773	0.41130	0.41487	0.41844	0.42201
62 4-Bromofluorobenzene	0.35459	0.35630	0.35416	0.35480	0.35899	0.35999	0.36846	0.37203	0.37560	0.37917	0.38274	0.38631	0.38988	0.39345	0.39702	0.40059	0.40416	0.40773	0.41130	0.41487	0.41844	0.42201
	0.36846	0.37203	0.37560	0.37917	0.38274	0.38631	0.38988	0.39345	0.39702	0.40059	0.40416	0.40773	0.41130	0.41487	0.41844	0.42201	0.42558	0.42915	0.43272	0.43629	0.43986	0.44343
79 d4-1,2-Dichlorobenzene	0.91717	0.94077	0.93994	0.93616	0.94883	0.94631	0.95899	0.95647	0.96915	0.96663	0.97931	0.97679	0.98947	0.98695	0.99963	0.99711	1.00979	1.00727	1.01995	1.01743	1.03011	1.02759
	0.93024	0.91523	0.93994	0.93616	0.94883	0.94631	0.95899	0.95647	0.96915	0.96663	0.97931	0.97679	0.98947	0.98695	0.99963	0.99711	1.00979	1.00727	1.01995	1.01743	1.03011	1.02759

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327g.b\GA032719.m
Batch File: \\target\share\chem1\nt2.i\20190327g.b
Inst ID: nt2.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10	RT11	RT12	RT13	RT14	RT15	RT16	RT17	RT18	RT19	RT20	RT21	RT22	RT23	RT24	RT25	RT26	RT27	RT28	RT29	RT30	RT31	RT32	RT33	RT34	RT35	RT36	RT37	RT38	RT39	RT40	RT41	RT42	RT43	RT44	RT45	RT46	RT47	RT48	RT49	RT50	RT51	RT52	RT53	RT54	RT55	RT56	RT57	RT58	RT59	RT60	RT61	RT62	RT63	RT64	RT65	RT66	RT67	RT68	RT69	RT70	RT71	RT72	RT73	RT74	RT75	RT76	RT77	RT78	RT79	RT80	RT81	RT82	RT83	RT84	RT85	RT86	RT87	RT88	RT89	RT90	RT91	RT92	RT93	RT94	RT95	RT96	RT97	RT98	RT99	RT100	RT101	RT102	RT103	RT104	RT105	RT106	RT107	RT108	RT109	RT110	RT111	RT112	RT113	RT114	RT115	RT116	RT117	RT118	RT119	RT120	RT121	RT122	RT123	RT124	RT125	RT126	RT127	RT128	RT129	RT130	RT131	RT132	RT133	RT134	RT135	RT136	RT137	RT138	RT139	RT140	RT141	RT142	RT143	RT144	RT145	RT146	RT147	RT148	RT149	RT150	RT151	RT152	RT153	RT154	RT155	RT156	RT157	RT158	RT159	RT160	RT161	RT162	RT163	RT164	RT165	RT166	RT167	RT168	RT169	RT170	RT171	RT172	RT173	RT174	RT175	RT176	RT177	RT178	RT179	RT180	RT181	RT182	RT183	RT184	RT185	RT186	RT187	RT188	RT189	RT190	RT191	RT192	RT193	RT194	RT195	RT196	RT197	RT198	RT199	RT200	RT201	RT202	RT203	RT204	RT205	RT206	RT207	RT208	RT209	RT210	RT211	RT212	RT213	RT214	RT215	RT216	RT217	RT218	RT219	RT220	RT221	RT222	RT223	RT224	RT225	RT226	RT227	RT228	RT229	RT230	RT231	RT232	RT233	RT234	RT235	RT236	RT237	RT238	RT239	RT240	RT241	RT242	RT243	RT244	RT245	RT246	RT247	RT248	RT249	RT250	RT251	RT252	RT253	RT254	RT255	RT256	RT257	RT258	RT259	RT260	RT261	RT262	RT263	RT264	RT265	RT266	RT267	RT268	RT269	RT270	RT271	RT272	RT273	RT274	RT275	RT276	RT277	RT278	RT279	RT280	RT281	RT282	RT283	RT284	RT285	RT286	RT287	RT288	RT289	RT290	RT291	RT292	RT293	RT294	RT295	RT296	RT297	RT298	RT299	RT300	RT301	RT302	RT303	RT304	RT305	RT306	RT307	RT308	RT309	RT310	RT311	RT312	RT313	RT314	RT315	RT316	RT317	RT318	RT319	RT320	RT321	RT322	RT323	RT324	RT325	RT326	RT327	RT328	RT329	RT330	RT331	RT332	RT333	RT334	RT335	RT336	RT337	RT338	RT339	RT340	RT341	RT342	RT343	RT344	RT345	RT346	RT347	RT348	RT349	RT350	RT351	RT352	RT353	RT354	RT355	RT356	RT357	RT358	RT359	RT360	RT361	RT362	RT363	RT364	RT365	RT366	RT367	RT368	RT369	RT370	RT371	RT372	RT373	RT374	RT375	RT376	RT377	RT378	RT379	RT380	RT381	RT382	RT383	RT384	RT385	RT386	RT387	RT388	RT389	RT390	RT391	RT392	RT393	RT394	RT395	RT396	RT397	RT398	RT399	RT400	RT401	RT402	RT403	RT404	RT405	RT406	RT407	RT408	RT409	RT410	RT411	RT412	RT413	RT414	RT415	RT416	RT417	RT418	RT419	RT420	RT421	RT422	RT423	RT424	RT425	RT426	RT427	RT428	RT429	RT430	RT431	RT432	RT433	RT434	RT435	RT436	RT437	RT438	RT439	RT440	RT441	RT442	RT443	RT444	RT445	RT446	RT447	RT448	RT449	RT450	RT451	RT452	RT453	RT454	RT455	RT456	RT457	RT458	RT459	RT460	RT461	RT462	RT463	RT464	RT465	RT466	RT467	RT468	RT469	RT470	RT471	RT472	RT473	RT474	RT475	RT476	RT477	RT478	RT479	RT480	RT481	RT482	RT483	RT484	RT485	RT486	RT487	RT488	RT489	RT490	RT491	RT492	RT493	RT494	RT495	RT496	RT497	RT498	RT499	RT500	RT501	RT502	RT503	RT504	RT505	RT506	RT507	RT508	RT509	RT510	RT511	RT512	RT513	RT514	RT515	RT516	RT517	RT518	RT519	RT520	RT521	RT522	RT523	RT524	RT525	RT526	RT527	RT528	RT529	RT530	RT531	RT532	RT533	RT534	RT535	RT536	RT537	RT538	RT539	RT540	RT541	RT542	RT543	RT544	RT545	RT546	RT547	RT548	RT549	RT550	RT551	RT552	RT553	RT554	RT555	RT556	RT557	RT558	RT559	RT560	RT561	RT562	RT563	RT564	RT565	RT566	RT567	RT568	RT569	RT570	RT571	RT572	RT573	RT574	RT575	RT576	RT577	RT578	RT579	RT580	RT581	RT582	RT583	RT584	RT585	RT586	RT587	RT588	RT589	RT590	RT591	RT592	RT593	RT594	RT595	RT596	RT597	RT598	RT599	RT600	RT601	RT602	RT603	RT604	RT605	RT606	RT607	RT608	RT609	RT610	RT611	RT612	RT613	RT614	RT615	RT616	RT617	RT618	RT619	RT620	RT621	RT622	RT623	RT624	RT625	RT626	RT627	RT628	RT629	RT630	RT631	RT632	RT633	RT634	RT635	RT636	RT637	RT638	RT639	RT640	RT641	RT642	RT643	RT644	RT645	RT646	RT647	RT648	RT649	RT650	RT651	RT652	RT653	RT654	RT655	RT656	RT657	RT658	RT659	RT660	RT661	RT662	RT663	RT664	RT665	RT666	RT667	RT668	RT669	RT670	RT671	RT672	RT673	RT674	RT675	RT676	RT677	RT678	RT679	RT680	RT681	RT682	RT683	RT684	RT685	RT686	RT687	RT688	RT689	RT690	RT691	RT692	RT693	RT694	RT695	RT696	RT697	RT698	RT699	RT700	RT701	RT702	RT703	RT704	RT705	RT706	RT707	RT708	RT709	RT710	RT711	RT712	RT713	RT714	RT715	RT716	RT717	RT718	RT719	RT720	RT721	RT722	RT723	RT724	RT725	RT726	RT727	RT728	RT729	RT730	RT731	RT732	RT733	RT734	RT735	RT736	RT737	RT738	RT739	RT740	RT741	RT742	RT743	RT744	RT745	RT746	RT747	RT748	RT749	RT750	RT751	RT752	RT753	RT754	RT755	RT756	RT757	RT758	RT759	RT760	RT761	RT762	RT763	RT764	RT765	RT766	RT767	RT768	RT769	RT770	RT771	RT772	RT773	RT774	RT775	RT776	RT777	RT778	RT779	RT780	RT781	RT782	RT783	RT784	RT785	RT786	RT787	RT788	RT789	RT790	RT791	RT792	RT793	RT794	RT795	RT796	RT797	RT798	RT799	RT800	RT801	RT802	RT803	RT804	RT805	RT806	RT807	RT808	RT809	RT810	RT811	RT812	RT813	RT814	RT815	RT816	RT817	RT818	RT819	RT820	RT821	RT822	RT823	RT824	RT825	RT826	RT827	RT828	RT829	RT830	RT831	RT832	RT833	RT834	RT835	RT836	RT837	RT838	RT839	RT840	RT841	RT842	RT843	RT844	RT845	RT846	RT847	RT848	RT849	RT850	RT851	RT852	RT853	RT854	RT855	RT856	RT857	RT858	RT859	RT860	RT861	RT862	RT863	RT864	RT865	RT866	RT867	RT868	RT869	RT870	RT871	RT872	RT873	RT874	RT875	RT876	RT877	RT878	RT879	RT880	RT881	RT882	RT883	RT884	RT885	RT886	RT887	RT888	RT889	RT890	RT891	RT892	RT893	RT894	RT895	RT896	RT897	RT898	RT899	RT900	RT901	RT902	RT903	RT904	RT905	RT906	RT907	RT908	RT909	RT910	RT911	RT912	RT913	RT914	RT915	RT916	RT917	RT918	RT919	RT920	RT921	RT922	RT923	RT924	RT925	RT926	RT927	RT928	RT929	RT930	RT931	RT932	RT933	RT934	RT935	RT936	RT937	RT938	RT939	RT940	RT941	RT942	RT943	RT944	RT945	RT946	RT947	RT948	RT949	RT950	RT951	RT952	RT953	RT954	RT955	RT956	RT957	RT958	RT959	RT960	RT961	RT962	RT963	RT964	RT965	RT966	RT967	RT968	RT969	RT970	RT971	RT972	RT973	RT974	RT975	RT976	RT977	RT978	RT979	RT980	RT981	RT982	RT983	RT984	RT985	RT986	RT987	RT988	RT989	RT990	RT991	RT992	RT993	RT994	RT995	RT996	RT997	RT998	RT999	RT1000	RT1001	RT1002	RT1003	RT1004	RT1005	RT1006	RT1007	RT1008	RT1009	RT1010	RT1011	RT1012	RT1013	RT1014	RT1015	RT1016	RT1017	RT1018	RT1019	RT1020	RT1021	RT1022	RT1023	RT1024	RT1025	RT1026	RT1027	RT1028	RT1029	RT1030	RT1031	RT1032	RT1033	RT1034	RT1035	RT1036	RT1037	RT1038	RT1039	RT1040	RT1041	RT1042	RT1043	RT1044	RT1045	RT1046	RT1047	RT1048	RT1049	RT1050	RT1051	RT1052	RT1053	RT1054	RT1055	RT1056	RT1057	RT1058	RT1059	RT1060	RT1061	RT1062	RT1063	RT1064	RT1065	RT1066	RT1067	RT1068	RT1069	RT1070	RT1071	RT1072	RT1073	RT1074	RT1075	RT1076	RT1077	RT1078	RT1079	RT1080	RT1081	RT1082	RT1083	RT1084	RT1085	RT1086	RT1087	RT1088	RT1089	RT1090	RT1091	RT1092	RT1093	RT1094	RT1095	RT1096	RT1097	RT1098	RT1099	RT1100	RT1101	RT1102	RT1103	RT1104	RT1105	RT1106	RT1107	RT1108	RT1109	RT1110	RT1111	RT1112	RT1113	RT1114	RT1115	RT1116	RT1117	RT1118	RT1119	RT1120	RT1121	RT1122	RT1123	RT1124	RT1125	RT1126	RT1127	RT1128	RT1129	RT1130	RT1131	RT1132	RT1133	RT1134	RT1135	RT1136	RT1137	RT1138	RT1139	RT1140	RT1141	RT1142	RT1143	RT1144	RT1145	RT1146	RT1147	RT1148	RT1149	RT1150	RT1151	RT1152	RT1153	RT1154	RT1155	RT1156	RT1157	RT1158	RT1159	RT1160	RT1161	RT1162	RT1163	RT1164	RT1165	RT1166	RT1167	RT1168	RT1169	RT1170	RT1171	RT1172	RT1173	RT1174	RT1175	RT1176	RT1177	RT1178	RT1179	RT1180	RT1181	RT1182	RT1183	RT1184	RT1185	RT1186	RT1187	RT1188	RT1189	RT1190	RT1191	RT1192	RT1193	RT1194	RT1195	RT1196	RT1197	RT1198	RT1199	RT1200	RT1201	RT1202	RT1203	RT1204	RT1205	RT1206	RT1207	RT1208	RT1209	RT1210	RT1211	RT1212	RT1213	RT1214	RT1215	RT1216	RT1217	RT1218	RT1219	RT1220	RT1221	RT1222	RT1223	RT1224	RT1225	RT1226	RT1227	RT1228	RT1229	RT1230	RT1231	RT1232	RT1233	RT1234	RT1235	RT1236	RT1237	RT1238	RT1239	RT1240	RT1241	RT1242	RT1243	RT1244	RT1245	RT1246	RT1247	RT1248	RT1249	RT1250	RT1251	RT1252	RT1253	RT1254	RT1255	RT1256	RT1257	RT1258	RT1259	RT1260	RT1261	RT1262	RT1263	RT1264	RT1265	RT1266	RT1267	RT1268	RT1269	RT1270	RT1271	RT1272	RT1273	RT1274	RT1275	RT1276	RT1277	RT1278	RT1279	RT1280	RT1281	RT1282	RT1283	RT1284	RT1285	RT1286	RT1287	RT1288	RT1289	RT1290	RT1291	RT1292	RT1293	RT1294	RT1295	RT1296	RT1297	RT1298	RT1299	RT1300	RT1301	RT1302	RT1303	RT1304	RT1305	RT1306	RT1307	RT1308	RT1309	RT1310	RT1311	RT1312	RT1313	RT1314	RT1315	RT1316	RT1317	RT1318	RT1319	RT1320	RT1321	RT1322
-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327g.b\GA032719.m

Batch File: \\target\share\chem1\nt2.i\20190327g.b

Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 Ethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.709	7.659-7.759	+++++	+++++
41 m,p-xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.838	7.788-7.888	+++++	+++++
42 o-xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.142	8.092-8.192	+++++	+++++
2 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.491	6.401-10.581	+++++	+++++
34 4-Bromofluorobenzene	8.572	8.570	8.574	8.570	8.576	8.571	8.576	8.572	8.575	8.525-8.625	8.573	0.002
17 nC10-Decane	8.645	8.643	8.666	8.668	8.667	8.669	+++++	8.663	8.642	8.592-8.692	8.660	0.011
1 NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.673	9.143-14.203	+++++	+++++
20 1,2,4-Trimethylbenzene	9.138	9.136	9.171	9.173	9.172	9.174	+++++	9.095	9.134	9.084-9.184	9.151	0.030
35 d4-Dichlorobenzene	9.393	9.392	9.396	9.392	9.391	9.393	9.391	9.393	9.390	9.340-9.440	9.393	0.002
43 n-Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.524	9.474-9.574	+++++	+++++
36 d4-1,2-Dichlorobenzene	9.734	9.714	9.712	9.714	9.714	9.715	9.713	9.716	9.713	9.663-9.763	9.716	0.007
22 nC12-Dodecane	10.324	10.323	10.326	10.371	10.371	10.330	+++++	10.373	10.327	10.277-10.377	10.345	0.025
44 n-Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.075	11.025-11.125	+++++	+++++
24 Naphthalene	11.115	11.113	11.111	11.113	11.113	11.114	+++++	11.115	11.112	11.062-11.162	11.114	0.001

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

ID: RT01 RT02 RT03 RT04 RT05 RT06 RT07 RT08 RT09 RT10
FILENAME: V203271906G V203271907G V203271908G V203271909G V203271910G V203271911G V203271912G V203271913G V203271914G V203271923G
INJ. DATE: 27-MAR-2019 27-MAR-2019 27-MAR-2019 27-MAR-2019 27-MAR-2019 27-MAR-2019 27-MAR-2019 27-MAR-2019 27-MAR-2019 27-MAR-2019
INJ. TIME: 09:29 09:50 10:10 10:30 10:50 11:11 11:31 11:51 12:11 15:13

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
1 Dichlorodifluoromethane	1.428	1.433	1.429	1.423	1.436	1.424	1.427	1.420	++++	++++
2 Chloromethane	1.549	1.555	1.551	1.551	1.557	1.564	1.567	1.572	++++	++++
3 Vinyl Chloride	1.634	1.640	1.648	1.642	1.655	1.655	1.652	1.651	++++	++++
4 Bromomethane	1.902	1.914	1.910	1.904	1.910	1.904	1.908	1.901	++++	++++
5 Chloroethane	2.036	2.029	2.037	2.038	2.038	2.032	2.011	2.010	++++	++++
6 Trichlorofluoromethane	2.115	2.121	2.116	2.105	2.111	2.105	2.096	2.126	++++	++++
7 1,1-Dichloroethene	2.644	2.644	2.640	2.640	2.640	2.635	2.638	2.631	++++	++++
8 Carbon Disulfide	2.638	2.650	2.646	2.646	2.646	2.647	2.644	2.637	2.653	++++
9 112Trichloro122Trifluo	2.656	2.674	2.658	2.664	2.665	2.665	2.656	2.643	++++	++++
10 Iodomethane	2.778	2.802	2.786	2.786	2.786	2.781	2.790	2.777	++++	++++
11 Bromoethane	2.875	2.881	2.877	2.871	2.877	2.878	2.875	2.862	++++	++++
12 Acrolein	2.997	2.997	2.999	2.993	2.993	2.993	2.997	2.996	2.987	++++
13 Methylene Chloride	3.240	3.246	3.242	3.242	3.242	3.243	3.240	3.233	++++	++++
14 Acetone	3.344	3.343	3.345	3.346	3.346	3.340	3.344	3.349	3.352	++++
15 Trans-1,2-Dichloroethe	3.405	3.404	3.406	3.407	3.407	3.407	3.404	3.397	++++	++++
16 n-hexane	3.484	3.489	3.491	3.486	3.492	3.486	3.484	3.477	3.486	3.484
17 Methyl tert butyl ethe	3.575	3.568	3.576	3.571	3.571	3.571	3.569	3.574	++++	++++

Reviewer 1
Reviewer 2

Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
18 1,1-Dichloroethane	4.013	4.013	4.014	4.015	4.015	4.015	4.013	4.006	++++	++++
19 Acrylonitrile	4.098	4.092	4.094	4.094	4.094	4.095	4.092	4.091	++++	++++
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++
20 Vinyl Acetate	4.287	4.286	4.288	4.283	4.283	4.283	4.287	4.286	++++	++++
22 Cis-1,2-Dichloroethene	4.494	4.493	4.495	4.496	4.496	4.496	4.493	4.492	++++	++++
23 2,2-Dichloropropane	4.579	4.578	4.580	4.575	4.581	4.581	4.579	4.578	++++	++++
24 Bromochloromethane	4.658	4.657	4.659	4.654	4.660	4.660	4.658	4.657	++++	++++
25 Chloroform	4.731	4.730	4.732	4.733	4.733	4.733	4.731	4.730	++++	++++
26 Carbon Tetrachloride	4.816	4.809	4.817	4.812	4.818	4.812	4.816	4.815	++++	++++
27 Dibromofluoromethane	4.877	4.876	4.878	4.879	4.879	4.879	4.877	4.876	4.879	4.877
28 1,1,1-Trichloroethane	4.871	4.876	4.878	4.879	4.879	4.879	4.877	4.876	++++	++++
30 1,1-Dichloropropene	4.974	4.974	4.976	4.976	4.976	4.977	4.974	4.973	++++	++++
29 2-Butanone	5.005	5.004	5.006	5.007	5.007	5.007	5.004	5.003	5.013	++++
31 Benzene	5.169	5.168	5.170	5.171	5.171	5.171	5.169	5.168	++++	++++
* 32 Pentafluorobenzene	5.254	5.260	5.256	5.256	5.256	5.256	5.260	5.259	5.256	5.260
33 d4-1,2-Dichloroethane	5.284	5.284	5.286	5.286	5.286	5.281	5.284	5.283	5.287	5.285
35 Methyl Methacrylate	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++
34 1,2-Dichloroethane	5.333	5.333	5.335	5.335	5.335	5.336	5.333	5.332	++++	++++
36 Trichloroethene	5.607	5.612	5.614	5.609	5.615	5.609	5.613	5.612	++++	++++
* 37 1,4-Difluorobenzene	5.643	5.649	5.645	5.645	5.645	5.646	5.649	5.648	5.646	5.650
38 Dibromomethane	5.923	5.923	5.919	5.925	5.919	5.920	5.923	5.922	++++	++++
39 1,2-Dichloropropane	5.990	5.996	5.998	5.998	5.998	5.993	5.996	5.995	++++	++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
40 Bromodichloromethane	6.045	6.044	6.046	6.047	6.047	6.047	6.045	6.044	++++	++++
173 2-Pentanone	6.282	6.282	6.284	6.284	6.284	6.285	6.282	6.281	6.285	6.617
42 Cis 1,3-dichloropropen	6.495	6.495	6.490	6.491	6.491	6.491	6.495	6.494	++++	++++
43 d8-Toluene	6.617	6.616	6.618	6.619	6.619	6.619	6.623	6.622	6.619	6.623
41 2-Chloroethyl Vinyl Et	6.459	6.458	6.460	6.461	6.461	6.461	6.458	6.457	++++	++++
44 Toluene	6.653	6.653	6.655	6.655	6.655	6.656	6.653	6.658	++++	++++
45 4-Methyl-2-Pentanone	6.939	6.939	6.935	6.935	6.935	6.936	6.939	6.938	6.936	++++
46 Tetrachloroethene	6.921	6.920	6.922	6.923	6.923	6.917	6.921	6.920	++++	++++
47 Trans 1,3-Dichloroprop	6.951	6.951	6.953	6.953	6.953	6.954	6.957	6.956	6.954	++++
48 1,1,2-Trichloroethane	7.061	7.060	7.062	7.063	7.063	7.063	7.067	7.066	++++	++++
49 Chlorodibromomethane	7.183	7.188	7.184	7.184	7.185	7.185	7.188	7.187	++++	++++
50 1,3-Dichloropropane	7.249	7.255	7.257	7.257	7.251	7.251	7.255	7.254	++++	++++
51 1,2-Dibromoethane	7.347	7.352	7.348	7.348	7.349	7.349	7.353	7.352	++++	++++
52 2-Hexanone	7.517	7.517	7.519	7.519	7.513	7.513	7.517	7.516	7.520	++++
* 53 d5-Chlorobenzene	7.706	7.705	7.707	7.708	7.708	7.708	7.705	7.711	7.708	7.706
54 Chlorobenzene	7.718	7.717	7.719	7.720	7.720	7.720	7.718	7.723	++++	++++
55 Ethyl Benzene	7.736	7.736	7.738	7.732	7.738	7.739	7.736	7.741	7.836	++++
56 1,1,1,2-Tetrachloroeth	7.767	7.766	7.762	7.762	7.762	7.763	7.766	7.765	++++	++++
57 m,p-xylene	7.840	7.839	7.841	7.842	7.842	7.842	7.839	7.844	7.836	++++
58 o-Xylene	8.144	8.143	8.145	8.146	8.146	8.146	8.143	8.149	++++	++++
59 Styrene	8.180	8.180	8.182	8.182	8.182	8.183	8.186	8.185	++++	++++
60 Bromoform	8.205	8.204	8.206	8.207	8.207	8.207	8.204	8.209	++++	++++
61 Isopropyl Benzene	8.369	8.368	8.364	8.365	8.365	8.365	8.369	8.368	++++	++++
62 4-Bromofluorobenzene	8.576	8.575	8.577	8.572	8.572	8.572	8.575	8.574	8.578	8.576

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
63 Bromobenzene	8.649	8.648	8.650	8.651	8.651	8.651	8.648	8.654	+++++	+++++
64 N-Propyl Benzene	8.667	8.666	8.668	8.669	8.669	8.669	8.667	8.672	+++++	+++++
82 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
65 1,2,2-Tetrachloroethl	8.722	8.721	8.723	8.724	8.724	8.724	8.721	8.727	+++++	+++++
66 2-Chloro Toluene	8.782	8.782	8.784	8.784	8.784	8.779	8.782	8.787	+++++	+++++
67 1,3,5-Trimethyl Benzenl	8.807	8.806	8.808	8.809	8.809	8.809	8.813	8.812	+++++	+++++
68 1,2,3-Trichloropropane	8.825	8.825	8.820	8.821	8.821	8.821	8.825	8.824	+++++	+++++
69 Trans-1,4-Dichloro 2-B	8.855	8.849	8.851	8.851	8.851	8.852	8.855	8.854	+++++	+++++
70 4-Chloro Toluene	8.904	8.904	8.906	8.906	8.906	8.907	8.904	8.909	8.907	+++++
71 T-Butyl Benzene	9.044	9.044	9.046	9.046	9.046	9.046	9.044	9.043	9.046	+++++
72 1,2,4-Trimethylbenzene	9.099	9.092	9.094	9.095	9.095	9.095	9.099	9.098	+++++	+++++
73 S-Butyl Benzene	9.172	9.177	9.173	9.174	9.174	9.174	9.178	9.177	9.174	+++++
74 4-Isopropyl Toluene	9.281	9.281	9.283	9.277	9.277	9.284	9.281	9.286	9.284	+++++
75 1,3-Dichlorobenzene	9.336	9.336	9.338	9.338	9.338	9.338	9.342	9.341	9.338	+++++
* 76 d4-1,4-Dichlorobenzene	9.391	9.396	9.392	9.393	9.393	9.393	9.397	9.396	9.393	9.391
77 1,4-Dichlorobenzene	9.403	9.402	9.404	9.405	9.405	9.405	9.409	9.408	9.405	+++++
78 N-Butyl Benzene	9.598	9.597	9.593	9.594	9.594	9.594	9.597	9.596	9.594	+++++
\$ 79 d4-1,2-Dichlorobenzene	9.713	9.713	9.715	9.715	9.715	9.716	9.713	9.718	9.716	9.713
80 1,2-Dichlorobenzene	9.719	9.719	9.721	9.721	9.721	9.722	9.725	9.724	9.722	+++++
81 1,2-Dibromo 3-Chloropr	10.334	10.333	10.329	10.336	10.330	10.330	10.333	10.333	+++++	+++++
83 Hexachloro 1,3-Butadie	10.827	10.832	10.828	10.828	10.829	10.829	10.832	10.831	10.829	+++++
84 1,2,4-Trichlorobenzene	10.857	10.856	10.852	10.853	10.853	10.853	10.857	10.856	10.853	+++++
85 Naphthalene	11.112	11.112	11.114	11.114	11.114	11.115	11.112	11.111	11.115	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m

Batch File: \\target\share\chem1\nt2.i\20190327s.b

Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
86 1,2,3-Trichlorobenzene	11.258	11.258	11.260	11.260	11.254	11.255	11.258	11.257	11.261	++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

ID: RT11

FILENAME: V203271924G

INJ. DATE: 27-MAR-2019

INJ. TIME: 15:34

Compound	RT11	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Dichlorodifluoromethane	++++	1.436	1.330-1.541	1.428	0.005
2 Chloromethane	++++	1.557	1.452-1.662	1.558	0.009
3 Vinyl Chloride	++++	1.655	1.549-1.760	1.647	0.008
4 Bromomethane	++++	1.910	1.805-2.015	1.907	0.004
5 Chloroethane	++++	2.038	1.933-2.143	2.029	0.012
6 Trichlorofluoromethane	++++	2.111	2.006-2.216	2.112	0.010
7 1,1-Dichloroethene	++++	2.640	2.535-2.745	2.639	0.004
8 Carbon Disulfide	++++	2.646	2.541-2.751	2.645	0.005
9 112Trichloro122Trifluo	++++	2.665	2.559-2.770	2.660	0.009
10 Iodomethane	++++	2.786	2.681-2.891	2.786	0.008
11 Bromoethane	++++	2.877	2.772-2.982	2.875	0.006
12 Acrolein	2.975	2.993	2.888-3.098	2.993	0.007
13 Methylene Chloride	++++	3.242	3.137-3.348	3.241	0.004
14 Acetone	3.231	3.346	3.241-3.451	3.334	0.036
15 Trans-1,2-Dichloroethel	++++	3.407	3.302-3.512	3.405	0.003
16 n-hexane	3.492	3.492	3.387-3.597	3.486	0.005
17 Methyl tert butyl ethel	++++	3.571	3.466-3.676	3.572	0.003
18 1,1-Dichloroethane	++++	4.015	3.910-4.120	4.013	0.003
19 Acrylonitrile	4.058	4.094	3.989-4.199	4.090	0.012
21 Allyl Chloride	++++	4.560	4.455-4.665	4.555	++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

Compound	RT1	EXPEC RT	RT WINDOW	AVG RT	STD DEV
20 Vinyl Acetate	4.052	4.283	4.178-4.388	4.259	0.078
22 Cis-1,2-Dichloroethene	++++	4.496	4.390-4.601	4.494	0.001
23 2,2-Dichloropropane	++++	4.581	4.476-4.686	4.579	0.002
24 Bromochloromethane	++++	4.660	4.555-4.765	4.658	0.002
25 Chloroform	4.636	4.733	4.628-4.838	4.721	0.032
26 Carbon Tetrachloride	++++	4.818	4.705-4.931	4.814	0.003
27 Dibromofluoromethane	4.879	4.879	4.774-4.984	4.878	0.001
28 1,1,1-Trichloroethane	++++	4.879	4.774-4.984	4.877	0.003
30 1,1-Dichloropropene	5.171	4.976	4.863-5.089	4.997	0.065
29 2-Butanone	4.983	5.007	4.901-5.112	5.004	0.008
31 Benzene	5.171	5.171	5.058-5.284	5.170	0.001
32 Pentafluorobenzene	5.256	5.256	5.151-5.361	5.257	0.002
33 d4-1,2-Dichloroethane	5.287	5.286	5.181-5.392	5.284	0.002
35 Methyl Methacrylate	++++	5.693	5.580-5.806	++++	++++
34 1,2-Dichloroethane	5.171	5.335	5.222-5.448	5.316	0.054
36 Trichloroethene	++++	5.615	5.502-5.728	5.611	0.003
* 37 1,4-Difluorobenzene	5.646	5.645	5.532-5.758	5.647	0.002
38 Dibromomethane	++++	5.919	5.806-6.032	5.922	0.002
39 1,2-Dichloropropane	++++	5.998	5.885-6.111	5.995	0.003
40 Bromodichloromethane	5.822	6.047	5.934-6.159	6.021	0.074
173 2-Pentanone	6.212	6.284	6.171-6.397	6.307	0.105
42 Cis 1,3-dichloropropene	6.656	6.491	6.378-6.604	6.511	0.054
43 d8-Toluene	6.619	6.619	6.505-6.731	6.619	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

Compound	RT1	EXPEC RT	RT WINDOW	AVG RT	STD DEV
----- ----- ----- ----- ----- -----					
41 2-Chloroethyl Vinyl Et	6.656	6.461	6.347-6.573	6.481	0.065
44 Toluene	6.656	6.655	6.542-6.768	6.655	0.002
45 4-Methyl-2-Pentanone	++++	6.935	6.822-7.048	6.937	0.002
46 Tetrachloroethene	++++	6.923	6.769-7.077	6.921	0.002
47 Trans 1,3-Dichloroprop	6.656	6.953	6.840-7.066	6.924	0.094
48 1,1,2-Trichloroethane	7.033	7.063	6.949-7.175	7.060	0.010
----- ----- ----- ----- ----- -----					
49 Chlorodibromomethane	++++	7.185	7.030-7.339	7.186	0.002
50 1,3-Dichloropropane	++++	7.251	7.097-7.406	7.253	0.003
51 1,2-Dibromoethane	++++	7.349	7.235-7.461	7.350	0.002
52 2-Hexanone	7.386	7.513	7.359-7.667	7.504	0.041
* 53 d5-Chlorobenzene	7.708	7.708	7.554-7.862	7.707	0.002
54 Chlorobenzene	++++	7.720	7.566-7.874	7.719	0.002
55 Ethyl Benzene	7.738	7.738	7.584-7.892	7.747	0.031
----- ----- ----- ----- ----- -----					
56 1,1,1,2-Tetrachloroeth	++++	7.762	7.609-7.917	7.764	0.002
57 m,p-xylene	7.842	7.842	7.688-7.996	7.841	0.002
58 o-Xylene	8.146	8.146	7.992-8.300	8.145	0.002
59 Styrene	8.146	8.182	8.028-8.337	8.178	0.012
60 Bromoform	++++	8.207	8.019-8.394	8.206	0.002
61 Isopropyl Benzene	8.365	8.365	8.177-8.552	8.366	0.002
62 4-Bromofluorobenzene	8.572	8.572	8.418-8.726	8.574	0.002
----- ----- ----- ----- ----- -----					
63 Bromobenzene	++++	8.651	8.463-8.838	8.650	0.002
64 N-Propyl Benzene	8.663	8.669	8.481-8.857	8.668	0.002
82 Cyclohexanone	++++	9.074	8.920-9.228	++++	++++
65 1,1,2,2-Tetrachloroeth	++++	8.724	8.536-8.911	8.723	0.002

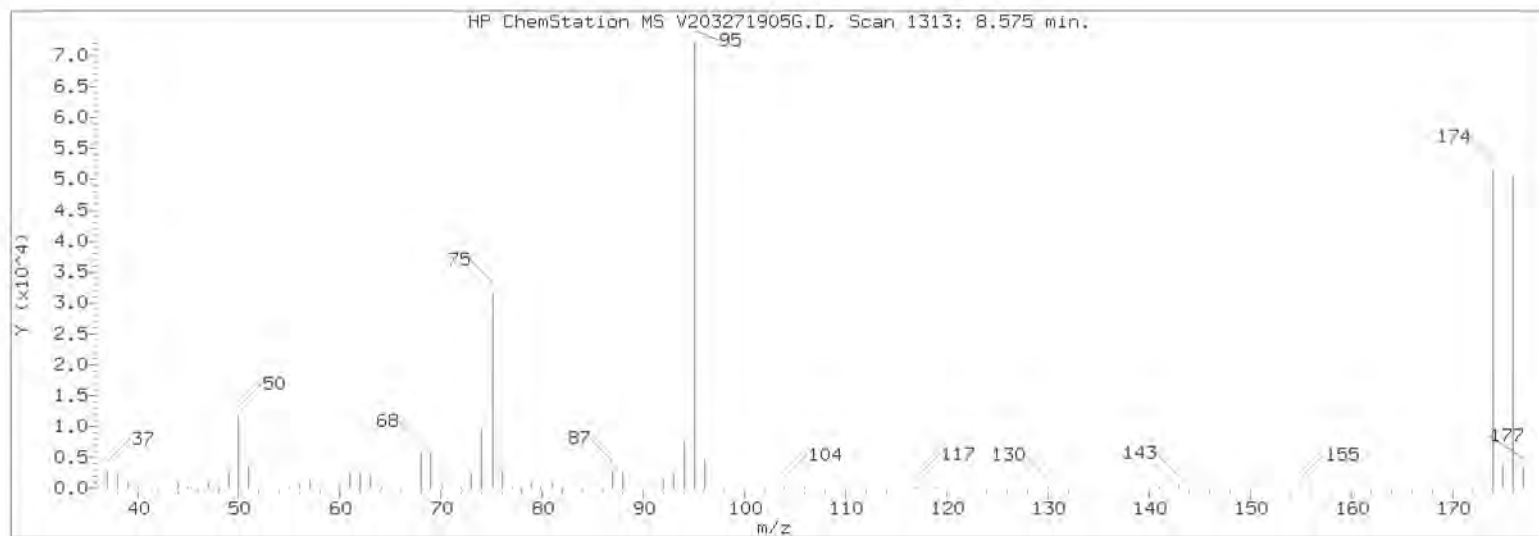
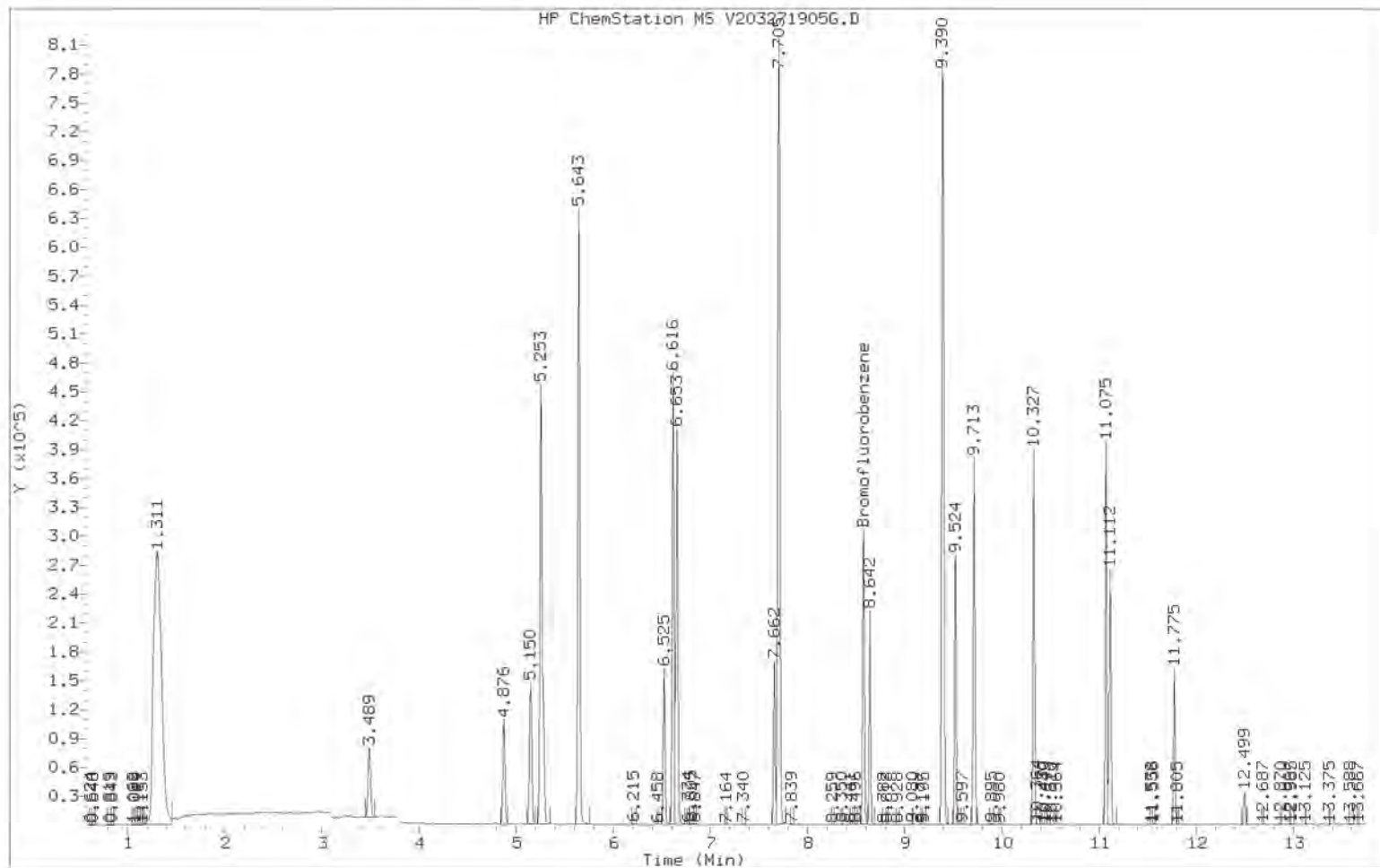
ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Batch File: \\target\share\chem1\nt2.i\20190327s.b
Inst ID: nt2.i

Compound	RT1	EXPEC RT	RT WINDOW	AVG RT	STD DEV
----- ----- ----- ----- ----- -----					
66 2-Chloro Toluene	++++	8.784	8.597-8.972	8.783	0.002
67 1,3,5-Trimethyl Benzen	8.809	8.809	8.621-8.997	8.809	0.002
68 1,2,3-Trichloropropane	++++	8.821	8.633-9.009	8.823	0.002
----- ----- ----- ----- ----- -----					
69 Trans-1,4-Dichloro 2-B	8.809	8.851	8.663-9.039	8.848	0.015
70 4-Chloro Toluene	++++	8.906	8.718-9.094	8.906	0.002
71 T-Butyl Benzene	9.253	9.046	8.858-9.234	9.066	0.066
72 1,2,4-Trimethylbenzene	9.095	9.095	8.907-9.282	9.096	0.002
73 S-Butyl Benzene	9.095	9.174	8.986-9.362	9.167	0.025
74 4-Isopropyl Toluene	9.253	9.277	9.089-9.465	9.279	0.009
75 1,3-Dichlorobenzene	++++	9.338	9.150-9.526	9.338	0.002
----- ----- ----- ----- ----- -----					
* 76 d4-1,4-Dichlorobenzene	9.393	9.393	9.205-9.581	9.393	0.002
77 1,4-Dichlorobenzene	++++	9.405	9.217-9.593	9.405	0.002
78 N-Butyl Benzene	9.594	9.594	9.406-9.782	9.595	0.002
\$ 79 d4-1,2-Dichlorobenzene	9.716	9.715	9.527-9.903	9.715	0.002
80 1,2-Dichlorobenzene	++++	9.721	9.534-9.909	9.722	0.002
81 1,2-Dibromo 3-Chloropr	++++	10.330	10.142-10.518	10.332	0.002
83 Hexachloro 1,3-Butadie	++++	10.829	10.641-11.017	10.829	0.002
----- ----- ----- ----- ----- -----					
84 1,2,4-Trichlorobenzene	++++	10.853	10.665-11.041	10.854	0.002
85 Naphthalene	11.115	11.114	10.927-11.302	11.114	0.001
86 1,2,3-Trichlorobenzene	++++	11.254	11.066-11.442	11.258	0.002
----- ----- ----- ----- ----- -----					

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190327s.b/V203271905G.D
Method Used: \20190327s.b\bfb8260.m Inst: nt2
Injection Date: 27-MAR-2019 08:56 Operator: LH
Sample Info: SHC0426-TUN1 SHC0426-TUN1
Report Date: 03/28/2019 09:50



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.57
75	30.00 - 60.00% of mass 95	43.98
96	5.00 - 9.00% of mass 95	6.65
173	Less than 2.00% of mass 174	0.40 (0.56)
174	50.00 - 100.00% of mass 95	71.08
175	5.00 - 9.00% of mass 174	4.96 (6.97)
176	95.00 - 101.00% of mass 174	68.50 (96.37)
177	5.00 - 9.00% of mass 176	4.38 (6.40)

Data File: V203271905G.D

Spectrum: Avg. Scans 1312-1314 (8.57), Background Scan 1307

Location of Maximum: 95.00

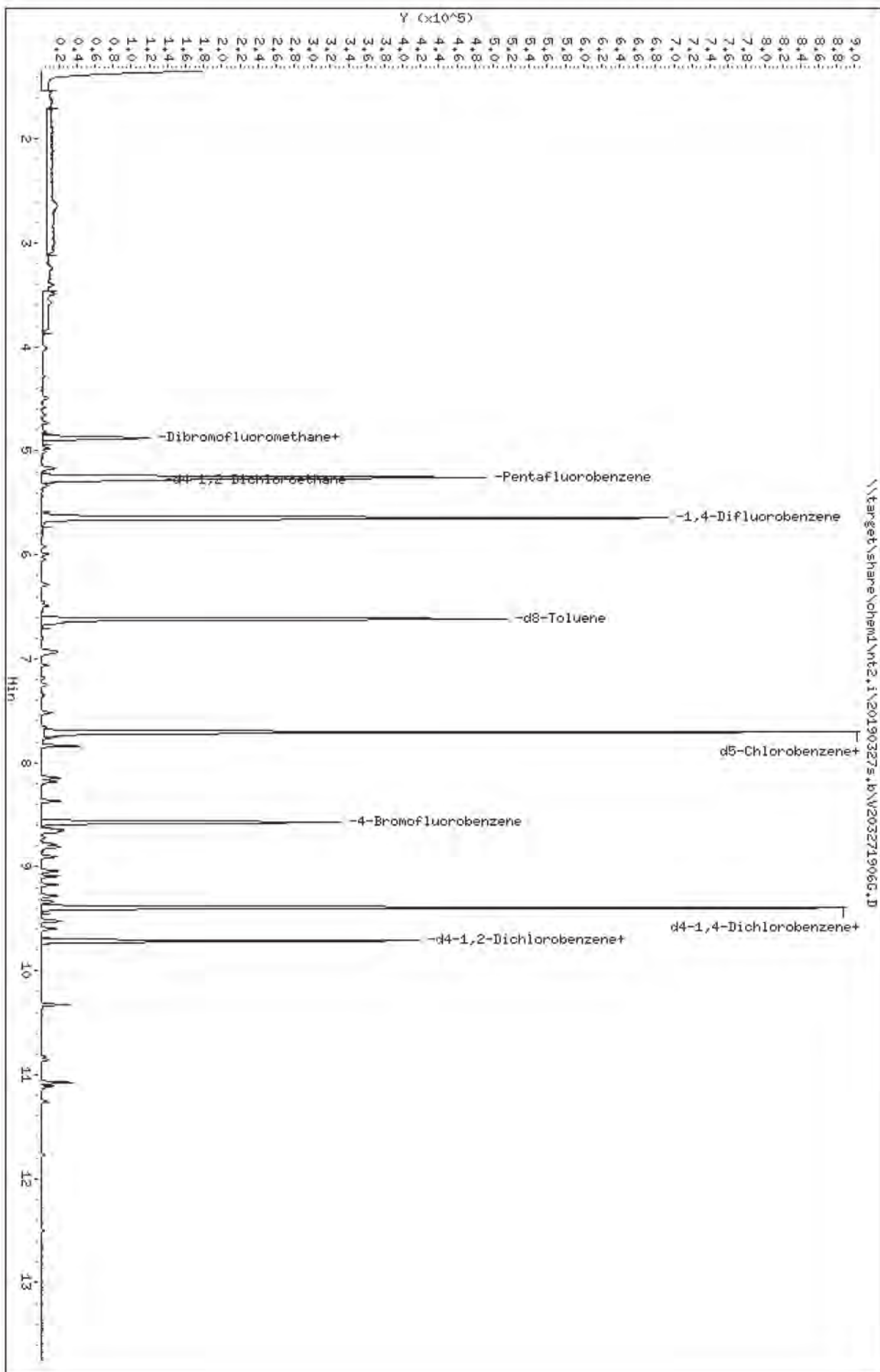
Number of points: 56

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	475	60.00	441	79.00	871	119.00	242
37.00	2396	61.00	2139	80.00	295	128.00	122
38.00	2121	62.00	2224	81.00	913	130.00	68
39.00	837	63.00	1669	82.00	64	141.00	330
40.00	34	64.00	74	87.00	2384	143.00	388
44.00	253	68.00	5228	88.00	2288	155.00	63
45.00	424	69.00	5160	92.00	1384	173.00	247
47.00	757	70.00	482	93.00	2127	174.00	44240
48.00	224	72.00	272	94.00	6239	175.00	3085
49.00	2031	73.00	2113	95.00	62240	176.00	42632
50.00	9689	74.00	8142	96.00	4138	177.00	2728
51.00	3116	75.00	27376	104.00	149		
55.00	135	76.00	2426	106.00	156		
56.00	713	77.00	356	117.00	205		
57.00	1219	78.00	197	118.00	68		

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271906G.D
Date: 27-MAR-2019 09:29
Client ID:
Sample Info: SHC0426-CAL1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271906G.D
 Lab Smp Id: SHC0426-CAL1
 Inj Date : 27-MAR-2019 09:29
 Operator : LH
 Smp Info : SHC0426-CAL1
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Meth Date : 27-Mar-2019 13:21 lanih
 Cal Date : 27-MAR-2019 11:51
 Als bottle: 8
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 4.14
 Processing Host: ORGDATA20

Inst ID: nt2.i
 Quant Type: ISTD
 Cal File: V203271913.D
 Calibration Sample, Level: 1
 Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
\$ 27 Dibromofluoromethane	111	4.876	4.879 (0.928)		61487	5.00000	4.876
* 32 Pentafluorobenzene	168	5.254	5.256 (1.000)		249235	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.284	5.286 (1.006)		66469	5.00000	4.822
* 37 1,4-Difluorobenzene	114	5.643	5.645 (1.000)		452819	10.0000	
\$ 43 d8-Toluene	98	6.616	6.619 (1.172)		271559	5.00000	4.960
* 53 d5-Chlorobenzene	117	7.705	7.708 (1.000)		409195	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.575	8.571 (1.113)		72548	5.00000	4.926
* 76 d4-1,4-Dichlorobenzene	162	9.390	9.393 (1.000)		186697	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.713	9.715 (1.034)		85616	5.00000	4.908

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271906G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	249235	24.87
37 1,4-Difluorobenze	364397	182199	728794	452819	24.27
53 d5-Chlorobenzene	328727	164364	657454	409195	24.48
76 d4-1,4-Dichlorobe	151591	75796	303182	186697	23.16

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.25	-0.04
37 1,4-Difluorobenze	5.65	5.15	6.15	5.64	-0.04
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271906G.D

Lab ID: SHC0426-CAL1

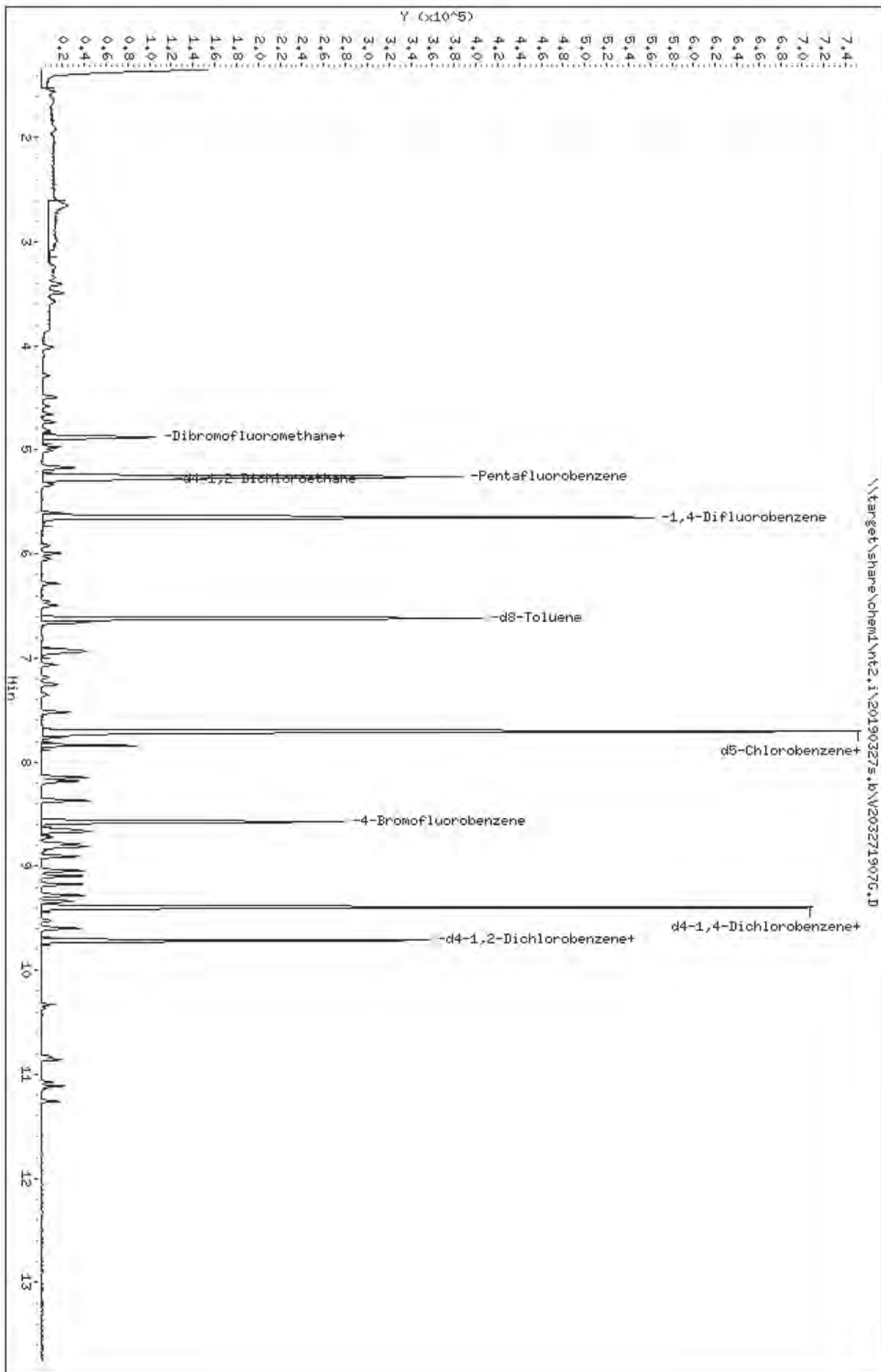
nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 09:29

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.1\20190327s.b\203271907G.D
Date: 27-MAR-2019 09:50
Client ID:
Sample Info: SHC0426-CAL2

Column phase: RTXVMS

Instrument: nt2.1
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271907G.D
Lab Smp Id: SHC0426-CAL2
Inj Date : 27-MAR-2019 09:50
Operator : LH
Smp Info : SHC0426-CAL2
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Meth Date : 27-Mar-2019 13:21 lanih
Cal Date : 27-MAR-2019 11:51
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA20

Inst ID: nt2.i
Quant Type: ISTD
Cal File: V203271913.D
Calibration Sample, Level: 2
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
\$ 27 Dibromofluoromethane	111	4.876	4.879 (0.927)		50512	5.00000	4.904
* 32 Pentafluorobenzene	168	5.259	5.256 (1.000)		203569	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.283	5.286 (1.005)		56072	5.00000	4.980
* 37 1,4-Difluorobenzene	114	5.648	5.645 (1.000)		367986	10.0000	
\$ 43 d8-Toluene	98	6.616	6.619 (1.171)		222469	5.00000	5.000
* 53 d5-Chlorobenzene	117	7.705	7.708 (1.000)		333078	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.575	8.571 (1.113)		59338	5.00000	4.950
* 76 d4-1,4-Dichlorobenzene	162	9.396	9.393 (1.000)		151179	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.715 (1.034)		71112	5.00000	5.034

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271907G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL2
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	203569	1.99
37 1,4-Difluorobenze	364397	182199	728794	367986	0.98
53 d5-Chlorobenzene	328727	164364	657454	333078	1.32
76 d4-1,4-Dichlorobe	151591	75796	303182	151179	-0.27

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.07
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.06
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.40	0.04

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271907G.D

Lab ID: SHC0426-CAL2

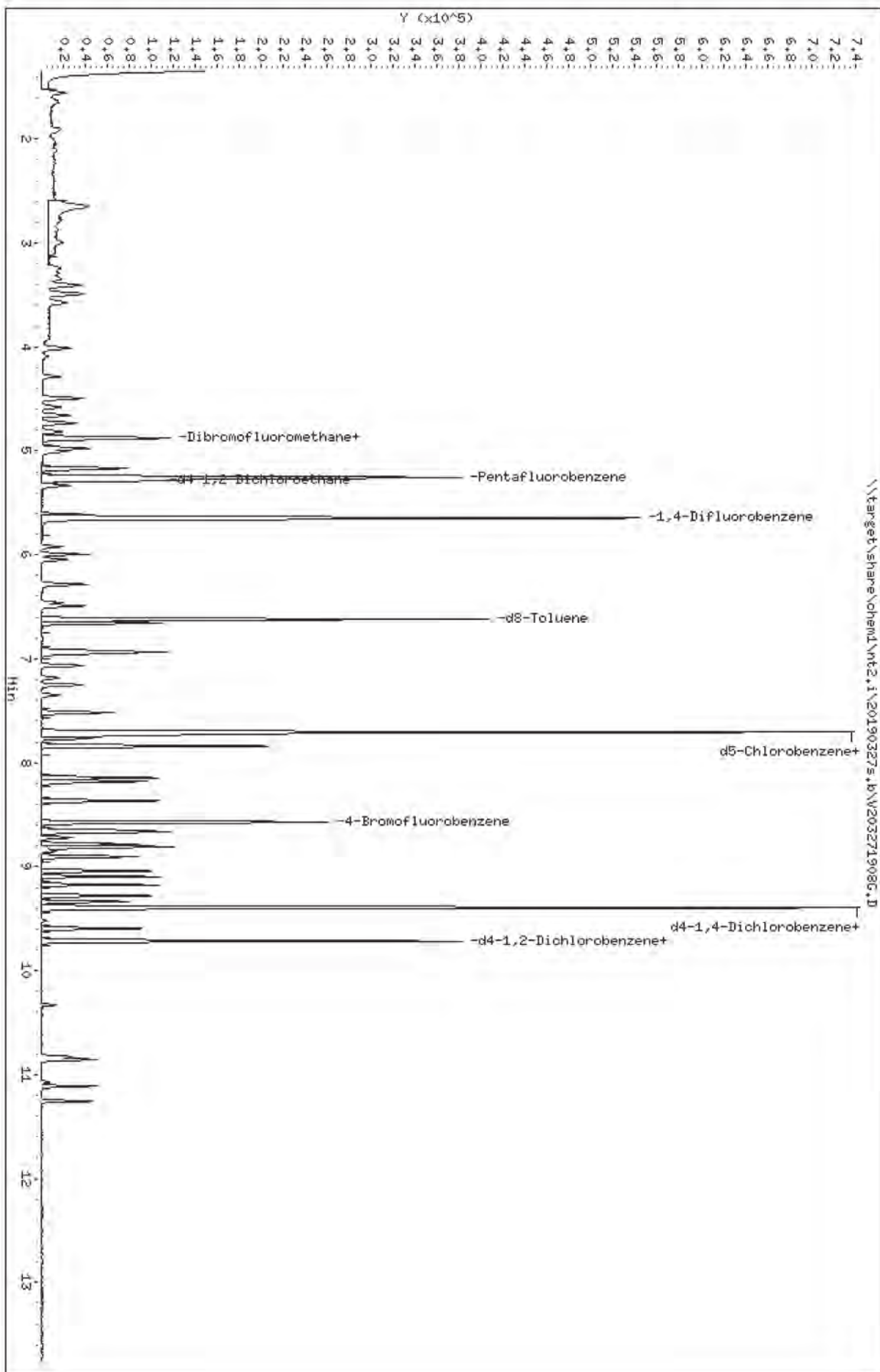
nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 09:50

RT CO-ELUTION COMPOUNDS

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271908G.D
Date: 27-MAR-2019 10:10
Client ID:
Sample Info: SHC0426-CAL3

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271908G.D
Lab Smp Id: SHC0426-CAL3
Inj Date : 27-MAR-2019 10:10
Operator : LH
Smp Info : SHC0426-CAL3
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Meth Date : 27-Mar-2019 13:21 lanih
Cal Date : 27-MAR-2019 11:51
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA20

Inst ID: nt2.i

Quant Type: ISTD
Cal File: V203271913.D
Calibration Sample, Level: 3
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
\$ 27 Dibromofluoromethane	111	4.878	4.879	(0.928)	48789	5.00000	4.934
* 32 Pentafluorobenzene	168	5.255	5.256	(1.000)	195434	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.285	5.286	(1.006)	53093	5.00000	4.912
* 37 1,4-Difluorobenzene	114	5.644	5.645	(1.000)	357183	10.0000	
\$ 43 d8-Toluene	98	6.618	6.619	(1.172)	214456	5.00000	4.965
* 53 d5-Chlorobenzene	117	7.707	7.708	(1.000)	319539	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.577	8.571	(1.113)	56584	5.00000	4.920
* 76 d4-1,4-Dichlorobenzene	162	9.392	9.393	(1.000)	145927	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.714	9.715	(1.034)	68581	5.00000	5.030

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271908G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL3
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	195434	-2.09
37 1,4-Difluorobenze	364397	182199	728794	357183	-1.98
53 d5-Chlorobenzene	328727	164364	657454	319539	-2.80
76 d4-1,4-Dichlorobe	151591	75796	303182	145927	-3.74

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	-0.01
37 1,4-Difluorobenze	5.65	5.15	6.15	5.64	-0.01
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	-0.01
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271908G.D

Lab ID: SHC0426-CAL3

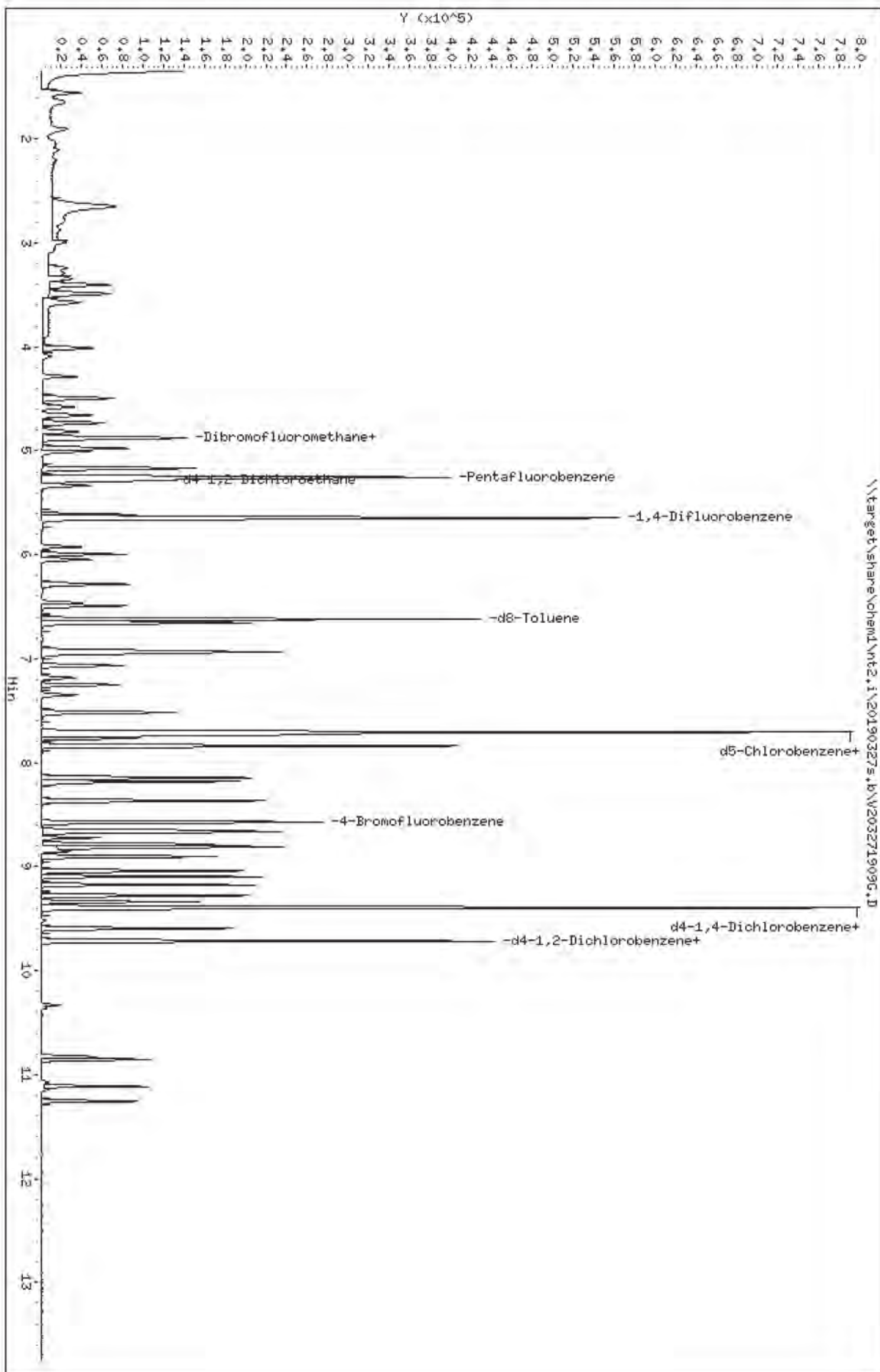
nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 10:10

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271909G.D
 Date: 27-MAR-2019 10:30
 Client ID:
 Sample Info: SHC0426-CAL4

Column phase: RTXVMS

Instrument: nt2.i
 Operator: LH
 Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271909G.D
Lab Smp Id: SHC0426-CAL4
Inj Date : 27-MAR-2019 10:30
Operator : LH
Smp Info : SHC0426-CAL4
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Meth Date : 27-Mar-2019 13:21 lanih
Cal Date : 27-MAR-2019 11:51
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA20

Inst ID: nt2.i
Quant Type: ISTD
Cal File: V203271913.D
Calibration Sample, Level: 4
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
\$ 27 Dibromofluoromethane	111	4.878	4.879	(0.928)	50321	5.00000	4.993
* 32 Pentafluorobenzene	168	5.256	5.256	(1.000)	199196	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.280	5.286	(1.005)	56801	5.00000	5.156
* 37 1,4-Difluorobenzene	114	5.645	5.645	(1.000)	366858	10.0000	
\$ 43 d8-Toluene	98	6.618	6.619	(1.172)	221145	5.00000	4.985
* 53 d5-Chlorobenzene	117	7.707	7.708	(1.000)	329870	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.571	8.571	(1.112)	58519	5.00000	4.929
* 76 d4-1,4-Dichlorobenzene	162	9.392	9.393	(1.000)	152480	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.715	9.715	(1.034)	71373	5.00000	5.010

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271909G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL4
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	199196	-0.20
37 1,4-Difluorobenze	364397	182199	728794	366858	0.68
53 d5-Chlorobenzene	328727	164364	657454	329870	0.35
76 d4-1,4-Dichlorobe	151591	75796	303182	152480	0.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	-0.00
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	-0.00
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	-0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271909G.D

Lab ID: SHC0426-CAL4

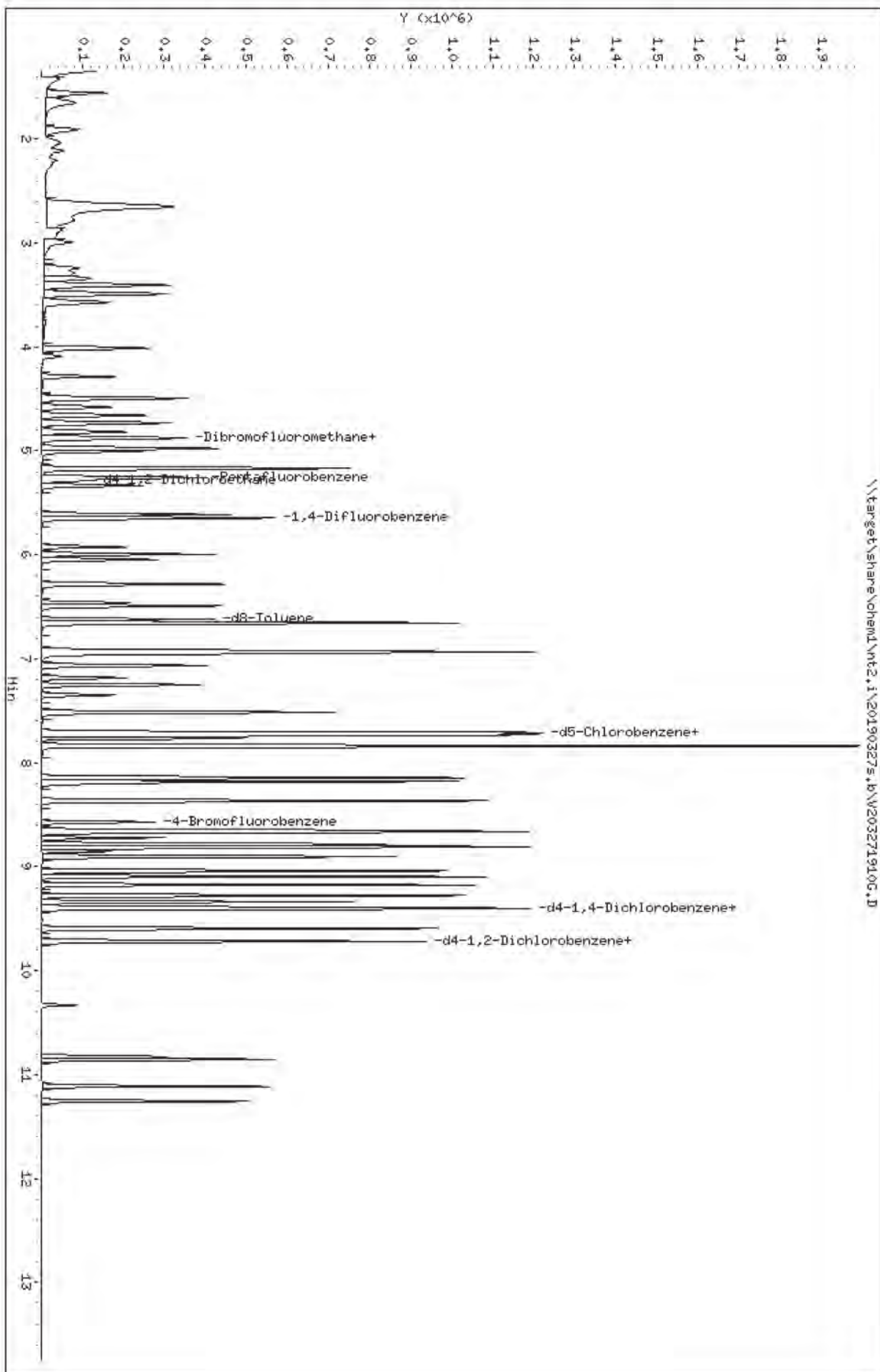
nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 10:30

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271910G.D
Date: 27-MAR-2019 10:50
Client ID:
Sample Info: SHC0426-CAL5

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271910G.D
 Lab Smp Id: SHC0426-CAL5
 Inj Date : 27-MAR-2019 10:50
 Operator : LH
 Smp Info : SHC0426-CAL5
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Meth Date : 27-Mar-2019 13:21 lanih
 Cal Date : 27-MAR-2019 11:51
 Als bottle: 12
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 4.14
 Processing Host: ORGDATA20

Inst ID: nt2.i
 Quant Type: ISTD
 Cal File: V203271913.D
 Calibration Sample, Level: 5
 Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
\$ 27 Dibromofluoromethane	111	4.878	4.879	(0.928)	50522	5.00000	5.002
* 32 Pentafluorobenzene	168	5.256	5.256	(1.000)	199603	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.286	5.286	(1.006)	55178	5.00000	4.998
* 37 1,4-Difluorobenzene	114	5.645	5.645	(1.000)	364397	10.0000	
\$ 43 d8-Toluene	98	6.618	6.619	(1.172)	219751	5.00000	4.987
* 53 d5-Chlorobenzene	117	7.707	7.708	(1.000)	328727	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.571	8.571	(1.112)	59005	5.00000	4.987
* 76 d4-1,4-Dichlorobenzene	162	9.392	9.393	(1.000)	151591	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.715	9.715	(1.034)	71917	5.00000	5.078

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271910G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL5
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	199603	0.00
37 1,4-Difluorobenze	364397	182199	728794	364397	0.00
53 d5-Chlorobenzene	328727	164364	657454	328727	0.00
76 d4-1,4-Dichlorobe	151591	75796	303182	151591	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.00
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.00
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271910G.D

Lab ID: SHC0426-CAL5

nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 10:50

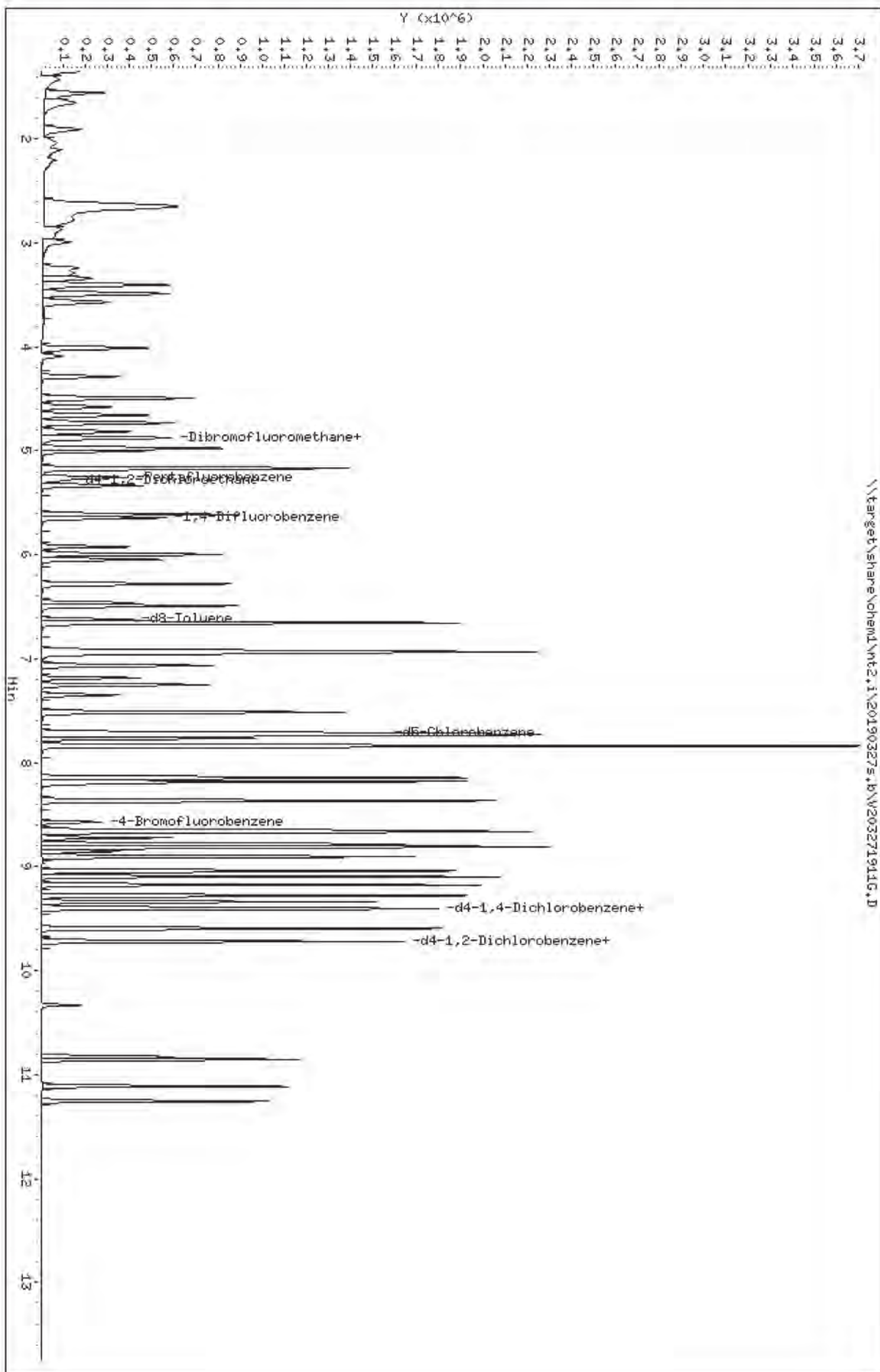
RT	CO-ELUTION COMPOUNDS
----	----------------------

-------	--

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271911G.D
Date: 27-MAR-2019 11:11
Client ID:
Sample Info: SHC0426-CAL6

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271911G.D
 Lab Smp Id: SHC0426-CAL6
 Inj Date : 27-MAR-2019 11:11
 Operator : LH
 Smp Info : SHC0426-CAL6
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Meth Date : 27-Mar-2019 13:21 lanih
 Cal Date : 27-MAR-2019 11:51
 Als bottle: 13
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 4.14
 Processing Host: ORGDATA20

Inst ID: nt2.i
 Quant Type: ISTD
 Cal File: V203271913.D
 Calibration Sample, Level: 6
 Compound Sublist: gsurr.sub

Compounds	QUANT SIG						AMOUNTS	
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
	MASS					(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111	4.879	4.879 (0.928)		49421	5.00000	5.042	
* 32 Pentafluorobenzene	168	5.256	5.256 (1.000)		193736	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.280	5.286 (1.005)		53770	5.00000	5.018	
* 37 1,4-Difluorobenzene	114	5.645	5.645 (1.000)		356419	10.0000		
\$ 43 d8-Toluene	98	6.619	6.619 (1.172)		215957	5.00000	5.011	
* 53 d5-Chlorobenzene	117	7.708	7.708 (1.000)		323593	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.571	8.571 (1.112)		58245	5.00000	5.001	
* 76 d4-1,4-Dichlorobenzene	162	9.393	9.393 (1.000)		150676	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.715	9.715 (1.034)		71293	5.00000	5.064	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271911G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL6
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	193736	-2.94
37 1,4-Difluorobenze	364397	182199	728794	356419	-2.19
53 d5-Chlorobenzene	328727	164364	657454	323593	-1.56
76 d4-1,4-Dichlorobe	151591	75796	303182	150676	-0.60

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.01
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.01
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	0.01
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271911G.D

Lab ID: SHC0426-CAL6

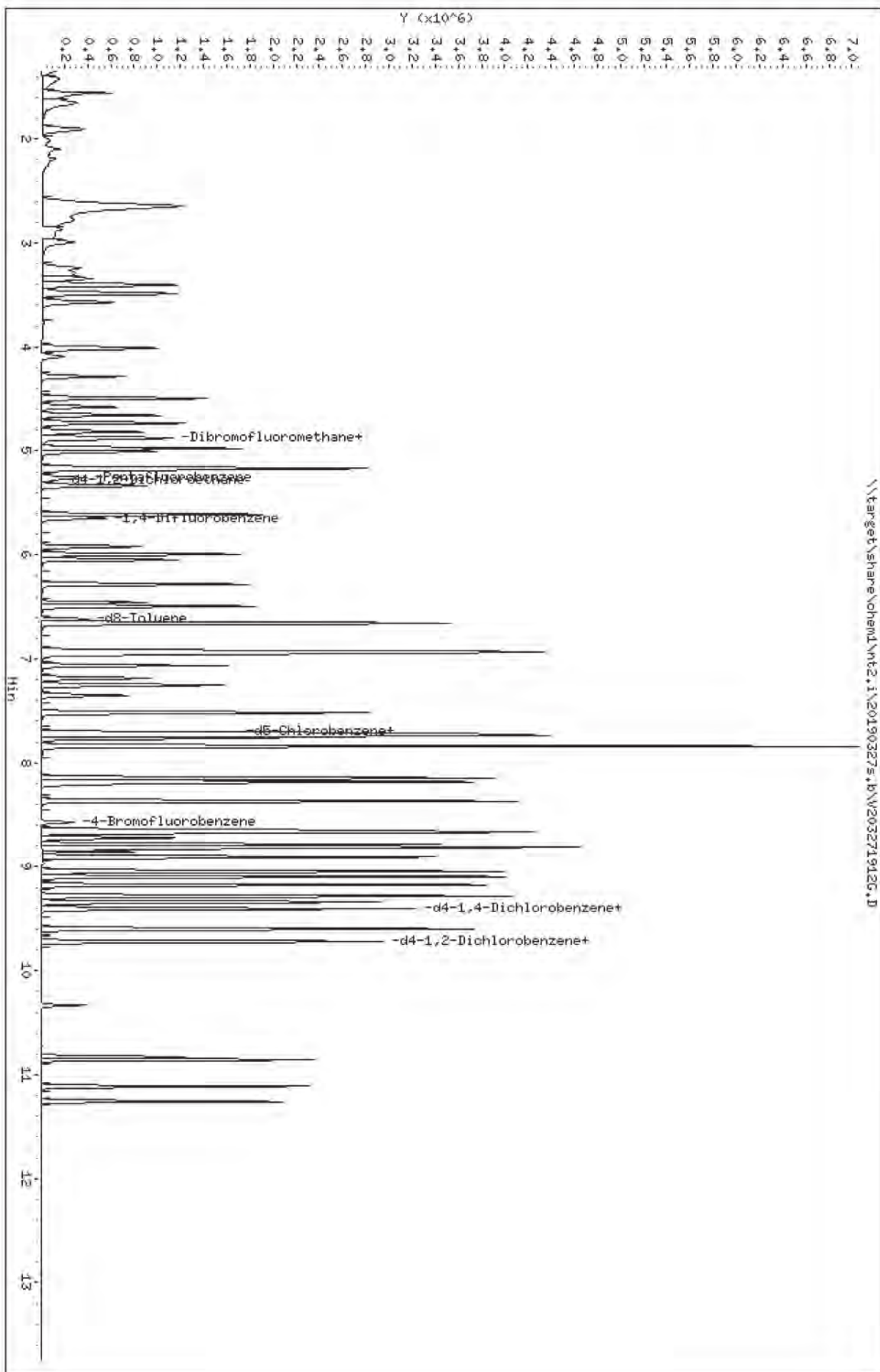
nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 11:11

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271912G.D
Date: 27-MAR-2019 11:31
Client ID:
Sample Info: SHC0426-CAL7

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271912G.D
 Lab Smp Id: SHC0426-CAL7
 Inj Date : 27-MAR-2019 11:31
 Operator : LH
 Smp Info : SHC0426-CAL7
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Meth Date : 27-Mar-2019 13:21 lanih
 Cal Date : 27-MAR-2019 11:51
 Als bottle: 14
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 4.14
 Processing Host: ORGDATA20

Inst ID: nt2.i
 Quant Type: ISTD
 Cal File: V203271913.D
 Calibration Sample, Level: 7
 Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
\$ 27 Dibromofluoromethane	111	4.876	4.879	(0.927)	50964	5.00000	5.064
* 32 Pentafluorobenzene	168	5.259	5.256	(1.000)	198883	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.284	5.286	(1.005)	55384	5.00000	5.035
* 37 1,4-Difluorobenzene	114	5.649	5.645	(1.000)	360824	10.0000	
\$ 43 d8-Toluene	98	6.622	6.619	(1.172)	219341	5.00000	5.027
* 53 d5-Chlorobenzene	117	7.705	7.708	(1.000)	328162	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.575	8.571	(1.113)	60458	5.00000	5.119
* 76 d4-1,4-Dichlorobenzene	162	9.396	9.393	(1.000)	152756	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.715	(1.034)	71050	5.00000	4.978

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271912G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL7
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	198883	-0.36
37 1,4-Difluorobenze	364397	182199	728794	360824	-0.98
53 d5-Chlorobenzene	328727	164364	657454	328162	-0.17
76 d4-1,4-Dichlorobe	151591	75796	303182	152756	0.77

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.07
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.07
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.40	0.04

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271912G.D

Lab ID: SHC0426-CAL7

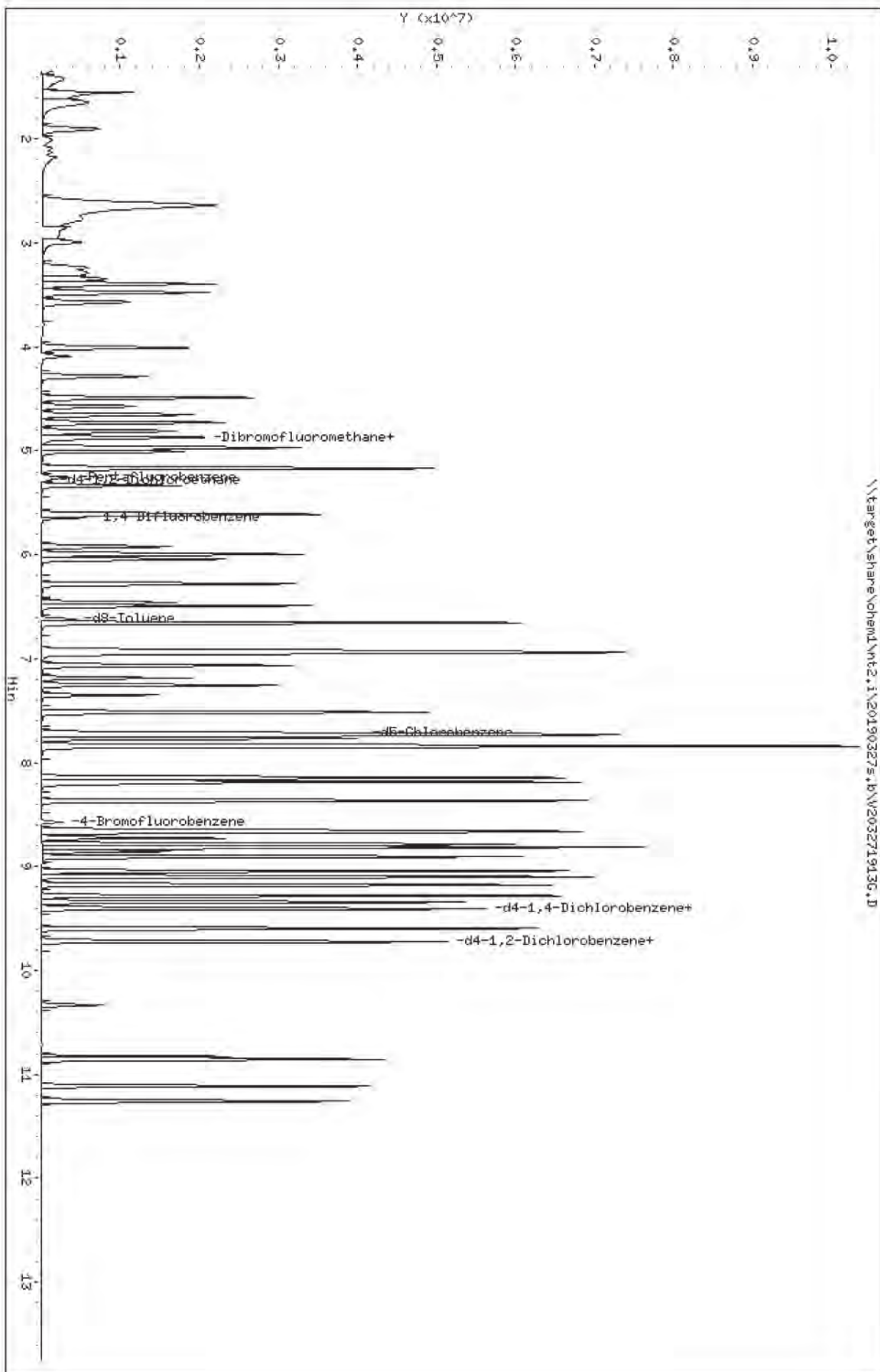
nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 11:31

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271913G.D
Date: 27-MAR-2019 11:51
Client ID:
Sample Info: SHC0426-CAL8

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271913G.D
 Lab Smp Id: SHC0426-CAL8
 Inj Date : 27-MAR-2019 11:51
 Operator : LH Inst ID: nt2.i
 Smp Info : SHC0426-CAL8
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Meth Date : 27-Mar-2019 13:21 lanih Quant Type: ISTD
 Cal Date : 27-MAR-2019 11:51 Cal File: V203271913.D
 Als bottle: 15 Calibration Sample, Level: 8
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA20

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
\$ 27 Dibromofluoromethane	111	4.875	4.879 (1.000)		52269	5.00000	5.185
* 32 Pentafluorobenzene	168	5.258	5.256 (1.000)		199230	10.0000	(M)
\$ 33 d4-1,2-Dichloroethane	65	5.283	5.286 (1.000)		55962	5.00000	5.079
* 37 1,4-Difluorobenzene	114	5.648	5.645 (1.000)		364969	10.0000	
\$ 43 d8-Toluene	98	6.621	6.619 (1.172)		223545	5.00000	5.065
* 53 d5-Chlorobenzene	117	7.710	7.708 (1.000)		326064	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.574	8.571 (1.112)		60652	5.00000	5.168
* 76 d4-1,4-Dichlorobenzene	162	9.395	9.393 (1.000)		149692	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.718	9.715 (1.034)		68501	5.00000	4.898

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271913G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-CAL8
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	199230	-0.19
37 1,4-Difluorobenze	364397	182199	728794	364969	0.16
53 d5-Chlorobenzene	328727	164364	657454	326064	-0.81
76 d4-1,4-Dichlorobe	151591	75796	303182	149692	-1.25

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.05
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.05
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	0.04
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.40	0.03

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V203271913G.D

Lab ID: SHC0426-CAL8

nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 11:51

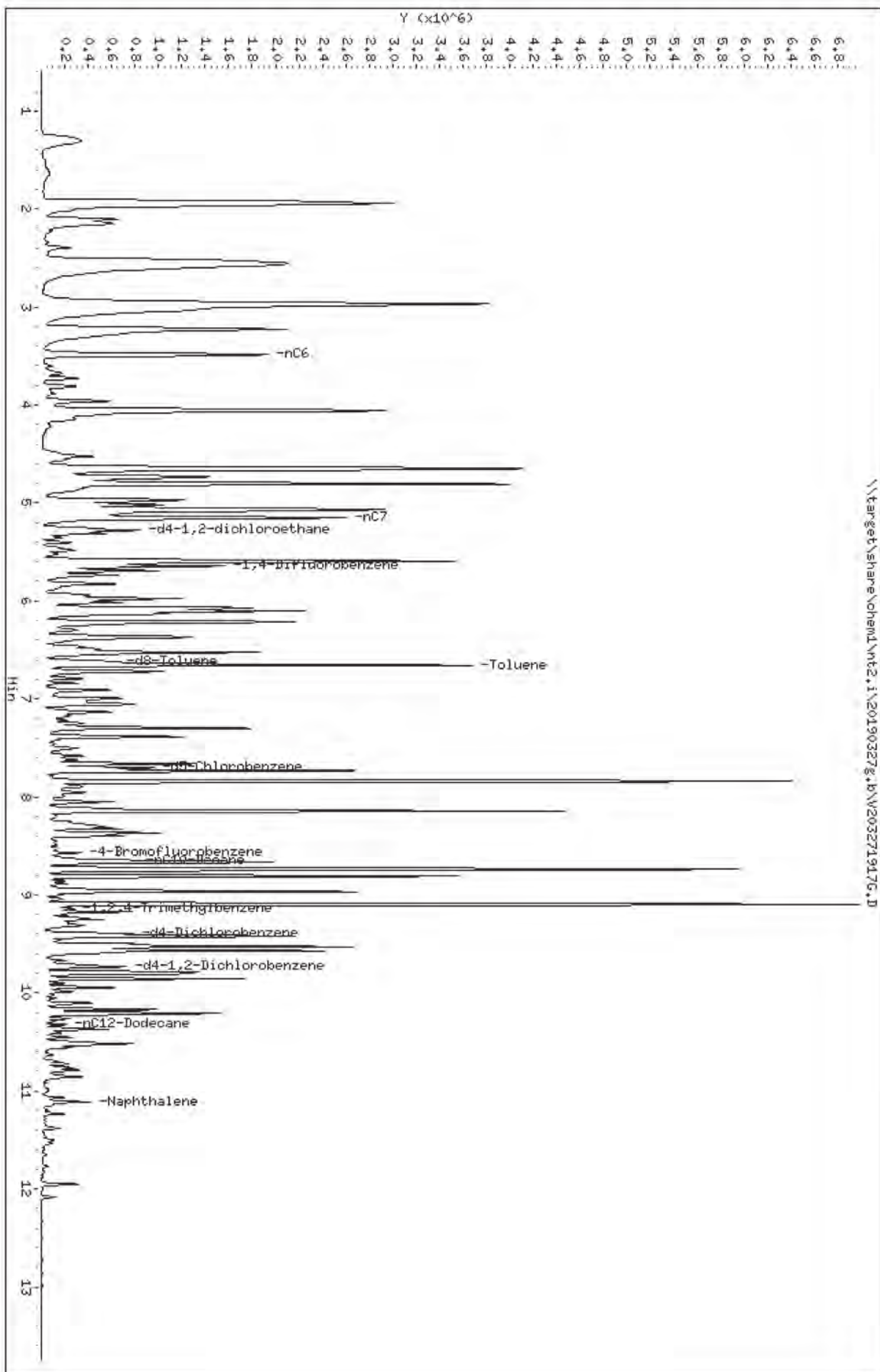
RT	CO-ELUTION COMPOUNDS
----	----------------------

-------	--

Data File: \\target\share\chemd\nt2.i\20190327g.b\203271947G.D
Date: 27-MAR-2019 13:12
Client ID:
Sample Info: SHC0426-CALE

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271917G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 13:12

ARI ID: SHC0426-CALE
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	120335429	5.014
8015C 2MP-TMB (3.04 to 9.23)	33333333	198006324	5.940
AK101 nC6-nC10 (3.39 to 8.54)	31889318	154770353	4.853
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	127002089	5.058
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	174309176	4.915

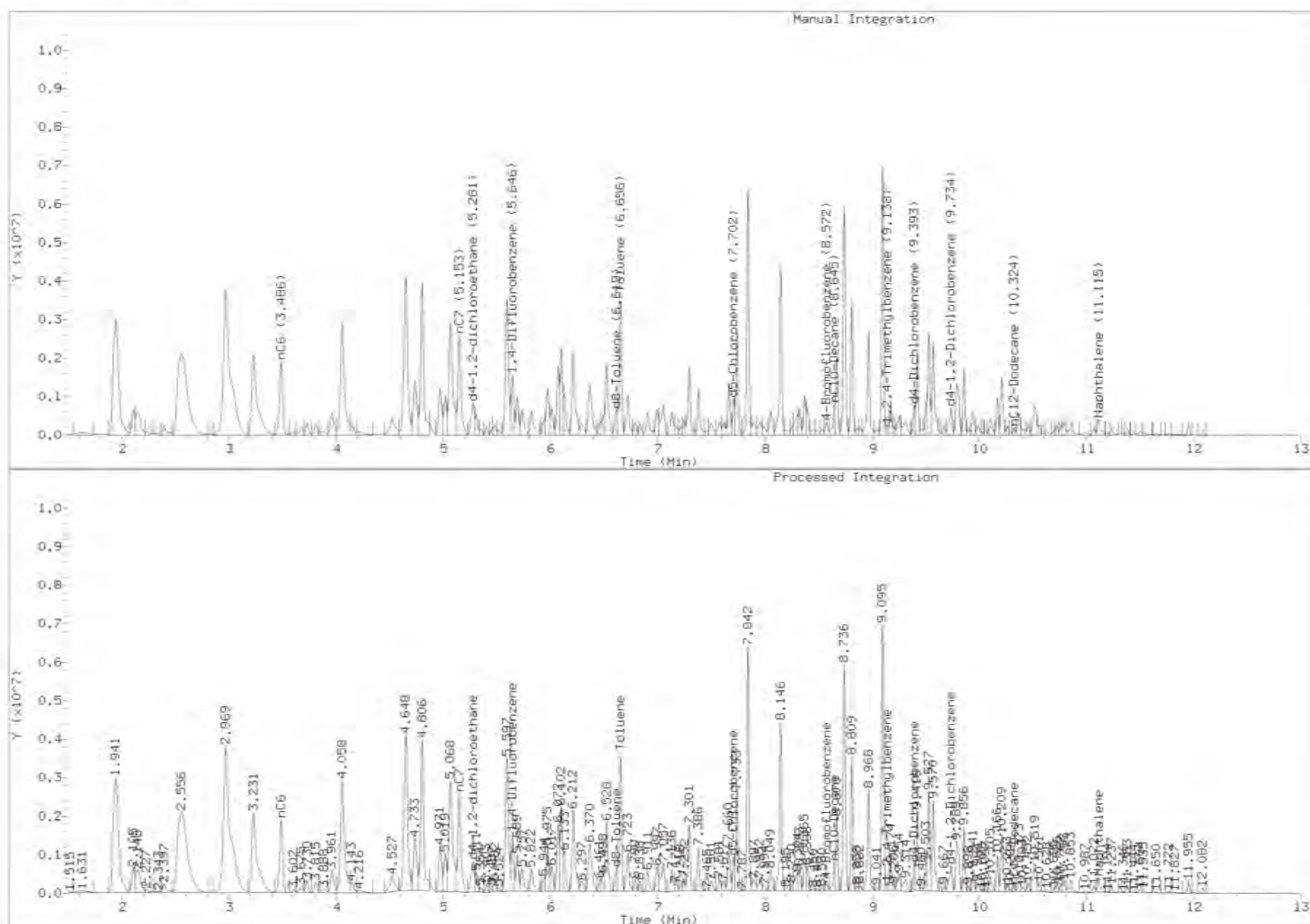
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.702	1387124	d5-Chlorobenzene
8.572	604076	4-Bromofluorobenzene
6.619	1077858	d8-Toluene
9.393	955607	d4-Dichlorobenzene
9.734	1561398	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

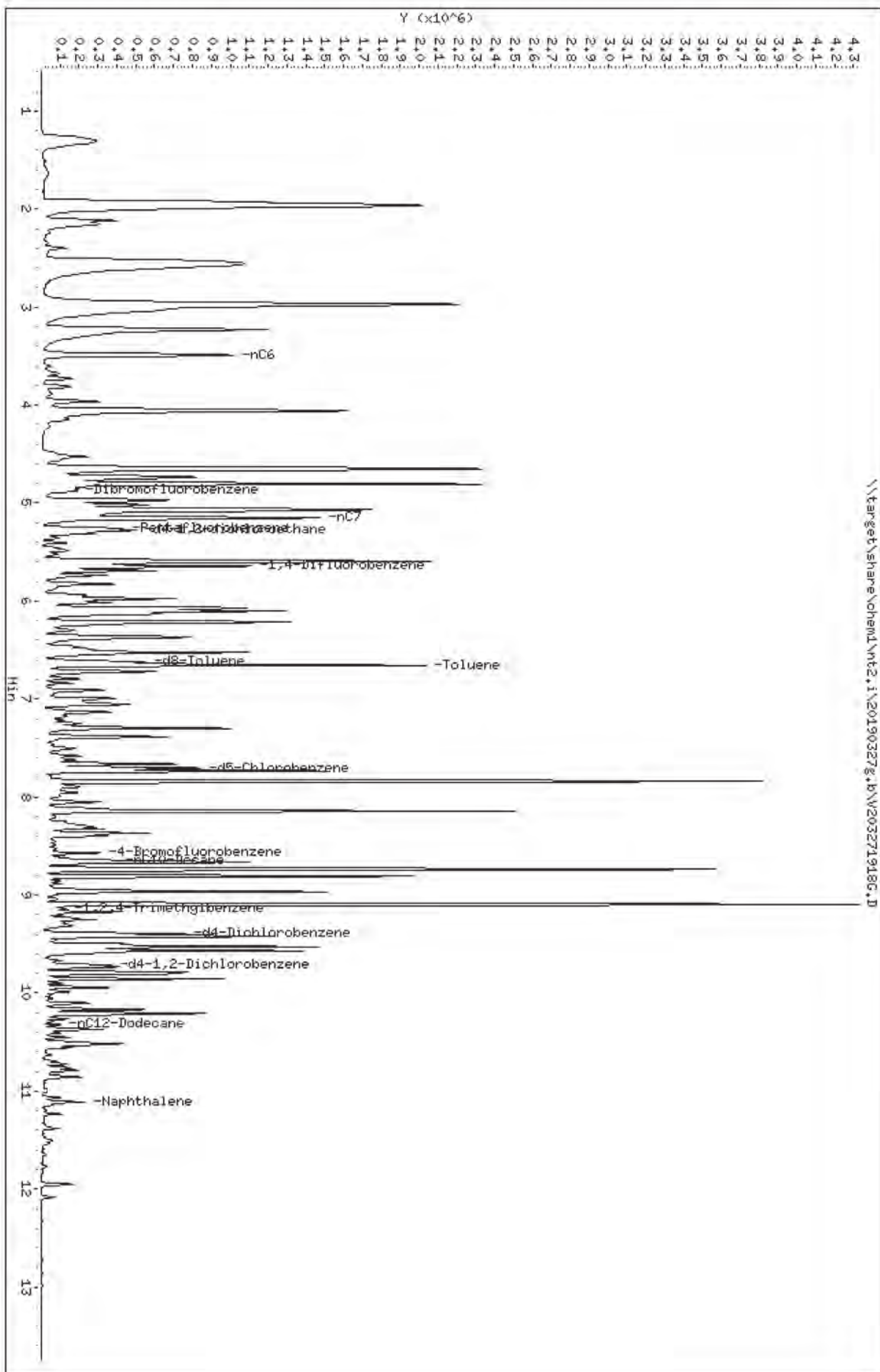
Datafile: NT2, 20190327g.b/V203271917G.D Injection: 27-MAR-2019 13:12
Lab ID:SHC0426-CALE



Data File: \\target\share\chemd\nt2.i\20190327g.b\203271918G.D
Date: 27-MAR-2019 13:32
Client ID:
Sample Info: SHC0426-CALD

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271918G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 13:32

ARI ID: SHC0426-CALD
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	67197802	2.800
8015C 2MP-TMB (3.04 to 9.23)	33333333	108719078	3.262
AK101 nC6-nC10 (3.39 to 8.54)	31889318	84781355	2.659
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	70797947	2.820
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	97251908	2.742

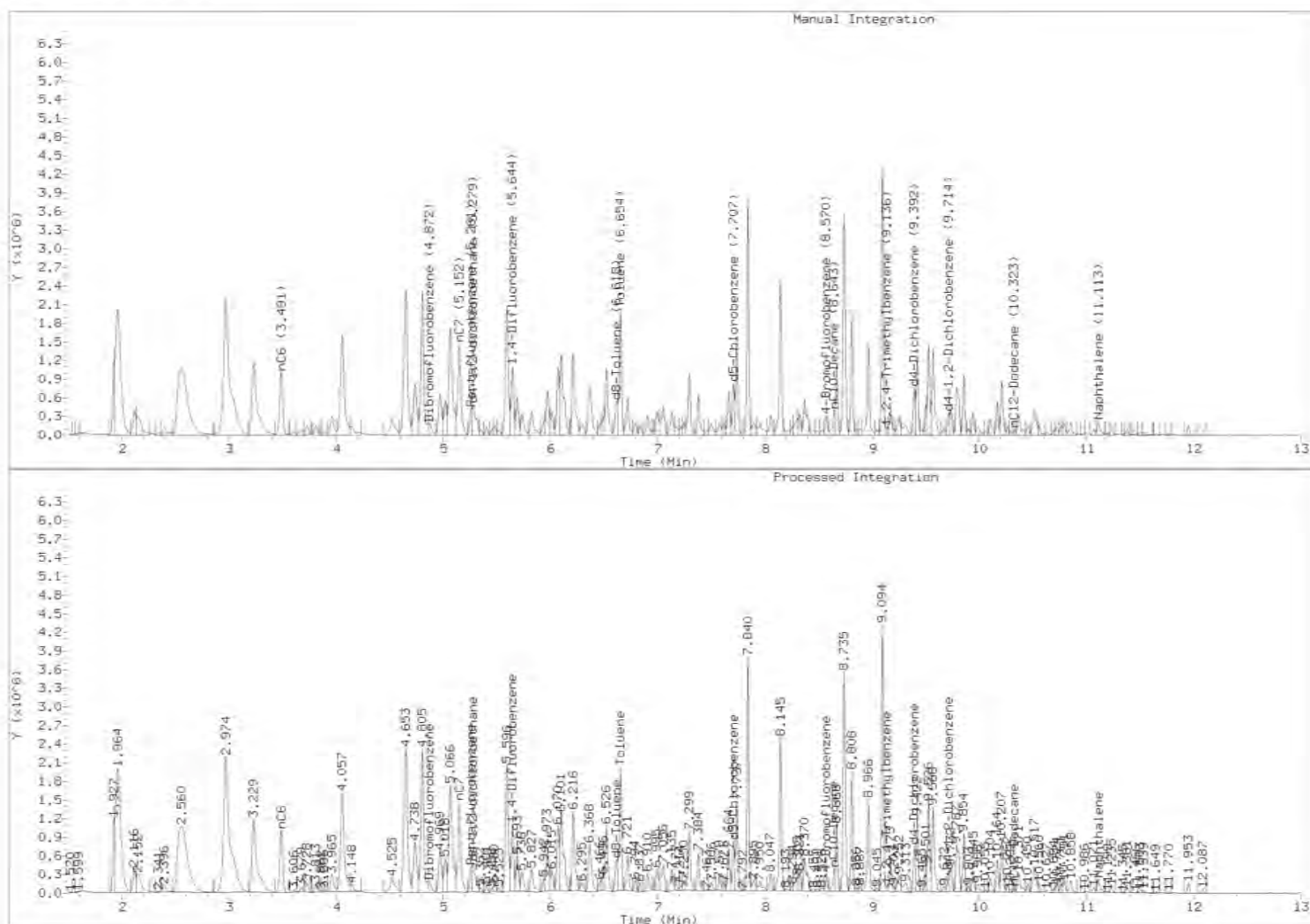
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.707	1325661	d5-Chlorobenzene
8.570	499466	4-Bromofluorobenzene
6.618	953351	d8-Toluene
9.392	1036047	d4-Dichlorobenzene
9.714	507175	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

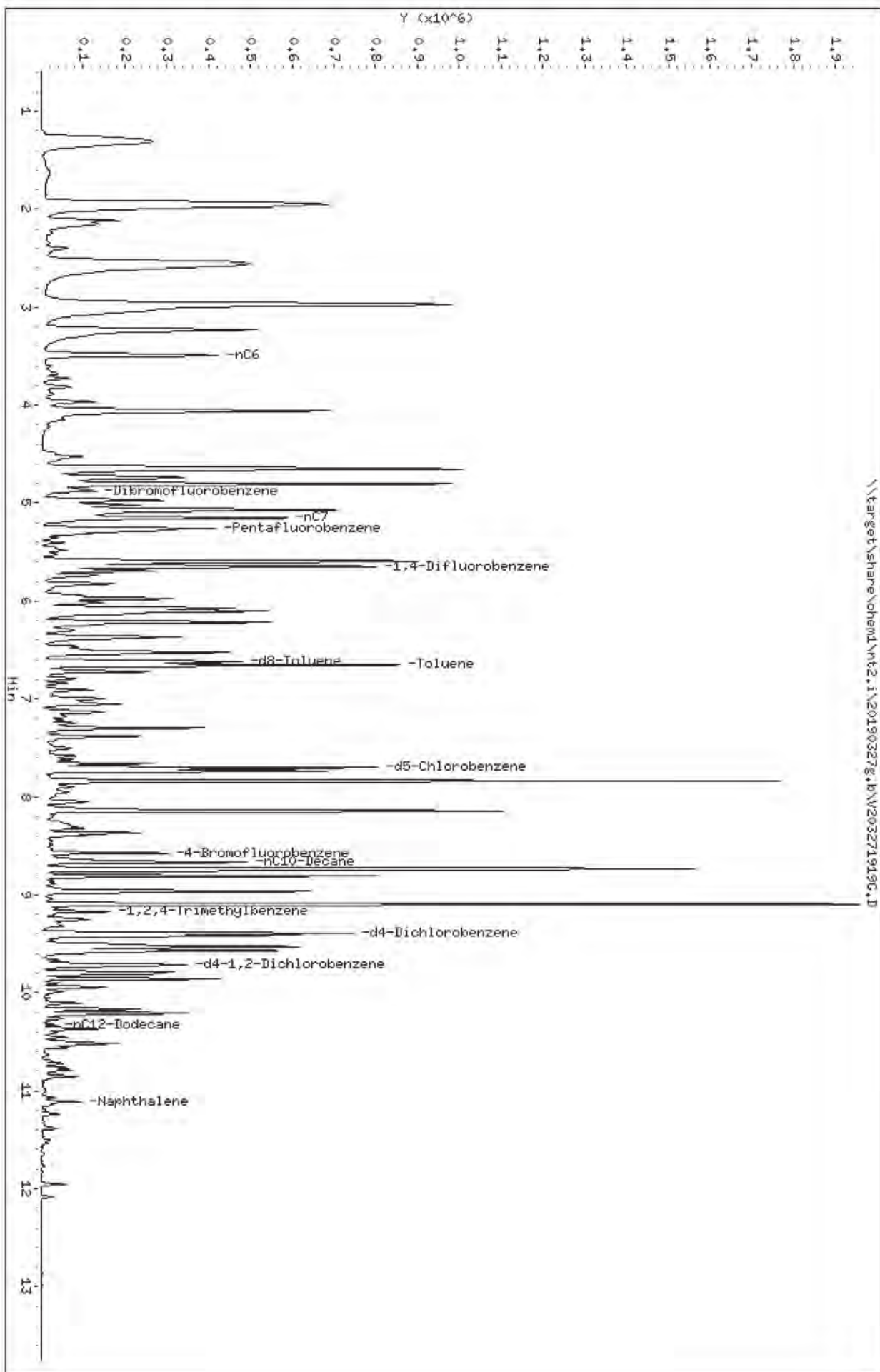
Datafile: NT2, 20190327g.b/V203271918G.D Injection: 27-MAR-2019 13:32
Lab ID:SHC0426-CALD



Data File: \\target\share\chem\nt2.i\20190327g.b\203271919G.D
Date: 27-MAR-2019 13:52
Client ID:
Sample Info: SHC0426-CALC

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271919G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 13:52

ARI ID: SHC0426-CALC
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	26660216	1.111
8015C 2MP-TMB (3.04 to 9.23)	33333333	44031875	1.321 M
AK101 nC6-nC10 (3.39 to 8.54)	31889318	34012137	1.067 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	28016709	1.116 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	38907279	1.097

* Surrogate areas are subtracted from Total Area

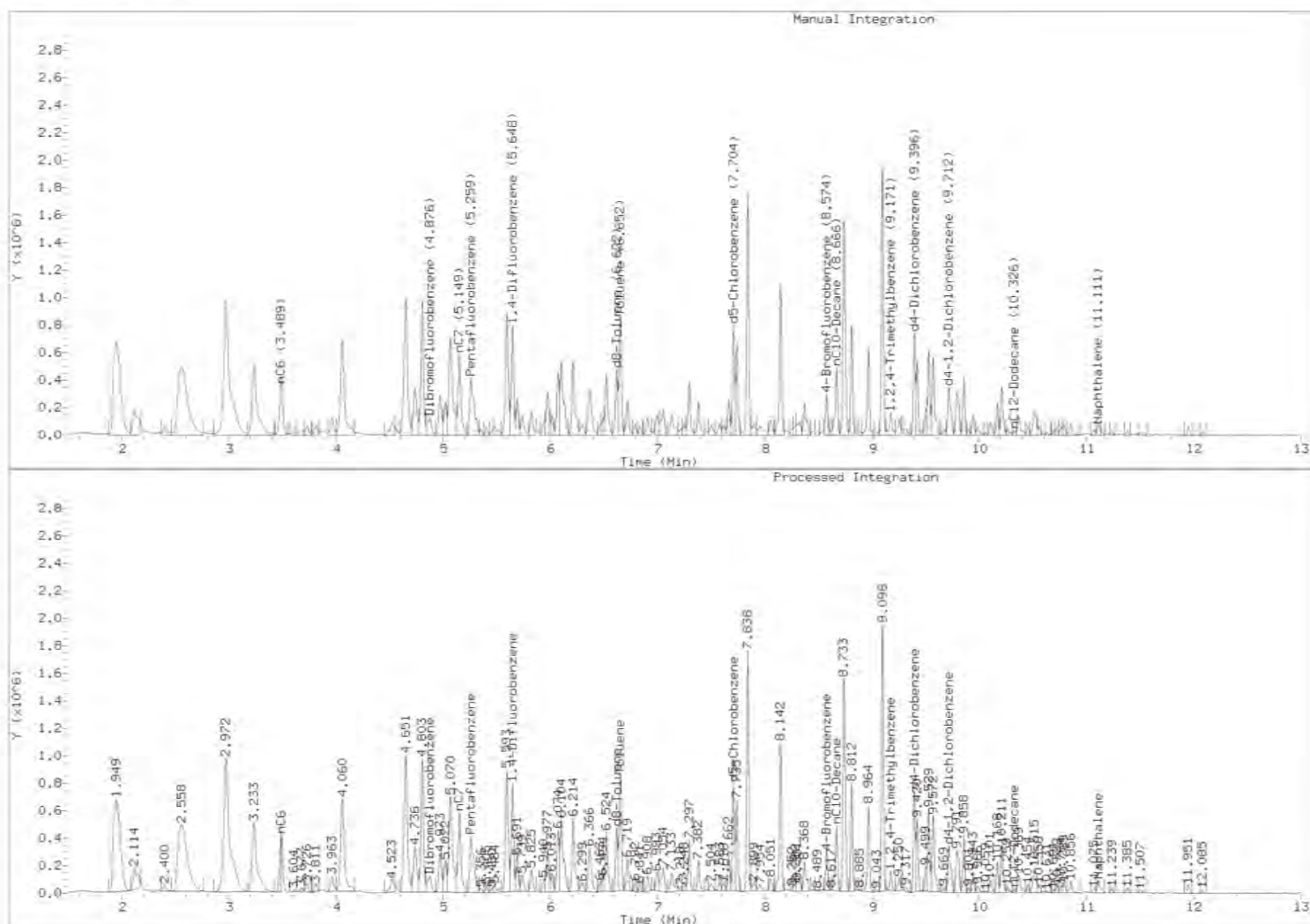
NW Gas Range Subtracted Peaks

7.704	1191341	d5-Chlorobenzene
8.574	426943	4-Bromofluorobenzene
6.622	779808	d8-Toluene
9.396	1042990	d4-Dichlorobenzene
9.712	677737	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

Datafile: NT2, 20190327g.b/V203271919G.D Injection: 27-MAR-2019 13:52

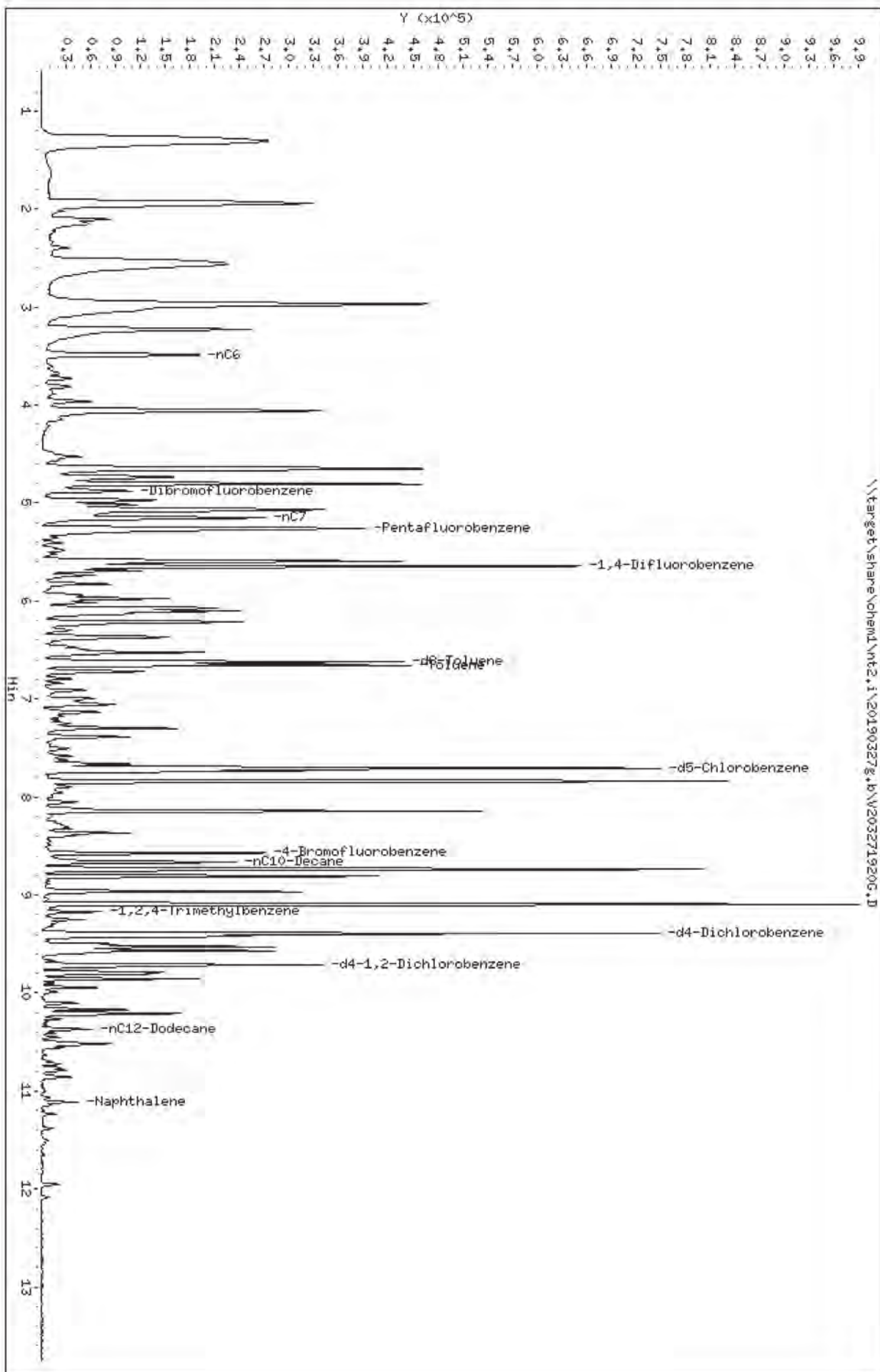
Lab ID:SHC0426-CALC



Data File: \\target\share\chem\nt2.i\20190327g.b\203271920G.D
Date: 27-MAR-2019 14:13
Client ID:
Sample Info: SHC0426-CALB

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271920G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 14:13

ARI ID: SHC0426-CALB
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	12013453	0.501 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	20314762	0.609
AK101 nC6-nC10 (3.39 to 8.54)	31889318	15651340	0.491
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	12519392	0.499 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	17658554	0.498 M

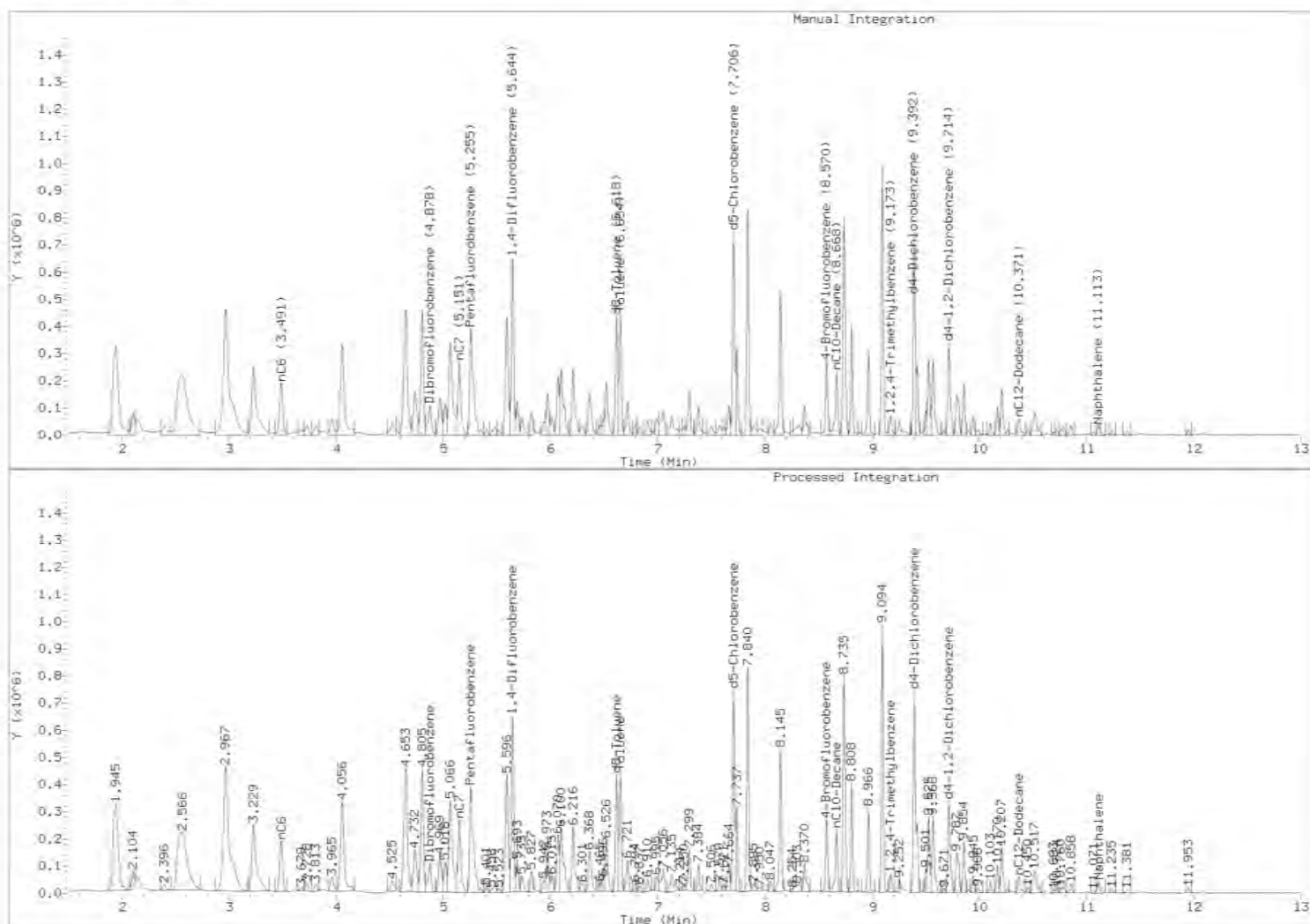
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.706	1087342	d5-Chlorobenzene
8.570	390277	4-Bromofluorobenzene
6.618	671096	d8-Toluene
9.392	993986	d4-Dichlorobenzene
9.714	530524	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

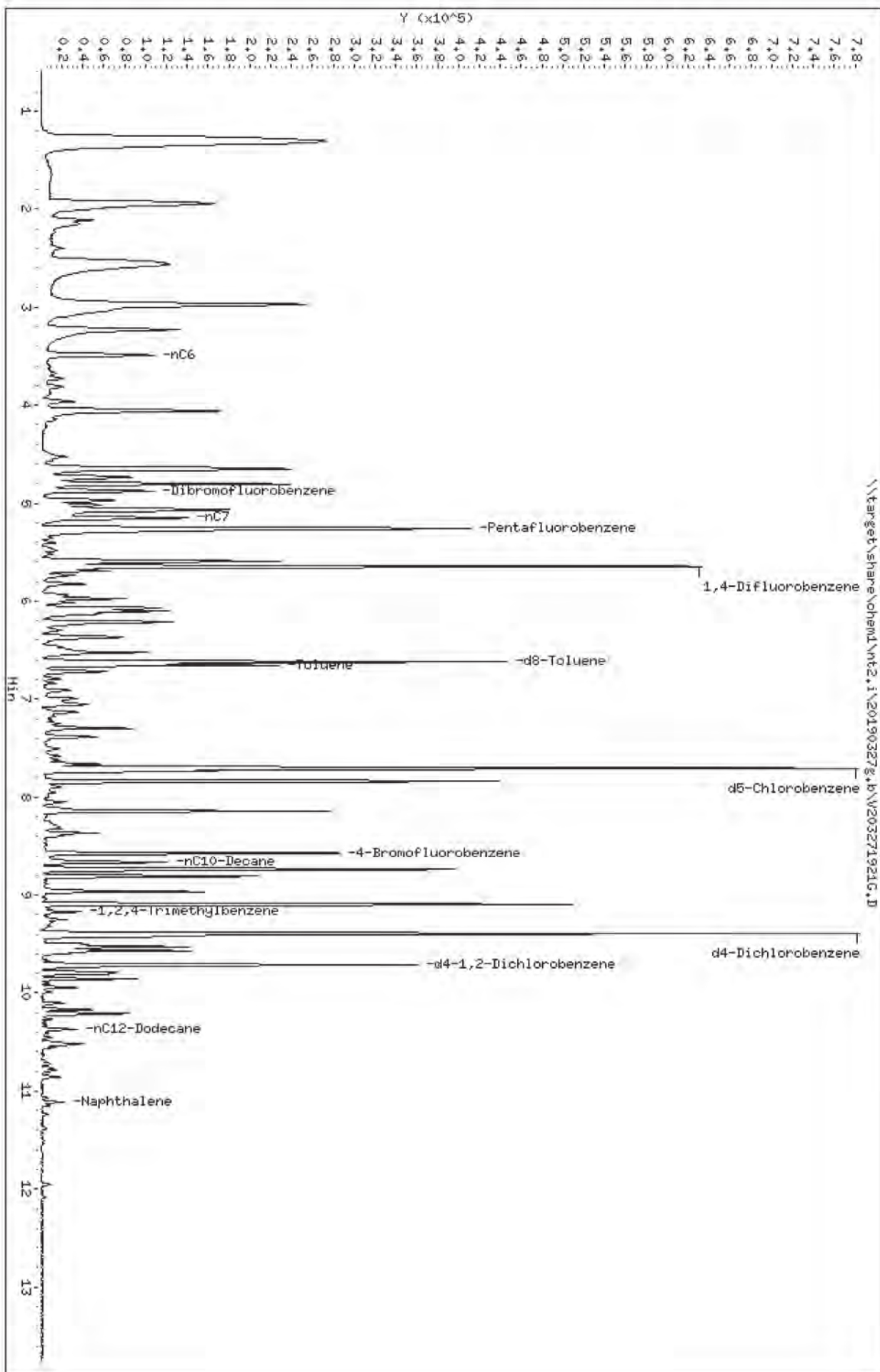
Datafile: NT2, 20190327g.b/V203271920G.D Injection: 27-MAR-2019 14:13
Lab ID:SHC0426-CALB



Data File: \\target\share\chemd\nt2.i\20190327g.b\W203271921G.D
Date: 27-MAR-2019 14:33
Client ID:
Sample Info: SHC0426-CALA

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271921G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 14:33

ARI ID: SHC0426-CALA
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	5559756	0.232 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	9927204	0.298 M
AK101 nC6-nC10 (3.39 to 8.54)	31889318	7556125	0.237 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	5756563	0.229 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	8304875	0.234 M

* Surrogate areas are subtracted from Total Area

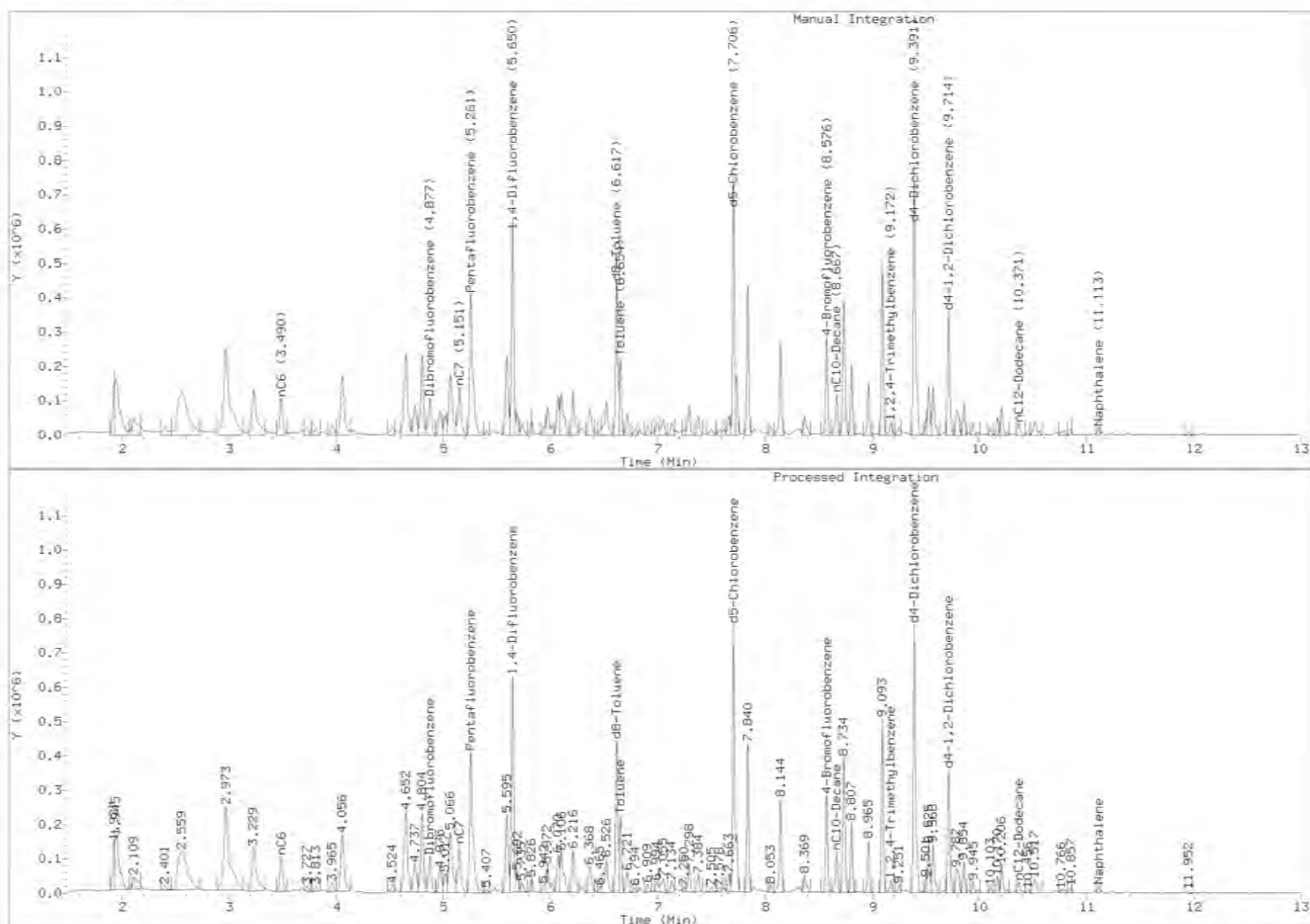
NW Gas Range Subtracted Peaks

7.706	1067429	d5-Chlorobenzene
8.576	403015	4-Bromofluorobenzene
6.617	679409	d8-Toluene
9.391	1166023	d4-Dichlorobenzene
9.714	505356	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

Datafile: NT2, 20190327g.b/V203271921G.D Injection: 27-MAR-2019 14:33

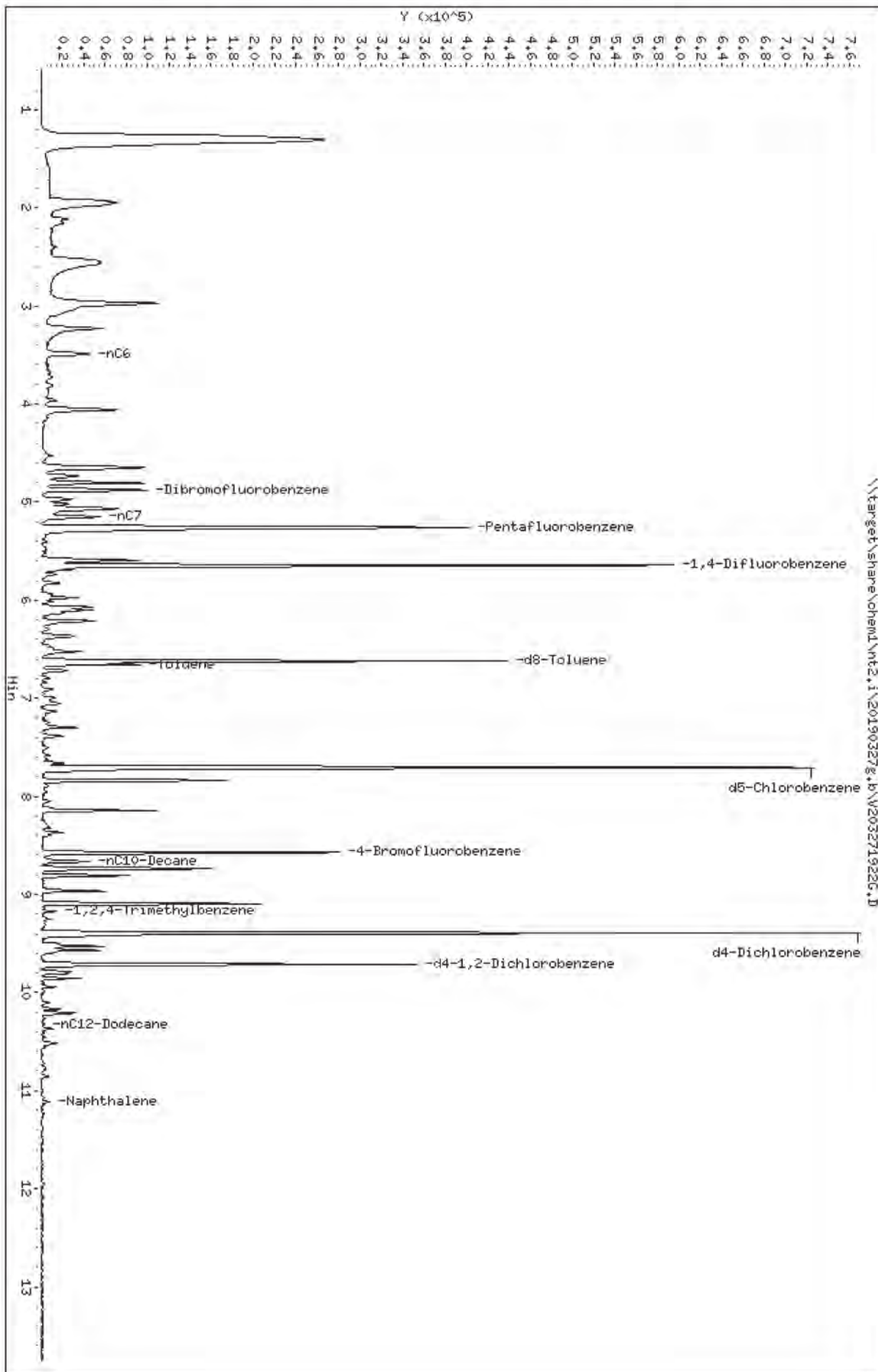
Lab ID:SHC0426-CALA



Data File: \\target\share\chemd\nt2.i\20190327g.b\203271922G.D
Date: 27-MAR-2019 14:53
Client ID:
Sample Info: SHC0426-CAL9

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271922G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 14:53

ARI ID: SHC0426-CAL9
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	2012494	0.084 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	4088619	0.123 M
AK101 nC6-nC10 (3.39 to 8.54)	31889318	3092998	0.097 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	2084101	0.083 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	3159588	0.089 M

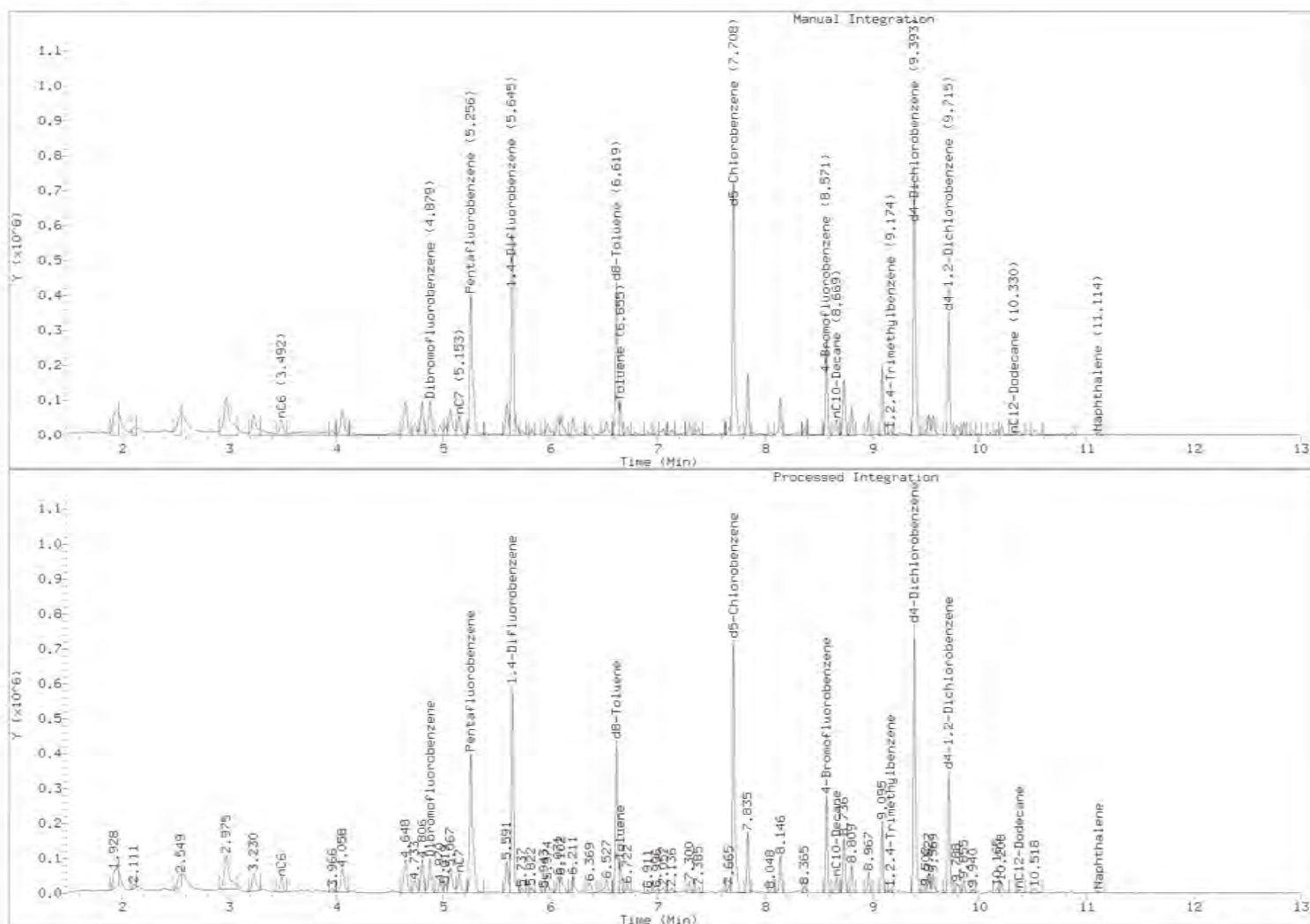
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.708	1074108	d5-Chlorobenzene
8.571	371482	4-Bromofluorobenzene
6.619	611759	d8-Toluene
9.393	1039834	d4-Dichlorobenzene
9.715	470676	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

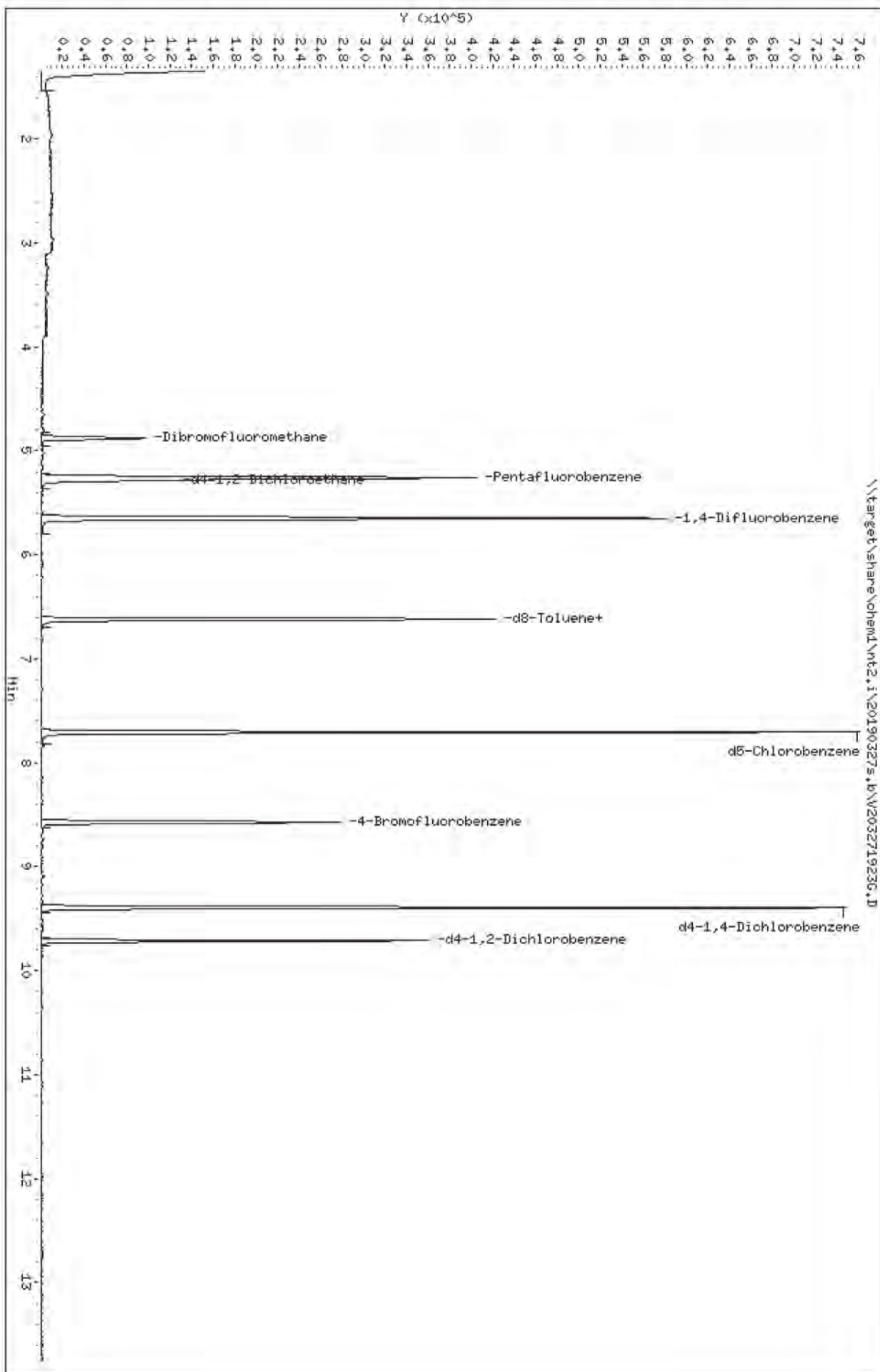
Datafile: NT2, 20190327g.b/V203271922G.D Injection: 27-MAR-2019 14:53
Lab ID:SHC0426-CAL9



Data File: \\target\share\chemd\nt2.i\20190327s.b\203271923G.D
Date: 27-MAR-2019 15:43
Client ID:
Sample Info: SHC0426-ICB1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271923G.D
Lab Smp Id: SHC0426-ICB1
Inj Date : 27-MAR-2019 15:13
Operator : LH
Smp Info : SHC0426-ICB1
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Meth Date : 27-Mar-2019 13:21 lanih
Cal Date : 27-MAR-2019 11:51
Als bottle: 25
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA20

Inst ID: nt2.i
Quant Type: ISTD
Cal File: V203271913.D
Compound Sublist: gsurr.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
	MASS					(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111	4.876	4.879 (0.927)		51582	4.78398	4.784	
* 32 Pentafluorobenzene	168	5.260	5.256 (1.000)		213097	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.284	5.286 (1.005)		59460	5.04502	5.045	
* 37 1,4-Difluorobenzene	114	5.649	5.645 (1.000)		385474	10.0000		
\$ 43 d8-Toluene	98	6.622	6.619 (1.172)		231894	4.97500	4.975	
* 53 d5-Chlorobenzene	117	7.705	7.708 (1.000)		348971	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.575	8.571 (1.113)		61485	4.89531	4.895	
* 76 d4-1,4-Dichlorobenzene	162	9.390	9.393 (1.000)		162630	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.713	9.715 (1.034)		75595	4.97499	4.975	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271923G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-ICB1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	213097	6.76
37 1,4-Difluorobenze	364397	182199	728794	385474	5.78
53 d5-Chlorobenzene	328727	164364	657454	348971	6.16
76 d4-1,4-Dichlorobe	151591	75796	303182	162630	7.28

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.08
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.07
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHC0426-ICB1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.784	95.68	
\$ 33 d4-1,2-Dichloroeth	5.000	5.045	100.90	
\$ 43 d8-Toluene	5.000	4.975	99.50	
\$ 62 4-Bromofluorobenze	5.000	4.895	97.91	
\$ 79 d4-1,2-Dichloroben	5.000	4.975	99.50	

REVIEW SUMMARY FOR FILE - V203271923G.D

Lab ID: SHC0426-ICB1

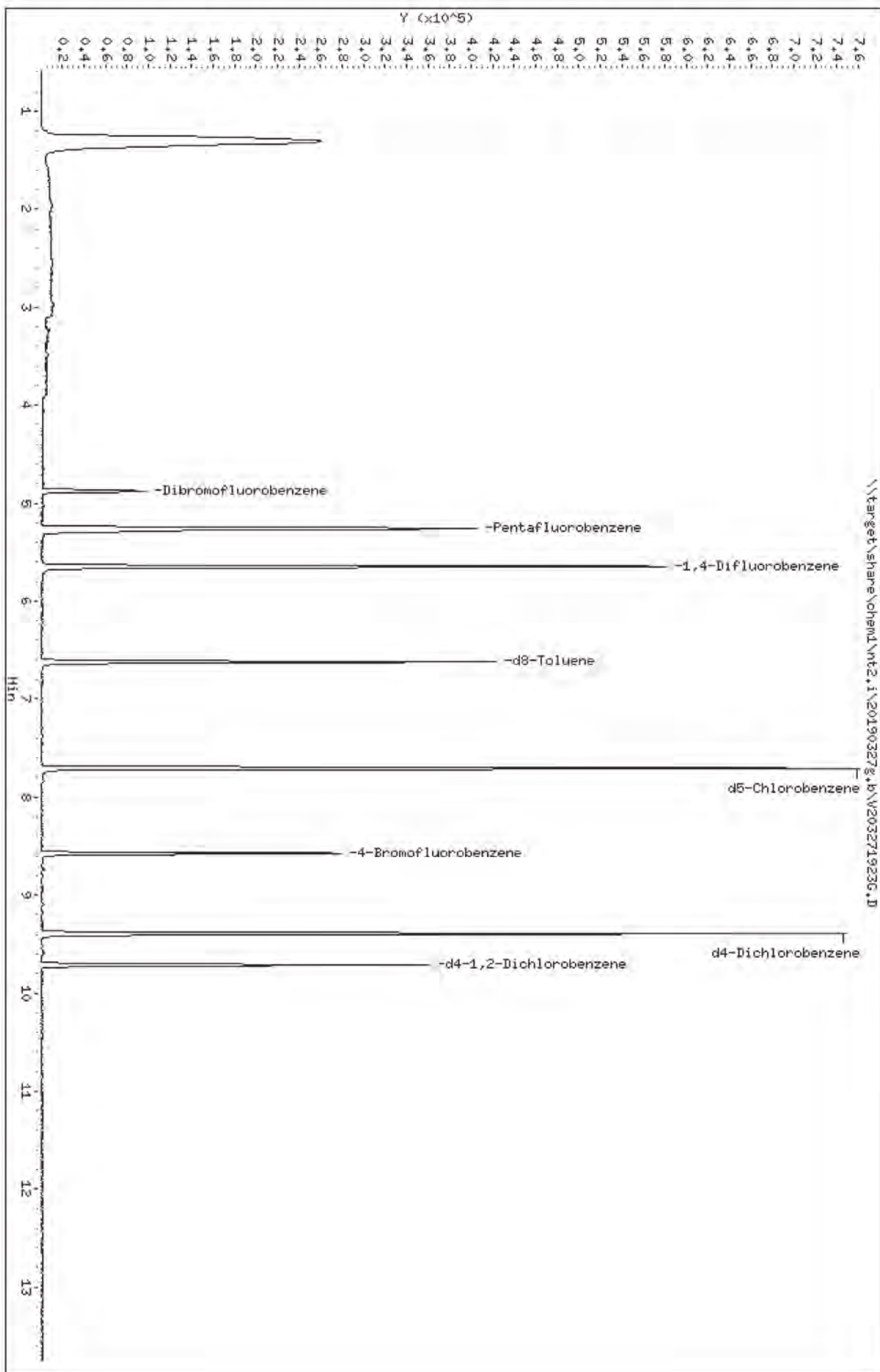
nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 15:13

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190327g.b\W203271923G.D
Date: 27-MAR-2019 15:43
Client ID:
Sample Info: SHC0426-ICB1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271923G.D

Method: \20190327g.b\GA032719.m

Instrument: nt2.1

Gas Ical Date: 3/27/19

Injection Date: 27-MAR-2019 15:13

ARI ID: SHC0426-ICB1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	2	0.000
8015C 2MP-TMB (3.04 to 9.23)	33333333	4	0.000
AK101 nC6-nC10 (3.39 to 8.54)	31889318	3	0.000
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	2	0.000
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	3	0.000

* Surrogate areas are subtracted from Total Area

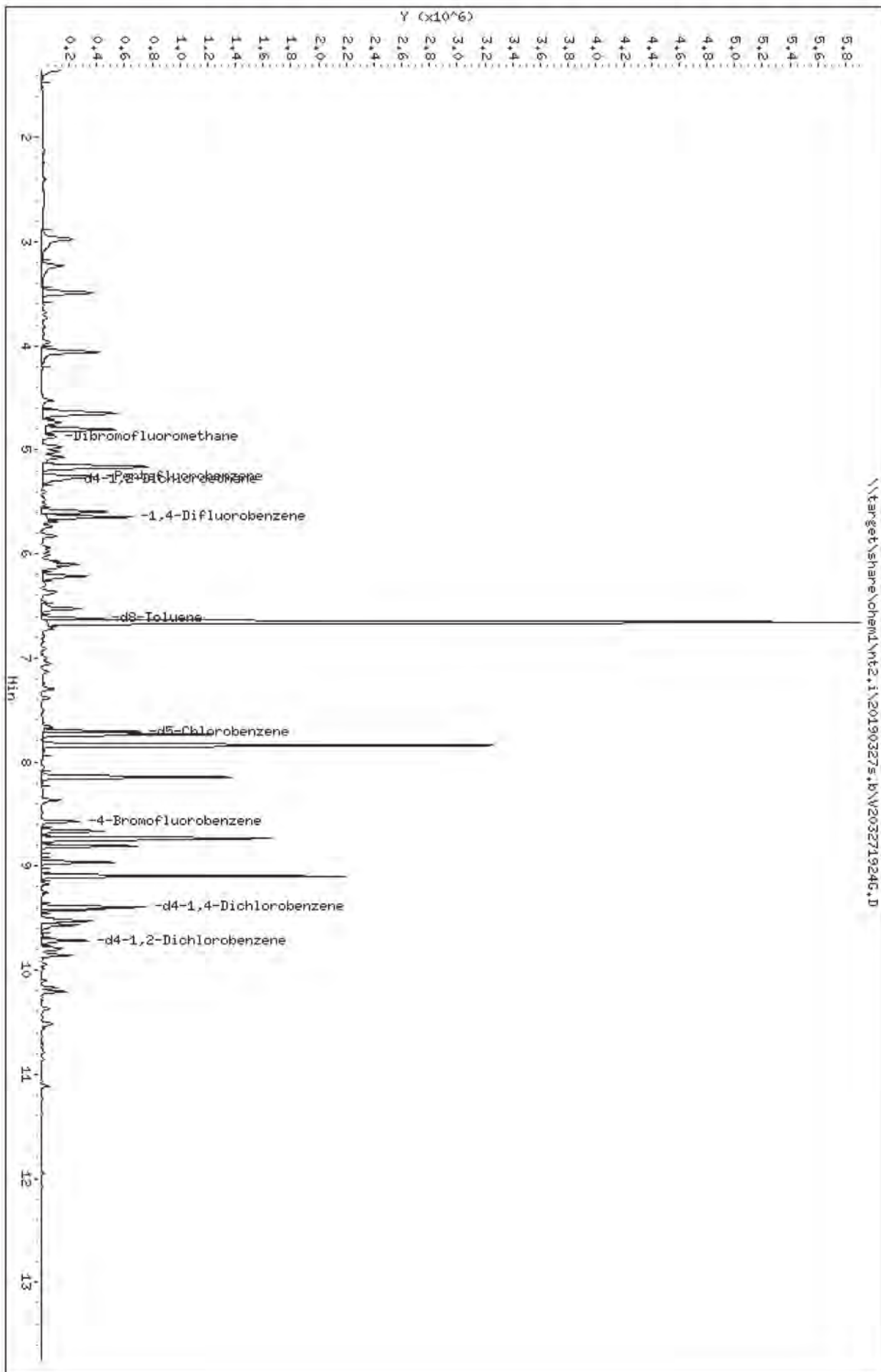
NW Gas Range Subtracted Peaks

7.706	991583	d5-Chlorobenzene
8.576	365044	4-Bromofluorobenzene
6.617	587279	d8-Toluene
9.391	990530	d4-Dichlorobenzene
9.713	454939	d4-1,2-Dichlorobenzene

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271924G.D
Date: 27-MAR-2019 15:34
Client ID:
Sample Info: SHC0426-SCV1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271924G.D
Lab Smp Id: SHC0426-SCV1
Inj Date : 27-MAR-2019 15:34
Operator : LH
Smp Info : SHC0426-SCV1
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Meth Date : 27-Mar-2019 13:21 lanih
Cal Date : 27-MAR-2019 11:51
Als bottle: 26
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA20

Inst ID: nt2.i

Quant Type: ISTD

Cal File: V203271913.D

Compound Sublist: gsurr.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
	MASS					(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111	4.879	4.879	(0.928)	49595	4.79510	4.795	
* 32 Pentafluorobenzene	168	5.256	5.256	(1.000)	204413	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.286	5.286	(1.006)	57727	5.10606	5.106	
* 37 1,4-Difluorobenzene	114	5.645	5.645	(1.000)	370519	10.0000		
\$ 43 d8-Toluene	98	6.619	6.619	(1.172)	224126	5.00242	5.002	
* 53 d5-Chlorobenzene	117	7.708	7.708	(1.000)	333831	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.571	8.571	(1.112)	59645	4.96418	4.964	
* 76 d4-1,4-Dichlorobenzene	162	9.393	9.393	(1.000)	154961	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.715	9.715	(1.034)	73445	5.07271	5.073	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271924G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-SCV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	204413	2.41
37 1,4-Difluorobenze	364397	182199	728794	370519	1.68
53 d5-Chlorobenzene	328727	164364	657454	333831	1.55
76 d4-1,4-Dichlorobe	151591	75796	303182	154961	2.22

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.01
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.01
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHC0426-SCV1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.795	95.90	
\$ 33 d4-1,2-Dichloroeth	5.000	5.106	102.12	
\$ 43 d8-Toluene	5.000	5.002	100.05	
\$ 62 4-Bromofluorobenze	5.000	4.964	99.28	
\$ 79 d4-1,2-Dichloroben	5.000	5.073	101.45	

REVIEW SUMMARY FOR FILE - V203271924G.D

Lab ID: SHC0426-SCV1

nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 15:34

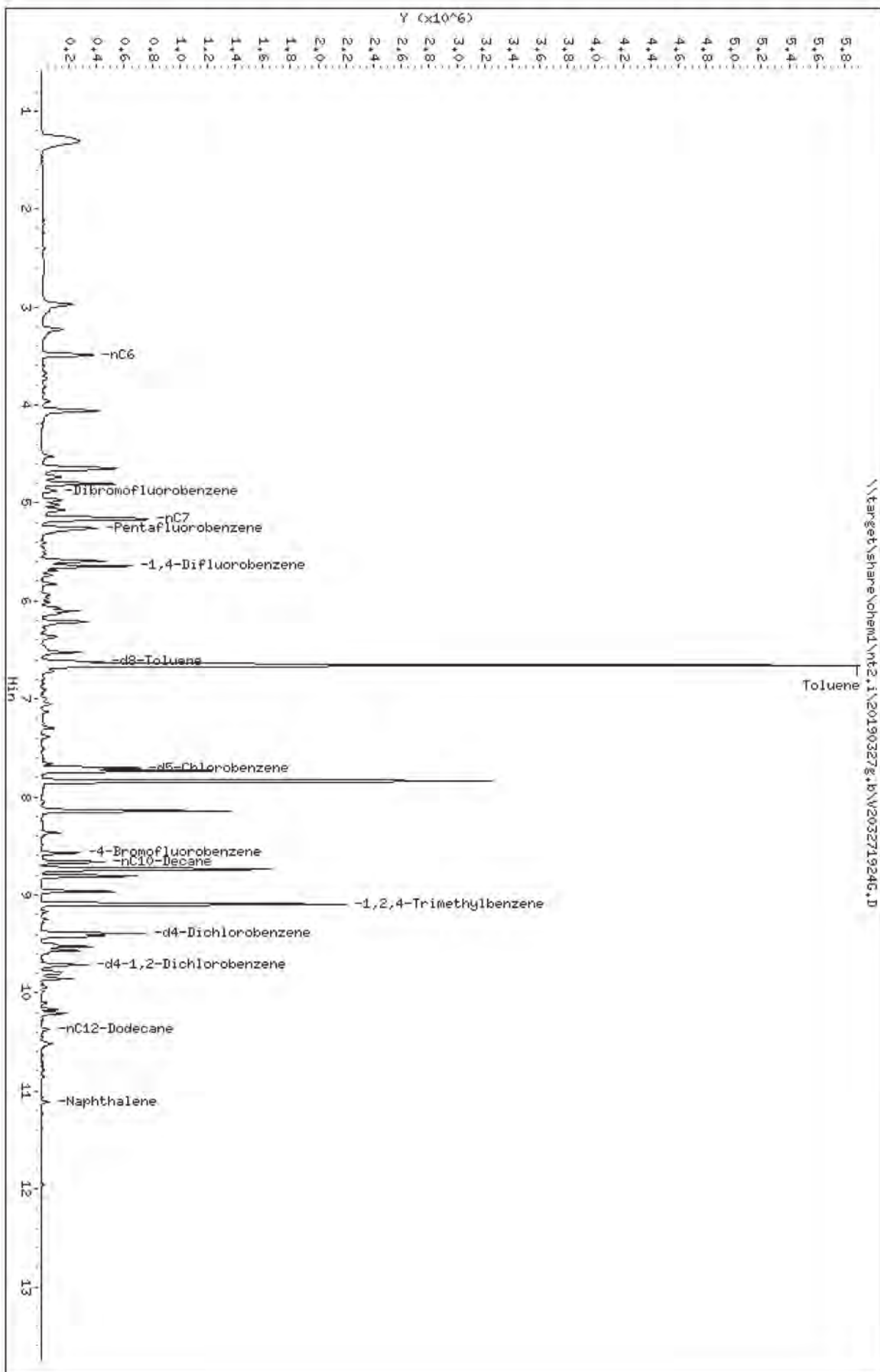
RT	CO-ELUTION COMPOUNDS
----	----------------------

-------	--

Data File: \\target\share\chemd\nt2.i\20190327g.b\203271924G.D
Date: 27-MAR-2019 15:34
Client ID:
Sample Info: SHC0426-SCV1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271924G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 15:34

ARI ID: SHC0426-SCV1
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

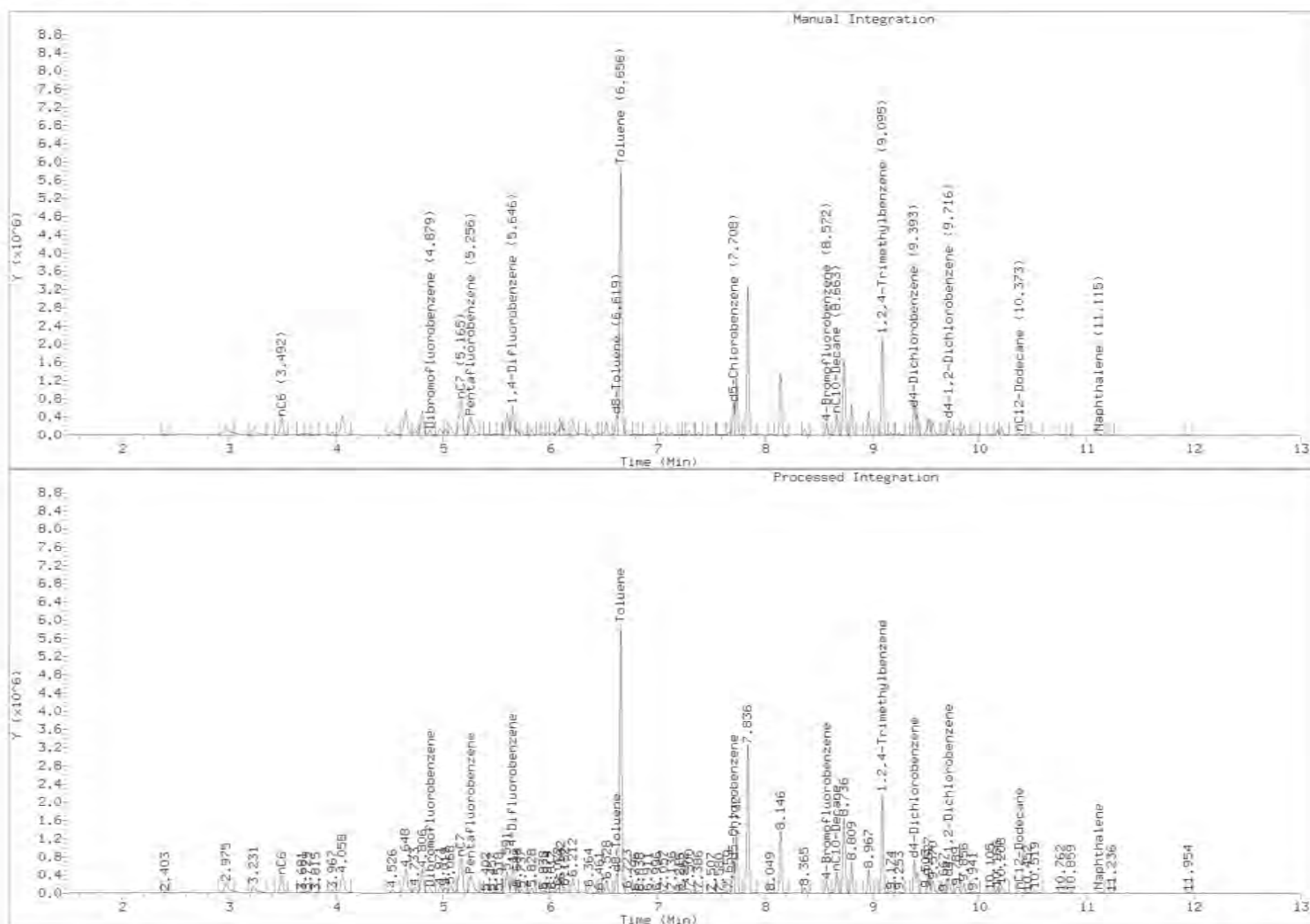
Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	28619754	1.193 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	37959579	1.139
AK101 nC6-nC10 (3.39 to 8.54)	31889318	29950146	0.939
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	28955880	1.153 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	34979565	0.986 M

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.708	1078034	d5-Chlorobenzene
8.572	369527	4-Bromofluorobenzene
6.619	643155	d8-Toluene
9.393	1067710	d4-Dichlorobenzene
9.716	526237	d4-1,2-Dichlorobenzene

Lab ID:SHC0426-SCV1





INITIAL CALIBRATION DATA NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CF00043 Instrument: NT3
Calibration Date: 06/13/2019 10:52 Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Toluene-d8	5	1.280232	5	1.271258	5	1.285438	5	1.267747	5	1.282245	5	1.306373
4-Bromofluorobenzene	5	0.4555063	5	0.4687424	5	0.4818928	5	0.4760424	5	0.478884	5	0.4959943



INITIAL CALIBRATION DATA NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CF00043 Instrument: NT3
Calibration Date: 06/13/2019 10:52 Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)					100	16111.27	250	14878.21	500	16204.14	1000	15457.52
Toluene-d8	5	1.319759	5	1.269921								
4-Bromofluorobenzene	5	0.4889149	5	0.5046012								



NWTPHg

SDG: 19G0163

Project: King County Closed Landfills - Vashon

Instrument: NT3

Column (1): RTX-VMS

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)	2500	17447.58	5000	20322.52								



INITIAL CALIBRATION DATA NWTPHg

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CF00043	Instrument:	NT3
Calibration Date:	06/13/2019 10:52	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Gasoline Range Organics (Tol-Nap)	16736.87	11.7			RSD (15)	
Toluene-d8	1.285372	1.4			RSD (15)	
4-Bromofluorobenzene	0.4813223	3.2			RSD (15)	



ANALYSIS SEQUENCE

SHF0222

Instrument: NT3 Element Column ID: 1300725RTXV
Calibration ID: CF00043 Tune File: bfb.u
EM Voltage: 1835

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHF0222-TUN1	MS Tune	QC		1	H005698	H001679	
SHF0222-CAL1	8260C 0.2	QC		2	H005845	H001679	
SHF0222-CAL2	8260C 0.5	QC		3	H005846	H001679	
SHF0222-CAL3	8260C 1.0	QC		4	H005847	H001679	
SHF0222-CAL4	8260C 2.0	QC		5	H005849	H001679	
SHF0222-CAL5	8260C 10	QC		6	H005850	H001679	
SHF0222-CAL6	8260C 20	QC		7	H005851	H001679	
SHF0222-CAL7	8260C 40	QC		8	H005852	H001679	
SHF0222-CAL8	8260C 80	QC		9	H005853	H001679	
SHF0222-CAL9	Gas 0.1	QC		10	H005157	H001679	
SHF0222-CALA	Gas 0.25	QC		11	H005158	H001679	
SHF0222-CALB	Gas 0.5	QC		12	H005159	H001679	
SHF0222-CALC	Gas 1	QC		13	H005160	H001679	
SHF0222-CALD	Gas 2.5	QC		14	H005161	H001679	
SHF0222-CALE	Gas 5	QC		15	H005162	H001679	
SHF0222-SCV1	Gas SCV 1	QC		16	H003085	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190613.b

Time	Filename	LabID	ClientID	Vial#	pH	DF				
1	1037	V306131901.D	TEST	1	5.41	32993 5.79	49679 7.82	52985 9.51	35087	
2	1106	V306131902.D	TEST	1	5.41	42376 5.79	64664 7.82	70631 9.50	45114	
3	1135	V306131903.D	TEST	raised EM level	1	5.41	86246 5.79	127605 7.82	141219 9.50	93627
4	1204	V306131904.D	TEST	1	5.41	84634 5.79	126750 7.82	140018 9.50	90700	
5	1232	V306131905.D	TEST	1	5.41	71681 5.79	108082 7.82	117990 9.50	77445	
6	1301	V306131906.D	TEST	1	5.41	82384 5.79	125238 7.82	140100 9.50	89227	
7	1334	V306131907.D	SHF0184-TUN1	1						
8	1418	V306131908.D	RINSE	1	5.41	91812 5.79	132251 7.82	148081 9.50	95460	
9	1445	V306131909.D	SHF0184-CAL1	1	5.41	91060 5.79	137022 7.82	152797 9.50	97791	
10	1512	V306131910.D	SHF0184-CAL2	1	5.41	73610 5.79	112454 7.82	123074 9.50	78392	
11	1539	V306131911.D	SHF0184-CAL3	1	5.41	89849 5.79	135392 7.82	147041 9.50	98484	
12	1606	V306131912.D	SHF0184-CAL4	1	5.41	79725 5.79	118003 7.82	128644 9.50	85395	
13	1632	V306131913.D	SHF0184-CAL5	1	5.41	91902 5.79	137175 7.82	154196 9.50	103285	
14	1659	V306131914.D	SHF0184-CAL6	1	5.41	91051 5.79	140355 7.82	158151 9.50	104107	
15	1725	V306131915.D	SHF0184-CAL7	1	5.41	75902 5.79	116003 7.82	130039 9.50	86433	
16	1752	V306131916.D	SHF0184-CAL8	1	5.41	97602 5.79	147047 7.82	162457 9.50	112257	
17	1819	V306131917.D	SHF0184-ICB1	1	5.41	93070 5.79	138439 7.82	154281 9.50	96600	
18	1846	V306131918.D	SHF0184-SCV1	1	5.41	92355 5.79	139714 7.82	155148 9.50	102163	
19	1913	V306131919.D	RINSE	1	5.41	91094 5.79	139807 7.82	152442 9.50	96875	
20	939	V306131920.D	SHFO-CAL9	1	5.41	77694 5.79	119310 7.82	127575 9.50	82901	
21	1006	V306131921.D	SHFO-CALA	1	5.41	90746 5.79	137942 7.82	154924 9.50	98459	
22	2032	V306131922.D	SHFO-CALB	1	5.41	85283 5.79	130339 7.82	141198 9.50	93020	

2058 of 3146

23	2059	V306131923.D	SHFO-CALC	1	5.41	91774	5.79	141573	7.82	155313	9.50	104015
24	2126	V306131924.D	SHFO-CALD	1	5.41	95136	5.79	150099	7.82	157636	9.50	103605
25	2153	V306131925.D	SHFO-CALE	1	5.41	77879	5.79	120964	7.82	131209	9.50	87318
26	2219	V306131926.D	RINSE	1	5.41	89986	5.79	131627	7.82	147052	9.50	94278
27	2246	V306131927.D	SHFO-SCV1	1	5.41	93592	5.79	142274	7.82	156073	9.50	101130

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190613g.b

Instrument: nt3.i Date: 13-JUN-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1334	V306131907G.D	SHF0222-TUN1	1	Pentafluorobenzene, d4-1,2-dichloroethane,
1939	V306131920G.D	SHF0222-CAL9	1	Pentafluorobenzene, d4-1,2-dichloroethane,
2006	V306131921G.D	SHF0222-CALA	1	Pentafluorobenzene, d4-1,2-dichloroethane,
2032	V306131922G.D	SHF0222-CALB	1	d4-Dichlorobenzene, d4-1,2-dichloroethane,
2059	V306131923G.D	SHF0222-CALC	1	Pentafluorobenzene, d4-1,2-dichloroethane,
2126	V306131924G.D	SHF0222-CALD	1	Naphthalene,
2153	V306131925G.D	SHF0222-CALE	1	Naphthalene, Pentafluorobenzene, d4-Dichlorobenzene, d4-1,2-dichloroethane,
2246	V306131927G.D	SHF0222-SCV1	1	nC7, Pentafluorobenzene, d4-1,2-dichloroethane,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190613s.b

Instrument: nt3.i Date: 13-JUN-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1445	V306131909G.D	SHF0222-CAL1	1	NO MANUAL INTEGRATION
1512	V306131910G.D	SHF0222-CAL2	1	NO MANUAL INTEGRATION
1539	V306131911G.D	SHF0222-CAL3	1	NO MANUAL INTEGRATION
1606	V306131912G.D	SHF0222-CAL4	1	NO MANUAL INTEGRATION
1632	V306131913G.D	SHF0222-CAL5	1	NO MANUAL INTEGRATION
1659	V306131914G.D	SHF0222-CAL6	1	NO MANUAL INTEGRATION
1725	V306131915G.D	SHF0222-CAL7	1	NO MANUAL INTEGRATION
1752	V306131916G.D	SHF0222-CAL8	1	Pentafluorobenzene,
1939	V306131920G.D	SHF0222-CAL9	1	NO MANUAL INTEGRATION
2006	V306131921G.D	SHF0222-CALA	1	NO MANUAL INTEGRATION
2032	V306131922G.D	SHF0222-CALB	1	NO MANUAL INTEGRATION
2059	V306131923G.D	SHF0222-CALC	1	NO MANUAL INTEGRATION
2126	V306131924G.D	SHF0222-CALD	1	NO MANUAL INTEGRATION
2153	V306131925G.D	SHF0222-CALE	1	NO MANUAL INTEGRATION
2246	V306131927G.D	SHF0222-SCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 19-Jun-2019 11:01

V306181903G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181906G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181907G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181908G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181914G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181915G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181920G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181925G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181926G.D	Data Locked	paul,	19-Jun-2019	11:01
V306181929G.D	Data Locked	paul,	19-Jun-2019	11:01

Security Status Report

Date: 19-Jun-2019 11:02

V306131907G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131909G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131910G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131911G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131912G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131913G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131914G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131915G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131916G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131920G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131921G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131922G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131923G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131924G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131925G.D	Data Locked	paul,	19-Jun-2019	11:02
V306131927G.D	Data Locked	paul,	19-Jun-2019	11:02

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190613g.b\NWTPHG.m
Batch File: \\target\share\chem1\nt3.i\20190613g.b
Inst ID: nt3.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
FILENAME:	V306131907G	V306131920G	V306131921G	V306131922G	V306131923G	V306131924G	V306131925G	V306131926G	V306131927G	V306131928G
INJ. DATE:	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019
INJ. TIME:	13:34	19:39	20:06	20:32	20:59	21:26	21:53	22:46		
Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
5 2-Methylpentane	3.141	3.140	3.140	3.161	3.130	3.156	3.146	3.097	3.141	3.091-3.191
3 AK101	3.784	3.783	3.783	3.778	3.784	3.778	3.783	3.783	3.480	0.740-6.220
7 nC6	3.784	3.783	3.783	3.778	3.784	3.778	3.783	3.783	3.784	3.734-3.834
10 Dibromofluorobenzene	5.055	5.054	5.054	5.048	5.049	5.043	5.043	5.048	5.055	5.005-5.105
46 nC7	5.320	5.314	5.314	5.314	5.314	5.319	5.314	5.324	5.320	5.250-5.390
37 Benzene	5.411	5.410	5.410	5.410	5.410	5.410	5.410	5.410	5.411	5.231-5.331
29 Pentafluorobenzene	5.437	5.436	5.436	5.436	5.442	5.442	5.436	5.436	5.437	5.387-5.487
30 d4-1,2-dichloroethane	5.788	5.787	5.787	5.787	5.787	5.793	5.793	5.787	5.788	5.738-5.838
31 1,4-Difluorobenzene	6.740	6.739	6.739	6.738	6.739	6.739	6.733	6.744	6.740	6.690-6.790
4 8015GAS	6.777	6.776	6.776	6.775	6.776	6.776	6.776	6.776	6.777	6.727-6.827
45 8015mod	7.819	7.818	7.818	7.817	7.818	7.818	7.818	7.817	7.819	7.769-7.869
38 n-Octane	7.819	7.818	7.818	7.817	7.818	7.818	7.818	7.817	7.819	7.811-7.911
32 d8-Toluene	7.819	7.818	7.818	7.817	7.818	7.818	7.818	7.817	7.819	7.811-7.911
12 Toluene	7.819	7.818	7.818	7.817	7.818	7.818	7.818	7.817	7.819	7.811-7.911
39 n-Nonane	7.819	7.818	7.818	7.817	7.818	7.818	7.818	7.817	7.819	7.811-7.911
33 d5-Chlorobenzene	7.819	7.818	7.818	7.817	7.818	7.818	7.818	7.817	7.819	7.811-7.911
40 Ethylbenzene	7.819	7.818	7.818	7.817	7.818	7.818	7.818	7.817	7.819	7.811-7.911

Reviewer 1
Reviewer 2Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190613g.b\NWTPHG.m
Batch File: \\target\share\chem1\nt3.i\20190613g.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
41 m,p-xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.940	7.890-7.990	+++++	+++++
42 o-xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.254	8.204-8.304	+++++	+++++
2 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	10.130	8.040-12.220	+++++	+++++
34 4-Bromofluorobenzene	8.685	8.684	8.684	8.684	8.684	8.684	8.684	8.684	8.685	8.635-8.735	8.684	0.000
17 nC10-Decane	8.749	8.775	8.743	8.774	8.748	8.748	8.748	8.774	8.749	8.699-8.799	8.757	0.014
20 1,2,4-Trimethylbenzene	+++++	9.386	9.359	9.359	9.359	9.386	9.386	9.407	9.386	9.336-9.436	9.377	0.019
35 d4-Dichlorobenzene	9.504	9.503	9.503	9.502	9.503	9.503	9.508	9.502	9.504	9.454-9.554	9.503	0.002
1 NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.625	7.095-12.155	+++++	+++++
43 n-Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.817	9.767-9.867	+++++	+++++
36 d4-1,2-Dichlorobenzene	9.822	9.822	9.822	9.821	9.827	9.838	9.843	9.821	9.822	9.773-9.873	9.827	0.009
22 nC12-Dodecane	10.428	10.433	10.433	10.427	10.433	10.433	10.433	10.433	10.428	10.378-10.478	10.432	0.002
44 n-Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.176	11.126-11.226	+++++	+++++
24 Naphthalene	11.226	11.220	11.225	11.224	11.220	11.225	11.225	11.219	11.226	11.176-11.276	11.223	0.003

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
Batch File: \\target\share\chem1\nt3.i\20190613.b
Inst ID: nt3.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09		
FILENAME:	V306131909	V306131910	V306131911	V306131912	V306131913	V306131914	V306131915	V306131916	V306131918		
INJ. DATE:	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019	13-JUN-2019		
INJ. TIME:	14:45	15:12	15:39	16:06	16:32	16:59	17:25	17:52	18:46		
Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Dichlorodifluoromethan	1.693	1.699	1.699	1.694	1.699	1.694	1.699	1.695	1.591-1.808	1.696	0.003
2 Chloromethane	1.901	1.912	1.906	1.896	1.901	1.896	1.896	1.897	1.793-2.010	1.900	0.006
3 Vinyl Chloride	1.980	1.986	1.981	1.981	1.987	1.981	1.986	1.982	1.878-2.095	1.983	0.003
4 Bromomethane	2.283	2.289	2.284	2.284	2.284	2.279	2.284	2.279	2.285	2.284	2.283
5 Chloroethane	2.400	2.406	2.401	2.401	2.401	2.395	2.401	2.396	2.402	2.401	2.400
6 Trichlorofluoromethane	2.517	2.518	2.523	2.518	2.518	2.512	2.518	2.513	2.518	2.518	2.517
7 1,1-Dichloroethene	2.980	2.980	2.975	2.981	2.980	2.975	2.980	2.976	2.872-3.089	2.978	0.003
8 Carbon Disulfide	2.985	2.985	2.985	2.986	2.986	2.980	2.986	2.986	2.878-3.094	2.985	0.002
9 112Trichloro122Trifluo	3.043	3.039	3.044	3.044	3.050	3.044	3.049	3.045	2.941-3.158	3.045	0.003
10 Iodomethane	3.113	3.113	3.113	3.108	3.108	3.108	3.113	3.103	3.000-3.216	3.110	0.003
11 Bromoethane	3.235	3.235	3.235	3.236	3.230	3.235	3.235	3.231	3.122-3.338	3.234	0.002
12 Acrolein	3.341	3.357	3.357	3.342	3.342	3.352	3.352	3.342	3.234-3.450	3.348	0.007
13 Methylene Chloride	3.554	3.559	3.559	3.560	3.560	3.554	3.560	3.555	3.452-3.668	3.558	0.003
14 Acetone	3.660	3.703	3.698	3.656	3.645	3.682	3.682	3.667	3.537-3.753	3.674	0.019
15 Trans-1,2-Dichloroethe	3.703	3.708	3.708	3.709	3.703	3.703	3.708	3.699	3.595-3.812	3.705	0.004
16 n-hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.655-3.871	+++++	+++++
17 Methyl tert butyl ethe	3.841	3.841	3.836	3.842	3.831	3.831	3.836	3.826	3.723-3.939	3.836	0.005

Reviewer 1
Reviewer 2

Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
Batch File: \\target\share\chem1\nt3.i\20190613.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 1,1-Dichloroethane	4.255	4.256	4.250	4.251	4.251	4.251	4.251	4.246	4.252	4.251	4.143-4.359	4.251	0.003
19 Acrylonitrile	++++	4.335	4.330	4.325	4.320	4.325	4.325	4.321	4.321	4.320	4.212-4.428	4.325	0.005
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	++++	++++	++++	4.560	4.452-4.668	++++	++++
20 Vinyl Acetate	4.495	4.490	4.495	4.490	4.485	4.484	4.490	4.485	4.491	4.485	4.376-4.593	4.489	0.004
22 Cis-1,2-Dichloroethene	4.691	4.697	4.697	4.697	4.692	4.692	4.692	4.693	4.693	4.692	4.584-4.800	4.694	0.003
23 2,2-Dichloropropane	4.766	4.777	4.777	4.772	4.772	4.771	4.772	4.772	4.772	4.772	4.664-4.880	4.772	0.003
24 Bromochloromethane	4.845	4.851	4.846	4.846	4.846	4.846	4.846	4.847	4.847	4.846	4.738-4.954	4.847	0.002
25 Chloroform	4.920	4.915	4.915	4.915	4.915	4.910	4.915	4.911	4.911	4.915	4.807-5.023	4.914	0.003
26 Carbon Tetrachloride	5.005	4.995	5.000	5.000	5.000	5.000	5.000	5.001	5.001	5.000	4.885-5.116	5.000	0.003
§ 27 Dibromofluoromethane	5.053	5.053	5.053	5.048	5.048	5.048	5.053	5.049	5.049	5.048	4.940-5.156	5.050	0.002
28 1,1,1-Trichloroethane	5.053	5.058	5.053	5.054	5.059	5.053	5.059	5.054	5.059	5.059	4.951-5.167	5.056	0.003
30 1,1-Dichloropropene	5.148	5.149	5.149	5.149	5.149	5.149	5.149	5.150	5.150	5.149	5.033-5.265	5.149	0.000
29 2-Butanone	5.186	5.186	5.175	5.171	5.165	5.175	5.176	5.171	5.171	5.165	5.057-5.273	5.175	0.007
31 Benzene	5.334	5.335	5.335	5.335	5.335	5.335	5.335	5.330	5.336	5.335	5.219-5.451	5.335	0.002
* 32 Pentafluorobenzene	5.409	5.415	5.409	5.410	5.410	5.409	5.409	5.410	5.410	5.410	5.301-5.518	5.410	0.002
§ 33 d4-1,2-Dichloroethane	5.441	5.441	5.441	5.442	5.436	5.441	5.441	5.437	5.437	5.436	5.328-5.544	5.440	0.002
35 Methyl Methacrylate	++++	++++	++++	++++	++++	++++	++++	++++	++++	5.693	5.577-5.809	++++	++++
34 1,2-Dichloroethane	5.489	5.489	5.494	5.490	5.489	5.489	5.489	5.490	5.490	5.489	5.374-5.605	5.490	0.002
36 Trichloroethene	5.760	5.755	5.760	5.761	5.760	5.760	5.760	5.761	5.761	5.760	5.645-5.876	5.760	0.002
* 37 1,4-Difluorobenzene	5.792	5.787	5.787	5.787	5.787	5.787	5.787	5.788	5.788	5.787	5.671-5.903	5.788	0.002
38 Dibromomethane	6.068	6.063	6.058	6.058	6.058	6.058	6.058	6.059	6.059	6.058	5.942-6.174	6.060	0.003
39 1,2-Dichloropropane	6.132	6.132	6.132	6.127	6.127	6.127	6.127	6.128	6.133	6.127	6.012-6.243	6.129	0.003

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
Batch File: \\target\share\chem1\nt3.i\20190613.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 Bromodichloromethane	6.174	6.175	6.180	6.181	6.175	6.175	6.180	6.176	6.176	6.175	6.059-6.291	6.177	0.003
173 2-Pentanone	++++	6.409	6.403	6.398	6.404	6.403	6.403	6.399	6.404	6.404	6.288-6.519	6.403	0.003
42 Cis 1,3-dichloropropen	6.615	6.616	6.616	6.611	6.616	6.616	6.616	6.617	6.617	6.616	6.501-6.732	6.616	0.002
43 d8-Toluene	6.743	6.738	6.738	6.744	6.739	6.738	6.738	6.739	6.739	6.739	6.623-6.854	6.740	0.002
41 2-Chloroethyl Vinyl Et	6.589	6.584	6.579	6.579	6.579	6.579	6.579	6.574	6.580	6.579	6.463-6.695	6.580	0.004
44 Toluene	6.775	6.775	6.775	6.776	6.776	6.776	6.775	6.776	6.776	6.776	6.660-6.891	6.776	0.000
45 4-Methyl-2-Pentanone	7.046	7.052	7.046	7.047	7.046	7.046	7.047	7.042	7.042	7.047	6.931-7.163	7.046	0.003
46 Tetrachloroethene	7.035	7.041	7.041	7.042	7.042	7.041	7.041	7.042	7.042	7.042	6.885-7.198	7.041	0.002
47 Trans 1,3-Dichloroprop	7.067	7.073	7.068	7.068	7.068	7.068	7.068	7.069	7.069	7.068	6.952-7.184	7.069	0.002
48 1,1,2-Trichloroethane	7.184	7.185	7.174	7.180	7.180	7.179	7.179	7.180	7.180	7.180	7.064-7.295	7.180	0.003
49 Chlorodibromomethane	7.301	7.302	7.302	7.302	7.302	7.302	7.302	7.303	7.303	7.302	7.146-7.458	7.302	0.000
50 1,3-Dichloropropane	7.365	7.365	7.365	7.366	7.366	7.365	7.365	7.366	7.366	7.366	7.209-7.522	7.366	0.000
51 1,2-Dibromoethane	7.466	7.466	7.466	7.467	7.467	7.466	7.466	7.462	7.467	7.467	7.351-7.582	7.466	0.002
52 2-Hexanone	7.625	7.626	7.626	7.621	7.621	7.621	7.621	7.621	7.622	7.621	7.464-7.777	7.623	0.002
* 53 d5-Chlorobenzene	7.817	7.817	7.817	7.818	7.818	7.817	7.817	7.818	7.818	7.818	7.661-7.974	7.817	0.000
54 Chlorobenzene	7.827	7.828	7.828	7.834	7.828	7.828	7.828	7.829	7.829	7.828	7.672-7.984	7.829	0.002
55 Ethyl Benzene	7.849	7.844	7.844	7.844	7.844	7.844	7.844	7.845	7.845	7.844	7.688-8.000	7.845	0.002
56 1,1,1,2-Tetrachloroeth	7.875	7.881	7.876	7.876	7.876	7.876	7.876	7.877	7.877	7.876	7.720-8.032	7.877	0.002
57 m,p-xylene	7.950	7.945	7.950	7.951	7.945	7.945	7.950	7.946	7.946	7.946	7.789-8.101	7.947	0.003
58 o-Xylene	8.253	8.253	8.253	8.254	8.253	8.253	8.253	8.254	8.254	8.253	8.097-8.410	8.253	0.000
59 Styrene	8.295	8.290	8.290	8.291	8.291	8.290	8.290	8.291	8.291	8.291	8.134-8.447	8.291	0.002
60 Bromoform	8.311	8.311	8.311	8.312	8.312	8.312	8.312	8.312	8.313	8.312	8.122-8.502	8.312	0.000
61 Isopropyl Benzene	8.476	8.471	8.476	8.477	8.477	8.476	8.476	8.477	8.477	8.477	8.287-8.667	8.476	0.002
62 4-Bromofluorobenzene	8.688	8.684	8.684	8.684	8.684	8.684	8.684	8.685	8.685	8.684	8.528-8.840	8.684	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
Batch File: \\target\share\chem1\nt3.i\20190613.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
63 Bromobenzene	8.758	8.763	8.763	8.759	8.758	8.763	8.763	8.759	8.759	8.758	8.568-8.948	8.761	0.003
64 N-Propyl Benzene	8.774	8.774	8.774	8.774	8.774	8.774	8.774	8.775	8.775	8.774	8.584-8.964	8.774	0.000
82 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.074	8.917-9.231	+++++	+++++
65 1,1,2,2-Tetrachloroeth	8.827	8.832	8.832	8.833	8.833	8.832	8.827	8.833	8.828	8.833	8.643-9.023	8.831	0.003
66 2-Chloro Toluene	8.896	8.891	8.891	8.891	8.891	8.891	8.891	8.892	8.892	8.891	8.701-9.081	8.892	0.002
67 1,3,5-Trimethyl Benzen	8.917	8.917	8.917	8.918	8.918	8.918	8.918	8.918	8.918	8.918	8.728-9.108	8.918	0.000
68 1,2,3-Trichloropropane	8.933	8.933	8.928	8.929	8.928	8.933	8.934	8.934	8.929	8.928	8.738-9.119	8.931	0.003
69 Trans-1,4-Dichloro 2-B	8.960	8.965	8.955	8.960	8.955	8.960	8.960	8.961	8.961	8.955	8.765-9.145	8.960	0.003
70 4-Chloro Toluene	9.018	9.013	9.013	9.014	9.014	9.013	9.013	9.014	9.014	9.014	8.823-9.204	9.014	0.002
71 T-Butyl Benzene	9.156	9.151	9.151	9.152	9.152	9.151	9.151	9.152	9.152	9.152	8.962-9.342	9.152	0.002
72 1,2,4-Trimethylbenzene	9.204	9.204	9.204	9.200	9.205	9.205	9.205	9.205	9.200	9.205	9.015-9.395	9.204	0.002
73 S-Butyl Benzene	9.284	9.284	9.284	9.279	9.279	9.279	9.284	9.285	9.280	9.279	9.089-9.469	9.282	0.003
74 4-Isopropyl Toluene	9.390	9.385	9.391	9.386	9.386	9.385	9.385	9.386	9.386	9.386	9.195-9.576	9.387	0.002
75 1,3-Dichlorobenzene	9.449	9.449	9.449	9.450	9.449	9.449	9.449	9.450	9.450	9.449	9.259-9.639	9.449	0.000
* 76 d4-1,4-Dichlorobenzene	9.502	9.502	9.502	9.503	9.503	9.502	9.502	9.503	9.503	9.503	9.313-9.693	9.502	0.000
77 1,4-Dichlorobenzene	9.512	9.518	9.518	9.513	9.513	9.513	9.518	9.514	9.514	9.513	9.323-9.703	9.515	0.002
78 N-Butyl Benzene	9.704	9.704	9.704	9.705	9.705	9.704	9.704	9.705	9.705	9.705	9.514-9.895	9.704	0.000
\$ 79 d4-1,2-Dichlorobenzene	9.826	9.826	9.826	9.822	9.827	9.826	9.827	9.827	9.822	9.827	9.637-10.017	9.826	0.002
80 1,2-Dichlorobenzene	9.831	9.832	9.832	9.832	9.832	9.832	9.832	9.833	9.833	9.832	9.642-10.022	9.832	0.000
81 1,2-Dibromo 3-Chloropr	10.437	10.427	10.443	10.444	10.443	10.443	10.443	10.444	10.444	10.443	10.253-10.633	10.441	0.006
83 Hexachloro 1,3-Butadie	10.942	10.943	10.937	10.943	10.943	10.943	10.943	10.944	10.944	10.943	10.753-11.133	10.942	0.002
84 1,2,4-Trichlorobenzene	10.964	10.964	10.964	10.964	10.970	10.969	10.969	10.965	10.965	10.970	10.780-11.160	10.966	0.003
85 Naphthalene	11.229	11.224	11.224	11.225	11.225	11.224	11.225	11.225	11.225	11.225	11.035-11.415	11.225	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190613.b\8260C061319.m

Batch File: \\target\share\chem1\nt3.i\20190613.b

Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
86 1,2,3-Trichlorobenzene	11.367	11.373	11.373	11.368	11.368	11.368	11.368	11.368	11.369	11.368	11.178-11.558	11.369	0.002

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
End Cal Date : 13-JUN-2019 17:52
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
Last Edit : 14-Jun-2019 10:32 paul

Calibration File Names:

Level 1: \\target\share\chem1\nt3.i\20190613.b\V306131909.D
Level 2: \\target\share\chem1\nt3.i\20190613.b\V306131910.D
Level 3: \\target\share\chem1\nt3.i\20190613.b\V306131911.D
Level 4: \\target\share\chem1\nt3.i\20190613.b\V306131912.D
Level 5: \\target\share\chem1\nt3.i\20190613.b\V306131913.D
Level 6: \\target\share\chem1\nt3.i\20190613.b\V306131914.D
Level 7: \\target\share\chem1\nt3.i\20190613.b\V306131915.D
Level 8: \\target\share\chem1\nt3.i\20190613.b\V306131916.D

Compound	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Curve	b	Coefficients	m1	m2	%RSD or R^2
1 Dichlorodifluoromethane	0.66495	0.90640	0.76428	0.93992	0.80037	0.87784	AVRG			0.84187		13.27842
2 Chloromethane	++++	2.56623	2.04732	2.15491	1.91402	2.01026	AVRG			2.12221		12.10799
3 Vinyl Chloride	1.42269	1.69216	1.45756	1.58752	1.44426	1.53688	AVRG			1.53887		8.89231
2071	1.77455	1.39533										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R ²
4 Bromomethane	+++++	++++	0.61225	0.62484	0.59079	0.63814	AVRG			0.62622		8.37012
	0.72110	0.57019										
5 Chloroethane	0.93125	0.96346	0.75749	0.81148	0.75312	0.80405	AVRG			0.83481		11.16747
	0.93074	0.72690										
6 Trichlorofluoromethane	1.03338	1.45361	1.05444	1.11433	1.07148	1.13074	AVRG			1.15334		13.14276
	1.31824	1.05048										
7 1,1-Dichloroethene	1.70492	1.96468	1.66669	1.76670	1.58573	1.68576	AVRG			1.74330		8.85291
	1.98351	1.58840										
8 Carbon Disulfide	2.00143	2.34751	1.78232	2.07413	1.84248	1.95954	AVRG			2.02109		10.64837
	2.32010	1.84119										
9 112Trichloro122Trifluoroethane	0.58203	0.72110	0.60323	0.62371	0.60436	0.62109	AVRG			0.62923		9.79783
	0.72388	0.55447										
10 Iodomethane	+++++	++++	1.01704	1.10499	0.99206	1.06670	AVRG			1.07080		9.23312
	1.25115	0.99287										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1		or R ²
	-----	-----	-----	-----	-----	-----					
	40.0000	80.0000									
	Level 7	Level 8									
	-----	-----	-----	-----	-----	-----					
11 Bromoethane	0.40029	0.56433	0.40746	0.45481	0.41842	0.46756					
	0.54574	0.42722				AVRG			0.46073		13.59028
	-----	-----	-----	-----	-----	-----					
12 Acrolein	++++	++++	0.13966	0.13725	0.11675	0.14413					
	0.17405	0.13056				AVRG			0.14040		13.56226
	-----	-----	-----	-----	-----	-----					
13 Methylene Chloride	++++	++++	0.93557	0.78771	0.64338	0.69183					
	0.83120	++++				AVRG			0.77794		14.83858
	-----	-----	-----	-----	-----	-----					
14 Acetone	++++	++++	0.22551	0.20616	0.16040	0.23262					
	0.27434	0.21293				AVRG			0.21866		17.02136
	-----	-----	-----	-----	-----	-----					
15 Trans-1,2-Dichloroethene	0.69515	0.84798	0.67068	0.73540	0.65655	0.70391					
	0.82931	0.66641				AVRG			0.72567		10.22181
	-----	-----	-----	-----	-----	-----					
16 n-hexane	++++	++++	++++	++++	++++	++++					
	++++	++++				AVRG			0.000e+000		0.000e+000
	-----	-----	-----	-----	-----	-----					
17 Methyl tert butyl ether	++++	1.63619	1.38599	1.31590	1.20684	1.34087					
	1.58273	1.21859				AVRG			1.38387		12.10380
	-----	-----	-----	-----	-----	-----					

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6							
40.0000	80.0000											
Level 7	Level 8											
18 1,1-Dichloroethane	1.62201	2.02853	1.66769	1.76281	1.68654	1.76272	AVRG		1.77943			9.70671
	2.06428	1.64089										
19 Acrylonitrile	++++	++++	0.29806	0.28159	0.25896	0.30001	AVRG		0.29364			11.92041
	0.35672	0.26646										
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	AVRG		0.000e+000			0.000e+000
	++++	++++										
20 Vinyl Acetate	1.86910	1.88996	1.85856	1.63468	1.61768	1.90790	AVRG		1.85755			11.00031
	2.27985	1.80269										
22 Cis-1,2-Dichloroethene	0.79014	0.85287	0.68259	0.74907	0.70177	0.75071	AVRG					
	0.88671	0.70467							0.76482			9.64030
23 2,2-Dichloropropane	0.72699	0.90096	0.67324	0.73484	0.64109	0.65911	AVRG					
	0.76671	0.57024							0.70915			13.98059
24 Bromochloromethane	315	1406	2763	5357	27150	59040	QUAD	0.000e+000	3.43858	-0.51611		0.99985
	113937	++++										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
25 Chloroform	1.16462	1.45660	1.08471	1.22985	1.13166	1.20533						
	1.42117	1.12339					AVRG			1.22717		11.31060
26 Carbon Tetrachloride	1146	4427	7866	14526	74652	164749						
	333009	++++					QUAD	0.000e+000		1.91700	-0.18234	0.99990
28 1,1,1-Trichloroethane	1.04711	1.28434	0.94458	1.11119	1.00804	1.04311						
	1.23672	1.02696					AVRG			1.08776		10.74234
30 1,1-Dichloropropene	0.62472	0.76565	0.62559	0.66134	0.59357	0.62661						
	0.74836	0.60181					AVRG			0.65596		10.01036
29 2-Butanone	++++	++++	0.38852	0.39712	0.37642	0.42031						
	0.49161	0.36995					AVRG			0.40732		11.02442
31 Benzene	1.78803	2.07480	1.80469	1.96974	1.76122	1.83799						
	2.20750	1.74806					AVRG			1.89900		8.85139
35 Methyl Methacrylate	++++	++++	++++	++++	++++	++++						
	++++	++++					AVRG			0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R^2
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
34 1,2-Dichloroethane	0.61559	0.81971	0.70410	0.73896	0.65909	0.68727	AVRG			0.71338		10.53306
	0.82098	0.66136										
36 Trichloroethene	0.46452	0.56432	0.48252	0.51732	0.45588	0.46931	AVRG					
	0.57006	0.46151								0.49818		9.37008
38 Dibromomethane	400	1432	2950	5227	28059	61370	QUAD	0.000e+000	5.12797	-1.28079		0.99995
	123157	++++										
39 1,2-Dichloropropane	0.65792	0.81651	0.67663	0.70422	0.62680	0.65566	AVRG			0.69387		10.06805
	0.78125	0.63198										
40 Bromodichloromethane	0.51233	0.62657	0.52802	0.59248	0.55836	0.55641	AVRG					
	0.67577	0.55622								0.57577		9.33556
173 2-Pentanone	++++	++++	0.04287	0.04207	0.04345	0.04571	AVRG					
	0.05585	0.04314								0.04551		11.44502
42 Cis 1,3-dichloropropene	0.60136	0.79232	0.67390	0.72583	0.69566	0.72672	AVRG					
	0.88980	0.72494								0.72882		11.63540

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
	-----	-----	-----	-----	-----	-----						
	40.0000	80.0000										
	Level 7	Level 8										
	-----	-----	-----	-----	-----	-----						
41 2-Chloroethyl Vinyl Ether	+++++	+++++	0.26715	0.29868	0.27940	0.31175				0.30444		11.37476
	0.36681	0.30288					AVRG					
	-----	-----	-----	-----	-----	-----						
44 Toluene	1.13303	1.42725	1.10110	1.31759	1.15568	1.20948						
	1.45634	1.17183					AVRG			1.24654		10.97316
	-----	-----	-----	-----	-----	-----						
45 4-Methyl-2-Pentanone	+++++	+++++	0.18986	0.21760	0.19725	0.21374						
	0.25977	0.20268					AVRG			0.21349		11.65902
	-----	-----	-----	-----	-----	-----						
46 Tetrachloroethene	0.44274	0.60906	0.47239	0.53201	0.47761	0.48559						
	0.58095	0.48063					AVRG			0.51012		11.42501
	-----	-----	-----	-----	-----	-----						
47 Trans 1,3-Dichloropropene	0.55101	0.69735	0.54449	0.60528	0.58995	0.61911						
	0.77500	0.62492					AVRG			0.62589		12.27778
	-----	-----	-----	-----	-----	-----						
48 1,1,2-Trichloroethane	0.30360	0.40265	0.31833	0.34529	0.31349	0.33369						
	0.39303	0.31950					AVRG			0.34120		10.91640
	-----	-----	-----	-----	-----	-----						
49 Chlorodibromomethane	0.34392	0.37847	0.30148	0.36030	0.32044	0.34760						
	0.43156	+++++					AVRG			0.35482		11.88837
	-----	-----	-----	-----	-----	-----						

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
50 1,3-Dichloropropane	0.53142	0.57201	0.53230	0.58891	0.52730	0.54556	AVRG			0.55969		7.58533
	0.64906	0.53096										
51 1,2-Dibromoethane	0.25032	0.38060	0.33318	0.31906	0.30586	0.32803	AVRG			0.32749		13.40547
	0.39015	0.31271										
52 2-Hexanone	++++	++++	0.35307	0.38935	0.33605	0.36983	AVRG			0.37287		10.54023
	0.44326	0.34568										
54 Chlorobenzene	1.16364	1.48789	1.28522	1.32078	1.20970	1.25715	AVRG			1.30785		9.80043
	1.51305	1.22539										
55 Ethyl Benzene	0.57233	0.73939	0.64118	0.70808	0.65072	0.67486	AVRG			0.68644		10.63998
	0.81906	0.68591										
56 1,1,1,2-Tetrachloroethane	0.31709	0.47987	0.43240	0.42975	0.40978	0.43754	AVRG			0.43606		14.20203
	0.53566	0.44636										
57 m,p-xylene	0.72776	0.92375	0.83861	0.88321	0.80624	0.84080	AVRG			0.86027		10.18171
	1.02535	0.83641										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
58 o-Xylene	0.76409	0.91896	0.80773	0.86289	0.79801	0.85212						
	1.03328	0.85540					AVRG			0.86156		9.74553
59 Styrene	2929	8097	18451	33815	200902	430730						
	889482	++++					QUAD	0.000e+000		0.82539	-0.03515	0.99996
60 Bromoform	329	1422	2742	5972	32475	73199						
	150324	++++					QUAD	0.000e+000		3.25237	-0.54817	0.99984
61 Isopropyl Benzene	2.97062	3.88994	3.23768	3.58616	3.20688	3.43389						
	4.08410	3.19191					AVRG			3.45015		11.03701
63 Bromobenzene	0.83494	1.02664	0.87334	0.93876	0.85792	0.89670						
	1.07779	0.86669					AVRG			0.92160		9.46405
64 N-Propyl Benzene	3.59747	4.60200	3.98907	4.21008	3.77174	4.06525						
	4.81734	3.75748					AVRG			4.10130		10.38480
82 Cyclohexanone	++++	++++	++++	++++	++++	++++						
	++++	++++					AVRG			0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
65 1,1,2,2-Tetrachloroethane	0.70354	0.73860	0.62000	0.63716	0.54737	0.58337	AVRG			0.63513		11.46539
	0.69943	0.55155										
66 2-Chloro Toluene	2.68430	3.18323	2.62550	2.90649	2.63987	2.81028	AVRG			2.86587		9.85630
	3.39329	2.68403										
67 1,3,5-Trimethyl Benzene	2.69350	3.44397	2.74552	3.05996	2.84524	3.07128	AVRG			3.05480		11.18322
	3.66694	2.91202										
68 1,2,3-Trichloropropane	++++	0.21609	0.16348	0.20224	0.17190	0.18158	AVRG			0.18891		11.93593
	0.21699	0.17005										
69 Trans-1,4-Dichloro 2-Butene	++++	++++	0.30015	0.30523	0.26204	0.29181	AVRG			0.29531		10.26370
	0.34576	0.26689										
70 4-Chloro Toluene	2.35809	3.21819	2.46395	2.80906	2.46469	2.65644	AVRG			2.70898		12.18000
	3.17242	2.52898										
71 T-Butyl Benzene	2.26759	2.73701	2.37734	2.63868	2.36683	2.54651	AVRG			2.55739		9.96779
	3.06172	2.46346										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
72 1,2,4-Trimethylbenzene	2.71753	3.34932	2.82249	3.12249	2.87338	3.12722	AVRG			3.09475		11.00388
	3.77597	2.96959										
73 S-Butyl Benzene	3.15622	4.39484	3.46655	3.71216	3.38160	3.63574	AVRG			3.70026		12.36562
	4.38758	3.46736										
74 4-Isopropyl Toluene	2.94608	3.84019	3.02679	3.28842	2.98539	3.25045	AVRG			3.29011		11.46909
	3.89839	3.08515										
75 1,3-Dichlorobenzene	1.92911	2.13057	1.79156	2.07067	1.81778	1.92804	AVRG			1.97708		9.18354
	2.31423	1.83471										
77 1,4-Dichlorobenzene	1.88105	2.25584	1.94661	2.01803	1.80839	1.93791	AVRG			1.99556		9.23563
	2.29046	1.82618										
78 N-Butyl Benzene	2.55852	3.28681	2.67252	2.88905	2.65096	2.85917	AVRG			2.88085		10.77094
	3.41183	2.71794										
80 1,2-Dichlorobenzene	1.61211	2.00505	1.71652	1.91457	1.66433	1.77298	AVRG			1.80501		9.77875
	2.08912	1.66540										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
	-----	-----	-----	-----	-----	-----						
	40.0000	80.0000										
	Level 7	Level 8										
	-----	-----	-----	-----	-----	-----						
81 1,2-Dibromo 3-Chloropropane	++++	1092	1660	2200	10504	21157						
	45192	++++					QUAD	0.000e+000	10.76215	-5.92563		0.99924
	-----	-----	-----	-----	-----	-----						
83 Hexachloro 1,3-Butadiene	++++	2720	4867	9205	47149	98617						
	196624	++++					QUAD	0.000e+000	2.32787	-0.24982		0.99986
	-----	-----	-----	-----	-----	-----						
84 1,2,4-Trichlorobenzene	++++	1.44734	1.24467	1.34282	1.14401	1.23501						
	1.45654	1.17083					AVRG		1.29160			9.78614
	-----	-----	-----	-----	-----	-----						
85 Naphthalene	++++	10216	18932	35173	178879	395258						
	791204	++++					QUAD	0.000e+000	0.59286	-0.01703		0.99983
	-----	-----	-----	-----	-----	-----						
86 1,2,3-Trichlorobenzene	++++	1.21339	0.98453	1.04321	0.88354	0.92490						
	1.11142	0.87586					AVRG		1.00526			12.48268
	-----	-----	-----	-----	-----	-----						
27 Dibromofluoromethane	0.45287	0.46344	0.46171	0.44393	0.45046	0.46767						
	0.44144	0.45003					AVRG		0.45394			2.08047
	-----	-----	-----	-----	-----	-----						
3 d4-1,2-Dichloroethane	0.57762	0.58291	0.58316	0.53559	0.56865	0.57440						
	0.56944	0.55005					AVRG		0.56773			2.94739
	-----	-----	-----	-----	-----	-----						

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
 End Cal Date : 13-JUN-2019 17:52
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
 Last Edit : 14-Jun-2019 10:32 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
	1.28023	1.27126	1.28544	1.26775	1.28225	1.30637						
	1.31976	1.26992				AVRG			1.28537			1.44304
	0.45551	0.46874	0.48169	0.47604	0.47888	0.49599						
	0.48891	0.50460				AVRG			0.48132			3.21257
	0.92540	0.97819	0.93650	0.97432	0.92860	0.96660						
	0.95306	0.95310				AVRG			0.95197			2.13624

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 13-JUN-2019 14:45
End Cal Date : 13-JUN-2019 17:52
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem1\nt3.i\20190613.b\8260C061319.m
Last Edit : 14-Jun-2019 10:32 paul

Curve	Formula	Units
Averaged	$\text{Amt} = \text{Resp}/m1$	Response
Quad	$\text{Amt} = b + m1*\text{Resp} + m2*\text{Resp}^2$	Response

6a
8260 GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20150930a

Instrument: NT3.I

Project:

Calibration Date: 13-JUN-2019

SDG No.: 20150930a

Gas Range	RF1 0.1	RF2 0.25	RF3 0.5	RF4 1.0	RF5 2.5	RF6 5	Ave RF	%RSD
WA Gas	14411152	13491426	15238622	14423265	16520002	19379185	15577275	13.6
AK Gas	19109760	18732767	20622044	19434829	21175744	24316613	20565293	10.0
NW Gas	16111268	14878207	16204143	15457521	17447580	20322527	16736874	11.7
8015Gas	28909502	28019554	30434906	28855755	31491086	35346809	30509602	8.8
8015mod	21761880	20703769	23070290	21830108	24319171	28097123	23297057	11.4

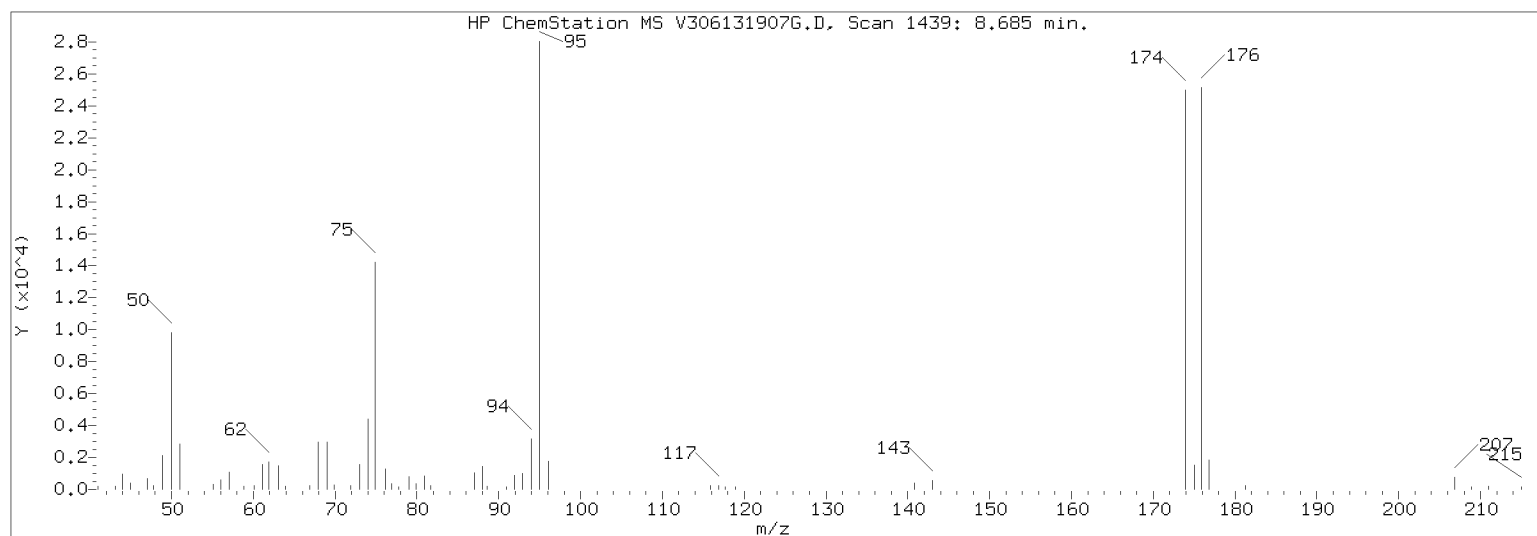
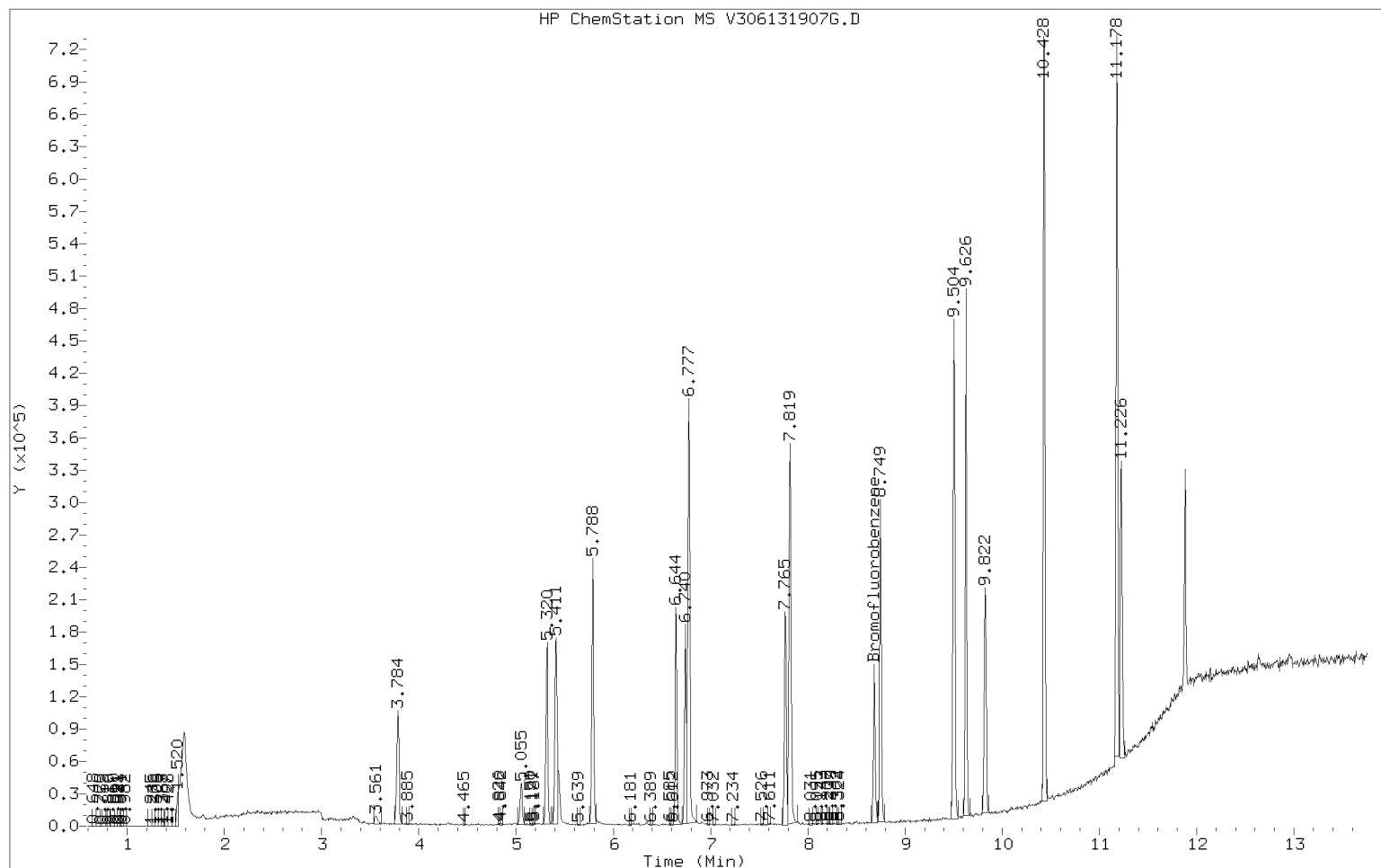
<- Indicates %RSD outside limits
Surrogate areas are not included in RF calculation.
Surrogate calibration is from BETX curve files.

Quant Ranges : WA Gas Toluene - nC12
 AK Gas nC6 - nC10
 NW Gas Toluene - Naphthalene
 8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene
 8015 mod nC7 - nC12

Gas Cal. Files	Analysis Time
V306131920G.D	13-JUN-2019 19:39
V306131921G.D	13-JUN-2019 20:06
V306131922G.D	13-JUN-2019 20:32
V306131923G.D	13-JUN-2019 20:59
V306131924G.D	13-JUN-2019 21:26
V306131925G.D	13-JUN-2019 21:53

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190613s.b/V306131907G.D
 Method Used: \20190613s.b\bfb8260.m Inst: nt3
 Injection Date: 13-JUN-2019 13:34 Operator: PKC
 Sample Info: SHF0222-TUN1 SHF0222-TUN1
 Report Date: 06/19/2019 10:37



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	33.25
75	30.00 - 60.00% of mass 95	49.58
96	5.00 - 9.00% of mass 95	7.09
173	Less than 2.00% of mass 174	0.33 (0.37)
174	50.00 - 100.00% of mass 95	89.78
175	5.00 - 9.00% of mass 174	5.72 (6.37)
176	95.00 - 101.00% of mass 174	88.79 (98.90)
177	5.00 - 9.00% of mass 176	5.09 (5.74)

Data File: V306131907G.D

Spectrum: Avg. Scans 1438-1440 (8.69), Background Scan 1432

Location of Maximum: 95.00

Number of points: 64

m/z	Y	m/z	Y	m/z	Y	m/z	Y
41.00	204	64.00	132	88.00	1038	141.00	389
42.00	63	67.00	150	91.00	56	143.00	373
44.00	76	68.00	2563	92.00	724	144.00	68
45.00	418	69.00	2633	93.00	1034	159.00	54
47.00	655	70.00	224	94.00	2856	172.00	120
48.00	333	72.00	137	95.00	25056	173.00	83
49.00	1892	73.00	1312	96.00	1776	174.00	22496
50.00	8331	74.00	4189	103.00	176	175.00	1432
51.00	2607	75.00	12424	104.00	54	176.00	22248
55.00	259	76.00	1126	106.00	51	177.00	1276
56.00	551	77.00	319	116.00	81	181.00	76
57.00	953	78.00	176	117.00	234	209.00	52
59.00	71	79.00	676	118.00	51	215.00	50
60.00	306	80.00	196	119.00	129		
61.00	1545	81.00	727	128.00	70		
62.00	1641	82.00	162	130.00	77		
63.00	1202	87.00	1003	133.00	157		

Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131907G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 13:34

ARI ID: SHF0222-TUN1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

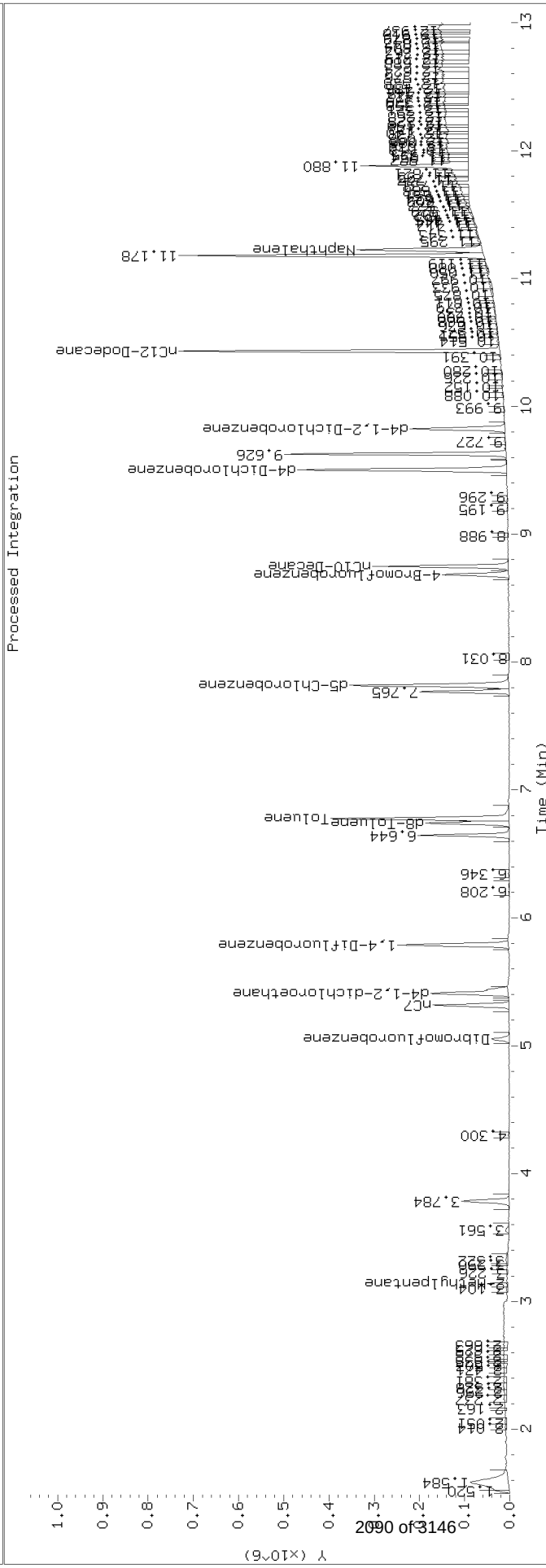
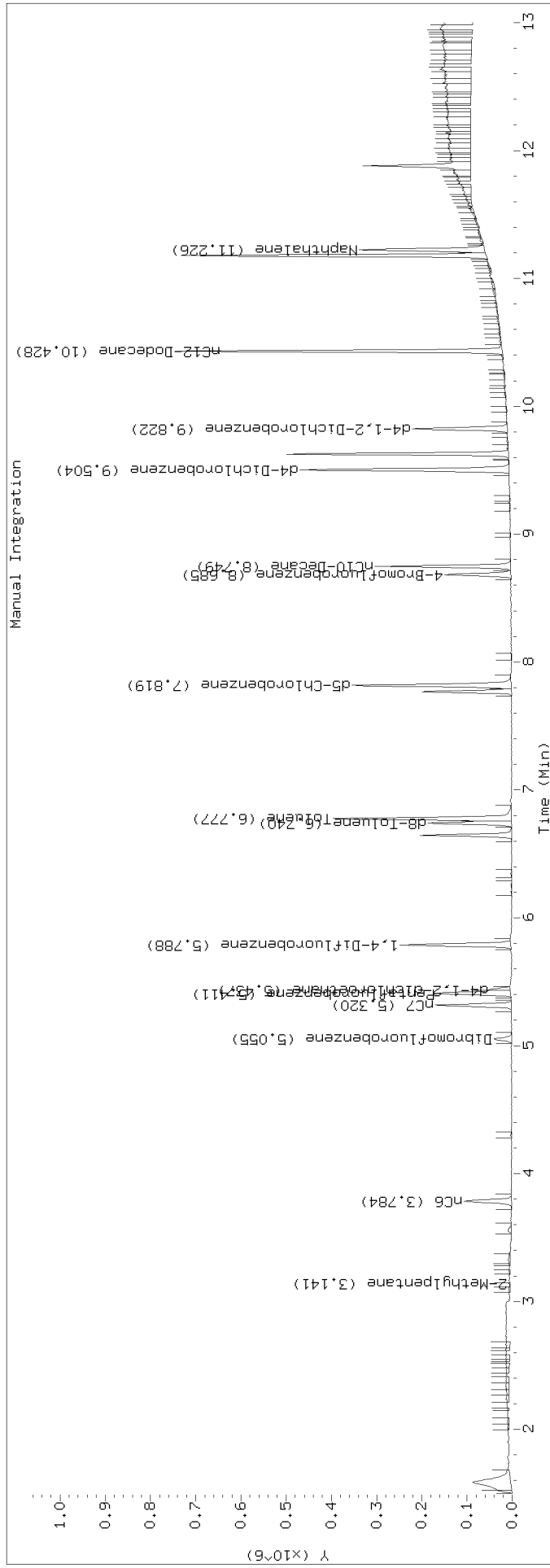
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	2700940	0.173
8015C 2MP-TMB (3.04 to 9.49)	30509602	1970394	0.065 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	1559760	0.076 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	3987761	0.238
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	3220203	0.138 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.819	523595	d5-Chlorobenzene
6.740	249450	d8-Toluene
9.504	645658	d4-Dichlorobenzene
8.685	212152	4-Bromofluorobenzene
9.822	305824	d4-1,2-Dichlorobenzene



Data File: \\target\share\chend\nt3.i\20190613s.b\201906131909G.D

Date : 13-JUN-2019 14:45

Client ID:

Sample Info: SHF0222-CAL1

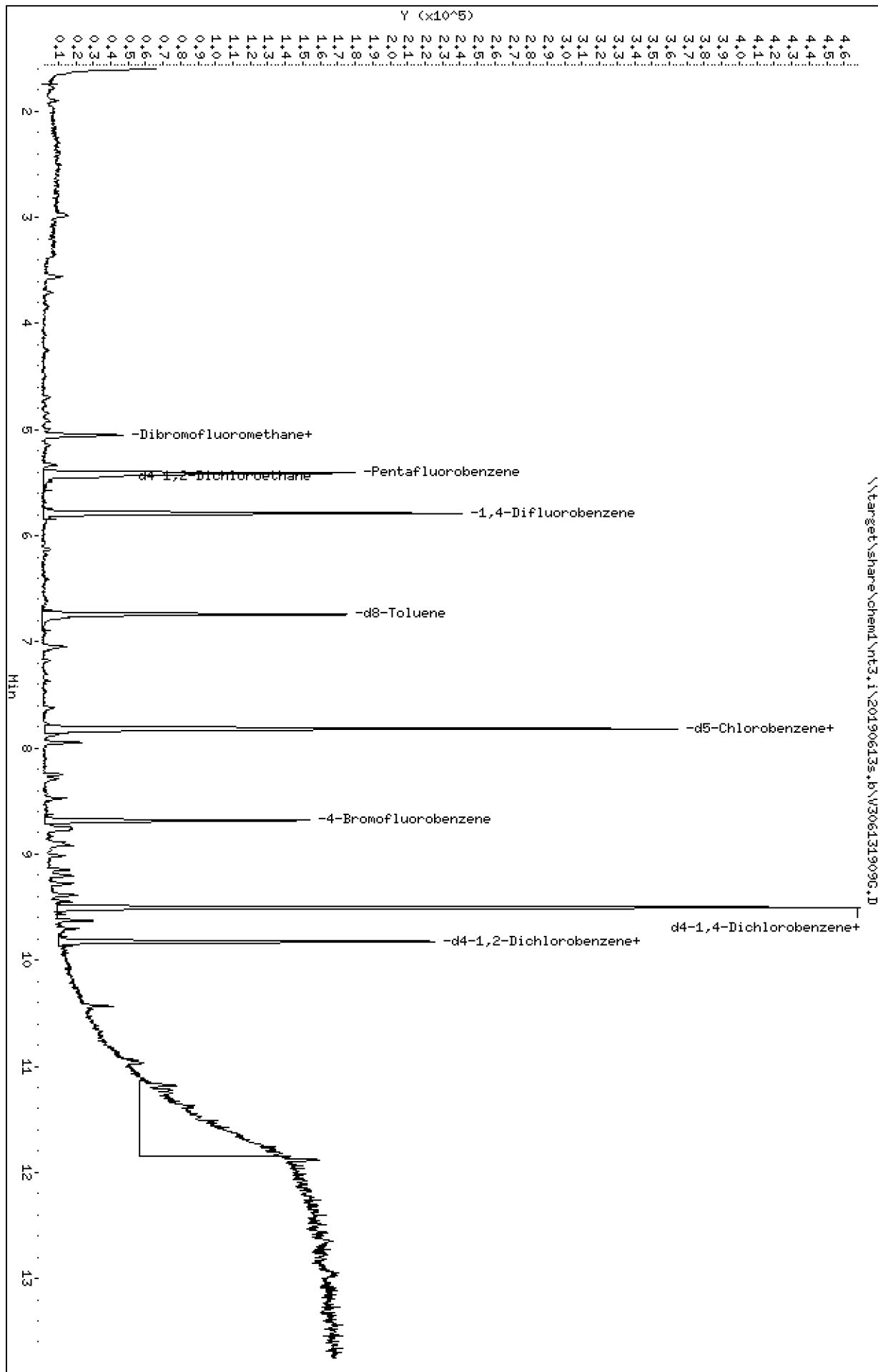
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131909G.D
Lab Smp Id: SHF0222-CAL1
Inj Date : 13-JUN-2019 14:45
Operator : PKC
Smp Info : SHF0222-CAL1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul
Cal Date : 13-JUN-2019 17:52
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11
Inst ID: nt3.i
Quant Type: ISTD
Cal File: V306131916.D
Calibration Sample, Level: 1
Compound Sublist: gsurr.sub

						AMOUNTS		
		QUANT SIG					CAL-AMT	ON-COL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====		=====	=====	=====	=====	=====	=====	=====
\$ 27	Dibromofluoromethane	111	5.052	5.048	(0.934)	20619	5.00000	4.988
* 32	Pentafluorobenzene	168	5.408	5.409	(1.000)	91060	10.0000	
\$ 33	d4-1,2-Dichloroethane	65	5.440	5.436	(1.006)	26299	5.00000	5.087
* 37	1,4-Difluorobenzene	114	5.791	5.787	(1.000)	137022	10.0000	
\$ 43	d8-Toluene	98	6.743	6.738	(1.164)	87710	5.00000	4.980
* 53	d5-Chlorobenzene	117	7.816	7.817	(1.000)	152797	10.0000	
\$ 62	4-Bromofluorobenzene	174	8.688	8.683	(1.112)	34800	5.00000	4.732
* 76	d4-1,4-Dichlorobenzene	152	9.501	9.502	(1.000)	97791	10.0000	
\$ 79	d4-1,2-Dichlorobenzene	152	9.826	9.826	(1.034)	45248	5.00000	4.860

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131909G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	91060	-0.92
37 1,4-Difluorobenze	137175	68588	274350	137022	-0.11
53 d5-Chlorobenzene	154196	77098	308392	152797	-0.91
76 d4-1,4-Dichlorobe	103285	51643	206570	97791	-5.32

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	-0.01
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.08
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	-0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131909G.D

Lab ID: SHF0222-CAL1

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 14:45

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190613s.b\W306131910G.D

Date : 13-JUN-2019 15:12

Client ID:

Sample Info: SHF0222-CAL2

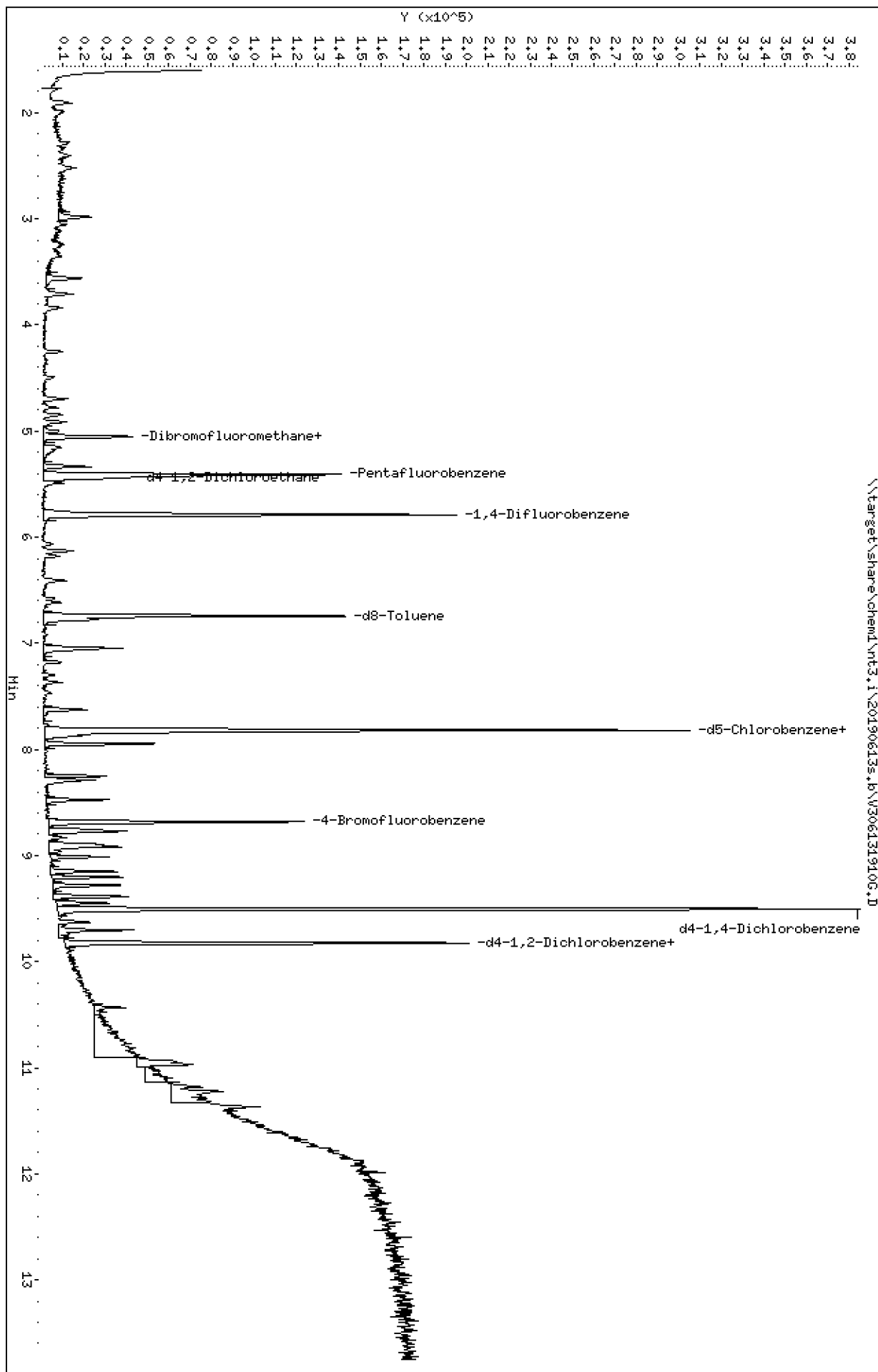
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131910G.D
Lab Smp Id: SHF0222-CAL2
Inj Date : 13-JUN-2019 15:12
Operator : PKC Inst ID: nt3.i
Smp Info : SHF0222-CAL2
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
Als bottle: 56 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	AMOUNTS					
		CAL-AMT	ON-COL				
	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.053	5.048 (0.933)		17057	5.00000	5.105
* 32 Pentafluorobenzene	168	5.414	5.409 (1.000)		73610	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.441	5.436 (1.005)		21454	5.00000	5.134
* 37 1,4-Difluorobenzene	114	5.786	5.787 (1.000)		112454	10.0000	
\$ 43 d8-Toluene	98	6.738	6.738 (1.164)		71479	5.00000	4.945
* 53 d5-Chlorobenzene	117	7.817	7.817 (1.000)		123074	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.683	8.683 (1.111)		28845	5.00000	4.869
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502 (1.000)		78392	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.826	9.826 (1.034)		38341	5.00000	5.138

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131910G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL2
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	73610	-19.90
37 1,4-Difluorobenze	137175	68588	274350	112454	-18.02
53 d5-Chlorobenzene	154196	77098	308392	123074	-20.18
76 d4-1,4-Dichlorobe	103285	51643	206570	78392	-24.10

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.09
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	-0.01
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	-0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131910G.D

Lab ID: SHF0222-CAL2

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 15:12

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190613s.b\W306131911G.D

Date : 13-JUN-2019 15:39

Client ID:

Sample Info: SHF0222-CAL3

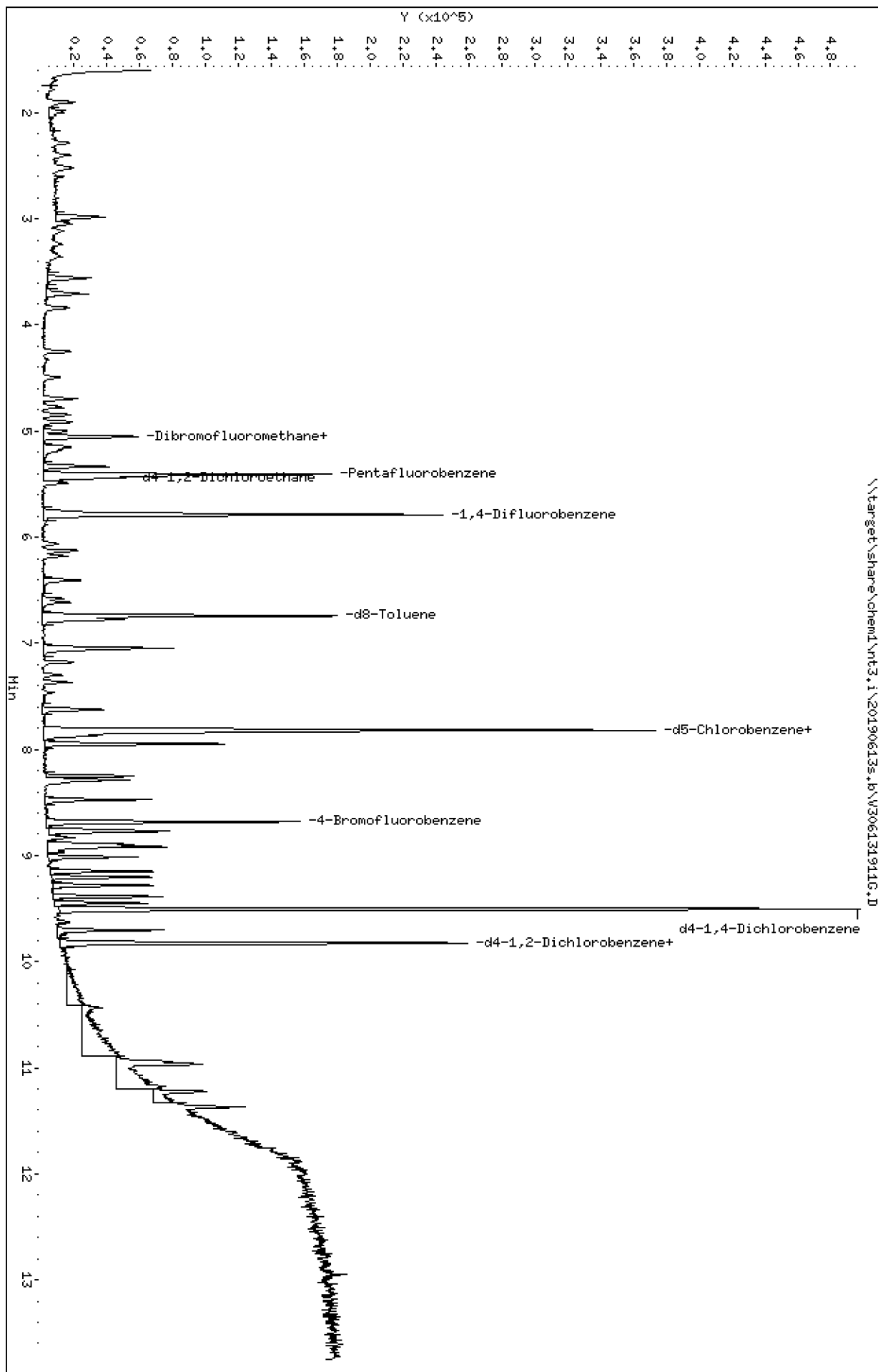
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131911G.D
 Lab Smp Id: SHF0222-CAL3
 Inj Date : 13-JUN-2019 15:39
 Operator : PKC
 Smp Info : SHF0222-CAL3
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Meth Date : 14-Jun-2019 15:40 paul
 Cal Date : 13-JUN-2019 17:52
 Als bottle: 57
 Dil Factor: 1.00000
 Integrator: HP RTE
 Target Version: 4.14
 Processing Host: ORGDATA11

Inst ID: nt3.i

Quant Type: ISTD
 Cal File: V306131916.D
 Calibration Sample, Level: 3
 Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.053	5.048	(0.934)	20742	5.00000	5.086
* 32 Pentafluorobenzene	168	5.409	5.409	(1.000)	89849	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.441	5.436	(1.006)	26198	5.00000	5.136
* 37 1,4-Difluorobenzene	114	5.786	5.787	(1.000)	135392	10.0000	
\$ 43 d8-Toluene	98	6.738	6.738	(1.164)	87019	5.00000	5.000
* 53 d5-Chlorobenzene	117	7.817	7.817	(1.000)	147041	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.683	8.683	(1.111)	35429	5.00000	5.006
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502	(1.000)	98484	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.826	9.826	(1.034)	46115	5.00000	4.919

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131911G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL3
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	89849	-2.23
37 1,4-Difluorobenze	137175	68588	274350	135392	-1.30
53 d5-Chlorobenzene	154196	77098	308392	147041	-4.64
76 d4-1,4-Dichlorobe	103285	51643	206570	98484	-4.65

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	-0.01
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	-0.01
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	-0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131911G.D

Lab ID: SHF0222-CAL3

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 15:39

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3,i\20190613s,b\W306131912G.D

Date : 13-JUN-2019 16:06

Client ID:

Sample Info: SHF0222-CAL4

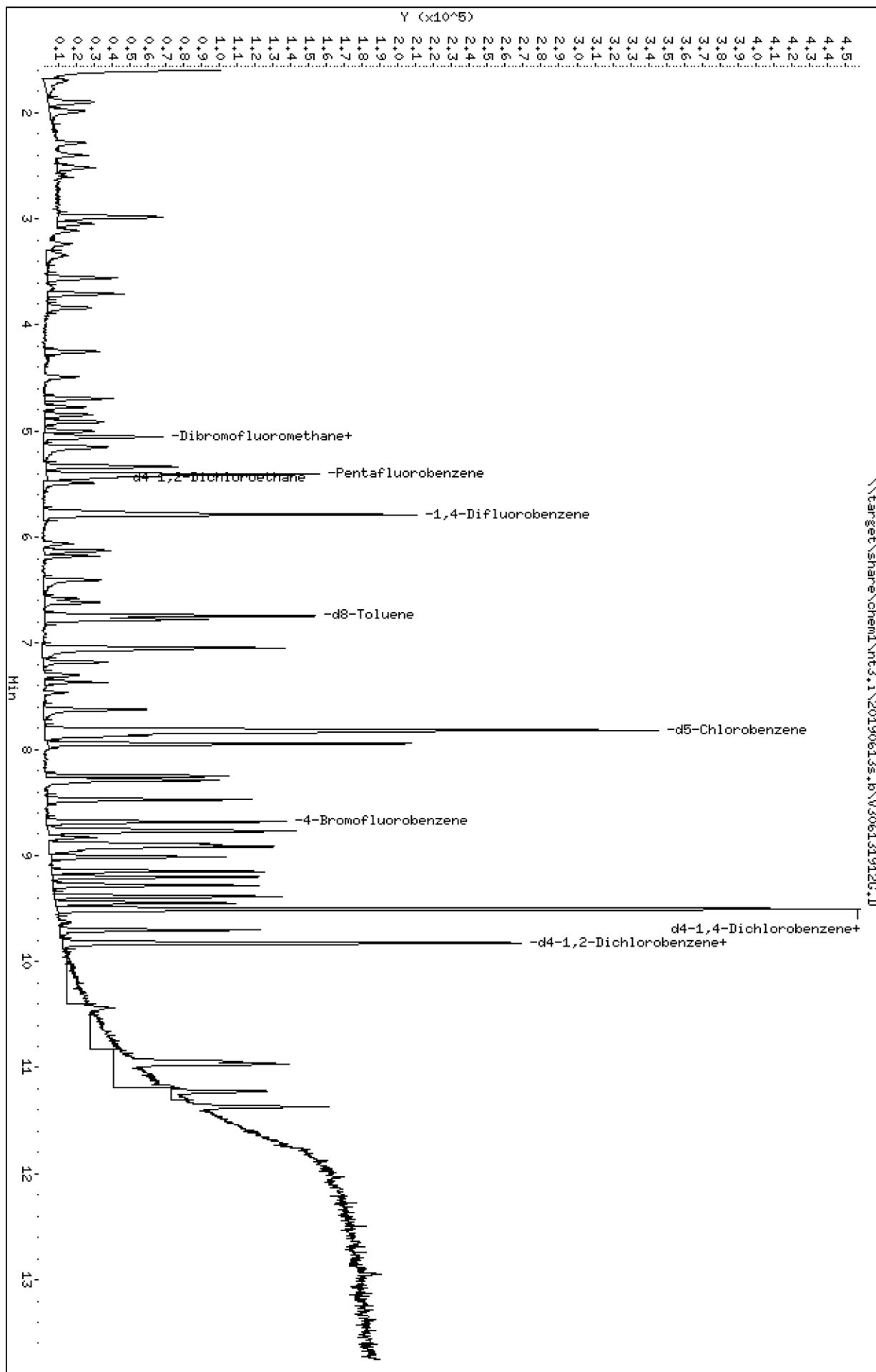
Column phase: RTXWMS

Instrument: nt3,i

Operator: PKC

Column diameter: 0.18

Page 1



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131912G.D
Lab Smp Id: SHF0222-CAL4
Inj Date : 13-JUN-2019 16:06
Operator : PKC
Smp Info : SHF0222-CAL4
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul
Cal Date : 13-JUN-2019 17:52
Als bottle: 58
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11
Inst ID: nt3.i
Quant Type: ISTD
Cal File: V306131916.D
Calibration Sample, Level: 4
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		CAL-AMT	ON-COL				
	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.048	5.048	(0.933)	17696	5.00000	4.890
* 32 Pentafluorobenzene	168	5.409	5.409	(1.000)	79725	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.441	5.436	(1.006)	21350	5.00000	4.717
* 37 1,4-Difluorobenzene	114	5.787	5.787	(1.000)	118003	10.0000	
\$ 43 d8-Toluene	98	6.743	6.738	(1.165)	74799	5.00000	4.931
* 53 d5-Chlorobenzene	117	7.817	7.817	(1.000)	128644	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.684	8.683	(1.111)	30620	5.00000	4.945
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502	(1.000)	85395	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.821	9.826	(1.034)	41601	5.00000	5.117

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131912G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL4
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	79725	-13.25
37 1,4-Difluorobenze	137175	68588	274350	118003	-13.98
53 d5-Chlorobenzene	154196	77098	308392	128644	-16.57
76 d4-1,4-Dichlorobe	103285	51643	206570	85395	-17.32

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131912G.D

Lab ID: SHF0222-CAL4

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 16:06

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3,i\20190613s,b\V306131913G.D

Date : 13-JUN-2019 16:32

Client ID:

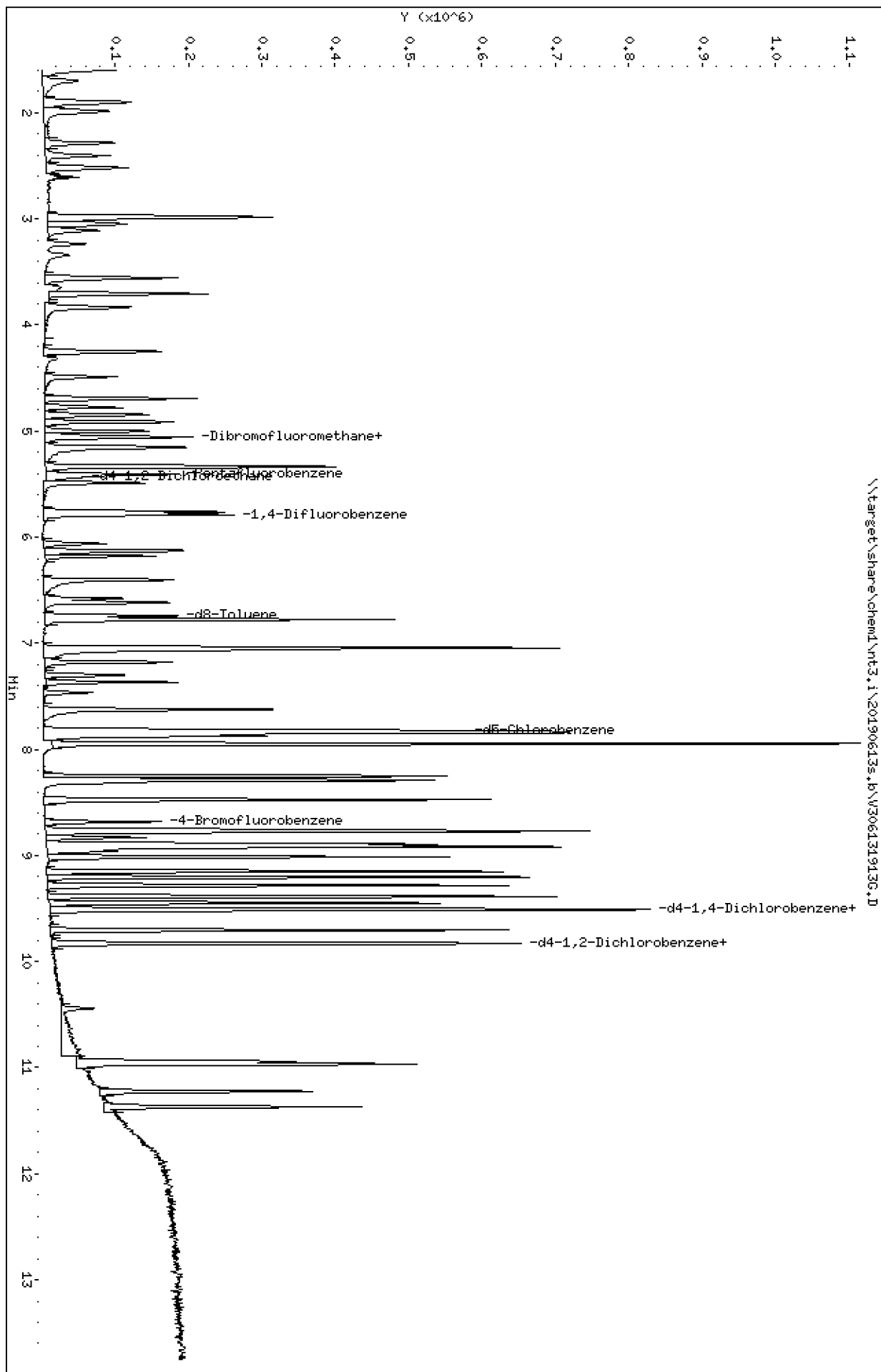
Sample Info: SHF0222-CAL5

Column phase: RTXWMS

Instrument: nt3,i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131913G.D
Lab Smp Id: SHF0222-CAL5
Inj Date : 13-JUN-2019 16:32
Operator : PKC
Smp Info : SHF0222-CAL5
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul
Cal Date : 13-JUN-2019 17:52
Als bottle: 59
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11

Inst ID: nt3.i

Quant Type: ISTD
Cal File: V306131916.D
Calibration Sample, Level: 5
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		CAL-AMT	ON-COL				
	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.048	5.048	(0.933)	20699	5.00000	4.962
* 32 Pentafluorobenzene	168	5.409	5.409	(1.000)	91902	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.436	5.436	(1.005)	26130	5.00000	5.008
* 37 1,4-Difluorobenzene	114	5.787	5.787	(1.000)	137175	10.0000	
\$ 43 d8-Toluene	98	6.738	6.738	(1.164)	87946	5.00000	4.988
* 53 d5-Chlorobenzene	117	7.817	7.817	(1.000)	154196	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.683	8.683	(1.111)	36921	5.00000	4.975
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502	(1.000)	103285	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.826	9.826	(1.034)	47955	5.00000	4.877

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131913G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL5
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	91902	0.00
37 1,4-Difluorobenze	137175	68588	274350	137175	0.00
53 d5-Chlorobenzene	154196	77098	308392	154196	0.00
76 d4-1,4-Dichlorobe	103285	51643	206570	103285	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131913G.D

Lab ID: SHF0222-CAL5

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 16:32

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190613s.b\V306131914G.D

Date : 13-JUN-2019 16:59

Client ID:

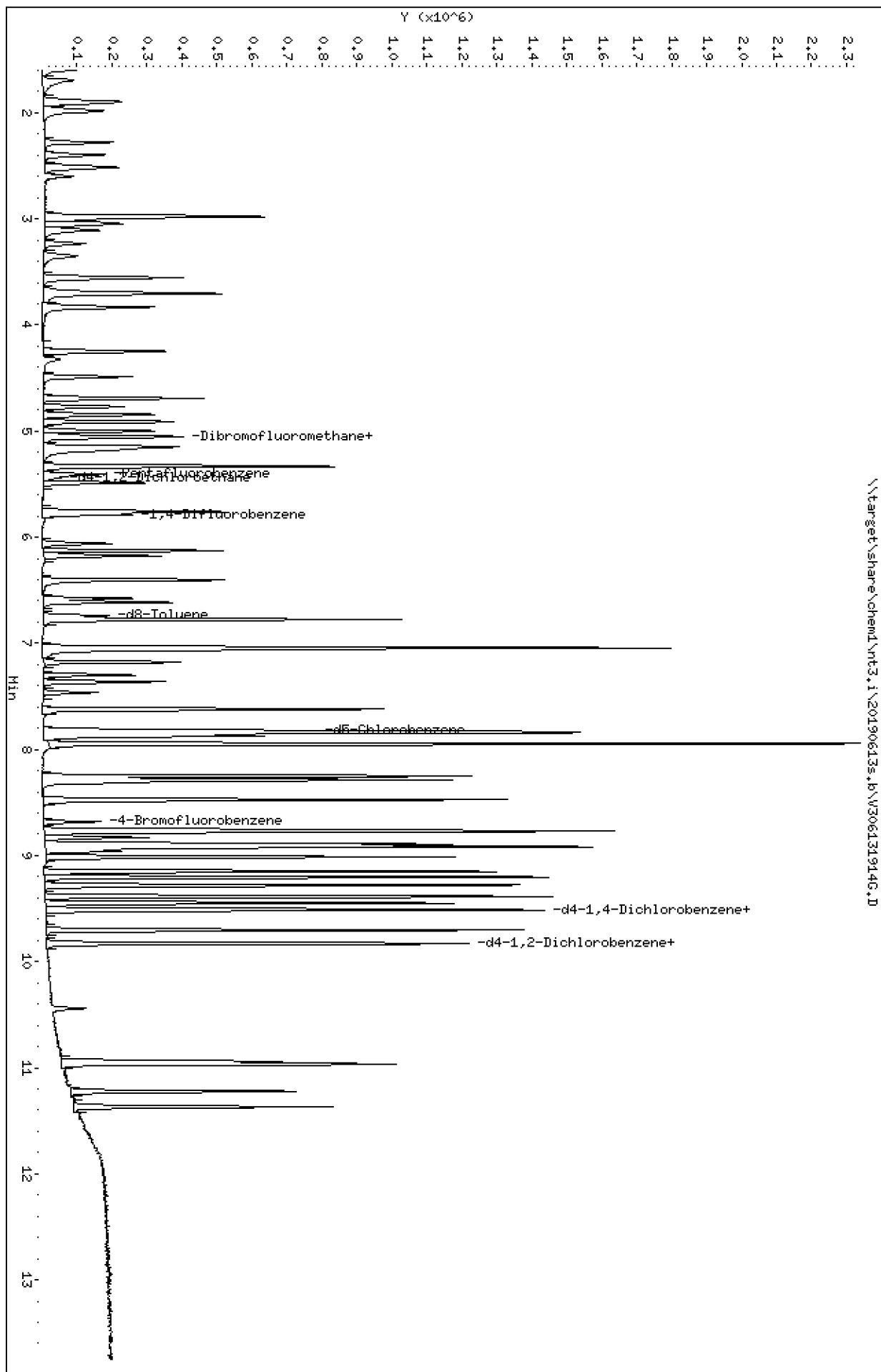
Sample Info: SHF0222-CAL6

Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131914G.D
Lab Smp Id: SHF0222-CAL6
Inj Date : 13-JUN-2019 16:59
Operator : PKC
Smp Info : SHF0222-CAL6
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul
Cal Date : 13-JUN-2019 17:52
Als bottle: 60
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11
Inst ID: nt3.i
Quant Type: ISTD
Cal File: V306131916.D
Calibration Sample, Level: 6
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		CAL-AMT	ON-COL				
	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.047	5.048	(0.933)	21291	5.00000	5.151
* 32 Pentafluorobenzene	168	5.409	5.409	(1.000)	91051	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.441	5.436	(1.006)	26150	5.00000	5.059
* 37 1,4-Difluorobenzene	114	5.786	5.787	(1.000)	140355	10.0000	
\$ 43 d8-Toluene	98	6.738	6.738	(1.164)	91678	5.00000	5.082
* 53 d5-Chlorobenzene	117	7.817	7.817	(1.000)	158151	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.683	8.683	(1.111)	39221	5.00000	5.152
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502	(1.000)	104107	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.826	9.826	(1.034)	50315	5.00000	5.077

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131914G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL6
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	91051	-0.93
37 1,4-Difluorobenze	137175	68588	274350	140355	2.32
53 d5-Chlorobenzene	154196	77098	308392	158151	2.56
76 d4-1,4-Dichlorobe	103285	51643	206570	104107	0.80

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	-0.01
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	-0.01
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	-0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131914G.D

Lab ID: SHF0222-CAL6

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 16:59

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190613s.b\V306131915G.D

Date : 13-JUN-2019 17:25

Client ID:

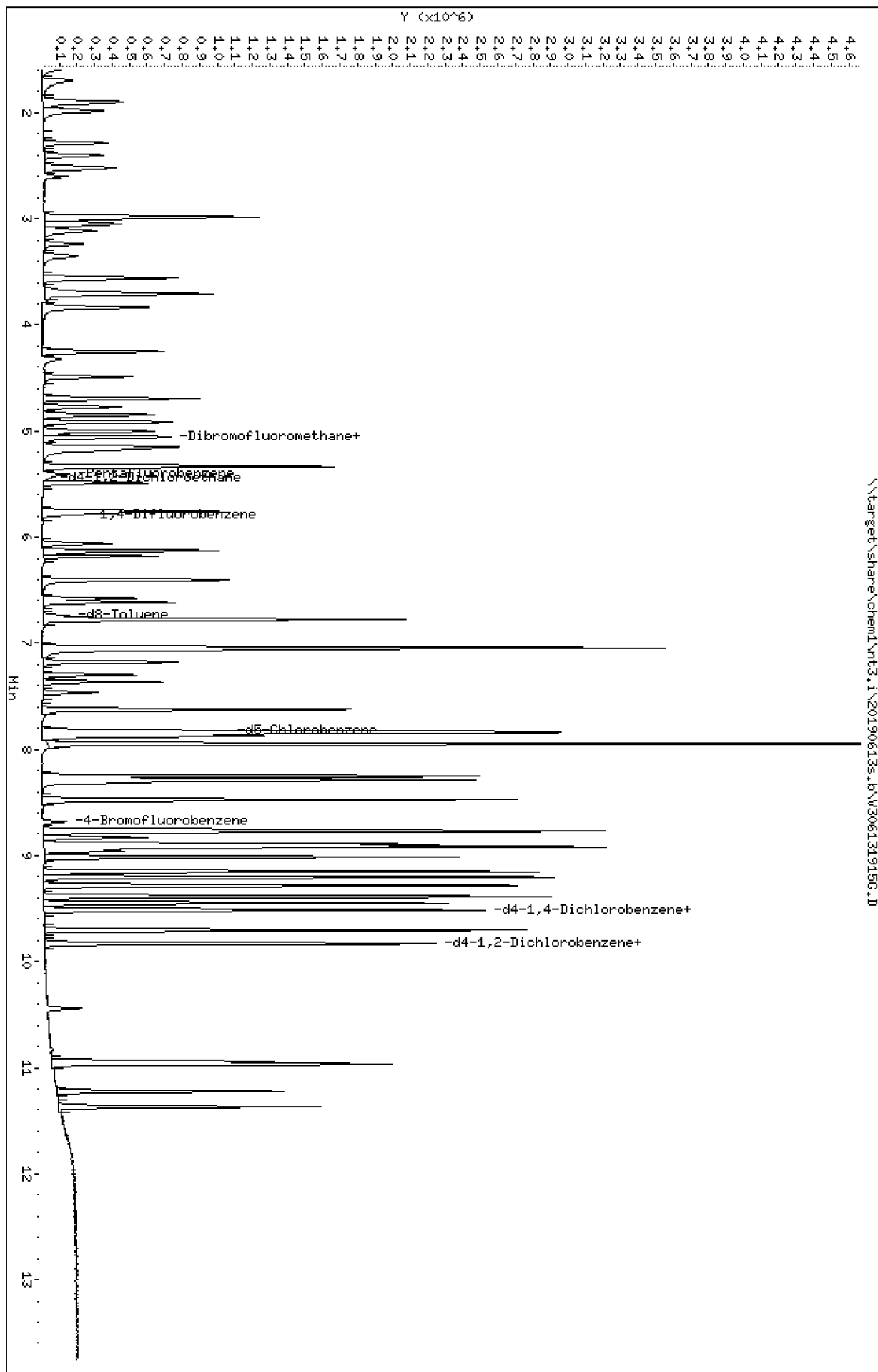
Sample Info: SHF0222-CAL7

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131915G.D
Lab Smp Id: SHF0222-CAL7
Inj Date : 13-JUN-2019 17:25
Operator : PKC
Smp Info : SHF0222-CAL7
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul
Cal Date : 13-JUN-2019 17:52
Als bottle: 61
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA11
Inst ID: nt3.i
Quant Type: ISTD
Cal File: V306131916.D
Calibration Sample, Level: 7
Compound Sublist: gsurr.sub

Compounds	QUANT SIG	AMOUNTS					
		RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/L)	ON-COL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.053	5.048	(0.934)	16753	5.00000	4.862
* 32 Pentafluorobenzene	168	5.409	5.409	(1.000)	75902	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.441	5.436	(1.006)	21611	5.00000	5.015
* 37 1,4-Difluorobenzene	114	5.786	5.787	(1.000)	116003	10.0000	
\$ 43 d8-Toluene	98	6.738	6.738	(1.164)	76548	5.00000	5.134
* 53 d5-Chlorobenzene	117	7.817	7.817	(1.000)	130039	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.683	8.683	(1.111)	31789	5.00000	5.079
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502	(1.000)	86433	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.826	9.826	(1.034)	41188	5.00000	5.006

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131915G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL7
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	75902	-17.41
37 1,4-Difluorobenze	137175	68588	274350	116003	-15.43
53 d5-Chlorobenzene	154196	77098	308392	130039	-15.67
76 d4-1,4-Dichlorobe	103285	51643	206570	86433	-16.32

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	-0.01
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	-0.00
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	-0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131915G.D

Lab ID: SHF0222-CAL7

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 17:25

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190613s.b\206131916G.D

Date : 13-JUN-2019 17:52

Client ID:

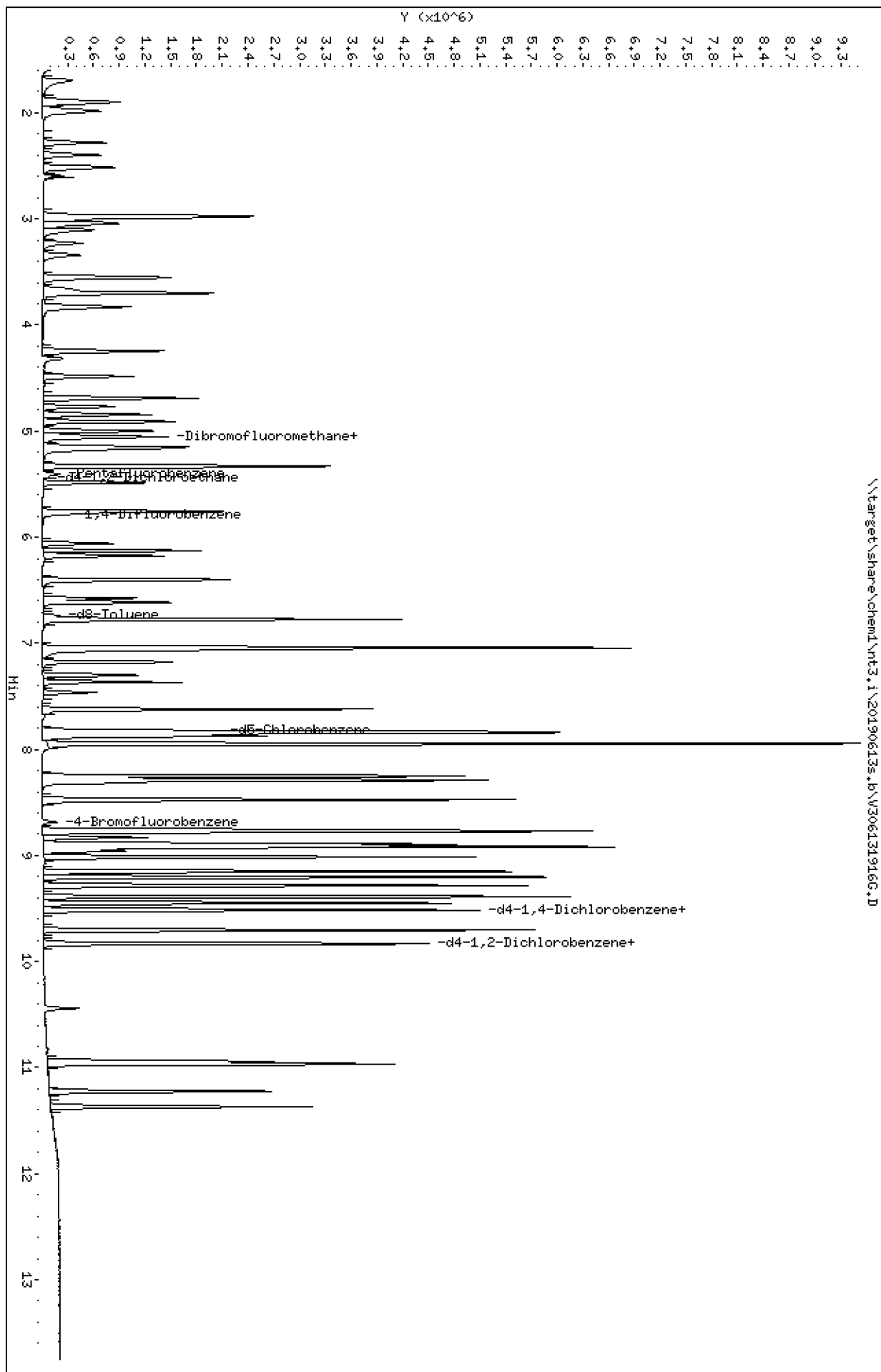
Sample Info: SHF0222-CAL8

Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131916G.D
 Lab Smp Id: SHF0222-CAL8
 Inj Date : 13-JUN-2019 17:52
 Operator : PKC Inst ID: nt3.i
 Smp Info : SHF0222-CAL8
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
 Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
 Als bottle: 62 Calibration Sample, Level: 8
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA11

Compounds	QUANT SIG							AMOUNTS	
		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT	ON-COL	
							(ug/L)	(ug/L)	
=====	=====		=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111		5.048	5.048	(1.000)	21962	5.00000	4.957	
* 32 Pentafluorobenzene	168		5.410	5.409	(1.000)	97602	10.0000	(M)	
\$ 33 d4-1,2-Dichloroethane	65		5.436	5.436	(1.000)	26843	5.00000	4.844	
* 37 1,4-Difluorobenzene	114		5.787	5.787	(1.000)	147047	10.0000		
\$ 43 d8-Toluene	98		6.739	6.738	(1.164)	93369	5.00000	4.940	
* 53 d5-Chlorobenzene	117		7.818	7.817	(1.000)	162457	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.684	8.683	(1.111)	40988	5.00000	5.242	
* 76 d4-1,4-Dichlorobenzene	152		9.503	9.502	(1.000)	112257	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.827	9.826	(1.034)	53496	5.00000	5.006	

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131916G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL8
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	97602	6.20
37 1,4-Difluorobenze	137175	68588	274350	147047	7.20
53 d5-Chlorobenzene	154196	77098	308392	162457	5.36
76 d4-1,4-Dichlorobe	103285	51643	206570	112257	8.69

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.01
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.01
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

REVIEW SUMMARY FOR FILE - V306131916G.D

Lab ID: SHF0222-CAL8

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 17:52

RT	CO-ELUTION COMPOUNDS
----	----------------------

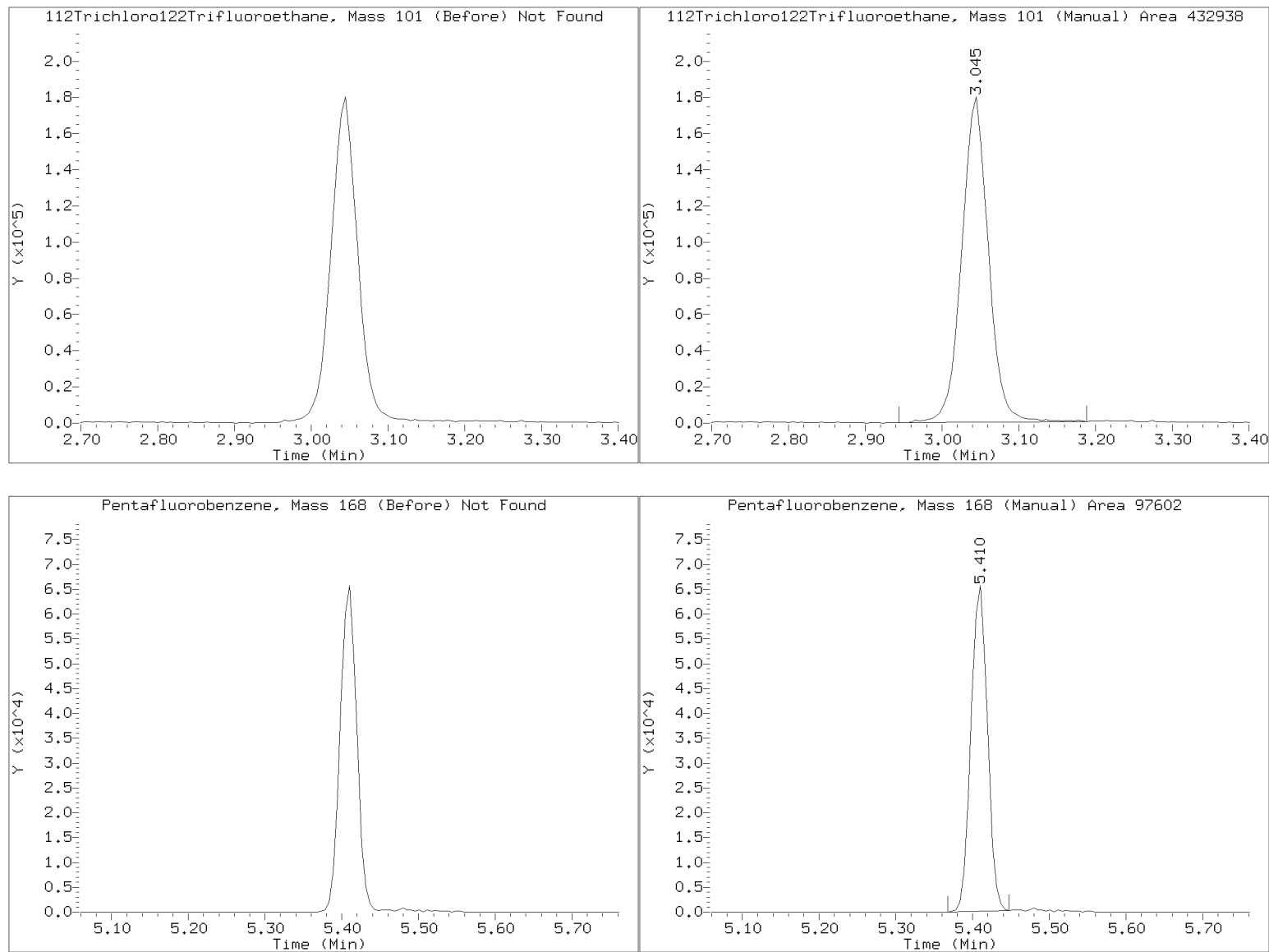
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190613.b/V306131916.D

Injection Date: 13-JUN-2019 17:52

Lab ID:SHF0184-CAL8 Client ID:

Report Date: 06/14/2019 12:41



Data File: \\target\share\chend\nt3.i\20190613s.b\W306131920G.D

Date : 13-JUN-2019 19:39

Client ID:

Sample Info: SHF0222-CAL9

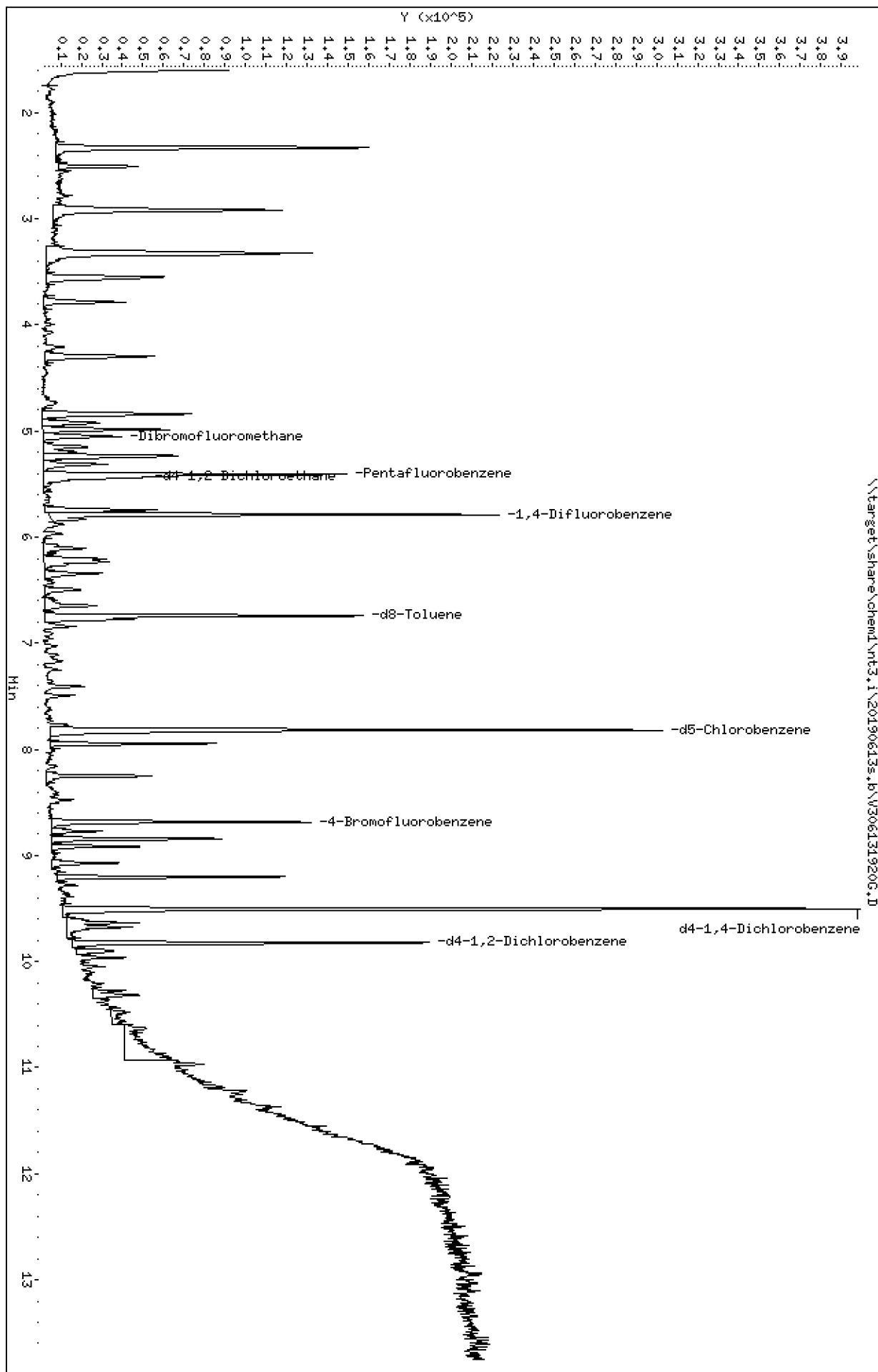
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge
 Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131920G.D
 Lab Smp Id: SHF0222-CAL9
 Inj Date : 13-JUN-2019 19:39
 Operator : PKC Inst ID: nt3.i
 Smp Info : SHF0222-CAL9
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
 Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
 Als bottle: 55
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.048	5.048	(0.933)	17470	4.95341	4.953 (R)
* 32 Pentafluorobenzene	168	5.409	5.409	(1.000)	77694	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.436	5.436	(1.005)	21880	4.96043	4.960 (R)
* 37 1,4-Difluorobenzene	114	5.787	5.787	(1.000)	119310	10.0000	
\$ 43 d8-Toluene	98	6.738	6.738	(1.164)	77317	5.04161	5.042 (R)
* 53 d5-Chlorobenzene	117	7.817	7.817	(1.000)	127575	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.684	8.683	(1.111)	30313	4.93659	4.937 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502	(1.000)	82901	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.821	9.826	(1.034)	39452	4.99903	4.999 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131920G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CAL9
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	77694	-15.46
37 1,4-Difluorobenze	137175	68588	274350	119310	-13.02
53 d5-Chlorobenzene	154196	77098	308392	127575	-17.26
76 d4-1,4-Dichlorobe	103285	51643	206570	82901	-19.74

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHF0222-CAL9
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.953	99.07	
\$ 33 d4-1,2-Dichloroeth	5.000	4.960	99.21	
\$ 43 d8-Toluene	5.000	5.042	100.83	
\$ 62 4-Bromofluorobenze	5.000	4.937	98.73	
\$ 79 d4-1,2-Dichloroben	5.000	4.999	99.98	

REVIEW SUMMARY FOR FILE - V306131920G.D

Lab ID: SHF0222-CAL9

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 19:39

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.1\20190613g.b\W306131920G.D

Date: 13-JUN-2019 19:39

Client ID:

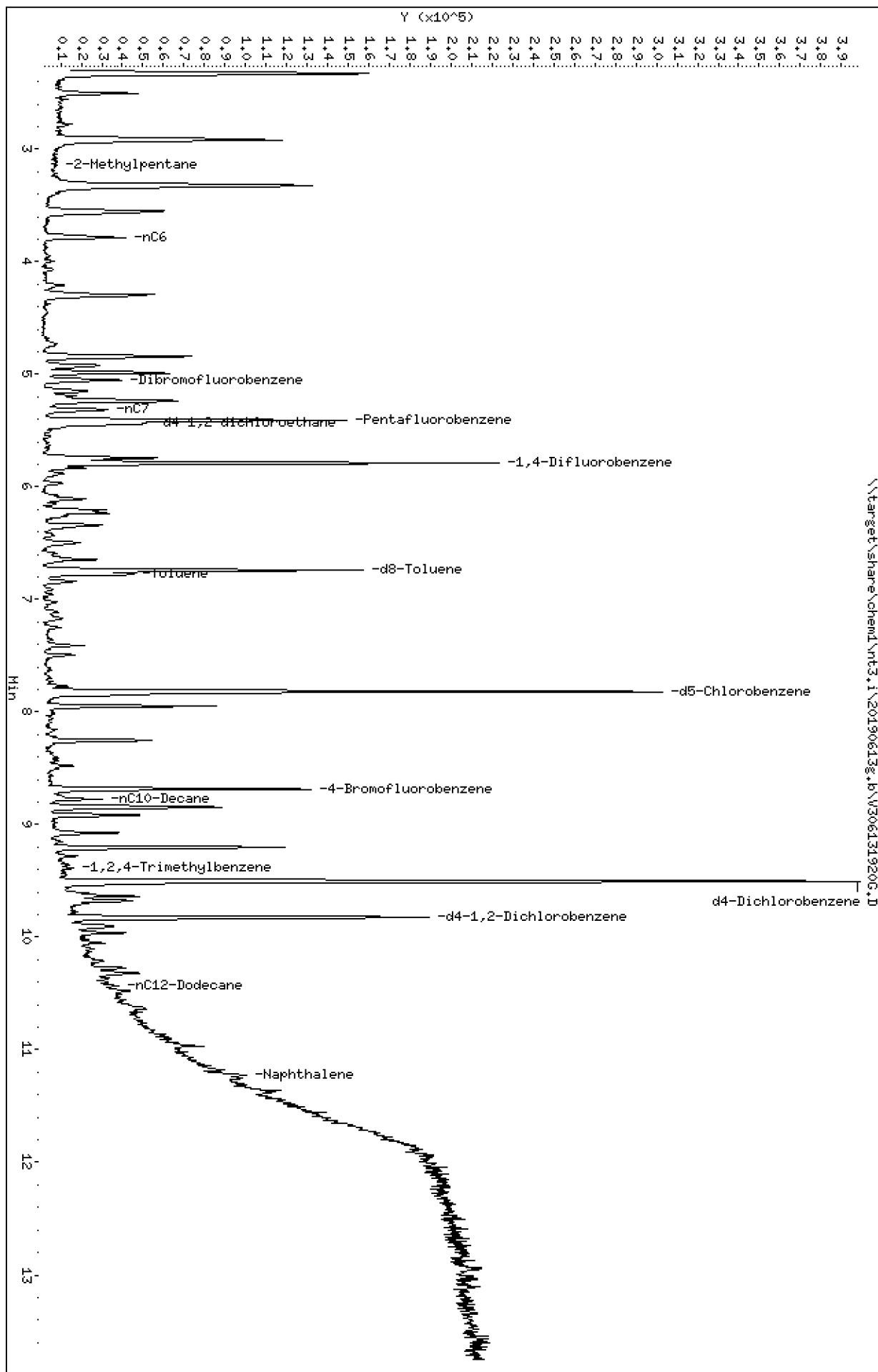
Sample Info: SHF0222-CAL9

Instrument: nt3.1

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131920G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 19:39

ARI ID: SHF0222-CAL9

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	1441115	0.093
8015C 2MP-TMB (3.04 to 9.49)	30509602	2890950	0.095 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	1910976	0.093 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	1611127	0.096
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	2176188	0.093 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.818	489098	d5-Chlorobenzene
6.739	231571	d8-Toluene
9.503	574650	d4-Dichlorobenzene
8.684	185438	4-Bromofluorobenzene
9.822	264136	d4-1,2-Dichlorobenzene

Data File: \\target\share\chend\nt3.1\20190613s.b\W306131921G.D

Date : 13-JUN-2019 20:06

Client ID:

Sample Info: SHF0222-CALA

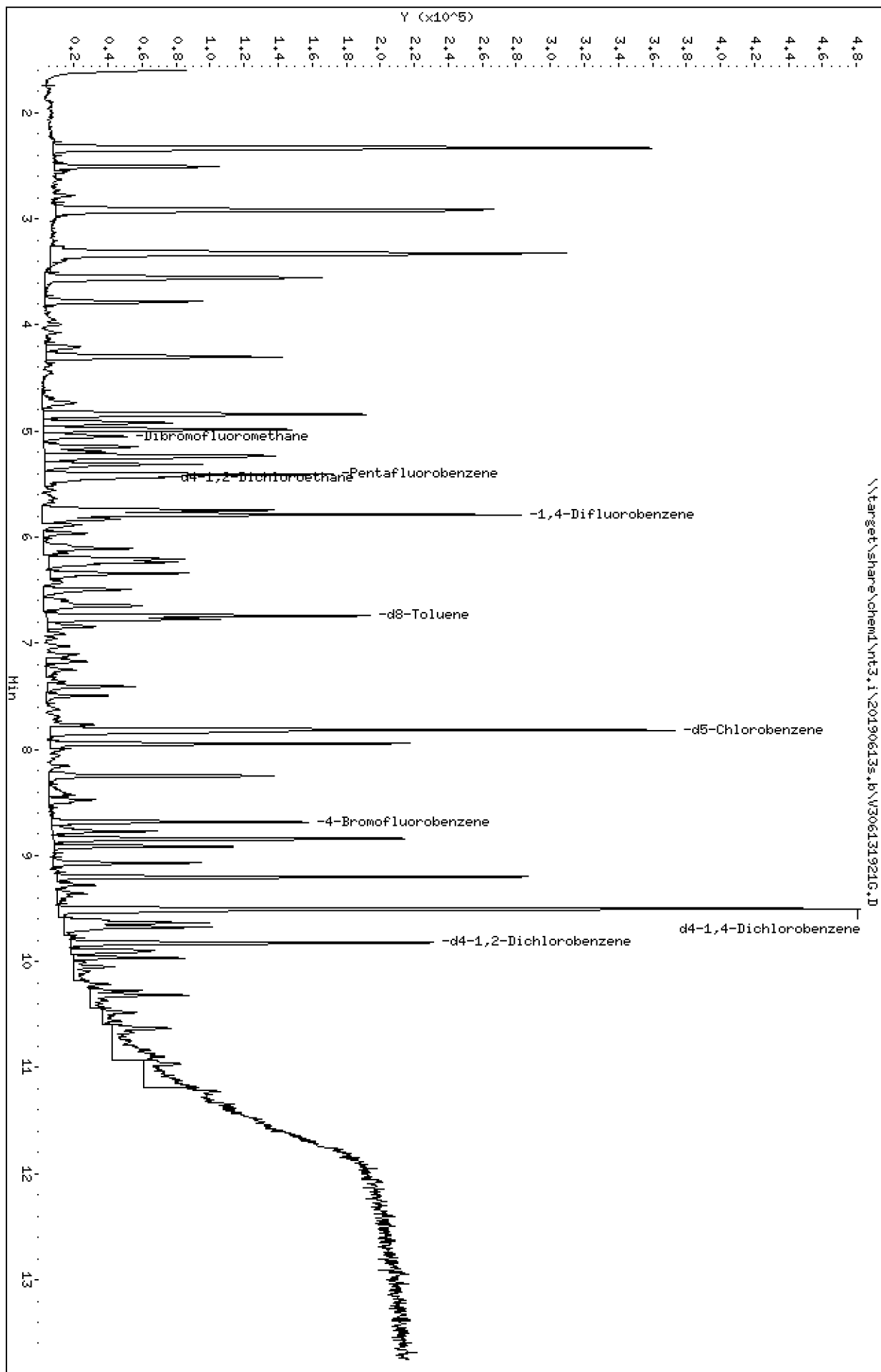
Page 1

Instrument: nt3.1

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131921G.D
Lab Smp Id: SHF0222-CALA
Inj Date : 13-JUN-2019 20:06
Operator : PKC Inst ID: nt3.i
Smp Info : SHF0222-CALA
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
=====	=====		=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111		5.048	5.048	(0.933)	19953	4.84373	4.844 (R)	
* 32 Pentafluorobenzene	168		5.409	5.409	(1.000)	90746	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.436	5.436	(1.005)	27837	5.40324	5.403 (R)	
* 37 1,4-Difluorobenzene	114		5.787	5.787	(1.000)	137942	10.0000		
\$ 43 d8-Toluene	98		6.738	6.738	(1.164)	87433	4.93117	4.931 (R)	
* 53 d5-Chlorobenzene	117		7.817	7.817	(1.000)	154924	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.684	8.683	(1.111)	35820	4.80364	4.804 (R)	
* 76 d4-1,4-Dichlorobenzene	152		9.502	9.502	(1.000)	98459	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.827	9.826	(1.034)	46081	4.91635	4.916 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131921G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CALA
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	90746	-1.26
37 1,4-Difluorobenze	137175	68588	274350	137942	0.56
53 d5-Chlorobenzene	154196	77098	308392	154924	0.47
76 d4-1,4-Dichlorobe	103285	51643	206570	98459	-4.67

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHF0222-CALA
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.844	96.87	
\$ 33 d4-1,2-Dichloroeth	5.000	5.403	108.06	
\$ 43 d8-Toluene	5.000	4.931	98.62	
\$ 62 4-Bromofluorobenze	5.000	4.804	96.07	
\$ 79 d4-1,2-Dichloroben	5.000	4.916	98.33	

REVIEW SUMMARY FOR FILE - V306131921G.D

Lab ID: SHF0222-CALA

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 20:06

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.1\20190613g.b\206131921G.D

Date: 13-JUN-2019 20:06

Client ID:

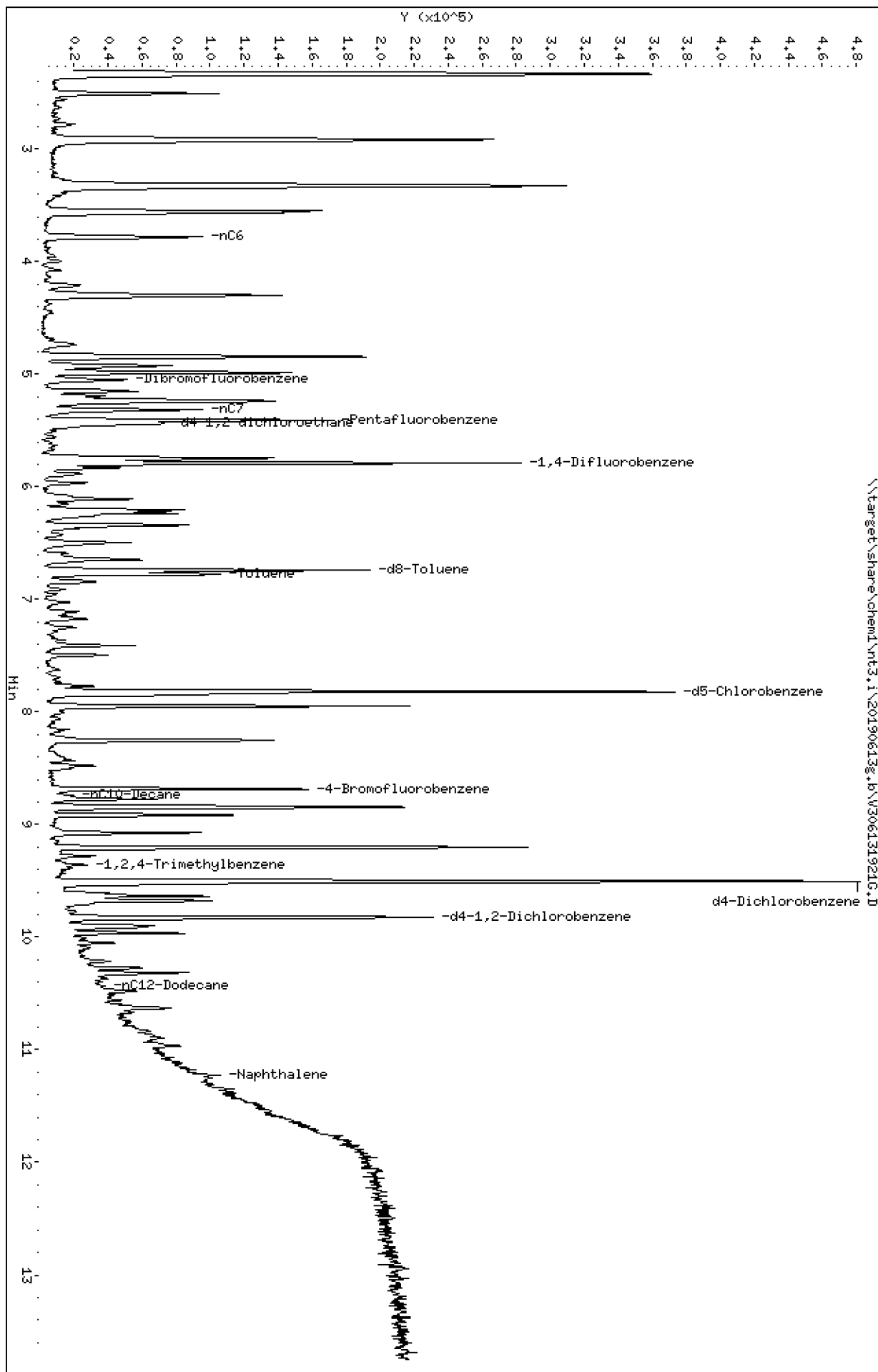
Sample Info: SHF0222-CALA

Column phase: RTXWMS

Instrument: nt3.1

Operator: PKC

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131921G.D
Method: \20190613g.b\NWTPHG.m
Instrument: nt3.i
Gas Ical Date: 13-JUN-2019
Injection Date: 13-JUN-2019 20:06

ARI ID: SHF0222-CALA
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: PKC

GASOLINE HYDROCARBONS

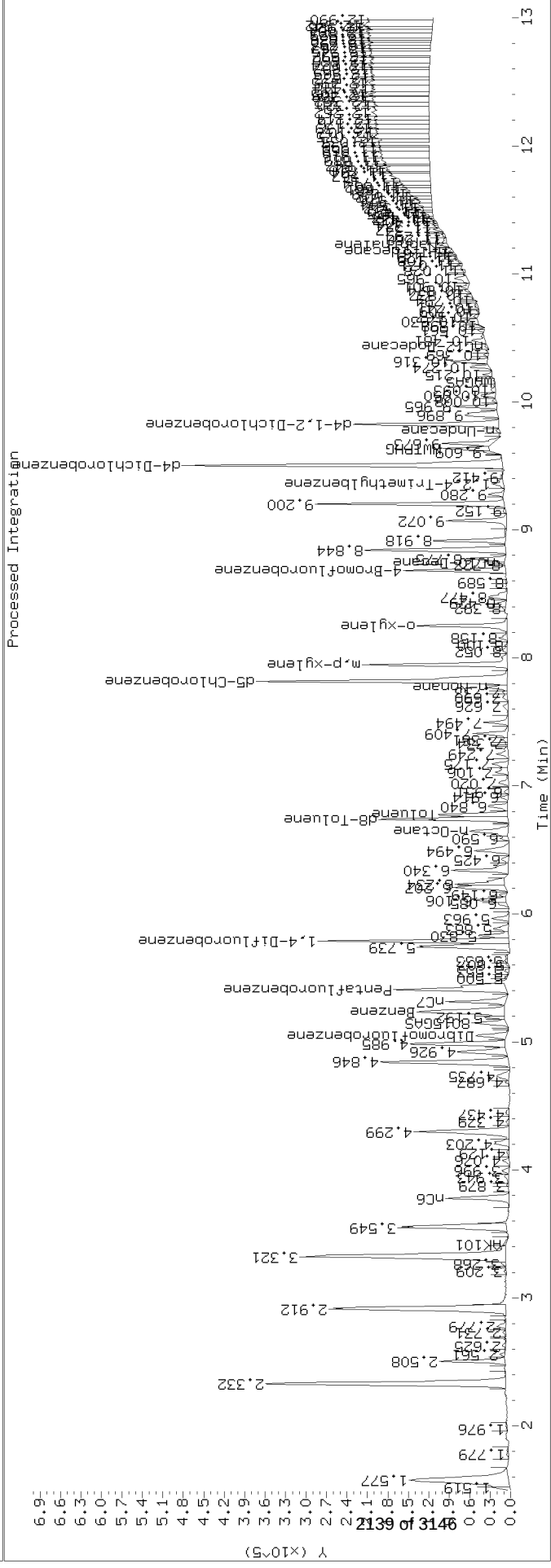
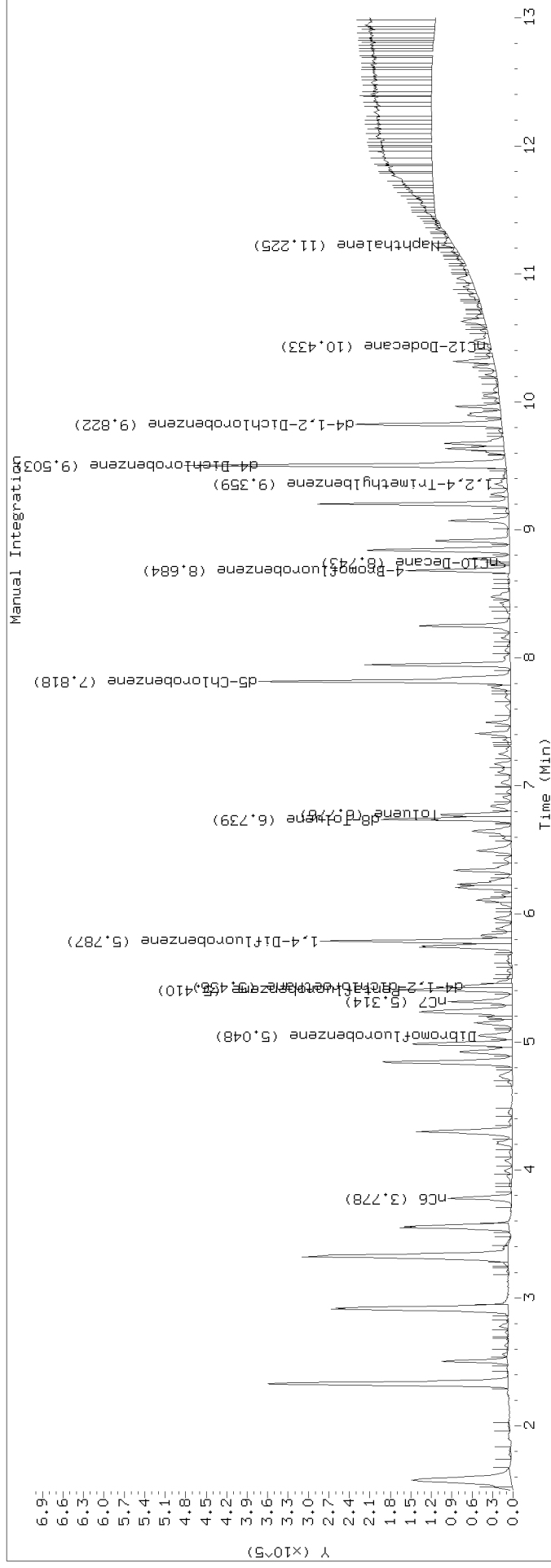
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	3372857	0.217
8015C 2MP-TMB (3.04 to 9.49)	30509602	7004888	0.230 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	4683192	0.228 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	3719552	0.222
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	5175942	0.222 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.818	644613	d5-Chlorobenzene
6.739	288074	d8-Toluene
9.503	746060	d4-Dichlorobenzene
8.684	220328	4-Bromofluorobenzene
9.822	329409	d4-1,2-Dichlorobenzene



Data File: \\target\share\chend\nt3.i\20190613s.b\W306131922G.D

Date : 13-JUN-2019 20:32

Client ID:

Sample Info: SHF0222-CALB

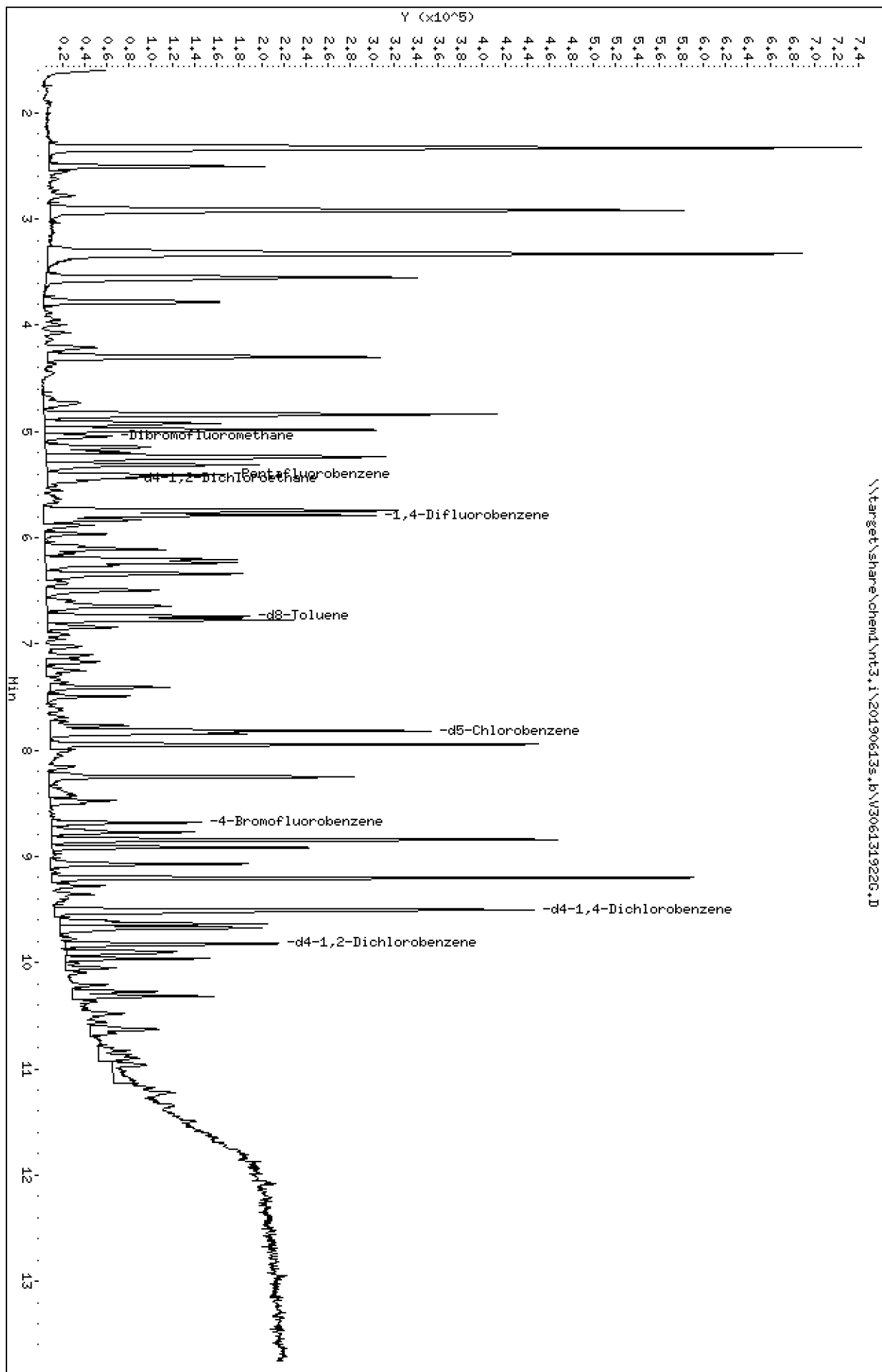
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge
 Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131922G.D
 Lab Smp Id: SHF0222-CALB
 Inj Date : 13-JUN-2019 20:32
 Operator : PKC Inst ID: nt3.i
 Smp Info : SHF0222-CALB
 Misc Info : 16-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
 Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
 Als bottle: 55
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	5.047	5.048	(0.933)	18532	4.78695	4.787 (R)
* 32 Pentafluorobenzene	168	5.409	5.409	(1.000)	85283	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.441	5.436	(1.006)	23996	4.95605	4.956 (R)
* 37 1,4-Difluorobenzene	114	5.786	5.787	(1.000)	130339	10.0000	
\$ 43 d8-Toluene	98	6.738	6.738	(1.164)	80614	4.81180	4.812 (R)
* 53 d5-Chlorobenzene	117	7.817	7.817	(1.000)	141198	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.683	8.683	(1.111)	33735	4.96382	4.964 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.502	9.502	(1.000)	93020	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.821	9.826	(1.034)	43325	4.89259	4.893 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131922G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CALB
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	85283	-7.20
37 1,4-Difluorobenze	137175	68588	274350	130339	-4.98
53 d5-Chlorobenzene	154196	77098	308392	141198	-8.43
76 d4-1,4-Dichlorobe	103285	51643	206570	93020	-9.94

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	-0.01
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	-0.01
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	-0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHF0222-CALB
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.787	95.74	
\$ 33 d4-1,2-Dichloroeth	5.000	4.956	99.12	
\$ 43 d8-Toluene	5.000	4.812	96.24	
\$ 62 4-Bromofluorobenze	5.000	4.964	99.28	
\$ 79 d4-1,2-Dichloroben	5.000	4.893	97.85	

REVIEW SUMMARY FOR FILE - V306131922G.D

Lab ID: SHF0222-CALB

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 20:32

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.1\20190613g.b\W306131922G.D

Date : 13-JUN-2019 20:32

Client ID:

Sample Info: SHF0222-CALB

Page 1

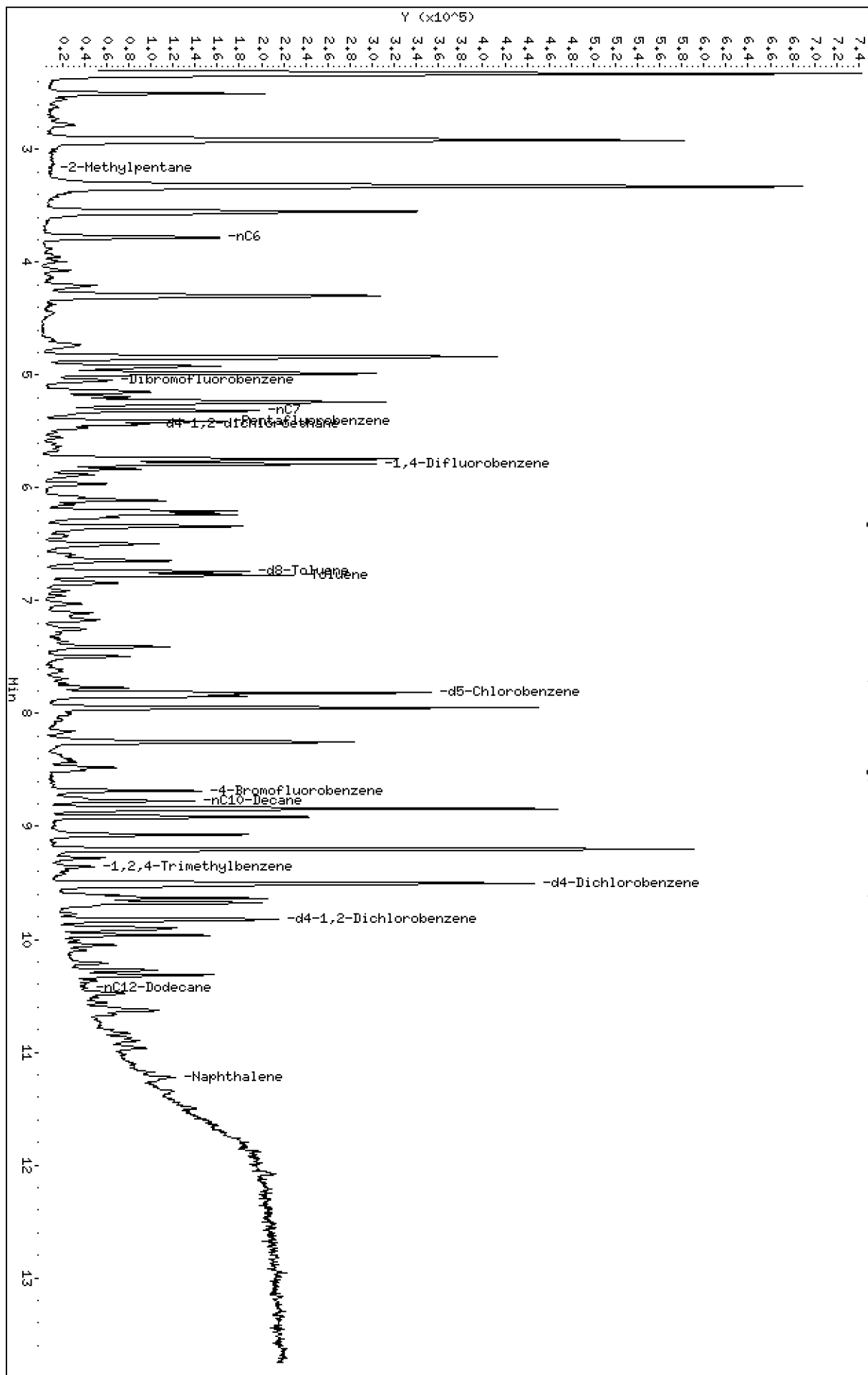
Instrument: nt3.1

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS

\\target\share\chend\nt3.1\20190613g.b\W306131922G.D



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131922G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 20:32

ARI ID: SHF0222-CALB

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

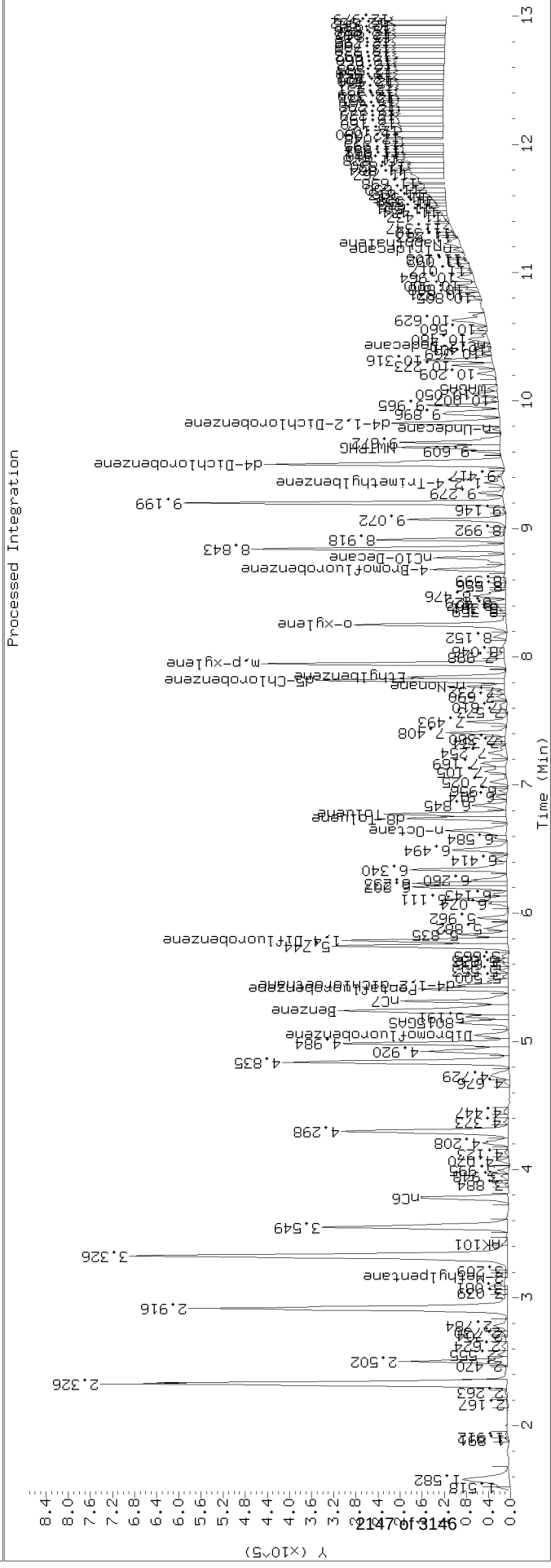
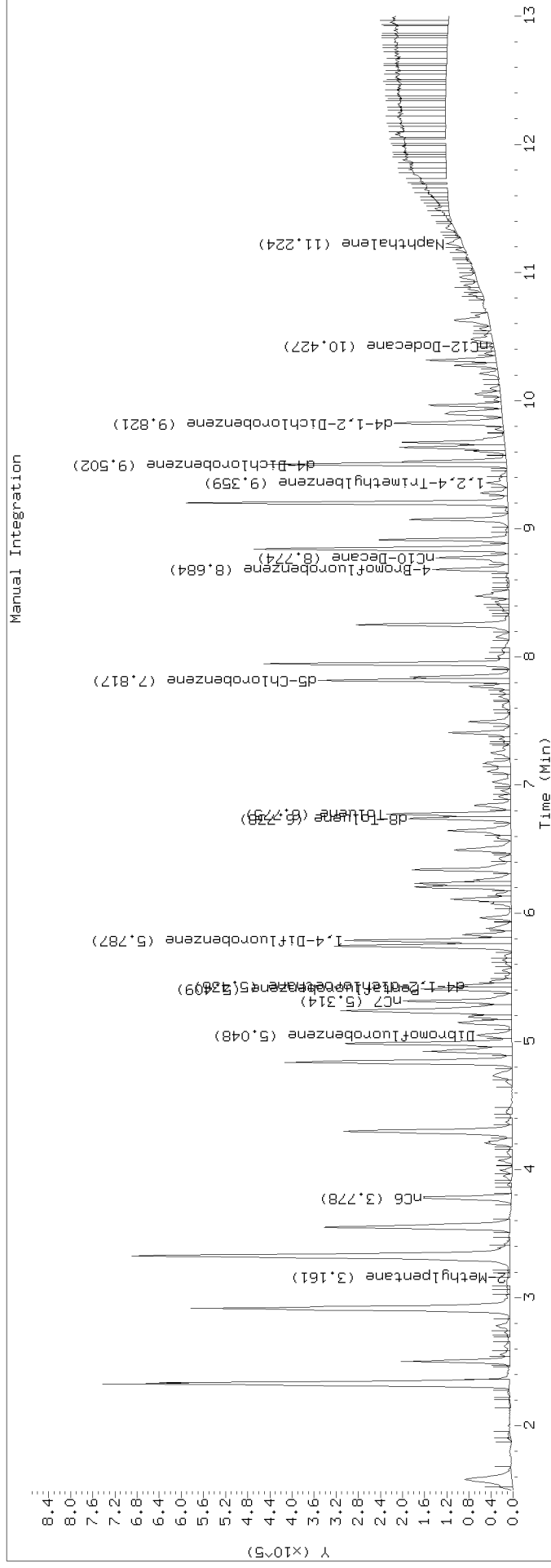
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	7619311	0.489 M
8015C 2MP-TMB (3.04 to 9.49)	30509602	15217453	0.499 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	10311022	0.501 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	8102072	0.484 M
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	11535145	0.495 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.817	501400	d5-Chlorobenzene
6.738	278728	d8-Toluene
9.502	606395	d4-Dichlorobenzene
8.684	205798	4-Bromofluorobenzene
9.821	338647	d4-1,2-Dichlorobenzene



Data File: \\target\share\chend\nt3.1\20190613s.b\201906131923G.D

Date: 13-JUN-2019 20:59

Client ID:

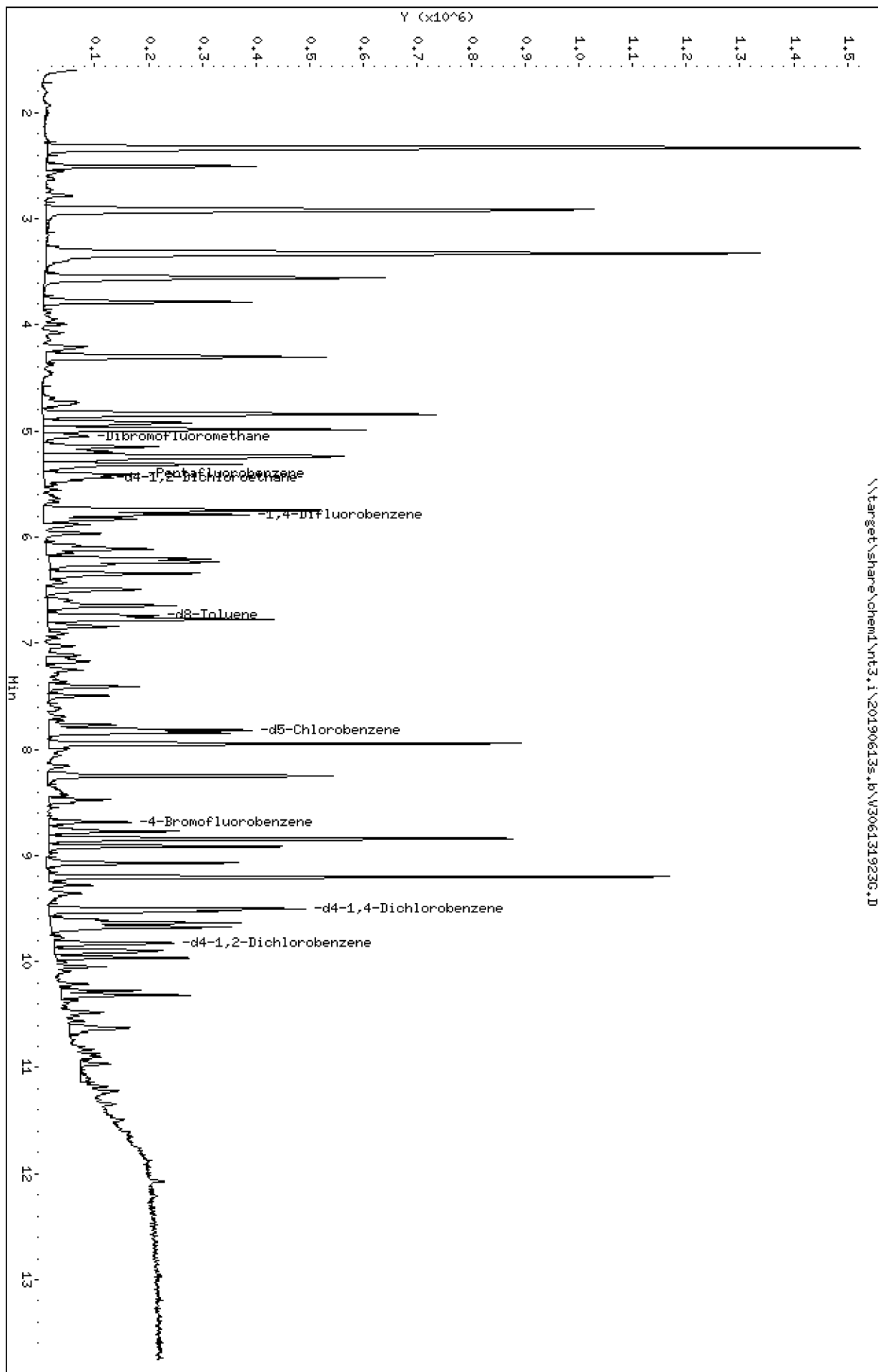
Sample Info: SHF0222-CALC

Column phase: RTXWMS

Instrument: nt3.1

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131923G.D
Lab Smp Id: SHF0222-CALC
Inj Date : 13-JUN-2019 20:59
Operator : PKC Inst ID: nt3.i
Smp Info : SHF0222-CALC
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111		5.048	5.048	(0.933)	19945	4.78755	4.788 (R)	
* 32 Pentafluorobenzene	168		5.410	5.409	(1.000)	91774	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.436	5.436	(1.005)	27020	5.18591	5.186 (R)	
* 37 1,4-Difluorobenzene	114		5.787	5.787	(1.000)	141573	10.0000		
\$ 43 d8-Toluene	98		6.738	6.738	(1.164)	91041	5.00297	5.003 (R)	
* 53 d5-Chlorobenzene	117		7.818	7.817	(1.000)	155313	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.684	8.683	(1.111)	38038	5.08831	5.088 (R)	
* 76 d4-1,4-Dichlorobenzene	152		9.503	9.502	(1.000)	104015	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.827	9.826	(1.034)	48051	4.85270	4.853 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131923G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CALC
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	91774	-0.14
37 1,4-Difluorobenze	137175	68588	274350	141573	3.21
53 d5-Chlorobenzene	154196	77098	308392	155313	0.72
76 d4-1,4-Dichlorobe	103285	51643	206570	104015	0.71

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.01
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.01
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHF0222-CALC
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.788	95.75	
\$ 33 d4-1,2-Dichloroeth	5.000	5.186	103.72	
\$ 43 d8-Toluene	5.000	5.003	100.06	
\$ 62 4-Bromofluorobenze	5.000	5.088	101.77	
\$ 79 d4-1,2-Dichloroben	5.000	4.853	97.05	

REVIEW SUMMARY FOR FILE - V306131923G.D

Lab ID: SHF0222-CALC

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 20:59

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3,i\20190613g,b\W306131923G.D

Date : 13-JUN-2019 20:59

Client ID:

Sample Info: SHF0222-CALC

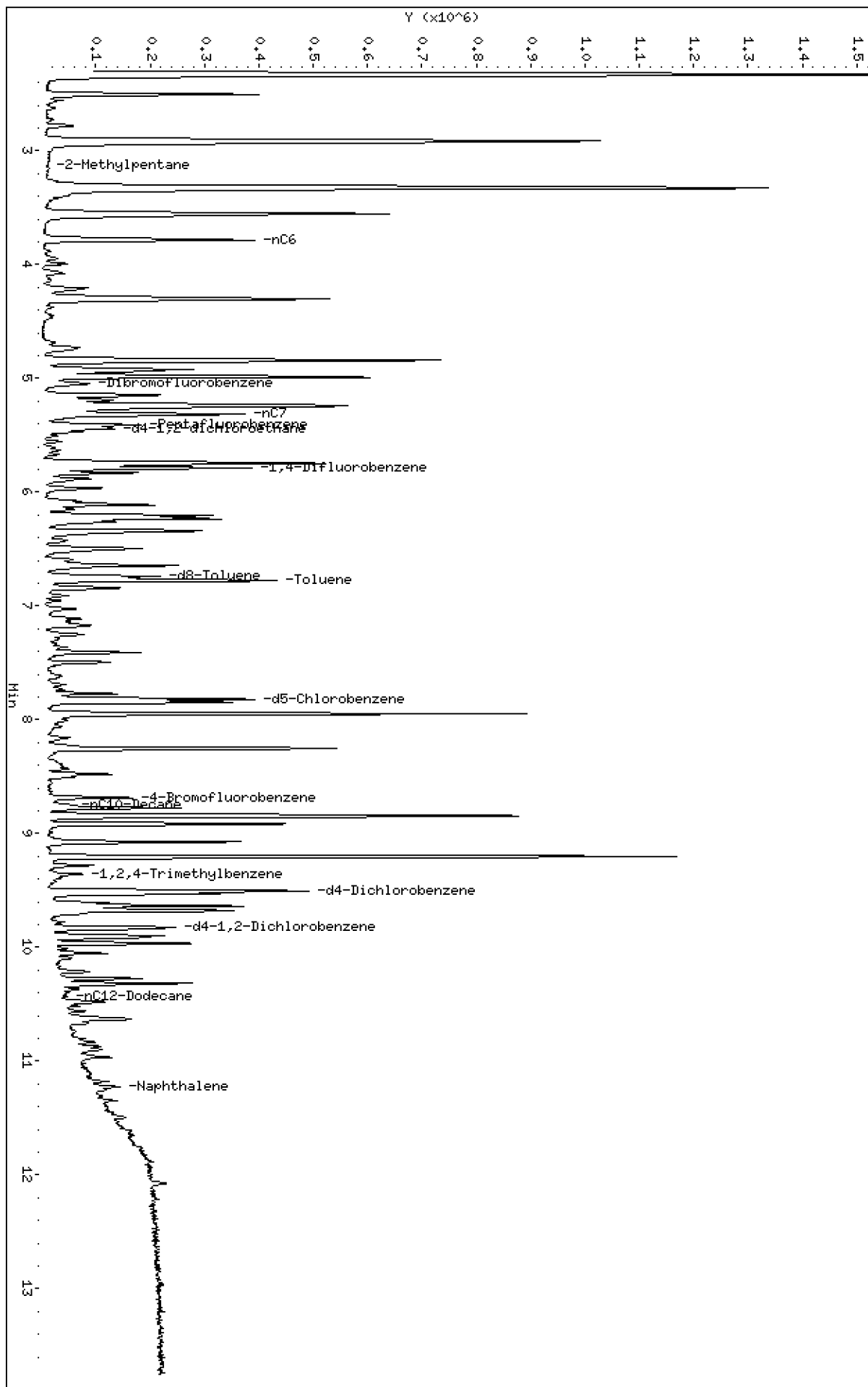
Column phase: RTXWMS

Instrument: nt3,i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3,i\20190613g,b\W306131923G.D



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131923G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 20:59

ARI ID: SHF0222-CALC

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	14423265	0.926 M
8015C 2MP-TMB (3.04 to 9.49)	30509602	28855755	0.946 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	19434829	0.945 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	15457521	0.924 M
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	21830108	0.937 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

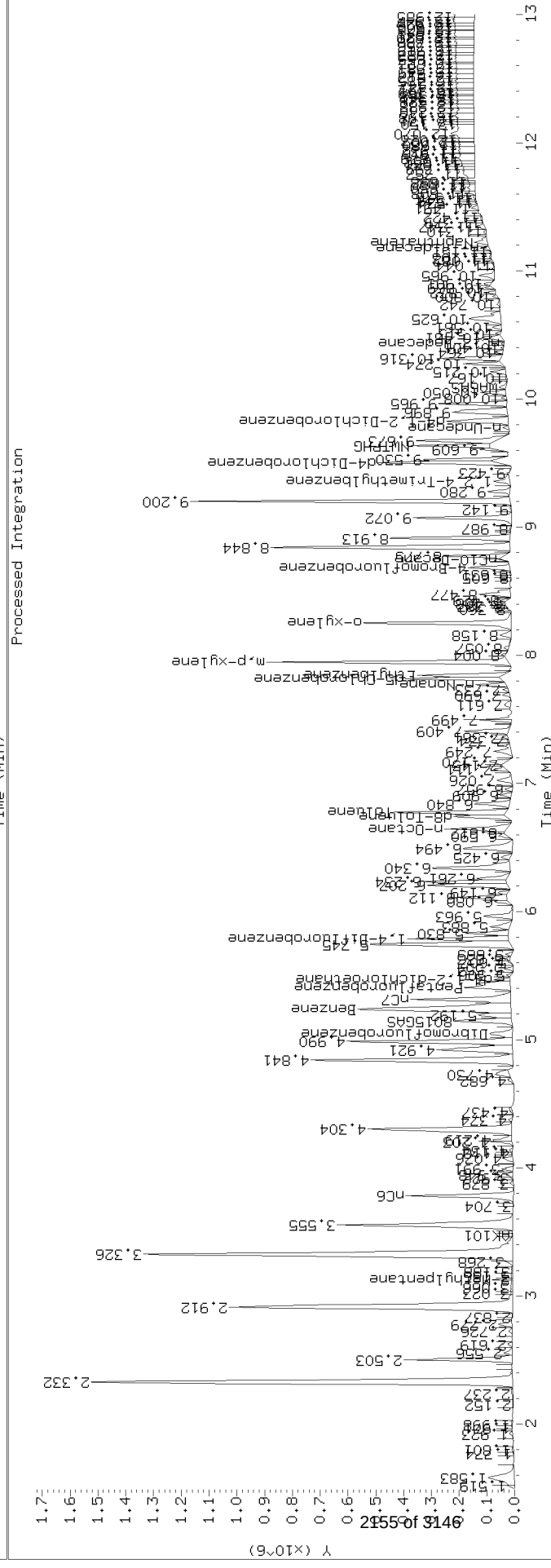
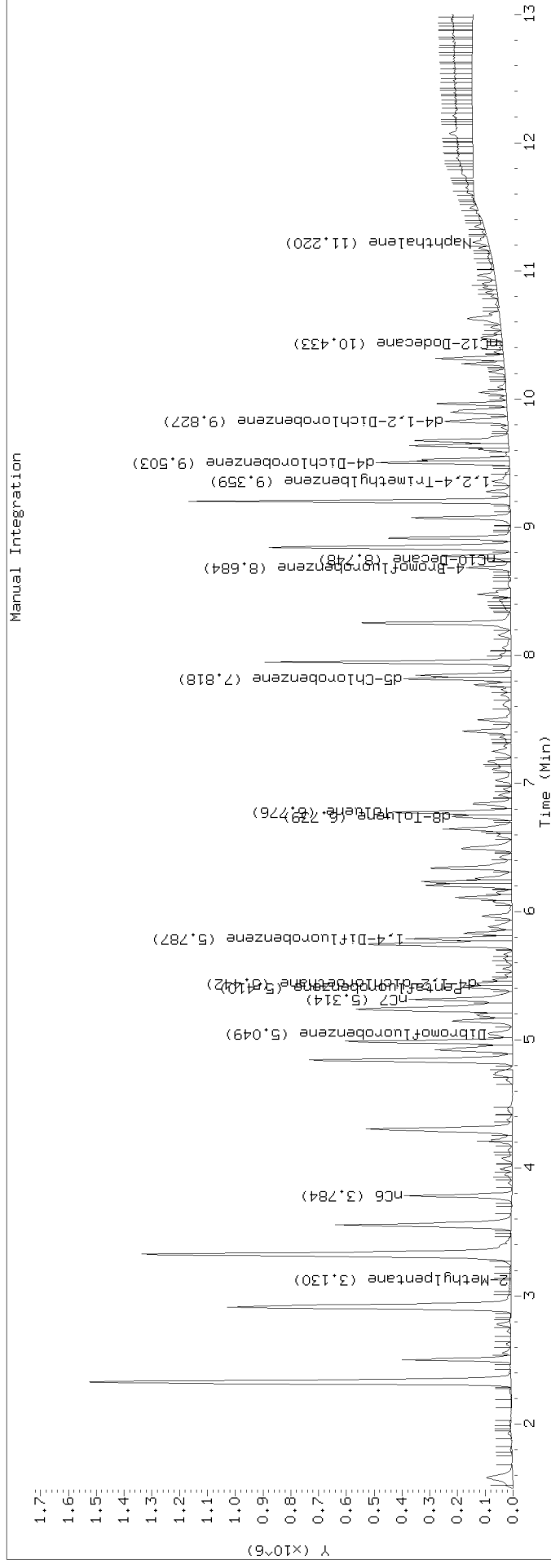
NW Gas Range Subtracted Peaks

7.818	540589	d5-Chlorobenzene
6.739	355587	d8-Toluene
9.503	713035	d4-Dichlorobenzene
8.684	246453	4-Bromofluorobenzene
9.827	422202	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report
Datafile: NT3, 20190613g.b/V306131923G.D Injection: 13-JUN-2019 20:59

Injection: 13-JUN-2019 20:59

Lab ID: SHF0222-CALC



Data File: \\target\share\chend\nt3.i\20190613s.b\306131924G.D

Date : 13-JUN-2019 21:26

Client ID:

Sample Info: SHF0222-CALD

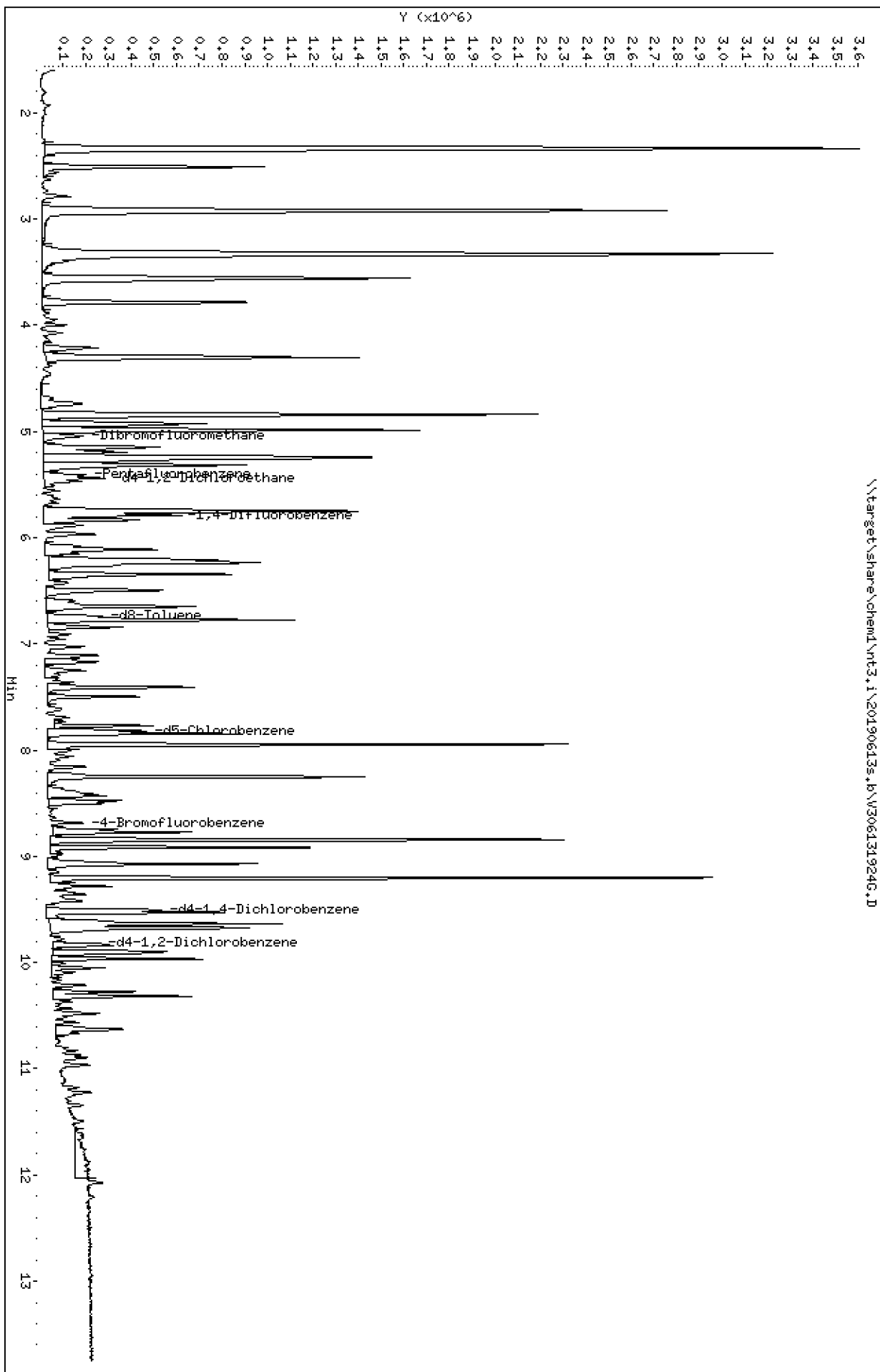
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131924G.D
Lab Smp Id: SHF0222-CALD
Inj Date : 13-JUN-2019 21:26
Operator : PKC Inst ID: nt3.i
Smp Info : SHF0222-CALD
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
=====	=====		=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111		5.053	5.048 (0.934)		21224	4.91452	4.915 (R)	
* 32 Pentafluorobenzene	168		5.409	5.409 (1.000)		95136	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.441	5.436 (1.006)		31290	5.79322	5.793 (R)	
* 37 1,4-Difluorobenzene	114		5.787	5.787 (1.000)		150099	10.0000		
\$ 43 d8-Toluene	98		6.738	6.738 (1.164)		98867	5.12442	5.124 (R)	
* 53 d5-Chlorobenzene	117		7.817	7.817 (1.000)		157636	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.684	8.683 (1.111)		37916	4.99725	4.997 (R)	
* 76 d4-1,4-Dichlorobenzene	152		9.502	9.502 (1.000)		103605	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.821	9.826 (1.034)		48738	4.94155	4.942 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131924G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CALD
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	95136	3.52
37 1,4-Difluorobenze	137175	68588	274350	150099	9.42
53 d5-Chlorobenzene	154196	77098	308392	157636	2.23
76 d4-1,4-Dichlorobe	103285	51643	206570	103605	0.31

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHF0222-CALD
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.915	98.29	
\$ 33 d4-1,2-Dichloroeth	5.000	5.793	115.86	
\$ 43 d8-Toluene	5.000	5.124	102.49	
\$ 62 4-Bromofluorobenze	5.000	4.997	99.95	
\$ 79 d4-1,2-Dichloroben	5.000	4.942	98.83	

REVIEW SUMMARY FOR FILE - V306131924G.D

Lab ID: SHF0222-CALD

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 21:26

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190613g.b\V306131924G.D

Date : 13-JUN-2019 21:26

Client ID:

Sample Info: SHF0222-CALD

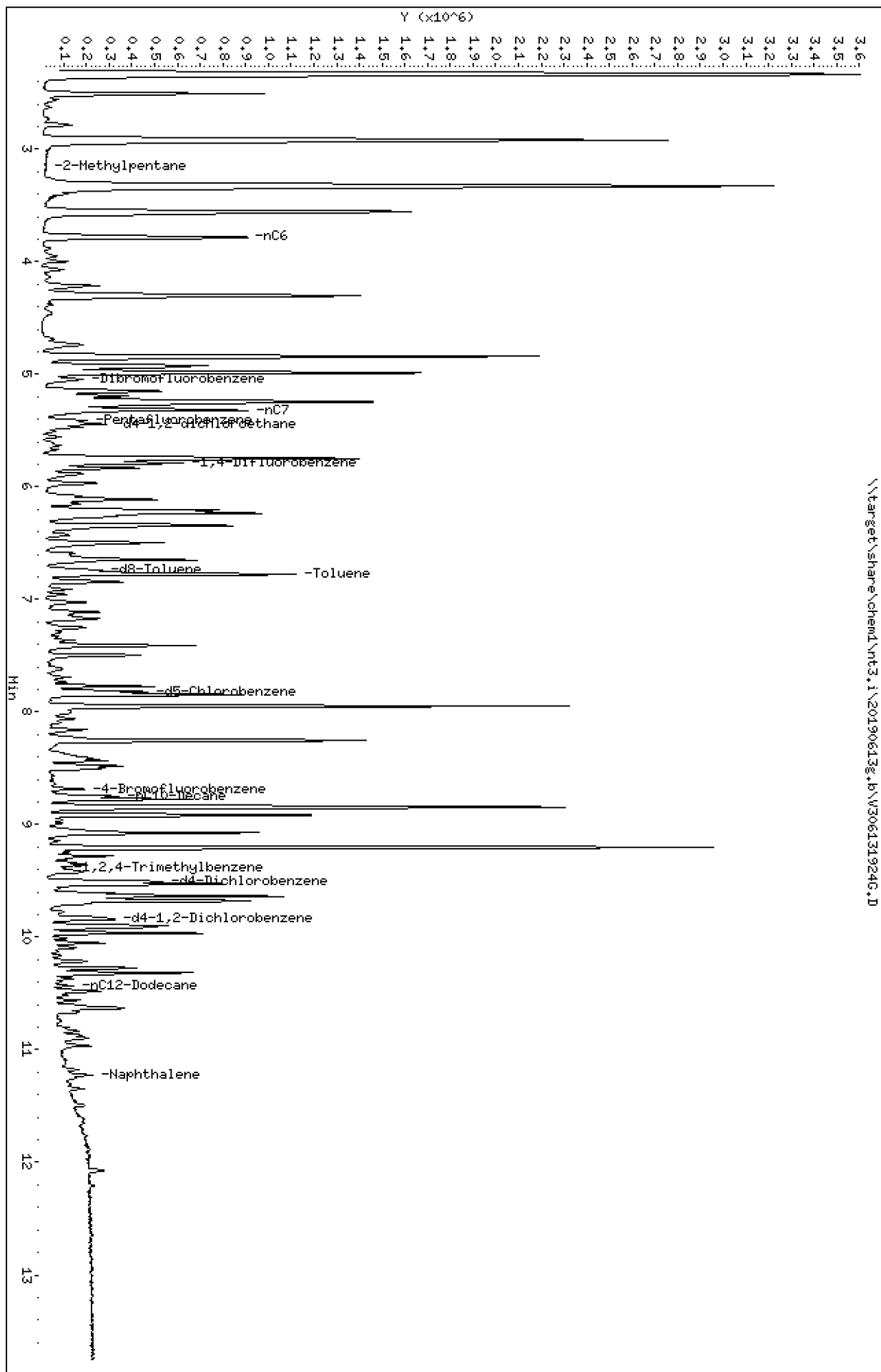
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWHS



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131924G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 21:26

ARI ID: SHF0222-CALD

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

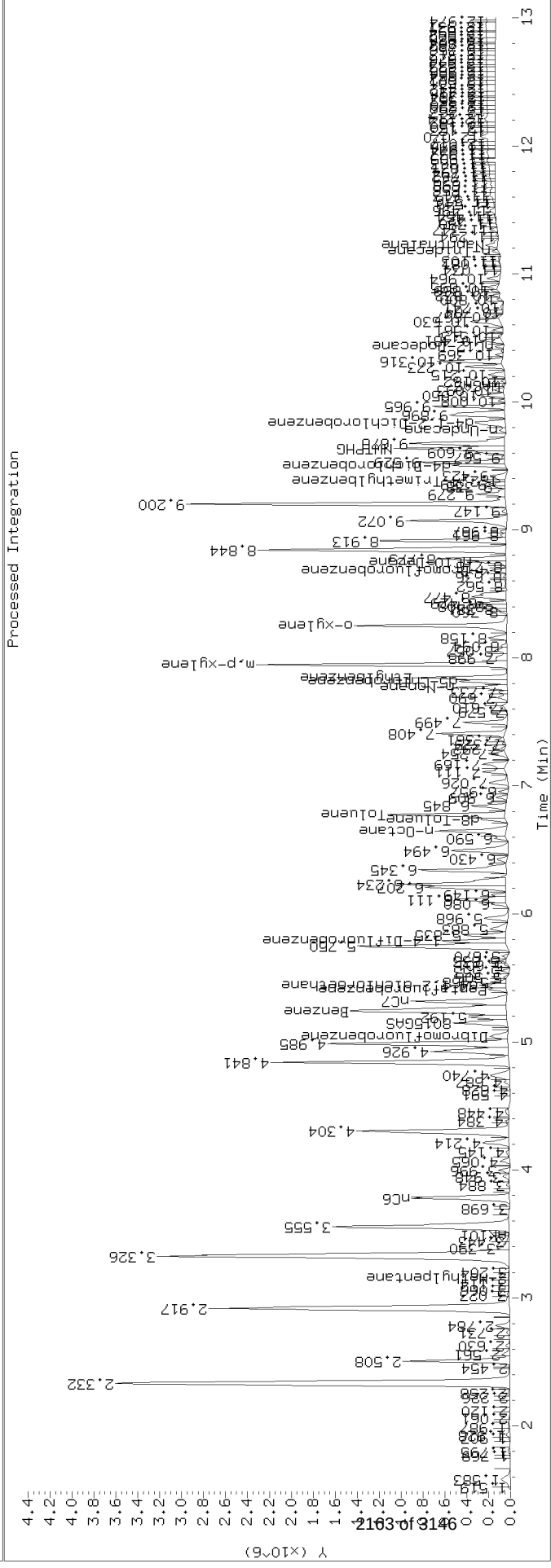
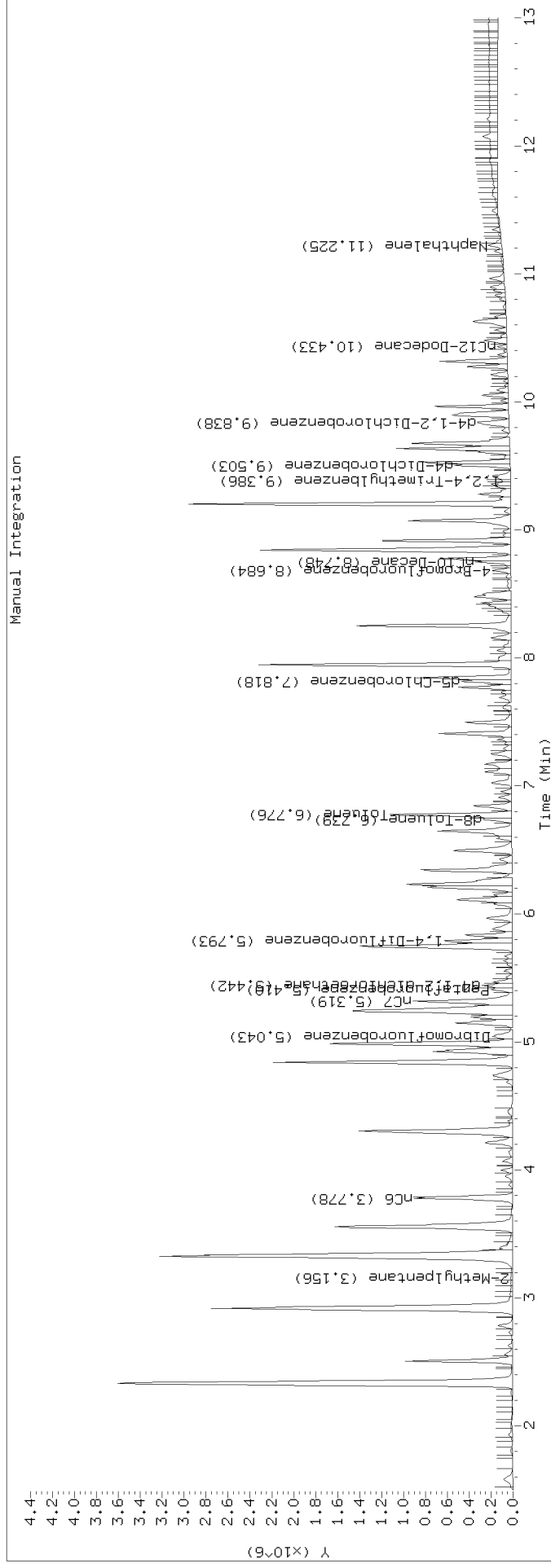
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	41300004	2.651
8015C 2MP-TMB (3.04 to 9.49)	30509602	78727714	2.580
AK101 nC6-nC10 (3.68 to 8.65)	20565293	52939361	2.574
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	43618950	2.606 M
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	60797928	2.610

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.818	688677	d5-Chlorobenzene
6.739	437511	d8-Toluene
9.503	684806	d4-Dichlorobenzene
8.684	258072	4-Bromofluorobenzene
9.838	654490	d4-1,2-Dichlorobenzene



Data File: \\target\share\chend\nt3.i\20190613s.b\206131925G.D

Date : 13-JUN-2019 21:53

Client ID:

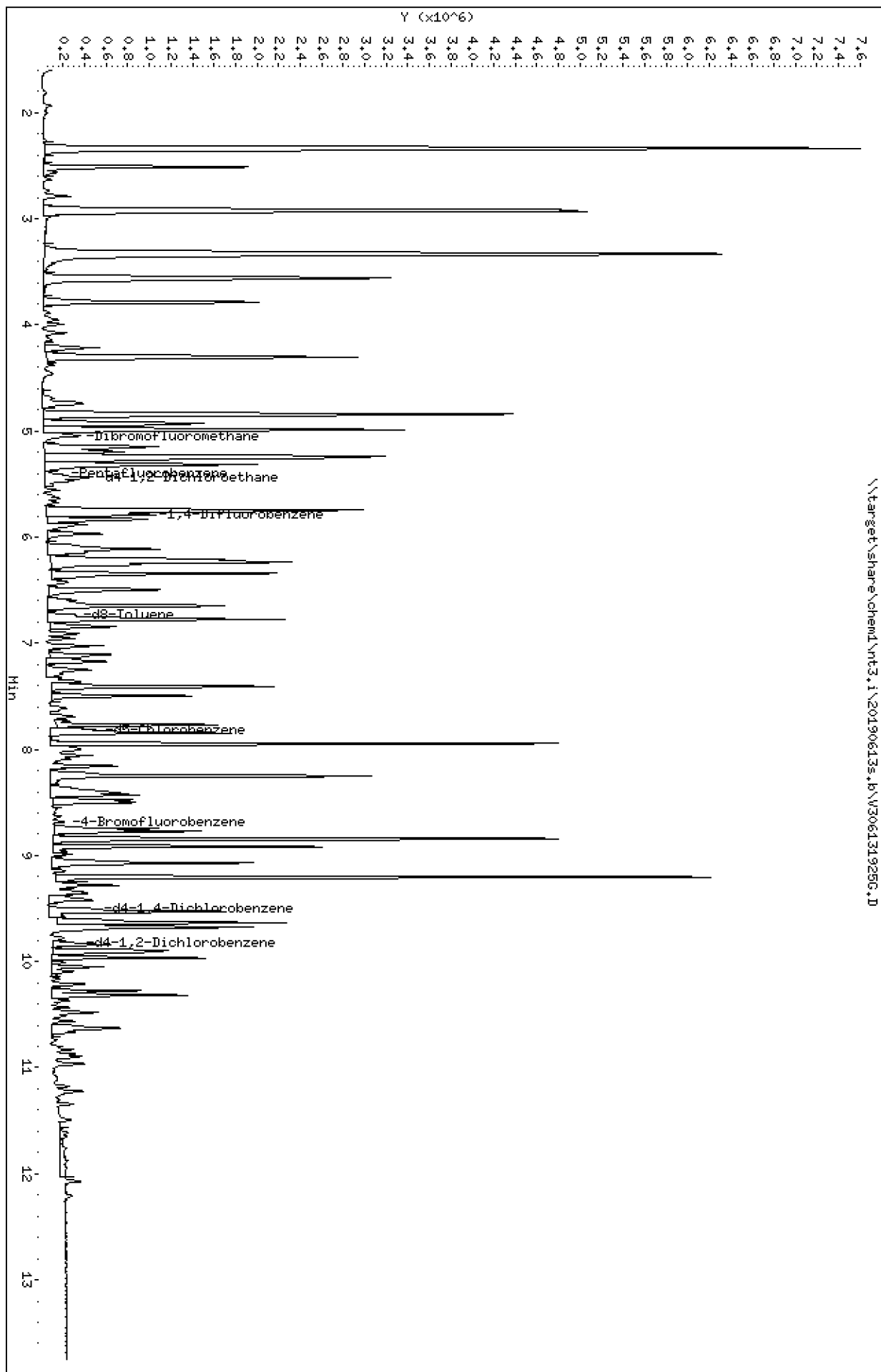
Sample Info: SHF0222-CALE

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131925G.D
Lab Smp Id: SHF0222-CALE
Inj Date : 13-JUN-2019 21:53
Operator : PKC Inst ID: nt3.i
Smp Info : SHF0222-CALE
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG							CONCENTRATIONS	
		MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
							(ug/L)	(ug/L)	
=====	=====		=====	=====	=====	=====	=====	=====	
\$ 27 Dibromofluoromethane	111		5.048	5.048	(0.933)	17065	4.82708	4.827 (R)	
* 32 Pentafluorobenzene	168		5.409	5.409	(1.000)	77879	10.0000		
\$ 33 d4-1,2-Dichloroethane	65		5.441	5.436	(1.006)	33044	7.47364	7.474 (R)	
* 37 1,4-Difluorobenzene	114		5.787	5.787	(1.000)	120964	10.0000		
\$ 43 d8-Toluene	98		6.738	6.738	(1.164)	83991	5.40192	5.402 (R)	
* 53 d5-Chlorobenzene	117		7.817	7.817	(1.000)	131209	10.0000		
\$ 62 4-Bromofluorobenzene	174		8.684	8.683	(1.111)	31710	5.02107	5.021 (R)	
* 76 d4-1,4-Dichlorobenzene	152		9.502	9.502	(1.000)	87318	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152		9.827	9.826	(1.034)	41517	4.99458	4.995 (R)	

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131925G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-CALE
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	77879	-15.26
37 1,4-Difluorobenze	137175	68588	274350	120964	-11.82
53 d5-Chlorobenzene	154196	77098	308392	131209	-14.91
76 d4-1,4-Dichlorobe	103285	51643	206570	87318	-15.46

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.00
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHF0222-CALE
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.827	96.54	
\$ 33 d4-1,2-Dichloroeth	5.000	7.474	149.47	
\$ 43 d8-Toluene	5.000	5.402	108.04	
\$ 62 4-Bromofluorobenze	5.000	5.021	100.42	
\$ 79 d4-1,2-Dichloroben	5.000	4.995	99.89	

REVIEW SUMMARY FOR FILE - V306131925G.D

Lab ID: SHF0222-CALE

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 21:53

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190613g.b\W306131925G.D

Date : 13-JUN-2019 21:53

Client ID:

Sample Info: SHF0222-CALE

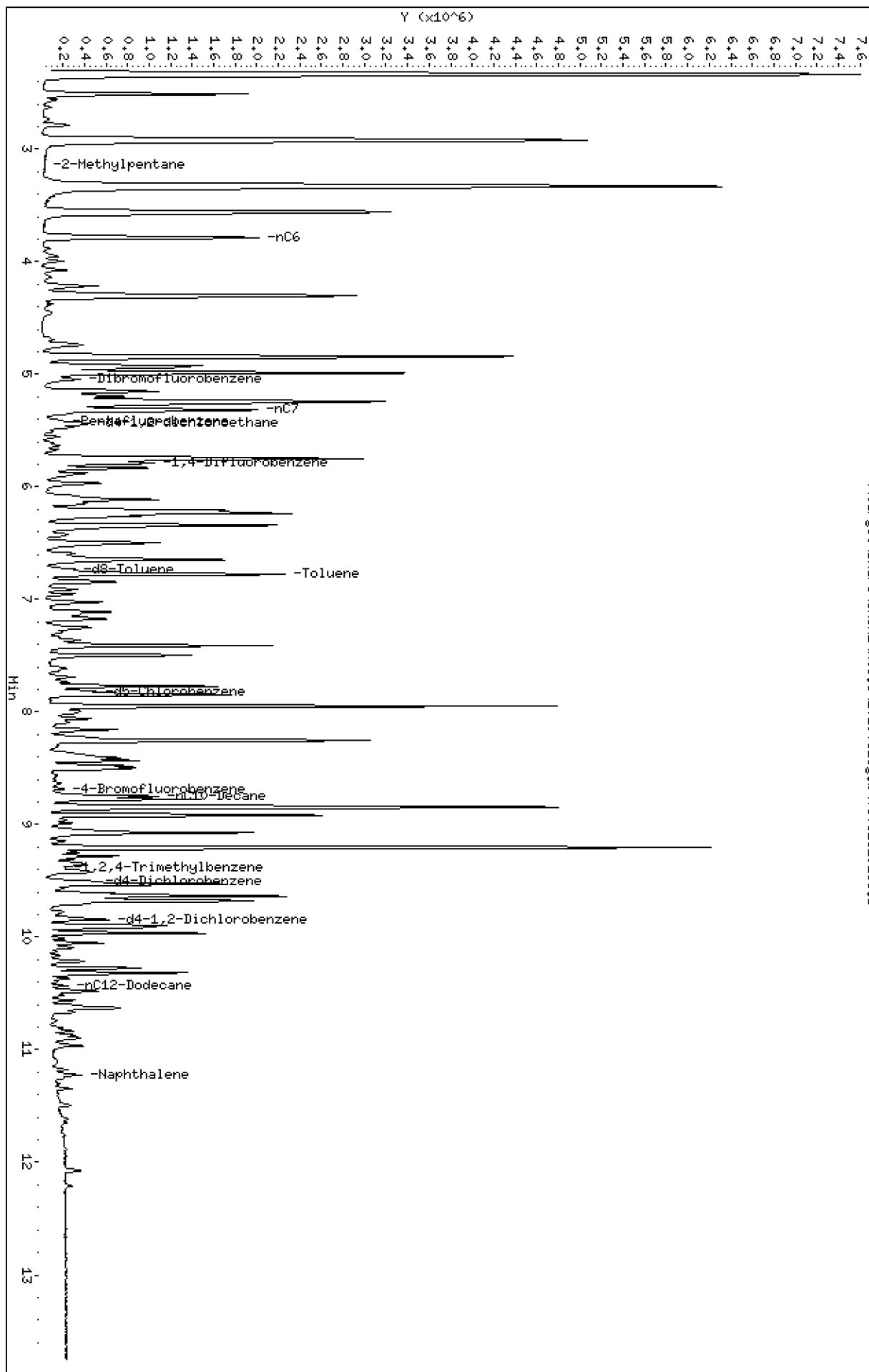
Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190613g.b\W306131925G.D



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131925G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 21:53

ARI ID: SHF0222-CALE

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

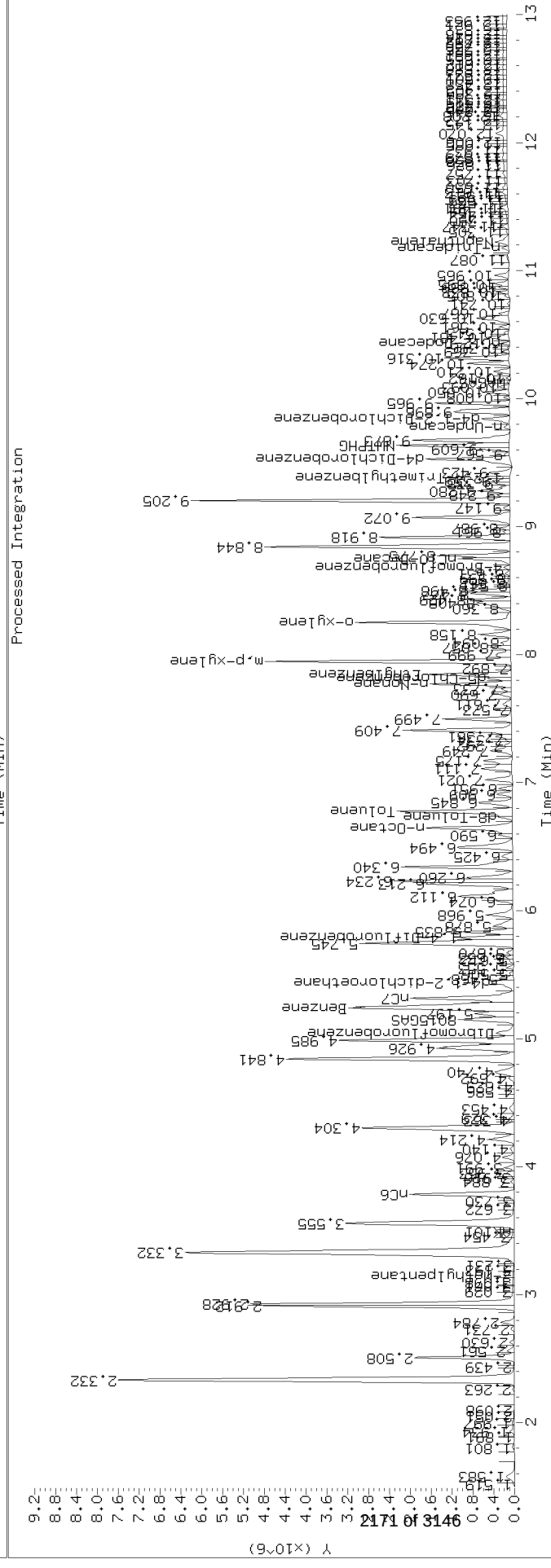
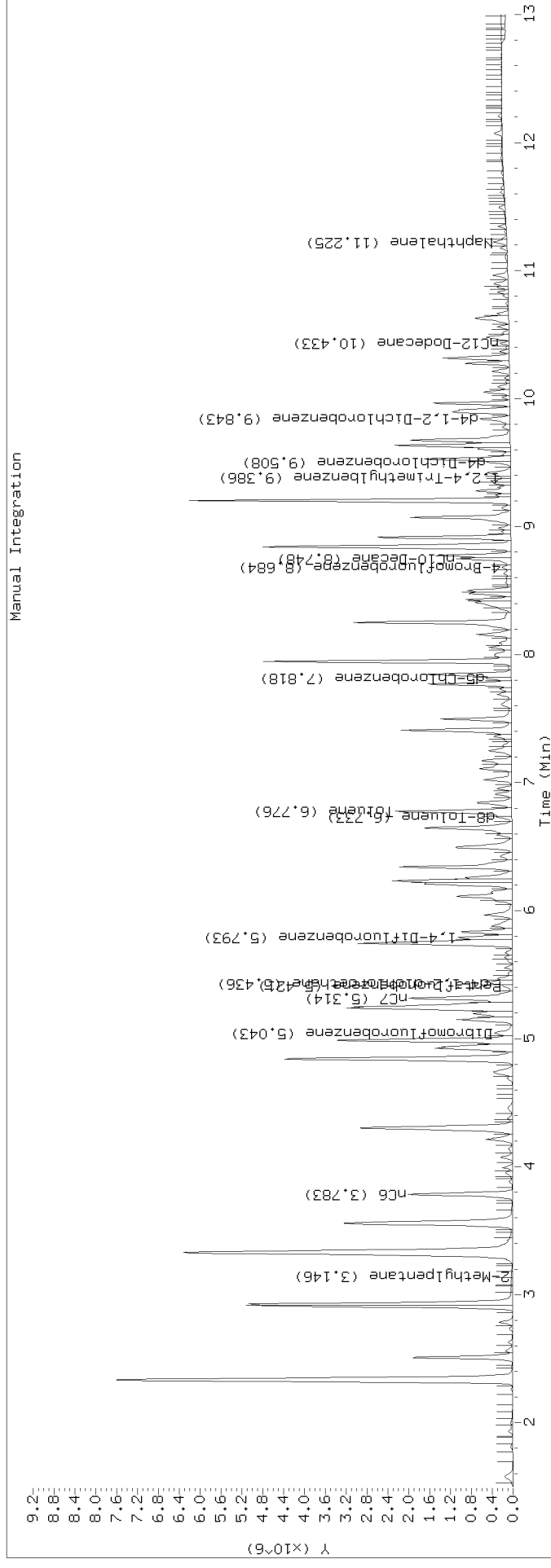
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	96895924	6.220 M
8015C 2MP-TMB (3.04 to 9.49)	30509602	176734047	5.793 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	121583066	5.912 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	101612634	6.071 M
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	140485616	6.030 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.818	709797	d5-Chlorobenzene
6.733	427491	d8-Toluene
9.508	532226	d4-Dichlorobenzene
8.684	282575	4-Bromofluorobenzene
9.843	1034265	d4-1,2-Dichlorobenzene



Data File: \\target\share\chend\nt3.i\20190613s.b\206131927G.D

Date : 13-JUN-2019 22:46

Client ID:

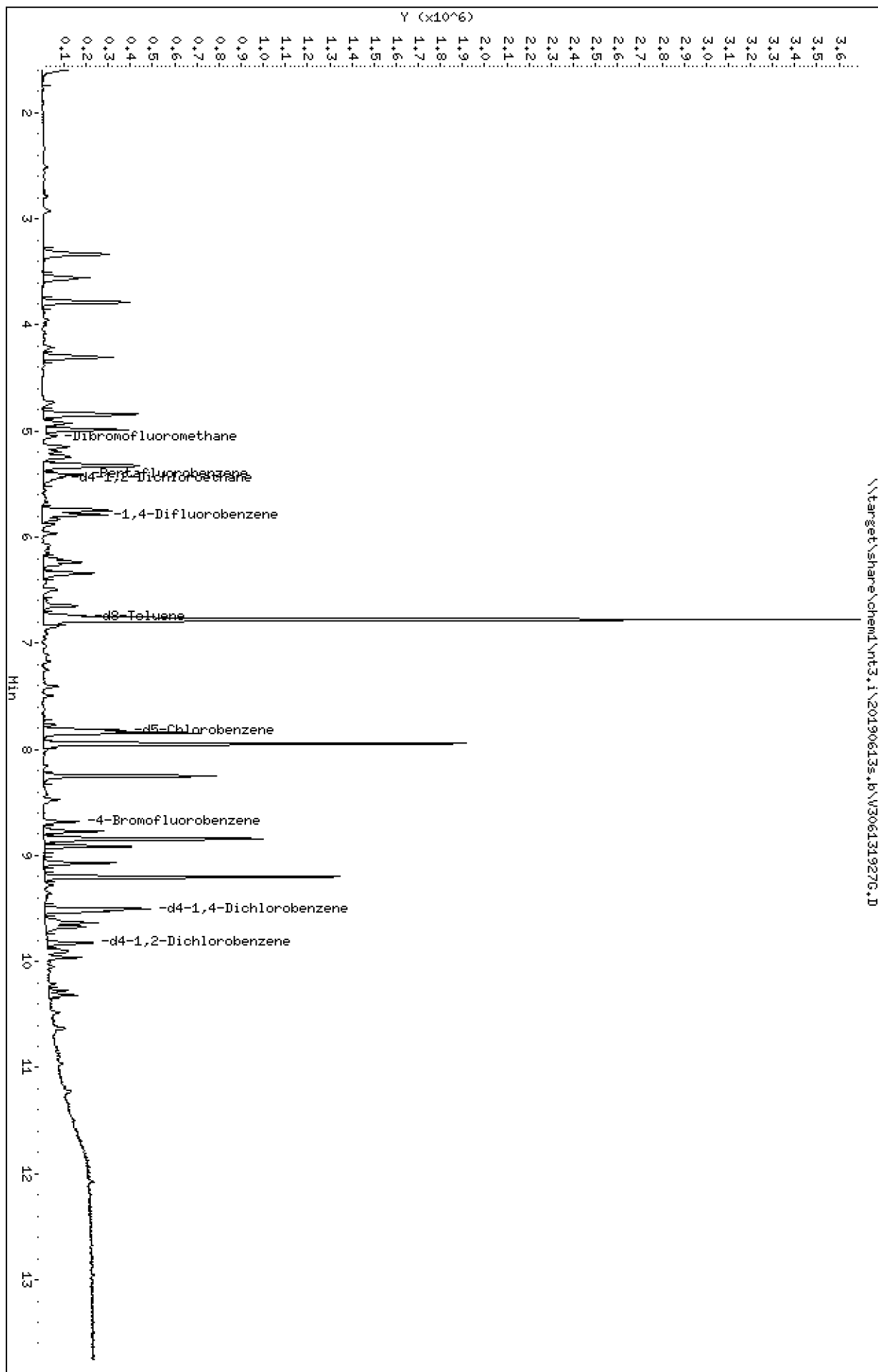
Sample Info: SHF0222-SCV1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190613s.b\V306131927G.D
Lab Smp Id: SHF0222-SCV1
Inj Date : 13-JUN-2019 22:46
Operator : PKC Inst ID: nt3.i
Smp Info : SHF0222-SCV1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Meth Date : 14-Jun-2019 15:40 paul Quant Type: ISTD
Cal Date : 13-JUN-2019 17:52 Cal File: V306131916.D
Als bottle: 55
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

						CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====		=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane		111	5.053	5.048	(0.934)	19911	4.68655	4.687 (R)
* 32 Pentafluorobenzene		168	5.409	5.409	(1.000)	93592	10.0000	
\$ 33 d4-1,2-Dichloroethane		65	5.441	5.436	(1.006)	26228	4.93612	4.936 (R)
* 37 1,4-Difluorobenzene		114	5.792	5.787	(1.000)	142274	10.0000	
\$ 43 d8-Toluene		98	6.743	6.738	(1.164)	90814	4.96591	4.966 (R)
* 53 d5-Chlorobenzene		117	7.817	7.817	(1.000)	156073	10.0000	
\$ 62 4-Bromofluorobenzene		174	8.683	8.683	(1.111)	36703	4.88582	4.886 (R)
* 76 d4-1,4-Dichlorobenzene		152	9.502	9.502	(1.000)	101130	10.0000	
\$ 79 d4-1,2-Dichlorobenzene		152	9.826	9.826	(1.034)	47186	4.90128	4.901 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 13-JUN-2019
 Lab File ID: V306131927G.D Calibration Time: 16:32
 Lab Smp Id: SHF0222-SCV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	91902	45951	183804	93592	1.84
37 1,4-Difluorobenze	137175	68588	274350	142274	3.72
53 d5-Chlorobenzene	154196	77098	308392	156073	1.22
76 d4-1,4-Dichlorobe	103285	51643	206570	101130	-2.09

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	-0.00
37 1,4-Difluorobenze	5.79	5.29	6.29	5.79	0.09
53 d5-Chlorobenzene	7.82	7.32	8.32	7.82	-0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHF0222-SCV1
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190613s.b\8260C061319.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.687	93.73	
\$ 33 d4-1,2-Dichloroeth	5.000	4.936	98.72	
\$ 43 d8-Toluene	5.000	4.966	99.32	
\$ 62 4-Bromofluorobenze	5.000	4.886	97.72	
\$ 79 d4-1,2-Dichloroben	5.000	4.901	98.03	

REVIEW SUMMARY FOR FILE - V306131927G.D

Lab ID: SHF0222-SCV1

nt3.i, 20190613s.b\8260C061319.m, 13-JUN-2019 22:46

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3,1\20190613g,b\V306131927G.D

Date : 13-JUN-2019 22:46

Client ID:

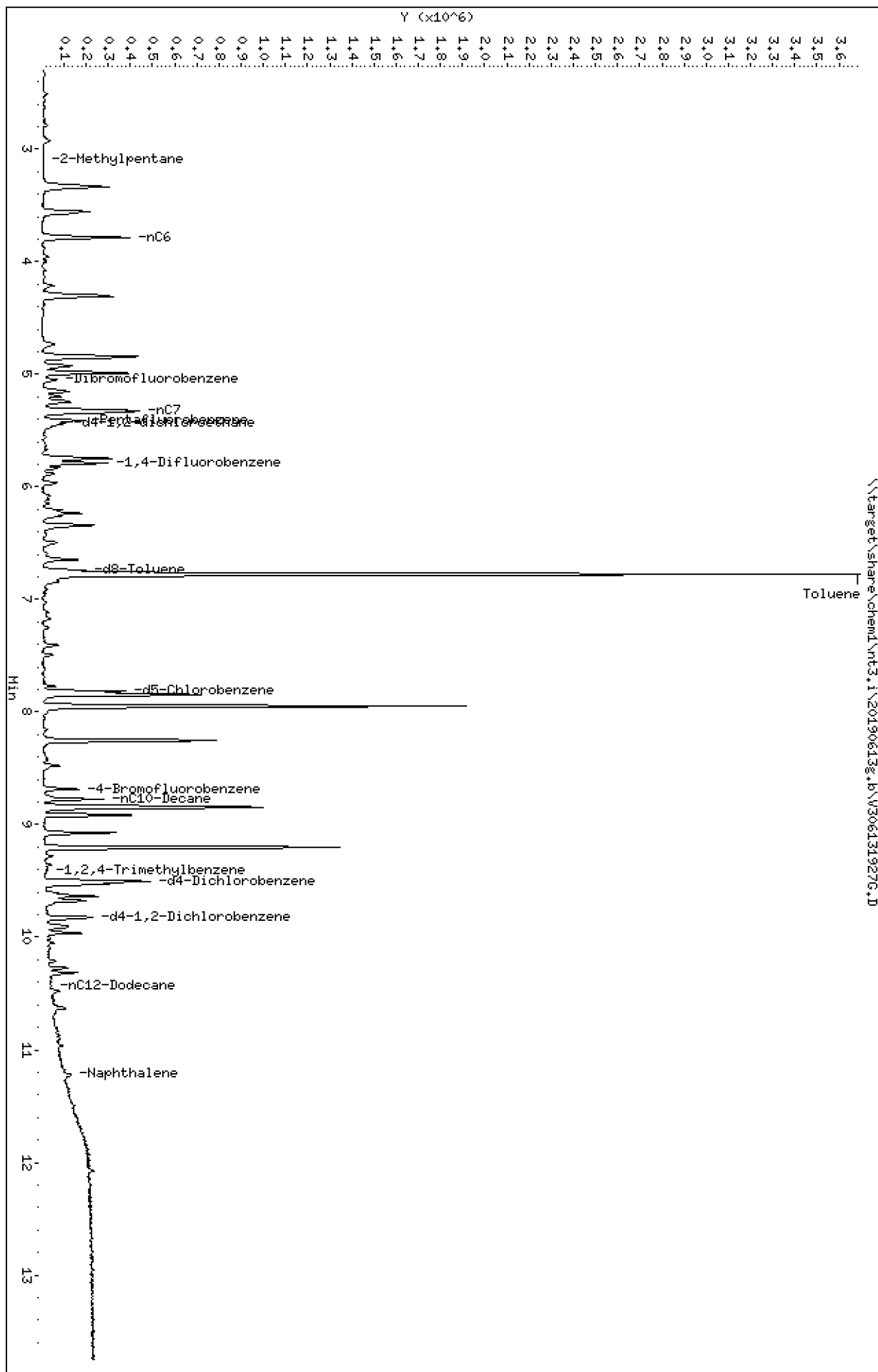
Sample Info: SHF0222-SCV1

Column phase: RTXWMS

Instrument: nt3,1

Operator: PKC

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190613g.b/V306131927G.D

Method: \20190613g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 13-JUN-2019 22:46

ARI ID: SHF0222-SCV1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

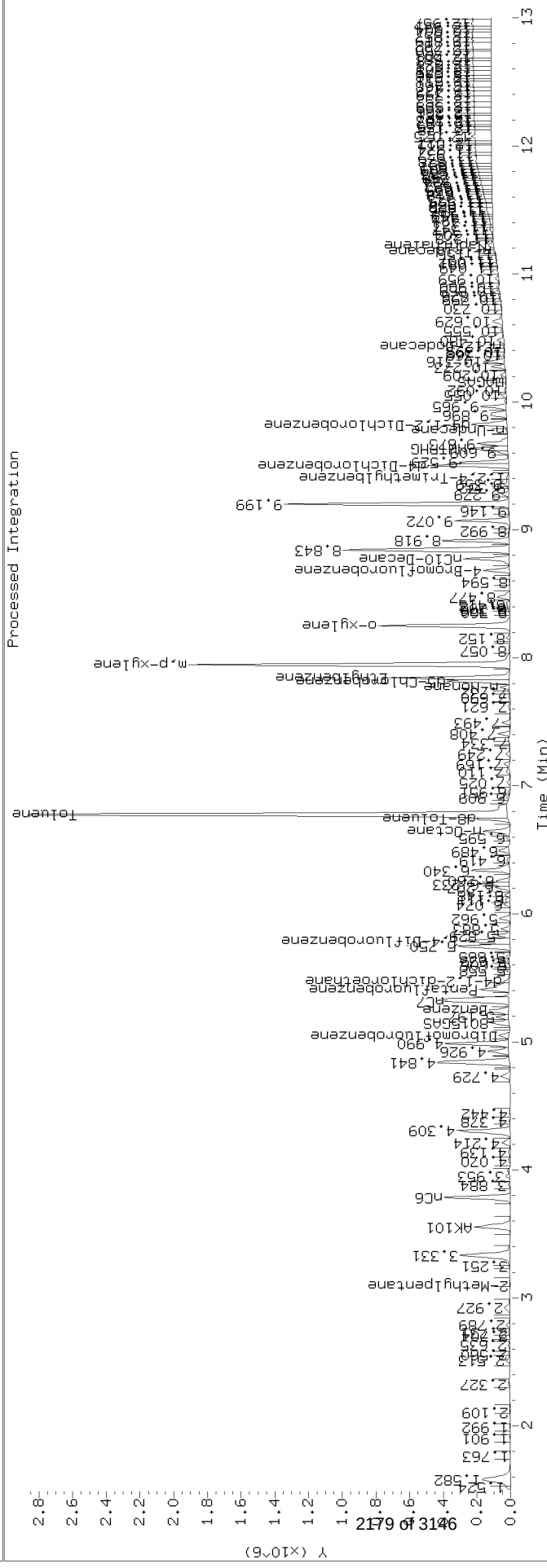
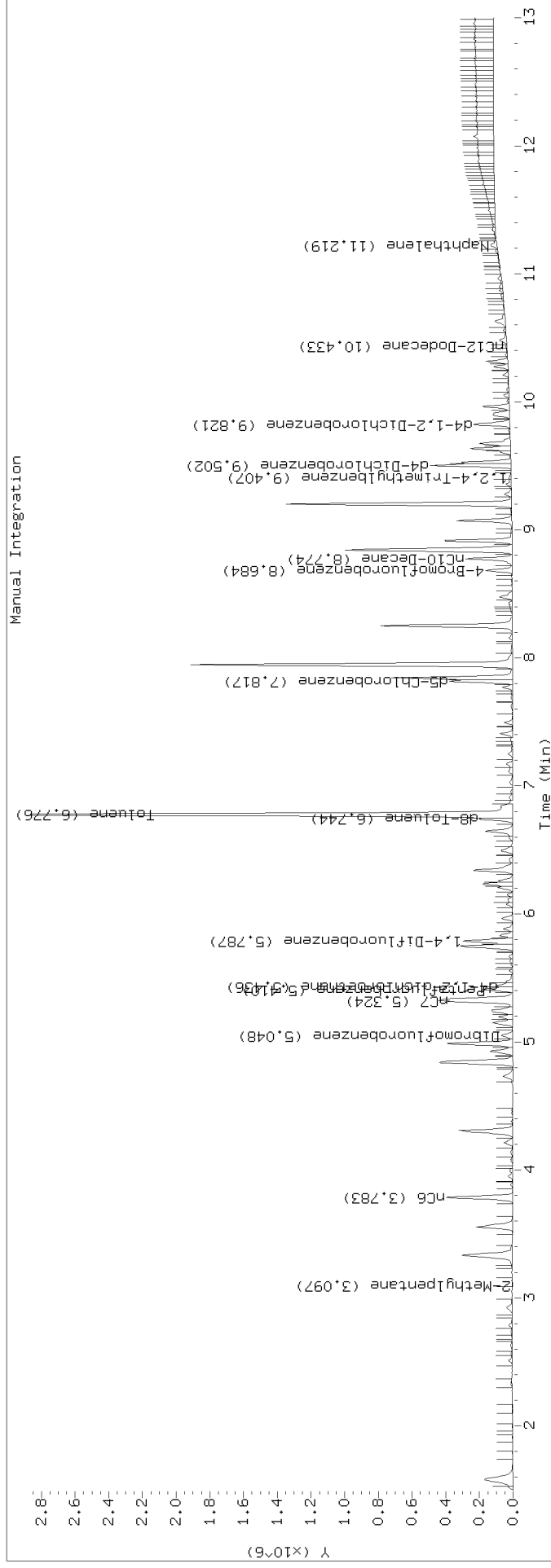
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.68 to 10.53)	15577275	18331465	1.177
8015C 2MP-TMB (3.04 to 9.49)	30509602	25153552	0.824 M
AK101 nC6-nC10 (3.68 to 8.65)	20565293	19062982	0.927 M
NWTPHG Tol-Nap (6.68 to 11.33)	16736874	18770811	1.122
mod8015 nC7-nC12 (5.22 to 10.53)	23297057	22387958	0.961 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.817	519969	d5-Chlorobenzene
6.744	274649	d8-Toluene
9.502	698683	d4-Dichlorobenzene
8.684	225492	4-Bromofluorobenzene
9.821	357683	d4-1,2-Dichlorobenzene





INITIAL CALIBRATION DATA

NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CG00045 Instrument: NT3
Calibration Date: 07/16/2019 11:44 Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Toluene-d8	5	1.279578	5	1.307913	5	1.285132	5	1.315778	5	1.337869	5	1.297074
4-Bromofluorobenzene	5	0.3850656	5	0.384107	5	0.377429	5	0.3992229	5	0.3811483	5	0.4195174



INITIAL CALIBRATION DATA

NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CG00045 Instrument: NT3
Calibration Date: 07/16/2019 11:44 Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)					100	16111.27	250	14878.21	500	16204.14	1000	15457.52
Toluene-d8	5	1.375384	5	1.2972								
4-Bromofluorobenzene	5	0.423055	5	0.4070542								



NWTPHg

Column (1): RTX-VMS

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)	2500	17447.58	5000	20322.52								



INITIAL CALIBRATION DATA NWTPHg

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00045	Instrument:	NT3
Calibration Date:	07/16/2019 11:44	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Gasoline Range Organics (Tol-Nap)	16736.87	11.7			RSD (15)	
Toluene-d8	1.311991	2.4			RSD (15)	
4-Bromofluorobenzene	0.3970749	4.5			RSD (15)	



ANALYSIS SEQUENCE

SHG0220

Instrument: NT3 Element Column ID: 1300725RTXV
Calibration ID: CG00045 Tune File: bfb.u
EM Voltage: 1929

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0220-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0220-CAL1	8260C 0.2	QC		2	H006796	H001679	
SHG0220-CAL2	8260C 0.5	QC		3	H006797	H001679	
SHG0220-CAL3	8260C 1	QC		4	H006798	H001679	
SHG0220-CAL4	8260C 2	QC		5	H006799	H001679	
SHG0220-CAL5	8260C 10	QC		6	H006800	H001679	
SHG0220-CAL6	8260C 20	QC		7	H006801	H001679	
SHG0220-CAL7	8260C 40	QC		8	H006802	H001679	
SHG0220-CAL8	8260C 80	QC		9	H006803	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190716x.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1	1554	V307161917.D	SHG0218-TUN1			1
2	1647	V307161918.D	RINSE			
3	1713	V307161919.D	SHG0218-CAL1			
4	1740	V307161920.D	SHG0218-CAL2			
5	1806	V307161921.D	SHG0218-CAL3			
6	1833	V307161922.D	SHG0218-CAL4			
7	1859	V307161923.D	SHG0218-CAL5			
8	1926	V307161924.D	SHG0218-CAL6			
9	1953	V307161925.D	SHG0218-CAL7			
10	2019	V307161926.D	SHG0218-CAL8			
11	2046	V307161927.D	SHG0218-ICB1			
12	2112	V307161928.D	SHG0218-SCV1			

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190716y.b

Instrument: nt3.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1713	V307161919G.D	SHG0220-CAL1	1	NO MANUAL INTEGRATION
1740	V307161920G.D	SHG0220-CAL2	1	NO MANUAL INTEGRATION
1806	V307161921G.D	SHG0220-CAL3	1	NO MANUAL INTEGRATION
1833	V307161922G.D	SHG0220-CAL4	1	NO MANUAL INTEGRATION
1859	V307161923G.D	SHG0220-CAL5	1	NO MANUAL INTEGRATION
1926	V307161924G.D	SHG0220-CAL6	1	NO MANUAL INTEGRATION
1953	V307161925G.D	SHG0220-CAL7	1	NO MANUAL INTEGRATION
2019	V307161926G.D	SHG0220-CAL8	1	Pentafluorobenzene,

Security Status Report

Date: 17-Jul-2019 11:50

V307161917G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161919G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161920G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161921G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161922G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161923G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161924G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161925G.D	Data Locked	paul,	17-Jul-2019	11:50
V307161926G.D	Data Locked	paul,	17-Jul-2019	11:50

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
End Cal Date : 16-JUL-2019 20:19
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Last Edit : 17-Jul-2019 07:49 paul

Calibration File Names:

Level 1: \\target\share\chem1\nt3.i\20190716x.b\V307161919.D
Level 2: \\target\share\chem1\nt3.i\20190716x.b\V307161920.D
Level 3: \\target\share\chem1\nt3.i\20190716x.b\V307161921.D
Level 4: \\target\share\chem1\nt3.i\20190716x.b\V307161922.D
Level 5: \\target\share\chem1\nt3.i\20190716x.b\V307161923.D
Level 6: \\target\share\chem1\nt3.i\20190716x.b\V307161924.D
Level 7: \\target\share\chem1\nt3.i\20190716x.b\V307161925.D
Level 8: \\target\share\chem1\nt3.i\20190716x.b\V307161926.D

Compound	0.200000 Level 1	0.500000 Level 2	1.0000 Level 3	2.0000 Level 4	10.0000 Level 5	20.0000 Level 6	Curve	b	Coefficients m1	m2	%RSD or R^2
1 Dichlorodifluoromethane	0.75828 1.15192	1.07231 1.07390	1.17860 1.07970	1.23193 1.08218	1.07970 1.08218	1.08218 1.08218	AVRG		1.07863		13.18631
2 Chloromethane	++++ 2.93834	3.32237 2.57762	2.94026 2.57762	3.11142 2.66725	2.74526 2.66725	2.66725 2.66725	AVRG		2.90036		8.99335
3 Vinyl Chloride	2.15507 2.01164	1.99983 1.79983	1.91176 1.79983	2.05819 1.86658	1.86658 1.80947	1.80947 1.80947	AVRG		1.95155		6.44508

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
	-----	-----	-----	-----	-----	-----						
	40.0000	80.0000										
	Level 7	Level 8										
	-----	-----	-----	-----	-----	-----						
4 Bromomethane	+++++	+++++	0.89363	0.92790	0.74616	0.74638				0.80807		10.72920
	0.81679	0.71757					AVRG					
	-----	-----	-----	-----	-----	-----						
5 Chloroethane	1.10698	1.01664	0.93695	1.08522	0.93447	0.89391						
	0.99207	0.87341					AVRG			0.97996		8.74278
	-----	-----	-----	-----	-----	-----						
6 Trichlorofluoromethane	1.33261	1.32310	1.44041	1.60952	1.32246	1.28784						
	1.40872	1.26081					AVRG			1.37318		8.17790
	-----	-----	-----	-----	-----	-----						
7 1,1-Dichloroethene	1.90496	1.92561	2.02111	2.19980	1.89047	1.81331						
	2.07399	1.85812					AVRG			1.96092		6.54123
	-----	-----	-----	-----	-----	-----						
8 Carbon Disulfide	2.35622	2.42156	2.52948	2.80722	2.31267	2.27760						
	2.54303	2.21427					AVRG			2.43276		7.82943
	-----	-----	-----	-----	-----	-----						
9 112Trichloro122Trifluoroethan	0.62197	0.70119	0.76226	0.84940	0.72303	0.67916						
	0.78455	0.70770					AVRG			0.72866		9.54887
	-----	-----	-----	-----	-----	-----						
10 Iodomethane	+++++	+++++	1.09496	1.28969	1.07977	1.06522						
	1.21489	1.05785					AVRG			1.13373		8.43972
	-----	-----	-----	-----	-----	-----						

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
11 Bromoethane	0.53728	0.52210	0.61169	0.62434	0.49701	0.49842	AVRG		0.54070			9.68453
	0.54914	0.48563										
12 Acrolein	++++	++++	7001	14766	54460	124043	LINR	0.000e+000	0.16369			0.99793
	250297	528591										
13 Methylene Chloride	++++	++++	7814	13612	59781	125665	AVRG					
	246717	510377					LINR	0.000e+000	0.79677			0.99720
14 Acetone	++++	++++	12506	23951	82909	198177	LINR	0.000e+000	0.26385			0.99853
	395636	857984										
15 Trans-1,2-Dichloroethene	0.79665	0.98516	0.91088	0.96986	0.80349	0.78097	AVRG		0.86244			9.76514
	0.86899	0.78355										
16 n-hexane	++++	++++	++++	++++	++++	++++	AVRG		0.000e+000			0.000e+000
	++++	++++										
17 Methyl tert butyl ether	++++	1.68860	1.76960	1.83968	1.42539	1.46990	AVRG		1.61837			9.78017
	1.63527	1.50019										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
18 1,1-Dichloroethane	1.98370	2.04847	2.07481	2.17913	1.87325	1.80662	AVRG			1.97041		6.90181
	2.00388	1.79339										
19 Acrylonitrile	++++	++++	3266	4493	19553	45047	LINR	0.000e+000	0.29912			0.99722
	92501	192651										
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	AVRG		0.000e+000			0.000e+000
	++++	++++										
20 Vinyl Acetate	1.99627	2.45614	2.52653	2.32688	1.93082	2.02848	AVRG			2.22206		10.06203
	2.34485	2.16649										
22 Cis-1,2-Dichloroethene	0.86084	0.89491	0.89629	0.95949	0.80359	0.79642	AVRG			0.86376		6.60900
	0.88822	0.81031										
23 2,2-Dichloropropane	1480	5735	8351	12389	57347	118904	LINR	0.000e+000	0.80187			0.99842
	233792	++++										
24 Bromochloromethane	0.34936	0.33345	0.36242	0.40607	0.32261	0.33151	AVRG			0.34715		7.89550
	0.34733	0.32446										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
	40.0000	80.0000										
	Level 7	Level 8										
25 Chloroform	1.48149	1.52244	1.47742	1.52711	1.32198	1.28212				1.41299		7.48529
	1.41639	1.27501					AVRG					
26 Carbon Tetrachloride	0.63641	0.73938	0.68313	0.75043	0.67947	0.63437				0.67836		7.17014
	0.68733	0.61636					AVRG					
28 1,1,1-Trichloroethane	1.26380	1.33069	1.22282	1.43058	1.17452	1.16413				1.25116		7.41496
	1.25696	1.16579					AVRG					
30 1,1-Dichloropropene	0.61624	0.71870	0.63869	0.75976	0.67248	0.65523						
	0.70731	0.64897					AVRG			0.67717		7.04840
29 2-Butanone	+++++	+++++	0.54467	0.49260	0.38055	0.41281						
	0.47432	0.43909					AVRG			0.45734		12.88848
31 Benzene	1.99190	2.18515	1.87610	2.31278	2.04823	1.91147						
	2.05979	1.83031					AVRG			2.02697		8.00388
35 Methyl Methacrylate	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++	+++++					AVRG			0.000e+000		0.000e+000

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
34 1,2-Dichloroethane	0.73253	0.75083	0.76739	0.79473	0.66472	0.64863	AVRG			0.70975		8.56520
	0.69367	0.62550										
36 Trichloroethene	0.37338	0.53582	0.47116	0.53100	0.46832	0.44956	AVRG			0.46861		11.09762
	0.48138	0.43827										
38 Dibromomethane	0.21992	0.26577	0.25975	0.24614	0.21366	0.22012	AVRG			0.23298		9.45279
	0.23230	0.20615										
39 1,2-Dichloropropane	0.62099	0.70383	0.62691	0.75942	0.65356	0.60909	AVRG			0.65500		8.13068
	0.66098	0.60526										
40 Bromodichloromethane	0.60833	0.60282	0.62057	0.71650	0.59062	0.58437	AVRG			0.61301		7.51159
	0.61881	0.56208										
173 2-Pentanone	++++	++++	0.04238	0.04608	0.03743	0.03995	AVRG			0.04207		7.64445
	0.04511	0.04150										
42 Cis 1,3-dichloropropene	0.65421	0.76792	0.77007	0.89019	0.77766	0.76444	AVRG			0.77595		8.65434
	0.83010	0.75297										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
41 2-Chloroethyl Vinyl Ether	+++++	+++++	0.24277	0.27429	0.25868	0.27287	AVRG			0.27042		6.60969
	0.29492	0.27900										
44 Toluene	1.29023	1.29417	1.19166	1.38115	1.25644	1.22954	AVRG			1.27075		5.19810
	1.32884	1.19397										
45 4-Methyl-2-Pentanone	+++++	+++++	0.17298	0.20111	0.17301	0.17910	AVRG			0.18385		6.57003
	0.19654	0.18037										
46 Tetrachloroethene	0.47785	0.49339	0.50586	0.53772	0.46745	0.47005	AVRG			0.48743		5.64663
	0.49824	0.44884										
47 Trans 1,3-Dichloropropene	0.49718	0.58658	0.59709	0.72870	0.69424	0.65723	AVRG			0.64052		12.21341
	0.72149	0.64165										
48 1,1,2-Trichloroethane	0.26105	0.39430	0.31922	0.39292	0.35684	0.32814	AVRG			0.33983		12.95331
	0.35084	0.31533										
49 Chlorodibromomethane	0.39846	0.38343	0.33901	0.40697	0.35094	0.36581	AVRG			0.37609		6.72211
	0.40182	0.36227										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
50 1,3-Dichloropropane	0.60412	0.61194	0.59681	0.70594	0.58602	0.60157	AVRG			0.61661		6.70446
	0.64662	0.57985										
51 1,2-Dibromoethane	0.28676	0.33875	0.31475	0.37005	0.31909	0.29766	AVRG			0.31880		8.38467
	0.32552	0.29780										
52 2-Hexanone	++++	++++	0.37866	0.45182	0.35905	0.39070	AVRG			0.39855		8.57613
	0.42661	0.38445										
54 Chlorobenzene	1.20673	1.39986	1.32200	1.59144	1.33614	1.34319	AVRG			1.36434		8.42169
	1.43389	1.28147										
55 Ethyl Benzene	0.67520	0.73420	0.65578	0.74708	0.72830	0.74483	AVRG			0.72813		6.46035
	0.81045	0.72925										
56 1,1,1,2-Tetrachloroethane	0.50848	0.45685	0.46169	0.52467	0.44713	0.46032	AVRG			0.47521		6.34884
	0.49633	0.44617										
57 m,p-xylene	0.84929	0.86799	0.83494	0.97601	0.90883	0.93756	AVRG			0.91151		6.77816
	1.01252	0.90498										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
	40.0000	80.0000										
	Level 7	Level 8										
58 o-Xylene	0.80071	0.84887	0.77787	1.00049	0.88935	0.92217	AVRG			0.89366		9.21380
	0.99737	0.91264										
59 Styrene	1.11146	1.28367	1.06602	1.42940	1.42014	1.46324	AVRG			1.36117		14.18509
	1.62730	1.48812										
60 Bromoform	0.30880	0.39332	0.34052	0.40950	0.33998	0.35397	AVRG			0.35863		9.09022
	0.37650	0.34646										
61 Isopropyl Benzene	3.26360	3.62892	3.61557	4.29654	3.78278	3.91122	AVRG			3.77014		8.27291
	4.02608	3.63641										
63 Bromobenzene	0.88136	1.01957	0.85808	1.04457	0.92497	0.92723	AVRG			0.92985		7.62465
	0.93334	0.84966										
64 N-Propyl Benzene	4.74325	4.58137	4.44181	5.24190	4.65183	4.78262	AVRG			4.72758		5.76187
	4.95333	4.42451										
82 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++				0.000e+000		0.000e+000
	+++++	+++++					AVRG					

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
65 1,1,2,2-Tetrachloroethane	0.69544	0.73517	0.77355	0.83908	0.69029	0.69521	AVRG			0.72613		8.06433
	0.72982	0.65051										
66 2-Chloro Toluene	3.26617	3.31523	3.11819	3.65097	3.16880	3.23894	AVRG			3.28183		5.42721
	3.39096	3.10536										
67 1,3,5-Trimethyl Benzene	3.14780	3.04590	2.96392	3.70707	3.39215	3.45403	AVRG			3.33328		8.17151
	3.65996	3.29545										
68 1,2,3-Trichloropropane	++++	0.22155	0.21279	0.22572	0.20871	0.20115	AVRG			0.20900		6.17571
	0.20594	0.18715										
69 Trans-1,4-Dichloro 2-Butene	++++	++++	0.33930	0.41121	0.31637	0.31842	AVRG			0.33776		11.64678
	0.34207	0.29917										
70 4-Chloro Toluene	2.91298	2.92958	2.86477	3.44610	3.01760	3.08866	AVRG			3.05019		6.40161
	3.21053	2.93129										
71 T-Butyl Benzene	2.48581	2.74472	2.56894	2.92417	2.73758	2.80033	AVRG			2.74467		6.08729
	2.99079	2.70501										

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
72 1,2,4-Trimethylbenzene	3.04358	3.10136	3.03354	3.71711	3.45009	3.52884						
	3.75765	3.36251					AVRG			3.37434		8.63459
73 S-Butyl Benzene	3.84774	3.98811	3.83066	4.53284	4.12370	4.13844						
	4.38250	3.98057					AVRG			4.10307		6.05517
74 4-Isopropyl Toluene	3.51578	3.23958	3.03367	3.90805	3.49007	3.56764						
	3.87891	3.48603					AVRG			3.51497		8.32010
75 1,3-Dichlorobenzene	1.94156	2.10398	2.01387	2.31050	2.01493	1.98913						
	2.11484	1.91442					AVRG			2.05440		6.27631
77 1,4-Dichlorobenzene	2.11719	2.33462	2.07807	2.41033	2.02995	1.98398						
	2.12401	1.88952					AVRG			2.12096		8.20238
78 N-Butyl Benzene	2.89754	2.96997	2.95972	3.61666	3.21338	3.27264						
	3.55865	3.20216					AVRG			3.21134		8.39532
80 1,2-Dichlorobenzene	1.90103	1.84517	1.83982	2.13388	1.80017	1.79318						
	1.94672	1.69332					AVRG			1.86916		7.00461

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6							or R^2
81 1,2-Dibromo 3-Chloropropane	++++	992	1472	2069	10059	20919	LINR	0.000e+000	0.13697			0.99817
	45673	++++										
83 Hexachloro 1,3-Butadiene	++++	0.36886	0.36219	0.44506	0.35517	0.34296						
	0.38190	0.34094					AVRG		0.37101			9.60934
84 1,2,4-Trichlorobenzene	++++	1.27069	0.99393	1.41291	1.03490	1.02322						
	1.25613	0.99468					AVRG		1.14092			14.84764
85 Naphthalene	++++	2.07212	1.79038	2.37010	1.76250	1.82702						
	2.24693	1.76329					AVRG		1.97605			12.82645
86 1,2,3-Trichlorobenzene	++++	0.89045	0.83518	1.09818	0.75765	0.75832						
	0.97765	++++					AVRG		0.88624			15.03705
27 Dibromofluoromethane	0.50306	0.50380	0.52303	0.52414	0.49463	0.51757						
	0.51432	0.51309					AVRG		0.51170			2.02940
33 d4-1,2-Dichloroethane	0.66781	0.66321	0.75105	0.66181	0.66731	0.64525						
	0.67520	0.65913					AVRG		0.67385			4.80325

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
 End Cal Date : 16-JUL-2019 20:19
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
 Last Edit : 17-Jul-2019 07:49 paul

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6			m1		or R^2
	-----	-----	-----	-----	-----	-----					
	40.0000	80.0000									
	Level 7	Level 8									
	=====	=====	=====	=====	=====	=====					
43 d8-Toluene	1.27958	1.30791	1.28513	1.31578	1.33787	1.29707					
	1.37538	1.29720				AVRG			1.31199		2.39866
	-----	-----	-----	-----	-----	-----					
62 4-Bromofluorobenzene	0.38507	0.38411	0.37743	0.39922	0.38115	0.41952					
	0.42306	0.40705				AVRG			0.39707		4.49989
	-----	-----	-----	-----	-----	-----					
79 d4-1,2-Dichlorobenzene	0.97644	0.93325	0.94254	0.95069	0.90928	0.91794					
	0.97105	0.90377				AVRG			0.93812		2.89781
	-----	-----	-----	-----	-----	-----					

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 16-JUL-2019 17:13
End Cal Date : 16-JUL-2019 20:19
Quant Method : ISTD
Origin : Force
Target Version : 4.14
Integrator : HP RTE
Method file : \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Last Edit : 17-Jul-2019 07:49 paul

Curve	Formula	Units
Averaged	Amt = Resp/ml	Response
Linear	Amt = b + Resp/ml	Response

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09			
FILENAME:	V307161919	V307161920	V307161921	V307161922	V307161923	V307161924	V307161925	V307161926	V307161928			
INJ.DATE:	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019			
INJ.TIME:	17:13	17:40	18:06	18:33	18:59	19:26	19:53	20:19	21:12			
Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
1 Dichlorodifluoromethan	1.694	1.694	1.694	1.689	1.694	1.689	1.689	1.688	1.689	1.585-1.802	1.691	0.003
2 Chloromethane	1.896	1.885	1.886	1.891	1.895	1.896	1.891	1.890	1.891	1.787-2.004	1.891	0.004
3 Vinyl Chloride	1.987	1.975	1.971	1.976	1.980	1.981	1.982	1.975	1.981	1.872-2.089	1.979	0.005
4 Bromomethane	2.284	2.273	2.268	2.279	2.278	2.278	2.279	2.273	2.273	2.170-2.386	2.276	0.005
5 Chloroethane	2.396	2.390	2.391	2.385	2.395	2.395	2.396	2.390	2.390	2.287-2.503	2.392	0.004
6 Trichlorofluoromethane	2.502	2.512	2.502	2.507	2.507	2.507	2.513	2.507	2.507	2.398-2.615	2.507	0.004
7 1,1-Dichloroethene	2.970	2.969	2.964	2.970	2.969	2.969	2.970	2.958	2.969	2.861-3.077	2.968	0.004
8 Carbon Disulfide	2.980	2.969	2.970	2.975	2.979	2.974	2.975	2.969	2.975	2.871-3.087	2.974	0.004
9 112Trichloro122Trifluo	3.044	3.043	3.033	3.039	3.043	3.038	3.039	3.033	3.033	2.935-3.151	3.038	0.005
10 Iodomethane	3.102	3.102	3.097	3.102	3.102	3.097	3.103	3.091	3.097	2.993-3.210	3.099	0.004
11 Bromoethane	3.230	3.235	3.219	3.225	3.224	3.224	3.225	3.218	3.224	3.116-3.332	3.225	0.005
12 Acrolein	3.341	3.341	3.347	3.336	3.330	3.336	3.331	3.330	3.331	3.222-3.438	3.336	0.006
13 Methylene Chloride	3.549	3.548	3.549	3.549	3.553	3.548	3.549	3.543	3.549	3.445-3.661	3.548	0.003
14 Acetone	3.644	3.660	3.692	3.666	3.633	3.649	3.634	3.649	3.639	3.525-3.741	3.652	0.019
15 Trans-1,2-Dichloroethe	3.703	3.691	3.692	3.698	3.702	3.697	3.698	3.691	3.697	3.594-3.810	3.697	0.004
16 n-hexane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	3.655-3.871	+++++	+++++
17 Methyl tert butyl ethe	3.830	3.840	3.841	3.830	3.830	3.830	3.825	3.830	3.830	3.721-3.938	3.832	0.005

Reviewer 1
Reviewer 2

Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 1,1-Dichloroethane	4.239	4.244	4.240	4.245	4.244	4.244	4.245	4.239	4.245	4.244	4.136-4.352	4.243	0.003
19 Acrylonitrile	++++	4.313	4.325	4.325	4.308	4.313	4.309	4.308	4.308	4.308	4.200-4.416	4.314	0.007
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	++++	++++	++++	4.560	4.452-4.668	++++	++++
20 Vinyl Acetate	4.494	4.483	4.489	4.484	4.483	4.483	4.479	4.483	4.484	4.483	4.375-4.591	4.485	0.005
22 Cis-1,2-Dichloroethene	4.691	4.685	4.686	4.686	4.690	4.691	4.686	4.685	4.691	4.690	4.582-4.798	4.688	0.003
23 2,2-Dichloropropane	4.765	4.759	4.766	4.766	4.770	4.765	4.766	4.765	4.765	4.770	4.662-4.878	4.765	0.003
24 Bromochloromethane	4.845	4.839	4.835	4.840	4.844	4.845	4.840	4.839	4.840	4.844	4.736-4.952	4.841	0.003
25 Chloroform	4.909	4.908	4.904	4.909	4.908	4.908	4.909	4.908	4.909	4.908	4.800-5.016	4.908	0.002
26 Carbon Tetrachloride	4.999	4.988	4.989	4.994	4.998	4.993	4.994	4.993	4.994	4.998	4.883-5.114	4.994	0.004
27 Dibromofluoromethane	5.047	5.041	5.042	5.047	5.046	5.047	5.047	5.041	5.042	5.046	4.938-5.154	5.044	0.003
28 1,1,1-Trichloroethane	5.058	5.046	5.042	5.047	5.052	5.052	5.053	5.046	5.052	5.052	4.943-5.160	5.050	0.005
30 1,1-Dichloropropene	5.143	5.142	5.138	5.148	5.147	5.142	5.143	5.142	5.143	5.147	5.031-5.263	5.143	0.003
29 2-Butanone	5.169	5.174	5.180	5.169	5.158	5.163	5.154	5.163	5.159	5.158	5.050-5.266	5.165	0.008
31 Benzene	5.329	5.329	5.318	5.329	5.333	5.328	5.329	5.328	5.329	5.333	5.217-5.449	5.327	0.004
* 32 Pentafluorobenzene	5.408	5.402	5.398	5.408	5.408	5.403	5.403	5.402	5.408	5.408	5.300-5.516	5.405	0.004
33 d4-1,2-Dichloroethane	5.435	5.434	5.430	5.435	5.439	5.440	5.435	5.434	5.435	5.439	5.332-5.548	5.435	0.003
35 Methyl Methacrylate	++++	++++	++++	++++	++++	++++	++++	++++	++++	5.693	5.577-5.809	++++	++++
34 1,2-Dichloroethane	5.493	5.487	5.478	5.488	5.487	5.488	5.483	5.482	5.483	5.487	5.371-5.603	5.485	0.005
36 Trichloroethene	5.759	5.758	5.749	5.759	5.753	5.759	5.759	5.753	5.754	5.753	5.637-5.869	5.756	0.004
* 37 1,4-Difluorobenzene	5.786	5.785	5.775	5.786	5.785	5.785	5.786	5.785	5.785	5.785	5.669-5.901	5.784	0.003
38 Dibromomethane	6.062	6.056	6.046	6.057	6.061	6.056	6.057	6.056	6.056	6.061	5.946-6.177	6.056	0.004
39 1,2-Dichloropropane	6.131	6.130	6.126	6.126	6.125	6.125	6.126	6.125	6.126	6.126	6.009-6.241	6.127	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 Bromodichloromethane	6.168	6.178	6.168	6.174	6.173	6.173	6.174	6.173	6.173	6.173	6.057-6.289	6.173	0.003
173 2-Pentanone	6.402	6.417	6.402	6.402	6.396	6.401	6.397	6.396	6.397	6.396	6.280-6.512	6.401	0.007
42 Cis 1,3-dichloropropen	6.620	6.614	6.615	6.615	6.614	6.614	6.609	6.614	6.614	6.614	6.498-6.730	6.614	0.003
43 d8-Toluene	6.737	6.736	6.737	6.737	6.736	6.736	6.737	6.736	6.737	6.736	6.620-6.852	6.736	0.000
41 2-Chloroethyl Vinyl Et	6.583	6.571	6.577	6.577	6.577	6.577	6.572	6.571	6.572	6.577	6.461-6.692	6.575	0.004
44 Toluene	6.774	6.773	6.774	6.774	6.773	6.773	6.774	6.773	6.774	6.774	6.658-6.889	6.774	0.000
45 4-Methyl-2-Pentanone	7.050	7.049	7.050	7.045	7.044	7.044	7.040	7.044	7.039	7.044	6.929-7.160	7.045	0.004
46 Tetrachloroethene	7.040	7.039	7.034	7.040	7.039	7.039	7.040	7.039	7.039	7.039	6.882-7.195	7.039	0.002
47 Trans 1,3-Dichloroprop	7.071	7.065	7.066	7.061	7.065	7.066	7.066	7.065	7.066	7.065	6.950-7.181	7.066	0.003
48 1,1,2-Trichloroethane	7.172	7.182	7.178	7.173	7.177	7.177	7.177	7.177	7.178	7.177	7.061-7.293	7.177	0.003
49 Chlorodibromomethane	7.295	7.299	7.300	7.295	7.299	7.294	7.300	7.299	7.300	7.299	7.143-7.455	7.298	0.003
50 1,3-Dichloropropane	7.358	7.363	7.369	7.364	7.363	7.363	7.364	7.363	7.364	7.363	7.207-7.519	7.363	0.003
51 1,2-Dibromoethane	7.470	7.469	7.459	7.459	7.459	7.454	7.460	7.464	7.459	7.459	7.343-7.574	7.463	0.004
52 2-Hexanone	7.619	7.629	7.624	7.619	7.618	7.618	7.619	7.618	7.619	7.618	7.462-7.774	7.620	0.004
* 53 d5-Chlorobenzene	7.815	7.815	7.815	7.815	7.815	7.815	7.816	7.815	7.815	7.815	7.659-7.971	7.815	0.000
54 Chlorobenzene	7.826	7.825	7.826	7.826	7.825	7.825	7.826	7.825	7.826	7.826	7.669-7.982	7.826	0.000
55 Ethyl Benzene	7.842	7.846	7.837	7.842	7.841	7.841	7.842	7.841	7.842	7.841	7.685-7.998	7.842	0.002
56 1,1,1,2-Tetrachloroeth	7.879	7.873	7.869	7.869	7.873	7.873	7.874	7.873	7.874	7.873	7.717-8.030	7.873	0.003
57 m,p-xylene	7.948	7.947	7.943	7.943	7.947	7.942	7.943	7.947	7.943	7.947	7.791-8.104	7.945	0.003
58 o-Xylene	8.246	8.250	8.246	8.251	8.250	8.251	8.251	8.250	8.251	8.250	8.094-8.407	8.250	0.002
59 Styrene	8.294	8.287	8.288	8.288	8.287	8.288	8.288	8.287	8.288	8.287	8.132-8.444	8.289	0.002
60 Bromoform	8.315	8.314	8.315	8.315	8.309	8.309	8.310	8.309	8.309	8.309	8.119-8.499	8.312	0.003
61 Isopropyl Benzene	8.469	8.473	8.474	8.474	8.473	8.474	8.474	8.473	8.474	8.473	8.283-8.663	8.473	0.002
62 4-Bromofluorobenzene	8.681	8.686	8.682	8.681	8.681	8.681	8.682	8.681	8.681	8.681	8.525-8.837	8.682	0.002

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m
Batch File: \\target\share\chem1\nt3.i\20190716x.b
Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
63 Bromobenzene	8.761	8.760	8.761	8.761	8.760	8.761	8.756	8.760	8.761	8.760	8.570-8.950	8.760	0.002
64 N-Propyl Benzene	8.777	8.771	8.772	8.772	8.771	8.771	8.772	8.771	8.772	8.771	8.581-8.961	8.772	0.002
82 Cyclohexanone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.074	8.917-9.231	+++++	+++++
65 1,1,2,2-Tetrachloroeth	8.830	8.829	8.825	8.825	8.824	8.830	8.825	8.829	8.825	8.824	8.634-9.014	8.827	0.003
66 2-Chloro Toluene	8.894	8.893	8.889	8.889	8.888	8.888	8.889	8.888	8.888	8.888	8.698-9.078	8.890	0.002
67 1,3,5-Trimethyl Benzen	8.915	8.914	8.910	8.915	8.914	8.915	8.915	8.914	8.915	8.914	8.724-9.104	8.914	0.002
68 1,2,3-Trichloropropane	8.926	8.930	8.931	8.931	8.930	8.931	8.926	8.930	8.931	8.930	8.740-9.120	8.930	0.002
69 Trans-1,4-Dichloro 2-B	8.963	8.962	8.958	8.958	8.957	8.957	8.958	8.957	8.958	8.957	8.767-9.147	8.959	0.002
70 4-Chloro Toluene	9.016	9.010	9.006	9.011	9.010	9.010	9.011	9.010	9.011	9.010	8.820-9.200	9.011	0.003
71 T-Butyl Benzene	9.144	9.148	9.149	9.149	9.148	9.148	9.149	9.148	9.149	9.148	8.958-9.338	9.148	0.002
72 1,2,4-Trimethylbenzene	9.202	9.196	9.202	9.202	9.201	9.202	9.202	9.201	9.202	9.201	9.011-9.391	9.201	0.002
73 S-Butyl Benzene	9.282	9.281	9.277	9.277	9.281	9.281	9.277	9.281	9.276	9.281	9.091-9.471	9.279	0.002
74 4-Isopropyl Toluene	9.388	9.382	9.383	9.383	9.382	9.382	9.383	9.387	9.383	9.382	9.192-9.572	9.384	0.002
75 1,3-Dichlorobenzene	9.447	9.451	9.447	9.447	9.446	9.446	9.447	9.446	9.446	9.446	9.256-9.636	9.447	0.002
* 76 d4-1,4-Dichlorobenzene	9.500	9.504	9.500	9.500	9.499	9.504	9.500	9.504	9.500	9.499	9.309-9.689	9.501	0.002
77 1,4-Dichlorobenzene	9.516	9.515	9.516	9.516	9.515	9.510	9.511	9.515	9.510	9.515	9.325-9.705	9.513	0.003
78 N-Butyl Benzene	9.702	9.701	9.702	9.702	9.701	9.701	9.702	9.701	9.701	9.701	9.511-9.891	9.701	0.000
\$ 79 d4-1,2-Dichlorobenzene	9.818	9.823	9.824	9.824	9.823	9.818	9.819	9.823	9.824	9.823	9.633-10.013	9.822	0.003
80 1,2-Dichlorobenzene	9.829	9.828	9.829	9.829	9.828	9.829	9.829	9.828	9.829	9.828	9.638-10.018	9.829	0.000
81 1,2-Dibromo 3-Chloropr	10.435	10.429	10.440	10.440	10.439	10.440	10.440	10.439	10.440	10.439	10.249-10.629	10.437	0.004
83 Hexachloro 1,3-Butadie	10.940	10.939	10.940	10.940	10.939	10.939	10.940	10.939	10.939	10.939	10.749-11.129	10.939	0.000
84 1,2,4-Trichlorobenzene	10.966	10.965	10.961	10.961	10.966	10.966	10.966	10.965	10.966	10.960	10.770-11.150	10.965	0.002
85 Naphthalene	11.221	11.220	11.221	11.221	11.220	11.221	11.221	11.220	11.221	11.220	11.031-11.411	11.221	0.000

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt3.i\20190716x.b\8260C071619.m

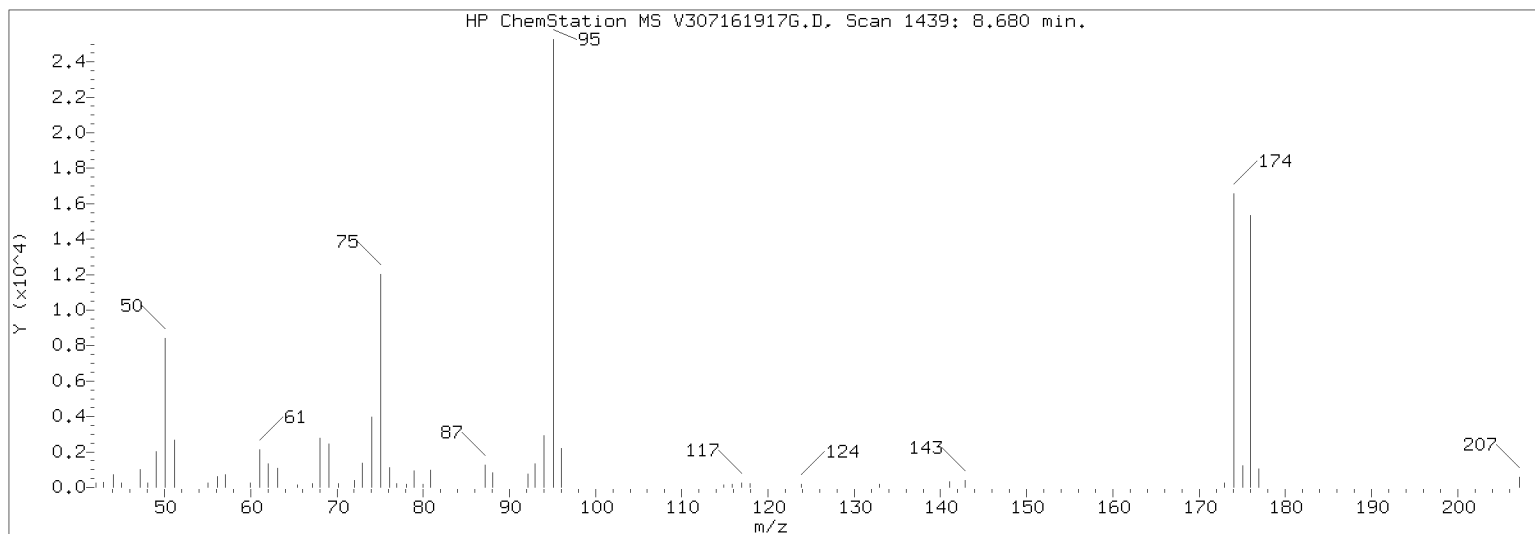
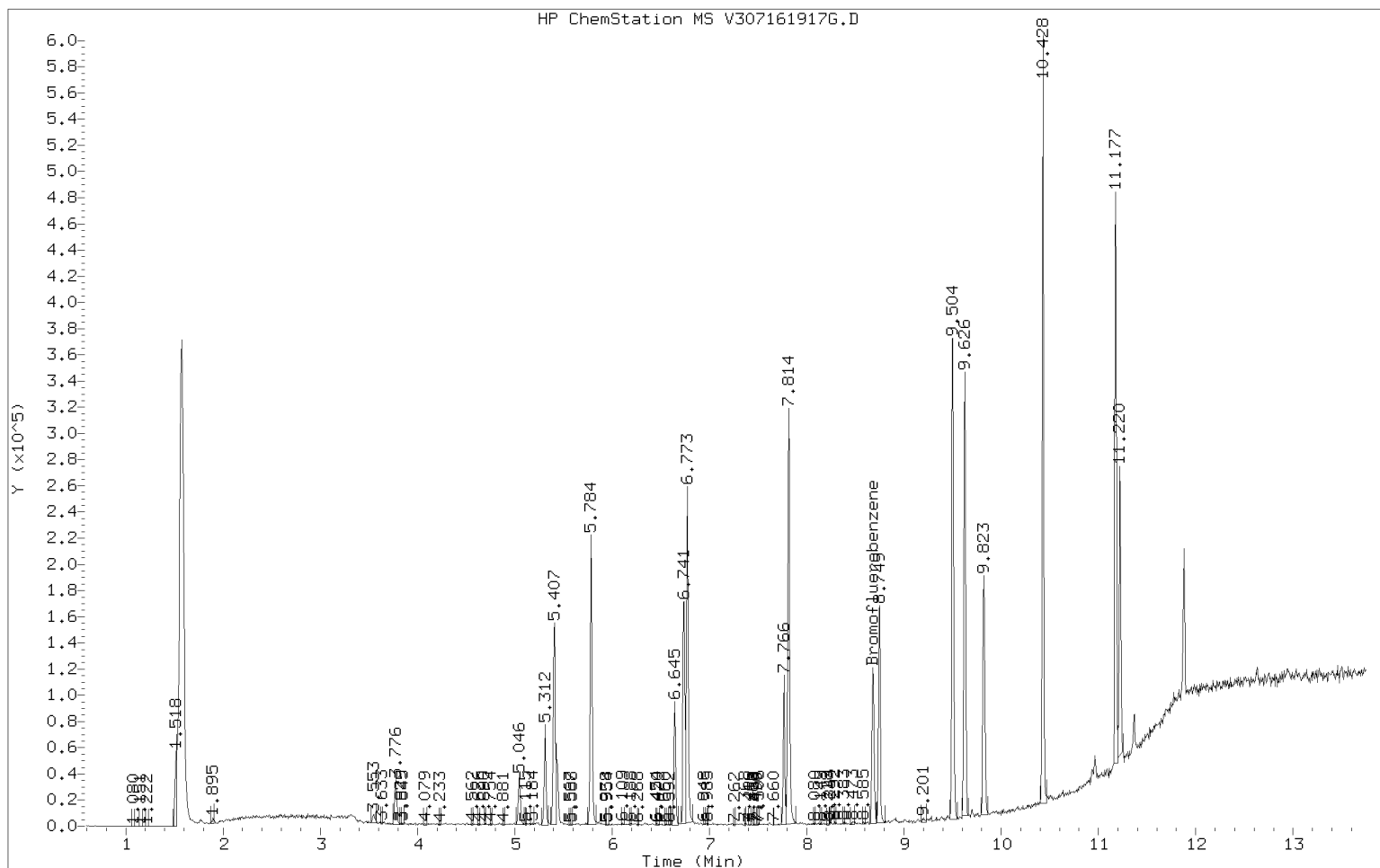
Batch File: \\target\share\chem1\nt3.i\20190716x.b

Inst ID: nt3.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	EXPEC RT	RT WINDOW	AVG RT	STD DEV
86 1,2,3-Trichlorobenzene	11.370	11.364	11.365	11.365	11.364	11.364	11.364	11.365	11.364	11.364	11.174-11.554	11.365	0.002

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190716y.b/V307161917G.D
 Method Used: \20190716y.b\bfb8260.m Inst: nt3
 Injection Date: 16-JUL-2019 15:54 Operator: PKC
 Sample Info: SHG0220-TUN1 SHG0220-TUN1
 Report Date: 07/17/2019 11:34



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	34.40
75	30.00 - 60.00% of mass 95	54.38
96	5.00 - 9.00% of mass 95	8.29
173	Less than 2.00% of mass 174	1.00 (1.43)
174	50.00 - 100.00% of mass 95	70.20
175	5.00 - 9.00% of mass 174	4.23 (6.03)
176	95.00 - 101.00% of mass 174	66.80 (95.16)
177	5.00 - 9.00% of mass 176	4.48 (6.70)

Data File: V307161917G.D

Spectrum: Avg. Scans 1438-1440 (8.68), Background Scan 1432

Location of Maximum: 95.00

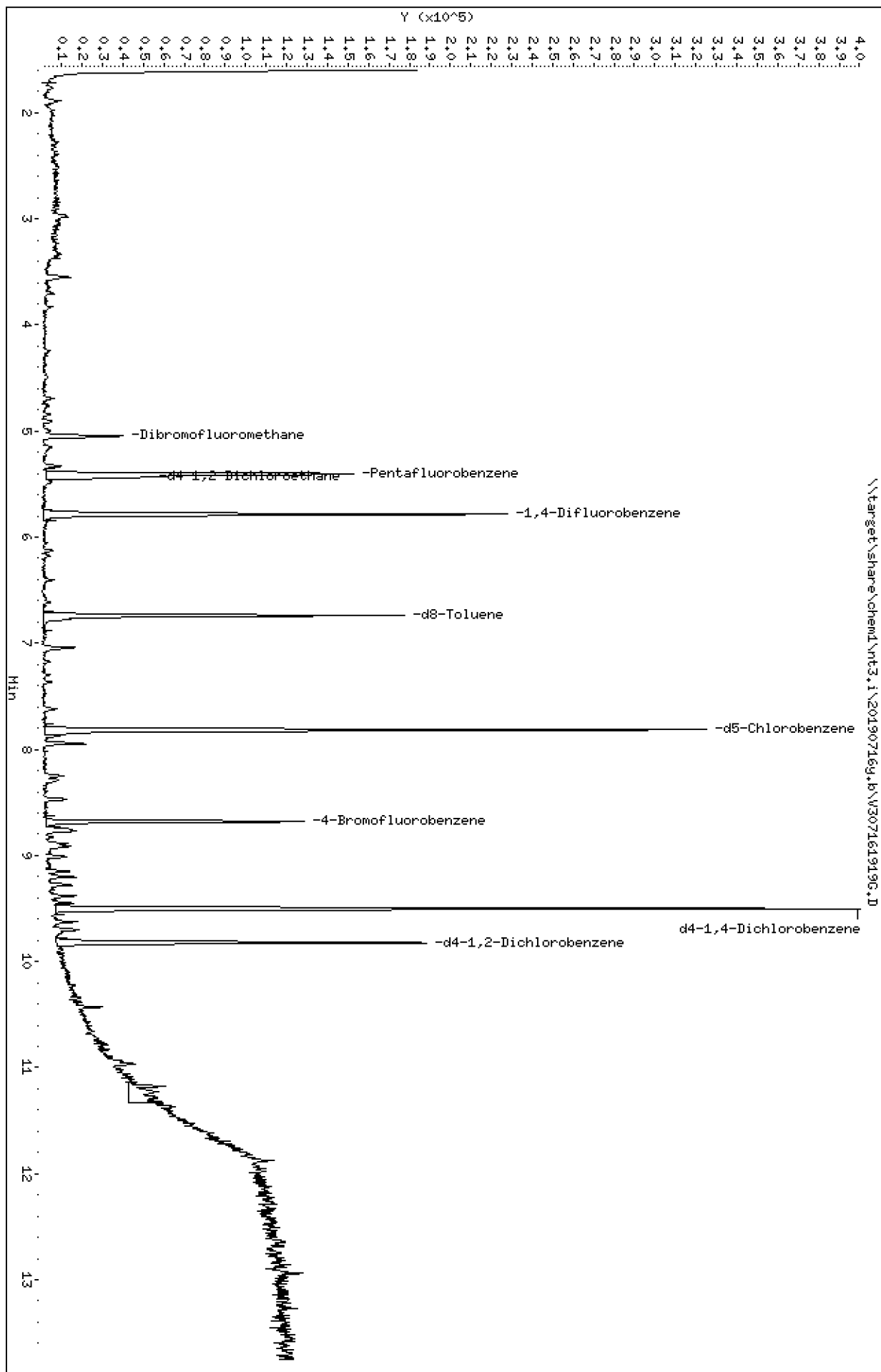
Number of points: 68

m/z	Y	m/z	Y	m/z	Y	m/z	Y
42.00	300	64.00	163	89.00	62	143.00	370
43.00	247	65.00	112	91.00	60	153.00	52
44.00	285	67.00	143	92.00	617	172.00	163
45.00	405	68.00	2396	93.00	1070	173.00	216
46.00	66	69.00	2363	94.00	2609	174.00	15090
47.00	670	70.00	312	95.00	21496	175.00	910
48.00	259	72.00	126	96.00	1781	176.00	14360
49.00	1946	73.00	1167	104.00	84	177.00	962
50.00	7394	74.00	3749	115.00	50	191.00	70
51.00	2355	75.00	11689	116.00	119	207.00	100
53.00	59	76.00	1029	117.00	178	208.00	52
55.00	191	77.00	230	118.00	70	209.00	52
56.00	495	78.00	134	119.00	89	211.00	57
57.00	900	79.00	762	124.00	64	233.00	56
60.00	302	80.00	228	133.00	63		
61.00	1661	81.00	762	135.00	80		
62.00	1094	87.00	1154	137.00	80		
63.00	870	88.00	810	141.00	221		

Data File: \\target\share\chend\nt3.i\20190716g.b\W307161919G.D
Date : 16-JUL-2019 17:13
Client ID:
Sample Info: SHG0220-CAL1

Column phase: RTXWMS

Instrument: nt3.i
Operator: PKC
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161919G.D
Lab Smp Id: SHG0220-CAL1
Inj Date : 16-JUL-2019 17:13
Operator : PKC
Smp Info : SHG0220-CAL1
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul
Cal Date : 16-JUL-2019 17:13
Als bottle: 56
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Inst ID: nt3.i
Quant Type: ISTD
Cal File: V307161919.D
Compound Sublist: gsurr.sub

						CONCENTRATIONS		
		QUANT SIG					ON-COLUMN	FINAL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====		----	----	-----	-----	-----	-----	-----
\$ 27	Dibromofluoromethane	111	5.047	5.046	(0.933)	19007	4.91550	4.915 (R)
* 32	Pentafluorobenzene	168	5.408	5.408	(1.000)	75566	10.0000	
\$ 33	d4-1,2-Dichloroethane	65	5.434	5.439	(1.005)	25232	4.95523	4.955 (R)
* 37	1,4-Difluorobenzene	114	5.785	5.785	(1.000)	126412	10.0000	
\$ 43	d8-Toluene	98	6.736	6.736	(1.164)	80877	4.87647	4.876 (R)
* 53	d5-Chlorobenzene	117	7.815	7.815	(1.000)	132258	10.0000	
\$ 62	4-Bromofluorobenzene	174	8.681	8.680	(1.111)	25464	4.84878	4.849 (R)
* 76	d4-1,4-Dichlorobenzene	152	9.499	9.499	(1.000)	77721	10.0000	
\$ 79	d4-1,2-Dichlorobenzene	152	9.818	9.823	(1.034)	37945	5.20425	5.204 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161919G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	75566	2.55
37 1,4-Difluorobenze	116116	58058	232232	126412	8.87
53 d5-Chlorobenzene	124912	62456	249824	132258	5.88
76 d4-1,4-Dichlorobe	77169	38585	154338	77721	0.72

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.01
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL1
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.915	98.31	
\$ 33 d4-1,2-Dichloroeth	5.000	4.955	99.10	
\$ 43 d8-Toluene	5.000	4.876	97.53	
\$ 62 4-Bromofluorobenze	5.000	4.849	96.98	
\$ 79 d4-1,2-Dichloroben	5.000	5.204	104.08	

REVIEW SUMMARY FOR FILE - V307161919G.D

Lab ID: SHG0220-CAL1

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 17:13

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.1\20190716g.b\201907161920G.D

Date : 16-JUL-2019 17:40

Client ID:

Sample Info: SHG0220-CAL2

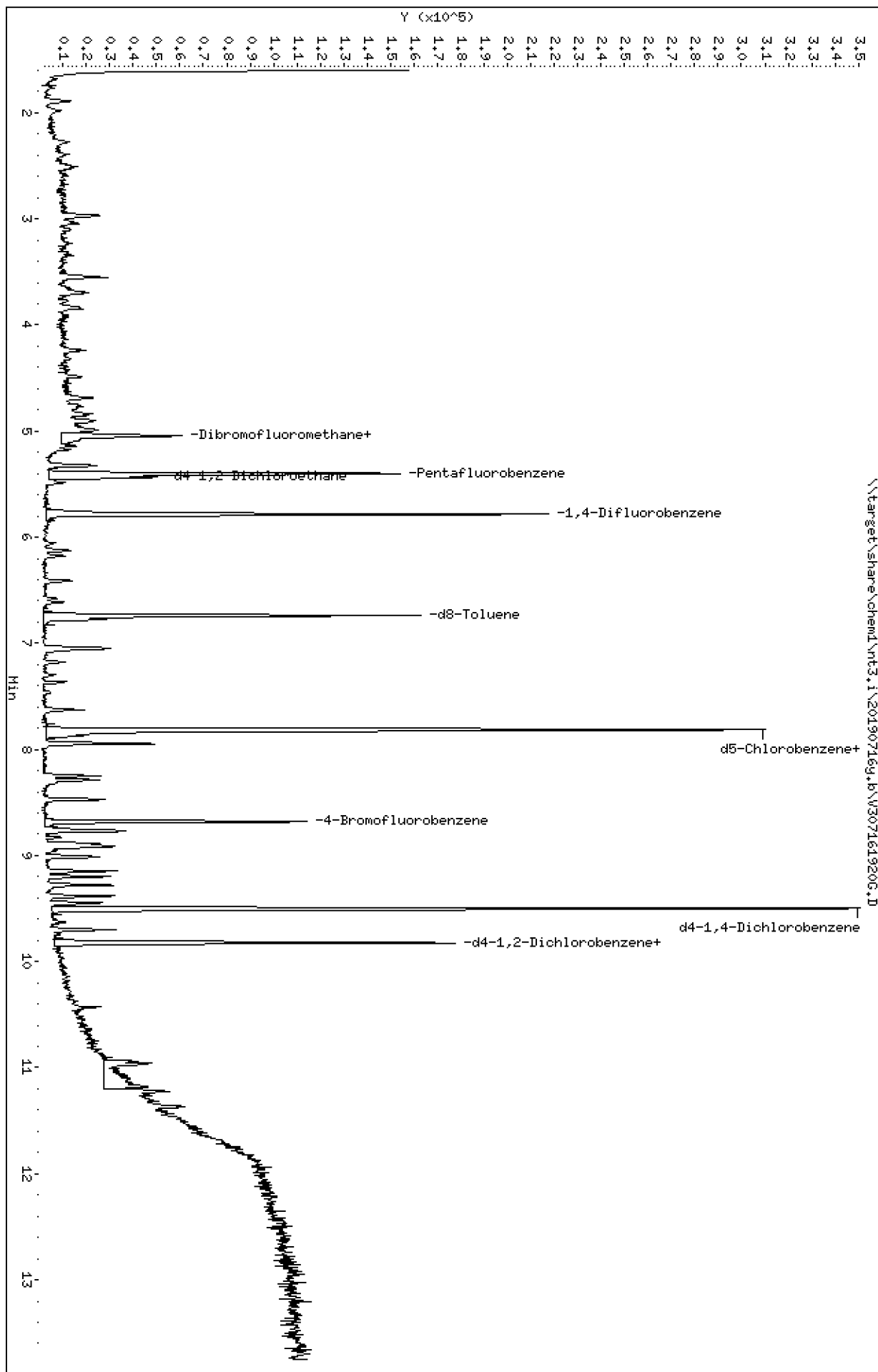
Page 1

Instrument: nt3.1

Operator: PKC

Column diameter: 0.18

Column phase: RTXVMS



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161920G.D
Lab Smp Id: SHG0220-CAL2
Inj Date : 16-JUL-2019 17:40
Operator : PKC Inst ID: nt3.i
Smp Info : SHG0220-CAL2
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul Quant Type: ISTD
Cal Date : 16-JUL-2019 17:40 Cal File: V307161920.D
Als bottle: 57
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.933)	17919	4.92272	4.923 (R)
* 32 Pentafluorobenzene	168	5.402	5.408	(1.000)	71136	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.434	5.439	(1.006)	23589	4.92106	4.921 (R)
* 37 1,4-Difluorobenzene	114	5.784	5.785	(1.000)	117017	10.0000	
\$ 43 d8-Toluene	98	6.735	6.736	(1.164)	76524	4.98446	4.984 (R)
* 53 d5-Chlorobenzene	117	7.814	7.815	(1.000)	118769	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.685	8.680	(1.112)	22810	4.83671	4.837 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.504	9.499	(1.000)	70324	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.823	(1.034)	32815	4.97405	4.974 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161920G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL2
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	71136	-3.46
37 1,4-Difluorobenze	116116	58058	232232	117017	0.78
53 d5-Chlorobenzene	124912	62456	249824	118769	-4.92
76 d4-1,4-Dichlorobe	77169	38585	154338	70324	-8.87

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.10
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL2
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.923	98.45	
\$ 33 d4-1,2-Dichloroeth	5.000	4.921	98.42	
\$ 43 d8-Toluene	5.000	4.984	99.69	
\$ 62 4-Bromofluorobenze	5.000	4.837	96.73	
\$ 79 d4-1,2-Dichloroben	5.000	4.974	99.48	

REVIEW SUMMARY FOR FILE - V307161920G.D

Lab ID: SHG0220-CAL2

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 17:40

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190716g.b\W307161921G.D

Date : 16-JUL-2019 18:06

Client ID:

Sample Info: SHG0220-CAL3

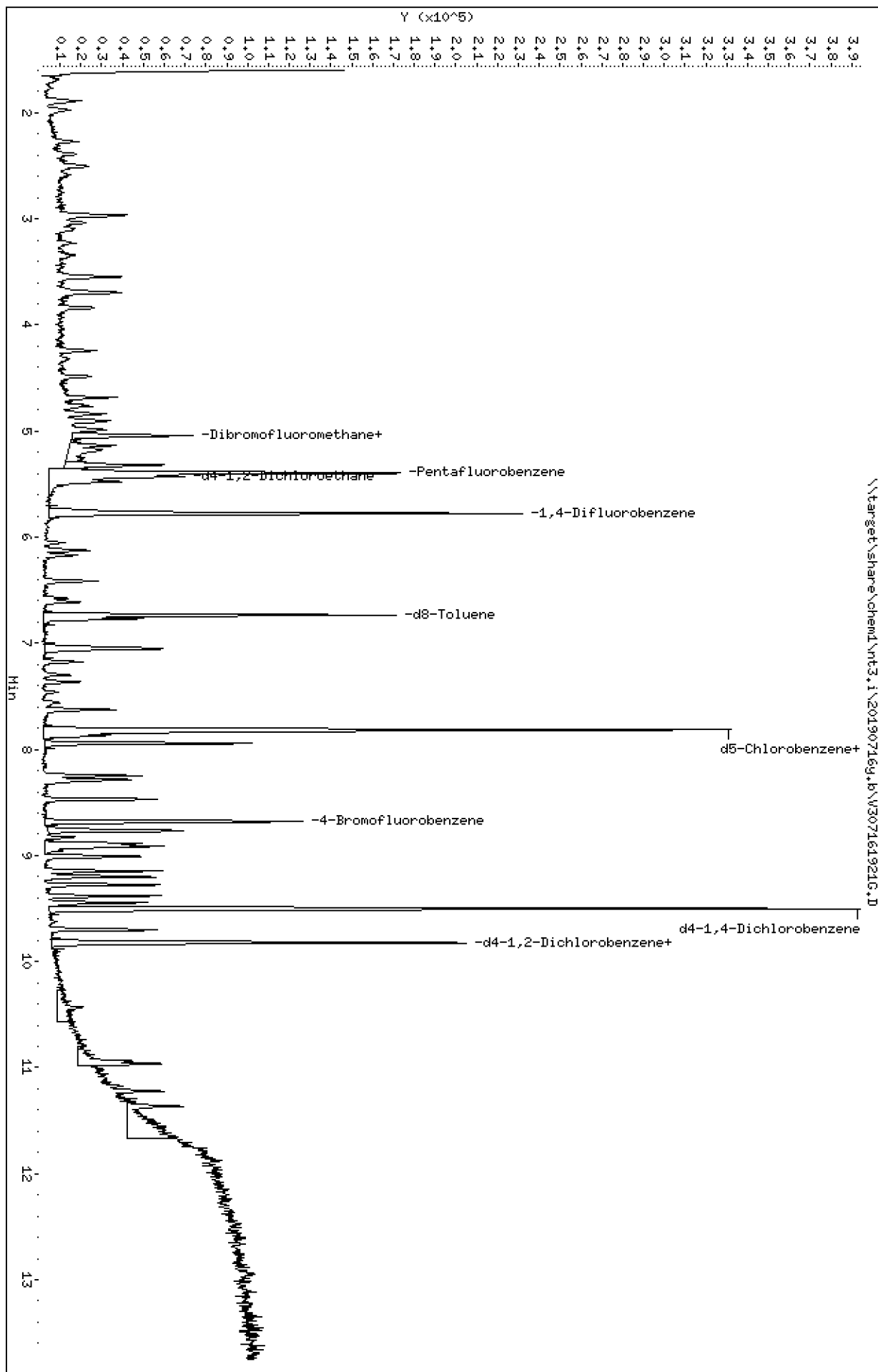
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161921G.D
Lab Smp Id: SHG0220-CAL3
Inj Date : 16-JUL-2019 18:06
Operator : PKC Inst ID: nt3.i
Smp Info : SHG0220-CAL3
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul Quant Type: ISTD
Cal Date : 16-JUL-2019 18:06 Cal File: V307161921.D
Als bottle: 58
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.934)	18653	5.11064	5.111 (R)
* 32 Pentafluorobenzene	168	5.397	5.408	(1.000)	71327	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.439	(1.006)	26785	5.57284	5.573 (R)
* 37 1,4-Difluorobenzene	114	5.775	5.785	(1.000)	123080	10.0000	
\$ 43 d8-Toluene	98	6.736	6.736	(1.167)	79087	4.89764	4.898 (R)
* 53 d5-Chlorobenzene	117	7.815	7.815	(1.000)	126339	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	23842	4.75262	4.753 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499	(1.000)	73828	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.823	(1.034)	34793	5.02357	5.024 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161921G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL3
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	71327	-3.20
37 1,4-Difluorobenze	116116	58058	232232	123080	6.00
53 d5-Chlorobenzene	124912	62456	249824	126339	1.14
76 d4-1,4-Dichlorobe	77169	38585	154338	73828	-4.33

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.18
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	-0.17
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL3
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.111	102.21	
\$ 33 d4-1,2-Dichloroeth	5.000	5.573	111.46	
\$ 43 d8-Toluene	5.000	4.898	97.95	
\$ 62 4-Bromofluorobenze	5.000	4.753	95.05	
\$ 79 d4-1,2-Dichloroben	5.000	5.024	100.47	

REVIEW SUMMARY FOR FILE - V307161921G.D

Lab ID: SHG0220-CAL3

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 18:06

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190716g.b\W307161922G.D

Date : 16-JUL-2019 18:33

Client ID:

Sample Info: SHC0220-CAL4

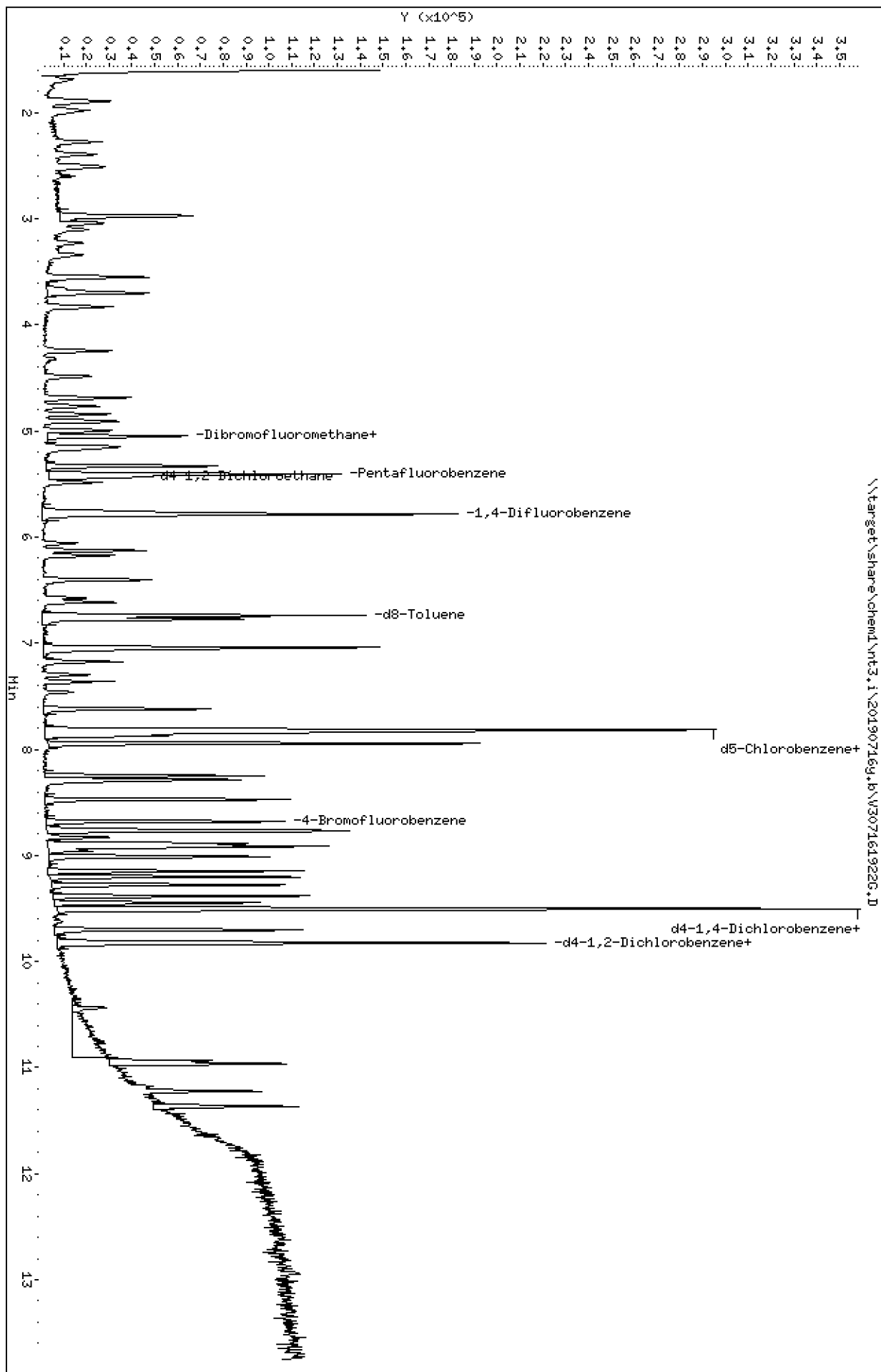
Page 1

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161922G.D
Lab Smp Id: SHG0220-CAL4
Inj Date : 16-JUL-2019 18:33
Operator : PKC Inst ID: nt3.i
Smp Info : SHG0220-CAL4
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul Quant Type: ISTD
Cal Date : 16-JUL-2019 18:33 Cal File: V307161922.D
Als bottle: 59
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.047	5.046	(0.933)	16425	5.12152	5.122 (R)
* 32 Pentafluorobenzene	168	5.408	5.408	(1.000)	62674	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.435	5.439	(1.005)	20739	4.91065	4.911 (R)
* 37 1,4-Difluorobenzene	114	5.785	5.785	(1.000)	101242	10.0000	
\$ 43 d8-Toluene	98	6.736	6.736	(1.164)	66606	5.01443	5.014 (R)
* 53 d5-Chlorobenzene	117	7.815	7.815	(1.000)	105009	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	20961	5.02705	5.027 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499	(1.000)	64261	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.823	(1.034)	30546	5.06697	5.067 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161922G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL4
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	62674	-14.95
37 1,4-Difluorobenze	116116	58058	232232	101242	-12.81
53 d5-Chlorobenzene	124912	62456	249824	105009	-15.93
76 d4-1,4-Dichlorobe	77169	38585	154338	64261	-16.73

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.02
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL4
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.122	102.43	
\$ 33 d4-1,2-Dichloroeth	5.000	4.911	98.21	
\$ 43 d8-Toluene	5.000	5.014	100.29	
\$ 62 4-Bromofluorobenze	5.000	5.027	100.54	
\$ 79 d4-1,2-Dichloroben	5.000	5.067	101.34	

REVIEW SUMMARY FOR FILE - V307161922G.D

Lab ID: SHG0220-CAL4

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 18:33

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190716g.b\201907161923G.D

Date : 16-JUL-2019 18:59

Client ID:

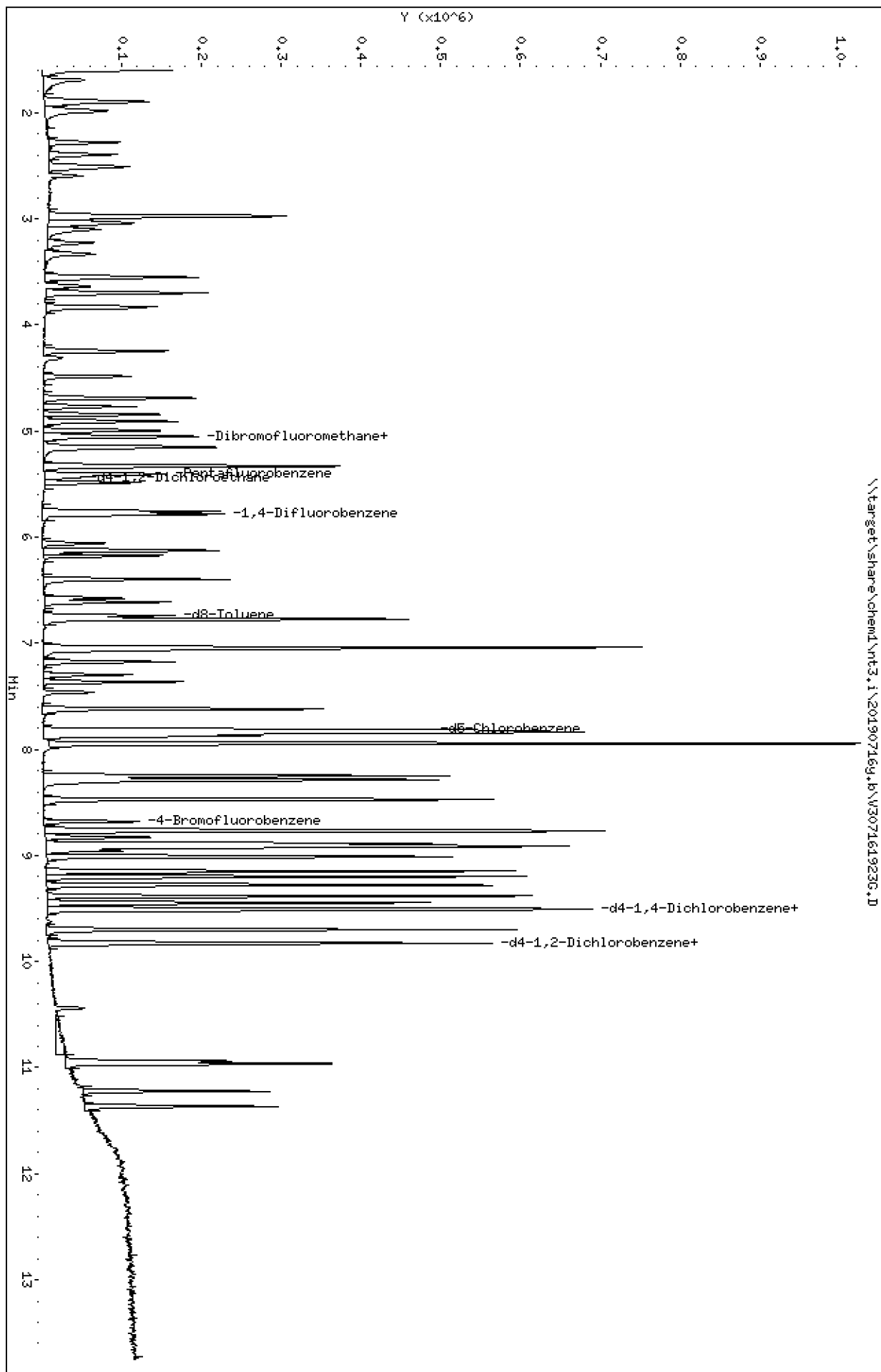
Sample Info: SHC0220-CAL5

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161923G.D
Lab Smp Id: SHG0220-CAL5
Inj Date : 16-JUL-2019 18:59
Operator : PKC Inst ID: nt3.i
Smp Info : SHG0220-CAL5
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul Quant Type: ISTD
Cal Date : 16-JUL-2019 18:59 Cal File: V307161923.D
Als bottle: 60
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.046	5.046	(0.933)	18224	4.83318	4.833 (R)
* 32 Pentafluorobenzene	168	5.407	5.408	(1.000)	73687	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.439	5.439	(1.006)	24586	4.95149	4.951 (R)
* 37 1,4-Difluorobenzene	114	5.784	5.785	(1.000)	116116	10.0000	
\$ 43 d8-Toluene	98	6.735	6.736	(1.164)	77674	5.09862	5.099 (R)
* 53 d5-Chlorobenzene	117	7.814	7.815	(1.000)	124912	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	23805	4.79945	4.799 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.498	9.499	(1.000)	77169	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.822	9.823	(1.034)	35084	4.84627	4.846 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161923G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL5
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	73687	0.00
37 1,4-Difluorobenze	116116	58058	232232	116116	0.00
53 d5-Chlorobenzene	124912	62456	249824	124912	0.00
76 d4-1,4-Dichlorobe	77169	38585	154338	77169	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.41	0.00
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL5
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.833	96.66	
\$ 33 d4-1,2-Dichloroeth	5.000	4.951	99.03	
\$ 43 d8-Toluene	5.000	5.099	101.97	
\$ 62 4-Bromofluorobenze	5.000	4.799	95.99	
\$ 79 d4-1,2-Dichloroben	5.000	4.846	96.93	

REVIEW SUMMARY FOR FILE - V307161923G.D

Lab ID: SHG0220-CAL5

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 18:59

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190716g.b\201907161924G.D

Date : 16-JUL-2019 19:26

Client ID:

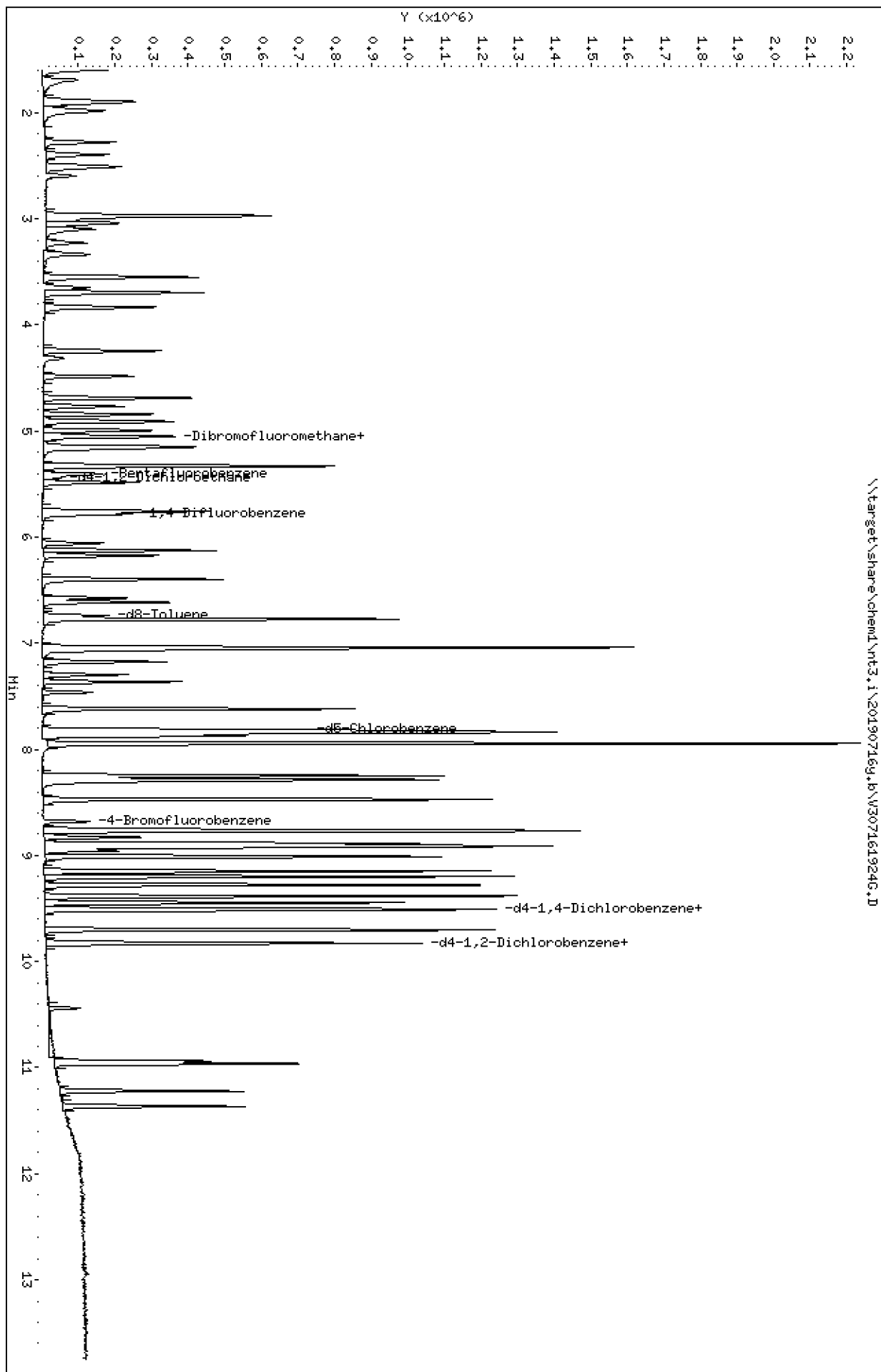
Sample Info: SHC0220-CAL6

Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161924G.D
Lab Smp Id: SHG0220-CAL6
Inj Date : 16-JUL-2019 19:26
Operator : PKC Inst ID: nt3.i
Smp Info : SHG0220-CAL6
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul Quant Type: ISTD
Cal Date : 16-JUL-2019 19:26 Cal File: V307161924.D
Als bottle: 61
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.046	5.046	(0.934)	20240	5.05735	5.057 (R)
* 32 Pentafluorobenzene	168	5.402	5.408	(1.000)	78211	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.439	5.439	(1.007)	25233	4.78784	4.788 (R)
* 37 1,4-Difluorobenzene	114	5.785	5.785	(1.000)	127692	10.0000	
\$ 43 d8-Toluene	98	6.736	6.736	(1.164)	82813	4.94315	4.943 (R)
* 53 d5-Chlorobenzene	117	7.814	7.815	(1.000)	130960	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	27470	5.28260	5.283 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.504	9.499	(1.000)	80506	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.817	9.823	(1.033)	36950	4.89247	4.892 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161924G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL6
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	78211	6.14
37 1,4-Difluorobenze	116116	58058	232232	127692	9.97
53 d5-Chlorobenzene	124912	62456	249824	130960	4.84
76 d4-1,4-Dichlorobe	77169	38585	154338	80506	4.32

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.09
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.01
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL6
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.057	101.15	
\$ 33 d4-1,2-Dichloroeth	5.000	4.788	95.76	
\$ 43 d8-Toluene	5.000	4.943	98.86	
\$ 62 4-Bromofluorobenze	5.000	5.283	105.65	
\$ 79 d4-1,2-Dichloroben	5.000	4.892	97.85	

REVIEW SUMMARY FOR FILE - V307161924G.D

Lab ID: SHG0220-CAL6

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 19:26

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190716g.b\201907161925G.D

Date : 16-JUL-2019 19:53

Client ID:

Sample Info: SHC0220-CAL7

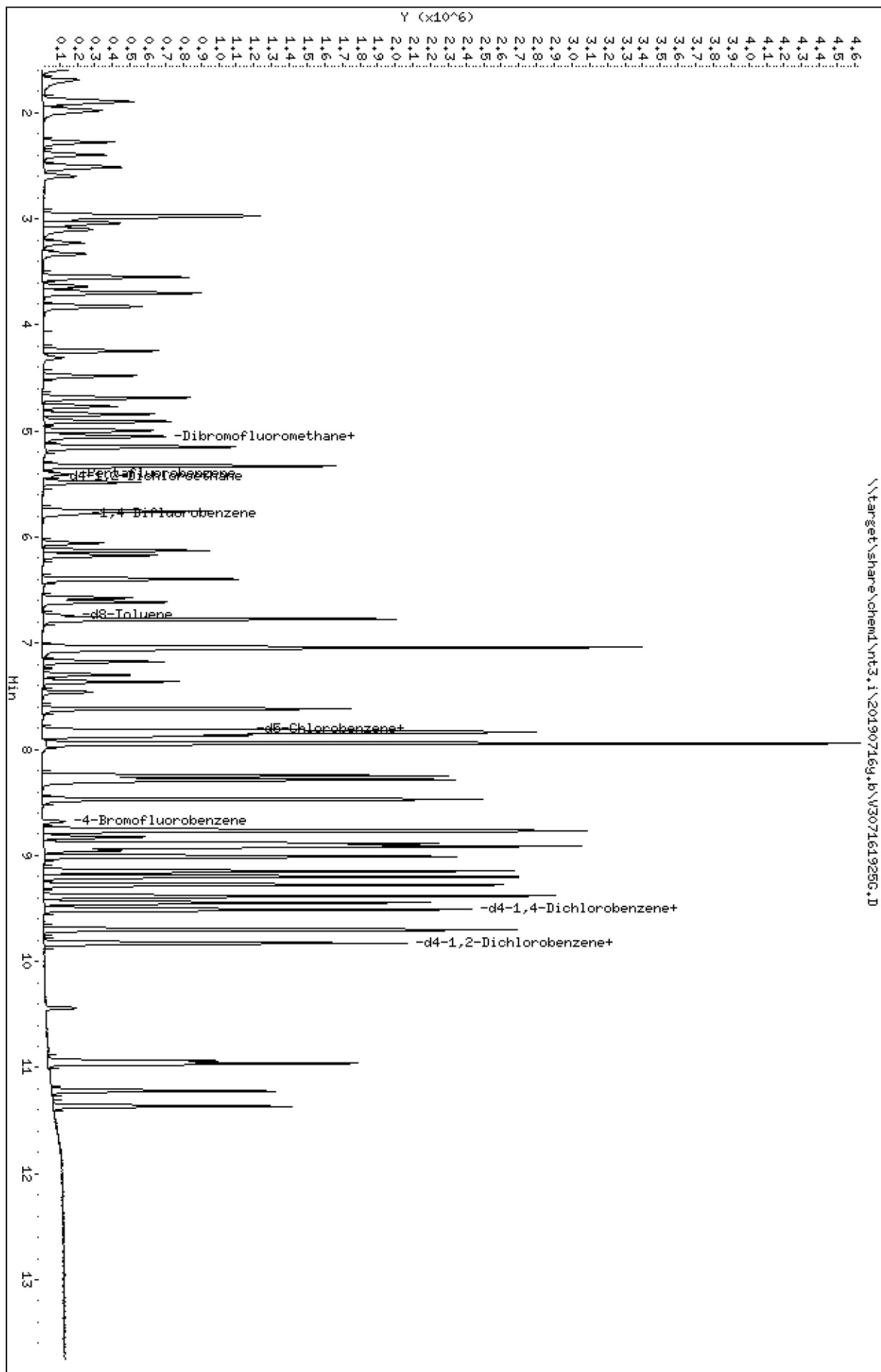
Page 1

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

Column phase: RTXWMS



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161925G.D
Lab Smp Id: SHG0220-CAL7
Inj Date : 16-JUL-2019 19:53
Operator : PKC Inst ID: nt3.i
Smp Info : SHG0220-CAL7
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul Quant Type: ISTD
Cal Date : 16-JUL-2019 19:53 Cal File: V307161925.D
Als bottle: 62
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.047	5.046	(0.934)	18513	5.02557	5.026 (R)
* 32 Pentafluorobenzene	168	5.403	5.408	(1.000)	71990	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.435	5.439	(1.006)	24304	5.01007	5.010 (R)
* 37 1,4-Difluorobenzene	114	5.785	5.785	(1.000)	121140	10.0000	
\$ 43 d8-Toluene	98	6.736	6.736	(1.164)	83307	5.24159	5.242 (R)
* 53 d5-Chlorobenzene	117	7.815	7.815	(1.000)	126324	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	26721	5.32714	5.327 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.499	(1.000)	82245	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.818	9.823	(1.034)	39932	5.17551	5.176 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161925G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL7
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	71990	-2.30
37 1,4-Difluorobenze	116116	58058	232232	121140	4.33
53 d5-Chlorobenzene	124912	62456	249824	126324	1.13
76 d4-1,4-Dichlorobe	77169	38585	154338	82245	6.58

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.08
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.02
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL7
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.026	100.51	
\$ 33 d4-1,2-Dichloroeth	5.000	5.010	100.20	
\$ 43 d8-Toluene	5.000	5.242	104.83	
\$ 62 4-Bromofluorobenze	5.000	5.327	106.54	
\$ 79 d4-1,2-Dichloroben	5.000	5.176	103.51	

REVIEW SUMMARY FOR FILE - V307161925G.D

Lab ID: SHG0220-CAL7

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 19:53

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt3.i\20190716g.b\201907161926g.D

Date : 16-JUL-2019 20:19

Client ID:

Sample Info: SHC0220-CAL8

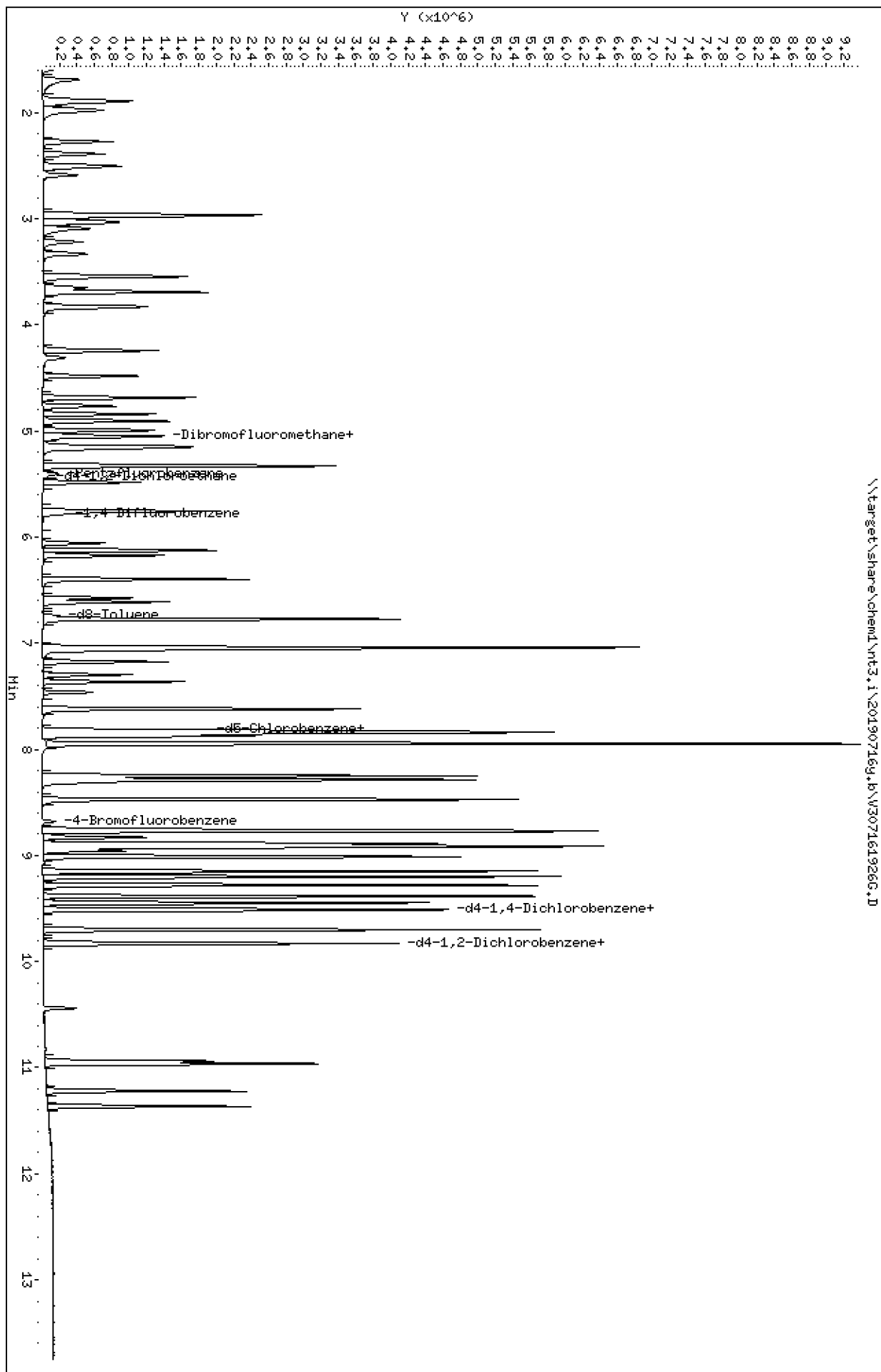
Page 1

Instrument: nt3.i

Column phase: RTXWMS

Operator: PKC

Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt3.i\20190716y.b\V307161926G.D
Lab Smp Id: SHG0220-CAL8
Inj Date : 16-JUL-2019 20:19
Operator : PKC Inst ID: nt3.i
Smp Info : SHG0220-CAL8
Misc Info : 16-
Comment :
Method : \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Meth Date : 17-Jul-2019 09:04 paul Quant Type: ISTD
Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
Als bottle: 63
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	5.040	5.046	(1.000)	21002	5.01352	5.014 (R)
* 32 Pentafluorobenzene	168	5.402	5.408	(1.000)	81865	10.0000	(M)
\$ 33 d4-1,2-Dichloroethane	65	5.434	5.439	(1.000)	26980	4.89083	4.891 (R)
* 37 1,4-Difluorobenzene	114	5.784	5.785	(1.000)	139630	10.0000	
\$ 43 d8-Toluene	98	6.735	6.736	(1.164)	90564	4.94363	4.944 (R)
* 53 d5-Chlorobenzene	117	7.814	7.815	(1.000)	145558	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.680	8.680	(1.111)	29625	5.12566	5.126 (R)
* 76 d4-1,4-Dichlorobenzene	152	9.504	9.499	(1.000)	93544	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.822	9.823	(1.034)	42271	4.81691	4.817 (R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 16-JUL-2019
 Lab File ID: V307161926G.D Calibration Time: 18:59
 Lab Smp Id: SHG0220-CAL8
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
 Misc Info: 16-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	81865	11.10
37 1,4-Difluorobenze	116116	58058	232232	139630	20.25
53 d5-Chlorobenzene	124912	62456	249824	145558	16.53
76 d4-1,4-Dichlorobe	77169	38585	154338	93544	21.22

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.41	4.91	5.91	5.40	-0.10
37 1,4-Difluorobenze	5.78	5.28	6.28	5.78	0.00
53 d5-Chlorobenzene	7.81	7.31	8.31	7.81	0.00
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.06

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930a
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0220-CAL8
Level: Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190716y.b\8260C071619.m
Misc Info: 16-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.014	100.27	
\$ 33 d4-1,2-Dichloroeth	5.000	4.891	97.82	
\$ 43 d8-Toluene	5.000	4.944	98.87	
\$ 62 4-Bromofluorobenze	5.000	5.126	102.51	
\$ 79 d4-1,2-Dichloroben	5.000	4.817	96.34	

REVIEW SUMMARY FOR FILE - V307161926G.D

Lab ID: SHG0220-CAL8

nt3.i, 20190716y.b\8260C071619.m, 16-JUL-2019 20:19

RT	CO-ELUTION COMPOUNDS
----	----------------------

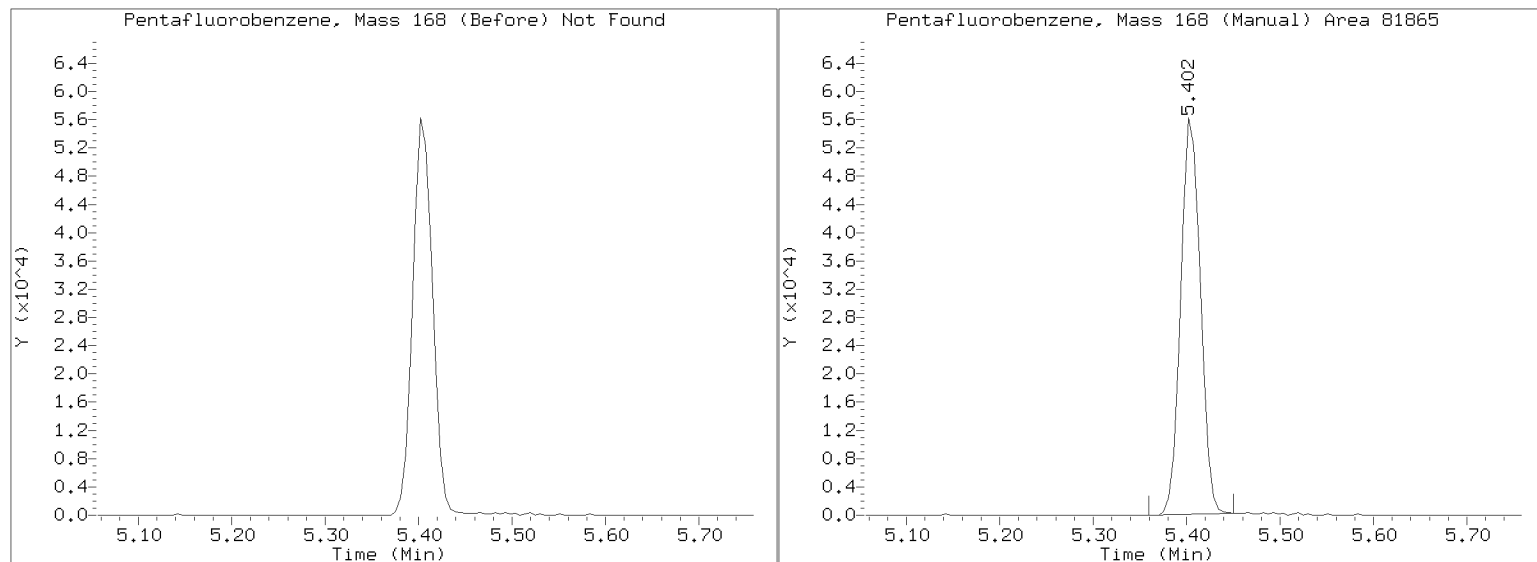
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt3.i/20190716x.b/V307161926.D

Injection Date: 16-JUL-2019 20:19

Lab ID: SHG0218-CAL8 Client ID:

Report Date: 07/17/2019 08:20





INITIAL CALIBRATION DATA NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CG00055 Instrument: NT2
Calibration Date: 07/18/2019 13:28 Column (1): RTX-VMS

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Toluene-d8	5	1.24554	5	1.235902	5	1.251178	5	1.25804	5	1.236702	5	1.253992
4-Bromofluorobenzene	5	0.3898294	5	0.382585	5	0.3943497	5	0.3961179	5	0.3953421	5	0.3952133



INITIAL CALIBRATION DATA NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CG00055 Instrument: NT2
Calibration Date: 07/18/2019 13:28 Column (1): RTX-VMS

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)					100	20841.01	250	23026.25	500	25038.78	1000	28016.71
Toluene-d8	5	1.253177	5	1.267331								
4-Bromofluorobenzene	5	0.3947937	5	0.409859								



NWTPHg

SDG: 19G0163

Project: King County Closed Landfills - Vashon

Instrument: NT2

Column (1): RTX-VMS

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF
Gasoline Range Organics (Tol-Nap)	2500	28319.17	5000	25400.42								



INITIAL CALIBRATION DATA NWTPHg

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00055	Instrument:	NT2
Calibration Date:	07/18/2019 13:28	Column (1):	RTX-VMS

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Gasoline Range Organics (Tol-Nap)	25107.06	11.5			RSD (15)	
Toluene-d8	1.250233	0.8			RSD (15)	
4-Bromofluorobenzene	0.3947613	1.9			RSD (15)	



ANALYSIS SEQUENCE

SHC0426

Instrument: NT2 Element Column ID: 1306512 RTXv
Calibration ID: CC00079 Tune File: bfb.u
EM Voltage: 1812

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHC0426-TUN1	MS Tune	QC		1	H002159	H001679	
SHC0426-CAL1	8260C 0.2	QC		2	H002992	H001679	
SHC0426-CAL2	8260C 0.5	QC		3	H002993	H001679	
SHC0426-CAL3	8260C 1	QC		4	H002994	H001679	
SHC0426-CAL4	8260C 2	QC		5	H002995	H001679	
SHC0426-CAL5	8260C 10	QC		6	H002996	H001679	
SHC0426-CAL6	8260C 20	QC		7	H002997	H001679	
SHC0426-CAL7	8260C 40	QC		8	H003000	H001679	
SHC0426-CAL8	8260C 80	QC		9	H003001	H001679	
SHC0426-CALE	Cal Standard	QC		10	H003084	H001679	
SHC0426-CALD	Cal Standard	QC		11	H003083	H001679	
SHC0426-CALC	Cal Standard	QC		12	H003082	H001679	
SHC0426-CALB	Cal Standard	QC		13	H003081	H001679	
SHC0426-CALA	Cal Standard	QC		14	H003080	H001679	
SHC0426-CAL9	Cal Standard	QC		15	H003079	H001679	
SHC0426-ICB1	Initial Cal Blank	QC		16		H001679	
SHC0426-SCV1	8260C SCV	QC		17	H003085	H001679	



ANALYSIS SEQUENCE

SHG0268

Instrument: NT2 Element Column ID: 1306512 RTXv
Calibration ID: CG00055 Tune File: bfb.u
EM Voltage: 1718

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0268-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0268-CAL1	8260C 0.2	QC		2	H006885	H001679	
SHG0268-CAL2	8260C 0.5	QC		3	H006886	H001679	
SHG0268-CAL3	8260C 1	QC		4	H006887	H001679	
SHG0268-CAL4	8260C 2	QC		5	H006888	H001679	
SHG0268-CAL5	8260C 10	QC		6	H006889	H001679	
SHG0268-CAL6	8260C 20	QC		7	H006890	H001679	
SHG0268-CAL7	8260C 40	QC		8	H006891	H001679	
SHG0268-CAL8	8260C 80	QC		9	H006892	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190327.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 0626	V203271901.D	RINSE				1
2 0706	V203271902.D	SHCO-TUN1				1
3 0744	V203271903.D	SHCO-TUN1				1
4 0820	V203271904.D	SHCO-TUN1				1
5 0856	V203271905.D	SHC0416-TUN1				1
6 0929	V203271906.D	SHC0416-CAL1				1 5.25 249235 5.64 452819 7.71 409195 9.39 186697
7 0950	V203271907.D	SHC0416-CAL2				1 5.26 203569 5.65 367986 7.71 333078 9.40 151179
8 1010	V203271908.D	SHC0416-CAL3				1 5.26 195434 5.64 357183 7.71 319539 9.39 145927
9 1030	V203271909.D	SHC0416-CAL4				1 5.26 199196 5.65 366858 7.71 329870 9.39 152480
10 1050	V203271910.D	SHC0416-CAL5				1 5.26 199603 5.65 364397 7.71 328727 9.39 151591
11 1111	V203271911.D	SHC0416-CAL6				1 5.26 193736 5.65 356419 7.71 323593 9.39 150676
12 1131	V203271912.D	SHC0416-CAL7				1 5.26 198883 5.65 360824 7.71 328162 9.40 152756
13 1151	V203271913.D	SHC0416-CAL8				1 5.26 199230 5.65 364969 7.71 326064 9.40 149692
14 1211	V203271914.D	SHC0416-ICB1				1 5.26 198908 5.65 364658 7.71 328421 9.39 150843
15 1232	V203271915.D	SHC0416-SCV1				1 5.26 203632 5.65 373064 7.71 332782 9.39 154485
16 1252	V203271916.D	SHC0416-SCV2				1 5.26 197027 5.65 358554 7.71 326951 9.39 152709
17 1312	V203271917.D	SHCO-CALE				1 5.26 197788 5.65 365217 7.71 319791 9.39 151602
18 1332	V203271918.D	SHCO-CALD				1 5.26 204085 5.65 366187 7.71 327839 9.39 153247
19 1352	V203271919.D	SHCO-CALC				1 0.00 0 0.00 0 0.00 0 0.00 0
20 1413	V203271920.D	SHCO-CALB				1 0.00 0 0.00 0 0.00 0 0.00 0

21	1433	V203271921.D	SHCO-CALA	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
22	1453	V203271922.D	SHCO-CAL9	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
23	1513	V203271923.D	RINSE	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
24	1534	V203271924.D	SHCO-SCV1	1	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190718.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
------	----------	-------	----------	-------	----	----

1	0953	V207181901.D	RINSE	1	5.25	179055 5.64	314451 7.70	288836 9.39	148368
---	------	--------------	-------	---	------	---------------	---------------	---------------	--------

2	1014	V207181902.D	SHGO-TUN1	1					
---	------	--------------	-----------	---	--	--	--	--	--

3	1037	V207181903.D	RINSE	1	5.25	187076 5.64	329016 7.70	305658 9.39	156813
---	------	--------------	-------	---	------	---------------	---------------	---------------	--------

4	1058	V207181904.D	RINSE	1	5.25	177069 5.64	311174 7.70	293768 9.39	154803
---	------	--------------	-------	---	------	---------------	---------------	---------------	--------

5	1135	V207181905.D	RINSE	1	5.25	177387 5.64	314258 7.70	295469 9.39	154263
---	------	--------------	-------	---	------	---------------	---------------	---------------	--------

6	1155	V207181906.D	SHG0248-TUN1	1					
---	------	--------------	--------------	---	--	--	--	--	--

7	1216	V207181907.D	SHG0248-CAL9	0.1	5.25	173284 5.64	305254 7.70	287317 9.39	151304
---	------	--------------	--------------	-----	------	---------------	---------------	---------------	--------

8	1238	V207181908.D	SHG0248-CAL1	0.2	5.25	173305 5.64	305286 7.70	286905 9.39	152471
---	------	--------------	--------------	-----	------	---------------	---------------	---------------	--------

9	1259	V207181909.D	SHG0248-CAL2	0.5	5.25	170855 5.64	304008 7.70	289222 9.39	149287
---	------	--------------	--------------	-----	------	---------------	---------------	---------------	--------

10	1320	V207181910.D	SHG0248-CAL3	1	5.25	169026 5.64	300325 7.70	283099 9.39	151459
----	------	--------------	--------------	---	------	---------------	---------------	---------------	--------

11	1341	V207181911.D	SHG0248-CAL4	2	5.25	166421 5.64	295547 7.70	282628 9.39	147652
----	------	--------------	--------------	---	------	---------------	---------------	---------------	--------

12	1402	V207181912.D	SHG0248-CAL5	10	5.25	169604 5.64	298924 7.70	281842 9.39	151581
----	------	--------------	--------------	----	------	---------------	---------------	---------------	--------

13	1423	V207181913.D	SHG0248-CAL6	20	5.25	174779 5.64	307766 7.70	290972 9.39	153326
----	------	--------------	--------------	----	------	---------------	---------------	---------------	--------

14	1444	V207181914.D	SHG0248-CAL7	40	5.25	163228 5.64	287297 7.70	274822 9.39	147079
----	------	--------------	--------------	----	------	---------------	---------------	---------------	--------

15	1505	V207181915.D	SHG0248-CAL8	80	5.25	169965 5.64	298405 7.71	287250 9.39	149880
----	------	--------------	--------------	----	------	---------------	---------------	---------------	--------

16	1526	V207181916.D	SHG0248-ICB1		5.25	171370 5.64	302616 7.70	286564 9.39	151381
----	------	--------------	--------------	--	------	---------------	---------------	---------------	--------

17	1547	V207181917.D	SHG0248-SCV1		5.25	167349 5.64	290913 7.70	277097 9.39	148582
----	------	--------------	--------------	--	------	---------------	---------------	---------------	--------

18	1609	V207181918.D	SHG0248-ICV1		5.25	166587 5.64	293360 7.70	275461 9.39	147392
----	------	--------------	--------------	--	------	---------------	---------------	---------------	--------

19	1609	V207181918LCS.D	BHG0453-BS1		5.25	166587 5.64	293360 7.70	275461 9.39	147392
----	------	-----------------	-------------	--	------	---------------	---------------	---------------	--------

20	1630	V207181919.D	BHG0453-BSD1		5.25	172673 5.64	303680 7.70	287749 9.39	150956
----	------	--------------	--------------	--	------	---------------	---------------	---------------	--------

21	1651	V207181920.D	RINSE	1	5.25	170899	5.64	301986	7.70	283761	9.39	149626
22	1712	V207181921.D	BHG0453-BLK1	1	5.25	170190	5.64	301877	7.70	282656	9.39	147918
23	1733	V207181922.D	19G0162-18	1	5.25	165618	5.64	298913	7.70	277202	9.39	144947
24	1754	V207181923.D	19G0162-01	1	5.25	160276	5.64	282488	7.70	265216	9.39	139191
25	1815	V207181924.D	19G0162-02	1	5.25	160464	5.64	287914	7.70	270307	9.39	143795
26	1836	V207181925.D	19G0162-03	1	5.25	161065	5.64	288776	7.70	278724	9.39	146945
27	1857	V207181926.D	19G0162-04	1	5.25	166587	5.64	297874	7.70	281169	9.39	147489
28	1918	V207181927.D	19G0162-05	1	5.25	147460	5.64	263482	7.70	250138	9.39	130497
29	1939	V207181928.D	19G0162-06	1	5.25	158753	5.64	282886	7.70	270567	9.39	140821
30	2000	V207181929.D	19G0162-07	1	5.25	168269	5.64	298358	7.70	285051	9.39	147030
31	2021	V207181930.D	19G0162-08	1	5.25	162652	5.64	290272	7.70	276399	9.39	143830
32	2041	V207181931.D	19G0162-09	1	5.25	167613	5.64	297897	7.70	285527	9.39	147050
33	2102	V207181932.D	19G0162-10	1	5.25	159897	5.64	282411	7.70	270303	9.39	140305
34	2123	V207181933.D	19G0162-11	1	5.25	157763	5.64	283558	7.70	270480	9.39	135937
35	2144	V207181934.D	19G0162-12	1	5.25	152328	5.64	273828	7.70	262871	9.39	135609
36	2205	V207181935.D	19G0162-13	1	5.25	157002	5.64	280580	7.70	270500	9.39	136893
37	2225	V207181936.D	19G0162-14	1	5.25	164621	5.64	296419	7.70	281478	9.39	143824
38	2246	V207181937.D	19G0162-15	1	5.25	152816	5.64	273937	7.70	265540	9.39	136368
39	2306	V207181938.D	19G0162-16	1	5.25	163371	5.64	292722	7.70	276492	9.39	141545
40	3327	V207181939.D	19G0162-17	1	5.25	154822	5.64	278351	7.70	266707	9.39	136676
41	348	V207181940.D	SHG0248-CCV1	1	5.25	164633	5.64	288688	7.70	274698	9.39	144682
42	0008	V207181941.D	RINSE	1	5.26	160961	5.64	287328	7.70	276169	9.39	138963

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190327g.b

Instrument: nt2.i Date: 27-MAR-2019

Time	Filename	LabID	DF	Manually Integrated Compounds			
0856	V203271905G.D	SHC0416-TUN1	1	NO	MANUAL INTEGRATION		
1312	V203271917G.D	SHC0426-CALC	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene,	d8-Toluene, d4-Dichlorobenzene,	
				nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, d4-1,2-dichloroethane, d4-1,2-Dichlorobenzene,			
1332	V203271918G.D	SHC0426-CALD	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene,	d4-1,2-dichloroethane, d8-Toluene,	
				nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d4-1,2-Dichlorobenzene,			
1352	V203271919G.D	SHC0426-CALC	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene,	d4-Dichlorobenzene,	
				nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, d4-Dichlorobenzene,			
1413	V203271920G.D	SHC0426-CALB	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene,	d8-Toluene, d4-Dichlorobenzene,	
				nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, d4-Dichlorobenzene,			
1433	V203271921G.D	SHC0426-CALA	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene,	d8-Toluene, d4-Dichlorobenzene,	
				nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, d4-Dichlorobenzene,			
1453	V203271922G.D	SHC0426-CAL9	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene,	d8-Toluene, d4-Dichlorobenzene,	
				nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d8-Toluene, d4-Dichlorobenzene,			
1513	V203271923G.D	SHC0426-ICB1	1	NO	MANUAL INTEGRATION		
1534	V203271924G.D	SHC0426-SCV1	1	nC6,	nC12-Dodecane, 1,2,4-Trimethylbenzene, nC10-Decane, Toluene, Naphthalene,	d8-Toluene, d4-Dichlorobenzene,	
				nC7, d5-Chlorobenzene, 4-Bromofluorobenzene, Pentafuorobenzene, d4-1,2-Dichlorobenzene,			

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190718sa.b

Instrument: nt2.i Date: 18-JUL-2019

Time	Filename	LabID	DF	Manually Integrated	Compounds
1155	V207181906G.D	SHG0268-TUN1	1	NO MANUAL INTEGRATION	
1238	V207181908G.D	SHG0268-CAL1	1	NO MANUAL INTEGRATION	
1259	V207181909G.D	SHG0268-CAL2	1	NO MANUAL INTEGRATION	
1320	V207181910G.D	SHG0268-CAL3	1	NO MANUAL INTEGRATION	
1341	V207181911G.D	SHG0268-CAL4	1	NO MANUAL INTEGRATION	
1402	V207181912G.D	SHG0268-CAL5	1	NO MANUAL INTEGRATION	
1423	V207181913G.D	SHG0268-CAL6	1	NO MANUAL INTEGRATION	
1444	V207181914G.D	SHG0268-CAL7	1	NO MANUAL INTEGRATION	
1505	V207181915G.D	SHG0268-CAL8	1	Dichlorodifluoromethane, 2-Chloro Toluene,	Trichlorofluoromethane, 112Trichloro122Trifluoroethane, Methylene Chloride, Vinyl Acetate

Security Status Report

Date: 28-Mar-2019 10:19

V203271905G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271917G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271918G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271919G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271920G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271921G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271922G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271923G.D	Data Locked	lanih,	28-Mar-2019	10:19
V203271924G.D	Data Locked	lanih,	28-Mar-2019	10:19

Security Status Report

Date: 19-Jul-2019 13:45

V207181906G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181908G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181909G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181910G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181911G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181912G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181913G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181914G.D	Data Locked	lanih,	19-Jul-2019	13:45
V207181915G.D	Data Locked	lanih,	19-Jul-2019	13:45

6a
8260 GAS INITIAL CALIBRATION

Lab Name: ANALYTICAL RESOURCES, INC.

Client: 20150930

Instrument: NT2.I

Project:

Calibration Date: 27-MAR-2019

SDG No.: 20150930

Gas Range	RF1 0.1	RF2 0.25	RF3 0.5	RF4 1.0	RF5 2.5	RF6 5	Ave RF	%RSD
WA Gas	20124942	22239023	24026907	26660216	26879121	24067086	23999549	10.8
AK Gas	30929978	30224499	31302680	34012137	33912542	30954071	31889318	5.2
NW Gas	20841011	23026251	25038783	28016709	28319179	25400418	25107058	11.5
8015Gas	40886187	39708815	40629525	44031875	43487631	39601265	41390883	4.6
8015mod	31595879	33219498	35317108	38907279	38900763	34861835	35467060	8.4

<- Indicates %RSD outside limits
Surrogate areas are not included in RF calculation.
Surrogate calibration is from BETX curve files.

Quant Ranges : WA Gas Toluene - nC12
 AK Gas nC6 - nC10
 NW Gas Toluene - Naphthalene
 8015 Gas 2-Methylpentane - 1,2,4-Trimethylbenzene
 8015 mod nC7 - nC12

Gas Cal. Files	Analysis Time
V203271922G.D	27-MAR-2019 14:53
V203271921G.D	27-MAR-2019 14:33
V203271920G.D	27-MAR-2019 14:13
V203271919G.D	27-MAR-2019 13:52
V203271918G.D	27-MAR-2019 13:32
V203271917G.D	27-MAR-2019 13:12

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-JUL-2019 12:38
 End Cal Date : 18-JUL-2019 15:05
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt2.i\20190718a.b\8260071819.m
 Last Edit : 19-Jul-2019 08:35 lanih

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						or R^2
81 1,2-Dibromo 3-Chloropropane	++++ 78995	694 158889	1351	2781	17223	37421	LINR	0.000e+000	0.13219			0.99898
83 Hexachloro 1,3-Butadiene	++++ 0.20047	0.23673 0.15794	0.23465	0.24585	0.24175	0.22871	AVRG		0.22087			14.24343
84 1,2,4-Trichlorobenzene	++++ 0.85123	0.82351 0.75698	0.81025	0.84533	0.84193	0.84613	AVRG		0.82505			4.04434
85 Naphthalene	++++ 2.19361	2.03072 1.93308	2.07376	2.10586	2.18390	2.19944	AVRG		2.10291			4.71614
86 1,2,3-Trichlorobenzene	++++ 0.75468	0.76818 0.67333	0.72706	0.74858	0.74346	0.74896	AVRG		0.73775			4.19690
27 Dibromofluoromethane	0.50154 0.52774	0.51343 0.52253	0.50893	0.51608	0.52119	0.52354	AVRG		0.51687			1.67365
33 d4-1,2-Dichloroethane	0.62273 0.62244	0.62839 0.62400	0.62570	0.63361	0.62420	0.62572	AVRG		0.62585			0.58627

ARI Labs, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 18-JUL-2019 12:38
 End Cal Date : 18-JUL-2019 15:05
 Quant Method : ISTD
 Origin : Force
 Target Version : 4.14
 Integrator : HP RTE
 Method file : \\target\share\chem1\nt2.i\20190718a.b\8260071819.m
 Last Edit : 19-Jul-2019 08:35 lanih

Compound	0.200000	0.500000	1.0000	2.0000	10.0000	20.0000	Curve	b	Coefficients	m1	m2	%RSD or R ²
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6						
	40.0000	80.0000										
	Level 7	Level 8										
	1.24554	1.23590	1.25118	1.25804	1.23670	1.25399						
	1.25318	1.26733				AVRG			1.25023			0.84836
\$ 62 4-Bromofluorobenzene	0.38983	0.38259	0.39435	0.39612	0.39534	0.39521						
	0.39479	0.40986				AVRG			0.39476			1.92226
\$ 79 d4-1,2-Dichlorobenzene	0.94933	0.94586	0.94051	0.93573	0.93913	0.94652						
	0.94334	0.93471				AVRG			0.94189			0.55864

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327g.b\GA032719.m
Batch File: \\target\share\chem1\nt2.i\20190327g.b
Inst ID: nt2.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08		
FILENAME:	V203271917G	V203271918G	V203271919G	V203271920G	V203271921G	V203271922G	V203271923G	V203271924G		
INJ. DATE:	27-MAR-2019	27-MAR-2019	27-MAR-2019	27-MAR-2019	27-MAR-2019	27-MAR-2019	27-MAR-2019	27-MAR-2019		
INJ. TIME:	13:12	13:32	13:52	14:13	14:33	14:53	15:13	15:34		
Compound	RT01	RT02	RT03	RT04	RT05	RT06	EXPEC RT	RT WINDOW	AVG RT	STD DEV
5 2-Methylpentane	++++	++++	++++	++++	++++	++++	++++	3.136	3.086-3.186	++++
7 nC6	3.486	3.491	3.489	3.491	3.490	3.492	3.492	3.439-3.539	3.490	0.002
10 Dibromofluorobenzene	++++	4.872	4.876	4.878	4.877	4.879	4.876	4.826-4.926	4.877	0.003
47 nC7	5.153	5.152	5.149	5.151	5.151	5.153	5.165	5.080-5.220	5.153	0.005
37 Benzene	++++	++++	++++	++++	++++	++++	++++	5.203-5.303	++++	++++
29 Pentafluorobenzene	++++	5.261	5.259	5.255	5.261	5.256	5.256	5.208-5.308	5.258	0.002
30 d4-1,2-dichloroethane	5.281	5.279	++++	++++	++++	++++	++++	5.222-5.322	5.280	0.001
31 1,4-Difluorobenzene	5.646	5.644	5.648	5.644	5.650	5.645	5.646	5.593-5.693	5.647	0.002
3 AK101	++++	++++	++++	++++	++++	++++	1.286	0.000-4.026	++++	++++
4 8015GAS	++++	++++	++++	++++	++++	++++	3.387	0.047-6.727	++++	++++
46 8015mod	++++	++++	++++	++++	++++	++++	1.000	0.930-1.070	++++	++++
38 n-Octane	++++	++++	++++	++++	++++	++++	6.525	6.475-6.575	++++	++++
45 n-Heptane	++++	++++	++++	++++	++++	++++	5.157	5.087-5.227	++++	++++
32 d8-Toluene	6.619	6.618	6.622	6.618	6.617	6.619	6.619	6.566-6.666	6.618	0.002
12 Toluene	6.656	6.654	6.652	6.654	6.654	6.655	6.656	6.603-6.703	6.654	0.001
39 n-Nonane	++++	++++	++++	++++	++++	++++	7.662	7.612-7.712	++++	++++
33 d5-Chlorobenzene	7.702	7.707	7.704	7.706	7.706	7.708	7.708	7.655-7.755	7.706	0.002

Reviewer 1
Reviewer 2

Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190327g.b\GA032719.m

Batch File: \\target\share\chem1\nt2.i\20190327g.b

Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
40 Ethylbenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.709	7.659-7.759	+++++	+++++
41 m,p-xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	7.838	7.788-7.888	+++++	+++++
42 o-xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.142	8.092-8.192	+++++	+++++
2 WAGAS	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	8.491	6.401-10.581	+++++	+++++
34 4-Bromofluorobenzene	8.572	8.570	8.574	8.570	8.576	8.571	8.576	8.572	8.575	8.525-8.625	8.573	0.002
17 nC10-Decane	8.645	8.643	8.666	8.668	8.667	8.669	+++++	8.663	8.642	8.592-8.692	8.660	0.011
1 NWTPHG	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.673	9.143-14.203	+++++	+++++
20 1,2,4-Trimethylbenzene	9.138	9.136	9.171	9.173	9.172	9.174	+++++	9.095	9.134	9.084-9.184	9.151	0.030
35 d4-Dichlorobenzene	9.393	9.392	9.396	9.392	9.391	9.393	9.391	9.393	9.390	9.340-9.440	9.393	0.002
43 n-Undecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	9.524	9.474-9.574	+++++	+++++
36 d4-1,2-Dichlorobenzene	9.734	9.714	9.712	9.714	9.714	9.715	9.713	9.716	9.713	9.663-9.763	9.716	0.007
22 nC12-Dodecane	10.324	10.323	10.326	10.371	10.371	10.330	+++++	10.373	10.327	10.277-10.377	10.345	0.025
44 n-Tridecane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	11.075	11.025-11.125	+++++	+++++
24 Naphthalene	11.115	11.113	11.111	11.113	11.113	11.114	+++++	11.115	11.112	11.062-11.162	11.114	0.001

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Batch File: \\target\share\chem1\nt2.i\20190718sa.b
Inst ID: nt2.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08			
FILENAME:	V207181908G	V207181909G	V207181910G	V207181911G	V207181912G	V207181913G	V207181914G	V207181915G			
INJ.DATE:	18-JUL-2019	18-JUL-2019	18-JUL-2019	18-JUL-2019	18-JUL-2019	18-JUL-2019	18-JUL-2019	18-JUL-2019			
INJ.TIME:	12:38	12:59	13:20	13:41	14:02	14:23	14:44	15:05			
Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	AVG RT	STD DEV	
1 Dichlorodifluoromethan	++++	1.421	1.415	1.423	1.421	1.422	1.420	1.421	1.316-1.526	1.421	0.003
2 Chloromethane	1.591	1.592	1.585	1.575	1.585	1.586	1.579	1.579	1.480-1.690	1.584	0.006
3 Vinyl Chloride	++++	1.659	1.664	1.660	1.658	1.659	1.652	1.658	1.553-1.763	1.659	0.004
4 Bromomethane	1.907	1.902	1.901	1.897	1.902	1.903	1.895	1.896	1.797-2.007	1.900	0.004
5 Chloroethane	2.017	2.024	2.023	2.001	2.029	2.031	1.998	1.999	1.924-2.134	2.015	0.014
6 Trichlorofluoromethane	++++	2.151	2.145	2.141	2.139	2.140	2.132	2.121	2.034-2.244	2.138	0.010
7 1,1-Dichloroethene	++++	2.632	2.625	2.621	2.626	2.621	2.625	2.601	2.521-2.731	2.622	0.010
8 Carbon Disulfide	++++	2.644	2.644	2.633	2.644	2.645	2.643	2.638	2.539-2.749	2.642	0.004
9 1,1,2-Trichloro-1,2,2-Trifluoroethane	++++	2.668	2.662	2.676	2.668	2.669	2.668	2.650	2.563-2.773	2.666	0.008
10 Iodomethane	++++	2.772	2.765	2.767	2.778	2.773	2.765	2.759	2.673-2.883	2.768	0.006
11 Bromoethane	++++	2.863	2.905	2.901	2.918	2.901	2.899	2.905	2.812-3.023	2.899	0.017
12 Acrolein	2.978	2.985	2.978	2.980	2.985	2.980	2.978	2.984	2.879-3.090	2.981	0.003
13 Methylene Chloride	3.233	3.234	3.234	3.230	3.234	3.229	3.276	3.270	3.129-3.339	3.243	0.019
14 Acetone	3.337	3.332	3.331	3.333	3.331	3.332	3.331	3.337	3.226-3.436	3.333	0.003
15 Trans-1,2-Dichloroethene	++++	3.398	3.392	3.388	3.392	3.393	3.391	3.386	3.287-3.497	3.392	0.004
16 n-hexane	++++	++++	++++	++++	++++	++++	++++	++++	3.384-3.594	++++	++++
17 Methyl tert butyl ether	++++	3.563	3.556	3.558	3.556	3.558	3.556	3.562	3.451-3.661	3.558	0.003

Reviewer 1
Reviewer 2

Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m

Batch File: \\target\share\chem1\nt2.i\20190718sa.b

Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT1	RT WINDOW	AVG RT	STD DEV
18 1,1-Dichloroethane	++++	4.007	4.006	4.002	4.007	4.002	4.000	4.000	4.007	3.901-4.112	4.003	0.003
19 Acrylonitrile	++++	4.080	4.085	4.081	4.086	4.081	4.085	4.086	4.086	3.981-4.191	4.083	0.003
21 Allyl Chloride	++++	++++	++++	++++	++++	++++	++++	++++	4.560	4.455-4.665	++++	++++
20 Vinyl Acetate	++++	4.274	4.274	4.276	4.274	4.275	4.274	4.274	4.274	4.169-4.379	4.275	0.001
22 Cis-1,2-Dichloroethene	++++	4.487	4.487	4.489	4.487	4.488	4.487	4.481	4.487	4.382-4.592	4.487	0.003
23 2,2-Dichloropropane	++++	4.566	4.572	4.568	4.572	4.573	4.572	4.566	4.572	4.467-4.677	4.570	0.003
24 Bromochloromethane	++++	4.652	4.651	4.647	4.651	4.653	4.651	4.645	4.651	4.546-4.756	4.650	0.003
25 Chloroform	++++	4.725	4.724	4.726	4.724	4.726	4.724	4.724	4.724	4.619-4.829	4.725	0.001
26 Carbon Tetrachloride	++++	4.810	4.809	4.805	4.810	4.811	4.809	4.803	4.810	4.697-4.922	4.808	0.003
27 Dibromofluoromethane	4.870	4.871	4.870	4.872	4.870	4.872	4.870	4.870	4.870	4.765-4.975	4.871	0.001
28 1,1,1-Trichloroethane	++++	4.871	4.870	4.866	4.870	4.872	4.870	4.864	4.870	4.765-4.975	4.869	0.003
30 1,1-Dichloropropene	++++	4.968	4.968	4.963	4.968	4.969	4.967	4.968	4.968	4.855-5.081	4.967	0.002
29 2-Butanone	4.998	4.998	4.998	5.000	4.998	4.993	4.998	4.998	4.998	4.893-5.103	4.998	0.002
31 Benzene	++++	5.163	5.162	5.164	5.162	5.164	5.162	5.162	5.162	5.050-5.275	5.163	0.001
* 32 Pentafluorobenzene	5.253	5.254	5.253	5.249	5.254	5.249	5.253	5.247	5.254	5.149-5.359	5.252	0.003
33 d4-1,2-Dichloroethane	5.278	5.278	5.278	5.274	5.278	5.279	5.277	5.278	5.278	5.173-5.383	5.277	0.002
35 Methyl Methacrylate	++++	++++	++++	++++	++++	++++	++++	++++	5.693	5.580-5.806	++++	++++
34 1,2-Dichloroethane	++++	5.327	5.326	5.328	5.327	5.328	5.326	5.327	5.327	5.214-5.439	5.327	0.001
36 Trichloroethene	++++	5.607	5.606	5.608	5.607	5.608	5.606	5.606	5.607	5.494-5.719	5.607	0.001
* 37 1,4-Difluorobenzene	5.643	5.643	5.643	5.639	5.643	5.644	5.642	5.643	5.643	5.530-5.756	5.642	0.002
38 Dibromomethane	++++	5.917	5.917	5.912	5.917	5.918	5.916	5.917	5.917	5.804-6.030	5.916	0.002
39 1,2-Dichloropropane	++++	5.990	5.990	5.991	5.990	5.991	5.989	5.990	5.990	5.877-6.103	5.990	0.001

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Batch File: \\target\share\chem1\nt2.i\20190718sa.b
Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT1	RT WINDOW	AVG RT	STD DEV
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
40 Bromodichloromethane	+++++	6.045	6.038	6.040	6.038	6.040	6.038	6.038	6.038	5.926-6.151	6.040	0.002
173 2-Pentanone	6.275	6.276	6.275	6.277	6.276	6.277	6.275	6.276	6.276	6.163-6.389	6.276	0.001
42 Cis 1,3-dichloropropen	+++++	6.489	6.488	6.490	6.489	6.490	6.488	6.489	6.489	6.376-6.601	6.489	0.001
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
43 d8-Toluene	6.616	6.617	6.616	6.612	6.616	6.617	6.616	6.616	6.616	6.503-6.729	6.616	0.002
41 2-Chloroethyl Vinyl Et	+++++	6.452	6.452	6.454	6.452	6.453	6.451	6.452	6.452	6.339-6.565	6.452	0.001
44 Toluene	+++++	6.647	6.653	6.648	6.653	6.654	6.652	6.653	6.653	6.540-6.766	6.651	0.003
45 4-Methyl-2-Pentanone	6.932	6.927	6.932	6.928	6.927	6.928	6.932	6.933	6.927	6.814-7.039	6.930	0.003
46 Tetrachloroethene	+++++	6.915	6.914	6.916	6.914	6.916	6.914	6.914	6.914	6.760-7.068	6.915	0.001
47 Trans 1,3-Dichloroprop	6.950	6.951	6.951	6.947	6.951	6.952	6.950	6.951	6.951	6.838-7.064	6.950	0.002
48 1,1,2-Trichloroethane	+++++	7.061	7.060	7.062	7.060	7.062	7.060	7.060	7.060	6.948-7.173	7.061	0.001
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
49 Chlorodibromomethane	+++++	7.182	7.182	7.184	7.182	7.183	7.181	7.182	7.182	7.028-7.336	7.182	0.001
50 1,3-Dichloropropane	+++++	7.249	7.249	7.251	7.249	7.250	7.248	7.249	7.249	7.095-7.403	7.249	0.001
51 1,2-Dibromoethane	+++++	7.347	7.346	7.348	7.346	7.348	7.346	7.346	7.346	7.233-7.459	7.347	0.001
52 2-Hexanone	7.510	7.511	7.510	7.512	7.511	7.512	7.510	7.511	7.511	7.357-7.665	7.511	0.001
* 53 d5-Chlorobenzene	7.699	7.699	7.699	7.701	7.699	7.700	7.705	7.705	7.699	7.545-7.853	7.701	0.003
54 Chlorobenzene	+++++	7.712	7.711	7.713	7.711	7.713	7.717	7.717	7.717	7.557-7.865	7.713	0.003
55 Ethyl Benzene	7.833	7.730	7.729	7.731	7.730	7.731	7.735	7.736	7.730	7.575-7.883	7.744	0.036
----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----												
56 1,1,1,2-Tetrachloroeth	+++++	7.760	7.760	7.762	7.760	7.761	7.759	7.760	7.760	7.606-7.914	7.760	0.001
57 m,p-xylene	7.833	7.833	7.833	7.835	7.833	7.834	7.839	7.839	7.833	7.679-7.987	7.835	0.003
58 o-Xylene	+++++	8.137	8.137	8.139	8.137	8.138	8.143	8.143	8.137	7.983-8.291	8.139	0.003
59 Styrene	+++++	8.180	8.180	8.175	8.180	8.181	8.179	8.180	8.180	8.026-8.334	8.179	0.002
60 Bromoform	+++++	+++++	8.198	8.200	8.198	8.199	8.204	8.204	8.198	8.010-8.386	8.200	0.003
61 Isopropyl Benzene	+++++	8.363	8.362	8.364	8.362	8.363	8.362	8.362	8.362	8.174-8.550	8.363	0.001
62 4-Bromofluorobenzene	8.569	8.569	8.569	8.571	8.569	8.570	8.569	8.569	8.569	8.415-8.723	8.569	0.001

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Batch File: \\target\share\chem1\nt2.i\20190718sa.b
Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
63 Bromobenzene	++++	8.648	8.648	8.644	8.648	8.643	8.648	8.648	8.648	8.460-8.836	8.647	0.002
64 N-Propyl Benzene	++++	8.661	8.660	8.662	8.660	8.662	8.666	8.666	8.660	8.473-8.848	8.662	0.003
82 Cyclohexanone	++++	++++	++++	++++	++++	++++	++++	++++	9.074	8.920-9.228	++++	++++
65 1,1,2,2-Tetrachloroeth	++++	8.715	8.721	8.717	8.721	8.716	8.721	8.721	8.721	8.533-8.909	8.719	0.003
66 2-Chloro Toluene	++++	8.776	8.776	8.778	8.776	8.777	8.775	8.782	8.776	8.588-8.964	8.777	0.002
67 1,3,5-Trimethyl Benze	++++	8.807	8.806	8.802	8.806	8.808	8.806	8.806	8.806	8.619-8.994	8.806	0.002
68 1,2,3-Trichloropropane	++++	8.819	8.818	8.820	8.819	8.820	8.818	8.825	8.819	8.631-9.006	8.820	0.002
69 Trans-1,4-Dichloro 2-B	++++	8.849	8.849	8.851	8.849	8.850	8.848	8.849	8.849	8.661-9.037	8.849	0.001
70 4-Chloro Toluene	++++	8.898	8.897	8.899	8.898	8.899	8.903	8.904	8.898	8.710-9.085	8.900	0.003
71 T-Butyl Benzene	++++	9.038	9.037	9.039	9.038	9.039	9.043	9.044	9.038	8.850-9.225	9.040	0.003
72 1,2,4-Trimethylbenzene	++++	9.093	9.092	9.092	9.092	9.093	9.092	9.092	9.092	8.904-9.280	9.092	0.002
73 S-Butyl Benzene	++++	9.172	9.171	9.171	9.171	9.173	9.171	9.171	9.171	8.983-9.359	9.171	0.002
74 4-Isopropyl Toluene	++++	9.275	9.275	9.277	9.275	9.276	9.280	9.281	9.275	9.087-9.463	9.277	0.003
75 1,3-Dichlorobenzene	++++	9.336	9.335	9.337	9.336	9.337	9.335	9.336	9.336	9.148-9.523	9.336	0.001
* 76 d4-1,4-Dichlorobenzene	9.390	9.391	9.390	9.392	9.390	9.392	9.390	9.390	9.390	9.202-9.578	9.391	0.001
77 1,4-Dichlorobenzene	++++	9.403	9.402	9.398	9.403	9.404	9.402	9.402	9.403	9.214-9.590	9.402	0.002
78 N-Butyl Benzene	++++	9.591	9.591	9.593	9.591	9.592	9.591	9.591	9.591	9.403-9.778	9.591	0.001
\$ 79 d4-1,2-Dichlorobenzene	9.712	9.713	9.713	9.708	9.713	9.714	9.712	9.713	9.713	9.525-9.900	9.712	0.002
80 1,2-Dichlorobenzene	++++	9.719	9.719	9.715	9.719	9.720	9.718	9.719	9.719	9.531-9.906	9.718	0.002
81 1,2-Dibromo 3-Chloropr	++++	10.334	10.327	10.329	10.327	10.328	10.327	10.327	10.327	10.139-10.514	10.328	0.002
83 Hexachloro 1,3-Butadie	++++	10.826	10.826	10.828	10.826	10.827	10.825	10.826	10.826	10.638-11.013	10.826	0.001
84 1,2,4-Trichlorobenzene	++++	10.851	10.850	10.852	10.850	10.852	10.850	10.850	10.850	10.662-11.038	10.851	0.001
85 Naphthalene	++++	11.106	11.106	11.108	11.106	11.107	11.111	11.112	11.106	10.918-11.293	11.108	0.003

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m

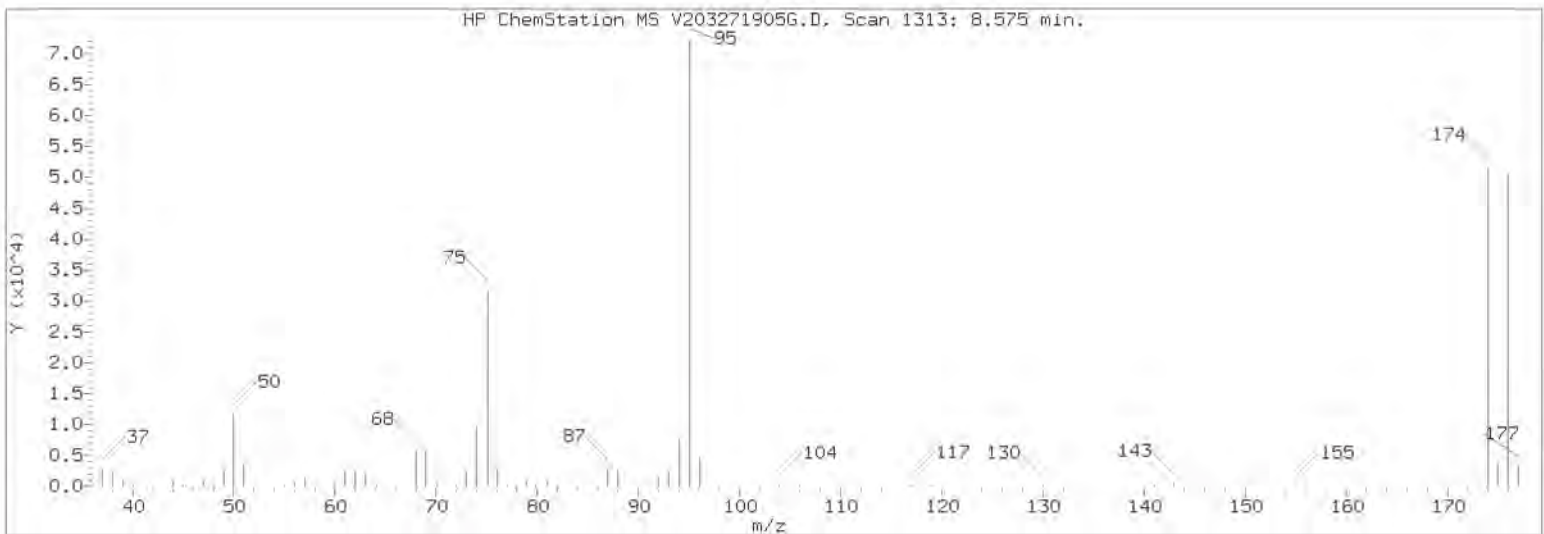
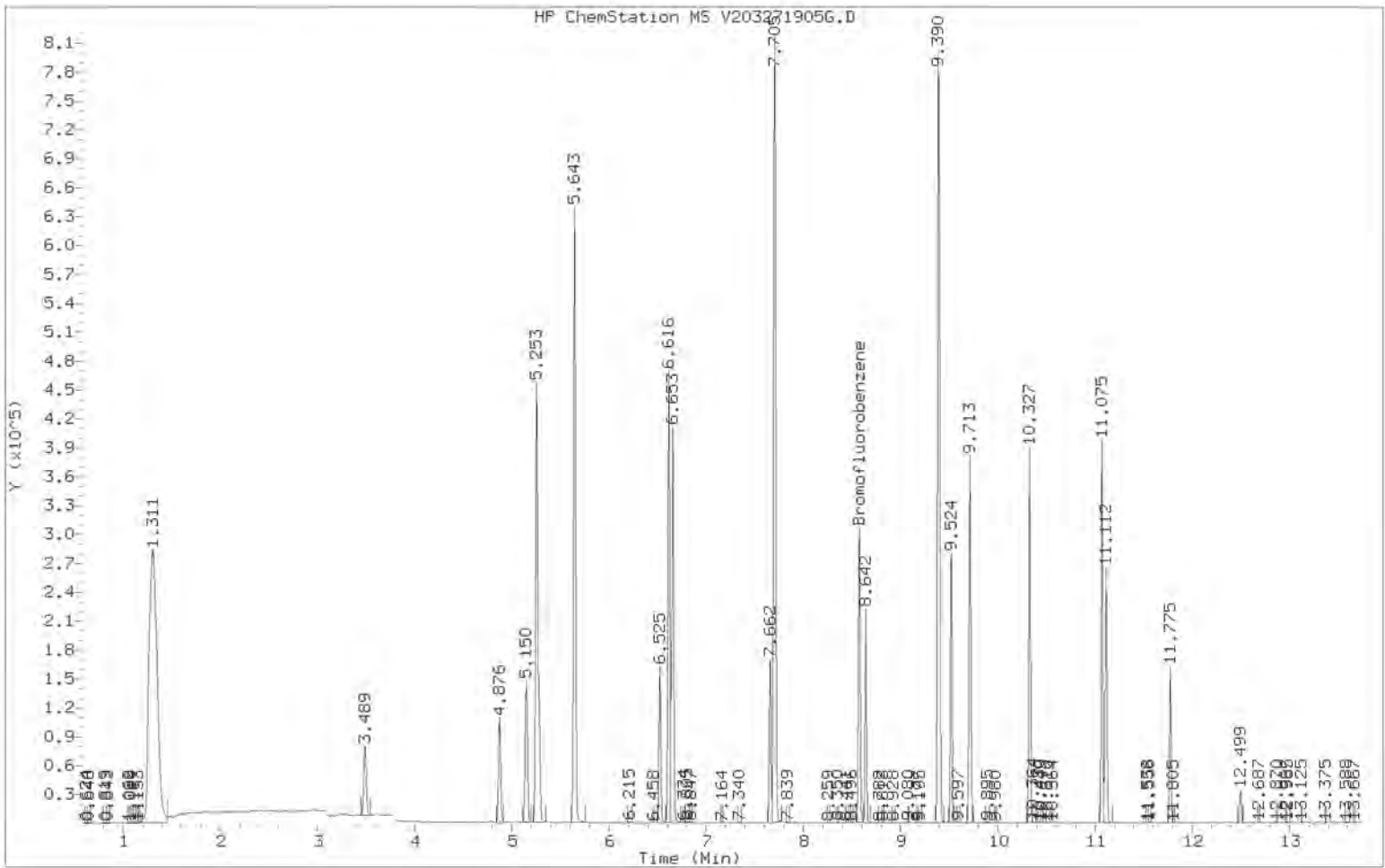
Batch File: \\target\share\chem1\nt2.i\20190718sa.b

Inst ID: nt2.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	EXPEC RT	RT WINDOW	AVG RT	STD DEV
86 1,2,3-Trichlorobenzene	++++	11.252	11.252	11.252	11.254	11.252	11.253	11.251	11.252	11.064-11.440	11.252	0.001

BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190327s.b/V203271905G.D
Method Used: \20190327s.b\bfb8260.m Inst: nt2
Injection Date: 27-MAR-2019 08:56 Operator: LH
Sample Info: SHC0426-TUN1 SHC0426-TUN1
Report Date: 03/28/2019 09:50



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.57
75	30.00 - 60.00% of mass 95	43.98
96	5.00 - 9.00% of mass 95	6.65
173	Less than 2.00% of mass 174	0.40 (0.56)
174	50.00 - 100.00% of mass 95	71.08
175	5.00 - 9.00% of mass 174	4.96 (6.97)
176	95.00 - 101.00% of mass 174	68.50 (96.37)
177	5.00 - 9.00% of mass 176	4.38 (6.40)

Data File: V203271905G.D

Spectrum: Avg. Scans 1312-1314 (8.57), Background Scan 1307

Location of Maximum: 95.00

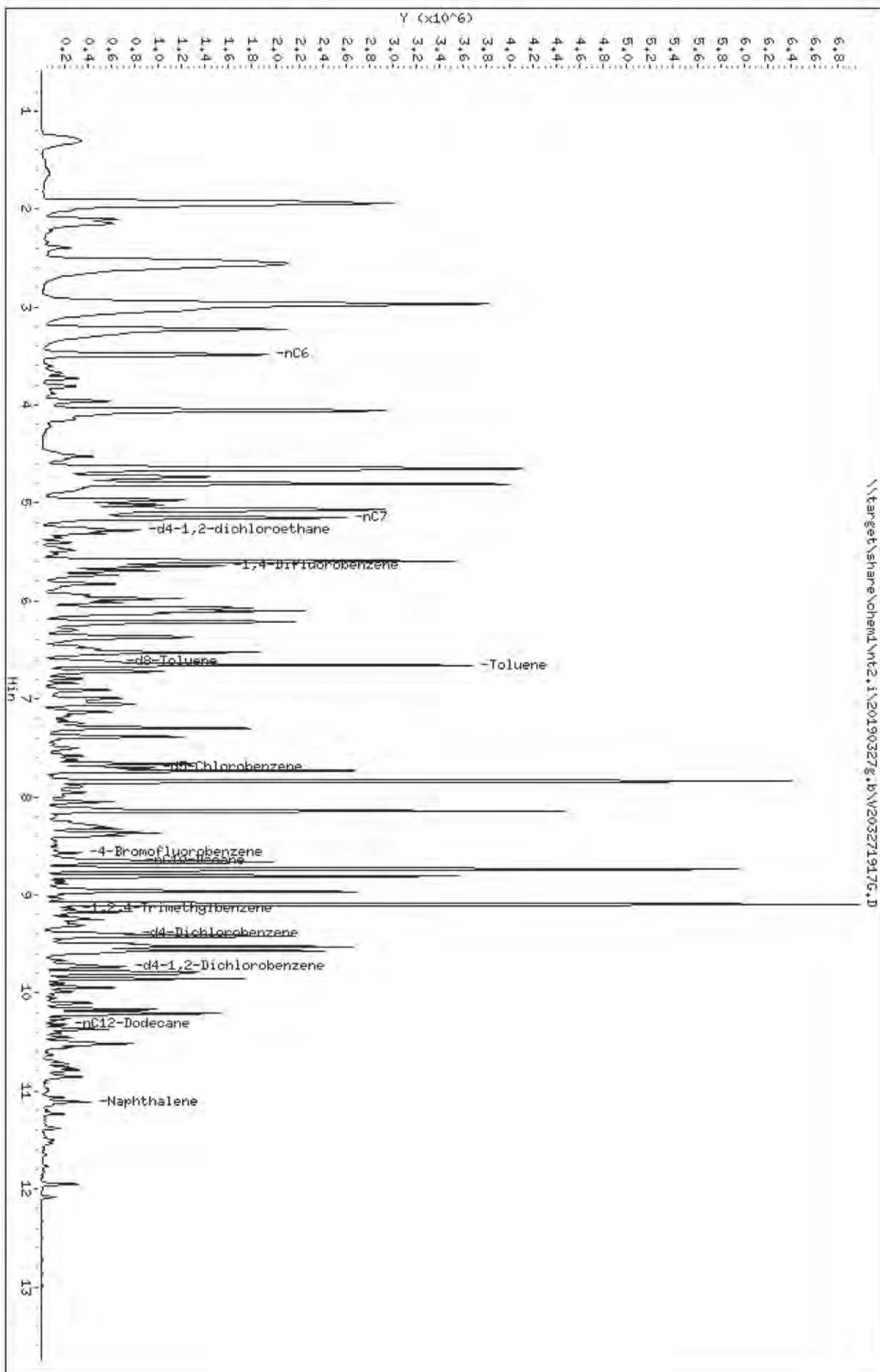
Number of points: 56

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	475	60.00	441	79.00	871	119.00	242
37.00	2396	61.00	2139	80.00	295	128.00	122
38.00	2121	62.00	2224	81.00	913	130.00	68
39.00	837	63.00	1669	82.00	64	141.00	330
40.00	34	64.00	74	87.00	2384	143.00	388
44.00	253	68.00	5228	88.00	2288	155.00	63
45.00	424	69.00	5160	92.00	1384	173.00	247
47.00	757	70.00	482	93.00	2127	174.00	44240
48.00	224	72.00	272	94.00	6239	175.00	3085
49.00	2031	73.00	2113	95.00	62240	176.00	42632
50.00	9689	74.00	8142	96.00	4138	177.00	2728
51.00	3116	75.00	27376	104.00	149		
55.00	135	76.00	2426	106.00	156		
56.00	713	77.00	356	117.00	205		
57.00	1219	78.00	197	118.00	68		

Data File: \\target\share\chemd\nt2.i\20190327g.b\203271947G.D
Date: 27-MAR-2019 13:12
Client ID:
Sample Info: SHC0426-CALE

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271917G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 13:12

ARI ID: SHC0426-CALE
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

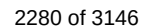
Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	120335429	5.014
8015C 2MP-TMB (3.04 to 9.23)	33333333	198006324	5.940
AK101 nC6-nC10 (3.39 to 8.54)	31889318	154770353	4.853
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	127002089	5.058
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	174309176	4.915

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.702	1387124	d5-Chlorobenzene
8.572	604076	4-Bromofluorobenzene
6.619	1077858	d8-Toluene
9.393	955607	d4-Dichlorobenzene
9.734	1561398	d4-1,2-Dichlorobenzene

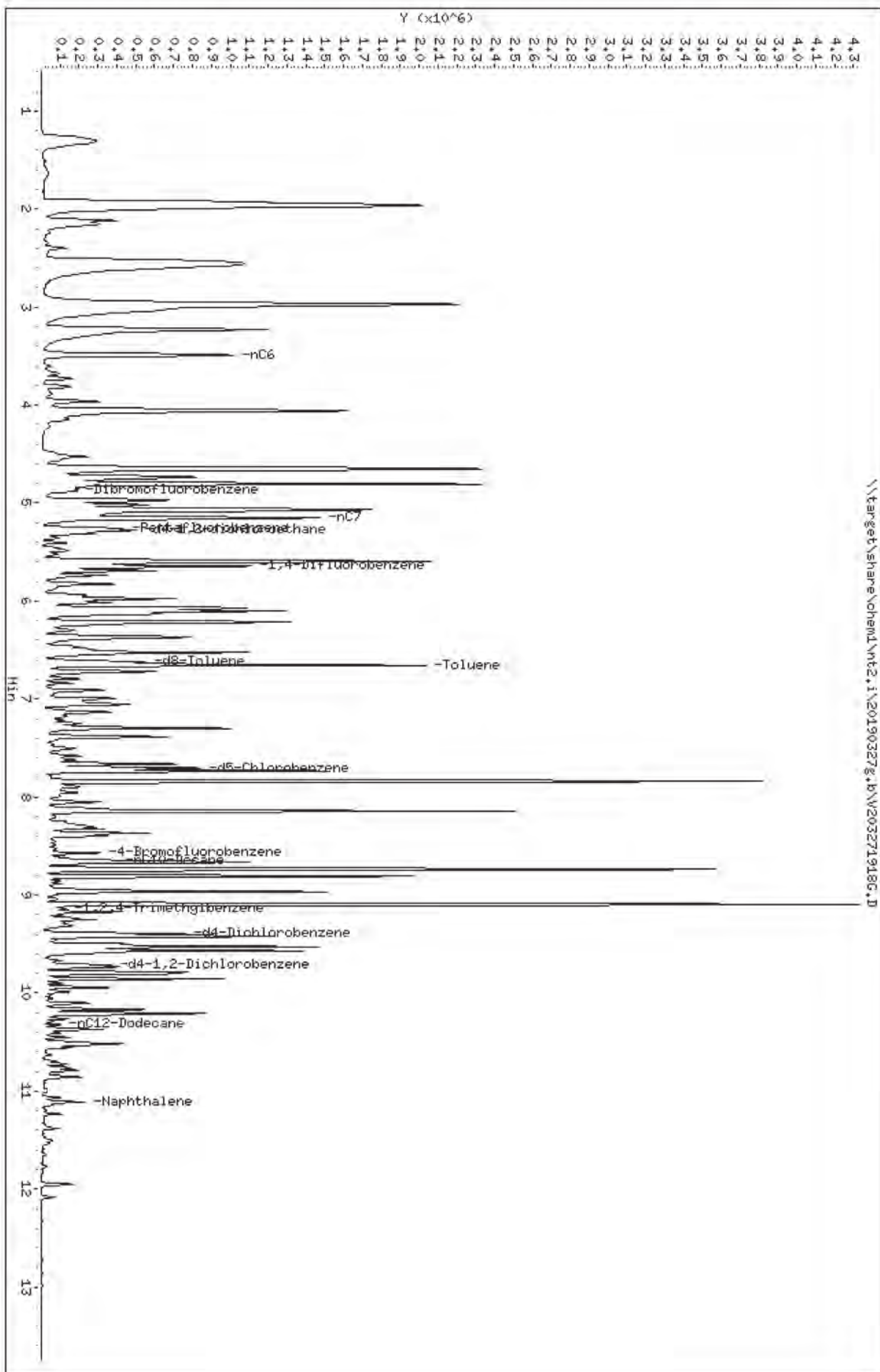
Datafile: NT2, 20190327g.b/V203271917G.D Injection: 27-MAR-2019 13:12
Lab ID:SHC0426-CALE



Data File: \\target\share\chemd\nt2.i\20190327g.b\203271918G.D
Date: 27-MAR-2019 13:32
Client ID:
Sample Info: SHC0426-CALD

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271918G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 13:32

ARI ID: SHC0426-CALD
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	67197802	2.800
8015C 2MP-TMB (3.04 to 9.23)	33333333	108719078	3.262
AK101 nC6-nC10 (3.39 to 8.54)	31889318	84781355	2.659
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	70797947	2.820
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	97251908	2.742

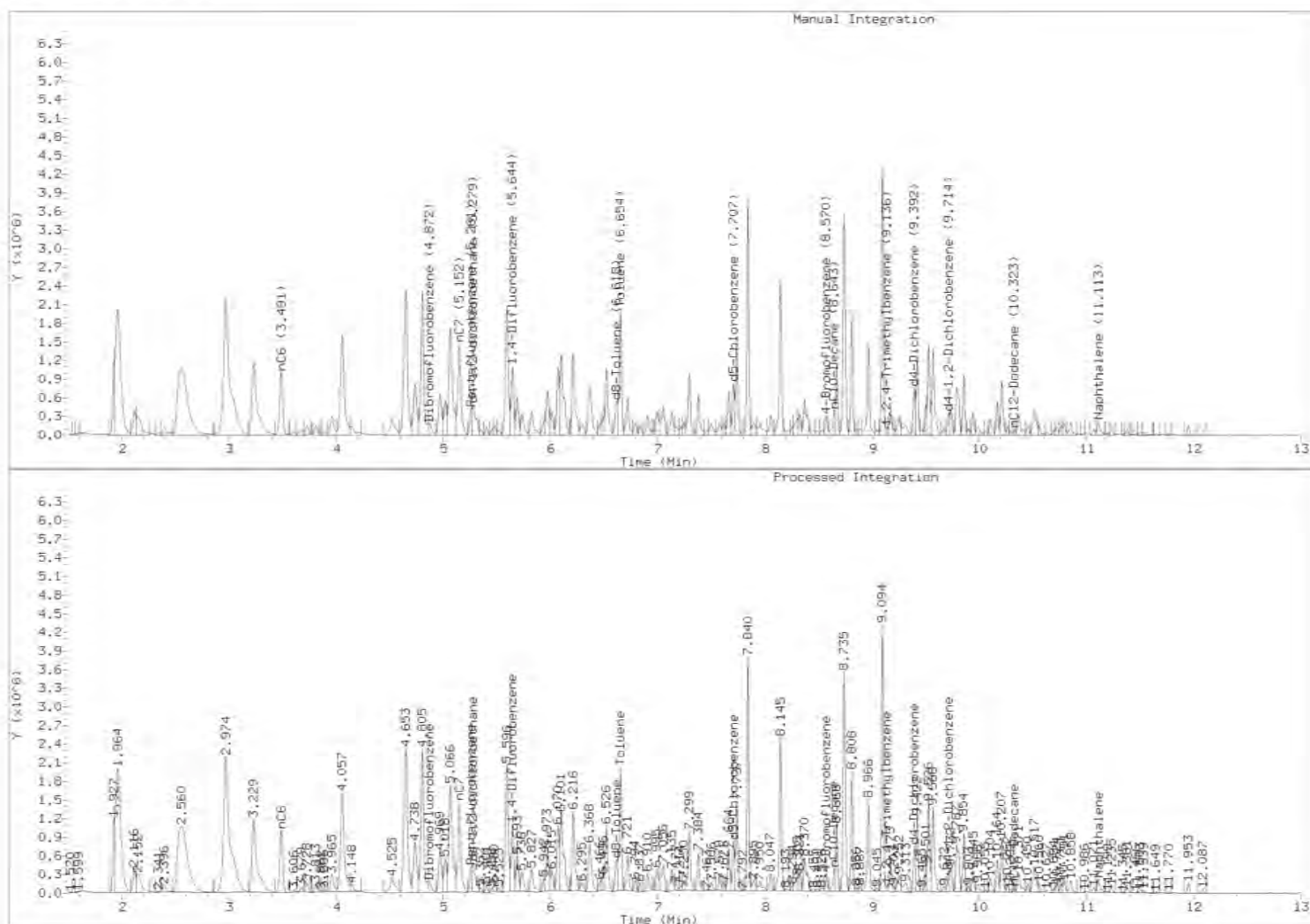
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.707	1325661	d5-Chlorobenzene
8.570	499466	4-Bromofluorobenzene
6.618	953351	d8-Toluene
9.392	1036047	d4-Dichlorobenzene
9.714	507175	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

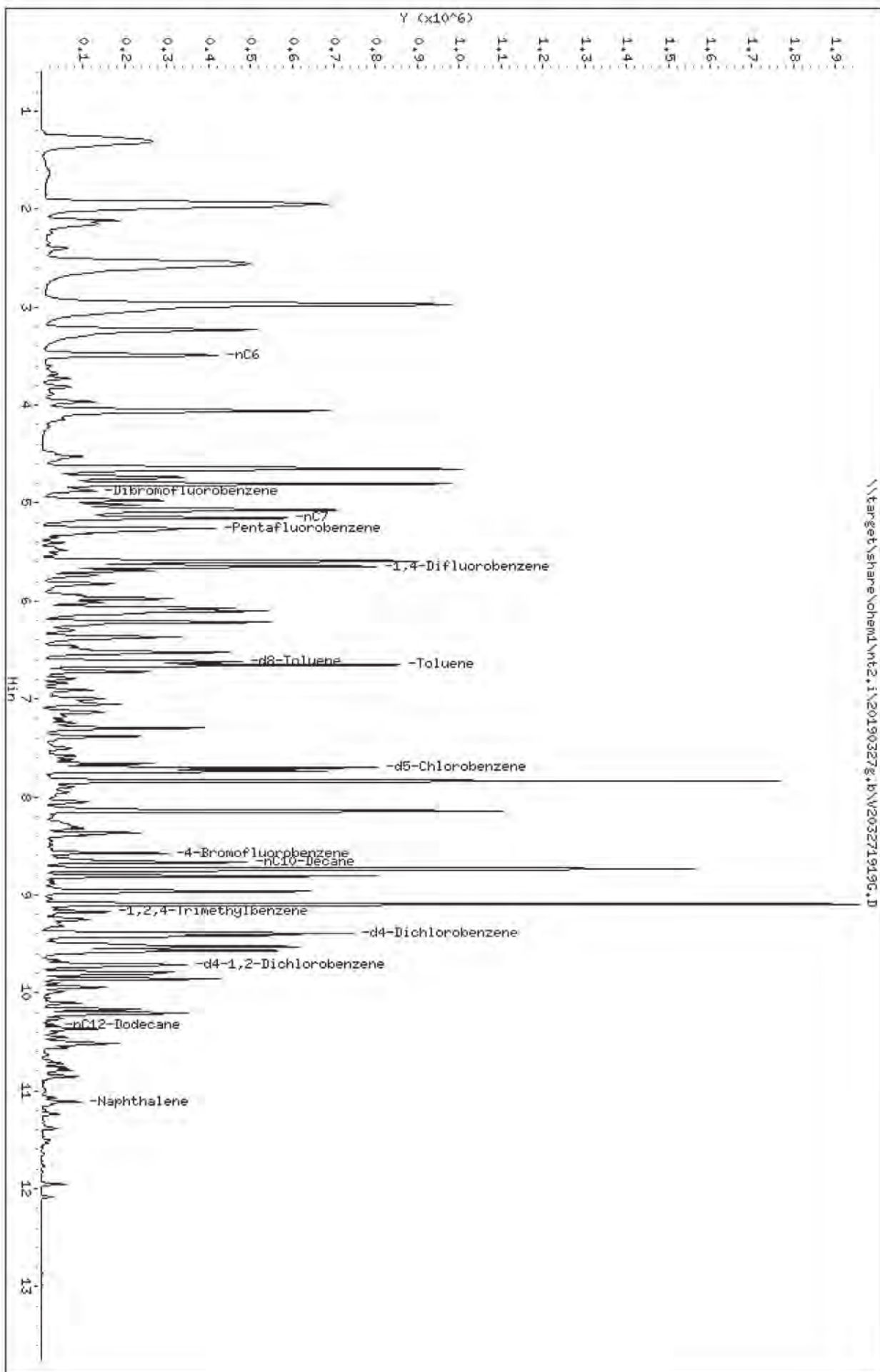
Datafile: NT2, 20190327g.b/V203271918G.D Injection: 27-MAR-2019 13:32
Lab ID:SHC0426-CALD



Data File: \\target\share\chem\nt2.i\20190327g.b\203271919G.D
Date: 27-MAR-2019 13:52
Client ID:
Sample Info: SHC0426-CALC

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271919G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 13:52

ARI ID: SHC0426-CALC
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	26660216	1.111
8015C 2MP-TMB (3.04 to 9.23)	33333333	44031875	1.321 M
AK101 nC6-nC10 (3.39 to 8.54)	31889318	34012137	1.067 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	28016709	1.116 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	38907279	1.097

* Surrogate areas are subtracted from Total Area

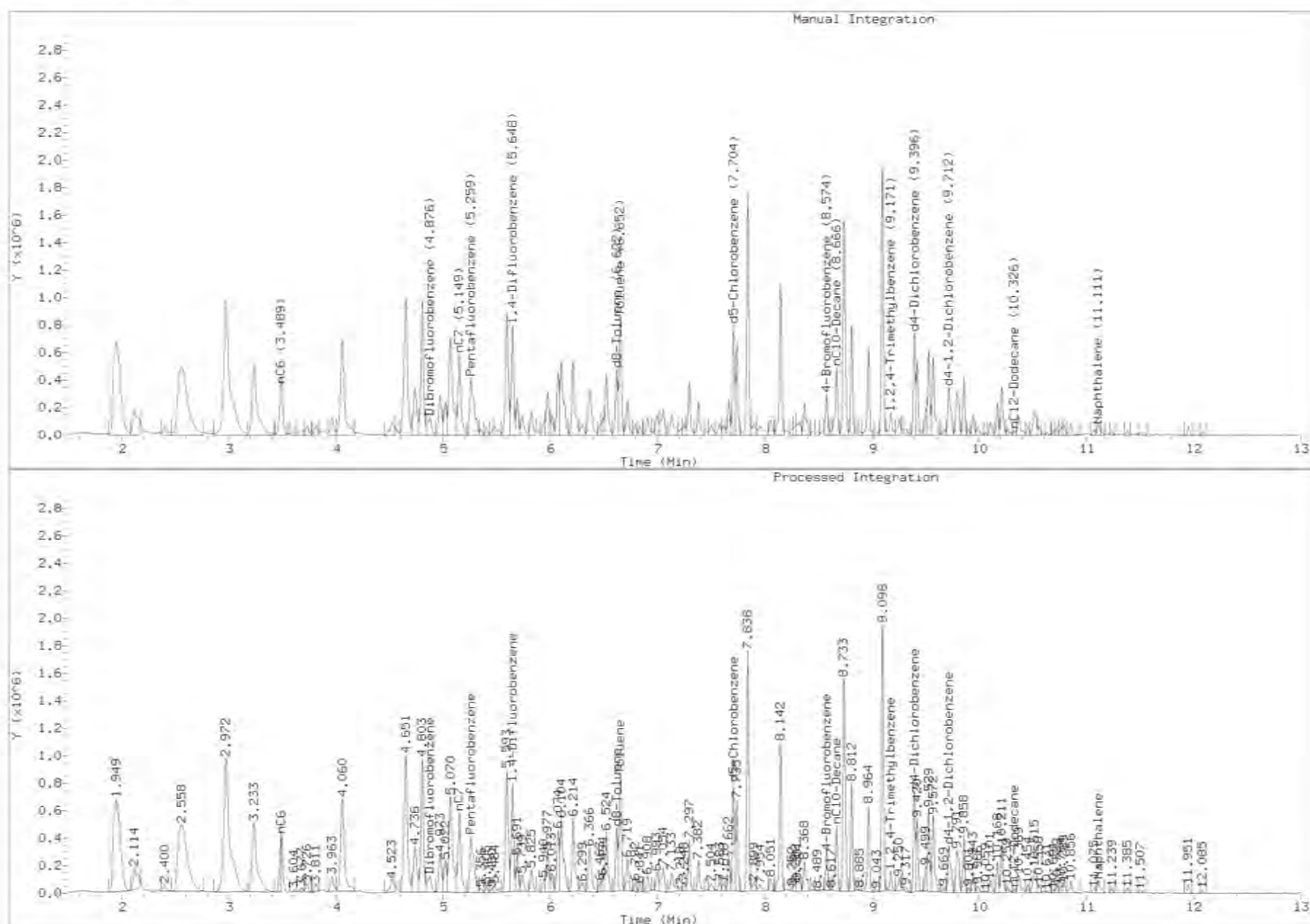
NW Gas Range Subtracted Peaks

7.704	1191341	d5-Chlorobenzene
8.574	426943	4-Bromofluorobenzene
6.622	779808	d8-Toluene
9.396	1042990	d4-Dichlorobenzene
9.712	677737	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

Datafile: NT2, 20190327g.b/V203271919G.D Injection: 27-MAR-2019 13:52

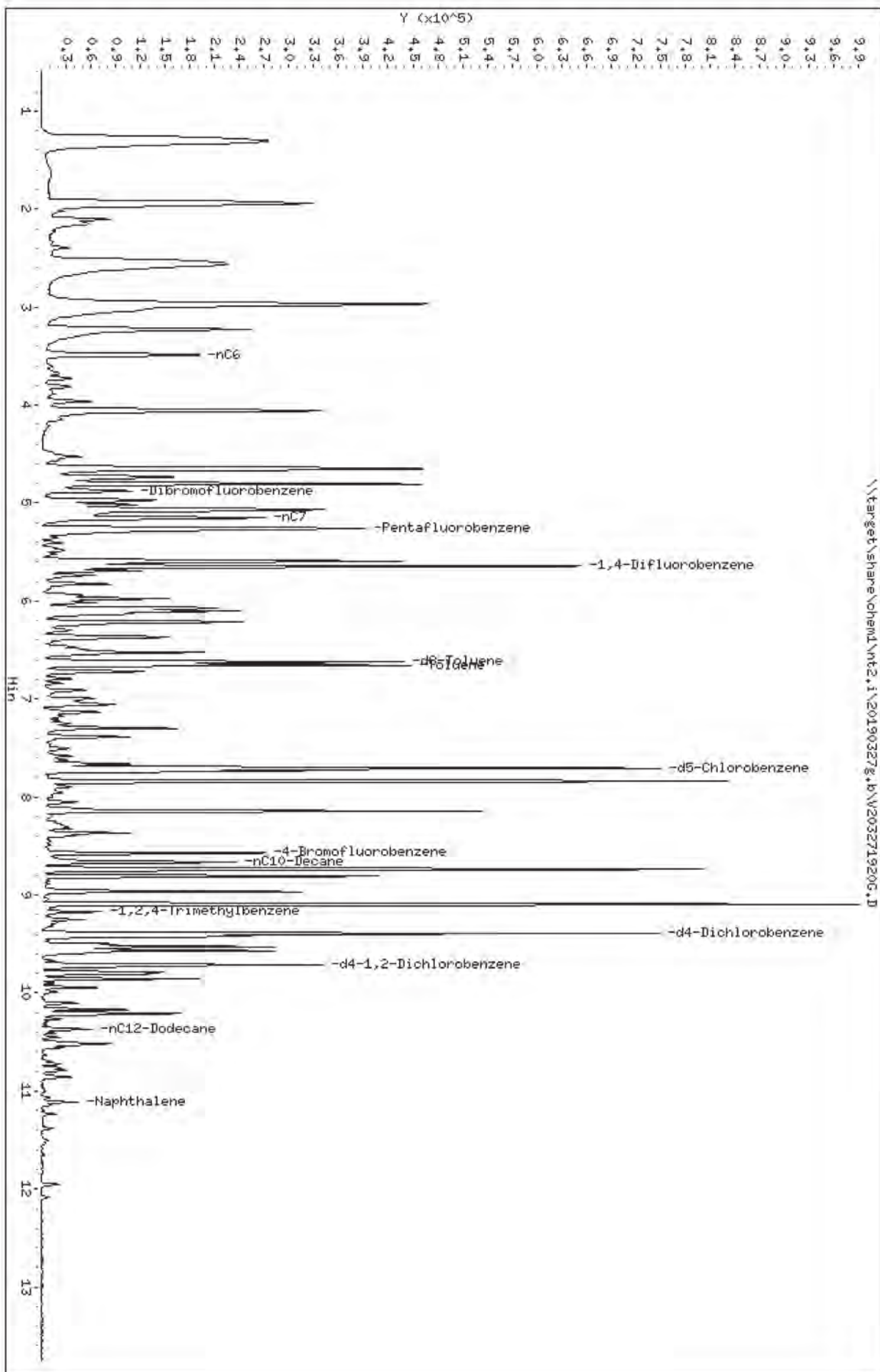
Lab ID:SHC0426-CALC



Data File: \\target\share\chemd\nt2.i\20190327g.b\203271920G.D
Date: 27-MAR-2019 14:13
Client ID:
Sample Info: SHC0426-CALB

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271920G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 14:13

ARI ID: SHC0426-CALB
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	12013453	0.501 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	20314762	0.609
AK101 nC6-nC10 (3.39 to 8.54)	31889318	15651340	0.491
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	12519392	0.499 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	17658554	0.498 M

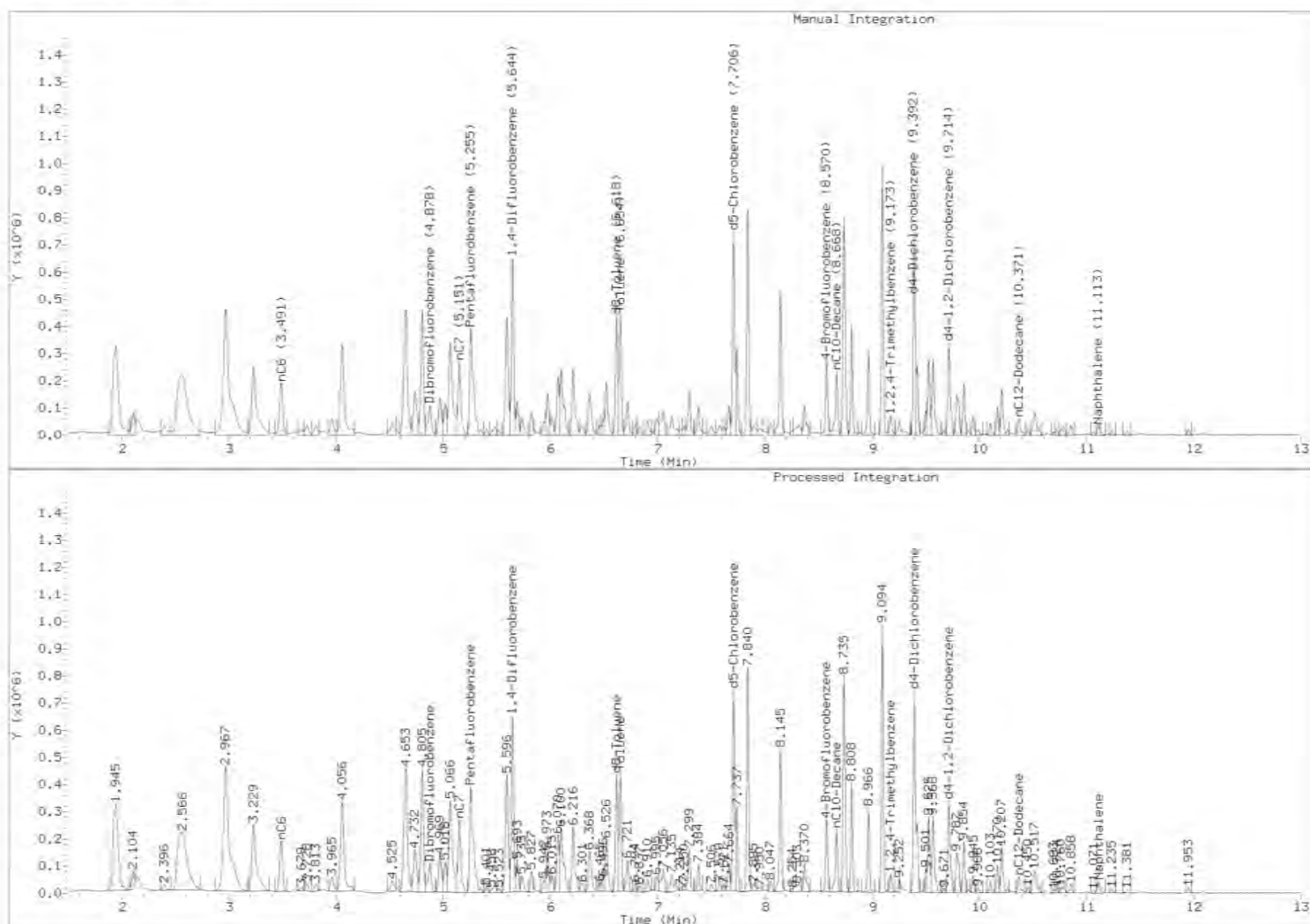
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.706	1087342	d5-Chlorobenzene
8.570	390277	4-Bromofluorobenzene
6.618	671096	d8-Toluene
9.392	993986	d4-Dichlorobenzene
9.714	530524	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

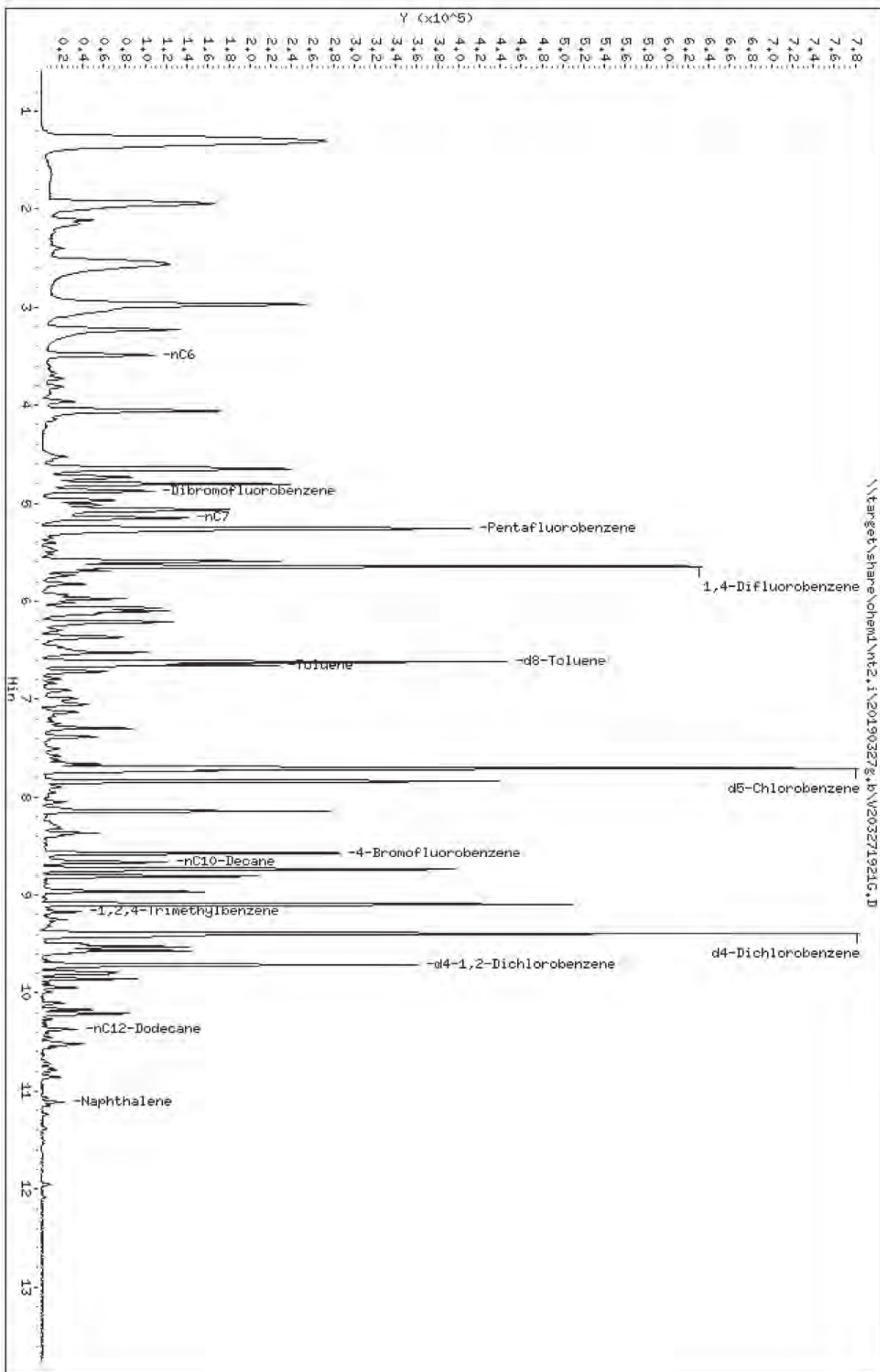
Datafile: NT2, 20190327g.b/V203271920G.D Injection: 27-MAR-2019 14:13
Lab ID:SHC0426-CALB



Data File: \\target\share\chemd\nt2.i\20190327g.b\W203271921G.D
Date: 27-MAR-2019 14:33
Client ID:
Sample Info: SHC0426-CALA

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271921G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 14:33

ARI ID: SHC0426-CALA
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	5559756	0.232 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	9927204	0.298 M
AK101 nC6-nC10 (3.39 to 8.54)	31889318	7556125	0.237 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	5756563	0.229 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	8304875	0.234 M

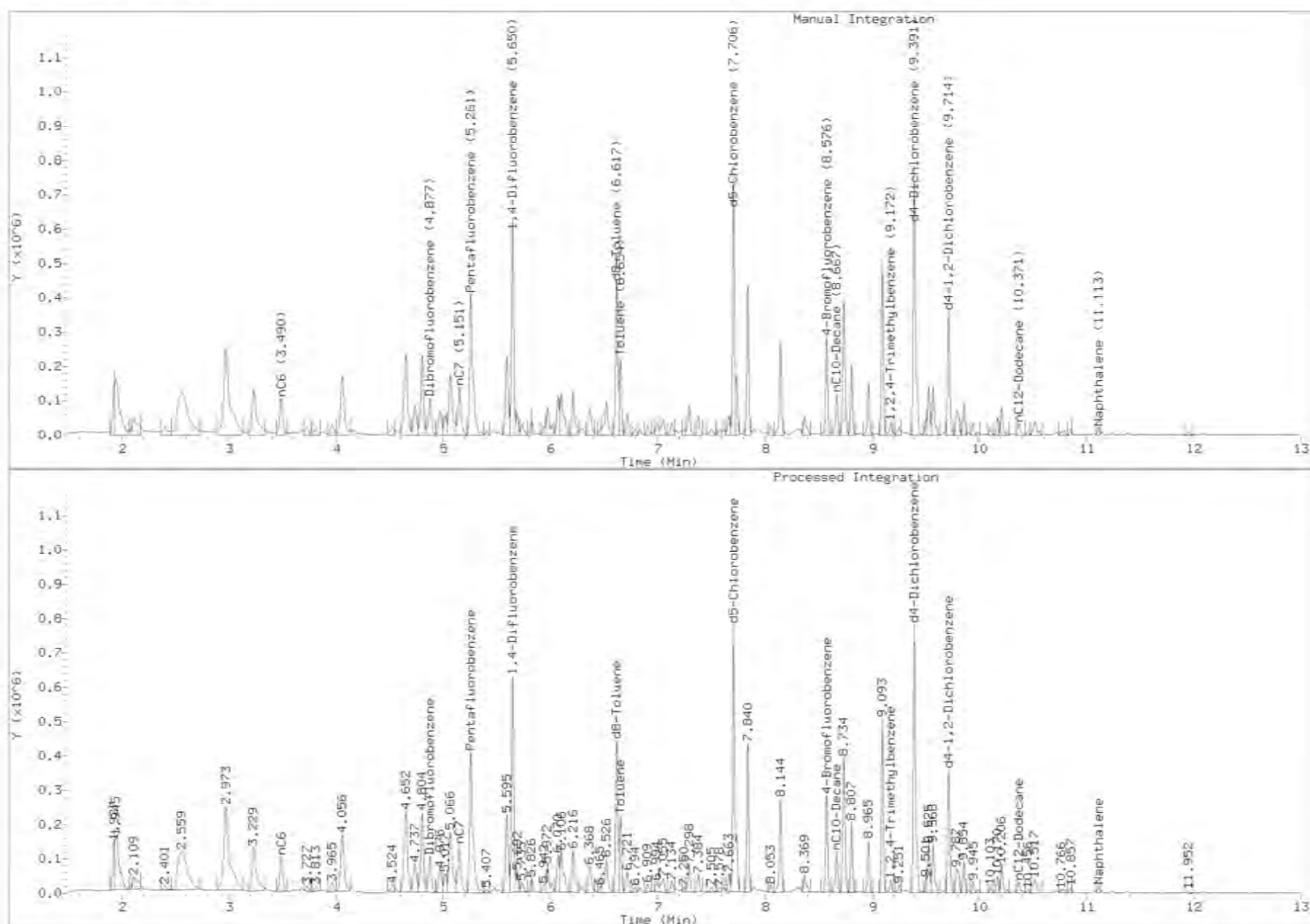
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.706	1067429	d5-Chlorobenzene
8.576	403015	4-Bromofluorobenzene
6.617	679409	d8-Toluene
9.391	1166023	d4-Dichlorobenzene
9.714	505356	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

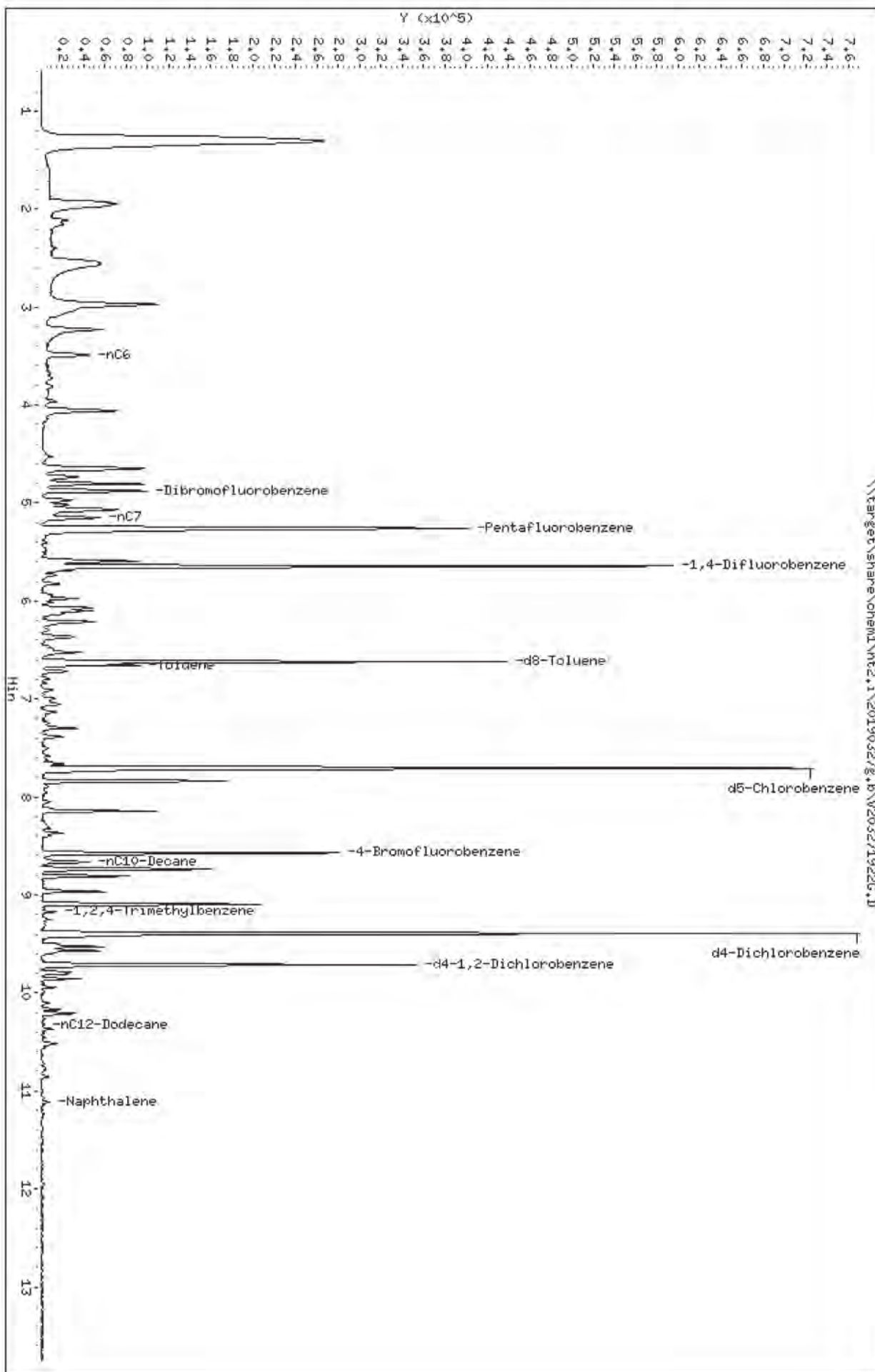
Datafile: NT2, 20190327g.b/V203271921G.D Injection: 27-MAR-2019 14:33
Lab ID:SHC0426-CALA



Data File: \\target\share\chemd\nt2.i\20190327g.b\203271922G.D
Date: 27-MAR-2019 14:53
Client ID:
Sample Info: SHC0426-CAL9

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271922G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 14:53

ARI ID: SHC0426-CAL9
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	2012494	0.084 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	4088619	0.123 M
AK101 nC6-nC10 (3.39 to 8.54)	31889318	3092998	0.097 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	2084101	0.083 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	3159588	0.089 M

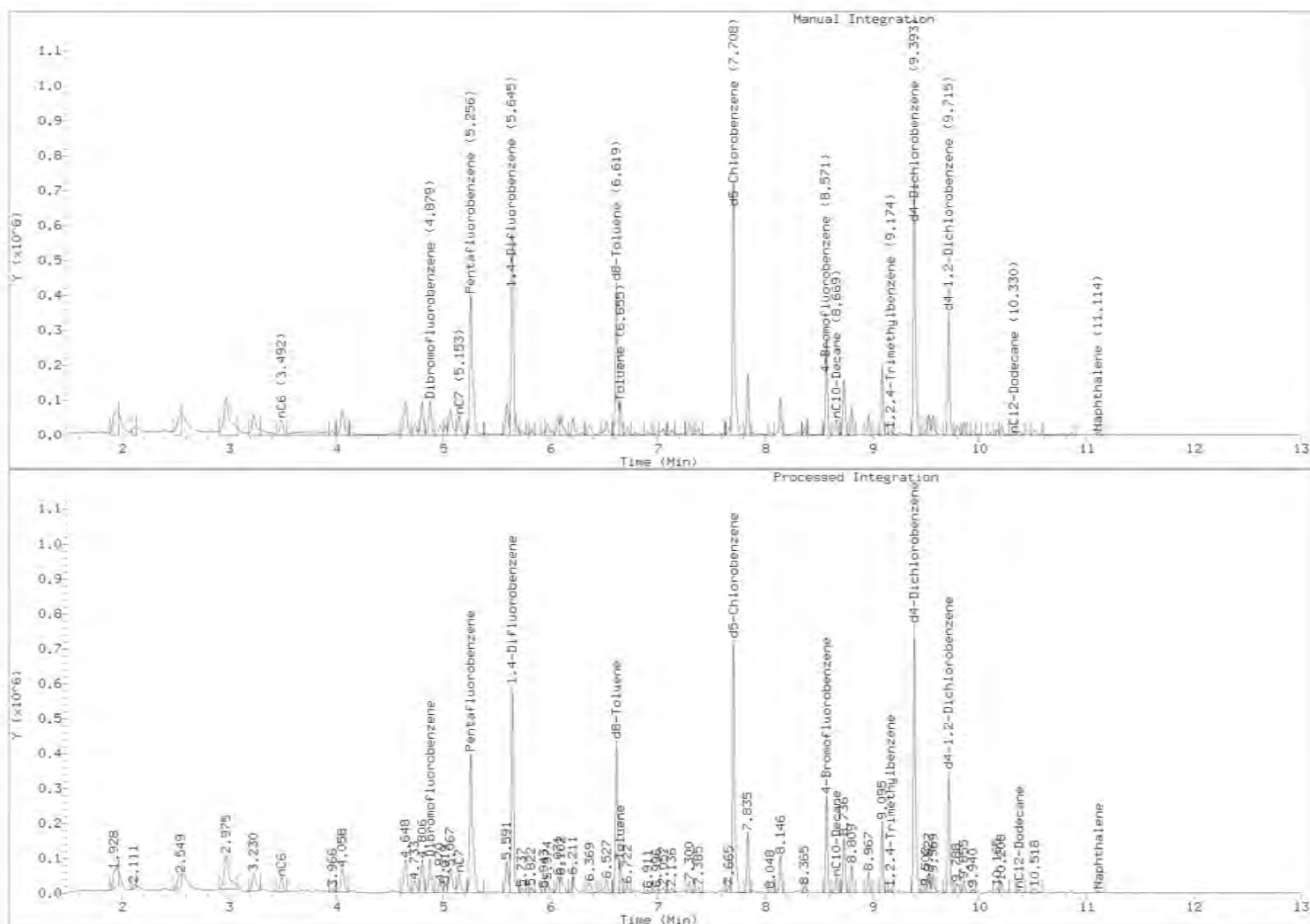
* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.708	1074108	d5-Chlorobenzene
8.571	371482	4-Bromofluorobenzene
6.619	611759	d8-Toluene
9.393	1039834	d4-Dichlorobenzene
9.715	470676	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

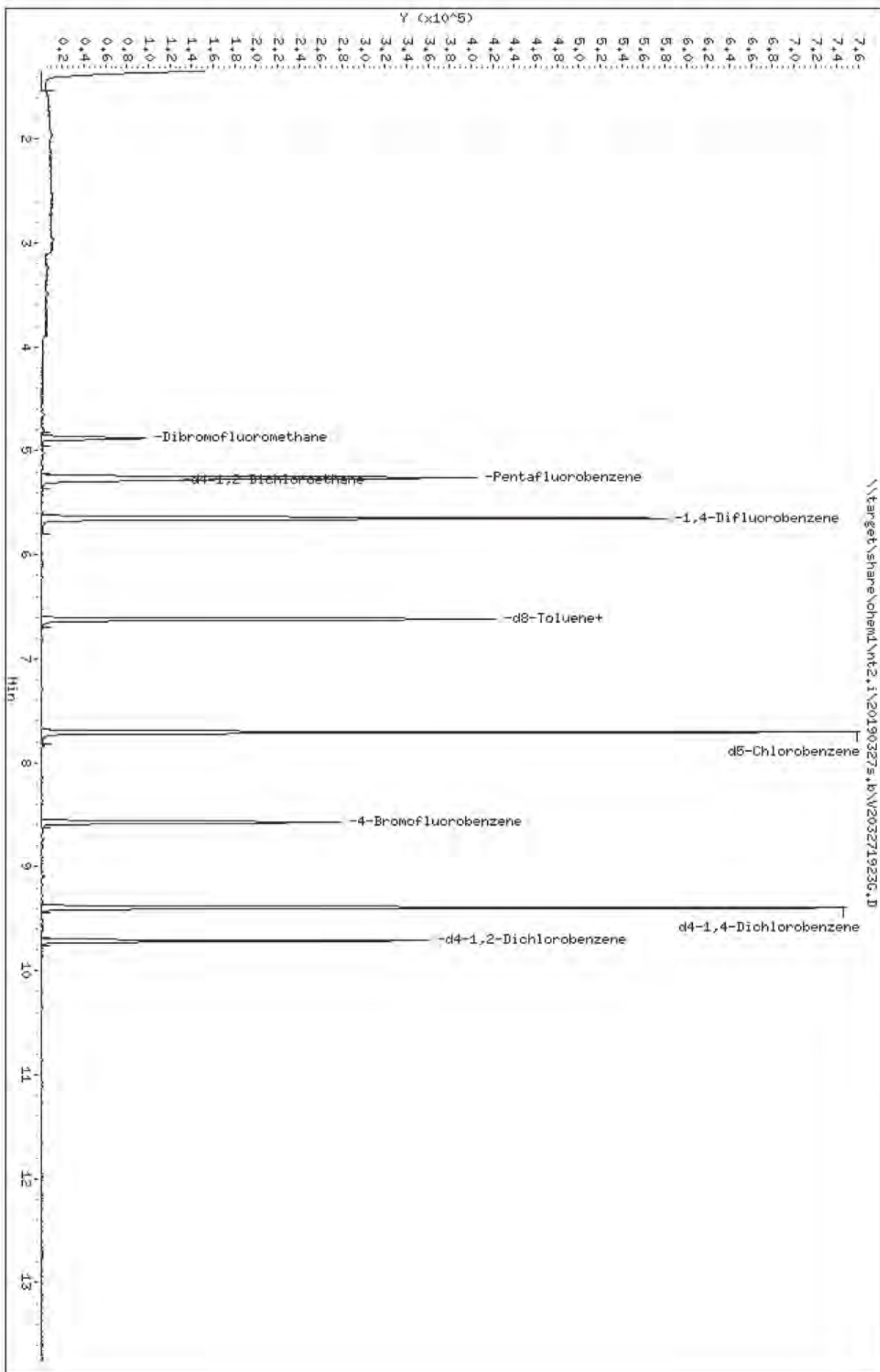
Datafile: NT2, 20190327g.b/V203271922G.D Injection: 27-MAR-2019 14:53
Lab ID:SHC0426-CAL9



Data File: \\target\share\chemd\nt2.i\20190327s.b\203271923G.D
Date: 27-MAR-2019 15:43
Client ID:
Sample Info: SHC0426-ICB1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271923G.D
Lab Smp Id: SHC0426-ICB1
Inj Date : 27-MAR-2019 15:13
Operator : LH
Smp Info : SHC0426-ICB1
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Meth Date : 27-Mar-2019 13:21 lanih
Cal Date : 27-MAR-2019 11:51
Als bottle: 25
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA20

Inst ID: nt2.i

Quant Type: ISTD

Cal File: V203271913.D

Compound Sublist: gsurr.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
	MASS					(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111	4.876	4.879	(0.927)	51582	4.78398	4.784	
* 32 Pentafluorobenzene	168	5.260	5.256	(1.000)	213097	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.284	5.286	(1.005)	59460	5.04502	5.045	
* 37 1,4-Difluorobenzene	114	5.649	5.645	(1.000)	385474	10.0000		
\$ 43 d8-Toluene	98	6.622	6.619	(1.172)	231894	4.97500	4.975	
* 53 d5-Chlorobenzene	117	7.705	7.708	(1.000)	348971	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.575	8.571	(1.113)	61485	4.89531	4.895	
* 76 d4-1,4-Dichlorobenzene	162	9.390	9.393	(1.000)	162630	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.713	9.715	(1.034)	75595	4.97499	4.975	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271923G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-ICB1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	213097	6.76
37 1,4-Difluorobenze	364397	182199	728794	385474	5.78
53 d5-Chlorobenzene	328727	164364	657454	348971	6.16
76 d4-1,4-Dichlorobe	151591	75796	303182	162630	7.28

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.08
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.07
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	-0.03
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHC0426-ICB1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.784	95.68	
\$ 33 d4-1,2-Dichloroeth	5.000	5.045	100.90	
\$ 43 d8-Toluene	5.000	4.975	99.50	
\$ 62 4-Bromofluorobenze	5.000	4.895	97.91	
\$ 79 d4-1,2-Dichloroben	5.000	4.975	99.50	

REVIEW SUMMARY FOR FILE - V203271923G.D

Lab ID: SHC0426-ICB1

nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 15:13

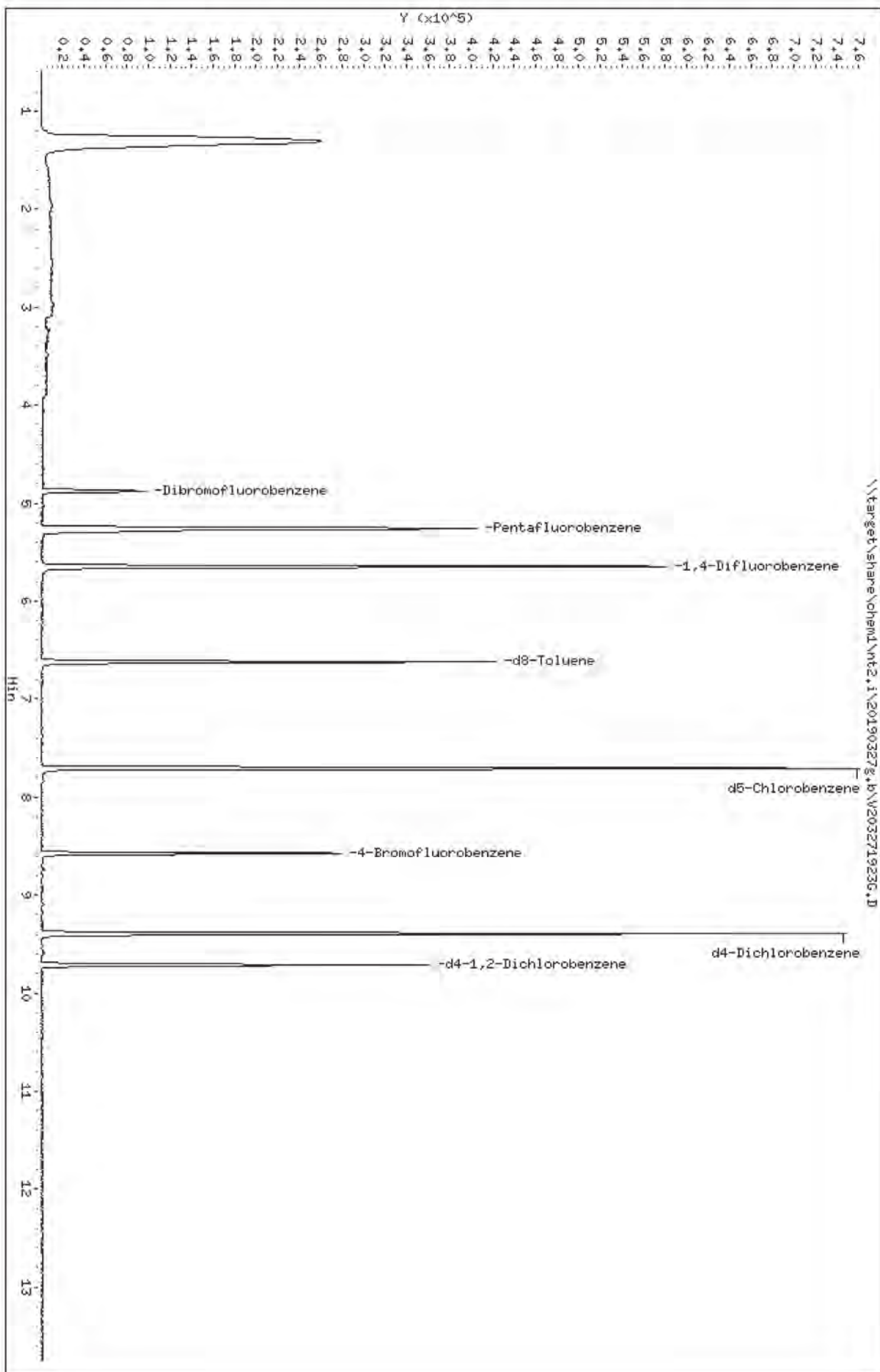
RT	CO-ELUTION COMPOUNDS
----	----------------------

-------	--

Data File: \\target\share\chemd\nt2.i\20190327g.b\W203271923G.D
Date: 27-MAR-2019 15:43
Client ID:
Sample Info: SHC0426-ICB1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271923G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.1
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 15:13

ARI ID: SHC0426-ICB1
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	2	0.000
8015C 2MP-TMB (3.04 to 9.23)	33333333	4	0.000
AK101 nC6-nC10 (3.39 to 8.54)	31889318	3	0.000
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	2	0.000
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	3	0.000

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.706	991583	d5-Chlorobenzene
8.576	365044	4-Bromofluorobenzene
6.617	587279	d8-Toluene
9.391	990530	d4-Dichlorobenzene
9.713	454939	d4-1,2-Dichlorobenzene

Data File: \\target\share\chemd\nt2.i\20190327s.b\203271924G.D

Date: 27-MAR-2019 15:34

Client ID:

Sample Info: SHC0426-SCV1

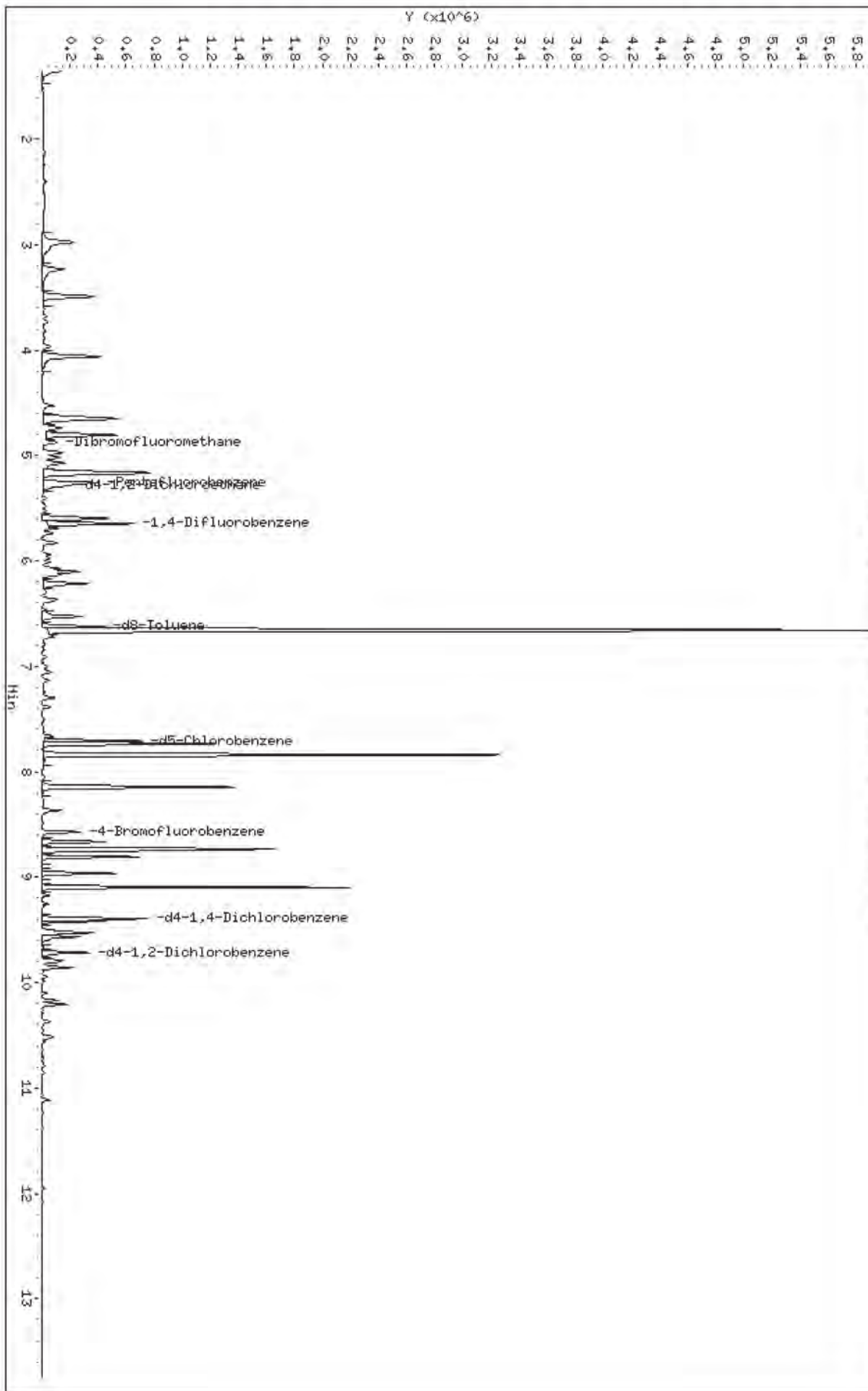
Column phase: RTXVMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18

\\target\share\chemd\nt2.i\20190327s.b\203271924G.D



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190327s.b\V203271924G.D
Lab Smp Id: SHC0426-SCV1
Inj Date : 27-MAR-2019 15:34
Operator : LH
Smp Info : SHC0426-SCV1
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Meth Date : 27-Mar-2019 13:21 lanih
Cal Date : 27-MAR-2019 11:51
Als bottle: 26
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.14
Processing Host: ORGDATA20

Inst ID: nt2.i

Quant Type: ISTD

Cal File: V203271913.D

Compound Sublist: gsurr.sub

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
	MASS					(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111	4.879	4.879	(0.928)	49595	4.79510	4.795	
* 32 Pentafluorobenzene	168	5.256	5.256	(1.000)	204413	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.286	5.286	(1.006)	57727	5.10606	5.106	
* 37 1,4-Difluorobenzene	114	5.645	5.645	(1.000)	370519	10.0000		
\$ 43 d8-Toluene	98	6.619	6.619	(1.172)	224126	5.00242	5.002	
* 53 d5-Chlorobenzene	117	7.708	7.708	(1.000)	333831	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.571	8.571	(1.112)	59645	4.96418	4.964	
* 76 d4-1,4-Dichlorobenzene	162	9.393	9.393	(1.000)	154961	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.715	9.715	(1.034)	73445	5.07271	5.073	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 27-MAR-2019
 Lab File ID: V203271924G.D Calibration Time: 10:50
 Lab Smp Id: SHC0426-SCV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
 Misc Info: 1

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	199603	99802	399206	204413	2.41
37 1,4-Difluorobenze	364397	182199	728794	370519	1.68
53 d5-Chlorobenzene	328727	164364	657454	333831	1.55
76 d4-1,4-Dichlorobe	151591	75796	303182	154961	2.22

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.26	4.76	5.76	5.26	0.01
37 1,4-Difluorobenze	5.65	5.15	6.15	5.65	0.01
53 d5-Chlorobenzene	7.71	7.21	8.21	7.71	0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHC0426-SCV1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190327s.b\82600327919.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.795	95.90	
\$ 33 d4-1,2-Dichloroeth	5.000	5.106	102.12	
\$ 43 d8-Toluene	5.000	5.002	100.05	
\$ 62 4-Bromofluorobenze	5.000	4.964	99.28	
\$ 79 d4-1,2-Dichloroben	5.000	5.073	101.45	

REVIEW SUMMARY FOR FILE - V203271924G.D

Lab ID: SHC0426-SCV1

nt2.i, 20190327s.b\82600327919.m, 27-MAR-2019 15:34

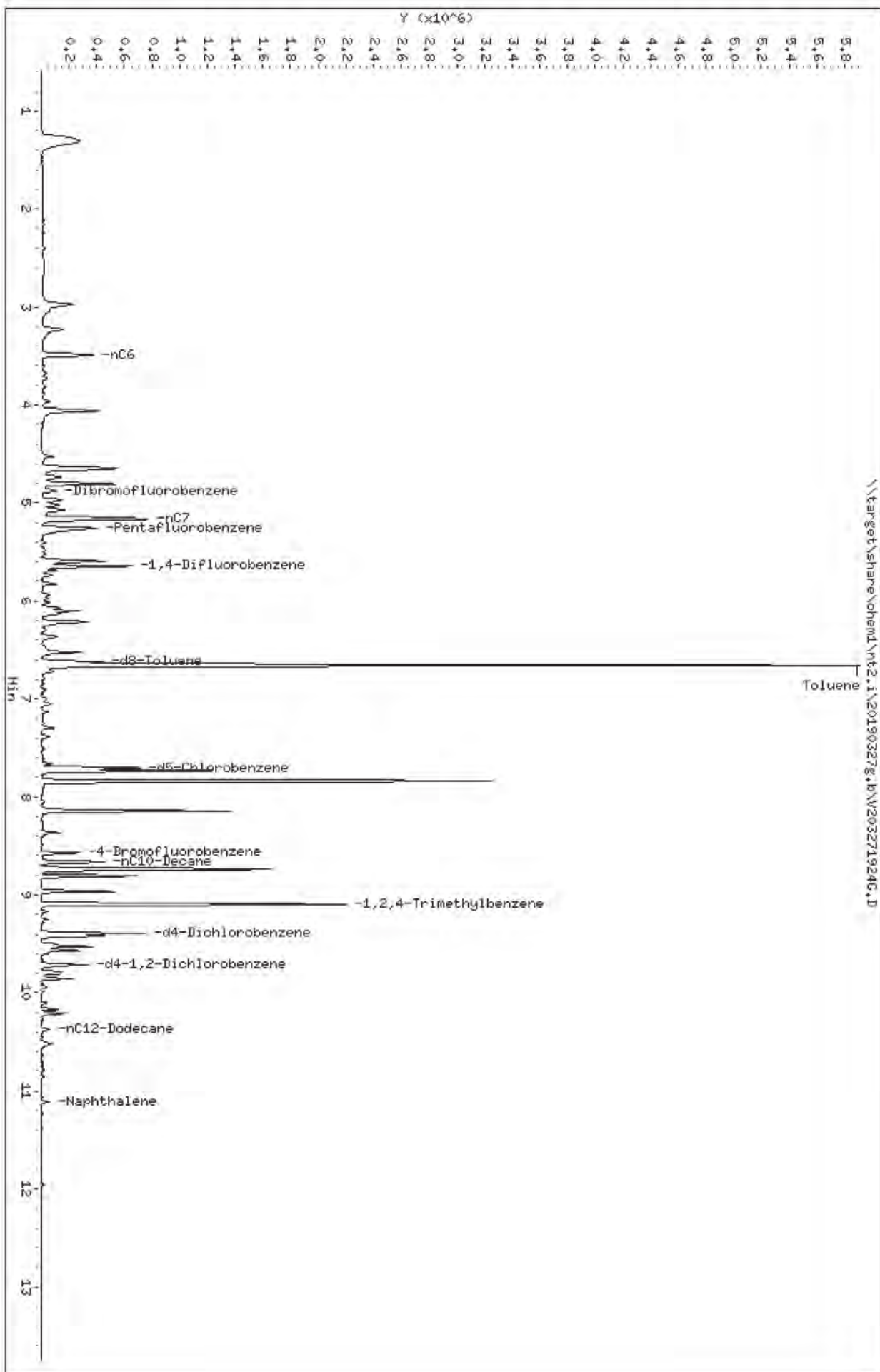
RT	CO-ELUTION COMPOUNDS
----	----------------------

-------	--

Data File: \\target\share\chemd\nt2.i\20190327g.b\203271924G.D
Date: 27-MAR-2019 15:34
Client ID:
Sample Info: SHC0426-SCV1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190327g.b/V203271924G.D
Method: \20190327g.b\GA032719.m
Instrument: nt2.i
Gas Ical Date: 3/27/19
Injection Date: 27-MAR-2019 15:34

ARI ID: SHC0426-SCV1
Client ID:
Matrix: NONE
Dilution Factor: 1.000
Operator: LH

=====

GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.43)	23999549	28619754	1.193 M
8015C 2MP-TMB (3.04 to 9.23)	33333333	37959579	1.139
AK101 nC6-nC10 (3.39 to 8.54)	31889318	29950146	0.939
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	28955880	1.153 M
mod8015 nC7-nC12 (5.05 to 10.43)	35467060	34979565	0.986 M

* Surrogate areas are subtracted from Total Area

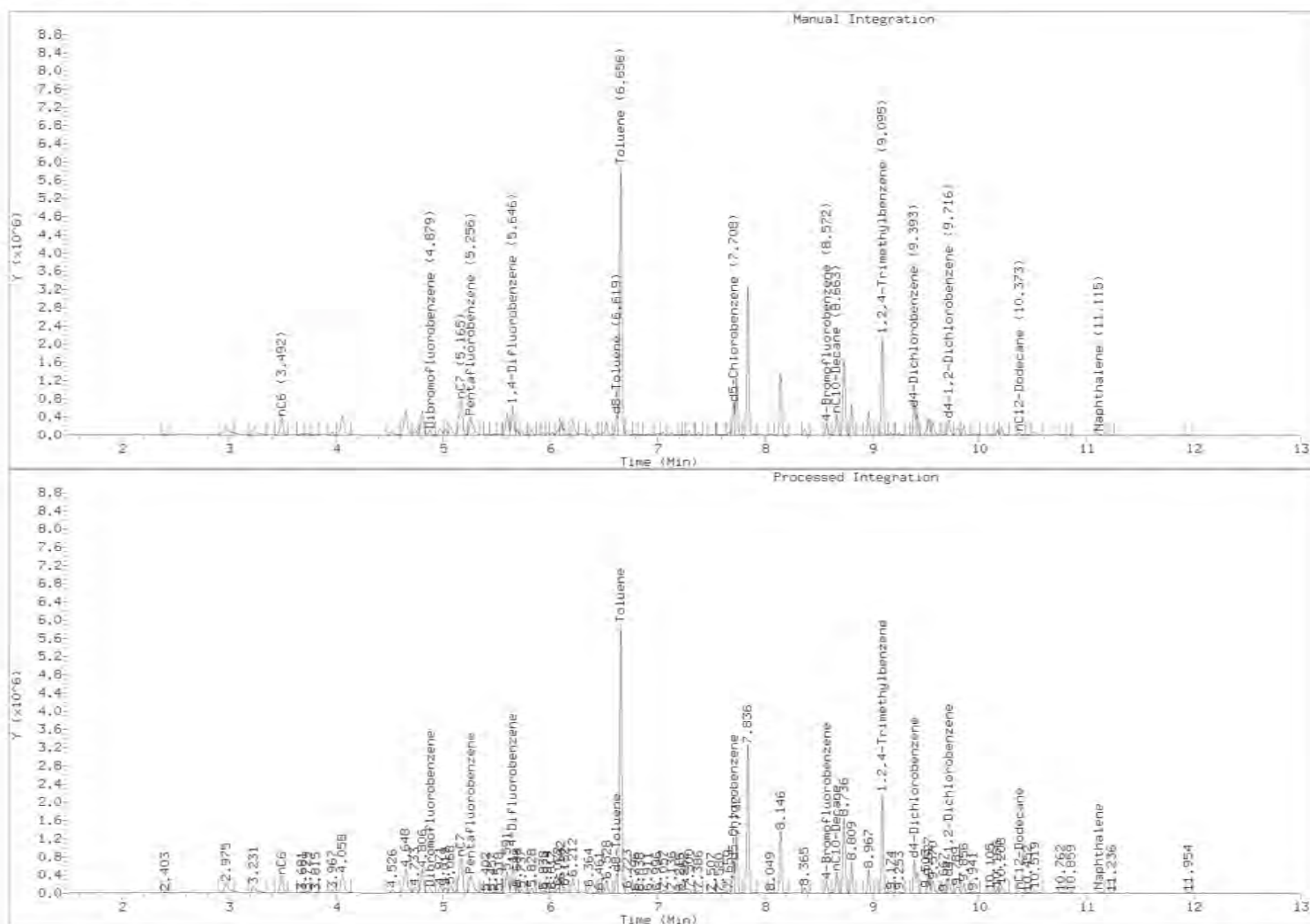
NW Gas Range Subtracted Peaks

7.708	1078034	d5-Chlorobenzene
8.572	369527	4-Bromofluorobenzene
6.619	643155	d8-Toluene
9.393	1067710	d4-Dichlorobenzene
9.716	526237	d4-1,2-Dichlorobenzene

TPHG Manual Integrations Report

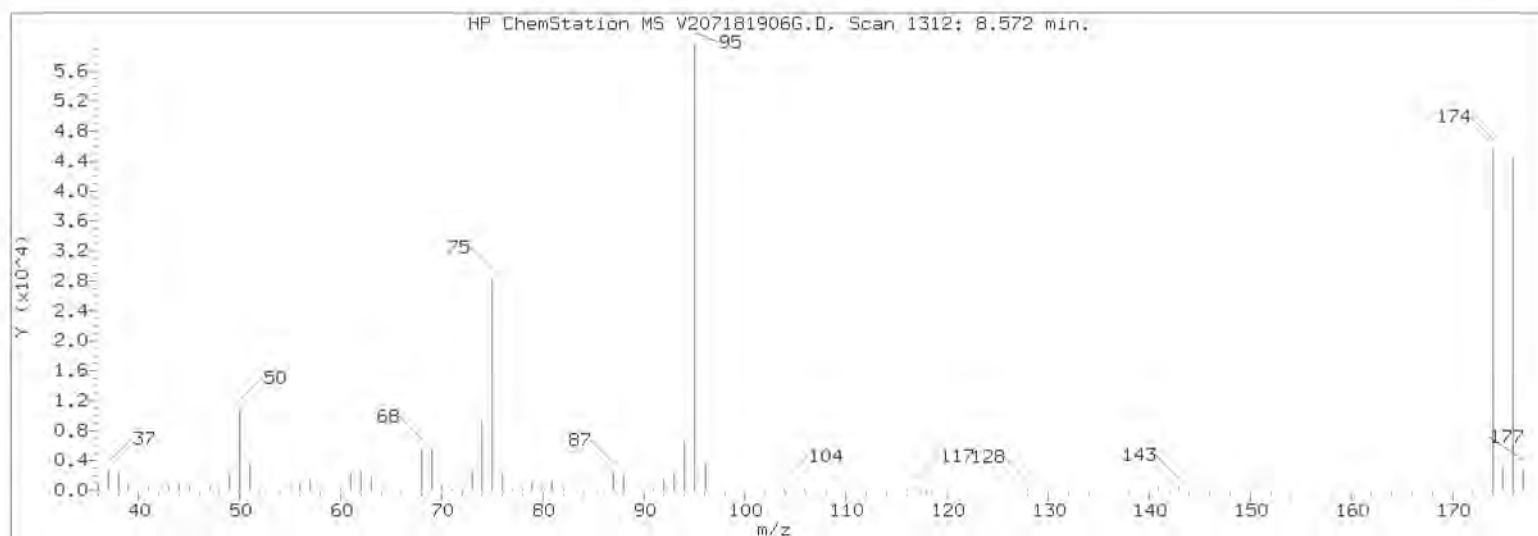
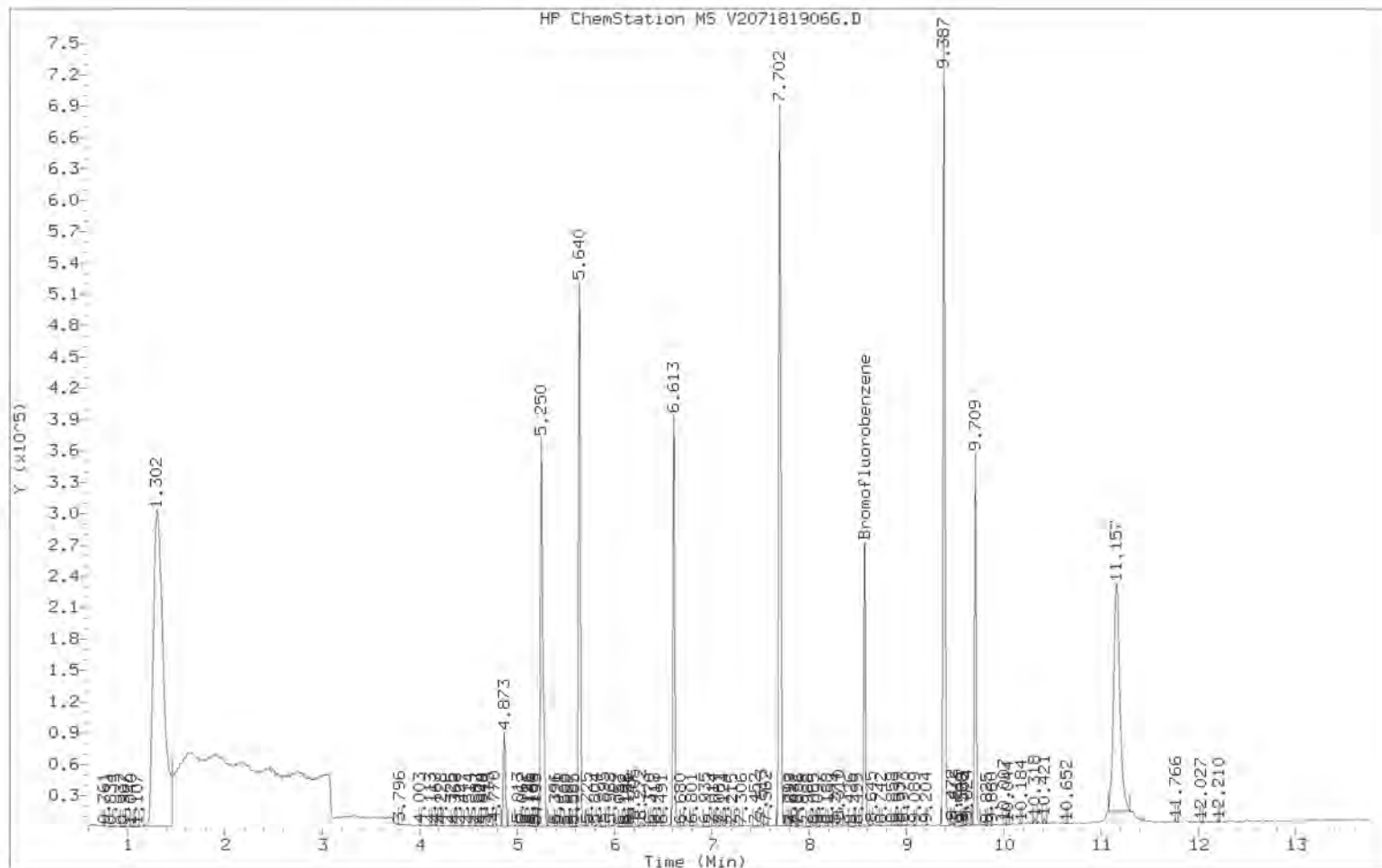
Datafile: NT2, 20190327g.b/V203271924G.D Injection: 27-MAR-2019 15:34

Lab ID:SHC0426-SCV1



BFB TUNE GRAPHIC REPORT

Datafile Analyzed: /20190718sa.b/V207181906G.D
 Method Used: \20190718sa.b\bfb8260.m Inst: nt2
 Injection Date: 18-JUL-2019 11:55 Operator: LH
 Sample Info: SHG0268-TUN1 SHG0268-TUN1
 Report Date: 07/19/2019 13:06



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.56
75	30.00 - 60.00% of mass 95	47.38
96	5.00 - 9.00% of mass 95	6.86
173	Less than 2.00% of mass 174	0.33 (0.44)
174	50.00 - 100.00% of mass 95	74.83
175	5.00 - 9.00% of mass 174	5.31 (7.09)
176	95.00 - 101.00% of mass 174	72.03 (96.26)
177	5.00 - 9.00% of mass 176	4.73 (6.57)

Data File: V207181906G.D

Spectrum: Avg. Scans 1311-1313 (8.57), Background Scan 1302

Location of Maximum: 95.00

Number of points: 62

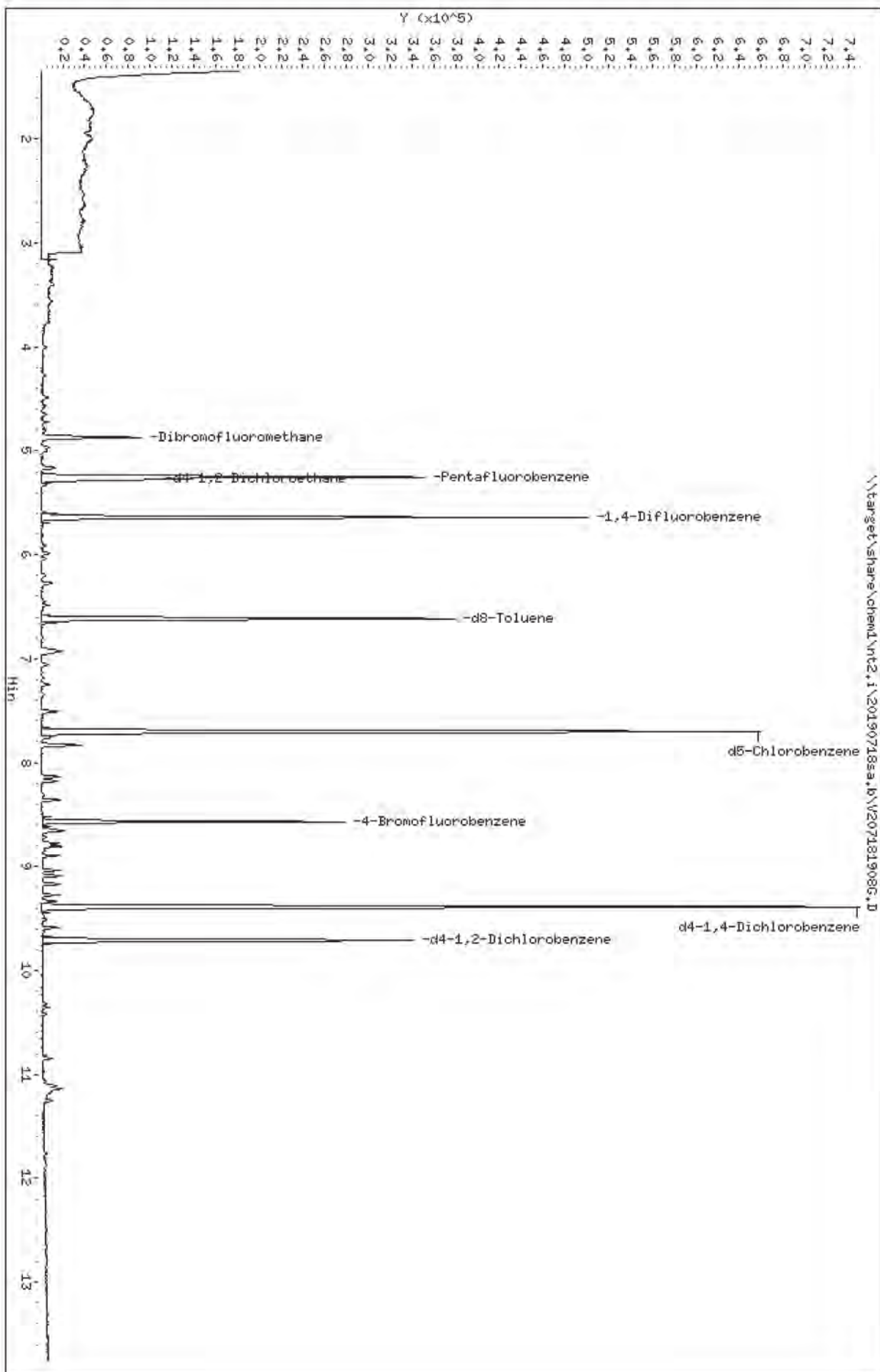
m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	543	57.00	1397	76.00	2024	106.00	146
37.00	2363	58.00	96	77.00	342	116.00	74
38.00	2185	60.00	379	78.00	171	117.00	168
39.00	988	61.00	2135	79.00	1016	118.00	140
41.00	394	62.00	2143	80.00	322	119.00	155
43.00	372	63.00	1561	81.00	1186	128.00	68
44.00	269	64.00	68	82.00	185	130.00	138
45.00	473	67.00	62	87.00	1985	141.00	401
47.00	552	68.00	4717	88.00	1788	143.00	385
48.00	334	69.00	4717	91.00	62	173.00	169
49.00	1944	70.00	583	92.00	1368	174.00	38672
50.00	9077	71.00	122	93.00	2045	175.00	2742
51.00	2856	72.00	282	94.00	5612	176.00	37224
52.00	66	73.00	2115	95.00	51680	177.00	2446
55.00	336	74.00	7881	96.00	3544		
56.00	725	75.00	24488	104.00	155		

Data File: \\target\share\chemd\nt2.i\20190718sa.b\207181908G.D
Date: 18-JUL-2019 12:38
Client ID: 0.2
Sample Info: SHG0268-CAL1

Page 1

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181908G.D
Lab Smp Id: SHG0268-CAL1 Client Smp ID: 0.2
Inj Date : 18-JUL-2019 12:38
Operator : LH Inst ID: nt2.i
Smp Info : SHG0268-CAL1
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 38
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA20

Compounds	QUANT SIG							CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	4.869	4.870 (0.927)		43460	4.85171	4.852		
* 32 Pentafluorobenzene	168	5.253	5.254 (1.000)		173305	10.0000			
\$ 33 d4-1,2-Dichloroethane	65	5.277	5.278 (1.005)		53961	4.97508	4.975		
* 37 1,4-Difluorobenzene	114	5.642	5.643 (1.000)		305286	10.0000			
\$ 43 d8-Toluene	98	6.615	6.616 (1.173)		190123	4.98123	4.981		
* 53 d5-Chlorobenzene	117	7.698	7.699 (1.000)		286905	10.0000			
\$ 62 4-Bromofluorobenzene	174	8.568	8.569 (1.113)		55922	4.93753	4.938		
* 76 d4-1,4-Dichlorobenzene	162	9.389	9.390 (1.000)		152471	10.0000			
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.713 (1.034)		72373	5.03952	5.040		

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181908G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL1	Client Smp ID: 0.2
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	173305	2.18
37 1,4-Difluorobenze	298924	149462	597848	305286	2.13
53 d5-Chlorobenzene	281842	140921	563684	286905	1.80
76 d4-1,4-Dichlorobe	151581	75791	303162	152471	0.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.01
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.01
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.01
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL1 Client Smp ID: 0.2
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.852	97.03	
\$ 33 d4-1,2-Dichloroeth	5.000	4.975	99.50	
\$ 43 d8-Toluene	5.000	4.981	99.62	
\$ 62 4-Bromofluorobenze	5.000	4.938	98.75	
\$ 79 d4-1,2-Dichloroben	5.000	5.040	100.79	

REVIEW SUMMARY FOR FILE - V207181908G.D

Lab ID: SHG0268-CAL1

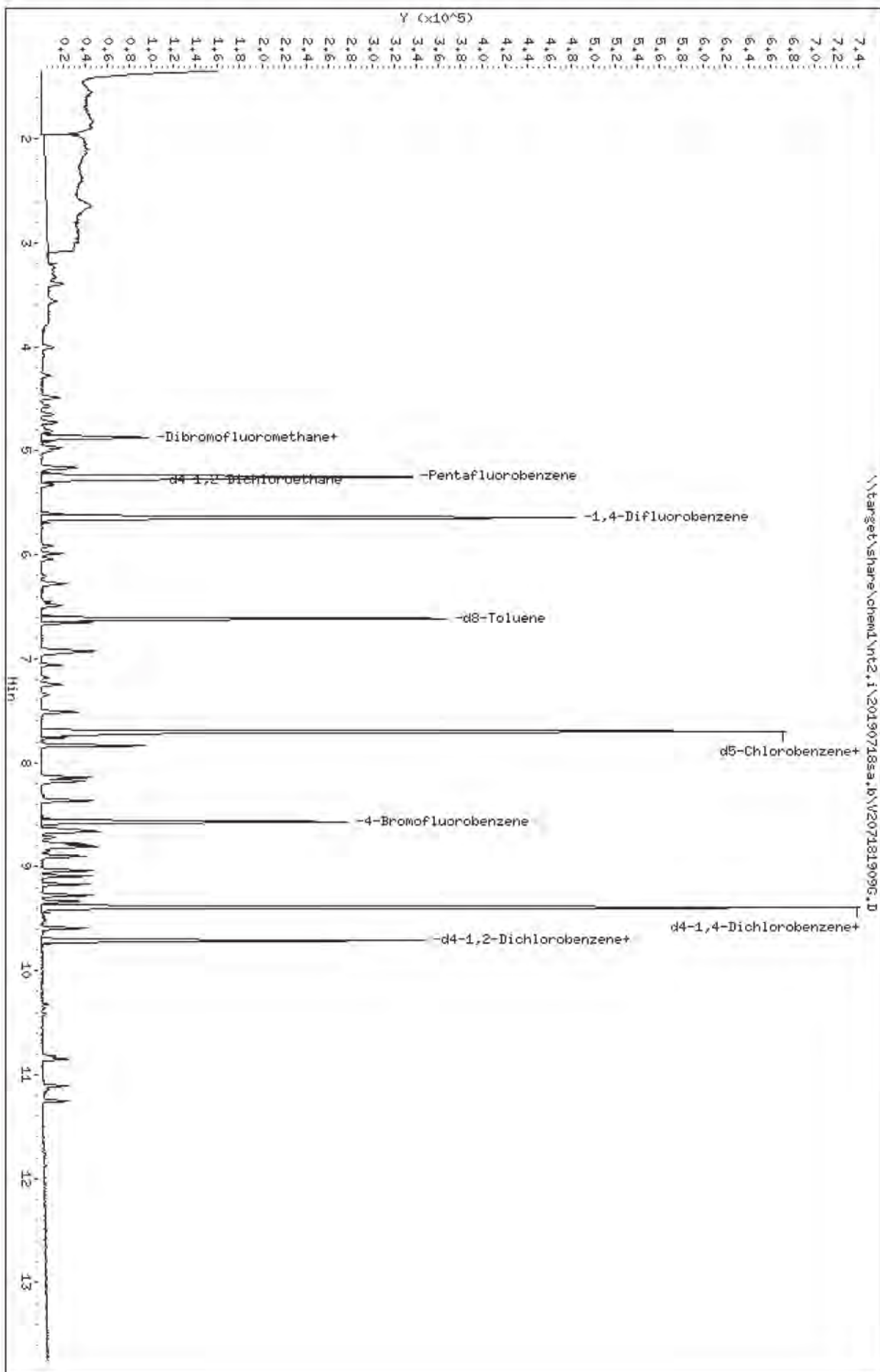
nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 12:38

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemid\nt2.i\20190718sa.b\207181909G.D
Date: 18-JUL-2019 12:59
Client ID: 0.5
Sample Info: SHG0268-CAL2

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181909G.D
 Lab Smp Id: SHG0268-CAL2 Client Smp ID: 0.5
 Inj Date : 18-JUL-2019 12:59
 Operator : LH Inst ID: nt2.i
 Smp Info : SHG0268-CAL2
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
 Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
 Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
 Als bottle: 39
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA20

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	4.870	4.870	(0.927)	43861	4.96669	4.967
* 32 Pentafluorobenzene	168	5.253	5.254	(1.000)	170855	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.278	5.278	(1.005)	53682	5.02033	5.020
* 37 1,4-Difluorobenzene	114	5.643	5.643	(1.000)	304008	10.0000	
\$ 43 d8-Toluene	98	6.616	6.616	(1.172)	187862	4.94269	4.943
* 53 d5-Chlorobenzene	117	7.699	7.699	(1.000)	289222	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.569	8.569	(1.113)	55326	4.84578	4.846
* 76 d4-1,4-Dichlorobenzene	162	9.390	9.390	(1.000)	149287	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.713	9.713	(1.034)	70602	5.02105	5.021

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181909G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL2	Client Smp ID: 0.5
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	170855	0.74
37 1,4-Difluorobenze	298924	149462	597848	304008	1.70
53 d5-Chlorobenzene	281842	140921	563684	289222	2.62
76 d4-1,4-Dichlorobe	151581	75791	303162	149287	-1.51

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	0.01
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL2 Client Smp ID: 0.5
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.967	99.33	
\$ 33 d4-1,2-Dichloroeth	5.000	5.020	100.41	
\$ 43 d8-Toluene	5.000	4.943	98.85	
\$ 62 4-Bromofluorobenze	5.000	4.846	96.92	
\$ 79 d4-1,2-Dichloroben	5.000	5.021	100.42	

REVIEW SUMMARY FOR FILE - V207181909G.D

Lab ID: SHG0268-CAL2

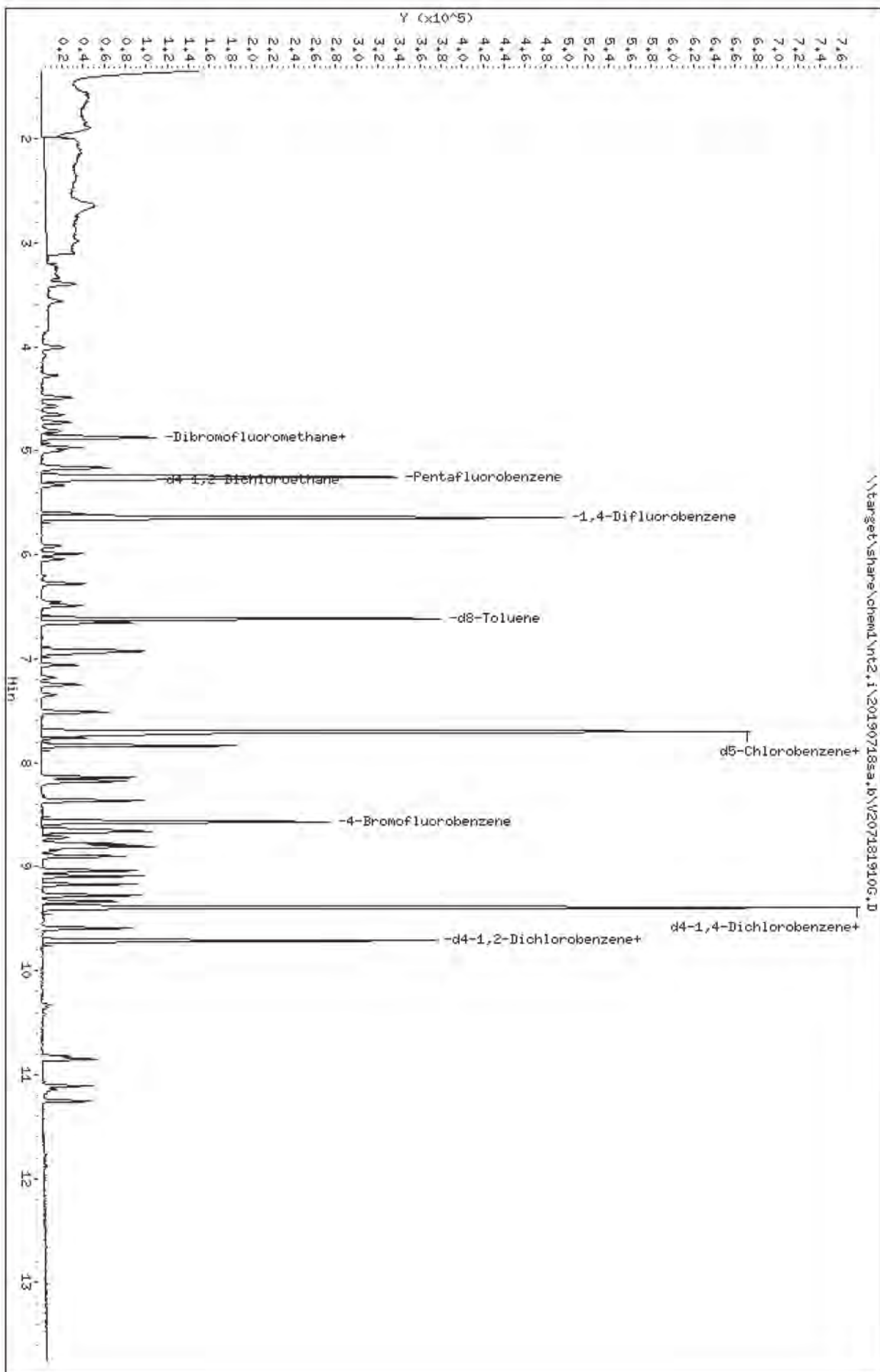
nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 12:59

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chem\nt2.i\20190718sa.b\2071819105.D
Date: 18-JUL-2019 13:20
Client ID: 1
Sample Info: SHG0268-CAL3

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181910G.D
 Lab Smp Id: SHG0268-CAL3 Client Smp ID: 1
 Inj Date : 18-JUL-2019 13:20
 Operator : LH Inst ID: nt2.i
 Smp Info : SHG0268-CAL3
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
 Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
 Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
 Als bottle: 40
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA20

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	4.870	4.870	(0.927)	43011	4.92314	4.923
* 32 Pentafluorobenzene	168	5.253	5.254	(1.000)	169026	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.277	5.278	(1.005)	52880	4.99884	4.999
* 37 1,4-Difluorobenzene	114	5.642	5.643	(1.000)	300325	10.0000	
\$ 43 d8-Toluene	98	6.616	6.616	(1.172)	187880	5.00378	5.004
* 53 d5-Chlorobenzene	117	7.698	7.699	(1.000)	283099	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.568	8.569	(1.113)	55820	4.99479	4.995
* 76 d4-1,4-Dichlorobenzene	162	9.390	9.390	(1.000)	151459	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.713	(1.034)	71224	4.99265	4.993

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181910G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL3	Client Smp ID: 1
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	169026	-0.34
37 1,4-Difluorobenze	298924	149462	597848	300325	0.47
53 d5-Chlorobenzene	281842	140921	563684	283099	0.45
76 d4-1,4-Dichlorobe	151581	75791	303162	151459	-0.08

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.00
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.00
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL3 Client Smp ID: 1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.923	98.46	
\$ 33 d4-1,2-Dichloroeth	5.000	4.999	99.98	
\$ 43 d8-Toluene	5.000	5.004	100.08	
\$ 62 4-Bromofluorobenze	5.000	4.995	99.90	
\$ 79 d4-1,2-Dichloroben	5.000	4.993	99.85	

REVIEW SUMMARY FOR FILE - V207181910G.D

Lab ID: SHG0268-CAL3

nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 13:20

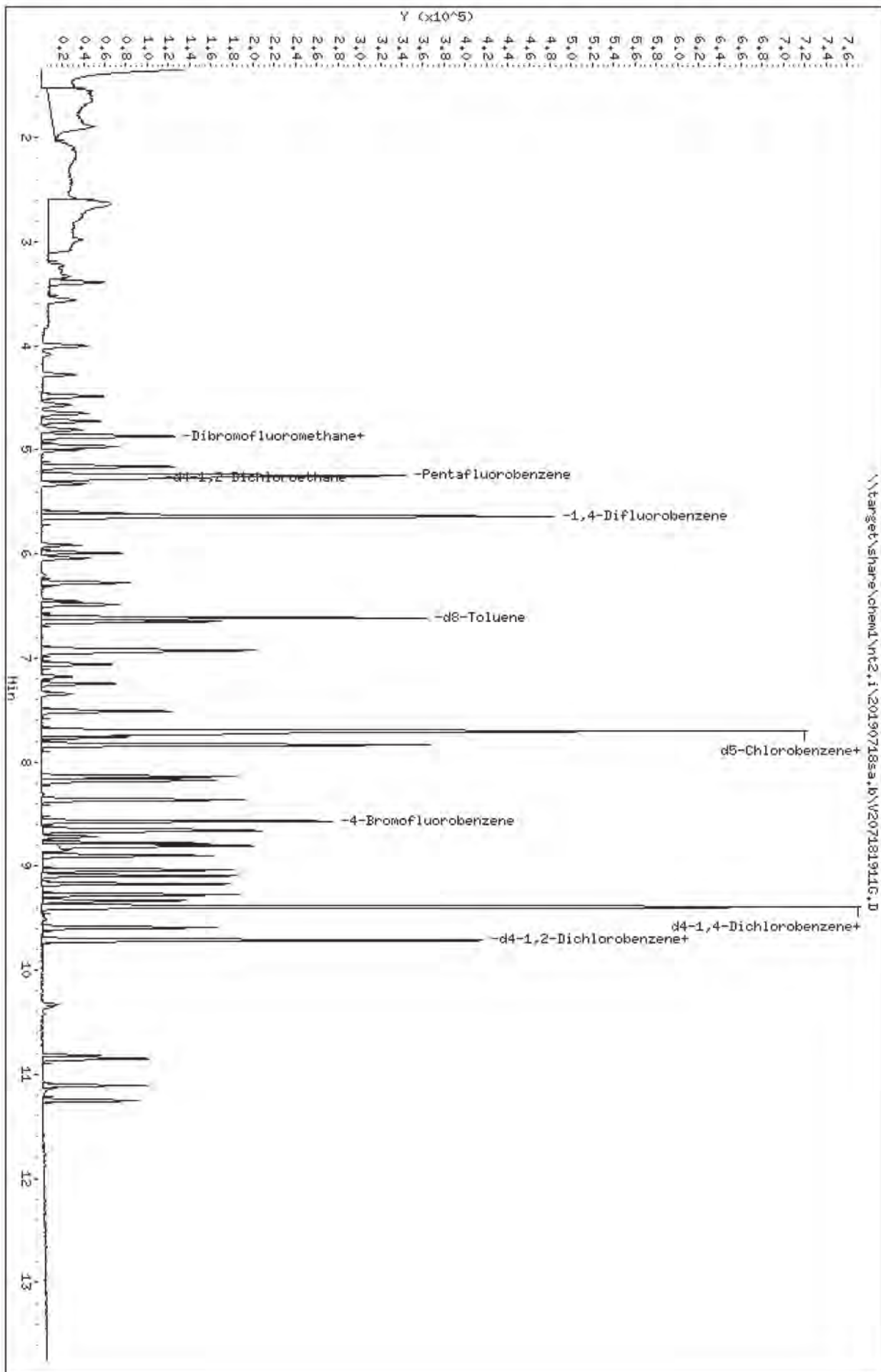
RT	CO-ELUTION COMPOUNDS
----	----------------------

-------	--

Data File: \\target\share\chemd\nt2.i\20190718sa.b\207181911G.D
Date: 18-JUL-2019 13:41
Client ID: 2
Sample Info: SHG0268-CAL4

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181911G.D
Lab Smp Id: SHG0268-CAL4 Client Smp ID: 2
Inj Date : 18-JUL-2019 13:41
Operator : LH Inst ID: nt2.i
Smp Info : SHG0268-CAL4
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 41
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA20

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	4.872	4.870 (0.928)		42943	4.99230	4.992
* 32 Pentafluorobenzene	168	5.249	5.254 (1.000)		166421	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.273	5.278 (1.005)		52723	5.06201	5.062
* 37 1,4-Difluorobenzene	114	5.638	5.643 (1.000)		295547	10.0000	
\$ 43 d8-Toluene	98	6.611	6.616 (1.173)		185905	5.03122	5.031
* 53 d5-Chlorobenzene	117	7.700	7.699 (1.000)		282628	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.570	8.569 (1.113)		55977	5.01718	5.017
* 76 d4-1,4-Dichlorobenzene	162	9.392	9.390 (1.000)		147652	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.708	9.713 (1.034)		69081	4.96728	4.967

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181911G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL4	Client Smp ID: 2
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	166421	-1.88
37 1,4-Difluorobenze	298924	149462	597848	295547	-1.13
53 d5-Chlorobenzene	281842	140921	563684	282628	0.28
76 d4-1,4-Dichlorobe	151581	75791	303162	147652	-2.59

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.08
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.08
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	0.02
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL4 Client Smp ID: 2
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.992	99.85	
\$ 33 d4-1,2-Dichloroeth	5.000	5.062	101.24	
\$ 43 d8-Toluene	5.000	5.031	100.62	
\$ 62 4-Bromofluorobenze	5.000	5.017	100.34	
\$ 79 d4-1,2-Dichloroben	5.000	4.967	99.35	

REVIEW SUMMARY FOR FILE - V207181911G.D

Lab ID: SHG0268-CAL4

nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 13:41

RT	CO-ELUTION COMPOUNDS
----	----------------------

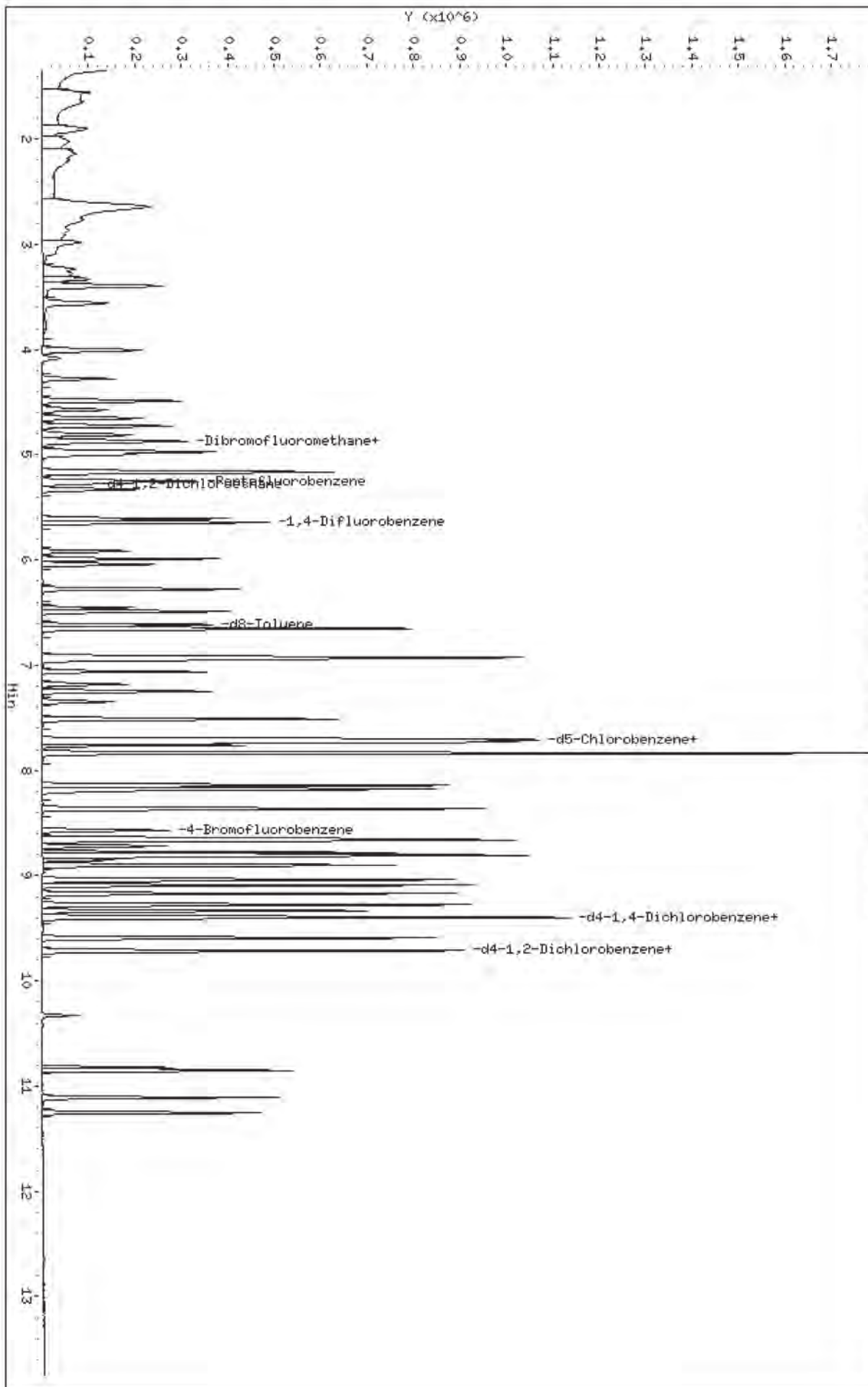
-------	--

Data File: \\target\share\chem\nt2.i\20190718sa.b\2071819126.D
Date: 18-JUL-2019 14:02
Client ID: 10
Sample Info: SHG0268-CAL5

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18

\\target\share\chem\nt2.i\20190718sa.b\2071819126.D



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181912G.D
 Lab Smp Id: SHG0268-CAL5 Client Smp ID: 10
 Inj Date : 18-JUL-2019 14:02
 Operator : LH Inst ID: nt2.i
 Smp Info : SHG0268-CAL5
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
 Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
 Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
 Als bottle: 42
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA20

Compounds	QUANT SIG						CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	
	MASS					(ug/L)	(ug/L)	
\$ 27 Dibromofluoromethane	111	4.870	4.870 (0.927)		44198	5.04177	5.042	
* 32 Pentafluorobenzene	168	5.253	5.254 (1.000)		169604	10.0000		
\$ 33 d4-1,2-Dichloroethane	65	5.277	5.278 (1.005)		52933	4.98679	4.987	
* 37 1,4-Difluorobenzene	114	5.642	5.643 (1.000)		298924	10.0000		
\$ 43 d8-Toluene	98	6.616	6.616 (1.172)		184840	4.94589	4.946	
* 53 d5-Chlorobenzene	117	7.699	7.699 (1.000)		281842	10.0000		
\$ 62 4-Bromofluorobenzene	174	8.569	8.569 (1.113)		55712	5.00736	5.007	
* 76 d4-1,4-Dichlorobenzene	162	9.390	9.390 (1.000)		151561	10.0000		
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.713 (1.034)		71177	4.98534	4.985	

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181912G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL5	Client Smp ID: 10
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	169604	0.00
37 1,4-Difluorobenze	298924	149462	597848	298924	0.00
53 d5-Chlorobenzene	281842	140921	563684	281842	0.00
76 d4-1,4-Dichlorobe	151581	75791	303162	151581	0.00

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	0.00
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.00
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	0.00
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL5 Client Smp ID: 10
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.042	100.84	
\$ 33 d4-1,2-Dichloroeth	5.000	4.987	99.74	
\$ 43 d8-Toluene	5.000	4.946	98.92	
\$ 62 4-Bromofluorobenze	5.000	5.007	100.15	
\$ 79 d4-1,2-Dichloroben	5.000	4.985	99.71	

REVIEW SUMMARY FOR FILE - V207181912G.D

Lab ID: SHG0268-CAL5

nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 14:02

RT	CO-ELUTION COMPOUNDS
----	----------------------

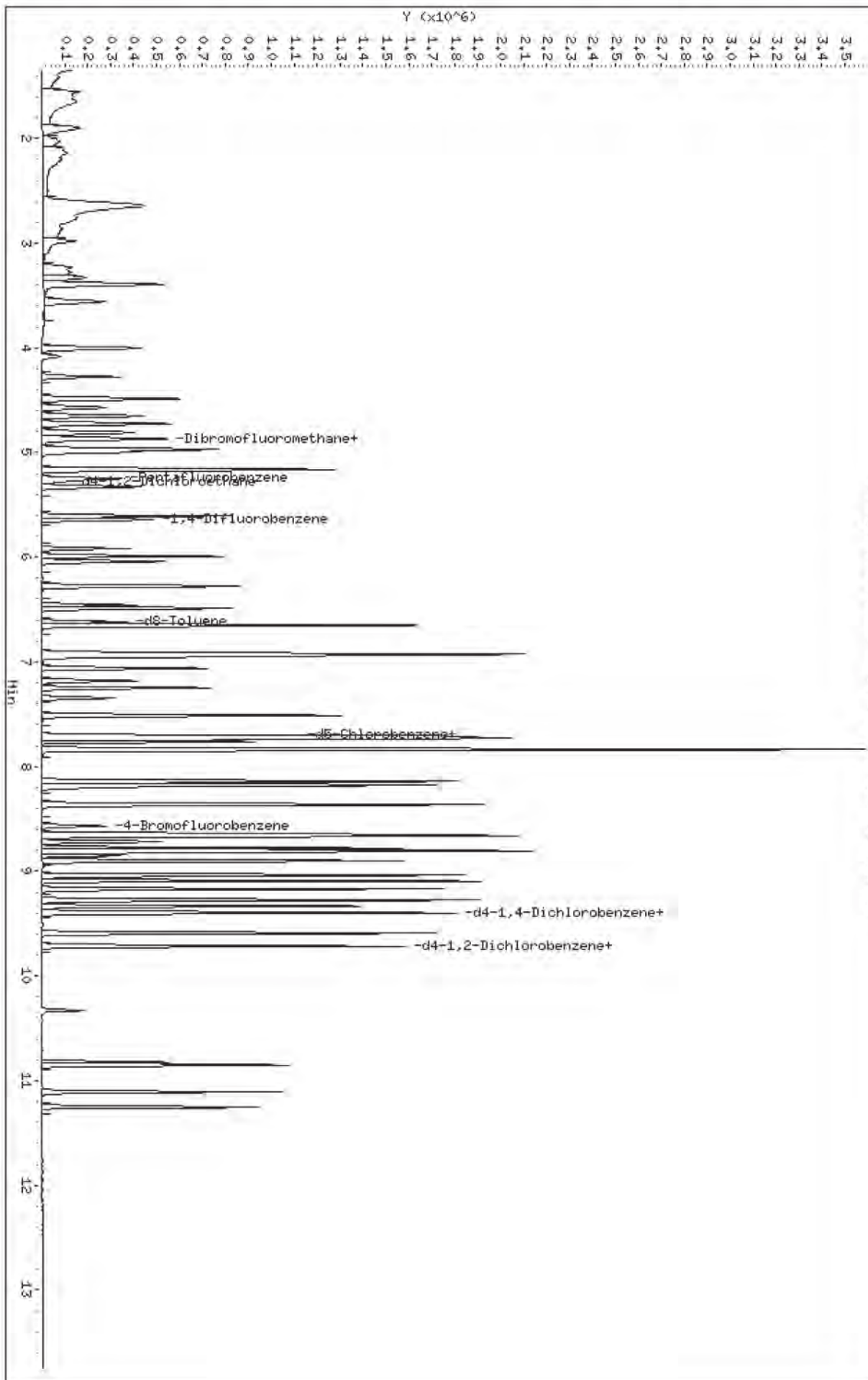
-------	--

Data File: \\target\share\chemd\nt2.i\20190718sa.b\207181913G.D
Date: 18-JUL-2019 14:23
Client ID: 20
Sample Info: SHG0268-CAL6

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18

\\target\share\chemd\nt2.i\20190718sa.b\207181913G.D



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181913G.D
 Lab Smp Id: SHG0268-CAL6 Client Smp ID: 20
 Inj Date : 18-JUL-2019 14:23
 Operator : LH Inst ID: nt2.i
 Smp Info : SHG0268-CAL6
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
 Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
 Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
 Als bottle: 43
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA20

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	4.871	4.870 (0.928)		45752	5.06451	5.065
* 32 Pentafluorobenzene	168	5.248	5.254 (1.000)		174779	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.279	5.278 (1.006)		54681	4.99894	4.999
* 37 1,4-Difluorobenzene	114	5.644	5.643 (1.000)		307766	10.0000	
\$ 43 d8-Toluene	98	6.617	6.616 (1.172)		192968	5.01503	5.015
* 53 d5-Chlorobenzene	117	7.700	7.699 (1.000)		290972	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.570	8.569 (1.113)		57498	5.00573	5.006
* 76 d4-1,4-Dichlorobenzene	162	9.391	9.390 (1.000)		153326	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.713	9.713 (1.034)		72563	5.02457	5.025

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181913G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL6	Client Smp ID: 20
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	174779	3.05
37 1,4-Difluorobenze	298924	149462	597848	307766	2.96
53 d5-Chlorobenzene	281842	140921	563684	290972	3.24
76 d4-1,4-Dichlorobe	151581	75791	303162	153326	1.15

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.09
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	0.02
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	0.01
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL6 Client Smp ID: 20
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.065	101.29	
\$ 33 d4-1,2-Dichloroeth	5.000	4.999	99.98	
\$ 43 d8-Toluene	5.000	5.015	100.30	
\$ 62 4-Bromofluorobenze	5.000	5.006	100.11	
\$ 79 d4-1,2-Dichloroben	5.000	5.025	100.49	

REVIEW SUMMARY FOR FILE - V207181913G.D

Lab ID: SHG0268-CAL6

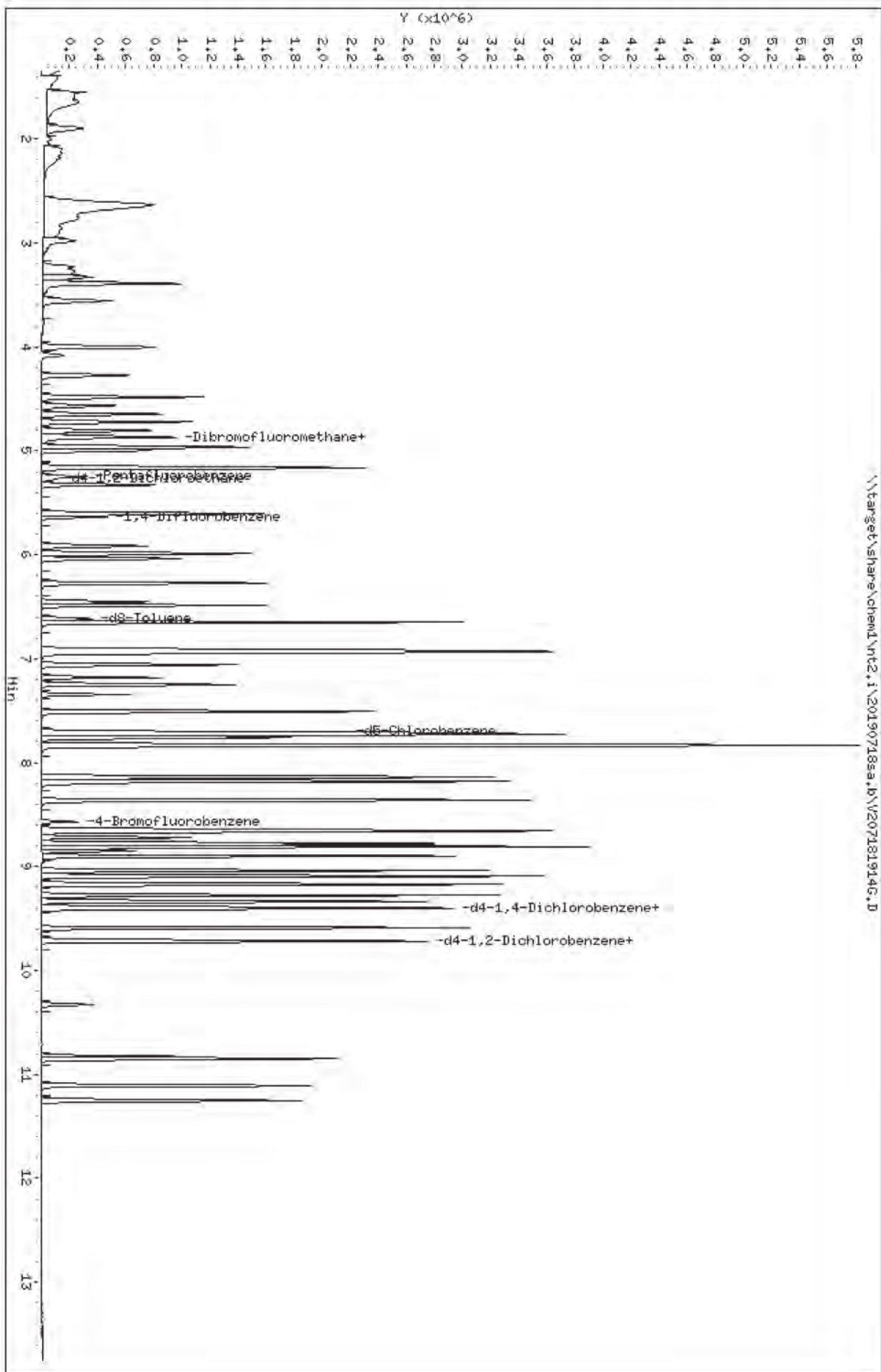
nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 14:23

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190718sa.b\W207181914G.D
Date: 18-JUL-2019 14:44
Client ID: 40
Sample Info: SHG0268-CAL7

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181914G.D
Lab Smp Id: SHG0268-CAL7 Client Smp ID: 40
Inj Date : 18-JUL-2019 14:44
Operator : LH Inst ID: nt2.i
Smp Info : SHG0268-CAL7
Misc Info : 1
Comment :
Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 44
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA20

Compounds	QUANT SIG	CONCENTRATIONS					
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/L)	FINAL (ug/L)
\$ 27 Dibromofluoromethane	111	4.869	4.870 (0.927)		43071	5.10513	5.105
* 32 Pentafluorobenzene	168	5.253	5.254 (1.000)		163228	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.277	5.278 (1.005)		50800	4.97279	4.973
* 37 1,4-Difluorobenzene	114	5.642	5.643 (1.000)		287297	10.0000	
\$ 43 d8-Toluene	98	6.615	6.616 (1.173)		180017	5.01177	5.012
* 53 d5-Chlorobenzene	117	7.704	7.699 (1.000)		274822	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.568	8.569 (1.112)		54249	5.00041	5.000
* 76 d4-1,4-Dichlorobenzene	162	9.389	9.390 (1.000)		147079	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.713 (1.034)		69373	5.90771	5.908

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181914G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL7	Client Smp ID: 40
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	163228	-3.76
37 1,4-Difluorobenze	298924	149462	597848	287297	-3.89
53 d5-Chlorobenzene	281842	140921	563684	274822	-2.49
76 d4-1,4-Dichlorobe	151581	75791	303162	147079	-2.97

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.01
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.01
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	0.07
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL7 Client Smp ID: 40
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.105	102.10	
\$ 33 d4-1,2-Dichloroeth	5.000	4.973	99.46	
\$ 43 d8-Toluene	5.000	5.012	100.24	
\$ 62 4-Bromofluorobenze	5.000	5.000	100.01	
\$ 79 d4-1,2-Dichloroben	5.000	5.008	100.15	

REVIEW SUMMARY FOR FILE - V207181914G.D

Lab ID: SHG0268-CAL7

nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 14:44

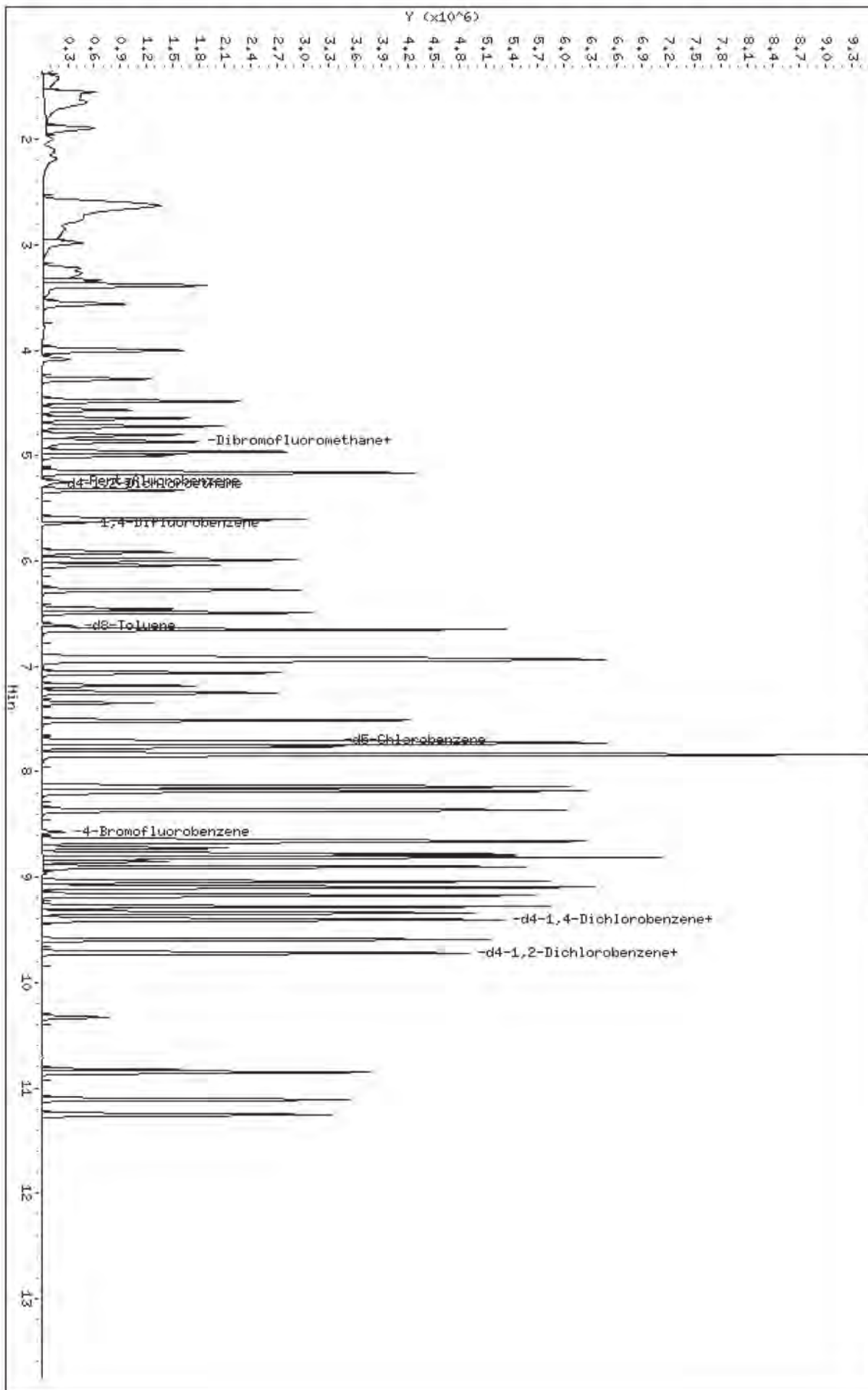
RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt2.i\20190718sa.b\207181915G.D
Date: 18-JUL-2019 15:05
Client ID: 80
Sample Info: SHG0268-CAL8

Column phase: RTXVMS

Instrument: nt2.i
Operator: LH
Column diameter: 0.18

\\target\share\chemd\nt2.i\20190718sa.b\207181915G.D



ARI Labs, Inc.

8260C 10 ml purge

Data file : \\target\share\chem1\nt2.i\20190718sa.b\V207181915G.D
 Lab Smp Id: SHG0268-CAL8 Client Smp ID: 80
 Inj Date : 18-JUL-2019 15:05
 Operator : LH Inst ID: nt2.i
 Smp Info : SHG0268-CAL8
 Misc Info : 1
 Comment :
 Method : \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
 Meth Date : 19-Jul-2019 08:35 lanih Quant Type: ISTD
 Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
 Als bottle: 45
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA20

Compounds	QUANT SIG							CONCENTRATIONS	
		RT	EXP RT	REL RT	RESPONSE	ON-COLUMN	FINAL	(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	4.870	4.870 (1.000)		44406	5.05474	5.055		
* 32 Pentafluorobenzene	168	5.247	5.254 (1.000)		169965	10.0000	(M)		
\$ 33 d4-1,2-Dichloroethane	65	5.277	5.278 (1.000)		53029	4.98523	4.985		
* 37 1,4-Difluorobenzene	114	5.642	5.643 (1.000)		298405	10.0000			
\$ 43 d8-Toluene	98	6.616	6.616 (1.172)		189089	5.06838	5.068		
* 53 d5-Chlorobenzene	117	7.705	7.699 (1.000)		287250	10.0000			
\$ 62 4-Bromofluorobenzene	174	8.569	8.569 (1.112)		58866	5.19123	5.191		
* 76 d4-1,4-Dichlorobenzene	152	9.390	9.390 (1.000)		149880	10.0000			
\$ 79 d4-1,2-Dichlorobenzene	152	9.712	9.713 (1.034)		70047	4.96187	4.962		

QC Flag Legend

M - Compound response manually integrated.

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i	Calibration Date: 18-JUL-2019
Lab File ID: V207181915G.D	Calibration Time: 14:02
Lab Smp Id: SHG0268-CAL8	Client Smp ID: 80
Analysis Type: VOA	Level:
Quant Type: ISTD	Sample Type:
Operator: LH	
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m	
Misc Info: 1	

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	169965	0.21
37 1,4-Difluorobenze	298924	149462	597848	298405	-0.17
53 d5-Chlorobenzene	281842	140921	563684	287250	1.92
76 d4-1,4-Dichlorobe	151581	75791	303162	149880	-1.12

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.12
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.00
53 d5-Chlorobenzene	7.70	7.20	8.20	7.71	0.08
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.00

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151001
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0268-CAL8 Client Smp ID: 80
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190718sa.b\8260071819.m
Misc Info: 1

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.055	101.09	
\$ 33 d4-1,2-Dichloroeth	5.000	4.985	99.70	
\$ 43 d8-Toluene	5.000	5.068	101.37	
\$ 62 4-Bromofluorobenze	5.000	5.191	103.82	
\$ 79 d4-1,2-Dichloroben	5.000	4.962	99.24	

REVIEW SUMMARY FOR FILE - V207181915G.D

Lab ID: SHG0268-CAL8

nt2.i, 20190718sa.b\8260071819.m, 18-JUL-2019 15:05

RT	CO-ELUTION COMPOUNDS
----	----------------------

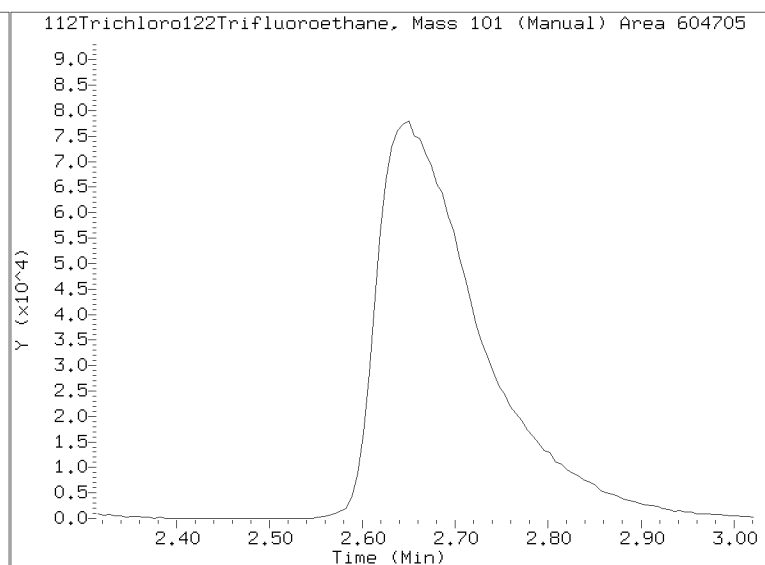
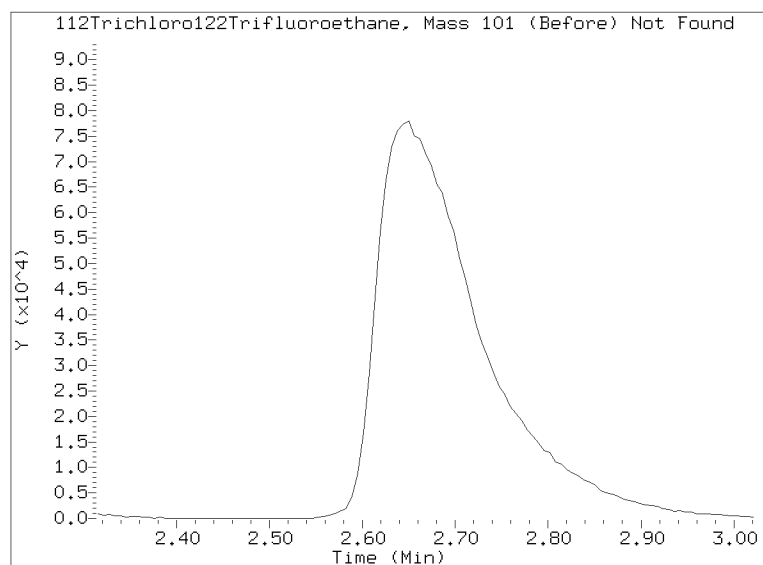
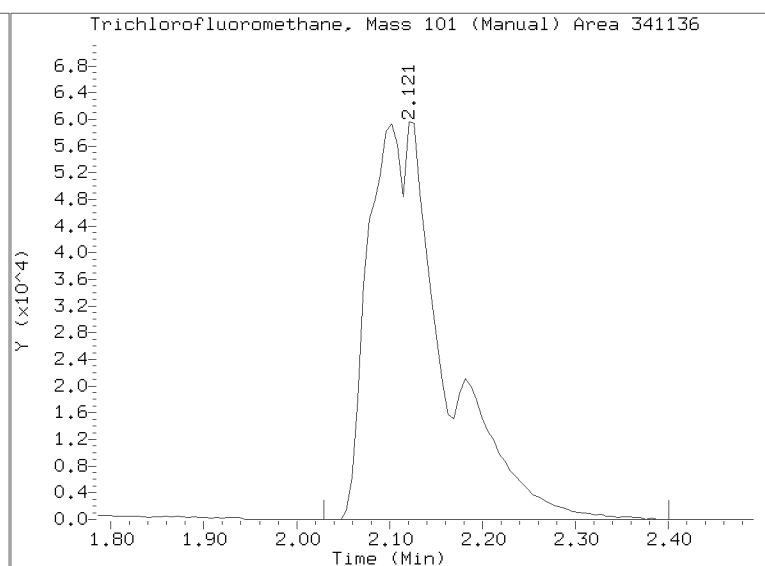
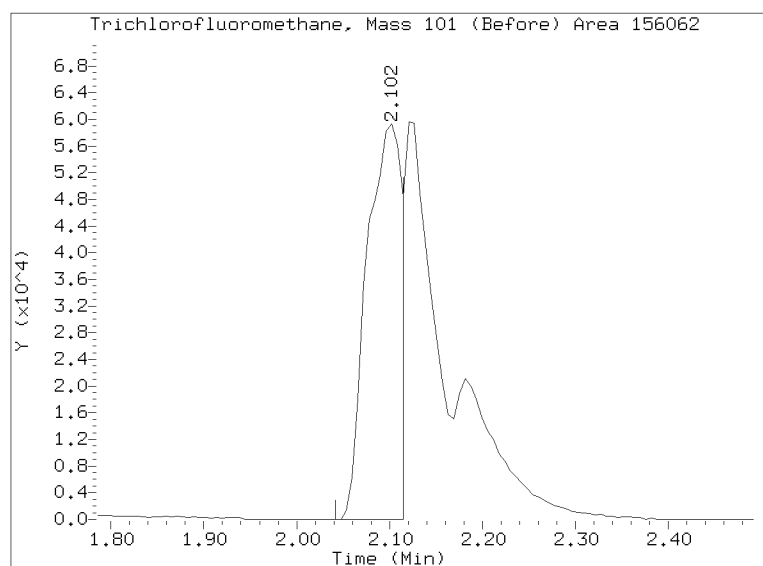
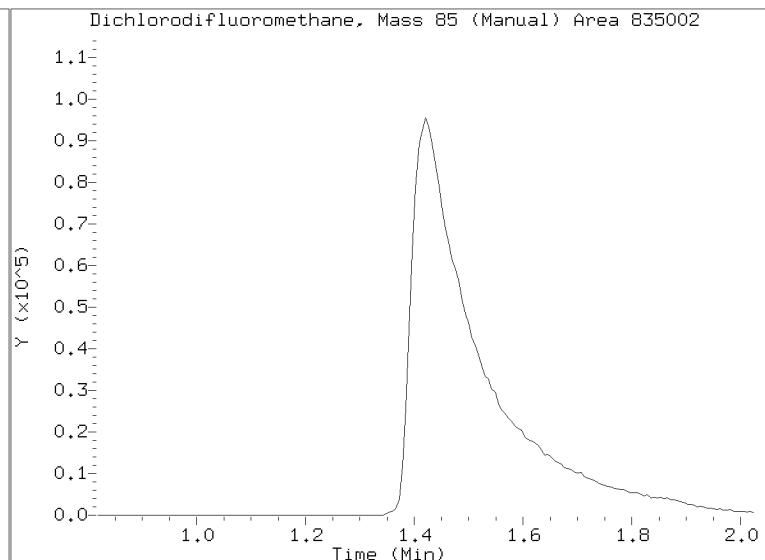
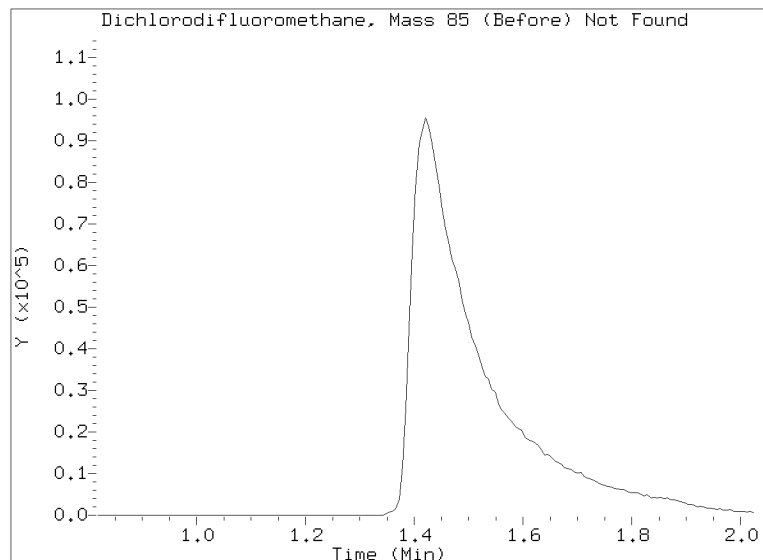
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt2.i/20190718sa.b/V207181915G.D

Injection Date: 18-JUL-2019 15:05

Lab ID:SHG0268-CAL8 Client ID:80

Report Date: 07/19/2019 13:39



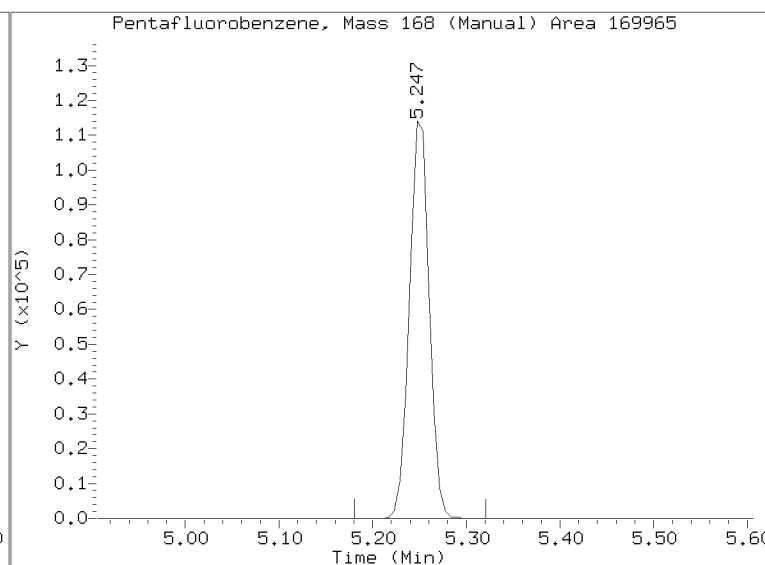
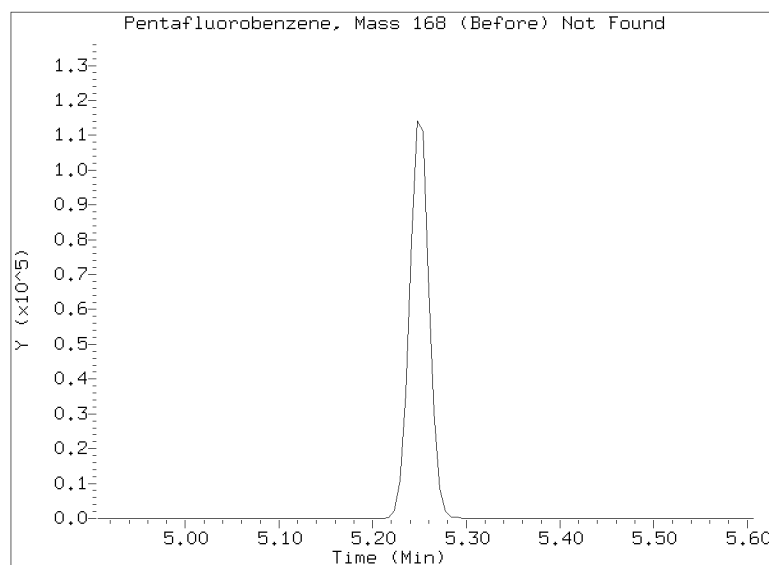
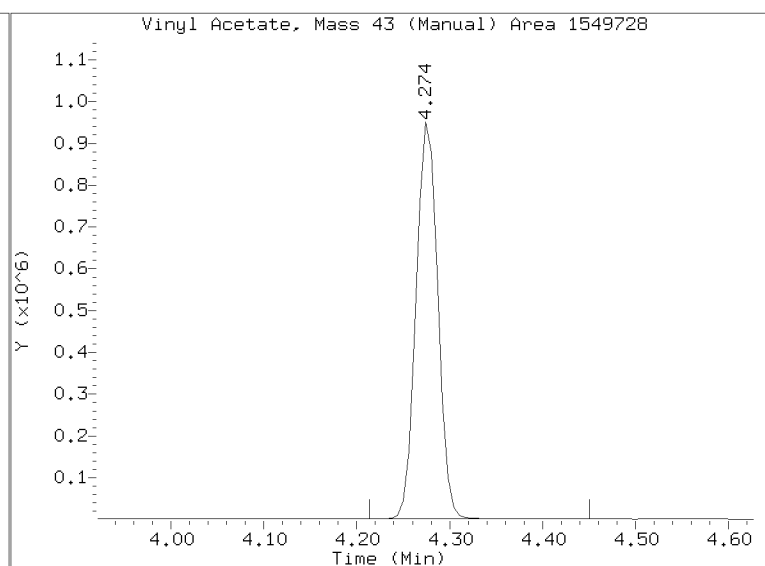
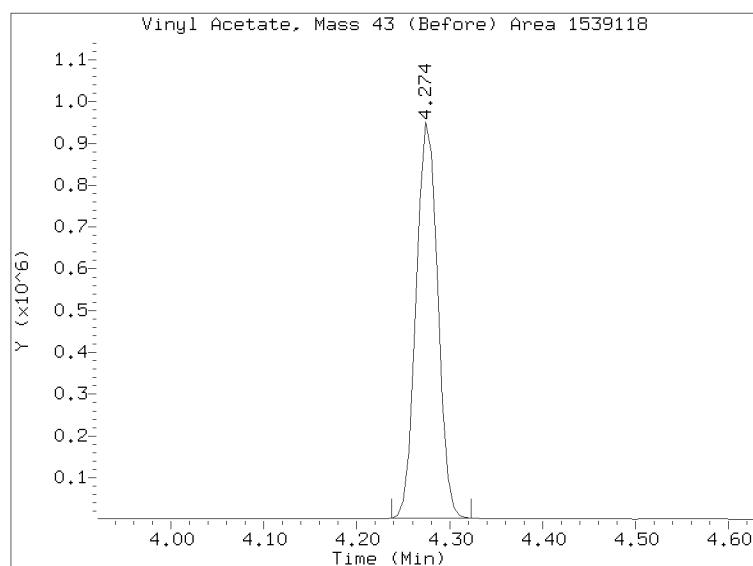
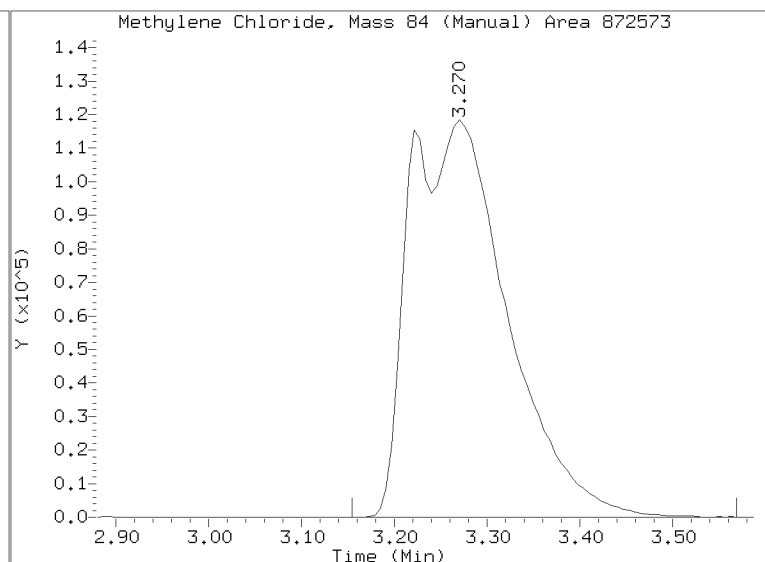
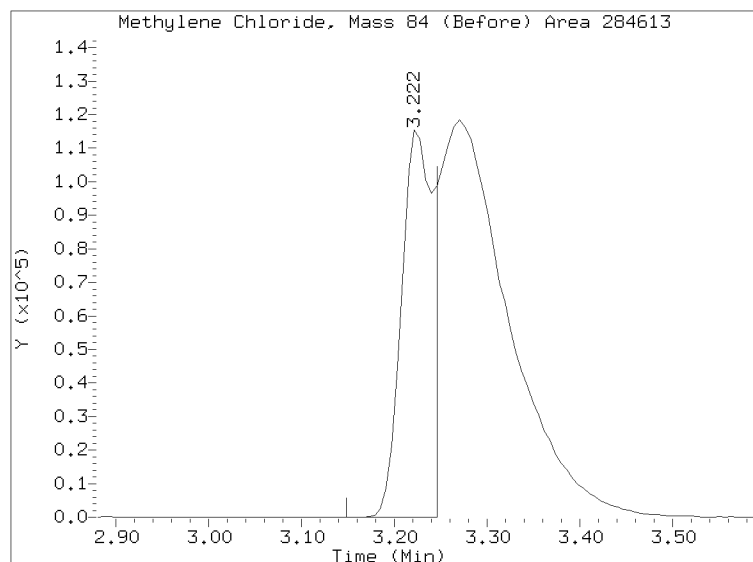
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt2.i/20190718sa.b/V207181915G.D

Injection Date: 18-JUL-2019 15:05

Lab ID:SHG0268-CAL8 Client ID:80

Report Date: 07/19/2019 13:39



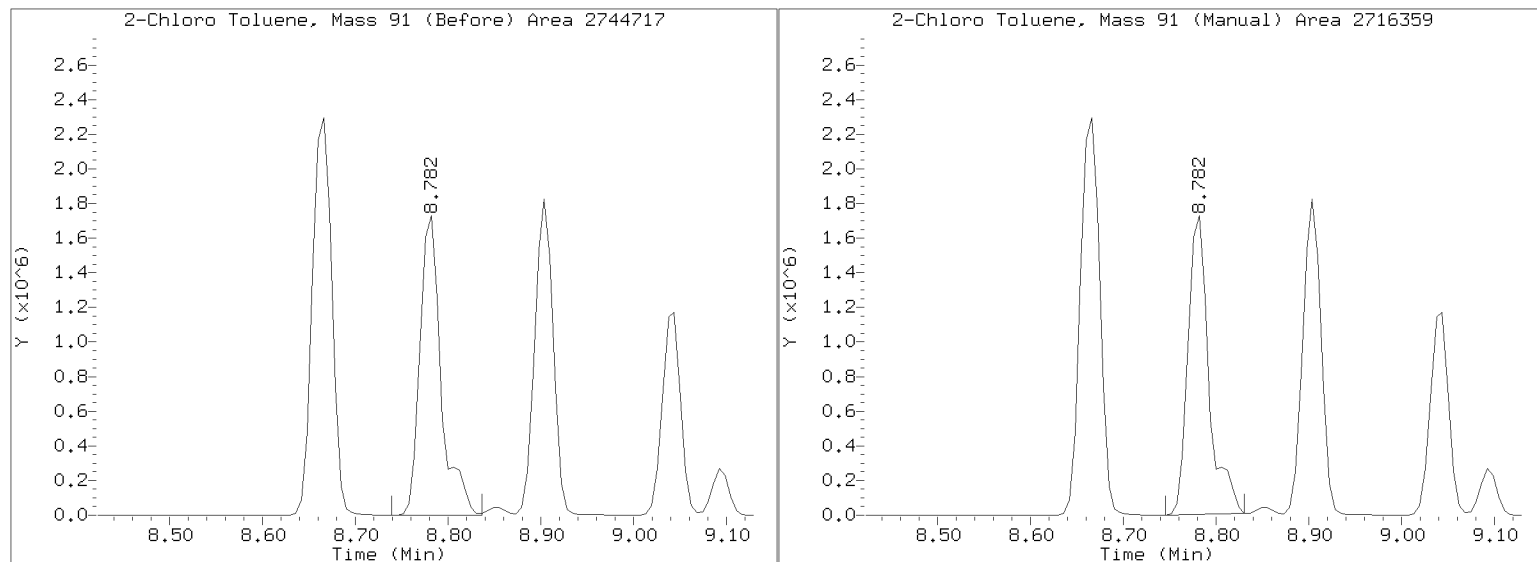
Quant Ion Manual Peak Adjustment Report

Datafile: //target/share/chem1/nt2.i/20190718sa.b/V207181915G.D

Injection Date: 18-JUL-2019 15:05

Lab ID: SHG0268-CAL8 Client ID: 80

Report Date: 07/19/2019 13:39





INITIAL CALIBRATION CHECK

NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: NT3 Calibration: CG00045
Lab File ID: V307181905.D Calibration Date: 07/16/19 11:44
Sequence: SHG0273 Injection Date: 07/18/19
Lab Sample ID: SHG0273-ICV1 Injection Time: 11:02
Sequence Name: ICV

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Gasoline Range Organics (Tol-Nap)	A	1000.0	923	16736.8700	15446.2000		-7.7	20
Toluene-d8	A	5.0000	5.23	1.3119910	1.3712370		4.5	
4-Bromofluorobenzene	A	5.0000	4.98	0.3970749	0.3956957		-0.3	

* Values outside of QC limits

Data File: \\target\share\chemd\nt3.i\20190718s.b\V307181905.D

Date : 18-JUL-2019 11:02

Client ID:

Sample Info: SHG0273-ICV1

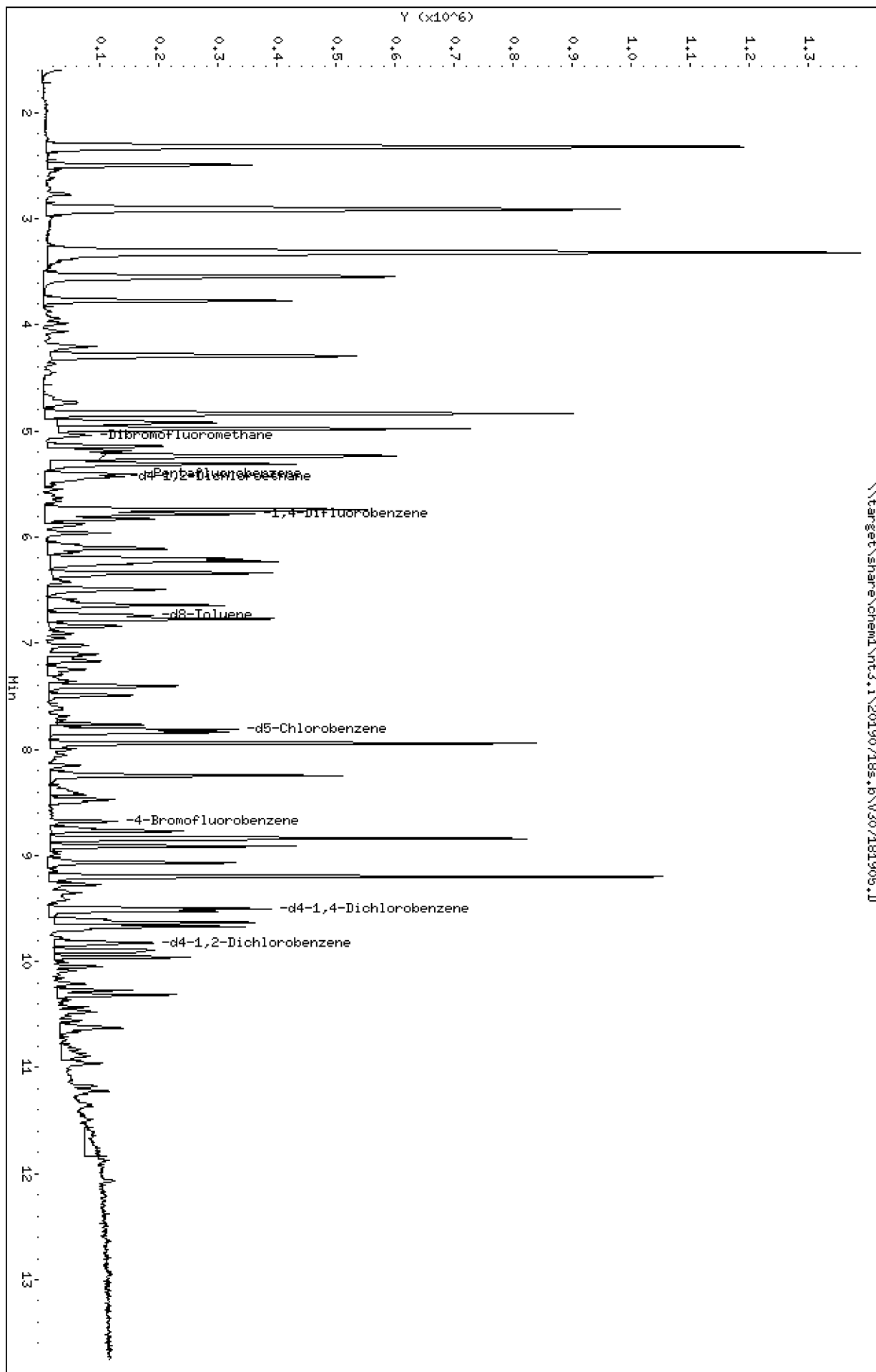
Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190718s.b\V307181905.D



ARI Labs, Inc.

8260C 10 ml purge
 Data file : \\target\share\chem1\nt3.i\20190718s.b\V307181905.D
 Lab Smp Id: SHG0273-ICV1
 Inj Date : 18-JUL-2019 11:02
 Operator : PKC Inst ID: nt3.i
 Smp Info : SHG0273-ICV1
 Misc Info : 15-
 Comment :
 Method : \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Meth Date : 19-Jul-2019 09:19 nt3.i Quant Type: ISTD
 Cal Date : 16-JUL-2019 20:19 Cal File: V307161926.D
 Als bottle: 56
 Dil Factor: 1.00000
 Integrator: HP RTE Compound Sublist: gsurr.sub
 Target Version: 4.14
 Processing Host: ORGDATA11

Concentration Formula: Amt * DF * Pv / Sa * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Pv	10.000	Purge Volume (mL)
Sa	10.000	Sample Amount (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS	
						ON-COLUMN	FINAL
	MASS					(ug/L)	(ug/L)
\$ 27 Dibromofluoromethane	111	5.041	5.046	(0.933)	18168	4.92699	4.927
* 32 Pentafluorobenzene	168	5.403	5.402	(1.000)	72062	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.429	5.434	(1.005)	25601	5.27217	5.272
* 37 1,4-Difluorobenzene	114	5.785	5.784	(1.000)	115802	10.0000	
\$ 43 d8-Toluene	98	6.736	6.735	(1.164)	79396	5.22579	5.226
* 53 d5-Chlorobenzene	117	7.815	7.814	(1.000)	122483	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.681	8.680	(1.111)	24233	4.98263	4.983
* 76 d4-1,4-Dichlorobenzene	152	9.499	9.498	(1.000)	73096	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.823	9.817	(1.034)	33888	4.94190	4.942

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt3.i Calibration Date: 18-JUL-2019
 Lab File ID: V307181905.D Calibration Time: 22:11
 Lab Smp Id: SHG0273-ICV1
 Analysis Type: VOA Level: LOW
 Quant Type: ISTD Sample Type: WATER
 Operator: PKC
 Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	73687	36844	147374	72062	-2.21
37 1,4-Difluorobenze	116116	58058	232232	115802	-0.27
53 d5-Chlorobenzene	124912	62456	249824	122483	-1.94
76 d4-1,4-Dichlorobe	77169	38585	154338	73096	-5.28

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.40	4.90	5.90	5.40	0.02
37 1,4-Difluorobenze	5.78	5.28	6.28	5.79	0.02
53 d5-Chlorobenzene	7.81	7.31	8.31	7.82	0.01
76 d4-1,4-Dichlorobe	9.50	9.00	10.00	9.50	0.01

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20151005
Sample Matrix: LIQUID Fraction: VOA
Lab Smp Id: SHG0273-ICV1
Level: LOW Operator: PKC
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt3.i\20190718s.b\8260C071619.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	4.927	98.54	80-120
\$ 33 d4-1,2-Dichloroeth	5.000	5.272	105.44	80-128
\$ 43 d8-Toluene	5.000	5.226	104.52	80-120
\$ 62 4-Bromofluorobenze	5.000	4.983	99.65	80-120
\$ 79 d4-1,2-Dichloroben	5.000	4.942	98.84	80-120

REVIEW SUMMARY FOR FILE - V307181905.D

Lab ID: SHG0273-ICV1

nt3.i, 20190718s.b\8260C071619.m, 18-JUL-2019 11:02

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chemd\nt3.i\20190718g.b\V307181905.D

Date : 18-JUL-2019 11:02

Client ID:

Sample Info: SHG0273-ICV1

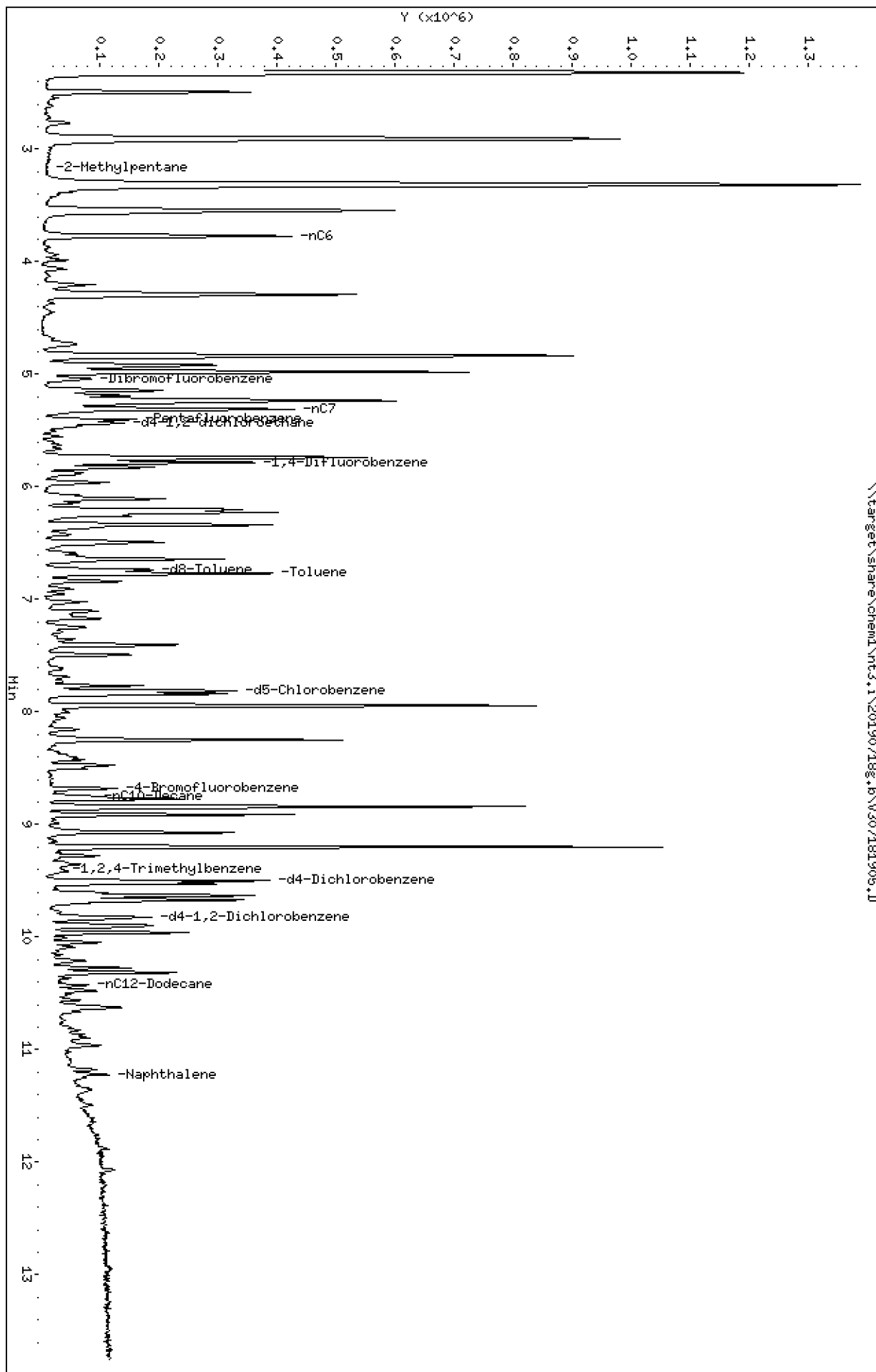
Column phase: RTXWMS

Instrument: nt3.i

Operator: PKC

Column diameter: 0.18

\\target\share\chemd\nt3.i\20190718g.b\V307181905.D



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190718g.b/V307181905.D

Method: \20190718g.b\NWTPHG.m

Instrument: nt3.i

Gas Ical Date: 13-JUN-2019

Injection Date: 18-JUL-2019 11:02

ARI ID: SHG0273-ICV1

Client ID:

Matrix: WATER

Dilution Factor: 1.000

Operator: PKC

GASOLINE HYDROCARBONS

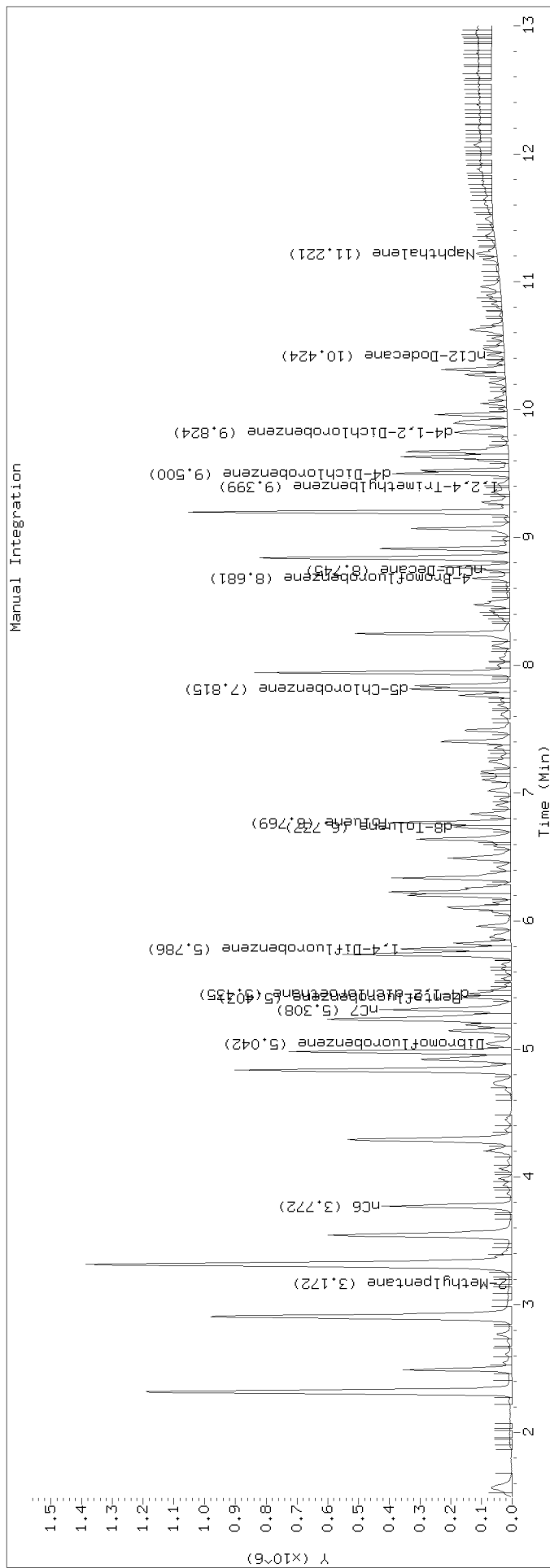
Range	RF	Total Area*	Amount (ug/mL)
WAGas Tol-C12 (6.67 to 10.53)	15577275	14506397	0.931
8015C 2MP-TMB (3.04 to 9.49)	30509602	30566031	1.002 M
AK101 nC6-nC10 (3.67 to 8.65)	20565293	20873358	1.015 M
NWTPHG Tol-Nap (6.67 to 11.32)	16736874	15446203	0.923
mod8015 nC7-nC12 (5.21 to 10.53)	23297057	22343880	0.959 M

M Indicates manual integration within range

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.815	479452	d5-Chlorobenzene
6.737	302030	d8-Toluene
9.500	556069	d4-Dichlorobenzene
8.681	196854	4-Bromofluorobenzene
9.824	364317	d4-1,2-Dichlorobenzene





INITIAL CALIBRATION CHECK

NWTPHg

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: NT2 Calibration: CG00055
Lab File ID: V207191903G.D Calibration Date: 07/18/19 13:28
Sequence: SHG0276 Injection Date: 07/19/19
Lab Sample ID: SHG0276-ICV1 Injection Time: 07:15
Sequence Name: ICV

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Gasoline Range Organics (Tol-Nap)	A	1000.0	945	25107.0600	23715.1000		-5.5	20
Toluene-d8	A	5.0000	5.12	1.2502330	1.2800970		2.4	
4-Bromofluorobenzene	A	5.0000	4.81	0.3947613	0.3799065		-3.8	

* Values outside of QC limits

Data File: \\target\share\chend\nt2.i\20190719s.b\2019191903G.D

Date : 19-JUL-2019 07:15

Client ID:

Sample Info: SHG0276-ICV1

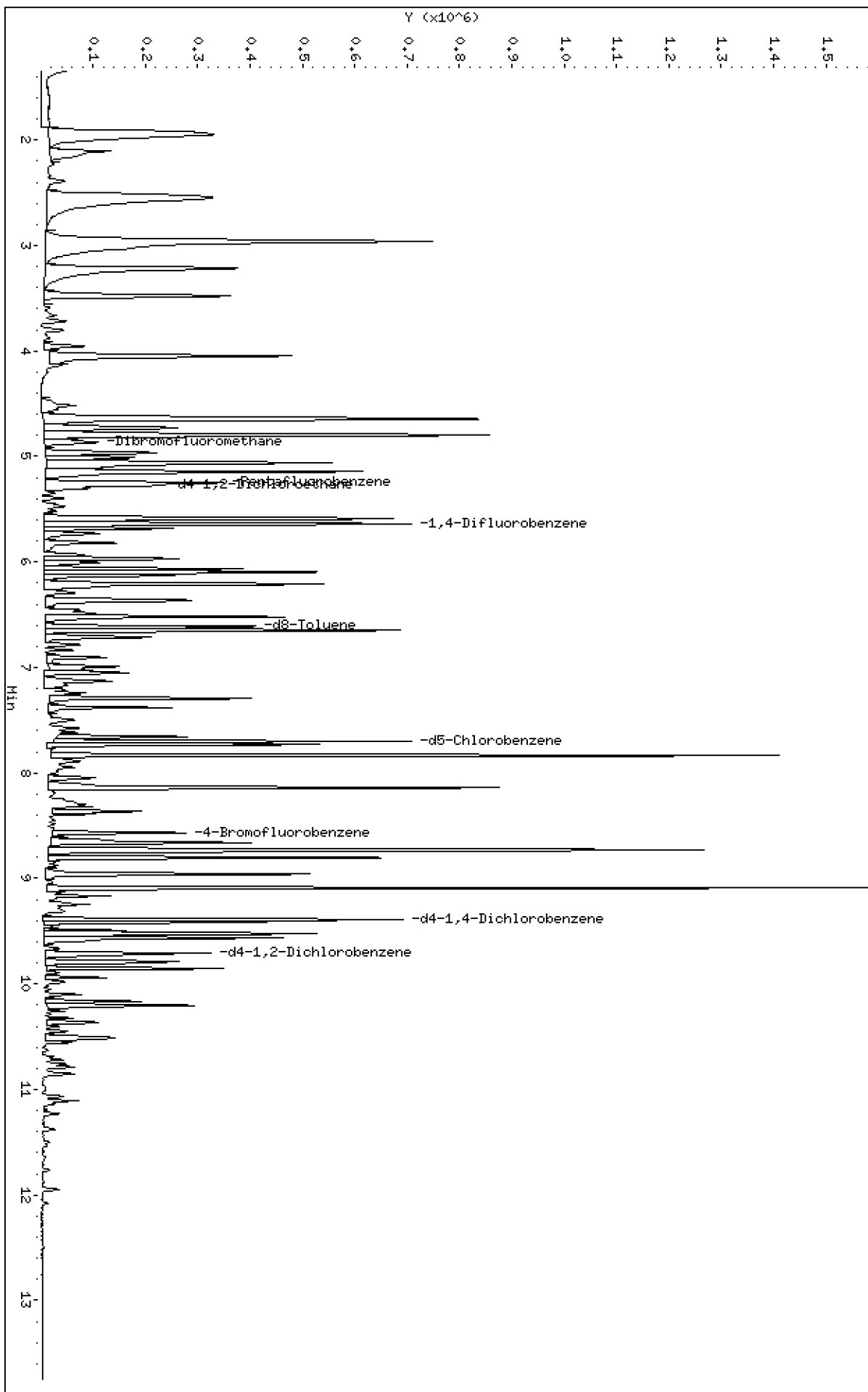
Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18

\\target\share\chend\nt2.i\20190719s.b\2019191903G.D



ARI Labs, Inc.

8260C 10 ml purge
Data file : \\target\share\chem1\nt2.i\20190719s.b\V207191903G.D
Lab Smp Id: SHG0276-ICV1
Inj Date : 19-JUL-2019 07:15
Operator : LH Inst ID: nt2.i
Smp Info : SHG0276-ICV1
Misc Info : 15-
Comment :
Method : \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Meth Date : 22-Jul-2019 08:26 nt2.i Quant Type: ISTD
Cal Date : 18-JUL-2019 15:05 Cal File: V207181915a.D
Als bottle: 34
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gsurr.sub
Target Version: 4.14
Processing Host: ORGDATA11

Compounds	QUANT SIG	CONCENTRATIONS					
		ON-COLUMN	FINAL				
	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/L)	(ug/L)
=====	=====	=====	=====	=====	=====	=====	=====
\$ 27 Dibromofluoromethane	111	4.864	4.872	(0.927)	42500	5.02501	5.025
* 32 Pentafluorobenzene	168	5.248	5.249	(1.000)	163632	10.0000	
\$ 33 d4-1,2-Dichloroethane	65	5.272	5.274	(1.005)	52758	5.15171	5.152
* 37 1,4-Difluorobenzene	114	5.637	5.639	(1.000)	295926	10.0000	
\$ 43 d8-Toluene	98	6.610	6.612	(1.173)	189407	5.11943	5.119
* 53 d5-Chlorobenzene	117	7.699	7.701	(1.000)	280827	10.0000	
\$ 62 4-Bromofluorobenzene	174	8.569	8.571	(1.113)	53344	4.81185	4.812
* 76 d4-1,4-Dichlorobenzene	152	9.390	9.392	(1.000)	145352	10.0000	
\$ 79 d4-1,2-Dichlorobenzene	152	9.707	9.708	(1.034)	67856	4.95641	4.956

ARI Labs, Inc.

INTERNAL STANDARD COMPOUNDS
 AREA AND RT SUMMARY

Instrument ID: nt2.i Calibration Date: 19-JUL-2019
 Lab File ID: V207191903G.D Calibration Time: 17:11
 Lab Smp Id: SHG0276-ICV1
 Analysis Type: VOA Level:
 Quant Type: ISTD Sample Type:
 Operator: LH
 Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
 Misc Info: 15-

Test Mode:

Use Initial Calibration Level 5.
 If Continuing Cal. use Initial Cal. Level 5

COMPOUND	STANDARD	AREA LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	169604	84802	339208	163632	-3.52
37 1,4-Difluorobenze	298924	149462	597848	295926	-1.00
53 d5-Chlorobenzene	281842	140921	563684	280827	-0.36
76 d4-1,4-Dichlorobe	151581	75791	303162	145352	-4.11

COMPOUND	STANDARD	RT LIMIT		SAMPLE	%DIFF
		LOWER	UPPER		
32 Pentafluorobenzen	5.25	4.75	5.75	5.25	-0.03
37 1,4-Difluorobenze	5.64	5.14	6.14	5.64	-0.03
53 d5-Chlorobenzene	7.70	7.20	8.20	7.70	-0.02
76 d4-1,4-Dichlorobe	9.39	8.89	9.89	9.39	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
 AREA LOWER LIMIT = - 50% of internal standard area.
 RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
 RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

ARI Labs, Inc.

RECOVERY REPORT

Client Name: Client SDG: 20150930
Sample Matrix: NONE Fraction: VOA
Lab Smp Id: SHG0276-ICV1
Level: Operator: LH
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: allspike.spk Quant Type: ISTD
Sublist File: gsurr.sub
Method File: \\target\share\chem1\nt2.i\20190719s.b\8260071819.m
Misc Info: 15-

SURROGATE COMPOUND	AMOUNT ADDED ug/L	AMOUNT RECOVERED ug/L	% RECOVERED	LIMITS
\$ 27 Dibromofluorometha	5.000	5.025	100.50	
\$ 33 d4-1,2-Dichloroeth	5.000	5.152	103.03	
\$ 43 d8-Toluene	5.000	5.119	102.39	
\$ 62 4-Bromofluorobenze	5.000	4.812	96.24	
\$ 79 d4-1,2-Dichloroben	5.000	4.956	99.13	

REVIEW SUMMARY FOR FILE - V207191903G.D

Lab ID: SHG0276-ICV1

nt2.i, 20190719s.b\8260071819.m, 19-JUL-2019 07:15

RT	CO-ELUTION COMPOUNDS
----	----------------------

Data File: \\target\share\chend\nt2.i\20190719g.b\207191903G.D

Date : 19-JUL-2019 07:15

Client ID:

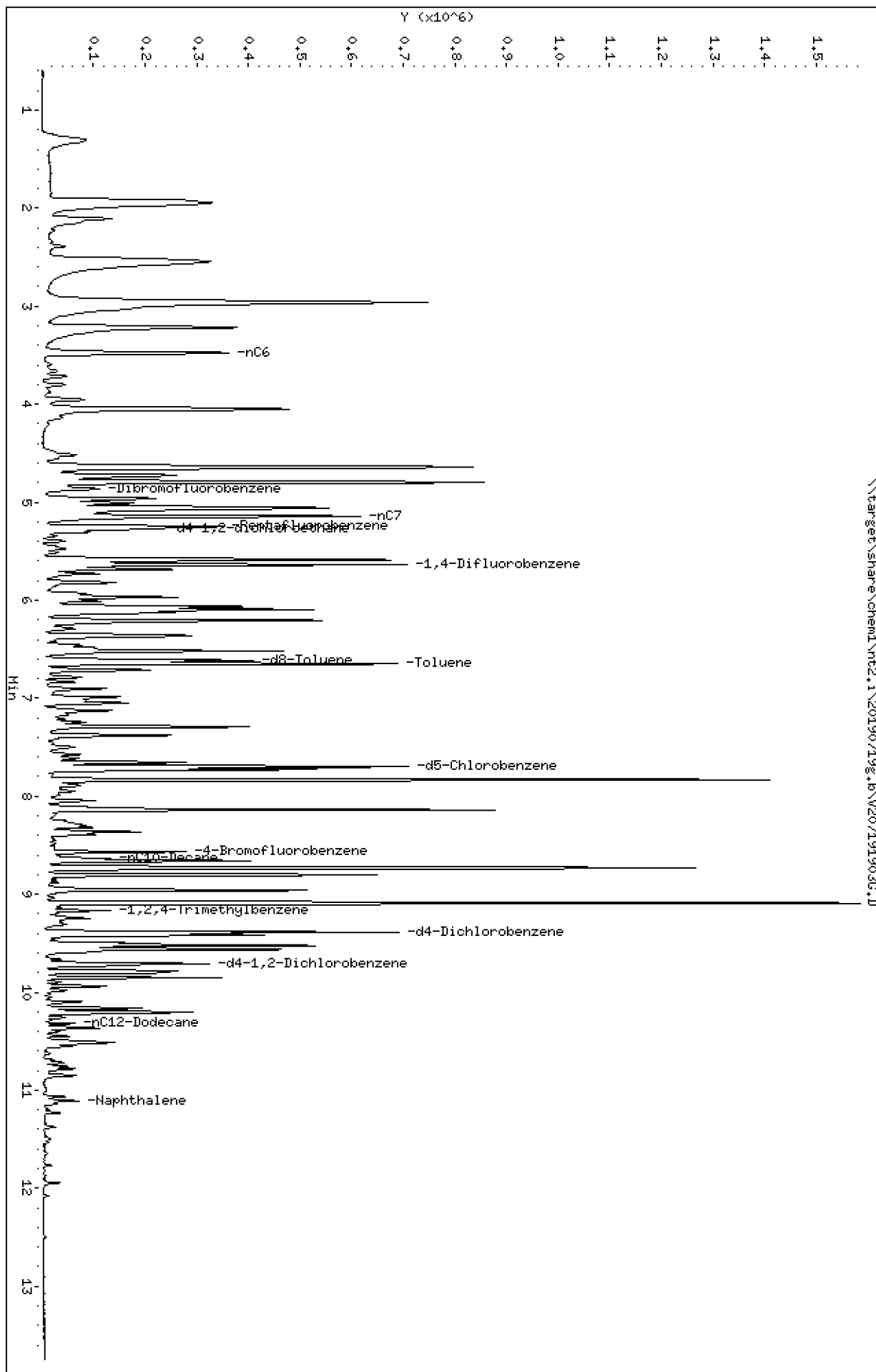
Sample Info: SHG0276-ICV1

Column phase: RTXWMS

Instrument: nt2.i

Operator: LH

Column diameter: 0.18



Analytical Resources Inc.
GC/MS Gas Quantitation Report

Data file: 20190719g.b/V207191903G.D

Method: \20190719g.b\GA032719.m

Instrument: nt2.i

Gas Ical Date: 3/27/19

Injection Date: 19-JUL-2019 07:15

ARI ID: SHG0276-ICV1

Client ID:

Matrix: NONE

Dilution Factor: 1.000

Operator: LH

=====

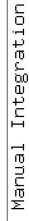
GASOLINE HYDROCARBONS

Range	RF	Total Area*	Amount (ug/mL)
-----	----	-----	-----
WAGas Tol-C12 (6.55 to 10.42)	23999549	22601123	0.942
8015C 2MP-TMB (3.04 to 9.27)	33333333	37272755	1.118 M
AK101 nC6-nC10 (3.38 to 8.54)	31889318	28792607	0.903 M
NWTPHG Tol-Nap (6.55 to 11.21)	25107058	23715101	0.945
mod8015 nC7-nC12 (5.05 to 10.42)	35467060	33431395	0.943 M

* Surrogate areas are subtracted from Total Area

NW Gas Range Subtracted Peaks

7.700	1059479	d5-Chlorobenzene
8.570	395066	4-Bromofluorobenzene
6.611	694869	d8-Toluene
9.391	963803	d4-Dichlorobenzene
9.707	610430	d4-1,2-Dichlorobenzene





ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHC0426

Instrument: NT2

Calibration: CC00079

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SHC0426-CALE	V203271917G.D	NA	03/27/19 13:12
Cal Standard	SHC0426-CALD	V203271918G.D	NA	03/27/19 13:32
Cal Standard	SHC0426-CALC	V203271919G.D	NA	03/27/19 13:52
Cal Standard	SHC0426-CALB	V203271920G.D	NA	03/27/19 14:13
Cal Standard	SHC0426-CALA	V203271921G.D	NA	03/27/19 14:33
Cal Standard	SHC0426-CAL9	V203271922G.D	NA	03/27/19 14:53
Initial Cal Blank	SHC0426-ICB1	V203271923G.D	NA	03/27/19 15:13
8260C SCV	SHC0426-SCV1	V203271924G.D	NA	03/27/19 15:34



ANALYSIS SEQUENCE

SHC0426

Instrument: NT2 Element Column ID: 1306512 RTXv
Calibration ID: CC00079 Tune File: bfb.u
EM Voltage: 1812

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHC0426-TUN1	MS Tune	QC		1	H002159	H001679	
SHC0426-CAL1	8260C 0.2	QC		2	H002992	H001679	
SHC0426-CAL2	8260C 0.5	QC		3	H002993	H001679	
SHC0426-CAL3	8260C 1	QC		4	H002994	H001679	
SHC0426-CAL4	8260C 2	QC		5	H002995	H001679	
SHC0426-CAL5	8260C 10	QC		6	H002996	H001679	
SHC0426-CAL6	8260C 20	QC		7	H002997	H001679	
SHC0426-CAL7	8260C 40	QC		8	H003000	H001679	
SHC0426-CAL8	8260C 80	QC		9	H003001	H001679	
SHC0426-CALE	Cal Standard	QC		10	H003084	H001679	
SHC0426-CALD	Cal Standard	QC		11	H003083	H001679	
SHC0426-CALC	Cal Standard	QC		12	H003082	H001679	
SHC0426-CALB	Cal Standard	QC		13	H003081	H001679	
SHC0426-CALA	Cal Standard	QC		14	H003080	H001679	
SHC0426-CAL9	Cal Standard	QC		15	H003079	H001679	
SHC0426-ICB1	Initial Cal Blank	QC		16		H001679	
SHC0426-SCV1	8260C SCV	QC		17	H003085	H001679	



ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHF0222

Instrument: NT3

Calibration: CF00043

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Gas 0.1	SHF0222-CAL9	V306131920G.D	NA	06/13/19 19:39
Gas 0.25	SHF0222-CALA	V306131921G.D	NA	06/13/19 20:06
Gas 0.5	SHF0222-CALB	V306131922G.D	NA	06/13/19 20:32
Gas 1	SHF0222-CALC	V306131923G.D	NA	06/13/19 20:59
Gas 2.5	SHF0222-CALD	V306131924G.D	NA	06/13/19 21:26
Gas 5	SHF0222-CALE	V306131925G.D	NA	06/13/19 21:53
Gas SCV 1	SHF0222-SCV1	V306131927G.D	NA	06/13/19 22:46



ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0220

Instrument: NT3

Calibration: CG00045

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0220-TUN1	V307161917G.D	NA	07/16/19 15:54



ANALYSIS SEQUENCE

SHG0220

Instrument: NT3 Element Column ID: 1300725RTXV
Calibration ID: CG00045 Tune File: bfb.u
EM Voltage: 1929

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0220-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0220-CAL1	8260C 0.2	QC		2	H006796	H001679	
SHG0220-CAL2	8260C 0.5	QC		3	H006797	H001679	
SHG0220-CAL3	8260C 1	QC		4	H006798	H001679	
SHG0220-CAL4	8260C 2	QC		5	H006799	H001679	
SHG0220-CAL5	8260C 10	QC		6	H006800	H001679	
SHG0220-CAL6	8260C 20	QC		7	H006801	H001679	
SHG0220-CAL7	8260C 40	QC		8	H006802	H001679	
SHG0220-CAL8	8260C 80	QC		9	H006803	H001679	



Analytical Resources, Incorporated
Analytical Chemists and Consultants

ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0268

Instrument: NT2

Calibration: CG00055

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0268-TUN1	V207181906G.D	NA	07/18/19 11:55



ANALYSIS SEQUENCE

SHG0268

Instrument: NT2 Element Column ID: 1306512 RTXv
Calibration ID: CG00055 Tune File: bfb.u
EM Voltage: 1718

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0268-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0268-CAL1	8260C 0.2	QC		2	H006885	H001679	
SHG0268-CAL2	8260C 0.5	QC		3	H006886	H001679	
SHG0268-CAL3	8260C 1	QC		4	H006887	H001679	
SHG0268-CAL4	8260C 2	QC		5	H006888	H001679	
SHG0268-CAL5	8260C 10	QC		6	H006889	H001679	
SHG0268-CAL6	8260C 20	QC		7	H006890	H001679	
SHG0268-CAL7	8260C 40	QC		8	H006891	H001679	
SHG0268-CAL8	8260C 80	QC		9	H006892	H001679	



ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0273

Instrument: NT3

Calibration: CG00045

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
BFB	SHG0273-TUN1	V307181902.D	NA	07/18/19 09:31
ICV	SHG0273-ICV1	V307181905.D	NA	07/18/19 11:02
LCS	BHG0439-BS2	V307181905LCS.D	Water	07/18/19 11:02
LCS	BHG0455-BS1	V307181905LCSA.D	Solid	07/18/19 11:02
LCS Dup	BHG0439-BSD2	V307181906.D	Water	07/18/19 11:29
LCS Dup	BHG0455-BSD1	V307181906A.D	Solid	07/18/19 11:29
Blank	BHG0439-BLK2	V307181909.D	Water	07/18/19 12:49
Blank	BHG0455-BLK1	V307181909A.D	Solid	07/18/19 12:49
TB-SO-190711	19G0163-16	V307181911.D	Water	07/18/19 13:42
SO-01-190711	19G0163-02	V307181919.D	Solid	07/18/19 17:18
SO-01-190711	BHG0455-MS1	V307181920.D	Solid	07/18/19 17:45
SO-01-190711	BHG0455-MSD1	V307181921.D	Solid	07/18/19 18:11
SO-02-190711	19G0163-03	V307181922.D	Solid	07/18/19 18:38
SO-03-190711	19G0163-04	V307181923.D	Solid	07/18/19 19:04
SO-04-190711	19G0163-05	V307181924.D	Solid	07/18/19 19:31
SO-05-190711	19G0163-06	V307181925.D	Solid	07/18/19 19:57
SO-06-190711	19G0163-07	V307181926.D	Solid	07/18/19 20:24
SO-07-190711	19G0163-08	V307181927.D	Solid	07/18/19 20:51
SO-08-190711	19G0163-09	V307181928.D	Solid	07/18/19 21:17
CCV	SHG0273-CCV1	V307181929.D	NA	07/18/19 21:44

Checklist for SEQUENCE SHG0273

Checklist: Analyst Checklist-VOA(rev3)

# Checklist Item	Response	Analyst Initials	Date
1 Samples have no Bubbles/Headspace of note for all Workorders	YES	PKC	07/19/2019
2 PH <=2 / 5035 Preserved for all Workorders	YES	PKC	07/19/2019
3 BFB abundance and time criteria met	YES	PKC	07/19/2019
4 Narrate all Internal Standard areas not within 50-200% for all affected Workorders	NA	PKC	07/19/2019
5 Retention times within windows and coelution summary checked for all Workorders	YES	PKC	07/19/2019
6 Rationale provided for all manual Integrations not done for baseline corrections per SOP 1021s Comments: <i>Manual integrations to resolve IS/SS from GRO and to resolve range marker compounds.</i>	YES	PKC	07/19/2019
7 Narrate any Workorders where the Project specific requirements have not been met	NA	PKC	07/19/2019
8 Trip Blank, Field Blank and (or) Holding Blank are below MRL for all Analytes	YES	PKC	07/19/2019
9 Narrate Samples per Workorder that will require more than one analysis to be reported due to dilutions or re-analysis	NA	PKC	07/19/2019
10 Verify that all samples requiring a dilution or re-analysis have been added to another batch or sequence	NA	PKC	07/19/2019
11 Extraction basis, sample prep, dilution factor, and total solids are correctly entered. Comments: <i>Maximum MEOH split volume for this analysis is 900 uL into 45 mL DI H2O, which is reported as a 50x dilution.</i>	YES	PKC	07/19/2019
12 AUTOCHECK: Blank checked for exceedence of criteria	YES *	PKC	07/19/2019
13 AUTOCHECK: Check blank spike recovery	YES *	PKC	07/19/2019
14 AUTOCHECK: Check blank spike/blank spike duplicate RPD. If exceeded include outliers in exception report.	YES *	PKC	07/19/2019
15 AUTOCHECK: Compounds in method designated as blank spike compounds are present	YES *	PKC	07/19/2019
16 AUTOCHECK: Check %RPD between sample and sample duplicate	NA *	PKC	07/19/2019
17 AUTOCHECK: Matrix spike recoveries within limits	YES *	PKC	07/19/2019
18 AUTOCHECK: Matrix spike/matrix spike duplicate RPD within limits	YES *	PKC	07/19/2019
19 AUTOCHECK: List of compounds listed as spiked are present	YES *	PKC	07/19/2019
20 AUTOCHECK: Check Surrogate recoveries	YES *	PKC	07/19/2019
21 AUTOCHECK: Checks Surrogate spike list against Analysis	YES *	PKC	07/19/2019
22 Data locked, checklist completed and status is Analyzed (REVIEWER)	YES	MW	07/19/2019
23 Color warnings have been addressed, narrated and (or) qualified (REVIEWER)	YES	MW	07/19/2019
24 rev_DilutionCheck.rpt and rev_DilutionCheck.exe was run to verify multiple sample results are consistent (REVIEWER) Comments: <i>EXCEPTION REPORT REQUIRED</i>	NO	MW	07/19/2019

Checklist for SEQUENCE SHG0273	Checklist: Analyst Checklist-VOA(rev3)
--------------------------------	--

# Checklist Item	Response	Analyst Initials	Date
25 List of samples in this sequence that will require additional runs-verify reshot created (ANALYST)	NA	PKC	07/19/2019
26 List of samples in this sequence that are re-analysis or dilutions of samples (ANALYST)	NA	PKC	07/19/2019
27 Additional Notes (ANALYST and REVIEWER)	YES	PKC	07/19/2019
Comments: <i>Several sample weights are below 4 g. This and high moisture combine to lead to elevated RLs.</i>			



ANALYSIS SEQUENCE

SHG0273

Instrument: NT3 Element Column ID: 1300725RTXV
Calibration ID: CG00045 Tune File: bfb.u
EM Voltage: 1929

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0273-TUN1	BFB	QC		1	H005698		
SHG0273-ICV1	ICV	QC		2	H005160	H001679	
BHG0439-BS2	LCS	QC		3		H001679	
BHG0455-BS1	LCS	QC		4		H001679	
BHG0439-BSD2	LCS Dup	QC		5		H001679	
BHG0455-BSD1	LCS Dup	QC		6		H001679	
BHG0439-BLK2	Blank	QC		7		H001679	
BHG0455-BLK1	Blank	QC		8		H001679	
19G0163-16	TB-SO-190711	8260C Gas (NW/TPH)	A	9		H001679	
19G0163-02	SO-01-190711	8260C Gas (NW/TPH)	J	10		H001679	
BHG0455-MS1	Matrix Spike	QC		11		H001679	
BHG0455-MSD1	Matrix Spike Dup	QC		12		H001679	
19G0163-03	SO-02-190711	8260C Gas (NW/TPH)	E	13		H001679	
19G0163-04	SO-03-190711	8260C Gas (NW/TPH)	E	14		H001679	
19G0163-05	SO-04-190711	8260C Gas (NW/TPH)	E	15		H001679	
19G0163-06	SO-05-190711	8260C Gas (NW/TPH)	E	16		H001679	
19G0163-07	SO-06-190711	8260C Gas (NW/TPH)	E	17		H001679	
19G0163-08	SO-07-190711	8260C Gas (NW/TPH)	E	18		H001679	
19G0163-09	SO-08-190711	8260C Gas (NW/TPH)	E	19		H001679	
SHG0273-CCV1	CCV	QC		20	H005160	H001679	

38 of 3146

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190718.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 0904	V307181901G.D	RINSE				1
2 0931	V307181902G.D	SHG0265-TUN1				1
3 1009	V307181903G.D	SHG0265-ICV1				1 5.41 69628 5.78 108714 7.81 127328 9.50 81014
4 1009	V307181903GLCS.D	BHG0439--BS1				1 5.41 69628 5.78 108714 7.81 127328 9.50 81014
5 1036	V307181904G.D	BHG0439--BSD1				1 5.40 81908 5.78 133400 7.81 138454 9.50 84628
6 1102	V307181905G.D	SHG0-ICV1 Gas				1 5.40 72062 5.79 115802 7.82 122483 9.50 73096
7 1129	V307181906G.D	BHG0-BSD1 Gas				1 5.40 64694 5.78 110050 7.81 112338 9.50 67652
8 1156	V307181907G.D	SHG0265-LCV1 0.5				1 5.40 76653 5.78 127042 7.81 128552 9.50 74365
9 1222	V307181908G.D	SHG0265-LCV2 1.0				1 5.40 74672 5.78 124201 7.81 127828 9.50 76139
10 1249	V307181909G.D	BHG0439-BLK1				1 5.40 75770 5.79 123016 7.81 123872 9.50 71515
11 1315	V307181910G.D	19G0106-01				1 5.41 71096 5.79 117488 7.82 121863 9.50 70200
12 1342	V307181911G.D	19G0163-16				1 5.40 60556 5.78 94130 7.81 96757 9.50 53470
13 1408	V307181912G.D	19G0224-01				1 5.40 70710 5.79 116322 7.82 119147 9.50 65968
14 1435	V307181913G.D	19G0157-17				1 5.40 68543 5.79 110936 7.82 117920 9.50 67640
15 1504	V307181914G.D	19G0157-18				1 5.40 67867 5.79 106858 7.82 112791 9.50 63205
16 1532	V307181915G.D	19G0118-11RE1				1 5.40 68710 5.78 113485 7.81 114934 9.50 64074
17 1558	V307181916G.D	19G0224-02				1 5.40 54588 5.79 89446 7.82 92847 9.50 52696
18 1625	V307181917G.D	19G0224-03				1 5.40 67635 5.79 106280 7.82 113118 9.50 63062
19 1651	V307181918G.D	19G0224-04				1 5.41 67891 5.79 111753 7.81 116224 9.50 68836
20 1718	V307181919G.D	19G0163-02				1 5.40 72752 5.78 114205 7.81 118065 9.50 70713
21 1745	V307181920G.D	BHG0-MS1				1 5.40 73616 5.78 121527 7.82 124194 9.50 74072
22 1811	V307181921G.D	BHG0-MSD1				1 5.40 75039 5.78 124165 7.81 125533 9.50 78653

23	1838	V307181922G.D	19G0163-03	1	5.40	66238	5.78	108967	7.82	110823	9.50	62766
24	1904	V307181923G.D	19G0163-04	1	5.40	74198	5.78	127346	7.82	126933	9.50	76325
25	1931	V307181924G.D	19G0163-05	1	5.40	79034	5.78	127938	7.82	131122	9.50	77544
26	1957	V307181925G.D	19G0163-06	1	5.40	80419	5.78	127165	7.82	132772	9.50	71500
27	2024	V307181926G.D	19G0163-07	1	5.40	73630	5.78	117787	7.82	122413	9.50	63892
28	2051	V307181927G.D	19G0163-08	1	5.40	77901	5.78	126581	7.82	132018	9.50	74924
29	2117	V307181928G.D	19G0163-09	1	5.40	73082	5.78	118734	7.81	119654	9.50	63511
30	2144	V307181929G.D	SHG0-CCV1 Gas	1	5.41	59267	5.79	98531	7.82	100406	9.50	59407
31	2211	V307181930G.D	SHG0265-CCV1	1	5.40	76628	5.78	128915	7.81	133871	9.50	81936

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190718g.b

Instrument: nt3.i Date: 18-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
0931	V307181902.D	SHG0273-TUN1	1	NO MANUAL INTEGRATION
1102	V307181905.D	SHG0273-ICV1	1	d4-1,2-dichloroethane,
1102	V307181905LCS.D	BHG0439-BS2	1	d4-1,2-dichloroethane,
1102	V307181905LCSA.D	BHG0455-BS1	1	d4-1,2-dichloroethane,
1129	V307181906.D	BHG0439-BSD2	1	Naphthalene,
1129	V307181906A.D	BHG0455-BSD1	1	Naphthalene,
1249	V307181909.D	BHG0439-BLK2	1	NO MANUAL INTEGRATION
1249	V307181909A.D	BHG0455-BLK1	1	NO MANUAL INTEGRATION
1342	V307181911.D	19G0163-16	1	NO MANUAL INTEGRATION
1718	V307181919.D	19G0163-02	1	NO MANUAL INTEGRATION
1745	V307181920.D	BHG0455-MS1	1	d4-Dichlorobenzene,
1811	V307181921.D	BHG0455-MSD1	1	d4-Dichlorobenzene, d4-1,2-dichloroethane,
1838	V307181922.D	19G0163-03	1	NO MANUAL INTEGRATION
1904	V307181923.D	19G0163-04	1	NO MANUAL INTEGRATION
1931	V307181924.D	19G0163-05	1	NO MANUAL INTEGRATION
1957	V307181925.D	19G0163-06	1	NO MANUAL INTEGRATION
2024	V307181926.D	19G0163-07	1	NO MANUAL INTEGRATION

Instrument: nt3.i Date: 18-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
2051	V307181927.D	19G0163-08	1	NO MANUAL INTEGRATION
2117	V307181928.D	19G0163-09	1	NO MANUAL INTEGRATION
2144	V307181929.D	SHG0273-CCV1	1	1,2,4-Trimethylbenzene,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt3.i\20190718s.b

Instrument: nt3.i Date: 18-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
0931	V307181902.D	SHG0273-TUN1	1	NO MANUAL INTEGRATION
1102	V307181905.D	SHG0273-ICV1	1	NO MANUAL INTEGRATION
1102	V307181905LCS.D	BHG0439-BS2	1	NO MANUAL INTEGRATION
1102	V307181905LCSA.D	BHG0455-BS1	1	NO MANUAL INTEGRATION
1129	V307181906.D	BHG0439-BSD2	1	NO MANUAL INTEGRATION
1129	V307181906A.D	BHG0455-BSD1	1	NO MANUAL INTEGRATION
1249	V307181909.D	BHG0439-BLK2	1	NO MANUAL INTEGRATION
1249	V307181909A.D	BHG0455-BLK1	1	NO MANUAL INTEGRATION
1342	V307181911.D	19G0163-16	1	NO MANUAL INTEGRATION
1718	V307181919.D	19G0163-02	1	NO MANUAL INTEGRATION
1745	V307181920.D	BHG0455-MS1	1	NO MANUAL INTEGRATION
1811	V307181921.D	BHG0455-MSD1	1	NO MANUAL INTEGRATION
1838	V307181922.D	19G0163-03	1	NO MANUAL INTEGRATION
1904	V307181923.D	19G0163-04	1	NO MANUAL INTEGRATION
1931	V307181924.D	19G0163-05	1	NO MANUAL INTEGRATION
1957	V307181925.D	19G0163-06	1	NO MANUAL INTEGRATION
2024	V307181926.D	19G0163-07	1	NO MANUAL INTEGRATION

Instrument: nt3.i Date: 18-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
2051	V307181927.D	19G0163-08	1	NO MANUAL INTEGRATION
2117	V307181928.D	19G0163-09	1	NO MANUAL INTEGRATION
2144	V307181929.D	SHG0273-CCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 19-Jul-2019 13:25

V307181902.D	Data Locked	paul,	19-Jul-2019	13:25
V307181905.D	Data Locked	paul,	19-Jul-2019	13:25
V307181905LCS.D	Data Locked	paul,	19-Jul-2019	13:25
V307181905LCSA.D	Data Locked	paul,	19-Jul-2019	13:25
V307181906.D	Data Locked	paul,	19-Jul-2019	13:25
V307181906A.D	Data Locked	paul,	19-Jul-2019	13:25
V307181909.D	Data Locked	paul,	19-Jul-2019	13:25
V307181909A.D	Data Locked	paul,	19-Jul-2019	13:25
V307181911.D	Data Locked	paul,	19-Jul-2019	13:25
V307181919.D	Data Locked	paul,	19-Jul-2019	13:25
V307181920.D	Data Locked	paul,	19-Jul-2019	13:25
V307181921.D	Data Locked	paul,	19-Jul-2019	13:25
V307181922.D	Data Locked	paul,	19-Jul-2019	13:25
V307181923.D	Data Locked	paul,	19-Jul-2019	13:25
V307181924.D	Data Locked	paul,	19-Jul-2019	13:25
V307181925.D	Data Locked	paul,	19-Jul-2019	13:25
V307181926.D	Data Locked	paul,	19-Jul-2019	13:25
V307181927.D	Data Locked	paul,	19-Jul-2019	13:25
V307181928.D	Data Locked	paul,	19-Jul-2019	13:25
V307181929.D	Data Locked	paul,	19-Jul-2019	13:25

Security Status Report

Date: 19-Jul-2019 13:24

V307181902.D	Data Locked	paul,	19-Jul-2019	13:23
V307181905.D	Data Locked	paul,	19-Jul-2019	13:23
V307181905LCS.D	Data Locked	paul,	19-Jul-2019	13:23
V307181905LCSA.D	Data Locked	paul,	19-Jul-2019	13:23
V307181906.D	Data Locked	paul,	19-Jul-2019	13:23
V307181906A.D	Data Locked	paul,	19-Jul-2019	13:23
V307181909.D	Data Locked	paul,	19-Jul-2019	13:23
V307181909A.D	Data Locked	paul,	19-Jul-2019	13:23
V307181911.D	Data Locked	paul,	19-Jul-2019	13:23
V307181919.D	Data Locked	paul,	19-Jul-2019	13:23
V307181920.D	Data Locked	paul,	19-Jul-2019	13:23
V307181921.D	Data Locked	paul,	19-Jul-2019	13:23
V307181922.D	Data Locked	paul,	19-Jul-2019	13:23
V307181923.D	Data Locked	paul,	19-Jul-2019	13:23
V307181924.D	Data Locked	paul,	19-Jul-2019	13:23
V307181925.D	Data Locked	paul,	19-Jul-2019	13:23
V307181926.D	Data Locked	paul,	19-Jul-2019	13:23
V307181927.D	Data Locked	paul,	19-Jul-2019	13:23
V307181928.D	Data Locked	paul,	19-Jul-2019	13:23
V307181929.D	Data Locked	paul,	19-Jul-2019	13:23



ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0276

Instrument: NT2

Calibration: CG00055

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
MS Tune	SHG0276-TUN1	V207191902G.D	NA	07/19/19 06:42
ICV	SHG0276-ICV1	V207191903G.D	NA	07/19/19 07:15
LCS	BHG0474-BS1	V207191903GLCS.D	Solid	07/19/19 07:15
LCS Dup	BHG0474-BSD1	V207191905G.D	Solid	07/19/19 07:56
Blank	BHG0474-BLK1	V207191907G.D	Solid	07/19/19 08:38
SO-09-190711	19G0163-10	V207191914G.D	Solid	07/19/19 11:09
SO-10-190711	19G0163-11	V207191915G.D	Solid	07/19/19 11:30
SO-10-190711D	19G0163-12	V207191916G.D	Solid	07/19/19 11:51
SO-11-190711	19G0163-13	V207191917G.D	Solid	07/19/19 12:12
SO-12-190711	19G0163-14	V207191918G.D	Solid	07/19/19 12:33
SO-13-190711	19G0163-15	V207191919G.D	Solid	07/19/19 12:54
ZZZZZ	19G0232-01	V207191920G.D	Solid	07/19/19 13:15
SO-11-190711	BHG0474-MS1	V207191921G.D	Solid	07/19/19 13:36
SO-11-190711	BHG0474-MSD1	V207191922G.D	Solid	07/19/19 13:57
CCV	SHG0276-CCV1	V207191923G.D	NA	07/19/19 14:18

Checklist for SEQUENCE SHG0276

Checklist: Analyst Checklist-VOA(rev4)

# Checklist Item	Response	Analyst Initials	Date
1 Instrument maintenance is recorded in Element Comments: <i>No instrument maintenance since previous sequence.</i>	NA	PKC	07/22/2019
2 Samples have no Bubbles/Headspace of note for all Workorders	YES	PKC	07/22/2019
3 PH <=2 / 5035 Preserved for all Workorders	YES	PKC	07/22/2019
4 BFB abundance and time criteria met (8260C only)	YES	PKC	07/22/2019
5 Narrate all Internal Standard areas not within 50-200% for all affected Workorders	NA	PKC	07/22/2019
6 Retention times within windows and coelution summary checked for all Workorders	YES	PKC	07/22/2019
7 Rationale provided for all manual Integrations not done for baseline corrections per SOP 1021s Comments: <i>Manual integrations to resolve IS/SS from GRO and to resolve range marker compounds.</i>	YES	PKC	07/22/2019
8 Narrate any Workorders where the Project specific requirements have not been met	NA	PKC	07/22/2019
9 Trip Blank, Field Blank and (or) Holding Blank are below MRL for all Analytes	YES	PKC	07/22/2019
10 Extraction basis, sample prep, dilution factor, and total solids are correctly entered. Comments: <i>Maximum MeOH split volume for soil samples in 900 uL into 45 mL for this analysis, which is reported as a 50x dilution.</i>	YES	PKC	07/22/2019
11 AUTOCHECK: Blank checked for exceedence of criteria	YES *	PKC	07/22/2019
12 AUTOCHECK: Check blank spike recovery	YES *	PKC	07/22/2019
13 AUTOCHECK: Check blank spike/blank spike duplicate RPD. If exceeded include outliers in exception report.	YES *	PKC	07/22/2019
14 AUTOCHECK: Compounds in method designated as blank spike compounds are present	YES *	PKC	07/22/2019
15 AUTOCHECK: Check %RPD between sample and sample duplicate	NA *	PKC	07/22/2019
16 AUTOCHECK: Matrix spike recoveries within limits	YES *	PKC	07/22/2019
17 AUTOCHECK: Matrix spike/matrix spike duplicate RPD within limits	YES *	PKC	07/22/2019
18 AUTOCHECK: List of compounds listed as spiked are present	YES *	PKC	07/22/2019
19 AUTOCHECK: Check Surrogate recoveries	YES *	PKC	07/22/2019
20 AUTOCHECK: Checks Surrogate spike list against Analysis	YES *	PKC	07/22/2019
21 Data locked, checklist completed and status is Analyzed (REVIEWER)	YES	BB	07/22/2019
22 Color warnings have been addressed, narrated and (or) qualified (REVIEWER)	YES	BB	07/22/2019
23 rev_DilutionCheck.rpt and rev_DilutionCheck.exe was run to verify multiple sample results are consistent (REVIEWER)	NA	BB	07/22/2019
24 List samples by workorder or batch QC to be reanalyzed-verify rebatch created (ANALYST)	NA	PKC	07/22/2019

* = Indicates Automated Response from Element DataSyst

Checklist for SEQUENCE SHG0276	Checklist: Analyst Checklist-VOA(rev4)
--------------------------------	--

# Checklist Item	Response	Analyst Initials	Date
25 List samples by workorder or batch QC reanalyzed and samples reported from two or more analyses (ANALYST)	NA	PKC	07/22/2019
26 Additional Notes (ANALYST and REVIEWER)	YES	PKC	07/22/2019
Comments: <i>Low sample weights in 5035 vials and high moisture for 19G0163 samples results in elevated reporting limits.</i>			



ANALYSIS SEQUENCE

SHG0276

Instrument: NT2 Element Column ID: 1306512 RTXv
Calibration ID: CG00055 Tune File: bfb.u
EM Voltage: 1718

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0276-TUN1	MS Tune	QC		1	H005698	H001679	
SHG0276-ICV1	ICV	QC		2	H005160	H001679	
BHG0474-BS1	LCS	QC		3		H001679	
BHG0476-BS1	LCS	QC		4		H001679	
BHG0474-BSD1	LCS Dup	QC		5		H001679	
BHG0476-BSD1	LCS Dup	QC		6		H001679	
BHG0474-BLK1	Blank	QC		7		H001679	
BHG0476-BLK1	Blank	QC		8		H001679	
19G0202-07	Blank	8260C Gas (NW/TPH)	B	9		H001679	
19G0202-05	Effluent Grab 1	8260C Gas (NW/TPH)	H	10		H001679	
19G0202-02	Influent Grab 1	8260C Gas (NW/TPH)	H	11		H001679	
19G0163-10	SO-09-190711	8260C Gas (NW/TPH)	E	12		H001679	
19G0163-11	SO-10-190711	8260C Gas (NW/TPH)	E	13		H001679	
19G0163-12	SO-10-190711D	8260C Gas (NW/TPH)	E	14		H001679	
19G0163-13	SO-11-190711	8260C Gas (NW/TPH)	E	15		H001679	
19G0163-14	SO-12-190711	8260C Gas (NW/TPH)	E	16		H001679	
19G0163-15	SO-13-190711	8260C Gas (NW/TPH)	E	17		H001679	
19G0232-01	Yale-02	8260C Gas (NW/TPH)	D	18		H001679	
BHG0474-MS1	Matrix Spike	QC		19		H001679	
BHG0474-MSD1	Matrix Spike Dup	QC		20		H001679	
SHG0276-CCV1	CCV	QC		21	H005160	H001679	

INTERNAL STANDARD SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190719.b

Time	Filename	LabID	ClientID	Vial#	pH	DF
1 0621	V207191901.D	RINSE				
				1 5.25	160395 5.64	286342 7.70 269666 9.39 132528
2 0642	V207191902.D	SHG0278-TUN1				
				1		
3 0715	V207191903.D	SHG0276-ICV1	GAS			
				1 5.25	163632 5.64	298818 7.70 280827 9.39 145352
4 0736	V207191904.D	SHG0278-ICV1				
				1 5.25	155877 5.64	275544 7.70 259620 9.39 137350
5 0736	V207191904LCS.D	BHG0476-BS2				
				1 5.25	155877 5.64	275544 7.70 259620 9.39 137350
6 0756	V207191905.D	BHG0476-BSD1	GAS			
				1 5.25	158474 5.64	285533 7.70 269273 9.39 138597
7 0817	V207191906.D	BHG0476-BSD2	VOA			
				1 5.25	154877 5.64	273568 7.70 254540 9.39 135199
8 0838	V207191907.D	BHG0476-BLK2				
				1 5.25	154697 5.64	273475 7.70 261868 9.39 133581
9 0901	V207191908.D	SHG0278-LCV1	0.2			
				1 5.25	168106 5.64	295862 7.70 279653 9.39 142035
10 0922	V207191909.D	SHG0278-LCV2	0.5			
				1 5.25	147916 5.64	263885 7.70 250616 9.39 129026
11 0943	V207191910.D	SHG0278-LCV3	1			
				1 5.25	156363 5.64	276037 7.70 263397 9.39 134891
12 1007	V207191911.D	19G0202-07				
				1 5.25	158777 5.64	281248 7.70 271539 9.39 136397
13 1028	V207191912.D	19G0202-05				
				1 5.25	156141 5.64	279594 7.70 264576 9.39 134074
14 1049	V207191913.D	19G0202-02				
				1 5.25	145290 5.64	259897 7.70 248087 9.39 131406
15 1109	V207191914.D	19G0163-10				
				1 5.25	145681 5.64	260195 7.70 247341 9.39 130146
16 1130	V207191915.D	19G0163-11				
				1 5.24	143654 5.64	256716 7.70 245172 9.39 125630
17 1151	V207191916.D	19G0163-12				
				1 5.24	152630 5.64	271805 7.70 253702 9.39 127585
18 1212	V207191917.D	19G0163-13				
				1 5.24	139595 5.64	249346 7.70 252265 9.39 135805
19 1233	V207191918.D	19G0163-14				
				1 5.24	140193 5.64	250325 7.70 253498 9.39 138951
20 2254	V207191919.D	19G0163-15				
				1 5.24	137050 5.64	246393 7.70 246781 9.39 139377
21 3115	V207191920.D	19G0232-01				
				1 5.24	141764 5.64	251476 7.70 251891 9.39 144467
22 1336	V207191921.D	BHG0474-MS1				
				1 5.24	153277 5.63	274571 7.70 270666 9.39 150455

23	1357	V207191922.D	BHG0474-MSD1	1	5.24	148499	5.63	263495	7.70	259846	9.39	149133	
24	1418	V207191923.D	SHG0276-CCV1	Gas	1	5.25	169007	5.64	296672	7.70	281140	9.39	149410
25	1439	V207191924.D	19G0257-01		1	5.25	163878	5.64	285900	7.70	272405	9.39	142671
26	1500	V207191925.D	19G0222-01		1	5.25	158231	5.64	273495	7.70	260604	9.39	136621
27	1521	V207191926.D	19G0174-01		1	5.25	159084	5.64	272420	7.70	256737	9.39	135538
28	1542	V207191927.D	19G0249-01		1	5.25	159661	5.64	277427	7.70	261618	9.39	136640
29	1605	V207191928.D	19G0225-02		1	5.25	144362	5.64	252282	7.70	242392	9.39	130541
30	1629	V207191929.D	19G0167-02		1	5.25	145405	5.64	257373	7.70	244708	9.39	131278
31	1650	V207191930.D	19G0174-01RE1		1	5.25	152819	5.64	266170	7.70	257365	9.39	136549
32	1711	V207191931.D	SHG0278-CCV1		1	5.25	156480	5.64	272075	7.70	263197	9.39	139299
33	1732	V207191932.D	RINSE		1	5.25	163068	5.64	283345	7.70	266364	9.39	138040

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190719g.b

Instrument: nt2.i Date: 19-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
0642	V207191902G.D	SHG0276-TUN1	1	d5-Chlorobenzene,
0715	V207191903G.D	SHG0276-ICV1	1	Pentafluorobenzene, d4-1,2-dichloroethane,
0715	V207191903GLCS.D	BHG0474-BS1	1	Pentafluorobenzene, d4-1,2-dichloroethane,
0715	V207191903GLCSA.D	BHG0476-BS1	1	Pentafluorobenzene, d4-1,2-dichloroethane,
0756	V207191905G.D	BHG0474-BSD1	1	Pentafluorobenzene, d4-1,2-dichloroethane,
0756	V207191905GA.D	BHG0476-BSD1	1	Pentafluorobenzene, d4-1,2-dichloroethane,
0838	V207191907G.D	BHG0474-BLK1	1	NO MANUAL INTEGRATION
0838	V207191907GA.D	BHG0476-BLK1	1	NO MANUAL INTEGRATION
1007	V207191911G.D	19G0202-07	1	NO MANUAL INTEGRATION
1028	V207191912G.D	19G0202-05	1	NO MANUAL INTEGRATION
1049	V207191913G.D	19G0202-02	1	Naphthalene, d5-Chlorobenzene,
1109	V207191914G.D	19G0163-10	1	NO MANUAL INTEGRATION
1130	V207191915G.D	19G0163-11	1	NO MANUAL INTEGRATION
1151	V207191916G.D	19G0163-12	1	NO MANUAL INTEGRATION
1212	V207191917G.D	19G0163-13	1	NO MANUAL INTEGRATION
1233	V207191918G.D	19G0163-14	1	NO MANUAL INTEGRATION
1254	V207191919G.D	19G0163-15	1	NO MANUAL INTEGRATION

Instrument: nt2.i Date: 19-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1315	V207191920G.D	19G0232-01	1	d4-Dichlorobenzene, 1,4-Difluorobenzene,
1336	V207191921G.D	BHG0474-MS1	1	1,2,4-Trimethylbenzene, Naphthalene,
1357	V207191922G.D	BHG0474-MSD1	1	1,2,4-Trimethylbenzene, Naphthalene,
1418	V207191923G.D	SHG0276-CCV1	1	nC6, Naphthalene, Pentafluorobenzene, d4-1,2-dichloroethane,

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem1\nt2.i\20190719s.b

Instrument: nt2.i Date: 19-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
0642	V207191902G.D	SHG0276-TUN1	1	NO MANUAL INTEGRATION
0715	V207191903G.D	SHG0276-ICV1	1	NO MANUAL INTEGRATION
0715	V207191903GLCS.D	BHG0474-BS1	1	NO MANUAL INTEGRATION
0715	V207191903GLCSA.D	BHG0476-BS1	1	NO MANUAL INTEGRATION
0756	V207191905G.D	BHG0474-BSD1	1	NO MANUAL INTEGRATION
0756	V207191905GA.D	BHG0476-BSD1	1	NO MANUAL INTEGRATION
0838	V207191907G.D	BHG0474-BLK1	1	NO MANUAL INTEGRATION
0838	V207191907GA.D	BHG0476-BLK1	1	NO MANUAL INTEGRATION
1007	V207191911G.D	19G0202-07	1	NO MANUAL INTEGRATION
1028	V207191912G.D	19G0202-05	1	NO MANUAL INTEGRATION
1049	V207191913G.D	19G0202-02	1	NO MANUAL INTEGRATION
1109	V207191914G.D	19G0163-10	1	NO MANUAL INTEGRATION
1130	V207191915G.D	19G0163-11	1	NO MANUAL INTEGRATION
1151	V207191916G.D	19G0163-12	1	NO MANUAL INTEGRATION
1212	V207191917G.D	19G0163-13	1	NO MANUAL INTEGRATION
1233	V207191918G.D	19G0163-14	1	NO MANUAL INTEGRATION
1254	V207191919G.D	19G0163-15	1	NO MANUAL INTEGRATION

Instrument: nt2.i Date: 19-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1315	V207191920G.D	19G0232-01	1	NO MANUAL INTEGRATION
1336	V207191921G.D	BHG0474-MS1	1	NO MANUAL INTEGRATION
1357	V207191922G.D	BHG0404-MSD1	1	NO MANUAL INTEGRATION
1418	V207191923G.D	SHG0276-CCV1	1	NO MANUAL INTEGRATION

Security Status Report

Date: 22-Jul-2019 12:27

V207191902G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191903G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191903GLCS.D	Data Locked	paul,	22-Jul-2019	12:27
V207191903GLCSA.D	Data Locked	paul,	22-Jul-2019	12:27
V207191905G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191905GA.D	Data Locked	paul,	22-Jul-2019	12:27
V207191907G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191907GA.D	Data Locked	paul,	22-Jul-2019	12:27
V207191911G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191912G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191913G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191914G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191915G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191916G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191917G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191918G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191919G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191920G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191921G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191922G.D	Data Locked	paul,	22-Jul-2019	12:27
V207191923G.D	Data Locked	paul,	22-Jul-2019	12:27

Security Status Report

Date: 22-Jul-2019 12:28

V207191902G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191903G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191903GLCS.D	Data Locked	paul,	22-Jul-2019	12:28
V207191903GLCSA.D	Data Locked	paul,	22-Jul-2019	12:28
V207191905G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191905GA.D	Data Locked	paul,	22-Jul-2019	12:28
V207191907G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191907GA.D	Data Locked	paul,	22-Jul-2019	12:28
V207191911G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191912G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191913G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191914G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191915G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191916G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191917G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191918G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191919G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191920G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191921G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191922G.D	Data Locked	paul,	22-Jul-2019	12:28
V207191923G.D	Data Locked	paul,	22-Jul-2019	12:28



SURROGATE RECOVERY SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG/WO: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0273

Instrument: NT3

Calibration: CG00045

Calibration Date: 07/16/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0439-BS2 (Water) Lab File ID: V307181905LCS.D Analyzed: 07/18/19 11:02				
Toluene-d8	5.0000	105	80 - 120	
4-Bromofluorobenzene	5.0000	99.7	80 - 120	
BHG0455-BS1 (Solid) Lab File ID: V307181905LCSA.D Analyzed: 07/18/19 11:02				
Toluene-d8	5.0000	105	80 - 120	
4-Bromofluorobenzene	5.0000	99.7	78 - 123	
SHG0273-ICV1 (Water) Lab File ID: V307181905.D Analyzed: 07/18/19 11:02				
Toluene-d8	5.0000	105	0 - 200	
4-Bromofluorobenzene	5.0000	99.7	0 - 200	
BHG0439-BSD2 (Water) Lab File ID: V307181906.D Analyzed: 07/18/19 11:29				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	98.2	80 - 120	
BHG0455-BSD1 (Solid) Lab File ID: V307181906A.D Analyzed: 07/18/19 11:29				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	98.2	78 - 123	
BHG0439-BLK2 (Water) Lab File ID: V307181909.D Analyzed: 07/18/19 12:49				
Toluene-d8	5.0000	98.5	80 - 120	
4-Bromofluorobenzene	5.0000	91.9	80 - 120	
BHG0455-BLK1 (Solid) Lab File ID: V307181909A.D Analyzed: 07/18/19 12:49				
Toluene-d8	5.0000	98.5	80 - 120	
4-Bromofluorobenzene	5.0000	91.9	78 - 123	
19G0163-16 (Water) Lab File ID: V307181911.D Analyzed: 07/18/19 13:42				
Toluene-d8	5.0000	99.6	80 - 120	
4-Bromofluorobenzene	5.0000	98.8	80 - 120	
19G0163-02 (Solid) Lab File ID: V307181919.D Analyzed: 07/18/19 17:18				
Toluene-d8	5.0000	99.7	80 - 120	
4-Bromofluorobenzene	5.0000	94.6	78 - 123	
BHG0455-MS1 (Solid) Lab File ID: V307181920.D Analyzed: 07/18/19 17:45				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	98.9	78 - 123	



SURROGATE RECOVERY SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHG0273 Instrument: NT3
Calibration: CG00045 Calibration Date: 07/16/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0455-MSD1 (Solid) Lab File ID: V307181921.D Analyzed: 07/18/19 18:11				
Toluene-d8	5.0000	103	80 - 120	
4-Bromofluorobenzene	5.0000	100	78 - 123	
19G0163-03 (Solid) Lab File ID: V307181922.D Analyzed: 07/18/19 18:38				
Toluene-d8	5.0000	98.1	80 - 120	
4-Bromofluorobenzene	5.0000	96.7	78 - 123	
19G0163-04 (Solid) Lab File ID: V307181923.D Analyzed: 07/18/19 19:04				
Toluene-d8	5.0000	98.7	80 - 120	
4-Bromofluorobenzene	5.0000	99.3	78 - 123	
19G0163-05 (Solid) Lab File ID: V307181924.D Analyzed: 07/18/19 19:31				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	97.3	78 - 123	
19G0163-06 (Solid) Lab File ID: V307181925.D Analyzed: 07/18/19 19:57				
Toluene-d8	5.0000	99.2	80 - 120	
4-Bromofluorobenzene	5.0000	89.6	78 - 123	
19G0163-07 (Solid) Lab File ID: V307181926.D Analyzed: 07/18/19 20:24				
Toluene-d8	5.0000	100	80 - 120	
4-Bromofluorobenzene	5.0000	90.3	78 - 123	
19G0163-08 (Solid) Lab File ID: V307181927.D Analyzed: 07/18/19 20:51				
Toluene-d8	5.0000	100	80 - 120	
4-Bromofluorobenzene	5.0000	98.2	78 - 123	
19G0163-09 (Solid) Lab File ID: V307181928.D Analyzed: 07/18/19 21:17				
Toluene-d8	5.0000	99.2	80 - 120	
4-Bromofluorobenzene	5.0000	90.3	78 - 123	



SURROGATE RECOVERY SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHG0276 Instrument: NT2
Calibration: CG00055 Calibration Date: 07/18/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0474-BS1 (Solid) Lab File ID: V207191903GLCS.D Analyzed: 07/19/19 07:15				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	96.2	78 - 123	
SHG0276-ICV1 (Water) Lab File ID: V207191903G.D Analyzed: 07/19/19 07:15				
Toluene-d8	5.0000	102	0 - 200	
4-Bromofluorobenzene	5.0000	96.2	0 - 200	
BHG0474-BSD1 (Solid) Lab File ID: V207191905G.D Analyzed: 07/19/19 07:56				
Toluene-d8	5.0000	101	80 - 120	
4-Bromofluorobenzene	5.0000	96.8	78 - 123	
BHG0474-BLK1 (Solid) Lab File ID: V207191907G.D Analyzed: 07/19/19 08:38				
Toluene-d8	5.0000	101	80 - 120	
4-Bromofluorobenzene	5.0000	96.5	78 - 123	
19G0163-10 (Solid) Lab File ID: V207191914G.D Analyzed: 07/19/19 11:09				
Toluene-d8	5.0000	101	80 - 120	
4-Bromofluorobenzene	5.0000	98.4	78 - 123	
19G0163-11 (Solid) Lab File ID: V207191915G.D Analyzed: 07/19/19 11:30				
Toluene-d8	5.0000	101	80 - 120	
4-Bromofluorobenzene	5.0000	96.5	78 - 123	
19G0163-12 (Solid) Lab File ID: V207191916G.D Analyzed: 07/19/19 11:51				
Toluene-d8	5.0000	100	80 - 120	
4-Bromofluorobenzene	5.0000	96.9	78 - 123	
19G0163-13 (Solid) Lab File ID: V207191917G.D Analyzed: 07/19/19 12:12				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	103	78 - 123	
19G0163-14 (Solid) Lab File ID: V207191918G.D Analyzed: 07/19/19 12:33				
Toluene-d8	5.0000	101	80 - 120	
4-Bromofluorobenzene	5.0000	103	78 - 123	
19G0163-15 (Solid) Lab File ID: V207191919G.D Analyzed: 07/19/19 12:54				
Toluene-d8	5.0000	101	80 - 120	
4-Bromofluorobenzene	5.0000	106	78 - 123	



SURROGATE RECOVERY SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHG0276 Instrument: NT2
Calibration: CG00055 Calibration Date: 07/18/2019

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	Q
BHG0474-MS1 (Solid) Lab File ID: V207191921G.D Analyzed: 07/19/19 13:36				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	105	78 - 123	
BHG0474-MSD1 (Solid) Lab File ID: V207191922G.D Analyzed: 07/19/19 13:57				
Toluene-d8	5.0000	102	80 - 120	
4-Bromofluorobenzene	5.0000	108	78 - 123	



INTERNAL STANDARD AREA AND RT SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0273

Instrument: NT3

Calibration: CG00045

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (BHG0439-BS2)		(Water)	Lab File ID: V307181905LCS.D				Analyzed: 07/18/19 11:02		
Pentafluorobenzene	72062	5.403	72062	5.403	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	122483	7.815	122483	7.815	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	115802	5.785	115802	5.785	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	73096	9.499	73096	9.499	100	50 - 200	0.000	+/-0.50	
LCS (BHG0455-BS1)		(Solid)	Lab File ID: V307181905LCSA.D				Analyzed: 07/18/19 11:02		
Pentafluorobenzene	72062	5.403	72062	5.403	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	122483	7.815	122483	7.815	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	115802	5.785	115802	5.785	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	73096	9.499	73096	9.499	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SHG0273-ICV1)		(Water)	Lab File ID: V307181905.D				Analyzed: 07/18/19 11:02		
Pentafluorobenzene	72062	5.403	72062	5.403	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	122483	7.815	122483	7.815	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	115802	5.785	115802	5.785	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	73096	9.499	73096	9.499	100	50 - 200	0.000	+/-0.50	
LCS Dup (BHG0439-BSD2)		(Water)	Lab File ID: V307181906.D				Analyzed: 07/18/19 11:29		
Pentafluorobenzene	64694	5.402	72062	5.403	90	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	112338	7.814	122483	7.815	92	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	110050	5.784	115802	5.785	95	50 - 200	-0.001	+/-0.50	
1,4-Dichlorobenzene-d4	67652	9.498	73096	9.499	93	50 - 200	-0.001	+/-0.50	
LCS Dup (BHG0455-BSD1)		(Solid)	Lab File ID: V307181906A.D				Analyzed: 07/18/19 11:29		
Pentafluorobenzene	64694	5.402	72062	5.403	90	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	112338	7.814	122483	7.815	92	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	110050	5.784	115802	5.785	95	50 - 200	-0.001	+/-0.50	
1,4-Dichlorobenzene-d4	67652	9.498	73096	9.499	93	50 - 200	-0.001	+/-0.50	
Blank (BHG0439-BLK2)		(Water)	Lab File ID: V307181909.D				Analyzed: 07/18/19 12:49		
Pentafluorobenzene	75770	5.402	72062	5.403	105	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	123872	7.814	122483	7.815	101	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	123016	5.785	115802	5.785	106	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	71515	9.499	73096	9.499	98	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0273

Instrument: NT3

Calibration: CG00045

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (BHG0455-BLK1)		(Solid)	Lab File ID: V307181909A.D				Analyzed: 07/18/19 12:49		
Pentafluorobenzene	75770	5.402	72062	5.403	105	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	123872	7.814	122483	7.815	101	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	123016	5.785	115802	5.785	106	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	71515	9.499	73096	9.499	98	50 - 200	0.000	+/-0.50	
TB-SO-190711 (19G0163-16)		(Water)	Lab File ID: V307181911.D				Analyzed: 07/18/19 13:42		
Pentafluorobenzene	60556	5.397	72062	5.403	84	50 - 200	-0.006	+/-0.50	
Chlorobenzene-d5	96757	7.814	122483	7.815	79	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	94130	5.779	115802	5.785	81	50 - 200	-0.006	+/-0.50	
1,4-Dichlorobenzene-d4	53470	9.499	73096	9.499	73	50 - 200	0.000	+/-0.50	
SO-01-190711 (19G0163-02)		(Solid)	Lab File ID: V307181919.D				Analyzed: 07/18/19 17:18		
Pentafluorobenzene	72752	5.397	72062	5.403	101	50 - 200	-0.006	+/-0.50	
Chlorobenzene-d5	118065	7.814	122483	7.815	96	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	114205	5.779	115802	5.785	99	50 - 200	-0.006	+/-0.50	
1,4-Dichlorobenzene-d4	70713	9.499	73096	9.499	97	50 - 200	0.000	+/-0.50	
Matrix Spike (BHG0455-MS1)		(Solid)	Lab File ID: V307181920.D				Analyzed: 07/18/19 17:45		
Pentafluorobenzene	73616	5.403	72062	5.403	102	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	124194	7.815	122483	7.815	101	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	121527	5.78	115802	5.785	105	50 - 200	-0.005	+/-0.50	
1,4-Dichlorobenzene-d4	74072	9.499	73096	9.499	101	50 - 200	0.000	+/-0.50	
Matrix Spike Dup (BHG0455-MSD1)		(Solid)	Lab File ID: V307181921.D				Analyzed: 07/18/19 18:11		
Pentafluorobenzene	75039	5.402	72062	5.403	104	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	125533	7.814	122483	7.815	102	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	124165	5.779	115802	5.785	107	50 - 200	-0.006	+/-0.50	
1,4-Dichlorobenzene-d4	78653	9.499	73096	9.499	108	50 - 200	0.000	+/-0.50	
SO-02-190711 (19G0163-03)		(Solid)	Lab File ID: V307181922.D				Analyzed: 07/18/19 18:38		
Pentafluorobenzene	66238	5.403	72062	5.403	92	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	110823	7.816	122483	7.815	90	50 - 200	0.001	+/-0.50	
1,4-Difluorobenzene	108967	5.781	115802	5.785	94	50 - 200	-0.004	+/-0.50	
1,4-Dichlorobenzene-d4	62766	9.5	73096	9.499	86	50 - 200	0.001	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0273

Instrument: NT3

Calibration: CG00045

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
SO-03-190711 (19G0163-04)		(Solid)	Lab File ID: V307181923.D				Analyzed: 07/18/19 19:04		
Pentafluorobenzene	74198	5.402	72062	5.403	103	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	126933	7.815	122483	7.815	104	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	127346	5.78	115802	5.785	110	50 - 200	-0.005	+/-0.50	
1,4-Dichlorobenzene-d4	76325	9.499	73096	9.499	104	50 - 200	0.000	+/-0.50	
SO-04-190711 (19G0163-05)		(Solid)	Lab File ID: V307181924.D				Analyzed: 07/18/19 19:31		
Pentafluorobenzene	79034	5.403	72062	5.403	110	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	131122	7.815	122483	7.815	107	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	127938	5.78	115802	5.785	110	50 - 200	-0.005	+/-0.50	
1,4-Dichlorobenzene-d4	77544	9.5	73096	9.499	106	50 - 200	0.001	+/-0.50	
SO-05-190711 (19G0163-06)		(Solid)	Lab File ID: V307181925.D				Analyzed: 07/18/19 19:57		
Pentafluorobenzene	80419	5.403	72062	5.403	112	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	132772	7.815	122483	7.815	108	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	127165	5.78	115802	5.785	110	50 - 200	-0.005	+/-0.50	
1,4-Dichlorobenzene-d4	71500	9.499	73096	9.499	98	50 - 200	0.000	+/-0.50	
SO-06-190711 (19G0163-07)		(Solid)	Lab File ID: V307181926.D				Analyzed: 07/18/19 20:24		
Pentafluorobenzene	73630	5.402	72062	5.403	102	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	122413	7.815	122483	7.815	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	117787	5.78	115802	5.785	102	50 - 200	-0.005	+/-0.50	
1,4-Dichlorobenzene-d4	63892	9.499	73096	9.499	87	50 - 200	0.000	+/-0.50	
SO-07-190711 (19G0163-08)		(Solid)	Lab File ID: V307181927.D				Analyzed: 07/18/19 20:51		
Pentafluorobenzene	77901	5.403	72062	5.403	108	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	132018	7.815	122483	7.815	108	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	126581	5.78	115802	5.785	109	50 - 200	-0.005	+/-0.50	
1,4-Dichlorobenzene-d4	74924	9.5	73096	9.499	103	50 - 200	0.001	+/-0.50	
SO-08-190711 (19G0163-09)		(Solid)	Lab File ID: V307181928.D				Analyzed: 07/18/19 21:17		
Pentafluorobenzene	73082	5.402	72062	5.403	101	50 - 200	-0.001	+/-0.50	
Chlorobenzene-d5	119654	7.814	122483	7.815	98	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	118734	5.779	115802	5.785	103	50 - 200	-0.006	+/-0.50	
1,4-Dichlorobenzene-d4	63511	9.499	73096	9.499	87	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0273

Instrument: NT3

Calibration: CG00045

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (SHG0273-CCV1)		(Solid)	Lab File ID: V307181929.D				Analyzed: 07/18/19 21:44		
Pentafluorobenzene	59267	5.408	72062	5.403	82	50 - 200	0.005	+/-0.50	
Chlorobenzene-d5	100406	7.815	122483	7.815	82	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	98531	5.785	115802	5.785	85	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	59407	9.499	73096	9.499	81	50 - 200	0.000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0276

Instrument: NT2

Calibration: CG00055

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (BHG0474-BS1)		(Solid)	Lab File ID: V207191903GLCS.D				Analyzed: 07/19/19 07:15		
Pentafluorobenzene	163632	5.248	163632	5.248	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	280827	7.699	280827	7.699	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	295926	5.637	295926	5.637	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	145352	9.39	145352	9.39	100	50 - 200	0.000	+/-0.50	
Initial Cal Check (SHG0276-ICV1)		(Water)	Lab File ID: V207191903G.D				Analyzed: 07/19/19 07:15		
Pentafluorobenzene	163632	5.248	163632	5.248	100	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	280827	7.699	280827	7.699	100	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	295926	5.637	295926	5.637	100	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	145352	9.39	145352	9.39	100	50 - 200	0.000	+/-0.50	
LCS Dup (BHG0474-BS1)		(Solid)	Lab File ID: V207191905G.D				Analyzed: 07/19/19 07:56		
Pentafluorobenzene	158474	5.253	163632	5.248	97	50 - 200	0.005	+/-0.50	
Chlorobenzene-d5	269273	7.698	280827	7.699	96	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	285533	5.642	295926	5.637	96	50 - 200	0.005	+/-0.50	
1,4-Dichlorobenzene-d4	138597	9.39	145352	9.39	95	50 - 200	0.000	+/-0.50	
Blank (BHG0474-BLK1)		(Solid)	Lab File ID: V207191907G.D				Analyzed: 07/19/19 08:38		
Pentafluorobenzene	154697	5.253	163632	5.248	95	50 - 200	0.005	+/-0.50	
Chlorobenzene-d5	261868	7.698	280827	7.699	93	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	273428	5.642	295926	5.637	92	50 - 200	0.005	+/-0.50	
1,4-Dichlorobenzene-d4	133581	9.389	145352	9.39	92	50 - 200	-0.001	+/-0.50	
SO-09-190711 (19G0163-10)		(Solid)	Lab File ID: V207191914G.D				Analyzed: 07/19/19 11:09		
Pentafluorobenzene	145681	5.248	163632	5.248	89	50 - 200	0.000	+/-0.50	
Chlorobenzene-d5	247341	7.7	280827	7.699	88	50 - 200	0.001	+/-0.50	
1,4-Difluorobenzene	260195	5.637	295926	5.637	88	50 - 200	0.000	+/-0.50	
1,4-Dichlorobenzene-d4	130146	9.391	145352	9.39	90	50 - 200	0.001	+/-0.50	
SO-10-190711 (19G0163-11)		(Solid)	Lab File ID: V207191915G.D				Analyzed: 07/19/19 11:30		
Pentafluorobenzene	143654	5.243	163632	5.248	88	50 - 200	-0.005	+/-0.50	
Chlorobenzene-d5	245172	7.7	280827	7.699	87	50 - 200	0.001	+/-0.50	
1,4-Difluorobenzene	256716	5.638	295926	5.637	87	50 - 200	0.001	+/-0.50	
1,4-Dichlorobenzene-d4	125630	9.391	145352	9.39	86	50 - 200	0.001	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0276

Instrument: NT2

Calibration: CG00055

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
SO-10-190711D (19G0163-12)		(Solid)	Lab File ID: V207191916G.D				Analyzed: 07/19/19 11:51		
Pentafluorobenzene	152630	5.243	163632	5.248	93	50 - 200	-0.005	+/-0.50	
Chlorobenzene-d5	253702	7.701	280827	7.699	90	50 - 200	0.002	+/-0.50	
1,4-Difluorobenzene	271805	5.639	295926	5.637	92	50 - 200	0.002	+/-0.50	
1,4-Dichlorobenzene-d4	127585	9.392	145352	9.39	88	50 - 200	0.002	+/-0.50	
SO-11-190711 (19G0163-13)		(Solid)	Lab File ID: V207191917G.D				Analyzed: 07/19/19 12:12		
Pentafluorobenzene	139595	5.24	163632	5.248	85	50 - 200	-0.008	+/-0.50	
Chlorobenzene-d5	252265	7.698	280827	7.699	90	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	249346	5.636	295926	5.637	84	50 - 200	-0.001	+/-0.50	
1,4-Dichlorobenzene-d4	135805	9.389	145352	9.39	93	50 - 200	-0.001	+/-0.50	
SO-12-190711 (19G0163-14)		(Solid)	Lab File ID: V207191918G.D				Analyzed: 07/19/19 12:33		
Pentafluorobenzene	140193	5.241	163632	5.248	86	50 - 200	-0.007	+/-0.50	
Chlorobenzene-d5	253498	7.698	280827	7.699	90	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	250325	5.636	295926	5.637	85	50 - 200	-0.001	+/-0.50	
1,4-Dichlorobenzene-d4	138951	9.39	145352	9.39	96	50 - 200	0.000	+/-0.50	
SO-13-190711 (19G0163-15)		(Solid)	Lab File ID: V207191919G.D				Analyzed: 07/19/19 12:54		
Pentafluorobenzene	137050	5.241	163632	5.248	84	50 - 200	-0.007	+/-0.50	
Chlorobenzene-d5	246781	7.698	280827	7.699	88	50 - 200	-0.001	+/-0.50	
1,4-Difluorobenzene	246393	5.636	295926	5.637	83	50 - 200	-0.001	+/-0.50	
1,4-Dichlorobenzene-d4	139377	9.389	145352	9.39	96	50 - 200	-0.001	+/-0.50	
Matrix Spike (BHG0474-MS1)		(Solid)	Lab File ID: V207191921G.D				Analyzed: 07/19/19 13:36		
Pentafluorobenzene	153277	5.238	163632	5.248	94	50 - 200	-0.010	+/-0.50	
Chlorobenzene-d5	270666	7.702	280827	7.699	96	50 - 200	0.003	+/-0.50	
1,4-Difluorobenzene	274571	5.633	295926	5.637	93	50 - 200	-0.004	+/-0.50	
1,4-Dichlorobenzene-d4	150455	9.393	145352	9.39	104	50 - 200	0.003	+/-0.50	
Matrix Spike Dup (BHG0474-MSD1)		(Solid)	Lab File ID: V207191922G.D				Analyzed: 07/19/19 13:57		
Pentafluorobenzene	148499	5.242	163632	5.248	91	50 - 200	-0.006	+/-0.50	
Chlorobenzene-d5	259846	7.699	280827	7.699	93	50 - 200	0.000	+/-0.50	
1,4-Difluorobenzene	263495	5.631	295926	5.637	89	50 - 200	-0.006	+/-0.50	
1,4-Dichlorobenzene-d4	149133	9.39	145352	9.39	103	50 - 200	0.000	+/-0.50	



HOLDING TIME SUMMARY

Analysis: NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-01-190711 19G0163-02	07/11/19 11:05	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 17:18	7	14	
SO-02-190711 19G0163-03	07/11/19 10:50	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 18:38	7	14	
SO-03-190711 19G0163-04	07/11/19 08:35	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 19:04	7	14	
SO-04-190711 19G0163-05	07/11/19 11:30	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 19:31	7	14	
SO-05-190711 19G0163-06	07/11/19 12:05	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 19:57	7	14	
SO-06-190711 19G0163-07	07/11/19 12:20	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 20:24	7	14	
SO-07-190711 19G0163-08	07/11/19 11:55	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 20:51	7	14	
SO-08-190711 19G0163-09	07/11/19 10:25	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 21:17	7	14	
SO-09-190711 19G0163-10	07/11/19 10:10	07/11/19 17:25	07/19/19 09:38	7	14	07/19/19 11:09	8	14	
SO-10-190711 19G0163-11	07/11/19 09:45	07/11/19 17:25	07/19/19 09:38	7	14	07/19/19 11:30	8	14	
SO-10-190711D 19G0163-12	07/11/19 09:50	07/11/19 17:25	07/19/19 09:38	7	14	07/19/19 11:51	8	14	
SO-11-190711 19G0163-13	07/11/19 09:10	07/11/19 17:25	07/19/19 09:38	8	14	07/19/19 12:12	8	14	
SO-12-190711 19G0163-14	07/11/19 09:25	07/11/19 17:25	07/19/19 09:38	8	14	07/19/19 12:33	8	14	
SO-13-190711 19G0163-15	07/11/19 12:35	07/11/19 17:25	07/19/19 09:38	7	14	07/19/19 12:54	8	14	
TB-SO-190711 19G0163-16	07/11/19 00:00	07/11/19 17:25	07/18/19 11:06	7	14	07/18/19 13:42	8	14	
Matrix Spike BHG0455-MS1	07/11/19 11:05	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 17:45	7	14	
Matrix Spike Dup BHG0455-MSD1	07/11/19 11:05	07/11/19 17:25	07/18/19 14:28	7	14	07/18/19 18:11	7	14	
Matrix Spike BHG0474-MS1	07/11/19 09:10	07/11/19 17:25	07/19/19 09:38	8	14	07/19/19 13:36	8	14	
Matrix Spike Dup BHG0474-MSD1	07/11/19 09:10	07/11/19 17:25	07/19/19 09:38	8	14	07/19/19 13:57	8	14	

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**METHOD DETECTION
AND REPORTING LIMITS**
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: NT2

Analyte	MDL	RL	Units
Gasoline Range Organics (Tol-Nap)	2500	5000	ug/kg



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**METHOD DETECTION
AND REPORTING LIMITS**
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: NT3

Analyte	MDL	RL	Units
Gasoline Range Organics (Tol-Nap)	2500	5000	ug/kg



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**METHOD DETECTION
AND REPORTING LIMITS**
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: NT2

Analyte	MDL	RL	Units
Gasoline Range Organics (Tol-Nap)	13.6	100	ug/L



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**METHOD DETECTION
AND REPORTING LIMITS**
NWTPHg

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: NT3

Analyte	MDL	RL	Units
Gasoline Range Organics (Tol-Nap)	13.6	100	ug/L



Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables) low level

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: 19G0163-01 C

SDG: 19G0163

Sampled: 07/11/19 15:10

Prepared: 07/15/19 11:49

File ID: 419G1654.D

% Solids:

Preparation: EPA 3510C SepF

Analyzed: 07/17/19 05:46

Batch: BHG0339

Sequence: SHG0211

Initial/Final: 500 mL / 1 mL

Instrument: FID4

Column: RTX-1

Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/L)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	0.100	U	0.033	0.100
RRO	Motor Oil Range Organics (C24-C38)	1	0.200	U	0.056	0.200

SURROGATES	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl	0.22500	0.228	101	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1654.D

Date : 17-JUL-2019 05:46

Client ID:

Sample Info: 19G0163-01

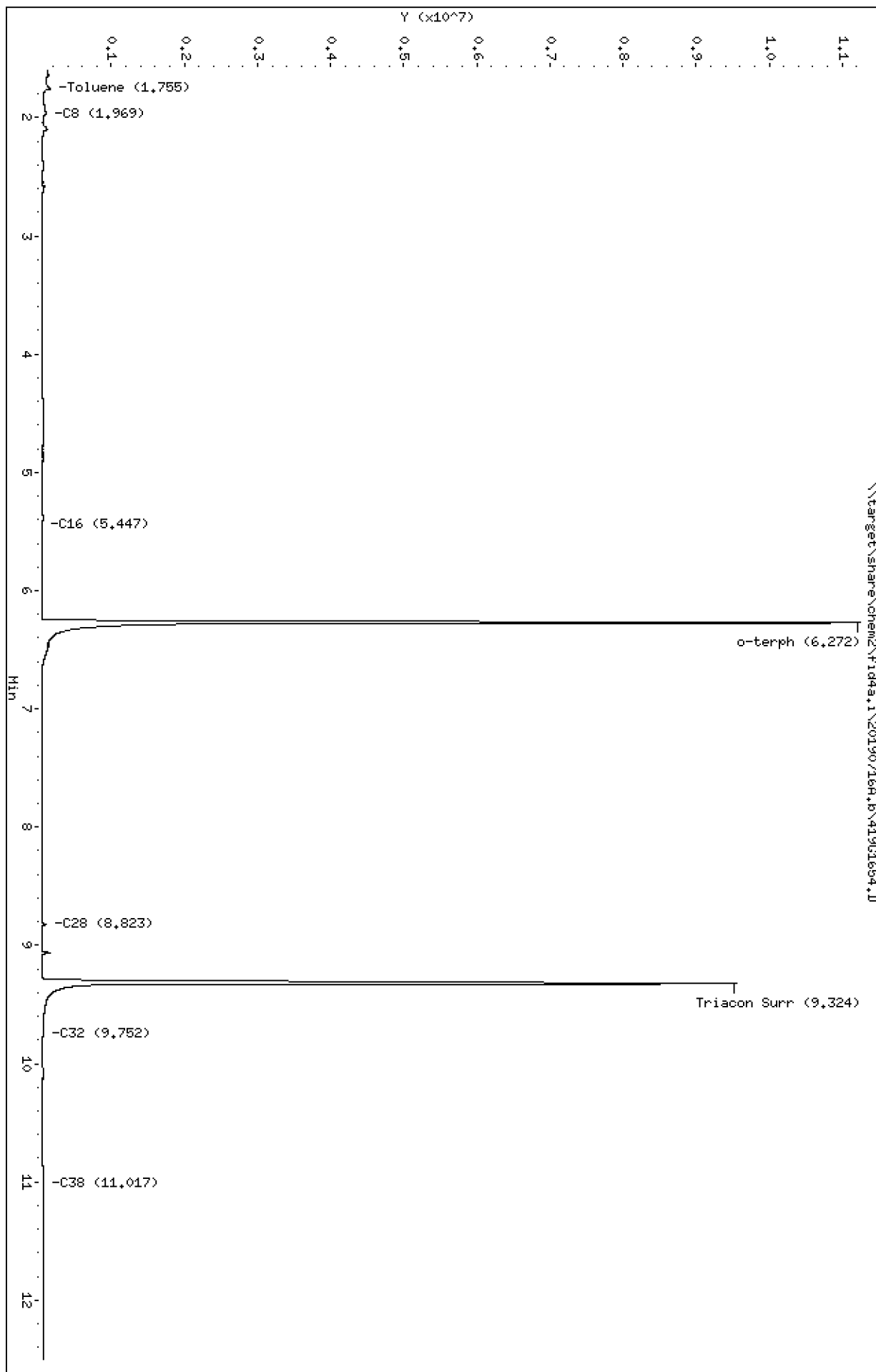
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1654.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-01

Client ID:

Injection: 17-JUL-2019 05:46

Dilution Factor: 1

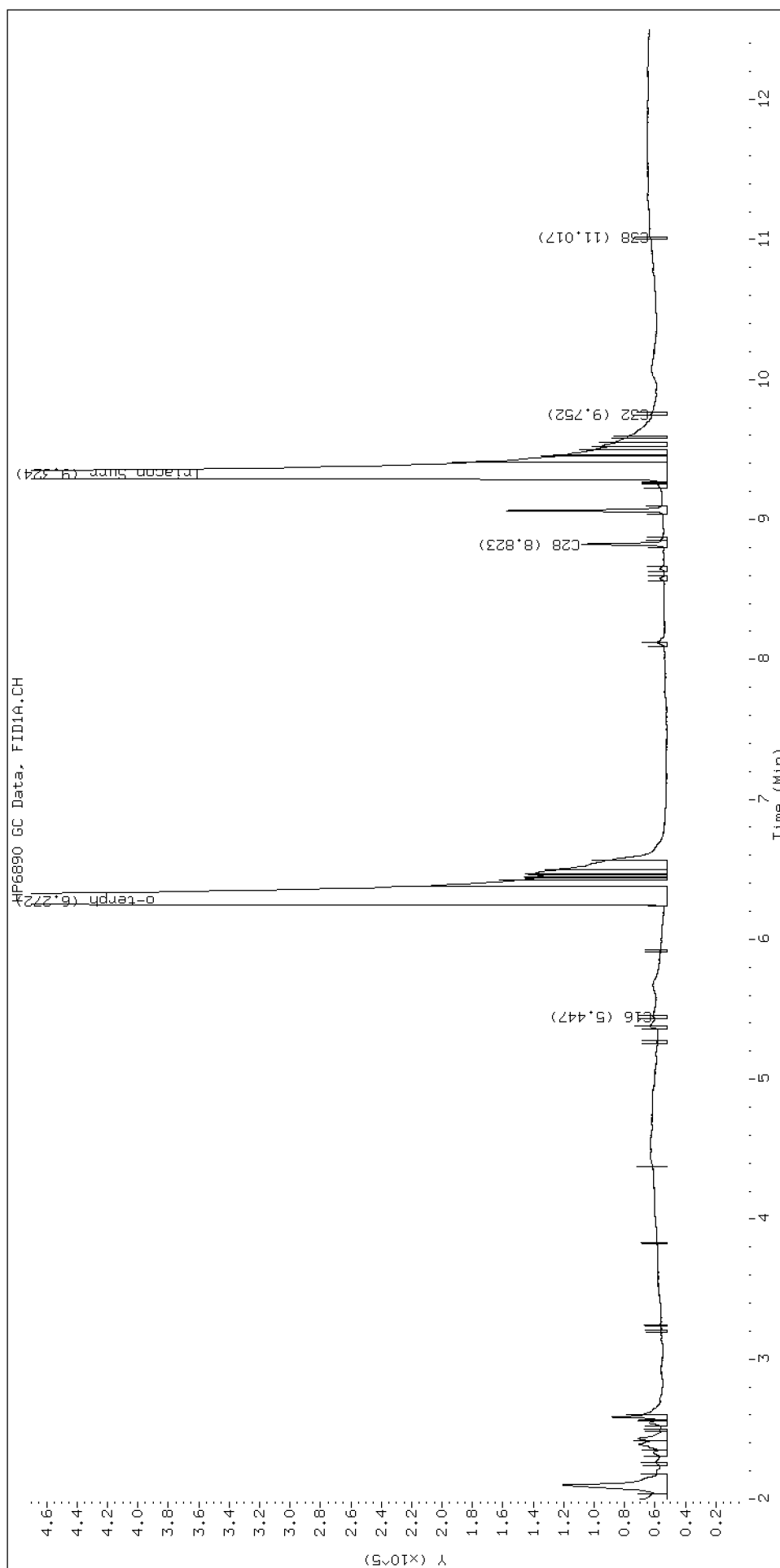
RT Std: 419G1645.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.969	-0.013	54235	186797	WATPHD	(C12-C24)	642231	6.1
C10	----				WATPHM	(C24-C38)	744436	8.1
C12	----				AK102	(C10-C25)	650116	5.3
C14	----				AK103	(C25-C36)	735844	10.6
C16	5.447	-0.042	8990	9576	OR.DIES	(C10-C28)	730628	6.0
C18	----							
C20	----							
C22	----							
C24	----							
C25	----							
C26	----							
C28	8.823	-0.002	56260	54321				
C32	9.752	-0.017	10437	14356				
C34	----							
Filter Peak	----							
C36	----							
C38	11.017	0.015	11046	8591				
C40	----							
o-terph	6.272	-0.004	11196846	14934087				
Triacon Surr	9.324	-0.008	9515397	13150923	NAS DIES	(C10-C24)	650116	5.3
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)								
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)								

Surrogate	Area	Amount
o-Terphenyl	14934087	113.8
Triacontane	13150923	107.4

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-02 D

SDG: 19G0163

Sampled: 07/11/19 11:05

Prepared: 07/12/19 12:52

File ID: 419G1659.D

% Solids: 49.02

Preparation: EPA 3546 (Microwave)

Analyzed: 07/17/19 07:28

Batch: BHG0310

Sequence: SHG0211

Initial/Final: 10.06 g Wet / 10 mL

Instrument: FID4

Column: RTX-1

Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	101	U	41.2	101
RRO	Motor Oil Range Organics (C24-C38)	1	203	U	42.6	203

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	114.07	111	97.4	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1659.D

Date : 17-JUL-2019 07:28

Client ID:

Sample Info: 19G0163-02

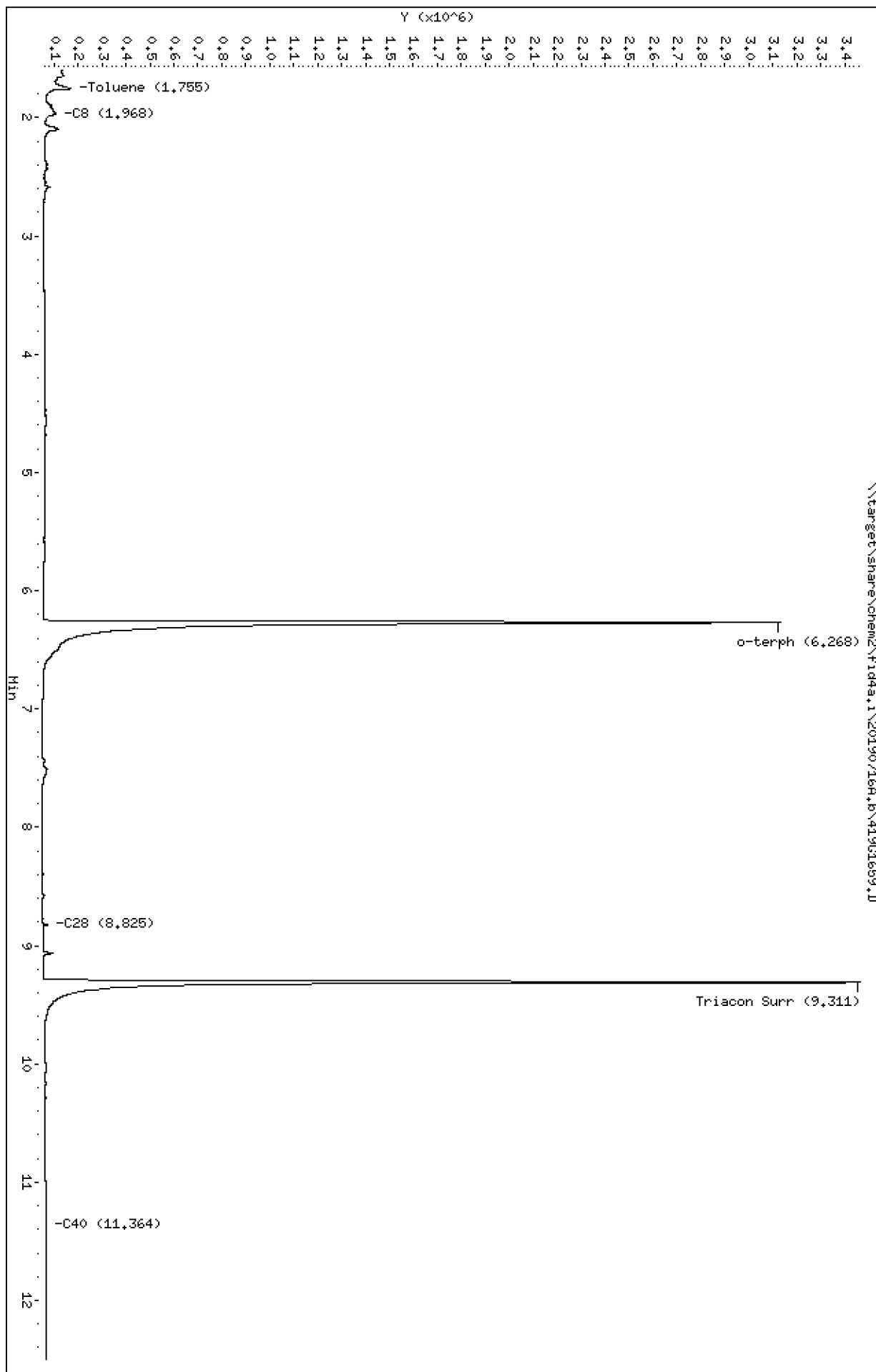
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1659.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-02

Client ID:

Injection: 17-JUL-2019 07:28

Dilution Factor: 1

RT Std: 419G1645.D

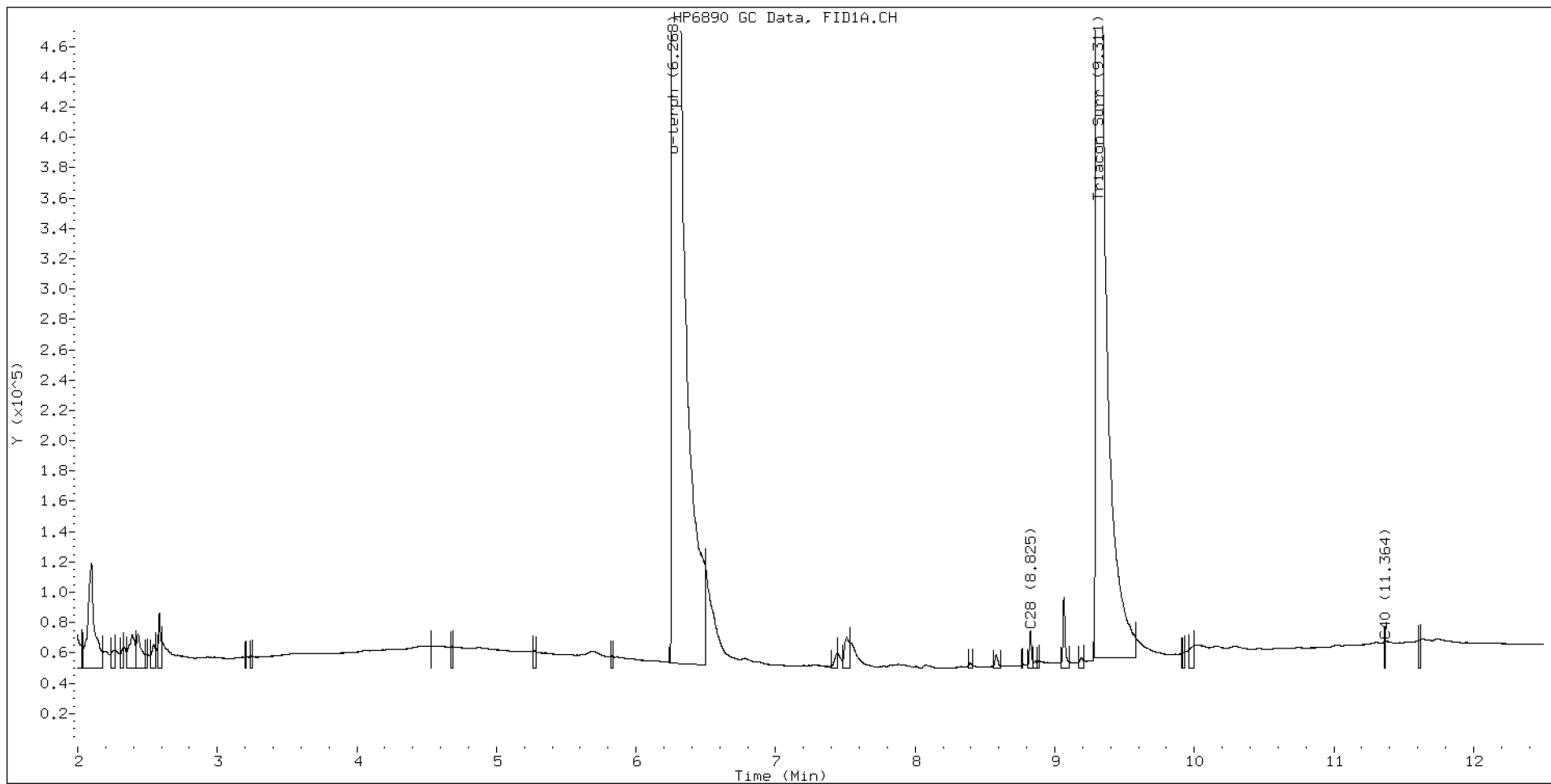
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.968	-0.014	58099	198837	WATPHD	(C12-C24)	98709	0.9
C10	----				WATPHM	(C24-C38)	164269	1.8
C12	----				AK102	(C10-C25)	109131	0.9
C14	----				AK103	(C25-C36)	164269	2.4
C16	----				OR.DIES	(C10-C28)	158593	1.3
C18	----							
C20	----							
C22	----							
C24	----							
C25	----							
C26	----							
C28	8.825	-0.000	24069	26508				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	11.364	-0.048	17151	8499				
o-terph	6.268	-0.008	3078643	7194475				
Triacon Surr	9.311	-0.021	3409039	6322095	NAS DIES	(C10-C24)	109131	0.9

Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7194475	54.8 M
Triacotane	6322095	51.6 M

M Indicates the peak was manually integrated

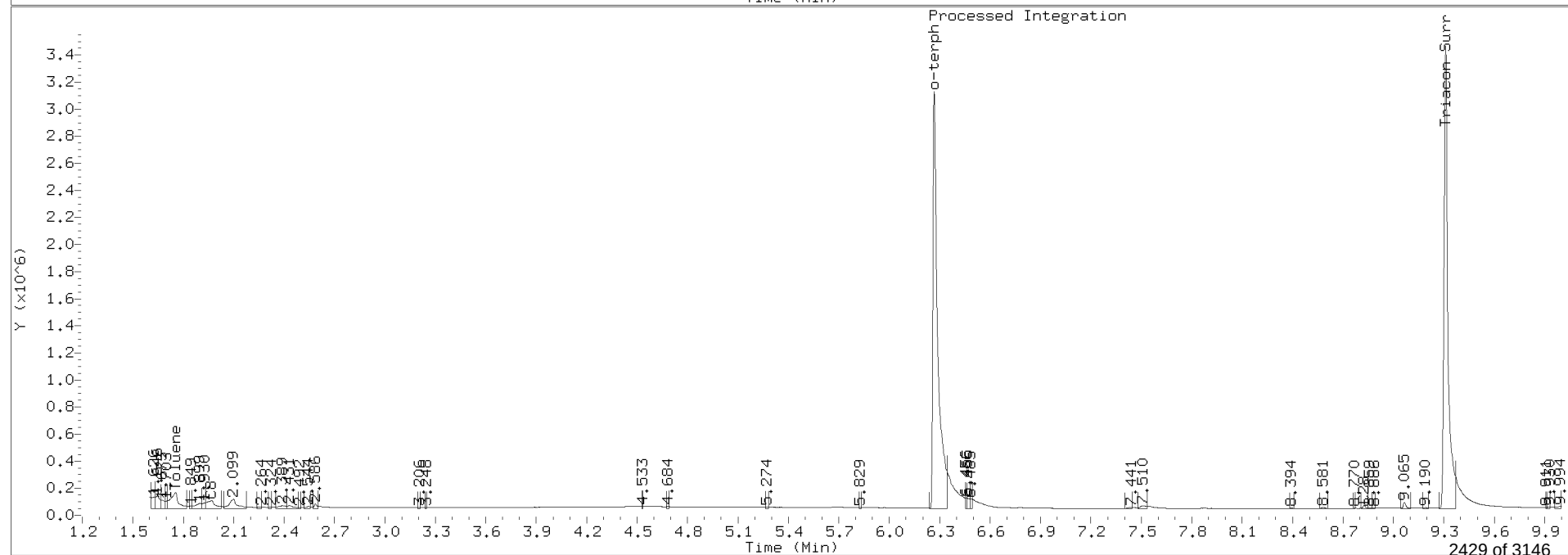
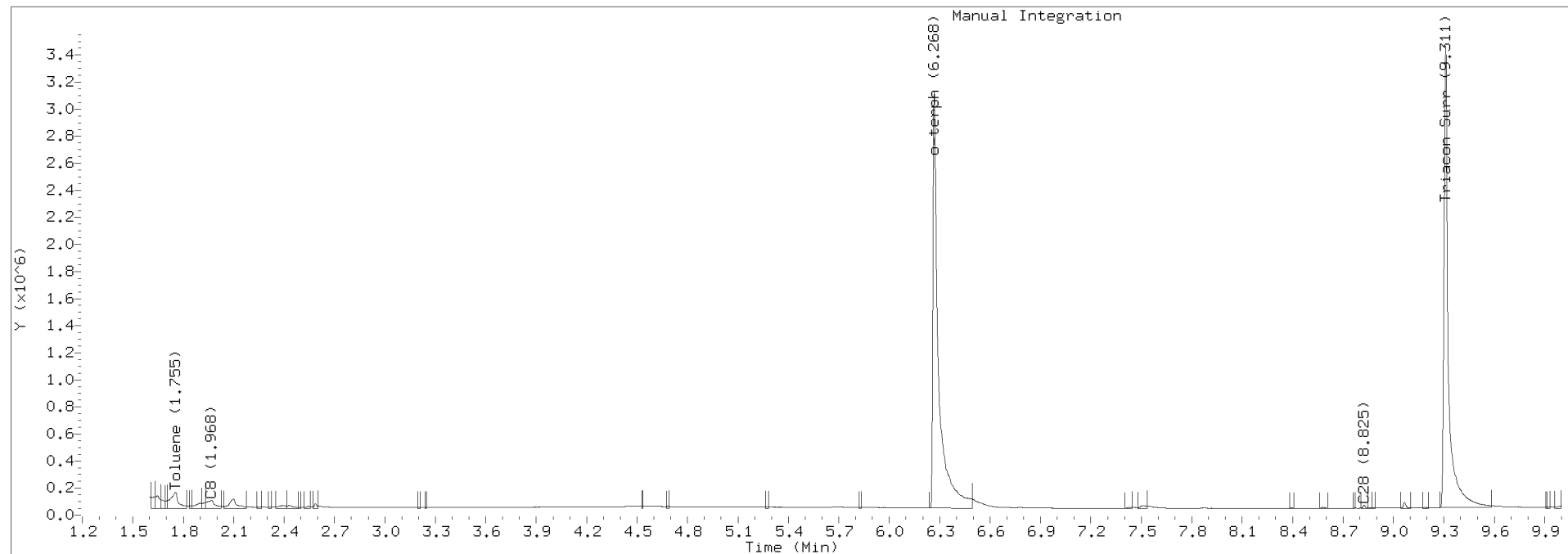
Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019



TPH Manual Integrations Report

Datafile: FID4A, 20190716A.b/419G1659.D Injection: 17-JUL-2019 07:28

Lab ID:19G0163-02





Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 B SDG: 19G0163

Sampled: 07/11/19 10:50 Prepared: 07/12/19 12:52 File ID: 419G1662.D

% Solids: 44.87 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 08:31

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.08 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	111	U	45.0	111
RRO	Motor Oil Range Organics (C24-C38)	1	221	U	46.4	221

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	124.38	122	97.8	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1662.D

Date : 17-JUL-2019 08:31

Client ID:

Sample Info: 19G0163-03

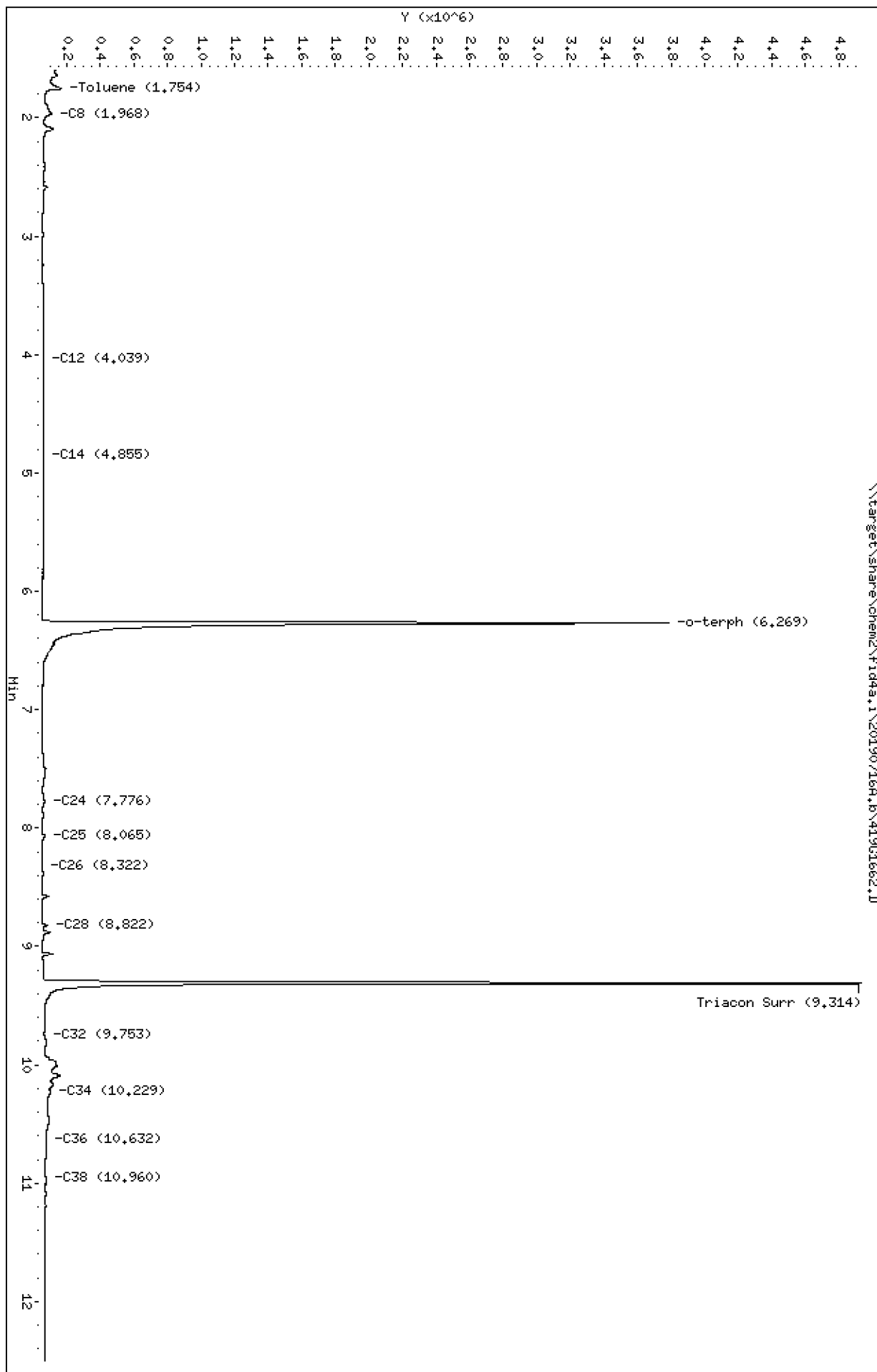
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1662.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-03

Client ID:

Injection: 17-JUL-2019 08:31

Dilution Factor: 1

RT Std: 419G1645.D

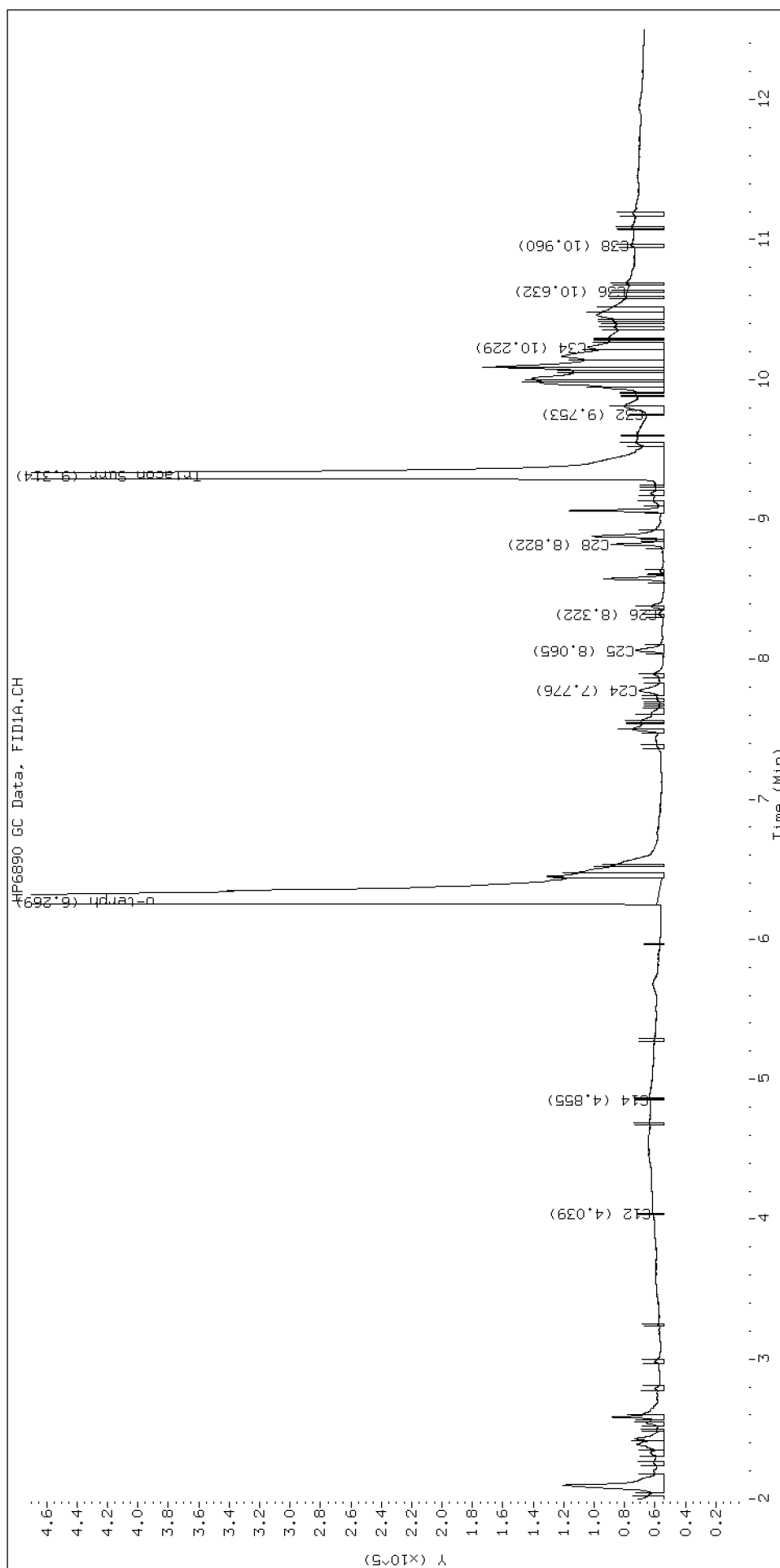
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.968	-0.014	54575	177419	WATPHD	(C12-C24)	344521	3.3
C10	----				WATPHM	(C24-C38)	2164446	23.6
C12	4.039	-0.021	7846	4541	AK102	(C10-C25)	361567	3.0
C14	4.855	0.027	9219	3173	AK103	(C25-C36)	2106157	30.3
C16	----				OR.DIES	(C10-C28)	504463	4.1
C18	----							
C20	----							
C22	----							
C24	7.776	0.001	16317	48639				
C25	8.065	0.011	19016	36803				
C26	8.322	0.007	3663	3248				
C28	8.822	-0.003	35460	41058				
C32	9.753	-0.016	12827	9285				
C34	10.229	0.028	50386	156976				
Filter Peak	----							
C36	10.632	0.023	24284	13244				
C38	10.960	-0.041	21817	28285				
C40	----							
o-terph	6.269	-0.007	3727264	7216931				
Triacon Surr	9.314	-0.018	4879687	6588615	NAS DIES	(C10-C24)	352297	2.9

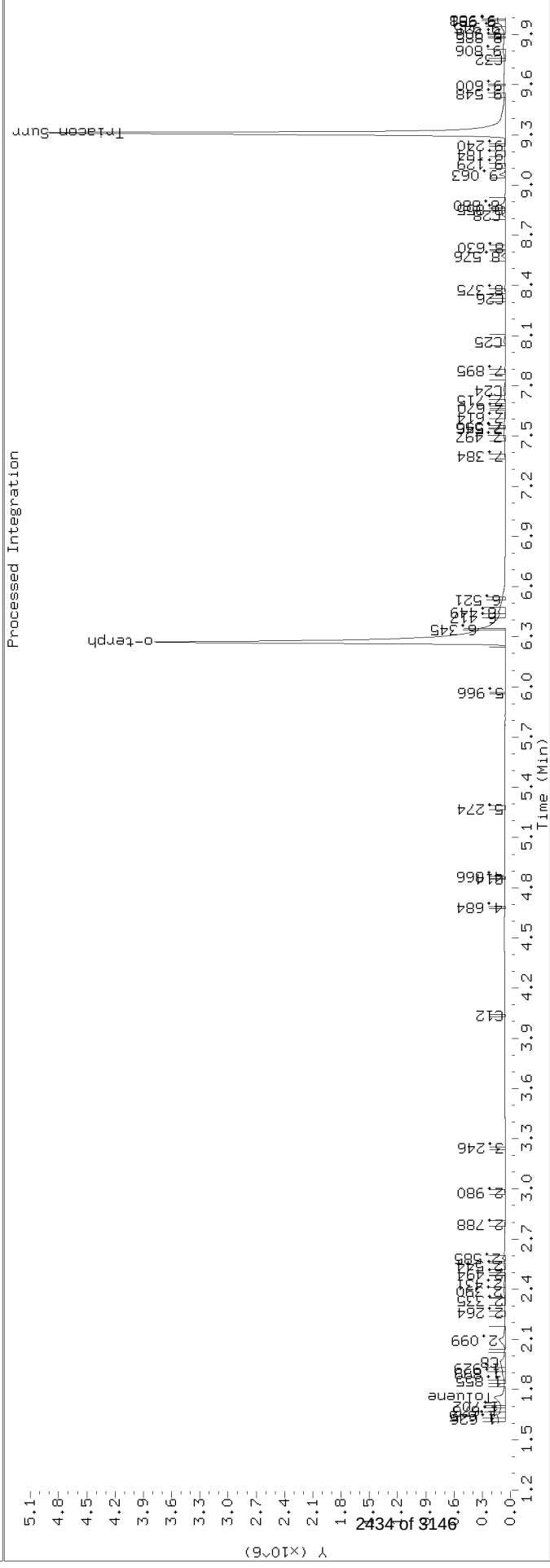
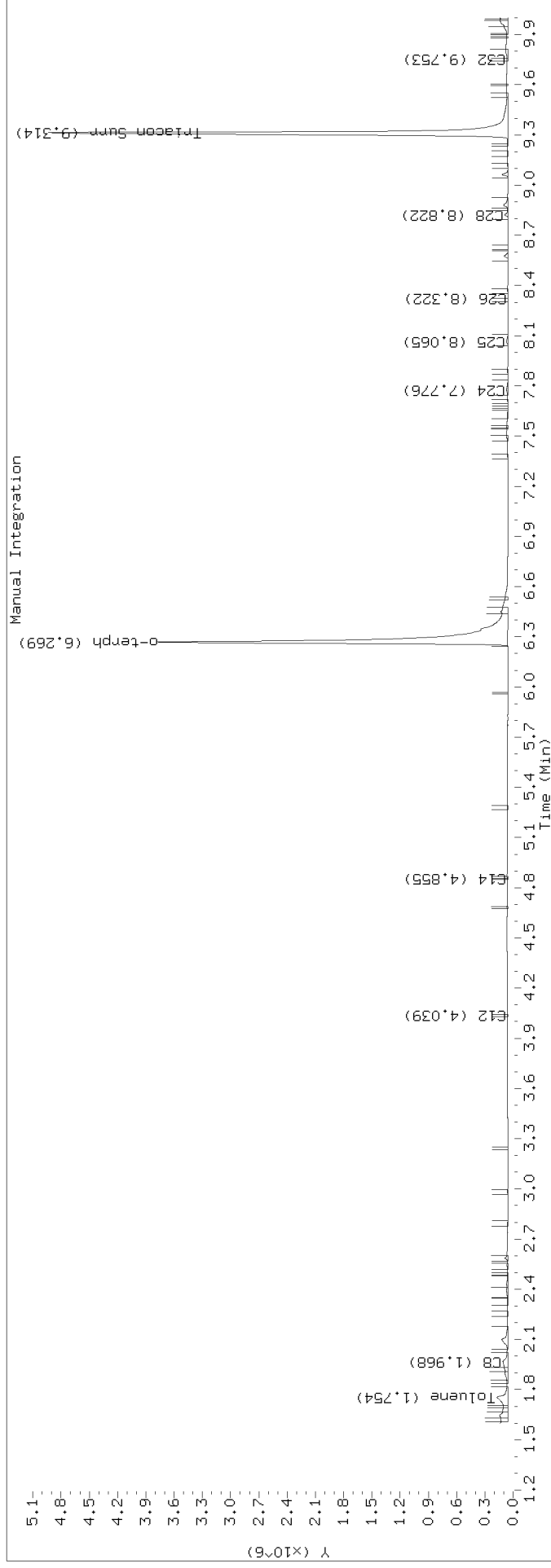
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7216931	55.0 M
Triacotane	6588615	53.8

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-04 B

SDG: 19G0163

Sampled: 07/11/19 08:35

Prepared: 07/12/19 12:52

File ID: 419G1663.D

% Solids: 23.77

Preparation: EPA 3546 (Microwave)

Analyzed: 07/17/19 08:51

Batch: BHG0310

Sequence: SHG0211

Initial/Final: 10.04 g Wet / 10 mL

Instrument: FID4

Column: RTX-1

Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	210	U	85.2	210
RRO	Motor Oil Range Organics (C24-C38)	1	419	U	88.0	419

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	235.69	224	95.1	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1663.D

Date : 17-JUL-2019 08:51

Client ID:

Sample Info: 19G0163-04

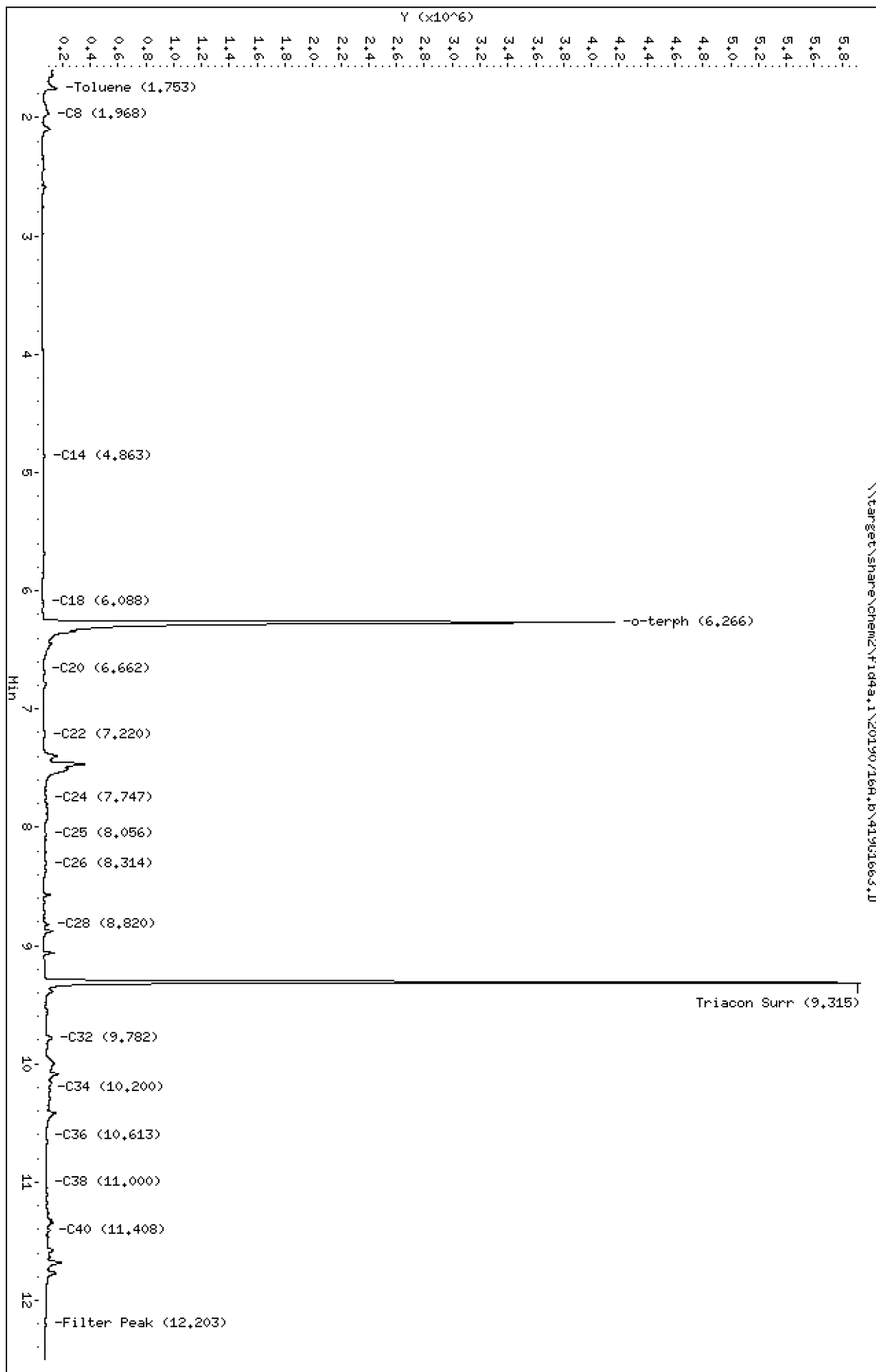
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1663.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-04

Client ID:

Injection: 17-JUL-2019 08:51

Dilution Factor: 1

RT Std: 419G1645.D

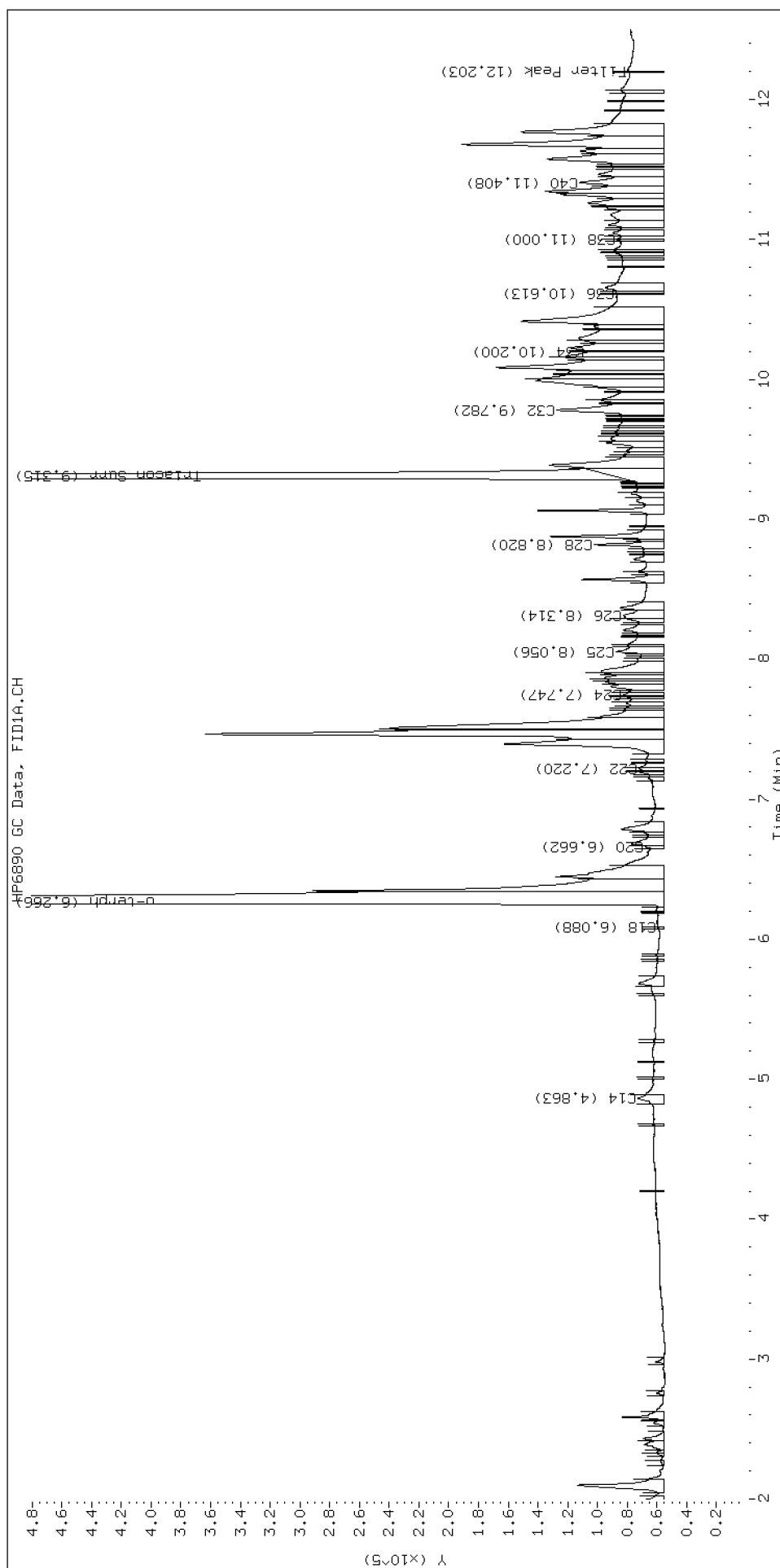
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.968	-0.014	46631	140720	WATPHD	(C12-C24)	3175496	30.1
C10	----				WATPHM	(C24-C38)	4785349	52.2
C12	----				AK102	(C10-C25)	3526316	28.8
C14	4.863	0.035	17322	54065	AK103	(C25-C36)	4222623	60.7
C16	----				OR.DIES	(C10-C28)	4191662	34.2
C18	6.088	0.006	4390	3984				
C20	6.662	0.001	12354	12105				
C22	7.220	-0.004	16780	15115				
C24	7.747	-0.029	26922	26923				
C25	8.056	0.001	32240	77253				
C26	8.314	-0.001	27350	77493				
C28	8.820	-0.005	46943	73258				
C32	9.782	0.013	72031	239100				
C34	10.200	-0.000	52629	15712				
Filter Peak	12.203	-0.019	24021	13120				
C36	10.613	0.003	31945	20644				
C38	11.000	-0.001	31210	26907				
C40	11.408	-0.004	56509	165539				
o-terph	6.266	-0.010	4110056	7016625				
Triacon Surr	9.315	-0.017	5840493	6586623	NAS DIES	(C10-C24)	3175496	26.0

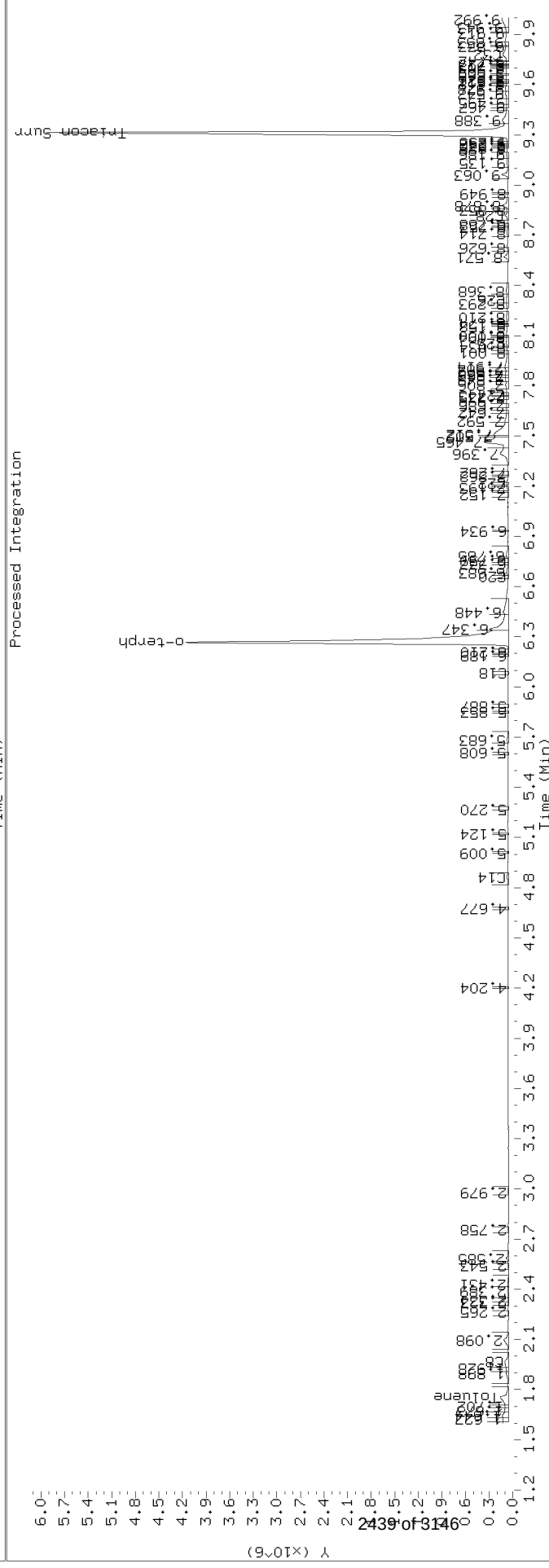
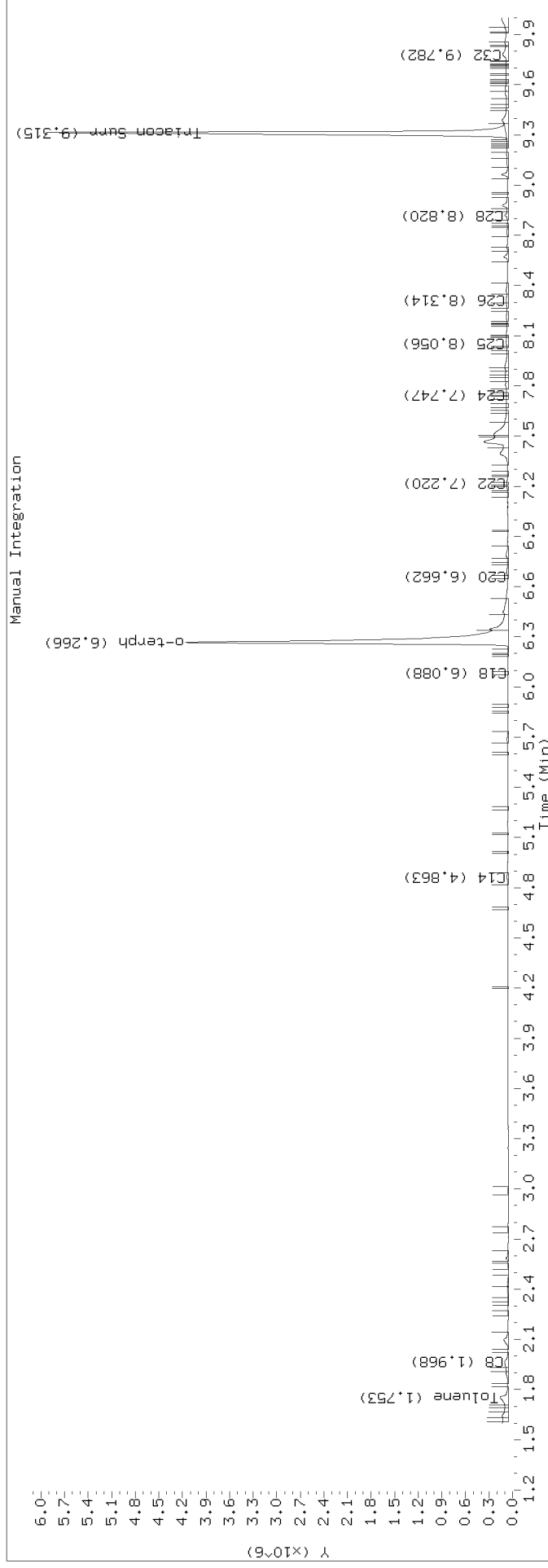
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7016625	53.5
Triacotane	6586623	53.8 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-05 B

SDG: 19G0163

Sampled: 07/11/19 11:30

Prepared: 07/12/19 12:52

File ID: 419G1664.D

% Solids: 21.73

Preparation: EPA 3546 (Microwave)

Analyzed: 07/17/19 09:12

Batch: BHG0310

Sequence: SHG0211

Initial/Final: 10.08 g Wet / 10 mL

Instrument: FID4

Column: RTX-1

Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	228	U	92.9	228
RRO	Motor Oil Range Organics (C24-C38)	1	499		95.8	456

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	256.78	235	91.6	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1664.D

Date : 17-JUL-2019 09:12

Client ID:

Sample Info: 19G0163-05

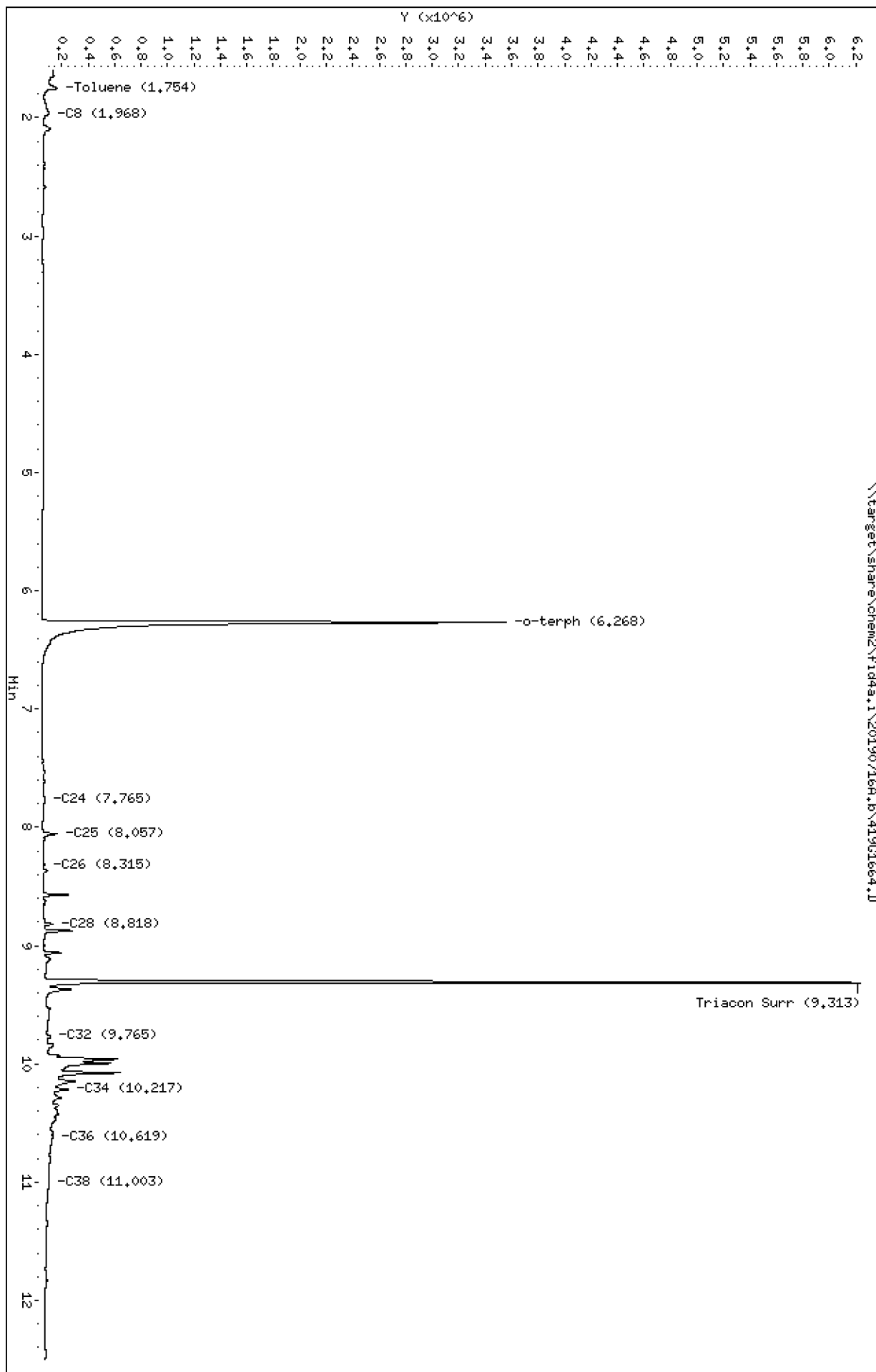
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1664.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-05

Client ID:

Injection: 17-JUL-2019 09:12

Dilution Factor: 1

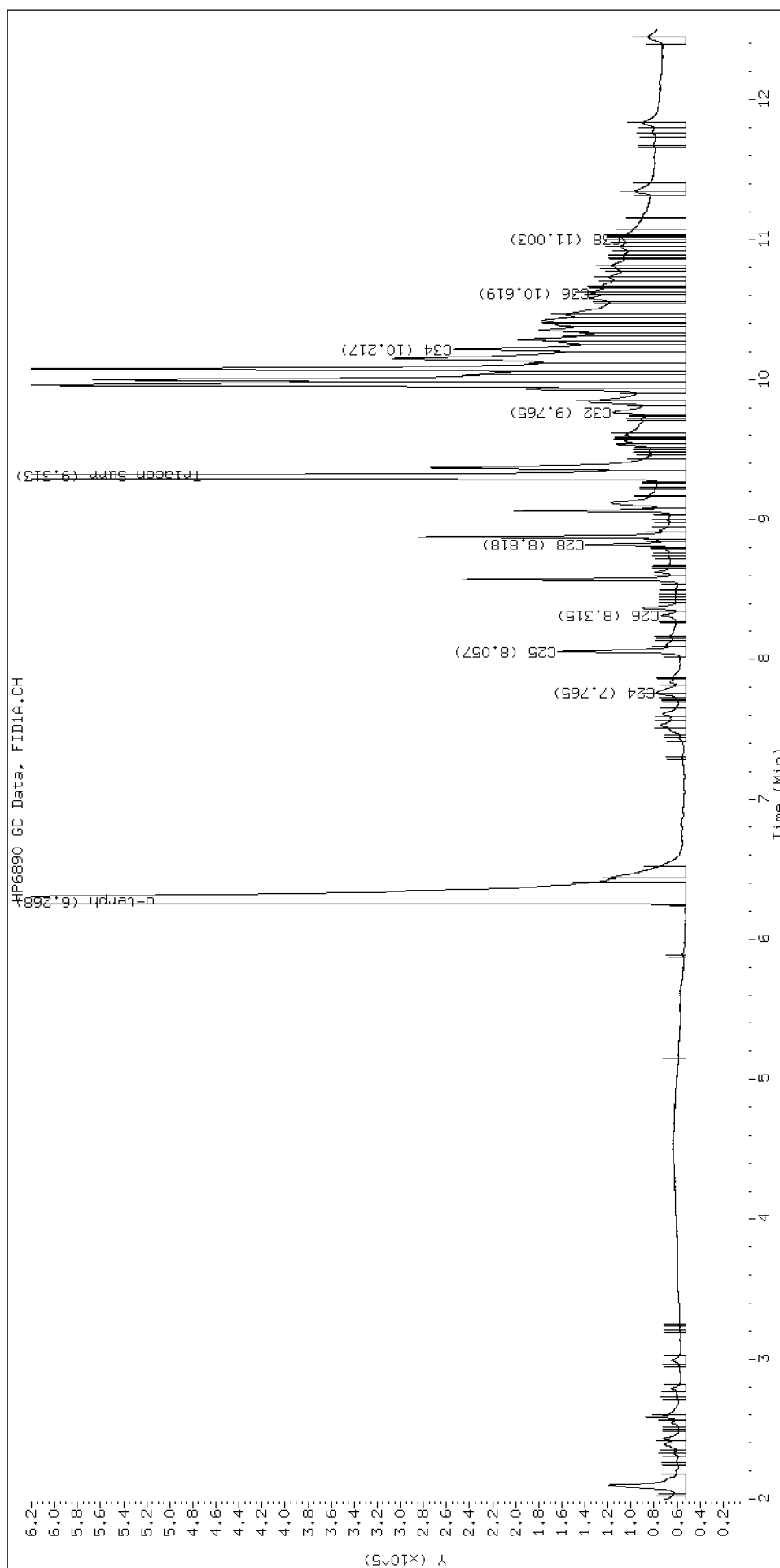
RT Std: 419G1645.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.968	-0.015	52934	176315	WATPHD	(C12-C24)	484505	4.6
C10	----				WATPHM	(C24-C38)	10025654	109.4
C12	----				AK102	(C10-C25)	529260	4.3
C14	----				AK103	(C25-C36)	9214218	132.5
C16	----				OR.DIES	(C10-C28)	1359964	11.1
C18	----							
C20	----							
C22	----							
C24	7.765	-0.010	25193	58555				
C25	8.057	0.002	110486	160049				
C26	8.315	-0.000	21333	56913				
C28	8.818	-0.007	86591	114092				
C32	9.765	-0.004	62761	196120				
C34	10.217	0.016	201580	403957				
Filter Peak	----							
C36	10.619	0.010	82338	78515				
C38	11.003	0.002	54715	81867				
C40	----							
o-terph	6.268	-0.009	3506926	6757071				
Triacon Surr	9.313	-0.019	6181386	6434448	NAS DIES	(C10-C24)	493333	4.0
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)								
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)								

Surrogate	Area	Amount
o-Terphenyl	6757071	51.5
Triacotane	6434448	52.5

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 B SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/12/19 12:52 File ID: 419G1665.D

% Solids: 33.67 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 09:32

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.07 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	147	U	60.0	147
RRO	Motor Oil Range Organics (C24-C38)	1	295	U	61.9	295

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	165.89	162	97.6	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1665.D

Date: 17-JUL-2019 09:32

Client ID:

Sample Info: 19G0163-06

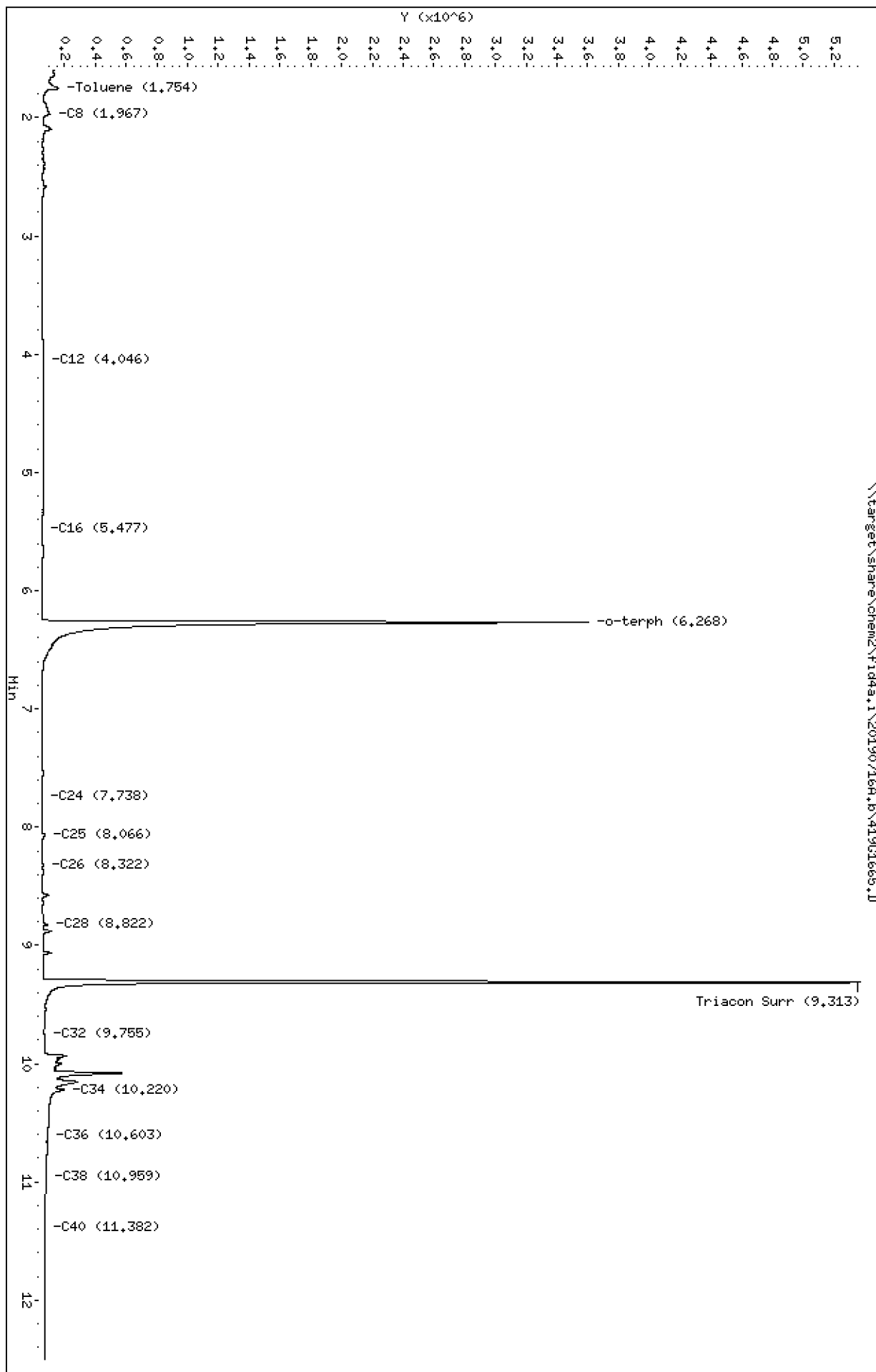
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1665.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-06

Client ID:

Injection: 17-JUL-2019 09:32

Dilution Factor: 1

RT Std: 419G1645.D

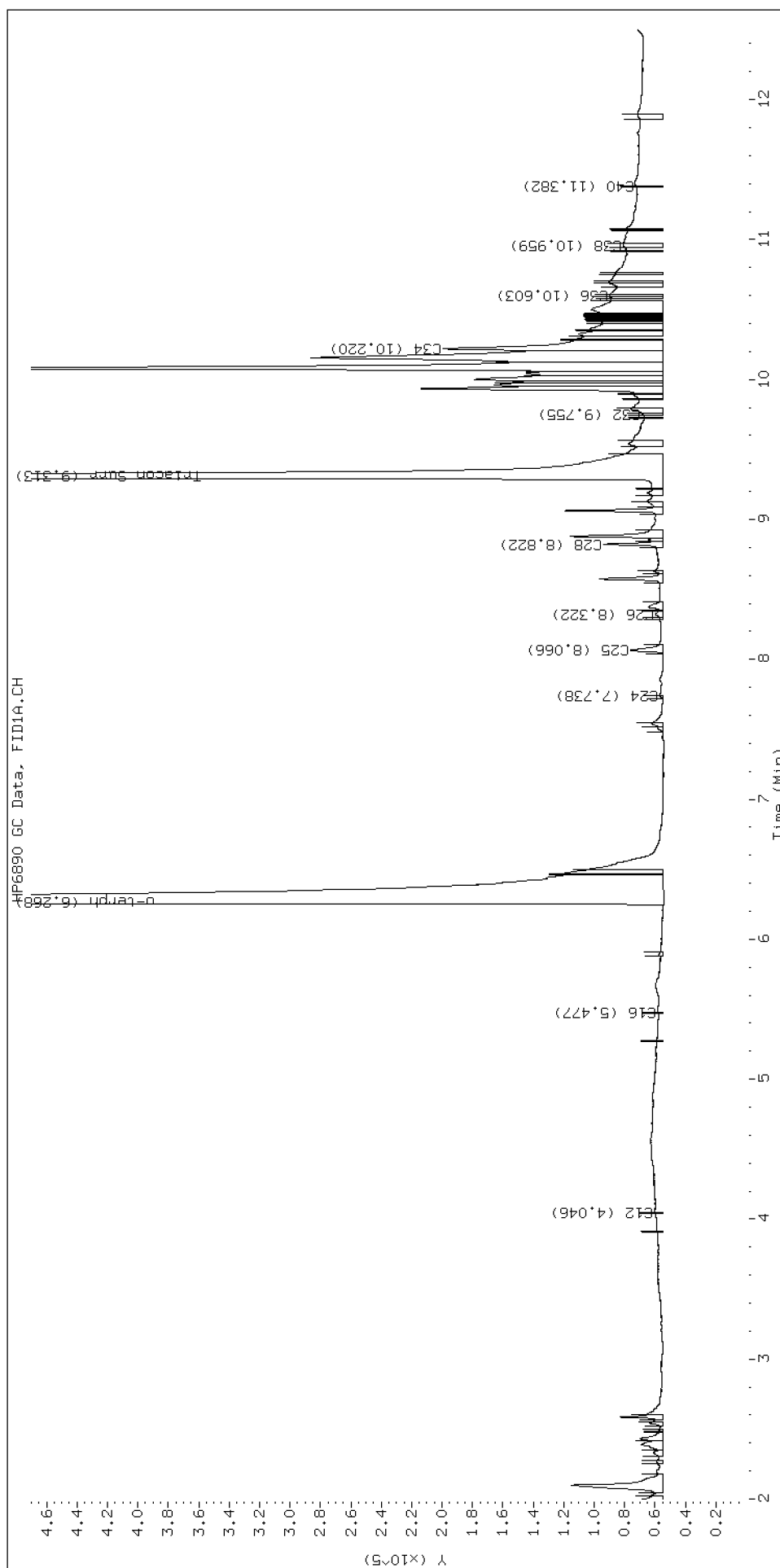
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.967	-0.015	48318	151327	WATPHD	(C12-C24)	148396	1.4
C10	----				WATPHM	(C24-C38)	4430408	48.3
C12	4.046	-0.014	5370	2108	AK102	(C10-C25)	151668	1.2
C14	----				AK103	(C25-C36)	4267865	61.4
C16	5.477	-0.011	3324	1450	OR.DIES	(C10-C28)	337746	2.8
C18	----							
C20	----							
C22	----							
C24	7.738	-0.037	2303	1736				
C25	8.066	0.011	21137	37659				
C26	8.322	0.007	4998	9410				
C28	8.822	-0.003	38960	45945				
C32	9.755	-0.014	13481	7868				
C34	10.220	0.019	144672	426159				
Filter Peak	----							
C36	10.603	-0.006	35265	34874				
C38	10.959	-0.042	26408	40120				
C40	11.382	-0.031	17808	7047				
o-terph	6.268	-0.008	3551628	7208440				
Triacon Surr	9.313	-0.019	5317034	6629805	NAS DIES	(C10-C24)	151668	1.2

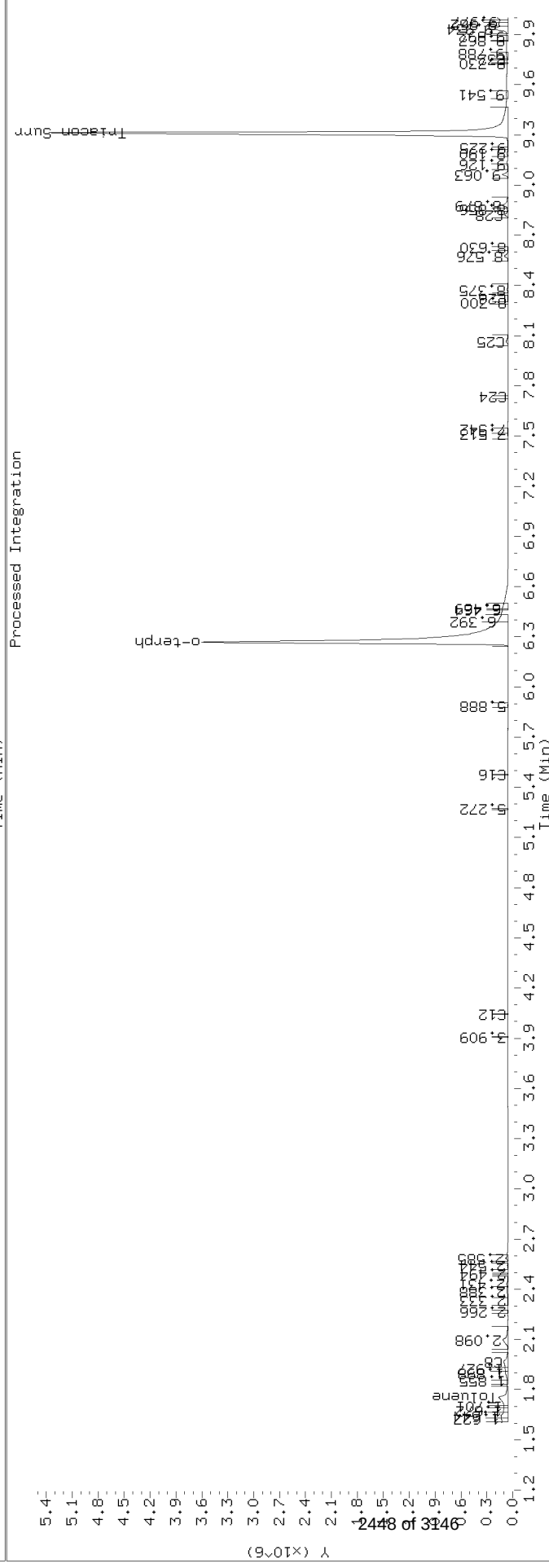
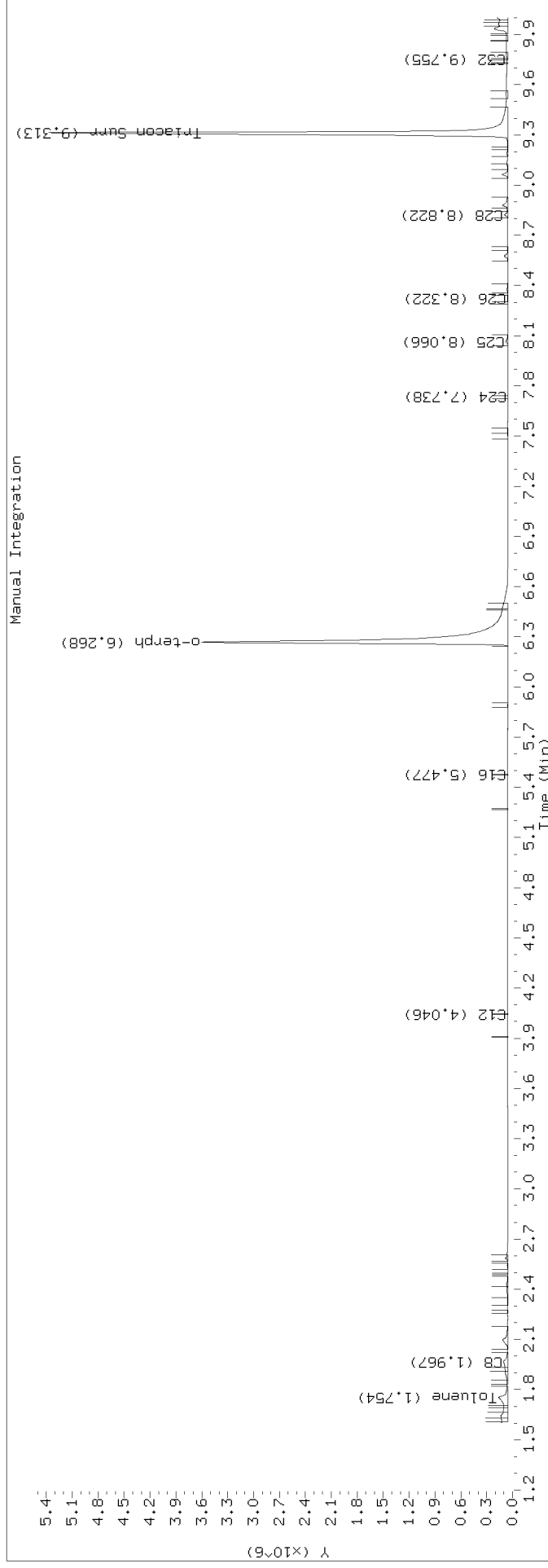
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7208440	54.9 M
Triacotane	6629805	54.1

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 B SDG: 19G0163

Sampled: 07/11/19 12:20 Prepared: 07/12/19 12:52 File ID: 419G1666.D

% Solids: 50.18 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 09:52

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.01 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	99.5	U	40.5	99.5
RRO	Motor Oil Range Organics (C24-C38)	1	199	U	41.8	199

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	111.97	107	96.0	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1666.D

Date : 17-JUL-2019 09:52

Client ID:

Sample Info: 19G0163-07

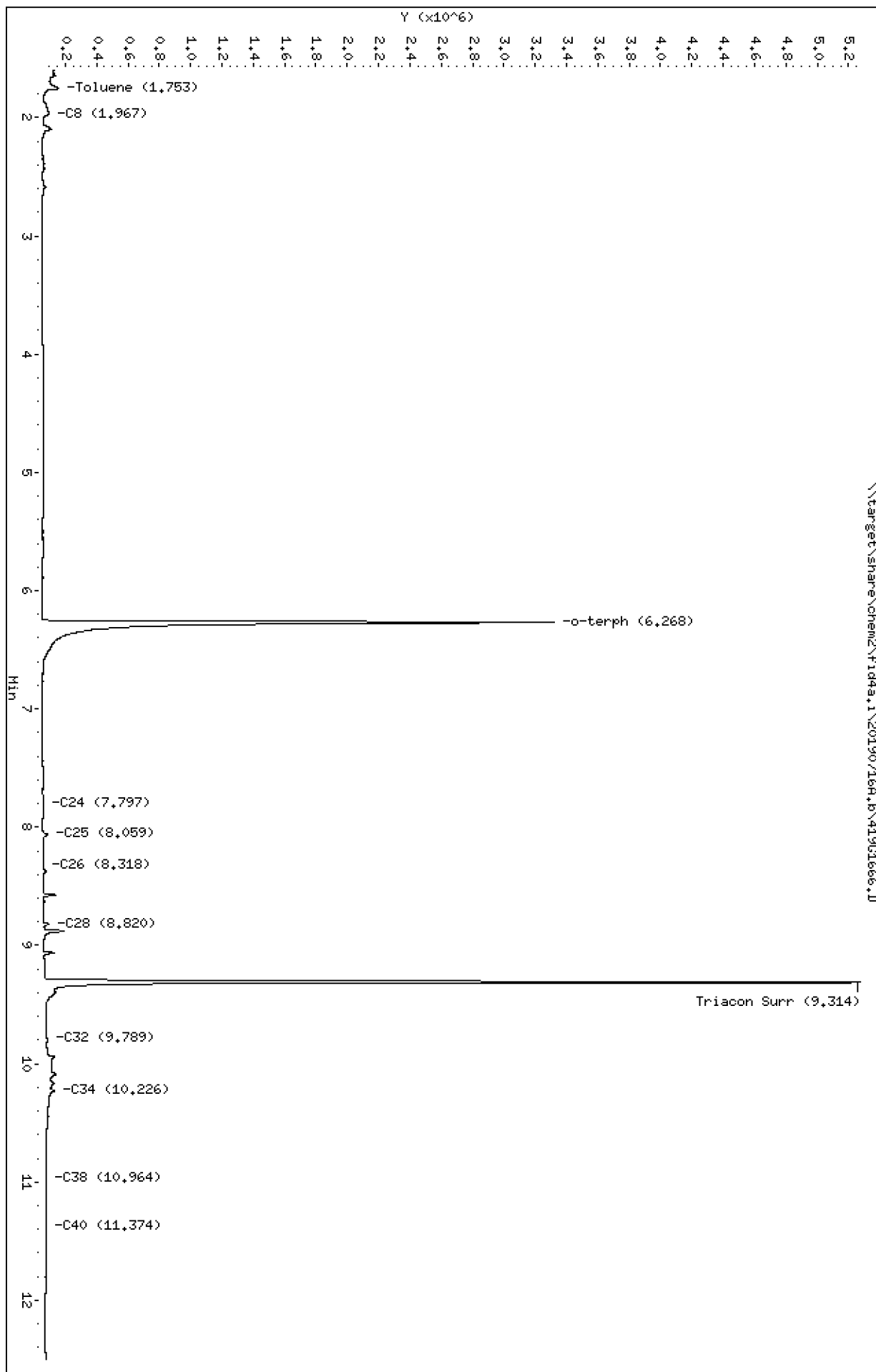
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1666.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-07

Client ID:

Injection: 17-JUL-2019 09:52

Dilution Factor: 1

RT Std: 419G1645.D

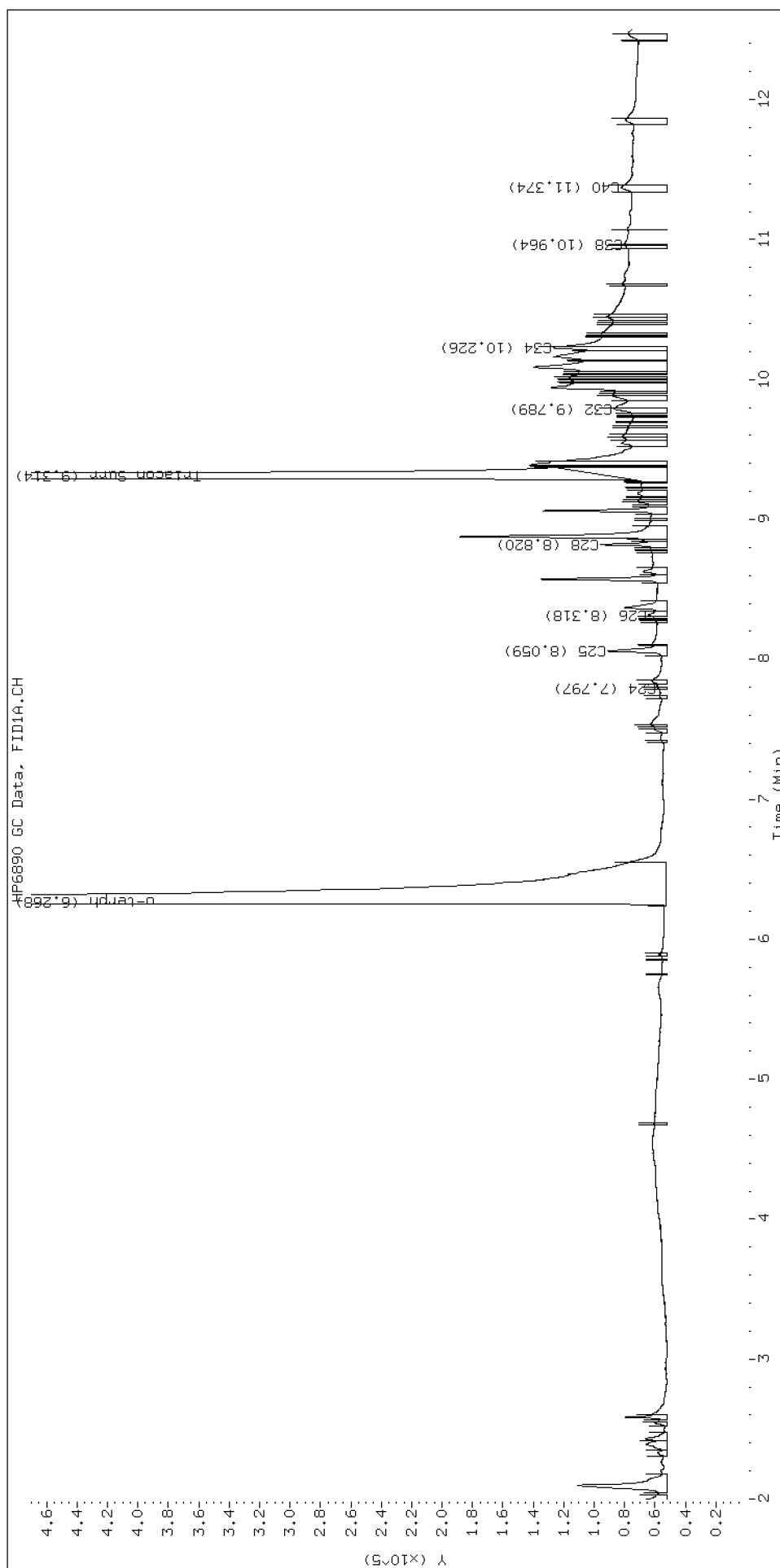
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.967	-0.015	47153	148931	WATPHD	(C12-C24)	52706	0.5
C10	----				WATPHM	(C24-C38)	3141062	34.3
C12	----				AK102	(C10-C25)	67641	0.6
C14	----				AK103	(C25-C36)	3036997	43.7
C16	----				OR.DIES	(C10-C28)	461364	3.8
C18	----							
C20	----							
C22	----							
C24	7.797	0.022	5622	3567				
C25	8.059	0.005	38875	70001				
C26	8.318	0.002	11755	23699				
C28	8.820	-0.005	43386	57095				
C32	9.789	0.020	34331	64506				
C34	10.226	0.026	74429	98827				
Filter Peak	----							
C36	----							
C38	10.964	-0.037	27857	15193				
C40	11.374	-0.038	29746	85957				
o-terph	6.268	-0.008	3268359	7083744				
Triacon Surr	9.314	-0.018	5183221	6065390	NAS DIES	(C10-C24)	52706	0.4

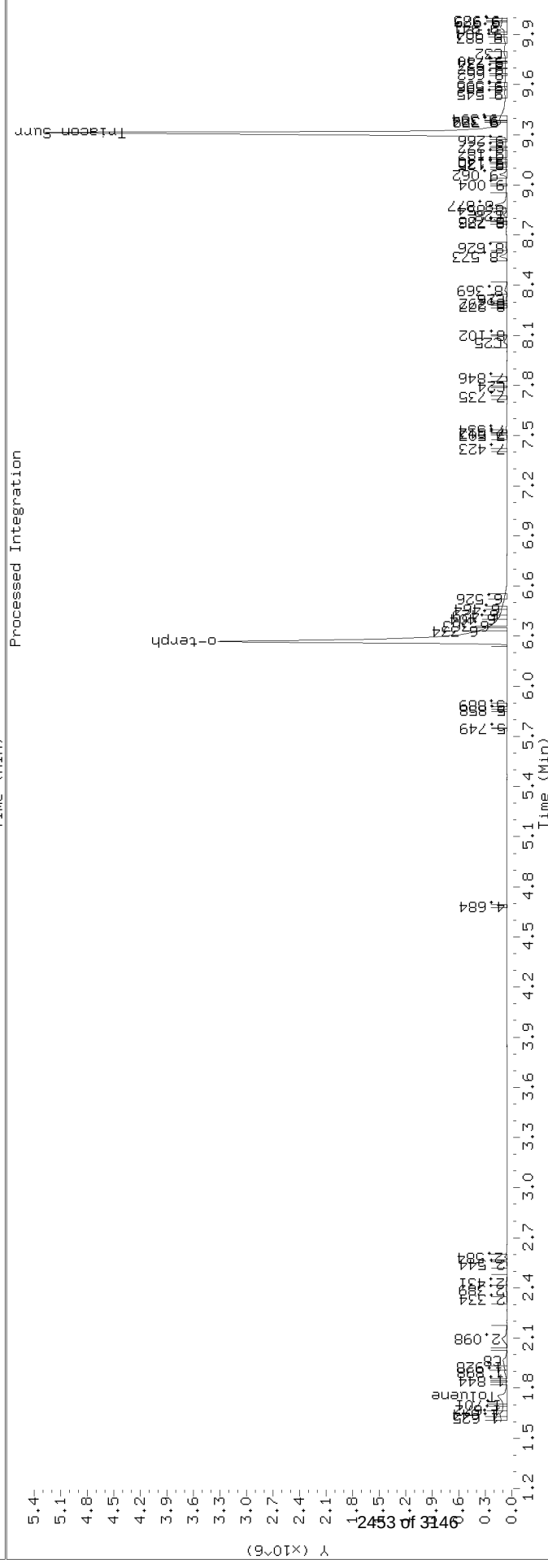
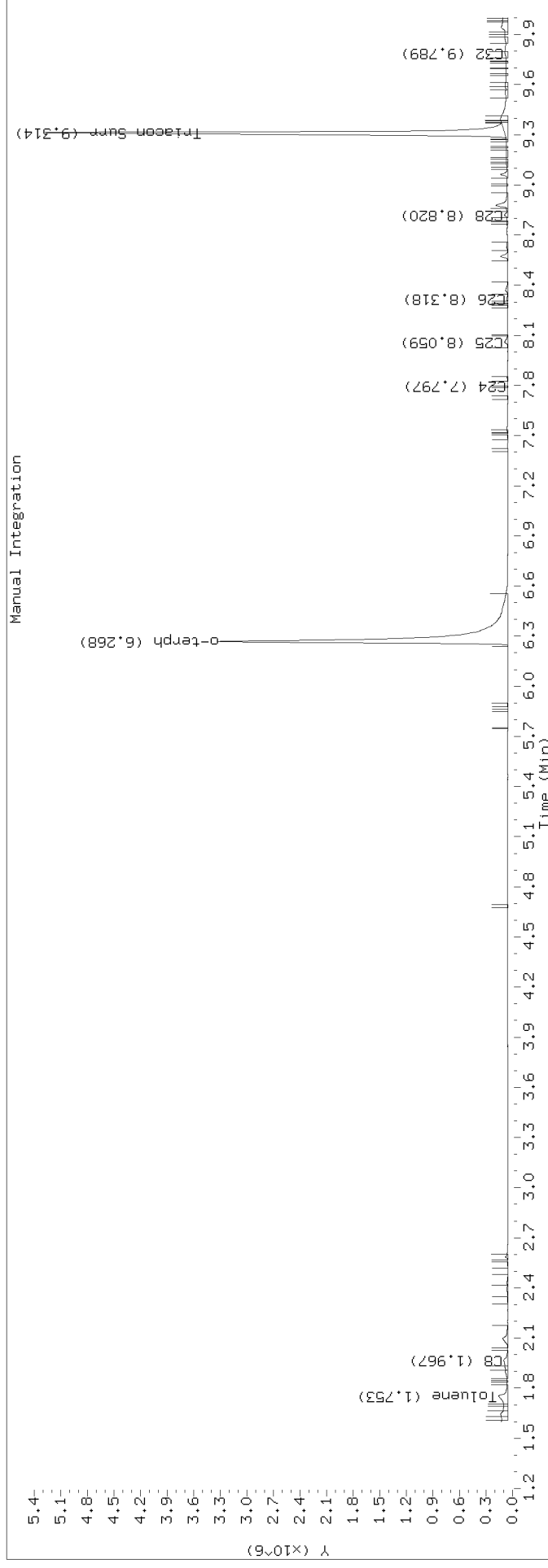
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7083744	54.0 M
Triacotane	6065390	49.5 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-08 B

SDG: 19G0163

Sampled: 07/11/19 11:55

Prepared: 07/12/19 12:52

File ID: 419G1669.D

% Solids: 63.69

Preparation: EPA 3546 (Microwave)

Analyzed: 07/17/19 10:54

Batch: BHG0310

Sequence: SHG0211

Initial/Final: 10.03 g Wet / 10 mL

Instrument: FID4

Column: RTX-1

Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	78.3	U	31.8	78.3
RRO	Motor Oil Range Organics (C24-C38)	1	157	U	32.9	157

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	88.053	79.7	90.5	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1669.D

Date : 17-JUL-2019 10:54

Client ID:

Sample Info: 19G0163-08

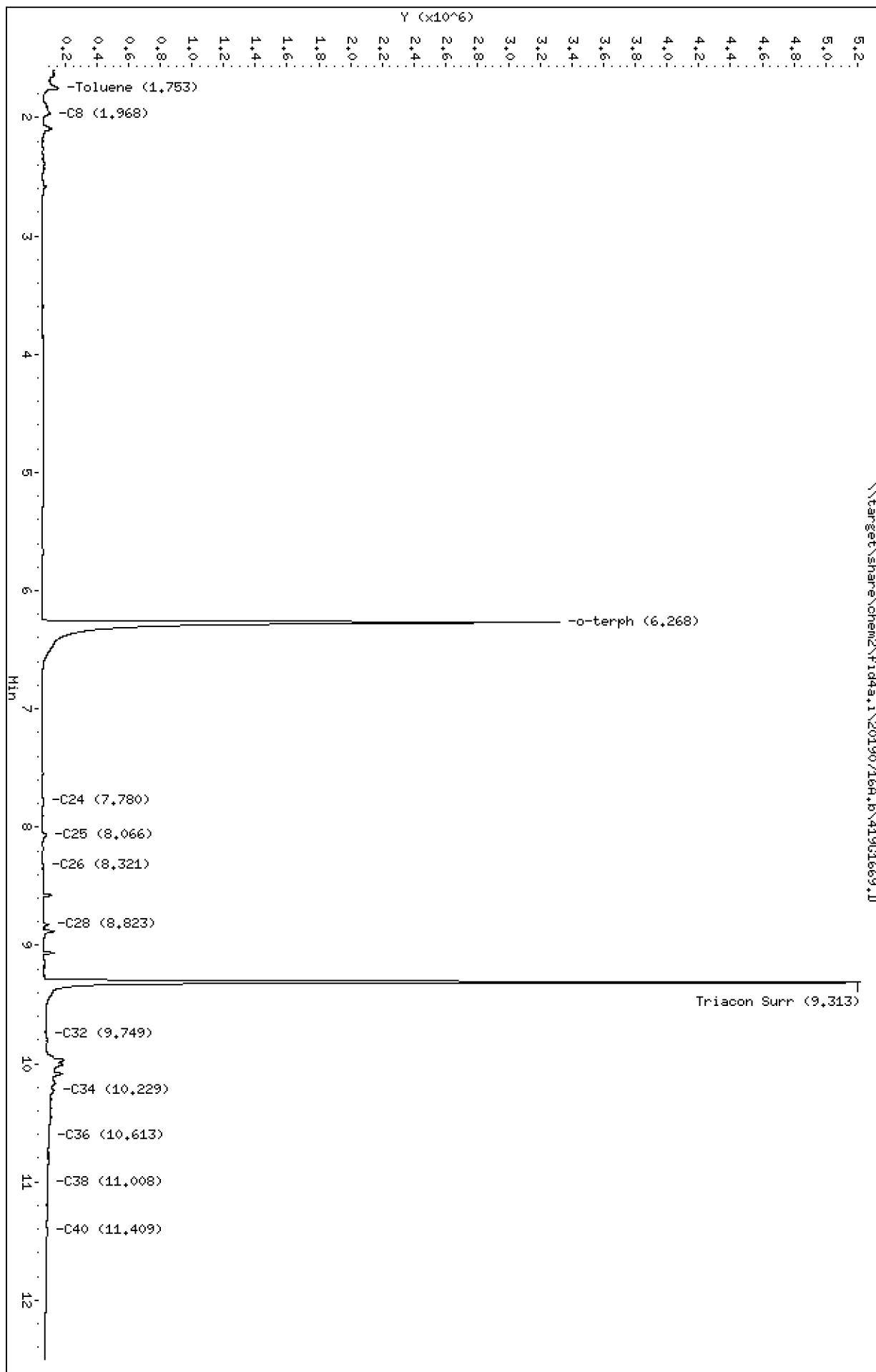
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1669.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-08

Client ID:

Injection: 17-JUL-2019 10:54

Dilution Factor: 1

RT Std: 419G1645.D

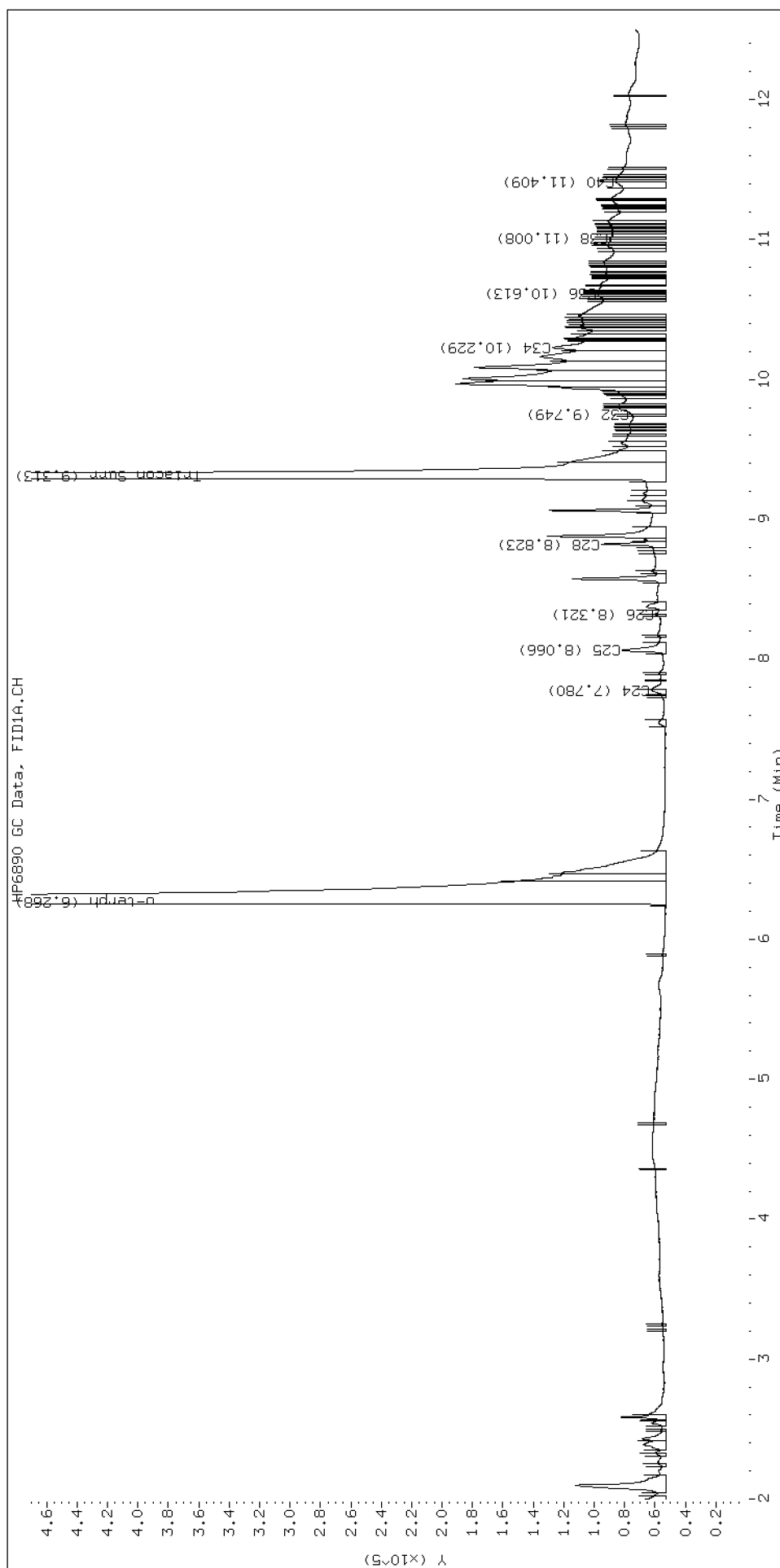
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.968	-0.014	48649	151964	WATPHD	(C12-C24)	602591	5.7
C10	----				WATPHM	(C24-C38)	4144546	45.2
C12	----				AK102	(C10-C25)	613116	5.0
C14	----				AK103	(C25-C36)	3644887	52.4
C16	----				OR.DIES	(C10-C28)	891499	7.3
C18	----							
C20	----							
C22	----							
C24	7.780	0.005	9058	16115				
C25	8.066	0.011	28421	61638				
C26	8.321	0.006	6651	6127				
C28	8.823	-0.003	42390	55481				
C32	9.749	-0.019	22885	15645				
C34	10.229	0.029	74659	247568				
Filter Peak	----							
C36	10.613	0.003	44270	30838				
C38	11.008	0.007	36707	32666				
C40	11.409	-0.003	32634	86116				
o-terph	6.268	-0.008	3264308	6675718				
Triacon Surr	9.313	-0.019	5166652	6453771	NAS DIES	(C10-C24)	606376	5.0

Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	6675718	50.9
Triacotane	6453771	52.7

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 B SDG: 19G0163

Sampled: 07/11/19 10:25 Prepared: 07/12/19 12:52 File ID: 419G1670.D

% Solids: 47.73 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 11:14

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.08 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	104	U	42.3	104
RRO	Motor Oil Range Organics (C24-C38)	1	208	U	43.6	208

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	116.91	111	95.1	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1670.D

Date : 17-JUL-2019 11:14

Client ID:

Sample Info: 19G0163-09

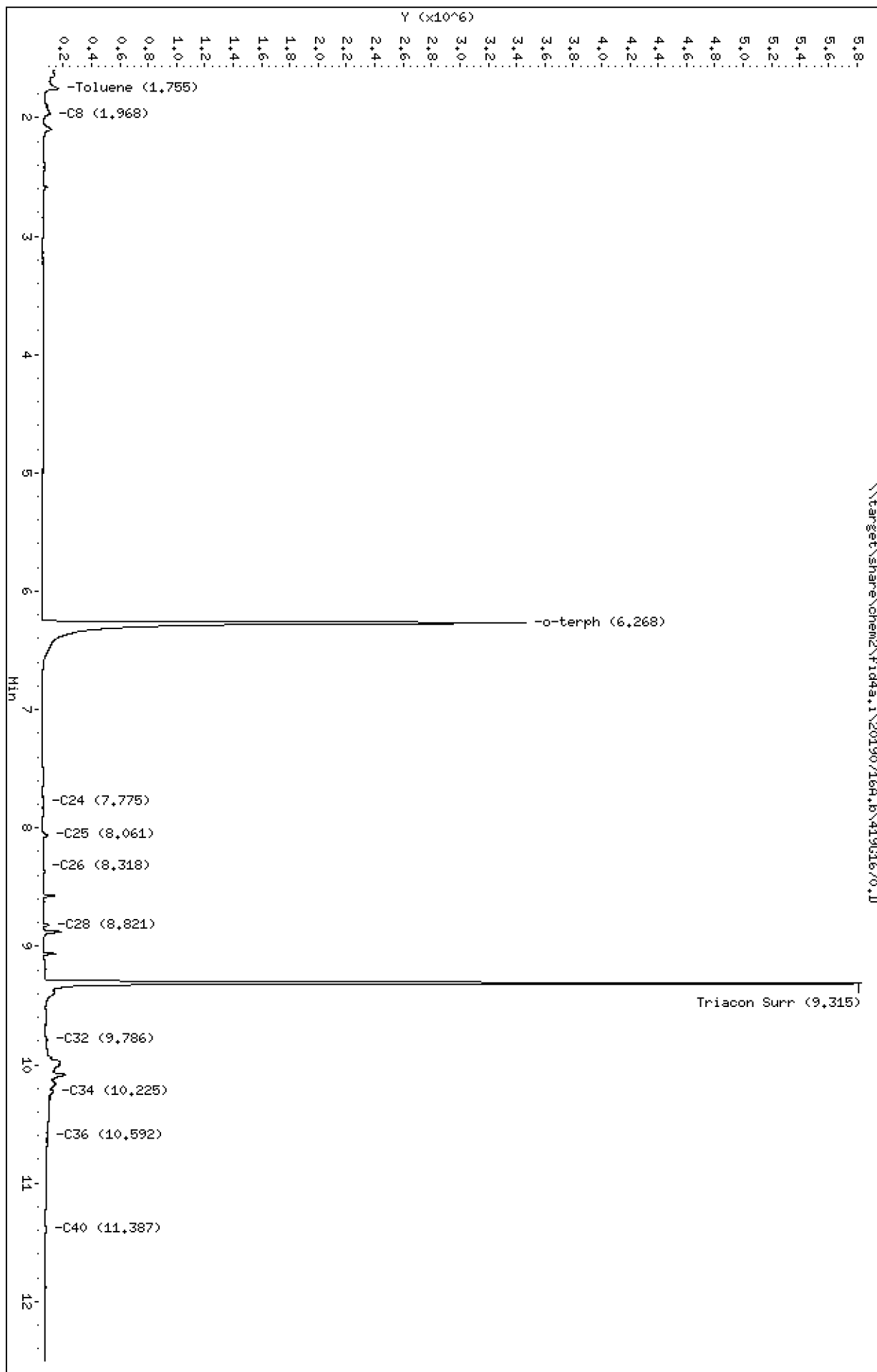
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1670.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-09

Client ID:

Injection: 17-JUL-2019 11:14

Dilution Factor: 1

RT Std: 419G1645.D

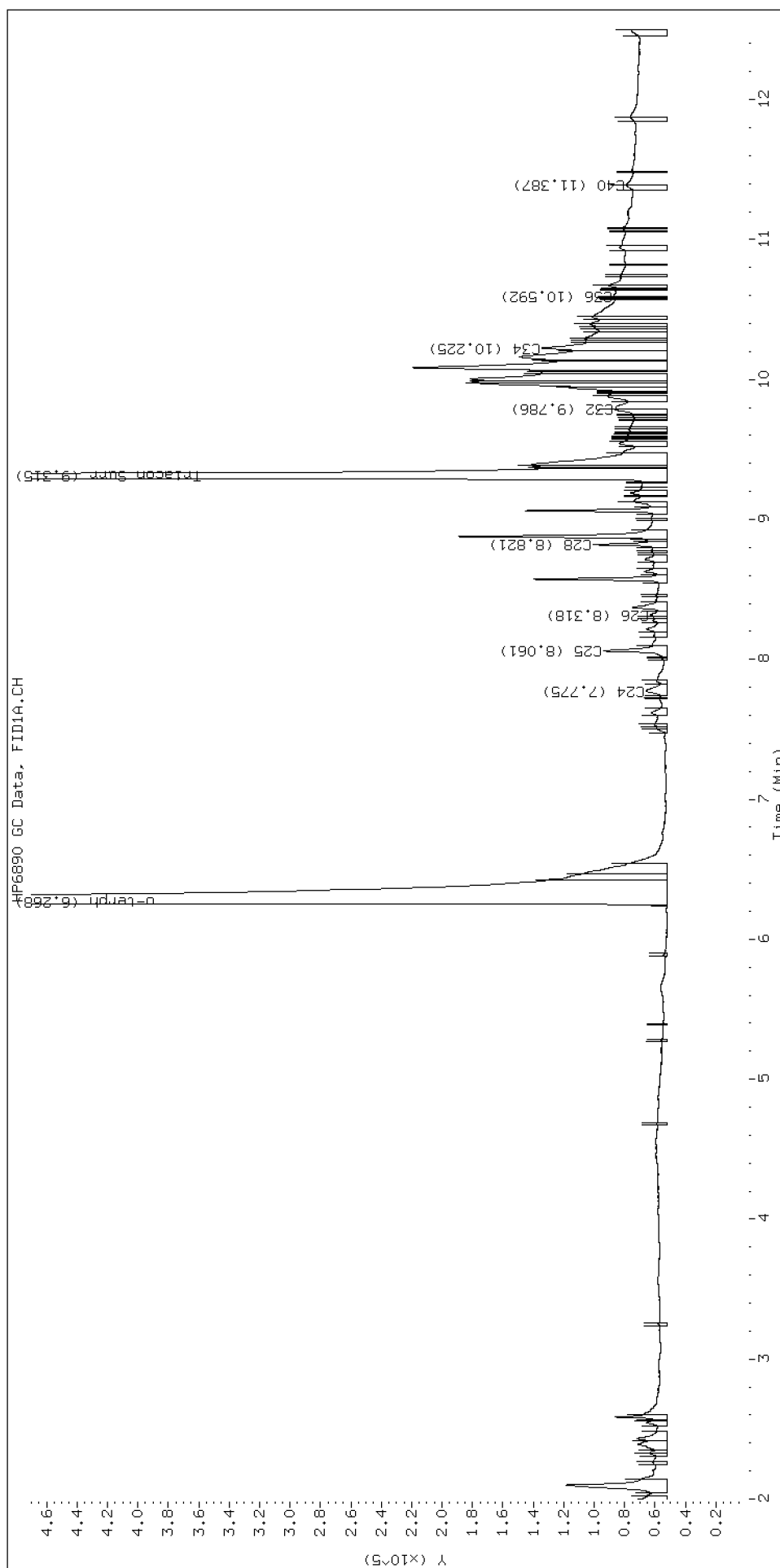
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.968	-0.014	54497	181506	WATPHD	(C12-C24)	458594	4.4
C10	----				WATPHM	(C24-C38)	4120980	45.0
C12	----				AK102	(C10-C25)	477940	3.9
C14	----				AK103	(C25-C36)	3970340	57.1
C16	----				OR.DIES	(C10-C28)	963428	7.9
C18	----							
C20	----							
C22	----							
C24	7.775	-0.000	13974	43679				
C25	8.061	0.006	41861	79687				
C26	8.318	0.003	10901	22766				
C28	8.821	-0.005	48547	63923				
C32	9.786	0.017	34269	62474				
C34	10.225	0.025	82041	239999				
Filter Peak	----							
C36	10.592	-0.017	34734	17187				
C38	----							
C40	11.387	-0.025	26599	51019				
o-terph	6.268	-0.008	3414049	7020044				
Triacon Surr	9.315	-0.017	5781128	6729927	NAS DIES	(C10-C24)	465763	3.8

Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7020044	53.5
Triacontane	6729927	54.9

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-10 B

SDG: 19G0163

Sampled: 07/11/19 10:10

Prepared: 07/12/19 12:52

File ID: 419G1671.D

% Solids: 66.02

Preparation: EPA 3546 (Microwave)

Analyzed: 07/17/19 11:35

Batch: BHG0310

Sequence: SHG0211

Initial/Final: 10.06 g Wet / 10 mL

Instrument: FID4

Column: RTX-1

Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	75.3	U	30.6	75.3
RRO	Motor Oil Range Organics (C24-C38)	1	151	U	31.6	151

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	84.688	78.3	92.4	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1671.D

Date : 17-JUL-2019 11:35

Client ID:

Sample Info: 19G0163-10

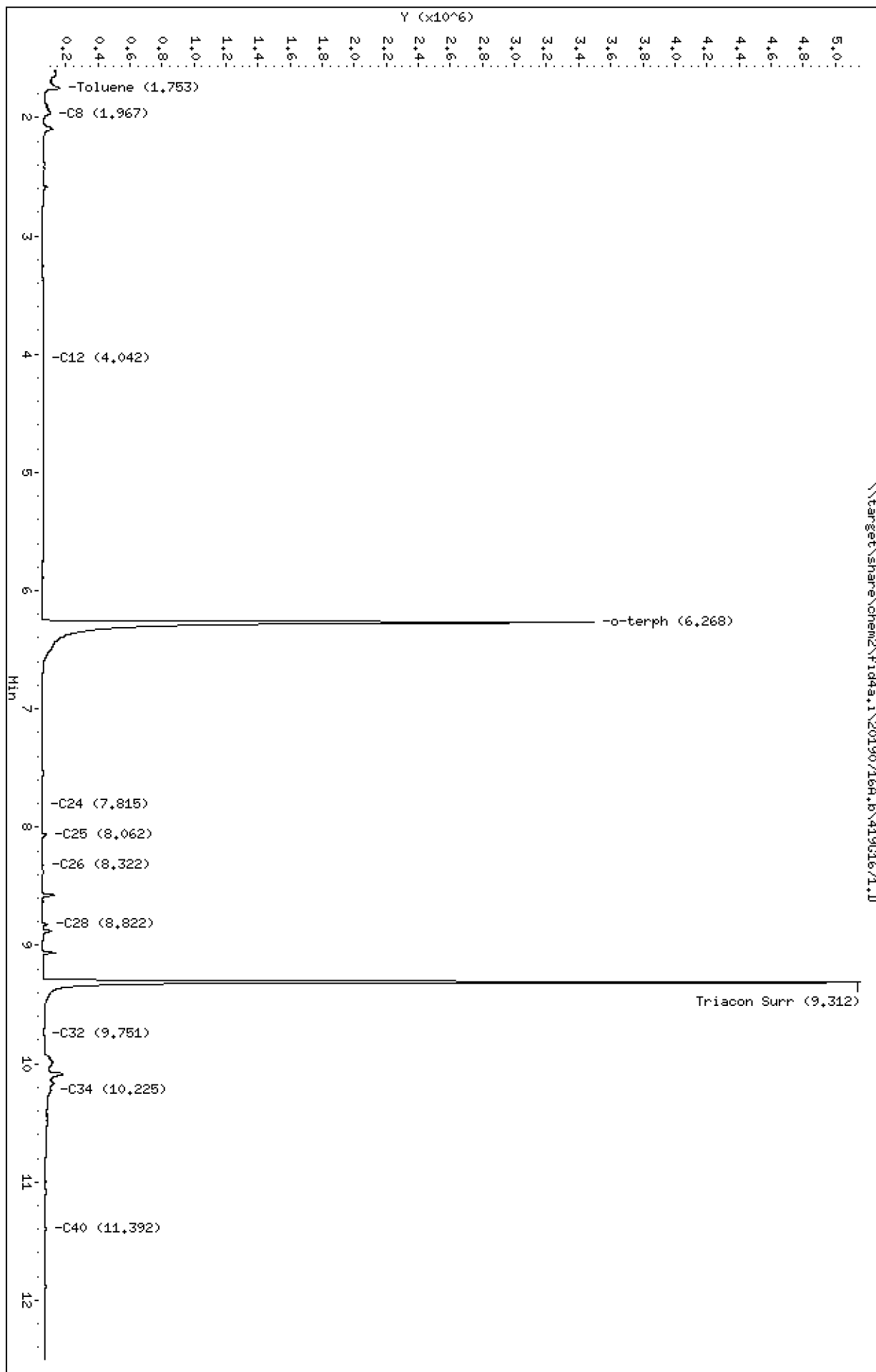
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1671.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-10

Client ID:

Injection: 17-JUL-2019 11:35

Dilution Factor: 1

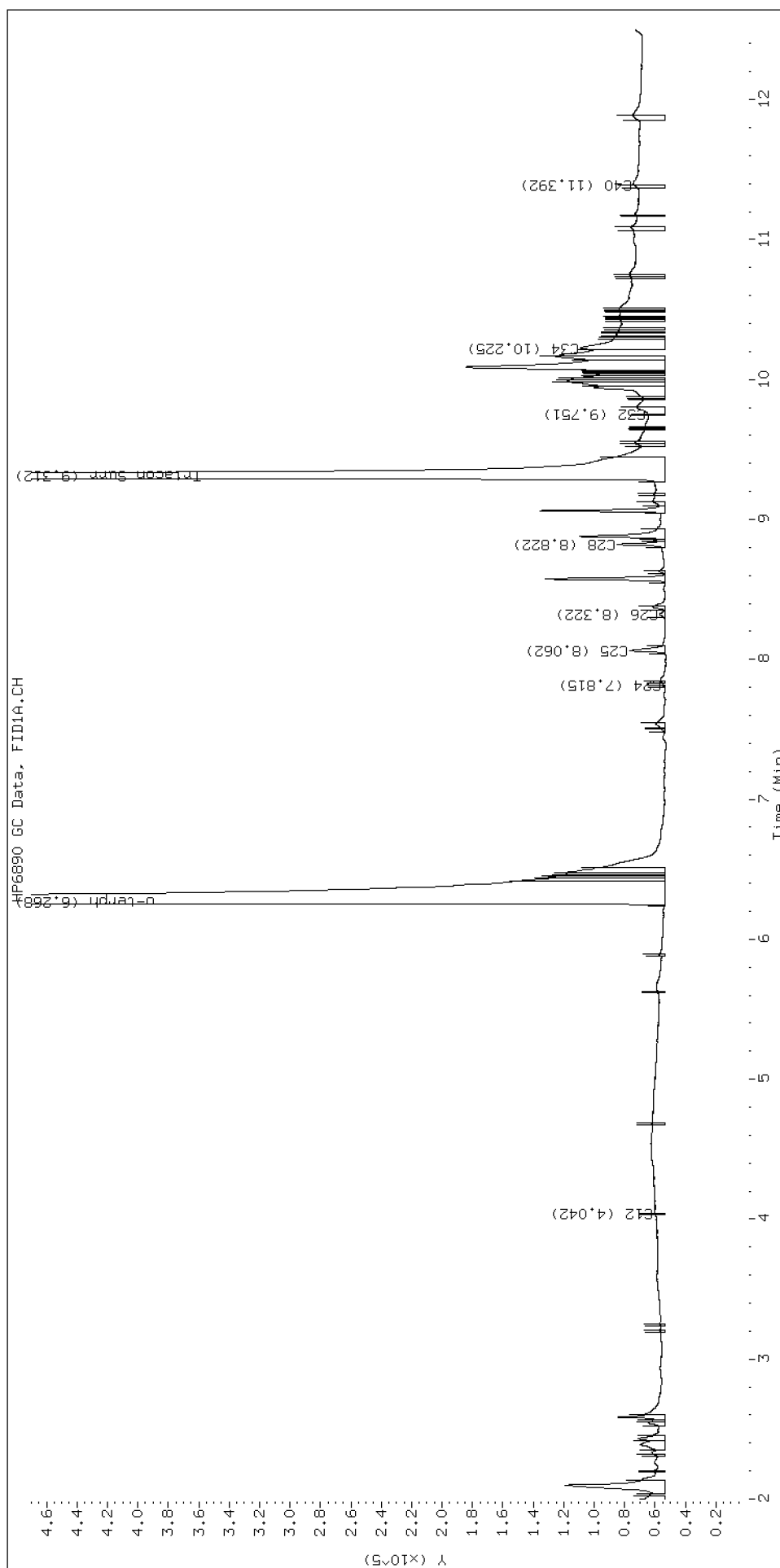
RT Std: 419G1645.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.967	-0.015	51767	171208	WATPHD	(C12-C24)	404041	3.8
C10	----				WATPHM	(C24-C38)	1838325	20.1
C12	4.042	-0.018	6695	3240	AK102	(C10-C25)	415802	3.4
C14	----				AK103	(C25-C36)	1802033	25.9
C16	----				OR.DIES	(C10-C28)	608149	5.0
C18	----							
C20	----							
C22	----							
C24	7.815	0.040	1712	1297				
C25	8.062	0.007	23516	36476				
C26	8.322	0.007	3849	6509				
C28	8.822	-0.004	31975	37945				
C32	9.751	-0.018	11850	6434				
C34	10.225	0.025	55542	211743				
Filter Peak	----							
C36	----							
C38	----							
C40	11.392	-0.020	20957	32114				
o-terph	6.268	-0.008	3439680	6820441				
Triacon Surr	9.312	-0.020	5104108	6378384	NAS DIES	(C10-C24)	413626	3.4
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)								
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)								

Surrogate	Area	Amount
o-Terphenyl	6820441	52.0
Triacotane	6378384	52.1

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-11 B SDG: 19G0163

Sampled: 07/11/19 09:45 Prepared: 07/12/19 12:52 File ID: 419G1672.D

% Solids: 71.70 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 11:57

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.02 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	69.6	U	28.3	69.6
RRO	Motor Oil Range Organics (C24-C38)	1	484		29.2	139

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	78.294	68.6	87.6	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1672.D

Date : 17-JUL-2019 11:57

Client ID:

Sample Info: 19G0163-11

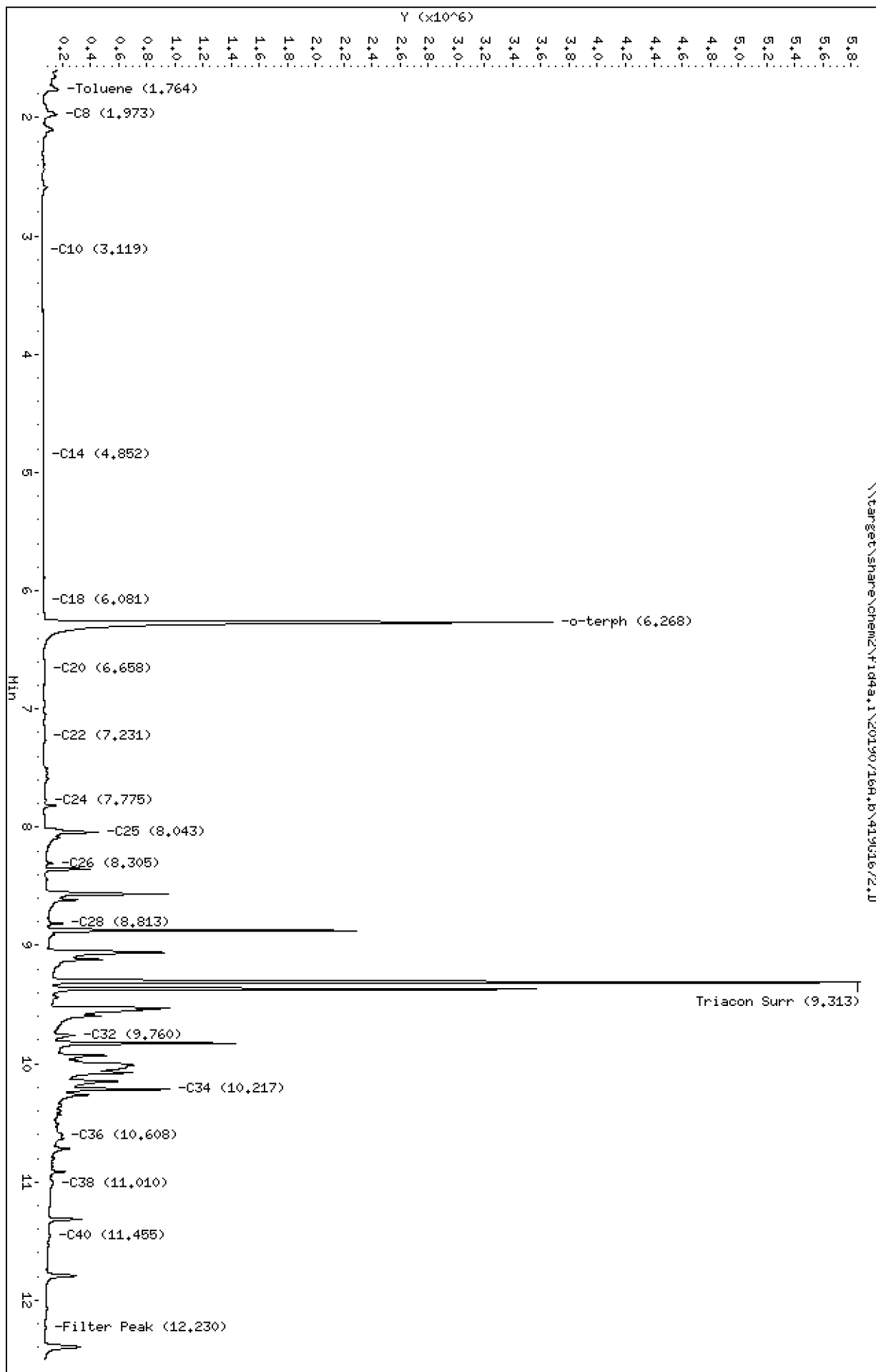
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1672.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-11

Client ID:

Injection: 17-JUL-2019 11:57

Dilution Factor: 1

RT Std: 419G1645.D

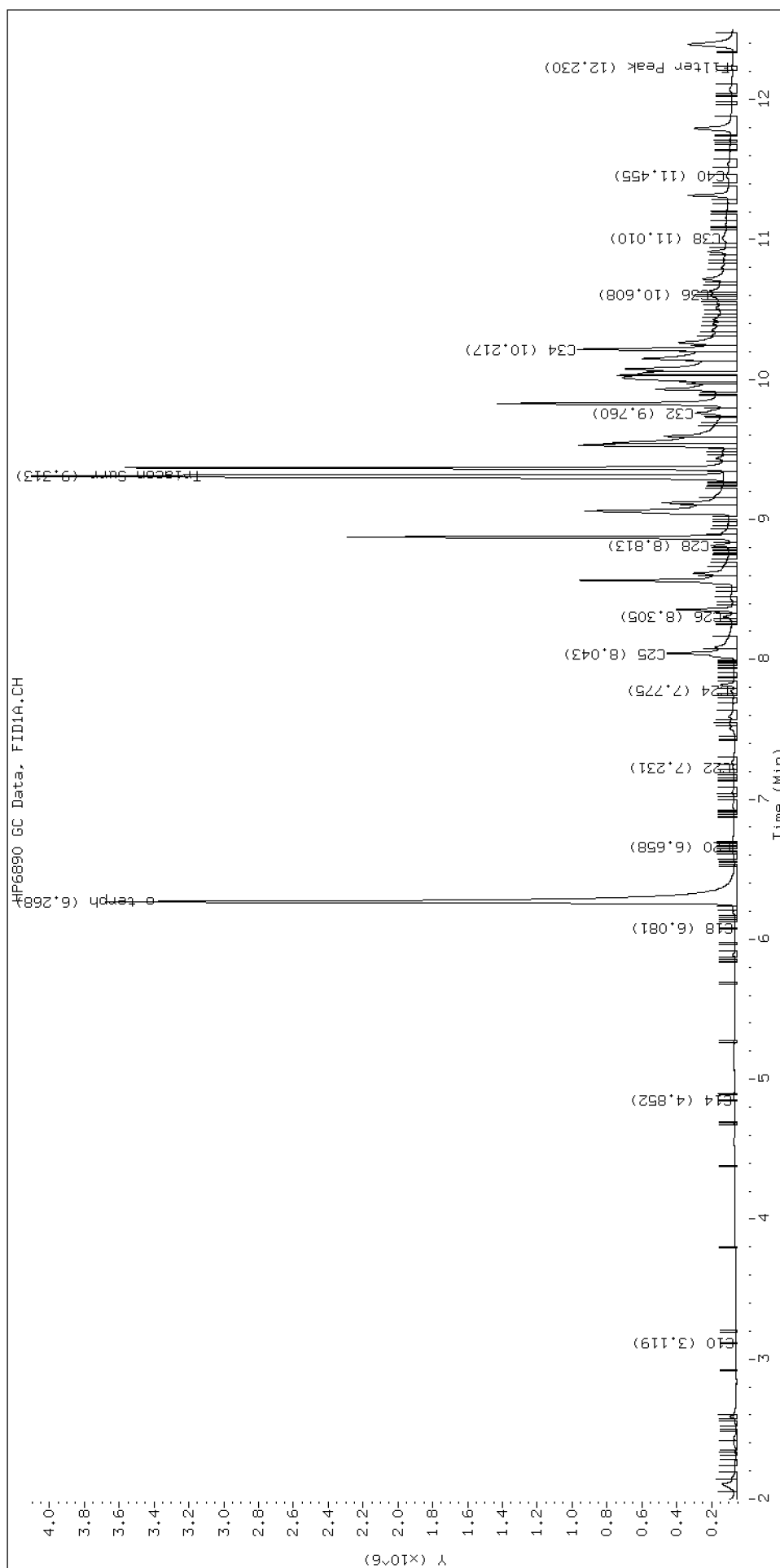
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.973	-0.009	106516	309783	WATPHD	(C12-C24)	1224087	11.6
C10	3.119	-0.007	2655	1374	WATPHM	(C24-C38)	31884107	347.8
C12	----				AK102	(C10-C25)	1297289	10.6
C14	4.852	0.023	12221	7854	AK103	(C25-C36)	29806051	428.5
C16	----				OR.DIES	(C10-C28)	7374178	60.2
C18	6.081	-0.001	7554	2588				
C20	6.658	-0.002	21669	18771				
C22	7.231	0.007	19385	35196				
C24	7.775	-0.000	30201	47793				
C25	8.043	-0.012	396101	749793				
C26	8.305	-0.010	74833	110784				
C28	8.813	-0.012	148082	178476				
C32	9.760	-0.009	237717	534511				
C34	10.217	0.016	909757	1233338				
Filter Peak	12.230	0.009	24766	36422				
C36	10.608	-0.002	145495	133442				
C38	11.010	0.009	80231	406602				
C40	11.455	0.043	56933	167071				
o-terph	6.268	-0.009	3622178	6473326				
Triacon Surr	9.313	-0.019	5736734	5735766	NAS DIES	(C10-C24)	1230416	10.1

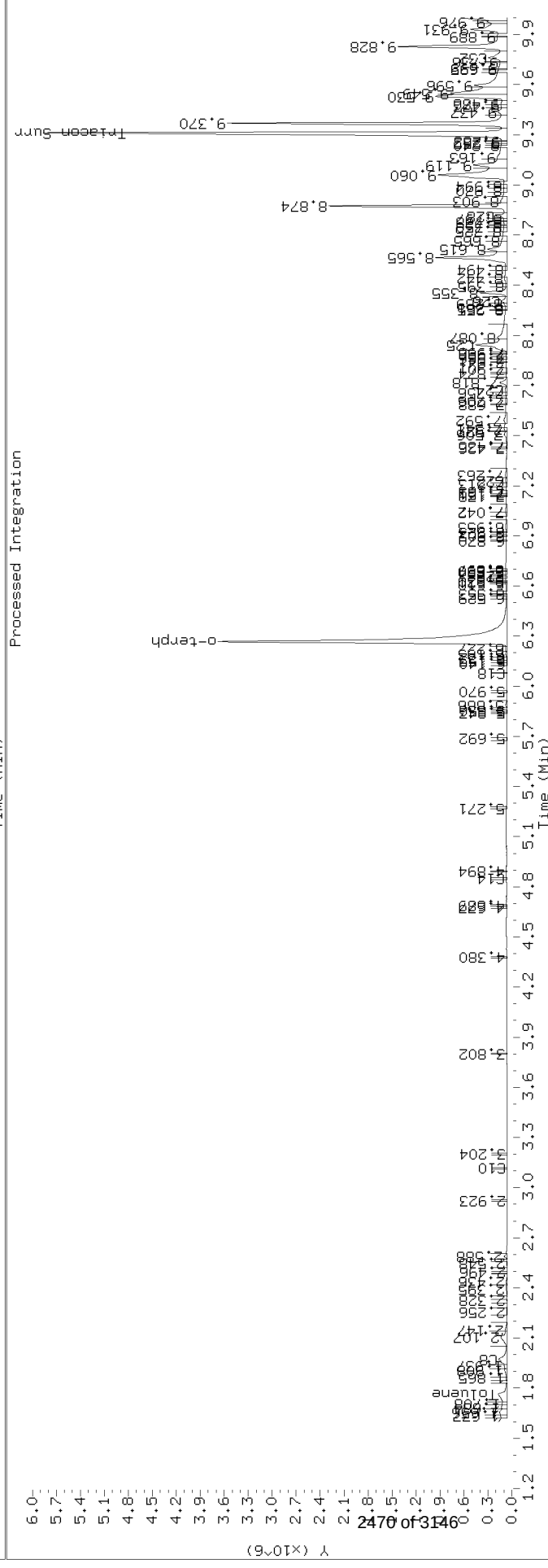
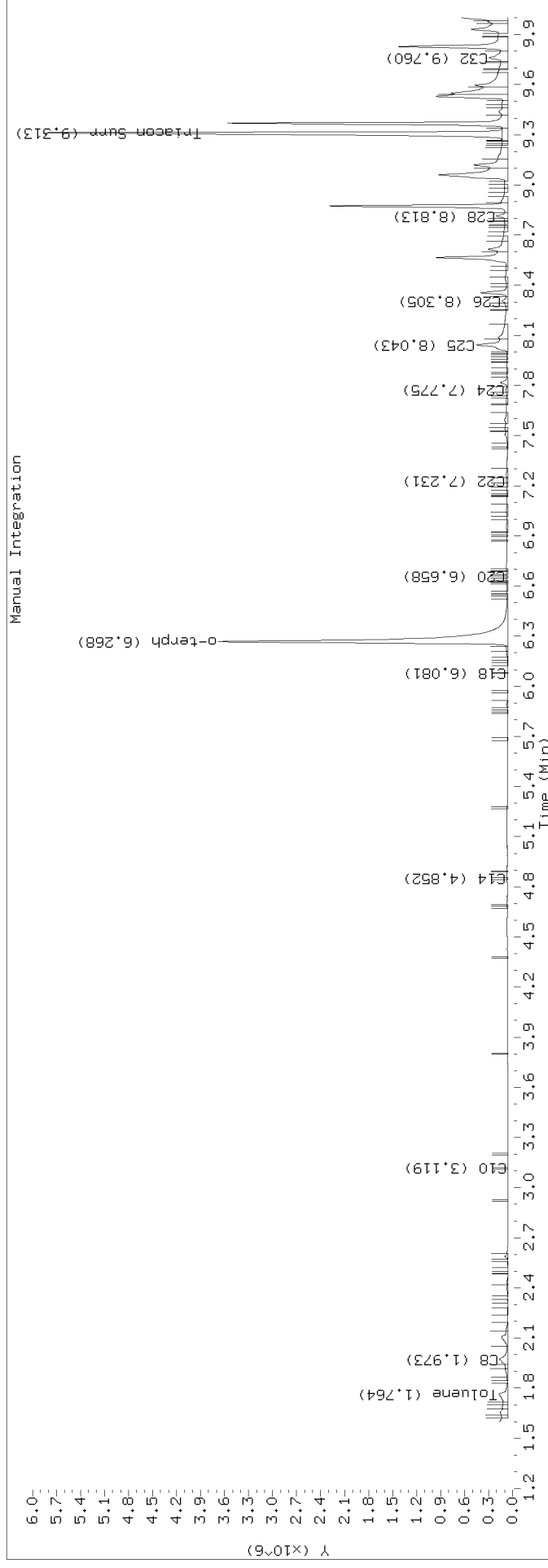
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	6473326	49.3
Triacontane	5735766	46.8 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12 B SDG: 19G0163

Sampled: 07/11/19 09:50 Prepared: 07/12/19 12:52 File ID: 419G1673.D

% Solids: 72.28 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 12:18

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.05 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	68.8	U	28.0	68.8
RRO	Motor Oil Range Organics (C24-C38)	1	543		28.9	138

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	77.436	66.5	85.9	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1673.D

Date : 17-JUL-2019 12:18

Client ID:

Sample Info: 19G0163-12

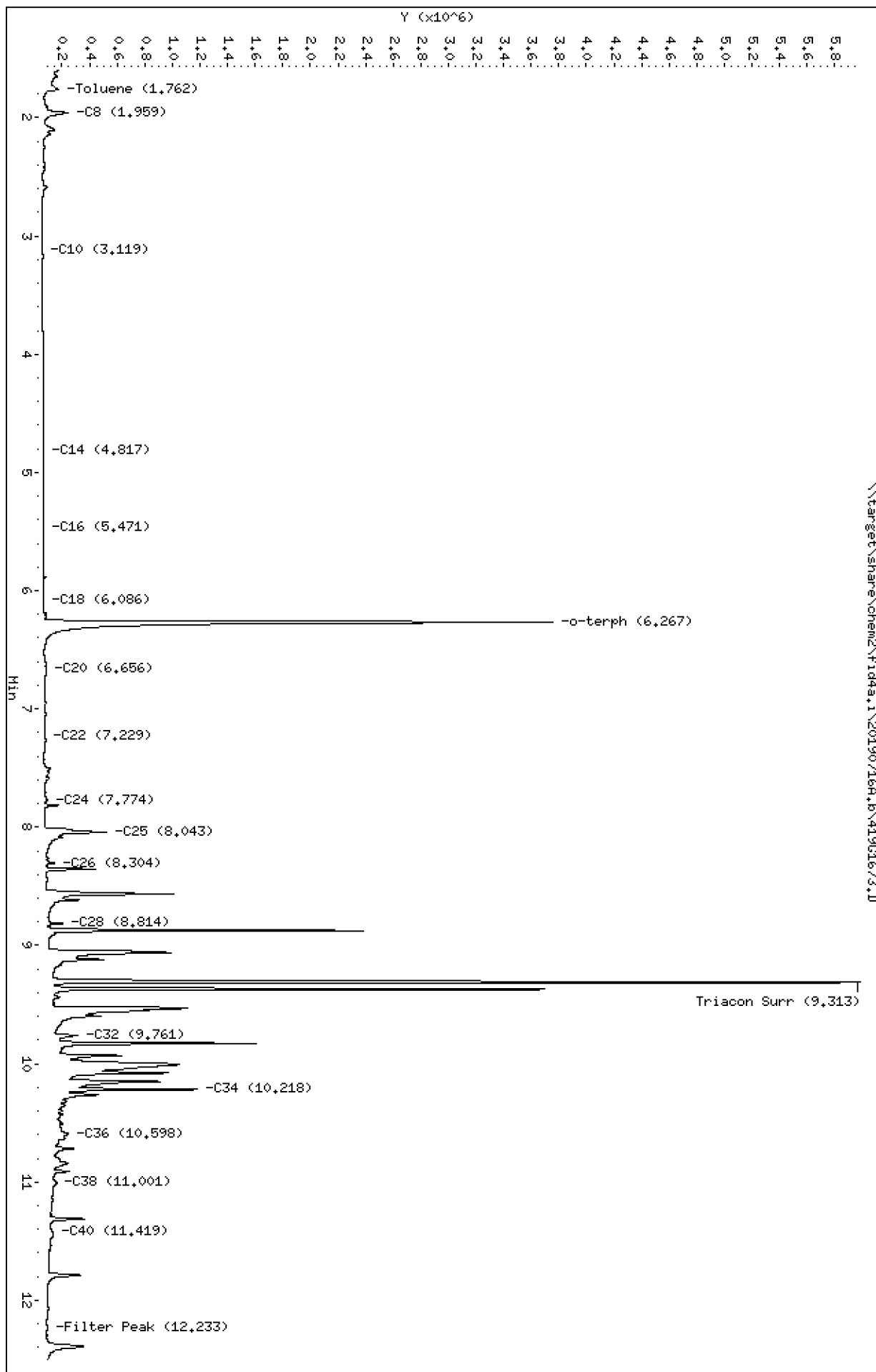
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1673.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-12

Client ID:

Injection: 17-JUL-2019 12:18

Dilution Factor: 1

RT Std: 419G1645.D

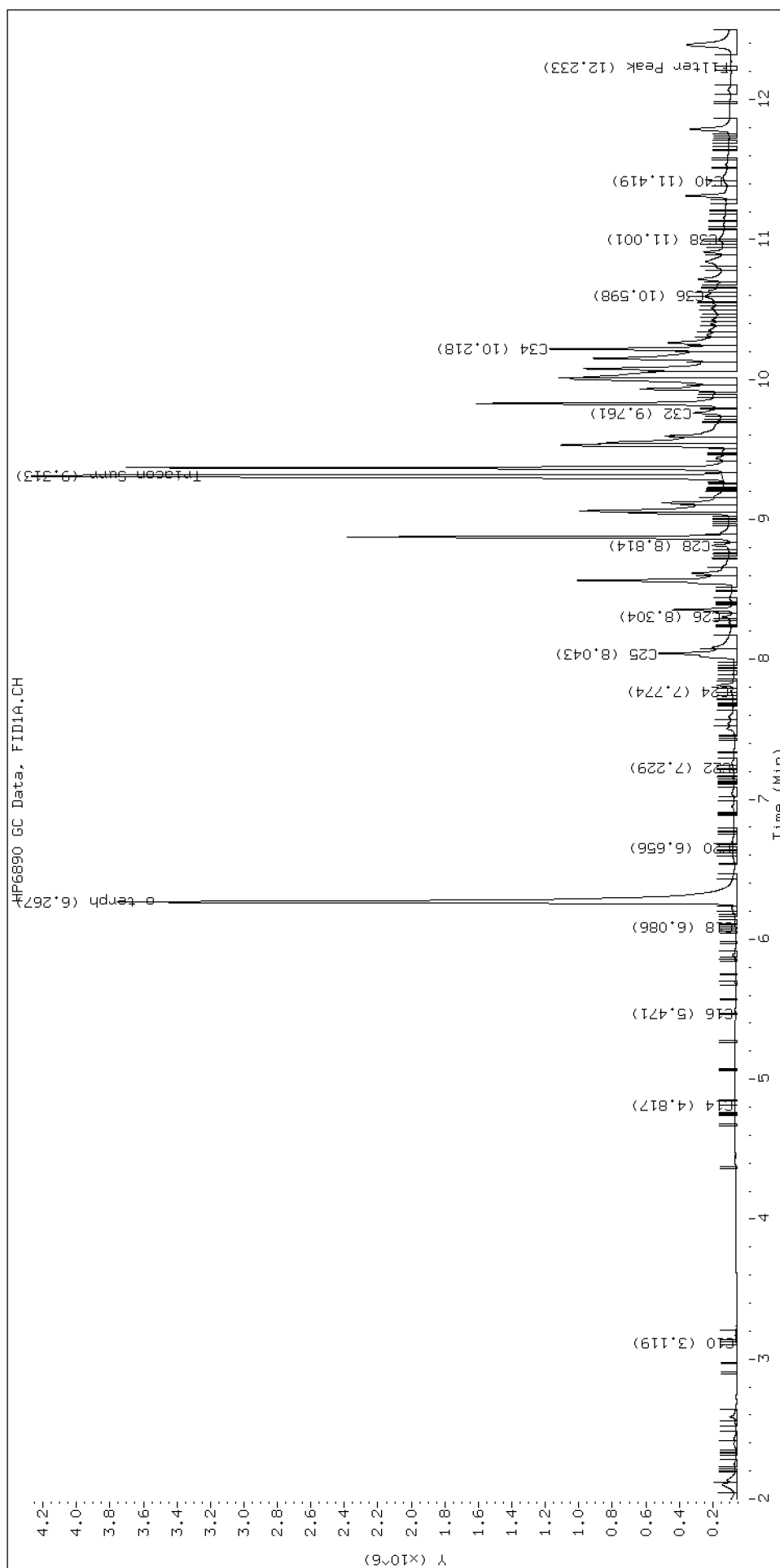
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.959	-0.024	188170	495497	WATPHD	(C12-C24)	1750266	16.6
C10	3.119	-0.007	2891	2898	WATPHM	(C24-C38)	36149878	394.3
C12	----				AK102	(C10-C25)	1863820	15.2
C14	4.817	-0.012	9625	3316	AK103	(C25-C36)	33304760	478.8
C16	5.471	-0.018	8870	7371	OR.DIES	(C10-C28)	8524078	69.6
C18	6.086	0.004	8856	6021				
C20	6.656	-0.004	26574	30719				
C22	7.229	0.006	23707	33778				
C24	7.774	-0.002	37844	55325				
C25	8.043	-0.012	468311	962153				
C26	8.304	-0.011	86317	126645				
C28	8.814	-0.012	149386	236781				
C32	9.761	-0.008	260820	546159				
C34	10.218	0.017	1122580	1387994				
Filter Peak	12.233	0.011	36044	59916				
C36	10.598	-0.012	186411	297445				
C38	11.001	-0.000	103827	60639				
C40	11.419	0.007	74731	152403				
o-terph	6.267	-0.009	3701879	6338866				
Triacon Surr	9.313	-0.019	5841115	5849930	NAS DIES	(C10-C24)	1772370	14.5

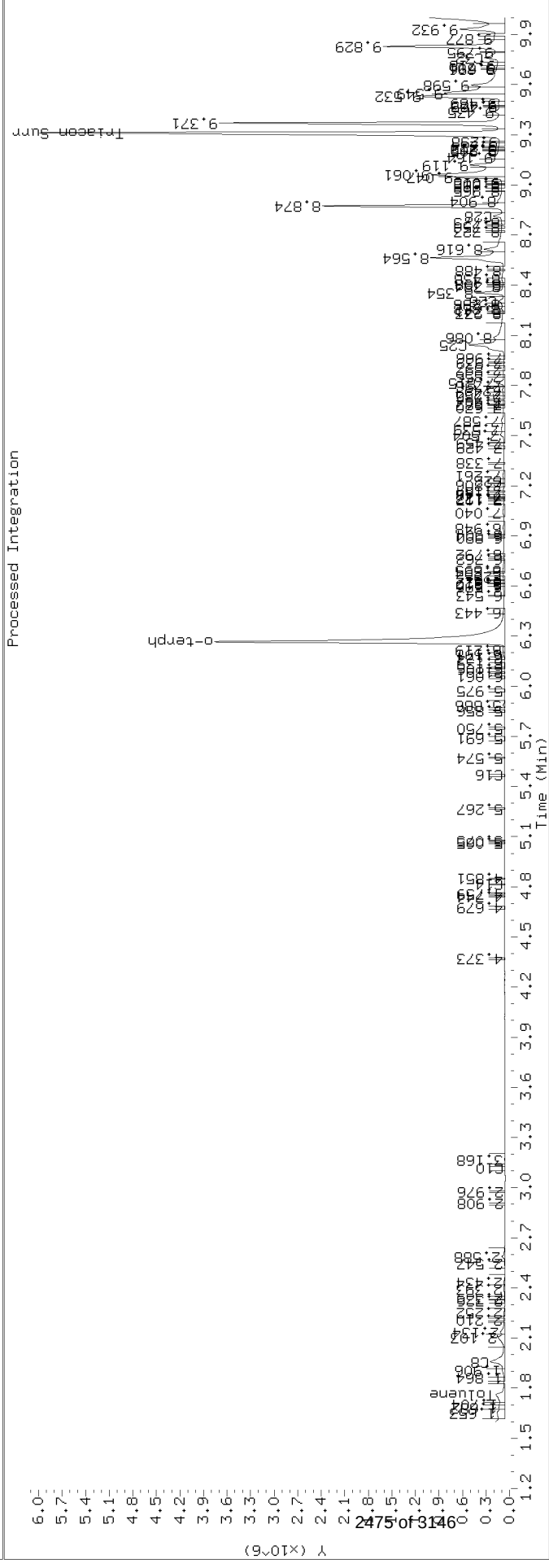
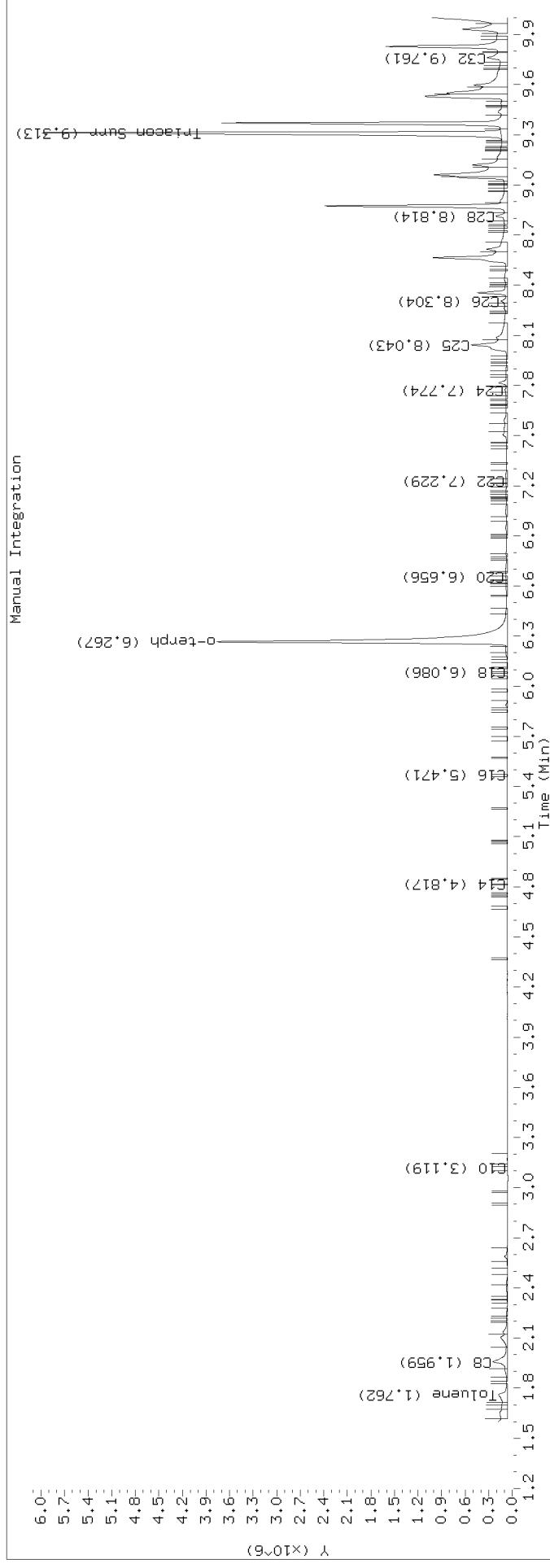
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	6338866	48.3
Triacotane	5849930	47.8 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13 B SDG: 19G0163

Sampled: 07/11/19 09:10 Prepared: 07/12/19 12:52 File ID: 419G1674.D

% Solids: 21.50 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 12:38

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.06 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	231	U	94.0	231
RRO	Motor Oil Range Organics (C24-C38)	1	462	U	97.0	462

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	260.01	267	103	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1674.D

Date : 17-JUL-2019 12:38

Client ID:

Sample Info: 19G0163-13

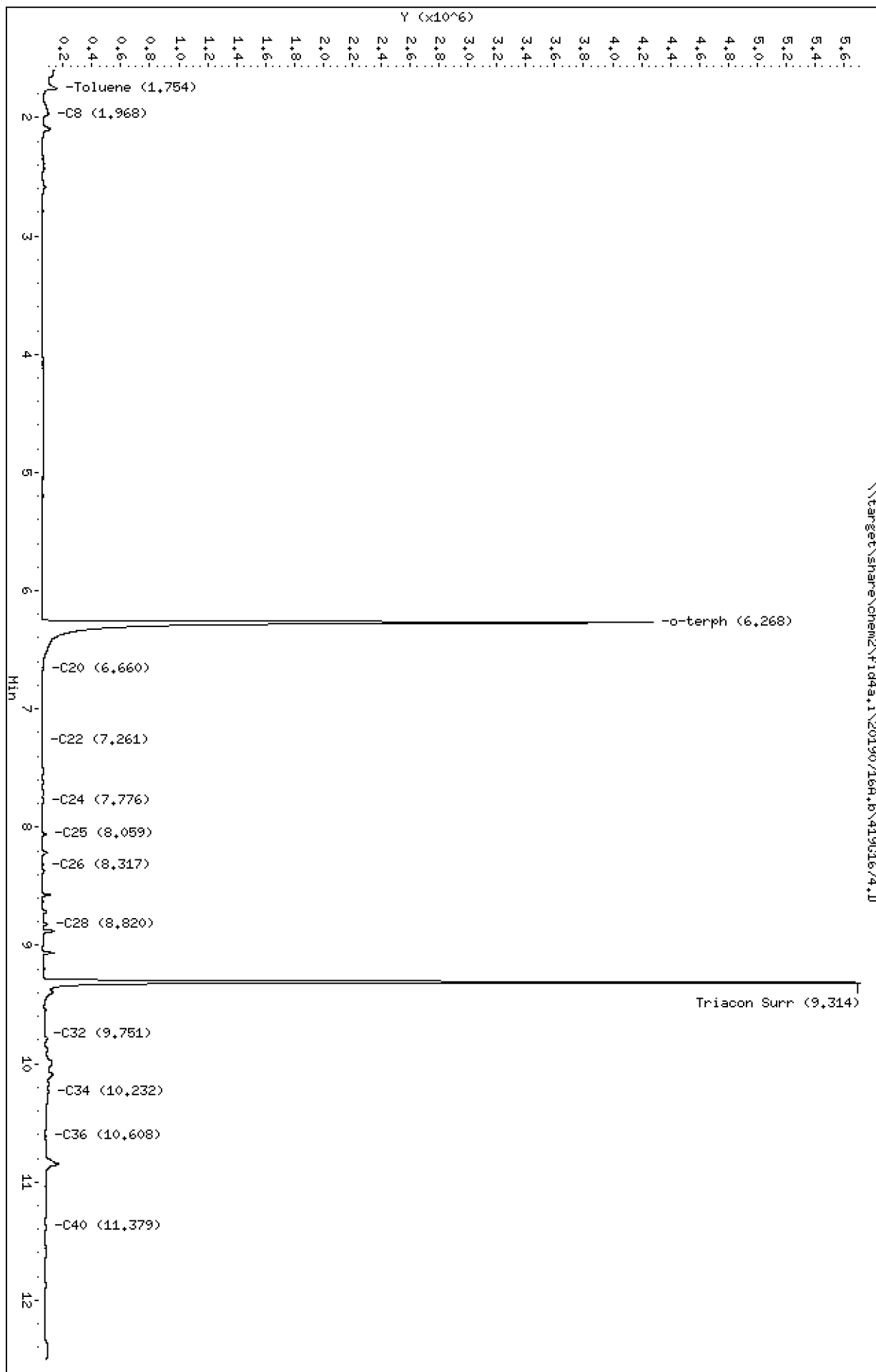
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1674.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-13

Client ID:

Injection: 17-JUL-2019 12:38

Dilution Factor: 1

RT Std: 419G1645.D

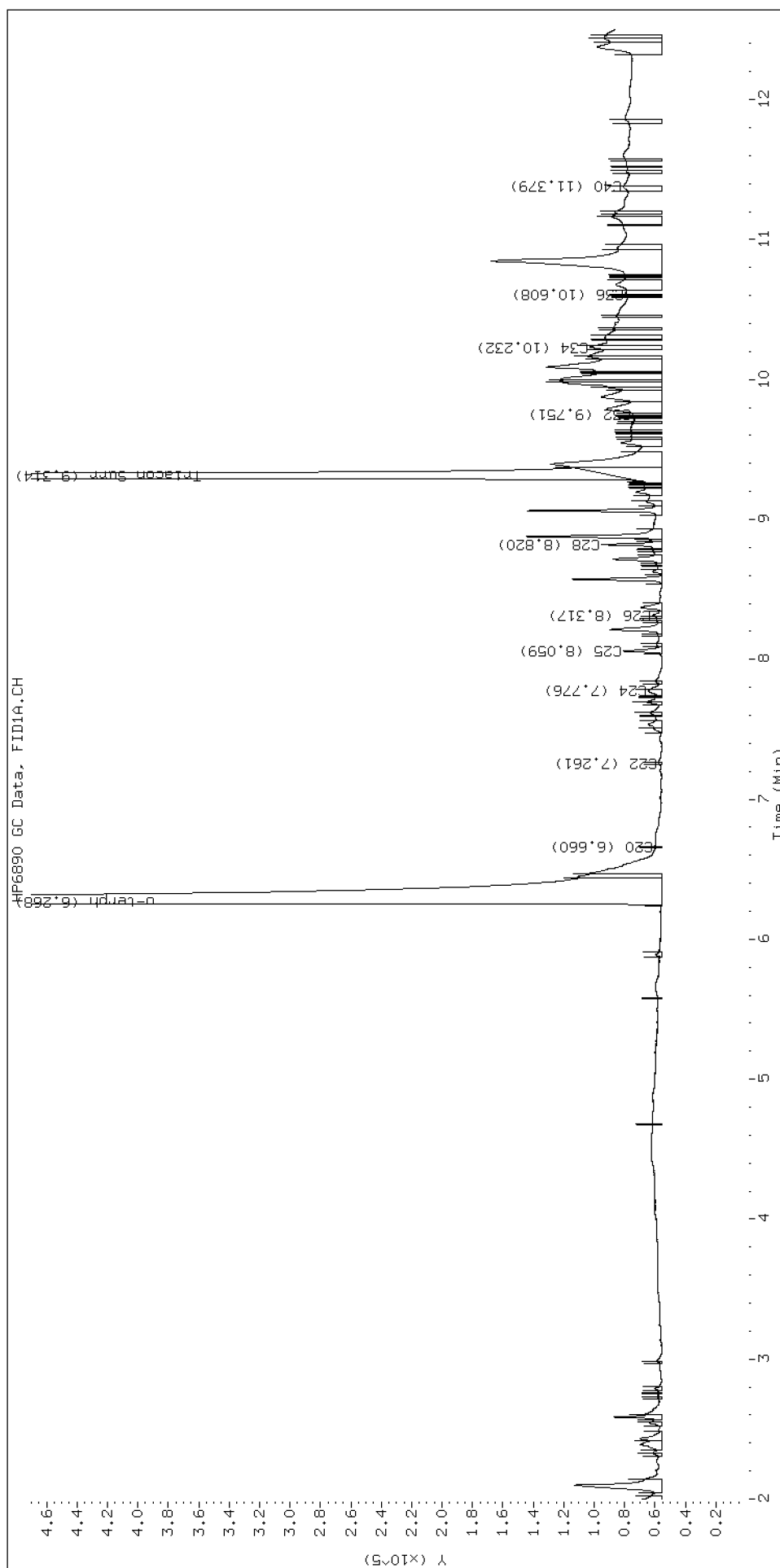
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.968	-0.014	45535	142610	WATPHD	(C12-C24)	163804	1.6
C10	----				WATPHM	(C24-C38)	3294068	35.9
C12	----				AK102	(C10-C25)	167797	1.4
C14	----				AK103	(C25-C36)	2562080	36.8
C16	----				OR.DIES	(C10-C28)	475171	3.9
C18	----							
C20	6.660	-0.000	4895	2529				
C22	7.261	0.037	1951	1540				
C24	7.776	0.001	8538	17772				
C25	8.059	0.005	25080	31500				
C26	8.317	0.001	5643	8478				
C28	8.820	-0.005	39472	46408				
C32	9.751	-0.018	19209	13300				
C34	10.232	0.031	46802	78215				
Filter Peak	----							
C36	10.608	-0.002	23557	12837				
C38	----							
C40	11.379	-0.033	25069	50381				
o-terph	6.268	-0.008	4222433	7566482				
Triacon Surr	9.314	-0.018	5625120	6575275	NAS DIES	(C10-C24)	163804	1.3

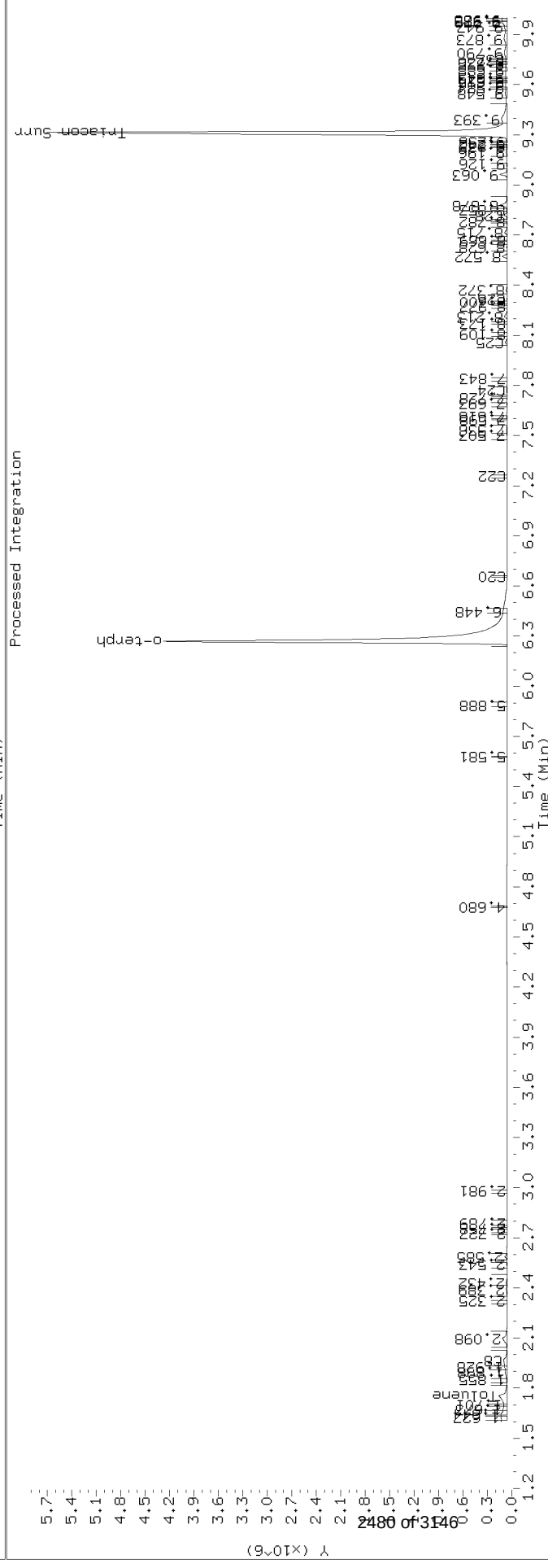
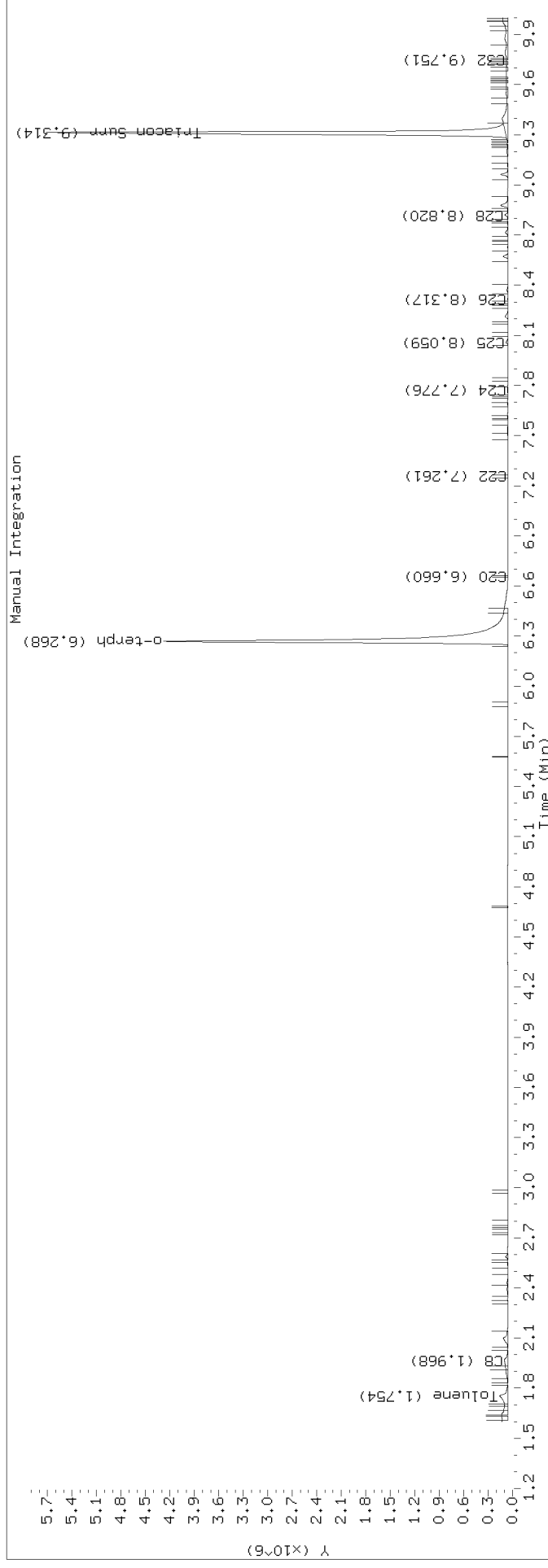
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7566482	57.7
Triacotane	6575275	53.7 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14 B SDG: 19G0163

Sampled: 07/11/19 09:25 Prepared: 07/12/19 12:52 File ID: 419G1676.D

% Solids: 42.67 Preparation: EPA 3546 (Microwave) Analyzed: 07/17/19 13:19

Batch: BHG0310 Sequence: SHG0211 Initial/Final: 10.08 g Wet / 10 mL

Instrument: FID4 Column: RTX-1 Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	116	U	47.3	116
RRO	Motor Oil Range Organics (C24-C38)	1	232	U	48.8	232

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	130.78	132	101	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1676.D

Date : 17-JUL-2019 13:19

Client ID:

Sample Info: 19G0163-14

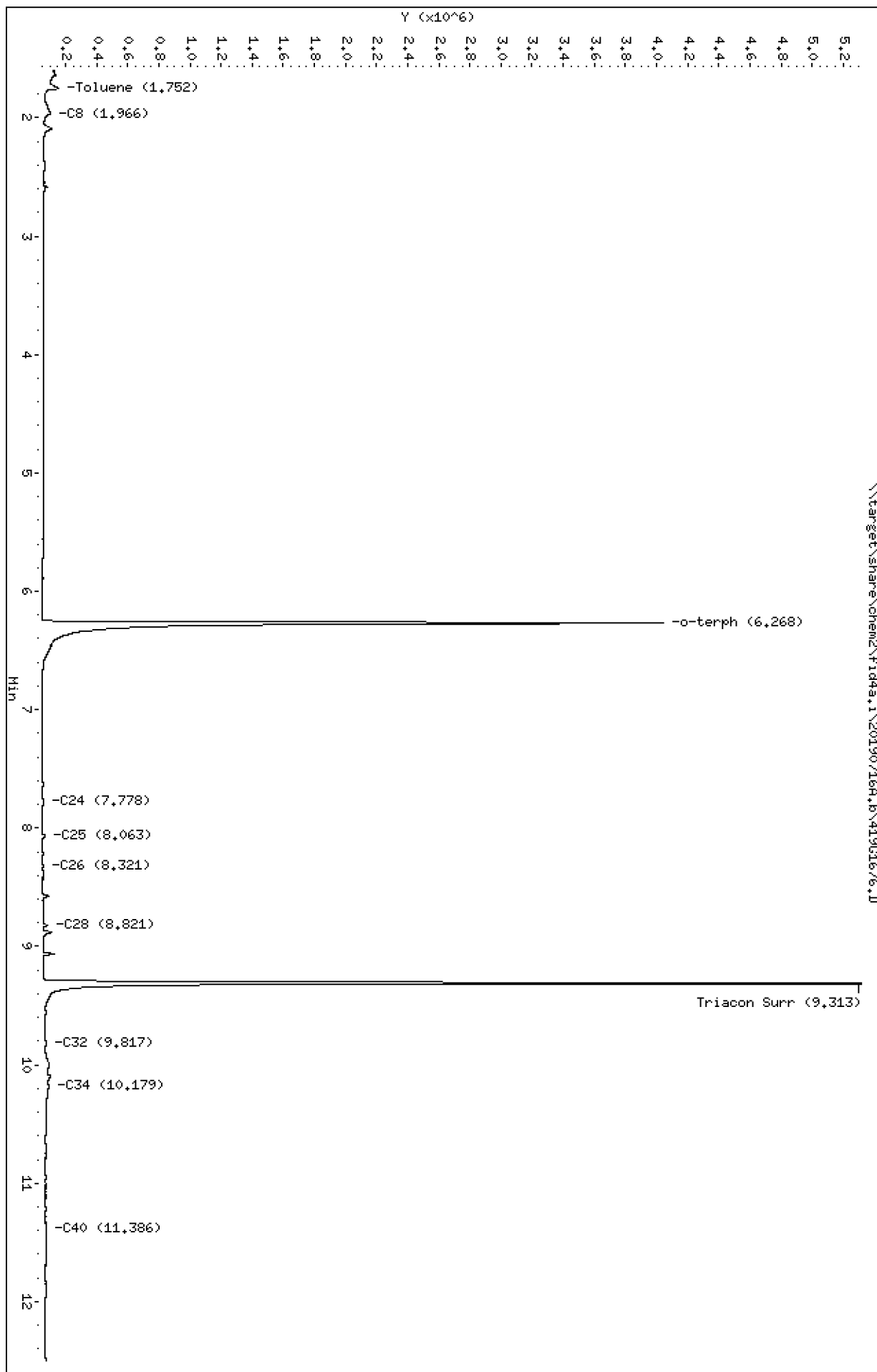
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1676.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/18/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-14

Client ID:

Injection: 17-JUL-2019 13:19

Dilution Factor: 1

RT Std: 419G1645.D

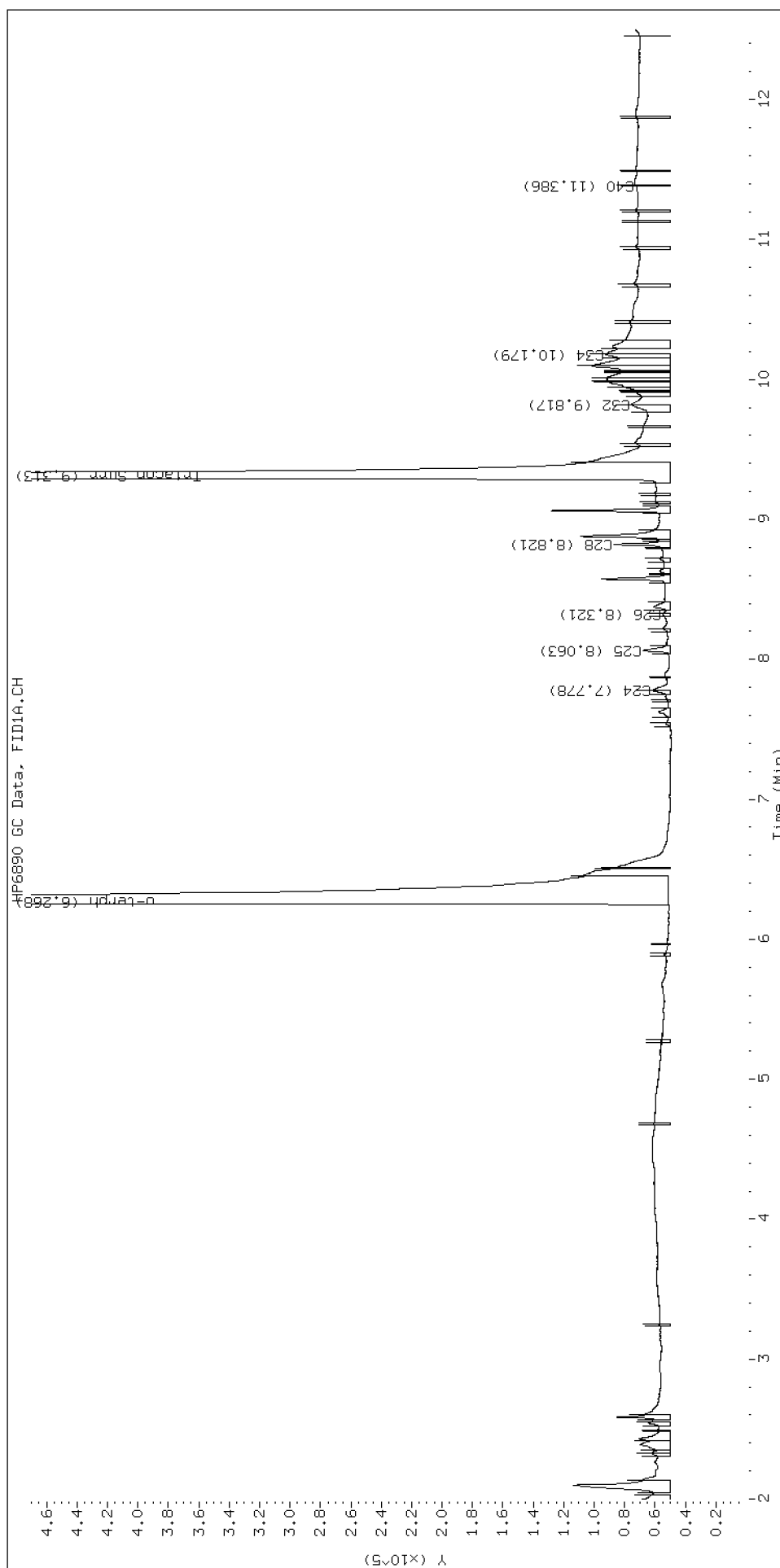
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.966	-0.016	52468	182835	WATPHD	(C12-C24)	85167	0.8
C10	----				WATPHM	(C24-C38)	1338866	14.6
C12	----				AK102	(C10-C25)	94239	0.8
C14	----				AK103	(C25-C36)	1283678	18.5
C16	----				OR.DIES	(C10-C28)	296525	2.4
C18	----							
C20	----							
C22	----							
C24	7.778	0.003	11599	14067				
C25	8.063	0.009	17948	30090				
C26	8.321	0.005	4977	6041				
C28	8.821	-0.004	37301	48436				
C32	9.817	0.049	25151	61802				
C34	10.179	-0.021	42546	68578				
Filter Peak	----							
C36	----							
C38	----							
C40	11.386	-0.026	22726	8990				
o-terph	6.268	-0.008	3992901	7431522				
Triacon Surr	9.313	-0.019	5266866	7070701	NAS DIES	(C10-C24)	93049	0.8

Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7431522	56.6 M
Triacotane	7070701	57.7

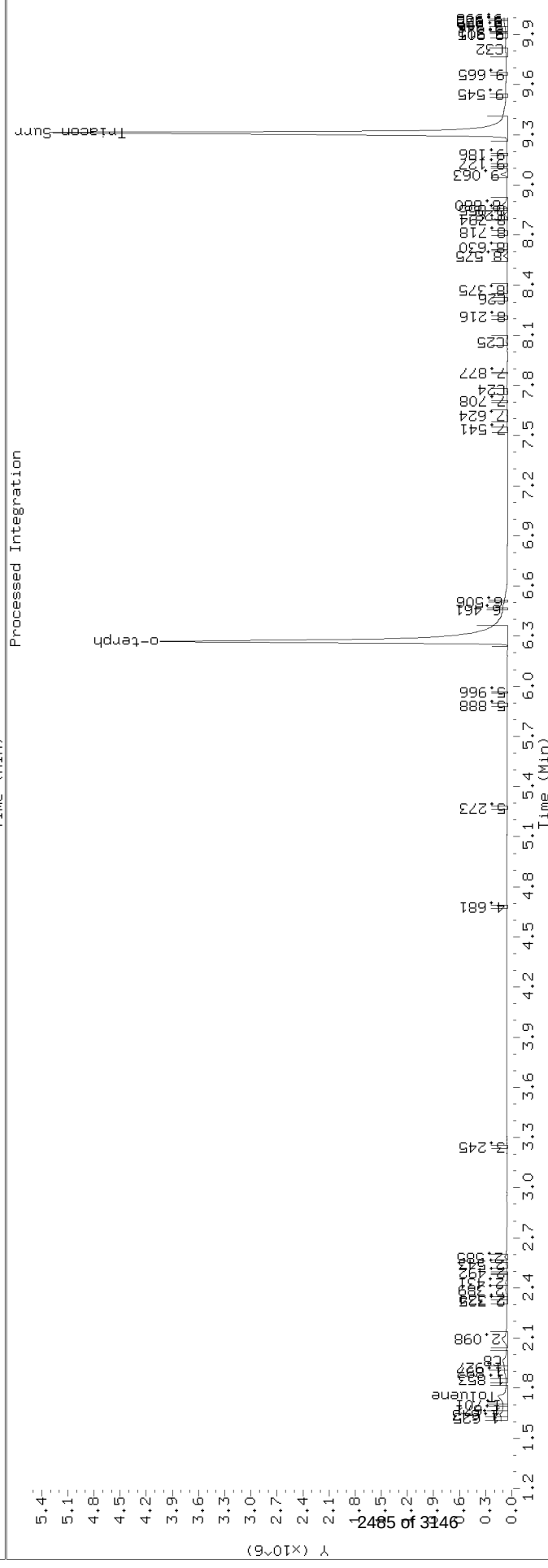
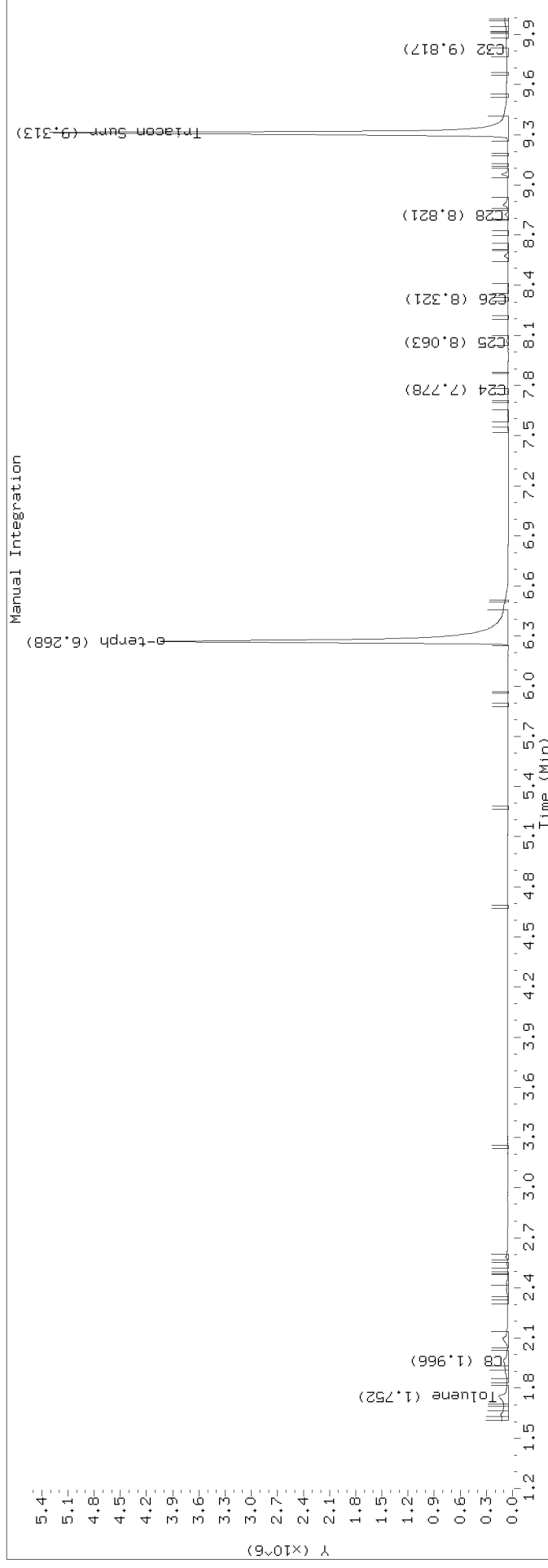
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019



TPH Manual Integrations Report

Datafile: FID4A, 20190716A.b/419G1676.D Injection: 17-JUL-2019 13:19
 Lab ID:19G0163-14





Form I
ORGANIC ANALYSIS DATA SHEET
NWTPH-Dx
TPH (Extractables)

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: 19G0163-15 B

SDG: 19G0163

Sampled: 07/11/19 12:35

Prepared: 07/12/19 12:52

File ID: 419G1677.D

% Solids: 87.59

Preparation: EPA 3546 (Microwave)

Analyzed: 07/17/19 13:40

Batch: BHG0310

Sequence: SHG0211

Initial/Final: 10.05 g Wet / 10 mL

Instrument: FID4

Column: RTX-1

Calibration: CG00044

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg dry)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	56.8	U	23.1	56.8
RRO	Motor Oil Range Organics (C24-C38)	1	114	U	23.8	114

SURROGATES	ADDED (mg/kg dry)	CONC (mg/kg dry)	% REC	QC LIMITS	Q
o-Terphenyl	63.898	58.7	91.9	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1677.D

Date : 17-JUL-2019 13:40

Client ID:

Sample Info: 19G0163-15

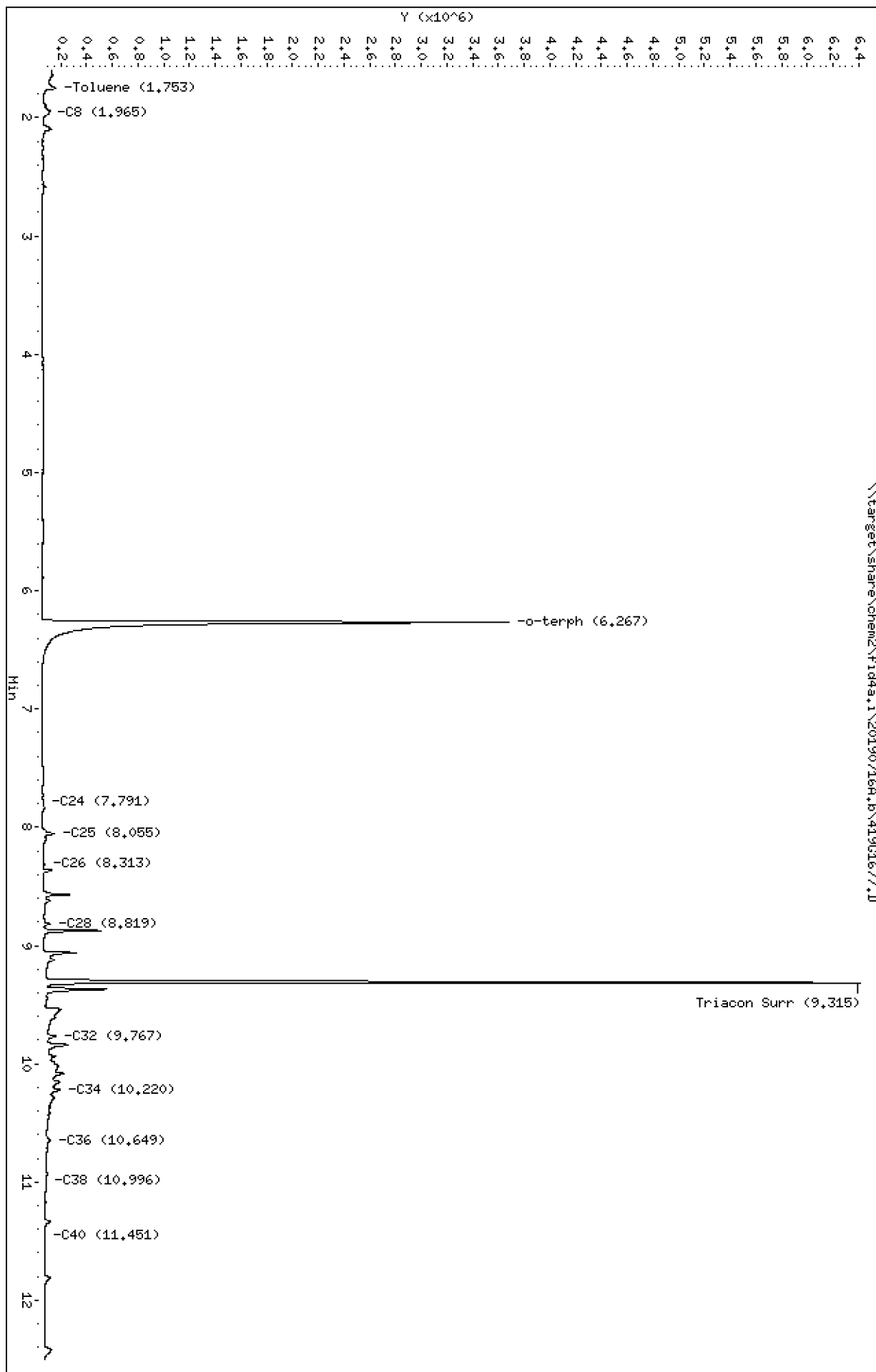
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1677.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/18/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: 19G0163-15

Client ID:

Injection: 17-JUL-2019 13:40

Dilution Factor: 1

RT Std: 419G1645.D

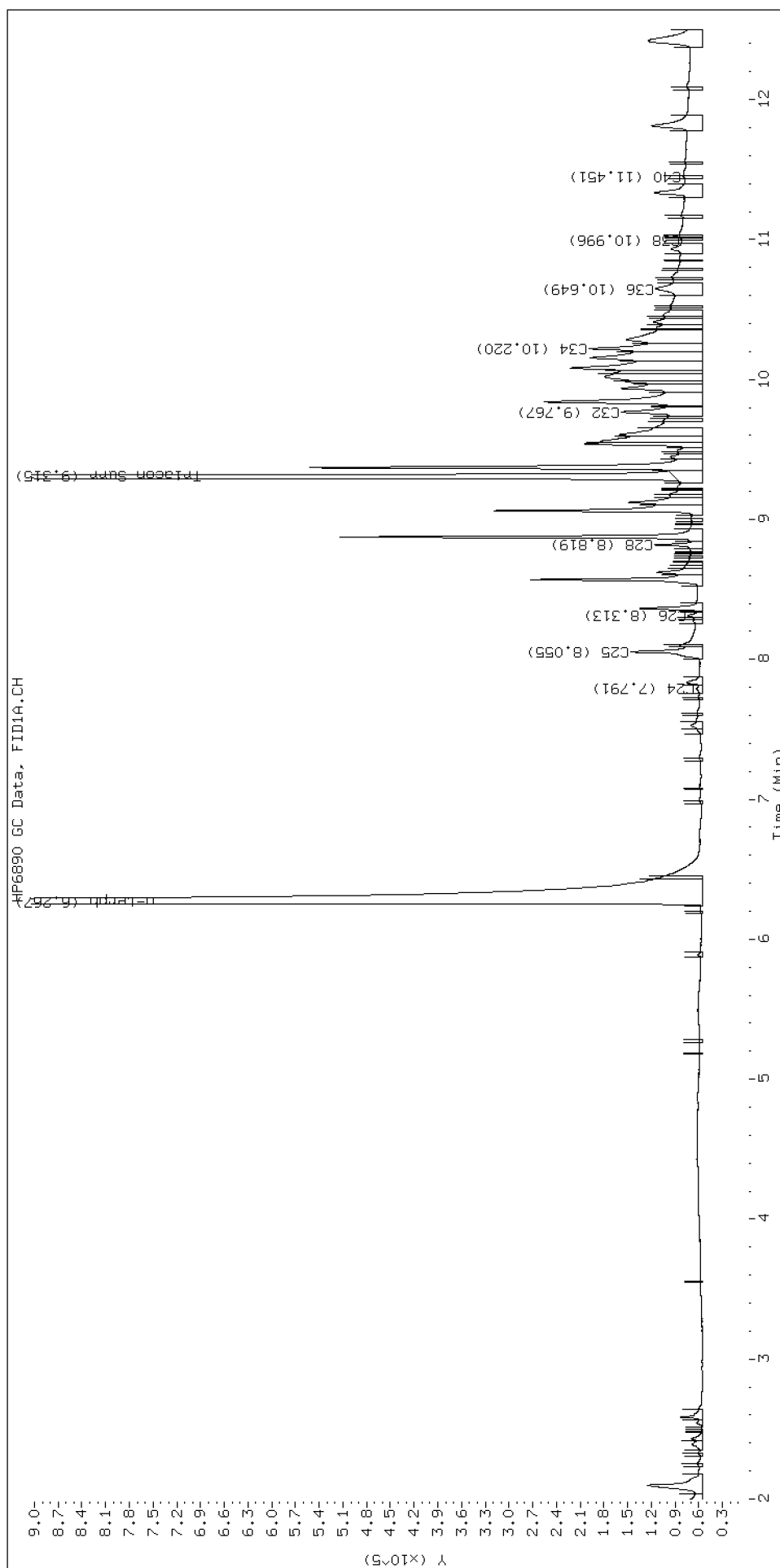
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.965	-0.017	53995	108921	WATPHD	(C12-C24)	162005	1.5
C10	----				WATPHM	(C24-C38)	8631039	94.1
C12	----				AK102	(C10-C25)	203035	1.7
C14	----				AK103	(C25-C36)	8292825	119.2
C16	----				OR.DIES	(C10-C28)	1695397	13.8
C18	----							
C20	----							
C22	----							
C24	7.791	0.016	7748	19351				
C25	8.055	0.000	91126	186341				
C26	8.313	-0.002	18700	30378				
C28	8.819	-0.007	60690	88342				
C32	9.767	-0.002	103067	263488				
C34	10.220	0.020	142876	351584				
Filter Peak	----							
C36	10.649	0.039	58919	245265				
C38	10.996	-0.005	26350	7863				
C40	11.451	0.039	24244	29030				
o-terph	6.267	-0.009	3629671	6788183				
Triacon Surr	9.315	-0.017	6320809	6286035	NAS DIES	(C10-C24)	163153	1.3

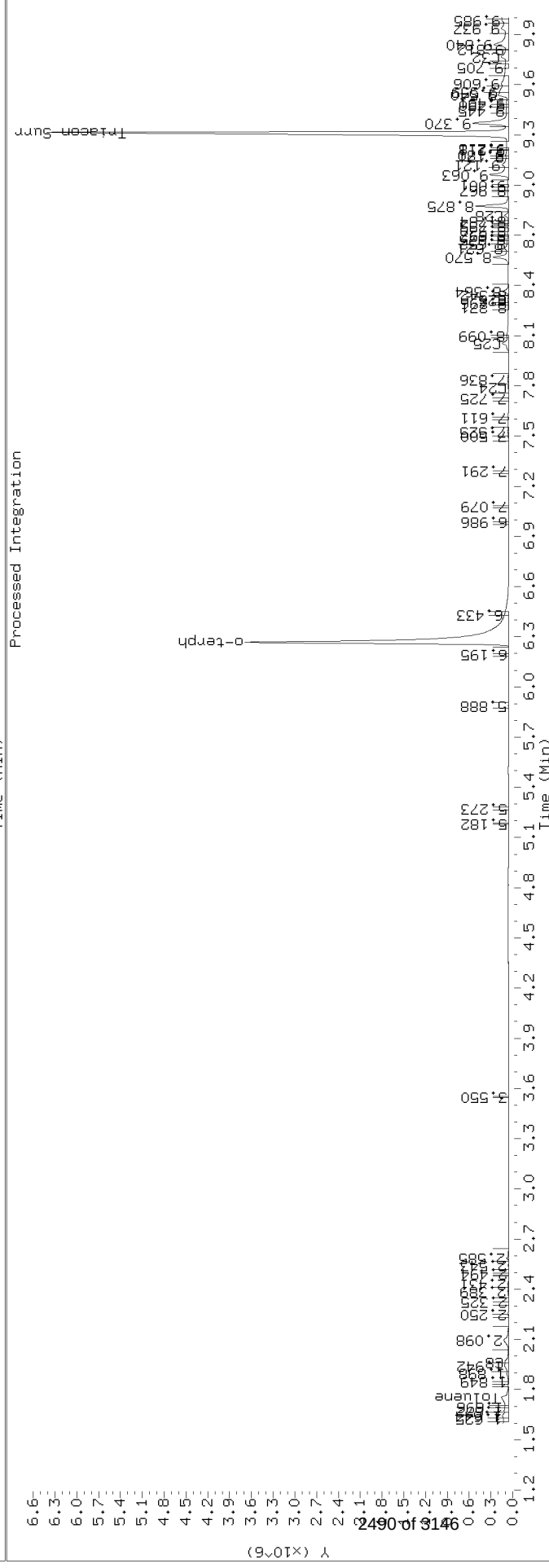
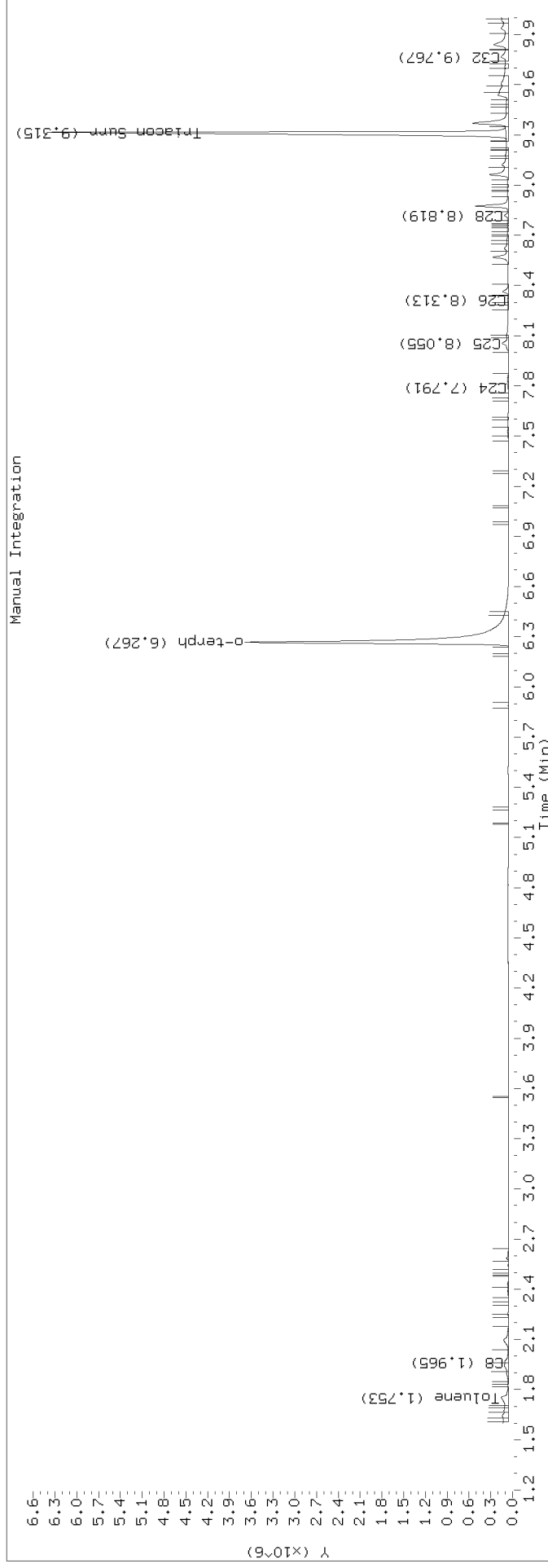
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	6788183	51.7
Triacotane	6286035	51.3 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







PREPARATION BATCH SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0310

Batch Matrix: Solid

Preparation: EPA 3546 (Microwave)

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02	419G1659.D	07/12/19 12:52	
SO-02-190711	19G0163-03	419G1662.D	07/12/19 12:52	
SO-03-190711	19G0163-04	419G1663.D	07/12/19 12:52	
SO-04-190711	19G0163-05	419G1664.D	07/12/19 12:52	
SO-05-190711	19G0163-06	419G1665.D	07/12/19 12:52	
SO-06-190711	19G0163-07	419G1666.D	07/12/19 12:52	
SO-07-190711	19G0163-08	419G1669.D	07/12/19 12:52	
SO-08-190711	19G0163-09	419G1670.D	07/12/19 12:52	
SO-09-190711	19G0163-10	419G1671.D	07/12/19 12:52	
SO-10-190711	19G0163-11	419G1672.D	07/12/19 12:52	
SO-10-190711D	19G0163-12	419G1673.D	07/12/19 12:52	
SO-11-190711	19G0163-13	419G1674.D	07/12/19 12:52	
SO-12-190711	19G0163-14	419G1676.D	07/12/19 12:52	
SO-13-190711	19G0163-15	419G1677.D	07/12/19 12:52	
Blank	BHG0310-BLK1	419G1657.D	07/12/19 12:52	
LCS	BHG0310-BS1	419G1658.D	07/12/19 12:52	
SO-01-190711	BHG0310-MS1	419G1660.D	07/12/19 12:52	
SO-01-190711	BHG0310-MSD1	419G1661.D	07/12/19 12:52	



Batch: BHG0310

Prepared using: EPA 3546 (Microwave)

TPH NW (Extractables) in Solid

Matrix: Solid

Date Prepared: 07/12/19

Balance ID: B146462614

Set Up By: WW 7/12/19

Analysis: TPH NW (Extractables)

Lab Number & Container	Initial (g) Target Wet: 10 (Wet) Actual	Acid C/U (1:10) (1mL) Y ☒ N	Silica Gel C/U (1mL) Y ☒ N	Final Effective Vol (mL)	Vol to Lab	Extraction Comments
19G0163-02 B	(10.000) 10.46	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-03 B	(10.000) 10.48	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-04 B	(10.000) 10.44	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-05 B	(10.000) 10.48	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-06 B	(10.000) 10.47	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-07 B	(10.000) 10.41	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-08 B	(10.000) 10.43	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-09 B	(10.000) 10.48	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-10 B	(10.000) 10.46	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-11 B	(10.000) 10.42	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-12 B	(10.000) 10.45	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-13 B	(10.000) 10.46	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-14 B	(10.000) 10.48	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
19G0163-15 B	(10.000) 10.45	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	

Batch QC

Lab Number	Initial (g) Target Wet: 10 (Wet) Actual	Acid C/U (1:10) (1mL) Y ☒ N	Silica Gel C/U (1mL) Y ☒ N	Final Effective Vol (mL)	Vol to Lab	Extraction Comments
BHG0310-BLK1	(10.000) 10.44	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
BHG0310-BS1	(10.000) 10.44	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	
BHG0310-MS1	(10.000) 10.48	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	Use 19G0163-02
BHG0310-MSD1	(10.000) 10.44	(1mL) Y ☒ N	(1mL) Y ☒ N	10	1.0	Use 19G0163-02

Client ID verified By me 07/12/19

Date

Preparation Reviewed By RO 7-15-19

Date

Extraction Date and Time 07/12/19 15:38



Batch: BHG0310

Prepared using: EPA 3546 (Microwave)

TPH NW (Extractables) in Solid

Prep Steps	Reagents Used	Surrogates & Spike Standards Used															
Microwave 1 2 3 6/7/12/19 Analyst/Date	Station/Reagent Microwave Analyst: <i>KG</i> Date: <i>6/7/12/19</i> Methylene Chloride <i>H006341</i> <i>H0064482</i> Anhydrous Sodium Sulfate <i>H0066182</i> <i>H0064584</i> Neutral Glass Wool <i>H0064584</i>	<table border="1"><thead><tr><th>Type</th><th>Vial ID / Standard ID</th><th>Vol uL</th><th>Analyst</th><th>Witness</th></tr></thead><tbody><tr><td>Surrogate</td><td>P H002944 Exp: 01/21/2020</td><td>500uL</td><td><i>KG</i></td><td><i>KG</i></td></tr><tr><td>Spike</td><td>11 H005882 Exp: 03/28/2020</td><td>1000uL</td><td><i>KG</i></td><td><i>KG</i></td></tr></tbody></table>	Type	Vial ID / Standard ID	Vol uL	Analyst	Witness	Surrogate	P H002944 Exp: 01/21/2020	500uL	<i>KG</i>	<i>KG</i>	Spike	11 H005882 Exp: 03/28/2020	1000uL	<i>KG</i>	<i>KG</i>
Type	Vial ID / Standard ID	Vol uL	Analyst	Witness													
Surrogate	P H002944 Exp: 01/21/2020	500uL	<i>KG</i>	<i>KG</i>													
Spike	11 H005882 Exp: 03/28/2020	1000uL	<i>KG</i>	<i>KG</i>													
TurboVap 1 2 3 4 5 RD 7-15-19 Analyst/Date	Vialing Analyst: <i>RD</i> Date: <i>7-15-19</i> Methylene Chloride Concentrated Sulfuric Acid 0% Silica	(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 in the 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).															
Vialing RD 7-15-19 Analyst/Date																	



Organic Extractions Laboratory Analyst Notes

Extraction Parameter: TPHd

Extraction Batch B4G0310

Total Solids Batch: BHG0308

Work Order(s): 1960163

Screens: Soil/Sediment/Solid/Other:	Analyst/Date
☐ No Anomalies (standard soil/wet sediment/sand/gravel)=	
☐ Standing Water Decanted (Not shared)=	
☒ Standing Water Homogenized (Shared samples)= <u>48</u>	<u>Yp 6/7/12/19</u>
☐ Clay/Clumps (Difficult to homogenize)=	
☐ Rocks (%+size)?	
☒ Organics (Leaves/sticks/grass)= <u>42 - 15.</u>	<u>Yp 6/7/12/19</u>
☐ 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 <u>43-15.</u>	<u>Yp 6/7/12/19</u>
☒ Multiple Jars Y / N	<u>Yp 6/7/12/19</u>
☐ Sample Pre-Screens indicate analyte activity=	
☐ Sample weights/volumes reduced based on Pre-Screen=	



Batch: BHG0310

Prepared using: EPA 3546 (Microwave)

TPH NW (Extractables) in Solid

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Weigh into 100mL beakers-dry with Sodium Sulfate. 2. Transfer to microwave vessel. 3. Add DCM to the vessel until the solvent is 1" above 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 let cool 15 min. in R-05. Re-homogenize while cool. 7. Collect into turbo tube with small funnel containing neutral glasswool and 1" sodium sulfate. 8. Add (2) 10mL DCM rinses to vessel and transfer to turbo tube. 9. TurboVap. 10. Acid/Silica Clean-up ☒ N 11. TurboVap. 12. Vial in DCM. A. Need Total Solids ☒ N <i>7/12/19</i> B. Archive/Freeze ☒ N <i>only #02-</i>	



PREPARATION BATCH SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0339

Batch Matrix: Water

Preparation: EPA 3510C SepF

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-10-190711E	19G0163-01	419G1654.D	07/15/19 11:49	
Blank	BHG0339-BLK1	419G1652.D	07/15/19 10:26	
LCS	BHG0339-BS1	419G1653.D	07/15/19 10:26	



Batch: BHG0339

Prepared using: EPA 3510C SepF
TPH NW (Extractables) low level in Water

Matrix: Water

Date Prepared: 7/15/19

Balance ID: N/A

Set Up By: RCM 07/15/19

The following standards may be missing from this batch!

Designator	Description
QLS 18	QLS Spike

Analysis: TPH NW (Extractables) low level

Lab Number & Container	Initial (mL) Actual	Acid/Silica Clean (1:1) (1mL) Y ☒ N	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
19G0163-01 C	(500.00) 500	(1:1) Y / N	1	1.0	

Batch QC

Lab Number	Initial (mL) Actual	Acid/Silica Clean (1:1) (1mL) Y ☒ N	Final Effective Vol (mL)	Vol (mL) to Lab	Extraction Comments
BHG0339-BLK1	(500.00) 500	(1:1) Y / N	1	1.0	
BHG0339-BS1	(500.00)	(1:1) Y / N	1	1.0	
BHG0339-MS1	(500.00)	(1:1) Y / N	1	1.0	Use 19G0163-01
BHG0339-MSD1	(500.00)	(1:1) Y / N	1	1.0	Use 19G0163-01

CO 7/15/19

Client ID verified By

Date

Preparation Reviewed By

Date

Extraction Date and Time



Batch: BHG0339

Prepared using: EPA 3510C SepF
TPH NW (Extractables) low level in Water

Prep Steps	Reagents Used	Surrogates & Spike Standards Used					
KD 80-85°C ② 1 2 3 4 5 6 ym 7/15/19 Analyst/Date	Station/Reagent Separatory Funnel Analyst: CO Date: 7/15/19 1:1 Sulfuric Acid/DI H2O Methylene Chloride Anhydrous Sodium Sulfate KD Analyst: ym Date: 7/15/19 Methylene Chloride Vialing Analyst: RD Date: 7-15-19 Methylene Chloride Concentrated Sulfuric Acid 0% Silica Gel	Standard ID H005885 H006341 H006182 H006341 H006341	Type Surrogate 2250µg/mL Spike 15000µg/mL	Vial ID / Standard ID P H002944 Exp: 01/21/2020 11 H005882 Exp: 03/28/2020	Vol uL 100µL 100µL	Analyst CO CO	Witness SH SH

(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 in the 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).



Batch: BHG0339

Prepared using: EPA 3510C SepF
TPH NW (Extractables) low level in Water

Prep Instructions	
SPECIAL INSTRUCTIONS: 1. Add Surr/Spk. 2. Acidify with 1 pipet of 1:1 Sulfuric Acid. 3. Check pH. 4. Extract 2X with 30mL DCM. 5. KD at 80°. 6. TurboVap. 7. Acid/Silica Clean-ups? Y ☒ N 8. Vial in DCM. Archive ☒ Y ☐ N	



Extraction Parameter: TPHD Extraction Batch BH6X339

Total Solids Batch: N/A Work Order(s): 1960165

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



Form I
METHOD BLANK DATA SHEET
NWTPH-Dx

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Solid Laboratory ID: BHG0310-BLK1 File ID: 419G1657.D
Sampled: N/A Prepared: 07/12/19 12:52 Analyzed: 07/17/19 06:47
Solids: Preparation: EPA 3546 (Microwave) Initial/Final: 10 g / 10 mL
Batch: BHG0310 Sequence: SHG0211 Calibration: CG00044
Instrument: FID4 Column: RTX-1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/kg wet)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	50.0	U	20.3	50.0
RRO	Motor Oil Range Organics (C24-C38)	1	100	U	21.0	100
SURROGATES		ADDED (mg/kg wet)	CONC (mg/kg wet)	% REC	QC LIMITS	Q
o-Terphenyl		56.250	59.6	106	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1657.D

Date : 17-JUL-2019 06:47

Client ID:

Sample Info: BHC0310-BLK1

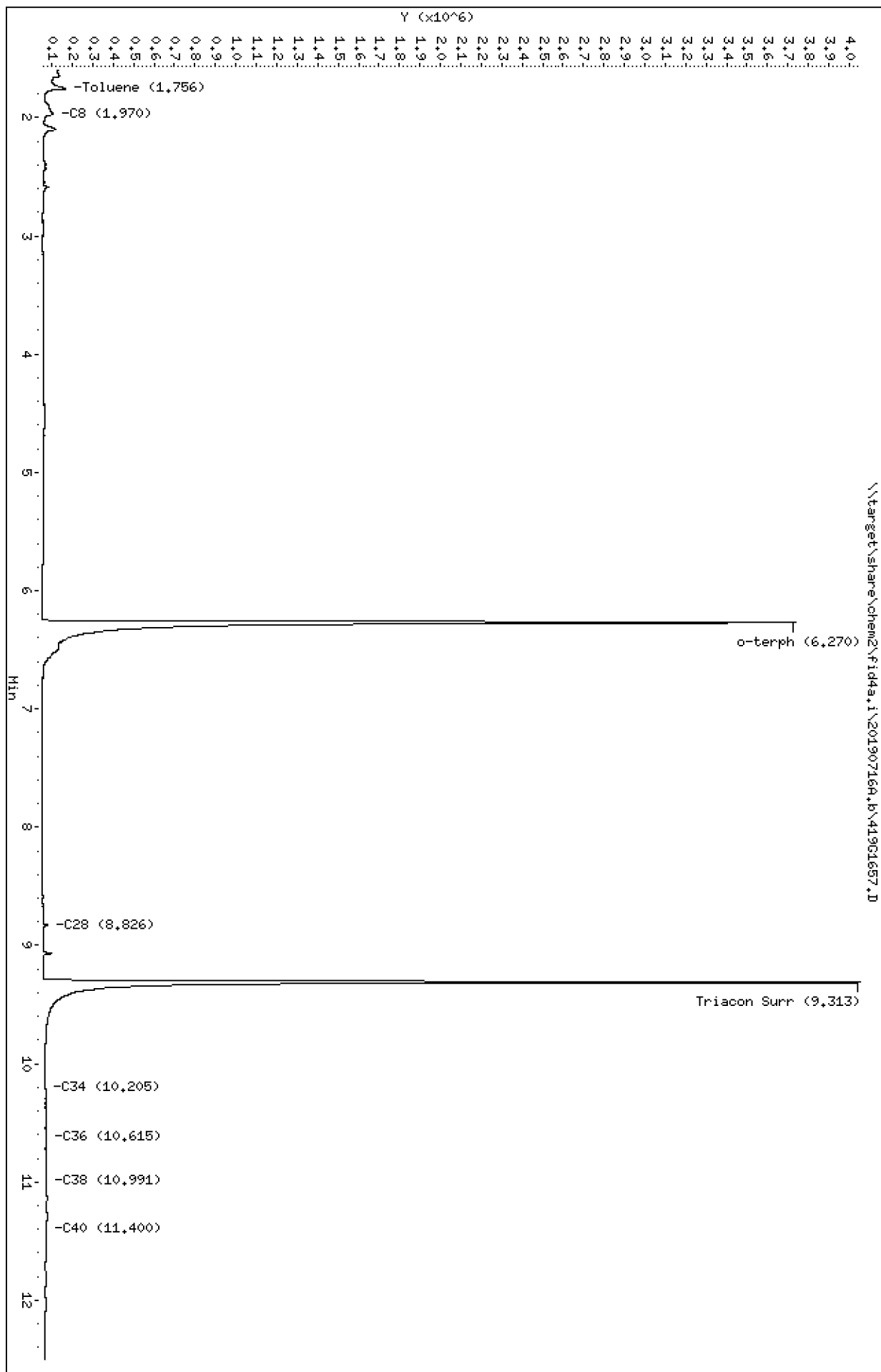
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1657.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: BHG0310-BLK1

Client ID:

Injection: 17-JUL-2019 06:47

Dilution Factor: 1

RT Std: 419G1645.D

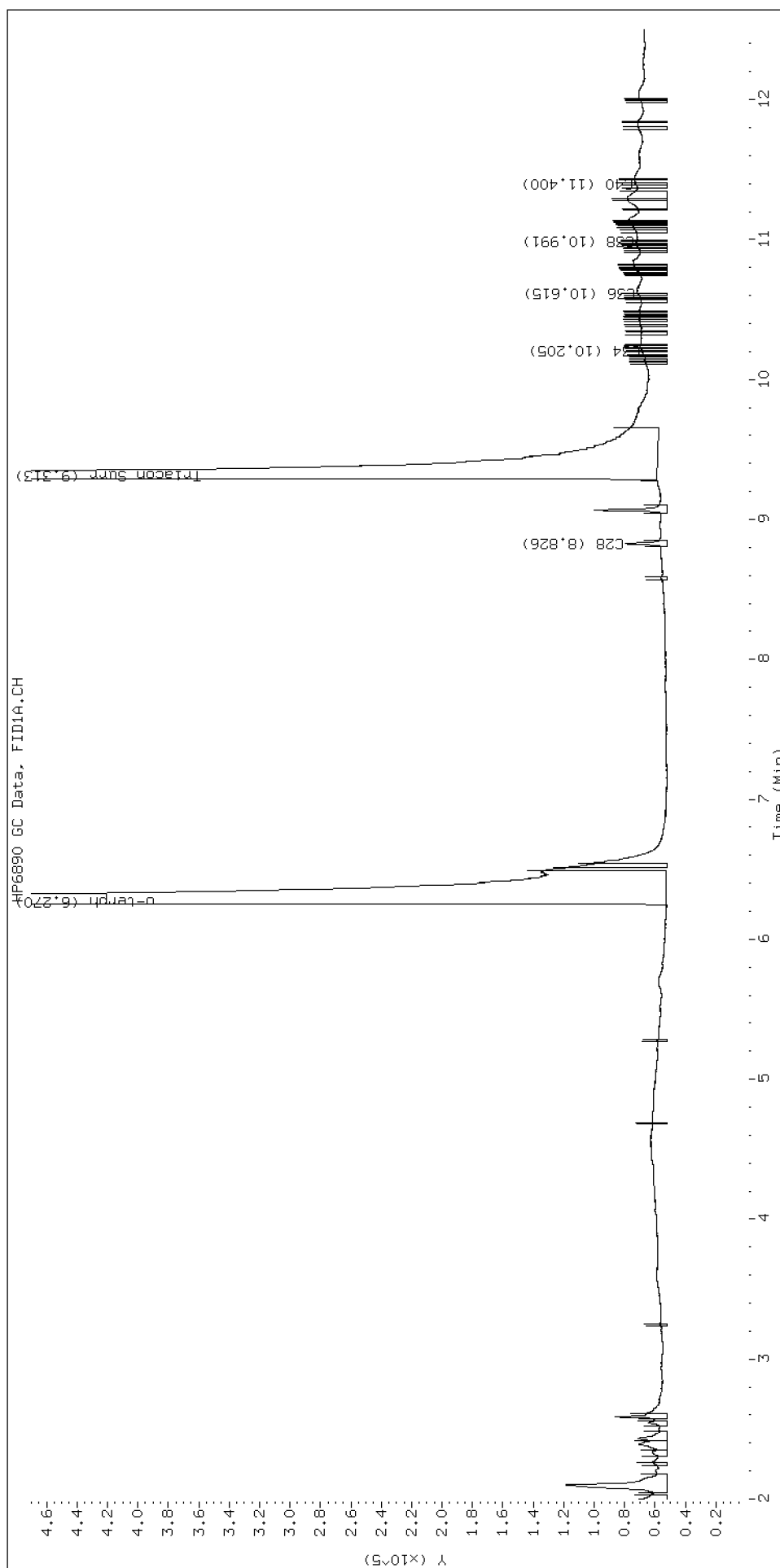
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.012	53959	178791	WATPHD	(C12-C24)	113824	1.1
C10	----				WATPHM	(C24-C38)	479014	5.2
C12	----				AK102	(C10-C25)	117865	1.0
C14	----				AK103	(C25-C36)	319809	4.6
C16	----				OR.DIES	(C10-C28)	156386	1.3
C18	----							
C20	----							
C22	----							
C24	----							
C25	----							
C26	----							
C28	8.826	0.001	27068	33897				
C32	----							
C34	10.205	0.005	16495	10545				
Filter Peak	----							
C36	10.615	0.006	19478	20350				
C38	10.991	-0.010	20122	12953				
C40	11.400	-0.012	20756	16406				
o-terph	6.270	-0.007	3688550	7817126				
Triacon Surr	9.313	-0.019	3995388	6999508	NAS DIES	(C10-C24)	117865	1.0

Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7817126	59.6 M
Triacotane	6999508	57.1 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Form I
METHOD BLANK DATA SHEET
NWTPH-Dx

Blank

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - V2
Matrix: Water Laboratory ID: BHG0339-BLK1 File ID: 419G1652.D
Sampled: N/A Prepared: 07/15/19 10:26 Analyzed: 07/17/19 05:05
Solids: Preparation: EPA 3510C SepF Initial/Final: 500 mL / 1 mL
Batch: BHG0339 Sequence: SHG0211 Calibration: CG00044
Instrument: FID4 Column: RTX-1

CAS NO.	COMPOUND	DILUTION	CONC. (mg/L)	Q	DL	RL
DRO	Diesel Range Organics (C12-C24)	1	0.100	U	0.033	0.100
RRO	Motor Oil Range Organics (C24-C38)	1	0.200	U	0.056	0.200
SURROGATES		ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
o-Terphenyl		0.22500	0.209	93.1	50 - 150	

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1652.D

Date : 17-JUL-2019 05:05

Client ID:

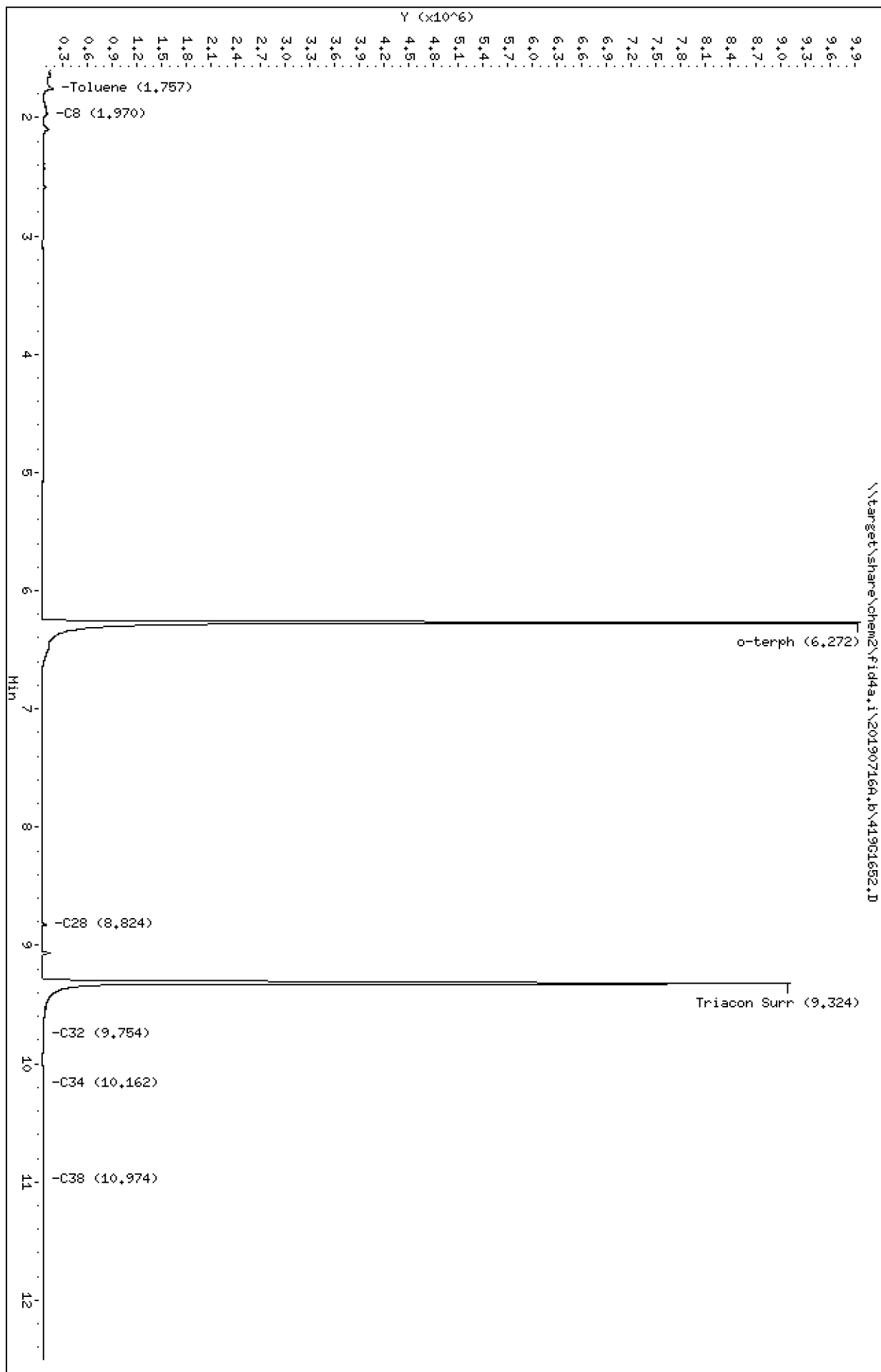
Sample Info: BHC0339-BLK1

Instrument: fid4a.i

Column phase: RTX-1

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1652.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: BHG0339-BLK1

Client ID:

Injection: 17-JUL-2019 05:05

Dilution Factor: 1

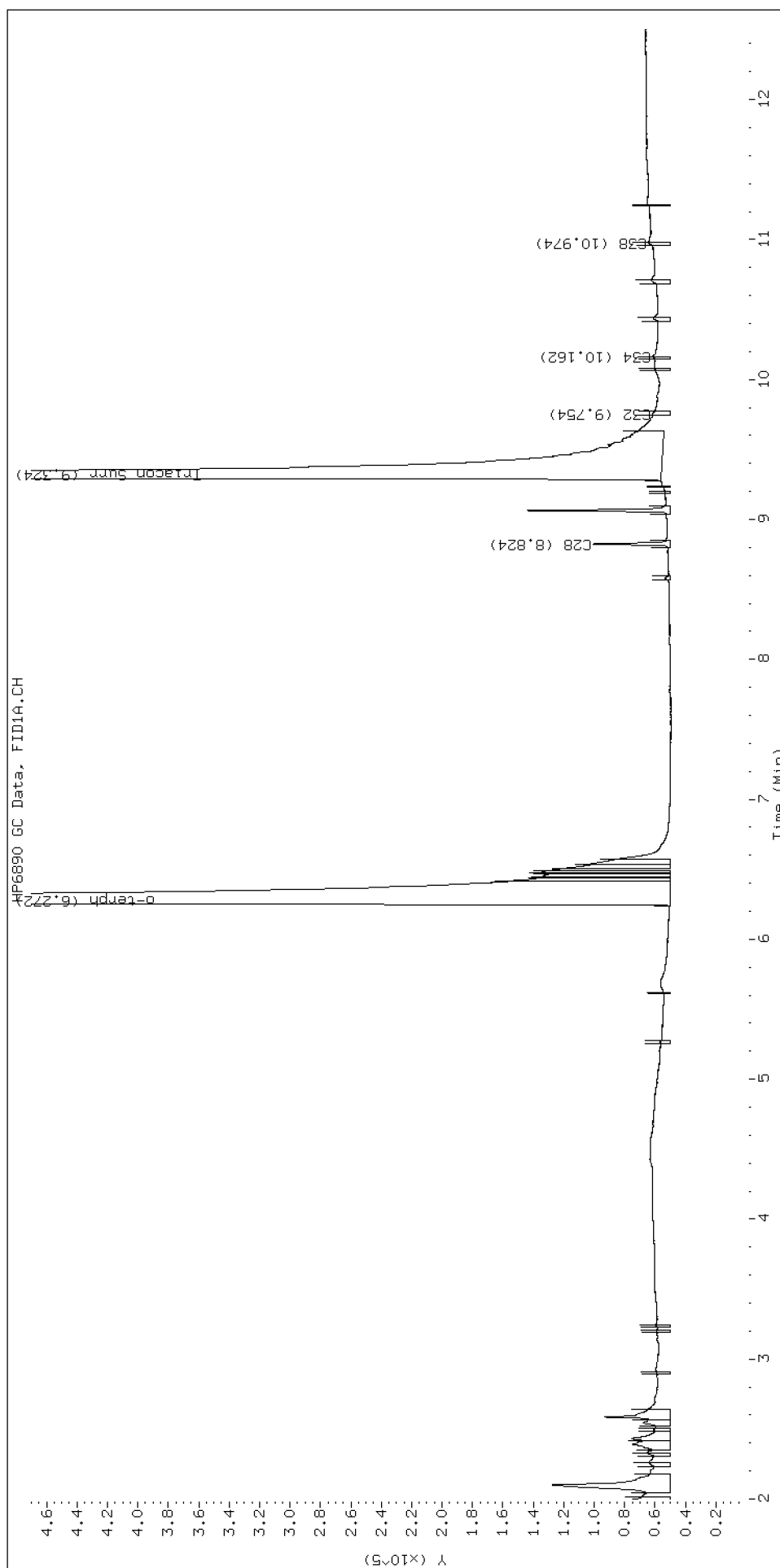
RT Std: 419G1645.D

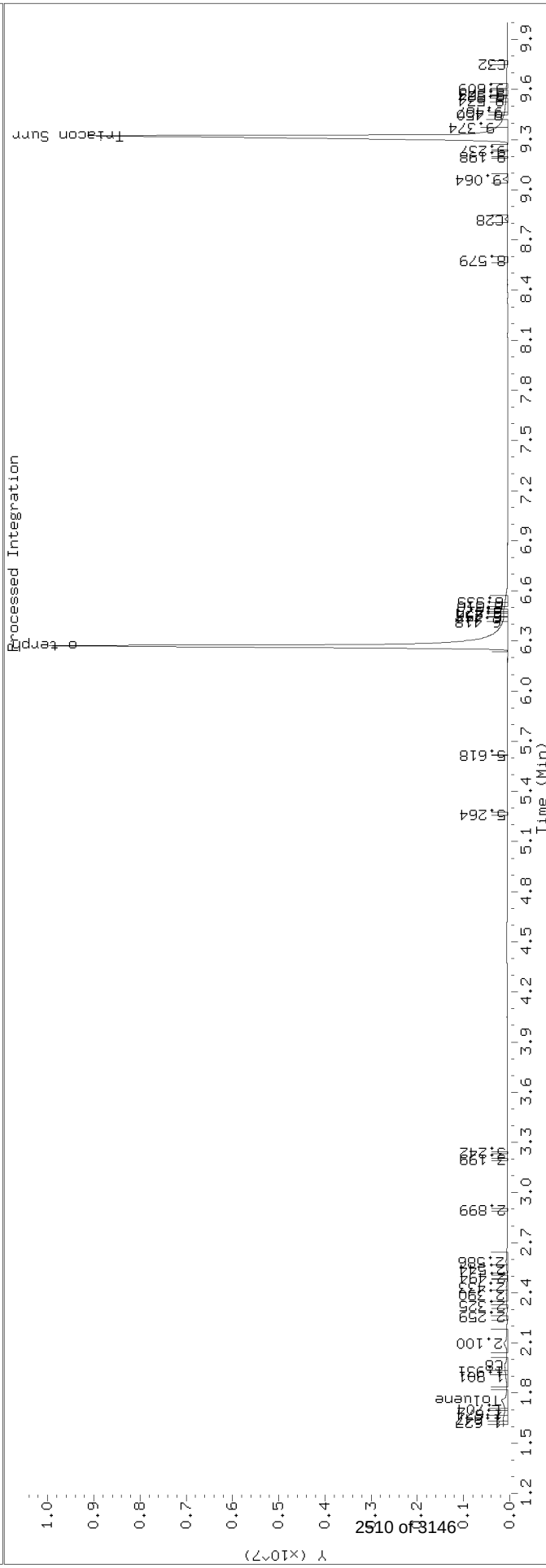
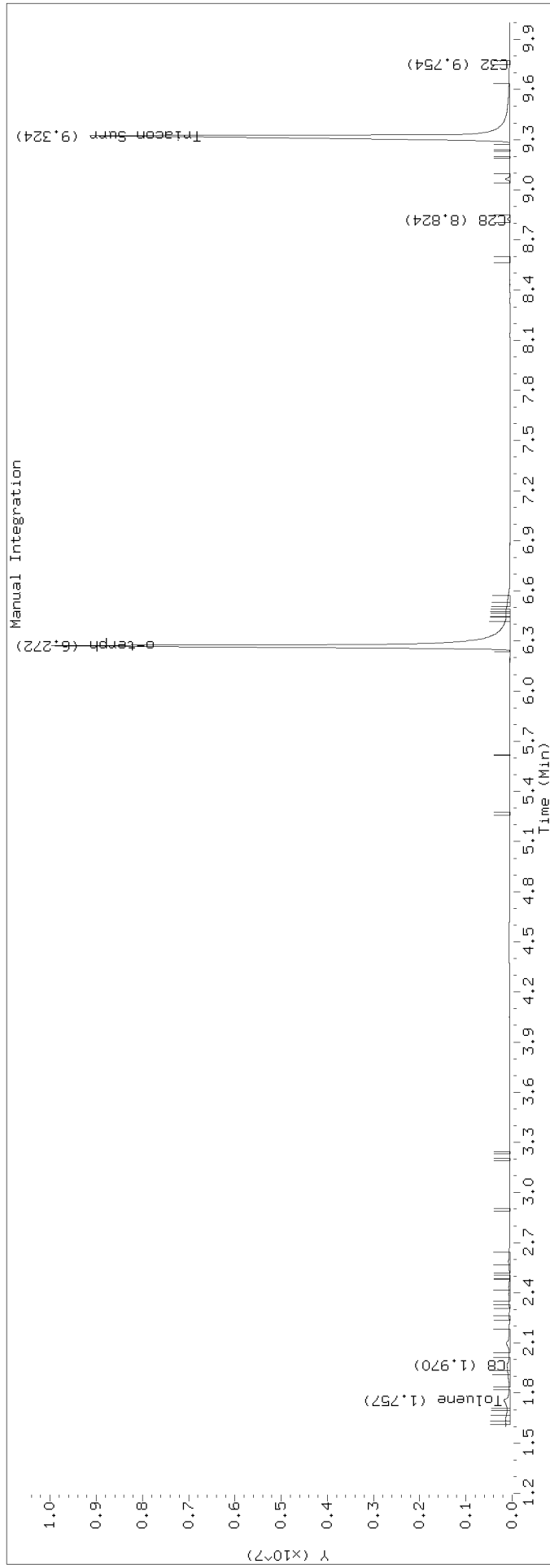
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.012	62704	205261	WATPHD	(C12-C24)	594965	5.6
C10	----				WATPHM	(C24-C38)	226582	2.5
C12	----				AK102	(C10-C25)	608854	5.0
C14	----				AK103	(C25-C36)	190004	2.7
C16	----				OR.DIES	(C10-C28)	661470	5.4
C18	----							
C20	----							
C22	----							
C24	----							
C25	----							
C26	----							
C28	8.824	-0.002	50641	48267				
C32	9.754	-0.015	11487	15648				
C34	10.162	-0.038	11041	10665				
Filter Peak	----							
C36	----							
C38	10.974	-0.027	13850	20233				
C40	----							
o-terph	6.272	-0.004	9923461	13731656				
Triacon Surr	9.324	-0.008	9076284	12761644	NAS DIES	(C10-C24)	608854	5.0
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)								
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)								

Surrogate	Area	Amount
o-Terphenyl	13731656	104.7
Triacontane	12761644	104.2 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







LCS / LCS DUPLICATE RECOVERY

NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/17/19 07:07
Batch: BHG0310 Laboratory ID: BHG0310-BS1
Preparation: EPA 3546 (Microwave) Sequence Name: LCS
Initial/Final: 10 g / 10 mL

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Diesel Range Organics (C12-C24)	1500	1360		91.0	63 - 120

* Indicates values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1658.D

Date : 17-JUL-2019 07:07

Client ID:

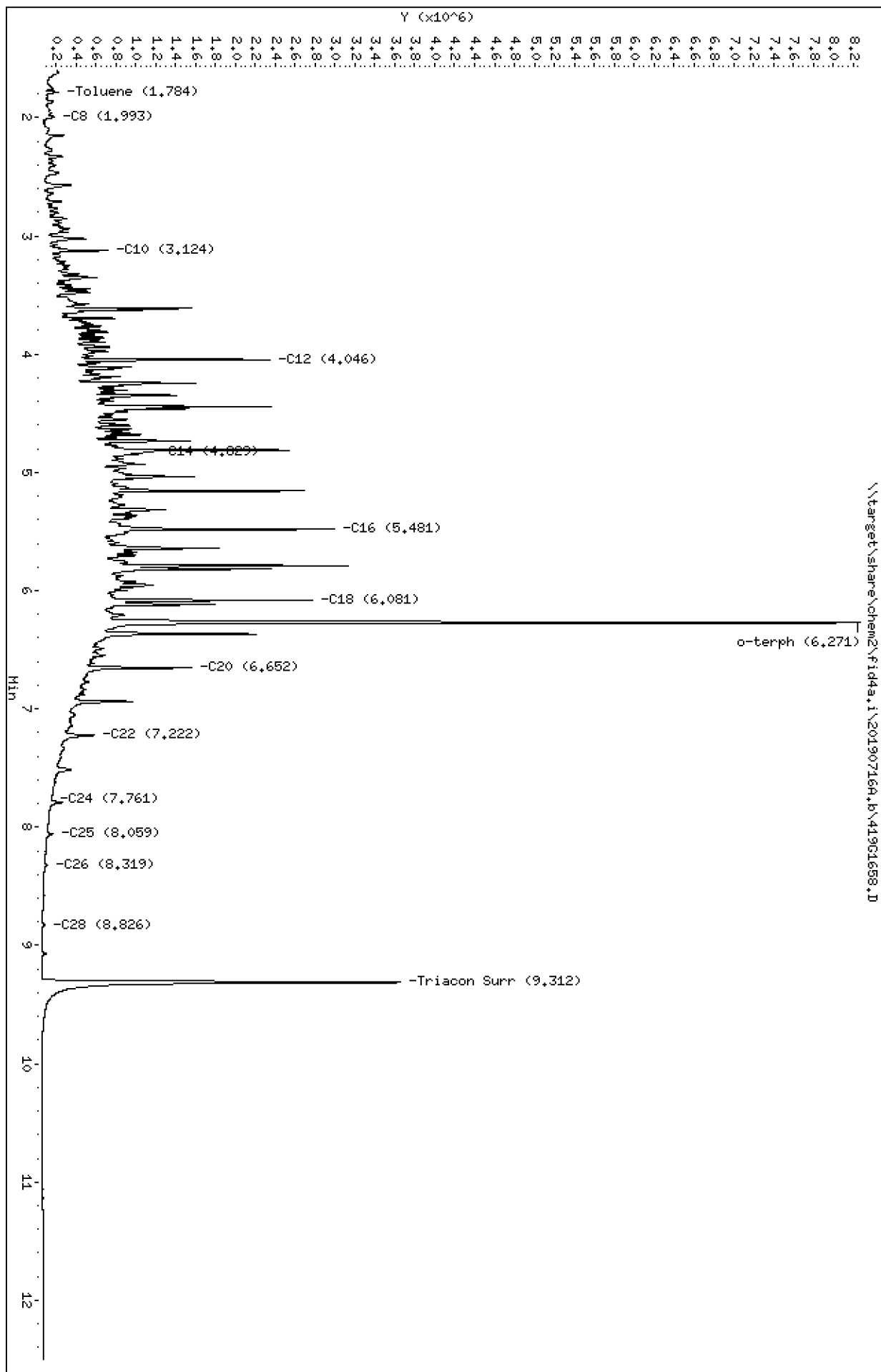
Sample Info: BHC0310-B51

Instrument: fid4a.i

Column phase: RTX-1

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1658.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: BHG0310-BS1

Client ID:

Injection: 17-JUL-2019 07:07

Dilution Factor: 1

RT Std: 419G1645.D

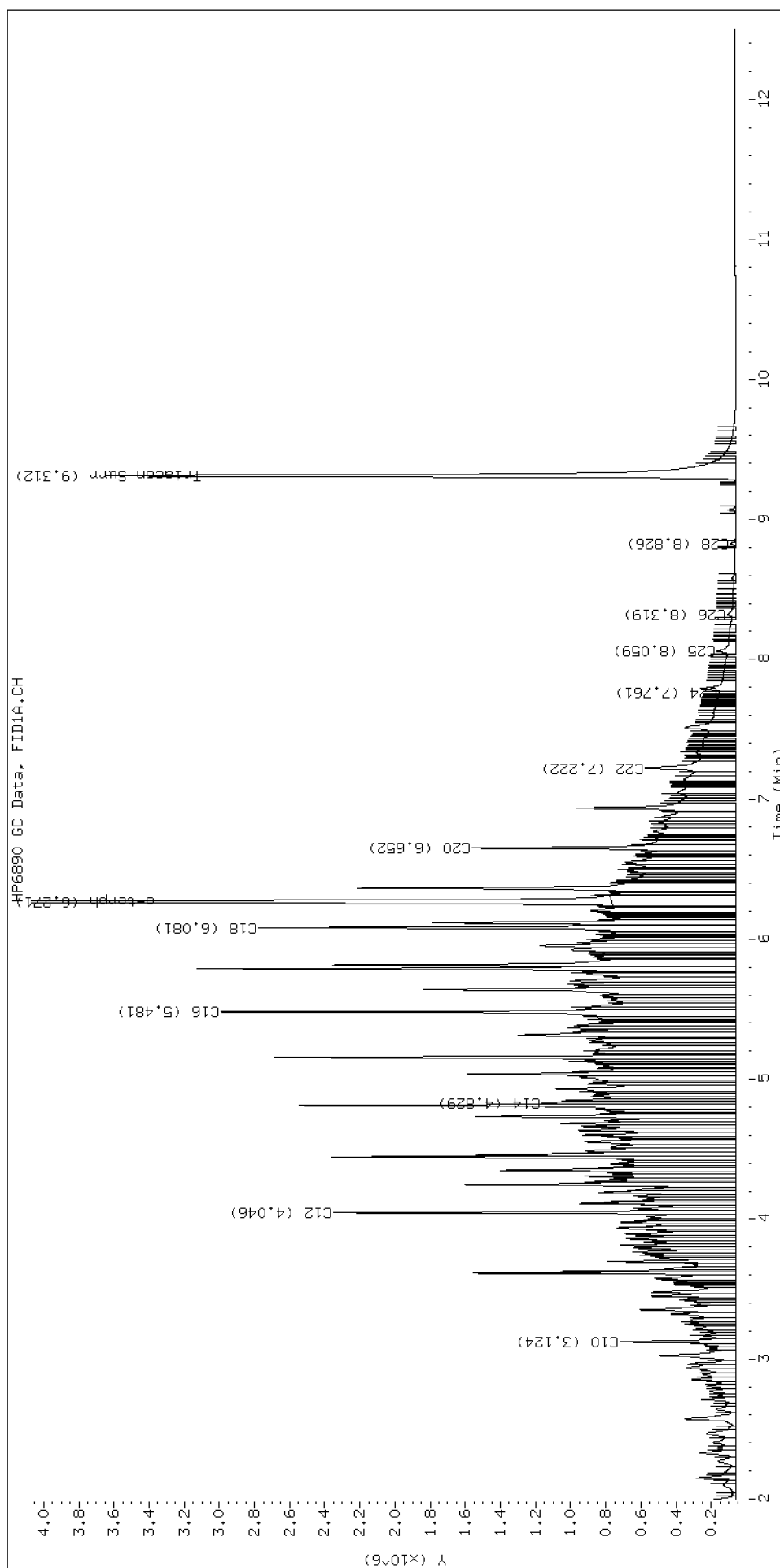
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.993	0.011	130747	190946	WATPHD	(C12-C24)	143794389	1364.5
C10	3.124	-0.002	661885	766455	WATPHM	(C24-C38)	2041833	22.3
C12	4.046	-0.013	2292176	2338783	AK102	(C10-C25)	168159843	1374.5
C14	4.829	0.000	1105702	874220	AK103	(C25-C36)	1448154	20.8
C16	5.481	-0.007	2932583	4113779	OR.DIES	(C10-C28)	169117497	1380.2
C18	6.081	-0.001	2718984	3311645				
C20	6.652	-0.008	1499399	2305161				
C22	7.222	-0.001	519799	1492869				
C24	7.761	-0.014	98388	76278				
C25	8.059	0.004	105222	325564				
C26	8.319	0.004	48588	127190				
C28	8.826	0.001	31694	40346				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.271	-0.005	7505348	7651171				
Triacon Surr	9.312	-0.020	3591775	6153600	NAS DIES	(C10-C24)	167566165	1371.8

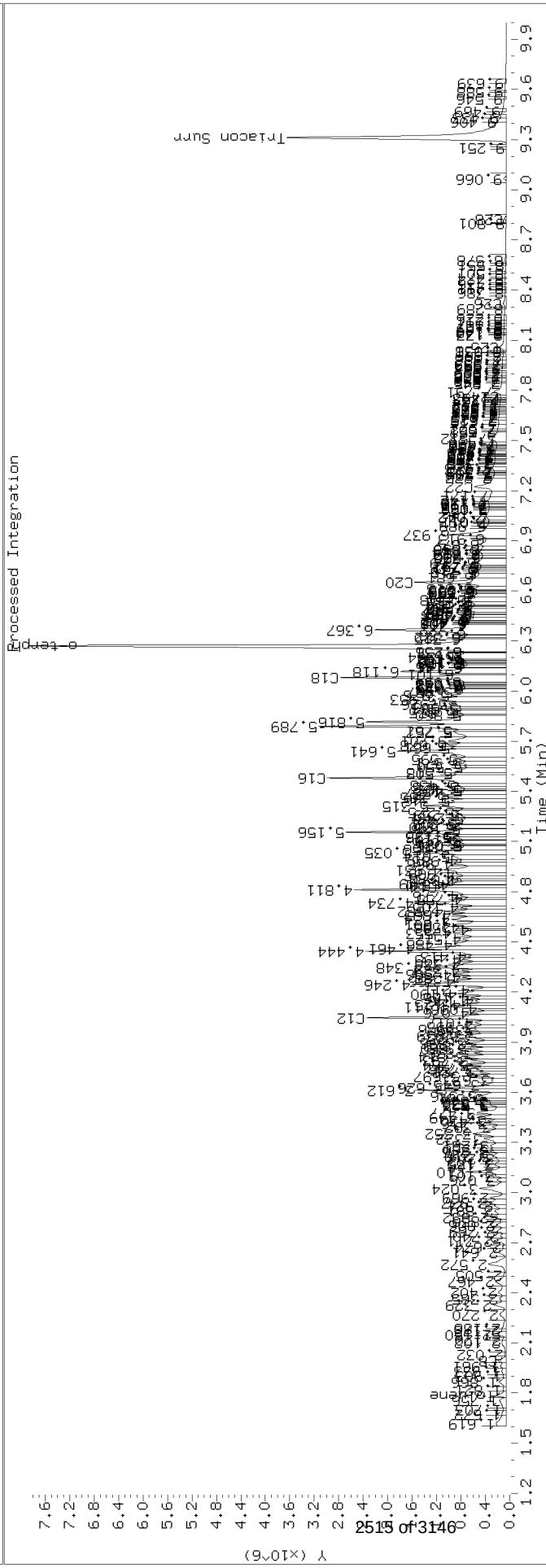
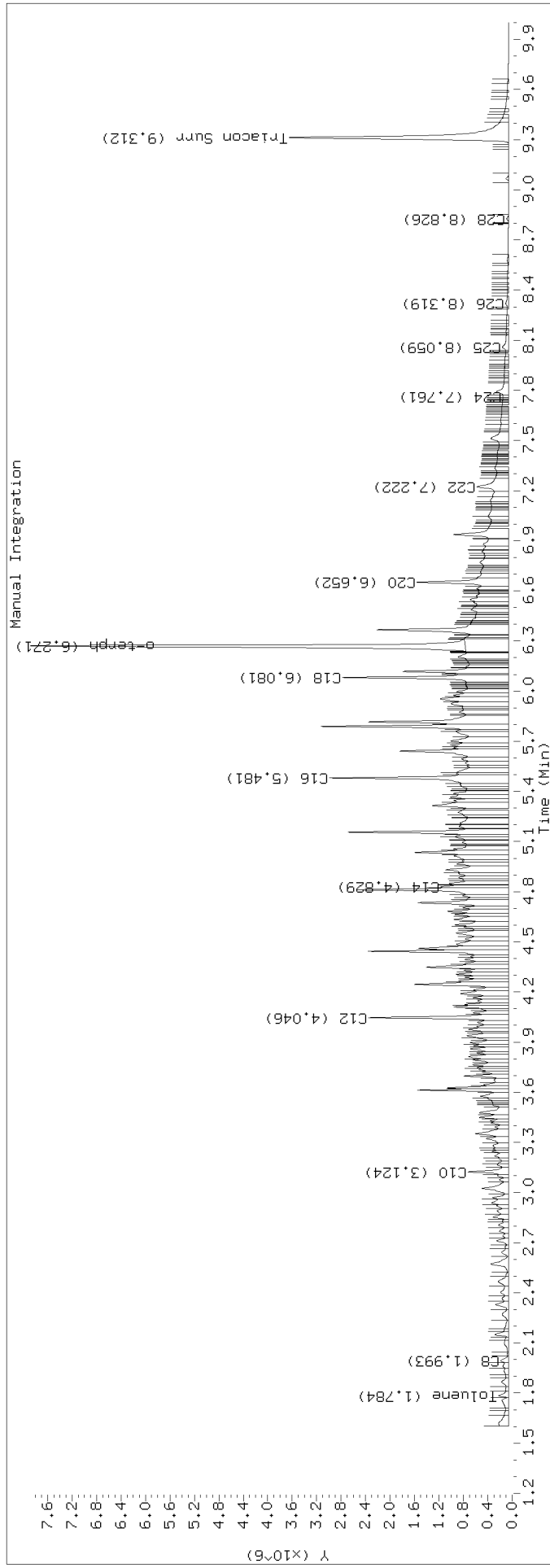
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7651171	58.3 M
Triacontane	6153600	50.2

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







LCS / LCS DUPLICATE RECOVERY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/17/19 05:25

Batch: BHG0339

Laboratory ID: BHG0339-BS1

Preparation: EPA 3510C SepF

Sequence Name: LCS

Initial/Final: 500 mL / 1 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	Q	LCS % REC. #	QC LIMITS REC.
Diesel Range Organics (C12-C24)	3.00	2.63		87.5	56 - 120

* Indicates values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1653.D

Date : 17-JUL-2019 05:25

Client ID:

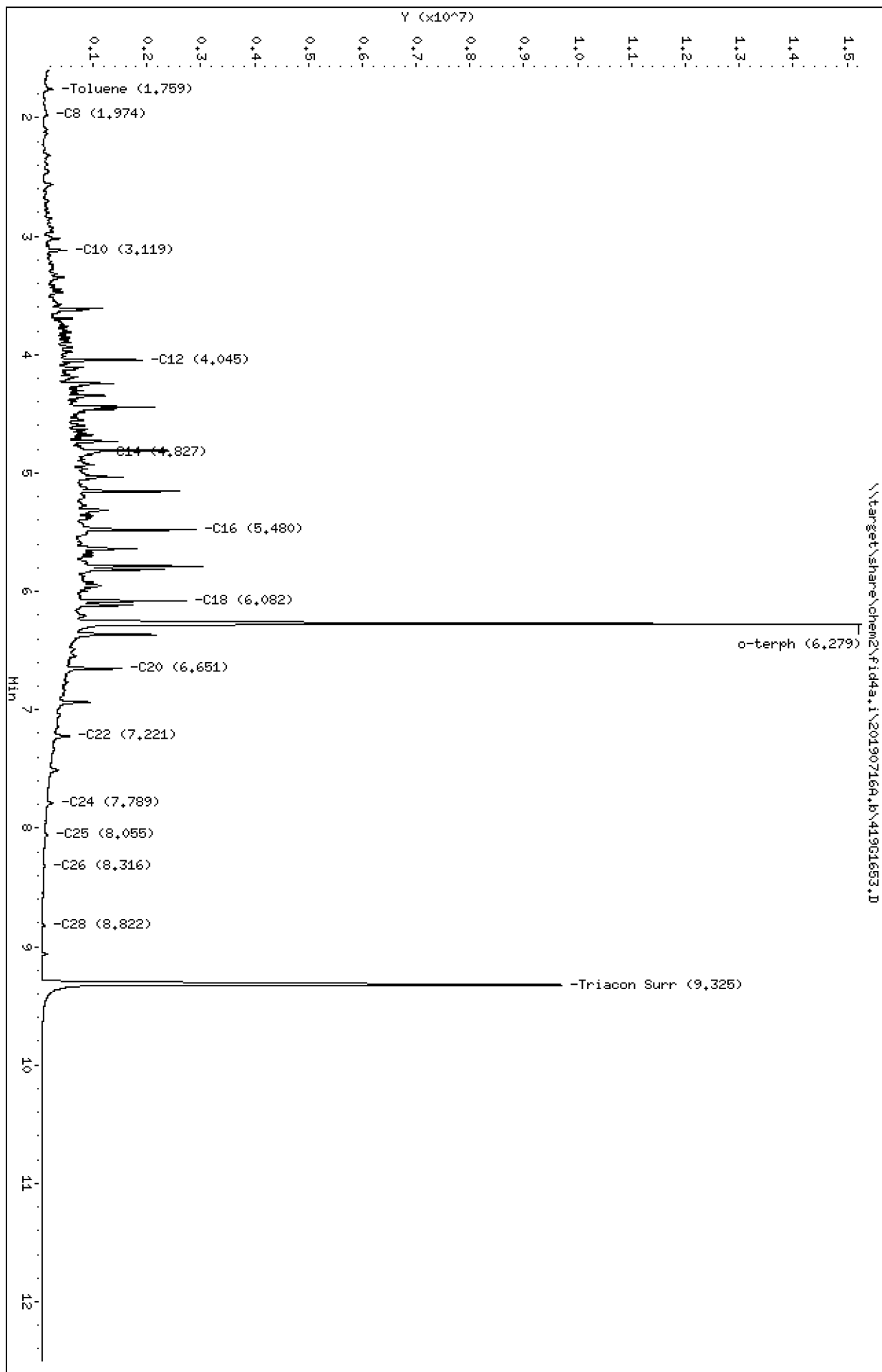
Sample Info: BHC0339-BS1

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1653.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: BHG0339-BS1

Client ID:

Injection: 17-JUL-2019 05:25

Dilution Factor: 1

RT Std: 419G1645.D

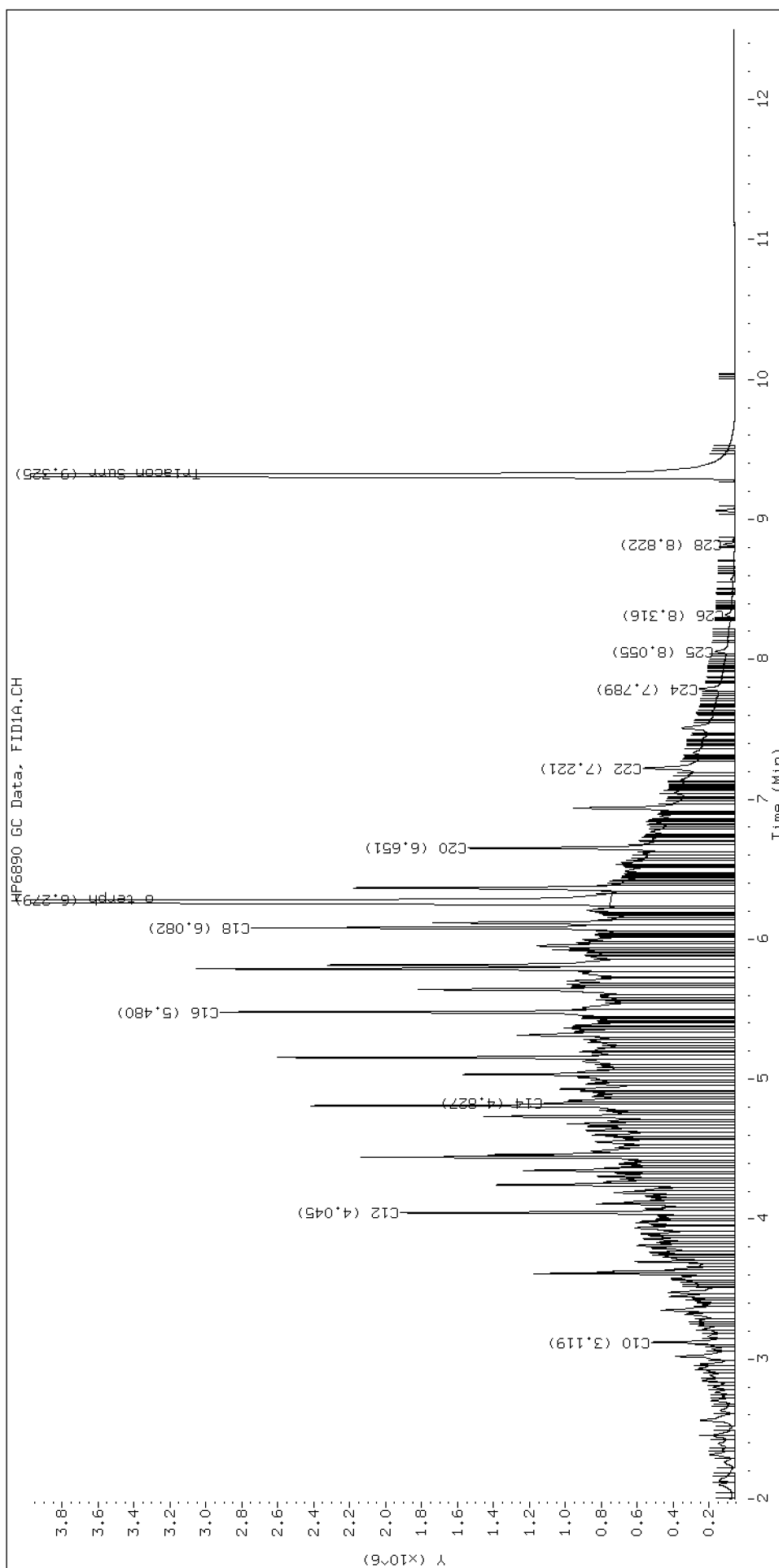
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.974	-0.008	108483	183086	WATPHD	(C12-C24)	138373015	1313.1
C10	3.119	-0.007	464391	622141	WATPHM	(C24-C38)	1913447	20.9
C12	4.045	-0.014	1862136	2007108	AK102	(C10-C25)	159199832	1301.3
C14	4.827	-0.002	1061303	928479	AK103	(C25-C36)	1215623	17.5
C16	5.480	-0.008	2864210	4090435	OR.DIES	(C10-C28)	160194528	1307.4
C18	6.082	-0.000	2688368	3408486				
C20	6.651	-0.009	1485448	2278119				
C22	7.221	-0.003	513205	1480379				
C24	7.789	0.014	201022	465106				
C25	8.055	0.001	113795	304096				
C26	8.316	0.001	53404	121748				
C28	8.822	-0.003	62795	61529				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.279	0.003	14520238	15957176				
Triacon Surr	9.325	-0.007	9654086	13469913	NAS DIES	(C10-C24)	158502007	1297.6

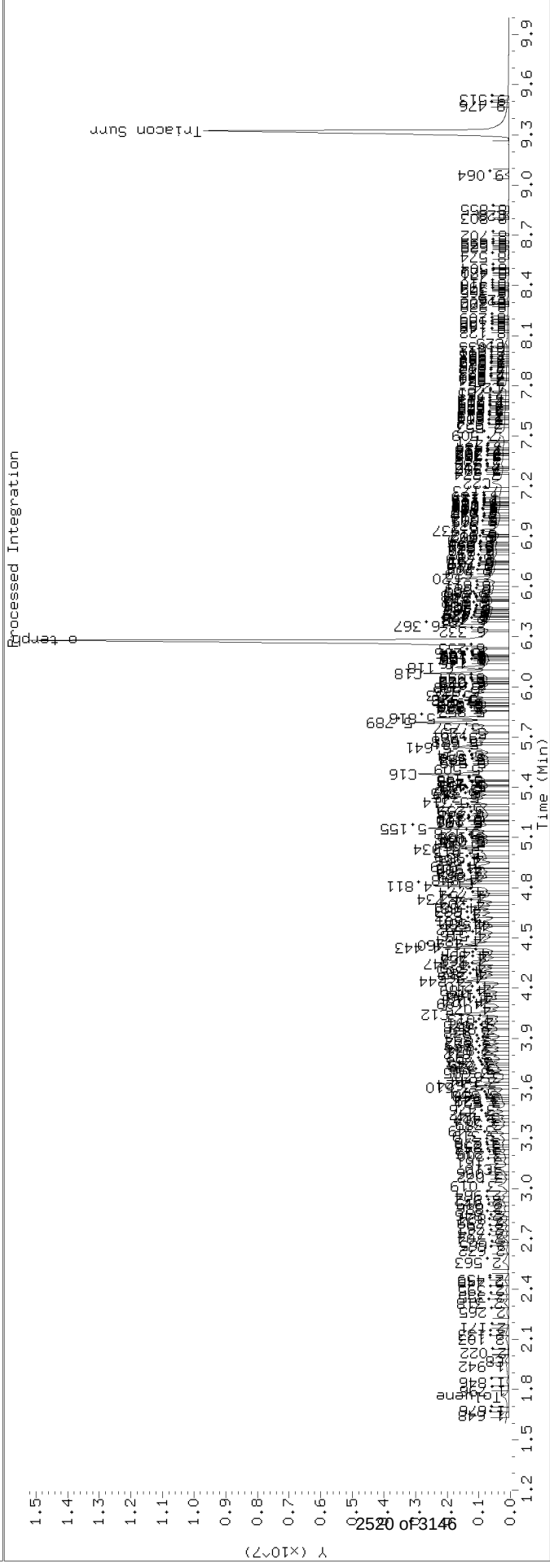
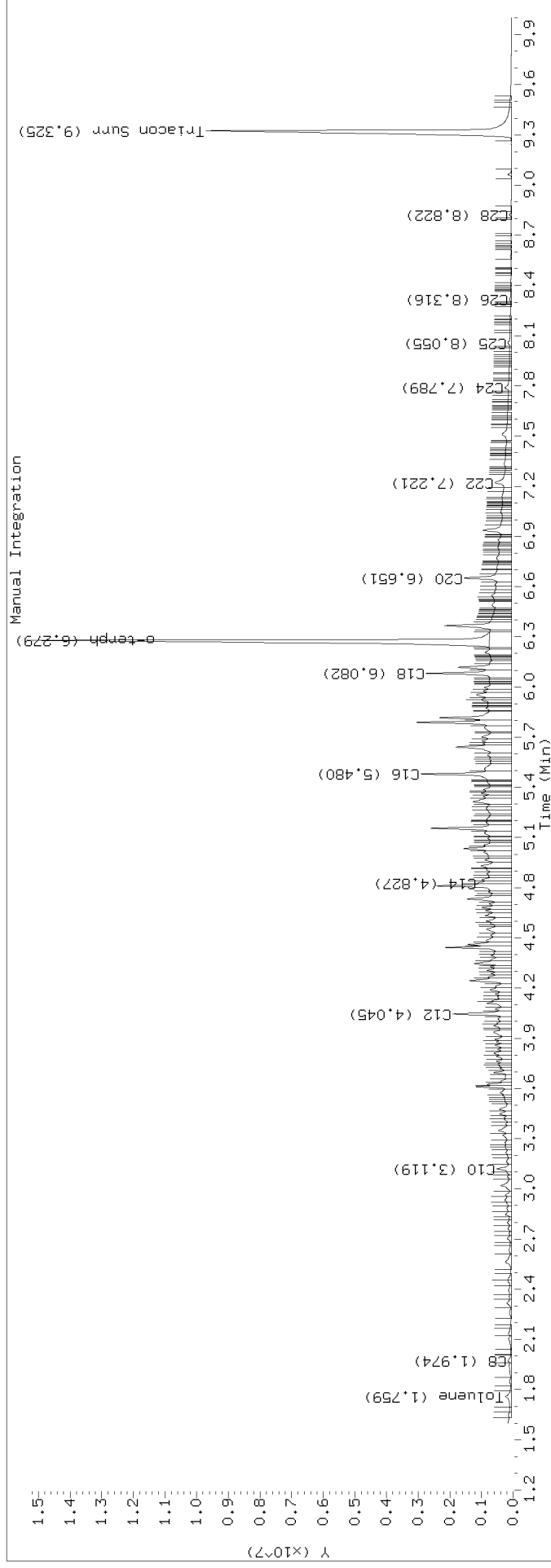
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	15957176	121.6 M
Triacontane	13469913	110.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







MS / MS DUPLICATE RECOVERY
NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/17/19 07:49

Batch: BHG0310

Laboratory ID: BHG0310-MS1

Preparation: EPA 3546 (Microwave)

Sequence Name: Matrix Spike

Initial/Final: 10.08 g / 10 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Diesel Range Organics (C12-C24)	3040	ND	U	2410		79.5	63 - 120

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY
NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/17/19 08:10

Batch: BHG0310

Laboratory ID: BHG0310-MSD1

Preparation: EPA 3546 (Microwave)

Sequence Name: Matrix Spike Dup

Initial/Final: 10.04 g / 10 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Diesel Range Organics (C12-C24)	3050	2510		82.5	4.00	30	63 - 120

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1660.D

Date : 17-JUL-2019 07:49

Client ID:

Sample Info: BHC0310-HS1

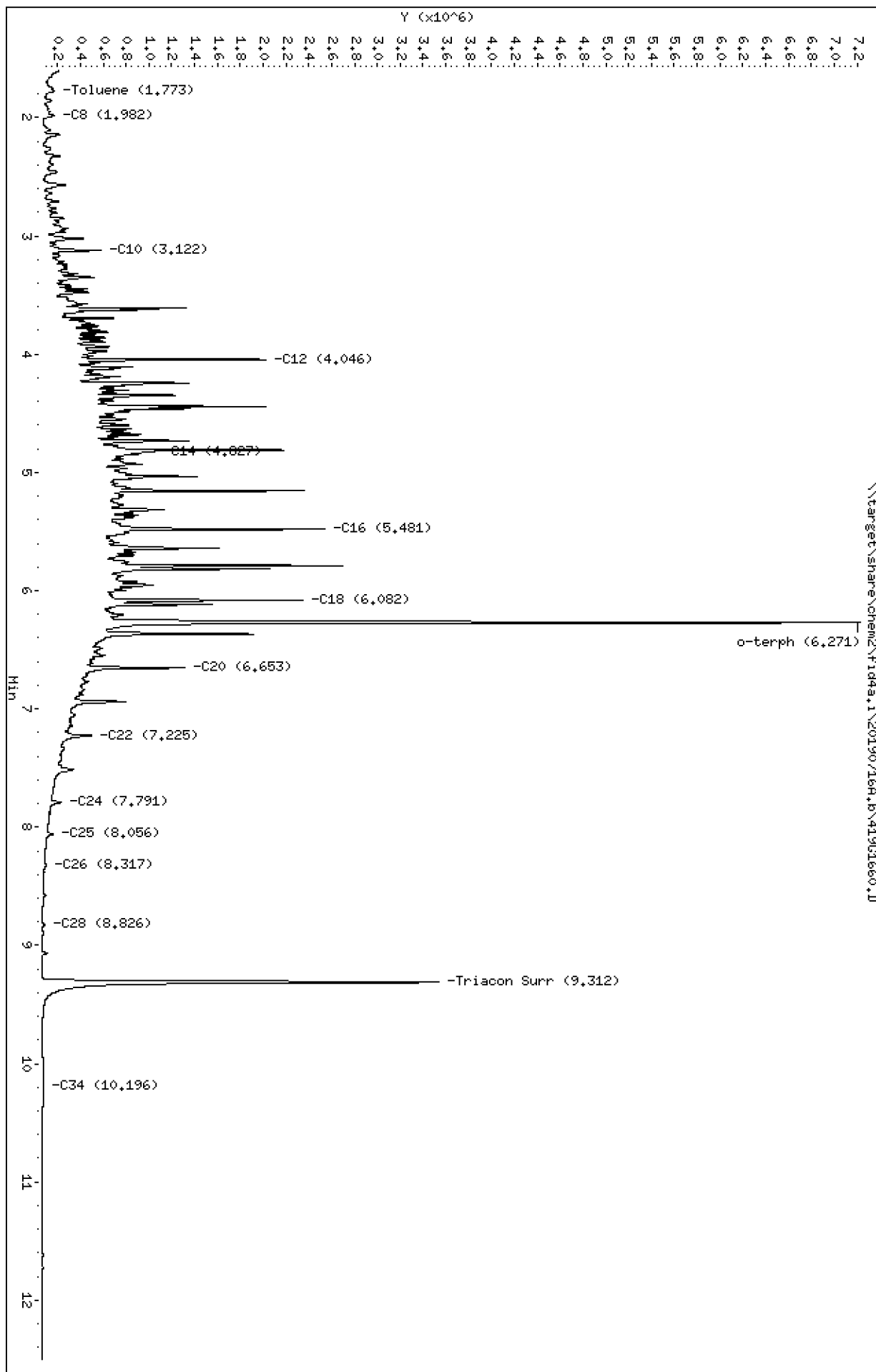
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1660.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: BHGO310-MS1

Client ID:

Injection: 17-JUL-2019 07:49

Dilution Factor: 1

RT Std: 419G1645.D

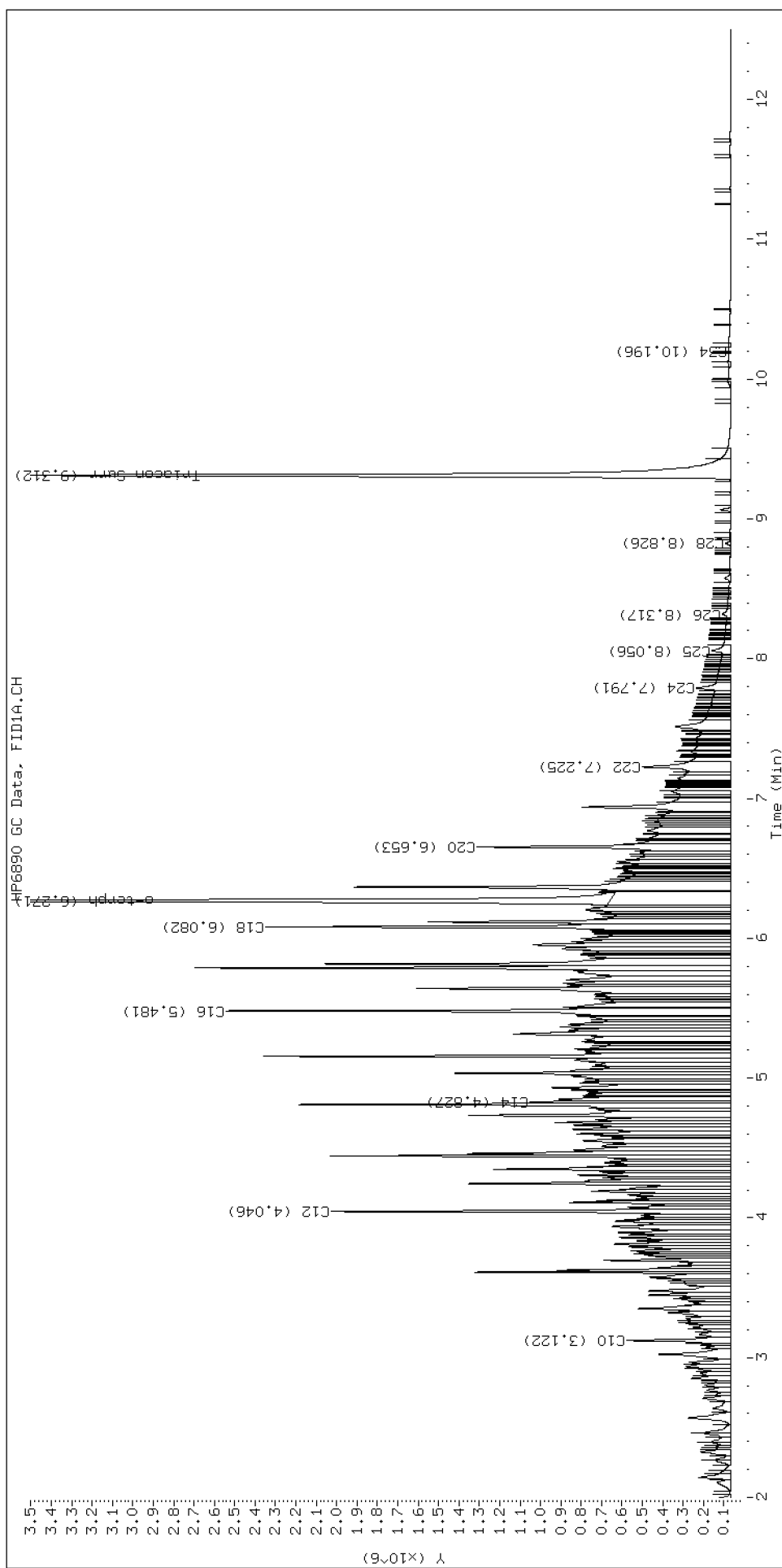
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.982	0.000	104079	199306	WATPHD	(C12-C24)	125724181	1193.1
C10	3.122	-0.004	514561	665965	WATPHM	(C24-C38)	1603110	17.5
C12	4.046	-0.014	1963833	2066766	AK102	(C10-C25)	146710630	1199.2
C14	4.827	-0.001	984929	854391	AK103	(C25-C36)	1081374	15.5
C16	5.481	-0.008	2475636	3571883	OR.DIES	(C10-C28)	147494243	1203.7
C18	6.082	-0.000	2284974	2884681				
C20	6.653	-0.007	1249002	2019800				
C22	7.225	0.001	435983	1245930				
C24	7.791	0.015	171978	407437				
C25	8.056	0.001	95894	228562				
C26	8.317	0.002	41460	107230				
C28	8.826	0.000	28063	35599				
C32	----							
C34	10.196	-0.005	10362	4091				
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.271	-0.005	6570550	6983943				
Triacon Surr	9.312	-0.020	3468591	6057668	NAS DIES	(C10-C24)	146188895	1196.8

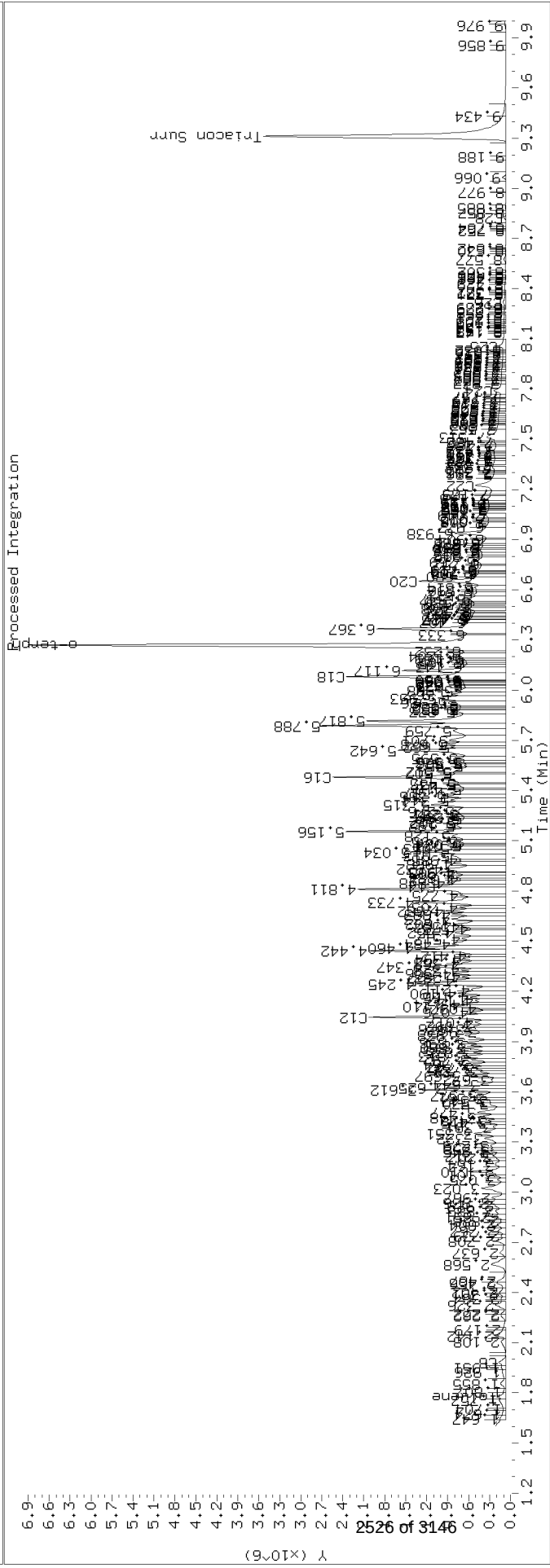
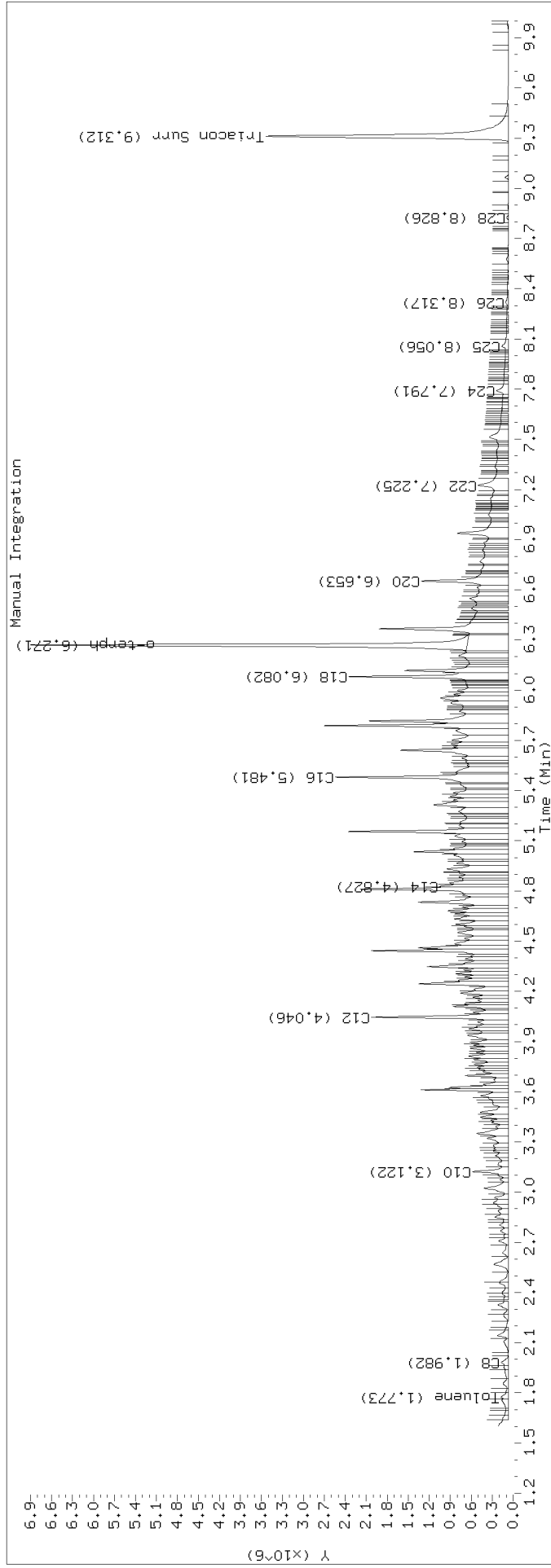
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	6983943	53.2 M
Triacotane	6057668	49.5

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1661.D

Date : 17-JUL-2019 08:10

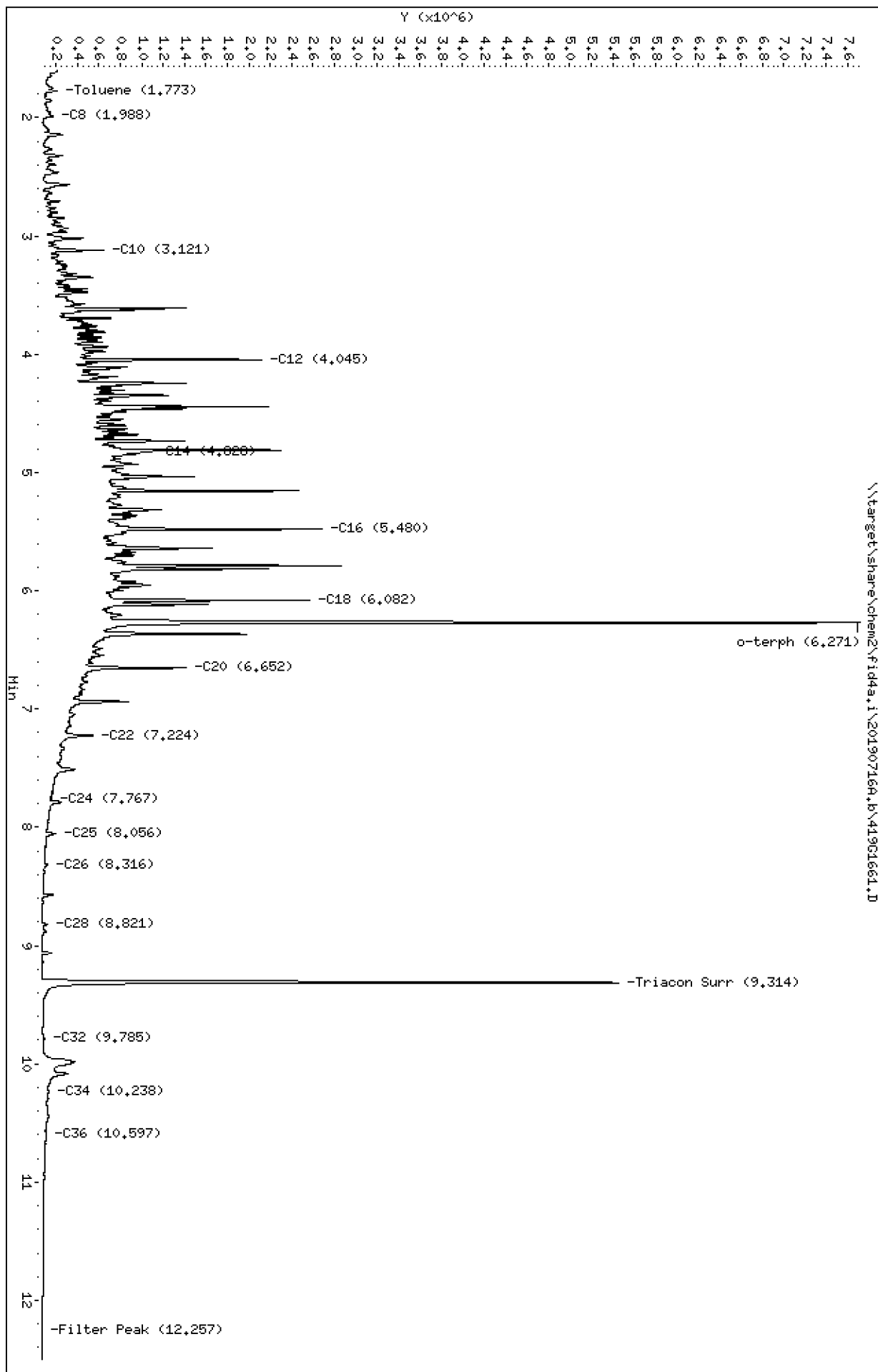
Client ID:

Sample Info: BHC0310-MSD1

Instrument: fid4a.i

Column phase: RTX-1

Operator: MHT
Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1661.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: BHG0310-MSD1

Client ID:

Injection: 17-JUL-2019 08:10

Dilution Factor: 1

RT Std: 419G1645.D

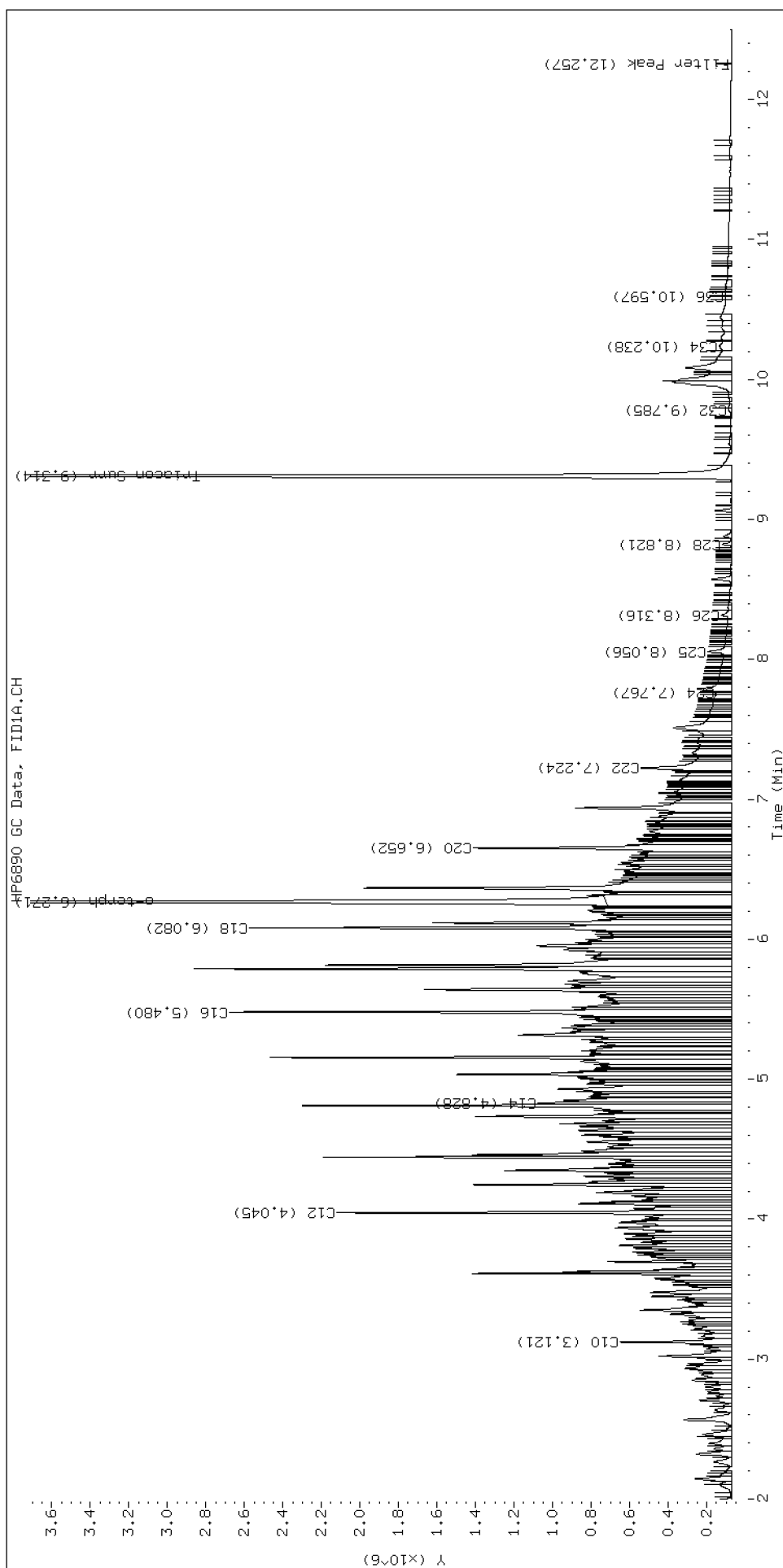
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.988	0.006	102247	173071	WATPHD	(C12-C24)	130348081	1236.9
C10	3.121	-0.005	581815	689093	WATPHM	(C24-C38)	5041300	55.0
C12	4.045	-0.014	2054377	2102503	AK102	(C10-C25)	151704378	1240.0
C14	4.828	-0.001	1006261	824606	AK103	(C25-C36)	4339048	62.4
C16	5.480	-0.008	2611379	3636775	OR.DIES	(C10-C28)	152592823	1245.3
C18	6.082	-0.000	2505780	3109541				
C20	6.652	-0.008	1345824	2188070				
C22	7.224	0.001	474378	1258212				
C24	7.767	-0.008	83486	29032				
C25	8.056	0.002	123708	240664				
C26	8.316	0.001	53306	108119				
C28	8.821	-0.004	52038	59293				
C32	9.785	0.017	20476	42800				
C34	10.238	0.037	65790	226756				
Filter Peak	12.257	0.036	3698	1084				
C36	10.597	-0.013	36991	16556				
C38	----							
C40	----							
o-terph	6.271	-0.005	6990437	7023130				
Triacon Surr	9.314	-0.018	5389250	6501037	NAS DIES	(C10-C24)	151180909	1237.7

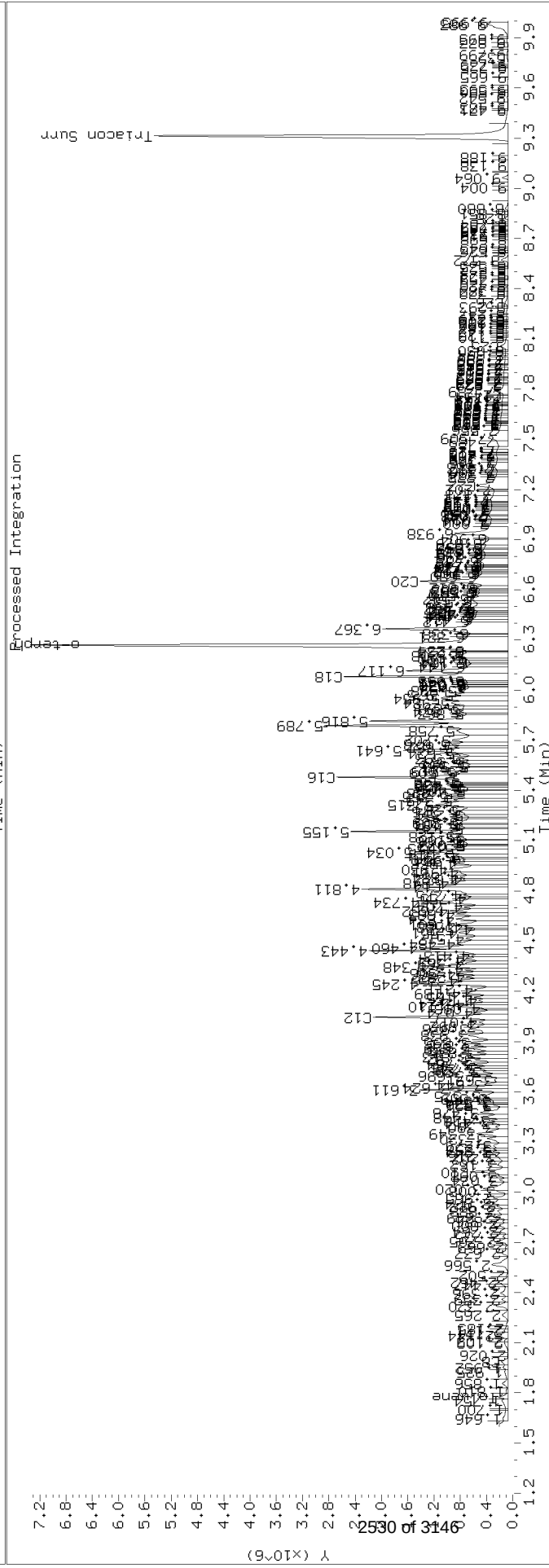
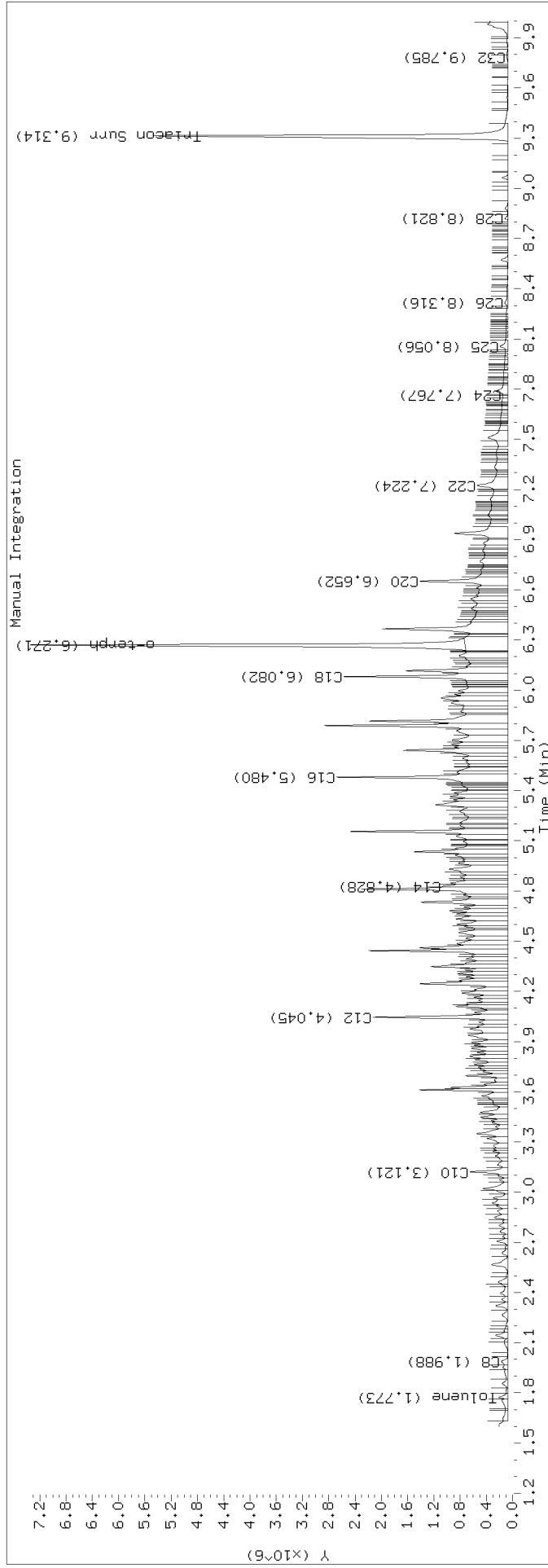
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	7023130	53.5 M
Triacotane	6501037	53.1

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







INITIAL CALIBRATION DATA NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CG00044 Instrument: FID4
Calibration Date: 07/16/2019 0:00 Column (1): RTX-1

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Diesel Range Organics (C12-C24)	50	103936.8	100	82039.81	250	110103.9	500	107518.8	1000	121669.8	2500	107010.8
o-Terphenyl	9	102794.8	18	133678.2	45	129718.3	90	133079.7	180	151688.1	450	136208.9
Diesel Range Organics (C12-C24)	50	103936.8	100	82039.81	250	110103.9	500	107518.8	1000	121669.8	2500	107010.8
o-Terphenyl	9	102794.8	18	133678.2	45	129718.3	90	133079.7	180	151688.1	450	136208.9



INITIAL CALIBRATION DATA NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Calibration: CG00044 Instrument: FID4
Calibration Date: 07/16/2019 0:00 Column (1): RTX-1

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Motor Oil Range Organics (C24-C38)	100	79400.83	250	86638.16	500	93122.2	1000	97242.59	2500	98823.64	5000	94842.38
Motor Oil Range Organics (C24-C38)	100	79400.83	250	86638.16	500	93122.2	1000	97242.59	2500	98823.64	5000	94842.38



INITIAL CALIBRATION DATA

NWTPH-Dx

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00044	Instrument:	FID4
Calibration Date:	07/16/2019 0:00	Column (1):	RTX-1

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF



INITIAL CALIBRATION DATA NWTPH-Dx

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00044	Instrument:	FID4
Calibration Date:	07/16/2019 0:00	Column (1):	RTX-1

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	Limit Type & Limit	Q
Diesel Range Organics (C12-C24)	105380	12.3			RSD (20)	
Motor Oil Range Organics (C24-C38)	91678.3	8.0			RSD (20)	
o-Terphenyl	131194.7	12.1			RSD (20)	
Diesel Range Organics (C12-C24)	105380	12.3			RSD (20)	
Motor Oil Range Organics (C24-C38)	91678.3	8.0			RSD (20)	
o-Terphenyl	131194.7	12.1			RSD (20)	



ANALYSIS SEQUENCE

SHG0207

Instrument: FID4 Element Column ID: G004923
Calibration ID: CG00044

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0207-IBL1	RT	QC		1	G007363		
SHG0207-IBL2	IB	QC		2	G007362		
SHG0207-CAL1	50ppm DIESEL	QC		3	H006819		
SHG0207-CAL2	100ppm DIESEL	QC		4	H006818		
SHG0207-CAL3	250ppm DIESEL	QC		5	H006817		
SHG0207-CAL4	500ppm DIESEL	QC		6	H006816		
SHG0207-CAL5	1000ppm DIESEL	QC		7	H006815		
SHG0207-CAL6	2500ppm DIESEL	QC		8	H006794		
SHG0207-CAL7	100ppmmoil	QC		9	H005105		
SHG0207-CAL8	250ppmmoil	QC		10	H005104		
SHG0207-CAL9	500ppmmoil	QC		11	H005103		
SHG0207-CALA	1000ppmmoil	QC		12	H005102		
SHG0207-CALB	2500ppmmoil	QC		13	H005101		
SHG0207-CALC	5000ppmmoil	QC		14	H005015		
SHG0207-CALD	100ppmak103	QC		15	H006838		
SHG0207-CALE	250ppmak103	QC		16	H006837		
SHG0207-CALF	500ppmak103	QC		17	H006839		
SHG0207-CALG	1000ppmak103	QC		18	H006836		
SHG0207-CALH	2500ppmak103	QC		19	H006835		
SHG0207-CALI	5000ppmak103	QC		20	H006795		
SHG0207-SCV1	DIESEL SCV1	QC		21	H002741		
SHG0207-SCV2	MOIL SCV2	QC		22	H006714		



ANALYSIS SEQUENCE

SHG0207

Instrument: FID4 Element Column ID: G004923
Calibration ID: CG00044

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0207-SCV3	ak103scv3	QC		23	H003035		

Inject	Date/Time	Filename	DF	LabID	ClientID
1	16-JUL-2019 11:11	419G1601.D	1	RINSE	
2	16-JUL-2019 11:32	419G1602.D	1	RINSE	
3	16-JUL-2019 11:53	419G1603.D	1	SHG0207-IBL1	
4	16-JUL-2019 12:15	419G1604.D	1	SHG0207-IBL2	
5	16-JUL-2019 12:36	419G1605.D	1	SHG0207-ICV1	
6	16-JUL-2019 12:56	419G1606.D	1	SHG0207-ICV2	
7	16-JUL-2019 13:17	419G1607.D	1	BHG0329-BLK1	
8	16-JUL-2019 13:38	419G1608.D	1	BHG0329-BS1	
9	16-JUL-2019 14:05	419G1609.D	1	SHG0207-IBL1	
10	16-JUL-2019 14:26	419G1610.D	1	SHG0207-IBL2	
11	16-JUL-2019 14:46	419G1611.D	1	SHG0207-ICV1	
12	16-JUL-2019 15:08	419G1612.D	1	SHG0207-ICV2	
13	16-JUL-2019 15:29	419G1613.D	1	BHG0329-BLK1	
14	16-JUL-2019 15:56	419G1614.D	1	R1	
15	16-JUL-2019 16:17	419G1615.D	1	R2	
16	16-JUL-2019 16:38	419G1616.D	1	SHG0207-IBL1	
17	16-JUL-2019 16:59	419G1617.D	1	SHG0207-IBL2	
18	16-JUL-2019 17:19	419G1618.D	1	SHG0207-ICV1	
19	16-JUL-2019 17:40	419G1619.D	1	SHG0207-ICV2	
20	16-JUL-2019 18:05	419G1620.D	1	R1	
21	16-JUL-2019 18:25	419G1621.D	1	R2	
22	16-JUL-2019 18:46	419G1622.D	1	SHG0207-IBL1	
23	16-JUL-2019 19:06	419G1623.D	1	SHG0207-IBL2	
24	16-JUL-2019 19:28	419G1624.D	1	SHG0207-CAL1	
25	16-JUL-2019 19:49	419G1625.D	1	SHG0207-CAL2	
26	16-JUL-2019 20:09	419G1626.D	1	SHG0207-CAL3	
27	16-JUL-2019 20:30	419G1627.D	1	SHG0207-CAL4	
28	16-JUL-2019 20:50	419G1628.D	1	SHG0207-CAL5	
29	16-JUL-2019 21:11	419G1629.D	1	SHG0207-CAL6	
30	16-JUL-2019 21:31	419G1630.D	1	SHG0207-CAL7	
31	16-JUL-2019 21:52	419G1631.D	1	SHG0207-CAL8	
32	16-JUL-2019 22:12	419G1632.D	1	SHG0207-CAL9	
33	16-JUL-2019 22:32	419G1633.D	1	SHG0207-CALA	
34	16-JUL-2019 22:53	419G1634.D	1	SHG0207-CALB	
35	16-JUL-2019 23:14	419G1635.D	1	SHG0207-CALC	
36	16-JUL-2019 23:36	419G1636.D	1	SHG0207-CALD	
37	16-JUL-2019 23:56	419G1637.D	1	SHG0207-CALF	
38	17-JUL-2019 00:17	419G1638.D	1	SHG0207-CALF	
39	17-JUL-2019 00:37	419G1639.D	1	SHG0207-CALG	
40	17-JUL-2019 00:58	419G1640.D	1	SHG0207-CALH	
41	17-JUL-2019 01:18	419G1641.D	1	SHG0207-CALI	
42	17-JUL-2019 01:39	419G1642.D	1	SHG0207-SCV1	
43	17-JUL-2019 01:59	419G1643.D	1	SHG0207-SCV2	
44	17-JUL-2019 02:19	419G1644.D	1	SHG0207-SCV3	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem2\fid4a.i\20190716.b

Instrument: fid4a.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1111	419G1601.D	RINSE	1	NO MANUAL INTEGRATION
1132	419G1602.D	RINSE	1	NO MANUAL INTEGRATION
1153	419G1603.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1215	419G1604.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION
1236	419G1605.D	SHG0207-ICV1	1	o-terph,
1256	419G1606.D	SHG0207-ICV2	1	Triacon Surr,
1317	419G1607.D	BHG0329-BLK1	1	NO MANUAL INTEGRATION
1338	419G1608.D	BHG0329-BS1	1	o-terph,
1405	419G1609.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1426	419G1610.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION
1446	419G1611.D	SHG0207-ICV1	1	o-terph,
1508	419G1612.D	SHG0207-ICV2	1	Triacon Surr,
1529	419G1613.D	BHG0329-BLK1	1	NO MANUAL INTEGRATION
1556	419G1614.D	R1	1	NO MANUAL INTEGRATION
1617	419G1615.D	R2	1	Triacon Surr,
1638	419G1616.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1659	419G1617.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION

Instrument: fid4a.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1719	419G1618.D	SHG0207-ICV1	1	NO MANUAL INTEGRATION
1740	419G1619.D	SHG0207-ICV2	1	NO MANUAL INTEGRATION
1805	419G1620.D	R1	1	NO MANUAL INTEGRATION
1825	419G1621.D	R2	1	NO MANUAL INTEGRATION
1846	419G1622.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1906	419G1623.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION
1928	419G1624.D	SHG0207-CAL1	1	C10, C12, o-terph,
1949	419G1625.D	SHG0207-CAL2	1	o-terph,
2009	419G1626.D	SHG0207-CAL3	1	o-terph,
2030	419G1627.D	SHG0207-CAL4	1	o-terph,
2050	419G1628.D	SHG0207-CAL5	1	o-terph,
2111	419G1629.D	SHG0207-CAL6	1	o-terph,
2131	419G1630.D	SHG0207-CAL7	1	Triacon Surr,
2152	419G1631.D	SHG0207-CAL8	1	Triacon Surr,
2212	419G1632.D	SHG0207-CAL9	1	Triacon Surr,
2232	419G1633.D	SHG0207-CALA	1	Triacon Surr,
2253	419G1634.D	SHG0207-CALB	1	Triacon Surr,
2311	419G1635.D	SHG0207-CALC	1	Triacon Surr,

Instrument: fid4a.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
2336	419G1636.D	SHG0207-CALD	1	Triacon Surr,
2356	419G1637.D	SHG0207-CALE	1	Triacon Surr,
0017	419G1638.D	SHG0207-CALF	1	Triacon Surr,
0037	419G1639.D	SHG0207-CALG	1	Triacon Surr,
0058	419G1640.D	SHG0207-CALH	1	Triacon Surr,
0118	419G1641.D	SHG0207-CALI	1	Triacon Surr,
0139	419G1642.D	SHG0207-SCV1	1	o-terph,
0159	419G1643.D	SHG0207-SCV2	1	Triacon Surr,
0219	419G1644.D	SHG0207-SCV3	1	Triacon Surr,

Security Status Report

Date: 19-Jul-2019 07:45

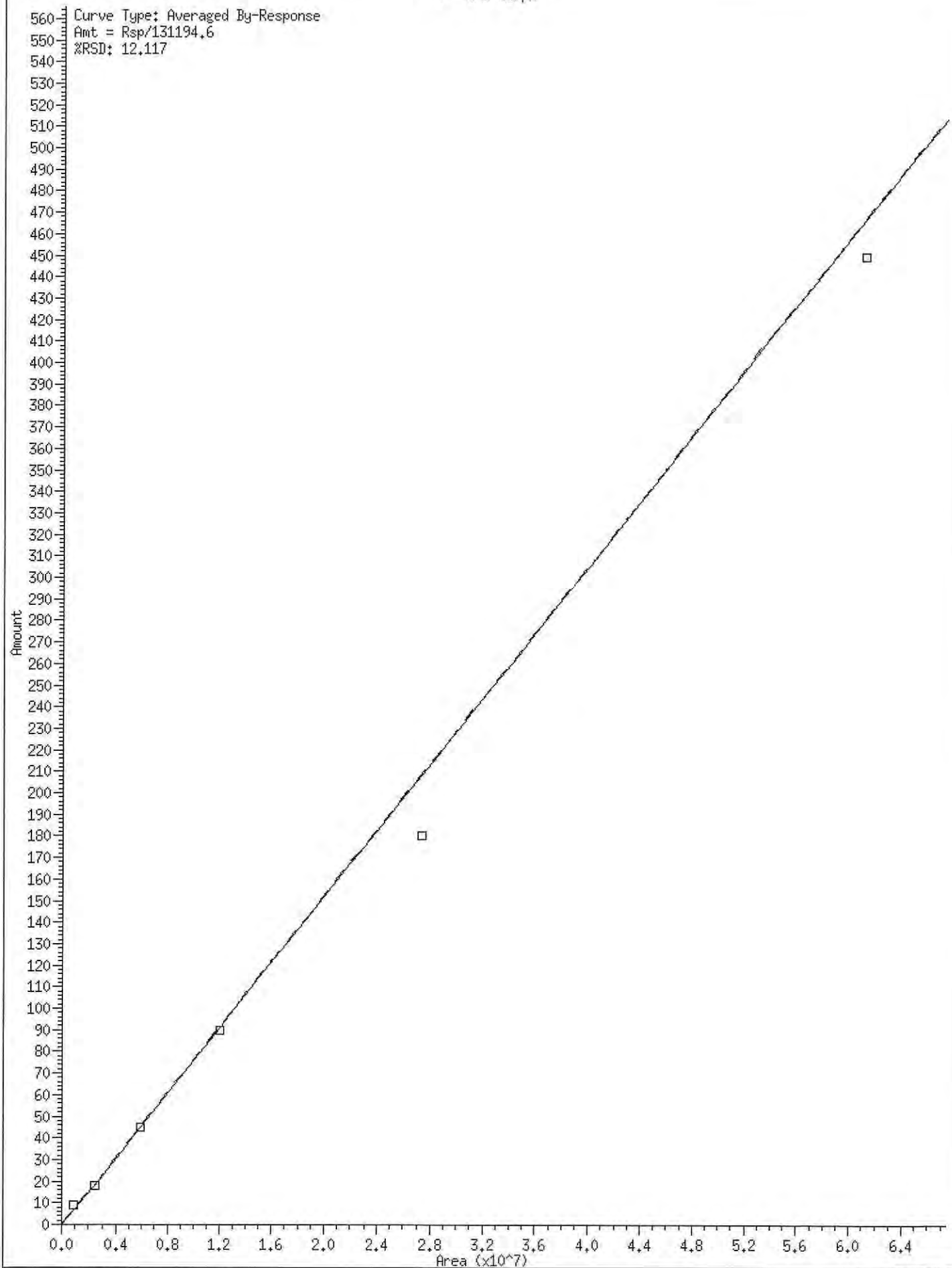
419G1601.D	Data Locked	van,	17-Jul-2019	09:56
419G1602.D	Data Locked	van,	17-Jul-2019	09:56
419G1603.D	Data Locked	van,	17-Jul-2019	09:56
419G1604.D	Data Locked	van,	17-Jul-2019	09:56
419G1605.D	Data Locked	van,	17-Jul-2019	09:56
419G1606.D	Data Locked	van,	17-Jul-2019	09:56
419G1607.D	Data Locked	van,	17-Jul-2019	09:56
419G1608.D	Data Locked	van,	17-Jul-2019	09:56
419G1609.D	Data Locked	van,	17-Jul-2019	09:56
419G1610.D	Data Locked	van,	17-Jul-2019	09:56
419G1611.D	Data Locked	van,	17-Jul-2019	09:56
419G1612.D	Data Locked	van,	17-Jul-2019	09:56
419G1613.D	Data Locked	van,	17-Jul-2019	09:56
419G1614.D	Data Locked	van,	17-Jul-2019	09:56
419G1615.D	Data Locked	van,	17-Jul-2019	09:56
419G1616.D	Data Locked	van,	17-Jul-2019	09:56
419G1617.D	Data Locked	van,	17-Jul-2019	09:56
419G1618.D	Data Locked	van,	17-Jul-2019	09:56
419G1619.D	Data Locked	van,	17-Jul-2019	09:56
419G1620.D	Data Locked	van,	17-Jul-2019	09:56
419G1621.D	Data Locked	van,	17-Jul-2019	09:56
419G1622.D	Data Locked	van,	17-Jul-2019	09:56
419G1623.D	Data Locked	van,	17-Jul-2019	09:56
419G1624.D	Data Locked	van,	17-Jul-2019	09:56
419G1625.D	Data Locked	van,	17-Jul-2019	09:56
419G1626.D	Data Locked	van,	17-Jul-2019	09:56
419G1627.D	Data Locked	van,	17-Jul-2019	09:56
419G1628.D	Data Locked	van,	17-Jul-2019	09:56
419G1629.D	Data Locked	van,	17-Jul-2019	09:56
419G1630.D	Data Locked	van,	17-Jul-2019	09:56
419G1631.D	Data Locked	van,	17-Jul-2019	09:56
419G1632.D	Data Locked	van,	17-Jul-2019	09:56
419G1633.D	Data Locked	van,	17-Jul-2019	09:56
419G1634.D	Data Locked	van,	17-Jul-2019	09:56
419G1635.D	Data Locked	van,	17-Jul-2019	09:56
419G1636.D	Data Locked	van,	17-Jul-2019	09:56
419G1637.D	Data Locked	van,	17-Jul-2019	09:56
419G1638.D	Data Locked	van,	17-Jul-2019	09:56
419G1639.D	Data Locked	van,	17-Jul-2019	09:56
419G1640.D	Data Locked	van,	17-Jul-2019	09:56
419G1641.D	Data Locked	van,	17-Jul-2019	09:56
419G1642.D	Data Locked	van,	17-Jul-2019	09:56
419G1643.D	Data Locked	van,	17-Jul-2019	09:56
419G1644.D	Data Locked	van,	17-Jul-2019	09:56

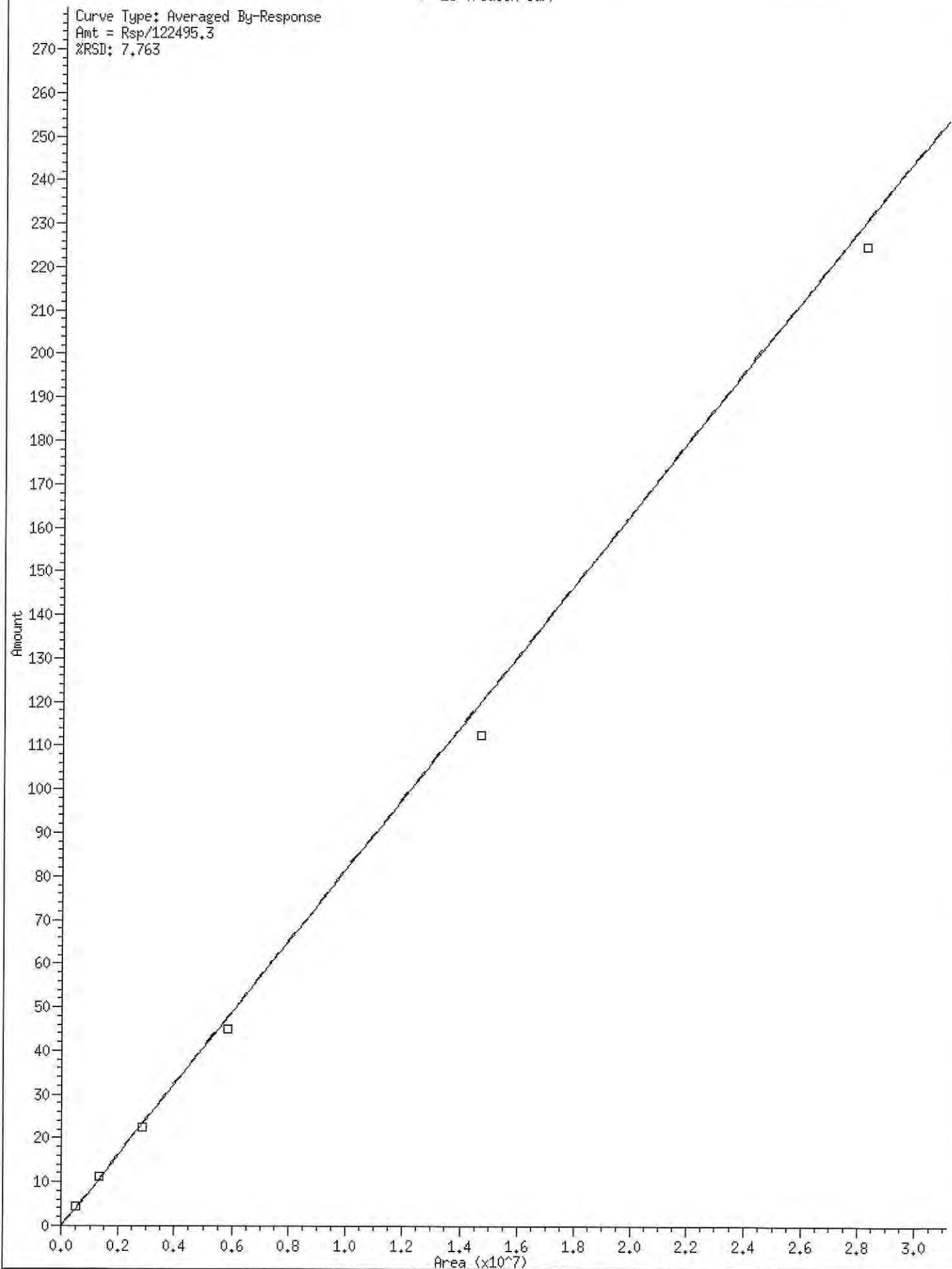
+

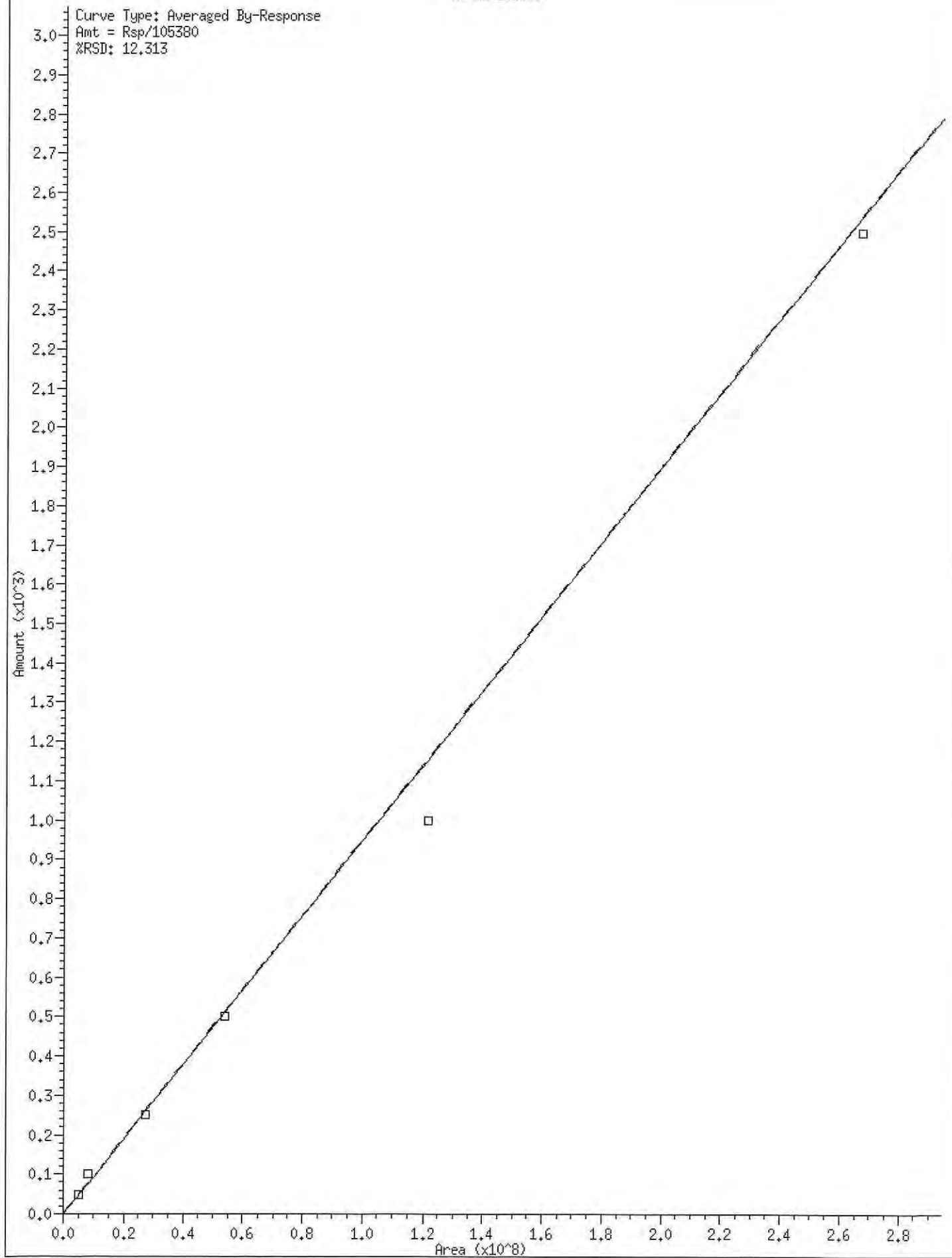
+

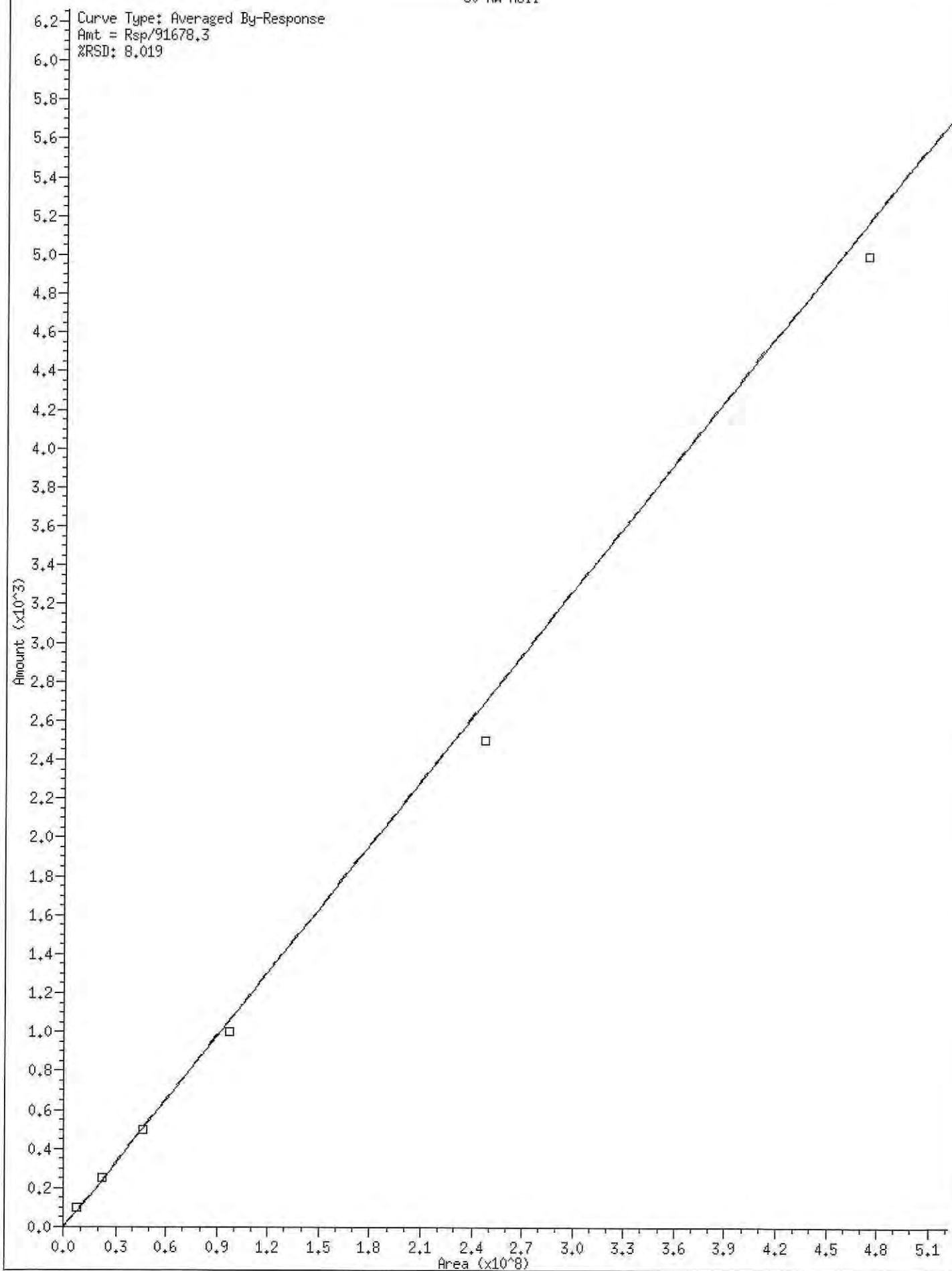
+

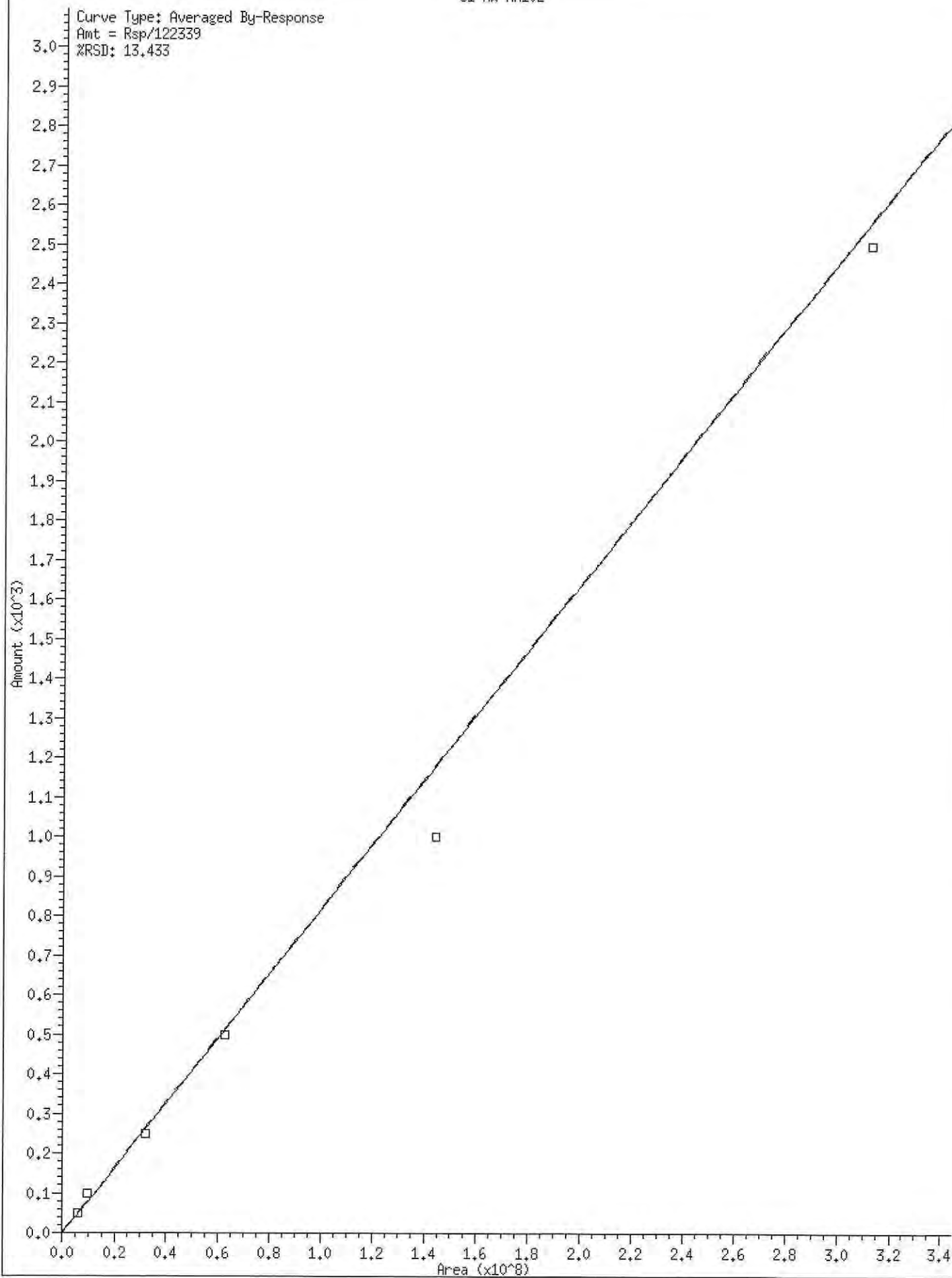
+

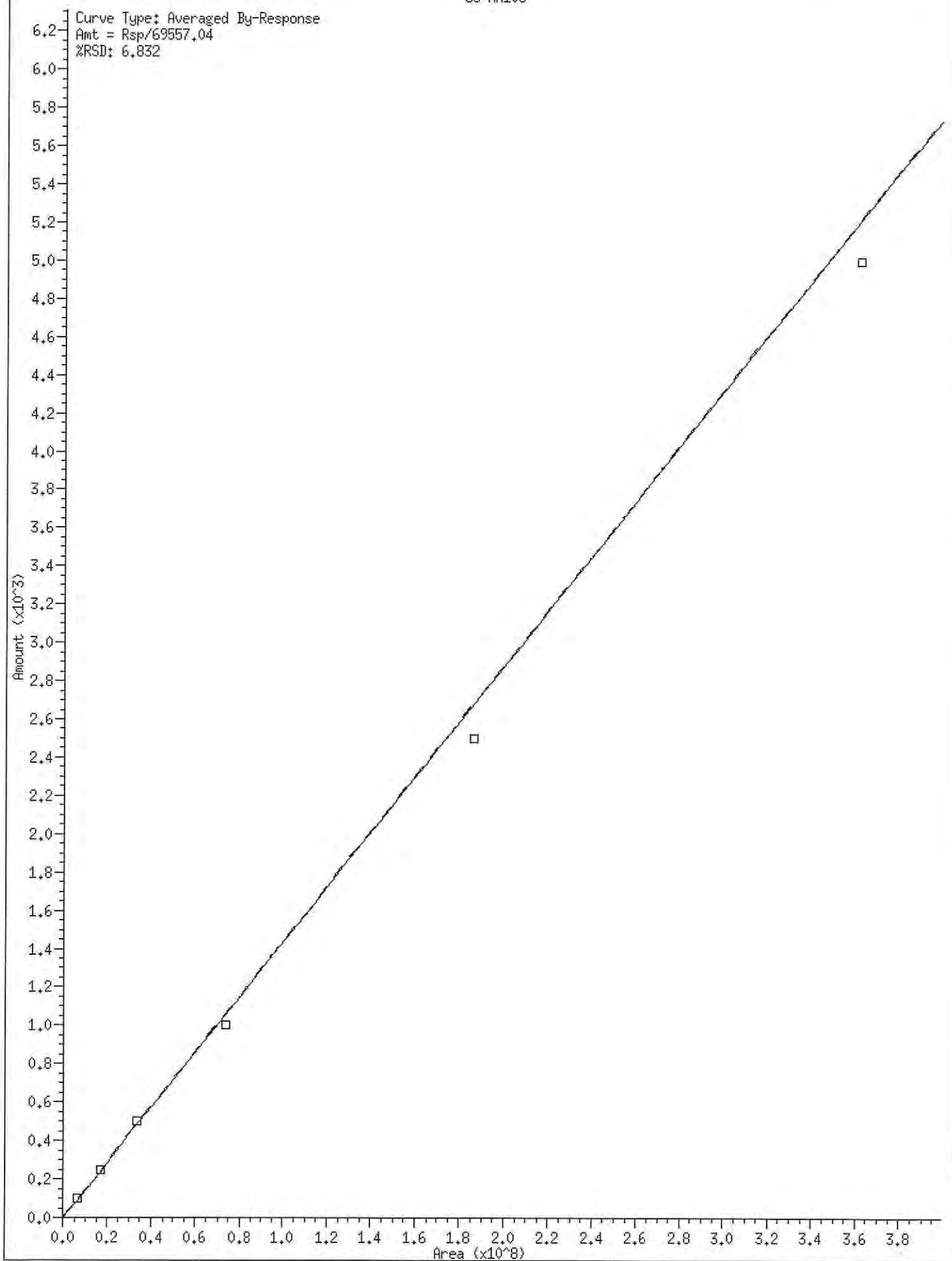


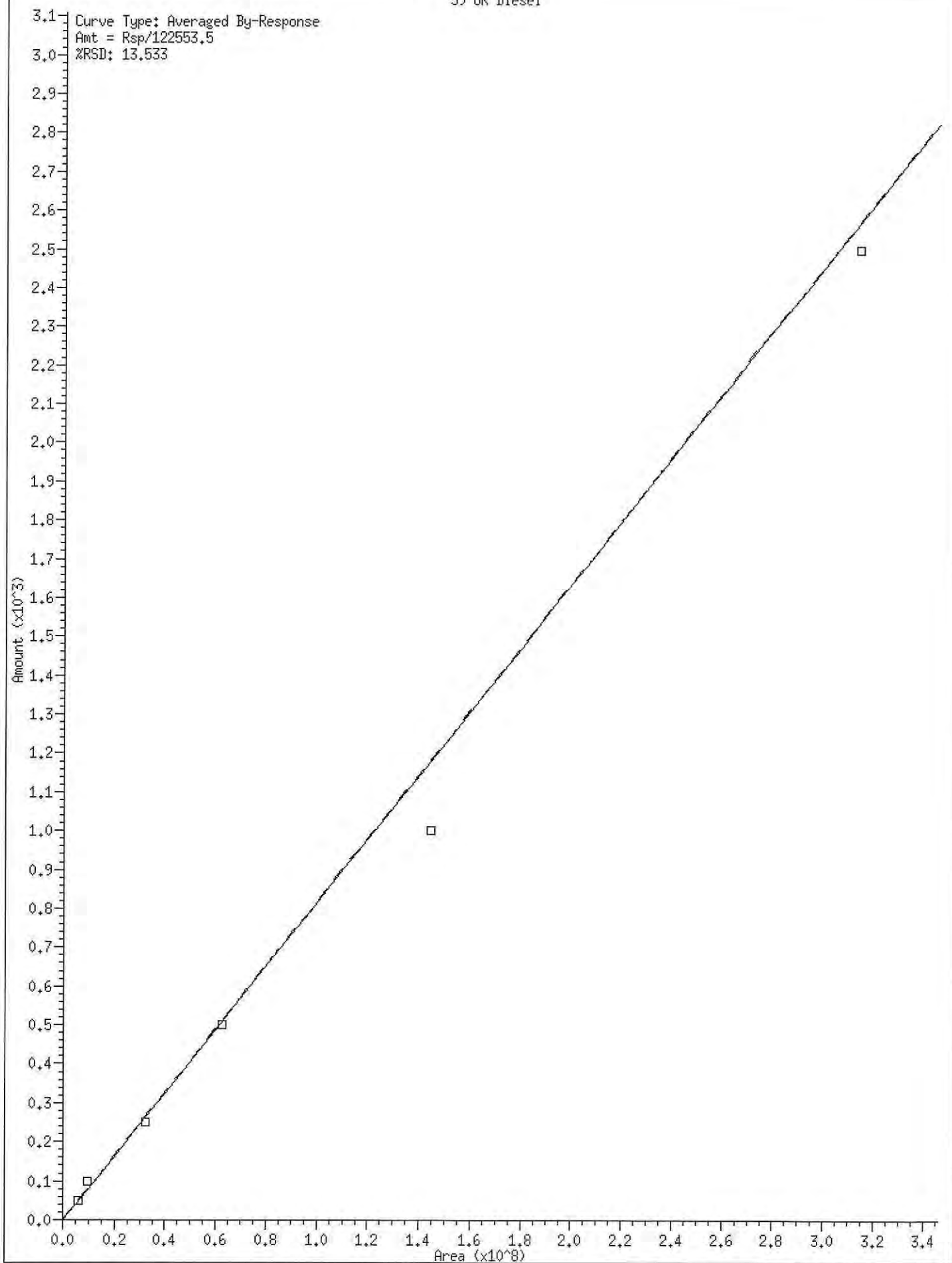


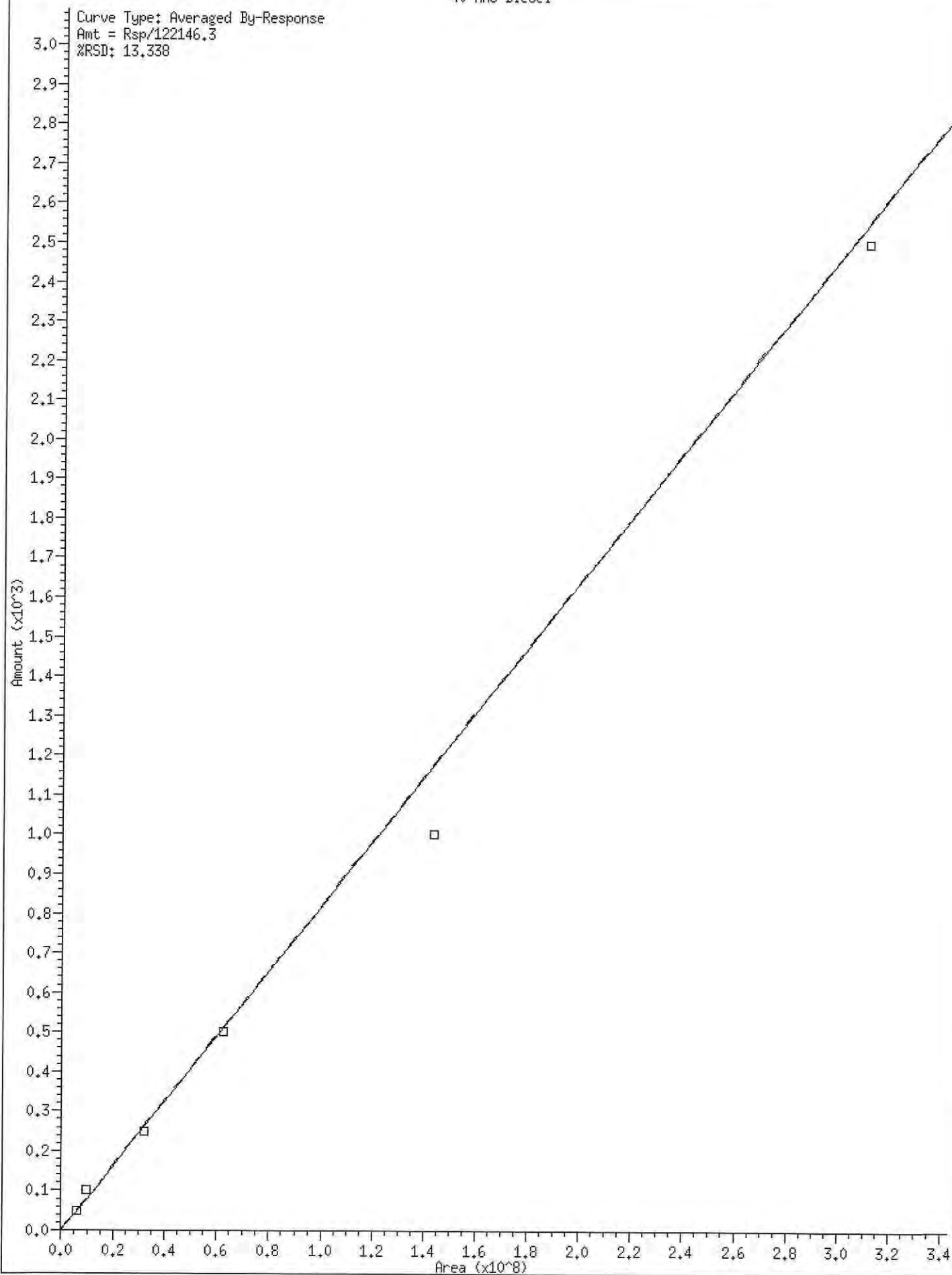












ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem2\fid4a.i\20190716.b\FID4TPH.m
Batch File: \\target\share\chem2\fid4a.i\20190716.b
Inst ID: fid4a.i

ID:	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
FILENAME:	419G1624	419G1625	419G1626	419G1627	419G1628	419G1629	419G1630	419G1631	419G1632	419G1633
INJ. DATE:	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019
INJ. TIME:	19:28	19:49	20:09	20:30	20:50	21:11	21:31	21:52	22:12	22:32

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
1 Toluene	1.755	1.754	1.757	1.757	1.759	1.757	1.759	1.756	1.757	1.757
38 NewCpnd_31	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++
35 Mineral Oil	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++
41 Mineral Spirits	++++	++++	++++	++++	++++	++++	++++	++++	++++	++++
2 C8	1.970	1.970	1.974	1.973	1.975	1.971	1.972	1.971	1.971	1.970
3 C10	3.149	3.145	3.135	3.124	3.120	3.116	3.122	3.116	3.116	3.113
4 C12	4.074	4.044	4.060	4.050	4.046	4.047	++++	++++	++++	++++
5 C14	++++	4.814	4.824	4.817	4.829	4.830	++++	++++	++++	4.814
6 C16	++++	5.479	5.485	5.483	5.480	5.485	++++	++++	++++	++++
7 C18	++++	6.069	6.081	6.080	6.081	6.087	6.060	6.045	6.038	6.038
8 o-terph	6.302	6.280	6.269	6.274	6.288	6.309	++++	++++	++++	6.278
9 C20	6.685	6.671	6.677	6.659	6.650	6.654	++++	++++	6.670	6.664
10 C22	++++	7.177	7.223	7.202	7.226	7.217	7.175	7.224	7.221	7.230
11 C24	++++	++++	7.786	7.760	7.767	7.785	7.781	7.773	7.776	7.784
12 C25	++++	++++	8.011	++++	8.077	8.037	8.051	8.050	8.050	8.062
13 C26	++++	++++	++++	8.321	8.302	8.315	8.306	8.315	8.313	8.322
14 C28	++++	++++	++++	++++	++++	8.812	8.825	8.826	8.827	8.829

Reviewer 1
Reviewer 2

Date:
Date:

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem2\fid4a.i\20190716.b\FID4TPH.m

Batch File: \\target\share\chem2\fid4a.i\20190716.b

Inst ID: fid4a.i

Compound	RT01	RT02	RT03	RT04	RT05	RT06	RT07	RT08	RT09	RT10
\$ 15 Triacon Surr	+++++	+++++	+++++	+++++	+++++	+++++	9.311	9.304	9.309	9.317
16 C32	+++++	+++++	+++++	+++++	+++++	+++++	9.767	9.771	9.764	9.766
17 C34	+++++	+++++	+++++	+++++	+++++	+++++	10.196	10.202	10.202	10.209
18 Filter Peak	+++++	+++++	+++++	+++++	+++++	+++++	12.167	12.195	12.197	12.161
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
19 C36	+++++	+++++	+++++	+++++	+++++	+++++	10.614	10.610	10.615	10.629
20 C38	+++++	11.014	+++++	+++++	11.021	10.996	11.017	11.008	11.007	11.042
21 C40	+++++	+++++	+++++	+++++	+++++	+++++	11.427	11.422	11.421	11.469
29 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
37 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
34 Jet A	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
30 NW Mol1	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
31 NW AK102	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
32 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
33 AK103	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
36 ABunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
39 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
40 NAS Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem2\fid4a.i\20190716.b\FID4TPH.m
Batch File: \\target\share\chem2\fid4a.i\20190716.b
Inst ID: fid4a.i

ID:	RT11	RT12	RT13	RT14	RT15	RT16	RT17	RT18						
FILENAME:	419G1634	419G1635	419G1636	419G1637	419G1638	419G1639	419G1640	419G1641						
INJ. DATE:	16-JUL-2019	16-JUL-2019	16-JUL-2019	16-JUL-2019	17-JUL-2019	17-JUL-2019	17-JUL-2019	17-JUL-2019						
INJ. TIME:	22:53	23:14	23:36	23:56	00:17	00:37	00:58	01:18						
Compound	RT11	RT12	RT13	RT14	RT15	RT16	RT17	RT18	EXPEC RT	RT WINDOW	AVG RT	STD DEV		
1 Toluene	1.757	1.758	1.759	1.756	1.758	1.759	1.762	1.758	1.777	1.677-1.877	1.760	0.009		
38 NewCpnd_31	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++		
35 Mineral Oil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.015	0.965-1.065	+++++	+++++		
41 Mineral Spirits	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++		
2 C8	1.971	1.971	1.972	1.970	1.971	1.973	1.973	1.957	1.988	1.888-2.088	1.971	0.004		
3 C10	3.112	3.111	+++++	3.121	3.117	3.115	3.112	3.111	3.128	3.078-3.178	3.121	0.012		
4 C12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	4.058	4.008-4.108	4.054	0.011		
5 C14	+++++	4.811	+++++	+++++	+++++	+++++	+++++	4.814	4.828	4.778-4.878	4.819	0.007		
6 C16	+++++	5.482	+++++	+++++	+++++	+++++	5.503	5.498	5.488	5.438-5.538	5.487	0.009		
7 C18	6.117	6.081	+++++	+++++	6.047	6.037	6.098	6.088	6.082	6.032-6.132	6.072	0.024		
8 o-terph	6.273	6.265	+++++	+++++	+++++	+++++	6.265	6.290	6.275	6.225-6.325	6.281	0.015		
9 C20	6.655	6.651	+++++	6.708	6.671	6.660	6.659	6.650	6.661	6.611-6.711	6.666	0.016		
10 C22	7.221	7.219	+++++	7.226	7.225	7.220	7.220	7.217	7.223	7.173-7.273	7.215	0.017		
11 C24	7.771	7.778	7.775	7.779	7.774	7.774	7.774	7.773	7.776	7.726-7.826	7.776	0.007		
12 C25	8.057	8.056	8.065	8.062	8.050	8.050	8.058	8.053	8.054	8.004-8.104	8.053	0.015		
13 C26	8.322	8.318	8.323	8.316	8.316	8.311	8.309	8.315	8.315	8.265-8.365	8.315	0.006		
14 C28	8.822	8.829	8.827	8.826	8.826	8.826	8.822	8.830	8.825	8.775-8.875	8.825	0.005		
15 Triacon Surr	9.338	9.364	9.310	9.305	9.306	9.316	9.337	9.360	9.331	9.281-9.381	9.323	0.021		
16 C32	9.767	9.771	9.768	9.769	9.766	9.760	9.771	9.764	9.768	9.718-9.818	9.767	0.003		
17 C34	10.201	10.203	10.196	10.208	10.201	10.201	10.196	10.201	10.200	10.150-10.250	10.201	0.004		

ARI Labs, Inc.
RETENTION TIME SUMMARY REPORT

Method File: \\target\share\chem2\fid4a.i\20190716.b\FID4TPH.m

Batch File: \\target\share\chem2\fid4a.i\20190716.b

Inst ID: fid4a.i

Compound	RT11	RT12	RT13	RT14	RT15	RT16	RT17	RT18	EXPEC RT	RT WINDOW	AVG RT	STD DEV
18 Filter Peak	12.203	12.203	12.202	12.152	12.200	12.204	12.203	12.201	12.198	12.098-12.298	12.191	0.019
19 C36	10.613	10.609	10.609	10.632	10.613	10.610	10.613	10.614	10.613	10.563-10.663	10.615	0.008
20 C38	11.011	11.010	11.011	11.042	11.007	11.007	11.007	11.005	11.009	10.959-11.059	11.014	0.013
21 C40	11.428	11.419	11.424	11.458	11.423	11.422	11.423	11.415	11.422	11.372-11.472	11.429	0.017
29 NW Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.899	0.849-0.949	+++++	+++++
37 Creosote	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
34 Jet A	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.024	0.974-1.074	+++++	+++++
30 NW Moil	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.885	0.835-0.935	+++++	+++++
31 NW AK102	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.803	0.753-0.853	+++++	+++++
32 Bunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.812	0.762-0.862	+++++	+++++
33 AK103	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.344	1.294-1.394	+++++	+++++
36 ABunker C	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	0.985	0.935-1.035	+++++	+++++
39 OR Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++
40 NAS Diesel	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	1.000	0.950-1.050	+++++	+++++

Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1622.D

Date: 16-JUL-2019 18:46

Client ID:

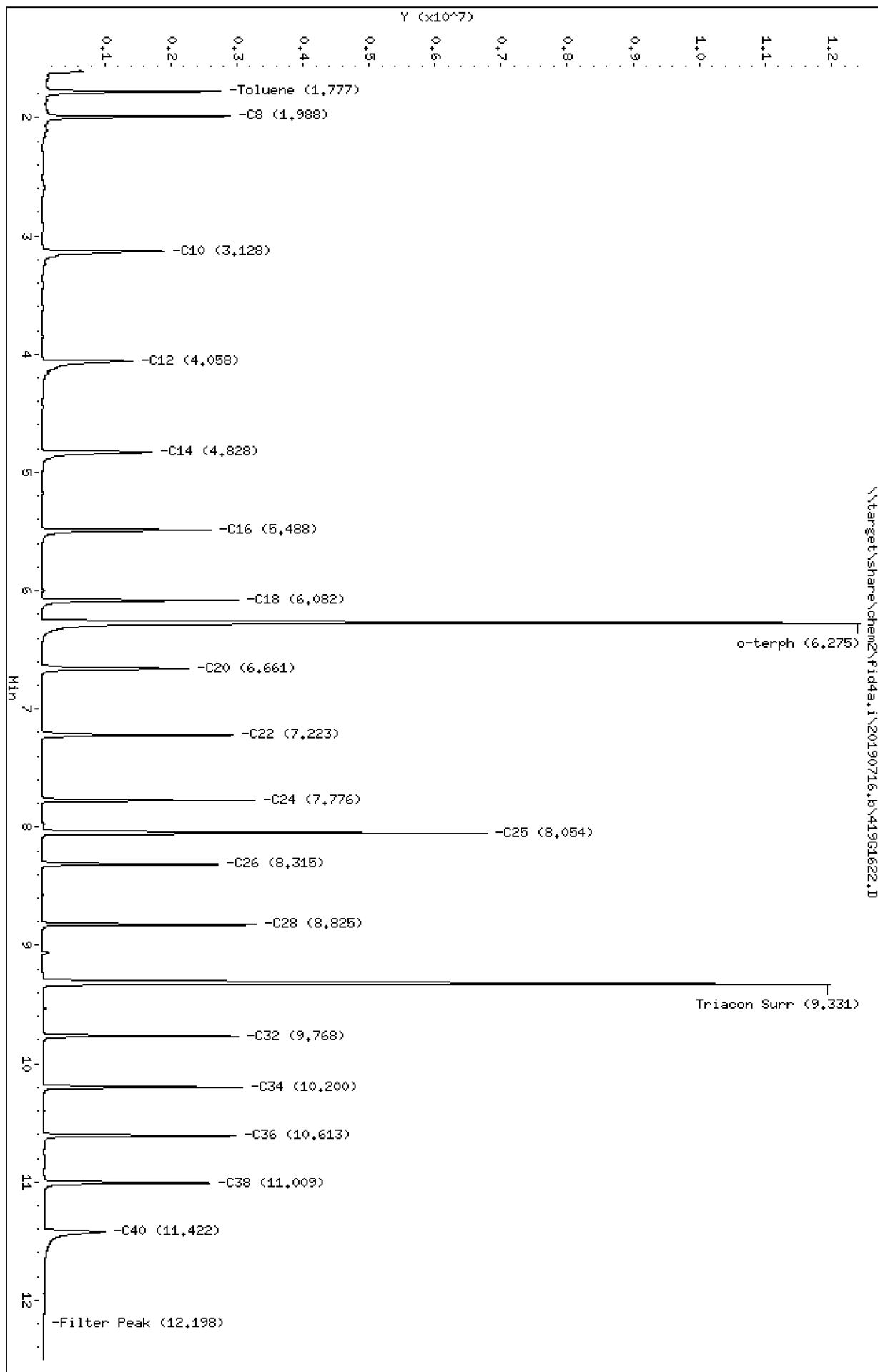
Sample Info: SHG0207-IBL1

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1622.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-IBL1

Client ID:

Injection: 16-JUL-2019 18:46

Dilution Factor: 1

RT Std: 419G1622.D

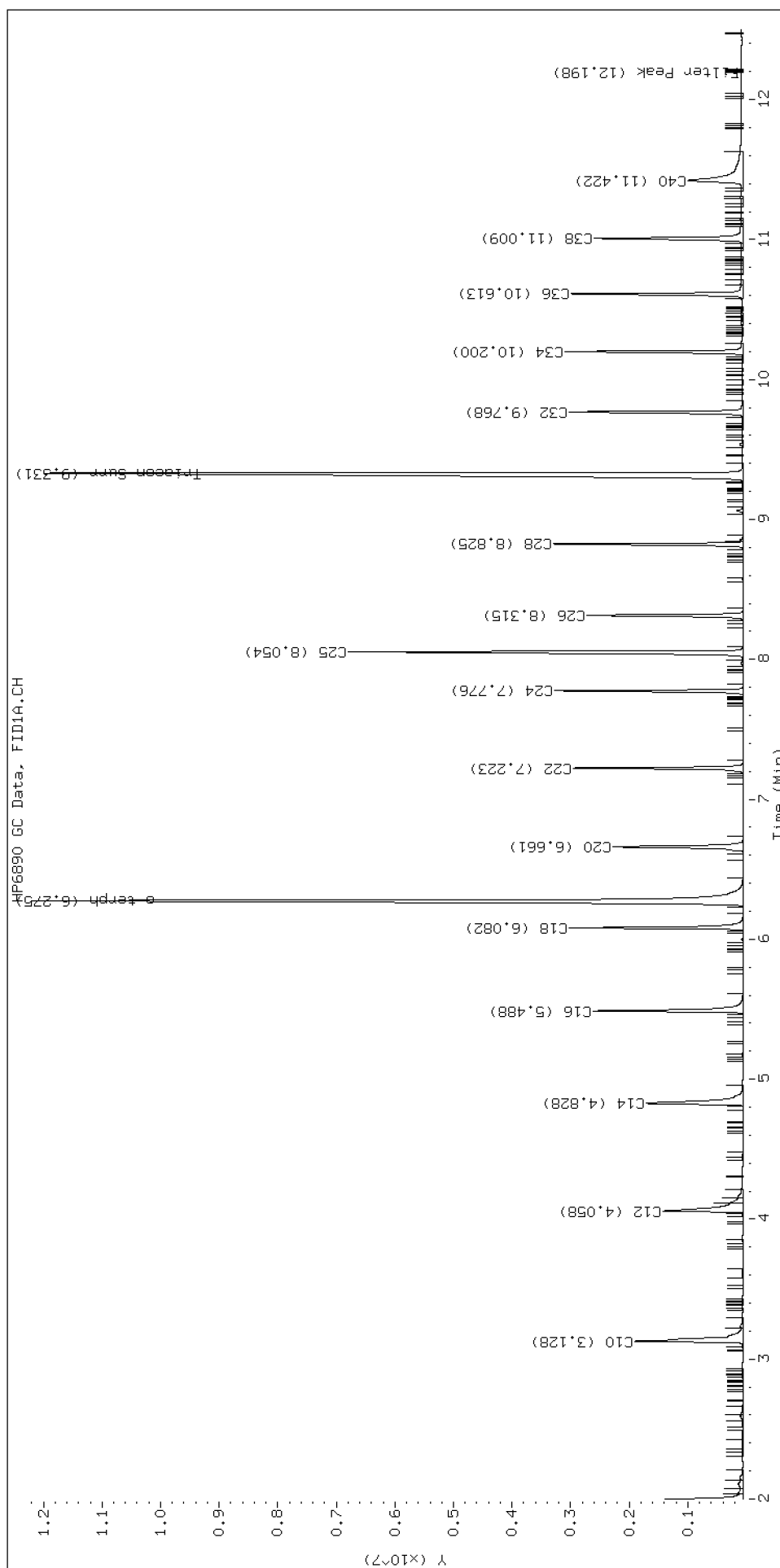
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.988	0.000	2855815	3310949	WATPHD	(C12-C24)	17571343	166.7
C10	3.128	0.000	1843526	3150295	WATPHM	(C24-C38)	25339469	276.4
C12	4.058	0.000	1363177	2475811	AK102	(C10-C25)	23545355	192.5
C14	4.828	0.000	1661344	2981586	AK103	(C25-C36)	21810450	313.6
C16	5.488	0.000	2554243	2936260	OR.DIES	(C10-C28)	35733599	291.6
C18	6.082	0.000	2968054	2806403				
C20	6.661	0.000	2227215	2784548				
C22	7.223	0.000	2894647	2687257				
C24	7.776	0.000	3215941	2641296				
C25	8.054	0.000	6736589	6699435				
C26	8.315	0.000	2669796	2653528				
C28	8.825	0.000	3239452	2739139				
C32	9.768	0.000	2966268	2947040				
C34	10.200	0.000	3037487	2891847				
Filter Peak	12.198	0.000	28650	14272				
C36	10.613	0.000	2935371	3045604				
C38	11.009	0.000	2539349	3073409				
C40	11.422	0.000	951346	3209010				
o-terph	6.275	0.000	12385340	15875295				
Triacon Surr	9.331	-0.000	11924689	16202662	NAS DIES	(C10-C24)	23483695	192.3

Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	15875295	121.0
Triacotane	16202662	132.3

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019



Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1623.D

Date : 16-JUL-2019 19:06

Client ID:

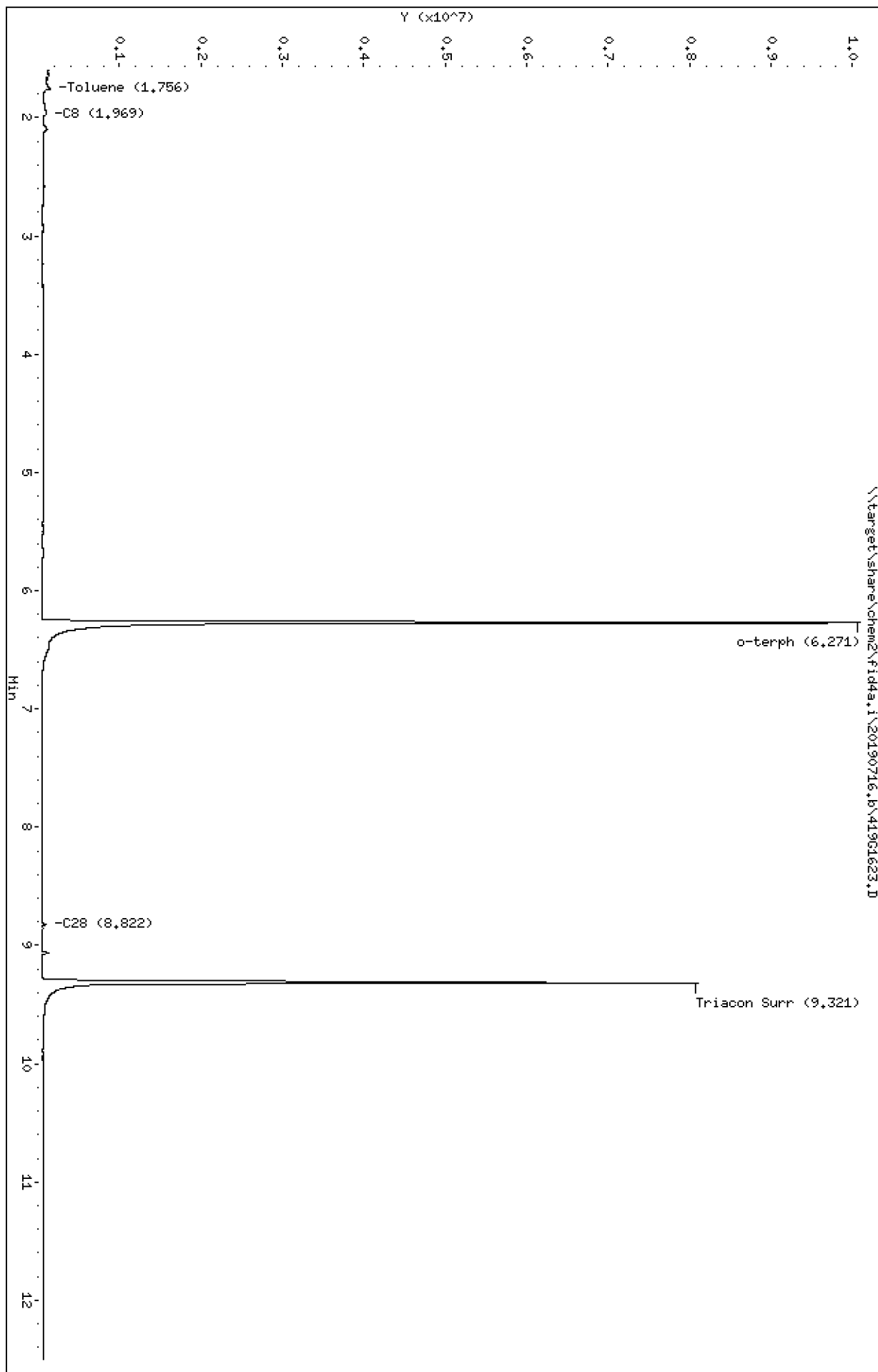
Sample Info: SHG0207-IBL2

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1623.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-IBL2

Client ID:

Injection: 16-JUL-2019 19:06

Dilution Factor: 1

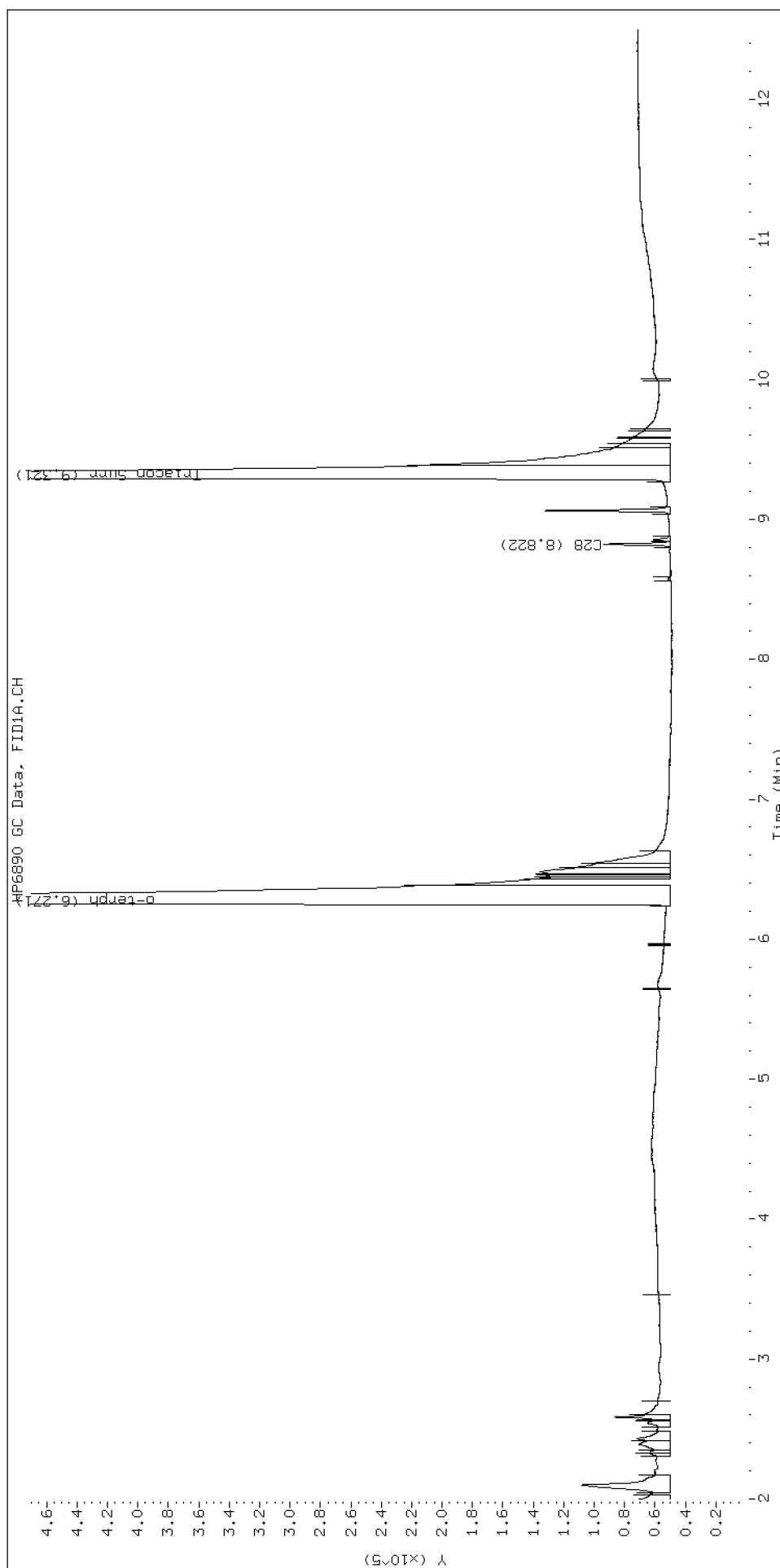
RT Std: 419G1622.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.969	-0.019	49919	185758	WATPHD	(C12-C24)	632353	6.0
C10	----				WATPHM	(C24-C38)	835456	9.1
C12	----				AK102	(C10-C25)	635133	5.2
C14	----				AK103	(C25-C36)	835456	12.0
C16	----				OR.DIES	(C10-C28)	689261	5.6
C18	----							
C20	----							
C22	----							
C24	----							
C25	----							
C26	----							
C28	8.822	-0.003	44426	40427				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.271	-0.004	10045553	13379599				
Triacon Surr	9.321	-0.010	8062007	10518146	NAS DIES	(C10-C24)	635133	5.2
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)								
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)								

Surrogate	Area	Amount
o-Terphenyl	13379599	102.0
Triacotane	10518146	85.9

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019



Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1624.D

Date : 16-JUL-2019 19:28

Client ID:

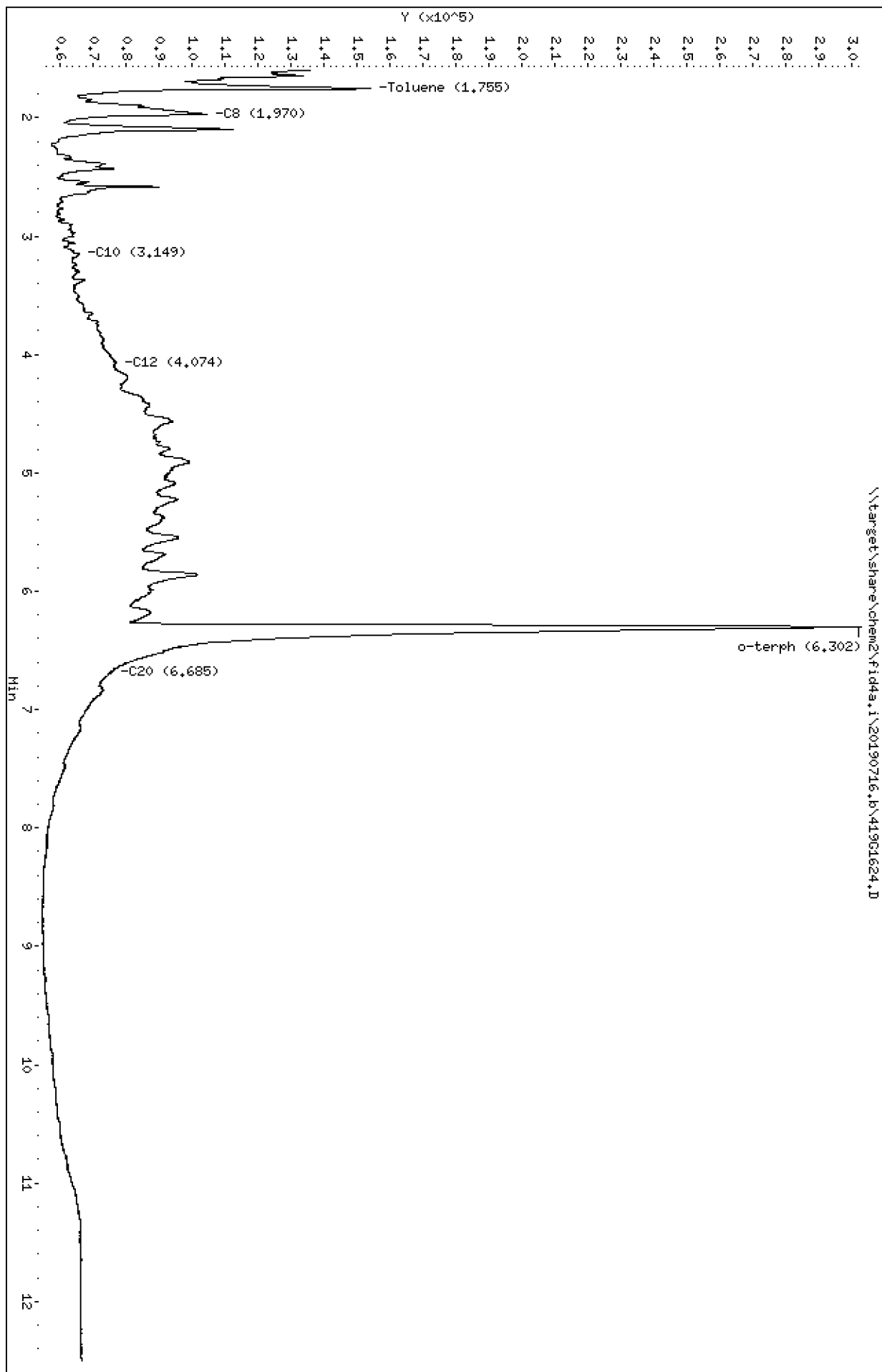
Sample Info: SHG0207-CAL1

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1624.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL1

Client ID:

Injection: 16-JUL-2019 19:28

Dilution Factor: 1

RT Std: 419G1622.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.018	46881	144959	WATPHD	(C12-C24)	5196838	49.3
C10	3.149	0.021	8050	101080	WATPHM	(C24-C38)	0	0.0
C12	4.074	0.016	19144	435016	AK102	(C10-C25)	5878703	48.1
C14	----				AK103	(C25-C36)	0	0.0
C16	----				OR.DIES	(C10-C28)	5878703	48.0
C18	----							
C20	6.685	0.024	18072	16800				
C22	----							
C24	----							
C25	----							
C26	----							
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.302	0.027	218959	925153				
Triacon Surr	----				NAS DIES	(C10-C24)	5878703	48.1

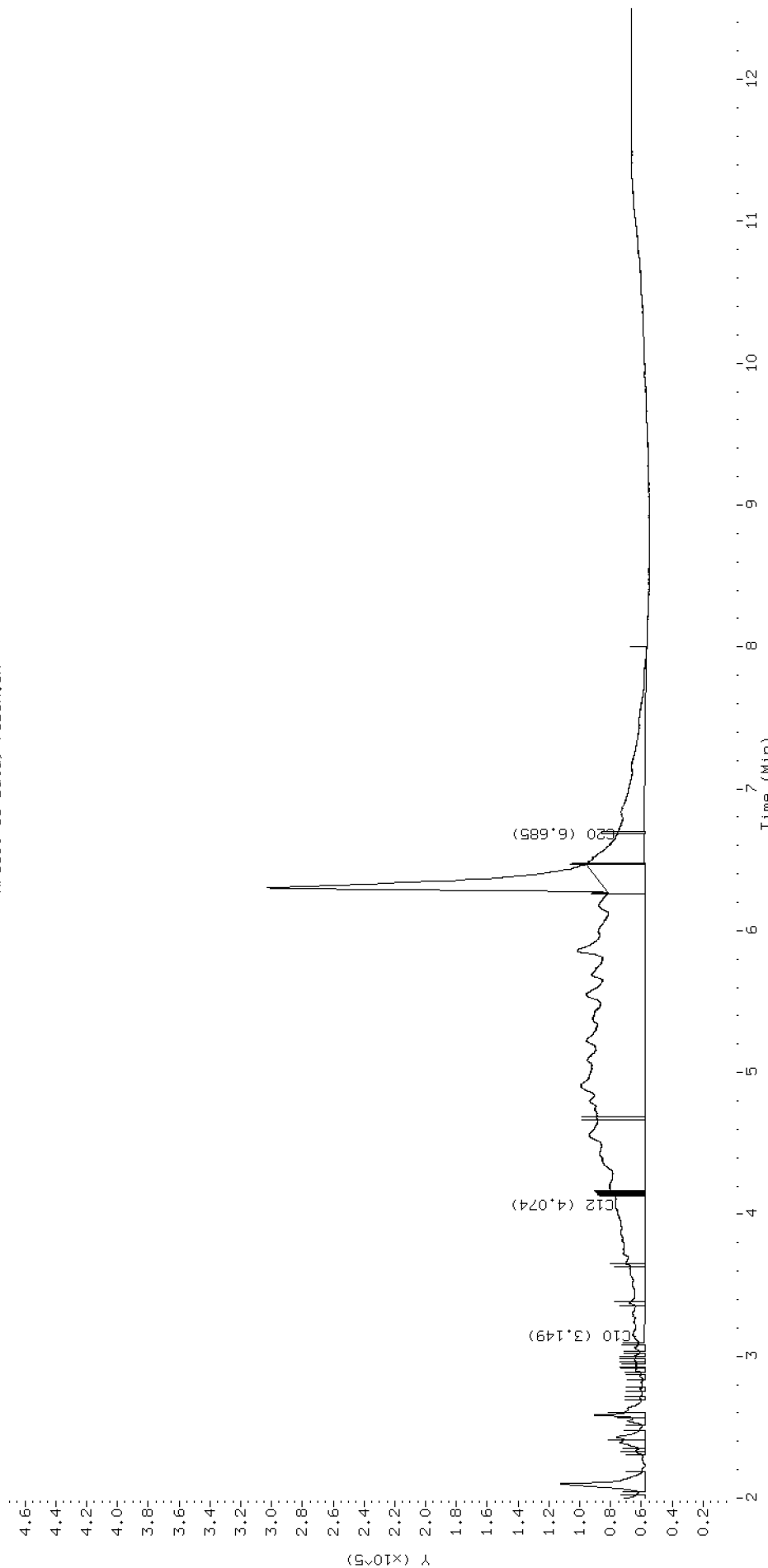
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	925153	7.1 M
Triacontane	0	0.0

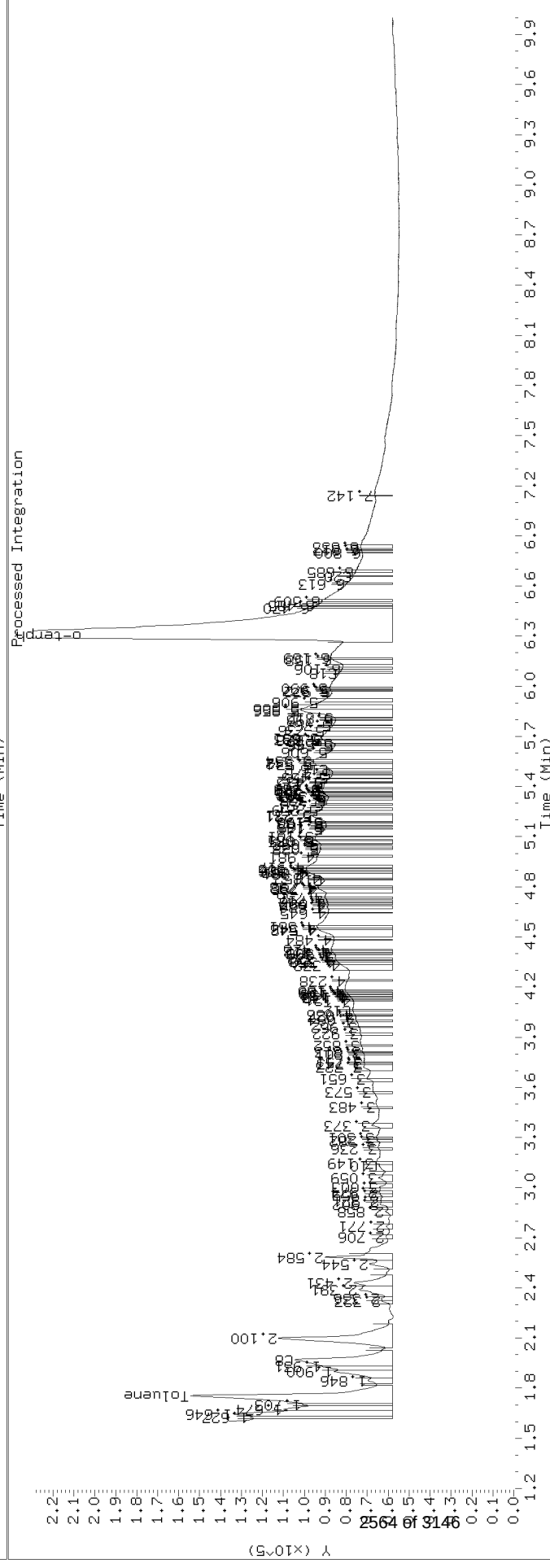
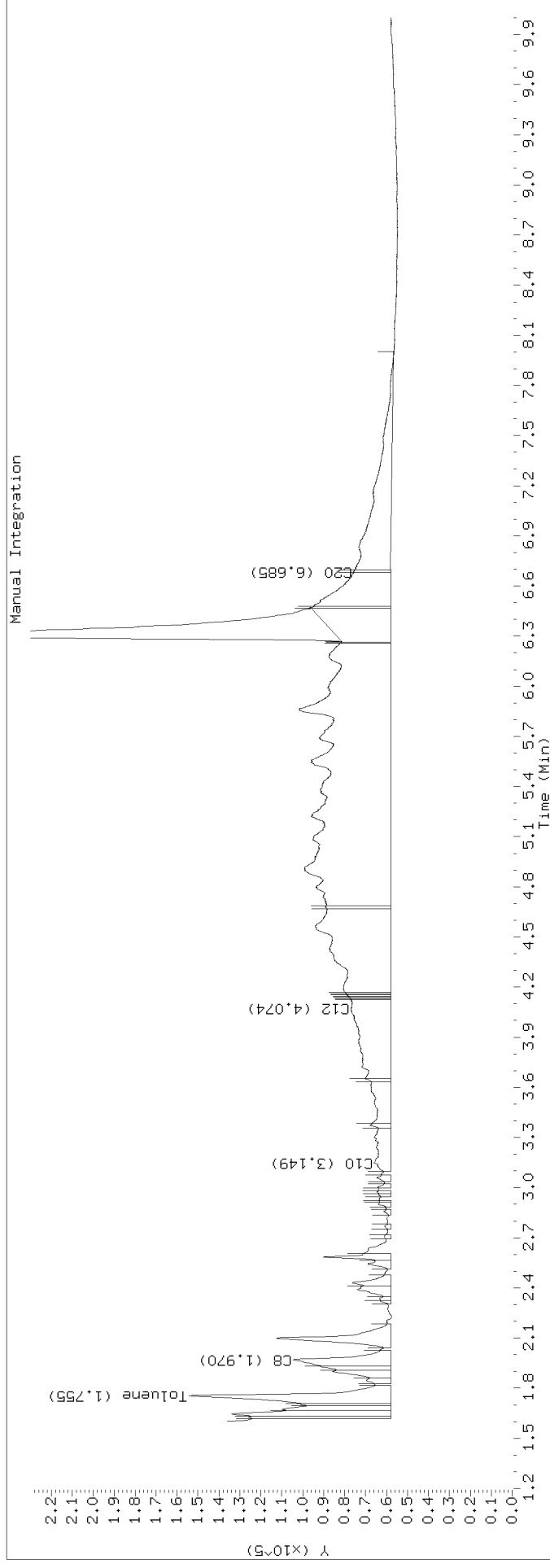
M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019

HP6890 GC Data, FID1A.CH



TPH Manual Integrations Report
Datafile: FID4A, 20190716.b/419G1624.D Injection: 16-JUL-2019 19:28



Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1625.D

Date : 16-JUL-2019 19:49

Client ID:

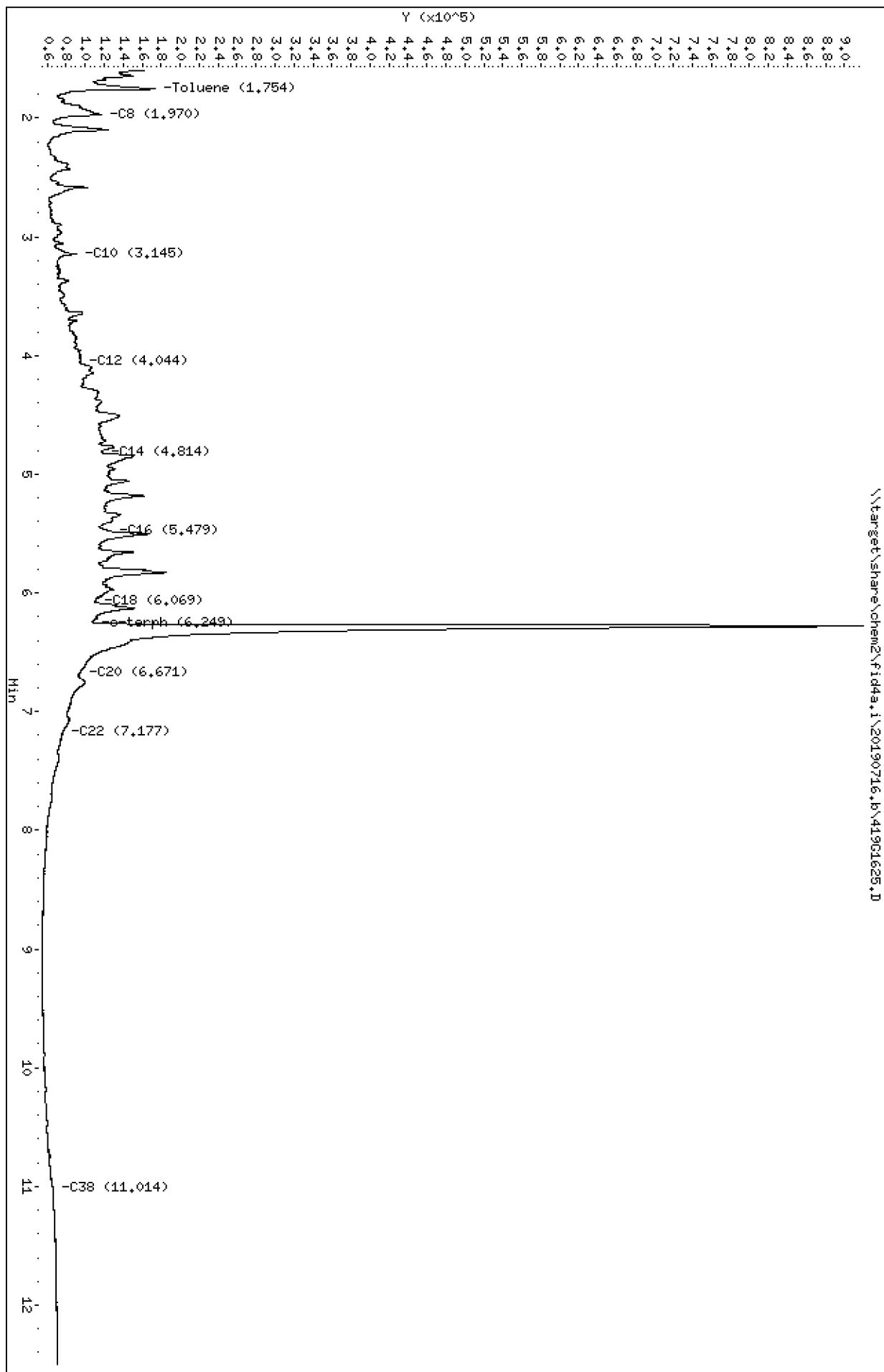
Sample Info: SHG0207-CAL2

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1625.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL2

Client ID:

Injection: 16-JUL-2019 19:49

Dilution Factor: 1

RT Std: 419G1622.D

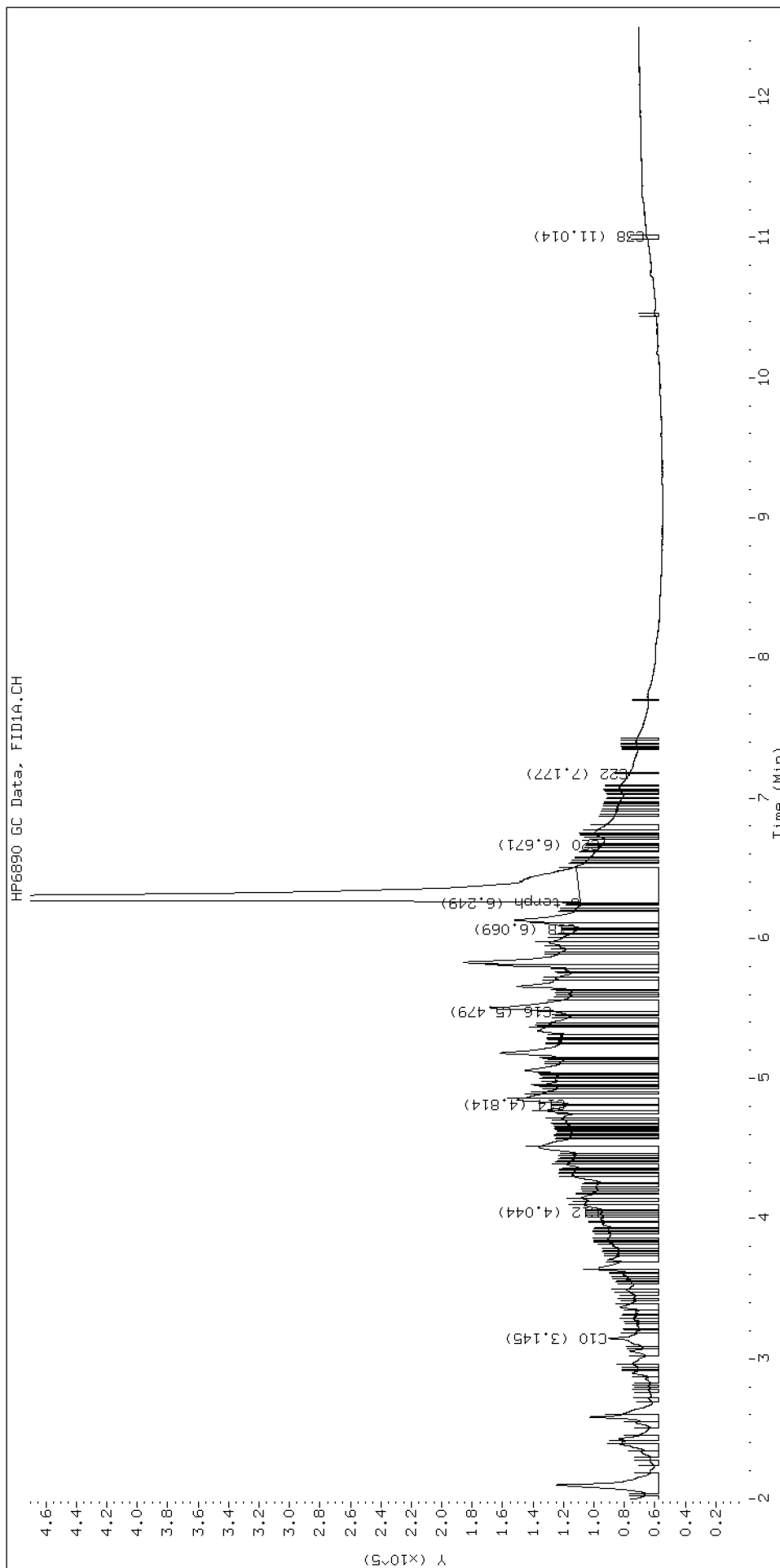
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.017	59629	161058	WATPHD	(C12-C24)	8203981	77.9
C10	3.145	0.018	33052	106891	WATPHM	(C24-C38)	14065	0.2
C12	4.044	-0.013	37629	28014	AK102	(C10-C25)	9387515	76.7
C14	4.814	-0.015	60523	42218	AK103	(C25-C36)	3454	0.0
C16	5.479	-0.009	69177	102856	OR.DIES	(C10-C28)	9387515	76.6
C18	6.069	-0.013	53575	32039				
C20	6.671	0.010	37601	24033				
C22	7.177	-0.046	19036	9408				
C24	----							
C25	----							
C26	----							
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	11.014	0.004	8152	10611				
C40	----							
o-terph	6.280	0.005	810866	2406207				
Triacon Surr	----				NAS DIES	(C10-C24)	9387515	76.9

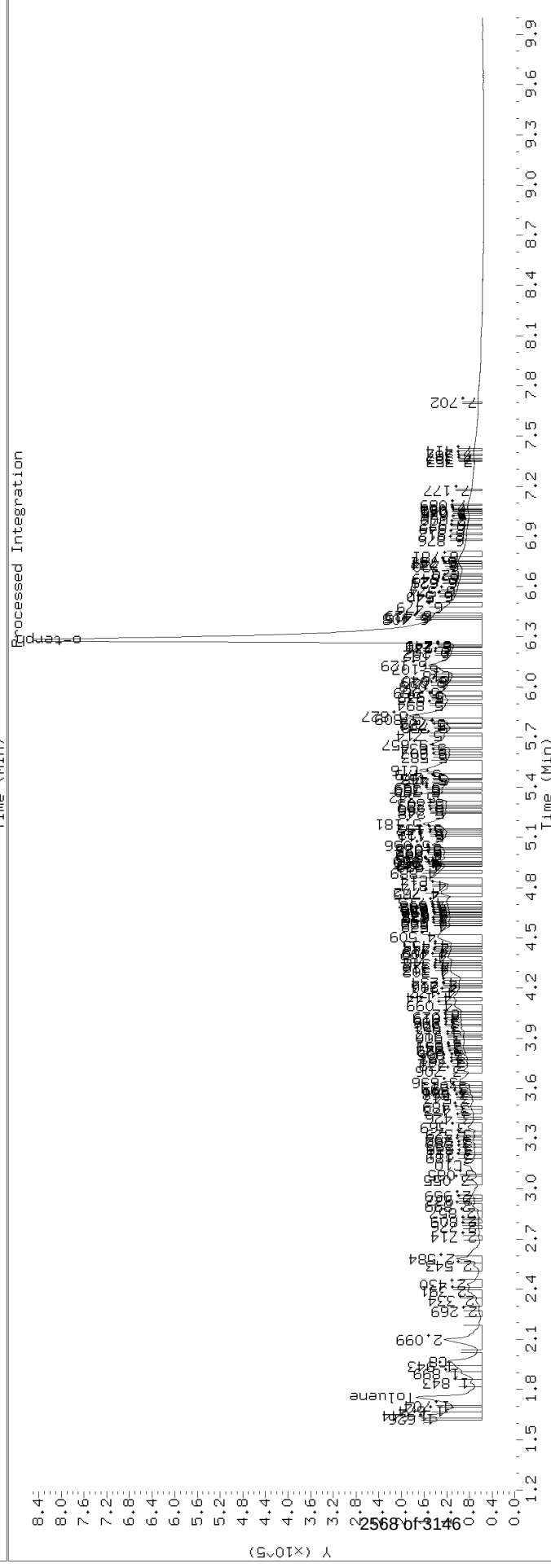
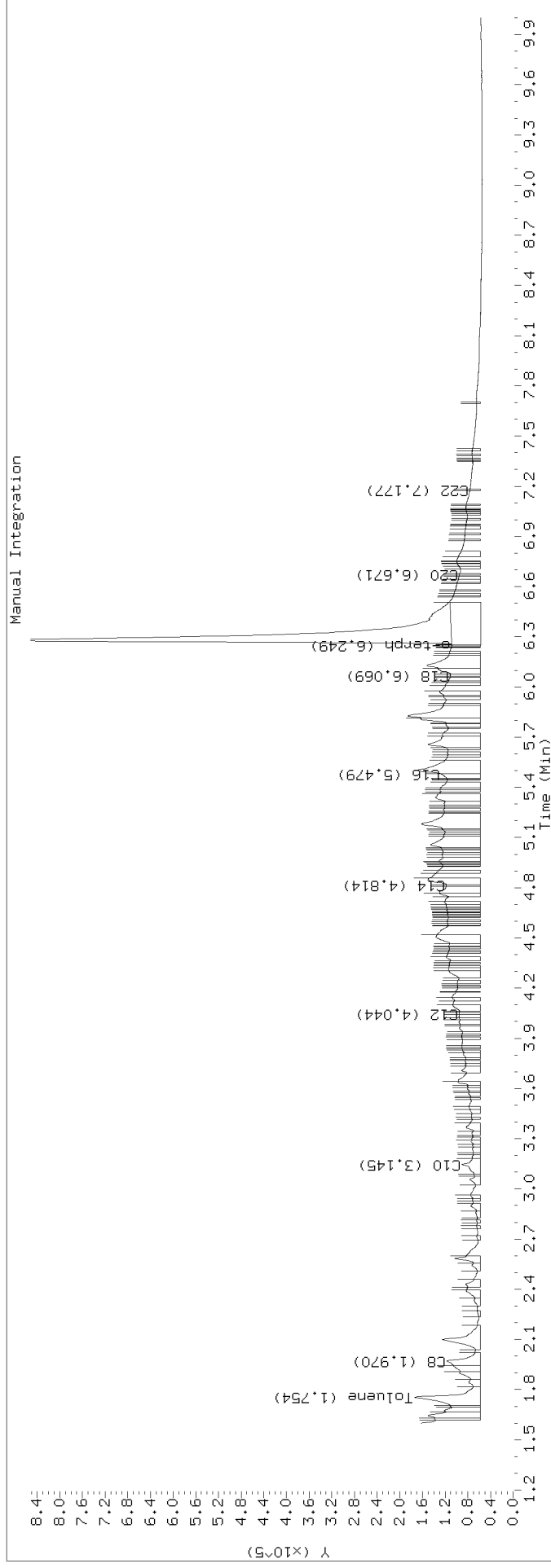
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	2406207	18.3 M
Triacotane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1626.D

Date : 16-JUL-2019 20:09

Client ID:

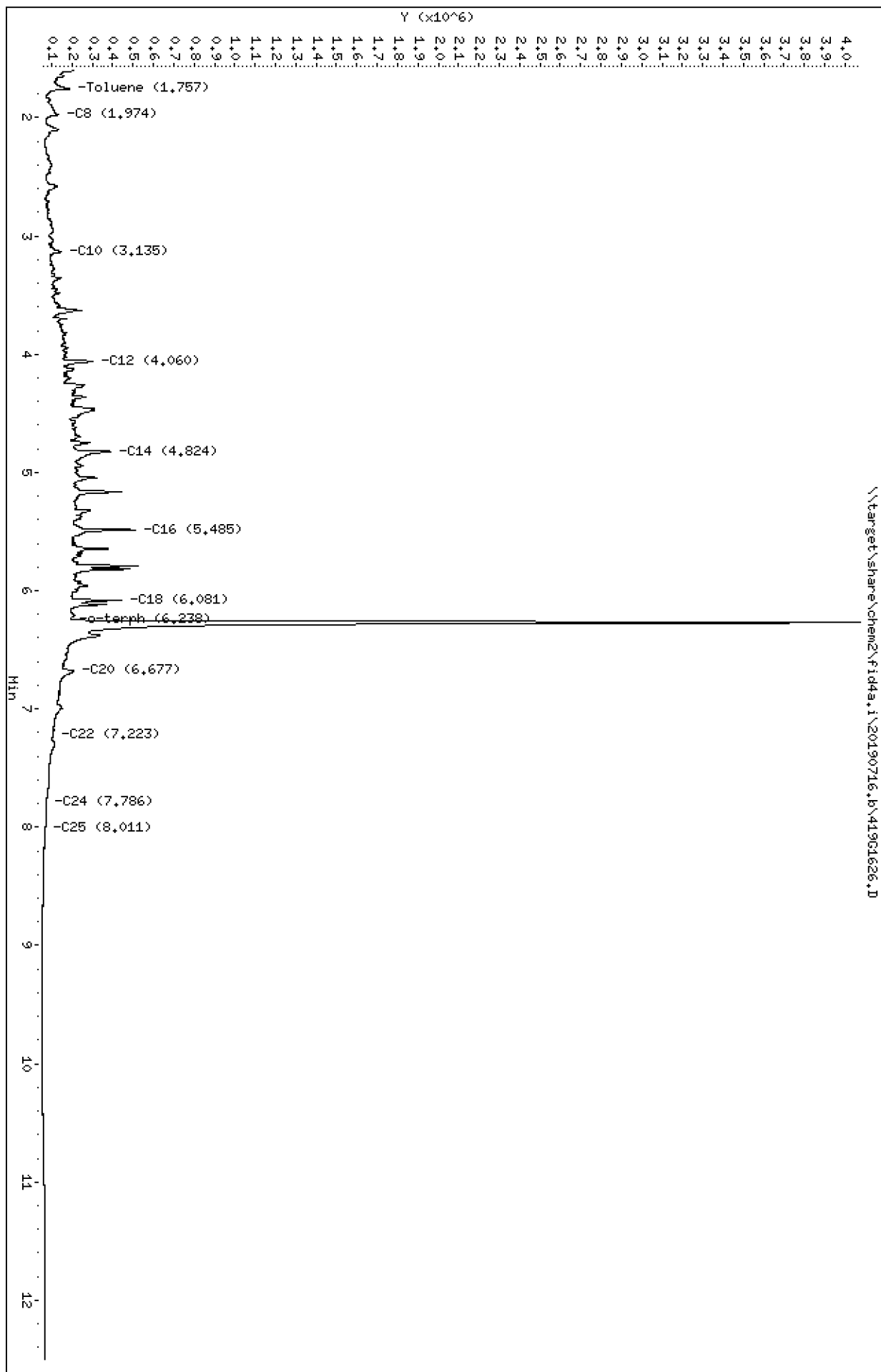
Sample Info: SHG0207-CAL3

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1626.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL3

Client ID:

Injection: 16-JUL-2019 20:09

Dilution Factor: 1

RT Std: 419G1622.D

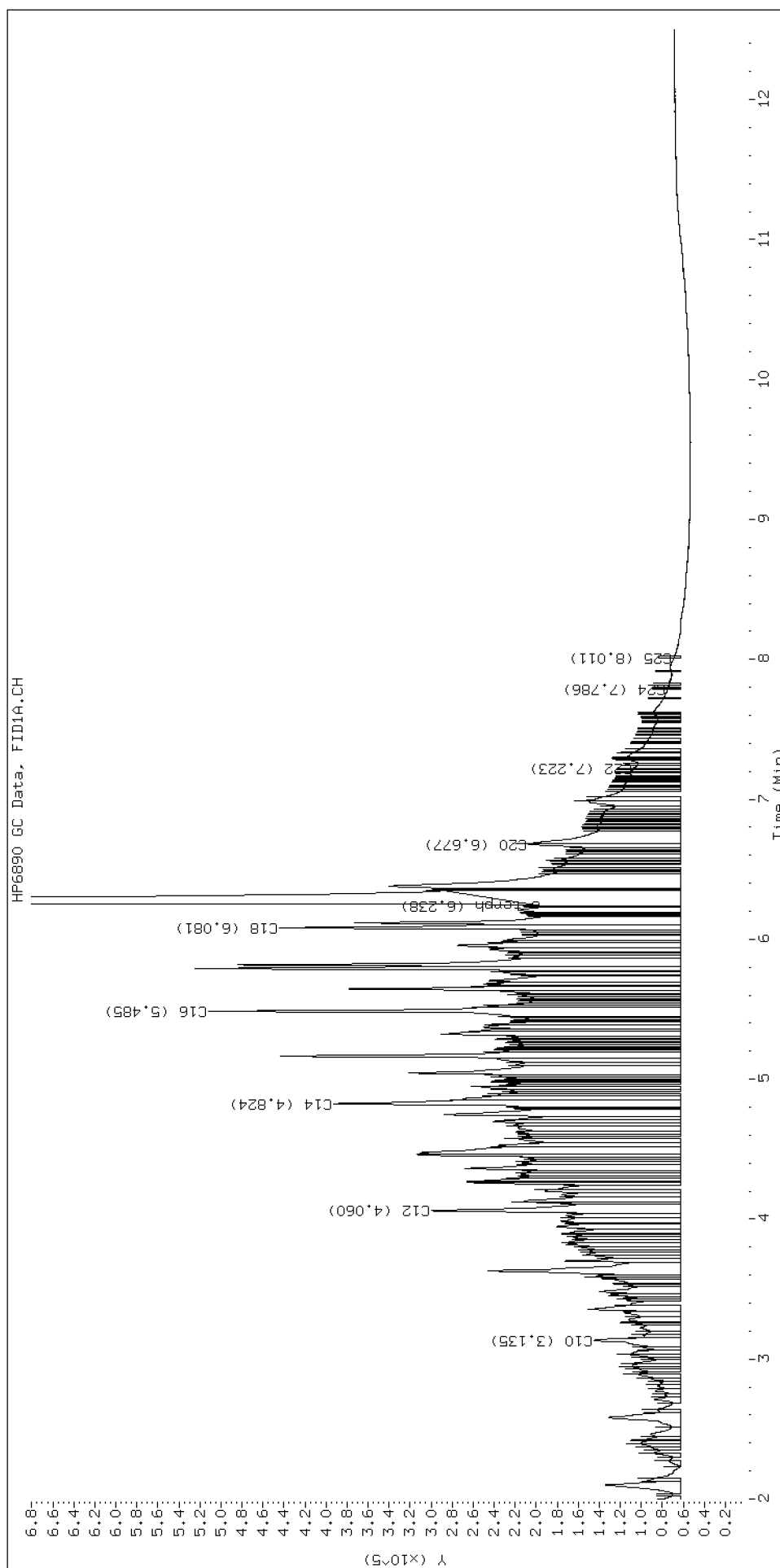
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.974	-0.014	70196	133361	WATPHD	(C12-C24)	27525984	261.2
C10	3.135	0.008	81565	220375	WATPHM	(C24-C38)	9398	0.1
C12	4.060	0.003	236692	609668	AK102	(C10-C25)	32104535	262.4
C14	4.824	-0.005	329654	773602	AK103	(C25-C36)	4443	0.1
C16	5.485	-0.002	448755	1014501	OR.DIES	(C10-C28)	32108979	262.0
C18	6.081	-0.000	381929	589008				
C20	6.677	0.016	144469	197593				
C22	7.223	0.000	44531	65718				
C24	7.786	0.010	12286	5381				
C25	8.011	-0.043	6288	4443				
C26	----							
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.269	-0.006	3854246	5837322				
Triacon Surr	----				NAS DIES	(C10-C24)	32099581	262.8

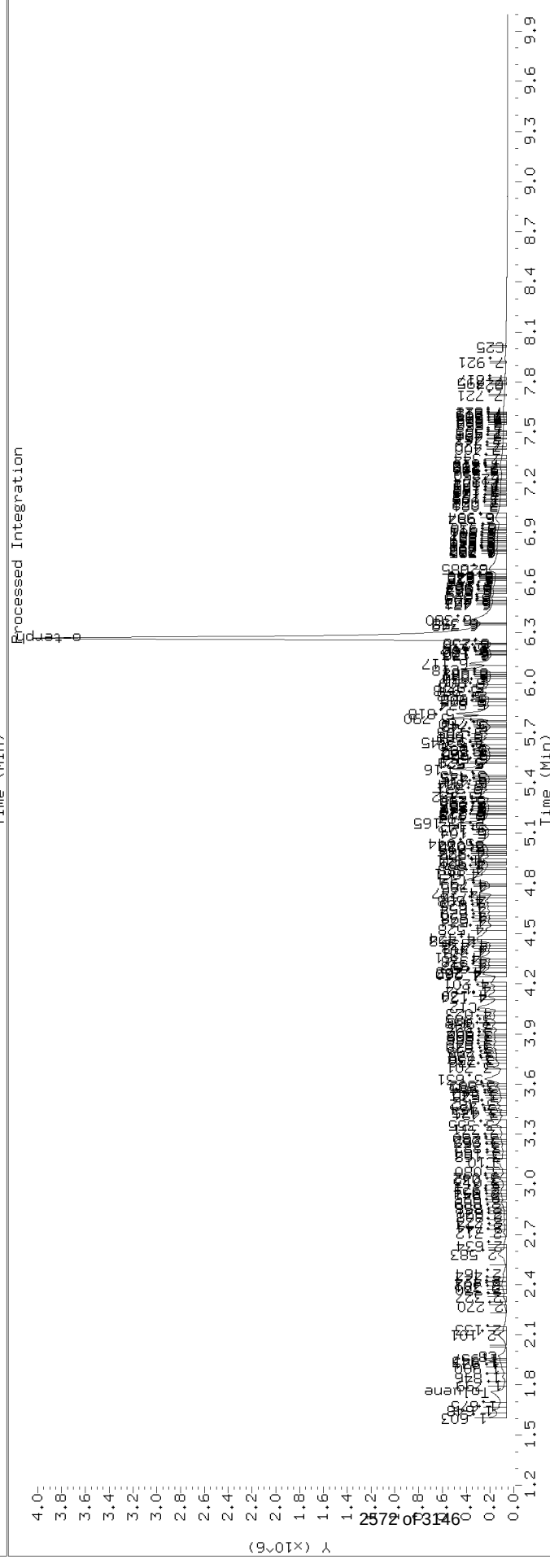
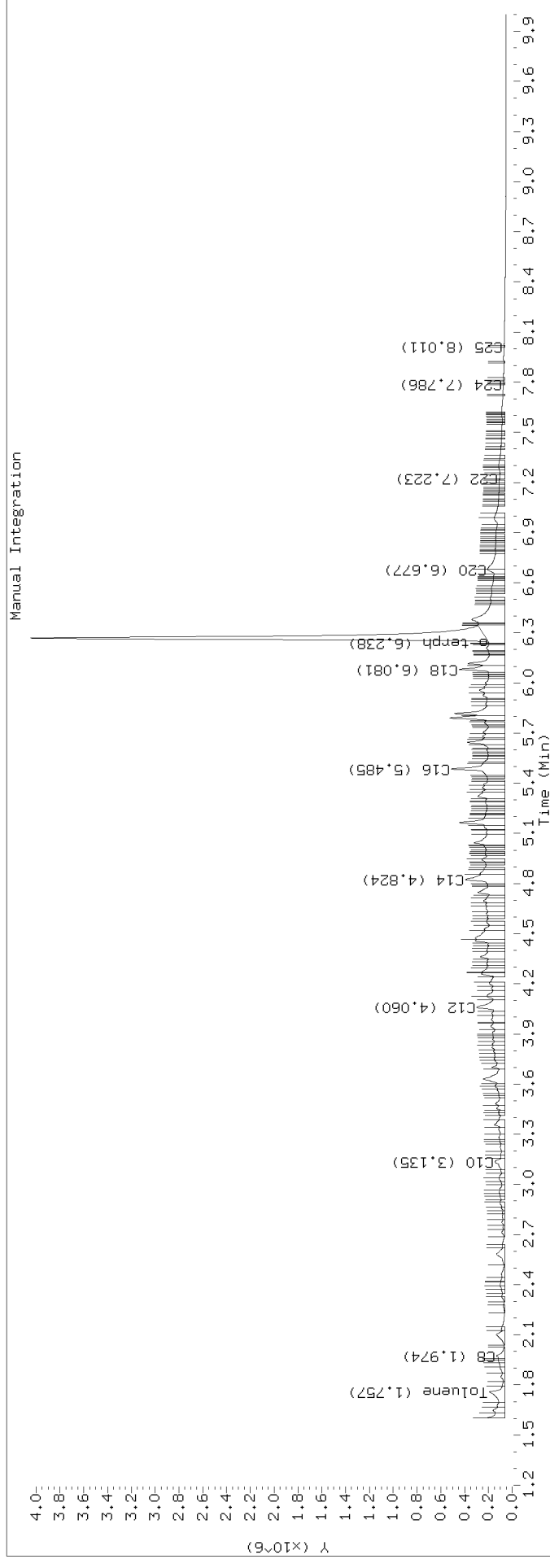
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	5837322	44.5 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1627.D

Date : 16-JUL-2019 20:30

Client ID:

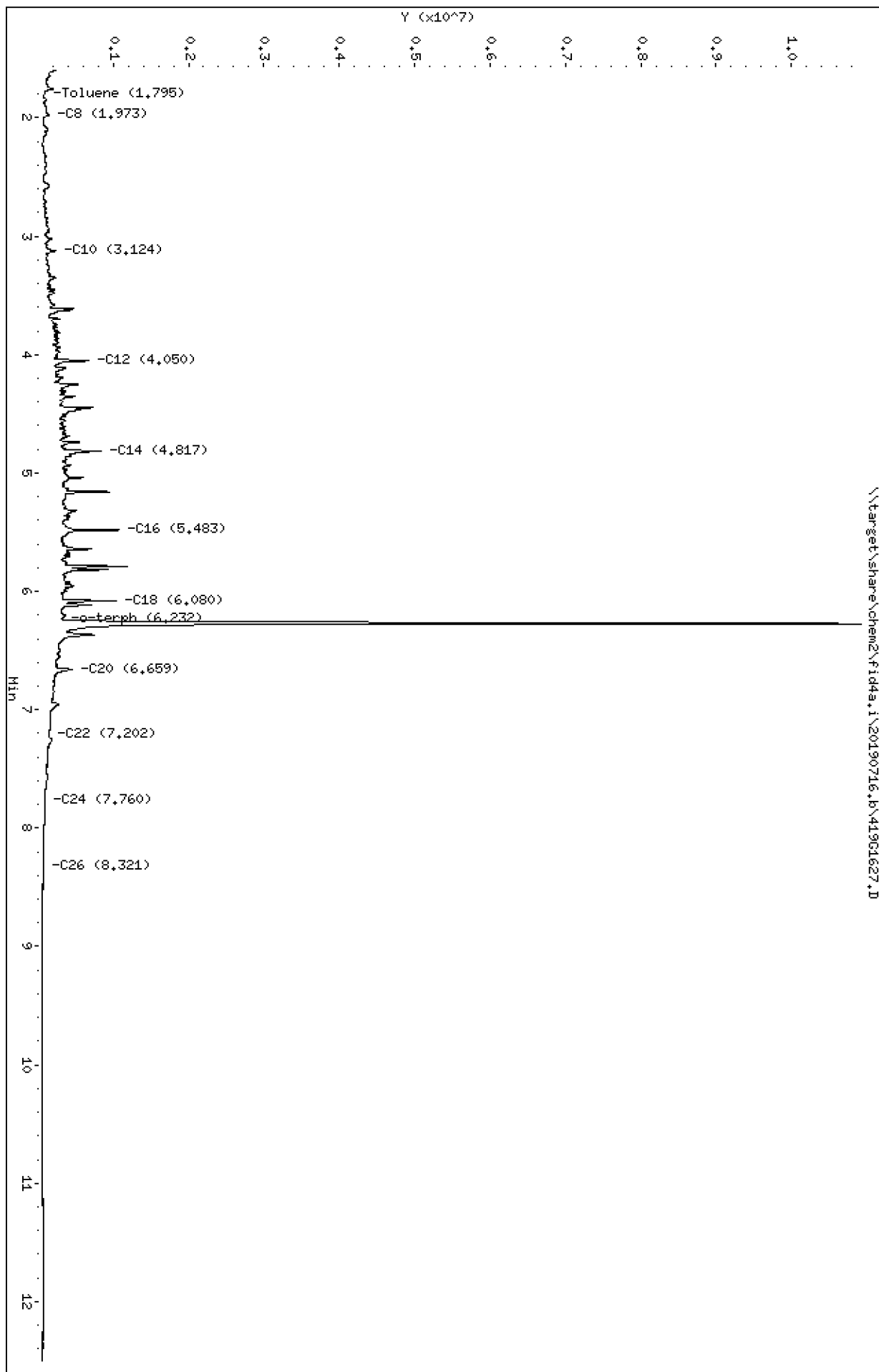
Sample Info: SHG0207-CAL4

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1627.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL4

Client ID:

Injection: 16-JUL-2019 20:30

Dilution Factor: 1

RT Std: 419G1622.D

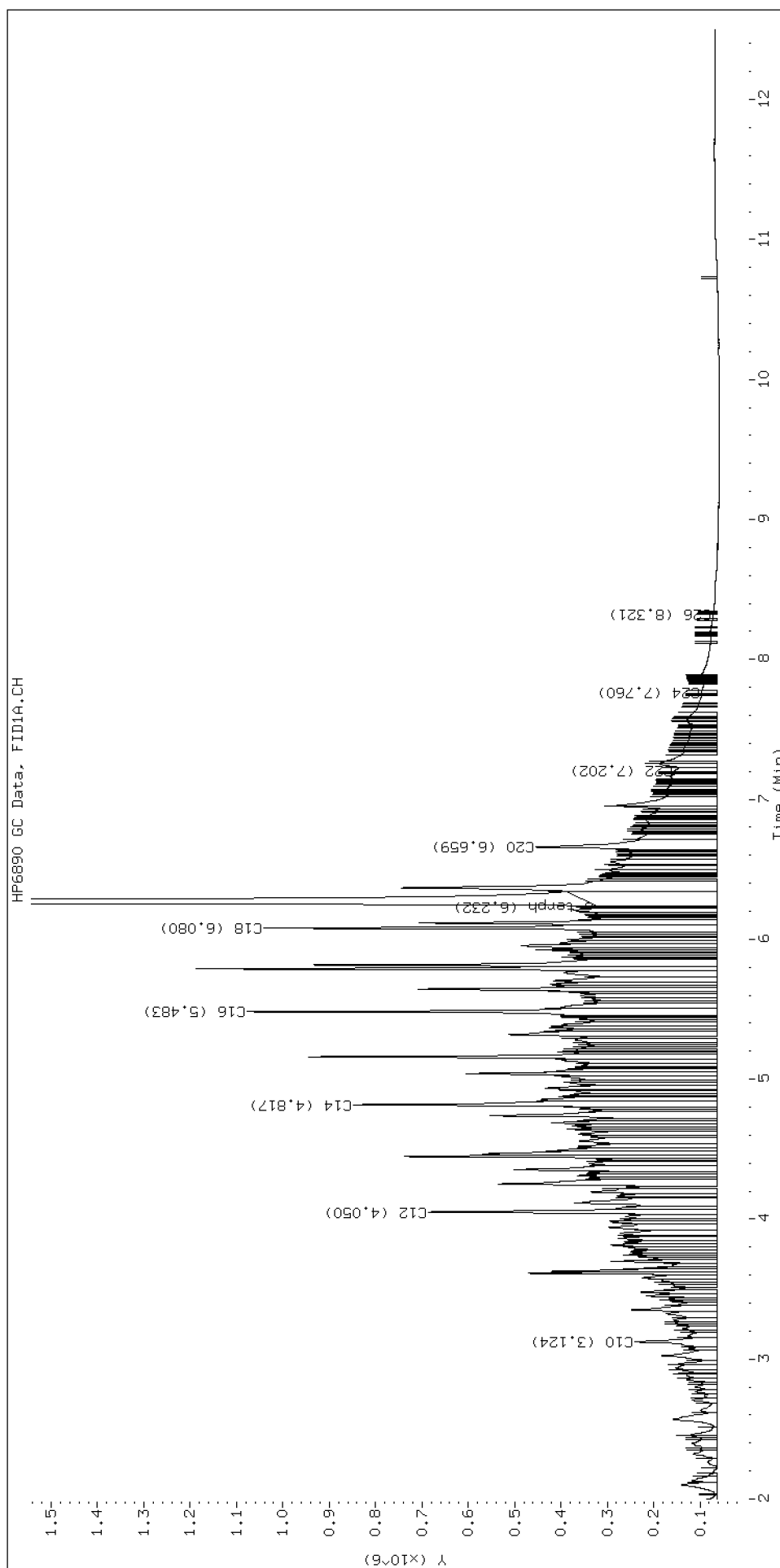
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.973	-0.015	91130	164629	WATPHD	(C12-C24)	53759426	510.1
C10	3.124	-0.004	179310	382755	WATPHM	(C24-C38)	172490	1.9
C12	4.050	-0.007	622630	905645	AK102	(C10-C25)	62538635	511.2
C14	4.817	-0.011	784629	1362643	AK103	(C25-C36)	56501	0.8
C16	5.483	-0.005	1014004	1538268	OR.DIES	(C10-C28)	62595136	510.8
C18	6.080	-0.001	977863	1353281				
C20	6.659	-0.002	390745	1070338				
C22	7.202	-0.020	93381	136988				
C24	7.760	-0.015	34963	40744				
C25	----							
C26	8.321	0.006	8937	3935				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.274	-0.001	10576291	11977167				
Triacon Surr	----				NAS DIES	(C10-C24)	62423769	511.1

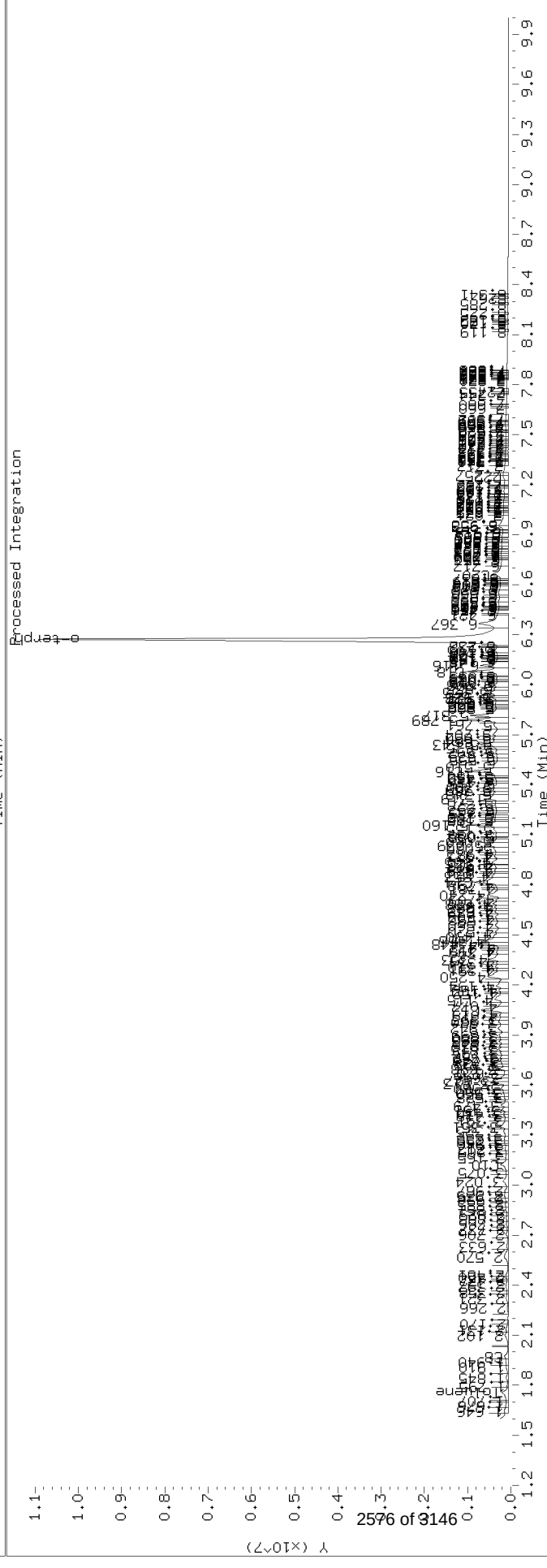
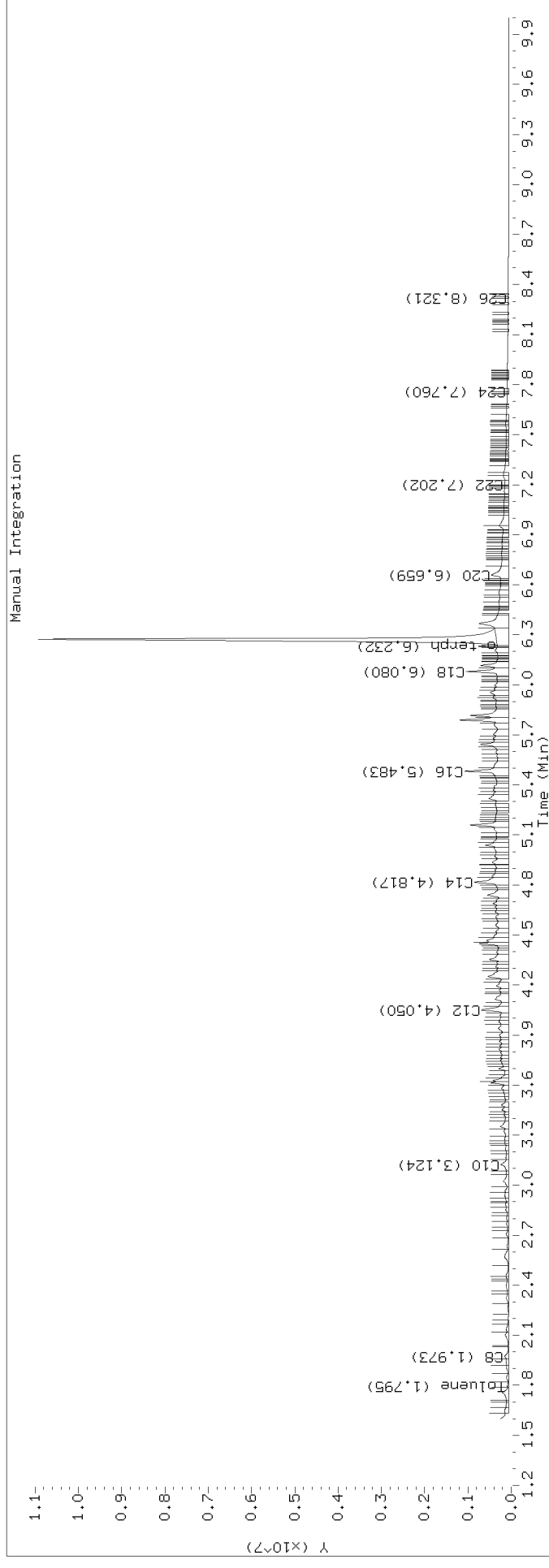
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	11977167	91.3 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1628.D

Date : 16-JUL-2019 20:50

Client ID:

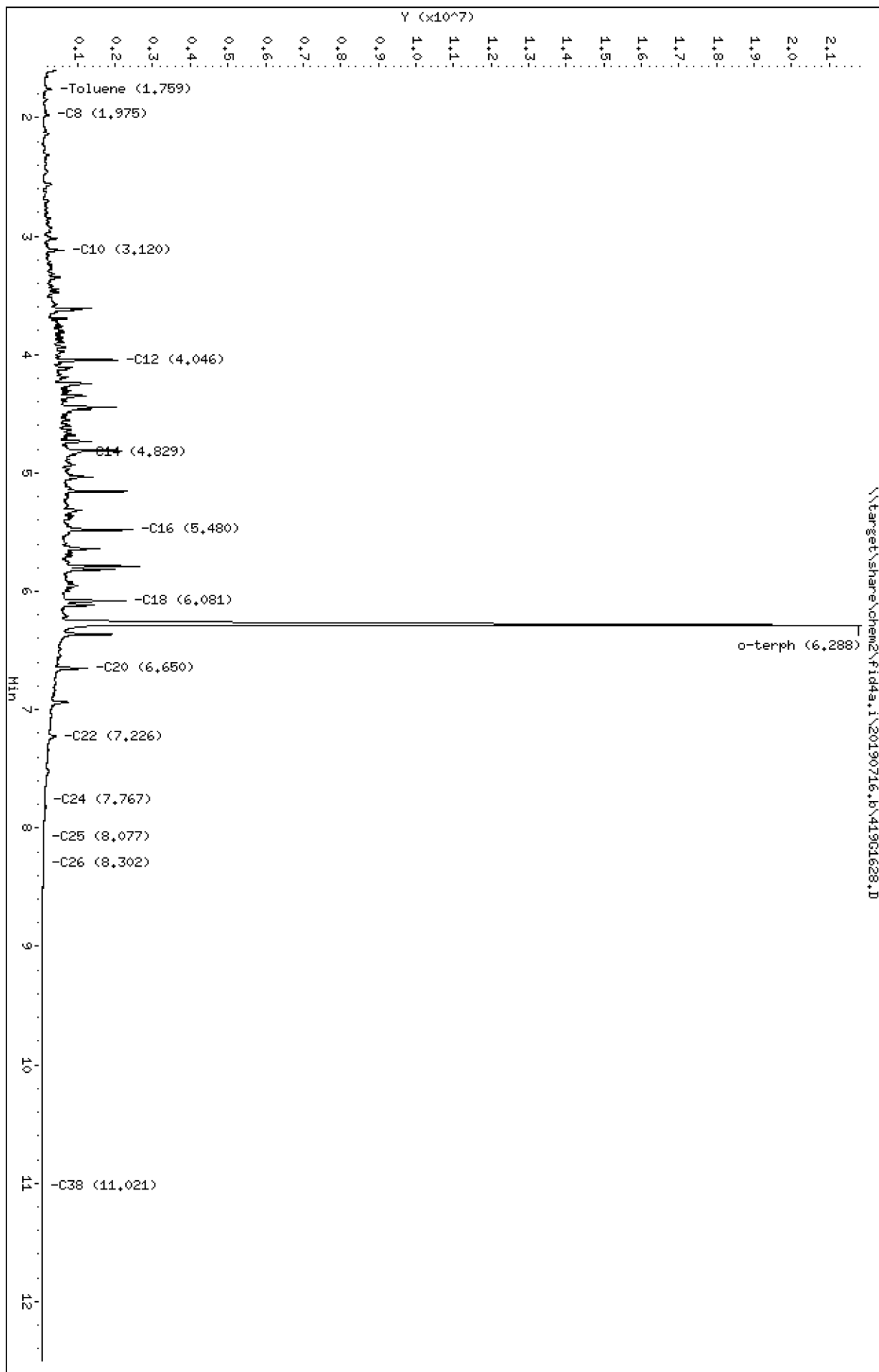
Sample Info: SHG0207-CAL5

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1628.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL5

Client ID:

Injection: 16-JUL-2019 20:50

Dilution Factor: 1

RT Std: 419G1622.D

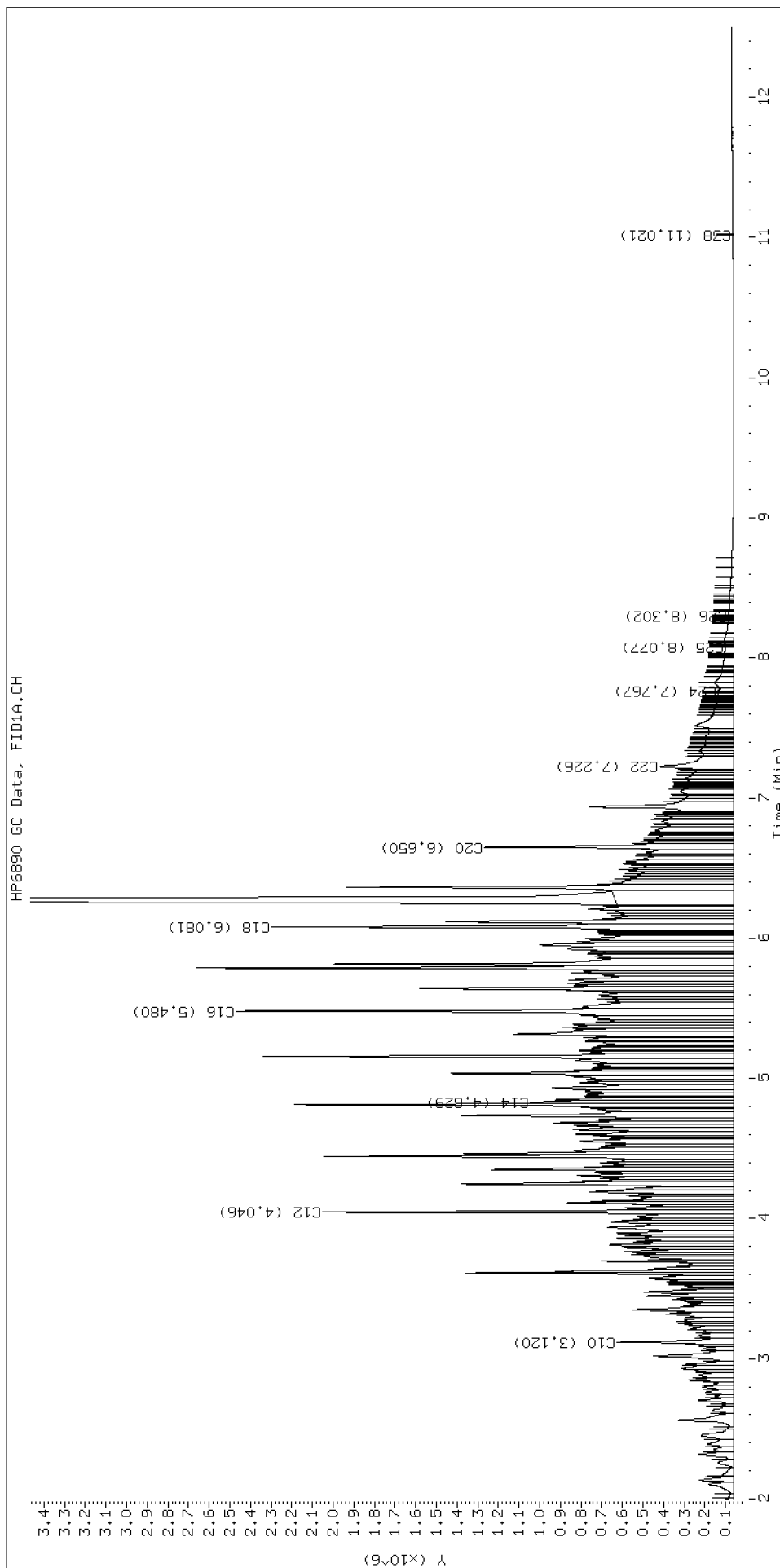
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.975	-0.013	185753	268977	WATPHD	(C12-C24)	121669850	1154.6
C10	3.120	-0.008	565363	740333	WATPHM	(C24-C38)	905849	9.9
C12	4.046	-0.011	1990838	2144376	AK102	(C10-C25)	143901793	1176.3
C14	4.829	0.000	984157	907088	AK103	(C25-C36)	454733	6.5
C16	5.480	-0.007	2406988	3470752	OR.DIES	(C10-C28)	144356526	1178.1
C18	6.081	-0.000	2237001	2773450				
C20	6.650	-0.010	1208514	1812318				
C22	7.226	0.004	358908	1209084				
C24	7.767	-0.009	76295	93349				
C25	8.077	0.023	39464	17483				
C26	8.302	-0.013	25457	8868				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	11.021	0.012	5006	2676				
C40	----							
o-terph	6.288	0.013	21208421	27303855				
Triacon Surr	----				NAS DIES	(C10-C24)	143453353	1174.4

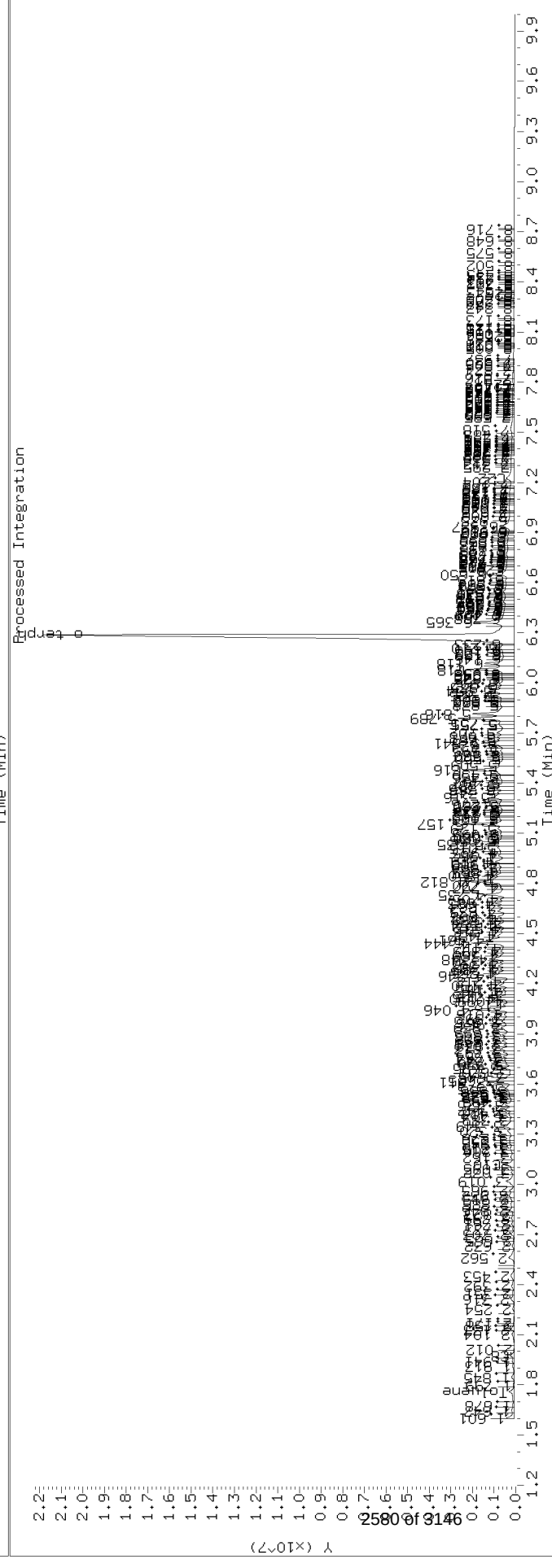
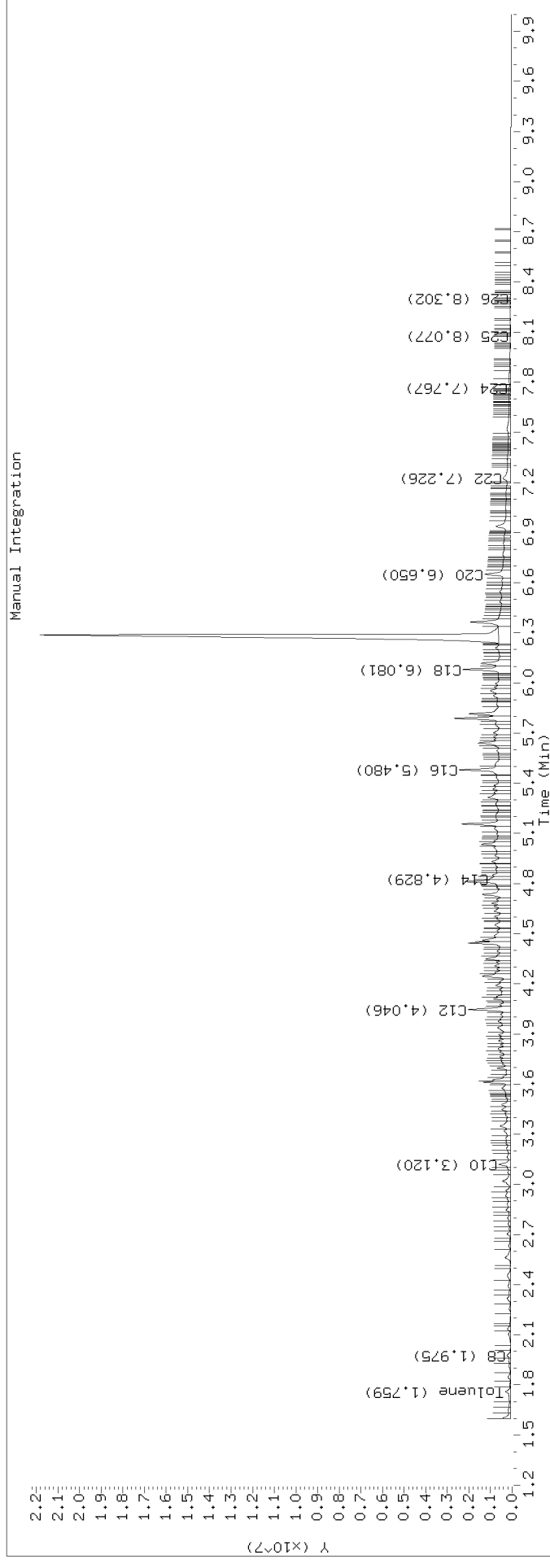
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	27303855	208.1 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1629.D

Date: 16-JUL-2019 21:11

Client ID:

Sample Info: SHG0207-CAL6

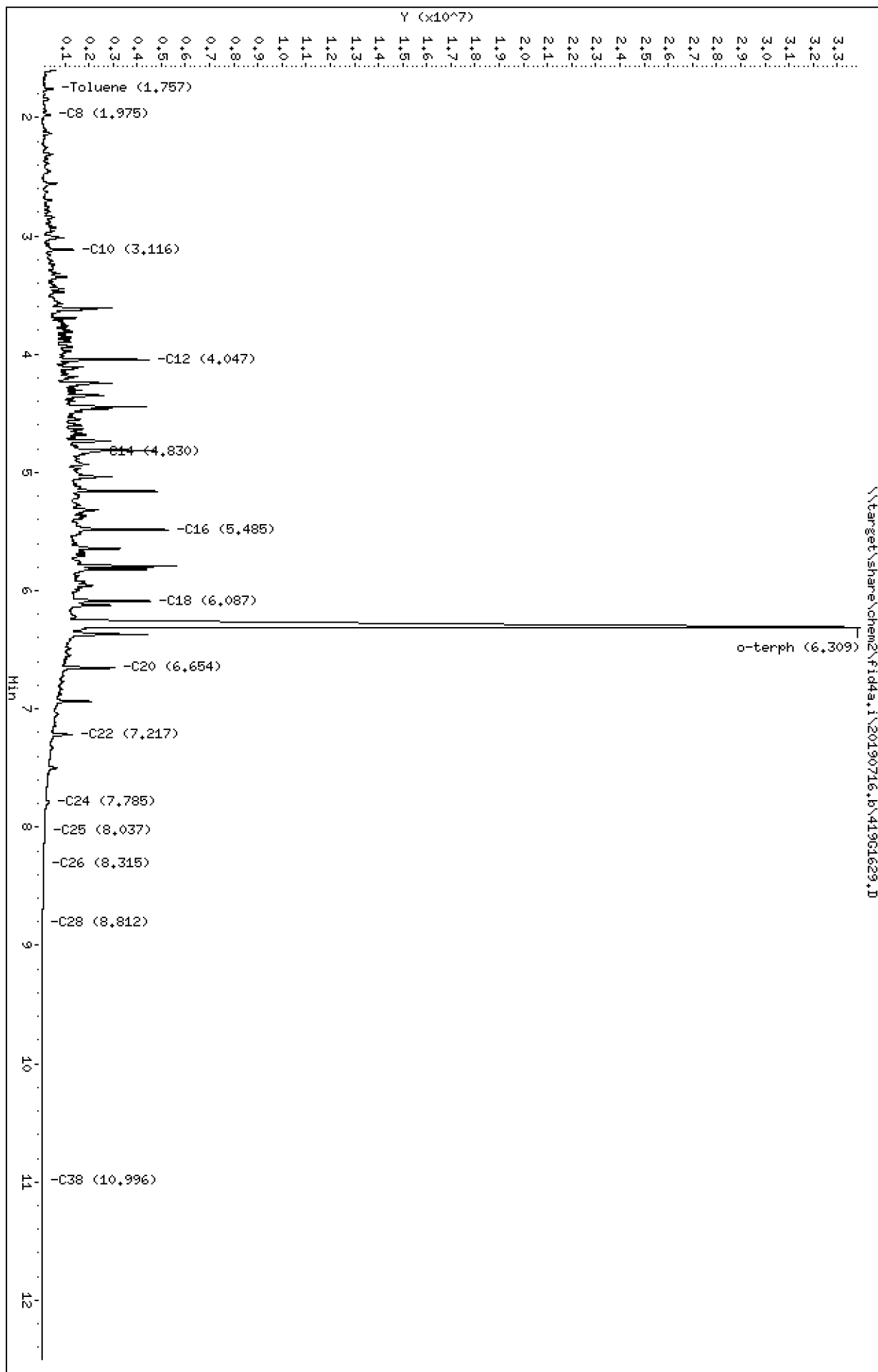
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1629.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL6

Client ID:

Injection: 16-JUL-2019 21:11

Dilution Factor: 1

RT Std: 419G1622.D

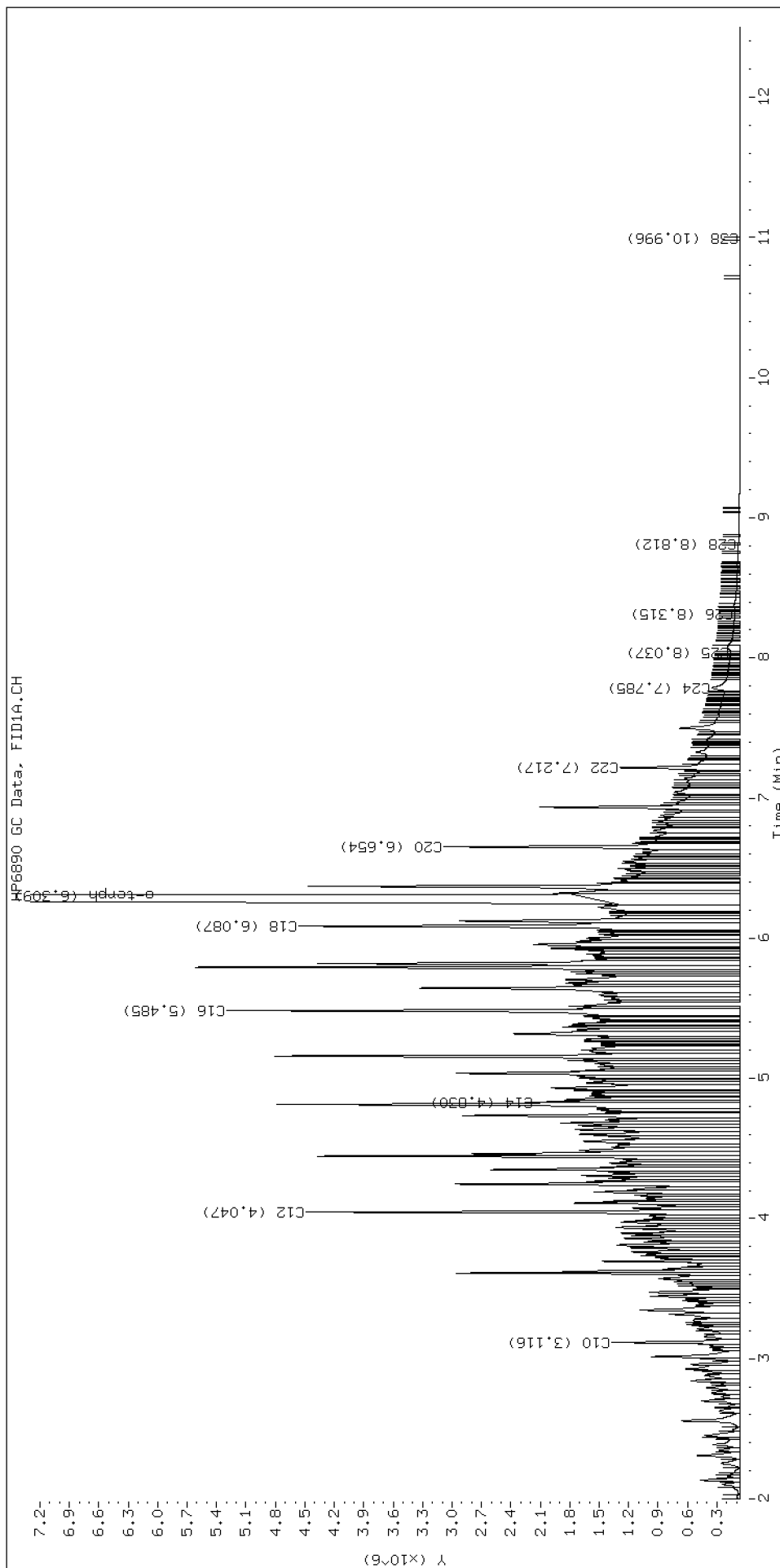
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.975	-0.012	366941	433664	WATPHD	(C12-C24)	267527122	2538.7
C10	3.116	-0.011	1312145	1433079	WATPHM	(C24-C38)	2915330	31.8
C12	4.047	-0.010	4424346	4409291	AK102	(C10-C25)	312968998	2558.2
C14	4.830	0.001	2096404	1806382	AK103	(C25-C36)	1764046	25.4
C16	5.485	-0.003	5234264	7735797	OR.DIES	(C10-C28)	314722935	2568.5
C18	6.087	0.005	4504588	6463252				
C20	6.654	-0.007	3026215	4227768				
C22	7.217	-0.005	1230248	2030570				
C24	7.785	0.010	285392	959994				
C25	8.037	-0.017	100905	84196				
C26	8.315	0.000	57362	42164				
C28	8.812	-0.013	19491	13525				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	10.996	-0.013	3859	4210				
C40	----							
o-terph	6.309	0.034	32220811	61294025				
Triacon Surr	----				NAS DIES	(C10-C24)	311823883	2552.9

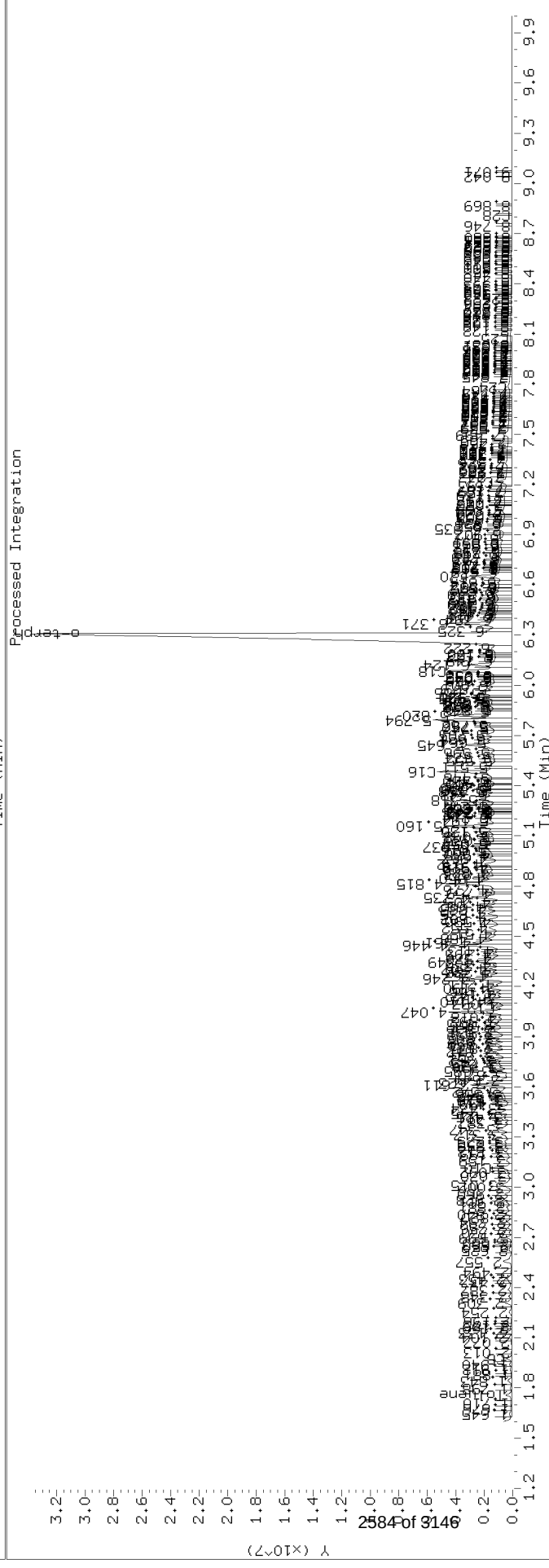
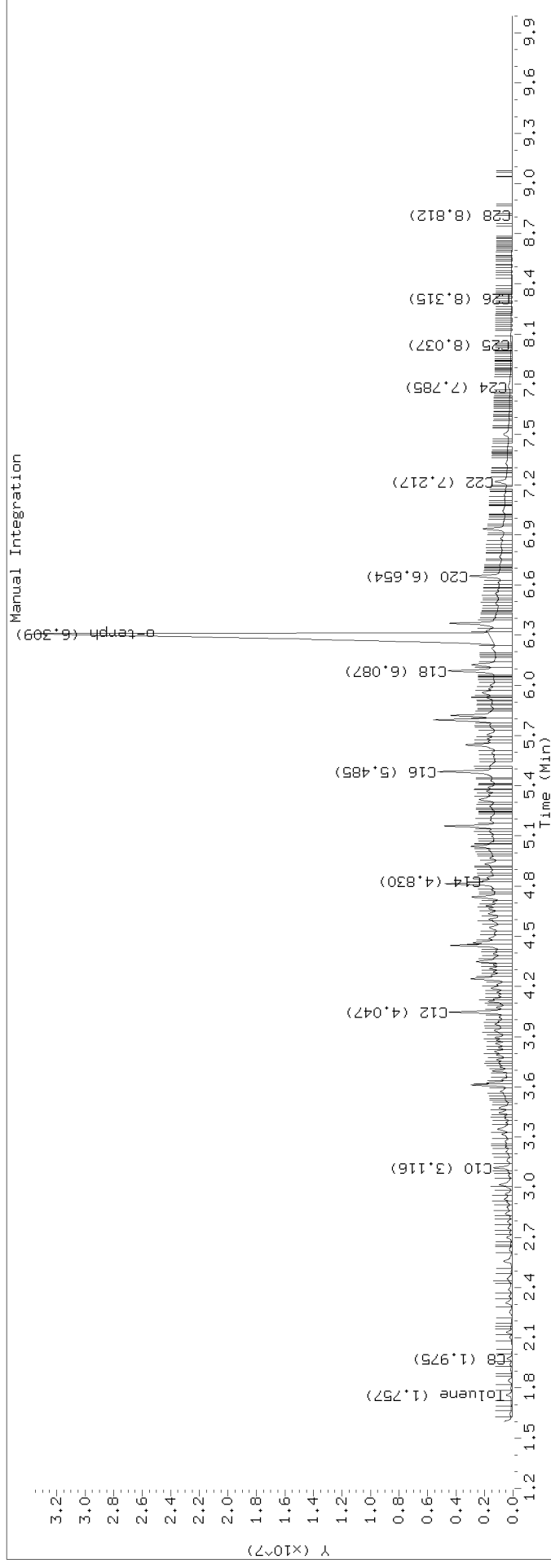
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	61294025	467.2 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1630.D

Date : 16-JUL-2019 21:31

Client ID:

Sample Info: SHG0207-CAL7

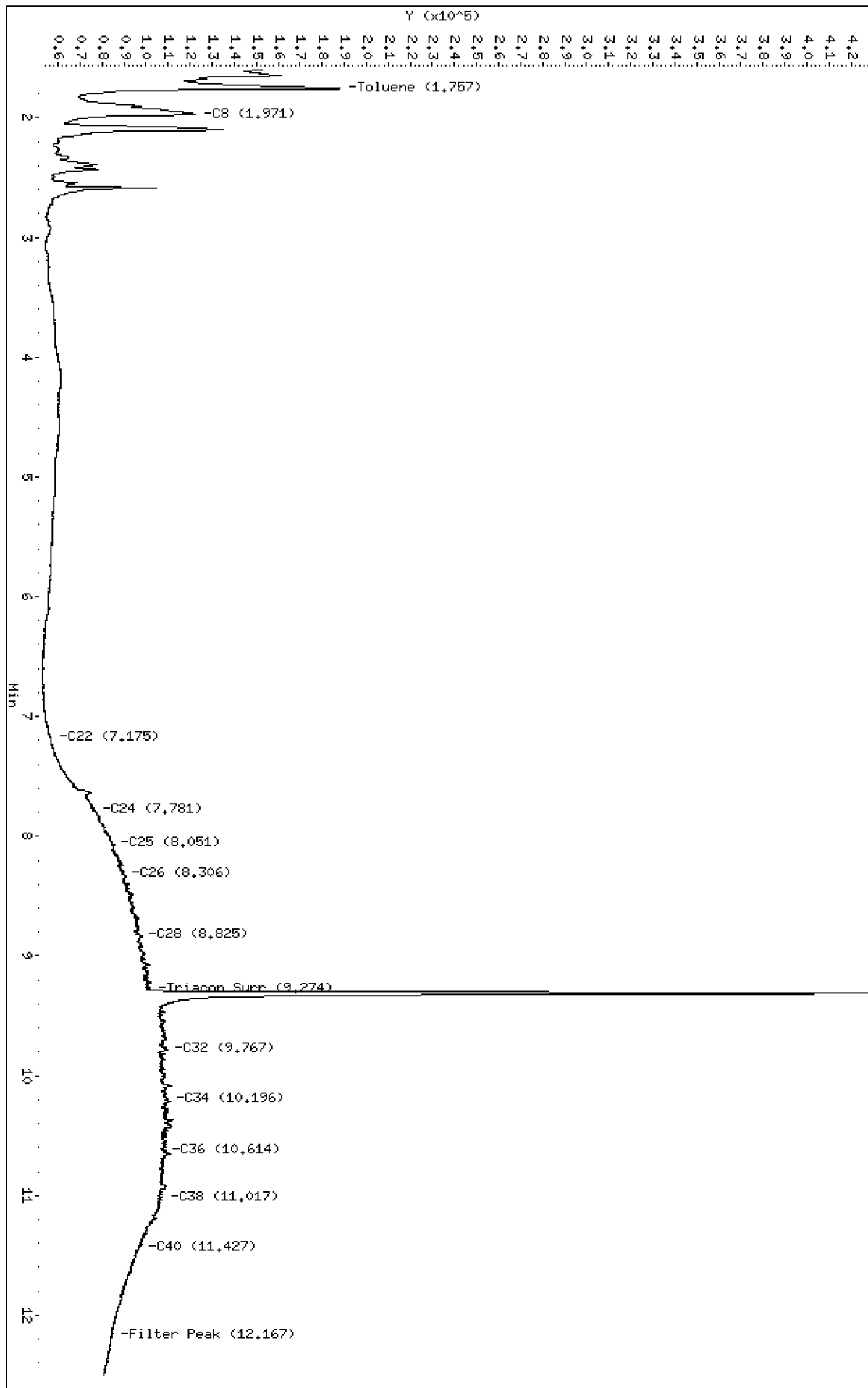
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

\\target\share\chem2\fid4a.i\20190716.b\419G1630.D



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1630.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL7

Client ID:

Injection: 16-JUL-2019 21:31

Dilution Factor: 1

RT Std: 419G1622.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.971	-0.017	68637	237608	WATPHD	(C12-C24)	256054	2.4
C10	----				WATPHM	(C24-C38)	7940083	86.6
C12	----				AK102	(C10-C25)	486247	4.0
C14	----				AK103	(C25-C36)	6738730	96.9
C16	----				OR.DIES	(C10-C28)	2183957	17.8
C18	----							
C20	----							
C22	7.175	-0.048	3325	1756				
C24	7.781	0.005	22497	7801				
C25	8.051	-0.003	31041	15341				
C26	8.306	-0.009	35745	24913				
C28	8.825	-0.000	43818	25948				
C32	9.767	-0.001	55571	35636				
C34	10.196	-0.004	56541	55905				
Filter Peak	12.167	-0.032	31161	27940				
C36	10.614	0.002	54273	35021				
C38	11.017	0.007	53597	31795				
C40	11.427	0.006	43713	43296				
o-terph	----							
Triacon Surr	9.311	-0.020	325362	475852	NAS DIES	(C10-C24)	256054	2.1

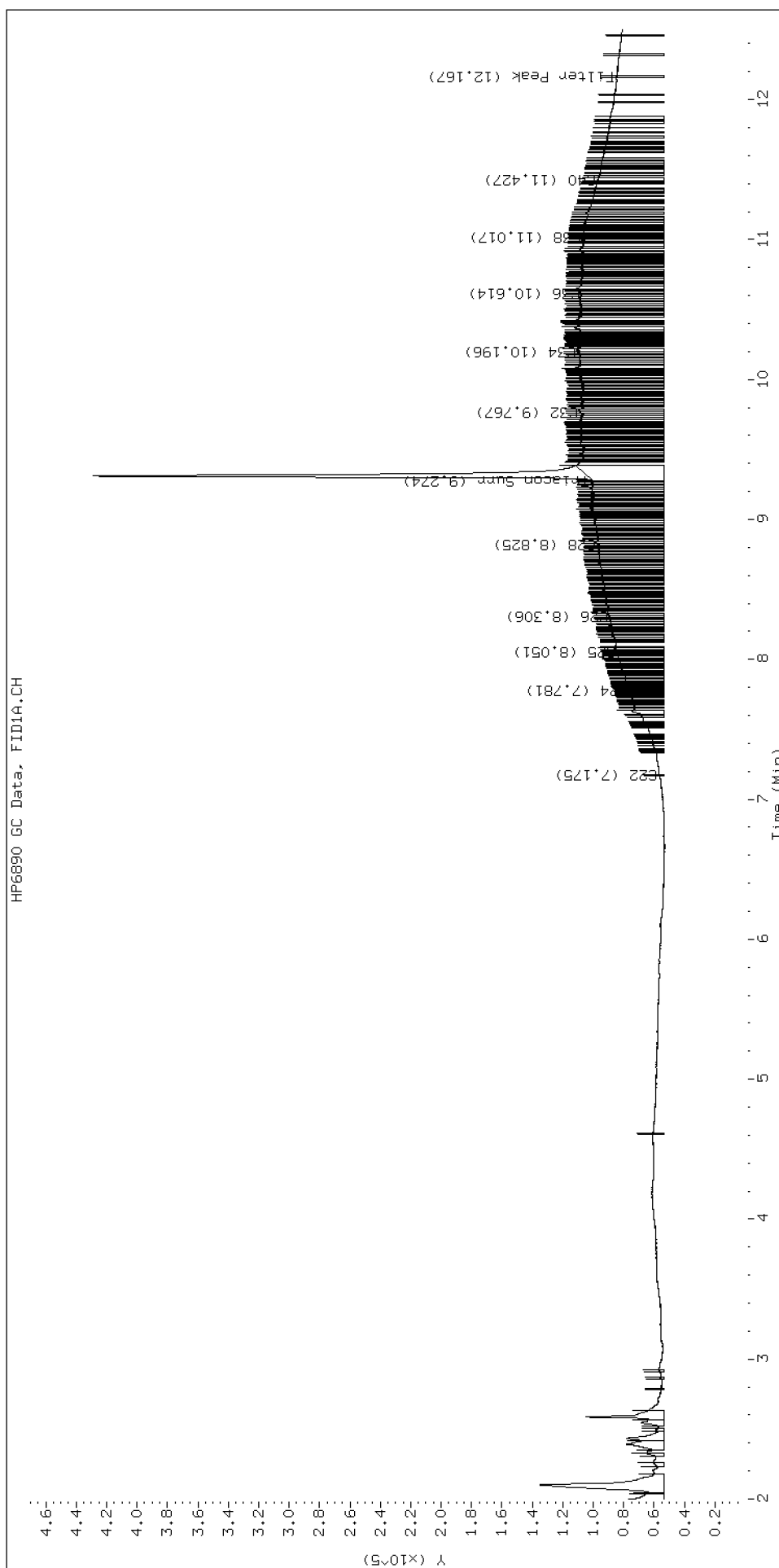
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

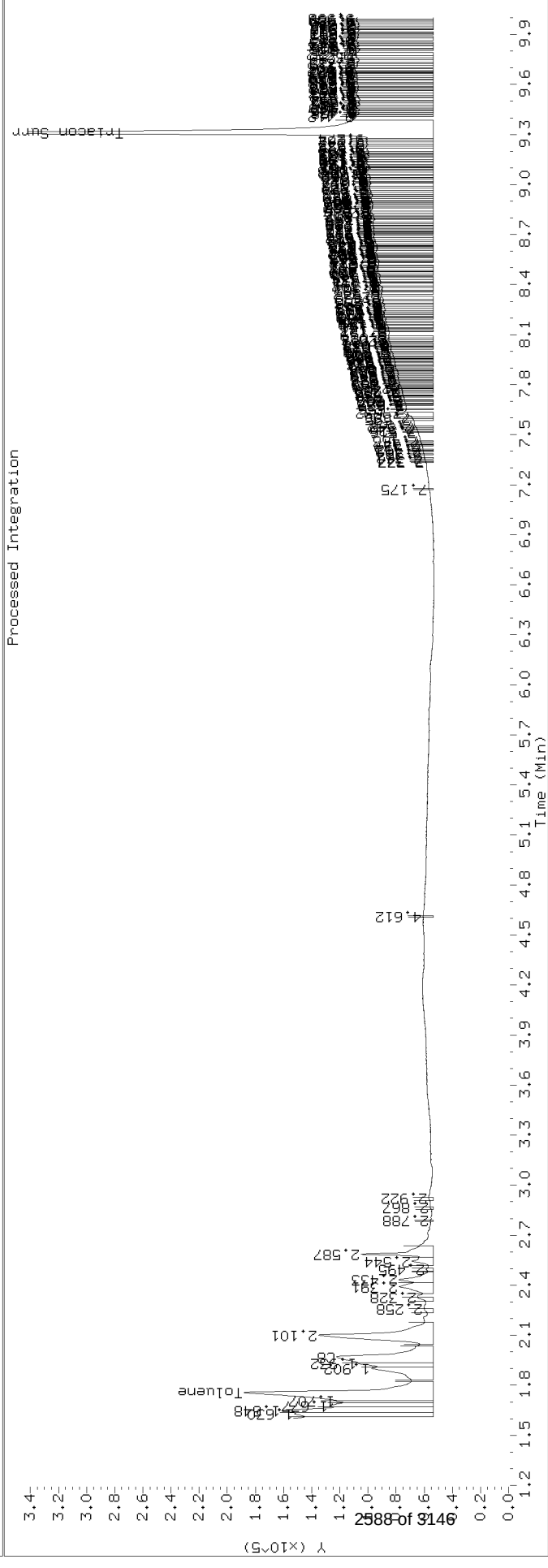
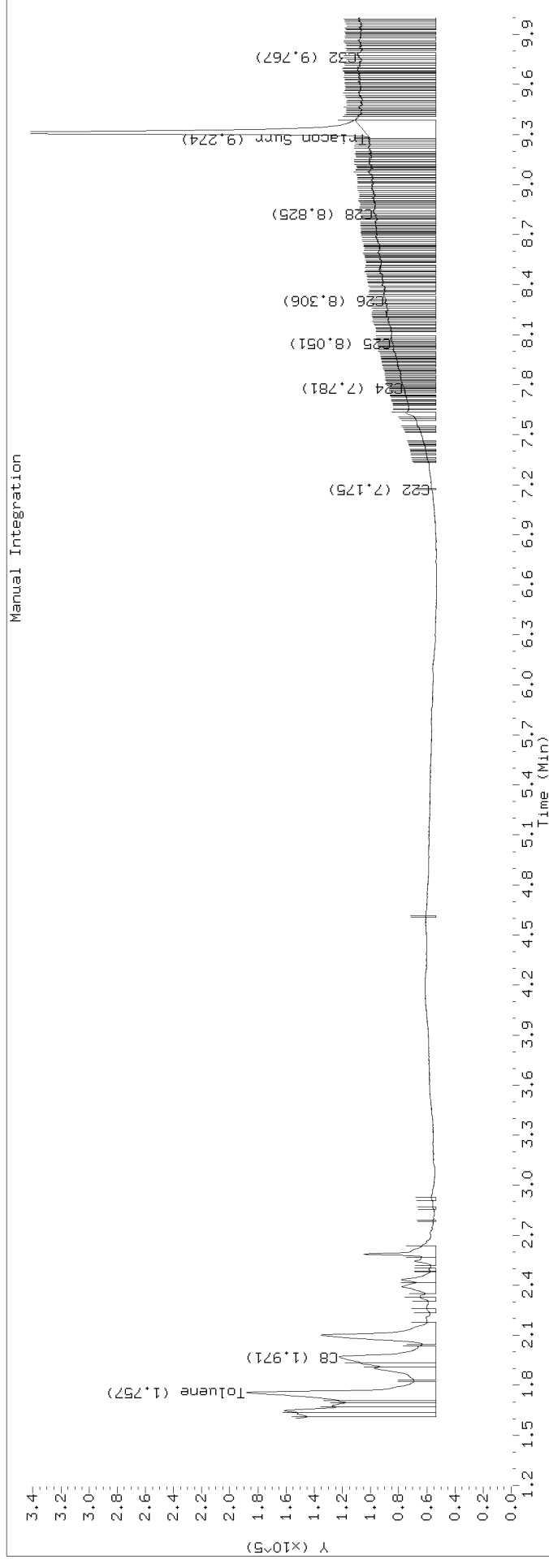
Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	475852	3.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019

HP6890 GC Data, FID1A.CH





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1631.D

Date: 16-JUL-2019 21:52

Client ID:

Sample Info: SHG0207-CAL8

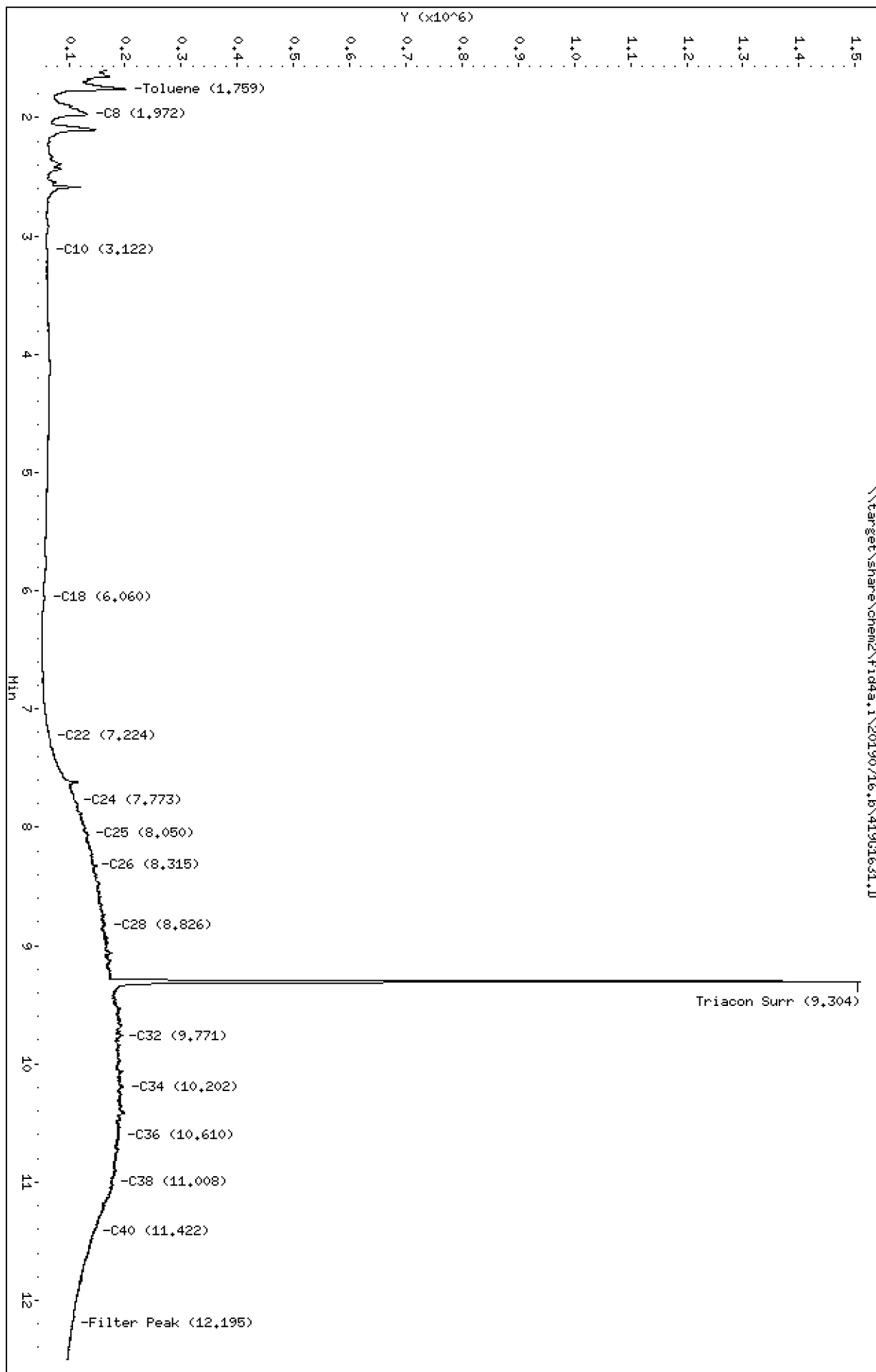
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1631.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL8

Client ID:

Injection: 16-JUL-2019 21:52

Dilution Factor: 1

RT Std: 419G1622.D

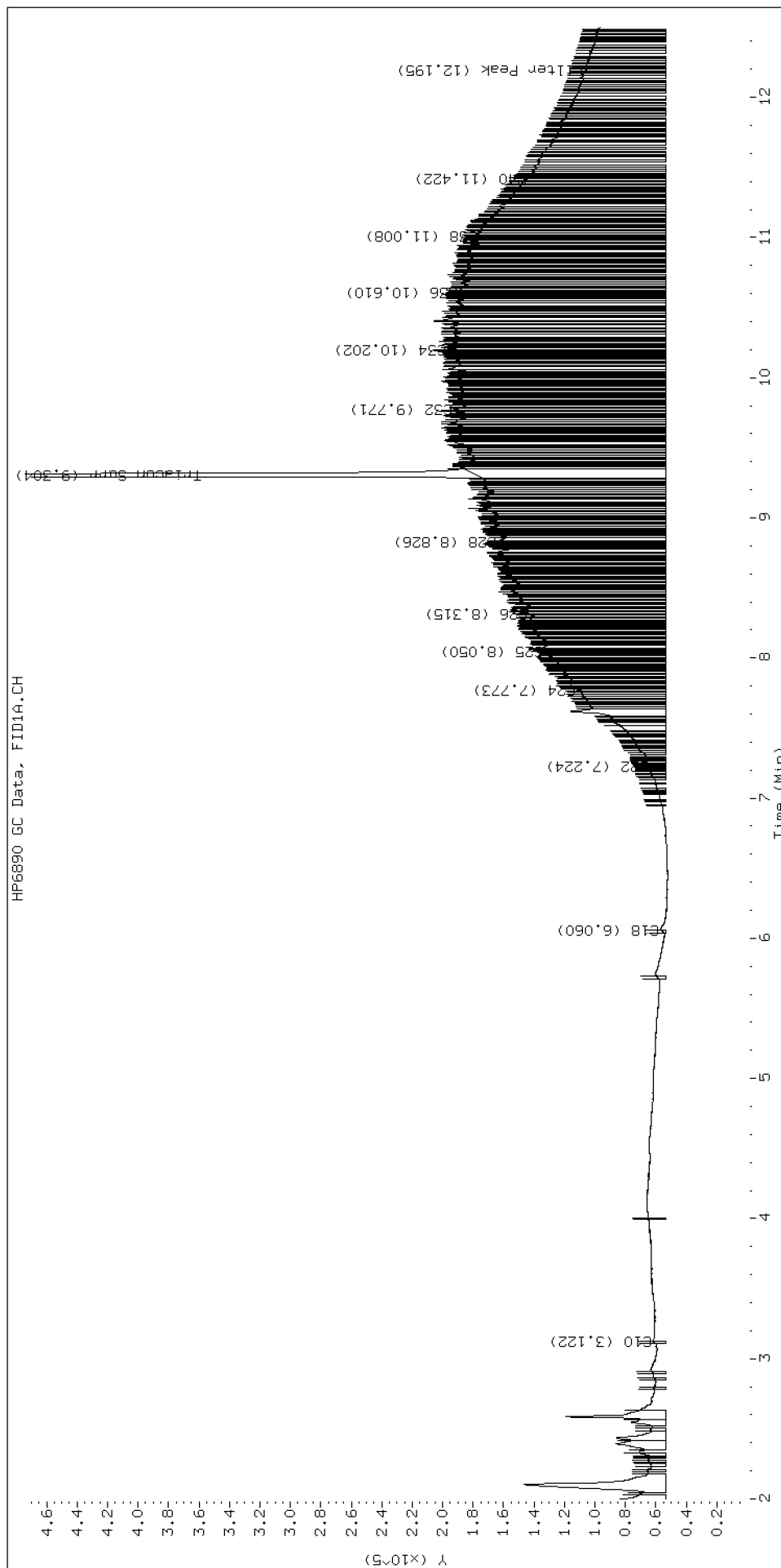
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.972	-0.016	79402	270035	WATPHD	(C12-C24)	1222750	11.6
C10	3.122	-0.006	8131	8375	WATPHM	(C24-C38)	21659535	236.3
C12	----				AK102	(C10-C25)	1902357	15.5
C14	----				AK103	(C25-C36)	18201717	261.7
C16	----				OR.DIES	(C10-C28)	6546689	53.4
C18	6.060	-0.021	3199	3329				
C20	----							
C22	7.224	0.002	10587	4174				
C24	7.773	-0.003	58377	31332				
C25	8.050	-0.004	79454	35311				
C26	8.315	0.000	90136	66665				
C28	8.826	0.001	110248	43526				
C32	9.771	0.004	138990	129413				
C34	10.202	0.002	143344	105190				
Filter Peak	12.195	-0.003	53064	29017				
C36	10.610	-0.002	135815	73665				
C38	11.008	-0.002	122525	36620				
C40	11.422	0.000	90560	45178				
o-terph	----							
Triacon Surr	9.304	-0.027	1331826	1315166	NAS DIES	(C10-C24)	1235153	10.1

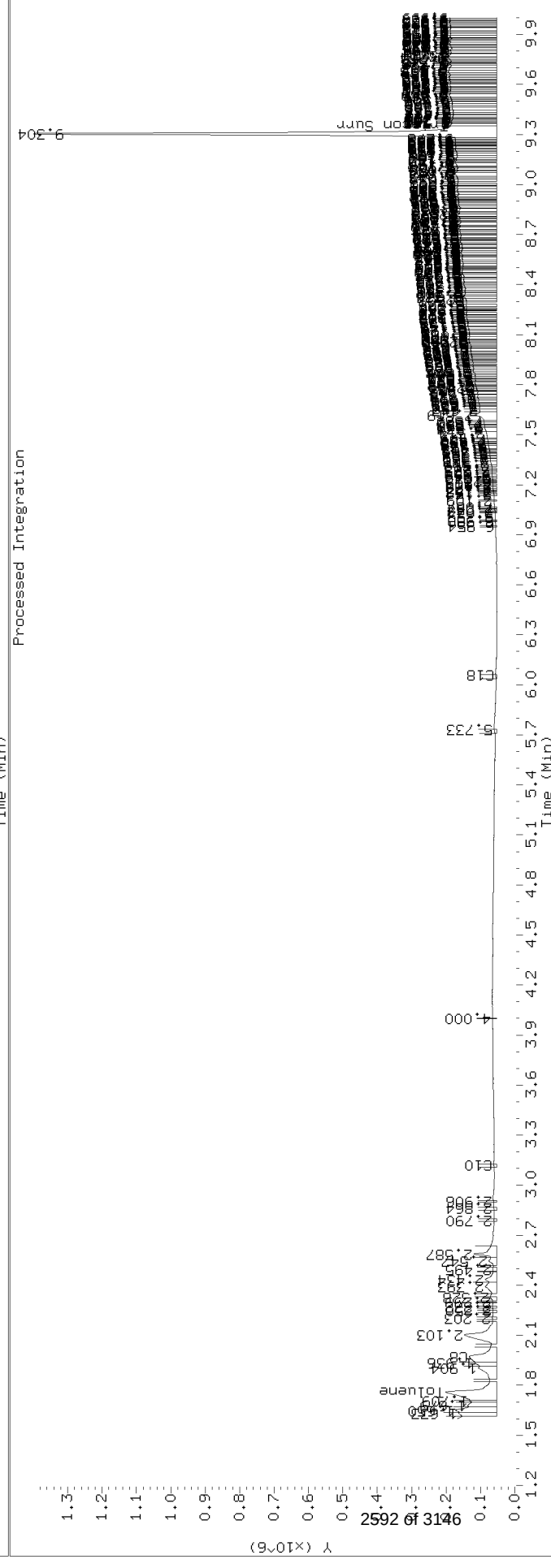
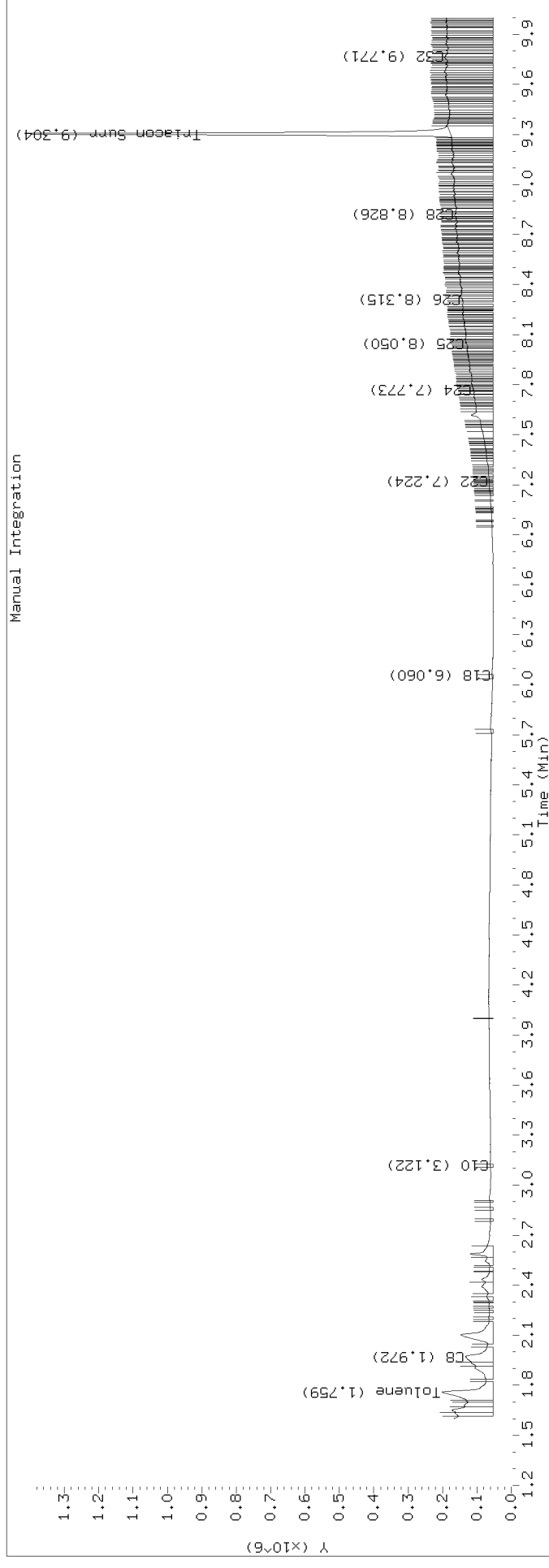
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	1315166	10.7 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\41961632.D

Date: 16-JUL-2019 22:12

Client ID:

Sample Info: SHG0207-CAL9

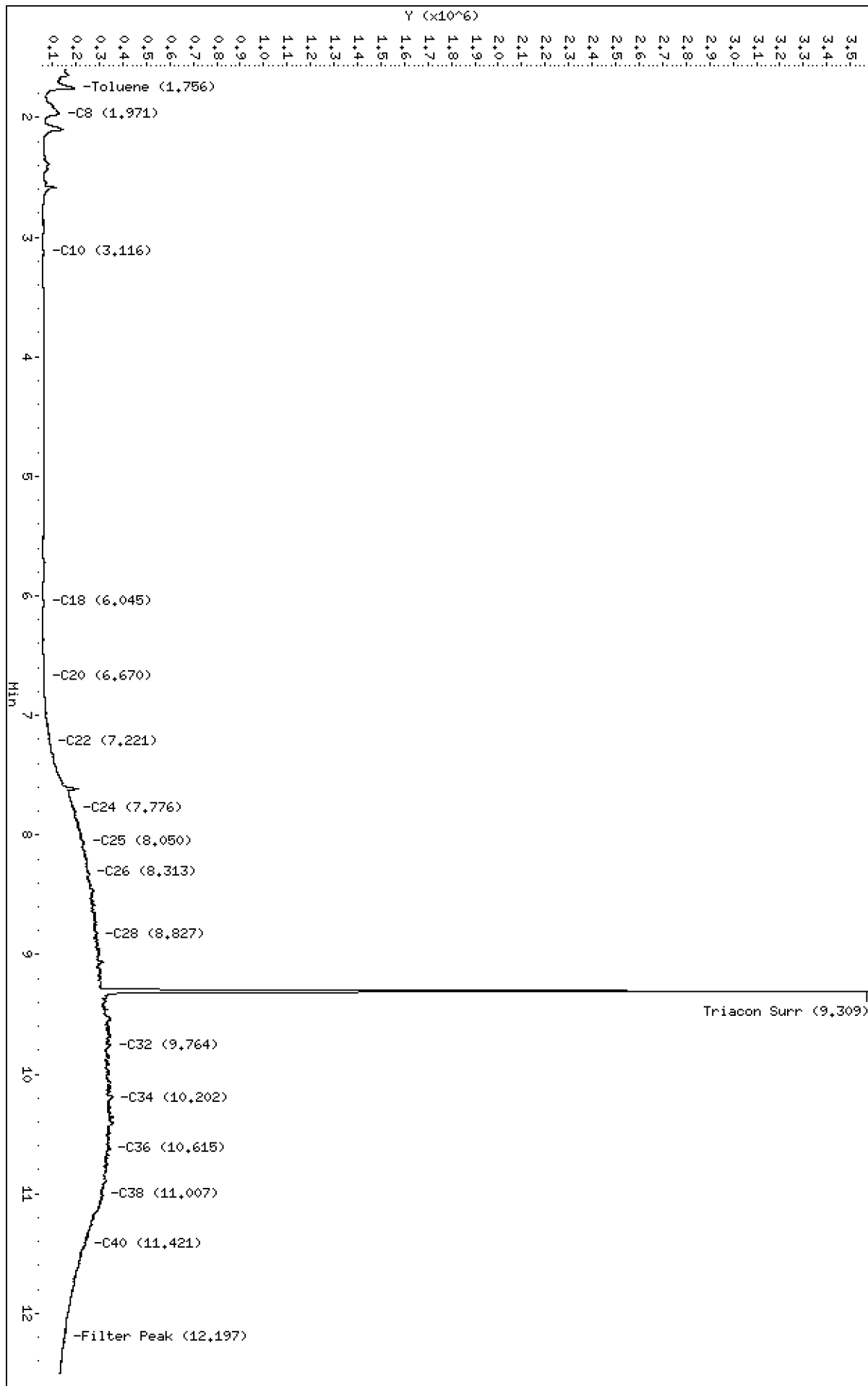
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

\\target\share\chem2\fid4a.i\20190716.b\41961632.D



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1632.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CAL9

Client ID:

Injection: 16-JUL-2019 22:12

Dilution Factor: 1

RT Std: 419G1622.D

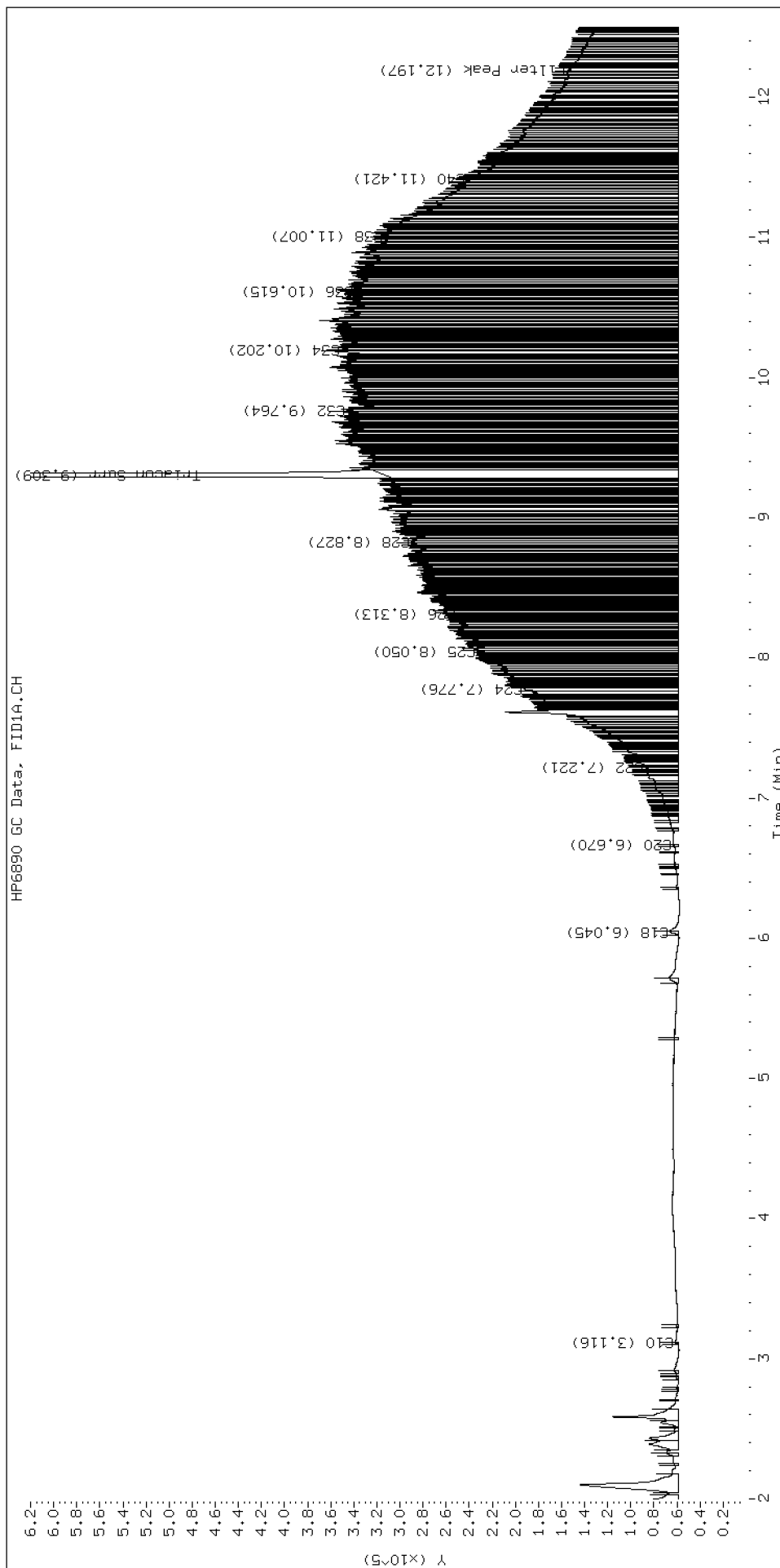
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.971	-0.017	70879	231585	WATPHD	(C12-C24)	3196316	30.3
C10	3.116	-0.011	3049	2264	WATPHM	(C24-C38)	46561096	507.9
C12	----				AK102	(C10-C25)	4796918	39.2
C14	----				AK103	(C25-C36)	38809458	558.0
C16	----				OR.DIES	(C10-C28)	15318432	125.0
C18	6.045	-0.037	7609	8737				
C20	6.670	0.009	5144	5442				
C22	7.221	-0.001	29175	22480				
C24	7.776	-0.000	133946	144344				
C25	8.050	-0.004	174845	178678				
C26	8.313	-0.002	192062	66735				
C28	8.827	0.002	231716	194531				
C32	9.764	-0.004	288069	198858				
C34	10.202	0.002	292113	188750				
Filter Peak	12.197	-0.001	96160	89884				
C36	10.615	0.002	280324	83651				
C38	11.007	-0.002	255128	126461				
C40	11.421	-0.000	184010	127508				
o-terph	----							
Triacon Surr	9.309	-0.022	3267369	2848392	NAS DIES	(C10-C24)	3200731	26.2

Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	2848392	23.3 M

M Indicates the peak was manually integrated

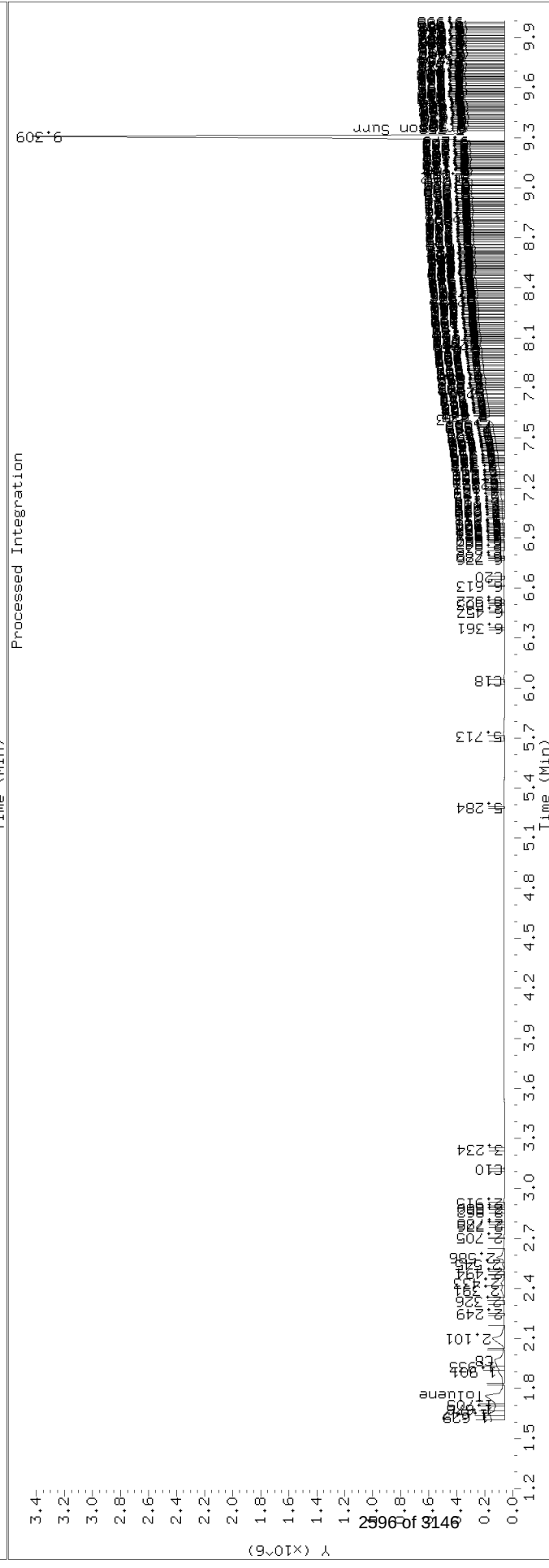
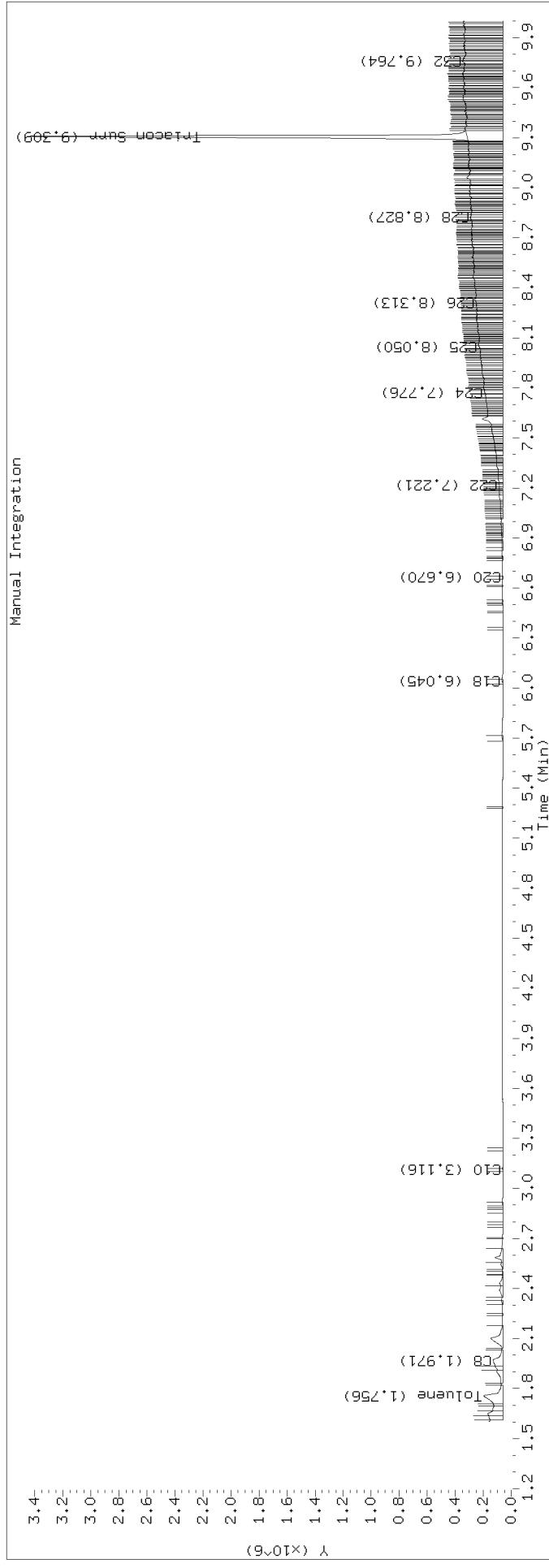
Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019



Iterations Report

Injection: 16-JUL-2019 22:12

Lab ID: SHG0207-CAL9



Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1633.D

Date: 16-JUL-2019 22:32

Client ID:

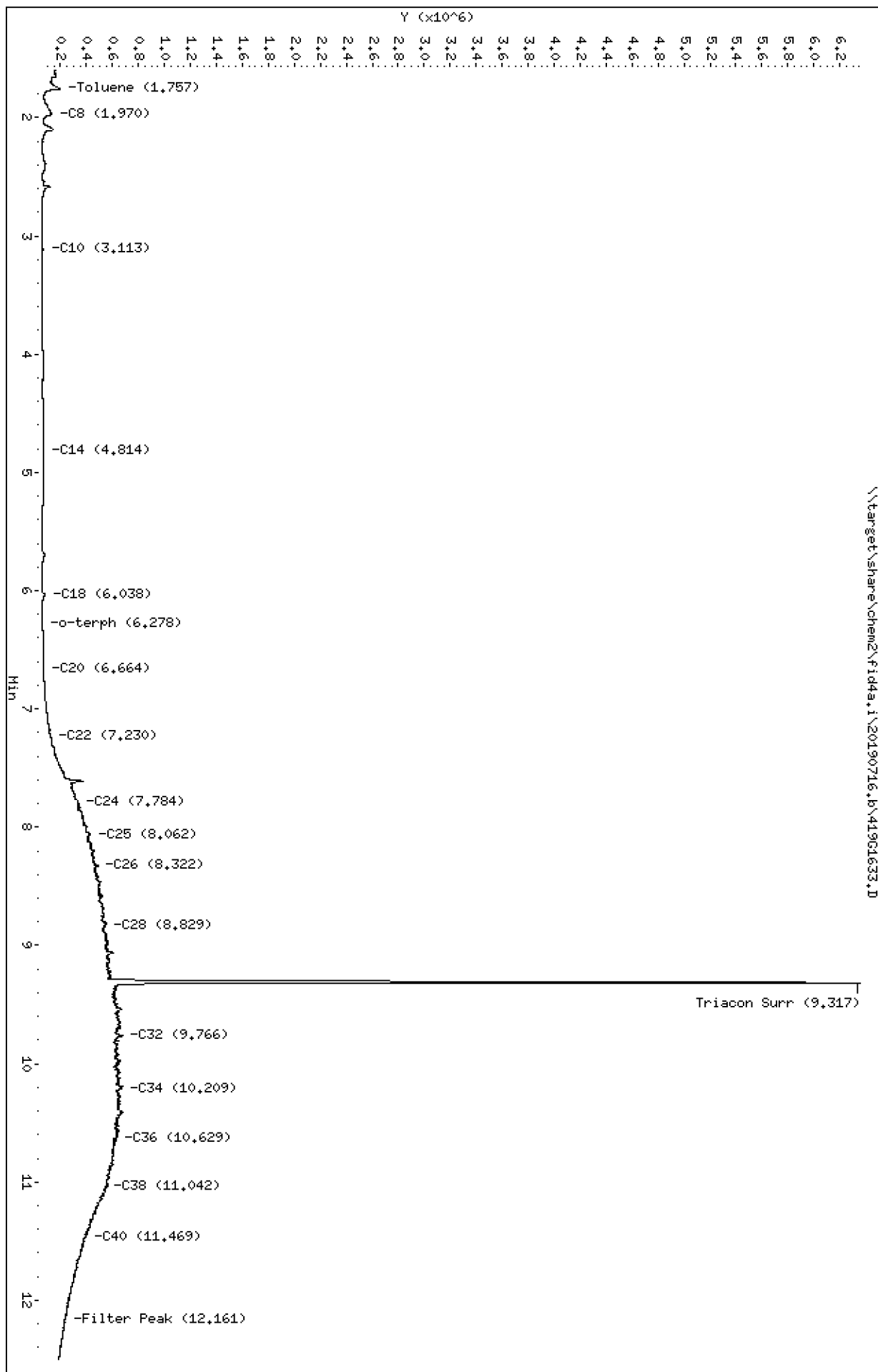
Sample Info: SHG0207-CALA

Instrument: fid4a.i

Column phase: RTX-1

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1633.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALA

Client ID:

Injection: 16-JUL-2019 22:32

Dilution Factor: 1

RT Std: 419G1622.D

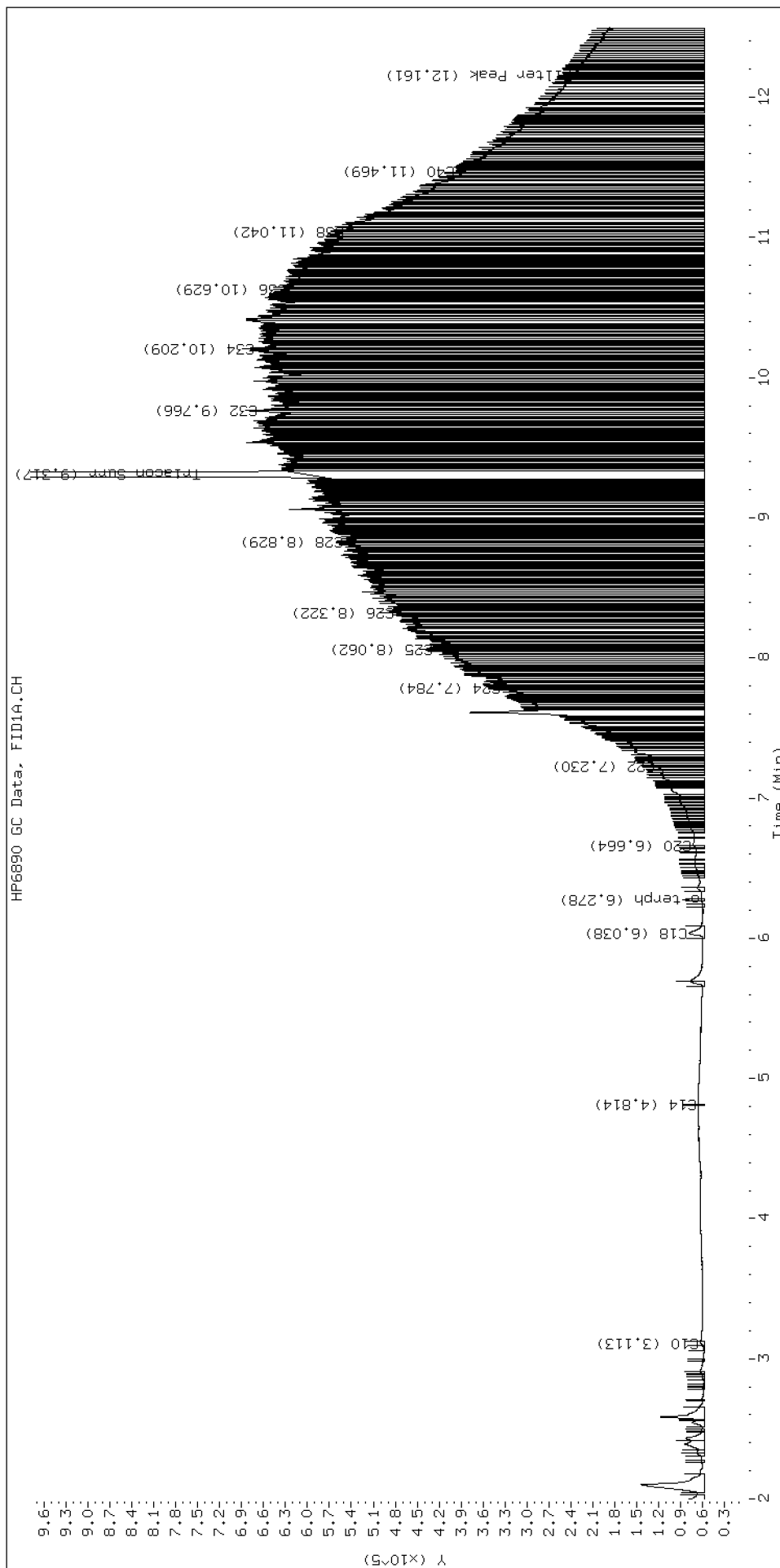
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.017	70811	230240	WATPHD	(C12-C24)	6922399	65.7
C10	3.113	-0.015	5992	7114	WATPHM	(C24-C38)	97242592	1060.7
C12	----				AK102	(C10-C25)	10404085	85.0
C14	4.814	-0.014	8011	3544	AK103	(C25-C36)	81441568	1170.9
C16	----				OR.DIES	(C10-C28)	31831606	259.8
C18	6.038	-0.044	20334	52767				
C20	6.664	0.003	15261	14569				
C22	7.230	0.008	65122	29156				
C24	7.784	0.008	276525	123763				
C25	8.062	0.008	368369	109297				
C26	8.322	0.007	422068	184753				
C28	8.829	0.004	491234	267628				
C32	9.766	-0.001	609373	505658				
C34	10.209	0.009	613180	273345				
Filter Peak	12.161	-0.037	178415	114529				
C36	10.629	0.017	569403	141898				
C38	11.042	0.033	490072	122325				
C40	11.469	0.048	338431	298047				
o-terph	6.278	0.003	4421	3663				
Triacon Surr	9.317	-0.014	5749710	5827004	NAS DIES	(C10-C24)	6931779	56.7

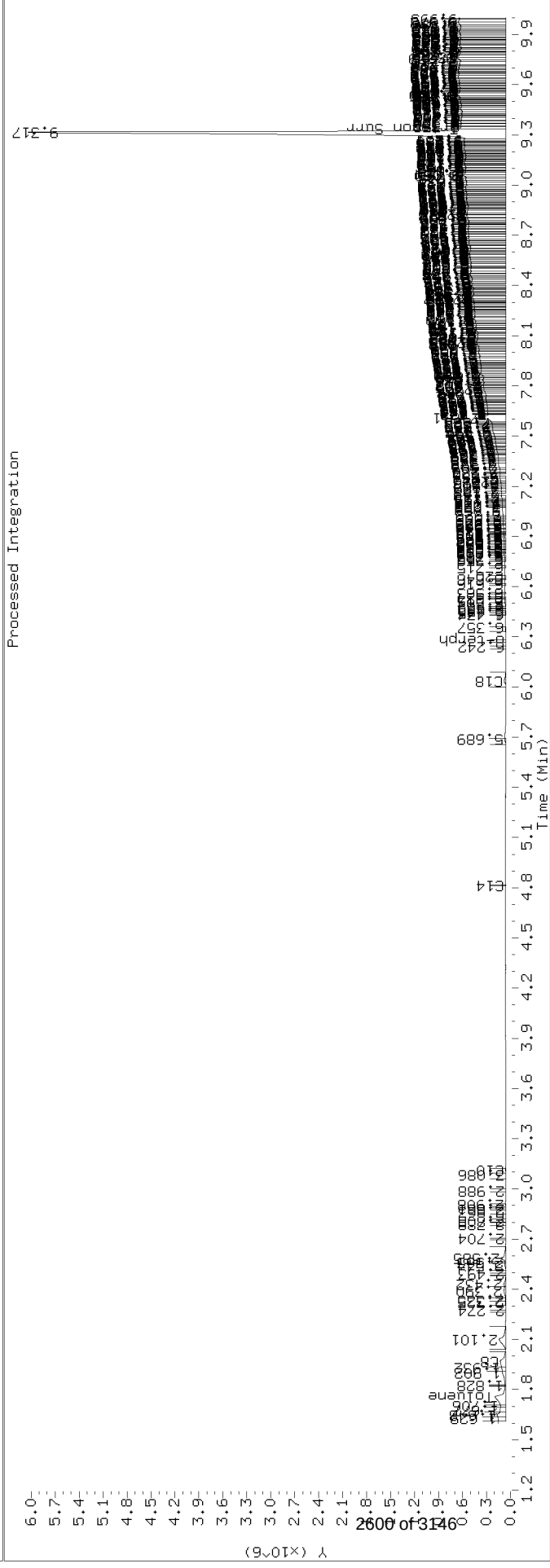
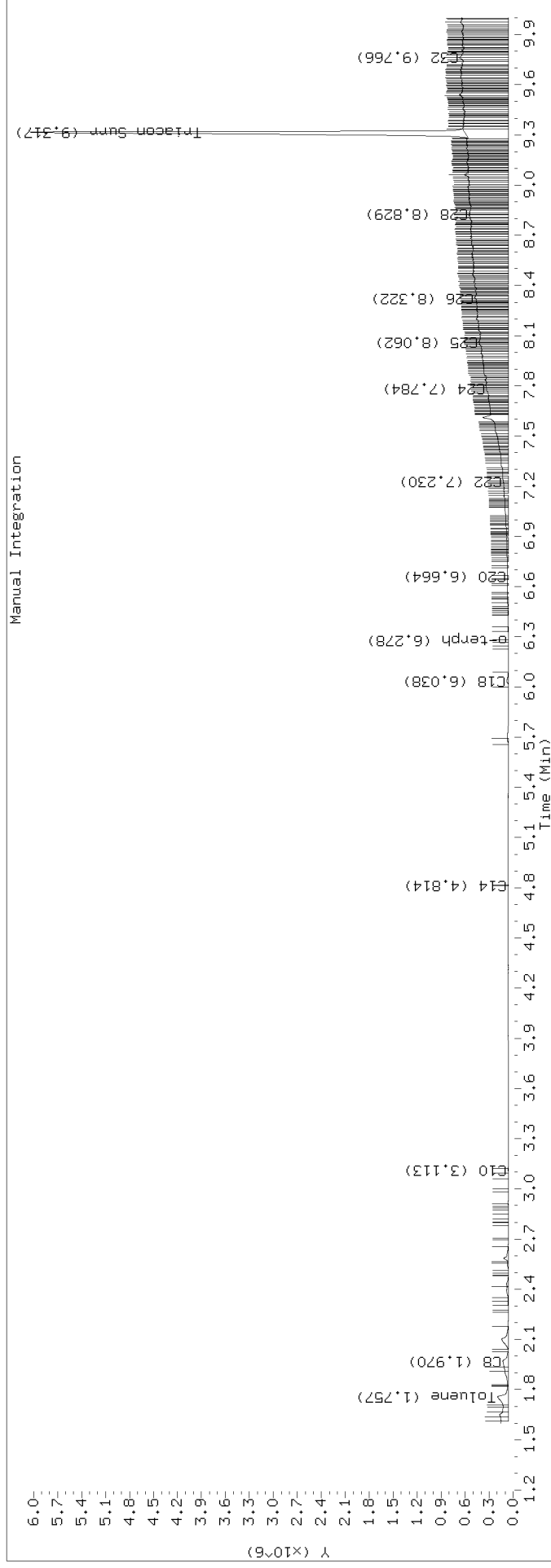
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	3663	0.0
Triacontane	5827004	47.6 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1634.D

Date : 16-JUL-2019 22:53

Client ID:

Sample Info: SHG0207-CALB

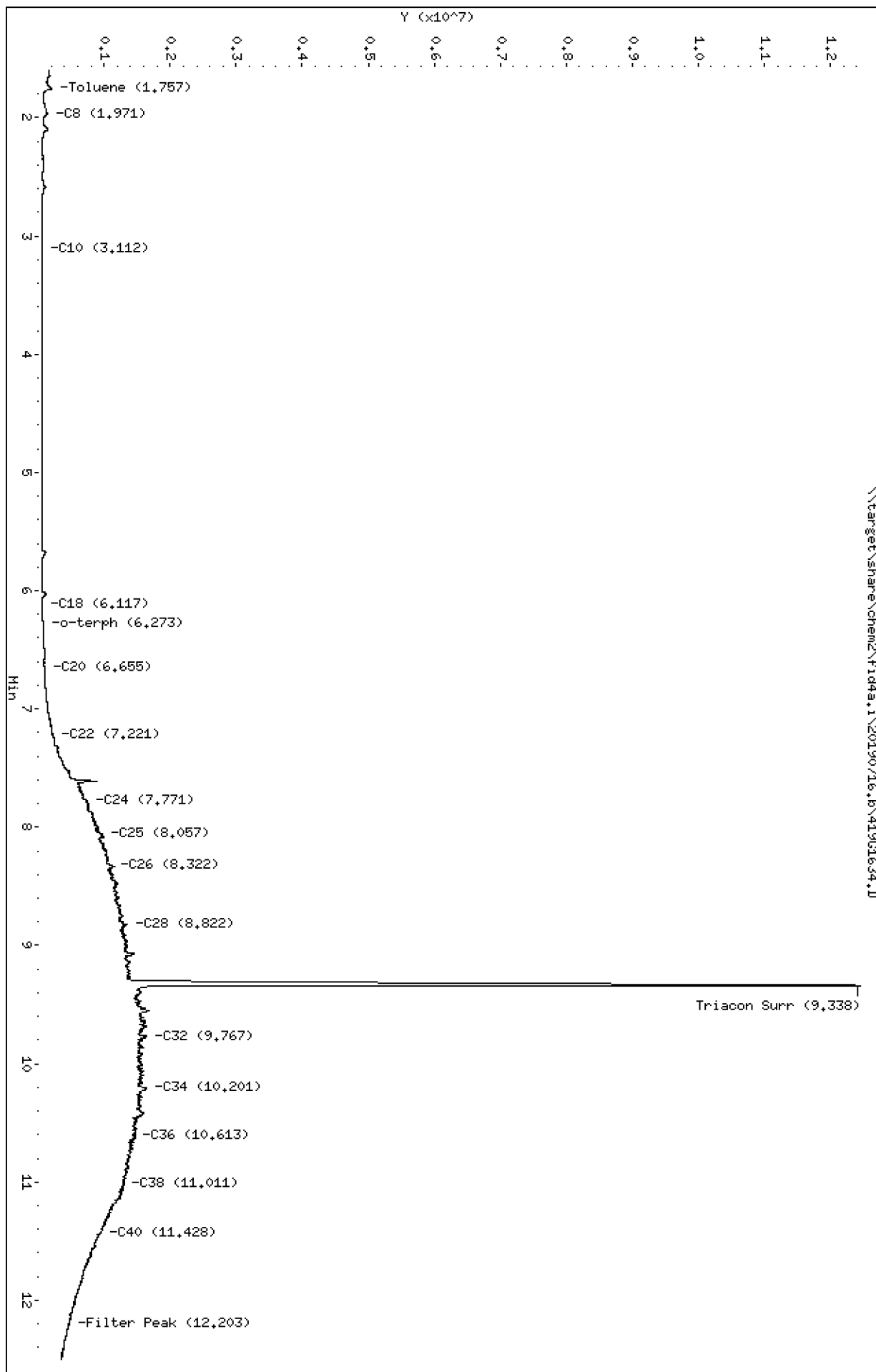
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

\\target\share\chem2\fid4a.i\20190716.b\419G1634.D



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1634.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALB

Client ID:

Injection: 16-JUL-2019 22:53

Dilution Factor: 1

RT Std: 419G1622.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.971	-0.017	74520	243193	WATPHD	(C12-C24)	18499385	175.5
C10	3.112	-0.016	7661	12587	WATPHM	(C24-C38)	247059090	2694.8
C12	----				AK102	(C10-C25)	26956219	220.3
C14	----				AK103	(C25-C36)	208285482	2994.5
C16	----				OR.DIES	(C10-C28)	81933175	668.7
C18	6.117	0.035	6742	4480				
C20	6.655	-0.006	39981	83513				
C22	7.221	-0.002	161463	87438				
C24	7.771	-0.005	676718	1114950				
C25	8.057	0.003	909911	1058725				
C26	8.322	0.007	1050150	815347				
C28	8.822	-0.003	1279275	1256366				
C32	9.767	-0.001	1582410	1618306				
C34	10.201	0.001	1578231	1317488				
Filter Peak	12.203	0.005	406586	241742				
C36	10.613	0.000	1394253	347814				
C38	11.011	0.002	1236329	492136				
C40	11.428	0.007	889153	616595				
o-terph	6.273	-0.002	11505	25369				
Triacon Surr	9.338	0.007	10920171	14681302	NAS DIES	(C10-C24)	18513260	151.6

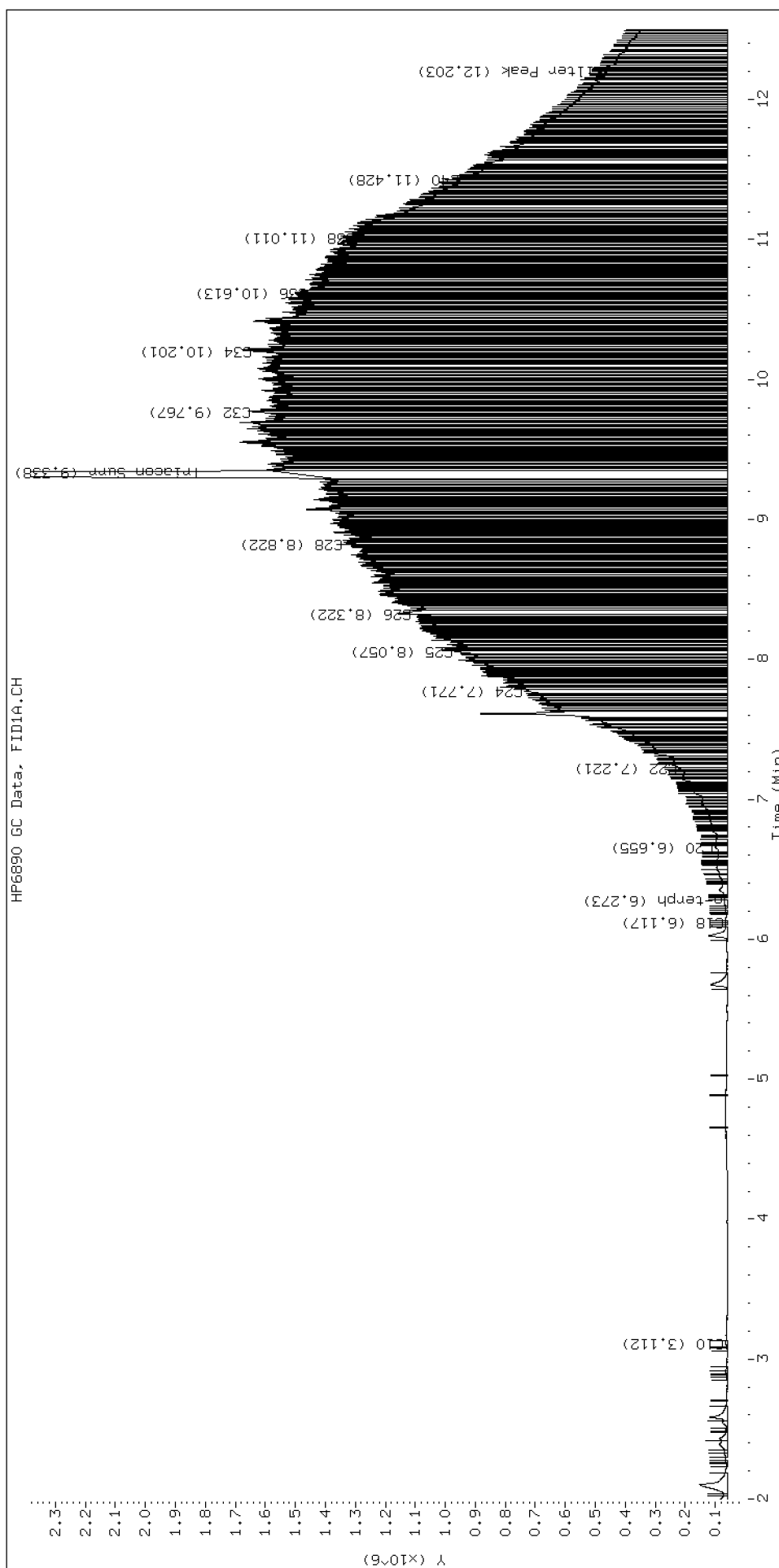
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

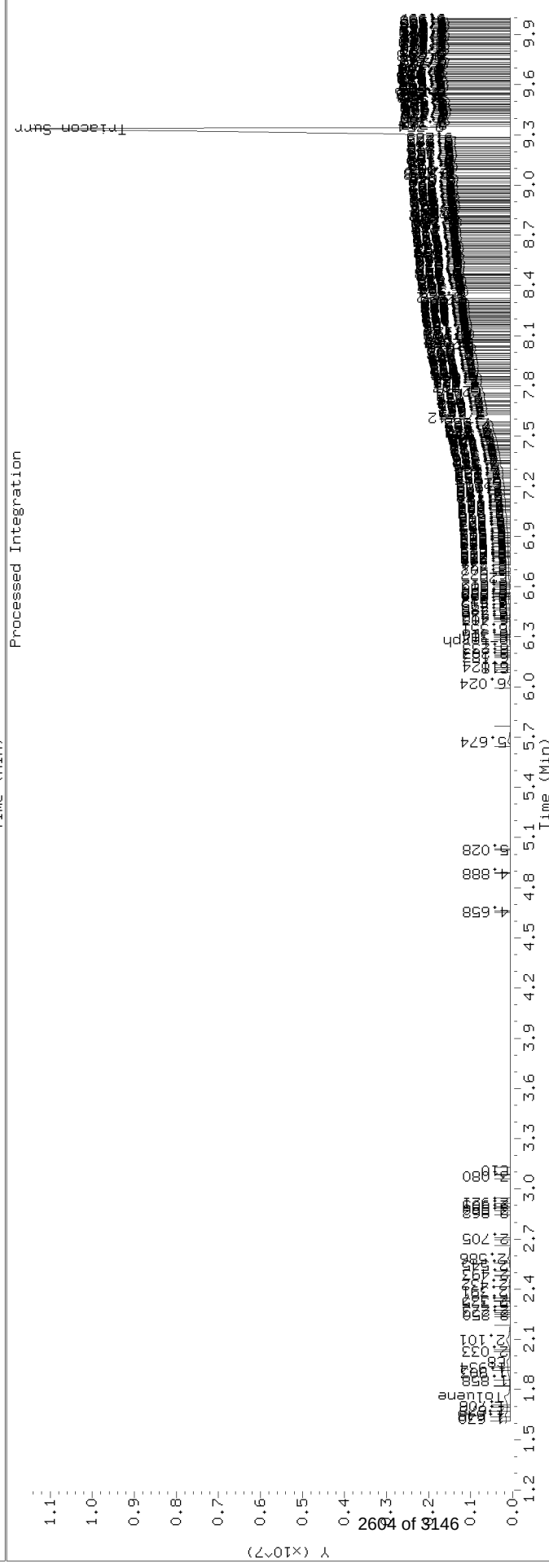
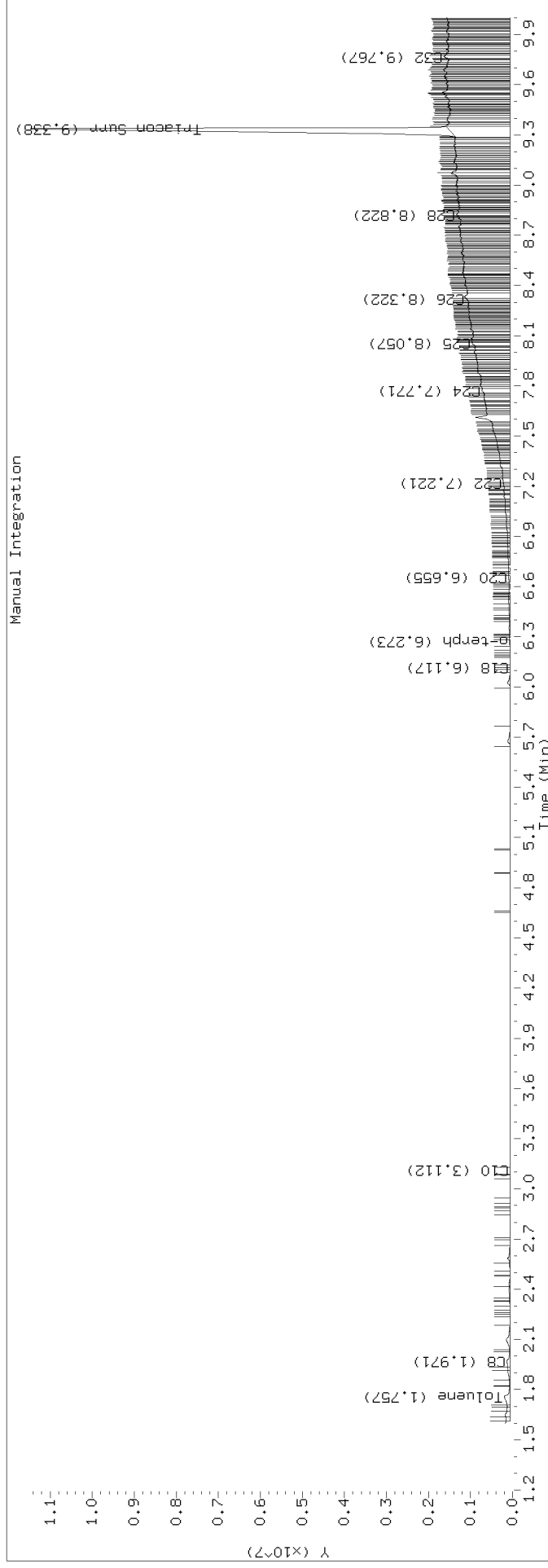
Surrogate	Area	Amount
o-Terphenyl	25369	0.2
Triacotane	14681302	119.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019

HP6890 GC Data, FID1A.CH





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1635.D

Date : 16-JUL-2019 23:14

Client ID:

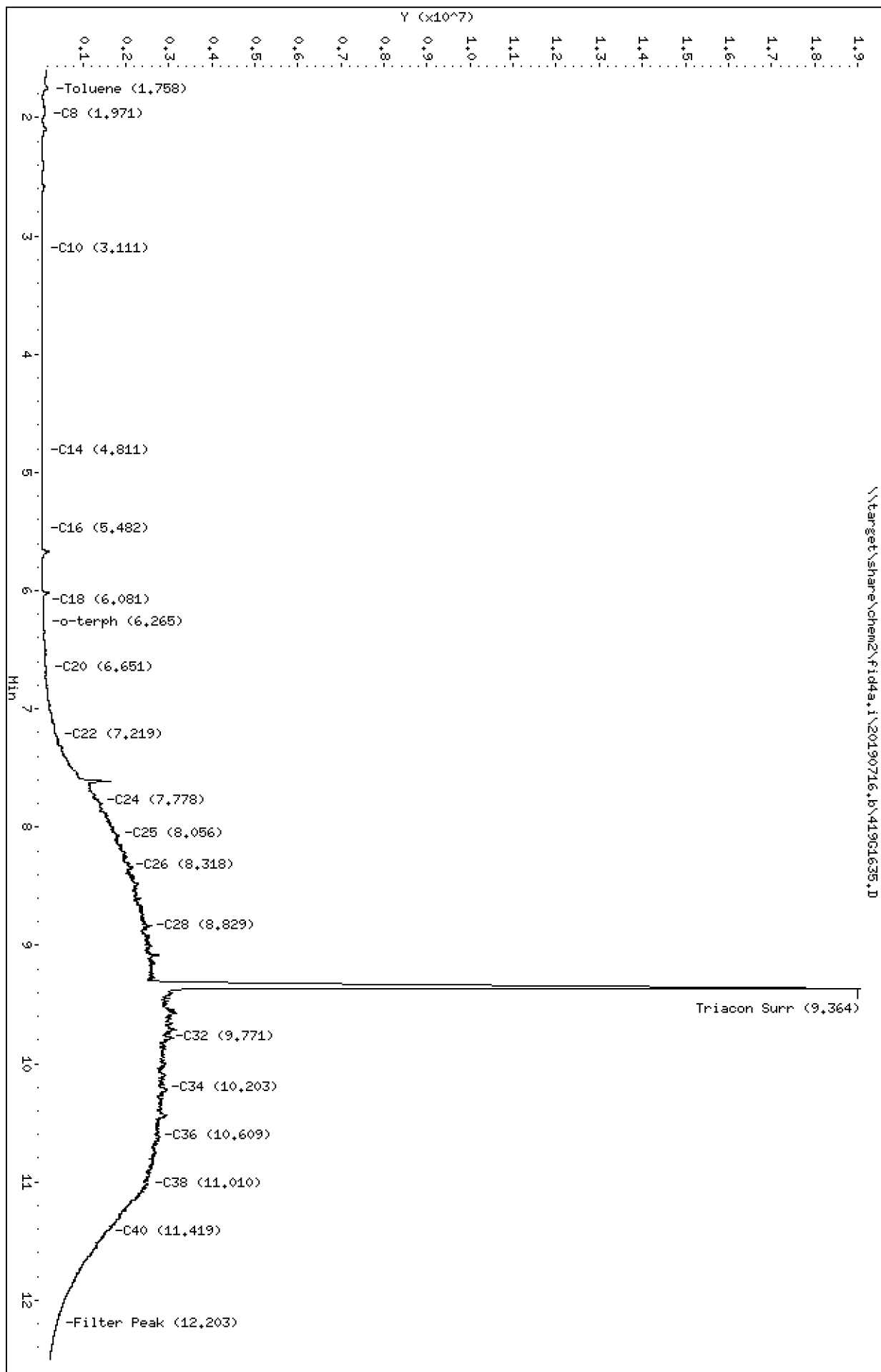
Sample Info: SHG0207-CALC

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1635.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALC

Client ID:

Injection: 16-JUL-2019 23:14

Dilution Factor: 1

RT Std: 419G1622.D

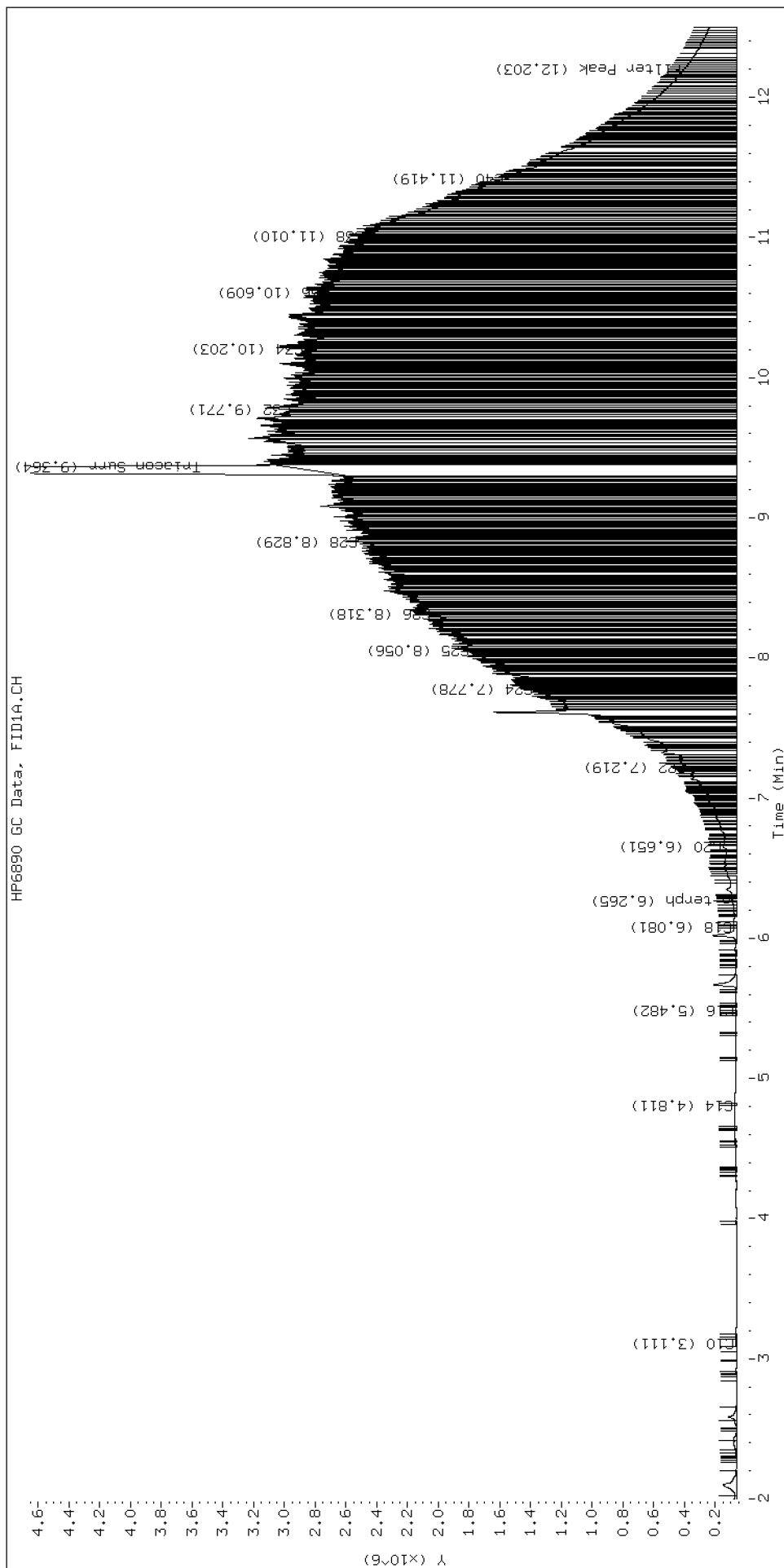
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.971	-0.016	68683	122184	WATPHD	(C12-C24)	37161809	352.6
C10	3.111	-0.016	10448	22600	WATPHM	(C24-C38)	474211905	5172.6
C12	----				AK102	(C10-C25)	53311397	435.8
C14	4.811	-0.017	13191	9757	AK103	(C25-C36)	398808273	5733.5
C16	5.482	-0.006	8599	7843	OR.DIES	(C10-C28)	160919094	1313.3
C18	6.081	-0.001	19758	12663				
C20	6.651	-0.010	90668	119517				
C22	7.219	-0.003	321604	127575				
C24	7.778	0.002	1317558	717565				
C25	8.056	0.002	1732220	942473				
C26	8.318	0.003	1980657	395218				
C28	8.829	0.004	2457177	1446943				
C32	9.771	0.004	2889056	1427823				
C34	10.203	0.003	2809829	1935038				
Filter Peak	12.203	0.004	343937	271642				
C36	10.609	-0.003	2639284	527305				
C38	11.010	0.001	2415511	1196390				
C40	11.419	-0.003	1508200	897244				
o-terph	6.265	-0.010	31682	12405				
Triacon Surr	9.364	0.033	16067717	28291205	NAS DIES	(C10-C24)	37210548	304.6

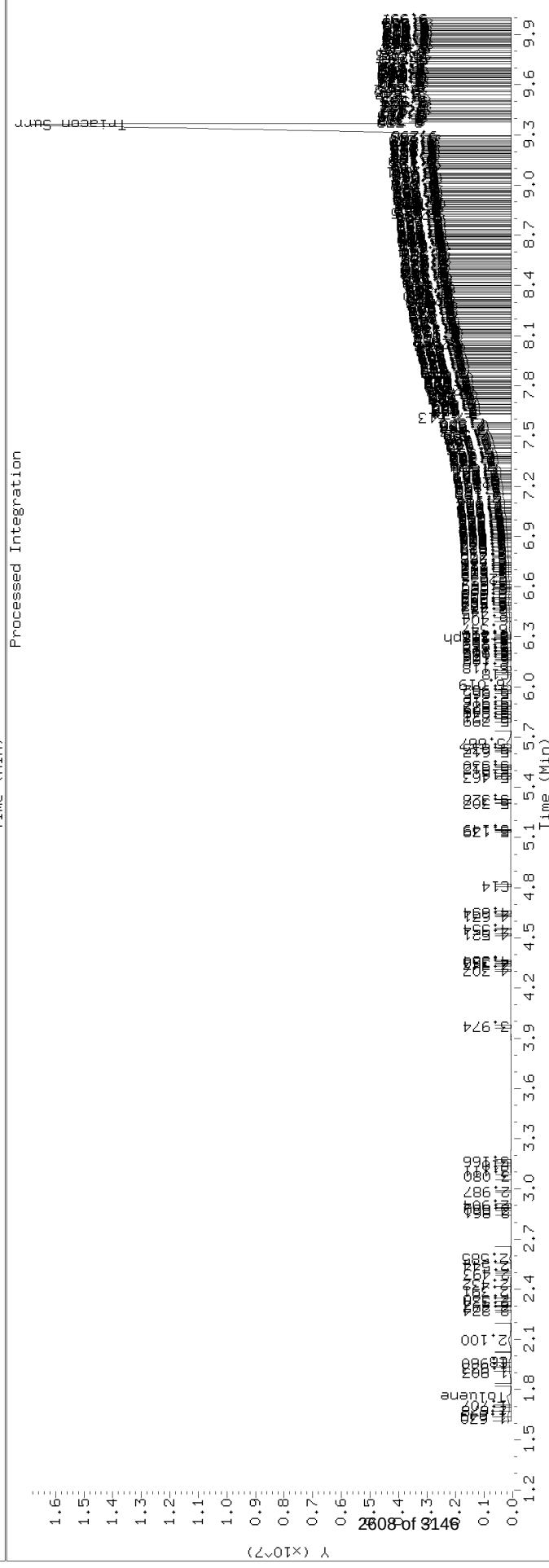
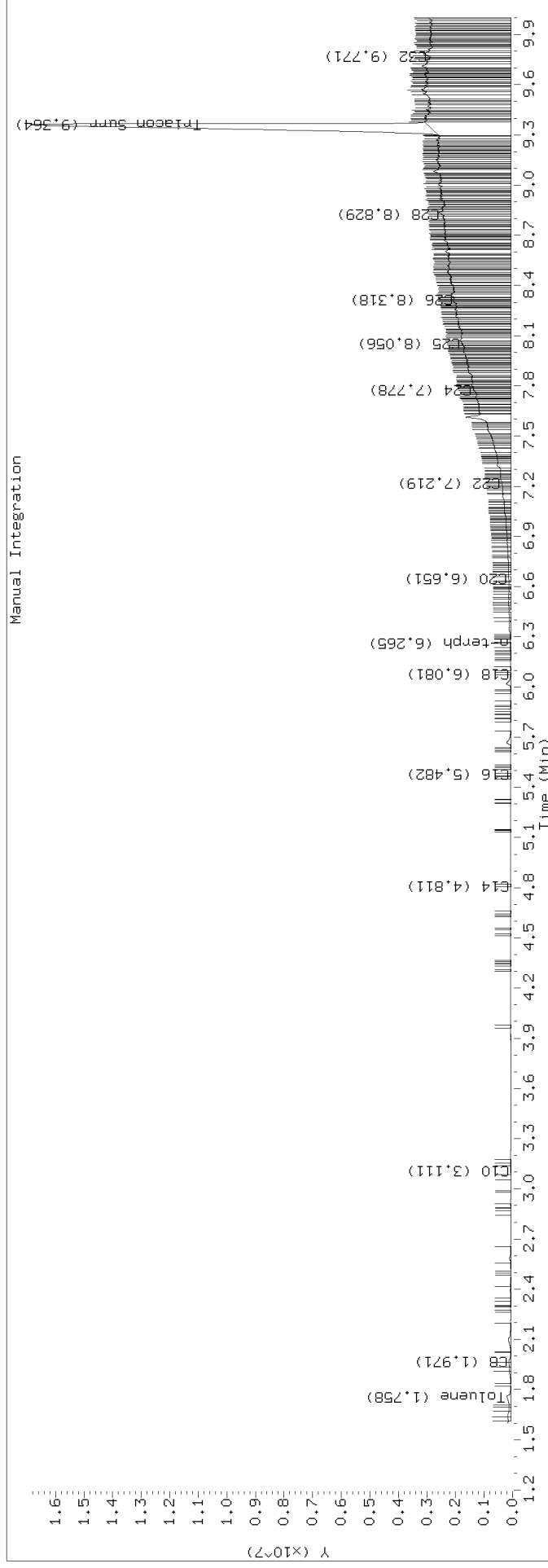
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	12405	0.1
Triacotane	28291205	231.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1636.D

Date : 16-JUL-2019 23:36

Client ID:

Sample Info: SHG0207-CALD

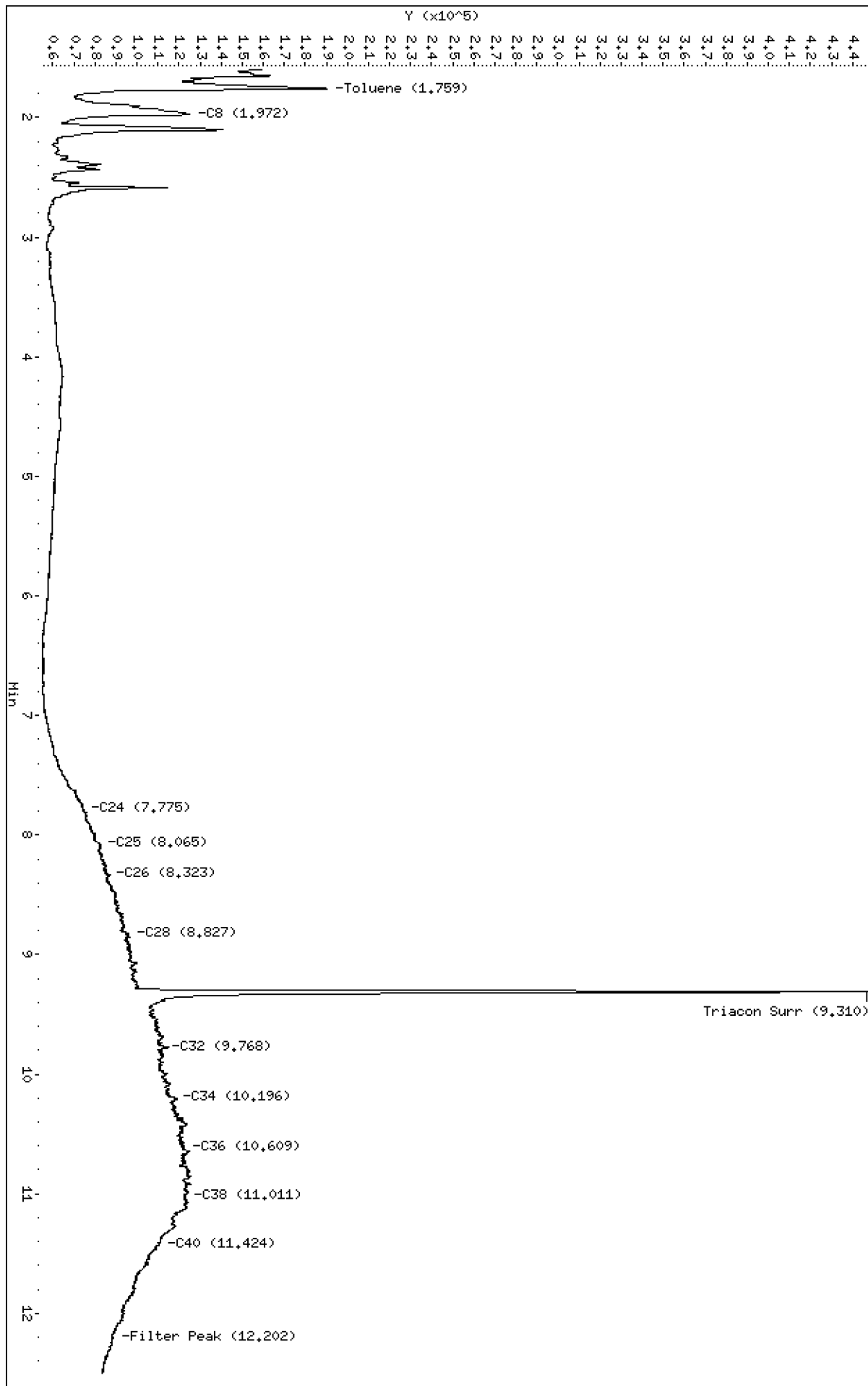
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

\\target\share\chem2\fid4a.i\20190716.b\419G1636.D



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1636.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALD

Client ID:

Injection: 16-JUL-2019 23:36

Dilution Factor: 1

RT Std: 419G1622.D

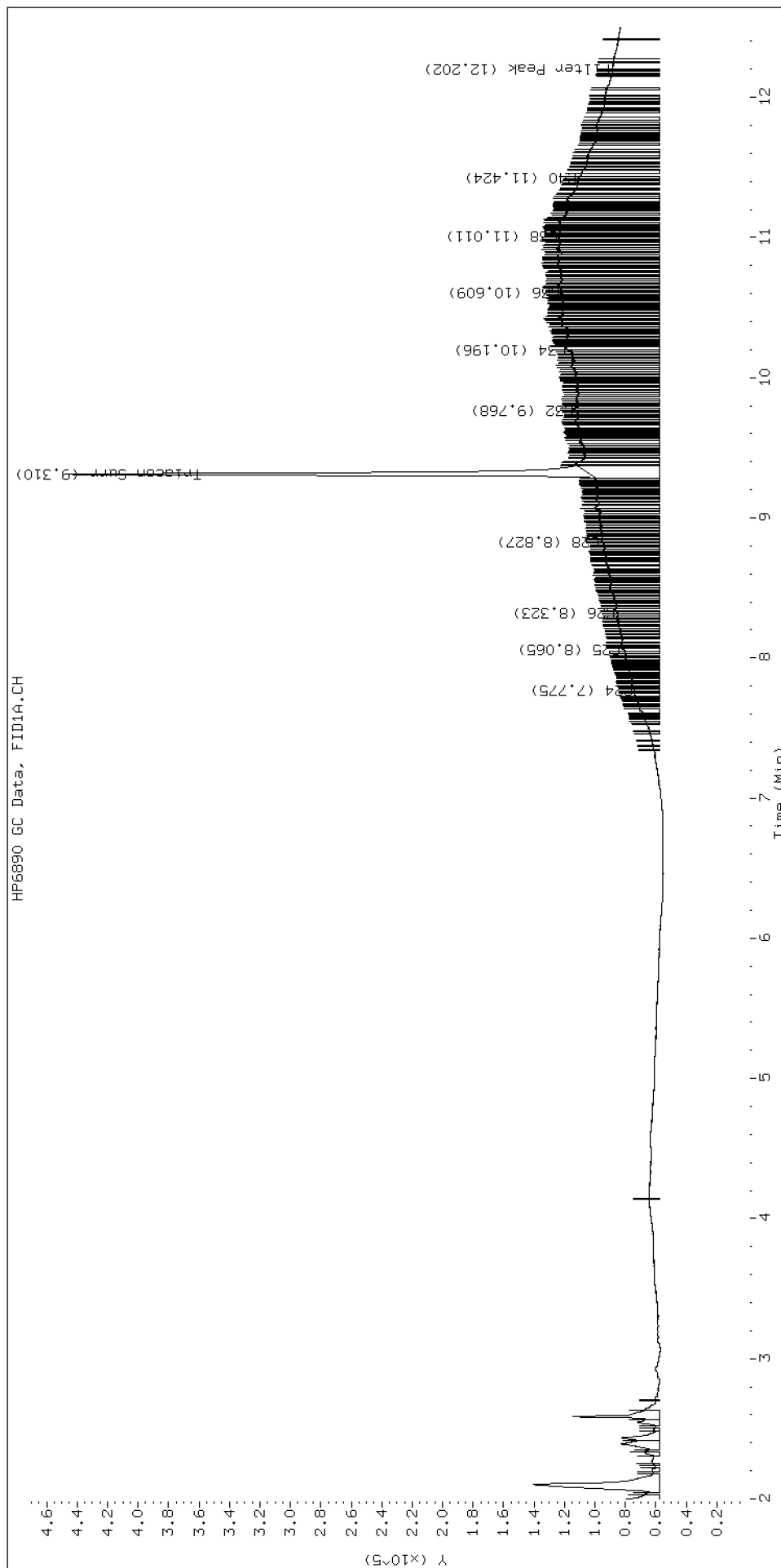
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.972	-0.015	67552	124141	WATPHD	(C12-C24)	182257	1.7
C10	----				WATPHM	(C24-C38)	7748684	84.5
C12	----				AK102	(C10-C25)	317680	2.6
C14	----				AK103	(C25-C36)	6235361	89.6
C16	----				OR.DIES	(C10-C28)	1639407	13.4
C18	----							
C20	----							
C22	----							
C24	7.775	-0.001	16668	12347				
C25	8.065	0.011	24332	24446				
C26	8.323	0.008	28257	23499				
C28	8.827	0.002	38117	18911				
C32	9.768	0.001	55116	29878				
C34	10.196	-0.004	60367	52987				
Filter Peak	12.202	0.004	30971	10814				
C36	10.609	-0.003	64468	22460				
C38	11.011	0.002	65593	29308				
C40	11.424	0.002	53077	42178				
o-terph	----							
Triacon Surr	9.310	-0.021	344576	491644	NAS DIES	(C10-C24)	182257	1.5

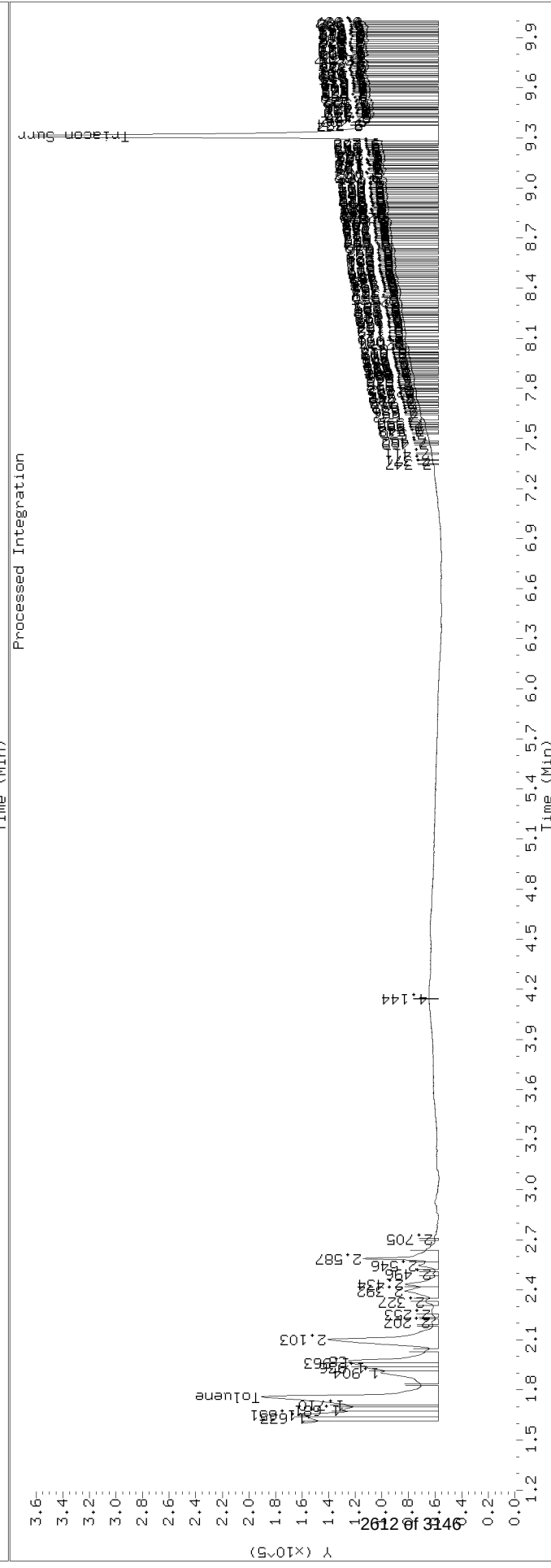
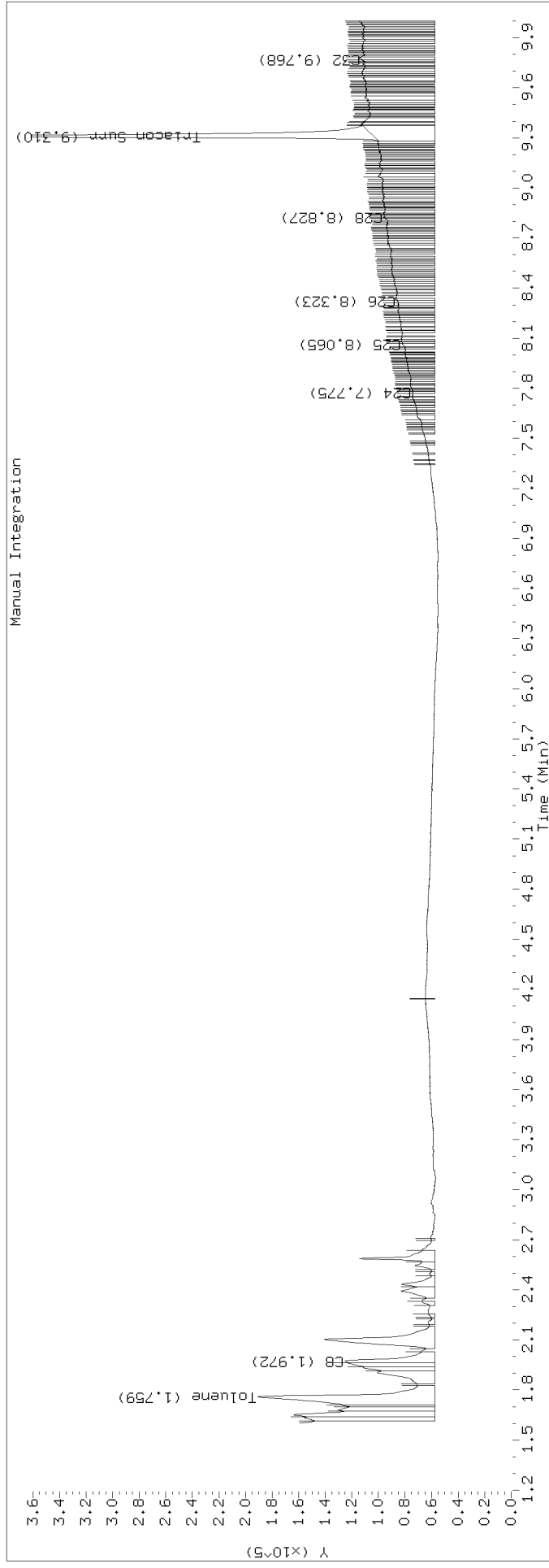
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	491644	4.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1637.D

Date: 16-JUL-2019 23:56

Client ID:

Sample Info: SHG0207-CALC

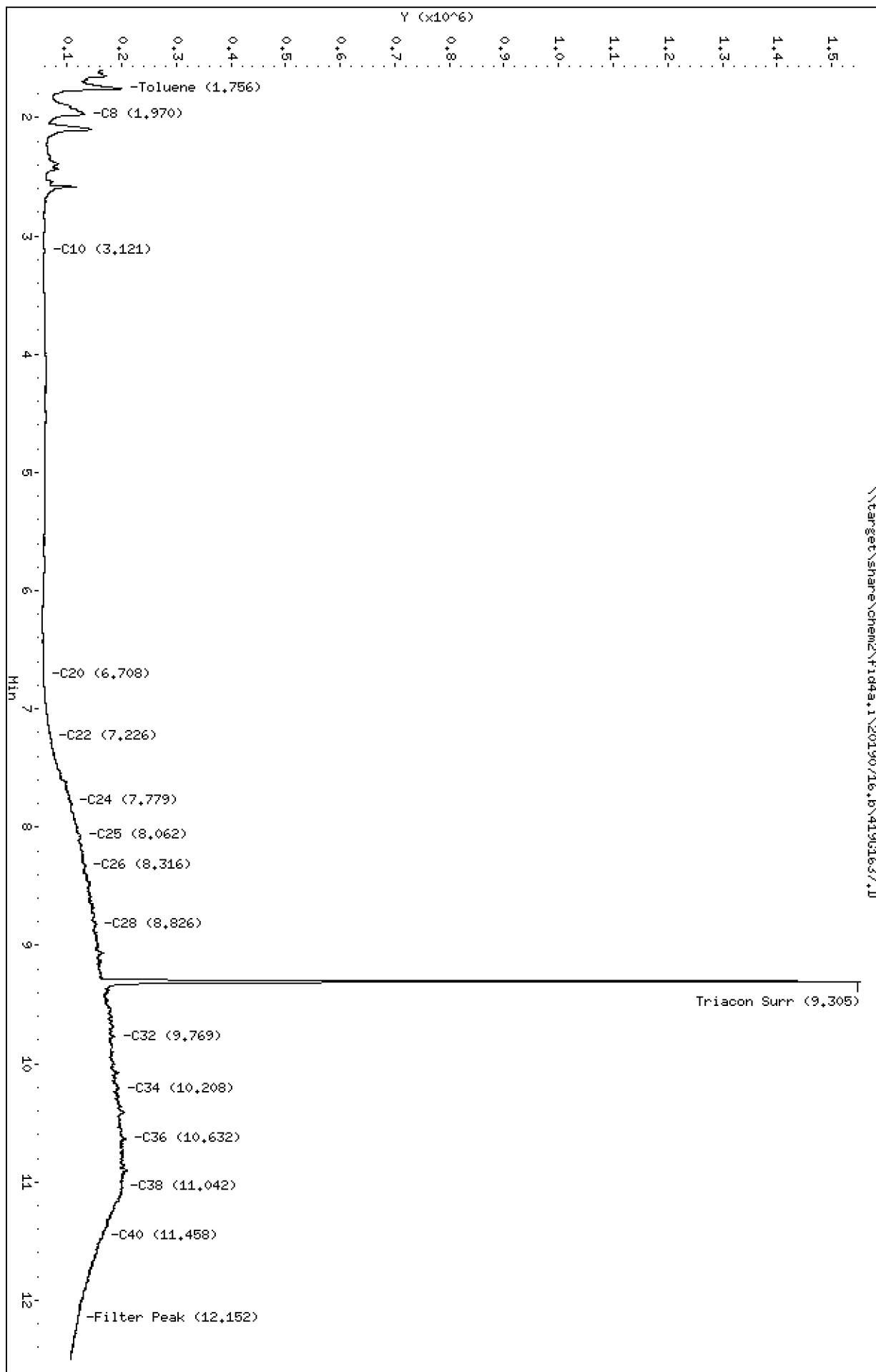
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1637.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALE

Client ID:

Injection: 16-JUL-2019 23:56

Dilution Factor: 1

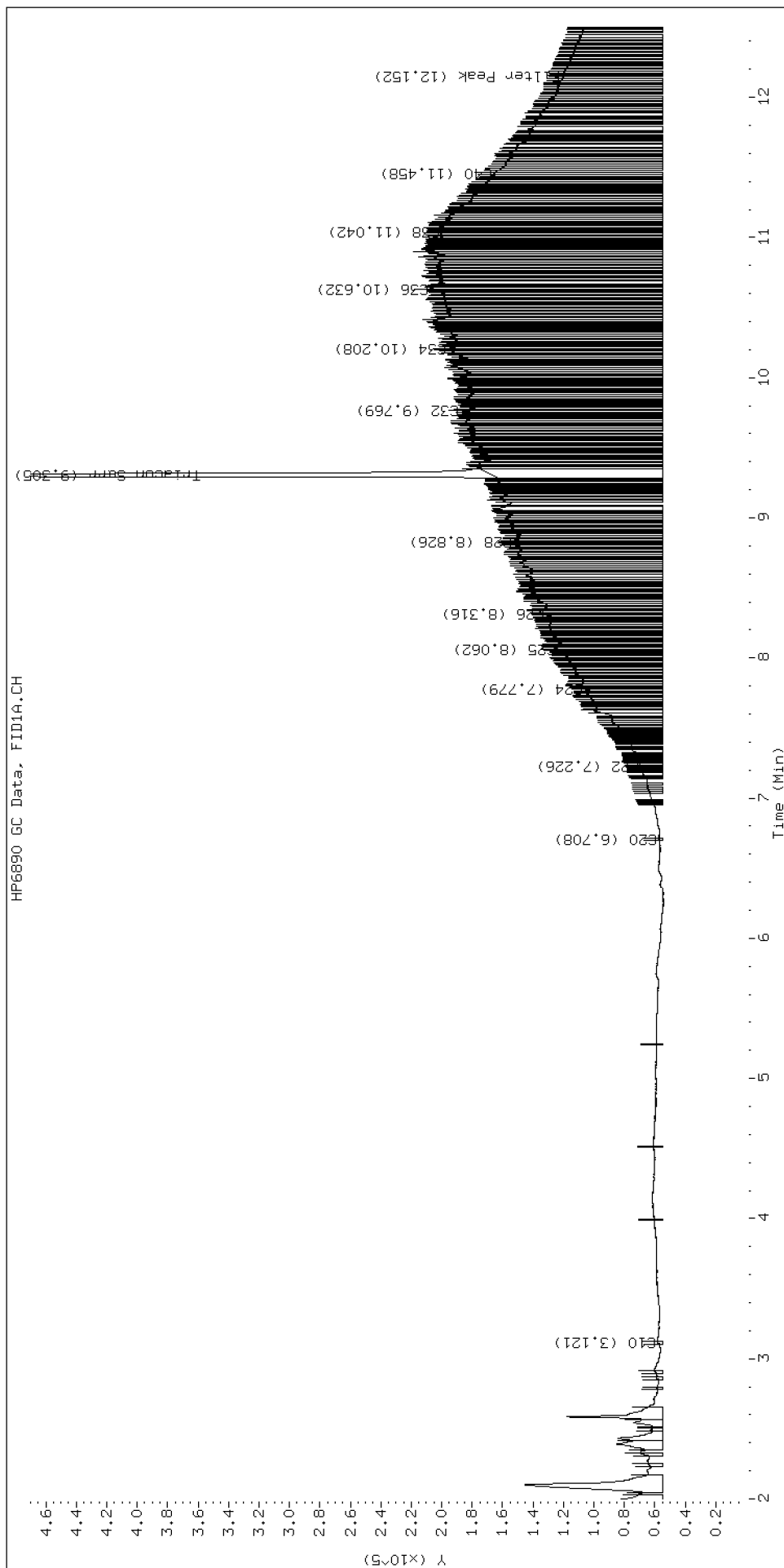
RT Std: 419G1622.D

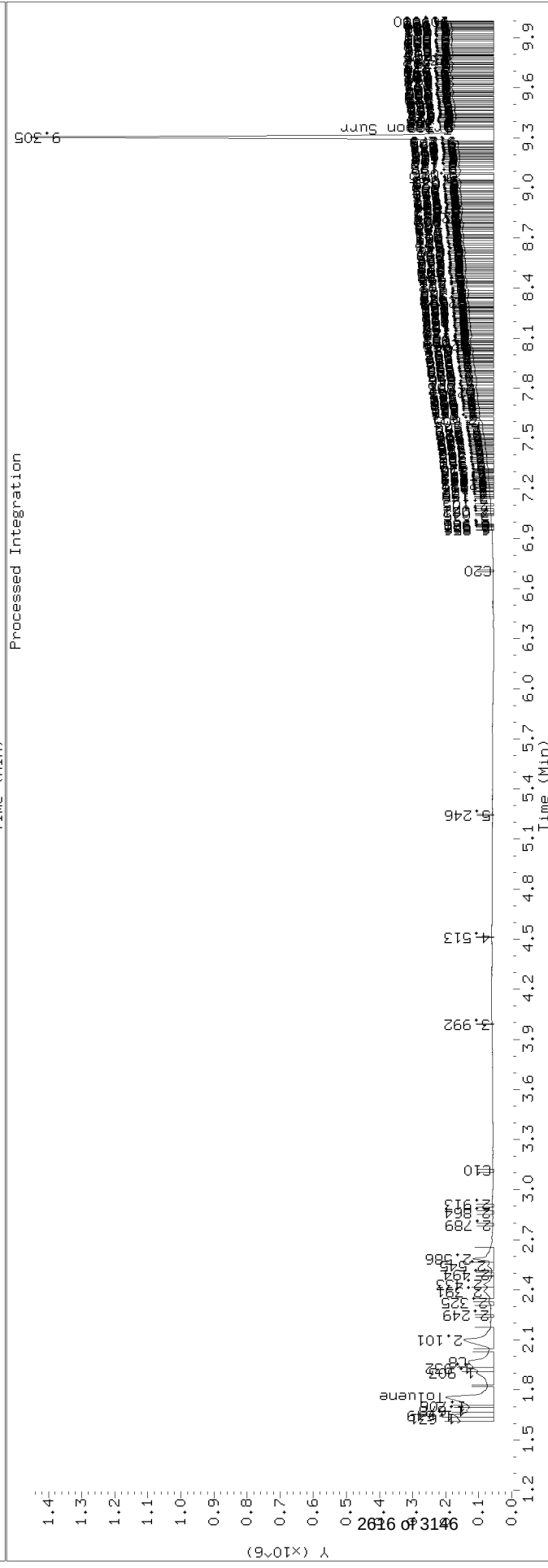
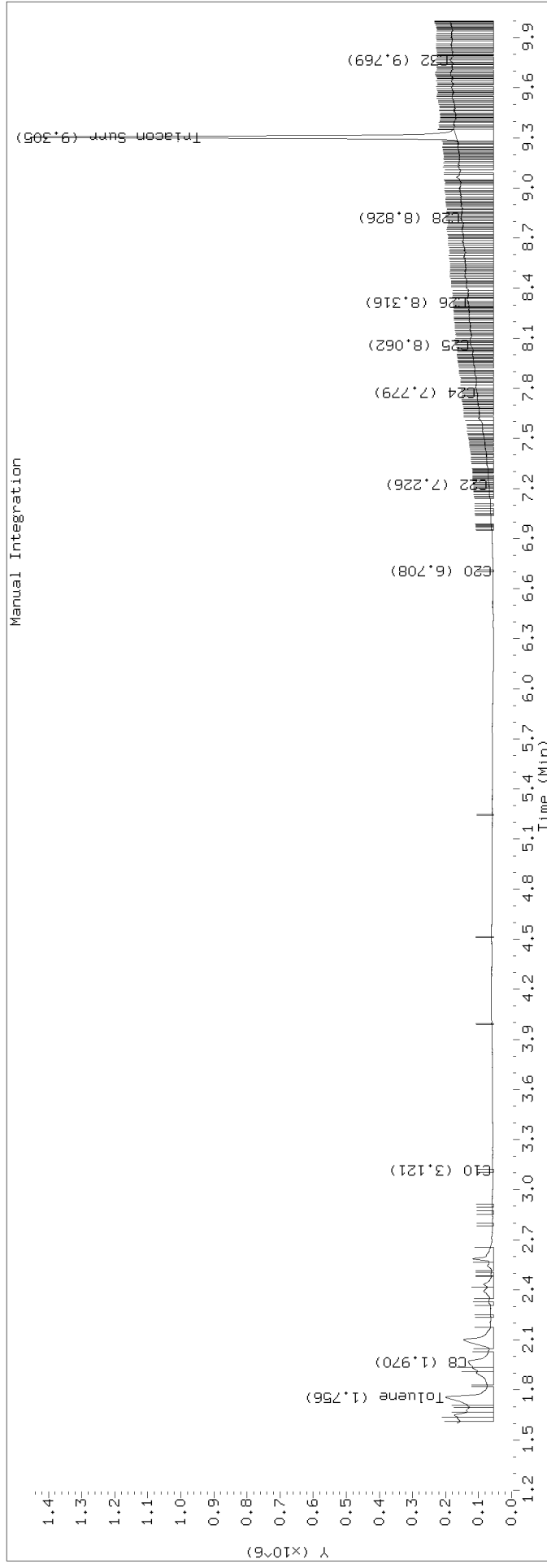
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.018	76435	264039	WATPHD	(C12-C24)	1187332	11.3
C10	3.121	-0.007	3479	2985	WATPHM	(C24-C38)	20622962	224.9
C12	----				AK102	(C10-C25)	1643707	13.4
C14	----				AK103	(C25-C36)	16817270	241.8
C16	----				OR.DIES	(C10-C28)	5796125	47.3
C18	----							
C20	6.708	0.047	2339	1314				
C22	7.226	0.003	14135	3499				
C24	7.779	0.003	50886	22601				
C25	8.062	0.008	69249	27371				
C26	8.316	0.001	76722	30506				
C28	8.826	0.001	98031	48797				
C32	9.769	0.001	132731	84090				
C34	10.208	0.008	141091	103556				
Filter Peak	12.152	-0.046	65384	35761				
C36	10.632	0.020	152497	97062				
C38	11.042	0.033	144946	79662				
C40	11.458	0.036	111108	99204				
o-terph	----							
Triacon Surr	9.305	-0.026	1385218	1319798	NAS DIES	(C10-C24)	1192514	9.8
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)								
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)								

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	1319798	10.8 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\41961638.D

Date : 17-JUL-2019 00:17

Client ID:

Sample Info: SHG0207-CALF

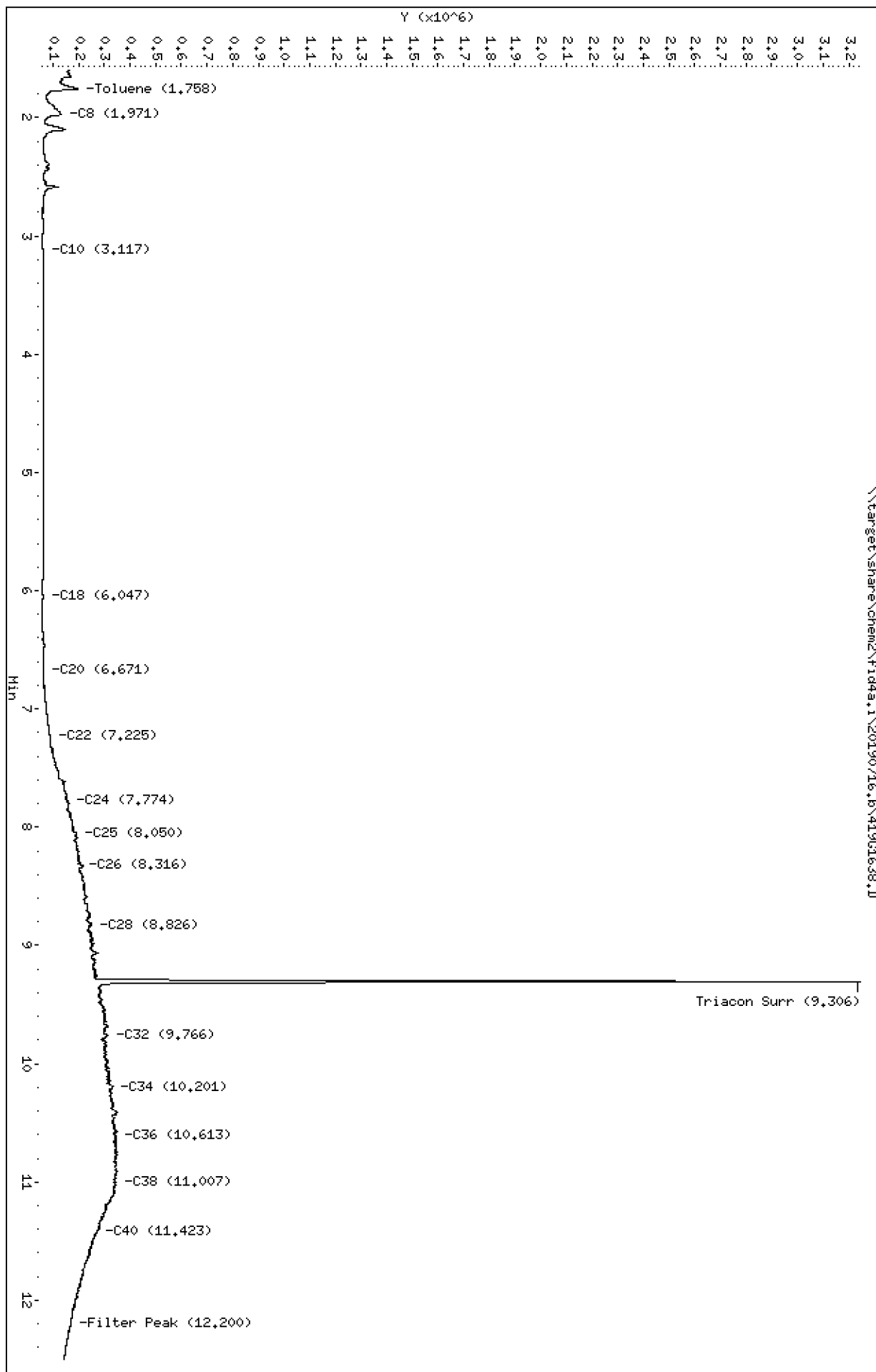
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1638.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALF

Client ID:

Injection: 17-JUL-2019 00:17

Dilution Factor: 1

RT Std: 419G1622.D

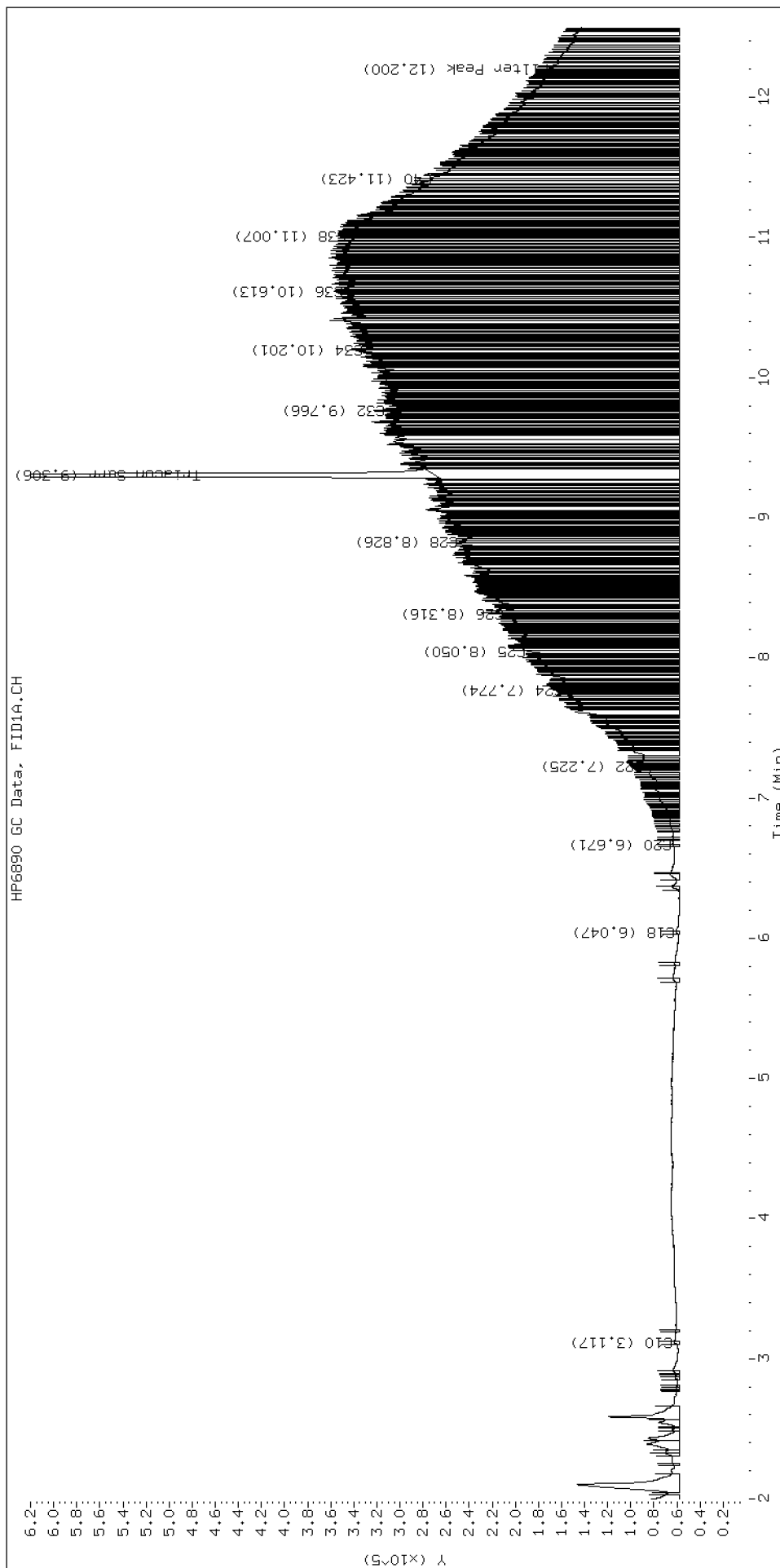
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.971	-0.016	72156	237635	WATPHD	(C12-C24)	2502802	23.8
C10	3.117	-0.010	4169	5429	WATPHM	(C24-C38)	41521867	452.9
C12	----				AK102	(C10-C25)	3738173	30.6
C14	----				AK103	(C25-C36)	33534009	482.1
C16	----				OR.DIES	(C10-C28)	11582147	94.5
C18	6.047	-0.034	2602	3252				
C20	6.671	0.010	5436	5414				
C22	7.225	0.002	29088	21551				
C24	7.774	-0.002	99137	34351				
C25	8.050	-0.005	131832	168377				
C26	8.316	0.001	150874	87472				
C28	8.826	0.001	190396	131424				
C32	9.766	-0.002	253446	88130				
C34	10.201	0.001	272361	176682				
Filter Peak	12.200	0.001	110611	44001				
C36	10.613	0.000	289880	143468				
C38	11.007	-0.002	286742	113591				
C40	11.423	0.001	212862	53164				
o-terph	----							
Triacon Surr	9.306	-0.025	2975552	2676205	NAS DIES	(C10-C24)	2510841	20.6

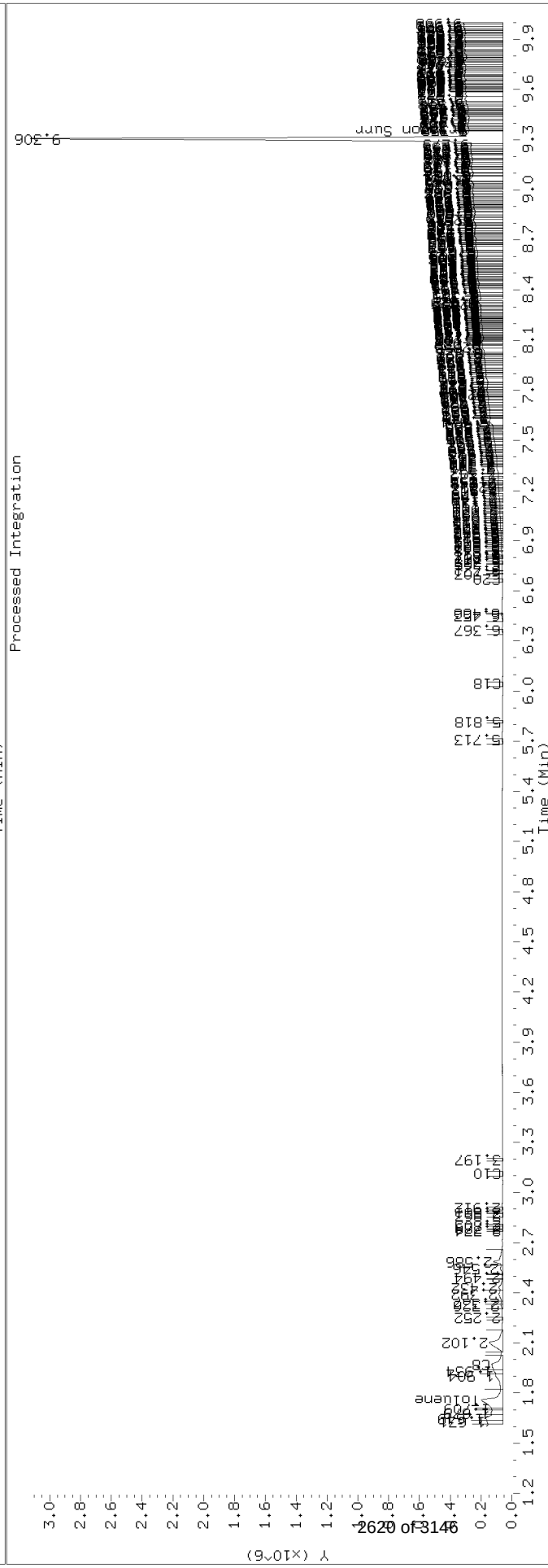
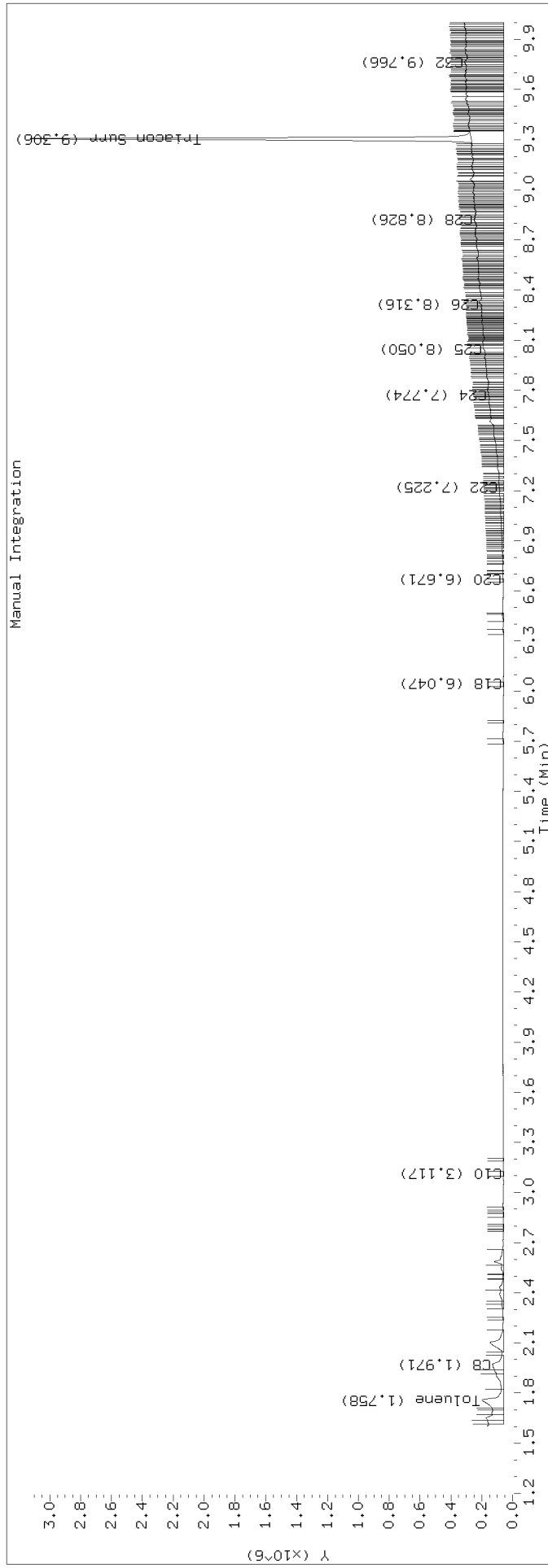
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	2676205	21.8 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\41961639.D

Date: 17-JUL-2019 00:37

Client ID:

Sample Info: SHG0207-CALG

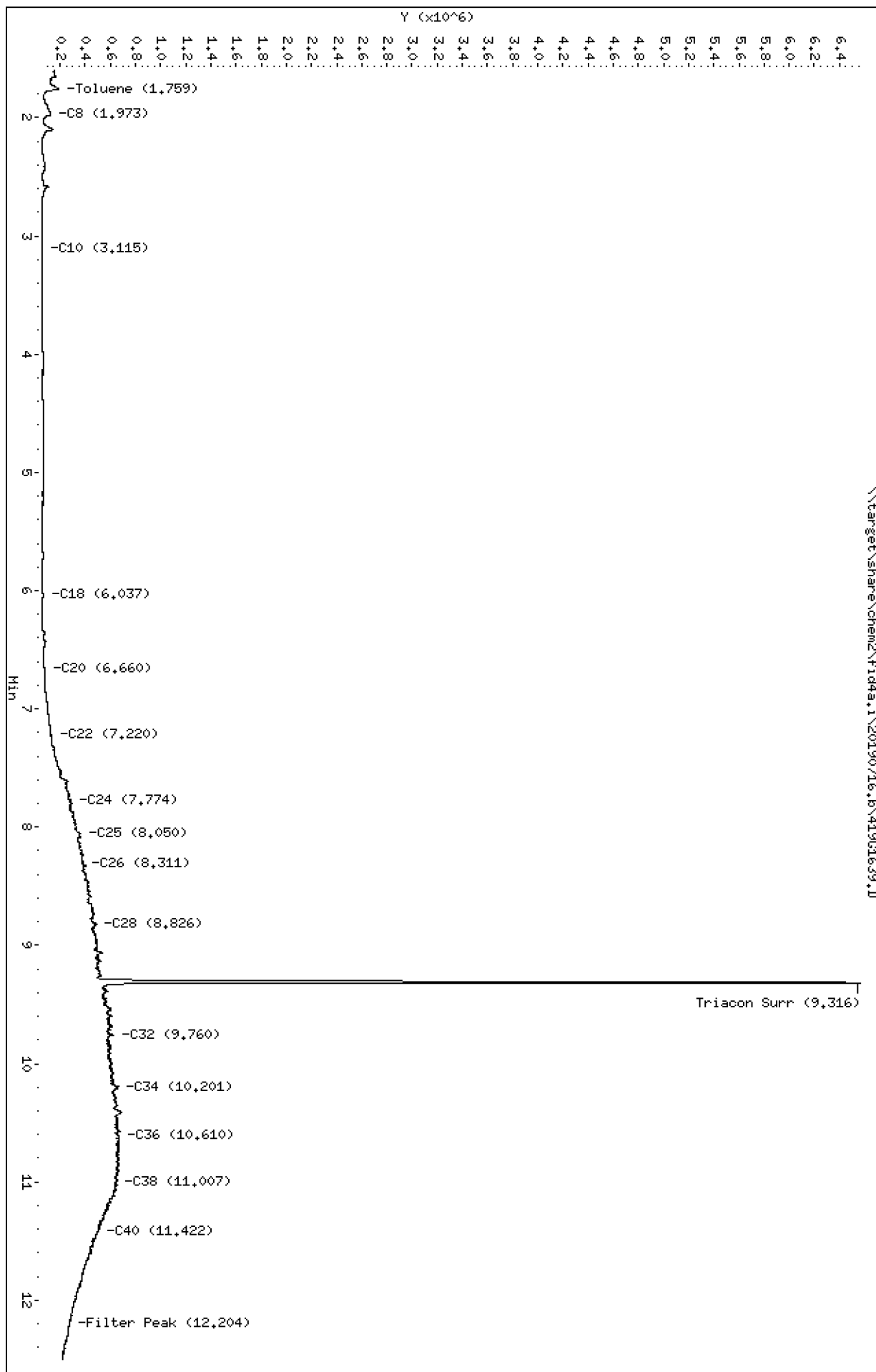
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1639.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALG

Client ID:

Injection: 17-JUL-2019 00:37

Dilution Factor: 1

RT Std: 419G1622.D

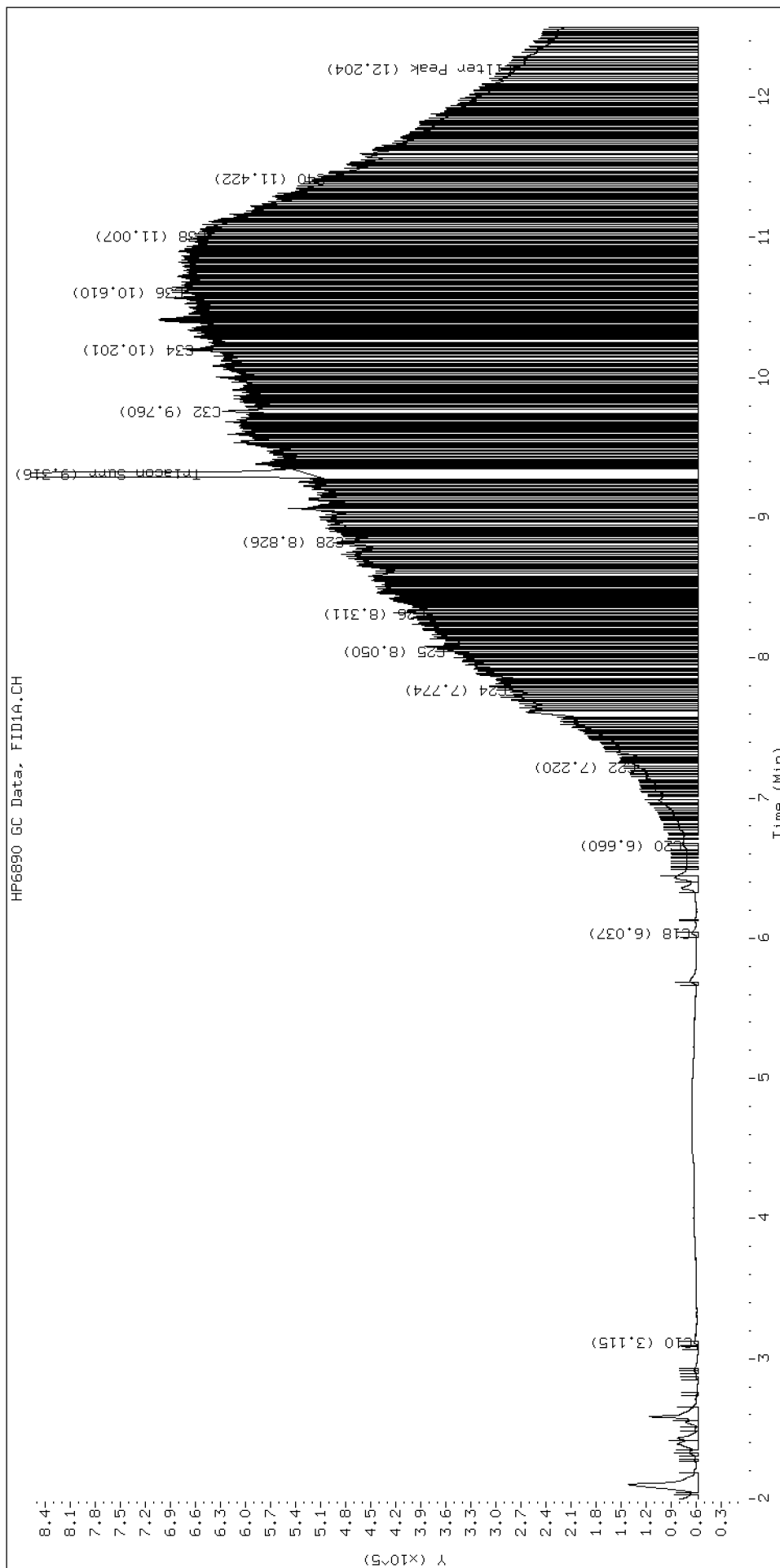
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.973	-0.015	67488	125234	WATPHD	(C12-C24)	6584184	62.5
C10	3.115	-0.013	5014	5406	WATPHM	(C24-C38)	90176506	983.6
C12	----				AK102	(C10-C25)	9194708	75.2
C14	----				AK103	(C25-C36)	73727718	1060.0
C16	----				OR.DIES	(C10-C28)	27156858	221.6
C18	6.037	-0.045	8057	10743				
C20	6.660	-0.000	18004	27731				
C22	7.220	-0.002	72993	53711				
C24	7.774	-0.002	227418	201645				
C25	8.050	-0.005	301154	208164				
C26	8.311	-0.004	324356	208906				
C28	8.826	0.001	422675	209486				
C32	9.760	-0.007	570027	896871				
C34	10.201	0.001	602724	269629				
Filter Peak	12.204	0.005	220368	109455				
C36	10.610	-0.003	615080	243627				
C38	11.007	-0.002	586593	146068				
C40	11.422	0.000	444437	241708				
o-terph	----							
Triacon Surr	9.316	-0.015	6039622	5792869	NAS DIES	(C10-C24)	6590671	54.0

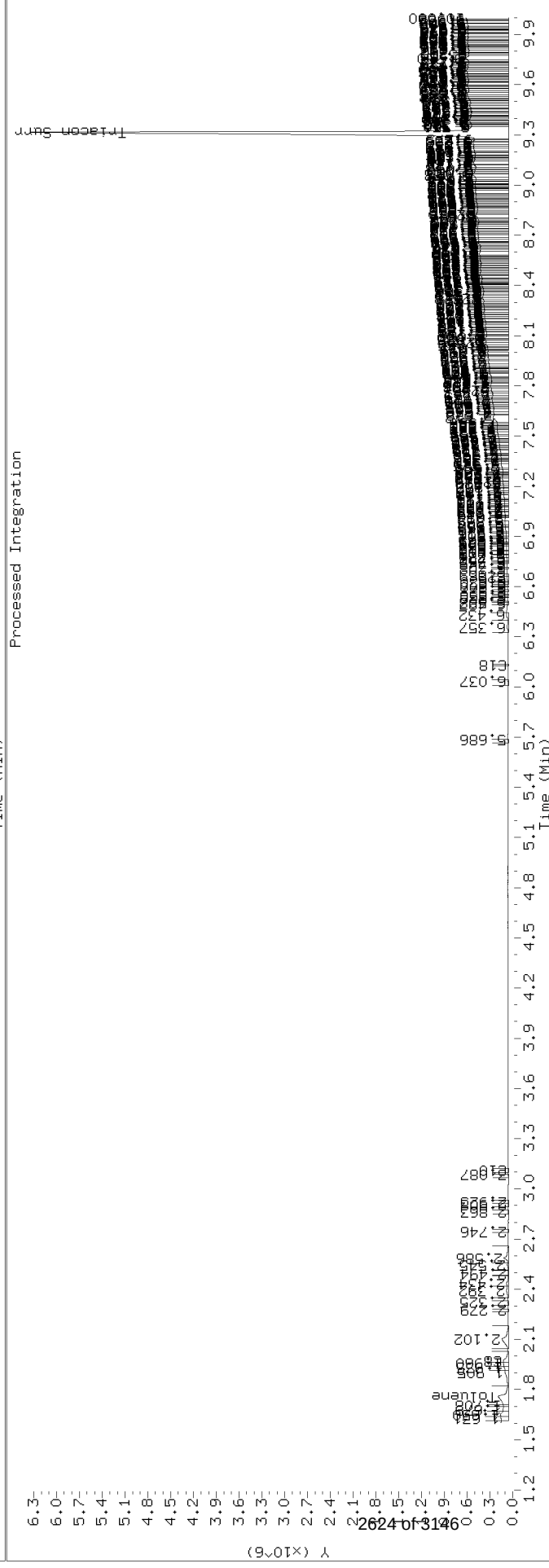
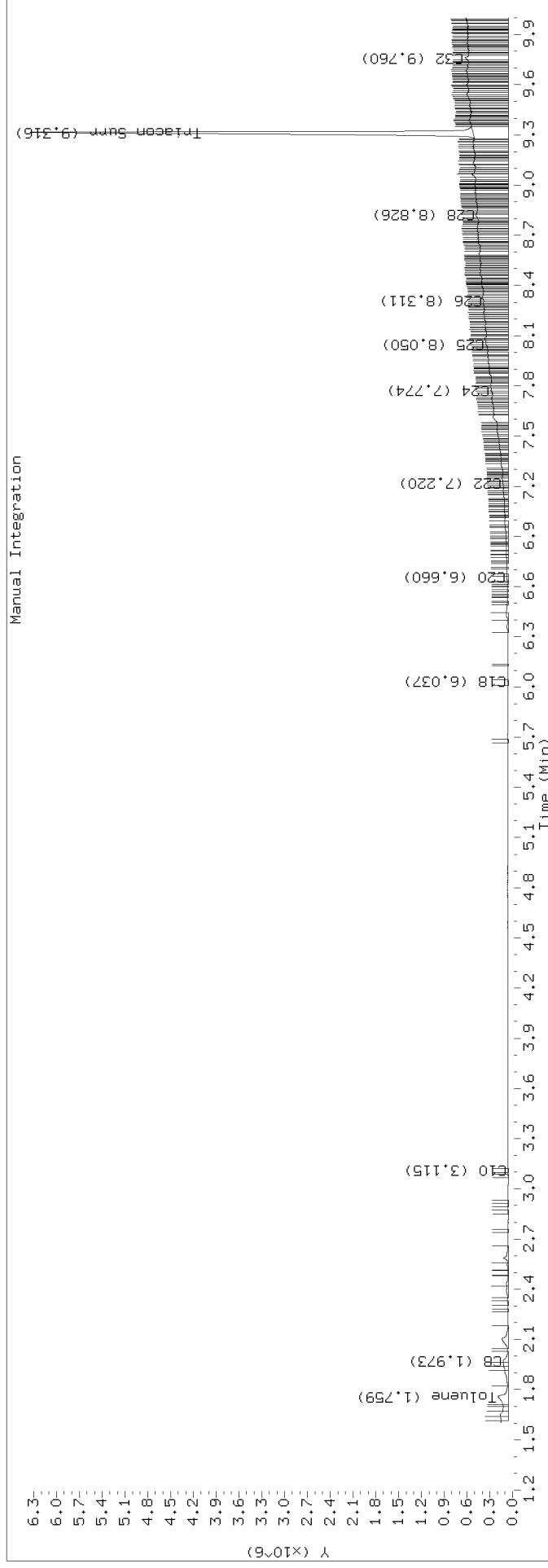
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacontane	5792869	47.3 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1640.D

Date : 17-JUL-2019 00:58

Client ID:

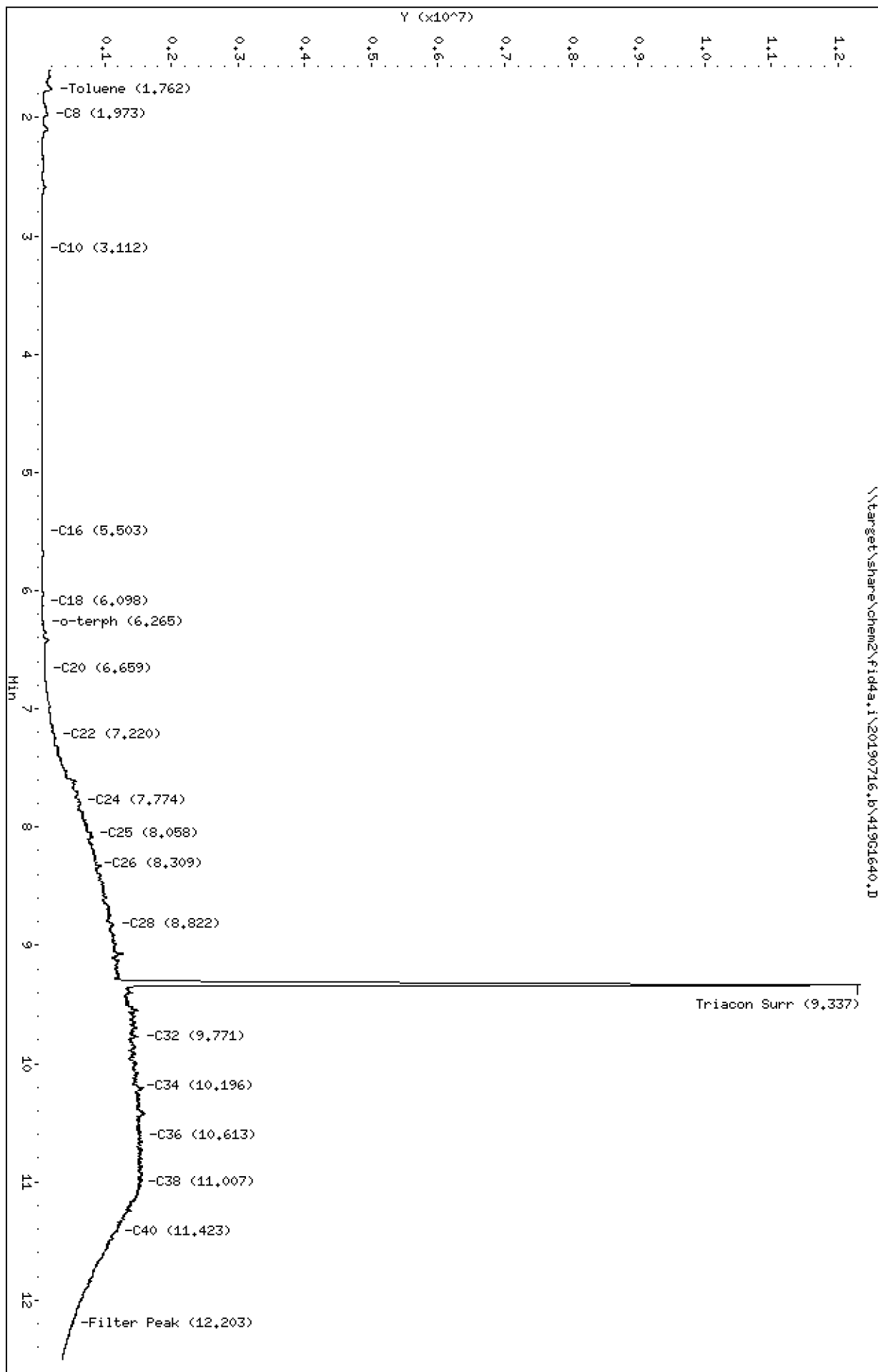
Sample Info: SHG0207-CALH

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1640.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALH

Client ID:

Injection: 17-JUL-2019 00:58

Dilution Factor: 1

RT Std: 419G1622.D

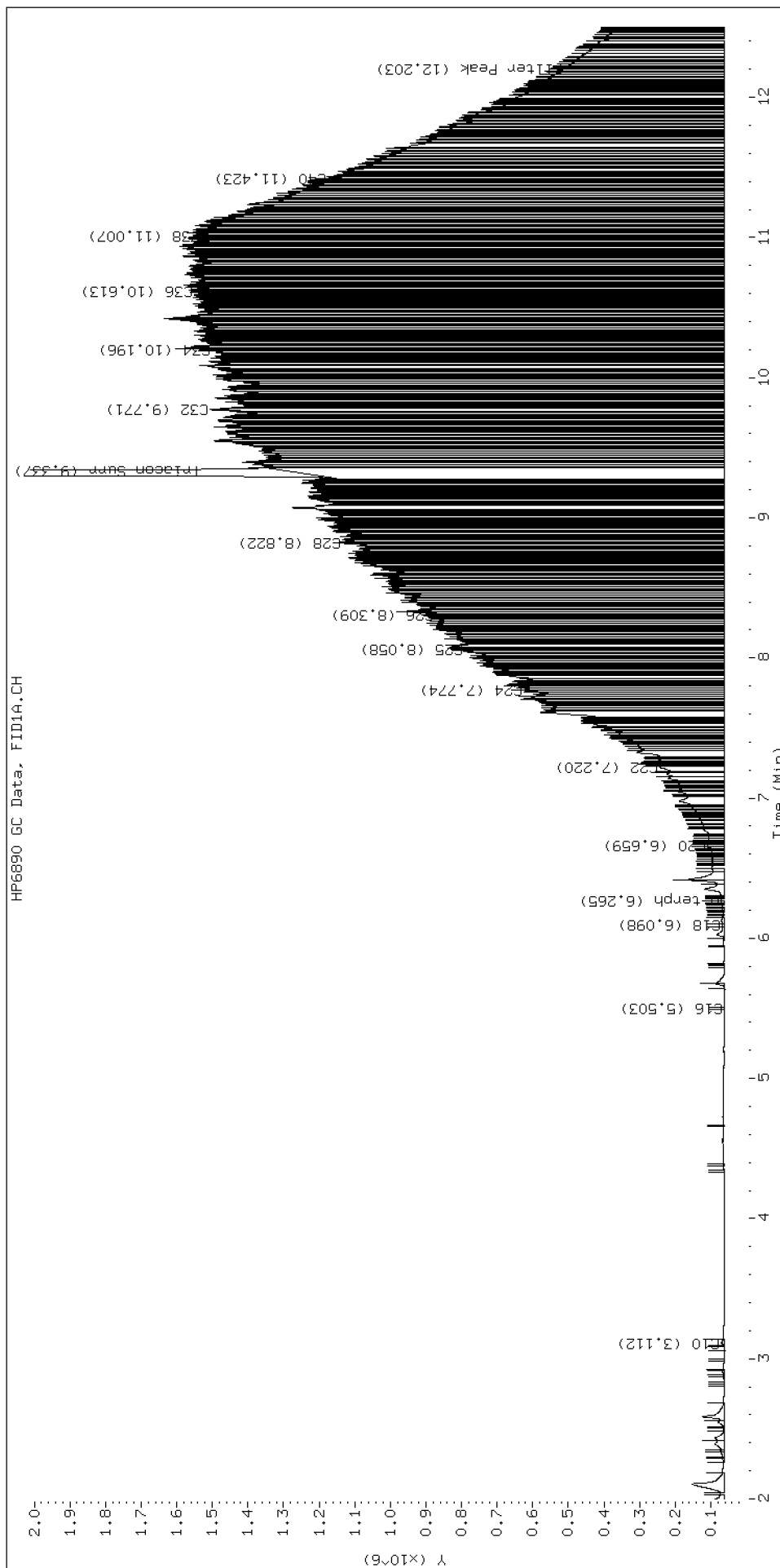
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.973	-0.014	75143	137670	WATPHD	(C12-C24)	16982005	161.2
C10	3.112	-0.015	8643	17293	WATPHM	(C24-C38)	227270024	2479.0
C12	----				AK102	(C10-C25)	23591371	192.8
C14	----				AK103	(C25-C36)	185958795	2673.5
C16	5.503	0.016	2366	1455	OR.DIES	(C10-C28)	68558629	559.5
C18	6.098	0.017	7522	10844				
C20	6.659	-0.002	48434	37990				
C22	7.220	-0.003	184048	320437				
C24	7.774	-0.002	562495	525932				
C25	8.058	0.004	731974	254940				
C26	8.309	-0.006	812736	322358				
C28	8.822	-0.003	1072403	637037				
C32	9.771	0.003	1444693	1610426				
C34	10.196	-0.004	1441513	359307				
Filter Peak	12.203	0.005	450288	134168				
C36	10.613	0.001	1489471	735070				
C38	11.007	-0.002	1468023	729003				
C40	11.423	0.002	1115276	981722				
o-terph	6.265	-0.010	10696	11035				
Triacon Surr	9.337	0.006	11032065	14477356	NAS DIES	(C10-C24)	17001502	139.2

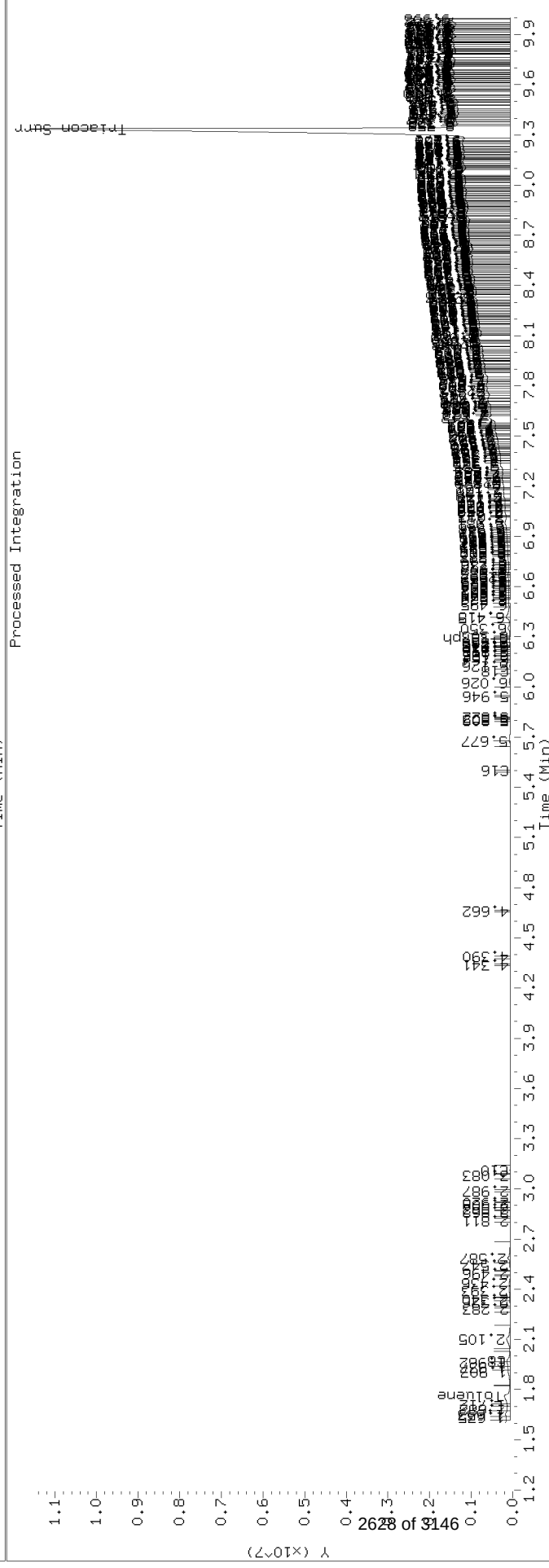
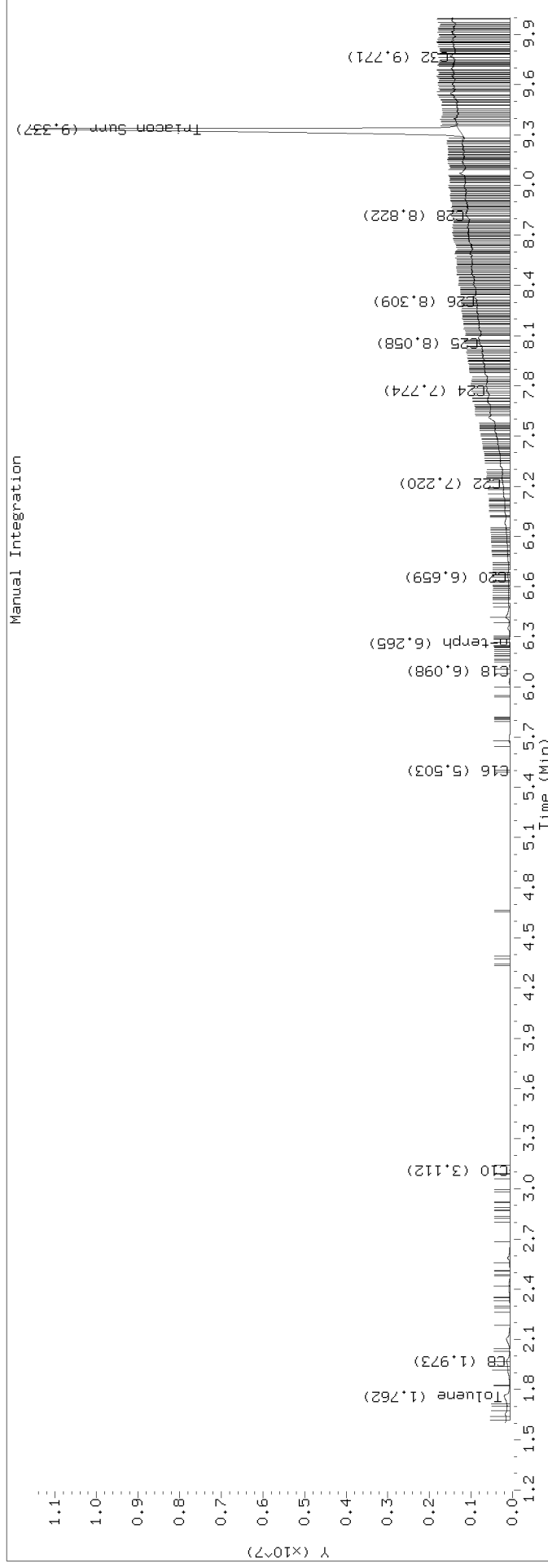
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	11035	0.1
Triacotane	14477356	118.2 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1641.D

Date: 17-JUL-2019 01:18

Client ID:

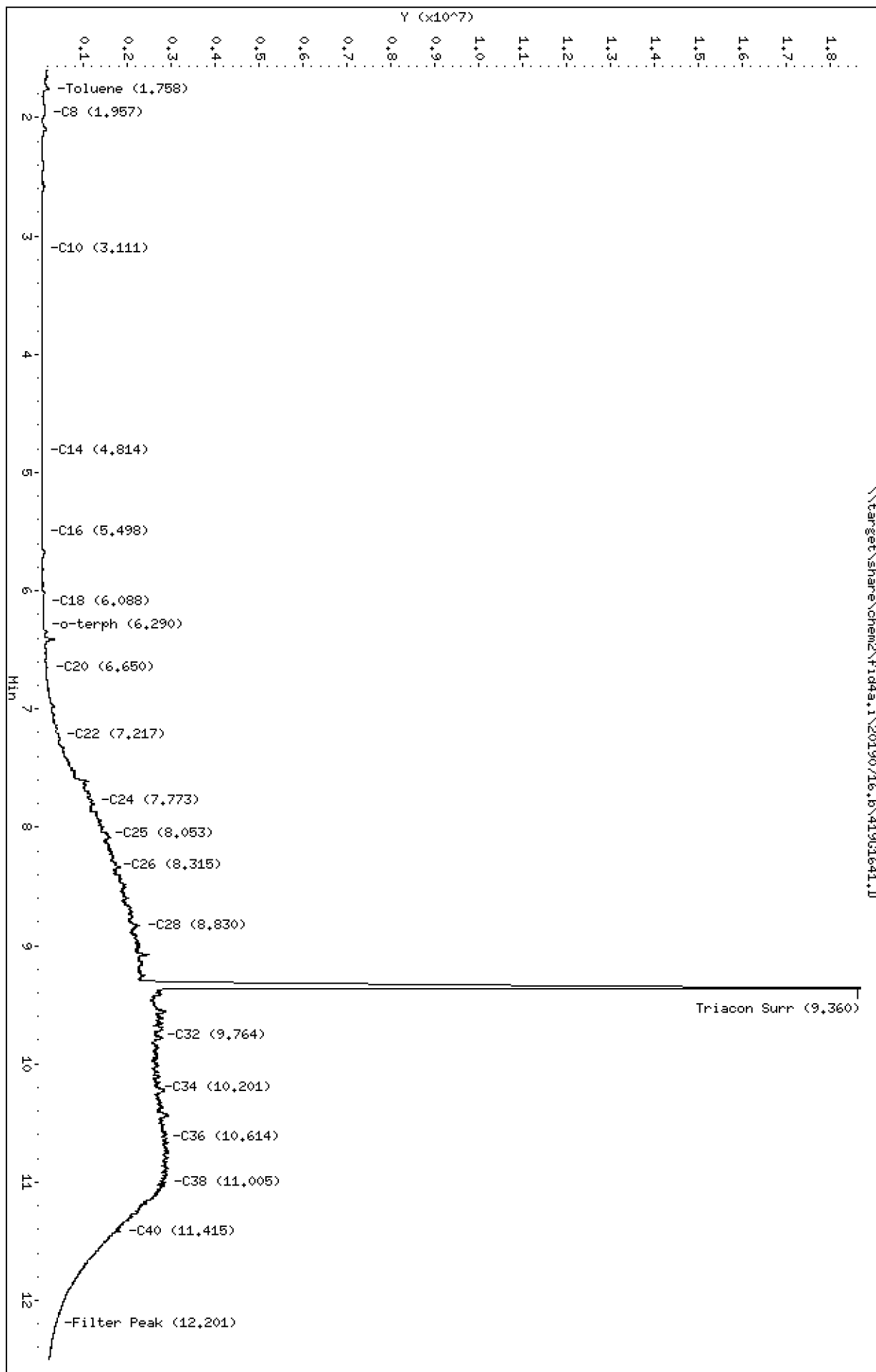
Sample Info: SHG0207-CALI

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1641.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-CALI

Client ID:

Injection: 17-JUL-2019 01:18

Dilution Factor: 1

RT Std: 419G1622.D

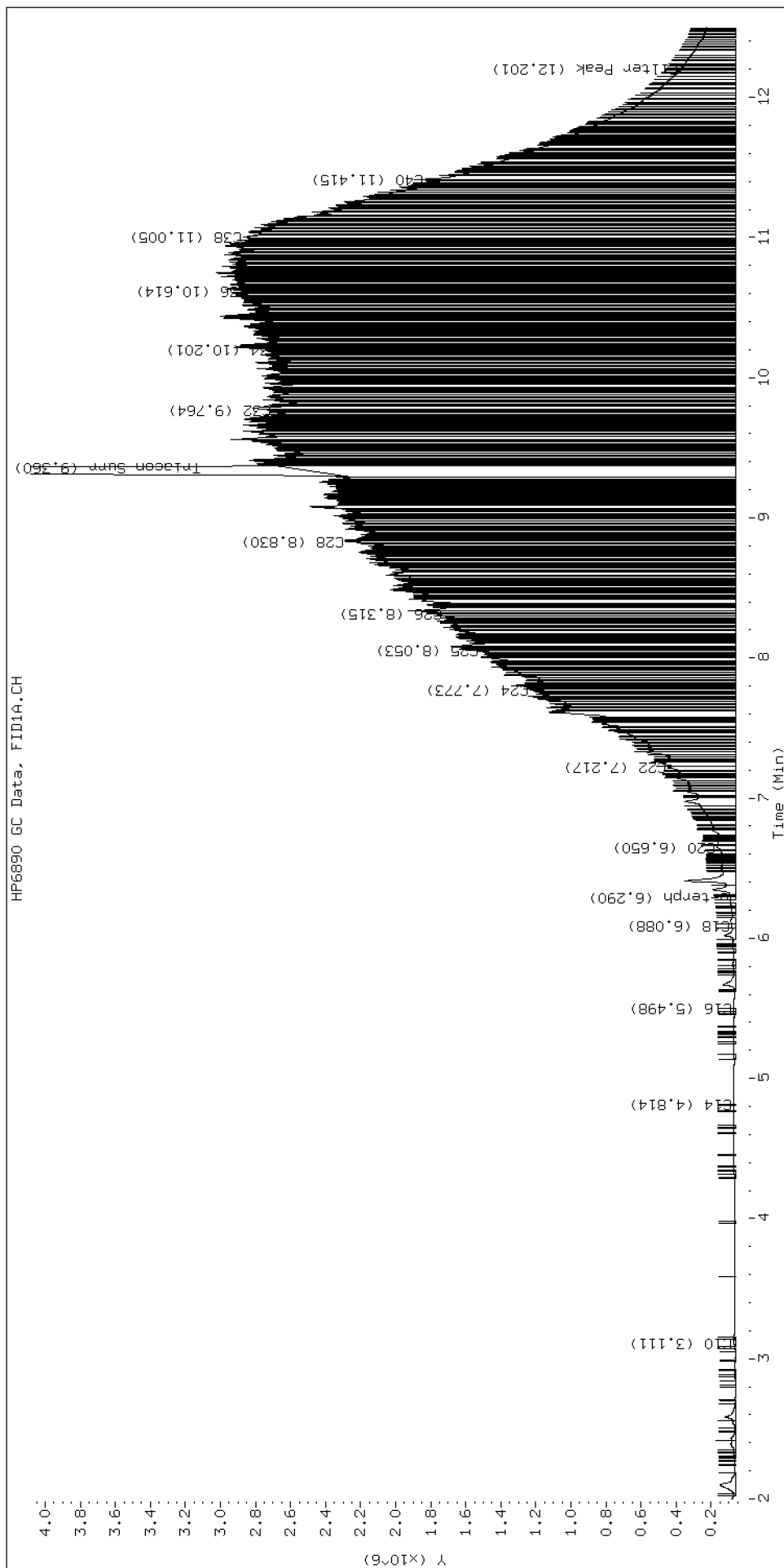
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.957	-0.031	74390	157499	WATPHD	(C12-C24)	35992198	341.5
C10	3.111	-0.017	12383	28598	WATPHM	(C24-C38)	442454386	4826.2
C12	----				AK102	(C10-C25)	49427815	404.0
C14	4.814	-0.014	12773	5663	AK103	(C25-C36)	362701548	5214.4
C16	5.498	0.010	12641	15596	OR.DIES	(C10-C28)	141122267	1151.7
C18	6.088	0.006	26287	42434				
C20	6.650	-0.011	109530	174790				
C22	7.217	-0.006	386484	729920				
C24	7.773	-0.003	1169522	1131889				
C25	8.053	-0.002	1459804	363799				
C26	8.315	0.000	1665284	332814				
C28	8.830	0.005	2223934	1932980				
C32	9.764	-0.003	2644286	1955638				
C34	10.201	0.001	2598655	389175				
Filter Peak	12.201	0.003	314003	247458				
C36	10.614	0.002	2772995	1242699				
C38	11.005	-0.004	2808112	4398385				
C40	11.415	-0.007	1772426	3115717				
o-terph	6.290	0.015	31690	33902				
Triacon Surr	9.360	0.029	16061893	28265175	NAS DIES	(C10-C24)	36037446	295.0

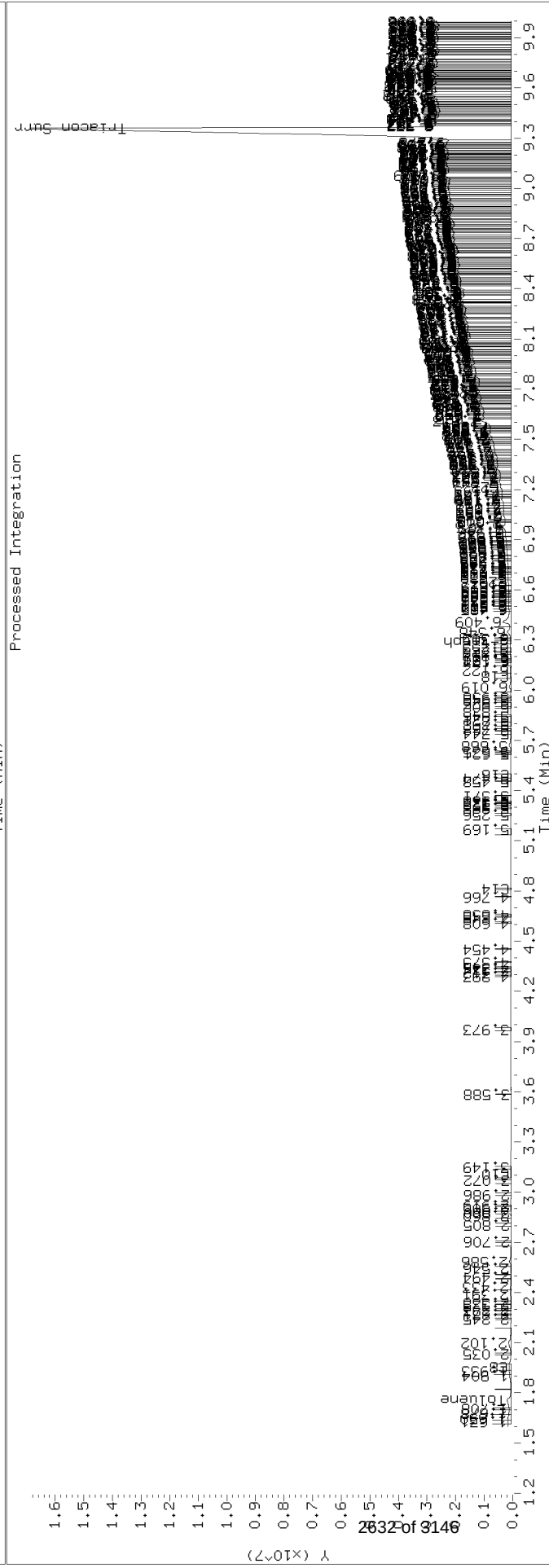
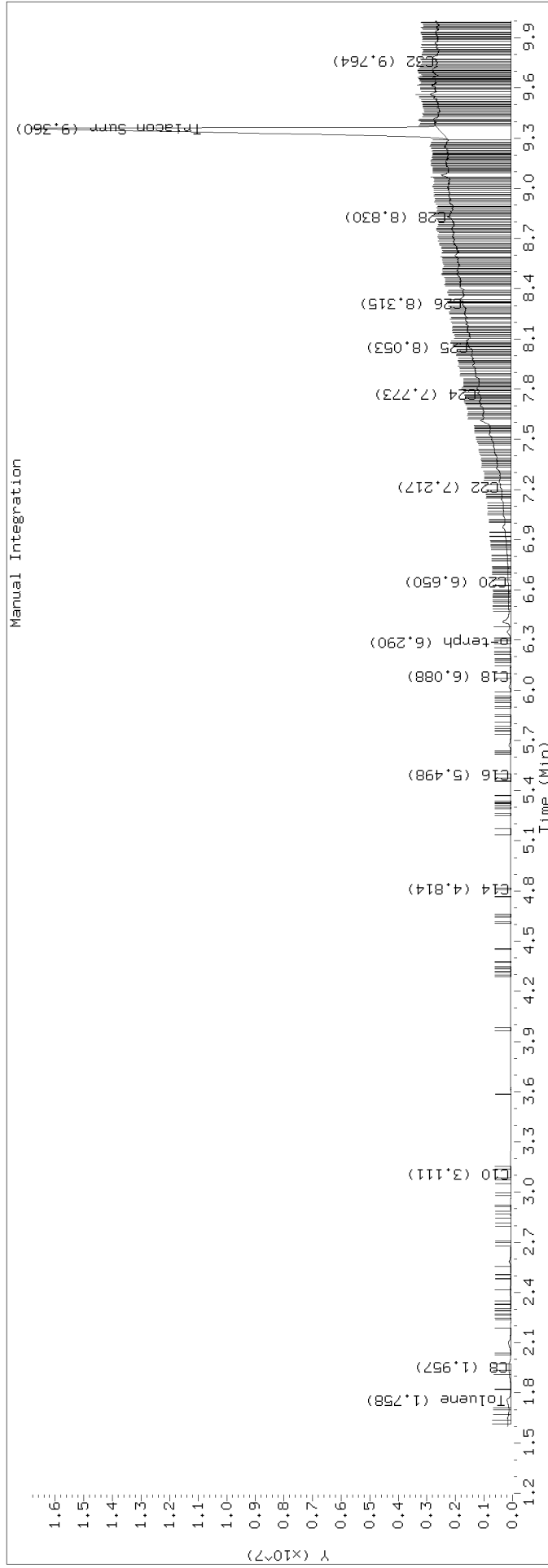
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	33902	0.3
Triacotane	28265175	230.7 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1642.D

Date : 17-JUL-2019 01:39

Client ID:

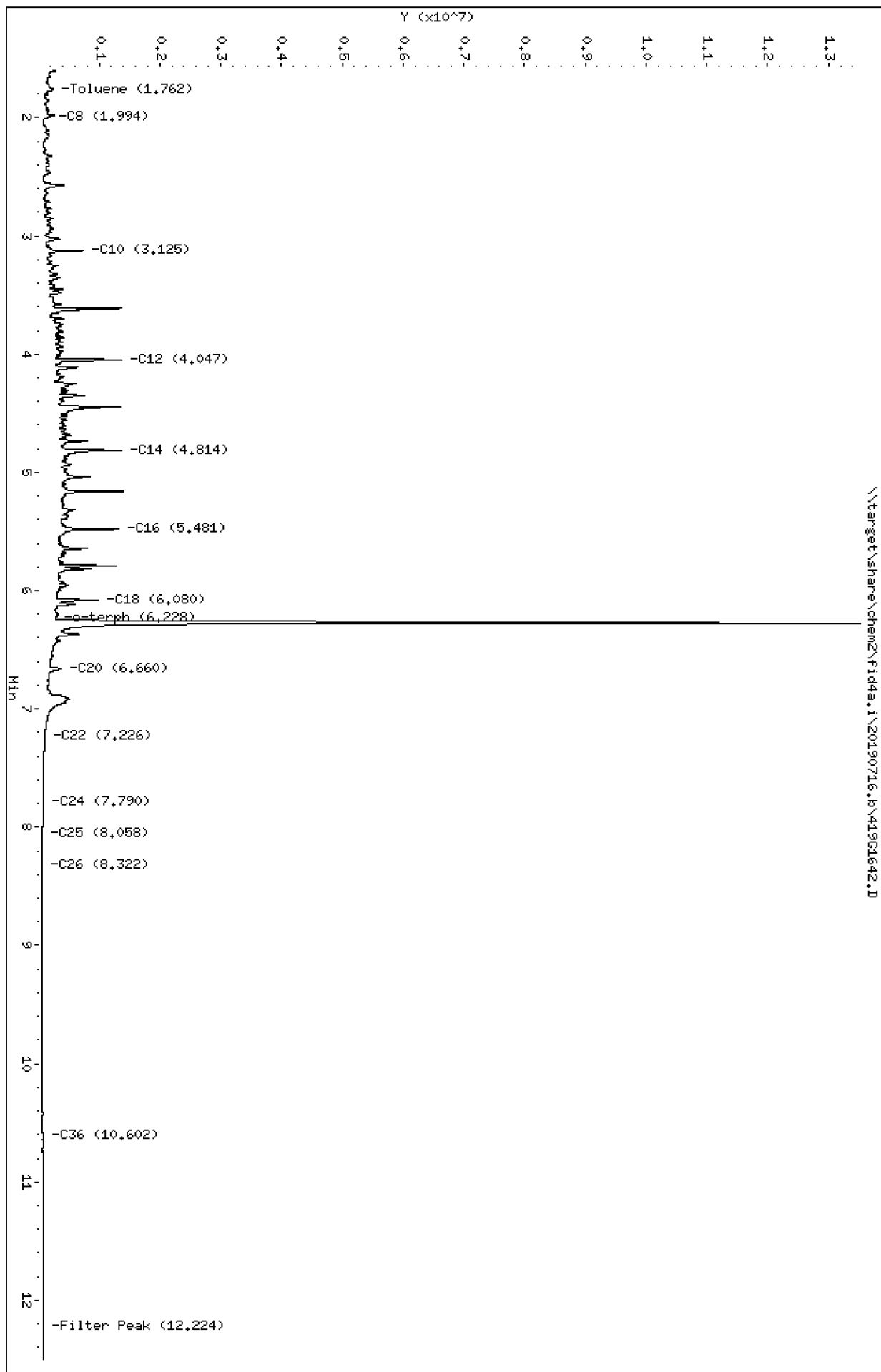
Sample Info: SHG0207-SCV1

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1642.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-SCV1

Client ID:

Injection: 17-JUL-2019 01:39

Dilution Factor: 1

RT Std: 419G1622.D

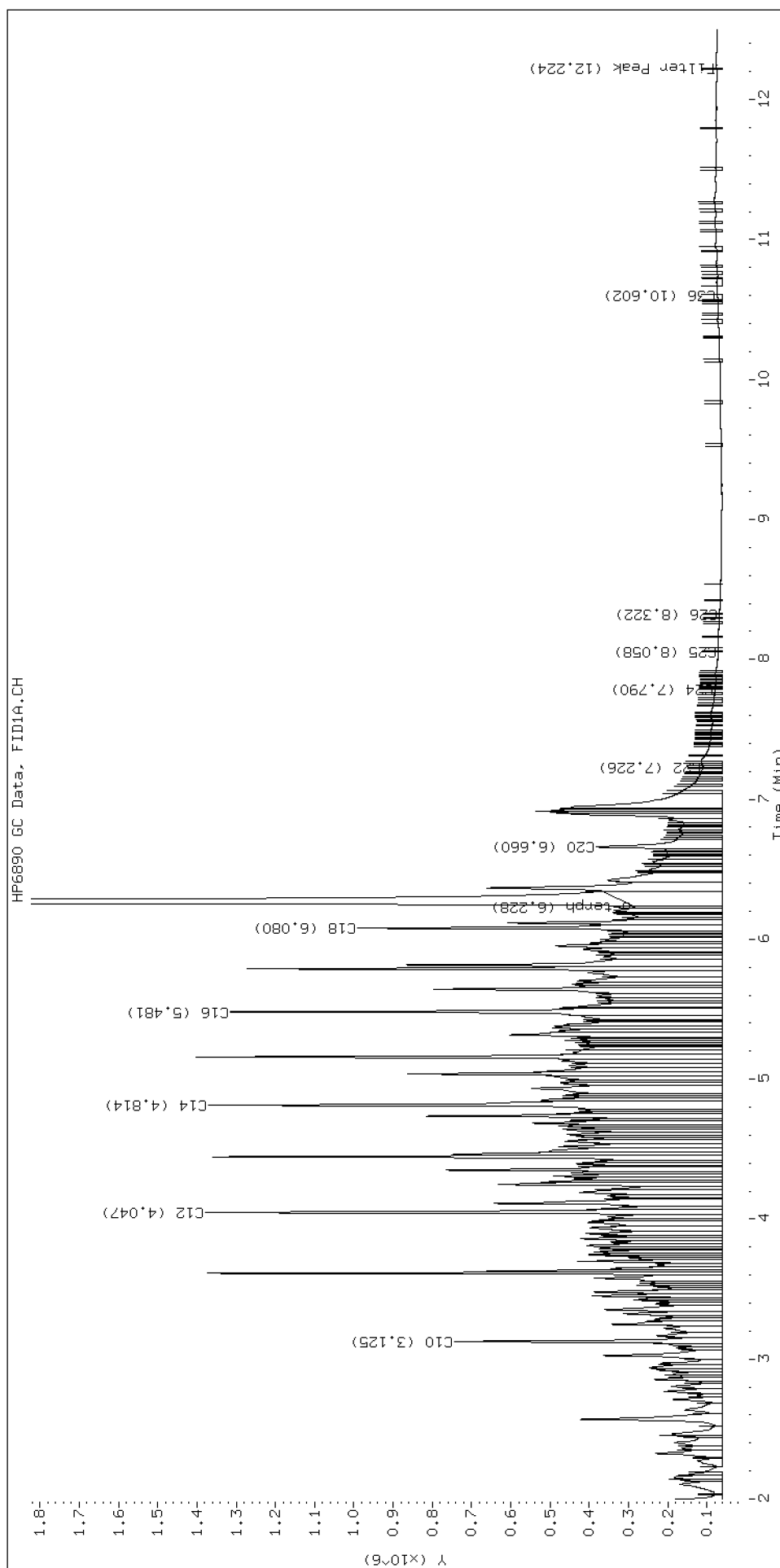
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.994	0.006	125622	150694	WATPHD	(C12-C24)	60434017	573.5
C10	3.125	-0.002	681886	791946	WATPHM	(C24-C38)	272531	3.0
C12	4.047	-0.010	1317003	1550744	AK102	(C10-C25)	75883164	620.3
C14	4.814	-0.015	1307726	2185437	AK103	(C25-C36)	105812	1.5
C16	5.481	-0.006	1253462	1902070	OR.DIES	(C10-C28)	75907889	619.5
C18	6.080	-0.002	928858	1226721				
C20	6.660	-0.001	319695	770332				
C22	7.226	0.004	47944	21217				
C24	7.790	0.014	17142	5934				
C25	8.058	0.004	9422	2808				
C26	8.322	0.007	6305	3398				
C32	----							
C34	----							
Filter Peak	12.224	0.025	13286	5247				
C36	10.602	-0.010	11784	20387				
C38	----							
C40	----							
o-terph	6.276	0.001	13210461	14678428				
Triacon Surr	----				NAS DIES	(C10-C24)	75818092	620.7

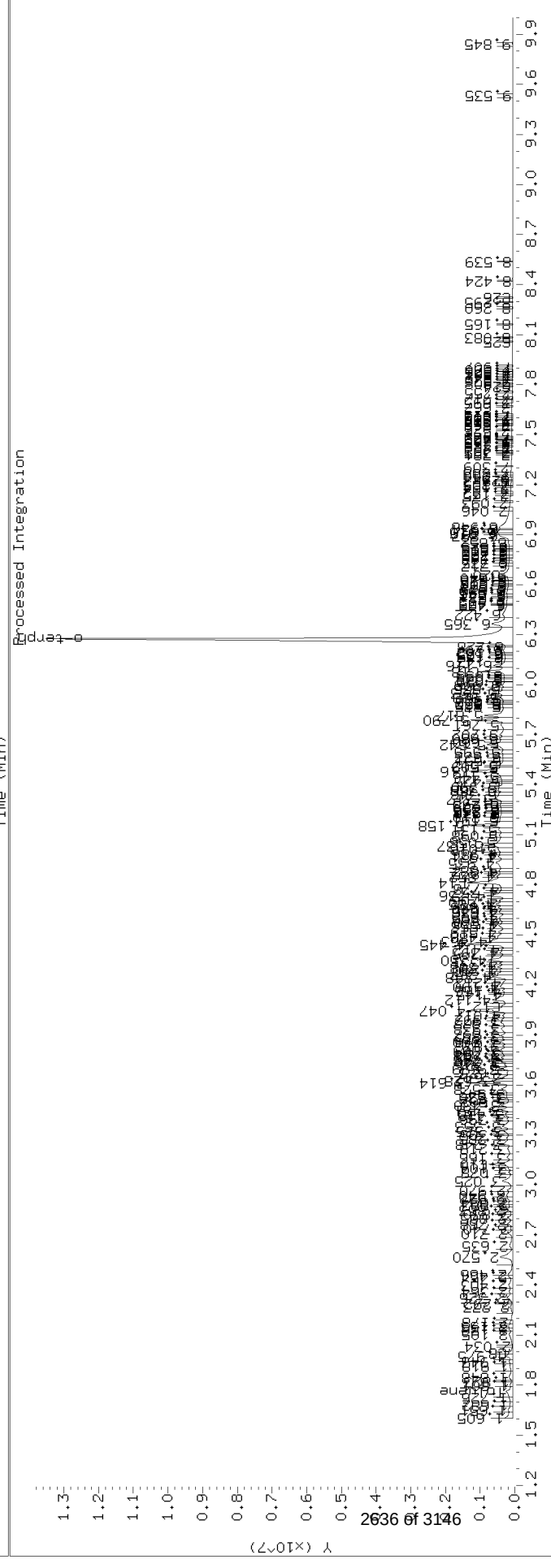
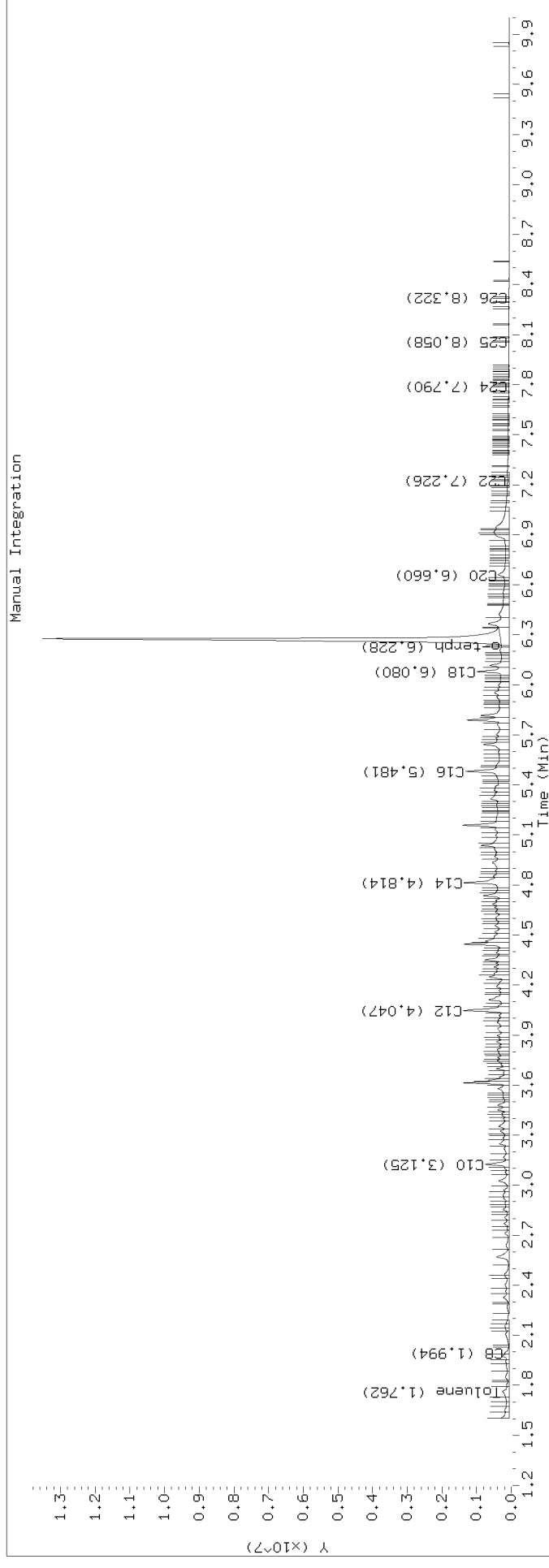
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	14678428	111.9 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1643.D

Date : 17-JUL-2019 01:59

Client ID:

Sample Info: SHG0207-SCV2

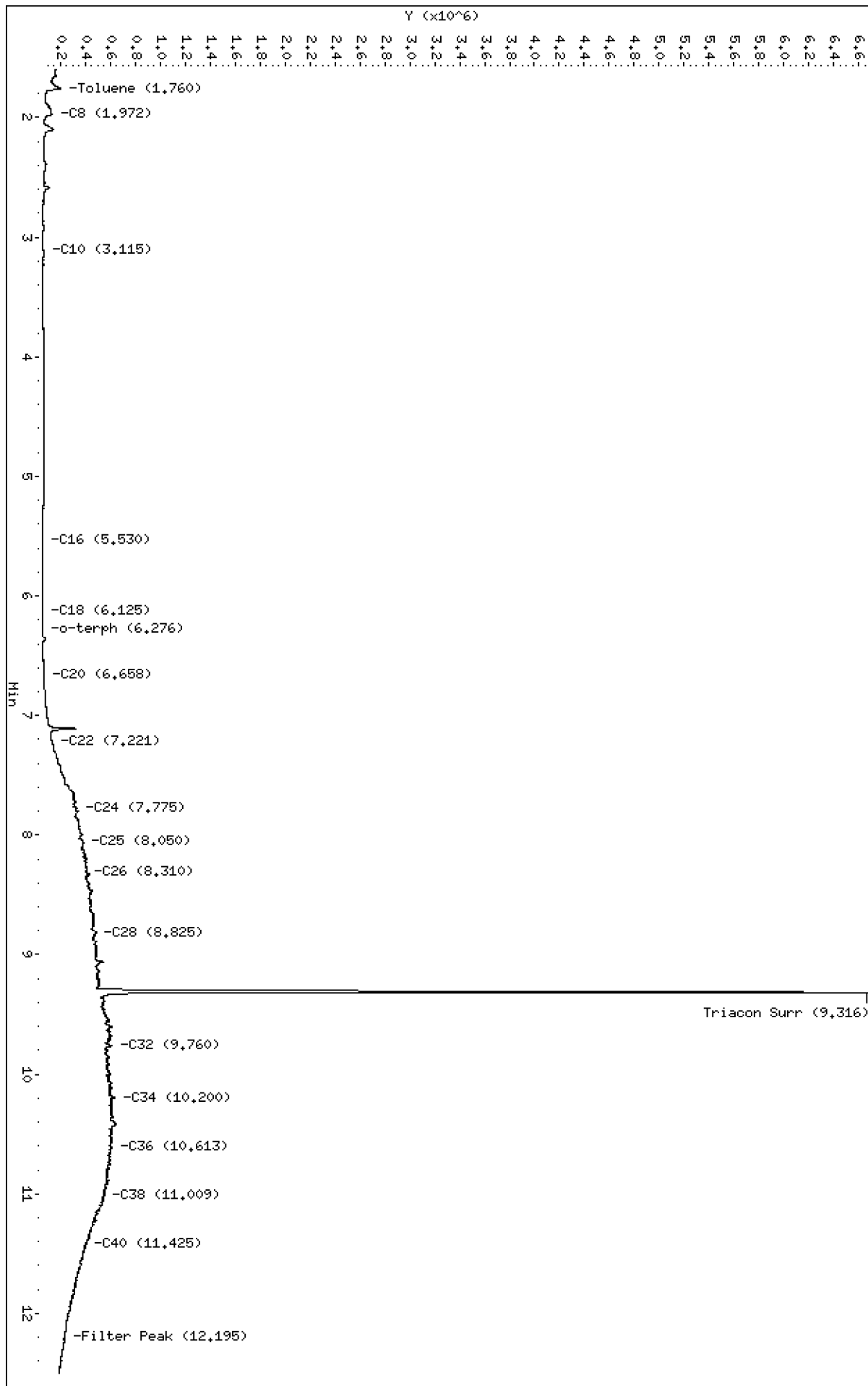
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

\\target\share\chem2\fid4a.i\20190716.b\419G1643.D



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1643.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-SCV2

Client ID:

Injection: 17-JUL-2019 01:59

Dilution Factor: 1

RT Std: 419G1622.D

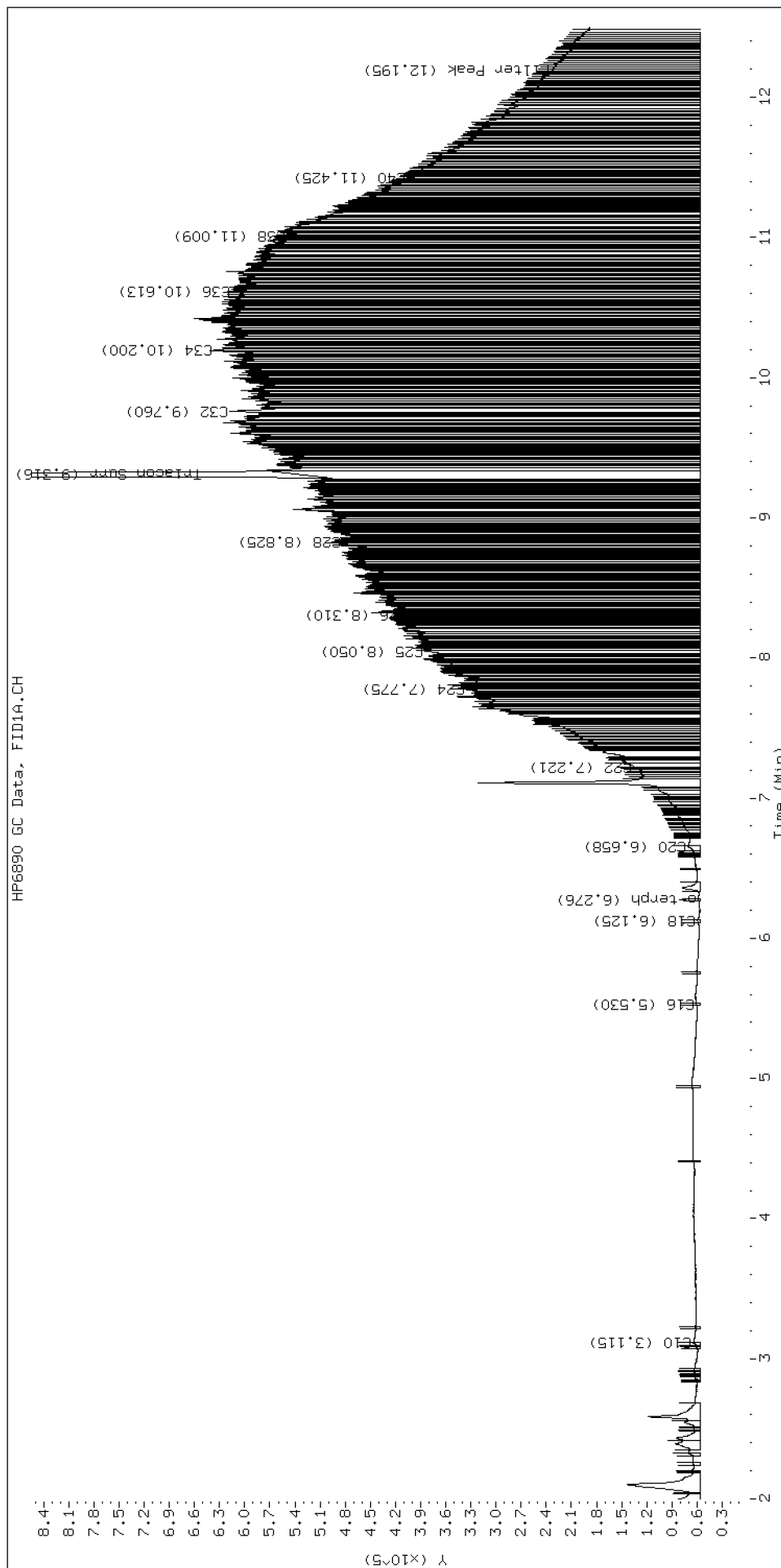
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.972	-0.015	72871	147769	WATPHD	(C12-C24)	7854686	74.5
C10	3.115	-0.013	7920	7270	WATPHM	(C24-C38)	88785398	968.4
C12	----				AK102	(C10-C25)	10972634	89.7
C14	----				AK103	(C25-C36)	73321008	1054.1
C16	5.530	0.043	4199	2004	OR.DIES	(C10-C28)	30174960	246.3
C18	6.125	0.044	2681	3490				
C20	6.658	-0.003	14083	23850				
C22	7.221	-0.001	79278	46759				
C24	7.775	-0.000	278953	201853				
C25	8.050	-0.005	327832	539207				
C26	8.310	-0.005	347226	86653				
C28	8.825	0.000	427045	148469				
C32	9.760	-0.007	561337	935176				
C34	10.200	-0.000	579704	482078				
Filter Peak	12.195	-0.003	176832	105425				
C36	10.613	0.000	558654	276983				
C38	11.009	-0.000	493137	147448				
C40	11.425	0.003	349391	242280				
o-terph	6.276	0.001	1780	1679				
Triacon Surr	9.316	-0.015	6139380	5794277	NAS DIES	(C10-C24)	7869864	64.4

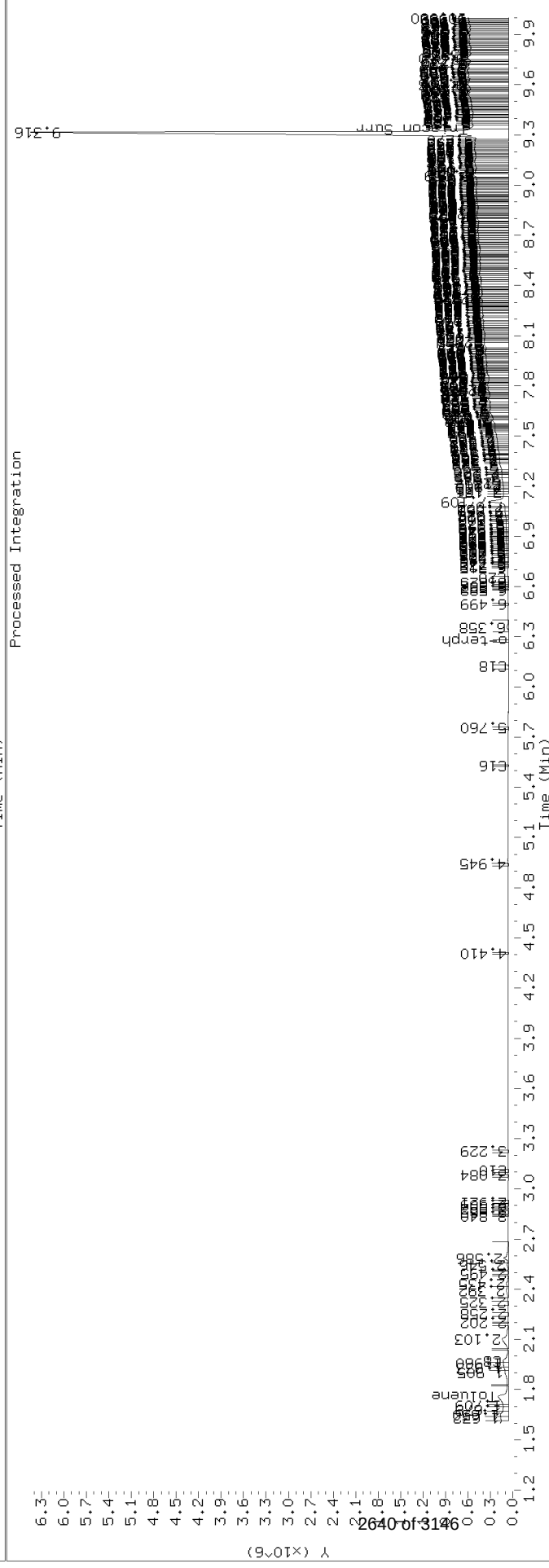
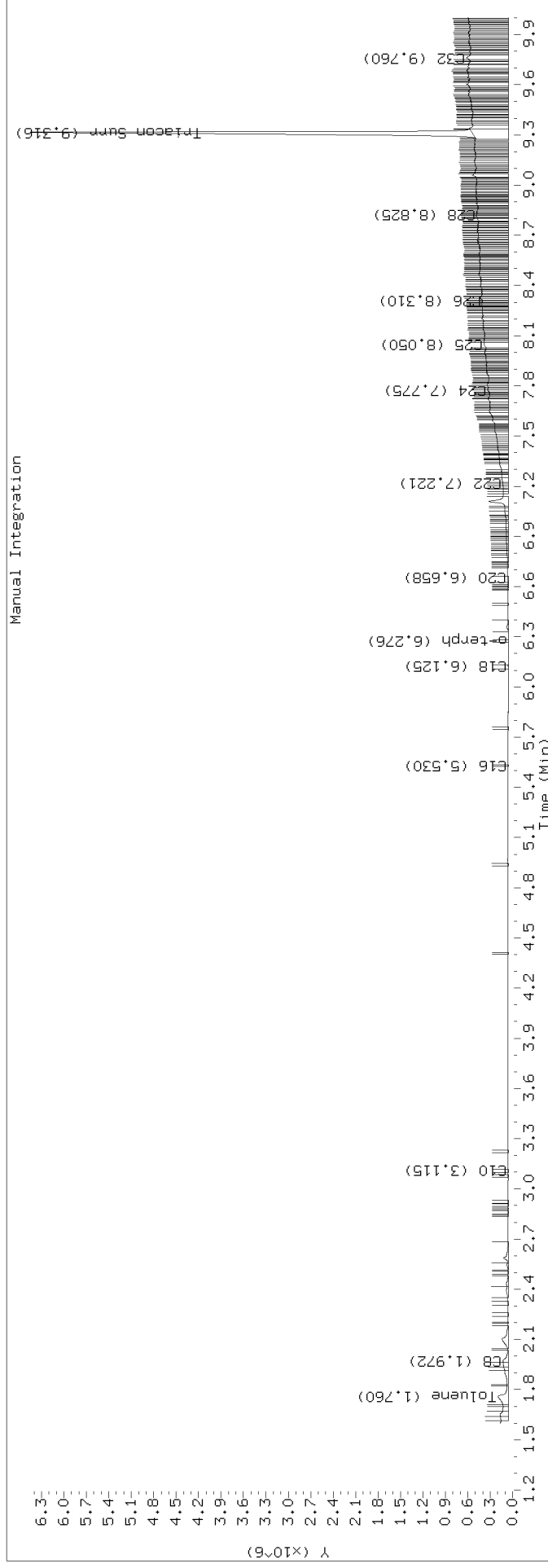
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	1679	0.0
Triacotane	5794277	47.3 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019





Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1644.D

Date: 17-JUL-2019 02:19

Client ID:

Sample Info: SHG0207-SCV3

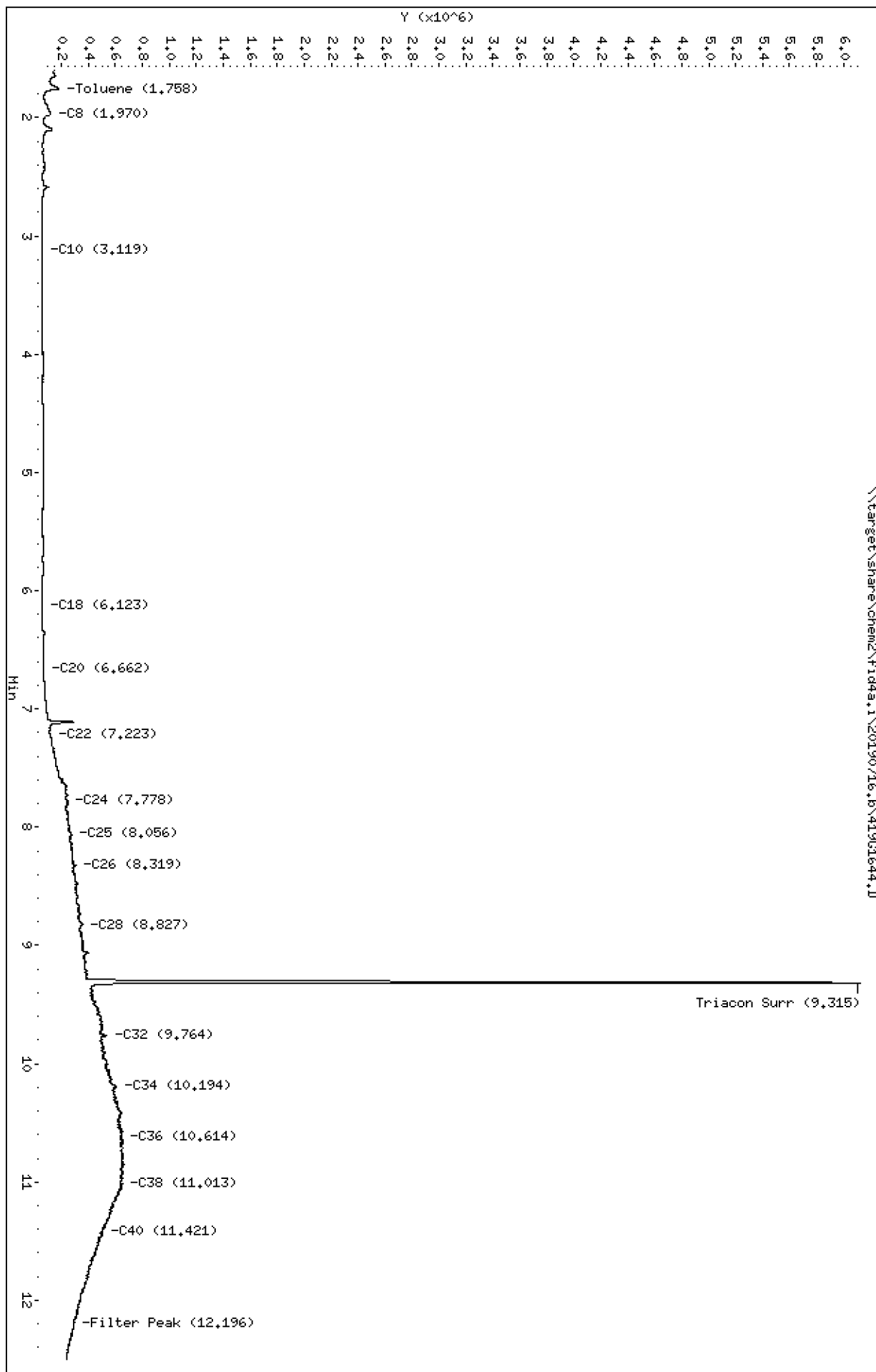
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1644.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/19/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-SCV3

Client ID:

Injection: 17-JUL-2019 02:19

Dilution Factor: 1

RT Std: 419G1622.D

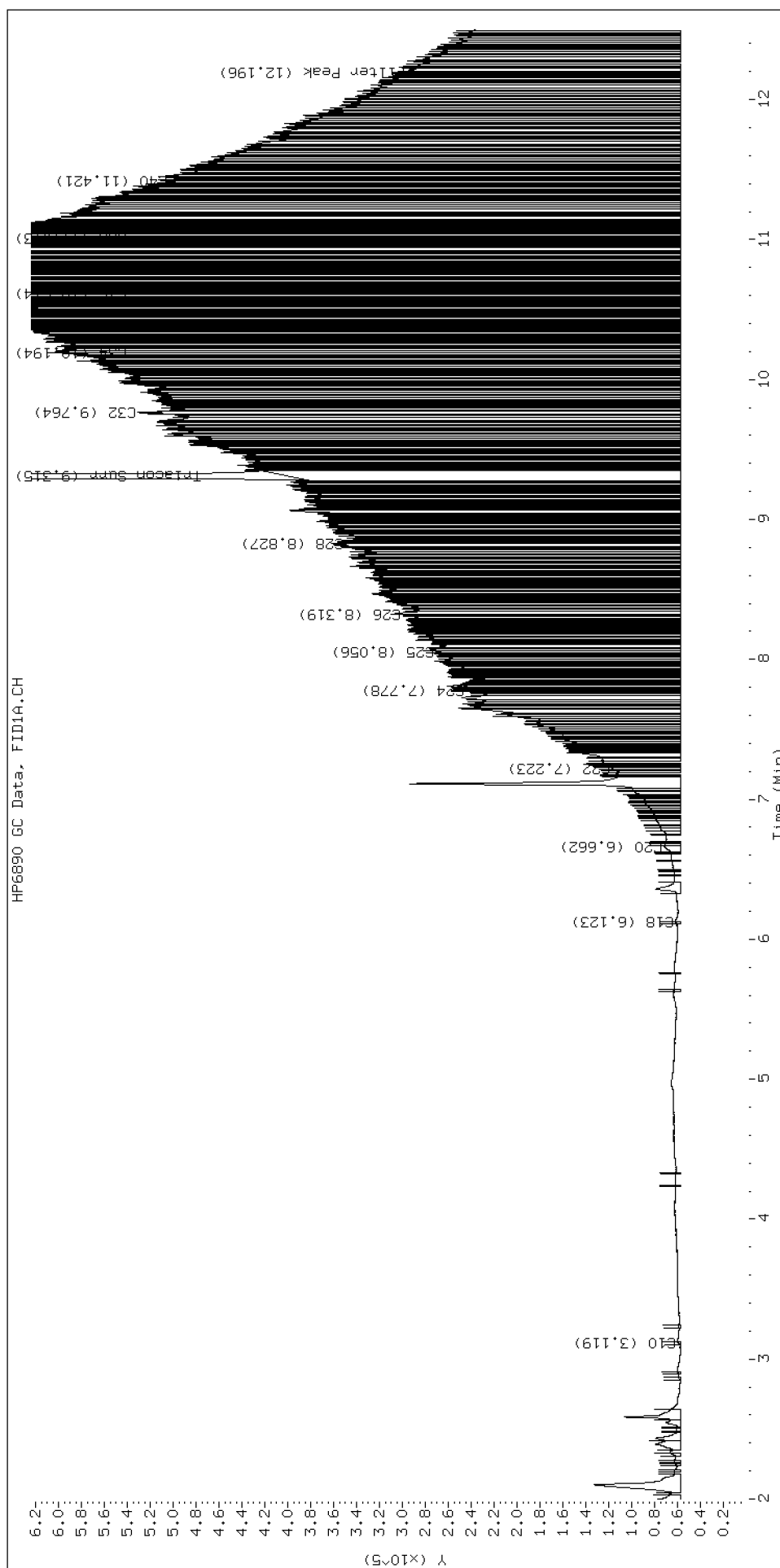
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.017	62072	122470	WATPHD	(C12-C24)	5602486	53.2
C10	3.119	-0.008	2091	1527	WATPHM	(C24-C38)	75127885	819.5
C12	----				AK102	(C10-C25)	7549400	61.7
C14	----				AK103	(C25-C36)	59166945	850.6
C16	----				OR.DIES	(C10-C28)	20006098	163.3
C18	6.123	0.041	4169	3217				
C20	6.662	0.001	13863	28545				
C22	7.223	0.000	59971	49975				
C24	7.778	0.002	187393	55984				
C25	8.056	0.002	213152	116012				
C26	8.319	0.004	242303	106181				
C28	8.827	0.002	292541	144254				
C32	9.764	-0.003	473521	574704				
C34	10.194	-0.006	546127	457814				
Filter Peak	12.196	-0.002	238139	176927				
C36	10.614	0.002	591834	293532				
C38	11.013	0.004	589637	205071				
C40	11.421	-0.001	446362	221729				
o-terph	----							
Triacon Surr	9.315	-0.016	5721225	5699061	NAS DIES	(C10-C24)	5606025	45.9

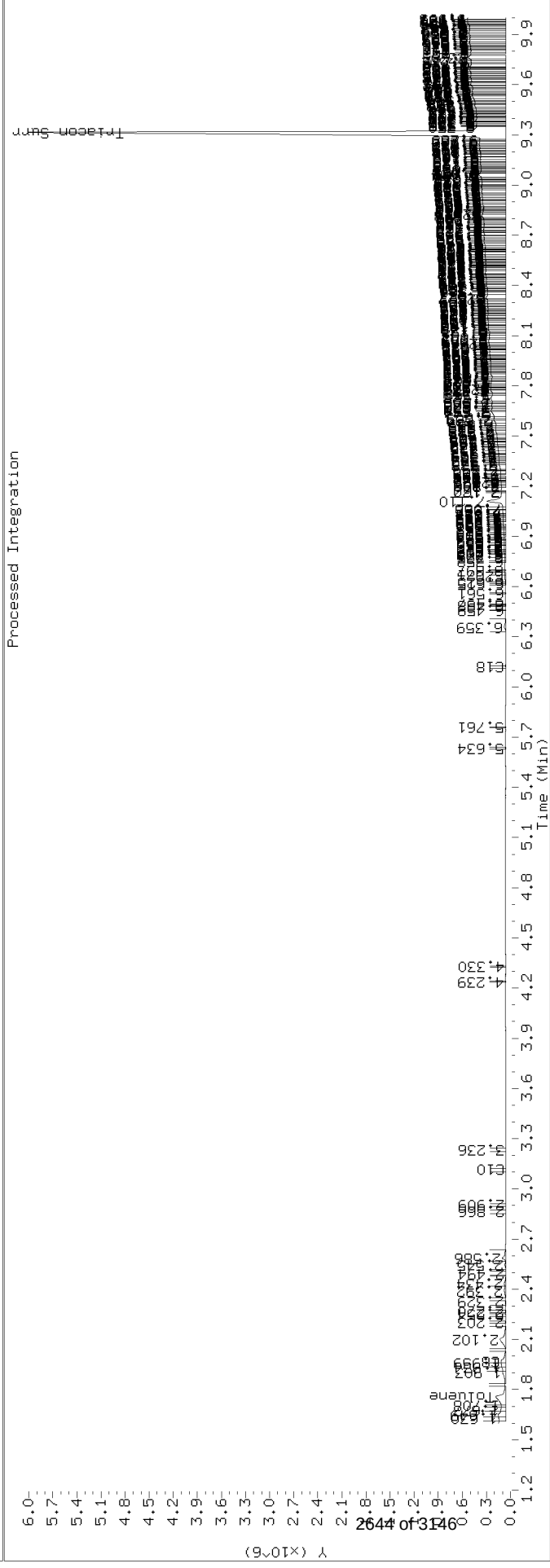
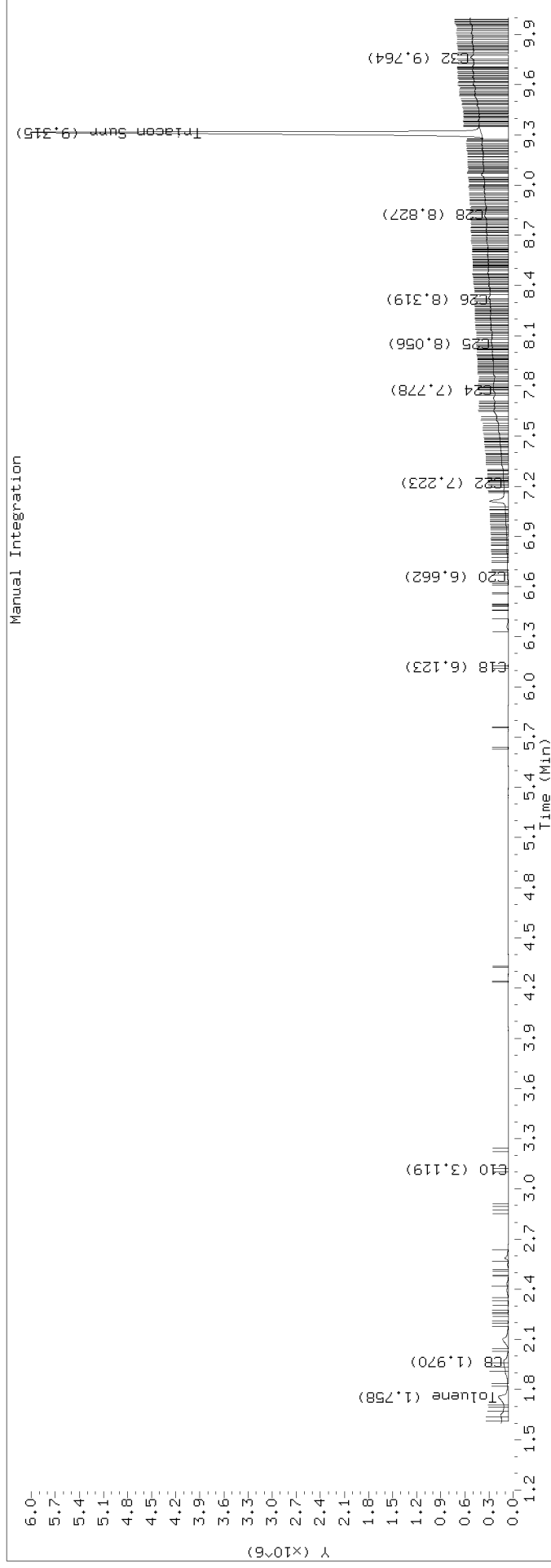
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	5699061	46.5 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







SECOND-SOURCE CALIBRATION VERIFICATION
NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00044

Laboratory ID: SHG0207-SCV1

Sequence: SHG0207

Sequence Name: DIESEL SCV1

Standard ID: H002741

ANALYTE	EXPECTED (mg/L)	FOUND (mg/L)	% DRIFT	QC LIMIT
Diesel Range Organics (C12-C24)	500.00	574	14.7	30.00
o-Terphenyl	90.000	112	24.3	

* Indicates values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1642.D

Date : 17-JUL-2019 01:39

Client ID:

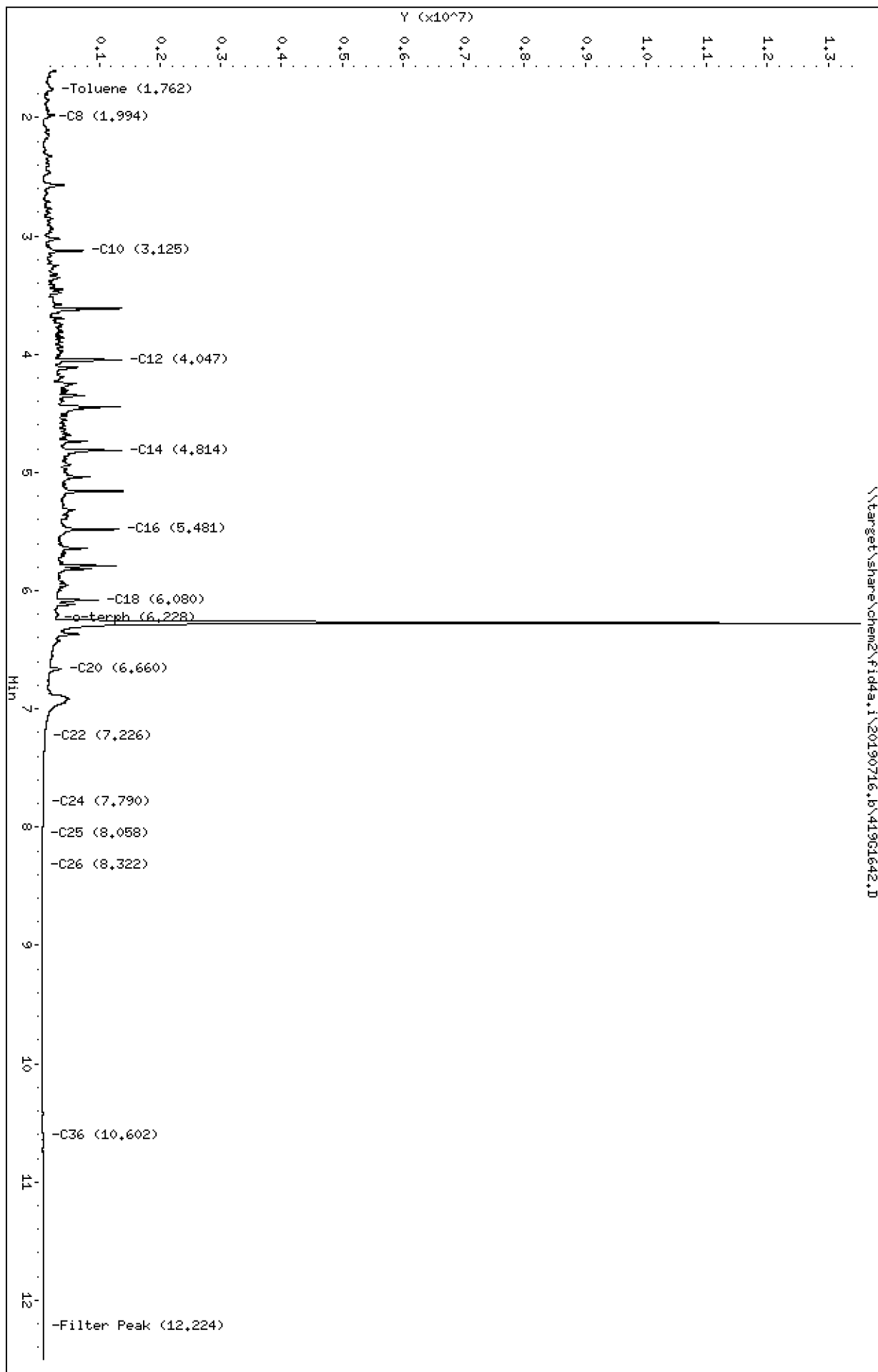
Sample Info: SHG0207-SCV1

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1642.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-SCV1

Client ID:

Injection: 17-JUL-2019 01:39

Dilution Factor: 1

RT Std: 419G1622.D

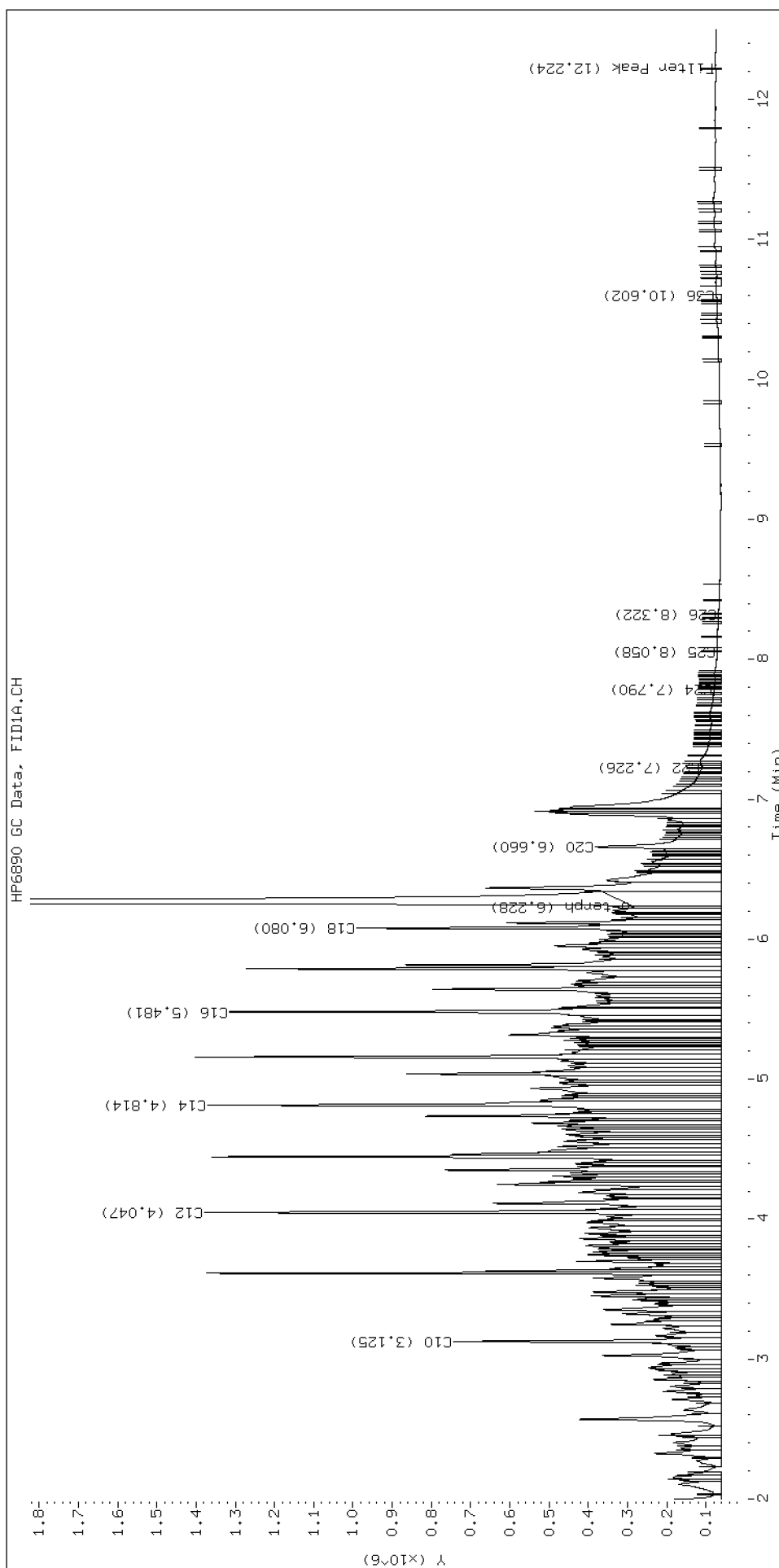
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.994	0.006	125622	150694	WATPHD	(C12-C24)	60434017	573.5
C10	3.125	-0.002	681886	791946	WATPHM	(C24-C38)	272531	3.0
C12	4.047	-0.010	1317003	1550744	AK102	(C10-C25)	75883164	620.3
C14	4.814	-0.015	1307726	2185437	AK103	(C25-C36)	105812	1.5
C16	5.481	-0.006	1253462	1902070	OR.DIES	(C10-C28)	75907889	619.5
C18	6.080	-0.002	928858	1226721				
C20	6.660	-0.001	319695	770332				
C22	7.226	0.004	47944	21217				
C24	7.790	0.014	17142	5934				
C25	8.058	0.004	9422	2808				
C26	8.322	0.007	6305	3398				
C32	----							
C34	----							
Filter Peak	12.224	0.025	13286	5247				
C36	10.602	-0.010	11784	20387				
C38	----							
C40	----							
o-terph	6.276	0.001	13210461	14678428				
Triacon Surr	----				NAS DIES	(C10-C24)	75818092	620.7

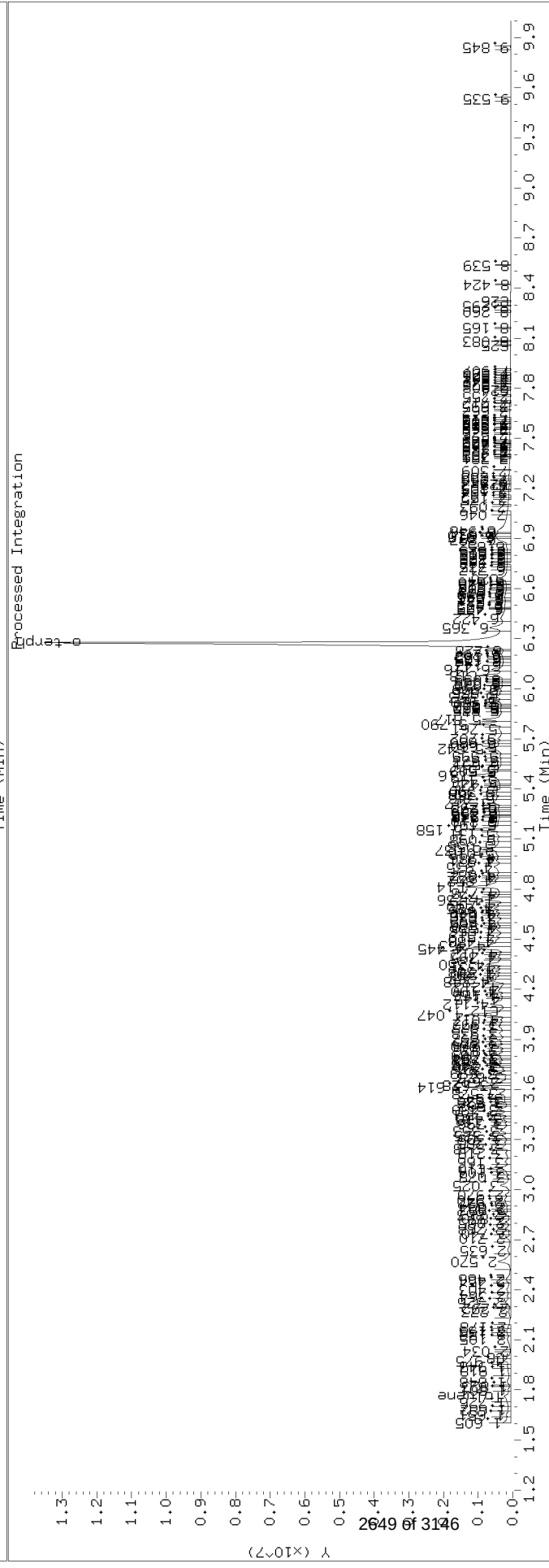
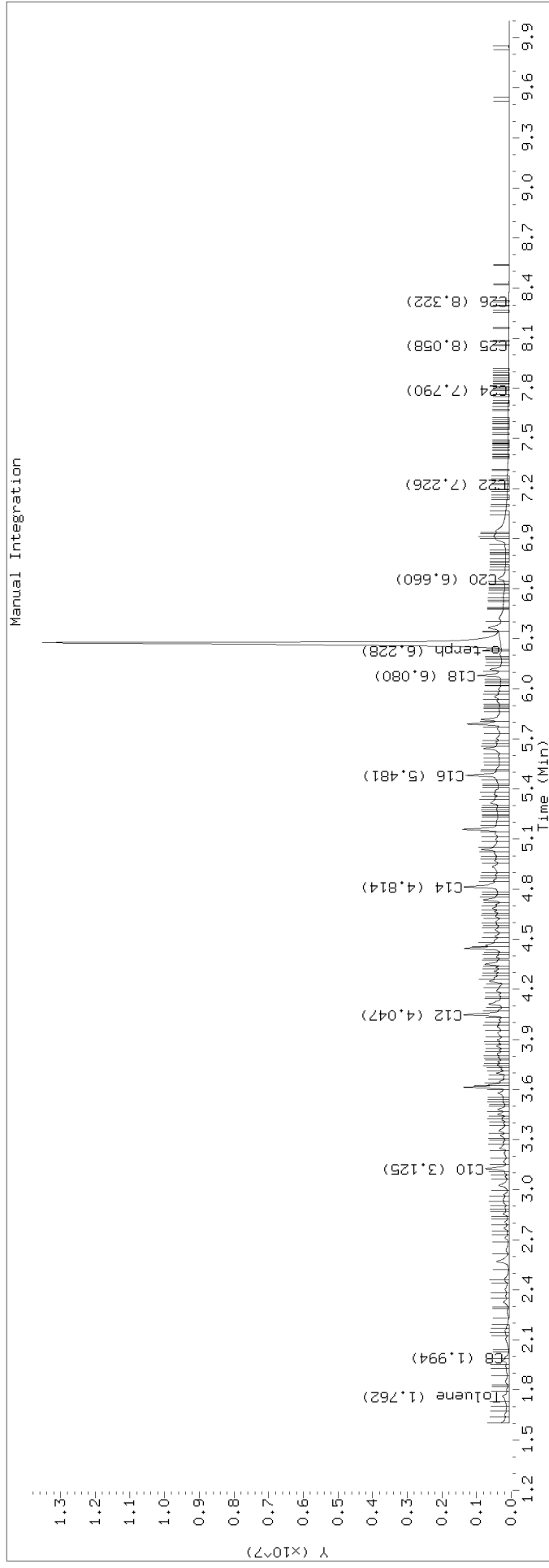
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	14678428	111.9 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







SECOND-SOURCE CALIBRATION VERIFICATION
NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00044

Laboratory ID: SHG0207-SCV2

Sequence: SHG0207

Sequence Name: MOIL SCV2

Standard ID: H006714

ANALYTE	EXPECTED (mg/L)	FOUND (mg/L)	% DRIFT	QC LIMIT
Motor Oil Range Organics (C24-C38)	1000.0	968	-3.2	30.00
Motor Oil Range Organics (C24-C38)	1000.0	968	-3.2	30.00

* Indicates values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1643.D

Date : 17-JUL-2019 01:59

Client ID:

Sample Info: SHG0207-SCV2

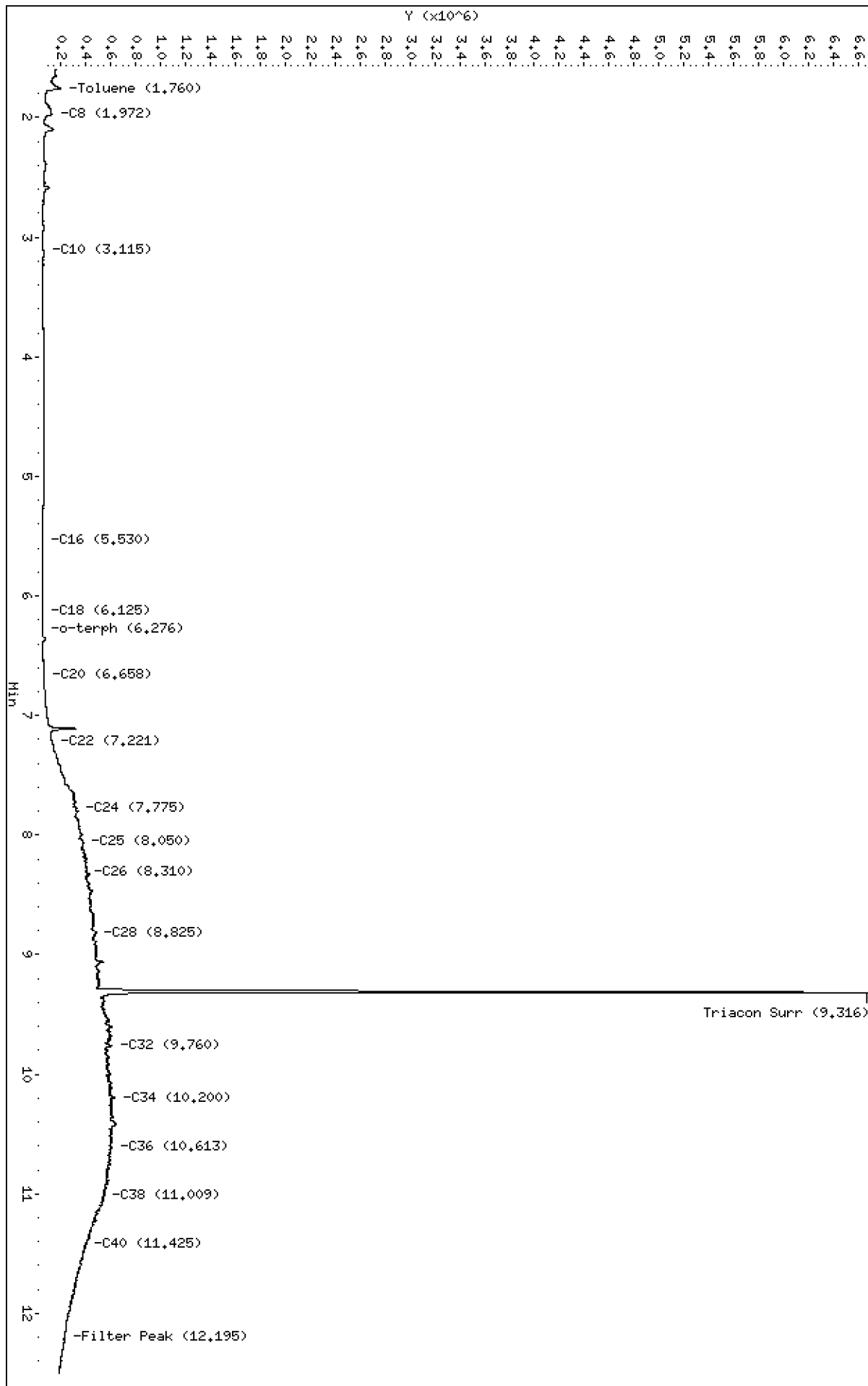
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

\\target\share\chem2\fid4a.i\20190716.b\419G1643.D



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1643.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-SCV2

Client ID:

Injection: 17-JUL-2019 01:59

Dilution Factor: 1

RT Std: 419G1622.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.972	-0.015	72871	147769	WATPHD	(C12-C24)	7854686	74.5
C10	3.115	-0.013	7920	7270	WATPHM	(C24-C38)	88785398	968.4
C12	----				AK102	(C10-C25)	10972634	89.7
C14	----				AK103	(C25-C36)	73321008	1054.1
C16	5.530	0.043	4199	2004	OR.DIES	(C10-C28)	30174960	246.3
C18	6.125	0.044	2681	3490				
C20	6.658	-0.003	14083	23850				
C22	7.221	-0.001	79278	46759				
C24	7.775	-0.000	278953	201853				
C25	8.050	-0.005	327832	539207				
C26	8.310	-0.005	347226	86653				
C28	8.825	0.000	427045	148469				
C32	9.760	-0.007	561337	935176				
C34	10.200	-0.000	579704	482078				
Filter Peak	12.195	-0.003	176832	105425				
C36	10.613	0.000	558654	276983				
C38	11.009	-0.000	493137	147448				
C40	11.425	0.003	349391	242280				
o-terph	6.276	0.001	1780	1679				
Triacon Surr	9.316	-0.015	6139380	5794277	NAS DIES	(C10-C24)	7869864	64.4

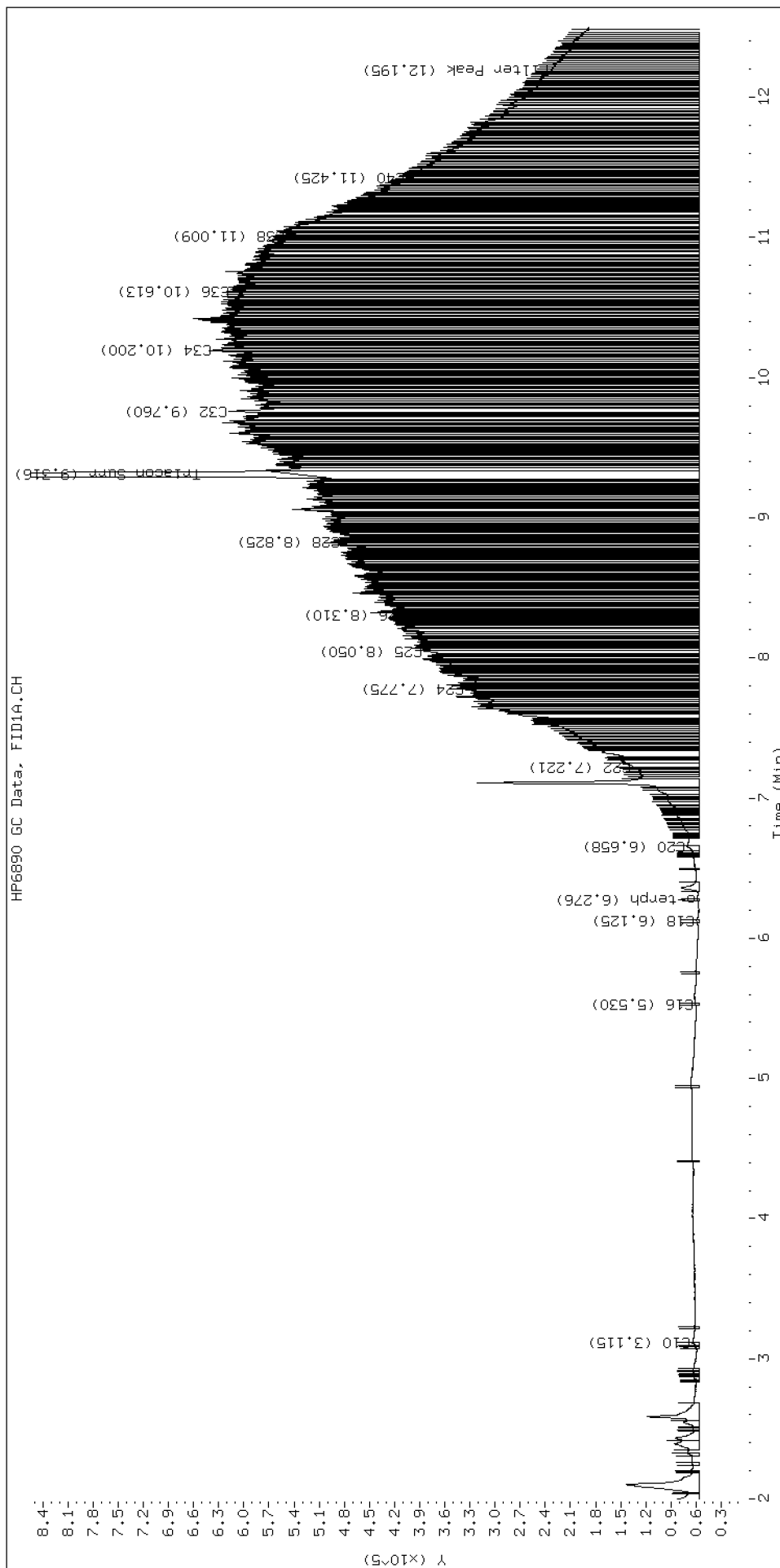
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

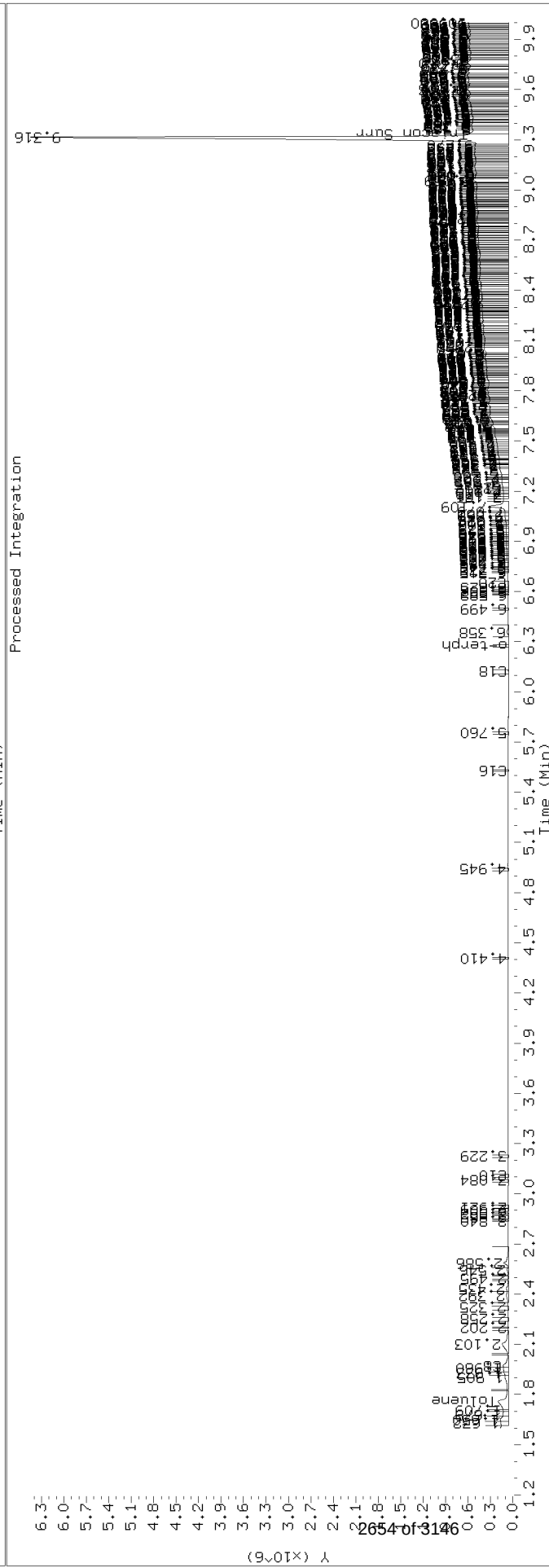
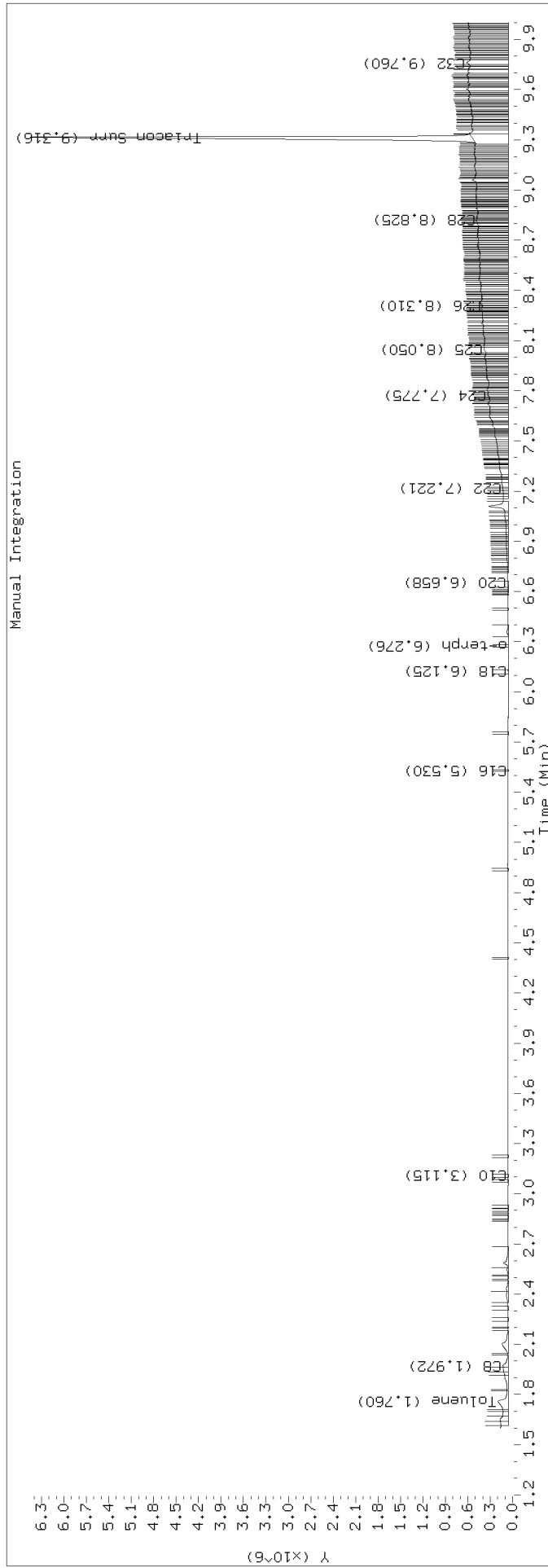
Surrogate	Area	Amount
o-Terphenyl	1679	0.0
Triacontane	5794277	47.3 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019

HP6890 GC Data, FID1A.CH







SECOND-SOURCE CALIBRATION VERIFICATION
NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00044

Laboratory ID: SHG0207-SCV3

Sequence: SHG0207

Sequence Name: ak103scv3

Standard ID: H003035

ANALYTE	EXPECTED (mg/L)	FOUND (mg/L)	% DRIFT	QC LIMIT
Motor Oil Range Organics (C24-C38)	1000.0	820	-18.1	30.00
Motor Oil Range Organics (C24-C38)	1000.0	820	-18.1	30.00

* Indicates values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716.b\419G1644.D

Date: 17-JUL-2019 02:19

Client ID:

Sample Info: SHG0207-SCV3

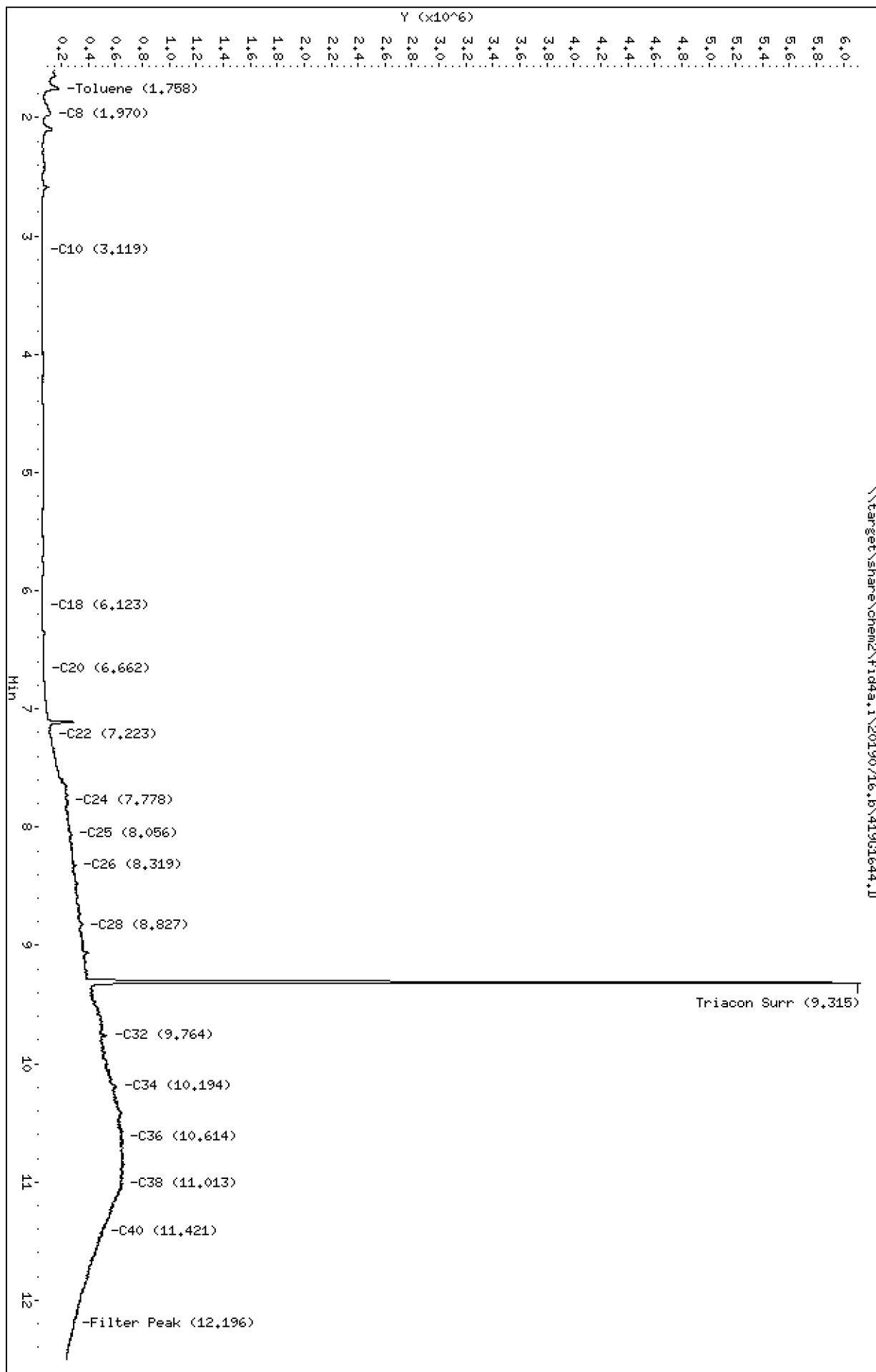
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716.b/419G1644.D

Method: 20190716.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0207-SCV3

Client ID:

Injection: 17-JUL-2019 02:19

Dilution Factor: 1

RT Std: 419G1622.D

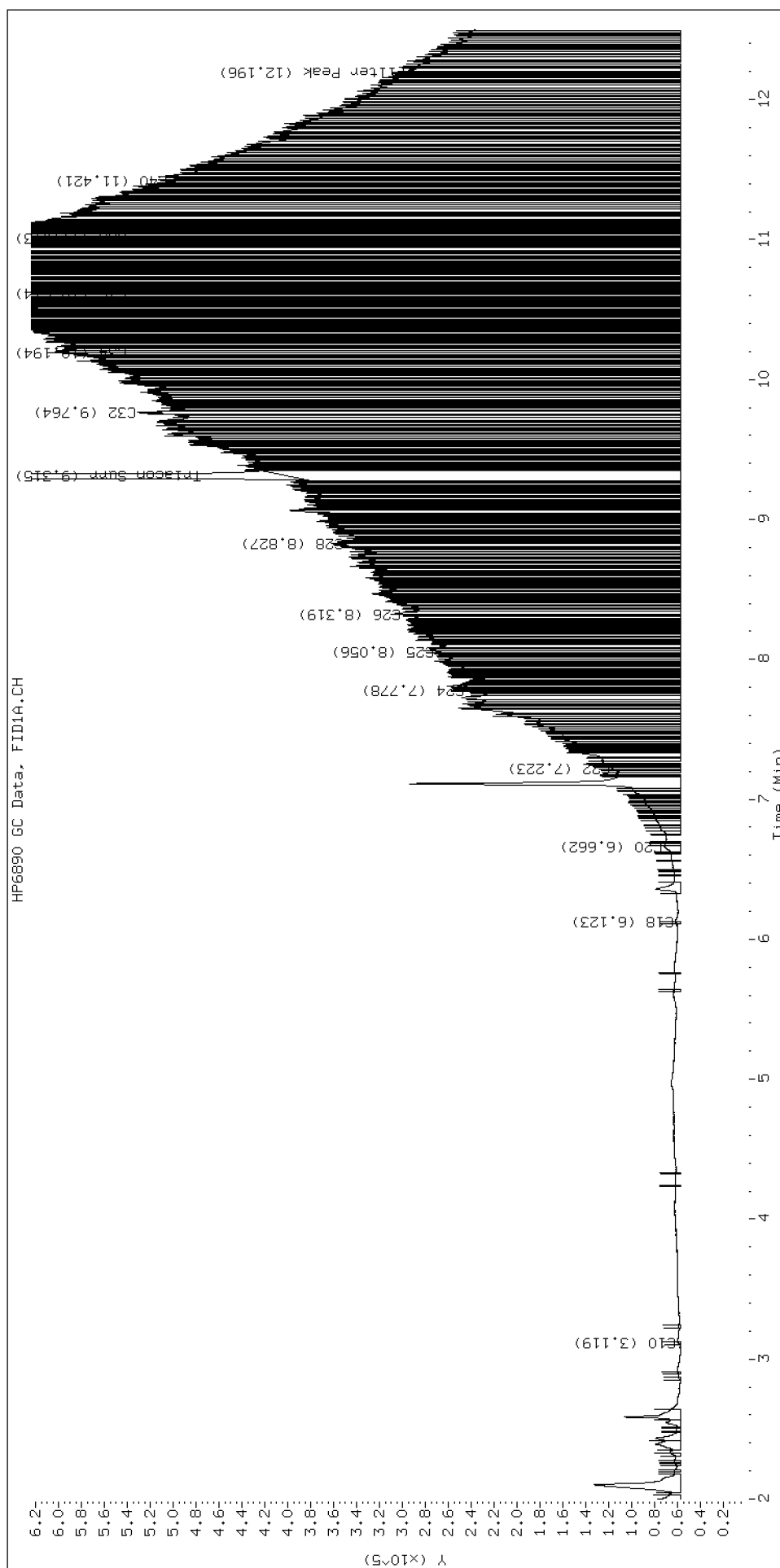
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.017	62072	122470	WATPHD	(C12-C24)	5602486	53.2
C10	3.119	-0.008	2091	1527	WATPHM	(C24-C38)	75127885	819.5
C12	----				AK102	(C10-C25)	7549400	61.7
C14	----				AK103	(C25-C36)	59166945	850.6
C16	----				OR.DIES	(C10-C28)	20006098	163.3
C18	6.123	0.041	4169	3217				
C20	6.662	0.001	13863	28545				
C22	7.223	0.000	59971	49975				
C24	7.778	0.002	187393	55984				
C25	8.056	0.002	213152	116012				
C26	8.319	0.004	242303	106181				
C28	8.827	0.002	292541	144254				
C32	9.764	-0.003	473521	574704				
C34	10.194	-0.006	546127	457814				
Filter Peak	12.196	-0.002	238139	176927				
C36	10.614	0.002	591834	293532				
C38	11.013	0.004	589637	205071				
C40	11.421	-0.001	446362	221729				
o-terph	----							
Triacon Surr	9.315	-0.016	5721225	5699061	NAS DIES	(C10-C24)	5606025	45.9

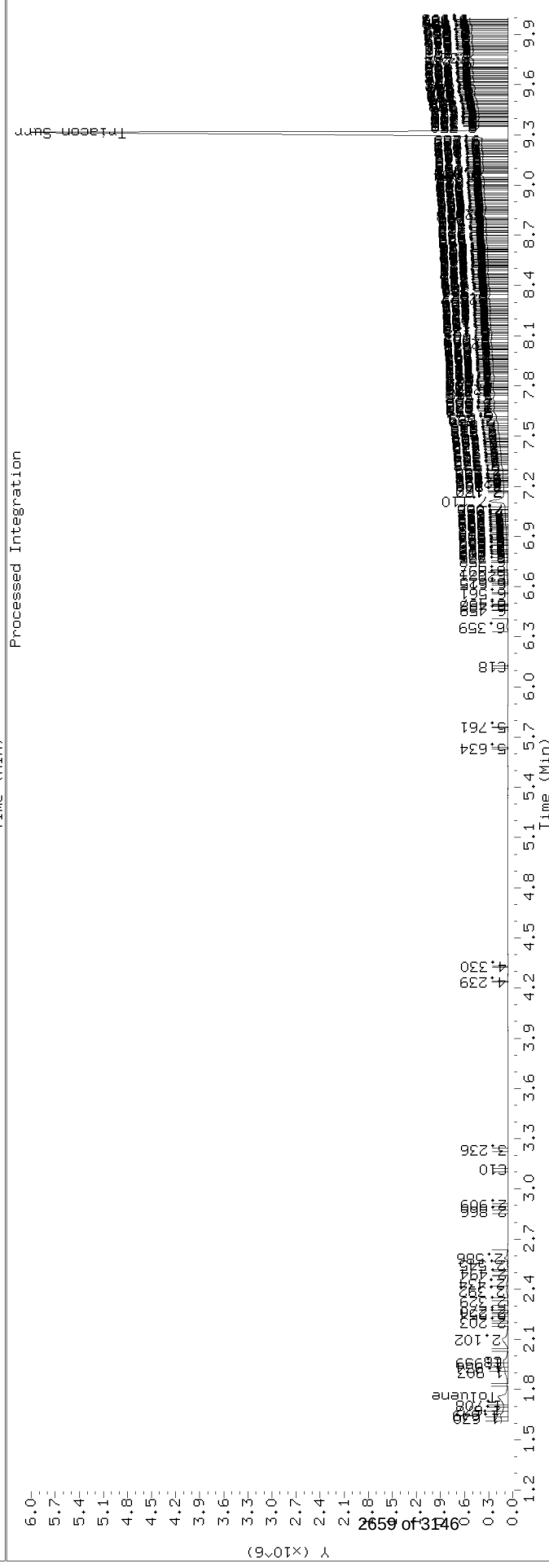
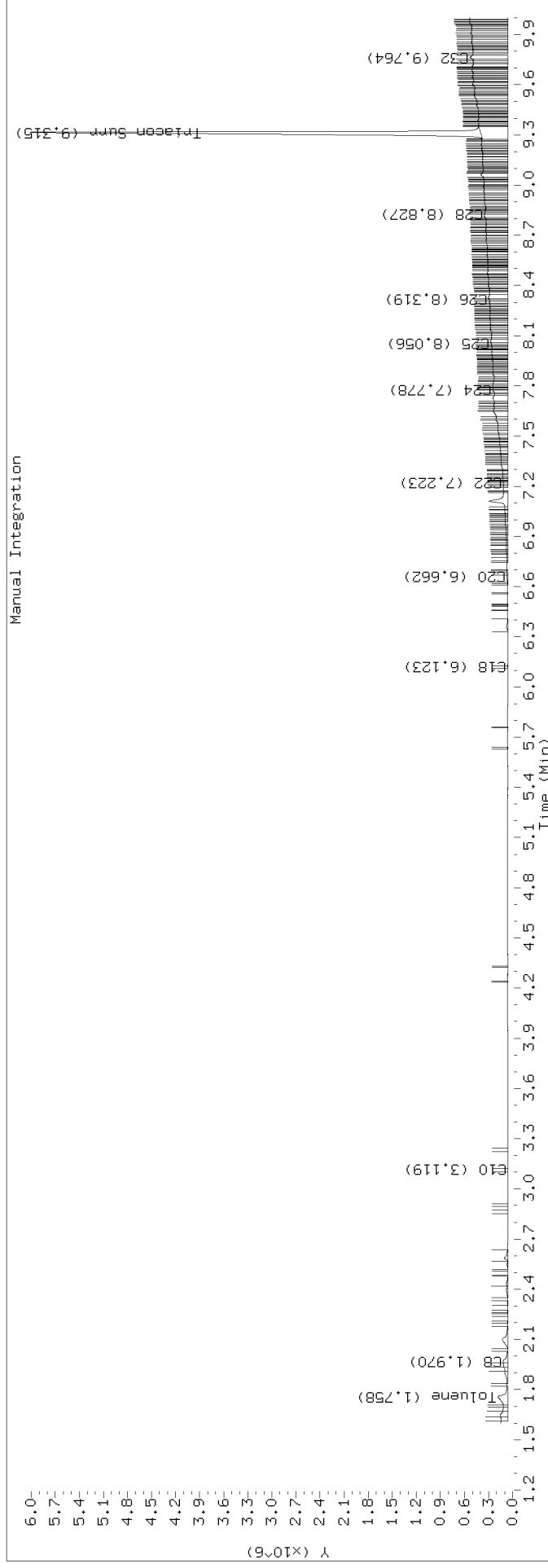
Range Times: NW Diesel(4.058 - 7.776) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.01) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	0	0.0
Triacotane	5699061	46.5 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







INITIAL CALIBRATION CHECK

NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1647.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-ICV1 Injection Time: 03:23
Sequence Name: DIESEL ICV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Diesel Range Organics (C12-C24)	A	500.00	537	105380.0000	113114.1000		7.3	15
o-Terphenyl	A	90.000	96.4	131194.7000	140535.9000		7.1	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1647.D

Date: 17-JUL-2019 03:23

Client ID:

Sample Info: SHG0211-ICV1

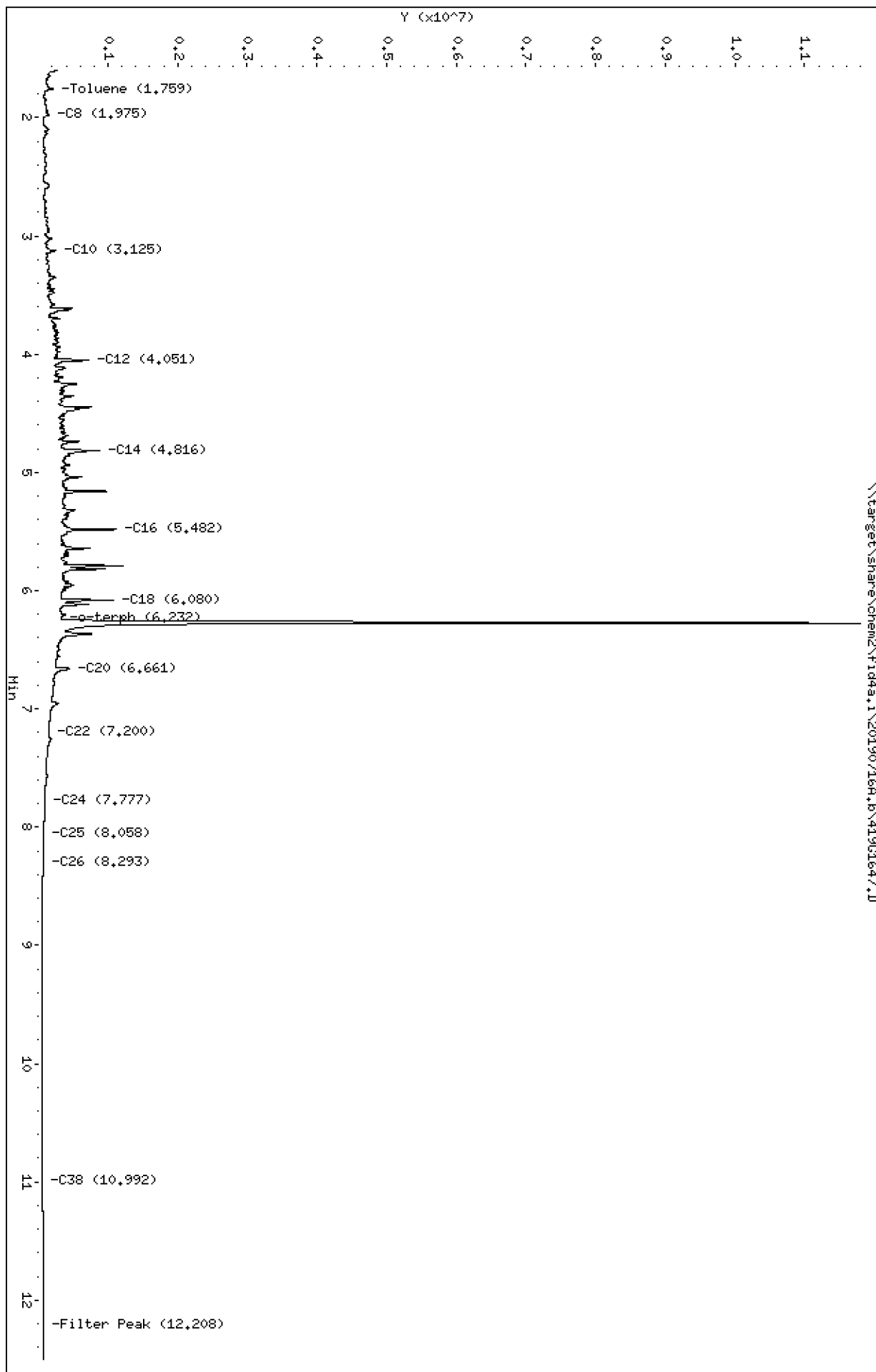
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1647.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-ICV1

Client ID:

Injection: 17-JUL-2019 03:23

Dilution Factor: 1

RT Std: 419G1645.D

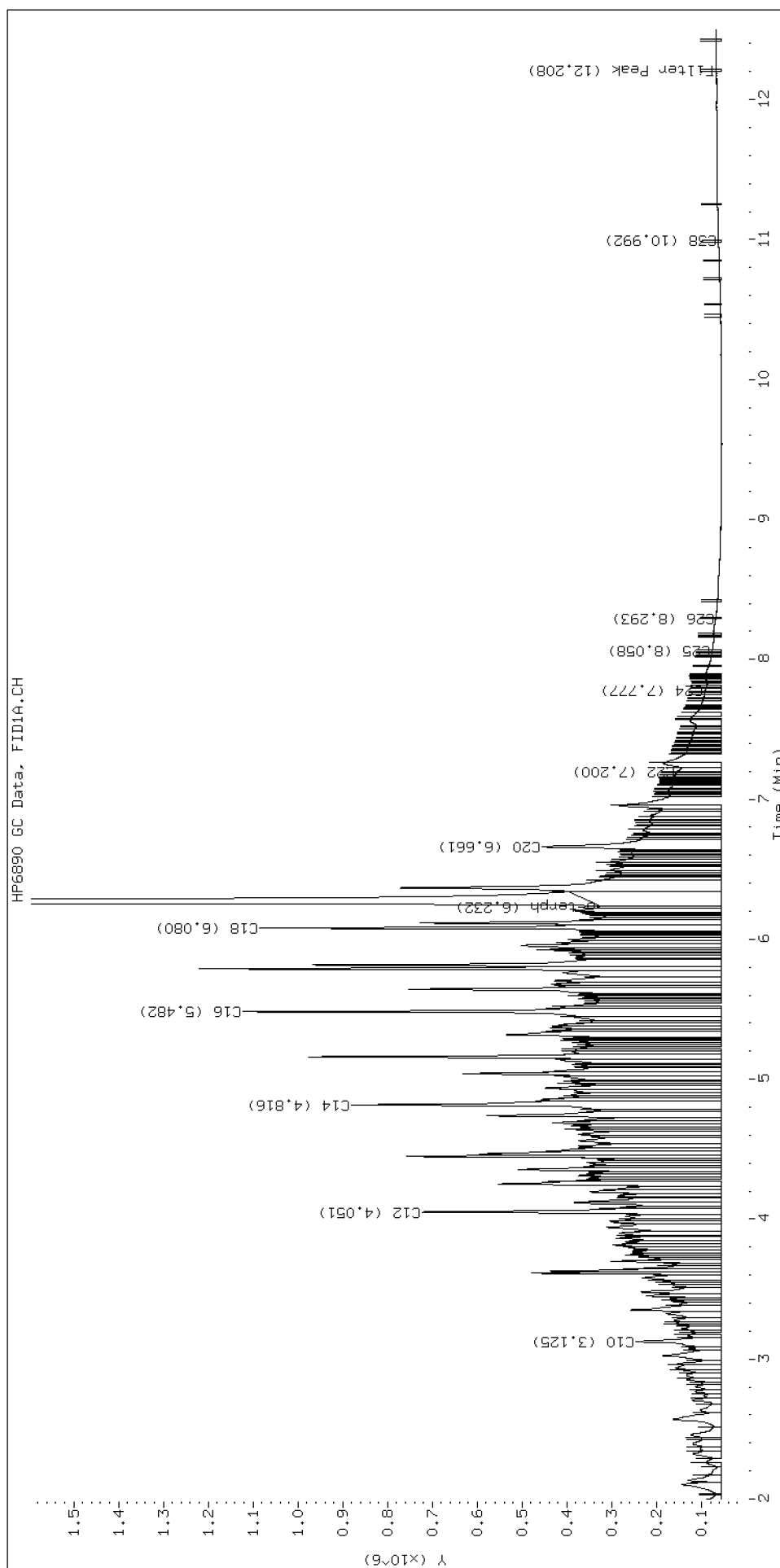
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.975	-0.007	105211	193969	WATPHD	(C12-C24)	56557065	536.7
C10	3.125	-0.001	191851	430730	WATPHM	(C24-C38)	258009	2.8
C12	4.051	-0.008	666976	955613	AK102	(C10-C25)	66240112	541.4
C14	4.816	-0.013	826069	1685525	AK103	(C25-C36)	87884	1.3
C16	5.482	-0.006	1068652	1705344	OR.DIES	(C10-C28)	66321258	541.3
C18	6.080	-0.002	1029871	1318118				
C20	6.661	0.000	401626	1147992				
C22	7.200	-0.024	100338	176262				
C24	7.777	0.001	37552	40297				
C25	8.058	0.004	21681	14853				
C26	8.293	-0.022	13880	7552				
C32	----							
C34	----							
Filter Peak	12.208	-0.013	11773	6452				
C36	----							
C38	10.992	-0.009	8858	7897				
C40	----							
o-terph	6.275	-0.001	11449093	12648232				
Triacon Surr	----				NAS DIES	(C10-C24)	66086641	541.0

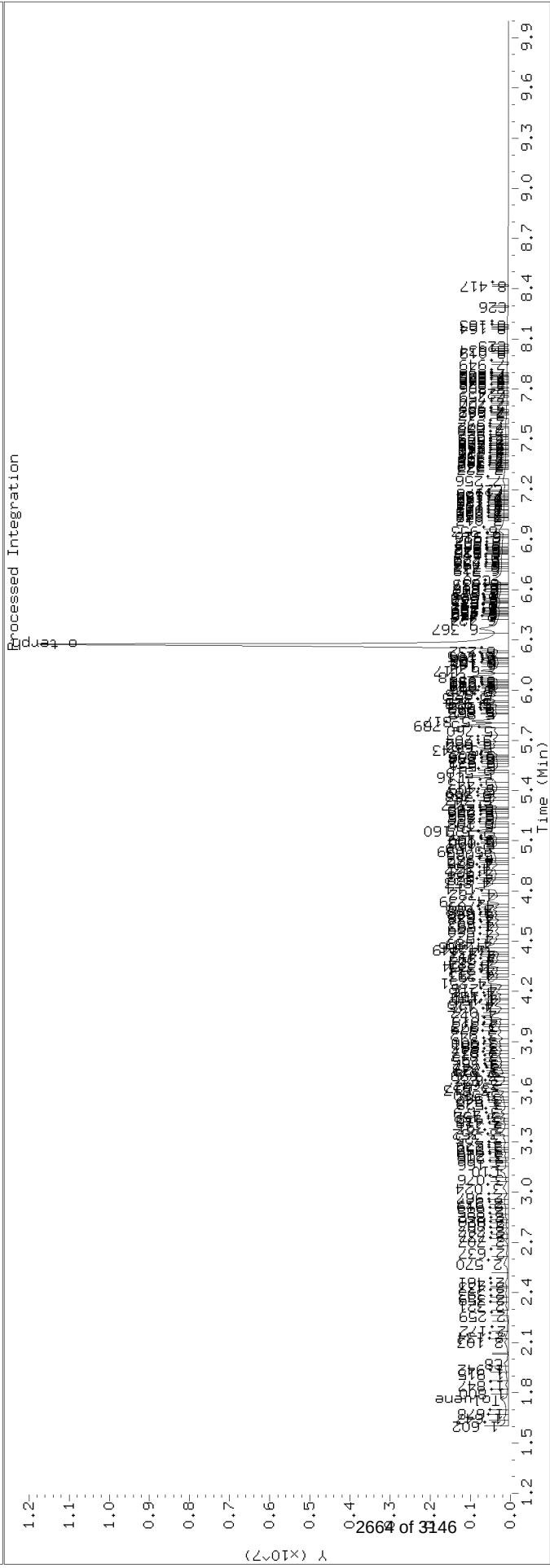
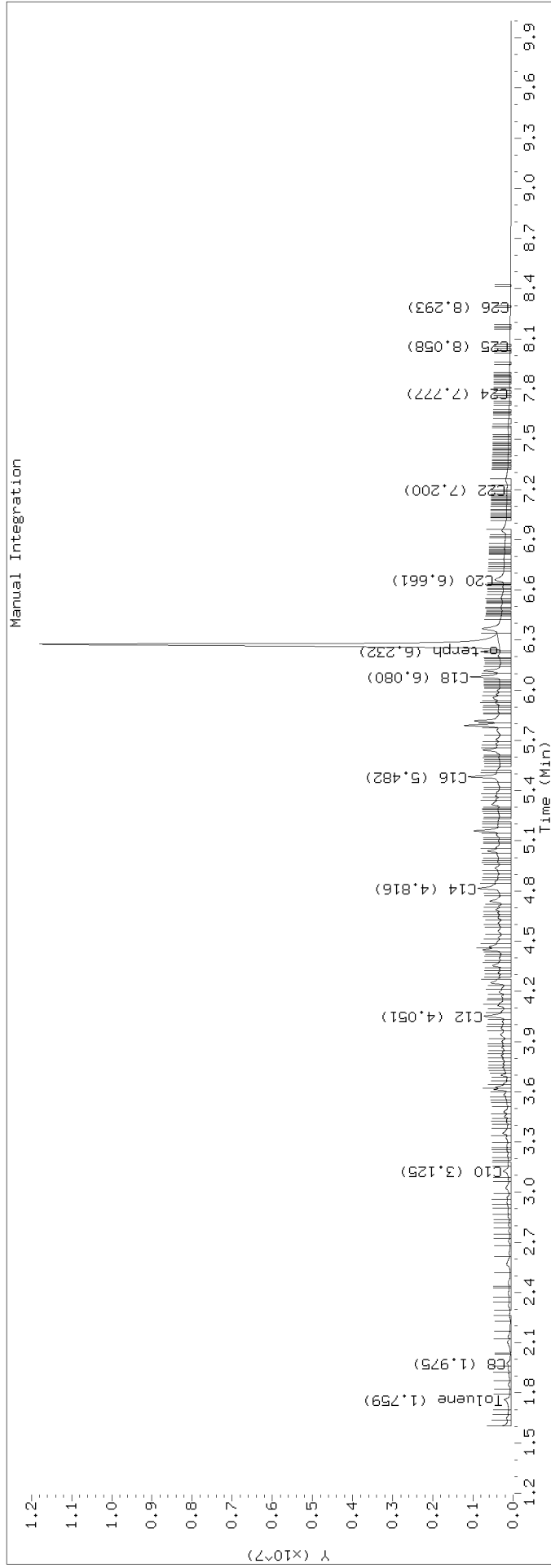
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	12648232	96.4 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







INITIAL CALIBRATION CHECK

NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1648.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-ICV2 Injection Time: 03:43
Sequence Name: MOIL ICV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	ICV	ICAL	ICV	MIN	ICV	LIMIT
Motor Oil Range Organics (C24-C38)	A	1000.0	979	91678.3000	89729.4100		-2.1	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1648.D

Date : 17-JUL-2019 03:43

Client ID:

Sample Info: SHG0211-ICV2

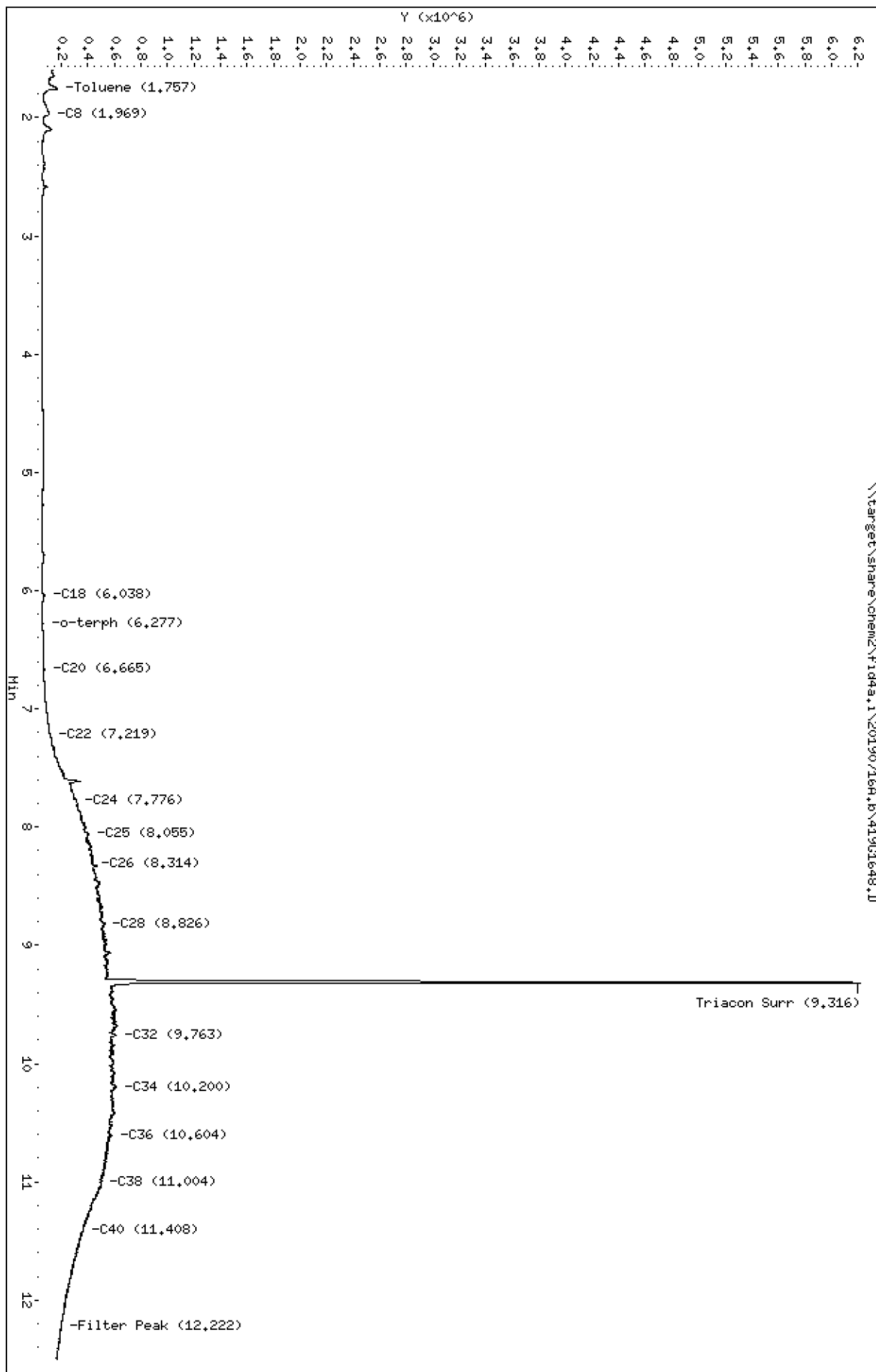
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1648.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-ICV2

Client ID:

Injection: 17-JUL-2019 03:43

Dilution Factor: 1

RT Std: 419G1645.D

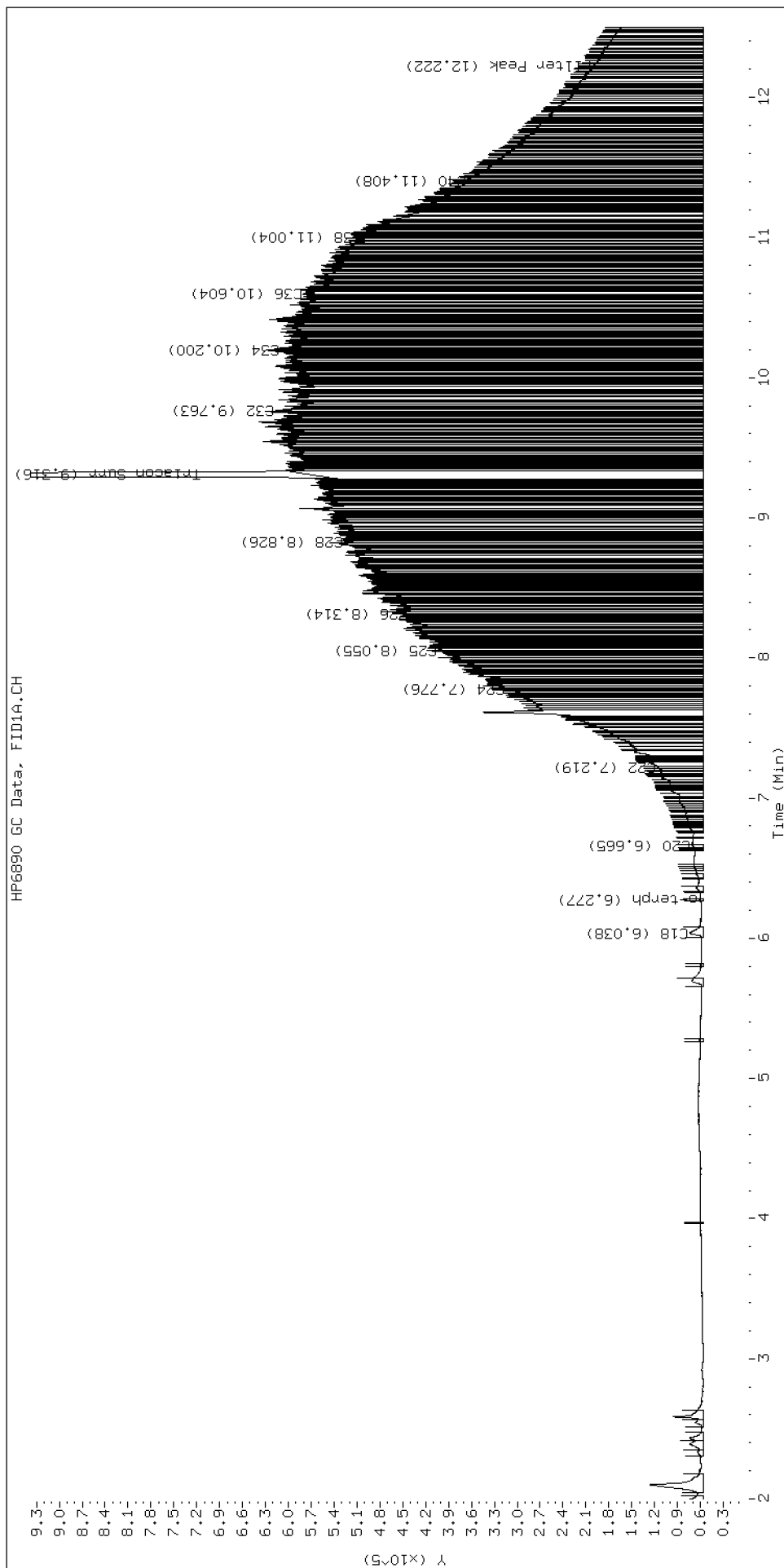
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.969	-0.013	54952	175854	WATPHD	(C12-C24)	6728746	63.9
C10	----				WATPHM	(C24-C38)	89729410	978.7
C12	----				AK102	(C10-C25)	9757221	79.8
C14	----				AK103	(C25-C36)	75988110	1092.5
C16	----				OR.DIES	(C10-C28)	30578455	249.6
C18	6.038	-0.044	17395	45638				
C20	6.665	0.005	14937	23629				
C22	7.219	-0.005	59892	49994				
C24	7.776	0.000	257838	102878				
C25	8.055	0.000	346974	120520				
C26	8.314	-0.001	385159	152112				
C28	8.826	0.000	469537	278505				
C32	9.763	-0.005	560473	436342				
C34	10.200	-0.000	553664	329273				
Filter Peak	12.222	0.000	143249	42804				
C36	10.604	-0.005	523670	615688				
C38	11.004	0.003	446060	176900				
C40	11.408	-0.004	308651	183995				
o-terph	6.277	0.001	4682	3291				
Triacon Surr	9.316	-0.016	5639019	5509967	NAS DIES	(C10-C24)	6731089	55.1

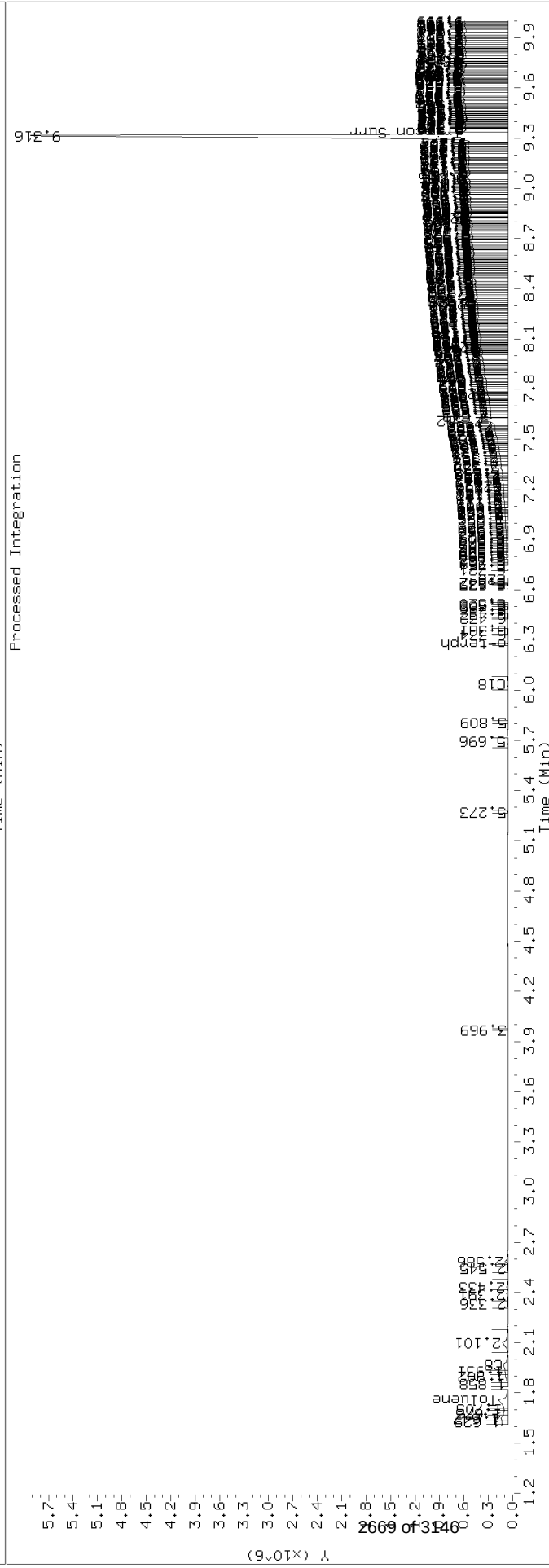
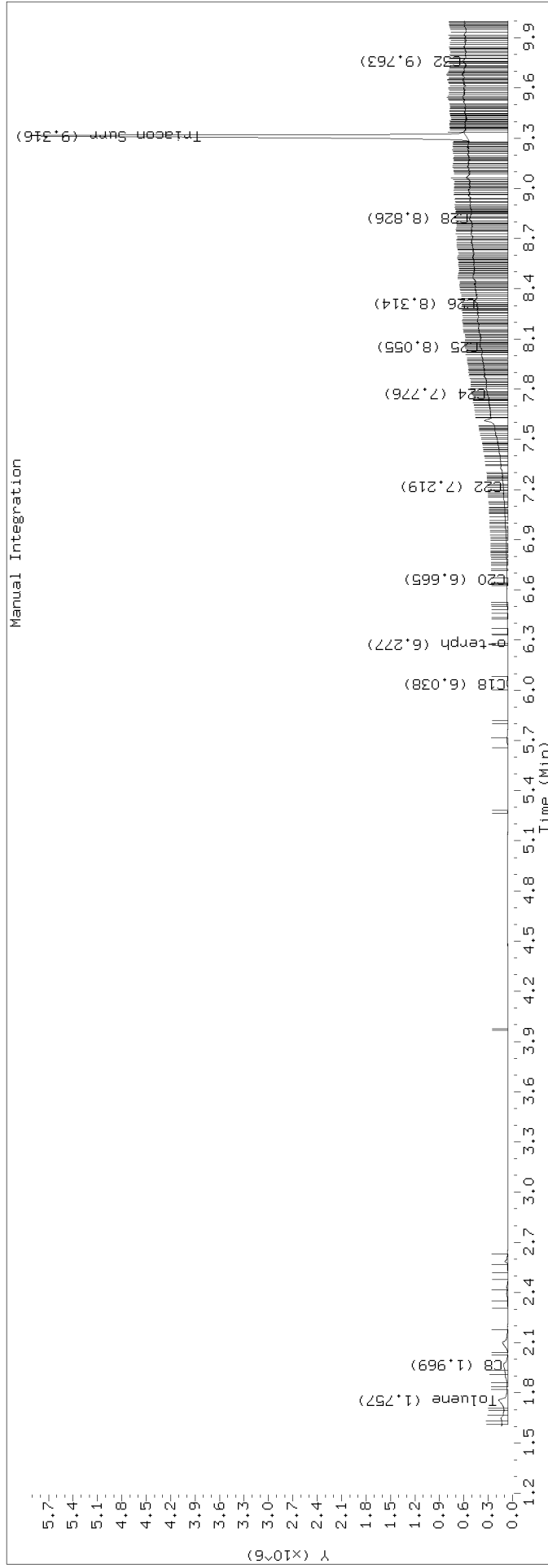
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	3291	0.0
Triacotane	5509967	45.0 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1655.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV1 Injection Time: 06:06
Sequence Name: DIESEL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Diesel Range Organics (C12-C24)	A	500.00	521	105380	109724.1		4.1	15
o-Terphenyl	A	90.000	91.0	131194.7	132662.2		1.1	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1655.D

Date : 17-JUL-2019 06:06

Client ID:

Sample Info: SHG0211-CCV1

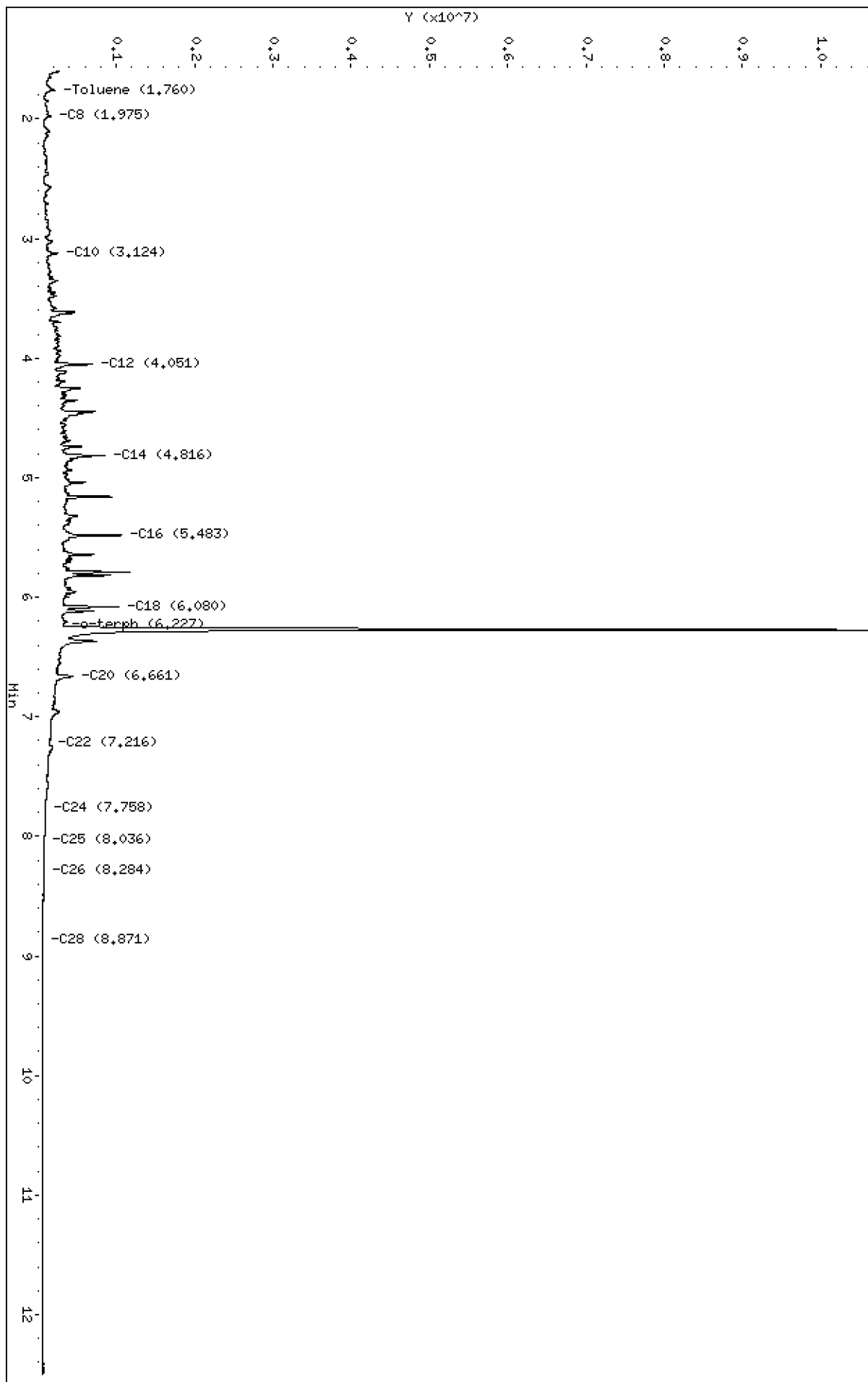
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

\\target\share\chem2\fid4a.i\20190716a.b\419G1655.D



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1655.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV1

Client ID:

Injection: 17-JUL-2019 06:06

Dilution Factor: 1

RT Std: 419G1645.D

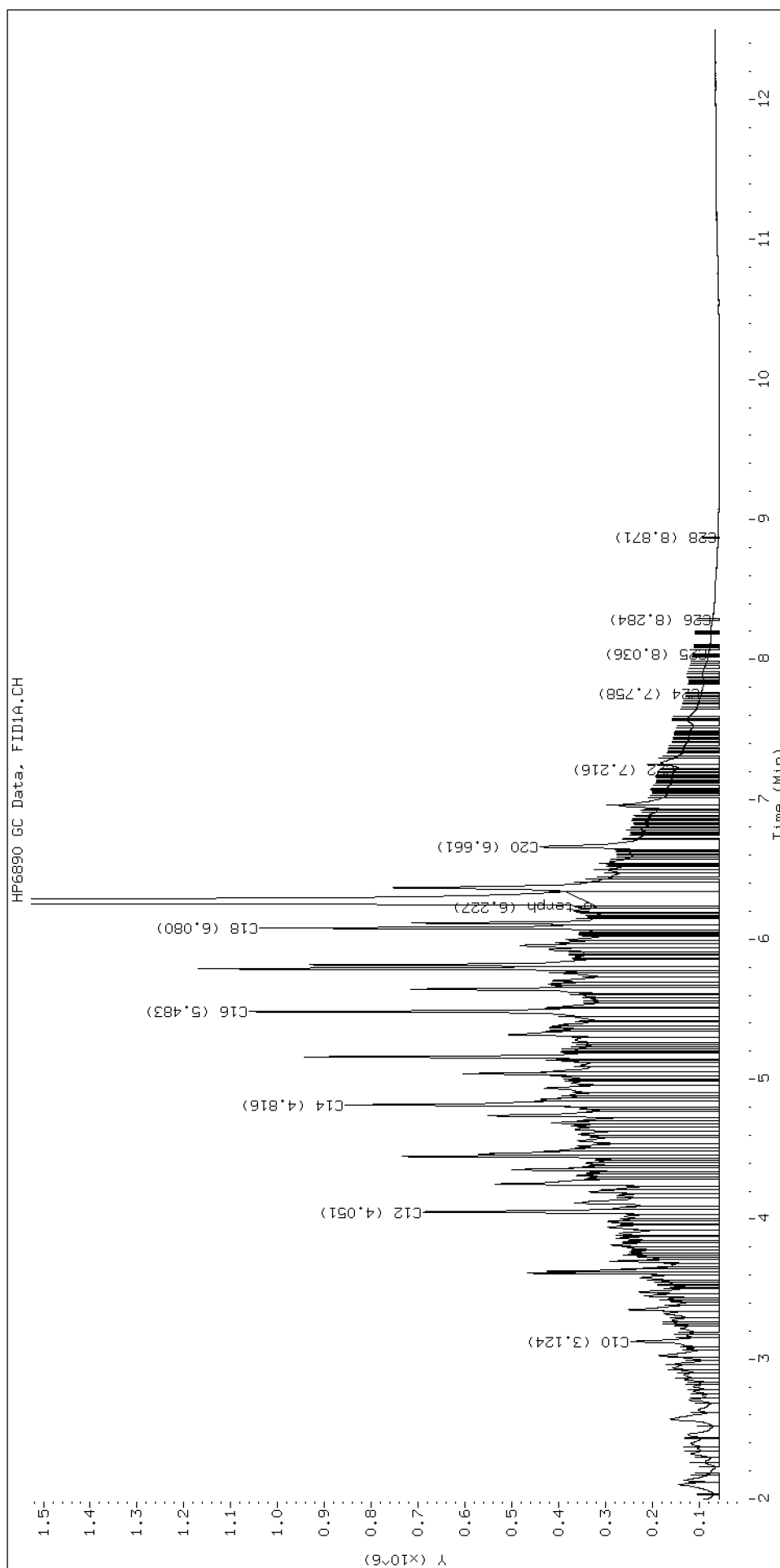
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.975	-0.007	102902	186781	WATPHD	(C12-C24)	54862066	520.6
C10	3.124	-0.002	190124	414540	WATPHM	(C24-C38)	307661	3.4
C12	4.051	-0.009	632711	908735	AK102	(C10-C25)	64030769	523.4
C14	4.816	-0.013	799258	1334783	AK103	(C25-C36)	97476	1.4
C16	5.483	-0.006	1003538	1646069	OR.DIES	(C10-C28)	64128245	523.4
C18	6.080	-0.002	980542	1178161				
C20	6.661	0.000	383650	1080358				
C22	7.216	-0.008	91909	49405				
C24	7.758	-0.017	38930	19291				
C25	8.036	-0.019	23770	12831				
C26	8.284	-0.031	14865	9558				
C28	8.871	0.045	3428	1649				
C32	----							
C34	----							
Filter Peak	----							
C36	----							
C38	----							
C40	----							
o-terph	6.274	-0.002	10280803	11939598				
Triacon Surr	----				NAS DIES	(C10-C24)	63820584	522.5

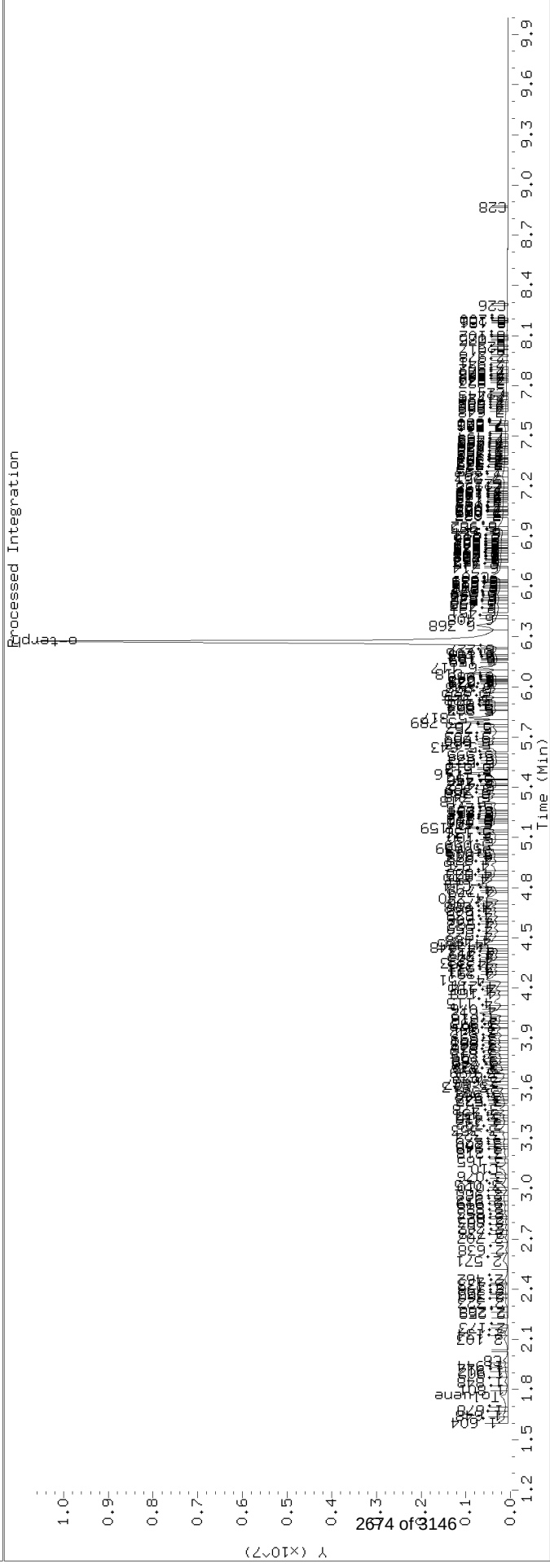
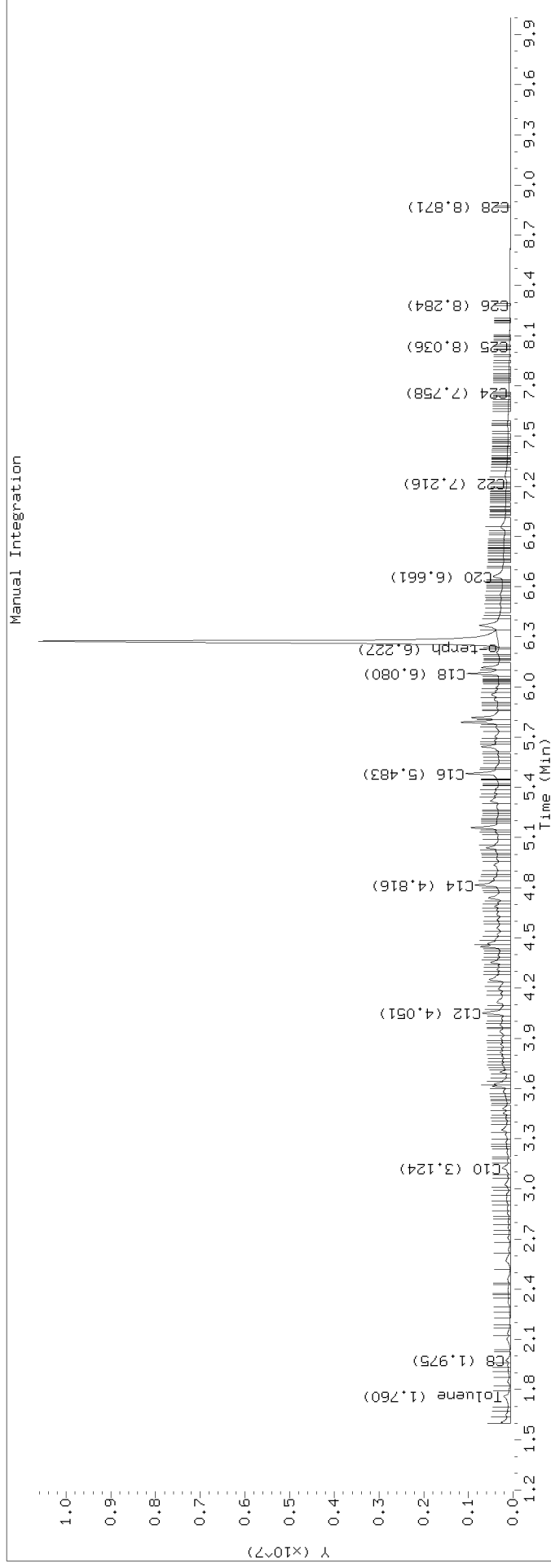
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	11939598	91.0 M
Triacotane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1656.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV2 Injection Time: 06:26
Sequence Name: MOIL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Motor Oil Range Organics (C24-C38)	A	1000.0	962	91678.3	88204.28		-3.8	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1656.D

Date: 17-JUL-2019 06:26

Client ID:

Sample Info: SHG0211-CCW2

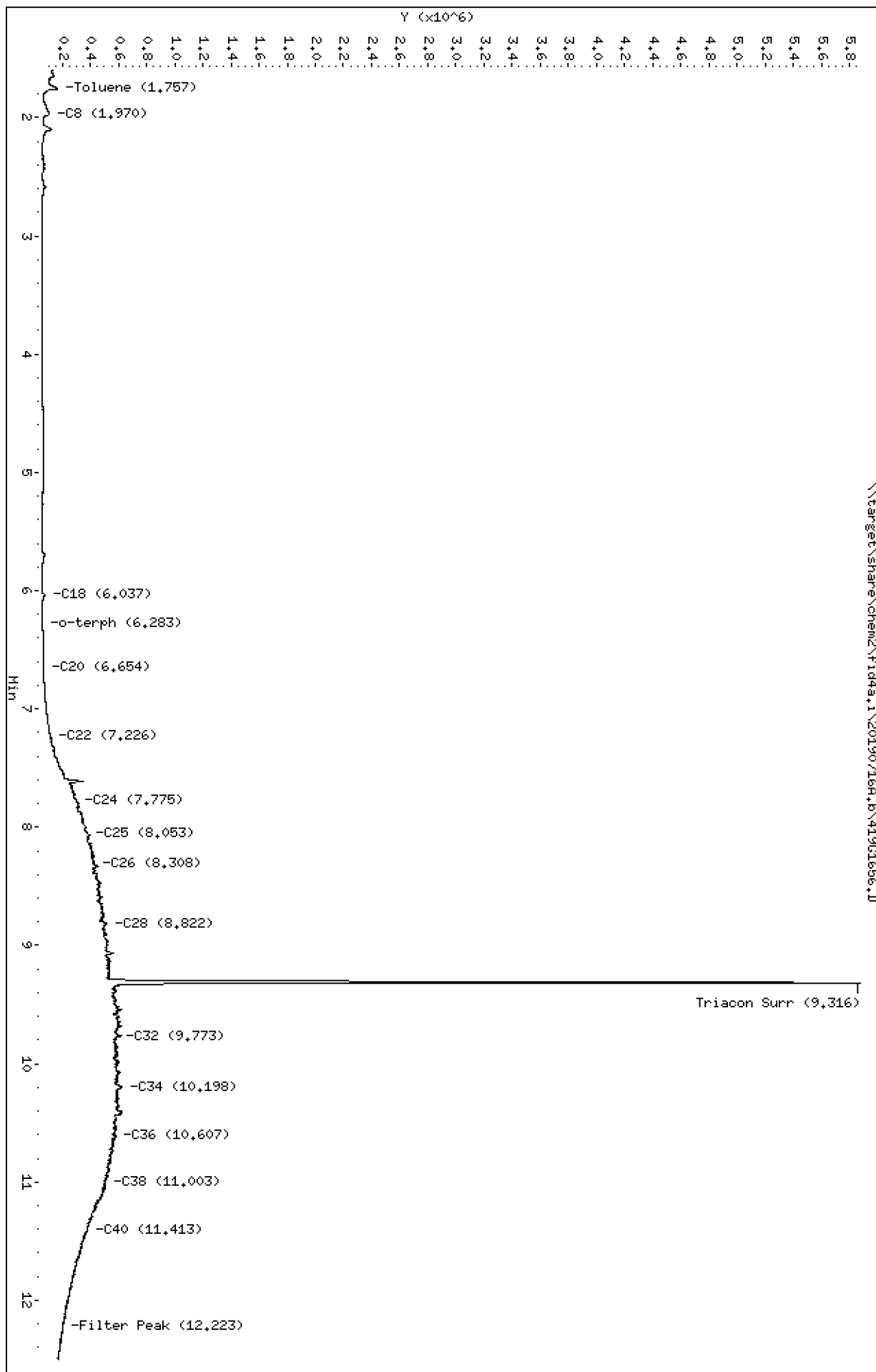
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1656.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV2

Client ID:

Injection: 17-JUL-2019 06:26

Dilution Factor: 1

RT Std: 419G1645.D

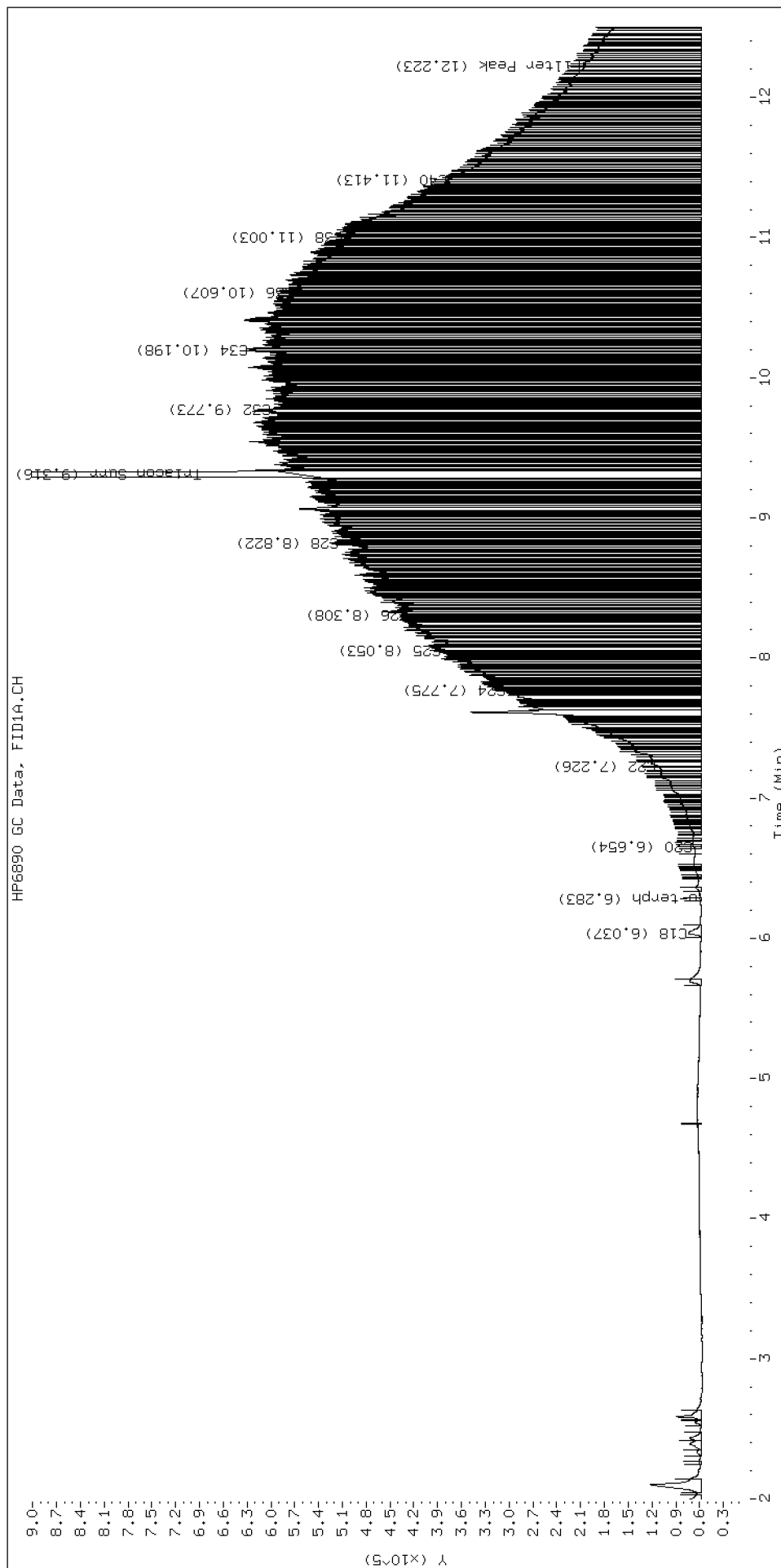
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.012	50152	159615	WATPHD	(C12-C24)	6146785	58.3
C10	----				WATPHM	(C24-C38)	88204283	962.1
C12	----				AK102	(C10-C25)	9240040	75.5
C14	----				AK103	(C25-C36)	74161406	1066.2
C16	----				OR.DIES	(C10-C28)	29117127	237.6
C18	6.037	-0.045	16797	43754				
C20	6.654	-0.006	10350	10066				
C22	7.226	0.002	56152	24996				
C24	7.775	-0.001	245177	109524				
C25	8.053	-0.001	325905	161054				
C26	8.308	-0.007	367062	181767				
C28	8.822	-0.004	454998	291907				
C32	9.773	0.004	540295	239577				
C34	10.198	-0.002	569151	393886				
Filter Peak	12.223	0.002	148767	117692				
C36	10.607	-0.003	512059	153453				
C38	11.003	0.002	450539	312818				
C40	11.413	0.001	318716	79438				
o-terph	6.283	0.007	2659	2388				
Triacon Surr	9.316	-0.016	5306900	5379771	NAS DIES	(C10-C24)	6146785	50.3

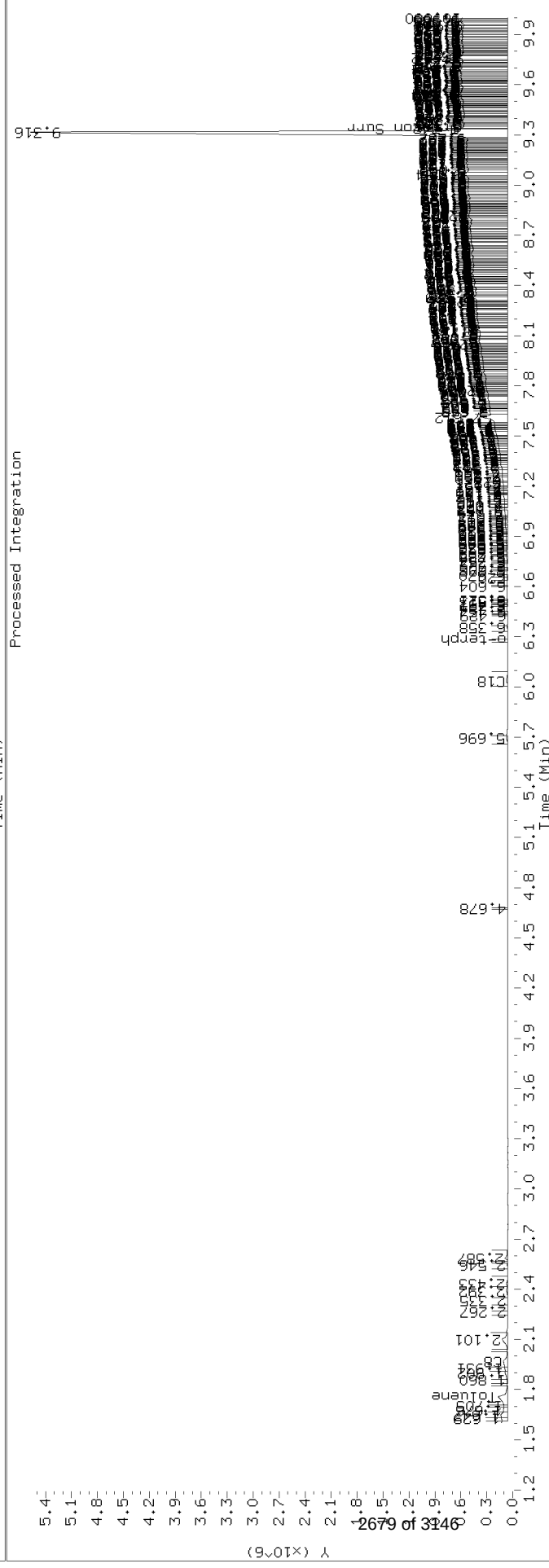
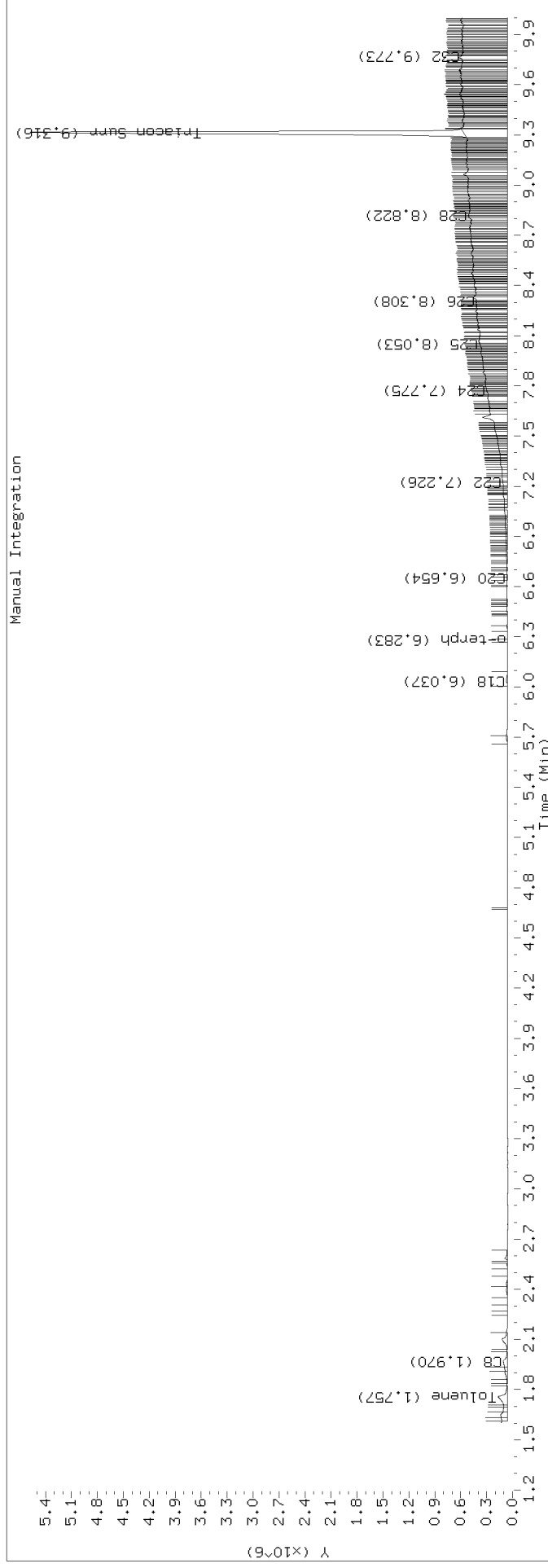
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	2388	0.0
Triacotane	5379771	43.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1667.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV3 Injection Time: 10:13
Sequence Name: DIESEL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Diesel Range Organics (C12-C24)	A	500.00	522	105380	110057.9		4.4	15
o-Terphenyl	A	90.000	89.1	131194.7	129899.8		-1.0	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1667.D

Date : 17-JUL-2019 10:13

Client ID:

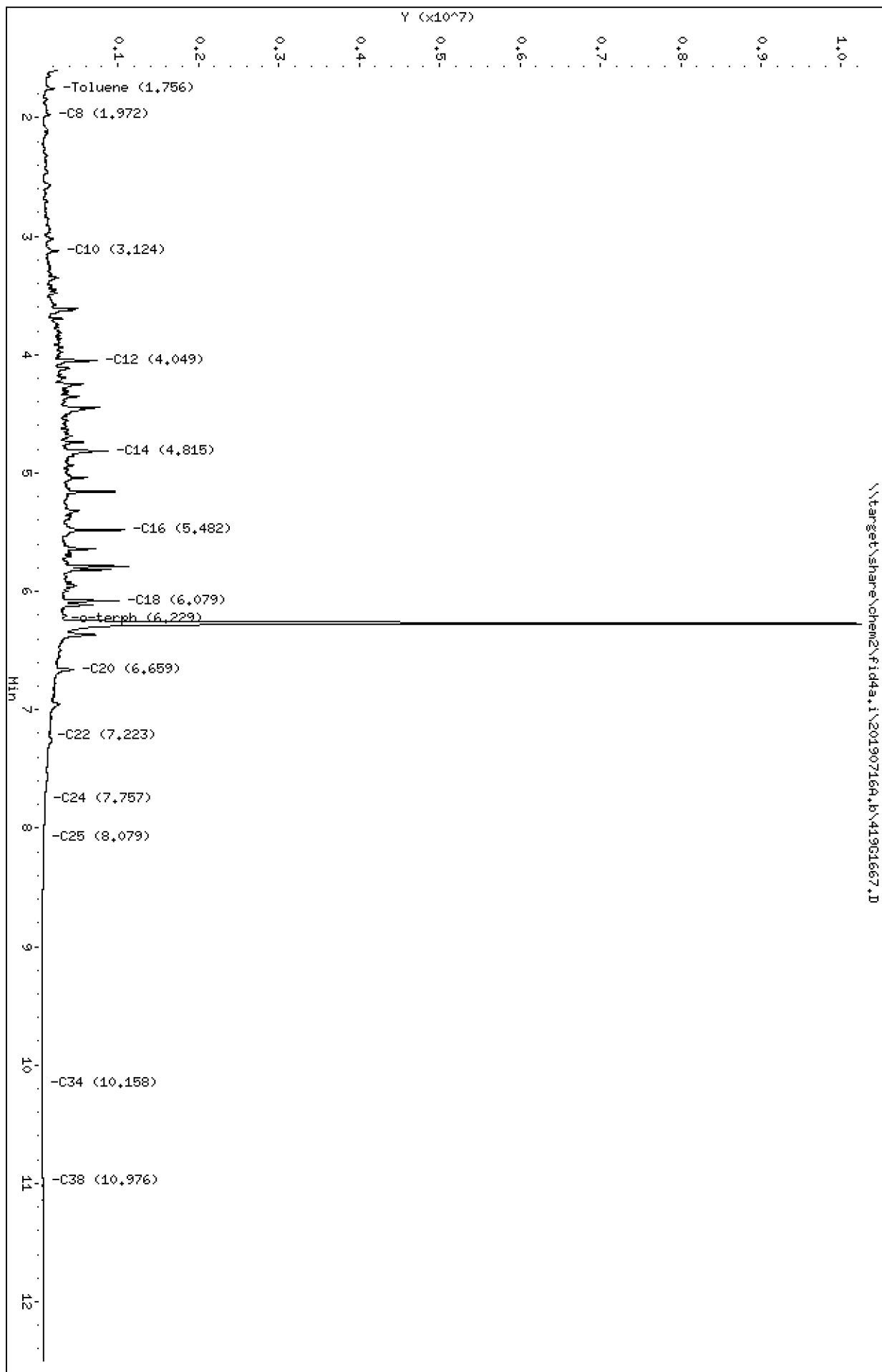
Sample Info: SHG0211-CCV3

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1667.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV3

Client ID:

Injection: 17-JUL-2019 10:13

Dilution Factor: 1

RT Std: 419G1645.D

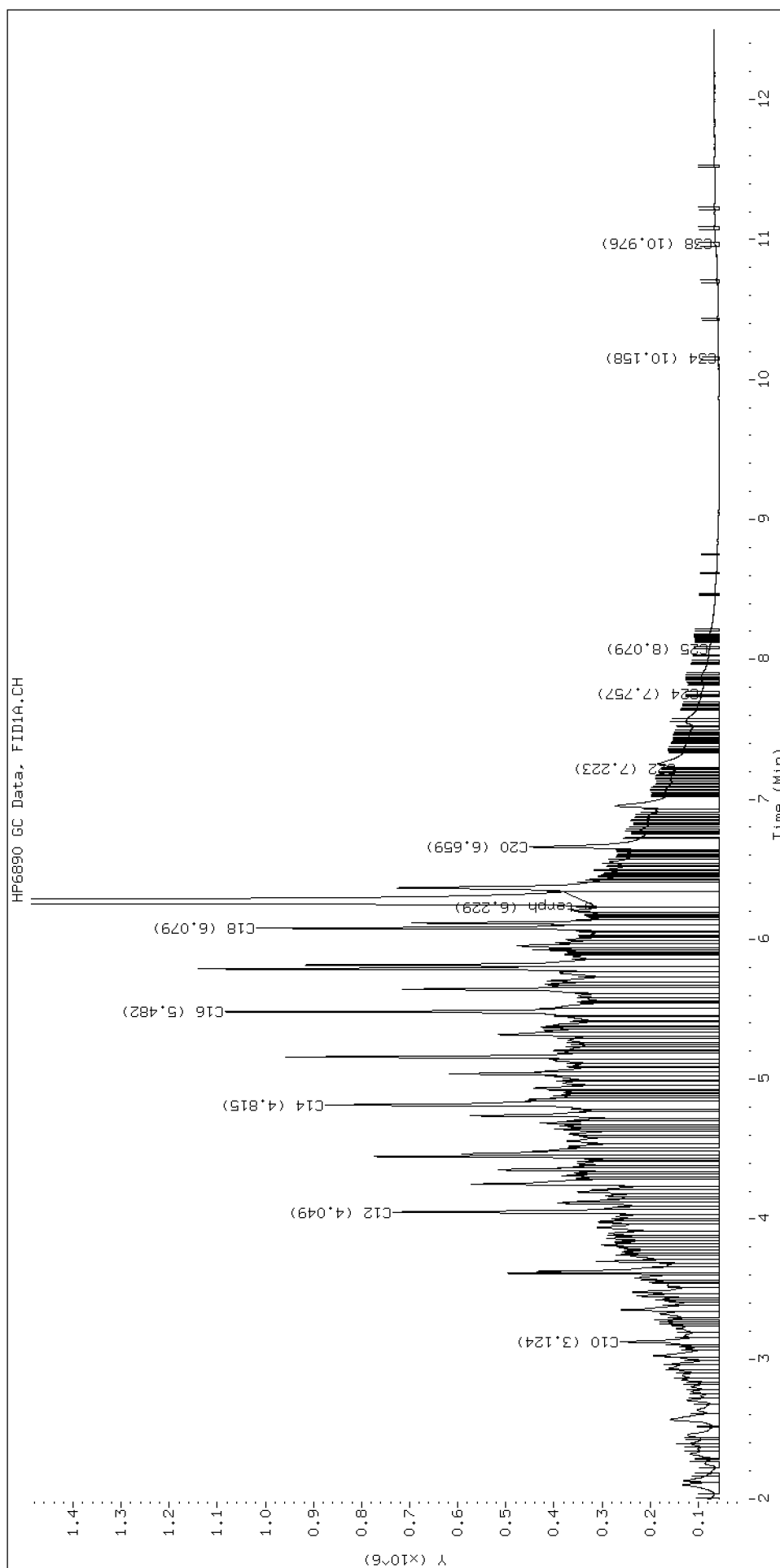
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.972	-0.010	95879	149892	WATPHD	(C12-C24)	55028973	522.2
C10	3.124	-0.003	204658	362361	WATPHM	(C24-C38)	266604	2.9
C12	4.049	-0.010	678043	971471	AK102	(C10-C25)	64609850	528.1
C14	4.815	-0.013	819367	1665862	AK103	(C25-C36)	91985	1.3
C16	5.482	-0.007	1026127	1632282	OR.DIES	(C10-C28)	64697459	528.0
C18	6.079	-0.003	960451	1310824				
C20	6.659	-0.001	392456	1109901				
C22	7.223	-0.001	86445	25815				
C24	7.757	-0.018	37230	49162				
C25	8.079	0.024	19064	13174				
C26	----							
C32	----							
C34	10.158	-0.043	1666	1848				
Filter Peak	----							
C36	----							
C38	10.976	-0.025	8909	13572				
C40	----							
o-terph	6.273	-0.003	9910056	11690977				
Triacon Surr	----				NAS DIES	(C10-C24)	64453616	527.7

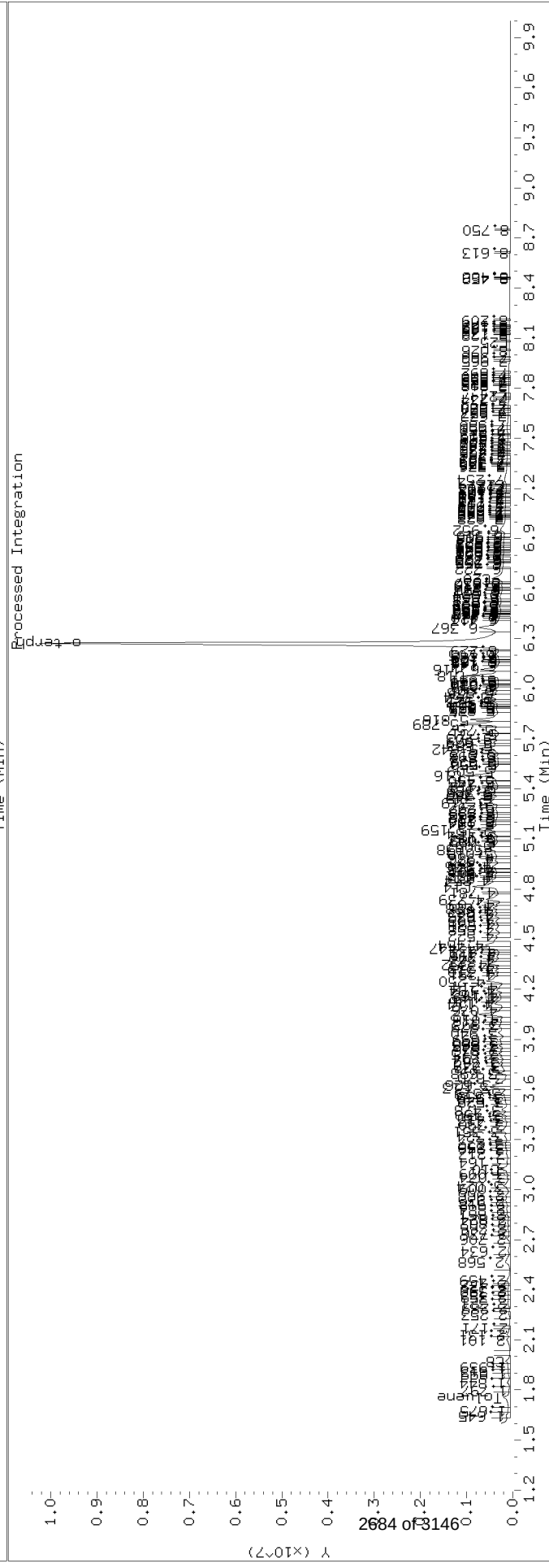
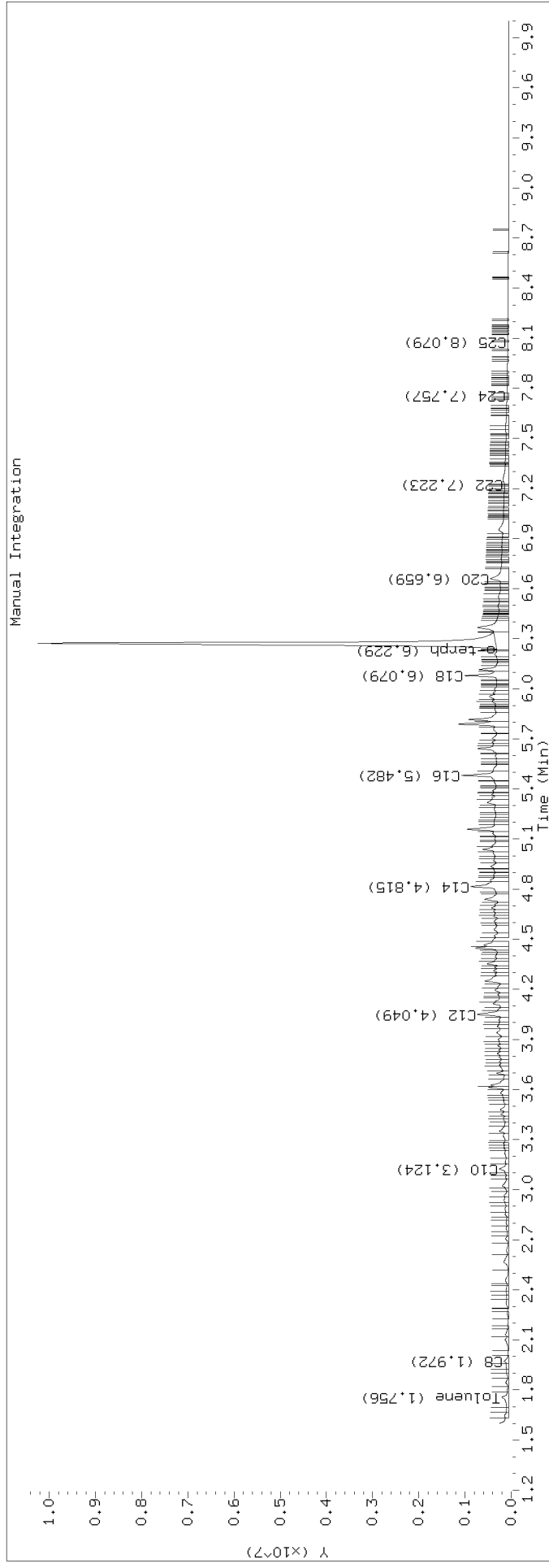
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	11690977	89.1 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1668.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV4 Injection Time: 10:33
Sequence Name: MOIL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Motor Oil Range Organics (C24-C38)	A	1000.0	977	91678.3	89561.34		-2.3	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1668.D

Date : 17-JUL-2019 10:33

Client ID:

Sample Info: SHG0211-CCV4

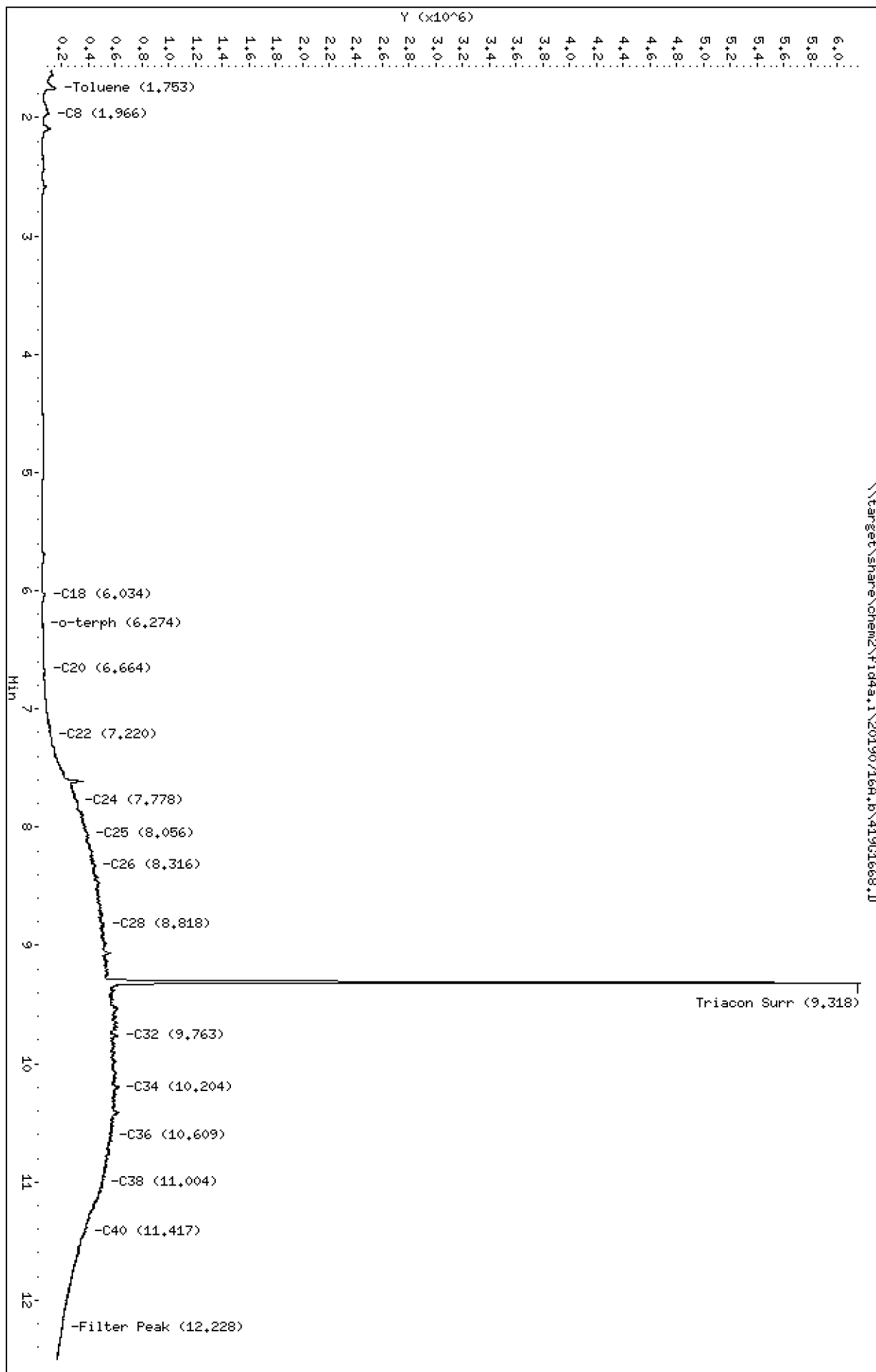
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1668.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/17/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV4

Client ID:

Injection: 17-JUL-2019 10:33

Dilution Factor: 1

RT Std: 419G1645.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.966	-0.016	48274	151143	WATPHD	(C12-C24)	6703970	63.6
C10	----				WATPHM	(C24-C38)	89561340	976.9
C12	----				AK102	(C10-C25)	9737580	79.6
C14	----				AK103	(C25-C36)	75720237	1088.6
C16	----				OR.DIES	(C10-C28)	30258763	246.9
C18	6.034	-0.048	18879	22363				
C20	6.664	0.004	15713	17596				
C22	7.220	-0.003	62161	27482				
C24	7.778	0.002	258718	102960				
C25	8.056	0.002	342513	136037				
C26	8.316	0.001	390143	247159				
C28	8.818	-0.008	465120	457115				
C32	9.763	-0.006	567935	930824				
C34	10.204	0.004	567579	196726				
Filter Peak	12.228	0.007	152403	134599				
C36	10.609	-0.001	516610	231068				
C38	11.004	0.002	453950	247450				
C40	11.417	0.005	324403	209205				
o-terph	6.274	-0.003	4349	2074				
Triacon Surr	9.318	-0.014	5586565	5439341	NAS DIES	(C10-C24)	6703970	54.9

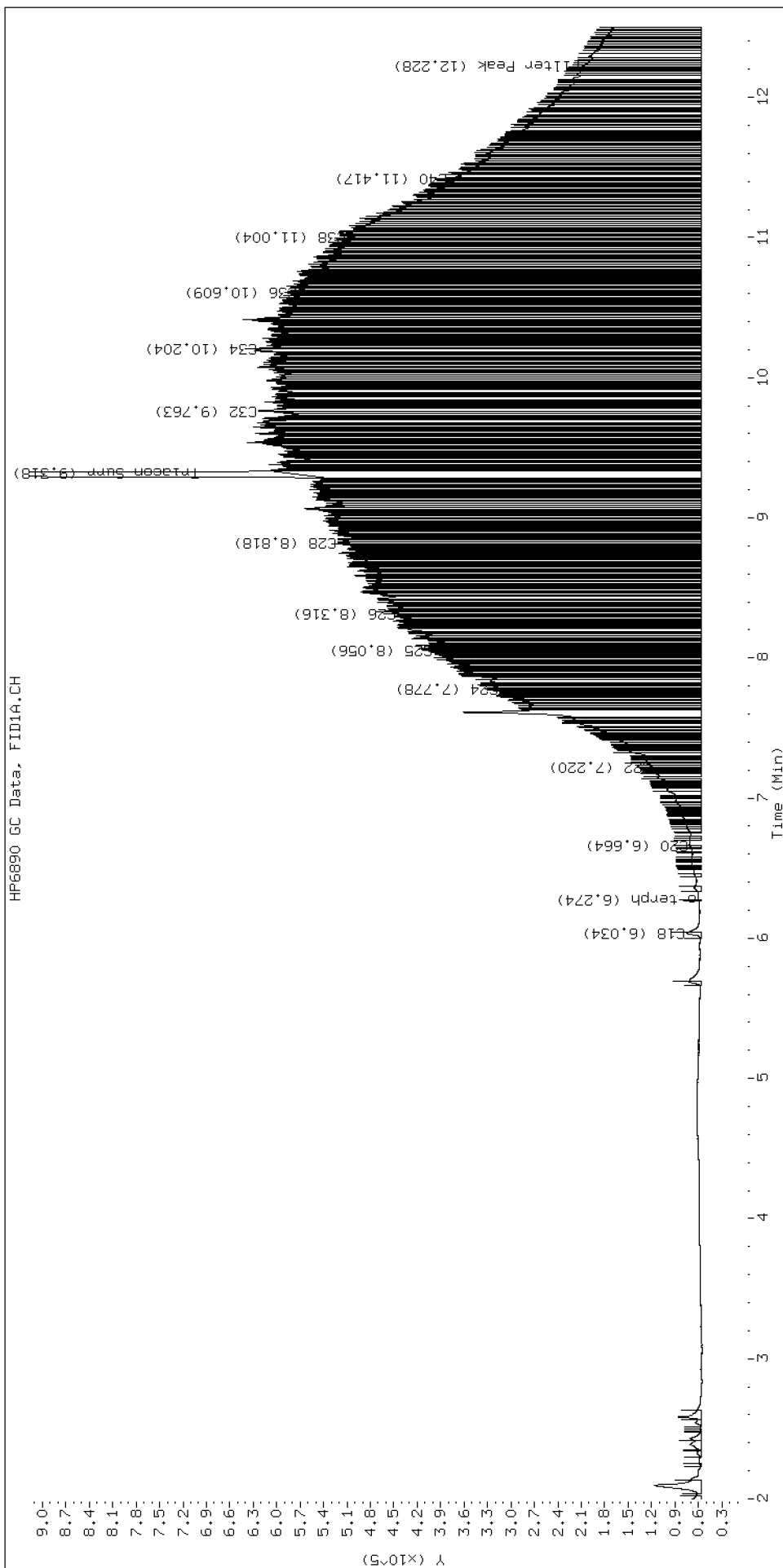
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

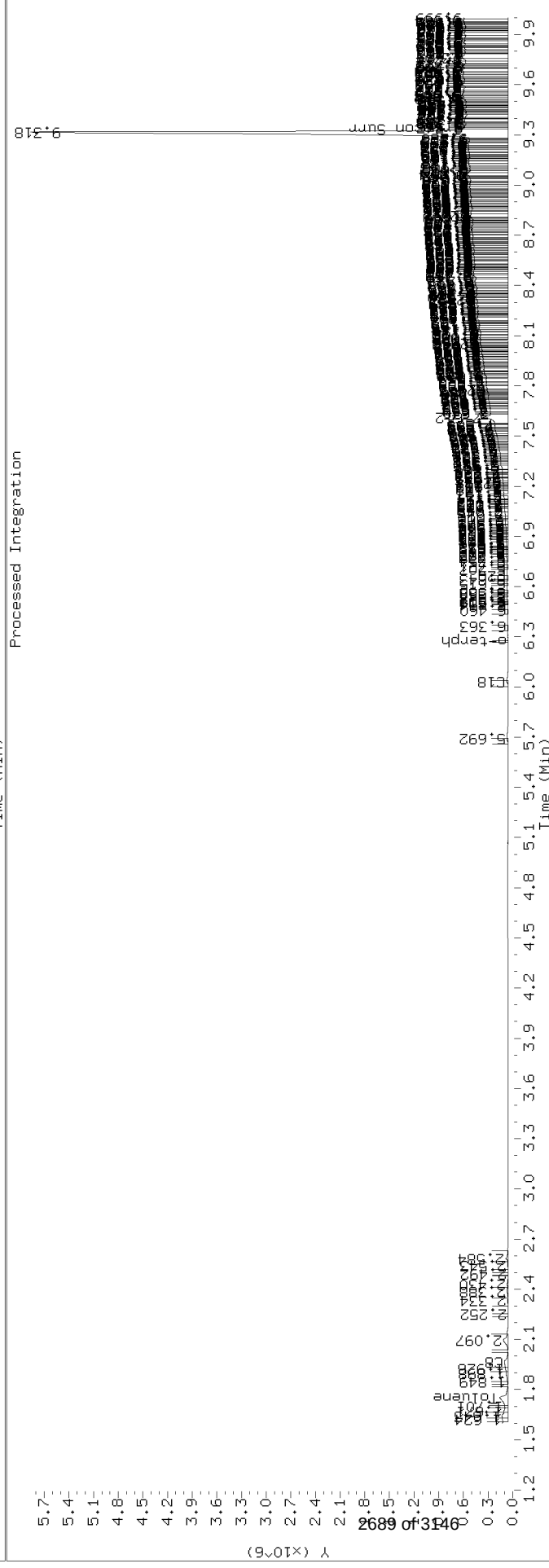
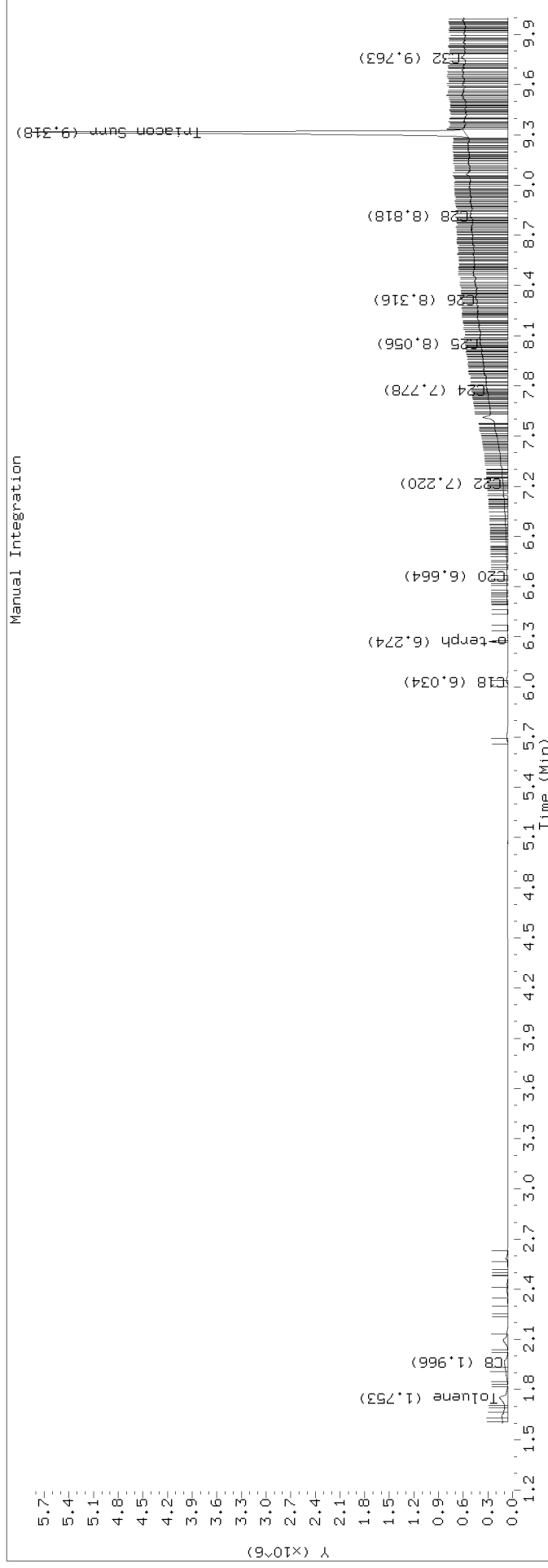
Surrogate	Area	Amount
o-Terphenyl	2074	0.0
Triacontane	5439341	44.4 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019

HP6890 GC Data, FID1A.CH







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1681.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV5 Injection Time: 15:04
Sequence Name: DIESEL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Diesel Range Organics (C12-C24)	A	500.00	507	105380	106808.4		1.4	15
o-Terphenyl	A	90.000	89.4	131194.7	130373.7		-0.7	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1681.D

Date : 17-JUL-2019 15:04

Client ID:

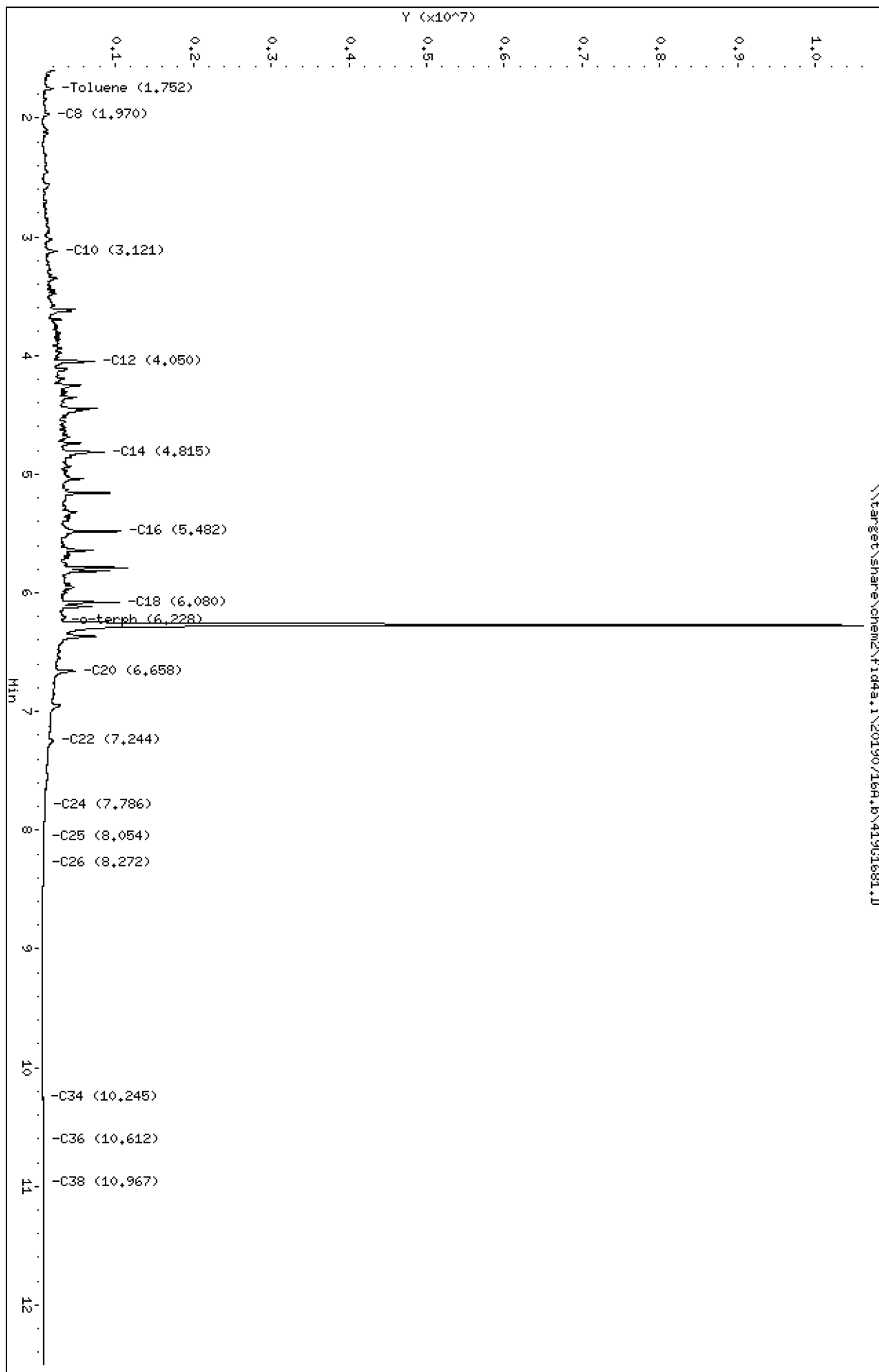
Sample Info: SHG0211-CCWS

Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1681.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/18/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV5

Client ID:

Injection: 17-JUL-2019 15:04

Dilution Factor: 1

RT Std: 419G1645.D

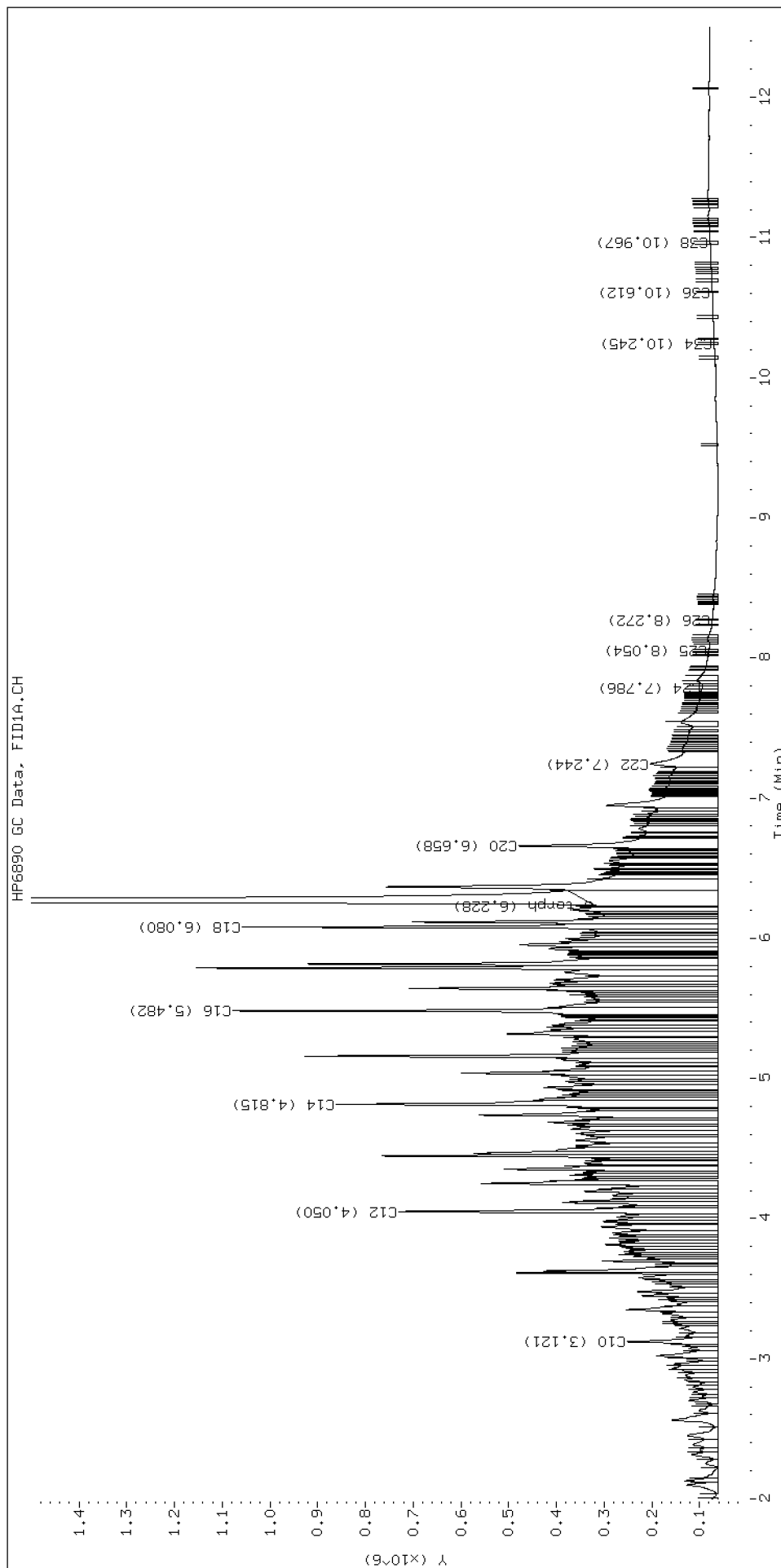
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.970	-0.012	90018	138386	WATPHD	(C12-C24)	53404219	506.8
C10	3.121	-0.005	189421	331182	WATPHM	(C24-C38)	463995	5.1
C12	4.050	-0.010	669745	957213	AK102	(C10-C25)	62497888	510.9
C14	4.815	-0.014	800532	1415695	AK103	(C25-C36)	197944	2.8
C16	5.482	-0.006	1015932	1620805	OR.DIES	(C10-C28)	62652217	511.3
C18	6.080	-0.002	996844	1199093				
C20	6.658	-0.002	417526	1076695				
C22	7.244	0.020	142531	658530				
C24	7.786	0.010	33726	40844				
C25	8.054	-0.000	20303	12061				
C26	8.272	-0.043	12231	7753				
C32	----							
C34	10.245	0.045	8550	4627				
Filter Peak	----							
C36	10.612	0.002	12647	6771				
C38	10.967	-0.034	16995	16495				
C40	----							
o-terph	6.274	-0.002	10270004	11733632				
Triacon Surr	----				NAS DIES	(C10-C24)	62309049	510.1

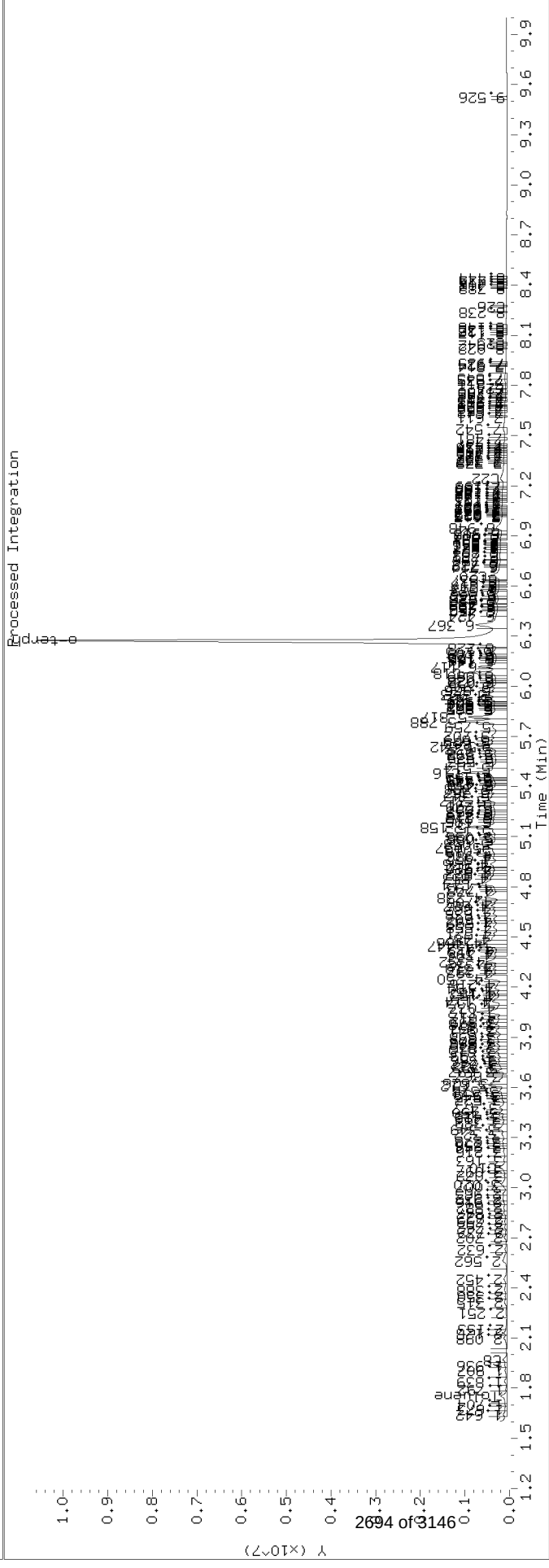
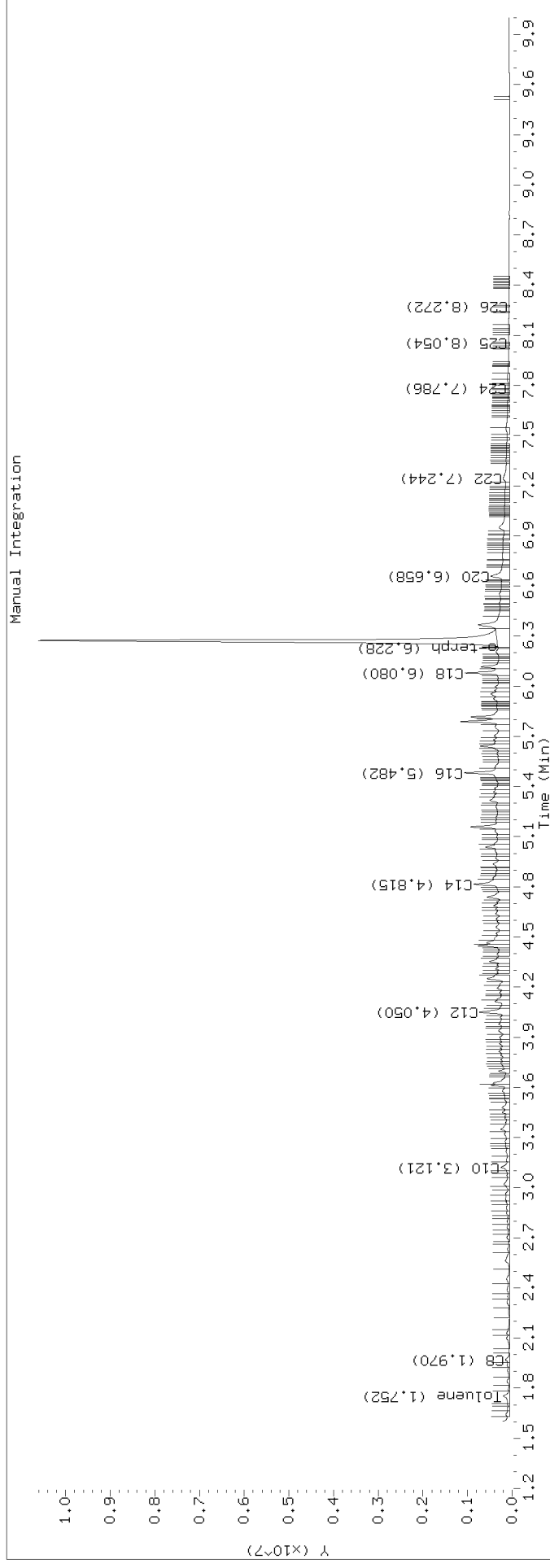
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	11733632	89.4 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1682.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV6 Injection Time: 15:24
Sequence Name: MOIL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Motor Oil Range Organics (C24-C38)	A	1000.0	1020	91678.3	93546.02		2.0	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1682.D

Date : 17-JUL-2019 15:24

Client ID:

Sample Info: SHG0211-CCW6

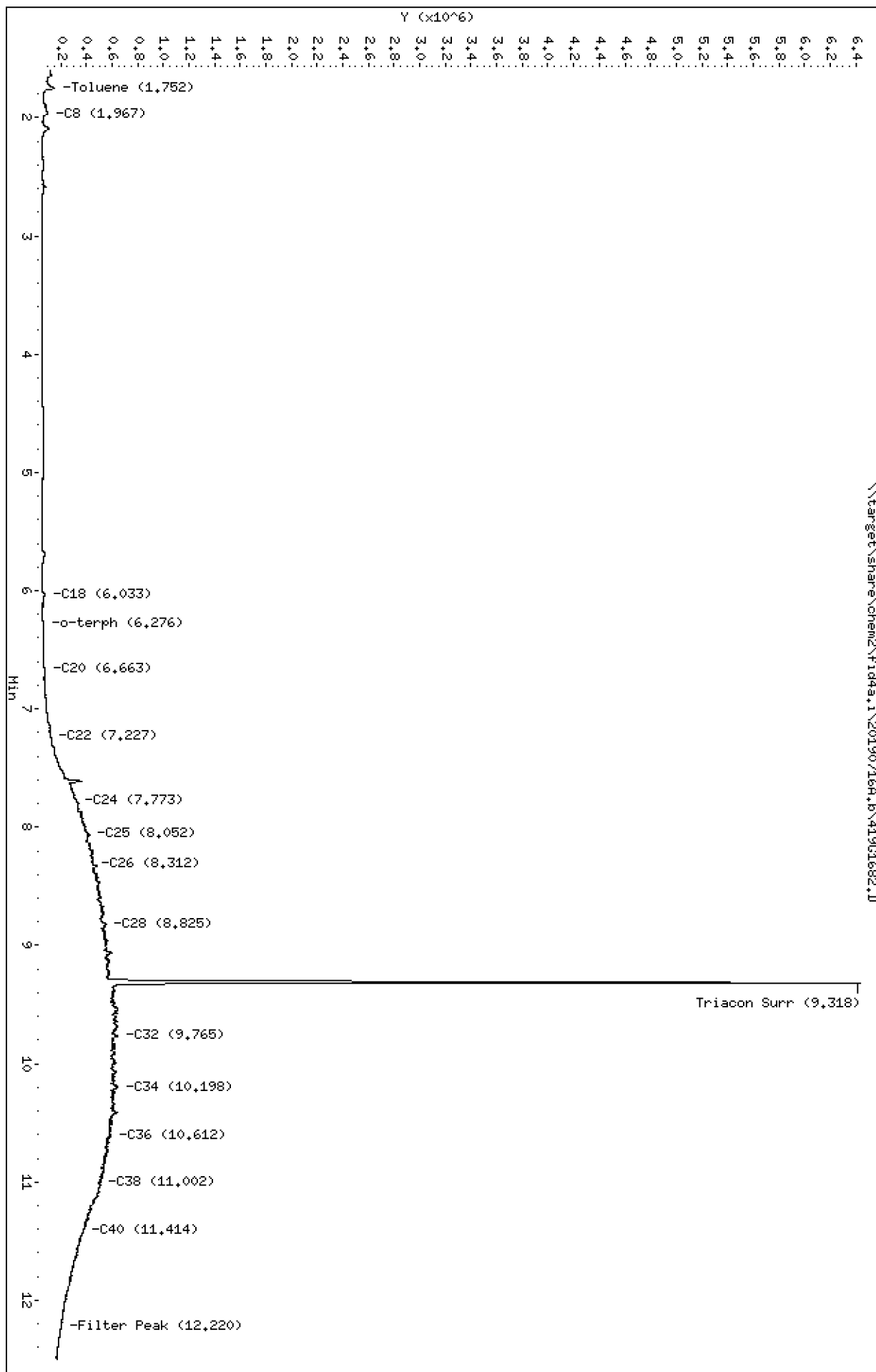
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1682.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/18/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV6

Client ID:

Injection: 17-JUL-2019 15:24

Dilution Factor: 1

RT Std: 419G1645.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.967	-0.015	42484	132688	WATPHD	(C12-C24)	7186838	68.2
C10	----				WATPHM	(C24-C38)	93546015	1020.4
C12	----				AK102	(C10-C25)	10452549	85.4
C14	----				AK103	(C25-C36)	79158291	1138.0
C16	----				OR.DIES	(C10-C28)	32165561	262.5
C18	6.033	-0.049	22008	60558				
C20	6.663	0.003	17948	22975				
C22	7.227	0.003	66960	73291				
C24	7.773	-0.002	267849	261675				
C25	8.052	-0.003	362130	232028				
C26	8.312	-0.003	394988	118013				
C28	8.825	-0.000	487691	145508				
C32	9.765	-0.004	588183	318853				
C34	10.198	-0.002	593252	551591				
Filter Peak	12.220	-0.001	147947	139017				
C36	10.612	0.002	537183	473954				
C38	11.002	0.000	453861	246567				
C40	11.414	0.002	322612	111980				
o-terph	6.276	-0.000	5883	3122				
Triacon Surr	9.318	-0.014	5842770	5862849	NAS DIES	(C10-C24)	7186838	58.8

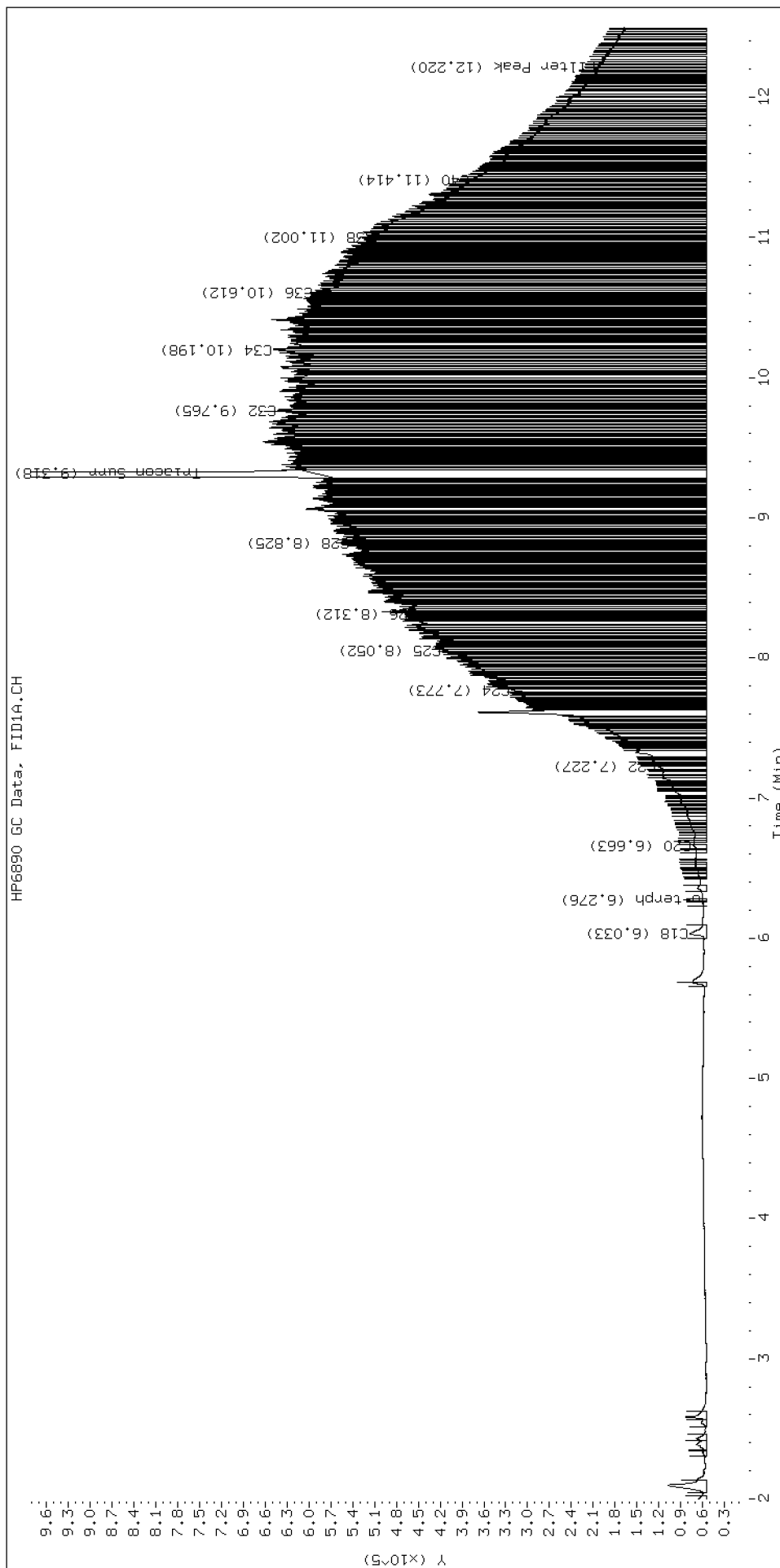
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

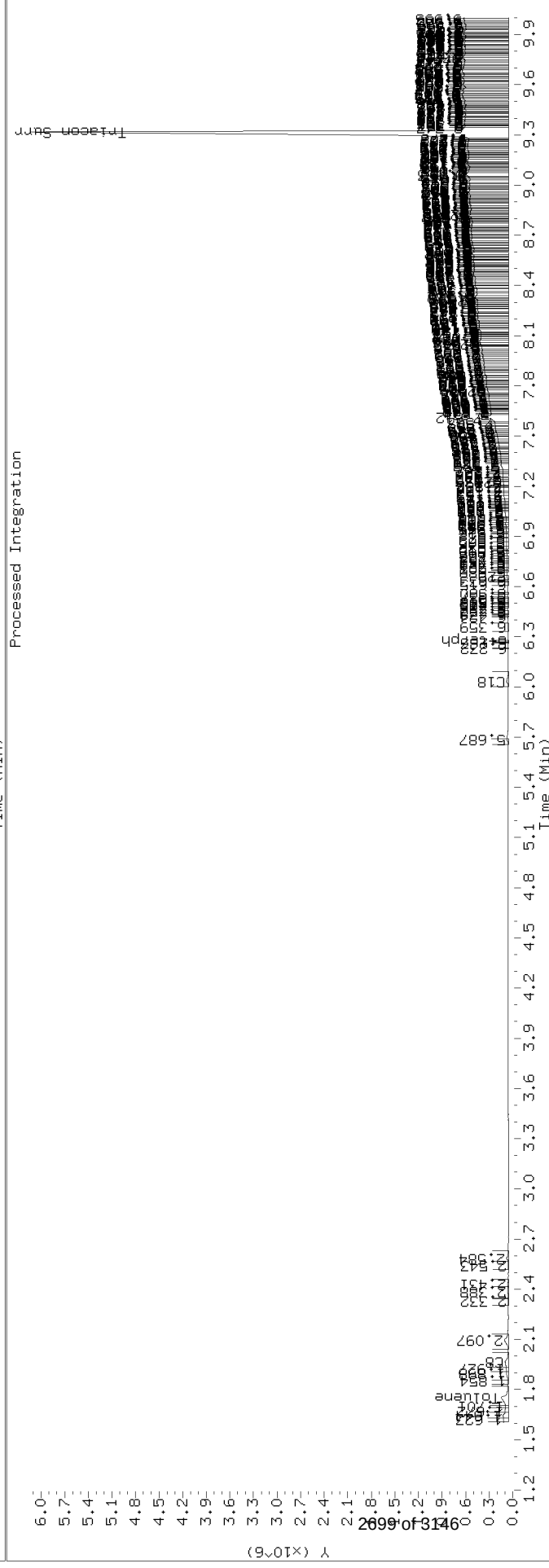
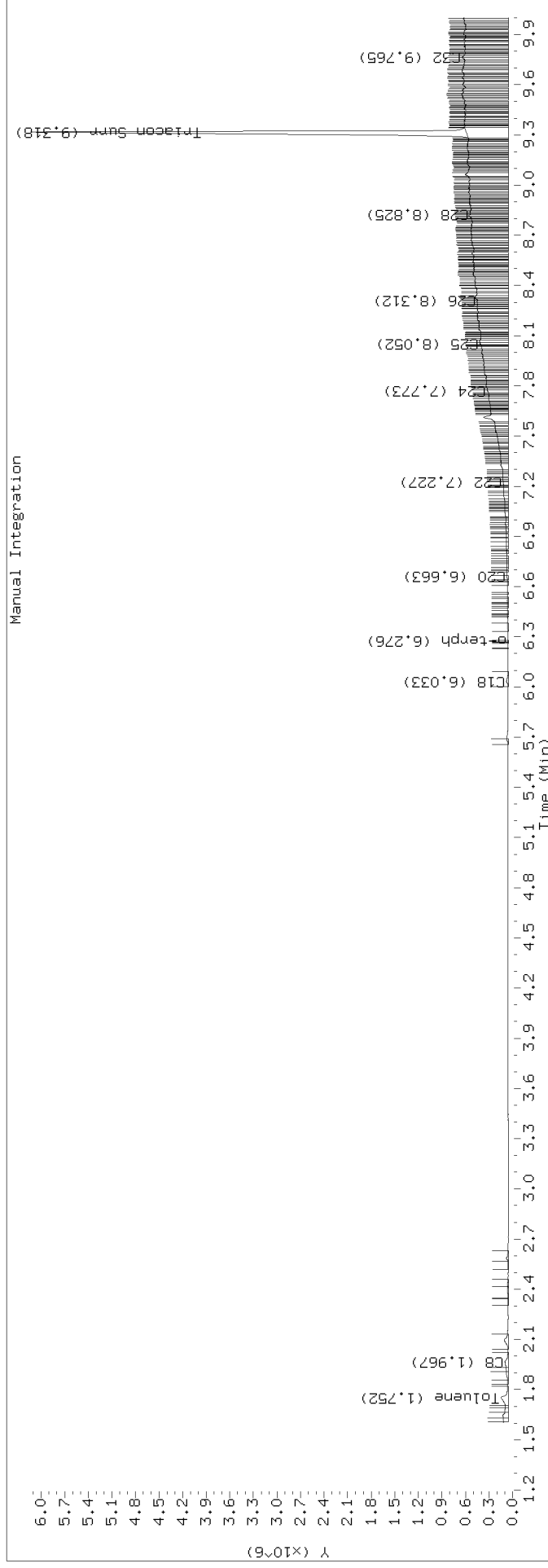
Surrogate	Area	Amount
o-Terphenyl	3122	0.0
Triacotane	5862849	47.9 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019

HP6890 GC Data, FID1A.CH







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1695.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV7 Injection Time: 19:56
Sequence Name: DIESEL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Diesel Range Organics (C12-C24)	A	500.00	543	105380	114418.3		8.6	15
o-Terphenyl	A	90.000	93.7	131194.7	136568.3		4.1	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1695.D

Date: 17-JUL-2019 19:56

Client ID:

Sample Info: SHG0211-CCV7

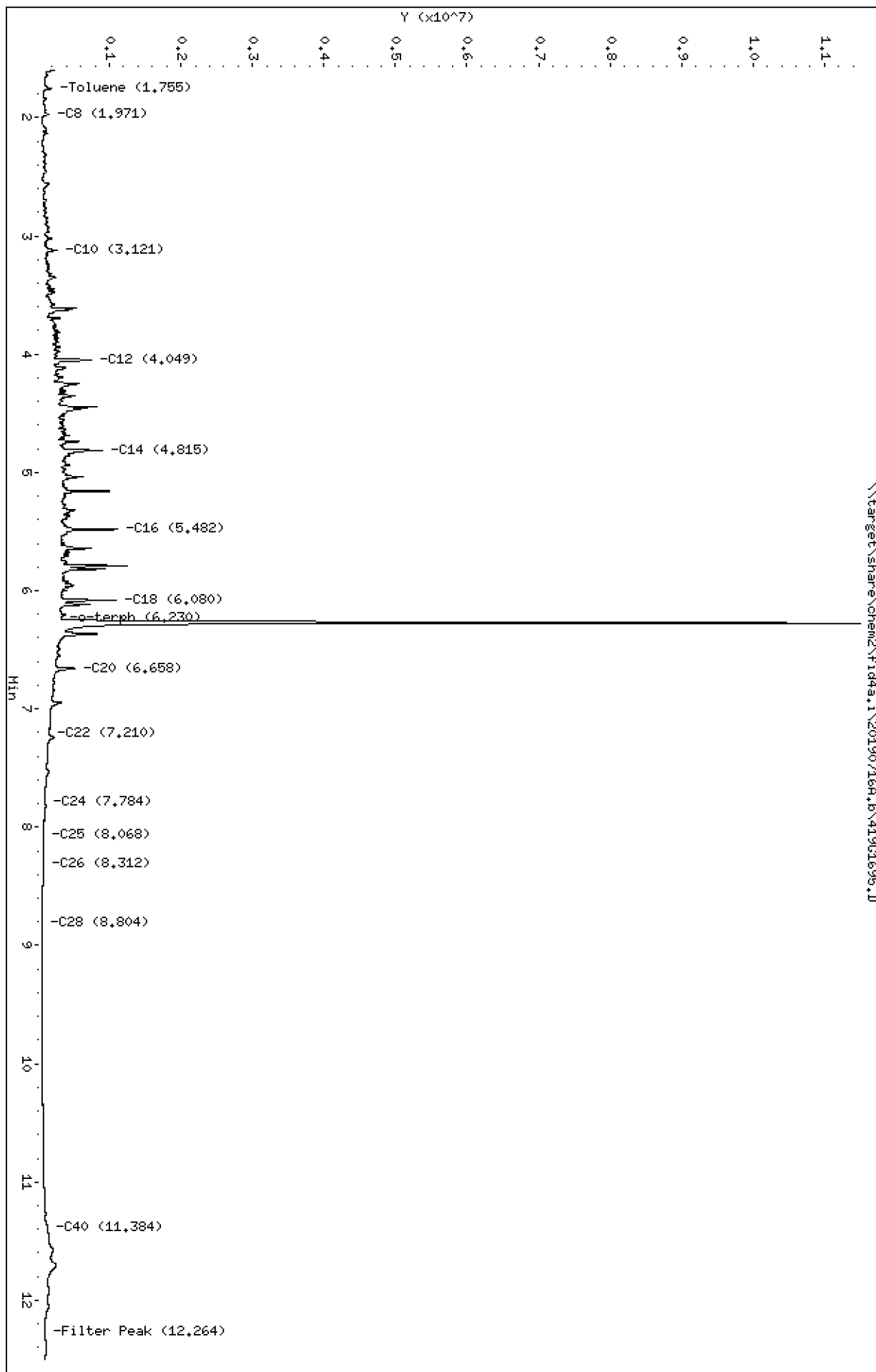
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1695.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/18/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV7

Client ID:

Injection: 17-JUL-2019 19:56

Dilution Factor: 1

RT Std: 419G1645.D

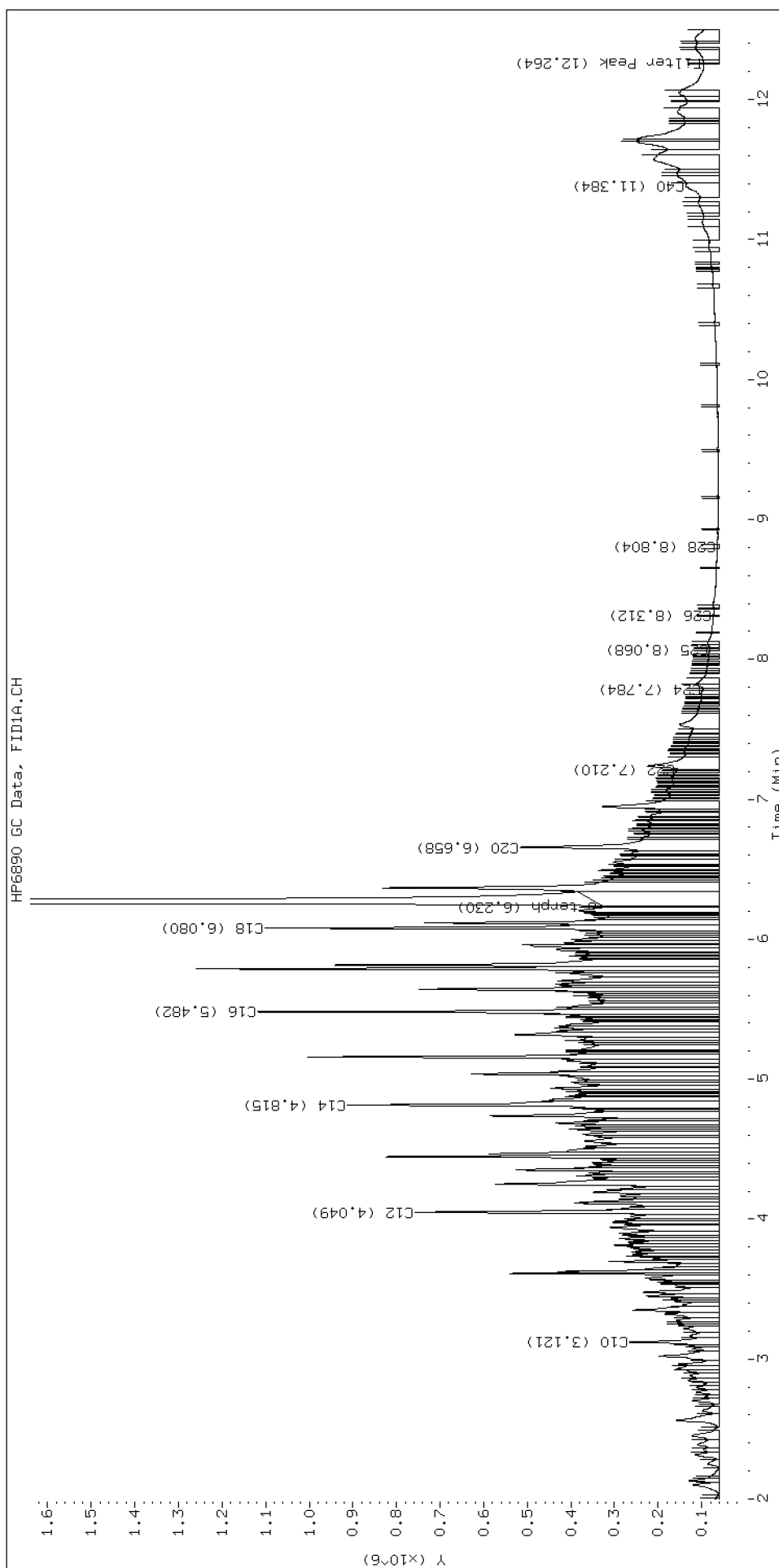
FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.971	-0.011	87228	121836	WATPHD	(C12-C24)	57209138	542.9
C10	3.121	-0.005	206964	328322	WATPHM	(C24-C38)	577608	6.3
C12	4.049	-0.011	698241	943035	AK102	(C10-C25)	66592540	544.3
C14	4.815	-0.014	854237	1491464	AK103	(C25-C36)	235878	3.4
C16	5.482	-0.007	1059107	1305047	OR.DIES	(C10-C28)	66790575	545.1
C18	6.080	-0.002	1041920	1271666				
C20	6.658	-0.002	458028	1228927				
C22	7.210	-0.014	97991	63022				
C24	7.784	0.008	38479	26490				
C25	8.068	0.013	22379	13179				
C26	8.312	-0.003	14570	5744				
C28	8.804	-0.022	6555	10218				
C32	----							
C34	----							
Filter Peak	12.264	0.043	36855	16522				
C36	----							
C38	----							
C40	11.384	-0.028	77226	364558				
o-terph	6.275	-0.001	11151890	12291153				
Triacon Surr	----				NAS DIES	(C10-C24)	66358110	543.3

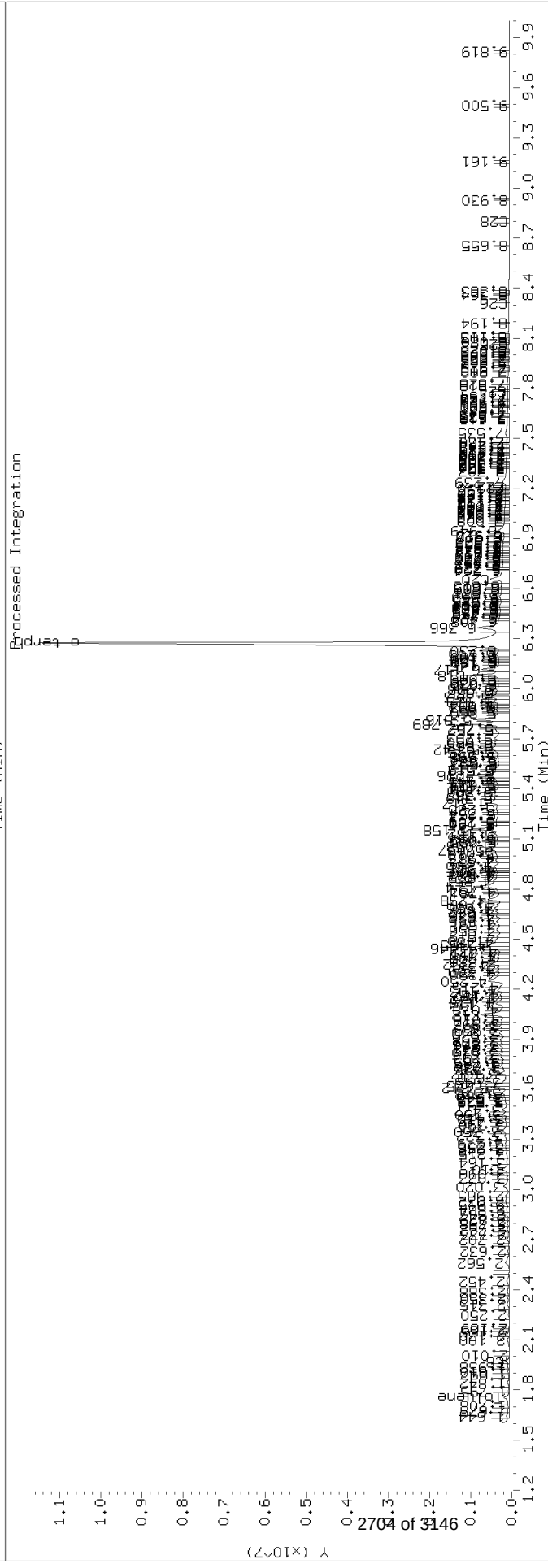
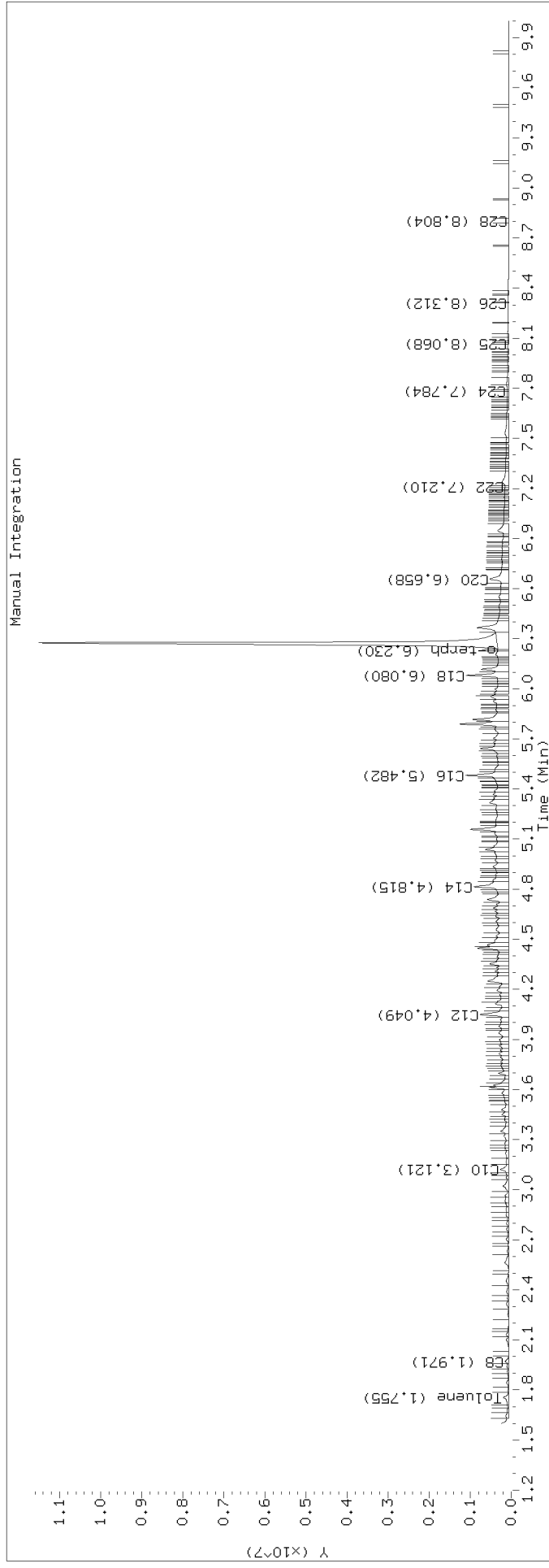
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

Surrogate	Area	Amount
o-Terphenyl	12291153	93.7 M
Triacontane	0	0.0

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019







CONTINUING CALIBRATION CHECK NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Instrument ID: FID4 Calibration: CG00044
Lab File ID: 419G1696.D Calibration Date: 07/16/19 00:00
Sequence: SHG0211 Injection Date: 07/17/19
Lab Sample ID: SHG0211-CCV8 Injection Time: 20:16
Sequence Name: MOIL CCV

COMPOUND	TYPE	CONC. (mg/L)		RESPONSE FACTOR			% DRIFT/DIFF	
		STD	CCV	ICAL	CCV	MIN	CCV	LIMIT
Motor Oil Range Organics (C24-C38)	A	1000.0	1050	91678.3	96500.77		5.3	15

* Values outside of QC limits

Data File: \\target\share\chem2\fid4a.i\20190716a.b\419G1696.D

Date : 17-JUL-2019 20:16

Client ID:

Sample Info: SHG0211-CCW8

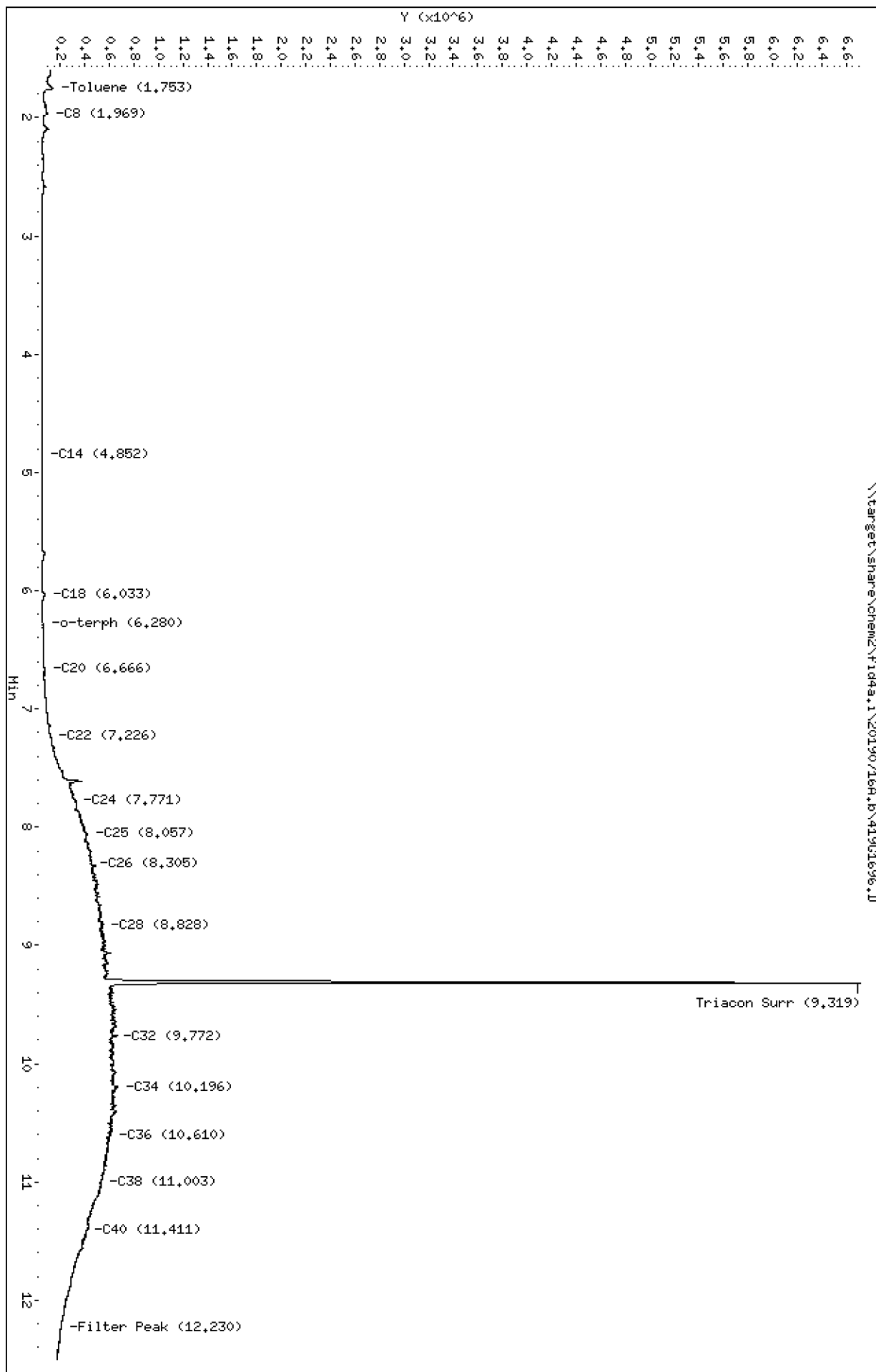
Column phase: RTX-1

Instrument: fid4a.i

Operator: MHT

Column diameter: 0.25

Page 1



Analytical Resources Inc.
TPH Quantitation Report

Data file: 20190716A.b/419G1696.D

Method: 20190716A.b\FID4TPH.m

Instrument: fid4a.i, WMT

Report Date: 07/18/2019

Macro: 16-JUL-2019

Calibration Dates: Gas:XX-XXX-XXXX Diesel:16-JUL-2019 M.Oil:16-JUL-2019

ARI ID: SHG0211-CCV8

Client ID:

Injection: 17-JUL-2019 20:16

Dilution Factor: 1

RT Std: 419G1645.D

FID:4A RESULTS								
Compound	RT	Shift	Height	Area	Method	Range	Total Area	Conc (mg/L)
C8	1.969	-0.013	41338	136759	WATPHD	(C12-C24)	7171663	68.1
C10	----				WATPHM	(C24-C38)	96500764	1052.6
C12	----				AK102	(C10-C25)	10614039	86.8
C14	4.852	0.024	2992	1447	AK103	(C25-C36)	81437468	1170.8
C16	----				OR.DIES	(C10-C28)	32456136	264.9
C18	6.033	-0.049	23688	56397				
C20	6.666	0.006	17849	33242				
C22	7.226	0.003	67130	33042				
C24	7.771	-0.005	267537	92554				
C25	8.057	0.003	368214	309638				
C26	8.305	-0.011	404019	259909				
C28	8.828	0.003	490888	267879				
C32	9.772	0.004	593056	261780				
C34	10.196	-0.004	614822	454278				
Filter Peak	12.230	0.009	155061	123134				
C36	10.610	0.000	559881	629179				
C38	11.003	0.002	484829	287402				
C40	11.411	-0.001	361554	125749				
o-terph	6.280	0.004	5179	5498				
Triacon Surr	9.319	-0.013	6110736	5899287	NAS DIES	(C10-C24)	7171663	58.7

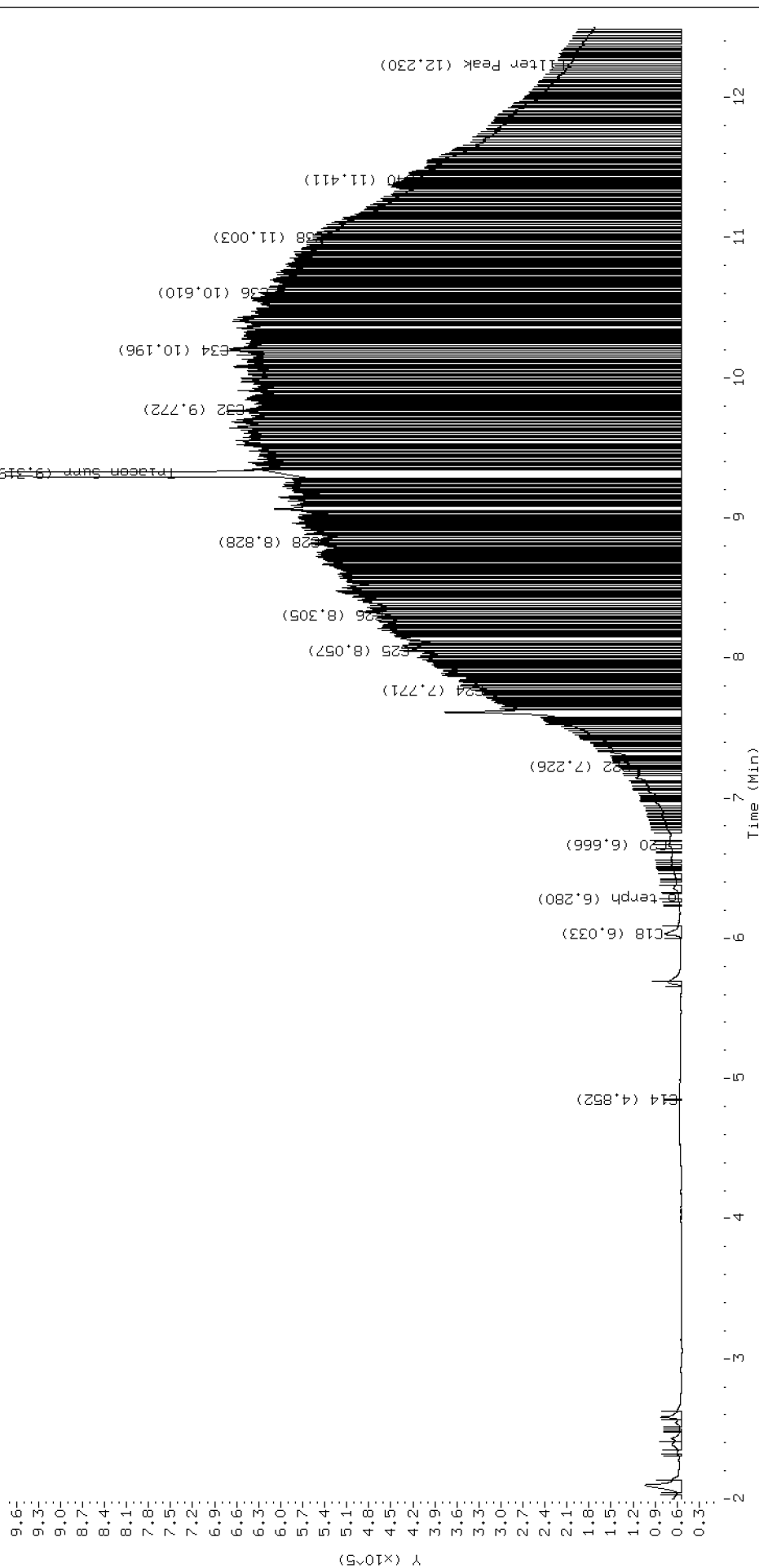
Range Times: NW Diesel(4.060 - 7.775) AK102(3.13 - 8.05) Jet A(3.13 - 6.08)
NW M.Oil(7.78 - 11.00) AK103(8.05 - 10.61) OR Diesel(3.13 - 8.83)

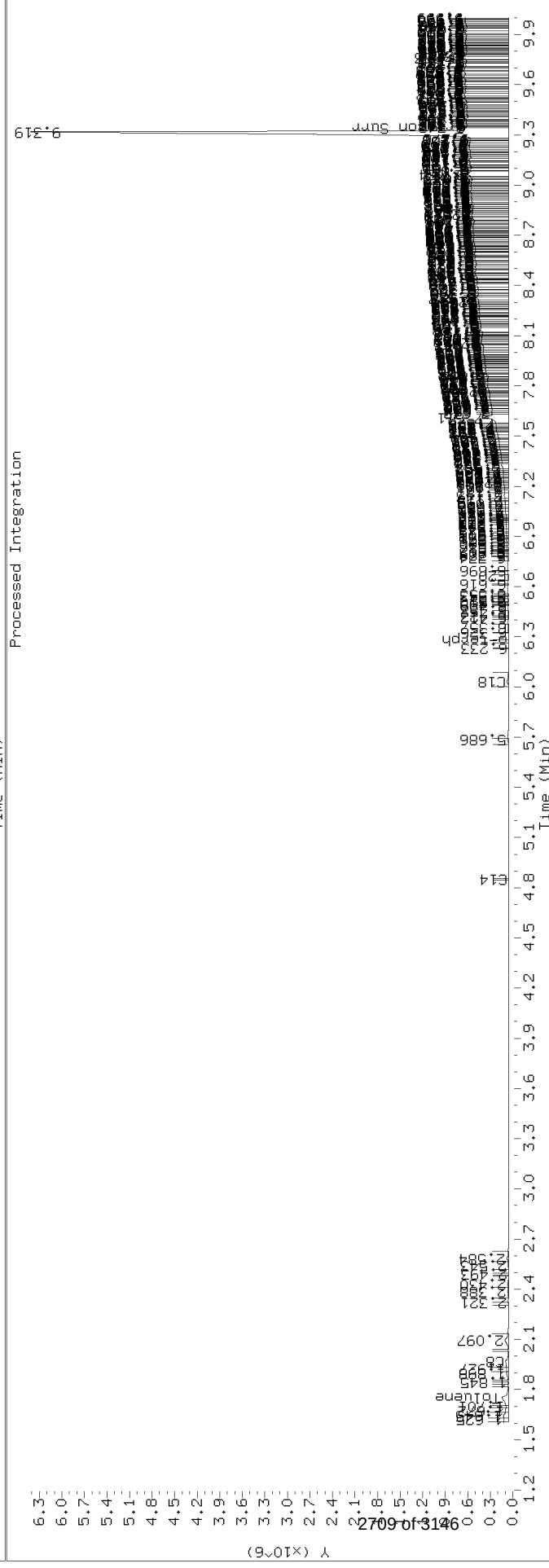
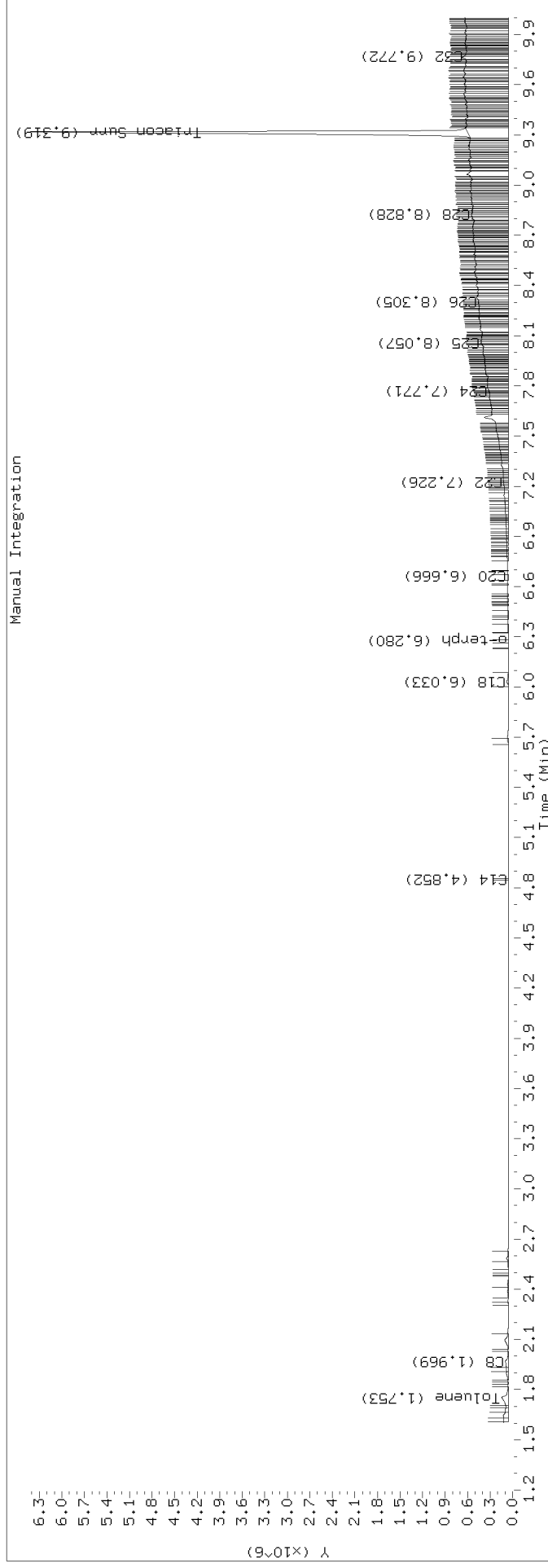
Surrogate	Area	Amount
o-Terphenyl	5498	0.0
Triacontane	5899287	48.2 M

M Indicates the peak was manually integrated

Analyte	RF	Curve Date
o-Terph Surr	131194.6	14-JUL-2019
Triacon Surr	122495.3	14-JUL-2019
Gas	15000.0	XX-XXX-XXXX
Diesel	105380.0	16-JUL-2019
Motor Oil	91678.3	16-JUL-2019
AK102	122339.0	16-JUL-2019
AK103	69557.0	16-JUL-2019
OR Diesel	122533.5	16-JUL-2019
NAS Diesel	122146.3	16-JUL-2019

HP6890 GC Data, FID1A.CH







ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0207

Instrument: FID4

Calibration: CG00044

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
RT	SHG0207-IBL1	419G1622.D	NA	07/16/19 18:46
IB	SHG0207-IBL2	419G1623.D	NA	07/16/19 19:06
50ppm DIESEL	SHG0207-CAL1	419G1624.D	NA	07/16/19 19:28
100ppm DIESEL	SHG0207-CAL2	419G1625.D	NA	07/16/19 19:49
250ppm DIESEL	SHG0207-CAL3	419G1626.D	NA	07/16/19 20:09
500ppm DIESEL	SHG0207-CAL4	419G1627.D	NA	07/16/19 20:30
1000ppm DIESEL	SHG0207-CAL5	419G1628.D	NA	07/16/19 20:50
2500ppm DIESEL	SHG0207-CAL6	419G1629.D	NA	07/16/19 21:11
100ppmmoil	SHG0207-CAL7	419G1630.D	NA	07/16/19 21:31
250ppmmoil	SHG0207-CAL8	419G1631.D	NA	07/16/19 21:52
500ppmmoil	SHG0207-CAL9	419G1632.D	NA	07/16/19 22:12
1000ppmmoil	SHG0207-CALA	419G1633.D	NA	07/16/19 22:32
2500ppmmoil	SHG0207-CALB	419G1634.D	NA	07/16/19 22:53
5000ppmmoil	SHG0207-CALC	419G1635.D	NA	07/16/19 23:14
100ppmak103	SHG0207-CALD	419G1636.D	NA	07/16/19 23:36
250ppmak103	SHG0207-CALE	419G1637.D	NA	07/16/19 23:56
500ppmak103	SHG0207-CALF	419G1638.D	NA	07/17/19 00:17
1000ppmak103	SHG0207-CALG	419G1639.D	NA	07/17/19 00:37
2500ppmak103	SHG0207-CALH	419G1640.D	NA	07/17/19 00:58
5000ppmak103	SHG0207-CALI	419G1641.D	NA	07/17/19 01:18
DIESEL SCV1	SHG0207-SCV1	419G1642.D	NA	07/17/19 01:39
MOIL SCV2	SHG0207-SCV2	419G1643.D	NA	07/17/19 01:59
ak103scv3	SHG0207-SCV3	419G1644.D	NA	07/17/19 02:19



ANALYSIS SEQUENCE

SHG0207

Instrument: FID4 Element Column ID: G004923
Calibration ID: CG00044

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0207-IBL1	RT	QC		1	G007363		
SHG0207-IBL2	IB	QC		2	G007362		
SHG0207-CAL1	50ppm DIESEL	QC		3	H006819		
SHG0207-CAL2	100ppm DIESEL	QC		4	H006818		
SHG0207-CAL3	250ppm DIESEL	QC		5	H006817		
SHG0207-CAL4	500ppm DIESEL	QC		6	H006816		
SHG0207-CAL5	1000ppm DIESEL	QC		7	H006815		
SHG0207-CAL6	2500ppm DIESEL	QC		8	H006794		
SHG0207-CAL7	100ppmmoil	QC		9	H005105		
SHG0207-CAL8	250ppmmoil	QC		10	H005104		
SHG0207-CAL9	500ppmmoil	QC		11	H005103		
SHG0207-CALA	1000ppmmoil	QC		12	H005102		
SHG0207-CALB	2500ppmmoil	QC		13	H005101		
SHG0207-CALC	5000ppmmoil	QC		14	H005015		
SHG0207-CALD	100ppmak103	QC		15	H006838		
SHG0207-CALE	250ppmak103	QC		16	H006837		
SHG0207-CALF	500ppmak103	QC		17	H006839		
SHG0207-CALG	1000ppmak103	QC		18	H006836		
SHG0207-CALH	2500ppmak103	QC		19	H006835		
SHG0207-CALI	5000ppmak103	QC		20	H006795		
SHG0207-SCV1	DIESEL SCV1	QC		21	H002741		
SHG0207-SCV2	MOIL SCV2	QC		22	H006714		



ANALYSIS SEQUENCE

SHG0207

Instrument: FID4 Element Column ID: G004923
Calibration ID: CG00044

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0207-SCV3	ak103scv3	QC		23	H003035		

	Inject	Date/Time	Filename	DF	LabID	ClientID
1	16-JUL-2019	11:11	419G1601.D	1	RINSE	
2	16-JUL-2019	11:32	419G1602.D	1	RINSE	
3	16-JUL-2019	11:53	419G1603.D	1	SHG0207-IBL1	
4	16-JUL-2019	12:15	419G1604.D	1	SHG0207-IBL2	
5	16-JUL-2019	12:36	419G1605.D	1	SHG0207-ICV1	
6	16-JUL-2019	12:56	419G1606.D	1	SHG0207-ICV2	
7	16-JUL-2019	13:17	419G1607.D	1	BHG0329-BLK1	
8	16-JUL-2019	13:38	419G1608.D	1	BHG0329-BS1	
9	16-JUL-2019	14:05	419G1609.D	1	SHG0207-IBL1	
10	16-JUL-2019	14:26	419G1610.D	1	SHG0207-IBL2	
11	16-JUL-2019	14:46	419G1611.D	1	SHG0207-ICV1	
12	16-JUL-2019	15:08	419G1612.D	1	SHG0207-ICV2	
13	16-JUL-2019	15:29	419G1613.D	1	BHG0329-BLK1	
14	16-JUL-2019	15:56	419G1614.D	1	R1	
15	16-JUL-2019	16:17	419G1615.D	1	R2	
16	16-JUL-2019	16:38	419G1616.D	1	SHG0207-IBL1	
17	16-JUL-2019	16:59	419G1617.D	1	SHG0207-IBL2	
18	16-JUL-2019	17:19	419G1618.D	1	SHG0207-ICV1	
19	16-JUL-2019	17:40	419G1619.D	1	SHG0207-ICV2	
20	16-JUL-2019	18:05	419G1620.D	1	R1	
21	16-JUL-2019	18:25	419G1621.D	1	R2	
22	16-JUL-2019	18:46	419G1622.D	1	SHG0207-IBL1	
23	16-JUL-2019	19:06	419G1623.D	1	SHG0207-IBL2	
24	16-JUL-2019	19:28	419G1624.D	1	SHG0207-CAL1	
25	16-JUL-2019	19:49	419G1625.D	1	SHG0207-CAL2	
26	16-JUL-2019	20:09	419G1626.D	1	SHG0207-CAL3	
27	16-JUL-2019	20:30	419G1627.D	1	SHG0207-CAL4	
28	16-JUL-2019	20:50	419G1628.D	1	SHG0207-CAL5	
29	16-JUL-2019	21:11	419G1629.D	1	SHG0207-CAL6	
30	16-JUL-2019	21:31	419G1630.D	1	SHG0207-CAL7	
31	16-JUL-2019	21:52	419G1631.D	1	SHG0207-CAL8	
32	16-JUL-2019	22:12	419G1632.D	1	SHG0207-CAL9	
33	16-JUL-2019	22:32	419G1633.D	1	SHG0207-CALA	
34	16-JUL-2019	22:53	419G1634.D	1	SHG0207-CALB	
35	16-JUL-2019	23:14	419G1635.D	1	SHG0207-CALC	
36	16-JUL-2019	23:36	419G1636.D	1	SHG0207-CALD	
37	16-JUL-2019	23:56	419G1637.D	1	SHG0207-CALF	
38	17-JUL-2019	00:17	419G1638.D	1	SHG0207-CALF	
39	17-JUL-2019	00:37	419G1639.D	1	SHG0207-CALG	
40	17-JUL-2019	00:58	419G1640.D	1	SHG0207-CALH	
41	17-JUL-2019	01:18	419G1641.D	1	SHG0207-CALI	
42	17-JUL-2019	01:39	419G1642.D	1	SHG0207-SCV1	
43	17-JUL-2019	01:59	419G1643.D	1	SHG0207-SCV2	
44	17-JUL-2019	02:19	419G1644.D	1	SHG0207-SCV3	

MANUAL INTEGRATION SUMMARY FOR DATABATCH - \\target\share\chem2\fid4a.i\20190716.b

Instrument: fid4a.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1111	419G1601.D	RINSE	1	NO MANUAL INTEGRATION
1132	419G1602.D	RINSE	1	NO MANUAL INTEGRATION
1153	419G1603.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1215	419G1604.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION
1236	419G1605.D	SHG0207-ICV1	1	o-terph,
1256	419G1606.D	SHG0207-ICV2	1	Triacon Surr,
1317	419G1607.D	BHG0329-BLK1	1	NO MANUAL INTEGRATION
1338	419G1608.D	BHG0329-BS1	1	o-terph,
1405	419G1609.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1426	419G1610.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION
1446	419G1611.D	SHG0207-ICV1	1	o-terph,
1508	419G1612.D	SHG0207-ICV2	1	Triacon Surr,
1529	419G1613.D	BHG0329-BLK1	1	NO MANUAL INTEGRATION
1556	419G1614.D	R1	1	NO MANUAL INTEGRATION
1617	419G1615.D	R2	1	Triacon Surr,
1638	419G1616.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1659	419G1617.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION

Instrument: fid4a.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
1719	419G1618.D	SHG0207-ICV1	1	NO MANUAL INTEGRATION
1740	419G1619.D	SHG0207-ICV2	1	NO MANUAL INTEGRATION
1805	419G1620.D	R1	1	NO MANUAL INTEGRATION
1825	419G1621.D	R2	1	NO MANUAL INTEGRATION
1846	419G1622.D	SHG0207-IBL1	1	NO MANUAL INTEGRATION
1906	419G1623.D	SHG0207-IBL2	1	NO MANUAL INTEGRATION
1928	419G1624.D	SHG0207-CAL1	1	C10, C12, o-terph,
1949	419G1625.D	SHG0207-CAL2	1	o-terph,
2009	419G1626.D	SHG0207-CAL3	1	o-terph,
2030	419G1627.D	SHG0207-CAL4	1	o-terph,
2050	419G1628.D	SHG0207-CAL5	1	o-terph,
2111	419G1629.D	SHG0207-CAL6	1	o-terph,
2131	419G1630.D	SHG0207-CAL7	1	Triacon Surr,
2152	419G1631.D	SHG0207-CAL8	1	Triacon Surr,
2212	419G1632.D	SHG0207-CAL9	1	Triacon Surr,
2232	419G1633.D	SHG0207-CALA	1	Triacon Surr,
2253	419G1634.D	SHG0207-CALB	1	Triacon Surr,
2314	419G1635.D	SHG0207-CALC	1	Triacon Surr,

Instrument: fid4a.i Date: 16-JUL-2019

Time	Filename	LabID	DF	Manually Integrated Compounds
2336	419G1636.D	SHG0207-CALD	1	Triacon Surr,
2356	419G1637.D	SHG0207-CALE	1	Triacon Surr,
0017	419G1638.D	SHG0207-CALF	1	Triacon Surr,
0037	419G1639.D	SHG0207-CALG	1	Triacon Surr,
0058	419G1640.D	SHG0207-CALH	1	Triacon Surr,
0118	419G1641.D	SHG0207-CALI	1	Triacon Surr,
0139	419G1642.D	SHG0207-SCV1	1	o-terph,
0159	419G1643.D	SHG0207-SCV2	1	Triacon Surr,
0219	419G1644.D	SHG0207-SCV3	1	Triacon Surr,

Security Status Report

Date: 19-Jul-2019 07:45

419G1601.D	Data Locked	van,	17-Jul-2019	09:56
419G1602.D	Data Locked	van,	17-Jul-2019	09:56
419G1603.D	Data Locked	van,	17-Jul-2019	09:56
419G1604.D	Data Locked	van,	17-Jul-2019	09:56
419G1605.D	Data Locked	van,	17-Jul-2019	09:56
419G1606.D	Data Locked	van,	17-Jul-2019	09:56
419G1607.D	Data Locked	van,	17-Jul-2019	09:56
419G1608.D	Data Locked	van,	17-Jul-2019	09:56
419G1609.D	Data Locked	van,	17-Jul-2019	09:56
419G1610.D	Data Locked	van,	17-Jul-2019	09:56
419G1611.D	Data Locked	van,	17-Jul-2019	09:56
419G1612.D	Data Locked	van,	17-Jul-2019	09:56
419G1613.D	Data Locked	van,	17-Jul-2019	09:56
419G1614.D	Data Locked	van,	17-Jul-2019	09:56
419G1615.D	Data Locked	van,	17-Jul-2019	09:56
419G1616.D	Data Locked	van,	17-Jul-2019	09:56
419G1617.D	Data Locked	van,	17-Jul-2019	09:56
419G1618.D	Data Locked	van,	17-Jul-2019	09:56
419G1619.D	Data Locked	van,	17-Jul-2019	09:56
419G1620.D	Data Locked	van,	17-Jul-2019	09:56
419G1621.D	Data Locked	van,	17-Jul-2019	09:56
419G1622.D	Data Locked	van,	17-Jul-2019	09:56
419G1623.D	Data Locked	van,	17-Jul-2019	09:56
419G1624.D	Data Locked	van,	17-Jul-2019	09:56
419G1625.D	Data Locked	van,	17-Jul-2019	09:56
419G1626.D	Data Locked	van,	17-Jul-2019	09:56
419G1627.D	Data Locked	van,	17-Jul-2019	09:56
419G1628.D	Data Locked	van,	17-Jul-2019	09:56
419G1629.D	Data Locked	van,	17-Jul-2019	09:56
419G1630.D	Data Locked	van,	17-Jul-2019	09:56
419G1631.D	Data Locked	van,	17-Jul-2019	09:56
419G1632.D	Data Locked	van,	17-Jul-2019	09:56
419G1633.D	Data Locked	van,	17-Jul-2019	09:56
419G1634.D	Data Locked	van,	17-Jul-2019	09:56
419G1635.D	Data Locked	van,	17-Jul-2019	09:56
419G1636.D	Data Locked	van,	17-Jul-2019	09:56
419G1637.D	Data Locked	van,	17-Jul-2019	09:56
419G1638.D	Data Locked	van,	17-Jul-2019	09:56
419G1639.D	Data Locked	van,	17-Jul-2019	09:56
419G1640.D	Data Locked	van,	17-Jul-2019	09:56
419G1641.D	Data Locked	van,	17-Jul-2019	09:56
419G1642.D	Data Locked	van,	17-Jul-2019	09:56
419G1643.D	Data Locked	van,	17-Jul-2019	09:56
419G1644.D	Data Locked	van,	17-Jul-2019	09:56





ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0211

Instrument: FID4

Calibration: CG00044

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Instrument Blank	SHG0211-IBL1	419G1645.D	NA	07/17/19 02:40
Instrument Blank	SHG0211-IBL2	419G1646.D	NA	07/17/19 03:01
DIESEL ICV	SHG0211-ICV1	419G1647.D	NA	07/17/19 03:23
MOIL ICV	SHG0211-ICV2	419G1648.D	NA	07/17/19 03:43
ZZZZZ	BHG0329-BLK1	419G1649.D	Solid	07/17/19 04:04
ZZZZZ	BHG0329-BS1	419G1650.D	Solid	07/17/19 04:24
ZZZZZ	19G0180-01	419G1651.D	Solid	07/17/19 04:44
Blank	BHG0339-BLK1	419G1652.D	Water	07/17/19 05:05
LCS	BHG0339-BS1	419G1653.D	Water	07/17/19 05:25
SO-10-190711E	19G0163-01	419G1654.D	Water	07/17/19 05:46
DIESEL CCV	SHG0211-CCV1	419G1655.D	NA	07/17/19 06:06
MOIL CCV	SHG0211-CCV2	419G1656.D	NA	07/17/19 06:26
Blank	BHG0310-BLK1	419G1657.D	Solid	07/17/19 06:47
LCS	BHG0310-BS1	419G1658.D	Solid	07/17/19 07:07
SO-01-190711	19G0163-02	419G1659.D	Solid	07/17/19 07:28
SO-01-190711	BHG0310-MS1	419G1660.D	Solid	07/17/19 07:49
SO-01-190711	BHG0310-MSD1	419G1661.D	Solid	07/17/19 08:10
SO-02-190711	19G0163-03	419G1662.D	Solid	07/17/19 08:31
SO-03-190711	19G0163-04	419G1663.D	Solid	07/17/19 08:51
SO-04-190711	19G0163-05	419G1664.D	Solid	07/17/19 09:12
SO-05-190711	19G0163-06	419G1665.D	Solid	07/17/19 09:32
SO-06-190711	19G0163-07	419G1666.D	Solid	07/17/19 09:52
DIESEL CCV	SHG0211-CCV3	419G1667.D	NA	07/17/19 10:13
MOIL CCV	SHG0211-CCV4	419G1668.D	NA	07/17/19 10:33
SO-07-190711	19G0163-08	419G1669.D	Solid	07/17/19 10:54
SO-08-190711	19G0163-09	419G1670.D	Solid	07/17/19 11:14
SO-09-190711	19G0163-10	419G1671.D	Solid	07/17/19 11:35
SO-10-190711	19G0163-11	419G1672.D	Solid	07/17/19 11:57
SO-10-190711D	19G0163-12	419G1673.D	Solid	07/17/19 12:18
SO-11-190711	19G0163-13	419G1674.D	Solid	07/17/19 12:38



ANALYSIS BATCH (SEQUENCE) SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0211

Instrument: FID4

Calibration: CG00044

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	19G0180-01RE1	419G1675.D	Solid	07/17/19 12:59
SO-12-190711	19G0163-14	419G1676.D	Solid	07/17/19 13:19
SO-13-190711	19G0163-15	419G1677.D	Solid	07/17/19 13:40
ZZZZZ	BHG0343-BLK1	419G1678.D	Water	07/17/19 14:00
ZZZZZ	BHG0343-BS1	419G1679.D	Water	07/17/19 14:22
ZZZZZ	19G0191-01	419G1680.D	Water	07/17/19 14:43
DIESEL CCV	SHG0211-CCV5	419G1681.D	NA	07/17/19 15:04
MOIL CCV	SHG0211-CCV6	419G1682.D	NA	07/17/19 15:24
ZZZZZ	BHG0390-BLK1	419G1685.D	Solid	07/17/19 16:27
ZZZZZ	BHG0390-BS1	419G1686.D	Solid	07/17/19 16:49
ZZZZZ	19G0212-01	419G1687.D	Solid	07/17/19 17:09
ZZZZZ	BHG0387-BLK1	419G1688.D	Water	07/17/19 17:30
ZZZZZ	BHG0387-BS1	419G1689.D	Water	07/17/19 17:50
ZZZZZ	BHG0387-BSD1	419G1690.D	Water	07/17/19 18:11
ZZZZZ	19G0202-02	419G1692.D	Water	07/17/19 18:52
ZZZZZ	19G0202-05	419G1694.D	Water	07/17/19 19:35
DIESEL CCV	SHG0211-CCV7	419G1695.D	NA	07/17/19 19:56
MOIL CCV	SHG0211-CCV8	419G1696.D	NA	07/17/19 20:16

Checklist for SEQUENCE SHG0211

Checklist: Analyst Checklist-FID(rev3)

# Checklist Item	Response	Analyst Initials	Date
1 Detail all ICV/CCV failures for all affected Workorders	NA	VTs	07/18/2019
2 Narrate any Retention times not within windows for all affected Workorders	NA	VTs	07/18/2019
3 Rationale provided for all manual integrations not done for baseline correction per SOP 1021s	NA	VTs	07/18/2019
4 Narrate any Workorders where the Project specific requirements have not been met	NA	VTs	07/18/2019
5 Narrate samples per Workorder that will require more than one analysis to be reported due to dilutions or re-analysis Comments: <i>19G0180-01 reported at 1x and 50x</i>	YES	VTs	07/17/2019
6 Verify that all samples requiring a dilution or re-analysis have been added to another batch or sequence	NA	VTs	07/18/2019
7 Extraction basis, cleanups, and total solids are correctly entered Comments: <i>Entered total solids for batch BGH0329. Brian corrected final effective volume for sample -01 to 10ml.</i>	YES	VTs	07/18/2019
8 An extract dilution bench sheet is attached to the sequence for all dilutions performed	YES	VTs	07/18/2019
9 AUTOCHECK: Blank checked for exceedence of criteria	YES *	VTs	07/18/2019
10 AUTOCHECK: Check blank spike recovery	YES *	VTs	07/18/2019
11 AUTOCHECK: Check blank spike/blank spike duplicate RPD. If exceeded include outliers in exception report.	YES *	VTs	07/18/2019
12 AUTOCHECK: Compounds in method designated as blank spike compounds are present	YES *	VTs	07/18/2019
13 AUTOCHECK: Check %RPD between sample and sample duplicate	NA *	VTs	07/18/2019
14 AUTOCHECK: Matrix spike recoveries within limits	YES *	VTs	07/18/2019
15 AUTOCHECK: Matrix spike/matrix spike duplicate RPD within limits	YES *	VTs	07/18/2019
16 AUTOCHECK: List of compounds listed as spiked are present	YES *	VTs	07/18/2019
17 AUTOCHECK: Check Surrogate recoveries Comments: <i>High diesel concentration prevents identification of the surrogate Surrogate Recovery for o-Terphenyl (8.89%) was outside acceptance limits (50-150) in 19G0180-01 for TPH NW (Extractables) low level - This surrogate not reported due to chromatographic interference Surrogate Recovery for o-Terphenyl (444%) was outside acceptance limits (50-150) in 19G0180-01RE1 for TPH NW (Extractables) low level - Surrogate was not detected due to sample extract dilution</i>	NO *	VTs	07/18/2019
18 AUTOCHECK: Checks Surrogate spike list against Analysis	YES *	VTs	07/18/2019
19 Data locked, checklist completed and status is analyzed (REVIEWER)			12/30/1899
20 Color warnings have been addressed, narrated and (or) qualified (REVIEWER)			12/30/1899
21 rev_DilutionCheck.rpt and rev_DilutionCheck.exe was run to verify multiple sample results are consistent (REVIEWER)			12/30/1899

* = Indicates Automated Response from Element DataSyst

Checklist for SEQUENCE SHG0211
Checklist: Analyst Checklist-FID(rev3)

#	Checklist Item	Response	Analyst Initials	Date
22	List of samples or QC in this sequence that will require additional runs-verify reshot created (ANALYST)	NA	VTs	07/18/2019
23	List of samples or QC in this sequence that are re-analysis or dilutions of samples (ANALYST)	NA	VTs	07/18/2019
24	Additional Notes (ANALYST and REVIEWER)	YES	VTs	07/17/2019
	Comments: Sequence completed 7/18 .SATURATED CHROMATOGRAPHY ON FIRST RUN Queue by Wallis and Josh. Data and upload by Van, EXTRACTIONS HAD WRONG FEV. WHICH HAS BEEN CORRECTED.(10ML) Entered total solids for batch BGH0329. Brian corrected final effective volume for sample -01 to 10ml.			



ANALYSIS SEQUENCE

SHG0211

Instrument: FID4 Element Column ID: G004923
Calibration ID: CG00044

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0211-IBL1	Instrument Blank	QC		1	G007363		
SHG0211-IBL2	Instrument Blank	QC		2	G007362		
SHG0211-ICV1	DIESEL ICV	QC		3	H006816		
SHG0211-ICV2	MOIL ICV	QC		4	H005102		
BHG0329-BLK1	Blank	QC		5			
BHG0329-BS1	LCS	QC		6			
19G0180-01	ML, Used speedidry	TPH NW (Extractables) low level	A 01	7			
BHG0339-BLK1	Blank	QC		8			
BHG0339-BS1	LCS	QC		9			
19G0163-01	SO-10-190711E	TPH NW (Extractables) low level	C 01	10			
SHG0211-CCV1	DIESEL CCV	QC		11	H006816		
SHG0211-CCV2	MOIL CCV	QC		12	H005102		
BHG0310-BLK1	Blank	QC		13			
BHG0310-BS1	LCS	QC		14			
19G0163-02	SO-01-190711	TPH NW (Extractables)	D 01	15			
BHG0310-MS1	Matrix Spike	QC		16			
BHG0310-MSD1	Matrix Spike Dup	QC		17			
19G0163-03	SO-02-190711	TPH NW (Extractables)	B 01	18			
19G0163-04	SO-03-190711	TPH NW (Extractables)	B 01	19			
19G0163-05	SO-04-190711	TPH NW (Extractables)	B 01	20			
19G0163-06	SO-05-190711	TPH NW (Extractables)	B 01	21			
19G0163-07	SO-06-190711	TPH NW (Extractables)	B 01	22			



ANALYSIS SEQUENCE

SHG0211

Instrument: FID4 Element Column ID: G004923
Calibration ID: CG00044

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
SHG0211-CCV3	DIESEL CCV	QC		23	H006816		
SHG0211-CCV4	MOIL CCV	QC		24	H005102		
19G0163-08	SO-07-190711	TPH NW (Extractables)	B 01	25			
19G0163-09	SO-08-190711	TPH NW (Extractables)	B 01	26			
19G0163-10	SO-09-190711	TPH NW (Extractables)	B 01	27			
19G0163-11	SO-10-190711	TPH NW (Extractables)	B 01	28			
19G0163-12	SO-10-190711D	TPH NW (Extractables)	B 01	29			
19G0163-13	SO-11-190711	TPH NW (Extractables)	B 01	30			
19G0180-01RE1	ML, Used speedidry	TPH NW (Extractables) low level	A 01	31			Added 7/17/2019 by VTS
19G0163-14	SO-12-190711	TPH NW (Extractables)	B 01	32			
19G0163-15	SO-13-190711	TPH NW (Extractables)	B 01	33			
BHG0343-BLK1	Blank	QC		34			
BHG0343-BS1	LCS	QC		35			
19G0191-01	BMF071519	TPH NW (Extractables) low level	D 01	36			
SHG0211-CCV5	DIESEL CCV	QC		37	H006816		
SHG0211-CCV6	MOIL CCV	QC		38	H005102		
BHG0390-BLK1	Blank	QC		39			
BHG0390-BS1	LCS	QC		40			
19G0212-01	A-CM-1745D9	TPH NW (Extractables)	A 01	41			
BHG0387-BLK1	Blank	QC		42			
BHG0387-BS1	LCS	QC		43			
BHG0387-BSD1	LCS Dup	QC		44			



ANALYSIS SEQUENCE

SHG0211

Instrument: FID4 Element Column ID: G004923
Calibration ID: CG00044

Lab Number	Sample Name	Analysis	Container	Order	STD ID	ISTD ID	Comments
19G0202-02	Influent Grab 1	TPH NW (Extractables) low level	E 01	45			
19G0202-05	Effluent Grab 1	TPH NW (Extractables) low level	E 01	46			
SHG0211-CCV7	DIESEL CCV	QC		47	H006816		
SHG0211-CCV8	MOIL CCV	QC		48	H005102		

GC LOG SUMMARY FOR DATABATCH - \\target\share\chem2\fid4a.i\20190716A.b

	Inject	Date/Time	Filename	DF	LabID	ClientID
1	17-JUL-2019	02:40	419G1645.D	1	SHG0211-IBL1	
2	17-JUL-2019	03:01	419G1646.D	1	SHG0211-IBL2	
3	17-JUL-2019	03:23	419G1647.D	1	SHG0211-ICV1	
4	17-JUL-2019	03:43	419G1648.D	1	SHG0211-ICV2	
5	17-JUL-2019	04:04	419G1649.D	1	BHG0329-BLK1	
6	17-JUL-2019	04:24	419G1650.D	1	BHG0329-BS1	
7	17-JUL-2019	04:44	419G1651.D	1	19G0180-01	
8	17-JUL-2019	05:05	419G1652.D	1	BHG0339-BLK1	
9	17-JUL-2019	05:25	419G1653.D	1	BHG0339-BS1	
10	17-JUL-2019	05:46	419G1654.D	1	19G0163-01	
11	17-JUL-2019	06:06	419G1655.D	1	SHG0211-CCV1	
12	17-JUL-2019	06:26	419G1656.D	1	SHG0211-CCV2	
13	17-JUL-2019	06:47	419G1657.D	1	BHG0310-BLK1	
14	17-JUL-2019	07:07	419G1658.D	1	BHG0310-BS1	
15	17-JUL-2019	07:28	419G1659.D	1	19G0163-02	
16	17-JUL-2019	07:49	419G1660.D	1	BHG0310-MS1	
17	17-JUL-2019	08:10	419G1661.D	1	BHG0310-MSD1	
18	17-JUL-2019	08:31	419G1662.D	1	19G0163-03	
19	17-JUL-2019	08:51	419G1663.D	1	19G0163-04	
20	17-JUL-2019	09:12	419G1664.D	1	19G0163-05	
21	17-JUL-2019	09:32	419G1665.D	1	19G0163-06	
22	17-JUL-2019	09:52	419G1666.D	1	19G0163-07	
23	17-JUL-2019	10:13	419G1667.D	1	SHG0211-CCV3	
24	17-JUL-2019	10:33	419G1668.D	1	SHG0211-CCV4	
25	17-JUL-2019	10:54	419G1669.D	1	19G0163-08	
26	17-JUL-2019	11:14	419G1670.D	1	19G0163-09	
27	17-JUL-2019	11:35	419G1671.D	1	19G0163-10	
28	17-JUL-2019	11:57	419G1672.D	1	19G0163-11	
29	17-JUL-2019	12:18	419G1673.D	1	19G0163-12	
30	17-JUL-2019	12:38	419G1674.D	1	19G0163-13	
31	17-JUL-2019	12:59	419G1675.D	50	19G0180-01RE1	
32	17-JUL-2019	13:19	419G1676.D	1	19G0163-14	
33	17-JUL-2019	13:40	419G1677.D	1	19G0163-15	
34	17-JUL-2019	14:00	419G1678.D	1	BHG0343-BLK1	
35	17-JUL-2019	14:22	419G1679.D	1	BHG0343-BS1	
36	17-JUL-2019	14:43	419G1680.D	1	19G0191-01	
37	17-JUL-2019	15:04	419G1681.D	1	SHG0211-CCV5	
38	17-JUL-2019	15:24	419G1682.D	1	SHG0211-CCV6	
39	17-JUL-2019	15:45	419G1683.D	1	H006806	
40	17-JUL-2019	16:05	419G1684.D	1	SURRP10X	
41	17-JUL-2019	16:27	419G1685.D	1	BHG0390-BLK1	
42	17-JUL-2019	16:49	419G1686.D	1	BHG0390-BS1	
43	17-JUL-2019	17:09	419G1687.D	1	19G0212-01	
44	17-JUL-2019	17:30	419G1688.D	1	BHG0387-BLK1	
45	17-JUL-2019	17:50	419G1689.D	1	BHG0387-BS1	

46	17-JUL-2019	18:11	419G1690.D	1	BHG0387-BSD1
47	17-JUL-2019	18:32	419G1691.D	1	19G0202-02
48	17-JUL-2019	18:52	419G1692.D	1	19G0202-02 5X
49	17-JUL-2019	19:14	419G1693.D	1	19G0202-02 10X
50	17-JUL-2019	19:35	419G1694.D	1	19G0202-05

	Inject	Date/Time	Filename	DF	LabID	ClientID
51	17-JUL-2019	19:56	419G1695.D	1	SHG0211-CCV7	
52	17-JUL-2019	20:16	419G1696.D	1	SHG0211-CCV8	

Security Status Report

Date: 18-Jul-2019 07:48

419G1645.D	Data	Locked	van,	18-Jul-2019	07:48
419G1646.D	Data	Locked	van,	17-Jul-2019	13:28
419G1647.D	Data	Locked	van,	17-Jul-2019	13:28
419G1648.D	Data	Locked	van,	17-Jul-2019	13:28
419G1649.D	Data	Locked	van,	17-Jul-2019	13:28
419G1650.D	Data	Locked	van,	17-Jul-2019	13:28
419G1651.D	Data	Locked	van,	17-Jul-2019	13:28
419G1652.D	Data	Locked	van,	17-Jul-2019	13:28
419G1653.D	Data	Locked	van,	17-Jul-2019	13:28
419G1654.D	Data	Locked	van,	17-Jul-2019	13:28
419G1655.D	Data	Locked	van,	17-Jul-2019	13:28
419G1656.D	Data	Locked	van,	17-Jul-2019	13:28
419G1657.D	Data	Locked	van,	17-Jul-2019	13:28
419G1658.D	Data	Locked	van,	17-Jul-2019	13:28
419G1659.D	Data	Locked	van,	17-Jul-2019	13:28
419G1660.D	Data	Locked	van,	17-Jul-2019	13:28
419G1661.D	Data	Locked	van,	17-Jul-2019	13:28
419G1662.D	Data	Locked	van,	17-Jul-2019	13:28
419G1663.D	Data	Locked	van,	17-Jul-2019	13:28
419G1664.D	Data	Locked	van,	17-Jul-2019	13:28
419G1665.D	Data	Locked	van,	17-Jul-2019	13:28
419G1666.D	Data	Locked	van,	17-Jul-2019	13:28
419G1667.D	Data	Locked	van,	17-Jul-2019	13:28
419G1668.D	Data	Locked	van,	17-Jul-2019	13:28
419G1669.D	Data	Locked	van,	17-Jul-2019	13:28
419G1670.D	Data	Locked	van,	17-Jul-2019	13:28
419G1671.D	Data	Locked	van,	17-Jul-2019	13:28
419G1672.D	Data	Locked	van,	17-Jul-2019	13:28
419G1673.D	Data	Locked	van,	17-Jul-2019	13:28
419G1674.D	Data	Locked	van,	17-Jul-2019	13:28
419G1675.D	Data	Locked	van,	17-Jul-2019	13:28
419G1676.D	Data	Locked	van,	18-Jul-2019	07:47
419G1677.D	Data	Locked	van,	18-Jul-2019	07:47
419G1678.D	Data	Locked	van,	18-Jul-2019	07:47
419G1679.D	Data	Locked	van,	18-Jul-2019	07:47
419G1680.D	Data	Locked	van,	18-Jul-2019	07:47
419G1681.D	Data	Locked	van,	18-Jul-2019	07:47
419G1682.D	Data	Locked	van,	18-Jul-2019	07:47
419G1683.D	Data	Locked	van,	18-Jul-2019	07:47
419G1684.D	Data	Locked	van,	18-Jul-2019	07:47
419G1685.D	Data	Locked	van,	18-Jul-2019	07:47
419G1686.D	Data	Locked	van,	18-Jul-2019	07:47
419G1687.D	Data	Locked	van,	18-Jul-2019	07:47
419G1688.D	Data	Locked	van,	18-Jul-2019	07:47

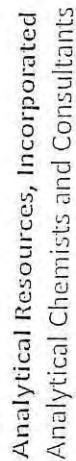
419G1689.D	Data Locked	van,	18-Jul-2019	07:47
419G1690.D	Data Locked	van,	18-Jul-2019	07:47
419G1691.D	Data Locked	van,	18-Jul-2019	07:47
419G1692.D	Data Locked	van,	18-Jul-2019	07:47
419G1693.D	Data Locked	van,	18-Jul-2019	07:47
419G1694.D	Data Locked	van,	18-Jul-2019	07:47
419G1695.D	Data Locked	van,	18-Jul-2019	07:47
419G1696.D	Data Locked	van,	18-Jul-2019	07:47

Security Status Report

Date: 18-Jul-2019 07:48

419G1645.D	Data	Locked	van,	18-Jul-2019	07:48
419G1646.D	Data	Locked	van,	17-Jul-2019	13:28
419G1647.D	Data	Locked	van,	17-Jul-2019	13:28
419G1648.D	Data	Locked	van,	17-Jul-2019	13:28
419G1649.D	Data	Locked	van,	17-Jul-2019	13:28
419G1650.D	Data	Locked	van,	17-Jul-2019	13:28
419G1651.D	Data	Locked	van,	17-Jul-2019	13:28
419G1652.D	Data	Locked	van,	17-Jul-2019	13:28
419G1653.D	Data	Locked	van,	17-Jul-2019	13:28
419G1654.D	Data	Locked	van,	17-Jul-2019	13:28
419G1655.D	Data	Locked	van,	17-Jul-2019	13:28
419G1656.D	Data	Locked	van,	17-Jul-2019	13:28
419G1657.D	Data	Locked	van,	17-Jul-2019	13:28
419G1658.D	Data	Locked	van,	17-Jul-2019	13:28
419G1659.D	Data	Locked	van,	17-Jul-2019	13:28
419G1660.D	Data	Locked	van,	17-Jul-2019	13:28
419G1661.D	Data	Locked	van,	17-Jul-2019	13:28
419G1662.D	Data	Locked	van,	17-Jul-2019	13:28
419G1663.D	Data	Locked	van,	17-Jul-2019	13:28
419G1664.D	Data	Locked	van,	17-Jul-2019	13:28
419G1665.D	Data	Locked	van,	17-Jul-2019	13:28
419G1666.D	Data	Locked	van,	17-Jul-2019	13:28
419G1667.D	Data	Locked	van,	17-Jul-2019	13:28
419G1668.D	Data	Locked	van,	17-Jul-2019	13:28
419G1669.D	Data	Locked	van,	17-Jul-2019	13:28
419G1670.D	Data	Locked	van,	17-Jul-2019	13:28
419G1671.D	Data	Locked	van,	17-Jul-2019	13:28
419G1672.D	Data	Locked	van,	17-Jul-2019	13:28
419G1673.D	Data	Locked	van,	17-Jul-2019	13:28
419G1674.D	Data	Locked	van,	17-Jul-2019	13:28
419G1675.D	Data	Locked	van,	17-Jul-2019	13:28
419G1676.D	Data	Locked	van,	18-Jul-2019	07:47
419G1677.D	Data	Locked	van,	18-Jul-2019	07:47
419G1678.D	Data	Locked	van,	18-Jul-2019	07:47
419G1679.D	Data	Locked	van,	18-Jul-2019	07:47
419G1680.D	Data	Locked	van,	18-Jul-2019	07:47
419G1681.D	Data	Locked	van,	18-Jul-2019	07:47
419G1682.D	Data	Locked	van,	18-Jul-2019	07:47
419G1683.D	Data	Locked	van,	18-Jul-2019	07:47
419G1684.D	Data	Locked	van,	18-Jul-2019	07:47
419G1685.D	Data	Locked	van,	18-Jul-2019	07:47
419G1686.D	Data	Locked	van,	18-Jul-2019	07:47
419G1687.D	Data	Locked	van,	18-Jul-2019	07:47
419G1688.D	Data	Locked	van,	18-Jul-2019	07:47

419G1689.D	Data Locked	van,	18-Jul-2019	07:47
419G1690.D	Data Locked	van,	18-Jul-2019	07:47
419G1691.D	Data Locked	van,	18-Jul-2019	07:47
419G1692.D	Data Locked	van,	18-Jul-2019	07:47
419G1693.D	Data Locked	van,	18-Jul-2019	07:47
419G1694.D	Data Locked	van,	18-Jul-2019	07:47
419G1695.D	Data Locked	van,	18-Jul-2019	07:47
419G1696.D	Data Locked	van,	18-Jul-2019	07:47



Extract Dilution Bench Sheet

Sequence: 514G0211

Analyst: VR

Date: 7.17.19

[illegible]



SURROGATE RECOVERY AND RT SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc. SDG/WO: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Sequence: SHG0207 Instrument: FID4
Calibration: CG00044 Calibration Date: 07/17/2019

Surrogate Compound	Spike Level mg/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SHG0207-SCV1 (Solid)			Lab File ID: 419G1642.D			Analyzed: 07/17/19 01:39		
o-Terphenyl	90.000	124	0 - 200	6.28	6.286667	-0.0067	N/A	



SURROGATE RECOVERY AND RT SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG/WO: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0211

Instrument: FID4

Calibration: CG00044

Calibration Date: 07/17/2019

Surrogate Compound	Spike Level mg/L	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
SHG0211-IBL1 (Solid)			Lab File ID: 419G1645.D			Analyzed: 07/17/19 02:40		
o-Terphenyl	100.00	125	50 - 150	6.28	6.286667	-0.0067	N/A	
SHG0211-IBL2 (Solid)			Lab File ID: 419G1646.D			Analyzed: 07/17/19 03:01		
o-Terphenyl	100.00	106	50 - 150	6.27	6.286667	-0.0167	N/A	
SHG0211-ICV1 (Solid)			Lab File ID: 419G1647.D			Analyzed: 07/17/19 03:23		
o-Terphenyl	90.000	107	85 - 115	6.27	6.286667	-0.0167	N/A	
BHG0339-BLK1 (Water)			Lab File ID: 419G1652.D			Analyzed: 07/17/19 05:05		
o-Terphenyl	0.22500	93.1	50 - 150	6.27	6.286667	-0.0167	N/A	
BHG0339-BS1 (Water)			Lab File ID: 419G1653.D			Analyzed: 07/17/19 05:25		
o-Terphenyl	0.22500	108	50 - 150	6.28	6.286667	-0.0067	N/A	
19G0163-01 (Water)			Lab File ID: 419G1654.D			Analyzed: 07/17/19 05:46		
o-Terphenyl	0.22500	101	50 - 150	6.27	6.286667	-0.0167	N/A	
BHG0310-BLK1 (Solid)			Lab File ID: 419G1657.D			Analyzed: 07/17/19 06:47		
o-Terphenyl	56.250	106	50 - 150	6.27	6.286667	-0.0167	N/A	
BHG0310-BS1 (Solid)			Lab File ID: 419G1658.D			Analyzed: 07/17/19 07:07		
o-Terphenyl	56.250	104	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-02 (Solid)			Lab File ID: 419G1659.D			Analyzed: 07/17/19 07:28		
o-Terphenyl	114.07	97.4	50 - 150	6.27	6.286667	-0.0167	N/A	
BHG0310-MS1 (Solid)			Lab File ID: 419G1660.D			Analyzed: 07/17/19 07:49		
o-Terphenyl	113.85	94.6	50 - 150	6.27	6.286667	-0.0167	N/A	
BHG0310-MSD1 (Solid)			Lab File ID: 419G1661.D			Analyzed: 07/17/19 08:10		
o-Terphenyl	114.30	95.1	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-03 (Solid)			Lab File ID: 419G1662.D			Analyzed: 07/17/19 08:31		
o-Terphenyl	124.38	97.8	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-04 (Solid)			Lab File ID: 419G1663.D			Analyzed: 07/17/19 08:51		
o-Terphenyl	235.69	95.1	50 - 150	6.27	6.286667	-0.0167	N/A	



SURROGATE RECOVERY AND RT SUMMARY

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG/WO: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0211

Instrument: FID4

Calibration: CG00044

Calibration Date: 07/17/2019

Surrogate Compound	Spike Level mg/kg dry	% Recovery	Recovery Limits	RT	Calibration Mean RT	RT Diff	RT Diff Limit	Q
19G0163-05 (Solid) Lab File ID: 419G1664.D Analyzed: 07/17/19 09:12								
o-Terphenyl	256.78	91.6	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-06 (Solid) Lab File ID: 419G1665.D Analyzed: 07/17/19 09:32								
o-Terphenyl	165.89	97.6	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-07 (Solid) Lab File ID: 419G1666.D Analyzed: 07/17/19 09:52								
o-Terphenyl	111.97	96.0	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-08 (Solid) Lab File ID: 419G1669.D Analyzed: 07/17/19 10:54								
o-Terphenyl	88.053	90.5	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-09 (Solid) Lab File ID: 419G1670.D Analyzed: 07/17/19 11:14								
o-Terphenyl	116.91	95.1	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-10 (Solid) Lab File ID: 419G1671.D Analyzed: 07/17/19 11:35								
o-Terphenyl	84.688	92.4	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-11 (Solid) Lab File ID: 419G1672.D Analyzed: 07/17/19 11:57								
o-Terphenyl	78.294	87.6	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-12 (Solid) Lab File ID: 419G1673.D Analyzed: 07/17/19 12:18								
o-Terphenyl	77.436	85.9	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-13 (Solid) Lab File ID: 419G1674.D Analyzed: 07/17/19 12:38								
o-Terphenyl	260.01	103	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-14 (Solid) Lab File ID: 419G1676.D Analyzed: 07/17/19 13:19								
o-Terphenyl	130.78	101	50 - 150	6.27	6.286667	-0.0167	N/A	
19G0163-15 (Solid) Lab File ID: 419G1677.D Analyzed: 07/17/19 13:40								
o-Terphenyl	63.898	91.9	50 - 150	6.27	6.286667	-0.0167	N/A	



HOLDING TIME SUMMARY

Analysis: NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-10-190711E 19G0163-01	07/11/19 15:10	07/11/19 17:25	07/15/19 11:49	3	7	07/17/19 05:46	2	40	
SO-01-190711 19G0163-02	07/11/19 11:05	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 07:28	5	40	
SO-02-190711 19G0163-03	07/11/19 10:50	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 08:31	5	40	
SO-03-190711 19G0163-04	07/11/19 08:35	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 08:51	5	40	
SO-04-190711 19G0163-05	07/11/19 11:30	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 09:12	5	40	
SO-05-190711 19G0163-06	07/11/19 12:05	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 09:32	5	40	
SO-06-190711 19G0163-07	07/11/19 12:20	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 09:52	5	40	
SO-07-190711 19G0163-08	07/11/19 11:55	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 10:54	5	40	
SO-08-190711 19G0163-09	07/11/19 10:25	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 11:14	5	40	
SO-09-190711 19G0163-10	07/11/19 10:10	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 11:35	5	40	
SO-10-190711 19G0163-11	07/11/19 09:45	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 11:57	5	40	
SO-10-190711D 19G0163-12	07/11/19 09:50	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 12:18	5	40	
SO-11-190711 19G0163-13	07/11/19 09:10	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 12:38	5	40	
SO-12-190711 19G0163-14	07/11/19 09:25	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 13:19	5	40	
SO-13-190711 19G0163-15	07/11/19 12:35	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 13:40	5	40	
Matrix Spike BHG0310-MS1	07/11/19 11:05	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 07:49	5	40	
Matrix Spike Dup BHG0310-MSD1	07/11/19 11:05	07/11/19 17:25	07/12/19 12:52	1	14	07/17/19 08:10	5	40	

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor OEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: FID4

Analyte	MDL	RL	Units
Diesel Range Organics (C12-C24)	20.3	50.0	mg/kg
Diesel Range Organics (C12-C24)	2.34	5.00	mg/kg
Motor Oil Range Organics (C24-C38)	21.0	100	mg/kg
Motor Oil Range Organics (C24-C38)	2.99	10.0	mg/kg



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

NWTPH-Dx

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: FID4

Analyte	MDL	RL	Units
Diesel Range Organics (C12-C24)	0.033	0.100	mg/L
Motor Oil Range Organics (C24-C38)	0.056	0.200	mg/L



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7470A
Total Metals

SO-10-190711E

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water Laboratory ID: 19G0163-01 B SDG: 19G0163

Sampled: 07/11/19 15:10 Prepared: 07/18/19 09:21 File ID: TWM 07-19-19-029

% Solids: 0.00 Preparation: TWM EPA 7470A Analyzed: 07/19/19 14:31

Batch: BHG0437 Sequence: SHG0282 Initial/Final: 20 mL / 20 mL

Instrument: CVAA Calibration: CG00056

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.000100	1	0.000013	0.000100	U



PREPARATION BATCH SUMMARY
EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0437

Batch Matrix: Water

Preparation: TWM EPA 7470A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-10-190711E	19G0163-01	TWM 07-19-19-029	07/18/19 09:21	
Blank	BHG0437-BLK1	TWM 07-19-19-027	07/18/19 09:21	
LCS	BHG0437-BS1	TWM 07-19-19-028	07/18/19 09:21	
SO-10-190711E	BHG0437-DUP1	TWM 07-19-19-030	07/18/19 09:21	
SO-10-190711E	BHG0437-MS1	TWM 07-19-19-031	07/18/19 09:21	



Form I
METHOD BLANK DATA SHEET
EPA 7470A
Total Metals

Blank

Batch: BHG0437

Laboratory ID: BHG0437-BLK1

Prepared: 07/18/19 09:21

Matrix: Water

Preparation: TWM EPA 7470A

Analyzed: 07/19/19 14:26

Sequence: SHG0282

Calibration: CG00056

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	ND	1	0.000013	0.000100	U



DUPLICATES

EPA 7470A

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: BHG0437-DUP1

Batch: BHG0437

Lab Source ID: 19G0163-01

Preparation: TWM EPA 7470A

Initial/Final: 20 mL / 20 mL

Source Sample Name: SO-10-190711E

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q
Mercury	20	ND	U	ND	U		

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = +/-RL instead of 20% RPD



INSTRUMENT BLANKS EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: CVAA

Calibration: CG00056

Sequence: SHG0282

Date Analyzed: 07/19/19 13:39

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0282-ICB1	Mercury	-0.000040	0.000013	0.000100	mg/L	
SHG0282-CCB1	Mercury	-0.000039	0.000013	0.000100	mg/L	
SHG0282-CCB2	Mercury	-0.000038	0.000013	0.000100	mg/L	
SHG0282-CCB3	Mercury	-0.000048	0.000013	0.000100	mg/L	
SHG0282-CCB4	Mercury	-0.000037	0.000013	0.000100	mg/L	



LCS / LCS DUPLICATE RECOVERY

EPA 7470A

Total Metals

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Water Analyzed: 07/19/19 14:28
Batch: BHG0437 Laboratory ID: BHG0437-BS1
Preparation: TWM EPA 7470A Sequence Name: LCS
Initial/Final: 20 mL / 20 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	Q	LCS % REC. #	QC LIMITS REC.
Mercury	0.00200	0.00215		108	80 - 120

* Indicates values outside of QC limits



MS / MS DUPLICATE RECOVERY

EPA 7470A

Total Metals

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Water Analyzed: 07/19/19 14:35
Batch: BHG0437 Laboratory ID: BHG0437-MS1
Preparation: TWM EPA 7470A Sequence Name: Matrix Spike
Initial/Final: 20 mL / 20 mL Source Sample: SO-10-190711E

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	Q	MS CONCENTRATION (mg/L)	Q	MS % REC. #	QC LIMITS REC.
Mercury	0.00100	ND	U	0.00104		104	75 - 125

* Values outside of QC limits



INITIAL CALIBRATION DATA

EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00056

Instrument: CVAA

Calibration Date: 07/19/2019 16:04

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Mercury	0	0	0.0001	7080000	0.0005	6458000	0.001	6776000	0.002	6625000	0.005	6689800



INITIAL CALIBRATION DATA

EPA 7470A

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00056	Instrument:	CVAA
Calibration Date:	07/19/2019 16:04		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Mercury	5604800	49.1	1.0000		0.99	

SHG0282
CG00056

TWM 07-19-19

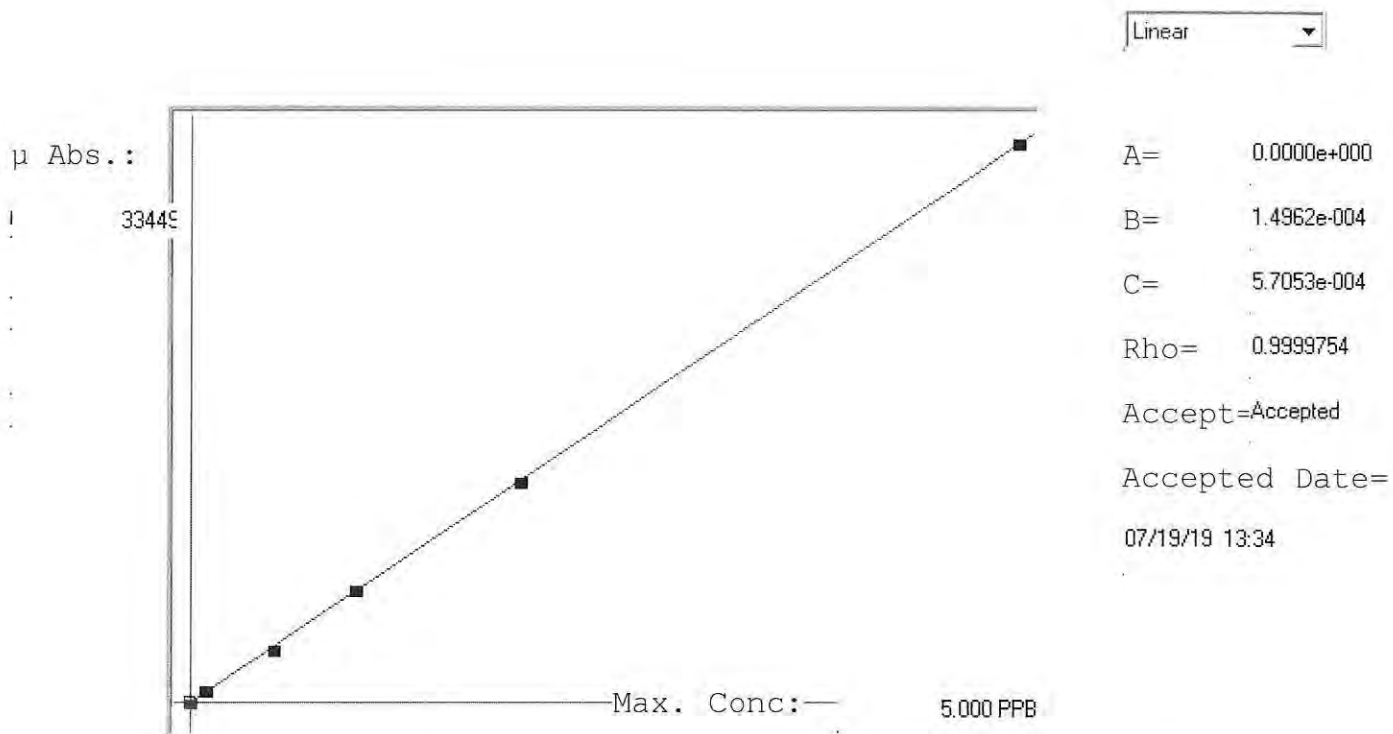
Method: ARI 10 ppb

Operator: Admin

Date of Analysis: 19 Jul 2019 11:48:04

Sample ID	Mean	Units	Date	Method
SEQ-CAL1	44	PPB	19 Jul 2019 13:16:13	ARI 10 ppb
SEQ-CAL2	708	PPB	19 Jul 2019 13:18:33	ARI 10 ppb
SEQ-CAL3	3229	PPB	19 Jul 2019 13:20:53	ARI 10 ppb
SEQ-CAL4	6776	PPB	19 Jul 2019 13:23:13	ARI 10 ppb
SEQ-CAL5	13250	PPB	19 Jul 2019 13:25:33	ARI 10 ppb
SEQ-CAL6	33449	PPB	19 Jul 2019 13:27:53	ARI 10 ppb
SEQ-CAL7	63826	PPB	19 Jul 2019 13:30:13	ARI 10 ppb
SEQ-ICV	105.0% 4.1999	PPB ✓	19 Jul 2019 13:37:05	ARI 10 ppb
SEQ-ICB	-0.0395	PPB ✓	19 Jul 2019 13:39:25	ARI 10 ppb
SEQ-CRL	102.3% 0.1023	PPB ✓	19 Jul 2019 13:41:50	ARI 10 ppb
SEQ-CCV	103.2% 4.1300	PPB ✓	19 Jul 2019 13:44:09	ARI 10 ppb
SEQ-CCB	-0.0385	PPB ✓	19 Jul 2019 13:46:26	ARI 10 ppb
BHG0398-BLK1	0.0025	PPB ✓	19 Jul 2019 13:48:51	ARI 10 ppb
19G0183-01	0.1819	PPB	19 Jul 2019 13:51:08	ARI 10 ppb
BHG0398-DUP1	0.1852	PPB RPD < 20	19 Jul 2019 13:53:25	ARI 10 ppb
BHG0398-MS1	1.2177	PPB ✓	19 Jul 2019 13:55:43	ARI 10 ppb
19F0332-29	-0.0097	PPB	19 Jul 2019 13:58:00	ARI 10 ppb
19F0332-35	0.0055	PPB	19 Jul 2019 14:00:19	ARI 10 ppb
19F0332-37	0.0131	PPB	19 Jul 2019 14:02:37	ARI 10 ppb
19F0332-38	0.0095	PPB	19 Jul 2019 14:04:55	ARI 10 ppb
BHG0445-BLK1	0.0084	PPB ✓	19 Jul 2019 14:07:14	ARI 10 ppb
19G0210-01	0.0067	PPB	19 Jul 2019 14:09:32	ARI 10 ppb
SEQ-CCV	105.4% 4.2158	PPB ✓	19 Jul 2019 14:11:51	ARI 10 ppb
SEQ-CCB	-0.0384	PPB ✓	19 Jul 2019 14:14:08	ARI 10 ppb
BHG0445-DUP1	0.0083	PPB NO RPD	19 Jul 2019 14:16:32	ARI 10 ppb
BHG0445-MS1	0.0061	PPB x Spike missing	19 Jul 2019 14:18:51	ARI 10 ppb
BHG0437-BLK1	0.0080	PPB ✓	19 Jul 2019 14:26:27	ARI 10 ppb
BHG0437-BS1	2.1531	PPB ✓	19 Jul 2019 14:28:44	ARI 10 ppb
19G0163-01	-0.0108	PPB	19 Jul 2019 14:31:02	ARI 10 ppb
BHG0437-DUP1	0.0080	PPB NO RPD	19 Jul 2019 14:33:22	ARI 10 ppb
BHG0437-MS1	1.0358	PPB ✓	19 Jul 2019 14:35:39	ARI 10 ppb
19G0206-01	-0.0040	PPB	19 Jul 2019 14:37:57	ARI 10 ppb
BHG0427-BLK1	0.0582	PPB Curve not stable	19 Jul 2019 14:40:15	ARI 10 ppb
BHG0427-BLK1	0.0126	PPB ✓	19 Jul 2019 14:44:12	ARI 10 ppb
SEQ-CCV	103.6% 4.1443	PPB ✓	19 Jul 2019 14:46:52	ARI 10 ppb
SEQ-CCB	-0.0484	PPB ✓	19 Jul 2019 14:49:08	ARI 10 ppb
BHG0427-BS1	2.0679	PPB ✓	19 Jul 2019 14:51:52	ARI 10 ppb
19G0100-01	0.2113	PPB	19 Jul 2019 14:56:39	ARI 10 ppb
19G0100-02	0.3055	PPB	19 Jul 2019 14:59:02	ARI 10 ppb
19G0100-03	0.1962	PPB	19 Jul 2019 15:01:20	ARI 10 ppb
SEQ-CCV	95.9% 3.8377	PPB ✓	19 Jul 2019 15:03:39	ARI 10 ppb
SEQ-CCB	-0.0372	PPB ✓	19 Jul 2019 15:05:56	ARI 10 ppb

ARI 10 ppb



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
SEQ-CAL1 - Blank	0.000	0.007	0.007	44	1.700	42	45	46		
SEQ-CAL2 - 0.1 PPB	0.100	0.106	0.006	707	0.7 %	704	715	704		
SEQ-CAL3 - 0.5 PPB	0.500	0.484	-0.016	3228	1.2 %	3208	3197	3281		
SEQ-CAL4 - 1.0 PPB	1.000	1.014	0.014	6776	0.2 %	6754	6786	6788		
SEQ-CAL5 - 2.0 PPB	2.000	1.983	-0.017	13250	0.9 %	13414	13219	13118		
SEQ-CAL6 - 5.0 PPB	5.000	5.005	0.005	33449	0.4 %	33394	33648	33305		
SEQ-CAL7 - 10.0 PPB	10.000					63082	64518	63878		

Mercury Analysis Log

Analyst: SM
Instrument: Hydra

SEQ: SHG0282

Date: 7/19/19
Page: 1 of 2

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
SEQ-CAL1	TWM			
-CAL2				
-CAL3				
-CAL4				
-CAL5				
-CAL6				
-CAL7				Dropped
-ICV		2X	4.20	✓
-ICB		1X	-0.0395	✓
-CPL			0.10	✓
-CCV			4.13	✓
✓ -CCB	TWM		-0.0385	✓
BHG398-BLK1	LEM		0.0025	✓
19G183-1			0.18	
BHG398-DUP1			0.19	SM No ✓ RPD < 20
" -MSI			1.22	✓
19F332-29			-0.01	
-35			0.01	
-37			0.01	
✓ -38			0.01	
BHG445-BLK1			0.01	✓
19G210-1			0.01	
SEQ-CCV			4.22	✓
" -CCB			-0.04	✓
BHG445-DUP1	✓		0.01	✓ RPD < 20
" -MSI	LEM		0.01	Missing spike
BHG437-BLK1	TWM		0.01	✓
" -BSI			2.15	✓
19G163-1	✓	✓	-0.01	
BHG437-DUP1	TWM	1X	0.01	✓ RPD < 20

Chemical/Reagent ID:
10% SnCl₂: H6919

14% NH₂OH/NaCl: HZ928

Standard ID:
Standard: H6962-H6968

ICV/CCV: H6969/H6970

Mercury Analysis Log

Analyst: SM
Instrument: Hydra

Date: 7/19/19
Page: 2 of 2

[illegible]

Chemical/Reagent ID:

10% SnCl_2 : _____

14% $\text{NH}_2\text{OH}/\text{NaCl}$: _____

Standard ID:

Standard: _____

ICV/CCV: _____



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: CVAA

Calibration: CG00056

Control Limit: +/- 20.00%

Sequence: SHG0282

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0282-ICV1	Mercury	0.0040000	0.00420	105	mg/L	EPA 7470A
SHG0282-CCV1	Mercury	0.0040000	0.00413	103	mg/L	EPA 7470A
SHG0282-CCV2	Mercury	0.0040000	0.00422	105	mg/L	EPA 7470A
SHG0282-CCV3	Mercury	0.0040000	0.00414	104	mg/L	EPA 7470A
SHG0282-CCV4	Mercury	0.0040000	0.00384	95.9	mg/L	EPA 7470A

* Values outside of QC limits



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0282

Instrument: CVAA

Calibration: CG00056

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SHG0282-CAL1	TWM 07-19-19-001	NA	07/19/19 13:16
Cal Standard	SHG0282-CAL2	TWM 07-19-19-002	NA	07/19/19 13:18
Cal Standard	SHG0282-CAL3	TWM 07-19-19-003	NA	07/19/19 13:20
Cal Standard	SHG0282-CAL4	TWM 07-19-19-004	NA	07/19/19 13:23
Cal Standard	SHG0282-CAL5	TWM 07-19-19-005	NA	07/19/19 13:25
Cal Standard	SHG0282-CAL6	TWM 07-19-19-006	NA	07/19/19 13:27
Initial Cal Check	SHG0282-ICV1	TWM 07-19-19-008	NA	07/19/19 13:37
Initial Cal Blank	SHG0282-ICB1	TWM 07-19-19-009	NA	07/19/19 13:39
Instrument RL Check	SHG0282-CRL1	TWM 07-19-19-010	NA	07/19/19 13:41
Calibration Check	SHG0282-CCV1	TWM 07-19-19-011	NA	07/19/19 13:44
Calibration Blank	SHG0282-CCB1	TWM 07-19-19-012	NA	07/19/19 13:46
Calibration Check	SHG0282-CCV2	TWM 07-19-19-023	NA	07/19/19 14:11
Calibration Blank	SHG0282-CCB2	TWM 07-19-19-024	NA	07/19/19 14:14
Blank	BHG0437-BLK1	TWM 07-19-19-027	Water	07/19/19 14:26
LCS	BHG0437-BS1	TWM 07-19-19-028	Water	07/19/19 14:28
SO-10-190711E	19G0163-01	TWM 07-19-19-029	Water	07/19/19 14:31
SO-10-190711E	BHG0437-DUP1	TWM 07-19-19-030	Water	07/19/19 14:33
SO-10-190711E	BHG0437-MS1	TWM 07-19-19-031	Water	07/19/19 14:35
Calibration Check	SHG0282-CCV3	TWM 07-19-19-035	NA	07/19/19 14:46
Calibration Blank	SHG0282-CCB3	TWM 07-19-19-036	NA	07/19/19 14:49
Calibration Check	SHG0282-CCV4	TWM 07-19-19-041	NA	07/19/19 15:03
Calibration Blank	SHG0282-CCB4	TWM 07-19-19-042	NA	07/19/19 15:05



DETECTION LEVEL STANDARD EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: CVAA

Calibration: CG00056

Sequence: SHG0282

Lab Sample ID: SHG0282-CRL1

Analyte	True	Found	%R	Units	QC Limits
Mercury	0.000100	0.000102	102	mg/L	70 - 130

* Values outside of QC limits



HOLDING TIME SUMMARY

Analysis: EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-10-190711E 19G0163-01	07/11/19 15:10	07/11/19 17:25	07/18/19 09:21	6	28	07/19/19 14:31	8	28	
Duplicate BHG0437-DUP1	07/11/19 15:10	07/11/19 17:25	07/18/19 09:21	6	28	07/19/19 14:33	8	28	
Matrix Spike BHG0437-MS1	07/11/19 15:10	07/11/19 17:25	07/18/19 09:21	6	28	07/19/19 14:35	8	28	

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 7470A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: CVAA

Analyte	MDL	RL	Units
Mercury	0.000013	0.000100	mg/L



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 7471B

Total Metals

SO-01-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-02RE1 B SDG: 19G0163

Sampled: 07/11/19 11:05 Prepared: 07/23/19 10:23 File ID: SMM 07-25-19-015

% Solids: 47.69 Preparation: SMM EPA 7471B Analyzed: 07/25/19 13:14

Batch: BHG0542 Sequence: SHG0348 Initial/Final: 0.215 g Wet / 50 mL

Instrument: CVAA Calibration: CG00075

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.111	1	0.0102	0.0488	



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 7471B

Total Metals

SO-02-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-03RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 10:50</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-019</u>
% Solids:	<u>47.66</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:23</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.241 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0457	1	0.00914	0.0435	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B
Total Metals

SO-03-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-04RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 08:35</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-020</u>
% Solids:	<u>23.97</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:26</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.256 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.324	1	0.0171	0.0815	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B
Total Metals

SO-04-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-05RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 11:30</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-021</u>
% Solids:	<u>22.92</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:28</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.273 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.318	1	0.0168	0.0799	



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 7471B

Total Metals

SO-05-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06RE1 B SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/23/19 10:23 File ID: SMM 07-25-19-022

% Solids: 35.60 Preparation: SMM EPA 7471B Analyzed: 07/25/19 13:30

Batch: BHG0542 Sequence: SHG0348 Initial/Final: 0.293 g Wet / 50 mL

Instrument: CVAA Calibration: CG00075

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0975	1	0.0101	0.0479	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B
Total Metals

SO-06-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-07RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 12:20</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-025</u>
% Solids:	<u>51.08</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:37</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.286 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0825	1	0.00719	0.0342	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B
Total Metals

SO-07-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-08RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 11:55</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-026</u>
% Solids:	<u>60.26</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:40</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.21 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0158	1	0.00830	0.0395	J



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 7471B

Total Metals

SO-08-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-09RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 10:25</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-027</u>
% Solids:	<u>48.64</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:42</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.282 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0667	1	0.00766	0.0365	



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 7471B

Total Metals

SO-09-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-10RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 10:10</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-028</u>
% Solids:	<u>66.65</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:44</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.216 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0354	1	0.00729	0.0347	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B
Total Metals

SO-10-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-11RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 09:45</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-029</u>
% Solids:	<u>71.41</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:47</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.246 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.221	1	0.00598	0.0285	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B
Total Metals

SO-10-190711D

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix:	<u>Solid</u>	Laboratory ID:	<u>19G0163-12RE1 B</u>	SDG:	<u>19G0163</u>
Sampled:	<u>07/11/19 09:50</u>	Prepared:	<u>07/23/19 10:23</u>	File ID:	<u>SMM 07-25-19-030</u>
% Solids:	<u>71.06</u>	Preparation:	<u>SMM EPA 7471B</u>	Analyzed:	<u>07/25/19 13:49</u>
Batch:	<u>BHG0542</u>	Sequence:	<u>SHG0348</u>	Initial/Final:	<u>0.235 g Wet / 50 mL</u>
Instrument:	<u>CVAA</u>			Calibration:	<u>CG00075</u>

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.225	1	0.00629	0.0299	



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 7471B

Total Metals

SO-11-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13RE1 B SDG: 19G0163
Sampled: 07/11/19 09:10 Prepared: 07/23/19 10:23 File ID: SMM 07-25-19-031
% Solids: 22.32 Preparation: SMM EPA 7471B Analyzed: 07/25/19 13:51
Batch: BHG0542 Sequence: SHG0348 Initial/Final: 0.221 g Wet / 50 mL
Instrument: CVAA Calibration: CG00075

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.304	1	0.0213	0.101	



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 7471B

Total Metals

SO-12-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14RE1 B SDG: 19G0163

Sampled: 07/11/19 09:25 Prepared: 07/23/19 10:23 File ID: SMM 07-25-19-032

% Solids: 43.51 Preparation: SMM EPA 7471B Analyzed: 07/25/19 13:53

Batch: BHG0542 Sequence: SHG0348 Initial/Final: 0.256 g Wet / 50 mL

Instrument: CVAA Calibration: CG00075

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0942	1	0.00943	0.0449	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7471B
Total Metals

SO-13-190711

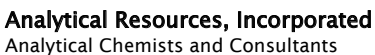
Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15RE1 B SDG: 19G0163
Sampled: 07/11/19 12:35 Prepared: 07/23/19 10:23 File ID: SMM 07-25-19-033
% Solids: 93.43 Preparation: SMM EPA 7471B Analyzed: 07/25/19 13:56
Batch: BHG0542 Sequence: SHG0348 Initial/Final: 0.251 g Wet / 50 mL
Instrument: CVAA Calibration: CG00075

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	0.0749	1	0.00448	0.0213	



EPA 7471B

SDG: 19G0163

Project: King County Closed Landfills - Vashon

Preparation: SMM EPA 7471B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	BHG0333-BLK1	SMM 07-17-19-033	07/15/19 10:02	



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

BHG 333

Mercury Digestion Log

Prep Code: SMM

Analyst: N

Bath Temp: 94°C

Start Time: 1320

Matrix: soil

Date: 7/15/19

End Time: 1405

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) Volume (mL)	Final Volume (mL)	# KMnO ₄ Aliquots	CLP	Comments
19G36-20	A		0.205	50	1.0		
19G72-2	A		0.244				
" -3	A		0.218				
" -4	A		0.255				
19G111-1	C		0.286				
19G112-1	C		0.271				
19G163-2	B		0.234				
" -3	B		0.231				QC
" -4	B		0.284				
" -5	B		0.273				
" -6	B		0.266				
" -7	B		0.289				
" -8	B		0.234				
" -9	B		0.241				
" -10	B		0.264				
" -11	B		0.221				
" -12	B		0.236				
" -13	B		0.232				
" -14	B		0.233				
" -15	B		0.258				
BHG 333-BLKI	-		-				
" -BSI	-		-				
" -DUP1	-		0.235				
" -MS1	-		0.237				19G163-2
" -MSD1	-		0.239	50	1.0		" "

Chemical/Reagent ID:

HNO₃:

5% K₂S₂O₈:

H₂SO₄:

5% KMnO₄:

HCl:

Digest Tube Lot:

5037F



PREPARATION BATCH SUMMARY

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0542

Batch Matrix: Solid

Preparation: SMM EPA 7471B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02RE1	SMM 07-25-19-015	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-02-190711	19G0163-03RE1	SMM 07-25-19-019	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-03-190711	19G0163-04RE1	SMM 07-25-19-020	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-04-190711	19G0163-05RE1	SMM 07-25-19-021	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-05-190711	19G0163-06RE1	SMM 07-25-19-022	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-06-190711	19G0163-07RE1	SMM 07-25-19-025	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-07-190711	19G0163-08RE1	SMM 07-25-19-026	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-08-190711	19G0163-09RE1	SMM 07-25-19-027	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-09-190711	19G0163-10RE1	SMM 07-25-19-028	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-10-190711	19G0163-11RE1	SMM 07-25-19-029	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-10-190711D	19G0163-12RE1	SMM 07-25-19-030	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-11-190711	19G0163-13RE1	SMM 07-25-19-031	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-12-190711	19G0163-14RE1	SMM 07-25-19-032	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
SO-13-190711	19G0163-15RE1	SMM 07-25-19-033	07/23/19 10:23	From BHG0333 by JPK on 23-Jul-2019
Blank	BHG0542-BLK1	SMM 07-25-19-013	07/23/19 10:23	
LCS	BHG0542-BS1	SMM 07-25-19-014	07/23/19 10:23	
SO-01-190711	BHG0542-DUP1	SMM 07-25-19-016	07/23/19 10:23	
SO-01-190711	BHG0542-MS1	SMM 07-25-19-017	07/23/19 10:23	
SO-01-190711	BHG0542-MSD1	SMM 07-25-19-018	07/23/19 10:23	



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

BHG542

Mercury Digestion Log

Prep Code: SMM

Matrix: soil

Analyst: IN

Date: 7/23/19

Bath Temp: 94°C

Start Time: 1500

End Time: 1545

ARI Sample ID	Sample Bottle #	pH<2	Initial Weight (g) Volume (mL)	Final Volume (mL)	# KMnO ₄ Aliquots	CLP	Comments
19G163-2RE1	B		0.215	50	1		QC
" -3RE1	B		0.241				
" -4RE1	B		0.256				
" -5RE1	B		0.273				
" -6RE1	B		0.293				
" -7RE1	B		0.286				
" -8RE1	B		0.210				
" -9RE1	B		0.282				
" -10RE1	B		0.216				
" -11RE1	B		0.246				
" -12RE1	B		0.235				
" -13RE1	B		0.221				
" -14RE1	B		0.256				
" -15RE1	B		0.251				
19G232-1	B		0.230				
19G253-1	A		0.248				
19G271-1	A		0.278				
" -2	A		0.276				
" -7	A		0.278				
19G278-1	C		0.207				
BHG542-BLKI	-		-				
" -BS1	-		-				
" -DUPI	-		0.216				19G163-2
" -MS1	-		0.214				" "
" -MSD1	-		0.217	50	1		" "

Chemical/Reagent ID:

HNO₃: _____

H₂SO₄: _____

HCl: _____

5% K₂S₂O₈: _____

5% KMnO₄: _____

Digest Tube Lot: _____



Form I
METHOD BLANK DATA SHEET
EPA 7471B
Total Metals

Blank

Batch: BHG0333

Laboratory ID: BHG0333-BLK1

Prepared: 07/15/19 10:02

Matrix: Solid

Preparation: SMM EPA 7471B

Analyzed: 07/17/19 13:33

Sequence: SHG0232

Calibration: CG00046

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	ND	1	0.00525	0.0250	U



Form I
METHOD BLANK DATA SHEET
EPA 7471B
Total Metals

Blank

Batch: BHG0542

Laboratory ID: BHG0542-BLK1

Prepared: 07/23/19 10:23

Matrix: Solid

Preparation: SMM EPA 7471B

Analyzed: 07/25/19 13:10

Sequence: SHG0348

Calibration: CG00075

Instrument: CVAA

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7439-97-6	Mercury	ND	1	0.00525	0.0250	U



DUPLICATES

EPA 7471B

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: BHG0542-DUP1

Batch: BHG0542

Lab Source ID: 19G0163-02RE1

Preparation: SMM EPA 7471B

Initial/Final: 0.215 g / 50 mL

Source Sample Name: SO-01-190711

% Solids: 47.69

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg dry)	C	DUPLICATE CONCENTRATION (mg/kg dry)	C	RPD %	Q
Mercury	20	0.111		0.102		8.19	

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = +/-RL instead of 20% RPD



INSTRUMENT BLANKS

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: CVAA

Calibration: CG00046

Sequence: SHG0232

Date Analyzed: 07/17/19 13:24

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0232-ICB1	Mercury	-0.000064	0.000021	0.000100	mg/L	
SHG0232-CCB1	Mercury	-0.000046	0.000021	0.000100	mg/L	
SHG0232-CCB2	Mercury	-0.000041	0.000021	0.000100	mg/L	



INSTRUMENT BLANKS EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: CVAA

Calibration: CG00075

Sequence: SHG0348

Date Analyzed: 07/25/19 13:00

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0348-ICB1	Mercury	-0.000072	0.000021	0.000100	mg/L	
SHG0348-CCB1	Mercury	-0.000047	0.000021	0.000100	mg/L	
SHG0348-CCB2	Mercury	-0.000044	0.000021	0.000100	mg/L	
SHG0348-CCB3	Mercury	-0.000044	0.000021	0.000100	mg/L	
SHG0348-CCB4	Mercury	-0.000042	0.000021	0.000100	mg/L	
SHG0348-CCB5	Mercury	-0.000043	0.000021	0.000100	mg/L	



LCS / LCS DUPLICATE RECOVERY

EPA 7471B

Total Metals

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/25/19 13:12
Batch: BHG0542 Laboratory ID: BHG0542-BS1
Preparation: SMM EPA 7471B Sequence Name: LCS
Initial/Final: 0.2 g / 50 mL

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Mercury	0.500	0.515		103	80 - 120

* Indicates values outside of QC limits



MS / MS DUPLICATE RECOVERY

EPA 7471B

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/25/19 13:19

Batch: BHG0542

Laboratory ID: BHG0542-MS1

Preparation: SMM EPA 7471B

Sequence Name: Matrix Spike

Initial/Final: 0.215 g / 50 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Mercury	0.488	0.111		0.655		112	75 - 125

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY

EPA 7471B

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/25/19 13:21

Batch: BHG0542

Laboratory ID: BHG0542-MSD1

Preparation: SMM EPA 7471B

Sequence Name: Matrix Spike Dup

Initial/Final: 0.215 g / 50 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Mercury	0.488	0.637		108	2.81	20	75 - 125

* Values outside of QC limits



INITIAL CALIBRATION DATA

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00046

Instrument: CVAA

Calibration Date: 07/17/2019 14:49

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Mercury	0	0	0.0001	4620000	0.0005	4036000	0.001	4292000	0.002	4454500	0.01	4225000



INITIAL CALIBRATION DATA

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00046

Instrument: CVAA

Calibration Date: 07/17/2019 14:49

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Mercury	3604583	49.3	0.9999		0.99	

SMM 07-17-19

3/17/19 N
~~SHG0232~~ SHG0232
 CG 00046

Method: ARI 10 ppb

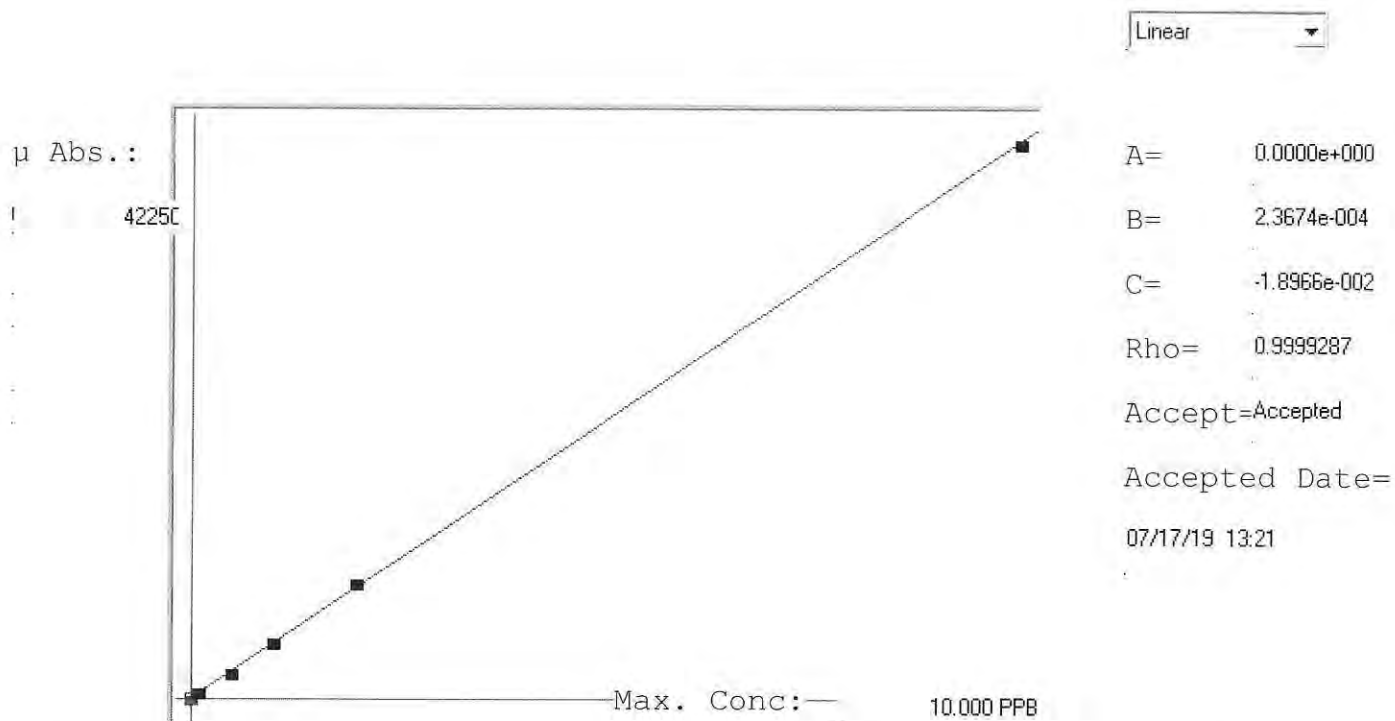
Operator: Admin

Date of Analysis: 17 Jul 2019 11:06:45

Sample ID	Mean	Units	Date	Method
SEQ-CAL1	-10	PPB	17 Jul 2019 11:50:33	ARI 10 ppb
SEQ-CAL2	473	PPB	17 Jul 2019 11:52:53	ARI 10 ppb
SEQ-CAL3	2125	PPB	17 Jul 2019 11:55:12	ARI 10 ppb
SEQ-CAL4	4480	PPB	17 Jul 2019 11:57:32	ARI 10 ppb
SEQ-CAL5	9257	PPB	17 Jul 2019 11:59:50	ARI 10 ppb
SEQ-CAL6	24722	PPB	17 Jul 2019 12:02:10	ARI 10 ppb
SEQ-CAL7	44426	PPB	17 Jul 2019 12:04:29	ARI 10 ppb
SEQ-ICV	103.4% 8.2748	PPB	17 Jul 2019 12:12:52	ARI 10 ppb
SEQ-ICB	-0.0564	PPB	17 Jul 2019 12:15:09	ARI 10 ppb
SEQ-CRL	92.0% 0.0920	PPB	17 Jul 2019 12:17:33	ARI 10 ppb
SEQ-CCV	108.1% 4.3254	PPB	17 Jul 2019 12:19:52	ARI 10 ppb
SEQ-CCB	-0.0431	PPB	17 Jul 2019 12:22:09	ARI 10 ppb
BHG0333-BLK1	-0.0038	PPB	17 Jul 2019 12:27:10	ARI 10 ppb
BHG0333-BS1	2.5143	PPB	17 Jul 2019 12:29:28	ARI 10 ppb
19G0163-02	0.2881	PPB	17 Jul 2019 12:31:45	ARI 10 ppb
BHG0333-BS1	2.5004	PPB	17 Jul 2019 12:36:12	ARI 10 ppb
SEQ-CAL1	27	PPB	17 Jul 2019 12:41:09	ARI 10 ppb
SEQ-CAL2	436	PPB	17 Jul 2019 12:43:28	ARI 10 ppb
SEQ-CAL3	1408	PPB	17 Jul 2019 12:45:48	ARI 10 ppb
SEQ-CAL4	2647	PPB	17 Jul 2019 12:48:07	ARI 10 ppb
SEQ-CAL1	-4	PPB	17 Jul 2019 13:02:21	ARI 10 ppb
SEQ-CAL2	462	PPB	17 Jul 2019 13:04:41	ARI 10 ppb
SEQ-CAL3	2018	PPB	17 Jul 2019 13:07:01	ARI 10 ppb
SEQ-CAL4	4292	PPB	17 Jul 2019 13:09:20	ARI 10 ppb
SEQ-CAL5	8909	PPB	17 Jul 2019 13:11:40	ARI 10 ppb
SEQ-CAL6	24174	PPB	17 Jul 2019 13:13:59	ARI 10 ppb
SEQ-CAL7	42250	PPB	17 Jul 2019 13:16:19	ARI 10 ppb
SEQ-ICV	107.0% 8.5581	PPB	17 Jul 2019 13:21:58	ARI 10 ppb
SEQ-ICB	-0.0640	PPB	17 Jul 2019 13:24:16	ARI 10 ppb
SEQ-CRL	99.2% 0.0992	PPB	17 Jul 2019 13:26:39	ARI 10 ppb
SEQ-CCV	110.9% 4.4362	PPB	17 Jul 2019 13:28:58	ARI 10 ppb
SEQ-CCB	-0.0464	PPB	17 Jul 2019 13:31:15	ARI 10 ppb
BHG0333-BLK1	-0.0130	PPB	17 Jul 2019 13:33:37	ARI 10 ppb
BHG0333-BS1	2.6098	PPB	17 Jul 2019 13:35:54	ARI 10 ppb
19G0163-02	0.2940	PPB	17 Jul 2019 13:38:12	ARI 10 ppb
BHG0333-DUP1	0.2992	PPB	17 Jul 2019 13:40:31	ARI 10 ppb
BHG0333-MS1	1.6902	PPB	17 Jul 2019 13:42:48	ARI 10 ppb
BHG0333-MSD1	1.7608	PPB	17 Jul 2019 13:45:05	ARI 10 ppb
19G0036-20	0.0997	PPB	17 Jul 2019 13:47:24	ARI 10 ppb
19G0111-01	0.0607	PPB	17 Jul 2019 13:49:43	ARI 10 ppb
19G0112-01	0.0512	PPB	17 Jul 2019 13:52:01	ARI 10 ppb
SEQ-CCV	112.8% 4.5129	PPB	17 Jul 2019 13:59:48	ARI 10 ppb
SEQ-CCB	-0.0408	PPB	17 Jul 2019 14:02:05	ARI 10 ppb

Dropped

ARI 10 ppb



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4
SEQ-CAL1 - Blank	0.000	-0.020	-0.020	-3	2.867	-7	-4	0	
SEQ-CAL2 - 0.1 PPB	0.100	0.090	-0.010	461	0.8 %	467	459	459	
SEQ-CAL3 - 0.5 PPB	0.500	0.459	-0.041	2018	1.0 %	2043	2016	1996	
SEQ-CAL4 - 1.0 PPB	1.000	0.997	-0.003	4291	1.0 %	4342	4293	4240	
SEQ-CAL5 - 2.0 PPB	2.000	2.090	0.090	8909	1.4 %	9073	8873	8782	
SEQ-CAL6 - 5.0 PPB	5.000					24072	24291	24160	
SEQ-CAL7 - 10.0 PPB	10.000	9.983	-0.017	42249	0.8 %	42755	41987	42007	

Mercury Analysis Log

Analyst: SM W
Instrument: Hydra

SEQ: SHG232

Date: 7/17/19
Page: 1 of 2

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
SEQ-CAL1	SMM	1x		
" -CAL2				
" -CAL3				
" -CAL4				
" -CAL5				
" -CAL6				X Dropped
" -CAL7				
" -ICV			8.2748	✓
" -ICB			-0.0564	✓
" -CRL			0.0920	✓
" -CCV			4.3254	✓
" -CCB			-0.0431	✓
BHG333-BLK1			-0.0038	✓
" -BSI			2.5143	126% High
19G163-2			0.2881	
BHG333-BSI			2.5004	X High
SEQ-CAL1				
" -CAL2				
" -CAL3				
" -CAL4				
" -CAL5				
" -CAL6				
" -CAL7				
" -ICV				
" -ICB				
" -CRL				
" -CCV				
" -CCB				
SEQ-CAL1	✓	✓		
" -CAL2	SMM	1x		

Chemical/Reagent ID:
10% SnCl₂: H6608

14% NH₂OH/NaCl: H2928

Standard ID:
Standard: H6842-H6849

ICV/CCV: H6850/H6851

Mercury Analysis Log

Analyst: W
Instrument: Hydra

Date: 7/17/19
Page: 2 of 2

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
SEQ - CAL3	SMM	1x		
" - CAL4				
" - CAL5				
" - CAL6				Dropped
" - CAL7				
" - ICLV			8.5581	✓
" - ICLB			0.0640	✓
" - CRL			0.0992	✓
" - CCV			4.4362	✓
" - CCB			0.0464	✓
BHG333-BLK1			0.0130	✓
" - BSI			2.6078	X High
19G163-2			0.2940	Non-Reportable
BHG333-DUP1			0.2992	✓
" - MSI			1.6902	X High
" - MSD1			0.0078	X High
19G36-20			0.0997	
19G111-1			0.0509 (2)	
19G112-1			0.0512 (1)	
SEQ-CCV			4.5129	✓
SEQ-CCB	SMM	1x	0.0408	✓
7/17/19 W				

Chemical/Reagent ID:

10% SnCl₂: _____

14% NH₂OH/NaCl: _____

Standard ID:

Standard: _____

ICV/CCV: _____

5026F

① 0.0512

② 0.0607

7/17/19 W

Page 11527

Revision 4

1/26/01

2789 of 3146



INITIAL CALIBRATION DATA

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00075

Instrument: CVAA

Calibration Date: 07/25/2019 15:14

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Mercury	0	0	0.0001	5760000	0.0005	5328000	0.001	5285000	0.002	5255000	0.01	5111500



INITIAL CALIBRATION DATA

EPA 7471B

Laboratory:	Analytical Resources, Inc.	SDG:	19G0163
Client:	Anchor QEA, LLC	Project:	King County Closed Landfills - Vashon
Calibration:	CG00075	Instrument:	CVAA
Calibration Date:	07/25/2019 15:14		

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Mercury	4456583	49.2	1.0000		0.99	

SMM 07-25-19

SHG0348
CG00075

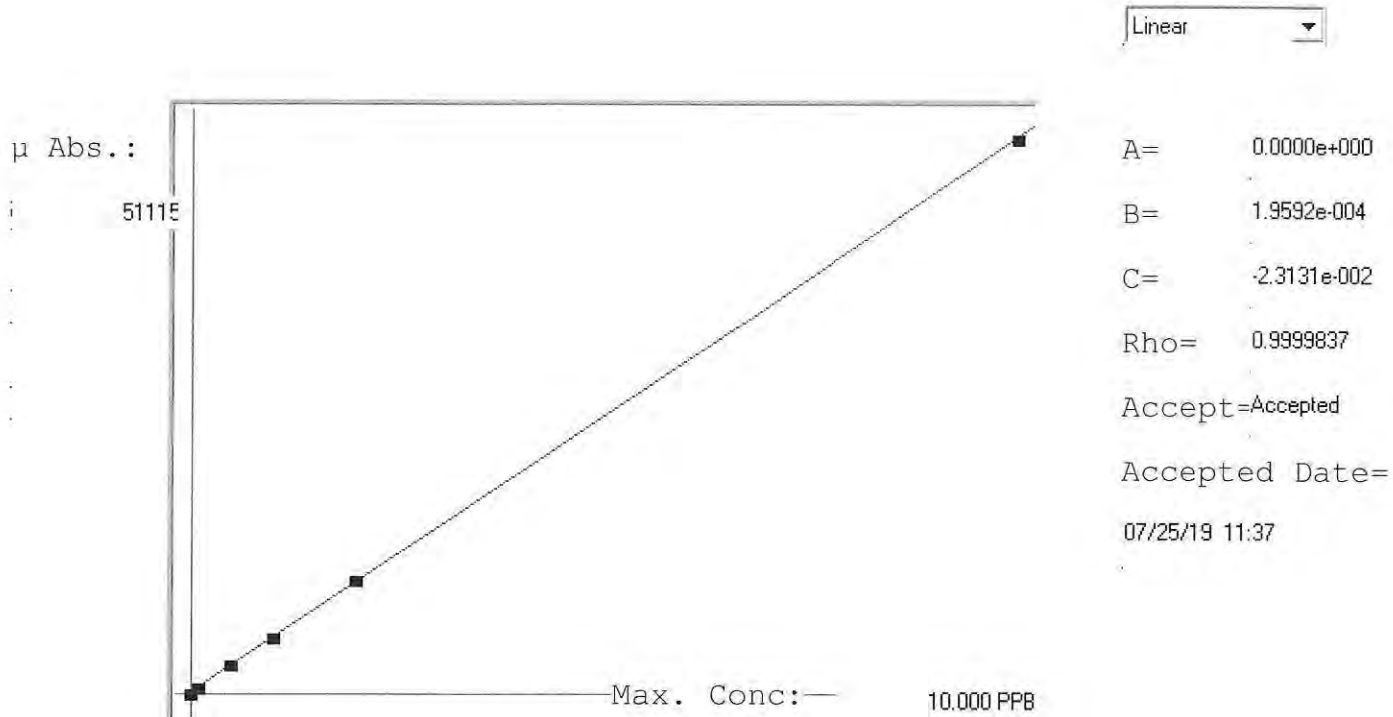
Method: ARI 10 ppb

Operator: Admin

Date of Analysis: 25 Jul 2019 11:06:39

Sample ID	Mean	Units	Date	Method
SEQ-CAL1	-26	PPB	25 Jul 2019 11:18:33	ARI 10 ppb
SEQ-CAL2	576	PPB	25 Jul 2019 11:20:52	ARI 10 ppb
SEQ-CAL3	2664	PPB	25 Jul 2019 11:23:11	ARI 10 ppb
SEQ-CAL4	5285	PPB	25 Jul 2019 11:25:31	ARI 10 ppb
SEQ-CAL5	10510	PPB	25 Jul 2019 11:27:50	ARI 10 ppb
SEQ-CAL6	26518	PPB	25 Jul 2019 11:30:09	ARI 10 ppb
SEQ-CAL7	51115	PPB	25 Jul 2019 11:32:29	ARI 10 ppb
SEQ-ICV	102.8% 8.2247	PPB	25 Jul 2019 12:58:20	ARI 10 ppb
SEQ-ICB	-0.0718	PPB	25 Jul 2019 13:00:41	ARI 10 ppb
SEQ-CRL	90.4% 0.0904	PPB	25 Jul 2019 13:03:04	ARI 10 ppb
SEQ-CCV	101.9% 4.0751	PPB	25 Jul 2019 13:05:24	ARI 10 ppb
SEQ-CCB	-0.0473	PPB	25 Jul 2019 13:07:41	ARI 10 ppb
BHG0542-BLK1	-0.0269	PPB	25 Jul 2019 13:10:05	ARI 10 ppb
BHG0542-BS1	2.0591	PPB	25 Jul 2019 13:12:23	ARI 10 ppb
19G0163-02RE1	0.2274	PPB	25 Jul 2019 13:14:41	ARI 10 ppb
BHG0542-DUP1	0.2095	PPB	25 Jul 2019 13:17:00	ARI 10 ppb
BHG0542-MS1	1.3440	PPB	25 Jul 2019 13:19:17	ARI 10 ppb
BHG0542-MSD1	1.3068	PPB	25 Jul 2019 13:21:35	ARI 10 ppb
19G0163-03RE1	0.1050	PPB	25 Jul 2019 13:23:53	ARI 10 ppb
19G0163-04RE1	0.3971	PPB	25 Jul 2019 13:26:12	ARI 10 ppb
19G0163-05RE1	0.3978	PPB	25 Jul 2019 13:28:30	ARI 10 ppb
19G0163-06RE1	0.2034	PPB	25 Jul 2019 13:30:49	ARI 10 ppb
SEQ-CCV	102.0% 4.0782	PPB	25 Jul 2019 13:33:08	ARI 10 ppb
SEQ-CCB	-0.0435	PPB	25 Jul 2019 13:35:25	ARI 10 ppb
19G0163-07RE1	0.2410	PPB	25 Jul 2019 13:37:47	ARI 10 ppb
19G0163-08RE1	0.0400	PPB	25 Jul 2019 13:40:06	ARI 10 ppb
19G0163-09RE1	0.1831	PPB	25 Jul 2019 13:42:25	ARI 10 ppb
19G0163-10RE1	0.1018	PPB	25 Jul 2019 13:44:43	ARI 10 ppb
19G0163-11RE1	0.7753	PPB	25 Jul 2019 13:47:01	ARI 10 ppb
19G0163-12RE1	0.7523	PPB	25 Jul 2019 13:49:19	ARI 10 ppb
19G0163-13RE1	0.3003	PPB	25 Jul 2019 13:51:36	ARI 10 ppb
19G0163-14RE1	0.2098	PPB	25 Jul 2019 13:53:54	ARI 10 ppb
19G0163-15RE1	0.3513	PPB	25 Jul 2019 13:56:11	ARI 10 ppb
19G0232-01	0.0163	PPB	25 Jul 2019 13:58:29	ARI 10 ppb
SEQ-CCV	103.5% 4.1400	PPB	25 Jul 2019 14:00:47	ARI 10 ppb
SEQ-CCB	-0.0438	PPB	25 Jul 2019 14:03:04	ARI 10 ppb
19G0253-01	0.0475	PPB	25 Jul 2019 14:05:27	ARI 10 ppb
19G0271-01	0.3204	PPB	25 Jul 2019 14:07:46	ARI 10 ppb
19G0271-02	0.5371	PPB	25 Jul 2019 14:10:04	ARI 10 ppb
19G0271-07	5.6392	PPB	25 Jul 2019 14:12:23	ARI 10 ppb
19G0278-01	-0.0270	PPB	25 Jul 2019 14:14:43	ARI 10 ppb
BHG0574-BLK1	-0.0225	PPB	25 Jul 2019 14:17:02	ARI 10 ppb
BHG0574-BS1	1.7395	PPB	25 Jul 2019 14:19:20	ARI 10 ppb
19G0301-01	0.3243	PPB	25 Jul 2019 14:21:38	ARI 10 ppb
BHG0574-DUP1	0.2817	PPB	25 Jul 2019 14:23:58	ARI 10 ppb
BHG0574-MS1	1.3040	PPB	25 Jul 2019 14:26:16	ARI 10 ppb
SEQ-CCV	102.2% 4.0866	PPB	25 Jul 2019 14:28:34	ARI 10 ppb
SEQ-CCB	-0.0419	PPB	25 Jul 2019 14:30:52	ARI 10 ppb
19G0261-01	0.2160	PPB	25 Jul 2019 14:33:14	ARI 10 ppb
19G0261-02	0.2796	PPB	25 Jul 2019 14:35:33	ARI 10 ppb
19G0298-01	0.1224	PPB	25 Jul 2019 14:37:51	ARI 10 ppb
SEQ-CCV	103.5% 4.1397	PPB	25 Jul 2019 14:40:09	ARI 10 ppb
SEQ-CCB	-0.0425	PPB	25 Jul 2019 14:42:26	ARI 10 ppb

ARI 10 ppb



Std ID	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3	Rep 4
SEQ-CAL1 - Blank	0.000	-0.028	-0.028	-26	0.816	-25	-26	-27	
SEQ-CAL2 - 0.1 PPB	0.100	0.090	-0.010	575	1.2 %	566	582	579	
SEQ-CAL3 - 0.5 PPB	0.500	0.499	-0.001	2664	0.2 %	2667	2657	2668	
SEQ-CAL4 - 1.0 PPB	1.000	1.012	0.012	5285	1.2 %	5374	5222	5259	
SEQ-CAL5 - 2.0 PPB	2.000	2.036	0.036	10509	0.8 %	10563	10397	10569	
SEQ-CAL6 - 5.0 PPB	5.000					26231	26423	26899	
SEQ-CAL7 - 10.0 PPB	10.000	9.991	-0.009	51115	1.2 %	51320	51747	50279	

Mercury Analysis Log

Analyst: SM
Instrument: Hydra

SEQ: SHG0348

Date: 7/25/19
Page: 1 of 2

ARI Sample ID	Prep Code	Dilution	QC Data (ppb)	Comments
SEQ-CAL1	SMM	1x		
-CAL2				
-CAL3				
-CAL4				
-CAL5				
-CAL6				
-CAL7				
-ICV			8.22	✓
-ICB			-0.0718	✓
-CPL			0.09	✓
-CCV			4.08	✓
✓ -CCB			-0.0473	✓
BHG542-BLK1			-0.0269	✓
✓ -BSI			2.06	✓
19G163-2RE1			0.23	
BHG542-DUP1			0.21	✓
↓ -MSI			1.34	✓
✓ -MSDI			1.31	✓
19G163-3RE1			0.11	
↓ -4RE1			0.40	
↓ -5RE1			0.40	
✓ -6RE1			0.20	
SEQ-CCV			4.08	✓
" -CCB			-0.0435	✓
19G163-7RE1			0.24	
↓ -8RE1			0.04	
↓ -9RE1			0.18	
↓ -10RE1			0.10	
↓ -11RE1	↓	↓	0.78	
✓ -12RE1	SMM	1x	0.75	

Chemical/Reagent ID:
10% SnCl₂: H6919

14% NH₂OH/NaCl: H2928

Standard ID:
Standard: H7106-H7112

ICV/CCV: H7113/H7114

Mercury Analysis Log

Analyst: SM
Instrument: Hydra

Date: 7/25/19
Page: 2 of 2

[illegible]

Chemical/Reagent ID:
10% SnCl_2 :

14% $\text{NH}_2\text{OH}/\text{NaCl}$: _____

Standard ID: _____
Standard: _____

ICV/CCV: _____



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: CVAA

Calibration: CG00046

Control Limit: +/- 20.00%

Sequence: SHG0232

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0232-ICV1	Mercury	0.0080000	0.00856	107	mg/L	EPA 7471B
SHG0232-CCV1	Mercury	0.0040000	0.00444	111	mg/L	EPA 7471B
SHG0232-CCV2	Mercury	0.0040000	0.00451	113	mg/L	EPA 7471B

* Values outside of QC limits



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: CVAA

Calibration: CG00075

Control Limit: +/- 20.00%

Sequence: SHG0348

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0348-ICV1	Mercury	0.0080000	0.00822	103	mg/L	EPA 7471B
SHG0348-CCV1	Mercury	0.0040000	0.00408	102	mg/L	EPA 7471B
SHG0348-CCV2	Mercury	0.0040000	0.00408	102	mg/L	EPA 7471B
SHG0348-CCV3	Mercury	0.0040000	0.00414	104	mg/L	EPA 7471B
SHG0348-CCV4	Mercury	0.0040000	0.00409	102	mg/L	EPA 7471B
SHG0348-CCV5	Mercury	0.0040000	0.00414	103	mg/L	EPA 7471B

* Values outside of QC limits



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0232

Instrument: CVAA

Calibration: CG00046

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SHG0232-CAL1	SMM 07-17-19-021	NA	07/17/19 13:02
Cal Standard	SHG0232-CAL2	SMM 07-17-19-022	NA	07/17/19 13:04
Cal Standard	SHG0232-CAL3	SMM 07-17-19-023	NA	07/17/19 13:07
Cal Standard	SHG0232-CAL4	SMM 07-17-19-024	NA	07/17/19 13:09
Cal Standard	SHG0232-CAL5	SMM 07-17-19-025	NA	07/17/19 13:11
Cal Standard	SHG0232-CAL7	SMM 07-17-19-027	NA	07/17/19 13:16
Initial Cal Check	SHG0232-ICV1	SMM 07-17-19-028	NA	07/17/19 13:21
Initial Cal Blank	SHG0232-ICB1	SMM 07-17-19-029	NA	07/17/19 13:24
Instrument RL Check	SHG0232-CRL1	SMM 07-17-19-030	NA	07/17/19 13:26
Calibration Check	SHG0232-CCV1	SMM 07-17-19-031	NA	07/17/19 13:28
Calibration Blank	SHG0232-CCB1	SMM 07-17-19-032	NA	07/17/19 13:31
Blank	BHG0333-BLK1	SMM 07-17-19-033	Solid	07/17/19 13:33
Calibration Check	SHG0232-CCV2	SMM 07-17-19-042	NA	07/17/19 13:59
Calibration Blank	SHG0232-CCB2	SMM 07-17-19-043	NA	07/17/19 14:02



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0348

Instrument: CVAA

Calibration: CG00075

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SHG0348-CAL1	SMM 07-25-19-001	NA	07/25/19 11:18
Cal Standard	SHG0348-CAL2	SMM 07-25-19-002	NA	07/25/19 11:20
Cal Standard	SHG0348-CAL3	SMM 07-25-19-003	NA	07/25/19 11:23
Cal Standard	SHG0348-CAL4	SMM 07-25-19-004	NA	07/25/19 11:25
Cal Standard	SHG0348-CAL5	SMM 07-25-19-005	NA	07/25/19 11:27
Cal Standard	SHG0348-CAL7	SMM 07-25-19-007	NA	07/25/19 11:32
Initial Cal Check	SHG0348-ICV1	SMM 07-25-19-008	NA	07/25/19 12:58
Initial Cal Blank	SHG0348-ICB1	SMM 07-25-19-009	NA	07/25/19 13:00
Instrument RL Check	SHG0348-CRL1	SMM 07-25-19-010	NA	07/25/19 13:03
Calibration Check	SHG0348-CCV1	SMM 07-25-19-011	NA	07/25/19 13:05
Calibration Blank	SHG0348-CCB1	SMM 07-25-19-012	NA	07/25/19 13:07
Blank	BHG0542-BLK1	SMM 07-25-19-013	Solid	07/25/19 13:10
LCS	BHG0542-BS1	SMM 07-25-19-014	Solid	07/25/19 13:12
SO-01-190711	19G0163-02RE1	SMM 07-25-19-015	Solid	07/25/19 13:14
SO-01-190711	BHG0542-DUP1	SMM 07-25-19-016	Solid	07/25/19 13:17
SO-01-190711	BHG0542-MS1	SMM 07-25-19-017	Solid	07/25/19 13:19
SO-01-190711	BHG0542-MSD1	SMM 07-25-19-018	Solid	07/25/19 13:21
SO-02-190711	19G0163-03RE1	SMM 07-25-19-019	Solid	07/25/19 13:23
SO-03-190711	19G0163-04RE1	SMM 07-25-19-020	Solid	07/25/19 13:26
SO-04-190711	19G0163-05RE1	SMM 07-25-19-021	Solid	07/25/19 13:28
SO-05-190711	19G0163-06RE1	SMM 07-25-19-022	Solid	07/25/19 13:30
Calibration Check	SHG0348-CCV2	SMM 07-25-19-023	NA	07/25/19 13:33
Calibration Blank	SHG0348-CCB2	SMM 07-25-19-024	NA	07/25/19 13:35
SO-06-190711	19G0163-07RE1	SMM 07-25-19-025	Solid	07/25/19 13:37
SO-07-190711	19G0163-08RE1	SMM 07-25-19-026	Solid	07/25/19 13:40
SO-08-190711	19G0163-09RE1	SMM 07-25-19-027	Solid	07/25/19 13:42
SO-09-190711	19G0163-10RE1	SMM 07-25-19-028	Solid	07/25/19 13:44
SO-10-190711	19G0163-11RE1	SMM 07-25-19-029	Solid	07/25/19 13:47
SO-10-190711D	19G0163-12RE1	SMM 07-25-19-030	Solid	07/25/19 13:49
SO-11-190711	19G0163-13RE1	SMM 07-25-19-031	Solid	07/25/19 13:51



ANALYSIS BATCH (SEQUENCE) SUMMARY
EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0348

Instrument: CVAA

Calibration: CG00075

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
SO-12-190711	19G0163-14RE1	SMM 07-25-19-032	Solid	07/25/19 13:53
SO-13-190711	19G0163-15RE1	SMM 07-25-19-033	Solid	07/25/19 13:56
Calibration Check	SHG0348-CCV3	SMM 07-25-19-035	NA	07/25/19 14:00
Calibration Blank	SHG0348-CCB3	SMM 07-25-19-036	NA	07/25/19 14:03
Calibration Check	SHG0348-CCV4	SMM 07-25-19-047	NA	07/25/19 14:28
Calibration Blank	SHG0348-CCB4	SMM 07-25-19-048	NA	07/25/19 14:30
Calibration Check	SHG0348-CCV5	SMM 07-25-19-052	NA	07/25/19 14:40
Calibration Blank	SHG0348-CCB5	SMM 07-25-19-053	NA	07/25/19 14:42



DETECTION LEVEL STANDARD EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: CVAA

Calibration: CG00046

Sequence: SHG0232

Lab Sample ID: SHG0232-CRL1

Analyte	True	Found	%R	Units	QC Limits
Mercury	0.000100	0.000099	99.2	mg/L	70 - 130

* Values outside of QC limits



DETECTION LEVEL STANDARD
EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: CVAA

Calibration: CG00075

Sequence: SHG0348

Lab Sample ID: SHG0348-CRL1

Analyte	True	Found	%R	Units	QC Limits
Mercury	0.000100	0.000090	90.4	mg/L	70 - 130

* Values outside of QC limits



HOLDING TIME SUMMARY

Analysis: EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-01-190711 19G0163-02RE1	07/11/19 11:05	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:14	14	28	
SO-02-190711 19G0163-03RE1	07/11/19 10:50	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:23	14	28	
SO-03-190711 19G0163-04RE1	07/11/19 08:35	07/11/19 17:25	07/23/19 10:23	12	28	07/25/19 13:26	14	28	
SO-04-190711 19G0163-05RE1	07/11/19 11:30	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:28	14	28	
SO-05-190711 19G0163-06RE1	07/11/19 12:05	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:30	14	28	
SO-06-190711 19G0163-07RE1	07/11/19 12:20	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:37	14	28	
SO-07-190711 19G0163-08RE1	07/11/19 11:55	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:40	14	28	
SO-08-190711 19G0163-09RE1	07/11/19 10:25	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:42	14	28	
SO-09-190711 19G0163-10RE1	07/11/19 10:10	07/11/19 17:25	07/23/19 10:23	12	28	07/25/19 13:44	14	28	
SO-10-190711 19G0163-11RE1	07/11/19 09:45	07/11/19 17:25	07/23/19 10:23	12	28	07/25/19 13:47	14	28	
SO-10-190711D 19G0163-12RE1	07/11/19 09:50	07/11/19 17:25	07/23/19 10:23	12	28	07/25/19 13:49	14	28	
SO-11-190711 19G0163-13RE1	07/11/19 09:10	07/11/19 17:25	07/23/19 10:23	12	28	07/25/19 13:51	14	28	
SO-12-190711 19G0163-14RE1	07/11/19 09:25	07/11/19 17:25	07/23/19 10:23	12	28	07/25/19 13:53	14	28	
SO-13-190711 19G0163-15RE1	07/11/19 12:35	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:56	14	28	
Duplicate BHG0542-DUP1	07/11/19 11:05	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:17	14	28	
Matrix Spike BHG0542-MS1	07/11/19 11:05	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:19	14	28	
Matrix Spike Dup BHG0542-MSD1	07/11/19 11:05	07/11/19 17:25	07/23/19 10:23	11	28	07/25/19 13:21	14	28	

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 7471B

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: CVAA

Analyte	MDL	RL	Units
Mercury	0.00525	0.0250	mg/kg



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-01-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-02 B SDG: 19G0163

Sampled: 07/11/19 11:05 Prepared: 07/16/19 01:31 File ID:

% Solids: 49.02 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	49.02	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-02-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 B SDG: 19G0163

Sampled: 07/11/19 10:50 Prepared: 07/16/19 01:31 File ID:

% Solids: 44.87 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	44.87	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-03-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04 B SDG: 19G0163

Sampled: 07/11/19 08:35 Prepared: 07/16/19 01:31 File ID:

% Solids: 23.77 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	23.77	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-04-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-05 B SDG: 19G0163

Sampled: 07/11/19 11:30 Prepared: 07/16/19 01:31 File ID:

% Solids: 21.73 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	21.73	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-05-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 B SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/16/19 01:31 File ID:

% Solids: 33.67 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	33.67	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-06-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 B SDG: 19G0163

Sampled: 07/11/19 12:20 Prepared: 07/16/19 01:31 File ID:

% Solids: 50.18 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	50.18	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-07-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-08 B SDG: 19G0163

Sampled: 07/11/19 11:55 Prepared: 07/16/19 01:31 File ID:

% Solids: 63.69 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	63.69	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-08-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 B SDG: 19G0163

Sampled: 07/11/19 10:25 Prepared: 07/16/19 01:31 File ID:

% Solids: 47.73 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	47.73	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-09-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-10 B SDG: 19G0163

Sampled: 07/11/19 10:10 Prepared: 07/16/19 01:31 File ID:

% Solids: 66.02 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	66.02	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-10-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-11 B SDG: 19G0163

Sampled: 07/11/19 09:45 Prepared: 07/16/19 01:31 File ID:

% Solids: 71.70 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	71.70	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-13-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 B SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/16/19 01:31 File ID:

% Solids: 87.59 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	87.59	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-13-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 B SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/16/19 01:31 File ID:

% Solids: 87.59 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	87.59	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-12-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14 B SDG: 19G0163

Sampled: 07/11/19 09:25 Prepared: 07/16/19 01:31 File ID:

% Solids: 42.67 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	42.67	1	0.04	0.04	



Form I
INORGANIC ANALYSIS DATA SHEET
SM 2540 G-97

SO-13-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 B SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/16/19 01:31 File ID:

% Solids: 87.59 Preparation: No Prep Wet Chem Analyzed: 07/16/19 02:38

Batch: BHG0358 Sequence: Initial/Final: 10 g Wet / 10 g

Instrument: BAL2 Calibration:

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	87.59	1	0.04	0.04	



PREPARATION BATCH SUMMARY

SM 2540 G-97

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0358

Batch Matrix: Solid

Preparation: No Prep Wet Chem

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02		07/16/19 01:31	
SO-02-190711	19G0163-03		07/16/19 01:31	
SO-03-190711	19G0163-04		07/16/19 01:31	
SO-04-190711	19G0163-05		07/16/19 01:31	
SO-05-190711	19G0163-06		07/16/19 01:31	
SO-06-190711	19G0163-07		07/16/19 01:31	
SO-07-190711	19G0163-08		07/16/19 01:31	
SO-08-190711	19G0163-09		07/16/19 01:31	
SO-09-190711	19G0163-10		07/16/19 01:31	
SO-10-190711	19G0163-11		07/16/19 01:31	
SO-10-190711D	19G0163-12		07/16/19 01:31	
SO-11-190711	19G0163-13		07/16/19 01:31	
SO-12-190711	19G0163-14		07/16/19 01:31	
SO-13-190711	19G0163-15		07/16/19 01:31	
Blank	BHG0358-BLK1		07/16/19 01:31	
SO-01-190711	BHG0358-DUP1		07/16/19 01:31	

TOTAL SOLIDS/VOLATILE SOLIDS (TS /TVS) BENCHSHEET for Solid samples															Batch: BHG0358	
Method: PSEP 1986, SM2540, EPA 160.1															Date: 7/16/2019 2:38	
(dry at 104 (12-24 hr) then combust at 550 (30 min))															Analyst: KLE	
Instrumentation		Drying Ovens:		Muffle Furnace:		12		Analytical Balance:		BAL2						
Batch drying time		TVS (mg/kg dry wt) calculated as:														
record times as mm/dd/yy hh:mm		Final ash wt (g) = (min ash wt - tare wt)														
date/time in oven:		TVS (mg/kg) = [(Dry wt-Ash wt)/ (dry weight)] *1,000,000														
date/time out:		if ash wt > dry wt, "Chk for Err"														
elapsed hrs =		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		
Date & Time:		7/16/19 1:52		7/16/19 2:20		7/17/19 6:06										
Cal Wt (g):		9.9999		9.9999		9.9999										
		Cal OK!		Cal OK!		Cal OK!										
Sample ID	Dish #	Tare Wt. (g)	Dish & Sample (g)	1	2	3	dry Wt (g)	TS (%)	Notes	1	2	3	Ash Wt (g)	TVS (mg/kg)	Notes	
BHG0358-BLK1	1	1.0900	0.0000	1.0899			-0.0001	0.01%								
19G0163-02	2	1.0805	6.2777	3.6280			2.5475	49.02%								
BHG0358-DUP1	3	1.1152	6.8954	3.8465			2.7313	47.25%	RPD-3.7							
19G0163-03	4	1.0947	6.0461	3.3162			2.2215	44.87%								
19G0163-04	5	1.0915	6.0497	2.2701			1.1786	23.77%								
19G0163-05	6	1.0938	6.3450	2.2350			1.1412	21.73%								
19G0163-06	7	1.0942	6.1755	2.8052			1.7110	33.67%								
19G0163-07	8	1.0988	6.6553	3.8873			2.7885	50.18%								
19G0163-08	9	1.0997	7.1280	4.9392			3.8395	63.69%								
19G0163-09	10	1.0893	6.0250	3.4452			2.3559	47.73%								
19G0163-10	11	1.0863	7.7078	5.4581			4.3718	66.02%								
19G0163-11	12	1.0729	6.4145	4.9029			3.8300	71.70%								
19G0163-12	13	1.0917	6.6201	5.0876			3.9959	72.28%								
19G0163-13	14	1.0718	6.0372	2.1396			1.0678	21.50%								
19G0163-14	15	1.0857	7.9385	4.0098			2.9241	42.67%								
19G0163-15	16	1.0858	6.8971	6.1761			5.0903	87.59%								

Total Solids Bench Sheet

Laboratory Section Metals

Oven Identification: 7

Balance ID: B116132369

Samples in Oven: Date: 7/15/19

Time: 1245

Temp: 102°CAnalyst:

Removed from Oven: Date: 7/16/19

Time: 0940

Temp: 101°C

Analyst:

[illegible]

1) Place a check mark in this column if samples have dried > 12 but < 24 hours. When samples have been at 104°C < 12 hours, constant weight must be verified as described in SOP 10023S. Use a 2nd bench sheet for additional weightings.



Form I
METHOD BLANK DATA SHEET
SM 2540 G-97
TotalAnalytes

Blank

Batch: BHG0358

Laboratory ID: BHG0358-BLK1

Prepared: 07/16/19 01:31

Matrix: Solid

Preparation: No Prep Wet Chem

Analyzed: 07/16/19 02:38

Sequence:

Calibration:

Instrument: BAL2

CAS NO.	Analyte	Concentration (%)	Dilution Factor	MDL	MRL	Q
	Total Solids	ND	1	0.04	0.04	U



DUPLICATES
SM 2540 G-97

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: BHG0358-DUP1

Batch: BHG0358

Lab Source ID: 19G0163-02

Preparation: No Prep Wet Chem

Initial/Final: 10 g / 10 g

Source Sample Name: SO-01-190711

% Solids: 49.02

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (%)	C	DUPLICATE CONCENTRATION (%)	C	RPD %	Q
Total Solids	20	49.02		47.25		3.66	

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD



HOLDING TIME SUMMARY

Analysis: SM 2540 G-97

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-01-190711 19G0163-02	07/11/19 11:05	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-02-190711 19G0163-03	07/11/19 10:50	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-03-190711 19G0163-04	07/11/19 08:35	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-04-190711 19G0163-05	07/11/19 11:30	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-05-190711 19G0163-06	07/11/19 12:05	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-06-190711 19G0163-07	07/11/19 12:20	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-07-190711 19G0163-08	07/11/19 11:55	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-08-190711 19G0163-09	07/11/19 10:25	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-09-190711 19G0163-10	07/11/19 10:10	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-10-190711 19G0163-11	07/11/19 09:45	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-10-190711D 19G0163-12	07/11/19 09:50	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-11-190711 19G0163-13	07/11/19 09:10	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-12-190711 19G0163-14	07/11/19 09:25	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
SO-13-190711 19G0163-15	07/11/19 12:35	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	
Duplicate BHG0358-DUP1	07/11/19 11:05	07/11/19 17:25	07/16/19 01:31	4	28	07/16/19 02:38	5	28	

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

SM 2540 G-97

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument:

Analyte	MDL	RL	Units
Total Solids	0.04	0.04	%



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-10-190711E

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water Laboratory ID: 19G0163-01 B SDG: 19G0163

Sampled: 07/11/19 15:10 Prepared: 07/16/19 13:27 File ID: I2190718-038

% Solids: 0.00 Preparation: TWC EPA 3010A Analyzed: 07/18/19 11:48

Batch: BHG0382 Sequence: SHG0263 Initial/Final: 25 mL / 25 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	0.0500	1	0.0047	0.0500	U
7440-43-9	Cadmium	0.0020	1	0.0003	0.0020	U
7440-47-3	Chromium	0.0023	1	0.0013	0.0050	J
7439-89-6	Iron	0.0088	1	0.0013	0.0500	J
7439-92-1	Lead	0.0200	1	0.0019	0.0200	U
7439-96-5	Manganese	0.0010	1	0.0003	0.0010	U



Form I
INORGANIC ANALYSIS DATA SHEET

EPA 6010C

Total Metals

SO-01-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-02 B SDG: 19G0163

Sampled: 07/11/19 11:05 Prepared: 07/16/19 12:00 File ID: I2190718-048

% Solids: 47.69 Preparation: SWC EPA 3050B Analyzed: 07/18/19 12:29

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.034 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	17.5	2	0.953	10.1	
7440-43-9	Cadmium	0.635	2	0.0689	0.406	
7440-47-3	Chromium	34.7	2	0.268	1.01	
7439-89-6	Iron	19400	2	0.264	10.1	
7439-92-1	Lead	17.5	2	0.385	4.06	
7439-96-5	Manganese	732	2	0.0689	0.203	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-02-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 B SDG: 19G0163

Sampled: 07/11/19 10:50 Prepared: 07/16/19 12:00 File ID: I2190718-043

% Solids: 47.66 Preparation: SWC EPA 3050B Analyzed: 07/18/19 12:09

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.076 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	25.6	2	0.916	9.75	
7440-43-9	Cadmium	0.365	2	0.0663	0.390	J
7440-47-3	Chromium	28.2	2	0.257	0.975	
7439-89-6	Iron	35700	2	0.253	9.75	
7439-92-1	Lead	9.21	2	0.370	3.90	
7439-96-5	Manganese	7010	2	0.0663	0.195	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-03-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04 B SDG: 19G0163

Sampled: 07/11/19 08:35 Prepared: 07/16/19 12:00 File ID: I2190718-063

% Solids: 23.97 Preparation: SWC EPA 3050B Analyzed: 07/18/19 13:33

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.02 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	13.6	2	1.92	20.5	J
7440-43-9	Cadmium	0.942	2	0.139	0.818	
7440-47-3	Chromium	30.8	2	0.540	2.05	
7439-89-6	Iron	7090	2	0.532	20.5	
7439-92-1	Lead	67.3	2	0.777	8.18	
7439-96-5	Manganese	1040	2	0.139	0.409	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-04-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-05 B SDG: 19G0163

Sampled: 07/11/19 11:30 Prepared: 07/16/19 12:00 File ID: I2190718-045

% Solids: 22.92 Preparation: SWC EPA 3050B Analyzed: 07/18/19 12:17

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.064 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	47.1	2	1.93	20.5	
7440-43-9	Cadmium	1.20	2	0.139	0.820	
7440-47-3	Chromium	23.7	2	0.541	2.05	
7439-89-6	Iron	51300	2	0.533	20.5	
7439-92-1	Lead	56.6	2	0.779	8.20	
7439-96-5	Manganese	1850	2	0.139	0.410	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-05-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 B SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/16/19 12:00 File ID: I2190718-046

% Solids: 35.60 Preparation: SWC EPA 3050B Analyzed: 07/18/19 12:21

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.088 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	59.2	2	1.21	12.9	
7440-43-9	Cadmium	0.758	2	0.0878	0.516	
7440-47-3	Chromium	33.2	2	0.341	1.29	
7439-89-6	Iron	51400	2	0.336	12.9	
7439-92-1	Lead	19.6	2	0.491	5.16	
7439-96-5	Manganese	6840	2	0.0878	0.258	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-06-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 B SDG: 19G0163

Sampled: 07/11/19 12:20 Prepared: 07/16/19 12:00 File ID: I2190718-066

% Solids: 51.08 Preparation: SWC EPA 3050B Analyzed: 07/18/19 13:46

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.008 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	38.1	2	0.913	9.71	
7440-43-9	Cadmium	0.540	2	0.0660	0.388	
7440-47-3	Chromium	34.1	2	0.256	0.971	
7439-89-6	Iron	27800	2	0.252	9.71	
7439-92-1	Lead	17.6	2	0.369	3.88	
7439-96-5	Manganese	2840	2	0.0660	0.194	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-07-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-08 B SDG: 19G0163

Sampled: 07/11/19 11:55 Prepared: 07/16/19 12:00 File ID: I2190718-067

% Solids: 60.26 Preparation: SWC EPA 3050B Analyzed: 07/18/19 13:50

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.062 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	19.4	2	0.734	7.81	
7440-43-9	Cadmium	0.414	2	0.0531	0.313	
7440-47-3	Chromium	24.2	2	0.206	0.781	
7439-89-6	Iron	19100	2	0.203	7.81	
7439-92-1	Lead	8.38	2	0.297	3.13	
7439-96-5	Manganese	187	2	0.0531	0.156	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-08-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 B SDG: 19G0163

Sampled: 07/11/19 10:25 Prepared: 07/16/19 12:00 File ID: I2190718-068

% Solids: 48.64 Preparation: SWC EPA 3050B Analyzed: 07/18/19 13:54

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.075 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	6.23	2	0.899	9.56	J
7440-43-9	Cadmium	0.408	2	0.0650	0.382	
7440-47-3	Chromium	26.9	2	0.252	0.956	
7439-89-6	Iron	11000	2	0.249	9.56	
7439-92-1	Lead	13.9	2	0.363	3.82	
7439-96-5	Manganese	296	2	0.0650	0.191	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-09-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-10 B SDG: 19G0163

Sampled: 07/11/19 10:10 Prepared: 07/16/19 12:00 File ID: I2190718-069

% Solids: 66.65 Preparation: SWC EPA 3050B Analyzed: 07/18/19 13:58

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.027 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	7.01	2	0.687	7.30	J
7440-43-9	Cadmium	0.324	2	0.0497	0.292	
7440-47-3	Chromium	23.4	2	0.193	0.730	
7439-89-6	Iron	11300	2	0.190	7.30	
7439-92-1	Lead	9.10	2	0.278	2.92	
7439-96-5	Manganese	271	2	0.0497	0.146	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-10-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-11 B SDG: 19G0163

Sampled: 07/11/19 09:45 Prepared: 07/16/19 12:00 File ID: I2190718-070

% Solids: 71.41 Preparation: SWC EPA 3050B Analyzed: 07/18/19 14:02

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.08 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	38.2	5	1.52	16.2	D
7440-43-9	Cadmium	1.47	5	0.110	0.648	D
7440-47-3	Chromium	27.6	5	0.428	1.62	D
7439-89-6	Iron	14800	5	0.421	16.2	D
7439-92-1	Lead	85.5	5	0.616	6.48	D
7439-96-5	Manganese	573	5	0.110	0.324	D



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-10-190711D

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12 B SDG: 19G0163

Sampled: 07/11/19 09:50 Prepared: 07/16/19 12:00 File ID: I2190718-071

% Solids: 71.06 Preparation: SWC EPA 3050B Analyzed: 07/18/19 14:06

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.079 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	33.6	5	1.53	16.3	D
7440-43-9	Cadmium	1.37	5	0.111	0.652	D
7440-47-3	Chromium	24.0	5	0.430	1.63	D
7439-89-6	Iron	12700	5	0.424	16.3	D
7439-92-1	Lead	86.9	5	0.620	6.52	D
7439-96-5	Manganese	565	5	0.111	0.326	D



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-11-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13 B SDG: 19G0163

Sampled: 07/11/19 09:10 Prepared: 07/16/19 12:00 File ID: I2190718-072

% Solids: 22.32 Preparation: SWC EPA 3050B Analyzed: 07/18/19 14:10

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.073 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	12.0	2	1.96	20.9	J
7440-43-9	Cadmium	0.903	2	0.142	0.835	
7440-47-3	Chromium	15.8	2	0.551	2.09	
7439-89-6	Iron	8010	2	0.543	20.9	
7439-92-1	Lead	61.9	2	0.793	8.35	
7439-96-5	Manganese	258	2	0.142	0.418	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-12-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14 B SDG: 19G0163

Sampled: 07/11/19 09:25 Prepared: 07/16/19 12:00 File ID: I2190718-073

% Solids: 43.51 Preparation: SWC EPA 3050B Analyzed: 07/18/19 14:14

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.016 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	5.17	2	1.06	11.3	J
7440-43-9	Cadmium	0.447	2	0.0769	0.452	J
7440-47-3	Chromium	29.5	2	0.299	1.13	
7439-89-6	Iron	13000	2	0.294	11.3	
7439-92-1	Lead	18.6	2	0.430	4.52	
7439-96-5	Manganese	155	2	0.0769	0.226	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 6010C
Total Metals

SO-13-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 B SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/16/19 12:00 File ID: I2190718-074

% Solids: 93.43 Preparation: SWC EPA 3050B Analyzed: 07/18/19 14:18

Batch: BHG0335 Sequence: SHG0263 Initial/Final: 1.048 g Wet / 50 mL

Instrument: ICP2 Calibration: CG00052

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	12.5	2	0.480	5.11	
7440-43-9	Cadmium	0.393	2	0.0347	0.204	
7440-47-3	Chromium	27.2	2	0.135	0.511	
7439-89-6	Iron	12200	2	0.133	5.11	
7439-92-1	Lead	24.5	2	0.194	2.04	
7439-96-5	Manganese	341	2	0.0347	0.102	



PREPARATION BATCH SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0335

Batch Matrix: Solid

Preparation: SWC EPA 3050B

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02	I2190718-048	07/16/19 12:00	
SO-02-190711	19G0163-03	I2190718-043	07/16/19 12:00	
SO-03-190711	19G0163-04	I2190718-063	07/16/19 12:00	
SO-04-190711	19G0163-05	I2190718-045	07/16/19 12:00	
SO-05-190711	19G0163-06	I2190718-046	07/16/19 12:00	
SO-06-190711	19G0163-07	I2190718-066	07/16/19 12:00	
SO-07-190711	19G0163-08	I2190718-067	07/16/19 12:00	
SO-08-190711	19G0163-09	I2190718-068	07/16/19 12:00	
SO-09-190711	19G0163-10	I2190718-069	07/16/19 12:00	
SO-10-190711	19G0163-11	I2190718-070	07/16/19 12:00	
SO-10-190711D	19G0163-12	I2190718-071	07/16/19 12:00	
SO-11-190711	19G0163-13	I2190718-072	07/16/19 12:00	
SO-12-190711	19G0163-14	I2190718-073	07/16/19 12:00	
SO-13-190711	19G0163-15	I2190718-074	07/16/19 12:00	
Blank	BHG0335-BLK1	I2190718-042	07/16/19 12:00	
LCS	BHG0335-BS1	I2190718-051	07/16/19 12:00	
SO-01-190711	BHG0335-DUP1	I2190718-047	07/16/19 12:00	
SO-01-190711	BHG0335-MS1	I2190718-049	07/16/19 12:00	
SO-01-190711	BHG0335-MSD1	I2190718-050	07/16/19 12:00	



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

BHG335

Digestion Log

Analyst: N Date: 7/15/19 Time: 1255
Matrix: so.1 Block ID: #7 Block Temp: 98°C Thermometer: 20-2

ARI Sample ID	Btl #	pH<2	Prep Code: <u>SWC</u>		Prep Code:		Comments
			Initial Wt (g) Vol (mL)	Final Vol (mL)	Initial Wt (g) Vol (mL)	Final Vol (mL)	
19G163-2	B		1.034	50			QC
" -3	B		1.076				
" -4	B		1.020				
" -5	B		1.064				
" -6	B		1.088				
" -7	B		1.008				
" -8	B		1.062				
" -9	B		1.075				
" -10	B		1.027				
" -11	B		1.080				
" -12	B		1.079				
" -13	B		1.073				
" -14	B		1.016				
" -15	B		1.048				
BHG335-BLK1	-		-				
" -BS1	-		-				
" -DUP1	-		1.038				19G163-2
" -MS1	-		1.035				" "
" -MSD1	-		1.039	50			" "
7/15/19 N							

Chemical/Reagent ID:

HNO₃: N HCl: _____ H₂O₂: _____ Tube Lot #: _____



PREPARATION BATCH SUMMARY
EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0382

Batch Matrix: Water

Preparation: TWC EPA 3010A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-10-190711E	19G0163-01	I2190718-038	07/16/19 13:27	
Blank	BHG0382-BLK1	I2190718-030	07/16/19 13:27	
LCS	BHG0382-BS1	I2190718-027	07/16/19 13:27	
SO-10-190711E	BHG0382-DUP1	I2190718-037	07/16/19 13:27	
SO-10-190711E	BHG0382-MS1	I2190718-039	07/16/19 13:27	



Form I
METHOD BLANK DATA SHEET
EPA 6010C
Total Metals

Blank

Batch: BHG0335

Laboratory ID: BHG0335-BLK1

Prepared: 07/16/19 12:00

Matrix: Solid

Preparation: SWC EPA 3050B

Analyzed: 07/18/19 12:05

Sequence: SHG0263

Calibration: CG00052

Instrument: ICP2

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	ND	2	0.470	5.00	U
7440-43-9	Cadmium	ND	2	0.0340	0.200	U
7440-47-3	Chromium	0.264	2	0.132	0.500	J
7439-89-6	Iron	ND	2	0.130	5.00	U
7439-92-1	Lead	ND	2	0.190	2.00	U
7439-96-5	Manganese	ND	2	0.0340	0.100	U



Form I
METHOD BLANK DATA SHEET
EPA 6010C
Total Metals

Blank

Batch: BHG0382

Laboratory ID: BHG0382-BLK1

Prepared: 07/16/19 13:27

Matrix: Water

Preparation: TWC EPA 3010A

Analyzed: 07/18/19 11:14

Sequence: SHG0263

Calibration: CG00052

Instrument: ICP2

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
7440-38-2	Arsenic	ND	1	0.0047	0.0500	U
7440-43-9	Cadmium	ND	1	0.0003	0.0020	U
7440-47-3	Chromium	ND	1	0.0013	0.0050	U
7439-89-6	Iron	0.0025	1	0.0013	0.0500	J
7439-92-1	Lead	ND	1	0.0019	0.0200	U
7439-96-5	Manganese	ND	1	0.0003	0.0010	U



DUPLICATES

EPA 6010C

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: BHG0335-DUP1

Batch: BHG0335

Lab Source ID: 19G0163-02

Preparation: SWC EPA 3050B

Initial/Final: 1.038 g / 50 mL

Source Sample Name: SO-01-190711

% Solids: 47.69

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg dry)	C	DUPLICATE CONCENTRATION (mg/kg dry)	C	RPD %	Q
Arsenic	20	17.5		21.2		19.3	
Cadmium	20	0.635		0.618		2.74	
Chromium	20	34.7		35.8		3.04	
Iron	20	19400		21800		11.2	
Lead	20	17.5		18.7		6.35	
Manganese	20	732		927	*	23.5	*

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = $\pm$ RL instead of 20% RPD



DUPLICATES

EPA 6010C

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: BHG0382-DUP1

Batch: BHG0382

Lab Source ID: 19G0163-01

Preparation: TWC EPA 3010A

Initial/Final: 25 mL / 25 mL

Source Sample Name: SO-10-190711E

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q
Arsenic	20	ND	U	ND	U		
Cadmium	20	ND	U	ND	U		
Chromium	20	0.0023	J	ND	U		
Iron	-0.03 - 0.07	0.0088	J	0.0184	L, J	70.6	L
Lead	20	ND	U	ND	U		
Manganese	20	ND	U	ND	U		

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = $\pm$ RL instead of 20% RPD



INSTRUMENT BLANKS EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: ICP2

Calibration: CG00052

Sequence: SHG0263

Date Analyzed: 07/18/19 09:59

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0263-ICB1	Arsenic	-0.0002	0.0047	0.0500	mg/L	
SHG0263-ICB1	Cadmium	-0.000003	0.0003	0.0020	mg/L	
SHG0263-ICB1	Chromium	-0.0003	0.0013	0.0050	mg/L	
SHG0263-ICB1	Iron	0.0020	0.0013	0.0500	mg/L	
SHG0263-ICB1	Lead	-0.0012	0.0019	0.0200	mg/L	
SHG0263-ICB1	Manganese	0.000003	0.0003	0.0010	mg/L	
SHG0263-CCB1	Arsenic	0.0009	0.0047	0.0500	mg/L	
SHG0263-CCB1	Cadmium	-0.000009	0.0003	0.0020	mg/L	
SHG0263-CCB1	Chromium	-0.0017	0.0013	0.0050	mg/L	
SHG0263-CCB1	Iron	0.0062	0.0013	0.0500	mg/L	
SHG0263-CCB1	Lead	-0.0015	0.0019	0.0200	mg/L	
SHG0263-CCB1	Manganese	0.00008	0.0003	0.0010	mg/L	
SHG0263-CCB2	Arsenic	0.0005	0.0047	0.0500	mg/L	
SHG0263-CCB2	Cadmium	0.0001	0.0003	0.0020	mg/L	
SHG0263-CCB2	Chromium	0.0005	0.0013	0.0050	mg/L	
SHG0263-CCB2	Iron	0.0011	0.0013	0.0500	mg/L	
SHG0263-CCB2	Lead	0.000008	0.0019	0.0200	mg/L	
SHG0263-CCB2	Manganese	0.00002	0.0003	0.0010	mg/L	
SHG0263-IBL1	Arsenic	-0.0004	0.0047	0.0500	mg/L	
SHG0263-IBL1	Cadmium	0.00009	0.0003	0.0020	mg/L	
SHG0263-IBL1	Chromium	0.0016	0.0013	0.0050	mg/L	
SHG0263-IBL1	Iron	0.0057	0.0013	0.0500	mg/L	
SHG0263-IBL1	Lead	-0.0019	0.0019	0.0200	mg/L	
SHG0263-IBL1	Manganese	-0.0001	0.0003	0.0010	mg/L	
SHG0263-CCB3	Arsenic	-0.0010	0.0047	0.0500	mg/L	
SHG0263-CCB3	Cadmium	0.0002	0.0003	0.0020	mg/L	
SHG0263-CCB3	Chromium	-0.0007	0.0013	0.0050	mg/L	
SHG0263-CCB3	Iron	0.0020	0.0013	0.0500	mg/L	
SHG0263-CCB3	Lead	-0.0014	0.0019	0.0200	mg/L	
SHG0263-CCB3	Manganese	-0.0002	0.0003	0.0010	mg/L	
SHG0263-CCB4	Arsenic	0.00008	0.0047	0.0500	mg/L	
SHG0263-CCB4	Cadmium	0.0001	0.0003	0.0020	mg/L	
SHG0263-CCB4	Chromium	0.0010	0.0013	0.0050	mg/L	
SHG0263-CCB4	Iron	0.0015	0.0013	0.0500	mg/L	



INSTRUMENT BLANKS EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: ICP2

Calibration: CG00052

Sequence: SHG0263

Date Analyzed: 07/18/19 12:50

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0263-CCB4	Lead	-0.0017	0.0019	0.0200	mg/L	
SHG0263-CCB4	Manganese	0.000004	0.0003	0.0010	mg/L	
SHG0263-CCB5	Arsenic	0.0007	0.0047	0.0500	mg/L	
SHG0263-CCB5	Cadmium	0.0001	0.0003	0.0020	mg/L	
SHG0263-CCB5	Chromium	0.0017	0.0013	0.0050	mg/L	
SHG0263-CCB5	Iron	0.0016	0.0013	0.0500	mg/L	
SHG0263-CCB5	Lead	-0.0011	0.0019	0.0200	mg/L	
SHG0263-CCB5	Manganese	-0.0002	0.0003	0.0010	mg/L	
SHG0263-CCB6	Arsenic	0.0011	0.0047	0.0500	mg/L	
SHG0263-CCB6	Cadmium	0.0001	0.0003	0.0020	mg/L	
SHG0263-CCB6	Chromium	0.00009	0.0013	0.0050	mg/L	
SHG0263-CCB6	Iron	0.0025	0.0013	0.0500	mg/L	
SHG0263-CCB6	Lead	-0.0004	0.0019	0.0200	mg/L	
SHG0263-CCB6	Manganese	-0.00009	0.0003	0.0010	mg/L	



LCS / LCS DUPLICATE RECOVERY

EPA 6010C

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/18/19 12:41

Batch: BHG0335

Laboratory ID: BHG0335-BS1

Preparation: SWC EPA 3050B

Sequence Name: LCS

Initial/Final: 1 g / 50 mL

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Arsenic	200	210		105	80 - 120
Cadmium	50.0	50.6		101	80 - 120
Chromium	50.0	51.0		102	80 - 120
Iron	200	201		101	80 - 120
Lead	200	205		102	80 - 120
Manganese	50.0	48.9		97.9	80 - 120

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 6010C

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/18/19 11:01

Batch: BHG0382

Laboratory ID: BHG0382-BS1

Preparation: TWC EPA 3010A

Sequence Name: LCS

Initial/Final: 25 mL / 25 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	Q	LCS % REC. #	QC LIMITS REC.
Arsenic	2.00	2.03		102	80 - 120
Cadmium	0.500	0.502		100	80 - 120
Chromium	0.500	0.499		99.8	80 - 120
Iron	2.00	1.96		98.2	80 - 120
Lead	2.00	1.99		99.6	80 - 120
Manganese	0.500	0.478		95.7	80 - 120

* Indicates values outside of QC limits



MS / MS DUPLICATE RECOVERY

EPA 6010C

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/18/19 12:33

Batch: BHG0335

Laboratory ID: BHG0335-MS1

Preparation: SWC EPA 3050B

Sequence Name: Matrix Spike

Initial/Final: 1.035 g / 50 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Arsenic	405	17.5		391		92.1	75 - 125
Cadmium	101	0.635		91.1		89.3	75 - 125
Chromium	101	34.7		117		80.8	75 - 125
Iron	405	19400		17700	HC	-421 *	75 - 125
Lead	405	17.5		379		89.3	75 - 125
Manganese	101	732		754	HC	22.5 *	75 - 125

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY

EPA 6010C

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/18/19 12:37

Batch: BHG0335

Laboratory ID: BHG0335-MSD1

Preparation: SWC EPA 3050B

Sequence Name: Matrix Spike Dup

Initial/Final: 1.039 g / 50 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	MSD CONCENTRATION (mg/kg dry)	Q	MSD % REC. #	% RPD #	QC LIMITS	
						RPD	REC.
Arsenic	404	411		97.6	5.17	20	75 - 125
Cadmium	101	97.0		95.5	6.27	20	75 - 125
Chromium	101	126		90.3	7.73	20	75 - 125
Iron	404	20700	HC	309 *	15.4	20	75 - 125
Lead	404	406		96.1	6.68	20	75 - 125
Manganese	101	829	HC	96.1	9.37	20	75 - 125

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY

EPA 6010C

Total Metals

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/18/19 11:52

Batch: BHG0382

Laboratory ID: BHG0382-MS1

Preparation: TWC EPA 3010A

Sequence Name: Matrix Spike

Initial/Final: 25 mL / 25 mL

Source Sample: SO-10-190711E

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	Q	MS CONCENTRATION (mg/L)	Q	MS % REC. #	QC LIMITS REC.
Arsenic	2.00	ND	U	2.05		103	75 - 125
Cadmium	0.500	ND	U	0.497		99.4	75 - 125
Chromium	0.500	0.0023	J	0.494		98.3	75 - 125
Iron	2.00	0.0088	J	1.96		97.3	75 - 125
Lead	2.00	ND	U	2.01		100	75 - 125
Manganese	0.500	ND	U	0.482		96.3	75 - 125

* Values outside of QC limits



INITIAL CALIBRATION DATA

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00052

Instrument: ICP2

Calibration Date: 07/18/2019 9:40

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Arsenic	0	0	0		10	1382.068	0		0			
Cadmium	0	0	10	23617.57	0		0		0			
Chromium	0	0	10	3962.377	0		0		0			
Iron	0	0	0		0		0		100	987.5511		
Manganese	0	0	10	37555.74	0		0		0			
Lead	0	0	0		10	6963.742	0		0			



INITIAL CALIBRATION DATA

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CG00052

Instrument: ICP2

Calibration Date: 07/18/2019 9:40

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Arsenic	691.034	141.4	1.0000			
Cadmium	11808.79	141.4	1.0000			
Chromium	1981.188	141.4	1.0000			
Iron	493.7755	141.4	1.0000			
Manganese	18777.87	141.4	1.0000			
Lead	3481.871	141.4	1.0000			



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. - 077C8121202

IEC Date: 4-26-19

Analysis Date: 7-18-19

Analyst: TH

LR Date: 4-26-19

Sequence: SH60263

Page: 1 of 4

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		SEQ-CAL1	H6894		
		-CAL2	H6684		
		-CAL3	H6685		
		-CAL4	H6686		
		-CAL5	H6687		
		-ICV1	HS329		
		-ICB1	H6894		
		-CPL1	HS484		
		-IFA1	HS485		
		-IFB1	HS486		
		-CCV1	HS329		
		↓ -CCB1	H6894		
		BH60380-BLK1	THC		
		1960095-01			
		1960132-01			
		1960133-01			
		BH60380-SRM1		5	
		1960096-01			
		BH60380-DUP1			
		↓ -MS1			
		↓ -BS1			
		BH60382-BS1			
		SEQ-CW2			



Analytical Resources,
Incorporated
Analytical Chemists and
Consultants

SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. - 077C8121202

IEC Date:

Analysis Date: 7-18-19

Analyst: TH

LR Date:

Sequence:

Page: 2 of 4

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		SEQ-CC32			
		BHG0382-BULK	TWC		
		1960207-01	↓		
		↓ -02			
		↓ -03			
		1960208-01			cd ↓ cd nr
		1960187-01	↓	5	
		SEQ-IBL1	—		BLO.
		BHG0382-DUP1	TWC		
		1960163-01	↓		
		BHG0382-MS1	↓		
		SEQ-CC33			
		↓ -CC33			
		BHG0335-BULK	SWC	2	
		1960163-03	↓		
✓		↓ -04		5	ZZ & Dil.
		↓ -05		2	
		↓ -06			
		BHG0335-DUP1			mn RPD (E2)
		1960163-02			
		BHG0335-MS1			Mg 1/2 ↓ (E2) Fe, mn STL
		↓ -MSD1			↓
		↓ -ISS1	↓	↓	



SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. - 077C8121202

IEC Date:

Analysis Date: 7-18-19

Analyst: TH

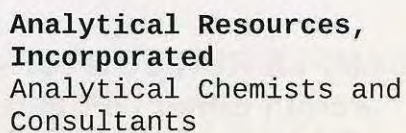
LR Date:

Sequence:

Page: 3 of 4

All corrections made by analyst unless otherwise noted.

Edit Label	Delete Data	ARI Sample ID	Prep. Code	Dilution	Comments
		SEQ-CCW4			
		↓ -CC34			
		13HG0399-BLK1	LEU	5	0.003283a (EZ)
		19F0332-29	↓	↓	
		↓ -35			
		↓ -37			
		↓ -38			
		1960196-02			
		13HG0399-Dup1			
		1960183-01			
		13HG0399-MS1	↓	↓	
		1960163-04	SWC	2	
		SEQ-CCW5			
		↓ -CC35			
		1960163-07	SWC	2	
		↓ -08	↓	↓	
		↓ -09			
		↓ -10		↓	
		↓ -11		5	
		↓ -12		↓	
		↓ -13		2	
		↓ -14	↓	↓	
		↓ -15	↓	↓	



SAMPLE RUN LOG-ICP-OES-02
Perkin Elmer OPTIMA 7300
Serial No. – 077C8121202

Analyst: 77

Page: 4 of 4

All corrections made by analyst unless otherwise noted.

[illegible]

Nebulizer Parameters: Hg_ReAlign

Analyte	Back Pressure	Flow
All	154.0 kPa	0.65 L/min

7/18/2019 9:17:25 AM Hg ReAlign... Actual peak offset (nm): 0.003
Drift (nm): 0.000 Slit adjustment: 0

=====

Analysis Begun

Start Time: 7/18/2019 9:20:37 AM	Plasma On Time: 7/18/2019 8:41:29 AM
Logged In Analyst: Metals Instrument Controller	Technique: ICP Continuous
Spectrometer: Optima 7300 DV, S/N 077C8121202	Autosampler: ESI

Sample Information File: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Sample Information\
BLKS.sif

Batch ID:

Results Data Set: I2190718

Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

=====

Method Loaded

Method Name: ELMT7300bcESI2FAST

Method Last Saved: 7/15/2019 11:03:39 AM

IEC File: IEC042619A.iec

MSF File:

Method Description: 12Axial Elements

Analyte	Calibration Equation	Processing	View	Internal Standard	IEC
Ag 328.068	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Al 308.215	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
As 188.979	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
B 249.677	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Ba 233.527	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Be 313.042	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Ca 317.933	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Cd 228.802	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Co 228.616	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Cr 267.716	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Cu 324.752	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Fe 273.955	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
K 766.490	Lin Thru 0	Peak Area	Radial	ScR 361.383	No
Mg 279.077	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Mn 257.610	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Mo 202.031	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Na 589.592	Lin Thru 0	Peak Area	Radial	ScR 361.383	No
Na 330.237	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Ni 231.604	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Pb 220.353	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Sb 206.836	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Se 196.026	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Si 288.158	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Sn 189.927	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Sr 421.552	Lin Thru 0	Peak Area	Radial	ScR 361.383	No
Ti 334.903	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
Tl 190.801	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
V 292.402	Lin Thru 0	Peak Area	Axial	ScA 357.253	Yes
Zn 206.200	Lin Thru 0	Peak Area	Radial	ScR 361.383	Yes
ScA 357.253	Lin, Calc Int	Peak Area	Axial	n/a	n/a
ScR 361.383	Lin, Calc Int	Peak Area	Radial	n/a	n/a

Sequence No.: 1

Autosampler Location: 1

Sample ID: B1

Date Collected: 7/18/2019 9:20:46 AM

TH 07-18-19

Data Type: Original

Dilution: 1X

Nebulizer Parameters: B1

Analyte	Back Pressure	Flow
All	154.0 kPa	0.65 L/min

=====
Analysis Begun

Start Time: 7/18/2019 9:40:46 AM

Plasma On Time: 7/18/2019 8:41:29 AM

Logged In Analyst: Metals Instrument Controller

Technique: ICP Continuous

Spectrometer: Optima 7300 DV, S/N 077C8121202

Autosampler: ESI

Sample Information File: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Sample Information\
0718.sif

Batch ID:

Results Data Set: I2190718

Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

=====
Sequence No.: 1

Autosampler Location: 1

Sample ID: SEQ-CAL1

Date Collected: 7/18/2019 9:40:53 AM

Data Type: Original

Nebulizer Parameters: SEQ-CAL1

Analyte	Back Pressure	Flow
All	155.0 kPa	0.65 L/min

Mean Data: SEQ-CAL1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
ScA 357.253	2037401.0	7886.29	0.39%	100.0	%
ScR 361.383	232817.8	1032.29	0.44%	100.0	%
Ag 328.068†	-89.6	29.89	33.35%	[0.00]	mg/L
Al 308.215†	322.9	18.31	5.67%	[0.00]	mg/L
As 188.979†	-6.7	0.50	7.49%	[0.00]	mg/L
B 249.677†	59.8	4.81	8.04%	[0.00]	mg/L
Ba 233.527†	22.5	1.79	7.96%	[0.00]	mg/L
Be 313.042†	1474.7	16.11	1.09%	[0.00]	mg/L
Ca 317.933†	228.4	11.07	4.85%	[0.00]	mg/L
Cd 228.802†	293.6	2.31	0.79%	[0.00]	mg/L
Co 228.616†	-33.3	0.10	0.29%	[0.00]	mg/L
Cr 267.716†	-173.2	4.76	2.75%	[0.00]	mg/L
Cu 324.752†	2009.7	61.14	3.04%	[0.00]	mg/L
Fe 273.955†	31.7	2.05	6.49%	[0.00]	mg/L
K 766.490†	369.7	26.68	7.22%	[0.00]	mg/L
Mg 279.077†	106.1	0.75	0.71%	[0.00]	mg/L
Mn 257.610†	263.3	3.35	1.27%	[0.00]	mg/L
Mo 202.031†	45.5	2.77	6.10%	[0.00]	mg/L
Na 589.592†	-8.0	12.27	152.59%	[0.00]	mg/L
Na 330.237†	-256.1	6.10	2.38%	[0.00]	mg/L
Ni 231.604†	-51.5	2.44	4.73%	[0.00]	mg/L
Pb 220.353†	28.6	4.13	14.45%	[0.00]	mg/L
Sb 206.836†	52.9	7.17	13.56%	[0.00]	mg/L
Se 196.026†	-38.5	1.35	3.51%	[0.00]	mg/L
Si 288.158†	2.1	13.91	653.00%	[0.00]	mg/L
Sn 189.927†	-14.1	2.31	16.39%	[0.00]	mg/L
Sr 421.552†	809.5	28.99	3.58%	[0.00]	mg/L
Ti 334.903†	-69.1	10.40	15.05%	[0.00]	mg/L
Tl 190.801†	-27.4	3.19	11.63%	[0.00]	mg/L
V 292.402†	209.9	5.05	2.41%	[0.00]	mg/L
Zn 206.200†	15.9	1.48	9.28%	[0.00]	mg/L

=====
Sequence No.: 2

Autosampler Location: 2

Sample ID: SEQ-CAL2

Date Collected: 7/18/2019 9:44:57 AM

Data Type: Original

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CAL2

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-CAL2

Mean Corrected

Calib

Analyte	Intensity	Std.Dev.	RSD	Conc. Units
ScA 357.253	2051488.6	8789.29	0.43%	100.7 %
ScR 361.383	233932.9	991.35	0.42%	100.5 %
Ba 233.527†	45645.3	101.74	0.22%	[10] mg/L
Cd 228.802†	236175.7	370.24	0.16%	[10] mg/L
Co 228.616†	312544.4	1345.27	0.43%	[10] mg/L
Cr 267.716†	39623.8	341.93	0.86%	[10] mg/L
Cu 324.752†	1953774.7	2388.04	0.12%	[10] mg/L
Mn 257.610†	375557.4	297.05	0.08%	[10] mg/L
V 292.402†	799289.9	6171.30	0.77%	[10] mg/L

Sequence No.: 3

Sample ID: SEQ-CAL3

Autosampler Location: 3

Date Collected: 7/18/2019 9:46:41 AM

Data Type: Original

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CAL3

Analyte	Back Pressure	Flow
All	155.0 kPa	0.65 L/min

Mean Data: SEQ-CAL3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc. Units
ScA 357.253	2018397.1	1141.15	0.06%	99.07 %
ScR 361.383	234118.1	377.18	0.16%	100.6 %
Ag 328.068†	147724.1	251.59	0.17%	[1.0] mg/L
As 188.979†	13820.7	67.44	0.49%	[10] mg/L
B 249.677†	75068.2	257.13	0.34%	[10] mg/L
Be 313.042†	2396485.0	9052.41	0.38%	[5.0] mg/L
Na 589.592†	415612.8	1101.27	0.26%	[50] mg/L
Ni 231.604†	33228.4	144.55	0.44%	[10] mg/L
Pb 220.353†	69637.4	281.76	0.40%	[10] mg/L
Se 196.026†	11121.5	61.36	0.55%	[10] mg/L
Sr 421.552†	1402617.6	14147.18	1.01%	[5] mg/L
Tl 190.801†	19644.4	42.03	0.21%	[10] mg/L
Zn 206.200†	25082.0	45.98	0.18%	[10] mg/L

Sequence No.: 4

Sample ID: SEQ-CAL4

Autosampler Location: 4

Date Collected: 7/18/2019 9:48:56 AM

Data Type: Original

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CAL4

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-CAL4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc. Units
ScA 357.253	2060939.8	6598.14	0.32%	101.2 %
ScR 361.383	235458.3	738.27	0.31%	101.1 %
Mo 202.031†	161792.9	1410.03	0.87%	[10] mg/L
Sb 206.836†	25286.0	206.47	0.82%	[10] mg/L
Si 288.158†	11233.5	150.16	1.34%	[10] mg/L
Sn 189.927†	34839.6	461.80	1.33%	[10] mg/L
Ti 334.903†	149603.3	1059.86	0.71%	[10] mg/L

Sequence No.: 5

Sample ID: SEQ-CAL5

Autosampler Location: 5

Date Collected: 7/18/2019 9:51:09 AM

Data Type: Original

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CAL5

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-CAL5

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc. Units
ScA 357.253	1929345.1	7143.32	0.37%	94.70 %
ScR 361.383	233321.5	487.35	0.21%	100.2 %
Al 308.215†	40125.4	30.85	0.08%	[30] mg/L
Ca 317.933†	308236.2	1834.99	0.60%	[30] mg/L
Fe 273.955†	98755.1	556.12	0.56%	[100] mg/L
K 766.490†	100762.2	888.80	0.88%	[100] mg/L
Mg 279.077†	36151.2	51.83	0.14%	[30] mg/L
Na 330.237†	2057.8	25.54	1.24%	[100] mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	1	Lin Thru 0	0.0	147700	0.00000	1.000000	
Al 308.215	1	Lin Thru 0	0.0	1338	0.00000	1.000000	
As 188.979	1	Lin Thru 0	0.0	1382	0.00000	1.000000	
B 249.677	1	Lin Thru 0	0.0	7507	0.00000	1.000000	
Ba 233.527	1	Lin Thru 0	0.0	4565	0.00000	1.000000	
Be 313.042	1	Lin Thru 0	0.0	479300	0.00000	1.000000	
Ca 317.933	1	Lin Thru 0	0.0	10270	0.00000	1.000000	
Cd 228.802	1	Lin Thru 0	0.0	23620	0.00000	1.000000	
Co 228.616	1	Lin Thru 0	0.0	31250	0.00000	1.000000	
Cr 267.716	1	Lin Thru 0	0.0	3962	0.00000	1.000000	
Cu 324.752	1	Lin Thru 0	0.0	195400	0.00000	1.000000	
Fe 273.955	1	Lin Thru 0	0.0	987.6	0.00000	1.000000	
K 766.490	1	Lin Thru 0	0.0	1008	0.00000	1.000000	
Mg 279.077	1	Lin Thru 0	0.0	1205	0.00000	1.000000	
Mn 257.610	1	Lin Thru 0	0.0	37560	0.00000	1.000000	
Mo 202.031	1	Lin Thru 0	0.0	16180	0.00000	1.000000	
Na 589.592	1	Lin Thru 0	0.0	8312	0.00000	1.000000	
Na 330.237	1	Lin Thru 0	0.0	20.58	0.00000	1.000000	
Ni 231.604	1	Lin Thru 0	0.0	3323	0.00000	1.000000	
Pb 220.353	1	Lin Thru 0	0.0	6964	0.00000	1.000000	
Sb 206.836	1	Lin Thru 0	0.0	2529	0.00000	1.000000	
Se 196.026	1	Lin Thru 0	0.0	1112	0.00000	1.000000	
Si 288.158	1	Lin Thru 0	0.0	1123	0.00000	1.000000	
Sn 189.927	1	Lin Thru 0	0.0	3484	0.00000	1.000000	
Sr 421.552	1	Lin Thru 0	0.0	280500	0.00000	1.000000	
Ti 334.903	1	Lin Thru 0	0.0	14960	0.00000	1.000000	
Tl 190.801	1	Lin Thru 0	0.0	1964	0.00000	1.000000	
V 292.402	1	Lin Thru 0	0.0	79930	0.00000	1.000000	
Zn 206.200	1	Lin Thru 0	0.0	2508	0.00000	1.000000	

=====
Analysis Begun

Start Time: 7/18/2019 9:55:23 AM

Plasma On Time: 7/18/2019 8:41:29 AM

Logged In Analyst: Metals Instrument Controller

Technique: ICP Continuous

Spectrometer: Optima 7300 DV, S/N 077C8121202

Autosampler: ESI

Sample Information File: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Sample Information\
0718.sif

Batch ID:

Results Data Set: I2190718

Results Library: C:\Documents and Settings\All Users\PerkinElmer\ICP\Data\Results\Results.mdb

Sequence No.: 1

Autosampler Location: 7

Sample ID: SEQ-ICV1

Date Collected: 7/18/2019 9:55:30 AM

Data Type: Original

Dilution: 1X

Nebulizer Parameters: SEQ-ICV1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-ICV1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2018084.0	99.05 %	0.517			0.52%
ScR 361.383	232866.5	100.0 %	0.23			0.23%
Ag 328.068†	148810.2	1.008 mg/L	0.0037	1.008 mg/L	0.0037	0.37%
Al 308.215†	2687.6	1.972 mg/L	0.0115	1.972 mg/L	0.0115	0.58%
As 188.979†	2698.4	1.976 mg/L	0.0192	1.976 mg/L	0.0192	0.97%
B 249.677†	7618.9	1.014 mg/L	0.0057	1.014 mg/L	0.0057	0.56%
Ba 233.527†	4525.5	0.9896 mg/L	0.00176	0.9896 mg/L	0.00176	0.18%
Be 313.042†	480721.1	0.9988 mg/L	0.00687	0.9988 mg/L	0.00687	0.69%
Ca 317.933†	21173.1	2.048 mg/L	0.0080	2.048 mg/L	0.0080	0.39%
Cd 228.802†	23581.4	0.9864 mg/L	0.00196	0.9864 mg/L	0.00196	0.20%
Co 228.616†	30125.9	0.9620 mg/L	0.00562	0.9620 mg/L	0.00562	0.58%
Cr 267.716†	3934.6	0.9928 mg/L	0.00338	0.9928 mg/L	0.00338	0.34%
Cu 324.752†	193065.3	0.9879 mg/L	0.00316	0.9879 mg/L	0.00316	0.32%
Fe 273.955†	1975.3	1.993 mg/L	0.0089	1.993 mg/L	0.0089	0.44%
K 766.490†	20309.5	20.16 mg/L	0.076	20.16 mg/L	0.076	0.38%
Mg 279.077†	2397.5	2.000 mg/L	0.0114	2.000 mg/L	0.0114	0.57%
Mn 257.610†	35627.0	0.9490 mg/L	0.00464	0.9490 mg/L	0.00464	0.49%
Mo 202.031†	15961.3	0.9864 mg/L	0.00314	0.9864 mg/L	0.00314	0.32%
Na 589.592†	418163.1	50.31 mg/L	0.215	50.31 mg/L	0.215	0.43%
Na 330.237†	1043.1	50.47 mg/L	0.204	50.47 mg/L	0.204	0.40%
Ni 231.604†	3360.6	1.013 mg/L	0.0008	1.013 mg/L	0.0008	0.08%
Pb 220.353†	13554.0	1.948 mg/L	0.0031	1.948 mg/L	0.0031	0.16%
Sb 206.836†	5276.4	2.083 mg/L	0.0162	2.083 mg/L	0.0162	0.78%
Se 196.026†	2255.5	2.027 mg/L	0.0207	2.027 mg/L	0.0207	1.02%
Si 288.158†	2328.1	2.074 mg/L	0.0069	2.074 mg/L	0.0069	0.33%
Sn 189.927†	3484.8	1.002 mg/L	0.0092	1.002 mg/L	0.0092	0.92%
Sr 421.552†	282292.8	1.006 mg/L	0.0096	1.006 mg/L	0.0096	0.95%
Ti 334.903†	14685.4	0.9803 mg/L	0.00489	0.9803 mg/L	0.00489	0.50%
Tl 190.801†	3931.0	1.994 mg/L	0.0108	1.994 mg/L	0.0108	0.54%
V 292.402†	77535.3	0.9772 mg/L	0.00480	0.9772 mg/L	0.00480	0.49%
Zn 206.200†	2539.5	1.011 mg/L	0.0066	1.011 mg/L	0.0066	0.65%

Sequence No.: 2
Sample ID: SEQ-ICB1

Autosampler Location: 1
Date Collected: 7/18/2019 9:59:35 AM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-ICB1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-ICB1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2057476.9	101.0	%	0.14				0.14%
ScR 361.383	235429.7	101.1	%	0.25				0.25%
Ag 328.068†	13.2	0.00009	mg/L	0.000047	0.00009	mg/L	0.000047	52.18%
Al 308.215†	-15.5	-0.01159	mg/L	0.010455	-0.01159	mg/L	0.010455	90.24%
As 188.979†	-0.2	-0.00015	mg/L	0.002071	-0.00015	mg/L	0.002071	>999.9%
B 249.677†	36.2	0.00482	mg/L	0.001789	0.00482	mg/L	0.001789	37.12%
Ba 233.527†	-3.5	-0.00076	mg/L	0.000754	-0.00076	mg/L	0.000754	99.59%
Be 313.042†	6.4	0.00001	mg/L	0.000078	0.00001	mg/L	0.000078	523.97%
Ca 317.933†	4.4	0.00042	mg/L	0.000902	0.00042	mg/L	0.000902	212.23%
Cd 228.802†	-0.1	-0.00000	mg/L	0.000139	-0.00000	mg/L	0.000139	>999.9%
Co 228.616†	0.1	0.00000	mg/L	0.000059	0.00000	mg/L	0.000059	>999.9%
Cr 267.716†	-1.0	-0.00026	mg/L	0.002086	-0.00026	mg/L	0.002086	802.41%
Cu 324.752†	33.7	0.00017	mg/L	0.000152	0.00017	mg/L	0.000152	88.28%
Fe 273.955†	2.0	0.00203	mg/L	0.003617	0.00203	mg/L	0.003617	178.46%
K 766.490†	-10.0	-0.00994	mg/L	0.023111	-0.00994	mg/L	0.023111	232.53%
Mg 279.077†	2.7	0.00227	mg/L	0.005577	0.00227	mg/L	0.005577	245.20%
Mn 257.610†	0.1	0.00000	mg/L	0.000054	0.00000	mg/L	0.000054	>999.9%
Mo 202.031†	15.9	0.00098	mg/L	0.000564	0.00098	mg/L	0.000564	57.23%
Na 589.592†	70.7	0.00851	mg/L	0.007302	0.00851	mg/L	0.007302	85.85%
Na 330.237†	-0.9	-0.04353	mg/L	1.067675	-0.04353	mg/L	1.067675	>999.9%
Ni 231.604†	0.5	0.00017	mg/L	0.001519	0.00017	mg/L	0.001519	915.01%
Pb 220.353†	-8.5	-0.00122	mg/L	0.001050	-0.00122	mg/L	0.001050	85.84%
Sb 206.836†	2.2	0.00088	mg/L	0.001039	0.00088	mg/L	0.001039	118.30%
Se 196.026†	3.2	0.00284	mg/L	0.007498	0.00284	mg/L	0.007498	264.16%
Si 288.158†	4.9	0.00437	mg/L	0.002509	0.00437	mg/L	0.002509	57.43%
Sn 189.927†	2.3	0.00066	mg/L	0.000737	0.00066	mg/L	0.000737	111.61%
Sr 421.552†	-2.7	-0.00001	mg/L	0.000029	-0.00001	mg/L	0.000029	301.98%
Ti 334.903†	6.6	0.00044	mg/L	0.001944	0.00044	mg/L	0.001944	442.92%
Tl 190.801†	0.3	0.00017	mg/L	0.001684	0.00017	mg/L	0.001684	>999.9%
V 292.402†	-27.3	-0.00034	mg/L	0.000430	-0.00034	mg/L	0.000430	125.41%
Zn 206.200†	0.5	0.00020	mg/L	0.000722	0.00020	mg/L	0.000722	368.19%

Sequence No.: 3
Sample ID: SEQ-CRL1

Autosampler Location: 301
Date Collected: 7/18/2019 10:03:34 AM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CRL1

Analyte	Back Pressure	Flow
All	155.0 kPa	0.65 L/min

Mean Data: SEQ-CRL1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2046563.0	100.4	%	0.22				0.22%
ScR 361.383	237432.7	102.0	%	0.16				0.16%
Ag 328.068†	424.2	0.00287	mg/L	0.000309	0.00287	mg/L	0.000309	10.76%
Al 308.215†	50.8	0.03784	mg/L	0.002091	0.03784	mg/L	0.002091	5.53%
As 188.979†	60.5	0.04392	mg/L	0.000396	0.04392	mg/L	0.000396	0.90%
B 249.677†	163.6	0.02180	mg/L	0.001934	0.02180	mg/L	0.001934	8.87%
Ba 233.527†	15.5	0.00338	mg/L	0.000706	0.00338	mg/L	0.000706	20.90%
Be 313.042†	409.9	0.00085	mg/L	0.000047	0.00085	mg/L	0.000047	5.50%
Ca 317.933†	445.6	0.04332	mg/L	0.001256	0.04332	mg/L	0.001256	2.90%
Cd 228.802†	52.9	0.00196	mg/L	0.000167	0.00196	mg/L	0.000167	8.49%
Co 228.616†	85.2	0.00272	mg/L	0.000136	0.00272	mg/L	0.000136	5.00%
Cr 267.716†	19.4	0.00490	mg/L	0.001642	0.00490	mg/L	0.001642	33.48%
Cu 324.752†	389.6	0.00199	mg/L	0.000139	0.00199	mg/L	0.000139	6.95%
Fe 273.955†	49.3	0.04995	mg/L	0.001518	0.04995	mg/L	0.001518	3.04%
K 766.490†	462.2	0.4587	mg/L	0.01138	0.4587	mg/L	0.01138	2.48%
Mg 279.077†	66.0	0.05478	mg/L	0.010242	0.05478	mg/L	0.010242	18.70%
Mn 257.610†	34.9	0.00093	mg/L	0.000109	0.00093	mg/L	0.000109	11.71%
Mo 202.031†	78.8	0.00487	mg/L	0.000214	0.00487	mg/L	0.000214	4.39%
Na 589.592†	3889.2	0.4679	mg/L	0.00320	0.4679	mg/L	0.00320	0.68%
Na 330.237†	9.5	0.4572	mg/L	0.37116	0.4572	mg/L	0.37116	81.18%
Ni 231.604†	33.4	0.01010	mg/L	0.000762	0.01010	mg/L	0.000762	7.55%
Pb 220.353†	122.1	0.01756	mg/L	0.000667	0.01756	mg/L	0.000667	3.80%
Sb 206.836†	124.8	0.04936	mg/L	0.002809	0.04936	mg/L	0.002809	5.69%
Se 196.026†	59.1	0.05316	mg/L	0.002760	0.05316	mg/L	0.002760	5.19%
Si 288.158†	77.0	0.06857	mg/L	0.004910	0.06857	mg/L	0.004910	7.16%
Sn 189.927†	35.7	0.01029	mg/L	0.000170	0.01029	mg/L	0.000170	1.65%
Sr 421.552†	264.6	0.00094	mg/L	0.000091	0.00094	mg/L	0.000091	9.62%
Ti 334.903†	74.6	0.00498	mg/L	0.001866	0.00498	mg/L	0.001866	37.47%
Tl 190.801†	93.5	0.04758	mg/L	0.001619	0.04758	mg/L	0.001619	3.40%
V 292.402†	171.8	0.00219	mg/L	0.000338	0.00219	mg/L	0.000338	15.46%
Zn 206.200†	22.9	0.00910	mg/L	0.000578	0.00910	mg/L	0.000578	6.35%

Sequence No.: 4
Sample ID: SEQ-IFA1

Autosampler Location: 302
Date Collected: 7/18/2019 10:07:33 AM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-IFA1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-IFA1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2020583.2	99.17	%	0.802				0.81%
ScR 361.383	231162.1	99.29	%	0.118				0.12%
Ag 328.068†	-181.0	-0.00123	mg/L	0.000092	-0.00123	mg/L	0.000092	7.52%
Al 308.215†	264533.6	197.8	mg/L	1.42	197.8	mg/L	1.42	0.72%
As 188.979†	31.5	0.01566	mg/L	0.003588	0.01566	mg/L	0.003588	22.91%
B 249.677†	-66.2	0.01080	mg/L	0.001644	0.01080	mg/L	0.001644	15.21%
Ba 233.527†	130.0	0.00419	mg/L	0.000360	0.00419	mg/L	0.000360	8.58%
Be 313.042†	112.5	0.00027	mg/L	0.000015	0.00027	mg/L	0.000015	5.59%
Ca 317.933†	1030059.3	100.3	mg/L	0.74	100.3	mg/L	0.74	0.74%
Cd 228.802†	22.9	0.00082	mg/L	0.000122	0.00082	mg/L	0.000122	14.91%
Co 228.616†	83.7	-0.00058	mg/L	0.000362	-0.00058	mg/L	0.000362	62.98%
Cr 267.716†	-2.6	-0.00209	mg/L	0.002130	-0.00209	mg/L	0.002130	101.67%
Cu 324.752†	-1225.0	0.00223	mg/L	0.000281	0.00223	mg/L	0.000281	12.61%
Fe 273.955†	191301.0	193.7	mg/L	0.73	193.7	mg/L	0.73	0.38%
K 766.490†	56.4	0.05602	mg/L	0.029132	0.05602	mg/L	0.029132	52.00%
Mg 279.077†	124968.9	103.6	mg/L	1.02	103.6	mg/L	1.02	0.98%
Mn 257.610†	39.1	0.00056	mg/L	0.000336	0.00056	mg/L	0.000336	59.70%
Mo 202.031†	51.7	0.00154	mg/L	0.000303	0.00154	mg/L	0.000303	19.72%
Na 589.592†	71.3	0.00857	mg/L	0.003143	0.00857	mg/L	0.003143	36.66%
Na 330.237†	-25.1	-1.217	mg/L	0.2476	-1.217	mg/L	0.2476	20.35%
Ni 231.604†	0.4	0.00014	mg/L	0.002231	0.00014	mg/L	0.002231	>999.9%
Pb 220.353†	-308.2	0.00037	mg/L	0.000909	0.00037	mg/L	0.000909	242.41%
Sb 206.836†	47.8	0.01868	mg/L	0.001544	0.01868	mg/L	0.001544	8.27%
Se 196.026†	-14.2	-0.01108	mg/L	0.007906	-0.01108	mg/L	0.007906	71.36%
Si 288.158†	-17.6	-0.00347	mg/L	0.003240	-0.00347	mg/L	0.003240	93.39%
Sn 189.927†	-100.0	-0.01178	mg/L	0.002108	-0.01178	mg/L	0.002108	17.89%
Sr 421.552†	84.2	0.00030	mg/L	0.000043	0.00030	mg/L	0.000043	14.38%
Ti 334.903†	132.1	0.00265	mg/L	0.000274	0.00265	mg/L	0.000274	10.37%
Tl 190.801†	-44.9	-0.02283	mg/L	0.001269	-0.02283	mg/L	0.001269	5.56%
V 292.402†	-678.0	0.00218	mg/L	0.000221	0.00218	mg/L	0.000221	10.11%
Zn 206.200†	3.2	0.00128	mg/L	0.001090	0.00128	mg/L	0.001090	85.05%

Sequence No.: 5
Sample ID: SEQ-IFB1

Autosampler Location: 303
Date Collected: 7/18/2019 10:11:48 AM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-IFB1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-IFB1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2015594.4	98.93 %	0.395			0.40%
ScR 361.383	233010.3	100.1 %	0.46			0.46%
Ag 328.068†	146748.9	0.9937 mg/L	0.00135	0.9937 mg/L	0.00135	0.14%
Al 308.215†	263232.4	196.8 mg/L	1.18	196.8 mg/L	1.18	0.60%
As 188.979†	1435.9	1.031 mg/L	0.0025	1.031 mg/L	0.0025	0.24%
B 249.677†	-41.4	0.01202 mg/L	0.000779	0.01202 mg/L	0.000779	6.48%
Ba 233.527†	4592.1	0.9799 mg/L	0.00579	0.9799 mg/L	0.00579	0.59%
Be 313.042†	492334.2	1.023 mg/L	0.0072	1.023 mg/L	0.0072	0.70%
Ca 317.933†	1039616.5	101.2 mg/L	0.91	101.2 mg/L	0.91	0.90%
Cd 228.802†	23272.8	0.9793 mg/L	0.00737	0.9793 mg/L	0.00737	0.75%
Co 228.616†	29782.1	0.9493 mg/L	0.00486	0.9493 mg/L	0.00486	0.51%
Cr 267.716†	3902.7	0.9841 mg/L	0.00670	0.9841 mg/L	0.00670	0.68%
Cu 324.752†	188808.6	0.9752 mg/L	0.00246	0.9752 mg/L	0.00246	0.25%
Fe 273.955†	193577.5	196.0 mg/L	1.75	196.0 mg/L	1.75	0.89%
K 766.490†	76.2	0.07567 mg/L	0.002066	0.07567 mg/L	0.002066	2.73%
Mg 279.077†	120204.1	99.63 mg/L	0.659	99.63 mg/L	0.659	0.66%
Mn 257.610†	35391.6	0.9421 mg/L	0.00478	0.9421 mg/L	0.00478	0.51%
Mo 202.031†	59.0	0.00191 mg/L	0.000437	0.00191 mg/L	0.000437	22.85%
Na 589.592†	145.1	0.01746 mg/L	0.004618	0.01746 mg/L	0.004618	26.45%
Na 330.237†	-11.4	-0.9674 mg/L	0.19911	-0.9674 mg/L	0.19911	20.58%
Ni 231.604†	3240.7	0.9758 mg/L	0.00771	0.9758 mg/L	0.00771	0.79%
Pb 220.353†	6572.8	0.9892 mg/L	0.00201	0.9892 mg/L	0.00201	0.20%
Sb 206.836†	2694.8	1.053 mg/L	0.0055	1.053 mg/L	0.0055	0.52%
Se 196.026†	1124.4	1.012 mg/L	0.0079	1.012 mg/L	0.0079	0.78%
Si 288.158†	-34.5	-0.01763 mg/L	0.011140	-0.01763 mg/L	0.011140	63.20%
Sn 189.927†	-102.1	-0.01175 mg/L	0.001120	-0.01175 mg/L	0.001120	9.53%
Sr 421.552†	94.5	0.00034 mg/L	0.000056	0.00034 mg/L	0.000056	16.65%
Ti 334.903†	117.5	0.00141 mg/L	0.000361	0.00141 mg/L	0.000361	25.55%
Tl 190.801†	1839.5	0.9282 mg/L	0.00131	0.9282 mg/L	0.00131	0.14%
V 292.402†	74210.8	0.9460 mg/L	0.00501	0.9460 mg/L	0.00501	0.53%
Zn 206.200†	2465.4	0.9827 mg/L	0.00432	0.9827 mg/L	0.00432	0.44%

Sequence No.: 6
Sample ID: SEQ-CCV1

Autosampler Location: 7
Date Collected: 7/18/2019 10:16:57 AM
Data Type: Original

Dilution: 1X
Wash Time: 120

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCV1

Analyte	Back Pressure	Flow
All	155.0 kPa	0.65 L/min

Mean Data: SEQ-CCV1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2038109.7	100.0 %	0.03			0.03%
ScR 361.383	233870.9	100.5 %	0.61			0.61%
Ag 328.068†	148581.0	1.006 mg/L	0.0055	1.006 mg/L	0.0055	0.54%
Al 308.215†	2684.2	1.969 mg/L	0.0182	1.969 mg/L	0.0182	0.93%
As 188.979†	2702.4	1.978 mg/L	0.0031	1.978 mg/L	0.0031	0.15%
B 249.677†	7571.5	1.008 mg/L	0.0077	1.008 mg/L	0.0077	0.76%
Ba 233.527†	4494.2	0.9827 mg/L	0.00599	0.9827 mg/L	0.00599	0.61%
Be 313.042†	478710.1	0.9946 mg/L	0.00176	0.9946 mg/L	0.00176	0.18%
Ca 317.933†	20128.0	1.946 mg/L	0.0105	1.946 mg/L	0.0105	0.54%
Cd 228.802†	23625.8	0.9883 mg/L	0.01211	0.9883 mg/L	0.01211	1.23%
Co 228.616†	30190.5	0.9640 mg/L	0.00242	0.9640 mg/L	0.00242	0.25%
Cr 267.716†	3903.2	0.9849 mg/L	0.00674	0.9849 mg/L	0.00674	0.68%
Cu 324.752†	192664.1	0.9859 mg/L	0.00387	0.9859 mg/L	0.00387	0.39%
Fe 273.955†	1952.2	1.970 mg/L	0.0074	1.970 mg/L	0.0074	0.37%
K 766.490†	19866.1	19.72 mg/L	0.068	19.72 mg/L	0.068	0.35%
Mg 279.077†	2402.2	2.004 mg/L	0.0189	2.004 mg/L	0.0189	0.94%
Mn 257.610†	35352.4	0.9417 mg/L	0.00361	0.9417 mg/L	0.00361	0.38%
Mo 202.031†	16015.4	0.9898 mg/L	0.00378	0.9898 mg/L	0.00378	0.38%
Na 589.592†	413740.1	49.77 mg/L	0.149	49.77 mg/L	0.149	0.30%
Na 330.237†	1032.5	49.95 mg/L	0.617	49.95 mg/L	0.617	1.23%
Ni 231.604†	3344.4	1.008 mg/L	0.0053	1.008 mg/L	0.0053	0.53%
Pb 220.353†	13590.2	1.953 mg/L	0.0042	1.953 mg/L	0.0042	0.21%
Sb 206.836†	5283.5	2.086 mg/L	0.0030	2.086 mg/L	0.0030	0.15%
Se 196.026†	2262.4	2.033 mg/L	0.0034	2.033 mg/L	0.0034	0.17%
Si 288.158†	2356.5	2.099 mg/L	0.0157	2.099 mg/L	0.0157	0.75%
Sn 189.927†	3499.1	1.006 mg/L	0.0035	1.006 mg/L	0.0035	0.35%
Sr 421.552†	280139.0	0.9986 mg/L	0.00652	0.9986 mg/L	0.00652	0.65%
Ti 334.903†	14557.2	0.9718 mg/L	0.00499	0.9718 mg/L	0.00499	0.51%
Tl 190.801†	3944.1	2.000 mg/L	0.0041	2.000 mg/L	0.0041	0.20%
V 292.402†	77125.0	0.9720 mg/L	0.00766	0.9720 mg/L	0.00766	0.79%
Zn 206.200†	2545.8	1.013 mg/L	0.0067	1.013 mg/L	0.0067	0.66%

Sequence No.: 7
Sample ID: SEQ-CCB1

Autosampler Location: 1
Date Collected: 7/18/2019 10:22:01 AM
Data Type: Original

Dilution: 1X
Wash Time: 100

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCB1

Analyte	Back Pressure	Flow
All	155.0 kPa	0.65 L/min

Mean Data: SEQ-CCB1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2063190.3	101.3 %	0.41			0.41%
ScR 361.383	233745.9	100.4 %	0.34			0.34%
Ag 328.068†	8.1	0.00005 mg/L	0.000275	0.00005 mg/L	0.000275	500.99%
Al 308.215†	-17.8	-0.01332 mg/L	0.022001	-0.01332 mg/L	0.022001	165.14%
As 188.979†	1.3	0.00090 mg/L	0.000378	0.00090 mg/L	0.000378	41.95%
B 249.677†	17.1	0.00228 mg/L	0.001862	0.00228 mg/L	0.001862	81.73%
Ba 233.527†	1.4	0.00031 mg/L	0.000760	0.00031 mg/L	0.000760	242.37%
Be 313.042†	-6.8	-0.00001 mg/L	0.000034	-0.00001 mg/L	0.000034	250.32%
Ca 317.933†	6.0	0.00059 mg/L	0.001818	0.00059 mg/L	0.001818	306.12%
Cd 228.802†	-0.1	-0.00001 mg/L	0.000079	-0.00001 mg/L	0.000079	916.59%
Co 228.616†	-4.2	-0.00013 mg/L	0.000095	-0.00013 mg/L	0.000095	71.37%
Cr 267.716†	-6.6	-0.00167 mg/L	0.002078	-0.00167 mg/L	0.002078	124.18%
Cu 324.752†	32.8	0.00017 mg/L	0.000056	0.00017 mg/L	0.000056	33.10%
Fe 273.955†	6.2	0.00624 mg/L	0.000742	0.00624 mg/L	0.000742	11.89%
K 766.490†	-4.4	-0.00432 mg/L	0.008748	-0.00432 mg/L	0.008748	202.33%
Mg 279.077†	4.9	0.00406 mg/L	0.002218	0.00406 mg/L	0.002218	54.67%
Mn 257.610†	3.2	0.00008 mg/L	0.000115	0.00008 mg/L	0.000115	136.77%
Mo 202.031†	12.4	0.00077 mg/L	0.000316	0.00077 mg/L	0.000316	41.18%
Na 589.592†	43.1	0.00518 mg/L	0.002996	0.00518 mg/L	0.002996	57.82%
Na 330.237†	-9.6	-0.4652 mg/L	0.16809	-0.4652 mg/L	0.16809	36.14%
Ni 231.604†	4.2	0.00126 mg/L	0.001134	0.00126 mg/L	0.001134	90.22%
Pb 220.353†	-10.4	-0.00150 mg/L	0.000975	-0.00150 mg/L	0.000975	65.06%
Sb 206.836†	0.9	0.00038 mg/L	0.001067	0.00038 mg/L	0.001067	277.63%
Se 196.026†	8.6	0.00774 mg/L	0.003107	0.00774 mg/L	0.003107	40.12%
Si 288.158†	6.0	0.00538 mg/L	0.000945	0.00538 mg/L	0.000945	17.56%
Sn 189.927†	1.9	0.00054 mg/L	0.000579	0.00054 mg/L	0.000579	106.81%
Sr 421.552†	-38.6	-0.00014 mg/L	0.000009	-0.00014 mg/L	0.000009	6.53%
Ti 334.903†	-9.6	-0.00064 mg/L	0.001154	-0.00064 mg/L	0.001154	179.15%
Tl 190.801†	1.0	0.00051 mg/L	0.001092	0.00051 mg/L	0.001092	213.42%
V 292.402†	-7.6	-0.00011 mg/L	0.000044	-0.00011 mg/L	0.000044	41.85%
Zn 206.200†	-1.3	-0.00053 mg/L	0.000814	-0.00053 mg/L	0.000814	153.47%

Sequence No.: 8

Sample ID: BHG0380-BLK1

Autosampler Location: 304

Date Collected: 7/18/2019 10:26:00 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0380-BLK1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: BHG0380-BLK1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2046157.2	100.4	%	0.32				0.32%
ScR 361.383	232675.9	99.94	%	1.098				1.10%
Ag 328.068†	22.0	0.00015	mg/L	0.000211	0.00015	mg/L	0.000211	141.75%
Al 308.215†	5.8	0.00434	mg/L	0.001775	0.00434	mg/L	0.001775	40.93%
As 188.979†	1.1	0.00073	mg/L	0.001250	0.00073	mg/L	0.001250	171.89%
B 249.677†	20.8	0.00277	mg/L	0.000374	0.00277	mg/L	0.000374	13.49%
Ba 233.527†	4.2	0.00092	mg/L	0.001055	0.00092	mg/L	0.001055	114.68%
Be 313.042†	5.7	0.00001	mg/L	0.000026	0.00001	mg/L	0.000026	186.35%
Ca 317.933†	38.1	0.00372	mg/L	0.000337	0.00372	mg/L	0.000337	9.07%
Cd 228.802†	0.2	0.00000	mg/L	0.000056	0.00000	mg/L	0.000056	>999.9%
Co 228.616†	-6.3	-0.00020	mg/L	0.000124	-0.00020	mg/L	0.000124	62.38%
Cr 267.716†	-3.2	-0.00081	mg/L	0.000626	-0.00081	mg/L	0.000626	77.49%
Cu 324.752†	65.4	0.00034	mg/L	0.000073	0.00034	mg/L	0.000073	21.85%
Fe 273.955†	6.0	0.00612	mg/L	0.003591	0.00612	mg/L	0.003591	58.67%
K 766.490†	-25.0	-0.02482	mg/L	0.019587	-0.02482	mg/L	0.019587	78.93%
Mg 279.077†	6.8	0.00568	mg/L	0.004284	0.00568	mg/L	0.004284	75.42%
Mn 257.610†	1.3	0.00003	mg/L	0.000082	0.00003	mg/L	0.000082	241.06%
Mo 202.031†	4.6	0.00028	mg/L	0.000141	0.00028	mg/L	0.000141	49.73%
Na 589.592†	54.5	0.00655	mg/L	0.004364	0.00655	mg/L	0.004364	66.57%
Na 330.237†	-4.2	-0.2062	mg/L	0.36539	-0.2062	mg/L	0.36539	177.20%
Ni 231.604†	3.2	0.00095	mg/L	0.001454	0.00095	mg/L	0.001454	153.41%
Pb 220.353†	-10.9	-0.00157	mg/L	0.000145	-0.00157	mg/L	0.000145	9.22%
Sb 206.836†	-1.6	-0.00064	mg/L	0.001296	-0.00064	mg/L	0.001296	201.43%
Se 196.026†	5.1	0.00460	mg/L	0.001635	0.00460	mg/L	0.001635	35.54%
Si 288.158†	9.9	0.00878	mg/L	0.002822	0.00878	mg/L	0.002822	32.12%
Sn 189.927†	-0.6	-0.00018	mg/L	0.000476	-0.00018	mg/L	0.000476	258.33%
Sr 421.552†	-7.5	-0.00003	mg/L	0.000092	-0.00003	mg/L	0.000092	343.58%
Ti 334.903†	-22.7	-0.00152	mg/L	0.001856	-0.00152	mg/L	0.001856	122.30%
Tl 190.801†	-4.2	-0.00213	mg/L	0.001059	-0.00213	mg/L	0.001059	49.84%
V 292.402†	-35.7	-0.00045	mg/L	0.000247	-0.00045	mg/L	0.000247	54.63%
Zn 206.200†	1.0	0.00040	mg/L	0.000358	0.00040	mg/L	0.000358	89.59%

Sequence No.: 9

Sample ID: 19G0095-01

Autosampler Location: 305

Date Collected: 7/18/2019 10:29:59 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0095-01

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: 19G0095-01

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2014232.4	98.86 %	0.119			0.12%
ScR 361.383	234395.5	100.7 %	0.29			0.29%
Ag 328.068†	3.7	0.00003 mg/L	0.000084	0.00003 mg/L	0.000084	329.05%
Al 308.215†	134.4	0.1004 mg/L	0.00798	0.1004 mg/L	0.00798	7.95%
As 188.979†	8.3	0.00522 mg/L	0.001273	0.00522 mg/L	0.001273	24.39%
B 249.677†	164.9	0.02210 mg/L	0.000669	0.02210 mg/L	0.000669	3.03%
Ba 233.527†	17.3	0.00362 mg/L	0.000637	0.00362 mg/L	0.000637	17.61%
Be 313.042†	-17.2	-0.00004 mg/L	0.000047	-0.00004 mg/L	0.000047	117.02%
Ca 317.933†	121274.9	11.80 mg/L	0.072	11.80 mg/L	0.072	0.61%
Cd 228.802†	0.5	-0.00002 mg/L	0.000227	-0.00002 mg/L	0.000227	>999.9%
Co 228.616†	-2.4	-0.00010 mg/L	0.000142	-0.00010 mg/L	0.000142	136.37%
Cr 267.716†	5.8	0.00091 mg/L	0.001076	0.00091 mg/L	0.001076	118.13%
Cu 324.752†	364.5	0.00190 mg/L	0.000138	0.00190 mg/L	0.000138	7.26%
Fe 273.955†	1362.6	1.380 mg/L	0.0075	1.380 mg/L	0.0075	0.55%
K 766.490†	567.7	0.5634 mg/L	0.01427	0.5634 mg/L	0.01427	2.53%
Mg 279.077†	4866.8	4.037 mg/L	0.0312	4.037 mg/L	0.0312	0.77%
Mn 257.610†	545.7	0.01451 mg/L	0.000113	0.01451 mg/L	0.000113	0.78%
Mo 202.031†	23.3	0.00124 mg/L	0.000145	0.00124 mg/L	0.000145	11.63%
Na 589.592†	47384.3	5.701 mg/L	0.0390	5.701 mg/L	0.0390	0.68%
Na 330.237†	106.6	5.178 mg/L	0.0460	5.178 mg/L	0.0460	0.89%
Ni 231.604†	5.9	0.00178 mg/L	0.001642	0.00178 mg/L	0.001642	92.08%
Pb 220.353†	-1.5	-0.00025 mg/L	0.000833	-0.00025 mg/L	0.000833	326.81%
Sb 206.836†	-4.4	-0.00181 mg/L	0.002913	-0.00181 mg/L	0.002913	161.02%
Se 196.026†	-2.6	-0.00219 mg/L	0.005269	-0.00219 mg/L	0.005269	240.39%
Si 288.158†	10832.3	9.643 mg/L	0.0279	9.643 mg/L	0.0279	0.29%
Sn 189.927†	-21.1	-0.00408 mg/L	0.001052	-0.00408 mg/L	0.001052	25.81%
Sr 421.552†	18103.1	0.06453 mg/L	0.000499	0.06453 mg/L	0.000499	0.77%
Ti 334.903†	43.1	0.00215 mg/L	0.000880	0.00215 mg/L	0.000880	40.94%
Tl 190.801†	-4.6	-0.00235 mg/L	0.000924	-0.00235 mg/L	0.000924	39.29%
V 292.402†	78.4	0.00107 mg/L	0.000242	0.00107 mg/L	0.000242	22.62%
Zn 206.200†	8.2	0.00325 mg/L	0.000652	0.00325 mg/L	0.000652	20.02%

Sequence No.: 10

Sample ID: 19G0132-01

Autosampler Location: 306

Date Collected: 7/18/2019 10:33:57 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0132-01

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: 19G0132-01

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2034965.3	99.88	%	0.224				0.22%
ScR 361.383	233438.8	100.3	%	0.16				0.16%
Ag 328.068†	-7.4	-0.00005	mg/L	0.000116	-0.00005	mg/L	0.000116	231.89%
Al 308.215†	36.0	0.02687	mg/L	0.001852	0.02687	mg/L	0.001852	6.89%
As 188.979†	0.9	0.00052	mg/L	0.000476	0.00052	mg/L	0.000476	92.16%
B 249.677†	42.2	0.00567	mg/L	0.000139	0.00567	mg/L	0.000139	2.44%
Ba 233.527†	27.0	0.00584	mg/L	0.001547	0.00584	mg/L	0.001547	26.48%
Be 313.042†	56.3	0.00012	mg/L	0.000021	0.00012	mg/L	0.000021	18.07%
Ca 317.933†	19203.0	1.869	mg/L	0.0092	1.869	mg/L	0.0092	0.49%
Cd 228.802†	0.7	0.00003	mg/L	0.000225	0.00003	mg/L	0.000225	830.95%
Co 228.616†	0.8	0.00001	mg/L	0.000066	0.00001	mg/L	0.000066	452.90%
Cr 267.716†	2.9	0.00070	mg/L	0.002521	0.00070	mg/L	0.002521	357.77%
Cu 324.752†	5884.3	0.03014	mg/L	0.000063	0.03014	mg/L	0.000063	0.21%
Fe 273.955†	526.5	0.5332	mg/L	0.00216	0.5332	mg/L	0.00216	0.41%
K 766.490†	435.6	0.4323	mg/L	0.02883	0.4323	mg/L	0.02883	6.67%
Mg 279.077†	396.7	0.3289	mg/L	0.00893	0.3289	mg/L	0.00893	2.72%
Mn 257.610†	4279.8	0.1140	mg/L	0.00031	0.1140	mg/L	0.00031	0.27%
Mo 202.031†	5.7	0.00032	mg/L	0.000102	0.00032	mg/L	0.000102	32.07%
Na 589.592†	4315.9	0.5192	mg/L	0.00669	0.5192	mg/L	0.00669	1.29%
Na 330.237†	-0.1	-0.03493	mg/L	0.218128	-0.03493	mg/L	0.218128	624.48%
Ni 231.604†	2.8	0.00084	mg/L	0.000145	0.00084	mg/L	0.000145	17.29%
Pb 220.353†	-9.7	-0.00145	mg/L	0.000502	-0.00145	mg/L	0.000502	34.72%
Sb 206.836†	3.1	0.00121	mg/L	0.001372	0.00121	mg/L	0.001372	113.48%
Se 196.026†	-0.0	-0.00009	mg/L	0.002093	-0.00009	mg/L	0.002093	>999.9%
Si 288.158†	1407.7	1.253	mg/L	0.0118	1.253	mg/L	0.0118	0.94%
Sn 189.927†	-3.5	-0.00070	mg/L	0.000743	-0.00070	mg/L	0.000743	106.21%
Sr 421.552†	2991.9	0.01067	mg/L	0.000081	0.01067	mg/L	0.000081	0.76%
Ti 334.903†	12.3	0.00071	mg/L	0.000231	0.00071	mg/L	0.000231	32.58%
Tl 190.801†	-4.5	-0.00213	mg/L	0.002249	-0.00213	mg/L	0.002249	105.46%
V 292.402†	2.2	0.00008	mg/L	0.000320	0.00008	mg/L	0.000320	388.68%
Zn 206.200†	187.2	0.07462	mg/L	0.000429	0.07462	mg/L	0.000429	0.57%

Sequence No.: 11

Sample ID: 19G0133-01

Autosampler Location: 307

Date Collected: 7/18/2019 10:37:55 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0133-01

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: 19G0133-01

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2027761.0	99.53	%	0.780				0.78%
ScR 361.383	233616.8	100.3	%	0.14				0.14%
Ag 328.068†	22.8	0.00015	mg/L	0.000173	0.00015	mg/L	0.000173	112.11%
Al 308.215†	90.9	0.06793	mg/L	0.005304	0.06793	mg/L	0.005304	7.81%
As 188.979†	2.6	0.00185	mg/L	0.002446	0.00185	mg/L	0.002446	131.86%
B 249.677†	54.6	0.00729	mg/L	0.000407	0.00729	mg/L	0.000407	5.58%
Ba 233.527†	28.0	0.00612	mg/L	0.000865	0.00612	mg/L	0.000865	14.15%
Be 313.042†	61.1	0.00013	mg/L	0.000023	0.00013	mg/L	0.000023	17.82%
Ca 317.933†	11503.7	1.120	mg/L	0.0015	1.120	mg/L	0.0015	0.14%
Cd 228.802†	1.4	0.00005	mg/L	0.000109	0.00005	mg/L	0.000109	224.97%
Co 228.616†	0.0	-0.00000	mg/L	0.000138	-0.00000	mg/L	0.000138	>999.9%
Cr 267.716†	-0.1	-0.00005	mg/L	0.000782	-0.00005	mg/L	0.000782	>999.9%
Cu 324.752†	1830.8	0.00937	mg/L	0.000259	0.00937	mg/L	0.000259	2.77%
Fe 273.955†	59.0	0.05977	mg/L	0.001138	0.05977	mg/L	0.001138	1.90%
K 766.490†	374.2	0.3714	mg/L	0.01812	0.3714	mg/L	0.01812	4.88%
Mg 279.077†	186.7	0.1548	mg/L	0.00555	0.1548	mg/L	0.00555	3.58%
Mn 257.610†	403.7	0.01075	mg/L	0.000057	0.01075	mg/L	0.000057	0.53%
Mo 202.031†	3.4	0.00019	mg/L	0.000121	0.00019	mg/L	0.000121	63.39%
Na 589.592†	3526.2	0.4242	mg/L	0.00287	0.4242	mg/L	0.00287	0.68%
Na 330.237†	-4.6	-0.2675	mg/L	0.22970	-0.2675	mg/L	0.22970	85.87%
Ni 231.604†	4.9	0.00148	mg/L	0.001413	0.00148	mg/L	0.001413	95.56%
Pb 220.353†	-5.1	-0.00073	mg/L	0.000371	-0.00073	mg/L	0.000371	50.53%
Sb 206.836†	0.9	0.00035	mg/L	0.002761	0.00035	mg/L	0.002761	790.67%
Se 196.026†	2.2	0.00198	mg/L	0.003217	0.00198	mg/L	0.003217	162.19%
Si 288.158†	543.4	0.4838	mg/L	0.00258	0.4838	mg/L	0.00258	0.53%
Sn 189.927†	-2.9	-0.00065	mg/L	0.000081	-0.00065	mg/L	0.000081	12.39%
Sr 421.552†	1619.9	0.00577	mg/L	0.000061	0.00577	mg/L	0.000061	1.06%
Ti 334.903†	29.8	0.00192	mg/L	0.000751	0.00192	mg/L	0.000751	39.09%
Tl 190.801†	-5.6	-0.00283	mg/L	0.000393	-0.00283	mg/L	0.000393	13.88%
V 292.402†	8.5	0.00011	mg/L	0.000148	0.00011	mg/L	0.000148	132.35%
Zn 206.200†	259.3	0.1034	mg/L	0.00100	0.1034	mg/L	0.00100	0.97%

Sequence No.: 12

Sample ID: BHG0380-SRL1

Autosampler Location: 308

Date Collected: 7/18/2019 10:41:53 AM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0380-SRL1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: BHG0380-SRL1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2020898.7	99.19	%	0.094				0.09%
ScR 361.383	231857.1	99.59	%	0.307				0.31%
Ag 328.068†	-4.8	-0.00003	mg/L	0.000058	-0.00016	mg/L	0.000291	177.19%
Al 308.215†	23.3	0.01739	mg/L	0.010590	0.08693	mg/L	0.052949	60.91%
As 188.979†	0.8	0.00045	mg/L	0.003169	0.00223	mg/L	0.015847	711.25%
B 249.677†	32.7	0.00437	mg/L	0.000329	0.02185	mg/L	0.001644	7.53%
Ba 233.527†	7.3	0.00158	mg/L	0.000585	0.00788	mg/L	0.002925	37.11%
Be 313.042†	8.4	0.00002	mg/L	0.000059	0.00009	mg/L	0.000294	331.30%
Ca 317.933†	23800.4	2.316	mg/L	0.0056	11.58	mg/L	0.028	0.24%
Cd 228.802†	-1.3	-0.00006	mg/L	0.000181	-0.00029	mg/L	0.000906	314.91%
Co 228.616†	-5.1	-0.00017	mg/L	0.000159	-0.00084	mg/L	0.000793	94.17%
Cr 267.716†	6.9	0.00163	mg/L	0.000274	0.00816	mg/L	0.001369	16.79%
Cu 324.752†	134.5	0.00069	mg/L	0.000056	0.00344	mg/L	0.000280	8.13%
Fe 273.955†	136.3	0.1380	mg/L	0.00402	0.6902	mg/L	0.02010	2.91%
K 766.490†	117.1	0.1162	mg/L	0.02359	0.5811	mg/L	0.11795	20.30%
Mg 279.077†	1013.2	0.8404	mg/L	0.01524	4.202	mg/L	0.0762	1.81%
Mn 257.610†	261.2	0.00695	mg/L	0.000110	0.03476	mg/L	0.000550	1.58%
Mo 202.031†	2.6	0.00012	mg/L	0.000239	0.00062	mg/L	0.001197	193.68%
Na 589.592†	9817.2	1.181	mg/L	0.0037	5.905	mg/L	0.0186	0.31%
Na 330.237†	21.9	1.065	mg/L	0.6142	5.325	mg/L	3.0709	57.67%
Ni 231.604†	4.1	0.00124	mg/L	0.001225	0.00622	mg/L	0.006124	98.44%
Pb 220.353†	-11.1	-0.00160	mg/L	0.000714	-0.00799	mg/L	0.003572	44.69%
Sb 206.836†	5.2	0.00202	mg/L	0.001753	0.01010	mg/L	0.008766	86.76%
Se 196.026†	0.1	0.00013	mg/L	0.003261	0.00067	mg/L	0.016305	>999.9%
Si 288.158†	1731.0	1.541	mg/L	0.0147	7.705	mg/L	0.0734	0.95%
Sn 189.927†	-4.3	-0.00083	mg/L	0.000509	-0.00416	mg/L	0.002545	61.22%
Sr 421.552†	3753.5	0.01338	mg/L	0.000165	0.06690	mg/L	0.000827	1.24%
Ti 334.903†	27.3	0.00168	mg/L	0.001582	0.00841	mg/L	0.007910	94.09%
Tl 190.801†	-3.4	-0.00174	mg/L	0.000239	-0.00871	mg/L	0.001193	13.69%
V 292.402†	-2.3	-0.00001	mg/L	0.000312	-0.00004	mg/L	0.001558	>999.9%
Zn 206.200†	1.7	0.00066	mg/L	0.000657	0.00328	mg/L	0.003283	100.18%

Sequence No.: 13

Sample ID: 19G0096-01

Autosampler Location: 309

Date Collected: 7/18/2019 10:45:51 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0096-01

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: 19G0096-01

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2018549.0	99.07	%	0.183				0.18%
ScR 361.383	233206.1	100.2	%	0.38				0.38%
Ag 328.068†	-7.2	-0.00005	mg/L	0.000143	-0.00005	mg/L	0.000143	293.11%
Al 308.215†	175.3	0.1309	mg/L	0.00343	0.1309	mg/L	0.00343	2.62%
As 188.979†	4.1	0.00226	mg/L	0.000219	0.00226	mg/L	0.000219	9.68%
B 249.677†	140.3	0.01876	mg/L	0.001088	0.01876	mg/L	0.001088	5.80%
Ba 233.527†	15.3	0.00326	mg/L	0.000383	0.00326	mg/L	0.000383	11.76%
Be 313.042†	-21.0	-0.00005	mg/L	0.000017	-0.00005	mg/L	0.000017	36.70%
Ca 317.933†	120825.3	11.76	mg/L	0.042	11.76	mg/L	0.042	0.36%
Cd 228.802†	-4.2	-0.00019	mg/L	0.000118	-0.00019	mg/L	0.000118	60.85%
Co 228.616†	-0.5	-0.00004	mg/L	0.000117	-0.00004	mg/L	0.000117	327.87%
Cr 267.716†	3.7	0.00034	mg/L	0.001466	0.00034	mg/L	0.001466	430.22%
Cu 324.752†	258.0	0.00132	mg/L	0.000024	0.00132	mg/L	0.000024	1.83%
Fe 273.955†	666.2	0.6745	mg/L	0.000079	0.6745	mg/L	0.000079	0.12%
K 766.490†	500.8	0.4970	mg/L	0.00743	0.4970	mg/L	0.00743	1.49%
Mg 279.077†	4976.9	4.128	mg/L	0.0135	4.128	mg/L	0.0135	0.33%
Mn 257.610†	1288.2	0.03428	mg/L	0.000156	0.03428	mg/L	0.000156	0.46%
Mo 202.031†	25.3	0.00137	mg/L	0.000333	0.00137	mg/L	0.000333	24.30%
Na 589.592†	49274.6	5.928	mg/L	0.0083	5.928	mg/L	0.0083	0.14%
Na 330.237†	122.0	5.929	mg/L	0.4640	5.929	mg/L	0.4640	7.83%
Ni 231.604†	7.7	0.00232	mg/L	0.000856	0.00232	mg/L	0.000856	36.87%
Pb 220.353†	-4.2	-0.00060	mg/L	0.001104	-0.00060	mg/L	0.001104	184.37%
Sb 206.836†	-3.2	-0.00132	mg/L	0.000498	-0.00132	mg/L	0.000498	37.60%
Se 196.026†	-3.4	-0.00303	mg/L	0.000760	-0.00303	mg/L	0.000760	25.07%
Si 288.158†	8528.7	7.593	mg/L	0.0107	7.593	mg/L	0.0107	0.14%
Sn 189.927†	-20.4	-0.00386	mg/L	0.000775	-0.00386	mg/L	0.000775	20.09%
Sr 421.552†	18805.8	0.06704	mg/L	0.000550	0.06704	mg/L	0.000550	0.82%
Ti 334.903†	69.5	0.00392	mg/L	0.000964	0.00392	mg/L	0.000964	24.62%
Tl 190.801†	-5.0	-0.00253	mg/L	0.003472	-0.00253	mg/L	0.003472	137.28%
V 292.402†	57.2	0.00077	mg/L	0.000162	0.00077	mg/L	0.000162	21.23%
Zn 206.200†	5.2	0.00206	mg/L	0.000694	0.00206	mg/L	0.000694	33.65%

Sequence No.: 14

Sample ID: BHG0380-DUP1

Autosampler Location: 310

Date Collected: 7/18/2019 10:49:49 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0380-DUP1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: BHG0380-DUP1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2026311.6	99.46 %	0.134			0.13%
ScR 361.383	233823.1	100.4 %	0.81			0.81%
Ag 328.068†	21.1	0.00014 mg/L	0.000174	0.00014 mg/L	0.000174	121.36%
Al 308.215†	200.5	0.1498 mg/L	0.02252	0.1498 mg/L	0.02252	15.04%
As 188.979†	3.0	0.00147 mg/L	0.000411	0.00147 mg/L	0.000411	27.90%
B 249.677†	139.5	0.01866 mg/L	0.000734	0.01866 mg/L	0.000734	3.93%
Ba 233.527†	15.9	0.00339 mg/L	0.000528	0.00339 mg/L	0.000528	15.56%
Be 313.042†	-34.2	-0.00007 mg/L	0.000071	-0.00007 mg/L	0.000071	95.09%
Ca 317.933†	118780.0	11.56 mg/L	0.016	11.56 mg/L	0.016	0.14%
Cd 228.802†	-4.4	-0.00020 mg/L	0.000164	-0.00020 mg/L	0.000164	81.73%
Co 228.616†	-2.2	-0.00009 mg/L	0.000106	-0.00009 mg/L	0.000106	112.83%
Cr 267.716†	7.3	0.00126 mg/L	0.000660	0.00126 mg/L	0.000660	52.39%
Cu 324.752†	248.6	0.00127 mg/L	0.000029	0.00127 mg/L	0.000029	2.26%
Fe 273.955†	666.8	0.6752 mg/L	0.00308	0.6752 mg/L	0.00308	0.46%
K 766.490†	442.8	0.4394 mg/L	0.02914	0.4394 mg/L	0.02914	6.63%
Mg 279.077†	4890.5	4.057 mg/L	0.0115	4.057 mg/L	0.0115	0.28%
Mn 257.610†	1275.2	0.03393 mg/L	0.000403	0.03393 mg/L	0.000403	1.19%
Mo 202.031†	19.5	0.00102 mg/L	0.000246	0.00102 mg/L	0.000246	24.20%
Na 589.592†	48547.6	5.840 mg/L	0.0035	5.840 mg/L	0.0035	0.06%
Na 330.237†	106.2	5.163 mg/L	0.5105	5.163 mg/L	0.5105	9.89%
Ni 231.604†	4.7	0.00141 mg/L	0.001193	0.00141 mg/L	0.001193	84.78%
Pb 220.353†	-2.2	-0.00031 mg/L	0.000399	-0.00031 mg/L	0.000399	127.83%
Sb 206.836†	6.1	0.00233 mg/L	0.001965	0.00233 mg/L	0.001965	84.17%
Se 196.026†	-1.2	-0.00101 mg/L	0.000659	-0.00101 mg/L	0.000659	65.27%
Si 288.158†	8376.1	7.457 mg/L	0.0524	7.457 mg/L	0.0524	0.70%
Sn 189.927†	-20.4	-0.00390 mg/L	0.000793	-0.00390 mg/L	0.000793	20.34%
Sr 421.552†	18243.3	0.06503 mg/L	0.000438	0.06503 mg/L	0.000438	0.67%
Ti 334.903†	89.9	0.00529 mg/L	0.000421	0.00529 mg/L	0.000421	7.95%
Tl 190.801†	-4.8	-0.00239 mg/L	0.002595	-0.00239 mg/L	0.002595	108.77%
V 292.402†	60.5	0.00081 mg/L	0.000258	0.00081 mg/L	0.000258	31.78%
Zn 206.200†	2.9	0.00112 mg/L	0.001229	0.00112 mg/L	0.001229	109.68%

Sequence No.: 15

Sample ID: BHG0380-MS1

Autosampler Location: 311

Date Collected: 7/18/2019 10:53:47 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0380-MS1

Analyte	Back Pressure	Flow
All	157.0 kPa	0.65 L/min

Mean Data: BHG0380-MS1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2001493.7	98.24 %	0.280			0.29%
ScR 361.383	230623.7	99.06 %	0.222			0.22%
Ag 328.068†	78492.7	0.5315 mg/L	0.00224	0.5315 mg/L	0.00224	0.42%
Al 308.215†	2940.6	2.191 mg/L	0.0131	2.191 mg/L	0.0131	0.60%
As 188.979†	2860.5	2.068 mg/L	0.0051	2.068 mg/L	0.0051	0.25%
B 249.677†	139.8	0.01770 mg/L	0.000299	0.01770 mg/L	0.000299	1.69%
Ba 233.527†	9137.5	2.001 mg/L	0.0075	2.001 mg/L	0.0075	0.37%
Be 313.042†	247624.3	0.5145 mg/L	0.00118	0.5145 mg/L	0.00118	0.23%
Ca 317.933†	220337.9	21.44 mg/L	0.081	21.44 mg/L	0.081	0.38%
Cd 228.802†	12201.2	0.5034 mg/L	0.00474	0.5034 mg/L	0.00474	0.94%
Co 228.616†	15446.9	0.4939 mg/L	0.00200	0.4939 mg/L	0.00200	0.41%
Cr 267.716†	2004.0	0.5040 mg/L	0.00702	0.5040 mg/L	0.00702	1.39%
Cu 324.752†	94967.6	0.4862 mg/L	0.00179	0.4862 mg/L	0.00179	0.37%
Fe 273.955†	2641.7	2.671 mg/L	0.0149	2.671 mg/L	0.0149	0.56%
K 766.490†	10583.3	10.50 mg/L	0.040	10.50 mg/L	0.040	0.38%
Mg 279.077†	16649.9	13.82 mg/L	0.005	13.82 mg/L	0.005	0.04%
Mn 257.610†	19324.4	0.5149 mg/L	0.00078	0.5149 mg/L	0.00078	0.15%
Mo 202.031†	36.7	0.00188 mg/L	0.000190	0.00188 mg/L	0.000190	10.08%
Na 589.592†	133825.0	16.10 mg/L	0.017	16.10 mg/L	0.017	0.11%
Na 330.237†	331.3	15.89 mg/L	0.163	15.89 mg/L	0.163	1.02%
Ni 231.604†	1682.7	0.5063 mg/L	0.00503	0.5063 mg/L	0.00503	0.99%
Pb 220.353†	13845.7	1.989 mg/L	0.0044	1.989 mg/L	0.0044	0.22%
Sb 206.836†	19.3	0.00114 mg/L	0.000559	0.00114 mg/L	0.000559	49.19%
Se 196.026†	2300.6	2.068 mg/L	0.0071	2.068 mg/L	0.0071	0.34%
Si 288.158†	8755.4	7.796 mg/L	0.0172	7.796 mg/L	0.0172	0.22%
Sn 189.927†	-36.7	-0.00691 mg/L	0.001036	-0.00691 mg/L	0.001036	14.99%
Sr 421.552†	165663.3	0.5906 mg/L	0.00243	0.5906 mg/L	0.00243	0.41%
Ti 334.903†	101.6	0.00536 mg/L	0.000684	0.00536 mg/L	0.000684	12.76%
Tl 190.801†	4029.9	2.047 mg/L	0.0072	2.047 mg/L	0.0072	0.35%
V 292.402†	40073.4	0.5050 mg/L	0.00407	0.5050 mg/L	0.00407	0.81%
Zn 206.200†	1260.8	0.5021 mg/L	0.00343	0.5021 mg/L	0.00343	0.68%

Sequence No.: 16

Sample ID: BHG0380-BS1

Autosampler Location: 312

Date Collected: 7/18/2019 10:57:45 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0380-BS1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: BHG0380-BS1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2022413.0	99.26	%	0.447				0.45%
ScR 361.383	233397.2	100.2	%	0.54				0.54%
Ag 328.068†	77844.6	0.5271	mg/L	0.00468	0.5271	mg/L	0.00468	0.89%
Al 308.215†	2701.6	2.013	mg/L	0.0147	2.013	mg/L	0.0147	0.73%
As 188.979†	2798.1	2.023	mg/L	0.0122	2.023	mg/L	0.0122	0.60%
B 249.677†	25.5	0.00241	mg/L	0.000861	0.00241	mg/L	0.000861	35.65%
Ba 233.527†	8985.6	1.967	mg/L	0.0134	1.967	mg/L	0.0134	0.68%
Be 313.042†	245423.2	0.5099	mg/L	0.00078	0.5099	mg/L	0.00078	0.15%
Ca 317.933†	101242.1	9.847	mg/L	0.0235	9.847	mg/L	0.0235	0.24%
Cd 228.802†	12060.0	0.4977	mg/L	0.00462	0.4977	mg/L	0.00462	0.93%
Co 228.616†	15295.4	0.4891	mg/L	0.00407	0.4891	mg/L	0.00407	0.83%
Cr 267.716†	1986.5	0.5001	mg/L	0.00116	0.5001	mg/L	0.00116	0.23%
Cu 324.752†	93491.6	0.4786	mg/L	0.00119	0.4786	mg/L	0.00119	0.25%
Fe 273.955†	1966.2	1.987	mg/L	0.0140	1.987	mg/L	0.0140	0.70%
K 766.490†	9924.5	9.849	mg/L	0.1047	9.849	mg/L	0.1047	1.06%
Mg 279.077†	12260.3	10.17	mg/L	0.063	10.17	mg/L	0.063	0.62%
Mn 257.610†	17897.6	0.4769	mg/L	0.00121	0.4769	mg/L	0.00121	0.25%
Mo 202.031†	22.0	0.00117	mg/L	0.000337	0.00117	mg/L	0.000337	28.89%
Na 589.592†	83163.7	10.00	mg/L	0.014	10.00	mg/L	0.014	0.14%
Na 330.237†	204.4	9.724	mg/L	0.3371	9.724	mg/L	0.3371	3.47%
Ni 231.604†	1662.4	0.5002	mg/L	0.00364	0.5002	mg/L	0.00364	0.73%
Pb 220.353†	13767.4	1.978	mg/L	0.0105	1.978	mg/L	0.0105	0.53%
Sb 206.836†	11.9	-0.00173	mg/L	0.000968	-0.00173	mg/L	0.000968	55.85%
Se 196.026†	2258.5	2.030	mg/L	0.0166	2.030	mg/L	0.0166	0.82%
Si 288.158†	10.3	0.01105	mg/L	0.004308	0.01105	mg/L	0.004308	38.99%
Sn 189.927†	-19.3	-0.00388	mg/L	0.000301	-0.00388	mg/L	0.000301	7.77%
Sr 421.552†	145215.9	0.5177	mg/L	0.00514	0.5177	mg/L	0.00514	0.99%
Ti 334.903†	8.3	-0.00015	mg/L	0.000645	-0.00015	mg/L	0.000645	419.62%
Tl 190.801†	4004.8	2.034	mg/L	0.0121	2.034	mg/L	0.0121	0.59%
V 292.402†	39398.1	0.4964	mg/L	0.00317	0.4964	mg/L	0.00317	0.64%
Zn 206.200†	1239.9	0.4938	mg/L	0.00428	0.4938	mg/L	0.00428	0.87%

Sequence No.: 17

Sample ID: BHG0382-BS1

Autosampler Location: 313

Date Collected: 7/18/2019 11:01:43 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0382-BS1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: BHG0382-BS1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2003857.3	98.35 %	0.359			0.37%
ScR 361.383	233376.4	100.2 %	0.43			0.43%
Ag 328.068†	78288.4	0.5301 mg/L	0.00109	0.5301 mg/L	0.00109	0.20%
Al 308.215†	2686.7	2.001 mg/L	0.0171	2.001 mg/L	0.0171	0.85%
As 188.979†	2808.0	2.031 mg/L	0.0084	2.031 mg/L	0.0084	0.41%
B 249.677†	12.4	0.00065 mg/L	0.001092	0.00065 mg/L	0.001092	167.66%
Ba 233.527†	8931.3	1.956 mg/L	0.0133	1.956 mg/L	0.0133	0.68%
Be 313.042†	245665.4	0.5104 mg/L	0.00390	0.5104 mg/L	0.00390	0.76%
Ca 317.933†	101619.9	9.884 mg/L	0.0121	9.884 mg/L	0.0121	0.12%
Cd 228.802†	12169.0	0.5023 mg/L	0.00513	0.5023 mg/L	0.00513	1.02%
Co 228.616†	15422.4	0.4931 mg/L	0.00101	0.4931 mg/L	0.00101	0.20%
Cr 267.716†	1983.0	0.4992 mg/L	0.00440	0.4992 mg/L	0.00440	0.88%
Cu 324.752†	94356.1	0.4831 mg/L	0.00219	0.4831 mg/L	0.00219	0.45%
Fe 273.955†	1943.1	1.964 mg/L	0.0156	1.964 mg/L	0.0156	0.79%
K 766.490†	9974.5	9.899 mg/L	0.0556	9.899 mg/L	0.0556	0.56%
Mg 279.077†	12244.2	10.16 mg/L	0.061	10.16 mg/L	0.061	0.60%
Mn 257.610†	17957.5	0.4785 mg/L	0.00282	0.4785 mg/L	0.00282	0.59%
Mo 202.031†	24.3	0.00131 mg/L	0.000389	0.00131 mg/L	0.000389	29.76%
Na 589.592†	83594.1	10.06 mg/L	0.045	10.06 mg/L	0.045	0.45%
Na 330.237†	202.4	9.630 mg/L	0.2153	9.630 mg/L	0.2153	2.24%
Ni 231.604†	1652.5	0.4972 mg/L	0.00343	0.4972 mg/L	0.00343	0.69%
Pb 220.353†	13866.8	1.992 mg/L	0.0084	1.992 mg/L	0.0084	0.42%
Sb 206.836†	15.2	-0.00037 mg/L	0.001359	-0.00037 mg/L	0.001359	371.49%
Se 196.026†	2280.8	2.050 mg/L	0.0016	2.050 mg/L	0.0016	0.08%
Si 288.158†	6.3	0.00746 mg/L	0.003489	0.00746 mg/L	0.003489	46.78%
Sn 189.927†	-18.1	-0.00352 mg/L	0.000548	-0.00352 mg/L	0.000548	15.57%
Sr 421.552†	146467.7	0.5221 mg/L	0.00336	0.5221 mg/L	0.00336	0.64%
Ti 334.903†	17.5	0.00046 mg/L	0.000447	0.00046 mg/L	0.000447	97.11%
Tl 190.801†	4036.8	2.051 mg/L	0.0065	2.051 mg/L	0.0065	0.32%
V 292.402†	39684.1	0.5000 mg/L	0.00283	0.5000 mg/L	0.00283	0.57%
Zn 206.200†	1231.6	0.4905 mg/L	0.00299	0.4905 mg/L	0.00299	0.61%

Sequence No.: 18
Sample ID: SEQ-CCV2

Autosampler Location: 7
Date Collected: 7/18/2019 11:05:41 AM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCV2

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-CCV2

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2011505.5	98.73 %	0.036			0.04%
ScR 361.383	230666.5	99.08 %	0.427			0.43%
Ag 328.068†	152015.9	1.029 mg/L	0.0018	1.029 mg/L	0.0018	0.17%
Al 308.215†	2726.8	2.001 mg/L	0.0125	2.001 mg/L	0.0125	0.62%
As 188.979†	2725.1	1.995 mg/L	0.0081	1.995 mg/L	0.0081	0.41%
B 249.677†	7724.2	1.028 mg/L	0.0058	1.028 mg/L	0.0058	0.57%
Ba 233.527†	4545.1	0.9939 mg/L	0.00516	0.9939 mg/L	0.00516	0.52%
Be 313.042†	491705.3	1.022 mg/L	0.0078	1.022 mg/L	0.0078	0.77%
Ca 317.933†	21509.1	2.080 mg/L	0.0132	2.080 mg/L	0.0132	0.63%
Cd 228.802†	24014.5	1.005 mg/L	0.0037	1.005 mg/L	0.0037	0.37%
Co 228.616†	30775.6	0.9827 mg/L	0.00094	0.9827 mg/L	0.00094	0.10%
Cr 267.716†	3923.7	0.9901 mg/L	0.00507	0.9901 mg/L	0.00507	0.51%
Cu 324.752†	197437.2	1.010 mg/L	0.0029	1.010 mg/L	0.0029	0.29%
Fe 273.955†	1967.7	1.985 mg/L	0.0145	1.985 mg/L	0.0145	0.73%
K 766.490†	20322.0	20.17 mg/L	0.034	20.17 mg/L	0.034	0.17%
Mg 279.077†	2432.8	2.030 mg/L	0.0224	2.030 mg/L	0.0224	1.10%
Mn 257.610†	37580.1	1.001 mg/L	0.0053	1.001 mg/L	0.0053	0.53%
Mo 202.031†	16286.8	1.007 mg/L	0.0059	1.007 mg/L	0.0059	0.59%
Na 589.592†	424772.6	51.10 mg/L	0.227	51.10 mg/L	0.227	0.44%
Na 330.237†	1056.9	51.14 mg/L	0.490	51.14 mg/L	0.490	0.96%
Ni 231.604†	3369.0	1.015 mg/L	0.0086	1.015 mg/L	0.0086	0.85%
Pb 220.353†	13830.9	1.988 mg/L	0.0048	1.988 mg/L	0.0048	0.24%
Sb 206.836†	5334.9	2.106 mg/L	0.0049	2.106 mg/L	0.0049	0.23%
Se 196.026†	2297.0	2.065 mg/L	0.0013	2.065 mg/L	0.0013	0.06%
Si 288.158†	2405.9	2.143 mg/L	0.0035	2.143 mg/L	0.0035	0.16%
Sn 189.927†	3543.6	1.019 mg/L	0.0040	1.019 mg/L	0.0040	0.40%
Sr 421.552†	288516.9	1.028 mg/L	0.0105	1.028 mg/L	0.0105	1.02%
Ti 334.903†	14831.8	0.9901 mg/L	0.00431	0.9901 mg/L	0.00431	0.44%
Tl 190.801†	3985.9	2.021 mg/L	0.0114	2.021 mg/L	0.0114	0.56%
V 292.402†	78084.1	0.9840 mg/L	0.01251	0.9840 mg/L	0.01251	1.27%
Zn 206.200†	2568.0	1.022 mg/L	0.0051	1.022 mg/L	0.0051	0.50%

Sequence No.: 19
Sample ID: SEQ-CCB2

Autosampler Location: 1
Date Collected: 7/18/2019 11:10:44 AM
Data Type: Original

Dilution: 1X
Wash Time: 100

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCB2

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: SEQ-CCB2

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2036252.5	99.94 %	0.181			0.18%
ScR 361.383	235642.5	101.2 %	0.22			0.21%
Ag 328.068†	14.3	0.00010 mg/L	0.000172	0.00010 mg/L	0.000172	178.38%
Al 308.215†	1.5	0.00112 mg/L	0.003689	0.00112 mg/L	0.003689	329.22%
As 188.979†	0.7	0.00052 mg/L	0.000347	0.00052 mg/L	0.000347	66.19%
B 249.677†	16.2	0.00216 mg/L	0.000407	0.00216 mg/L	0.000407	18.86%
Ba 233.527†	2.9	0.00065 mg/L	0.000708	0.00065 mg/L	0.000708	109.62%
Be 313.042†	-15.2	-0.00003 mg/L	0.000019	-0.00003 mg/L	0.000019	60.87%
Ca 317.933†	9.8	0.00095 mg/L	0.001084	0.00095 mg/L	0.001084	113.68%
Cd 228.802†	2.9	0.00012 mg/L	0.000064	0.00012 mg/L	0.000064	53.58%
Co 228.616†	-7.6	-0.00025 mg/L	0.000071	-0.00025 mg/L	0.000071	28.76%
Cr 267.716†	1.8	0.00046 mg/L	0.001276	0.00046 mg/L	0.001276	278.21%
Cu 324.752†	89.0	0.00046 mg/L	0.000047	0.00046 mg/L	0.000047	10.39%
Fe 273.955†	1.1	0.00109 mg/L	0.002923	0.00109 mg/L	0.002923	268.48%
K 766.490†	-29.4	-0.02921 mg/L	0.023250	-0.02921 mg/L	0.023250	79.59%
Mg 279.077†	11.2	0.00928 mg/L	0.006837	0.00928 mg/L	0.006837	73.68%
Mn 257.610†	0.7	0.00002 mg/L	0.000115	0.00002 mg/L	0.000115	657.83%
Mo 202.031†	11.9	0.00073 mg/L	0.000433	0.00073 mg/L	0.000433	59.16%
Na 589.592†	65.2	0.00784 mg/L	0.003936	0.00784 mg/L	0.003936	50.20%
Na 330.237†	-4.6	-0.2214 mg/L	0.79984	-0.2214 mg/L	0.79984	361.31%
Ni 231.604†	-0.9	-0.00026 mg/L	0.000472	-0.00026 mg/L	0.000472	181.72%
Pb 220.353†	0.1	0.00001 mg/L	0.001414	0.00001 mg/L	0.001414	>999.9%
Sb 206.836†	-0.0	-0.00001 mg/L	0.001148	-0.00001 mg/L	0.001148	>999.9%
Se 196.026†	0.1	0.00012 mg/L	0.003157	0.00012 mg/L	0.003157	>999.9%
Si 288.158†	13.5	0.01199 mg/L	0.007426	0.01199 mg/L	0.007426	61.94%
Sn 189.927†	0.2	0.00007 mg/L	0.000447	0.00007 mg/L	0.000447	630.05%
Sr 421.552†	1.7	0.00001 mg/L	0.000082	0.00001 mg/L	0.000082	>999.9%
Ti 334.903†	25.4	0.00170 mg/L	0.000526	0.00170 mg/L	0.000526	31.05%
Tl 190.801†	-2.7	-0.00137 mg/L	0.001190	-0.00137 mg/L	0.001190	87.09%
V 292.402†	-5.0	-0.00006 mg/L	0.000151	-0.00006 mg/L	0.000151	256.05%
Zn 206.200†	-2.0	-0.00082 mg/L	0.000378	-0.00082 mg/L	0.000378	46.40%

Sequence No.: 20

Sample ID: BHG0382-BLK1

Autosampler Location: 314

Date Collected: 7/18/2019 11:14:43 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0382-BLK1

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: BHG0382-BLK1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2032458.8	99.76 %	0.246			0.25%
ScR 361.383	232869.8	100.0 %	0.44			0.44%
Ag 328.068†	-3.7	-0.00003 mg/L	0.000109	-0.00003 mg/L	0.000109	434.19%
Al 308.215†	3.1	0.00233 mg/L	0.005578	0.00233 mg/L	0.005578	238.90%
As 188.979†	-2.7	-0.00199 mg/L	0.000902	-0.00199 mg/L	0.000902	45.43%
B 249.677†	18.8	0.00251 mg/L	0.001848	0.00251 mg/L	0.001848	73.59%
Ba 233.527†	-0.4	-0.00009 mg/L	0.000664	-0.00009 mg/L	0.000664	712.41%
Be 313.042†	-27.0	-0.00006 mg/L	0.000039	-0.00006 mg/L	0.000039	71.34%
Ca 317.933†	22.0	0.00215 mg/L	0.000520	0.00215 mg/L	0.000520	24.18%
Cd 228.802†	-1.1	-0.00004 mg/L	0.000168	-0.00004 mg/L	0.000168	477.86%
Co 228.616†	-9.8	-0.00031 mg/L	0.000242	-0.00031 mg/L	0.000242	77.79%
Cr 267.716†	-0.9	-0.00022 mg/L	0.001002	-0.00022 mg/L	0.001002	448.04%
Cu 324.752†	76.1	0.00039 mg/L	0.000050	0.00039 mg/L	0.000050	12.77%
Fe 273.955†	2.4	0.00245 mg/L	0.002138	0.00245 mg/L	0.002138	87.12%
K 766.490†	25.9	0.02570 mg/L	0.015458	0.02570 mg/L	0.015458	60.15%
Mg 279.077†	6.6	0.00546 mg/L	0.007469	0.00546 mg/L	0.007469	136.80%
Mn 257.610†	-3.6	-0.00010 mg/L	0.000092	-0.00010 mg/L	0.000092	95.37%
Mo 202.031†	3.7	0.00023 mg/L	0.000194	0.00023 mg/L	0.000194	84.19%
Na 589.592†	54.1	0.00651 mg/L	0.007501	0.00651 mg/L	0.007501	115.16%
Na 330.237†	-8.1	-0.3937 mg/L	0.53008	-0.3937 mg/L	0.53008	134.64%
Ni 231.604†	0.1	0.00003 mg/L	0.000957	0.00003 mg/L	0.000957	>999.9%
Pb 220.353†	-9.2	-0.00132 mg/L	0.000867	-0.00132 mg/L	0.000867	65.58%
Sb 206.836†	1.4	0.00055 mg/L	0.000868	0.00055 mg/L	0.000868	157.84%
Se 196.026†	-1.0	-0.00086 mg/L	0.009546	-0.00086 mg/L	0.009546	>999.9%
Si 288.158†	12.6	0.01126 mg/L	0.006107	0.01126 mg/L	0.006107	54.25%
Sn 189.927†	0.8	0.00022 mg/L	0.000178	0.00022 mg/L	0.000178	79.37%
Sr 421.552†	-7.2	-0.00003 mg/L	0.000052	-0.00003 mg/L	0.000052	202.34%
Ti 334.903†	-9.5	-0.00063 mg/L	0.001188	-0.00063 mg/L	0.001188	187.23%
Tl 190.801†	-4.0	-0.00204 mg/L	0.000251	-0.00204 mg/L	0.000251	12.29%
V 292.402†	-20.5	-0.00026 mg/L	0.000226	-0.00026 mg/L	0.000226	87.46%
Zn 206.200†	-0.8	-0.00033 mg/L	0.000326	-0.00033 mg/L	0.000326	98.97%

Sequence No.: 21

Sample ID: 19G0207-01

Autosampler Location: 315

Date Collected: 7/18/2019 11:18:42 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0207-01

Analyte	Back Pressure	Flow
All	156.0 kPa	0.65 L/min

Mean Data: 19G0207-01

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1988945.3	97.62 %	0.633			0.65%
ScR 361.383	233624.2	100.3 %	0.49			0.49%
Ag 328.068†	-105.6	-0.00072 mg/L	0.000066	-0.00072 mg/L	0.000066	9.23%
Al 308.215†	9321.9	6.970 mg/L	0.0487	6.970 mg/L	0.0487	0.70%
As 188.979†	31.8	0.01729 mg/L	0.002109	0.01729 mg/L	0.002109	12.20%
B 249.677†	177.0	0.03851 mg/L	0.001020	0.03851 mg/L	0.001020	2.65%
Ba 233.527†	159.3	0.01635 mg/L	0.001124	0.01635 mg/L	0.001124	6.87%
Be 313.042†	191.4	0.00043 mg/L	0.000040	0.00043 mg/L	0.000040	9.27%
Ca 317.933†	1133080.4	110.3 mg/L	0.92	110.3 mg/L	0.92	0.83%
Cd 228.802†	189.8	0.00790 mg/L	0.000031	0.00790 mg/L	0.000031	0.39%
Co 228.616†	992.3	0.02925 mg/L	0.000199	0.02925 mg/L	0.000199	0.68%
Cr 267.716†	-15.9	0.00150 mg/L	0.001821	0.00150 mg/L	0.001821	121.30%
Cu 324.752†	21944.8	0.1193 mg/L	0.00060	0.1193 mg/L	0.00060	0.50%
Fe 273.955†	146223.5	148.1 mg/L	0.18	148.1 mg/L	0.18	0.12%
K 766.490†	11458.3	11.37 mg/L	0.111	11.37 mg/L	0.111	0.98%
Mg 279.077†	22156.9	18.30 mg/L	0.034	18.30 mg/L	0.034	0.19%
Mn 257.610†	97808.9	2.605 mg/L	0.0019	2.605 mg/L	0.0019	0.07%
Mo 202.031†	58.7	0.00180 mg/L	0.000298	0.00180 mg/L	0.000298	16.51%
Na 589.592†	64040.6	7.704 mg/L	0.0182	7.704 mg/L	0.0182	0.24%
Na 330.237†	165.3	6.993 mg/L	0.3275	6.993 mg/L	0.3275	4.68%
Ni 231.604†	81.5	0.02451 mg/L	0.000424	0.02451 mg/L	0.000424	1.73%
Pb 220.353†	36.5	-0.00024 mg/L	0.000986	-0.00024 mg/L	0.000986	408.57%
Sb 206.836†	24.8	0.00965 mg/L	0.002040	0.00965 mg/L	0.002040	21.15%
Se 196.026†	-30.5	-0.01326 mg/L	0.002527	-0.01326 mg/L	0.002527	19.05%
Si 288.158†	16202.7	14.43 mg/L	0.027	14.43 mg/L	0.027	0.19%
Sn 189.927†	-97.0	-0.00924 mg/L	0.000477	-0.00924 mg/L	0.000477	5.16%
Sr 421.552†	76555.6	0.2729 mg/L	0.00178	0.2729 mg/L	0.00178	0.65%
Ti 334.903†	133.4	0.00212 mg/L	0.000425	0.00212 mg/L	0.000425	20.08%
Tl 190.801†	-42.1	-0.01849 mg/L	0.001836	-0.01849 mg/L	0.001836	9.93%
V 292.402†	-609.8	0.00097 mg/L	0.000159	0.00097 mg/L	0.000159	16.37%
Zn 206.200†	6183.1	2.465 mg/L	0.0207	2.465 mg/L	0.0207	0.84%

Sequence No.: 22

Sample ID: 19G0207-02

Autosampler Location: 316

Date Collected: 7/18/2019 11:22:56 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0207-02

Analyte	Back Pressure	Flow
All	157.0 kPa	0.65 L/min

Mean Data: 19G0207-02

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	1989079.8	97.63	%	0.671				0.69%
ScR 361.383	227784.1	97.84	%	0.493				0.50%
Ag 328.068†	-89.5	-0.00061	mg/L	0.000338	-0.00061	mg/L	0.000338	55.77%
Al 308.215†	11393.7	8.518	mg/L	0.0345	8.518	mg/L	0.0345	0.41%
As 188.979†	38.3	0.01729	mg/L	0.001890	0.01729	mg/L	0.001890	10.93%
B 249.677†	1316.4	0.1777	mg/L	0.00121	0.1777	mg/L	0.00121	0.68%
Ba 233.527†	88.0	0.01635	mg/L	0.000599	0.01635	mg/L	0.000599	3.67%
Be 313.042†	303.9	0.00064	mg/L	0.000038	0.00064	mg/L	0.000038	5.98%
Ca 317.933†	1548887.8	150.7	mg/L	0.18	150.7	mg/L	0.18	0.12%
Cd 228.802†	3055.0	0.1292	mg/L	0.00066	0.1292	mg/L	0.00066	0.51%
Co 228.616†	456.3	0.01418	mg/L	0.000110	0.01418	mg/L	0.000110	0.77%
Cr 267.716†	1.1	-0.00199	mg/L	0.001135	-0.00199	mg/L	0.001135	56.93%
Cu 324.752†	385639.2	1.975	mg/L	0.0058	1.975	mg/L	0.0058	0.30%
Fe 273.955†	23012.8	23.30	mg/L	0.128	23.30	mg/L	0.128	0.55%
K 766.490†	7158.4	7.104	mg/L	0.0692	7.104	mg/L	0.0692	0.97%
Mg 279.077†	17198.6	14.24	mg/L	0.060	14.24	mg/L	0.060	0.42%
Mn 257.610†	40307.8	1.073	mg/L	0.0060	1.073	mg/L	0.0060	0.56%
Mo 202.031†	75.1	0.00215	mg/L	0.000156	0.00215	mg/L	0.000156	7.26%
Na 589.592†	132448.5	15.93	mg/L	0.038	15.93	mg/L	0.038	0.24%
Na 330.237†	632.6	15.17	mg/L	0.592	15.17	mg/L	0.592	3.90%
Ni 231.604†	50.8	0.01529	mg/L	0.000285	0.01529	mg/L	0.000285	1.86%
Pb 220.353†	279.3	0.03882	mg/L	0.001249	0.03882	mg/L	0.001249	3.22%
Sb 206.836†	4.9	0.00174	mg/L	0.002270	0.00174	mg/L	0.002270	130.56%
Se 196.026†	-14.5	-0.01214	mg/L	0.005751	-0.01214	mg/L	0.005751	47.37%
Si 288.158†	15366.7	13.68	mg/L	0.063	13.68	mg/L	0.063	0.46%
Sn 189.927†	-107.9	-0.00555	mg/L	0.000565	-0.00555	mg/L	0.000565	10.17%
Sr 421.552†	117894.7	0.4203	mg/L	0.00290	0.4203	mg/L	0.00290	0.69%
Ti 334.903†	181.7	0.00285	mg/L	0.000575	0.00285	mg/L	0.000575	20.16%
Tl 190.801†	-13.4	-0.00562	mg/L	0.002444	-0.00562	mg/L	0.002444	43.48%
V 292.402†	-106.4	0.00015	mg/L	0.000141	0.00015	mg/L	0.000141	95.60%
Zn 206.200†	92518.2	36.89	mg/L	0.230	36.89	mg/L	0.230	0.62%

Sequence No.: 23

Sample ID: 19G0207-03

Autosampler Location: 317

Date Collected: 7/18/2019 11:27:11 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0207-03

Analyte	Back Pressure	Flow
All	158.0 kPa	0.65 L/min

Mean Data: 19G0207-03

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1983760.4	97.37 %	0.047			0.05%
ScR 361.383	235447.3	101.1 %	0.45			0.44%
Ag 328.068†	-150.8	-0.00102 mg/L	0.000380	-0.00102 mg/L	0.000380	37.21%
Al 308.215†	79.9	0.05946 mg/L	0.004528	0.05946 mg/L	0.004528	7.62%
As 188.979†	49.6	0.01836 mg/L	0.001767	0.01836 mg/L	0.001767	9.63%
B 249.677†	436.3	0.05814 mg/L	0.000457	0.05814 mg/L	0.000457	0.79%
Ba 233.527†	27.8	0.00609 mg/L	0.001200	0.00609 mg/L	0.001200	19.72%
Be 313.042†	41.6	0.00009 mg/L	0.000064	0.00009 mg/L	0.000064	73.60%
Ca 317.933†	2538752.8	247.1 mg/L	1.09	247.1 mg/L	1.09	0.44%
Cd 228.802†	-9.5	-0.00064 mg/L	0.000164	-0.00064 mg/L	0.000164	25.83%
Co 228.616†	74.1	0.00233 mg/L	0.000125	0.00233 mg/L	0.000125	5.37%
Cr 267.716†	36.6	0.00408 mg/L	0.000574	0.00408 mg/L	0.000574	14.09%
Cu 324.752†	386.5	0.00185 mg/L	0.000229	0.00185 mg/L	0.000229	12.40%
Fe 273.955†	115.7	0.1171 mg/L	0.00055	0.1171 mg/L	0.00055	0.47%
K 766.490†	10059.7	9.984 mg/L	0.0114	9.984 mg/L	0.0114	0.11%
Mg 279.077†	18357.6	15.21 mg/L	0.029	15.21 mg/L	0.029	0.19%
Mn 257.610†	32352.7	0.8609 mg/L	0.00331	0.8609 mg/L	0.00331	0.38%
Mo 202.031†	108.7	0.00263 mg/L	0.000277	0.00263 mg/L	0.000277	10.52%
Na 589.592†	94826.5	11.41 mg/L	0.016	11.41 mg/L	0.016	0.14%
Na 330.237†	232.0	11.25 mg/L	0.493	11.25 mg/L	0.493	4.39%
Ni 231.604†	4.1	0.00122 mg/L	0.001287	0.00122 mg/L	0.001287	105.48%
Pb 220.353†	-6.5	-0.00090 mg/L	0.000845	-0.00090 mg/L	0.000845	93.92%
Sb 206.836†	-6.6	-0.00298 mg/L	0.001348	-0.00298 mg/L	0.001348	45.28%
Se 196.026†	-12.3	-0.01183 mg/L	0.004249	-0.01183 mg/L	0.004249	35.93%
Si 288.158†	2099.7	1.871 mg/L	0.0109	1.871 mg/L	0.0109	0.58%
Sn 189.927†	-117.4	0.00796 mg/L	0.001583	0.00796 mg/L	0.001583	19.90%
Sr 421.552†	118941.0	0.4240 mg/L	0.00129	0.4240 mg/L	0.00129	0.30%
Ti 334.903†	279.8	0.00346 mg/L	0.000309	0.00346 mg/L	0.000309	8.90%
Tl 190.801†	-9.4	-0.00378 mg/L	0.002294	-0.00378 mg/L	0.002294	60.70%
V 292.402†	-12.3	0.00007 mg/L	0.000306	0.00007 mg/L	0.000306	441.92%
Zn 206.200†	186.9	0.07399 mg/L	0.000732	0.07399 mg/L	0.000732	0.99%

Sequence No.: 24

Sample ID: 19G0208-01

Autosampler Location: 318

Date Collected: 7/18/2019 11:31:25 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0208-01

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: 19G0208-01

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2418680.9	118.7 %	0.49			0.41%
ScR 361.383	235914.0	101.3 %	0.31			0.30%
Ag 328.068†	3158.8	0.02138 mg/L	0.000232	0.02138 mg/L	0.000232	1.08%
Al 308.215†	4921.5	3.680 mg/L	0.0285	3.680 mg/L	0.0285	0.77%
As 188.979†	7.0	0.00448 mg/L	0.001309	0.00448 mg/L	0.001309	29.20%
B 249.677†	122792.1	16.36 mg/L	0.026	16.36 mg/L	0.026	0.16%
Ba 233.527†	1942.1	0.4254 mg/L	0.00162	0.4254 mg/L	0.00162	0.38%
Be 313.042†	-15582.4	-0.03251 mg/L	0.000054	-0.03251 mg/L	0.000054	0.17%
Ca 317.933†	95194.0	9.265 mg/L	0.0264	9.265 mg/L	0.0264	0.28%
Cd 228.802†	-52.3	-0.00225 mg/L	0.000052	-0.00225 mg/L	0.000052	2.30%
Co 228.616†	-2.3	-0.00014 mg/L	0.000060	-0.00014 mg/L	0.000060	43.17%
Cr 267.716†	74.2	0.01849 mg/L	0.001004	0.01849 mg/L	0.001004	5.43%
Cu 324.752†	3794.7	0.01943 mg/L	0.000073	0.01943 mg/L	0.000073	0.37%
Fe 273.955†	437.5	0.4430 mg/L	0.00265	0.4430 mg/L	0.00265	0.60%
K 766.490†	104975.2	104.2 mg/L	0.24	104.2 mg/L	0.24	0.23%
Mg 279.077†	1372.5	1.138 mg/L	0.0067	1.138 mg/L	0.0067	0.59%
Mn 257.610†	499.7	0.01327 mg/L	0.000063	0.01327 mg/L	0.000063	0.47%
Mo 202.031†	19.6	0.00106 mg/L	0.000155	0.00106 mg/L	0.000155	14.66%
Na 589.592†	29946.8	3.603 mg/L	0.0073	3.603 mg/L	0.0073	0.20%
Na 330.237†	75.2	3.648 mg/L	0.3615	3.648 mg/L	0.3615	9.91%
Ni 231.604†	7.4	0.00223 mg/L	0.001368	0.00223 mg/L	0.001368	61.21%
Pb 220.353†	-12.5	-0.00080 mg/L	0.000145	-0.00080 mg/L	0.000145	18.23%
Sb 206.836†	-9.4	-0.00399 mg/L	0.000752	-0.00399 mg/L	0.000752	18.85%
Se 196.026†	9.6	0.00827 mg/L	0.002609	0.00827 mg/L	0.002609	31.53%
Si 288.158†	9122.9	8.121 mg/L	0.0318	8.121 mg/L	0.0318	0.39%
Sn 189.927†	10.4	0.00456 mg/L	0.000790	0.00456 mg/L	0.000790	17.32%
Sr 421.552†	10823.3	0.03858 mg/L	0.000357	0.03858 mg/L	0.000357	0.93%
Ti 334.903†	78.5	0.00467 mg/L	0.002160	0.00467 mg/L	0.002160	46.24%
Tl 190.801†	0.1	0.00008 mg/L	0.001333	0.00008 mg/L	0.001333	>999.9%
V 292.402†	3.5	0.00020 mg/L	0.000157	0.00020 mg/L	0.000157	80.64%
Zn 206.200†	41.0	0.01091 mg/L	0.000479	0.01091 mg/L	0.000479	4.39%

Sequence No.: 25

Sample ID: 19G0187-01

Autosampler Location: 319

Date Collected: 7/18/2019 11:35:23 AM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0187-01

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: 19G0187-01

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1814967.4	89.08 %	0.514			0.58%
ScR 361.383	227207.0	97.59 %	0.824			0.84%
Ag 328.068†	-13.4	-0.00009 mg/L	0.000445	-0.00045 mg/L	0.002227	492.21%
Al 308.215†	19.8	-0.01430 mg/L	0.001830	-0.07148 mg/L	0.009151	12.80%
As 188.979†	44.3	0.02581 mg/L	0.002247	0.1291 mg/L	0.01124	8.70%
B 249.677†	154854.5	20.63 mg/L	0.032	103.1 mg/L	0.16	0.16%
Ba 233.527†	18.2	0.00397 mg/L	0.000755	0.01986 mg/L	0.003773	19.00%
Be 313.042†	10.7	0.00002 mg/L	0.000048	0.00011 mg/L	0.000238	220.05%
Ca 317.933†	836050.9	81.33 mg/L	0.151	406.6 mg/L	0.75	0.19%
Cd 228.802†	7.2	0.00016 mg/L	0.000276	0.00078 mg/L	0.001378	176.40%
Co 228.616†	40.6	0.00129 mg/L	0.000109	0.00645 mg/L	0.000543	8.42%
Cr 267.716†	-2.3	-0.00175 mg/L	0.001822	-0.00876 mg/L	0.009112	104.07%
Cu 324.752†	878.1	0.00310 mg/L	0.000199	0.01552 mg/L	0.000993	6.40%
Fe 273.955†	65.6	0.06642 mg/L	0.003174	0.3321 mg/L	0.01587	4.78%
K 766.490†	4064.1	4.033 mg/L	0.0292	20.17 mg/L	0.146	0.72%
Mg 279.077†	662.0	0.5410 mg/L	0.00487	2.705 mg/L	0.0243	0.90%
Mn 257.610†	592.7	0.01561 mg/L	0.000104	0.07804 mg/L	0.000518	0.66%
Mo 202.031†	1955.1	0.1195 mg/L	0.00099	0.5975 mg/L	0.00493	0.82%
Na 589.592†	20334224.7	2446 mg/L	8.99	12230 mg/L	44.95	0.37%
Na 330.237†	56527.6	2747 mg/L	2.03	13730 mg/L	10.13	0.07%
Ni 231.604†	208.1	0.06263 mg/L	0.000867	0.3131 mg/L	0.00433	1.38%
Pb 220.353†	47.0	0.00675 mg/L	0.000863	0.03374 mg/L	0.004316	12.79%
Sb 206.836†	-3.2	-0.00141 mg/L	0.000139	-0.00707 mg/L	0.000693	9.81%
Se 196.026†	-6.0	-0.00544 mg/L	0.003696	-0.02722 mg/L	0.018482	67.91%
Si 288.158†	80.1	0.07138 mg/L	0.006174	0.3569 mg/L	0.03087	8.65%
Sn 189.927†	-84.3	-0.01048 mg/L	0.000577	-0.05242 mg/L	0.002887	5.51%
Sr 421.552†	14995.6	0.05346 mg/L	0.000318	0.2673 mg/L	0.00159	0.60%
Ti 334.903†	106.1	0.00196 mg/L	0.002426	0.00980 mg/L	0.012129	123.71%
Tl 190.801†	-1.8	-0.00080 mg/L	0.003443	-0.00400 mg/L	0.017213	429.93%
V 292.402†	10.8	0.00018 mg/L	0.000305	0.00091 mg/L	0.001524	166.61%
Zn 206.200†	80.0	0.03166 mg/L	0.000685	0.1583 mg/L	0.00343	2.16%

Sequence No.: 26
Sample ID: SEQ-IBL1

Autosampler Location: 320
Date Collected: 7/18/2019 11:40:07 AM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-IBL1

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: SEQ-IBL1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2097544.7	103.0 %	0.06			0.06%
ScR 361.383	240607.7	103.3 %	0.22			0.21%
Ag 328.068†	47.8	0.00032 mg/L	0.000066	0.00032 mg/L	0.000066	20.43%
Al 308.215†	-4.5	-0.00335 mg/L	0.015109	-0.00335 mg/L	0.015109	450.61%
As 188.979†	-0.5	-0.00035 mg/L	0.001425	-0.00035 mg/L	0.001425	405.46%
B 249.677†	547.8	0.07297 mg/L	0.010418	0.07297 mg/L	0.010418	14.28%
Ba 233.527†	-1.7	-0.00038 mg/L	0.000505	-0.00038 mg/L	0.000505	134.01%
Be 313.042†	-91.4	-0.00019 mg/L	0.000006	-0.00019 mg/L	0.000006	3.26%
Ca 317.933†	68.7	0.00667 mg/L	0.002332	0.00667 mg/L	0.002332	34.97%
Cd 228.802†	1.9	0.00009 mg/L	0.000088	0.00009 mg/L	0.000088	103.68%
Co 228.616†	-5.5	-0.00018 mg/L	0.000080	-0.00018 mg/L	0.000080	44.38%
Cr 267.716†	6.5	0.00165 mg/L	0.001126	0.00165 mg/L	0.001126	68.38%
Cu 324.752†	120.3	0.00062 mg/L	0.000031	0.00062 mg/L	0.000031	5.10%
Fe 273.955†	5.6	0.00573 mg/L	0.003832	0.00573 mg/L	0.003832	66.93%
K 766.490†	28.2	0.02797 mg/L	0.033797	0.02797 mg/L	0.033797	120.85%
Mg 279.077†	3.1	0.00254 mg/L	0.006763	0.00254 mg/L	0.006763	265.78%
Mn 257.610†	-4.2	-0.00011 mg/L	0.000133	-0.00011 mg/L	0.000133	118.85%
Mo 202.031†	-0.6	-0.00004 mg/L	0.000307	-0.00004 mg/L	0.000307	805.74%
Na 589.592†	3111.5	0.3743 mg/L	0.07995	0.3743 mg/L	0.07995	21.36%
Na 330.237†	13.8	0.6685 mg/L	0.40063	0.6685 mg/L	0.40063	59.93%
Ni 231.604†	1.8	0.00054 mg/L	0.001028	0.00054 mg/L	0.001028	189.81%
Pb 220.353†	-13.2	-0.00190 mg/L	0.001026	-0.00190 mg/L	0.001026	53.99%
Sb 206.836†	-3.9	-0.00157 mg/L	0.001687	-0.00157 mg/L	0.001687	107.16%
Se 196.026†	3.9	0.00349 mg/L	0.006208	0.00349 mg/L	0.006208	177.70%
Si 288.158†	5.6	0.00498 mg/L	0.000982	0.00498 mg/L	0.000982	19.74%
Sn 189.927†	0.7	0.00021 mg/L	0.000886	0.00021 mg/L	0.000886	429.90%
Sr 421.552†	-47.1	-0.00017 mg/L	0.000110	-0.00017 mg/L	0.000110	65.29%
Ti 334.903†	20.2	0.00135 mg/L	0.000443	0.00135 mg/L	0.000443	32.87%
Tl 190.801†	-1.5	-0.00078 mg/L	0.001302	-0.00078 mg/L	0.001302	167.27%
V 292.402†	-19.3	-0.00023 mg/L	0.000139	-0.00023 mg/L	0.000139	60.45%
Zn 206.200†	0.9	0.00037 mg/L	0.000877	0.00037 mg/L	0.000877	234.79%

Sequence No.: 27

Sample ID: BHG0382-DUP1

Autosampler Location: 321

Date Collected: 7/18/2019 11:44:05 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0382-DUP1

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: BHG0382-DUP1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2106937.5	103.4 %	0.35			0.34%
ScR 361.383	242142.7	104.0 %	0.52			0.50%
Ag 328.068†	21.0	0.00014 mg/L	0.000255	0.00014 mg/L	0.000255	179.15%
Al 308.215†	16.3	0.01222 mg/L	0.021728	0.01222 mg/L	0.021728	177.85%
As 188.979†	-0.2	-0.00020 mg/L	0.001705	-0.00020 mg/L	0.001705	873.92%
B 249.677†	268.2	0.03573 mg/L	0.002042	0.03573 mg/L	0.002042	5.72%
Ba 233.527†	-1.5	-0.00033 mg/L	0.000218	-0.00033 mg/L	0.000218	67.11%
Be 313.042†	-104.3	-0.00022 mg/L	0.000066	-0.00022 mg/L	0.000066	30.39%
Ca 317.933†	1738.2	0.1692 mg/L	0.00118	0.1692 mg/L	0.00118	0.70%
Cd 228.802†	0.3	0.00002 mg/L	0.000098	0.00002 mg/L	0.000098	639.67%
Co 228.616†	-9.8	-0.00031 mg/L	0.000185	-0.00031 mg/L	0.000185	58.91%
Cr 267.716†	4.0	0.00101 mg/L	0.000400	0.00101 mg/L	0.000400	39.79%
Cu 324.752†	147.8	0.00076 mg/L	0.000193	0.00076 mg/L	0.000193	25.46%
Fe 273.955†	18.1	0.01835 mg/L	0.001412	0.01835 mg/L	0.001412	7.70%
K 766.490†	6.6	0.00652 mg/L	0.038846	0.00652 mg/L	0.038846	595.76%
Mg 279.077†	12.1	0.01004 mg/L	0.005101	0.01004 mg/L	0.005101	50.79%
Mn 257.610†	9.4	0.00025 mg/L	0.000124	0.00025 mg/L	0.000124	49.93%
Mo 202.031†	-1.5	-0.00009 mg/L	0.000109	-0.00009 mg/L	0.000109	116.79%
Na 589.592†	4689.9	0.5642 mg/L	0.00733	0.5642 mg/L	0.00733	1.30%
Na 330.237†	18.0	0.8768 mg/L	0.67183	0.8768 mg/L	0.67183	76.63%
Ni 231.604†	1.3	0.00040 mg/L	0.001283	0.00040 mg/L	0.001283	320.78%
Pb 220.353†	-7.1	-0.00102 mg/L	0.000496	-0.00102 mg/L	0.000496	48.56%
Sb 206.836†	-3.2	-0.00129 mg/L	0.000271	-0.00129 mg/L	0.000271	21.09%
Se 196.026†	1.4	0.00124 mg/L	0.003612	0.00124 mg/L	0.003612	290.24%
Si 288.158†	602.9	0.5367 mg/L	0.00097	0.5367 mg/L	0.00097	0.18%
Sn 189.927†	5.7	0.00167 mg/L	0.001591	0.00167 mg/L	0.001591	95.34%
Sr 421.552†	58.2	0.00021 mg/L	0.000043	0.00021 mg/L	0.000043	20.53%
Ti 334.903†	-9.2	-0.00063 mg/L	0.001069	-0.00063 mg/L	0.001069	170.42%
Tl 190.801†	-2.8	-0.00142 mg/L	0.002457	-0.00142 mg/L	0.002457	172.66%
V 292.402†	-20.6	-0.00025 mg/L	0.000087	-0.00025 mg/L	0.000087	34.92%
Zn 206.200†	0.4	0.00018 mg/L	0.000430	0.00018 mg/L	0.000430	241.16%

Sequence No.: 28

Sample ID: 19G0163-01

Autosampler Location: 322

Date Collected: 7/18/2019 11:48:03 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-01

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: 19G0163-01

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2090363.1	102.6 %	0.46			0.45%
ScR 361.383	238743.3	102.5 %	0.13			0.13%
Ag 328.068†	23.6	0.00016 mg/L	0.000249	0.00016 mg/L	0.000249	156.32%
Al 308.215†	0.4	0.00032 mg/L	0.015667	0.00032 mg/L	0.015667	>999.9%
As 188.979†	-0.0	-0.00004 mg/L	0.001459	-0.00004 mg/L	0.001459	>999.9%
B 249.677†	184.6	0.02459 mg/L	0.002457	0.02459 mg/L	0.002457	9.99%
Ba 233.527†	-1.8	-0.00039 mg/L	0.000499	-0.00039 mg/L	0.000499	127.24%
Be 313.042†	-68.5	-0.00014 mg/L	0.000076	-0.00014 mg/L	0.000076	53.51%
Ca 317.933†	1354.5	0.1318 mg/L	0.00115	0.1318 mg/L	0.00115	0.87%
Cd 228.802†	2.4	0.00010 mg/L	0.000149	0.00010 mg/L	0.000149	144.56%
Co 228.616†	-9.6	-0.00031 mg/L	0.000156	-0.00031 mg/L	0.000156	50.78%
Cr 267.716†	9.2	0.00232 mg/L	0.000870	0.00232 mg/L	0.000870	37.49%
Cu 324.752†	147.9	0.00076 mg/L	0.000048	0.00076 mg/L	0.000048	6.39%
Fe 273.955†	8.7	0.00878 mg/L	0.001544	0.00878 mg/L	0.001544	17.58%
K 766.490†	32.2	0.03199 mg/L	0.022723	0.03199 mg/L	0.022723	71.03%
Mg 279.077†	15.2	0.01259 mg/L	0.007050	0.01259 mg/L	0.007050	56.01%
Mn 257.610†	7.7	0.00020 mg/L	0.000096	0.00020 mg/L	0.000096	46.72%
Mo 202.031†	0.1	0.00000 mg/L	0.000189	0.00000 mg/L	0.000189	>999.9%
Na 589.592†	4169.0	0.5015 mg/L	0.00390	0.5015 mg/L	0.00390	0.78%
Na 330.237†	8.1	0.3932 mg/L	0.41384	0.3932 mg/L	0.41384	105.25%
Ni 231.604†	1.4	0.00042 mg/L	0.001050	0.00042 mg/L	0.001050	248.33%
Pb 220.353†	-5.9	-0.00084 mg/L	0.001713	-0.00084 mg/L	0.001713	203.33%
Sb 206.836†	-3.9	-0.00159 mg/L	0.001157	-0.00159 mg/L	0.001157	72.69%
Se 196.026†	7.2	0.00649 mg/L	0.002766	0.00649 mg/L	0.002766	42.61%
Si 288.158†	590.7	0.5258 mg/L	0.00612	0.5258 mg/L	0.00612	1.16%
Sn 189.927†	0.6	0.00019 mg/L	0.001110	0.00019 mg/L	0.001110	573.42%
Sr 421.552†	33.0	0.00012 mg/L	0.000141	0.00012 mg/L	0.000141	119.77%
Ti 334.903†	0.0	-0.00001 mg/L	0.000767	-0.00001 mg/L	0.000767	>999.9%
Tl 190.801†	-3.5	-0.00178 mg/L	0.001271	-0.00178 mg/L	0.001271	71.61%
V 292.402†	-11.8	-0.00013 mg/L	0.000294	-0.00013 mg/L	0.000294	223.40%
Zn 206.200†	-2.9	-0.00114 mg/L	0.000481	-0.00114 mg/L	0.000481	42.19%

Sequence No.: 29

Sample ID: BHG0382-MS1

Autosampler Location: 323

Date Collected: 7/18/2019 11:52:02 AM

Data Type: Original

Dilution: 1X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0382-MS1

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: BHG0382-MS1

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2074818.4	101.8 %	0.21			0.20%
ScR 361.383	239583.9	102.9 %	0.64			0.62%
Ag 328.068†	79161.7	0.5360 mg/L	0.00053	0.5360 mg/L	0.00053	0.10%
Al 308.215†	2725.2	2.030 mg/L	0.0145	2.030 mg/L	0.0145	0.71%
As 188.979†	2837.5	2.052 mg/L	0.0048	2.052 mg/L	0.0048	0.23%
B 249.677†	140.9	0.01776 mg/L	0.000432	0.01776 mg/L	0.000432	2.43%
Ba 233.527†	8974.1	1.965 mg/L	0.0148	1.965 mg/L	0.0148	0.75%
Be 313.042†	251875.6	0.5234 mg/L	0.00155	0.5234 mg/L	0.00155	0.30%
Ca 317.933†	104181.8	10.13 mg/L	0.055	10.13 mg/L	0.055	0.54%
Cd 228.802†	12042.1	0.4968 mg/L	0.00200	0.4968 mg/L	0.00200	0.40%
Co 228.616†	15562.0	0.4976 mg/L	0.00111	0.4976 mg/L	0.00111	0.22%
Cr 267.716†	1960.7	0.4936 mg/L	0.00273	0.4936 mg/L	0.00273	0.55%
Cu 324.752†	94834.5	0.4855 mg/L	0.00187	0.4855 mg/L	0.00187	0.38%
Fe 273.955†	1934.9	1.956 mg/L	0.0190	1.956 mg/L	0.0190	0.97%
K 766.490†	10088.8	10.01 mg/L	0.134	10.01 mg/L	0.134	1.34%
Mg 279.077†	12416.7	10.30 mg/L	0.067	10.30 mg/L	0.067	0.65%
Mn 257.610†	18071.5	0.4815 mg/L	0.00224	0.4815 mg/L	0.00224	0.47%
Mo 202.031†	16.5	0.00082 mg/L	0.000149	0.00082 mg/L	0.000149	18.04%
Na 589.592†	89059.8	10.71 mg/L	0.063	10.71 mg/L	0.063	0.59%
Na 330.237†	216.9	10.33 mg/L	0.193	10.33 mg/L	0.193	1.87%
Ni 231.604†	1649.2	0.4962 mg/L	0.00376	0.4962 mg/L	0.00376	0.76%
Pb 220.353†	13963.7	2.006 mg/L	0.0074	2.006 mg/L	0.0074	0.37%
Sb 206.836†	15.7	-0.00010 mg/L	0.000988	-0.00010 mg/L	0.000988	973.74%
Se 196.026†	2327.1	2.092 mg/L	0.0019	2.092 mg/L	0.0019	0.09%
Si 288.158†	612.5	0.5472 mg/L	0.00430	0.5472 mg/L	0.00430	0.79%
Sn 189.927†	-14.8	-0.00255 mg/L	0.000408	-0.00255 mg/L	0.000408	16.05%
Sr 421.552†	152412.0	0.5433 mg/L	0.00230	0.5433 mg/L	0.00230	0.42%
Ti 334.903†	16.4	0.00037 mg/L	0.000223	0.00037 mg/L	0.000223	59.92%
Tl 190.801†	4081.4	2.073 mg/L	0.0040	2.073 mg/L	0.0040	0.19%
V 292.402†	39284.2	0.4950 mg/L	0.00117	0.4950 mg/L	0.00117	0.24%
Zn 206.200†	1245.0	0.4958 mg/L	0.00449	0.4958 mg/L	0.00449	0.91%

Sequence No.: 30
Sample ID: SEQ-CCV3

Autosampler Location: 7
Date Collected: 7/18/2019 11:56:01 AM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCV3

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: SEQ-CCV3

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2055918.8	100.9 %	0.33			0.33%
ScR 361.383	236868.7	101.7 %	0.60			0.59%
Ag 328.068†	154790.2	1.048 mg/L	0.0044	1.048 mg/L	0.0044	0.42%
Al 308.215†	2754.3	2.021 mg/L	0.0136	2.021 mg/L	0.0136	0.67%
As 188.979†	2777.8	2.034 mg/L	0.0074	2.034 mg/L	0.0074	0.36%
B 249.677†	7858.5	1.046 mg/L	0.0063	1.046 mg/L	0.0063	0.61%
Ba 233.527†	4530.9	0.9907 mg/L	0.00777	0.9907 mg/L	0.00777	0.78%
Be 313.042†	504889.1	1.049 mg/L	0.0033	1.049 mg/L	0.0033	0.31%
Ca 317.933†	20684.0	2.000 mg/L	0.0029	2.000 mg/L	0.0029	0.14%
Cd 228.802†	23959.3	1.002 mg/L	0.0072	1.002 mg/L	0.0072	0.71%
Co 228.616†	31363.5	1.002 mg/L	0.0039	1.002 mg/L	0.0039	0.39%
Cr 267.716†	3850.9	0.9717 mg/L	0.01066	0.9717 mg/L	0.01066	1.10%
Cu 324.752†	199477.8	1.021 mg/L	0.0063	1.021 mg/L	0.0063	0.62%
Fe 273.955†	1942.4	1.959 mg/L	0.0217	1.959 mg/L	0.0217	1.11%
K 766.490†	20418.0	20.26 mg/L	0.036	20.26 mg/L	0.036	0.18%
Mg 279.077†	2433.5	2.031 mg/L	0.0129	2.031 mg/L	0.0129	0.64%
Mn 257.610†	36455.7	0.9711 mg/L	0.00078	0.9711 mg/L	0.00078	0.08%
Mo 202.031†	16546.1	1.023 mg/L	0.0082	1.023 mg/L	0.0082	0.80%
Na 589.592†	433442.5	52.14 mg/L	0.080	52.14 mg/L	0.080	0.15%
Na 330.237†	1060.6	51.32 mg/L	0.289	51.32 mg/L	0.289	0.56%
Ni 231.604†	3326.8	1.002 mg/L	0.0103	1.002 mg/L	0.0103	1.03%
Pb 220.353†	14041.9	2.018 mg/L	0.0055	2.018 mg/L	0.0055	0.27%
Sb 206.836†	5430.3	2.144 mg/L	0.0081	2.144 mg/L	0.0081	0.38%
Se 196.026†	2361.1	2.122 mg/L	0.0027	2.122 mg/L	0.0027	0.13%
Si 288.158†	2460.0	2.191 mg/L	0.0220	2.191 mg/L	0.0220	1.01%
Sn 189.927†	3630.8	1.044 mg/L	0.0057	1.044 mg/L	0.0057	0.55%
Sr 421.552†	306020.8	1.091 mg/L	0.0083	1.091 mg/L	0.0083	0.76%
Ti 334.903†	14955.2	0.9983 mg/L	0.00220	0.9983 mg/L	0.00220	0.22%
Tl 190.801†	4072.3	2.065 mg/L	0.0092	2.065 mg/L	0.0092	0.44%
V 292.402†	78220.4	0.9856 mg/L	0.01161	0.9856 mg/L	0.01161	1.18%
Zn 206.200†	2573.2	1.024 mg/L	0.0073	1.024 mg/L	0.0073	0.71%

Sequence No.: 31
Sample ID: SEQ-CCB3

Autosampler Location: 1
Date Collected: 7/18/2019 12:01:04 PM
Data Type: Original

Dilution: 1X
Wash Time: 100

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCB3

Analyte	Back Pressure	Flow
All	159.0 kPa	0.65 L/min

Mean Data: SEQ-CCB3

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2072065.7	101.7	%	0.02				0.02%
ScR 361.383	237441.7	102.0	%	0.21				0.21%
Ag 328.068†	18.1	0.00012	mg/L	0.000047	0.00012	mg/L	0.000047	38.01%
Al 308.215†	-3.5	-0.00267	mg/L	0.012114	-0.00267	mg/L	0.012114	453.93%
As 188.979†	-1.5	-0.00104	mg/L	0.000761	-0.00104	mg/L	0.000761	73.19%
B 249.677†	92.3	0.01230	mg/L	0.000718	0.01230	mg/L	0.000718	5.84%
Ba 233.527†	1.4	0.00030	mg/L	0.000849	0.00030	mg/L	0.000849	280.41%
Be 313.042†	-41.0	-0.00008	mg/L	0.000083	-0.00008	mg/L	0.000083	98.99%
Ca 317.933†	8.0	0.00077	mg/L	0.000594	0.00077	mg/L	0.000594	76.79%
Cd 228.802†	4.6	0.00020	mg/L	0.000126	0.00020	mg/L	0.000126	62.49%
Co 228.616†	-5.4	-0.00017	mg/L	0.000056	-0.00017	mg/L	0.000056	31.98%
Cr 267.716†	-2.6	-0.00066	mg/L	0.000569	-0.00066	mg/L	0.000569	86.25%
Cu 324.752†	162.2	0.00083	mg/L	0.000096	0.00083	mg/L	0.000096	11.54%
Fe 273.955†	2.0	0.00201	mg/L	0.002479	0.00201	mg/L	0.002479	123.23%
K 766.490†	17.3	0.01717	mg/L	0.021020	0.01717	mg/L	0.021020	122.43%
Mg 279.077†	-4.0	-0.00333	mg/L	0.003540	-0.00333	mg/L	0.003540	106.16%
Mn 257.610†	-7.9	-0.00021	mg/L	0.000106	-0.00021	mg/L	0.000106	50.69%
Mo 202.031†	17.7	0.00109	mg/L	0.000336	0.00109	mg/L	0.000336	30.75%
Na 589.592†	262.8	0.03162	mg/L	0.001927	0.03162	mg/L	0.001927	6.09%
Na 330.237†	3.0	0.1447	mg/L	0.30557	0.1447	mg/L	0.30557	211.20%
Ni 231.604†	1.2	0.00037	mg/L	0.001020	0.00037	mg/L	0.001020	274.82%
Pb 220.353†	-10.0	-0.00144	mg/L	0.001049	-0.00144	mg/L	0.001049	72.87%
Sb 206.836†	-2.7	-0.00106	mg/L	0.000506	-0.00106	mg/L	0.000506	47.67%
Se 196.026†	2.1	0.00185	mg/L	0.003445	0.00185	mg/L	0.003445	186.05%
Si 288.158†	12.1	0.01079	mg/L	0.002964	0.01079	mg/L	0.002964	27.46%
Sn 189.927†	0.9	0.00027	mg/L	0.000485	0.00027	mg/L	0.000485	179.54%
Sr 421.552†	-20.6	-0.00007	mg/L	0.000124	-0.00007	mg/L	0.000124	168.69%
Ti 334.903†	10.9	0.00073	mg/L	0.001043	0.00073	mg/L	0.001043	142.71%
Tl 190.801†	-2.3	-0.00116	mg/L	0.002594	-0.00116	mg/L	0.002594	222.74%
V 292.402†	-41.1	-0.00052	mg/L	0.000092	-0.00052	mg/L	0.000092	17.78%
Zn 206.200†	-1.3	-0.00054	mg/L	0.000214	-0.00054	mg/L	0.000214	39.93%

Sequence No.: 32

Sample ID: BHG0335-BLK1

Autosampler Location: 324

Date Collected: 7/18/2019 12:05:03 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0335-BLK1

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: BHG0335-BLK1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2110785.4	103.6 %	0.59			0.57%
ScR 361.383	242760.8	104.3 %	0.46			0.44%
Ag 328.068†	24.9	0.00017 mg/L	0.000101	0.00034 mg/L	0.000202	59.90%
Al 308.215†	-4.1	-0.00307 mg/L	0.007801	-0.00614 mg/L	0.015602	254.29%
As 188.979†	-2.0	-0.00146 mg/L	0.000022	-0.00291 mg/L	0.000043	1.49%
B 249.677†	75.4	0.01004 mg/L	0.000450	0.02009 mg/L	0.000901	4.48%
Ba 233.527†	1.3	0.00029 mg/L	0.000035	0.00057 mg/L	0.000071	12.30%
Be 313.042†	-88.5	-0.00018 mg/L	0.000040	-0.00037 mg/L	0.000080	21.68%
Ca 317.933†	24.0	0.00233 mg/L	0.000771	0.00467 mg/L	0.001541	33.02%
Cd 228.802†	3.1	0.00014 mg/L	0.000108	0.00028 mg/L	0.000216	77.14%
Co 228.616†	-5.8	-0.00018 mg/L	0.000088	-0.00037 mg/L	0.000175	47.34%
Cr 267.716†	10.5	0.00264 mg/L	0.000785	0.00528 mg/L	0.001569	29.71%
Cu 324.752†	131.2	0.00067 mg/L	0.000093	0.00134 mg/L	0.000187	13.91%
Fe 273.955†	0.5	0.00054 mg/L	0.000679	0.00107 mg/L	0.001359	126.38%
K 766.490†	18.0	0.01785 mg/L	0.036337	0.03570 mg/L	0.072674	203.58%
Mg 279.077†	-2.3	-0.00194 mg/L	0.003163	-0.00389 mg/L	0.006327	162.80%
Mn 257.610†	-7.3	-0.00020 mg/L	0.000041	-0.00039 mg/L	0.000082	21.03%
Mo 202.031†	4.0	0.00025 mg/L	0.000225	0.00050 mg/L	0.000450	90.55%
Na 589.592†	216.9	0.02609 mg/L	0.002503	0.05218 mg/L	0.005006	9.59%
Na 330.237†	-0.1	-0.00558 mg/L	0.573234	-0.01116 mg/L	1.146469	>999.9%
Ni 231.604†	2.1	0.00063 mg/L	0.001355	0.00125 mg/L	0.002709	216.07%
Pb 220.353†	-8.0	-0.00115 mg/L	0.001034	-0.00230 mg/L	0.002068	89.81%
Sb 206.836†	-4.6	-0.00186 mg/L	0.001438	-0.00372 mg/L	0.002876	77.22%
Se 196.026†	2.7	0.00245 mg/L	0.005689	0.00490 mg/L	0.011377	232.00%
Si 288.158†	12.2	0.01084 mg/L	0.003586	0.02167 mg/L	0.007172	33.10%
Sn 189.927†	0.6	0.00017 mg/L	0.000508	0.00034 mg/L	0.001016	300.86%
Sr 421.552†	-41.9	-0.00015 mg/L	0.000078	-0.00030 mg/L	0.000156	52.29%
Ti 334.903†	-10.0	-0.00067 mg/L	0.000473	-0.00133 mg/L	0.000946	71.01%
Tl 190.801†	-2.5	-0.00127 mg/L	0.001966	-0.00255 mg/L	0.003931	154.36%
V 292.402†	-20.9	-0.00024 mg/L	0.000297	-0.00049 mg/L	0.000595	121.93%
Zn 206.200†	-1.2	-0.00049 mg/L	0.000377	-0.00099 mg/L	0.000754	76.57%

Sequence No.: 33

Sample ID: 19G0163-03

Autosampler Location: 325

Date Collected: 7/18/2019 12:09:02 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-03

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: 19G0163-03

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2093005.3	102.7 %	0.72			0.70%
ScR 361.383	239324.3	102.8 %	0.53			0.52%
Ag 328.068†	264.0	0.00183 mg/L	0.000237	0.00366 mg/L	0.000475	12.98%
Al 308.215†	56021.7	41.88 mg/L	0.177	83.75 mg/L	0.354	0.42%
As 188.979†	53.1	0.1313 mg/L	0.00214	0.2625 mg/L	0.00428	1.63%
B 249.677†	202.1	0.04529 mg/L	0.000499	0.09059 mg/L	0.000998	1.10%
Ba 233.527†	2939.7	0.6210 mg/L	0.00367	1.242 mg/L	0.0073	0.59%
Be 313.042†	698.7	0.00084 mg/L	0.000040	0.00168 mg/L	0.000079	4.74%
Ca 317.933†	964837.1	93.91 mg/L	0.941	187.8 mg/L	1.88	1.00%
Cd 228.802†	46.1	0.00187 mg/L	0.000125	0.00374 mg/L	0.000250	6.70%
Co 228.616†	1603.3	0.04214 mg/L	0.000285	0.08428 mg/L	0.000570	0.68%
Cr 267.716†	543.4	0.1444 mg/L	0.00187	0.2887 mg/L	0.00375	1.30%
Cu 324.752†	11380.1	0.06627 mg/L	0.000183	0.1325 mg/L	0.00037	0.28%
Fe 273.955†	180613.0	182.9 mg/L	0.91	365.8 mg/L	1.82	0.50%
K 766.490†	2693.5	2.673 mg/L	0.0445	5.346 mg/L	0.0890	1.66%
Mg 279.077†	29053.5	24.08 mg/L	0.116	48.15 mg/L	0.233	0.48%
Mn 257.610†	1349450.3	35.93 mg/L	0.183	71.86 mg/L	0.367	0.51%
Mo 202.031†	70.5	0.00280 mg/L	0.000227	0.00560 mg/L	0.000455	8.12%
Na 589.592†	10452.4	1.257 mg/L	0.0047	2.515 mg/L	0.0094	0.38%
Na 330.237†	0.4	0.6616 mg/L	0.05477	1.323 mg/L	0.1095	8.28%
Ni 231.604†	637.5	0.1919 mg/L	0.00136	0.3837 mg/L	0.00272	0.71%
Pb 220.353†	309.6	0.04721 mg/L	0.000296	0.09442 mg/L	0.000592	0.63%
Sb 206.836†	25.9	0.01335 mg/L	0.000871	0.02670 mg/L	0.001742	6.53%
Se 196.026†	-1.7	-0.01654 mg/L	0.002335	-0.03309 mg/L	0.004669	14.11%
Si 288.158†	1375.4	1.227 mg/L	0.0207	2.455 mg/L	0.0414	1.68%
Sn 189.927†	-100.7	-0.01157 mg/L	0.001500	-0.02314 mg/L	0.002999	12.96%
Sr 421.552†	126388.7	0.4505 mg/L	0.00295	0.9011 mg/L	0.00589	0.65%
Ti 334.903†	50588.0	3.376 mg/L	0.0103	6.751 mg/L	0.0207	0.31%
Tl 190.801†	-149.3	-0.03440 mg/L	0.002125	-0.06880 mg/L	0.004250	6.18%
V 292.402†	10956.6	0.1541 mg/L	0.00199	0.3081 mg/L	0.00398	1.29%
Zn 206.200†	421.0	0.1677 mg/L	0.00072	0.3354 mg/L	0.00144	0.43%

Sequence No.: 34
Sample ID: 19G0163-04

Autosampler Location: 326
Date Collected: 7/18/2019 12:13:16 PM
Data Type: Original

Dilution: 5X
Wash Time: 37

DEL

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-04

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: 19G0163-04

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2101196.4	103.1	%	0.56				0.54%
ScR 361.383	243012.4	104.4	%	0.56				0.54%
Ag 328.068†	29.0	0.00020	mg/L	0.000049	0.00102	mg/L	0.000246	24.06%
Al 308.215†	6521.5	4.874	mg/L	0.0195	24.37	mg/L	0.098	0.40%
As 188.979†	-2.6	0.01199	mg/L	0.001567	0.05993	mg/L	0.007835	13.07%
B 249.677†	98.1	0.01375	mg/L	0.001001	0.06874	mg/L	0.005006	7.28%
Ba 233.527†	295.0	0.06375	mg/L	0.000838	0.3188	mg/L	0.00419	1.31%
Be 313.042†	123.5	0.00014	mg/L	0.000002	0.00071	mg/L	0.000010	1.47%
Ca 317.933†	156706.6	15.25	mg/L	0.056	76.26	mg/L	0.278	0.36%
Cd 228.802†	21.2	0.00093	mg/L	0.000079	0.00463	mg/L	0.000393	8.49%
Co 228.616†	120.0	0.00279	mg/L	0.000152	0.01397	mg/L	0.000759	5.43%
Cr 267.716†	120.4	0.02995	mg/L	0.000341	0.1498	mg/L	0.00170	1.14%
Cu 324.752†	5973.5	0.03077	mg/L	0.000278	0.1538	mg/L	0.00139	0.90%
Fe 273.955†	6782.2	6.868	mg/L	0.0201	34.34	mg/L	0.100	0.29%
K 766.490†	362.2	0.3595	mg/L	0.00607	1.797	mg/L	0.0304	1.69%
Mg 279.077†	6873.0	5.700	mg/L	0.0224	28.50	mg/L	0.112	0.39%
Mn 257.610†	38388.5	1.022	mg/L	0.0038	5.111	mg/L	0.0192	0.38%
Mo 202.031†	40.2	0.00223	mg/L	0.000052	0.01114	mg/L	0.000259	2.33%
Na 589.592†	1699.4	0.2044	mg/L	0.00377	1.022	mg/L	0.0189	1.85%
Na 330.237†	-10.9	-0.4586	mg/L	0.18730	-2.293	mg/L	0.9365	40.84%
Ni 231.604†	60.5	0.01821	mg/L	0.001537	0.09104	mg/L	0.007685	8.44%
Pb 220.353†	442.8	0.06462	mg/L	0.000766	0.3231	mg/L	0.00383	1.19%
Sb 206.836†	3.6	0.00175	mg/L	0.002225	0.00873	mg/L	0.011126	127.39%
Se 196.026†	-4.3	-0.00447	mg/L	0.005539	-0.02237	mg/L	0.027694	123.78%
Si 288.158†	300.7	0.2684	mg/L	0.00372	1.342	mg/L	0.0186	1.39%
Sn 189.927†	-25.4	-0.00450	mg/L	0.000692	-0.02249	mg/L	0.003461	15.39%
Sr 421.552†	23033.0	0.08211	mg/L	0.000800	0.4105	mg/L	0.00400	0.97%
Ti 334.903†	7745.2	0.5168	mg/L	0.00344	2.584	mg/L	0.0172	0.67%
Tl 190.801†	-8.8	-0.00340	mg/L	0.001286	-0.01700	mg/L	0.006431	37.82%
V 292.402†	2051.5	0.02636	mg/L	0.000073	0.1318	mg/L	0.00036	0.28%
Zn 206.200†	226.4	0.09024	mg/L	0.001671	0.4512	mg/L	0.00835	1.85%

Sequence No.: 35

Sample ID: 19G0163-05

Autosampler Location: 327

Date Collected: 7/18/2019 12:17:14 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-05

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: 19G0163-05

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2107774.4	103.5	%	0.23				0.22%
ScR 361.383	243398.5	104.5	%	0.64				0.61%
Ag 328.068†	10.3	0.00010	mg/L	0.000081	0.00020	mg/L	0.000161	80.95%
Al 308.215†	18564.2	13.88	mg/L	0.030	27.75	mg/L	0.060	0.22%
As 188.979†	117.9	0.1148	mg/L	0.00132	0.2297	mg/L	0.00265	1.15%
B 249.677†	170.5	0.03533	mg/L	0.002456	0.07065	mg/L	0.004911	6.95%
Ba 233.527†	1230.8	0.2539	mg/L	0.00171	0.5078	mg/L	0.00343	0.67%
Be 313.042†	378.7	0.00036	mg/L	0.000062	0.00071	mg/L	0.000125	17.47%
Ca 317.933†	468017.0	45.55	mg/L	0.218	91.10	mg/L	0.436	0.48%
Cd 228.802†	80.8	0.00293	mg/L	0.000052	0.00586	mg/L	0.000104	1.77%
Co 228.616†	576.9	0.01440	mg/L	0.000104	0.02881	mg/L	0.000208	0.72%
Cr 267.716†	206.6	0.05775	mg/L	0.000263	0.1155	mg/L	0.00053	0.45%
Cu 324.752†	14856.4	0.08177	mg/L	0.000127	0.1635	mg/L	0.00025	0.16%
Fe 273.955†	123517.0	125.1	mg/L	0.91	250.1	mg/L	1.82	0.73%
K 766.490†	1388.7	1.378	mg/L	0.0187	2.756	mg/L	0.0373	1.35%
Mg 279.077†	15654.2	12.92	mg/L	0.040	25.85	mg/L	0.080	0.31%
Mn 257.610†	169383.0	4.511	mg/L	0.0130	9.021	mg/L	0.0261	0.29%
Mo 202.031†	60.9	0.00301	mg/L	0.000148	0.00602	mg/L	0.000295	4.90%
Na 589.592†	4842.7	0.5826	mg/L	0.00297	1.165	mg/L	0.0059	0.51%
Na 330.237†	-5.1	-0.07252	mg/L	0.419618	-0.1450	mg/L	0.83924	578.63%
Ni 231.604†	274.7	0.08268	mg/L	0.002718	0.1654	mg/L	0.00544	3.29%
Pb 220.353†	976.8	0.1380	mg/L	0.00165	0.2759	mg/L	0.00329	1.19%
Sb 206.836†	20.4	0.00909	mg/L	0.000806	0.01819	mg/L	0.001612	8.86%
Se 196.026†	-16.6	-0.00586	mg/L	0.001360	-0.01171	mg/L	0.002721	23.23%
Si 288.158†	1322.4	1.179	mg/L	0.0052	2.358	mg/L	0.0103	0.44%
Sn 189.927†	-54.1	-0.00737	mg/L	0.001115	-0.01475	mg/L	0.002230	15.12%
Sr 421.552†	89466.4	0.3189	mg/L	0.00186	0.6379	mg/L	0.00372	0.58%
Ti 334.903†	16208.0	1.081	mg/L	0.0018	2.161	mg/L	0.0036	0.17%
Tl 190.801†	-44.0	-0.01754	mg/L	0.001783	-0.03508	mg/L	0.003565	10.16%
V 292.402†	7903.1	0.1068	mg/L	0.00206	0.2135	mg/L	0.00413	1.93%
Zn 206.200†	318.4	0.1269	mg/L	0.00139	0.2538	mg/L	0.00279	1.10%

Sequence No.: 36

Sample ID: 19G0163-06

Autosampler Location: 328

Date Collected: 7/18/2019 12:21:13 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-06

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: 19G0163-06

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2129957.9	104.5	%	0.59				0.57%
ScR 361.383	242120.8	104.0	%	0.44				0.42%
Ag 328.068†	193.9	0.00135	mg/L	0.000076	0.00271	mg/L	0.000153	5.64%
Al 308.215†	46784.1	34.97	mg/L	0.264	69.94	mg/L	0.527	0.75%
As 188.979†	208.0	0.2292	mg/L	0.00285	0.4584	mg/L	0.00570	1.24%
B 249.677†	126.4	0.03683	mg/L	0.000745	0.07367	mg/L	0.001490	2.02%
Ba 233.527†	3073.8	0.6483	mg/L	0.00160	1.297	mg/L	0.0032	0.25%
Be 313.042†	679.2	0.00081	mg/L	0.000028	0.00162	mg/L	0.000055	3.40%
Ca 317.933†	506427.1	49.29	mg/L	0.368	98.58	mg/L	0.737	0.75%
Cd 228.802†	88.3	0.00294	mg/L	0.000218	0.00587	mg/L	0.000436	7.42%
Co 228.616†	1695.8	0.04592	mg/L	0.000249	0.09183	mg/L	0.000499	0.54%
Cr 267.716†	474.0	0.1286	mg/L	0.00153	0.2571	mg/L	0.00307	1.19%
Cu 324.752†	13994.9	0.08054	mg/L	0.000364	0.1611	mg/L	0.00073	0.45%
Fe 273.955†	196445.2	198.9	mg/L	2.57	397.8	mg/L	5.14	1.29%
K 766.490†	2409.5	2.391	mg/L	0.0346	4.783	mg/L	0.0691	1.45%
Mg 279.077†	27769.8	22.99	mg/L	0.303	45.97	mg/L	0.606	1.32%
Mn 257.610†	995214.6	26.50	mg/L	0.172	53.00	mg/L	0.344	0.65%
Mo 202.031†	68.2	0.00339	mg/L	0.000564	0.00678	mg/L	0.001129	16.65%
Na 589.592†	10132.5	1.219	mg/L	0.0024	2.438	mg/L	0.0048	0.20%
Na 330.237†	-5.5	0.2631	mg/L	0.29051	0.5262	mg/L	0.58101	110.41%
Ni 231.604†	681.8	0.2052	mg/L	0.00232	0.4104	mg/L	0.00464	1.13%
Pb 220.353†	529.2	0.07601	mg/L	0.001866	0.1520	mg/L	0.00373	2.45%
Sb 206.836†	29.3	0.01412	mg/L	0.001295	0.02824	mg/L	0.002590	9.17%
Se 196.026†	-5.4	-0.00894	mg/L	0.003954	-0.01788	mg/L	0.007907	44.22%
Si 288.158†	1297.8	1.158	mg/L	0.0038	2.316	mg/L	0.0077	0.33%
Sn 189.927†	-73.2	-0.01148	mg/L	0.001306	-0.02295	mg/L	0.002612	11.38%
Sr 421.552†	126874.5	0.4523	mg/L	0.00431	0.9046	mg/L	0.00861	0.95%
Ti 334.903†	41411.6	2.765	mg/L	0.0243	5.530	mg/L	0.0487	0.88%
Tl 190.801†	-111.3	-0.02619	mg/L	0.005430	-0.05238	mg/L	0.010860	20.74%
V 292.402†	10818.6	0.1515	mg/L	0.00164	0.3030	mg/L	0.00329	1.09%
Zn 206.200†	334.3	0.1331	mg/L	0.00121	0.2663	mg/L	0.00241	0.91%

Sequence No.: 37

Sample ID: BHG0335-DUP1

Autosampler Location: 329

Date Collected: 7/18/2019 12:25:27 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0335-DUP1

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: BHG0335-DUP1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2142895.4	105.2 %	1.53			1.45%
ScR 361.383	246485.3	105.9 %	0.70			0.66%
Ag 328.068†	-40.2	-0.00021 mg/L	0.000118	-0.00041 mg/L	0.000235	57.21%
Al 308.215†	78051.1	58.34 mg/L	0.418	116.7 mg/L	0.84	0.72%
As 188.979†	-39.8	0.1051 mg/L	0.00257	0.2101 mg/L	0.00513	2.44%
B 249.677†	116.8	0.02629 mg/L	0.000217	0.05259 mg/L	0.000433	0.82%
Ba 233.527†	1943.2	0.4120 mg/L	0.00187	0.8241 mg/L	0.00374	0.45%
Be 313.042†	969.3	0.00103 mg/L	0.000050	0.00207 mg/L	0.000100	4.83%
Ca 317.933†	401549.8	39.08 mg/L	0.310	78.16 mg/L	0.620	0.79%
Cd 228.802†	63.9	0.00306 mg/L	0.000294	0.00612 mg/L	0.000588	9.62%
Co 228.616†	1870.3	0.04961 mg/L	0.001086	0.09921 mg/L	0.002173	2.19%
Cr 267.716†	692.3	0.1772 mg/L	0.00271	0.3544 mg/L	0.00542	1.53%
Cu 324.752†	18126.2	0.09687 mg/L	0.001200	0.1937 mg/L	0.00240	1.24%
Fe 273.955†	106341.8	107.7 mg/L	1.26	215.4 mg/L	2.53	1.17%
K 766.490†	4283.9	4.251 mg/L	0.0943	8.503 mg/L	0.1886	2.22%
Mg 279.077†	37935.5	31.43 mg/L	0.241	62.85 mg/L	0.482	0.77%
Mn 257.610†	172302.9	4.588 mg/L	0.0299	9.176 mg/L	0.0598	0.65%
Mo 202.031†	75.3	0.00400 mg/L	0.000235	0.00800 mg/L	0.000471	5.89%
Na 589.592†	12834.8	1.544 mg/L	0.0099	3.088 mg/L	0.0198	0.64%
Na 330.237†	7.1	1.250 mg/L	0.3279	2.500 mg/L	0.6557	26.23%
Ni 231.604†	647.9	0.1950 mg/L	0.00075	0.3899 mg/L	0.00150	0.38%
Pb 220.353†	566.9	0.09239 mg/L	0.001463	0.1848 mg/L	0.00293	1.58%
Sb 206.836†	6.6	0.00750 mg/L	0.000972	0.01500 mg/L	0.001945	12.97%
Se 196.026†	-7.6	-0.00449 mg/L	0.006620	-0.00899 mg/L	0.013239	147.27%
Si 288.158†	1853.5	1.654 mg/L	0.0174	3.308 mg/L	0.0347	1.05%
Sn 189.927†	-52.4	-0.00636 mg/L	0.001888	-0.01272 mg/L	0.003776	29.67%
Sr 421.552†	68186.1	0.2431 mg/L	0.00279	0.4861 mg/L	0.00558	1.15%
Ti 334.903†	70476.0	4.708 mg/L	0.0271	9.417 mg/L	0.0542	0.58%
Tl 190.801†	-38.2	-0.01524 mg/L	0.000238	-0.03049 mg/L	0.000475	1.56%
V 292.402†	17610.0	0.2276 mg/L	0.00279	0.4551 mg/L	0.00558	1.23%
Zn 206.200†	533.9	0.2126 mg/L	0.00022	0.4253 mg/L	0.00044	0.10%

Sequence No.: 38

Sample ID: 19G0163-02

Autosampler Location: 330

Date Collected: 7/18/2019 12:29:26 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-02

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: 19G0163-02

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2134773.3	104.8	%	0.78				0.74%
ScR 361.383	246339.1	105.8	%	0.30				0.28%
Ag 328.068†	-55.4	-0.00031	mg/L	0.000260	-0.00063	mg/L	0.000521	82.87%
Al 308.215†	72102.3	53.90	mg/L	0.075	107.8	mg/L	0.15	0.14%
As 188.979†	-49.7	0.08620	mg/L	0.002376	0.1724	mg/L	0.00475	2.76%
B 249.677†	105.7	0.02364	mg/L	0.001236	0.04727	mg/L	0.002472	5.23%
Ba 233.527†	1735.2	0.3680	mg/L	0.00122	0.7360	mg/L	0.00245	0.33%
Be 313.042†	848.9	0.00087	mg/L	0.000023	0.00174	mg/L	0.000045	2.59%
Ca 317.933†	369981.4	36.01	mg/L	0.204	72.02	mg/L	0.407	0.57%
Cd 228.802†	64.7	0.00313	mg/L	0.000150	0.00627	mg/L	0.000300	4.79%
Co 228.616†	1684.5	0.04459	mg/L	0.000527	0.08918	mg/L	0.001054	1.18%
Cr 267.716†	670.6	0.1712	mg/L	0.00130	0.3425	mg/L	0.00259	0.76%
Cu 324.752†	17895.2	0.09520	mg/L	0.000726	0.1904	mg/L	0.00145	0.76%
Fe 273.955†	94668.5	95.86	mg/L	1.250	191.7	mg/L	2.50	1.30%
K 766.490†	3951.6	3.922	mg/L	0.0379	7.843	mg/L	0.0757	0.97%
Mg 279.077†	35692.8	29.57	mg/L	0.083	59.14	mg/L	0.167	0.28%
Mn 257.610†	135493.2	3.608	mg/L	0.0059	7.216	mg/L	0.0118	0.16%
Mo 202.031†	67.7	0.00358	mg/L	0.000544	0.00716	mg/L	0.001087	15.18%
Na 589.592†	11737.2	1.412	mg/L	0.0021	2.824	mg/L	0.0041	0.15%
Na 330.237†	6.9	1.161	mg/L	0.0922	2.323	mg/L	0.1843	7.94%
Ni 231.604†	609.4	0.1834	mg/L	0.00114	0.3668	mg/L	0.00229	0.62%
Pb 220.353†	529.5	0.08636	mg/L	0.001073	0.1727	mg/L	0.00215	1.24%
Sb 206.836†	13.7	0.00970	mg/L	0.000331	0.01941	mg/L	0.000662	3.41%
Se 196.026†	-7.5	-0.00447	mg/L	0.003151	-0.00894	mg/L	0.006302	70.49%
Si 288.158†	1484.4	1.325	mg/L	0.0065	2.650	mg/L	0.0130	0.49%
Sn 189.927†	-51.2	-0.00671	mg/L	0.000764	-0.01343	mg/L	0.001527	11.38%
Sr 421.552†	62287.5	0.2220	mg/L	0.00095	0.4441	mg/L	0.00190	0.43%
Ti 334.903†	64333.6	4.298	mg/L	0.0127	8.596	mg/L	0.0255	0.30%
Tl 190.801†	-34.1	-0.01421	mg/L	0.001863	-0.02843	mg/L	0.003725	13.10%
V 292.402†	16053.5	0.2073	mg/L	0.00125	0.4145	mg/L	0.00250	0.60%
Zn 206.200†	496.1	0.1976	mg/L	0.00271	0.3952	mg/L	0.00542	1.37%

Sequence No.: 39

Sample ID: BHG0335-MS1

Autosampler Location: 331

Date Collected: 7/18/2019 12:33:25 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0335-MS1

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: BHG0335-MS1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2132400.0	104.7 %	0.37			0.35%
ScR 361.383	245812.3	105.6 %	0.43			0.41%
Ag 328.068†	71730.2	0.4858 mg/L	0.00189	0.9715 mg/L	0.00378	0.39%
Al 308.215†	69006.5	51.58 mg/L	0.401	103.2 mg/L	0.80	0.78%
As 188.979†	2513.7	1.928 mg/L	0.0094	3.857 mg/L	0.0187	0.49%
B 249.677†	104.6	0.02161 mg/L	0.000697	0.04323 mg/L	0.001394	3.22%
Ba 233.527†	9341.3	2.035 mg/L	0.0076	4.069 mg/L	0.0153	0.38%
Be 313.042†	225718.9	0.4683 mg/L	0.00275	0.9366 mg/L	0.00550	0.59%
Ca 317.933†	432278.3	42.07 mg/L	0.400	84.13 mg/L	0.801	0.95%
Cd 228.802†	10890.6	0.4497 mg/L	0.00106	0.8993 mg/L	0.00212	0.24%
Co 228.616†	15034.3	0.4723 mg/L	0.00211	0.9447 mg/L	0.00422	0.45%
Cr 267.716†	2276.4	0.5751 mg/L	0.00235	1.150 mg/L	0.0047	0.41%
Cu 324.752†	102180.7	0.5263 mg/L	0.00243	1.053 mg/L	0.0049	0.46%
Fe 273.955†	86450.7	87.54 mg/L	0.271	175.1 mg/L	0.54	0.31%
K 766.490†	12227.1	12.13 mg/L	0.150	24.27 mg/L	0.301	1.24%
Mg 279.077†	43560.1	36.10 mg/L	0.252	72.21 mg/L	0.505	0.70%
Mn 257.610†	139842.7	3.724 mg/L	0.0311	7.448 mg/L	0.0622	0.84%
Mo 202.031†	73.5	0.00381 mg/L	0.000415	0.00762 mg/L	0.000831	10.89%
Na 589.592†	88270.0	10.62 mg/L	0.065	21.24 mg/L	0.130	0.61%
Na 330.237†	193.7	9.975 mg/L	0.2372	19.95 mg/L	0.474	2.38%
Ni 231.604†	1968.1	0.5922 mg/L	0.00421	1.184 mg/L	0.0084	0.71%
Pb 220.353†	12966.8	1.873 mg/L	0.0095	3.745 mg/L	0.0190	0.51%
Sb 206.836†	25.0	0.00843 mg/L	0.000573	0.01685 mg/L	0.001147	6.81%
Se 196.026†	2138.3	1.924 mg/L	0.0114	3.848 mg/L	0.0228	0.59%
Si 288.158†	1190.5	1.065 mg/L	0.0077	2.130 mg/L	0.0153	0.72%
Sn 189.927†	-58.4	-0.00794 mg/L	0.000661	-0.01587 mg/L	0.001323	8.33%
Sr 421.552†	188080.3	0.6705 mg/L	0.00342	1.341 mg/L	0.0068	0.51%
Ti 334.903†	58267.1	3.892 mg/L	0.0287	7.784 mg/L	0.0575	0.74%
Tl 190.801†	3644.1	1.854 mg/L	0.0039	3.708 mg/L	0.0078	0.21%
V 292.402†	48420.2	0.6145 mg/L	0.00802	1.229 mg/L	0.0160	1.31%
Zn 206.200†	1547.2	0.6162 mg/L	0.00471	1.232 mg/L	0.0094	0.76%

Sequence No.: 40

Sample ID: BHG0335-MSD1

Autosampler Location: 332

Date Collected: 7/18/2019 12:37:24 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0335-MSD1

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: BHG0335-MSD1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2135811.4	104.8 %	0.67			0.64%
ScR 361.383	248721.4	106.8 %	0.39			0.36%
Ag 328.068†	70901.6	0.4802 mg/L	0.00078	0.9603 mg/L	0.00156	0.16%
Al 308.215†	76883.5	57.46 mg/L	0.228	114.9 mg/L	0.46	0.40%
As 188.979†	2652.8	2.038 mg/L	0.0097	4.077 mg/L	0.0194	0.48%
B 249.677†	92.7	0.02142 mg/L	0.001238	0.04284 mg/L	0.002475	5.78%
Ba 233.527†	10012.0	2.180 mg/L	0.0031	4.359 mg/L	0.0062	0.14%
Be 313.042†	237190.0	0.4921 mg/L	0.00301	0.9841 mg/L	0.00603	0.61%
Ca 317.933†	465341.4	45.28 mg/L	0.115	90.57 mg/L	0.229	0.25%
Cd 228.802†	11637.0	0.4806 mg/L	0.00310	0.9613 mg/L	0.00620	0.64%
Co 228.616†	16540.2	0.5197 mg/L	0.00426	1.039 mg/L	0.0085	0.82%
Cr 267.716†	2467.3	0.6238 mg/L	0.00629	1.248 mg/L	0.0126	1.01%
Cu 324.752†	105512.4	0.5440 mg/L	0.00139	1.088 mg/L	0.0028	0.26%
Fe 273.955†	101226.4	102.5 mg/L	0.94	205.0 mg/L	1.88	0.92%
K 766.490†	12894.1	12.80 mg/L	0.094	25.59 mg/L	0.188	0.73%
Mg 279.077†	47776.2	39.59 mg/L	0.151	79.19 mg/L	0.302	0.38%
Mn 257.610†	154175.7	4.106 mg/L	0.0217	8.211 mg/L	0.0434	0.53%
Mo 202.031†	71.3	0.00362 mg/L	0.000294	0.00724 mg/L	0.000588	8.13%
Na 589.592†	91891.3	11.05 mg/L	0.053	22.11 mg/L	0.105	0.48%
Na 330.237†	211.1	10.87 mg/L	0.247	21.75 mg/L	0.493	2.27%
Ni 231.604†	2124.4	0.6392 mg/L	0.00202	1.278 mg/L	0.0040	0.32%
Pb 220.353†	13915.1	2.010 mg/L	0.0164	4.019 mg/L	0.0328	0.82%
Sb 206.836†	25.8	0.00859 mg/L	0.001011	0.01717 mg/L	0.002023	11.78%
Se 196.026†	2228.1	2.006 mg/L	0.0141	4.011 mg/L	0.0283	0.71%
Si 288.158†	1333.8	1.193 mg/L	0.0112	2.386 mg/L	0.0223	0.94%
Sn 189.927†	-62.3	-0.00837 mg/L	0.000596	-0.01673 mg/L	0.001193	7.13%
Sr 421.552†	200031.5	0.7131 mg/L	0.00937	1.426 mg/L	0.0187	1.31%
Ti 334.903†	63207.8	4.222 mg/L	0.0099	8.444 mg/L	0.0199	0.24%
Tl 190.801†	3751.2	1.909 mg/L	0.0118	3.817 mg/L	0.0237	0.62%
V 292.402†	51571.9	0.6551 mg/L	0.00903	1.310 mg/L	0.0181	1.38%
Zn 206.200†	1655.4	0.6593 mg/L	0.00195	1.319 mg/L	0.0039	0.30%

Sequence No.: 41

Sample ID: BHG0335-BS1

Autosampler Location: 333

Date Collected: 7/18/2019 12:41:09 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0335-BS1

Analyte	Back Pressure	Flow
All	160.0 kPa	0.65 L/min

Mean Data: BHG0335-BS1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2145872.8	105.3 %	1.14			1.09%
ScR 361.383	244564.4	105.0 %	0.72			0.69%
Ag 328.068†	79015.8	0.5350 mg/L	0.00647	1.070 mg/L	0.0129	1.21%
Al 308.215†	2724.4	2.030 mg/L	0.0135	4.059 mg/L	0.0270	0.67%
As 188.979†	2907.3	2.103 mg/L	0.0188	4.205 mg/L	0.0377	0.90%
B 249.677†	33.9	0.00349 mg/L	0.000802	0.00697 mg/L	0.001604	23.00%
Ba 233.527†	9115.3	1.996 mg/L	0.0093	3.992 mg/L	0.0187	0.47%
Be 313.042†	255372.0	0.5307 mg/L	0.00227	1.061 mg/L	0.0045	0.43%
Ca 317.933†	105691.4	10.28 mg/L	0.052	20.56 mg/L	0.104	0.50%
Cd 228.802†	12277.6	0.5064 mg/L	0.00410	1.013 mg/L	0.0082	0.81%
Co 228.616†	15948.8	0.5100 mg/L	0.00481	1.020 mg/L	0.0096	0.94%
Cr 267.716†	2025.9	0.5100 mg/L	0.00078	1.020 mg/L	0.0016	0.15%
Cu 324.752†	94150.5	0.4820 mg/L	0.00129	0.9640 mg/L	0.00259	0.27%
Fe 273.955†	1993.5	2.015 mg/L	0.0099	4.030 mg/L	0.0199	0.49%
K 766.490†	9894.7	9.820 mg/L	0.0395	19.64 mg/L	0.079	0.40%
Mg 279.077†	12719.0	10.55 mg/L	0.061	21.11 mg/L	0.122	0.58%
Mn 257.610†	18361.8	0.4893 mg/L	0.00073	0.9785 mg/L	0.00146	0.15%
Mo 202.031†	27.7	0.00151 mg/L	0.000038	0.00302 mg/L	0.000076	2.51%
Na 589.592†	84058.0	10.11 mg/L	0.040	20.23 mg/L	0.081	0.40%
Na 330.237†	202.5	9.624 mg/L	0.2955	19.25 mg/L	0.591	3.07%
Ni 231.604†	1703.8	0.5126 mg/L	0.00242	1.025 mg/L	0.0048	0.47%
Pb 220.353†	14266.0	2.050 mg/L	0.0112	4.099 mg/L	0.0224	0.55%
Sb 206.836†	11.1	-0.00221 mg/L	0.000742	-0.00442 mg/L	0.001484	33.57%
Se 196.026†	2380.8	2.140 mg/L	0.0199	4.281 mg/L	0.0399	0.93%
Si 288.158†	2.2	0.00392 mg/L	0.007649	0.00783 mg/L	0.015298	195.30%
Sn 189.927†	-22.8	-0.00482 mg/L	0.000824	-0.00964 mg/L	0.001647	17.09%
Sr 421.552†	152130.2	0.5423 mg/L	0.00415	1.085 mg/L	0.0083	0.77%
Ti 334.903†	27.9	0.00112 mg/L	0.000887	0.00225 mg/L	0.001775	79.00%
Tl 190.801†	4155.5	2.111 mg/L	0.0225	4.222 mg/L	0.0449	1.06%
V 292.402†	39394.5	0.4965 mg/L	0.00274	0.9929 mg/L	0.00548	0.55%
Zn 206.200†	1285.4	0.5119 mg/L	0.00209	1.024 mg/L	0.0042	0.41%

Sequence No.: 42
Sample ID: SEQ-CCV4

Autosampler Location: 7
Date Collected: 7/18/2019 12:45:08 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCV4

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: SEQ-CCV4

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2113177.6	103.7 %	0.43			0.42%
ScR 361.383	241401.8	103.7 %	0.46			0.45%
Ag 328.068†	152234.3	1.031 mg/L	0.0121	1.031 mg/L	0.0121	1.18%
Al 308.215†	2700.6	1.981 mg/L	0.0127	1.981 mg/L	0.0127	0.64%
As 188.979†	2789.7	2.042 mg/L	0.0118	2.042 mg/L	0.0118	0.58%
B 249.677†	7710.7	1.027 mg/L	0.0031	1.027 mg/L	0.0031	0.30%
Ba 233.527†	4515.4	0.9874 mg/L	0.00492	0.9874 mg/L	0.00492	0.50%
Be 313.042†	502209.6	1.044 mg/L	0.0078	1.044 mg/L	0.0078	0.75%
Ca 317.933†	20775.2	2.009 mg/L	0.0093	2.009 mg/L	0.0093	0.46%
Cd 228.802†	23755.8	0.9934 mg/L	0.00624	0.9934 mg/L	0.00624	0.63%
Co 228.616†	31285.1	0.9990 mg/L	0.01069	0.9990 mg/L	0.01069	1.07%
Cr 267.716†	3875.3	0.9779 mg/L	0.00758	0.9779 mg/L	0.00758	0.77%
Cu 324.752†	194807.4	0.9968 mg/L	0.00835	0.9968 mg/L	0.00835	0.84%
Fe 273.955†	1943.9	1.961 mg/L	0.0037	1.961 mg/L	0.0037	0.19%
K 766.490†	20025.6	19.87 mg/L	0.219	19.87 mg/L	0.219	1.10%
Mg 279.077†	2444.5	2.040 mg/L	0.0177	2.040 mg/L	0.0177	0.87%
Mn 257.610†	36242.1	0.9654 mg/L	0.00684	0.9654 mg/L	0.00684	0.71%
Mo 202.031†	16372.5	1.012 mg/L	0.0083	1.012 mg/L	0.0083	0.82%
Na 589.592†	425647.8	51.21 mg/L	0.383	51.21 mg/L	0.383	0.75%
Na 330.237†	1039.5	50.29 mg/L	0.461	50.29 mg/L	0.461	0.92%
Ni 231.604†	3327.6	1.003 mg/L	0.0028	1.003 mg/L	0.0028	0.28%
Pb 220.353†	14033.7	2.017 mg/L	0.0194	2.017 mg/L	0.0194	0.96%
Sb 206.836†	5397.9	2.131 mg/L	0.0101	2.131 mg/L	0.0101	0.47%
Se 196.026†	2365.9	2.127 mg/L	0.0105	2.127 mg/L	0.0105	0.49%
Si 288.158†	2438.2	2.172 mg/L	0.0067	2.172 mg/L	0.0067	0.31%
Sn 189.927†	3651.2	1.050 mg/L	0.0066	1.050 mg/L	0.0066	0.63%
Sr 421.552†	302286.5	1.078 mg/L	0.0159	1.078 mg/L	0.0159	1.47%
Ti 334.903†	14841.1	0.9907 mg/L	0.00757	0.9907 mg/L	0.00757	0.76%
Tl 190.801†	4071.7	2.065 mg/L	0.0108	2.065 mg/L	0.0108	0.52%
V 292.402†	77326.6	0.9745 mg/L	0.01129	0.9745 mg/L	0.01129	1.16%
Zn 206.200†	2597.1	1.034 mg/L	0.0046	1.034 mg/L	0.0046	0.44%

Sequence No.: 43
Sample ID: SEQ-CCB4

Autosampler Location: 1
Date Collected: 7/18/2019 12:50:11 PM
Data Type: Original

Dilution: 1X
Wash Time: 100

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCB4

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: SEQ-CCB4

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2120407.8	104.1	%	0.40				0.38%
ScR 361.383	245200.4	105.3	%	0.50				0.48%
Ag 328.068†	-3.7	-0.00003	mg/L	0.000332	-0.00003	mg/L	0.000332	>999.9%
Al 308.215†	-28.7	-0.02148	mg/L	0.015207	-0.02148	mg/L	0.015207	70.78%
As 188.979†	0.1	0.00008	mg/L	0.000853	0.00008	mg/L	0.000853	>999.9%
B 249.677†	35.4	0.00472	mg/L	0.000555	0.00472	mg/L	0.000555	11.75%
Ba 233.527†	3.6	0.00079	mg/L	0.000474	0.00079	mg/L	0.000474	59.65%
Be 313.042†	-49.0	-0.00010	mg/L	0.000073	-0.00010	mg/L	0.000073	72.54%
Ca 317.933†	-8.8	-0.00086	mg/L	0.000513	-0.00086	mg/L	0.000513	59.99%
Cd 228.802†	2.9	0.00012	mg/L	0.000106	0.00012	mg/L	0.000106	87.37%
Co 228.616†	-0.2	-0.00001	mg/L	0.000157	-0.00001	mg/L	0.000157	>999.9%
Cr 267.716†	4.1	0.00104	mg/L	0.001636	0.00104	mg/L	0.001636	158.02%
Cu 324.752†	121.9	0.00062	mg/L	0.000048	0.00062	mg/L	0.000048	7.66%
Fe 273.955†	1.5	0.00155	mg/L	0.001668	0.00155	mg/L	0.001668	107.68%
K 766.490†	-16.0	-0.01588	mg/L	0.016199	-0.01588	mg/L	0.016199	101.99%
Mg 279.077†	9.7	0.00808	mg/L	0.004049	0.00808	mg/L	0.004049	50.13%
Mn 257.610†	0.1	0.00000	mg/L	0.000157	0.00000	mg/L	0.000157	>999.9%
Mo 202.031†	13.1	0.00081	mg/L	0.000244	0.00081	mg/L	0.000244	30.25%
Na 589.592†	98.0	0.01179	mg/L	0.002700	0.01179	mg/L	0.002700	22.91%
Na 330.237†	-1.5	-0.07119	mg/L	0.852442	-0.07119	mg/L	0.852442	>999.9%
Ni 231.604†	1.7	0.00051	mg/L	0.002807	0.00051	mg/L	0.002807	546.53%
Pb 220.353†	-11.6	-0.00168	mg/L	0.000426	-0.00168	mg/L	0.000426	25.45%
Sb 206.836†	-2.1	-0.00085	mg/L	0.001457	-0.00085	mg/L	0.001457	171.03%
Se 196.026†	-0.2	-0.00018	mg/L	0.004319	-0.00018	mg/L	0.004319	>999.9%
Si 288.158†	15.1	0.01345	mg/L	0.003650	0.01345	mg/L	0.003650	27.15%
Sn 189.927†	1.8	0.00050	mg/L	0.000760	0.00050	mg/L	0.000760	151.01%
Sr 421.552†	-20.0	-0.00007	mg/L	0.000036	-0.00007	mg/L	0.000036	50.43%
Ti 334.903†	6.5	0.00043	mg/L	0.000683	0.00043	mg/L	0.000683	157.56%
Tl 190.801†	0.7	0.00036	mg/L	0.001639	0.00036	mg/L	0.001639	454.25%
V 292.402†	-19.0	-0.00023	mg/L	0.000023	-0.00023	mg/L	0.000023	10.00%
Zn 206.200†	-0.6	-0.00022	mg/L	0.000697	-0.00022	mg/L	0.000697	310.74%

Sequence No.: 44

Sample ID: BHG0399-BLK1

Autosampler Location: 334

Date Collected: 7/18/2019 12:54:10 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0399-BLK1

Analyte	Back Pressure	Flow
All	161.0 kPa	0.65 L/min

Mean Data: BHG0399-BLK1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2026337.6	99.46 %	0.345			0.35%
ScR 361.383	245846.0	105.6 %	1.22			1.15%
Ag 328.068†	-15.1	-0.00010 mg/L	0.000173	-0.00051 mg/L	0.000867	169.80%
Al 308.215†	1.1	-0.00315 mg/L	0.013608	-0.01575 mg/L	0.068041	432.12%
As 188.979†	0.4	0.00026 mg/L	0.000806	0.00132 mg/L	0.004030	304.39%
B 249.677†	163.0	0.02171 mg/L	0.000792	0.1086 mg/L	0.00396	3.65%
Ba 233.527†	15.0	0.00328 mg/L	0.001063	0.01641 mg/L	0.005316	32.39%
Be 313.042†	-60.9	-0.00013 mg/L	0.000038	-0.00063 mg/L	0.000191	30.27%
Ca 317.933†	2981.8	0.2836 mg/L	0.00054	1.418 mg/L	0.0027	0.19%
Cd 228.802†	11.1	0.00047 mg/L	0.000093	0.00234 mg/L	0.000466	19.87%
Co 228.616†	-2.3	-0.00008 mg/L	0.000109	-0.00038 mg/L	0.000544	144.53%
Cr 267.716†	1.8	0.00044 mg/L	0.001446	0.00221 mg/L	0.007229	326.81%
Cu 324.752†	321.9	0.00144 mg/L	0.000074	0.00722 mg/L	0.000370	5.13%
Fe 273.955†	3.5	0.00354 mg/L	0.000702	0.01771 mg/L	0.003509	19.81%
K 766.490†	103.8	0.1030 mg/L	0.03046	0.5149 mg/L	0.15228	29.57%
Mg 279.077†	71.8	0.05955 mg/L	0.012092	0.2978 mg/L	0.06046	20.30%
Mn 257.610†	4.5	0.00012 mg/L	0.000122	0.00060 mg/L	0.000609	102.07%
Mo 202.031†	2.0	0.00012 mg/L	0.000065	0.00060 mg/L	0.000327	54.58%
Na 589.592†	3499586.7	421.0 mg/L	2.91	2105 mg/L	14.54	0.69%
Na 330.237†	8544.5	415.2 mg/L	2.60	2076 mg/L	12.98	0.63%
Ni 231.604†	5.0	0.00149 mg/L	0.001879	0.00746 mg/L	0.009395	126.00%
Pb 220.353†	1.0	0.00015 mg/L	0.000646	0.00073 mg/L	0.003231	441.33%
Sb 206.836†	0.7	0.00029 mg/L	0.000292	0.00143 mg/L	0.001458	102.30%
Se 196.026†	4.5	0.00402 mg/L	0.004632	0.02008 mg/L	0.023159	115.32%
Si 288.158†	38.2	0.03397 mg/L	0.003821	0.1699 mg/L	0.01910	11.25%
Sn 189.927†	6.8	0.00199 mg/L	0.000451	0.00994 mg/L	0.002254	22.68%
Sr 421.552†	63.4	0.00023 mg/L	0.000067	0.00113 mg/L	0.000336	29.75%
Ti 334.903†	-2.4	-0.00018 mg/L	0.000892	-0.00090 mg/L	0.004460	496.58%
Tl 190.801†	-1.4	-0.00069 mg/L	0.000239	-0.00345 mg/L	0.001193	34.62%
V 292.402†	-20.1	-0.00025 mg/L	0.000139	-0.00124 mg/L	0.000697	56.01%
Zn 206.200†	3.4	0.00133 mg/L	0.000668	0.00666 mg/L	0.003338	50.16%

Sequence No.: 45

Sample ID: 19F0332-29

Autosampler Location: 335

Date Collected: 7/18/2019 12:58:27 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19F0332-29

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: 19F0332-29

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2013712.3	98.84 %	0.452			0.46%
ScR 361.383	239774.9	103.0 %	0.11			0.10%
Ag 328.068†	-25.7	-0.00017 mg/L	0.000253	-0.00087 mg/L	0.001265	145.34%
Al 308.215†	1.4	-0.00309 mg/L	0.004319	-0.01547 mg/L	0.021597	139.61%
As 188.979†	29.9	0.01552 mg/L	0.003203	0.07760 mg/L	0.016016	20.64%
B 249.677†	122.4	0.01631 mg/L	0.000387	0.08157 mg/L	0.001936	2.37%
Ba 233.527†	1044.2	0.2288 mg/L	0.00030	1.144 mg/L	0.0015	0.13%
Be 313.042†	39.4	0.00008 mg/L	0.000008	0.00041 mg/L	0.000039	9.53%
Ca 317.933†	883343.0	85.97 mg/L	0.413	429.8 mg/L	2.06	0.48%
Cd 228.802†	12.6	0.00039 mg/L	0.000196	0.00196 mg/L	0.000982	49.97%
Co 228.616†	13.1	0.00038 mg/L	0.000095	0.00190 mg/L	0.000474	24.86%
Cr 267.716†	-0.4	-0.00133 mg/L	0.001351	-0.00663 mg/L	0.006757	101.84%
Cu 324.752†	6801.4	0.03460 mg/L	0.000271	0.1730 mg/L	0.00136	0.78%
Fe 273.955†	1.8	0.00181 mg/L	0.001183	0.00907 mg/L	0.005916	65.24%
K 766.490†	1139.0	1.130 mg/L	0.0308	5.652 mg/L	0.1541	2.73%
Mg 279.077†	386.4	0.3109 mg/L	0.00528	1.555 mg/L	0.0264	1.70%
Mn 257.610†	3132.6	0.08324 mg/L	0.000156	0.4162 mg/L	0.00078	0.19%
Mo 202.031†	75.3	0.00323 mg/L	0.000300	0.01615 mg/L	0.001498	9.27%
Na 589.592†	3445285.0	414.5 mg/L	0.94	2072 mg/L	4.70	0.23%
Na 330.237†	8560.5	416.0 mg/L	1.89	2080 mg/L	9.46	0.45%
Ni 231.604†	11.1	0.00333 mg/L	0.001025	0.01666 mg/L	0.005127	30.78%
Pb 220.353†	354.9	0.05092 mg/L	0.000434	0.2546 mg/L	0.00217	0.85%
Sb 206.836†	11.0	0.00420 mg/L	0.002222	0.02102 mg/L	0.011111	52.86%
Se 196.026†	-4.5	-0.00415 mg/L	0.001510	-0.02075 mg/L	0.007550	36.38%
Si 288.158†	585.3	0.5211 mg/L	0.00544	2.606 mg/L	0.0272	1.04%
Sn 189.927†	-83.0	-0.00932 mg/L	0.000868	-0.04659 mg/L	0.004341	9.32%
Sr 421.552†	11172.8	0.03983 mg/L	0.000265	0.1991 mg/L	0.00132	0.67%
Ti 334.903†	104.5	0.00168 mg/L	0.001174	0.00842 mg/L	0.005868	69.69%
Tl 190.801†	-4.4	-0.00214 mg/L	0.001582	-0.01069 mg/L	0.007912	74.02%
V 292.402†	-1.6	-0.00001 mg/L	0.000096	-0.00003 mg/L	0.000481	>999.9%
Zn 206.200†	169.6	0.06758 mg/L	0.001199	0.3379 mg/L	0.00600	1.77%

Sequence No.: 46

Sample ID: 19F0332-35

Autosampler Location: 336

Date Collected: 7/18/2019 1:02:59 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19F0332-35

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: 19F0332-35

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1992036.5	97.77 %	0.490			0.50%
ScR 361.383	238621.3	102.5 %	0.23			0.22%
Ag 328.068†	-62.3	-0.00042 mg/L	0.000258	-0.00211 mg/L	0.001290	61.19%
Al 308.215†	5.3	-0.00011 mg/L	0.005176	-0.00057 mg/L	0.025880	>999.9%
As 188.979†	26.8	0.01369 mg/L	0.001517	0.06843 mg/L	0.007586	11.08%
B 249.677†	81.7	0.01089 mg/L	0.001118	0.05445 mg/L	0.005589	10.27%
Ba 233.527†	585.7	0.1283 mg/L	0.00022	0.6415 mg/L	0.00108	0.17%
Be 313.042†	31.7	0.00007 mg/L	0.000020	0.00033 mg/L	0.000099	30.05%
Ca 317.933†	830625.2	80.84 mg/L	0.129	404.2 mg/L	0.64	0.16%
Cd 228.802†	134.4	0.00567 mg/L	0.000090	0.02835 mg/L	0.000451	1.59%
Co 228.616†	47.1	0.00147 mg/L	0.000167	0.00733 mg/L	0.000837	11.42%
Cr 267.716†	6.1	0.00037 mg/L	0.001693	0.00187 mg/L	0.008467	452.08%
Cu 324.752†	7007.1	0.03566 mg/L	0.000182	0.1783 mg/L	0.00091	0.51%
Fe 273.955†	4.9	0.00492 mg/L	0.001136	0.02461 mg/L	0.005678	23.07%
K 766.490†	382.0	0.3791 mg/L	0.01741	1.896 mg/L	0.0870	4.59%
Mg 279.077†	499.3	0.4052 mg/L	0.00747	2.026 mg/L	0.0373	1.84%
Mn 257.610†	1633.6	0.04334 mg/L	0.000077	0.2167 mg/L	0.00038	0.18%
Mo 202.031†	70.4	0.00302 mg/L	0.000359	0.01508 mg/L	0.001793	11.89%
Na 589.592†	3432343.7	412.9 mg/L	1.26	2065 mg/L	6.31	0.31%
Na 330.237†	8405.1	404.1 mg/L	1.59	2021 mg/L	7.95	0.39%
Ni 231.604†	355.0	0.1068 mg/L	0.00003	0.5341 mg/L	0.00016	0.03%
Pb 220.353†	716.0	0.1028 mg/L	0.00088	0.5139 mg/L	0.00440	0.86%
Sb 206.836†	1.9	0.00055 mg/L	0.001433	0.00275 mg/L	0.007164	260.69%
Se 196.026†	-4.0	-0.00362 mg/L	0.004380	-0.01811 mg/L	0.021900	120.94%
Si 288.158†	665.7	0.5926 mg/L	0.00201	2.963 mg/L	0.0101	0.34%
Sn 189.927†	-85.4	-0.01087 mg/L	0.000840	-0.05434 mg/L	0.004200	7.73%
Sr 421.552†	15276.1	0.05446 mg/L	0.000234	0.2723 mg/L	0.00117	0.43%
Ti 334.903†	105.8	0.00209 mg/L	0.000648	0.01044 mg/L	0.003240	31.04%
Tl 190.801†	-5.6	-0.00280 mg/L	0.001741	-0.01401 mg/L	0.008707	62.14%
V 292.402†	8.5	0.00013 mg/L	0.000215	0.00063 mg/L	0.001077	172.16%
Zn 206.200†	25759.6	10.27 mg/L	0.041	51.35 mg/L	0.207	0.40%

Sequence No.: 47

Sample ID: 19F0332-37

Autosampler Location: 337

Date Collected: 7/18/2019 1:07:16 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19F0332-37

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: 19F0332-37

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2003148.7	98.32 %	0.386			0.39%
ScR 361.383	239667.1	102.9 %	0.83			0.81%
Ag 328.068†	34.3	0.00023 mg/L	0.000256	0.00116 mg/L	0.001281	110.24%
Al 308.215†	74.7	0.05173 mg/L	0.001618	0.2587 mg/L	0.00809	3.13%
As 188.979†	14.6	0.00902 mg/L	0.001890	0.04510 mg/L	0.009451	20.96%
B 249.677†	168.3	0.02242 mg/L	0.001148	0.1121 mg/L	0.00574	5.12%
Ba 233.527†	1248.4	0.2735 mg/L	0.00378	1.367 mg/L	0.0189	1.38%
Be 313.042†	31.9	0.00007 mg/L	0.000011	0.00034 mg/L	0.000056	16.64%
Ca 317.933†	233729.0	22.74 mg/L	0.199	113.7 mg/L	0.99	0.87%
Cd 228.802†	891.4	0.03768 mg/L	0.000069	0.1884 mg/L	0.00035	0.18%
Co 228.616†	145.4	0.00461 mg/L	0.000249	0.02305 mg/L	0.001247	5.41%
Cr 267.716†	6.2	0.00107 mg/L	0.000602	0.00533 mg/L	0.003011	56.47%
Cu 324.752†	53433.6	0.2733 mg/L	0.00237	1.366 mg/L	0.0119	0.87%
Fe 273.955†	79.8	0.08079 mg/L	0.006741	0.4039 mg/L	0.03370	8.34%
K 766.490†	644.0	0.6392 mg/L	0.03215	3.196 mg/L	0.1608	5.03%
Mg 279.077†	2055.0	1.703 mg/L	0.0193	8.517 mg/L	0.0963	1.13%
Mn 257.610†	10043.9	0.2745 mg/L	0.00226	1.372 mg/L	0.0113	0.82%
Mo 202.031†	31.3	0.00156 mg/L	0.000367	0.00779 mg/L	0.001835	23.55%
Na 589.592†	3539910.6	425.9 mg/L	2.01	2129 mg/L	10.06	0.47%
Na 330.237†	8635.8	417.9 mg/L	3.97	2089 mg/L	19.85	0.95%
Ni 231.604†	34.7	0.01047 mg/L	0.000749	0.05236 mg/L	0.003745	7.15%
Pb 220.353†	280780.4	40.32 mg/L	0.205	201.6 mg/L	1.03	0.51%
Sb 206.836†	64.4	0.02536 mg/L	0.000391	0.1268 mg/L	0.00196	1.54%
Se 196.026†	1.4	0.00102 mg/L	0.004092	0.00511 mg/L	0.020459	400.04%
Si 288.158†	921.7	0.8207 mg/L	0.00824	4.104 mg/L	0.0412	1.00%
Sn 189.927†	-37.2	-0.00683 mg/L	0.001809	-0.03415 mg/L	0.009043	26.48%
Sr 421.552†	48926.7	0.1744 mg/L	0.00153	0.8721 mg/L	0.00763	0.87%
Ti 334.903†	69.7	0.00325 mg/L	0.000485	0.01627 mg/L	0.002426	14.91%
Tl 190.801†	2.0	0.00132 mg/L	0.001722	0.00658 mg/L	0.008608	130.72%
V 292.402†	-13.0	-0.00010 mg/L	0.000236	-0.00049 mg/L	0.001181	238.65%
Zn 206.200†	10475.4	4.179 mg/L	0.0383	20.89 mg/L	0.191	0.92%

Sequence No.: 48

Sample ID: 19F0332-38

Autosampler Location: 338

Date Collected: 7/18/2019 1:11:32 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19F0332-38

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: 19F0332-38

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1981750.3	97.27 %	0.428			0.44%
ScR 361.383	233737.9	100.4 %	0.51			0.50%
Ag 328.068†	-79.7	-0.00054 mg/L	0.000189	-0.00269 mg/L	0.000945	35.09%
Al 308.215†	-7.9	-0.01033 mg/L	0.009599	-0.05165 mg/L	0.047993	92.92%
As 188.979†	41.1	0.01963 mg/L	0.000900	0.09813 mg/L	0.004498	4.58%
B 249.677†	172.7	0.02301 mg/L	0.000133	0.1151 mg/L	0.00067	0.58%
Ba 233.527†	124.1	0.02719 mg/L	0.000739	0.1360 mg/L	0.00369	2.72%
Be 313.042†	18.1	0.00003 mg/L	0.000035	0.00014 mg/L	0.000177	127.84%
Ca 317.933†	1463184.5	142.4 mg/L	1.55	712.0 mg/L	7.74	1.09%
Cd 228.802†	35.5	0.00131 mg/L	0.000122	0.00655 mg/L	0.000612	9.34%
Co 228.616†	16.8	0.00051 mg/L	0.000213	0.00257 mg/L	0.001063	41.28%
Cr 267.716†	11.1	0.00042 mg/L	0.001175	0.00210 mg/L	0.005877	279.86%
Cu 324.752†	640.8	0.00303 mg/L	0.000250	0.01514 mg/L	0.001249	8.25%
Fe 273.955†	7.3	0.00733 mg/L	0.004480	0.03666 mg/L	0.022402	61.11%
K 766.490†	685.0	0.6798 mg/L	0.04470	3.399 mg/L	0.2235	6.58%
Mg 279.077†	4487.5	3.708 mg/L	0.0510	18.54 mg/L	0.255	1.38%
Mn 257.610†	3119.1	0.08277 mg/L	0.000935	0.4138 mg/L	0.00468	1.13%
Mo 202.031†	102.2	0.00396 mg/L	0.000443	0.01981 mg/L	0.002217	11.19%
Na 589.592†	3678816.7	442.6 mg/L	3.06	2213 mg/L	15.29	0.69%
Na 330.237†	9110.8	442.7 mg/L	3.82	2214 mg/L	19.11	0.86%
Ni 231.604†	5.2	0.00155 mg/L	0.000343	0.00776 mg/L	0.001717	22.12%
Pb 220.353†	809.3	0.1162 mg/L	0.01363	0.5811 mg/L	0.06815	11.73%
Sb 206.836†	2.1	0.00060 mg/L	0.002397	0.00300 mg/L	0.011987	399.65%
Se 196.026†	-8.1	-0.00734 mg/L	0.002936	-0.03671 mg/L	0.014678	39.98%
Si 288.158†	1099.1	0.9789 mg/L	0.01204	4.894 mg/L	0.0602	1.23%
Sn 189.927†	-105.3	-0.00621 mg/L	0.001621	-0.03105 mg/L	0.008105	26.10%
Sr 421.552†	179315.7	0.6392 mg/L	0.01010	3.196 mg/L	0.0505	1.58%
Ti 334.903†	172.3	0.00273 mg/L	0.002082	0.01366 mg/L	0.010411	76.23%
Tl 190.801†	-4.5	-0.00221 mg/L	0.002871	-0.01103 mg/L	0.014354	130.14%
V 292.402†	185.2	0.00235 mg/L	0.000265	0.01176 mg/L	0.001324	11.27%
Zn 206.200†	76.3	0.03040 mg/L	0.000739	0.1520 mg/L	0.00369	2.43%

Sequence No.: 49

Sample ID: 19G0196-02

Autosampler Location: 339

Date Collected: 7/18/2019 1:16:04 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0196-02

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0196-02

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2001740.1	98.25	%	0.266				0.27%
ScR 361.383	234588.9	100.8	%	0.54				0.54%
Ag 328.068†	-39.7	-0.00027	mg/L	0.000217	-0.00134	mg/L	0.001083	80.60%
Al 308.215†	8.1	0.00169	mg/L	0.008152	0.00847	mg/L	0.040758	481.40%
As 188.979†	28.4	0.01359	mg/L	0.002427	0.06793	mg/L	0.012133	17.86%
B 249.677†	206.8	0.02759	mg/L	0.001421	0.1380	mg/L	0.00711	5.15%
Ba 233.527†	51.6	0.01124	mg/L	0.001349	0.05621	mg/L	0.006743	12.00%
Be 313.042†	-6.7	-0.00001	mg/L	0.000074	-0.00006	mg/L	0.000371	592.96%
Ca 317.933†	1014847.9	98.77	mg/L	0.324	493.8	mg/L	1.62	0.33%
Cd 228.802†	-3.7	-0.00027	mg/L	0.000183	-0.00133	mg/L	0.000916	68.96%
Co 228.616†	111.9	0.00355	mg/L	0.000278	0.01776	mg/L	0.001391	7.83%
Cr 267.716†	11.3	0.00086	mg/L	0.003223	0.00432	mg/L	0.016114	372.58%
Cu 324.752†	412.1	0.00186	mg/L	0.000165	0.00932	mg/L	0.000827	8.88%
Fe 273.955†	418.8	0.4241	mg/L	0.00266	2.120	mg/L	0.0133	0.63%
K 766.490†	261.0	0.2591	mg/L	0.05345	1.295	mg/L	0.2673	20.63%
Mg 279.077†	6962.9	5.768	mg/L	0.0398	28.84	mg/L	0.199	0.69%
Mn 257.610†	23145.6	0.6161	mg/L	0.00432	3.080	mg/L	0.0216	0.70%
Mo 202.031†	81.1	0.00338	mg/L	0.000068	0.01691	mg/L	0.000341	2.02%
Na 589.592†	3690533.9	444.0	mg/L	1.70	2220	mg/L	8.48	0.38%
Na 330.237†	9122.9	443.3	mg/L	2.86	2217	mg/L	14.31	0.65%
Ni 231.604†	92.1	0.02770	mg/L	0.001099	0.1385	mg/L	0.00549	3.97%
Pb 220.353†	34.1	0.00489	mg/L	0.000543	0.02443	mg/L	0.002714	11.11%
Sb 206.836†	-0.6	-0.00046	mg/L	0.001627	-0.00232	mg/L	0.008136	349.97%
Se 196.026†	-13.1	-0.01224	mg/L	0.005572	-0.06122	mg/L	0.027862	45.51%
Si 288.158†	2301.6	2.050	mg/L	0.0390	10.25	mg/L	0.195	1.90%
Sn 189.927†	-87.6	-0.00849	mg/L	0.001550	-0.04243	mg/L	0.007748	18.26%
Sr 421.552†	43791.5	0.1561	mg/L	0.00119	0.7805	mg/L	0.00593	0.76%
Ti 334.903†	128.7	0.00251	mg/L	0.001521	0.01256	mg/L	0.007606	60.56%
Tl 190.801†	-9.2	-0.00398	mg/L	0.001372	-0.01992	mg/L	0.006858	34.42%
V 292.402†	-27.5	-0.00019	mg/L	0.000227	-0.00095	mg/L	0.001134	119.85%
Zn 206.200†	16.7	0.00663	mg/L	0.000941	0.03313	mg/L	0.004704	14.20%

Sequence No.: 50

Sample ID: BHG0399-DUP1

Autosampler Location: 340

Date Collected: 7/18/2019 1:20:19 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0399-DUP1

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: BHG0399-DUP1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1993035.3	97.82 %	0.089			0.09%
ScR 361.383	237236.9	101.9 %	0.14			0.14%
Ag 328.068†	-20.8	-0.00014 mg/L	0.000093	-0.00069 mg/L	0.000463	67.01%
Al 308.215†	15.1	0.00647 mg/L	0.006385	0.03233 mg/L	0.031925	98.75%
As 188.979†	29.7	0.01555 mg/L	0.003147	0.07777 mg/L	0.015736	20.24%
B 249.677†	364.2	0.04853 mg/L	0.002031	0.2426 mg/L	0.01016	4.19%
Ba 233.527†	172.3	0.03775 mg/L	0.000297	0.1887 mg/L	0.00148	0.79%
Be 313.042†	-10.3	-0.00007 mg/L	0.000012	-0.00033 mg/L	0.000062	19.03%
Ca 317.933†	832976.5	81.06 mg/L	0.315	405.3 mg/L	1.57	0.39%
Cd 228.802†	2.7	-0.00003 mg/L	0.000265	-0.00014 mg/L	0.001323	940.61%
Co 228.616†	10.5	0.00032 mg/L	0.000195	0.00161 mg/L	0.000975	60.55%
Cr 267.716†	186.3	0.04584 mg/L	0.000951	0.2292 mg/L	0.00475	2.07%
Cu 324.752†	2275.7	0.01142 mg/L	0.000084	0.05711 mg/L	0.000418	0.73%
Fe 273.955†	2.6	0.00262 mg/L	0.002512	0.01311 mg/L	0.012560	95.78%
K 766.490†	6387.4	6.339 mg/L	0.0407	31.70 mg/L	0.203	0.64%
Mg 279.077†	683.0	0.5576 mg/L	0.00647	2.788 mg/L	0.0323	1.16%
Mn 257.610†	25.6	0.00051 mg/L	0.000052	0.00253 mg/L	0.000261	10.32%
Mo 202.031†	303.1	0.01739 mg/L	0.000650	0.08694 mg/L	0.003250	3.74%
Na 589.592†	3651853.7	439.3 mg/L	3.39	2197 mg/L	16.95	0.77%
Na 330.237†	9061.2	440.3 mg/L	3.64	2202 mg/L	18.22	0.83%
Ni 231.604†	4.2	0.00127 mg/L	0.001024	0.00634 mg/L	0.005120	80.72%
Pb 220.353†	2.5	0.00045 mg/L	0.001374	0.00225 mg/L	0.006869	305.60%
Sb 206.836†	6.7	0.00176 mg/L	0.002404	0.00879 mg/L	0.012019	136.74%
Se 196.026†	-10.7	-0.00962 mg/L	0.003617	-0.04812 mg/L	0.018085	37.59%
Si 288.158†	4344.6	3.868 mg/L	0.0029	19.34 mg/L	0.015	0.08%
Sn 189.927†	-82.0	-0.00988 mg/L	0.000263	-0.04940 mg/L	0.001314	2.66%
Sr 421.552†	134980.5	0.4812 mg/L	0.00267	2.406 mg/L	0.0133	0.55%
Ti 334.903†	85.4	0.00069 mg/L	0.002756	0.00343 mg/L	0.013779	402.29%
Tl 190.801†	-2.7	-0.00142 mg/L	0.001243	-0.00710 mg/L	0.006213	87.46%
V 292.402†	814.6	0.01051 mg/L	0.000248	0.05255 mg/L	0.001242	2.36%
Zn 206.200†	3.0	0.00087 mg/L	0.001037	0.00437 mg/L	0.005183	118.62%

Sequence No.: 51

Sample ID: 19G0183-01

Autosampler Location: 341

Date Collected: 7/18/2019 1:24:50 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0183-01

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0183-01

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1976742.0	97.02 %	0.934			0.96%
ScR 361.383	238695.4	102.5 %	1.21			1.18%
Ag 328.068†	-49.8	-0.00033 mg/L	0.000337	-0.00167 mg/L	0.001685	100.96%
Al 308.215†	12.3	0.00446 mg/L	0.017785	0.02232 mg/L	0.088927	398.47%
As 188.979†	29.1	0.01527 mg/L	0.001692	0.07633 mg/L	0.008458	11.08%
B 249.677†	362.9	0.04836 mg/L	0.001217	0.2418 mg/L	0.00608	2.52%
Ba 233.527†	166.4	0.03645 mg/L	0.001117	0.1822 mg/L	0.00559	3.07%
Be 313.042†	5.0	-0.00003 mg/L	0.000097	-0.00016 mg/L	0.000485	297.49%
Ca 317.933†	821586.2	79.96 mg/L	0.238	399.8 mg/L	1.19	0.30%
Cd 228.802†	0.5	-0.00012 mg/L	0.000157	-0.00058 mg/L	0.000786	136.38%
Co 228.616†	13.7	0.00042 mg/L	0.000050	0.00212 mg/L	0.000252	11.89%
Cr 267.716†	183.7	0.04520 mg/L	0.000923	0.2260 mg/L	0.00461	2.04%
Cu 324.752†	2240.1	0.01124 mg/L	0.000223	0.05622 mg/L	0.001116	1.98%
Fe 273.955†	3.1	0.00312 mg/L	0.004003	0.01560 mg/L	0.020016	128.27%
K 766.490†	6345.7	6.298 mg/L	0.0858	31.49 mg/L	0.429	1.36%
Mg 279.077†	671.1	0.5479 mg/L	0.01457	2.739 mg/L	0.0728	2.66%
Mn 257.610†	27.1	0.00055 mg/L	0.000048	0.00274 mg/L	0.000242	8.83%
Mo 202.031†	299.9	0.01721 mg/L	0.000184	0.08604 mg/L	0.000921	1.07%
Na 589.592†	3588007.9	431.7 mg/L	4.20	2158 mg/L	21.00	0.97%
Na 330.237†	8897.0	432.4 mg/L	3.71	2162 mg/L	18.54	0.86%
Ni 231.604†	4.0	0.00120 mg/L	0.000923	0.00598 mg/L	0.004617	77.23%
Pb 220.353†	3.2	0.00055 mg/L	0.001198	0.00277 mg/L	0.005990	216.03%
Sb 206.836†	9.4	0.00284 mg/L	0.002367	0.01418 mg/L	0.011833	83.44%
Se 196.026†	-9.3	-0.00837 mg/L	0.005340	-0.04185 mg/L	0.026701	63.81%
Si 288.158†	4234.7	3.770 mg/L	0.0790	18.85 mg/L	0.395	2.10%
Sn 189.927†	-83.0	-0.01035 mg/L	0.001177	-0.05174 mg/L	0.005886	11.38%
Sr 421.552†	132984.3	0.4741 mg/L	0.00372	2.370 mg/L	0.0186	0.79%
Ti 334.903†	97.1	0.00153 mg/L	0.001889	0.00767 mg/L	0.009444	123.20%
Tl 190.801†	-5.4	-0.00276 mg/L	0.002207	-0.01380 mg/L	0.011037	79.95%
V 292.402†	804.1	0.01037 mg/L	0.000284	0.05187 mg/L	0.001422	2.74%
Zn 206.200†	4.8	0.00157 mg/L	0.001383	0.00785 mg/L	0.006916	88.10%

Sequence No.: 52

Sample ID: BHG0399-MS1

Autosampler Location: 342

Date Collected: 7/18/2019 1:29:21 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: BHG0399-MS1

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: BHG0399-MS1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	1999449.4	98.14 %	0.370			0.38%
ScR 361.383	242366.9	104.1 %	0.27			0.26%
Ag 328.068†	32024.4	0.2168 mg/L	0.00224	1.084 mg/L	0.0112	1.03%
Al 308.215†	1121.1	0.8305 mg/L	0.00306	4.152 mg/L	0.0153	0.37%
As 188.979†	1295.5	0.9312 mg/L	0.01168	4.656 mg/L	0.0584	1.25%
B 249.677†	378.2	0.04997 mg/L	0.000637	0.2498 mg/L	0.00319	1.28%
Ba 233.527†	3768.3	0.8251 mg/L	0.00443	4.126 mg/L	0.0222	0.54%
Be 313.042†	102876.5	0.2137 mg/L	0.00077	1.069 mg/L	0.0039	0.36%
Ca 317.933†	857185.1	83.42 mg/L	0.451	417.1 mg/L	2.26	0.54%
Cd 228.802†	5309.6	0.2188 mg/L	0.00287	1.094 mg/L	0.0143	1.31%
Co 228.616†	6575.1	0.2102 mg/L	0.00204	1.051 mg/L	0.0102	0.97%
Cr 267.716†	991.2	0.2485 mg/L	0.00181	1.243 mg/L	0.0091	0.73%
Cu 324.752†	43757.6	0.2238 mg/L	0.00210	1.119 mg/L	0.0105	0.94%
Fe 273.955†	790.3	0.7987 mg/L	0.00880	3.994 mg/L	0.0440	1.10%
K 766.490†	10511.1	10.43 mg/L	0.033	52.16 mg/L	0.164	0.31%
Mg 279.077†	5423.3	4.491 mg/L	0.0467	22.46 mg/L	0.233	1.04%
Mn 257.610†	7222.1	0.1923 mg/L	0.00095	0.9614 mg/L	0.00475	0.49%
Mo 202.031†	317.1	0.01821 mg/L	0.000204	0.09103 mg/L	0.001020	1.12%
Na 589.592†	3676500.5	442.3 mg/L	2.05	2211 mg/L	10.25	0.46%
Na 330.237†	9027.0	438.6 mg/L	2.08	2193 mg/L	10.41	0.47%
Ni 231.604†	672.5	0.2023 mg/L	0.00066	1.012 mg/L	0.0033	0.33%
Pb 220.353†	5907.1	0.8488 mg/L	0.01127	4.244 mg/L	0.0563	1.33%
Sb 206.836†	12.8	0.00155 mg/L	0.001657	0.00777 mg/L	0.008284	106.63%
Se 196.026†	1021.4	0.9183 mg/L	0.00748	4.591 mg/L	0.0374	0.81%
Si 288.158†	4243.9	3.779 mg/L	0.0255	18.89 mg/L	0.128	0.68%
Sn 189.927†	-88.1	-0.01122 mg/L	0.001625	-0.05611 mg/L	0.008126	14.48%
Sr 421.552†	196014.1	0.6987 mg/L	0.00839	3.494 mg/L	0.0420	1.20%
Ti 334.903†	99.9	0.00147 mg/L	0.000668	0.00734 mg/L	0.003339	45.46%
Tl 190.801†	1591.1	0.8081 mg/L	0.00440	4.040 mg/L	0.0220	0.54%
V 292.402†	16980.1	0.2142 mg/L	0.00213	1.071 mg/L	0.0106	0.99%
Zn 206.200†	524.1	0.2084 mg/L	0.00157	1.042 mg/L	0.0079	0.75%

Sequence No.: 53

Sample ID: 19G0163-04

Autosampler Location: 343

Date Collected: 7/18/2019 1:33:37 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-04

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-04

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2127268.7	104.4 %	0.26			0.25%
ScR 361.383	245213.4	105.3 %	0.20			0.19%
Ag 328.068†	37.4	0.00027 mg/L	0.000171	0.00055 mg/L	0.000342	62.67%
Al 308.215†	16573.9	12.39 mg/L	0.039	24.78 mg/L	0.079	0.32%
As 188.979†	-2.7	0.03314 mg/L	0.001392	0.06627 mg/L	0.002783	4.20%
B 249.677†	125.5	0.01844 mg/L	0.000898	0.03688 mg/L	0.001797	4.87%
Ba 233.527†	721.4	0.1558 mg/L	0.00051	0.3117 mg/L	0.00102	0.33%
Be 313.042†	254.8	0.00024 mg/L	0.000033	0.00047 mg/L	0.000066	13.92%
Ca 317.933†	397263.5	38.66 mg/L	0.110	77.33 mg/L	0.219	0.28%
Cd 228.802†	53.2	0.00230 mg/L	0.000073	0.00460 mg/L	0.000146	3.17%
Co 228.616†	299.0	0.00692 mg/L	0.000179	0.01385 mg/L	0.000358	2.59%
Cr 267.716†	302.4	0.07520 mg/L	0.001751	0.1504 mg/L	0.00350	2.33%
Cu 324.752†	14981.0	0.07716 mg/L	0.000074	0.1543 mg/L	0.00015	0.10%
Fe 273.955†	17113.4	17.33 mg/L	0.136	34.66 mg/L	0.273	0.79%
K 766.490†	1011.2	1.004 mg/L	0.0391	2.007 mg/L	0.0781	3.89%
Mg 279.077†	17104.1	14.19 mg/L	0.026	28.37 mg/L	0.052	0.18%
Mn 257.610†	95568.5	2.545 mg/L	0.0036	5.089 mg/L	0.0073	0.14%
Mo 202.031†	91.2	0.00499 mg/L	0.000114	0.00999 mg/L	0.000229	2.29%
Na 589.592†	6832.2	0.8219 mg/L	0.06466	1.644 mg/L	0.1293	7.87%
Na 330.237†	11.5	0.7421 mg/L	0.39694	1.484 mg/L	0.7939	53.49%
Ni 231.604†	146.5	0.04409 mg/L	0.001117	0.08818 mg/L	0.002233	2.53%
Pb 220.353†	1127.2	0.1645 mg/L	0.00130	0.3290 mg/L	0.00261	0.79%
Sb 206.836†	6.1	0.00328 mg/L	0.001572	0.00656 mg/L	0.003145	47.96%
Se 196.026†	-5.4	-0.00643 mg/L	0.002946	-0.01285 mg/L	0.005892	45.85%
Si 288.158†	805.3	0.7186 mg/L	0.01130	1.437 mg/L	0.0226	1.57%
Sn 189.927†	-44.1	-0.00556 mg/L	0.000531	-0.01112 mg/L	0.001061	9.55%
Sr 421.552†	58895.5	0.2099 mg/L	0.00034	0.4199 mg/L	0.00067	0.16%
Ti 334.903†	19648.0	1.311 mg/L	0.0039	2.622 mg/L	0.0077	0.30%
Tl 190.801†	-12.0	-0.00339 mg/L	0.000542	-0.00679 mg/L	0.001084	15.97%
V 292.402†	5261.7	0.06756 mg/L	0.000025	0.1351 mg/L	0.00005	0.04%
Zn 206.200†	546.2	0.2177 mg/L	0.00140	0.4354 mg/L	0.00280	0.64%

Sequence No.: 54
Sample ID: SEQ-CCV5

Autosampler Location: 7
Date Collected: 7/18/2019 1:37:36 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCV5

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: SEQ-CCV5

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2118028.8	104.0 %	0.24			0.23%
ScR 361.383	242662.7	104.2 %	0.17			0.17%
Ag 328.068†	151953.9	1.029 mg/L	0.0021	1.029 mg/L	0.0021	0.21%
Al 308.215†	2663.1	1.953 mg/L	0.0117	1.953 mg/L	0.0117	0.60%
As 188.979†	2783.3	2.037 mg/L	0.0184	2.037 mg/L	0.0184	0.90%
B 249.677†	7576.5	1.009 mg/L	0.0025	1.009 mg/L	0.0025	0.24%
Ba 233.527†	4382.9	0.9583 mg/L	0.00128	0.9583 mg/L	0.00128	0.13%
Be 313.042†	500128.7	1.039 mg/L	0.0027	1.039 mg/L	0.0027	0.26%
Ca 317.933†	20666.5	1.998 mg/L	0.0060	1.998 mg/L	0.0060	0.30%
Cd 228.802†	23718.4	0.9918 mg/L	0.00437	0.9918 mg/L	0.00437	0.44%
Co 228.616†	31242.5	0.9977 mg/L	0.00129	0.9977 mg/L	0.00129	0.13%
Cr 267.716†	3821.0	0.9642 mg/L	0.00291	0.9642 mg/L	0.00291	0.30%
Cu 324.752†	195186.9	0.9988 mg/L	0.00077	0.9988 mg/L	0.00077	0.08%
Fe 273.955†	1908.2	1.925 mg/L	0.0069	1.925 mg/L	0.0069	0.36%
K 766.490†	20170.2	20.02 mg/L	0.171	20.02 mg/L	0.171	0.85%
Mg 279.077†	2406.0	2.007 mg/L	0.0074	2.007 mg/L	0.0074	0.37%
Mn 257.610†	35336.6	0.9413 mg/L	0.00161	0.9413 mg/L	0.00161	0.17%
Mo 202.031†	16339.8	1.010 mg/L	0.0004	1.010 mg/L	0.0004	0.04%
Na 589.592†	429484.8	51.67 mg/L	0.095	51.67 mg/L	0.095	0.18%
Na 330.237†	1026.8	49.68 mg/L	0.218	49.68 mg/L	0.218	0.44%
Ni 231.604†	3248.1	0.9788 mg/L	0.00402	0.9788 mg/L	0.00402	0.41%
Pb 220.353†	14017.7	2.014 mg/L	0.0043	2.014 mg/L	0.0043	0.21%
Sb 206.836†	5375.0	2.122 mg/L	0.0120	2.122 mg/L	0.0120	0.57%
Se 196.026†	2348.2	2.111 mg/L	0.0030	2.111 mg/L	0.0030	0.14%
Si 288.158†	2393.9	2.133 mg/L	0.0056	2.133 mg/L	0.0056	0.26%
Sn 189.927†	3617.4	1.040 mg/L	0.0057	1.040 mg/L	0.0057	0.54%
Sr 421.552†	300302.4	1.071 mg/L	0.0061	1.071 mg/L	0.0061	0.57%
Ti 334.903†	14697.0	0.9811 mg/L	0.00235	0.9811 mg/L	0.00235	0.24%
Tl 190.801†	4037.5	2.048 mg/L	0.0130	2.048 mg/L	0.0130	0.64%
V 292.402†	76714.1	0.9667 mg/L	0.00267	0.9667 mg/L	0.00267	0.28%
Zn 206.200†	2515.0	1.001 mg/L	0.0028	1.001 mg/L	0.0028	0.28%

Sequence No.: 55
Sample ID: SEQ-CCB5

Autosampler Location: 1
Date Collected: 7/18/2019 1:42:39 PM
Data Type: Original

Dilution: 1X
Wash Time: 100

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCB5

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: SEQ-CCB5

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2147817.6	105.4	%	0.42				0.40%
ScR 361.383	247727.6	106.4	%	0.18				0.17%
Ag 328.068†	24.3	0.00016	mg/L	0.000147	0.00016	mg/L	0.000147	89.42%
Al 308.215†	-18.1	-0.01358	mg/L	0.010462	-0.01358	mg/L	0.010462	77.04%
As 188.979†	1.1	0.00075	mg/L	0.001662	0.00075	mg/L	0.001662	222.82%
B 249.677†	19.0	0.00253	mg/L	0.000312	0.00253	mg/L	0.000312	12.36%
Ba 233.527†	1.8	0.00039	mg/L	0.000560	0.00039	mg/L	0.000560	143.29%
Be 313.042†	-62.5	-0.00013	mg/L	0.000027	-0.00013	mg/L	0.000027	20.65%
Ca 317.933†	12.5	0.00120	mg/L	0.000845	0.00120	mg/L	0.000845	70.69%
Cd 228.802†	3.6	0.00015	mg/L	0.000125	0.00015	mg/L	0.000125	85.95%
Co 228.616†	-0.5	-0.00001	mg/L	0.000297	-0.00001	mg/L	0.000297	>999.9%
Cr 267.716†	6.6	0.00168	mg/L	0.000626	0.00168	mg/L	0.000626	37.37%
Cu 324.752†	132.3	0.00068	mg/L	0.000109	0.00068	mg/L	0.000109	16.11%
Fe 273.955†	1.6	0.00165	mg/L	0.000666	0.00165	mg/L	0.000666	40.39%
K 766.490†	13.4	0.01333	mg/L	0.024005	0.01333	mg/L	0.024005	180.04%
Mg 279.077†	-6.4	-0.00532	mg/L	0.003766	-0.00532	mg/L	0.003766	70.80%
Mn 257.610†	-8.3	-0.00022	mg/L	0.000059	-0.00022	mg/L	0.000059	26.65%
Mo 202.031†	13.6	0.00084	mg/L	0.000713	0.00084	mg/L	0.000713	84.80%
Na 589.592†	1029.0	0.1238	mg/L	0.00953	0.1238	mg/L	0.00953	7.70%
Na 330.237†	17.5	0.8525	mg/L	0.15399	0.8525	mg/L	0.15399	18.06%
Ni 231.604†	-1.7	-0.00052	mg/L	0.002225	-0.00052	mg/L	0.002225	427.03%
Pb 220.353†	-8.0	-0.00115	mg/L	0.001017	-0.00115	mg/L	0.001017	88.56%
Sb 206.836†	-6.0	-0.00241	mg/L	0.001749	-0.00241	mg/L	0.001749	72.71%
Se 196.026†	8.3	0.00750	mg/L	0.002029	0.00750	mg/L	0.002029	27.06%
Si 288.158†	5.0	0.00443	mg/L	0.002618	0.00443	mg/L	0.002618	59.06%
Sn 189.927†	0.7	0.00019	mg/L	0.000525	0.00019	mg/L	0.000525	272.08%
Sr 421.552†	-4.6	-0.00002	mg/L	0.000158	-0.00002	mg/L	0.000158	968.13%
Ti 334.903†	-14.0	-0.00093	mg/L	0.000388	-0.00093	mg/L	0.000388	41.59%
Tl 190.801†	-0.3	-0.00015	mg/L	0.001915	-0.00015	mg/L	0.001915	>999.9%
V 292.402†	-35.5	-0.00043	mg/L	0.000266	-0.00043	mg/L	0.000266	61.53%
Zn 206.200†	-2.0	-0.00080	mg/L	0.000235	-0.00080	mg/L	0.000235	29.43%

Sequence No.: 56

Sample ID: 19G0163-07

Autosampler Location: 344

Date Collected: 7/18/2019 1:46:37 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-07

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-07

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2171946.0	106.6	%	0.38				0.36%
ScR 361.383	248657.6	106.8	%	0.87				0.81%
Ag 328.068†	56.2	0.00044	mg/L	0.000122	0.00088	mg/L	0.000243	27.69%
Al 308.215†	59425.1	44.42	mg/L	0.263	88.84	mg/L	0.527	0.59%
As 188.979†	137.6	0.1960	mg/L	0.00103	0.3920	mg/L	0.00206	0.53%
B 249.677†	64.4	0.02290	mg/L	0.000472	0.04580	mg/L	0.000943	2.06%
Ba 233.527†	1549.4	0.3213	mg/L	0.00283	0.6427	mg/L	0.00565	0.88%
Be 313.042†	801.1	0.00081	mg/L	0.000031	0.00162	mg/L	0.000063	3.87%
Ca 317.933†	394302.7	38.38	mg/L	0.127	76.75	mg/L	0.254	0.33%
Cd 228.802†	77.3	0.00278	mg/L	0.000148	0.00556	mg/L	0.000296	5.32%
Co 228.616†	1710.2	0.04625	mg/L	0.000237	0.09250	mg/L	0.000473	0.51%
Cr 267.716†	672.4	0.1754	mg/L	0.00150	0.3509	mg/L	0.00301	0.86%
Cu 324.752†	13509.4	0.07526	mg/L	0.000051	0.1505	mg/L	0.00010	0.07%
Fe 273.955†	141255.6	143.0	mg/L	0.67	286.1	mg/L	1.33	0.47%
K 766.490†	2693.8	2.673	mg/L	0.0066	5.347	mg/L	0.0133	0.25%
Mg 279.077†	26809.6	22.19	mg/L	0.205	44.39	mg/L	0.410	0.92%
Mn 257.610†	548524.3	14.61	mg/L	0.110	29.21	mg/L	0.220	0.75%
Mo 202.031†	58.9	0.00299	mg/L	0.000162	0.00599	mg/L	0.000323	5.40%
Na 589.592†	9342.1	1.124	mg/L	0.0088	2.248	mg/L	0.0176	0.78%
Na 330.237†	3.7	0.8168	mg/L	0.34179	1.634	mg/L	0.6836	41.84%
Ni 231.604†	629.2	0.1893	mg/L	0.00168	0.3787	mg/L	0.00336	0.89%
Pb 220.353†	591.5	0.09039	mg/L	0.001373	0.1808	mg/L	0.00275	1.52%
Sb 206.836†	16.4	0.00934	mg/L	0.001759	0.01868	mg/L	0.003518	18.83%
Se 196.026†	-5.4	-0.00588	mg/L	0.004325	-0.01176	mg/L	0.008650	73.57%
Si 288.158†	1259.4	1.124	mg/L	0.0049	2.248	mg/L	0.0098	0.44%
Sn 189.927†	-60.1	-0.00928	mg/L	0.001460	-0.01856	mg/L	0.002920	15.74%
Sr 421.552†	103127.3	0.3676	mg/L	0.00318	0.7352	mg/L	0.00635	0.86%
Ti 334.903†	50700.3	3.387	mg/L	0.0156	6.773	mg/L	0.0312	0.46%
Tl 190.801†	-76.3	-0.02268	mg/L	0.001469	-0.04537	mg/L	0.002938	6.48%
V 292.402†	15440.8	0.2043	mg/L	0.00135	0.4087	mg/L	0.00269	0.66%
Zn 206.200†	461.7	0.1839	mg/L	0.00116	0.3679	mg/L	0.00232	0.63%

Sequence No.: 57

Sample ID: 19G0163-08

Autosampler Location: 345

Date Collected: 7/18/2019 1:50:37 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-08

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-08

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2171209.6	106.6	%	0.24				0.23%
ScR 361.383	251138.3	107.9	%	0.18				0.17%
Ag 328.068†	-99.2	-0.00061	mg/L	0.000213	-0.00122	mg/L	0.000426	34.90%
Al 308.215†	65100.1	48.66	mg/L	0.196	97.32	mg/L	0.391	0.40%
As 188.979†	11.9	0.1240	mg/L	0.00455	0.2481	mg/L	0.00910	3.67%
B 249.677†	49.7	0.01887	mg/L	0.000629	0.03775	mg/L	0.001258	3.33%
Ba 233.527†	1111.2	0.2280	mg/L	0.00169	0.4559	mg/L	0.00338	0.74%
Be 313.042†	666.3	0.00048	mg/L	0.000047	0.00096	mg/L	0.000094	9.71%
Ca 317.933†	288585.3	28.09	mg/L	0.301	56.17	mg/L	0.602	1.07%
Cd 228.802†	59.8	0.00265	mg/L	0.000091	0.00530	mg/L	0.000183	3.45%
Co 228.616†	1279.5	0.03168	mg/L	0.000298	0.06337	mg/L	0.000596	0.94%
Cr 267.716†	596.5	0.1550	mg/L	0.00524	0.3100	mg/L	0.01049	3.38%
Cu 324.752†	11281.1	0.06272	mg/L	0.000435	0.1254	mg/L	0.00087	0.69%
Fe 273.955†	120760.4	122.3	mg/L	0.56	244.6	mg/L	1.13	0.46%
K 766.490†	2521.8	2.503	mg/L	0.0529	5.005	mg/L	0.1058	2.11%
Mg 279.077†	28376.0	23.48	mg/L	0.153	46.95	mg/L	0.306	0.65%
Mn 257.610†	45043.6	1.200	mg/L	0.0078	2.399	mg/L	0.0155	0.65%
Mo 202.031†	39.7	0.00198	mg/L	0.000416	0.00396	mg/L	0.000832	21.02%
Na 589.592†	10825.2	1.302	mg/L	0.0097	2.605	mg/L	0.0194	0.74%
Na 330.237†	3.5	0.9561	mg/L	0.32227	1.912	mg/L	0.6445	33.71%
Ni 231.604†	664.6	0.2000	mg/L	0.00374	0.4000	mg/L	0.00749	1.87%
Pb 220.353†	320.7	0.05365	mg/L	0.001325	0.1073	mg/L	0.00265	2.47%
Sb 206.836†	16.6	0.01076	mg/L	0.001313	0.02151	mg/L	0.002625	12.20%
Se 196.026†	-11.2	-0.00210	mg/L	0.004122	-0.00420	mg/L	0.008244	196.06%
Si 288.158†	1335.8	1.192	mg/L	0.0077	2.384	mg/L	0.0153	0.64%
Sn 189.927†	-49.2	-0.00758	mg/L	0.001708	-0.01515	mg/L	0.003416	22.54%
Sr 421.552†	55248.4	0.1969	mg/L	0.00120	0.3939	mg/L	0.00240	0.61%
Ti 334.903†	60323.1	4.030	mg/L	0.0188	8.061	mg/L	0.0376	0.47%
Tl 190.801†	-28.2	-0.01395	mg/L	0.002555	-0.02790	mg/L	0.005110	18.32%
V 292.402†	16224.7	0.2103	mg/L	0.00246	0.4207	mg/L	0.00492	1.17%
Zn 206.200†	385.7	0.1536	mg/L	0.00207	0.3073	mg/L	0.00414	1.35%

Sequence No.: 58

Sample ID: 19G0163-09

Autosampler Location: 346

Date Collected: 7/18/2019 1:54:36 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-09

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-09

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2149470.0	105.5	%	0.79				0.75%
ScR 361.383	247762.0	106.4	%	0.34				0.32%
Ag 328.068†	-41.0	-0.00023	mg/L	0.000004	-0.00046	mg/L	0.000009	1.93%
Al 308.215†	60782.7	45.43	mg/L	0.076	90.87	mg/L	0.152	0.17%
As 188.979†	-101.7	0.03255	mg/L	0.001415	0.06510	mg/L	0.002830	4.35%
B 249.677†	129.5	0.02297	mg/L	0.000516	0.04594	mg/L	0.001032	2.25%
Ba 233.527†	1120.3	0.2381	mg/L	0.00071	0.4761	mg/L	0.00141	0.30%
Be 313.042†	573.6	0.00045	mg/L	0.000051	0.00090	mg/L	0.000101	11.32%
Ca 317.933†	359637.0	35.00	mg/L	0.053	70.01	mg/L	0.106	0.15%
Cd 228.802†	35.8	0.00213	mg/L	0.000233	0.00426	mg/L	0.000466	10.92%
Co 228.616†	1024.6	0.02510	mg/L	0.000481	0.05020	mg/L	0.000963	1.92%
Cr 267.716†	554.9	0.1406	mg/L	0.00123	0.2812	mg/L	0.00246	0.87%
Cu 324.752†	12295.8	0.06485	mg/L	0.000443	0.1297	mg/L	0.00089	0.68%
Fe 273.955†	56842.1	57.56	mg/L	0.399	115.1	mg/L	0.80	0.69%
K 766.490†	2539.9	2.521	mg/L	0.0332	5.041	mg/L	0.0664	1.32%
Mg 279.077†	26332.1	21.82	mg/L	0.037	43.64	mg/L	0.073	0.17%
Mn 257.610†	58221.3	1.550	mg/L	0.0028	3.100	mg/L	0.0056	0.18%
Mo 202.031†	55.6	0.00285	mg/L	0.000512	0.00570	mg/L	0.001024	17.97%
Na 589.592†	8767.8	1.055	mg/L	0.0023	2.110	mg/L	0.0046	0.22%
Na 330.237†	-1.2	0.6587	mg/L	0.29856	1.317	mg/L	0.5971	45.33%
Ni 231.604†	505.9	0.1522	mg/L	0.00257	0.3045	mg/L	0.00513	1.69%
Pb 220.353†	438.7	0.07284	mg/L	0.001111	0.1457	mg/L	0.00222	1.53%
Sb 206.836†	7.1	0.00664	mg/L	0.001548	0.01329	mg/L	0.003096	23.30%
Se 196.026†	-6.2	-0.00502	mg/L	0.001896	-0.01004	mg/L	0.003792	37.76%
Si 288.158†	1015.2	0.9064	mg/L	0.00609	1.813	mg/L	0.0122	0.67%
Sn 189.927†	-51.4	-0.00719	mg/L	0.001361	-0.01437	mg/L	0.002722	18.93%
Sr 421.552†	56900.9	0.2028	mg/L	0.00119	0.4057	mg/L	0.00239	0.59%
Ti 334.903†	56226.1	3.756	mg/L	0.0101	7.512	mg/L	0.0202	0.27%
Tl 190.801†	-15.9	-0.00712	mg/L	0.001603	-0.01424	mg/L	0.003205	22.51%
V 292.402†	13294.3	0.1702	mg/L	0.00086	0.3403	mg/L	0.00171	0.50%
Zn 206.200†	443.9	0.1768	mg/L	0.00193	0.3537	mg/L	0.00385	1.09%

Sequence No.: 59

Sample ID: 19G0163-10

Autosampler Location: 347

Date Collected: 7/18/2019 1:58:35 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-10

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-10

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2145278.2	105.3	%	0.62				0.59%
ScR 361.383	248049.9	106.5	%	0.48				0.45%
Ag 328.068†	-66.0	-0.00039	mg/L	0.000164	-0.00078	mg/L	0.000328	41.75%
Al 308.215†	86822.2	64.90	mg/L	0.433	129.8	mg/L	0.87	0.67%
As 188.979†	-130.0	0.04801	mg/L	0.002472	0.09601	mg/L	0.004943	5.15%
B 249.677†	109.1	0.02224	mg/L	0.000374	0.04447	mg/L	0.000748	1.68%
Ba 233.527†	1387.4	0.2941	mg/L	0.00156	0.5882	mg/L	0.00312	0.53%
Be 313.042†	772.8	0.00079	mg/L	0.000045	0.00158	mg/L	0.000090	5.69%
Ca 317.933†	371639.2	36.17	mg/L	0.103	72.34	mg/L	0.205	0.28%
Cd 228.802†	34.2	0.00221	mg/L	0.000244	0.00443	mg/L	0.000488	11.02%
Co 228.616†	1260.9	0.03011	mg/L	0.000435	0.06021	mg/L	0.000870	1.44%
Cr 267.716†	631.7	0.1605	mg/L	0.00088	0.3210	mg/L	0.00176	0.55%
Cu 324.752†	10247.2	0.05505	mg/L	0.000313	0.1101	mg/L	0.00063	0.57%
Fe 273.955†	76327.5	77.29	mg/L	0.263	154.6	mg/L	0.53	0.34%
K 766.490†	4262.1	4.230	mg/L	0.0230	8.460	mg/L	0.0460	0.54%
Mg 279.077†	33505.5	27.76	mg/L	0.165	55.52	mg/L	0.331	0.60%
Mn 257.610†	69583.7	1.853	mg/L	0.0147	3.705	mg/L	0.0295	0.80%
Mo 202.031†	48.9	0.00242	mg/L	0.000060	0.00483	mg/L	0.000120	2.49%
Na 589.592†	11301.9	1.360	mg/L	0.0112	2.719	mg/L	0.0224	0.82%
Na 330.237†	5.7	1.249	mg/L	0.0665	2.498	mg/L	0.1331	5.33%
Ni 231.604†	568.0	0.1709	mg/L	0.00301	0.3419	mg/L	0.00602	1.76%
Pb 220.353†	334.4	0.06229	mg/L	0.000486	0.1246	mg/L	0.00097	0.78%
Sb 206.836†	13.4	0.01071	mg/L	0.002560	0.02142	mg/L	0.005120	23.90%
Se 196.026†	-8.2	-0.00686	mg/L	0.008101	-0.01372	mg/L	0.016201	118.06%
Si 288.158†	1165.6	1.041	mg/L	0.0066	2.082	mg/L	0.0131	0.63%
Sn 189.927†	-56.6	-0.00793	mg/L	0.000749	-0.01586	mg/L	0.001498	9.44%
Sr 421.552†	59304.2	0.2114	mg/L	0.00160	0.4228	mg/L	0.00320	0.76%
Ti 334.903†	74881.7	5.003	mg/L	0.0278	10.01	mg/L	0.056	0.56%
Tl 190.801†	-24.0	-0.01099	mg/L	0.001409	-0.02199	mg/L	0.002818	12.82%
V 292.402†	14467.2	0.1859	mg/L	0.00125	0.3718	mg/L	0.00249	0.67%
Zn 206.200†	515.2	0.2052	mg/L	0.00207	0.4104	mg/L	0.00414	1.01%

Sequence No.: 60

Sample ID: 19G0163-11

Autosampler Location: 348

Date Collected: 7/18/2019 2:02:34 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-11

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-11

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2150388.6	105.5 %		0.24				0.22%
ScR 361.383	246132.8	105.7 %		0.93				0.88%
Ag 328.068†	57.5	0.00042 mg/L		0.000209	0.00210 mg/L		0.001045	49.69%
Al 308.215†	39349.3	29.41 mg/L		0.088	147.1 mg/L		0.44	0.30%
As 188.979†	70.8	0.1178 mg/L		0.00125	0.5888 mg/L		0.00626	1.06%
B 249.677†	44.7	0.01051 mg/L		0.000687	0.05257 mg/L		0.003434	6.53%
Ba 233.527†	1243.7	0.2666 mg/L		0.00118	1.333 mg/L		0.0059	0.44%
Be 313.042†	445.5	0.00046 mg/L		0.000035	0.00228 mg/L		0.000176	7.69%
Ca 317.933†	118079.4	11.49 mg/L		0.041	57.46 mg/L		0.205	0.36%
Cd 228.802†	113.8	0.00455 mg/L		0.000073	0.02274 mg/L		0.000364	1.60%
Co 228.616†	745.0	0.01890 mg/L		0.000160	0.09452 mg/L		0.000799	0.85%
Cr 267.716†	330.0	0.08502 mg/L		0.000976	0.4251 mg/L		0.00488	1.15%
Cu 324.752†	28394.4	0.1471 mg/L		0.00092	0.7353 mg/L		0.00461	0.63%
Fe 273.955†	45190.5	45.76 mg/L		0.456	228.8 mg/L		2.28	1.00%
K 766.490†	2119.4	2.103 mg/L		0.0100	10.52 mg/L		0.050	0.48%
Mg 279.077†	9746.1	8.064 mg/L		0.0329	40.32 mg/L		0.165	0.41%
Mn 257.610†	66331.7	1.766 mg/L		0.0035	8.831 mg/L		0.0173	0.20%
Mo 202.031†	34.9	0.00196 mg/L		0.000314	0.00980 mg/L		0.001571	16.04%
Na 589.592†	3878.6	0.4666 mg/L		0.00106	2.333 mg/L		0.0053	0.23%
Na 330.237†	-6.1	0.1419 mg/L		0.13251	0.7093 mg/L		0.66254	93.40%
Ni 231.604†	256.6	0.07722 mg/L		0.000728	0.3861 mg/L		0.00364	0.94%
Pb 220.353†	1796.5	0.2638 mg/L		0.00077	1.319 mg/L		0.0038	0.29%
Sb 206.836†	8.1	0.00568 mg/L		0.000774	0.02842 mg/L		0.003871	13.62%
Se 196.026†	2.7	0.00304 mg/L		0.002539	0.01520 mg/L		0.012695	83.52%
Si 288.158†	610.9	0.5449 mg/L		0.00548	2.724 mg/L		0.0274	1.01%
Sn 189.927†	-14.9	-0.00131 mg/L		0.001266	-0.00657 mg/L		0.006328	96.36%
Sr 421.552†	22208.7	0.07917 mg/L		0.000569	0.3958 mg/L		0.00284	0.72%
Ti 334.903†	34783.5	2.324 mg/L		0.0067	11.62 mg/L		0.033	0.29%
Tl 190.801†	-13.2	-0.00517 mg/L		0.000081	-0.02584 mg/L		0.000404	1.56%
V 292.402†	8396.7	0.1081 mg/L		0.00159	0.5405 mg/L		0.00797	1.47%
Zn 206.200†	325.4	0.1296 mg/L		0.00092	0.6482 mg/L		0.00459	0.71%

Sequence No.: 61

Sample ID: 19G0163-12

Autosampler Location: 349

Date Collected: 7/18/2019 2:06:32 PM

Data Type: Original

Dilution: 5X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-12

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-12

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	2157255.0	105.9	%	0.17				0.16%
ScR 361.383	247163.0	106.2	%	0.09				0.09%
Ag 328.068†	91.0	0.00064	mg/L	0.000063	0.00322	mg/L	0.000316	9.83%
Al 308.215†	33363.9	24.94	mg/L	0.043	124.7	mg/L	0.21	0.17%
As 188.979†	55.7	0.1031	mg/L	0.00215	0.5154	mg/L	0.01077	2.09%
B 249.677†	49.0	0.01041	mg/L	0.000406	0.05205	mg/L	0.002029	3.90%
Ba 233.527†	1037.3	0.2223	mg/L	0.00095	1.111	mg/L	0.0048	0.43%
Be 313.042†	364.7	0.00034	mg/L	0.000040	0.00172	mg/L	0.000199	11.56%
Ca 317.933†	122411.6	11.91	mg/L	0.030	59.57	mg/L	0.148	0.25%
Cd 228.802†	104.4	0.00422	mg/L	0.000278	0.02108	mg/L	0.001390	6.59%
Co 228.616†	652.2	0.01628	mg/L	0.000241	0.08142	mg/L	0.001207	1.48%
Cr 267.716†	286.0	0.07365	mg/L	0.001630	0.3682	mg/L	0.00815	2.21%
Cu 324.752†	28545.7	0.1475	mg/L	0.00076	0.7377	mg/L	0.00378	0.51%
Fe 273.955†	38489.6	38.97	mg/L	0.491	194.9	mg/L	2.45	1.26%
K 766.490†	2084.5	2.069	mg/L	0.0231	10.34	mg/L	0.115	1.12%
Mg 279.077†	8046.1	6.657	mg/L	0.0159	33.29	mg/L	0.080	0.24%
Mn 257.610†	65109.5	1.734	mg/L	0.0031	8.669	mg/L	0.0155	0.18%
Mo 202.031†	33.7	0.00188	mg/L	0.000245	0.00941	mg/L	0.001224	13.00%
Na 589.592†	3604.0	0.4336	mg/L	0.00190	2.168	mg/L	0.0095	0.44%
Na 330.237†	-1.6	0.3389	mg/L	0.21591	1.694	mg/L	1.0796	63.72%
Ni 231.604†	239.1	0.07195	mg/L	0.001058	0.3598	mg/L	0.00529	1.47%
Pb 220.353†	1822.9	0.2667	mg/L	0.00049	1.333	mg/L	0.0025	0.19%
Sb 206.836†	11.7	0.00704	mg/L	0.001112	0.03522	mg/L	0.005561	15.79%
Se 196.026†	5.5	0.00534	mg/L	0.003335	0.02669	mg/L	0.016674	62.47%
Si 288.158†	679.7	0.6060	mg/L	0.00685	3.030	mg/L	0.0342	1.13%
Sn 189.927†	-13.2	-0.00080	mg/L	0.000686	-0.00400	mg/L	0.003430	85.82%
Sr 421.552†	22557.7	0.08041	mg/L	0.001154	0.4021	mg/L	0.00577	1.44%
Ti 334.903†	32850.6	2.195	mg/L	0.0023	10.98	mg/L	0.011	0.10%
Tl 190.801†	-13.4	-0.00526	mg/L	0.002694	-0.02629	mg/L	0.013471	51.25%
V 292.402†	7366.8	0.09478	mg/L	0.001003	0.4739	mg/L	0.00501	1.06%
Zn 206.200†	286.2	0.1140	mg/L	0.00114	0.5700	mg/L	0.00569	1.00%

Sequence No.: 62

Sample ID: 19G0163-13

Autosampler Location: 350

Date Collected: 7/18/2019 2:10:30 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-13

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0163-13

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2134251.9	104.8	%	0.90				0.86%
ScR 361.383	245138.5	105.3	%	0.52				0.50%
Ag 328.068†	41.3	0.00029	mg/L	0.000206	0.00059	mg/L	0.000412	70.06%
Al 308.215†	17138.9	12.81	mg/L	0.066	25.62	mg/L	0.132	0.51%
As 188.979†	-3.8	0.02869	mg/L	0.001305	0.05738	mg/L	0.002610	4.55%
B 249.677†	221.8	0.03147	mg/L	0.001331	0.06293	mg/L	0.002662	4.23%
Ba 233.527†	562.2	0.1207	mg/L	0.00230	0.2415	mg/L	0.00461	1.91%
Be 313.042†	209.2	0.00022	mg/L	0.000012	0.00044	mg/L	0.000024	5.36%
Ca 317.933†	373692.6	36.37	mg/L	0.120	72.74	mg/L	0.239	0.33%
Cd 228.802†	49.3	0.00216	mg/L	0.000027	0.00432	mg/L	0.000054	1.24%
Co 228.616†	371.9	0.00947	mg/L	0.000201	0.01893	mg/L	0.000402	2.12%
Cr 267.716†	153.1	0.03774	mg/L	0.000920	0.07548	mg/L	0.001840	2.44%
Cu 324.752†	15546.7	0.08017	mg/L	0.000887	0.1603	mg/L	0.00177	1.11%
Fe 273.955†	18944.7	19.18	mg/L	0.137	38.37	mg/L	0.275	0.72%
K 766.490†	1001.7	0.9941	mg/L	0.04982	1.988	mg/L	0.0996	5.01%
Mg 279.077†	16582.8	13.75	mg/L	0.047	27.49	mg/L	0.095	0.34%
Mn 257.610†	23181.8	0.6172	mg/L	0.00205	1.234	mg/L	0.0041	0.33%
Mo 202.031†	84.8	0.00463	mg/L	0.000185	0.00927	mg/L	0.000370	3.99%
Na 589.592†	3862.4	0.4647	mg/L	0.00689	0.9293	mg/L	0.01377	1.48%
Na 330.237†	-5.3	-0.05561	mg/L	0.182681	-0.1112	mg/L	0.36536	328.50%
Ni 231.604†	203.4	0.06120	mg/L	0.000717	0.1224	mg/L	0.00143	1.17%
Pb 220.353†	1015.2	0.1483	mg/L	0.00176	0.2967	mg/L	0.00353	1.19%
Sb 206.836†	1.4	0.00177	mg/L	0.001669	0.00354	mg/L	0.003339	94.42%
Se 196.026†	-3.4	-0.00270	mg/L	0.001233	-0.00539	mg/L	0.002467	45.74%
Si 288.158†	762.7	0.6806	mg/L	0.00193	1.361	mg/L	0.0039	0.28%
Sn 189.927†	-43.9	-0.00594	mg/L	0.000544	-0.01188	mg/L	0.001089	9.16%
Sr 421.552†	50786.3	0.1810	mg/L	0.00094	0.3621	mg/L	0.00187	0.52%
Ti 334.903†	17620.4	1.176	mg/L	0.0035	2.351	mg/L	0.0071	0.30%
Tl 190.801†	-8.0	-0.00360	mg/L	0.001480	-0.00719	mg/L	0.002960	41.15%
V 292.402†	3810.8	0.04893	mg/L	0.000456	0.09786	mg/L	0.000911	0.93%
Zn 206.200†	266.3	0.1061	mg/L	0.00099	0.2122	mg/L	0.00198	0.93%

Sequence No.: 63

Sample ID: 19G0163-14

Autosampler Location: 351

Date Collected: 7/18/2019 2:14:29 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-14

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: 19G0163-14

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2148205.3	105.4	%	0.30				0.29%
ScR 361.383	247067.3	106.1	%	0.36				0.34%
Ag 328.068†	-35.7	-0.00020	mg/L	0.000115	-0.00040	mg/L	0.000229	57.03%
Al 308.215†	62686.0	46.86	mg/L	0.133	93.72	mg/L	0.266	0.28%
As 188.979†	-93.4	0.02284	mg/L	0.001815	0.04568	mg/L	0.003630	7.95%
B 249.677†	134.9	0.02369	mg/L	0.001667	0.04738	mg/L	0.003335	7.04%
Ba 233.527†	1048.0	0.2223	mg/L	0.00034	0.4446	mg/L	0.00069	0.15%
Be 313.042†	708.5	0.00086	mg/L	0.000034	0.00173	mg/L	0.000069	3.99%
Ca 317.933†	314345.7	30.59	mg/L	0.123	61.19	mg/L	0.245	0.40%
Cd 228.802†	32.9	0.00197	mg/L	0.000276	0.00395	mg/L	0.000552	13.98%
Co 228.616†	923.0	0.02284	mg/L	0.000129	0.04567	mg/L	0.000258	0.57%
Cr 267.716†	514.2	0.1305	mg/L	0.00174	0.2610	mg/L	0.00347	1.33%
Cu 324.752†	14972.6	0.07866	mg/L	0.000319	0.1573	mg/L	0.00064	0.41%
Fe 273.955†	56676.7	57.39	mg/L	0.366	114.8	mg/L	0.73	0.64%
K 766.490†	2570.5	2.551	mg/L	0.0530	5.102	mg/L	0.1061	2.08%
Mg 279.077†	25126.9	20.82	mg/L	0.119	41.63	mg/L	0.239	0.57%
Mn 257.610†	25794.7	0.6868	mg/L	0.00301	1.374	mg/L	0.0060	0.44%
Mo 202.031†	47.3	0.00241	mg/L	0.000508	0.00481	mg/L	0.001017	21.12%
Na 589.592†	6265.7	0.7538	mg/L	0.00600	1.508	mg/L	0.0120	0.80%
Na 330.237†	-4.4	0.3816	mg/L	0.23050	0.7632	mg/L	0.46100	60.41%
Ni 231.604†	518.6	0.1561	mg/L	0.00134	0.3121	mg/L	0.00267	0.86%
Pb 220.353†	500.4	0.08206	mg/L	0.000435	0.1641	mg/L	0.00087	0.53%
Sb 206.836†	9.3	0.00676	mg/L	0.003040	0.01352	mg/L	0.006079	44.97%
Se 196.026†	-3.6	-0.00216	mg/L	0.002178	-0.00432	mg/L	0.004357	100.74%
Si 288.158†	1203.0	1.074	mg/L	0.0058	2.147	mg/L	0.0116	0.54%
Sn 189.927†	-43.4	-0.00588	mg/L	0.000402	-0.01176	mg/L	0.000803	6.83%
Sr 421.552†	46543.9	0.1659	mg/L	0.00113	0.3318	mg/L	0.00225	0.68%
Ti 334.903†	47929.6	3.202	mg/L	0.0106	6.404	mg/L	0.0212	0.33%
Tl 190.801†	-13.0	-0.00653	mg/L	0.000511	-0.01307	mg/L	0.001022	7.82%
V 292.402†	10875.2	0.1397	mg/L	0.00095	0.2795	mg/L	0.00190	0.68%
Zn 206.200†	478.6	0.1907	mg/L	0.00130	0.3814	mg/L	0.00259	0.68%

Sequence No.: 64

Sample ID: 19G0163-15

Autosampler Location: 352

Date Collected: 7/18/2019 2:18:28 PM

Data Type: Original

Dilution: 2X

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0163-15

Analyte	Back Pressure	Flow
All	164.0 kPa	0.65 L/min

Mean Data: 19G0163-15

Analyte	Mean Corrected		Calib. Units	Std.Dev.	Sample		Std.Dev.	RSD
	Intensity	Conc.			Conc.	Units		
ScA 357.253	2146940.7	105.4 %		0.22				0.21%
ScR 361.383	247218.2	106.2 %		0.74				0.69%
Ag 328.068†	-57.9	-0.00030 mg/L		0.000168	-0.00061 mg/L		0.000336	55.36%
Al 308.215†	136588.5	102.1 mg/L		0.19	204.2 mg/L		0.38	0.19%
As 188.979†	-78.7	0.1226 mg/L		0.00326	0.2451 mg/L		0.00651	2.66%
B 249.677†	94.2	0.02443 mg/L		0.000741	0.04885 mg/L		0.001482	3.03%
Ba 233.527†	2327.1	0.4946 mg/L		0.00583	0.9892 mg/L		0.01166	1.18%
Be 313.042†	1372.9	0.00155 mg/L		0.000063	0.00311 mg/L		0.000126	4.05%
Ca 317.933†	380462.2	37.03 mg/L		0.181	74.06 mg/L		0.362	0.49%
Cd 228.802†	76.6	0.00385 mg/L		0.000149	0.00770 mg/L		0.000298	3.86%
Co 228.616†	2114.7	0.05438 mg/L		0.000107	0.1088 mg/L		0.00021	0.20%
Cr 267.716†	1044.4	0.2664 mg/L		0.00279	0.5328 mg/L		0.00557	1.05%
Cu 324.752†	25773.6	0.1363 mg/L		0.00041	0.2725 mg/L		0.00081	0.30%
Fe 273.955†	117976.3	119.5 mg/L		0.54	238.9 mg/L		1.07	0.45%
K 766.490†	4840.4	4.804 mg/L		0.0379	9.608 mg/L		0.0757	0.79%
Mg 279.077†	42087.5	34.86 mg/L		0.158	69.72 mg/L		0.316	0.45%
Mn 257.610†	125262.1	3.335 mg/L		0.0108	6.671 mg/L		0.0217	0.33%
Mo 202.031†	54.7	0.00275 mg/L		0.000100	0.00550 mg/L		0.000201	3.64%
Na 589.592†	7708.4	0.9274 mg/L		0.00430	1.855 mg/L		0.0086	0.46%
Na 330.237†	-10.4	0.7044 mg/L		0.44267	1.409 mg/L		0.8853	62.85%
Ni 231.604†	902.2	0.2715 mg/L		0.00287	0.5430 mg/L		0.00574	1.06%
Pb 220.353†	1511.7	0.2396 mg/L		0.00011	0.4792 mg/L		0.00021	0.04%
Sb 206.836†	21.4	0.01452 mg/L		0.004615	0.02903 mg/L		0.009229	31.79%
Se 196.026†	-5.5	-0.00475 mg/L		0.001438	-0.00950 mg/L		0.002875	30.27%
Si 288.158†	1562.5	1.395 mg/L		0.0238	2.791 mg/L		0.0477	1.71%
Sn 189.927†	-59.6	-0.00806 mg/L		0.000858	-0.01611 mg/L		0.001717	10.65%
Sr 421.552†	60772.0	0.2166 mg/L		0.00049	0.4333 mg/L		0.00099	0.23%
Ti 334.903†	94315.1	6.302 mg/L		0.0129	12.60 mg/L		0.026	0.21%
Tl 190.801†	-32.6	-0.01417 mg/L		0.001983	-0.02834 mg/L		0.003965	13.99%
V 292.402†	23321.7	0.2998 mg/L		0.00393	0.5996 mg/L		0.00785	1.31%
Zn 206.200†	709.2	0.2825 mg/L		0.00103	0.5650 mg/L		0.00206	0.37%

Sequence No.: 65

Sample ID: 19G0208-01 RE1

Autosampler Location: 353

Date Collected: 7/18/2019 2:22:27 PM

Data Type: Original

Dilution: 2X

TH 07-18-19

Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: 19G0208-01 RE1

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: 19G0208-01 RE1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2301346.2	113.0 %	0.33			0.29%
ScR 361.383	245484.0	105.4 %	0.72			0.68%
Ag 328.068†	1756.5	0.01189 mg/L	0.000062	0.02378 mg/L	0.000124	0.52%
Al 308.215†	2480.8	1.855 mg/L	0.0117	3.709 mg/L	0.0235	0.63%
As 188.979†	4.6	0.00300 mg/L	0.001700	0.00601 mg/L	0.003399	56.58%
B 249.677†	60983.5	8.124 mg/L	0.0239	16.25 mg/L	0.048	0.29%
Ba 233.527†	962.2	0.2108 mg/L	0.00122	0.4215 mg/L	0.00245	0.58%
Be 313.042†	-7983.1	-0.01666 mg/L	0.000198	-0.03331 mg/L	0.000396	1.19%
Ca 317.933†	49613.1	4.829 mg/L	0.0326	9.657 mg/L	0.0651	0.67%
Cd 228.802†	-27.3	-0.00117 mg/L	0.000111	-0.00235 mg/L	0.000222	9.46%
Co 228.616†	0.2	-0.00003 mg/L	0.000098	-0.00006 mg/L	0.000196	341.76%
Cr 267.716†	31.0	0.00769 mg/L	0.000993	0.01538 mg/L	0.001987	12.92%
Cu 324.752†	2179.4	0.01116 mg/L	0.000208	0.02232 mg/L	0.000416	1.86%
Fe 273.955†	228.7	0.2316 mg/L	0.00329	0.4632 mg/L	0.00658	1.42%
K 766.490†	53107.3	52.71 mg/L	0.330	105.4 mg/L	0.66	0.63%
Mg 279.077†	763.5	0.6329 mg/L	0.00763	1.266 mg/L	0.0153	1.20%
Mn 257.610†	258.9	0.00687 mg/L	0.000070	0.01375 mg/L	0.000140	1.02%
Mo 202.031†	11.0	0.00060 mg/L	0.000158	0.00120 mg/L	0.000317	26.32%
Na 589.592†	15323.5	1.843 mg/L	0.0091	3.687 mg/L	0.0182	0.49%
Na 330.237†	25.7	1.248 mg/L	0.6600	2.496 mg/L	1.3201	52.89%
Ni 231.604†	9.6	0.00287 mg/L	0.001121	0.00575 mg/L	0.002241	39.00%
Pb 220.353†	-8.2	-0.00068 mg/L	0.000074	-0.00135 mg/L	0.000147	10.91%
Sb 206.836†	-6.6	-0.00270 mg/L	0.000900	-0.00541 mg/L	0.001801	33.30%
Se 196.026†	4.7	0.00401 mg/L	0.003154	0.00803 mg/L	0.006308	78.60%
Si 288.158†	4665.5	4.153 mg/L	0.0210	8.307 mg/L	0.0419	0.50%
Sn 189.927†	5.6	0.00241 mg/L	0.000517	0.00483 mg/L	0.001035	21.44%
Sr 421.552†	5717.5	0.02038 mg/L	0.000213	0.04076 mg/L	0.000427	1.05%
Ti 334.903†	52.3	0.00320 mg/L	0.000514	0.00639 mg/L	0.001029	16.09%
Tl 190.801†	-1.1	-0.00058 mg/L	0.001381	-0.00115 mg/L	0.002762	239.50%
V 292.402†	-0.6	0.00006 mg/L	0.000242	0.00012 mg/L	0.000485	413.97%
Zn 206.200†	24.1	0.00686 mg/L	0.000444	0.01371 mg/L	0.000889	6.48%

Sequence No.: 66
Sample ID: SEQ-CCV6

Autosampler Location: 7
Date Collected: 7/18/2019 2:26:25 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCV6

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: SEQ-CCV6

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	2115147.8	103.8 %	0.42			0.41%
ScR 361.383	241273.3	103.6 %	0.72			0.70%
Ag 328.068†	151573.8	1.026 mg/L	0.0045	1.026 mg/L	0.0045	0.44%
Al 308.215†	2687.2	1.971 mg/L	0.0187	1.971 mg/L	0.0187	0.95%
As 188.979†	2810.7	2.057 mg/L	0.0123	2.057 mg/L	0.0123	0.60%
B 249.677†	7791.8	1.037 mg/L	0.0101	1.037 mg/L	0.0101	0.97%
Ba 233.527†	4444.5	0.9718 mg/L	0.00863	0.9718 mg/L	0.00863	0.89%
Be 313.042†	506662.2	1.053 mg/L	0.0038	1.053 mg/L	0.0038	0.36%
Ca 317.933†	20892.5	2.020 mg/L	0.0045	2.020 mg/L	0.0045	0.22%
Cd 228.802†	23499.5	0.9824 mg/L	0.00486	0.9824 mg/L	0.00486	0.49%
Co 228.616†	31311.1	0.9999 mg/L	0.00617	0.9999 mg/L	0.00617	0.62%
Cr 267.716†	3829.2	0.9662 mg/L	0.00667	0.9662 mg/L	0.00667	0.69%
Cu 324.752†	194085.3	0.9931 mg/L	0.00647	0.9931 mg/L	0.00647	0.65%
Fe 273.955†	1933.3	1.950 mg/L	0.0118	1.950 mg/L	0.0118	0.61%
K 766.490†	20250.8	20.10 mg/L	0.249	20.10 mg/L	0.249	1.24%
Mg 279.077†	2434.1	2.031 mg/L	0.0157	2.031 mg/L	0.0157	0.77%
Mn 257.610†	35878.6	0.9557 mg/L	0.00334	0.9557 mg/L	0.00334	0.35%
Mo 202.031†	16345.6	1.010 mg/L	0.0095	1.010 mg/L	0.0095	0.94%
Na 589.592†	429925.6	51.72 mg/L	0.243	51.72 mg/L	0.243	0.47%
Na 330.237†	1029.5	49.81 mg/L	0.383	49.81 mg/L	0.383	0.77%
Ni 231.604†	3287.0	0.9905 mg/L	0.00712	0.9905 mg/L	0.00712	0.72%
Pb 220.353†	14021.8	2.015 mg/L	0.0171	2.015 mg/L	0.0171	0.85%
Sb 206.836†	5427.7	2.143 mg/L	0.0070	2.143 mg/L	0.0070	0.33%
Se 196.026†	2391.8	2.150 mg/L	0.0103	2.150 mg/L	0.0103	0.48%
Si 288.158†	2407.1	2.144 mg/L	0.0217	2.144 mg/L	0.0217	1.01%
Sn 189.927†	3663.9	1.053 mg/L	0.0022	1.053 mg/L	0.0022	0.21%
Sr 421.552†	307052.3	1.095 mg/L	0.0102	1.095 mg/L	0.0102	0.93%
Ti 334.903†	14800.1	0.9880 mg/L	0.00535	0.9880 mg/L	0.00535	0.54%
Tl 190.801†	4091.4	2.075 mg/L	0.0103	2.075 mg/L	0.0103	0.50%
V 292.402†	77188.2	0.9727 mg/L	0.01615	0.9727 mg/L	0.01615	1.66%
Zn 206.200†	2549.3	1.015 mg/L	0.0077	1.015 mg/L	0.0077	0.76%

Sequence No.: 67
Sample ID: SEQ-CCB6

Autosampler Location: 1
Date Collected: 7/18/2019 2:31:28 PM
Data Type: Original

Dilution: 1X
Wash Time: 100

Auto Dilution Factor: 1

Nebulizer Parameters: SEQ-CCB6

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: SEQ-CCB6

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	2134475.4	104.8	%	0.60				0.58%
ScR 361.383	242843.5	104.3	%	1.02				0.98%
Ag 328.068†	21.9	0.00015	mg/L	0.000166	0.00015	mg/L	0.000166	112.19%
Al 308.215†	-9.1	-0.00684	mg/L	0.013975	-0.00684	mg/L	0.013975	204.44%
As 188.979†	1.5	0.00112	mg/L	0.000480	0.00112	mg/L	0.000480	42.76%
B 249.677†	77.4	0.01031	mg/L	0.000720	0.01031	mg/L	0.000720	6.98%
Ba 233.527†	2.3	0.00051	mg/L	0.000612	0.00051	mg/L	0.000612	120.81%
Be 313.042†	-67.0	-0.00014	mg/L	0.000073	-0.00014	mg/L	0.000073	53.11%
Ca 317.933†	9.0	0.00087	mg/L	0.001843	0.00087	mg/L	0.001843	210.98%
Cd 228.802†	3.4	0.00014	mg/L	0.000086	0.00014	mg/L	0.000086	62.31%
Co 228.616†	-2.0	-0.00007	mg/L	0.000184	-0.00007	mg/L	0.000184	281.67%
Cr 267.716†	0.3	0.00009	mg/L	0.000717	0.00009	mg/L	0.000717	824.89%
Cu 324.752†	111.7	0.00057	mg/L	0.000177	0.00057	mg/L	0.000177	30.99%
Fe 273.955†	2.5	0.00252	mg/L	0.002761	0.00252	mg/L	0.002761	109.56%
K 766.490†	29.2	0.02900	mg/L	0.022857	0.02900	mg/L	0.022857	78.82%
Mg 279.077†	-1.3	-0.00106	mg/L	0.001680	-0.00106	mg/L	0.001680	159.25%
Mn 257.610†	-3.3	-0.00009	mg/L	0.000061	-0.00009	mg/L	0.000061	68.74%
Mo 202.031†	10.7	0.00066	mg/L	0.000402	0.00066	mg/L	0.000402	60.88%
Na 589.592†	159.3	0.01916	mg/L	0.004667	0.01916	mg/L	0.004667	24.36%
Na 330.237†	-3.4	-0.1638	mg/L	0.37619	-0.1638	mg/L	0.37619	229.70%
Ni 231.604†	2.8	0.00084	mg/L	0.001520	0.00084	mg/L	0.001520	181.05%
Pb 220.353†	-3.1	-0.00044	mg/L	0.000818	-0.00044	mg/L	0.000818	184.19%
Sb 206.836†	3.8	0.00152	mg/L	0.000632	0.00152	mg/L	0.000632	41.69%
Se 196.026†	5.9	0.00529	mg/L	0.004530	0.00529	mg/L	0.004530	85.60%
Si 288.158†	6.5	0.00581	mg/L	0.004785	0.00581	mg/L	0.004785	82.38%
Sn 189.927†	3.0	0.00086	mg/L	0.000804	0.00086	mg/L	0.000804	93.26%
Sr 421.552†	-1.3	-0.00000	mg/L	0.000156	-0.00000	mg/L	0.000156	>999.9%
Ti 334.903†	5.2	0.00035	mg/L	0.001167	0.00035	mg/L	0.001167	338.07%
Tl 190.801†	-0.8	-0.00042	mg/L	0.001500	-0.00042	mg/L	0.001500	360.94%
V 292.402†	-29.2	-0.00036	mg/L	0.000265	-0.00036	mg/L	0.000265	72.77%
Zn 206.200†	-3.5	-0.00142	mg/L	0.000768	-0.00142	mg/L	0.000768	54.24%

Sequence No.: 68
Sample ID: RINSE - 1

Autosampler Location: 9
Date Collected: 7/18/2019 2:35:26 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: RINSE - 1

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: RINSE - 1

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
ScA 357.253	736304.1	36.14	%	59.800				165.47%
ScR 361.383	246186.8	105.7	%	1.69				1.60%
Ag 328.068†	-5962.7	-0.04032	mg/L	0.053650	-0.04032	mg/L	0.053650	133.07%
Al 308.215†	-21.8	-0.02245	mg/L	0.024378	-0.02245	mg/L	0.024378	108.60%
As 188.979†	-486.2	-0.3527	mg/L	0.36142	-0.3527	mg/L	0.36142	102.48%
B 249.677†	58.5	0.00824	mg/L	0.001222	0.00824	mg/L	0.001222	14.83%
Ba 233.527†	-2.8	-0.00070	mg/L	0.000141	-0.00070	mg/L	0.000141	20.21%
Be 313.042†	-68.9	-0.00079	mg/L	0.000801	-0.00079	mg/L	0.000801	101.49%
Ca 317.933†	15.8	0.00200	mg/L	0.001652	0.00200	mg/L	0.001652	82.50%
Cd 228.802†	4139.5	0.1776	mg/L	0.23522	0.1776	mg/L	0.23522	132.46%
Co 228.616†	-2281.3	-0.07297	mg/L	0.085930	-0.07297	mg/L	0.085930	117.76%
Cr 267.716†	-1.4	-0.00036	mg/L	0.001183	-0.00036	mg/L	0.001183	324.36%
Cu 324.752†	137649.1	0.7045	mg/L	0.86282	0.7045	mg/L	0.86282	122.48%
Fe 273.955†	2.3	0.00095	mg/L	0.003323	0.00095	mg/L	0.003323	349.76%
K 766.490†	-2.4	-0.00233	mg/L	0.037658	-0.00233	mg/L	0.037658	>999.9%
Mg 279.077†	1.6	0.00278	mg/L	0.008004	0.00278	mg/L	0.008004	288.25%
Mn 257.610†	-3.4	-0.00006	mg/L	0.000145	-0.00006	mg/L	0.000145	233.94%
Mo 202.031†	3013.5	0.1863	mg/L	0.24244	0.1863	mg/L	0.24244	130.17%
Na 589.592†	172.2	0.02072	mg/L	0.004229	0.02072	mg/L	0.004229	20.41%
Na 330.237†	0.3	0.01684	mg/L	0.379783	0.01684	mg/L	0.379783	>999.9%
Ni 231.604†	6.1	0.00291	mg/L	0.001905	0.00291	mg/L	0.001905	65.50%
Pb 220.353†	1175.1	0.1678	mg/L	0.20948	0.1678	mg/L	0.20948	124.80%
Sb 206.836†	3608.6	1.426	mg/L	1.7786	1.426	mg/L	1.7786	124.71%
Se 196.026†	-2433.3	-2.188	mg/L	2.5379	-2.188	mg/L	2.5379	116.00%
Si 288.158†	10.6	0.00939	mg/L	0.000666	0.00939	mg/L	0.000666	7.09%
Sn 189.927†	-707.6	-0.2025	mg/L	0.23300	-0.2025	mg/L	0.23300	115.08%
Sr 421.552†	-14.1	-0.00005	mg/L	0.000026	-0.00005	mg/L	0.000026	51.54%
Ti 334.903†	1.3	-0.00009	mg/L	0.001916	-0.00009	mg/L	0.001916	>999.9%
Tl 190.801†	-1825.3	-0.9291	mg/L	1.09296	-0.9291	mg/L	1.09296	117.63%
V 292.402†	12064.1	0.1510	mg/L	0.18946	0.1510	mg/L	0.18946	125.47%
Zn 206.200†	0.6	0.00012	mg/L	0.000394	0.00012	mg/L	0.000394	316.04%

Sequence No.: 69
Sample ID: RINSE - 2

Autosampler Location: 9
Date Collected: 7/18/2019 2:39:24 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: RINSE - 2

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: RINSE - 2

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	11662.0	0.5724 %	0.00200			0.35%
ScR 361.383	-531.9	-0.2285 %	0.00269			1.18%
Ag 328.068†	-17984.6	-0.1216 mg/L	0.07601	-0.1216 mg/L	0.07601	62.50%
Al 308.215†	-144135.4	-107.8 mg/L	2.12	-107.8 mg/L	2.12	1.96%
As 188.979†	-1434.4	-1.040 mg/L	0.2048	-1.040 mg/L	0.2048	19.69%
B 249.677†	-44826.1	-5.978 mg/L	0.6585	-5.978 mg/L	0.6585	11.02%
Ba 233.527†	-9012.2	-1.974 mg/L	0.3206	-1.974 mg/L	0.3206	16.24%
Be 313.042†	-677526.9	-1.415 mg/L	0.0298	-1.415 mg/L	0.0298	2.10%
Ca 317.933†	-134462.3	-13.19 mg/L	0.588	-13.19 mg/L	0.588	4.45%
Cd 228.802†	10904.4	0.4753 mg/L	0.00913	0.4753 mg/L	0.00913	1.92%
Co 228.616†	-7243.4	-0.2344 mg/L	0.03800	-0.2344 mg/L	0.03800	16.21%
Cr 267.716†	77439.7	19.55 mg/L	0.431	19.55 mg/L	0.431	2.21%
Cu 324.752†	396262.9	2.025 mg/L	0.0276	2.025 mg/L	0.0276	1.36%
Fe 273.955†	-15757.5	-15.93 mg/L	0.722	-15.93 mg/L	0.722	4.53%
K 766.490†	-195270.2	-193.8 mg/L	6.43	-193.8 mg/L	6.43	3.32%
Mg 279.077†	-47345.9	-39.26 mg/L	1.915	-39.26 mg/L	1.915	4.88%
Mn 257.610†	-120447.6	-3.206 mg/L	0.0989	-3.206 mg/L	0.0989	3.08%
Mo 202.031†	7644.0	0.4715 mg/L	0.02490	0.4715 mg/L	0.02490	5.28%
Na 589.592†	-91012.8	-10.95 mg/L	1.754	-10.95 mg/L	1.754	16.02%
Na 330.237†	121086.8	5886 mg/L	170.99	5886 mg/L	170.99	2.91%
Ni 231.604†	22893.5	6.893 mg/L	0.5443	6.893 mg/L	0.5443	7.90%
Pb 220.353†	3492.5	0.5131 mg/L	0.00954	0.5131 mg/L	0.00954	1.86%
Sb 206.836†	9757.2	3.533 mg/L	0.2453	3.533 mg/L	0.2453	6.94%
Se 196.026†	-6408.0	-5.749 mg/L	0.2927	-5.749 mg/L	0.2927	5.09%
Si 288.158†	-5369.2	-4.758 mg/L	2.4575	-4.758 mg/L	2.4575	51.65%
Sn 189.927†	-2446.8	-0.7022 mg/L	0.02341	-0.7022 mg/L	0.02341	3.33%
Sr 421.552†	-369022.1	-1.315 mg/L	0.0225	-1.315 mg/L	0.0225	1.71%
Ti 334.903†	17700.9	1.180 mg/L	0.0614	1.180 mg/L	0.0614	5.20%
Tl 190.801†	-5341.1	-2.729 mg/L	0.3286	-2.729 mg/L	0.3286	12.04%
V 292.402†	30450.6	0.5095 mg/L	0.05879	0.5095 mg/L	0.05879	11.54%
Zn 206.200†	-8188.2	-3.255 mg/L	0.3607	-3.255 mg/L	0.3607	11.08%

Sequence No.: 70
Sample ID: RINSE - 3

Autosampler Location: 9
Date Collected: 7/18/2019 2:43:06 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: RINSE - 3

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: RINSE - 3

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	11591.6	0.5689	%	0.00151				0.27%
ScR 361.383	-537.1	-0.2307	%	0.00642				2.78%
Ag 328.068†	-14537.1	-0.09827	mg/L	0.018271	-0.09827	mg/L	0.018271	18.59%
Al 308.215†	-144390.3	-108.0	mg/L	6.99	-108.0	mg/L	6.99	6.47%
As 188.979†	-1673.2	-1.170	mg/L	0.3103	-1.170	mg/L	0.3103	26.53%
B 249.677†	-40190.7	-5.360	mg/L	0.4510	-5.360	mg/L	0.4510	8.41%
Ba 233.527†	-10236.3	-2.242	mg/L	0.0905	-2.242	mg/L	0.0905	4.04%
Be 313.042†	-669049.0	-1.398	mg/L	0.0256	-1.398	mg/L	0.0256	1.83%
Ca 317.933†	-129480.2	-12.71	mg/L	0.340	-12.71	mg/L	0.340	2.67%
Cd 228.802†	10739.3	0.4692	mg/L	0.03360	0.4692	mg/L	0.03360	7.16%
Co 228.616†	-6401.6	-0.2101	mg/L	0.02666	-0.2101	mg/L	0.02666	12.69%
Cr 267.716†	79150.1	19.98	mg/L	0.533	19.98	mg/L	0.533	2.67%
Cu 324.752†	398237.5	2.035	mg/L	0.0053	2.035	mg/L	0.0053	0.26%
Fe 273.955†	-15534.8	-15.70	mg/L	1.110	-15.70	mg/L	1.110	7.07%
K 766.490†	-175413.1	-174.1	mg/L	28.25	-174.1	mg/L	28.25	16.23%
Mg 279.077†	-49107.5	-40.73	mg/L	0.814	-40.73	mg/L	0.814	2.00%
Mn 257.610†	-118023.5	-3.142	mg/L	0.0804	-3.142	mg/L	0.0804	2.56%
Mo 202.031†	7505.7	0.4629	mg/L	0.01846	0.4629	mg/L	0.01846	3.99%
Na 589.592†	-79009.9	-9.505	mg/L	1.5153	-9.505	mg/L	1.5153	15.94%
Na 330.237†	117785.9	5726	mg/L	195.17	5726	mg/L	195.17	3.41%
Ni 231.604†	22351.7	6.730	mg/L	0.5274	6.730	mg/L	0.5274	7.84%
Pb 220.353†	3745.9	0.5503	mg/L	0.16401	0.5503	mg/L	0.16401	29.80%
Sb 206.836†	10020.9	3.633	mg/L	0.6330	3.633	mg/L	0.6330	17.42%
Se 196.026†	-6283.7	-5.638	mg/L	0.3565	-5.638	mg/L	0.3565	6.32%
Si 288.158†	-5732.3	-5.081	mg/L	1.1497	-5.081	mg/L	1.1497	22.63%
Sn 189.927†	-2340.5	-0.6709	mg/L	0.13630	-0.6709	mg/L	0.13630	20.32%
Sr 421.552†	-371095.1	-1.323	mg/L	0.0359	-1.323	mg/L	0.0359	2.72%
Ti 334.903†	40400.3	2.697	mg/L	0.4411	2.697	mg/L	0.4411	16.36%
Tl 190.801†	-5298.4	-2.708	mg/L	0.1770	-2.708	mg/L	0.1770	6.54%
V 292.402†	36101.3	0.5829	mg/L	0.03714	0.5829	mg/L	0.03714	6.37%
Zn 206.200†	-7375.1	-2.932	mg/L	0.6152	-2.932	mg/L	0.6152	20.99%

Sequence No.: 71
Sample ID: RINSE - 4

Autosampler Location: 9
Date Collected: 7/18/2019 2:46:48 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: RINSE - 4

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: RINSE - 4

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	11620.6	0.5704	%	0.00203				0.36%
ScR 361.383	-543.7	-0.2335	%	0.00460				1.97%
Ag 328.068†	-13572.0	-0.09176	mg/L	0.066044	-0.09176	mg/L	0.066044	71.98%
Al 308.215†	-141661.0	-106.0	mg/L	5.08	-106.0	mg/L	5.08	4.80%
As 188.979†	-1239.7	-0.8687	mg/L	0.21753	-0.8687	mg/L	0.21753	25.04%
B 249.677†	-36701.8	-4.895	mg/L	0.4601	-4.895	mg/L	0.4601	9.40%
Ba 233.527†	-10441.9	-2.287	mg/L	0.4302	-2.287	mg/L	0.4302	18.81%
Be 313.042†	-650251.8	-1.358	mg/L	0.0105	-1.358	mg/L	0.0105	0.77%
Ca 317.933†	-126265.8	-12.39	mg/L	0.842	-12.39	mg/L	0.842	6.80%
Cd 228.802†	11036.2	0.4794	mg/L	0.02793	0.4794	mg/L	0.02793	5.83%
Co 228.616†	-6440.7	-0.2104	mg/L	0.03791	-0.2104	mg/L	0.03791	18.02%
Cr 267.716†	76569.4	19.33	mg/L	0.846	19.33	mg/L	0.846	4.38%
Cu 324.752†	397186.9	2.030	mg/L	0.0395	2.030	mg/L	0.0395	1.95%
Fe 273.955†	-15873.2	-16.05	mg/L	1.597	-16.05	mg/L	1.597	9.95%
K 766.490†	-179369.3	-178.0	mg/L	4.01	-178.0	mg/L	4.01	2.25%
Mg 279.077†	-48857.9	-40.52	mg/L	3.726	-40.52	mg/L	3.726	9.20%
Mn 257.610†	-116890.8	-3.112	mg/L	0.0427	-3.112	mg/L	0.0427	1.37%
Mo 202.031†	8507.3	0.5248	mg/L	0.02384	0.5248	mg/L	0.02384	4.54%
Na 589.592†	-78827.8	-9.483	mg/L	2.1623	-9.483	mg/L	2.1623	22.80%
Na 330.237†	114323.3	5557	mg/L	111.11	5557	mg/L	111.11	2.00%
Ni 231.604†	21150.8	6.368	mg/L	0.8618	6.368	mg/L	0.8618	13.53%
Pb 220.353†	3552.3	0.5217	mg/L	0.02444	0.5217	mg/L	0.02444	4.69%
Sb 206.836†	9867.7	3.582	mg/L	0.1581	3.582	mg/L	0.1581	4.41%
Se 196.026†	-6532.8	-5.862	mg/L	0.4853	-5.862	mg/L	0.4853	8.28%
Si 288.158†	-5763.5	-5.110	mg/L	2.6124	-5.110	mg/L	2.6124	51.13%
Sn 189.927†	-2634.3	-0.7554	mg/L	0.15276	-0.7554	mg/L	0.15276	20.22%
Sr 421.552†	-346359.2	-1.235	mg/L	0.0447	-1.235	mg/L	0.0447	3.62%
Ti 334.903†	33487.2	2.235	mg/L	0.4087	2.235	mg/L	0.4087	18.29%
Tl 190.801†	-5379.0	-2.748	mg/L	0.2621	-2.748	mg/L	0.2621	9.54%
V 292.402†	31025.1	0.5151	mg/L	0.03324	0.5151	mg/L	0.03324	6.45%
Zn 206.200†	-7839.4	-3.116	mg/L	0.1545	-3.116	mg/L	0.1545	4.96%

Sequence No.: 72
Sample ID: DI - 1

Autosampler Location: 10
Date Collected: 7/18/2019 2:50:30 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: DI - 1

Analyte	Back Pressure	Flow
All	162.0 kPa	0.65 L/min

Mean Data: DI - 1

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	11700.0	0.5743 %	0.00295			0.51%
ScR 361.383	-567.4	-0.2437 %	0.00490			2.01%
Ag 328.068†	-23090.4	-0.1562 mg/L	0.07335	-0.1562 mg/L	0.07335	46.96%
Al 308.215†	-137352.4	-102.8 mg/L	2.00	-102.8 mg/L	2.00	1.94%
As 188.979†	-1222.5	-0.8747 mg/L	0.23413	-0.8747 mg/L	0.23413	26.77%
B 249.677†	-31376.5	-4.186 mg/L	0.2953	-4.186 mg/L	0.2953	7.06%
Ba 233.527†	-10204.6	-2.235 mg/L	0.3015	-2.235 mg/L	0.3015	13.49%
Be 313.042†	-625524.8	-1.307 mg/L	0.0321	-1.307 mg/L	0.0321	2.46%
Ca 317.933†	-103078.1	-10.13 mg/L	0.470	-10.13 mg/L	0.470	4.64%
Cd 228.802†	10445.2	0.4543 mg/L	0.00791	0.4543 mg/L	0.00791	1.74%
Co 228.616†	-5442.6	-0.1773 mg/L	0.02310	-0.1773 mg/L	0.02310	13.02%
Cr 267.716†	75150.1	18.97 mg/L	0.691	18.97 mg/L	0.691	3.64%
Cu 324.752†	399066.8	2.040 mg/L	0.0310	2.040 mg/L	0.0310	1.52%
Fe 273.955†	-14266.4	-14.42 mg/L	0.178	-14.42 mg/L	0.178	1.23%
K 766.490†	-192339.2	-190.9 mg/L	6.06	-190.9 mg/L	6.06	3.18%
Mg 279.077†	-43835.2	-36.35 mg/L	1.171	-36.35 mg/L	1.171	3.22%
Mn 257.610†	-107021.2	-2.849 mg/L	0.0931	-2.849 mg/L	0.0931	3.27%
Mo 202.031†	6933.9	0.4275 mg/L	0.01636	0.4275 mg/L	0.01636	3.83%
Na 589.592†	-62355.2	-7.502 mg/L	1.1566	-7.502 mg/L	1.1566	15.42%
Na 330.237†	110736.7	5383 mg/L	215.00	5383 mg/L	215.00	3.99%
Ni 231.604†	21122.8	6.360 mg/L	0.0944	6.360 mg/L	0.0944	1.48%
Pb 220.353†	2543.7	0.3769 mg/L	0.08047	0.3769 mg/L	0.08047	21.35%
Sb 206.836†	9283.3	3.357 mg/L	0.2701	3.357 mg/L	0.2701	8.05%
Se 196.026†	-6407.1	-5.749 mg/L	0.6772	-5.749 mg/L	0.6772	11.78%
Si 288.158†	-5171.8	-4.583 mg/L	1.9218	-4.583 mg/L	1.9218	41.93%
Sn 189.927†	-2217.6	-0.6358 mg/L	0.19551	-0.6358 mg/L	0.19551	30.75%
Sr 421.552†	-348420.2	-1.242 mg/L	0.0158	-1.242 mg/L	0.0158	1.27%
Ti 334.903†	23436.7	1.563 mg/L	0.1518	1.563 mg/L	0.1518	9.71%
Tl 190.801†	-5094.4	-2.603 mg/L	0.2484	-2.603 mg/L	0.2484	9.54%
V 292.402†	32891.2	0.5363 mg/L	0.04062	0.5363 mg/L	0.04062	7.57%
Zn 206.200†	-6139.9	-2.438 mg/L	0.3220	-2.438 mg/L	0.3220	13.21%

Sequence No.: 73
Sample ID: DI - 2

Autosampler Location: 10
Date Collected: 7/18/2019 2:54:11 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: DI - 2

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: DI - 2

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
ScA 357.253	11755.3	0.5770	%	0.00373				0.65%
ScR 361.383	-568.9	-0.2444	%	0.00245				1.00%
Ag 328.068†	-13163.3	-0.08898	mg/L	0.072156	-0.08898	mg/L	0.072156	81.09%
Al 308.215†	-127414.2	-95.34	mg/L	3.007	-95.34	mg/L	3.007	3.15%
As 188.979†	-1001.3	-0.6913	mg/L	0.44170	-0.6913	mg/L	0.44170	63.90%
B 249.677†	-33839.6	-4.514	mg/L	0.3655	-4.514	mg/L	0.3655	8.10%
Ba 233.527†	-8971.3	-1.965	mg/L	0.2460	-1.965	mg/L	0.2460	12.52%
Be 313.042†	-626507.7	-1.309	mg/L	0.0151	-1.309	mg/L	0.0151	1.16%
Ca 317.933†	-100553.4	-9.889	mg/L	0.5525	-9.889	mg/L	0.5525	5.59%
Cd 228.802†	10062.6	0.4374	mg/L	0.02727	0.4374	mg/L	0.02727	6.24%
Co 228.616†	-4985.2	-0.1641	mg/L	0.03833	-0.1641	mg/L	0.03833	23.35%
Cr 267.716†	71168.1	17.96	mg/L	0.165	17.96	mg/L	0.165	0.92%
Cu 324.752†	399817.9	2.043	mg/L	0.0386	2.043	mg/L	0.0386	1.89%
Fe 273.955†	-14106.4	-14.26	mg/L	0.518	-14.26	mg/L	0.518	3.63%
K 766.490†	-178317.7	-177.0	mg/L	9.66	-177.0	mg/L	9.66	5.46%
Mg 279.077†	-46688.0	-38.72	mg/L	1.668	-38.72	mg/L	1.668	4.31%
Mn 257.610†	-108341.8	-2.884	mg/L	0.0514	-2.884	mg/L	0.0514	1.78%
Mo 202.031†	6963.1	0.4294	mg/L	0.04219	0.4294	mg/L	0.04219	9.82%
Na 589.592†	-112451.3	-13.53	mg/L	9.194	-13.53	mg/L	9.194	67.96%
Na 330.237†	115814.8	5630	mg/L	174.87	5630	mg/L	174.87	3.11%
Ni 231.604†	22245.9	6.698	mg/L	0.3247	6.698	mg/L	0.3247	4.85%
Pb 220.353†	3529.7	0.5183	mg/L	0.05013	0.5183	mg/L	0.05013	9.67%
Sb 206.836†	9135.1	3.316	mg/L	0.3495	3.316	mg/L	0.3495	10.54%
Se 196.026†	-5722.0	-5.134	mg/L	0.7013	-5.134	mg/L	0.7013	13.66%
Si 288.158†	-4059.5	-3.594	mg/L	4.7566	-3.594	mg/L	4.7566	132.33%
Sn 189.927†	-2273.7	-0.6516	mg/L	0.10889	-0.6516	mg/L	0.10889	16.71%
Sr 421.552†	-333322.5	-1.188	mg/L	0.0253	-1.188	mg/L	0.0253	2.13%
Ti 334.903†	34651.8	2.313	mg/L	0.4260	2.313	mg/L	0.4260	18.42%
Tl 190.801†	-4801.8	-2.454	mg/L	0.0971	-2.454	mg/L	0.0971	3.95%
V 292.402†	32669.6	0.5267	mg/L	0.03744	0.5267	mg/L	0.03744	7.11%
Zn 206.200†	-6508.9	-2.586	mg/L	0.0711	-2.586	mg/L	0.0711	2.75%

Sequence No.: 74
Sample ID: DI - 3

Autosampler Location: 10
Date Collected: 7/18/2019 2:57:53 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: DI - 3

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: DI - 3

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	11740.9	0.5763 %	0.00154			0.27%
ScR 361.383	-564.9	-0.2426 %	0.00242			1.00%
Ag 328.068†	-19241.5	-0.1301 mg/L	0.00711	-0.1301 mg/L	0.00711	5.46%
Al 308.215†	-134535.4	-100.7 mg/L	4.25	-100.7 mg/L	4.25	4.22%
As 188.979†	-973.4	-0.6776 mg/L	0.42443	-0.6776 mg/L	0.42443	62.64%
B 249.677†	-29096.5	-3.882 mg/L	0.5504	-3.882 mg/L	0.5504	14.18%
Ba 233.527†	-10373.3	-2.272 mg/L	0.2030	-2.272 mg/L	0.2030	8.93%
Be 313.042†	-636236.9	-1.329 mg/L	0.0079	-1.329 mg/L	0.0079	0.60%
Ca 317.933†	-109478.5	-10.76 mg/L	0.229	-10.76 mg/L	0.229	2.13%
Cd 228.802†	10556.4	0.4577 mg/L	0.00976	0.4577 mg/L	0.00976	2.13%
Co 228.616†	-6471.4	-0.2113 mg/L	0.02163	-0.2113 mg/L	0.02163	10.24%
Cr 267.716†	74858.7	18.90 mg/L	0.525	18.90 mg/L	0.525	2.78%
Cu 324.752†	399293.1	2.041 mg/L	0.0088	2.041 mg/L	0.0088	0.43%
Fe 273.955†	-14371.1	-14.53 mg/L	1.106	-14.53 mg/L	1.106	7.61%
K 766.490†	-197717.4	-196.2 mg/L	8.79	-196.2 mg/L	8.79	4.48%
Mg 279.077†	-46260.8	-38.37 mg/L	1.573	-38.37 mg/L	1.573	4.10%
Mn 257.610†	-110427.2	-2.940 mg/L	0.0596	-2.940 mg/L	0.0596	2.03%
Mo 202.031†	7179.5	0.4427 mg/L	0.05324	0.4427 mg/L	0.05324	12.03%
Na 589.592†	-168275.0	-20.24 mg/L	13.506	-20.24 mg/L	13.506	66.72%
Na 330.237†	119163.1	5792 mg/L	175.50	5792 mg/L	175.50	3.03%
Ni 231.604†	20918.6	6.298 mg/L	0.6507	6.298 mg/L	0.6507	10.33%
Pb 220.353†	3476.6	0.5112 mg/L	0.07638	0.5112 mg/L	0.07638	14.94%
Sb 206.836†	8754.7	3.149 mg/L	0.1301	3.149 mg/L	0.1301	4.13%
Se 196.026†	-5857.3	-5.255 mg/L	0.0995	-5.255 mg/L	0.0995	1.89%
Si 288.158†	-6551.0	-5.811 mg/L	4.1496	-5.811 mg/L	4.1496	71.41%
Sn 189.927†	-2461.6	-0.7058 mg/L	0.16577	-0.7058 mg/L	0.16577	23.49%
Sr 421.552†	-347727.1	-1.240 mg/L	0.0634	-1.240 mg/L	0.0634	5.11%
Ti 334.903†	32164.7	2.146 mg/L	0.5270	2.146 mg/L	0.5270	24.55%
Tl 190.801†	-4826.2	-2.467 mg/L	0.4749	-2.467 mg/L	0.4749	19.25%
V 292.402†	35241.0	0.5651 mg/L	0.04174	0.5651 mg/L	0.04174	7.39%
Zn 206.200†	-6287.2	-2.497 mg/L	0.2797	-2.497 mg/L	0.2797	11.20%

Sequence No.: 75
Sample ID: DI - 4

Autosampler Location: 10
Date Collected: 7/18/2019 3:01:35 PM
Data Type: Original

Dilution: 1X
Wash Time: 37

Auto Dilution Factor: 1

Nebulizer Parameters: DI - 4

Analyte	Back Pressure	Flow
All	163.0 kPa	0.65 L/min

Mean Data: DI - 4

Analyte	Mean Corrected Intensity	Conc. Units	Calib. Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
ScA 357.253	11757.4	0.5771 %	0.00321			0.56%
ScR 361.383	-572.3	-0.2458 %	0.00696			2.83%
Ag 328.068†	-18147.2	-0.1227 mg/L	0.03020	-0.1227 mg/L	0.03020	24.61%
Al 308.215†	-131642.9	-98.50 mg/L	1.015	-98.50 mg/L	1.015	1.03%
As 188.979†	-1277.9	-0.9147 mg/L	0.21907	-0.9147 mg/L	0.21907	23.95%
B 249.677†	-33064.1	-4.411 mg/L	0.4095	-4.411 mg/L	0.4095	9.28%
Ba 233.527†	-10983.8	-2.406 mg/L	0.1680	-2.406 mg/L	0.1680	6.98%
Be 313.042†	-629648.1	-1.316 mg/L	0.0172	-1.316 mg/L	0.0172	1.31%
Ca 317.933†	-103579.3	-10.18 mg/L	1.019	-10.18 mg/L	1.019	10.00%
Cd 228.802†	10903.3	0.4739 mg/L	0.00706	0.4739 mg/L	0.00706	1.49%
Co 228.616†	-4693.3	-0.1533 mg/L	0.01938	-0.1533 mg/L	0.01938	12.65%
Cr 267.716†	71972.1	18.17 mg/L	0.648	18.17 mg/L	0.648	3.56%
Cu 324.752†	399575.3	2.042 mg/L	0.0356	2.042 mg/L	0.0356	1.74%
Fe 273.955†	-15410.6	-15.58 mg/L	0.705	-15.58 mg/L	0.705	4.52%
K 766.490†	-188704.7	-187.3 mg/L	26.58	-187.3 mg/L	26.58	14.19%
Mg 279.077†	-44742.3	-37.11 mg/L	0.978	-37.11 mg/L	0.978	2.64%
Mn 257.610†	-106131.6	-2.825 mg/L	0.1089	-2.825 mg/L	0.1089	3.85%
Mo 202.031†	7680.0	0.4737 mg/L	0.01626	0.4737 mg/L	0.01626	3.43%
Na 589.592†	-135122.9	-16.26 mg/L	6.534	-16.26 mg/L	6.534	40.20%
Na 330.237†	113283.7	5506 mg/L	458.19	5506 mg/L	458.19	8.32%
Ni 231.604†	21074.9	6.345 mg/L	0.5397	6.345 mg/L	0.5397	8.51%
Pb 220.353†	3744.8	0.5488 mg/L	0.22557	0.5488 mg/L	0.22557	41.10%
Sb 206.836†	9161.9	3.322 mg/L	0.1102	3.322 mg/L	0.1102	3.32%
Se 196.026†	-5424.0	-4.866 mg/L	0.7514	-4.866 mg/L	0.7514	15.44%
Si 288.158†	-2043.6	-1.799 mg/L	1.2744	-1.799 mg/L	1.2744	70.82%
Sn 189.927†	-2344.9	-0.6724 mg/L	0.11612	-0.6724 mg/L	0.11612	17.27%
Sr 421.552†	-349790.9	-1.247 mg/L	0.0397	-1.247 mg/L	0.0397	3.18%
Ti 334.903†	22879.4	1.526 mg/L	0.1647	1.526 mg/L	0.1647	10.79%
Tl 190.801†	-4848.1	-2.478 mg/L	0.2422	-2.478 mg/L	0.2422	9.77%
V 292.402†	34559.1	0.5518 mg/L	0.04942	0.5518 mg/L	0.04942	8.96%
Zn 206.200†	-5652.0	-2.244 mg/L	0.3302	-2.244 mg/L	0.3302	14.72%



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: ICP2

Calibration: CG00052

Control Limit: +/- 10.00%

Sequence: SHG0263

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0263-ICV1	Arsenic	2.0000	1.98	98.8	mg/L	EPA 6010C
	Cadmium	1.0000	0.986	98.6	mg/L	EPA 6010C
	Chromium	1.0000	0.993	99.3	mg/L	EPA 6010C
	Iron	2.0000	1.99	99.6	mg/L	EPA 6010C
	Lead	2.0000	1.95	97.4	mg/L	EPA 6010C
	Manganese	1.0000	0.949	94.9	mg/L	EPA 6010C
SHG0263-CCV1	Arsenic	2.0000	1.98	98.9	mg/L	EPA 6010C
	Cadmium	1.0000	0.988	98.8	mg/L	EPA 6010C
	Chromium	1.0000	0.985	98.5	mg/L	EPA 6010C
	Iron	2.0000	1.97	98.5	mg/L	EPA 6010C
	Lead	2.0000	1.95	97.7	mg/L	EPA 6010C
	Manganese	1.0000	0.942	94.2	mg/L	EPA 6010C
SHG0263-CCV2	Arsenic	2.0000	2.00	99.8	mg/L	EPA 6010C
	Cadmium	1.0000	1.00	100	mg/L	EPA 6010C
	Chromium	1.0000	0.990	99.0	mg/L	EPA 6010C
	Iron	2.0000	1.99	99.3	mg/L	EPA 6010C
	Lead	2.0000	1.99	99.4	mg/L	EPA 6010C
	Manganese	1.0000	1.00	100	mg/L	EPA 6010C
SHG0263-CCV3	Arsenic	2.0000	2.03	102	mg/L	EPA 6010C
	Cadmium	1.0000	1.00	100	mg/L	EPA 6010C
	Chromium	1.0000	0.972	97.2	mg/L	EPA 6010C
	Iron	2.0000	1.96	98.0	mg/L	EPA 6010C
	Lead	2.0000	2.02	101	mg/L	EPA 6010C
	Manganese	1.0000	0.971	97.1	mg/L	EPA 6010C
SHG0263-CCV4	Arsenic	2.0000	2.04	102	mg/L	EPA 6010C
	Cadmium	1.0000	0.993	99.3	mg/L	EPA 6010C
	Chromium	1.0000	0.978	97.8	mg/L	EPA 6010C
	Iron	2.0000	1.96	98.1	mg/L	EPA 6010C
	Lead	2.0000	2.02	101	mg/L	EPA 6010C
	Manganese	1.0000	0.965	96.5	mg/L	EPA 6010C
SHG0263-CCV5	Arsenic	2.0000	2.04	102	mg/L	EPA 6010C
	Cadmium	1.0000	0.992	99.2	mg/L	EPA 6010C
	Chromium	1.0000	0.964	96.4	mg/L	EPA 6010C
	Iron	2.0000	1.93	96.3	mg/L	EPA 6010C



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: ICP2

Calibration: CG00052

Control Limit: +/- 10.00%

Sequence: SHG0263

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0263-CCV5	Lead	2.0000	2.01	101	mg/L	EPA 6010C
	Manganese	1.0000	0.941	94.1	mg/L	EPA 6010C
SHG0263-CCV6	Arsenic	2.0000	2.06	103	mg/L	EPA 6010C
	Cadmium	1.0000	0.982	98.2	mg/L	EPA 6010C
	Chromium	1.0000	0.966	96.6	mg/L	EPA 6010C
	Iron	2.0000	1.95	97.5	mg/L	EPA 6010C
	Lead	2.0000	2.02	101	mg/L	EPA 6010C
	Manganese	1.0000	0.956	95.6	mg/L	EPA 6010C

* Values outside of QC limits



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0263

Instrument: ICP2

Calibration: CG00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
CAL 0	SHG0263-CAL1	I2190718-006	NA	07/18/19 09:40
CAL 1 - LOW CHECK	SHG0263-CAL2	I2190718-007	NA	07/18/19 09:44
CAL 2	SHG0263-CAL3	I2190718-008	NA	07/18/19 09:46
CAL 3	SHG0263-CAL4	I2190718-009	NA	07/18/19 09:48
CAL 4	SHG0263-CAL5	I2190718-010	NA	07/18/19 09:51
Initial Cal Check	SHG0263-ICV1	I2190718-011	NA	07/18/19 09:55
Initial Cal Blank	SHG0263-ICB1	I2190718-012	NA	07/18/19 09:59
Instrument RL Check	SHG0263-CRL1	I2190718-013	NA	07/18/19 10:03
Interference Check A	SHG0263-IFA1	I2190718-014	NA	07/18/19 10:07
Interference Check B	SHG0263-IFB1	I2190718-015	NA	07/18/19 10:11
Calibration Check	SHG0263-CCV1	I2190718-016	NA	07/18/19 10:16
Calibration Blank	SHG0263-CCB1	I2190718-017	NA	07/18/19 10:22
ZZZZZ	19G0095-01	I2190718-019	Water	07/18/19 10:29
ZZZZZ	19G0095-01	I2190718-019	Water	07/18/19 10:29
ZZZZZ	19G0132-01	I2190718-020	Water	07/18/19 10:33
ZZZZZ	19G0132-01	I2190718-020	Water	07/18/19 10:33
ZZZZZ	19G0133-01	I2190718-021	Water	07/18/19 10:37
ZZZZZ	19G0133-01	I2190718-021	Water	07/18/19 10:37
ZZZZZ	19G0096-01	I2190718-023	Water	07/18/19 10:45
ZZZZZ	19G0096-01	I2190718-023	Water	07/18/19 10:45
LCS	BHG0382-BS1	I2190718-027	Water	07/18/19 11:01
Calibration Check	SHG0263-CCV2	I2190718-028	NA	07/18/19 11:05
Calibration Blank	SHG0263-CCB2	I2190718-029	NA	07/18/19 11:10
Blank	BHG0382-BLK1	I2190718-030	Water	07/18/19 11:14
ZZZZZ	19G0187-01	I2190718-035	Water	07/18/19 11:35
ZZZZZ	19G0187-01	I2190718-035	Water	07/18/19 11:35
ZZZZZ	19G0187-01	I2190718-035	Water	07/18/19 11:35
RINSE	SHG0263-IBL1	I2190718-036	NA	07/18/19 11:40
SO-10-190711E	BHG0382-DUP1	I2190718-037	Water	07/18/19 11:44
SO-10-190711E	BHG0382-DUP1	I2190718-037	Water	07/18/19 11:44



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0263

Instrument: ICP2

Calibration: CG00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
SO-10-190711E	BHG0382-DUP1	I2190718-037	Water	07/18/19 11:44
SO-10-190711E	BHG0382-DUP1	I2190718-037	Water	07/18/19 11:44
SO-10-190711E	BHG0382-DUP1	I2190718-037	Water	07/18/19 11:44
SO-10-190711E	BHG0382-DUP1	I2190718-037	Water	07/18/19 11:44
SO-10-190711E	19G0163-01	I2190718-038	Water	07/18/19 11:48
SO-10-190711E	19G0163-01	I2190718-038	Water	07/18/19 11:48
SO-10-190711E	19G0163-01	I2190718-038	Water	07/18/19 11:48
SO-10-190711E	19G0163-01	I2190718-038	Water	07/18/19 11:48
SO-10-190711E	19G0163-01	I2190718-038	Water	07/18/19 11:48
SO-10-190711E	19G0163-01	I2190718-038	Water	07/18/19 11:48
SO-10-190711E	BHG0382-MS1	I2190718-039	Water	07/18/19 11:52
SO-10-190711E	BHG0382-MS1	I2190718-039	Water	07/18/19 11:52
SO-10-190711E	BHG0382-MS1	I2190718-039	Water	07/18/19 11:52
SO-10-190711E	BHG0382-MS1	I2190718-039	Water	07/18/19 11:52
SO-10-190711E	BHG0382-MS1	I2190718-039	Water	07/18/19 11:52
SO-10-190711E	BHG0382-MS1	I2190718-039	Water	07/18/19 11:52
Calibration Check	SHG0263-CCV3	I2190718-040	NA	07/18/19 11:56
Calibration Blank	SHG0263-CCB3	I2190718-041	NA	07/18/19 12:01
Blank	BHG0335-BLK1	I2190718-042	Solid	07/18/19 12:05
SO-02-190711	19G0163-03	I2190718-043	Solid	07/18/19 12:09
SO-02-190711	19G0163-03	I2190718-043	Solid	07/18/19 12:09
SO-02-190711	19G0163-03	I2190718-043	Solid	07/18/19 12:09
SO-02-190711	19G0163-03	I2190718-043	Solid	07/18/19 12:09
SO-02-190711	19G0163-03	I2190718-043	Solid	07/18/19 12:09
SO-02-190711	19G0163-03	I2190718-043	Solid	07/18/19 12:09
SO-04-190711	19G0163-05	I2190718-045	Solid	07/18/19 12:17
SO-04-190711	19G0163-05	I2190718-045	Solid	07/18/19 12:17
SO-04-190711	19G0163-05	I2190718-045	Solid	07/18/19 12:17
SO-04-190711	19G0163-05	I2190718-045	Solid	07/18/19 12:17
SO-04-190711	19G0163-05	I2190718-045	Solid	07/18/19 12:17



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0263

Instrument: ICP2

Calibration: CG00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
SO-04-190711	19G0163-05	I2190718-045	Solid	07/18/19 12:17
SO-05-190711	19G0163-06	I2190718-046	Solid	07/18/19 12:21
SO-05-190711	19G0163-06	I2190718-046	Solid	07/18/19 12:21
SO-05-190711	19G0163-06	I2190718-046	Solid	07/18/19 12:21
SO-05-190711	19G0163-06	I2190718-046	Solid	07/18/19 12:21
SO-05-190711	19G0163-06	I2190718-046	Solid	07/18/19 12:21
SO-05-190711	19G0163-06	I2190718-046	Solid	07/18/19 12:21
SO-01-190711	BHG0335-DUP1	I2190718-047	Solid	07/18/19 12:25
SO-01-190711	BHG0335-DUP1	I2190718-047	Solid	07/18/19 12:25
SO-01-190711	BHG0335-DUP1	I2190718-047	Solid	07/18/19 12:25
SO-01-190711	BHG0335-DUP1	I2190718-047	Solid	07/18/19 12:25
SO-01-190711	BHG0335-DUP1	I2190718-047	Solid	07/18/19 12:25
SO-01-190711	BHG0335-DUP1	I2190718-047	Solid	07/18/19 12:25
SO-01-190711	19G0163-02	I2190718-048	Solid	07/18/19 12:29
SO-01-190711	19G0163-02	I2190718-048	Solid	07/18/19 12:29
SO-01-190711	19G0163-02	I2190718-048	Solid	07/18/19 12:29
SO-01-190711	19G0163-02	I2190718-048	Solid	07/18/19 12:29
SO-01-190711	19G0163-02	I2190718-048	Solid	07/18/19 12:29
SO-01-190711	19G0163-02	I2190718-048	Solid	07/18/19 12:29
SO-01-190711	BHG0335-MS1	I2190718-049	Solid	07/18/19 12:33
SO-01-190711	BHG0335-MS1	I2190718-049	Solid	07/18/19 12:33
SO-01-190711	BHG0335-MS1	I2190718-049	Solid	07/18/19 12:33
SO-01-190711	BHG0335-MS1	I2190718-049	Solid	07/18/19 12:33
SO-01-190711	BHG0335-MS1	I2190718-049	Solid	07/18/19 12:33
SO-01-190711	BHG0335-MSD1	I2190718-050	Solid	07/18/19 12:37
SO-01-190711	BHG0335-MSD1	I2190718-050	Solid	07/18/19 12:37
SO-01-190711	BHG0335-MSD1	I2190718-050	Solid	07/18/19 12:37
SO-01-190711	BHG0335-MSD1	I2190718-050	Solid	07/18/19 12:37



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0263

Instrument: ICP2

Calibration: CG00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
SO-01-190711	BHG0335-MSD1	I2190718-050	Solid	07/18/19 12:37
LCS	BHG0335-BS1	I2190718-051	Solid	07/18/19 12:41
Calibration Check	SHG0263-CCV4	I2190718-052	NA	07/18/19 12:45
Calibration Blank	SHG0263-CCB4	I2190718-053	NA	07/18/19 12:50
ZZZZZ	19F0332-29	I2190718-055	Solid	07/18/19 12:58
ZZZZZ	19F0332-29	I2190718-055	Solid	07/18/19 12:58
ZZZZZ	19F0332-29	I2190718-055	Solid	07/18/19 12:58
ZZZZZ	19F0332-29	I2190718-055	Solid	07/18/19 12:58
ZZZZZ	19F0332-29	I2190718-055	Solid	07/18/19 12:58
ZZZZZ	19F0332-29	I2190718-055	Solid	07/18/19 12:58
ZZZZZ	19F0332-29	I2190718-055	Solid	07/18/19 12:58
ZZZZZ	19F0332-35	I2190718-056	Solid	07/18/19 13:02
ZZZZZ	19F0332-35	I2190718-056	Solid	07/18/19 13:02
ZZZZZ	19F0332-35	I2190718-056	Solid	07/18/19 13:02
ZZZZZ	19F0332-35	I2190718-056	Solid	07/18/19 13:02
ZZZZZ	19F0332-35	I2190718-056	Solid	07/18/19 13:02
ZZZZZ	19F0332-35	I2190718-056	Solid	07/18/19 13:02
ZZZZZ	19F0332-35	I2190718-056	Solid	07/18/19 13:02
ZZZZZ	19F0332-37	I2190718-057	Solid	07/18/19 13:07
ZZZZZ	19F0332-37	I2190718-057	Solid	07/18/19 13:07
ZZZZZ	19F0332-37	I2190718-057	Solid	07/18/19 13:07
ZZZZZ	19F0332-37	I2190718-057	Solid	07/18/19 13:07
ZZZZZ	19F0332-37	I2190718-057	Solid	07/18/19 13:07
ZZZZZ	19F0332-37	I2190718-057	Solid	07/18/19 13:07
ZZZZZ	19F0332-38	I2190718-058	Solid	07/18/19 13:11
ZZZZZ	19F0332-38	I2190718-058	Solid	07/18/19 13:11
ZZZZZ	19F0332-38	I2190718-058	Solid	07/18/19 13:11
ZZZZZ	19F0332-38	I2190718-058	Solid	07/18/19 13:11



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0263

Instrument: ICP2

Calibration: CG00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
ZZZZZ	19F0332-38	I2190718-058	Solid	07/18/19 13:11
ZZZZZ	19F0332-38	I2190718-058	Solid	07/18/19 13:11
ZZZZZ	19G0196-02	I2190718-059	Solid	07/18/19 13:16
ZZZZZ	19G0196-02	I2190718-059	Solid	07/18/19 13:16
ZZZZZ	19G0196-02	I2190718-059	Solid	07/18/19 13:16
ZZZZZ	19G0196-02	I2190718-059	Solid	07/18/19 13:16
ZZZZZ	19G0183-01	I2190718-061	Solid	07/18/19 13:24
ZZZZZ	19G0183-01	I2190718-061	Solid	07/18/19 13:24
ZZZZZ	19G0183-01	I2190718-061	Solid	07/18/19 13:24
ZZZZZ	19G0183-01	I2190718-061	Solid	07/18/19 13:24
ZZZZZ	19G0183-01	I2190718-061	Solid	07/18/19 13:24
ZZZZZ	19G0183-01	I2190718-061	Solid	07/18/19 13:24
ZZZZZ	19G0183-01	I2190718-061	Solid	07/18/19 13:24
SO-03-190711	19G0163-04	I2190718-063	Solid	07/18/19 13:33
SO-03-190711	19G0163-04	I2190718-063	Solid	07/18/19 13:33
SO-03-190711	19G0163-04	I2190718-063	Solid	07/18/19 13:33
SO-03-190711	19G0163-04	I2190718-063	Solid	07/18/19 13:33
SO-03-190711	19G0163-04	I2190718-063	Solid	07/18/19 13:33
SO-03-190711	19G0163-04	I2190718-063	Solid	07/18/19 13:33
Calibration Check	SHG0263-CCV5	I2190718-064	NA	07/18/19 13:37
Calibration Blank	SHG0263-CCB5	I2190718-065	NA	07/18/19 13:42
SO-06-190711	19G0163-07	I2190718-066	Solid	07/18/19 13:46
SO-06-190711	19G0163-07	I2190718-066	Solid	07/18/19 13:46
SO-06-190711	19G0163-07	I2190718-066	Solid	07/18/19 13:46
SO-06-190711	19G0163-07	I2190718-066	Solid	07/18/19 13:46
SO-06-190711	19G0163-07	I2190718-066	Solid	07/18/19 13:46
SO-06-190711	19G0163-07	I2190718-066	Solid	07/18/19 13:46
SO-07-190711	19G0163-08	I2190718-067	Solid	07/18/19 13:50
SO-07-190711	19G0163-08	I2190718-067	Solid	07/18/19 13:50
SO-07-190711	19G0163-08	I2190718-067	Solid	07/18/19 13:50



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0263

Instrument: ICP2

Calibration: CG00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
SO-07-190711	19G0163-08	I2190718-067	Solid	07/18/19 13:50
SO-07-190711	19G0163-08	I2190718-067	Solid	07/18/19 13:50
SO-07-190711	19G0163-08	I2190718-067	Solid	07/18/19 13:50
SO-08-190711	19G0163-09	I2190718-068	Solid	07/18/19 13:54
SO-08-190711	19G0163-09	I2190718-068	Solid	07/18/19 13:54
SO-08-190711	19G0163-09	I2190718-068	Solid	07/18/19 13:54
SO-08-190711	19G0163-09	I2190718-068	Solid	07/18/19 13:54
SO-08-190711	19G0163-09	I2190718-068	Solid	07/18/19 13:54
SO-08-190711	19G0163-09	I2190718-068	Solid	07/18/19 13:54
SO-08-190711	19G0163-09	I2190718-068	Solid	07/18/19 13:54
SO-09-190711	19G0163-10	I2190718-069	Solid	07/18/19 13:58
SO-09-190711	19G0163-10	I2190718-069	Solid	07/18/19 13:58
SO-09-190711	19G0163-10	I2190718-069	Solid	07/18/19 13:58
SO-09-190711	19G0163-10	I2190718-069	Solid	07/18/19 13:58
SO-09-190711	19G0163-10	I2190718-069	Solid	07/18/19 13:58
SO-09-190711	19G0163-10	I2190718-069	Solid	07/18/19 13:58
SO-10-190711	19G0163-11	I2190718-070	Solid	07/18/19 14:02
SO-10-190711	19G0163-11	I2190718-070	Solid	07/18/19 14:02
SO-10-190711	19G0163-11	I2190718-070	Solid	07/18/19 14:02
SO-10-190711	19G0163-11	I2190718-070	Solid	07/18/19 14:02
SO-10-190711	19G0163-11	I2190718-070	Solid	07/18/19 14:02
SO-10-190711D	19G0163-12	I2190718-071	Solid	07/18/19 14:06
SO-10-190711D	19G0163-12	I2190718-071	Solid	07/18/19 14:06
SO-10-190711D	19G0163-12	I2190718-071	Solid	07/18/19 14:06
SO-10-190711D	19G0163-12	I2190718-071	Solid	07/18/19 14:06
SO-10-190711D	19G0163-12	I2190718-071	Solid	07/18/19 14:06
SO-10-190711D	19G0163-12	I2190718-071	Solid	07/18/19 14:06
SO-11-190711	19G0163-13	I2190718-072	Solid	07/18/19 14:10
SO-11-190711	19G0163-13	I2190718-072	Solid	07/18/19 14:10
SO-11-190711	19G0163-13	I2190718-072	Solid	07/18/19 14:10



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0263

Instrument: ICP2

Calibration: CG00052

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
SO-11-190711	19G0163-13	I2190718-072	Solid	07/18/19 14:10
SO-11-190711	19G0163-13	I2190718-072	Solid	07/18/19 14:10
SO-11-190711	19G0163-13	I2190718-072	Solid	07/18/19 14:10
SO-12-190711	19G0163-14	I2190718-073	Solid	07/18/19 14:14
SO-12-190711	19G0163-14	I2190718-073	Solid	07/18/19 14:14
SO-12-190711	19G0163-14	I2190718-073	Solid	07/18/19 14:14
SO-12-190711	19G0163-14	I2190718-073	Solid	07/18/19 14:14
SO-12-190711	19G0163-14	I2190718-073	Solid	07/18/19 14:14
SO-12-190711	19G0163-14	I2190718-073	Solid	07/18/19 14:14
SO-12-190711	19G0163-14	I2190718-073	Solid	07/18/19 14:14
SO-13-190711	19G0163-15	I2190718-074	Solid	07/18/19 14:18
SO-13-190711	19G0163-15	I2190718-074	Solid	07/18/19 14:18
SO-13-190711	19G0163-15	I2190718-074	Solid	07/18/19 14:18
SO-13-190711	19G0163-15	I2190718-074	Solid	07/18/19 14:18
SO-13-190711	19G0163-15	I2190718-074	Solid	07/18/19 14:18
SO-13-190711	19G0163-15	I2190718-074	Solid	07/18/19 14:18
Calibration Check	SHG0263-CCV6	I2190718-076	NA	07/18/19 14:26
Calibration Blank	SHG0263-CCB6	I2190718-077	NA	07/18/19 14:31



ICP INTERFERENCE CHECK SAMPLE

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: ICP2

Calibration: CG00052

Sequence: SHG0263

Standard ID: H005485

Lab Sample ID	Analyte	True	Found	%R	Units
SHG0263-IFA1	Arsenic	0	0.0157		mg/L
	Cadmium	0	0.0008		mg/L
	Chromium	0	-0.0021		mg/L
	Iron	200.00	193.71	96.9	mg/L
	Lead	0	0.0004		mg/L
	Manganese	0	0.0006		mg/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.



ICP INTERFERENCE CHECK SAMPLE

EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: ICP2

Calibration: CG00052

Sequence: SHG0263

Standard ID: H005485

Lab Sample ID	Analyte	True	Found	%R	Units
SHG0263-IFB1	Arsenic	1.0000	1.0310	103	mg/L
	Cadmium	1.0000	0.9793	97.9	mg/L
	Chromium	1.0000	0.9841	98.4	mg/L
	Iron	200.00	196.01	98.0	mg/L
	Lead	1.0000	0.9892	98.9	mg/L
	Manganese	1.0000	0.9421	94.2	mg/L

* Indicates %R outside of QC limits

NOTE: True value and %R are populated only for analytes found in the interference check standards, and will be seen only if those analytes were requested.



INTER-ELEMENT CORRECTION FACTORS

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument: ICP2

IEC Date: 04/26/2019

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		<u>Al</u>	<u>Ca</u>	<u>Fe</u>	<u>Mg</u>	<u>Sb</u>
Aluminum	308.22					
Arsenic	188.98		0.032374			
Cadmium	228.8					
Chromium	267.72			-0.046264	0.065811	
Copper	324.75			-0.04141	0.008071	
Iron	273.96					
Lead	220.35	-0.215392		0.056765		
Magnesium	279.08			0.732007		
Manganese	257.61	0.006929				
Nickel	231.6					-0.665647
Sodium	330.24		7.292129			
Zinc	206.2					0.372282



INTER-ELEMENT CORRECTION FACTORS

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument: ICP2

IEC Date: 04/26/2019

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		<u>As</u>	<u>Ba</u>	<u>Cd</u>	<u>Cr</u>	<u>Co</u>
Aluminum	308.22					
Arsenic	188.98				1.867997	-1.045097
Cadmium	228.8	6.78389				0.141972
Chromium	267.72					
Copper	324.75				-0.02196	-0.150139
Iron	273.96				-1.111711	
Lead	220.35				-2.835826	0
Magnesium	279.08				-0.985888	-1.311775
Manganese	257.61					0
Nickel	231.6					
Sodium	330.24					
Zinc	206.2			0	-0.445119	



INTER-ELEMENT CORRECTION FACTORS

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument: ICP2

IEC Date: 04/26/2019

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		<u>Cu</u>	<u>Pb</u>	<u>Mn</u>	<u>Mo</u>	<u>Ni</u>
Aluminum	308.22				15.81688	
Arsenic	188.98				4.047051	
Cadmium	228.8					-0.844665
Chromium	267.72		0	0.124714		
Copper	324.75				0.360089	
Iron	273.96	0				
Lead	220.35	1.572459				0
Magnesium	279.08			0	-2.740694	
Manganese	257.61	0	-0.257807			
Nickel	231.6					
Sodium	330.24					
Zinc	206.2		-0.115122		0.328676	0.174959



INTER-ELEMENT CORRECTION FACTORS

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument: ICP2

IEC Date: 04/26/2019

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		<u>K</u>	<u>Si</u>	<u>Ag</u>	<u>Tl</u>	<u>Sn</u>
Aluminum	308.22					
Arsenic	188.98					
Cadmium	228.8					
Chromium	267.72					
Copper	324.75					
Iron	273.96					
Lead	220.35			0		
Magnesium	279.08					
Manganese	257.61					
Nickel	231.6				0.374587	
Sodium	330.24					
Zinc	206.2		-0.117183			2.176557



INTER-ELEMENT CORRECTION FACTORS

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument: ICP2

IEC Date: 04/26/2019

Analyte	Wave-length (nm)	Interelement Correction Factors for:				
		<u>Ti</u>	<u>V</u>	<u>Zn</u>		
Aluminum	308.22	1.789848	15.57622			
Arsenic	188.98	-9.166767	0.198781			
Cadmium	228.8		0.079966			
Chromium	267.72		0.16953			
Copper	324.75	0.182233				
Iron	273.96		11.17715			
Lead	220.35					
Magnesium	279.08					
Manganese	257.61					
Nickel	231.6					
Sodium	330.24	-181.9295		392.7569		
Zinc	206.2		0			



DETECTION LEVEL STANDARD EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: ICP2

Calibration: CG00052

Sequence: SHG0263

Lab Sample ID: SHG0263-CRL1

Analyte	True	Found	%R	Units	QC Limits
Arsenic	0.0500	0.0439	87.8	mg/L	50 - 150
Cadmium	0.0020	0.0020	98.1	mg/L	50 - 150
Chromium	0.0050	0.0049	98.1	mg/L	50 - 150
Iron	0.0500	0.0500	99.9	mg/L	50 - 150
Lead	0.0200	0.0176	87.8	mg/L	50 - 150
Manganese	0.0010	0.0009	93.1	mg/L	50 - 150

* Values outside of QC limits



HOLDING TIME SUMMARY

Analysis: EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-10-190711E 19G0163-01	07/11/19 15:10	07/11/19 17:25	07/16/19 13:27	4	180	07/18/19 11:48	7	180	
SO-01-190711 19G0163-02	07/11/19 11:05	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 12:29	7	180	
SO-02-190711 19G0163-03	07/11/19 10:50	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 12:09	7	180	
SO-03-190711 19G0163-04	07/11/19 08:35	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 13:33	7	180	
SO-04-190711 19G0163-05	07/11/19 11:30	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 12:17	7	180	
SO-05-190711 19G0163-06	07/11/19 12:05	07/11/19 17:25	07/16/19 12:00	4	180	07/18/19 12:21	7	180	
SO-06-190711 19G0163-07	07/11/19 12:20	07/11/19 17:25	07/16/19 12:00	4	180	07/18/19 13:46	7	180	
SO-07-190711 19G0163-08	07/11/19 11:55	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 13:50	7	180	
SO-08-190711 19G0163-09	07/11/19 10:25	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 13:54	7	180	
SO-09-190711 19G0163-10	07/11/19 10:10	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 13:58	7	180	
SO-10-190711 19G0163-11	07/11/19 09:45	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 14:02	7	180	
SO-10-190711D 19G0163-12	07/11/19 09:50	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 14:06	7	180	
SO-11-190711 19G0163-13	07/11/19 09:10	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 14:10	7	180	
SO-12-190711 19G0163-14	07/11/19 09:25	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 14:14	7	180	
SO-13-190711 19G0163-15	07/11/19 12:35	07/11/19 17:25	07/16/19 12:00	4	180	07/18/19 14:18	7	180	
Duplicate BHG0335-DUP1	07/11/19 11:05	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 12:25	7	180	
Matrix Spike BHG0335-MS1	07/11/19 11:05	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 12:33	7	180	
Matrix Spike Dup BHG0335-MSD1	07/11/19 11:05	07/11/19 17:25	07/16/19 12:00	5	180	07/18/19 12:37	7	180	
Duplicate BHG0382-DUP1	07/11/19 15:10	07/11/19 17:25	07/16/19 13:27	4	180	07/18/19 11:44	7	180	
Matrix Spike BHG0382-MS1	07/11/19 15:10	07/11/19 17:25	07/16/19 13:27	4	180	07/18/19 11:52	7	180	

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**METHOD DETECTION
AND REPORTING LIMITS**
EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: ICP2

Analyte	MDL	RL	Units
Arsenic	0.470	5.00	mg/kg
Cadmium	0.0340	0.200	mg/kg
Chromium	0.132	0.500	mg/kg
Iron	0.130	5.00	mg/kg
Lead	0.190	2.00	mg/kg
Manganese	0.0340	0.100	mg/kg



Analytical Resources, Incorporated
Analytical Chemists and Consultants

**METHOD DETECTION
AND REPORTING LIMITS**
EPA 6010C

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: ICP2

Analyte	MDL	RL	Units
Arsenic	0.0047	0.0500	mg/L
Cadmium	0.0003	0.0020	mg/L
Chromium	0.0013	0.0050	mg/L
Iron	0.0013	0.0500	mg/L
Lead	0.0019	0.0200	mg/L
Manganese	0.0003	0.0010	mg/L



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-10-190711E

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water Laboratory ID: 19G0163-01 A 01 SDG: 19G0163

Sampled: 07/11/19 15:10 Prepared: 07/12/19 12:41 File ID: Cr6+ 071219 BF2-006

% Solids: 0.00 Preparation: SM 5310 A-00, 0.45um filtration Analyzed: 07/12/19 13:30

Batch: BHG0309 Sequence: SHG0204 Initial/Final: 40 mL / 50 mL

Instrument: UV1800-1 Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	0.013	1	0.013	0.013	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-01-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-02 B

SDG: 19G0163

Sampled: 07/11/19 11:05 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-017

% Solids: 49.02 Preparation: EPA 3060A

Analyzed: 07/19/19 18:55

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.852 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	0.894	1	0.894	0.894	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-02-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 B

SDG: 19G0163

Sampled: 07/11/19 10:50 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-021

% Solids: 44.87 Preparation: EPA 3060A

Analyzed: 07/19/19 18:57

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.7237 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	1.02	1	1.02	1.02	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-03-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04RE1 B

SDG: 19G0163

Sampled: 07/11/19 08:35 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-038

% Solids: 23.77 Preparation: EPA 3060A

Analyzed: 07/19/19 19:50

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.82223 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	3.73	3	3.73	3.73	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-04-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-05RE1 B

SDG: 19G0163

Sampled: 07/11/19 11:30 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-039

% Solids: 21.73 Preparation: EPA 3060A

Analyzed: 07/19/19 19:50

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.5019 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	4.60	3	4.60	4.60	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-05-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 B

SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-026

% Solids: 33.67 Preparation: EPA 3060A

Analyzed: 07/19/19 19:23

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.6856 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	1.38	1	1.38	1.38	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-06-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 B

SDG: 19G0163

Sampled: 07/11/19 12:20 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-027

% Solids: 50.18 Preparation: EPA 3060A

Analyzed: 07/19/19 19:23

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.5774 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	17.2	1	0.966	0.966	D



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-07-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-08 B

SDG: 19G0163

Sampled: 07/11/19 11:55 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-028

% Solids: 63.69 Preparation: EPA 3060A

Analyzed: 07/19/19 19:24

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.9752 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	0.660	1	0.660	0.660	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-08-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 B

SDG: 19G0163

Sampled: 07/11/19 10:25 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-029

% Solids: 47.73 Preparation: EPA 3060A

Analyzed: 07/19/19 19:24

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.5621 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	1.02	1	1.02	1.02	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-09-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-10 B

SDG: 19G0163

Sampled: 07/11/19 10:10 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-030

% Solids: 66.02 Preparation: EPA 3060A

Analyzed: 07/19/19 19:25

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.748 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	0.689	1	0.689	0.689	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-10-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-11RE1 B

SDG: 19G0163

Sampled: 07/11/19 09:45 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-040

% Solids: 71.70 Preparation: EPA 3060A

Analyzed: 07/19/19 19:51

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.5107 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	2.48	3	1.39	1.39	D



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-10-190711D

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12RE1 B

SDG: 19G0163

Sampled: 07/11/19 09:50 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-041

% Solids: 72.28 Preparation: EPA 3060A

Analyzed: 07/19/19 19:51

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.5043 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	5.37	6	3.45	3.45	D



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-11-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13RE1 B

SDG: 19G0163

Sampled: 07/11/19 09:10 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-042

% Solids: 21.50 Preparation: EPA 3060A

Analyzed: 07/19/19 19:52

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.6474 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	4.39	3	4.39	4.39	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-12-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14 B

SDG: 19G0163

Sampled: 07/11/19 09:25 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-034

% Solids: 42.67 Preparation: EPA 3060A

Analyzed: 07/19/19 19:27

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.6445 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	1.11	1	1.11	1.11	U



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 7196A

SO-13-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 B

SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/18/19 11:15

File ID: Modified Cr6+ 071919b BF 2b-035

% Solids: 87.59 Preparation: EPA 3060A

Analyzed: 07/19/19 19:27

Batch: BHG0440 Sequence: SHG0289

Initial/Final: 2.6553 g Wet / 100 mL

Instrument: UV1800-1

Calibration: UNASSIGNED

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	0.537	1	0.537	0.537	U



PREPARATION BATCH SUMMARY

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0309

Batch Matrix: Water

Preparation: SM 5310 A-00, 0.45um filtration

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-10-190711E	19G0163-01	Cr6+ 071219 BF2-006	07/12/19 12:41	
Blank	BHG0309-BLK1	Cr6+ 071219 BF2-004	07/12/19 12:41	BHG0291-BLK1
LCS	BHG0309-BS1	Cr6+ 071219 BF2-005	07/12/19 12:41	BHG0291-BS1
SO-10-190711E	BHG0309-DUP1	Cr6+ 071219 BF2-007	07/12/19 12:41	BHG0291-DUP1
MRL Check	BHG0309-MRL1	Cr6+ 071219 BF2-003	07/12/19 12:41	BHG0291-MRL1
SO-10-190711E	BHG0309-MS1	Cr6+ 071219 BF2-008	07/12/19 12:41	



PREPARATION BATCH SUMMARY

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0440

Batch Matrix: Solid

Preparation: EPA 3060A

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02	fied Cr6+ 071919b BF 20	07/18/19 11:15	MS/MSD
SO-02-190711	19G0163-03	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-03-190711	19G0163-04RE1	fied Cr6+ 071919b BF 20	07/18/19 11:15	Added 7/22/2019 by BF
SO-04-190711	19G0163-05RE1	fied Cr6+ 071919b BF 20	07/18/19 11:15	Added 7/22/2019 by BF
SO-05-190711	19G0163-06	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-06-190711	19G0163-07	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-07-190711	19G0163-08	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-08-190711	19G0163-09	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-09-190711	19G0163-10	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-10-190711	19G0163-11RE1	fied Cr6+ 071919b BF 20	07/18/19 11:15	Added 7/22/2019 by BF
SO-10-190711D	19G0163-12RE1	fied Cr6+ 071919b BF 20	07/18/19 11:15	Added 7/22/2019 by BF
SO-11-190711	19G0163-13RE1	fied Cr6+ 071919b BF 20	07/18/19 11:15	Added 7/22/2019 by BF
SO-12-190711	19G0163-14	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-13-190711	19G0163-15	fied Cr6+ 071919b BF 20	07/18/19 11:15	
Blank	BHG0440-BLK1	fied Cr6+ 071919b BF 20	07/18/19 11:15	
LCS	BHG0440-BS1	fied Cr6+ 071919b BF 20	07/18/19 11:15	
LCS	BHG0440-BS2	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-01-190711	BHG0440-DUP1	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-01-190711	BHG0440-MS1	fied Cr6+ 071919b BF 20	07/18/19 11:15	
SO-01-190711	BHG0440-MS2	fied Cr6+ 071919b BF 20	07/18/19 11:15	

7/1/2015

Hot Block: HOT BLOCK #9

Date Printed: 7/18/2019



Form I
METHOD BLANK DATA SHEET
EPA 7196A
TotalAnalytes

Blank

Batch: BHG0309

Laboratory ID: BHG0309-BLK1

Prepared: 07/12/19 12:41

Matrix: Water

Preparation: SM 5310 A-00, 0.45um fil

Analyzed: 07/12/19 13:28

Sequence: SHG0204

Calibration: N/A

Instrument: UV1800-1

CAS NO.	Analyte	Concentration (mg/L)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	ND	1.25	0.013	0.013	U



Form I
METHOD BLANK DATA SHEET
EPA 7196A
TotalAnalytes

Blank

Batch: BHG0440

Laboratory ID: BHG0440-BLK1

Prepared: 07/18/19 11:15

Matrix: Solid

Preparation: EPA 3060A

Analyzed: 07/19/19 18:50

Sequence: SHG0289

Calibration: N/A

Instrument: UV1800-1

CAS NO.	Analyte	Concentration (mg/kg wet)	Dilution Factor	MDL	MRL	Q
1854-02-99	Hexavalent Chromium	ND	1.25	0.487	0.487	U



DUPLICATES
EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Laboratory ID: BHG0309-DUP1

Batch: BHG0309

Lab Source ID: 19G0163-01

Preparation: SM 5310 A-00, 0.45um filtration

Initial/Final: 40 mL / 50 mL

Source Sample Name: SO-10-190711E

% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/L)	C	DUPLICATE CONCENTRATION (mg/L)	C	RPD %	Q
Hexavalent Chromium	20	ND	U	ND	U		

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = +/-RL instead of 20% RPD



DUPLICATES
EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: BHG0440-DUP1

Batch: BHG0440

Lab Source ID: 19G0163-02

Preparation: EPA 3060A

Initial/Final: 3.1472 g / 100 mL

Source Sample Name: SO-01-190711

% Solids: 49.02

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/kg dry)	C	DUPLICATE CONCENTRATION (mg/kg dry)	C	RPD %	Q
Hexavalent Chromium	30	ND	U	ND	U		

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = +/-RL instead of 20% RPD



MS / MS DUPLICATE RECOVERY
EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Analyzed: 07/12/19 13:35

Batch: BHG0309

Laboratory ID: BHG0309-MS1

Preparation: SM 5310 A-00, 0.45um filtration

Sequence Name: Matrix Spike

Initial/Final: 40 mL / 50 mL

Source Sample: SO-10-190711E

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	Q	MS CONCENTRATION (mg/L)	Q	MS % REC. #	QC LIMITS REC.
Hexavalent Chromium	0.0625	ND	U	0.071	D	114	85 - 115

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY
EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 18:56

Batch: BHG0440

Laboratory ID: BHG0440-MS1

Preparation: EPA 3060A

Sequence Name: Matrix Spike

Initial/Final: 3.0425 g / 100 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Hexavalent Chromium	33.5	ND	U	ND	*, K, U	*	75 - 125

* Values outside of QC limits



MS / MS DUPLICATE RECOVERY
EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Analyzed: 07/19/19 18:57

Batch: BHG0440

Laboratory ID: BHG0440-MS2

Preparation: EPA 3060A

Sequence Name: Matrix Spike

Initial/Final: 2.6103 g / 100 mL

Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (mg/kg dry)	SAMPLE CONCENTRATION (mg/kg dry)	Q	MS CONCENTRATION (mg/kg dry)	Q	MS % REC. #	QC LIMITS REC.
Hexavalent Chromium	1600	ND	U	246	*, K, D	15.4 *	75 - 125

* Values outside of QC limits



LCS / LCS DUPLICATE RECOVERY
EPA 7196A

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Water Analyzed: 07/12/19 13:29
Batch: BHG0309 Laboratory ID: BHG0309-BS1
Preparation: SM 5310 A-00, 0.45um filtration Sequence Name: LCS
Initial/Final: 40 mL / 50 mL

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	Q	LCS % REC. #	QC LIMITS REC.
Hexavalent Chromium	0.625	0.642	D	103	85 - 115

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY
EPA 7196A

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/19/19 18:51
Batch: BHG0440 Laboratory ID: BHG0440-BS1
Preparation: EPA 3060A Sequence Name: LCS
Initial/Final: 2.5377 g / 100 mL

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Hexavalent Chromium	19.7	17.3	D	87.9	80 - 120

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY

EPA 7196A

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/19/19 18:54
Batch: BHG0440 Laboratory ID: BHG0440-BS2
Preparation: EPA 3060A Sequence Name: LCS
Initial/Final: 2.5617 g / 100 mL

COMPOUND	SPIKE ADDED (mg/kg wet)	LCS CONCENTRATION (mg/kg wet)	Q	LCS % REC. #	QC LIMITS REC.
Hexavalent Chromium	609	530	D	87.0	80 - 120

* Indicates values outside of QC limits



POST DIGEST SPIKE SAMPLE RECOVERY
EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: BHG0440-PS1

Batch: BHG0440

Lab Source ID: 19G0163-02

Preparation: EPA 3060A

Initial/Final: 10 g / 10.1 mL

Source Sample Name: SO-01-190711

% Solids: 49.02

Analyte	Control Limit %R	Spike Sample Result (SSR) (mg/L)	Sample Result (SR) (mg/L)	Spike Added (SA) (mg/L)	%R
Hexavalent Chromium	85 - 115	0.198	ND	0.49490	40.0 *

* Values outside of QC limits



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0204

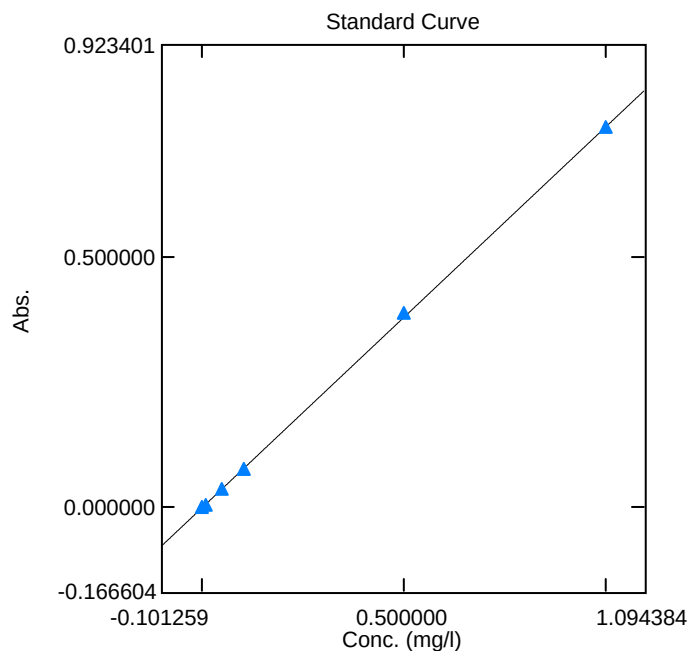
Instrument: UV1800-1

Calibration: UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SHG0204-CAL1	Cr6+ 071219 BF1-001	NA	07/12/19 13:22
Cal Standard	SHG0204-CAL2	Cr6+ 071219 BF1-002	NA	07/12/19 13:22
Cal Standard	SHG0204-CAL3	Cr6+ 071219 BF1-003	NA	07/12/19 13:23
Cal Standard	SHG0204-CAL4	Cr6+ 071219 BF1-004	NA	07/12/19 13:23
Cal Standard	SHG0204-CAL5	Cr6+ 071219 BF1-005	NA	07/12/19 13:24
Cal Standard	SHG0204-CAL6	Cr6+ 071219 BF1-006	NA	07/12/19 13:24
Initial Cal Blank	SHG0204-ICB1	Cr6+ 071219 BF2-001	NA	07/12/19 13:26
Initial Cal Check	SHG0204-ICV1	Cr6+ 071219 BF2-002	NA	07/12/19 13:26
MRL Check	BHG0309-MRL1	Cr6+ 071219 BF2-003	Water	07/12/19 13:27
Blank	BHG0309-BLK1	Cr6+ 071219 BF2-004	Water	07/12/19 13:28
LCS	BHG0309-BS1	Cr6+ 071219 BF2-005	Water	07/12/19 13:29
SO-10-190711E	19G0163-01	Cr6+ 071219 BF2-006	Water	07/12/19 13:30
SO-10-190711E	BHG0309-DUP1	Cr6+ 071219 BF2-007	Water	07/12/19 13:31
SO-10-190711E	BHG0309-MS1	Cr6+ 071219 BF2-008	Water	07/12/19 13:35
Calibration Blank	SHG0204-CCB1	Cr6+ 071219 BF2-011	NA	07/12/19 13:59
Calibration Check	SHG0204-CCV1	Cr6+ 071219 BF2-012	NA	07/12/19 14:00

Quantitative Measurement Report

Data set: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071219 BF.pho



Software Information

Software Name: UVProbe
Version: 2.51
Mode: Security Mode

Data Information

Filename: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071219 BF.pho

Title:
Analyst: Brandon Fisk
Date/Time: 07/12/2019 02:05:36 PM
Comments:

Instrument Information

Instrument Name: UV1800-1
Instrument Type: UV-1800 Series
Model (S/N): UV1800-1 (A11455350830)

$x = 1.31630 y - 0.00152222$
Correlation Coefficient $r^2 = 0.99988$

Standard Table

	Sample ID	Date	Time	Conc	WL540.0	Comments
1	SEQ_CAL1	07/12/2019	01:22:22 PM	0.000000	0.000000	
2	SEQ_CAL2	07/12/2019	01:22:58 PM	0.010000	0.006790	
3	SEQ_CAL3	07/12/2019	01:23:27 PM	0.050000	0.037750	
4	SEQ_CAL4	07/12/2019	01:23:57 PM	0.100000	0.078781	
5	SEQ_CAL5	07/12/2019	01:24:26 PM	0.500000	0.387024	
6	SEQ_CAL6	07/12/2019	01:24:51 PM	1.000000	0.757706	
7						

Quantitative Measurement Report

Data set: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071219 BF.pho

Sample Table

	Sample ID	Date	Time	Conc	WL540.0	Dilution	DF	PreDF	
1	SEQ_ICB1	07/12/2019	01:26:24 PM	0.000747	0.001724	1.250000	1.000000	1.250000	
2	SEQ_ICV1	07/12/2019	01:26:50 PM	0.269446	0.205856	1.250000	1.000000	1.250000	
3	BHG0309_MRL1	07/12/2019	01:27:54 PM	0.011854	0.010162	1.250000	1.000000	1.250000	
4	BHG0309_BLK1	07/12/2019	01:28:42 PM	0.003559	0.003860	1.250000	1.000000	1.250000	
5	BHG0309_BS1	07/12/2019	01:29:10 PM	0.513862	0.391541	1.250000	1.000000	1.250000	
6	19G0163_01	07/12/2019	01:30:43 PM	0.004845	0.004837	1.250000	1.000000	1.250000	
7	BHG0309_DUP1	07/12/2019	01:31:11 PM	0.004805	0.004807	1.250000	1.000000	1.250000	
8	BHG0309_MS1	07/12/2019	01:35:32 PM	0.057066	0.044510	1.250000	1.000000	1.250000	
9	BHG0309_MS2	07/12/2019	01:48:47 PM	0.053531	0.041824	1.250000	1.000000	1.250000	
10	BHG0309_PS1	07/12/2019	01:57:33 PM	0.030273	0.024155	1.000000	1.000000	1.000000	
11	SEQ_CCB1	07/12/2019	01:59:30 PM	0.004443	0.004532	1.250000	1.000000	1.250000	
12	SEQ_CCV1	07/12/2019	02:00:00 PM	0.273985	0.209305	1.250000	1.000000	1.250000	
13									

Quantitative Measurement Report

Page 3 / 3

Print Date: 07/12/2019 02:05:49 PM

Data set: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071219 BF.pho

[Wavelengths]

Wavelength Name: WL540.0
Wavelength: 540.00 nm

[Calibration Curve]

Column for Cal. Curve: WL540.0
Cal. Curve Type: Multi Point
Cal. Curve Unit: mg/l
Selected Wavelength: WL540.0
Calibration Equation: $\text{Conc} = K1 * (\text{Abs}) + K0$
Zero Interception: Not Selected

[Measurement Parameters(Standard)]

Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Measurement Parameters(Sample)]

Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Equations]

Equation Name: Dilution
Equation: $\text{DF} * \text{PreDF}$
Units: mg/l

[Pass Fail]

[Method Summary]

Title:
Date/Time: 10/23/2018 05:21:18 PM
Comments:
Sample Preparations:

[Instrument Properties]

Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]

Attachment: None



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0289

Instrument: UV1800-1

Calibration: UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Cal Standard	SHG0289-CAL1	ified Cr6+ 071919b BF 1-	NA	07/19/19 10:57
Cal Standard	SHG0289-CAL2	ified Cr6+ 071919b BF 1-	NA	07/19/19 10:57
Cal Standard	SHG0289-CAL3	ified Cr6+ 071919b BF 1-	NA	07/19/19 10:58
Cal Standard	SHG0289-CAL4	ified Cr6+ 071919b BF 1-	NA	07/19/19 10:58
Cal Standard	SHG0289-CAL5	ified Cr6+ 071919b BF 1-	NA	07/19/19 10:58
Cal Standard	SHG0289-CAL6	ified Cr6+ 071919b BF 1-	NA	07/19/19 10:59
Initial Cal Blank	SHG0289-ICB1	ified Cr6+ 071919b BF 2b	NA	07/19/19 18:01
Initial Cal Check	SHG0289-ICV1	ified Cr6+ 071919b BF 2b	NA	07/19/19 18:01
Calibration Blank	SHG0289-CCB1	ified Cr6+ 071919b BF 2b	NA	07/19/19 18:28
Calibration Check	SHG0289-CCV1	ified Cr6+ 071919b BF 2b	NA	07/19/19 18:29
Blank	BHG0440-BLK1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:50
LCS	BHG0440-BS1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:51
LCS	BHG0440-BS2	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:54
SO-01-190711	19G0163-02	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:55
SO-01-190711	BHG0440-DUP1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:55
SO-01-190711	BHG0440-MS1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:56
SO-01-190711	BHG0440-MS2	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:57
SO-02-190711	19G0163-03	ified Cr6+ 071919b BF 2b	Solid	07/19/19 18:57
Calibration Blank	SHG0289-CCB2	ified Cr6+ 071919b BF 2b	NA	07/19/19 19:22
Calibration Check	SHG0289-CCV2	ified Cr6+ 071919b BF 2b	NA	07/19/19 19:22
SO-05-190711	19G0163-06	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:23
SO-06-190711	19G0163-07	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:23
SO-07-190711	19G0163-08	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:24
SO-08-190711	19G0163-09	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:24
SO-09-190711	19G0163-10	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:25
SO-12-190711	19G0163-14	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:27
SO-13-190711	19G0163-15	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:27
Calibration Blank	SHG0289-CCB3	ified Cr6+ 071919b BF 2b	NA	07/19/19 19:49
Calibration Check	SHG0289-CCV3	ified Cr6+ 071919b BF 2b	NA	07/19/19 19:49
SO-03-190711	19G0163-04RE1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:50



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Sequence: SHG0289

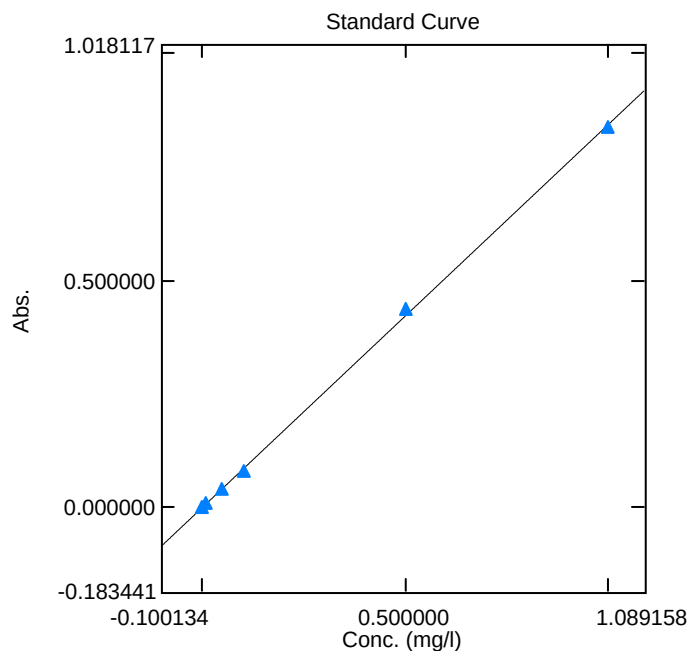
Instrument: UV1800-1

Calibration: UNASSIGNED

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
SO-04-190711	19G0163-05RE1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:50
SO-10-190711	19G0163-11RE1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:51
SO-10-190711D	19G0163-12RE1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:51
SO-11-190711	19G0163-13RE1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 19:52
Calibration Blank	SHG0289-CCB4	ified Cr6+ 071919b BF 2b	NA	07/19/19 20:17
Calibration Check	SHG0289-CCV4	ified Cr6+ 071919b BF 2b	NA	07/19/19 20:18
Calibration Blank	SHG0289-CCB5	ified Cr6+ 071919b BF 2b	NA	07/19/19 20:32
Calibration Check	SHG0289-CCV5	ified Cr6+ 071919b BF 2b	NA	07/19/19 20:32
SO-01-190711	BHG0440-PS1	ified Cr6+ 071919b BF 2b	Solid	07/19/19 20:46
Calibration Blank	SHG0289-CCB6	ified Cr6+ 071919b BF 2b	NA	07/19/19 20:47
Calibration Check	SHG0289-CCV6	ified Cr6+ 071919b BF 2b	NA	07/19/19 20:47

Quantitative Measurement Report

Data set: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071919b BF 1.pho



Software Information

Software Name: UVProbe
Version: 2.51
Mode: Security Mode

Data Information

Filename: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071919b BF 1.pho

Title:
Analyst: Brandon Fisk
Date/Time: 07/19/2019 08:50:22 PM
Comments:

Instrument Information

Instrument Name: UV1800-1
Instrument Type: UV-1800 Series
Model (S/N): UV1800-1 (A11455350830)

$x = 1.18775 y - 0.00118049$
Correlation Coefficient $r^2 = 0.99947$

Standard Table

	Sample ID	Date	Time	Conc	WL540.0	Comments
1	SEQ_CAL1	07/19/2019	10:57:12 AM	0.000000	0.000214	
2	SEQ_CAL2	07/19/2019	10:57:36 AM	0.010000	0.008087	
3	SEQ_CAL3	07/19/2019	10:58:01 AM	0.050000	0.040619	
4	SEQ_CAL4	07/19/2019	10:58:30 AM	0.100000	0.082138	
5	SEQ_CAL5	07/19/2019	10:58:55 AM	0.500000	0.437042	
6	SEQ_CAL6	07/19/2019	10:59:28 AM	1.000000	0.835464	
7						

Quantitative Measurement Report

Page 2 / 4

Print Date: 07/19/2019 08:50:35 PM

Data set: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071919b BF 1.pho

Sample Table

	Sample ID	Date	Time	Conc	WL540.0	Dilution	DF	PreDF	
	1	SEQ_ICB1	07/19/2019	06:01:16 PM	-0.001180	0.000000	1.250000	1.000000	1.250000
	2	SEQ_ICV1	07/19/2019	06:01:46 PM	0.249179	0.210785	1.250000	1.000000	1.250000
	3	BHG0494_MRL1	07/19/2019	06:02:45 PM	0.007537	0.007339	1.250000	1.000000	1.250000
	4	BHG0494_BLK1	07/19/2019	06:03:36 PM	-0.000582	0.000504	1.250000	1.000000	1.250000
1.	5	BHG0494_BS1	07/19/2019	06:04:05 PM	0.460537	0.388733	1.250000 1.00	1.000000 1.00	1.250000
	6	19G0257_01	07/19/2019	06:05:22 PM	0.012068	0.011154	1.250000	1.000000	1.250000
	7	BHG0494_DUP1	07/19/2019	06:05:50 PM	0.009893	0.009323	1.250000	1.000000	1.250000
	8	BHG0494_MS1	07/19/2019	06:06:37 PM	0.044545	0.038498	1.250000	1.000000	1.250000
	9	19G0257_01BKG	07/19/2019	06:08:51 PM	0.011162	0.010391	1.250000	1.000000	1.250000
2.	10	BHG0494_PS1	07/19/2019	06:19:58 PM	0.038945	0.033783	1.00250000 1.00	1.000000 1.00	1.250000
3.	11	BHG0494_MS2	07/19/2019	06:28:20 PM	0.042769	0.037003	1.25000000 1.00	1.00000000 1.00	1.250000
	12	SEQ_CCB1	07/19/2019	06:28:51 PM	-0.000782	0.000336	1.250000	1.000000	1.250000
	13	SEQ_CCV1	07/19/2019	06:29:12 PM	0.250140	0.211594	1.250000	1.000000	1.250000
	14	BHG0440_BLK1	07/19/2019	06:50:46 PM	0.002227	0.002869	1.250000	1.000000	1.250000
	15	BHG0440_BS1	07/19/2019	06:51:06 PM	0.351596	0.297012	1.250000	1.000000	1.250000
4.	16	BHG0440_BS2	07/19/2019	06:54:26 PM	0.543017	0.458176	1.250000 25	1.000000 20	1.250000
	17	19G0163_02	07/19/2019	06:55:10 PM	0.380757	0.321564	1.250000	1.000000	1.250000
	18	BHG0440_DUP1	07/19/2019	06:55:48 PM	0.405187	0.342133	1.250000	1.000000	1.250000
	19	BHG0440_MS1	07/19/2019	06:56:23 PM	0.307900	0.260223	1.250000	1.000000	1.250000
5.	20	BHG0440_MS2	07/19/2019	06:57:01 PM	0.134330	0.114090	1.250000 25	1.000000 20	1.250000
	21	19G0163_03	07/19/2019	06:57:32 PM	0.102088	0.086945	1.250000	1.000000	1.250000
	22	19G0163_04	07/19/2019	06:58:08 PM	1.591306	1.340759	1.250000	1.000000	1.250000
	23	19G0163_05	07/19/2019	07:00:28 PM	1.020013	0.859772	1.250000	1.000000	1.250000
	24	SEQ_CCB2	07/19/2019	07:22:31 PM	-0.001180	0.000000	1.250000	1.000000	1.250000
	25	SEQ_CCV2	07/19/2019	07:22:55 PM	0.249324	0.210907	1.250000	1.000000	1.250000
	26	19G0163_06	07/19/2019	07:23:27 PM	0.595250	0.502151	1.250000	1.000000	1.250000
	27	19G0163_07	07/19/2019	07:23:55 PM	0.212533	0.179932	1.250000	1.000000	1.250000
	28	19G0163_08	07/19/2019	07:24:19 PM	0.038420	0.033340	1.250000	1.000000	1.250000
	29	19G0163_09	07/19/2019	07:24:45 PM	0.204359	0.173050	1.250000	1.000000	1.250000
	30	19G0163_10	07/19/2019	07:25:15 PM	0.107380	0.091400	1.250000	1.000000	1.250000
	31	19G0163_11	07/19/2019	07:25:47 PM	1.350588	1.138092	1.250000	1.000000	1.250000
	32	19G0163_12	07/19/2019	07:26:23 PM	2.162979	1.822067	1.250000	1.000000	1.250000
	33	19G0163_13	07/19/2019	07:26:54 PM	1.170113	0.986145	1.250000	1.000000	1.250000
	34	19G0163_14	07/19/2019	07:27:19 PM	0.297950	0.251846	1.250000	1.000000	1.250000
	35	19G0163_15	07/19/2019	07:27:44 PM	0.119632	0.101715	1.250000	1.000000	1.250000
	36	SEQ_CCB3	07/19/2019	07:49:26 PM	-0.000818	0.000305	1.250000	1.000000	1.250000
	37	SEQ_CCV3 04	07/19/2019	07:49:47 PM	0.248545	0.210251	1.250000	1.000000	1.250000
6.	38	19G0163_03RE1	07/19/2019	07:50:22 PM	0.832307	0.701736	2.500000	2.000000	1.250000
7.	39	19G0163_04RE1	07/19/2019	07:50:50 PM	0.516086	0.435501	2.500000	2.000000	1.250000

05

1. DF corrected to 1.00. Dilution corrected to 1.25
2. PreDF corrected to 1.00. Dilution corrected to 1.00
3. DF corrected to 1.00. Dilution corrected to 1.25
4. DF corrected to 20.00. Dilution corrected to 25.00
5. DF corrected to 20.00. Dilution corrected to 25.00
6. Name corrected to 19G0163-04RE1
7. Name corrected to 19G0163-05RE1

BF 072219

Quantitative Measurement Report

Data set: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071919b BF 1.pho

Sample Table

	Sample ID	Date	Time	Conc	WL540.0	Dilution	DF	PreDF	
40	19G0163_11RE1	07/19/2019	07:51:18 PM	0.685451	0.578094	2.500000	2.000000	1.250000	
41	19G0163_12RE1	07/19/2019	07:51:48 PM	0.430162	0.363159	6.250000	5.000000	1.250000	
42	19G0163_13RE1	07/19/2019	07:52:17 PM	0.598095	0.504547	2.500000	2.000000	1.250000	
43	19G0163_02BKG	07/19/2019	08:14:50 PM	0.386212	0.326157	1.250000	1.000000	1.250000	
44	BHG0440_DUP1BKG	07/19/2019	08:15:10 PM	0.415373	0.350708	1.250000	1.000000	1.250000	
45	BHG0440_MS1BKG	07/19/2019	08:15:45 PM	0.310201	0.262161	1.250000	1.000000	1.250000	
8. 46	BHG0440_MS2BKG	07/19/2019	08:16:14 PM	0.007319	0.007156	25 1.250000	20 1.000000	1.250000	
47	SEQ_CCB4	07/19/2019	08:17:38 PM	-0.000999	0.000153	1.250000	1.000000	1.250000	
48	SEQ_CCV4	07/19/2019	08:18:07 PM	0.242727	0.205353	1.250000	1.000000	1.250000	
49	19G0163_03BKG	07/19/2019	08:18:54 PM	0.106293	0.090485	1.250000	1.000000	1.250000	
50	19G0163_04BKG	07/19/2019	08:19:15 PM	0.825981	0.696411	2.500000	2.000000	1.250000	
51	19G0163_05BKG	07/19/2019	08:19:45 PM	0.509380	0.429855	2.500000	2.000000	1.250000	
52	19G0163_06BKG	07/19/2019	08:20:18 PM	0.595576	0.502426	1.250000	1.000000	1.250000	
53	19G0163_07BKG	07/19/2019	08:21:29 PM	0.033762	0.029419	1.250000	1.000000	1.250000	
54	19G0163_09BKG	07/19/2019	08:25:31 PM	0.206788	0.175095	1.250000	1.000000	1.250000	
55	19G0163_10BKG	07/19/2019	08:26:13 PM	0.110606	0.094116	1.250000	1.000000	1.250000	
56	19G0163_11BKG	07/19/2019	08:26:41 PM	0.666385	0.562042	2.500000	2.000000	1.250000	
57	19G0163_12BKG	07/19/2019	08:27:14 PM	0.413415	0.349060	6.250000	5.000000	1.250000	
58	19G0163_08BKG	07/19/2019	08:31:54 PM	0.038619	0.033508	1.250000	1.000000	1.250000	
59	SEQ_CCB5	07/19/2019	08:32:17 PM	-0.000691	0.000412	1.250000	1.000000	1.250000	
60	SEQ_CCV5	07/19/2019	08:32:37 PM	0.243434	0.205948	1.250000	1.000000	1.250000	
61	19G0163_13BKG	07/19/2019	08:33:09 PM	0.593854	0.500977	2.500000	2.000000	1.250000	
62	19G0163_14BKG	07/19/2019	08:33:32 PM	0.291099	0.246078	1.250000	1.000000	1.250000	
63	19G0163_15BKG	07/19/2019	08:33:58 PM	0.119867	0.101913	1.250000	1.000000	1.250000	
64	BHG0440_BS3	07/19/2019	08:34:39 PM	0.351958	0.297318	1.250000	1.000000	1.250000	
65	BHG0440_BS4	07/19/2019	08:35:10 PM	0.557879	0.470688	25.000000	20.000000	1.250000	
9. 66	BHG0440_PS1	07/19/2019	08:46:25 PM	0.585409	0.493866	1.01 1.250000	1.000000	1.01 1.250000	
67	SEQ_CCB6	07/19/2019	08:47:29 PM	0.000994	0.001831	1.250000	1.000000	1.250000	
68	SEQ_CCV6	07/19/2019	08:47:57 PM	0.242981	0.205566	1.250000	1.000000	1.250000	
69									

8. DF corrected to 20.00. Dilution corrected to 25.00

9. DF corrected to 1.00. Dilution corrected to 1.00

BF072219

Quantitative Measurement Report

Page 4 / 4

Print Date: 07/19/2019 08:50:35 PM

Data set: \\ARI-File\Inorganics\Conventional\Methods\Chrome 6+\Instrument Data\2019 Data\July 2019\Cr6+ 071919b BF 1.pho

[Wavelengths]

Wavelength Name: WL540.0
Wavelength: 540.00 nm

[Calibration Curve]

Column for Cal. Curve: WL540.0
Cal. Curve Type: Multi Point
Cal. Curve Unit: mg/l
Selected Wavelength: WL540.0
Calibration Equation: $\text{Conc} = K1 * (\text{Abs}) + K0$
Zero Interception: Not Selected

[Measurement Parameters(Standard)]

Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Measurement Parameters(Sample)]

Data Acquired by: Instrument
Delay sample read: Disabled
Repeat: Disabled

[Equations]

Equation Name: Dilution
Equation: $\text{DF} * \text{PreDF}$
Units: mg/l

[Pass Fail]

[Method Summary]

Title:
Date/Time: 10/23/2018 05:21:18 PM
Comments:
Sample Preparations:

[Instrument Properties]

Instrument Type: UV-1800 Series
Measuring Mode: Absorbance
Slit Width: 1.0 nm
Light Source Change Wavelength: 340.0 nm
S/R Exchange: Normal

[Attachment Properties]

Attachment: None



INSTRUMENT BLANKS

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: UV1800-1

Calibration: UNASSIGNED

Sequence: SHG0204

Date Analyzed: 07/12/19 13:26

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0204-ICB1	Hexavalent Chromium	0.0007	0.01	0.010	mg/L	
SHG0204-CCB1	Hexavalent Chromium	0.004	0.01	0.010	mg/L	



INSTRUMENT BLANKS EPA 7196A

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Instrument ID: UV1800-1

Sequence: SHG0289

SDG: 19G0163

Project: King County Closed Landfills - Vashor

Calibration: UNASSIGNED

Date Analyzed: 07/19/19 18:01

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0289-ICB1	Hexavalent Chromium	-0.001	0.01	0.010	mg/L	
SHG0289-CCB1	Hexavalent Chromium	-0.0008	0.01	0.010	mg/L	
SHG0289-CCB2	Hexavalent Chromium	-0.001	0.01	0.010	mg/L	
SHG0289-CCB3	Hexavalent Chromium	-0.0008	0.01	0.010	mg/L	
SHG0289-CCB4	Hexavalent Chromium	-0.001	0.01	0.010	mg/L	
SHG0289-CCB5	Hexavalent Chromium	-0.0007	0.01	0.010	mg/L	
SHG0289-CCB6	Hexavalent Chromium	0.001	0.01	0.010	mg/L	



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: UV1800-1

Calibration: UNASSIGNED

Control Limit: +/- 10.00%

Sequence: SHG0204

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0204-ICV1	Hexavalent Chromium	0.25000	0.269	108	mg/L	EPA 7196A
SHG0204-CCV1	Hexavalent Chromium	0.25000	0.274	110	mg/L	EPA 7196A

* Values outside of QC limits



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: UV1800-1

Calibration: UNASSIGNED

Control Limit: +/- 10.00%

Sequence: SHG0289

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0289-ICV1	Hexavalent Chromium	0.25000	0.249	99.7	mg/L	EPA 7196A
SHG0289-CCV1	Hexavalent Chromium	0.25000	0.250	100	mg/L	EPA 7196A
SHG0289-CCV2	Hexavalent Chromium	0.25000	0.249	99.7	mg/L	EPA 7196A
SHG0289-CCV3	Hexavalent Chromium	0.25000	0.249	99.4	mg/L	EPA 7196A
SHG0289-CCV4	Hexavalent Chromium	0.25000	0.243	97.1	mg/L	EPA 7196A
SHG0289-CCV5	Hexavalent Chromium	0.25000	0.243	97.4	mg/L	EPA 7196A
SHG0289-CCV6	Hexavalent Chromium	0.25000	0.243	97.2	mg/L	EPA 7196A

* Values outside of QC limits



HOLDING TIME SUMMARY

Analysis: EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-10-190711E 19G0163-01	07/11/19 15:10	07/11/19 17:25	07/12/19 12:41	0	1	07/12/19 13:30	1	1	
SO-01-190711 19G0163-02	07/11/19 11:05	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 18:55	8	28	
SO-02-190711 19G0163-03	07/11/19 10:50	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 18:57	8	28	
SO-03-190711 19G0163-04RE1	07/11/19 08:35	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 19:50	8	28	
SO-04-190711 19G0163-05RE1	07/11/19 11:30	07/11/19 17:25	07/18/19 11:15	6	28	07/19/19 19:50	8	28	
SO-05-190711 19G0163-06	07/11/19 12:05	07/11/19 17:25	07/18/19 11:15	6	28	07/19/19 19:23	8	28	
SO-06-190711 19G0163-07	07/11/19 12:20	07/11/19 17:25	07/18/19 11:15	6	28	07/19/19 19:23	8	28	
SO-07-190711 19G0163-08	07/11/19 11:55	07/11/19 17:25	07/18/19 11:15	6	28	07/19/19 19:24	8	28	
SO-08-190711 19G0163-09	07/11/19 10:25	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 19:24	8	28	
SO-09-190711 19G0163-10	07/11/19 10:10	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 19:25	8	28	
SO-10-190711 19G0163-11RE1	07/11/19 09:45	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 19:51	8	28	
SO-10-190711D 19G0163-12RE1	07/11/19 09:50	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 19:51	8	28	
SO-11-190711 19G0163-13RE1	07/11/19 09:10	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 19:52	8	28	
SO-12-190711 19G0163-14	07/11/19 09:25	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 19:27	8	28	
SO-13-190711 19G0163-15	07/11/19 12:35	07/11/19 17:25	07/18/19 11:15	6	28	07/19/19 19:27	8	28	
Duplicate BHG0309-DUP1	07/11/19 15:10	07/11/19 17:25	07/12/19 12:41	0	1	07/12/19 13:31	1	1	
Matrix Spike BHG0309-MS1	07/11/19 15:10	07/11/19 17:25	07/12/19 12:41	0	1	07/12/19 13:35	1	1	
Duplicate BHG0440-DUP1	07/11/19 11:05	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 18:55	8	28	
Matrix Spike BHG0440-MS1	07/11/19 11:05	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 18:56	8	28	
Matrix Spike BHG0440-MS2	07/11/19 11:05	07/11/19 17:25	07/18/19 11:15	7	28	07/19/19 18:57	8	28	
Post Spike BHG0440-PS1	07/11/19 11:05	07/11/19 17:25	07/18/19 10:16	6	28	07/19/19 20:46	8	28	

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: UV1800-1

Analyte	MDL	RL	Units
Hexavalent Chromium	0.400	0.400	mg/kg



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 7196A

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Water

Instrument: UV1800-1

Analyte	MDL	RL	Units
Hexavalent Chromium	0.010	0.010	mg/L



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-01-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-02 B

SDG: 19G0163

Sampled: 07/11/19 11:05 Prepared: 07/16/19 15:36

File ID: CubeData_07172019@1008-011

% Solids: 49.02 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 15:36

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.4446 g Wet / 0.4446 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	6.09	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-02-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-03 B

SDG: 19G0163

Sampled: 07/11/19 10:50 Prepared: 07/16/19 17:09

File ID: CubeData_07172019@1008-014

% Solids: 44.87 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 17:09

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.268 g Wet / 0.268 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	6.32	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-03-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-04 B

SDG: 19G0163

Sampled: 07/11/19 08:35 Prepared: 07/16/19 18:43

File ID: CubeData_07172019@1008-017

% Solids: 23.77 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 18:43

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.1728 g Wet / 0.1728 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	24.8	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-04-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-05 B

SDG: 19G0163

Sampled: 07/11/19 11:30 Prepared: 07/16/19 19:14

File ID: CubeData_07172019@1008-018

% Solids: 21.73 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 19:14

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.2327 g Wet / 0.2327 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	28.9	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-05-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-06 B

SDG: 19G0163

Sampled: 07/11/19 12:05 Prepared: 07/16/19 19:45

File ID: CubeData_07172019@1008-019

% Solids: 33.67 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 19:45

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.1787 g Wet / 0.1787 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	10.9	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-06-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-07 B

SDG: 19G0163

Sampled: 07/11/19 12:20 Prepared: 07/16/19 20:16

File ID: CubeData_07172019@1008-020

% Solids: 50.18 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 20:16

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.3366 g Wet / 0.3366 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	6.65	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-07-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-08 B

SDG: 19G0163

Sampled: 07/11/19 11:55 Prepared: 07/16/19 20:47

File ID: CubeData_07172019@1008-021

% Solids: 63.69 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 20:47

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.3866 g Wet / 0.3866 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	1.85	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-08-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-09 B

SDG: 19G0163

Sampled: 07/11/19 10:25 Prepared: 07/16/19 21:18

File ID: CubeData_07172019@1008-022

% Solids: 47.73 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 21:18

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.3018 g Wet / 0.3018 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	8.45	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-09-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-10 B

SDG: 19G0163

Sampled: 07/11/19 10:10 Prepared: 07/16/19 21:49

File ID: CubeData_07172019@1008-023

% Solids: 66.02 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 21:49

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.3936 g Wet / 0.3936 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	2.65	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-10-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-11 B

SDG: 19G0163

Sampled: 07/11/19 09:45 Prepared: 07/16/19 22:20

File ID: CubeData_07172019@1008-024

% Solids: 71.70 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 22:20

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.0552 g Wet / 0.0552 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	10.6	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-10-190711D

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-12 B

SDG: 19G0163

Sampled: 07/11/19 09:50 Prepared: 07/16/19 22:52

File ID: CubeData_07172019@1008-025

% Solids: 72.28 Preparation: No Prep Wet Chem

Analyzed: 07/16/19 22:52

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.0572 g Wet / 0.0572 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	11.1	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-11-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-13RE1 B

SDG: 19G0163

Sampled: 07/11/19 09:10 Prepared: 07/18/19 18:59

File ID: CubeData_07192019@0523-010

% Solids: 21.50 Preparation: No Prep Wet Chem

Analyzed: 07/18/19 18:59

Batch: BHG0359 Sequence: SHG0239

Initial/Final: 0.0697 g Wet / 0.0697 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	28.7	1	0.02	0.02	
	Total Inorganic Carbon	0.45	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-12-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-14 B

SDG: 19G0163

Sampled: 07/11/19 09:25 Prepared: 07/17/19 00:56

File ID: CubeData_07172019@1008-029

% Solids: 42.67 Preparation: No Prep Wet Chem

Analyzed: 07/17/19 00:56

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.2006 g Wet / 0.2006 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	7.48	1	0.02	0.02	



Form I
INORGANIC ANALYSIS DATA SHEET
EPA 9060A m

SO-13-190711

Laboratory: Analytical Resources, Inc.

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid Laboratory ID: 19G0163-15 B

SDG: 19G0163

Sampled: 07/11/19 12:35 Prepared: 07/17/19 01:27

File ID: CubeData_07172019@1008-030

% Solids: 87.59 Preparation: No Prep Wet Chem

Analyzed: 07/17/19 01:27

Batch: BHG0359 Sequence: SHG0202

Initial/Final: 0.0761 g Wet / 0.0761 g

Instrument: TOC Cube

Calibration: CE00054

CAS NO.	Analyte	Concentration (% dry)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	6.13	1	0.02	0.02	



PREPARATION BATCH SUMMARY

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Batch: BHG0359

Batch Matrix: Solid

Preparation: No Prep Wet Chem

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
SO-01-190711	19G0163-02	eData_07172019@1008-	07/16/19 15:36	
SO-02-190711	19G0163-03	eData_07172019@1008-	07/16/19 17:09	
SO-03-190711	19G0163-04	eData_07172019@1008-	07/16/19 18:43	
SO-04-190711	19G0163-05	eData_07172019@1008-	07/16/19 19:14	
SO-05-190711	19G0163-06	eData_07172019@1008-	07/16/19 19:45	
SO-06-190711	19G0163-07	eData_07172019@1008-	07/16/19 20:16	
SO-07-190711	19G0163-08	eData_07172019@1008-	07/16/19 20:47	
SO-08-190711	19G0163-09	eData_07172019@1008-	07/16/19 21:18	
SO-09-190711	19G0163-10	eData_07172019@1008-	07/16/19 21:49	
SO-10-190711	19G0163-11	eData_07172019@1008-	07/16/19 22:20	
SO-10-190711D	19G0163-12	eData_07172019@1008-	07/16/19 22:52	
SO-11-190711	19G0163-13RE1	eData_07192019@0523-	07/18/19 18:59	Added 7/17/2019 By KLE
SO-12-190711	19G0163-14	eData_07172019@1008-	07/17/19 00:56	
SO-13-190711	19G0163-15	eData_07172019@1008-	07/17/19 01:27	
Blank	BHG0359-BLK1	eData_07172019@1008-	07/16/19 13:01	
LCS	BHG0359-BS1	eData_07172019@1008-	07/16/19 13:32	
LCS	BHG0359-BS2		07/18/19 00:23	
SO-01-190711	BHG0359-DUP2	eData_07192019@0523-	07/18/19 17:57	
MRL Check	BHG0359-MRL1	eData_07172019@1008-	07/16/19 12:30	
SO-01-190711	BHG0359-MS2	eData_07192019@0523-	07/18/19 18:28	



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Conventional Laboratory Analyst Notes

ARI Job No.:

^{WGR} SHG0239
~~196~~ 19F0116

Client ID: _____

Parameter:

TIC

Client Project: _____

List problems, concerns, corrective actions and any other pertinent information

BS was not run on second sequence.
BS standard is the same as Cal ver. std.
CV loaded to verify Blank Spike recovery is
acceptable.

Analyst Initials:

WGR

Date:

7-22-19



Form I
METHOD BLANK DATA SHEET
EPA 9060A m
TotalAnalytes

Blank

Batch: BHG0359

Laboratory ID: BHG0359-BLK1

Prepared: 07/16/19 13:01

Matrix: Solid

Preparation: No Prep Wet Chem

Analyzed: 07/16/19 13:01

Sequence: SHG0202

Calibration: CE00054

Instrument: TOC Cube

CAS NO.	Analyte	Concentration (% wet)	Dilution Factor	MDL	MRL	Q
	Total Organic Carbon	ND	1	0.02	0.02	U



DUPLICATES

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Laboratory ID: BHG0359-DUP2

Batch: BHG0359

Lab Source ID: 19G0163-02

Preparation: No Prep Wet Chem

Initial/Final: 0.1276 g / 0.1276 g

Source Sample Name: SO-01-190711

% Solids: 49.02

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (% dry)	C	DUPLICATE CONCENTRATION (% dry)	C	RPD %	Q
Total Organic Carbon	20	6.09		5.46		11.0	

*: Values outside of QC limits

L: Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to Dup = +/- RL instead of 20% RPD



MS / MS DUPLICATE RECOVERY
EPA 9060A m

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/18/19 18:28
Batch: BHG0359 Laboratory ID: BHG0359-MS2
Preparation: No Prep Wet Chem Sequence Name: Matrix Spike
Initial/Final: 0.1548 g / 0.1548 g Source Sample: SO-01-190711

COMPOUND	SPIKE ADDED (% dry)	SAMPLE CONCENTRATION (% dry)	Q	MS CONCENTRATION (% dry)	Q	MS % REC. #	QC LIMITS REC.
Total Organic Carbon	4.74	6.09		10.5		92.7	75 - 125
Total Inorganic Carbon	0.00	ND	U	0.13		*	75 - 125

* Values outside of QC limits



LCS / LCS DUPLICATE RECOVERY
EPA 9060A m

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/16/19 13:32
Batch: BHG0359 Laboratory ID: BHG0359-BS1
Preparation: No Prep Wet Chem Sequence Name: LCS
Initial/Final: 0.0201 g / 0.0201 g

COMPOUND	SPIKE ADDED (% wet)	LCS CONCENTRATION (% wet)	Q	LCS % REC. #	QC LIMITS REC.
Total Organic Carbon	44.4	45.9		103	80 - 120

* Indicates values outside of QC limits



LCS / LCS DUPLICATE RECOVERY
EPA 9060A m

Laboratory: Analytical Resources, Inc. SDG: 19G0163
Client: Anchor QEA, LLC Project: King County Closed Landfills - Vashon
Matrix: Solid Analyzed: 07/18/19 16:55
Batch: BHG0359 Laboratory ID: BHG0359-BS2
Preparation: No Prep Wet Chem Sequence Name: LCS
Initial/Final: 0.0199 g / 0.0199 g

COMPOUND	SPIKE ADDED (% wet)	LCS CONCENTRATION (% wet)	Q	LCS % REC. #	QC LIMITS REC.
Total Inorganic Carbon	12.0	11.8		98.7	80 - 120

* Indicates values outside of QC limits



ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

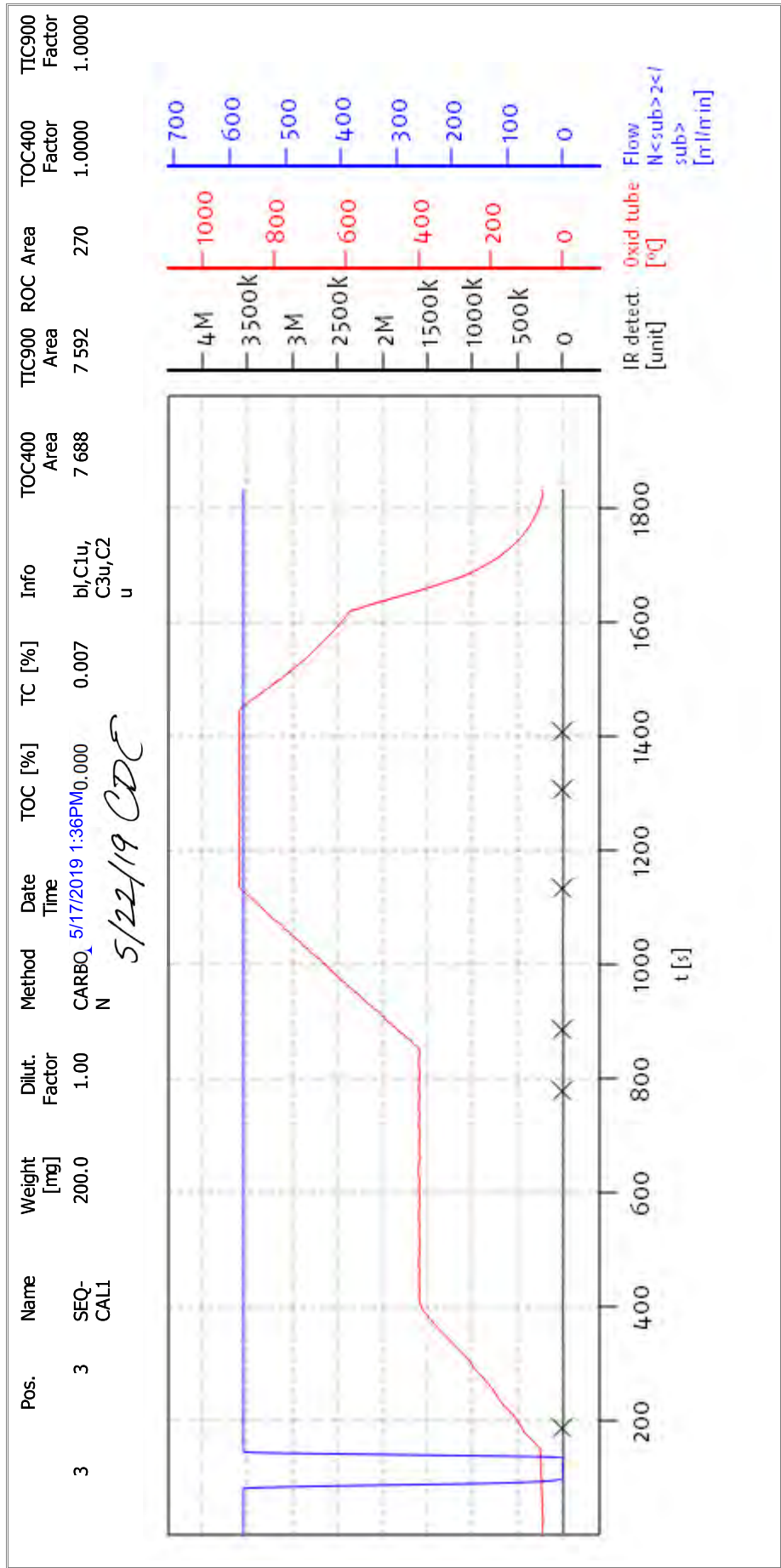
Sequence: SHE0340

Instrument: TOC Cube

Calibration: CE00054

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
	SHE0340-CAL1	peData_05222019@1016-0	NA	05/17/19 13:36
	SHE0340-CAL2	peData_05222019@1016-0	NA	05/17/19 14:07
	SHE0340-CAL3	peData_05222019@1016-0	NA	05/17/19 14:38
	SHE0340-CAL4	peData_05222019@1016-0	NA	05/17/19 15:09
	SHE0340-CAL5	peData_05222019@1016-0	NA	05/17/19 15:40
	SHE0340-CAL6	peData_05222019@1016-0	NA	05/17/19 16:11
	SHE0340-CAL7	peData_05222019@1016-0	NA	05/17/19 16:41
	SHE0340-CAL8	peData_05222019@1016-0	NA	05/17/19 17:12
	SHE0340-CAL9	peData_05222019@1016-0	NA	05/17/19 17:43
	SHE0340-CALA	peData_05222019@1016-0	NA	05/17/19 18:14
	SHE0340-CALB	peData_05222019@1016-0	NA	05/17/19 18:45
	SHE0340-CALC	peData_05222019@1016-0	NA	05/17/19 19:16
	SHE0340-CALD	peData_05222019@1016-0	NA	05/17/19 19:47
	SHE0340-CALE	peData_05222019@1016-0	NA	05/17/19 20:18
	SHE0340-CALF	peData_05222019@1016-0	NA	05/17/19 20:48
	SHE0340-CALG	peData_05222019@1016-0	NA	05/17/19 21:19
	SHE0340-CALH	peData_05222019@1016-0	NA	05/17/19 21:50
	SHE0340-CALI	peData_05222019@1016-0	NA	05/17/19 22:21
	SHE0340-CALJ	peData_05222019@1016-0	NA	05/17/19 22:52
	SHE0340-CALK	peData_05222019@1016-0	NA	05/17/19 23:23
	SHE0340-CALL	peData_05222019@1016-0	NA	05/17/19 23:54
	SHE0340-CALM	peData_05222019@1016-0	NA	05/18/19 00:25
	SHE0340-CALN	peData_05222019@1016-0	NA	05/18/19 00:56
	SHE0340-CALO	peData_05222019@1016-0	NA	05/18/19 01:27
	SHE0340-ICV1	peData_05222019@1016-0	NA	05/18/19 01:58
	SHE0340-ICB1	peData_05222019@1016-0	NA	05/18/19 02:28

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



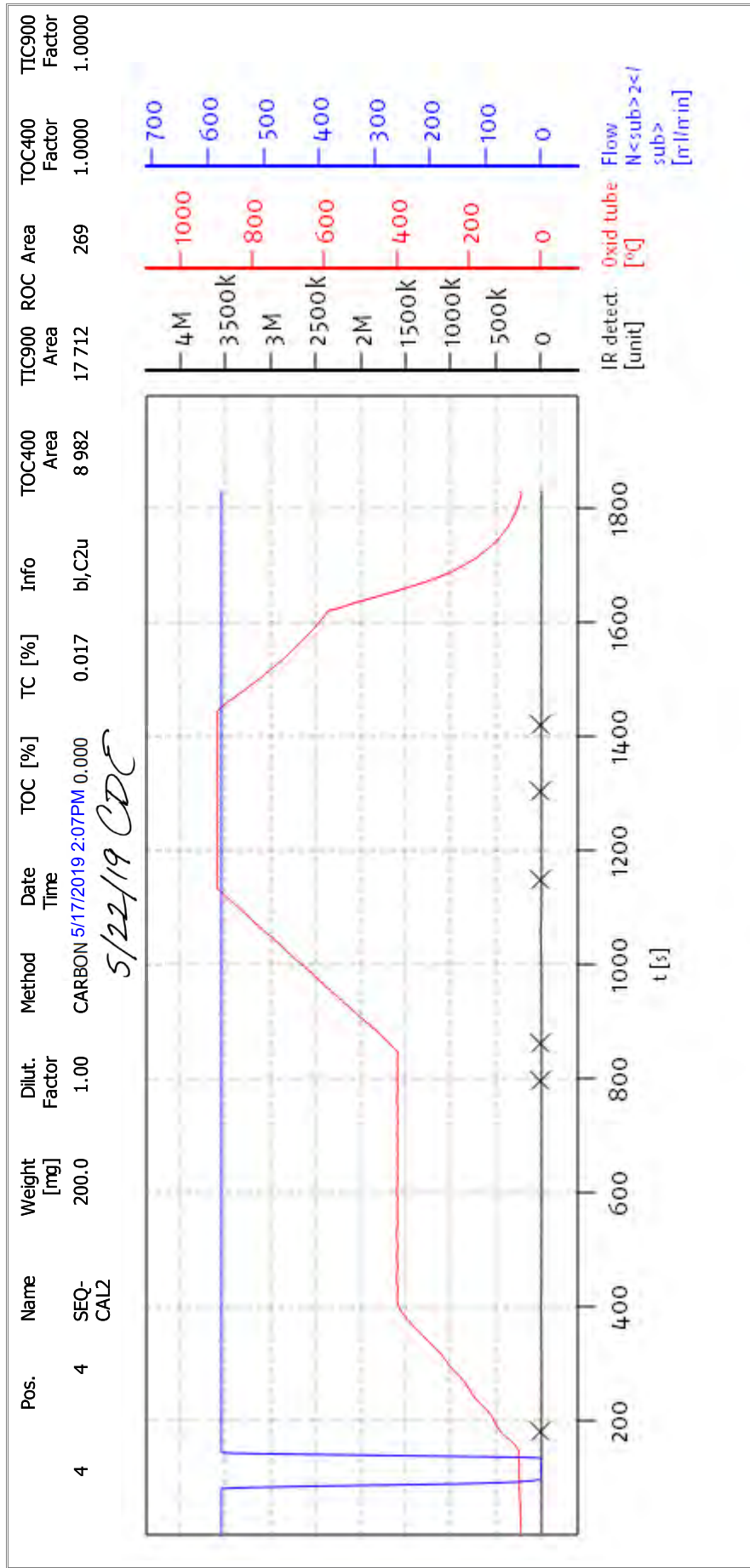
Date: Wed May 22 09:18:30 2019

Access: solITOC superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



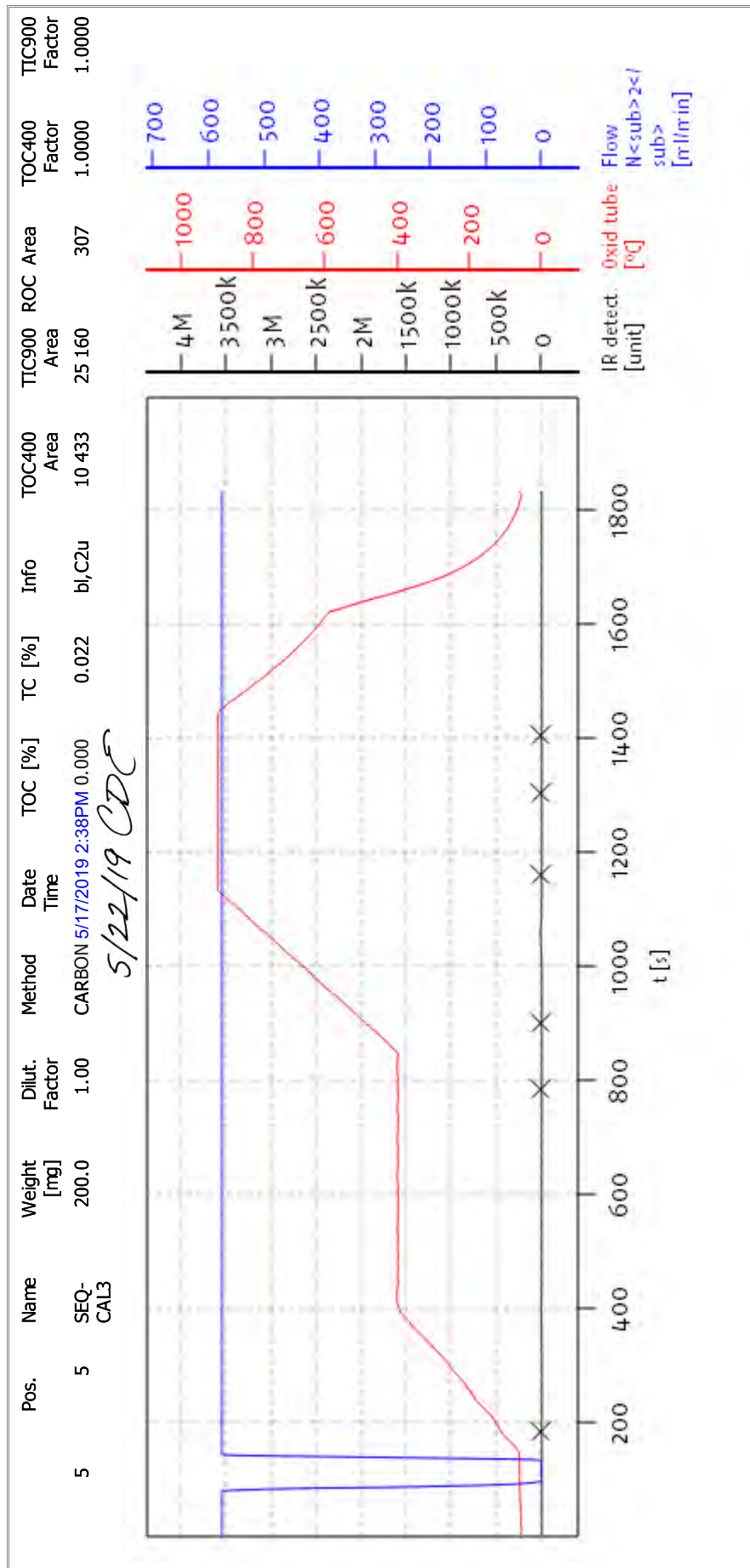
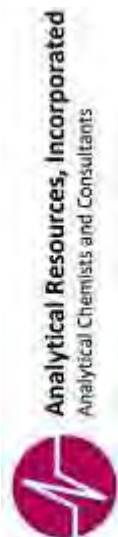
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

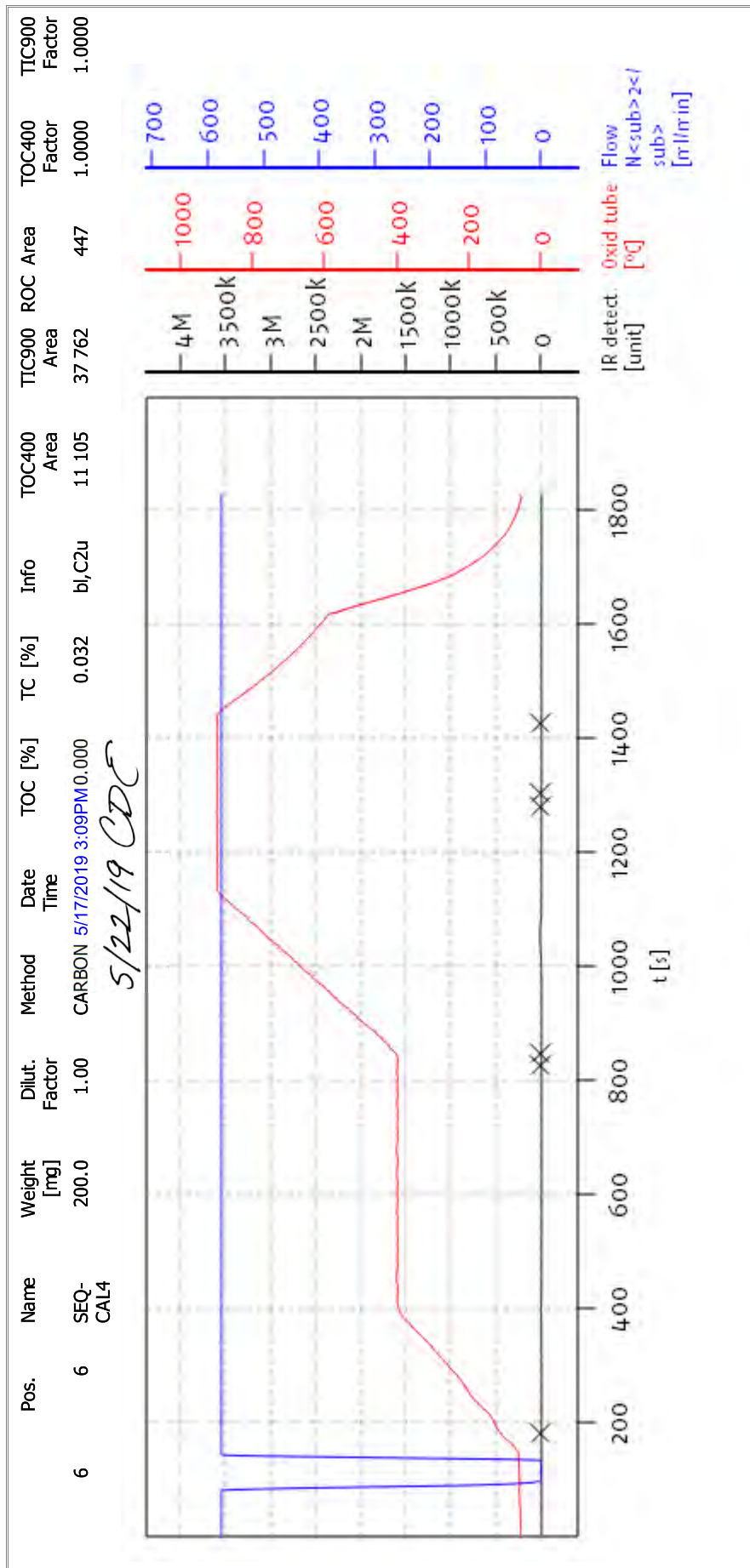
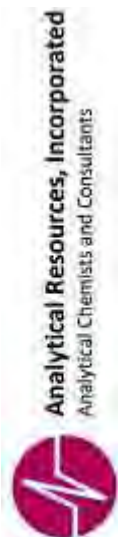
Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

Access: solITOC superuser

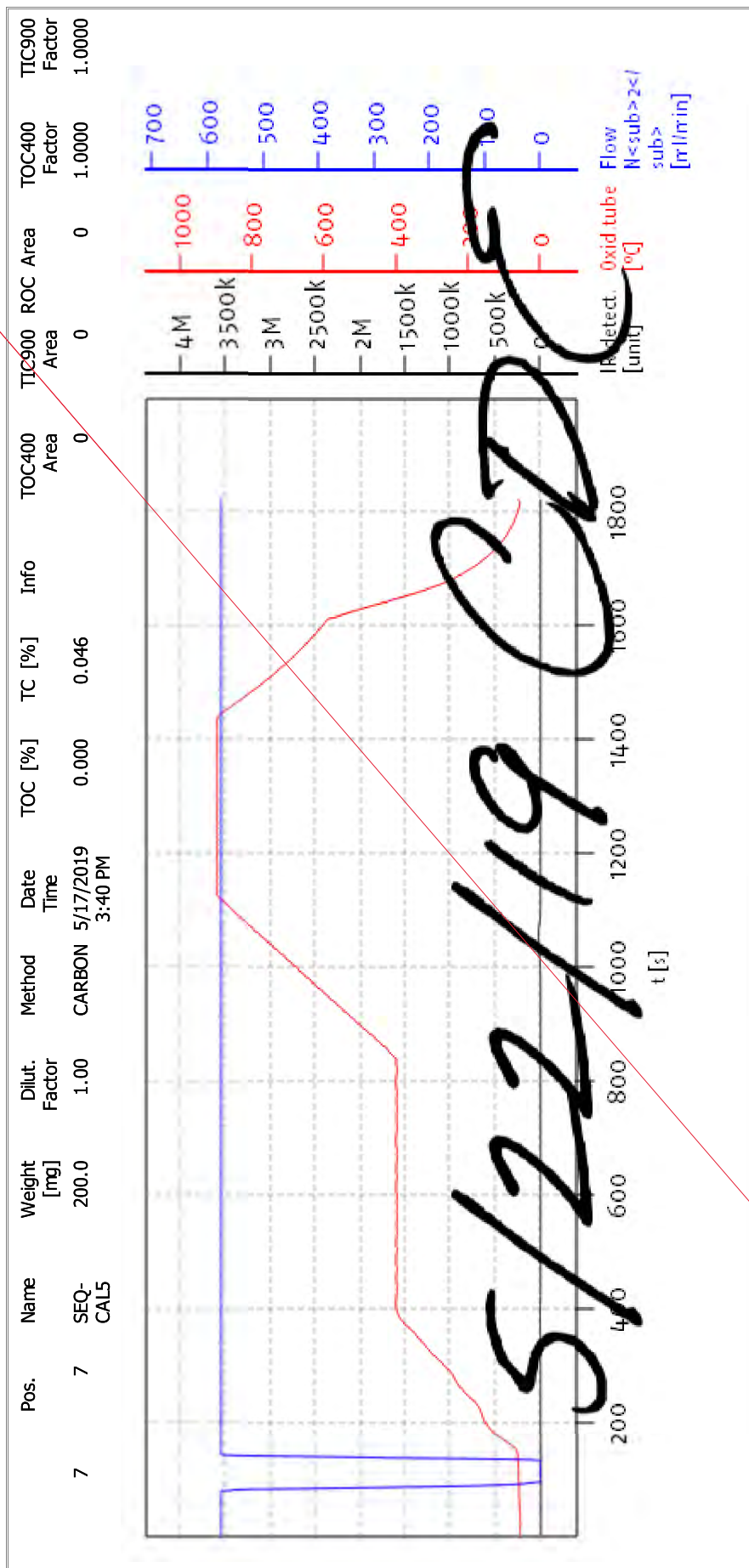
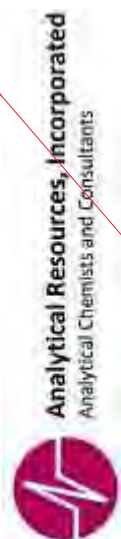
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC



3031 of 3146

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

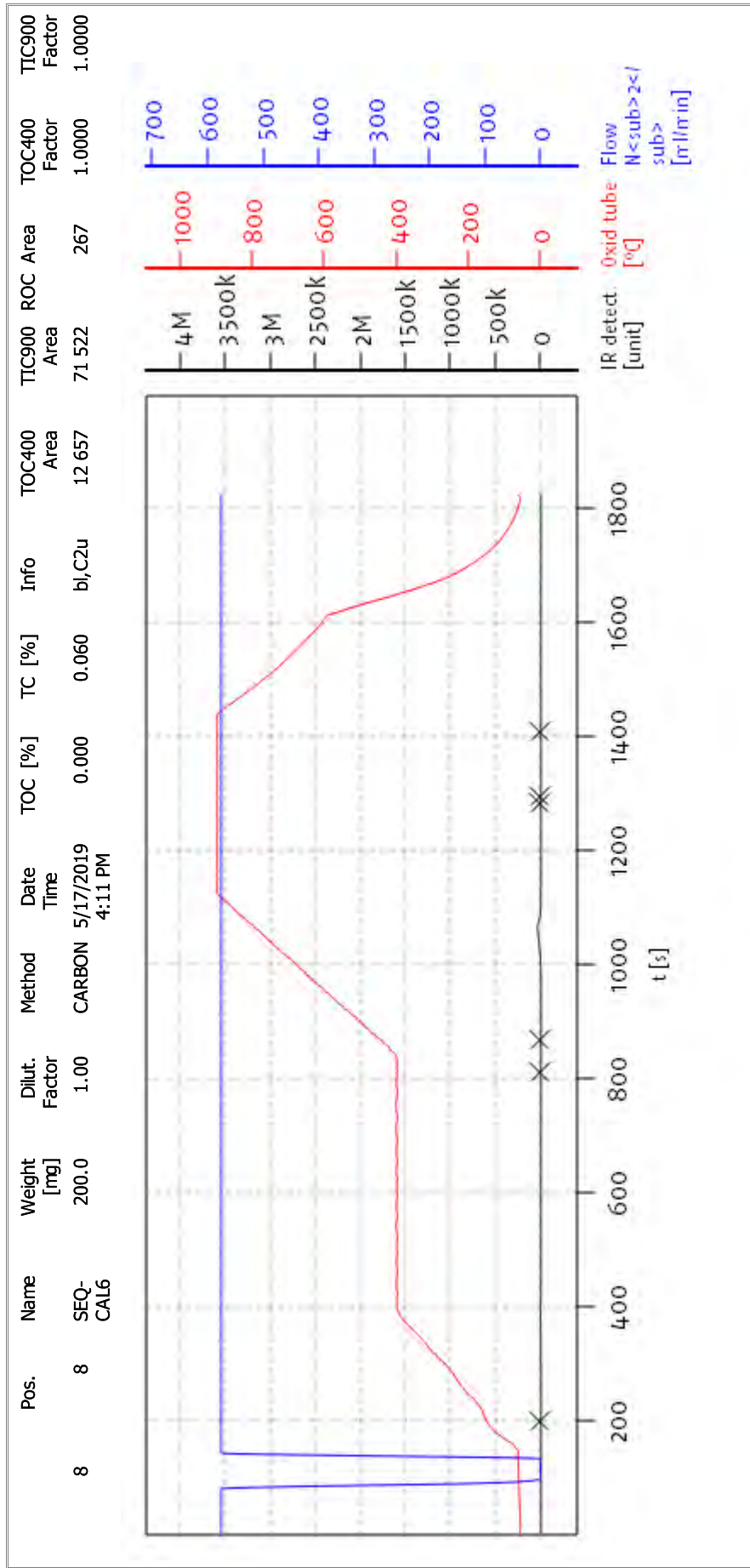
Access: solITOC superuser

Date: Wed May 22 09:18:30 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

Access: solITOC superuser



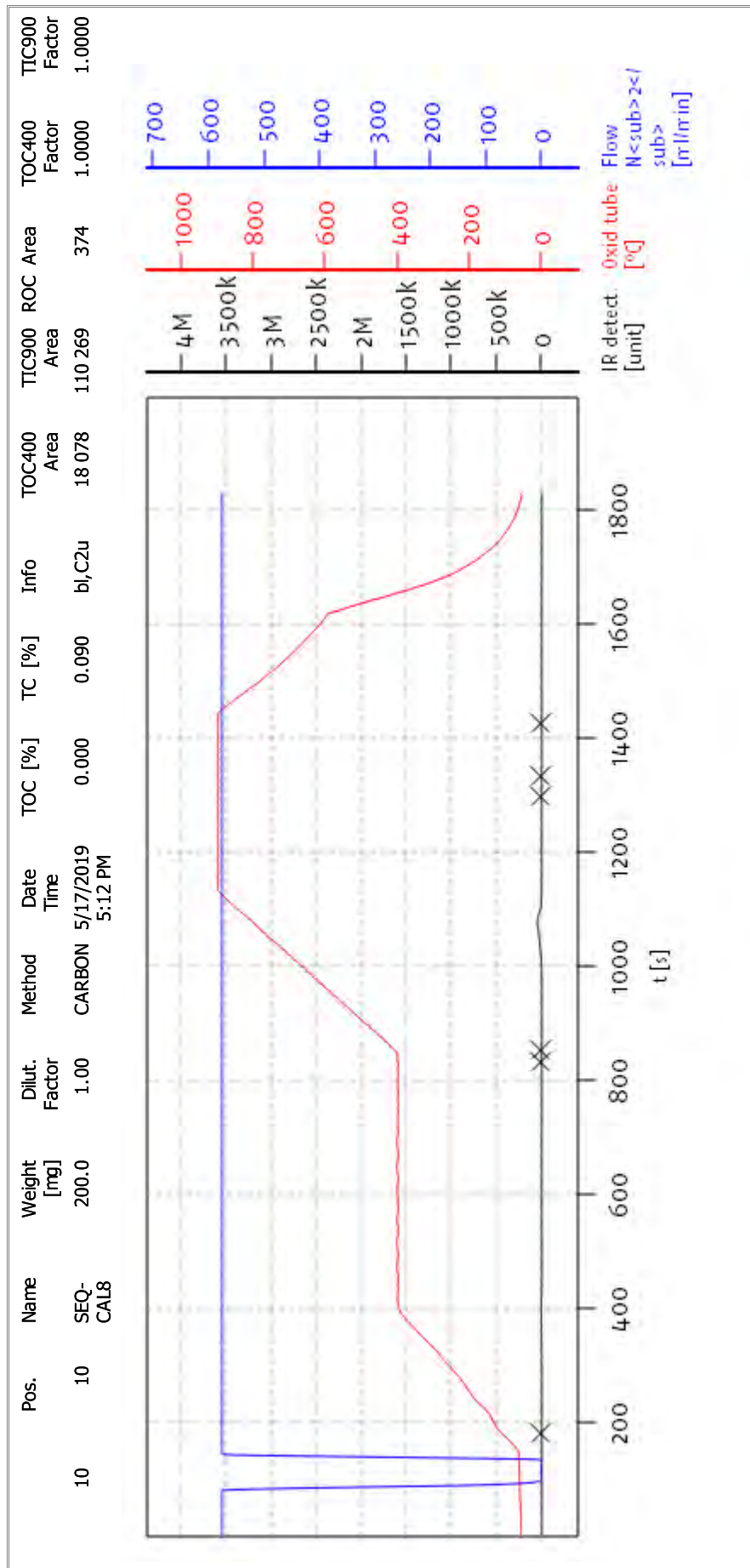
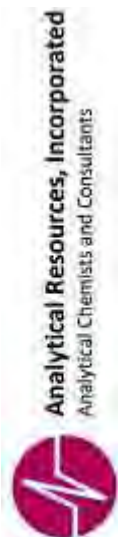
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Date: Wed May 22 09:18:30 2019

The graph displays two data series over time (t [s]). The red line represents the IR detect. signal in units, and the blue line represents the Oxid tube temperature in degrees Celsius. The IR detect. signal shows a sharp peak around 1400s, while the Oxid tube signal remains relatively stable around 1000°C.

t [s]	IR detect. [unit]	Oxid tube [°C]
0	0	1000
200	0	1000
400	0	1000
600	0	1000
800	0	1000
1000	0	1000
1200	0	1000
1400	1000	1000
1600	0	1000
1800	0	1000

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



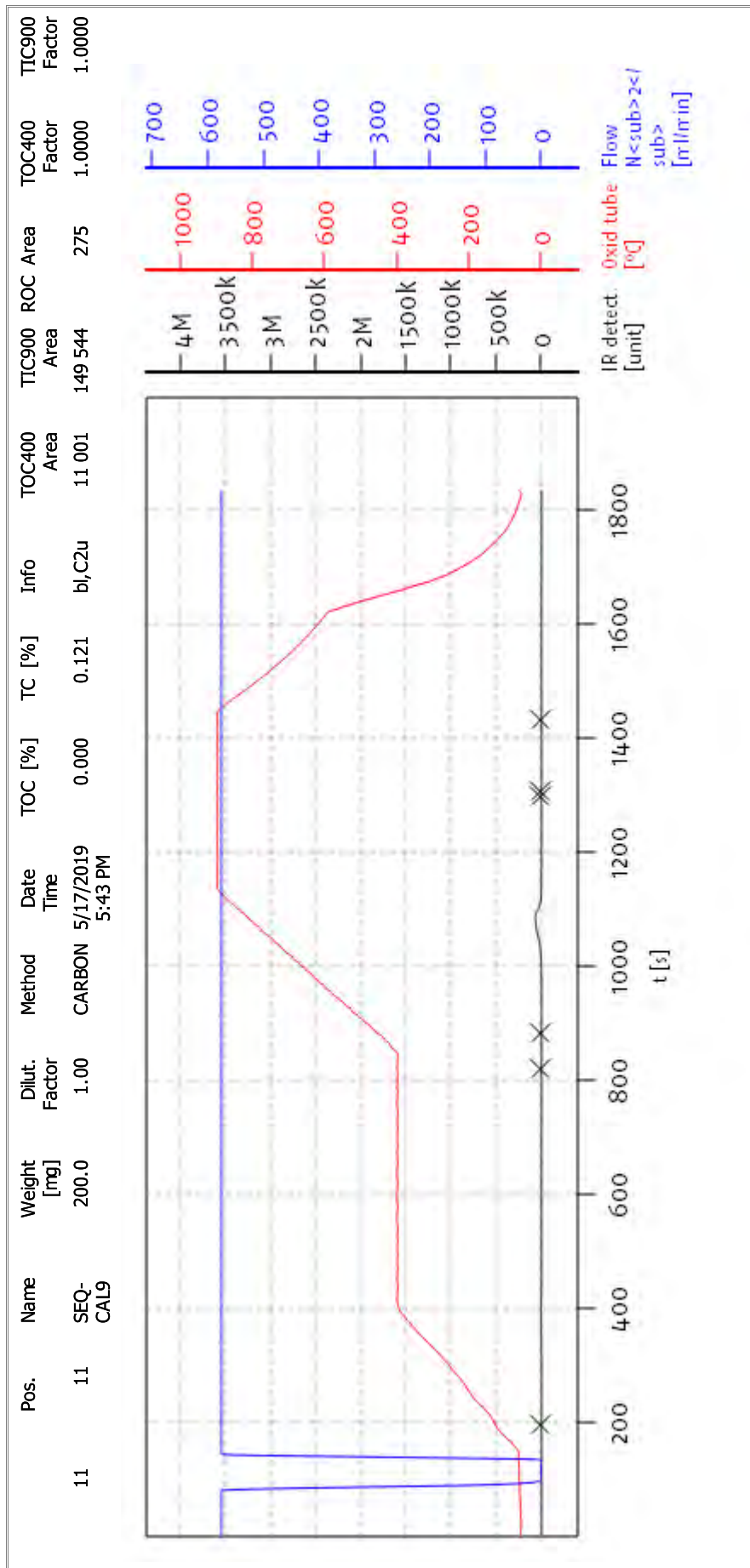
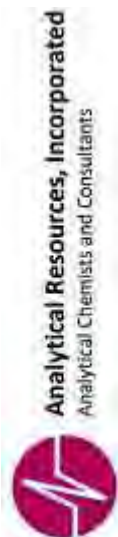
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

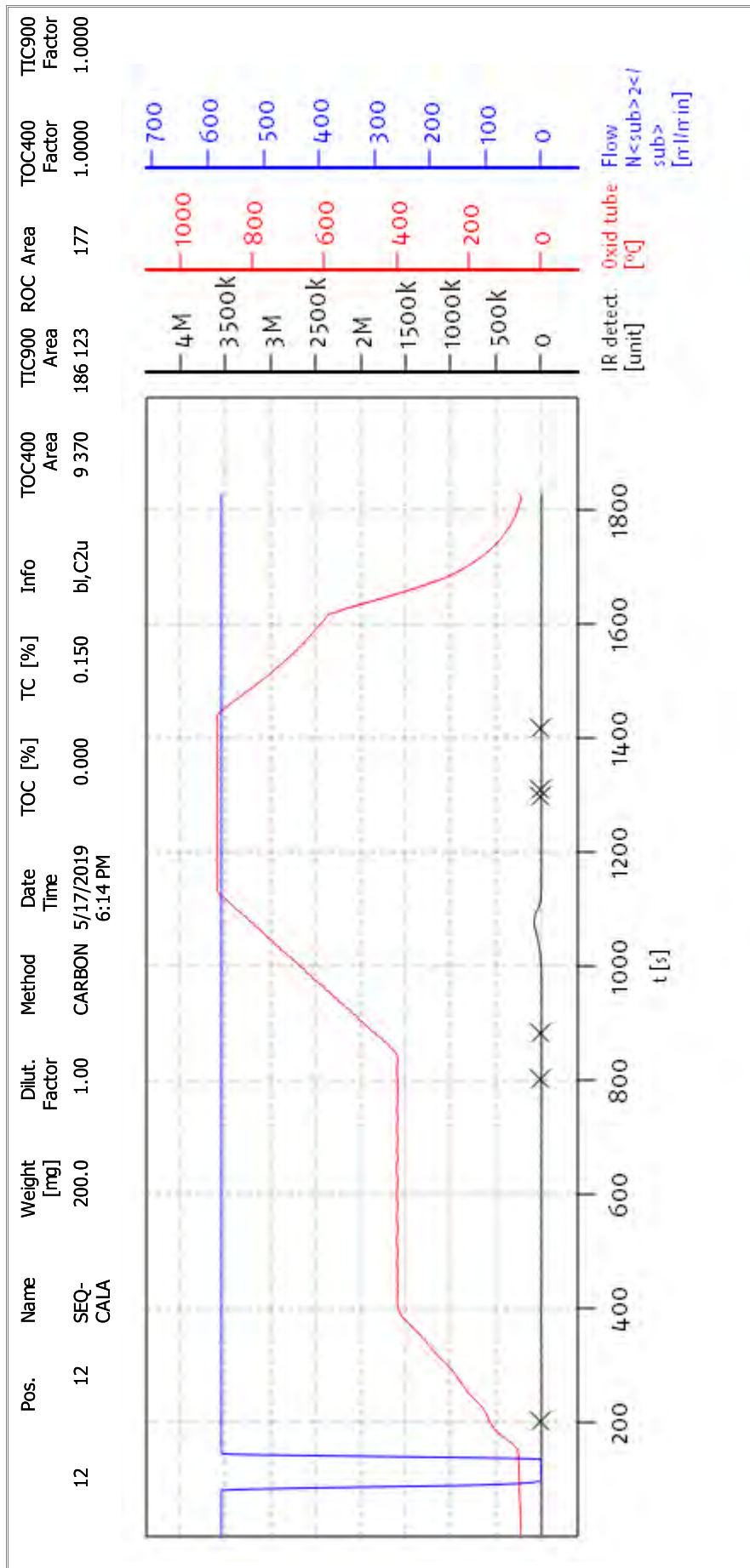
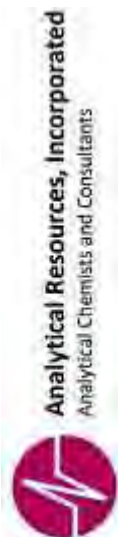
Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

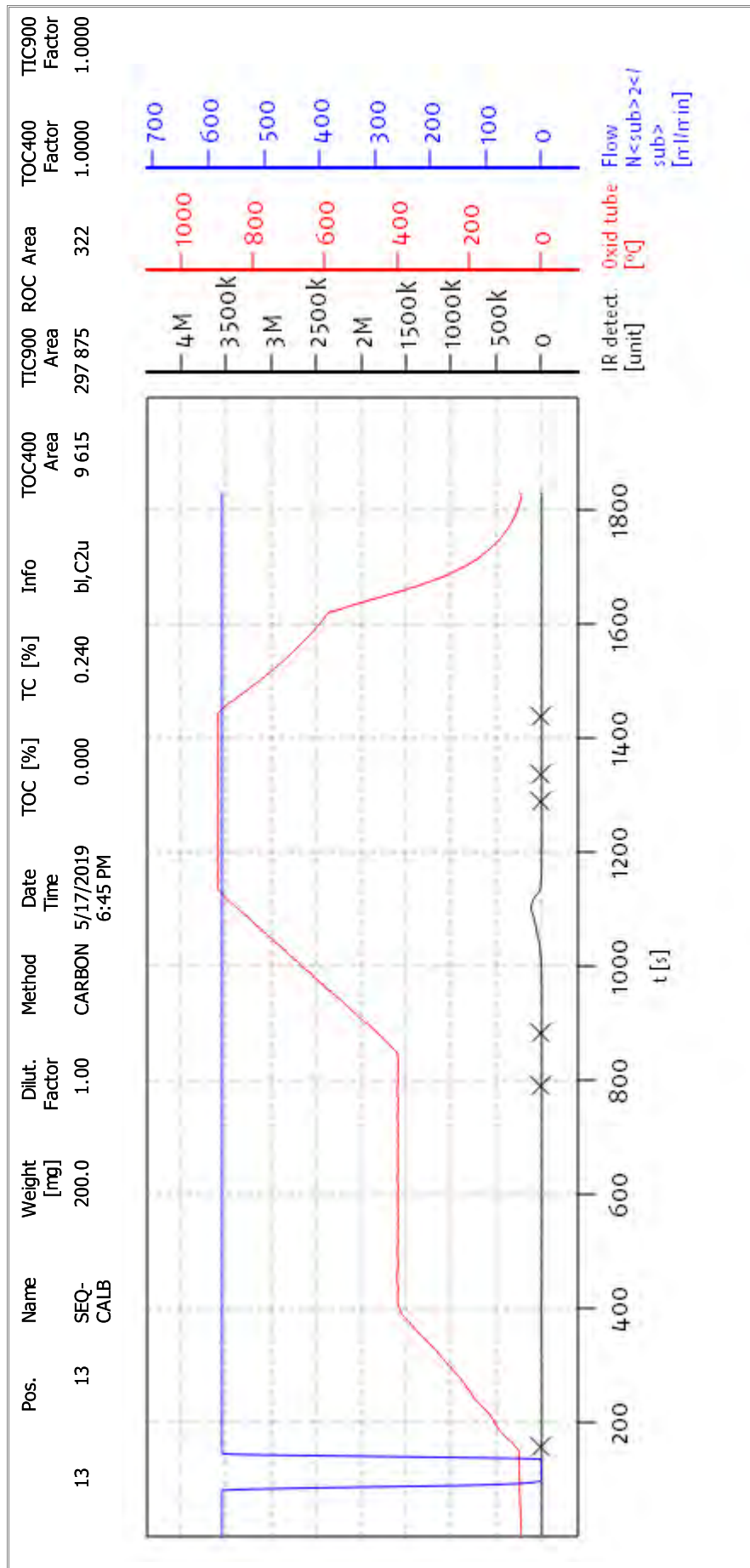
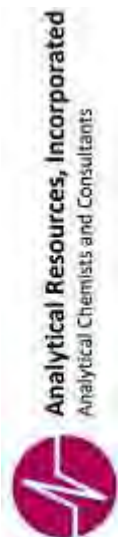
Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



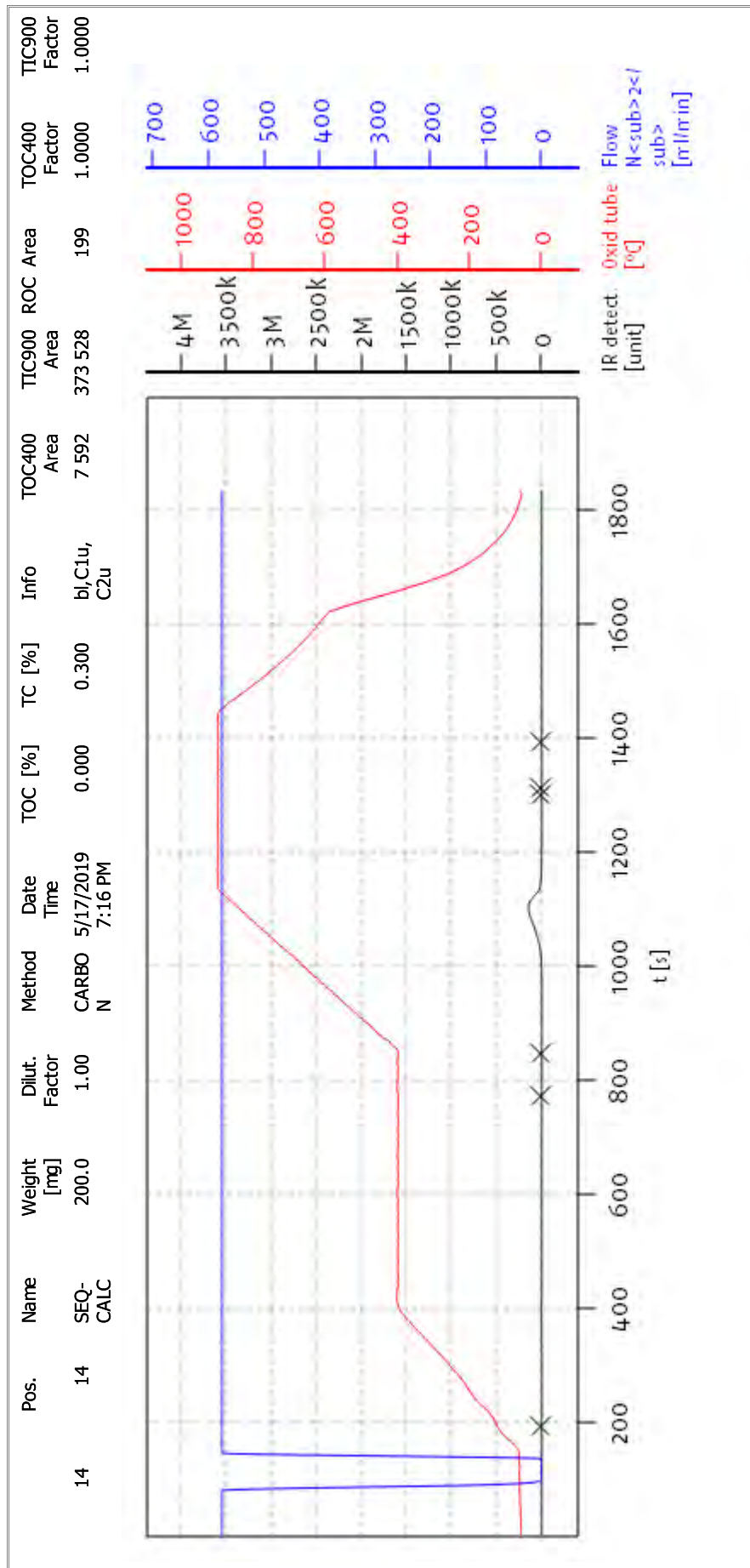
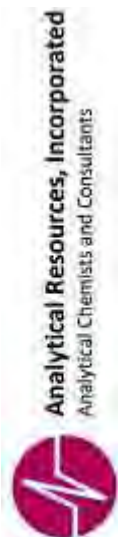
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



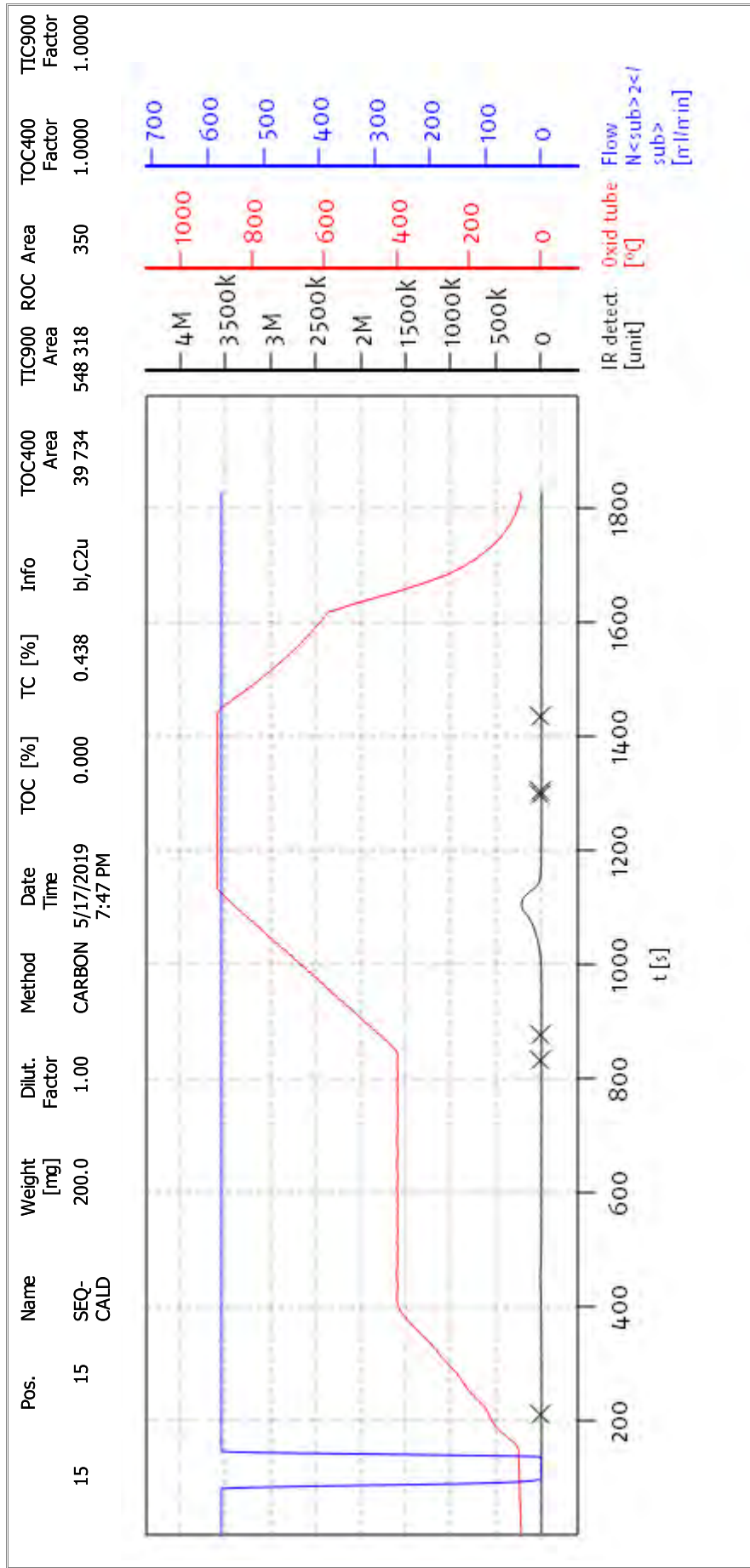
Name:

Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

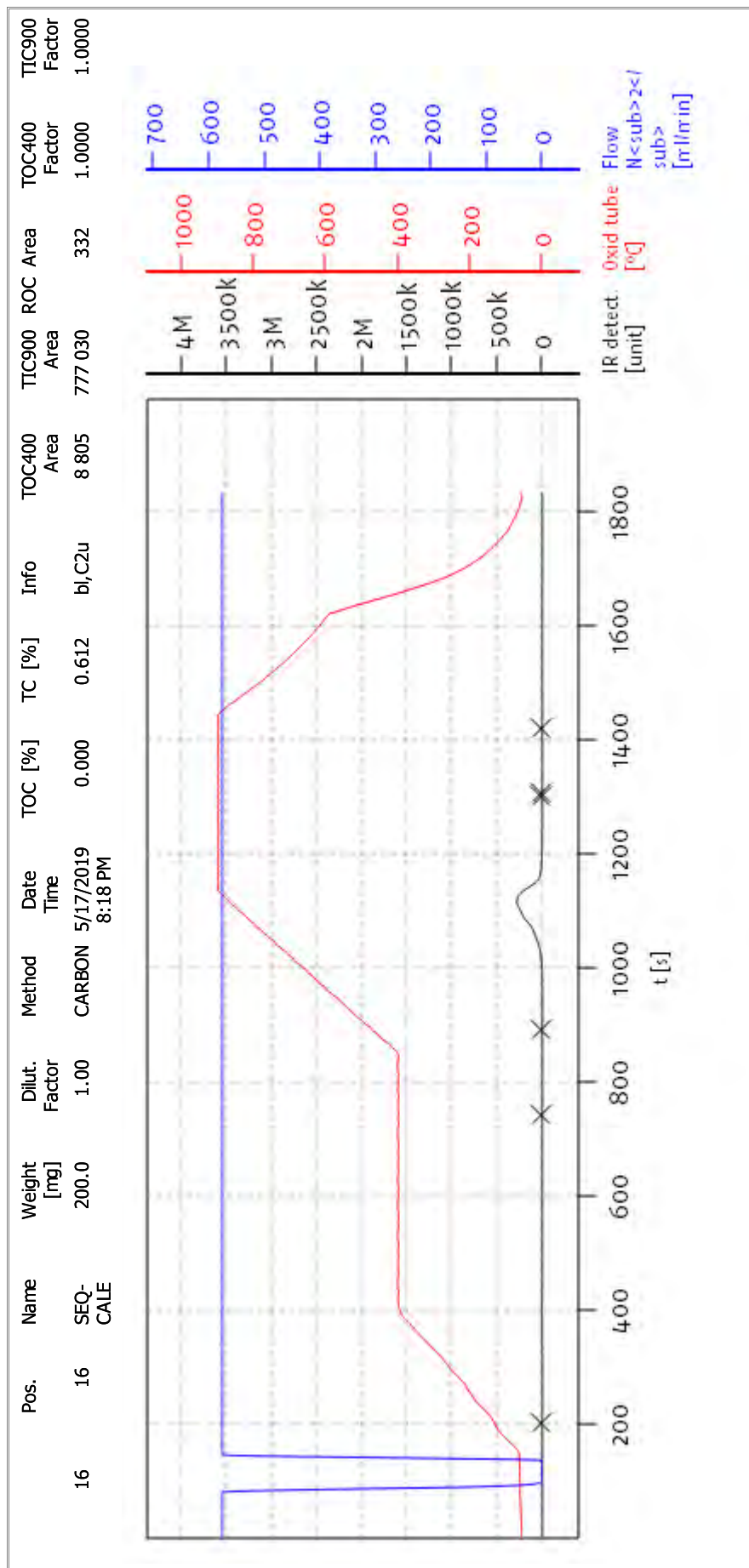
Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

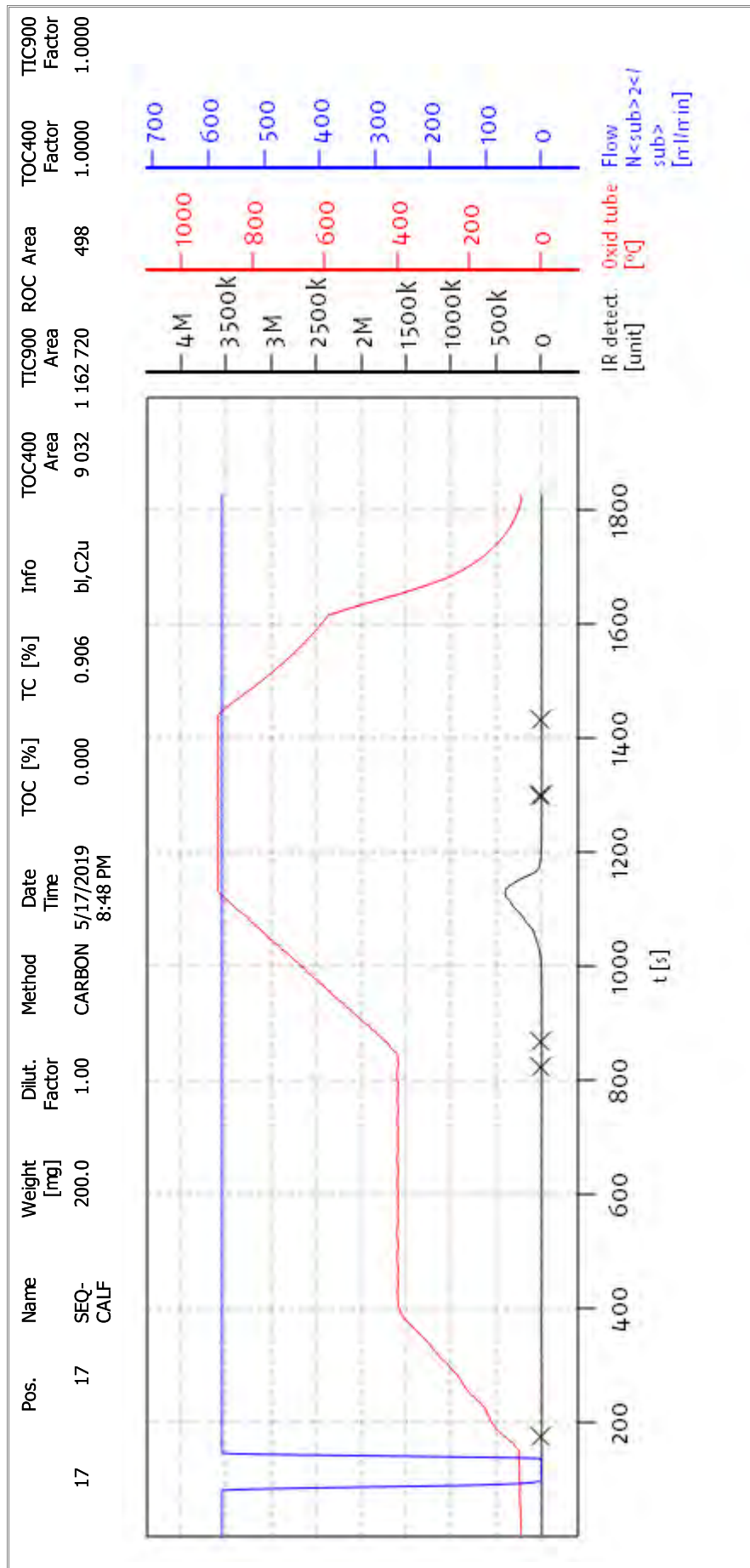
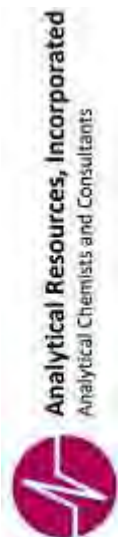
Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



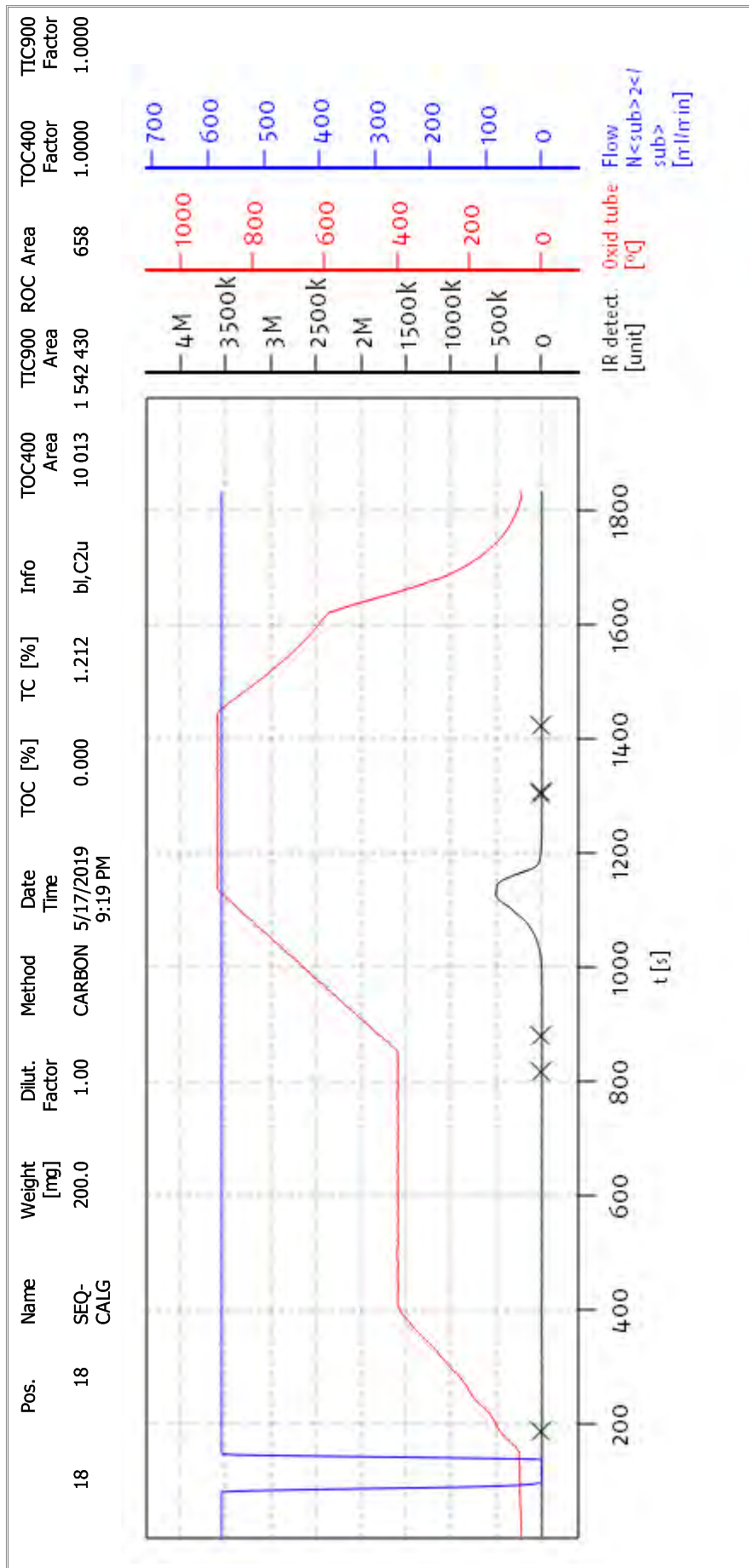
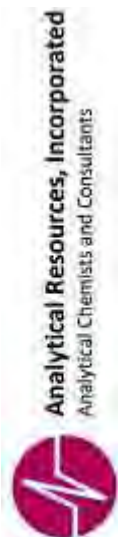
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

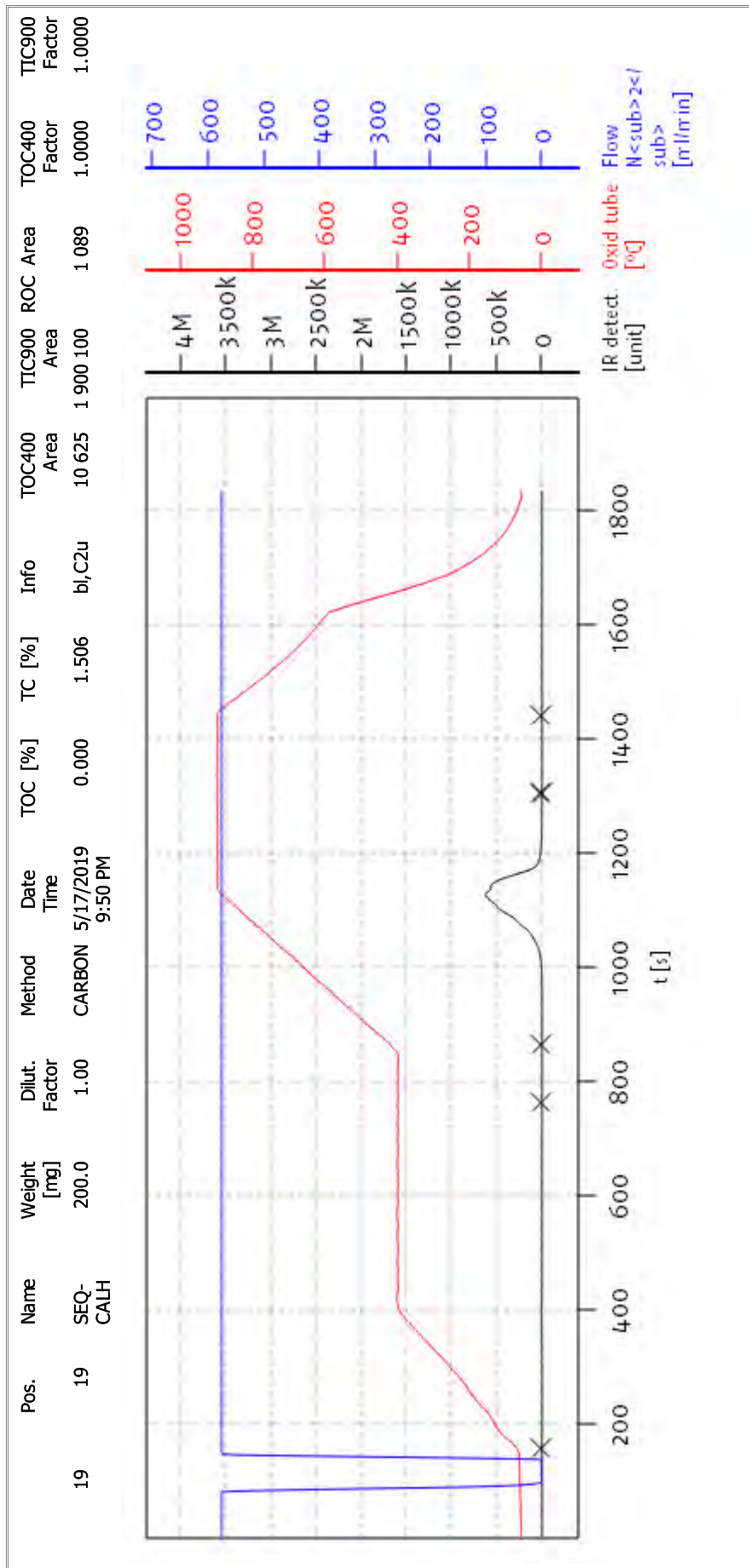
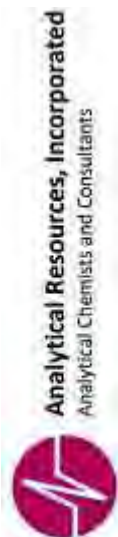
Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



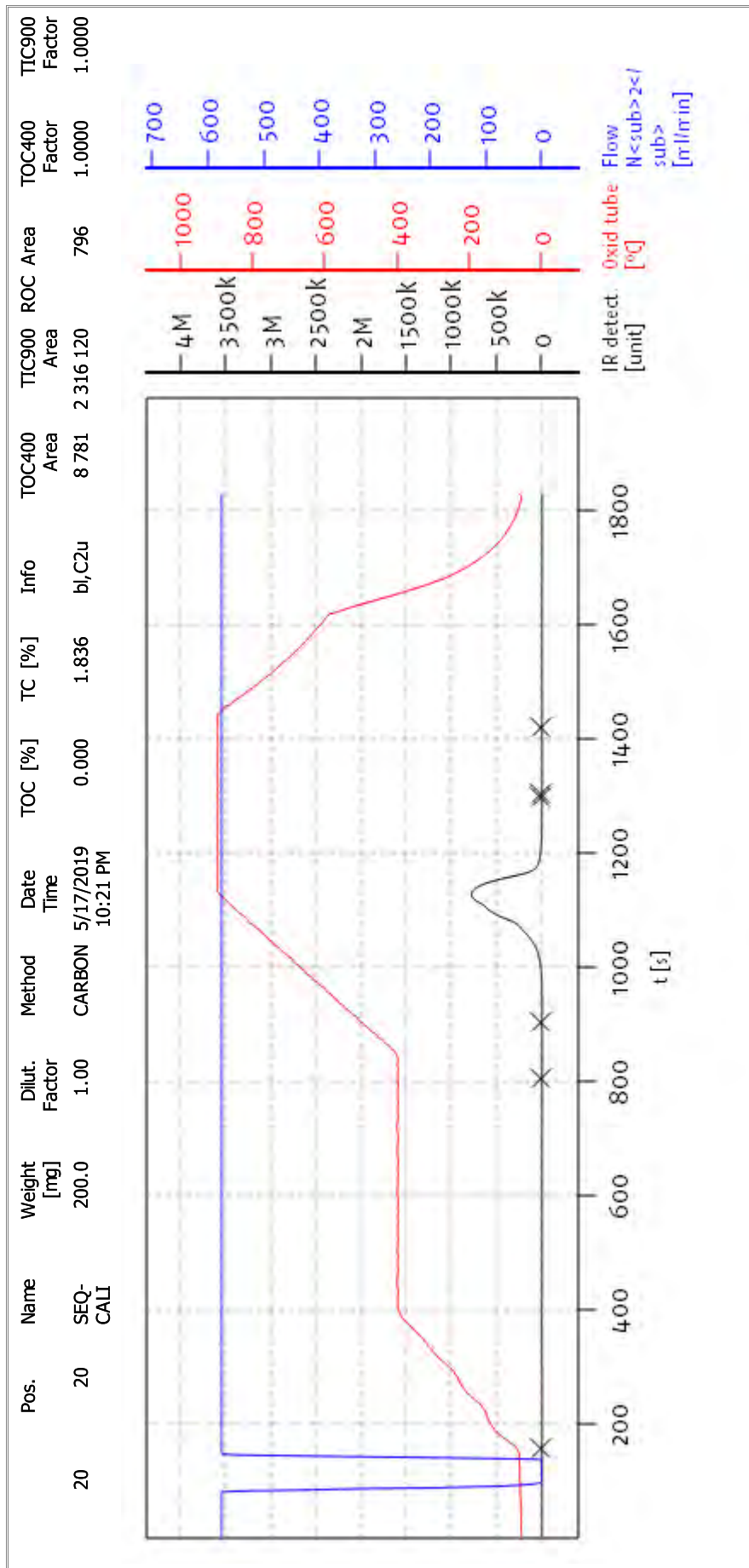
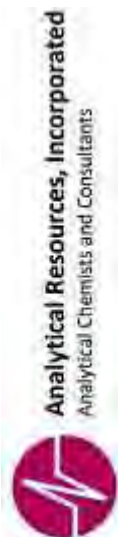
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

Access: solITOC superuser

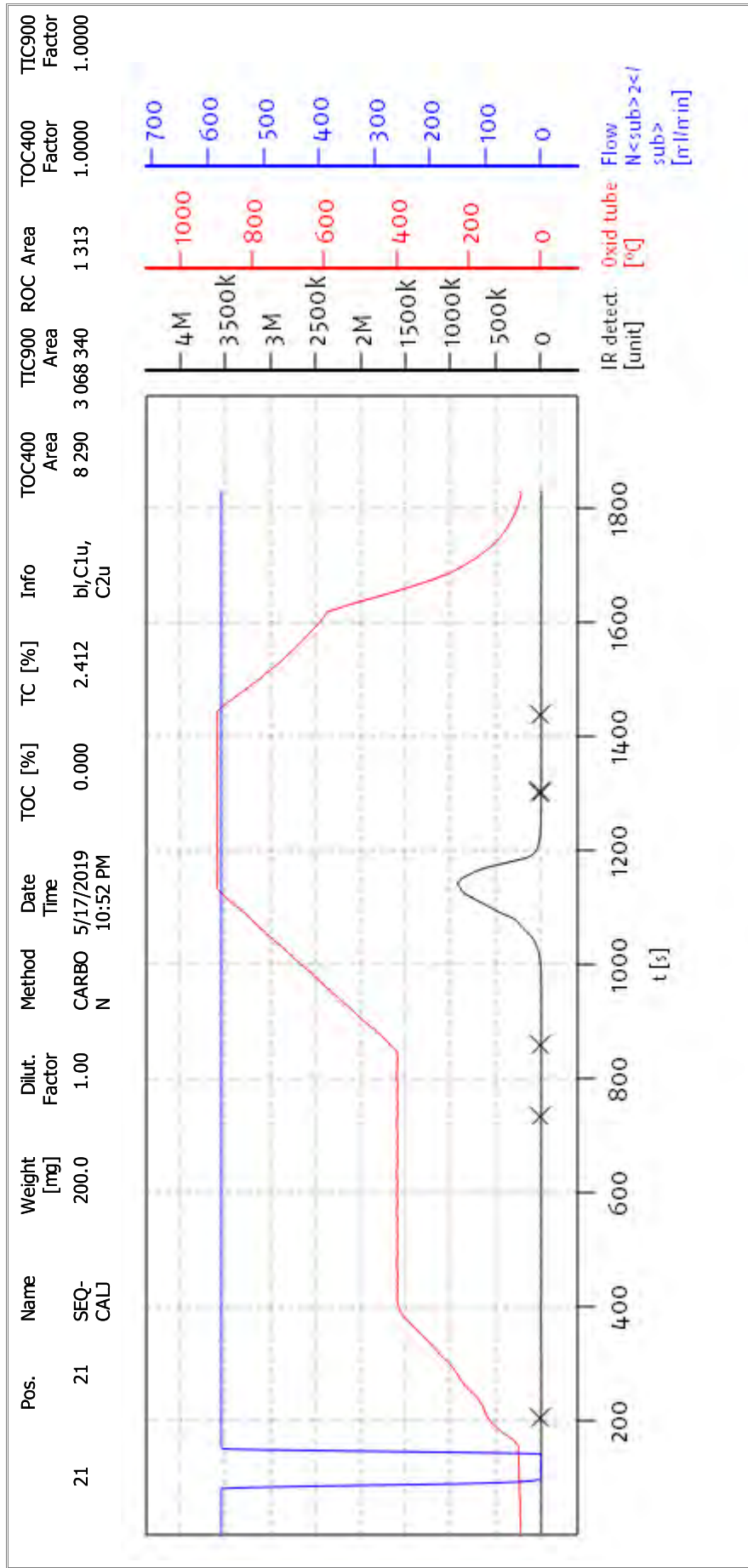
solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC



3045 of 3146

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



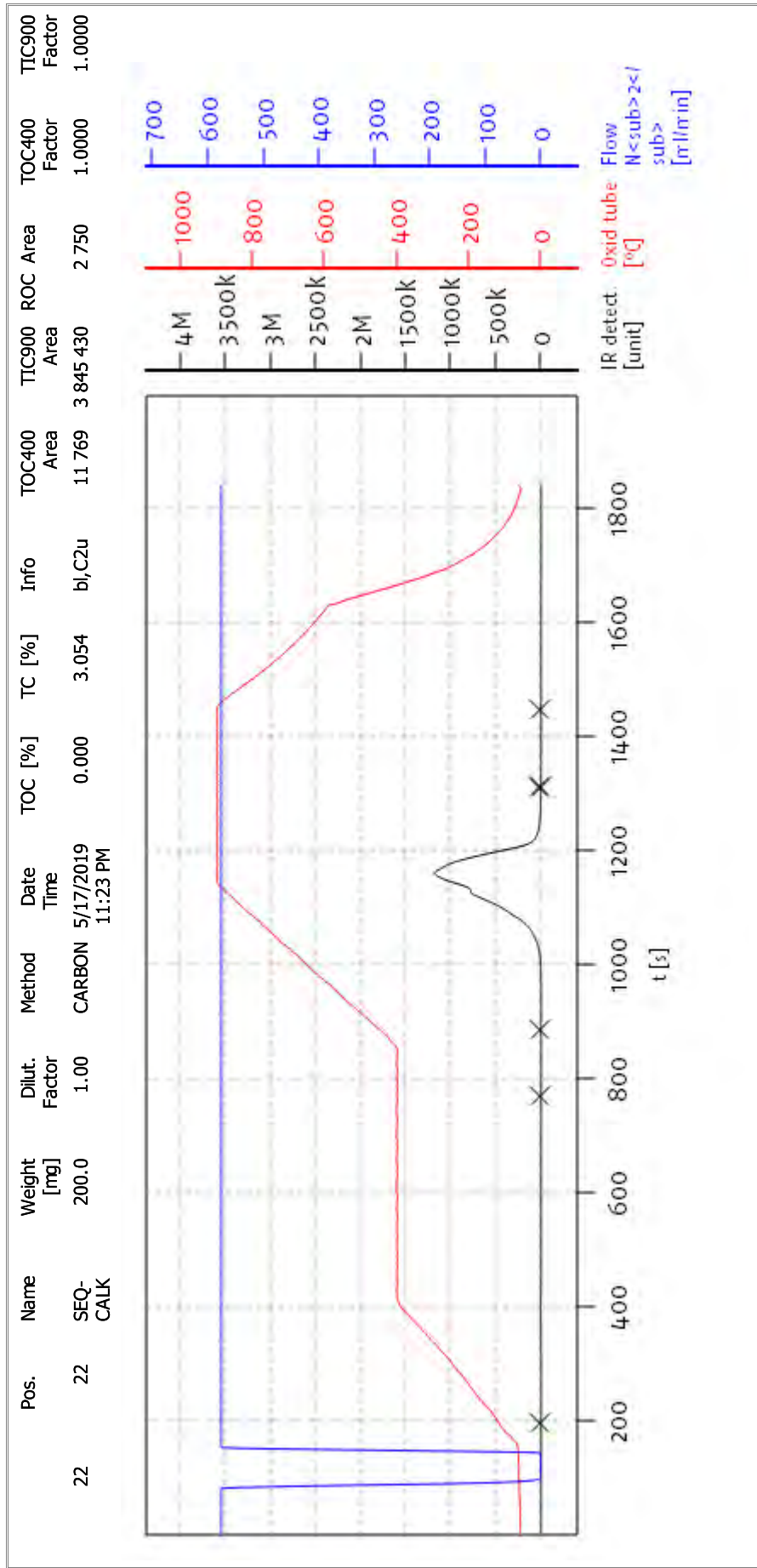
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



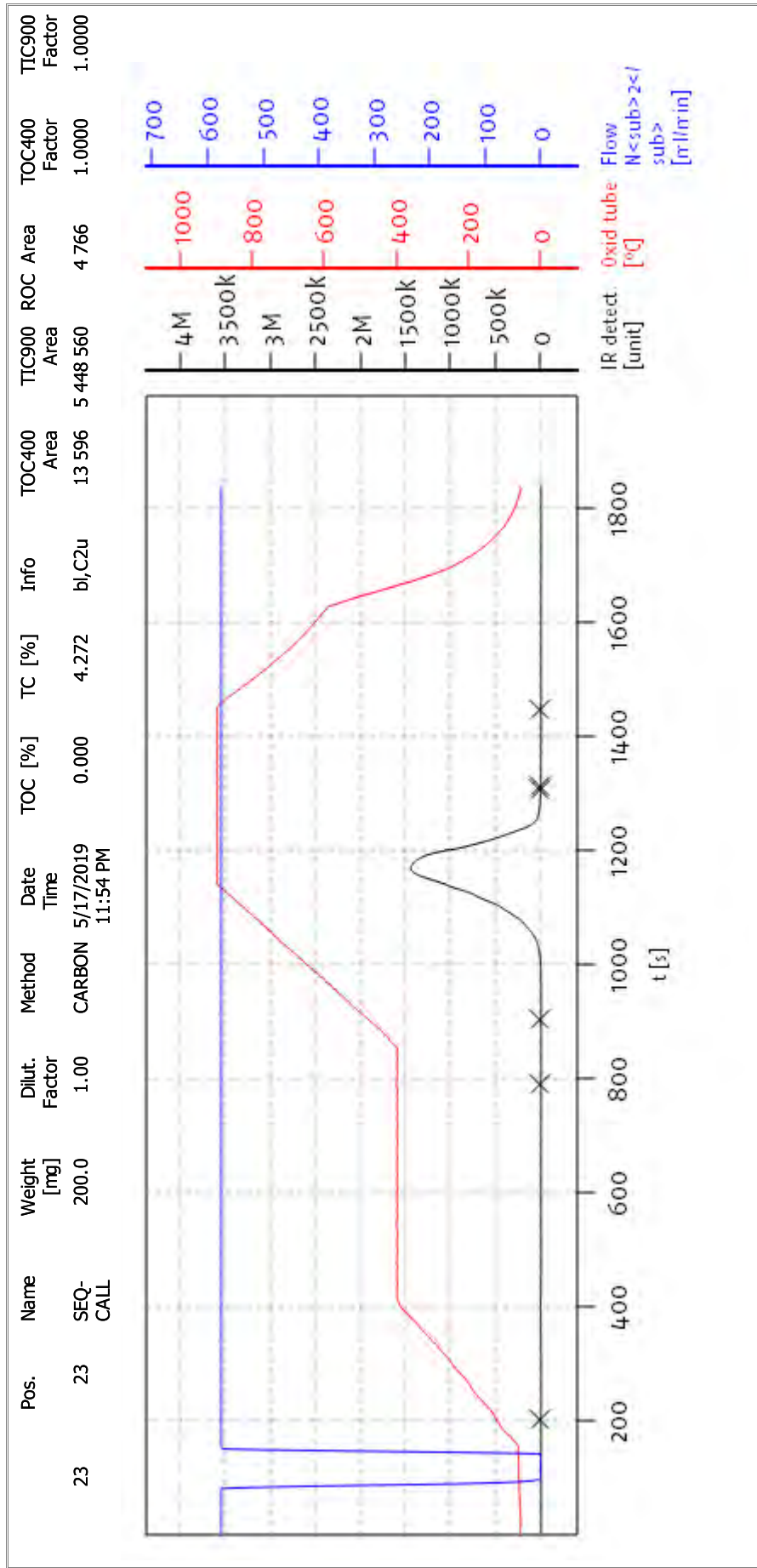
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

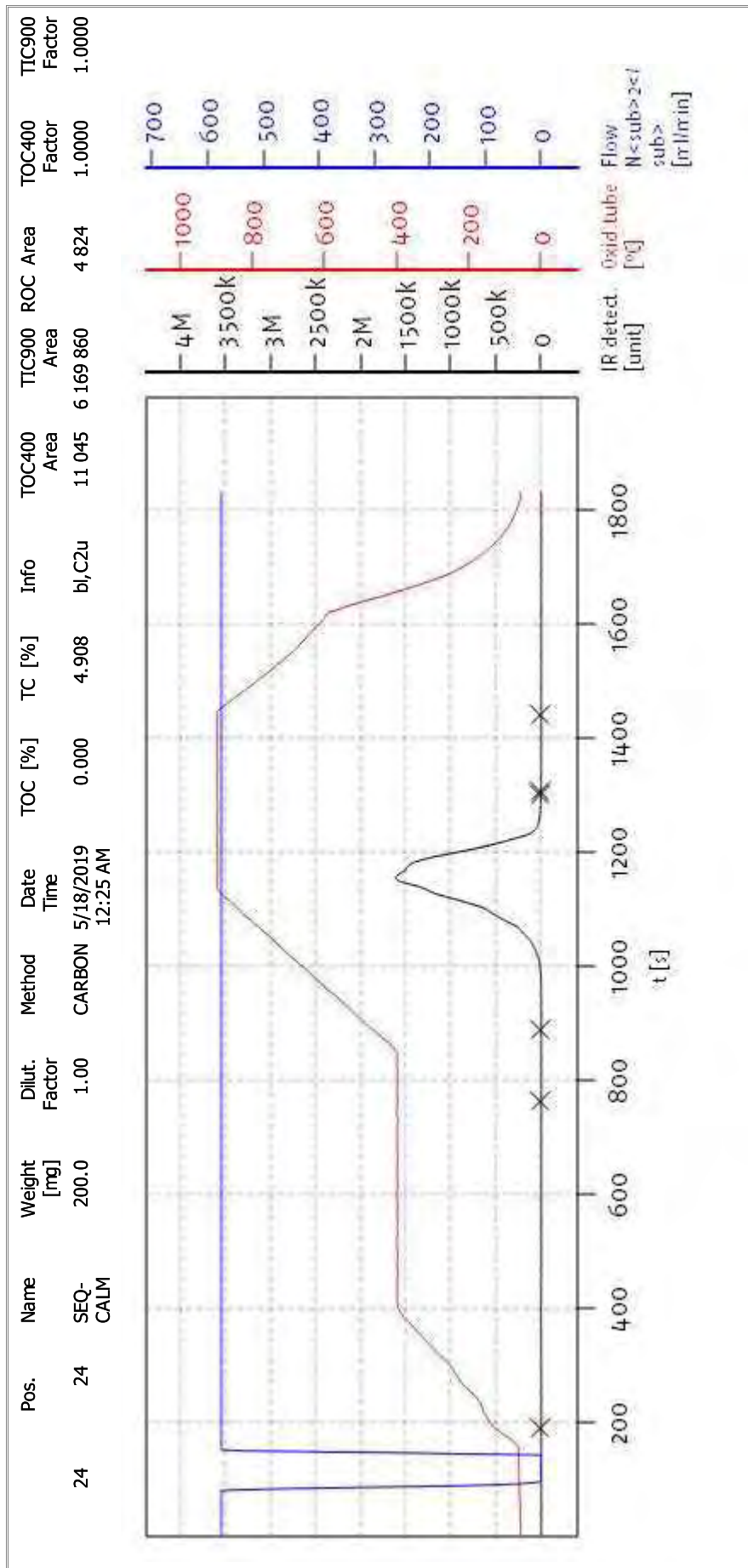
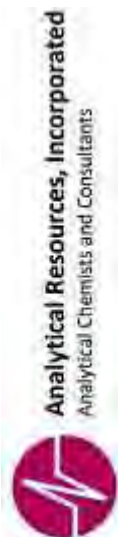
Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC



Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



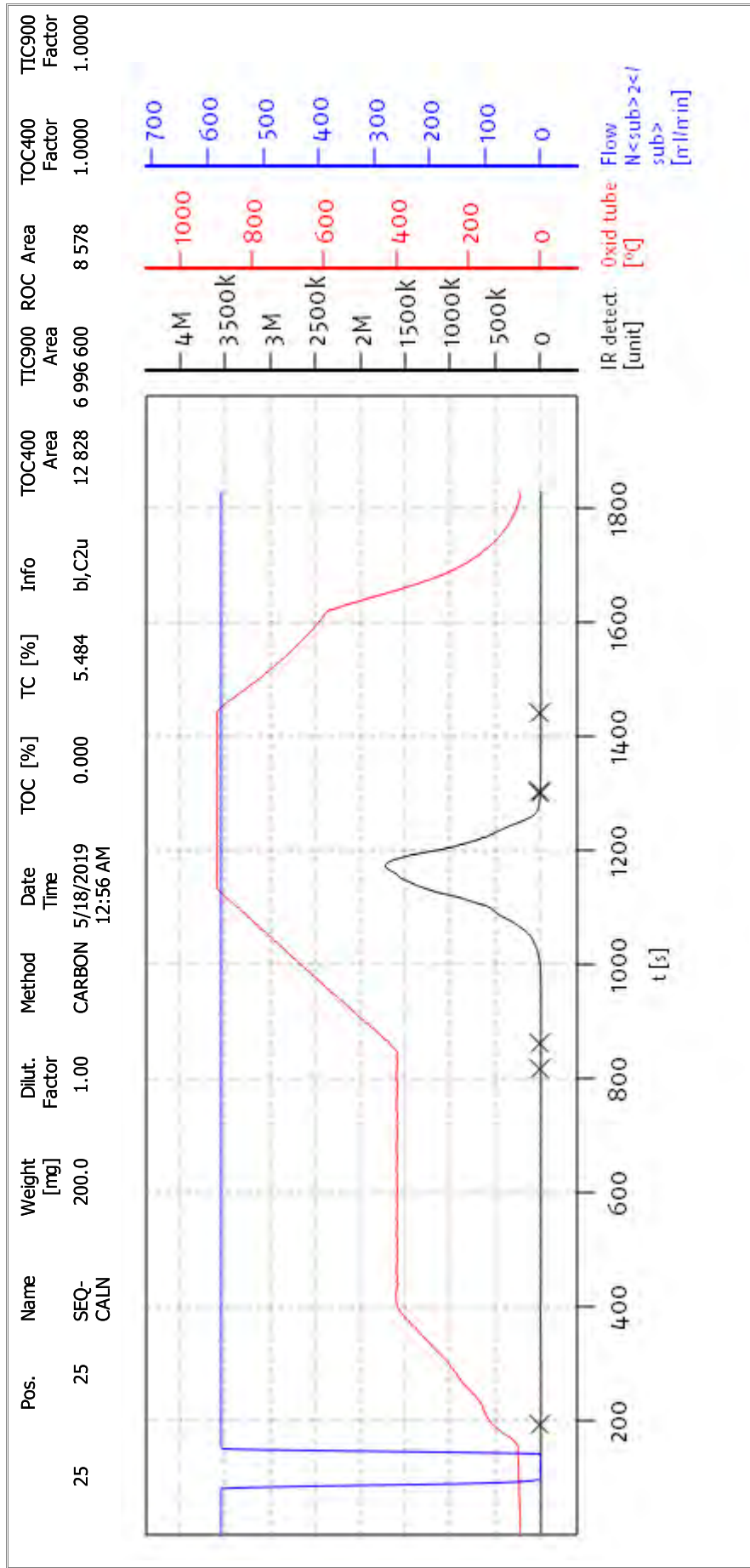
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



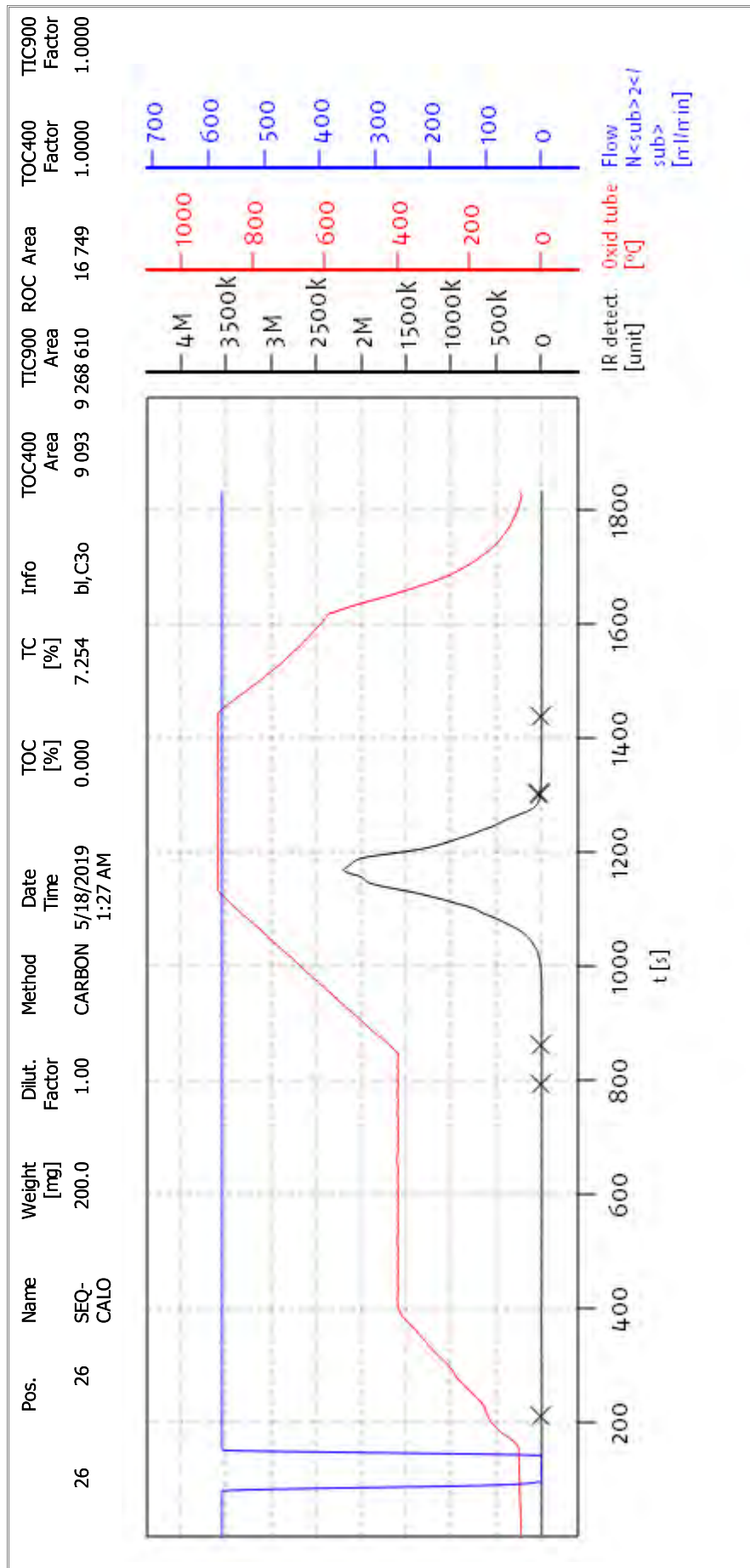
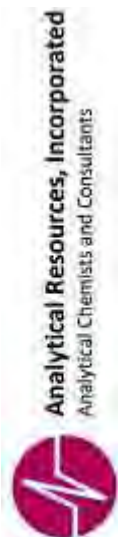
Name:

Access: solITOC superuser

solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



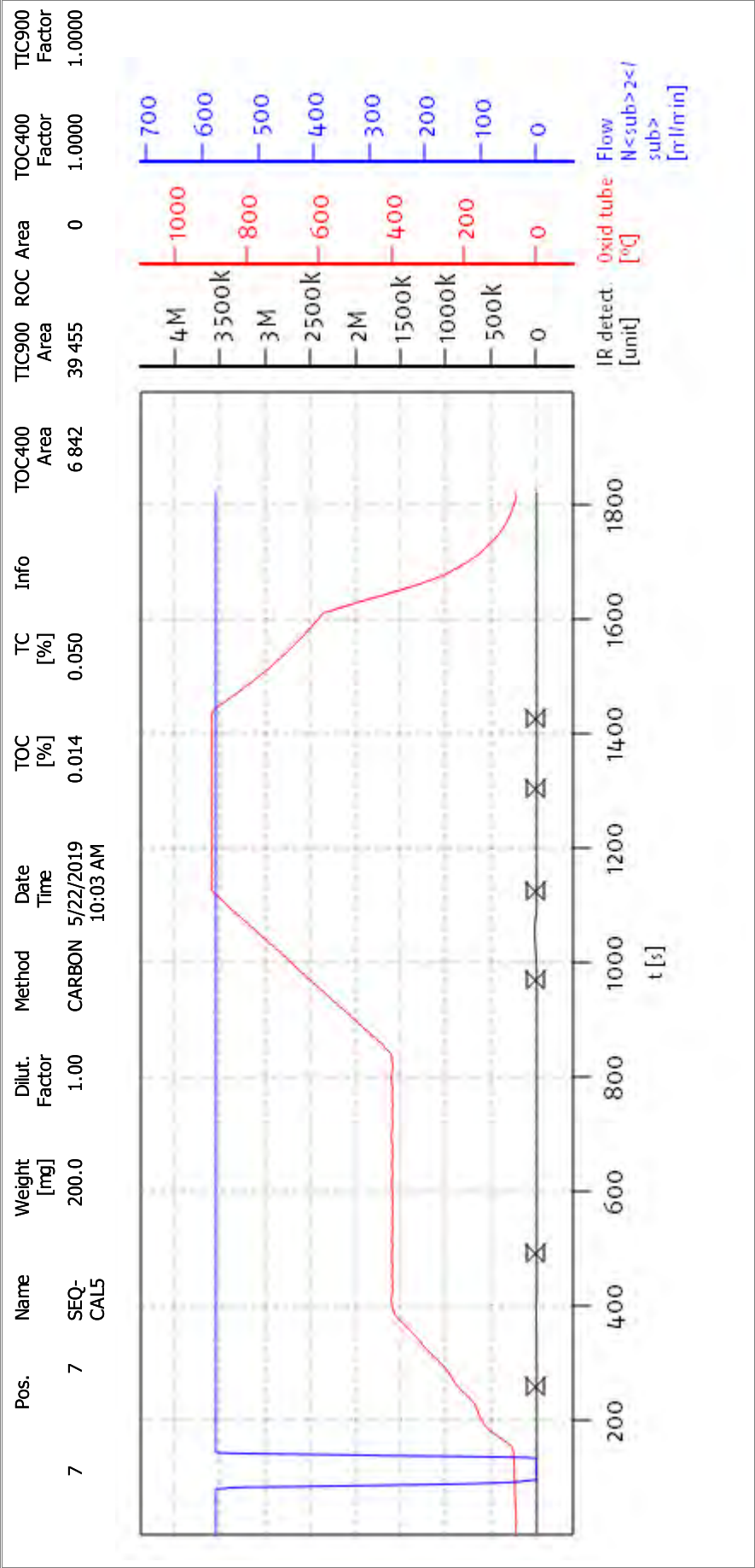
Name:

Access: solITOC superuser



solITOC V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF





ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

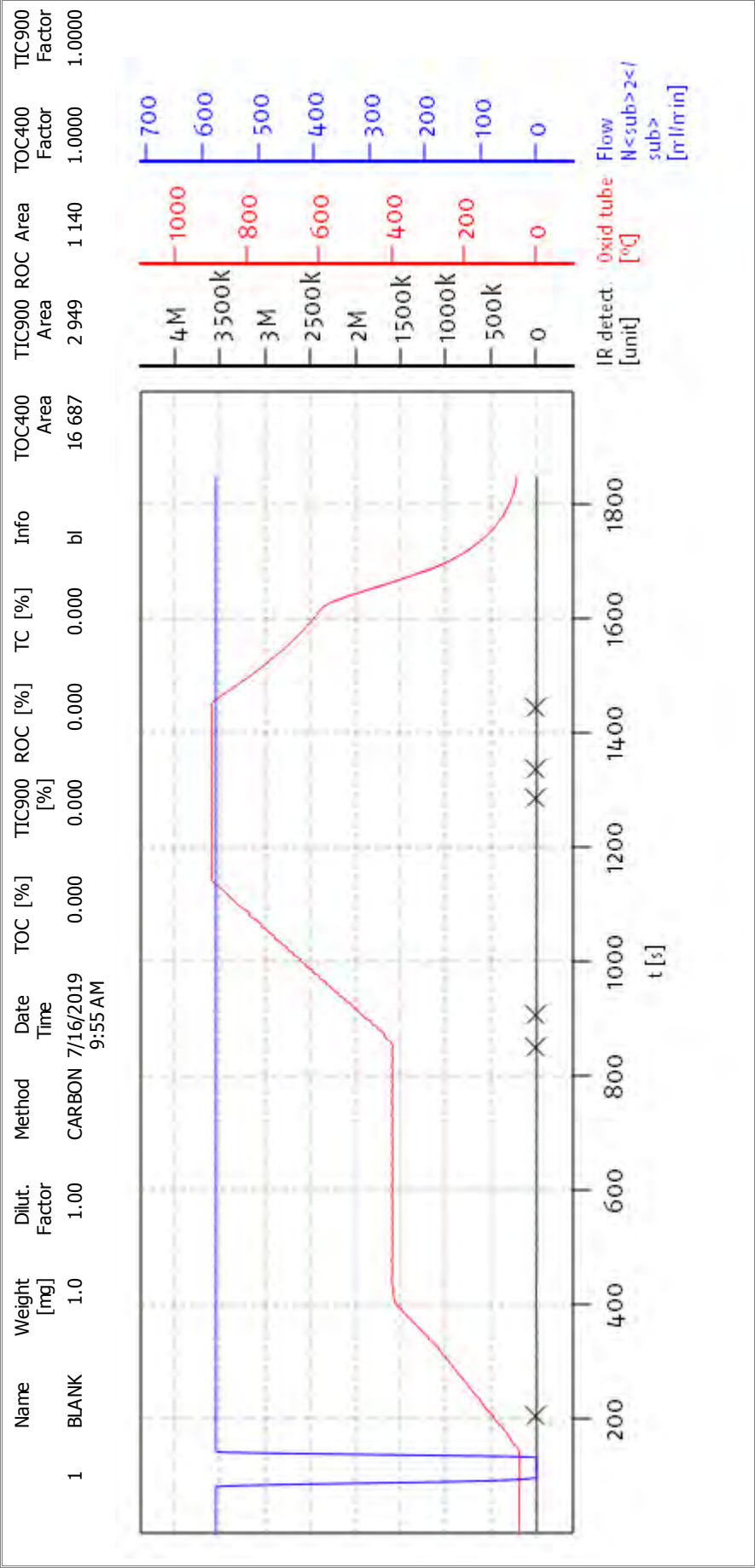
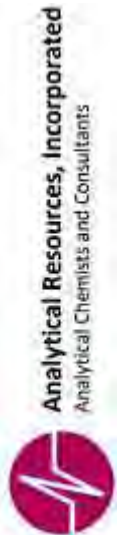
Sequence: SHG0202

Instrument: TOC Cube

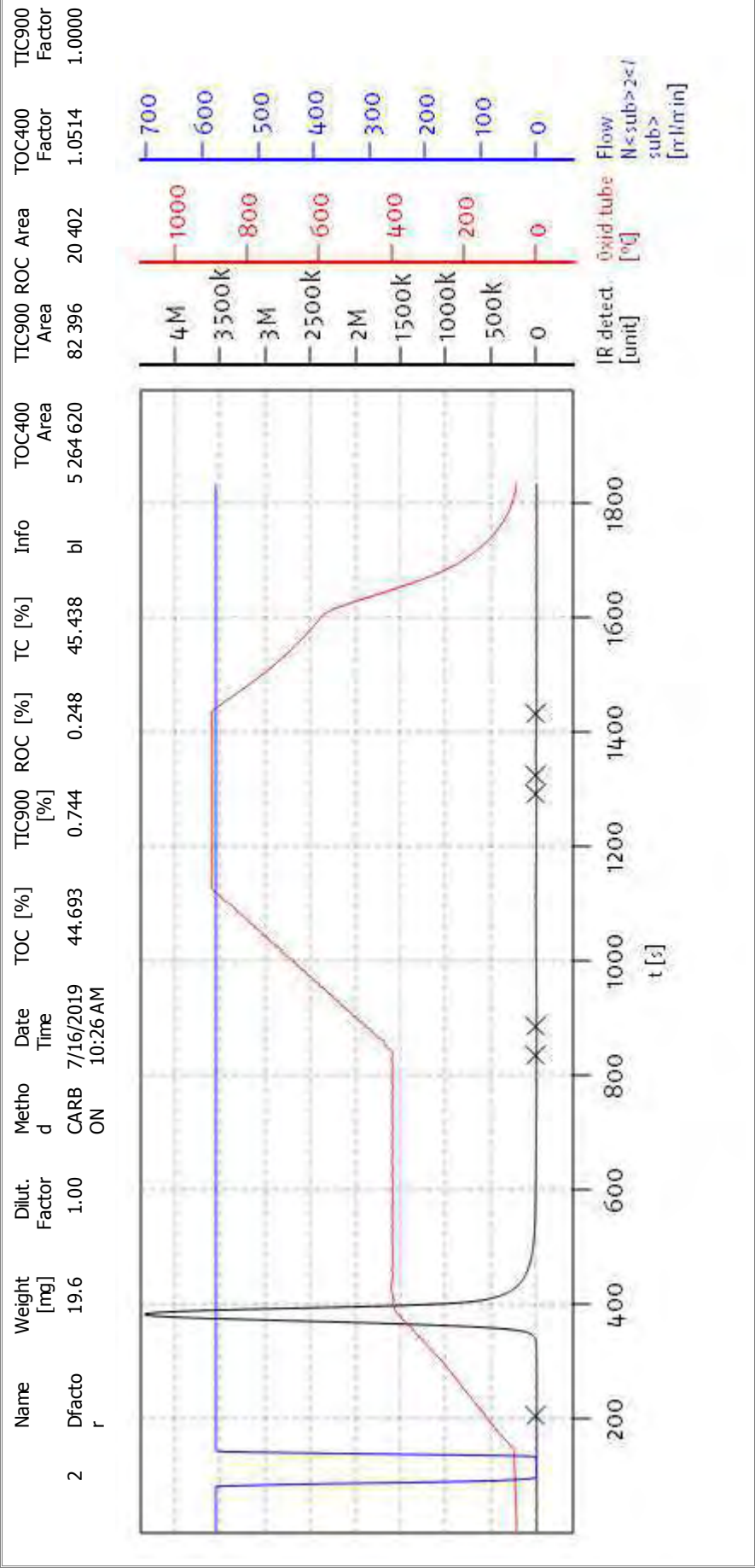
Calibration: CE00054

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Initial Cal Check	SHG0202-ICV1	peData_07172019@1008-(	NA	07/16/19 11:28
Initial Cal Blank	SHG0202-ICB1	peData_07172019@1008-(	NA	07/16/19 11:59
MRL Check	BHG0359-MRL1	peData_07172019@1008-(	Solid	07/16/19 12:30
Blank	BHG0359-BLK1	peData_07172019@1008-(	Solid	07/16/19 13:01
LCS	BHG0359-BS1	peData_07172019@1008-(	Solid	07/16/19 13:32
SO-01-190711	19G0163-02	peData_07172019@1008-(	Solid	07/16/19 15:36
SO-02-190711	19G0163-03	peData_07172019@1008-(	Solid	07/16/19 17:09
Calibration Check	SHG0202-CCV1	peData_07172019@1008-(	NA	07/16/19 17:40
Calibration Blank	SHG0202-CCB1	peData_07172019@1008-(	NA	07/16/19 18:11
SO-03-190711	19G0163-04	peData_07172019@1008-(	Solid	07/16/19 18:43
SO-04-190711	19G0163-05	peData_07172019@1008-(	Solid	07/16/19 19:14
SO-05-190711	19G0163-06	peData_07172019@1008-(	Solid	07/16/19 19:45
SO-06-190711	19G0163-07	peData_07172019@1008-(	Solid	07/16/19 20:16
SO-07-190711	19G0163-08	peData_07172019@1008-(	Solid	07/16/19 20:47
SO-08-190711	19G0163-09	peData_07172019@1008-(	Solid	07/16/19 21:18
SO-09-190711	19G0163-10	peData_07172019@1008-(	Solid	07/16/19 21:49
SO-10-190711	19G0163-11	peData_07172019@1008-(	Solid	07/16/19 22:20
SO-10-190711D	19G0163-12	peData_07172019@1008-(	Solid	07/16/19 22:52
Calibration Check	SHG0202-CCV2	peData_07172019@1008-(	NA	07/16/19 23:54
Calibration Blank	SHG0202-CCB2	peData_07172019@1008-(	NA	07/17/19 00:25
SO-12-190711	19G0163-14	peData_07172019@1008-(	Solid	07/17/19 00:56
SO-13-190711	19G0163-15	peData_07172019@1008-(	Solid	07/17/19 01:27
Calibration Check	SHG0202-CCV3	peData_07172019@1008-(	NA	07/17/19 01:58
Calibration Blank	SHG0202-CCB3	peData_07172019@1008-(	NA	07/17/19 02:29

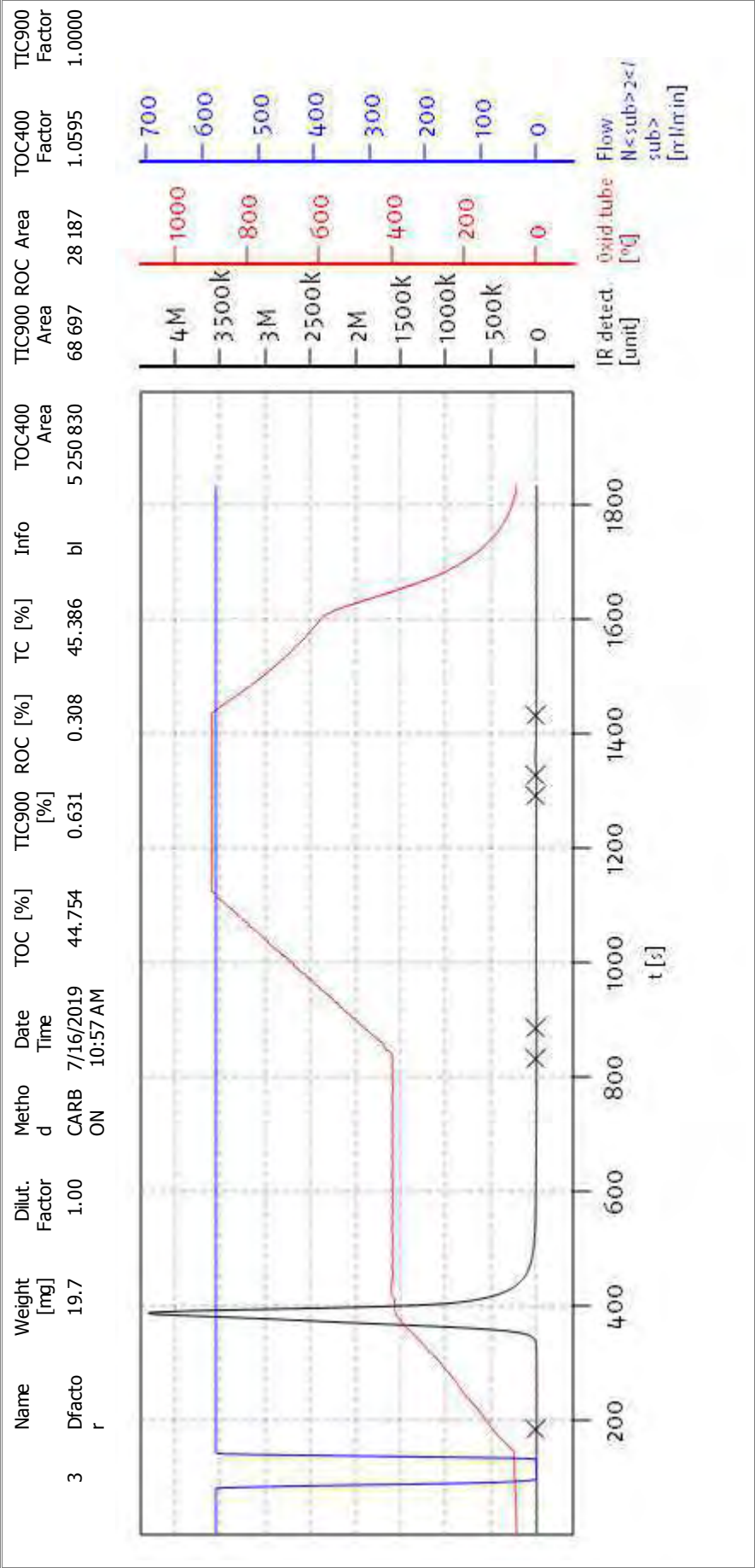
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



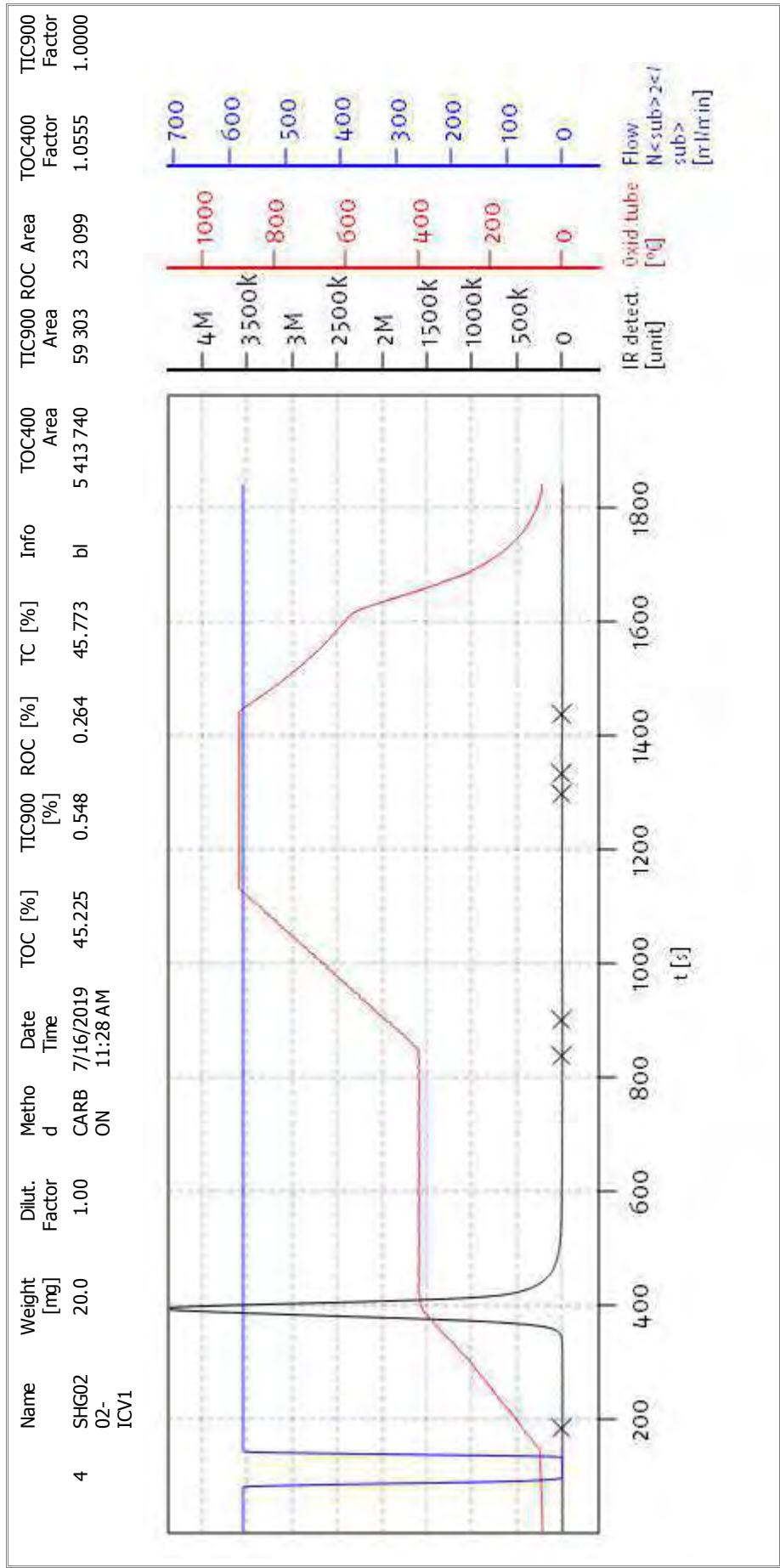
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



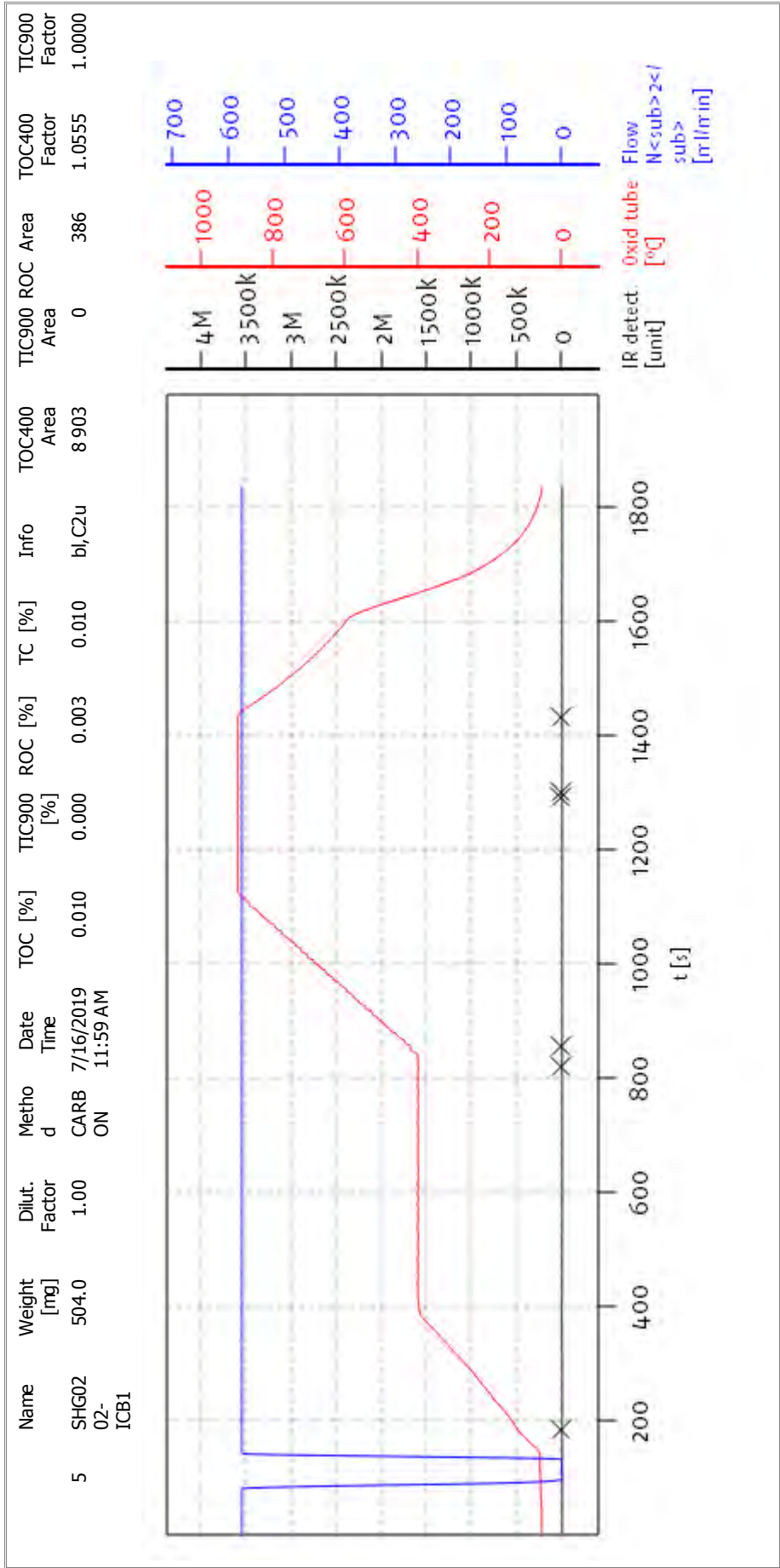
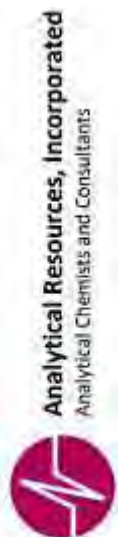
Date: Wed Jul 17 10:05:31 2019

Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Name:

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Date: Wed Jul 17 10:05:31 2019

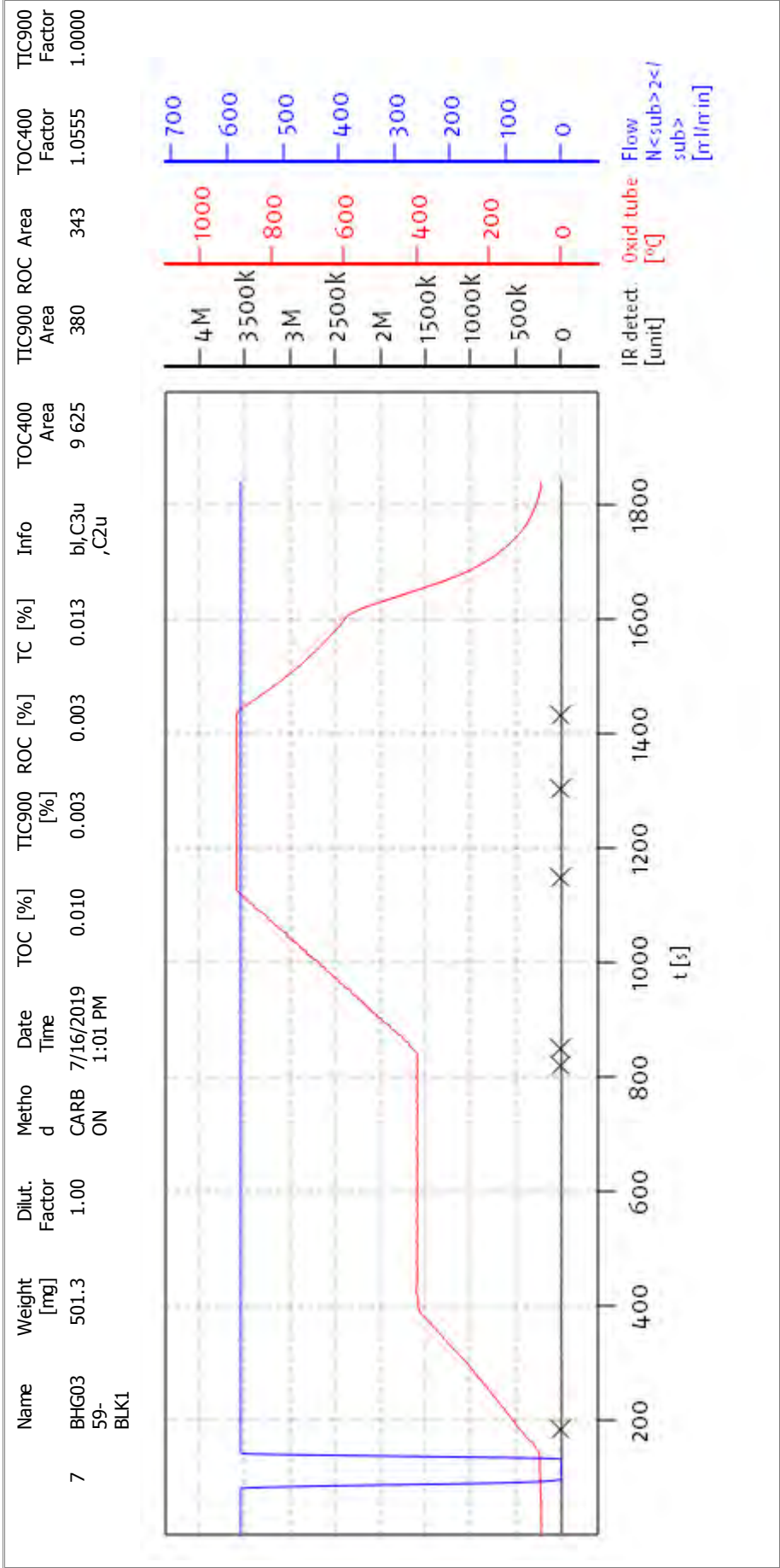
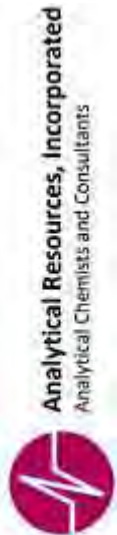
Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Name:



The graph displays two signals over a time interval from 0 to 1800 seconds. The x-axis is labeled 't [s]' with major ticks every 200 seconds. The left y-axis has two scales: a black scale for 'IR detect. [unit]' ranging from 0 to 4M (4,000,000) and a red scale for 'Oxid tube [%]' ranging from 0 to 1000. The right y-axis has a blue scale for 'Flow N₂ ₂ [ml/min]' ranging from 0 to 700. The 'IR detect.' signal (black line) shows a step-like increase from 0 to approximately 3.5M at 1200s, followed by a gradual rise to about 4M at 1800s. The 'Oxid tube' signal (red line) shows a step-like increase from 0 to approximately 1000% at 1200s, followed by a gradual rise to about 1200% at 1800s. The 'Flow N₂ ₂' signal (blue line) is a constant step function at approximately 650 ml/min.

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



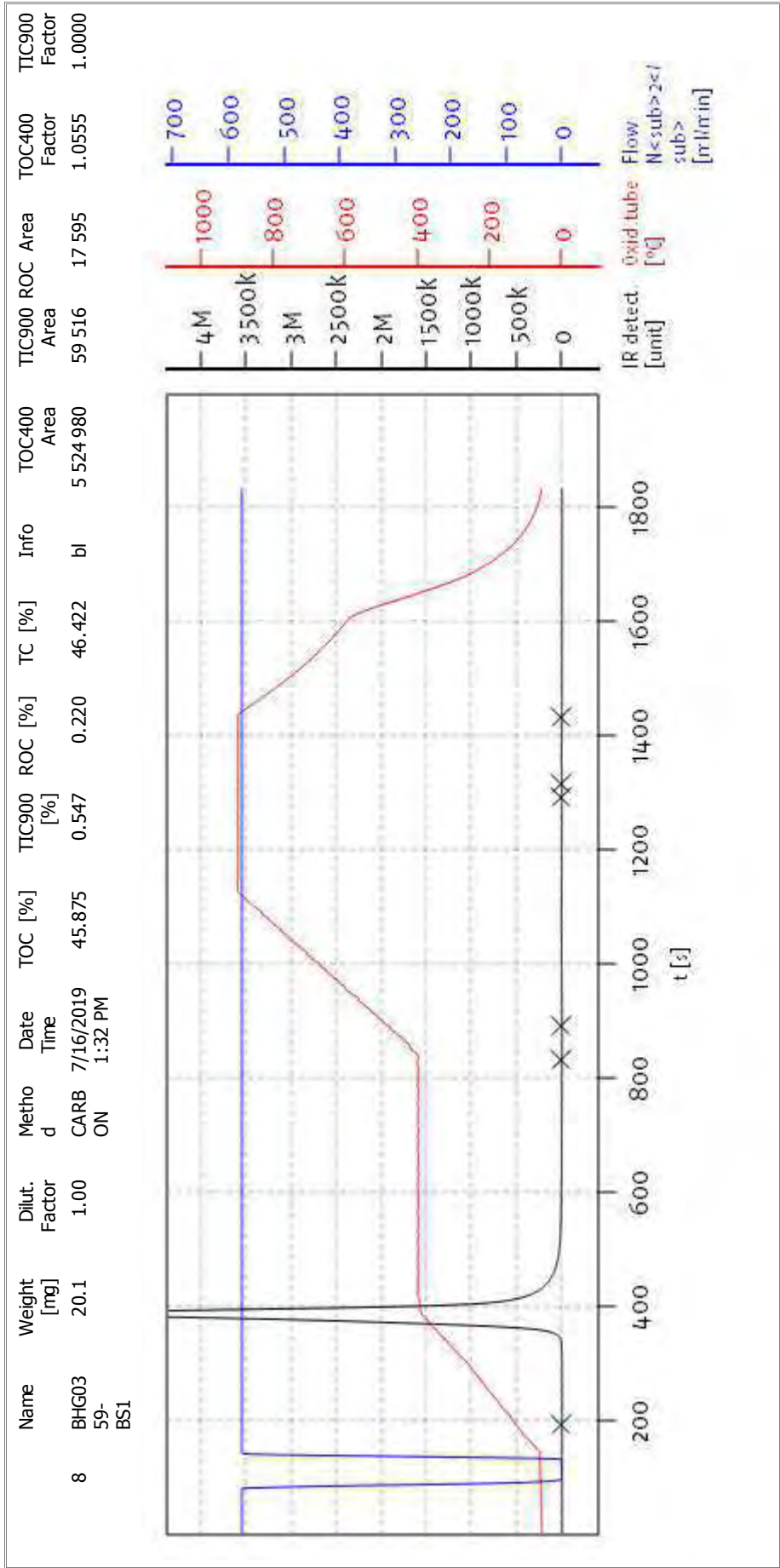
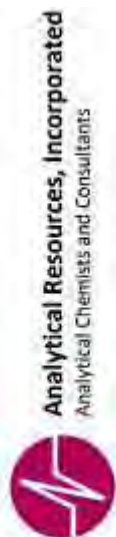
Date: Wed Jul 17 10:05:31 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

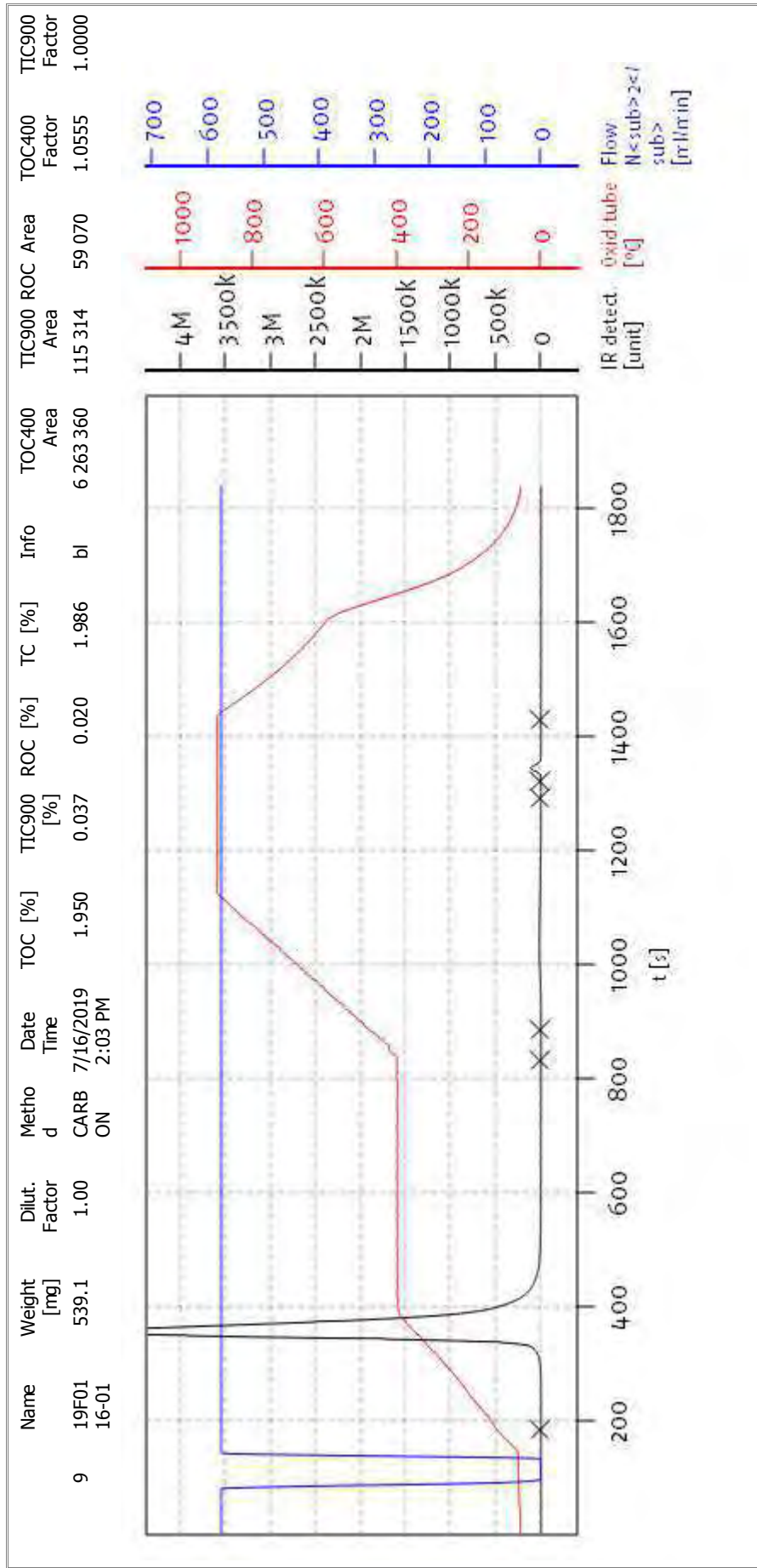
Access: soliTOC superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

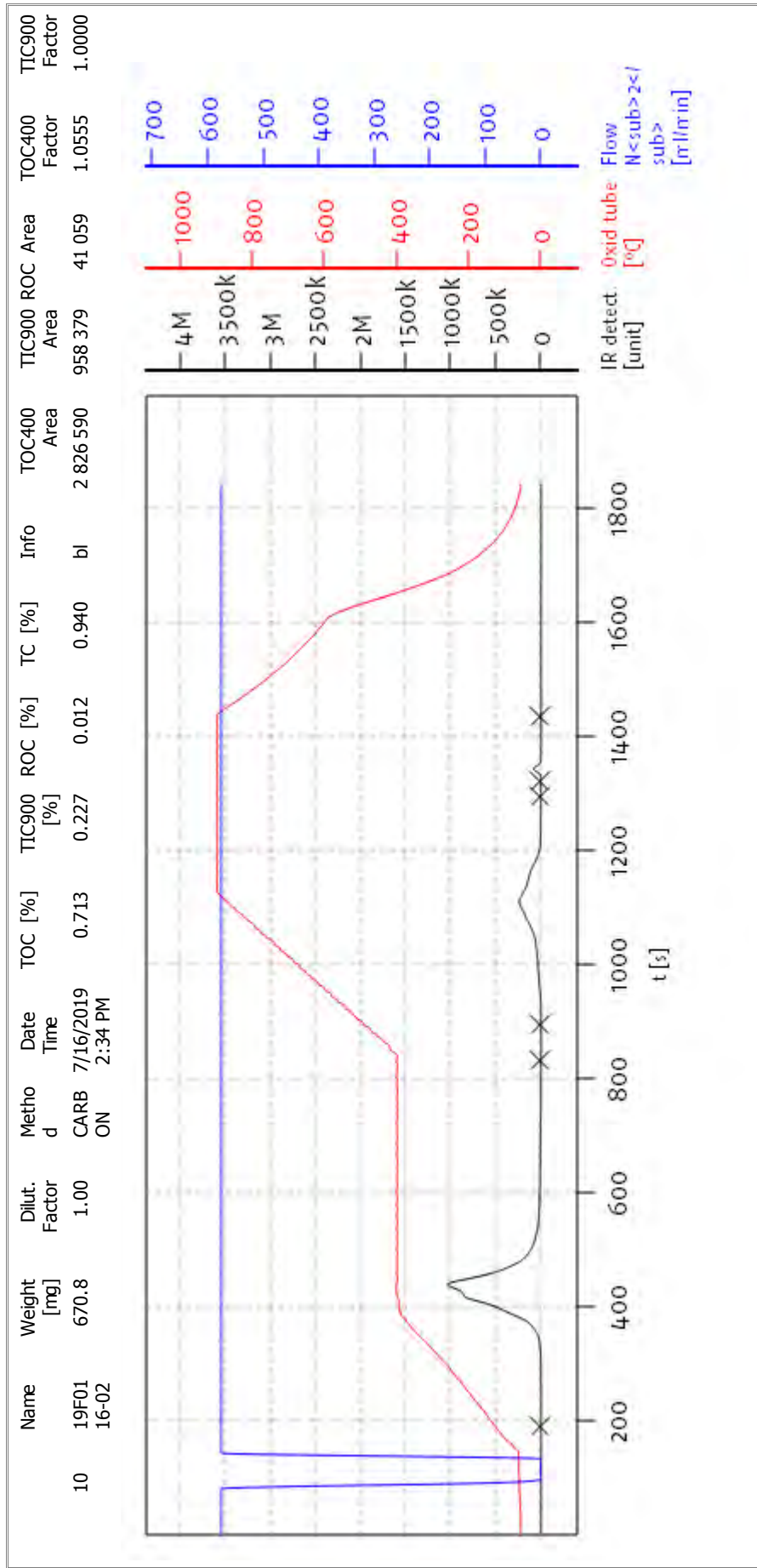
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

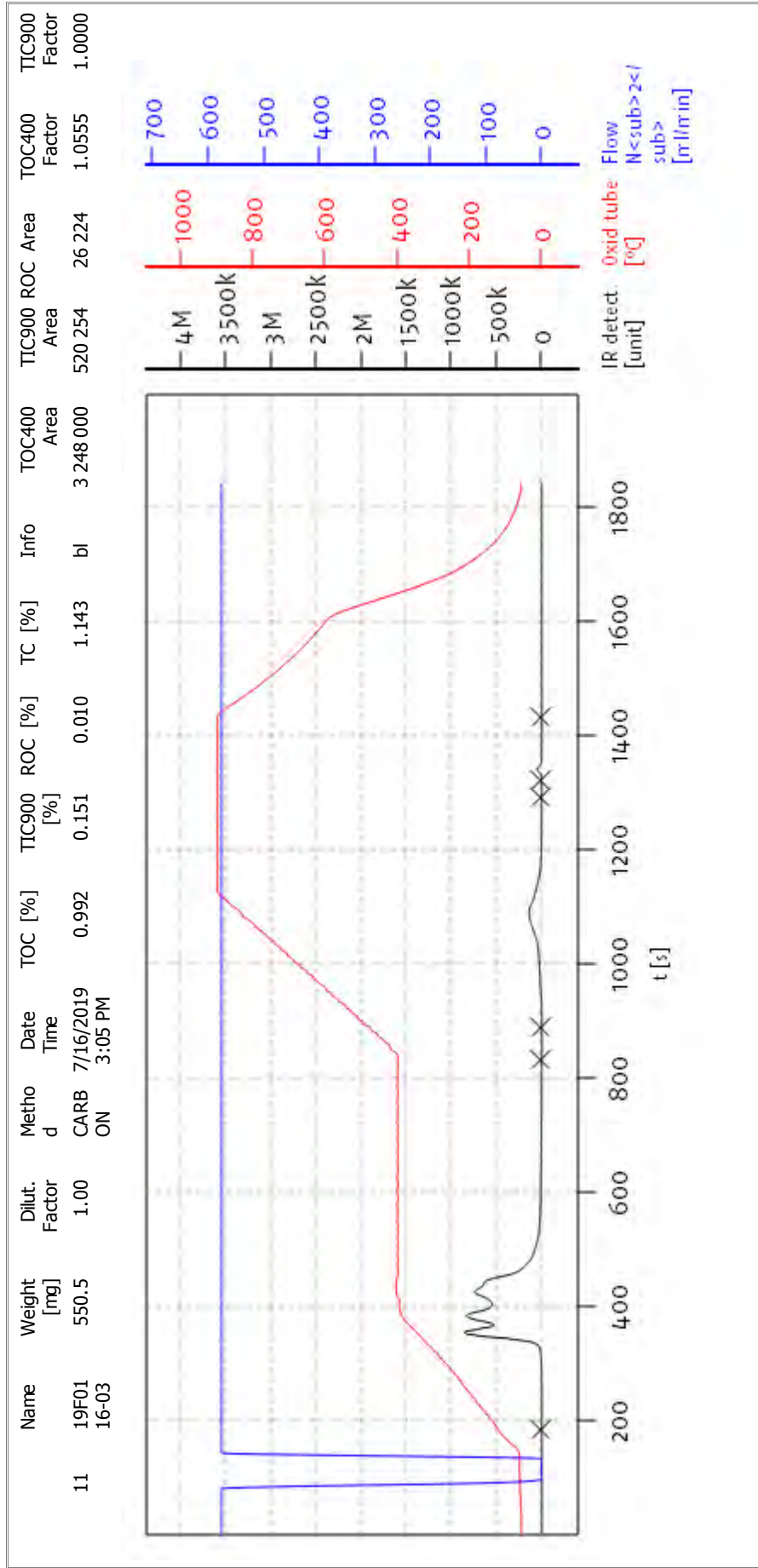
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE

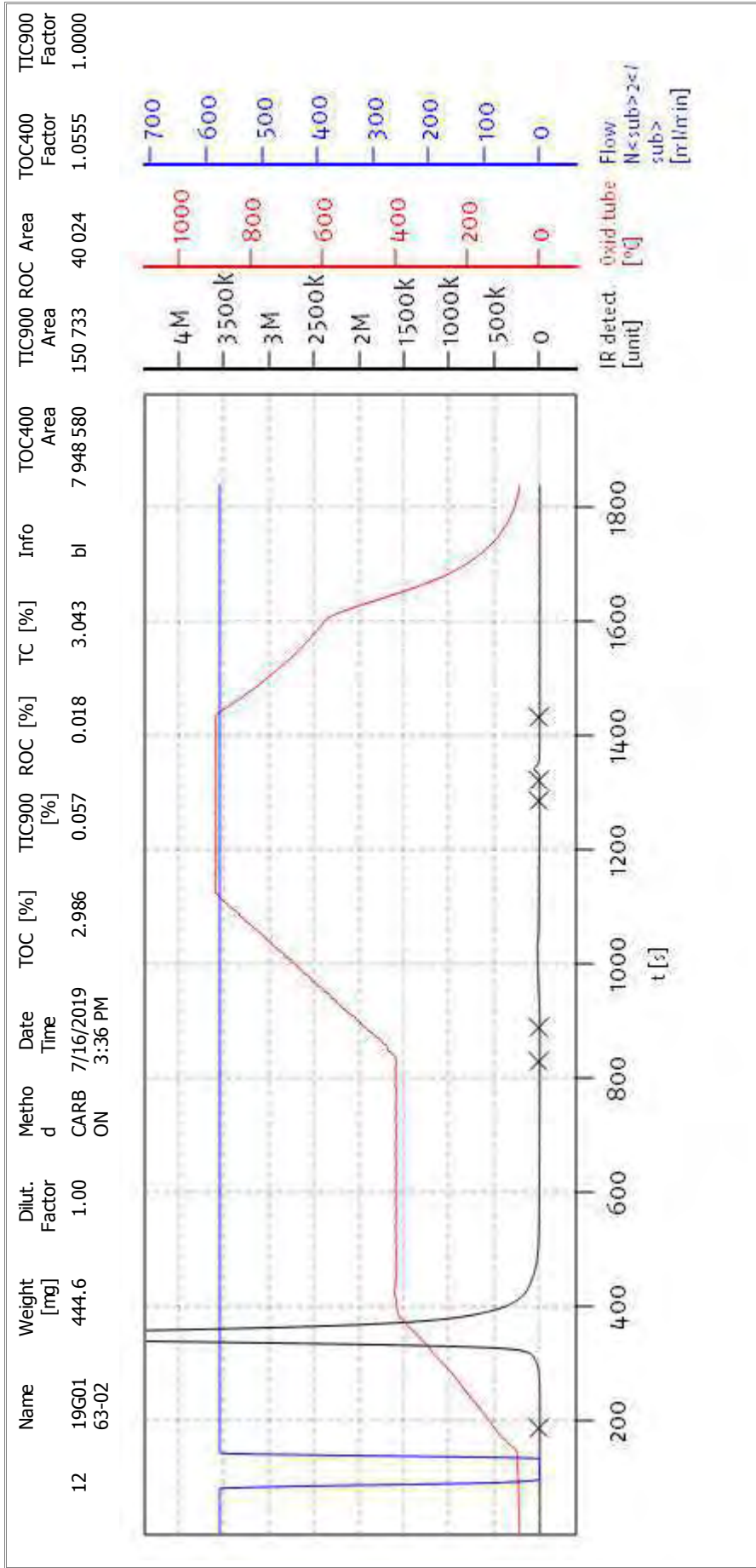
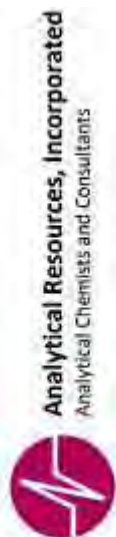


Name:

Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

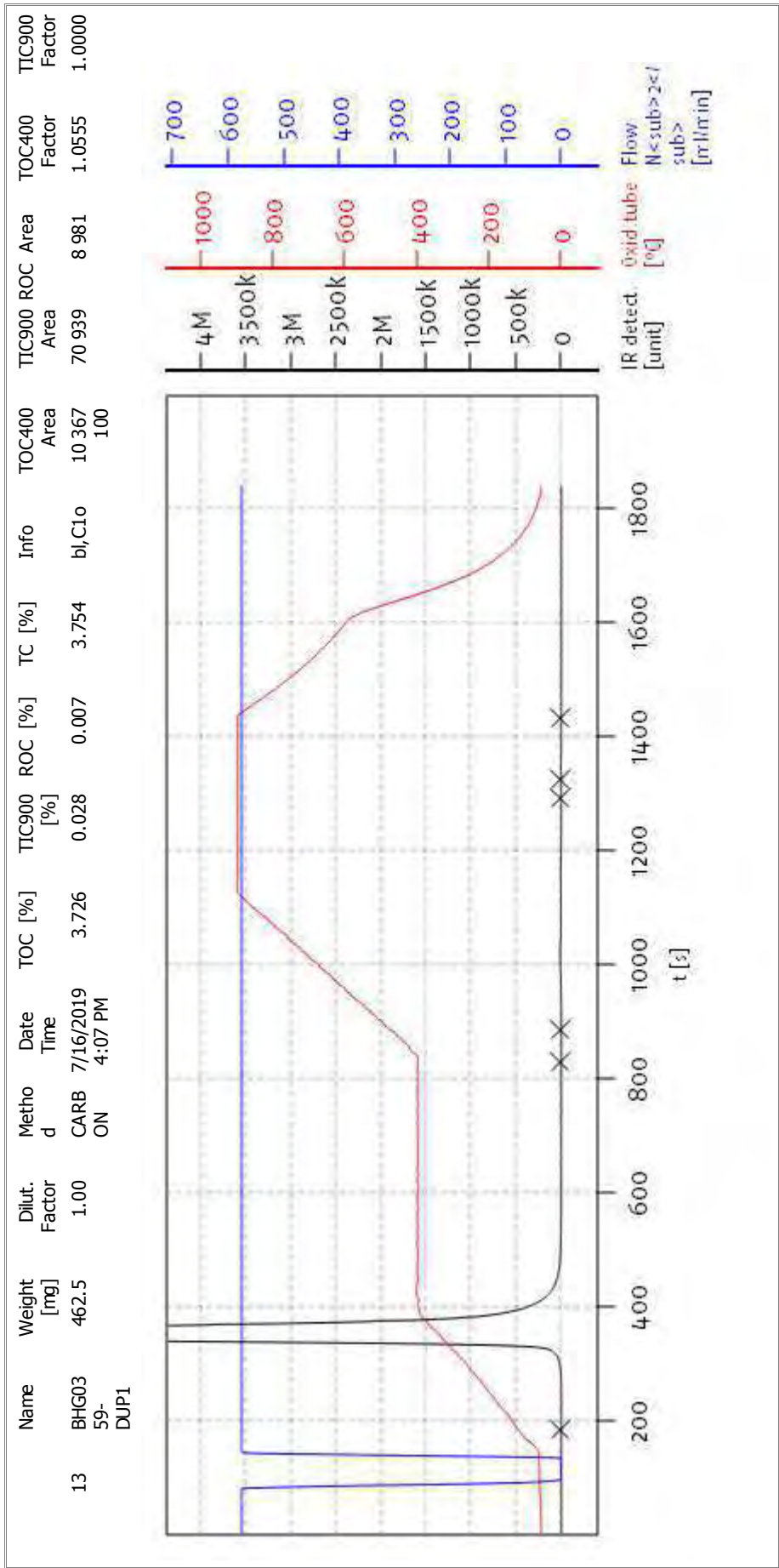
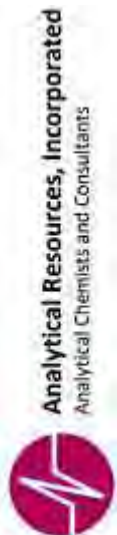
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

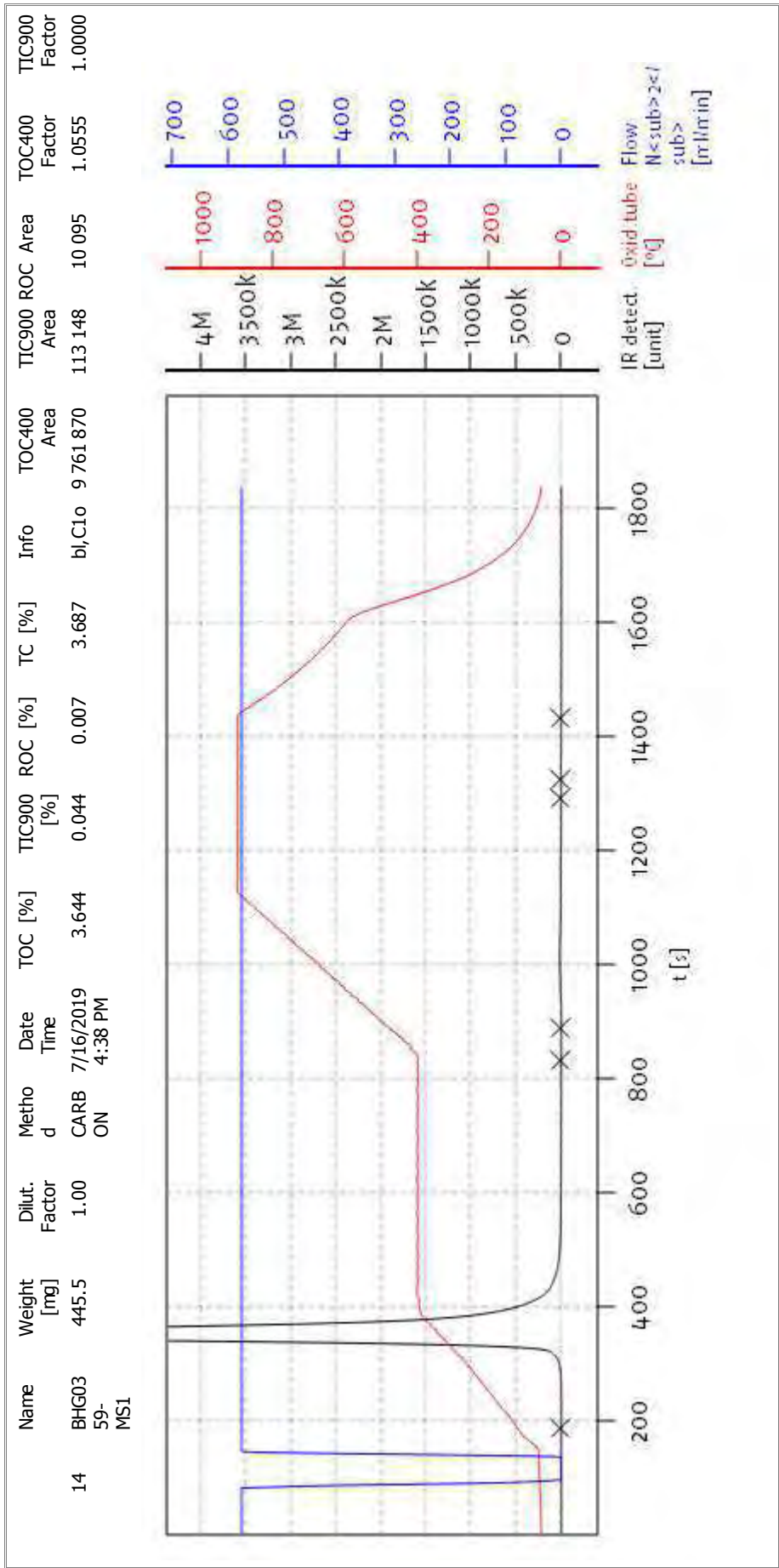
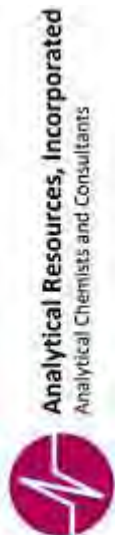
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

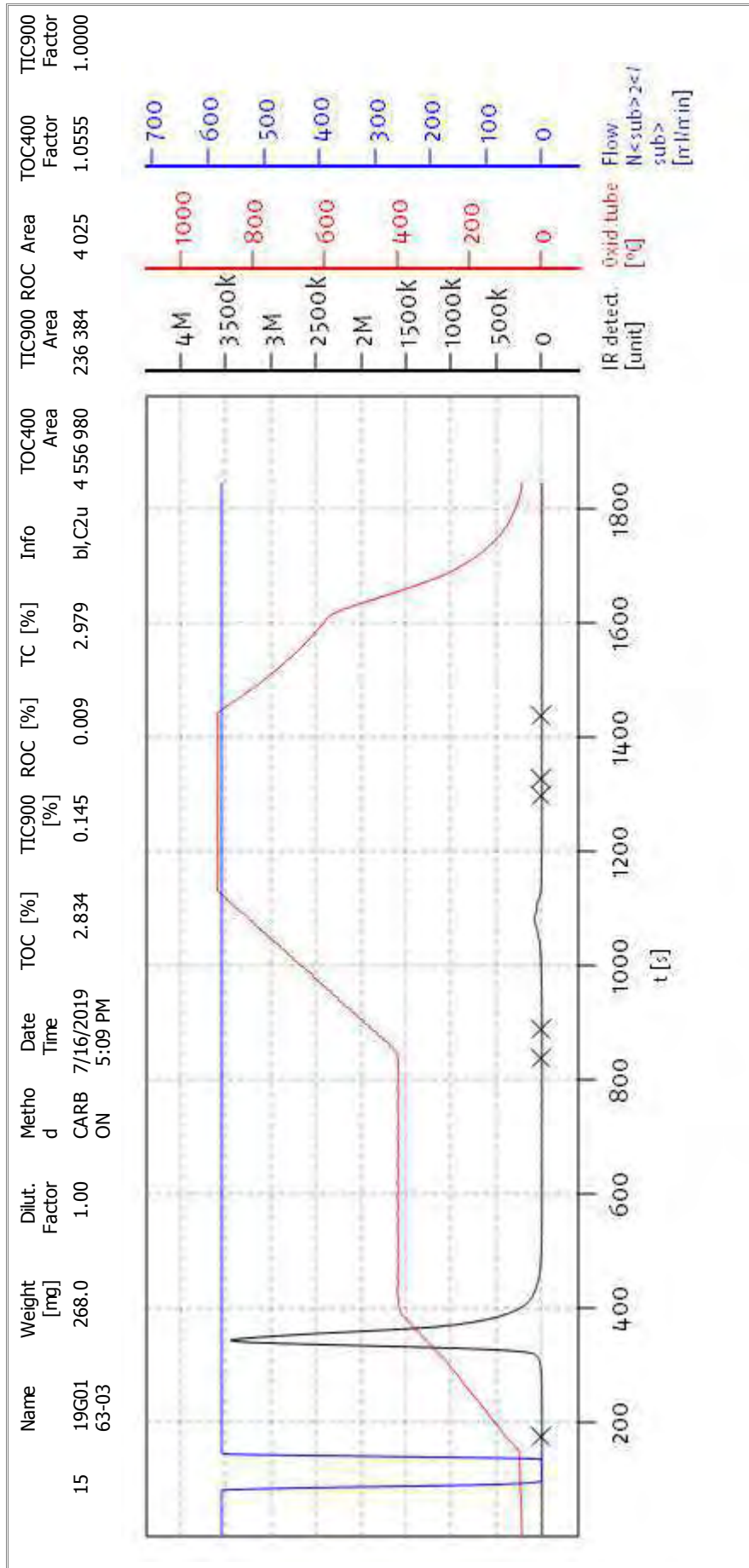
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE

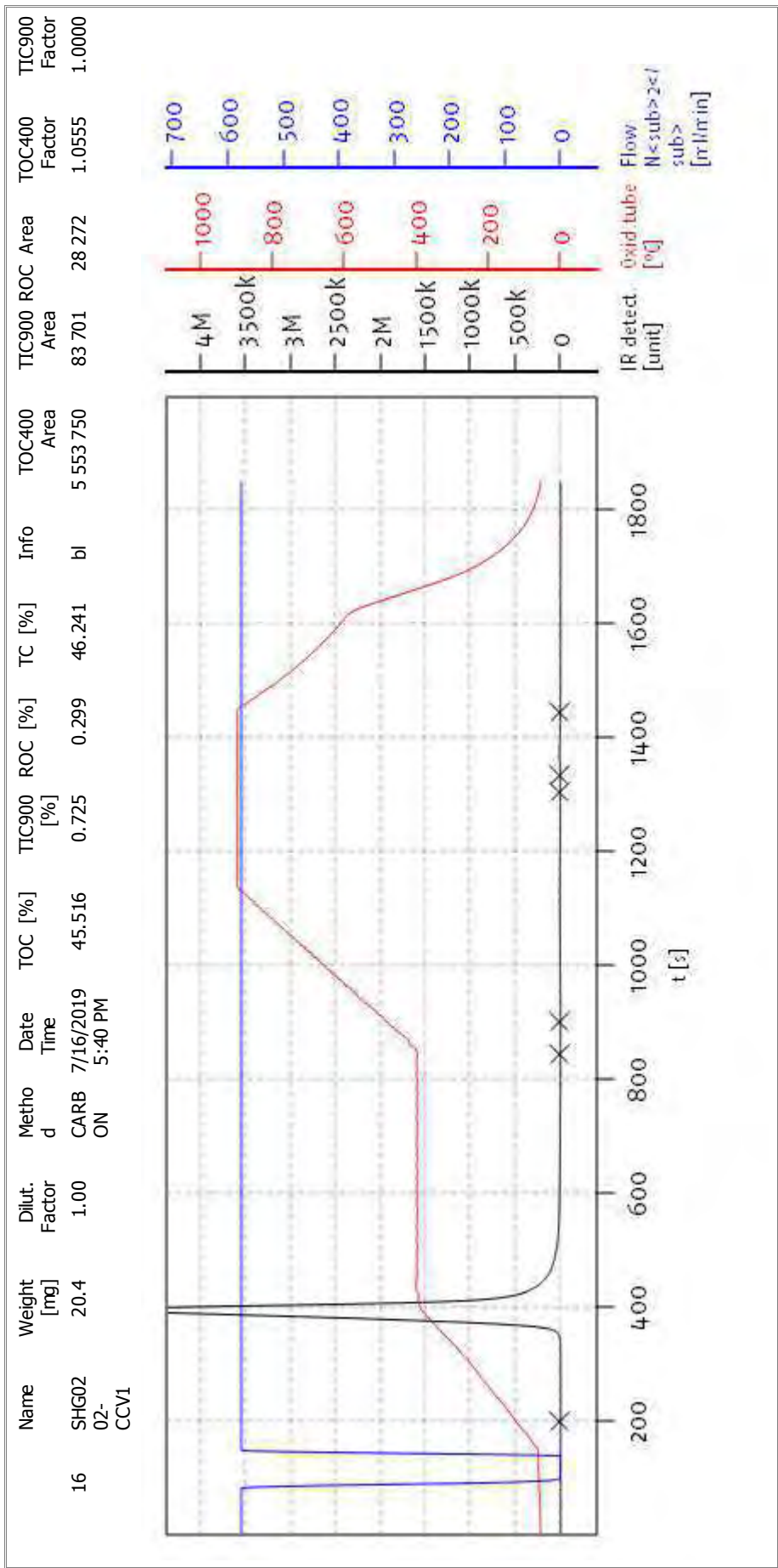
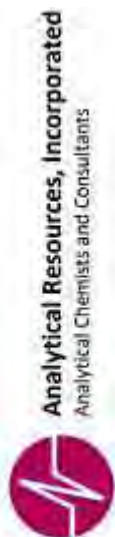


Name:

Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

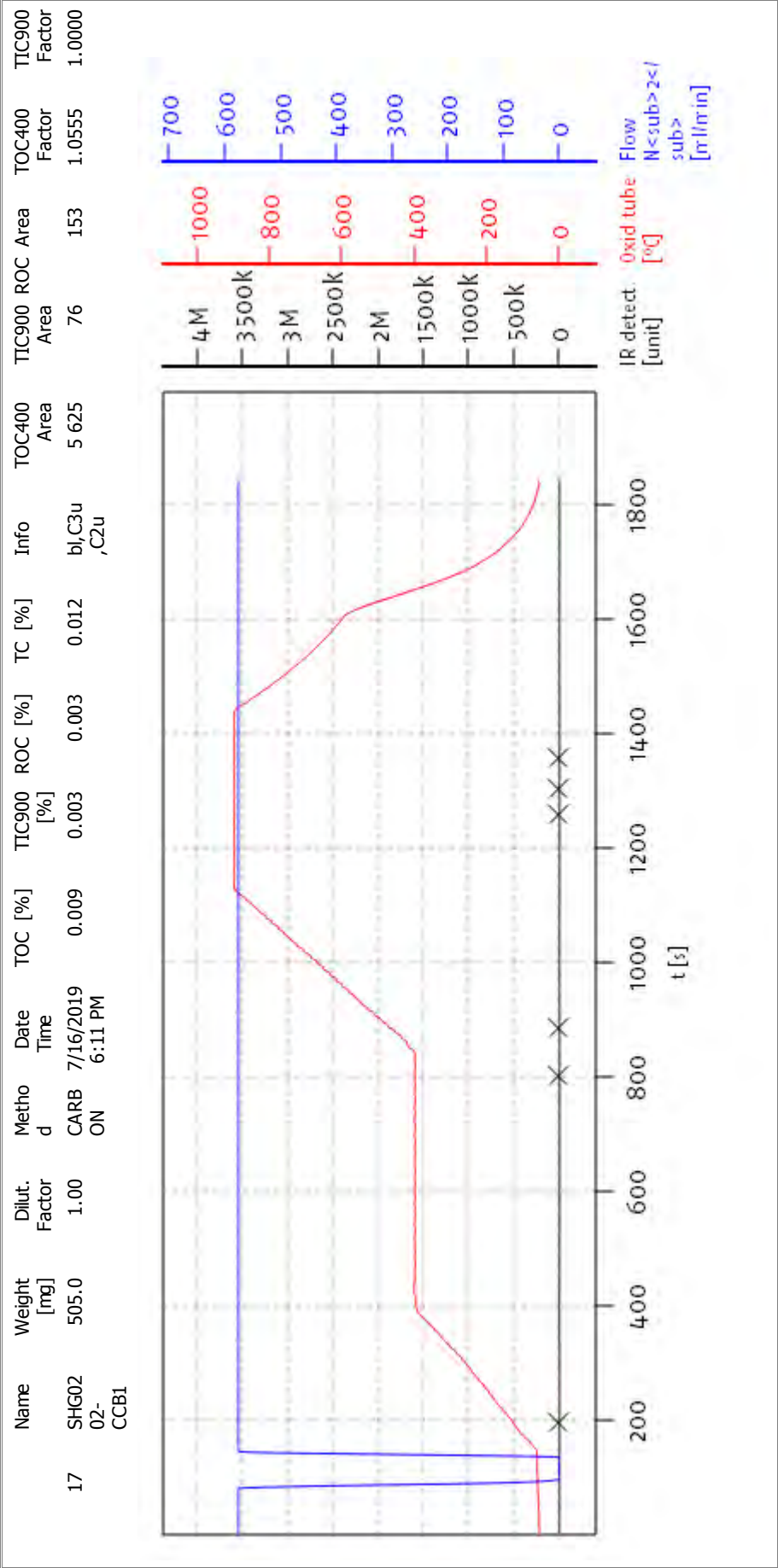
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



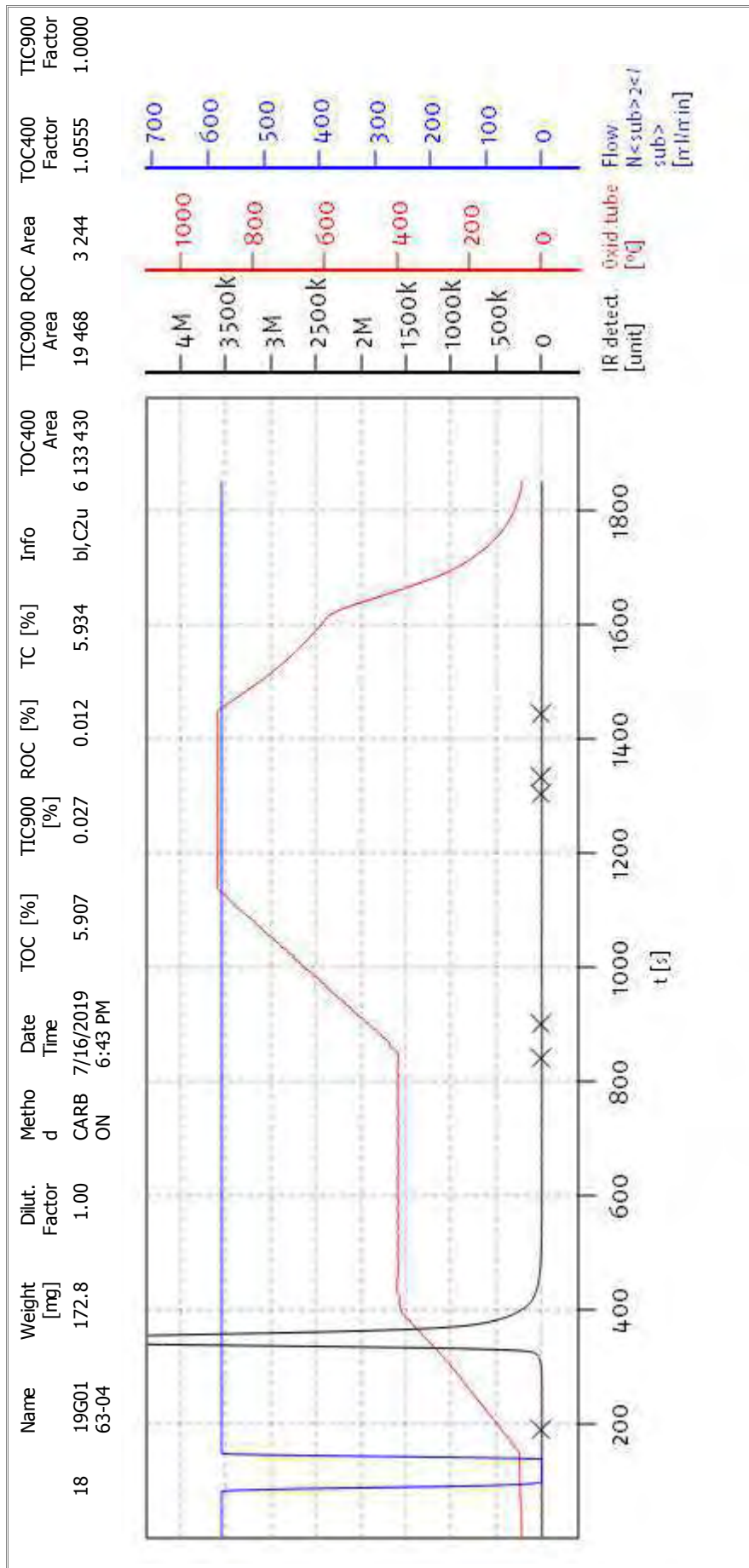
Name:

Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE

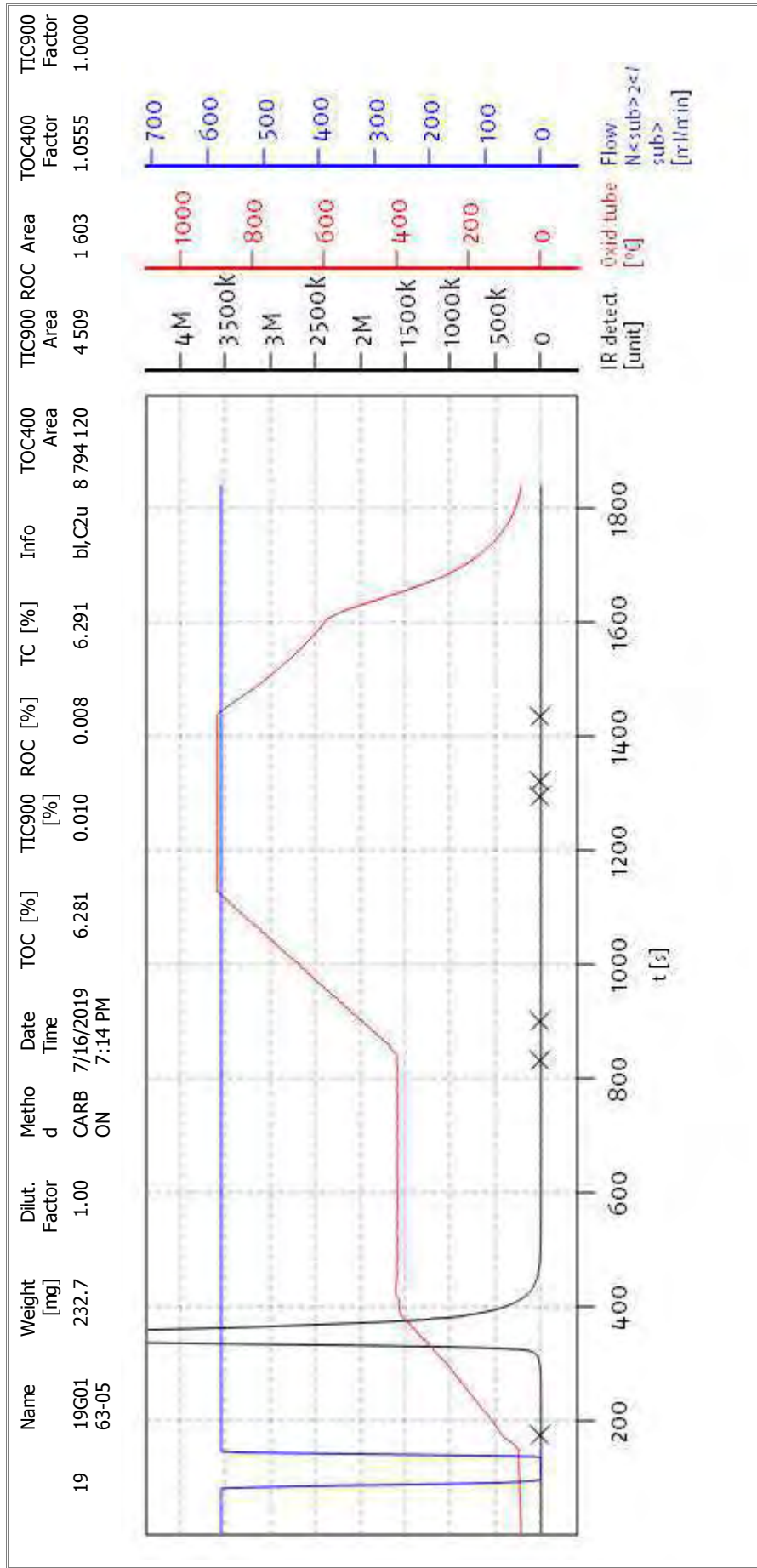


Name:

Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

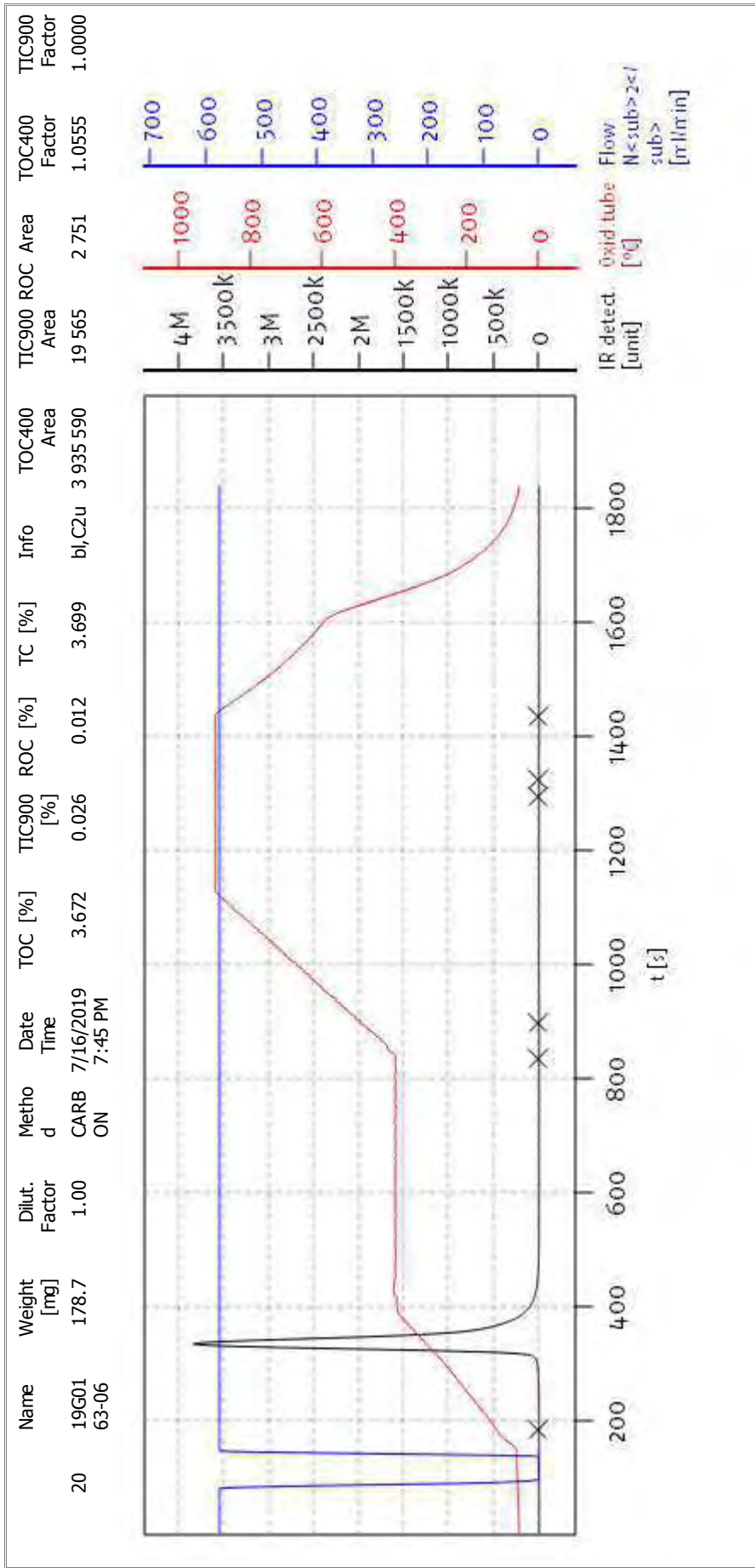
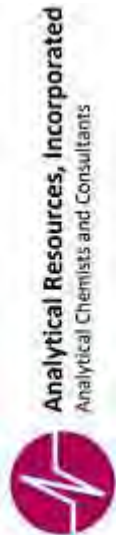
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

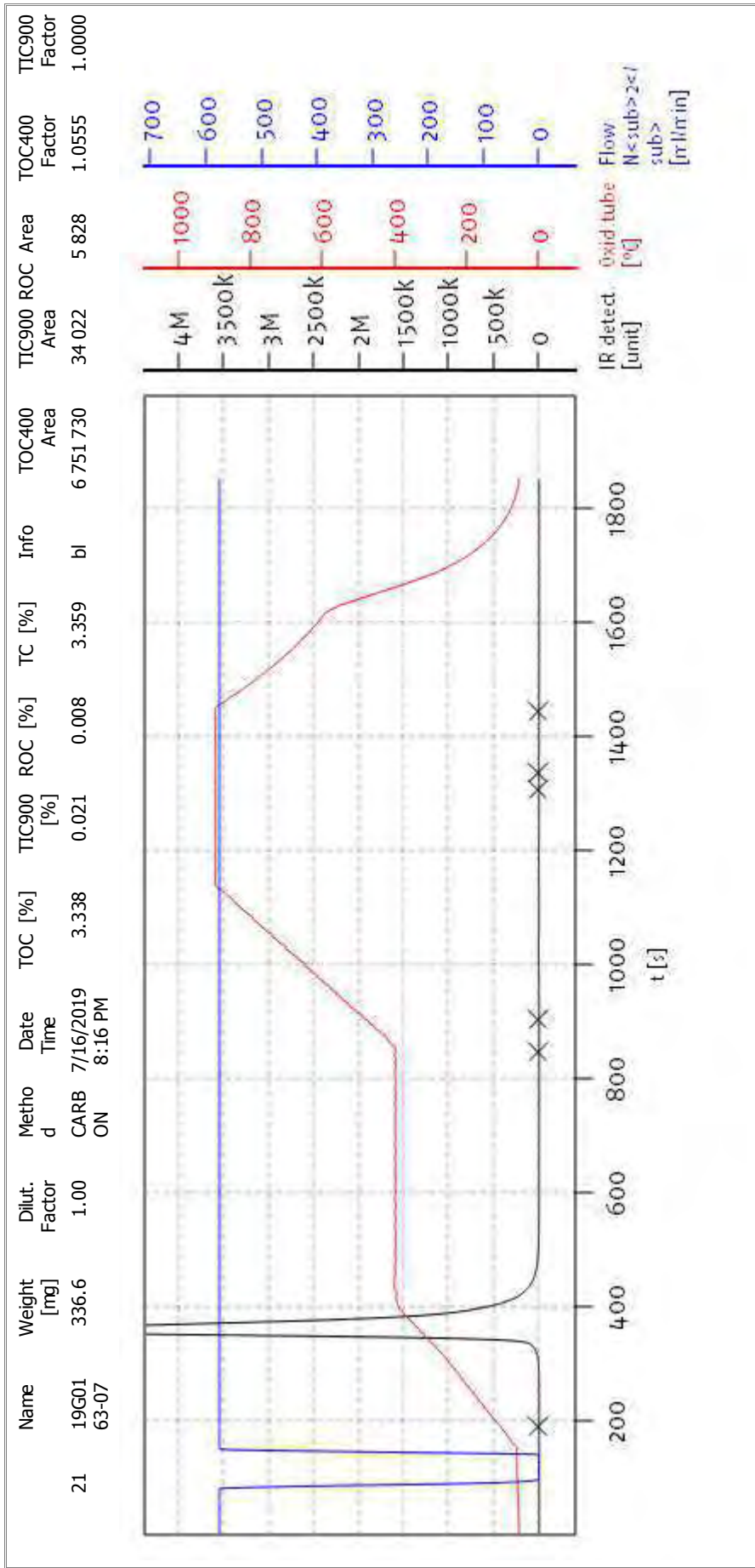
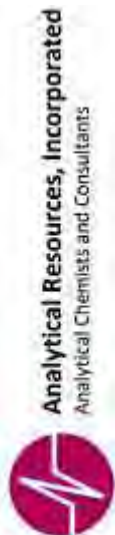
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

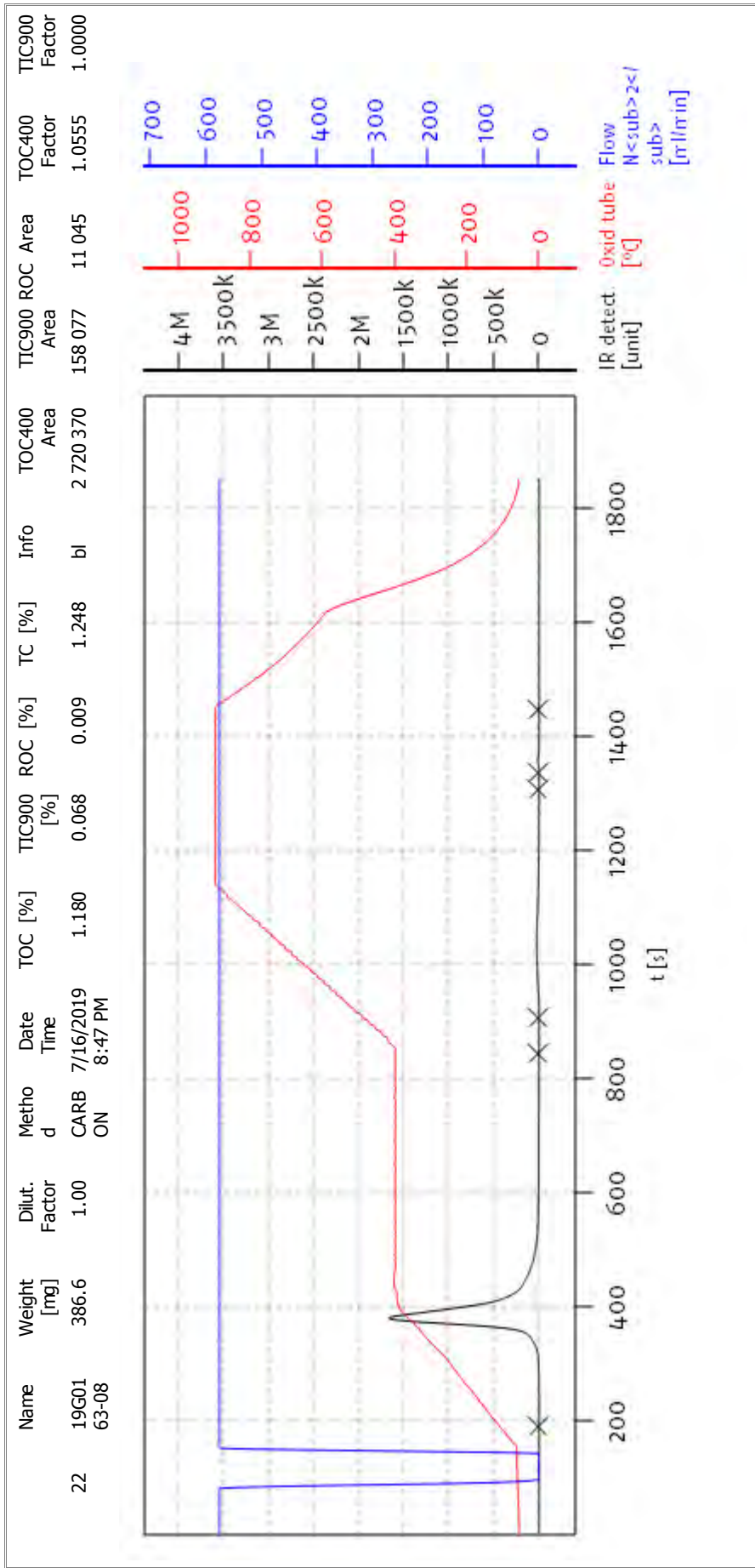
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE

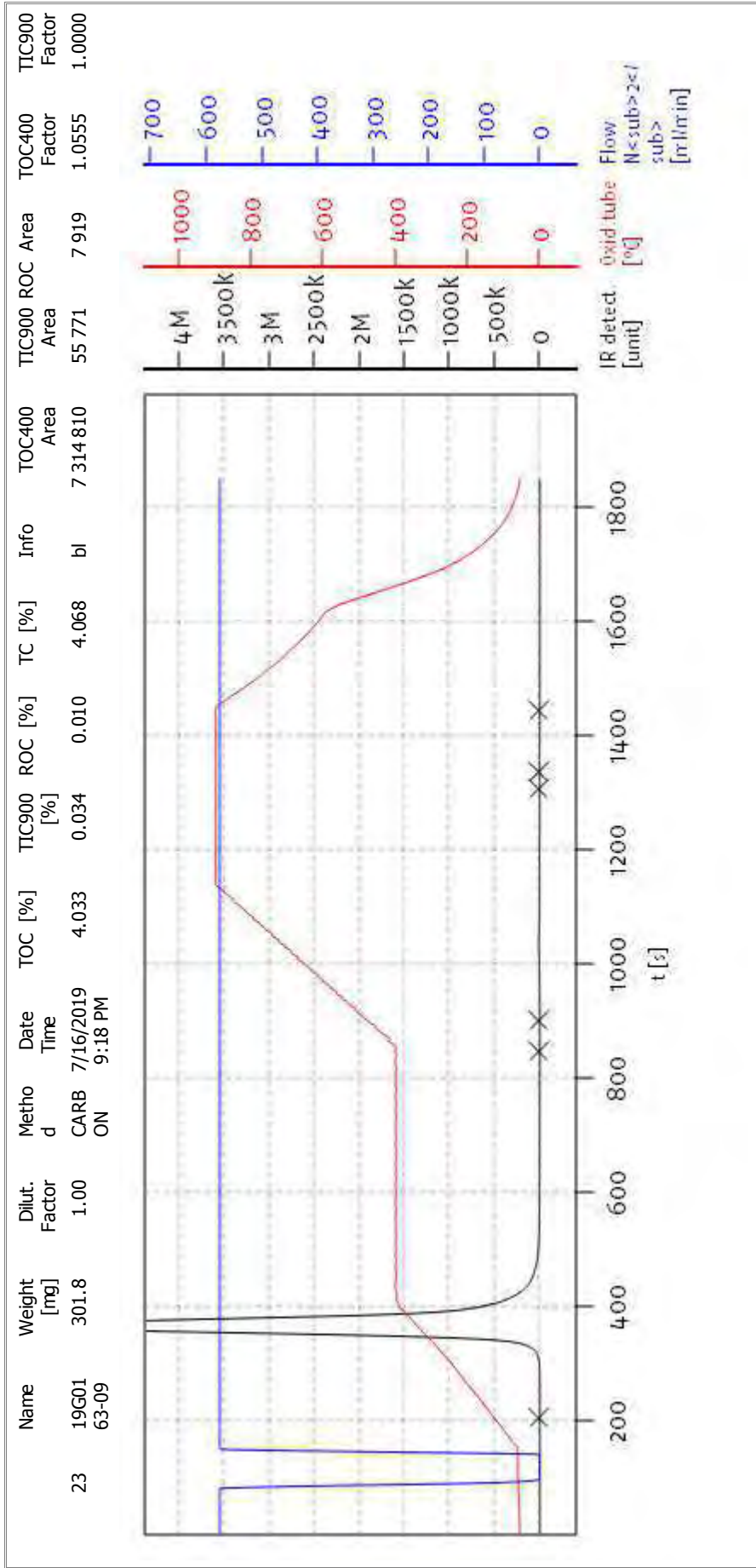
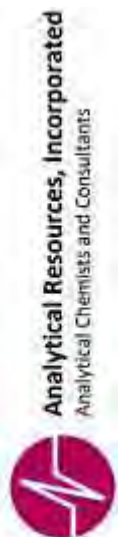


Name:

Access: soliT0C superuser

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

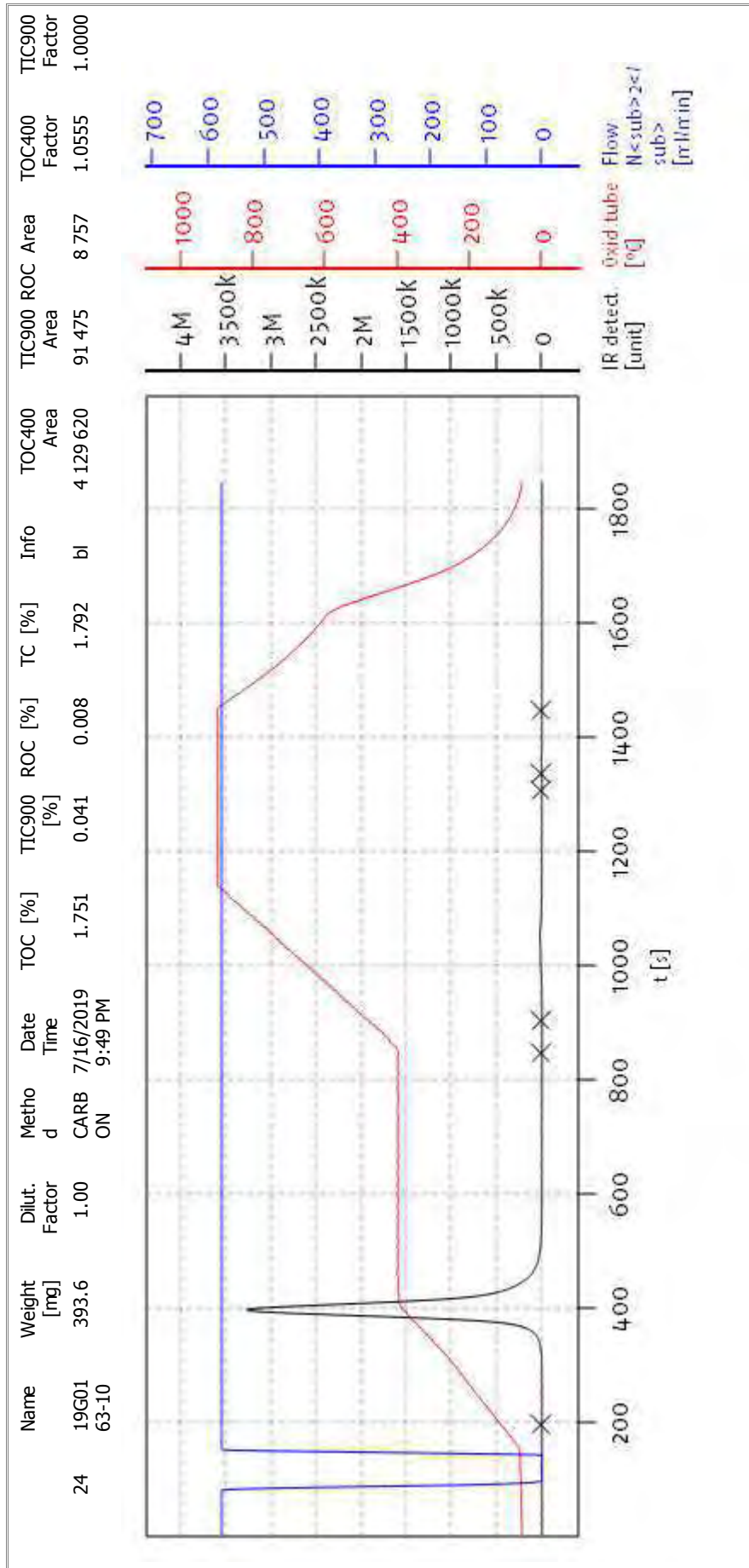
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

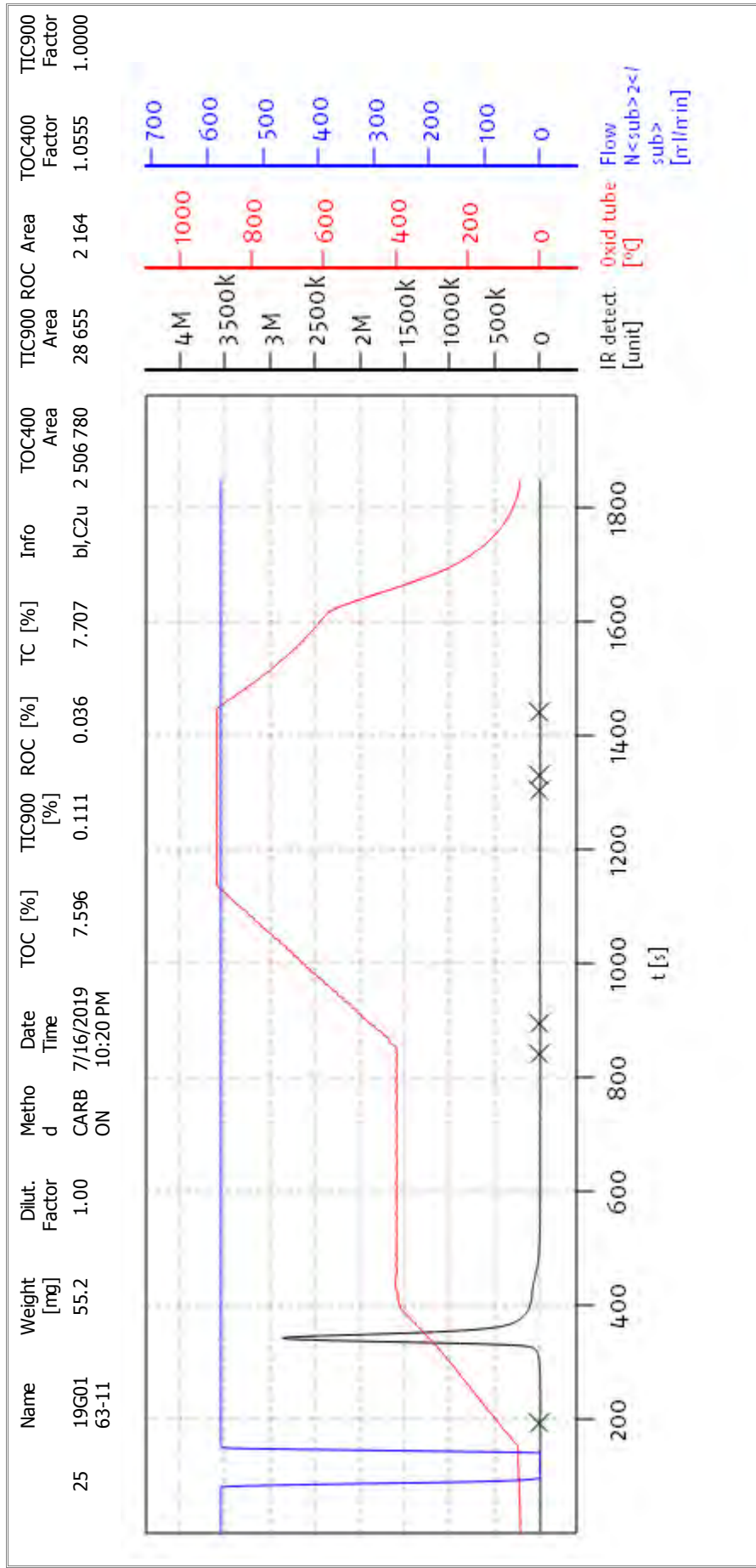
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

Access: soliT0C superuser

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

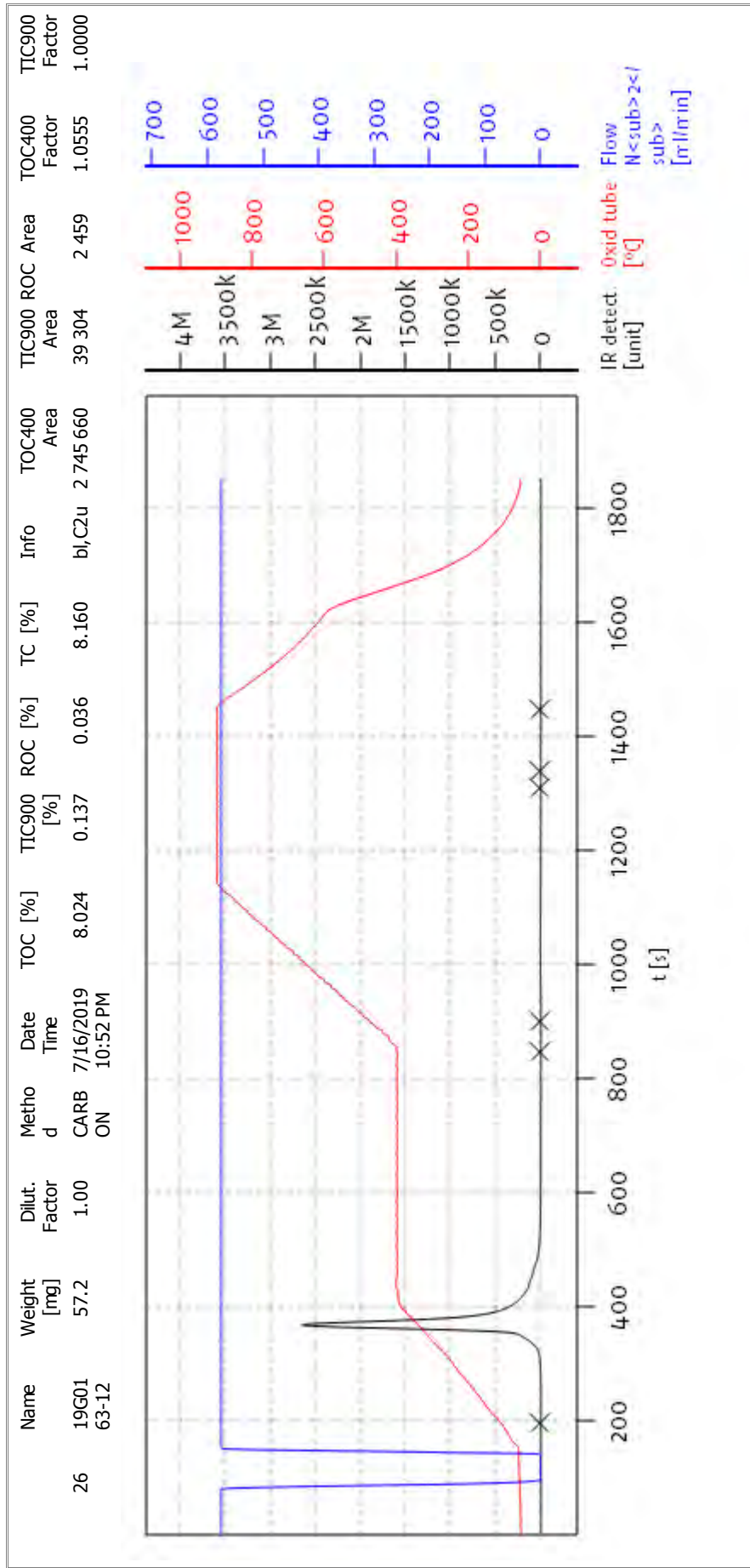
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE

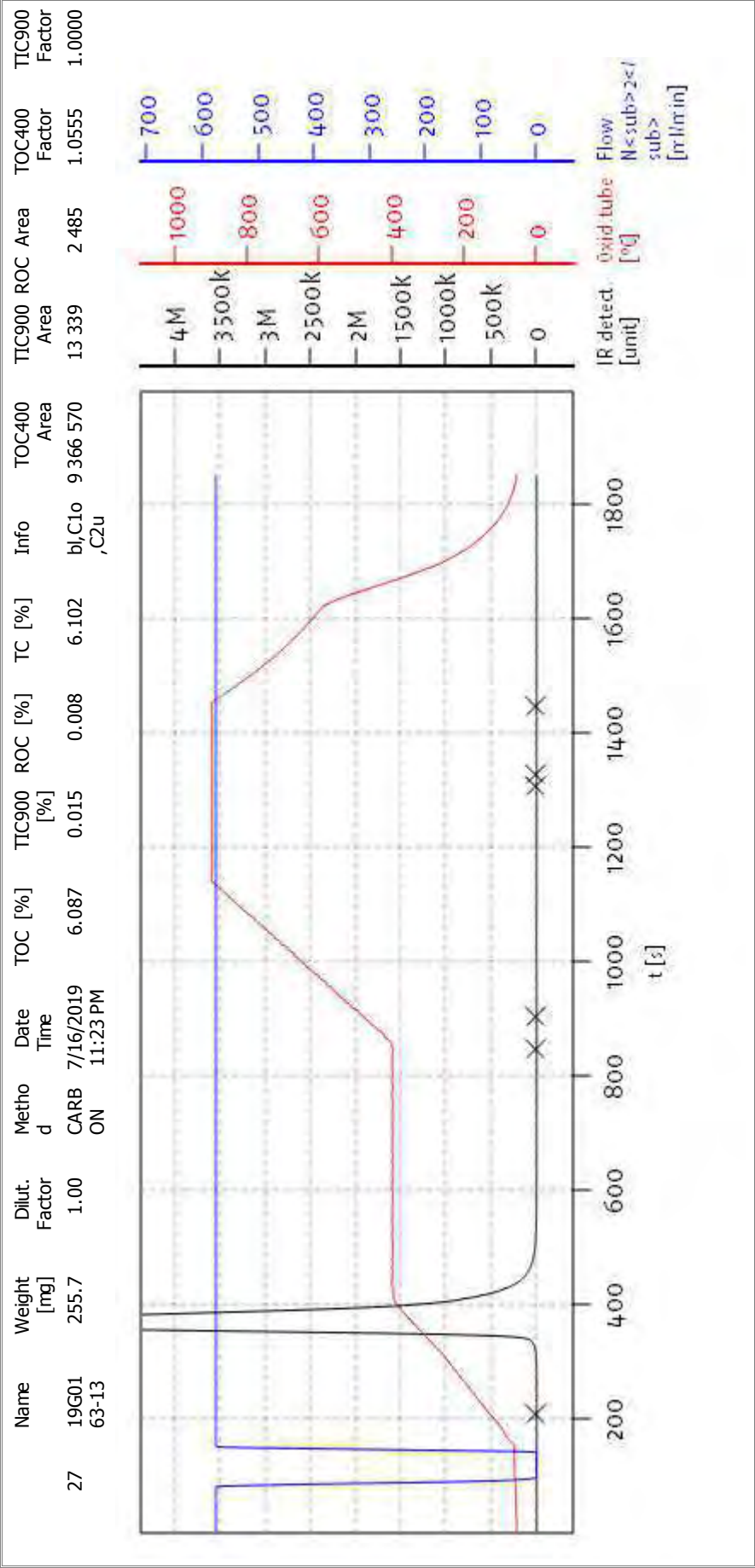
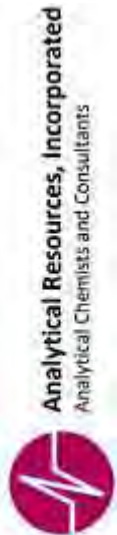


Date: Wed Jul 17 10:05:31 2019

Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



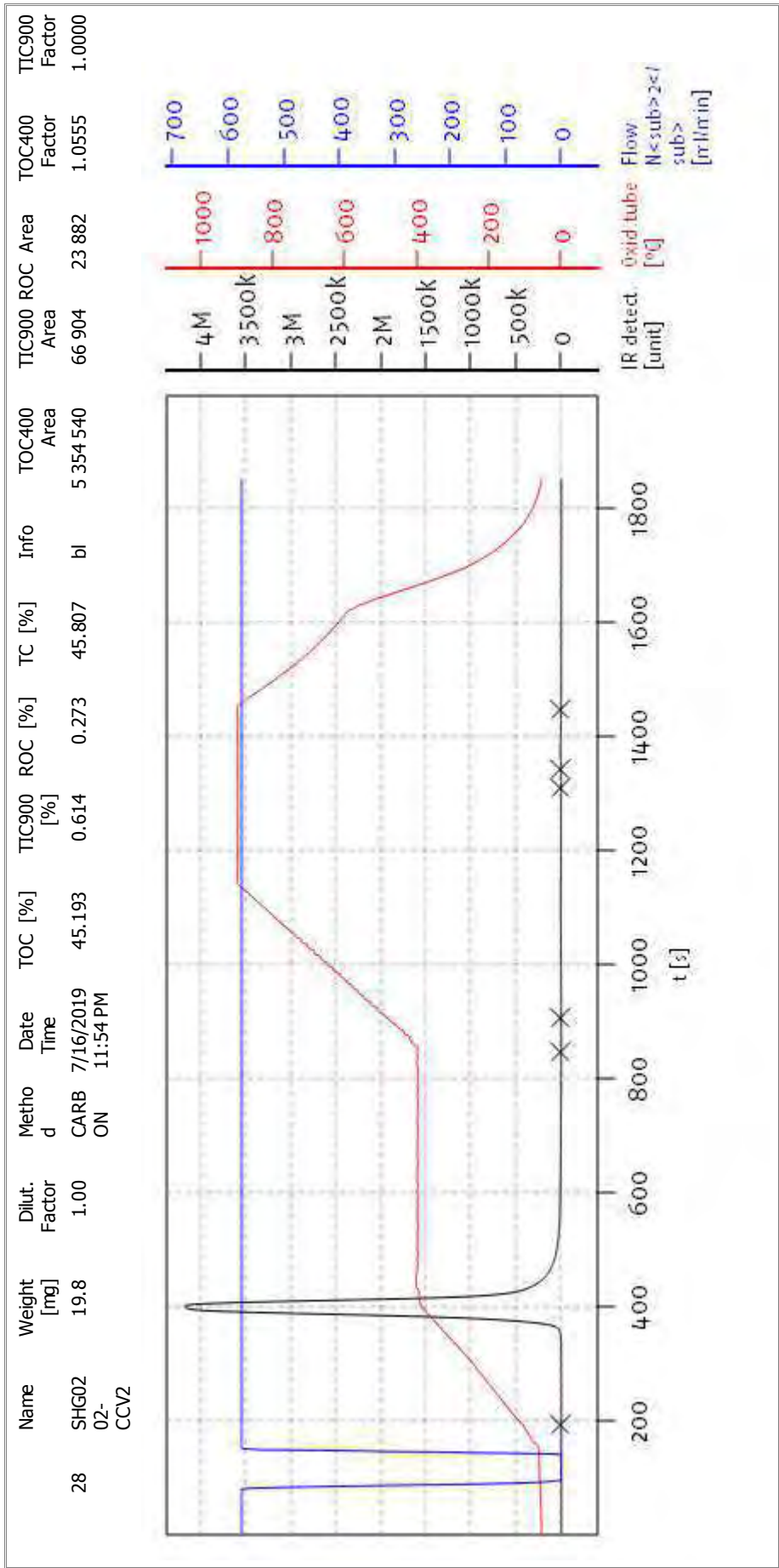
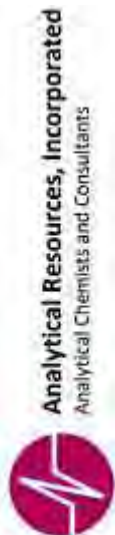
Date: Wed Jul 17 10:05:31 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

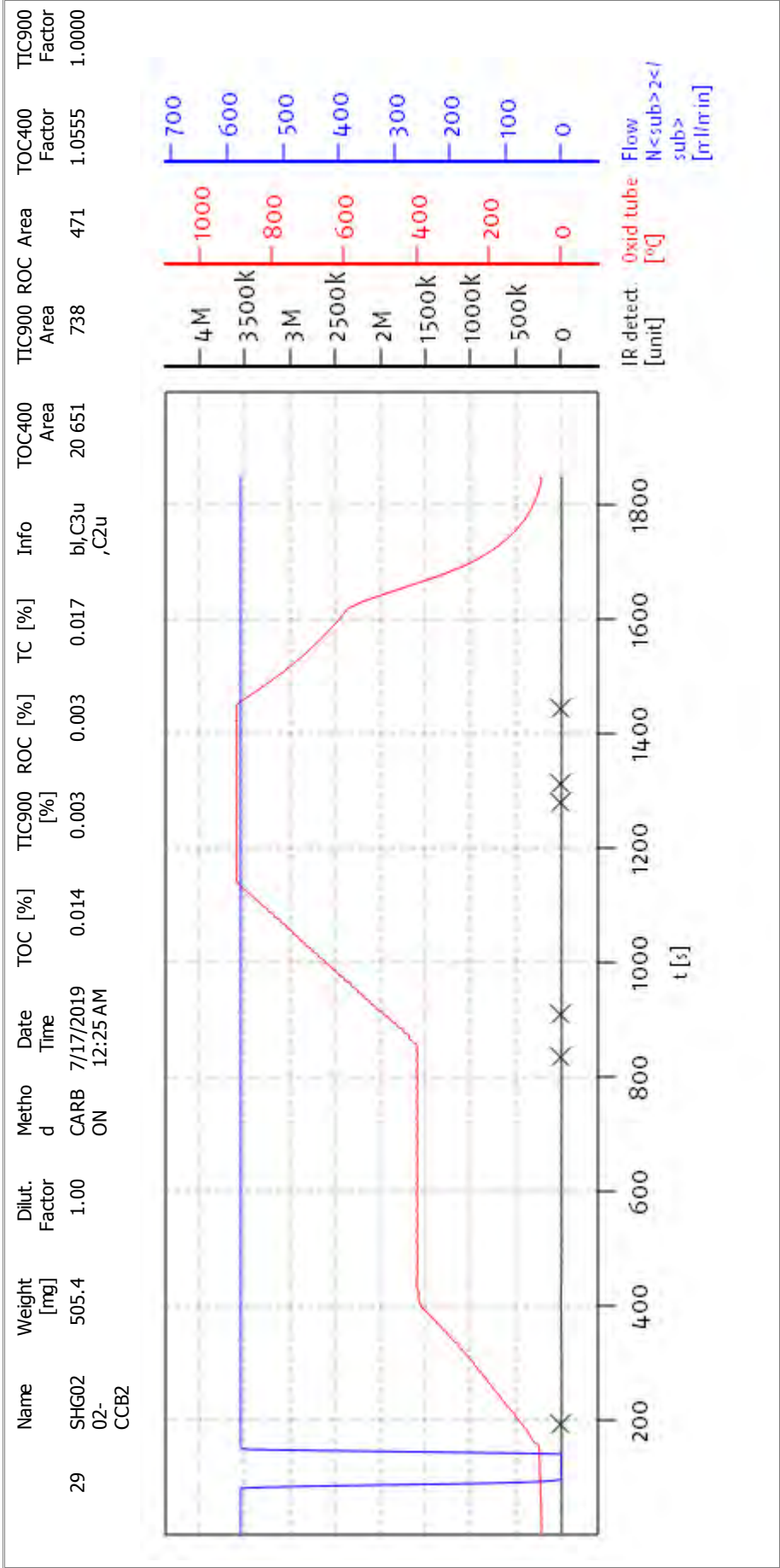
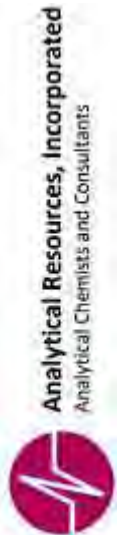
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



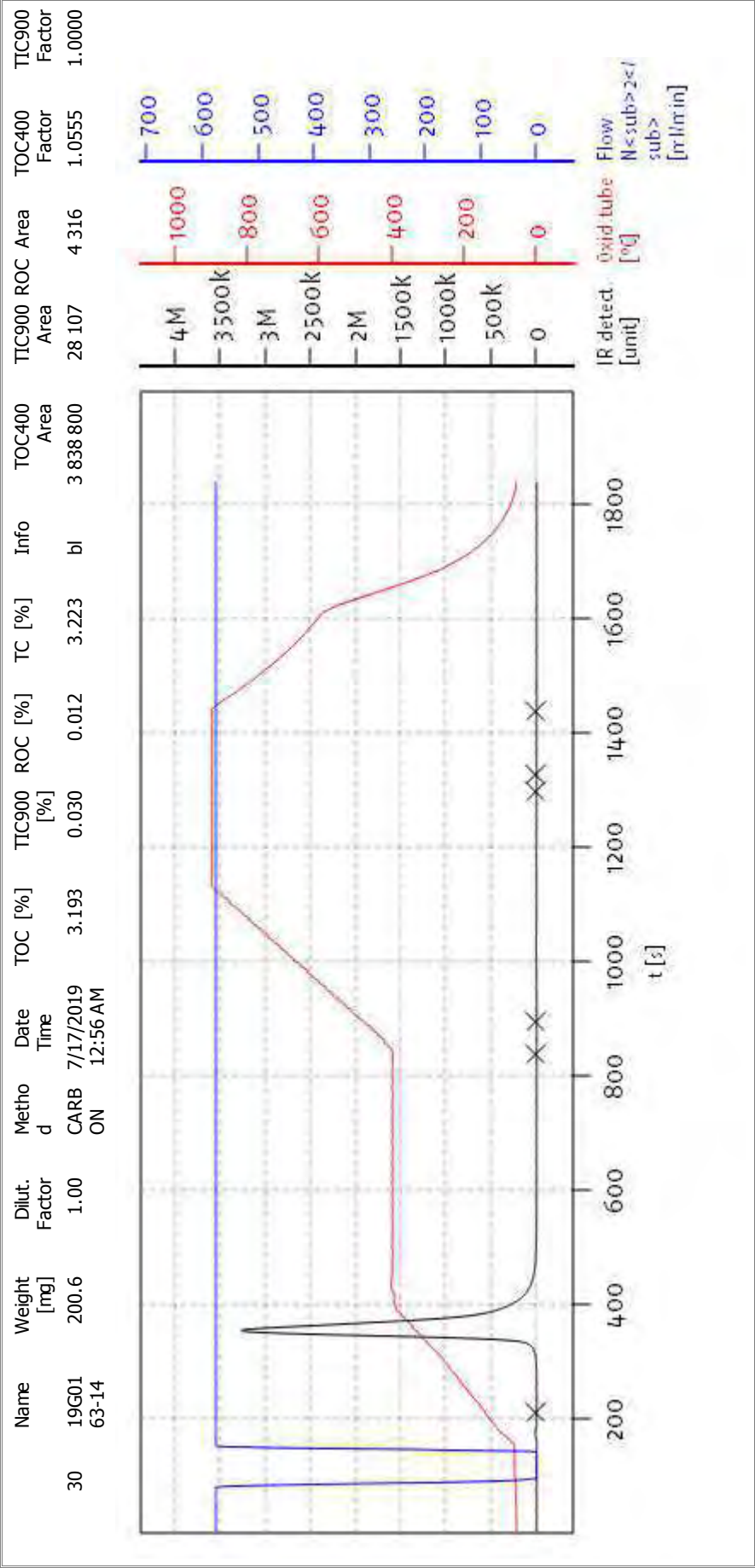
Date: Wed Jul 17 10:05:31 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



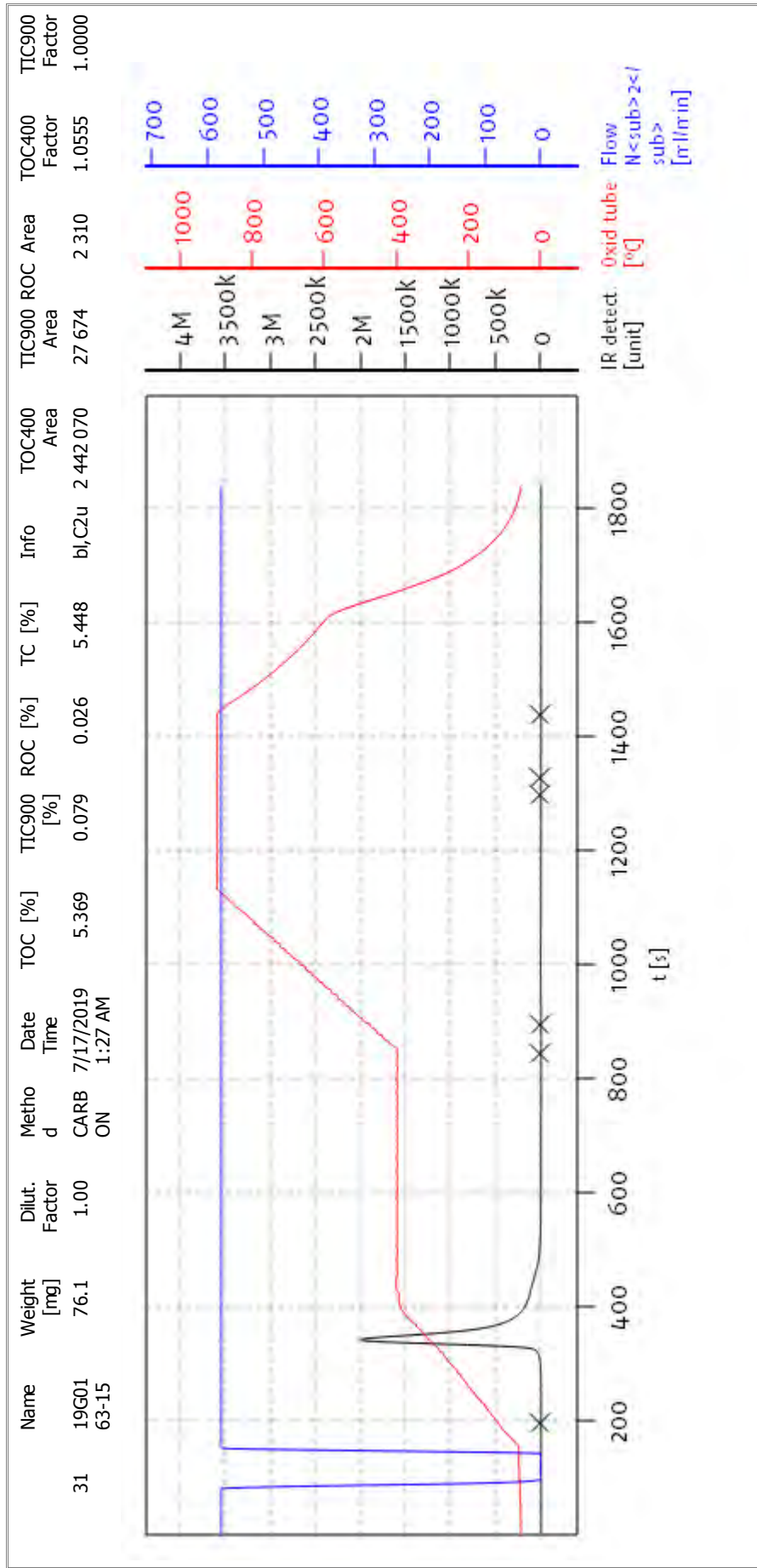
Date: Wed Jul 17 10:05:31 2019

Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Name:

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



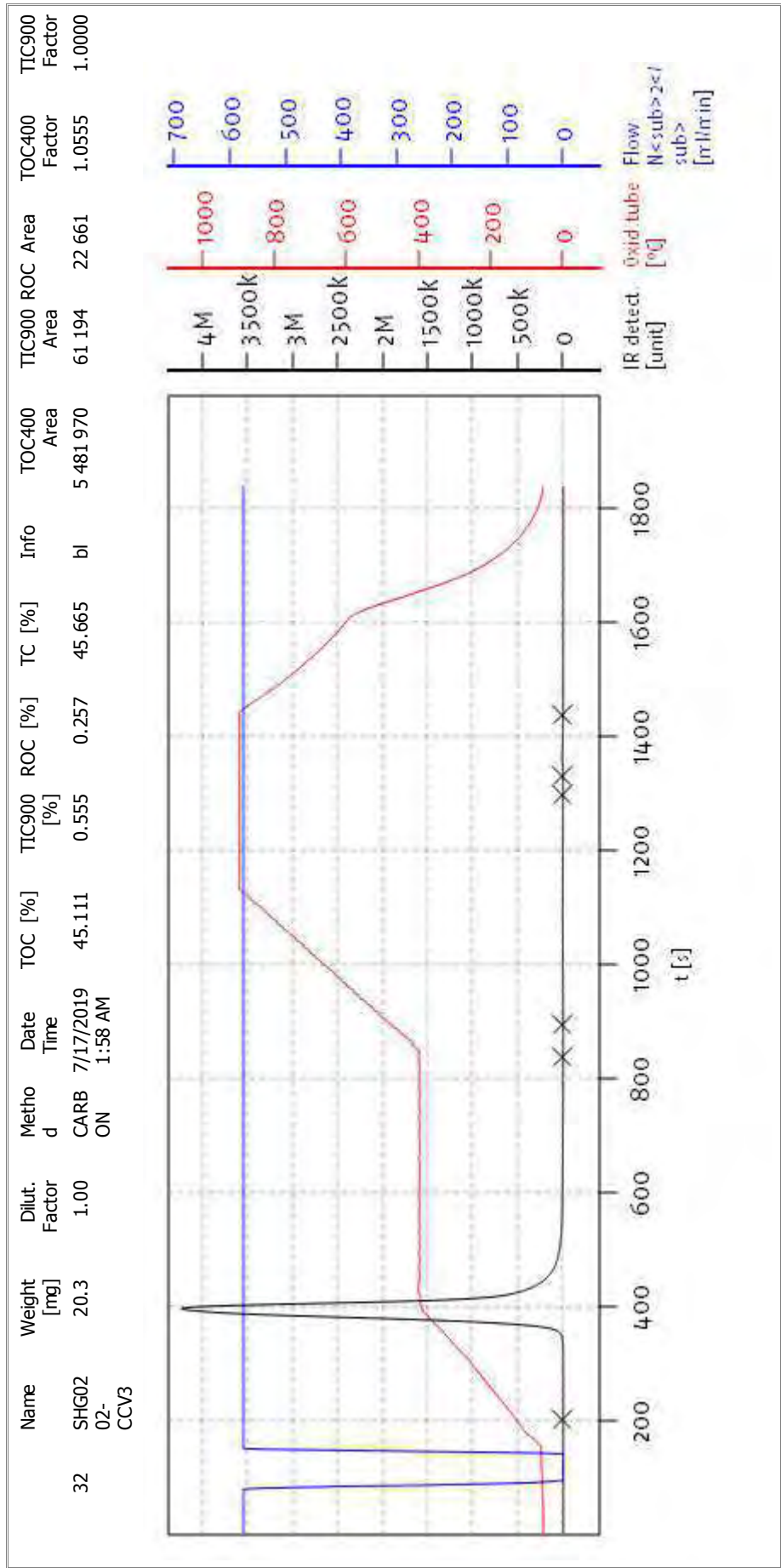
Name:

Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

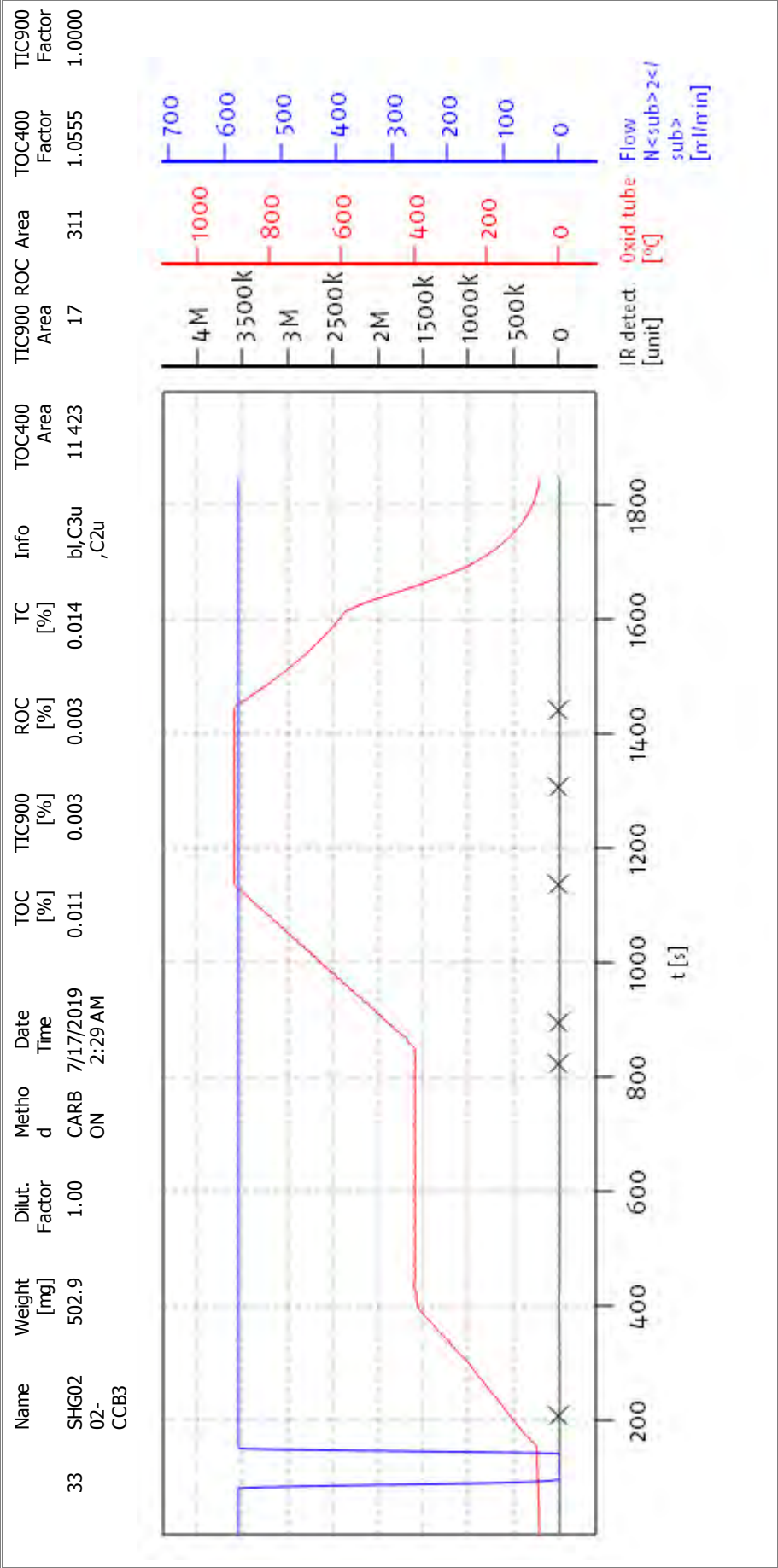
Access: soliT0C superuser

Date: Wed Jul 17 10:05:31 2019

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE





ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

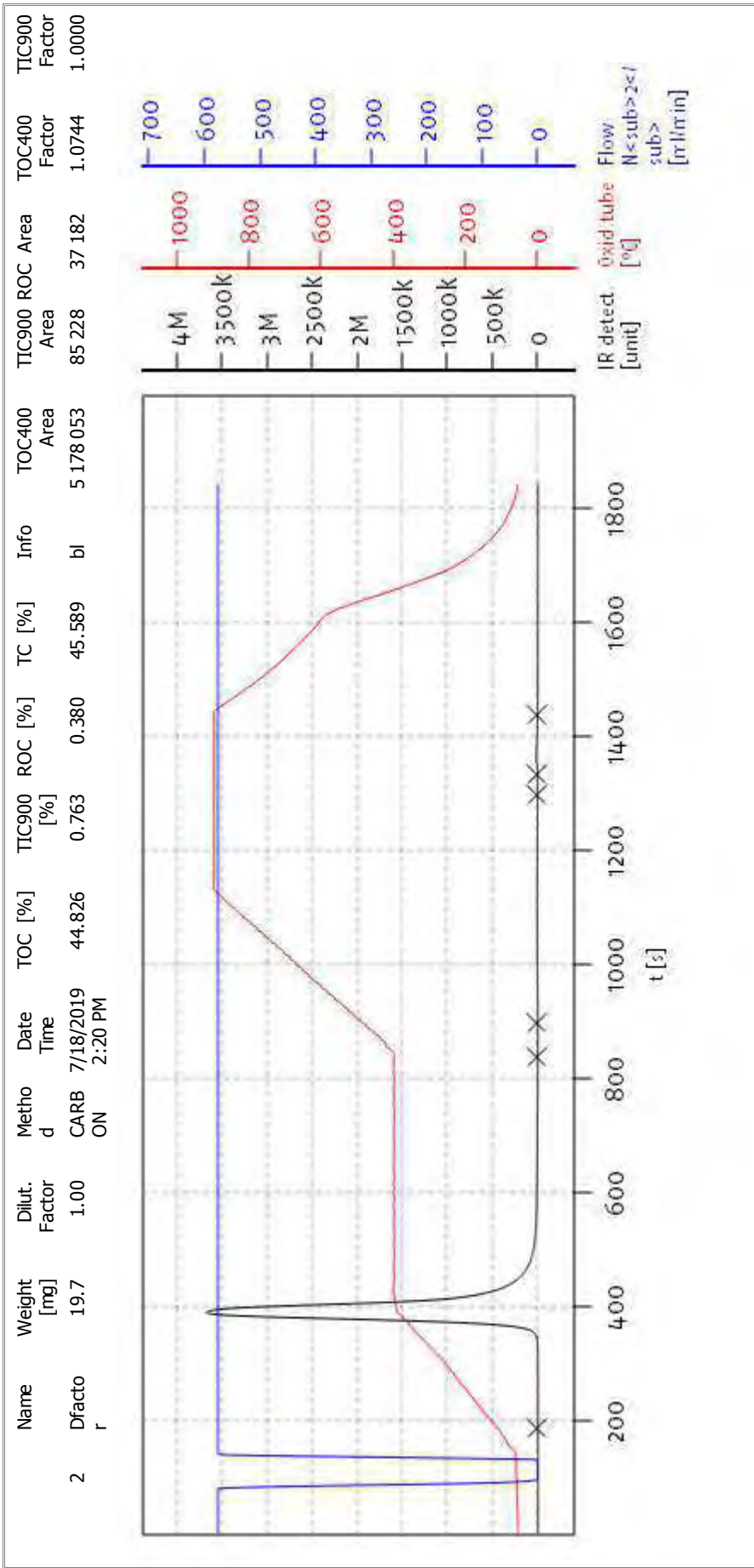
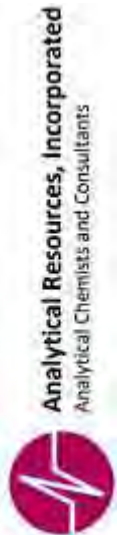
Sequence: SHG0239

Instrument: TOC Cube

Calibration: CE00054

Sample Name	Lab Sample ID	Lab File ID	Matrix	Analysis Date/Time
Initial Cal Check	SHG0239-ICV1	peData_07192019@0523-(	NA	07/18/19 16:24
Initial Cal Check	SHG0239-ICV2	peData_07192019@0523-(	NA	07/18/19 16:55
LCS	BHG0359-BS2		Solid	07/18/19 16:55
Initial Cal Blank	SHG0239-ICB1	peData_07192019@0523-(	NA	07/18/19 17:26
SO-01-190711	BHG0359-DUP2	peData_07192019@0523-(	Solid	07/18/19 17:57
SO-01-190711	BHG0359-MS2	peData_07192019@0523-(	Solid	07/18/19 18:28
SO-11-190711	19G0163-13RE1	peData_07192019@0523-(	Solid	07/18/19 18:59
Calibration Check	SHG0239-CCV1	peData_07192019@0523-(	NA	07/18/19 21:03
Calibration Check	SHG0239-CCV2	peData_07192019@0523-(	NA	07/18/19 21:34
Calibration Blank	SHG0239-CCB1	peData_07192019@0523-(	NA	07/18/19 22:05

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



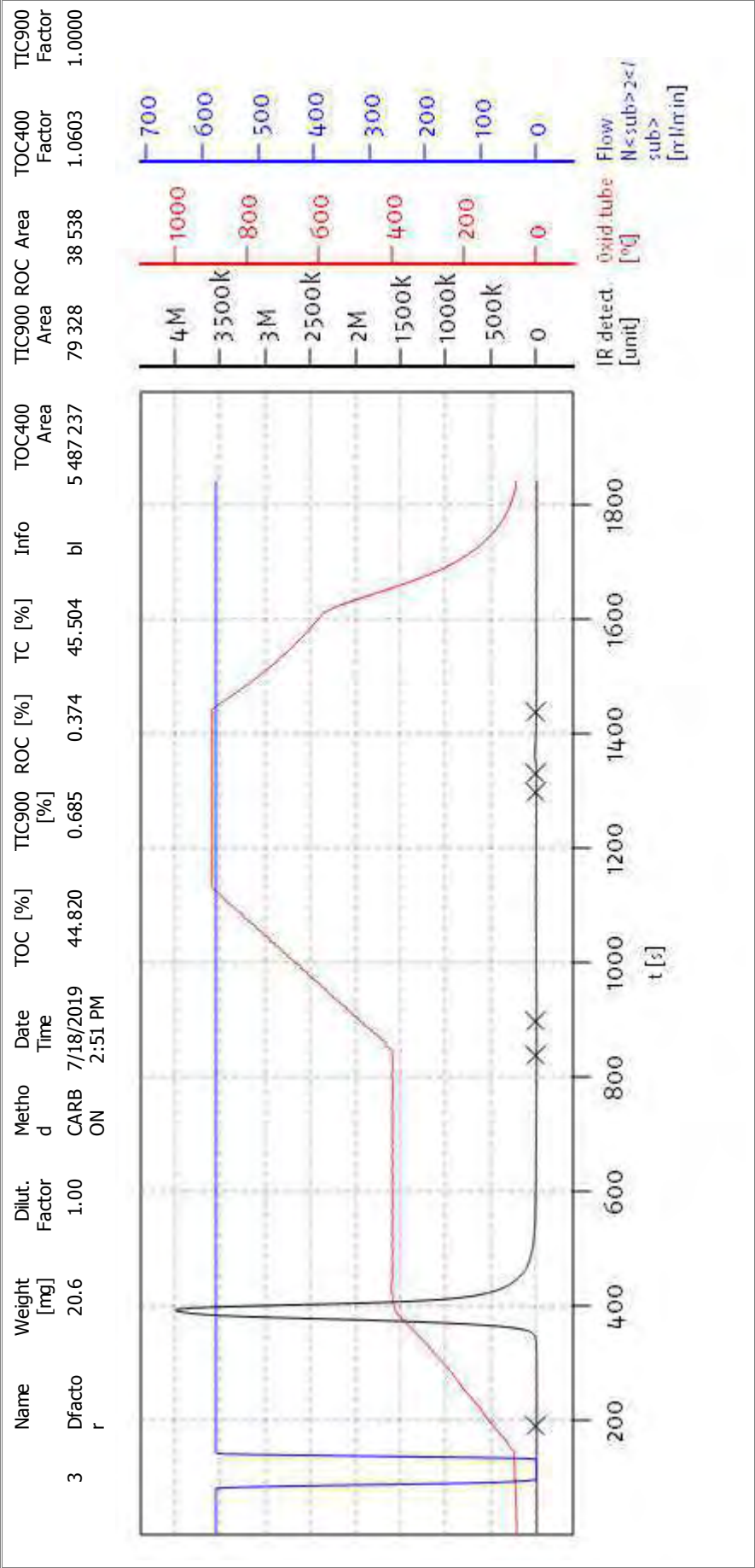
Name:

Access: soliT0C superuser

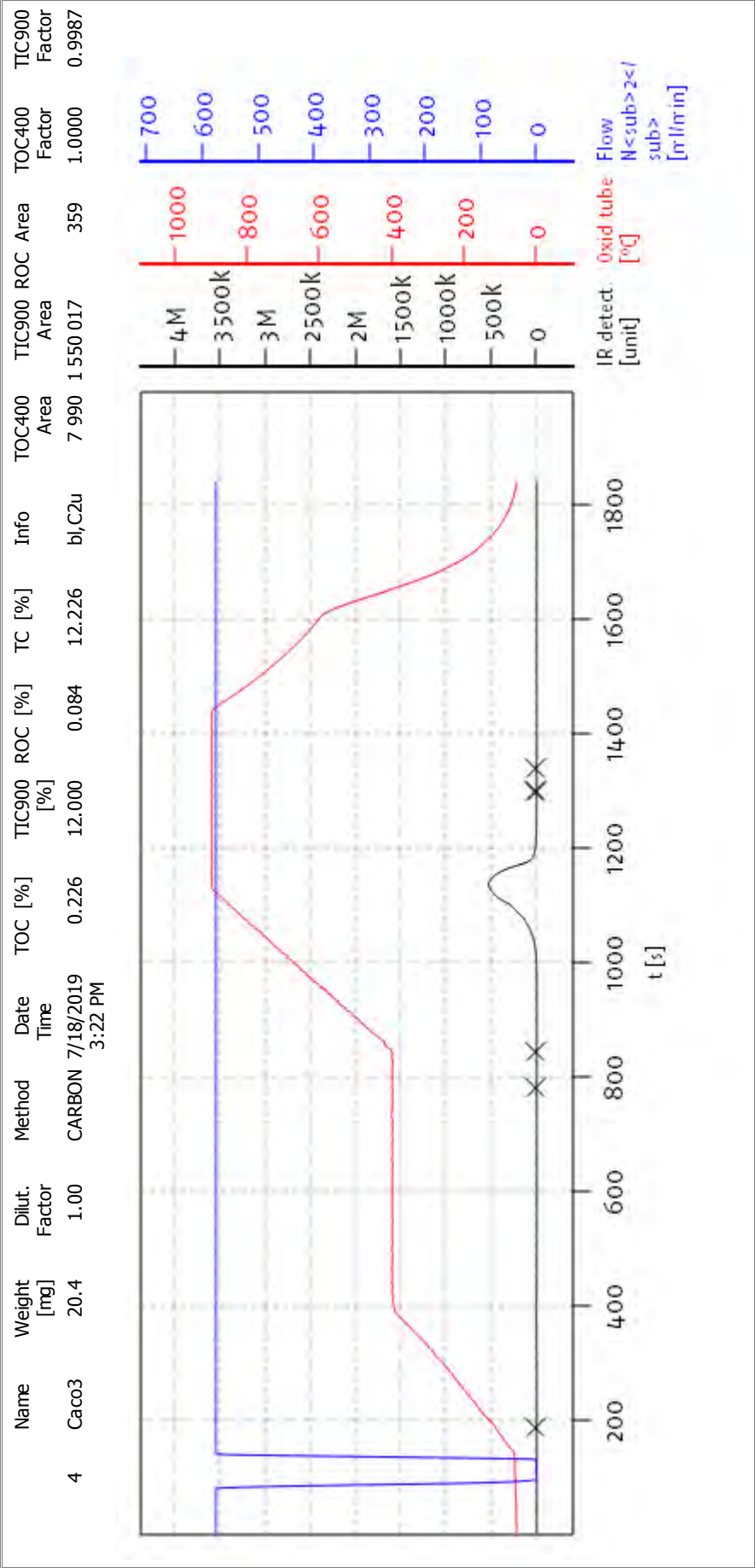
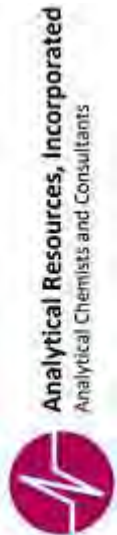
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Name:

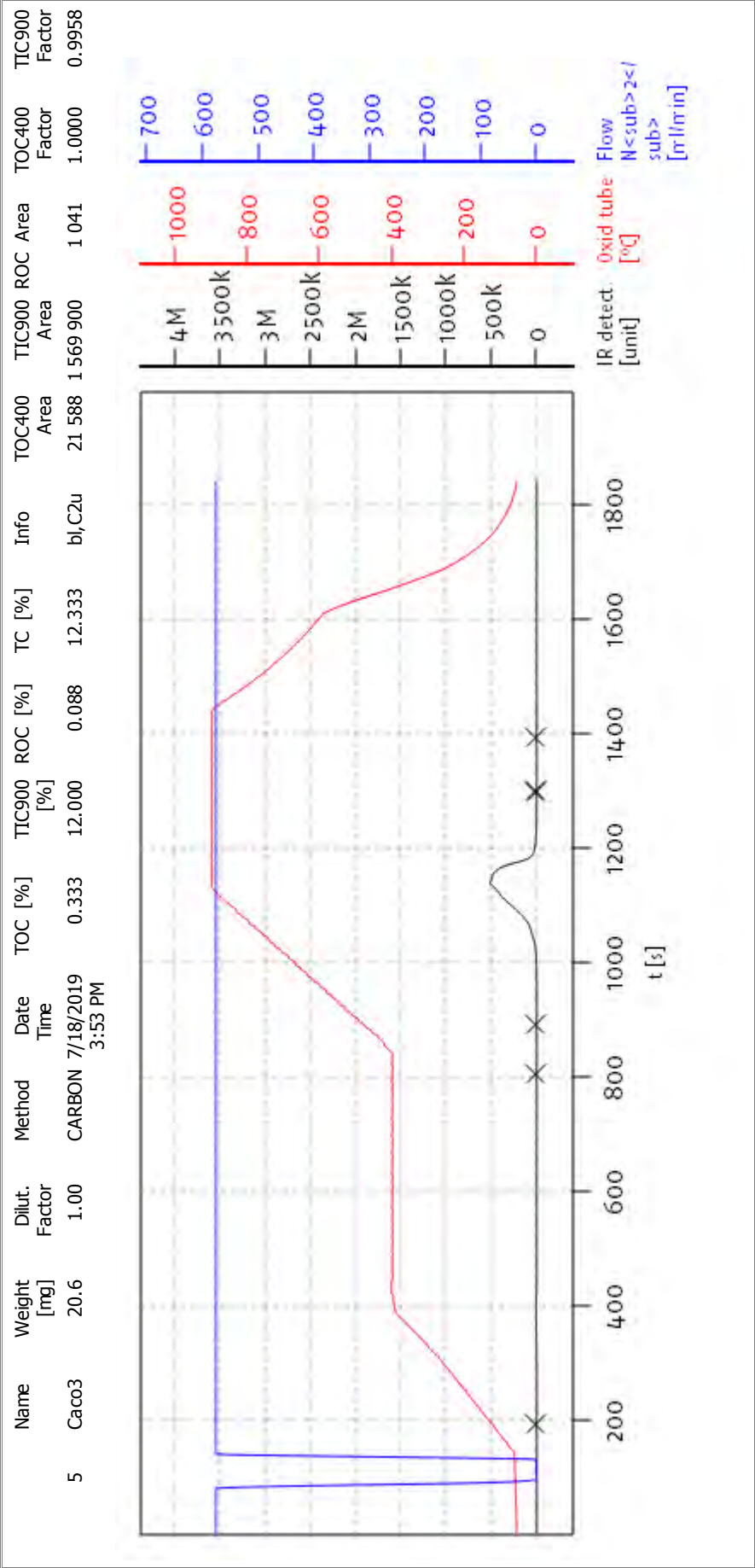
Access: soliT0C superuser

Date: Fri Jul 19 05:20:53 2019

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



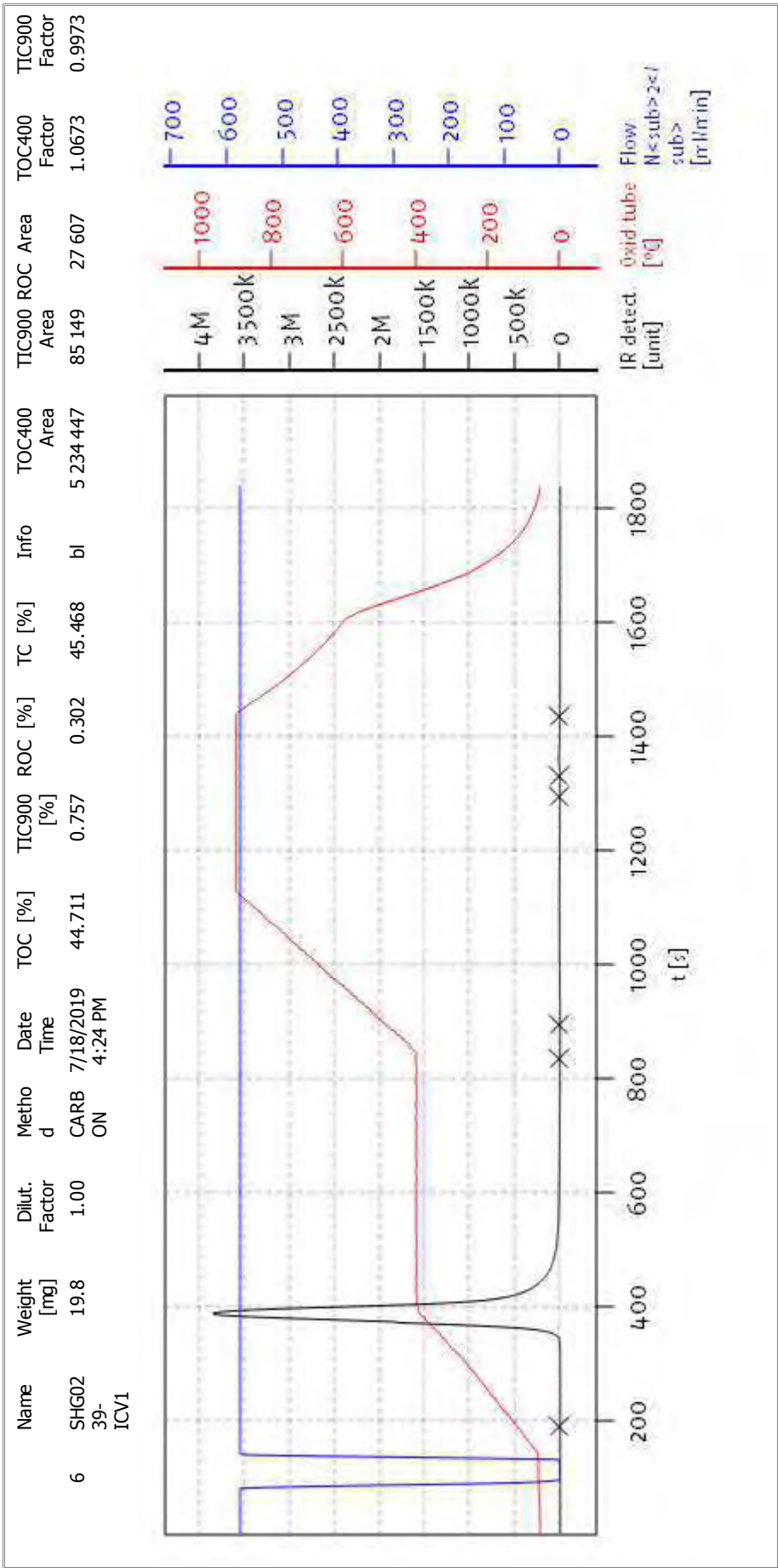
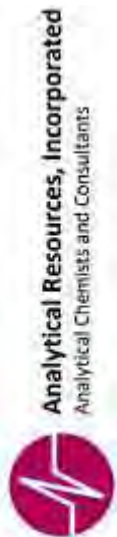
Name:

Access: soliT0C superuser

Date: Fri Jul 19 05:20:53 2019

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



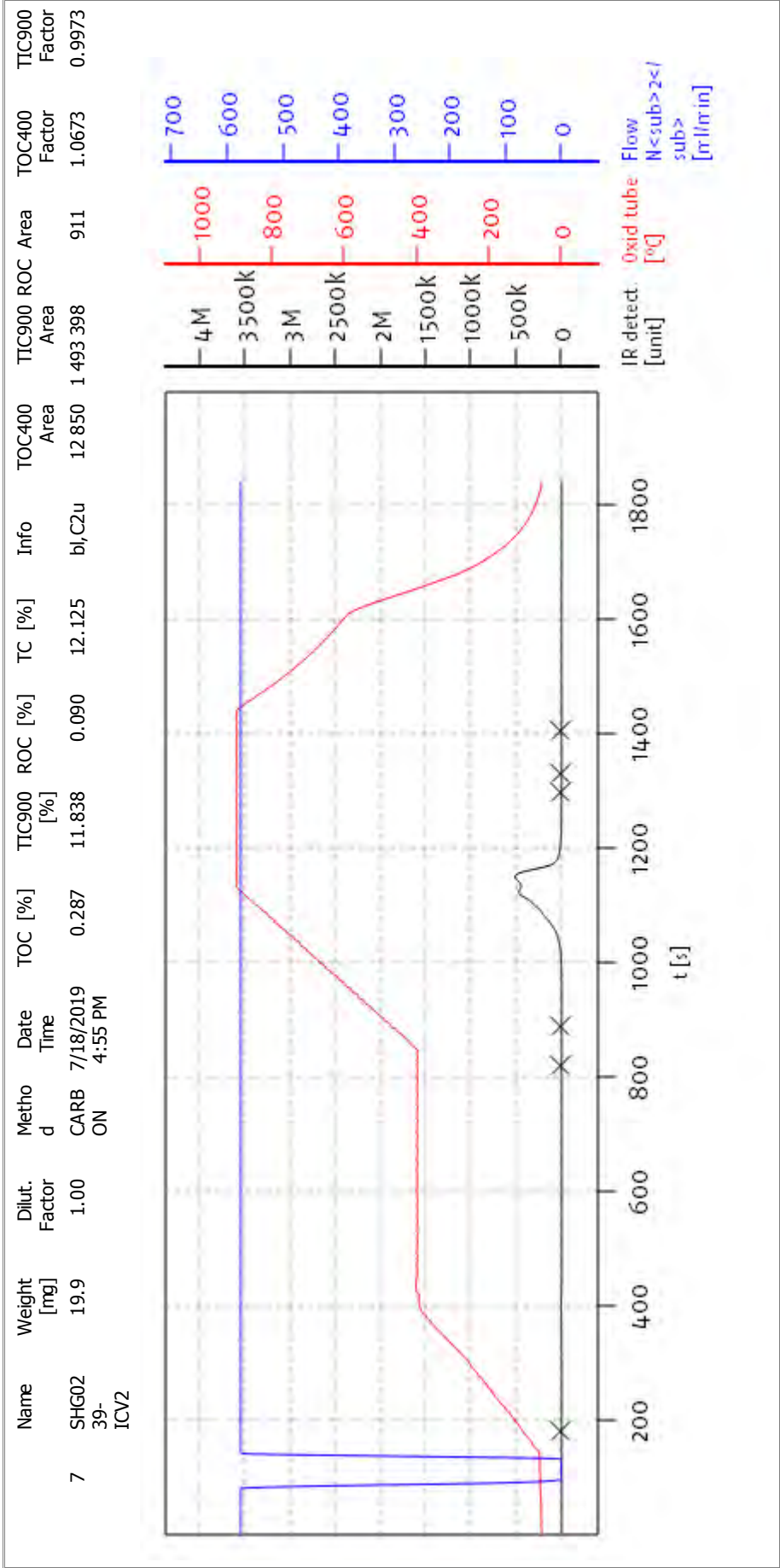
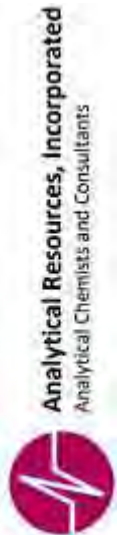
Date: Fri Jul 19 05:20:53 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



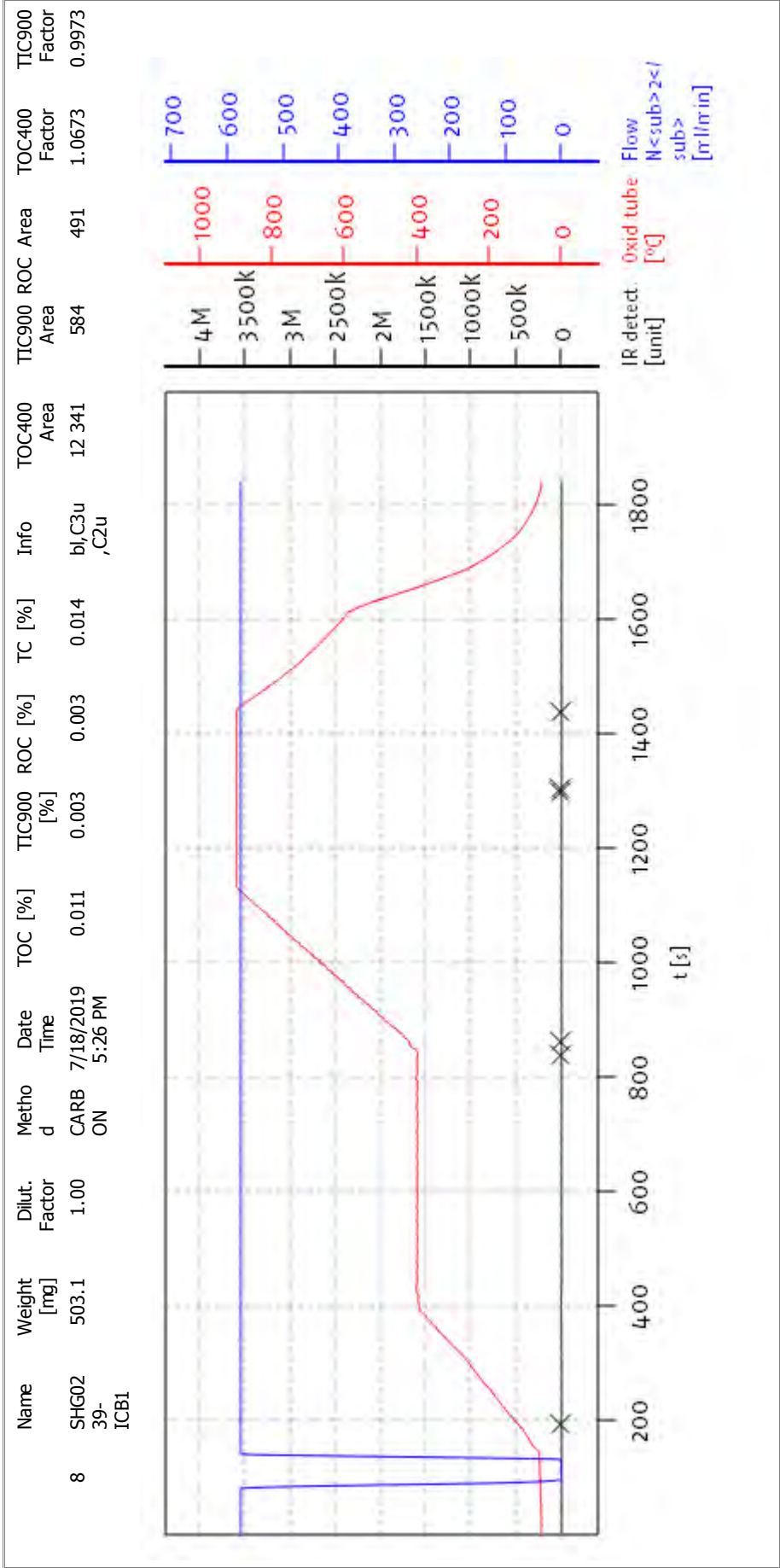
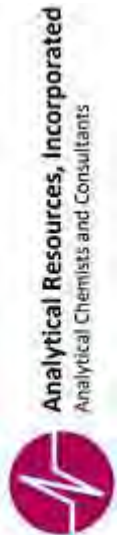
Date: Fri Jul 19 05:20:53 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



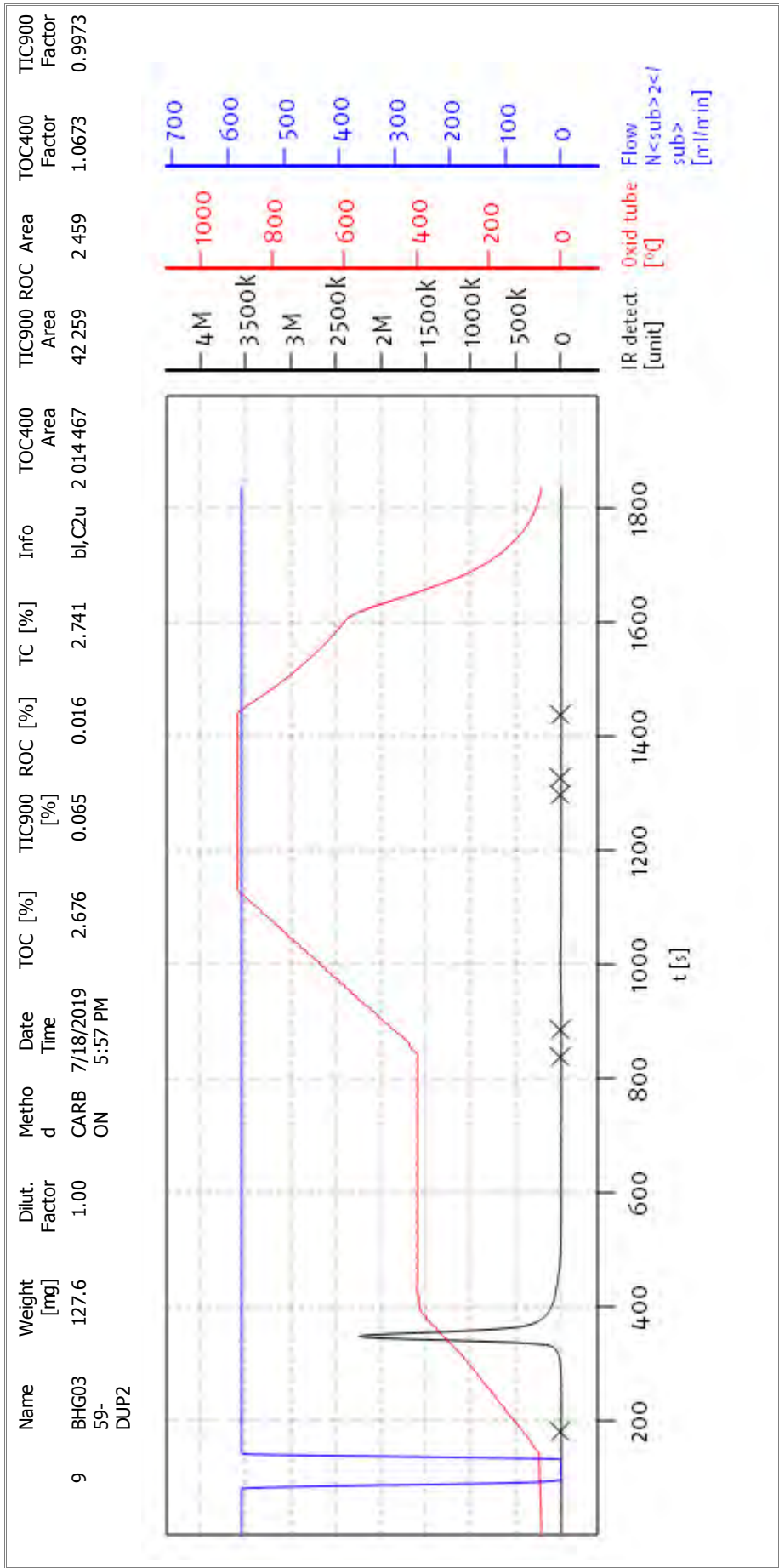
Date: Fri Jul 19 05:20:53 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

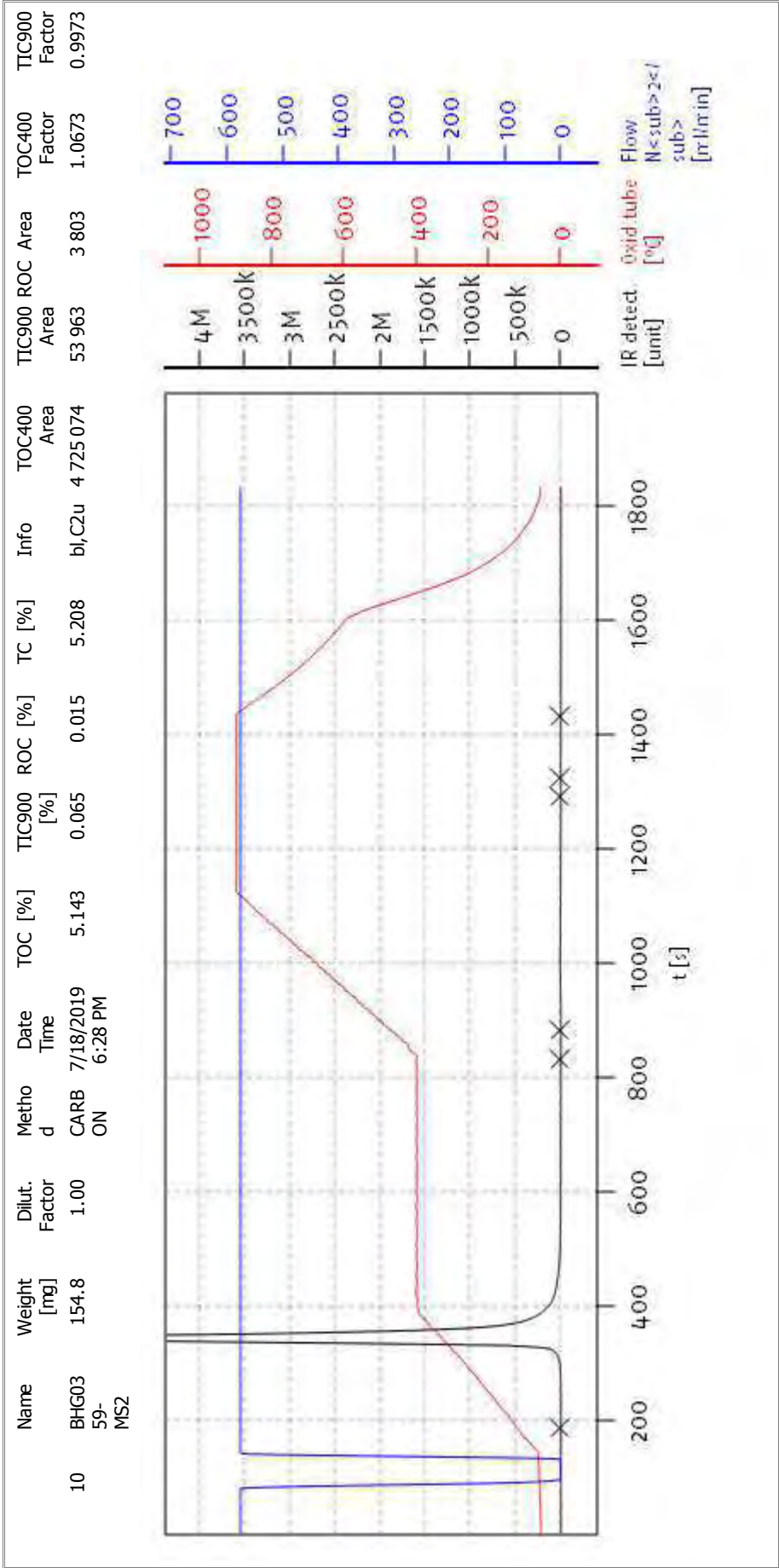
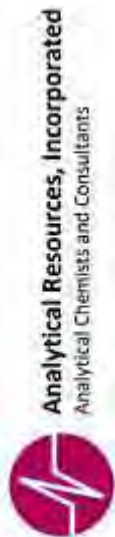
Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



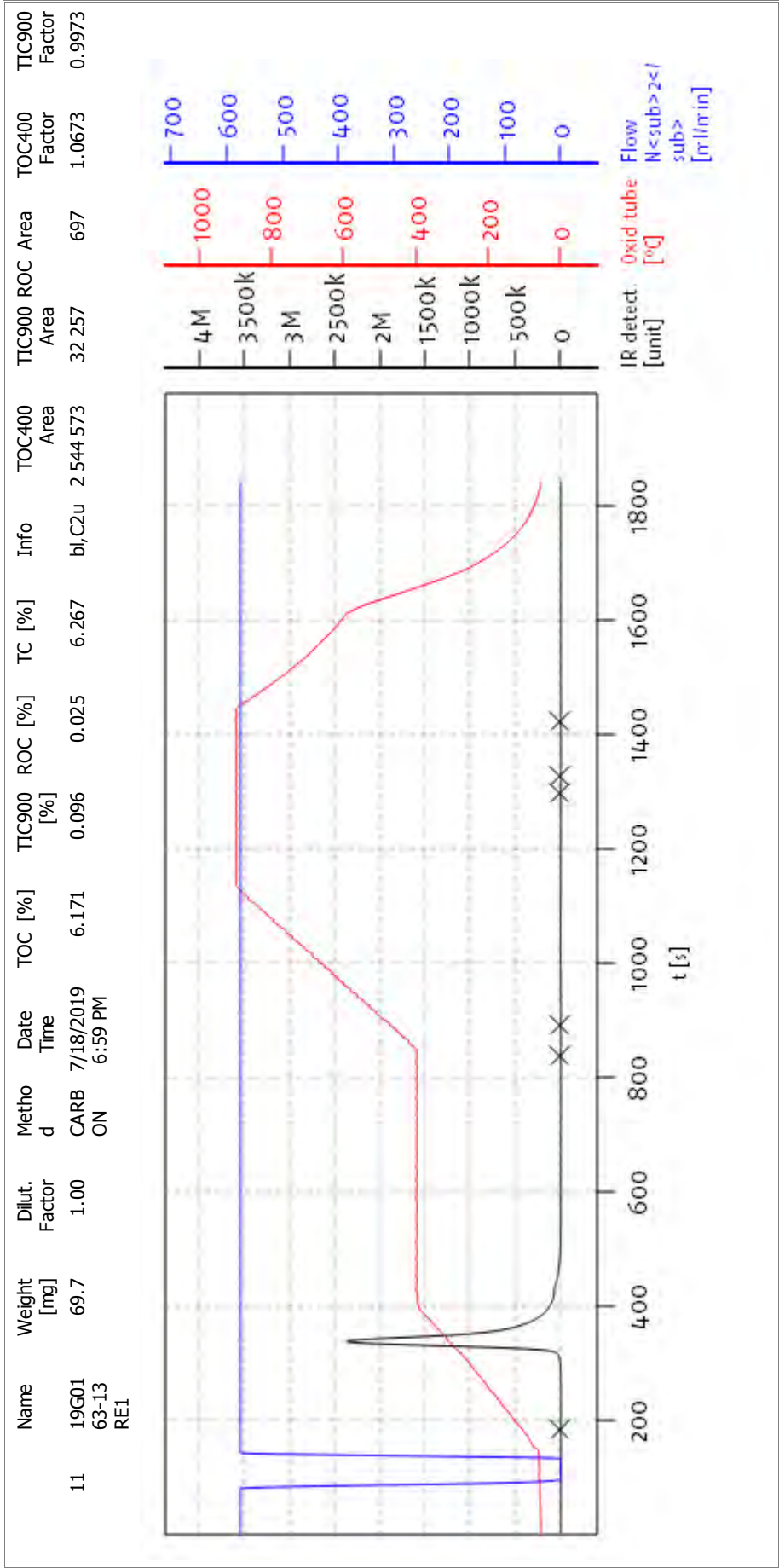
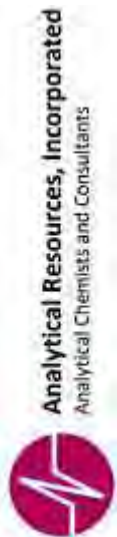
Date: Fri Jul 19 05:20:53 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

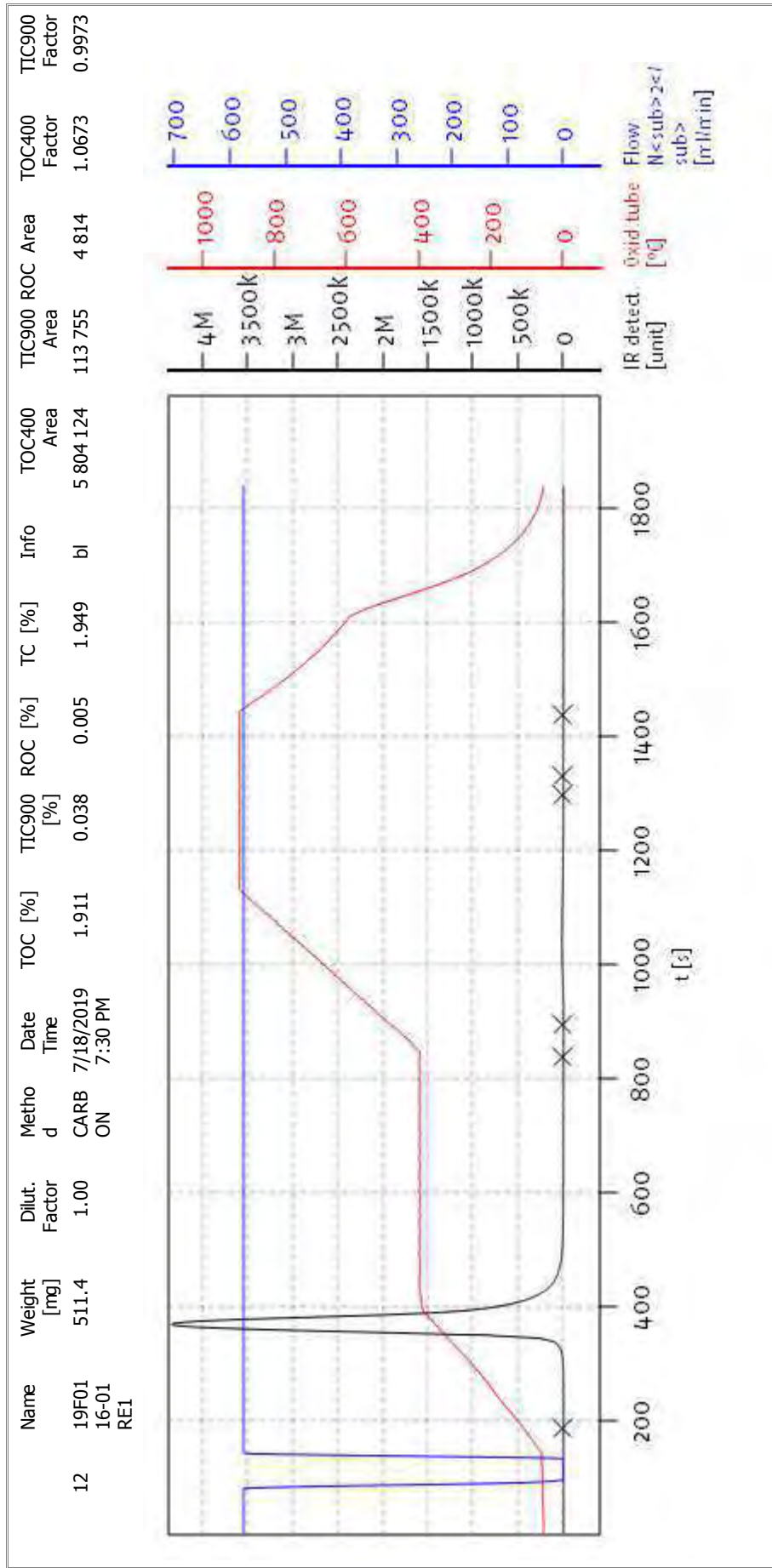
Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



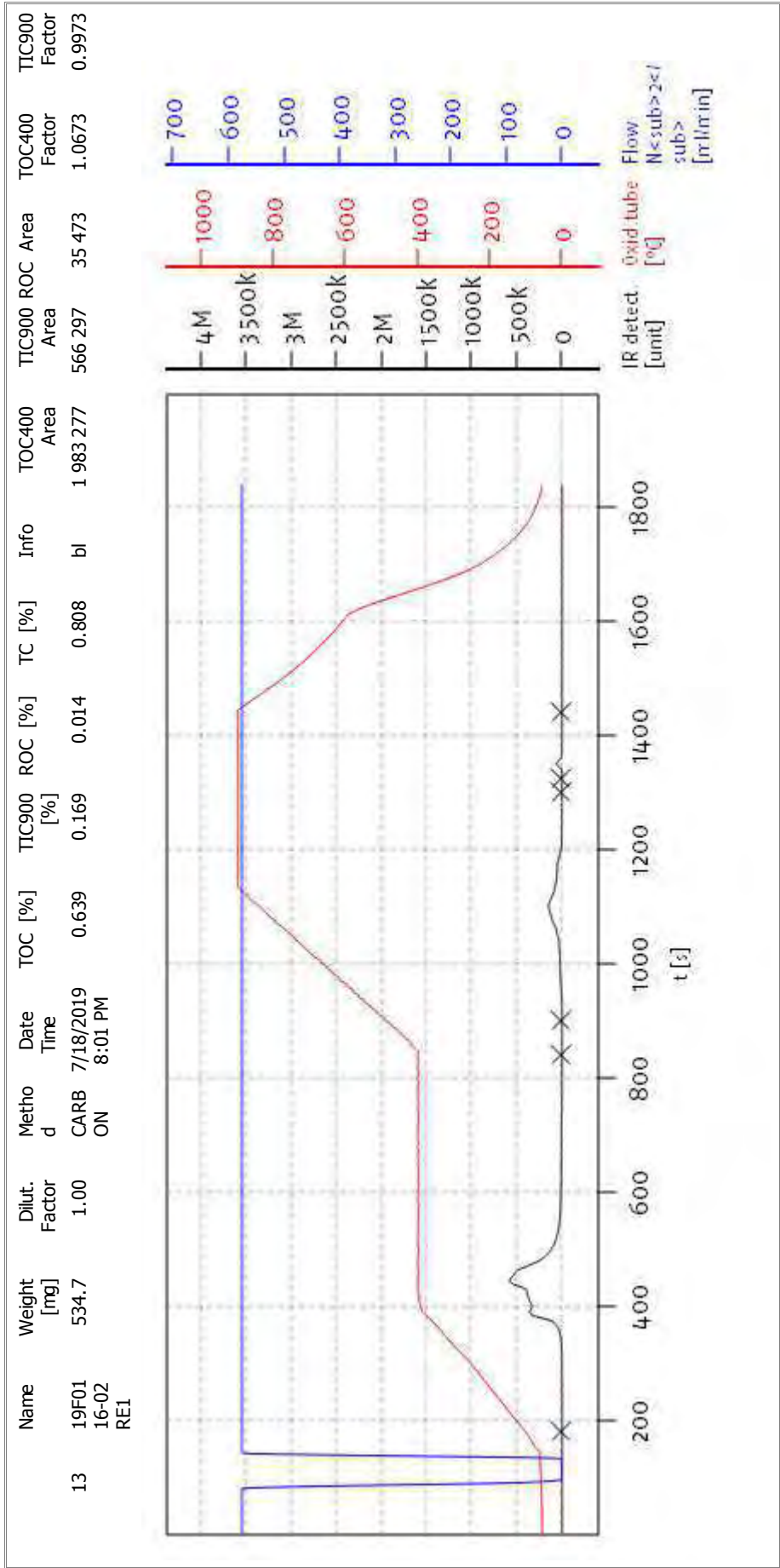
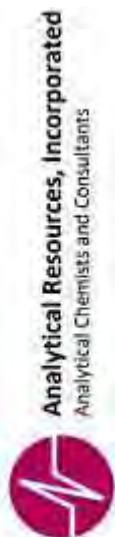
Name:

Access: soliT0C superuser

Date: Fri Jul 19 05:20:53 2019

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



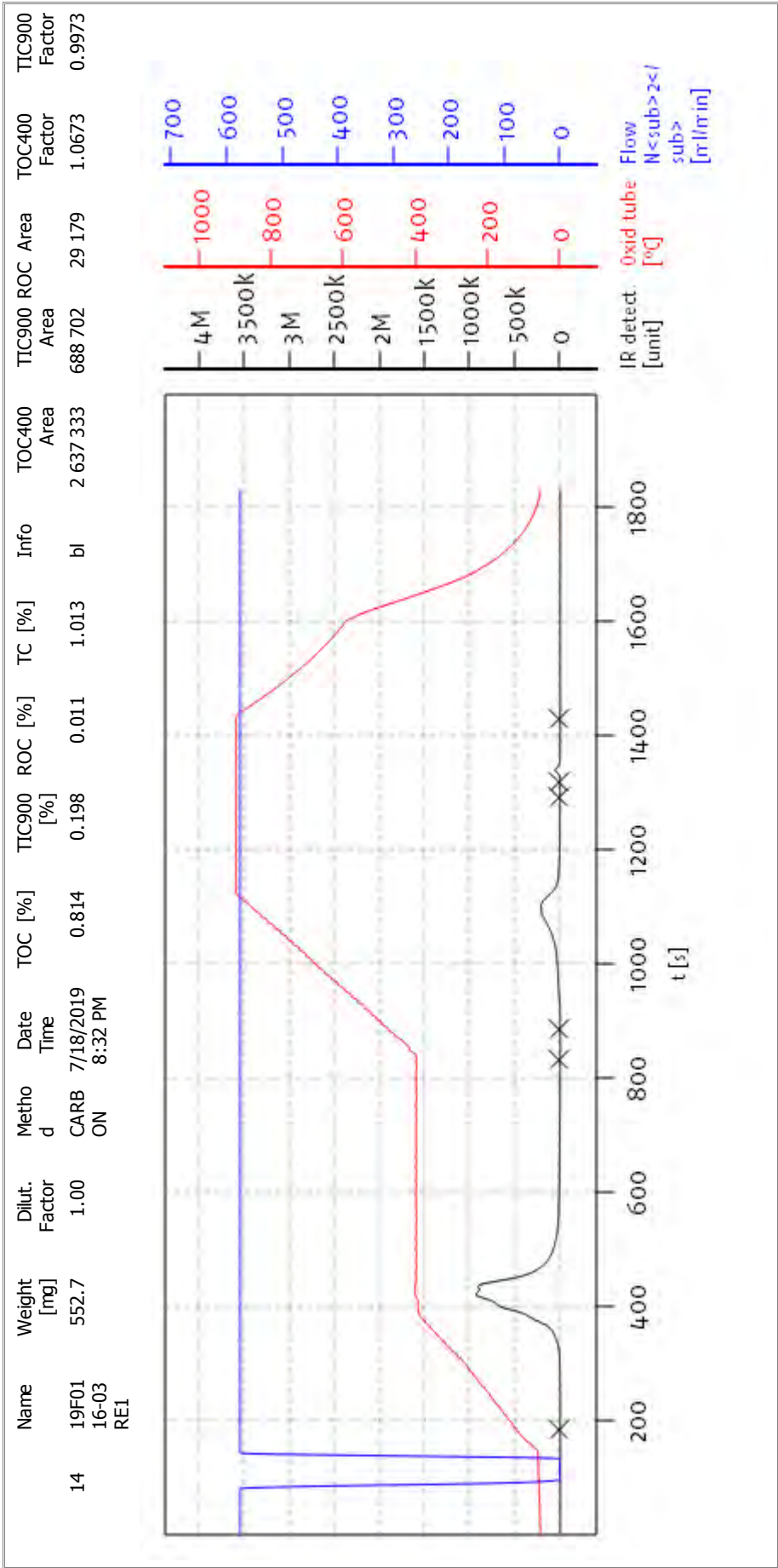
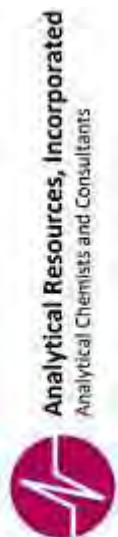
Date: Fri Jul 19 05:20:53 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



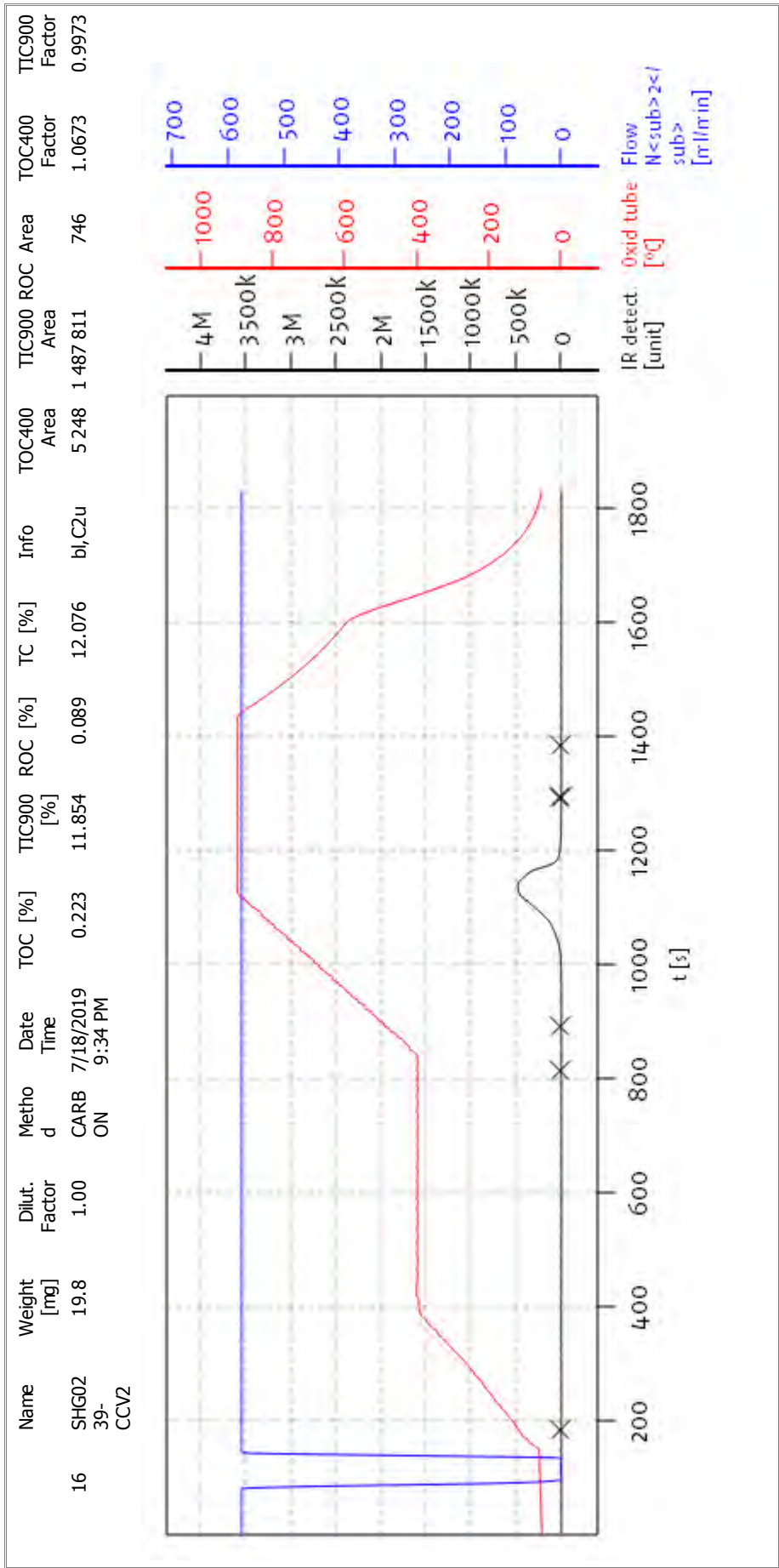
Date: Fri Jul 19 05:20:53 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

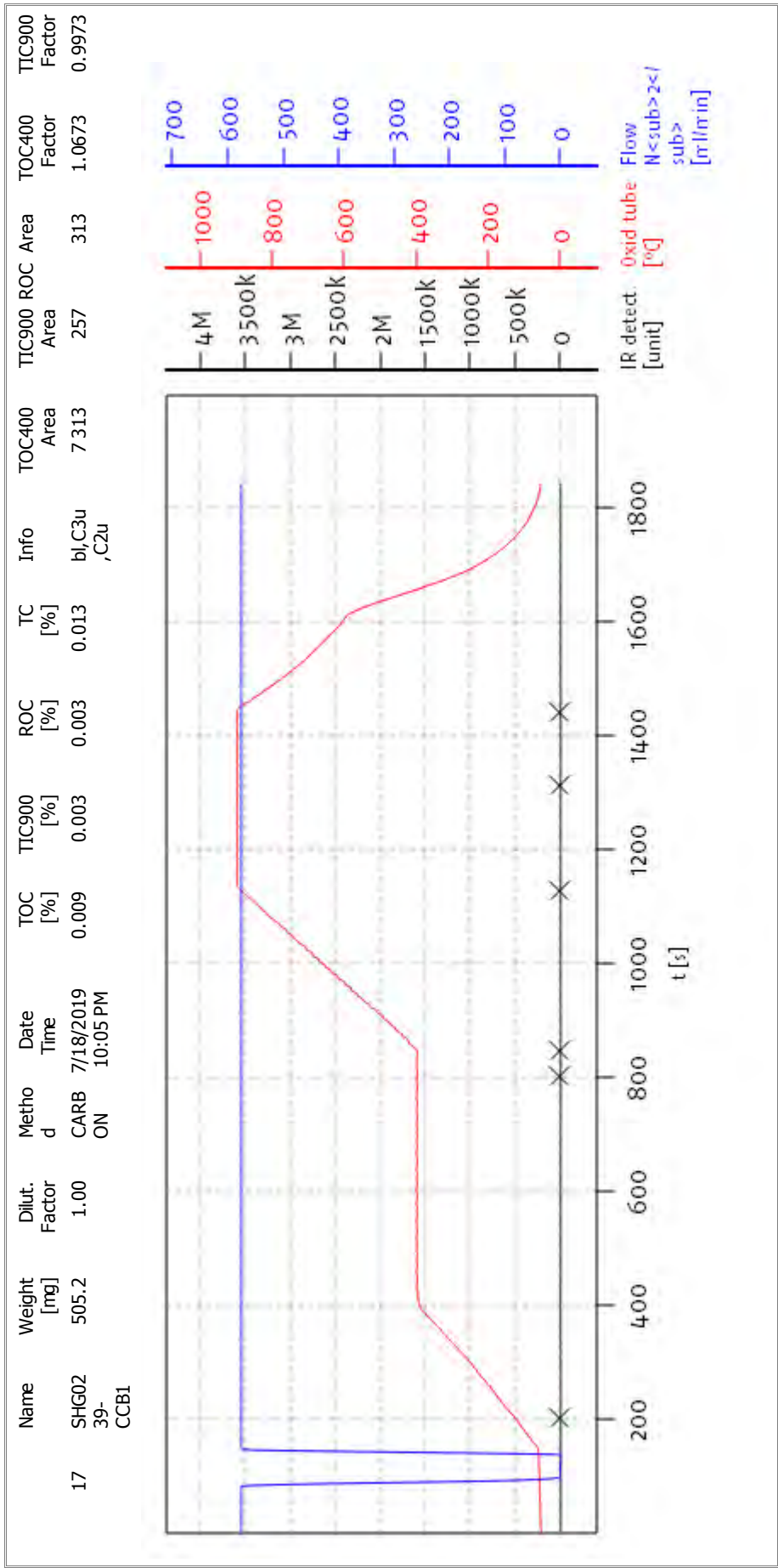
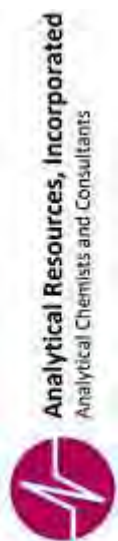
Name:



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: KLE



Date: Fri Jul 19 05:20:53 2019

Access: soliT0C superuser
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Name:





INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CE00054

Instrument: TOC Cube

Calibration Date: 05/17/2019 13:36

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.0071992	1054547	0.016798	1054411	0.022198	1133436	0.032397	1165602	0.045595	865336.1	0.059994	1192153
Total Carbon	0.0071992	1054547	0.016798	1054411	0.022198	1133436	0.032397	1165602	0.045595	865336.1	0.059994	1192153
Total Inorganic Carbon	0.0071992	1054547	0.016798	1054411	0.022198	1133436	0.032397	1165602	0.045595	865336.1	0.059994	1192153
% Soot	0.0071992	1054547	0.016798	1054411	0.022198	1133436	0.032397	1165602	0.045595	865336.1	0.059994	1192153



INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CE00054

Instrument: TOC Cube

Calibration Date: 05/17/2019 13:36

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.075592	1221611	0.090291	1221262	0.12059	1240103	0.14998	1240986	0.24	1241146	0.3	1245093
Total Carbon	0.075592	1221611	0.090291	1221262	0.12059	1240103	0.14998	1240986	0.24	1241146	0.3	1245093
Total Inorganic Carbon	0.075592	1221611	0.090291	1221262	0.12059	1240103	0.14998	1240986	0.24	1241146	0.3	1245093
% Soot	0.075592	1221611	0.090291	1221262	0.12059	1240103	0.14998	1240986	0.24	1241146	0.3	1245093



INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CE00054

Instrument: TOC Cube

Calibration Date: 05/17/2019 13:36

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	0.438	1251868	0.612	1269657	0.906	1283355	1.212	1272632	1.506	1261687	1.836	1261503
Total Carbon	0.438	1251868	0.612	1269657	0.906	1283355	1.212	1272632	1.506	1261687	1.836	1261503
Total Inorganic Carbon	0.438	1251868	0.612	1269657	0.906	1283355	1.212	1272632	1.506	1261687	1.836	1261503
% Soot	0.438	1251868	0.612	1269657	0.906	1283355	1.212	1272632	1.506	1261687	1.836	1261503



INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CE00054

Instrument: TOC Cube

Calibration Date: 05/17/2019 13:36

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
		RF		RF		RF		RF		RF		RF
Total Organic Carbon	2.412	1272114	3.054	1259145	4.272	1275412	4.908	1257103	5.484	1275821	7.254	1277724
Total Carbon	2.412	1272114	3.054	1259145	4.272	1275412	4.908	1257103	5.484	1275821	7.254	1277724
Total Inorganic Carbon	2.412	1272114	3.054	1259145	4.272	1275412	4.908	1257103	5.484	1275821	7.254	1277724
% Soot	2.412	1272114	3.054	1259145	4.272	1275412	4.908	1257103	5.484	1275821	7.254	1277724



INITIAL CALIBRATION DATA

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Calibration: CE00054

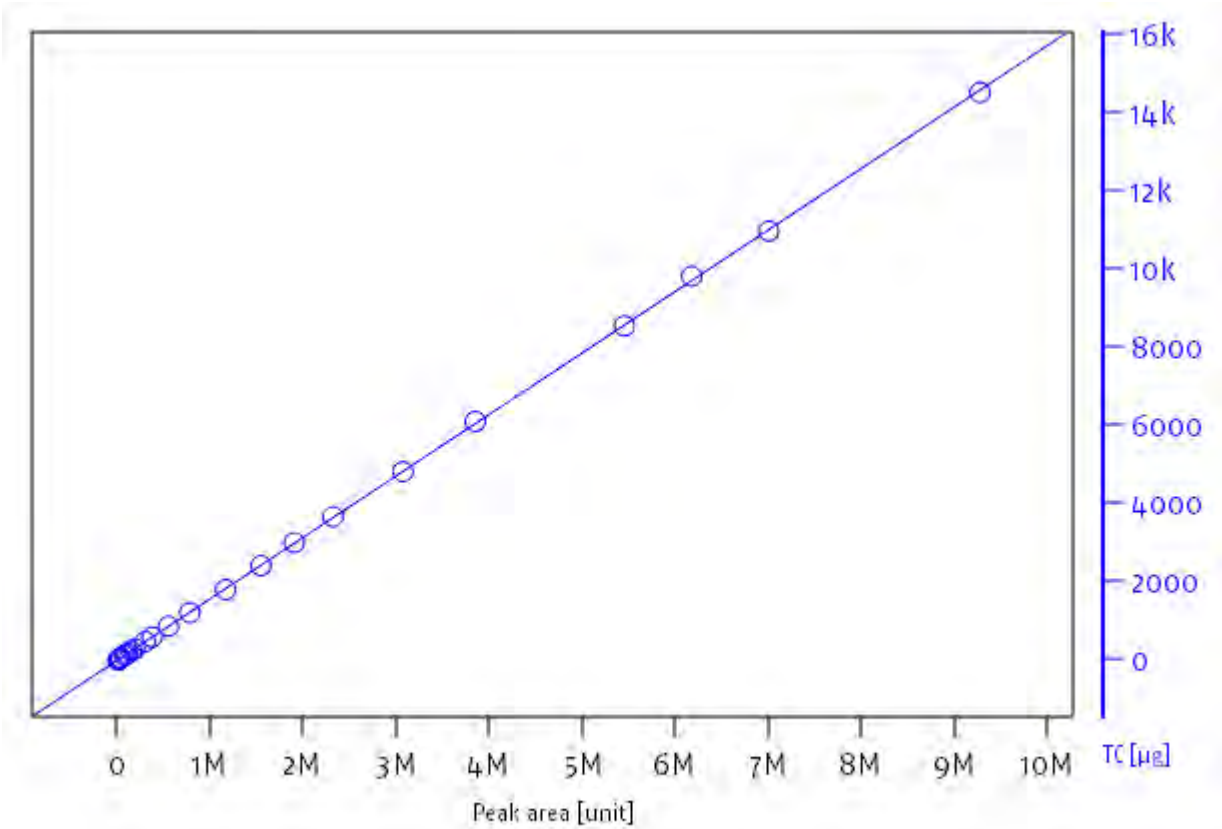
Instrument: TOC Cube

Calibration Date: 05/17/2019 13:36

COMPOUND	Mean RF	RF RSD	Linear COD	Quad COD	COD Limit	Q
Total Organic Carbon	1212238	8.1	0.9999			
Total Carbon	1212238	8.1	0.9999			
Total Inorganic Carbon	1212238	8.1	0.9999			
% Soot	1212238	8.1	0.9999			

Calibration parameters TC, Whole range	
a	+1.650153e-02
b	+1.570679e-06
c	+0.000000e+00
d	+0.000000e+00
e	+0.000000e+00
r	0.999938
r_old	0.999938
Proc.-SD	32.739237 µg

Calibration graph TC, Whole range



Name:

Access: soliTOC superuser

Date: Wed May 22 09:16:34 2019



soliTOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.181017
Mode CCC

Pos.	Name	Weight [mg]	Dilut. Factor	Method	Date Time	TOC [%]	TC [%]	Info	TOC400 Area	TIC900 ROC Area	TOC400 Factor	TIC900 Factor
3	3 SEQ-CAL1	200.0	1.00	CARBON	5/17/2019 1:36PM		0.007	bl,C1u, C3u,C2 u	7 688	7 592	1.0000	1.0000

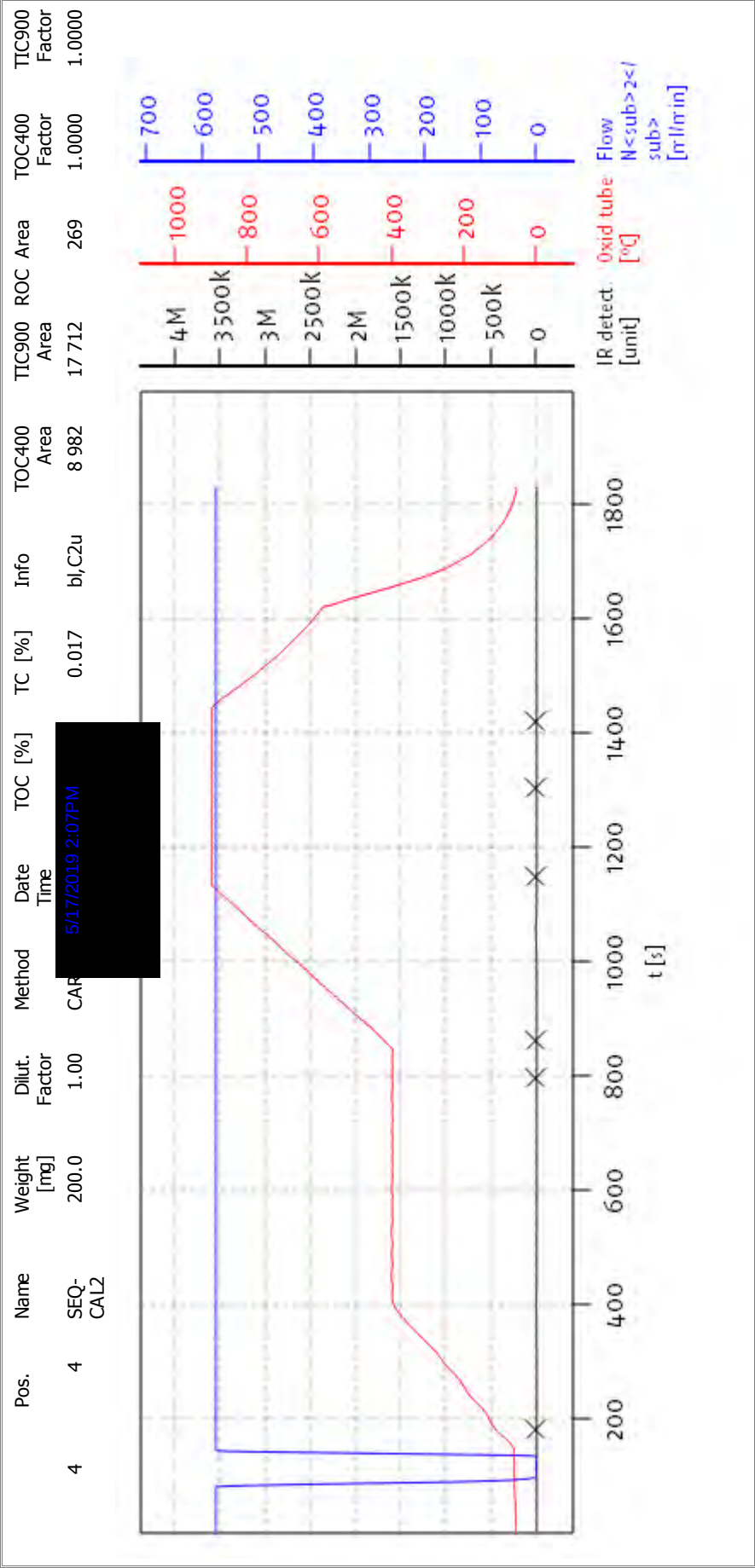
IR detect. [unit]

Oxid tube [%]

Flow N₂> [ml/min]

t[s]

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



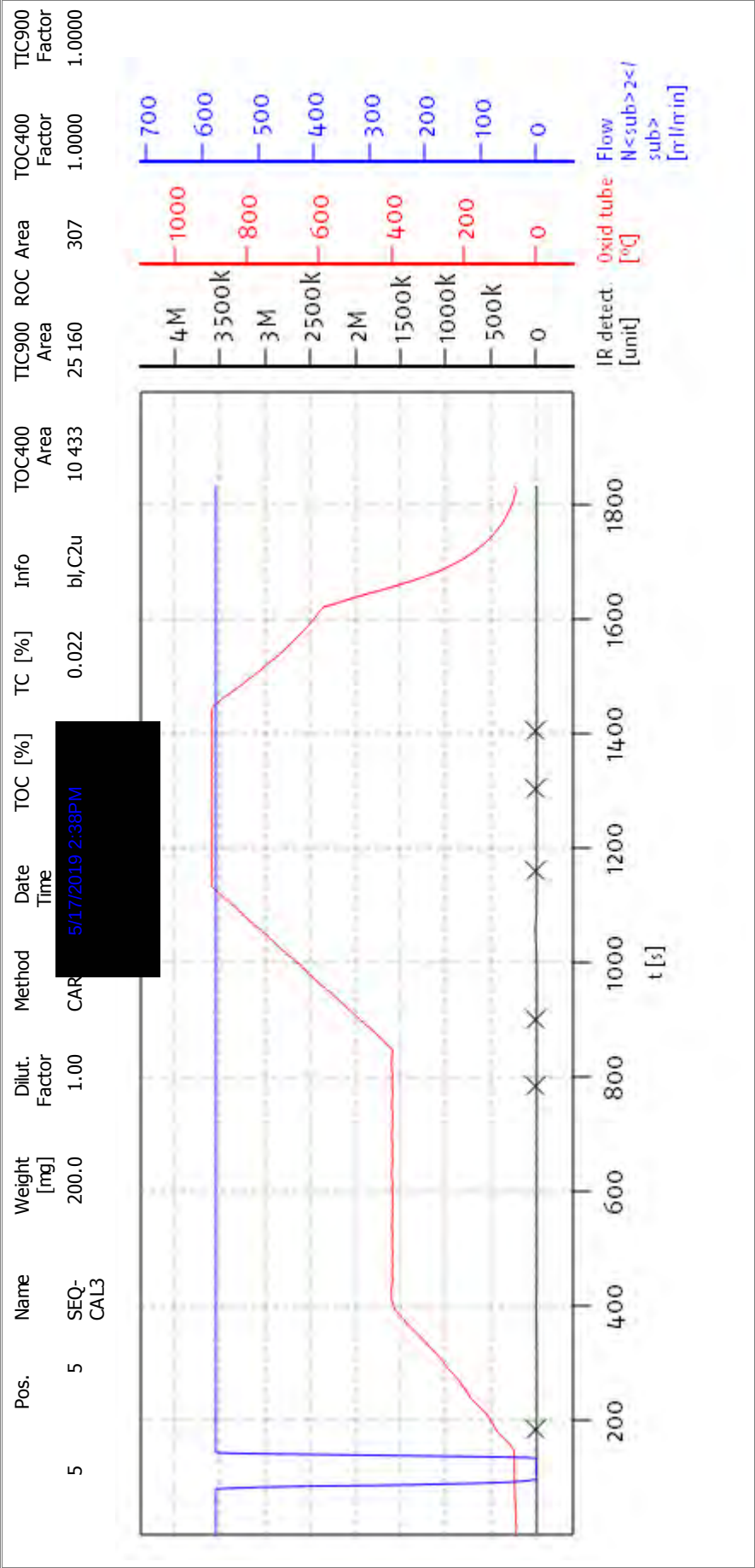
Name:

Access: soliT0C superuser

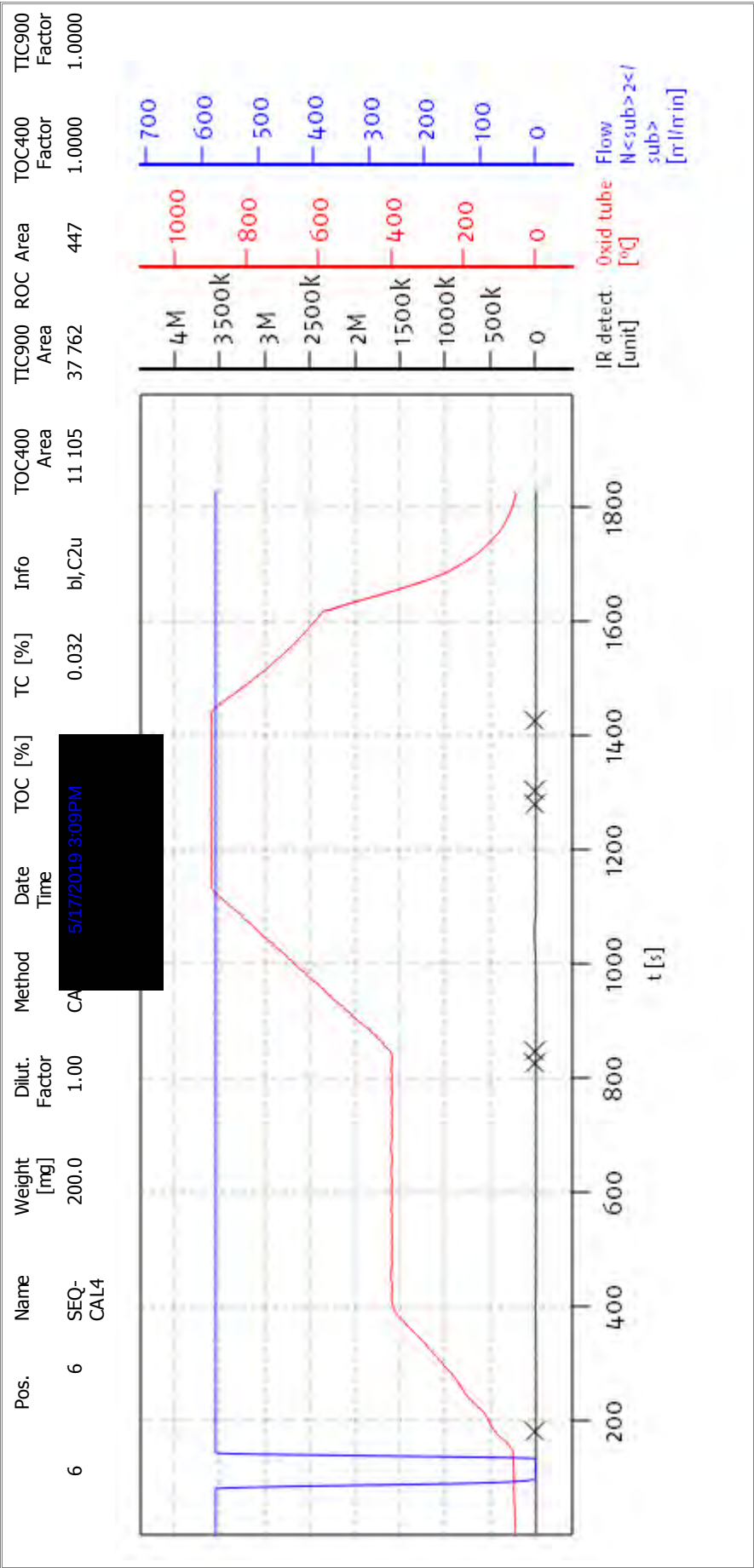
Date: Wed May 22 09:18:30 2019

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

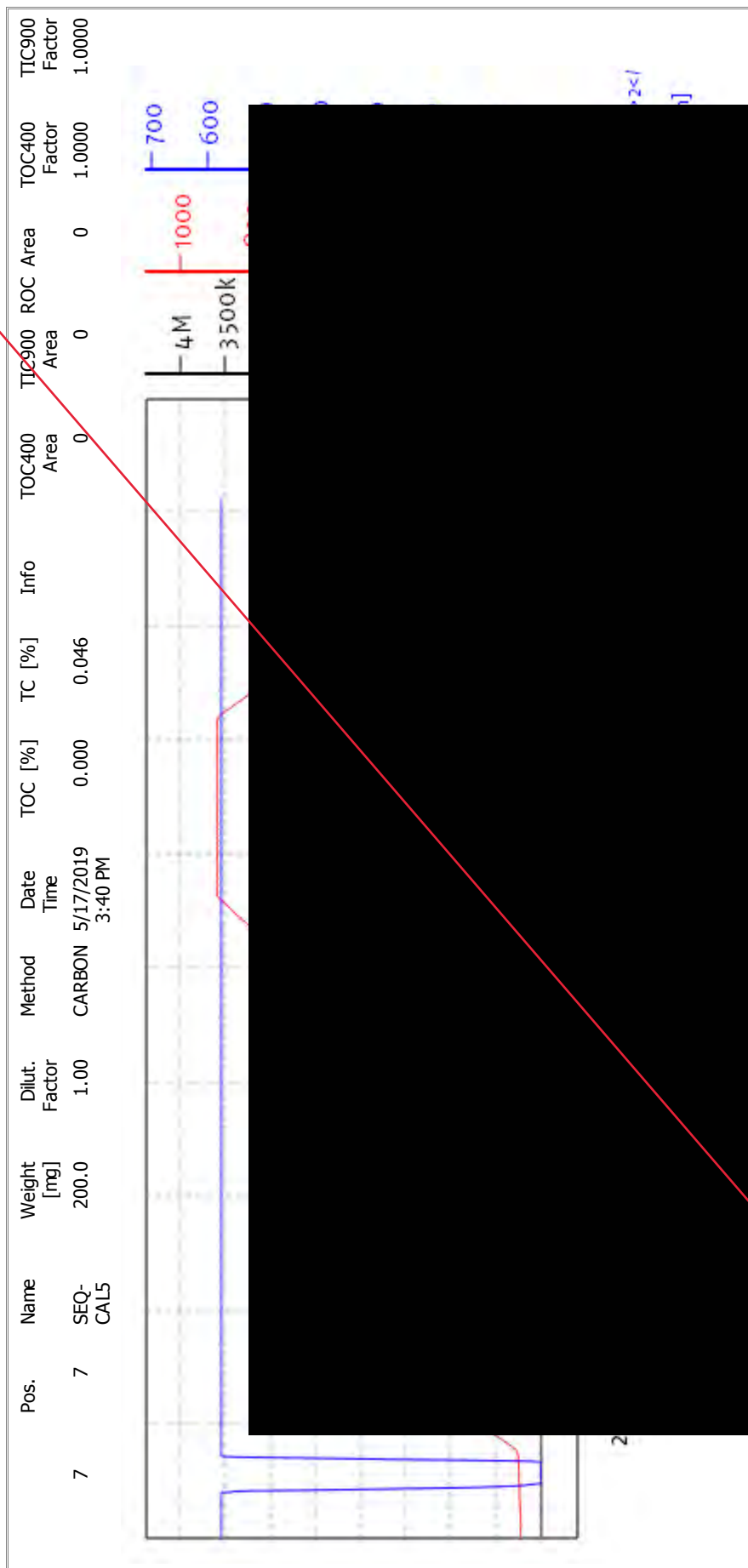
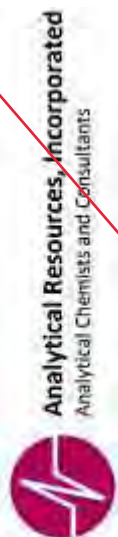
Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

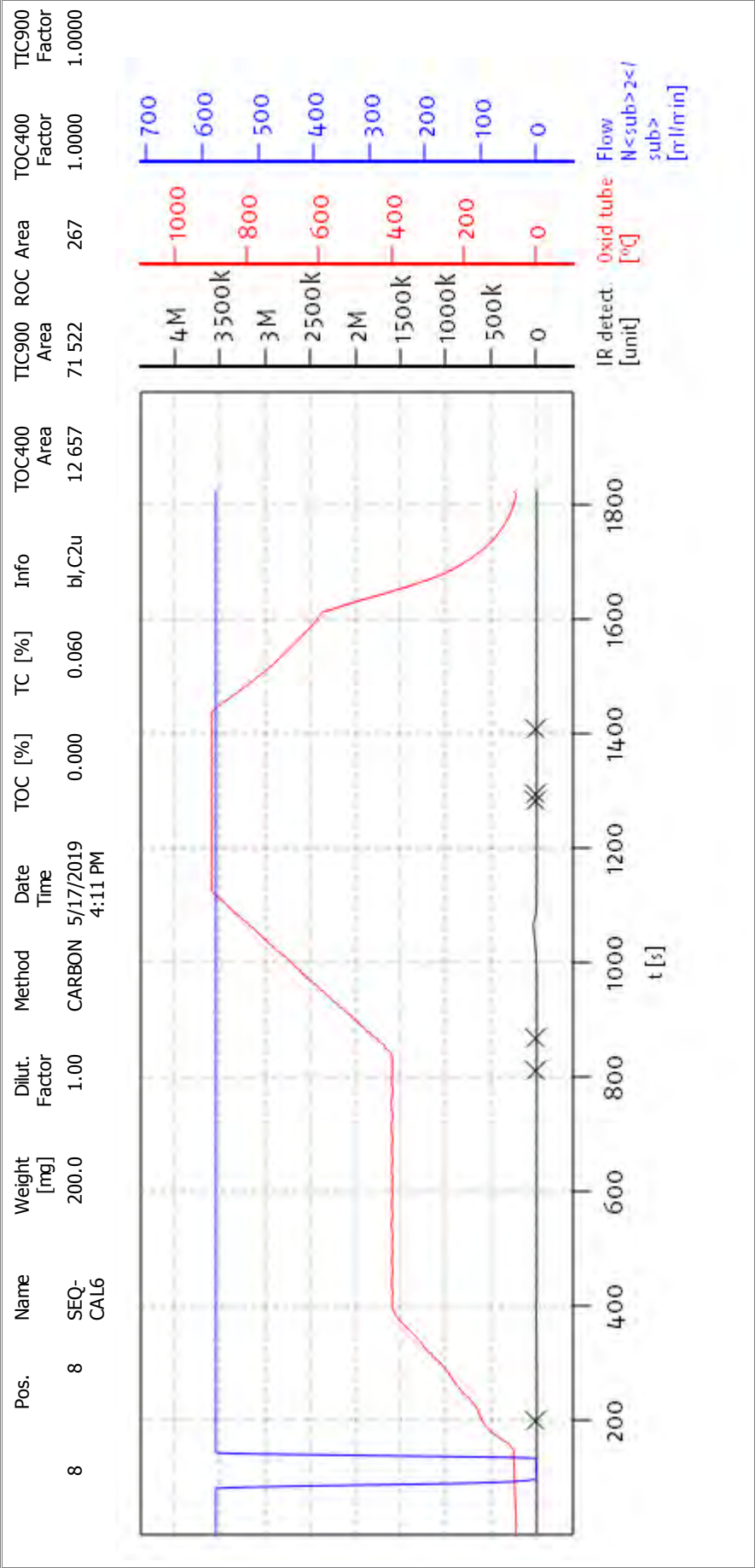


Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19
 Serial No: 0300.181017
 Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

Access: soliT0C superuser

Date: Wed May 22 09:18:30 2019

solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

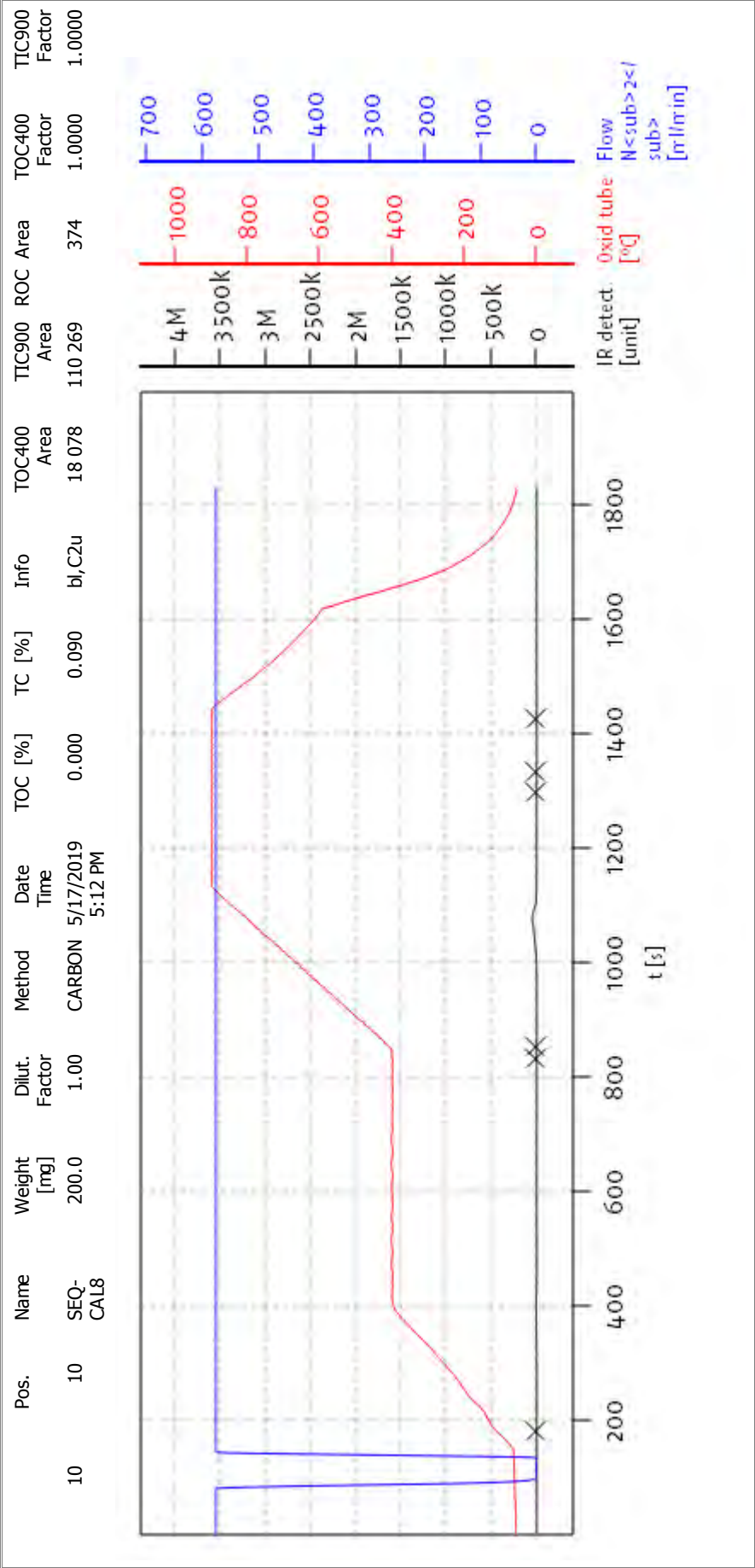
Pos.	Name	Weight [mg]	Dilut. Factor	Method	Date Time	TOC [%]	TC [%]	Info	TOC400 Area	TIC900 Area	ROC Area	TOC400 Factor	TIC900 Factor
9	9 SEQ- CAL7	200.0	1.00	CARBON	5/17/2019 4:41 PM	0.000	0.076	bl,C2u	11 536	92 344	271	1.0000	1.0000

IR detect. [unit]

Flow N₂ [ml/min]

t [s]

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



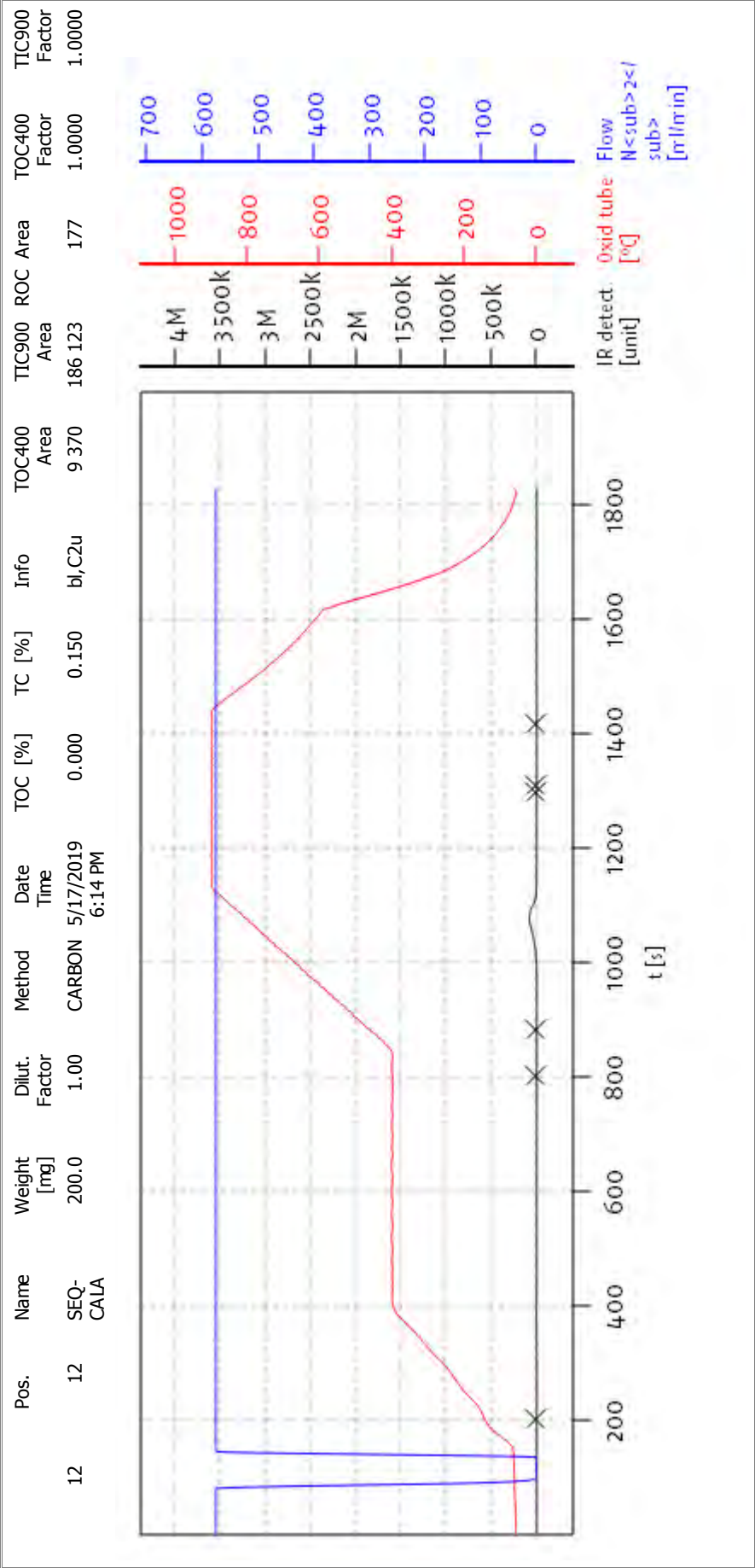
Name:

Access: soliT0C superuser

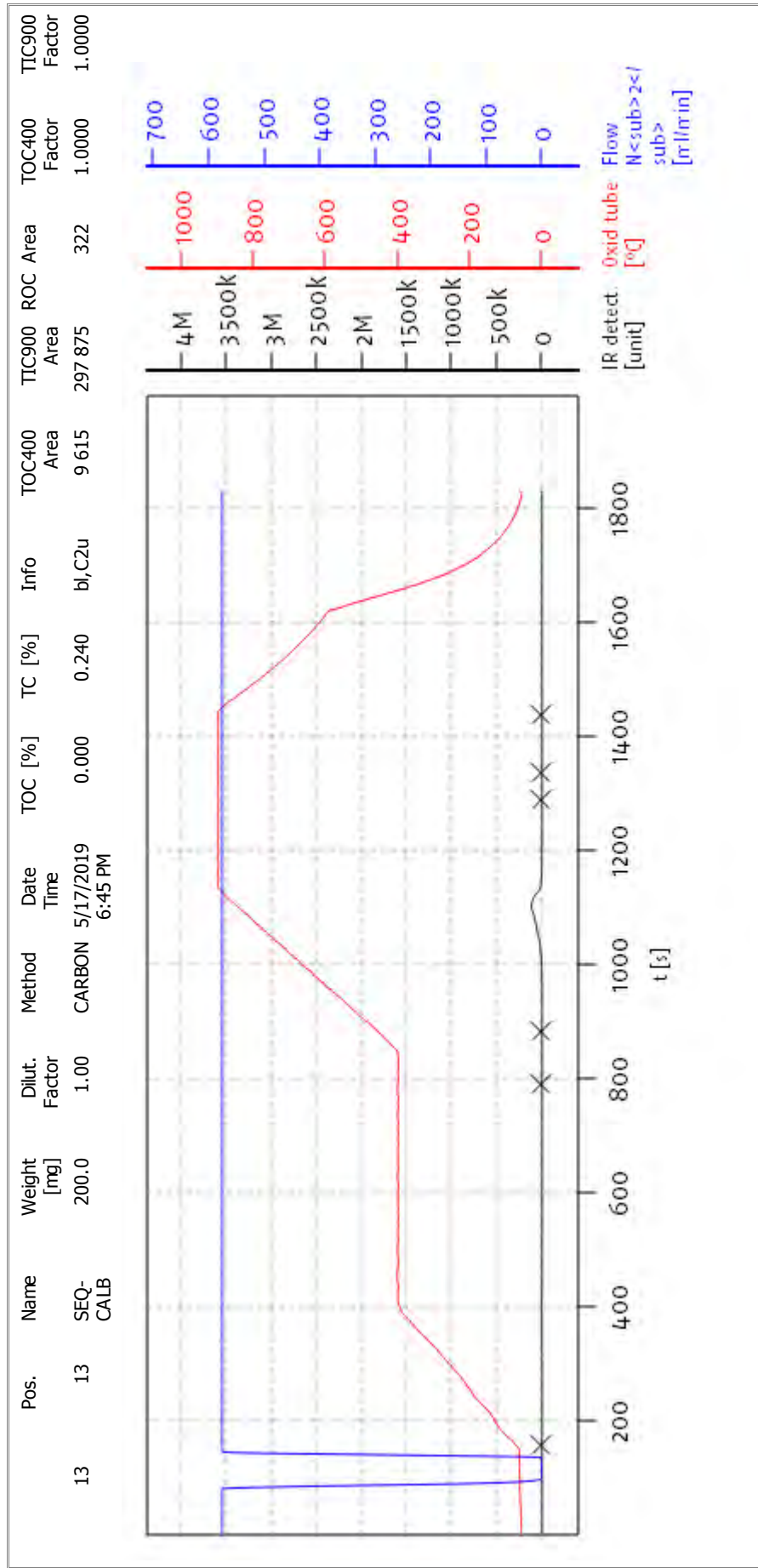
Date: Wed May 22 09:18:30 2019

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

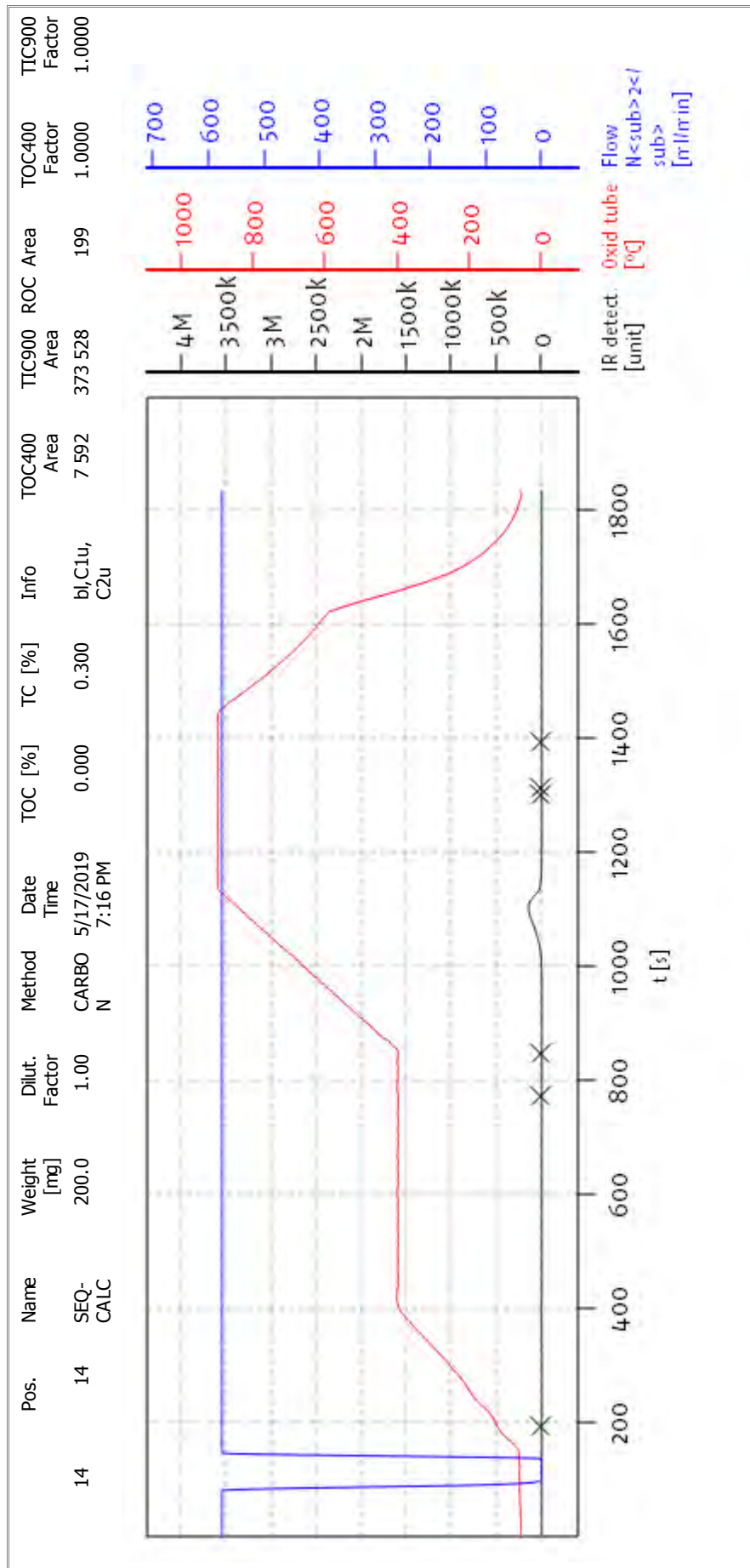
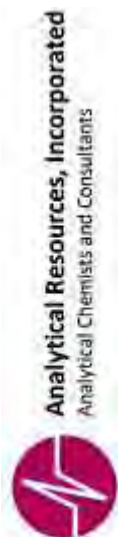
Access: soliT0C superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

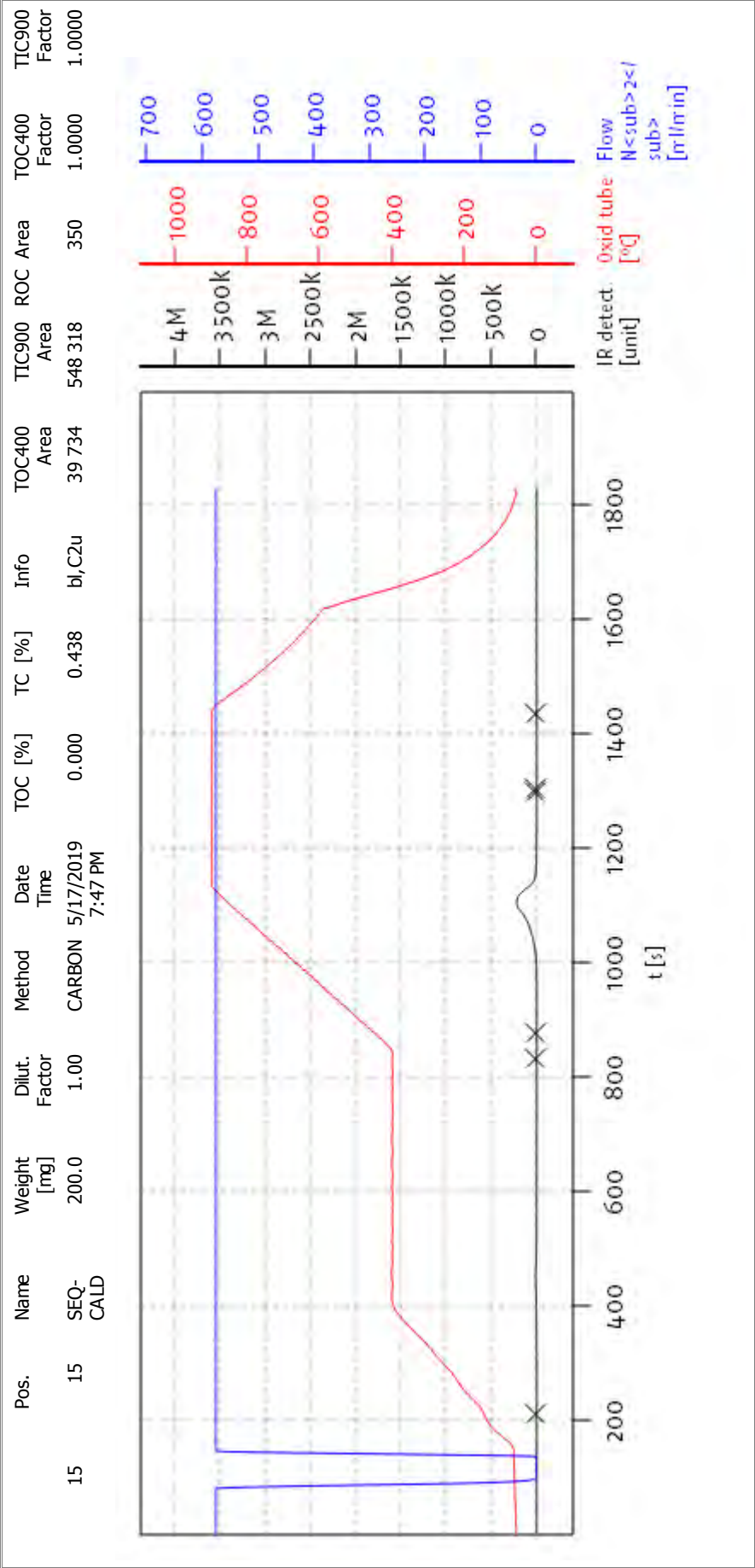
Access: soliT0C superuser



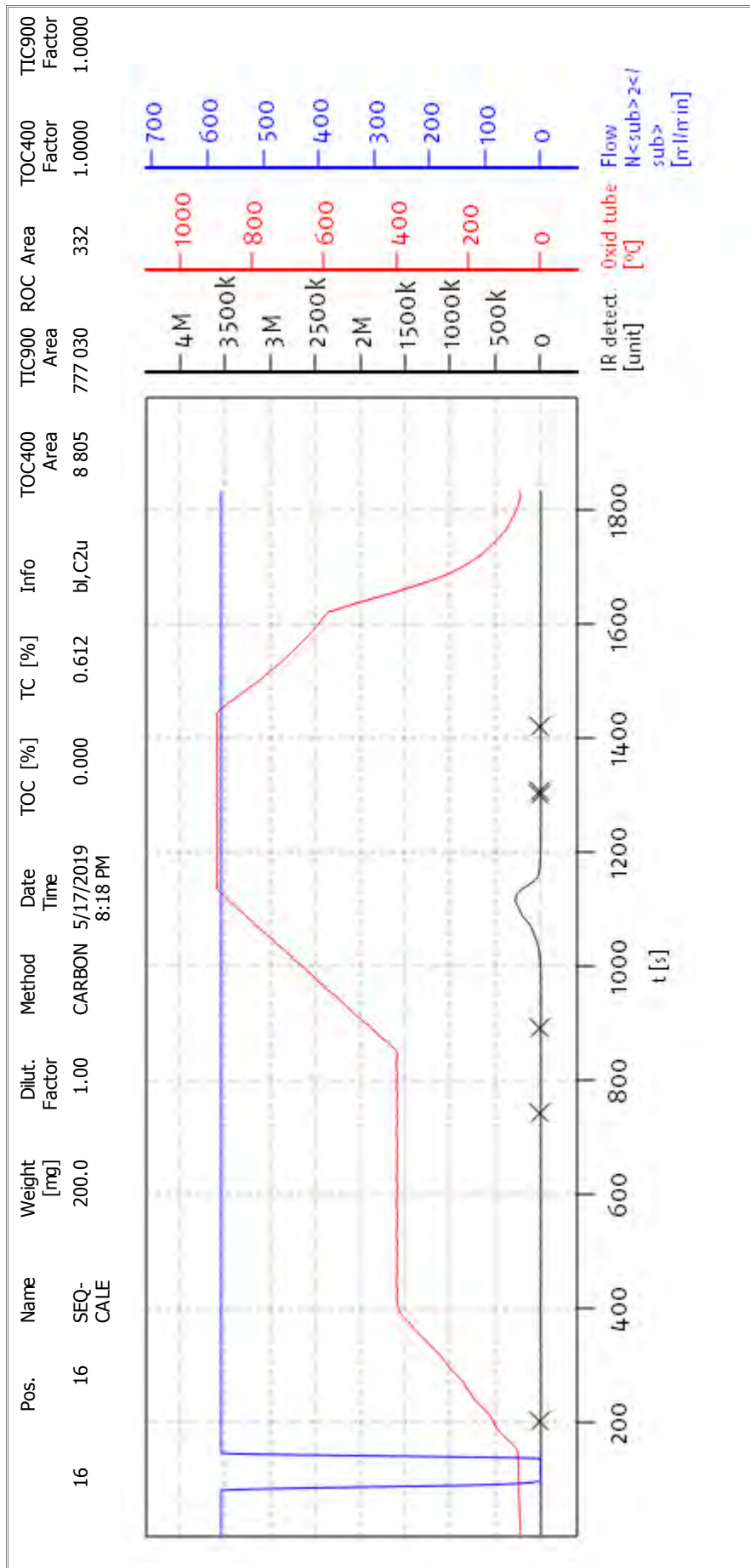
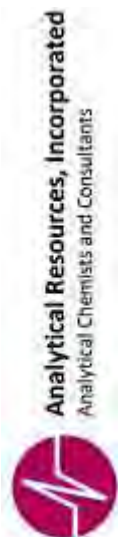
solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

Access: soliT0C superuser

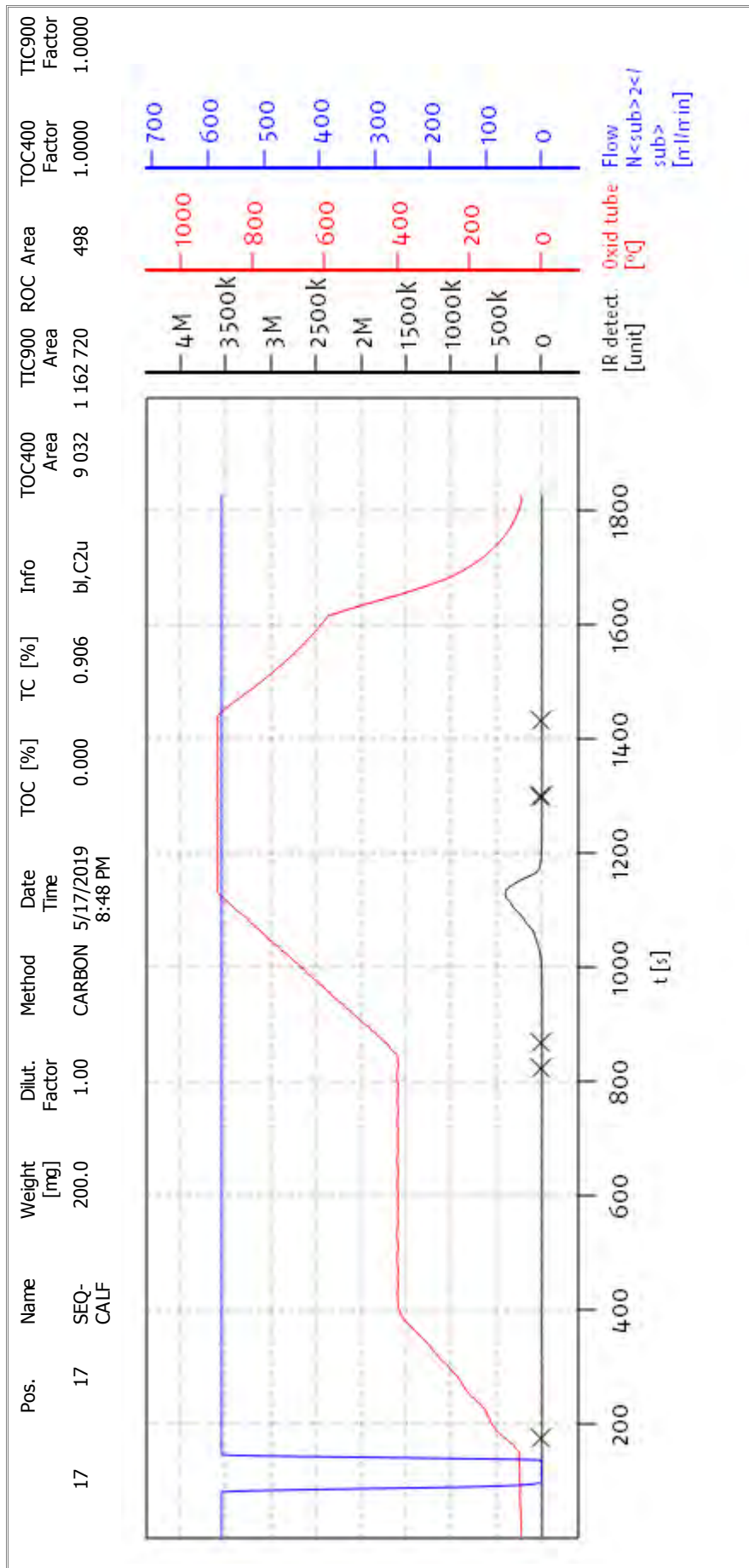
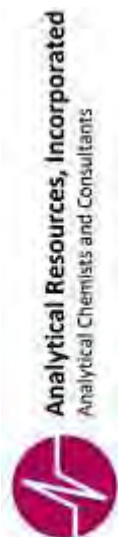
soliT0C V2.0.2 (31015f9) 2018-11-19

Serial No: 0300.18107

Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19

Serial No: 0300.18107

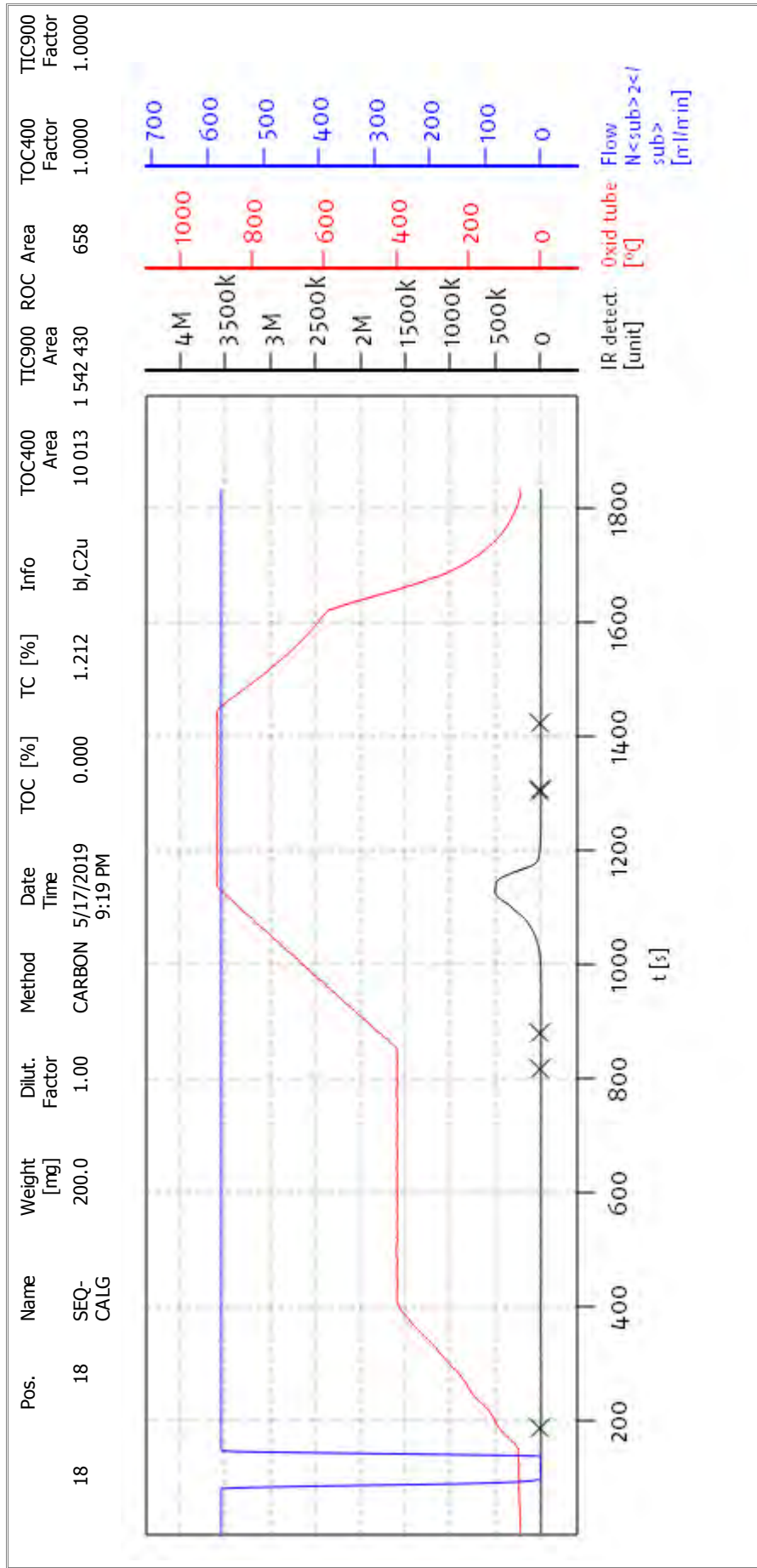
Mode CCC



3125 of 3146

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



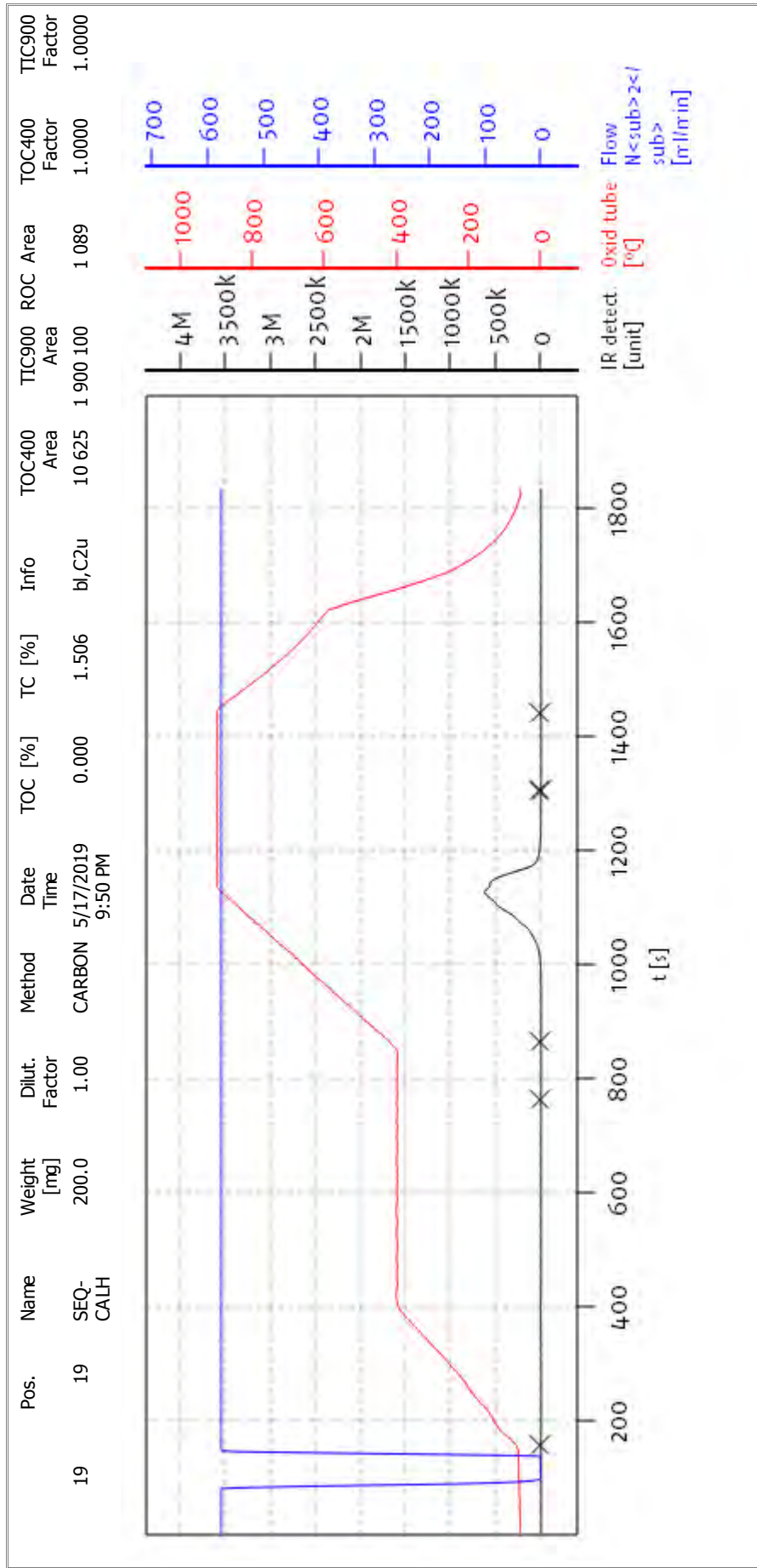
Name:

Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



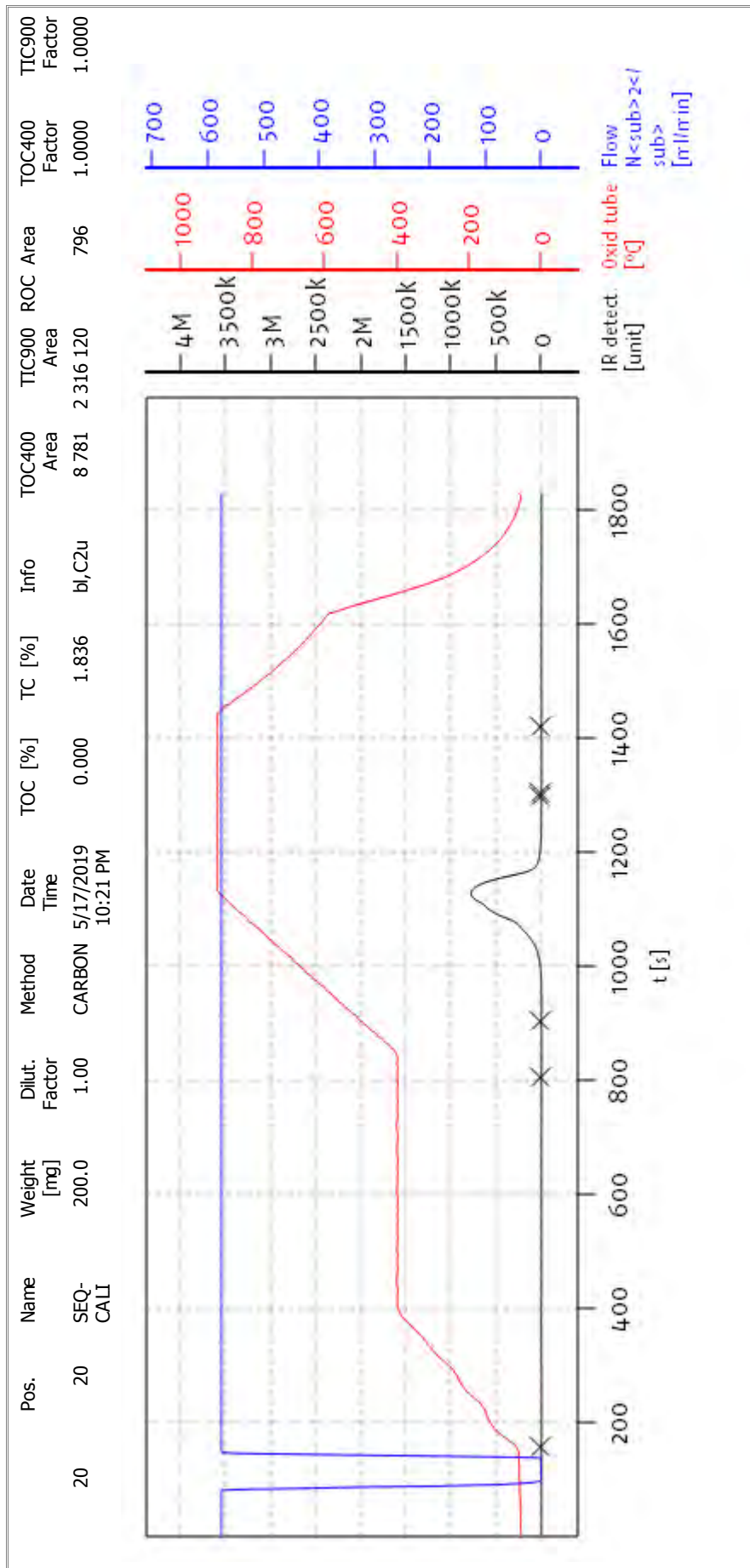
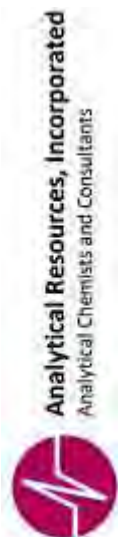
Name:

Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



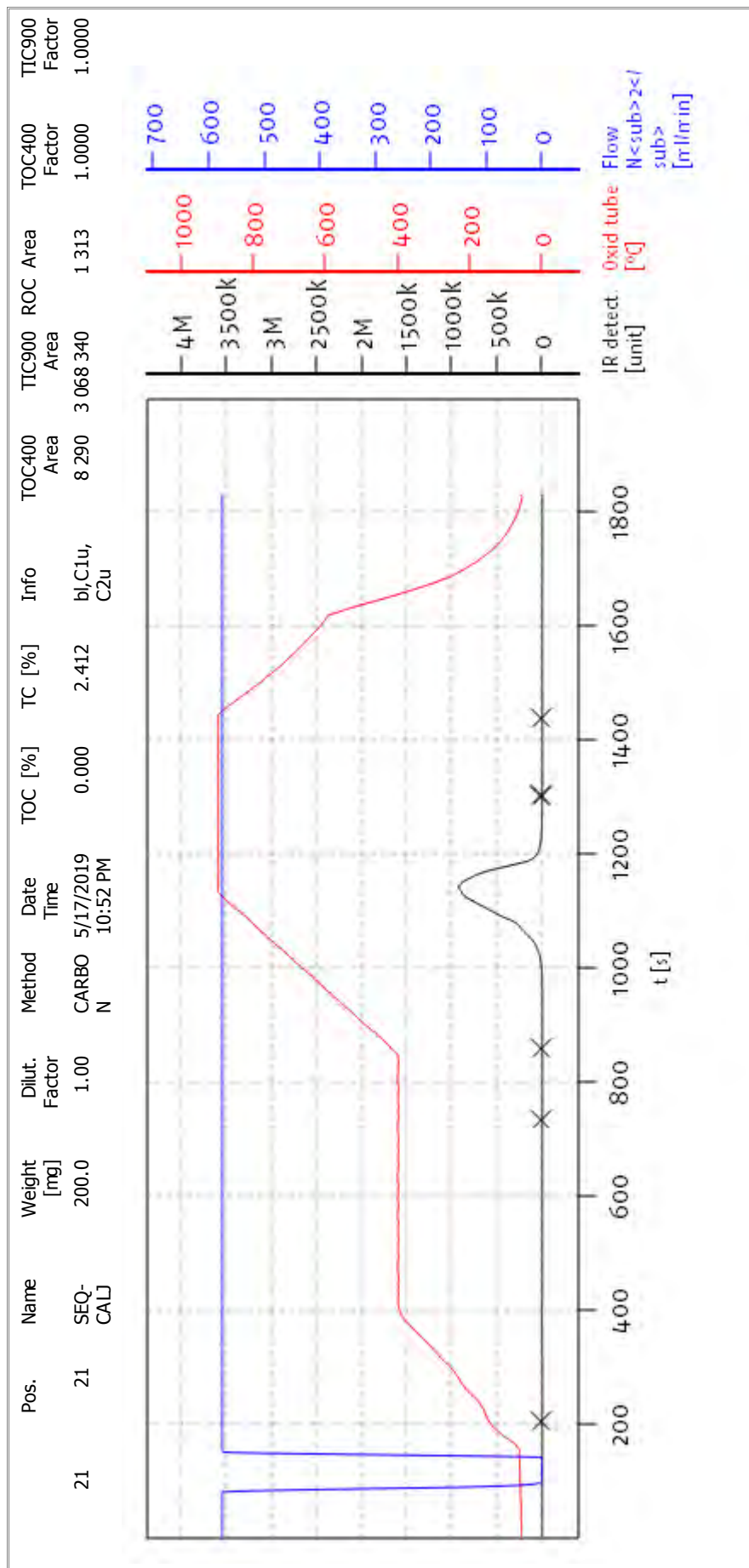
Name:

Access: soliT0C superuser

soliT0C V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

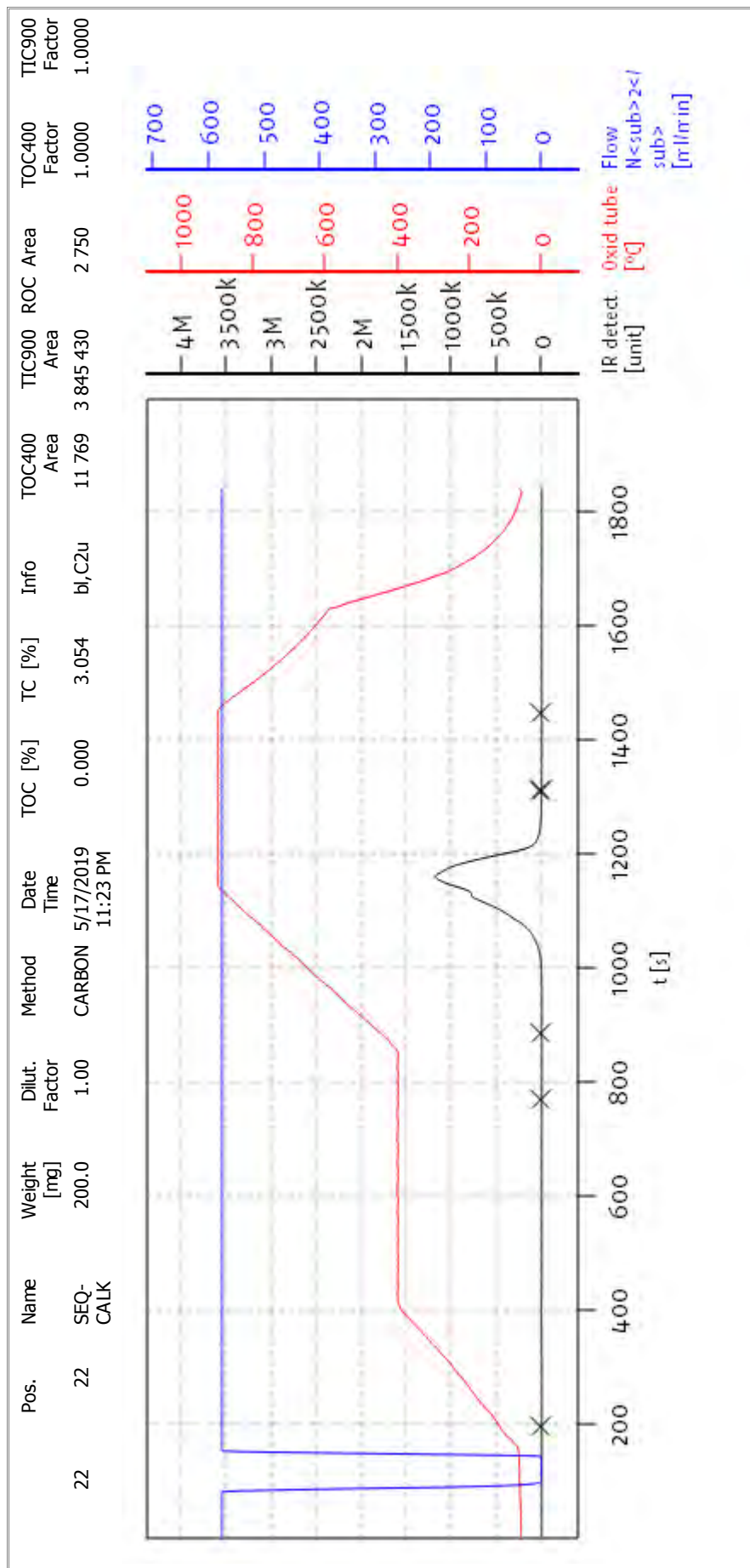
Access: soliT0C superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



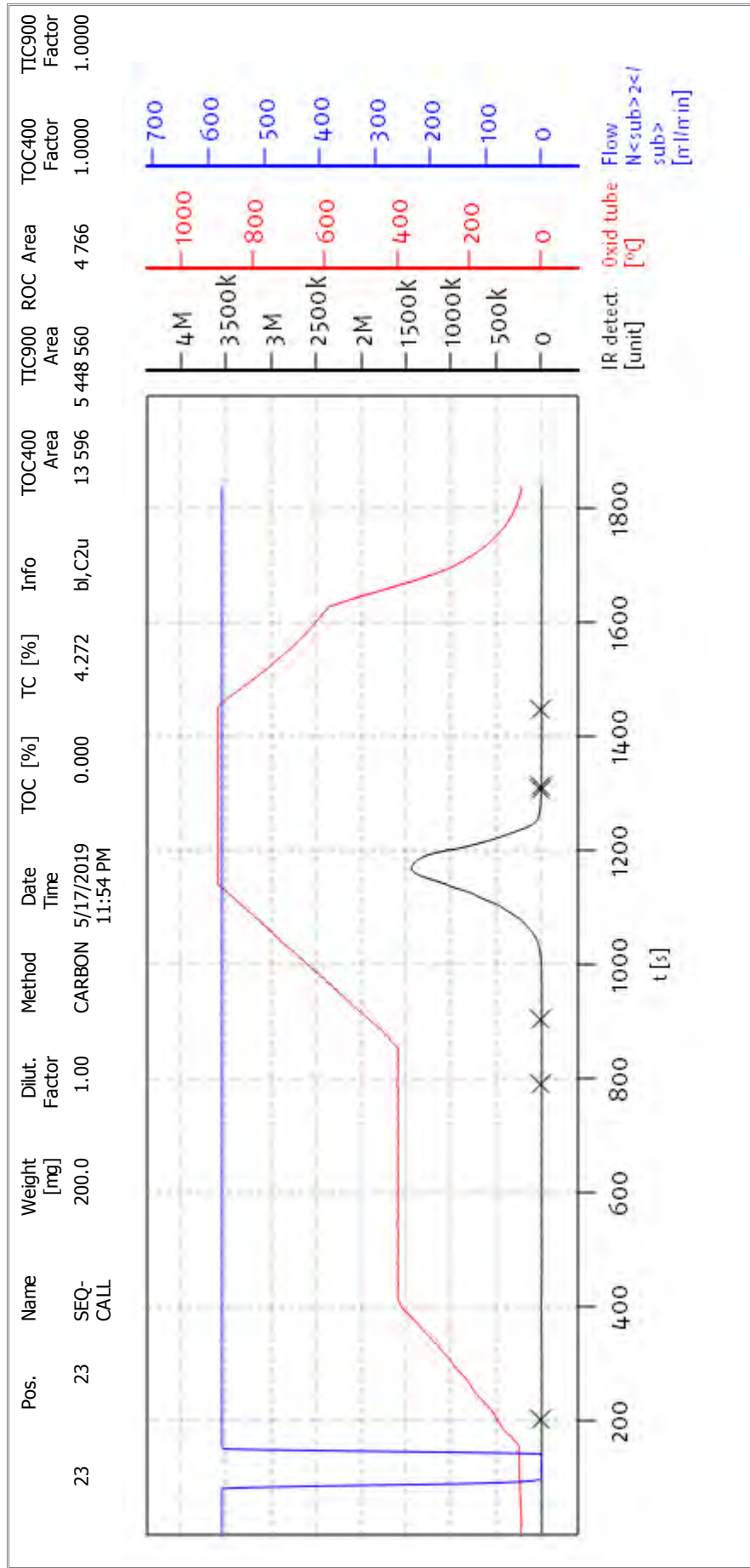
Name:

Access: soliT0C superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Name:

Access: soliT0C superuser

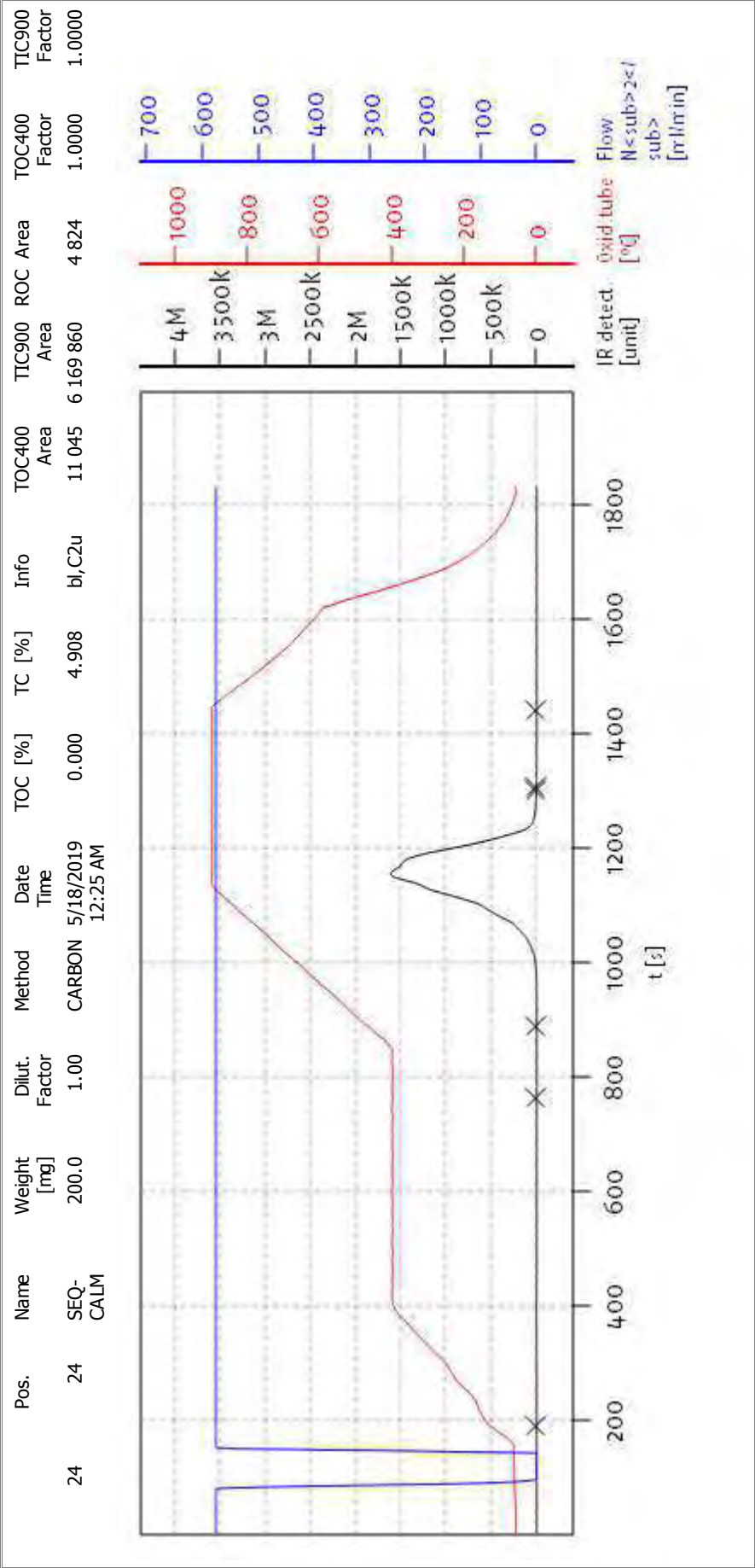
soliT0C V2.0.2 (31015f9) 2018-11-19

Serial No: 0300.18107

Mode CCC



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF

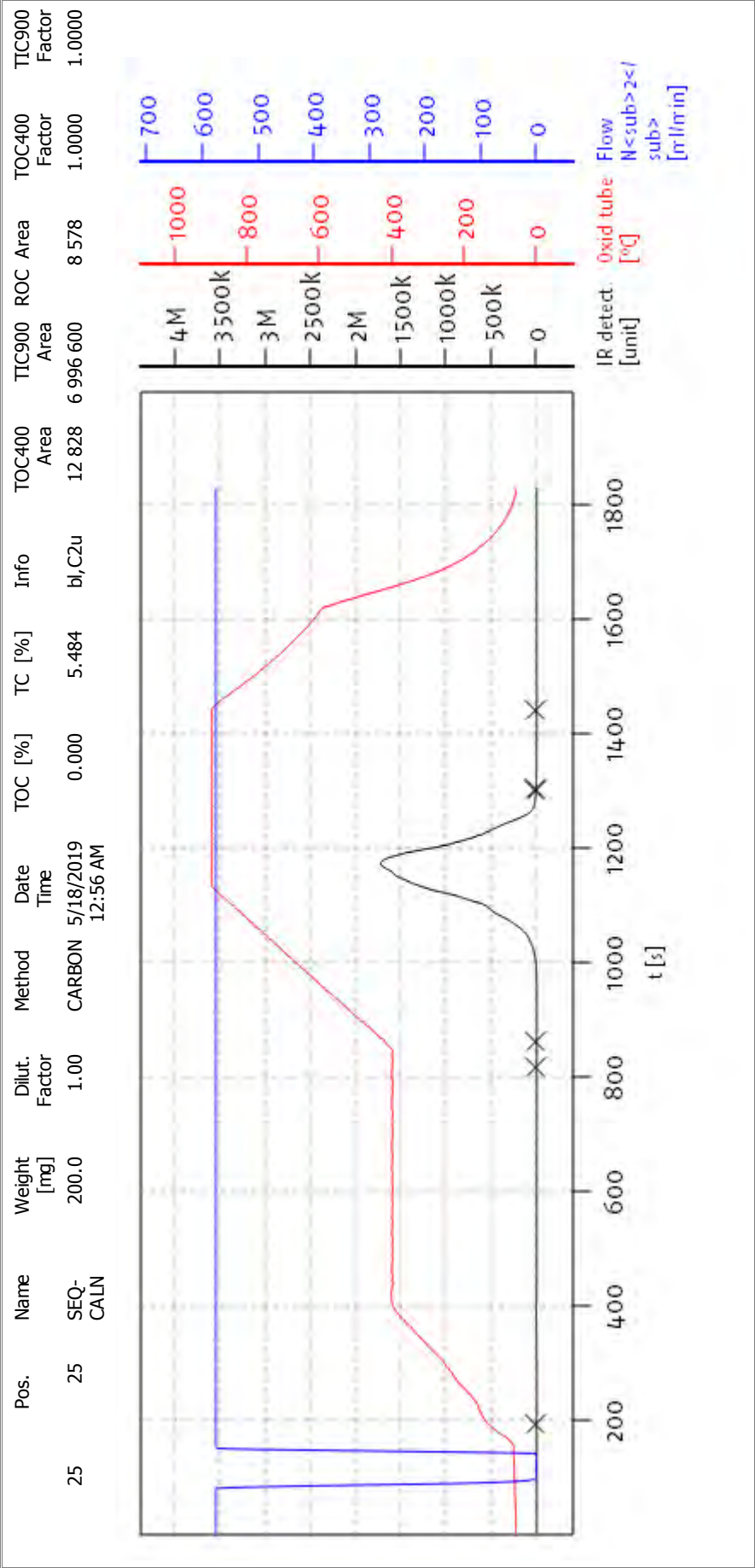
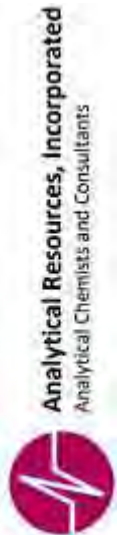


Name:

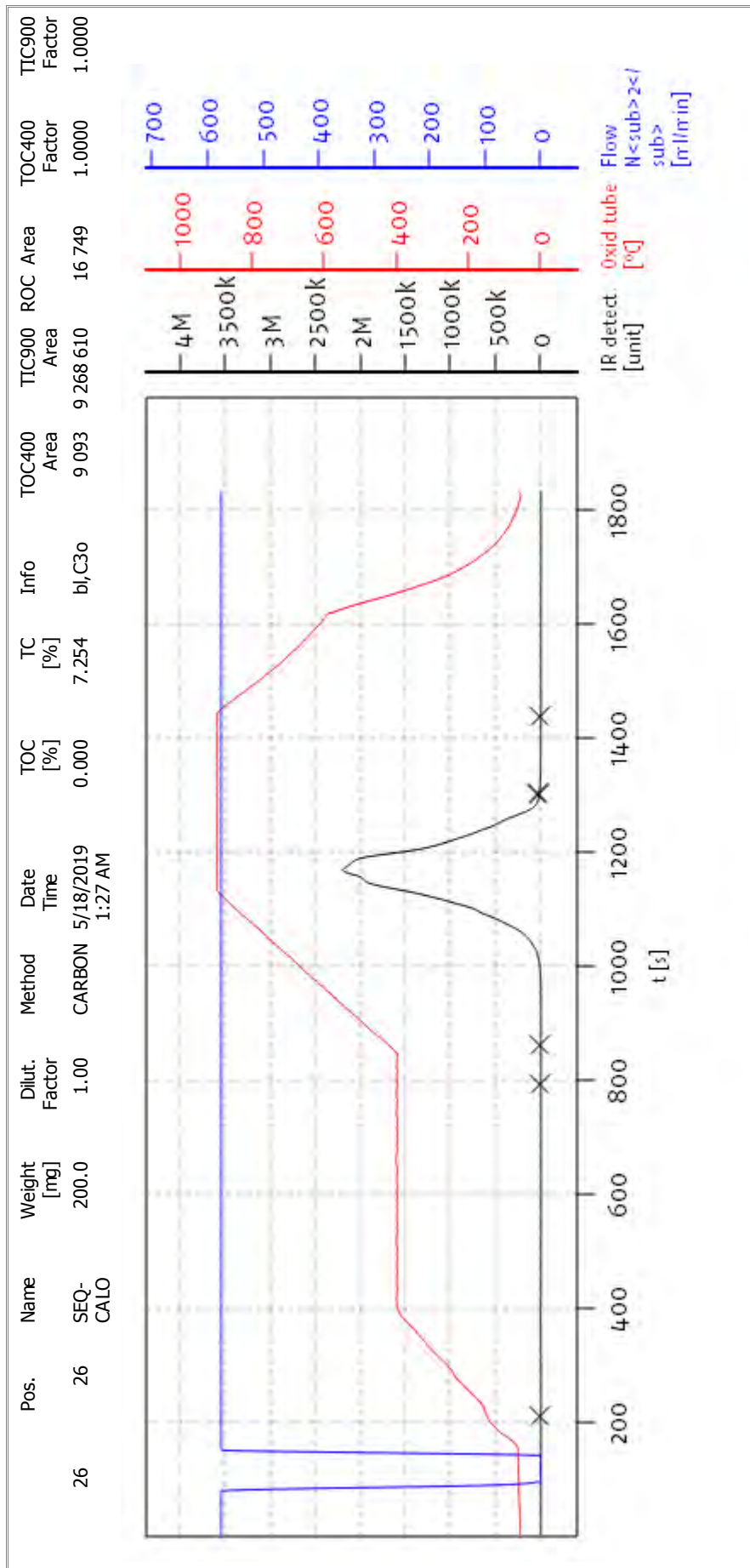
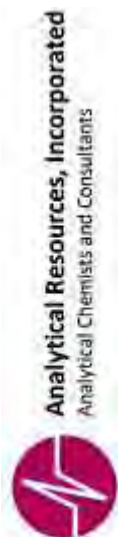
Access: soliT0C superuser

Date: Wed May 22 09:18:30 2019

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF



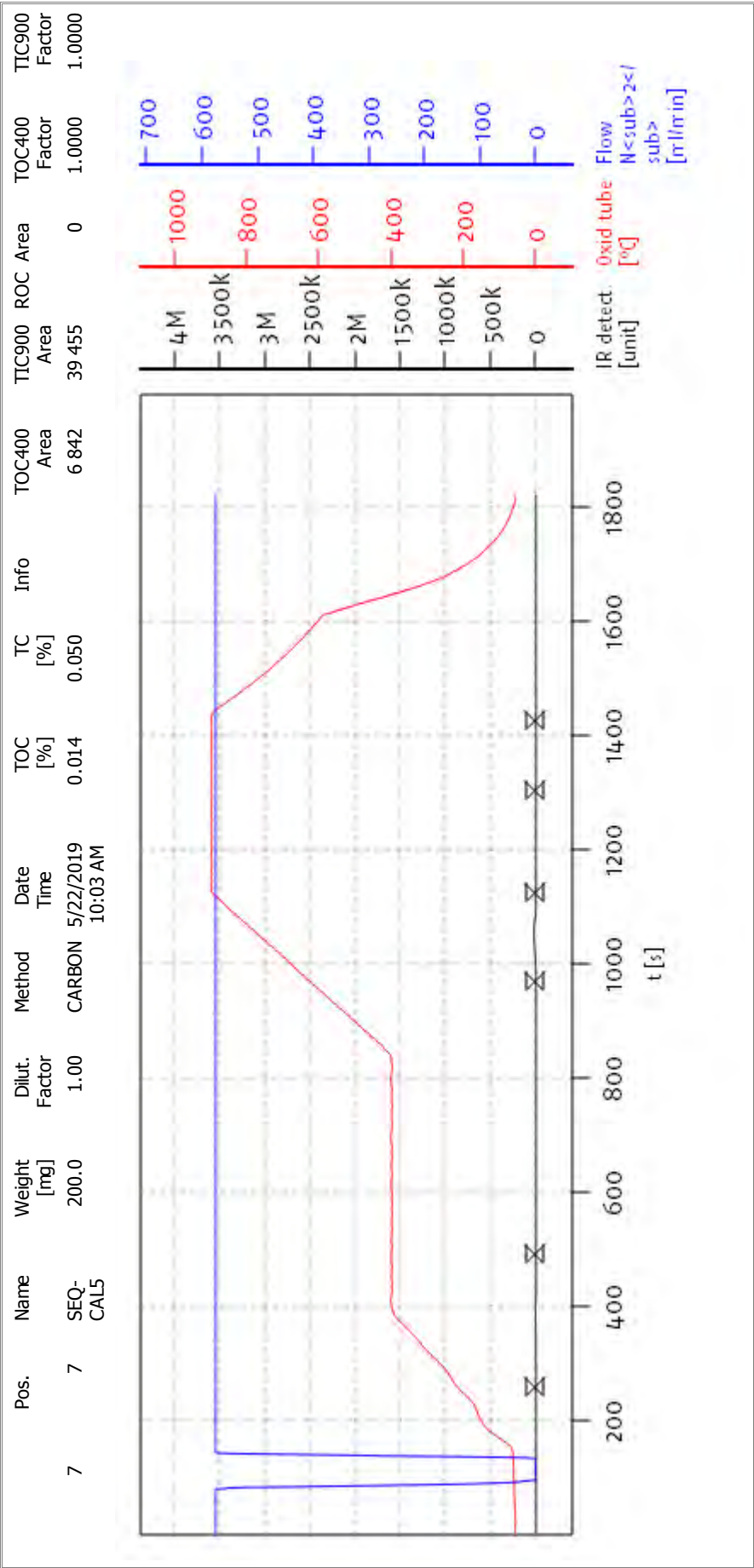
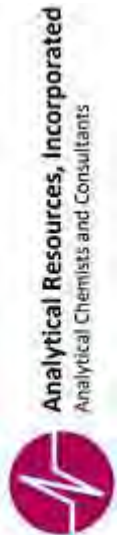
Name:

Access: soliT0C superuser



solITOC V2.0.2 (31015f9) 2018-11-19
Serial No: 0300.18107
Mode CCC

Soli TOC Cube, Carbon
Balance: BAL3
Analyst: BF





INSTRUMENT BLANKS
EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: TOC Cube

Calibration: CE00054

Sequence: SHE0340

Date Analyzed: 05/18/19 02:28

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHE0340-ICB1	Total Organic Carbon	0.01	0.02	0.02	%	



INSTRUMENT BLANKS

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: TOC Cube

Calibration: CE00054

Sequence: SHG0202

Date Analyzed: 07/16/19 11:59

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0202-ICB1	Total Organic Carbon	0.01	0.02	0.02	%	
SHG0202-CCB1	Total Organic Carbon	0.009	0.02	0.02	%	
SHG0202-CCB2	Total Organic Carbon	0.01	0.02	0.02	%	
SHG0202-CCB3	Total Organic Carbon	0.01	0.02	0.02	%	



INSTRUMENT BLANKS

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashor

Instrument ID: TOC Cube

Calibration: CE00054

Sequence: SHG0239

Date Analyzed: 07/18/19 17:26

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C
SHG0239-ICB1	Total Organic Carbon	0.01	0.02	0.02	%	
SHG0239-CCB1	Total Organic Carbon	0.009	0.02	0.02	%	



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: TOC Cube

Calibration: CE00054

Control Limit: +/- 10.00%

Sequence: SHE0340

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHE0340-ICV1	Total Organic Carbon	44.446	43.3	97.3	%	EPA 9060A m
	Total Carbon	44.446	43.9	98.8	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	0.67		%	EPA 9060A m

* Values outside of QC limits



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: TOC Cube

Calibration: CE00054

Control Limit: +/- 10.00%

Sequence: SHG0202

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0202-ICV1	Total Organic Carbon	44.446	45.2	102	%	EPA 9060A m
SHG0202-CCV1	Total Organic Carbon	44.446	45.5	102	%	EPA 9060A m
SHG0202-CCV2	Total Organic Carbon	44.446	45.2	102	%	EPA 9060A m
SHG0202-CCV3	Total Organic Carbon	44.446	45.1	101	%	EPA 9060A m

* Values outside of QC limits



INITIAL AND CONTINUING CALIBRATION CHECK

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Instrument ID: TOC Cube

Calibration: CE00054

Control Limit: +/- 10.00%

Sequence: SHG0239

Lab Sample ID	Analyte	True	Found	%R	Units	Method
SHG0239-ICV1	Total Organic Carbon	44.446	44.7	101	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	0.76		%	EPA 9060A m
SHG0239-ICV2	Total Organic Carbon	0.0000	0.29		%	EPA 9060A m
	Total Inorganic Carbon	12.000	11.8	98.7	%	EPA 9060A m
SHG0239-CCV1	Total Organic Carbon	44.446	44.9	101	%	EPA 9060A m
	Total Inorganic Carbon	0.0000	0.74		%	EPA 9060A m
SHG0239-CCV2	Total Organic Carbon	0.0000	0.22		%	EPA 9060A m
	Total Inorganic Carbon	12.000	11.9	98.8	%	EPA 9060A m

* Values outside of QC limits



HOLDING TIME SUMMARY

Analysis: EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

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
SO-01-190711 19G0163-02	07/11/19 11:05	07/11/19 17:25	07/16/19 15:36	5	14	07/16/19 15:36			
SO-02-190711 19G0163-03	07/11/19 10:50	07/11/19 17:25	07/16/19 17:09	5	14	07/16/19 17:09			
SO-03-190711 19G0163-04	07/11/19 08:35	07/11/19 17:25	07/16/19 18:43	5	14	07/16/19 18:43			
SO-04-190711 19G0163-05	07/11/19 11:30	07/11/19 17:25	07/16/19 19:14	5	14	07/16/19 19:14			
SO-05-190711 19G0163-06	07/11/19 12:05	07/11/19 17:25	07/16/19 19:45	5	14	07/16/19 19:45			
SO-06-190711 19G0163-07	07/11/19 12:20	07/11/19 17:25	07/16/19 20:16	5	14	07/16/19 20:16			
SO-07-190711 19G0163-08	07/11/19 11:55	07/11/19 17:25	07/16/19 20:47	5	14	07/16/19 20:47			
SO-08-190711 19G0163-09	07/11/19 10:25	07/11/19 17:25	07/16/19 21:18	5	14	07/16/19 21:18			
SO-09-190711 19G0163-10	07/11/19 10:10	07/11/19 17:25	07/16/19 21:49	5	14	07/16/19 21:49			
SO-10-190711 19G0163-11	07/11/19 09:45	07/11/19 17:25	07/16/19 22:20	5	14	07/16/19 22:20			
SO-10-190711D 19G0163-12	07/11/19 09:50	07/11/19 17:25	07/16/19 22:52	5	14	07/16/19 22:52			
SO-11-190711 19G0163-13RE1	07/11/19 09:10	07/11/19 17:25	07/18/19 18:59	7	14	07/18/19 18:59			
SO-12-190711 19G0163-14	07/11/19 09:25	07/11/19 17:25	07/17/19 00:56	5	14	07/17/19 00:56			
SO-13-190711 19G0163-15	07/11/19 12:35	07/11/19 17:25	07/17/19 01:27	5	14	07/17/19 01:27			
Duplicate BHG0359-DUP2	07/11/19 11:05	07/11/19 17:25	07/18/19 17:57	7	14	07/18/19 17:57			
Matrix Spike BHG0359-MS2	07/11/19 11:05	07/11/19 17:25	07/18/19 18:28	7	14	07/18/19 18:28			

* Indicates hold time exceedance.



Analytical Resources, Incorporated
Analytical Chemists and Consultants

METHOD DETECTION AND REPORTING LIMITS

EPA 9060A m

Laboratory: Analytical Resources, Inc.

SDG: 19G0163

Client: Anchor QEA, LLC

Project: King County Closed Landfills - Vashon

Matrix: Solid

Instrument: TOC Cube

Analyte	MDL	RL	Units
Total Organic Carbon	0.02	0.02	%

TOTAL SOLIDS BENCHSHEET

Method: PSEP 1986

(dry at 103-105 C)

Batch: BHG0308

Date: 7/12/2019 13:45

Analyst: YEN

Instrumentation

Drying Oven:

15

Analytical Balance:

b146462614

Batch drying time

record times as mm/dd/yy hh:mm

date/time in oven: 7/12/2019 14:30

date/time out: 7/19/2019 9:05

elapsed hrs: 162.6

TS (%) calculated as:

Final dry wt (g) = (Dry Wt - Tare Wt)

TS = (Final Dry Wt X 100)/(sample & dish -dish tare)

SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
19G0163-02	1.0800	11.8200	6.2700	5.19	48.32%	No
19G0163-03	1.0600	12.0000	6.1700	5.11	46.71%	No
19G0163-04	1.0700	11.9100	3.6200	2.55	23.52%	No
19G0163-05	1.0900	11.8500	3.5100	2.42	22.49%	No
19G0163-06	1.0800	11.7700	4.6300	3.55	33.21%	No
19G0163-07	1.0800	12.0300	6.5700	5.49	50.14%	No
19G0163-08	1.0700	11.8500	7.5800	6.51	60.39%	No
19G0163-09	1.0400	11.8100	6.3400	5.30	49.21%	No
19G0163-10	1.0400	11.7800	8.1600	7.12	66.29%	No
19G0163-11	1.0700	12.1500	8.9600	7.89	71.21%	No
19G0163-12	1.1000	11.8000	8.8100	7.71	72.06%	No
19G0163-13	1.0800	12.1400	3.4700	2.39	21.61%	No
19G0163-14	1.0900	12.1000	5.8700	4.78	43.42%	No
19G0163-15	1.0900	11.9100	16.6000	15.51	143.35%	No

TOTAL SOLIDS BENCHSHEET

Method: PSEP 1986

(dry at 103-105 C)

Instrumentation

Batch drying time

record times as mm/dd/yy hh:mm

date/time in oven:

date/time out:

elapsed hrs:

TS (%) calculated as:

Final dry wt (g) = (Dry Wt - Tare Wt)

TS = (Final Dry Wt X 100) / (sample & dish - dish tare)

Batch: BHG0308

Date: 7/12/2019 12:50

Analyst: *WJL*

Drying Oven: *205*

Analytical Balance: *P146462614*

SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
19G0163-02	1.08	11.82	6.27			No
19G0163-03	1.42	12.04	6.17			No
19G0163-04	1.07	11.91	3.62			No
19G0163-05	1.09	11.85	3.51			No
19G0163-06	1.08	11.77	4.63			No
19G0163-07	1.08	12.03	6.57			No
19G0163-08	1.07	11.85	7.58			No
19G0163-09	1.04	11.81	6.34			No
19G0163-10	1.04	11.78	8.16			No
19G0163-11	1.07	12.15	8.96			No
19G0163-12	1.14	11.74	8.81			No
19G0163-13	1.08	12.14	3.47			No
19G0163-14	1.09	12.14	5.87			No
19G0163-15	1.09	11.91	16.66			No

TOTAL SOLIDS BENCHSHEET

Method: PSEP 1986

(dry at 103-105 C)

Batch: BHG0308

Date: 7/12/2019 13:45

Analyst: YEN

Drying Oven: 15

Analytical Balance: b146462614

Batch drying time

record times as mm/dd/yy hh:mm

date/time in oven: 7/12/2019 14:30

date/time out: 7/19/2019 9:05

elapsed hrs: 162.6

TS (%) calculated as:

Final dry wt (g) = (Dry Wt - Tare Wt)

TS = (Final Dry Wt X 100) / (sample & dish -dish tare)

SAMPLE ID	Dish Tare Wt (g)	Dish with Sample (g)	Dry Wt (g)	Solids Wt (g)	TS (%)	Sample Decanted
19G0163-02	1.0800	11.8200	6.2700	5.19	48.32%	No
19G0163-03	1.0600	12.0000	6.1700	5.11	46.71%	No
19G0163-04	1.0700	11.9100	3.6200	2.55	23.52%	No
19G0163-05	1.0900	11.8500	3.5100	2.42	22.49%	No
19G0163-06	1.0800	11.7700	4.6300	3.55	33.21%	No
19G0163-07	1.0800	12.0300	6.5700	5.49	50.14%	No
19G0163-08	1.0700	11.8500	7.5800	6.51	60.39%	No
19G0163-09	1.0400	11.8100	6.3400	5.30	49.21%	No
19G0163-10	1.0400	11.7800	8.1600	7.12	66.29%	No
19G0163-11	1.0700	12.1500	8.9600	7.89	71.21%	No
19G0163-12	1.1000	11.8000	8.8100	7.71	72.06%	No
19G0163-13	1.0800	12.1400	3.4700	2.39	21.61%	No
19G0163-14	1.0900	12.1000	5.8700	4.78	43.42%	No
19G0163-15	1.0900	11.9100	10.6000	9.51	87.89%	No